

始
→

0m 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

特67:
6. 98



MAGNETIC OBSERVATIONS
IN
THE YEAR 1905.

MAGNETIC OBSERVATORY.

It is placed within the circle of the Central Meteorological Observatory at the altitude of 21 metres above the mean sea-level. Its geographical co-ordinates are

Longitude 139° 45' E.

Latitude 35° 41' N.

The observatory was first established in 1890. It was rebuilt in July of 1897. The building is constructed of wood, with exclusion of iron, and the supports for instruments are made of marble, placed on the masonry work of white bricks which are free from magnetic ingredients. The observation rooms are put under the ground, and great care is taken to keep off the sudden changes in temperature. There are two rooms, with the stair case running in the N-S direction between them. In the eastern there is a set of Mascart's self-registering magnetograph, and in the western the apparatus for the direct reading.

ABSOLUTE MEASUREMENT OF MAGNETIC ELEMENTS.

Absolute measurement is made twice every month, and in each measurement the horizontal intensity and the dip are generally observed three or four times and the declination in such a manner that it is sufficient to obtain a curve of diurnal variation.

The declination and the horizontal intensity are measured by means of instrument devised by Prof. Tanakadate, which is described in a paper published in the Proceeding of the Royal Society of Edinburgh (1884-6) and also in the Journal of the college of Science, Imperial University, Japan (Vol.II, Part III). It will be sufficient here to give a short description which is chiefly the extraction of the papers.

Declination.—The declinometer is built upon a theodolite which in its ordinary form serves for all the astronomical observations. The magnetometer stage resting on tripods is fitted to the centre of the theodolite base, being able to be fixed either to the base of the theodolite or to the Y's by means of a screw

projected downward from the centre of the base of the stage. A telescope with a mirror and a lamp are fixed to the stage.

The magnetometer case is set upon the stage and can be levelled by four screws at the upper surface of the stage and centered by other four screws at its vertical sides. The magnet is a small hollow cylinder piercing a mirror centrally perpendicular to its plane. Mirror and magnet are fastened to an aluminium stem, whose lower end is broadened, so that it may, when necessary, be securely gripped by means of a vice fitted to the lower part of the case. The suspension is made by means of a spider line.

The peculiar feature of the declinometer is a coil of wire, wound on a flat rectangular frame of brass in two separate parts, a certain portion in the middle being left vacant. Two pivots project from the middle of the sides in a direction perpendicular to the axis of the coil. These pivots are hollow, and are made of the same external diameter as those of the telescope belonging to the theodolite. The upper and lower surfaces are pierced so as to allow the magnetometer to project above the coil.

To bring the coil into adjustment, it is necessary to operate as follows. Place the stage and magnetometer on the theodolite, and mount the coil with its pivots resting on the Y's. Adjust the Y's into an approximate east and west direction by sighting the freely hanging mirror edge-on through the pivot cores. Lay the coil horizontal, so that the ends of the coil now face north and south. Adjust the centering of the magnetometer and place the small telescope with attached scale and lamp-counterpoise in due position. Clamp the stage and all its bearings to the base of theodolite, thus rendering them quite free of the Y's and consequently the coil being able to be turned round independent of every thing else. The magnetometer stage is adjusted until some convenient division on the scale, as reflected from the magnet mirror, is brought to coincidence with the cross-wire of the observing telescope. Thus all things are prepared.

The coil is now in circuit with a small dry battery. This is done by communicating it with the resistance box, whose terminals are joined to the poles of the battery and which enables to change the direction of the current. At the first trial the direction of the current should be such as to make the magnetic field due to the current in the coil have the same (general) direction as that of the earth. This is readily judged of by the quickened movement of the magnet. The reflected image of the scale will in general be seen to move. With the current always on, let the azimuth of the coil be shifted until the originally observed reading of the scale is brought back again to the cross wires. Since the magnetometer and telescope have been absolutely fixed in position during

the whole operation, this gives to the first approximation the direction of the declination. The current is now reversed. In general, the result of this will be that the image of the zero scale reading will slowly move to one or other side of the cross wire. The resistance is then adjusted until the current is such as to cause the time of oscillation of the magnet to be some three or four times as long as that under the earth's force alone. The original division of the scale is again brought back to the cross wire by carefully adjusting the azimuth of the coil. If the current is now broken and the scale image does not shift, it is certain that the magnetic axis of the coil lies in the magnetic meridian. The reading on the theodolite gives its azimuth. An exactly similar observation is made with the coil reversed as regards east and west. Next, two such observations must be made in overturning the coil up and down. The mean of the four readings gives the declination at that instant corresponding to the mean of the two instances of the first and the last adjustments, quite independent of any errors resulting from any slight deviation from perpendicularity between the axis of the pivots and the line of magnetic force at the centre of the coil due to the current in it and from any deviation of the centre of the coil from that of the magnet. A complete observation usually takes four or five minutes.

Horizontal Intensity.—For the determination of the horizontal intensity, the declinometer must be removed and in its place a deflection bar substituted. The bar is made of brass and has a V-groove on its upper surface—or rather two V-grooves extending the one to the east and the other to the west, when the instrument is mounted ready for use. Where the bar rests on the Y's, it is made in the form of the semi-cylinder—the upper surface being flat, the lower having the same curvature as the pivots of the theodolite telescope and the declinometer coil. Between the Y's, the bar swells out into an oblate ring, through which the magnetometer projects. A semi-circular groove is cut in front of the ring, so that the magnet mirror can be sighted by the small telescope. On the V-groove of the bar there are four stops two on each side of the centre. The deflection magnet rests in the groove, and the stops are so placed that the two distances of the magnet from the centre are obtained simply by slipping the magnet along the groove from one stop to the other, without having to lift it out. The stops are placed so as to make the ratio of the two distances the best possible, according to the usual rule.

The instrument is obviously available for use either according to the method of sines or the method of tangents. The former method is the preferable one; and in using it, it is necessary to clamp the stage to the Y's, and free it from the base of the theodolite. The operations are then conducted exactly as with

the Kew instrument. The temperature of the bar is measured by means of two thermometers placed in its opposite sides beyond the further stops. It is advisable to dust with a small brush the surfaces of the magnet and stop just before they are brought together. The chronometer time is taken as the final deflection is adjusted. The beginning of the experiment is given by the first time record in the vibration experiment, which it was found most convenient to make first. The mean of these times is taken as the time corresponding to the value of the horizontal force as finally deduced.

The vibration experiment is made in a vibration box somewhat similar in construction to the one used in the Kew instrument. It is mounted on a second tripod, so that the magnetometer stage need never be removed until the theodolite has to be used for the astronomical observations. The magnet is suspended by two loops of silk from the end of a silk fibre freed from twist in the usual way and its horizontality is well adjusted. A horizontal vibration of about half a degree is given to the magnet, and it is observed by means of a telescope. The observer signals the instant of transit of the middle point of the swing, and these are noted down by recorder at some distance. The temperature is observed at the beginning and the end of the experiment with a thermometer attached to the inside of the glass window of the box, the mean of two readings being taken as the temperature in the vibration experiment.

For determining the horizontal intensity all the necessary corrections are applied. The torsion and arc correction are applied in the usual way; the time correction is applied so as to reduce the time-unit at once to the mean solar second; besides these we may mention the corrections for induction, expansion of steel magnet and of the brass, which constitutes V-groove on which the magnet is to be placed in the deflection experiment, and the correction for the temperature difference in the vibration and the deflection experiments.

The vibration experiment is usually taken before the deflection experiment. From the first recorded swing to the last deflection adjustment the whole experiment generally takes about 20 minutes.

Dip.—The observations of dip are made by means of a dip circle of Casella. The magnetization of the needle is reversed by means of an electro-magnetic coil. A complete observation usually takes 20 minutes.

The astronomical meridian is sometimes determined by observations of circumpolar stars. Thus, the azimuth of the top of a tower of a Cathedral Nicoli at a distance of about 1.5 km. is often tested. The reading of the meridian is usually reduced from that of the object.

PHOTOGRAPHIC RECORDS OF MAGNETIC ELEMENTS.

Photographic records of magnetic elements are made by means of a Mascart's magnetograph. Let us shortly describe the arrangement of the instrument and the method of reduction.

THE ARRANGEMENT OF THE APPARATUS.

Declinometer.—It is contained in a metal case with a tube on its cover. From the upper end of the tube, a magnet with a mirror perpendicular to its direction is freely suspended by means of a fine silk thread. There is a second mirror fixed to the base of the case. Thus, the rays of light falling upon the two mirrors reflect on a photographic paper moving by a clock-work, one tracing the curve of variation of the magnetic needle and other the fixed line.

bifilar magnetometer.—Its construction is similar to that of declinometer. But, in this case, the magnet with a mirror parallel to its direction is suspended by means of two fine silk threads and put in equilibrium in the direction perpendicular to the magnetic meridian in virtue of the couples due to the horizontal intensity and the torsion. Its sensibility can be adjusted by regulating the distance between the two points of suspension. The light reflected from the mirror traces the variation of the horizontal intensity.

Magnetic balance.—It is a magnetic balance with a hole in its central portion. There is, in the hole, a knife-edge by means of which the magnet rests on an agate plane, and the magnet is placed horizontally by adjusting the position of its centre of gravity by means of a small index attached to it, the couple due to the vertical intensity equilibrating with that due to gravity. The sensibility can be adjusted by means of two weights movable in the horizontal and vertical ones attached to the magnet. The whole is contained in a metal case. There are two horizontal mirrors, one fixed to the case, and the other to the magnet. At the central portion of the cover of the case, there is a hole on which an isosceles rectangular prism is placed, the two faces being put horizontally and vertically. Thus, the light falling upon the vertical face of the prism is refracted towards the mirrors and again reflected and traces the variation of the vertical intensity and the fixed line.

METHOD OF REDUCTION.

The hourly ordinates of the three magnetic curves are at first measured in millimetres and the tenths.

For declination, the ordinate values are then reduced into minutes by multiplication of the factor 1.36 which is the angular value for 1 mm. of the paper. The ordinates measured for the times of the absolute measurements combined with the absolute values of declination, give the values of the base line, from which hourly values of declination are all reduced.

For the horizontal and vertical intensities, the ordinates of the curves are multiplied respectively by the factors ΔH and ΔZ , which are the variations of the horizontal intensity (H) and the vertical intensity (Z) corresponding to 1 mm. of the paper. The mean values of ΔH and ΔZ for each month were as follows: —

	ΔH	ΔZ		ΔH	ΔZ
January	3.66×10^{-5} C.G.S.	3.58×10^{-5} C.G.S.	July	4.08×10^{-5} C.G.S.	4.80×10^{-5} C.G.S.
February	3.72 ..	3.66 ..	August	4.08 ..	4.72 ..
March	3.83 ..	3.80 ..	September	3.96 ..	8.09 ..
April	3.91 ..	4.89 ..	October	3.90 ..	9.93 ..
May	4.00 ..	5.43 ..	November	3.81 ..	6.01 ..
June	4.03 ..	5.69 ..	December	3.76 ..	5.53 ..

TEMPERATURE COEFFICIENTS OF BIFILAR AND BALANCE.

The temperature of the room where the photographic record is always made can not be constant, the range in a day sometimes amounting to nearly 1.5° C. Thus, the temperature coefficients of the bifilar and the balance were determined in June, 1898. The result was as follows: —

Temperature Coefficient for 1 °C.	
Bifilar	20.73×10^{-5} C.G.S.
Balance	30.45×10^{-5} ..

DIRECT READING SYSTEM.

The system is essentially the same as the self-recording magnetograph. By means of this system, the variations obtained by photographic records are often tested.

HARMONIC ANALYSIS OF DIURNAL VARIATION OF MAGNETIC ELEMENTS.

Expressing the means of hourly values of magnetic elements for every month and the year by the formula,

$$ft = p_0 + p_1 \cos t + q_1 \sin t + p_2 \cos 2t + q_2 \sin 2t \\ + p_3 \cos 3t + q_3 \sin 3t + p_4 \cos 4t + q_4 \sin 4t,$$

where t is the Central Standard Mean Time (mean time of the meridian 135° E) converted into arc; and ft the mean value of the magnetic element at the time t , the coefficients $p_0, p_1, q_1, p_2, q_2, p_3, q_3, p_4$ and q_4 , were calculated. The result is given in page 48.

HOURLY VALUES
OF
MAGNETIC ELEMENTS

observed at the Central Meteorological Observatory, Tokio,

1905.

Time is given in the Central Standard Time (the civil mean time of the meridian 135° E.).

The declination is measured in degrees and minutes, the horizontal and vertical intensities in C. G. S. units. For the hourly values, the declination is given to 0.1 minute of arc; the intensities to the fifth decimal of the C. G. S. unit. For the mean values, one more figure is added, i.e. the declination is given to 0'.01 and the intensities to 10^{-6} C. G. S. unit.

The mean values are taken only using all days of complete record. The values for intensities are all corrected for temperature.

The characters of the diurnal variation of the magnetic elements are divided into 5 classes:

Calm (C), Agitated (A), Light Storm (S°), Storm (S), and Severe Storm (S^{\sharp}).

DECLINATION: $4^{\circ} + \dots - W$

Hour Intv.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	45.3	45.5	45.8	45.7	45.5	45.4	45.1	44.9	44.1	44.1	44.6	45.5	46.2	46.4	46.0	45.0	44.6
2	45.3	45.1	45.3	45.5	45.8	45.8	45.8	44.7	43.8	43.8	44.7	45.1	46.4	46.2	45.0	45.0	44.7
3	45.1	45.3	45.8	45.8	45.8	45.8	45.8	44.6	43.9	44.5	45.7	46.0	46.0	45.0	45.8	44.7	
4	45.3	45.4	45.3	45.8	45.8	45.8	44.8	45.1	44.1	43.6	44.1	45.1	45.7	45.3	45.8	45.1	44.6
5	45.5	44.5	45.8	45.8	46.0	46.0	47.6	47.3	46.1	45.8	46.5	46.1	45.8	45.4	44.9	44.9	
6	44.7	47.2	44.5	45.8	47.0	46.0	47.0	46.5	48.7	46.5	46.1	46.5	46.6	46.0	45.5	46.2	46.1
7	45.8	46.0	45.8	45.8	45.8	46.1	46.0	46.1	41.9	45.8	46.2	47.0	46.9	46.4	45.8	45.8	45.3
8	45.3	44.9	45.3	45.7	45.7	45.9	45.7	45.0	45.0	45.9	46.8	46.8	46.7	45.9	45.6	45.4	
9	45.3	45.4	45.4	45.6	45.6	45.6	45.7	45.2	44.5	45.7	47.1	47.4	47.1	46.8	45.4	44.9	
10	45.2	45.6	45.4	45.3	45.4	45.4	45.2	44.8	44.2	44.1	44.9	45.7	46.1	46.0	46.3	45.7	45.2
11	45.4	45.4	45.0	45.3	45.7	45.2	46.0	45.7	44.9	45.2	46.4	47.4	47.6	46.9	46.1	45.7	46.4
12	44.5	44.8	45.2	44.4	44.6	45.2	45.7	45.4	44.4	45.7	46.3	45.7	45.2	44.6	44.4	44.9	
13	45.6	45.4	45.3	45.0	45.2	45.6	46.3	45.7	45.0	44.6	45.9	47.2	47.9	47.6	47.0	46.6	45.2
14	45.6	45.6	45.5	45.6	45.6	45.6	45.6	45.7	45.2	44.5	47.1	47.4	47.1	46.8	45.4	44.9	
15	45.6	44.9	44.8	44.4	45.2	45.2	44.8	45.8	45.8	46.2	45.8	47.4	47.7	47.0	46.8	45.8	45.1
16	45.6	45.8	45.8	45.6	45.6	45.8	45.6	44.4	43.6	43.6	44.9	46.7	47.1	47.5	47.4	46.8	45.6
17	45.6	45.6	45.8	45.6	45.8	46.0	45.9	44.7	41.9	43.7	44.8	46.6	47.5	46.6	46.4	45.6	
18	44.4	44.4	44.5	45.6	45.6	45.8	47.0	45.6	44.0	43.4	44.5	46.3	47.0	46.2	45.6	45.2	
19	44.9	45.1	45.6	45.6	46.0	46.3	46.3	45.5	45.7	44.9	44.1	45.5	45.8	46.0	45.8	45.1	
20	45.2	44.7	44.7	45.2	45.8	45.8	46.2	45.8	44.2	43.3	44.2	45.5	46.1	46.6	46.3	45.7	45.5
21	44.8	45.2	45.4	45.5	45.6	45.6	45.6	45.5	44.2	43.5	44.6	46.2	46.9	46.7	46.3	45.5	
22	45.2	45.2	45.2	45.5	45.7	45.7	46.1	45.5	44.2	42.8	45.2	47.0	47.2	46.7	45.8		
23	45.5	44.3	45.0	45.5	45.5	46.9	45.5	44.7	43.5	44.2	45.0	45.5	46.3	46.2	45.6		
24	45.8	45.8	45.7	45.8	45.8	46.2	45.7	44.2	42.5	42.5	44.2	45.9	46.9	45.5	44.7		
25	45.9	45.5	45.8	45.7	47.0	47.0	44.7	43.2	43.6	45.2	46.9	47.0	47.7	46.9	45.9	45.5	
26	46.2	45.2	45.7	45.7	45.9	45.8	45.5	45.4	43.6	43.3	45.4	47.8	48.6	48.2	46.7	45.5	
27	45.8	45.8	45.9	45.8	45.8	45.8	45.5	45.2	43.5	44.2	44.2	45.9	46.7	45.5	45.1		
28	45.8	45.7	46.2	45.8	45.8	45.8	46.1	45.8	44.2	44.4	45.8	48.8	49.5	45.7	45.0		
29	45.4	45.8	45.9	46.7	45.9	45.5	45.5	44.2	44.2	41.2	41.7	46.6	48.4	47.0	46.3		
30	45.9	46.1	46.9	46.3	46.5	46.1	46.1	44.7	44.6	45.2	46.2	48.2	48.9	48.8	48.1	46.3	
31	46.2	46.5	46.5	46.1	46.1	45.5	44.2	43.3	43.1	45.1	45.8	46.9	48.1	47.7	46.9	46.2	
Mean	45.41	45.43	45.51	45.59	45.74	45.80	45.94	45.23	44.26	44.29	45.26	46.55	47.06	46.92	46.49	45.71	45.29

DECLINATION: $4^{\circ} + \dots - W$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	45.5	45.9	45.8	46.5	47.4	46.1	46.9	44.7	42.5	44.2	47.2	48.2	48.9	49.3	47.4	46.9	45.5
2	45.5	45.5	45.5	45.9	45.9	45.9	46.9	44.2	41.4	43.3	49.1						
3	45.7	46.1	46.1	46.1	46.3	46.3	45.5	43.3	41.4	43.7	44.8	46.9	46.2	48.1	47.7	47.6	
4	46.1	46.8	46.4	46.8	49.1	49.1	49.5	52.2	47.9	46.1	46.2	46.8	45.6	47.9	47.1	47.2	46.8
5	47.5	46.9	46.8	48.9	46.9	46.1	44.3	43.0	43.0	45.6	47.6	49.5	49.1	47.3	46.6		
6	46.1	46.1	46.4	46.2	45.8	45.4	43.9	43.0	44.1	45.1	46.6	47.2	48.1	48.0	46.8	46.2	
7	46.5	46.4	46.1	46.2	46.5	46.5	46.0	44.2	42.8	44.1	46.6	48.1	48.4	47.3	46.1	46.1	
8	45.6	46.1	45.6	46.2	45.4	45.4	45.6	43.7	43.0	44.2	46.8	48.1	48.9	49.4	48.1	47.3	
9	45.7	46.0	45.8	46.0	46.5	46.2	44.9	43.2	42.4	43.7	45.3	48.0	49.6	50.0	49.5	47.3	
10	45.7	45.8	46.1	46.8	46.1	45.6	44.1	42.6	42.7	44.6	46.1	47					

DECLINATION: $4^{\circ} + \frac{1}{4}^{\circ}$ W

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	45.5	45.4	45.5	45.5	45.2	45.8	44.9	43.3	42.6	42.5	43.6	45.2	46.6	47.7	47.3	46.6	45.9
2	45.5	45.5	45.6	45.9	46.3	46.3	45.5	44.0	43.2	43.7	45.2	46.6	47.4	47.9	48.2	49.2	48.3
3	48.7	50.0	45.5	47.9	47.9	47.1	47.3	46.6	45.2	45.4	46.6	48.8	49.3	49.8	49.2	48.2	46.6
4	46.3	46.4	46.6	46.6	46.6	47.4	46.4	45.2	44.0	44.1	45.5	48.3	49.3	49.6	48.2	47.9	47.9
5	45.7	46.2	46.3	46.9	46.2	46.5	45.4	44.0	42.9	43.2	45.1	47.7	48.0	48.1	47.2	46.6	47.2
6	45.9	45.8	45.8	45.9	45.7	45.9	45.4	44.7	43.6	44.4	43.3	47.6	49.7	49.9	48.9	46.5	45.1
7	45.3	44.7	44.6	45.1	45.5	45.7	45.4	45.8	45.5	44.4	45.3	49.1	50.0	47.4	46.5	46.5	
8	46.2	45.9	46.2	46.2	46.3	47.0	45.8	43.6	43.1	42.9	44.2	48.0	48.2	47.6	46.6		
9	45.9	46.2	45.7	46.5	45.7	46.5	45.1	43.9	44.6	46.3	47.8	47.4	47.0	45.3	45.1	45.4	
10	45.8	45.8	45.9	45.7	45.9	46.3	45.5	43.9	43.1	44.7	45.9	47.3	47.7	46.5	45.8	45.7	
11	45.7	45.8	45.8	45.8	45.7	45.5	44.6	43.1	41.9	43.2	45.1	47.2	48.0	47.4	46.8	46.2	
12	45.8	45.8	45.7	45.7	45.5	45.5	44.8	43.6	43.5	43.4	44.4	47.8	47.6	47.3	46.8		
13	45.5	45.4	45.4	45.5	45.8	45.8	45.8	45.1	43.1	43.9	46.2	49.2	49.3	48.0	47.6	46.5	
14	45.8	45.8	45.6	45.6	45.8	45.4	45.2	43.9	43.2	43.9	46.9	49.3	48.8	48.3	47.3	46.0	
15	45.8	45.8	45.2	45.4	45.6	47.0	45.6	45.2	47.3	48.5	49.3	48.6	47.9	46.9	45.5		
16	45.6	45.2	45.4	45.2	46.2	47.3	45.5	45.2	43.6	43.9	46.0	48.5	49.2	49.0	49.3	48.1	45.9
17	45.4	45.5	45.2	45.6	45.8	45.1	44.0	43.0	43.9	44.8	46.0	48.9	48.9	47.9	47.0	46.3	
18	45.8	45.5	45.9	45.9	45.6	45.4	44.4	43.3	43.9	44.2	45.2	47.6	48.6	48.6	46.6		
19	45.4	45.2	45.2	45.5	44.9	44.7	43.9	43.0	43.0	43.9	45.9	47.5	48.5	48.5	47.1	45.4	
20	45.8	45.8	45.8	45.9	45.4	45.4	43.9	41.8	43.0	46.2	46.9	47.7	46.9	45.8	45.2		
21	45.7	45.6	46.0	45.9	45.9	45.3	44.0	41.9	41.5	42.9	45.5	47.6	48.2	48.3	47.4	46.1	45.5
22	46.0	45.7	45.9	45.9	45.3	43.3	41.4	41.1	41.8	44.1	47.0	48.2	48.7	48.0	47.0	45.9	
23	45.5	45.3	45.2	45.0	45.6	45.6	44.0	41.2	42.6	45.0	47.4	48.6	48.6	48.6			
24	45.9	45.5	45.6	45.9	45.3	45.4	44.2	41.5	42.6	44.4	44.8	48.6	48.9	47.2	46.1		
25	45.6	45.5	45.9	45.9	46.1	45.0	42.3	41.1	41.5	44.5	47.1	48.7	48.6	47.8	46.7		
26	46.0	45.9	45.9	56.0	66.1	46.0	41.5	42.6	40.7	40.2	42.5	45.5	48.0	48.7	48.6	47.2	46.0
27	45.9	45.6	45.6	45.7	46.0	46.3	41.5	41.2	41.1	41.0	46.4	48.3	48.3	47.4	46.1	45.3	
28	45.7	45.1	45.4	46.1	46.1	46.6	46.5	45.5	45.5	45.5	48.0	48.1	48.4	47.6	46.0		
29	45.6	45.4	45.7	45.4	45.6	45.4	44.1	42.1	43.3	42.2	43.2	46.8	48.0	48.1	47.3	46.5	45.6
30	45.3	45.3	45.3	45.2	45.0	45.5	44.6	43.6	43.0	42.7	45.2	46.8	48.4	48.2	47.6	46.4	45.0
31	46.0	45.3	45.5	45.3	45.9	46.1	44.6	43.3	42.6	43.0	45.9	48.3	49.3	48.6	46.7	45.3	
Mean	45.82	45.76	45.63	45.79	45.86	45.98	45.00	43.53	42.72	43.32	45.23	47.48	48.14	48.33	47.82	46.93	46.07

DECLINATION: $4^{\circ} + \frac{1}{4}^{\circ}$ W

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	45.2	45.1	45.1	45.2	45.2	45.2	44.0	42.5	41.7	44.4	44.7	46.6	49.9	48.1	46.0	49.3	46.7
2	45.2	46.3	45.2	45.4	45.4	46.1	46.6	46.9	45.8	47.4	49.3	50.7	50.7	49.3	47.9	46.6	
3	45.9	46.2	46.6	46.0	46.2	46.9	46.2	45.5	41.5	41.2	47.3	50.3	51.3	50.7	48.2	46.6	
4	45.8	45.8	45.9	45.9	45.9	45.8	44.4	43.1	43.8	44.0	45.5	47.2	49.2	48.6	47.2	46.8	
5	45.5	45.8	46.2	45.5	45.7	46.5	44.4	43.8	43.1	44.4	46.6	49.2	50.0	50.2	49.2	47.2	
6	45.1	45.1	45.1	45.1	45.8	46.2	43.9	43.6	45.8	49.2	50.4	50.6	49.9	48.7	47.4	45.8	
7	46.2	46.2	45.2	45.7	45.0	45.7	43.7	42.4	42.4	45.8	47.7	47.2	47.5	46.7	46.1		
8	45.3	45.3	45.2	45.2	45.2	45.9	43.9	42.2	41.1	43.5	43.8	45.5	48.0	49.0	48.7	47.4	
9	45.2	45.2	45.1	45.1	45.6	45.6	44.4	42.9	42.9	44.2	47.0	48.1	49.3	49.0	47.6	46.3	
10	45.2	45.1	44.9	45.1	45.6	46.3	44.3	43.6	42.2	43.3	46.1	48.3	49.7	49.			

DECLINATION: $4^{\circ} + \dots' - W$

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	46.0	45.5	45.5	45.6	45.5	45.5	45.3	45.4	45.1	45.6	46.7	48.2	49.7	50.3	50.8	49.6	47.0
2	45.8	46.0	45.6	45.5	45.3	44.1	43.4	43.0	44.1	45.3	46.6	48.2	49.3	49.6	49.2	48.3	46.8
3	46.6	46.2	46.1	46.0	45.9	44.8	43.5	42.8	43.1	45.9	48.2	49.6	49.8	48.6	48.3	47.4	
4	46.7	46.5	46.1	46.3	45.7	45.4	43.2	43.1	43.5	45.0	48.3	49.7	49.9	44.4	48.3	46.9	
5	46.3	46.1	46.0	46.3	45.5	45.3	44.4	43.9	45.3	45.2	46.2	48.4	49.0	48.8	47.3	46.8	46.3
6	46.5	46.1	46.0	46.0	45.7	45.1	44.5	44.3	44.7	46.8	48.1	49.2	49.4	48.5	48.0	47.2	46.5
7	46.4	46.2	46.0	46.0	45.8	44.5	43.9	43.5	45.5	47.0	47.7	48.1	48.4	47.6	47.2	46.9	
8	46.4	46.1	46.1	46.0	45.8	45.4	43.4	43.3	46.1	48.3	49.1	49.0	50.8	50.2	48.5	47.3	
9	46.3	46.5	46.5	46.5	46.3	45.2	45.0	44.4	43.5	47.1	48.6	49.9	49.7	48.8	47.4		
10	46.5	46.5	46.5	46.5	46.1	45.6	44.7	43.4	43.4	45.5	47.3	48.9	49.9	49.2	48.2	47.0	
11	46.9	46.6	46.7	46.2	46.1	45.6	45.1	45.1	45.9	47.3	48.5	49.5	49.0	48.5	47.3		
12	47.1	47.0	47.0	46.8	46.7	45.9	45.1	45.7	46.8	47.5	48.1	48.6	48.6	48.5	47.2		
13	46.2	47.1	46.3	46.6	46.0	45.3	44.7	44.5	45.7	47.5	48.5	49.7	49.4	48.6	47.5		
14	46.7	46.7	46.5	46.1	45.3	46.0	44.6	43.6	45.6	47.5	49.3	49.9	48.8	47.3	46.1		
15	46.9	46.5	46.5	46.0	45.8	44.8	43.9	43.5	45.0	47.5	49.0	49.8	48.7	48.2	47.5		
16	46.7	46.7	46.3	46.3	45.7	43.8	42.1	42.9	44.8	47.9	49.9	50.3	51.1	50.2	48.7	46.1	
17	46.1	45.8	45.5	45.4	44.7	42.7	40.8	40.9	42.1	45.7	48.8	50.4	50.2	49.3	45.9		
18	46.2	45.1	45.3	45.0	45.0	42.0	42.1	41.5	43.0	49.3	49.9	49.2	48.1	47.4	46.8		
19	46.1	45.8	44.7	43.5	43.6	40.8	40.6	41.2	45.1	48.3	48.9	49.3	48.1	47.3			
20	46.3	46.2	46.0	45.9	44.8	44.1	43.6	42.2	43.2	44.8	48.8	49.0	49.2	47.5	47.1		
21	46.9	46.3	46.2	46.2	46.0	45.5	44.7	44.0	45.0	47.5	49.2	51.6	50.3	49.0	47.8		
22	46.8	46.4	46.4	46.5	46.6	45.6	44.2	44.8	45.1	46.8	49.0	49.3	48.2	47.1			
23	46.0	46.4	46.4	46.3	46.9	43.7	42.6	43.1	43.2	45.5	48.4	49.3	48.5	47.6			
24	46.4	46.3	46.3	46.3	45.8	43.8	43.8	43.9	45.5	47.0	48.2	48.7	47.9	47.4			
25	47.1	46.5	46.5	46.4	46.0	46.2	47.7	49.2	49.8	49.5	49.5	49.2	48.1				
26	46.7	46.4	46.2	46.2	45.7	45.0	44.7	45.0	45.0	47.5	49.2	51.6	50.3	49.0	47.8		
27	46.4	46.8	46.6	46.6	46.6	45.2	45.2	45.1	45.6	47.9	49.0	49.3	48.2	47.1			
28	45.4	45.4	45.4	45.0	45.6	45.3	45.3	45.3	45.8	47.8	50.3	50.7	48.9	47.4			
29	46.8	46.5	46.5	46.6	46.2	44.0	43.8	43.1	43.6	45.8	49.2	50.3	50.7	49.5			
30	47.3	46.7	46.1	46.3	45.4	43.7	41.9	41.9	42.0	47.0	49.4	50.0	50.4	49.3	48.1		
31	46.7	46.6	46.6	46.5	45.6	43.6	43.7	45.4	45.9	49.2	50.1	50.5	50.0	49.3	48.1		
Mean	46.51	46.28	46.18	46.12	45.77	44.82	44.03	43.75	44.10	46.05	47.80	48.87	49.00	49.51	48.92	48.06	47.00

DECLINATION: $4^{\circ} + \dots' - W$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	47.3	47.0	46.7	46.7	46.4	44.5	44.0	45.1	45.4	47.0	48.8	49.3	49.7	49.6	49.0	47.3
2	47.2	46.8	46.7	46.7	45.7	44.2	42.5	42.1	43.3	45.5	47.3	48.4	49.8	49.4	48.7	47.8
3	46.8	46.7	46.4	46.4	45.5	44.1	44.0	44.4	45.7	47.0	50.1	50.9	50.8	49.8	48.7	48.2
4	47.4	46.8	46.8	46.7	45.9	44.1	43.3	41.1	45.2	45.5	47.0	48.0	48.0	47.1	46.5	45.5
5	46.1	45.8	45.6	45.4	44.9	44.1	43.7	43.9	44.7	46.1	46.8	49.5	49.3	48.5	46.0	
6	46.1	46.9	46.5	46.1	45.4	45.1	45.1	45.6	47.2	47.2	47.9	48.3	48.0	47.3	47.4	46.2
7	45.3	44.1	45.3	45.3	45.1	43.1	43.1	43.2	44.3	44.3	48.1	48.8	48.8	48.4	47.1	
8	45.6	45.6	45.4	45.4	45.4	44.2	43.8	43.5	43.7	45.1	46.9	48.1	48.3	48.4	47.6	
9	45.3	44.3	44.2	44.4	44.8	42.7	42.7	43.4	43.4	45.3	47.0	48.2	48.3	48.1	46.9	
10	44.5	45.3	44.9	44.7	43.8	42.2	42.7	42.7	43.9	45.3	46.9	48.3	49.6	48.7	46.4	
11	46.6	46.1	46.8	44.7	43.9	44.1	44.2	46.9	48.1	49.5	49.8	48.4	48.4	47.1		
12	47.0	47.0	45.4	45.3	45.7	43.1	44.1	45.1	47.1	47.8	49.0	49.4	49.4	47.9	47.1	
13	46.5	46.0	46.0	45.6	45.9	44.1	44.0	44.0	45.0	46.3	47.8	48.0	48.0	47.0	46.5	

DECLINATION: $4^{\circ} + \dots$ W

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	45.7	45.3	45.3	45.0	43.9	42.5	41.7	41.7	42.1	43.9	46.5	49.5	50.3	49.6	48.5	47.4	46.3
2	45.7	45.4	45.3	45.3	45.0	43.8	42.8	43.1	45.0	46.6	48.5	49.5	48.7	47.8	46.5		
3	45.7	45.4	45.4	45.4	45.3	43.2	41.6	41.3	42.9	45.3	47.8	49.3	50.0	49.1	46.8	46.1	
4	45.9	45.8	45.4	45.4	45.0	43.4	41.9	41.7	42.4	44.8	47.3	47.8	48.7	49.1	48.5	47.8	46.5
5	45.0	44.6	44.5	44.5	44.9	43.7	41.5	40.4	40.5	42.0	45.4	46.7	48.7	49.1	47.2	46.2	
6	45.2	45.0	45.0	45.0	44.3	43.3	40.7	39.6	41.1	43.3	47.9	51.1	49.0	47.7	47.9	48.4	48.0
7	45.9	44.6	43.8	43.2	43.4	45.6	44.2	44.9	45.2	48.6	49.0	49.0	49.3	48.2	47.5	46.1	
8	46.0	45.8	45.5	45.5	45.0	43.6	42.4	41.8	43.1	44.8	45.9	47.8	48.9	49.2	48.4	47.4	
9	46.3	45.9	45.1	45.1	44.8	43.9	43.5	42.8	43.3	45.0	46.3	48.1	49.2	49.6	47.7	46.9	
10	45.8	46.1	45.5	45.5	44.7	43.6	42.7	42.8	43.6	44.2	46.4	47.7	48.0	47.6	46.4	46.1	
11	45.7	45.8	45.2	45.0	45.0	43.8	43.1	43.4	43.3	45.5	45.8	48.2	48.2	47.5	46.7	45.3	
12	45.7	45.4	45.2	44.8	44.6	43.3	42.0	42.7	43.8	45.4	48.2	49.0	48.7	47.7	46.9	46.1	
13	45.5	45.5	45.3	44.7	43.6	43.2	42.1	42.1	42.9	43.8	45.6	47.5	47.2	47.4	46.8	45.7	
14	44.4	44.7	44.4	44.1	43.2	41.8	41.7	42.9	43.1	45.6	47.1	48.1	48.6	48.8	48.4	46.1	
15	45.6	45.1	45.1	44.7	44.1	42.7	41.7	42.5	42.8	45.1	47.0	48.1	49.0	48.9	47.7	45.1	
16	45.1	45.1	45.0	45.0	44.3	41.7	40.2	40.5	42.6	45.4	47.0	48.5	49.9	49.1	49.2	46.4	44.9
17	44.9	44.9	44.9	44.8	44.2	42.7	41.2	40.5	41.6	44.1	46.0	47.6	50.6	49.7	47.5	45.6	
18	44.6	44.5	44.5	44.6	44.1	42.0	40.1	40.4	42.5	44.6	46.3	48.2	49.1	48.7	48.8	46.9	45.7
19	44.9	44.5	44.4	44.4	42.0	41.1	40.1	39.3	41.6	44.2	46.5	48.0	49.7	49.8	48.4	47.1	45.6
20	44.6	44.4	44.2	44.2	43.3	41.9	42.9	42.3	44.6	46.3	46.8	47.1	47.3	47.6	47.1	46.3	
21	44.6	44.6	44.6	44.5	44.3	43.0	41.6	41.5	42.7	44.2	45.7	46.8	46.4	46.3	45.4		
22	44.9	45.0	45.0	45.0	44.5	44.2	42.8	42.3	41.0	45.0	46.8	47.9	49.1	48.1	47.8	45.3	
23	44.9	44.6	44.9	44.5	44.3	43.1	42.2	41.6	41.9	43.2	45.0	45.8	47.0	47.2	47.3		
24	44.3	44.0	44.2	44.6	44.2	42.0	43.0	43.1	43.3	45.4	46.4	45.0	47.2	48.1	48.4	47.2	
25	45.8	45.5	45.1	45.4	44.6	43.0	41.6	43.2	45.7	47.7	48.4	49.1	48.4	47.7	46.8	46.0	
26	45.1	45.1	41.7	44.6	44.3	43.0	42.7	42.7	43.6	45.6	46.1	47.2	47.7	47.4	46.5	45.7	
27	45.0	44.7	44.6	44.7	44.3	43.0	42.0	42.4	44.0	45.8	47.2	48.0	48.3	47.7	46.2	45.7	
28	54.7	44.5	44.5	44.6	44.3	43.2	42.6	42.7	43.5	45.7	48.1	48.9	49.8	48.8	47.0	45.8	
29	45.2	45.8	45.2	44.3	41.8	40.9	41.2	42.6	44.4	47.0	48.4	48.8	48.6	47.1	46.1	45.5	
30	45.8	45.6	45.5	45.5	44.8	42.9	42.5	43.2	44.4	45.9	47.1	48.0	47.7	47.5	47.1	45.9	45.0
31	45.4	45.1	45.2	45.1	44.1	42.4	40.9	40.6	41.0	44.6	46.7	47.0	48.5	48.6	47.5	46.2	45.0
Mean	45.27	45.12	44.96	44.91	44.26	42.80	41.82	42.21	42.00	44.03	46.56	47.88	48.39	48.52	48.08	47.00	46.01

DECLINATION: $4^{\circ} + \dots$ W

18	19	20	21	22	23	24	25	Mean	Maximum	Minimum	Range	Remarks	at m.	p. m.	
45.8	45.8	45.5	46.1	45.9	45.8	45.4	45.6	45.65	50.3	43.00	41.6	7.20	8.7	C	C
45.8	45.8	45.1	45.1	45.8	45.9	46.1	45.95	49.5	44.00	42.4	6.45	7.1	C	C	
45.3	45.4	45.8	45.9	45.9	46.1	45.8	45.9	45.95	50.2	43.30	41.0	7.30	9.2	C	C
46.3	45.9	45.3	45.9	45.9	45.7	45.4	45.7	45.74	49.1	44.00	41.6	7.20	7.5	C	C
45.8	45.7	45.8	45.8	45.7	46.1	45.8	45.8	45.18	49.2	43.00	40.6	8.30	9.6	C	C
47.9	46.7	47.7	45.4	45.7	47.1	45.4	45.77	51.1	42.00	39.4	7.40	11.7	A	A	
45.5	46.0	46.0	45.7	45.7	45.5	45.6	45.5	44.35	44.9	41.40	40.7	6.33	8.8	C	C
46.3	44.7	45.4	45.4	45.0	45.1	45.8	45.5	45.36	49.3	44.40	40.2	8.34	9.1	A	A
45.6	44.7	45.9	45.9	45.9	45.9	45.5	45.5	45.91	49.6	44.00	42.5	7.20	7.1	C	C
45.5	45.7	45.8	45.8	45.8	45.8	45.9	45.8	45.67	48.0	44.00	42.7	7.00	5.3	C	C
44.8	45.0	45.2	45.3	45.4	45.4	45.1	45.4	45.42	48.3	43.30	43.1	7.00	5.2	C	C
46.0	45.8	45.4	45.7												

DECLINATION: $4^{\circ} + \dots W$

Hour deg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	46.7	45.5	45.0	45.1	45.2	43.2	42.1	43.3	45.8	49.9	51.1	51.2	50.7	48.6	45.6	45.2	44.3
2	45.8	45.6	45.6	45.2	44.7	43.1	42.1	42.9	45.5	47.4	49.7	50.7	49.9	47.7	46.1	45.0	
3	45.2	45.2	45.3	45.5	44.8	43.2	42.0	42.7	45.6	48.4	49.3	49.0	47.7	47.0	45.6	43.1	
4	45.5	46.7	45.1	45.2	45.0	44.3	44.3	42.5	45.1	47.3	49.6	50.1	50.0	48.6	48.1	47.1	45.9
5	45.9	45.2	45.9	45.7	44.5	44.4	43.0	42.6	44.4	47.9	49.8	50.8	50.9	49.8	48.7	46.2	46.7
6	46.0	45.2	45.7	45.2	44.7	42.8	41.8	43.0	46.3	48.6	49.1	49.4	48.7	47.6	46.6	45.7	
7	45.7	45.6	45.3	45.3	44.8	43.7	42.3	41.8	42.3	45.2	47.5	48.9	48.7	48.1	46.4	45.7	45.3
8	45.3	45.1	45.1	44.7	44.7	43.2	42.6	43.4	44.2	46.7	48.6	49.3	49.0	47.8	46.4	45.5	45.6
9	45.2	45.2	44.9	44.8	44.2	42.8	42.2	43.2	44.8	47.2	49.4	50.6	49.3	48.9	47.9	47.2	46.0
10	44.8	45.1	44.9	44.5	44.5	43.3	42.9	43.0	43.7	47.2	48.6	48.7	47.9	46.6	45.1	44.7	45.3
11	45.6	45.6	44.8	44.8	44.2	43.0	42.5	43.2	44.7	46.6	48.3	49.3	48.9	47.8	47.2	45.9	44.7
12	45.9	45.6	45.2	45.2	44.7	42.5	42.5	43.0	46.0	48.6	50.5	50.6	47.6	45.7	44.5		
13	45.7	45.6	45.3	45.3	44.5	43.2	41.9	42.1	44.2	48.2	50.4	51.0	50.0	47.9	46.0	44.8	44.7
14	45.3	45.2	45.2	44.9	44.6	43.3	43.1	43.8	46.4	49.1	51.1	50.6	49.7	47.9	46.1	45.3	45.3
15	45.3	45.2	45.2	44.8	44.6	43.3	42.4	42.6	44.3	47.1	49.7	50.2	48.8	47.7	46.1	43.9	46.2
16	45.0	45.2	44.8	44.6	44.6	42.9	41.4	42.0	44.6	47.5	49.8	50.3	49.4	48.0	46.1	45.0	44.6
17	45.4	45.3	45.3	45.2	44.8	43.3	41.9	41.6	44.1	46.9	49.0	50.2	49.9	48.2	46.5	44.6	
18	45.4	45.4	45.3	45.3	44.9	43.3	42.3	43.3	45.4	48.2	50.5	50.3	48.7	46.9	41.6	44.6	
19	44.8	45.4	44.3	44.6	44.4	43.0	42.0	42.4	44.1	46.1	50.3	51.1	50.9	49.1	48.6	47.9	
20	45.2	45.3	44.8	45.8	45.0	44.6	43.9	44.5	47.1	50.2	51.6	51.4	50.3	48.4	46.0	45.2	45.3
21	46.1	46.0	46.0	45.4	44.9	44.5	43.7	44.6	45.7	47.3	48.6	49.4	49.5	48.0	46.5	45.3	45.3
22	46.1	45.9	45.9	45.3	45.4	44.4	44.2	46.2	48.7	49.5	49.6	49.6	48.2	45.4	45.4		
23	45.3	44.0	44.7	44.7	44.6	44.0	43.4	43.4	44.7	47.4	49.3	49.8	45.8	46.5	45.7		
24	45.7	45.5	45.3	45.4	45.3	45.3	44.1	43.5	43.8	45.5	46.9	47.2	47.3	46.9	46.8	46.4	46.5
25	45.3	45.1	45.1	45.1	45.3	45.0	44.0	44.0	45.5	47.4	48.3	48.5	47.4	46.2	45.5	46.1	
26	45.7	45.4	44.7	46.1	45.7	46.6	45.8	44.7	45.5	46.8	48.7	49.7	47.4	46.8	47.4	47.6	
27	45.4	45.8	46.6	45.9	45.7	45.3	45.8	49.5	46.1	47.7	49.3	50.2	48.7	47.4	47.7	45.3	
28	46.6	46.2	46.6	46.5	46.6	46.9	45.9	45.3	45.5	47.3	49.9	50.2	48.9	47.3	46.1	45.3	
29	45.9	46.1	46.6	46.4	45.7	45.5	46.1	46.1	46.9	47.6	48.3	48.1	46.4	45.9	45.5	45.7	
30	46.3	46.5	46.3	45.9	45.5	44.8	43.7	43.2	43.9	46.0	48.6	49.7	48.6	46.7	45.5	45.5	
Mean	45.0	45.49	45.36	45.28	44.96	43.98	43.25	43.14	44.89	47.43	49.30	49.81	49.41	48.04	46.75	45.82	45.47

DECLINATION: $4^{\circ} + \dots W$

1	45.6	45.0	46.2	44.8	46.3	45.9	44.1	43.6	44.8	47.9	50.3	49.3	47.9	46.2	45.1	45.6
2	46.2	45.9	45.9	46.6	45.8	46.2	45.1	44.0	45.2	49.7	50.3	49.6	48.6	47.0	46.2	
3	46.2	46.0	46.0	45.9	45.6	45.6	44.5	42.9	42.6	44.8	47.7	49.6	48.4	47.0	45.9	
4	45.9	45.6	45.9	45.8	45.6	45.5	44.7	43.9	43.7	45.5	48.2	49.6	50.3	49.4	47.5	46.0
5	45.8	45.6	45.0	45.0	45.4	45.5	44.1	41.8	47.0	48.8	49.0	49.0	48.4	46.9	46.2	45.8
6	45.9	45.4	45.5	45.2	45.0	45.4	43.5	43.5	44.4	46.2	48.5	50.1	49.3	48.8	47.5	47.9
7	46.5	46.3	46.2	46.2	46.0	45.2	43.9	43.9	45.0	47.3	48.8	49.6	48.2	47.5	46.5	46.3
8	45.5	45.4	45.6	45.8	46.2	46.9	45.2	43.9	45.7	46.9	49.0	49.2	48.8	48.2	47.5	45.9
9	46.3	46.3	46.5	45.7	46.1	46.1	44.4	44.6	46.1	45.7	49.4	49.9	48.2	46.8	46.1	46.3
10	46.3	46.3	46.1	45.9	45.6	45.2	44.1	43.7	44.6	47.6	49.7	49.4	48.3	47.0	46.3	46.3
11	46.1	46.0	45.9	45.7	45.6	45.1	44.2	44.0	44.4	46.1	47.9	48.5	48.3	47.6	45.7	46.1
12	45.5	45.3	45.7	45.5	45.6	45.8	44.1</									

DECLINATION: $4^{\circ} + \dots / - W$

Hour Index	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	46.5	46.5	46.3	46.3	46.3	46.3	45.4	44.6	43.6	44.0	45.9	47.7	48.1	48.4	47.8	47.2	47.2	
2	46.6	46.4	46.4	46.3	46.4	46.6	45.8	44.7	43.9	44.0	45.8	47.8	48.8	49.0	47.0	47.0	47.0	
3	46.6	46.4	46.4	46.4	46.0	46.0	45.1	43.7	42.6	43.9	45.9	46.9	47.9	48.2	47.2	47.1	47.1	
4	46.6	46.3	46.3	46.4	46.6	45.9	45.1	44.0	45.1	47.4	49.0	49.7	49.3	47.8	47.1	47.3	47.3	
5	45.4	48.8	45.9	45.4	45.2	46.2	47.1	46.7	46.3	47.8	49.7	50.5	49.6	48.8	48.2	48.6		
6	46.6	46.7	46.6	47.0	46.7	46.9	45.9	45.2	46.6	46.9	49.3	49.4	50.0	49.2	48.5	48.3	47.7	
7	46.2	46.0	46.3	45.9	46.6	46.0	45.8	44.0	45.9	45.2	47.3	49.7	50.5	48.8	47.3	46.7	47.7	
8	47.1	47.0	46.9	46.7	47.1	46.6	46.3	45.4	45.1	46.3	47.5	49.6	50.7	50.3	49.0	48.1	47.3	
9	46.7	46.7	46.6	46.6	46.6	46.6	46.6	46.0	46.6	46.6	49.6	49.2	49.6	49.3	47.9	47.5	47.8	
10	46.5	46.5	46.1	46.4	46.7	47.2	46.0	44.6	44.4	44.5	46.4	48.2	49.1	49.0	48.3	46.4	47.8	
11	46.8	46.8	46.8	46.7	46.7	46.5	45.5	44.4	43.8	44.5	45.9	47.9	49.1	48.2	47.5	47.5		
12	46.7	46.7	46.7	46.7	46.7	46.7	46.0	44.6	44.1	44.8	46.7	48.2	49.5	49.4	48.6	48.2		
13	46.8	44.4	45.2	48.0	45.3	48.9	43.9	42.2	47.5	48.0	48.4	48.9	50.1	49.9	48.2	48.4	48.7	
14	46.4	47.0	48.2	47.8	47.4	46.8	46.1	45.3	45.6	46.8	47.5	47.4	48.2	48.0	47.5	48.4		
15	47.6	47.5	47.4	46.8	46.7	46.5	46.8	46.0	46.7	48.7	49.7	50.6	51.4	49.7	48.0	47.2	47.1	
16	49.4	44.1	45.3	47.8	51.7	51.8	50.9	51.0	50.9	50.1	49.3	50.5	52.0	50.6	49.8	48.2	52.0	
17	46.7	46.7	47.8	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.4	48.7	48.7	48.0	47.4	46.4		
18	48.4	48.0	47.3	47.6	47.3	47.1	47.5	47.6	47.5	47.6	48.1	48.7	49.0	48.7	48.5	47.7		
19	48.1	48.0	47.7	47.7	47.9	47.9	48.0	47.5	47.6	46.8	48.3	49.4	49.0	48.7	48.3	48.3		
20	47.9	47.5	47.6	47.9	47.9	48.1	48.1	46.9	46.1	46.8	47.3	48.0	48.1	47.6	47.5	47.6		
21	47.6	47.7	47.6	47.3	47.6	47.6	47.3	46.0	45.6	45.4	46.6	47.3	48.0	47.5	46.9	47.1		
22	47.2	47.1	46.8	46.8	47.3	47.6	48.9	47.5	46.6	46.4	47.6	47.6	47.6	48.4	48.1			
23	47.5	47.6	47.6	47.9	47.9	48.0	47.5	47.5	47.5	46.9	47.2	47.6	47.7	48.1	47.3			
24	46.9	46.9	46.8	47.5	57.5	57.5	47.6	48.1	46.4	46.4	46.5	46.8	47.5	47.7	47.9	48.1		
25	47.2	47.7	47.6	47.6	47.7	47.9	48.0	47.2	46.6	46.2	46.4	46.8		
26	46.9	47.2	47.5	47.5	47.5	46.9	46.2	46.2	46.5	46.4	46.9	46.8	47.6	48.0	47.6			
27	47.0	47.0	46.7	46.3	46.7	47.0	47.2	47.4	47.4	47.4	47.7	48.4	48.1	47.7		
28	46.2	45.9	47.0	47.0	47.2	47.4	47.2	45.9	45.2	46.3	47.3	47.2	46.9	47.7	48.1			
29	47.3	46.6	46.3	46.5	47.2	47.4	46.5	45.9	46.1	47.7	48.2	48.1	48.1	47.4	47.4	47.4		
30	47.3	47.1	46.7	47.1	47.1	47.0	46.7	46.3	46.2	47.4	48.1	48.6	48.0	47.9	47.1	47.7		
Mean	47.02	46.82	46.78	47.01	47.28	47.26	46.96	45.97	45.54	46.05	47.21	48.34	48.96	48.68	48.01	47.61	47.80	

DECLINATION: $4^{\circ} + \dots / - W$

Hour Index	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	47.2	47.2	47.1	47.4	46.9	46.1	46.5	46.0	45.9	46.9	48.4	49.7	49.9	48.7	48.4	47.2	47.1
2	47.3	47.3	47.3	47.3	47.3	47.2	46.8	45.4	45.0	45.8	46.9	49.5	49.5	48.7	47.7	46.6	46.9
3	47.3	47.2	47.2	47.2	47.2	47.9	47.2	46.6	46.6	47.0	47.7	48.7	49.4	48.5	47.9	47.3	
4	46.6	47.3	47.3	47.4	47.6	47.4	47.1	45.9	46.3	47.4	48.8	48.9	48.8	48.5	47.8	47.3	
5	46.7	46.8	46.6	47.2	47.4	48.7	47.4	47.4	47.0	48.1	49.4	50.1	49.8	49.1	48.5	48.6	
6	48.2	48.2	48.3	48.3	48.3	48.4	48.4	47.3	46.3	46.4	46.8	48.8	49.7	49.8	48.1	48.0	
7	47.9	47.6	47.9	47.9	47.6	48.6	48.0	47.3	47.6	47.5	48.8	48.8	49.5	48.8	48.4	47.9	
8	47.9	47.9	47.9	48.2	48.0	48.0	47.2	46.4	46.7	47.8	48.8	49.1	48.4	48.7	48.2	47.6	
9	47.5	47.4	47.5	47.7	47.5	47.5	47.4	46.7	46.7	46.8	49.5	49.0	48.7	48.6	47.5	47.5	
10	47.9	47.9	47.7	47.4	47.4	47.2	47.4	47.4	47.1	47.4	49.1	49.1	48.6	47.9	47.4	47.4	
11	47.7	47.4	47.4	47.4	47.5	47.4	46.7	46.4	46.4	47.8	4						

HORIZONTAL INTENSITY: 0.29 C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	963	964	967	970	968	968	971	974	978	972	971	967	969	970	965	961	
2	962	969	962	962	968	966	973	974	970	961	973	965	973	975	974		
3	966	966	965	967	969	971	973	978	980	977	975	969	963	964	964		
4	968	968	970	972	972	973	979	982	980	991	986	977	975	987	981	985	
5	973	965	969	971	974	974	987	988	982	974	963	964	961	957	960	968	
6	971	958	956	954	965	977	963	969	958	967	964	945	941	944	940		
7	945	953	949	950	950	955	959	961	960	954	950	953	950	955	955	965	
8	960	967	956	969	961	965	965	962	960	965	963	971	971	973	967		
9	965	967	970	971	973	972	975	980	983	983	980	986	982	983	983	979	
10	976	974	978	980	980	984	993	1000	984	980	987	976	970	976	967		
11	974	973	976	974	977	983	979	983	975	972	982	988	983	978	968	955	
12	957	961	960	961	963	965	974	979	980	977	982	990	988	993	981		
13	973	969	978	977	970	967	967	969	953	954	960	956	957	972			
14	972	974	975	974	975	975	980	980	975	964	958	956	965	980	983	995	
15	961	966	959	963	962	971	974	975	973	958	942	937	961	960	967	971	
16	969	969	971	974	975	977	979	979	970	962	958	963	964	969	971	975	
17	979	980	982	983	985	987	995	974	957	955	959	967	972	980			
18	973	979	966	967	964	969	973	976	983	983	976	973	979	987	983		
19	975	976	978	974	976	982	983	988	983	976	969	972	974	975	976		
20	974	977	971	973	972	988	990	992	996	976	978	978	985	990			
21	979	981	983	982	984	989	979	1003	1000	992	978	975	979	981	986	960	
22	983	985	987	981	985	985	990	996	990	982	986	983	979	976	977		
23	961	989	975	970	971	975	976	994	995	1001	1004	1000	1085				
24	992	994	996	992	990	993	1000	1002	998	998	977	985	991	990	1005	1016	
25	989	997	994	997	999	1014	1007	998	992	975	982	978	976	982	996		
26	1001	1004	995	997	1000	1004	1001	997	995	984	993	...	1003	1004	1007	1011	
27	992	990	991	996	1001	996	985	979	968	977	984	997	1006	1011	1010		
28	998	998	994	1002	997	994	988	988	989	988	972	958	967	993	994	990	
29	980	983	987	994	1011	990	980	993	982	981	973	963	972	980	994	986	
30	980	988	996	1000	987	987	984	984	983	973	961	953	972	982	985	981	
31	979	985	984	985	985	987	989	985	973	962	957	964	970	974	976	982	
Mean	97.30	97.52	97.46	97.58	97.61	97.92	98.09	98.37	98.16	97.44	96.88	97.15	97.22	97.41	97.78	98.00	
																97.80	

HORIZONTAL INTENSITY: 0.29 C.G.S.

1	971	986	992	987	985	1000	994	998	996	982	973	975	981	984	994	993	993
2	981	987	989	988	985	986	985	1003	1007	1002	995	978	951	956	959	961	
3	968	966	968	970	972	976	981	987	982	969	983	995	1000	985	955	955	
4	920	914	951	939	953	1002	950	957	969	957	955	979	942	940	937	938	
5	930	930	943	939	1039	944	937	930	924	924	928	941	944	940	938	930	
6	939	958	963	943	948	952	955	950	931	920	935	942	950	962	963	955	
7	964	958	960	960	963	965	962	959	960	948	940	947	957	961	960	968	
8	951	950	952	952	959	948	951	949	939	919	909	923	931	935	951	952	956
9	955	956	956	956	957	952	956	954	946	937	926	929	936	942	954	961	
10	961	958	961	963	967	967	967	972	969	955	938	937	943	944	960	963	964
11	962	959	956	960	983	961	957	974	964	958	957	958	964	971	979		
12	965	966	968	969	972	974	981	986	982	969	961	959	977	986	991		
13	959	959	970	966	967	969	944	939	912	944	949	947	948				
14	963	963	963	965	967	971	974	980	972	958	950	942	943	952	964	978	
15	965	957	959	967	967	961	967	978	974	969	955	949	966	960	969	963	
16	969	966	965	968	967	968	961	952	952	958	944	944	954	964	964	966</td	

HORIZONTAL INTENSITY: 0.29 C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	977	979	981	984	986	986	983	980	974	968	947	955	949	946	939	930	931
2	976	977	965	974	971	978	983	980	974	968	947	955	949	946	939	930	931
3	969	919	918	906	900	912	925	914	951	967	929	918	910	912	918	927	928
4	921	923	920	920	924	925	928	921	910	882	979	879	880	912	917	919	919
5	946	944	947	949	953	956	956	954	941	926	925	933	947	973	981	973	961
6	964	952	961	962	976	975	985	974	953	951	936	956	947	957	971	982	985
7	972	980	967	969	979	979	983	978	960	948	941	965	929	933	952	958	942
8	932	935	935	929	935	940	947	945	933	928	927	939	943	951	952	936	938
9	945	951	946	945	949	944	955	950	935	931	932	944	953	965	969	968	966
10	955	958	968	961	955	954	956	943	930	924	948	964	968	979	976	972	973
11	963	964	965	960	963	958	958	959	952	953	960	967	974	977	974	972	973
12	967	964	964	961	961	962	964	961	956	955	977	974	986	991	988	967	967
13	968	969	967	970	970	972	980	979	981	970	959	957	965	961	964	964	964
14	962	964	962	968	968	968	967	962	960	953	958	970	978	988	986	991	991
15	959	962	981	979	969	970	974	966	962	936	944	946	967	962	970	975	975
16	961	973	957	960	949	946	972	966	979	977	975	975	954	954	952	952	952
17	950	954	954	954	958	956	954	948	944	947	955	965	976	977	975	969	965
18	962	963	969	964	967	965	961	957	949	938	940	955	976	987	982	975	965
19	965	963	966	969	971	974	972	965	954	950	959	984	997	1015	1021	989	990
20	971	968	965	968	967	968	966	967	962	953	948	976	990	1001	1002	998	999
21	965	968	962	968	962	962	955	948	937	934	940	959	974	982	980	976	970
22	966	969	967	966	969	970	965	957	950	946	949	959	970	975	978	980	980
23	971	977	979	984	978	977	973	966	962	967	985	986	1000	998	993	992	992
24	966	966	968	970	969	970	973	969	958	940	956	965	970	962	964	967	967
25	960	961	962	964	968	970	972	966	955	947	953	963	970	979	980	974	973
26	962	964	965	966	966	972	977	976	969	961	964	979	986	990	989	986	986
27	977	976	979	980	984	985	987	983	974	972	985	990	1007	1008	998	979	996
28	973	971	960	962	963	964	970	958	954	954	956	973	984	988	984	978	978
29	972	970	968	971	974	974	972	969	950	956	962	984	993	1014	1026	1016	1011
30	997	994	989	988	988	990	981	972	971	973	986	999	1007	1005	1013	1011	1001
31	985	989	987	985	987	988	987	984	970	958	965	978	1004	1011	1010	1011	1011
Mean	961.2	962.9	962.7	961.9	962.8	961.0	967.3	962.2	954.9	948.6	949.4	960.5	967.3	974.4	978.5	973.1	971.2

HORIZONTAL INTENSITY: 0.29 C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	999	1001	1004	1004	1007	1011	1014	1001	980	975	998	1031	1058	1026	1006	975	985
2	955	952	987	975	962	964	954	946	937	930	925	922	913	925	937	934	933
3	952	951	964	968	951	960	957	945	947	947	943	936	932	926	925	943	943
4	957	949	951	953	953	956	950	942	922	923	939	940	955	961	943	934	934
5	942	938	940	939	937	940	941	939	921	919	936	943	962	968	958	944	942
6	943	944	929	933	931	938	942	952	944	934	930	951	958	956	951	948	947
7	944	944	939	940	939	941	937	933	923	925	943	947	963	946	946	944	944
8	949	951	948	950	949	944	941	940	924	921	933	945	962	965	964	966	960
9	948	948	946	948	951	948	941	932	928	939	961	979	985	984	977	970	970
10	966	963	967	959	961	956	956	948	947	941	975	988	976	977	972	972	972
11	952	955	951	949	949	951	950	946	937	922	942	977	991	980	978	980	980
12	964	962	961	955	960	958	958	957	957	971	968	989	995	991	987	979	979
13	963	955	946	940	953	960	955	949	944	971	978	973	964	971	971	971	971

HORIZONTAL INTENSITY: 0.29 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	963	962	962	960	961	957	954	941	918	920	939	947	952	959	961	949	
2	961	954	949	947	951	960	952	944	929	946	955	952	966	967	973	969	
3	976	978	974	974	972	970	966	964	958	960	958	963	976	977	983	981	
4	959	957	956	956	957	957	952	941	933	936	950	976	986	986	971	960	
5	956	958	953	951	956	956	949	940	935	939	949	960	968	972	969	973	962
6	943	941	941	940	943	938	936	934	940	946	958	968	976	980	982	981	977
7	965	964	962	965	964	968	965	959	960	955	955	956	971	980	984	976	
8	966	966	968	965	968	964	956	944	939	944	957	974	986	984	980	966	
9	960	957	957	956	952	955	959	950	946	935	946	958	964	971	967	960	
10	953	953	952	957	962	951	937	922	915	920	932	945	950	957	954	947	
11	949	950	952	952	953	953	945	937	935	936	941	940	947	955	960	966	959
12	944	943	945	942	943	949	949	945	956	962	973	978	981	985	977		
13	957	946	949	949	955	961	955	948	943	945	966	980	989	992	995	998	
14	958	954	956	958	952	960	959	947	937	940	952	971	977	983	981	973	
15	964	965	963	959	958	956	948	942	939	940	955	961	973	982	983	979	
16	961	961	963	963	964	962	949	945	952	965	976	978	978	980	980	976	
17	965	974	973	974	973	970	962	946	943	951	961	976	988	996	992	977	
18	967	962	961	959	969	970	957	951	957	965	977	977	981	982	983		
19	968	964	969	969	982	986	974	959	948	944	946	960	964	966	972		
20	946	938	940	945	950	954	954	950	946	938	940	951	949	955	952		
21	951	954	953	955	957	959	952	944	933	928	937	945	958	963	960	955	
22	948	948	946	942	946	946	943	940	942	937	939	945	949	953	953	972	
23	952	948	945	945	951	966	972	972	968	974	981	991	995	984	990	991	
24	963	965	963	960	962	958	966	963	956	956	963	979	984	975	967	964	
25	956	957	958	956	958	952	950	947	945	951	962	974	981	980	963	959	
26	950	948	948	952	946	946	947	955	958	960	960	962	964	964	956	954	
27	953	954	940	946	948	948	942	948	941	916	956	963	973	972	972		
28	952	942	942	943	946	952	929	923	916	920	933	942	952	958	981	965	
29	962	953	953	948	955	961	951	945	953	950	950	959	961	965	967	972	
30	965	959	956	965	955	965	968	966	957	952	950	951	964	977	974	967	
31	955	964	964	963	963	960	947	931	910	951	945	941	964	976	981	973	
Mean	958.2	956.1	955.1	95.51	957.5	958.0	953.9	947.0	943.4	944.8	951.2	950.3	968.0	972.7	973.8	972.9	968.1

HORIZONTAL INTENSITY: 0.29 . . . C.G.S.

18	19	20	21	22	23	24	Mean	Maximum	Minimum	Range	Remarks	n. m.	p. m.	
945	947	952	952	955	955	955	950.8	969	1,20	909	9,25	60	A	
964	963	967	973	981	976	976	960.5	988	21,40	933	9,25	55	A	
968	962	957	959	964	965	963	968.2	983	16,00	957	9,48	26	C	
956	954	953	950	953	953	953	958.0	986	13-14	933	9,00	53	C	
955	954	954	949	948	947	946	951.1	973	16,00	935	9,00	38	C	
967	964	965	965	967	969	967	957.8	982	15,00	934	8,00	48	C	
968	972	971	971	973	970	967	967.9	983	15,00	935	10-11	34	C	
956	957	959	960	954	959	962	962.0	986	14,00	944	10,00	47	C	
949	956	955	954	951	952	955	954.0	971	15,00	933	10,00	38	C	
939	947	946	948	948	948	946	945.2	962	6,00	918	10,00	47	C	
950	946	942	943	942	940	940	947.4	971	15,40	935	9,00	30	C	
967	961	964	963	967	969	949	958.7	985	16,00	942	4,00	43	C	
984	982	982	981	988	958	955	966.8	995	15-16	943	9,00	52	A	
969	973	970	970	969	963	964	963.5	984	14,00	937	9,00	46	A	
973	973	963	967	965	963	944.0	985	16,00	939	9,00	46	C		
970	977	974	973	973	971	970	972	98.2	980	15-16	945	8,00	35	C
973	974	973	973	971	966	967	970.8	996	14,00	943	9,00	53	C	
978	981	980	977	977	975	975	971.3	982	17,00	951	8,00	31	A	
960</td														

HORIZONTAL INTENSITY: 0.29 C.G.S.

Band No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	901	907	903	905	903	903	907	905	893	880	885	894	909	916	913	906	
2	912	908	908	904	907	904	896	897	891	897	916	929	928	927	920	917	909
3	910	906	906	907	906	905	900	894	895	894	900	907	913	915	910	912	
4	921	916	921	920	921	916	909	900	905	920	919	920	924	929	935	933	
5	914	914	911	942	945	951	941	937	930	927	991	935	939	942	939	937	935
6	925	929	924	923	923	923	924	923	884	874	916	930	923	920	919		
7	925	912	908	908	917	927	896	887	889	890	918	919	919	912	911		
8	911	908	914	909	909	907	906	904	904	891	894	903	911	918	929	925	
9	922	922	918	912	914	914	912	907	903	904	905	901	919	927	928	928	
10	922	920	922	917	917	917	916	909	907	921	924	923	936	931	930	929	
11	932	935	934	933	933	932	928	922	912	908	914	924	927	928	931	927	930
12	933	937	937	939	942	940	938	935	940	945	946	937	939	935	936	934	
13	943	946	945	948	948	945	937	949	922	925	926	914	939	943	937		
14	964	947	944	950	945	939	931	927	935	935	929	939	941	939	939	926	
15	914	944	908	958	940	937	928	923	939	931	942	948	954	960	954	947	
16	957	955	954	956	953	948	941	959	941	954	969	973	983	989	1003	983	971
17	970	966	966	967	967	963	947	963	975	972	980	977	985	987	982		
18	968	965	963	963	961	959	948	944	956	976	1002	996	997	982	974	965	
19	969	971	969	971	970	965	952	942	954	951	973	981	974	978	973	970	
20	963	961	958	956	952	950	936	939	954	965	967	968	973	979	975	968	
21	949	948	944	944	946	945	933	922	927	911	956	961	968	976	972	963	953
22	947	945	941	940	941	942	937	931	936	942	944	967	965	962	960	958	
23	938	937	931	935	940	937	924	921	931	946	945	952	954	955	950	948	
24	930	954	952	954	961	960	952	941	936	942	949	949	943	921	906		
25	915	912	918	914	914	907	900	892	907	917	928	925	927	933	932	929	
26	925	904	920	916	913	912	908	903	901	907	918	921	931	933	936	936	
27	931	932	930	930	932	929	919	915	917	932	945	954	954	955	941		
28	942	943	930	937	938	936	928	917	920	919	930	930	941	952	947	929	
29	939	938	938	935	935	924	919	913	928	934	934	949	949	950	948	948	
30	949	948	943	943	939	935	928	922	931	941	947	951	963	967	970	952	
31	941	944	947	945	948	945	937	924	918	921	933	946	962	967	958	953	
Mean	938.1	956.2	935.9	935.5	935.3	934.4	926.8	921.1	921.9	925.6	933.4	935.8	941.0	946.2	947.4	944.5	939.3

HORIZONTAL INTENSITY: 0.29 C.G.S.

Band No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	949	951	951	949	947	942	928	920	924	932	942	953	965	968	971	968	959
2	930	962	930	962	936	956	940	939	950	975	936	954	946	954	945	933	955
3	894	963	961	961	967	894	885	875	882	892	899	915	921	919	929	913	
4	922	921	925	924	922	913	901	894	878	902	903	928	941	942	930	929	
5	922	922	922	923	919	922	918	914	917	917	924	939	949	949	937		
6	935	933	928	927	930	924	928	907	904	910	923	937	939	942	948	936	
7	940	935	949	944	947	946	938	938	963	980	970	941	922	928	920	920	
8	946	950	955	954	958	962	953	956	952	952	952	944	948	944	941	938	
9	932	953	957	956	960	957	946	933	939	938	944	956	968	972	961	959	
10	978	957	972	969	965	954	954	945	966	977	973	978	978	978	973	977	
11	973	970	970	971	972	965	957	954	954	957	983	978	978	979	979	979	
12	973	972	967	969	969	970	959	949	942	959	972	982	986	990	987	977	
13	982	976	978	978	981	979	965	961	972	970	980	990	992	987	981	976	
14	976	977	966	965	964	961	953	945	946	952	972	985	991	996	981	970	
15	962	960	957	961	961	956	954	943	945	977	973	978	982	987	984	973	
16	944	940	941	942	942	938	926	9									

HORIZONTAL INTENSITY: 0.29 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	934	930	929	930	929	929	919	890	872	883	920	930	639	944	944	944	948
2	935	934	934	935	933	930	917	909	902	904	916	930	934	936	948	949	947
3	947	943	940	940	937	934	929	920	916	916	922	927	939	946	948	953	975
4	908	917	923	925	922	924	912	906	914	917	922	.935	948	946	953	956	
5	952	955	954	962	951	946	937	921	904	910	921	933	949	948	948	943	935
6	975	945	953	955	954	947	941	940	901	937	952	953	962	970	974	972	971
7	964	962	962	960	963	966	956	947	940	939	945	947	954	954	962	970	973
8	961	963	961	961	958	957	952	945	947	951	956	959	973	980	980	972	
9	966	967	966	966	965	961	956	945	937	934	945	958	979	978	974	961	971
10	966	961	962	962	954	952	944	939	942	946	956	962	971	978	977	971	961
11	963	962	968	956	954	947	925	920	916	924	939	946	960	969	964	961	960
12	963	960	960	959	957	946	902	923	931	945	949	959	972	977	981	982	966
13	960	961	963	960	964	959	951	946	959	969	975	988	992	989	985	979	
14	966	964	964	963	961	959	948	940	940	949	955	970	984	994	993	988	980
15	975	975	973	970	967	968	958	947	946	959	970	982	993	997	996	994	985
16	986	980	983	978	976	975	963	954	951	955	977	987	989	991	983	980	
17	985	982	980	979	979	975	964	952	943	950	963	980	992	993	990	987	
18	976	977	979	983	985	983	971	957	963	965	976	998	1010	1011	1011	1005	1005
19	974	969	974	985	999	993	988	966	946	950	950	944	942	949	924	914	912
20	925	923	936	939	954	945	940	933	931	932	936	936	939	943	941	949	943
21	943	942	944	946	944	939	934	915	914	926	938	947	956	956	954	938	
22	942	944	947	950	947	945	939	927	919	930	938	956	967	967	963	950	
23	964	971	946	950	950	949	948	937	935	931	929	933	949	956	955	951	
24	950	948	951	950	949	949	942	940	942	945	957	963	970	966	955	951	
25	956	953	953	954	954	955	950	957	957	960	960	979	984	981	972	960	
26	968	971	968	971	961	959	960	941	937	945	958	974	986	984	968	951	915
27	935	937	939	947	938	924	918	922	939	954	964	958	940	934	912	909	
28	931	936	934	933	935	932	920	910	909	914	921	947	955	961	954	949	
29	942	942	930	940	943	940	929	918	914	919	927	946	953	963	955	949	
30	955	954	958	957	958	947	935	931	934	940	967	988	988	978	966	950	
Mean	955.7	954.4	956.1	955.6	955.5	952.4	943.3	933.1	928.6	933.3	943.0	955.7	965.4	969.8	967.7	962.7	956.5

HORIZONTAL INTENSITY: 0.29 . . . C.G.S.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	969	960	966	954	955	957	937	928	923	916	926	951	970	974	967	958	941
2	945	948	952	955	952	945	942	930	918	920	938	957	965	968	967	959	950
3	949	952	951	954	953	950	945	934	921	914	927	946	961	971	970	965	956
4	953	953	954	955	954	947	933	926	921	933	936	957	972	980	974	969	
5	955	956	956	963	968	965	949	949	935	948	962	970	980	985	982	973	
6	951	954	957	961	960	961	949	935	918	915	921	943	955	964	960	955	940
7	928	931	932	932	934	935	929	919	911	917	933	946	956	963	964	950	
8	946	948	942	944	941	937	946	937	917	933	947	966	985	991	973	965	
9	949	955	944	949	946	948	942	926	919	928	944	962	965	967	965	964	957
10	954	955	957	953	952	951	940	925	945	959	973	979	969	964	959		
11	954	958	955	956	956	949	937	931	930	942	953	972	975	976	970	965	
12	960	957	956	955	957	956	946	944	940	948	964	986	985	982	973	961	
13	963	965	964	960	957	961	959	948	936	929	938	956	976	984	973	961	
14	941	946	956	946	950	953	944	942	938	937	954	959	960	967	950	960	
15	954	956	955	955	953	953	921	920	924	940	964	973	971	966	960	</	

HORIZONTAL INTENSITY: 0.29 C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	934	932	933	934	935	936	929	920	908	905	914	928	935	942	941	938	938
2	936	935	933	933	931	935	931	925	914	914	916	926	933	939	939	937	935
3	927	926	924	925	932	936	933	922	910	916	928	936	940	939	938	934	
4	927	929	928	929	929	930	929	924	916	912	923	936	930	926	925	927	924
5	918	927	928	931	929	922	938	923	915	908	912	914	916	910	904	908	
6	927	924	923	933	925	930	924	911	905	896	909	922	930	927	923	919	915
7	917	913	920	922	920	925	922	917	900	902	913	938	938	934	929	923	
8	920	921	919	919	925	930	926	919	909	903	911	917	916	918	921	917	919
9	924	923	924	926	930	933	931	923	920	919	932	937	937	935	935		
10	932	927	923	921	923	925	922	918	915	936	939	930	924	921	917		
11	926	926	927	930	931	934	933	928	928	924	930	936	940	939	934	928	
12	930	934	930	933	935	939	935	934	932	927	928	929	921	921	910	886	
13	845	845	931	828	876	863	862	857	848	852	858	864	873	885	890	882	873
14	873	873	974	883	878	885	896	890	891	885	882	877	879	895	914	915	915
15	893	900	903	914	923	939	922	913	893	874	874	877	879	895	914	915	
16	951	943	916	878	—	—	—	—	—	849	833	854	856	845	808		
17	873	873	855	858	871	874	900	884	887	897	904	901	904	904	895		
18	911	902	897	900	892	904	904	901	904	890	894	902	905	910	912	903	
19	809	803	804	805	806	808	904	901	896	889	877	901	905	907	903		
20	901	901	905	908	898	900	905	907	909	902	895	902	911	925	928	921	918
21	908	911	912	913	916	927	931	937	944	946	952	948	952	961	953	934	
22	922	924	926	828	929	934	941	943	941	944	945	941	938	928	914		
23	930	927	929	928	933	935	938	941	933	924	932	931	929	922	920		
24	917	911	915	920	918	926	933	936	938	937	938	942	941	936			
25	928	939	931	929	937	938	920	954	956	955	—	—	—	—	—		
26	949	946	945	947	949	953	960	962	960	964	965	969	962	957	949	949	
27	943	945	948	940	936	941	944	942	938	942	943	951	950	945	941	936	
28	940	939	933	940	912	943	947	949	946	948	955	948	947	947	939		
29	962	956	954	950	950	954	959	964	963	955	950	962	967	972	975	968	
30	966	965	967	965	969	969	968	961	960	962	967	970	976	977	980	974	968
Mean	924.3	921.6	922.8	924.6	925.4	929.1	930.9	927.6	922.6	918.6	921.1	930.6	932.1	933.6	934.6	930.4	925.0

HORIZONTAL INTENSITY: 0.29 C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	968	967	962	966	972	971	971	968	962	958	961	969	973	979	987	982	976
2	974	976	978	976	978	978	978	971	965	965	959	978	985	991	998	992	
3	978	979	976	978	977	974	981	981	975	968	963	972	971	973	977	982	
4	988	972	978	982	987	987	987	984	975	987	973	989	997	984	988	997	
5	964	950	952	950	956	965	972	973	974	968	965	973	964	964	967	964	
6	978	978	978	980	981	988	985	976	968	963	971	978	977	978	985	983	
7	976	978	972	974	972	973	972	971	968	962	969	971	977	978	981	980	
8	977	977	976	976	975	975	979	975	975	985	988	989	999	994	991	991	
9	977	979	976	973	978	977	976	973	963	971	975	987	994	993	989	986	
10	984	984	987	987	985	985	987	987	988	985	988	992	996	1001	999	993	
11	990	988	987	988	985	991	990	984	980	980	986	992	994	994	991		
12	983	981	982	983	985	986	990	990	992	985	1017	1024	1022	1020	1014	1008	
13	981	984	974	986	989	981	984	988	981	982	984	986	986	982	978		
14	967	960	956	958	962	962	955	968	969	964	967	966	964	964	956		
15	964	967	964	963	965	968	970	965	962	959	961	975	962	961			
16	968	959	959	961	963	966	968	974	965	962	956	957	9				

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	380	377	377	375	369	366	363	362	365	364	360	366	373	375	384	385	383
2	376	373	371	369	367	365	365	369	354	351	359	362	375	384	393	397	396
3	378	376	376	374	371	369	367	365	365	361	364	375	379	384	390	395	
4	393	392	391	391	391	389	380	387	386	387	380	386	401	403	410	409	
5	409	—	—	—	—	—	—	402	397	400	379	393	399	401	406	413	417
6	411	410	406	403	406	406	394	391	390	381	388	390	394	394	398	404	405
7	410	411	411	411	409	409	408	406	401	401	414	420	425	427	427		
8	419	419	412	411	408	407	405	402	399	399	401	411	413	415	417		
9	403	400	400	398	395	392	391	389	387	381	383	401	407	411	414	410	
10	403	400	400	398	395	392	391	389	385	372	371	391	389	390	393		
11	397	396	395	393	392	389	381	379	374	365	372	381	392	394	396	395	393
12	392	391	388	381	377	374	373	368	363	360	370	381	386	389	395	394	
13	380	376	376	372	369	362	361	359	350	343	355	361	363	375	385	379	
14	384	385	385	384	384	384	375	384	376	370	373	382	393	403	405	408	
15	392	392	399	388	387	386	386	383	371	365	367	398	406	411	413		
16	391	389	387	388	386	383	381	376	369	361	360	378	380	388	396	397	402
17	387	384	383	379	374	371	368	364	357	343	356	363	389	402	405	411	
18	402	399	387	387	382	383	383	379	377	374	375	395	396	401	410	415	
19	418	419	420	418	416	417	415	413	409	402	400	413	412	416	418	419	
20	417	417	414	417	414	418	416	413	410	407	403	404	412	413	418	424	428
21	423	422	421	419	417	418	415	412	406	395	391	398	412	414	422	425	428
22	423	421	421	418	420	417	416	417	412	405	398	401	401	402	406	409	
23	417	424	414	411	410	411	406	403	391	388	392	417	421	429	436	441	
24	432	431	429	428	423	423	423	420	409	395	392	399	409	420	423	425	
25	411	413	411	410	409	414	409	403	390	376	372	379	381	389	398	402	403
26	380	372	364	361	360	357	348	342	332	326	336	341	353	364	372	376	374
27	375	371	368	366	363	363	362	358	350	345	361	381	400	411	413	410	
28	417	417	417	420	414	413	410	407	400	389	385	397	410	416	416	410	
29	407	410	419	411	407	403	400	399	394	388	391	394	402	413	422	421	407
30	409	409	410	406	397	393	390	386	375	370	372	401	409	414	415	408	
31	398	399	395	392	389	386	384	378	369	360	380	379	381	386	388	387	
Mean	400.8	399.9	397.3	395.9	393.3	392.0	389.4	386.4	381.2	374.2	374.4	382.6	390.5	397.5	403.9	406.8	406.4

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	375	376	374	370	367	371	364	361	351	334	333	349	357	365	376	375	373
2	367	366	364	363	361	363	363	353	349	339	348	341	350	362	365	364	
3	361	360	358	355	354	354	353	347	337	317	328	345	356	359	364		
4	364	358	368	355	359	374	346	338	327	325	335	350	347	359	363		
5	383	379	380	380	371	370	368	359	344	337	340	349	364	376	384	394	395
6	390	406	408	394	393	395	393	388	379	361	362	386	391	395	401	409	406
7	381	375	371	369	354	347	346	321	318	333	352	364	374	382	384		
8	371	369	368	369	363	355	354	349	335	322	325	344	355	360	378		
9	374	371	365	364	357	354	350	343	330	322	317	331	342	355	369	375	373
10	352	349	347	346	347	343	340	337	329	319	316	331	345	355	373	380	393
11	378	374	373	372	370	375	373	368	357	341	344	369	370	379	395	402	408
12	400	397	396	393	394	393	393	384	369	366	396	406	407	414	421		
13	407	404	406	399	399	398	397	391	381	369	371	386	396	402	408		
14	413	408	406	403	401	399	399	394	381	365	365	377	391	403	414	418	421
15	417	408	408	403													

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	408	407	404	402	402	397	397	389	385	379	379	386	399	403	409	414	
2	493	389	386	387	383	384	382	376	369	362	353	367	375	384	391	399	
3	403	407	411	398	392	394	391	392	389	375	371	373	376	385	388	401	
4	413	414	410	410	411	408	410	404	397	381	372	380	385	391	407	409	
5	406	402	404	401	403	403	395	390	379	368	364	377	390	404	410	411	
6	396	387	387	382	383	378	378	370	359	355	345	373	377	389	407	416	
7	413	413	406	406	404	398	394	385	371	360	353	380	370	383	401	410	
8	414	409	406	409	402	398	398	394	388	378	369	377	387	404	419	417	
9	432	431	426	424	425	423	428	423	413	407	415	419	424	425	431	431	
10	434	433	435	446	423	420	417	406	394	395	411	420	423	429	431	433	
11	437	426	434	430	430	422	421	419	411	398	395	401	409	414	421	427	
12	434	434	435	436	437	438	439	437	432	428	430	428	433	440	443	435	
13	443	439	435	435	430	433	435	427	420	406	393	411	412	415	423	424	
14	426	424	421	421	426	425	428	426	424	420	413	433	442	444	454	451	
15	448	445	437	444	445	446	445	440	436	419	421	420	428	431	442	443	
16	441	442	433	434	433	431	440	434	427	422	423	430	436	441	452	429	
17	429	431	428	427	424	420	417	410	404	396	400	408	416	421	423	421	
18	419	418	416	418	416	410	408	406	398	392	394	406	417	422	424	424	
19	432	429	430	431	429	430	426	423	413	405	414	432	439	448	453	445	
20	444	441	438	441	439	438	434	428	418	417	420	440	448	453	456	453	
21	442	443	438	438	434	427	422	409	405	401	402	406	413	414	414	413	
22	408	407	404	403	403	403	402	397	390	380	381	396	425	435	442	442	
23	434	433	432	434	432	431	424	415	409	401	419	419	428	442	444	444	
24	444	445	446	448	447	445	445	439	425	401	398	408	417	427	435	444	
25	449	451	451	451	455	456	457	452	440	422	421	432	438	450	455	457	
26	450	459	456	455	456	458	461	459	450	436	425	427	441	445	449	454	
27	458	453	454	454	453	451	450	445	433	419	416	423	426	431	436	436	
28	426	421	417	418	414	414	415	409	405	395	396	392	407	417	423	425	
29	422	419	417	416	416	415	411	411	405	393	398	397	409	428	441	449	
30	432	434	432	431	434	430	427	415	403	411	424	426	424	423	412	413	
31	418	423	422	422	425	426	428	419	402	392	393	398	402	400	412	413	
Mean	428.3	427.1	425.2	424.3	423.4	422.0	421.3	416.3	407.4	397.6	396.0	406.0	412.9	420.1	426.4	427.8	428.3

VERTICAL INTENSITY: 0.34 . . . C.G.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	404	406	407	405	406	408	409	405	394	389	387	419	419	404	391	386	391
2	387	392	409	406	401	405	406	406	403	397	393	396	395	400	404	409	409
3	403	403	406	394	401	399	394	389	382	362	380	379	382	391	392	392	392
4	378	378	379	377	374	374	372	363	363	360	372	381	386	392	391	389	389
5	389	389	388	385	384	386	387	381	372	358	357	367	375	378	381	381	381
6	381	380	377	380	378	381	376	367	365	377	382	385	386	385	389	389	389
7	390	377	375	376	375	374	374	369	368	375	387	390	390	396	396	398	398
8	396	398	307	309	306	306	302	302	303	371	377	375	385	387	388	392	392
9	384	384	382	383	380	—	—	—	372	365	367	376	384	388	386	387	387
10	393	391	390	392	389	389	388	381	371	369	369	393	393	389	388	388	388
11	388	390	390	389	392	391	386	376	363	370	374	385	386	381	384	382	382
12	390	380	391	388	396	394	389	388	387	381	384	388	388	390	394	392	392
13	391	390	390	397	398	395	392	381	384	390	398	387	394	394	391	392	392
14	410	411	411	410	411	411	402	402	395	391	391	391	389	390	387	387	387
15	398	400	397	396	390	391	386	381	374	376	374	385	386	381	381	381	381
16</td																	

VERTICAL INTENSITY: 0.34 C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	443	442	440	441	441	431	432	417	392	400	405	427	410	417	425	425	421
2	429	424	419	416	421	424	410	394	377	374	373	390	380	379	387	375	
3	374	376	381	383	391	385	392	387	379	371	375	386	389	395	...	410	410
4	411	411	412	411	412	413	409	402	398	390	387	402	408	407	409	407	
5	406	408	405	407	412	416	414	413	407	405	409	418	431	431	429	428	424
6	420	418	418	419	423	420	419	410	406	400	399	402	403	407	407	406	405
7	403	402	401	405	404	407	400	391	390	387	381	396	406	411	409	406	402
8	397	401	402	400	404	407	407	402	394	390	387	410	412	413	410	405	
9	412	410	411	413	409	411	417	409	404	393	395	403	405	412	413	412	
10	414	415	413	413	416	418	414	408	396	389	394	404	411	414	417	414	414
11	418	418	419	417	418	416	410	405	403	405	402	405	410	411	414	404	
12	399	400	401	402	404	407	404	400	396	394	389	396	365	361	361	351	
13	359	359	360	361	365	368	361	355	352	346	347	361	348	341	334	326	
14	340	340	356	354	361	357	355	342	330	335	340	351	360	350	344	332	325
15	341	344	346	349	351	345	334	330	330	332	344	341	339	334	331	315	
16	326	320	331	336	340	334	303	282	288	294	304	301	304	305	305	305	
17	337	341	345	346	348	340	321	306	293	279	294	311	311	310	307	302	
18	307	309	310	314	310	300	294	288	291	293	303	305	306	306	310	310	
19	318	318	317	321	323	319	312	303	297	294	298	311	310	316	314	318	
20	318	312	315	317	321	320	317	311	306	315	318	322	324	324	318		
21	326	329	329	331	333	336	334	329	321	321	325	330	333	335	333	330	
22	337	334	333	331	335	337	335	328	326	324	324	339	342	345	346	338	
23	336	336	335	345	338	341	341	339	336	332	336	326	329	334	337	337	
24	346	344	344	347	349	345	341	335	333	333	341	342	341	341	341	341	
25	346	342	344	343	343	343	346	346	353	354	363	362	362	354	352	352	
26	352	350	352	355	357	357	357	356	356	353	351	353	353	357	364	364	
27	360	361	354	358	358	361	361	359	358	353	357	368	362	366	368	368	
28	357	359	362	363	354	348	342	341	344	343	355	352	352	357	355	349	
29	356	349	352	353	358	361	359	357	350	352	373	369	371	367	376	371	
30	363	355	358	362	361	360	352	340	332	335	347	346	351	356	351		
31	352	355	358	359	361	358	349	349	328	331	334	334	342	346	349	354	
Mean	367.4	367.1	367.7	369.1	371.4	376.7	365.8	358.5	352.7	350.8	351.9	361.4	361.7	363.1	362.8	363.1	359.3

VERTICAL INTENSITY: 0.34 C.G.S.

18	19	20	21	22	23	24	Mean	Maximum	Minimum	Range	Remarks	n. m.	p. m.
421	423	426	426	425	425	423	424.3	423	420	5.00	C	C	
379	374	372	375	376	371	373	390.1	429	370	18.00	C	C	
402	399	402	404	410	414	413	414	420	371	10.00	C	C	
409	411	418	411	414	414	407	409.2	419	409.4	2.00	C	C	
421	422	424	426	420	425	425	418.0	435	402	2.45	C	C	
401	404	406	409	409	406	409	409.3	423	399	11.00	C	C	
400	402	406	406	405	404	401	401.1	412	401	11.28	C	C	
409	404	409	411	412	410	414	404.9	414	404	2.00	C	C	
419	414	416	419	418	418	419	419.4	419	21.24	3.00	C	C	
412	420	420	420	421	423	421	412.6	424	398	10.00	C	C	
398	397	401	403	401	404	404	407.9	419	396	18.42	C	C	
347	341	351	354	357	361	356	376.1	407	341	19.00	C	C	
320	320	325	325	323	323	323	368.6	319	21.00	4.00	C	C	
320	322	328	328	332	332	332	364	320	18.00	4.00	C	C	
310	311	319	321	319	324	325	351.9	351	310	18.00	C	C	
305	313	318	318	325	329	329	312.4	340	279	9.00	C	C	
303	304	305	306	305	305	305	313.9	348	279	10.00	C	C	
309	310	311	313	316	316	318	306.3	318	24.00	8.20	C	C	
313	308	310	311	312	310	311	311.1	323	289	10.20	C	C	
318	318	317	315	316	321	324	317.3	324	15-16				

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	301	302	304	307	309	309	307	300	295	284	278	279	284	301	309	309	308
2	310	309	311	312	315	316	312	302	292	288	293	304	299	291	310	313	313
3	313	315	316	318	317	319	314	306	299	291	293	310	312	306	309	306	306
4	314	312	311	313	313	317	307	297	287	285	295	300	291	297	300	308	300
5	310	307	—	—	—	320	310	295	277	261	274	283	291	300	305	298	298
6	313	320	316	319	319	320	317	298	287	259	267	305	317	313	317	318	318
7	339	329	329	335	337	327	320	—	323	318	329	329	331	329	333	333	333
8	339	339	341	340	338	334	329	326	317	315	310	334	334	341	335	335	335
9	346	344	344	341	343	345	345	340	331	327	322	331	324	344	345	343	343
10	347	345	349	347	348	351	349	339	332	340	344	348	358	358	359	353	353
11	353	355	355	357	358	358	357	347	340	345	353	354	360	365	365	365	365
12	365	367	367	368	366	364	360	359	364	363	358	356	354	361	359	359	359
13	377	375	374	375	376	373	370	369	363	364	365	367	372	376	377	381	378
14	388	383	382	381	378	373	370	367	373	388	394	392	389	385	385	385	385
15	398	393	392	394	394	386	383	384	376	382	388	391	398	402	396	396	396
16	401	399	399	398	394	388	383	383	390	397	404	407	412	405	401	401	401
17	409	407	409	410	408	405	410	394	402	410	407	406	408	409	407	407	407
18	401	400	399	401	402	401	395	390	392	393	397	404	403	405	406	406	406
19	404	403	402	401	401	399	393	381	382	387	390	394	392	393	393	393	393
20	391	392	390	389	389	389	384	378	377	375	386	391	394	395	393	392	392
21	385	384	380	380	381	381	372	365	368	372	380	382	384	386	389	389	389
22	386	384	382	382	383	381	376	374	375	376	380	383	385	386	389	389	389
23	377	375	374	375	372	369	365	363	362	368	372	376	377	381	383	383	383
24	381	375	371	373	369	363	362	364	362	376	373	379	374	375	375	375	375
25	372	368	367	369	368	362	358	357	356	360	365	365	369	370	370	370	370
26	366	364	361	360	357	356	356	353	353	360	363	367	369	372	373	373	373
27	371	368	366	365	365	363	361	358	357	355	361	367	373	374	374	374	374
28	382	380	379	377	378	377	375	371	372	374	389	387	393	398	397	394	394
29	386	387	385	383	382	375	371	365	368	370	369	367	373	385	386	381	381
30	380	380	381	379	376	374	372	371	378	382	385	389	390	392	389	389	389
31	374	374	372	372	369	363	353	348	347	358	359	364	361	362	360	360	360
Mean	370.5	369.1	368.7	368.6	368.3	367.1	365.1	358.0	356.5	355.9	350.2	364.3	366.6	370.3	372.4	373.1	371.3

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	353	353	351	352	351	347	343	340	343	344	348	362	371	375	378	374	376
2	371	367	365	365	367	363	355	349	348	349	353	345	341	349	352	348	346
3	370	370	367	364	363	360	358	355	357	356	369	374	377	377	376	376	376
4	377	376	375	377	374	371	364	359	359	363	372	376	376	376	373	370	370
5	365	362	361	360	357	356	355	354	354	354	353	361	368	370	374	377	376
6	379	377	372	373	374	371	363	358	360	365	372	382	383	384	385	379	379
7	387	388	388	387	387	387	387	387	387	387	381	386	386	386	386	386	386
8	398	397	398	394	393	392	379	369	369	365	361	382	385	387	386	386	386
9	388	388	391	389	389	388	381	374	375	375	374	384	398	392	390	390	390
10	392	391	390	392	393	389	382	374	373	370	380	386	388	392	392	390	390
11	386	387	384	386	387	380	370	367	367	364	368	381	381	386	392	394	390
12	394	394	390	391	392	391	385	378	370	373	378	389	393	394	394	394	394
13	392	390	391	391	394	392	385	376	376	376	381	388	392	392	396	396	396
14	389	393	391	392													

VERTICAL INTENSITY : 0.34 . . . C.G.S.

Hour Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	308	307	305	306	305	304	294	277	264	271	293	308	317	317	311	305	304
2	309	309	310	311	314	310	303	296	285	283	294	317	315	315	311	309	
3	..	313	316	315	311	307	303	297	295	301	311	316	317	316	312	315	
4	332	335	330	330	328	327	319	313	314	322	323	325	318	315	311		
5	312	315	313	316	304	305	296	282	274	279	306	310	310	303	296	284	
6	297	293	300	304	305	301	288	281	270	278	290	316	312	308	309	292	282
7	294	296	298	300	303	306	297	285	272	271	279	290	295	296	293	296	
8	307	308	311	309	308	308	299	293	281	302	311	323	313	305	300		
9	311	315	314	313	313	308	298	291	287	292	303	314	322	319	305	302	
10	315	313	316	316	310	307	300	295	291	301	314	325	330	329	319	312	302
11	313	319	323	312	310	308	284	278	276	291	310	330	334	331	326	309	293
12	303	300	303	307	306	295	274	263	268	276	299	302	306	306	299	279	
13	299	301	305	305	307	305	290	286	272	251	261	286	310	319	325	316	304
14	293	303	306	307	308	303	287	280	289	287	305	327	331	327	316	293	
15	295	296	301	299	300	303	298	292	279	291	310	307	297	291	280	271	
16	285	285	281	278	279	264	246	239	242	257	278	286	282	272	259		
17	267	271	275	279	281	268	245	241	257	285	305	309	304	297	289		
18	303	307	309	313	316	313	301	293	290	305	338	347	346	345	336	334	
19	353	351	366	355	358	355	349	342	350	359	365	367	355	354	355		
20	370	370	373	380	374	362	357	360	366	369	372	373	375	373	370		
21	371	371	372	374	372	368	367	361	372	379	392	401	394	393	388	377	
22	380	382	381	380	378	375	370	364	361	363	368	376	380	383	377	367	
23	381	379	364	367	366	367	357	353	352	353	363	372	383	378	377	372	
24	365	365	365	365	363	363	365	362	368	374	380	376	368	364	358		
25	364	363	363	362	360	357	355	349	343	350	370	371	362	351	334	326	
26	353	357	360	364	363	359	355	341	342	347	369	366	368	353	332	317	285
27	351	348	350	349	351	343	337	335	333	339	318	362	358	336	318	293	274
28	326	326	320	320	325	318	306	292	275	265	280	326	336	324	312		
29	313	315	324	317	317	314	306	302	307	319	334	336	337	339	324	319	
30	317	320	321	319	314	317	310	304	294	289	362	374	395	371	371		
Mean	320.9	322.3	323.3	323.3	323.0	319.8	310.9	302.0	295.7	299.5	310.8	330.3	335.5	333.0	327.7	317.6	300.1

VERTICAL INTENSITY : 0.34 . . . C.G.S.

1	385	380	387	381	384	389	375	371	361	371	386	398	394	391	384		
2	401	400	400	403	400	398	399	393	383	381	392	401	407	410	411	406	407
3	411	412	411	410	407	403	403	399	391	386	390	393	402	408	404	401	398
4	395	393	393	393	392	394	394	391	391	387	389	404	410	415	411	402	
5	399	396	400	404	405	406	407	400	395	397	402	411	414	411	412	408	402
6	407	408	410	403	402	400	395	383	382	380	388	401	406	409	408	403	397
7	413	413	413	413	411	411	411	407	401	399	403	406	414	411	409	394	386
8	380	388	386	387	384	383	386	388	368	366	376	394	399	385	379	372	
9	375	381	375	378	377	379	372	365	356	351	363	378	382	381	377	379	373
10	374	373	373	371	371	369	365	358	356	361	370	368	352	348	349	349	
11	362	366	363	364	361	361	358	354	351	351	359	370	364	361	352	345	345
12	353	353	352	358	356	355	354	344	343	342	343	351	356	346	340	334	
13	354	356	354	352	355	356	349	344	339	339	338	351	362	368	361	356	
14	358	364	368	363	364	362	360	357	351	341	348	347	350	349	346	347	
15	353	352	352	352	351	350	340	336	336	335	341	353	356	353	348	348	
16	355	354	357	357	356	356	353	348	341	331	326	338	350	348	349	350	
17	356	356															

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Row No. Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	317	317	320	323	326	327	326	318	308	295	299	359	368	374	378	377	378
2	387	385	386	387	386	388	386	378	375	368	371	375	386	390	387	387	387
3	399	390	389	389	392	394	390	384	373	370	373	379	382	384	383		
4	387	388	388	389	389	386	386	383	382	358	360	369	369	372	373	376	376
5	355	362	364	366	364	362	370	369	363	358	367	375	378	379	379		
6	382	381	381	381	378	378	375	367	365	359	362	380	382	383	387	387	385
7	376	376	369	367	365	361	357	351	340	342	348	361	365	371	375	377	379
8	374	374	370	368	366	363	363	356	351	354	361	367	373	376	378	378	
9	374	371	370	372	370	369	363	359	351	348	360	369	373	379	380	381	
10	383	382	380	381	380	378	376	373	371	370	371	379	380	381	385	387	
11	371	371	365	363	360	355	349	345	341	340	338	345	344	346	362	366	368
12	358	358	350	351	344	349	343	342	338	337	343	344	346	362	366	368	368
13	364	372	365	366	371	363	358	354	347	349	352	360	369	371	375	376	378
14	398	401	405	401	400	402	402	400	393	375	379	373	381	379	376	376	376
15	384	387	385	387	384	381	375	368	363	363	371	373	375	376	376		
16	380	374	367	353	341	340	340	340	335	358	370	372	376	387	392	385	
17	398	395	387	386	390	386	379	373	369	371	373	374	376	377	376	375	
18	375	373	371	371	361	359	358	358	358	358	358	358	358	358	358	358	
19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
20	—	—	—	—	—	—	—	—	—	—	—	300	335	361	363	358	346
21	370	372	370	370	361	364	361	359	350	340	341	337	348	361	360	354	
22	375	374	375	374	374	374	374	374	380	378	370	365	375	379	381	378	
23	394	390	390	388	389	387	385	387	379	373	376	368	393	397	401	405	
24	416	401	402	406	400	399	403	402	395	395	389	386	395	401	405	404	407
25	405	415	408	406	419	404	407	405	402	397	399	399	399	399	399	399	
26	411	408	409	407	411	414	411	410	404	413	410	408	410	410	419		
27	423	424	426	422	423	425	426	420	414	408	400	407	413	413			
28	419	417	418	419	421	421	418	416	411	404	404	413	417	420	426	423	
29	440	437	433	431	431	431	432	432	422	408	404	414	411	428	421	416	413
30	413	412	413	412	414	409	406	402	400	401	408	412	421	430	425	425	
Mean	385.3	384.8	383.5	383.7	382.5	381.8	380.2	376.7	371.0	364.8	365.4	376.7	377.7	383.9	386.5	386.9	386.3

VERTICAL INTENSITY: 0.34 . . . C.G.S.

Row No. Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	426	425	425	424	425	425	421	420	411	406	403	408	420	428	420	441	434	432
2	430	430	432	428	427	427	425	419	408	400	397	408	425	435	442	443	440	
3	432	434	431	428	430	427	427	424	419	414	413	425	430	434	440	446	445	
4	446	438	440	438	437	431	428	424	416	426	446	446	452	461	453	456	457	
5	454	445	446	445	447	449	447	433	422	420	422	424	427	433	436	438		
6	443	442	—	—	—	—	—	436	428	434	442	445	451	458	458	457		
7	451	452	451	451	450	451	452	444	442	439	442	443	450	454	458	458		
8	451	451	451	451	450	450	451	449	441	439	440	451	455	455	459	455		
9	453	453	452	452	452	450	446	445	439	436	438	437	442	446	446	439	439	
10	452	430	431	430	426	423	422	421	418	416	422	428	430	437	436	428		
11	424	421	418	419	416	414	414	412	403	396	408	411	416	416	419	422		
12	417	417	416	418	417	416	417	415	408	399	403	417	417	415	415	411		
13	399	399	399	399	389	386	388	384	380	380	376	380	382	384	390	392		
14	390	385	381	381	379	375	371	369	366	367	370	372	377	381	394	393		
15	384	384	380	375	374	371	371	369	365	365	375	373	383	385	387			
16	375</																	

TOKIO

Hour Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---------------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

MEAN VALUES OF

DECLINATION:

January	45.41	45.45	45.51	45.59	45.71	45.80	45.94	45.23	44.26	44.29	45.26	46.55	47.06	46.92	46.49	45.71
February	45.70	45.80	45.87	46.04	46.22	46.05	45.76	43.99	42.71	43.23	45.22	46.82	47.07	48.00	47.65	47.02
March	45.82	45.76	45.63	45.79	45.80	45.98	45.00	43.53	42.72	43.42	45.23	47.48	48.44	48.53	47.82	46.93
April	45.18	45.11	45.00	45.02	45.21	45.00	44.01	44.94	42.56	44.04	45.94	47.72	48.77	48.84	48.05	47.00
May	46.51	46.28	46.18	46.12	45.77	44.83	44.03	43.75	44.46	46.05	47.86	48.87	49.60	49.54	48.92	48.06
June	46.02	45.75	45.59	45.47	44.87	43.62	42.99	43.24	44.13	45.68	47.19	48.30	48.77	48.81	48.37	47.63
July	45.27	45.12	44.96	44.91	44.29	42.89	41.82	42.21	42.00	44.63	46.56	47.88	48.39	48.02	48.09	47.00
August	45.49	45.19	45.06	44.85	44.25	42.57	41.68	42.11	43.83	46.35	47.95	49.28	49.65	48.97	47.68	46.45
September	45.60	45.49	45.36	45.28	44.95	43.98	43.25	43.44	44.89	47.43	49.30	49.84	49.41	48.04	46.75	45.82
October	46.10	45.91	45.98	45.92	45.97	46.01	44.95	44.18	44.24	45.49	47.39	48.84	49.27	48.55	47.49	46.59
November	47.02	46.82	46.78	47.01	47.28	47.26	46.96	45.97	45.51	46.05	47.21	48.34	48.96	48.68	48.01	47.61
December	47.55	47.60	47.57	47.62	47.61	47.78	47.84	47.08	45.17	45.84	48.12	49.01	49.19	48.87	48.39	47.66
Year	45.97	45.85	45.79	45.80	45.67	45.15	44.51	43.97	41.06	45.29	46.91	48.25	48.76	48.52	47.80	46.96

MEAN VALUES OF MAGNETIC ELEMENTS

YEAR 1905.

17	18	19	20	21	22	23	24	Mean	Mean			Absolute				
									Max.	Min.	Range	Max.	Min.	Day		
45.29	45.33	45.41	45.36	45.51	45.34	45.33	45.36	45.60	47.57	49.62	3.95	50.3	6	41.9	17	8.8
45.25	46.05	46.19	45.77	45.90	45.70	45.78	45.00	45.87	48.54	42.34	6.20	52.2	3	40.7	11	11.5
46.07	46.09	46.37	46.05	45.89	45.83	45.89	45.79	45.91	48.96	42.19	6.77	50.7	2, 3, 7	39.8	2	10.9
46.00	45.54	45.86	45.80	45.67	45.74	45.65	45.63	45.68	49.23	42.11	7.13	52.0	3	40.2	26	11.8
47.09	46.62	46.82	46.84	46.82	46.93	46.81	46.60	46.73	49.92	43.29	6.03	51.8	21	39.4	19	12.4
46.81	46.03	45.85	46.03	46.19	46.28	46.17	46.22	46.08	49.15	42.83	6.62	51.1	23	39.8	23	11.3
46.01	45.37	45.22	45.41	45.38	45.46	45.57	45.43	45.39	49.00	41.26	7.74	51.1	6	39.1	19	12.0
45.45	45.25	45.29	45.34	45.31	45.63	45.39	45.67	45.62	49.37	41.29	8.67	52.0	30	40.1	18.5	11.9
45.47	46.05	45.93	46.03	46.07	46.02	45.96	45.65	46.08	50.11	42.75	7.36	53.4	2	41.2	15	12.2
46.41	46.47	46.55	46.58	46.56	46.47	46.35	46.25	46.44	49.51	45.65	5.85	50.7	29	41.9	30	8.8
47.89	47.84	47.75	47.75	47.57	47.35	47.26	47.22	47.31	49.44	44.82	4.63	52.1	15, 16	42.1	3	9.7
47.63	47.69	48.18	47.76	47.70	47.65	47.60	47.61	47.78	49.50	46.20	3.31	50.7	13	45.0	2	5.7
46.36	46.20	46.28	46.24	46.21	46.20	46.16	46.04	46.21	49.24	43.00	6.24	51.51	1	40.96	10.55	

HORIZONTAL INTENSITY:

January	973.0	975.2	974.6	975.8	976.1	979.2	980.9	983.7	981.6	974.4	968.8	971.5	972.2	974.1	977.8	980.0
February	962.6	963.5	964.8	964.5	964.4	967.5	971.0	973.6	969.8	959.8	951.0	954.7	967.6	965.8	968.4	
March	961.2	962.9	962.7	961.9	962.8	964.0	967.3	962.2	954.9	948.6	949.4	960.5	967.3	971.1		
April	952.8	952.5	953.7	954.7	953.5	955.6	954.1	947.9	939.0	936.5	944.0	956.6	966.7	971.1	968.6	
May	958.2	956.1	955.1	955.1	957.5	958.0	953.9	947.0	941.4	941.4	951.2	959.3	968.0	972.9		
June	930.3	930.3	930.3	929.5	931.9	932.4	925.8	920.4	924.0	924.0	931.9	936.0	942.9	941.9	938.4	
July	938.1	936.3	935.9	935.5	935.4	934.4	926.8	920.4	921.9	926.6	933.4	934.0	941.0	947.4	941.5	
August	942.7	943.9	943.1	943.7	944.6	941.5	933.0	923.2	923.2	930.3	938.8	945.6	952.3	9		

VALUES OF THE COEFFICIENTS IN THE PERIODICAL EXPRESSION

$$f(t) = p_0 + p_1 \cos t + q_1 \sin t + p_2 \cos 2t + q_2 \sin 2t + p_3 \cos 3t + q_3 \sin 3t + p_4 \cos 4t + q_4 \sin 4t,$$

in which t is the Central Standard Mean Time (mean time of the meridian 135°E) converted into arc, and $f(t)$ the mean value of the magnetic element at the time t for each month and for the year.

The values of the coefficients for declination are given in degrees and minutes and those for horizontal and vertical intensities in 10^{-5} C.G.S. unit.

1905,

Month	p_0	p_1	q_1	p_2	q_2	p_3	q_3	p_4	q_4
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

DECLINATION.

January	45.60	-0.24	-0.18	+0.10	+0.48	-0.22	-0.49	+0.17	+0.32
February	45.87	-0.12	-0.03	+1.12	-0.41	-0.80	+0.28	+0.25	
March	45.91	-0.11	-1.00	+0.30	+1.15	-0.50	-0.83	+0.39	+0.33
April	45.68	-0.57	-1.27	+0.68	+1.09	-0.54	-0.81	+0.31	+0.14
May	46.73	-0.64	-1.36	+1.00	+0.92	-0.59	-0.37	+0.09	-0.09
June	46.08	-0.65	-1.42	+1.13	+0.95	-0.52	-0.21	-0.02	-0.19
July	45.39	-0.68	-1.56	+1.21	+1.16	-0.60	-0.30	+0.01	-0.18
August	45.62	-1.10	-1.37	+1.76	+0.93	-0.89	-0.10	+0.09	-2.03
September	46.08	-1.09	-0.86	+1.49	+0.26	-1.06	-0.07	+0.30	-0.22
October	46.44	-0.53	-0.84	+0.73	+0.63	-0.73	-0.49	+0.42	+0.11
November	47.34	-0.15	-0.70	+0.10	+0.44	-0.36	-0.44	+0.36	+0.16
December	47.78	-0.27	-0.22	+0.22	+0.33	-0.34	-0.35	+0.27	+0.24
Year	46.21	-0.51	-0.96	+0.72	+0.79	-0.56	-0.44	+0.22	+0.06

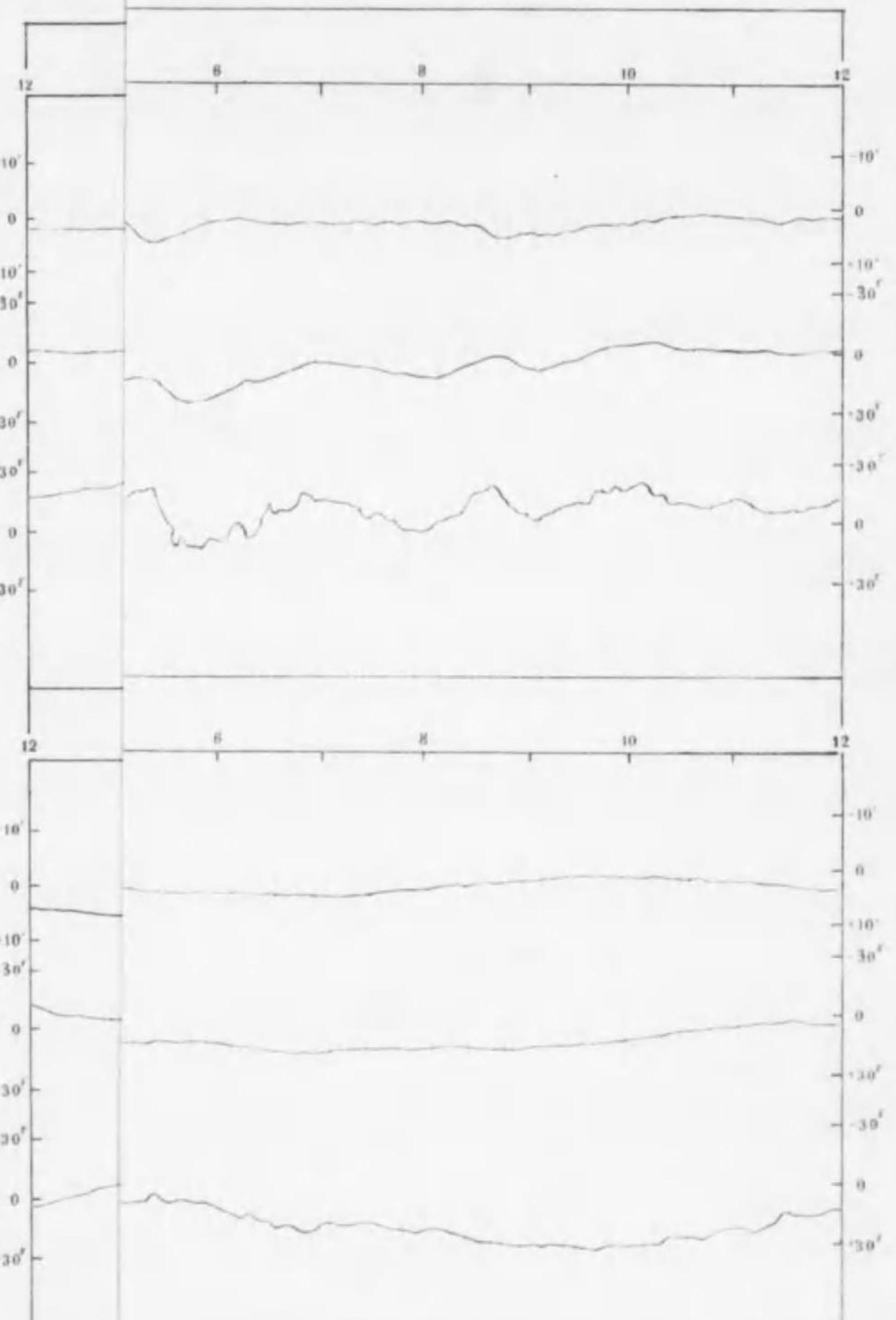
HORIZONTAL INTENSITY.

January	29975.2	-1.48	+1.96	-3.09	+0.63	+3.36	+0.04	-0.78	+0.27
February	962.9	-0.04	+2.25	-4.73	+1.11	+4.47	-0.01	-1.60	+1.14
March	963.9	+0.24	-4.66	-2.70	+4.95	+2.62	-4.46	-0.58	+1.97
April	954.8	-0.70	-6.63	-0.76	+6.84	+0.10	-5.59	+0.88	+2.22
May	959.0	-0.71	-7.87	-0.66	+6.46	+0.38	-4.24	+0.88	+0.78
June	932.7	-1.35	-5.28	+1.92	+4.30	-1.86	-3.58	+4.14	+0.04
July	936.5	+1.73	-6.50	+1.81	+5.01	-1.30	-3.39	+0.22	-0.62
August	942.3	+1.94	-5.93	+2.27	+7.01	-2.57	-4.34	+1.26	-0.38
September	952.5	+1.99	-6.35	+2.24	+10.40	-1.61	-6.03	+1.43	+0.35
October	946.4	-0.23	-5.91	-1.18	+10.03	-0.24	-5.41	+1.33	+2.80
November	925.2	-3.45	+0.35	-0.37	+3.54	+1.37	-3.17	+0.50	+1.83
December	968.9	-0.86	-1.03	-1.38	+1.92	+2.25	-2.08	-0.75	+1.07
Year	951.7	-0.24	-3.76	-0.55	+5.18	+0.58	-3.52	+0.33	+0.96

VERTICAL INTENSITY.

January	34395.8	+8.29	-8.87	-3.82	+4.35	+2.09	-2.23	-0.67	+1.15
February	375.1	+13.09	-11.44	-6.63	+4.01	+3.30	-2.80	-0.18	+2.07
March	421.6	+10.60	-5.71	-4.72	+3.49	+2.45	-3.56	-0.67	+1.93
April	405.3	+5.67	-1.10	-2.18	+2.16	+0.28	-2.86	+0.20	+1.45
May	362.0	+3.60	+2.12	-1.53	+4.60	-0.66	-3.30	+0.80	+0.92
June	356.4	+4.83	-0.67	-1.20	+2.54	-1.26	-2.09	+1.63	-0.47
July	367.8	+4.32	-4.85	-0.95	+3.00	-0.40	-2.09	-0.45	+0.12
August	354.6	+5.45	-4.92	-0.49	+3.68	-1.74	-2.61	+0.82	+0.17
September	317.9	+2.11	-2.43	+4.86	+8.49	-4.72	-7.17	+1.88	+2.29
October	361.4	+3.32	-1.40	-0.39	+3.48	-0.49	-3.10	+0.32	+1.94
November	382.3	+6.70	-5.06	-2.63	+2.65	+0.96	-2.94	-0.12	+1.39
December	411.6	+5.82	-5.56	-2.44	+3.00	+1.12	-2.52	-0.48	+1.39
Year	376.0	+6.14	-4.13	-1.76	+3.79	+0.07	-3.11	+0.26	+1.19

PLATE I.



sd into arc, and
year.

for horizontal

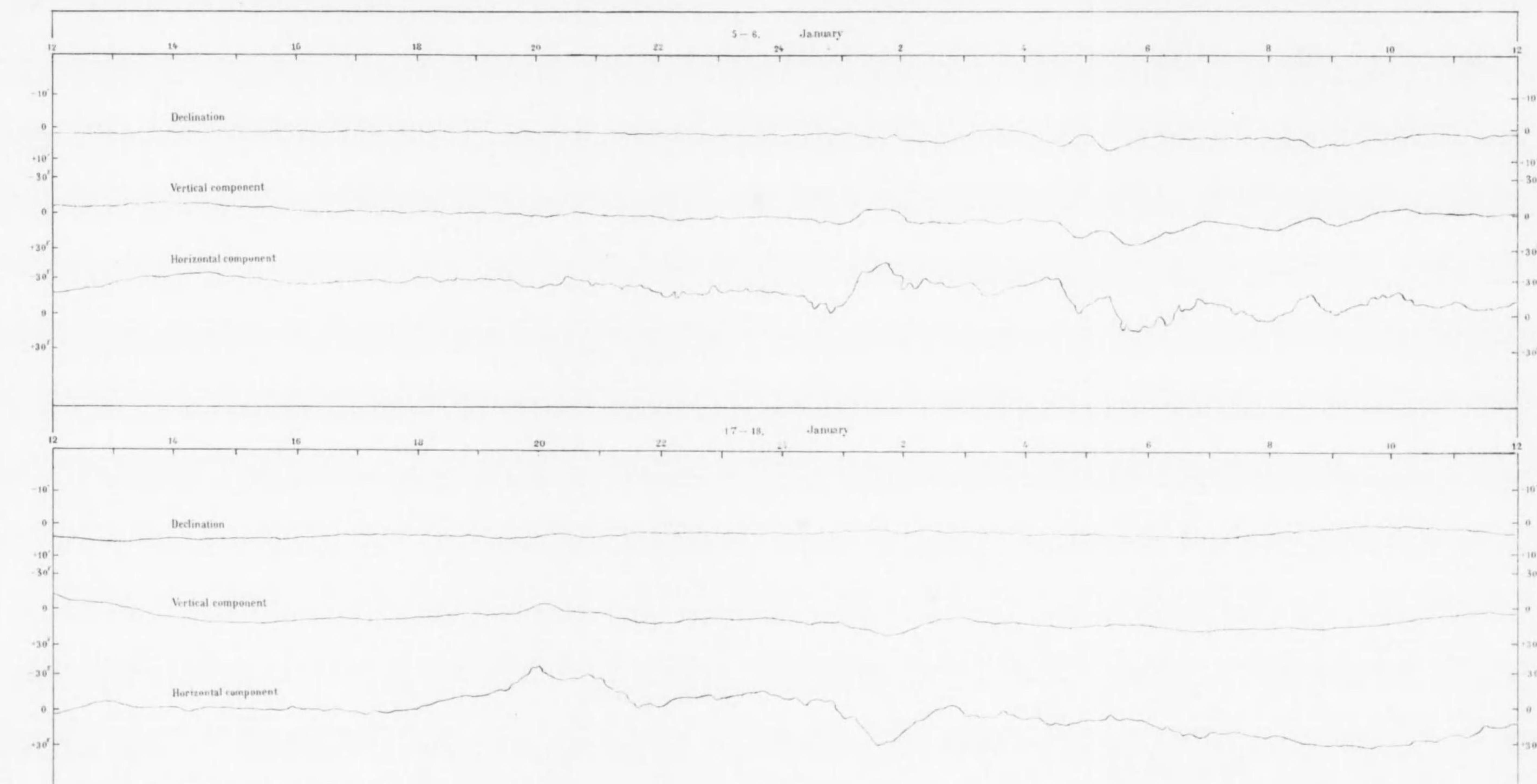
PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE I.

p q₁

+0.17	+0.32
+0.28	+0.25
+0.39	+0.33
+0.31	+0.14
+0.09	-0.09
+0.92	-0.19
+0.01	-0.18
+0.09	-2.03
+0.30	-0.22
+0.42	+0.11
+0.36	+0.16
+0.27	+0.24
+0.22	+0.06



-0.78	+0.27
-1.60	+1.14
-0.58	+1.97
+0.88	+2.22
+0.88	+0.78
+1.14	+0.04
+0.22	-0.62
+1.26	-0.38
+1.43	+0.35
+1.33	+2.80
+0.50	+1.83
-0.75	+1.07
+0.33	+0.96

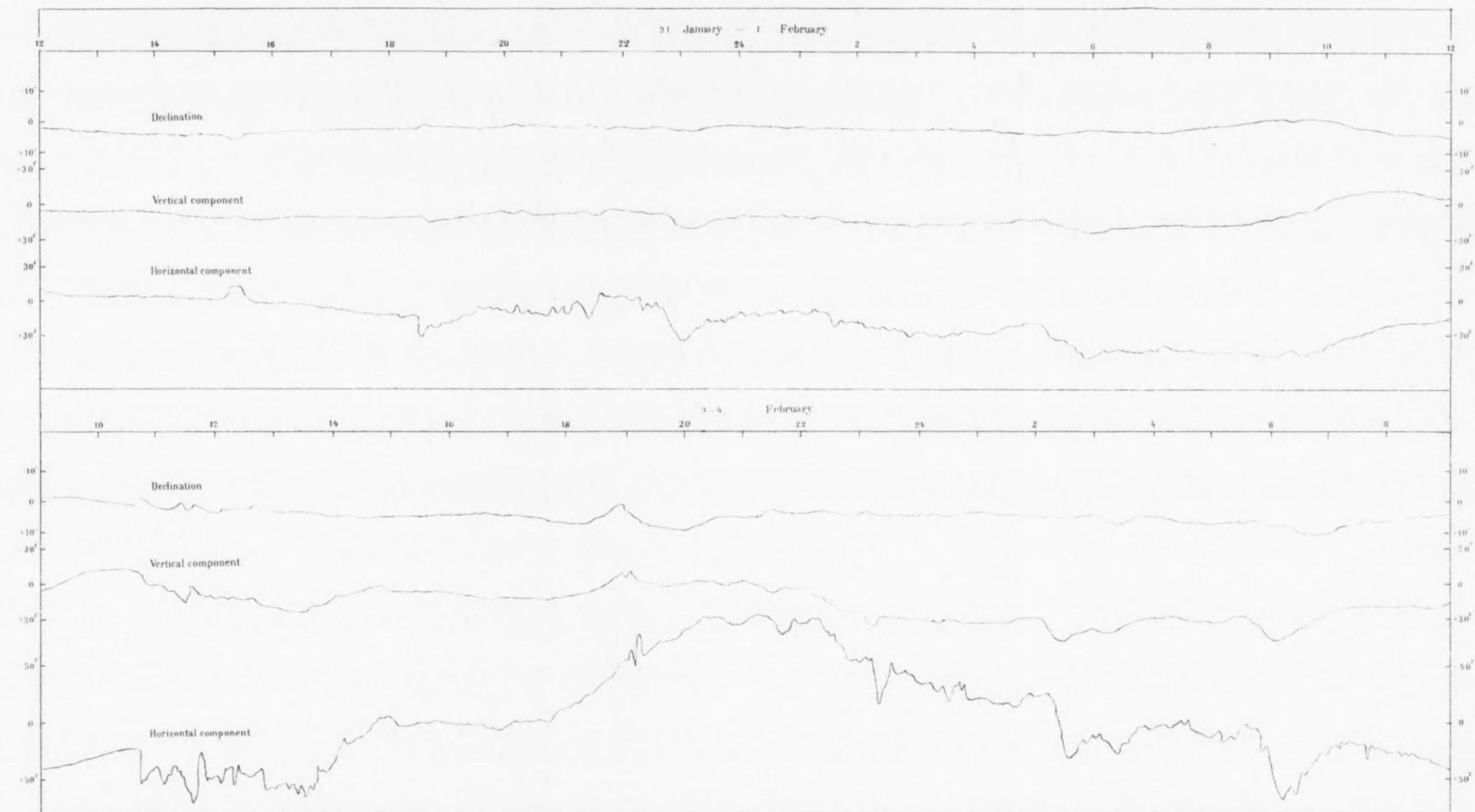
-0.67	+1.15
-0.18	+2.67
-0.67	+1.93
+0.20	+1.45
+0.80	+0.92
+1.63	-0.47
-0.45	+0.12
+0.82	+0.17
+1.88	+2.29
+0.32	+1.94
+0.32	+1.39
-0.48	+1.39
+0.26	+1.19

$$\gamma = 10^{-5} \text{ C.G.S.}$$

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE II.

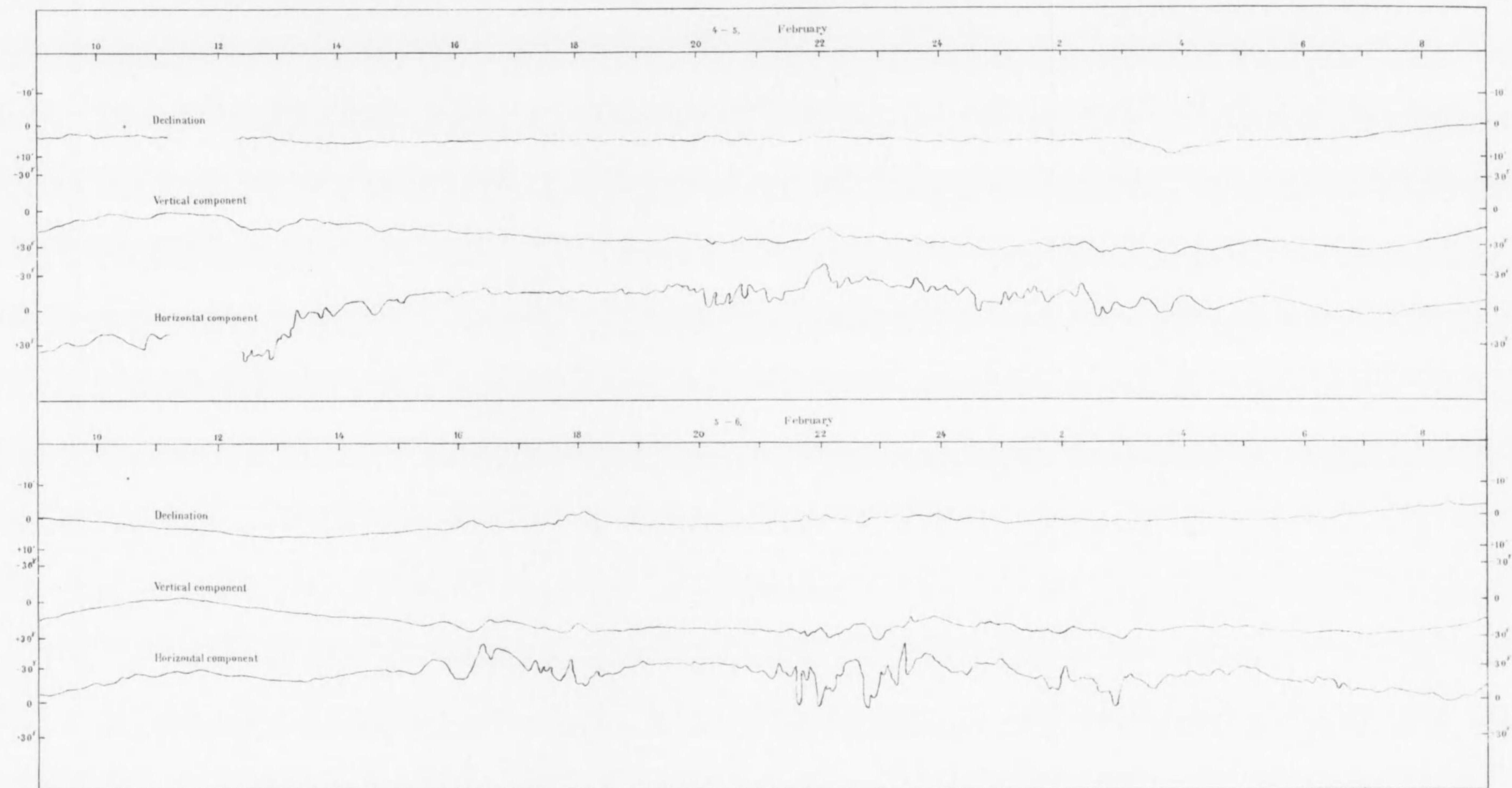


$\delta = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE III.

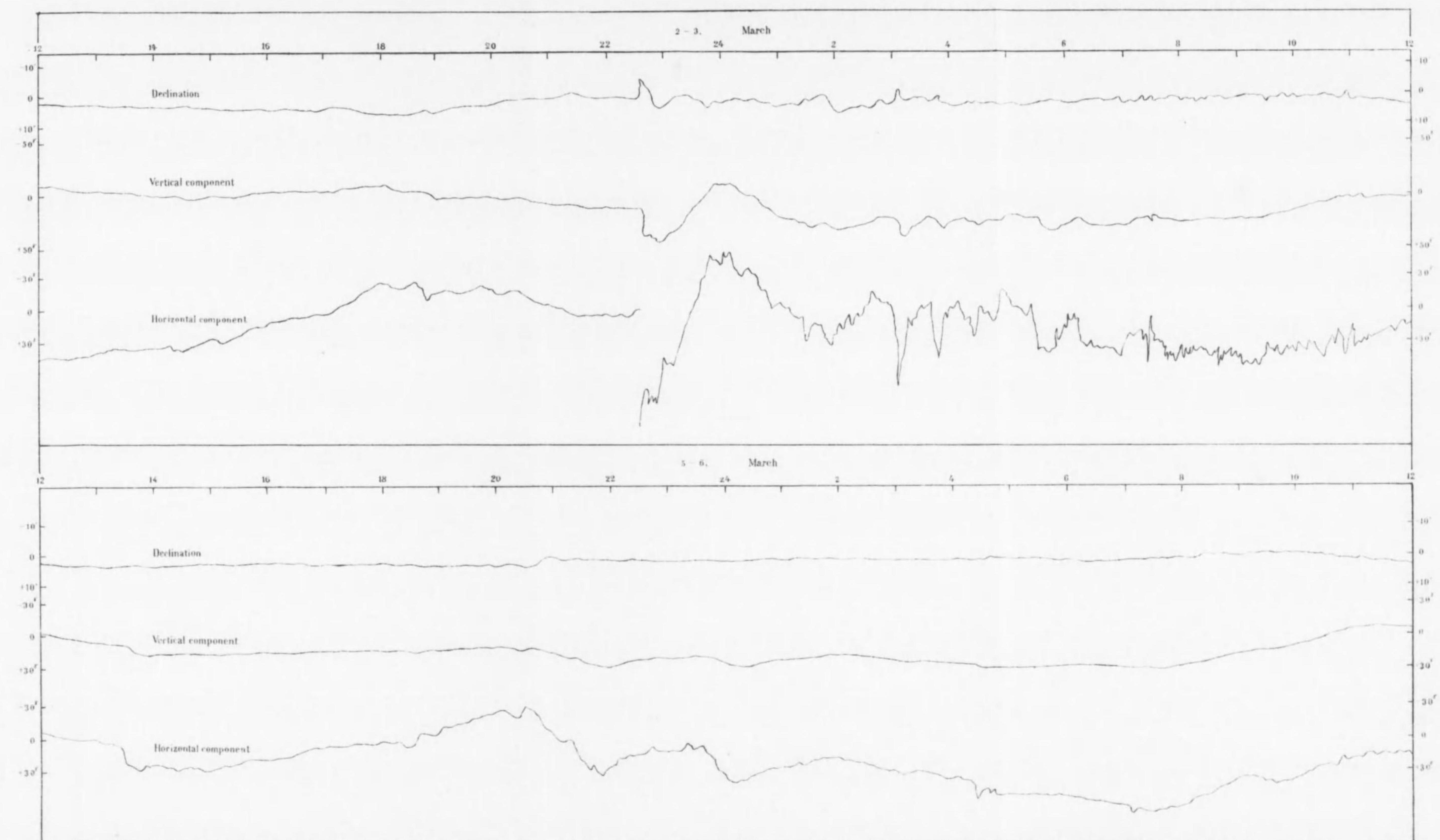


$\gamma = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

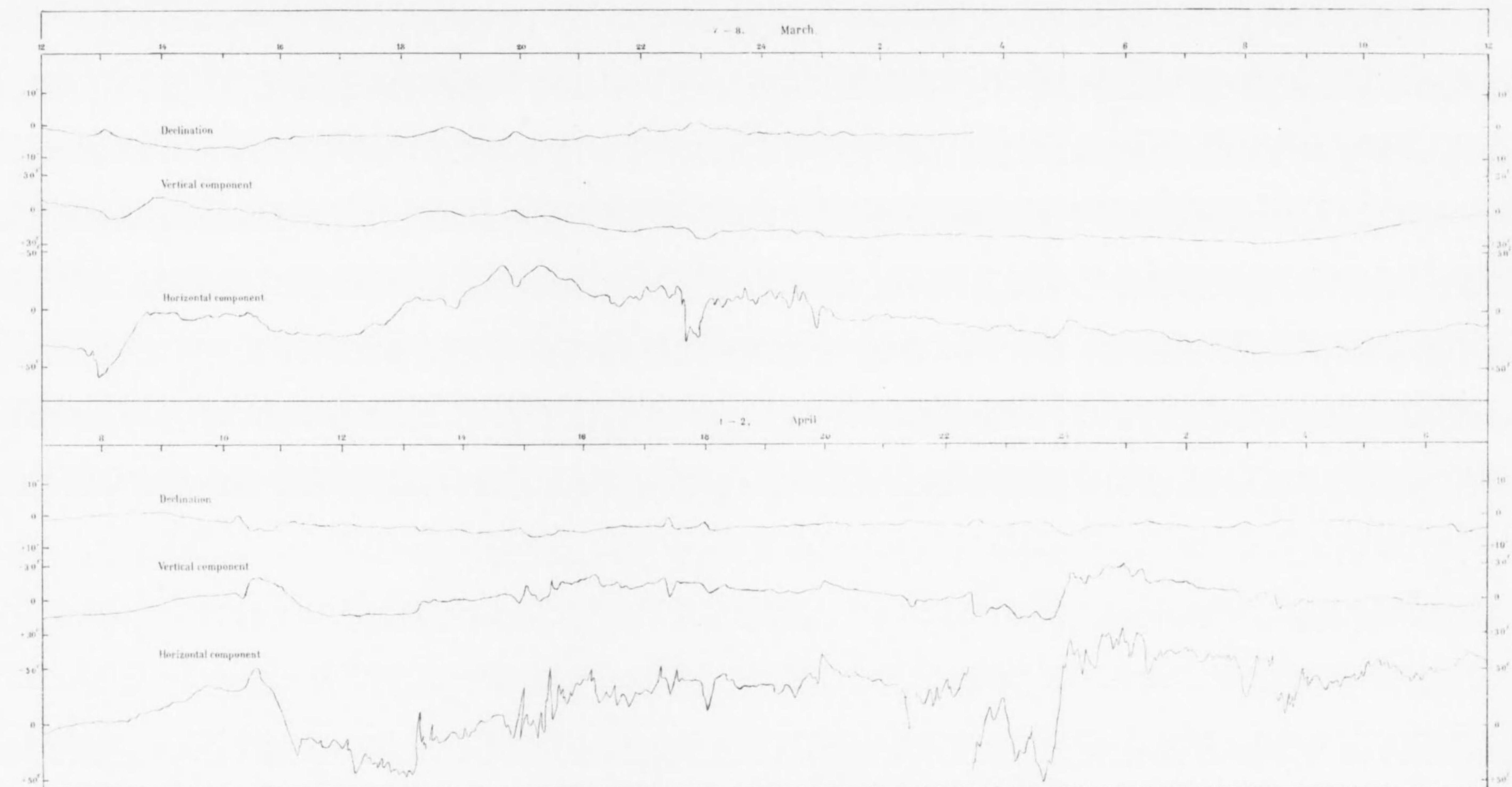
PLATE IV.



PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE V.

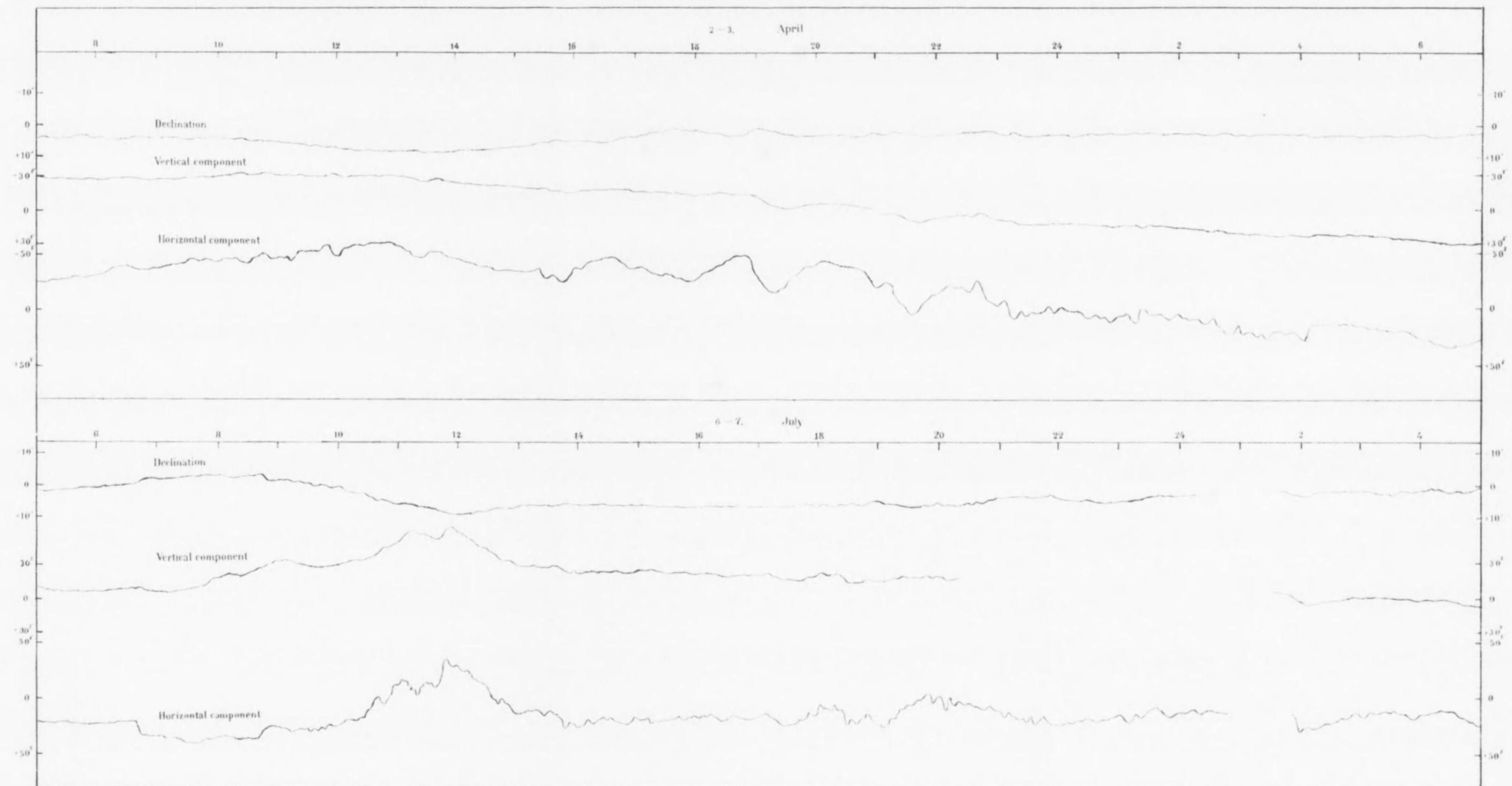


$\delta = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE VI.

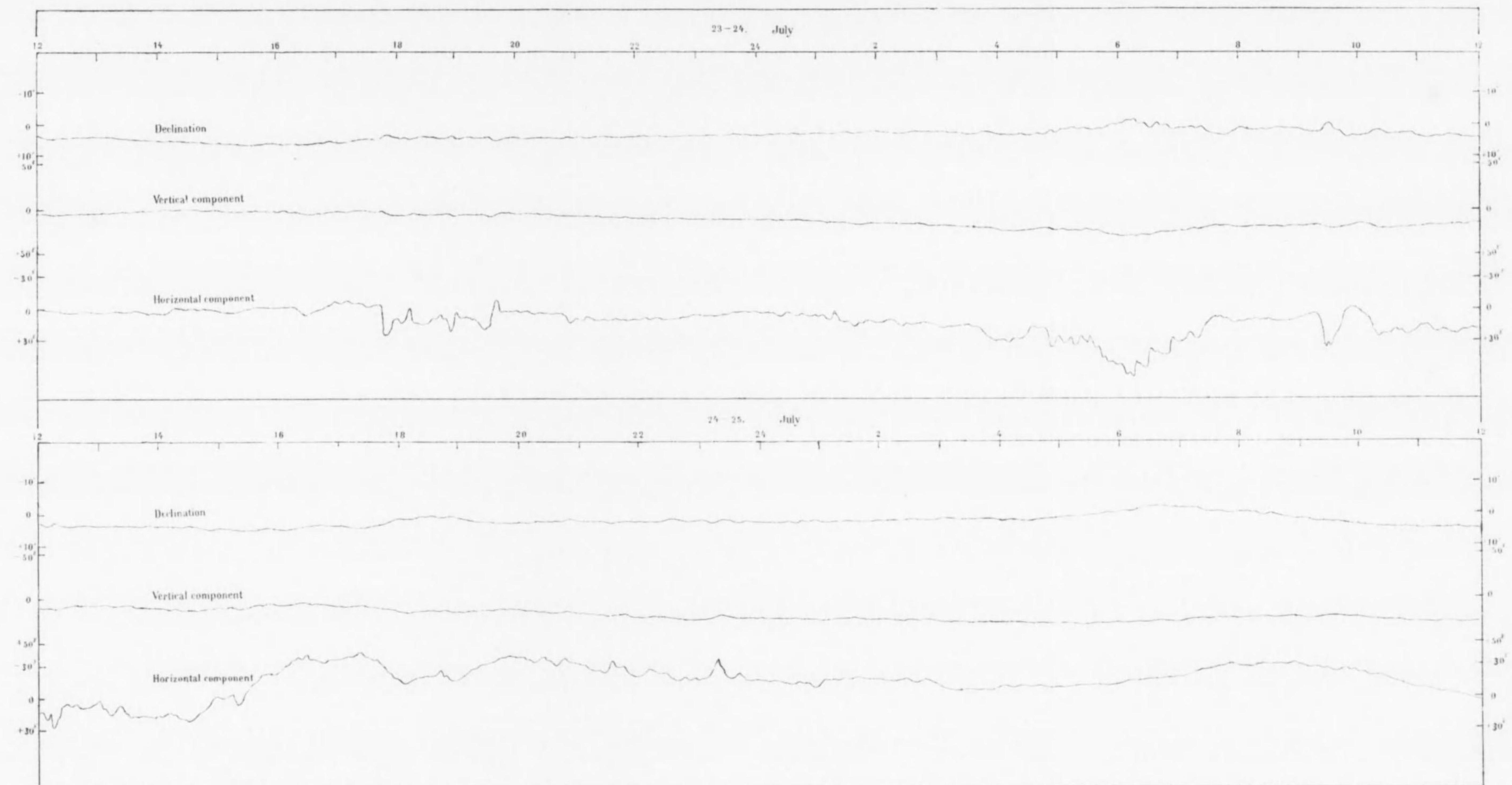


$\gamma = 10^{-3}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE VII.

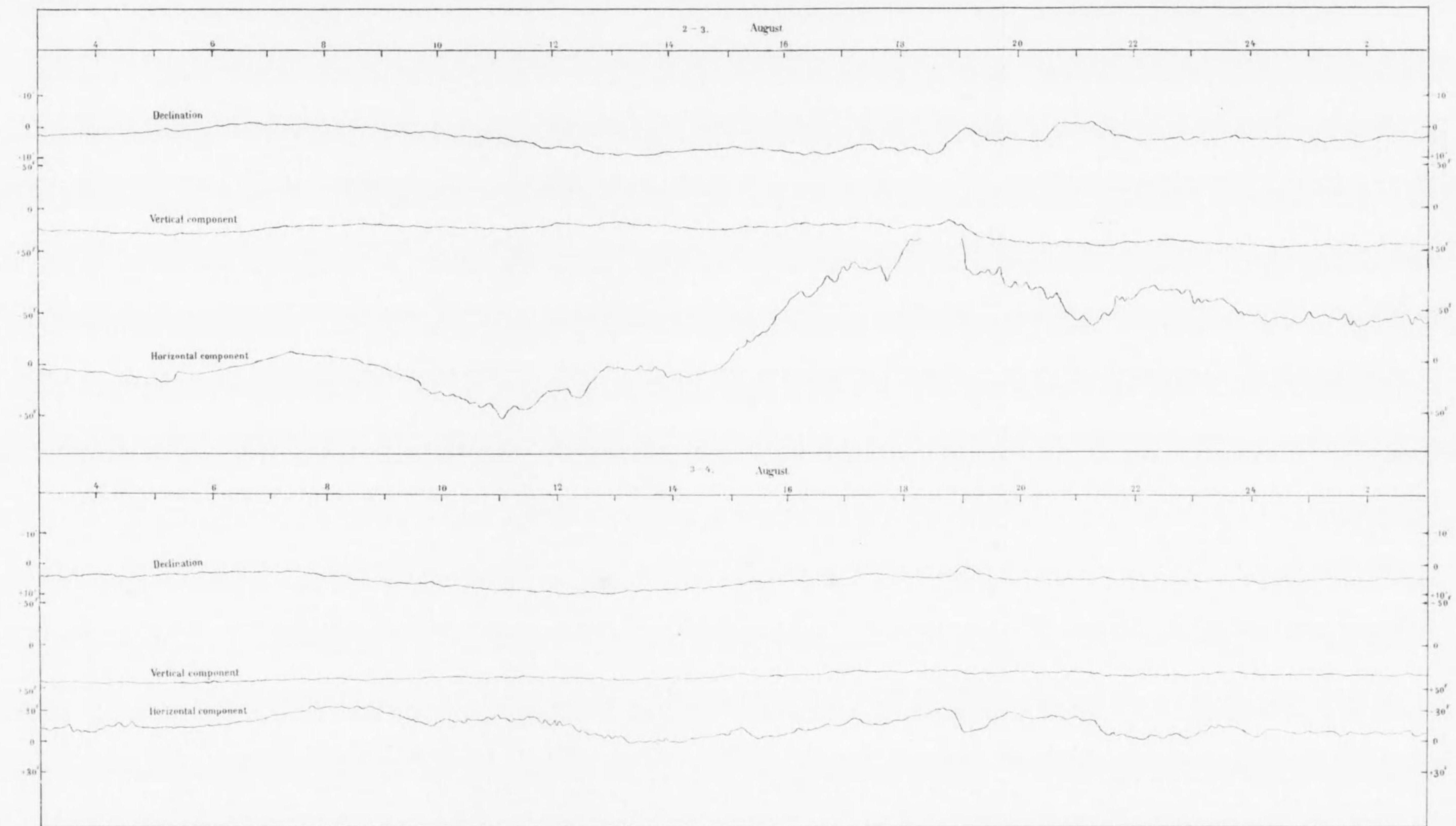


$\text{f} = 10^{-3}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE VIII.

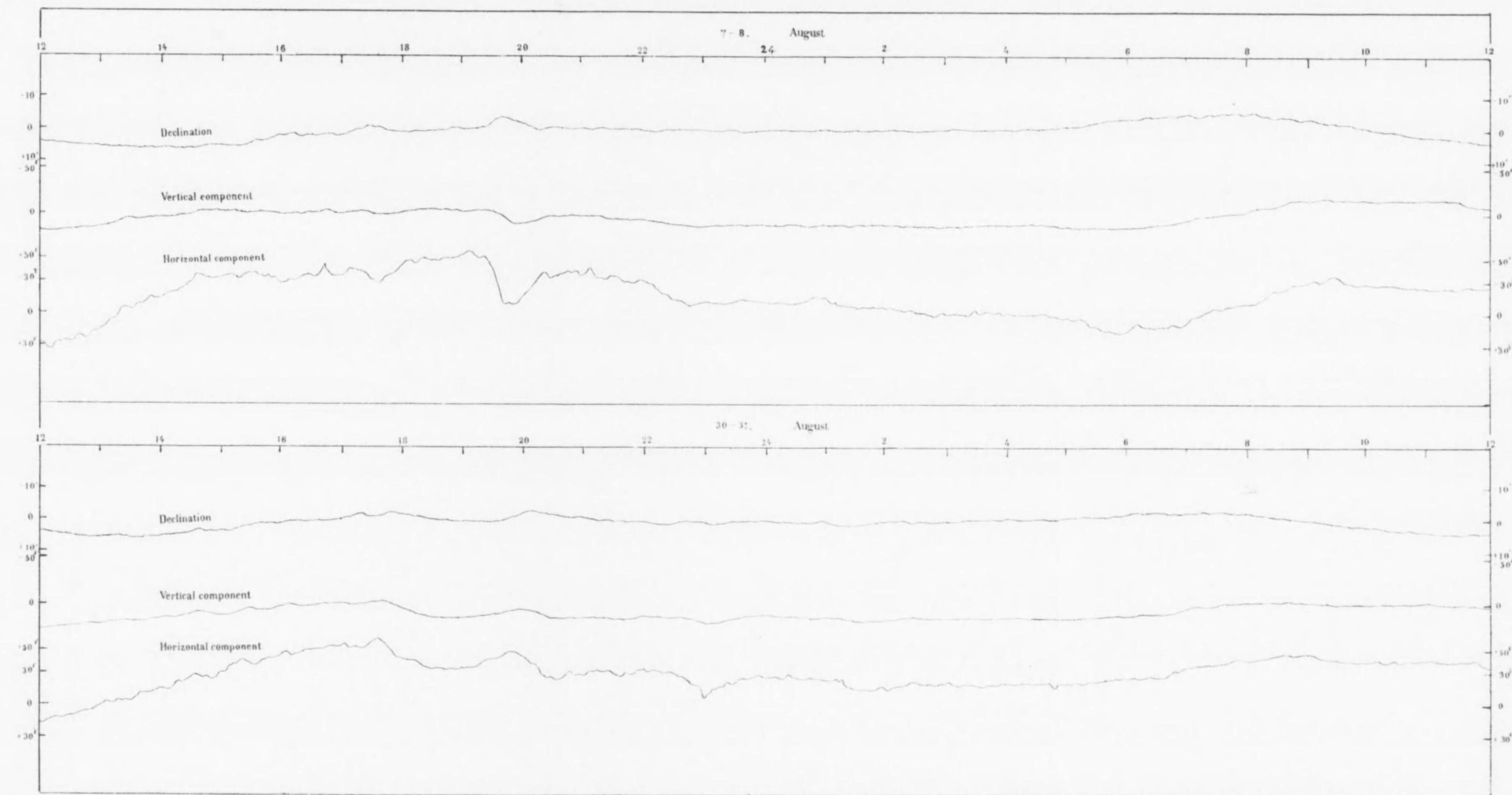


$$\gamma = 10^{-3} \text{ C.G.S.}$$

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE IX.

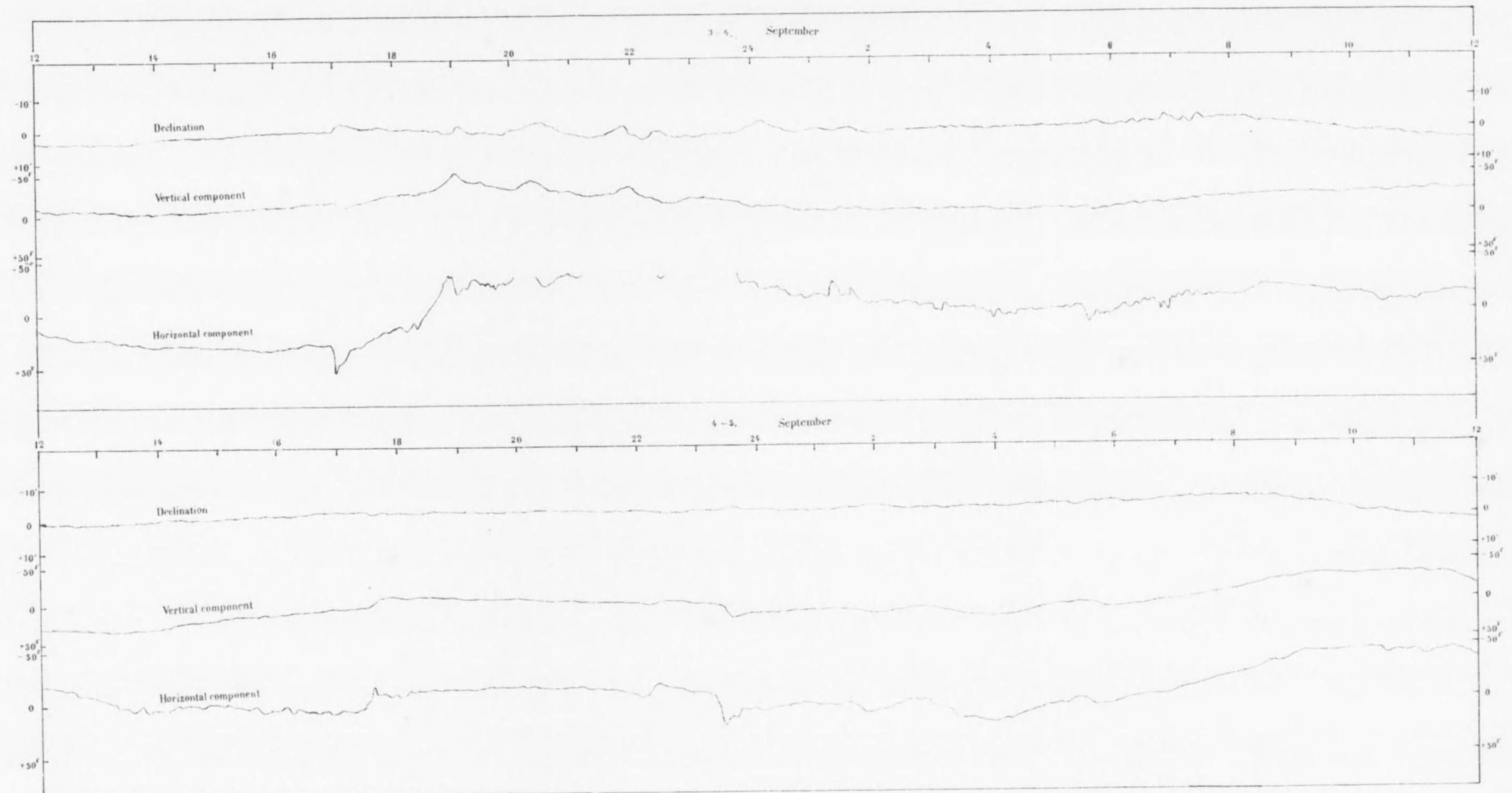


$$\gamma = 10^{-3} \text{ C.G.S.}$$

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE X.

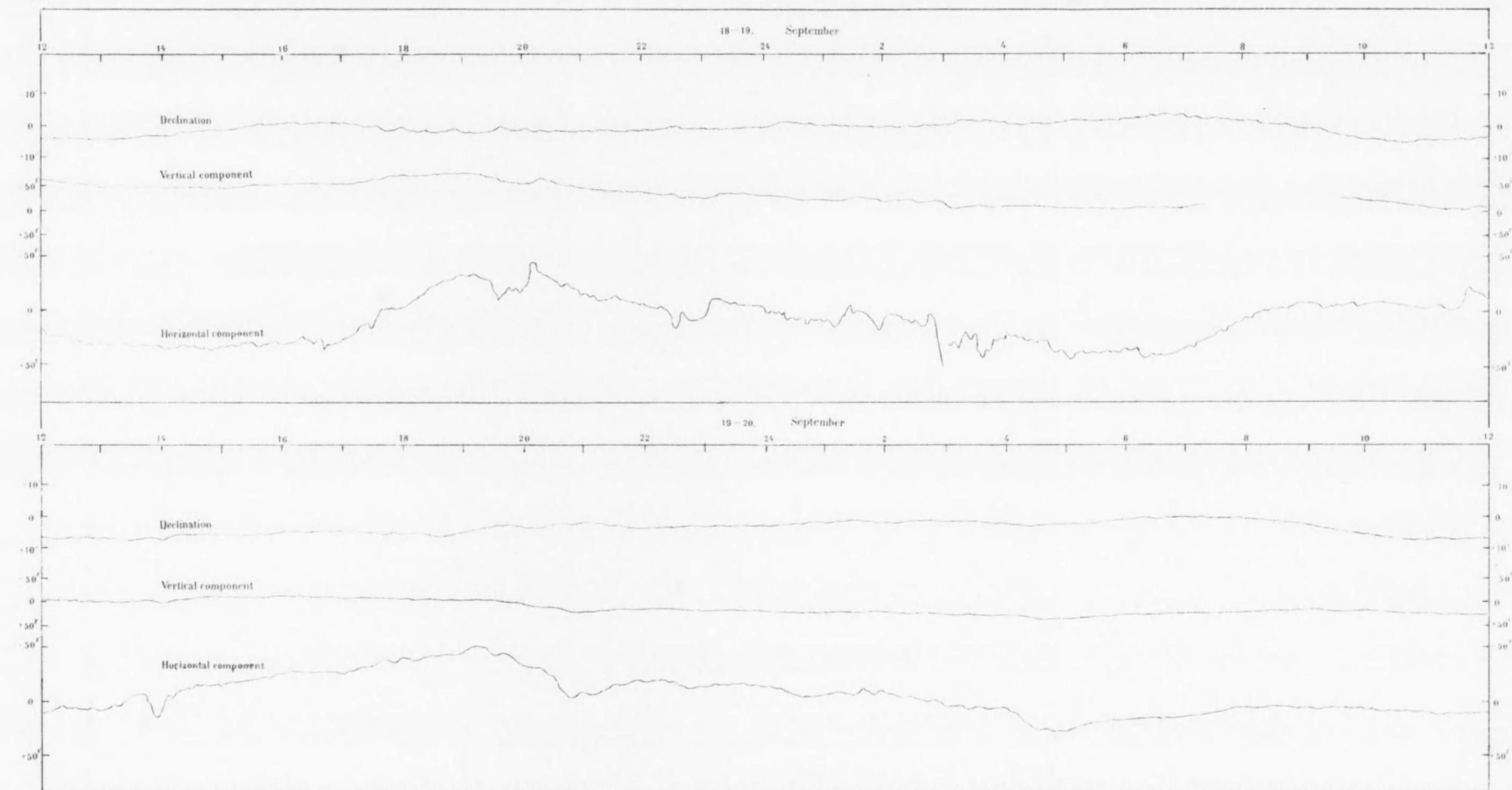


$\delta = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE XI.

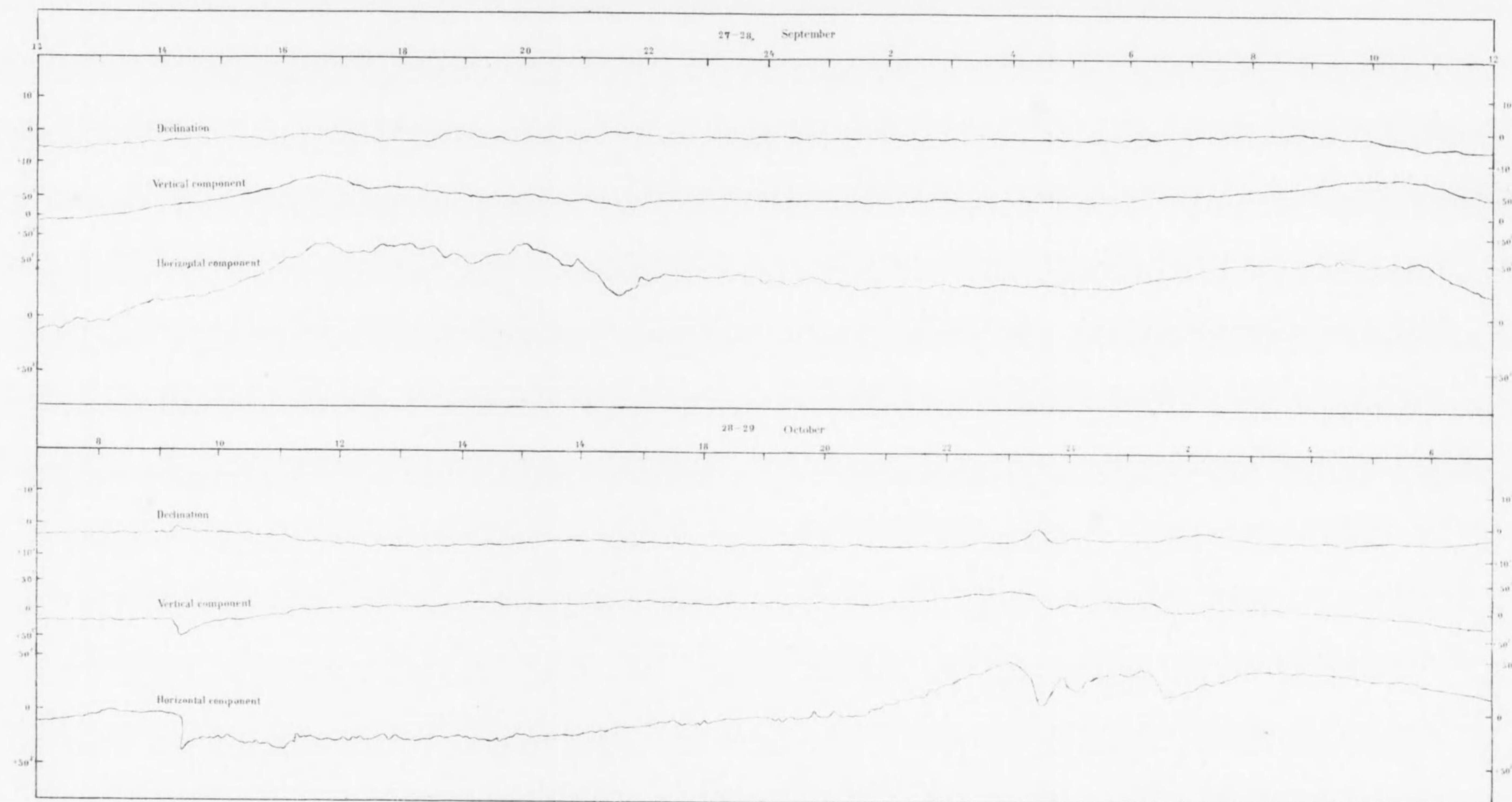


$\gamma = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE XII.

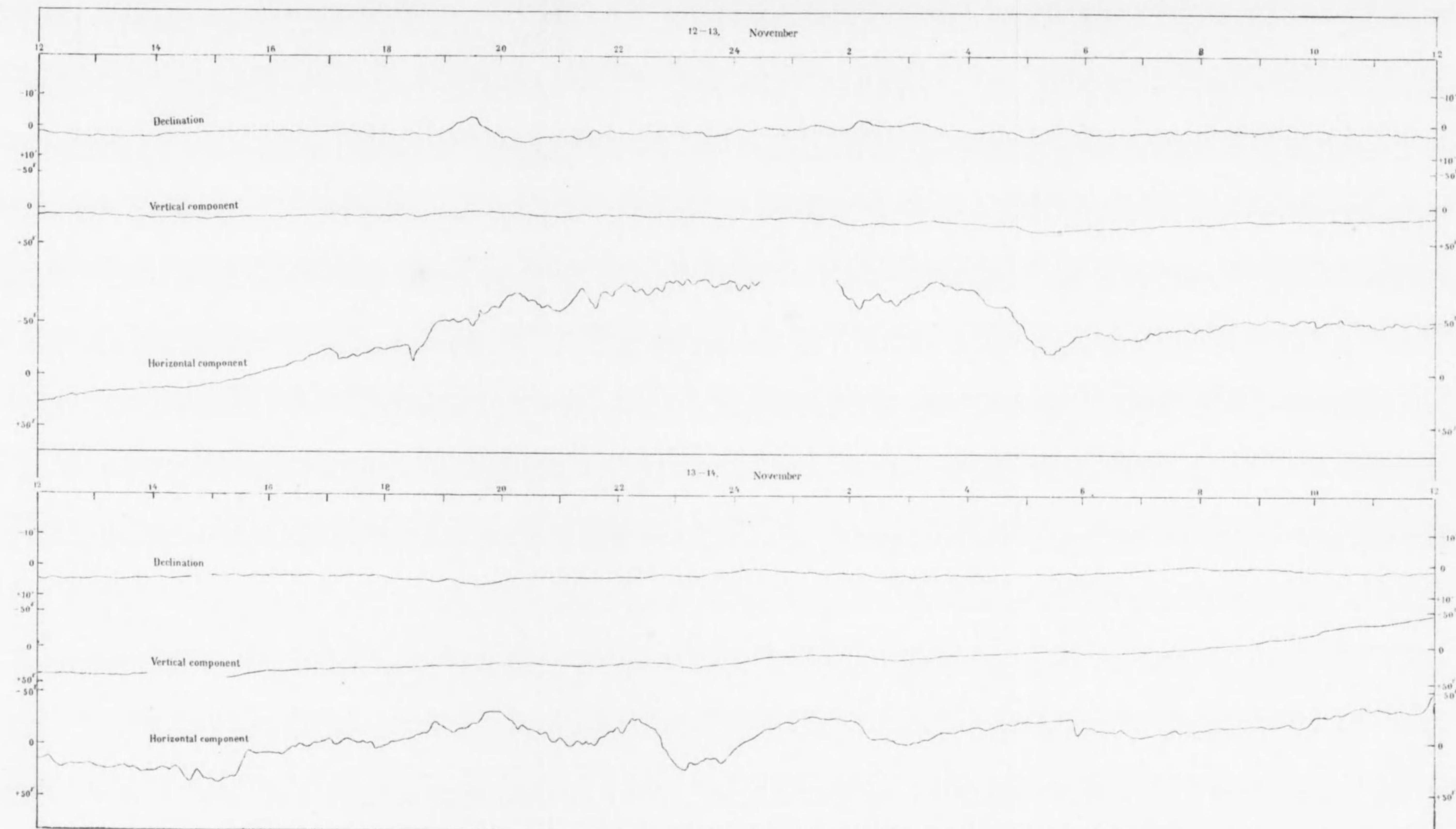


$\frac{1}{2} = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE XIII.

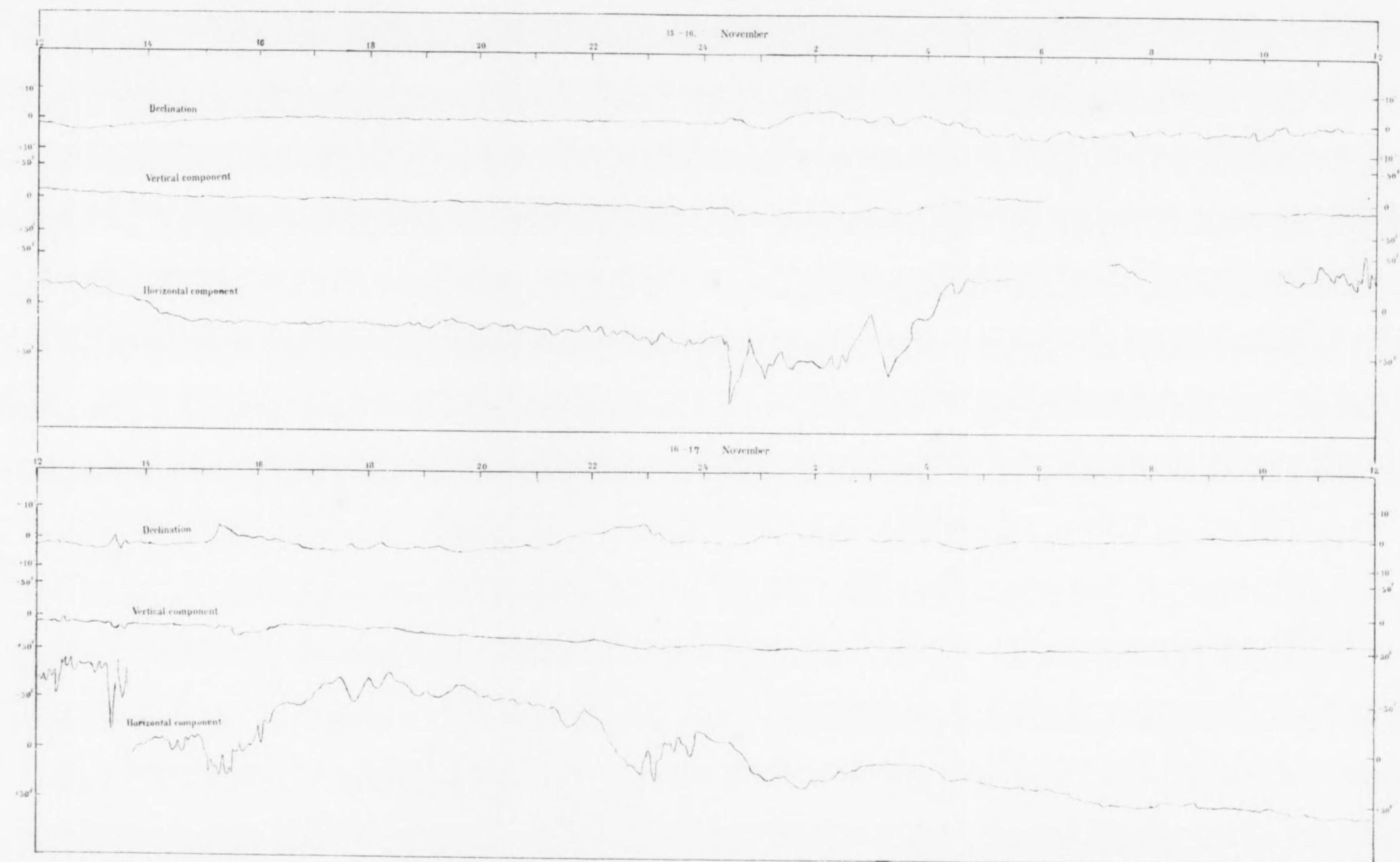


$\gamma = 10^{-5}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE XIV.

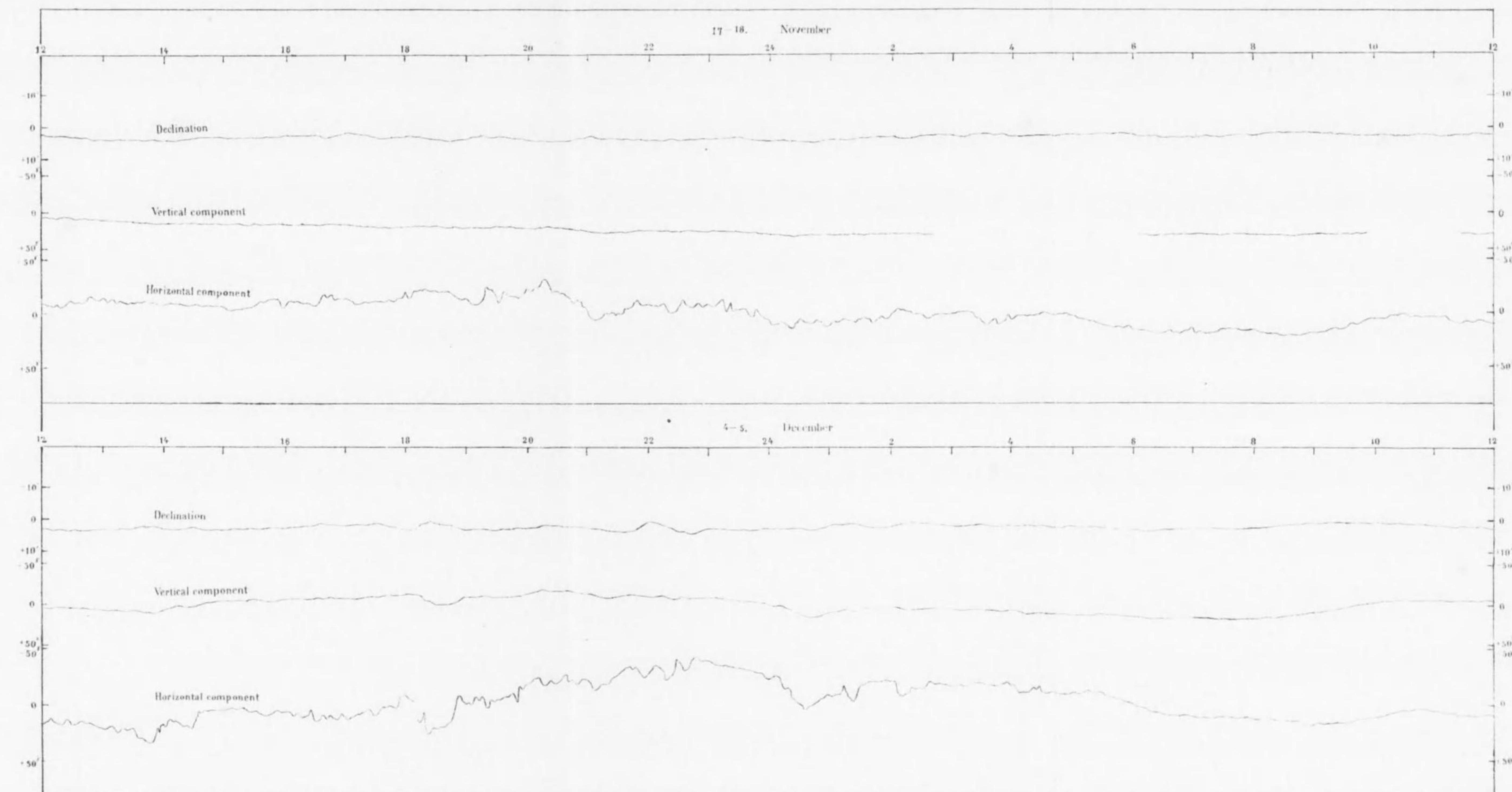


$\delta = 10^{-3}$ C.G.S.

PRINCIPAL MAGNETIC DISTURBANCES

RECORDED AT THE CENTRAL METEOROLOGICAL OBSERVATORY, TOKIO, 1905.

PLATE XV.

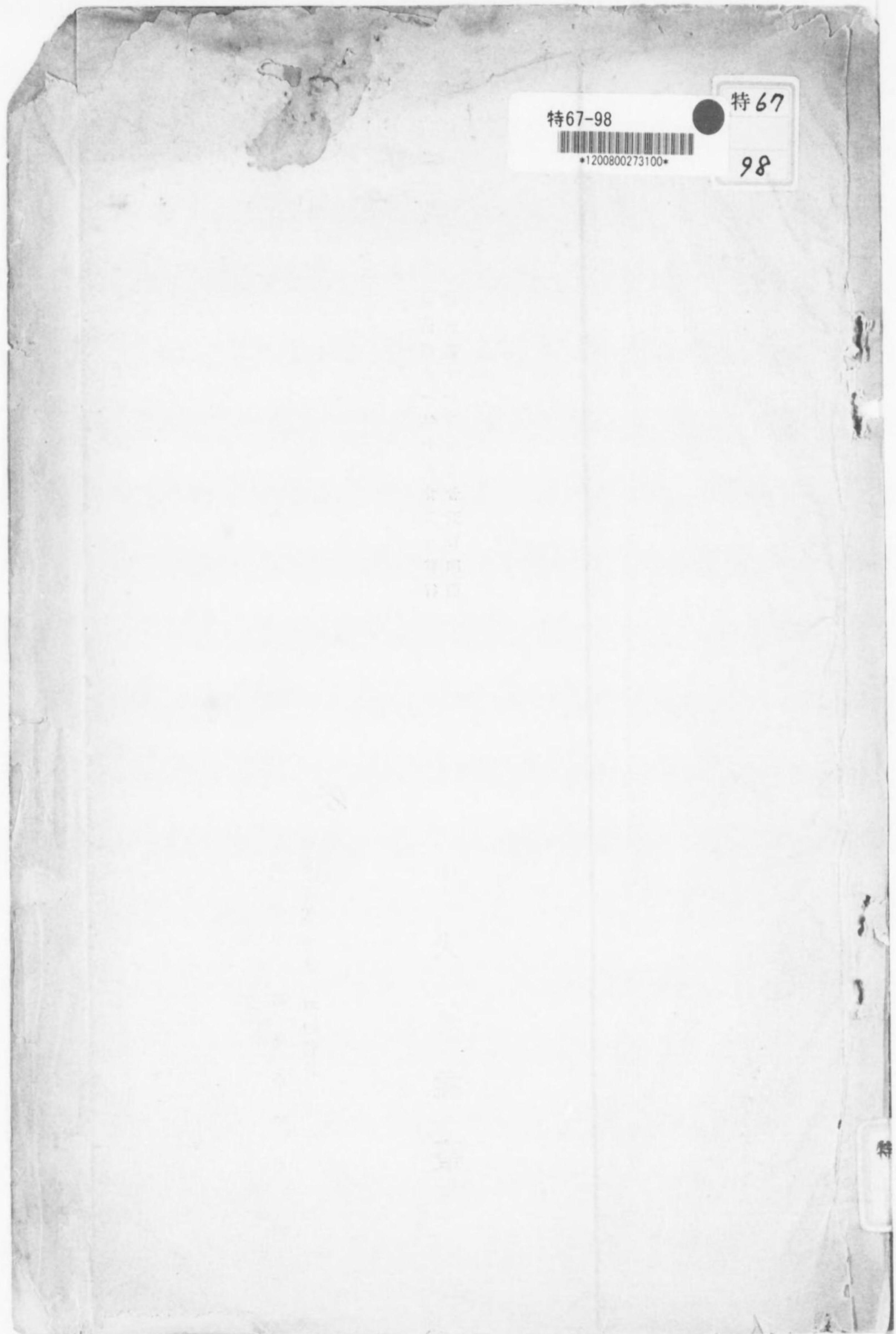


$\delta = 10^{-5}$ C.G.S.

明治四十一年十月廿八日發行

中央氣象臺

印刷者 高島幸三郎
東京市京橋區高代町四番地



特67-98



1200800273100

特67

98

終