



# RESULTS

OF THE

MAGNETICAL AND METEOROLOGICAL

OBSERVATIONS

MADE AT

THE ROYAL OBSERVATORY, GREENWICH,

1849.

(EXTRACTED FROM THE GREENWICH OBSERVATIONS, 1849.)



APPENDIX.

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ROYAL OBSERVATORY, GREENWICH.

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RESULTS

OF

MAGNETICAL AND METEOROLOGICAL

OBSERVATIONS.

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1849.



ROYAL OBSERVATORY, GREENWICH.

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INDICATIONS

OF

MAGNETOMETERS.

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1849.

For description of the three Magnetometers, the method of observing by the Telescope, and the method of reducing the observations, the reader is referred to the *Greenwich Magnetical and Meteorological Observations* for 1847, Introduction, page i to xlii; and to corresponding parts of the preceding Volumes.

During the year 1849, Telescope-Observations of the Magnetometers have usually been made four times every day (except Sundays); but though these observations are employed in forming the base-lines on the Photographic sheets, their immediate results are not necessarily given in the following pages.

Observations were made of the reading of the Horizontal Circle of the Theodolite, by which the DECLINATION MAGNET is observed, corresponding to the Astronomical Meridian, on January 6, April 21, June 16, 22, July 7, September 25, October 18, 19, November 1, and December 6.

Observations of the angle of torsion of the HORIZONTAL FORCE MAGNETOMETER were made on 1848, December 29 and 30. The angle determined was  $42^{\circ}.53'$ , being  $9'$  larger than that determined last year. The angle used in the reduction of the observations is  $42^{\circ}.44'$ . Observations were made for the times of vibration and readings of the scale for different readings of the torsion-circle on 1848, December 29; and the general conclusion was, that the scale-readings were nearly identical and had nearly the usual value when the reading of the torsion-circle was  $144^{\circ}.30'$  (marked end West); and  $230^{\circ}.0'$  (marked end East). The reading adopted for the adjustment of the torsion-circle throughout the year (marked end West) is  $144^{\circ}.30'$ .

The number used for the variation of horizontal force for a disturbance through one division of the scale, in parts of the whole horizontal force, is  $0.0020789$ .

The correction for temperature is  $0.00009050(t-32^{\circ}) + 0.00000626(t-32^{\circ})^2$ . This is not applied to any of the results of observation.

Observations of the times of vibration of the VERTICAL FORCE MAGNETOMETER in a vertical plane have usually been made three times a week. The adopted time of vibration in the month of January was  $24^s.3$ ; in February and till March 5 it was  $23^s.1$ ; and from March 6 to the end of the year it was  $22^s.6$ .

Observations for the time of vibration in a horizontal plane were made in 1848, July, and the time was found to be  $24^s.0164$  from 7000 vibrations. The values of the disturbing force, in terms of the whole vertical force, for one division of the scale, are inferred to be  $0.000600$  for January;  $0.000664$  for February and till March 5; and  $0.000694$  from March 6 till the end of the year; and these numbers are used in their respective periods.

The correction for temperature is  $0.00018979 \times (t-32^{\circ}) + 0.000007257 \times (t-32^{\circ})^2$ . This is not applied to any of the results of observation.

The methods adopted in the use of the Photographic Apparatus, in the determinations of zeros both for time and for magnetic indications, and in the translation into numbers of the indications given by the Photographic Traces, for arbitrary times, are in every respect the same as those described in the Addendum to the Introduction to the *Greenwich Magnetical and Meteorological Observations*, 1847, pages lxxxiii to xc.

It is proper, however, to mention that, in measuring the ordinates of the Vertical Force Curves, the same difficulty that is mentioned in the volume for 1848 has still occasionally been felt. Occasionally, without any apparent cause, the curve is dislocated; one part being raised above or depressed below the contiguous part, in the direction of the ordinate, by a considerable quantity. In some instances this has been traced to a possible disturbance during the operation of changing the lamps (a cause of disturbance which, however, has nearly ceased to exist since 1849,

August 18, when the camphine lamps were exchanged for lamps of coal-gas charged with the vapour of coal-naphtha), or shutting the doors: in other cases no obvious cause can be assigned. In all cases this displacement is accompanied with vibration, the original position being at the extremity of the arc of vibration, and the new position being at the center of the arc: shewing that there has been no want of delicacy of the movement, and that the change has been precisely the same as would be caused by the quiet application of a small weight upon one end of the magnet. To combine these dislocated parts, a small machine has been prepared, by means of which a piece of tracing-paper can be slid, parallel to itself, in the direction of the ordinates: and the various portions of the curve are traced on this paper in such a manner that their ends are properly joined. This traced curve is then used for the measure of the ordinates. I conceive that these measures, for a single sheet, are perfectly and accurately comparable: although it is evident that the results on one sheet cannot always be compared with those on another.

In general the ordinates of the photographic curves have been measured only at the times of the maximum and minimum values; but, on days in which the unsteadiness of the magnets was strongly marked, the ordinates have been measured at well-marked bends of the curve: so that a reader, laying down a succession of points by means of the given times as abscissæ and the given measures of force as ordinates, and connecting these points by straight lines, will very nearly reproduce the original curves.



Göttingen Mean Solar Time.	Western Declina- tion.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermo- meters.		Göttingen Mean Solar Time.	Western Declina- tion.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermo- meters.						
							H. F.	V. F.								H. F.	V. F.					
Jan. 2 3. 38 15. 36 23. 36	22. 37. 15 32. 15 37. 0	Jan. 2 3. 23 5. 50 7. 0 14. 55 17. 40 19. 0 23. 7 23. 23	·1043 ·1033 ·1039 ·1057 ·1053 ·1067 ·1035 ·1047	Jan. 2 3. 30 8. 45 12. 12 22. 48	·00904 ·00800 ·01043 ·00853		3 44.0 9 41.0 21 29.0	44.5 41.0 29.0	Jan. 7 20. 0 21. 50 22. 20	22. 43. 0 35. 0 42. 0	Jan. 7 13. 53 14. 16 14. 47 15. 0 15. 38 21. 51 23. 15	·1029 ·1048 ·1032 ·1059 ·1042 ·1007 ·1029										
Jan. 3 1. 35 11. 6 14. 30 15. 10 23. 35	22. 41. 15 30. 15 38. 30 33. 30 42. 30	Jan. 3 1. 32 17. 15 18. 30 19. 22 21. 45 22. 50	·1032 ·1049 ·1041 ·1063 ·1039 ·1033	Jan. 3 0. 0 11. 7 22. 30	·00726 ·00758 ·00885		1 35.0 3 39.0 9 38.5 21 35.0	35.5 39.0 38.0 35.0	Jan. 8 0. 30 10. 40 11. 0 11. 12 12. 10 17. 10 23. 24	22. 46. 30 34. 0 25. 30 24. 0 34. 0 33. 45 37. 30	Jan. 8 0. 27 1. 8 2. 56 (+) 7. 18 9. 54 17. 37 22. 50	·1033 ·1012 ·1023 ·1022 ·1018 ·1041 ·1013	Jan. 8 0. 0 1. 15 3. 35 11. 0 23. 0	·00950 ·00900 ·00982 ·00840 ·00967		1 43.0 3 45.0 9 45.0 21 43.5	43.5 45.5 45.0 43.5					
Jan. 4 1. 33 4. 0 4. 33 5. 45 8. 10 9. 0 10. 25 23. 34	22. 44. 0 41. 45 29. 30 35. 0 34. 30 22. 0 32. 30 39. 15	Jan. 4 0. 52 2. 23 4. 15 5. 24 8. 42 9. 29 23. 0	·1020 ·1035 ·1011 ·1039 ·1019 ·1040 ·1023	Jan. 4 1. 12 4. 50 10. 35 23. 6	·00810 ·00978 ·00893 ·00985		1 41.5 3 39.5 9 41.0 21 37.0	41.5 39.5 41.5 37.5	Jan. 9 0. 45 9. 20 9. 33 10. 51 23. 15	22. 42. 0 32. 0 25. 30 33. 30 40. 0	Jan. 9 0. 30 1. 38 3. 23 9. 0 11. 30 23. 30 5. 10 14. 0 14. 35 15. 23 21. 22 22. 10 23. 41	·1022 *** ·1009 *** ·1023 *** ·1009 *** ·1033 *** ·1029 ·1044 *** ·1015 *** ·1021 *** ·1014	Jan. 9 0. 30 1. 38 3. 23 9. 0 11. 30 23. 30	·01128 ·01090 ·01168 ·01073 ·01190 ·01030		1 48.0 3 51.0 9 50.0 21 44.0	48.5 51.0 50.5 44.0					
Jan. 5 0. 32 21. 44 23. 55	22. 41. 30 31. 0 37. 30	Jan. 5 0. 3 18. 24 23. 33	·1022 ·1048 ·1025	Jan. 5 0. 0 3. 5 5. 0 19. 8 23. 0	·00964 ·00893 ·00968 ·00882 ·00950		1 40.0 3 41.0 9 43.0 21 37.5	40.5 41.5 43.5 37.5	Jan. 10 2. 20 5. 30 6. 45 7. 38 8. 12 8. 35 21. 10	22. 39. 45 32. 30 39. 45 30. 30 36. 45 29. 30 32. 30	Jan. 10 0. 0 1. 50 3. 30 5. 22 12. 0 13. 10 23. 0	·1015 *** ·1009 *** ·1021 *** ·1016 *** ·1027 *** ·1015 *** ·1019 ***	Jan. 10 0. 0 1. 50 3. 30 5. 22 12. 0 13. 10 23. 0	·01080 ·01032 ·01060 ·00980 ·00985 ·01020 ·00923		1 48.0 3 48.0 9 48.0 21 41.0	48.5 48.5 48.0 41.5					
Jan. 6 0. 45 14. 50 23. 45	22. 39. 45 30. 15 37. 30	Jan. 6 0. 10 2. 28 8. 25 13. 0 13. 18 20. 3 22. 0	·1025 ·1044 ·1033 ·1044 ·1032 ·1048 ·1034	Jan. 6 1. 0 8. 20 12. 0 23. 18	·01018 ·00930 ·01185 ·00950		1 38.0 3 42.0 9 42.0	38.0 42.0 42.0	Jan. 7 0. 30 6. 40 15. 10 23. 20	·00832 ·00752 ·00592 ·00695		0 34.0 9 37.0 21 38.0	34.0 37.0 38.0	Jan. 7 1. 45 10. 8 11. 18 12. 10 13. 20 14. 25 14. 49 15. 23	22. 41. 0 34. 0 27. 0 34. 45 29. 45 39. 45 31. 45 30. 0	Jan. 7 0. 0 3. 7 3. 40 10. 14 11. 10 11. 44 12. 42 13. 28	·1034 ·1047 ·1039 ·1047 ·1022 ·1034 ·1017 ·1036					

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (+) denotes that the register has failed between the preceding and following readings. The Symbol ; attached to a time denotes that the reading will apply equally to several times near that which is recorded.

The time of reading the thermometers is the hour specified in Greenwich Time, or the hour increased by 40<sup>m</sup> in Göttingen Time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Jan. 10 23. 55	22. 39. 45	Jan. 10 8. 10	·1043 ***				o	o	Jan. 14 15. 52	22. 39. 15	Jan. 14 12. 0	·0986				o	o
		8. 28	·1016 ***						16. 50	23. 30	12. 13	·1001					
		20. 8	·1036 ***						23. 38	40. 30	12. 46	·0980					
		23. 30	·1026								12. 57	·1010					
											13. 22	·0976					
											17. 15	·1022					
											23. 15	·0997					
											23. 35	·1016					
Jan. 11 3. 15	22. 42. 0	Jan. 11 0. 15	·1025 ***	Jan. 11 0. 7	·01082	1	42·0	42·5	Jan. 15 2. 10	22. 47. 30	Jan. 15 0. 13	·1010	Jan. 15 0. 0	·01055	1	43·5	43·5
11. 7	28. 30	2. 45	·1035 ***	8. 0	·00990	3	44·0	44·5	8. 54	36. 0	1. 33	·1046	2. 8	·01115	3	46·0	46·0
23. 45	36. 30	7. 46	·1024 ***	22. 30	·01015	9	43·0	43·0	9. 18	25. 0	1. 56	·1016	3. 50	·00958	9	47·0	47·0
		20. 33	·1049 ***			21	39·0	39·0	9. 47	31. 45	2. 15	·1045	7. 30	·01092	21	42·0	42·0
		23. 40	·1020						11. 0	28. 0	2. 48	·1019	10. 30	·00985			
									12. 10	35. 0	4. 52	·1036	17. 0	·01170			
									12. 50	29. 15	6. 16	·1009	23. 0	·01140			
									14. 35	36. 0	6. 42	·1028					
									15. 44	27. 0	7. 12	·0998					
									17. 12	33. 0	9. 30	·1019					
									21. 8	28. 45	11. 38	·1009					
									23. 55	38. 0	12. 8	·1040					
											12. 38	·1016					
											23. 12	·1012					
									Jan. 16 0. 0	22. 38. 0	Jan. 16 0. 15	·1019 ***	Jan. 16 0. 30	·00970	2	43·0	43·5
									6. 10	42. 0	2. 8	·1038	3. 7	·00860	3	45·0	45·0
									6. 30	14. 15	2. 8	·1038 ***	5. 17	·00933	9	49·0	49·0
									6. 38	22. 0	2. 40	·1018 ***	6. 22	·01100	21	49·0	49·5
									6. 42	18. 0	3. 32	·1035 ***	7. 34	·00975			
									6. 54	27. 45	3. 32	·1035 ***	9. 14	·01020			
									7. 12	23. 50	4. 32	·0997	11. 45	·00852			
									7. 39	48. 0	4. 45	·1006	17. 0	·00795			
									7. 45	30. 30	5. 10	·1011	23. 1	·00941			
									8. 34	41. 0	5. 37	·1020					
									10. 42	30. 0	6. 24	·0989					
									12. 22	36. 45	6. 33	·1033					
									22. 5	38. 0	7. 5	·1022					
									23. 47	36. 30	7. 25	·1041					
											7. 40	·0968					
											8. 2	·1012					
											8. 22	·0996					
											10. 12	·1021					
											10. 50	·1000					
											20. 40	·1022					
											23. 22	·1003					
Jan. 14 6. 40	22. 47. 0	Jan. 14 0. 0	·1020	Jan. 14 0. 40	·01345	1	53·0	53·5	Jan. 17 1. 58	22. 43. 0	Jan. 17 0. 0	·1001	Jan. 17 0. 0	·01290	1	51·0	51·0
6. 50	39. 0	1. 50	·1037	5. 50	·01310	9	50·0	50·5									
7. 5	42. 0	3. 42	·1011	11. 40	·01618	21	41·0	41·0									
7. 17	29. 30	4. 28	·1033	16. 20	·01300												
7. 33	42. 0	5. 54	·1019	20. 0	·01390												
11. 16	28. 0	6. 18	·1035	23. 0	·01440												
11. 42	37. 0	7. 7	·0997														
12. 2	18. 30	7. 25	·1033														
13. 0	34. 30	8. 23	·1007														
13. 15	22. 40	9. 0	·1021														
13. 21	28. 10	11. 20	·0986														
14. 18	19. 45	11. 43	·1004														

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (†) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded.

The time of reading the thermometers is the hour specified in Greenwich Time, or the hour increased by 40<sup>m</sup> in Gottingen Time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

## INDICATIONS OF THE MAGNETOMETERS

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		
							H. F.	V. F.								H. F.	V. F.	
Jan. 17 21.30 23.50	22° 31' 15" 37.30	Jan. 17 2 53 19.14 22.53	·0994 ·1026 ·1006	Jan. 17 1.23 5.7 9.40 13.45 22.30	·01198 ·01300 ·01110 ·01360 ·01225	3 53.0 9 54.0 21 46.0	53.5 54.0 46.0	Jan. 23 10.8 10.21 10.40 10.52 11.20 12.6 15.30 20.40 23.7	22° 28' 30" 34.0 27.30 31.30 24.30 30.0 34.30 29.15 34.30	Jan. 23 20.22 22.50 23.10	·1009 ·1040 ·1015							
Jan. 18 1.3 21.53 23.30	22.39.0 29.30 33.30	Jan. 18 0.6 3.22 6.58 20.0 23.42	·1005 ·1017 ·1015 ·1029 ·0997	Jan. 18 0.0 3.50 15.10 23.0	·01352 ·01050 ·01100 ·01263	1 47.0 3 51.0 9 51.0 21 50.0	47.5 51.0 51.0 50.0	Jan. 24 2.20 7.52 8.42 9.22 10.12 12.16 13.17 14.0 20.57 23.37	22.42.0 33.0 25.0 31.30 21.30 30.30 26.15 35.0 28.30 36.30	Jan. 24 0.30 7.30 9.48	·0997 ·1024 ·1024 (+) ·1010* (+)						1 50.0 3 53.5 9 52.5 21 48.0	
Jan. 19 2.37 21.30 23.50	22.41.0 28.30 34.15	Jan. 19 1.0 19.22 23.20	·0999 ·1028 ·0998	Jan. 19 0.0 4.0 14.40 23.0	·01370 ·01150 ·01283 ·01273	1 52.0 3 54.0 9 54.0 21 51.0	52.0 54.0 54.0 51.0	Jan. 25 0.10 1.5 1.37 8.0 8.22 8.53 9.10 9.42 9.55 10.47 11.23 12.8 13.6 23.32	22.35.45 43.15 37.30 34.0 23.15 34.15 26.0 30.0 25.15 33.30 23.15 31.30 26.45 36.30	Jan. 25 0.52 2.52 8.21 8.40 9.3 9.18 9.46 11.40 13.18 22.50	·1000 ·1017 ·1009 ·1041 ·0997 ·1016 ·1000 ·0989 ·1017 ·0997						1 51.0 3 54.0 9 54.5 21 50.0	
Jan. 20 2.30 21.30 23.40	22.39.15 29.45 35.15	Jan. 20 0.30 7.32 8.53 12.6 12.38 13.40 18.40 22.45	·1002 ·1022 ·1009 ·1015 ·1034 ·1019 ·1031 ·1005	Jan. 20 0.0 8.30 10.30 23.0	·01273 ·01010 ·01087 ·00996	1 52.0 3 54.0 9 54.3 21 49.0	52.0 54.5 54.3 49.0	Jan. 26 2.0 6.39 7.46 8.8 8.20 8.36 10.6 10.52 11.20 12.46 23.38	22.42.0 38.15 31.0 37.45 33.10 37.0 25.0 29.15 23.15 29.45 37.15	Jan. 26 0.20 6.36 7.36 8.2 9.57 11.6 11.18 13.45 14.7 21.0 23.13	·1000 ·1031 ·1011 ·1030 ·1001 ·1023 ·1013 ·1034 ·1017 ·1033 ·1013						1 51.0 3 54.0 9 52.0 21 43.0	
Jan. 21 2.17 21.40 23.52	22.40.30 28.30 36.15	Jan. 21 0.0 11.15 15.55 21.55	·1005 ·1046 ·1035 ·1020	Jan. 21 1.0 10.0 23.0	·01378 ·01056 ·01210	1 49.5 3 52.0 9 51.5 21 49.0	49.5 52.0 51.5 49.0	Jan. 22 0.37 1.32 2.2 8.30 9.40	22.39.0 34.0 40.0 32.5 35.0	Jan. 22 1.8 5.23 8.18 10.30 19.13	·1032 ·1007 ·1029 ·1009 ·1030							
Jan. 22 1.43 12.21 13.23 14.38 15.0 15.30 17.12 17.39 22.55	22.39.30 29.30 35.0 21.45 27.30 24.0 32.0 28.0 36.0	Jan. 22 0.57 10.22 14.7 14.38 16.8 18.15 23.25	·1018 ·1040 ·1017 ·1040 ·1016 ·1033 ·1016	Jan. 22 0.30 6.35 11.45 21.50 23.30	·01395 ·00900 ·01288 ·01170 ·01242	1 50.0 3 53.0 9 50.0 21 46.0	50.5 53.5 50.5 46.0	Jan. 23 0.37 1.32 2.2 8.30 9.40	22.39.0 34.0 40.0 32.5 35.0	Jan. 23 1.8 5.23 8.18 10.30 19.13	·1032 ·1007 ·1029 ·1009 ·1030							
Jan. 23 0.37 1.32 2.2 8.30 9.40	22.39.0 34.0 40.0 32.5 35.0	Jan. 23 1.8 5.23 8.18 10.30 19.13	·1032 ·1007 ·1029 ·1009 ·1030	Jan. 23 0.0 3.32 6.0 11.7 22.55	·01238 ·00988 ·01042 ·00962 ·01200	1 46.7 3 50.0 9 51.5 21 47.0	46.7 50.0 51.5 47.0											

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (†) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded.

The time of reading the thermometers is the hour specified in Greenwich Time, or the hour increased by 40<sup>m</sup> in Göttingen Time.

For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

Jan. 24<sup>d</sup> to 26<sup>d</sup>, the Vertical Force magnet and its stand were in the hands of Mr. Barrow, and on the 27th and 28th days it was under adjustment.

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Jan. 27 2. 22 9. 22 23. 45	22. 43. 30 28. 0 35. 15	Jan. 27 0. 12 0. 45 9. 40 23. 33	.1015 .0997 .1038 .1011				1 43.0 3 45.0 9 45.7 22 45.0	43.0 45.0 45.5 45.0	Feb. 2 14. 58 16. 52 23. 30	22. 33. 45 28. 15 37. 0	Feb. 2 7. 12 10. 57 16. 30 23. 0	.1035 .1029 .1045 .1023	Feb. 2 14. 15 15. 33 22. 4 23. 30	.01290 .01275 (+) .01030 .01065	9 51.0 21 48.5	51.5 48.5	
Jan. 28 2. 47 7. 0 8. 5 9. 0 11. 6 23. 35	22. 40. 45 36. 0 25. 30 34. 0 30. 0 35. 15	Jan. 28 0. 15 8. 45 9. 33 10. 50 17. 50 23. 30	.1011 .1039 .1029 .1040 .1047 .1032			1 44.5 9 44.7 21 41.0	45.0 44.5 41.0		Feb. 3 0. 16 10. 41 23. 40	22. 38. 45 28. 30 35. 0	Feb. 3 1. 40 9. 46 10. 34 10. 40 11. 7 11. 20 12. 5 17. 57 22. 50	(+) .1024* (+) .1034 .1029 .1043 .1030 .1042 .1029 .1039 .1020	Feb. 3 0. 0 2. 8 6. 0 11. 0 23. 30	.01068 .00995 (+) .00883 .00850 .01052	1 48.5 3 49.5 9 50.5 22 48.5	49.0 49.5 50.5 48.5	
Jan. 29 2. 16 9. 30 9. 37 9. 44 10. 55 23. 30	22. 40. 30 32. 40 27. 0 32. 0 28. 30 35. 0	Jan. 29 1. 20 1. 40 2. 0 2. 22 2. 45 19. 50 23. 30	.1026 .1030 .1026 .1034 .1029 .1055 .1028	Jan. 29 0. 0 3. 33 5. 15 10. 0 15. 35 23. 0	.00994 .00910 .00955 .00912 .01135 .01032	1 43.5 3 44.0 9 45.5 21 39.0	43.0 44.0 45.5 39.5		Feb. 4 2. 20 5. 8 6. 45 7. 50 8. 26 8. 39 9. 3 21. 45	22. 39. 0 33. 0 38. 0 28. 15 34. 0 34. 30 29. 30 31. 30	Feb. 4 0. 40 3. 38 5. 46 8. 20 8. 55 18. 0 23. 15	.1019 .1033 .1015 .1040 .1022 .1036 .1020	Feb. 4 0. 0 6. 29 8. 10 9. 0 13. 30 22. 15	.01215 .01040 .01065 .01200 .01008 .01070	4 49.5 9 49.5 21 48.0	49.5 49.5 48.0	
Jan. 30 2. 10 10. 22 13. 40 14. 40 15. 34 23. 38	22. 48. 0 31. 0 47. 45 32. 45 48. 0 34. 50	Jan. 30 0. 52 2. 25 3. 10 5. 0 7. 45 10. 50 11. 0 14. 10 23. 0	.1026 .1048 .1011 .1047 .1015 .1037 .1026 .1043 .1026	Jan. 30 1. 0 14. 40 23. 30	.00895 .00862 .01095	1 41.0 3 43.0 9 44.0 21 35.0	41.5 43.0 44.5 35.0		Feb. 5 1. 58 8. 47 23. 50	22. 48. 0 40. 30 46. 30	Feb. 5 0. 0 6. 50 8. 40 20. 0 22. 54	.1020 .1031 .1010 .1036 .1014	Feb. 5 0. 0 6. 20 23. 30	.01275 .01085 .01200	1 49.0 3 51.0 9 52.0 21 48.0	49.0 51.0 52.0 48.5	
Jan. 31 2. 33 22. 36 23. 9 23. 40	22. 37. 0 28. 30 33. 30 28. 0	Jan. 31 1. 40 9. 40 22. 40	(+) .1021* (+) .1033 .1011	Jan. 31 6. 7 10. 0 13. 45 23. 17	(+) .01173 .01030 .01200 .01085	1 44.0 3 46.0 9 48.0 21 40.0	44.5 46.0 48.5 40.0		Feb. 6 2. 17 9. 10 10. 39 11. 30 14. 45 21. 38	22. 49. 45 43. 0 35. 0 41. 40 38. 10 45. 0 39. 30	Feb. 6 0. 15 8. 15 11. 53 19. 10 23. 8	.1011 .1034 .1019 .1036 .1015	Feb. 6 0. 0 3. 35 11. 30 23. 30	.01145 .01215 .01036 .01235	1 50.0 3 50.0 9 50.0 21 46.0	50.5 50.5 50.5 46.5	
Feb. 1 0. 0 2. 3 4. 0 8. 0 9. 34 12. 42 23. 48	22. 29. 0 37. 30 33. 0 27. 45 34. 0 36. 30 45. 30	Feb. 1 1. 2 3. 27 7. 38 12. 40 23. 20	.1010 .1040 .1015 .1045 .1029	Feb. 1 0. 27 4. 24 21. 55	.01065 .00876 .00925	1 41.0 3 43.5 9 45.0 21 44.0	41.5 43.5 45.0 44.5		Feb. 7 3. 0 21. 0 23. 52	22. 50. 30 39. 15 47. 0	Feb. 7 0. 24 19. 0 23. 5	.1011 .1044 .1019	Feb. 7 1. 0 9. 52 19. 0 23. 30	.01225 .00963 .01195 .01164	1 48.0 3 48.0 9 48.5 21 44.0	48.0 48.5 48.5 44.0	

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							H. F.	V. F.								H. F.	V. F.						
Feb. 8 2. 22 21. 30 23. 45	22. 51. 0 39. 0 48. 30	Feb. 8 1. 20 18. 0 23. 13	•1017 *** •1045 *** •1015	Feb. 8 0. 15 3. 40 11. 40 23. 15	•01172 •01030 •01060 •00850	1 47.5 3 49.0 9 52.0 21 42.0	47.5 49.0 52.5 42.0	Feb. 13 19. 42 23. 12		Feb. 13 0. 0 3. 38 6. 45 11. 45 14. 6 14. 44 15. 0 18. 33 23. 16	•1043 •1028 •1032 *** •1010 *** •1027 *** •1019 *** •1045 *** •1016 *** •1037 *** •1007	Feb. 14 3. 15 9. 38 14. 45 15. 20 15. 45 23. 54	22. 52. 30 37. 30 41. 0 32. 15 38. 0 46. 30	Feb. 14 0. 22 3. 40 11. 45 14. 6 14. 44 15. 0 18. 33 23. 16	•1032 *** •1010 *** •1027 *** •1019 *** •1045 *** •1016 *** •1037 *** •1007	Feb. 14 0. 0 3. 38 6. 45 11. 45 23. 45	•01090 •00942 •01042 •00975 •01244	1 44.0 3 51.0 9 50.0 21 44.0	44.5 51.0 50.0 44.0				
Feb. 9 2. 30 9. 30 15. 46 21. 47	22. 51. 30 41. 0 44. 45 40. 0	Feb. 9 0. 16 6. 55 9. 10 19. 0 23. 40	•1013 *** •1039 *** •1028 *** •1043 *** •1013	Feb. 9 0. 0 5. 30 23. 55	•01115 •00940 •00890	1 43.5 3 45.5 9 48.0 21 47.0	43.5 45.5 48.0 47.0	Feb. 10 3. 22 12. 40 23. 53	22. 53. 30 35. 0 *** 44. 30	Feb. 10 0. 30 19. 10 23. 8	•1016 •1040 •1022	Feb. 10 0. 30 2. 45 7. 24 23. 30	•01130 •01035 •01162 •01140	1 48.0 3 51.0 9 51.0 22 43.0	48.5 51.5 51.5 43.5	Feb. 15 1. 40 9. 53 10. 30 23. 35	22. 51. 30 43. 30 37. 0 47. 15	Feb. 15 0. 43 7. 10 11. 17 20. 20 23. 46	•1006 *** •1028 *** •1010 *** •1046 *** •1021	Feb. 15 0. 0 4. 10 7. 0 23. 30	•01235 •01040 •01106 •00865	1 50.0 3 51.0 9 54.0 21 45.0	50.5 51.5 54.0 45.5
Feb. 11 2. 30 12. 38 23. 38	22. 53. 45 38. 30 *** 47. 0	Feb. 11 0. 50 5. 0 7. 35 19. 30 23. 38	•1023 •1038 •1029 *** •1056 *** •1028	Feb. 11 0. 0 3. 46 11. 7 15. 50 23. 30	•01130 •01152 •00942 •01150 •01038	1 44.0 9 47.0 21 39.0	44.5 47.5 39.5	Feb. 16 0. 3 3. 18 14. 47 15. 40 16. 15 17. 30 23. 45	22. 46. 0 50. 0 33. 30 37. 15 30. 0 41. 45 49. 30	Feb. 16 0. 8 10. 13 17. 25 23. 30	•1018 *** •1036 *** •1018 *** •1035 *** •1020 *** •1038 *** •1025 *** •1034	Feb. 16 0. 0 10. 13 17. 25 23. 30	•01172 •00872 •01112 •01045	1 47.0 3 50.0 9 48.0 21 41.0	47.5 50.5 48.5 41.5								
Feb. 12 3. 10 6. 0 7. 30 8. 27 8. 46 9. 18 23. 45	22. 54. 0 48. 0 53. 30 47. 0 51. 30 40. 0 *** 47. 45	Feb. 12 0. 30 7. 20 8. 23 8. 33 9. 12 10. 0 20. 18 23. 10	•1030 •1051 •1039 •1059 •1013 •1034 *** •1055 •1040	Feb. 12 0. 30 5. 55 9. 33 11. 45 17. 50 23. 45	•01020 •00862 •00920 •00855 •01080 •00995	1 40.0 3 43.0 9 44.0 21 37.5	40.5 43.5 44.0 38.0	Feb. 17 3. 30 12. 54 23. 52	22. 55. 15 37. 0 44. 45	Feb. 17 0. 28 2. 30 4. 33	•1026 *** •1019 ***	Feb. 17 0. 0 2. 30 4. 33	•01038 •01054 •00913	1 42.0 3 48.0 9 50.0	42.5 48.5 50.5								
Feb. 13 3. 22 12. 40 13. 15 14. 8 15. 42 23. 52	22. 54. 0 43. 30 36. 45 46. 15 39. 0 50. 0	Feb. 13 0. 37 3. 22 4. 47 5. 45 8. 8 9. 40 12. 50 13. 54	•1028 •1049 •1015 •1039 •1017 •1037 •1043 •1021	Feb. 13 0. 0 4. 50 8. 30 14. 45 23. 30	•00990 •00860 •00978 •00865 •01130	1 40.0 3 44.0 9 48.0 21 40.0	40.5 44.5 48.5 40.0	Feb. 17 3. 30 12. 54 23. 52	22. 55. 15 37. 0 44. 45	Feb. 17 0. 28 2. 30 4. 33	•1026 *** •1019 ***	Feb. 17 0. 0 2. 30 4. 33	•01038 •01054 •00913	1 42.0 3 48.0 9 50.0	42.5 48.5 50.5								

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							H. F.	V. F.								H. F.	V. F.
		Feb.17 13.30 ***	•1040	Feb.17 6.45 11.25 18.50 23.40	•00986 •00910 •01186 •01100	23	43° 0'	43° 0'	Feb.20 10.12 11.53 12.50 13.23 13.40 14.2 15.25 16.22 16.40 23.10	22.30.0 45.15 37.45 41.0 28.0 39.0 36.30 44.0 39.15 48.0	12.13 12.30 13.40 14.6 19.25: 23.35	•1012 •0996 •1020 •0996 •1026 •1008	Feb.20 11.55 16.40 23.30	•01190 •01418 •01305	21	44° 5'	44° 5'
Feb.18 3.17 3.48 4.20 5.10 6.15 6.45 7.18 8.13 8.25 8.43 9.28 9.45 10.50 12.8 12.34 12.42 13.12 13.54 19.40 21.33 23.40	22.57.0 50.0 54.45 47.15 52.30 51.0 29.0 47.30 41.45 48.30 32.30 42.30 29.30 37.30 32.45 38.30 28.30 40.15 48.15 42.30 47.15	Feb.18 1.0 3.12 5.16 6.22 6.50 8.10 8.52 9.42 9.59 10.15 12.12 12.32 12.51 13.16 13.20 14.10 23.30	•1025 •1043 •1014 •1028 •1011 •1030 •0996 •1046 •1002 •1026 •1004 •0996 •1019 •0990 •1024 •0992 •1016 •1017	Feb.18 0.0 5.50 6.52 8.52 9.23 9.42 10.2 13.32 23.30	•01100 •00922 •00990 •00962 •00982 •00910 •00920 •00840 •00885	1 9 21	43° 0'	43° 0'	Feb.21 1.27 8.10 8.57 9.42 10.0 11.18 12.8 12.37 14.45 16.10 16.24 23.30	22.57.0 44.30 26.0 43.15 38.30 45.30 39.0 44.30 31.30 43.30 38.30 49.0	Feb.21 0.17 7.0 8.46 14.37 17.11 18.18 22.55	•0991 •1028 •1007 •1035 •1014 •1034 •0994	Feb.21 0.0 1.20 6.30 15.0 23.30	•01148 •01195 •00910 •00840 •00920	1 3 9 21	46° 0'	46° 0'
Feb.19 1.8 3.16 6.50 8.17 8.38 9.30 10.12 11.12 11.42 12.27 14.23 14.47 15.10 17.30 18.2 23.30	22.52.45 50.30 57.0 46.15 51.15 25.30 42.30 48.15 34.45 42.30 25.45 34.30 29.0 39.0 33.0 46.0	Feb.19 0.37 4.45 7.16 8.56 9.20 9.42 11.37 13.45 14.15 14.28 14.54 15.18 17.8 18.0 23.40	•1013 •1037 •1002 •1022 •0994 •1015 •0986 •1017 •0994 •1009 •0985 •1003 •0992 •1016 •1003	Feb.19 0.30 2.15 3.55 4.40 10.0 14.15 17.22 23.45	•01018 •01050 •00990 •01040 •01380 •01250 •01335 •01285	1 3 9 21	49° 0'	49° 5'	Feb.22 0.0 2.53 6.22 6.50 7.3 7.30 7.43 8.7 8.48 8.53 9.7 9.40 9.45 11.30 13.9 13.28 13.42 15.42 23.45	22.49.30 56.30 43.45 51.15 39.30 53.15 29.30 53.0 45.0 51.15 23.0 38.45 30.0 45.15 30.30 38.15 26.0 42.0 44.0	Feb.22 0.0 7.10 7.38 7.55 8.40 9.0 9.28 11.12 11.30 23.30	•1000 •0997 •1019 •1000 •1028 •0999 •1028 •0995 •1045 •1002 •1023 •0981 •1027 •0981 •1002 •0990 •0997 •0983 •1030 •1000 •1016 •0990	Feb.22 0.0 7.10 7.38 7.55 8.40 9.0 9.28 11.12 11.30 23.30	•00940 •01152 •01228 •01090 •01072 •01110 •01058 •01045 •00955 •00810	1 3 9 21	54° 0'	54° 5'
Feb.20 3.8 5.50 8.38	22.54.0 42.30 52.30	Feb.20 0.20 5.25 10.8	•1000 •1023 •0999	Feb.20 0.0 4.36 6.15	•01292 •01188 •01255	1 3 9	49° 0'	49° 5'	Feb.23 2.13 10.37	22.50.0 32.45 ***	Feb.23 1.0 6.22	•0991 •1030	Feb.23 0.30 4.33	•01200 •00905	1 3	50° 0'	50° 5'

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							H. F.	V. F.								H. F.	V. F.
Feb. 23 23. 42	22. 47. 0	Feb. 23 7. 41 8. 23 10. 54 19. 0; 22. 55	·1006 ·1022 ·0996 ·1033 ·1003	Feb. 23 7. 0; 10. 0 16. 25 23. 45	·00930 ·00882 ·01200 ·01185	9 21	52.0 45.0	52.0 45.5	Feb. 27 23. 45	22. 52. 15	Feb. 27 21. 53 22. 58	·1023 ·1004			0	0	
Feb. 24 1. 22 8. 13 23. 30	22. 52. 30 36. 45 45. 15	Feb. 24 0. 20 7. 18 9. 0 17. 20 23. 37	·0998 ·1037 ·1015 ·1043 ·1009	Feb. 24 0. 0 6. 40 11. 0 19. 45 23. 30	·01190 ·00843 ·00828 ·01166 ·01140	1 3 9 22	48.0 50.0 49.5 44.0	48.5 50.5 49.5 44.0	Feb. 28 1. 36 9. 17 21. 9 23. 42	22. 54. 15 44. 0 41. 15 50. 0	Feb. 28 0. 50 4. 2 4. 38 19. 28; 23. 33	·0991 ·1026 ·1003 ·1042 ·1010	Feb. 28 0. 0 9. 28 15. 0 23. 30	·01120 ·00680 ·01070 ·01018	1 3 9 21	46.0 48.3 48.0 41.0	46.5 48.3 48.0 41.0
Feb. 25 1. 27 21. 55 23. 38	22. 55. 30 38. 0 46. 0	Feb. 25 0. 0 19. 30; 23. 28	·1008 ·1043 ·1006	Feb. 25 0. 0 8. 0 8. 45; 22. 50;	·01140 ·00775 ·01135 ·01080	0 6 9 21	45.5 49.5 47.0 44.0	45.5 49.5 47.0 44.0	Mar. 1 0. 45 21. 38 23. 48	22. 55. 0 38. 45 48. 30	Mar. 1 0. 38 2. 37 2. 53 3. 37 4. 30 18. 54 23. 36	·1009 ·1026 ·1011 ·1027 ·1013 ·1039 ·1000	Mar. 1 0. 15 9. 29 23. 5	·01002 ·00650 ·00840	1 3 9 21	42.8 46.0 48.5 44.5	43.0 46.0 48.5 44.5
Feb. 26 1. 50 10. 0 10. 49 12. 8 17. 25 21. 30 23. 40	22. 52. 30 43. 30 22. 45 37. 0 43. 0 37. 45 48. 0	Feb. 26 0. 27 6. 30 10. 25 11. 0 11. 18 13. 7 20. 7 22. 32	·1007 ·1044 ·1030 ·1051 ·1029 ·1020 ·1046 ·1020	Feb. 26 0. 0 2. 10 3. 45 9. 38 16. 25 23. 15	·01085 ·01113 ·01030 (+) ·00740 ·01115 ·01010	1 3 9 21	45.8 50.0 49.0 39.0	45.8 50.0 49.0 39.0	Mar. 2 1. 37 9. 27 11. 48 11. 56 12. 30 12. 47 17. 0 21. 10 23. 38	22. 52. 15 37. 40 41. 30 45. 0 43. 0 39. 0 44. 30 39. 0 47. 30	Mar. 2 0. 20 11. 52 12. 24 12. 52 14. 13 19. 22 22. 53	·0993 ·1034 ·1020 ·1056 ·1023 ·1035 ·1002	Mar. 2 0. 0 2. 15 4. 48 13. 20; 23. 15	·00825 ·00684 ·00900 ·00750 ·00740	1 3 9 21	48.0 51.5 54.0 46.0	48.0 51.5 54.0 46.0
Feb. 27 0. 0 0. 45 1. 18 5. 19 6. 53 7. 18 8. 1 8. 12 8. 18 8. 31 8. 38 9. 8 10. 43 11. 18 12. 0 12. 38 12. 40 13. 37 14. 48 16. 10 17. 55 21. 35	22. 48. 45 58. 15 52. 0 55. 30 22. 40. 45 23. 0. 15 22. 23. 45 29. 0 25. 30 38. 0 30. 0 39. 30 38. 0 28. 15 31. 0 28. 0 27. 30 46. 0 49. 30 40. 30 59. 0 44. 30	Feb. 27 0. 22 0. 43 1. 37 3. 30 5. 25 6. 52 7. 0 7. 33 7. 38 7. 43 8. 25 8. 37 8. 42 9. 52 11. 2 11. 25 11. 40 12. 18 17. 55 18. 37 20. 52	·1005 ·1036 ·1011 ·1039 ·1017 ·1022 ·1056 ·0991 ·1013 ·0977 ·1009 ·0985 ·1005 ·0987 ·1023 ·0991 ·1001 ·0984 ·1016 ·1045 ·1007	Feb. 27 0. 0 4. 32 7. 20 7. 37 8. 35 10. 45 11. 7 23. 30	·01015 ·00782 ·00890 ·01020 ·00854 ·00805 ·00704 ·01148	1 3 9 21	43.0 49.5 49.8 43.0	43.5 49.5 49.8 43.0	Mar. 3 0. 0 3. 0 7. 50 14. 8 14. 30; 15. 13 20. 55 23. 54	22. 47. 45 54. 0 39. 45 41. 45 47. 45 41. 30 38. 15 50. 0	Mar. 3 1. 7 14. 30 17. 22 18. 55 23. 15	·0998 ·1040 ·1020 ·1037 ·0998	Mar. 3 0. 0 4. 38 18. 0 23. 30	·01182 ·00890 ·01002 ·01030	1 3 9 22	49.0 53.0 53.0 51.0	49.0 53.0 53.0 51.0
									Mar. 4 2. 33 9. 2 12. 54 13. 20 13. 58	22. 58. 0 33. 30 *** 42. 15 39. 0 46. 15 ***	Mar. 4 1. 0 2. 34 2. 56 5. 42 7. 37 13. 50 16. 13 18. 44 23. 44	·0990 ·1006 ·0988 ·1019 ·1001 ·1040 ·1024 ·1041 ·1007	Mar. 4 0. 5 4. 20 5. 30 7. 0 9. 38 23. 15	·01268 ·00968 ·01008 ·00962 ·01130 ·00900	0 5 9 21	53.0 58.0 55.0 46.5	53.5 58.5 55.0 46.5

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							H. F.	V. F.								H. F.	V. F.
Mar. 4 18. 38 23. 42	22. 38. 30 *** 49. 45								Mar. 10 9. 17 23. 55	22. 37. 45 48. 0	Mar. 10 18. 30: 23. 20	.1045 .1002	Mar. 10 3. 10 3. 40 4. 42 8. 56 23. 25	.00235 .00214 .00262 .00220 .00296	3 9 22	46.0 48.0 41.0	46.0 48.0 41.5
Mar. 5 2. 16 15. 30 21. 0 23. 25	22. 54. 0 *** 40. 15 *** 46. 0	Mar. 5 1. 30 19. 13: 23. 0	.1005 .1037 .1011	Mar. 5 0. 0 5. 12 19. 30 23. 40	.01185 .00855 .01240 .01195	1 3 9 21	50.0 54.0 55.5 48.0	50.0 54.0 55.5 48.0	Mar. 11 2. 12 8. 45 23. 48	22. 54. 15 37. 30 49. 0	Mar. 11 0. 56 18. 8: 23. 18	.1009 .1048 .1009	Mar. 11 0. 0 5. 40 11. 0: 22. 20	.00410 .00220 .00182 .00278	0 3 9 21	41.0 45.0 44.0 45.0	41.0 45.0 44.0 45.0
Mar. 6 1. 52 10. 1 10. 57 11. 30 12. 7 13. 3 14. 12 15. 40 17. 15 23. 40	22. 50. 30 43. 0 33. 30 46. 30 38. 0 46. 30 38. 0 43. 30 36. 0 46. 0	Mar. 6 0. 27 2. 12 11. 32 11. 57 17. 10: 23. 37	.1005 .1001 .1043 .1025 .1041 .1009	Mar. 6 0. 0 4. 30 6. 15: 9. 0 11. 30 17. 30: 23. 30	.01185 .00875 .00895 .00860 .01032 .00900 .00885	1 3 9 21	49.0 55.0 56.0 49.0	49.5 55.0 56.0 49.0	Mar. 12 1. 54 9. 18 23. 41	22. 53. 45 37. 30 45. 30	Mar. 12 0. 25 6. 45 10. 35 17. 38: 23. 30	.1013 .1045 .1029 .1037 .1011	Mar. 12 0. 30 5. 10 23. 5	.00350 .00492 .00590	1 3 9	49.0 51.0 53.0	49.5 51.0 53.0
Mar. 7 0. 40 21. 38 23. 45	22. 50. 45 37. 30 47. 45	Mar. 7 0. 28 19. 12: 22. 51	.1011 .1037 .1014	Mar. 7 0. 0 4. 55 8. 40 20. 30 23. 30	.01160 .00795 .00780 .01240 .01170	1 3 9 21	52.0 55.0 55.0 47.5	52.0 55.0 55.0 47.5	Mar. 13 0. 55 21. 10 23. 45	22. 53. 30 38. 30 45. 30	Mar. 13 1. 35 19. 17 23. 37	.1007 .1047 .1021	Mar. 13 0. 0 3. 40 12. 32 23. 30	.00588 .00505 .00662 .00502	1 3 9	54.0 55.0 53.0 45.0	54.0 55.5 53.0 45.0
Mar. 8 1. 47 9. 44 9. 54 10. 20: 11. 12 23. 25	22. 53. 0 43. 45 33. 0 32. 0 37. 15 48. 30	Mar. 8 0. 13 2. 0 2. 32 4. 20 5. 0 19. 55 23. 15	.1014 .1030 .1011 .1028 .1012 .1047 .1023	Mar. 8 0. 20 8. 15: 13. 8 23. 40	.01160 .00872 .01162 .00965	1 3 9 21	50.5 50.5 51.0 39.0	50.0 50.5 51.0 39.0	Mar. 14 2. 54 10. 32 11. 0 12. 0 17. 24 20. 33 23. 55	22. 50. 45 43. 30 33. 45 41. 0 43. 15 36. 45 44. 45	Mar. 14 0. 50 8. 13 11. 20 18. 25 23. 45	.1019 .1044 .1027 .1043 .1012	Mar. 14 0. 0 3. 30 6. 45 23. 30	.00510 .00550 .00370 .00450	1 3 9 21	48.0 50.0 51.0 50.0	48.5 50.0 51.0 50.0
Mar. 8 1. 47 9. 44 9. 54 10. 20: 11. 12 23. 25	22. 53. 0 43. 45 33. 0 32. 0 37. 15 48. 30	Mar. 8 0. 13 2. 0 2. 32 4. 20 5. 0 19. 55 23. 15	.1014 .1030 .1011 .1028 .1012 .1047 .1023	Mar. 8 0. 20 8. 15: 13. 8 23. 40	.01160 .00872 .01162 .00965	1 3 9 21	50.5 50.5 51.0 39.0	50.0 50.5 51.0 39.0	Mar. 15 2. 55 12. 14 17. 54 21. 0 23. 50	22. 52. 15 35. 15 42. 30 38. 30 45. 30	Mar. 15 0. 5 2. 45 6. 36 11. 45 23. 18	.1011 .1043 .1019 .1046 .1009	Mar. 15 0. 0 4. 50 7. 30 12. 35 22. 10 23. 30	.00450 .00432 .00490 .00420 .00670 .00647	1 3 9 21	50.0 52.0 53.0 51.0	50.0 52.0 53.0 51.0
Mar. 9 0. 43 8. 53 23. 50	22. 57. 0 37. 45 50. 0	Mar. 9 0. 0 2. 0 2. 51 3. 30 5. 35 19. 40: 23. 0	.1026 .1048 .1037 .1049 .1030 .1044 .1013	Mar. 9 3. 14 4. 12 5. 10 9. 15 19. 8 22. 50	.00272 .00205 .00240 .00145 .00370 .00285	1 3 9 21	44.0 46.0 44.0 38.0	44.5 46.0 44.0 38.0	Mar. 16 0. 0 2. 17 9. 23	22. 45. 45 50. 30 42. 15	Mar. 16 0. 55 10. 40: 15. 28: 19. 20: 23. 18	.1014 .1036 .1031 .1040 .1016	Mar. 16 0. 0 3. 52 16. 15 23. 30	.00647 .00488 .00700 .00560	1 3 9 21	53.0 56.0 56.0 49.0	53.0 56.0 56.0 49.0
Mar. 10 2. 16	22. 54. 15	Mar. 10 0. 20	.1020	Mar. 10 1. 3	.00134	1	43.0	43.0	Mar. 17 1. 36 9. 56	22. 51. 45 41. 45	Mar. 17 0. 22 2. 25	.1019 .1013	Mar. 17 0. 0 1. 50	.00550 .00595	1 3	50.0 58.0	50.0 58.0

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The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Greenwich Time.

For the Horizontal and Vertical Forces, increasing readings denote increasing forces.



INDICATIONS OF THE MAGNETOMETERS

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							H. F.	V. F.								H. F.	V. F.
Mar. 17 10. 35 11. 40 12. 45 13. 57 15. 0 17. 0 23. 40	22. 33. 30 37. 45 28. 30 37. 15 25. 0 34. 30 *** 49. 15	Mar. 17 10. 23 11. 28 12. 23 12. 55 14. 37 16. 42 17. 54 18. 50 19. 30 23. 5	·1038 ·1017 ·1035 ·1014 ·1037 ·1023 ·1055 ·1040 ·1053 ·1014	Mar. 17 3. 16 5. 10 10. 9 11. 45 12. 35 13. 25 13. 45 23. 30	·00490 ·00560 ·00475 ·00522 ·00535 ·00605 ·00575 ·00497	9	56.0	56.0	Mar. 20 21. 38 23. 55	22. 39. 30 50. 0	Mar. 20 23. 55	·1009	h m				
Mar. 18 1. 23 9. 56 10. 16 10. 24 10. 40 11. 0 12. 10 14. 20 15. 8 15. 52 16. 30 16. 52 18. 50 20. 8 23. 33	22. 52. 30 30. 30 35. 15 29. 15 36. 15 31. 45 36. 45 27. 0 38. 30 34. 45 43. 30 37. 30 43. 45 37. 45 47. 45	Mar. 18 0. 30 1. 1 1. 35 2. 12 2. 28 4. 38 9. 22 9. 37 9. 44 10. 2 11. 48 12. 43 13. 45 17. 53 23. 2	·1013 ·1026 ·1007 ·1027 ·1016 ·1043 ·1039 ·1057 ·1032 ·1049 ·1006 ·1023 ·1006 ·1038 ·1009	Mar. 18 0. 0 3. 45 10. 35 14. 45 14. 55 15. 11 20. 0 23. 30	·00490 ·00580 ·00350 ·00396 ·00372 ·00420 ·00555 ·00537	0 3 9 21	48.0 48.0 48.5 46.0	48.0 48.0 48.5 46.0	Mar. 22 1. 40 20. 37 23. 54	22. 56. 30 36. 0 47. 0	Mar. 22 1. 7 1. 20 2. 20 8. 10 23. 30	·1005 ·1023 ·1013 ·1043 ·1012	Mar. 22 0. 0 4. 30 10. 36 17. 45 23. 30	·00495 ·00530 ·00323 ·00520 ·00475	1 3 9 21	45.0 46.5 47.0 44.5 44.5	45.0 47.0 47.0 44.5
Mar. 19 2. 30 11. 5 13. 45 17. 45 23. 50	22. 52. 30 36. 30 42. 30 38. 0 46. 30	Mar. 19 0. 10 2. 3 5. 35 6. 37 9. 7 9. 41 10. 10 18. 0 23. 8	·1023 ·1041 ·1021 ·1035 ·1015 ·1025 ·1016 ·1034 ·1012	Mar. 19 0. 30 3. 11 6. 20 11. 8 17. 40 23. 55	·00555 ·00590 ·00392 ·00338 ·00575 ·00535	1 3 9 21	46.0 50.0 56.0 45.0	46.0 50.0 56.0 45.0	Mar. 24 2. 49 9. 56 20. 0 20. 52 21. 30 23. 54	22. 52. 15 40. 30 *** 33. 0 36. 0 33. 30 46. 45	Mar. 24 0. 10 4. 25 6. 30 7. 52 9. 32 12. 7 18. 8 21. 35 23. 52	·1027 ·1047 ·1025 ·1040 ·1023 ·1044 ·1054 ·1016 ·1034	Mar. 24 0. 0 2. 49 10. 0 15. 15 23. 8	·00420 ·00462 (+) ·00175 ·00470 ·00380	1 3 9 22	46.0 49.0 48.0 38.0	46.0 49.5 48.0 38.0
Mar. 20 2. 29 9. 37 9. 53 10. 10 10. 27 11. 8 11. 36 13. 4 14. 20 15. 8 16. 10	22. 50. 0 40. 30 31. 0 42. 30 36. 45 43. 0 37. 15 43. 0 39. 15 49. 0 40. 30	Mar. 20 0. 22 4. 30 5. 30 6. 20 7. 8 9. 37 10. 0 10. 24 11. 36 11. 53 17. 50	·1019 ·1014 ·1038 ·1023 ·1037 ·1021 ·1049 ·1008 ·1032 ·1023 ·1036	Mar. 20 0. 0 4. 55 10. 15 15. 30 23. 30	·00545 ·00395 ·00355 ·00594 ·00490	1 3 9 21	49.0 53.0 52.0 44.0	49.0 53.0 52.0 44.0	Mar. 25 2. 44 7. 13 7. 38 8. 2 9. 36 13. 5 14. 37 23. 45	22. 52. 30 44. 30 48. 45 44. 30 37. 15 48. 0 40. 0 49. 0	Mar. 25 0. 25 6. 36 7. 50 13. 12 13. 50 14. 5 23. 0	·1036 ·1079 ·1031 ·1063 ·1051 ·1066 ·1020	Mar. 25 1. 0 14. 18 23. 30	·00342 ·00016 ·00278	1 9 21	39.0 42.0 39.0	39.0 42.0 39.0

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							H. F.	V. F.								H. F.	V. F.
Mar. 26 0. 15 3. 19 4. 20 9. 30 12. 20: 13. 22: 15. 15 23. 40	22. 50. 0 52. 0 46. 0 39. 0 40. 30 45. 0 35. 0 46. 0	Mar. 26 0. 30 3. 22 3. 54 6. 7 15. 27 17. 40 19. 48 21. 45 23. 45	·1024 ·1044 ·1023 ·1055 ·1045 ·1046 ·1044 ·1027 ·1009	Mar. 26 0. 30 2. 7 7. 30 14. 30 23. 30	·00090 ·00070 ·00220 ·00160 ·00488	1 3 9 21	41. 0 45. 0 46. 0 41. 0	41. 0 45. 0 46. 0 41. 5	Mar. 30 16. 6 22. 40:	o / "	Mar. 30 16. 6 22. 40:	·1028 ·1001	h m				
Mar. 27 1. 57 11. 43 12. 8 12. 40 14. 10 20. 50 23. 40	22. 52. 15 40. 0 43. 30 35. 0 42. 0 35. 0 46. 45	Mar. 27 0. 4 6. 11 6. 15 6. 45 11. 58 16. 30 21. 54 23. 40	·1006 ·1033 ·1071 ·1045 ·1032 ·1041 (†) ·1025 ·1012	Mar. 27 0. 0 4. 42 8. 0 19. 40 23. 30	·00400 ·00218 ·00270 ·00490 ·00465	1 3 9 21	45. 0 50. 0 50. 0 43. 5	45. 0 50. 0 50. 0 43. 5	Mar. 31 1. 3 9. 26 21. 7 23. 37	22. 51. 30 44. 0 *** 37. 0 46. 45	Mar. 31 0. 10 18. 50 23. 40	·1003 ·1039 ·1008	Mar. 31 0. 30 3. 4 5. 20 5. 26 7. 18 7. 22 10. 30 17. 5 23. 45	·00632 ·00378 ·00428 ·00550 ·00426 ·00530 ·00390 ·00711 ·00614	1 3 9 22	51. 0 57. 0 55. 0 48. 0	51. 0 57. 0 55. 0 48. 0
Mar. 28 1. 42 7. 18 7. 53 8. 18 8. 58 9. 25 9. 40 16. 0 21. 8 23. 55	22. 55. 15 35. 0 38. 0 34. 15 38. 30 33. 0 37. 0 47. 30 33. 45 44. 0	Mar. 28 0. 40 5. 53 8. 20 9. 38 11. 0 11. 37 16. 3 19. 30 23. 7 23. 55	·1008 ·1041 ·1022 ·1050 ·1008 ·1050 ·1027 ·1038 ·1013 ·1020	Mar. 28 0. 30 2. 45 10. 20 11. 20 12. 35 22. 10 23. 25	·00490 ·00510 ·00150 ·00180 ·00135 ·00542 ·00515	1 3 9 21	45. 0 47. 0 47. 0 43. 0	45. 0 47. 0 47. 0 43. 0	Apr. 1 2. 0 12. 10 20. 58 23. 40	22. 55. 30 43. 0 *** 32. 0 *** 49. 15	Apr. 1 0. 25 1. 48 3. 54 18. 58 23. 7	·1012 ·1020 ·0999 ·1039 ·0988	Apr. 1 0. 0 2. 33 10. 22: 19. 5 22. 25 23. 30	·00617 ·00692 ·00325 ·00654 ·00600 ·00628	1 11 21	49. 0 52. 0 47. 0	49. 0 52. 0 47. 0
Mar. 29 2. 15 10. 0 17. 50 20. 8 23. 54	22. 48. 15 43. 0 *** 41. 0 36. 15 50. 30	Mar. 29 0. 45 5. 20: 11. 48 18. 40: 23. 38	·1014 ·1039 ·1030 ·1042 ·1010	Mar. 29 0. 30 6. 0 11. 7 18. 30 23. 30	·00515 ·00264 ·00227 ·00582 ·00538	1 3 9 21	47. 0 53. 0 50. 0 43. 0	47. 0 53. 0 50. 0 43. 0	Apr. 2 2. 42 8. 30 9. 36 11. 0 13. 22 14. 52: 16. 7 19. 24 23. 40	22. 53. 0 43. 15 *** 30. 15 *** 43. 15 *** 42. 0 *** 33. 0 *** 43. 15 *** 38. 15 *** 52. 30	Apr. 2 0. 33 7. 55 9. 26 9. 45 11. 8 14. 12 15. 30 16. 45 23. 24	·1001 ·1047 ·1028 ·1051 ·1027 ·1048 ·1023 ·1057 ·0999	Apr. 2 0. 8 5. 0 5. 55 9. 26 16. 8 23. 30	·00625 ·00368 ·00390 ·00328 ·00585 ·00502	1 3 9 21	53. 0 55. 0 53. 0 43. 0	53. 0 55. 0 53. 0 43. 0
Mar. 30 2. 0 15. 8 15. 38 16. 30 16. 58 23. 50	22. 54. 45 38. 45 52. 45 27. 0 37. 0 49. 15	Mar. 30 0. 8 1. 20 2. 18 3. 24 3. 48 4. 25 5. 51 12. 2	·1014 ·1035 ·1018 ·1038 ·1024 ·1053 ·1004 ·1037	Mar. 30 0. 30 5. 0 12. 30 15. 25 16. 6 23. 30	·00535 ·00330 ·00285 ·00308 ·00218 ·00655	1 3 9 21	47. 0 50. 0 53. 0 48. 0	47. 5 50. 0 53. 0 48. 0	Apr. 3 1. 25 6. 13 23. 56	22. 55. 45 37. 45 51. 15	Apr. 3 0. 24 4. 0 4. 40 6. 10 7. 45 10. 55 22. 53	·1013 ·1036 ·1018 ·1052 ·1029 ·1043 ·1012	Apr. 3 0. 0 0. 45 4. 10 6. 15 9. 20 16. 55 23. 30	·00540 ·00560 ·00350 ·00380 ·00305 ·00620 ·00572	1 3 9 21	50. 0 55. 0 53. 0 46. 0	50. 0 55. 0 53. 0 46. 0

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							H. F.	V. F.								H. F.	V. F.
Apr. 4 1. 42 8. 40 9. 40 9. 50 10. 37 11. 7 13. 0 13. 33 13. 55 23. 47	22. 52. 45 44. 45 *** 32. 30 *** 45. 0 *** 24. 15 *** 38. 0 *** 38. 0 *** 43. 45 *** 34. 30 *** 52. 30	Apr. 4 0. 0 10. 37 11. 0 11. 24 13. 33 14. 50 22. 3 23. 50	(†) ·1032 ·1075 ·1037 ·1063 ·1043 ·1015 ·1026	Apr. 4 0. 45 3. 0	·00555 ·00313 (†)	1 3 9 21	52. 0 58. 0 56. 0 49. 0	52. 5 58. 0 56. 0 49. 0	Apr. 8 23. 55	22. 49. 0 0 0	Apr. 8 18. 3 23. 20	·1053 ·1014	Apr. 8 16. 40 23. 30	·00660 ·00550	0 0	0 0	
Apr. 5 0. 55 20. 42 23. 47	22. 52. 45 34. 0 48. 0	Apr. 5 1. 20 10. 50 11. 7 11. 56 18. 45 23. 30	·1010 ·1027 ·1045 ·1026 ·1042 ·0997	Apr. 5 0. 30 4. 15 5. 8 8. 30 11. 45 23. 45	·00712 ·00468 ·00497 ·00450 ·00590 ·00408	1 3 9 23	51. 0 56. 0 56. 0 48. 0	51. 0 56. 0 56. 0 48. 0	Apr. 9 0. 50 10. 32 12. 32 20. 15 23. 43	22. 54. 0 38. 30 45. 0 35. 0 47. 45	Apr. 9 0. 45 9. 50 11. 40 12. 0 23. 15	·1029 (†) ·1040 ·1039 ·1059 ·1013	Apr. 9 0. 30 10. 50 19. 15 23. 52	·00558 ·00245 ·00652 ·00580	1 3 9 21	49. 0 52. 5 53. 0 48. 5	49. 0 52. 5 53. 0 48. 5
Apr. 6 1. 50 10. 45 21. 38 23. 55	22. 54. 0 40. 30 *** 33. 30 51. 0	Apr. 6 0. 0 5. 55 6. 22 7. 12 9. 55 10. 40 18. 45 23. 7	·0996 ·1025 ·1042 ·1027 ·1036 ·1024 ·1035 ·0987	Apr. 6 0. 0 3. 2 7. 0 10. 15 14. 6 23. 30	·00604 ·00360 ·00480 ·00430 ·00790 ·00652	0 9 21	52. 0 59. 0 51. 0	52. 0 59. 0 51. 0	Apr. 10 1. 40 7. 10 7. 40 9. 9 20. 40 23. 50	22. 53. 30 44. 15 37. 30 41. 0 34. 30 46. 45	Apr. 10 0. 0 1. 30 2. 10 5. 45 7. 33 16. 52 23. 0	·1015 ·1032 ·1014 ·1052 ·1033 ·1052 ·1013	Apr. 10 0. 0 4. 38 7. 37 9. 38 16. 55 22. 12	·00595 ·00440 ·00495 ·00440 ·00830 ·00770	1 3 9 21	49. 0 52. 2 52. 0 46. 5	49. 0 52. 2 52. 0 46. 5
Apr. 7 2. 16 21. 0 23. 45	22. 58. 15 33. 45 48. 15	Apr. 7 0. 0 8. 12 9. 24 15. 30 23. 10 23. 48	·0985 ·1039 ·1026 ·1036 (†) ·1000 ·1004	Apr. 7 1. 0 5. 45 10. 0 15. 28 23. 30	·00645 ·00415 ·00380 ·00710 ·00625	1 3 9 22	52. 0 55. 0 57. 0 49. 0	52. 5 55. 0 57. 0 49. 0	Apr. 11 2. 36 9. 56 19. 0 20. 55 23. 38	22. 53. 45 43. 0 *** 39. 30 34. 0 45. 15	Apr. 11 0. 3 18. 48 23. 40	·1014 ·1064 ·1020	Apr. 11 0. 0 9. 15 17. 5 21. 0 23. 30	·00360 ·00110 ·00550 ·00560 ·00450	1 3 9 21	48. 0 49. 5 49. 0 42. 5	48. 0 49. 5 49. 0 42. 5
Apr. 8 2. 6 12. 37 20. 30	22. 52. 45 40. 30 *** 34. 15	Apr. 8 0. 15 8. 20 11. 18	·1004 ·1045 ·1036	Apr. 8 0. 5 7. 15 10. 45	·00618 ·00310 ·00292	0 9 21	50. 0 53. 5 48. 0	50. 0 53. 5 48. 0	Apr. 12 1. 50 9. 44 20. 48 23. 30	22. 53. 0 43. 0 *** 35. 30 44. 45	Apr. 12 0. 0 2. 55 3. 45 10. 12 23. 0	·1019 ·1045 ·1037 ·1055 ·1016	Apr. 12 0. 0 4. 10 6. 30 10. 30 22. 30	·00270 ·00060 ·00107 ·00095 ·00495	1 3 9 21	45. 0 48. 0 49. 0 45. 0	45. 0 48. 0 49. 0 45. 0
Apr. 8 2. 6 12. 37 20. 30	22. 52. 45 40. 30 *** 34. 15	Apr. 8 0. 15 8. 20 11. 18	·1004 ·1045 ·1036	Apr. 8 0. 5 7. 15 10. 45	·00618 ·00310 ·00292	0 9 21	50. 0 53. 5 48. 0	50. 0 53. 5 48. 0	Apr. 13 1. 55 9. 28 12. 30 15. 33 17. 15	22. 54. 0 42. 30 ** 42. 15 ** 27. 30 *** 40. 30 ***	Apr. 13 0. 15 8. 0 8. 18 12. 42 17. 0 17. 30 18. 10 23. 55	·1016 ·1072 ·1055 ·1073 ·1045 ·1068 ·1048 ·1000	Apr. 13 2. 30 4. 30 15. 52 18. 0 23. 30	·01225 ·01223 ·01415 ·01360 ·01407	1 3 9 21	48. 0 49. 0 49. 0 44. 5	48. 0 49. 0 49. 0 44. 5

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							H. F.	V. F.								H. F.	V. F.
Apr. 14 2. 3 6. 8 6. 43 7. 35 9. 30 20. 57 23. 53	22. 59. 15 47. 30 33. 30 41. 30 41. 30 *** 35. 30 45. 30	Apr. 14 0. 8 1. 12 1. 45 2. 0 3. 7 3. 12 4. 33 6. 22 6. 52 8. 33 18. 10 23. 38	•1007 •1027 •1013 •1031 •1004 •1030 •1017 •1045 •1025 •1055 •1037 •1055 •1017	Apr. 14 1. 30 15. 48 23. 15	•01160 •01550 •01440	1 3 9 23	49. 0 52. 0 53. 0 44. 0		Apr. 18 14. 48 19. 55 23. 55	22. 32. 30 *** 36. 0 50. 45							
Apr. 15 0. 0 9. 40 21. 0 23. 45	(+) 22. 39. 16* (+) 37. 0 48. 30	Apr. 15 0. 0 9. 40 21. 40 23. 32	(+) •1066* (+) •1036 •1017	Apr. 15 0. 0 10. 0 14. 30 18. 30 23. 50	(+) •01430 •01440 •01405 •01475 •01400	9 21	45. 0 43. 0		Apr. 19 1. 0 3. 6 9. 10 20. 15 23. 55	22. 53. 30 49. 45 (+) 47. 15 34. 45 49. 30	Apr. 19 0. 0 1. 40 3. 40 9. 40 21. 40 23. 55	(+) •1049* (+) •1061* (+) •1056* (+) •1038 (+)	Apr. 19 0. 30 9. 36 23. 55	•01430 •01440 •01240	1 3 9 21	43. 0 45. 0 45. 0 39. 0	43. 0 45. 0 45. 0
Apr. 16 2. 47 11. 45 21. 35 23. 50	22. 52. 30 34. 0 *** 38. 30 46. 0	Apr. 16 0. 0 6. 15 10. 10 11. 10 11. 36 15. 22 16. 50 22. 1 23. 40	•1019 •1056 •1037 •1057 •1041 •1036 •1051 (+) •1023 •1021	Apr. 16 0. 0 1. 20 5. 10 10. 10 18. 30 23. 30	•01170 •01120 •01360 •01300 •01570 •01520	1 3 9 21	47. 0 54. 0 53. 0 46. 0	47. 0 54. 0 53. 0	Apr. 20 1. 15 11. 4 15. 40 21. 10 23. 50	22. 52. 15 40. 15 *** 30. 0 *** 33. 45 44. 30	Apr. 20 0. 43 7. 40 14. 30 18. 13 23. 33	•1043 •1066 •1052 •1073 •1038	Apr. 20 1. 5 2. 40 7. 40 11. 30 17. 5 23. 30	•01140 •01050 •01220 •01175 •01470 •01350	1 3 9 21	44. 0 47. 0 49. 0 41. 0	44. 5 47. 0 49. 0
Apr. 17 1. 12 7. 10 8. 50 18. 0 21. 17 23. 55	22. 49. 0 38. 30 *** 36. 0 *** 39. 0 34. 30 47. 0	Apr. 17 0. 30 1. 12 1. 40 7. 20 9. 50 14. 32 15. 33 23. 10	•1024 •1042 •1028 •1058 •1045 •1071 •1055 •1031	Apr. 17 0. 15 4. 50 8. 30 12. 55 23. 55	•01518 •01280 •01270 •01500 •01340	1 3 9 21	48. 0 51. 0 48. 0 40. 5	48. 0 51. 0	Apr. 21 2. 58 9. 37 10. 38 11. 5 13. 40 14. 52 17. 52 20. 32 23. 38	22. 58. 15 41. 30 32. 0 37. 45 *** 46. 0 38. 0 44. 30 35. 45 44. 45	Apr. 21 0. 10 2. 13 2. 20 2. 57 4. 30 5. 26 5. 40 7. 50 9. 10 18. 37 23. 0	•1043 •1063 •1040 •1092 •1023 •1046 •1031 •1052 •1043 •1075 •1027	Apr. 21 0. 0 2. 42 5. 37 8. 30 11. 40 18. 35 23. 30	•01350 •01380 •01210 •01235 •01185 •01515 •01485	1 3 9 23	43. 0 47. 0 49. 0 45. 0	43. 0 47. 0
Apr. 18 1. 17 7. 38 8. 13 9. 22 10. 8	22. 50. 15 38. 0 40. 30 32. 30 *** 39. 45 ***	Apr. 18 0. 30 6. 45 7. 30 9. 32 18. 52 22. 23	•1034 •1059 •1041 •1053 •1060 •1036	Apr. 18 0. 15 3. 10 6. 38 9. 45 14. 50 23. 45	•01340 •01120 •01318 •01220 •01362 •01275	1 3 9 21	45. 0 50. 0 49. 0 42. 5	45. 0 50. 0 49. 0	Apr. 22 10. 0 12. 43 15. 48 21. 12 23. 40	22. 43. 15 37. 45 44. 0 35. 30 43. 0	Apr. 22 0. 0 9. 15 17. 0 19. 37 22. 38 23. 25	(+) •1064 •1052 •1055 (+) •1028 •1023	Apr. 22 0. 0 10. 0 15. 10 21. 30 23. 55	(+) •01200 •01140 •01195 •01170	9 21	47. 0 47. 0	47. 0
Apr. 18 1. 45 20. 30 23. 53	22. 51. 30 36. 0 43. 30	Apr. 23 0. 30 7. 0 19. 30	•1036 •1051 •1044	Apr. 23 1. 30 8. 55 10. 45	•01162 •01325 •01630	1 3 9	49. 0 53. 0 52. 0	49. 0 53. 0 52. 0									

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							H. F.	V. F.								H. F.	V. F.
		Apr.23 18.53: 23.30	·1057 ·1014	Apr.23 23.55	·01580	21	46°0	46°0	Apr.28 2.8 19.17 23.53	22°49.30 36.30 46.30	Apr.28 0.54 4.52 6.0 15.32 23.7	·0994 ·1031 ·1020 ·1035 ·0993	Apr.28 2.25 4.0 6.30 10.0	·01520 ·01450 ·01488 ·01460 (+)	1 3 9 23	55°0 59°0 57°5 53°0	55°0 59°0
Apr.24 1.40 19.48 20.53 22.0 23.55	22.49.0 31.45 38.15 33.30 43.30	Apr.24 0.15 1.38 4.14 16.33 21.50 23.50	·1020 ·1025 (+) ·1036 ·1043 (+) ·1026 ·1007	Apr.24 0.30 5.7 7.40 11.15 19.10 21.33 23.55	·01565 ·01305 ·01350 ·01298 ·01700 (+) ·01710 ·01605	1 3 9 21	50°0 55°0 53°0 48°0	50°0 55°0 53°0	Apr.29 0.0 9.50 16.37 16.52 17.38 20.13 23.50	(+) 22.42.0 41.0 46.0 40.0 35.45 44.0	Apr.29 0.0 10.38 17.6 23.48	(+) ·1017 ·1028 ·0988	Apr.29 0.0 10.0 11.10 13.40 19.55 23.55	(+) ·01435 ·01468 ·01455 (+)	9 21	58°0 55°0	55°0
Apr.25 2.40 12.25 14.40 19.40 23.52	22.51.15 37.0 47.0 35.45 48.20	Apr.25 1.0 5.0 5.45 6.13 7.0 12.0 17.8 18.8 23.0	·1013 ·1047 ·1034 ·1049 ·1031 ·1043 ·1029 ·1041 ·1007	Apr.25 0.30 4.15 6.30 12.15 18.30 23.40	·01624 ·01400 ·01470 ·01380 ·01725 ·01645	1 3 9 21	50°0 54°0 57°0 50°5	50°0 54°0	Apr.30 2.8 10.4 18.27 18.55 19.15 19.23 19.44 20.8 20.20 23.55	22.49.30 40.15 32.15 37.15 33.0 37.0 30.30 37.0 32.0 45.0	Apr.30 1.10 10.20 14.10 15.13 23.30	·0985 ·1019 ·1014 ·1026 ·0980	Apr.30 1.45 3.6 5.45 9.0 22.50	·01320 ·01335 ·01210 ·01400 ·01060	1 3 9 21	61°0 65°0 65°0 51°0	61°0 65°0
Apr.26 1.20 9.31 12.20 14.30 15.15 15.50 17.45 19.30 21.10 23.36	22.52.30 42.0 *** 39.0 *** 44.0 *** 44.0 *** 36.30 *** 41.0 *** 37.45 45.0	Apr.26 0.0 1.8 2.43 4.30 5.33 14.40: 23.40	·1020 ·1002 ·1035 ·1015 ·1039 ·1025 ·1042 ·0992	Apr.26 0.0 2.10 7.10 11.40 16.35 23.30	·01650 ·01695 ·01425 ·01365 ·01675 ·01620	1 3 9 21	50°0 54°0 54°0 48°5	50°0 54°0	May 1 1.34 10.50 16.15 19.54 23.45	22.50.30 35.30 41.30 33.0 46.30	May 1 1.48 7.46 10.40 12.52 23.30	·0994 ·1028 ·1006 ·1024 ·0996	May 1 0.30 3.30 7.42 10.33 16.25 22.40	·01250 ·01035 ·01167 ·01082 ·01400 ·01242	1 3 9 21	56°0 60°0 61°0 54°0	56°0 60°0
Apr.27 1.38 21.15 23.55	22.50.15 35.0 43.15	Apr.27 0.43 5.0 6.12 11.0 23.30	·0997 ·1025 ·1015 ·1032 ·0994	Apr.27 1.15 2.52 6.45 7.20 8.30 11.20 23.0	·01580 ·01368 ·01635 ·01714 ·01650 ·01715 (+)	1 3 9 21	54°0 60°0 58°0 52°5	54°0 60°0	May 2 0.6 11.9 11.32 12.14 20.45 23.50	22.47.0 41.15 48.0 36.30 33.0 46.45	May 2 0.0 6.3 11.3 11.24 11.42 18.0 23.7	·0994 ·1030 ·1020 ·1035 ·1020 ·1025 ·0996	May 2 0.0 4.10 8.10 11.45 18.5 23.45	·01265 ·01035 ·01170 ·01080 ·01458 ·01405	1 3 9 21	56°0 59°0 63°0 56°0	56°0 59°0 63°0

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							H. F.	V. F.								H. F.	V. F.
May 3 2. 7 9. 26 22. 3 23. 45	22. 50. 0 39. 0 (+) 36. 30 46. 0	May 3 0. 0 1. 40 3. 40 9. 40 21. 45 23. 55	(+) ·0990* (+) ·0992* (+) ·1008* (+) ·1002* (+)	May 3 0. 0 2. 7 5. 25 9. 36 13. 38 23. 30	·01394 ·01170 ·01310 ·01200 ·01525 ·01330	1 3 9 21	60. 0 66. 0 67. 5 59. 0	60. 0 66. 0	May 7 10. 52 11. 40 14. 55 20. 25 23. 52	22. 31. 0 *** 41. 30 *** 45. 0 *** 34. 15 45. 30	May 7 2. 10 2. 38 3. 47 4. 7 5. 4 8. 55 11. 8 11. 48 17. 22: 22. 50:	·1025 ·0974 ·1029 ·1002 ·1039 ·1003 ·1027 ·1010 ·1024 ·0996	May 7 16. 20 23. 45	·01128 ·01035	21	50. 0 50. 0	50. 0
May 4 1. 53 10. 30 11. 50 13. 12 21. 45 23. 40	22. 48. 30 39. 30 31. 30 39. 15 32. 30 46. 0	May 4 1. 8 3. 0 7. 6 8. 54 9. 3 9. 18 10. 36 12. 0 13. 12 13. 45 14. 20 15. 7 18. 10: 22. 40	·0990 ·0981 ·1012 ·0996 ·1020 ·1004 ·1013 ·0984 ·1014 ·0996 ·1014 ·0997 ·1007 ·0973	May 4 0. 15 1. 23 5. 8 8. 30 11. 10 23. 45	·01238 ·01042 ·01223 ·01122 ·01515 ·01275	1 3 9 21	65. 0 70. 0 72. 0 62. 0	65. 0 70. 0 72. 0	May 8 1. 15 15. 0 23. 53	22. 48. 0 29. 30 49. 0	May 8 0. 40 15. 54: 21. 50 23. 30	·0995 ·1027 ·0991 ·0993	May 8 0. 30 3. 14 6. 0 9. 30 16. 38 23. 0	·00850 ·00682 ·00768 ·00730 ·01118 ·01080	1 3 9 21	53. 0 56. 8 56. 0 48. 5	53. 0 56. 0
May 5 1. 23 8. 0 17. 0 23. 55	22. 49. 0 38. 5 37. 30 (+)	May 5 1. 40 17. 48 22. 15	·0980 ·1014 ·0990	May 5 0. 30 1. 55 6. 0 8. 15 10. 12 22. 25	·01208 ·00990 ·01140 ·01122 ·01500 ·01215	1 3 9 23	69. 0 70. 0 69. 0 56. 0	69. 0	May 9 1. 30 20. 52 23. 40	22. 50. 0 33. 30 42. 0	May 9 0. 18 18. 15: 23. 25	·0993 ·1027 ·1004	May 9 0. 0 10. 15 20. 15 23. 0	·00925 ·00613 ·01035 ·00950	1 3 9 21	50. 0 52. 0 53. 0 48. 0	50. 0 52. 0
May 5 1. 23 8. 0 17. 0 23. 55	22. 49. 0 38. 5 37. 30 (+)	May 5 1. 40 17. 48 22. 15	·0980 ·1014 ·0990	May 5 0. 30 1. 55 6. 0 8. 15 10. 12 22. 25	·01208 ·00990 ·01140 ·01122 ·01500 ·01215	1 3 9 23	69. 0 70. 0 69. 0 56. 0	69. 0	May 10 2. 0 11. 15 15. 20 20. 30 23. 43	22. 48. 15 38. 45 42. 0 37. 15 43. 30	May 10 0. 0 6. 10 22. 15	·1007 ·1034 ·1013	May 10 0. 0 6. 32 20. 0 23. 30	·00782 ·00585 ·00840 ·00742	1 3 9 21	50. 0 51. 0 51. 0 48. 5	50. 0 51. 0
May 6 0. 0 9. 45 15. 40 16. 15 17. 0 18. 32 23. 50	(+) 22. 40. 0 *** 39. 0 *** 54. 15 *** 36. 30 *** 32. 20 *** 51. 0	May 6 0. 0 10. 28 15. 20 16. 8 16. 38 23. 52	(+) ·1026 ·1027 ·0996 ·1035 ·0992 ·1029	May 6 0. 0 9. 30 16. 18 16. 30 18. 30 22. 35 23. 50	(+) ·00765 ·01132 ·01104 ·01150 ·01105 ·01148	9 21	61. 0 53. 0	61. 0 53. 0	May 11 0. 0 1. 40 3. 40 9. 40 21. 40 23. 55	(+) 22. 45. 48* (+) 46. 23* (+) 40. 16* (+) 37. 0* (+)	May 11 0. 0 1. 40 3. 40 9. 40 21. 40 23. 55	(+) ·1018 (+) ·1017 (+) ·1022 (+) ·1021 (+)	May 11 0. 0 4. 5 8. 30 11. 30 17. 52 23. 30	(+) ·00652 ·00750 ·00680 ·01142 ·01050	1 3 9 21	50. 0 55. 0 55. 0 49. 5	50. 0 55. 0
May 6 0. 0 9. 45 15. 40 16. 15 17. 0 18. 32 23. 50	(+) 22. 40. 0 *** 39. 0 *** 54. 15 *** 36. 30 *** 32. 20 *** 51. 0	May 6 0. 0 10. 28 15. 20 16. 8 16. 38 23. 52	(+) ·1026 ·1027 ·0996 ·1035 ·0992 ·1029	May 6 0. 0 9. 30 16. 18 16. 30 18. 30 22. 35 23. 50	(+) ·00765 ·01132 ·01104 ·01150 ·01105 ·01148	9 21	61. 0 53. 0	61. 0 53. 0	May 11 0. 0 1. 40 3. 40 9. 40 21. 40 23. 55	(+) 22. 45. 48* (+) 46. 23* (+) 40. 16* (+) 37. 0* (+)	May 11 0. 0 1. 40 3. 40 9. 40 21. 40 23. 55	(+) ·1018 (+) ·1017 (+) ·1022 (+) ·1021 (+)	May 11 0. 0 4. 5 8. 30 11. 30 17. 52 23. 30	(+) ·00652 ·00750 ·00680 ·01142 ·01050	1 3 9 21	50. 0 55. 0 55. 0 49. 5	50. 0 55. 0
May 7 2. 2 8. 20 9. 55	22. 56. 0 35. 0 41. 0 ***	May 7 0. 38 0. 50 1. 42	·1009 ·1021 ·0998	May 7 1. 0 5. 0 10. 30	·00935 ·00990 ·00700	1 3 9	53. 0 55. 0 57. 0	53. 0 55. 0	May 12 2. 10 7. 53 8. 5 8. 25 8. 54 11. 33 12. 14 13. 32	22. 52. 15 40. 15 45. 30 32. 30 39. 30 44. 0 35. 30 48. 45	May 12 0. 20 0. 50 1. 54 2. 40 2. 52 3. 8 3. 42 5. 8	·1033 ·1013 ·1036 ·0998 ·1024 ·1015 ·1043 ·1018	May 12 0. 0 2. 40 7. 15 8. 10 8. 30 13. 40 18. 10 23. 55	·01025 ·00802 ·01055 ·01000 ·01038 ·00950 ·01290 (+)	1 3 9 22	53. 0 56. 0 58. 0 55. 0	53. 0 56. 0 58. 0

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							H. F.	V. F.								H. F.	V. F.
May 12 14. 5 <sup>h</sup> 22. 35. 30 <sup>m</sup> 15. 11 31. 30 16. 52 45. 0 18. 47 31. 0 23. 55 47. 45		May 12 6. 0 6. 18 6. 52 7. 10 7. 55 8. 15 8. 38 10. 15 12. 10 12. 28 13. 8 13. 22 13. 38 14. 10 14. 54 16. 2 16. 15 17. 23 20. 26 22. 37 23. 10	·1043 ·1028 ·1049 ·1039 ·1048 ·0988 ·1020 ·1004 ·1006 ·1017 ·0990 ·1006 ·0996 ·1020 ·1005 ·1021 ·0993 ·1028 ·0985 ·0994 ·0984						May 15 14. 15: 22. 44. 45 <sup>h</sup> 15. 10 39. 0 20. 16 34. 30 23. 55 43. 0		May 15 22. 25 23. 30	·1001 ·1009	4. 30 23. 0	·00940 (+)	9 64. 5 <sup>o</sup> 21 57. 5 <sup>o</sup>		
									May 16 2. 31 22. 47. 0 (+) 9. 30 37. 15 22. 10 36. 30 23. 55 47. 30		May 16 0. 35 2. 31 (+) 9. 38 16. 30: 23. 55	·1002 ·1008 (+) ·1002 ·1008 ·0995	0. 30 10. 12 18. 10 23. 30	·01276 ·00935 ·01396 ·01245	1 60. 0 3 64. 0 9 64. 0 21 59. 0	60. 0 64. 0	
									May 17 1. 8 22. 50. 30 7. 12 38. 30 8. 17 42. 30 8. 45 39. 0 13. 50 37. 0 23. 50 50. 0		May 17 1. 34 3. 40 4. 11 6. 2 7. 0 7. 20 8. 40 9. 0 23. 15	·0983 ·1023 ·1001 ·1035 ·1021 ·1035 ·1007 ·1017 ·0992	0. 30 9. 54 20. 3 (+)	·01055 ·00870 ·01300 (+)	1 56. 0 3 60. 0 9 60. 0 21 57. 0	56. 0 60. 0 60. 0	
May 13 1. 7 22. 50. 45 7. 10 41. 0 7. 48 30. 30 8. 0 39. 0 8. 50 31. 45 11. 23 42. 0 19. 33 33. 0 23. 55 48. 0		May 13 0. 33 1. 0 1. 40 4. 20 4. 42 5. 22 7. 22 7. 47 9. 12 12. 57: 17. 10 19. 8: 22. 24 23. 55	·0986 ·0999 ·0986 ·1020 ·1009 ·1030 ·1017 ·1056 ·0998 ·1014 ·0993 ·1009 ·0999 ·1006	May 13 0. 30 2. 55 7. 45 10. 45 16. 52 23. 0	·01052 ·00805 ·00960 ·00858 ·01292 ·01200	9 60. 5 21 53. 0 53. 0			May 18 1. 38 22. 52. 0 12. 10 41. 0 12. 40 34. 15 14. 0 39. 0 19. 15 34. 30 23. 36 47. 30		May 18 0. 3 3. 10 4. 38 6. 25 9. 50 22. 0:	·0998 (+) ·1010 ·1034 ·1015 ·1034 ·0992	0. 0 3. 40 9. 20 19. 40 23. 30	·01020 ·00840 ·00800 ·01305 ·01280	1 60. 0 3 60. 0 9 60. 0 21 55. 5		
									May 19 1. 17 22. 50. 15 19. 27 34. 30 23. 55 48. 0		May 19 0. 40 5. 12: 22. 30:	·0992 ·1015 ·0998	0. 30 5. 0 7. 30 10. 30 19. 30 23. 55	·01280 ·01112 ·01140 ·01102 ·01582 ·01522	1 57. 1 3 60. 0 9 62. 5 22 56. 0		
May 14 0. 0 (+) 1. 40 22. 48. 22* (+) 3. 40 45. 29* (+) 9. 40 37. 19* (+) 21. 40 38. 25* 23. 55 (+)		May 14 0. 0 (+) 1. 40 (+) 3. 40 (+) 9. 40 (+) 21. 40 23. 55 (+)	·1008* (+) ·1010* (+) ·1010* (+) ·1004* (+)	May 14 1. 5 3. 56 8. 35 9. 55 15. 35 23. 55	·01170 ·00910 ·00985 ·00923 ·01368 ·01250	1 57. 0 3 65. 0 9 65. 0 21 58. 0	57. 0 65. 0 65. 0		May 20 1. 7 22. 49. 30 13. 7 37. 30 14. 40 45. 45 19. 6 39. 30 23. 45 54. 0		May 20 0. 12 6. 55 10. 0 10. 25 11. 16 14. 55: 21. 2 23. 22:	·1001 ·1037 ·1023 ·1042 ·1021 ·1036 ·0986 ·0995	0. 30 4. 0 13. 30 13. 55 17. 50 23. 0 23. 55	·01322 ·01330 ·01240 ·01120 ·01160 ·01115 ·00950	10 55. 0 21 55. 0		
May 15 0. 41 22. 45. 30 13. 45 40. 15		May 15 0. 22 6. 50:	·0995 ·1013	May 15 0. 30 4. 0	·01202 ·00932	1 60. 0 3 65. 0	60. 0 65. 0										

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							H. F.	V. F.								H. F.	V. F.
May 21 2. 3 17. 48 23. 40	22. 55. 0 37. 30 46. 30	May 21 1. 0 7. 18 23. 10	.0969 .1025 .0985	May 21 0. 0 1. 34 7. 0 10. 51 16. 27 23. 45	.00935 .00790 .01035 .00932 .01377 .00950	1 57.0 3 59.0 9 66.0 21 56.0			May 27 2. 0 4. 10 5. 8 6. 30 8. 15 9. 5 19. 10	22. 46. 45 45. 50 40. 20 40. 30 34. 30 40. 0 33. 0 (+) 37. 0 44. 0	May 27 0. 0 9. 40 21. 40 23. 55	(+) .0983* (+) .0990* (+)	May 27 0. 30 1. 55 5. 37 8. 50 11. 40 23. 55	.01195 .00945 .01166 .01092 .01540 .01310	9 72.0 21 60.0		
May 22 1. 45 18. 37 23. 45	22. 51. 0 35. 15 49. 0	May 22 1. 38 7. 3 23. 45	.0997 .1035 .0995	May 22 0. 30 11. 0 17. 48 23. 55	.01312 .00880 .01315 .01125	1 58.0 3 59.0 9 60.0 21 56.0			May 28 2. 17 11. 23 11. 47 12. 32 14. 0 20. 25 23. 55	22. 52. 30 37. 15 40. 30 45. 30 38. 45 36. 30 47. 0	May 28 0. 50 1. 55 2. 20 2. 43 5. 0 6. 25 6. 50 12. 30 13. 15 23. 30	.1003 .0991 .1007 .0991 .1039 .1021 .1035 .1011 .1023 .1002	May 28 0. 0 7. 52 14. 37 15. 10 17. 25 18. 55 19. 40 23. 45	.01310 .01412 .01342 .01250 .01322 .01270 .01295 .01205	1 60.0 3 61.0 9 60.0 21 56.0		
May 23 1. 15 9. 30 22. 3 23. 55	22. 50. 30 41. 0 (+) 38. 15 47. 30	May 23 0. 20 7. 18: 9. 54 11. 15 23. 20	.0991 .1019 .1010 .1018 .0978	May 23 0. 30 1. 10 8. 0 9. 27 21. 40 23. 45	.00773 .00735 .00953 (+) .01314 .01215	1 60.0 3 63.0 9 64.0 21 58.0			May 29 2. 45 15. 0 23. 47	22. 49. 30 37. 30 48. 30	May 29 0. 15 7. 45: 23. 27	.1000 .1015 .0982	May 29 0. 30 3. 25 7. 30: 11. 0 17. 25 23. 45	.01051 .00780 .00930 .00885 .01378 .01250	1 60.0 3 64.0 9 69.0 21 63.0		
May 24 1. 50 20. 0 23. 50	22. 51. 0 34. 55 43. 30	May 24 1. 30 4. 56 7. 42 23. 25	.0987 .0996 (+) .1005 .0979	May 24 0. 30 1. 50 6. 40 9. 36 14. 40 23. 55	.01167 .00942 .01108 .01062 .01510 .01390	1 64.0 3 69.0 9 69.0 21 63.0			May 30 0. 55 18. 52 23. 50	22. 48. 0 34. 0 45. 0	May 30 1. 24: 17. 35: 22. 35	.0982 .1002 .0989	May 30 0. 30 2. 25 6. 0 9. 47 15. 38 23. 45	.01192 .00904 .01035 .00995 .01490 .01362	1 60.0 3 70.0 9 74.0 21 64.5		
May 25 2. 40 19. 14 23. 50	22. 50. 30 34. 30 44. 30	May 25 1. 0 8. 15: 10. 38 11. 35 11. 45 16. 10: 23. 55	.0975 .1004 .0997 .1010 .0999 .1011 .0976	May 25 0. 30 3. 50 7. 30 9. 42 13. 18 23. 55	.01350 .01038 .01100 .01058 .01540 .01395	1 65.0 3 70.0 9 70.5 21 61.0			May 31 3. 6 20. 28 23. 55	22. 49. 0 34. 15 49. 0	May 31 0. 18 3. 10 4. 30 18. 10 21. 20	.0991 .1005 .0995 .1015 .0987	May 31 0. 30 5. 4 8. 30 11. 0 15. 35 23. 45	.01338 .00980 .01040 .00995 .01490 .01340	1 68.0 3 70.0 9 73.0 21 65.0		
May 26 2. 25 6. 0 6. 40 8. 7 9. 52 12. 17 13. 2: 15. 7 23. 50	22. 50. 30 42. 30 33. 30 40. 3 33. 30 38. 30 32. 0 38. 30 43. 0	May 26 0. 30 1. 20 2. 42 3. 48 4. 54 7. 9 10. 36 18. 30 21. 55 23. 0:	.0972 .0991 .0978 .1003 .0986 .1029 .0991 .1004 .0974 .0982	May 26 0. 30 6. 12 7. 0 8. 30 8. 55 9. 5 12. 5 23. 55	.01375 .01020 .01060 .01018 .01040 .01240 .01435 .01250	1 65.0 3 68.0 9 69.0 22 62.0			June 1 1. 32 19. 13 23. 55	22. 52. 0 34. 0 50. 0	June 1 0. 45 3. 47 6. 52 9. 10	.0993 .0977 .1009 .0996	June 1 0. 30 3. 37 6. 30 9. 50	.01285 .00932 .01055 .01000	1 68.0 3 70.0 9 72.0 21 65.0		

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INDICATIONS OF THE MAGNETOMETERS

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
		June 1 17. 0: 21. 0: 23. 5	·1011 ·0990 ·0996	June 1 16. 10 21. 45	·01500 ·01420						June 6 21. 20 23. 55	·0968 ·0993	June 6 h m				
June 2 7. 0 8. 38 9. 45 18. 15 23. 40	(+) 22. 40. 30 30. 30 38. 45 34. 15 46. 45	June 2 1. 53: 2. 13: 2. 43: 6. 8: 7. 8: 22. 50:	·1010 ·1000 ·1019 ·0986 ·0998 ·0977	June 2 7. 0 10. 0 15. 20 22. 55	(+) ·01038 ·01010 ·01510 ·01380	5 23	75. 0 66. 0		June 7 0. 5 3. 57 4. 18 4. 40 4. 53 7. 54 8. 48 9. 7 9. 26 10. 7 11. 0 11. 22 15. 47 16. 40 18. 56 23. 52	22. 48. 30 59. 0 45. 30 52. 30 46. 30 41. 30 28. 0 43. 15 32. 30 41. 0 30. 15 45. 15 36. 0 44. 30 32. 30 45. 15	June 7 0. 30 1. 37 1. 55 2. 52 10. 8 11. 5 14. 8 15. 42 16. 46: 22. 30	·0989 ·1000 ·0980 ·1002 (+) ·0991 ·0976 ·1001 ·0990 ·1004 ·0971	June 7 1. 0 3. 45 6. 48 10. 8 16. 40 23. 55	·00872 ·00690 ·00860 ·00735 ·01245 ·01210	1 3 9 21	66. 0 69. 0 70. 0 63. 5	
June 3 2. 10 11. 36 14. 40 15. 0 15. 45 20. 45 23. 55	22. 49. 0 33. 45 39. 45 44. 5 40. 30 32. 15 44. 0	June 3 0. 0 11. 40 21. 40 23. 55	(+) ·1002* (+) ·0992* (+)	June 3 0. 35 3. 30 7. 10 8. 35 9. 10 13. 5 23. 55	·01345 ·00975 ·01085 ·01060 ·01210 ·01540 ·01338	11 21	73. 0 64. 0		June 8 0. 50 7. 52 8. 13 8. 50 10. 18 20. 23 23. 55	22. 46. 30 38. 45 34. 45 39. 30 35. 0 31. 15 45. 0	June 8 0. 0 1. 40 (+) ·0992* (+) ·1002* (+) ·0970* (+)	June 8 0. 30 10. 0 16. 12 23. 45	(+) ·0985* (+) ·0992* (+) ·1002* (+) ·0970* (+)	·01172 ·00835 ·01188 ·00875	1 3 9 21	68. 0 67. 0 63. 5 57. 0	
June 4 2. 30 21. 40 23. 55	22. 48. 30 32. 0 51. 30	June 4 1. 15 8. 5 23. 22	·0989 ·1005 ·0962	June 4 0. 30 4. 47 7. 10 10. 15 17. 15 23. 55	·01302 ·00910 ·01000 ·00940 ·01500 ·01230	1 3 9 21	65. 0 70. 0 72. 0 69. 0		June 9 1. 30 22. 16 23. 55	22. 49. 30 31. 0 41. 30	June 9 0. 0 1. 45 3. 45 9. 45 22. 40 23. 55	(+) ·0990* (+) ·0992* (+) ·1002* (+) ·0996* (+)	June 9 0. 0 9. 58: 16. 27 23. 0	·01110 ·00640 ·01132 ·00995	1 3 9 22	62. 0 64. 0 63. 0 57. 0	
June 5 0. 30 20. 18 23. 50	22. 53. 0 31. 0 44. 45	June 5 0. 45 2. 3 2. 30 5. 0 9. 45 10. 24 11. 20 14. 30 22. 40: 23. 55	·0971 ·0984 ·0974 ·1007 ·0980 ·0998 ·0980 ·0998 ·0970 ·0981	June 5 0. 30 1. 15 2. 35 3. 15 7. 45 12. 50 23. 45	·01115 ·00970 ·01045 ·00965 ·00945 ·01425 ·01255	1 3 9 21	75. 0 79. 0 75. 0 66. 0		June 10 1. 17 21. 15 23. 55	22. 46. 30 36. 15 44. 30	June 10 1. 30 6. 10 22. 50	·1002 ·1029 ·0996	June 10 0. 30 10. 55 15. 25: 15. 40 19. 0: 23. 45	·01010 ·00815 ·00955 ·00895 ·00950 ·00800	10 21	59. 0 56. 0	

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Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
June 11 3. 7 5. 33 13. 9 19. 50 23. 55	22. 51. 0 43. 0 35. 30 33. 45 44. 45	June 11 0. 52 5. 50 22. 22	·0996 ·1037 ·0992	June 11 0. 30 5. 30 7. 35 10. 30 18. 42 21. 0 21. 12 23. 45	·00775 ·00485 ·00525 ·00480 ·01050 ·01005 ·00930 ·00907	1 56.0 3 60.0 9 62.0 21 55.0			June 14 8. 48 13. 13 13. 42 15. 30 16. 0 18. 45 23. 55	22. 39. 0 38. 30 44. 0 38. 0 43. 30 30. 45 44. 15	June 14 22. 0 23. 55	·0988 ·0976	June 14 23. 8	·01035	21 58.0		
June 12 3. 33 22. 0 23. 55	22. 52. 0 38. 30 49. 15	June 12 1. 35 3. 30 6. 45 8. 0 10. 30 11. 40 14. 5 16. 8 18. 3 18. 9 18. 40 19. 20 20. 3 20. 30 23. 30	·1003 ·1035 ·1034 ·1027 ·1016 ·1021 ·1022 ·1045 ·0991 ·1011 ·0989 ·1032 ·1012 ·1028 ·0977	June 12 0. 30 10. 25 19. 12 19. 37 23. 30	·00883 ·00472 ·00860 ·00790 ·00592	1 52.0 3 57.0 9 58.5 21 58.0	52.5	June 15 1. 36 20. 8 23. 55	22. 47. 15 33. 30 44. 45	June 15 0. 45 7. 8 22. 1 23. 55	·0967 ·1010 ·0984 ·0997	June 15 1. 0 2. 45 8. 0 10. 0 18. 35 23. 45	·00815 ·00625 ·00720 ·00718 ·01240 ·01180	1 60.0 3 66.0 9 68.0 21 60.0			
June 13 2. 40 4. 45 5. 3 5. 40 5. 52 6. 8 8. 22 8. 37 8. 54 10. 0 10. 26 10. 48 12. 55 14. 10 19. 50 23. 55	22. 53. 30 46. 45 52. 15 46. 45 51. 30 47. 15 38. 30 43. 0 38. 15 41. 30 35. 15 42. 45 38. 30 45. 15 35. 30 47. 0	June 13 1. 0 2. 56 3. 58 4. 7 5. 0 5. 40 5. 50 6. 22 7. 0 7. 55 8. 26 8. 45 9. 0 10. 10 10. 38 11. 0 14. 22 17. 55 22. 30 23. 55	·0975 ·1007 ·1002 ·0974 ·1036 ·0999 ·1017 ·0997 ·1015 ·0993 ·1014 ·0996 ·1015 ·0987 ·1011 ·0989 ·0999 ·1004 ·0967 ·0977	June 13 0. 30 0. 45 5. 50 9. 8 13. 45 23. 30	·00490 ·00460 ·00770 ·00720 ·01060 ·00880	1 60.0 3 65.0 9 66.0 21 57.5		June 16 2. 58 18. 0 22. 50	22. 46. 45 36. 15 44. 30	June 16 0. 30 17. 10 22. 36	·1002 ·1017 ·0992	June 16 0. 30 5. 42 7. 0 10. 0 17. 35 23. 0	·01180 ·00725 ·00755 ·00723 ·01235 ·01172	1 60.0 3 63.0 9 65.0 21 56.0			
June 14 2. 30 7. 37 8. 0	22. 49. 0 39. 30 34. 15	June 14 0. 30 8. 15 20. 22	·0977 ·1009 ·0979	June 14 0. 30 3. 15 16. 15	·00925 ·00620 ·01130	1 60.0 3 65.0 9 64.0		June 17 0. 38 20. 24 23. 50	22. 50. 0 35. 15 46. 45	June 17 1. 0 11. 21 23. 48	·1000 ·1021 ·0991	June 17 0. 0 10. 30 16. 12 18. 15 19. 30 23. 30	·01170 ·00760 ·01175 ·01150 ·01200 ·00990	11 61.0 21 59.5			
								June 18 2. 20 18. 35 23. 55	22. 48. 30 34. 0 48. 0	June 18 0. 10 0. 35 1. 37 2. 25 7. 5 22. 30	·0997 ·0981 ·0996 ·0970 ·1010 ·0982	June 18 3. 45 12. 50 23. 55	·00670 ·01270 ·01058	1 65.0 3 67.0 9 68.5 21 55.0			
								June 19 0. 48 10. 3 13. 3 17. 40 20. 8 20. 18 21. 12 22. 12 23. 3	22. 49. 45 39. 30 45. 30 32. 45 40. 30 36. 0 48. 0 45. 0 49. 30	June 19 0. 30 4. 50 5. 26 8. 8 9. 47 17. 2 20. 40 21. 38 23. 30	·1000 ·1023 ·1005 ·1025 ·1009 ·1020 ·0969 ·0999 ·0984	June 19 0. 30 10. 55 21. 10 23. 40	·01040 ·00735 ·00905 ·00764	1 60.0 3 60.0 9 61.0 21 61.0			

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							H. F.	V. F.								H. F.	V. F.
June 20 1. 55 16. 20 17. 10 17. 37 18. 27 19. 17 23. 50	22. 49. 0 36. 0 40. 0 34. 30 50. 30 39. 0 48. 0	June 20 0. 30 2. 25 3. 40 4. 32 6. 4 6. 20 7. 36 9. 15 17. 30 18. 23 18. 53 21. 50 23. 23 23. 55	·0995 ·0980 ·1009 ·0985 ·1016 ·1000 ·1024 ·0999 ·1017 ·0986 ·1006 ·0974 ·0991 ·0978	June 20 0. 0 2. 8 6. 25 8. 15 16. 42 19. 5 22. 20 23. 30	·00752 ·00597 ·00767 ·00750 ·01225 ·01140 ·01150 ·01075	1 3 9 21	64. 0 66. 0 68. 0 63. 0	0	June 25 6. 20 8. 10 23. 10	0 0 0	June 25 ·0994 ·1013 ·0977	June 25 23. 45	·01060	21	64. 0	0	
June 21 2. 10 21. 6 22. 10	22. 53. 0 32. 0 35. 0	June 21 0. 30 9. 40 11. 8 18. 0 23. 20	·0982 ·1013 ·0987 ·1007 ·0975	June 21 0. 30 3. 32 9. 10 14. 35 22. 10 23. 45	·01115 ·00740 ·00838 ·01303 ·01155 ·01180	1 3 9 21	65. 0 67. 0 70. 0 62. 0		June 26 1. 45 9. 30 21. 55 23. 50	22. 48. 15 38. 0 (+) 38. 0 45. 30	June 26 1. 18 4. 15 23. 33	·0983 ·1013 ·0991	June 26 0. 30 5. 24 9. 27 21. 55 23. 55	·01045 ·00715 ·00742 (+) ·01220 ·01115	1 3 9 21	68. 0 70. 0 73. 0 65. 0 65. 0	68. 0 70. 0 73. 0 65. 0
June 22 2. 15 20. 52 23. 55	22. 50. 0 33. 30 46. 45	June 22 1. 35 4. 20 11. 30 18. 2 22. 44	·0983 ·1016 ·0994 ·1008 ·0972	June 22 0. 30 5. 45 7. 45 8. 55 15. 40 21. 40 23. 55	·01175 ·00752 ·00800 ·00770 ·01260 ·01195 ·00918	1 3 9 21	60. 0 65. 0 70. 5 64. 0		June 27 1. 10 5. 32 6. 10 20. 7 23. 55	22. 47. 0 35. 0 42. 30 32. 0 43. 45	June 27 0. 7 0. 55 4. 56 5. 26 7. 3	·0992 ·0979 ·1028 ·1000 ·1020 21. 58 23. 37 ·0989	June 27 0. 15 3. 42 5. 40 8. 10 15. 8 23. 45	·01095 ·00768 ·00845 ·00827 ·01325 ·01195	1 3 9 21	70. 0 75. 0 77. 0 64. 0	70. 0 75. 0 77. 0 64. 0
June 23 2. 15 9. 10 19. 8 23. 55	22. 50. 30 *** 38. 0 31. 30 44. 30	June 23 0. 30 18. 0 23. 0	·0972 ·0993 ·0962	June 23 0. 30 1. 30 14. 10 23. 55	·00830 ·00695 ·01425 ·01295	1 3 9 23	70. 0 75. 0 75. 0 72. 0		June 28 2. 30 9. 44 13. 37 17. 43 23. 55	22. 49. 0 38. 15 46. 0 34. 45 46. 0	June 28 1. 0 4. 47 5. 30 6. 55 23. 54	·0971 ·1024 ·1008 ·1026 ·0983	June 28 0. 45 10. 45 15. 52 23. 55	·01205 ·00982 ·01235 ·01020	1 3 9 21	65. 0 65. 0 68. 0 62. 5	65. 0 65. 0 68. 0 62. 5
June 24 2. 20 14. 16 17. 10 20. 3 20. 12 23. 55	22. 49. 0 40. 0 30. 30 36. 0 32. 30 44. 30	June 24 0. 30 3. 30 5. 0 14. 42 22. 30 22. 38 22. 55	·0972 ·0996 ·0983 ·1021 ·0997 ·1026 ·1007	June 24 0. 30 6. 30 12. 10 23. 45	·01282 ·00818 ·01290 ·01080	11 21	69. 0 63. 0		June 29 1. 25 10. 22 16. 8 19. 50 23. 55	22. 49. 0 36. 30 42. 0 35. 0 47. 30	June 29 0. 45 10. 40 23. 50	·0982 ·1020 ·0997	June 29 0. 15 9. 55 17. 0 23. 30	·00995 ·00585 ·00835 ·00700	1 3 9 21	65. 0 66. 0 66. 0 61. 0	65. 0 66. 0 66. 0 61. 0
June 25 3. 0 20. 7 23. 55	22. 48. 15 31. 45 48. 0	June 25 1. 5 2. 10 3. 15	·0995 ·0987 ·1009	June 25 0. 30 5. 0 18. 45	·01040 ·00675 ·01250	1 3 9	64. 0 70. 0 69. 0		June 30 2. 22 11. 55 13. 7 13. 30 14. 10 19. 8 23. 15	22. 51. 30 36. 45 40. 0 46. 45 42. 30 35. 30 47. 30	June 30 0. 10 13. 8 13. 25 13. 55 23. 15	·1000 ·1018 ·1032 ·1013 ·0985	June 30 0. 30 8. 45 16. 35 23. 20	·00690 ·00565 ·01057 ·00872	1 3 9 22	65. 0 65. 0 66. 0 56. 0	65. 0 65. 0 66. 0 56. 0
July 1 2. 12 18. 17 23. 54	22. 49. 30 36. 15 48. 5	July 1 0. 0 2. 24 7. 32 9. 15 19. 22 23. 45	·0982 ·1003 ·0989	July 1 0. 0 5. 20 22. 30	·00800 ·00555 ·00800 ·00785 ·01330 ·01235	12 21	70. 0 66. 8	70. 0 67. 0									

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							H. F.	V. F.								H. F.	V. F.
July 2 0.45 18.14 23.55	22. 48. 30 32. 0 44. 30	July 2 1. 0 6. 30 9. 35 17. 0 23. 53	.0983 .1001 .0994 .1013 .0991	July 2 0.45 6.14 10.22 23.45	.01235 .01185 .01280 .00895	1 3 9 21	65.0 70.0 69.0 63.5	0	July 8 1.40 12.0 15.40 18.50 23.55	22. 51. 0 34. 30 37. 0 32. 30 43. 30	July 8 0.30 2.18 (+) 9.42 15.50 22.48	.0961 .0967 (+) .0983 .0992 .0965	July 8 0.30 2.5 4.30 5.20 5.35 6.30 13.33 23.30	.00890 .00710 .00818 .00785 .00830 .00810 .01277 .01135	9 21	79.0 66.0	0
July 3 2.45 12.15 14.8 15.42 16.10 16.25 19.3 20.45 23.50	22. 50. 15 38. 15 44. 30 29. 30 35. 0 29. 0 45. 0 36. 30 47. 15	July 3 1.40 5.13 5.40 6.4 6.20 7.20 9.20 14.7 15.43 16.10 23.40	.0995 .1035 .1019 .1032 .0998 .1023 .0994 .1018 .1004 .1019 .0981	July 3 1.0 5.0 7.30 10.0 19.4 23.45	.00915 .00690 .00755 .00713 .01220 .01165	1 3 9 21	65.0 68.0 69.5 60.0		July 9 2.13 11.30 13.13 13.32 14.10 15.33 16.26 17.12 23.55	22. 48. 30 35. 30 37. 45 47. 45 31. 0 24. 0 34. 0 27. 30 43. 30	July 9 0.30 5.8 11.25 12.6 13.12 13.25 13.52 14.30 15.40 16.24 23.52	.0975 .1006 .0982 .1000 .0988 .1032 .0990 .1017 .0993 .1018 .0964	July 9 0.30 4.15 7.0 9.0 13.24 17.0 23.45	.01090 .01015 .01050 .00996 .01183 .01040 .01000	1 3 9 21	70.0 75.0 75.0 65.5	
July 4 2.23 8.12 9.0 9.47 11.37 12.0 17.0 18.27 23.55	22. 54. 0 44. 0 32. 45 41. 0 42. 0 36. 0 46. 45 34. 0 45. 45	July 4 0.25 2.30 3.20 5.0 8.45 9.10 10.7 10.34 22.30 23.55	.0984 .0996 .0975 .1026 .1005 .1032 .1002 .1011 .0962 .0987	July 4 0.30 10.1 14.38 23.45	.01173 .00940 .01230 .01102	1 3 9 21	65.0 67.0 68.0 62.0		July 10 2.37 20.52 23.55	22. 47. 30 32. 30 46. 0	July 10 0.30 17.30 23.50	.0965 .1000 .1055	July 10 0.30 12.0 17.40 23.45	.00988 .00710 .01105 .01015	1 3 9 21	71.0 75.0 74.5 67.5	
July 5 3.3 9.32 9.50 10.30 19.45 23.55	22. 50. 30 39. 30 46. 0 40. 0 35. 45 49. 0	July 5 0.45 4.22 5.45 9.40 11.20 18.28 23.55	.0995 .1024 .1003 .1033 .0997 .1005 .0977	July 5 1.0 9.56 17.32 23.45	.01082 .00655 .01190 .01030	1 3 9 21	65.0 65.0 68.0 64.5		July 11 2.47 18.43 23.55	22. 49. 0 34. 15 48. 15	July 11 0.50 17.20 23.0	.0971 .1022 .0992	July 11 0.45 4.30 8.10 11.30 23.55	.00955 .00685 .00705 .00918 .00385	1 3 9 21	72.0 75.0 73.0 63.0	
July 6 1.40 20.24 23.55	22. 52. 0 34. 15 47. 0	July 6 0.50 5.5 23.40	.0973 .1010 .0958	July 6 0.30 3.0 8.15 15.50 23.45	.00910 .00660 .00758 .01318 .01080	1 3 9 21	65.0 70.0 73.5 69.0		July 12 1.45 13.36 14.53 15.10 15.45 18.15 23.50	22. 50. 0 38. 0 42. 0 34. 0 41. 45 35. 15 49. 30	July 12 0.30 2.18 4.53 5.18 14.55 15.30 16.55 23.20	.0998 .0973 .1000 .0973 .1025 .0989 .1007 .0984	July 12 0.20 1.50 4.50 15.32 23.15	.00595 .00464 .00640 .01130 .00862	1 3 9 21	70.0 75.0 78.0 65.0	
July 7 2.0 18.50 23.55	22. 50. 45 32. 15 48. 15	July 7 0.45 17.15 23.55	.0960 .1006 .0958	July 7 (+)		1 3 10 23	75.0 77.0 78.0 74.0		July 13 1.38 9.20 10.0 12.43	22. 51. 15 39. 0 42. 0 37. 30	July 13 0.30 3.15 23.55	.0988 .1006 .0979	July 13 0.30 4.15 5.40 7.45 15.7 23.45	.00780 .00635 .00695 .00705 .01095 .00835	1 3 9 21	72.0 75.0 75.0 63.0	

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Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
July 13 14. 13	22. 38. 0 ***						°	°	July 18 2. 4	22. 48. 0 ***	July 18 0. 40	·0995	July 18 1. 0	·00605	1 65·0		°
14. 45	29. 45 ***								10. 0	37. 0 ***	23. 15:	·0988	6. 5	·00415	3 68·0		
16. 0	37. 0 ***								12. 24	42. 0 ***			17. 15	·00580	9 65·0		
18. 30:	34. 30 ***								13. 3	36. 15 ***			23. 55	·00375	21 60·0		
23. 55	47. 15								14. 37	40. 0 ***							
July 14 2. 5	22. 50. 45	July 14 1. 0	·0984	July 14 0. 30	·00520	1 68·0			16. 32	36. 45 ***							
5. 0	40. 15 ***	19. 53:	·1008	2. 0	·00398	3 75·0			17. 5	40. 0 ***							
9. 0	40. 30	23. 30	·0985	17. 7:	·00985	9 72·0			19. 33:	34. 0 ***							
9. 36	46. 0			23. 15:	·00830	21 61·0			23. 55	48. 30							
10. 30	41. 15								July 19 2. 10:	22. 49. 30 ***	July 19 0. 40	·0997	July 19 0. 30	·00360	1 62·0		
12. 37	44. 30								20. 0	35. 30	23. 25:	·1030	9. 10:	·00148	3 65·0		
14. 40	38. 0								23. 55	46. 0		·0973	13. 10	·00287	9 63·0		
16. 10	39. 33								July 20 2. 42	22. 51. 45	July 20 1. 0	·0985	July 20 1. 0	·00060	1 60·0		
18. 30	35. 0								10. 25	37. 15	10. 30	·1019	2. 10	·00022	3 61·0		
23. 10	45. 30								13. 20	40. 0	12. 55	·1000	7. 0	·00200	9 63·0		
July 15 2. 22:	22. 48. 15	July 15 0. 0	·0980	July 15 0. 0	·00800	11 71·0			14. 55	34. 0	16. 0	·1022	11. 0:	·00155	21 58·0		
11. 8	43. 15	7. 15	·1024	10. 0:	·00415	21 62·5			15. 50	44. 45	23. 8	·0983	19. 30:	·00420			
12. 8	36. 0	8. 28	·1001	15. 55:	·00760				16. 30	36. 30			23. 55	·00250			
13. 8	48. 0	11. 13	·1020	23. 15	·00525				19. 23	30. 30							
14. 15	38. 15	12. 45	·0997						23. 55	47. 15							
15. 30	42. 30	13. 40	·1010						July 21 1. 45:	22. 51. 15	July 21 1. 8	·0984	July 21 0. 30	·00222	1 60·0		
19. 13	35. 15	14. 45	·0998						9. 31	40. 45 ***	6. 12	·1020	2. 40	·00130	3 65·0		
23. 55	50. 15	16. 7	·1010						14. 23	40. 0 ***	22. 48	·0971	7. 0	·00325	9 68·0		
July 16 0. 48:	22. 51. 0	July 16 1. 6	·0885	July 16 1. 0	·00402	1 68·0			14. 40	44. 30 ***			9. 50:	·00280	22 63·5		
9. 27	40. 0 ***	16. 42:	·1017	2. 20	·00308	3 73·0			17. 40	30. 15			21. 15	·00833			
20. 18:	36. 15 ***	23. 40	·0978	16. 40:	·00970	9 72·5			18. 47	41. 0			23. 30	·00810			
23. 55	46. 0			23. 55	·00825	21 65·0			20. 3	33. 30							
July 17 2. 38:	22. 45. 0 ***	July 17 0. 30	·0985	July 17 0. 30	·00770	1 70·0			23. 30	43. 45							
10. 54	42. 0 * *	7. 15:	·1026	6. 15	·00560	3 70·0			July 22 2. 38:	22. 49. 30	July 22 1. 22	·0961	July 22 0. 0	·00760	11 66·0		
11. 20	36. 0 ***	8. 0	·1016	18. 45:	·00725	9 68·0			10. 30	39. 45	4. 32	·0983	5. 35	·00368	21 63·8		
20. 40	34. 15	8. 36:	·1025	23. 55	·00642	21 64·0			11. 30	30. 30	6. 0	·1023	7. 20	·00397			
23. 55	46. 0	10. 23	·1013						11. 42	35. 0	6. 33	·0986	12. 0	·00318			
		10. 56	·1038														
		11. 18	·1023														
		22. 55	·0984														
		23. 55	·0995														

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							H. F.	V. F.								H. F.	V. F.
July 22 11. 55 12. 8 12. 40 13. 48 15. 33 23. 43	22. 30. 30 34. 30 30. 0 37. 0 31. 13 45. 0	July 22 7. 40 19. 0 21. 20 23. 15	·1005 ·0992 ·0948 ·0955	July 22 22. 0 23. 15	·00815 ·00780		°	°	July 25 11. 7 12. 3 13. 2 13. 45 15. 15 19. 20: 22. 40	22. 36. 15 *** 43. 30 *** 38. 30 *** 44. 0 *** 37. 45 *** 32. 30 *** 42. 15	July 25 2. 24 3. 3 6. 3 10. 20 11. 15 11. 40 12. 3 13. 32 14. 33 23. 40:	·0980 ·1004 ·1017 ·1004 ·1021 ·1001 ·1018 ·0992 ·1006 ·0978	July 25 3. 7 11. 40: 20. 30 23. 55	·00322 ·00168 ·00657 ·00427		3 65.0 9 64.0 21 60.0	
July 23 3. 12: 9. 40 12. 56 13. 37 14. 2 16. 20 17. 54 18. 15 18. 55 21. 30 22. 40 23. 55	22. 47. 45 *** 35. 30 *** 39. 45 *** 50. 0 *** 31. 30 *** 45. 15 *** 33. 30 *** 43. 30 *** 33. 0 47. 0 41. 15 44. 30	July 23 1. 30 5. 33 5. 57 6. 15 7. 47 9. 24 13. 38 14. 1 15. 10 16. 0 19. 29 20. 45 23. 0 23. 55	·0977 ·1023 ·0995 ·1007 ·1026 ·0996 ·1031 ·0987 ·1029 ·1002 ·1003 ·0955 ·0990 ·0984	July 23 1. 30 4. 0 10. 45 13. 20 13. 50 15. 5 15. 30 18. 5 23. 55	·00685 ·00610 ·00552 ·00635 ·00550 ·00705 ·00630 ·00667 ·00395		1 64.0 3 65.0 9 65.0 21 60.0	July 26 2. 30 9. 43 16. 20 20. 28: 23. 45	22. 52. 0 *** 38. 0 *** 45. 0 *** 37. 0 47. 30	July 26 0. 30 1. 0 1. 33 9. 35 9. 50 10. 25 23. 30	·0984 ·0992 ·0982 ·1010 ·1022 ·1002 ·0980	July 26 1. 0 5. 45 14. 10 18. 22 20. 40 23. 55	·00375 ·00175 ·00290 ·00222 ·00278 ·00075		1 65.0 3 65.0 9 63.0 21 58.0		
July 24 2. 37: 9. 13 9. 29 10. 8 10. 53 12. 40 13. 8 13. 47 20. 33 23. 55	22. 48. 30 *** 39. 0 *** 31. 30 *** 40. 45 *** 36. 0 *** 39. 0 *** 47. 15 *** 38. 15 *** 33. 0 *** 46. 0	July 24 0. 40 3. 23 4. 40 5. 38 9. 10 9. 29 10. 27 23. 33	·0976 ·0986 ·1025 ·1005 ·1002 ·1016 ·0993 ·0963	July 24 0. 30 7. 37 10. 25 15. 40 15. 50 19. 0 23. 55	·00368 ·00240 ·00200 ·00385 ·00330 ·00375 ·00210		1 60.0 3 62.5 9 63.0 21 59.5	July 28 0. 0 1. 40 3. 40 10. 0 22. 40 23. 55	(+) 22. 49. 28 (+) 47. 1 (+) 38. 25 (+) 39. 17 (+)	July 28 1. 25 3. 52 4. 55: 7. 45: 22. 18	·0974 ·0996 ·0981 ·0996 ·0979	July 28 1. 0 2. 2 4. 10: 7. 40 8. 15 23. 40	·00595 ·00510 ·00555 ·00440 ·00505 ·00690		1 66.0 3 70.0 9 68.0 22 64.0		
July 25 1. 48	22. 49. 0 ***	July 25 0. 30	·0970	July 25 0. 35	·00200		1 63.0	July 29 1. 30 20. 10: 23. 45	22. 49. 0 35. 30 44. 0	July 29 0. 24 5. 26 6. 40 7. 20 8. 0 22. 45:	·0991 ·1015 ·1001 ·1007 ·0999 ·0982	July 29 0. 0 10. 30 14. 47 18. 55	·00803 ·00615 ·00817 ·00778 (+)		9 66.0 21 60.0		

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							H. F.	V. F.								H. F.	V. F.
July 30 1. 13: 9. 38 17. 40: 23. 55	22. 47. 0 37. 30 31. 15 45. 0	July 30 1. 30: 10. 30 14. 55 23. 40:	·0992 ·0997 ·1005 ·0981	July 30 1. 0 2. 30 3. 25 10. 30: 16. 10 23. 55	·00295 ·00350 ·00250 ·00105 ·00500 ·00465	1 3 9 21	65.0 69.0 68.5 62.2	0	Aug. 4 1. 30: 11. 0 23. 55	22. 49. 30 34. 30 (†)	Aug. 4 1. 0 11. 35 22. 45	·0993 ·1005 ·0981	Aug. 4 1. 0 4. 30 17. 34 23. 55	·00630 ·00230 ·00802 ·00700	1 3 9 22	60.0 65.0 67.0 58.5	0
July 31 1. 40: 6. 30 9. 35 18. 37 19. 12 21. 0 23. 3	22. 45. 45 37. 15 37. 30 (†) 40. 0 47. 15 38. 0 45. 0	July 31 0. 10 1. 38 2. 8 2. 47 3. 42 4. 34 6. 8 10. 8 10. 32 12. 25 13. 0 14. 20 15. 20 23. 7	·0986 ·0997 ·0988 ·1000 ·0981 ·1027 ·0987 ·1004 ·1024 ·0969 ·0998 ·0991 ·0957 ·0978 ·0952	July 31 0. 30 9. 31 10. 30 12. 0 12. 45 13. 45 18. 15 19. 40 23. 30	·00705 ·00310 ·00345 ·00275 ·00315 ·00227 ·00695 ·00638 ·00684	1 3 9 21	65.0 68.0 60.8 60.8		Aug. 5 2. 15: 19. 50 23. 8	22. 48. 0 34. 30 41. 30	Aug. 5 0. 30 3. 30 23. 52:	·0992 ·1007 ·0982	Aug. 5 0. 30 4. 35 7. 30 10. 15: 19. 25 23. 30	·00668 ·00250 ·00318 ·00270 ·00840 ·00820	9 21	68.0 59.5	
Aug. 1 1. 55 9. 20 13. 29 16. 8 17. 0 20. 52 23. 55	22. 51. 0 34. 30 43. 0 34. 15 36. 30 34. 0 46. 0	Aug. 1 0. 10 1. 22 2. 8 3. 8 3. 48 6. 18 7. 7 9. 37 20. 52: 23. 52	·0973 ·0997 ·0983 ·1003 ·0987 ·1007 ·0989 ·1007 ·0975 ·0977	Aug. 1 0. 30 7. 42 9. 20 13. 45 20. 10 23. 45	·00755 ·00300 ·00338 ·00335 ·00790 ·00750	1 3 9 21	64.0 65.0 66.5 60.0		Aug. 6 2. 10 20. 0 23. 55	22. 48. 45 33. 30 46. 30	Aug. 6 1. 30 11. 0 16. 0 23. 10:	·0991 ·0994 ·0992 ·0971	Aug. 6 1. 30 4. 40 7. 50 7. 53 8. 35 16. 42 23. 55	·00750 ·00345 ·00390 ·00472 ·00435 ·00925 ·00755	1 3 9 21	65.0 70.0 70.0 61.5	
Aug. 2 1. 45: 20. 40: 23. 55	22. 51. 15 36. 0 45. 0	Aug. 2 0. 36 16. 40: 23. 55	·0977 ·0998 ·0981	Aug. 2 0. 30 5. 25 10. 15 23. 55	·00735 ·00350 ·00335 ·00875	1 3 9 21	65.0 66.0 70.0 65.0		Aug. 7 2. 15 12. 0 20. 2: 23. 40	22. 51. 15 36. 0 35. 0 46. 15	Aug. 7 1. 40 12. 23 23. 20:	·0991 ·0997 ·0971	Aug. 7 1. 0 3. 50 20. 35 23. 55	·00650 ·00370 ·00987 ·00960	1 3 9 21	65.0 75.0 74.5 70.0	
Aug. 3 2. 40: 21. 2 23. 55	22. 50. 0 37. 15 46. 45	Aug. 3 0. 40 17. 2 23. 5	·0980 ·1009 ·0981	Aug. 3 1. 0 4. 0: 9. 29 12. 30 16. 0 16. 50 23. 55	·00885 ·00910 ·00805 ·00882 ·00815 ·00880 ·00740	1 3 9 21	63.0 65.0 65.0 55.0		Aug. 8 2. 16 13. 0 15. 40: 21. 15: 23. 50	22. 53. 30 *** 35. 30 41. 0 35. 0 43. 30	Aug. 8 0. 10 1. 55 2. 18 3. 30 8. 8 8. 11 9. 0 23. 25	·0975 ·0979 ·1000 ·0924 ·0990 ·1022 ·0997 ·0974	Aug. 8 0. 0 4. 54 8. 15 15. 18 23. 30	·00957 ·00498 ·00495 ·01035 ·00880	1 3 9 21	74.0 76.0 77.0 67.0	
Aug. 2 1. 45: 20. 40: 23. 55	22. 51. 15 36. 0 45. 0	Aug. 2 0. 36 16. 40: 23. 55	·0977 ·0998 ·0981	Aug. 2 0. 30 5. 25 10. 15 23. 55	·00735 ·00350 ·00335 ·00875	1 3 9 21	65.0 66.0 70.0 65.0		Aug. 8 13. 0 15. 40: 21. 15: 23. 50	22. 53. 30 *** 35. 30 41. 0 35. 0 43. 30	Aug. 8 0. 10 1. 55 2. 18 3. 30 8. 8 8. 11 9. 0 23. 25	·0975 ·0979 ·1000 ·0924 ·0990 ·1022 ·0997 ·0974	Aug. 8 0. 0 4. 54 8. 15 15. 18 23. 30	·00957 ·00498 ·00495 ·01035 ·00880	1 3 9 21	74.0 76.0 77.0 67.0	
Aug. 3 2. 40: 21. 2 23. 55	22. 50. 0 37. 15 46. 45	Aug. 3 0. 40 17. 2 23. 5	·0980 ·1009 ·0981	Aug. 3 1. 0 4. 0: 9. 29 12. 30 16. 0 16. 50 23. 55	·00885 ·00910 ·00805 ·00882 ·00815 ·00880 ·00740	1 3 9 21	63.0 65.0 65.0 55.0		Aug. 9 3. 36 7. 38 8. 8 9. 2 9. 39 10. 5 10. 46 12. 43 13. 1 13. 17 13. 50 14. 17 15. 9	22. 53. 0 40. 30 44. 30 36. 30 39. 0 36. 0 46. 45 30. 45 35. 30 30. 15 36. 30 30. 0 38. 0	Aug. 9 0. 38 3. 32 4. 25 4. 55 5. 14 5. 50 6. 30 6. 53 7. 8 7. 42 8. 55 23. 5:	·0923 ·1024 ·0996 ·1013 ·0997 ·1016 ·1000 ·1019 ·0987 ·1005 ·0979 ·0972	Aug. 9 0. 0 10. 15 10. 45 11. 30 20. 55 23. 30	·00850 ·00440 ·00365 ·00422 ·00887 ·00778	1 3 9 21	69.0 70.0 72.0 65.0	

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							H. F.	V. F.								H. F.	V. F.
Aug. 9 15. 40 20. 18 23. 40	22. 35. 0 42. 30 48. 15								Aug. 12 20. 22 23. 45	22. 34. 0 *** 43. 15							
Aug. 10 1. 24 9. 20 10. 18 12. 0 12. 20 13. 10 14. 0 18. 50 23. 55	22. 48. 15 38. 0 39. 30 39. 0 43. 20 37. 0 36. 15 33. 0 42. 30	Aug. 10 0. 25 0. 50 1. 50 3. 30 23. 8	.0971 .0982 .0963 .0986 .0965	Aug. 10 0. 0 3. 20 6. 0 8. 40 17. 38 23. 30	.00675 .00415 .00485 .00432 .01005 .00950	1 70.0 3 75.0 9 77.0 21 69.0			Aug. 13 1. 50 9. 30 10. 35 10. 48 11. 45 12. 40 14. 0 14. 57 16. 0 16. 30 17. 0 23. 50	22. 50. 30 36. 15 26. 0 32. 30 25. 0 46. 0 30. 0 43. 0 34. 0 40. 0 37. 0 44. 0	Aug. 13 1. 0 5. 20 9. 52 10. 10 10. 28 12. 0 13. 30 14. 45 15. 20 17. 15 22. 40	.0984 .0976 .1000 .1018 .1004 .0983 .1009 .0992 .1012 .0983 .1011 .0964	Aug. 13 1. 30 8. 0 12. 25 14. 35 15. 52 18. 48 23. 45	.00760 .00500 .00710 .00818 .00770 .00830 .00750	1 68.0 3 70.0 9 67.0 21 61.0		
Aug. 11 1. 40 11. 55 12. 55 15. 46 20. 18 23. 28	22. 46. 30 *** 36. 0 41. 0 35. 0 36. 30 43. 45	Aug. 11 1. 0 5. 2 6. 30 17. 0 23. 25	.0963 .0985 .0975 .0999 .0976	Aug. 11 0. 45 5. 30 7. 50 18. 30 23. 30	.00900 .00432 .00412 .01000 .00958	1 74.0 3 77.0 9 75.0 22 66.0			Aug. 14 1. 37 19. 40 23. 55	22. 48. 0 *** 34. 15 42. 0	Aug. 14 0. 0 6. 40 22. 25	.0976 .1002 .0976	Aug. 14 0. 0 9. 40 23. 0	.00740 .00212 .00830	1 63.5 3 64.5 9 66.0 21 61.0		
Aug. 12 2. 5 4. 30 8. 53 9. 10 11. 18 11. 45 14. 42 15. 5 16. 22 18. 40 18. 56 19. 35 20. 3	22. 48. 0 44. 0 36. 30 39. 30 35. 45 39. 30 40. 0 34. 15 42. 0 31. 30 37. 15 31. 30 37. 30	Aug. 12 0. 25 5. 50 8. 38 14. 43 16. 30 17. 7 23. 7	.0971 .1011 .0982 .1013 .0991 .1010 .0979	Aug. 12 0. 0 10. 5 23. 55	.00940 .00750 (†)	9 69.0 21 65.0			Aug. 15 1. 4 13. 15 23. 55	22. 45. 0 37. 0 44. 0	Aug. 15 0. 40 18. 10 22. 52	.0990 .1003 .0982	Aug. 15 1. 0 5. 45 9. 56 17. 48 23. 55	.00750 .00290 .00260 .00862 .00715	1 65.0 3 69.0 9 66.0 21 62.0		
									Aug. 16 1. 8 6. 22 7. 17 7. 37 7. 47	22. 45. 45 *** 40. 0 28. 30 39. 0 29. 0	Aug. 16 1. 0 5. 22 6. 45 7. 22 8. 40 9. 16 9. 52 10. 13	.0981 .0994 .1029 .1014 .1032 .0990 .1019 .0986 .1002	Aug. 16 0. 45 2. 37	.00672 .00572 (†)	1 64.0 3 65.0 9 64.0 21 57.0		

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							H. F.	V. F.								H. F.	V. F.
Aug. 16 8. 8	22. 35. 0 ***	Aug. 16 10. 45:	.0991	Aug. 16 18. 50	.1006		o	o	Aug. 20 3. 40	22. 48. 49*	Aug. 20 10. 3:	.0997	Aug. 20 5. 25	.00468	3 68.0		
8. 13	32. 0 ***	22. 55:	.0985						9. 40	30. 56*	23. 55	.0972	8. 30	.00568	9 70.0		
9. 38	42. 30 ***								21. 40	37. 51*			10. 30:	.00520	21 64.0		
10. 0	30. 30 ***								Aug. 21 1. 40	22. 48. 8*	Aug. 21 1. 8	.0968	Aug. 21 1. 0	.00868	1 65.0		
10. 30	39. .0 ***								3. 40	46. 49*	2. 57	.1000	6. 47	.00500	3 70.0		
20. 0	35. 0										6. 8	.0991	8. 10	.00630	9 68.0		
23. 55	46. 0										7. 13	.1005	10. 7	.00590	21 67.0		
Aug. 17 0. 32	22. 46. 20	Aug. 17 1. 0	.0991	Aug. 17 0. 0	(+)	1 63.0					7. 50	.0978	23. 0	.00930			
2. 0	46. 40 ***	5. 56	.1007	9. 30	.00450	3 65.0					8. 33	.0995					
8. 10	34. 0 ***	23. 18	.0980	15. 38	.00672	9 63.0					12. 40	.0986					
9. 28	37. 50			23. 55	.00635	21 57.5					16. 50	.1006					
10. 30	37. 5										19. 30	.0982					
11. 36	42. 0										21. 40	(+)					
12. 43	36. 0										23. 55	.0963*					
14. 30	39. 0											(+)					
19. 30	35. 30																
21. 8	43. 20																
23. 59	48. 0																
Aug. 18 2. 0	22. 50. 30	Aug. 18 1. 0	.0990	Aug. 18 0. 30	.00632	1 61.0											
10. 0	34. 0	6. 12:	.1017	4. 30	.00372	3 65.0											
23. 40	46. 30	9. 18	.0990	8. 20	.00400	9 62.5											
		9. 40	.1014	8. 30	.00468	23 57.0											
		10. 30:	.0999	16. 10	.00720												
		12. 7	.1033	23. 30	.00655												
		13. 33	.1001														
		16. 35	.1009														
		23. 30	(+) .0979														
Aug. 19 0. 0	22. 48. 40	Aug. 19 0. 30	.0982	Aug. 19 0. 0	.00648	9 66.0											
2. 2	49. 0	2. 7	.1003	3. 30	.00375	21 62.0											
2. 14	48. 0	2. 33	.0934	20. 0	.00842												
2. 38	46. 30	3. 13	.1000	23. 55	.00808												
12. 0	38. 30	23. 55	.0965														
12. 25	38. 0																
12. 36	37. 30																
22. 30	41. 0																
Aug. 20 1. 40	22. 48. 20*	Aug. 20 1. 8	.0966	Aug. 20 1. 0	.00768	1 65.0											

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (+) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded.

The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time.

For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

Aug. 20 and 21. The photographic lamp of the Declination Magnet was under alteration, to be adapted to the use of gas.

Aug. 22 and 23. The photographic lamp of the Horizontal Force Magnet was under alteration, to be adapted to the use of gas.

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Aug. 24 0. 0 1. 40 3. 40 9. 40 21. 40 23. 55	(†) 22. 39. 33 (†) 36. 21* (†) 29. 59* (†) 32. 43* (†)	Aug. 24 1. 10 15. 15 22. 52	·0981 ·1000 ·0970	Aug. 24 1. 30 3. 50 16. 55 23. 55	·00637 ·00437 ·00900 ·00840	1 3 9 21	67. 0 70. 0 68. 0 63. 0		Aug. 28 11. 55 12. 17 12. 40 13. 30 15. 10 15. 30 16. 10 17. 10 23. 35	22. 30. 0 27. 25 29. 20 26. 30 28. 55 28. 15 30. 30 28. 0 36. 0	Aug. 28 11. 55 12. 12 23. 25	·1020 ·0993 ·0978					
Aug. 25 1. 30 6. 30 12. 55 13. 10 13. 30 20. 30 22. 15 22. 25	22. 39. 30 27. 55 31. 5 32. 0 30. 57 27. 0 31. 10 32. 45	Aug. 25 1. 0 17. 50 22. 20	·0980 ·0989 ·0977	Aug. 25 1. 15 2. 55 6. 20 8. 30 10. 0 17. 18 22. 20	·00718 ·00505 ·00548 ·00655 ·00640 ·00997 ·00942	1 3 9 22	69. 0 70. 0 72. 0 66. 0		Aug. 29 0. 40 7. 40 8. 45 9. 40 11. 55 12. 15 12. 40 17. 30 20. 35 21. 0 23. 55	22. 37. 20 32. 35 27. 30 31. 30 31. 20 34. 0 32. 0 30. 15 27. 55 29. 5 36. 50	Aug. 29 0. 35 8. 50 23. 35	·0982 ·1007 ·0987	Aug. 29 0. 0 5. 30 8. 30 10. 45 21. 50 23. 15	·00680 ·00442 ·00513 ·00465 ·00907 ·00810	1 3 9 21	68. 0 70. 0 72. 5 70. 0	
Aug. 26 1. 30 7. 0 7. 25 7. 45 10. 0 10. 35 23. 59	22. 38. 5 30. 45 29. 0 30. 25 27. 20 29. 0 36. 10	Aug. 26 0. 0 3. 40 23. 55	·0978 ·0996 ·0994	Aug. 26 0. 0 4. 20 7. 0 8. 0 17. 42 23. 30	·00920 ·00528 ·00535 ·00630 ·01022 ·00895	9 21	72. 0 66. 0		Aug. 30 1. 0 12. 0 12. 25 13. 20 22. 0	22. 38. 50 32. 10 34. 0 31. 0 31. 10	Aug. 30 0. 40 9. 35 23. 30	·0986 ·1003 ·0980	Aug. 30 1. 0 10. 0 23. 45	·00730 ·00498 ·00862	1 3 9 21	73. 0 74. 0 72. 0 68. 0	
Aug. 27 0. 20 11. 40 12. 12 12. 40 13. 10 14. 50 17. 25 18. 35 19. 45 23. 30	22. 37. 20 30. 0 25. 30 28. 30 25. 30 31. 0 24. 55 28. 30 25. 0 38. 35	Aug. 27 0. 28 0. 40 0. 55 2. 24 2. 50 3. 20 3. 53 5. 10 6. 55 7. 27 8. 7 12. 30 23. 0	·0992 ·1006 ·0985 ·1013 ·0992 ·1028 ·0993 ·1014 ·0998 ·1024 ·1007 ·1025 ·0983	Aug. 27 0. 30 3. 22 6. 30 11. 35 20. 20 23. 30	·00900 ·00920 ·00850 ·00930 ·00760 ·00780	1 3 9 21	66. 0 67. 0 63. 5 62. 0		Aug. 31 0. 45 20. 10 23. 40	22. 36. 55 26. 15 37. 20	Aug. 31 1. 5 16. 30 23. 1	·0989 ·1004 ·0986	Aug. 31 1. 0 10. 20 17. 27 17. 35 18. 30 23. 55	·00840 ·00552 ·00980 ·00920 ·00962 ·00828	1 3 9 21	70. 0 70. 0 71. 0 65. 0	
Aug. 28 0. 0 9. 0 9. 29 10. 10 10. 45 10. 55 11. 10	22. 38. 45 30. 45 31. 30 23. 50 29. 50 36. 0 32. 10	Aug. 28 0. 7 0. 50 1. 30 3. 7 4. 2 10. 15 10. 42	·0981 ·1001 ·0981 ·1011 ·0987 ·1010 ·0995	Aug. 28 0. 0 4. 50 8. 20 10. 35 20. 0 23. 15	·00798 ·00388 ·00470 ·00398 ·00760 ·00682	1 3 9 21	64. 5 70. 0 70. 5 66. 0		Sep. 1 0. 0 6. 50 11. 40 12. 0 13. 40 14. 10 14. 40 19. 42 23. 23	22. 41. 30 31. 0 31. 0 27. 20 29. 0 34. 50 28. 55 27. 0 39. 40	Sep. 1 1. 15 11. 55 12. 23 13. 30 22. 52	·0990 ·1004 ·1015 ·1000 ·0978	Sep. 1 0. 30 7. 10 8. 30 11. 40 21. 20 23. 15	·00795 ·00425 ·00478 ·00440 ·00760 ·00700	1 3 9 22	67. 0 70. 0 71. 0 70. 0	
									Sep. 2 0. 0 9. 40	(†) 22. 27. 47* (†)	Sep. 2 2. 0 14. 15	·0987 ·1000	Sep. 2 0. 0 2. 45	·00680 ·00512	9 21	75. 0 69. 0	

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (†) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded. The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

INDICATIONS OF THE MAGNETOMETERS

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Sep. 2 21.40 23.55	22. 35. 36* (†)	Sep. 2 22.40	·0966	Sep. 2 5. 0: 9. 50 18. 50 22. 45	·00560 ·00478 ·00992 ·00960		°	°	Sep. 8 2. 25 4. 0 5. 5 5. 30 9. 15 9. 35 9. 48 10. 30 11. 40 13. 20 14. 30 15. 0 16. 0 20. 10 23. 20	22. 39. 0 36. 0 29. 0 30. 0 27. 45 23. 30 26. 25 28. 10 23. 55 29. 10 29. 0 38. 45 28. 55 24. 30 30. 0	Sep. 8 1. 0 15. 25: 23. 0	·0975 ·1012 ·0987	Sep. 8 1. 0 4. 55 8. 0 9. 44 17. 40 23. 15	·00710 ·00285 ·00350 ·00290 ·00825 ·00780	1 3 9 22	63.0 69.0 66.0 60.0	°
Sep. 3 0. 30 7. 0 11. 50 13. 45 14. 35 15. 50 16. 40 17. 0 17. 35 19. 25 23. 50	22. 40. 0 28. 0 32. 35 23. 35 27. 0 19. 25 30. 10 28. 0 37. 0 26. 0 42. 0	Sep. 3 0. 40 11. 55 12. 42: 14. 8 15. 37 17. 22 18. 10 20. 38 23. 30	·0975 ·1000 ·1011 ·0983 ·1007 ·0983 ·0996 ·0956 ·0973	Sep. 3 0. 30 10. 0: 17. 40 22. 18 23. 55	·00930 ·00440 ·00905 ·00915 ·00778	1 3 9 21	70.0 73.0 72.0 65.0		Sep. 9 0. 0 1. 40 9. 11 12. 10 13. 0 15. 10 21. 8 22. 30 22. 52	22. 32. 0 36. 20 29. 10 10. 0 24. 0 30. 30 23. 45 28. 50 28. 25	Sep. 9 0. 15 11. 10 11. 50 12. 26 23. 14	·0990 ·1004 ·1026 ·0997 ·0976	Sep. 9 0. 0 5. 42 7. 40 10. 25 22. 15 23. 14	·00770 ·00270 ·00325 ·00280 ·00705 ·00702	11 21	65.0 63.0	
Sep. 4 0. 38 12. 0 21. 40 23. 55	22. 43. 0 29. 10 24. 30 38. 0	Sep. 4 1. 0 10. 0 23. 30	·0961 ·1000 ·0964	Sep. 4 1. 0 4. 8 9. 45 17. 37 23. 45	·00710 ·00452 ·00427 ·00990 ·00750	1 3 9 21	70.0 73.0 71.5 65.0		Sep. 10 1. 33 2. 53 11. 10 13. 0 14. 10 14. 50 15. 52 16. 45 20. 43 23. 55	22. 35. 0 43. 0 23. 0 29. 50 28. 50 23. 8 23. 40 27. 10 23. 5 27. 30	Sep. 10 2. 10 3. 37 14. 0 23. 55	·1000 ·0980 ·1025 ·0992	Sep. 10 1. 30 7. 50 9. 0 12. 0: 20. 8 23. 28	·00680 ·00360 ·00452 ·00362 ·00928 ·00890	1 3 9 21	65.0 68.0 67.0 60.0	
Sep. 5 1. 40 9. 30 11. 55 20. 58 23. 55	22. 39. 15 29. 55 28. 0 24. 25 31. 0	Sep. 5 1. 38 5. 42 17. 24: 23. 30	·0983 ·0976 ·0999 ·0975	Sep. 5 1. 0 2. 24 4. 45 6. 50 13. 18 23. 55	·00645 ·00450 ·00485 ·00430 ·00972 ·00700	1 3 9 21	70.0 75.0 70.0 64.0		Sep. 11 0. 35 7. 0 10. 40 11. 12 13. 40 23. 12 23. 28 23. 32 23. 40	22. 32. 0 23. 40 25. 35 20. 30 27. 55 24. 45 31. 0 26. 25 30. 5	Sep. 11 1. 5 14. 37: 23. 10	·0976 ·1021 ·0992	Sep. 11 1. 12 6. 50 13. 30 23. 55	·00920 ·00490 ·00892 ·00675	1 3 9 21	62.0 65.0 62.0 55.0	
Sep. 6 8. 10 9. 0 10. 35 10. 45 11. 0 19. 55 23. 55	22. 29. 0 30. 20 28. 0 24. 25 26. 0 24. 30 31. 50	Sep. 6 2. 22 17. 20 21. 0 22. 50 23. 55	·0977 ·1008 ·0995 ·1007 ·0991	Sep. 6 1. 30 2. 22 4. 0: 6 26: 13. 20 23. 55	·00500 ·00390 ·00425 ·00392 ·00933 ·00812	1 3 9 21	69.0 75.0 69.0 57.0		Sep. 12 0. 45	22. 31. 20	Sep. 12 0. 40	·1000	Sep. 12 1. 0	·00620	1	60.0	
Sep. 7 0. 0 1. 40 3. 40 9. 40 21. 45 23. 55	(†) 22. 34. 21* (†) 36. 53* (†) 29. 1* (†) 27. 10* (†)	Sep. 7 1. 30 6. 36 11. 40 23. 45	·0996 ·0994 ·1016 ·0973	Sep. 7 1. 0 5. 6 8. 0 9. 50 16. 40 23. 55	·00780 ·00292 ·00330 ·00300 ·00822 ·00775	1 3 9 21	65.0 69.0 65.0 58.8		Sep. 12 0. 45	22. 31. 20	Sep. 12 0. 40	·1000	Sep. 12 1. 0	·00620	1	60.0	

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Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Sep. 12 2. 12	22. 38. 0	Sep. 12 1. 45	·1027	Sep. 12 10. 0	·00320	3	65. 0	°	Sep. 16 8. 15	22. 21. 50	Sep. 16 4. 3	·0968	Sep. 16 14. 45	·00348		°	°
3. 0	34. 40	2. 25	·1011	23. 55	(†)	9	58. 0		14. 0	26. 0	7. 2	·0991	23. 15	·00845			
3. 18	40. 50	14. 30	·1017			21	56. 0		14. 33	31. 0	8. 21	·0971					
5. 30	33. 30	14. 37	·1037						15. 5	23. 0	16. 52	·1005					
6. 15	24. 55	15. 54	·1007						17. 0	19. 30	***						
6. 50	29. 0	16. 25	·1036						19. 8	31. 50	22. 55	·0963					
7. 3	26. 0	17. 40	·0976						21. 0	23. 50							
8. 20	29. 25	17. 56	·1006						23. 55	29. 20							
9. 10	26. 35	18. 37	·0980						Sep. 17 1. 0	22. 31. 0	Sep. 17 1. 0	·0980	Sep. 17 1. 0	·00822	1	63. 0	
9. 25	29. 30	18. 50	·1004						9. 0	14. 15	4. 5	·0971	4. 10	·00505	3	65. 0	
15. 10	18. 30	23. 0	·0968						9. 33	18. 30	4. 47	·0999	11. 0	·00820	9	59. 0	
15. 36	23. 30								9. 45	6. 40	5. 42	·0980	23. 45	·00635	21	50. 0	
17. 10	6. 15								10. 20	21. 0	6. 20	·0995					
17. 40	22. 10. 45								13. 40	28. 30	7. 13	·0975					
18. 40	21. 55. 0								15. 40	24. 0	8. 3	·0998					
23. 55	22. 17. 15								18. 20	27. 30	10. 5	·1018					
Sep. 13 1. 20	22. 25. 0	Sep. 13 1. 10	·0983	Sep. 13 1. 0	·00385	1	60. 0		21. 0	31. 55	17. 30	·0993					
1. 40	25. 50	2. 45	·1000	3. 14	·00185	3	63. 0		23. 55	31. 25	23. 7	·1023					
1. 45	30. 45	3. 14	·0983	5. 15	·00260	21	57. 0		Sep. 18 0. 10	22. 32. 45	Sep. 18 0. 35	·0983	Sep. 18 0. 30	·00702	1	55. 0	
2. 0	26. 0	***	***	8. 40	·00240				4. 40	27. 0	4. 48	·0994	4. 52	·00285	3	60. 0	
2. 10	30. 55	4. 37	·0989	21. 30	·00622				5. 0	19. 30	5. 7	·1029	7. 40	·00330	9	58. 0	
2. 35	22. 0	5. 10	·1015	23. 45	·00528				5. 45	27. 15	5. 55	·0993	10. 30	·00210	21	55. 0	
2. 55	24. 20	5. 40	·0985						8. 5	22. 0	8. 20	·0989	23. 30	·00800			
4. 38	27. 55	13. 30	·0994						8. 27	11. 15	8. 38	·1007					
4. 58	23. 0	13. 54	·1015						8. 45	17. 30	9. 10	·0990					
8. 0	26. 30	17. 0	·0980						13. 10	21. 5	12. 58	·1007					
9. 40	27. 40	17. 57	·0998						13. 38	30. 35	15. 37	·0994					
10. 24	21. 50	18. 40	·0976						14. 20	21. 10	16. 15	·1023					
14. 10	29. 20	20. 30	·0984						14. 35	22. 0	21. 45	·0952					
20. 15	16. 50	22. 10	·0968						14. 55	29. 50	23. 55	·0971					
23. 50	33. 0	23. 40	·0980						16. 0	31. 50							
Sep. 14 0. 0	22. 34. 0	Sep. 14 0. 0	·0984	Sep. 14 0. 0	·00508	1	60. 0		16. 40	24. 0							
1. 26	36. 50	11. 10	·0998	3. 53	·00170	3	63. 0		19. 25	31. 45							
7. 25	22. 0	22. 0	·0971	7. 40	·00247	9	63. 0		20. 25	26. 45							
11. 10	29. 0			10. 0	·00197	21	59. 0		22. 42	37. 55							
20. 45	14. 10			23. 0	·00715				23. 55	34. 0							
23. 35	32. 30								Sep. 19 0. 5	22. 34. 30	Sep. 19 0. 5	·0978	Sep. 19 0. 30	·00755	1	60. 0	
Sep. 15 0. 30	22. 31. 55	Sep. 15 0. 30	·0983	Sep. 15 0. 30	·00695	1	65. 0		10. 0	15. 30	9. 23	·0981	3. 22	·00380	3	65. 0	
20. 30	26. 0	16. 25	·1003	9. 40	·00280	3	65. 0		10. 30	22. 10	9. 40	·1010	7. 30	·00440	9	65. 0	
21. 0	14. 5	23. 5	·0973	18. 37	·00792	9	61. 0		11. 8	15. 55	10. 30	·0990	10. 25	·00375	21	58. 0	
21. 40	14. 30			23. 15	·00650	22	59. 0		15. 30	28. 55	11. 10	·1015	19. 0	·00882			
23. 25	34. 0								16. 25	26. 0	11. 47	·0991	23. 30	·00870			
Sep. 16 0. 10	22. 37. 15	Sep. 16 0. 0	·0977	Sep. 16 0. 0	·00625	11	65. 0		17. 15	35. 0	17. 40	·1013					
7. 30	22. 0	1. 40	·0974	3. 22	·00292	21	61. 0		21. 0	22. 55	23. 5	·0979					
8. 0	18. 0	1. 45	·1003	7. 45	·00445				23. 55	29. 20							

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Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Sep. 20 0. 30 7. 55 16. 5 16. 40 17. 35 21. 0 21. 55 23. 55	22. 33. 0 19. 25 26. 25 32. 25 26. 45 30. 20 26. 50 33. 0	Sep. 20 0. 38 18. 22 21. 3 22. 0 23. 22	·0993 ·1019 ·0985 ·1000 ·0989	Sep. 20 0. 30 9. 34 18. 25 20. 50 23. 45	·00857 ·00418 ·00887 ·00847 ·00875	1 60·0 3 64·0 9 60·0 21 57·5			Sep. 24 21. 45 22. 25 23. 50	22. 12. 0 30. 30 38. 0	Sep. 24 12. 35 15. 8 17. 36 18. 52 23. 53	·1002 ·0985 ·1017 ·0990 ·0981					
Sep. 21 0. 30 2. 20 6. 40 7. 5 7. 35 10. 30 11. 25 18. 25 20. 45 23. 55	22. 34. 20 38. 50 27. 0 18. 55 26. 0 27. 0 22. 5 27. 25 20. 0 34. 25	Sep. 21 0. 30 2. 5 2. 24 4. 12 4. 22 4. 55 5. 33 7. 10 7. 47 23. 25	·0989 ·0999 ·1018 ·1002 ·0972 ·1011 ·1001 ·1023 ·1004 ·0989	Sep. 21 0. 30 5. 55 7. 15 9. 0 21. 10 23. 30	·00795 ·00330 ·00420 ·00350 ·00870 ·00800	1 60·0 3 65·0 9 60·0 21 60·0			Sep. 25 0. 30 5. 25 6. 30 13. 38 16. 20 19. 12 22. 5 22. 50	22. 36. 50 25. 30 29. 0 *** 27. 15 27. 35 17. 10 3. 40 3. 30	Sep. 25 1. 0 3. 25 4. 10 5. 8 5. 40 7. 40 8. 5 8. 50 19. 0 21. 38 23. 0	·0983 ·0980 ·0991 ·0967 ·0991 ·0990 ·1011 ·0990 ·1012 ·0997 ·1000	Sep. 25 0. 30 3. 0 4. 30 8. 45 14. 42 17. 30 19. 37 22. 55	·00690 ·00390 ·00465 ·00385 ·00930 ·00882 ·00920 ·00800	1 60·0 3 65·0 9 61·0 21 56·0		
Sep. 22 0. 38 10. 45 11. 10 18. 30 21. 30 22. 55	22. 34. 20 24. 0 26. 25 26. 35 20. 10 23. 55	Sep. 22 0. 45 9. 11 23. 0	·0995 ·1013 ·0990	Sep. 22 1. 0 4. 0 6. 25 7. 30 19. 45 23. 0	·00702 ·00380 ·00355 ·00407 ·00995 ·00867	1 65·0 3 65·0 9 63·0 22 60·0			Sep. 26 0. 0 0. 40 5. 23 19. 52 21. 42 21. 59 23. 0	22. 20. 0 30. 0 (†) 30. 30 14. 0 14. 45 16. 25 33. 15	Sep. 26 0. 13 18. 10 23. 8	·0991 ·1009 ·0974	Sep. 26 0. 0 2. 55 4. 33 6. 30 7. 40 11. 0 22. 15 23. 55	·00730 ·00366 ·00425 ·00398 ·00475 ·00428 ·00805 ·00767	9 63·5 21 63·0		
Sep. 23 0. 0 22. 0 23. 55	22. 32. 5 7. 25 34. 30	Sep. 23 0. 20 1. 47 2. 3 2. 28 4. 10 4. 35 4. 50 5. 28 7. 0 23. 30	·0988 ·0993 ·1014 ·1001 ·1024 ·1013 ·1027 ·1001 ·1014 ·0980	Sep. 23 0. 0 12. 0 22. 30 23. 55	·00845 ·00538 ·00805 ·00712	8 62·5 21 60·5			Sep. 27 0. 30 8. 40 9. 20 9. 50 11. 38 12. 0 13. 0 14. 20 19. 40 21. 0 21. 25 21. 50 23. 0	22. 32. 50 27. 30 8. 0 20. 0 24. 30 32. 15 15. 55 28. 0 13. 50 18. 25 24. 30 13. 50 31. 25	Sep. 27 1. 10 5. 37 6. 9 6. 52 9. 7 11. 12 11. 35 12. 6 12. 47 13. 14 23. 52	·0981 ·0993 ·1022 ·1001 ·0979 ·1001 ·0992 ·1019 ·0982 ·0999 ·0966	Sep. 27 1. 30 3. 5 6. 5 9. 38 12. 15 21. 30 23. 55	·00615 ·00427 ·00410 ·00500 ·00450 ·01035 ·00995	1 65·0 3 69·0 9 65·0 21 62·0		
Sep. 24 0. 50 6. 5 6. 45 7. 5 8. 0 11. 8 11. 45 12. 25 20. 22 20. 29	22. 37. 30 28. 30 32. 0 4. 20 28. 50 25. 25 43. 0 20. 30 15. 0 23. 45	Sep. 24 1. 13 4. 43 5. 40 6. 0 7. 0 7. 12 7. 38 10. 40 11. 20 12. 7	·0979 ·0998 ·0982 ·1005 ·0983 ·1023 ·0988 ·0996 ·1056 ·0963	Sep. 24 1. 0 3. 50 7. 15 9. 0 11. 10 11. 47 15. 7 17. 32 19. 45 22. 55	·00635 ·00412 ·00505 ·00442 ·00615 ·00572 ·00913 ·00812 ·00870 ·00730	1 63·0 3 65·0 9 61·5 21 54·0			Sep. 28 1. 0 9. 50 11. 5 12. 30 17. 50 21. 0	22. 33. 30 *** 15. 30 26. 0 21. 40 31. 0 21. 40	Sep. 28 1. 0 2. 45 3. 5 10. 5 10. 50 11. 27 12. 15	·0974 ·0985 ·0965 ·0986 ·0983 ·1019 ·0982	Sep. 28 1. 30 5. 0 7. 0 11. 30 23. 55	·00895 ·00550 ·00690 ·00600 ·00930	1 65·0 3 69·0 9 67·0 21 63·5		

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Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Sep. 28 21. 38 22. 10 23. 45	22. 28. 50 26. 0 *** 35. 0	Sep. 28 13. 50: 14. 45 18. 0: 23. 25	·1000 ·0985 ·1007 ·0968	h m			o	o	h m	o / "	Oct. 3 11. 10 18. 10 23. 0	·1002 ·1008 ·0984	Oct. 3 12. 0 23. 30	·01180 ·01435	21	59. 0	62. 0
Sep. 29 0. 0 8. 25 13. 40 15. 20 16. 5 16. 33 17. 10 23. 30:	22. 34. 10 26. 0 32. 55 22. 0 34. 20 26. 30 31. 0 34. 30	Sep. 29 0. 7 12. 30 13. 0 13. 35 13. 55 15. 55 16. 20 17. 5 23. 15:	·0972 ·0989 ·1019 ·1007 ·1021 ·0999 ·1018 ·0994 ·0971	Sep. 29 0. 30 8. 45 19. 45 20. 40 23. 30	·00932 ·00595 ·00905 ·00878 ·00985	1 65. 0 3 67. 0 9 66. 0 22 65. 0			Oct. 4 3. 10 19. 42 21. 20 21. 50 22. 30 23. 55	22. 30. 0 15. 30 26. 10 15. 0 33. 0 36. 10	Oct. 4 1. 0 18. 0: 23. 7:	·0990 ·1019 ·0990	Oct. 4 1. 0 4. 40: 12. 20 21. 15 23. 40	·01430 ·01182 ·01452 ·01248 ·01300	1 60. 0 3 61. 0 9 59. 0 21 50. 5	62. 0 63. 5 60. 5 54. 5	
Sep. 30 0. 0 18. 0: 21. 10 23. 41	22. 37. 0 24. 45 23. 0 30. 0	Sep. 30 0. 30 5. 25 6. 47 11. 38 21. 55 23. 41	·0974 ·0999 ·0924 ·1012 ·0983 (†) ·0982	Sep. 30 0. 0 7. 5 13. 30 19. 30 22. 30	·01000 ·01180 ·01062 ·01200 ·01100	8 63. 0 21 63. 0			Oct. 5 0. 35 *** 3. 55 (†) 10. 45 11. 35 17. 0 23. 55	22. 35. 30 7. 10: 36. 0 (†) 27. 0 25. 0 *** 31. 0 *** 34. 10	Oct. 5 0. 37 7. 10: 23. 50	·0993 ·1026 ·0998	Oct. 5 0. 30 10. 0: 20. 40 23. 0	·01270 ·01000 ·01340 ·01300	1 54. 5 3 56. 5 9 57. 5 21 53. 5	57. 0 58. 5 61. 5 57. 5	
Oct. 1 2. 0 10. 40 11. 40 12. 5 12. 30 22. 0 22. 55 23. 55	22. 34. 50 21. 10 22. 50 25. 50 20. 0 10. 5 12. 35 13. 0	Oct. 1 1. 5 11. 43 23. 28	·0978 ·1006 ·0989	Oct. 1 2. 30 5. 0 12. 12 19. 50: 23. 55	·01525 ·01635 ·01452 ·01480 ·01428	1 61. 0 3 65. 0 9 60. 0 21 58. 0	59. 5		Oct. 6 1. 25 7. 8 12. 30 13. 25 17. 0 20. 10 23. 25	22. 38. 30 28. 0 28. 55 22. 0 32. 0 25. 0 31. 25	Oct. 6 0. 50 12. 35 22. 53	·1001 ·1030 ·0993	Oct. 6 1. 0 12. 40 19. 55 23. 25	·01338 ·00960 ·01116 ·01037	1 54. 8 3 57. 0 9 58. 0 22 55. 0	56. 0 59. 0 60. 0 56. 5	
Oct. 2 1. 20 5. 10 5. 35 5. 55 7. 45 11. 35 12. 22 14. 5 21. 53 22. 2 22. 50	22. 27. 5 23. 0 16. 25 19. 50 21. 30 18. 55 20. 20 13. 45 6. 15 2. 0 2. 25	Oct. 2 0. 30 5. 20 5. 50 6. 55 8. 5 8. 50 11. 10 12. 0 12. 30 18. 15 23. 0	·0996 ·0992 ·1014 ·0990 ·1003 ·0996 ·1005 ·1030 ·1007 ·1017 ·0989	Oct. 2 0. 30 5. 30 5. 50 8. 30: 20. 0 23. 30	·01300 ·01190 ·01215 ·01172 ·01350 ·01308	1 58. 5 3 60. 0 9 58. 5 21 54. 0	60. 0 61. 0 60. 0 55. 0		Oct. 7 0. 20 2. 12 11. 31 12. 20 13. 38 15. 18 16. 10 17. 5 18. 0 21. 0 23. 55	22. 35. 0 40. 50 29. 35 23. 30 28. 0 29. 20 22. 20 31. 50 26. 0 27. 0 33. 10	Oct. 7 0. 36 7. 18 11. 40 15. 45 22. 15	·0989 ·1013 ·0997 ·1013 ·0983	Oct. 7 0. 0 1. 38 11. 17 16. 10: 23. 0	·01062 ·01005 ·01150 ·01138 ·01385	10 60. 0 21 56. 0	62. 0 57. 7	
Oct. 3 (†)		Oct. 3 1. 0 9. 28 10. 12	·0996 ·1004 ·1022	Oct. 3 0. 30 2. 35 7. 0:	·01135 ·01038 ·01235	1 55. 0 3 59. 0 9 60. 0	56. 5 60. 0 62. 5		Oct. 8 0. 30 21. 8 23. 40	22. 38. 0 *** 27. 55 *** 34. 40	Oct. 8 1. 6 15. 40: 23. 40:	·0988 ·1017 ·1000	Oct. 8 0. 45 2. 30 8. 25: 12. 10 23. 40:	·01485 ·01500 ·01283 ·01515 ·01306	1 59. 0 3 60. 0 9 58. 0 21 49. 0	62. 5 62. 5 62. 5 52. 5	

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							H. F.	V. F.								H. F.	V. F.
Oct. 9 0.30 8.5 21.15 23.55	22.36.35 27.55 28.25 36.10	Oct. 9 0.30 19.50 23.20	.1004 .1029 .1001	Oct. 9 1.0 6.30 11.0 17.50 22.40	.01320 .00968 .00922 .01342 .01295	1 51.8 3 53.0 9 54.0 21 46.5	54.0 55.0 56.0 52.0		Oct. 13 21.0 23.8	22.27.0 35.35	Oct. 13 23.10	.0991					
Oct. 10 0.45 5.8 6.0 6.50 9.15 9.40 10.15 10.33 11.15 14.20 15.40 20.43 23.55	22.35.10 33.55 26.40 33.5 24.0 16.0 27.55 15.55 28.10 26.55 30.20 26.0 36.55	Oct. 10 0.28 2.53 5.17 7.43 8.50 9.15 10.3 10.15 10.25 10.45 11.25 13.0 23.40	.1000 .1014 .0988 .1025 .1003 .1015 .1003 .1015 .1007 .1037 .1000 .1027 .1011	Oct. 10 1.0 2.37 6.20 10.30 15.50 23.50	.01056 .00950 .01098 .00950 .01415 .01380	1 50.0 3 56.0 9 55.5 21 50.0	54.0 58.4 57.0 51.0		Oct. 13 21.0 23.8	22.27.0 35.35	Oct. 13 23.10	.0991					
Oct. 11 1.0 4.15 4.33 4.54 7.10 7.27 7.45 7.57 8.5 8.27 8.42 9.8 9.40 11.7 23.50	22.40.5 34.45 29.30 33.0 32.15 29.15 32.30 28.45 32.30 26.0 32.0 26.15 29.30 27.0 34.0	Oct. 11 1.0 3.10 4.42 5.10 6.55 7.50 8.3 8.14 8.33 8.50 11.0 11.35 12.0 18.50 23.20	.1016 .0994 .1013 .0997 .1010 .0995 .1006 .0986 .1003 .0989 .0997 .1015 .1000 .1011 .0992	Oct. 11 1.0 2.57 6.40 10.50 18.50 23.45	.01305 .01008 .01105 .01035 .01500 .01484	1 53.0 3 57.0 9 57.0 21 51.5	55.8 59.0 59.3 53.5		Oct. 13 21.0 23.8	22.27.0 35.35	Oct. 13 23.10	.0991					
Oct. 12 0.32 21.3 23.52	22.35.55 *** 28.0 35.55	Oct. 12 0.32 16.50 23.25	.0995 .1018 .1000	Oct. 12 0.40 4.40 7.0 9.50 17.40 23.30	.01472 .01065 .01078 .01030 .01500 .01450	1 56.0 3 58.0 9 55.0 21 49.5	57.7 59.5 57.4 54.0		Oct. 13 21.0 23.8	22.27.0 35.35	Oct. 13 23.10	.0991					
Oct. 13 0.40 14.0 15.0 16.35 18.30	22.38.10 30.5 18.0 30.20 33.0	Oct. 13 0.40 13.7 14.20 15.32 19.5	.1008 .1018 .1037 .1004 .1021	Oct. 13 1.0 10.2 21.25 23.30	.01475 .00955 .01425 .01393	1 54.0 3 55.0 9 53.0 22 48.0	56.6 57.0 57.5 51.0		Oct. 13 21.0 23.8	22.27.0 35.35	Oct. 13 23.10	.0991					
Oct. 14 0.0 5.17 5.55 6.43 7.20 8.35 9.0 9.20 9.53 12.8 14.30 15.33 16.22 16.45 17.22 18.45 19.45 20.8 21.45 23.40	22.36.0 39.0 23.40 22.31.0 21.55.40 22.27.10 20.0 24.25 22.45 34.0 30.50 38.30 27.15 32.30 37.45 36.15 29.15 35.15 28.30 39.30	Oct. 14 0.0 1.23 2.50 3.15 3.38 4.32 5.54 6.25 6.50 7.30 8.50 10.3 16.30 17.38 20.57 23.15	.1000 .1020 .0999 .1006 .0990 .1018 .0990 .1003 .0992 .1065 .0983 .1022 .0998 .1020 .0978 *** .0980	Oct. 14 0.0 2.37 6.20 10.30 15.50 23.50	.01056 .00950 .01098 .00950 .01415 .01380	1 50.0 3 56.0 9 55.5 21 50.0	54.0 58.4 57.0 51.0		Oct. 14 0.0 1.23 2.50 3.15 3.38 4.32 5.54 6.25 6.50 7.30 8.50 10.3 16.30 17.38 20.57 23.15	22.36.0 39.0 23.40 22.31.0 21.55.40 22.27.10 20.0 24.25 22.45 34.0 30.50 38.30 27.15 32.30 37.45 36.15 29.15 35.15 28.30 39.30	Oct. 14 0.0 1.23 2.50 3.15 3.38 4.32 5.54 6.25 6.50 7.30 8.50 10.3 16.30 17.38 20.57 23.15	.1000 .1020 .0999 .1006 .0990 .1018 .0990 .1003 .0992 .1065 .0983 .1022 .0998 .1020 .0978 *** .0980					
Oct. 15 1.0 9.0 10.40 12.30 15.0 22.0 23.55	22.37.5 27.40 35.10 27.30 33.5 29.0 36.55	Oct. 15 1.0 10.10 10.32 11.6 23.30	.0992 .1007 .1032 .1007 .0998	Oct. 15 1.0 10.10 18.50 23.45	.01458 .01028 .00940 .01458 .01382	1 49.0 3 56.0 9 55.0 21 46.0	54.5 57.0 57.5 53.0		Oct. 15 1.0 10.10 10.32 11.6 23.30	22.37.5 27.40 35.10 27.30 33.5 29.0 36.55	Oct. 15 1.0 10.10 10.32 11.6 23.30	.0992 .1007 .1032 .1007 .0998					
Oct. 16 0.30 5.0 5.45 6.40 8.30 23.30	22.36.5 32.5 17.15 30.50 27.5 36.0	Oct. 16 0.30 4.10 6.0 11.0 23.30	.0997 .1003 .0991 .1006 .0937 .1012 .1013 .0991	Oct. 16 0.30 4.40 7.0 9.50 17.40 23.30	.01423 .01070 .01140 .01035 .01255	1 51.0 3 58.0 9 57.0 21 54.0	55.5 57.0 60.0 57.5		Oct. 16 0.30 4.10 6.0 11.0 23.30	22.36.5 32.5 17.15 30.50 27.5 36.0	Oct. 16 0.30 4.10 6.0 11.0 23.30	.0997 .1003 .0991 .1006 .0937 .1012 .1013 .0991					
Oct. 17 0.30 8.10 9.0 10.53 13.0 13.40 14.18	22.37.0 26.55 30.0 23.30 28.30 33.0 29.20	Oct. 17 0.30 1.25 6.40 10.5 23.0	.0992 .0994 .1034 .0988 .1008 .0972 .0984	Oct. 17 0.30 1.25 6.40 10.5 23.0	.01205 .01118 .01235 .01178 .01645	1 59.5 3 63.0 9 63.0 21 59.5	63.0 65.5 67.0 63.0		Oct. 17 0.30 1.25 6.40 10.5 23.0	22.37.0 26.55 30.0 23.30 28.30 33.0 29.20	Oct. 17 0.30 1.25 6.40 10.5 23.0	.0992 .0994 .1034 .0988 .1008 .0972 .0984					

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							H. F.	V. F.								H. F.	V. F.
Oct. 17 19. 0 20. 10 23. 55	22. 28. 30 26. 50 33. 30								Oct. 21 20. 30 21. 42 22. 20 23. 55	22. 31. 0 40. 55 33. 20 39. 0							
Oct. 18 1. 0 7. 35 8. 43 9. 20 11. 30 11. 47 12. 40 18. 0 21. 0 23. 55	22. 38. 35 28. 0 14. 10 24. 0 24. 20 33. 0 22. 10 33. 50 25. 0 34. 0	Oct. 18 1. 10 2. 48 5. 55 7. 50 8. 42 9. 25 9. 37 11. 10 20. 10 23. 50:	·0985 ·0975 ·0993 ·0977 ·1009 ·0989 ·1003 ·0984 ·1009 ·0980	Oct. 18 0. 30 4. 0 6. 0 6. 15 9. 45 14. 10 23. 30	·01630 ·01290 ·01280 ·01352 ·01310 ·01712 ·01660	1 60·0 3 67·0 9 65·0 21 58·0	66·0 69·0 68·0 61·0	Oct. 22 1. 30 2. 35 3. 5 3. 56 4. 8 4. 20 4. 38 5. 37 7. 0 7. 18 7. 46 8. 0 8. 15 8. 42 9. 0 9. 38 9. 42 10. 0 10. 10 10. 20 10. 30 10. 48 14. 0 20. 6 23. 55	22. 46. 0 42. 0 53. 10 28. 20 31. 50 28. 0 40. 50 45. 10 23. 55 18. 0 29. 10 23. 0 32. 55 26. 50 32. 40 9. 35 37. 35 16. 10 25. 10 15. 30 32. 0 23. 20 33. 0 27. 10 35. 30	Oct. 22 1. 45 2. 25 2. 40 3. 2 3. 30 4. 3 4. 18 4. 37 6. 10 6. 50 6. 55 7. 6 7. 12 7. 35 7. 55 9. 3 9. 40 9. 42 10. 2 10. 14 10. 23 10. 36 11. 0 23. 30	·0981 ·0993 ·0981 ·1011 ·0975 ·1014 ·0998 ·1010 ·0972 ·0997 ·0971 ·0990 ·0975 ·1015 ·0977 ·0944 ·1017 ·0954 ·0987 ·0954 ·0980 ·0954 ·0977 ·0965	Oct. 22 3. 0 6. 50 8. 8 8. 32 8. 55 9. 33 10. 35 23. 55	·01240 ·01312 ·01180 ·01253 ·01205 ·01400 ·01140 ·01210	1 56·0 3 60·0 9 60·0 21 59·0	58·8 61·7 62·0 61·7		
Oct. 19 1. 0 6. 55 7. 47 8. 40 12. 12 12. 35 13. 0 21. 30 23. 55	22. 37. 0 30. 0 19. 30 23. 30 27. 45 30. 30 25. 30 26. 55 36. 20	Oct. 19 1. 0 6. 28 8. 20 12. 20 12. 45 14. 13 18. 20: 23. 55:	·0986 ·1006 ·0978 ·0993 ·1012 ·0993 ·1004 ·0981	Oct. 19 1. 0 4. 18 7. 12 10. 30 19. 45: 23. 55:	·01625 ·01250 ·01320 ·01225 ·01735 ·01725	1 62·0 3 65·0 9 65·5 21 62·5	65·0 67·7 69·2 64·0	Oct. 23 1. 0 8. 30 9. 20 10. 0 13. 10: 14. 40: 18. 52: 21. 5 23. 55	22. 37. 10 26. 0 15. 30 *** 28. 0 *** 33. 0 28. 0 *** 36. 0 26. 0 33. 0	Oct. 23 1. 25 9. 0 9. 31 10. 38 12. 55 17. 17 18. 52: 23. 12	·0967 ·0985 ·1026 ·0982 ·1001 ·0987 ·1004 ·0959	Oct. 23 1. 0 2. 18 7. 15 10. 10 20. 55 23. 0	·01192 ·01152 ·01240 ·01145 ·01492 ·01470	1 62·0 3 65·0 9 64·0 21 58·5	63·5 65·8 65·0 63·0		
Oct. 20 1. 0 7. 20 7. 32 8. 10 9. 40 13. 42 14. 35 15. 50 19. 10 21. 25 23. 30	22. 36. 35 29. 55 23. 10 23. 0 29. 40 27. 0 30. 20 26. 5 28. 5 27. 0 36. 20	Oct. 20 1. 10 3. 45 4. 53 6. 30 6. 55 7. 55 9. 10 15. 33 23. 30	·0988 ·0998 ·0980 ·1000 ·0985 ·1000 ·0988 ·1004 ·0989	Oct. 20 1. 0 5. 30 9. 18 17. 42 20. 54 23. 30	·01665 ·01285 ·01262 ·01750 ·01750 ·01690	1 66·0 3 66·0 9 65·0 23 60·0	67·0 66·0 67·7 64·0	Oct. 24 0. 42 1. 50 7. 0 7. 50 8. 10	22. 35. 30 40. 0 30. 0 24. 25 27. 50	Oct. 24 0. 45 1. 50 2. 40 3. 10 10. 30	·0969 ·0977 ·0964 ·0982 ·0985	Oct. 24 0. 45 4. 40 10. 0 16. 15 23. 30	·01510 ·01278 ·01190 ·01490 ·01490	1 61·0 3 64·0 9 63·0 21 59·5	63·4 66·0 66·0 62·5		
Oct. 21 0. 0 1. 30 13. 0: 14. 20: 15. 38: 17. 0:	22. 37. 0 40. 30 *** 26. 30 *** 20. 0 *** 26. 30 ***	Oct. 21 0. 30 13. 45: 15. 7 17. 40: 21. 23 22. 30 23. 40	·0986 ·1019 ·1000 ·1021 ·0968 ·1000 ·0985	Oct. 21 0. 0 2. 25 9. 48 23. 30	·01695 ·01720 ·01715 ·01540	9 59·0 21 54·0	63·5 56·5	Oct. 24 0. 42 1. 50 7. 0 7. 50 8. 10	22. 35. 30 40. 0 30. 0 24. 25 27. 50	Oct. 24 0. 45 1. 50 2. 40 3. 10 10. 30	·0969 ·0977 ·0964 ·0982 ·0985	Oct. 24 0. 45 4. 40 10. 0 16. 15 23. 30	·01510 ·01278 ·01190 ·01490 ·01490	1 61·0 3 64·0 9 63·0 21 59·5	63·4 66·0 66·0 62·5		

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							H. F.	V. F.								H. F.	V. F.
Oct. 24 8. 32 9. 38 10. 25 11. 30: 13. 40 14. 22: 15. 0 17. 18 23. 55	22. 24. 40 30. 0 28. 0 *** 33. 40 *** 25. 0 *** 28. 0 *** 34. 0 29. 0 36. 0	Oct. 24 11. 38 14. 17 17. 25: 21. 25 23. 37	.1011 .0985 .1006 .0970 .0976				°	°	Oct. 27 10. 12 16. 30 16. 45 17. 10 17. 37 18. 10 22. 10 23. 25	22. 26. 15 30. 30 34. 15 32. 30 35. 0 30. 0 (+) 30. 0 32. 25	Oct. 27 4. 30 7. 10 7. 30 8. 30 13. 0 16. 10 23. 20	.0992 .0992 .1019 .0988 .0998 (+) .1000 .0978	Oct. 27 16. 0 23. 30	.01120 .01200	22	60.0 63.0	
Oct. 25 1. 0 3. 0 3. 40 4. 0 6. 40: 7. 30 8. 35 10. 5 11. 8: 17. 55 19. 30 20. 30 23. 55	22. 36. 35 39. 50 31. 0 33. 40 29. 50 30. 30 24. 12 31. 0 *** 26. 15 *** 32. 10 33. 0 30. 50 37. 0	Oct. 25 1. 0 3. 15 3. 52 8. 20 8. 37 9. 0 9. 58 10. 20 16. 36 23. 35	.0981 .0966 .0986 .0991 .1007 .0985 .1009 .0990 .1006 .0977	Oct. 25 1. 0 6. 0 10. 15 23. 55	.01500 .01230 .01152 .01480	1 3 9 21	61.0 64.0 63.0 61.0	62.4 65.5 67.0 64.0	Oct. 28 0. 0 1. 50 12. 0 12. 32 13. 30 14. 30 15. 10 20. 48: 22. 58	22. 34. 0 38. 10 30. 55 27. 0 31. 20 29. 5 31. 30 27. 55 31. 55	Oct. 28 0. 10 1. 40 9. 20: 23. 1	.0978 .0967 .0997 .0977	Oct. 28 0. 0 3. 15 16. 50 23. 16	.01212 .01152 .01545 .01490	10 21	59.0 57.0 62.0 61.0	
Oct. 26 1. 0 4. 55 6. 30 8. 0 8. 20 9. 10 9. 39 13. 40 17. 50 21. 0 23. 55	22. 38. 0 28. 55 31. 10 30. 0 25. 50 *** 30. 25 *** 22. 30 *** 32. 0 *** 34. 50 28. 45 35. 55	Oct. 26 1. 33 4. 20 4. 50 5. 15 8. 35 9. 26 23. 55	.0973 .0990 .0979 .0995 .1011 .1000 .0974	Oct. 26 1. 0 8. 15 12. 20 23. 55	.01500 .01325 .01512 .01455	1 3 9 21	62.0 64.0 59.5 56.0	64.8 66.0 64.0 61.0	Oct. 29 1. 0 8. 2 8. 45 9. 27 12. 0 13. 0 13. 45: 15. 0: 17. 0: 21. 52 23. 30	22. 37. 0 32. 5 22. 30 27. 30 25. 30 33. 30 27. 30 *** 26. 0 *** 34. 0 *** 28. 0 36. 55	Oct. 29 1. 0 7. 35 8. 30 9. 27 17. 40 23. 30	.0984 .1005 .0978 .0993 .1021 .0991	Oct. 29 1. 0 6. 8 10. 15 15. 48 23. 30	.01506 .01135 .01110 .01455 .01380	1 3 9 21	61.0 60.0 60.0 53.0 63.0 62.5 63.3 57.0	
Oct. 27 1. 0 6. 37	22. 37. 30 30. 30 (+)	Oct. 27 0. 0 1. 40	(+) .0988*	Oct. 27 3. 30 5. 57 7. 30	.01330 .01138 .01175	1 3 9	57.7 60.0 63.0 66.0	60.0 63.0 66.0	Oct. 30 1. 0 7. 42 8. 20 9. 5 9. 50 11. 5 11. 30 11. 45 12. 10 12. 25 12. 53 13. 0 13. 5	22. 35. 0 26. 50 33. 0 21. 41 27. 0 30. 10 19. 45 22. 0 16. 0 16. 0 27. 0 23. 0 26. 10	Oct. 30 1. 0 7. 32 8. 40 8. 42 9. 10 9. 38 15. 12 17. 4 17. 40 18. 0 19. 33 23. 50:	.1006 .1002 .1038 .0956 .1029 .0995 *** .1023 .0964 .0996 .0965 .0999 .0977	Oct. 30 1. 0 4. 7 8. 40 9. 10 11. 8 14. 30 15. 20 23. 55	.01390 .01080 .00990 .01070 .00995 .01135 .01020 .01427	1 3 9 21	57.0 62.0 59.0 54.0 59.0 62.0 62.0 58.0	

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (+) denotes that the register has failed between the preceding and following readings.

The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded.

The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Oct. 30 1. 45 14. 40 15. 43 15. 55 16. 25 17. 20 17. 34 18. 38 21. 0 23. 55	22. 22. 40 32. 55 12. 55 14. 0 6. 25 26. 15 18. 0 36. 50 28. 50 35. 20								Nov. 4 23. 30:	22. 36. 0			Nov. 4 23. 30	·01337			
Oct. 31 1. 0 9. 0 14. 30 21. 5 23. 55	22. 35. 30 28. 20 *** 30. 50 28. 10 34. 35	Oct. 31 1. 0 16. 40 23. 38:	·0981 ·1015 ·0993	Oct. 31 1. 0 2. 40 8. 30: 14. 50 23. 55	·01450 ·01465 ·01090 ·01418 ·01370		1 56·0 3 57·0 9 55·0 21 52·0	58·0 58·0 58·5 56·0	Nov. 5 1. 0 7. 55 12. 0: 14. 54: 22. 0 23. 42	22. 35. 5 26. 50 28. 15 31. 50 28. 55 34. 40	Nov. 5 1. 0 18. 3: 23. 30	·1006 ·1023 ·1009	Nov. 5 1. 0 5. 10 6. 0 9. 45: 16. 5 23. 0	·01372 ·00986 ·01002 ·00935 ·01355 ·01295	1 55·0 3 59·0 9 55·0 21 48·0	57·4 60·7 58·0 52·0	
Nov. 1 1. 0 11. 20 12. 15 20. 0 21. 25 21. 53 23. 52	22. 35. 45 28. 0 32. 30 26. 0 30. 10 28. 40 35. 0	Nov. 1 0. 58 18. 15: 23. 55	·0997 ·1017 ·0998	Nov. 1 0. 30 6. 42 10. 53: 19. 33 23. 30	·01410 ·00982 ·00935 ·01370 ·01340		1 53·0 3 55·0 9 56·0 21 51·0	55·0 58·8 59·3 54·5	Nov. 6 0. 50 4. 0 5. 38 9. 27 15. 26 20. 50 23. 55	22. 36. 0 26. 5 30. 55 24. 0 *** 32. 20 *** 27. 10 32. 0	Nov. 6 1. 43 2. 32 4. 30 9. 37 23. 18	·1012 ·1023 ·1006 ·1029 ·1008	Nov. 6 1. 0 5. 38 11. 0 18. 10 23. 55	·01318 ·00905 ·00852 ·01293 ·01287	1 51·0 3 55·0 9 53·5 21 46·0	53·5 57·0 57·0 50·0	
Nov. 2 1. 10 12. 0: 15. 0: 20. 30 23. 36	22. 35. 50 23. 0 *** 30. 20 *** 28. 0 35. 10	Nov. 2 1. 0 18. 50: 23. 25	·1004 ·1019 ·0994	Nov. 2 1. 0 4. 18 6. 5 10. 30: 18. 40 23. 45	·01368 ·01050 ·01080 ·00990 ·01440 ·01410		1 55·0 3 58·0 9 59·0 21 54·0	56·3 60·0 62·0 57·0	Nov. 7 0. 55 21. 0: 23. 55:	22. 33. 30 28. 0 33. 0	Nov. 7 1. 30 4. 15: 23. 10	·1013 ·1019 ·0999	Nov. 7 1. 0 5. 55 20. 40: 23. 30	·01308 ·00945 ·01050 ·01005	1 49·0 3 53·0 9 56·0 21 59·0	52·0 55·0 58·0 62·5	
Nov. 3 1. 14 2. 0 3. 0 8. 40 9. 25 13. 30 20. 30 23. 30	22. 36. 55 40. 10 34. 0 31. 50 27. 20 31. 50 29. 0 33. 0	Nov. 3 1. 15 20. 25: 23. 30	·0990 ·1015 ·1004	Nov. 3 1. 0 6. 22 12. 20 23. 50	·01420 ·01040 ·00978 ·01230		1 54·0 3 57·0 9 58·0 22 55·0	57·0 59·0 60·4 58·5	Nov. 8 1. 0 8. 0: 11. 15 21. 30 23. 55	22. 34. 10 25. 55 26. 0 27. 10 32. 0	Nov. 8 1. 0 19. 25 23. 30	·1003 ·1012 ·0996	Nov. 8 1. 0 9. 26 23. 30	·01010 ·01070 ·01420	1 59·0 3 60·0 9 59·5 21 59·0	61·8 62·4 63·0 60·5	
Nov. 4 0. 0: 10. 30: 11. 53: 12. 52:	22. 35. 0 30. 0 21. 30 30. 45	Nov. 4 0. 43 20. 15: 21. 8 23. 30	·0999 ·1013 ·0998 ·1002	Nov. 4 0. 0 2. 25: 10. 0: 19. 12	·01240 ·01283 ·01132 ·01423		9 56·5 21 52·0	60·5 55·0	Nov. 9 1. 0 21. 30: 23. 58	22. 33. 0 28. 5 32. 15	Nov. 9 1. 0 18. 50 23. 55	·0997 ·1012 ·1000	Nov. 9 1. 0 8. 30: 15. 40 23. 0	·01415 ·01130 ·01370 ·01330	1 60·0 3 60·0 9 59·0 21 56·5	60·0 60·0 62·0 58·5	
									Nov. 10 0. 47 3. 20 5. 30: 11. 15 16. 0 21. 0 23. 25	22. 34. 0 33. 0 34. 30 *** 28. 20 *** 30. 0 28. 5 36. 35	Nov. 10 1. 10 7. 32 23. 22	·1003 ·1031 ·1002	Nov. 10 0. 30 9. 0: 16. 20 23. 30	·01520 ·01010 ·01450 ·01400	1 57·0 3 60·0 9 58·5 22 54·0	58·8 61·0 60·5 55·0	

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (†) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded. The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

INDICATIONS OF THE MAGNETOMETERS

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Nov. 11 0. 0 7. 30 8. 20 12. 20 13. 0 13. 20 13. 30 14. 20 15. 12 23. 58	22. 39. 0 29. 25 24. 30 29. 0 37. 55 33. 10 34. 45 23. 25 29. 50 34. 25	Nov. 11 0. 0 0. 30 2. 21 4. 0 6. 22 8. 0 10. 0 12. 37 12. 58 13. 15 18. 11 23. 0	.0998 .0994 .1005 .0984 .1000 .0986 .1005 .1002 .1023 .1007 .1016 .1007	Nov. 11 0. 0 1. 15 5. 48 10. 0 17. 42 23. 0	.01420 .01445 .01072 .00995 .01435 .01385	11 21	56.0 52.0	57.5 54.0	Nov. 14 9. 52 11. 50 13. 14 14. 0 14. 25 14. 55 16. 8 18. 30 19. 55 20. 32 23. 30	22. 25. 0 *** 30. 0 26. 20 *** 29. 10 *** 22. 30 *** 35. 55 *** 25. 0 *** 30. 0 *** 31. 30 *** 23. 30 *** 31. 55	b m	h m					
Nov. 12 0. 25 10. 15 11. 2 12. 0 13. 30 18. 0 21. 59 23. 58	22. 37. 0 25. 55 29. 30 25. 0 29. 30 33. 10 30. 10 39. 30	Nov. 12 1. 51 18. 37 23. 38	.1000 .1027 .0983	Nov. 12 0. 30 2. 22 12. 45 23. 55	.01402 .01440 .00890 .01126	1 3 9 21	53.0 56.0 56.0 53.0	54.0 57.0 57.5 55.0	Nov. 15 1. 0 6. 10 23. 50	22. 34. 50 24. 0 36. 0	Nov. 15 0. 0 6. 5 6. 30 7. 20 12. 50 22. 3 22. 39	Nov. 15 0. 0 2. 30 10. 30 23. 0	.01292 .01320 .01050 .01265	9 21	49.0 45.5	50.0 48.0	
Nov. 13 1. 5 1. 15 1. 45 2. 35 3. 8 3. 28 4. 5 5. 3 5. 12 5. 38 9. 10 12. 8 13. 16 17. 15 23. 30	22. 40. 0 45. 20 39. 30 43. 30 32. 45 41. 5 34. 10 34. 30 40. 30 37. 45 29. 0 *** 26. 0 *** 35. 0 *** 28. 0 *** 33. 0	Nov. 13 1. 15 1. 42 2. 20 2. 53 3. 18 3. 42 4. 20 5. 18 6. 42 19. 25 23. 17	.0991 .0975 .1000 .0975 .0998 .0973 .0987 .0972 .0998 .1013 .0989	Nov. 13 2. 0 5. 13 10. 5 19. 20 23. 55	.00950 .01095 .00968 .01425 .01435	1 3 9 21	56.0 57.0 57.0 52.5 54.5	57.0 57.8 57.0	Nov. 16 1. 5 8. 12 16. 30 23. 38	22. 34. 55 26. 0 *** 31. 30 *** 32. 50	Nov. 16 1. 30 5. 15 9. 0 18. 40 23. 42	Nov. 16 1. 30 5. 7 10. 15 18. 10 23. 30	.01162 .00870 .00815 .01285 .01278	1 3 9 21	47.0 51.0 50.0 43.5	49.8 52.5 52.5 47.0	
Nov. 14 0. 10 7. 53 8. 35 9. 6	22. 32. 55 *** 31. 30 *** 23. 30 *** 29. 45 ***	Nov. 14 0. 38 13. 30 14. 55 16. 0 16. 30 17. 45 23. 0	.0991 .1010 .1033 .1013 .1025 .1009 .1009	Nov. 14 0. 30 7. 20 12. 0 15. 20 23. 0	.01425 .01130 .01370 .01260 .01295	1 3 9 22	53.5 55.0 52.5 46.0	56.5 57.0 55.0 47.0	Nov. 18 0. 0 7. 10 11. 5 16. 42 17. 20 18. 0 19. 30	22. 31. 0 32. 55 25. 30 30. 50 30. 0 28. 5 30. 30	Nov. 18 0. 6 6. 0 21. 30 23. 30	Nov. 18 0. 0 8. 40 23. 35	.01017 .01029 .1003 .1013	9 21	48.5 53.0	52.0 56.0	

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							H. F.	V. F.								H. F.	V. F.
Nov. 18 20. 0 23. 34 23. 53	22. 28. 55 35. 0 31. 20								Nov. 22 13. 30 20. 40 23. 58	22. 30. 50 28. 30 34. 20							
Nov. 19 0. 30 7. 35 8. 10 9. 20 9. 55 10. 32 10. 55 11. 25 12. 50 14. 5 14. 43 18. 2 20. 12 21. 35 23. 42	22. 35. 55 26. 50 30. 35 22. 10 22. 0 16. 30 21. 20 16. 0 31. 20 29. 0 34. 55 29. 25 31. 50 28. 30 36. 10	Nov. 19 1. 33 3. 50 4. 30 6. 55 7. 20 7. 55 8. 48 9. 48 10. 12 10. 45 11. 55 12. 42 13. 53 18. 45 23. 55	•0987 •1006 •0983 •1006 •0992 •1010 •1001 •1026 •1000 •1011 •0991 •1016 •0999 •1026 •0997	Nov. 19 1. 0 6. 50 10. 30 21. 15 23. 55	•01017 •01120 •01000 •01520 •01490	1 54.0 3 56.0 9 55.0 21 52.0	55.0 57.5 58.0 53.0	Nov. 23 1. 15 10. 30 12. 22 15. 8 16. 18 23. 58	22. 32. 50 30. 0 25. 30 30. 40 29. 0 34. 0	Nov. 23 1. 30 12. 30 23. 48	•1016 •1033 •1000	Nov. 23 1. 0 9. 0 23. 55	•01412 •00920 •01006	1 46.0 3 48.5 9 49.0 21 49.5	50.8 52.0 53.0 55.5		
Nov. 20 0. 30 2. 0 5. 35 6. 40 8. 10 8. 38 8. 46 9. 2 9. 30 10. 30 11. 8 11. 40 16. 40 21. 35 23. 58	22. 30. 30 33. 30 30. 0 18. 30 31. 0 21. 0 24. 0 19. 50 32. 0 21. 10 24. 25 18. 30 33. 0 28. 50 32. 50	Nov. 20 1. 42 4. 15 6. 20 6. 50 8. 30 9. 10 9. 42 9. 52 10. 22 11. 0 12. 3 12. 52 18. 15 23. 14	•0991 •1013 •1005 •1023 •1010 •1049 •1010 •1017 •1005 •1017 •0999 •1017 •1022 •1004	Nov. 20 1. 0 3. 45 11. 25 23. 55	•01524 •01555 •01305 •01480	1 52.0 3 52.0 9 51.0 21 50.0	52.8 53.0 52.5 51.0	Nov. 24 2. 0 8. 40 9. 42 11. 0 12. 50 13. 55 15. 12 15. 50 23. 55	22. 32. 10 25. 30 27. 10 29. 10 18. 5 27. 5 23. 55 32. 30 34. 20	Nov. 24 7. 10 23. 30	•1003 •1034 •1018	Nov. 24 1. 30 14. 37 23. 30	•01012 •01386 •01330	1 50.0 3 52.0 9 49.5 22 44.0	55.0 55.8 54.0 48.0		
Nov. 21 1. 5 9. 34 10. 50 13. 20 15. 7 19. 50 23. 58	22. 33. 15 29. 50 23. 0 32. 40 29. 0 35. 10 36. 0	Nov. 21 1. 0 16. 52 23. 12	•1001 •1030 •1006	Nov. 21 1. 30 9. 0 19. 37 23. 55	•01458 •01050 •01470 •01450	1 53.0 3 54.0 9 52.5 21 46.0	54.0 55.0 56.0 52.0	Nov. 25 0. 0 7. 30 8. 10 8. 50 9. 20 13. 10 14. 30 19. 45 21. 13 23. 58	22. 34. 10 30. 0 24. 10 29. 0 26. 50 31. 55 29. 25 35. 0 30. 50 32. 20	Nov. 25 0. 3 18. 30 23. 7	•1015 •1039 •1022	Nov. 25 0. 0 5. 20 13. 20 17. 4 23. 0	•01325 •01375 •01270 •01360 •01312	12 43.0 21 40.0	47.5 45.0		
Nov. 22 1. 0 5. 20 6. 35 9. 46	22. 37. 55 29. 10 32. 30 27. 25	Nov. 22 2. 0 17. 0 22. 20 23. 50	•1008 •1026 •1010 •1014	Nov. 22 2. 30 9. 0 23. 45	•01425 •01235 •01405	1 48.0 3 48.0 9 48.0 21 44.0	51.8 52.0 51.8 50.0	Nov. 26 0. 40 3. 40 5. 25 6. 33 7. 12 8. 40 20. 38 23. 52	22. 33. 30 32. 0 35. 30 21. 0 35. 0 30. 50 35. 50 40. 25	Nov. 26 1. 0 6. 15 6. 38 6. 58 19. 23 22. 57	•1026 •1013 •1044 •1027 •1043 •1006	Nov. 26 1. 0 2. 30 9. 0 15. 18 23. 7	•01328 •01345 •01030 •01312	1 43.0 3 45.0 9 43.0 21 39.0	46.0 48.0 47.5 43.0		
Nov. 22 1. 0 5. 20 6. 35 9. 46	22. 37. 55 29. 10 32. 30 27. 25	Nov. 22 2. 0 17. 0 22. 20 23. 50	•1008 •1026 •1010 •1014	Nov. 22 2. 30 9. 0 23. 45	•01425 •01235 •01405	1 48.0 3 48.0 9 48.0 21 44.0	51.8 52.0 51.8 50.0	Nov. 27 0. 50 6. 30 6. 47 8. 12 8. 42 9. 10	22. 39. 40 32. 55 37. 0 30. 0 19. 0 31. 0	Nov. 27 1. 30 4. 0 4. 32 5. 24 8. 30 8. 52	•1023 •1021 •1007 •1024 •1005 •1043	Nov. 27 1. 0 2. 35 10. 30 23. 55	•01272 •01292 •00885 •01285	1 37.5 3 42.0 9 42.0 21 39.0	43.0 47.0 45.5 43.0		

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							H. F.	V. F.								H. F.	V. F.
Nov. 27 14. 5: 18. 33 19. 38 19. 55 21. 22 21. 45 22. 50 23. 8 23. 55	22. 33. 30 27. 35 34. 45 26. 0 57. 30 45. 0 36. 15 41. 45 38. 0	Nov. 27 9. 30 19. 20 20. 55 22. 42 23. 55	.1013 .1050 .0925 .1013 .1000						Nov. 29 16. 48 17. 20 17. 48 18. 23 19. 0 19. 17 21. 12 22. 8 23. 30 23. 58	22. 16. 0 40. 30 28. 50 48. 0 39. 15 41. 0 30. 40 43. 50 31. 20 35. 30	Nov. 29 21. 38 23. 18 23. 33 23. 50	.0948 .0994 .0973 .0980					
Nov. 28 2. 0 2. 40 2. 58 3. 8 3. 15 4. 7 9. 28 10. 5 10. 45 11. 38 12. 0 12. 55 13. 23 14. 0 14. 15 14. 38 14. 55 16. 12 22. 58	22. 39. 50 33. 55 42. 0 32. 0 44. 0 34. 0 31. 40 10. 5 9. 30 15. 25 8. 0 25. 0 18. 30 33. 50 28. 35 35. 0 26. 30 27. 0 33. 30	Nov. 28 4. 28 9. 38 9. 50 10. 24 11. 52 13. 0 13. 47 14. 3 14. 35 14. 50 16. 27 17. 7 19. 32 19. 55 20. 52 23. 48	.1035 .1013 .0992 .1027 .0978 .0971 .0997 .0981 .1006 .0996 .0992 .1017 .0995 .1029 .0990 .0990	Nov. 28 1. 0 11. 55 13. 40 14. 50 23. 55	.01302 .00768 .00772 .00718 .00885	1 40.0 3 41.0 9 43.0 21 44.0	44.0 44.8 46.8 47.5	Nov. 30 1. 27 3. 33 6. 30 7. 52 8. 32 9. 0 9. 12 9. 50 10. 55 11. 35 11. 50 12. 14 12. 30 13. 30 15. 4 16. 8 17. 13: 18. 12 19. 0 20. 10 20. 15 23. 58	22. 35. 50 28. 30 30. 50 18. 25 25. 10 23. 0 27. 0 17. 30 24. 50 16. 55 17. 0 21. 55 14. 40 18. 30 29. 5 19. 55 29. 0 25. 5 29. 55 30. 20 28. 40 35. 0 34. 0	Nov. 30 1. 46 5. 40 7. 20 8. 0 8. 45 9. 4 10. 12 10. 30 11. 0 11. 12 12. 28 13. 5 13. 50 14. 10 14. 26 18. 10 23. 35	.0975 .1004 .0976 .0993 .0959 .0971 .0947 .0957 .0944 .0982 .0950 .0968 .0951 .0970 .0963 .0996 .0962	Nov. 30 1. 30 5. 33 5. 37 7. 15 7. 55 12. 37 23. 55	.01060 .01160 .01282 .01180 .01220 .01138 .01645	1 51.0 3 53.0 9 55.0 21 49.0	53.0 55.0 58.0 52.0		
Nov. 29 0. 50 1. 50 3. 25 3. 42 4. 22 4. 50 5. 40 6. 25 8. 15 8. 32 9. 12 10. 50 11. 0 11. 50 12. 33 13. 40 14. 38 15. 5 15. 40 16. 8	22. 33. 30 35. 0 42. 0 33. 0 36. 25 16. 5 31. 0 33. 0 27. 0 29. 30 19. 0 20. 0 25. 25 23. 50 8. 0 34. 5 16. 30 23. 15 20. 15 24. 20	Nov. 29 1. 53 2. 58 3. 32 4. 0 4. 28 5. 10 5. 25 9. 20 10. 46 12. 6 13. 0 13. 15 13. 43 14. 5 14. 51 16. 25 17. 20 18. 45 20. 16 20. 40	.0971 .0986 .0967 .0989 .0965 .1009 .0990 .1009 .0977 .0995 .0961 .0977 .0960 .1019 .0990 .1013 .1070 .1008 .0965 .0988	Nov. 29 1. 15 4. 55 13. 10 14. 30 15. 30 17. 50 18. 18 19. 0 23. 55	.00930 .01113 .01050 .00883 .00955 .09838 .00882 .00835 .01032	1 49.0 3 51.0 9 50.0 21 49.0	50.0 52.5 52.0 52.0	Dec. 1 1. 10 3. 50 7. 32 8. 0 15. 30 19. 30 23. 0	22. 39. 35 30. 0 (+) 22. 50 32. 10 30. 0 30. 0 32. 45	Dec. 1 3. 40 3. 58 4. 30 4. 53 5. 7 5. 20 5. 50 6. 31 6. 45 20. 42: 23. 15:	.0988 .0973 .0986 .0972 .0988 .0978 .0995 .0973 .0995 .1001 .0997	Dec. 1 0. 0 6. 0 9. 25 12. 45 17. 50 18. 0 23. 0	(+) .01525 .01348 .01465 (+) .01660 .01655 .01595	1 50.0 3 52.0 9 50.0 22 49.0	53.0 55.0 52.0 51.0		
Dec. 2 0. 30 7. 0	22. 32. 0 27. 0	Dec. 2 0. 0 4. 25	.0999 .1007	Dec. 2 0. 0 10. 16													

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (+) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded. The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Dec. 2 7.40 9.50 10.8 11.0 11.47 14.8 15.25 23.26	22. 31. 5 28. 55 25. 0 29. 30 26. 30 32. 30 28. 15 31. 45	Dec. 2 23. 0	·1000	Dec. 2 11. 7 23. 0	·01250 ·01345		°	°	Dec. 8 1. 30 9. 7 23. 34	22. 32. 30 27. 15 31. 30	Dec. 8 1. 0 19. 45: 23. 55	·1009 ·1022 ·1018	Dec. 8 1. 0 4. 52 6. 40 6. 45 8. 0 8. 30 17. 11 23. 55	·01432 ·01148 ·01162 ·01247 ·01195 ·01265 ·01625 ·01535		1 50.0 3 53.0 9 53.5 22 46.0	54.0 56.0 58.0 51.0
Dec. 3 1. 0 7. 4 8. 0 8. 46 23. 52	22. 32. 30 31. 0 24. 0 28. 30 33. 30	Dec. 3 1. 0 8. 2: 12. 30 23. 55	·1000 ·1019 ·1019 ·1008	Dec. 3 1. 0 12. 5 23. 55	·01450 ·01615 ·01497		1 50.0 3 51.0 9 49.5 21 44.0	54.0 53.0 53.0 50.0	Dec. 9 0. 30 10. 52 23. 47	22. 32. 45 27. 30 33. 0	Dec. 9 1. 0 21. 30 23. 50	·1016 ·1028 ·1020	Dec. 9 0. 0 2. 45 9. 50: 20. 8 23. 0	·01535 ·01570 ·01140 ·01525 ·01505	10 48.0 21 44.0	53.5 49.0	
Dec. 4 1. 27 11. 53 12. 15 13. 44 16. 5 23. 55	22. 34. 30 28. 0 31. 0 22. 15 29. 0 32. 15	Dec. 4 1. 5 11. 55 12. 15 13. 10 23. 45	·1009 ·1019 ·1037 ·1015 ·1026	Dec. 4 1. 30 3. 0 10. 0: 15. 45 23. 45	·01515 ·01543 ·01185 ·01470 ·01400		1 44.5 3 45.5 9 48.0 21 39.0	48.0 51.0 52.0 46.0	Dec. 10 1. 22 10. 50 11. 20 14. 20 15. 18 23. 55	22. 35. 0 28. 15 23. 30 29. 45 27. 30 32. 15	Dec. 10 2. 0 3. 58 6. 30 8. 40 11. 0 11. 33 20. 23 23. 24	·1016 ·1002 ·1019 ·1010 ·1016 ·1006 ·1027 ·1016	Dec. 10 1. 30 11. 12 23. 55	·01530 ·01117 ·01305	1 44.0 3 48.0 9 48.0 21 45.5	50.0 51.0 52.0 50.0	
Dec. 5 1. 15 8. 20 9. 15 12. 8 23. 52	22. 33. 0 26. 15 28. 45 27. 15 31. 15	Dec. 5 1. 30 16. 36 23. 55	·1025 ·1015 ·1012	Dec. 5 1. 5 6. 25 12. 30 17. 45 23. 55	·01400 ·00968 ·01050 ·01025 ·01158		1 42.0 3 43.0 9 50.5 21 48.0	46.0 47.0 54.0 53.0	Dec. 11 1. 30 4. 9 7. 27 8. 7 9. 10 15. 3 23. 55	22. 34. 45 30. 30 37. 15 22. 0 29. 15 28. 15 33. 30	Dec. 11 1. 0 4. 27 7. 17 8. 13 8. 45 10. 24 20. 22: 23. 55	·1025 ·1027 ·0995 ·1015 ·1002 ·1017 ·1033 ·1026	Dec. 11 1. 5 10. 0: 21. 25 23. 55	·01340 ·00985 ·01475 ·01450	1 46.0 3 48.0 9 49.5 21 43.0	50.0 52.4 53.0 48.0	
Dec. 6 1. 8 12. 0 13. 52 14. 48 16. 0 23. 55	22. 32. 10 22. 0 *** 26. 45 *** 23. 45 *** 28. 15 28. 30	Dec. 6 1. 30 14. 42 23. 45	·1013 ·1021 ·1015	Dec. 6 1. 5 2. 50 5. 40 9. 30 22. 9 23. 55	·01195 ·01170 ·01240 ·01172 ·01680 ·01675		1 50.0 3 53.0 9 55.0 21 48.0	54.5 56.0 57.5 53.0	Dec. 12 0. 55 3. 56 4. 47 5. 7 6. 0 6. 50 9. 40 10. 22 10. 40 14. 33 15. 10 23. 55	22. 34. 0 36. 0 25. 15 38. 15 34. 30 40. 0 11. 15 28. 0 18. 30 30. 45 28. 45 29. 30	Dec. 12 1. 0 3. 33 4. 18 5. 0 6. 52 9. 10 9. 58 10. 33 10. 50 23. 40: 23. 55	·1024 ·1020 ·0998 ·1029 ·0998 ·1014 ·1055 ·0994 ·1009 ·1028	Dec. 12 1. 0 4. 50 10. 30 15. 47 23. 45	·01460 ·01515 ·01265 ·01465 ·01400	1 43.0 3 43.0 9 45.0 21 39.0	47.0 48.0 48.5 45.0	
Dec. 7 1. 4 11. 41 13. 33 15. 42 16. 52 17. 20 23. 55	22. 31. 0 21. 0 24. 15 20. 15 25. 30 23. 30 32. 0	Dec. 7 1. 10 5. 36 13. 5 23. 55	·1010 ·1016 ·0996 ·1009	Dec. 7 1. 0 10. 45: 23. 45	·01623 ·01170 ·01402		1 51.5 3 52.0 9 52.0 21 48.0	54.5 56.0 56.0 54.0	Dec. 13 1. 0	22. 31. 0	Dec. 13 1. 24	·1029	Dec. 13 1. 0	·01422	1 41.0	46.0	

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (†) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded. The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time. For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

## INDICATIONS OF THE MAGNETOMETERS

Göttingen Mean Solar Time.	Western Declina- tion.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermo- meters.		Göttingen Mean Solar Time.	Western Declina- tion.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermo- meters.	
							H. F.	V. F.								H. F.	V. F.
Dec.13 10.34 <sup>h</sup> 22.25.0 <sup>m</sup> 13.10 28.15 14.23 23.45 15.30 28.0 16.14 26.30 23.23 30.45		Dec.13 4.33 7.7 20.37 23.42	·1011 ·1024 ·1028 ·1023	Dec.13 12.0 19.0 23.25	·00905 ·00962 ·00882	3 9 21	43.0 45.0 43.0	47.0 49.0 48.0	Dec.20 0.32 <sup>h</sup> 22.30.30 <sup>m</sup> 2.30 34.30 3.42 31.30 5.0 39.0 7.40 26.30 14.40 28.30 15.8 32.0 15.54 20.0 16.45 26.0 17.3 25.0 20.53 34.30 22.50 30.0 23.57 34.30		Dec.20 2.23 <sup>h</sup> 5.8 5.42 23.0 16.25 23.0	·1017 ·0995 ·1034 ·1016 ·00672 ·00595	1.0 4.8 5.42 9.40 16.25 23.0	·00645 ·00430 ·00492 ·00378 ·00672 ·00595	1 46.0 3 55.0 9 51.0 21 42.0	50.0 58.8 54.0 47.0	
Dec.14 1.30 14.15 23.38	22.32.0 25.0 29.0	Dec.14 1.0 6.37 23.22	·1024 ·1019 ·1002	Dec.14 1.0 5.45 23.55	·00940 ·01140 ·01150	1 3 9 21	47.5 50.0 53.0 53.5	52.0 54.0 58.0 59.0	Dec.21 0.23 9.28 10.55 11.38 12.7 13.55 15.15 16.14 17.27 17.52 18.18 19.8 22.37 23.0	22.37.30 27.45 19.45 21.45 17.45 29.45 15.0 27.0 27.30 36.30 30.15 36.0 32.15 35.0	Dec.21 0.37 6.27 10.30 13.20 13.48 14.18 16.0 17.14 17.52 20.0 22.18 23.0	·1006 ·1025 ·1003 ·1023 ·1006 ·1043 ·1018 ·1030 ·1018 ·1031 ·1004 ·1008	0.0 2.45 10.0 17.50 23.0	·00605 ·00640 ·00247 ·00582 ·00552	1 44.0 3 46.0 9 47.0 21 39.5	46.4 48.8 49.0 44.0	
Dec.15 1.17 13.10 23.37	22.33.0 25.0 29.30	Dec.15 2.0 10.28 20.42 23.30	·1004 ·0997 ·1016 ·1012	Dec.15 1.0 6.0 10.10 10.20 17.58 23.55	·01170 ·01252 ·01240 ·01418 ·01720 (+)	1 3 9 23	57.0 58.0 58.0 53.0	61.0 61.0 62.5 58.0	Dec.21 0.23 9.28 10.55 11.38 12.7 13.55 15.15 16.14 17.27 17.52 18.18 19.8 22.37 23.0	22.37.30 27.45 19.45 21.45 17.45 29.45 15.0 27.0 27.30 36.30 30.15 36.0 32.15 35.0	Dec.21 0.37 6.27 10.30 13.20 13.48 14.18 16.0 17.14 17.52 20.0 22.18 23.0	·1006 ·1025 ·1003 ·1023 ·1006 ·1043 ·1018 ·1030 ·1018 ·1031 ·1004 ·1008	0.0 2.45 10.0 17.50 23.0	·00605 ·00640 ·00247 ·00582 ·00552	1 44.0 3 46.0 9 47.0 21 39.5	46.4 48.8 49.0 44.0	
Dec.16 1.10 15.15 23.45	22.31.30 27.15 29.30	Dec.16 1.0 17.50 23.50	·1012 ·1019 ·1011	Dec.16 3.40 9.30 23.0	·01725 ·01555 ·01650	9 21	55.0 53.0	59.5 59.0	Dec.22 0.0 2.13 3.12 11.0 22.40 23.50	22.32.15 36.0 31.15 28.0 30.24* (+)	Dec.22 0.0 18.25 23.25	·1011 ·1030 ·1017	0.0 10.0 23.30	·00570 ·00118 ·00520	1 42.0 3 45.0 9 44.0 22 40.0	44.0 46.8 47.0 43.0	
Dec.17 1.42 14.36 15.0 15.45 16.30 23.40	22.34.0 27.30 31.45 24.45 28.15 29.45	Dec.17 1.30 15.6 23.53	·1014 ·1028 ·1011	Dec.17 1.30 5.50 10.22 23.55	·01688 ·01460 ·01750 ·01675	1 3 9 21	55.0 49.0 55.0 49.5	59.8 55.0 59.0 55.0	Dec.22 0.0 2.13 3.12 11.0 22.40 23.50	22.32.15 36.0 31.15 28.0 30.24* (+)	Dec.22 0.0 18.25 23.25	·1011 ·1030 ·1017	0.0 10.0 23.30	·00570 ·00118 ·00520	1 42.0 3 45.0 9 44.0 22 40.0	44.0 46.8 47.0 43.0	
Dec.18 2.10 4.49 7.57 9.42 12.56 16.20 17.5 23.33	22.33.45 28.30 31.30 25.15 28.30 24.0 28.0 29.15	Dec.18 1.30 3.2 5.40 8.8 13.2 17.10 23.0	·1017 ·1004 ·1015 ·0996 ·1019 ·1023 ·1010	Dec.18 2.0 13.20 20.35 23.55	·00660 ·00510 ·00790 ·00780	1 3 9 21	50.0 55.0 56.5 51.0	55.0 58.5 58.5 55.0	Dec.23 0.33 1.50 2.47 11.23 11.54 12.33 14.3 20.0 23.55	22.31.0 34.30 30.45 27.45 30.15 23.30 28.30 27.15 ***	Dec.23 1.0 19.35 23.15	·1020 ·1043 ·1019	1.0 4.15 10.0 23.0	·00547 ·00578 ·00464 ·00500	11 38.0 21 36.0	42.5 41.7	
Dec.19 1.17 9.26 22.35	22.31.0 26.30 29.45	Dec.19 1.8 20.0 23.55	·1016 ·1031 ·1023	Dec.19 1.0 3.40 8.30 13.10 23.40	·00772 ·00747 ·00470 ·00722 ·00620	1 3 9 21	53.0 54.0 53.0 44.0	57.0 57.8 56.0 47.5	Dec.23 0.33 1.50 2.47 11.23 11.54 12.33 14.3 20.0 23.55	22.31.0 34.30 30.45 27.45 30.15 23.30 28.30 27.15 ***	Dec.23 1.0 19.35 23.15	·1020 ·1043 ·1019	1.0 4.15 10.0 23.0	·00547 ·00578 ·00464 ·00500	11 38.0 21 36.0	42.5 41.7	

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For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.		Göttingen Mean Solar Time.	Western Declination.	Göttingen Mean Solar Time.	Horizontal Force in parts of the whole H. F. uncorrected for Temperature.	Göttingen Mean Solar Time.	Vertical Force in parts of the whole V. F. uncorrected for Temperature.	Hour.	Thermometers.	
							H. F.	V. F.								H. F.	V. F.
Dec.24 0.54 3.8 3.45 8.4 9.29 22.40	22.33.45 30.30 32.0 22.15 27.0 29.25*	Dec.24 1.0 4.5 9.29 23.40	.1021 .1011 .1025 (+) .1023	Dec.24 1.0 4.0 7.30 9.29 23.35	.00505 .00223 .00355 .00320 (+)	1 3 9 22	43.0 48.0 50.0 42.0	43.8 50.0 53.0 45.0			Dec.28 1.40 3.40 9.40 21.40	.1058* .1050* .1048* .1050*	Dec.28 1.40 3.40 9.40 21.40	.00088* .00108* .00196* .00144*	1 3 9 21	37.0 40.0 37.0 28.0	37.0 40.0 37.0 27.7
Dec.25 1.22 8.4 8.30 9.50 14.55 15.10 15.36 15.58 16.30 23.33	22.33.0 29.0 24.45 28.15 29.0 32.0 28.30 31.45 28.15 30.0	Dec.25 0.0 15.10 22.48	.1025 .1050 .1035	Dec.25 0.0 5.0 15.40 21.30	.00635 .00695 .00620 .00663	8 21	44.0 42.0	46.0 44.0			Dec.29 1.40 3.40 9.40 23.40	.1053* .1039* .1015* .1023*	Dec.29 2.30 3.42 5.12 11.55 20.0 20.40 23.45	.00493 .00210 .00255 .00130 .00152 .00228 .00210	1 3 9 23	36.0 40.0 43.0 45.0	37.0 41.0 46.8 48.5
Dec.26 1.40 3.40 9.40 21.40	22.31.23* 30.6* 24.57* 26.15*	Dec.26 1.40 3.40 9.40 21.40	.1032* .1033* .1038* .1021*	Dec.26 1.40 3.40 9.40 21.40	.00567* .00546* .00145* .00520*	1 3 9 21	45.0 50.0 48.5 43.0	46.0 52.0 48.5 45.0			Dec.30 11.40 21.40	.1003* .1030*	Dec.30 0.30 1.33 1.43 10.5 10.32 11.43 22.45 23.10	.00208 .00227 .00280 .00488 .00470 .00532 .01370 .01360	11 21	44.0 39.0	50.0 42.0
		Dec.27 1.40 3.40 9.40 21.40	.1035* .1002* .1004* .1044*	Dec.27 1.40 3.40 9.40 21.40	.00470* .00262* .00199* .00359*	1 3 9 21	47.0 54.0 47.5 36.0	47.7 54.0 48.0 37.0			Dec.31 9.40	.1037	Dec.31 0.0 1.10 7.25 10.0 16.0 23.45	.01375 .01400 .00678 .00598 .00816 .01330	1 3 9 21	45.0 49.3 48.0 45.0	

The indications are taken from the sheets of the Photographic Record, except where an asterisk is attached to the number, in which instances they are inferred from observations made with the telescope in the ancient manner. The Symbol \*\*\* denotes that the magnet has been generally in a state of agitation. The Symbol (†) denotes that the register has failed between the preceding and following readings. The Symbol : attached to a time denotes that the reading will apply equally to several times near that which is recorded.

The time of reading the thermometers is the hour specified in Greenwich time, or the hour increased by 40<sup>m</sup> in Göttingen time.

For the Horizontal and Vertical Forces, increasing readings denote increasing forces.

The Zero for the Horizontal Force is constant throughout the year; but no reliance whatever can be placed on the constancy of the Zero of the Vertical Force beyond a single day; and in many instances it is known to be different on different days.



In passing through the Press the sheet ending with page (xvi), a slight error has been committed, by inserting in several instances, as readings of the V. F. Thermometer, degrees inferred from the readings of the H. F. Thermometer. The following readings of the V. F. Thermometer ought to be struck out:—

First and second readings: Feb. 4, 18; March 7; April 1.

First, second, and third: Feb. 21, March 26.

First, second, and fourth: Jan. 27, April 10.

Second: Jan. 31.

Second and third: April 6.

Second and fourth: Feb. 8, April 7.

Second, third, and fourth: Feb. 3, March 6.

Third: Feb. 1, 2, 19; March 2, 15; April 2.

Third and fourth: Feb. 20; March 9, 14, 21, 24, 31.

Fourth: Feb. 7, 17; March 12, 16, 18, 20, 22, 27, 28, 30; April 3.

All: Feb. 9; March 23, 25; April 8, 9, 11, 12, 13.

It is proper, however, to observe that the almost absolute equality of temperature in the boxes of the two instruments has been established by the printed comparisons, and that in many other instances when the reading of the V. F. Thermometer has not been recorded it has been remarked as being the same as that of the H. F. Thermometer.

The following corrections are required to the printed Results from the Photographic Sheets:—

Declination.

	d	h	m				
Jan.	4.	4.	0	for	22°. 41'. 45"	read	22°. 38'. 10"
	11			„	11 <sup>h</sup> . 7 <sup>m</sup>	„	11 <sup>h</sup> . 37 <sup>m</sup>
	16.	22.	5	„	22°. 38'. 0"	„	22°. 32'. 30"
	25.	9.	10	„	22°. 26'. 0"	„	22°. 22'. 0"

Vertical Force.

	d	h	m			
Jan.	6.	12.	0	for	·01185	read ·01085
	7.	0.	30	„	·00832	„ ·00882
	9.	11.	30	„	·01190	„ ·01140
	12.	6.	10	„	·00822	„ ·00930
	17.	9.	40	„	·01110	„ ·01210
	22.	6.	35	„	·00900	„ ·01150

ROYAL OBSERVATORY, GREENWICH.

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R E S U L T S

OF

O B S E R V A T I O N S

OF THE

M A G N E T I C D I P.

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1849.

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The Dipping Needle is described, and the mode of using it is explained, in the *Magnetical and Meteorological Observations*, 1847, Introduction, page xliii, and in the corresponding parts of several preceding Volumes.

The needle A 2 has been used throughout the Year 1849.

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Magnetic Dip, observed at the Royal Observatory, Greenwich, in the Year 1849.

Day and Approximate Hour, 1849.			Magnetic Dip.	Day and Approximate Hour, 1849.			Magnetic Dip.	Day and Approximate Hour, 1849.			Magnetic Dip.
	d	h	o /		d	h	o /		d	h	o /
January	4	3	68.59.50	May	20	21	68.52.50	September	9	21	68.58.75
	8	21	68.56.50		24	3	68.54.00		13	3	68.53.00
	14	21	68.56.00		27	21	68.51.75		16	21	68.40.00
	18	3	68.48.25	June	3	21	68.57.50		20	3	68.45.00
	21	21	68.58.00		7	3	68.54.50		20	3	68.45.25
25	3	68.52.75	10		21	68.58.50	21		3	68.52.75	
February	1	3	68.49.75		14	3	68.35.25	23	21	68.41.00	
	4	21	68.55.25		17	21	69.0.25	27	3	68.48.00	
	15	3	68.51.25	21	3	68.53.50	30	21	68.43.00		
	18	21	68.51.25	24	22	68.59.50	October	4	3	68.46.50	
	22	3	68.51.25	28	3	68.59.50		7	21	68.41.75	
25	21	68.53.00	July	1	21	68.58.00		11	3	68.46.00	
March	4	21		68.55.00	5	3		68.45.25	14	21	68.42.50
	8	3		68.53.75	8	21		68.48.50	18	23	68.37.75
	11	21		68.54.75	12	3		68.50.00	21	21	68.42.50
	18	21		68.54.00	15	21	68.49.50	25	3	68.38.00	
	22	3	68.54.75	19	3	68.41.25	28	21	68.43.50		
25	21	68.54.50	22	21	68.52.75	November	1	3	68.39.50		
29	3	68.54.00	29	21	68.48.25		4	21	68.48.25		
April	1	21	68.53.75	August	2		3	68.58.25	8	3	68.41.25
	5	3	68.55.00		5		21	68.58.50	11	21	68.45.75
	8	21	68.54.00		9		3	68.56.75	21	21	68.42.75
	16	21	68.56.00		12	21	68.56.75	22	3	68.52.00	
	22	21	68.55.75		16	3	68.58.50	25	21	68.57.00	
	26	30	68.53.75		19	21	69.0.75	29	3	68.47.00	
29	21	68.54.50	23	3	69.2.25	December	6	3	68.43.75		
May	3	3	68.53.00	26	21		68.55.00	13	3	68.41.50	
	5	3	68.56.25	30	3		68.52.75	16	21	68.53.75	
	10	3	68.53.50	September	2		21	68.56.00	20	3	68.42.25
	13	21	68.55.00		6		3	68.53.50	23	21	68.45.25
								28	3	68.40.75	
							30	21	68.40.50		

September 20<sup>d</sup>. 3<sup>h</sup>. In consequence of the smallness of the results for dip on September 16, and on this day, the observation was repeated on September 20.

## Mean Monthly Magnetic Dip, at the Royal Observatory, Greenwich, in the Year 1849.

1849, Month.	Mean Monthly Dip at			
	21 <sup>h</sup>	Number of Observations.	3 <sup>h</sup>	Number of Observations.
January	68. 56 · 8	3	68. 53 · 5	3
February	68. 53 · 2	3	68. 50 · 8	3
March	68. 54 · 6	4	68. 54 · 2	3
April	68. 54 · 8	5	68. 54 · 4	2
May	68. 53 · 1	3	68. 54 · 2	4
June	68. 58 · 9	4	68. 55 · 8	3
July	68. 51 · 4	5	68. 45 · 5	3
August	68. 57 · 8	4	68. 57 · 7	5
September	68. 47 · 8	5	68. 49 · 6	6
October	68. 42 · 6	4	68. 42 · 1	4
November	68. 48 · 4	4	68. 44 · 9	4
December	68. 46 · 5	3	68. 42 · 1	4
Mean	68. 52 · 2		68. 50 · 4	

*Mean = 68° 51' 3*

ROYAL OBSERVATORY, GREENWICH.

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OBSERVATIONS

OF

DEFLEXION OF A MAGNET

FOR

ABSOLUTE MEASURE

OF

HORIZONTAL FORCE.

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1849.

The Apparatus used for observation of the Deflexion of a Magnet is described, and the method of computing the results is explained, in the Greenwich *Magnetical and Meteorological Observations*, 1847, Introduction, page xlv, and in preceding Volumes. The magnet, marked  $\frac{D}{XX}$  (the same which was used in preceding years), has been employed to produce the deflexion of another magnet, marked  $\frac{H}{23}$  (of nearly the same dimensions): and the vibrations then observed are those of  $\frac{D}{XX}$ .

The following is the explanation of the notation used:—

$m$  = the magnetic moment of the deflecting magnet  $\frac{D}{XX}$ .

$X$  = the absolute measure of horizontal magnetic force.

$K$  = the moment of inertia of  $\frac{D}{XX}$  with its stirrup and pulley as suspended for vibration  
= 3.92866: the unit of length being the English foot, and the unit of weight being the English grain.

$T$  = the time of vibration in seconds of mean solar time.

Then when the natural sine of the observed deflexion (the Deflecting Magnet being in the Lateral Position) is expressed by the formula

$$\frac{a}{(\text{distance})^3} + \frac{b}{(\text{distance})^5},$$

we have for the formula of computation

$$\frac{m}{X} = \frac{1}{2} a$$

$$m X = \frac{\pi^2 K}{T^2}$$

from which  $m$  and  $X$  are found.

The natural sine of the observed deflexion when the Deflecting Magnet is in the Axial Position is treated in the same manner as the former, for expressing it by the formula

$$\frac{a_1}{(\text{distance})^3} + \frac{b_1}{(\text{distance})^5}$$

but no further use is made of these deflexions.

For the determination of the Absolute Measure of Horizontal Force on those days on which Vibrations, unaccompanied by Deflexions, were observed: it is assumed that the quantity  $m$  (which is peculiar to the magnet) changes at a uniform rate from one observation of deflexion to the next; and the comparison of its interpolated value with the value of  $m X$  given by the vibration determines the value of  $X$ .

Observed Deflexions of a Magnet for Absolute Measure of Horizontal Force.

Month and Day, 1849.	Position of Deflecting Magnet with regard to Suspended Magnet.	Distance of Centers of Magnets.	Temperature.	Observed Deflexion.	Mean of the Times of Vibrations of Deflecting Magnet.	Number of Vibrations.	Temperature.
January 9	Lateral .....	ft. in. 1. 0	44.3	0 / " 12. 17. 52.79	5.075	100	46.0
	Axial.....	1. 6		6. 33. 14.71			
January 31	Lateral .....	1. 0	44.3	12. 17. 6.54	5.062	102	42.5
	Axial.....	1. 6		6. 35. 41.33			
February 27	Lateral .....	1. 0	45.2	3. 37. 49.85	5.077	100	42.0
	Axial.....	1. 6		1. 50. 23.31			
May 19	Lateral .....	1. 0	60.3	12. 19. 9.92	5.084	140	55.5
	Axial.....	1. 6		6. 34. 1.90			
October 10	Lateral .....	1. 0	55.3	3. 34. 51.74	5.093	100	49.0
	Axial.....	1. 6		1. 48. 56.23			
December 20	Lateral .....	1. 0	41.6	12. 9. 53.06	5.084	100	62.2
	Axial.....	1. 6		6. 32. 26.95			
December 20	Lateral .....	1. 0	41.6	3. 34. 5.77	5.092	100	40.5
	Axial.....	1. 6		1. 51. 18.70			
December 20	Lateral .....	1. 0	41.6	12. 11. 24.67	5.097	100	57.0
	Axial.....	1. 6		6. 31. 54.85			
December 20	Lateral .....	1. 0	41.6	3. 35. 53.78	5.045	40	42.5
	Axial.....	1. 6		1. 50. 4.95			
December 20	Lateral .....	1. 0	41.6	12. 12. 43.43	5.092	100	40.5
	Axial.....	1. 6		6. 31. 56.36			
December 20	Lateral .....	1. 0	41.6	3. 36. 8.80	5.045	40	42.5
	Axial.....	1. 6		1. 48. 59.23			

Dec. 20. In the determination of the adopted time of vibration of the Deflecting Magnet, for the calculation of the Absolute Measure of Horizontal Force, double weight was given to the first determination.



## Computation of the Values of Absolute Measure of Horizontal Force from Observations of Deflexion of a Magnet.

Month and Day, 1849.	Apparent Value of $a$ .	Apparent Value of $b$ .	Mean Value of $b$ .	Apparent Value of $a_1$ .	Apparent Value of $b_1$ .	Adopted Value of $a$ , assuming the Mean Value of $b$ as applicable to all.	$\text{Log. } \frac{1}{2} a$ = $\text{Log. } \frac{m}{X}$	Adopted Time of Vibration of Deflecting Magnet.	$\text{Log. } m X$ .	Value of $X$ .	Value of $m$ .
January 9	+0.21257	+0.00043	+0.00040	+0.10376	+0.01038	+0.2126	9.02653	5.077	0.17733	3.7619	0.3999
January 31	+0.21445	-0.00167		+0.10311	+0.01174	+0.2130	9.02658	5.073	0.17802	3.7646	0.4002
February 26	+0.20876	+0.00460		+0.10096	+0.01341	+0.2124	9.02617	5.079	0.17698	3.7619	0.3996
May 19	+0.20954	+0.00118		+0.10552	+0.00839	+0.2102	9.02164	5.084	0.17612	3.7778	0.3971
October 10	+0.21234	-0.00118		+0.10351	+0.01025	+0.2110	9.02317	5.095	0.17425	3.7631	0.3969
December 20	+0.21247	-0.00094		+0.10157	+0.01219	+0.2113	9.02387	5.076	0.17750	3.7742	0.3987

Values of Absolute Measure of Horizontal Force, from Observations of Vibration of the Deflecting Magnet  $\frac{H}{23}$ , unaccompanied by Deflexions.

Month and Day, 1849.	Adopted time of Vibration.	Tem- pera- ture.	$\text{Log. } m X$ .	Value of $m$ interpolated from the Deflexion Observations.	Inferred Value of $X$ .
January 18	5.092	51.0	0.17578	0.4000	3.7386
February 12	5.109	49.0	0.17188	0.4001	3.7129
February 14	5.067	48.5	0.17904	0.4001	3.7746
May 12	5.079	53.7	0.17698	0.3974	3.7823
June 6	5.102	66.0	0.17306	0.3971	3.7511
August 6	5.095	76.0	0.17426	0.3970	3.7625
September 8	5.079	65.0	0.17698	0.3969	3.7870
November 23	5.092	42.0	0.17476	0.3981	3.7564

The number of observed vibrations in the different determinations varied from 100 to 140.

ROYAL OBSERVATORY, GREENWICH.

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R E S U L T S

OF

METEOROLOGICAL OBSERVATIONS.

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1849.

The day in the first column of the following tables is to be understood, generally, as defined in civil reckoning.

The barometer is described in the *Greenwich Magnetical and Meteorological Observations*, 1847, Introduction, page xlvi, and in the corresponding parts of several preceding volumes. The barometer has been read at 21<sup>h</sup>, 0<sup>b</sup>, 3<sup>b</sup>, 9<sup>b</sup> (Astronomical), on every day, excepting on Sundays and on Good Friday and Christmas Day, on which days a smaller number of observations has been taken. Every reading has been reduced to the reading which would have been obtained at the temperature 32° of the mercury and scale, by application of the correction given in table II (pages 82 to 87) of the Report of the Committee of Physics of the Royal Society. The mean of the reduced readings has then been taken for each civil day, and finally converted into mean daily reading by application of the correction inferred from Mr. Glaisher's paper in the *Philosophical Transactions*, 1848, part I.

The positions of all the thermometers are described in the Introduction, 1847, page lxix.

The thermometers used for determining the "highest and lowest readings of the dry thermometers" are self-registering thermometers, as described in the Introduction, 1847, page lxvii; and their index-errors have been found for every month, in the manner there explained. The readings given in these tables are corrected for the index-errors.

The dry-bulb and wet-bulb thermometers are described in the Introduction, 1847, page xlix; their scales have been verified from time to time, in the manner there described.

The mean daily reading of the dry thermometer is inferred from observations taken at the same hours as the observations of the barometer; the mean of these is corrected by a quantity given in the *Phil. Trans.*, 1848, part I.

The dew-point has been exclusively inferred from simultaneous observations of the dry-bulb and wet-bulb thermometers. In order to find the difference between the dry-bulb reading and the dew-point, the difference between the dry-bulb and the wet-bulb readings has been multiplied by a factor taken from the following table (deduced by Mr. Glaisher from comparison of all the simultaneous readings of the dry-bulb, wet-bulb, and dew-point thermometers, to the end of the year 1844).

TABLE OF FACTORS, BY WHICH THE DIFFERENCE OF READINGS OF THE DRY-BULB AND WET-BULB THERMOMETERS IS TO BE MULTIPLIED, IN ORDER TO PRODUCE THE DIFFERENCE BETWEEN THE READINGS OF THE DRY-BULB AND DEW-POINT THERMOMETERS.

Reading of the Dry-bulb Thermometer.	Factor.	Reading of the Dry-bulb Thermometer.	Factor.	Reading of the Dry-bulb Thermometer.	Factor.	Reading of the Dry-bulb Thermometer.	Factor.	Reading of the Dry-bulb Thermometer.	Factor.	Reading of the Dry-bulb Thermometer.	Factor.
20	8.5	32	3.1	44	2.3	56	1.9	68	1.6	80	1.5
21	8.5	33	2.8	45	2.3	57	1.9	69	1.5	81	1.5
22	8.5	34	2.6	46	2.3	58	1.9	70	1.5	82	1.5
23	8.5	35	2.6	47	2.2	59	1.8	71	1.5	83	1.5
24	7.3	36	2.6	48	2.2	60	1.8	72	1.5	84	1.5
25	6.4	37	2.5	49	2.2	61	1.8	73	1.5	85	1.5
26	6.1	38	2.5	50	2.1	62	1.7	74	1.5	86	1.5
27	6.1	39	2.5	51	2.1	63	1.7	75	1.5	87	1.5
28	5.7	40	2.4	52	2.0	64	1.7	76	1.5	88	1.5
29	5.0	41	2.4	53	2.0	65	1.6	77	1.5	89	1.5
30	4.6	42	2.4	54	2.0	66	1.6	78	1.5	90	1.5
31	3.7	43	2.4	55	2.0	67	1.6	79	1.5		

Tables nearly equivalent to this have been used in the reduction of the observations with the wet-bulb thermometer in the years following 1844.

The dew-point being thus found for each individual observation, the mean is taken for each day (as defined from midnight to midnight), and this mean is corrected by application of the elements in the *Phil. Trans.*, 1848, part I.

The thermometers exhibiting the highest temperature in the sunshine, the lowest on the grass, and the highest and lowest temperatures of the water of the Thames, are described in the Introduction, 1847, pages lxix and lxxi. They are occasionally verified. That for the highest temperature in the sunshine was out of order from June 5 to 16, August 25 to 27, October 5 to 15, October 21 to November 1, and December 2 to 16; and those for the temperature of the Thames water from July 18 to August 6.

The mean daily value of the difference between dew-point temperature and air temperature is the difference between the two numbers in the sixth and seventh columns. The Greatest and Least are the greatest and least among the

differences corresponding to the times of observation in the civil day, and they probably differ little from the absolute maxima and minima.

The difference between the mean temperature for the day and the mean for the same day of the year on an average of seven years, is found by comparison with a table of results deduced by Mr. Glaisher from seven years' observations, made in the Magnetic and Meteorological Department of the Royal Observatory in nearly the same locality as that in which the present observations are made, which are printed in the *Greenwich Magnetical and Meteorological Observations*. For all ordinary week days, the mean adopted in these results was the mean of the twelve readings made at equidistant intervals of two hours. For Sundays and exceptional days the maximum and minimum readings were taken, and their mean was corrected for a difference exhibited in the Introductions to the various volumes of the *Magnetical and Meteorological Observations*.

Osler's Anemometer is described in the Introduction, 1847, page lxxi. Little explanation of the results deduced from it appears to be necessary. In the columns of direction, the letter C is occasionally used for Calm. It may be understood generally that the greatest pressure occurred in gusts of short duration.

Whewell's Anemometer is described in the Introduction, 1847, page lxxii. The amount of movement of air here exhibited is to be understood as from 22<sup>h</sup> to 22<sup>h</sup> (10<sup>h</sup> A.M. to 10<sup>h</sup> A.M.), the numbers being placed opposite to the day preceding the civil day on which the instrument is read. This instrument was broken in a gale of wind on February 28, and was not replaced till April 21.

The register of rain is read at 9<sup>h</sup> P.M. from Crosley's rain-gauge, described in page lxxv of the Introduction, 1847. If, however, there appears to be any doubt as to the correctness of the results, reference is made to the rain-gauge No. 2, described in the same place.

For understanding the divisions of time under the heads of Electricity and Weather, the following remarks are necessary:—The day is divided by columns into two parts (from midnight to noon, and from noon to midnight), and each of these parts is roughly subdivided into two or three parts by colons (:). Thus, when there is a single colon in the first column, it denotes that the remarks before it apply (roughly) to the interval from midnight to 6 A.M., and those following it to the interval from 6 A.M. to noon. When there are two colons in the first column, it is to be understood that the twelve hours are divided into three nearly equal parts of four hours each. And similarly for the second column.

The Electrical Apparatus is described in page lxxvii of the Introduction, 1847. The following is the explanation of the notation employed, it being premised that the quality of the Electricity is always to be supposed positive when no indication of quality is given:

g cur. denotes <i>galvanic currents</i>	N denotes <i>negative</i>	s denotes <i>strong</i>	v denotes <i>variable</i>
m .. <i>moderate</i>	P .. <i>positive</i>	sp .. <i>sparks</i>	w .. <i>weak</i>

The duplication of the letter denotes an intensity of the modification described; thus s s is very strong, v v very variable.

The Electric Apparatus was under repair from March 24 to April 12.

The Clouds and Weather are described generally by Howard's nomenclature; the figure denotes the proportion of sky covered by clouds, the whole sky being represented by 10. The notation is as follows:

a denotes <i>aurora borealis</i>	h-fr denotes <i>hoar frost</i>	r denotes <i>rain</i>	sq denotes <i>squalls</i>
ci .. <i>cirrus</i>	h .. <i>haze</i>	fr-r .. <i>frozen rain</i>	h-sqs .. <i>heavy squalls</i>
ci-cu .. <i>cirro-cumulus</i>	hl .. <i>hail</i>	h-r .. <i>heavy rain</i>	sc .. <i>scud</i>
ci-s .. <i>cirro-stratus</i>	so-ha .. <i>solar halo</i>	c-h-r .. <i>continued heavy rain</i>	sl .. <i>sleet</i>
cu .. <i>cumulus</i>	l .. <i>lightning</i>	m-r .. <i>misty rain</i>	sn .. <i>snow</i>
cu-s .. <i>cumulo-stratus</i>	li-cl .. <i>light clouds</i>	sl-r .. <i>slight rain</i>	sl-sn .. <i>slight snow</i>
d .. <i>dew</i>	lu-co .. <i>lunar corona</i>	h-sh .. <i>heavy showers</i>	s .. <i>stratus</i>
h-d .. <i>heavy dew</i>	lu-ha .. <i>lunar halo</i>	fr-shs .. <i>frequent showers</i>	t .. <i>thunder</i>
f .. <i>fog</i>	m .. <i>meteor</i>	fr-h-shs .. <i>frequent heavy showers</i>	t-s .. <i>thunder storm</i>
th-f .. <i>thick fog</i>	ms .. <i>meteors</i>	li-shs .. <i>light showers</i>	w .. <i>wind</i>
fr .. <i>frost</i>	n .. <i>nimbus</i>	sq .. <i>squall</i>	st-w .. <i>strong wind</i>

Observations of special character are reserved for the pages following the tabular arrangement.

RESULTS OF METEOROLOGICAL OBSERVATIONS

Table with columns: MONTH and DAY, 1849.; Phases of the Moon.; READINGS OF THERMOMETERS. (Dry, Dew Point, Water of the Thames); Difference between the Dew Point Temperature and Air Temperature.; WIND AS DEDUCED FROM ANEMOMETERS. (OSLER'S, General Direction, Pressure); WHEELWELL'S (Amount of Horizontal Movement of the Air on each Day); Rain in Inches read at 9h P. M.

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A. M.	P. M.	A. M.	P. M.
Jan. 1	0	0	10, ci.-s, li.-cl	10, ci.-s, li.-cl : 0
2	0	0	0	0
3	0	0	5, ci.-s, sc	5, ci.-s, sc : 10, ci.-s, sc
4	0	0 : N, w	10, ci.-s, sc	10, fr.-r : 10, r, sl
5	s	s	10, ci.-s, sc, f	10, m.-r : 10, sn
6	: w :	0	10, ci.-s, sc	5, ci.-s, sc : v
7	0	m : 0	10, ci.-s, sc	10, ci.-s, sc : r
8	0	s : 0	10, ci.-s, sc, r	10, ci.-s, sc, r
9	0	s : 0	8, ci.-s, h	0 : 10 : r
10	0	0	10, ci.-s, sc, r	10, ci.-s, sc : 9, ci.-s, sc
11	0	0	10, ci.-s, sc, w	10, ci.-s, sc, w
12	0 : s	s : 0	3, ci.-s, sc	10, ci.-s, sc : li.-sh.-r
13	0	0	10, ci.-s, sc, w, r	10, ci.-s, sc,
14	0	0	10, ci.-s, sc	10 : 0
15	0	0 : 0 : m	8, ci.-s	8 : 8 : 0
16	0	0	10, ci.-s, sc	10, ci.-s, sc, r : r
17	0	0	10, ci.-s, sc, m.-r	10, ci.-s, sc, m.-r : 0
18	0	0	10, ci.-s, sc	10, ci.-s, sc : 7, ci.-s, sc : 10, ci.-s, sc
19	0	0	8, ci.-s, li.-cl, sc	8, ci.-s, li.-cl, sc : 10, ci.-s, li.-cl, sc
20	0	v	8, ci.-s, sc	8, ci.-s, sc
21	0	0	10, ci.-s, sc	10, ci.-s, sc
22	0 : s, PN, sps, g. cur	0	5, ci.-s, sc	5, ci.-s, sc
23	0	0	5	5
24	0	0 : s	10, ci.-s, sc	10, ci.-s, sc
25	0	0	8, ci.-s, sc	8, ci.-s, sc
26	0	0 : s	10, ci.-s, sc	5, ci.-s, sc : 0
27	s	s : s, N	7, ci.-s, sc, so.-ha	10, ci.-s, sc, r
28	0	0	5, cu.-s, sc, r	5, cu, ci.-s, sc : 0 : 10, cu, ci.-s, sc, r
29	0	0	10	7
30	0	0	10, ci.-s, sc	10, ci.-s, sc, h.-r, sn
31	v	v	0	0 : 3, ci.-s : 3, h
Feb. 1	s	s : N, m	0	10, ci.-s, sc : 10, m.-r
2	0	0	10, ci.-s, sc, m.-r	10, ci.-s, sc, m.-r
3	0	0 : m	10, ci.-s, sc, r	10, ci.-s, sc, r : 10, ci.-s, sc
4	0	0 : m	10, ci.-s, sc, sl.-r	10, ci.-s, sc
5	0	m : 0	8, ci.-s, sc	10, ci.-s, sc
6	0	0	10, ci.-s, sc	10, ci.-s, sc
7	0	m : 0	10, ci.-s, sc, sl.-r	10, ci.-s, sc
8	0 : w	0	5, ci.-s, sc	5, ci.-s, sc, h.-r : 0
9	0	m : m : 0	0	10, ci.-s, sc
10	0	0	8	10 : 0
11	s	s	0, h	0, h
12	s	s	0, f	0, f
13	s	s	0	7, ci.-s, sc : 10, ci.-s, sc
14	s	s	0	0 : 10, ci.-s, sc : 0
15	0	0	0	0
16	s	s	10	10, so.-ha : 0
17	0	0	0	0
18	0	0	10, ci.-s, sc, th.-f	10, ci.-s, sc, th.-f
19	0	0	10, ci.-s, sc	10, ci.-s, sc
20	0	0	7, ci.-s, sc	10, ci.-s, sc, r
21	0	0	8, ci.-s, sc	8, ci.-s, sc : 8, ci.-s, sc, r
22	0	0	0	7, ci.-s, sc : 0, a
23	0	0	0	7, ci.-s, sc 7, ci.-s, sc 3, ci.-s, sc
24	s, N	s, N	10, ci.-s, sc, h.-r	10, ci.-s, sc, h.-r
25	s	s, N : 0 : s	10, ci.-s, sc, h.-s, h.-l	10, ci.-s, sc : v : 10, ci.-s, sc
26	0 : 0 : s	0	10, r, cu.-s, ci.-s, sc	5, cu, ci.-s, sc : 5, cu, ci.-s, sc : 0
27	0	s	0	5, cu, ci.-s, sc : 5, cu, ci.-s, sc : 0, a
28	0	0	10	10

RESULTS OF METEOROLOGICAL OBSERVATIONS

Table with columns for MONTH and DAY (1849), Phases of the Moon, READINGS OF THERMOMETERS (Dry, Dew Point, Air Temperature), WIND AS DEDUCED FROM ANEMOMETERS (OSLER'S, General Direction, Pressure), and Rain in Inches read at 9h P.M. The table covers the months of March and April.

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A. M.	P. M.	A. M.	P. M.
Mar. 1	0	0	10, ci.-s, sc	0 : 0 : 10, ci.-s, sc
2	0	0	5, ci.-s, sc	5, ci.-s, sc
3	s	s	10	10
4	m	m	5	3, sc : 0 : 0
5	m	m	10, ci.-s, sc	10, ci.-s, sc
6	m	m	0	10, ci.-s, sc : 3, ci.-s, sc : 9, ci.-s, sc, lu.-ha
7	0	0	7, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, sl.-r
8	m	m	0	10, ci.-s, sc, hl, r, sn : 5, cl.-s, sc, hl, r, sn
9	0	0	2	7 : 5 : 8, sn
10	m	m	3, ci.-s, sc	10, ci.-s, sc : 3, ci.-s, sc : 3, ci.-s, sc
11	0	m : 0	10, ci.-s, sc	10, ci.-s, sc : 8, ci.-s, s : 10, ci.-s, sc
12	0	w : 0	10, ci.-s, sc	10, ci.-s, sc
13	0	0	10, ci.-s, sc	8, ci.-s, sc : 10, ci.-s, sc
14	0	s	10, ci.-s, sc	10, ci.-s, sc
15	s	s	10, ci.-s, sc	10, ci.-s, sc
16	m	m	10, ci.-s, sc	10, ci.-s, sc
17	0	0	2, h	2, h
18	0	0	10, ci.-s, sc, th.-f	10, ci.-s, sc, th.-f
19	0	0	10	10 : 10 : 8
20	0	0	10, cu.-s, ci.-s, sc	8, cu.-s, ci.-s, sc : 0
21	0	0	10, ci.-s, sc	10, ci.-s, sc : 0
22	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, l
23	0	0	10, ci.-s, sc	10, ci.-s, sc
24	0	0	10, ci.-s, cu.-s, cu, sc, sn, h	10, ci.-s, cu.-s, cu, sc, m, h : 0
25			10, ci.-s, sc, sn	10, ci.-s, sc, sn
26			10, ci.-s, sc	10, ci.-s, sc
27			10, ci.-s, sc	10, ci.-s, sc
28			10, ci.-s, sc, hl, r	10, ci.-s, sc
29			10, cu.-s, ci.-s, sc, r	0
30			10, ci.-s, sc	10, ci.-s, sc, r : 10, ci.-s, sc
31			5, cu, cu.-s, sc	5, cu, cu.-s, sc, r : 5, cu, cu.-s, sc
Apr. 1			8, ci.-s, sc	8, ci.-s, sc : 8, ci.-s, sc, lt.-sh
2			8	8, r
3			10, ci.-s, sc	10, ci.-s, sc
4			7, cu, cu.-s, sc	7, cu, cu.-s, sc : 10, cu, cu.-s, sc
5			8, m.-r	8 : 0
6			0	0 : 7
7			8	0
8			10, ci.-s, sc, h.-r	8, ci.-s, sc, : 0
9			10, ci.-s, sc	10, ci.-s, sc, r
10			9, ci.-s, sc, h.-r	9, ci.-s, sc, h.-r : 9, ci.-s, sc
11			8, ci.-s, sc, r	8, ci.-s, sc, r : 0
12	0	0	7, ci.-s, sc, r	7, ci.-s, sc, r
13	s, N	s, N	10, ci.-s, sc, h.-shs	10, ci.-s, sc, h.-shs
14	m	m	5, ci.-s, cu, li.-cls, sc	5, ci.-s, cu, li.-cls, sc
15	v	v	10, ci.-s, sc, r	10, ci.-s, sc, r : 10, ci.-s, sc : 0
16	m	m : 0	10, ci.-s, sc	10, ci.-s, sc
17	0	0	9	9 : 10, sn : 0 : 10, sn
18	0	0	8, cu.-s, ci.-s, sc, sn	8, cu.-s, ci.-s, sc, r, sn
19	s, N, sps, g. cur	s, N, sps, g. cur	10, ci.-s, sc, sn, r	10, ci.-s, sc, sn, r : 10, ci.-s, sc
20	s, sps	s	7, fr.-shs, hl, sl, r	7, fr.-shs, hl, sl, r : 0
21	s	s	10	10 : 0
22	0	0	10, ci.-s, sc, m.-r	10, ci.-s, sc
23	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r : 10, ci.-s, sc, fr.-shs
24	0	0	10, ci.-s, sc	10, ci.-s, sc
25	0	0	10, ci.-s	10, ci.-s
26	0	0	10, cu, ci.-s, sc, r	7, cu, ci.-s, sc, r : 0
27	m	m	7, cu, ci.-s, sc	7, cu, ci.-s, sc : 10, cu, ci.-s, h.-sh.-r
28	0	P, N, g. cur, sps	7, cu, cu.-s, sc, fr.-h-shs	7, cu, cu.-s, sc, fr.-h-shs, t : 7, cu, cu.-s, sc, fr.-h-shs
29	0	0 : s	0	10, ci.-s



Table with columns: MONTH and DAY, 1849; Phases of the Moon; READINGS OF THERMOMETERS (Dry, Dew Point, etc.); Difference between the Dew Point Temperature and Air Temperature; WIND AS DEDUCED FROM ANEMOMETERS (General Direction, Pressure, etc.); Rain in Inches read at 9th P. M.

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A. M.	P. M.	A. M.	P. M.
Apr. 30	v	v	0	0
May 1	0	0 : s	10, ci.-s, sc	10, ci.-s, sc
2	0	0	10, ci.-s, sc	10, ci.-s, sc, t.-s
3	0	s : 0 : s	8	0 : 0, l
4	s : 0	s	0	0
5	0	s : 0	7, cu, cu.-s, sc	7, cu, cu.-s, sc, t
6	0	0	10, cu, ci, sc	10, cu, ci, sc
7	0	0	10, ci.-s, sc	7, ci.-s, sc
8	0	0	5, ci.-s, sc	10, ci.-s, sc
9	0	0	10, ci.-s, sc	10, ci.-s, sc, r
10	0	0	10, ci.-s, sc	10, ci.-s, sc, r
11	0	0	10	10 : 0 : 10
12	0	0	8, ci.-s, li.-cls, sc	8, ci.-s, li.-cls, sc
13	0	0	8, ci.-s, sc	8, ci.-s, sc : 0
14	0	0	10, cu, ci.-s, sc	7, cu, ci.-s, sc : 10, cu, ci.-s, sc
15	0	0	7, ci.-s, sc	7, ci.-s, sc : 0
16	0	0	10, ci.-s, sc, h.-r	9, ci.-s, sc : 10, ci.-s, sc, h.-r
17	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, fr.-shs
18	s N	s N	10, ci.-s, sc, li.-cls, h.-sh	7, ci.-s, sc, li.-cls : 10, ci.-s, sc, li.-cls
19	0	0	10, cu, ci.-s, sc	10, cu, ci.-s, sc
20	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r : 10, ci.-s, sc
21	0	0	10, ci.-s, sc, li.-cls	7, ci.-s, sc, li.-cls, sh
22	0	0	10, cu, ci.-s, sc, r	7, cu, ci.-s, sc, fr.-shs
23	0	0	5, cu, cu.-s, sc	5, cu, cu.-s, sc
24	s : 0 : 0	0	0	7, cu, cu.-s, sc : 7, cu, cu.-s, sc
25	0	0	7, cu, cu.-s, li.-cls	7, cu, cu.-s, li.-cls : 10
26	0	0	8, sl.-r	3 : 10
27	0	0	3, ci, li.-cls	3, ci, li.-cls
28	s N	s N	10, ci.-s, sc	10, ci.-s, sc, h.-r
29	0	0	10, cu, ci.-s, sc	7, cu, ci.-s, sc : 5, cu, ci.-s, sc : 0
30	0	0	0	5, ci.-s, sc : 7, ci.-s, sc
31	0	0	10, ci.-s, sc	10, ci.-s, sc : 5, ci.-s, sc
June 1	m	m	6, ci.-s, sc	10, ci.-s, sc : 0
2	s	s	8, cu, li.-cls, ci.-s, sc	10, cu, li.-cls, ci.-s, sc
3	0	0	0	0
4	s	s : 0	7, cu, cu.-s, sc	7, cu, cu.-s, sc : 10, cu, cu.-s, sc
5	s	s, sps, g. cur : 0	0	5, cu, ci.-s, sc, t : 10, cu, ci.-s, sc, sl.-sh
6	0	0	10, ci.-s, sc	10, ci.-s, sc, r : 10, ci.-s, sc, r : 10, ci.-s, sc
7	0	0	8, cu, ci.-s, sc	10, cu, ci.-s, sc
8	v	v : 0	5, cu.-s, li.-cls, sc	10, cu.-s, li.-cls, sc
9	0	0	3, ci.-s, li.-cls	3, ci.-s, sc, li.-cls : 0
10	0	0	10, ci.-s, sc	10, ci.-s, sc : 0
11	0	0	10, ci.-s, sc	10, ci.-s, sc : 0
12	0	0	10, cu.-s, ci.-s, sc	10, cu.-s, ci.-s, sc, fr.-shs
13	0	0 : 0 : s	5, cu, cu.-s, sc	5, cu, cu.-s, sc : 0
14	v	v	0	2, cu, li.-cls : 0
15	s	s	10, ci.-s, sc	10, ci.-s, sc
16	0	0	10, cu, cu.-s, ci.-s, sc	10, cu, cu.-s, ci.-s, sc : 5, cu, cu.-s, ci.-s, sc
17	0	0	8, cu, cu.-s, sc	0
18	0	0 : 0 : w	3, cu, li.-cls	3, cu, li.-cls
19	0	0	10, ci.-s, sc	10, ci.-s, sc : 5, ci.-s, sc
20	0	m : 0	5, ci, li.-cls	5, ci, li.-cls : 10, ci, li.-cls
21	0	0	9, cu, cu.-s, ci.-s, sc	9, cu, cu.-s, ci.-s, sc
22	0	v	5, cu, ci, sc	0
23	s	s	0	0
24	0 : m	0	0	0
25	0	s N, fr.-sps, g. cur: wP	10, ci.-s, sc	10, ci.-s, sc, sh : 5, ci.-s, sc
26	v	0 : v : v	7, cu, ci.-s, sc	7, cu, ci.-s, sc
27	v	v	10, cu, ci.-s, sc	5, cu, ci.-s, sc : 0

RESULTS OF METEOROLOGICAL OBSERVATIONS

Table with columns: MONTH and DAY, 1849; Phases of the Moon; Mean Daily Reading of the Barometer; READINGS OF THERMOMETERS (Dry, Dew Point, Water of the Thames); Difference between the Dew Point and Air Temperature; WIND AS DEDUCED FROM ANEMOMETERS (OSLER'S, General Direction, Pressure); and Rain in Inches read at 9 P. M.

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A. M.	P. M.	A. M.	P. M.
June 28	0	s : 0	10, ci.-s, sc	10, ci.-s, sc
29	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, r
30	0	0	8, ci.-s, sc, r	8, ci.-s, sc : 0
July 1	0	0	0	0 : 10, ci.-s, sc
2	0	0	5, ci.-s, sc	5, ci.-s, sc
3	0	0	10, cu, cu.-s, ci.-s, sc, s, w	5, cu, cu.-s, ci.-s, sc, s, w : 5, cu, cu.-s, ci.-s, sc
4	0	0	10, ci.-s, sc	10, ci.-s, sc : 5, ci.-s, sc
5	0 : m : 0	0	5, cu, ci.-s, sc	5, cu, ci.-s, sc
6	0	m : 0 : 0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	2, cu.-s, h	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	7, cu, cu.-s, sc	7, cu, cu.-s, sc : 0 : 0
14	0	0	10, ci.-s	5, ci.-s : 0 : 10
15	0	0	10, ci.-s, sc, sl.-sh	0
16	0	0	10, cu, ci.-s, sc	5, cu, ci.-s, sc
17	0	0	10, ci.-s, sc	10, ci.-s, sc, fr.-shs
18	0	0	10, ci.-s, sc	10, ci.-s, sc, r : 5, ci.-s, sc
19	0	s, N, fr.-sps, g. cur	10, cu, ci.-s, sc	10, cu, ci.-s, sc, l, t, h.-r : 10, cu, ci.-s, sc
20	0	s, N, shs, g. cur : m	10, cu, ci.-s, sc	10, cu, ci.-s, sc, l, t, sl.-shs : 10, cu, ci.-s, sc
21	0	0	10, ci.-s, sc	10, ci.-s, sc
22	0	0	5, cu, ci.-s, sc	10, cu, ci.-s, sc
23	0	0	10, ci.-s, sc, fr.-shs	10, ci.-s, sc, fr.-shs : 0
24	s	0 : s, N	10, cu, cu.-s, ci.-s, sc, fr.-h.-shs	10, cu, cu.-s, ci.-s, sc : 10, ci.-s, sc, h.-r
25	s, N	s, N	7, cu, sc, fr.-h.-shs	7, cu, sc, fr.-h.-shs
26	s, N, sps, g. cur	s, P, sps, g. cur : s, N, sps, g. cur	10, cu, ci.-s, sc	10, cu, ci.-s, sc, t.-s : 5, cu, ci.-s, sc
27	0	0	10, cu.-s, sc	10, cu.-s, sc, sh.-r : 10, cu.-s, sc, sh.-r
28	w	w	0	7, ci.-s, sc : 10, ci.-s, sc
29	v	v	10, ci.-s, sc	5, ci.-s, sc, h.-shs : 5, ci.-s, sc
30	0	w	5, ci.-cu, ci.-s, sc	7, ci.-cu ci.-sc : 3, shs.-r
31	v	v	10, ci.-s, sc	10, ci.-s, sc
Aug. 1	0	s	7, cu, ci.-cu, ci.-s, sc	7, cu, ci.-cu, ci.-s, sc
2	v	v	8, ci.-s, sc	8, ci.-s, sc : 8, ci.-s, sc, sh
3	0	s	10, ci.-s, sc, r	10, ci.-s, sc
4	v	v	7, cu, ci, sc	7, cu, ci, sc
5	0	0 : w	0	0 : 3
6	s	s	5, cu.-s, li.-cls, sc	5, cu.-s, li.-cls, sc : 0
7	s	s : 0	5, ci.-s, li.-cls, sc	7, ci.-s, li.-cls, sc, l : 0
8	0	0	7, h.-r, ci.-s, sc	5, ci.-s, sc : 0
9	w	w	8, ci.-s, sc	8, ci.-s, sc
10	v	v	7, ci.-s, li.-cls, sc	7, ci.-s, li.-cls, sc
11	w	w	0	0 : 10, ci.-s, sc, l, h.-sh
12	0	0	0	0
13	0	0	7, cu, ci.-s, sc	5, cu, ci.-s, sc : 0, shs
14	0	0 : w	10, cu, ci.-s, sc	5, sh, cu, ci.-s, sc
15	0	0	10, ci.-s, sc	10, ci.-s, sc : 0
16	0	0	10, ci.-s, sc	10, ci.-s, sc, r : 0
17	0	s, N : s, P	7, cu, cu.-s, ci.-s, sc	7, sh, cu, cu.-s, ci.-s, sc
18	s	s	7, cu, ci.-s, sc	7, cu, ci.-s, sc : 0, l
19	0	0 : m	5, ci.-s, li.-cls, sc	0
20	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, l
21	0	s : 0	10, ci.-s, sc	10, ci.-s, sc
22	0	0 : m	10, ci.-s, sc	10, ci.-s, sc
23	s	s	10, ci.-s, sc	10, ci.-s, sc
24	0	v : 0	5, cu, ci, sc	5, cu, ci, sc : 10, cu, ci, sc, sl.-r
25	w	w	7	7

RESULTS OF METEOROLOGICAL OBSERVATIONS

Table with columns: MONTH and DAY, 1849; Phases of the Moon; Mean Daily Reading of the Barometer; READINGS OF THERMOMETERS (Dry, Dew Point); Difference between the Dew Point Temperature and Air Temperature; WIND AS DEDUCED FROM ANEMOMETERS (OSLER'S, General Direction, Pressure); and Rain in Inches read at 9th P.M.

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A.M.	P.M.	A.M.	P.M.
Aug. 26	0	0 : m	3, li.-cls	10, li.-cls
27	0	0	8, ci.-s, li.-cls, sc	3, ci.-s, li.-cls, sc : 10, ci.-s, li.-cls, sc
28	0	w	7, ci.-s, li.-cls, sc	7, ci.-s, li.-cls, sc : 10, ci.-s, li.-cls, sc
29	0	0	10, ci.-s, sc, h	10, ci.-s, sc, h
30	0	s	10, ci.-s, sc, h	10, ci.-s, sc, h
31	v	v	10, ci.-s, sc, h	0
Sep. 1	0	0 : w	10, r	10 : 10, t.-s, r
2	0	0	5, cu, ci.-s	5, cu, ci.-s : 10, cu, ci.-s, l
3	0	0 : v : 0	0	10, ci.-s, sc : 10, ci.-s, sc, l, r
4	v	v	10, ci.-s	5, ci.-s
5	v	v	10, ci.-s : 0	0
6	0	0	0	0
7	0	0	10, ci.-s : 5, ci.-s	0
8	0	s : s : 0	10, ci.-s	10, ci.-s
9	v	v	5, cu.-s, ci.-s	5, cu.-s, ci.-s
10	0	m : 0	10, cu.-s, ci.-s, sc	10, cu.-s, ci.-s, sc, l, r
11	w	w	5, cu, cu.-s, ci.-s	5, cu, cu.-s, ci.-s, l, t
12	v	v	10, ci.-s, sc, h, fr.-shs	10, ci.-s, sc, h, fr.-shs, l
13	0 : w	0	10, ci.-s, sc, sqs, w, r	5, ci.-s sc
14	0	0 : v : v	10, cu.-s, ci.-s	10, cu.-s, ci.-s
15	0	s : s : 0	10, ci.-s, sc	10, ci.-s, sc
16	0	0	10, ci.-s, sc, h	10, ci.-s, sc, h
17	v	v	3, cu, cu.-s, ci.-s	3, cu, cu.-s, ci.-s : 0
18	0	0	0 : 3, li.-cls	3, li.-cls : 10
19	v	v	10, cu.-s, ci.-s, h	3, cu.-s, ci.-s, h
20	0 : 0 : s	0	10, ci.-s, sc	10, ci.-s, sc : 0
21	0	0	10, cu.-s, ci.-s, shs	10, cu.-s, ci.-s, shs : 0
22	v	v	7, cu, cu.-s, ci.-s	0 : 10, cu, cu.-s, ci.-s
23	0	0	10, ci.-s, sc, sl.-r	10, ci.-s, sc, sl.-r
24	0	0 : s	10, cu, cu.-s, sc	10, sh, cu, cu.-s, sc : 5, cu, cu.-s, sc
25	v	v	0	0 : 0, h
26	0	0 : s	7, ci.-s, li.-cls	0
27	v	v	10, cu, cu.-s, ci.-s, sc	10, cu, cu.-s, ci.-s, sc : 10, cu, cu.-s, ci.-s, sc, r
28	0	w : 0 : 0	0	10, ci.-s, sc
29	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, r
30	0	0	10, ci.-s, sc, h.-sqs	10, ci.-s, sc, h.-sqs
Oct. 1	0	s : s : 0	10, ci.-s, sc, m.-r	10, ci.-s, sc, m.-r
2	s	s	10, cu.-s, ci.-s, sc	10, cu.-s, ci.-s, sc, th.-f
3	0 : 0 : s	0	10, ci.-s, sc, h.-r	10, ci.-s, sc, h.-r, st.-w
4	w	s : w	10, ci.-s, sc, h.-r : 10, ci.-s, sc	10, ci.-s, sc
5	0 : w	0	0	0 : 5, ci.-s, li.-cls : 10, ci.-s, li.-cls
6	s	s	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, r
7	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, h.-r
8	0 : m	0	10, ci.-s, sc	7, ci.-s, sc : 0
9	0	s : s : 0	0	5, cu.-s, ci.-s, h : 0
10	s	s	0	7, cu, cu.-s, ci.-s
11	w	w	10, ci.-s sc	10, ci.-s, sc
12	m	m	10, cu.-s, ci.-s, sc	7, cu.-s, ci.-s, sc
13	0	s : 0	10, ci.-s, sc, h.-r	10, ci.-s, sc, h.-r
14	0	0 : 0 : m	10, ci.-s, sc	0
15	0 : 0 : s	0 : 0 : w	10, ci.-s	0 : 5, ci.-s, sc
16	v	v	5, ci.-s, li.-cls	5, ci.-s, li.-cls : 10, ci.-s, li.-cls
17	0	0	5, ci.-s, li.-cls, r	5, ci.-s, li.-cls
18	0	0	0	0
19	0	0	0	5, ci.-s, li.-cls : 0
20	0	0 : v : 0	5, cls	5, ci.-s : 10, ci.-s, r
21	0	0	10, ci.-s, r	10, ci.-s : 0
22	0	0	10, ci.-s, li.-cls, sc : 7, ci.-s, li.-cls, sc	5, ci.-s, li.-cls, sc : 5, ci.-s, li.-cls, sc, fr.-shs, a

RESULTS OF METEOROLOGICAL OBSERVATIONS

Table with columns: MONTH and DAY, 1849; Phases of the Moon; Mean Daily Reading of the Barometer; READINGS OF THERMOMETERS (Dry, Dew Point, etc.); Difference between the Dew Point Temperature and Air Temperature; WIND AS DEDUCED FROM ANEMOMETERS (OSLER'S, General Direction, Pressure, etc.); Rain in Inches read at 9th P. M.

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A.M.	P.M.	A.M.	P.M.
Oct. 23	0	v : 0	8, ci.-s	8, ci.-s
24	0	0	10, ci.-s, li.-cls, sc	5, ci.-s, li.-cls, sc
25	0	s, N : 0	10, ci.-s	10, ci.-s : 10, ci.-s, r
26	0	0	7, cu.-s, ci.-s	0 : 10, cu.-s, ci.-s
27	0	0	10, ci.-s, sc, r	10, ci.-s, sc
28	0	0	10, ci.-s, sc, h	10, ci.-s, sc, h : 0
29	0	0	0	5, cu.-s, li.-cls : 0
30	0	0	0	0 : 5, cls
31	0	0	10, ci.-s : 0	0 : 10, ci.-s, lu, ha
Nov. 1	0	0	10, ci.-s	10, ci.-s : 5, ci.-s
2	w : 0 : 0	0	3	3 : 0
3	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, th, f
4	0	0	10, ci.-s, sc, r, f	10, ci.-s, sc, r, f
5	s	s	0	5, cu, ci, li.-cls : 0
6	0	s : 0	0	0
7	0	0	10, ci.-s : 10, ci.-s, r, hl	10, ci.-s
8	0	0	10, ci.-s	10, ci.-s
9	0	0	10, ci.-s, sc	10, ci.-s, sc
10	0	0	8, ci.-s, li.-cls	8, ci.-s, li.-cls : 0
11	0	0	0	0 : 5, ci.-s, h
12	0	0	10, th.-f : 7	7 : 10
13	0	0	5, ci.-s, sc : 10, ci.-s, sc	10, ci.-s, sc, fr.-shs : 5, ci.-s, sc
14	0	0	7, cu, ci.-s, sc	7, cu, ci.-s, sc : 0
15	0	0	0	8, cu.-s, ci.-s, sc, fr.-shs
16	0	0	5, cu.-s, ci.-s, h	5, cu.-s, ci.-s, h : 0
17	0	0	0	0
18	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r
19	0	0	10, ci.-s, sc	10, ci.-s, sc
20	0	0	10, ci.-s, sc	10, ci.-s, sc
21	0	0	10, ci.-s, sc	10, ci.-s, sc
22	0	0	10, ci.-s, sc	10, ci.-s, sc
23	0	0	10, ci.-s, sc	10, ci.-s, sc, r
24	0	w	10, ci.-s, sc	5, cu, ci.-s, sc, th.-f : 0
25	0	0 : s	10, ci.-s, th, f	10, ci.-s, th.-f : 0
26	0	0 : s	10, ci.-s, sc	0 : 5, ci.-s, sc
27	v	v	10, ci.-s : 5, ci.-s	0 : 0, th.-f
28	s	s : w	5, th, f : 0	0 : 8, cu.-s
29	0	0	10, ci.-s	5, ci.-s : 8, ci.-s, lu, ha
30	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r
Dec. 1	s	0	0	10
2	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r
3	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r
4	0	0	2, li.-cls, ci.-s	5, li.-cls, ci.-s : 7, li.-cls, ci.-s : 5, li.-cls, ci.-s
5	s, N	0	10, r, cls, ci.-s, sc	10, cls, ci.-s, sc, fr.-shs
6	0	m : 0	0	0
7	0	0	10	10
8	0	0 : s	10, h.-r : 0	0
9	0 : s	0	0	0, h.-f : 10, ci.-s, th.-f
10	m	m	10, ci.-s, sc, f	10, ci.-s, sc, f, r : 10, ci.-s, sc, f
11	0	0 : m	10, ci.-s, sc, r	10, ci.-s, sc, r
12	m	m	10, ci.-s, sc	10, ci.-s, sc
13	m	m	10, ci.-s, sc	10, ci.-s, sc
14	0	0	10, r, ci.-s, sc	10, r, ci.-s, sc
15	0	0	10, ci.-s, sc, r : 10, ci.-s, sc	10, ci.-s, sc
16	0	0	10, ci.-s, sc	10, ci.-s, sc : 10, ci.-s, sc, r
17	0	0	0	10, ci.-s, sc : 0
18	0	0	10, ci.-s, sc, r	10, ci.-s, sc, r
19	0	0	7, ci.-s, li.-cls	8, ci.-s, li.-cls : 0
20	0	0	0	8, ci.-s, sc



RESULTS OF METEOROLOGICAL OBSERVATIONS

MONTH and DAY, 1849.	Phases of the Moon.	Mean Daily Reading of the Barometer (corrected and reduced to 32° Fahrenheit).	READINGS OF THERMOMETERS.								Difference between the Dew Point Temperature and Air Temperature.			Difference between the Mean Tempe- rature of the Day and the Mean Tem- perature of the same day on an Average of 7 Years.	WIND AS DEDUCED FROM ANEMOMETERS.							
			Dry.			Dew Point.		In the Water of the Thames, at Greenwich, by Self-Regis- tering Ther- mometers, read at 9 <sup>h</sup> A. M. next morning.			OSLER'S.				W.H.R. WELL'S	Rain in Inches read at 9 <sup>h</sup> P. M.						
			Highest.	Lowest.	Mean Daily Value.	Mean Daily Value.	Highest in the Sun, as shown by a Self-Registering Thermometer read at 9 <sup>h</sup> A. M. next morning.	Lowest on the Grass, as shown by a Self-Registering Thermometer read at 9 <sup>h</sup> A. M. next morning.	Highest.	Lowest.	Mean Daily Value.	Greatest.	Least.				General Direction.		Pressure in lbs. on the square foot.			
			A. M.		P. M.		Greatest.	Least.	Mean of 24 Obs.	Amount of Horizontal Movement of the Air on each Day.												
Dec. 21	..	30.341	37.3	30.3	32.9	30.4	37.5	25.4	42.6	38.7	2.5	5.3	2.3	-	6.1		N	NNE	2.0	0.0	0.1	125
22	First Qr.	30.434	35.3	31.0	33.3	30.5	36.7	25.0	40.8	37.1	2.8	4.9	1.0	-	5.2	NNE	NNE	3.0	0.0	0.5	100	0.00
23	In Equator	30.440	36.3	29.0	32.6	29.0	..	17.8	39.3	34.9	3.6	5.3	2.7	-	5.8	NNE	N	4.0	0.0	0.5	50	0.00
24	..	30.304	35.3	26.3	32.0	28.9	37.9	26.8	38.3	33.9	3.1	5.9	1.8	-	6.3	N; SW	WSW	0.0	0.0	0.0	25	0.02
25	..	30.378	37.1	30.3	34.2	28.2	..	28.8	37.4	32.9	6.0	10.1	3.5	-	3.8	NE	N	0.0	0.0	0.0	25	0.00
26	..	29.922	41.3	34.0	38.6	36.6	44.0	32.0	37.3	32.9	2.0	3.4	0.7	+	0.7	SW	W	0.0	0.0	0.0	155	0.00
27	..	29.327	42.1	33.3	37.7	28.7	45.0	22.8	36.6	32.7	9.0	12.3	6.0	-	0.2	SW; NW	NNW	4.5	0.0	1.4	110	0.00
28	..	29.308	33.0	23.1	25.2	18.9	39.0	10.8	35.0	30.9	6.3	15.4	3.4	-	13.0	NW	NNW	5.0	0.0	1.4	170	0.00
29	Full Perigee Greatest Declination N.	29.460	36.5	18.8	31.1	23.9	39.0	31.0	34.3	29.9	7.2	8.5	4.5	-	7.4	SW	NW	3.0	0.0	0.9	190	0.00
30	..	29.999	37.7	30.0	33.5	27.3	..	24.0	33.3	29.9	6.2	7.0	2.8	-	5.2	N	N	0.0	0.0	0.0	115	0.00
31	..	29.956	38.0	29.3	34.3	28.1	42.0	19.3	33.8	29.9	6.2	8.5	2.8	-	4.7	N by W	NNW; W	0.0	0.0	0.0	95	0.00

*Jan 15*

MONTH and DAY, 1849.	ELECTRICITY.		CLOUDS AND WEATHER.	
	A. M.	P. M.	A. M.	P. M.
Dec. 21	0	0	10, ci.-s, sc, shs, sn, hl	10, ci.-s, sc
22	0	0	8, ci.-s, sc	8, ci.-s, sc, fr.-shs, sn
23	0	0	0	0 : 10, ci.-s
24	s	s	10, ci.-s, sc	10, ci.-s, sc, sl, sn : 10, ci.-s, sc, m.-r
25	s	s	8, ci.-s, sc : 0	0 : 10, ci.-s, sc
26	0	0	10, ci.-s, sc, f, r	10, ci.-s, sc
27	0	0	5, ci.-s, h : 0	0
28	0	0	10, h.-sn : 0	0 : 10, cls
29	w	0	10, ci.-s, sc	10, ci.-s, sc : 3, cls
30	0	0	0	0
31	0	0	10, ci.-s, sc : 0	10, ci.-s, sc

MAXIMA AND MINIMA READINGS OF THE BAROMETER.

The following table contains the highest and lowest readings of the Barometer, reduced to 32° Fahrenheit, as taken by the eye-observations. There is good reason to believe that these readings do not differ much from true maxima and minima, although the times may sometimes be sensibly erroneous.

Table with 8 columns: Maxima (Approximate Mean Solar Time, Reading), Minima (Approximate Mean Solar Time, Reading), Maxima (Approximate Mean Solar Time, Reading), Minima (Approximate Mean Solar Time, Reading). Rows list months from January to December with specific time and reading data.

READINGS OF THE THERMOMETERS SUNK IN THE GROUND.

(I.)--Reading of a Thermometer whose bulb is sunk to the depth of 25.6 feet (24 French feet) below the surface of the soil, at Noon on every Day, except Sundays.

Table with 13 columns: Day of the Month, 1849., and months from January to December. Rows show temperature readings for days 1 through 6, with handwritten annotations and corrections.

51.76

(I.)—Reading of a Thermometer whose bulb is sunk to the depth of 24 French feet—continued.

Day of the Month, 1849.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	2.21	2.78	4.87	°	2.90	4.94	9.93	2.90	°	3.96	8.41
7	S 10.43	51.05	50.38	49.73	49.23	48.96	49.26	49.96	50.78	S 8.46	51.98	52.13
8	51.69	51.07	50.30	49.72	49.23	48.96	S 11.20	50.03	50.80	51.53	52.04	S 12.13
9	51.66	51.84	50.27	49.72	49.20	48.95	49.28	50.03	S 4.48	51.53	52.05	S 12.67
10	51.66	51.00	50.25	49.68	49.18	S 5.27	49.30	50.05	50.86	51.54	52.05	S 12.76
11	51.62	S 11.98	S 11.98	49.67	49.18	48.95	49.33	50.07	50.87	51.58	S 12.09	52.09
12	51.59	50.90	50.25	49.64	49.18	48.95	49.35	S 6.07	50.80	51.60	52.05	52.07
13	51.64	50.87	50.24	49.63	49.18	S 5.20	49.37	50.10	50.92	51.62	52.06	52.06
14	S 9.56	50.88	50.18	49.62	49.16	48.97	49.38	50.17	50.95	S 9.20	52.09	52.11
15	51.58	50.87	50.18	S 5.26	49.15	48.98	S 4.91	50.16	50.97	51.65	52.06	52.13
16	51.55	50.82	50.15	49.55	49.14	48.98	49.43	50.19	S 5.37	51.68	52.05	S 12.55
17	51.58	50.80	50.14	49.52	49.12	S 5.80	49.44	50.23	51.04	51.76	52.05	52.07
18	51.52	S 5.14	S 6.14	49.52	49.13	49.02	49.45	50.23	51.04	51.76	S 12.05	52.06
19	51.53	50.76	50.07	49.47	49.10	49.00	49.45	S 6.08	51.08	51.78	52.08	52.04
20	51.50	50.74	50.05	49.47	S 5.20	49.06	49.47	50.30	51.08	51.80	52.05	52.00
21	S 9.26	50.73	50.04	49.45	49.10	49.03	49.50	50.33	51.13	S 6.43	52.08	51.98
22	51.44	50.72	50.00	S 4.95	49.06	49.04	S 5.22	50.36	51.15	51.80	52.06	51.98
23	51.44	50.66	50.03	49.44	49.08	49.07	49.49	50.38	S 6.52	51.84	52.08	S 12.13
24	51.42	50.64	49.96	49.42	49.08	S 5.22	49.48	50.41	51.22	51.86	52.07	51.94
25	51.38	S 4.45	S 6.15	49.40	49.07	49.07	49.59	50.44	51.23	51.87	S 12.4	Christ. Day. 2.02
26	51.35	50.59	49.96	49.38	49.05	49.08	49.63	S 6.22	51.88	52.06	52.07	51.94
27	51.34	50.56	49.92	49.37	S 5.46	49.10	49.64	50.53	51.28	51.90	52.07	51.93
28	S 8.37	50.54	49.88	49.35	49.03	49.10	49.69	50.54	51.31	S 11.5	52.04	51.86
29	51.25	49.85	49.88	S 5.36	48.98	49.12	S 5.52	50.58	51.33	51.83	52.06	51.88
30	51.23	49.85	49.85	49.35	48.98	49.03	49.73	50.58	S 6.37	51.84	52.10	S 12.90
31	51.21	49.86	49.86	49.35	48.98	49.03	49.75	50.60	51.83	51.83	52.10	51.86
	41.61	51.56	50.87	50.15	49.57	49.15	49.01	26.93	50.22	50.97	51.67	52.04
												52.03

The letter S denotes that the day was Sunday.

From 1846, April, to 1847, December, this thermometer was read every two hours, night and day (excepting Sundays and a few other days). During that interval of time, the monthly mean of the readings at noon was found in twelve instances to be greater by 0°·01 than the monthly mean of all the observations; in one instance the excess was 0°·02, and in another it amounted to 0°·03. In all the remaining cases the means of the noon observations agreed precisely with the means of all the observations.

(II.)—Reading of a Thermometer whose bulb is sunk to the depth of 12·8 feet (12 French feet) below the surface of the soil, at Noon on every Day, except Sundays.

Day of the Month, 1849.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
d	°	2.83	2.57	°	2.58	3.20	°	2.58	2.19	°	3.62	3.14
1	50.32	48.24	47.24	S 4.24	46.90	48.55	S 6.07	53.85	55.13	55.58	54.41	52.85
2	50.18	48.24	47.24	46.96	46.86	48.60	51.38	53.93	S 3.32	55.55	54.38	S 12.99
3	50.08	48.26	47.23	46.90	46.94	S 5.51	51.46	...	55.19	55.55	54.34	52.72
4	50.12	S 4.37	S 4.28	46.93	46.88	48.75	51.55	53.98	55.24	55.55	S 26.75	52.58
5	49.98	48.20	47.24	46.88	46.90	48.87	51.65	S 4.34	55.28	55.56	54.25	52.52
6	49.97	48.13	47.24	46.88	S 4.36	48.95	51.77	54.09	55.31	55.48	54.20	52.45
7	S 6.65	48.08	47.28	46.90	46.94	49.03	51.90	54.16	55.30	S 3.27	54.14	52.33
8	49.75	48.13	47.17	S 4.45	46.97	49.14	S 9.71	54.27	55.35	55.53	54.19	52.23
9	49.74	48.08	47.15	46.95	47.00	49.22	52.04	54.24	S 3.47	55.48	54.14	S 12.83
10	49.65	48.03	47.16	46.93	47.03	S 5.96	52.12	54.25	55.40	55.48	54.10	51.99
11	49.54	S 4.65	S 4.24	46.92	47.08	49.32	52.22	54.30	55.38	55.49	S 26.02	51.92
12	49.44	47.92	47.16	46.93	47.14	49.50	52.30	S 2.51	55.43	55.44	53.98	51.78
13	49.45	47.90	47.14	46.94	S 4.26	49.64	52.40	54.32	55.46	55.39	53.94	51.68
14	S 5.57	47.90	47.14	46.96	47.26	49.75	52.47	54.40	55.58	S 3.81	53.94	51.69
15	49.22	47.88	47.14	S 4.63	47.30	49.90	S 13.55	54.40	55.55	55.34	...	51.63
16	49.10	47.84	47.11	46.87	47.40	49.97	52.65	54.43	S 3.80	55.30	53.74	S 10.62
17	49.08	47.84	47.10	46.86	47.44	S 5.05	52.73	54.49	55.67	55.36	53.69	51.38
18	48.94	S 4.22	S 4.29	46.94	47.54	50.20	52.79	54.54	55.60	55.30	S 12.29	51.27
19	48.92	47.78	47.05	46.88	47.56	50.26	52.84	S 2.58	55.65	55.24	53.62	51.13
20	48.84	47.75	47.04	46.94	S 4.50	50.44	52.93	54.65	55.64	55.19	53.54	51.03
21	S 5.10	47.72	47.04	46.94	47.70	50.45	53.04	54.71	55.60	S 3.78	53.50	50.93
	9.02									5.29		

READINGS OF THERMOMETERS SUNK IN THE GROUND

(II.)—Reading of a Thermometer whose bulb is sunk to the depth of 12 French feet—continued.

Day of the Month, 1849.	Repetko January.	40 February.	40 March.	40 April.	40 May.	40 June.	50 July.	50 August.	50 September.	50 October.	50 November.	50 December.
d	°	23.30	21.13	°	9.70	4.35	°	9.36	28.16	°	0.66	5.72
22	48.64	47.73	47.04	S 11.43	47.73	50.56	S 11.48	54.75	55.70	54.98	53.42	50.85
23	48.65	47.65	47.07	46.96	47.82	50.69	53.20	54.78	S 23.26	54.94	53.38	S 6.5
24	48.59	47.52	47.04	46.95	47.90	S 12.50	53.19	54.83	55.72	54.90	53.33	50.70
25	48.50	S 46.20	S 42.28	46.94	47.95	50.83	53.39	54.80	55.69	54.82	S 20.79	Christ. Day.
26	48.44	47.60	47.04	46.97	48.00	50.90	53.46	S 28.52	...	54.74	53.15	50.61
27	48.45	47.51	47.00	46.94	S 5.10	50.98	53.55	54.95	55.70	54.68	53.12	50.55
28	S 51.27	47.46	46.97	46.87	48.14	51.03	53.65	55.02	55.69	S 29.06	52.98	50.43
29	48.30	46.97	46.97	S 41.63	48.25	51.14	S 20.44	55.06	55.66	54.67	52.94	50.39
30	48.28	46.93	46.93	46.88	48.37	51.19	53.75	55.08	S 50.09	54.52	52.95	S
31	48.25	46.98	46.98	46.88	48.44	51.19	53.83	55.08	55.69	54.43	52.95	50.26
	26.82	189.24	191.96	173.02	201.44	257.76	68.26	178.6	131.92	140.49	93.37	37.8
	49.21	47.89	47.11	46.92	47.46	49.91	52.63	52.51	55.49	55.21	53.73	57.5

From 1846, April, to 1847, December, this thermometer was read at every two hours, night and day (excepting Sundays and a few other days). During that interval of time, the monthly mean reading at noon was found to be of the same value in three cases as the monthly mean of all the readings; in five cases it was in excess by 0° 01; in seven cases the excess amounted to 0° 02; in four cases to 0° 03; and in one case to 0° 04.

(III.)—Reading of a Thermometer whose bulb is sunk to the depth of 6.4 feet (6 French feet) below the surface of the soil, at Noon on every Day, except Sundays.

Day of the Month, 1849.	Repetko January.	40 February.	40 March.	40 April.	40 May.	50 June.	50 July.	50 August.	50 September.	50 October.	50 November.	40 December.
d	°	18.16	18.59	°	9.27	7.27	°	15.80	43.80	°	0.43	52.34
1	47.08	45.90	44.96	S 34.94	46.40	52.27	S 30.15	57.90	58.25	57.80	54.45	50.10
2	46.94	45.88	45.12	45.51	46.60	52.42	56.60	57.90	S 52.05	57.70	54.40	S
3	46.83	45.83	45.18	45.54	46.84	S 11.46	56.69	...	58.20	57.65	54.28	49.49
4	46.81	S 35.77	S 31.85	45.64	47.07	52.80	56.78	57.80	58.20	57.65	S 26.26	49.11
5	46.58	45.70	45.19	45.70	47.30	53.10	56.89	S 39.20	58.20	57.50	53.99	49.05
6	46.42	45.68	45.22	45.78	S 20.42	53.20	57.04	57.80	58.25	57.34	53.85	48.98
7	S 40.66	45.71	45.38	45.87	47.77	53.48	57.08	57.80	58.25	S 45.64	53.70	48.85
8	45.98	45.85	45.37	S 34.94	48.08	53.72	S 41.08	58.85	58.15	57.03	53.68	48.75
9	45.70	45.88	45.40	46.13	48.31	53.90	57.30	58.85	S 49.25	56.77	53.48	S
10	45.50	45.89	45.39	46.22	48.49	S 20.40	57.44	58.85	58.00	56.60	53.31	48.48
11	45.30	S 34.71	S 32.08	46.32	48.67	54.22	57.70	57.80	58.10	56.47	S 22.01	48.44
12	45.20	45.87	45.50	46.42	48.70	54.38	57.80	S 49.95	58.00	56.20	53.19	48.34
13	45.27	45.87	45.42	46.47	S 30.02	54.50	57.90	57.80	58.00	55.98	53.07	48.23
14	S 32.95	45.87	45.31	46.52	48.94	54.57	58.00	58.85	58.00	S 29.05	53.12	48.23
15	45.16	45.78	45.34	S 38.05	48.90	54.67	S 46.14	58.80	58.20	55.48	...	48.12
16	45.12	45.68	45.38	46.40	48.98	54.60	57.95	57.75	S 48.30	55.27	52.86	S
17	45.28	45.57	45.40	46.38	49.08	S 26.24	58.00	58.70	58.00	55.17	52.70	47.78
18	45.27	S 34.64	S 32.35	46.38	49.27	54.77	58.10	57.60	58.00	54.92	S 14.24	47.78
19	45.38	45.47	45.57	46.30	49.38	54.90	58.15	S 47.50	58.00	54.77	52.39	47.80
20	45.47	45.40	45.60	46.30	S 52.55	54.96	58.10	57.50	58.00	54.67	52.12	47.87
21	S 31.68	45.43	45.70	46.20	49.78	55.00	58.00	58.45	57.95	S 20.28	52.00	47.90
22	45.58	45.40	45.74	S 37.96	49.86	55.08	S 48.30	58.40	58.00	54.48	51.80	47.90
23	45.78	45.40	45.85	46.04	50.04	55.26	58.00	58.35	S 47.95	54.48	51.70	S
24	45.89	45.47	45.78	45.96	50.27	S 29.97	58.00	58.30	58.00	54.50	51.69	47.73
25	45.90	S 32.57	S 34.24	45.90	50.38	55.40	58.00	58.30	57.95	54.48	S 11.60	Christ. Day.
26	45.98	45.57	45.85	45.89	50.50	55.62	58.00	S 49.30	...	54.48	51.20	47.38
27	46.08	45.50	45.77	45.97	S 20.83	55.84	58.00	59.05	57.90	54.48	51.13	47.19
28	S 35.21	45.52	45.68	46.03	50.90	55.96	58.00	59.05	57.90	S 26.90	50.87	46.91
29	46.08	45.60	45.60	S 35.79	52.12	56.19	S 48.00	59.10	57.85	54.47	50.67	46.79
30	46.08	45.56	46.27	52.10	56.30	57.90	58.30	S 29.60	54.50	50.47	S	
31	46.00	45.58	46.27	52.10	56.30	57.90	58.30	58.30	54.50	50.47	S	
	158.68	136.72	147.94	152.74	216.88	17.31	199.32	216.15	140.35	155.30	102.3	203.07
	45.88	45.67	45.39	46.09	49.16	54.51	57.67	58.31	58.29	58.75	52.62	48.15

The reading on March 1 is supposed to be erroneous. The increase in the readings from May 28 to May 29 is remarkable. From 1846, April, to 1847, December, this thermometer was read at every two hours, night and day (excepting on Sundays and a few other days). During that interval of time, the monthly mean reading at noon was found to be higher than the monthly mean reading, as found from all the observations, by 0° 03.

(IV).--Reading of a Thermometer whose bulb is sunk to the depth of 3.2 feet (3 French feet) below the surface of the soil, at Noon on every Day, except Sundays.

Day of the Month, 1849.	Rept 40 January.	40 February.	40 March.	40 April.	40 May.	50 June.	60 July.	60 August.	50 September.	50 October.	40 November.	40 December.
d	o	10.11	10.27	o	9.30	20.68	o	9.44	29.79	o	41.66	31.00
1	43.34	42.84	42.58	S 19.2	46.96	56.15	S 32.35	60.50	62.18	58.39	53.12	44.70
2	42.98	42.59	42.47	44.08	47.50	56.46	60.44	60.68	S 61.47	58.18	52.70	S 35.70
3	42.30	42.78	42.48	44.38	48.00	S 33.29	60.80	...	62.12	57.87	52.37	44.92
4	41.76	S 18.32	S 17.80	44.48	48.70	57.04	60.80	60.58	62.08	57.35	S 29.83	45.05
5	41.11	43.50	43.38	44.50	49.53	57.59	60.80	S 3.20	62.20	57.01	52.10	44.97
6	40.85	43.78	43.67	44.89	S 4.92	57.90	60.78	60.40	62.30	56.30	51.80	44.57
7	S 2.34	43.98	43.89	45.19	50.57	65.28	61.00	60.59	62.18	S 4.59	51.27	44.67
8	40.42	44.12	44.00	S 27.52	50.62	58.38	S 4.62	61.00	62.05	55.50	50.89	44.75
9	40.30	44.06	43.98	45.88	50.30	58.40	61.98	61.40	S 72.23	55.38	51.10	S 28.93
10	40.54	43.88	43.50	45.94	49.90	S 5.59	62.47	61.78	61.40	54.92	51.40	44.58
11	40.88	S 23.32	S 22.42	45.92	49.60	58.10	62.70	62.10	61.20	54.00	S 18.53	44.37
12	41.04	43.70	42.67	45.75	49.40	57.70	62.88	S 7.27	60.90	53.50	51.48	44.21
13	41.02	43.21	42.84	45.45	S 6.39	57.40	63.08	62.50	60.48	53.19	51.30	43.90
14	S 4.20	42.71	43.24	45.28	49.67	57.28	63.28	62.43	59.98	S 26.49	51.26	43.61
15	42.25	42.50	43.50	S 32.22	50.08	57.45	S 16.39	62.20	59.50	52.40	...	43.72
16	42.30	42.60	43.82	44.98	50.58	57.62	63.48	62.00	S 63.46	52.07	50.30	S 24.39
17	42.40	42.71	44.22	44.82	50.97	S 45.35	63.37	61.80	59.30	51.91	49.73	45.07
18	42.70	S 12.43	S 20.29	44.70	51.30	58.00	63.30	61.38	59.30	52.06	S 52.97	45.49
19	43.10	42.58	44.42	44.37	51.49	57.97	62.90	S 2.31	58.90	52.50	48.70	45.62
20	43.52	42.88	44.45	43.97	S 4.09	58.13	62.30	60.78	58.54	52.90	48.80	45.62
21	S 6.27	43.28	44.44	43.69	51.88	58.05	61.86	60.85	58.40	S 13.84	48.88	45.17
22	44.17	43.38	44.39	S 26.53	52.00	58.38	S 17.21	60.98	58.28	53.57	48.78	44.50
23	44.35	43.68	44.35	43.57	52.34	58.80	61.23	61.12	S 52.72	53.43	48.47	S 31.47
24	44.23	43.68	44.08	43.90	52.56	S 19.33	61.20	61.30	58.30	53.60	48.19	43.27
25	44.27	S 19.48	S 28.13	44.27	52.88	59.00	60.75	61.40	58.28	53.77	S 17.82	Christ. Day.
26	44.40	43.60	43.55	44.57	53.47	60.31	60.43	S 6.43	...	53.90	47.60	42.30
27	44.52	43.48	43.24	45.11	S 75.13	60.66	60.30	61.70	58.19	54.00	46.98	42.19
28	S 25.94	43.19	43.12	45.40	54.48	60.78	60.30	61.93	58.20	S 22.27	46.12	42.05
29	43.70	10.27	43.19	S 2.82	55.00	60.90	S 4.21	61.98	58.35	54.08	45.40	41.70
30	43.39	43.27	43.27	46.30	55.50	60.70	60.50	62.08	S 41.32	54.03	44.90	S 3.07
31	43.02	43.40	43.77	46.30	55.70	62.35	60.94	62.10	62.09	63.55	31.00	40.88
	68.86	78.71	96.14	121.39	300.98	217.43	43.87	37.58	242.61	19.35	243.64	101.88
	42.58	43.28	43.57	43.57	43.57	43.57	43.57	43.57	43.57	43.57	43.57	43.57

The letter S denotes that the day was Sunday.

From 1846, April, to 1847, December, this thermometer was read at every two hours, night and day (excepting on Sundays, and a few other days). During that interval of time, the monthly mean reading at noon, in the Months from April to September, was found to be 0° .08 higher than the mean for the same months from all the observations, and in the remaining months the excess was 0° .03.

(V).--Reading of a Thermometer whose bulb is sunk to the depth of one inch below the surface of the soil, within the box which covers the tops of the deep-sunk Thermometers, at Noon on every Day, except Sundays.

Day of the Month, 1849.	Rept 30 January.	40 February.	40 March.	40 April.	50 May.	50 June.	60 July.	60 August.	60 September.	40 October.	30 November.	30 December.
d	o	8.2	8.2	o	o	23.8	o	9.5	19.4	o	69.0	42.5
1	37.5	38.5	40.0	S 22.2	53.0	63.0	S 32.2	62.7	65.8	56.7	50.8	41.8
2	32.0	45.0	45.0	48.0	53.0	65.0	65.0	64.0	S 93.2	54.0	50.0	S 54.3
3	31.0	46.5	45.7	45.5	57.8	S 17.8	65.7	...	66.0	52.8	51.0	44.0
4	35.0	S 10.2	S 18.9	47.0	60.7	65.0	64.0	61.0	67.0	56.0	S 12.8	39.0
5	36.0	46.5	46.0	48.0	61.7	69.6	63.7	S 13.5	67.0	50.0	49.5	42.0
6	35.0	40.0	46.0	49.0	S 4.0	63.8	65.5	63.3	63.8	50.0	47.7	45.0
7	S 26.5	44.0	48.0	49.5	54.0	63.7	70.0	65.8	64.0	S 79.5	44.0	44.0
8	40.5	44.0	44.8	S 47.0	51.0	64.0	S 33.9	70.5	61.0	53.4	54.0	43.0
9	40.5	42.5	38.5	48.0	49.8	60.5	70.0	67.0	S 89.8	48.0	53.9	S 7.0
10	43.8	48.0	38.8	47.0	48.8	S 8.4	69.0	68.0	61.0	45.0	52.7	41.0
11	40.7	S 31.0	S 22.1	45.0	50.0	57.6	70.0	78.8	61.7	50.0	S 21.7	41.0
12	36.0	39.0	47.5	43.0	51.7	56.6	70.0	S 53.4	67.7	50.0	49.7	39.0
13	46.5	37.0	49.0	45.5	45.5	52.5	70.0	65.6	57.7	48.0	52.0	37.5

READINGS OF THERMOMETERS SUNK IN THE GROUND, AND CHANGES OF WIND,

(V.)—Reading of a Thermometer whose bulb is sunk to the depth of one inch—continued.

Day of the Month, 1849.	30 January.	40 February.	40 March.	40 April.	50 May.	50 June.	60 July.	60 August.	60 September.	40 October.	80 November.	30 December.
d	0	21.5	28.5	32.8	37.0	41.5	46.0	50.0	54.0	58.0	62.0	66.0
14	S 26.0	41.0	43.0	44.5	55.8	60.0	68.0	63.5	59.0	S 55.5	50.5	45.0
15	41.5	44.8	47.0	S 33.0	56.7	63.0	S 55.0	64.8	59.0	48.8	...	50.5
16	41.8	41.7	48.0	45.5	57.0	61.4	68.0	63.0	S 46.1	47.7	44.0	S 74.0
17	49.0	40.0	46.6	43.0	56.5	S 57.1	70.0	62.0	60.0	54.0	43.0	49.8
18	45.0	S 3.5	S 41.1	41.7	56.8	63.3	65.5	60.7	56.0	57.0	S 82.2	48.0
19	48.5	45.8	44.0	40.0	54.4	61.7	62.6	S 19.6	57.5	56.3	49.8	46.0
20	48.0	45.0	44.0	42.0	S 37.2	61.5	59.5	63.8	56.8	60.8	45.8	41.0
21	S 94.1	43.0	44.0	40.8	58.5	63.6	61.3	64.0	67.8	S 84.6	47.0	39.0
22	45.8	49.8	43.0	S 13.0	54.7	63.0	S 26.9	65.7	60.0	53.0	43.0	38.0
23	46.0	44.0	43.2	48.0	56.8	68.0	62.6	64.0	S 58.9	56.5	44.0	S 61.8
24	47.5	46.0	42.5	46.0	60.0	S 81.1	56.0	64.6	62.0	57.0	47.0	35.0
25	48.4	S 33.6	S 20.7	48.0	61.0	66.4	60.7	66.2	58.0	56.8	S 96.6	Christ. Day.
26	46.6	42.5	41.0	48.0	61.0	67.2	61.7	S 28.3	...	56.7	40.0	38.0
27	41.0	40.7	42.0	50.0	S 52.0	68.0	61.0	64.0	61.0	54.8	36.0	40.0
28	S 95.3	45.0	43.0	50.0	58.0	64.0	63.8	64.0	61.0	S 94.8	34.0	31.0
29	40.0	43.4	43.4	S 6.0	59.0	65.0	S 5.8	66.0	61.3	53.0	38.8	33.0
30	39.0	44.8	44.8	54.8	63.0	63.6	62.8	67.7	S 100.9	53.0	43.7	S 5.7
31	41.2	48.0	48.0	54.8	63.0	63.6	62.8	67.7	S 100.9	53.0	43.7	S 5.7

The letter S denotes that the day was Sunday.

(VI.)—Reading of a Thermometer within the case covering the deep sunk Thermometers, whose bulb is placed on a level with the scales of the other Thermometers, at Noon on every Day, except Sundays.

Days of the Month, 1849.	30 January.	40 February.	40 March.	40 April.	50 May.	60 June.	60 July.	60 August.	60 September.	50 October.	30 November.	30 December.
d	0	2.2	18.6	0	9.0	21.5	0	18.8	46.3	0	78.4	32.8
1	32.5	40.0	42.8	S 32.0	58.8	69.8	S 57.1	66.0	69.8	56.0	54.0	43.0
2	29.0	48.6	49.8	51.4	58.8	72.7	67.8	70.0	S 54.1	52.8	55.0	S 27.8
3	26.6	47.5	50.8	50.0	65.6	S 46.0	68.0	...	70.0	54.0	54.4	40.2
4	34.5	S 13.9	S 37.0	51.7	71.5	71.0	64.8	69.8	72.8	57.7	S 42.8	36.5
5	31.8	48.0	50.0	52.8	72.0	82.0	67.0	S 52.6	74.0	50.5	51.8	44.0
6	34.5	44.5	53.4	55.8	S 87.2	67.0	71.0	70.0	73.0	50.8	49.0	44.0
7	S 11.9	43.5	51.5	52.0	48.8	68.0	79.4	75.0	67.8	S 21.8	43.7	44.5
8	38.5	49.5	44.0	S 22.7	52.6	69.3	S 58.0	79.0	66.8	52.0	56.7	46.0
9	42.0	45.0	38.0	52.0	51.0	63.8	76.0	71.3	S 64.4	46.0	56.7	S 75.2
10	46.0	51.7	41.7	48.0	45.6	S 61.1	75.0	74.0	66.2	49.8	56.4	39.0
11	38.0	S 42.2	S 38.6	44.5	50.5	59.0	77.8	76.0	65.0	53.8	S 134.3	39.0
12	34.8	36.7	52.0	43.5	54.6	58.0	77.2	S 88.3	56.0	51.7	53.0	34.5
13	50.5	39.5	55.5	44.5	S 31.6	64.0	76.3	66.0	59.0	48.0	53.5	31.5
14	S 69.8	45.8	42.8	48.5	60.0	66.7	76.3	65.5	63.5	S 1.3	52.5	49.0
15	41.5	50.0	50.0	S 41.0	62.0	71.7	S 98.6	67.0	63.7	50.0	...	55.5
16	44.0	40.8	50.4	47.0	60.7	65.5	75.0	64.5	S 13.4	51.0	47.5	S 68.5
17	52.5	44.3	51.8	44.4	58.0	S 25.9	71.3	66.8	64.0	61.0	44.8	51.7
18	48.5	S 71.1	S 62.5	45.4	60.0	69.0	66.8	65.5	57.7	64.8	S 10.3	51.0
19	50.5	48.0	43.8	37.6	58.0	63.0	63.0	S 35.3	62.0	65.0	50.0	44.8
20	49.5	47.7	45.8	43.7	S 58.7	67.0	60.0	68.0	58.0	67.7	43.0	40.5
21	S 106.5	44.5	46.4	42.0	64.0	69.0	63.0	67.8	63.0	S 59.5	46.0	35.5
22	48.0	55.0	41.7	S 20.1	56.0	69.0	S 39.1	69.5	66.4	57.7	41.8	35.7
23	48.5	48.6	42.2	51.4	62.0	78.6	60.0	66.7	S 11.1	61.0	46.7	S 79.2
24	50.5	46.6	41.0	48.8	68.8	S 55.6	54.4	68.8	66.7	63.7	46.0	32.8
25	50.0	S 50.4	S 20.9	52.8	66.6	71.8	62.8	79.0	63.7	60.0	S 93.5	Christ. Day.
26	47.0	42.0	40.5	49.4	66.5	71.8	65.5	S 32.8	...	58.0	36.7	39.0
27	42.5	43.8	44.7	58.8	S 83.9	75.5	66.8	65.5	68.7	56.0	32.1	40.7
28	S 106.5	47.8	44.8	51.7	58.0	65.7	71.0	68.5	64.1	S 58.4	30.0	26.4
29	38.8	45.0	45.0	S 72.9	63.8	69.3	S 20.8	68.5	65.0	56.4	38.0	34.8
30	36.8	47.0	47.0	61.0	71.7	63.0	66.0	73.8	S 28.2	57.0	48.0	S
31	42.2	55.0	55.0	21.0	70.0	63.5	57.1	67.8	68.0	63.0	34.8	35.7

The letter S denotes that the day was Sunday.

The upper limit of graduation of the 6-foot thermometer is 57° 50, at which point the uniform bore of the thermometer-tube is expanded into a small bulb. When the alcohol enters the bulb, the reading can only be obtained by rough estimation: and it is probable that the apparent irregularity of reading from day to day between July 11 and October 4 may be due to the difference of estimation by different observers.

ABSTRACT OF THE CHANGES OF THE DIRECTION OF THE WIND, AS DERIVED FROM OSLER'S ANEMOMETER.

By *direct* motion, in the following statements, is meant that the change of the direction of the wind was in the order N., E., S., W., N., &c.; by *retrograde* is meant in the order N., W., S., E., N., &c.

- d h  
 1848. Dec. 31. 12. The direction of the wind was N.N.E.  
 1849. Jan. 31. 12. ,, ,, W.S.W., which implies apparent retrograde motion of  $135^{\circ}$ .  
 Jan. 6. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 Jan. 12. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 Jan. 29. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .

Therefore the whole excess of direct motion in the month of January was  $945^{\circ}$ .

- d h  
 1849. Jan. 31. 12. The direction of the wind was W.S.W.  
 Feb. 28. 12. ,, ,, W.S.W., which implies no apparent change.  
 Feb. 24. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 Feb. 25. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 Feb. 27. 0. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .

Therefore the whole excess of direct motion in the month of February was  $360^{\circ}$ .

- d h  
 1849. Feb. 28. 12. The direction of the wind was W.S.W.  
 March 31. 12. ,, ,, S.E., which implies apparent direct motion  $112\frac{1}{2}^{\circ}$ .  
 March 17. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 March 19. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 March 30. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .

Therefore the whole excess of direct motion in the month of March was  $472\frac{1}{2}^{\circ}$ .

- d h  
 1849. March 31. 12. The direction of the wind was S.E.  
 April 30. 12. ,, ,, N.N.E., which implies apparent direct motion  $247\frac{1}{2}^{\circ}$ .  
 April 12. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 April 14. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 April 18. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 April 25. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .

Therefore the whole excess of retrograde motion in the month of April was  $472\frac{1}{2}^{\circ}$ .

- d h  
 1849. April 30. 12. The direction of the wind was N.N.E.  
 May 31. 12. ,, ,, S.S.W., which implies apparent retrograde motion  $180^{\circ}$ .  
 May 12. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 May 20. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 May 21. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 May 24. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 May 27. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^{\circ}$ .  
 May 29. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 May 30. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .

Therefore the whole excess of direct motion in the month of May was  $900^{\circ}$ .

- d h  
 1849. May 31. 12. The direction of the wind was S.S.W.  
 June 30. 12. ,, ,, N., which implies apparent direct motion  $157\frac{1}{2}^{\circ}$ .  
 June 5. 2 $\frac{1}{2}$ . The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 June 9. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .  
 June 11. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^{\circ}$ .



CHANGES IN THE DIRECTION OF THE WIND — *continued.*

- d h
1849. June 17. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 June 24. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 June 28. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of direct motion in the month of June was  $2317\frac{1}{2}^\circ$ .

- d h
1849. June 30. 12. The direction of the wind was N.  
 July 31. 12. ,, ,, W.S.W., which implies apparent retrograde motion  $112\frac{1}{2}^\circ$ .  
 July 16. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 July 21. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of direct motion in the month of July was  $607\frac{1}{2}^\circ$ .

- d h
1849. July 31. 12. The direction of the wind was W.S.W.  
 August 31. 12. ,, ,, E., which implies apparent direct motion  $202\frac{1}{2}^\circ$ .  
 August 5. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 August 24. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 August 30. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of direct motion in the month of August was  $1282\frac{1}{2}^\circ$ .

- d h
1849. August 31. 12. The direction of the wind was E.  
 Sep. 30. 12. ,, ,, N.E., which implies apparent retrograde motion  $45^\circ$ .  
 Sep. 1. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 Sep. 3. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^\circ$ .  
 Sep. 8. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 Sep. 24. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of direct motion in the month of September was  $675^\circ$ .

- d h
1849. Sep. 30. 12. The direction of the wind was N.E.  
 Oct. 31. 12. ,, ,, S.E., which implies apparent retrograde motion  $270^\circ$ .  
 Oct. 3. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 Oct. 6. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 Oct. 16. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 Oct. 29. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of direct motion in the month of October was  $1170^\circ$ .

- d h
1849. Oct. 31. 12. The direction of the wind was S.E.  
 Nov. 30. 12. ,, ,, N.N.W., which implies apparent direct motion  $202\frac{1}{2}^\circ$ .  
 Nov. 2. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^\circ$ .  
 Nov. 23. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .  
 Nov. 28. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of direct motion in the month of November was  $562\frac{1}{2}^\circ$ .

- d h
1849. Nov. 30. 12. The direction of the wind was N.N.W.  
 Dec. 31. 12. ,, ,, W., which implies apparent retrograde motion  $67\frac{1}{2}^\circ$ .  
 Dec. 3. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^\circ$ .  
 Dec. 10. 22. The trace was shifted to the next set of lines upwards, which implies apparent retrograde motion  $360^\circ$ .  
 Dec. 12. 22. The trace was shifted to the next set of lines downwards, which implies apparent direct motion  $360^\circ$ .

Therefore the whole excess of retrograde motion in the month of December was  $427\frac{1}{2}^\circ$ .

The whole excess of direct motion to the end of the year was  $8392\frac{1}{2}^\circ$ .

AMOUNT OF RAIN COLLECTED IN EACH MONTH OF THE YEAR 1849.

1849, Month.	Monthly Amount of Rain collected in the Gauge.			
	On the Roof of the Library.	Crosley's.	Cylinder partly sunk in the Ground.	Cylinder partly sunk in the Ground at the Royal Naval Schools.
	in.	in.	in.	in.
January	1·4	1·5	1·5	1·4
February	2·2	2·0	2·3	1·4
March	0·3	0·5	0·6	1·2
April	2·0	2·2	2·0	2·0
May	3·6	3·6	3·7	3·7
June	0·1	0·3	0·3	0·2
July	2·8	2·8	2·9	2·6
August	0·4	0·5	0·5	0·5
September	2·8	3·0	3·3	2·8
October	2·6	2·6	2·7	2·6
November	1·5	1·4	1·5	1·2
December	1·9	2·0	2·4	2·2
Sums	21·6	22·4	23·7	21·8

The gauges at the Royal Observatory were read at 9<sup>h</sup> P. M., and the monthly records for the Royal Observatory terminate at 9<sup>h</sup> P. M., on the last day of every month. The gauge at the Royal Naval Schools was read at noon on the last day of every month, except in three instances, to be spoken of presently; the results, therefore, are not strictly comparable in those instances in which rain has fallen after noon on the last day of the month. This circumstance occurred on February 28, when rain fell heavily between the hours of noon and 9<sup>h</sup> P. M.; and this fall is attributed to the month of February in the record of the Royal Observatory, and to the month of March in the record of the Royal Naval Schools.

At the Royal Naval Schools the reading was not taken for April; but, at the end of May, the amount accumulated in the two months was found to be 5<sup>in</sup>·7. In like manner, the reading was not taken at the end of July, and the amount collected at the end of August was found to be 3<sup>in</sup>·1 for July and August; the reading was also not taken at the end of December, but at the end of January, 1850, the amount found in the gauge was 3<sup>in</sup>·3. These numbers, when divided in proportion to the monthly falls at the Royal Observatory, give the separate numbers inserted in the table above.

EXTRAORDINARY ELECTROMETER OBSERVATIONS

Greenwich Mean Solar Time, or Limits of Time, 1849.	Sign of Electricity, as shewn by Dry Pile Apparatus.	READINGS OF ELECTROMETERS.					Time of Recovery after Discharge.	RONALDS' SPARK-MEASURER.		GALVANOMETER.	
		Single Gold Leaf of Dry Pile Appa- ratus.	Double Gold Leaf.	Volta (1).	Volta (2).	Henley.		Opening of Spark- measur- er, or Length of Spark.	Corresponding Frequency.	The Head of the Needle towards A.	The Head of the Needle towards B.
d h m s h m s						o o		in.	sp. sec.	o o	o o
Jan. 21. 21. 23. 0 to 21. 37. 30	Neg.	B. R.	B. R.	B. R.	B. R.	0 to 40	Instantly	0.15	Several	15	..
21. 38. 0	Pos.	B. R.	B. R.	B. R.	B. R.	20	Instantly	0.10	3 in 1	..	3
21. 38. 30 to 21. 39. 0	Neg.	B. R.	B. R.	B. R.	B. R.	35	Instantly	0.15	Volley	40	..
21. 40. 0	...	0	0	0	0	0	..	..	...	..	..
21. 41. 0 to 21. 43. 0	Neg.	B. R.	B. R.	B. R.	B. R.	6 to 20	Instantly	0.11	Volley	13	..
21. 44. 0 to 21. 45. 0	Pos.	B. R.	B. R.	B. R.	B. R.	8 to 26	Instantly	0.10	3 in 1	..	3
21. 46. 0	...	0	0	0	0	0	..	..	...	..	..
Feb. 24. 1. 30. 0 to 1. 50. 0	Neg. & Pos.	B. R.	B. R.	B. R.	B. R.	0 to 18	Instantly	0.10	1 in 1	..	0 to 5
1. 50. 0 to 2. 0. 0	Neg.	B. R.	B. R.	B. R.	B. R.	0 to 15	Instantly	0.06	Slight vollies 3 in 1	5	..
Mar. 8. 1. 40. 0 to 1. 50. 0	...	suddenly cut off	B. R.	B. R.	B. R.	22	Instantly	..	Abundant	..	..
April 18. 23. 14. 0	Neg.	B. R.	B. R.	B. R.	B. R.	10	Instantly	0.05	1 in 1	..	..
19. 1. 34. 0 to 1. 35. 0	Pos.	B. R.	B. R.	B. R.	B. R.	12 to 14	Instantly	0.01	1 in 15	..	2
								0.02	1 in 5	..	..
May 26. 21. 0. 0	Neg.	B. R.	B. R.	B. R.	B. R.	20	Instantly	0.12	Frequent	..	..
June 5. 2. 32. 0	...	B. R.	B. R.	B. R.	B. R.	12	Instantly	0.11	Frequent	..	..
2. 34. 0	...	0	0	0	0	0	..	..	...	..	..
June 25. 2. 30. 0 to 2. 34. 0	Neg.	B. R.	B. R.	B. R.	B. R.	32 to 40	Instantly	0.16	Frequent	..	..
2. 35. 0	Neg.	B. R.	B. R.	B. R.	B. R.	10	Instantly	0.15	Frequent	..	..
2. 37. 0	...	0	0	0	0	..	..	..	...	..	..
June 25. 23. 35. 0	Neg.	B. R.	B. R.	B. R.	B. R.	42	Instantly	0.03	5 in 1	18	..
23. 37. 0	Neg.	B. R.	B. R.	B. R.	B. R.	50	Instantly	0.26	5 in 1	12	..
23. 39. 0 to 23. 40. 0	Neg.	B. R.	B. R.	B. R.	B. R.	40 to 42	Instantly	0.16	5 in 1	15	..
								0.20	3 in 1	..	..
23. 41. 0	Neg.	B. R.	B. R.	B. R.	B. R.	40	Instantly	0.20	4 in 1	19	..
23. 43. 0	Neg.	B. R.	B. R.	B. R.	B. R.	30	Instantly	0.12	1 in 1	..	..
23. 44. 0	...	0	0	0	0	0	..	..	...	..	..
23. 46. 0	Neg.	B. R.	B. R.	B. R.	B. R.	30	Instantly	0.08	1 in 1	..	..
23. 49. 0	Neg.	B. R.	B. R.	B. R.	B. R.	30	Instantly	0.12	2 in 1	2	..
23. 51. 0 to 23. 54. 0	Neg.	B. R.	B. R.	B. R.	B. R.	10 to 30	Instantly	0.05	2 in 1	..	..
								0.13	2 in 1	..	..
23. 56. 0	...	0	0	0	0	0	..	..	...	..	..
July 26. 1. 58. 10	Neg.	B. R.	B. R.	B. R.	B. R.	15	Instantly	0.02	3 in 2	..	..
1. 59. 0 to 2. 1. 30	Neg.	B. R.	B. R.	B. R.	B. R.	50 to 60	Instantly	0.03	2 in 1	4 to 30	..
2. 4. 0 to 2. 6. 0	Neg.	B. R.	B. R.	B. R.	B. R.	60	Instantly	0.25	1 in 1	3	..
2. 23. 0	Neg.	B. R.	B. R.	B. R.	B. R.	0 to 50	Instantly	..	...	..	..
2. 24. 0 to 2. 25. 35	Neg. & Pos.	B. R.	B. R.	B. R.	B. R.	50	Instantly	0.25	3 in 1	..	..
2. 27. 0 to 2. 33. 0	Neg.	B. R.	B. R.	B. R.	B. R.	50	Instantly	0.30	1 in 1	3	..
2. 34. 19	Neg.	B. R.	B. R.	B. R.	B. R.	50	Instantly	..	...	..	..
2. 49. 3 to 2. 49. 38	Pos.	B. R.	B. R.	B. R.	B. R.	40	Instantly	..	...	..	2
2. 50. 0	...	0	0	0	0	0	..	..	...	..	..
2. 50. 25	Pos.	B. R.	B. R.	B. R.	B. R.	15	Instantly	..	...	..	..
2. 54. 2	Pos.	B. R.	B. R.	B. R.	B. R.	3 to 50	Instantly	0.02	...	..	3
3. 0. 0	Pos.	B. R.	B. R.	B. R.	B. R.	..	Instantly	..	...	..	..
3. 6. 0 to 3. 15. 0	Pos.	B. R.	B. R.	B. R.	B. R.	..	Instantly	..	...	..	..
3. 16. 0	Neg.	B. R.	B. R.	B. R.	B. R.	..	Instantly	..	...	..	..

The letters B. R. denote that the gold leaf or straws have been deflected from the vertical *beyond the range* to which confidence can be placed in their indications. The greatest inclination considered trustworthy, for all the electrometers except Henley's, is about 20° from the vertical.

WIND.		REMARKS.
From Osler's Anemometer.		
Direction.	Pressure in lbs. per square foot.	
WSW	from lbs. to lbs. $\frac{1}{2}$ to $3\frac{1}{2}$	At 21 <sup>h</sup> . 35 <sup>m</sup> hail was falling.
WSW	$\frac{1}{2}$ to $3\frac{1}{2}$	Heavy rain falling. Snow and sleet falling. Heavy rain falling. The rain has ceased.
WSW	$\frac{1}{2}$ to $3\frac{1}{2}$	
WSW	0 to 2	
WSW	1 to 3	
WSW	$\frac{1}{2}$ to 3	
WSW	$\frac{1}{2}$ to 3	
N		
N		
NW	0 to 1	Hail falling.
NE	0 to 1	During the morning of this day rain, sleet, and snow fell frequently.
NE	$\frac{1}{2}$ to 4	
SW	..	At 22 <sup>h</sup> . 7 <sup>m</sup> rain was falling heavily at the rate of one inch in 26 <sup>m</sup> . 40 <sup>s</sup> , as measured by Crosley's rain-gauge.
W by S	..	At 2 <sup>h</sup> . 30 <sup>m</sup> thunder was heard frequently in the N., N.W., and W.
W by S	..	
ESE	..	At 2 <sup>h</sup> . 29 <sup>m</sup> heavy rain commenced falling, and continued some time.
ESE		
ESE		
WSW	..	At 23 <sup>h</sup> . 30 <sup>m</sup> thunder was heard in the N. E., and rain commenced falling.
WSW		
SW	..	Very heavy rain falling.
SW		
SW	..	The rain still continues.
SW		
SW	..	The rain has ceased.
SW		
SSW	..	A very long and loud clap of thunder in the N. to N.W. Between 1 <sup>h</sup> and 2 <sup>h</sup> frequent thunder in the N. Distant thunder; at 2 <sup>h</sup> . 1 <sup>m</sup> . 2 <sup>s</sup> lightning, followed by thunder in 16 seconds.
SSW	..	
SSW	..	Several claps of thunder in the N.W. [was again Negative.
SW	..	
SW	..	The electricity suddenly changed to Positive, and a long clap of thunder was heard, after which the electricity
SW	..	Thunder heard frequently.
SSW	..	Lightning, followed by thunder in 16 seconds. [heavily.
WNW	$\frac{1}{2}$ to 3	At 2 <sup>h</sup> . 48 <sup>m</sup> rain commenced falling. At 2 <sup>h</sup> . 48 <sup>m</sup> . 45 <sup>s</sup> lightning followed by thunder in 15 seconds; rain falling
WNW	$\frac{1}{2}$ to 3	Lightning followed by thunder in 15 seconds.
WNW	$\frac{1}{2}$ to 3	At 2 <sup>h</sup> . 52 <sup>m</sup> . 15 <sup>s</sup> thunder; rain commenced falling. At 2 <sup>h</sup> . 52 <sup>m</sup> . 40 <sup>s</sup> lightning followed by thunder in 15 seconds;
NW	..	A loud clap of thunder, and heavy rain continues falling. [heavy rain falling.
NNW	..	Rain very violent. At 3 <sup>h</sup> . 6 <sup>m</sup> lightning followed by thunder in three seconds.
NW		
W	..	Heavy rain still falling.