PART IV.

OBSERVATIONS

WITH THE

SIX-INCH TRANSIT CIRCLE.

1900-1901.

BY

MILTON UPDEGRAFF,

ASSISTED BY

FRANK B. LITTELL AND GEORGE K. LAWTON.

4780—VOL. III—O2—16

D 1

THE 6-INCH TRANSIT CIRCLE.

U. S. NAVAL OBSERVATORY, WASHINGTON. MOUNTED, 1897.

INTRODUCTION.

By MILTON UPDEGRAFF.

The 6-inch steel transit circle designed by Prof. WILLIAM HARKNESS, U. S. Navy, and made by WARNER & SWASEY, of Cleveland, Ohio, was mounted in December, 1897, by Mr. GOTTLIEB FECKER, the instrument maker of the firm. From June 5, 1899, to January 20, 1900, while the 9-inch transit circle was undergoing repairs, this instrument was used in carrying on the regular series of observations of the Sun, Moon, and planets. I was placed in charge of the instrument on December 18, 1899, but necessary repairs and alterations delayed the commencement of observations until February 13, 1900, when work was begun on a list of 130 comparison stars for the planets.

The instrument is reversible and is similar in form to the modern REPSOLD type of meridian circles, the merits of which have recently been discussed in the astronomical journals, and examples of which exist in this country at the Lick Observatory and at several other places. The metal pier heads, long microscope bearers, and divided circles of relatively small diameter are among the principal features of meridian circles of this form.

The 6-inch transit circle differs from the REPSOLD instruments in that the telescope tube and circles are made of steel instead of brass, and in general the parts of the instrument are perhaps of somewhat heavier construction. The edge of the cube, for example, is longer in proportion to the diameter of the object-glass, being as 1 : 2, while in case of the REPSOLD instruments this relation is about as 1 : 1.5.

The instrument is symmetrical in appearance and convenient in use. The construction of the tube and circles of steel instead of brass is perhaps an important advantage, as steel is much the more rigid of the two metals, the coefficient of elasticity of steel being more than three times that of brass. The object-glass gives excellent definition. The massive concrete foundations on which the piers rest are apparently well constructed, and the sheet-iron building lined with zinc in which the instrument is mounted is admirably adapted to its purpose.

While many minor improvements in the instrument and its accessories were made before the observing was begun, yet during the entire time that this work was in progress the following defects existed in the instrument:

- (1) Roughness and irregularity in form and position of the graduations of the circles.
- (2) Oblique, unsymmetrical, and irregular illumination of the field.
- (3) Bad definition of the circle microscopes, due in part to defective microscope objectives.

(4) Large variation of azimuth with temperature, approximately represented by the formula

$$a = a_0 + 0^s.03 (t - t_0),$$

in which the temperature is expressed in Fahrenheit degrees.

(5) Meridian mark out of focus, being 4 or 5 feet south of the principal focus of the meridian-mark lens.

There were, under the circumstances, two alternatives; to delay indefinitely the commencement of work pending repairs, or to begin work with the instrument in its imperfect condition. The latter course was adopted for the reason that it would give a more intimate knowledge of the instrument with which to proceed in making alterations and also give opportunity for special investigations which were needed. The work has been made purely differential in order to eliminate as far as possible the effect of systematic errors due to the above defects or to lack of more thorough investigation.

During September, 1900, the instrument was dismantled in making an unsuccessful attempt to find the cause of and to remove the azimuth variation due to temperature. Observations of stars were again discontinued on March 15, 1901, pending an attempt to remove this defect.

The circles were sent to the makers on April 24, 1901, to be regraduated. The work was done during the summer and the circles were returned to the Observatory on September 30. The apparatus for illuminating the field of the telescope has been remodeled by the Observatory instrument maker after designs by myself and is now entirely satisfactory. New microscope objectives have been made by Mr. J. A. BRASHEAR, but have not yet been brought into use. The causes of the azimuth variation, due to temperature, have been found, and that difficulty has been removed by substituting cast-iron foundation plates for the original cast-steel plates, which latter had probably been imperfectly annealed, and by replacing the marble piers of the instrument with brick piers. In order to correct the focus of the meridian mark it will be necessary to move the meridian-mark house and pier 4 or 5 feet northward.

With the introduction of these changes the instrument becomes practically a new one, and it seems desirable at this time to publish all observations that have been made up to date and also those instrumental investigations already made which pertain to the instrument in its former condition. As regards the observations of stars, all series which have been undertaken are complete, making it convenient to do this.

Since January 20, 1900, when the observations of the Sun, Moon, and planets with the 6-inch transit circle were discontinued, the instrument was used for nine months in observations of the fixed stars. The number of observations made is about 3,960. The number of determinations of the constants of the instrument during that time is about 1,830.

Until February 1, 1901, I was assisted in this work by Assistant Astronomer, (now Professor), F. B. LITTELL, whose efficient services both as observer and computer are hereby acknowledged. From December 8, 1900, to March 7, 1901, valuable assistance as microscope reader and recorder was rendered by Computer G. K. LAWTON, whose untimely death occurred in the month of July following. During June and July, 1900, excellent work was done by Computer J. C. HAMMOND as microscope reader and recorder.

THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

DESCRIPTION OF THE INSTRUMENT AND ACCESSORIES.

It is not proposed to attempt an exhaustive description of the instrument, but in addition to what has been stated above a more detailed account of the various parts of the instrument will be given.

The drawings for all the plates in this part of the volume have been prepared by Mr. W. W. DINWIDDIE, Assistant in Spectroscopic Work, to whose skill and interest in the work their excellence is due.

The telescope tube and axis.—The two conical halves of the telescope tube were intended to be exact duplicates, and each was made from an ingot of forged steel, bored out and machined both inside and outside so that the walls have a uniform thickness of one-eighth of an inch (0.32 cm.). There are flanges at each end, one with 12 screw holes for clamping to the cube, the other with 8 screw holes for securing the eye end and object-glass end to the tube. The eye end and object-glass end are interchangeable. The cube is 12 inches (30.5 cm.) on a side, and is cast in one piece with the two conical halves of the axis. It is carefully machined both inside and outside, and is pierced with two holes 4 inches (10.2 cm.) in diameter, through which the collimators are pointed on each other. These holes are closed with brass caps. There are two handwheels covered with leather for turning the telescope.

The telescope tube and axis and all the large parts of the instrument are painted a dark olive-green.

The pivots and wyes.—The pivots are 2.24 inches (5.69 cm.) in diameter, and consist of cores of soft iron or steel covered with cylindrical shells of hardened steel. Each pivot is perforated with a hole 1 inch (2.54 cm.) in diameter, and these holes are closed with brass plugs fitted with glass disks.

The wyes are of cast steel, and each is cast as one piece with a circular cheek 10.5 inches (26.7 cm.) in diameter, by means of which the wyes are secured to the microscope bearers with screws. Each pivot bears on the slightly rounded surfaces of two half-inch gun-metal plugs. These plugs are inserted in the sides of the wyes in such a way that the distance between the bearing points is 1.60 inches (4.06 cm.). The line joining these bearing points subtends an angle at the center of the pivot of very nearly 90° . There are vertical levers behind the wyes fitted with springs, clamps, and screw motions for adjusting and holding the telescope and axis in an east and west direction. The wyes of the hanging level are similar to those of the instrument, as stated below.

The object-glass.—The object-glass by BRASHEAR, is of the FRAUNHOFER type, and its clear aperture is 6 inches (15.24 cm.). The glass of which the lenses are made is almost colorless, the field is very flat, and the definition, as before stated, is excellent. The lenses are supported in the cell by means of two lugs and two springs, one of the latter for each lens, in the usual manner. The springs act in a direction perpendicular to the meridian, so that any change in collimation, due to the effect of temperature on the object-glass, should change the collimation in right ascension but not in declination. Our determinations of collimation in right ascension show, however, that there is no appreciable effect of this kind. Suitable adjusting screws are provided for squaring on the objective. The cell is not

clamped directly to the telescope tube, but to a short section of the tube, 2.5 inches (6.4 cm.) long, which can be detached without disturbing the adjustment of the object-glass.

An unexpected but not very serious difficulty has arisen in that the focus of the telescope varies slightly with the temperature. The eye end has to be drawn out in summer and pushed in in winter one or two hundredths of an inch. The expansion and contraction of the steel tube seems not to be sufficient to compensate for the variation, due to temperature, of the focal length of the object-glass.

The eye end.—The sliding tube which carries the micrometer is 4.75 inches (12.1 cm.) in diameter and works in a sleeve 3.5 inches (8.9 cm.) long, which is made as one piece, with a flange 8 inches (20.3 cm.) in diameter, which latter is clamped directly to one of the conical halves of the telescope tube. The eye end is moved for focusing by means of two rings or collars, one inside and the other outside of the telescope tube, which screw on the sliding tube and act against the sleeve. The inside collar has teeth on its circumference and is turned by means of a pinion wheel whose shaft projects outside of the telescope tube near the micrometer box. By means of these collars the eye end is clamped firmly in place. But an additional safeguard is provided by four capstan-headed screws, which, working in the sleeve, abut against the sliding tube and fix the position of the eye end at right angles to the line of collimation. There is also a simple and effective device for turning and clamping the whole eye end so as to fix the threads of the reticule parallel to the meridian. The focusing screw has twelve threads to the inch (2.54 cm.).

The micrometer.—The micrometer box is of steel and is 5.2 inches (13.2 cm.) square, with the corners cut off. The right ascension and zenith distance micrometer heads are 2 inches (5.08 cm.) in diameter, and are divided to hundredths, every tenth division being numbered. Whole revolutions are counted on count scales. The zenith distance micrometer has also a scale on the outside of the box for whole revolutions, and a ROGERS recording apparatus. Both right ascension and zenith distance micrometer screws have 100 threads to the inch (2.54 cm.). The right ascension micrometer screw carries one vertical thread, and the zenith distance micrometer screw carries a double horizontal thread of width 6". These with the threads of the reticule make three systems of threads, which must be nearly enough in the same plane for all to be in focus at the same time. There was considerable trouble with "fiddling" of the zenith distance micrometer threads when they were in use in the year 1899. The steel right ascension and zenith distance micrometer screws work in steel nuts.

The spider-line reticule.—The reticule is similar to that used here for many years on the 9-inch transit circle, a diagram of which is shown in Plate VIII, fig. 4, Washington Observations for 1865. The thickness of each thread is about 1". I. Screws are provided for moving the reticule frame in right ascension for adjustment of the collimation.

Eyepieces.—There are four positive KELLNER eyepieces, designated as I, II, III, and IV, of powers 79, 90, 140, and 273, respectively. There are also two other eyepieces with colored glass between the lenses, for observations of the Sun. Eyepiece III, power 140, has always been used.

The circles.—These are of cast steel, supposed to be thoroughly annealed, and are of strong and symmetrical design. Each wheel has eight spokes. The diameter of the circles at the divisions is 25.5 inches (64.8 cm.). They are fitted on their conical bearings so as to be interchangeable, and are held in position by steel disks clamped against their outer faces. By unclamping these disks the circles can be rotated on their axes, but not very conveniently.

These circles are divided to two minutes, and each degree is numbered. The divisions are the same on the two circles, and are engraved on silver bands 0.22 inch (0.56 cm.) wide and 0.025 inch (0.63 mm.) thick, inlaid in the steel rims. These silver surfaces are inclined inward at an angle of 4° or 5° to the planes of the circles.

As stated above, the original divisions were not satisfactory, being rough and irregular in form and apparently also inaccurate in position. No determinations of division error have been made, but the probable error due to division error of the mean of four microscopes was determined by two independent methods which gave accordant results and was found to be about $0''.25$.

The new divisions referred to above have been made on coin silver, instead of pure silver which had been used previously, and are much sharper and more regular in form than the old divisions. It is hoped that upon investigation the division errors will be found to be smaller than before.

The microscopes.—The microscopes for reading the divided circles are similar in design to those on the REPSOLD instruments, but are clamped to the microscope bearers in a different manner. There are four microscopes for each circle, with two extra microscopes for division error work. There is at present no way of illuminating the circles so that these auxiliary microscopes can be used. Double threads are used in setting on the divisions and a comb scale is provided in the field of each microscope. The steel micrometer screws have 100 threads to the inch (2.54 cm.). These screws turn in steel nuts, and therefore do not work as smoothly as they should. In April, 1900, one of them became jammed in the nut and had to be sent to the makers for repairs. The magnifying power of the microscopes on the circles is 32. The object-glasses are 1.0 inch (2.54 cm.) in diameter and 5.33 inches (13.54 cm.) focal length. They may be moved for adjusting the error of runs. When the new object-glasses are substituted for the old ones it is expected that the definition of these microscopes will be improved. The focal length of the microscopes is about 19.75 inches (50.16 cm.), the distance between the points of support is 17 inches (43 cm.), and the distance of the objectives from the circles is 7.3 inches (18.5 cm.). The microscope micrometer heads are of aluminum and are 1.25 inches (3.18 cm.) in diameter. They are divided into 60 parts and every tenth part is numbered. The design of the setting microscope is the same as that of the setting microscopes of the later REPSOLD meridian circles. The magnifying power on the divisions of the circles is about 17 diameters.

The illumination.—The field of the telescope, and the circles are illuminated by two lamps, each supported by two iron posts, one west and the other east of the instrument. The lenses of these lamps are 7.75 feet (2.36 m.) from the center of the cube, and the centers of the lenses are in line with the axis of the instrument. The clear aperture of the lenses is 3.9 inches (9.9 cm.). Either gas with WELSBACH

burner or electric light may be used. The former gives the better results. For the illumination of the field, light is admitted through the hole in the pivot opposite the clamp. A series of colored-glass diaphragms makes it possible for light of four different colors to be used; red, orange, yellow, and white. These diaphragms are moved, and the intensity of the light is adjusted by means of a screw head near the eye end of the telescope. As originally constructed the instrument was provided with both bright-field and bright-wire illumination. It was possible to pass from one to the other by turning a screw head. The bright-field illumination was effected by means of two systems of mirrors, by each of which a ray of light was reflected obliquely upon the reticule at an angle of about 86° . These rays of light were symmetrically situated with reference to the meridian in a plane perpendicular to it, and were intended to be of equal intensity. While it was possible to adjust the mirrors so as to give rays of approximately equal brightness for any given position of the screw, used for adjusting the intensity of the illumination, yet on turning the adjusting screw this equality of brightness would be destroyed, thus giving rise to unsymmetrical illumination of the field. A defect of this kind might be expected to give rise to errors in observations in right ascension. The brightness of the field was also irregular. Some parts were so much brighter than others, when the light was turned down low, as to cause serious difficulty in observing faint stars. In reducing our observations with screens, for personal equation due to star magnitudes, discrepancies were found which are probably due to this defective illumination of the field.

In June, 1901, with the aid of the Instrument Maker, I changed the bright-field illumination so that it is now practically the same as that used in the REPSOLD meridian circles. One of the numerous mirrors, used in the old plan of illumination, was turned so as to reflect the light coming through the hole in the pivot opposite the clamp, to the center of the object glass. A small circular mirror, three-eighths of an inch (1.0 cm.) in diameter, was cemented to the center of the inner surface of the object glass, and was adjusted so as to throw the light perpendicularly upon the reticule. The old apparatus for adjusting the brightness and changing the color of the light is satisfactory and is still used. The brightness can be changed quickly and with great nicety from total darkness to any desired brilliancy. With the gaslight the brightness of the field is very uniform. The electric light also gives satisfactory results, except that when the illumination is turned down for ninth magnitude stars there is some lack of uniformity in the brightness of the field unless care is taken in adjusting the position of the incandescent filament. Stars of the ninth magnitude are easily observed in a sky of average clearness.

The old bright-wire illumination was also unsatisfactory. In making the changes above described some of the bright-wire mechanism was removed and the instrument now has bright-field illumination only. The parts have all been preserved and the bright-wire illumination can be restored at any time, if desired; but there is reason to doubt whether good transit observations of faint stars can be made with this illumination. The necessity of using the instrument for observing stars too faint to be accurately observed with bright-field illumination seems not likely to arise. All the observations printed here were made with the old bright-field illumination.

The method of illuminating the circles is the same as that employed in the more modern REPSOLD meridian circles, the light being reflected directly on the circles by means of mirrors. This, together with the optical arrangement of the long microscopes, exaggerates the minute irregularities of the division marks and gives them a rough and blurred appearance, which is prejudicial to accurate settings and injurious to the eyes. This difficulty has been almost entirely overcome by putting pieces of ground glass in the path of the rays, causing the light to be diffused and the divisions to appear beautifully clear and distinct. The precision of the microscope readings has been greatly increased, the work is less fatiguing to the eyes, and the settings of the microscopes can be made more quickly.

Clamp and slow motion in declination.—The instrument is clamped in declination by means of a screw which passes through a collar on the axis, and acts against a piece of metal which bears against the axis itself. The clamp arm is fitted with joints so as to avoid any possibility of disturbing the axis of the instrument in clamping. The clamp brackets are 20 inches (51 cm.) below the axis, and are curved so as to make room for the rectangular frame of the striding level.

The slow-motion handles are hard rubber disks about 2.5 inches (6.4 cm.) in diameter, mounted on horizontal brass rods about 10 inches long, which project from the lower end of the clamp arm. The action of the slow motion in declination has been very satisfactory since the introduction, in January, 1900, of a stronger spring in place of the one originally provided to act against the screw. Since our settings in declination are made with the slow-motion screw, it is important that it should work easily and smoothly. This screw is 0.32 inch (0.81 cm.) in diameter and has 36 threads to the inch (2.54 cm.).

The counterpoises.—The fulcrums of the counterpoise levers are supported on columns which rest directly on the bedplates, and are 17.0 inches (43.2 cm.) above the axis of the instrument. The inner ends of the counterpoise levers are 12.0 inches (30.5 cm.) long and the outer or weight ends 16.5 inches (41.9 cm.) long. When the instrument is out of the wyes the weights rest in recesses in the back of the piers. The weight left on each pivot is about 26 pounds (12 kilograms).

The microscope bearers and bed-plates.—The cast-steel microscope bearers, which carry not only the microscopes but also the wyes of the instrument, rest on bed-plates also originally of cast steel, which latter rest on the tops of the piers. These cast-steel bed-plates were found to give rise to a variation of the azimuth constant with temperature. On June 17, 1901, they were replaced by cast-iron bed-plates, which were made as nearly as possible of the same form as the old ones.

These bed-plates are frustums of pyramids, and are in a general way symmetrical with reference to a vertical line through their centers. They are rather heavily cast, planed on top and bottom, and are strengthened internally by transverse vertical webs. They are 19.0 by 17.0 inches (48.3 by 43.2 cm.) at the base, and 7.0 inches (17.8 cm.) thick. There are two vertical holes in each bed-plate on the east and west central line, counterbored at the top for the reception of two $\frac{3}{4}$ -inch (1.90 cm.) anchor bolts for clamping the bed-plates to the piers. There is another vertical hole in the center of each plate for a third and longer anchor bolt of the same size, which passes through the base of the microscope bearer and clamps both bed-plate and microscope bearer to the pier. There are also on the under surface of each bed-plate two circular

projections or lugs 2 inches (5.08 cm.) in diameter and nine-sixteenths of an inch (1.43 cm.) thick, which fit into holes in the piers counterbored around the east and west anchor bolts.

There are four holes 3 inches (7.62 cm.) square in the top of each bed-plate for the reception of four lugs or projections on the bottom of the microscope bearers. Four half-inch screws in the bed-plate act horizontally against these lugs and clamp the microscope bearer in a north and south direction. Two half-inch (1.27 cm.) screws in the circular flanges of the microscope bearer act horizontally against the bed-plate and clamp the microscope bearer in an east and west direction.

The microscope bearers are given a three-point support on the bed-plates by means of three vertical half-inch screws in the microscope bearer. Two of these screws are on the side next the telescope. They are 11.75 inches (29.84 cm.) apart, and their points of bearing on the bed-plates and the center of the pivot form an isosceles triangle, whose base is 11.75 inches (29.84 cm.) and whose altitude is 9.0 inches (22.9 cm.). The third of these supporting screws bears on a point eleven-sixteenths of an inch (1.75 cm.) north of the center of that side of the bed-plate farthest from the telescope. Thus the microscope bearers are not symmetrically supported. Each of these screws has near it a holding-down screw five-eighths of an inch (1.59 cm.) in diameter. All of these screws have capstan heads.

In the design of the instrument it was intended to use these supporting screws merely for the purpose of adjustment, and to let the microscope bearers down on small steel plates about 0.05 inch (0.13 cm.) thick, laid on the bed-plates near the supporting screws. Since this does away with the level adjustment, the practicability of the plan would seem to depend largely on the degree of steadiness of the level constant.

The microscope bearers themselves are drum-shaped castings of steel, similar in form to the cast-iron microscope bearers of the REPSOLD meridian circles. They are 17.2 inches (43.7 cm.) in length and 22.8 inches (57.9 cm.) in diameter.

The adjustments in azimuth and level.—These are made by means of the half-inch (1.27 cm.) capstan-head screws which support the microscope bearers on the bed-plates, and the adjustment in azimuth is also made by means of the four half-inch (1.27 cm.) screws in each bed-plate which clamp the microscope bearers in a north and south direction.

The piers and pier foundations.—The piers on which the instrument was mounted while these observations were in progress were monoliths of white marble, each weighing about 3.5 tons. The foundation of the piers of the instrument is a frustum of a pyramid of concrete, the dimensions of which are given on page D XI. The concrete frustum is surmounted by a granite capstone 1 foot (30.5 cm.) thick, on which the piers rest. Each of the marble piers was mounted on three pieces of cardboard 1 foot (30.5 cm.) square and about one-quarter of an inch (0.6 cm.) thick. These marble piers were removed in July, 1901, and in their place piers were constructed of brick laid in cement.

The piers rise 55 inches (140 cm.) above the floor and extend 18 inches (46 cm.) below it. The wyes of the instrument are 16 inches (40.6 cm.) above the tops of the piers.

The piers of the collimators, like the original piers of the instrument itself, are monoliths of white marble, supported on pieces of cardboard by concrete foundations, similar in form to those of the piers of the instrument, and having granite capstones 8 inches (20 cm.) thick. These pier foundations stand in the basement of the transit circle house and rest on massive concrete footings. The pier of the north meridian mark is of brick with heavy concrete foundations and is covered with a capstone of white marble. The dimensions of the piers and pier foundations are given in the following table.

Dimensions of Piers.

	Feet.	Meters.		Feet.	Meters.
<i>Brick piers of instrument.</i>			<i>Concrete foundations of piers of instrument.</i>		
Height above foundations.....	6.08	1.854	Height above concrete footings.....	8.42	2.57
Length of base, N. and S.....	3.75	1.143	Length of base, E. and W.....	14.00	4.27
Width of base, E. and W.....	2.92	0.890	Width of base, N. and S.....	12.00	3.66
Length of top, N. and S.....	1.75	0.533	Length at top of capstone.....	12.00	3.66
Width of top, E. and W.....	1.50	0.457	Width at top of capstone.....	6.00	1.83
Distance between piers.....	3.27	0.997	Thickness of capstone.....	1.00	0.30
<i>Marble collimator piers.</i>			<i>Concrete foundations of collimator piers.</i>		
Height above foundations.....	6.33	1.930	Height above concrete footings.....	8.42	2.57
Height above floor.....	4.83	1.473	Length of base, N. and S.....	7.75	2.36
Length at base.....	3.50	1.067	Width of base, E. and W.....	6.83	2.08
Width at base.....	3.17	0.966	Length at top of capstone, N. and S.....	7.00	2.13
Length at top.....	3.50	1.067	Width at top of capstone, E. and W.....	3.00	0.91
Width at top.....	1.33	0.406	Thickness of capstone.....	0.67	0.20
<i>North meridian mark pier.</i>					
Height above floor.....	2.17	0.66			
Horizontal length and breadth.....	3.00	0.91			
Length and breadth of capstone.....	3.17	0.96			
Thickness of capstone.....	0.33	0.10			

The horizontal collimators.—They are of 4.0 inches (10.2 cm.) clear aperture and 48.0 inches (122 cm.) focal length. The tubes are of brass. The distance between the object-glasses of the collimators is 24.5 feet (747 cm.), and each is 12.25 feet (373 cm.) from the axis of the instrument. The collimators rest directly on brackets of cast iron or steel and are provided with screws for adjustment in level and azimuth. The distance between the wyes of the collimators is 37.5 inches (95.2 cm.), and the diameter of the pivots is 4.8 inches (12.2 cm.). Stops 90° apart are provided for convenience in rotating the collimators about their axes through 90° or 180°. The micrometer screws have 100 threads to the inch (2.54 cm.) and the angular value of a revolution is about 2^s.84. The power of the eyepieces is about 125 diameters. The micrometer screw of the north collimator carries two threads crossed at an angle of about 20° and that of the south collimator carries one vertical

thread. A spirit level is provided, but is not sensitive enough to be of use for the purpose for which it was intended, the angular value of one division being $6''.5$.

The vertical collimator.—This is of 4.0 inches (10.2 cm.) clear aperture and 51.5 inches (131 cm.) focal length. It is supported at a height of about 10 feet (3 m.) by means of a pyramidal steel casting which rests on the pillar which supports the fulcrum of the east counterpoise lever. It is provided with an adjustable mirror before the object-glass and with a micrometer. When not in use the telescope occupies a north and south position.

The axial collimator.—The axial collimator telescope is of 1.5 inches (3.8 cm.) aperture and 36 inches (91 cm.) focal length. With the 1-inch (2.54 cm.) eyepiece used, the magnifying power is about 36 diameters. The magnifying power of the apparatus on the glass diaphragm mentioned below is about 10 diameters. The micrometer screw has 100 threads to the inch (2.54 cm.) and the value of one revolution is about $56''.7$. The telescope may be mounted on either the east or the west side of the instrument. It is supported in the center of the microscope bearer, the object-glass being near one of the pivots in which is inserted a small object-glass of 0.9 inch (2.3 cm.) aperture and 36.2 inches (91.9 cm.) focal length. A glass diaphragm with its plane perpendicular to the axis of the instrument is inserted in the other pivot. A small circular spot of india ink 0.0027 inch (0.069 mm.) in diameter on this diaphragm has been used in making micrometer settings. Since the object-glass in the pivot has, as before stated, a clear aperture of only 0.9 inch (2.3 cm.), only about two-thirds of the aperture of the object-glass of the collimator can be used. This causes imperfect definition of the image of the spot of india ink and diminishes the accuracy of the work which can be done with the apparatus.

Meridian marks.—The instrument is provided with a meridian mark to the north, which is seen through a lens of 6 inches (15 cm.) aperture, and 376 feet (115 m.) focal length. This lens is mounted on the north bracket of the north collimator, and the line of sight to the mark passes under the north collimator at an angle of depression of $2^{\circ} 22'$. The lens is adjusted so as to be perpendicular to the line of sight, and can be moved horizontally east and west by means of a screw which has a scale and index. A long rod with bevel gearing is provided for turning this screw, so that an observer at the eye end of the telescope may adjust the image of the mark to any desired position in the field.

The mark is a hole 0.02 inch (0.5 mm.) in diameter in a metal plate mounted on a casting which is set with plaster of paris in the capstone of the meridian-mark pier. The mark is illuminated by an incandescent electric light, which can be turned on or off by means of a switch in the observing room. As stated above, the mark is 4 or 5 feet south of the principal focus of the lens. It is also out of place in a lateral direction, so that the lens has to be placed with its center east of the meridian of the instrument 0.7 inch (1.8 cm.) in order to bring the image of the mark conveniently near to the middle thread of the reticule. Thus the line of collimation of the telescope when directed to the mark does not pass as near the center of the lens as it should.

The wooden house, 10 feet (3.0 m.) square, which shelters the meridian mark and pier, is without ventilation, and the line of sight to the mark passes for about 175 feet (53 m.) within about 3 feet (0.9 m.) of the ground. The image of the mark

is at times very unsteady and blurred, especially in the daytime, which is, no doubt, to some extent due to the above conditions. Sometimes, in bright sunshine, the mark is entirely invisible with the stellar focus of the telescope, but becomes plainly visible on pulling out the eyepiece so as to bring the mark into focus.

As regards the nearness of the line of sight to the ground, conditions were worse during the entire time that these observations were being made. The line of sight approached in places to within about 1 foot of the ground until March, 1901, when the earth was removed to a depth of 1 or 2 feet where the ground was highest.

A lens of 6.5 inches (16.5 cm.) aperture, and about 185 feet (56 m.) focal length, together with cast-iron brackets for a south meridian mark were furnished in 1901 by WARNER & SWASEY, but have not yet been put in place. The line of sight to the south mark will have about the same angular depression as the line of sight to the north mark, but will nowhere pass within less than 9 feet (2.8 m.) of the ground.

The hanging level.—The tube of this level was made by ADOLF PESSLER, of Freiberg, Saxony, and is numbered 37576. It is mounted in a steel box covered by a glass plate, on which the divisions are marked and numbered from 0 to 100. These divisions are 0.05 inch (0.13 cm.) apart, which is too close for accurate estimate of tenths in reading. The angular value of a division is $0^{\circ}.060$. The usual screws for adjustment are provided.

The frame of the level is rectangular in form, and is made of steel tubes covered with leather. The distance between the level wyes is 34.60 inches (87.88 cm.). The distance in each wye between the bearing points of the bronze plugs on the pivots is 1.61 inches (4.09 cm.), making the angular distance on the pivots between these bearing points very nearly 90° . The wyes are provided with counterpoise springs.

The mercury horizon for nadir observations.—This is a shallow basin 8 inches (20 cm.) square, which holds the mercury, and floats on mercury in another vessel supported in a wooden box. This box rests on layers of slate, felt, and sand, altogether about 9 inches (23 cm.) thick, which are intended to obstruct the transmission of vibrations to the mercury. The nadir basin is isolated from the floor, and precautions are taken to avoid air currents.

The sidereal clock used in making these observations is the HOWARD, No. 404, which has been used in connection with the 9-inch transit circle since 1894. The electric contact breaks on a three-point relay, which makes it possible for three observers to use the clock at the same time on as many different chronographs. This clock, which is apparently a very fine one, has DENNISON'S gravity escapement and the mercurial form of compensation. The mercury is contained in a cluster of four jars, which constitute the pendulum bob. While these observations were being made the clock was mounted on a granite pier in the clock room. Both clock and pier were inclosed in a wooden case 3.5 by 4 feet (1.07 by 1.22 m.), which afforded some protection against the rapid changes of temperature to which the clock room is subject, being above ground and without artificial regulation of temperature in summer. In winter the clock room is heated by a steam radiator located in the center of the room.

This work in right ascension being of a purely differential character, no elaborate discussion of the rate of the clock is necessary. Furthermore, the

materials for such a discussion are lacking, as there was no thermometer in the clock case, and no record has been kept of the temperature of the clock. I have, however, collected the rates of the clock for the period June 5 to July 16, 1900, as deduced from observations by myself with the 6-inch transit circle, and also the mean temperatures for the corresponding time intervals from thermometer readings made by the watchmen at intervals of three hours, on the attached thermometer of a barometer which hangs in the hall of the main building of the Observatory. These temperatures are perhaps the nearest attainable approximation to the actual temperature of the clock. At all events, they should vary in approximately the same way as the temperature of the clock, because there was no artificial heat in either building during that time.

These rates and temperatures are given in the following table, and are plotted with the time on page D xv. The rate of the clock during this period is fairly well represented by the formula

$$R = -0.24 + 0.06 (t - 70^{\circ} \text{ F.}),$$

and the average deviation of the observed rates from the mean daily rate for the period is 0.19.

Rate of Clock, Howard No. 404.

Date.	Sidereal Time.	ΔT .	Daily Rate.	Reduction to Mean Rate.	Temperature.*
	h	s	s	s	°
1900 June 5	14.2	21.75	-0.15	+0.29	72.5
6	14.3	21.90	-0.09	0.23	73.2
7	14.5	21.99	+0.08	0.06	75.4
9	15.3	21.83	+0.12	0.02	75.7
11	15.3	21.60	-0.05	0.19	72.6
19	16.3	21.98	0.24	0.38	70.1
20	15.3	22.22	0.27	0.41	71.6
21	14.1	22.49	0.07	0.21	72.2
22	14.5	22.56	-0.01	0.15	73.9
23	14.3	22.57	+0.04	+0.10	75.7
25	16.3	22.50	0.18	-0.04	78.3
26	16.3	22.32	0.31	0.17	80.1
27	17.8	22.01	0.35	0.21	80.5
30	18.0	20.96	0.30	-0.16	73.8
July 1	18.0	20.66	0.12	+0.02	75.0
2	18.0	20.54	0.34	-0.20	81.5
7	16.3	18.85	0.57	0.43	84.1
8	17.5	18.28	0.46	0.32	80.9
9	18.0	17.82	0.34	0.20	76.4
10	18.1	17.48	0.27	0.13	79.7
11	18.1	17.21	+0.28	-0.14	80.0
16	17.9	-15.80			
Means. . . .			0.14	+0.19	76.3

* Read on thermometer in hall of main building of the Observatory.

Rate of Clock, Howard No 404. June 5 to July 16, 1900

On April 29, 1901, this clock was dismantled with the intention of transferring it to the newly constructed clock vault in the basement of the 6-inch transit circle observer's room, where it will be kept at a more uniform temperature. After the clock was dismantled, I opened the mercury jars and found that each lacked 0.75 inch (1.90 cm.) of being full. Furthermore, a computation based on the temperature coefficient, $+0^s.06$ per degree Fahrenheit, indicates that the jars will not hold enough mercury to compensate the clock.

The chronograph.—This is an old one by ALVAN CLARK & SONS, made from designs by Professor HARKNESS. When in good repair it served its purpose very well.

Barometer and thermometers, and thermometer shelter.—The barometer, GREEN No. 2876, is hung in a glass case on the north side of the clock pier on the west side of the observing room. It is 0.60 inch (1.52 cm.) bore, and has both English and metric scales. The metric scale is used.

A thermometer, GREEN No. 9361 (Centigrade), graduated to fifths of a degree, is used for refraction. It is mounted in the thermometer shelter on the north side of the building 10 feet (3 m.) from the ground. The corrections to this thermometer and to the attached thermometer of the barometer above mentioned have been accurately determined through the kindness of Prof. C. F. MARVIN, of the instrument division of the United States Weather Bureau.

A thermometer, GREEN No. 3920 (Fahrenheit), hung near the east microscope bearer, and a thermometer, GREEN No. 4195 (Fahrenheit), inserted in the hollow of the

casting of the east microscope bearer, have been read for the temperatures of the air and the instrument, respectively.

In July, 1901, a hole 1.25 inches (3.18 cm.) in diameter and 15 inches (38 cm.) deep was drilled, at a point between the piers south of the nadir basin, down through the granite capstone into the concrete pier foundations. The thermometer, GREEN No. 3920, has been fitted so as to be conveniently let down with its bulb immersed in mercury in the bottom of this hole. Readings are taken once a week or oftener, and may be of interest in connection with records of the azimuth and level constants of the instrument.

The thermometer shelter, referred to above, is of louvre work, and is 2 feet (0.6 m.) square by 2.75 feet (0.84 m.) high. It is east of the slit on the north side of the building, and is 10 feet (3 m.) above the ground. A door gives access to the thermometer from inside the observing room. During the spring and summer months the Sun shines on the thermometer shelter early in the morning and late in the afternoon, causing the thermometer to read too high.

Other accessories.—The instrument is furnished with a mercury horizon for observation of stars by reflection, with a carriage and an iron track resting on the pier foundations and isolated from the floor. There are also a reversing carriage of iron, wooden steps for nadir observations and for observations with the vertical collimator, and an observing couch which is both inconvenient and dangerous. There is a sidereal clock, used merely for finding purposes, on a marble pier west of the instrument. The observing room is provided with suitable furniture and a convenient system of electric lights.

The 6-inch transit circle house.—Like the house for the 9-inch transit circle, it is built mainly of iron and rests on a heavy stone foundation. The iron framework is covered with corrugated iron painted white and is lined with zinc, with an air-space of 8 inches between. Louvre work in the sheathing at the bottom and openings under the eaves above, cause vertical currents in this air-space, especially in the daytime, which tend to keep the air temperature inside the building very nearly the same as that outside. The difference between the outside and inside temperatures is always small, being usually not more than 1° F. when the shutters are open. The slit is 3.67 feet (1.12 m.) wide and is closed with iron shutters. The mechanism for opening and closing the shutters was designed and made by WARNER & SWASEY, of Cleveland, Ohio, and is very satisfactory. The observing room is 30 by 40 feet (9.1 by 12.2 m.) inside measure, and the height from the floor to the roof is about 27 feet (8.2 m.).

The site of the building is higher than any other ground near by, and the horizon is clear on the meridian. A grove of trees on the west side of the building protects it from the strong west winds which sometimes prevail on clear nights. The massive footings of the concrete-pier foundations are embedded in a hard material, which is a mixture of red gravel and sand. This stratum is said to lie on bedrock and is overlaid by about 4 feet of reddish clay.

THE CONSTANTS OF THE INSTRUMENT.

The clamp was *east* until April 4, 1900, *west* April 5 to April 15, *east* April 16 to July 16, and *west* October 11, 1900, to March 15, 1901.

Until January 17, 1900, both circles were set so as to read zero on the setting microscope for stars at the zenith. On January 17, 1900, Circle A was turned so as to read zero at the equator, clamp east, and on April 5 it was set so as to read zero at the equator, clamp west. On April 27, 1900, Circle B was turned so as to read zero at the equator, clamp east.

The barometer, GREEN No. 2876, and the thermometer, GREEN No. 9361, have been read for refraction, except that the thermometer, GREEN No. 4194 (Fahrenheit), was used from February 13 to February 23, 1900. The corrections to these instruments have been determined with sufficient accuracy for the purpose for which they have been used, and the corrections have been applied.

The azimuth constant.—This constant has usually been determined by observations on the meridian mark. The azimuth of the mark being known from observations of a circumpolar star, usually α Ursæ Minoris, at both upper and lower culminations, the azimuth of the instrument is computed from measures made with the right ascension micrometer of the distance of the image of the mark from the middle thread of the reticule, known as c_3 . The formula, see page D XLV, used for this purpose is

$$a = A_m + (2 D_m + 2 C_3 - 0.043 b) 0^s.952$$

When the mark has been observed the temperature has usually been read from a thermometer, GREEN No. 4195, inserted in a hollow of the steel casting of the east microscope bearer. During the time in which these observations were made the azimuth of the instrument varied with the temperature of the steel supports of the pivots in a manner approximately represented by the formula.

$$a = a_0 + 0^s.03 (t - t_0 F.)$$

This great unsteadiness in azimuth has made necessary frequent observations on the mark in order that, by interpolation, the exact value of the azimuth at the time could be used in the reduction of each observation. It is, perhaps, hardly necessary to state that the character of the variation of azimuth with the temperature was such that no formula could be constructed by which the azimuth at any time could be accurately computed from temperature readings. A statement as to the cause of this variation of the azimuth, and the means by which it was removed will be found on pages D xxviii to D xxxv.

The level constant.—The adopted values of the level constant used in the reductions are those determined by means of the hanging level described on page D xiii. The levels have always been taken with the telescope directed northward toward the meridian mark. Four readings are usually taken, the level being reversed twice.

The level has usually been determined twice on each night, once before and once after the observations of the stars. The correction, $-0^s.014$ clamp west, see page D XXII, for inequality of pivots derived from caliper measures, has been applied.

Whenever practicable, the level has also been determined by observations over mercury. The mean of 96 determinations of the inequality of pivots from simultaneous observations of the level constant by these two methods gives $-0^s.019 \pm 0^s.0015$ clamp west. This indicates that our adopted values of the level and collimation constants are free from any considerable systematic error. The separate results are given in the table below.

The level constant has at times undergone sudden changes and also been subject to slow progressive changes. But there has been no change with temperature, such as that found in case of the azimuth, excepting for a few days in July, 1901, while the marble piers were cemented to their foundations.

Correction for Inequality of Pivots from Observations with Spirit Level, and over Mercury.

[Observer U.]

Date.	Clamp	Nadir Level.	Spirit Level.	Correction for Inequality. Clamp W.	Date.	Clamp	Nadir Level.	Spirit Level.	Correction for Inequality. Clamp W.
¹⁹⁰⁰ Feb. 13	E.	^s -0.007	^s $+0.002$	^s $+0.009$	¹⁹⁰⁰ Mar. 30	E.	^s $+0.584$	^s $+0.604$	^s $+0.020$
14		-0.026	-0.092	-0.066	31		$+0.610$	$+0.628$	$+0.018$
14		-0.059	-0.058	$+0.001$	Apr. 1		$+0.694$	$+0.720$	$+0.026$
15		$+0.042$	$+0.051$	$+0.009$	1	E.	$+0.687$	$+0.721$	$+0.034$
19		$+0.080$	$+0.092$	$+0.012$	5	W.	-0.059	-0.033	-0.026
19		$+0.110$	$+0.112$	$+0.002$	5		$+0.008$	-0.014	$+0.022$
20		$+0.234$	$+0.244$	$+0.010$	14		$+0.071$	$+0.094$	-0.023
20		$+0.223$	$+0.253$	$+0.030$	14	W.	$+0.048$	$+0.056$	-0.008
23		$+0.045$	$+0.016$	-0.029	23	E.	-0.028	-0.067	-0.039
23		$+0.009$	$+0.012$	$+0.003$	23		-0.039	-0.079	-0.040
27		$+0.174$	$+0.180$	$+0.006$	24		-0.038	-0.044	-0.006
Mar. 2		-0.046	-0.054	-0.008	24		-0.056	-0.048	$+0.008$
2		-0.040	-0.087	-0.047	24		-0.101	-0.107	-0.006
2		-0.040	-0.091	-0.051	25		-0.146	-0.177	-0.031
3		-0.012	-0.017	-0.005	25		-0.156	-0.202	-0.046
3		-0.002	-0.029	-0.027	26		-0.132	-0.125	$+0.007$
3		0.000	-0.007	-0.007	26		-0.123	-0.156	-0.033
5		$+0.111$	$+0.100$	-0.011	27		-0.080	-0.084	-0.004
5		$+0.128$	$+0.100$	-0.028	27		-0.061	-0.071	-0.010
7		$+0.107$	$+0.106$	-0.001	June 5		-0.002	-0.020	-0.018
7		$+0.161$	$+0.096$	-0.065	5		$+0.010$	-0.031	-0.041
9		$+0.167$	$+0.197$	$+0.030$	8		-0.022	-0.054	-0.032
12		$+0.177$	$+0.196$	$+0.019$	9		-0.006	-0.014	-0.008
28		$+0.571$	$+0.573$	$+0.002$	19		-0.028	-0.027	$+0.001$
28	E.	$+0.577$	$+0.565$	-0.012	20	E.	-0.002	-0.018	-0.016

Correction for Inequality of Pivots from Observations with Spirit Level, and over Mercury—Cont'd.

[Observer U.]

Date.	Clamp.	Nadir Level.	Spirit Level.	Correction for Inequality. Clamp W.	Date.	Clamp.	Nadir Level.	Spirit Level.	Correction for Inequality. Clamp W.
1900 June 20	E.	^s +0.007	^s -0.011	^s -0.018	1900 Dec. 13	W.	^s -0.071	^s -0.049	^s -0.022
20		-0.017	-0.014	+0.003	19		+0.047	+0.077	-0.030
21		+0.029	-0.004	-0.033	19		+0.040	+0.080	-0.040
21		+0.039	-0.004	-0.043	28		+0.135	+0.159	-0.024
22		+0.033	+0.003	-0.030	29		+0.083	+0.160	-0.077
23		-0.002	-0.019	-0.017	1901 Jan. 9		+0.288	+0.365	-0.077
25		+0.011	-0.002	-0.013	13		-0.107	-0.088	-0.019
26		+0.019	-0.011	-0.030	16		-0.019	-0.009	-0.010
27		-0.007	-0.015	-0.008	20		-0.057	-0.018	-0.039
30		+0.028	+0.011	-0.017	Feb. 25		+0.151	+0.192	-0.041
30		+0.028	+0.008	-0.020	25		+0.146	+0.166	-0.020
July 7		+0.092	+0.071	-0.021	26		+0.129	+0.149	-0.020
7		+0.092	+0.074	-0.018	26		+0.099	+0.128	-0.029
8		+0.167	+0.148	-0.019	28		+0.133	+0.138	-0.005
8		+0.177	+0.136	-0.041	28		+0.135	+0.164	-0.029
9		+0.258	+0.241	-0.017	Mar. 2		+0.129	+0.182	-0.053
9		+0.238	+0.217	-0.021	2		+0.135	+0.185	-0.050
10		+0.357	+0.326	-0.031	7		+0.164	+0.193	-0.029
11		+0.449	+0.400	-0.049	7		+0.160	+0.210	-0.050
11		+0.461	+0.420	-0.041	8		+0.150	+0.188	-0.038
16		+0.676	+0.641	-0.035	15	W.	-0.422	-0.410	-0.012
16	E.	+0.682	+0.626	-0.056	General mean $-0^s.019 \pm 0^s.0015$				
Dec. 8	W.	+0.137	+0.164	-0.027					
11		+0.187	+0.206	-0.019					
13	W.	-0.056	-0.038	-0.018					

The collimation constant.—The collimation of the telescope has usually been determined by means of the collimators once each night on which observations have been made in right ascension. The adopted values of the collimation have all been derived in this way. Occasionally, by way of a check, the telescope has been collimated by reversal on the north collimator and the results have been found to agree with those from the collimators. The accuracy of the adopted values of the collimation has also been tested by observations over mercury, as stated above.

The collimation constant has been, during certain periods, subject to a very slow change with the time, but there seems to be no change with temperature.

During the period June 4 to July 16, 1900, some of the spider threads of the reticule were loosened by dampness and were crooked at times. The middle thread c_3 , which is used in determining the collimation of the mean of the threads, was one of those thus affected. A special value of the quantity Δi (CHAUVENET'S

notation) was derived from the observations of the transits of each night and used in deducing the collimation for that night. These values of Δi are given in the following table.

Collimation—June 5 to July 16, 1900.

$$[c_o' = c + \Delta i - 0^s.021 \cos \phi.]$$

Date.	Δi From Stars.	No. Stars.	c .	c_o' .	Adopted c_o' .
1900 June	^s		^s	^s	^s
5	+ 0.024	14	+ 0.042	+ 0.050	+ 0.041
6	0.033	10	0.051	0.068	0.041
7	0.028	27	0.038	0.050	0.041
9	0.016	33	0.030	0.030	0.041
11	+ 0.017	30	+ 0.031	+ 0.032	+ 0.041
19	— 0.017	22	+ 0.052	+ 0.019	+ 0.041
20	— 0.014	33	0.066	0.036	0.041
21	+ 0.013	9	0.074	0.071	0.041
22	— 0.040	13	0.078	0.022	0.041
23	0.013	9	0.061	0.032	0.041
25	— 0.008	18	+ 0.063	+ 0.039	+ 0.041
26	— 0.009	31	+ 0.019	— 0.006	— 0.006
27	+ 0.005	20	— 0.007	0.018	0.020
27	+ 0.005	20	— 0.010	— 0.021	— 0.020
30	— 0.007	27	+ 0.028	+ 0.005	+ 0.005
July					
1	0.029	30	0.078	0.033	0.033
2	— 0.050	23	+ 0.085	+ 0.019	+ 0.019
7	— 0.021	11	+ 0.050	+ 0.013	+ 0.013
8	0.029	22	0.050	+ 0.005	+ 0.005
9	0.021	21	0.036	— 0.001	— 0.001
10	0.021	26	0.059	+ 0.022	+ 0.026
11	0.018	25	0.062	0.028	0.026
16	— 0.011	22	+ 0.055	+ 0.028	+ 0.026

For record of instrumental constants, a , b , and c , see Table III, page D LX.

The nadir points of the circle.—These are determined by observation of the reflected image of the fixed double zenith distance threads. The illumination of the field is effected by means of an oil lamp and nadir cap. In making the pointings the space of 9'' between the fixed threads, seen direct, is bisected first by the reflected image of one of the threads and then by the reflected image of the other thread. The microscopes on one of the circles, A for example, are read for each pointing of the telescope, and the mean is the reading for the nadir point on Circle A. When the observer has an assistant this operation is repeated on Circle B. Here, as in the observation of stars, the observer reads the microscopes on Circle B and the assistant reads on Circle A. The setting microscope is so adjusted that the nadir lines of the circles are the same, clamp west and clamp east. All observations of the nadir point have thus far been made with the observer facing north. After the change of position of Circle B on its axis on April 27, 1901, the 56' lines were invariably employed in the determination of the nadir point on both Circle

A and Circle B. Before that time the 4' lines were used on Circle A until April 3 and the 56' lines thereafter. The even-degree lines were used on Circle B from April 7 to April 27, inclusive. The nadir lines used on Circle B from February 13 to April 5 are unknown, except that the 58' lines were used on April 5.

For record of nadir points, see Table IV, page D LXIX.

Error of runs.—The error of runs has been carefully determined on ten-minute spaces of the circle and the four microscopes on each circle have been kept so adjusted that the mean error of runs has always been very small. No correction for the error of runs has been applied to the observations. The definition of the microscope objectives has been so poor that a really accurate determination of the runs has hardly been possible. The errors from this source affecting the observations in declination are very small, and it is likely that the small corrections for runs which might have been applied would have been misleading.

Inequality and irregularity of the pivots.—A series of differential measures of the pivots with an instrument known as the spherometer-caliper was made by myself during the period October 6 to October 15, 1900. The work was done during the same time, in duplicate, by Mr. LITTELL. A description of the spherometer-caliper may be found in DOOLITTLE's Practical Astronomy, page 300. Measurements were first made on that diameter of each pivot which is perpendicular to a line through the center of the pivot and parallel to the telescope tube designated as AB. The instrument having been placed on the reversing carriage with the telescope tube horizontal, five settings were made on the vertical diameter of one of the pivots; then ten settings were made on the vertical diameter of the other pivot, and finally five more settings were made on the pivot first measured. The instrument was then turned through 180° about its horizontal axis and a similar series of measures was made. The first series is regarded as direct and the second as reverse.

Measurements were also made in the same way on the two other diameters which make angles of 54° with the one just measured, CD and EF. To do this the instrument was turned so as to bring these diameters into a vertical position, as the spherometer-caliper can be used only in a vertical position in which the spherometer plate is horizontal. Care was taken to measure that part of each pivot which bears on the wyes when the instrument is in use.

Although not theoretically a perfect instrument, the accuracy of which the spherometer-caliper is capable when properly handled is remarkable, and the small irregularities in the form of the pivots which are indicated by these measures must be regarded as in part real. The imperfections are such as to cause small but appreciable errors in observations in right ascension.

The value of one revolution of the spherometer screw is 0.010 inch (0.0254 cm.). The results given below are differences between corresponding measures on the two pivots.

Summary of Measures of Pivots with Spherometer-Caliper.

Diameter.	No. Series.	Difference.			Mean of Direct and Reverse.
		Observer U.	Observer L.	Mean.	
AB Direct	6	0.0083	0.0097	0.0090	} 0.0070
AB Reverse	6	0.0043	0.0056	0.0050	
CD Direct	2	0.0054	0.0057	0.0056	} 0.0059
CD Reverse	2	0.0057	0.0066	0.0062	
EF Direct	4	0.0078	0.0090	0.0084	} 0.0056
EF Reverse	3	0.0026	0.0029	0.0027	
		Mean			0.0062

This result gives 0.000062 inch (0.000157 cm.) as the mean difference of the measures on the pivots.

The mean difference in the radii of the pivots is 0.000026 inch (0.000066 cm.), and the correction for inequality of pivots to be applied to determinations of the level constant with the hanging level is as follows:

$$-0^s.014 \pm 0^s.0014 \text{ clamp west.}$$

$$+0^s.014 \pm 0^s.0014 \text{ clamp east.}$$

The probable errors are not accurately determined.

The regularity in form of the pivots was tested with the hanging level in October, 1900. In this work the position of the level bubble was read with the telescope set at intervals of 10° . Each series was repeated backward in order to eliminate any progressive change in the hanging level or in the level constant of the instrument. In reducing the observations a residual was derived for each setting of the telescope by subtracting the mean reading of the bubble for that setting from the mean reading of the bubble for the whole series. In collecting the results it has been assumed that the position of the level bubble would be the same for settings of the circle differing by 180° , since the angles of the wyes of the instrument and of the hanging level are equal.

The following summary of results shows slight irregularities in the pivots, which seem to be of about the same order as those indicated by the spherometer-caliper measures. The angular value of one division of the striding level, the unit of the table, is $0^s.060$.

Summary of Results of Tests of Pivots with Hanging Level.

Setting.	Clamp W.	Clamp E.	Clamp W.	Clamp E.
°	d	d	d	d
35	-0.3	-0.1	-0.3	+0.1
210	-0.2 *	0.0 _d	-0.3	-0.1
25	-0.2	-0.1	-0.2	-0.1
200	+0.2 *	-0.5	+0.1	-0.4
15	0.0	-0.2	-0.1	-0.2
190	+0.2 *	-0.6	-0.1	-0.4
5	0.0	-0.4	-0.2	-0.2
180	0.0 *	-0.4	-0.2	-0.3
355	+0.1	-0.1	+0.1	0.0
170	+0.1 *	+0.1	+0.2	-0.1
345	0.0	+0.2	+0.3	+0.3
160	+0.2 *	+0.1	+0.3	+0.1
335	0.0	0.0	+0.2	+0.2
150	0.0 *	0.0	+0.3	+0.1
325	0.0	0.0	+0.1	+0.2
140	+0.1 *	+0.1	-0.1	+0.2
315	0.0	+0.2	-0.2	+0.5
130	-0.1 *	+0.2	-0.2	+0.1
305	+0.1	+0.2	-0.1	+0.2
120	+0.1 *	+0.1	0.0	+0.1
295	+0.1	-0.1	0.0	-0.2
110	+0.1 *	-0.3	-0.1	-0.2
285	-0.2	-0.3	-0.1	-0.2
100	0.0 *	-0.2	-0.4	-0.4
275	-0.2	-0.3	-0.3	-0.2
90	-0.3 *	0.0	-0.3	-0.1
265	+0.2	0.0	+0.1	-0.1
80	+0.1 *	+0.2	+0.2	+0.1
255	+0.1	+0.2	+0.5	+0.3
70	0.0 *	+0.4	+0.4	+0.2
245	0.0	+0.2	+0.3	+0.1
60	+0.1 *	+0.4	+0.3	+0.1
235	0.0	+0.2	+0.4	0.0
{ 50	-0.1 *	+0.4	0.0	+0.3
{ 230	0.0	+0.1	-0.2	-0.1

*These residuals were obtained from settings on 52°, 62°, 72°, etc., instead of 50°, 60°, 70°, etc.

Observations with the axial collimator.—In November, 1900, observations were made with the axial collimator, described on page D XII, with a view to detecting any possible instability of the axis of the instrument during rotation, which might arise from imperfections of the pivots or any other cause. Considerable difficulty was found in getting a suitable spot or point on the glass diaphragm on which to make the micrometer settings. After several experiments had been made a feasible plan was suggested by Photographer G. H. PETERS. By spattering india ink on a thin glass plate some minute spots were formed which were sensibly circular under a high magnifying power and opaque or nearly so. A small piece of the glass plate with the india-ink spots on it was cut out and cemented on the glass diaphragm. One of these small spots or disks near the center of the diaphragm and about 0.0027 inch (0.0069 cm.) in diameter was used in making the micrometer settings. As seen in the field of the telescope the edges of this small disk were not well defined. This was no doubt in part due to the large ratio, 1 : 40, of the available aperture of the telescope of the axial collimator to its focal length, referred to on page D XII. The spot was about 0.02 inch

(0.05 cm.) from the center of the west pivot, and, as the instrument rotated on its axis, moved on the circumference of a small circle of about 0.02 inch (0.05 cm.) radius.

In making the observations the micrometer box was first adjusted to a horizontal position by means of a small level. The instrument was set at intervals of 10 degrees and the position of the spot observed by bisecting it with the micrometer. The spot was bisected three times in each position and the mean taken. After observations had been made throughout a complete rotation of the instrument, they were repeated backward in order to eliminate the effect of changes in the apparatus as far as possible. This work was very fatiguing to the eyes, and in each series the direct observations were made by myself and the reverse observations by Mr. LITTELL.

Eight complete series of observations were made, four with the micrometer horizontal and four with it vertical. The telescope was mounted on the east microscope bearer and the clamp was west. The settings of the instrument were made on Circle A, which read zero when the telescope was pointed at the equator. The circle settings increase northward.

If while the instrument rotates its axis remains fixed with reference to the line of collimation of the view telescope of the axial collimator, the image of the point on the diaphragm on which the micrometer settings are made describes a perfect circle whose radius is the distance of the point from the axis. The distance in micrometer revolutions, M , of the point from the zero of the micrometer will be given, for any reading, R , of the divided circle, by the formula

$$M = C - a \cos (R - K), \quad (1)$$

in which C is the distance of the center of the circle from the micrometer zero, a the radius of the circle, both in micrometer revolutions, and K the circle reading for the point where the circle is tangent to the micrometer thread and nearest to the micrometer zero. By differentiating this equation we get

$$\Delta M = \Delta C - \Delta a \cos (R - K) - a \Delta K \sin (R - K), \quad (2)$$

in which ΔK is in radians.

In reducing these observations, approximate values of C , a , and K were adopted, and the substitution of these values in equation (2) gave an observation equation for each measured position of the point. Then the corrections to the approximate values of the elements were deduced by least squares, and the corrected elements when substituted in equation (2) produced the differences between the observed and computed positions of the point. The residuals given in the table below are each the mean of the results of observations made in two similar series. They are no doubt principally the results of errors of observation. The results of the horizontal and vertical measures have each been plotted in a curve; see page D xxvi. It will be seen that the evidence of systematic change in these residuals is more marked in case of the horizontal than in case of the vertical measures. There seems to be no reason why systematic errors of observation or of the micrometer should not affect the horizontal and vertical measures alike. On this account there is perhaps reason to believe that this slight apparent change in azimuth of the axis of the instrument is real. The form of the curve is very nearly that which would be produced if one of the pivots were slightly elliptical, with a difference between the semi-major and

semi-minor axes of the pivot section, of 0.000027 inch (0.000069 cm.). (See *Astronomische Nachrichten* Nr. 3712.)

The apparent changes in level are also small, and are no doubt in part due to minute irregularities of the pivots. The indicated variations from the mean position of the axis are of about the same amount in both level and azimuth, and seem to be at the maximum about $\pm 0^s.007$.

Results of Observations with Axial Collimator.

[Clamp West. Collimator on East Side.]

Circle Setting.	Displacement of Axis.		Circle Setting.	Displacement of Axis.	
	Horizontal.	Vertical.		Horizontal.	Vertical.
0	^s -0.006	^s +0.013	180	^s -0.008	^s 0.000
5	-0.004	+0.008	185	-0.006	+0.008
10	-0.006	-0.015	190	+0.008	+0.009
15	+0.008	-0.002	195	-0.006	-0.002
20	-0.006	+0.008	200	-0.002	+0.015
25	-0.006	+0.009	205	+0.002	+0.009
30	-0.004	-0.002	210	+0.008	-0.009
35	0.000	+0.002	215	0.004	0.004
40	-0.008	+0.015	220	+0.002	-0.011
45	-0.011	-0.002	225	-0.004	+0.009
50	+0.008	-0.004	230	0.013	+0.015
55	+0.009	-0.004	235	0.011	0.008
60	+0.004	+0.017	240	+0.002	-0.006
65	+0.017	-0.008	245	+0.006	-0.008
70	-0.008	0.000	250	+0.019	-0.004
75	-0.002	-0.025	255	+0.006	0.000
80	+0.017	+0.004	260	-0.008	+0.009
85	+0.004	0.000	265	+0.017	-0.004
90	+0.002	+0.009	270	+0.011	+0.019
95	0.000	+0.015	275	+0.006	+0.015
100	+0.011	+0.006	280	-0.009	+0.006
105	+0.009	+0.019	285	-0.009	+0.002
110	+0.002	+0.004	290	+0.006	-0.004
115	+0.002	+0.006	295	-0.006	+0.009
120	0.000	-0.009	300	+0.013	+0.008
125	-0.004	+0.004	305	+0.004	-0.006
130	+0.008	0.000	310	+0.023	-0.009
135	+0.009	+0.002	315	0.000	-0.002
140	+0.026	-0.011	320	+0.004	-0.002
145	-0.004	-0.002	325	+0.002	-0.008
150	-0.011	-0.013	330	-0.004	-0.002
155	+0.009	+0.006	335	-0.002	-0.013
160	-0.008	-0.023	340	-0.030	-0.011
165	0.000	-0.021	345	+0.002	+0.004
170	-0.023	+0.006	350	-0.006	-0.023
175	-0.004	-0.013	355	-0.006	+0.008
180	-0.008	0.000	360	-0.006	+0.013

Plot of Results of Observations with Axial Collimator, 6-inch Transit Circle, October, 1900.

Angular value of one division of the hanging level, PESSLER No. 37576.—The value of a division of this level was determined in May, 1899, at an average temperature of 63° F. by Prof. A. N. SKINNER, U. S. Navy, and six other observers. The mean result obtained is,

$$\text{Angular value of 1 division} = 0''.060$$

Another determination by myself in January, 1900, at an average temperature of 24° F. gave exactly the same result. The work was done in both cases with the STACKPOLE level trier No. 1994. In case of the last of the above determinations the angular value of one revolution of the screw was found to be 120''.34, which is in close agreement with the value adopted and used before. Care was taken to use different parts of the screw in order to diminish the effect of periodic errors. The length of the level-bubble used was about 40 divisions. The following summary of the latter series of observations shows the quality of this level. The bubble and the level constant of the instrument are kept adjusted so that only divisions of the scale from 10 to 80 are used.

Angular Value of One Division of the Hanging Level.

Mean Reading of Center of Bubble.	No. Divisions of Level to 10 Divi- sions on Screw- head.	Angular Value of 1 Division of Level.
d	d	"
23.3	12.53	[0.801]
27.5	11.88	0.845
33.0	10.88	0.922
38.0	10.57	0.949
43.6	10.48	0.957
49.2	11.29	0.889
54.6	11.48	0.874
60.6	11.34	0.885
67.0	12.70	[0.790]
71.2	13.26	[0.757]
Mean value of 1 division...		0.903
		0 ^s .0602
Adopted value of 1 division.		0 ^s .060

By way of a check against displacement of the level tube or other changes, an approximate determination of the value of a division of this level was made in May, 1901, at temperature 67° F., with the result, 1 division = 0^s.061, which indicates that no considerable change had taken place.

Angular values of one revolution of the right ascension and zenith distance micrometer screws.—The value of one revolution of the right ascension micrometer screw was determined in July, 1899, by measures on the known thread intervals of the spider-line reticule. The resulting value, adopted and used until July 17, 1900, is,

$$1 \text{ revolution right ascension micrometer screw} = 1^{\text{s}}.900.$$

On December 17, 1900, a new determination was made based on the thread intervals of the new reticule. The result below has been adopted and used since July 17, 1900.

$$1 \text{ revolution right ascension micrometer screw} = 1^{\text{s}}.902.$$

The value of one revolution of the zenith distance micrometer screw was determined in July, 1899, by observations over the nadir on the lengths of arcs of Circle B. The resulting value is,

$$1 \text{ revolution zenith distance micrometer screw} = 28''.494.$$

The values of a revolution of the north and south collimator micrometer screws have been determined as follows:

$$1 \text{ revolution north collimator micrometer screw} = 2^{\text{s}}.84,$$

$$1 \text{ revolution south collimator micrometer screw} = 2^{\text{s}}.86.$$

Equatorial thread intervals of reticule.—Considerable difficulty has been experienced in getting suitable spider threads in the reticule. A new reticule was put in

by Messrs. WARNER & SWASEY in February, 1900. Some of the threads of this reticule were imperfect to begin with. But in our anxiety to avoid delay, work was commenced and the intervals accurately determined during February and March. As before stated, in June and July some of the threads of the reticule became visibly slack and crooked, which was no doubt caused by the warm and humid weather which prevailed at that time. During August, 1900, a new reticule was put in by Messrs. WARNER & SWASEY, which is much better than the old one. The intervals of this reticule were determined in October and November, 1900, from observations made both by eye and ear, and on the chronograph. The results from the two methods agree well. For adopted values of intervals of these two reticules, see Table I, page D LIX.

Inclination of the fixed horizontal threads.—When both divided circles are read in declination, clamp west for example, the bisection of the star for Circle A is made before the transits are observed, and the bisection for Circle B is made afterwards. A correction to each circle reading for inclination of the threads is necessary to reduce the reading to what it would be had the bisection been made on the middle thread.

The inclination of the threads has been determined by special observations for the purpose. A star, usually between the equator and the zenith, is bisected on Thread I and both circles read. The same thing is done when the star crosses Thread VII. If the instrumental constants are properly adjusted no correction for them is necessary. A few observations of this kind give the corrections for inclination within the limits of the reticule with a high degree of accuracy, and when, in regular observations, the bisections are made at equal distances from the middle thread, any error in the adopted correction for inclination is eliminated from the final results. For adopted values of inclination, see Table II, page D LIX.

STATEMENT CONCERNING VARIATION OF THE AZIMUTH WITH TEMPERATURE.

When observations with this instrument were commenced in June, 1899, it was found to be subject to an extraordinary variation in azimuth. In November, 1899, while an observer on the instrument, I plotted some of the observed azimuths and the corresponding temperatures of the air, with the time, and found that the azimuth seemed to vary with the temperature.

With the permission of Professor HARKNESS, then Astronomical Director, I made a series of observations of azimuth and temperature at intervals of one or two hours and extending over two and one-half days. The temperatures were read from a thermometer, GREEN No. 4195 (Fahrenheit), inserted in a hollow of the casting of the east microscope bearer, and are therefore approximately the temperatures of the metal supports of the wyes. A plot of the temperature and azimuth with the time, see fig. 1, page D XXIX, showed that the variation of the azimuth was a function of the temperature. The response to temperature changes seemed to be almost without delay or drag, and the trouble, for this reason, was supposed to be in the metal supports of the pivots. The absence of any corresponding change in the level was a puzzling feature. The instrument was then in use in regular observations of the Sun, Moon, and planets, but during the following December and January, when it was possible, various experi-

ments were tried by way of changing the tension of the adjusting screws both in level and azimuth, but nothing that was done seemed in any way to affect the change of the azimuth with the temperature. While the variation was large, amounting to about three hundredths of a second of time for 1° F. , it was still possible to do very accurate work with the instrument by making frequent readings on the meridian mark, and observations of stars were carried on from February 13 to July 16, 1900.

In September, 1900, the instrument was dismantled two or three times and remounted on the piers in a different way, in order to find out whether the trouble was due to the manner of connection between the marble piers and the cast-steel bed-plates. The bed-plates had been originally mounted on the piers by setting each of them in position on three small pieces of paper and running liquid plaster of paris under them. In doing this the plaster of paris had not spread evenly under the plates, leaving large vacant places in such a way that the instrument was, perhaps, in part supported by these small pieces of paper, which had been intended merely as temporary supports. The plaster of paris was so soft that it could easily be

1.—Instrument as Originally Mounted. Nov. 23–25, 1899.

crumbled with the fingers. The two anchor bolts in each pier for clamping down the bed-plates had been set with plaster of paris, which was so soft that the bolts were readily drawn out.

The bed-plates, when the instrument was first remounted, were supported on three steel plugs set into the pier with good plaster of paris. The same material was run around the anchor bolts and also into the two holes 2 inches (5 cm.) in diameter and counter-sunk in the top of each pier, which receive the lugs on the bed-plates. This manner of mounting the instrument was intended to give a solid central support for the bed-plates along an east and west line and security against movement from any possible cause in a north and south direction, while expansion and contraction of the metal with reference to the marble in the piers could take place freely, since the bed-plates were free to slip on the steel plugs.

Much to my disappointment, this arrangement gave no relief whatever, there being no change, apparently, in the variation of the azimuth. But the anchor bolts set in plaster of paris were not firm, and the instrument was again dismantled. The

anchor bolts were now set in Portland cement, but the cement was not run in around the lugs. After the cement had been given time to harden, the nuts on the anchor bolts were set up, the instrument mounted and adjusted, and for the time being the attempt to remove the azimuth variation was abandoned. The instrument was used during the winter in observing the comparison stars for Eros.

In February Mr. AMBROSE SWASEY, of the firm of WARNER & SWASEY, the makers of the instrument, visited the Observatory and suggested that temporary pivot bearers of cast iron could be substituted for the cast-steel microscope bearers without great expense, with a view to determining whether the fault might be in imperfect annealing of the latter. The suggestion of Mr. SWASEY was adopted, and the temporary bearers were made by his firm and put in place on March 18. A subsequent test showed the same variation as before, which proved that, barring a remarkable coincidence, the trouble could not be in the microscope bearers. The results of this

2.—*Temporary Bearers, 3-point Support of Bed-plates. March 18-20, 1901.*

test were also plotted in a curve; see fig. 2. While the problem seemed even farther than ever from solution, yet it was, on the whole, encouraging to find that the complex and costly castings were probably not at fault. The patterns from which they were cast had been destroyed by fire, and to replace them would have cost much time and trouble, as well as expense.

It then occurred to me that the foundation plates could be tested by turning each around horizontally 180 degrees on its own pier. The plates are symmetrical with reference to their centers, making it possible to do this. It is evident that if the defect was in the plates the azimuth variation would be changed in sign. As will be seen later, this seems to be exactly what happened when the experiment was tried. On turning the plates on April 10 and testing for change of azimuth our first positive result was secured. The results of this test are shown in fig. 3, page D xxxi. The azimuth change per degree of temperature was reduced to less than half

of what it was before, but was not changed in sign. The delay in response to changes of temperature was apparently much greater than before. It was now evident that a part of the difficulty was in the plates. New cast-iron bed-plates were ordered, but were not ready until June 17, when a test with the new bed-plates in place showed an azimuth variation larger than that found with the old bed-plates reversed, but only about two-thirds of that found with the old bed-plates in their usual position; see

3.—*Bed-plates Reversed. April 10-12, 1901.*

fig. 4. With the new bed-plates the drag or delay in response to temperature changes was much increased, amounting to about three and a half hours. With the old bed-plates in their usual position the delay, while not well determined, was apparently small, perhaps not more than half an hour, and in the reversed position of the old bed-plates the drag was greater, as stated above. The remaining cause of the trouble now seemed to be definitely located in the marble piers or else in the manner in which they were supported on their foundations.

4.—*New Cast-iron Bed-plates. June 17-19, 1901.*

The foundations themselves, consisting of a mass of concrete, with granite capstone 8.4 feet (2.6 m.) high, 12 by 14 feet (3.7 by 4.3 m.) at base, and 6 by 12 feet (1.8 by 3.7 m.) at top, in the form of a frustum of a pyramid with its greatest horizontal dimension east and west, seemed to be free from suspicion. While the manner in which the piers were supported on their foundations was not above criticism, consisting of a three-point support on pieces of cardboard 12 inches (30 cm.) square,

it would not be expected to give rise to the peculiar azimuth variation due to temperature.

However, in order to be more sure, another test was made with the new bed-plates and temporary pivot bearers, the results of which are shown in fig. 5. With this arrangement the instrument was entirely reconstructed from the piers to the pivots, excepting that the old adjusting screws in level and azimuth were used. This test gave the same result as the last, confirming the previous conclusion that the temporary pivot bearers of cast iron and the cast-steel microscope bearers were neither of them at fault or else both had the same defect, the probability of the latter being regarded as very small.

I then recommended to the Superintendent of the Observatory that the marble piers be removed and brick piers built. The Superintendent preferred, however, to

5.—*New Bed-plates. Temporary Bearers. June 29–July 1, 1901.*

try cementing the piers to their foundations, and this was done by running liquid Portland cement under and around the bases of the piers. I was absent from the Observatory during the progress of this work, and on my return, on July 11, just after it was finished, it was reported to me that the west pier had been found loose on its foundation. Instead of resting properly on three points it seems to have rested principally on some point not very far from the center of the base, so that a man pushing or striking against the top could produce enough motion to disturb water in a glass on top of the pier. This is a statement of the facts substantially as given me by Mr. WILLIAM M. GORMAN, foreman in charge of the work, and Assistant Astronomer G. A. HILL, who witnessed the phenomena as described. Another test for azimuth variation, see fig. 6, page D XXXIII, made when the cement was supposed to be thoroughly set, showed no appreciable change in the variation of

azimuth with temperature except that the amount of change per degree of temperature was somewhat larger. The level constant which had before that time showed no change with temperature was found to have a well-marked variation with the diurnal temperature change of $0^s.008$ per degree Fahrenheit; see fig. 6.

On July 19 the Superintendent decided to remove the marble piers and to construct piers of brick laid in cement. The work was completed on July 26, and the instrument was mounted temporarily on the new piers on July 29. Each bed-plate was set up on three pieces of sheet lead without holding down bolts. A test completed on July 31 showed that the azimuth variation with temperature had disappeared, and another test, made October 5-8, 1901, after the instrument had been permanently mounted and adjusted, showed a highly satisfactory degree of stability in both azimuth and level; see figs. 7 and 8, page D XXXIV.

After the complete solution of this problem the facts of the case seem to be as follows: The changes of temperature in producing variation of the azimuth acted in two ways.

6.—Piers Cemented to Foundations. Temporary Bearers. July 14-17, 1901.

The principal cause was the defective support of the west pier on its foundation, in that most of the weight of the pier seems to have rested on a point somewhere near the center, producing a strain on the marble at that point which under changes of temperature gave a rocking motion to the pier. An examination of the bases of the piers after their removal shows that while the base of the east pier had been carefully hollowed out in order to prevent any bearing near the center, this precaution had been either neglected or imperfectly carried out in the case of the west pier. The corners of the pieces of cardboard, about a foot square, on which the marble piers were supported, penetrated too near to the center of the base. This rocking motion of the pier being very small, would affect the azimuth, but would have no appreciable effect upon the level, which corresponds with the observed facts.

An independent cause of variation of azimuth existed in the cast-steel bed-plates, which had perhaps been imperfectly annealed. In their usual position their effect

was to increase the total amount of azimuth variation and at the same time, on account of their quick response to changes of temperature, to obscure the drag of three or four hours, which manifested itself in the case of the piers. The effect of the bed-plates in their reversed position, described above, was in the opposite direc-

7.—*Instrument Temporarily Mounted on Brick Piers. July 29-31, 1901.*

tion, tending to diminish the total amount of azimuth variation and emphasizing the drag. The effect of change of temperature on the bed-plates seems to have been such as to give the microscope bearers, one or both of them, a rocking motion, such that the azimuth of the instrument was changed without appreciably affecting the level.

8.—*Instrument Permanently Mounted on Brick Piers. October 5-8, 1901.*

It is quite possible that the azimuth variation, in so far as it was due to the piers, might have been removed by taking out or lifting up the marble piers and resetting them properly on their foundations. But the cost of doing this would have been perhaps as great or greater than that of building the brick piers, which, in the opinion of the writer, will probably serve the purpose better than monoliths

of marble or granite, the use of which is not in conformity with the best modern practice.

The instrument was permanently mounted on the brick piers on September 27, the bed-plates and anchor bolts having both been set in Portland cement. During three weeks, observations of the azimuth and level constants have been frequently made, with changes of temperature of more than 20° F.; but the small changes in azimuth and level which have been detected seem to have no relation to changes of temperature.

STATEMENT CONCERNING AN EXTRAORDINARY CHANGE IN THE AZIMUTH AND LEVEL CONSTANTS ON JULY 6, 1900.

The afternoon of that day was very hot and sultry, and the sky being clear the north vertical shutters of the observing room were left open for ventilation, as we expected to observe that night. A thunderstorm with a north wind came up very suddenly about 7.30 p. m., and before the shutters could be closed a considerable amount of rain came in on the floor of the observing room. The sky cleared about 8.15 p. m. and observations were commenced. It was soon noticed that both the azimuth and level constants were changing rapidly. At the end of the night's work the azimuth had changed $1^{\circ}.70$ and the level $0^{\circ}.46$ during two hours and forty-five minutes. On the following morning they had changed still more in the same direction, and the total change in thirteen hours amounted to $3^{\circ}.25$ in azimuth and to $0^{\circ}.88$ in level. The setting microscope was on the west side and was not thrown out of adjustment. On adjusting the instrument in level and azimuth the east microscope bearer only was moved and everything came back into place as before, and it was concluded that the change in the constants of the instrument was entirely due to motion of the eastern wye.

I was unable, however, at the time to understand the cause of this extraordinary phenomenon, which seemed to have no connection with the azimuth variation due to temperature. The fact that the piers were supported on pieces of cardboard was then unknown to me. But it now seems practically certain that some of the rain water which came in on the floor during the shower ran down the north side of the east pier and moistened the piece of cardboard that supported the pier on that side. This, through expansion of the cardboard with the moisture, would have moved the east pivot south and raised it, and the motion in level would have been to the motion in azimuth in the ratio of 1:4.0. The motions as observed were the same in direction and in the ratio of 1:3.7. This seems to confirm the above hypothesis as to the cause of the phenomenon.

METHODS OF OBSERVING IN RIGHT ASCENSION AND DECLINATION.

An attempt has been made to render the methods of observing as convenient and as simple as is consistent with the greatest possible accuracy. Bright-field illumination and Eyepiece III, power 140 diameters, have always been used. Stars of the ninth magnitude on the Durchmusterung scale are easily observed with sky of average clearness. The seeing is marked on a scale of five, one being the poorest and five the best, as has long been the practice here. The observing room is kept well ventilated.

The barometer is usually read once each hour and the thermometer once each half hour for the computation of refraction. The instrumental constants are completely determined on each night on which observations are made and are redetermined as frequently as is considered necessary. Whenever instrumental observations are being made, the temperature of the air in the observing room is read from a thermometer, suspended over the instrument.

All transits are observed across the nine central threads of the reticule, which are symmetrically disposed with reference to the middle thread, and between the two fixed horizontal threads, 9'' apart. Transits are observed on the chronograph, except those of stars within eight or ten degrees of the pole, which are observed by eye and ear, using for the purpose the second beats of the clock transmitted to a sounder in the observing room.

The pointings in declination are made by moving the telescope by means of the tangent screw so as to cause the star to bisect the space between the two fixed horizontal threads. The zenith distance micrometer has not been used in this work.

In making ordinary observations of stars the observer, when he has an assistant, takes his place at the telescope about forty-five seconds before the star is due on the meridian, brings the star between the double threads, and adjusts the illumination of the field according to the magnitude of the star. He sets on the star in declination as it crosses Thread II of the reticule and notifies the assistant, who reads and records the microscopes on Circle A while the transits across nine threads are being observed. For stars north of the zenith the first bisection is usually made on Thread III instead of Thread II. The second pointing on the star in declination is made on Thread V; the microscopes on Circle B are read by the observer and are recorded by the assistant. Excepting at high declinations, stars are easily observed two minutes apart in this way, and it is possible to observe completely two stars south of the zenith which differ $1^m 30^s$ in right ascension. When the observer has no assistant, only one bisection in declination can be made, except in case of close circumpolar stars.

When the newly divided circles, the new microscope objectives, and the improved illumination of the circles are brought into use, the precision of the microscope readings will probably be greatly increased. It may then be unnecessary to read four microscopes for each bisection of a star in the field of the telescope, and the above method of making observations may be modified with advantage.

The minutes of all circle readings were always taken from the microscopes E, F, G, and H on the west side. In reading microscopes it was our practice to read on the division nearest the middle tooth of the comb scale.

The observers are designated as follows:

U.=MILTON UPDEGRAFF.	L.=F. B. LITTELL.
La.=G. K. LAWTON.	Hd.=J. C. HAMMOND.

METHODS OF REDUCTION IN RIGHT ASCENSION AND DECLINATION.

The observations in right ascension have been reduced by BESSEL'S formula, which is,

$$\alpha = T + \Delta T + m + n \tan \delta + c'_0 \sec \delta,$$

in which c_o' is the collimation constant plus the correction for diurnal aberration, $-0^s.016$. The quantity n has been computed from the observed values of a and b by the formula,

$$n = b \sin \varphi - a \cos \varphi.$$

On account of the large variation with temperature of the azimuth constant, it has frequently been necessary to interpolate the value of n for each star. The values of $\Delta T + m$ have also been interpolated when necessary.

In reducing observations of circumpolar stars for the azimuth of the meridian mark, MAYER'S formula,

$$\alpha = T + \Delta T + a \frac{\sin(\varphi - \delta)}{\cos \delta} + b \frac{\cos(\varphi - \delta)}{\cos \delta} + \frac{c_o'}{\cos \delta},$$

has been used.

The chronograph sheets have usually been read by Mr. LITTELL or by Mr. HAMMOND. The means of the transits across the threads of the reticule have been taken in such a way as to detect mistakes in reading the sheets.

The observations in declination have been corrected for inclination of thread and reduction to the meridian, except when the bisections were made on the meridian. In computing the refractions the Pulkowa refraction tables, adapted to the metric system, have been used. The character of the work done thus far does not require that corrections be applied to these tables to adapt them to conditions at Washington. The microscope readings have been scrutinized for the detection of errors.

The supplements of the actual readings of microscopes A, B, C, and D, that is, the readings subtracted from 60, have been used in the computations. For convenience, $1''$ has been added to the correction for reduction to the meridian, and has been subtracted from the equator-point correction.

The numerical work has in all cases been checked. The computations in right ascension have been in part carried out to three places of decimals and in declination to two. No corrections for error of runs of the microscopes have hitherto been applied, for reasons given on page D XXI.

The interpolation of clock corrections, equator points, and instrumental constants has in many cases been effected by plotting the observed values with the time as argument. The plotted curves are not given here, but it is intended to print with the observations all data which have been treated in this way.

RESULTS OF OBSERVATIONS FOR PERSONAL EQUATION.

Effect of position of the observer.—During February and March, 1901, eight stars which culminate near the zenith were observed four times each with the head north, and four times with the head south. The observations in the two positions were made on alternate nights, all the stars being observed head north on one night and head south on the following night. It has since occurred to me that it would have been a better plan to observe half of the stars head north and the other half head south on each night. The means of 29 separate results in the sense head north minus head south are,

$$\begin{aligned} \text{In right ascension} & +0^s.028 \pm 0^s.007 \\ \text{In declination} & +0''.41 \pm 0''.11 \end{aligned}$$

The observations both in right ascension and declination were referred to zero stars near the equator, which were observed facing south, that is, head north. The above differences are therefore to be regarded as corrections to be applied to results in right ascension and declination, observed head south which are referred to zero stars observed head north. They are double the errors of personal equation by which each observation is affected.

The separate results are shown in the tables below. They are less accordant than they should be, and there are reasons for believing that these differences may be due to other causes than change of position of the observer. The defective illumination of the field, see page D VIII, is perhaps a source of error of this kind.

Differences in Right Ascension.

[Head North minus Head South.]

Head North. Head South.	Feb. 23 Feb. 25	Feb. 26 Feb. 28	Mar. 2 Mar. 5	Mar. 6 Mar. 7	Mean.
58 Ursæ Majoris	^s +0.02	^s +0.03	^s +0.11	^s -0.06	^s +0.025
Groombridge 1830	-0.01	....	+0.07	+0.01	+0.023
2 Canum Venaticorum	-0.01	-0.03	+0.05	+0.03	+0.010
9 Canum Venaticorum	+0.04	-0.01	0.00	-0.02	+0.002
α Canum Venaticorum	-0.03	+0.02	+0.18	+0.10	+0.068
14 Canum Venaticorum	-0.09	+0.05	+0.01	+0.04	+0.002
20 Canum Venaticorum	-0.00	....	+0.12	+0.08	+0.066
25 Canum Venaticorum	+0.02	+0.05	+0.04	....	+0.037
Mean	-0.008	+0.018	+0.072	+0.026	+0.029

Differences in Declination.

[Head North minus Head South.]

Circle A.					
Head North. Head South.	Feb. 23 Feb. 25	Feb. 26 Feb. 28	Mar. 2 Mar. 5	Mar. 6 Mar. 7	Mean.
58 Ursæ Majoris	" +1.7	" -0.8	" +0.1	" -0.7	" +0.08
Groombridge 1830	+0.5	...	+1.4	+1.9	+1.27
2 Canum Venaticorum	+0.2	+1.6	+2.2	+0.2	+1.05
9 Canum Venaticorum	0.0	+0.5	+1.4	+1.4	+0.82
α Canum Venaticorum	-0.7	+0.6	+0.4	+1.7	+0.50
14 Canum Venaticorum	-0.6	+1.5	+0.6	+0.6	+0.52
20 Canum Venaticorum	-1.2	...	+1.4	+0.7	+0.30
25 Canum Venaticorum	-0.7	+1.5	-0.4	...	+0.13
Mean	-0.10	+0.80	+0.89	+0.83	+0.58

Differences in Declination—Continued.

[Head North minus Head South.]

Circle B.					
Head North. Head South.	Feb. 23 Feb. 25	Feb. 26 Feb. 28	Mar. 2 Mar. 5	Mar. 6 Mar. 7	Mean.
58 Ursæ Majoris	" +1.0	" -2.5	" -0.3	" +0.1	" -0.65
Groombridge 1830j.....	-0.2	...	+0.5	...	+0.15
2 Canum Venaticorum.....	-0.9	+0.7	+0.3	-0.5	-0.10
9 Canum Venaticorum.....	+0.6	+0.7	+0.7	+0.2	+0.55
α Canum Venaticorum.....	-0.9	+2.2	-0.1	+0.5	+0.42
14 Canum Venaticorum.....	0.0	+1.1	+0.6	+0.2	+0.48
20 Canum Venaticorum.....	+1.9	...	+0.3	+1.0	+1.07
25 Canum Venaticorum.....	-1.3	+0.5	+0.8	...	0.00
Mean	+0.02	+0.37	+0.34	+0.25	+0.24

Effect of star magnitudes.—Two series of observations, with wire screens, to determine the effect of star magnitudes on observations in right ascension were made by myself, one in October and November, 1900, and the other in February, 1901, comprising in all about 320 observations. Another series of 85 observations was made on four nights in November and December, 1900, by Mr. LITTELL. The three screens used are made of fine brass wire, and they differ somewhat in the effect produced in diminishing the light of the stars. They are numbered 5, 6, and 7. For one screen, No. 5 was always used, and for two screens, Nos. 5 and 6. Two screens and sometimes all three were used for the brighter stars. The screens were held before the object-glass by an assistant. Care was taken when two or more screens were used to place them with reference to each other so that their planes were parallel, but with the wires at a considerable angle with each other. This precaution was necessary in order to produce more certain and uniform effects.

The thread intervals of the spider-line reticule were very accurately determined, both by eye and ear observations and by the chronographic method. These two determinations agree satisfactorily and were made in part simultaneously with the first series of screen observations. Furthermore, measures with the right ascension micrometer made on the reticule, both before and after the screen observations, show that only very small changes, if any, had taken place in the thread intervals. In order, however, to eliminate any small errors in the adopted values of the thread intervals, about half of the screen observations were made using the screens for the middle tally of five threads called c, and the remaining observations were made using the screens for the two side tallies of three threads each, called respectively b and d. A systematic difference appears between the results of observations made in these two ways which can not possibly be attributed to error in the adopted thread intervals.

While these observations were in progress, the apparatus originally provided for illumination, see page D VIII, was in use, and it is highly probable that this discrepancy was caused by the defective illumination of the field, although great pains were

taken to adjust the mirrors so as to reflect the light properly. In ordinary observations the brightness of the field is adjusted so as to correspond with the brightness of the star being observed, and the same practice was followed in making the screen observations. When the screens were put on or taken off, the illumination of the field was always adjusted by a turn of the adjusting handle. That the above is not merely a personal error is shown by the fact that it appears in the results of Mr. LITTELL'S observations as well as my own, as will be seen in the table below.

Summary of Results of Screen Observations.

[Faint minus Bright.]

Ob-server.	One Screen.			Two Screens.			Three Screens.		
	On c.	On b and d.	Diff.	On c.	On b and d.	Diff.	On c.	On b and d.	Diff.
U.	^s -0.005	^s +0.026	^s +0.031	^s +0.006	^s +0.048	^s +0.042	^s +0.003	^s +0.052	^s +0.049
L.	-0.008	+0.052	+0.060	+0.019	+0.083	+0.064	.....	.....	.....

In making the observations, estimates of the magnitudes of the stars, with and without the screens, were made as nearly as possible on the Durchmusterung scale. The mean results for effect of screens on the magnitudes of the stars and on the personal equations of the observers are given in the table below.

Effect of Screens.

No. of Screen.	On Star Magnitudes.		On Personal Equation, Faint minus Bright.	
	U.	L.	U.	L.
Screen 5.....	^m 3.3	^m 3.4	^s +0.010	^s +0.022
Screens 5 and 6.....	5.2	5.7	+0.027	+0.051
Screens 5, 6, and 7.....	7.2	...	+0.028	.....

My observations of October and November, 1900, were made when the seeing was excellent. The mean result of 66 observations with two screens, faint minus bright, is +0^s.022. The observations of February, 1901, were all made with bad seeing, and the mean result from 113 observations with two screens, faint minus bright, is +0^s.032. It is perhaps to be expected that difference of magnitude would have greater effect on personal equation when the star disk is blurred or unsteady, but these results hardly justify any conclusions on this point.

The probable error of a single observation has been found to be about 0^s.030.

The stars observed for this purpose were all south of the zenith, and no attempt has been made to determine the personal equation due to star magnitudes at different declinations.

While these results are believed to be real and fairly accurate, yet they have not been used to correct any of the observations here published.

The individual results of observations with screens follow.

INTRODUCTION.

D XLI

Results of Observations with Wire Screens for Determination of Personal Equation due to Star Magnitudes.

No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.	No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.
		With Screens	Without Screens					With Screens	Without Screens		
1900 October 20, U. CLAMP WEST.						1900 October 27, U. CLAMP WEST.					
1	28 Aquarii.....	8.5	5.7	1	+0.01	8	γ Aquarii.....	8.0	4.2	1	0.00
2	θ Aquarii.....	7.8	4.1	1	-0.04	9	η Aquarii.....	9.5	4.5	2	+0.09
3	γ Aquarii.....	8.0	3.8	1	+0.02	10	α Piscis Australis.	8.7	2.3	2	-0.06
4	σ Aquarii.....	7.8	4.0	1	+0.01	11	52 Pegasi.....	9.2	6.3	1	+0.07
5	η Aquarii.....	8.2	4.2	1	0.00	12	β Pegasi.....	8.2	2.0	2	+0.01
6	10 Lacertæ.....	8.5	4.9	1	-0.06	13	55 Pegasi.....	9.0	6.0	1	+0.04
7	η Pegasi.....	8.5	3.2	2	+0.10	14	59 Pegasi.....	9.0	6.0	1	-0.10
8	λ Pegasi.....	9.0	3.8	2	-0.02	15	κ Piscium.....	9.0	6.0	1	+0.04
9	μ Pegasi.....	8.8	4.0	2	-0.01	16	70 Pegasi.....	8.9	5.7	1	+0.05
10	δ Aquarii.....	9.0	3.8	2	0.00	17	72 Pegasi.....	8.8	5.5	1	+0.02
11	α Piscis Australis.	9.0	1.0	3	-0.04	18	ι Piscium.....	8.3	5.0	1	-0.06
12	α Pegasi.....	8.0	2.8	2	+0.03	19	λ Piscium.....	8.8	5.5	1	+0.04
13	ϵ Aquarii.....	9.0	4.0	2	+0.05	20	19 Piscium.....	9.3	6.0	1	+0.09
14	ϕ Aquarii.....	9.5	4.2	2	-0.02	21	ϕ Pegasi.....	8.9	6.0	1	-0.01
15	γ Piscium.....	9.1	4.0	2	-0.06	22	ψ Pegasi.....	9.0	5.7	1	-0.02
16	τ Pegasi.....	8.1	5.1	1	0.00	23	ω Piscium.....	8.2	4.9	1	+0.01
17	κ Piscium.....	8.1	5.4	1	+0.05	24	30 Piscium.....	8.8	5.5	1	+0.03
18	70 Pegasi.....	8.0	5.0	1	+0.01	25	33 Piscium.....	8.8	5.5	1	+0.06
19	14 Piscium.....	9.0	6.0	1	-0.01	26	α Andromedæ.....	8.8	2.2	2	-0.03
20	ι Piscium.....	7.75	5.0	1	-0.01	27	γ Pegasi.....	6.0	3.0	2	+0.03
21	λ Piscium.....	8.25	4.0	1	+0.02	October 30, U. CLAMP EAST.					
22	19 Piscium.....	8.0	5.75	1	-0.01	1	16 Pegasi.....	8.2	5.0	1	-0.05
23	ϕ Pegasi.....	8.0	5.5	1	+0.02	2	28 Aquarii.....	9.0	5.8	1	0.00
October 24, U. CLAMP WEST.						3	σ Aquarii.....	8.5	5.2	1	+0.01
1	α Aquarii.....	8.5	3.2	2	+0.08	4	α Aquarii.....	8.6	3.0	2	+0.05
2	θ Pegasi.....	9.0	3.7	2	-0.01	5	θ Pegasi.....	9.1	3.5	2	-0.04
3	θ Aquarii.....	7.8	5.0	1	+0.06	6	θ Aquarii.....	8.0	4.0	1	+0.04
4	π Aquarii.....	8.5	4.5	1	-0.02	7	ρ Aquarii.....	9.0	5.8	1	-0.02
5	σ Aquarii.....	8.7	5.0	1	+0.01	8	γ Aquarii.....	9.2	3.5	2	+0.05
6	η Aquarii.....	8.2	4.7	1	+0.03	9	π Aquarii.....	8.6	4.7	1	+0.05
7	κ Aquarii.....	8.7	4.5	1	+0.01	10	38 Pegasi.....	9.2	5.9	1	+0.04
8	ζ Pegasi.....	9.1	3.0	2	+0.03	11	η Aquarii.....	9.2	3.3	2	+0.06
9	λ Pegasi.....	9.2	4.0	2	-0.02	12	κ Aquarii.....	8.5	5.2	1	+0.02
10	α Piscis Australis.	9.2	1.0	3	+0.11	13	ζ Pegasi.....	9.0	3.1	2	+0.05
11	β Pegasi.....	7.9	2.8	2	+0.02	14	λ Pegasi.....	9.1	3.2	2	-0.02
12	α Pegasi.....	8.8	3.0	2	+0.02	15	μ Pegasi.....	8.8	3.2	2	-0.05
13	γ Piscium.....	9.2	3.7	2	+0.01	16	λ Aquarii.....	9.2	3.8	2	+0.04
14	τ Pegasi.....	8.0	4.5	1	0.00	17	α Piscis Australis.	7.8	2.0	2	-0.07
15	ν Pegasi.....	8.0	4.5	1	-0.01	18	52 Pegasi.....	9.0	5.9	1	+0.02
16	θ Piscium.....	7.9	4.5	1	-0.01	19	α Pegasi†.....	8.5	2.7	2	-0.02
17	72 Pegasi.....	8.0	5.0	1	-0.03	20	55 Pegasi†.....	8.8	5.5	1	-0.01
18	ι Piscium.....	7.8	5.0	1	+0.04	21	59 Pegasi.....	9.0	5.8	1	+0.02
19	λ Piscium.....	7.7	4.7	1	+0.04	22	γ Piscium.....	7.5	4.0	1	-0.02
20	19 Piscium.....	8.2	5.0	1	+0.02	November 21, U. CLAMP WEST.					
21	ϕ Pegasi.....	8.5	5.7	1	-0.07	1	δ Andromedæ.....	8.5	3.0	2	+0.13
22	ψ Pegasi.....	8.7	5.0	1	+0.05	2	β Ceti.....	8.3	1.0	2	+0.01
23	ω Piscium.....	9.3	4.0	2	0.00	3	ζ Andromedæ.....	9.1	4.5	2	+0.08
24	30 Piscium.....	7.8	5.0	1	+0.03	4	μ Andromedæ.....	9.2	4.0	2	+0.06
25	α Andromedæ*.....	8.2	2.5	2	+0.01	5	ϵ Piscium.....	9.2	4.5	2	+0.09
26	γ Pegasi.....	8.5	3.0	2	-0.02	6	72 Piscium.....	9.0	6.0	1	+0.01
October 27, U. CLAMP WEST.						7	β Andromedæ.....	7.8	1.8	2	+0.11
1	1 Pegasi.....	8.1	4.0	1	-0.07	8	τ Piscium.....	8.0	5.0	1	-0.01
2	69 Cygni.....	9.2	6.5	1	0.00	9	ν Piscium.....	8.5	4.7	1	+0.05
3	β Aquarii.....	9.2	3.7	2	+0.07	10	η Piscium.....	8.0	4.5	1	+0.04
4	ϵ Pegasi.....	8.0	3.0	2	+0.02	11	ν Piscium.....	7.8	5.5	1	-0.03
5	δ Capricorni.....	7.2	3.8	1	+0.05	12	σ Piscium.....	8.8	4.2	1	+0.03
6	α Aquarii.....	9.0	3.6	2	-0.02	13	α Trianguli.....	9.1	4.0	2	+0.03
7	θ Pegasi.....	9.5	4.0	2	+0.06	14	α Arietis.....	7.9	2.0	2	+0.08

*Through clouds. Seeing fair on this night.

†Through clouds.

Results of Observations with Wire Screens for Determination of Personal Equation due to Star Magnitudes—Continued.

No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.	No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.
		With Screens	Without Screens					With Screens	Without Screens		
1900 November 21, U.						1900 November 27, U.					
CLAMP WEST.						CLAMP WEST.					
15	β Trianguli*	9.0	3.5	2	+0.02	26	λ Arietis	8.4	4.8	1	0.00
16	ξ_1 Ceti	8.4	5.0	1	+0.06	27	ν Ceti	...	...	2	-0.02
17	γ Trianguli	8.0	4.5	1	+0.01	28	α Arietis	8.2	2.0	2	0.00
18	ϵ Arietis	9.3	6.0	1	+0.15	29	β Trianguli	8.5	3.5	2	+0.06
19	ξ_2 Ceti	9.0	5.8	1	+0.04	30	15 Arietis	9.0	5.8	1	-0.03
20	δ Ceti	8.5	5.0	1	+0.11	November 30, L.					
21	γ Ceti	9.2	3.8	2	+0.09	CLAMP WEST.					
22	μ Ceti	8.3	4.8	1	+0.06	1	55 Pegasi†	8.0	4.5	1	+0.03
23	39 Arietis	8.5	5.0	1	+0.06	2	ϵ^2 Aquarii	7.8	4.0	1	-0.01
24	41 Arietis	9.1	3.8	2	+0.09	3	ϕ Aquarii	8.0	4.3	1	+0.02
25	δ Arietis	9.0	6.0	1	0.00	4	γ Piscium	9.5	3.5	2	+0.02
26	λ Ceti	8.5	5.5	1	-0.01	5	τ Pegasi	8.0	4.2	1	0.00
27	α Ceti	9.0	3.0	2	0.00	6	δ^1 Aquarii	7.8	4.0	1	-0.07
November 22, L.						November 30, L.					
CLAMP WEST.						CLAMP WEST.					
1	γ Piscium	9.0	3.8	2	+0.11	9	ι Piscium	7.8	4.5	1	+0.02
2	τ Pegasi	9.0	4.0	2	+0.06	10	λ Piscium	8.5	4.6	1	-0.02
3	ν Pegasi	8.0	5.0	1	+0.03	11	19 Piscium	8.5	5.0	1	-0.04
4	θ Piscium	7.8	4.5	1	+0.02	12	ψ Pegasi	8.2	4.5	1	+0.02
5	14 Piscium	9.2	6.0	1	+0.07	13	ω Piscium	9.5	3.5	2	+0.01
6	ι Piscium	8.0	4.3	1	+0.04	14	30 Piscium	8.0	4.7	1	+0.05
7	λ Piscium	8.5	5.0	1	+0.02	15	33 Piscium	8.2	4.5	1	+0.05
8	19 Piscium	8.5	5.2	1	0.00	16	α Andromedæ	8.0	2.0	2	+0.15
9	ϕ Pegasi	8.5	5.0	1	+0.06	17	γ Pegasi	9.0	3.5	2	-0.01
10	ω Piscium	8.0	4.5	1	+0.08	18	ι Ceti	9.6	3.5	2	-0.02
11	30 Piscium	8.5	5.0	1	+0.06	19	12 Ceti	9.2	6.0	1	+0.03
12	33 Piscium	8.4	5.0	1	+0.06	20	13 Ceti	8.5	5.0	1	-0.07
13	α Andromedæ	7.8	2.0	2	+0.10	21	π Andromedæ	9.6	4.0	2	+0.05
14	γ Pegasi	9.0	3.2	2	+0.08	22	δ Andromedæ	9.3	3.5	2	-0.02
15	ι Ceti	9.5	4.2	2	-0.04	23	β Ceti	8.5	2.2	2	+0.06
16	π Andromedæ	8.0	4.5	1	+0.03	24	ζ Andromedæ	9.6	4.2	2	+0.11
17	δ Andromedæ	9.6	3.0	2	+0.11	25	δ Piscium	8.0	4.4	1	0.00
18	β Ceti†	9.5	2.8	2	+0.14	26	μ Andromedæ	9.4	3.8	2	+0.01
19	β Andromedæ	9.0	2.5	2	+0.05	27	β Andromedæ	8.5	2.5	2	-0.11
November 27, U.						December 5, L.					
CLAMP WEST.						CLAMP WEST.					
1	ψ Pegasi	9.1	5.0	2	+0.02	1	72 Pegasi	8.0	4.5	1	0.00
2	ω Piscium	9.1	4.8	2	+0.01	2	ι Piscium	9.6	4.5	2	+0.06
3	30 Piscium	9.5	4.5	2	+0.03	3	λ Piscium	8.3	5.0	1	+0.07
4	33 Piscium	8.8	4.7	1	-0.01	4	19 Piscium	8.5	5.0	1	+0.12
5	α Andromedæ	7.5	2.5	2	-0.03	5	ψ Pegasi	8.5	5.0	1	0.00
6	γ Pegasi	8.5	4.0	2	-0.01	6	ω Piscium	9.6	4.0	2	+0.07
7	δ Andromedæ	9.0	4.8	1	-0.05	7	30 Piscium	8.0	4.5	1	+0.08
8	ι Ceti	9.1	3.5	2	-0.01	8	ι Ceti	9.6	3.8	2	+0.14
9	44 Piscium	9.2	5.0	1	-0.02	9	β Andromedæ	8.0	2.5	2	+0.04
10	12 Ceti	9.0	5.2	1	+0.03	10	37 Ceti	8.5	5.0	1	+0.08
11	13 Ceti	9.0	6.0	1	+0.03	11	ν Piscium	8.5	5.0	1	+0.02
12	π Andromedæ	8.1	4.7	1	-0.07	12	ϕ Piscium	8.0	4.7	1	+0.04
13	δ Andromedæ	8.6	3.0	2	+0.03	13	χ Ceti	8.5	5.0	1	+0.02
14	β Ceti	8.0	2.0	2	0.00	14	ζ Ceti	9.7	4.0	2	+0.14
15	ζ Andromedæ	9.0	4.5	2	+0.03	15	β Arietis	8.0	2.3	2	+0.04
16	δ Piscium	7.8	5.2	1	+0.05	16	α Arietis	8.0	2.0	2	+0.03
17	20 Ceti	9.1	6.0	1	-0.02	17	β Trianguli	9.2	3.8	2	+0.09
18	μ Andromedæ	9.1	3.8	2	+0.04	18	ξ^1 Ceti	8.0	4.5	1	+0.05
19	β Andromedæ	7.8	2.3	2	+0.02	December 6, L.					
20	χ Piscium	8.2	5.3	1	-0.02	CLAMP WEST.					
21	ν Piscium	8.0	5.3	1	-0.03	1	72 Pegasi	8.3	4.8	1	+0.03
22	τ Ceti	9.1	3.7	2	+0.06	2	ι Piscium	9.6	4.8	2	-0.03
23	χ Ceti	8.5	5.0	1	0.00	3	λ Piscium	8.0	4.5	1	-0.06
24	α Trianguli	9.0	3.7	2	+0.04	4	19 Piscium	8.2	5.0	1	+0.05
25	β Arietis	8.4	3.0	2	0.00						

* Observation poor.

† Diffuse; poor observation.

‡ Observation hurried.

INTRODUCTION.

D XLIII

Results of Observations with Wire Screens for Determination of Personal Equation due to Star Magnitudes—Continued.

No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.	No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.
		With Screens	Without Screens					With Screens	Without Screens		
1900 December 6, L. CLAMP WEST.						1901 February 10,** U. CLAMP WEST.					
5	ϕ Pegasi.....	8.5	5.0	1	—0.02	1	γ Tauri.....	8.2	4.0	2	0.00
6	ψ Pegasi.....	9.6	4.8	2	+0.02	2	δ Tauri.....	8.7	4.0	2	+0.03
7	ω Piscium.....	9.2	3.5	2	+0.04	3	ϵ Tauri.....	8.7	4.0	2	+0.09
8	30 Piscium.....	7.8	4.2	1	+0.01	4	ρ Tauri.....	9.0	4.4	2	+0.11
9	33 Piscium.....	7.8	4.5	1	—0.03	5	α Tauri.....	8.2	1.0	3	—0.09
10	α Andromedæ.....	7.5	2.0	2	—0.04	6	53 Eridani.....	9.0	4.5	2	+0.01
11	γ Pegasi.....	8.0	3.0	2	0.00	7	τ Tauri.....	9.0	4.5	2	+0.04
12	σ Andromedæ.....	7.8	4.2	1	+0.03	8	μ Eridani.....	9.2	4.7	2	+0.05
13	13 Ceti.....	8.5	5.0	1	+0.01	9	π^3 Orionis.....	8.0	3.5	2	—0.05
14	π Andromedæ.....	9.2	3.5	2	+0.08	10	π^4 Orionis.....	9.0	4.8	2	+0.04
15	ϵ Andromedæ.....	8.0	4.8	1	+0.03	11	π^5 Orionis.....	9.0	4.2	2	+0.03
16	β Ceti.....	7.8	2.0	2	+0.03	12	ι Tauri.....	9.0	4.5	2	+0.04
17	ζ Andromedæ.....	7.8	4.8	1	—0.02	13	11 Orionis.....	9.2	5.0	2	—0.06
18	δ Piscium.....	7.5	4.5	1	—0.06	14	β Eridani.....	8.0	3.5	2	—0.02
19	μ Andromedæ.....	9.4	3.8	2	+0.08	15	ρ Orionis.....	9.3	5.0	2	0.00
20	β Andromedæ.....	7.5	2.0	2	+0.08	16	β Orionis.....	7.8	1.0	3	+0.02
21	τ Piscium.....	7.5	4.5	1	—0.01	17	τ Orionis†.....	9.0	4.0	2	+0.11
1901 February 6,* U. CLAMP WEST.						18	σ Orionis.....	9.3	5.0	2	+0.05
1	α^1 Eridani.....	8.8	4.0	2	+0.08	19	γ Orionis.....	8.9	2.0	3	+0.07
2	μ Tauri.....	9.0	4.0	2	+0.11	20	β Leporis.....	8.8	3.5	2	+0.01
3	γ Tauri.....	8.3	3.5	2	+0.02	21	δ Orionis.....	7.8	2.5	2	+0.03
4	δ Tauri.....	8.4	4.0	2	+0.06	22	α Leporis.....	7.8	3.3	2	—0.05
5	68 Tauri.....	9.0	4.4	2	+0.09	23	ϵ Orionis.....	9.1	2.0	3	+0.06
6	ρ Tauri.....	7.8	4.7	1	+0.09	24	σ Orionis.....	9.0	4.7	2	+0.10
7	α Tauri.....	8.6	1.0	3	+0.04	25	ζ Orionis.....	9.2	2.0	3	+0.07
8	53 Eridani.....	8.5	4.0	2	+0.05	26	κ Orionis.....	7.6	2.0	2	+0.05
9	τ Tauri.....	9.0	4.7	2	+0.06	27	δ Leporis.....	9.0	4.0	2	+0.07
10	μ Eridani.....	9.0	4.7	2	+0.10	28	α Orionis.....	7.0	0.5	3	+0.01
11	π^3 Orionis.....	8.2	3.5	2	+0.10	29	η Leporis.....	9.0	4.2	2	+0.06
12	π^4 Orionis.....	8.7	4.0	2	+0.03	30	μ Orionis.....	9.0	4.2	2	+0.08
13	11 Orionis.....	8.0	5.0	1	+0.03	31	1 Geminorum.....	9.0	4.2	2	+0.04
14	β Eridani.....	8.3	3.7	2	+0.06	32	ν Orionis.....	9.0	4.5	2	+0.04
15	β Orionis.....	7.9	0.5	3	+0.09	33	ξ Orionis.....	9.0	4.5	2	+0.10
16	τ Orionis.....	9.0	4.0	2	+0.07	34	η Geminorum.....	7.9	3.0	2	+0.09
17	λ Leporis.....	8.0	4.3	1	+0.05	35	κ Orionis.....	9.2	4.8	2	+0.07
18	γ Orionis.....	8.5	1.5	3	+0.07	36	μ Geminorum.....	8.3	3.0	2	+0.06
19	β Leporis.....	8.5	2.7	2	+0.04	37	β Canis Majoris.....	9.1	2.0	3	+0.05
20	δ Orionis.....	8.3	2.7	2	+0.06	38	ν Geminorum.....	8.9	4.2	2	+0.03
21	ϵ Orionis†.....	9.0	1.3	3	+0.03	39	γ Geminorum.....	9.0	2.2	3	+0.12
22	ζ Orionis.....	8.1	1.5	2	+0.07	40	ζ Monocerotis.....	9.0	4.6	2	+0.07
23	κ Orionis.....	9.0	2.5	3	+0.05	41	ϵ Geminorum.....	9.0	2.5	2	+0.09
24	α Orionis.....	...	...	3	+0.07	42	α Canis Majoris.....	7.0	—1.0	3	+0.02
1901 February 8,† U. CLAMP WEST.						1901 February 12,†† U. CLAMP WEST.					
1	α^1 Eridani†.....	8.5	4.0	2	—0.02	1	ι Tauri.....	9.0	4.5	2	+0.04
2	α^2 Eridani.....	9.0	4.0	2	—0.03	2	11 Orionis.....	9.0	4.5	2	+0.07
3	γ Tauri.....	8.5	3.8	2	+0.02	3	β Orionis.....	7.8	0.5	3	+0.08
4	δ Tauri.....	8.5	4.0	2	+0.03	4	τ Orionis.....	8.5	3.5	2	+0.15
5	ϵ Tauri.....	8.5	3.8	2	—0.04	5	σ Orionis.....	9.5	4.7	2	+0.10
6	ρ Tauri.....	9.0	4.3	2	+0.05	6	γ Orionis.....	9.0	1.5	3	+0.08
7	α Tauri.....	8.2	1.0	3	—0.01	7	β Leporis.....	8.8	3.0	2	+0.12
8	53 Eridani.....	8.6	4.0	2	—0.07	8	δ Orionis.....	8.4	2.5	2	+0.07
9	τ Tauri.....	8.7	4.3	2	+0.01	9	α Leporis.....	8.8	3.0	2	0.00
10	μ Eridani.....	8.5	3.8	2	—0.05	10	ϵ Orionis.....	9.0	1.7	3	+0.09
11	π^3 Orionis.....	8.3	3.7	2	—0.01	11	σ Orionis.....	9.0	4.3	2	+0.07
12	π^4 Orionis.....	8.6	4.2	2	—0.01	12	δ Orionis.....	9.1	1.5	3	+0.06
						13	κ Orionis.....	9.3	2.0	3	+0.01
						14	δ Leporis.....	8.9	4.0	2	+0.09
						15	α Orionis.....	7.8	1.0	3	+0.06

* Seeing 2-3 on this night. Stars unsteady and blurred.

† Poor observation.

†† Seeing 2-3 on this night.

** Seeing 3 on this night.

††† Seeing 1-2 on this night. Stars very unsteady and blurred.

Results of Observations with Wire Screens for Determination of Personal Equation due to Star Magnitudes—Continued.

No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.	No.	DATE, OBSERVER, AND OBJECT.	Observed Magnitudes.		No. of Screens.	Faint minus Bright.
		With Screens	Without Screens					With Screens	Without Screens		
1901 February 12, U. CLAMP WEST.						1901 February 15, † U. CLAMP WEST.					
16	η Leporis.....	9.0	4.0	2	+0.07	21	k Orionis.....	9.2	5.0	2	+0.06
17	μ Orionis.....	9.1	4.0	2	+0.11	22	μ Geminorum....	9.3	3.0	2	+0.04
18	ι Geminorum....	9.0	3.7	2	+0.12	23	β Canis Majoris...	9.0	2.0	3	-0.03
19	ν Orionis.....	9.1	4.2	2	+0.10	24	ν Geminorum....	9.0	4.2	2	-0.03
20	ξ Orionis.....	9.2	4.5	2	+0.06	25	γ Geminorum....	9.1	2.0	3	-0.03
21	η Geminorum....	8.3	3.5	2	+0.05	26	S Monocerotis....	9.2	4.5	2	+0.01
22	k Orionis*.....	9.5	5.0	2	+0.13	27	ϵ Geminorum....	9.3	3.0	3	+0.08
23	μ Geminorum....	8.4	3.0	2	+0.01	28	α Canis Majoris...	7.5	-1.5	3	+0.04
24	β Canis Majoris*..	9.2	2.0	3	-0.02	February 19, ‡ U. CLAMP WEST.					
25	ν Geminorum....	9.0	4.3	2	-0.01	1	β Eridani.....	8.0	2.5	2	+0.05
26	γ Geminorum....	9.2	2.0	3	+0.03	2	ρ Orionis*.....	...	...	2	[-0.06]
27	S Monocerotis....	9.2	4.7	2	+0.12	3	β Orionis.....	8.2	0.5	3	+0.09
28	ϵ Geminorum....	8.2	3.5	2	+0.06	4	τ Orionis*.....	8.5	4.0	2	+0.05
29	α Canis Majoris...	7.5	-1.5	3	+0.08	5	σ Orionis.....	9.0	4.3	2	+0.01
February 15, † U. CLAMP WEST.						6	γ Orionis.....	9.0	2.0	3	+0.05
1	ρ Orionis.....	9.1	4.3	2	+0.02	7	β Leporis*.....	...	...	2	[-0.04]
2	β Orionis.....	7.5	1.0	2	+0.05	8	δ Orionis.....	8.2	3.0	2	-0.01
3	τ Orionis.....	9.0	4.0	2	-0.01	9	α Leporis*.....	8.0	2.5	2	0.00
4	σ Orionis.....	9.2	4.7	2	+0.07	10	ϵ Orionis.....	8.0	1.5	2	+0.04
5	γ Orionis.....	8.5	2.0	2	-0.03	11	σ Orionis*.....	9.0	4.5	2	[+0.16]
6	β Leporis.....	8.5	3.0	2	-0.01	12	ζ Orionis.....	8.0	1.5	2	-0.06
7	δ Orionis.....	9.1	2.5	3	-0.01	13	κ Orionis.....	8.0	2.0	2	-0.11
8	α Leporis.....	8.5	2.8	2	-0.01	14	δ Leporis*.....	9.0	4.0	2	+0.04
9	ϵ Orionis.....	8.1	2.0	3	+0.02	15	α Orionis.....	7.8	1.0	3	+0.06
10	σ Orionis.....	9.0	4.0	2	-0.08	16	η Leporis.....	9.0	4.0	2	+0.10
11	ζ Orionis.....	9.1	2.0	3	+0.06	17	μ Orionis.....	9.0	4.3	2	+0.10
12	κ Orionis.....	9.2	2.5	3	+0.03	18	ι Geminorum....	9.0	4.3	2	+0.08
13	δ Leporis.....	8.5	4.0	2	-0.05	19	ν Orionis.....	9.1	4.2	2	+0.07
14	α Orionis.....	7.5	1.0	3	-0.02	20	ξ Orionis.....	9.0	4.5	2	+0.08
15	η Leporis.....	9.0	4.0	2	+0.03	21	k Orionis.....	9.3	5.0	2	+0.06
16	μ Orionis.....	9.0	4.0	2	+0.08	22	μ Geminorum....	8.5	3.5	2	+0.05
17	ι Geminorum....	9.0	4.5	2	-0.04	23	β Canis Majoris...	8.0	2.0	3	-0.02
18	ν Orionis.....	9.2	4.5	2	-0.04	24	ν Geminorum....	9.2	4.0	2	+0.08
19	ξ Orionis.....	9.1	4.3	2	0.00	25	γ Geminorum....	9.0	2.0	3	+0.02
20	η Geminorum....	9.2	3.0	3	+0.04						

* Poor observation.

† Seeing 3 on this night.

‡ Seeing 1 at beginning and 2-3 at end of night.

RESULTS OF OBSERVATIONS OF CIRCUMPOLAR STARS FOR AZIMUTH OF THE MERIDIAN MARK AND FOR LATITUDE.

Azimuth of the mark.—In making ordinary observations in right ascension the azimuth of the instrument is determined by measuring, with the right ascension micrometer, the distance of c_3 , the middle thread of the reticule, from the meridian mark. The azimuth of the mark itself is determined by observations of the same circumpolar star at both upper and lower culminations. The mean result from a pair of observations made on the same day and by the same observer, one at upper and the other at lower culmination, constitutes a determination of the azimuth of the mark which is fundamental, because whatever error there may be in the adopted right ascension of the star is eliminated. It may be assumed that the personal equation of the observer is also eliminated. A pair of observations at upper and lower culmination

are sometimes combined when several days apart, and are regarded as giving a fundamental determination, since small errors in the computed reductions to apparent place are in the long run nearly eliminated.

The collimation and the level of the instrument are determined at each observation, and readings on the mark are taken both before and after the observation of the star. Two time stars are also observed for clock error. The errors of the ephemeris places of the clock stars are too small to appreciably affect the results, provided that close circumpolar stars are used.

The formulæ for deducing the azimuth of the instrument from observations of stars and from measurements on the mark are derived as follows:

By MAYER'S formula for the reduction of transit observations we have, using CHAUVENET'S notation,

$$\alpha = T + \Delta T + Aa + Bb + Cc_0', \quad (1)$$

in which c_0' is the collimation of the mean of the threads, corrected for diurnal aberration, which is, for Washington, $-0^s.016$.

Putting

$$\alpha - T - Bb - Cc_0' = M,$$

we have for the circumpolar star, and for a time star, respectively,

$$aA_p = M_p - \Delta T \text{ and } aA_t = M_t - \Delta T.$$

$$a = \frac{M_t - M_p}{A_t - A_p}. \quad (2)$$

Let D_m = Distance in micrometer revolutions of mark west of c_3 as seen in the field.

A_m = Azimuth of mark, positive when west of north point.

C_3 = Collimation of c_3 in micrometer revolutions.

a and b = Azimuth and level constants, respectively.

R = Angular value of one revolution of right ascension micrometer screw.

Z = North zenith distance of mark.

Then

$$A_m = a - \frac{D_m R + b \cos Z + C_3 R}{\sin Z}. \quad (3)$$

For the 6-inch transit circle, $R = 1^s.902^*$ and for the north meridian mark $Z = 92^\circ 22'$. and we have

$$A_m = a - (2 D_m + 2 C_3 - 0.043b) 0^s.952.$$

$$\text{Let } (2 D_m + 2 C_3 - 0.043b) 0^s.952 = K. \quad (4)$$

Then

$$A_m = a - K, \quad (5)$$

$$\text{and } a = A_m + K. \quad (6)$$

In practice, the value of a is computed from the observations by means of formula (2) and the value of K from formula (4). It is then convenient to pass from the azimuth of the instrument to the azimuth of the mark, or from the azimuth of the mark to the azimuth of the instrument, by means of formulæ (5) and (6), respectively.

The observations for azimuth of the mark which follow have been made rather

* From February 13, 1900, to July 16, 1900, the adopted value of one revolution of the right ascension micrometer screw was $1^s.900$.

frequently in order to test the steadiness of the mark, and also to detect any systematic difference that there may be between the results from α Ursæ Minoris at upper and lower culmination. As to the latter, we have the following results from 83 observations:

Azimuth of mark from α Ursæ Minoris $+0^{\circ}.506$, 47 observations.

Azimuth of mark from α Ursæ Minoris s. p. $+0^{\circ}.505$, 36 observations.

Adopted Values of Azimuth of Meridian Mark.

Period.	Observer.	Clamp.	Adopted A_m .	No. Obs'ns.
Feb. 13 to Mar. 12, 1900	L.	E.	^s $+0.449$	8
Mar. 14 to May 2, 1900	U. and L.	E.	0.529	8
June 5 to July 16, 1900	U.	E.	0.498	13
Oct. 5 to Dec. 6, 1900	U.	W.	0.500	18
Dec. 7, 1900, to Jan. 5, 1901	U. and L.	W.	0.506	16
Jan. 6 to Jan. 30, 1901	U. and L.	W.	0.523	8
Feb. 22 to Mar. 7, 1901	U.	W.	0.534	12
Mar. 8 to Mar. 15, 1901	U.	W.	$+0.579$	3

Latitude.—In observing circumpolar stars in right ascension for azimuth of the mark we have usually at the same time also observed the stars in declination for fundamental determination of the latitude. A single determination of the latitude consists in the mean of the latitudes derived from two observations of the same star, one at upper and the other at lower culmination. The observations have been reduced with the Pulkowa refraction tables, and can not be regarded as really fundamental until the corrections to these tables for this observatory have been determined and applied. The results which follow agree in a general way with previous determinations of the latitude. They are uncorrected, however, for flexure and division error.

Summary of Observations of Circumpolar Stars for Latitude.

Date.	Mean Epoch.	Star.	Circle.	Clamp.	Latitude.	No. Obs'ns.
Feb. 19, 1900, to Mar. 15, 1901	¹⁹⁰⁰⁺ 0.280	α Ursæ Minoris	A	E.	[°] 38 ['] 55 ["] 14.56	13
	0.349	α Ursæ Minoris s. p.	A	E.	13.09	16
	1.027	α Ursæ Minoris	A	W.	14.44	20
	1.094	α Ursæ Minoris s. p.	A	W.	14.68	12
Mar. 12, 1900, to Mar. 15, 1901	0.331	α Ursæ Minoris	B	E.	14.98	9
	0.394	α Ursæ Minoris s. p.	B	E.	14.93	13
	1.031	α Ursæ Minoris	B	W.	14.20	23
	1.094	α Ursæ Minoris s. p.	B	W.	13.83	12
Dec. 8, 1900, to Dec. 20, 1900	0.963	43 H. Cephei	A	W.	15.28	4
	0.951	43 H. Cephei s. p.	A	W.	13.85	4
Dec. 8, 1900, to Dec. 20, 1900	0.958	43 H. Cephei	B	W.	14.48	5
	0.951	43 H. Cephei s. p.	B	W.	13.92	4

Probable error of one observation = $0''.39$

INTRODUCTION.

D XLVII

Summary of Observations of Circumpolar Stars for Latitude—Continued.

Mean Epoch.	Star.	Clamp.	Circle.	Latitude.	Weight.
1901.060	α Ursæ Minoris	W.	A	$38^{\circ} 55' 14.56'' \pm 0.10$	2
1900.314	α Ursæ Minoris	E.	A	13.82 ± 0.10	2
1901.062	α Ursæ Minoris	W.	B	14.02 ± 0.10	2
1900.362	α Ursæ Minoris	E.	B	14.96 ± 0.12	2
1900.957	43 H. Cephei	W.	A	14.56 ± 0.14	1
1900.954	43 H. Cephei	W.	B	14.20 ± 0.14	1

Mean ϕ $38^{\circ} 55' 14''.35 \pm 0''.15$
 Correction for bisection error -0.20

These results may be arranged as follows:

Circle A, Clamp W.,	$38^{\circ} 55' 14.56''$
" A, " E.,	13.82
" B, " W.,	14.11
" B, " E.,	14.96
Mean...	$38^{\circ} 55' 14.36''$
Circle A, Clamps W. and E.,	$38^{\circ} 55' 14.31''$
" B, Clamps W. and E.,	14.39
Clamp W., Circles A and B,	14.34
" E., Circles A and B,	14.39

The number of divisions of the circles used is enough to partially eliminate the effect of division errors. The mean result corrected for bisection error but uncorrected for flexure and error of refraction tables is $+38^{\circ} 55' 14''.15$.

Results of Observations of Circumpolar Stars for Azimuth of Meridian Mark and for Latitude.

Date.	Star.	Observer.	Clamp.	a .	K .	A_m .	Latitude.	
							A.	B.
1900				s	s	s	$38^{\circ} 55'$	$38^{\circ} 55'$
Feb. 19	α Ursæ Minoris.....	L.	E.	$+2.350$	$+1.883$	$+0.467$	14.4	....
19	α Ursæ Minoris S. P. ...			$+2.378$	$+1.921$	$+0.457$	12.4	....
23	α Ursæ Minoris S. P. ...			$+2.484$	$+1.972$	$+0.512$	13.2	....
27	α Ursæ Minoris.....			$+2.219$	$+1.851$	$+0.368$	14.5	....
Mar. 3	α Ursæ Minoris.....			$+2.842$	$+2.403$	$+0.439$	14.0	....
3	α Ursæ Minoris S. P. ...			$+2.939$	$+2.465$	$+0.474$	13.4	....
7	α Ursæ Minoris.....	}		$+2.322$	$+1.874$	$[+0.448]$	15.1	....
7	α Ursæ Minoris S. P. ...			$+2.506$	$+2.082$	$+0.424$	14.3	14.1
12	α Ursæ Minoris.....			$+2.377$	$+1.853$	$+0.524$	15.5	14.4
14	α Ursæ Minoris.....			.....	.....	.....	14.6	13.4
16	α Ursæ Minoris S. P. ...			$+2.556$	$+2.023$	$+0.533$	13.0	13.6
16	α Ursæ Minoris.....			$+2.409$	$+1.824$	$+0.585$	15.6	15.2
27	α Ursæ Minoris S. P. ...	L.	E.	$+2.300$	$+1.828$	$+0.472$	13.0	14.8
30	α Ursæ Minoris S. P. ...	U.	E.	$+2.456$	$+1.942$	$+0.514$	13.4	15.4
Apr. 9	α Ursæ Minoris S. P. ...	U.	W.	$+0.144$	-0.382	$+0.526$	[12.9]	[16.5]
19	α Ursæ Minoris S. P. ...	L.	E.	-0.898	-1.463	$+0.565$	13.6	13.4
24	α Ursæ Minoris.....	U.		-0.813	-1.328	$+0.515$	13.4	12.7
June 5	α Ursæ Minoris S. P. ...			$+0.460$	-0.003	$+0.463$	13.3	15.3
5	α Ursæ Minoris.....	U.	E.	$+0.693$	$+0.162$	$+0.531$	14.6	16.2

The mirrors for illuminating the circles were being repaired from November 11 to December 6, inclusive, and during this time no observations in declination were made.

D XLVIII

SIX-INCH TRANSIT CIRCLE.

Results of Observations of Circumpolar Stars for Azimuth of Meridian Mark and for Latitude—Cont'd.

Date.	Star.	Ob- server.	Clamp.	α .	K .	A_m .	Latitude.	
							A.	B.
1900 June				^s	^s	^s	38° 55'	38° 55'
7	α Ursæ Minoris S. P.	U.	E.	+0.158	-0.346	+0.504	13.2	15.6
8	α Ursæ Minoris			+0.202	-0.307	+0.509	14.1	16.0
9	α Ursæ Minoris S. P.			+0.040	-0.494	+0.534	13.2	15.0
11	α Ursæ Minoris S. P.			-0.226	-0.716	+0.490	13.8	14.9
20	α Ursæ Minoris S. P.			+0.206	-0.300	+0.506	13.4	15.2
20	α Ursæ Minoris			+0.444	-0.108	+0.552	15.1	16.4
21	α Ursæ Minoris S. P.			-0.034	-0.448	+0.414	11.7	14.7
22	α Ursæ Minoris S. P.			-0.064	-0.549	+0.485	13.1	15.4
23	α Ursæ Minoris S. P.			-0.188	-0.675	+0.487	12.6	15.1
30	α Ursæ Minoris S. P.			-0.932	-1.423	+0.491	13.1	15.7
30	α Ursæ Minoris		E.	-0.526	-1.036	+0.510	14.1	16.4
Nov. 11	43 H. Cephei		W.	-0.214	-0.631	+0.417	....	....
11	α Ursæ Minoris			-0.120	-0.632	+0.512	....	....
11	α Ursæ Minoris S. P.			-0.022	-0.514	+0.492	....	....
12	43 H. Cephei			-0.176	-0.572	+0.396	....	....
12	α Ursæ Minoris			-0.104	-0.572	+0.468	....	....
13	43 H. Cephei			-0.280	-0.717	+0.437	....	....
13	α Ursæ Minoris			-0.268	-0.717	+0.449	....	....
13	43 H. Cephei S. P.			-0.076	-0.583	+0.507	....	....
13	α Ursæ Minoris S. P.			-0.092	-0.583	+0.491	....	....
14	43 H. Cephei			-0.078	-0.550	+0.472	....	....
14	α Ursæ Minoris			-0.065	-0.550	+0.485	....	....
15	α Ursæ Minoris S. P.			+0.186	-0.334	+0.520	....	....
16	43 H. Cephei			+0.087	-0.379	+0.466	....	....
16	α Ursæ Minoris			+0.124	-0.380	+0.504	....	....
22	43 H. Cephei			-0.453	-1.010	+0.557	....	....
22	α Ursæ Minoris			-0.476	-0.984	+0.508	....	....
27	43 H. Cephei			+0.759	+0.302	+0.457	....	....
27	α Ursæ Minoris			+0.802	+0.315	+0.487	....	....
29	α Ursæ Minoris S. P.			+1.272	+0.768	+0.504	....	....
30	43 H. Cephei			-0.225	-0.759	+0.534	....	....
30	α Ursæ Minoris			-0.251	-0.759	+0.508	....	....
30	43 H. Cephei S. P.			-0.066	-0.605	+0.539	....	....
30	α Ursæ Minoris S. P.			-0.056	-0.586	+0.530	....	....
Dec. 1	43 H. Cephei			-0.268	-0.737	+0.469	....	....
1	α Ursæ Minoris			-0.276	-0.733	+0.457	....	....
1	43 H. Cephei S. P.			-0.164	-0.670	+0.506	....	....
1	α Ursæ Minoris S. P.			-0.157	-0.662	+0.505	....	....
2	43 H. Cephei			-0.339	-0.846	+0.507	....	....
2	α Ursæ Minoris			-0.292	-0.835	+0.543	....	....
5	43 H. Cephei			-0.296	-0.786	+0.490	....	....
5	α Ursæ Minoris			-0.285	-0.777	+0.492	....	....
6	43 H. Cephei			-0.182	-0.736	+0.554	....	....
6	α Ursæ Minoris			-0.214	-0.721	+0.507	....	....
8	43 H. Cephei			-0.282	-0.784	+0.502	[12.1]	13.7
8	α Ursæ Minoris			-0.288	-0.778	+0.490	15.8	13.6
9	43 H. Cephei S. P.			-0.012	-0.488	+0.476	14.4	14.6
9	α Ursæ Minoris S. P.			+0.025	-0.485	+0.510	14.1	14.1
10	α Ursæ Minoris			-0.096	-0.566	+0.470	14.1	13.2
11	43 H. Cephei S. P.			+0.009	-0.540	+0.549	14.2	14.2
11	α Ursæ Minoris S. P.			-0.007	-0.514	+0.507	13.9	14.3
13	α Ursæ Minoris			-0.086	-0.574	+0.488	14.2	13.8
14	43 H. Cephei S. P.			+0.364	-0.123	+0.487	13.8	14.1
14	α Ursæ Minoris S. P.			+0.400	-0.115	+0.515	13.7	13.6
15	43 H. Cephei			+0.270	-0.183	+0.453	15.4	14.6
15	α Ursæ Minoris			+0.280	-0.183	+0.463	14.9	14.1
16	43 H. Cephei			+0.374	-0.124	+0.498	15.1	14.2
16	α Ursæ Minoris			+0.376	-0.124	+0.500	15.0	14.0
18	43 H. Cephei S. P.			+0.158	-0.304	+0.462	13.0	12.8
18	α Ursæ Minoris S. P.			+0.212	-0.304	+0.516	14.9	14.5
19	43 H. Cephei			-0.144	-0.644	+0.500	15.2	15.0
19	α Ursæ Minoris			-0.124	-0.627	+0.503	14.0	14.0
20	43 H. Cephei			-0.136	-0.628	+0.492	15.4	14.9
20	α Ursæ Minoris			-0.114	-0.619	+0.505	15.0	14.3
21	α Ursæ Minoris	U.	W.	+0.094	-0.430	+0.524	14.0	14.7

INTRODUCTION.

D XLIX

Results of Observations of Circumpolar Stars for Azimuth of Meridian Mark and for Latitude—Cont'd.

Date.	Star.	Ob- server.	Clamp.	α .	K .	A_m .	Latitude.	
							A.	B.
				^s	^s	^s	38° 55'	38° 55'
¹⁹⁰⁰ Dec. 28	α Ursæ Minoris.....	U.	W.	-0.125	-0.648	+0.523	15.4	15.3
29	α Ursæ Minoris.....			-0.014	-0.521	+0.507	15.1	14.3
¹⁹⁰¹ Jan. 3	α Ursæ Minoris.....	U.		+0.079	-0.432	+0.511	....	15.3
5	α Ursæ Minoris.....	L.		-0.020	-0.528	+0.508	....	14.8
9	α Ursæ Minoris.....	U.		-0.601	-1.157	+0.556	14.5	14.8
13	α Ursæ Minoris.....	U.		-0.306	-0.849	+0.543	14.1	14.3
15	α Ursæ Minoris.....	L.		-0.588	-1.136	+0.548	14.4	14.4
16	α Ursæ Minoris.....	U.		-0.986	-1.475	+0.489	13.4	13.6
18	α Ursæ Minoris.....	U.		-0.135	-0.644	+0.509	[10.1]	....
19	α Ursæ Minoris.....	L.		-0.043	-0.576	+0.533	14.9	13.9
20	α Ursæ Minoris.....	U.		-0.154	-0.687	+0.533	13.4	13.6
22	α Ursæ Minoris.....			-0.560	-1.034	+0.474	14.4	14.2
Feb. 23	43 H. Cephei S. P.....			+0.048	-0.489	+0.537	14.2	13.2
23	α Ursæ Minoris S. P....			+0.032	-0.481	+0.513	15.5	14.1
24	α Ursæ Minoris.....			-0.054	-0.580	+0.526	[16.7]	15.0
25	α Ursæ Minoris S. P....			-0.268	-0.792	+0.524	14.5	13.4
26	43 H. Cephei S. P.....			-0.182	-0.726	+0.544	13.9	13.5
26	α Ursæ Minoris S. P....			-0.206	-0.719	+0.513	14.8	14.4
28	43 H. Cephei S. P.....			-0.181	-0.719	+0.538	14.5	13.5
28	α Ursæ Minoris S. P....			-0.190	-0.721	+0.531	15.0	13.6
Mar. 2	43 H. Cephei S. P.....			-0.592	-1.143	+0.551	15.1	13.5
2	α Ursæ Minoris S. P....			-0.588	-1.134	+0.546	15.2	13.3
5	43 H. Cephei S. P.....			-0.125	-0.635	+0.510	13.7	13.2
5	α Ursæ Minoris S. P....			-0.128	-0.627	+0.499	14.6	13.8
6	43 H. Cephei S. P.....			+0.062	-0.510	+0.572	14.3	13.1
6	α Ursæ Minoris S. P....			-0.039	-0.518	+0.557	15.6	13.4
7	43 H. Cephei S. P.....			-0.235	-0.815	+0.580	13.9	12.8
7	α Ursæ Minoris S. P....			-0.290	-0.834	+0.544	14.3	13.5
8	α Ursæ Minoris.....			-0.450	-1.026	+0.576	14.6	13.5
12	α Ursæ Minoris.....			-0.239	-0.800	+0.561	14.1	14.1
15	α Ursæ Minoris.....	U.	W.	+0.219	-0.381	+0.600	13.5	13.8

RESULTS OF OBSERVATIONS OF FUNDAMENTAL STARS FOR PRELIMINARY TEST OF THE INSTRUMENT, AND FOR DETERMINATION OF THE LATITUDE.

These observations were made by myself, assisted by Mr. LITTELL, in April, 1900. The method of observing is described on page D XXXVI. Each star was observed in right ascension and declination four times in each position of the clamp. All stars south of the zenith were observed facing south, and those north of the zenith facing north. The nadir was observed at the beginning, near the middle, and at the end of each night's work. All the observations in right ascension were made on the chronograph, except those of 1 H. Draconis, 9 H. Draconis, and Groombridge 1706, which were made by eye and ear.

The number of stars observed is 45. They were selected from those stars in the American Ephemeris and Berliner Jahrbuch, whose apparent places are given. Thirty-two of the stars are arranged in pairs of approximately equal north and south zenith distances. The star places used are those of NEWCOMB'S Fundamental Catalogue.

On account of the presence of instrumental errors, which can not be allowed for, no attempt will be made here to discuss these observations completely; but the

partial discussion which follows will give some indication of the character of the work which has been done with the instrument.

The observations in right ascension were reduced by BESSELS's formula. A value of the quantity $\Delta T + m$ has been assumed for each night's work and the correction to it found for each star. The mean of the four values of this correction designated as $\delta (\Delta T + m)$ was taken for each star in each position of the clamp. The rate of change of $\Delta T + m$ during each night's work was very small and no correction for it has been applied. The effect on $\delta (\Delta T + m)$ is negligible. The results for the 16 pairs of stars are given in the accompanying table.

The absolute values of the quantity $\delta (\Delta T + m)$ have of course no significance, but the relative values for the different stars show, within the limits of the declinations of the stars, the range of error in right ascension. For the stars south of the zenith the probable error of $\delta (\Delta T + m)$ is 0^s.025, clamp west, and 0^s.022, clamp east. This leaves a very small margin for personal and instrumental error, as the probable errors of the right ascensions of the stars and of the mean of four observations combined can not be much smaller than this. The values of $\delta (\Delta T + m)$ from stars near the pole indicate a high degree of accuracy in adopted values of the instrumental constants. The column headed *Mean* $\delta (\Delta T + m)$ contains the mean of the four values of $\delta (\Delta T + m)$ for each pair of stars. The probable error of one of these mean values of $\delta (\Delta T + m)$ is 0^s.024. The pairs containing circumpolar stars give results which agree remarkably well with the results from zenith stars.

There seems to be little or no trace of error due to defective illumination of the field which was found in observations with screens; see page D xxxix. But these stars are all of the sixth magnitude or brighter, and there is reason to believe that the bad effect of the defective illumination is most pronounced when the light is turned down for the fainter stars. No corrections have been applied for personal error due to star magnitudes or to the position of the observer.

The observations in declination were reduced from the nadir and are discussed for each circle separately. This is made possible by the fact that at each observation an independent determination of the declination was made on each circle. Only the observations of the stars of the 16 pairs are included in the discussion.

The correction to the assumed latitude, $+38^{\circ} 55' 14''.00$, having been found for each observation, the means were taken for each star in each position of the clamp and are arranged according to zenith distance. The mean of the four corrections for each pair is given in the column headed *Mean* $\Delta \phi$, and from this correction to the latitude assumed, the errors of the computed refractions, flexures of the telescope and circles, and presumably all other errors of long period depending on the zenith distance, are nearly eliminated. The systematic division errors of the circles are in part eliminated and the division errors of the nadir entirely so, since the same divisions are used on the nadir clamp east and clamp west.

INTRODUCTION.

D LI

The means of the corrections deduced from each of the 16 pairs of stars give

$$\begin{array}{l} \text{for Circle A, } \varphi = 38^{\circ} 55' 13.58'' \pm 0.04, \\ \text{for Circle B, } \varphi = 38^{\circ} 55' 14.12'' \pm 0.04. \end{array}$$

Mean Epoch April 17.5, 1900.

The probable error of the latitude from a single pair is,

$$\begin{array}{l} \text{Circle A, } 0.173, \\ \text{Circle B, } 0.170. \end{array}$$

Assuming as the probable error of the mean of 16 observations, $0''.075$, and as the probable error of the mean of 2 declinations, $0''.072$, we get as the probable error of the mean of 4 divisions of the circles,

$$\begin{array}{l} \text{Circle A, } 0.276, \\ \text{Circle B, } 0.270. \end{array}$$

These results do not include the systematic errors of division of long period, but they agree with the result given on page D LVII, which was deduced in an entirely different way, and show that the circles were not as accurately divided as they should be. As stated elsewhere, these circles have recently been redivided by the makers.

The column headed *W.—E.* gives the difference between the observed corrections to the assumed latitude for each star in the two positions of the clamp. The column headed *S.—N.* gives the difference between the results from the two stars of a pair. But on account of the uncorrected errors of division it is perhaps not practicable to deduce any results of value from these differences concerning the systematic errors of the instrument in declination. No corrections have been applied for personal error due to the position of the observer.

Results of Observations in Right Ascension for Testing the Performance of the Instrument.

No.	Star.	Mag.	R. A.	Decl.	Z. D.	$\delta (\Delta T + m)$						Mean Z. D.
						W.	E.	W.-E.	$\frac{W.+E.}{2}$	S.-N.	Mean.	
1	{19 Leo. Min ..	5.2	h m	o /	o /	s	s	s	s	s	s	o /
	{31 Leo. Min ..	4.3	9 51	+ 41 32	- 2 37	-0.208	-0.155	-0.053	-0.182			
2	{ μ Urs. Maj ..	3.0	10 22	+ 37 13	+ 1 42	-0.150	-0.108	-0.042	-0.129	+0.053	-0.156	2 10
	{10 Leo. Min ..	4.8	10 16	+ 42 0	- 3 5	-0.112	-0.175	+0.063	-0.144			
3	{ λ Urs. Maj ..	3.3	9 28	+ 36 50	+ 2 5	-0.152	-0.140	-0.012	-0.146	-0.002	-0.145	2 35
	{40 Lyncis	3.3	9 14	+ 34 49	+ 4 6	-0.115	-0.125	+0.010	-0.120			
4	{ ψ Urs. Maj ..	3.1	11 13	+ 43 25	- 4 30	-0.180	-0.145	-0.035	-0.162	-0.042	-0.141	4 18
	{ ν Urs. Maj ..	3.3	11 4	+ 45 2	- 6 7	-0.045	-0.075	+0.030	-0.060			
5	{ κ Urs. Maj ..	3.3	11 13	+ 33 38	+ 5 17	-0.168	-0.080	-0.088	-0.124	-0.064	-0.092	5 42
	{42 Leo. Min ..	5.0	8 57	+ 47 33	- 8 38	-0.112	-0.052	-0.060	-0.082			
6	{ θ Urs. Maj ..	3.0	10 40	+ 31 13	+ 7 42	-0.150	-0.093	-0.057	-0.122	-0.040	-0.102	8 10
	{ ϵ Leonis	3.0	9 26	+ 52 8	-13 13	-0.080	-0.090	+0.010	-0.085			
7	{36 Urs. Maj ..	5.0	9 40	+ 24 14	+14 41	-0.218	-0.145	-0.073	-0.182	-0.097	-0.134	13 57
	{ δ Leonis	2.3	10 24	+ 56 30	-17 35	-0.118	-0.110	-0.008	-0.114			
8	{ ν Urs. Maj ..	3.6	11 9	+ 21 4	+17 51	-0.183	-0.100	-0.083	-0.142	-0.028	-0.128	17 43
	{ η Leonis	3.3	11 24	+ 56 30	-17 35	-0.118	-0.110	-0.008	-0.114			
9	{ α Urs. Maj ..	2.0	10 2	+ 17 15	+21 40	-0.280	-0.185	-0.095	-0.232	-0.107	-0.178	21 8
	{ β Leonis	2.0	9 44	+ 59 31	-20 36	-0.130	-0.120	-0.010	-0.125			
10	{3 Draconis ..	5.3	10 58	+ 62 17	-23 22	-0.190	-0.195	+0.005	-0.192	+0.023	-0.180	23 34
	{ γ Leonis	5.1	11 44	+ 15 8	+23 47	-0.240	-0.098	-0.142	-0.169			
11	{36 Urs. Maj ..	5.0	11 37	+ 67 17	-28 23	-0.168	-0.150	-0.018	-0.159	+0.027	-0.146	28 6
	{ σ Leonis	3.8	10 44	+ 11 4	+27 50	-0.182	-0.082	-0.100	-0.132			
12	{ σ^2 Urs. Maj ..	5.0	9 2	+ 67 32	-28 37	-0.095	+0.005	-0.100	-0.045	-0.115	-0.102	28 35
	{ λ Draconis ..	3.3	9 36	+ 10 21	+28 34	-0.195	-0.125	-0.070	-0.160			
13	{ π Leonis	5.0	11 25	+ 69 52	-30 58	-0.215	-0.177	-0.038	-0.196	+0.058	-0.167	30 41
	{9 H. Draconis	4.6	9 55	+ 8 31	+30 24	-0.153	-0.122	-0.031	-0.138			
14	{9 H. Draconis	4.6	10 27	+ 76 13	-37 19	-0.082	+0.055	-0.137	-0.014	-0.132	-0.080	36 45
	{ θ Hydræ	4.0	9 9	+ 2 44	+36 11	-0.205	-0.088	-0.117	-0.146			
15	{Gr. 1706 ..	6.3	10 52	+ 78 17	-39 23	-0.122	-0.330	+0.208	-0.226	+0.041	-0.206	39 17
	{ ν Leonis	4.8	11 32	- 0 16	+39 11	-0.218	-0.152	-0.066	-0.185			
16	{1 H. Draconis	4.3	9 23	+ 81 45	-42 51	-0.160	-0.042	-0.118	-0.101	-0.062	-0.132	42 46
	{6 Sextantis ..	6.1	9 46	- 3 46	+42 41	-0.178	-0.148	-0.030	-0.163			
17	{24 Cephei s. p.	4.8	10 8	+108 16	-69 14	-0.185	-0.167	-0.018	-0.176	+0.002	-0.175	69 44
	{ ξ Hydræ	4.0	11 28	- 31 18	+70 13	-0.208	-0.140	-0.068	-0.174			

Probable error of $\delta (\Delta T + m)$ for stars south of zenith = 0".025, clamp west, and 0".022, clamp east.
 Probable error of Mean $\delta (\Delta T + m)$ from stars of one pair = 0".024

INTRODUCTION.

D LIII

Results of Observations in Declination for Testing the Performance of the Instrument.

CIRCLE A.										
No.	Star.	R. A.	Z. D.	$\Delta\phi$			S.—N.		Mean $\Delta\phi$	
				W.	E.	W.—E.	W.	E.		
1	$\{19$ Leonis Minoris ..	h m ^s 9 51	° ' " — 2 37	" +0.38	" —0.75	" +1.13	"	"	"	
	$\{31$ Leonis Minoris ..	10 22	+ 1 42	—1.05	—0.90	—0.15	} —1.43	—0.15	—0.58	
2	$\{\mu$ Ursæ Majoris	10 16	— 3 5	+0.52	—0.80	+1.32				} —0.80	+0.40	—0.24
	$\{10$ Leonis Minoris ..	9 28	+ 2 5	—0.28	—0.40	+0.12				
3	$\{\gamma$ Ursæ Majoris	10 11	— 4 30	—0.38	+0.68	—1.06	} +0.06	—0.88	—0.06	
	$\{40$ Lyncis	9 14	+ 4 6	—0.32	—0.20	—0.12				
4	$\{\psi$ Ursæ Majoris	11 4	— 6 7	—0.23	+0.42	—0.65	} —0.84	—0.27	—0.18	
	$\{\nu$ Ursæ Majoris	11 13	+ 5 17	—1.07	+0.15	—1.22				
5	$\{\kappa$ Ursæ Majoris	8 57	— 8 38	—0.62	+0.32	—0.94	} —1.08	—0.19	—0.47	
	$\{42$ Leonis Minoris ..	10 40	+ 7 42	—1.70	+0.13	—1.83				
6	$\{\theta$ Ursæ Majoris	9 26	—13 13	—0.35	—0.30	—0.05	} —0.45	+0.20	—0.39	
	$\{\epsilon$ Leonis	9 40	+14 41	—0.80	—0.10	—0.70				
7	$\{36$ Ursæ Majoris	10 24	—17 35	—0.18	—0.40	+0.22	} —1.47	+0.18	—0.61	
	$\{\delta$ Leonis	11 9	+17 51	—1.65	—0.22	—1.43				
8	$\{\nu$ Ursæ Majoris	9 44	—20 36	+0.55	—1.05	+1.60	} —1.60	+1.80	—0.20	
	$\{\eta$ Leonis	10 2	+21 40	—1.05	+0.75	—1.80				
9	$\{\alpha$ Ursæ Majoris	10 58	—23 22	—0.22	+0.02	—0.24	} —0.23	+0.56	—0.02	
	$\{\beta$ Leonis	11 44	+23 47	—0.45	+0.58	—1.03				
10	$\{3$ Draconis	11 37	—28 23	+0.50	+0.98	—0.48	} —2.70	—2.46	—0.55	
	$\{l$ Leonis	10 44	+27 50	—2.20	—1.48	—0.72				
11	$\{6^2$ Ursæ Majoris	9 2	—28 37	+1.22	—0.10	+1.32	} —1.72	—2.18	—0.42	
	$\{o$ Leonis	9 36	+28 34	—0.50	—2.28	+1.78				
12	$\{\lambda$ Draconis	11 25	—30 58	—1.00	+0.15	—1.15	} —0.18	—2.03	—0.98	
	$\{\pi$ Leonis	9 55	+30 24	—1.18	—1.88	+0.70				
13	$\{9$ H. Draconis	10 27	—37 19	+0.75	+0.30	+0.45	} —2.10	—1.38	—0.34	
	$\{\theta$ Hydræ	9 9	+36 11	—1.35	—1.08	—0.27				
14	$\{$ Gr. 1706	10 52	—39 23	+0.70	+0.62	+0.08	} —2.45	—1.42	—0.31	
	$\{\nu$ Leonis	11 32	+39 11	—1.75	—0.80	—0.95				
15	$\{1$ H. Draconis	9 23	—42 51	+0.10	—1.02	+1.12	} —0.92	+0.02	—0.68	
	$\{6$ Sextantis	9 46	+42 41	—0.82	—1.00	+0.18				
16	$\{24$ Cephei S. P.	10 8	—69 14	+0.35	+1.23	—0.88	} —2.97	—3.03	—0.71	
	$\{\xi$ Hydræ	11 28	+70 13	—2.62	—1.80	—0.82				
									—0.421	

Probable error of latitude from one pair = 0".173

Assumed $\phi = +38^\circ 55' 14''.00$ Observed $\phi = +38^\circ 55' 13''.58 \pm 0''.043$

Results of Observations in Declination for Testing the Performance of the Instrument—Continued.

CIRCLE B.											
No.	Star.	R. A.		Z. D.		$\Delta\phi$			S.—N.		Mean $\Delta\phi$
		W.	E.	W.—E.	W.	E.					
		h	m	°	'	"	"	"	"	"	"
1	{19 Leonis Minoris...	9	51	— 2	37	—0.18	+1.20	—1.38	—0.44	—1.72	—0.03
	{31 Leonis Minoris...	10	22	+ 1	42	—0.62	—0.52	—0.10			
2	{ μ Ursæ Majoris	10	16	— 3	5	—1.58	+2.02	—3.60	+0.76	—1.44	+0.05
	{10 Leonis Minoris...	9	28	+ 2	5	—0.82	+0.58	—1.40			
3	{ λ Ursæ Majoris	10	11	— 4	30	—0.08	+0.88	—0.96	—0.12	+0.97	+0.61
	{40 Lyncis.....	9	14	+ 4	6	—0.20	+1.85	—2.05			
4	{ ψ Ursæ Majoris	11	4	— 6	7	—0.90	+0.42	—1.32	+0.77	+0.96	+0.19
	{ ν Ursæ Majoris	11	13	+ 5	17	—0.13	+1.38	—1.51			
5	{ κ Ursæ Majoris	8	57	— 8	38	—0.48	—0.60	+0.12	+1.10	+1.23	+0.04
	{42 Leonis Minoris...	10	40	+ 7	42	+0.62	+0.63	—0.01			
6	{ θ Ursæ Majoris	9	26	—13	13	+0.32	+0.85	—0.53	—0.42	—0.63	+0.32
	{ ϵ Leonis.....	9	40	+14	41	—0.10	+0.22	—0.32			
7	{36 Ursæ Majoris	10	24	—17	35	—0.45	+1.00	—1.45	+0.42	—1.32	+0.05
	{ δ Leonis.....	11	9	+17	51	—0.03	—0.32	+0.29			
8	{ ν Ursæ Majoris	9	44	—20	36	—1.00	+0.85	—1.85	+0.28	—1.00	—0.26
	{ η Leonis.....	10	2	+21	40	—0.72	—0.15	—0.57			
9	{ α Ursæ Majoris	10	58	—23	22	+0.40	+0.48	—0.08	—0.52	+0.07	+0.33
	{ β Leonis.....	11	44	+23	47	—0.12	+0.55	—0.67			
10	{3 Draconis.....	11	37	—28	23	+1.08	—0.35	+1.43	—0.48	—1.00	0.00
	{ γ Leonis.....	10	44	+27	50	+0.60	—1.35	+1.95			
11	{ σ^2 Ursæ Majoris	9	2	—28	37	+0.82	—0.20	+1.02	—1.12	—0.20	—0.02
	{ ϕ Leonis.....	9	36	+28	34	—0.30	—0.40	+0.10			
12	{ λ Draconis.....	11	25	—30	58	+1.30	—0.32	+1.62	—1.18	—1.23	—0.11
	{ π Leonis.....	9	55	+30	24	+0.12	—1.55	+1.67			
13	{9 H. Draconis.....	10	27	—37	19	+0.78	+0.58	+0.20	—1.00	—0.80	+0.23
	{6 Hydræ.....	9	9	+36	11	—0.22	—0.22	0.00			
14	{Gr. 1706.....	10	52	—39	23	+2.00	+0.92	+1.08	—2.08	—2.00	+0.44
	{ ν Leonis.....	11	32	+39	11	—0.08	—1.08	+1.00			
15	{1 H. Draconis.....	9	23	—42	51	+1.58	+0.92	+0.66	—2.20	—1.60	+0.30
	{6 Sextantis.....	9	46	+42	41	—0.62	—0.68	+0.06			
16	{24 Cephei S. P.....	10	8	—69	14	+0.80	+0.23	+0.57	—1.62	—1.53	—0.27
	{ ξ Hydræ.....	11	28	+70	13	—0.82	—1.30	+0.48			
											+0.117

Probable error of latitude from one pair = 0."170

Assumed $\phi = +38^\circ 55' 14.''00$ Observed $\phi = +38^\circ 55' 14.''12 \pm 0.''04$

OBSERVATIONS OF STARS.

The observations of stars, the individual results, and the mean results are printed in a manner which is nearly self-explanatory. In printing the observations the means of the transits across the threads in right ascension and the means of the microscopes are given instead of the separate transits and microscope readings. The observed, and to some extent the adopted, instrumental constants are given on pages D LX to D LXVIII, and an attempt has been made to give, as far as practicable, all data needed for repeating the reductions. The notes found at the bottom of the page are referred to the proper star by reference numbers. Values of $\Delta T + m$ in heavy-face type belong to clock stars, and when inclosed in brackets have not been used in deriving the adopted values of $\Delta T + m$. Observations of a

few anonymous stars were made by mistake, and in such cases the observations and results have been printed with the others.

Concerning the accuracy of the work, it may be said that while the accidental errors of observation are small, considerable systematic errors are to be expected for reasons already given.

List of 139 Zodiacal Stars.—These observations were undertaken by the Observatory at the request of Sir DAVID GILL, H. M. Astronomer, Cape of Good Hope. Excepting a part of the observations of the Sun, Moon, and planets contained in Vol. I of this series of publications, this is the first work done with the 6-inch transit circle. The methods of observation and reduction used are given on pages D xxxv to D xxxvii.

After certain repairs to the instrument were completed, work was commenced on February 13, 1900. Excepting one group of comparison stars for Jupiter, the observations were finished on July 16, 1900. This group of stars would have been observed in May but for the absence of both myself and Mr. LITTELL on other duty, and was observed during February and March, 1901. It was intended to observe each star five times. The total number of observations made is 825, of which about 70 were made by Assistant Astronomer, (now Professor), F. B. LITTELL and the rest by myself. Assistance in reading microscopes and recording was rendered by Computers G. K. LAWTON and J. C. HAMMOND.

This work was well adapted to an instrument the errors of which had not been thoroughly investigated. The stars are disposed in small isolated groups, and those in each group differ only a few degrees in declination. The nadir points of the circles were observed at the beginning and end of each night's work, but have not been used in the reductions, which have been made purely differential in both right ascension and declination. Whenever an assistant was available both circles were read in declinations. Excepting in case of a few observations made on April 5, all the work done in 1900 was with the clamp east. The clamp was west during the observations of February and March, 1901. It is to be regretted that each star was not observed two or three times in each position of the clamp, but the circumstances under which the work was done rendered this impracticable. A statement as to the probable effect of division errors in declination will be found on page D vii.

The probable error of a single observation in right ascension is about $0^s.022$. When both circles are read in declination, the probable error of a single observation is $0''.22$.

A correction for inequality of pivots of $-0^s.014$, clamp west, has been applied.

The results of observations for personal equation due to star magnitudes are given on page D xl, but no correction of this kind has been applied to these observations.

Pulkowa refraction tables have been used in the computation of the refractions. The star places used are those of NEWCOMB'S Fundamental Catalogue. In case of a few stars not in NEWCOMB'S Catalogue the places used were furnished by the office of the American Ephemeris and Nautical Almanac. These places, which are given in the table below, have been derived from the same sources and by the same methods as those of NEWCOMB'S Fundamental Catalogue and may be considered as belonging to the same system.

The reductions to mean place have been computed by means of the independent star-numbers of the American Ephemeris.

Places of Zero Stars not in NEWCOMB'S Fundamental Catalogue.

Name.	Mag.	R. A. 1900.0	Cent. Var.	Proper Motion.	Decl. 1900.0	Cent. Var.	Proper Motion.
		h m s	s	s	° ' "	"	"
108 Tauri.....	6.8	5 9 26.987	+360.321	-0.108	+22 10 13.60	+436.06	-2.66
<i>n</i> Tauri.....	5.2	5 13 16.093	+360.301	+0.149	+21 59 35.31	+397.69	-8.28
<i>o</i> Tauri.....	6.0	5 21 37.697	+360.144	+0.009	+21 51 5.70	+333.14	-0.95
3 Geminorum...	6.5	6 3 39.694	+364.450	+0.096	+23 7 47.52	-31.97	+0.58
P. XII, 170....	6.8	12 39 3.283	+307.721	-0.459	-2 17 40.34	-1976.51	-0.31
37 Virginis.....	7.2	12 46 31.483	+305.295	-0.285	+3 36 1.48	-1961.45	+2.55
Mayer 592.....	6.0	14 31 40.544	+318.611	-5.943	-11 52 48.42	-1543.27	+38.53
24 Ophiuchi.....	5.6	16 50 46.144	+361.387	-0.038	-22 59 29.68	-599.85	-3.32
ξ Ophiuchi.....	4.5	17 15 0.621	+359.267	+1.645	-21 0 19.38	-410.76	-19.81
C^2 Ophiuchi.....	4.9	17 25 18.836	+365.743	-0.052	-23 53 6.97	-305.28	-2.93
X Sagittarii.....	4.6	17 41 15.957	+377.463	-0.037	-27 47 33.79	-165.90	-2.13
Mayer 722.....	6.5	17 50 2.090	+352.826	+0.130	-18 47 3.74	-87.47	-0.21
Bradley 2335..	6.0	18 32 55.676	+357.806	-0.616	-21 8 3.87	+274.22	-12.85

DATA FOR WEIGHTS.

Name.	Right Ascension.			Declination.		
	Mean Epoch.	Weight.		Mean Epoch.	Weight.	
		α_0	Cent. Var.		δ_0	Cent. Var.
108 Tauri.....	1872.5	15.5	2.07	1871.8	11.0	0.85
<i>n</i> Tauri.....	1863.8	55.8	3.75	1863.0	35.2	2.12
<i>o</i> Tauri.....	1868.2	62.3	3.88	1869.0	35.4	1.93
3 Geminorum...	1864.0	37.2	3.20	1865.7	25.5	1.70
P. XII, 170....	1876.5	15.5	0.63	1881.3	10.8	0.32
37 Virginis.....	1874.1	42.4	2.32	1871.5	21.9	1.25
Mayer 592.....	1876.0	59.5	2.37	1876.3	27.7	0.88
24 Ophiuchi.....	1875.7	49.4	2.37	1877.0	27.0	0.81
ξ Ophiuchi.....	1868.4	110.2	5.69	1868.0	53.9	2.90
C^2 Ophiuchi.....	1869.3	94.0	5.87	1869.1	38.6	2.09
X Sagittarii.....	1870.7	97.6	4.78	1870.5	42.6	2.04
Mayer 722.....	1888.0	35.0	0.30	1887.5	20.3	0.14
Bradley 2335..	1881.0	43.3	1.72	1883.4	21.3	0.41

Supplementary list of 352 reference stars for the planet Eros.—These observations were begun on December 8, 1900, and were finished on January 29, 1901. 1,672 observations were made, 1,370 of Eros stars and 302 of zero stars. Of these, 1,144 observations were made by myself and 528 by Mr. F. B. LITTELL. Assistance in reading microscopes and in recording was rendered by Mr. LITTELL and by Mr. G. K. LAWTON.

The observations and reductions have been made by the methods used in case of the preceding list of stars. On account of the large variation of the azimuth of the instrument with temperature, readings on the meridian mark were made about once an hour during each night's work. In reducing the observations in right ascension the azimuth constant was interpolated for each star. The variation of the azimuth was always regular and uniform enough so that this could be done accurately, and the errors arising from this source are probably very small. The nadir point was observed on both circles at the beginning, at the end, and near the middle of each night's work, but the observations in declination as printed have been reduced differentially from the zero stars.

All the observations were made with the clamp west and with the circles in the same position on the axis of the instrument. The instrument should have been reversed during the progress of the work, so as to give, as far as possible, two observations of each star in each position of the clamp. This would have been done but for the fact that when the work was begun circumstances seemed to indicate that only about two or three observations per star would be secured. It is hoped that the reading of both circles in declination and the selection of the zero stars as near as possible to the stars to be determined, will to some extent compensate for this deficiency.

The observations have been reduced differentially in both right ascension and declination. A list of the zero stars employed is given below. The star places used are those of NEWCOMB'S Fundamental Catalogue. No corrections for division errors have been applied. The probable accidental errors in right ascension and declination for a single observation have been computed by Mr. J. C. HAMMOND, and are as follows:

For Observer U.

Probable error in right ascension $= 0^s.021 \text{ sec } \delta$

Probable error in declination $= 0''.25 \text{ sec } \delta$

For Observer L.

Probable error in right ascension $= 0^s.023 \text{ sec } \delta$

Probable error in declination $= 0''.28 \text{ sec } \delta$

Observations with wire screens for personal equation due to difference of star magnitudes were made by myself on six nights, and by Mr. LITTELL on four nights, before commencing this work. After its completion observations for the same purpose were made by myself on seven nights. The mean results are given on page D XL. They seem to indicate that Mr. LITTELL'S personal equation from this cause is larger than my own by one or two hundredths of a second, and a similar difference has been found by comparison of our observations in right ascension. All observations of stars which were observed two or more times both by myself and Mr. LITTELL (excluding observations in right ascension of December 29) have been discussed in order to determine any systematic difference due to personality of observers. The mean difference in right ascension for 95 stars gives

$$U. - L. = -0^s.017.$$

The mean for 113 stars in declination gives

$$U. - L. = -0''.02, \text{ Circle A; and } U. - L. = -0''.05, \text{ Circle B.}$$

The difference $U. - L.$ in right ascension seems to be about the same for all the stars from the sixth to the ninth magnitudes, but may be due wholly or in part to difference of personal equation depending upon star magnitudes. No correction for personal equation due to star magnitudes has been applied to the individual results as printed, but in taking the means of the individual results for each star the correction $-0^s.017$ was applied to Mr. LITTELL'S observations to reduce them to mine. No correction for the difference $U. - L.$ in declination has been made, for the reason that the difference is so small that its reality may be open to doubt.

The differences of the observed declinations on Circles A and B have been taken for each star, and the mean difference without regard to sign is $0''.56$. This indicates a probable error due to division errors in the mean of four microscopes of about $0''.25$, which result agrees with a previous determination by a different method.

The probable error due to division error of the declination of a star determined with both circles may be taken as about $0''.2$.

The observations were made, on the whole, under fairly good conditions. Before beginning this work the instrument had been dismantled for some weeks in an unsuccessful attempt to get rid of the variation of the azimuth with temperature mentioned above, and soon after its completion the instrument was again dismantled for the purpose of investigating and removing this and other defects. A large part of the work was done in rather cold weather, but the seeing was fair on the average. On several cold nights the air was so damp that the slightest additional moisture caused the formation of frost on the eyepiece to an extent that was very troublesome. The moisture seemed to come from the eyeball, and by using spectacles, which served as a shield, I was able to observe, when without them work would have been impossible.

The right ascensions of December 29 from $3^h 0^m$ to $6^h 0^m$ are systematically too small by about $0^s.07$ as compared with the results of observations of the same stars on other nights. No satisfactory explanation of this has been found, nor does there seem to be any good reason for rejecting these observations or giving them diminished weight.

The greater part of the work of reducing the observations was done by Mr. J. C. HAMMOND, Computer. The methods of reduction used are the same as those given on pages D XXXVI and D XXXVII. The reductions to mean place were made in duplicate, using the BESSELIAN star-numbers of the American Ephemeris and the star-constants furnished for the purpose by the *Conférence Astrophotographique Internationale* of July, 1900.

List of 32 Fundamental Stars used in the Observation of the Eros Reference Stars.

Star.	Mag.	R. A. 1900.0			Decl. 1900.0	
		h	m	s	°	'
α Trianguli	3.6	1	47	23	+29	6
β Arietis	2.7	1	49	7	+20	19
γ Andromedæ	2.2	1	57	45	+41	51
α Arietis	2.2	2	1	32	+22	59
ξ^1 Ceti	4.5	2	7	42	+8	23
ξ^2 Ceti	4.3	2	22	50	+8	1
ν Arietis	5.4	2	33	8	+21	32
μ Ceti	4.4	2	39	32	+9	42
δ^1 Arietis	3.7	2	44	6	+26	51
β Persei	Var.	3	1	39	+40	34
δ Arietis	4.6	3	5	55	+19	21
ζ Arietis	5.0	3	9	9	+20	40
ϵ Tauri	3.8	3	21	45	+9	23
ϵ Persei	3.0	3	51	8	+39	43
λ Tauri	3.5	3	55	8	+12	12
ν Tauri	4.0	3	57	50	+5	43
δ^3 Tauri	5.8	4	3	20	+19	21
γ Tauri	3.9	4	14	6	+15	23
δ Tauri	3.9	4	17	10	+17	19
α Tauri	1.1	4	30	11	+16	19
τ Tauri	4.3	4	36	15	+22	46
i Tauri	5.1	4	45	31	+18	40
π^5 Orionis	3.9	4	49	2	+2	17
i Tauri	4.7	4	57	7	+21	27
τ Orionis	3.6	5	12	45	-6	57
χ Aurigæ	5.0	5	26	13	+32	7
σ Orionis	3.8	5	33	43	-2	39
i Geminorum	4.3	5	58	2	+23	16
ν Orionis	4.5	6	1	52	+14	47
η Geminorum	3.5	6	8	51	+22	32
μ Geminorum	3.2	6	16	55	+22	34
δ Monocerotis	4.4	6	18	28	+4	39

INTRODUCTION.

D LIX

TABLE I.—*The Equatorial Thread Intervals.*[Reduction to the mean of the nine threads, b_2 to d_2 .]

Vertical Thread.	Feb. 13, 1900, to Apr. 4, 1900.	Apr. 5, 1900, to Apr. 15, 1900.	Apr. 16, 1900, to July 16, 1900.	Oct. 11, 1900, to Mar. 15, 1901.
I	+ 35.89 ^s	+ 35.87 ^s	+ 35.89 ^s	+ 35.88 ^s
a ₁	31.58	31.49	31.58	31.52
a ₂	29.80	29.70	29.80	29.75
a ₃	27.99	27.91	27.99	27.92
a ₄	26.20	26.15	26.20	26.12
II a ₅	23.90	23.89	23.90	23.89
III b ₁	11.967	11.953	11.967	11.972
b ₂	9.359	9.377	9.359	9.409
b ₃	7.772	7.761	7.772	7.771
c ₁	4.198	4.193	4.198	4.208
c ₂	+ 2.113	2.090	+ 2.113	+ 2.074
IV c ₃	— 0.020	+ 0.020	— 0.020	— 0.019
c ₄	2.090	— 2.113	2.090	2.111
c ₅	4.193	4.198	4.193	4.186
d ₁	7.761	7.772	7.761	7.775
d ₂	9.377	9.359	9.377	9.370
V d ₃	11.953	11.967	11.953	12.006
VI e ₁	23.89	23.90	23.89	23.94
e ₂	26.15	26.20	26.15	26.14
e ₃	27.91	27.99	27.91	27.99
e ₄	29.70	29.80	29.70	29.75
e ₅	31.49	31.58	31.49	31.54
VII	— 35.87	— 35.89	— 35.87	— 35.82

TABLE II.—*Correction for the Inclination of the Fixed Zenith Distance Threads.*

Vertical Thread.	Feb. 13, 1900, to Apr. 4, 1900.	Apr. 5, 1900, to Apr. 15, 1900.	Apr. 16, 1900, to June 3, 1900.	June 4, 1900, to July 16, 1900.	Oct. 11, 1900, to Mar. 15, 1901.
I	+ 0.42	— 0.42	+ 0.42	— 0.24	+ 0.41
II	+ 0.28	— 0.28	+ 0.28	— 0.16	+ 0.27
III	+ 0.14	— 0.14	+ 0.14	— 0.08	+ 0.14
IV	0.00	0.00	0.00	0.00	0.00
V	— 0.14	+ 0.14	— 0.14	+ 0.08	— 0.14
VI	— 0.28	+ 0.28	— 0.28	+ 0.16	— 0.27
VII	— 0.42	+ 0.42	— 0.42	+ 0.24	— 0.41

DLX

SIX-INCH TRANSIT CIRCLE.

TABLE III.—Record of Constants a , b , c , and n .

Date.	Obs'r.	Sidereal Time.	a .	b .	c_0' .	$\mu^*.$	Clamp.	Sidereal Time.	Adopted.	
									c_0' .	n .
1900 Feb. 13	U.	h m 22 54	s	s +0.098	s	°	E.	h m h m	s	s
13		0 0	+1.405	.....	-0.063	57.5				
13	U.	4 18	+1.727	+0.057	.....	.....		4 57— 6 10	-0.087	-1.352
13		6 18	+1.807	+0.016	-0.099	45.4				
14	U.	4 18	+2.365	-0.078	-0.069	42.4		4 57— 6 10	-0.087	-1.882
14		6 18	+2.375	-0.044	-0.087	40.0				
15	U.	4 53	.....	+0.025	.....	.....		4 57— 6 10	-0.087	-1.681
15		5 0	+2.182	+0.035	.....	.....				
15		6 30	+2.217	+0.065	-0.086	45.5				
18	U.	4 24	+2.448	+0.030	-0.098	22.3		4 57— 6 10	-0.087	-1.879
18		6 18	+2.449	+0.051	.....	20.5				
19	L.	0 54	+2.332	+0.079	-0.094	24.0			-0.087	
19	U.	4 48	+2.317	+0.106	-0.078	25.2		4 57— 6 10	-0.087	-1.736
19		6 18	+2.335	+0.126	.....	23.4				
19	L.	12 24	+2.394	+0.177	-0.077	19.9			-0.087	
19		13 36	+2.362	.....	.....	19.6				
20	U.	4 24	+2.201	+0.258	-0.098	31.3		4 57— 6 10	-0.087	-1.552
20		6 12	+2.216	+0.267	.....	30.5				
23	U.	4 36	+2.258	+0.030	-0.092	43.2		4 57— 6 10	-0.087	-1.749
23		6 36	+2.285	+0.026	.....	41.8				
23	L.	11 48	+2.370	+0.033	-0.086	36.7			-0.087	
23		13 42	+2.433	.....	.....	36.1				
25	U.	4 36	+2.603	-0.097	-0.094	20.4		4 57— 6 10	-0.087	-2.077
25		5 6	.....	-0.093	.....	.....				
25		6 18	+2.590	-0.089	.....	19.4				
26	U.	4 36	+2.159	-0.057	-0.107	23.1		4 57— 6 10	-0.087	-1.721
26		7 0	+2.193	-0.032	.....	21.8				
27	L.	1 36	+2.300	+0.138	-0.088	20.0			-0.087	
27	U.	4 36	+2.194	+0.184	-0.106	22.4		4 57— 6 10	-0.087	-1.585
27		6 18	+2.188	+0.194	.....	21.0				
Mar. 2	U.	4 48	+2.639	-0.040	.....	39.2		5 14— 8 41	-0.087	-2.111
2		6 18	+2.669	-0.073	-0.083	37.9				
2		8 30	+2.681	-0.077	.....	36.0				
3	L.	0 48	+2.861	-0.038	-0.085	37.3			-0.087	
3		1 36	+2.844	.....	.....	39.0				
3	U.	5 6	+2.780	-0.003	.....	40.9		4 57— 8 41	-0.087	-2.173
3		6 18	+2.788	-0.015	-0.102	39.8				
3		8 30	+2.804	+0.007	.....	37.3				
3	L.	11 54	+2.829	.....	-0.089	34.4			-0.087	
3		13 36	+2.930	+0.016	.....	34.0				
			Collimation adjusted.							
4	U.	23 0	.....	+0.110	+0.058	52.0				
5	U.	5 0	+2.308	+0.114	+0.068	48.3		5 10— 6 10	+0.072	-1.744
5		6 15	+2.336	+0.114	+0.065	46.3				
5		7 27	+2.362	.....	.....	44.8				
7	L.	0 40	+2.223	+0.145	+0.062	44.9			+0.072	
7		1 40	+2.227	.....	.....	45.0	E.			

* Read from the thermometer, GREEN No. 4195, inserted in the hollow of the casting of the east microscope bearer.

INTRODUCTION.

D LXI

TABLE III.—*Record of Constants a , b , c , and n —Continued.*

Date.	Obs'r.	Sidereal Time.	a.	b.	c ₀ '.	l'.	Clamp.	Sidereal Time.	Adopted.	
									c ₀ '.	n.
1900 Mar.		h m s	s	s	s	°		h m h m	s	s
7	U.	5 2	+2.172	+0.120	.....	45.3	E.	4 57— 6 10	+0.072	-1.629
7		6 14	+2.200	+0.110	+0.062	43.4				
7		7 43	+2.263	.....	.....	41.8		7 38— 8 41	+0.072	-1.698
7		8 33	+2.287	+0.107	.....	41.0				
7	L.	12 40	+2.386	+0.175	+0.065	37.8			+0.072	
9	U.	7 30	+2.286	+0.187	.....	46.0		7 38— 8 41	+0.072	-1.652
9		8 47	+2.283	+0.211	+0.064	44.8				
10	U.	7 25	+2.020	+0.245	+0.070	48.8				
12	L.	1 0	+2.527	+0.137	+0.061	23.5			+0.072	
12		1 55	+2.537	.....	.....	25.1				
12	U.	7 8	+2.512	+0.185	+0.070	27.3		7 34— 9 2	+0.072	-1.820
12		8 56	+2.487	+0.210	.....	26.5				
14	L.	1 10	+2.378	.....	.....	41.2			+0.072	
14		1 35	+2.385	+0.346	+0.067	42.1				
16	L.	7 9	+2.577	+0.404	+0.069	30.4		7 34— 9 2	+0.072	-1.742
16		8 56	+2.541	+0.395	.....	28.1				
16	L.	13 10	+2.531	+0.379	+0.063	23.4			+0.072	
16		13 35	+2.574	.....	.....	23.2				
17	U.	0 58	+2.543	+0.366	+0.076	25.0				
17	L.	7 43	+2.564	+0.355	+0.061	22.4		7 38— 9 2	+0.072	-1.770
17		8 56	+2.573	+0.380	.....	21.0				
20	L.	7 5	+2.303	+0.489	+0.091	50.9				
21	L.	7 35	+2.739	+0.392	+0.063	35.8		7 34— 9 2	+0.072	-1.870
21		8 55	+2.708	+0.395	.....	34.0				
24	L.	7 16	+2.190	+0.504	+0.105	48.5		7 34— 9 2	+0.072	-1.395
24		9 5	+2.242	+0.543	+0.080	45.0				
27	L.	1 8	+2.354	+0.604	.....	45.0			+0.072	
27		2 15	+2.350	.....	+0.070	....				
27	L.	7 25	+2.236	+0.591	.....	48.5		7 34— 9 2	+0.072	-1.386
27		8 55	+2.280	+0.589	+0.078	45.9				
28	U.	7 7	+2.279	+0.587	+0.075	46.0		7 34— 9 2	+0.072	-1.418
28		8 56	+2.306	+0.579	.....	44.1				
28	L.	12 40	+2.349	+0.599	+0.069	40.8			+0.072	
28		13 40	+2.365	.....	.....	40.3				
30	U.	13 4	+2.457	+0.618	+0.052	36.2			+0.072	
30		13 44	+2.485	.....	.....	36.0				
31	U.	7 25	+2.443	+0.642	+0.075	42.1		7 34— 9 2	+0.072	-1.506
31		8 57	+2.458	+0.633	.....	41.1				
Apr.	1	U.	7 44	+2.254	+0.734	+0.086	52.2	7 34— 8 41	+0.072	-1.286
1		8 58	+2.235	+0.735	+0.069	50.7				
3	L.	7 30	+2.021	+0.707	+0.091	53.0		7 34— 8 41	+0.072	-1.128
3		8 44	+2.033	+0.721	+0.070	51.5	E.			
		Instrument reversed. Level and azimuth adjusted.								
5	U.	7 50	+0.358	-0.028	-0.102	52.0	W.	7 38— 11 49	-0.106	-0.308
5		9 5	+0.374	-0.031	.....	51.2				
5		11 35	+0.387	-0.026	.....	49.7	W.			

TABLE III.—Record of Constants a , b , c , and n —Continued.

Date.	Obs'r.	Sidereal Time.	a .	b .	c_0' .	l' .	Clamp.	Sidereal Time.	Adopted.	
									c_0' .	n .
1900		h m	s	s	s	°		h m h m	s	s
Apr. 7	L.	8 44	—0.235	+0.021	—0.109	61.9	W.	n interpolated.	—0.106	+0.189
7		11 47	—0.171	0.000	.....	59.0				+0.139
9	U.	8 40	—0.009	—0.067	—0.107	50.1		n interpolated.	—0.106	—0.040
9		10 18	+0.045	.....	.....	48.0				—0.082
9		11 51	+0.095	—0.081	—0.098	45.7				—0.121
9		13 27	+0.146	—0.076	.....	43.6				—0.161
10	U.	8 44	+0.246	—0.078	—0.106	....		n interpolated.	—0.106	—0.234
10		10 23	+0.308	.....	.....	....				—0.283
10		11 47	+0.316	—0.058	.....	42.2				—0.289
14	U.	8 45	+0.196	+0.080	—0.095	52.0		n interpolated.	—0.106	—0.102
14		10 19	+0.227	.....	.....	49.8				—0.139
14		11 46	+0.270	+0.042	.....	48.1				—0.186
15	U.	23 30	.....	+0.068	—0.111	50.0	W.			
Instrument reversed.										
19	L.	13 0	—0.941	—0.012	+0.077	64.0	E.		+0.087	
19		13 33	—0.926	.....	.....	63.6				
22	U.	8 50	—0.640	—0.053	+0.088	61.5				
23	U.	11 51	—0.908	—0.065	+0.079	66.3				
24	U.	8 53	—1.079	—0.030	+0.082	....		n interpolated.	+0.087	+0.819
24		10 19	—1.058	.....	.....	71.0				+0.803
24		11 47	—1.041	—0.034	.....	68.3				+0.790
24	U.	1 37	—0.799	—0.093	.....	58.5			+0.087	
Azimuth adjusted.										
25	U.	8 45	+0.458	—0.163	+0.097	62.8		n interpolated.	+0.087	—0.458
25		10 18	+0.518	.....	.....	61.2				—0.513
25		11 52	+0.538	—0.188	.....	59.0				—0.537
26	U.	8 45	+0.400	—0.111	+0.087	67.0		n interpolated.	+0.087	—0.381
26		10 18	+0.453	.....	.....	65.4				—0.431
26		11 47	+0.481	—0.142	.....	63.1				—0.463
27	U.	8 45	+0.320	—0.070	+0.099	70.0		n interpolated.	+0.087	—0.289
27		10 19	+0.330	.....	.....	67.8				—0.297
27		11 46	+0.381	—0.057	.....	65.5				—0.336
Stellar focus and collimation adjusted.										
June 4	U.	12 35	.....	.....	+0.022	....				
Azimuth adjusted.										
5	U.	13 10	+0.486	—0.006	+0.046	72.1		12 55—14 46	+0.041	—0.416
5		14 50	+0.563	—0.017	.....	69.9				
5	U.	1 10	+0.665	—0.060	+0.050	63.3			+0.041	
5		1 46	+0.655	.....	.....	64.8				
6	U.	13 35	+0.382	+0.010	+0.055	73.2		13 39—15 23	+0.041	—0.297
6		14 27	+0.405	+0.018	.....	71.9				
7	U.	13 5	+0.131	+0.022	+0.042	79.8		n interpolated.	+0.041	—0.089
7		13 48	+0.184	.....	.....	78.3				—0.131
7		14 36	+0.194	+0.012	.....	77.0				—0.138
7		16 47	+0.279	+0.029	.....	74.1				—0.205
Object-glass tightened in cell.										
8	U.	1 12	+0.198	—0.040	+0.034	70.0			+0.041	
8		1 55	+0.167	—0.027	.....	71.1				
9	U.	13 10	+0.017	+0.006	+0.034	78.9		n interpolated.	+0.041	—0.011
9		13 42	—0.019	.....	.....	78.0				+0.017
9		14 35	+0.070	.....	.....	76.6				—0.052
9		15 25	+0.050	+0.006	.....	75.9				—0.036
9		16 46	+0.136	0.000	.....	73.5	E.			—0.103

INTRODUCTION.

D LXIII

TABLE III.—*Record of Constants a, b, c, and n*—Continued.

Date.	Obs'r.	Sidereal Time.	a.	b.	c_0' .	l' .	Clamp.	Sidereal Time.	Adopted.	
									c_0' .	n.
1900 June	11	U.	h m s 13 10 —0.214	s +0.022	s +0.035	° 84.1	E.	h m h m n interpolated.	s +0.041	s +0.183
	11		13 47 —0.223	.....	.....	83.8				+0.190
	11		14 35 —0.196	.....	.....	82.5				+0.169
	11		15 40 +0.033	.....	.....	.....				+0.105
	11		16 47 —0.114	+0.027	.....	79.6				
	19	U.	15 17 +0.416	—0.013	+0.056	65.3		15 22—17 10	+0.041	—0.340
	19		16 47 +0.409	—0.045	.....	63.1				
	20	U.	13 8 +0.196	—0.002	.....	76.2		13 22—17 10	+0.041	—0.177
	20		14 27 +0.209	.....	+0.070	73.8				
	20		15 26 +0.247	—0.004	.....	71.8				
	20		16 47 +0.257	+0.003	.....	69.8				
	20	U.	1 10 +0.396	.....	.....	63.0				
	20		2 0 +0.383	0.000	+0.069	64.0			+0.041	
	21	U.	13 47 +0.069	+0.010	+0.078	74.2		13 23—14 46	+0.041	—0.063
	21		14 35 +0.107	+0.010	.....	73.4				
	22	U.	13 50 —0.034	+0.017	.....	75.8		n interpolated.	+0.041	+0.037
	22		14 50 +0.004	.....	+0.082	73.8				+0.007
	22		16 33 +0.067	.....	.....	72.0				—0.042
	23	U.	13 36 —0.177	—0.005	.....	78.5		13 23—14 46	+0.041	+0.123
	23		14 56 —0.149	.....	+0.065	76.6				
	25	U.	15 14 —0.529	+0.012	+0.067	79.8		15 22—17 10	+0.041	+0.407
	25		16 43 —0.497	+0.012	.....	79.0				
	26	U.	15 26 —0.891	+0.003	+0.023	78.7		15 22—18 23	—0.006	+0.657
	26		16 44 —0.857	.....	.....	77.2				
	26		17 33 —0.020	.....	.....	.....				
	26		18 44 —0.807	.....	.....	76.0				
	27	U.	15 27 —1.232	—0.001	—0.003	83.2		n interpolated.	—0.020	+0.959
	27		16 45 —1.156	.....	.....	81.9				+0.900
	27		18 40 —1.107	+0.003	—0.006	79.8				+0.862
	30	U.	13 13 —0.931	+0.011	.....	76.8		n interpolated.	+0.005	+0.736
	30		13 48 —0.919	.....	+0.032	76.0				+0.727
	30		15 14 —0.883	+0.025	.....	73.3				+0.699
	30		16 45 —0.764	.....	.....	70.6				+0.606
	30		18 18 —0.710	+0.022	.....	68.1				+0.564
	30	U.	1 13 —0.531	—0.002	+0.030	62.7			+0.005	
	30		1 35 —0.546	.....	.....	62.8				
July	1	U.	15 28 —0.726	+0.033	+0.082	74.4		15 22—18 33	+0.033	+0.558
	1		16 45 —0.684	.....	.....	73.0				
	1		17 36 +0.031	.....	.....	.....				
	1		18 20 —0.665	.....	.....	71.3				
	2	U.	15 18 —0.660	+0.026	+0.089	75.2		15 22—18 33	+0.019	+0.499
	2		16 46 —0.603	.....	.....	73.7				
	2		17 36 +0.044	.....	.....	.....				
	2		18 20 —0.578	.....	.....	72.0				
	6	U.	15 32 —1.935	—0.110	.....	88.0				
	6		17 14 —0.323	+0.069	.....	.....				
	6		17 46 —3.377	.....	.....	83.2				
	6		17 55 —0.479	.....	.....	.....				
	6		18 18 —3.638	.....	.....	82.8				
	6		18 40 —0.570	.....	.....	.....				
Level and azimuth adjusted.										
	7	U.	15 26 —0.372	+0.085	+0.054	86.1		n interpolated.	+0.013	+0.343
	7		17 8 —0.289	.....	.....	83.7				+0.278
	7		18 9 —0.224	+0.088	.....	82.1	E.			+0.228

TABLE III.—Record of Constants a , b , c , and n —Continued.

Date.	Obs'r.	Sidereal Time.	a .	b .	c_0' .	t' .	Clamp.	Sidereal Time.	Adopted.	
									c_0' .	n .
1900 July	U.	h m s		s	s	°	E.	h m h m n interpolated.	s	s
		15 9	−0.082	+0.162	+0.054	87.7			+0.005	+0.161
		16 5	−0.016	.....	.....	85.9				+0.110
		17 13	+0.058	.....	.....	84.0				+0.052
		17 47	.....	+0.150	.....	.....				.....
	U.	18 15	+0.102	.....	.....	81.9				+0.018
		15 26	+0.667	+0.255	+0.040	73.9		n interpolated.	−0.001	−0.366
		16 47	+0.766	.....	.....	72.0				−0.443
		17 36	.....	+0.231	.....	.....				.....
		18 15	+0.858	.....	.....	70.2				−0.515
	U.	15 17	+1.022	+0.305	+0.063	78.1		n interpolated.	+0.026	−0.594
		16 45	+1.041	.....	.....	75.9				−0.608
		18 14	+1.109	+0.340	.....	73.5				−0.661
	U.	15 15	+0.954	+0.414	+0.066	84.1		n interpolated.	+0.026	−0.477
		17 8	+1.047	+0.434	.....	80.9				−0.549
		18 15	+1.079	.....	.....	79.1				−0.574
	U.	15 26	+1.089	+0.463	+0.047	79.4				
		15 26	+1.033	+0.655	+0.059	90.2		15 22—18 33	+0.026	−0.409
		16 26	+1.029	.....	.....	88.1				
		17 32	.....	+0.640	.....	.....				
		18 14	+1.082	.....	.....	85.2	E.			
New reticule put in on Aug. 31. Instrument reversed.										
Oct.	U.	18 30	.....	.....	+0.006	.....	W.			
	U.	22 45	.....	.....	+0.016	.....				
	U.	22 15	.....	+0.059	−0.015	.....				
	U.	20 40	.....	.....	+0.006	62.0				
	U.	22 11	.....	+0.103	+0.006	50.2				
	U.	20 45	.....	.....	−0.006	.....				
	L.	0 10	.....	.....	−0.017	.....				
	L.	0 15	.....	.....	−0.005	.....				
	U.	1 5	.....	+0.069	.....	.....				
	U.	21 43	.....	.....	+0.005	66.7				
	U.	0 8	.....	.....	+0.005	58.9				
	U.	21 20	.....	.....	−0.018	.....				
Nov.	U.	20 30	−0.187	+0.166	+0.016	48.0				
		1 2	−0.001	+0.159	+0.005	43.7				
	U.	1 10	−0.128	+0.165	+0.003	42.5		+0.003		
		1 36	−0.136	.....	.....	42.3				
	U.	13 6	−0.012	+0.168	+0.005	39.5		+0.005		
		13 36	−0.029	.....	.....	40.5				
	U.	1 10	−0.080	+0.157	0.000	40.1		0.000		
		1 36	−0.063	.....	.....	41.0				
	U.	12 20	.....	.....	−0.008	.....				
		1 12	−0.217	+0.167	+0.002	47.7		+0.002		
	U.	1 38	−0.217	.....	.....	47.3				
		13 10	−0.081	+0.172	−0.007	40.5		−0.007		
	U.	13 37	−0.085	.....	.....	40.9				
							W.			

TABLE III.—*Record of Constants a, b, c, and n*—Continued.

Date.	Obs'r.	Sidereal Time.	a.	b.	c'_0 .	l' .	Clamp.	Sidereal Time.	Adopted.	
									c'_0 .	n.
¹⁹⁰⁰ Nov. 14	U.	h m 1 3	s -0.062	s +0.169	s	° 38.6	W.	h m h m	s	s
14		1 37	-0.039	.....	+0.013	38.0			+0.013	
15	U.	13 5	+0.161	+0.216	+0.003	30.5			+0.003	
15		13 33	+0.171	.....	.....	31.0				
16	U.	1 27	+0.120	+0.196	+0.006	35.3			+0.006	
21	U.	0 2	-0.714	-1.371	+0.018	67.7				
21	U.	12 40	+0.188	-1.463	+0.007	52.5				
			Level and azimuth adjusted.							
21		13 14	.....	+0.036	.....	.....				
22	L.	22 50	.....	+0.191	+0.018	.....				
22	U.	1 6	-0.500	+0.157	+0.017	57.0			+0.018	
22		1 35	-0.474	+0.180	.....	57.0				
27	U.	23 20	.....	+0.209	+0.014	.....				
27		1 0	+0.804	+0.179	.....	45.3			+0.014	
27		1 42	+0.825	.....	.....	45.0				
29	U.	13 19	+1.271	+0.500	.....	35.4				
29		13 29	+1.265	.....	-0.001	35.3			-0.001	
			Level and azimuth adjusted.							
30	U.	22 55	.....	-0.109	-0.007	.....				
30		1 0	-0.260	.....	.....	39.5			-0.007	
30		1 36	-0.258	-0.088	.....	39.0				
30		13 6	-0.098	-0.038	-0.004	32.3			-0.004	
30		13 35	-0.079	-0.046	.....	32.7				
Dec. 1	U.	0 43	-0.238	+0.029	0.000	42.7			0.000	
1		1 35	-0.232	.....	.....	42.0				
1	U.	13 8	-0.166	+0.069	-0.014	36.5			-0.012	
1		13 35	-0.157	.....	-0.010	37.3				
2	U.	0 48	-0.348	+0.127	-0.013	44.6			-0.013	
2		1 37	-0.331	.....	.....	43.7				
5	U.	0 47	-0.289	+0.024	+0.002	42.6			+0.002	
5		1 33	-0.274	.....	.....	41.9				
5	U.	12 45	.....	.....	-0.015	.....				
6	U.	1 8	-0.230	+0.066	-0.006	39.0			-0.006	
6		1 41	-0.213	.....	.....	38.4				
8	U.	1 3	-0.276	+0.185	-0.004	40.0			-0.004	
8		1 35	-0.268	+0.157	.....	39.3		n interpolated from diagram.		+0.303
8		3 20	-0.219	.....	.....	38.0				+0.265
8		4 45	-0.174	+0.145	.....	37.2				+0.230
8		6 5	-0.164	+0.150	.....	36.6				+0.022
9	U.	12 45	+0.017	.....	.....	26.3				
9		13 35	+0.022	+0.139	0.000	26.0			0.000	
9		14 15	.....	+0.155	.....	.....				
10	U.	1 34	-0.060	+0.146	-0.026	32.2		n interpolated from diagram.	-0.026	+0.139
10		2 45	-0.047	.....	.....	31.5				+0.129
10		3 57	-0.047	.....	.....	30.7				+0.129
10		4 45	-0.011	.....	.....	30.0				+0.101
10		5 45	+0.020	.....	.....	29.6				+0.077
10		6 25	-0.011	+0.148	.....	29.3				+0.101
11	L.	1 45	+0.011	+0.194	-0.009	31.0	W.			

DLXVI

SIX-INCH TRANSIT CIRCLE.

TABLE III.—Record of Constants a , b , c , and n —Continued.

Date.	Obs'r.	Sidereal Time.	a.	b.	c ₀ '.	l'.	Clamp.	Sidereal Time.	Adopted.				
									c ₀ '.	n.			
1900 Dec. 11 11	U.	h m 12 49 13 33	s -0.039 0.000	s +0.192	s 0.000	° 25.5 25.5	W.	h m h m	s	s			
12	L.	1 55	-0.059	+0.200		34.2							
			Level and azimuth adjusted.										
13	U.	22 7		-0.064				n interpolated from diagram.	+0.008	+0.016 +0.006 +0.005 -0.010 -0.016			
13		1 13	-0.068	-0.052	+0.008	49.2							
13		2 51	-0.055	.....	.....	47.6							
13		3 57	-0.053	.....	.....	46.8							
13		5 45	-0.034	.....	.....	44.2							
13		6 7	-0.026	-0.063	.....	43.5							
14	L.	1 43	+0.287	-0.036	-0.017			n interpolated from diagram.	-0.017	-0.250 -0.285 -0.309 -0.330 -0.346 -0.368 -0.387			
14		2 44	+0.321	.....	.....	27.1							
14		3 28	+0.343	.....	.....	26.3							
14		4 6	+0.363	.....	.....	25.7							
14		5 8	+0.382	.....	.....	.....							
14		5 33	+0.395	.....	.....	24.8							
14		6 6	+0.414	-0.106		24.3							
14	U.	12 47	+0.381			20.5							
14		13 40	+0.395	-0.097	0.000	19.1							
15	U.	1 2	+0.320	-0.084	-0.012	26.5							
15		1 59	+0.326	.....	.....	.....							
16	U.	0 40	+0.380	-0.037	-0.010	24.9					0 51-6 19	-0.010	-0.319
16		1 41	+0.384	-0.036	.....	24.0							
16		2 42	+0.364	.....	.....	.....							
16		3 28	+0.375	.....	.....	23.3							
16		4 39	+0.381	.....	.....	.....							
16		6 6	+0.368	-0.052	.....	22.9							
18	L.	1 43	+0.128	+0.054	-0.006		1 47-6 19	-0.006	-0.098				
18		2 40	+0.151	.....	.....	37.0							
18		3 27	+0.157	.....	.....	36.6							
18		4 37	+0.191	.....	.....	35.7							
18		6 5	+0.160	+0.023	.....	34.8							
18	U.	12 49	+0.206	+0.003		31.0							
18		13 40	+0.199	.....	-0.003	.....							
19	U.	0 48	-0.142	+0.063	-0.005	48.4	0 51-5 22	-0.005	+0.120				
19		1 33	-0.116	.....	.....	48.0							
19		3 13	-0.087	.....	.....	46.8							
19		4 38	-0.095	.....	.....	45.0							
19		6 6	-0.112	+0.066	.....	44.5							
20	U.	1 4	-0.119	+0.067		43.1	n interpolated from diagram.	-0.007	+0.115 +0.096 +0.068 +0.029				
20		1 43	-0.107	+0.048	.....	41.6							
20		2 51	-0.090	.....	.....	39.2							
20		4 38	-0.065	.....	.....	37.3							
20		6 0	-0.023	+0.018	-0.007	35.9							
21	U.	1 13	+0.072	+0.037	+0.001	34.5	n interpolated from diagram.	+0.001	 -0.041 -0.065 -0.100 -0.120				
21		1 43	+0.083	.....	.....	34.0							
21		3 3	+0.114	.....	.....	33.0							
21		4 55	+0.159	.....	.....	31.8							
21		6 0	+0.184	+0.037	.....	31.0							
28	U.	1 20	-0.144		-0.005								
28		1 33	-0.137	+0.145	.....	40.0							
29	U.	1 13	-0.016	+0.143	-0.028	35.3	n interpolated from diagram.	-0.028	+0.103 +0.101 +0.059 +0.052 +0.041				
29		1 43	-0.014	.....	.....	35.0							
29		3 20	+0.040	.....	.....	33.8							
29		4 56	+0.049	.....	.....	32.5							
29		6 6	+0.064	+0.146	.....	31.7							
							W.						

TABLE III.—Record of Constants a , b , c , and n —Continued.

Date.	Obs'r.	Sidereal Time.	a .	b .	c_0' .	l' .	Clamp.	Sidereal Time.	Adopted.	
									c_0' .	n .
1901 Jan.		h m s		s	s	°		h m h m	s	s
3	U.	1 15	+0.078	+0.160	-0.005	27.5	W.	1 22— 2 21	-0.005	+0.049
3		1 43	+0.064	.....	.....	26.9				
3		2 38	+0.068	.....	.....	25.9				
5	L.	1 20	-0.023	+0.224	-0.012	34.4		n interpolated from diagram.	-0.012	+0.154
5		2 40	-0.002	.....	.....	33.1				+0.137
5		3 33	+0.028	.....	.....	32.0				+0.114
5		4 55	+0.032	.....	.....	30.8				+0.111
5		5 56	+0.013	+0.207	.....	25.5				+0.125
8	L.	1 56	-0.199	+0.273	0.000	40.0		1 47— 4 58	0.000	+0.316
8		2 35	-0.199	.....	.....	39.6				
8		3 32	-0.221	.....	.....	38.8				
8		5 5	-0.161	+0.251	.....	38.0				
9	U.	1 7	-0.632	+0.345	-0.013	52.8			-0.013	
9		1 51	-0.636	+0.357	.....	52.0				
			Level adjusted.							
13	U.	1 10	-0.337	-0.116	-0.002	38.0		n interpolated from diagram.	-0.002	+0.194
13		2 17	-0.285	.....	.....	36.9				+0.153
13		3 32	-0.260	.....	.....	35.8				+0.134
13		4 53	-0.253	.....	.....	35.0				+0.128
13		5 56	-0.217	-0.102	.....	33.9				+0.100
15	L.	1 0	-0.606	-0.040	-0.005	51.0		1 23— 6 19	-0.005	+0.445
15		1 44	-0.619	.....	.....	.....				
15		3 13	-0.621	.....	.....	50.0				
15		3 58	-0.637	.....	.....	49.4				
15		5 0	-0.595	.....	.....	48.0				
15		5 56	-0.595	-0.062	.....	47.0				
16	U.	1 8	-0.941	-0.004	-0.020	57.2		n interpolated from diagram.	-0.016	+0.723
16		1 54	-0.973	.....	.....	57.0				+0.748
16		3 12	-0.941	.....	.....	56.1				+0.723
16		4 54	-0.874	.....	.....	53.8				+0.671
16		6 4	-0.848	-0.023	-0.013	52.0		1 23— 6 19	-0.010	+0.651
18	U.	1 12	-0.128	-0.109	-0.010	27.8				+0.012
18		2 18	-0.090	.....	.....	26.9				
18		3 34	-0.060	.....	.....	25.7				
18		5 10	-0.018	.....	.....	24.6				
18		6 0	+0.015	+0.036	.....	24.0				
19	L.	1 10	-0.051	-0.087	+0.016	23.8		1 23— 6 19	+0.016	-0.010
19		1 53	-0.059	.....	.....	23.0				
19		2 37	-0.064	.....	.....	22.0				
19		3 34	-0.042	.....	.....	21.7				
19		4 55	-0.055	.....	.....	23.0				
19		6 5	-0.059	-0.085	.....	19.3				
20	U.	1 7	-0.148	-0.032	-0.023	30.9		n interpolated from diagram.	-0.022	+0.087
20		1 52	-0.190	.....	.....	30.4				+0.120
20		3 34	-0.228	.....	.....	31.3				+0.149
20		4 53	-0.260	.....	.....	31.2				+0.174
20		6 5	-0.281	-0.058	-0.020	31.0				+0.190
22	U.	1 15	-0.508	.....	.....	42.1		n interpolated from diagram.	+0.001	+0.364
22		1 42	-0.516	-0.052	+0.001	41.7				+0.371
22		3 33	-0.474	.....	.....	.....				+0.338
22		4 52	-0.441	-0.046	.....	38.8				+0.312
26	L.	2 32	-0.097	-0.009	-0.031	31.8		1 47— 3 22	-0.028	+0.083
26		3 30	-0.123	+0.001	-0.025	31.0				
28	U.	3 34	-0.130	-0.024	.....	30.2		3 21— 6 17	-0.020	+0.088
28		4 44	-0.124	.....	-0.020	30.0				
28		6 6	-0.134	-0.014	.....	28.6	W.			

TABLE III.—*Record of Constants a, b, c, and n—Continued.*

Date.	Obs'r.	Sidereal Time.	a.	b.	c ₀ '.	l'.	Clamp.	Sidereal Time.	Adopted.	
									c ₀ '.	n.
1901		h m	s	s	s	°		h m h m	s	s
Jan. 29	U.	2 20	-0.231	+0.067	-0.042	33.7	W.	2 22— 6 19	-0.039	+0.222
29		4 17	-0.267	.....	-0.036	32.0				
29		5 11	-0.269	.....	.....	31.1				
29		6 7	-0.264	+0.009	.....	30.4				
Feb. 19	U.	21 33	.....	-0.014	.....	.....				
23	U.	11 51	+0.034	+0.123	-0.042	20.1		11 25—13 40	-0.038	+0.039
23		12 49	+0.044	.....	.....	19.8				
23		13 43	+0.058	+0.113	-0.033	18.8				
24	U.	1 10	-0.018	.....	.....	27.3				
24		1 32	-0.062	+0.148	-0.046	28.0			-0.046	
25	U.	11 20	-0.247	+0.178	-0.048	31.3		11 25—13 34	-0.048	+0.301
25		12 50	-0.249	.....	.....	31.3				
25		13 38	-0.263	+0.152	.....	30.1				
26	U.	11 50	-0.226	+0.135	-0.033	32.2		11 25—13 40	-0.042	+0.234
26		12 49	-0.194	.....	.....	30.9				
26		13 42	-0.180	+0.114	-0.050	26.2				
28	U.	11 29	-0.200	+0.124	-0.050	29.0		11 25—13 40	-0.050	+0.235
28		12 37	-0.183	.....	.....	28.2				
28		13 43	-0.189	+0.150	.....	28.0				
Mar. 2	U.	11 44	-0.674	+0.168	-0.042	41.5		n interpolated.	-0.042	+0.631
2		12 49	-0.611	.....	.....	41.0				+0.581
2		13 43	-0.594	+0.171	.....	40.5				+0.569
5	U.	11 21	-0.190	+0.041	-0.042	23.9		n interpolated.	-0.044	+0.177
5		12 50	-0.102	.....	.....	21.4				+0.108
5		13 37	-0.089	+0.052	-0.045	20.5				+0.098
6	U.	11 21	+0.001	+0.144	-0.047	16.5		11 25—13 37	-0.047	+0.071
6		12 37	+0.028	.....	.....	16.9				
6		13 40	+0.012	+0.116	-0.068	15.5				
7	U.	11 18	-0.277	+0.179	-0.048	30.0		11 25—13 37	-0.047	+0.341
7		12 38	-0.269	.....	.....	29.2				
7		13 40	-0.312	+0.196	-0.046	30.0				
8	U.	1 10	-0.423	+0.174	-0.058	45.2			-0.058	
8		1 32	-0.466	.....	.....	46.7				
12	U.	0 49	-0.165	-0.626	-0.065	49.0		1 4— 3 39	-0.065	-0.134
12		1 33	-0.236	.....	.....	51.2				
12		3 30	-0.302	-0.587	.....	55.2				
15	U.	0 58	+0.205	-0.424	.....	46.4		1 4— 3 25	-0.045	-0.346
15		1 35	+0.195	.....	-0.045	48.0				
15		3 12	+0.102	-0.424	.....	50.6	W.			

INTRODUCTION.

D LXIX

TABLE IV.—*Nadir-Points of the Circles.*

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.*	Clamp.
1900 Feb. 13	U.	h m 4 50	° ' " 141 3 47.80	U.	° ' "		° 43.0	E.
13		6 30	48.22				40.0	
14	U.	4 30	141 3 52.10	U.			38.7	
14		4 43	52.40				....	
14		6 35	52.62				37.1	
15	L.	4 35	141 3 55.18	L.			44.0	
15	U.	4 40	141 3 54.36	U.			....	
15		6 16	53.66				43.2	
Microscopes adjusted.								
18	U.	4 55	141 3 59.16	U.			17.8	
18		6 30	59.60				16.8	
19	L.	2 15	141 4 0.75	L.			25.8	
19	U.	4 45	141 4 1.00	U.			21.7	
19		6 32	1.05				21.2	
19	L.	13 38	141 4 1.16	L.			17.7	
Microscopes adjusted.								
20	U.	4 45	141 4 1.68	U.			30.0	
20		6 20	1.30				28.4	
Microscopes adjusted.								
23	U.	4 45	141 3 53.32	U.			42.3	
23		5 20	53.79				40.3	
23	L.	11 45	141 3 54.41	L.			33.8	
23		13 50	54.34				....	
25	U.	4 50	141 3 56.48	U.			17.0	
25		6 28	56.62				16.2	
26	U.	4 45	141 3 57.90	U.			20.9	
26		6 23	58.91				22.0	
26		6 37	59.06				19.0	
27	L.	0 50	141 4 1.94	L.			....	
27		2 20	1.71				26.0	
27	U.	4 45	141 4 1.54	U.			21.0	
27		6 25	2.42				18.7	
Microscopes adjusted.								
Mar. 2	U.	4 40	141 3 56.15	U.			37.1	
2		6 23	56.41				35.0	
2		7 35	56.32				34.0	
2		8 54	56.06				33.0	
3	L.	0 40	141 3 56.84	L.			42.0	
3		2 0	57.65				40.1	
3	U.	4 40	141 3 56.35	U.			40.3	
3		6 25	56.32				36.3	
3		7 35	56.42				35.2	
3		8 40	56.35				34.2	
3	L.	12 20	141 3 56.95	L.			32.0	
3		13 40	57.18				31.0	
5	U.	4 50	141 3 58.15	U.			45.0	
5		6 25	58.35				41.6	
5		7 34	58.61				45.0	
7	L.	0 50	141 3 60.22	L.			45.8	
7		1 55	59.86				45.0	E.

*Read from a thermometer, GREEN No. 3920, suspended near the east microscope bearer.

DLXX

SIX-INCH TRANSIT CIRCLE.

TABLE IV.—*Nadir-Points of the Circles*—Continued.

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.	Clamp.
1900 Mar. 7	U.	h m 4 45	141 3 59.38	U.	° ' "		° 43.0	E.
7		6 25	59.29				40.8	
7		7 30	59.60				38.4	
7		8 47	59.34				40.0	
7	L.	13 0	141 4 0.11 Microscopes adjusted.	L.			34.0	
9	U.	7 35	141 3 59.91	U.			44.0	
9		8 32	59.98				42.9	
12	L.	1 15	141 4 2.38	L.	180 0 1.24	L.	25.7	
12		1 37	2.47		0.88		26.0	
12	U.	7 25	141 4 1.80	U.	180 0 1.36	L.	25.1	
12		8 45	1.56		2.14		23.3	
14	L.	0 55	141 4 2.00	L.	180 0 0.72	L.	45.8	
14		1 40	2.08		0.25		47.0	
16	U.	1 10	141 4 2.26	U.	180 0 0.15	U.	35.0	
16	L.	7 26	141 4 2.89	U.	179 59 59.88	L.	26.3	
16		9 8	3.80		59.16		23.0	
16	L.	12 50	141 4 3.54	L.	179 59 57.91	L.	19.6	
16		13 45	4.81		58.62		21.0	
17	L.	7 28	141 4 3.58	U.	179 59 57.89	L.	18.4	
17		9 8	4.02		57.40		17.1	
			Microscopes adjusted on both circles.					
19	L.	.. ..	141 4 5.96	U.	179 59 .....	.	....	
19		.. ..	5.98		.....		....	
19		.. ..	5.98		.....		....	
19		.. ..	6.40		.....		....	
20	L.	7 27	141 4 5.66	L.	179 59	.	48.0	
21	L.	7 4	141 4 5.25	U.	179 59 57.14	L.	33.1	
21		9 8	5.15		58.04		31.1	
			Microscopes adjusted on both circles.					
24	L.	7 25	141 4 3.58	U.	179 59 56.28	L.	44.0	
24		9 20	3.88		56.32		39.7	
27	L.	0 56	141 4 4.50	L.	179 59 55.10	L.	50.0	
27		1 35	3.97		55.41		51.0	
27	L.	7 10	141 4 4.18	L.	179 59	.	45.5	
27		9 15	4.21		.....		42.8	
			Microscopes adjusted on Circle B.					
28	U.	7 20	141 4 4.12	L.	179 59 57.74	U.	43.3	
28		9 10	4.45		57.54		40.3	
28	L.	12 55	141 4 4.30	L.	179 59 58.15	L.	38.5	
28		14 0	4.33		58.50		38.0	
30	U.	12 55	141 4 4.40	U.	179 59 57.70	U.	33.5	
30		13 55	4.81		57.49		33.7	
31	U.	0 55	141 4 4.86	U.	179 59 57.06	U.	42.3	
Mar. 31	U.	7 15	141 4 4.85	L.	179 59 57.52	U.	41.2	
31		9 10	4.80		57.46		38.0	
Apr. 1	U.	7 20	141 4 4.70	U.	179 59		51.3	
1		8 47	5.16		.....		49.0	E.

TABLE IV.—*Nadir-Points of the Circles*—Continued.

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.	Clamp.
1900 Apr. 3	L.	h m 7 20 8 50	° ' " 141 4 4.72 4.58	U.	° ' " 179 59 56.78 57.21	L.	° 51.8 49.0	E. E.
Instrument reversed. Circle A changed to read declinations.								
5	U.	7 30	218 54 43.94	U.	180 0 13.44	L.	53.1 50.0	W.
5		8 45	43.60		13.95		....	
5		10 30	43.28		13.76		49.0	
5		11 55	43.54					
Microscopes adjusted on Circle B.								
7	L.	8 37	218 54 44.68	U.	180 0 13.88	L.	59.8	
7		10 34	44.90		12.65		58.3	
7		11 55	44.74		12.95		57.6	
Microscopes adjusted on Circle B.								
9	U.	8 30	218 54 46.82	L.	180 0 15.15	U.	47.5	
9		10 30	47.42		14.68		....	
9		11 58	47.30		14.68		42.0	
9	U.	12 48	218 54 47.28	U.	180 0 14.73	U.	41.7	
9	U.	0 45	218 54 48.05	U.	180 0 14.48	U.	42.5	
10	U.	8 35	218 54 48.12	L.	180 0 14.78	U.	43.5	
10		10 30	47.95		14.22		....	
10		11 55	48.45		14.19		40.0	
14	U.	8 35	218 54 49.56	L.	180 0 13.06	U.	49.8	
14		10 30	49.26		12.88		....	
14		11 55	49.05		12.74		44.0	W.
Instrument reversed.								
19	L.	12 30	218 54 59.14	L.	180 0 3.41	L.	60.0	E.
19		13 50	59.06		3.55		61.8	
22	U.	8 43	218 54 57.57	U.	180 0 4.28		62.8	
23	U.	11 25	218 54 58.02	U.	180 0 4.72		64.1	
24	U.	8 45	218 54 57.56	L.	180 0 4.28	U.	72.8	
24		10 30	58.40		4.72		66.3	
24		11 53	58.02		5.15		65.0	
24	U.	0 55	218 54 58.28	U.	180 0 5.41	U.	59.8	
25	U.	8 40	218 54 57.81	L.	180 0 4.59	U.	62.0	
25		10 30	58.85		4.28		....	
25		12 0	58.66		4.38		....	
Microscopes adjusted on both circles.								
26	U.	8 40	218 54 55.68	L.	180 0 3.32	U.	67.2	
26		10 30	56.00		3.87		....	
26		11 55	55.74		4.08		60.0	
Microscopes adjusted on both circles.								
27	U.	8 35	218 54 53.69	L.	180 0 2.90	U.	70.0	
27		10 30	53.64		3.10		....	
27		11 55	53.56		3.62		....	
Circle B changed to read declinations.								
28	L.	11 17	218 54 53.51	Br.	218 55 8.94	L.	65.0	
May 2	L.	11 25	218 54 55.68	L.	218 55 52.84		64.0	
Microscopes adjusted on Circle B.								
June 4	U.	11 10	218 55 5.66	L.	218 54 52.84	U.	71.5	
Microscopes adjusted on both circles.								
5	U.	13 5	218 55 0.58	L.	218 54 58.99	U.	69.8	
5		14 35	0.70		59.56		65.3	E.

DLXXII

SIX-INCH TRANSIT CIRCLE.

TABLE IV.—*Nadir-Points of the Circles*—Continued.

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.	Clamp.
		h m	° ' "		° ' "		°	
1900 June 5	U.	1 40	218 54 59.65 Microscopes adjusted on Circle B.	U.	218 55 0.48	U.	70.0	E.
6	U.	13 25	218 55 0.89	L.	218 55 0.38	U.	70.2	
6		15 15	1.08		0.57		66.9	
7	U.	13 30	218 55 0.81	L.	218 54 59.06	U.	76.5	
7		15 10	1.42		59.38		72.3	
7		16 55	1.55		59.56		....	
8	U.	1 40	218 55 0.74	U.	218 54 58.79	U.	73.0	
9	U.	13 30	218 55 0.65	L.	218 54 59.12	U.	75.0	
9		15 5	1.02		59.30		73.1	
9		16 55	0.68 Microscopes adjusted on Circle B.		60.24		68.9	
11	U.	13 30	218 55 1.04	L.	218 54 52.40	U.	81.0	
11		15 0	1.60		52.92		78.4	
11		16 55	1.78		53.48		75.0	
19	U.	15 8	218 55 4.78	Hd.	218 54 51.30	U.	60.0	
19		17 25	3.26		53.39		59.5	
20	U.	13 33	218 55 3.36	Hd.	218 54 52.02	U.	71.0	
20		15 7	3.22		52.45		67.0	
20		16 58	3.27		53.18		65.5	
20	U.	1 37	218 55 2.76	U.	218 54 52.81	U.	67.0	
21	U.	13 30	218 55 3.87	L.	218 54 51.22	U.	71.0	
21		15 10	4.07		51.59		68.4	
22	U.	13 32	218 55 4.18	Hd.	218 54 50.72	U.	72.5	
22		15 8	4.52		50.90		70.2	
23	U.	13 32	218 55 4.26	Hd.	218 54 50.79	U.	75.2	
23		14 39	4.14		50.74		74.0	
25	U.	15 8	218 55 4.32	Hd.	218 54 49.31	U.	78.0	
25		16 56	4.15		50.00		76.8	
26	U.	15 5	218 55 4.35	Hd.	218 54 48.00	U.	74.7	
26		16 58	4.45		48.01		73.6	
26		18 27	4.36 Microscopes adjusted on Circle B.		48.28		74.5	
27	U.	15 10	218 55 ....	....	218 54 50.46	U.	81.0	
27		16 57	....		50.83		79.0	
27		18 30	....		51.32		76.6	
29	U.	15 15	218 55 ....	....	218 54 51.78	U.	81.0	
30	U.	13 35	218 55 2.89	U.	218 54 53.31	U.	71.0	
30	U.	15 5	218 55 ....	....	218 54 54.00	U.	69.0	
30		16 57	....		54.60		66.5	
30		18 44	....		54.92		64.3	
30	U.	1 48	218 55 2.59	U.	218 54 54.32	U.	64.0	
July 1	U.	15 12	218 55 ....	....	218 54 54.50	U.	71.3	
1		16 55	....		55.55		....	
1		18 30	....		56.02		....	
1		18 40	....		55.98		68.0	
2	U.	15 8	218 55 1.79	Hd.	218 54 55.00	U.	72.3	
2		16 57	2.03		55.86		70.0	
2		18 27	2.18		55.62		69.1	
3	U.	15 11	218 55 2.24	Hd.	218 54 53.95	U.	82.0	E.

TABLE IV.—*Nadir-Points of the Circles*—Continued.

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.	Clamp.
1900 July		h m	° ' "		° ' "		°	
6	U.	15 42	218 54 61.17	Hd.	218 54 51.42	U.	82.0	E.
6		16 58	54.30		53.51		79.5	
6		18 27	49.55		53.91		78.0	
Microscopes adjusted on both circles.								
7	U.	15 10	218 54 53.98	Hd.	218 55 7.64	U.	81.4	
7		16 58	53.90		8.35		78.8	
7		18 4	54.22		7.85		77.5	
8	U.	15 23	218 54 55.35	Hd.	218 55 8.15	U.	82.3	
8		16 57	55.11		9.26		79.1	
8		17 35	55.29		8.93		76.8	
8		18 28	55.12		9.86		76.8	
9	U.	15 10	218 54 57.89	Hd.	218 55 8.72	U.	70.5	
9		16 55	57.02		10.35		67.0	
9		18 27	56.54		11.18		....	
10	U.	15 8	218 54 58.08	Hd.	218 55 9.31	U.	75.5	
10		16 58	58.52		9.64		....	
10		18 28	58.40		9.78		70.0	
11	U.	15 6	218 54 59.48	Hd.	218 55 8.55	U.	81.5	
11		16 58	59.94		8.68		77.0	
11		18 28	60.46		9.05		75.2	
12	U.	15 15	218 55 .....	....	218 55 7.81	U.	73.0	
16	U.	15 15	218 55 4.12	Hd.	218 55 5.75	U.	87.0	
16		16 58	4.72		6.16		83.0	
16		18 27	4.70		6.72	U.	81.3	E.
Instrument dismantled and reversed.								
Dec. 8	U.	0 35	218 54 53.53	U.	218 55 3.19	U.	37.5	W.
8		1 43	52.95	L.	3.95		37.0	
8		3 12	53.60		3.30		....	
8		4 32	54.44		3.16		....	
8		6 21	53.92		3.34		35.0	
9	U.	13 5	218 54 53.61	U.	218 55 3.37	U.	24.0	
Microscopes adjusted on Circle A.								
10	U.	1 40	218 54 52.46	La.	218 55 3.44	U.	30.0	
10		4 3	52.99		2.74		30.5	
10		6 33	53.78		2.74		28.0	
11	L.	1 38	218 54 52.50	La.	218 55 3.02	L.	29.1	
11	U.	13 8	218 54 53.55	U.	218 55 1.95	U.	25.6	
12	L.	1 40	218 54 .....	....	218 55 3.84	L.	34.5	
Microscopes adjusted on both circles.								
13	U.	1 40	218 55 21.31	La.	218 54 49.78	U.	47.0	
13		4 7	21.40		49.98		....	
13		6 32	21.08		50.80		40.0	
Microscopes probably adjusted on both circles.								
14	L.	1 32	218 55 6.68	La.	218 54 47.24	L.	28.3	
14		4 25	6.35		47.68		22.0	
14		6 34	6.00		47.18		22.0	
14	U.	13 10	218 55 6.28	U.	218 54 47.20	U.	15.4	
Microscopes adjusted on Circle B.								
15	U.	1 40	218 55 8.12	La.	218 54 45.76	U.	25.0	
16	U.	1 10	218 55 8.61	U.	218 54 45.90	U.	22.8	
16		1 35	8.48	L.	45.48		23.0	
16		4 20	7.99		46.10		22.0	
16		6 35	7.08		46.32		20.2	W.

TABLE IV.—*Nadir-Points of the Circles*—Continued.

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.	Clamp.
¹⁹⁰⁰								
Dec. 18	L.	h m	° ' "		° ' "		°	
18		1 35	218 55 6.00	La.	218 54 45.76	L.	37.0	W.
18		4 10	6.38		46.08		33.0	
18		6 30	6.90		46.05		33.0	
18	U.	13 48	218 55 6.88	U.	218 54 45.84	U.	32.1	
Microscopes adjusted on both circles.								
19	U.	0 38	218 55 6.75	U.	218 54 45.00	U.	47.9	
19		1 40	6.20	La.	45.34		....	
19		4 30	6.70		45.45		45.0	
19		6 28	6.94		45.44		41.5	
20	U.	1 10	218 55 8.40	U.	218 54 44.75	U.	...	
20		1 37	7.76	La.	44.88		37.6	
20		4 30	8.62		44.62		34.0	
20		6 25	8.51		44.42		32.4	
21	U.	1 39	218 55 7.46	La.	218 54 45.65	U.	32.0	
21		3 16	8.02		45.37		29.3	
21		6 25	8.22		45.71		28.1	
28	U.	1 40	218 55 9.82	La.	218 54 44.60	U.	40.0	
29	U.	1 37	218 55 8.91	La.	218 54 44.98	U.	33.0	
29		4 8	9.16		45.32		31.0	
29		6 29	9.22		45.12		29.2	
¹⁹⁰¹								
Jan. 3	U.	1 35	218 55 10.88	La.	218 54 43.16	U.	24.0	
3		2 40	10.57		43.54		22.5	
5	L.	1 39	218 55 9.08	La.	218 54 44.24	L.	34.0	
5		4 15	8.66		44.62		28.0	
5		6 29	8.62		43.90		25.0	
8	L.	1 43	218 55 9.58	La.	218 54 43.19	L.	40.0	
8		4 13	9.62		43.10		....	
8		5 15	9.64		43.16		38.0	
9	U.	1 31	218 55 9.94	L.	218 54 41.69	U.	49.5	
13	U.	1 35	218 55 8.85	L.	218 54 43.08	U.	35.2	
13		4 9	9.27		43.30		33.0	
13		6 25	9.68		42.98		....	
15	L.	1 35	218 55 9.08	La.	218 54 42.32	L.	52.0	
15		4 24	9.82		42.05		....	
15		6 26	9.72		42.36		44.0	
16	U.	1 35	218 55 9.62	L.	218 54 41.88	U.	58.0	
16		4 23	9.87		42.20		52.1	
16		6 24	10.60		41.95		48.9	
18	U.	1 40	218 55 10.13	La.	218 54 42.55		....	
18		4 39	10.32		42.95		22.0	
18		6 26	11.52		42.86		21.2	
19	L.	1 40	218 55 10.74	La.	218 54 42.02	L.	20.0	
19		4 37	10.40		42.28		17.5	
19		6 25	10.34		41.99		16.2	
20	U.	1 35	218 55 10.10	L.	218 54 41.12	U.	32.8	
20		4 35	9.58		41.45		31.2	
20		6 24	9.68		41.24		31.9	
22	U.	1 33	218 55 9.88	L.	218 54 41.52	U.	40.0	
22		4 20	9.76		41.64		37.0	
26	L.	1 45	218 55 10.65	La.	218 54 42.22	L.	30.0	
26		3 41	10.94		41.84		31.0	W.

INTRODUCTION.

DLXXV

TABLE IV.—*Nadir-Points of the Circles*—Continued.

Date.	Obs'r.	Sid. Time.	Circle A.	Reader.	Circle B.	Reader.	Temp.	Clamp.
		h m	° ' "		° ' "		°	
1901 Jan. 28	U.	3 17	218 55 10.56	La.	218 54 41.68	U.	29.8	W.
28		6 36	10.49		42.30		27.0	
29	U.	2 9	218 55 11.04	La.	218 54 41.35	U.	33.0	
29		4 5	10.66		41.60		29.2	
29		6 29	10.57		41.40		28.2	
Feb. 23	U.	11 40	218 55 11.14	La.	218 54 41.69	U.	18.3	
23		13 51	11.04		42.56		16.0	
24	U.	1 45	218 55 11.16	U.	218 54 41.30	U.	32.0	
25	U.	11 40	218 55 10.65	La.	218 54 41.30	U.	31.8	
25		13 46	9.94		41.20		30.0	
26	U.	11 39	218 55 10.53	La.	218 54 42.00	U.	29.0	
26		13 50	9.78		42.06		26.2	
28	U.	11 40	218 55 11.26	La.	218 54 40.78	U.	27.0	
28		13 48	11.30		40.55		28.0	
Mar. 2	U.	11 38	218 55 10.55	La.	218 54 40.45	U.	40.0	
2		13 49	10.92		40.97		38.9	
5	U.	11 40	218 55 10.12	La.	218 54 42.02	U.	18.0	
5		13 45	9.52		42.61		16.1	
6	U.	11 39	218 55 10.36	La.	218 54 41.52	U.	13.2	
6		13 50	10.06		42.12		14.0	
7	U.	11 40	218 55 9.61	La.	218 54 40.76	U.	30.1	
7		13 45	9.45		41.01		28.5	
8	U.	1 37	218 55 7.83	U.	218 54 41.46	U.	55.3	
12	U.	1 40	218 55 0.04	U.	218 54 53.78	U.	61.0	
15	U.	1 40	218 55 1.06	U.	218 54 55.50	U.	55.5	W.

SIX-INCH TRANSIT CIRCLE.

OBSERVATIONS AND REDUCTIONS.

D 1

1900 FEBRUARY 13.										CLAMP EAST.									
UPDEGRAFF, OBSERVER.										NO ASSISTANT.									
NO.	NAME.	THDS.	MEAN THREAD.	c' SEC δ + n TAN δ.	ΔT+ m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0						
								A.	B.		A.	B.							
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"						
1	α Tauri	9	57 56.45	-0.62	-46.50	4 57 9.34	-2.25	338 31 49.25	....	18.4	+21 26 52.4	....	-1.2						
2	β Tauri	9	14 5.58	0.64	46.49	5 13 18.44	2.36	337 59 5.48	....	17.9	21 59 36.7	....	-0.5						
3	Lal. 10107.....	9	20 3.25	0.60	46.50	5 19 16.15	2.36	339 29 7.65	....	19.7	20 29 32.8	....	+0.3						
4	W. B. 2 V. 541.....	9	22 40.98	0.68	46.50	5 21 53.80	2.43	336 46 9.58	....	16.6	23 12 33.9	....	-0.4						
5	W. B. 2 V. 618.....	9	24 58.34	-0.62	-46.50	5 24 11.22	-2.40	338 40 35.90	....	18.8	+21 18 5.4	....	+0.3						
6	Mayer 219.....	8	28 31.66	-0.60	-46.50	5 27 44.56	-2.41	339 34 29.68	....	19.9	+20 24 10.5	....	+0.8						
7	ζ Tauri	9	32 29.63	0.62	46.50	5 31 42.51	2.43	338 53 49.82	....	19.1	21 4 51.2	....	1.0						
8	Piazzi V. 184	9	36 50.90	0.66	46.50	5 36 3.74	2.49	337 22 7.42	....	17.4	22 36 35.3	....	0.6						
9	Lal. 10891.....	9	42 2.32	0.65	46.51	5 41 15.16	2.51	337 29 15.05	....	17.6	22 29 27.5	....	1.0						
10	Lal. 11062.....	9	46 35.51	-0.68	-46.51	5 45 48.32	-2.55	336 37 22.50	....	16.6	+23 21 21.0	....	+1.0						
11	χ ¹ Orionis	9	49 17.22	-0.59	-46.51	5 48 30.12	-2.51	339 43 15.78	....	20.2	+20 15 24.2	....	+2.1						
12	W. B. 2 V. 1652.....	9	53 47.34	0.60	46.51	5 53 0.23	2.54	339 18 41.02	....	19.7	20 39 59.4	....	2.2						
13	1 Geminorum	9	58 52.35	0.68	46.46	5 58 5.16	2.61	336 42 39.10	....	16.7	23 16 4.3	....	1.7						
14	3 Geminorum	9	4 29.48	0.67	46.48	6 3 42.30	2.64	336 50 57.05	....	16.9	23 7 46.1	....	2.1						
15	η Geminorum	9	9 40.32	-0.66	-46.50	6 8 53.15	-2.65	337 26 36.35	....	17.6	+22 32 6.2	....	+2.7						

UPDEGRAFF, OBSERVER.			1900 FEBRUARY 14.			CLAMP EAST.			NO ASSISTANT.					
16	<i>z</i>	Tauri.....	9	57 56.34	-0.83	-46.20	4 57 9.29	-2.23	338 31 54.22	....	19.0	+21 26 51.1	....	-1.2
17	108	Tauri.....	9	10 16.41	0.86	46.24	5 9 29.33	2.32	337 48 32.55	....	18.2	22 10 13.6	....	0.8
18	<i>n</i>	Tauri.....	9	14 5.51	0.85	46.23	5 13 18.44	2.34	337 59 9.72	....	18.3	21 59 36.2	....	-0.5
19		Lal. 10107.....	9	20 3.04	0.80	46.22	5 19 16.02	2.35	339 29 11.82	....	20.1	20 29 32.4	....	+0.3
20		W. B. ₂ V. 541.....	9	22 40.97	-0.90	-46.22	5 21 53.85	-2.41	336 46 14.10	....	16.9	+23 12 33.3	....	-0.5
21		W. B. ₂ V. 618.....	8	24 58.25	-0.83	-46.22	5 24 11.20	-2.39	338 40 40.18	....	19.1	+21 18 5.0	....	+0.3
22		Mayer 219.....	9	28 31.54	0.79	46.22	5 27 44.53	2.39	339 34 33.20	....	20.2	20 24 10.9	....	0.8
23	<i>ζ</i>	Tauri.....	9	32 29.52	0.82	46.20	5 31 42.48	2.42	338 53 52.50	....	19.4	21 4 52.4	....	1.0
24		Piazzi V. 184.....	9	36 50.77	0.88	46.22	5 36 3.67	2.47	337 22 11.58	....	17.6	22 36 35.1	....	0.6
25		Lal. 10891.....	9	42 2.27	0.87	46.22	5 41 15.18	2.50	337 29 19.70	....	17.7	22 29 26.9	....	0.9
26		Lal. 11062.....	9	46 35.42	-0.91	-46.23	5 45 48.28	-2.54	336 37 26.62	....	16.8	+23 21 20.9	....	+0.9
27	<i>χ</i> ¹	Orionis.....	9	49 17.14	-0.79	-46.23	5 48 30.12	-2.49	339 43 19.08	....	20.3	+20 15 24.9	....	+2.0
28		W. B. ₂ V. 1652.....	9	53 47.24	0.80	46.23	5 53 0.21	2.52	339 18 45.92	....	19.8	20 39 58.6	....	2.2
29	<i>ι</i>	Geminorum.....	9	58 52.24	0.90	46.25	5 58 5.11	2.59	336 42 41.65	....	16.8	23 16 5.8	....	1.7
30	3	Geminorum.....	9	4 29.45	0.90	46.24	6 3 42.32	2.62	336 51 1.78	....	17.0	23 7 45.5	....	2.1
31	<i>η</i>	Geminorum.....	9	9 40.22	-0.88	-46.20	6 8 53.11	-2.63	337 26 39.85	....	17.6	+22 32 6.8	....	+2.7

UPDEGRAFF, OBSERVER.			1900 FEBRUARY 15.				CLAMP EAST.				LITTELL, ASSISTANT.			
32	<i>z</i>	Tauri.....	9	57 56.36	-0.75	-46.31	4 57 9.34	-2.22	338 31 57.05	....	18.3	+21 26 50.1	....	-1.2
33	108	Tauri.....	9	10 16.33	0.78	46.26	5 9 29.29	2.30	337 48 33.70	....	17.6	22 10 14.4	....	0.8
34	<i>n</i>	Tauri.....	9	14 5.40	0.77	46.21	5 13 18.37	2.33	337 59 11.30	....	17.7	21 59 36.6	....	-0.5
35		Lal. 10107.....	9	20 3.07	0.72	46.26	5 19 16.09	2.33	339 29 13.20	....	19.4	20 29 33.1	....	+0.3
36		Mayer 219.....	9	28 31.52	0.72	46.25	5 27 44.55	2.38	339 34 35.18	....	19.5	20 24 11.0	....	0.8
37	<i>ζ</i>	Tauri.....	9	32 29.48	-0.74	-46.26	5 31 42.49	-2.40	338 53 53.80	....	18.8	+21 4 53.2	....	+0.9

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at IV, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°			"	
13 4 20	74.90	8.2	42.9		1	+61.4	....
— 4 55	75.35	7.0	41.7		2	60.8	....
5 35	76.45	6.2	40.3		7	58.4	....
6 12	76.85	5.2	39.9		13	58.4	....
14 4 55	77.20	4.8	38.6		14	60.6	....
5 36	77.00	3.9	37.8		15	59.7	....
6 0	76.55	5.6	37.1		16	55.9	....
15 5 7	75.43	7.9	43.9		17	54.9	....
					18	56.1	....
				Adopted Equator Point Corrections.	23	55.4	....
				"	29	55.7	....
				1-15, from stars	30	55.8	....
				16-31, from stars	31	56.1	....
				32-37, from stars { 5 ^h 6 ^m	32	53.7	....
				{ 6 4 +53.97	33	54.4	....
					34	55.2	....
					37	+54.6	....

NO.	NAME.	THDS.	MEAN THREAD.	c_0 ' SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Piazzi V. 184	9	36 50.77	— 0.80	—46.25	5 36 3.72	—2.46	337 21 12.45	"	17.1	+22 36 36.3	"	+0.6
2	Piazzi V. 192	6	38 4.67	0.81	46.25	5 37 17.61	2.48	336 49 24.32	"	16.5	23 9 25.0	"	0.5
3	Lal. 10891	9	42 2.19	0.79	46.24	5 41 15.16	2.48	337 29 20.78	"	17.2	22 29 27.8	"	0.9
4	Lal. 11062	9	46 35.39	0.82	46.24	5 45 48.33	2.52	336 37 28.30	"	16.3	23 21 21.3	"	0.9
5	χ^1 Orionis	9	49 17.04	— 0.71	—46.24	5 48 30.09	—2.48	339 43 20.18	"	19.7	+20 15 26.0	"	+2.0
6	Anonymous	6	53 38.40	— 0.73	—46.24	5 52 51.43	—2.51	339 19 30.92	"	19.2	+20 39 15.7	"	+2.2
7	140 Tauri	9	55 14.14	0.80	46.24	5 54 27.10	2.56	337 5 12.58	"	16.8	22 53 36.6	"	1.6
8	Geminorum	9	58 52.13	0.82	46.23	5 58 5.07	2.58	336 42 43.38	"	16.4	23 16 6.3	"	1.7
9	3 Geminorum	9	4 29.36	0.81	46.23	6 3 42.32	2.63	336 51 4.25	"	16.5	23 7 45.2	"	2.1
10	7 Geminorum	9	9 40.16	— 0.79	—46.24	6 8 53.14	—2.62	337 26 42.70	"	17.2	+22 32 6.2	"	+2.6

1900 FEBRUARY 18.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

11	1 Tauri	8	57 56.92	— 0.83	—46.84	4 57 9.25	—2.17	338 32 0.78	"	19.4	+21 26 51.3	"	—1.1
12	108 Tauri	9	10 16.93	0.86	46.83	5 9 29.23	2.25	337 48 39.75	"	18.5	22 10 13.1	"	0.8
13	2 Tauri	9	14 6.04	0.85	46.82	5 13 18.35	2.28	337 59 15.85	"	18.7	21 59 36.8	"	—0.5
14	Lal. 10107	9	20 3.74	0.80	46.84	5 19 16.10	2.28	339 29 18.00	"	20.5	20 29 32.9	"	+0.4
15	W. B. V. 541	8	22 41.54	0.90	46.84	5 21 53.80	2.34	336 46 20.45	"	17.3	23 12 33.6	"	—0.4
16	Mayer 219	9	28 32.13	0.79	46.84	5 27 44.50	2.33	339 34 39.60	"	20.6	20 24 11.2	"	+0.8
17	5 Tauri	9	32 30.13	— 0.82	—46.87	5 31 42.47	—2.36	338 53 58.58	"	19.8	+21 4 53.0	"	+1.0
18	Anonymous	9	36 47.22	— 0.87	—46.84	5 35 59.51	—2.41	337 28 49.25	"	18.2	+22 30 4.0	"	+0.6
19	Lal. 10891	9	42 2.82	0.87	46.84	5 41 15.11	2.44	337 29 25.60	"	18.2	22 29 27.6	"	0.9
20	Lal. 11062	9	46 35.98	0.91	46.84	5 45 48.23	2.48	336 37 33.48	"	17.2	23 21 20.7	"	0.9
21	χ^1 Orionis	9	49 17.66	0.79	46.84	5 48 30.03	2.43	339 43 25.30	"	20.8	20 15 25.3	"	2.1
22	W. B. V. 1652	9	53 47.81	0.80	46.84	5 53 0.17	2.46	339 18 51.65	"	20.3	20 39 59.4	"	2.2
23	3 Geminorum	9	4 29.93	0.90	46.77	6 3 42.19	2.57	336 51 9.15	"	17.4	23 7 44.8	"	2.0
24	7 Geminorum	9	9 40.58	— 0.87	—46.92	6 8 53.16	—2.58	337 26 46.35	"	18.1	+22 32 7.0	"	+2.6

1900 FEBRUARY 19.

CLAMP EAST.

LITTELL, OBSERVER.

NO ASSISTANT.

25	β Andromedæ	9	4 57.47	— 1.35	—47.61	1 4	....	324 53 31.65	"	4.1	+35 5 39.0	"	....
26	α Ursæ Minoris	11	24 28.91	86.99	48.20	1 22	....	271 13 35.99	"	72.0	88 46 49.8	"	....
27	α Arietis	9	2 21.54	— 0.85	—47.58	2 1	....	336 59 24.00	"	17.4	+22 59 33.9	"	....

1900 FEBRUARY 19.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

28	1 Tauri	9	57 57.47	— 0.78	—47.46	4 57 9.17	—2.15	338 32 2.08	"	19.4	+21 26 51.0	"	—1.1
29	108 Tauri	9	10 17.53	0.80	47.51	5 9 29.20	2.23	337 48 39.65	"	18.5	22 10 14.3	"	0.7
30	2 Tauri	9	14 6.72	0.80	47.57	5 13 18.38	2.26	337 59 17.78	"	18.7	21 59 36.0	"	—0.5
31	Lal. 10107	9	20 4.29	0.74	47.54	5 19 16.01	2.27	339 29 18.90	"	20.5	20 29 33.1	"	+0.4
32	W. B. V. 541	9	22 42.13	0.84	47.54	5 21 53.75	2.33	336 46 21.55	"	17.3	23 12 33.7	"	—0.4
33	W. B. V. 618	9	24 59.49	— 0.77	—47.55	5 24 11.17	—2.31	338 40 47.72	"	19.6	+21 18 5.2	"	+0.4
34	Mayer 219	9	28 32.79	— 0.74	—47.55	5 27 44.50	—2.31	339 34 41.32	"	20.6	+20 24 10.6	"	+0.9
35	5 Tauri	9	32 30.78	0.76	47.60	5 31 42.46	2.34	338 54 0.05	"	19.8	21 4 52.7	"	1.0
36	Piazzi V. 184	9	36 52.01	0.82	47.56	5 36 3.63	2.40	337 22 19.38	"	18.0	22 36 35.1	"	0.6
37	Lal. 10891	9	42 3.44	0.81	47.56	5 41 15.07	2.42	337 29 26.92	"	18.2	22 29 27.4	"	0.9
38	Lal. 11062	9	46 36.65	0.84	47.57	5 45 48.24	2.46	336 37 34.00	"	17.2	23 21 21.3	"	0.9
39	χ^1 Orionis	9	49 18.38	0.73	47.57	5 48 30.08	2.42	339 43 26.78	"	20.8	20 15 24.9	"	2.1
40	W. B. V. 1652	9	53 48.51	— 0.75	—47.58	5 53 0.18	—2.45	339 18 53.58	"	20.3	+20 39 58.6	"	+2.2

Time. Barom. Att. Ther. Ext. Ther.

Bisections are made at IV, except as noted below.

Eq. Pt. Cor. from stars.

				No.		
				A.		B.
d	h	m	cm.			
15	5	44	75.45	8	+54.5	....
	6	2	75.43	9	53.8	....
18	5	1	75.30	10	53.6	....
	5	55	75.33	11	49.1	....
19	1	10	75.78	12	47.3	....
	2	10	75.80	13	49.6	....
	5	2	75.95	17	48.9	....
	5	30	75.95	23	47.9	....
				24	49.1	....
				28	47.7	....
				29	47.5	....
				30	47.7	....
				35	+47.5	....

Notes.
2. Bisection 8^h late.
3. 6. Very faint; poor.
14. Clouds.
29. Observation hurried.

Adopted Equator Point Corrections.

I-10, from stars {5^h 6^m +54.43
6 4 +53.97
11-24, from stars +48.6
25-27, from nadir +45.2
28-40, from stars +47.5

OBSERVATIONS OF ZODIACAL STARS.

D5

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	I Geminorum.....	9	m s 58 53.47	s - 0.84	s -47.61	h m s 5 58 5.05	s -2.52	o ' " 336 42 49.92	"	" 17.3	o ' " +23 16 5.3	"	" +1.7
2	3 Geminorum.....	9	4 30.63	0.84	47.55	6 3 42.20	2.55	336 51 9.70	....	17.4	23 7 45.4	....	2.1
3	7 Geminorum.....	9	9 41.49	- 0.81	-47.60	6 8 53.09	-2.57	337 26 47.68	....	18.1	+22 32 6.7	....	+2.6

LITTELL, OBSERVER.

1900 FEBRUARY 19.

CLAMP EAST.

NO ASSISTANT.

4	κ Draconis	9	30 9.96	- 5.15	-47.82	12 29 .....	....	289 40 .....	....	....	+70 20 .....	....	....
5	θ Virginis	9	5 36.51	+ 0.06	47.85	13 4 .....	....	4 58 45.10	....	59.8	- 5 0 29.7	....	....
6	α Ursæ Minoris s. P.	9	21 35.44	+85.39	-47.45	1 22 .....	....	268 47 25.53	....	80.3	+88 46 48.5	....	....

UPDEGRAFF, OBSERVER.

1900 FEBRUARY 20.

CLAMP EAST.

NO ASSISTANT.

7	ι Tauri.....	9	57 57.99	- 0.70	-48.07	4 57 9.24	-2.14	338 32 3.05	....	19.1	+21 26 50.7	....	-1.1
8	108 Tauri.....	9	10 18.02	0.73	48.08	5 9 29.23	2.22	337 48 40.10	....	18.3	22 10 14.5	....	0.7
9	η Tauri.....	9	14 7.11	0.72	48.06	5 13 18.32	2.24	337 59 18.42	....	18.5	21 59 36.0	....	-0.4
10	Lal. 10107	9	20 4.72	0.67	48.07	5 19 15.98	2.25	339 29 19.92	....	20.3	20 29 32.7	....	+0.4
11	W. B. ₂ V. 541	9	22 42.58	- 0.76	-48.08	5 21 53.74	-2.31	336 46 20.90	....	17.1	+23 12 34.9	....	-0.4
12	W. B. ₂ V. 618	9	24 59.84	- 0.70	-48.08	5 24 11.06	-2.29	338 40 48.25	....	19.3	+21 18 5.3	....	+0.4
13	Rümker 1471	9	29 44.99	0.74	48.08	5 28 56.17	2.34	337 28 51.12	....	17.9	22 30 3.9	....	0.3
14	ζ Tauri	9	32 31.16	0.69	48.06	5 31 42.39	2.33	338 54 0.50	....	19.6	21 4 52.8	....	1.0
15	Anonymous.....	5	37 40.46	0.70	48.09	5 36 51.67	2.36	338 38 30.62	....	19.3	21 20 23.0	....	1.1
16	Lal. 10913	9	42 31.43	- 0.69	-48.10	5 41 42.64	-2.38	339 4 38.95	....	19.8	+20 54 14.1	....	+1.5
17	B. D. +22° 1080	9	48 9.40	- 0.72	-48.10	5 47 20.58	-2.43	337 55 53.35	....	18.5	+22 3 1.1	....	+1.5
18	140 Tauri.....	9	55 15.81	0.75	48.11	5 54 26.95	2.48	337 5 19.58	....	17.5	22 53 35.8	....	1.6
19	I Geminorum	9	58 53.92	0.76	48.15	5 58 5.05	2.51	336 42 50.58	....	17.1	23 16 5.2	....	1.7
20	3 Geminorum	9	4 31.06	0.76	48.08	6 3 42.18	2.53	336 51 10.08	....	17.2	23 7 45.6	....	2.1
21	7 Geminorum	9	9 41.93	- 0.74	-48.12	6 8 53.07	-2.56	337 26 48.25	....	17.9	+22 32 6.7	....	+2.6

UPDEGRAFF, OBSERVER.

1900 FEBRUARY 23.

CLAMP EAST.

NO ASSISTANT.

22	ι Tauri.....	9	57 59.77	- 0.78	-49.82	4 57 9.12	-2.09	338 31 56.20	....	18.3	+21 26 50.5	....	-1.0
23	108 Tauri.....	9	10 19.83	0.81	49.86	5 9 29.15	2.17	337 48 32.98	....	17.5	22 10 14.5	....	0.6
24	η Tauri.....	9	14 8.96	0.80	49.87	5 13 18.29	2.20	337 59 10.65	....	17.7	21 59 36.6	....	-0.3
25	Lal. 10107	9	20 6.51	0.75	49.87	5 19 15.89	2.20	339 29 13.60	....	19.4	20 29 32.0	....	+0.6
26	θ Tauri.....	9	22 30.61	- 0.80	-49.87	5 21 39.94	-2.24	338 7 41.98	....	17.9	+21 51 5.1	....	+0.2
27	W. B. ₂ V. 618	9	25 1.71	- 0.78	-49.87	5 24 11.06	-2.24	338 40 41.12	....	18.5	+21 18 5.4	....	+0.5
28	Rümker 1471	9	29 46.81	0.82	49.87	5 28 56.12	2.29	337 28 43.48	....	17.2	22 30 4.3	....	0.4
29	ζ Tauri	9	32 33.05	0.77	49.92	5 31 42.41	2.28	338 53 53.12	....	18.7	21 4 53.2	....	1.1
30	W. B. ₂ V. 1127	9	38 15.47	0.78	49.87	5 37 24.82	2.32	338 36 39.22	....	18.4	21 22 7.4	....	1.2
31	Lal. 10913	9	42 33.28	- 0.76	-49.87	5 41 42.65	-2.33	339 4 31.80	....	19.0	+20 54 14.2	....	+1.6
32	B. D. +22° 1080	9	48 11.21	- 0.80	-49.87	5 47 20.54	-2.38	337 55 46.65	....	17.7	+22 3 0.6	....	+1.6
33	140 Tauri.....	9	55 17.65	0.83	49.87	5 54 26.95	2.44	337 5 12.12	....	16.7	22 53 36.2	....	1.7
34	I Geminorum.....	9	58 55.67	0.85	49.86	5 58 4.95	2.46	336 42 42.95	....	16.3	23 16 5.8	....	1.8
35	3 Geminorum.....	9	4 32.87	0.84	49.85	6 3 42.16	2.49	336 51 4.02	....	16.5	23 7 44.5	....	2.1
36	7 Geminorum.....	9	9 43.73	- 0.82	-49.89	6 8 53.04	-2.51	337 26 42.28	....	17.1	+22 32 5.6	....	+2.6

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at IV, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°				
19 6 2	75.965	-5.5	21.3	6. Bisections at d_1 and b_3 .	1	"	
13 8	76.14	7.4	18.2		2	+47.0	....
13 38	76.125	7.5	17.8	Notes.	3	47.5	....
20 4 55	76.385	0.4	30.0	6. Star images diffuse.	7	47.7	....
5 46	76.38	0.8	29.0	22-36. Seeing poor.	8	47.0	....
6 7	76.35	-1.0	28.4	29, 30, 34. Unsteady.	9	47.3	....
23 4 55	74.85	+6.2	42.2		14	47.4	....
5 37	74.92	5.7	40.9		19	47.2	....
6 8	74.90	+5.0	40.2		20	46.5	....
				Adopted Equator Point Corrections.	21	47.3	....
				"	22	54.8	....
					23	55.3	....
					24	56.0	....
				1-3, from stars.....	26	54.6	....
				5-6, from nadir.....	29	55.6	....
				7-21, from stars.....	34	55.1	....
				22-36, from stars.....	35	54.1	....
					36	+54.1	....

1900 FEBRUARY 23.													CLAMP EAST.		NO ASSISTANT.	
LITTELL, OBSERVER.																
NO.	NAME.	THDS.	MEAN THREAD.	C ₀ ' SEC δ + n TAN δ.	ΔT + m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0			
								A.	B.		A.	B.				
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"			
1	κ Draconis	11	30 12.63	- 5.41	-50.05	12 29	....	289 40	....	....	+70 20	....	....			
2	θ Virginis	9	5 38.77	+ 0.08	50.04	13 4	....	4 58 41.18	....	56.9	- 5 0 29.7	....	....			
3	α Ursæ Minoris S. P.	11	21 26.82	+91.65	-47.69	1 22	....	268 47 13.64	....	76.3	+88 46 48.5	....	....			

1900 FEBRUARY 25.													CLAMP EAST.		NO ASSISTANT.	
UPDEGRAFF, OBSERVER.																
4	ι Tauri	9	58 0.34	- 0.91	-50.30	4 57 9.12	-2.05	338 31 58.80	....	19.2	+21 26 50.2	....	-1.0			
5	108 Tauri	9	10 20.43	0.94	50.36	5 9 29.18	2.14	337 48 35.80	....	18.4	22 10 14.0	....	0.6			
6	η Tauri	9	14 9.46	0.93	50.28	5 13 18.22	2.16	337 59 13.98	....	18.6	21 59 35.6	....	-0.3			
7	Lal. 10107	9	20 7.03	0.87	50.32	5 19 15.84	2.17	339 29 15.32	....	20.4	20 29 32.5	....	+0.6			
8	ο Tauri	9	22 31.18	- 0.93	-50.35	5 21 39.93	-2.20	338 7 43.38	....	18.8	+21 51 6.0	....	+0.2			
9	W. B. ₂ V. 618	9	25 2.26	- 0.90	-50.32	5 24 11.04	-2.21	338 40 43.22	....	19.5	+21 18 5.5	....	+0.5			
10	Rümker 1471	9	29 47.32	0.95	50.32	5 28 56.05	2.26	337 28 46.50	....	18.1	22 30 3.6	....	0.4			
11	ζ Tauri	9	32 33.51	0.90	50.28	5 31 42.29	2.25	338 53 55.50	....	19.7	21 4 53.0	....	1.1			
12	W. B. ₂ V. 1127	9	38 16.03	0.90	50.33	5 37 24.80	2.28	338 36 40.68	....	19.4	21 22 8.1	....	1.2			
13	Lal. 10913	9	42 33.82	- 0.89	-50.33	5 41 42.60	-2.30	339 4 33.85	....	20.0	+20 54 14.4	....	+1.6			
14	Anonymous	9	48 4.81	- 0.94	-50.33	5 47 13.54	-2.35	337 56 36.40	....	18.6	+22 2 13.2	....	+1.5			
15	140 Tauri	9	55 18.23	0.97	50.34	5 54 26.92	2.40	337 5 14.18	....	17.6	22 53 36.4	....	1.7			
16	ι Geminorum	9	58 56.24	0.99	50.32	5 58 4.91	2.43	336 42 45.32	....	17.2	23 16 5.7	....	1.7			
17	ζ Geminorum	9	4 33.47	0.98	50.34	6 3 42.15	2.46	336 51 6.02	....	17.4	23 7 44.8	....	2.1			
18	η Geminorum	9	9 44.31	- 0.96	-50.36	6 8 53.01	-2.48	337 26 43.30	....	18.0	+22 32 6.9	....	+2.5			

1900 FEBRUARY 26.													CLAMP EAST.		NO ASSISTANT.	
UPDEGRAFF, OBSERVER.																
19	ι Tauri	9	58 0.89	- 0.77	-51.00	4 57 9.11	-2.04	338 31 58.98	....	19.4	+21 26 51.3	....	-0.9			
20	108 Tauri	9	10 20.96	0.79	51.06	5 9 29.16	2.12	337 48 37.62	....	18.6	22 10 13.5	....	0.6			
21	η Tauri	9	14 10.00	0.79	50.98	5 13 18.20	2.14	337 59 15.08	....	18.8	21 59 35.8	....	-0.3			
22	ο Tauri	9	22 31.59	0.78	50.93	5 21 39.80	2.18	338 7 45.15	....	19.0	21 51 5.5	....	+0.2			
23	Rümker 1471	9	29 47.90	0.81	51.01	5 28 56.08	2.24	337 28 46.35	....	18.2	22 30 5.1	....	0.3			
24	ζ Tauri	9	32 34.14	0.76	51.06	5 31 42.37	2.24	338 53 56.65	....	19.9	21 4 53.1	....	1.1			
25	W. B. ₂ V. 1127	9	38 16.64	- 0.77	-51.01	5 37 24.86	-2.27	338 36 42.82	....	19.6	+21 22 7.3	....	+1.2			
26	Lal. 10913	9	42 34.38	- 0.75	-51.01	5 41 42.62	-2.28	339 4 35.42	....	20.1	+20 54 14.2	....	+1.6			
27	B. D. +22° 1080	9	48 12.34	0.79	51.01	5 47 20.54	2.33	337 55 49.40	....	18.8	22 3 1.5	....	1.5			
28	140 Tauri	9	55 18.81	0.82	51.01	5 54 26.98	2.39	337 5 15.85	....	17.8	22 53 36.1	....	1.6			
29	ι Geminorum	9	58 56.79	0.84	51.03	5 58 4.94	2.42	336 42 47.10	....	17.3	23 16 5.3	....	1.7			
30	ζ Geminorum	9	4 33.99	0.83	51.02	6 3 42.15	2.45	336 51 7.32	....	17.5	23 7 44.9	....	2.1			
31	η Geminorum	9	9 44.76	- 0.81	-50.98	6 8 52.94	-2.46	337 26 44.68	....	18.2	+22 32 6.8	....	+2.5			

1900 FEBRUARY 27.													CLAMP EAST.		NO ASSISTANT.	
LITTELL, OBSERVER.																
32	β Andromedæ	9	5 1.11	- 1.30	-51.39	1 4	....	324 53 34.25	....	4.2	+35 5 37.4	....	....			
33	α Ursæ Minoris	11	24 20.55	84.05	48.37	1 22	....	271 13 40.22	....	74.0	88 46 48.1	....	....			
34	α Arietis	9	2 25.07	- 0.82	-51.25	2 1	....	336 59 24.00	....	17.8	+22 59 34.0	....	....			

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at IV, except as noted below.	Eq. Pt. Cor. from stars		
					No.	A.	B.
d h m	cm.	°	°			"	
23 13 0	74.90	+1.4	+33.8	3. Bisections at c ₃ and c ₁ .	4	+51.3	....
13 44	74.87	+1.4	+34.1	33. Bisections at b ₃ and d ₁ .	5	51.6	....
25 5 7	74.72	-7.8	-8.4	Notes.	6	51.8	....
5 37	74.79	8.0	8.8		8	52.3	....
6 2	74.82	8.2	8.9		11	52.2	....
26 5 3	75.95	5.6	6.6	5, 12, 18. Seeing poor.	16	51.7	....
5 35	76.00	6.2	6.7	9. Very poor.	17	51.2	....
6 3	76.03	6.5	7.1	13. Observation hurried.	18	52.1	....
27 1 13	77.05	5.0	6.2	19-31. Seeing good; stellar focus not good.	19	51.0	....
2 7	77.035	-4.5	-5.6		20	49.6	....

*Ext. Ther. Centigrade from here on.				Adopted Equator Point Corrections.				21	50.5	....
				1-3, from nadir.....				22	50.3	....
				4-18, from stars.....				24	50.8	....
				19-31, from stars.....				29	49.8	....
				32-34, from nadir.....				30	49.8	....
								31	+50.5	....

1900 FEBRUARY 27.												CLAMP EAST.				NO ASSISTANT.			
UPDEGRAFF, OBSERVER.																			
NO.	NAME.	THDS.	MEAN THREAD.		c_0' SEC δ + n TAN δ .	$\Delta T + m.$	APPARENT R. A.			RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0			
			m	s			h	m	s		A.	B.		A.	B.				
1	ι Tauri	9	58	1.04	-0.72	-51.22	4	57	9.08	-2.02	338 32 3.00	....	19.8	+21 26 50.4	....	-0.9			
2	ι 08 Tauri	9	10	21.07	0.74	51.24	5	9	29.08	2.10	337 48 40.22	....	18.9	22 10 14.2	....	0.6			
3	η Tauri	9	14	10.17	0.73	51.22	5	13	18.19	2.13	337 59 18.30	....	19.1	21 59 35.9	....	-0.3			
4	θ Tauri	9	22	31.91	0.73	51.31	5	21	39.92	2.17	338 7 48.72	....	19.3	21 51 5.4	....	+0.2			
5	Rümker 1471.....	9	29	48.07	0.75	51.26	5	28	56.06	2.22	337 28 51.18	....	18.5	22 30 3.8	....	0.3			
6	W. B. ₂ V. 1127 ...	9	38	16.76	-0.71	-51.27	5	37	24.78	-2.25	338 36 46.50	....	19.9	+21 22 7.2	....	+1.2			
7	Lal. 10913.....	7	42	34.54	-0.70	-51.27	5	41	42.57	-2.27	339 4 38.58	....	20.5	+20 54 14.6	....	+1.6			
8	B. D. +22° 1080 ..	9	48	12.50	0.74	51.28	5	47	20.48	2.32	337 55 53.08	....	19.1	22 3 1.5	....	1.5			
9	ι 40 Tauri	9	55	18.97	0.76	51.29	5	54	26.92	2.37	337 5 19.65	....	18.1	22 53 36.0	....	1.6			
10	ι Geminorum	9	58	56.98	0.78	51.30	5	58	4.91	2.40	336 42 50.60	....	17.6	23 16 5.6	....	1.7			
11	ζ Geminorum	6	4	34.16	0.77	51.27	6	3	42.10	2.43	336 51 11.95	....	17.8	23 7 44.1	....	2.0			
12	η Geminorum	9	9	45.01	-0.75	-51.31	6	8	52.96	-2.44	337 26 48.70	....	18.5	+22 32 6.8	....	+2.5			

1900 MARCH 2.												CLAMP EAST.				NO ASSISTANT.					
UPDEGRAFF, OBSERVER.																					
13	η	Tauri.....	9	14	11.79	-0.95	-52.68	5	13	18.15	-2.07	337	59	13.52	....	18.0	+21	59	35.8	....	-0.4
14	θ	Tauri.....	9	22	33.45	0.94	52.70	5	21	39.83	2.11	338	7	43.75	....	18.2	21	51	5.5	....	+0.1
15		Rümker 1471	9	29	49.56	0.97	52.68	5	28	55.91	2.16	337	28	46.18	....	17.5	22	30	3.9	....	0.3
16	ζ	Tauri.....	9	32	35.84	0.91	52.67	5	31	42.25	2.18	338	53	55.78	....	19.1	21	4	52.8	....	1.0
17		Piazz V. 192.....	9	38	11.07	1.00	52.68	5	37	17.39	2.23	336	49	25.75	....	16.7	23	9	25.5	....	0.5
18		Lal. 10913.....	9	42	36.15	-0.90	-52.67	5	41	42.58	-2.21	339	4	34.40	....	19.3	+20	54	14.3	....	+1.5
19		B. D. +22° 1080 ...	9	48	14.08	-0.95	-52.67	5	47	20.46	-2.26	337	55	48.35	....	18.0	+22	3	1.7	....	+1.4
20		Lal. 11293.....	9	54	35.30	0.93	52.67	5	53	41.70	2.29	338	23	3.78	....	18.5	21	35	46.0	....	1.9
21	ι	Geminorum.....	9	58	58.54	1.00	52.70	5	58	4.87	2.34	336	42	46.40	....	16.6	23	16	5.4	....	1.6
22	ζ	Geminorum.....	9	4	35.68	1.00	52.62	6	3	42.02	2.37	336	51	6.45	....	16.8	23	7	45.3	....	1.9
23	η	Geminorum.....	9	9	46.54	0.97	52.67	6	8	52.91	2.39	337	26	43.88	....	17.4	22	32	7.3	....	2.5
24	κ	Geminorum.....	9	39	21.34	-1.06	-52.74	7	38	27.55	-2.83	335	20	43.00	....	15.1	+24	38	10.2	....	+7.0
25	φ	Geminorum.....	9	48	19.51	-1.18	-52.70	7	47	25.61	-2.91	332	57	35.30	....	12.5	+27	1	20.5	....	+7.2
26	ω 1	Cancri.....	9	55	49.62	1.11	52.72	7	54	55.80	2.91	334	19	1.48	....	14.0	25	39	52.8	....	7.9
27		B. D. +25° 1853 ...	9	3	2.62	1.08	52.70	8	2	8.84	2.92	334	58	45.75	....	14.7	25	0	7.9	....	8.6
28	ψ 2	Cancri.....	9	5	22.62	1.12	52.70	8	4	28.80	2.94	334	10	23.00	....	13.8	25	48	31.5	....	8.5
29		B. D. +25° 1880 ...	9	9	41.01	-1.08	-52.70	8	8	47.23	-2.94	334	56	46.12	....	14.7	+25	2	7.5	....	+9.0
30		Lal. 16332.....	9	16	53.58	-1.00	-52.69	8	15	59.89	-2.92	336	42	48.78	....	16.6	+23	16	2.9	....	+9.8
31	ν 1	Cancri.....	9	21	39.79	1.07	52.68	8	20	46.04	2.96	335	7	16.25	....	14.9	24	51	37.1	....	9.8
32	η	Cancri.....	9	27	52.12	0.90	52.69	8	26	58.54	2.90	339	12	8.65	....	19.5	20	46	40.1	....	11.2
33	γ	Cancri.....	9	38	26.57	0.94	52.66	8	37	32.97	2.94	338	9	18.92	....	18.3	21	49	31.1	....	11.6
34	ι	Cancri.....	9	41	35.90	-1.28	-52.65	8	40	41.96	-3.10	330	51	36.30	....	10.3	+29	7	21.7	....	+10.2

LITTELL, OBSERVER.					1900 MARCH 3.		CLAMP EAST.		NO ASSISTANT.					
35	β Andromedæ	9	5	2.89	—I. 68	—52.83	I 4 .....	....	324 53 30.52	....	4.0	+35 5 36.7	....	....
36	α Ursæ Minoris	11	24	47.00	109.24	52.54	I 22 .....	....	271 13 32.02	....	69.9	88 46 47.6	....	....
37	β Arietis	9	50	1.33	—0.91	—52.76	I 49 .....	....	339 39 32.45	....	19.9	+20 19 18.9	....	....

					Bisections are made at IV, except as noted below.												Eq. Pt. Cor. from stars.		
Time.		Barom.	Att. Ther.	Ext. Ther.													No.	A.	B.
d	h m	cm.	°	°														"	
27	4 54	77.40	-5.2	-6.8	36. Bisections at b_3 and d_1 .												1	+46.6	....
	5 33	77.15	6.1	7.4													2	46.7	....
	6 8	77.17	-6.7	-7.7													3	47.0	....
	2 5 16	75.24	+3.3	+2.0													4	46.5	....
2	5 35	75.26	3.0	1.5	Notes. 2. Hurried. 11. Hurried; bisection 5 ^a late. 36. Very unsteady.												10	46.0	....
	6 3	75.25	2.5	1.4													11	[44.7]	....
	7 43	75.35	1.6	1.2													12	46.2	....
	8 34	75.36	1.3	0.9													13	52.8	....
3	1 10	76.15	5.9	5.4	Adopted Equator Point Corrections. " $\begin{matrix} 1-12, \text{ from stars } \left\{ \begin{matrix} 5^h & 10^m & \dots & +46.70 \\ 6 & 3 & \dots & +46.10 \end{matrix} \right. \\ 13-23, \text{ from stars } \left\{ \begin{matrix} 5 & 22 & \dots & +52.53 \\ 6 & 4 & \dots & +51.47 \end{matrix} \right. \\ 24-34, \text{ from stars } \dots & +51.7 \\ 35-37, \text{ from nadir } \dots & +48.8 \end{matrix}$												14	52.4	....
	1 54	76.20	+6.5	+6.0													16	52.4	....
																	21	51.1	....
																	22	51.2	....
												23	52.1	....					
												24	52.6	....					
												25	50.2	....					
												26	52.5	....					
												32	51.5	....					
												33	52.7	....					
												34	+50.8	....					

UPDEGRAFF, OBSERVER.													
1900 MARCH 3.													
CLAMP EAST.													
NO ASSISTANT.													
NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ι Tauri.....	9	m s 58 2.67	s - 0.95	s -52.69	h m s 4 57 8.95	s -1.95	o ' " 338 31 58.08	"	" 18.7	o ' " +21 26 50.9	"	" - 0.8
2	ι Tauri.....	9	10 22.76	0.98	52.77	5 9 29.01	2.02	337 48 35.72	....	17.9	22 10 14.1	....	0.6
3	η Tauri.....	9	14 11.85	0.97	52.74	5 13 18.12	2.05	337 59 13.12	....	18.1	21 59 36.5	....	- 0.3
4	θ Tauri.....	9	22 33.52	0.96	52.77	5 21 39.80	2.09	338 7 43.48	....	18.3	21 51 5.9	....	+ 0.2
5	Mayer 219.....	9	28 37.92	0.90	52.75	5 27 44.27	2.11	339 34 37.00	....	20.0	20 24 10.7	....	1.0
6	ζ Tauri.....	9	32 35.91	- 0.93	-52.75	5 31 42.23	-2.15	338 53 56.42	....	19.2	+21 4 52.1	....	+ 1.0
7	Piazzi V. 192.....	9	38 11.14	- 1.02	-52.75	5 37 17.37	-2.21	336 49 26.35	....	16.9	+23 9 24.5	....	+ 0.5
8	Lal. 10891.....	9	42 8.61	0.99	52.74	5 41 14.88	2.22	337 29 22.25	....	17.6	22 29 27.9	....	1.0
9	Lal. 11062.....	9	46 41.84	1.03	52.74	5 45 48.07	2.26	336 37 31.28	....	16.7	23 21 19.7	....	0.9
10	Lal. 11293.....	9	54 35.27	0.96	52.73	5 53 41.58	2.28	338 23 3.22	....	18.7	21 35 45.8	....	1.9
11	ι Geminorum.....	9	58 58.59	1.03	52.74	5 58 4.83	2.32	336 42 45.18	....	16.8	23 16 5.7	....	1.6
12	β Geminorum.....	9	4 35.76	- 1.02	-52.69	6 3 42.01	-2.36	336 51 6.25	....	16.9	+23 7 44.5	....	+ 1.9
13	η Geminorum.....	9	9 46.64	- 1.00	-52.75	6 8 52.92	-2.38	337 26 43.32	....	17.6	+22 32 6.8	....	+ 2.5
14	κ Geminorum.....	9	39 21.35	1.09	52.74	7 38 27.53	2.81	335 20 42.55	....	15.3	24 38 10.4	....	7.0
15	ϕ Geminorum.....	9	48 19.53	1.21	52.70	7 47 25.59	2.90	332 57 34.58	....	12.7	27 1 20.9	....	7.2
16	ω Cancri.....	9	55 49.67	1.14	52.75	7 54 55.80	2.90	334 19 1.62	....	14.1	25 39 52.5	....	7.9
17	B. D. +25° 1853.....	9	3 2.69	1.11	52.73	8 2 8.85	2.90	334 58 45.72	....	14.9	25 0 7.6	....	8.5
18	ψ Cancri.....	9	5 22.70	- 1.15	-52.73	8 4 28.82	-2.93	334 10 22.40	....	14.0	+25 48 31.8	....	+ 8.4
19	B. D. +25° 1880.....	9	9 41.04	- 1.11	-52.73	8 8 47.20	-2.92	334 56 46.18	....	14.8	+25 2 7.2	....	+ 8.9
20	Lal. 16332.....	9	16 53.61	1.03	52.73	8 15 59.85	2.91	336 42 48.62	....	16.8	23 16 2.8	....	9.8
21	ν Cancri.....	9	21 39.82	1.10	52.73	8 20 45.99	2.95	335 7 16.02	....	15.0	24 51 37.2	....	9.7
22	η Cancri.....	9	27 52.18	0.92	52.74	8 26 58.53	2.89	339 12 7.35	....	19.7	20 46 41.2	....	11.1
23	γ Cancri.....	9	38 26.64	0.96	52.71	8 37 32.95	2.94	338 9 18.85	....	18.5	21 49 30.8	....	11.5
24	ι Cancri.....	9	41 36.01	- 1.31	-52.74	8 40 41.97	-3.09	330 51 36.90	....	10.4	+29 7 20.9	....	+10.1

LITTELL, OBSERVER.													
1900 MARCH 3.													
CLAMP EAST.													
NO ASSISTANT.													
25	κ Draconis.....	11	30 16.66	- 6.47	-52.72	12 29.....	....	289 40.....	....	....	+70 20.....	....	....
26	θ Virginis.....	9	5 41.54	+ 0.11	52.68	13 4.....	....	4 58 46.38	....	58.0	- 5 0 33.3	....	....
27	α Ursæ Minoris S. P.	11	21 6.55	+110.22	-51.84	1 22.....	....	268 47 17.32	....	77.9	+88 46 46.8	....	....

UPDEGRAFF, OBSERVER.													
1900 MARCH 5.													
CLAMP EAST.													
NO ASSISTANT.													
28	ι Tauri.....	9	10 22.74	- 0.63	-53.13	5 9 29.00	-1.99	337 48 36.65	....	17.8	+22 10 15.0	....	- 0.4
29	η Tauri.....	9	14 11.79	0.63	53.06	5 13 18.05	2.01	337 59 15.32	....	18.0	21 59 36.1	....	- 0.2
30	θ Tauri.....	9	22 33.53	0.62	53.15	5 21 39.80	2.06	338 7 46.50	....	18.2	21 51 4.7	....	+ 0.3
31	Mayer 219.....	9	28 37.89	0.57	53.11	5 27 44.21	2.07	339 34 39.20	....	19.8	20 24 10.4	....	1.1
32	ζ Tauri.....	9	32 35.89	0.60	53.10	5 31 42.19	2.11	338 53 58.02	....	19.1	21 4 52.3	....	1.0
33	Piazzi V. 192.....	9	38 11.07	0.67	53.10	5 37 17.30	2.17	336 49 27.98	....	16.7	23 9 24.7	....	0.6
34	Lal. 10891.....	9	42 8.57	- 0.64	-53.10	5 41 14.83	-2.18	337 29 24.08	....	17.5	+22 29 27.8	....	+ 1.0

Time.					Barom.					Att. Ther.					Ext. Ther.					Bisections are made at IV, except as noted below.					Eq. Pt. Cor. from stars.		
																									No.		
																									A.		
																									B.		
d	h	m			cm.					°					°					27. Bisections at d_1 and b_3 .					"		
3	4	56			76.38					5.4					4.2										1	+52.7	....
					76.39					4.5					3.5										2	52.2	....
					76.41					3.7					2.8										3	53.2	....
					76.44					2.5					2.0										4	52.7	....
					76.46					2.2					2.3										5	51.7	....
					76.44					1.8					1.6										6	51.1	....
					76.43					0.5					1.4										11	52.1	....
					76.40					0.5					0.9										12	51.2	....
					76.40					7.7					6.0										13	52.5	....
					.....					...					5.6										14	52.9	....
																									15	50.7	....
																									16	52.3	....
																									22	52.6	....
																									23	52.4	....
																									24	50.0	....
																									28	51.6	....
																									29	51.2	....
																									30	49.9	....
																									32	+50.2	....

Adopted Equator Point Corrections.

1-13, from stars.....	+52.3
14-24, from stars.....	+51.8
25-27, from nadir.....	+48.9
28-34, from stars.....	+50.6

OBSERVATIONS OF ZODIACAL STARS.

D 9

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + # TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Lal. 11062.....	9	m s 46 41.78	s - 0.68	s -53.10	h m s 5 45 48.00	s -2.22	336 37 32.48	....	16.5	+23 21 20.4	....	+ 1.0
2	χ^1 Orionis.....	9	49 23.53	0.57	53.10	5 48 29.86	2.18	339 43 24.65	....	20.0	20 15 24.8	....	2.2
3	Lal. 11293.....	9	54 35.30	0.61	53.09	5 53 41.60	2.24	338 23 5.60	....	18.5	21 35 45.3	....	2.0
4	I Geminorum.....	8	58 58.53	0.67	53.07	5 58 4.77	2.29	336 42 47.48	....	16.6	23 16 5.3	....	1.7
5	3 Geminorum.....	9	4 35.77	0.67	53.09	6 3 42.01	2.32	336 51 6.80	....	16.8	23 7 45.8	....	2.0
6	7 Geminorum.....	9	9 46.61	- 0.65	-53.11	6 8 52.87	-2.34	337 26 45.45	....	17.5	+22 32 6.4	....	+ 2.5

LITTELL, OBSERVER.

1900 MARCH 7.

CLAMP EAST.

NO ASSISTANT.

7	α Ursæ Minoris.....	II	23 17.27	-73.60	- 0.40	I 22		271 13 36.90		69.8	+88 46 45.4		
---	----------------------------	----	----------	--------	--------	------------	------	--------------	------	------	-------------	------	------

UPDEGRAFF, OBSERVER.

1900 MARCH 7.

CLAMP EAST.

NO ASSISTANT.

8	ι Tauri.....	9	57 8.24	- 0.56	+ 1.28	4 57 8.95	-1.88	338 32 1.35	....	18.7	+21 26 51.1	....	- 0.7
9	108 Tauri.....	9	9 28.26	0.58	1.26	5 9 28.95	1.95	337 48 39.28	....	17.9	22 10 13.9	....	0.3
10	η Tauri.....	9	13 17.39	0.58	1.26	5 13 18.08	1.98	337 59 17.28	....	18.1	21 59 35.7	....	- 0.1
11	θ Tauri.....	9	21 39.00	0.58	1.30	5 21 39.70	2.02	338 7 47.38	....	18.3	21 51 5.4	....	+ 0.4
12	Rümker 1471.....	9	28 55.22	0.60	1.28	5 28 55.90	2.07	337 28 48.80	....	17.5	22 30 4.8	....	0.5
13	ζ Tauri.....	9	31 41.43	- 0.55	+ 1.27	5 31 42.16	-2.07	338 53 59.98	....	19.2	+21 4 51.9	....	+ 1.1
14	Piazzi V. 192.....	9	37 16.66	- 0.62	+ 1.28	5 37 17.32	-2.13	336 49 29.55	....	16.8	+23 9 24.7	....	+ 0.7
15	χ^1 Orionis.....	9	48 29.07	0.52	1.28	5 48 29.83	2.15	339 43 26.22	....	20.1	20 15 24.8	....	2.3
16	Lal. 11293.....	9	53 40.91	0.57	1.28	5 53 41.62	2.20	338 23 7.52	....	18.6	21 35 45.0	....	2.1
17	I Geminorum.....	9	58 4.11	0.62	1.26	5 58 4.78	2.25	336 42 49.22	....	16.7	23 16 5.2	....	1.7
18	3 Geminorum.....	9	3 41.28	0.62	1.32	6 3 41.95	2.29	336 51 8.85	....	16.9	23 7 45.3	....	2.1
19	7 Geminorum.....	9	8 52.13	- 0.60	+ 1.28	6 8 52.82	-2.30	337 26 46.75	....	17.5	+22 32 6.9	....	+ 2.5
20	κ Geminorum.....	9	38 26.87	- 0.70	+ 1.30	7 38 27.44	-2.76	335 20 46.05	....	15.3	+24 38 10.1	....	+ 6.8
21	ϕ Geminorum.....	9	47 25.06	0.78	1.29	7 47 25.55	2.85	332 57 37.45	....	12.6	27 1 21.5	....	6.9
22	ω^1 Cancri.....	9	54 55.23	0.74	1.23	7 54 55.77	2.84	334 19 4.28	....	14.2	25 39 53.0	....	7.7
23	B. D. +25° 1853.....	9	2 8.26	0.71	1.28	8 2 8.83	2.86	334 58 49.45	....	14.9	25 0 7.1	....	8.4
24	ψ^2 Cancri.....	9	4 28.26	0.74	1.28	8 4 28.80	2.88	334 10 25.60	....	14.0	25 48 31.9	....	8.4
25	B. D. +25° 1880.....	9	8 46.58	- 0.71	+ 1.29	8 8 47.16	-2.88	334 56 48.95	....	14.9	+25 2 7.7	....	+ 8.8
26	Lal. 16332.....	9	15 59.21	- 0.65	+ 1.29	8 15 59.85	-2.87	336 42 51.65	....	16.8	+23 16 3.1	....	+ 9.7
27	ν^1 Cancri.....	9	20 45.38	0.71	1.29	8 20 45.96	2.91	335 7 19.45	....	15.1	24 51 36.9	....	9.6
28	η Cancri.....	9	26 57.73	0.57	1.33	8 26 58.46	2.86	339 12 11.45	....	19.7	20 46 40.3	....	11.0
29	γ Cancri.....	9	37 32.24	0.60	1.29	8 37 32.94	2.90	338 9 21.85	....	18.5	21 49 31.1	....	11.3
30	ι Cancri.....	9	40 41.50	- 0.86	+ 1.28	8 40 41.94	-3.05	330 51 39.05	....	10.4	+29 7 22.1	....	+ 9.7

LITTELL, OBSERVER.

1900 MARCH 7.

CLAMP EAST.

NO ASSISTANT.

31	α Ursæ Minoris S. P. .	5	20 44.60	+78.60	- 0.16	I 22		268 47			+88 46		
----	-------------------------------	---	----------	--------	--------	------------	------	--------------	------	------	--------------	------	------

Time.				Barom.	Att. Ther.	Ext. Ther.	Bisections are made at IV, except as noted below.						Eq. Pt. Cor. from stars.		
													No.	A.	B.
d	h	m		cm.	°	°									
5	6	2		76.40	6.8	5.2							4	+50.1	....
	7	42		76.41	5.5	4.7							5	50.9	....
7	1	35		76.43	8.1	7.3							6	50.4	....
	5	4		76.60	6.8	5.4							8	49.6	....
	5	35		76.62	6.0	5.0							9	48.9	....
	6	2		76.65	5.5	4.7							10	49.2	....
	7	46		76.74	4.2	3.2							11	49.0	....
	8	12		76.77	4.2	3.0							13	48.2	....
	8	40		76.73	3.8	2.5							17	48.3	....
													18	48.8	....
													19	49.2	....
													20	49.1	....
													21	47.7	....
													22	49.3	....
													28	48.3	....
													29	49.2	....
													30	+47.5	....

Adopted Equator Point Corrections.

1-6, from stars..... +50.6
 7, from nadir..... +46.0
 8-19, from stars..... +48.9
 20-30, from stars..... +48.5

1900 MARCH 9.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

NO.	NAME.	THDS.	MEAN THREAD.	C' SEC δ + u TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	κ Geminorum	9	38 26.61	- 0.68	+1.51	7 38 27.46	-2.73	335 20 46.40	....	14.9	+24 38 11.4	....	+ 6.7
2	φ Geminorum	9	47 24.71	0.76	1.59	7 47 25.47	2.82	332 57 39.45	....	12.3	27 1 20.9	....	6.8
3	ω ¹ Cancri	9	54 54.97	0.72	1.45	7 54 55.75	2.82	334 19 6.72	....	13.8	25 39 52.2	....	7.6
4	Lal. 15839	9	1 54.59	0.67	1.49	8 1 55.41	2.82	335 40 37.70	....	15.3	24 18 19.7	....	8.5
5	ψ ² Cancri	9	4 28.02	- 0.72	+1.49	8 4 28.79	-2.86	334 10 27.30	....	13.6	+25 48 31.8	....	+ 8.3
6	v ^t Cancri	9	20 45.22	- 0.69	+1.46	8 20 45.99	+2.89	335 7 20.42	....	14.7	+24 51 37.6	....	+ 9.5
7	η Cancri	9	26 57.56	0.55	1.46	8 26 58.46	2.84	339 12 12.42	....	19.2	20 46 41.1	....	10.9
8	γ Cancri	9	37 32.08	0.58	1.41	8 37 32.94	2.88	338 9 23.50	....	18.0	21 49 31.2	....	11.2
9	ι Cancri	9	40 41.29	- 0.84	+1.45	8 40 41.88	+3.03	330 51 40.62	....	10.1	+29 7 22.0	....	+ 9.5

1900 MARCH 12.

CLAMP EAST.

LITTELL, OBSERVER.

UPDEGRAFF, ASSISTANT.

NO.	NAME.	THDS.	MEAN THREAD.	C' SEC δ + u TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
10	β Andromedæ	9	4 8.14	- 1.24	+1.41	1 4 ..... .....	....	324 53 36.92	34.75	4.1	+35 5 35.4	34.1	....
11	α Ursæ Minoris	7	23 23.40	85.02	2.36	1 22 ..... .....	....	271 13 42.17	39.59	72.3	88 46 45.0	45.2	....
12	α Arietis	9	1 32.17	- 0.72	+1.41	2 1 ..... .....	....	336 59 26.42	25.45	17.4	+22 59 32.6	30.1	....

1900 MARCH 12.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

NO.	NAME.	THDS.	MEAN THREAD.	C' SEC δ + u TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
13	24 Lyncis	9	34 38.36	- 2.88	[+1.43]	7 34 36.95	-3.98	301 2 54.98	51.35	22.2	+58 56 41.5	43.0	- 3.4
14	κ Geminorum	9	38 26.70	0.76	1.45	7 38 27.41	2.68	335 20 48.00	48.75	15.5	24 38 11.1	8.3	+ 6.6
15	φ Geminorum	9	47 24.84	0.85	1.50	7 47 25.46	2.77	332 57 40.25	37.50	12.9	27 1 21.5	22.2	6.6
16	ω ¹ Cancri	9	54 55.01	0.80	1.45	7 54 55.68	2.78	334 19 6.45	6.42	14.4	25 39 53.8	51.8	7.5
17	B. D. +25° 1853	9	2 8.06	0.77	1.46	8 2 8.75	2.79	334 58 50.98	51.35	15.2	25 0 8.5	6.0	8.2
18	ψ ² Cancri	5	4 28.02	0.80	1.46	8 4 28.68	2.82	334 10 28.50	....	14.2	25 48 31.9	....	8.1
19	B. D. +25° 1880	9	8 46.37	- 0.77	+1.46	8 8 47.06	-2.82	334 56 50.92	50.30	15.1	+25 2 8.6	7.2	+ 8.5
20	Lal. 16332	9	15 59.02	- 0.70	+1.46	8 15 59.78	-2.81	336 42 54.20	51.82	17.1	+23 16 3.3	3.7	+ 9.5
21	v ^t Cancri	9	20 45.21	0.76	1.46	8 20 45.91	2.86	335 7 21.98	20.20	15.3	24 51 37.3	37.0	9.3
22	η Cancri	9	26 57.56	0.62	1.50	8 26 58.40	2.81	339 12 14.02	10.08	20.0	20 46 40.6	42.5	10.8
23	γ Cancri	9	37 32.09	0.65	1.44	8 37 32.89	2.85	338 9 24.52	22.75	18.8	21 49 31.3	31.0	11.1
24	ι Cancri	9	40 41.38	0.93	1.42	8 40 41.90	3.00	330 51 42.58	38.25	10.6	29 7 21.4	23.7	9.3
25	ι Ursæ Majoris	9	52 26.00	1.94	[1.39]	8 52 25.51	3.63	311 33 27.52	22.48	10.2	48 25 57.1	60.1	5.3
26	σ ² Ursæ Majoris	8	1 44.15	- 4.22	[+1.42]	9 1 41.37	-5.33	292 27 24.58	21.80	33.4	+67 32 22.9	23.6	+ 1.8

1900 MARCH 14.

CLAMP EAST.

LITTELL, OBSERVER.

NO ASSISTANT.

NO.	NAME.	THDS.	MEAN THREAD.	C' SEC δ + u TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
27	β Andromedæ	7	4 8.47	- 1.06	+0.89	1 4 ..... .....	....	324 53 36.88	35.65	3.9	+35 5 35.3	34.0	....
28	α Ursæ Minoris	9	23 11.89	73.38	1.07	1 22 ..... .....	....	271 13 40.21	37.78	69.0	88 46 43.4	44.4	....
29	β Arietis	9	49 7.27	- 0.52	+0.80	1 49 ..... .....	....	339 39 39.02	38.62	19.6	+20 19 17.4	15.3	....

1900 MARCH 16.										CLAMP EAST.										NO ASSISTANT.									
UPDEGRAFF, OBSERVER.																													
NO.	NAME.	THDS.	MEAN THREAD.	C' SEC δ + n TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0																
								A.	B.		A.	B.																	
I	α Ursæ Minoris		m s	s	s	h m s	s	° ' "	"	"	° ' "	"	....																
						I 22 .....	....	271 13 42.16	38.79	69.8	+88 46 43.4	44.8	....																

1900 MARCH 16.										CLAMP EAST.										UPDEGRAFF, ASSISTANT.									
LITTELL, OBSERVER.																													
2	24 Lyncis	9	34 39.47	- 2.75	[+0.05]	7 34 36.78	-3.84	301 2 55.22	53.62	22.0	+58 56 39.7	42.1	- 4.0																
3	κ Geminorum	9	38 27.97	0.72	0.08	7 38 27.31	2.62	335 20 48.45	48.60	15.4	24 38 9.2	9.8	+ 6.4																
4	φ Geminorum	8	47 26.21	0.81	0.03	7 47 25.45	2.71	332 57 37.60	39.35	12.8	27 1 22.6	21.7	6.5																
5	ω ¹ Cancrī	9	54 56.33	0.76	0.03	7 54 55.61	2.72	334 19 5.08	7.70	14.3	25 39 53.6	51.8	7.3																
6	Anonymous	9	1 44.37	0.74	0.03	8 1 43.66	2.73	334 57 29.78	30.48	15.0	25 1 28.2	28.3	7.8																
7	ψ ² Cancrī	9	4 29.39	0.76	0.02	8 4 28.65	2.76	334 10 26.95	28.25	14.1	25 48 32.0	31.5	7.7																
8	Anonymous	9	7 40.73	- 0.74	+0.02	8 7 40.01	-2.76	334 56 38.48	40.65	15.0	+25 2 19.5	18.1	+ 8.1																
9	Lal. 16332	9	16 0.39	- 0.67	+0.01	8 15 59.73	-2.76	336 42 53.88	53.62	17.0	+23 16 2.1	3.1	+ 9.1																
10	Lal. 16554	9	21 35.32	0.68	0.00	8 21 34.64	2.78	336 30 14.38	15.20	16.8	23 28 41.8	41.8	9.4																
11	η Cancrī	9	26 58.99	0.58	-0.02	8 26 58.40	2.76	339 12 12.62	11.35	19.9	20 46 40.5	42.6	10.6																
12	γ Cancrī	9	37 33.50	0.62	-0.05	8 37 32.86	2.80	338 9 22.25	24.00	18.7	21 49 32.1	31.1	10.9																
13	ι Cancrī	9	40 42.69	0.89	+0.01	8 40 41.77	2.94	330 51 39.75	39.65	10.5	29 7 22.8	23.6	8.9																
14	ι Ursæ Majoris	9	52 27.21	1.85	[0.03]	8 52 25.32	3.57	311 33 28.08	25.78	10.2	48 25 55.1	58.2	4.7																
15	σ ² Ursæ Majoris	9	1 45.14	- 4.03	[+0.13]	9 1 41.06	-5.22	292 27 24.22	23.08	33.2	+67 32 21.9	23.8	+ 0.9																
16	θ Virginis	9	4 48.97	+ 0.22	[-0.02]	13 4 .....	....	4 58 51.85	50.60	59.0	- 5 0 32.7	33.9	....																
17	α Ursæ Minoris S. P. ..	9	20 39.70	+78.53	[+0.15]	1 22 .....	....	268 47 21.95	18.96	79.2	+88 46 43.0	43.0	....																
18	δ Bootis	9	5 53.83	- 0.78	[-0.07]	14 5 .....	....	334 25 26.40	25.58	14.5	+25 33 37.3	35.7	....																

1900 MARCH 17.										CLAMP EAST.										UPDEGRAFF, ASSISTANT.									
LITTELL, OBSERVER.																													
19	κ Geminorum	9	38 28.65	- 0.73	-0.60	7 38 27.32	-2.61	335 20 48.30	51.82	15.8	+24 38 10.6	9.6	+ 6.4																
20	φ Geminorum	9	47 26.78	0.82	0.55	7 47 25.36	2.69	332 57 39.40	42.58	13.1	27 1 22.2	21.5	6.4																
21	ω ¹ Cancrī	9	54 57.01	0.77	0.66	7 54 55.63	2.70	334 19 6.62	9.80	14.6	25 39 53.5	52.8	7.2																
22	Lal. 15839	9	1 56.54	0.72	0.61	8 1 55.21	2.70	335 40 38.75	41.42	16.2	24 18 19.7	19.6	8.0																
23	Lal. 16053	9	7 50.21	0.69	0.61	8 7 48.91	2.71	336 32 45.90	50.70	17.2	23 26 11.6	9.3	8.5																
24	W. B. 2 VIII. 252 ..	9	14 45.34	- 0.77	-0.61	8 14 43.96	-2.78	334 20 3.12	5.58	14.7	+25 38 56.9	56.9	+ 8.3																
25	Lal. 16554	9	21 36.07	- 0.69	-0.61	8 21 34.77	-2.77	336 30 15.60	19.38	17.2	+23 28 41.9	40.7	+ 9.2																
26	η Cancrī	9	26 59.54	0.60	0.58	8 26 58.33	2.73	339 12 13.05	14.12	20.4	20 46 41.3	42.7	10.5																
27	γ Cancrī	9	37 34.11	0.63	0.66	8 37 32.86	2.79	338 9 24.20	27.12	19.2	21 49 31.3	30.9	10.7																
28	ι Cancrī	9	40 43.31	0.90	0.61	8 40 41.79	2.93	330 51 41.58	....	10.8	29 7 22.3	....	8.8																
29	ι Ursæ Majoris	9	52 27.85	1.89	[0.59]	8 52 25.34	3.55	311 33 28.40	28.28	10.4	48 25 56.9	59.3	4.5																
30	σ ² Ursæ Majoris	9	1 45.81	- 4.09	[-0.52]	9 1 41.10	-5.18	292 27 25.82	26.68	34.0	+67 32 22.9	24.4	+ 0.7																

1900 MARCH 21.										CLAMP EAST.										UPDEGRAFF, ASSISTANT.									
LITTELL, OBSERVER.																													
31	24 Lyncis	9	34 41.80	- 2.97	[-2.22]	7 34 36.49	-3.68	301 2 56.65	55.40	22.0	+58 56 41.9	43.3	- 4.5																
32	κ Geminorum	9	38 30.36	0.78	2.33	7 38 27.24	2.54	335 20 51.05	51.95	15.4	24 38 10.4	9.7	+ 6.2																
33	φ Geminorum	9	47 28.56	0.87	2.35	7 47 25.36	2.62	332 57 42.10	42.28	12.7	27 1 22.1	22.0	6.2																
34	ω ¹ Cancrī	9	54 58.66	- 0.82	-2.32	7 54 55.51	-2.64	334 19 8.80	10.20	14.2	+25 39 54.9	52.6	+ 7.0																

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°			"	"
16 1 15	74.78	+2.2	+1.2	1. Bisections at c ₁ , c ₂ , c ₄ , and c ₅ .	3	+45.1	+45.2
7 37	75.29	-2.5	-3.8	2-15. Bisections at III and V.	4	45.7	44.3
8 7	75.34	3.0	4.2	16, 18. Bisection at IV.	5	46.8	44.5
8 55	75.41	3.8	4.8	17. Bisections at d ₁ , c ₅ , c ₁ , and b ₅ .	11	45.4	47.0
13 0	75.48	6.5	6.8		12	47.1	45.6
13 56	75.48	6.1	6.2		13	44.7	45.0
17 1 10	75.76	3.5	5.0	Notes.	19	44.6	41.6
7 42	76.00	6.8	8.2	1, 17. Very diffuse and unsteady.	20	43.3	40.6
8 24	76.02	7.2	8.6		21	44.7	42.0
9 6	76.04	-7.8	-9.0		26	44.2	43.6
21 7 31	76.26	+1.1	+0.1		27	44.2	41.8
					28	42.2	[44.6]
					32	42.0	41.7
					33	40.8	41.1
					34	+42.7	+41.8
				Adopted Equator Point Corrections.			
				1, from nadir		+43.7	+46.2
				2-15, from stars		+45.8	+45.3
				16-18, from nadir		+41.8	+44.3
				19-30, from stars		+43.9	+41.9
				31-34, from stars		+41.7	+42.1

SIX-INCH TRANSIT CIRCLE.

NO.	NAME.	TRDS.	MEAN THREAD.	ϵ_0 SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Lal. 15839.....	9	m s 1 58.31	-0.77	s -2.33	h m s 8 1 55.21	s -2.64	o ' " 335 40 40.45	" 42.22	" 15.7	o ' " +24 18 20.7	" 19.1	" +7.9
2	Lal. 16053.....	9	7 51.94	0.73	2.32	8 7 48.89	2.65	336 32 48.00	47.45	16.7	23 26 12.2	12.9	8.5
3	W. B. 2 VIII. 252..	9	14 47.11	0.82	2.32	8 14 43.97	2.72	334 20 5.05	5.55	14.3	25 38 57.5	57.2	8.1
4	Lal. 16554.....	9	21 37.62	0.73	2.31	8 21 34.58	2.71	336 30 17.70	18.70	16.7	23 28 42.5	41.7	9.1
5	η Cancri.....	9	27 1.31	-0.63	-2.37	8 26 58.37	-2.68	339 12 15.32	15.00	19.8	+20 46 41.8	42.3	+10.3
6	γ Cancri.....	9	37 35.78	-0.67	-2.34	8 37 32.80	-2.74	338 9 26.65	26.55	18.6	+21 49 31.6	31.9	+10.5
7	ϵ Cancri.....	9	40 44.92	0.96	2.21	8 40 41.66	2.88	330 51 43.60	42.15	10.4	29 7 22.9	24.5	8.5
8	ι Ursæ Majoris.....	9	52 29.47	2.00	[2.17]	8 52 25.17	3.48	311 33 28.88	25.70	10.1	48 25 58.3	61.3	+3.9
9	σ^2 Ursæ Majoris.....	9	1 47.52	-4.34	[-2.11]	9 1 40.88	-5.05	292 27 25.35	24.82	33.0	+67 32 24.6	25.0	-0.1

LITTELL, OBSERVER.

1900 MARCH 24.

CLAMP EAST.

UPDEGRAFF, ASSISTANT.

10	24 Lyncis.....	9	34 41.94	-2.18	[-3.25]	7 34 36.31	-3.58	301 2 54.42	55.48	21.4	+58 56 42.0	43.7	-4.7
11	κ Geminorum.....	9	38 31.20	0.56	3.44	7 38 27.20	2.49	335 20 49.25	53.15	15.0	24 38 10.6	9.8	+6.1
12	ϕ Geminorum.....	9	47 29.35	0.63	3.43	7 47 25.29	2.57	332 57 39.50	43.45	12.4	27 1 23.0	22.1	6.0
13	Lal. 15590.....	9	55 9.04	0.54	3.41	7 55 5.09	2.56	336 7 37.30	42.18	15.8	23 51 21.8	20.0	7.6
14	Lal. 15839.....	9	1 59.07	0.55	3.40	8 1 55.12	2.59	335 40 39.42	45.12	15.3	24 18 20.2	17.5	7.8
15	Lal. 16053.....	9	7 52.77	0.53	3.39	8 7 48.85	2.60	336 32 47.25	50.78	16.3	23 26 11.3	10.9	8.4
16	W. B. 2 VII. 252..	9	14 47.86	-0.59	-3.37	8 14 43.90	-2.67	334 20 3.50	8.60	13.9	+25 38 57.5	55.4	+8.0
17	Lal. 16554.....	9	21 38.57	-0.53	-3.36	8 21 34.68	-2.66	336 30 16.55	20.28	16.3	+23 28 42.0	41.4	+9.1
18	η Cancri.....	9	27 2.09	0.45	3.37	8 26 58.29	2.64	339 12 14.08	16.82	19.3	20 46 41.5	41.8	10.1
19	γ Cancri.....	9	37 36.50	0.48	3.29	8 37 32.69	2.70	338 9 24.30	28.08	18.1	21 49 32.5	31.8	10.3
20	ϵ Cancri.....	9	40 45.74	0.70	3.34	8 40 41.72	2.83	330 51 41.35	42.62	10.2	29 7 23.3	25.1	8.3
21	ι Ursæ Majoris.....	8	52 30.05	1.46	[3.35]	8 52 25.29	3.42	311 33 27.25	27.70	9.9	48 25 57.7	60.0	+3.5
22	σ^2 Ursæ Majoris.....	9	1 47.18	-3.19	[-3.03]	9 1 40.70	-4.94	292 27 22.08	24.28	32.2	+67 32 25.1	25.7	-0.7

LITTELL, OBSERVER.

1900 MARCH 27.

CLAMP EAST.

NO ASSISTANT.

23	β Andromedæ.....	9	4 13.70	-0.93	[-4.48]	1 4 [6.56]	....	354 53 41.70	43.55	3.8	+35 5 32.7	31.4	....
24	α Ursæ Minoris.....	8	23 6.75	64.63	[6.56]	1 21 [4.53]	....	271 13 45.48	46.62	68.0	88 46 39.2	39.6	....
25	α Arietis.....	8	1 37.81	0.53	[4.53]	2 1 [4.45]	....	336 57 31.08	34.22	16.4	22 59 30.8	26.1	....
26	24 Lyncis.....	8	34 43.03	2.16	[4.45]	7 34 36.28	-3.49	301 2 54.38	....	21.1	58 56 42.7	....	-5.0
27	κ Geminorum.....	9	38 32.34	0.56	4.64	7 38 27.20	2.43	335 20 50.25	....	14.8	24 38 11.0	....	+6.1
28	ϕ Geminorum.....	9	47 30.38	0.63	4.51	7 47 25.18	2.52	332 57 41.35	....	12.2	27 1 22.4	....	5.9
29	Lal. 15590.....	9	55 10.03	-0.53	-4.55	7 55 4.95	-2.51	336 7 39.18	....	15.6	+23 51 21.4	....	+7.4
30	Lal. 16053.....	8	7 53.83	-0.52	-4.53	8 7 48.78	-2.56	336 32 48.50	....	16.1	+23 26 11.4	....	+8.2
31	λ Cancri.....	9	14 43.14	0.55	4.52	8 14 38.07	2.60	335 38 53.52	....	15.1	24 20 7.4	....	8.2
32	η Cancri.....	8	27 3.20	0.45	4.53	8 26 58.25	2.59	339 12 15.32	....	19.0	20 46 41.7	....	10.1
33	γ Cancri.....	9	37 37.61	0.48	4.45	8 37 32.65	2.65	338 9 24.90	....	17.9	21 49 33.2	....	10.2
34	ϵ Cancri.....	9	40 46.80	0.69	4.46	8 40 41.64	2.78	330 51 42.90	....	10.0	29 7 23.1	....	8.0
35	ι Ursæ Majoris.....	9	52 31.26	1.46	[4.63]	8 52 25.35	3.35	311 33 26.75	....	9.8	48 25 59.0	....	+3.0
36	σ^2 Ursæ Majoris.....	9	1 48.48	-3.17	[-4.47]	9 1 40.88	-4.82	292 27 20.82	....	31.8	+67 32 27.0	....	-1.2

UPDEGRAFF, OBSERVER.

1900 MARCH 28.

CLAMP EAST.

LITTELL, ASSISTANT.

37	24 Lyncis.....	9	34 43.47	-2.22	[-4.88]	7 34 36.30	-3.44	301 2 53.90	53.52	21.3	+58 56 43.5	44.6	-5.0
38	κ Geminorum.....	9	38 32.68	-0.57	-4.99	7 38 27.16	-2.41	335 20 50.80	52.88	14.9	+24 38 10.3	9.2	+6.1

Time.					Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.				Eq. Pt. Cor. from stars.							
												No.	A.	B.					
d	h	m			cm.	°	°												
21	8	31			76.24	0.3	-0.4	8, 10, 21.	Bisections at III and V.										
	9	5			76.22	0.0	-0.6	23, 25, 26, 27.	} Bisection at IV.						5	+42.3	+43.2		
24	7	40			75.65	7.0	+4.9	28, 30, 31, 33.									6	42.1	42.8
	8	17			75.65	6.0	4.3	34, 35, 36.									7	40.3	42.3
	9	13			75.70	4.7	3.7	24.							Adopted Equator Point Corrections.						11	44.1	40.8
27	1	10				...	9.4	29.	Bisections at b_3 , c_1 , c_5 , and d_1 .						12	43.5	40.1		
	1	45			75.20	10.0	9.7	32.	Bisection at VI.						18	43.8	41.6		
	7	28			75.26	8.6	7.6	37.	Bisection at V.						19	44.8	41.6		
	8	45			75.29	7.1	6.4		Bisection at b_3 , and d_1 .						20	42.5	41.8		
28	9	3			75.29	7.1	6.2	Notes.						27	44.8	.....			
	7	37			75.66	7.3	+6.8	23, 25, 29, 30, 31, 32.	Very faint.						28	43.1			
														32	44.3	.....			
														33	45.7	.....			
														34	42.3	.....			
														38	+42.7	+41.2			
														</					

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ϕ Geminorum.....	9	m s 47 30.78	s - 0.64	s -4.92	h m s 7 47 25.18	s -2.50	° ' " ° ' "	° ' " ° ' "	"	° ' " ° ' "	° ' " ° ' "	"
2	Lal. 15590.....	9	55 10.49	0.55	4.96	7 55 4.98	2.49	332 57 40.68	42.22	12.3	+27 1 23.0	22.4	+ 5.9
3	W. B. VII. 1646....	9	2 26.17	0.61	4.97	8 2 20.59	2.56	336 7 39.52	40.28	15.7	23 51 21.2	21.0	7.3
4	Lal. 16053.....	7	7 54.28	0.54	4.97	8 7 48.77	2.54	334 8 35.05	37.30	13.6	25 50 27.3	26.0	7.0
5	W. B. VIII. 252....	9	14 49.41	0.60	4.98	8 14 43.83	2.61	336 32 48.10	49.58	16.2	23 26 11.7	11.2	8.1
6	Lal. 16554.....	9	21 40.08	- 0.54	-4.98	8 21 34.56	-2.60	334 20 3.98	6.35	13.8	25 38 58.2	56.8	7.7
								336 30 18.65	19.35	16.2	+23 28 41.1	41.4	+ 8.8
7	η Cancrī.....	9	27 3.63	- 0.46	-4.96	8 26 58.19	-2.58	339 12 14.60	14.65	19.2	+20 46 42.2	43.1	+10.1
8	γ Cancrī.....	9	37 38.15	0.49	4.99	8 37 32.67	2.64	338 9 25.32	26.40	18.0	21 49 32.7	32.6	10.1
9	ϵ Cancrī.....	9	40 47.37	0.71	5.02	8 40 41.67	2.77	330 51 42.72	42.88	10.1	29 7 23.1	23.9	8.0
10	ϵ Ursæ Majoris.....	9	52 31.70	1.49	[5.06]	8 52 25.21	3.33	311 33 25.65	23.40	9.8	48 26 0.3	3.2	+ 2.9
11	σ^2 Ursæ Majoris.....	9	1 48.98	- 3.25	[-4.93]	9 1 40.72	-4.78	292 27 21.45	22.60	32.1	+67 32 26.7	26.2	- 1.4

1900 MARCH 28.

CLAMP EAST.

LITTELL, OBSERVER.

NO ASSISTANT.

12	θ Virginis.....	9	4 54.27	+ 0.19	-5.15	13 4 .....	....	4 58 55.52	55.08	55.6	- 5 0 32.8	35.0	....
13	α Ursæ Minoris S. P.	8	20 57.40	+64.95	7.19	1 21 .....	....	268 47 15.51	13.62	76.3	+88 46 39.3	41.2	....
14	η Bootis.....	9	50 3.78	- 0.43	-5.10	13 49 .....	....	341 4 17.98	14.00	21.5	+18 53 38.8	40.2	....

1900 MARCH 30.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

15	α Ursæ Minoris S. P.	9	20 52.88	+68.48	-6.56	1 21 .....	....	268 47 15.78	14.40	76.6	+88 46 39.0	41.0	....
16	B. A. C. 4536.....	9	30 30.13	- 1.10	6.07	13 30 .....	....	322 17 54.92	54.35	1.3	+37 41 22.4	20.7	....
17	m Virginis.....	9	36 30.59	+ 0.30	-6.09	13 36 .....	....	8 10 23.42	24.05	63.9	- 8 12 8.7	11.5	....

1900 MARCH 31.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

18	24 Lyncis.....	9	34 45.02	- 2.36	[-6.39]	7 34 36.20	-3.34	301 2 54.30	53.12	21.4	+58 56 44.0	45.5	- 5.2
19	κ Geminorum.....	9	38 34.16	0.61	6.48	7 38 27.09	2.36	335 20 50.65	52.38	14.9	24 38 11.2	10.0	+ 5.9
20	ϕ Geminorum.....	9	47 32.31	0.69	6.45	7 47 25.15	2.45	332 57 42.22	42.48	12.4	27 1 22.1	22.4	5.8
21	Lal. 15590.....	9	55 11.99	0.59	6.47	7 55 4.93	2.43	336 7 39.58	40.42	15.8	23 51 21.4	21.1	7.1
22	W. B. VII. 1646....	9	2 27.72	0.65	6.48	8 2 20.59	2.50	334 8 36.32	37.45	13.7	25 50 26.8	26.2	+ 6.8
23	Bradley 1147.....	9	7 17.41	5.78	[6.50]	8 7 5.15	5.89	283 56 11.18	9.40	44.5	76 3 50.5	52.2	- 7.5
24	λ Cancrī.....	9	14 45.13	- 0.60	-6.48	8 14 38.05	-2.53	335 38 53.85	56.85	15.3	+24 20 7.6	5.2	+ 7.9
25	σ Ursæ Majoris.....	9	22 10.39	- 2.58	[-6.37]	8 22 1.32	-3.80	298 56 30.22	28.85	24.0	+61 3 10.7	12.4	- 3.0
26	η Cancrī.....	9	27 5.16	0.50	6.50	8 26 58.17	2.53	339 12 15.45	15.00	19.3	20 46 42.0	43.1	+ 9.9
27	γ Cancrī.....	9	37 39.66	0.53	6.51	8 37 32.63	2.59	338 9 25.50	27.68	18.1	21 49 33.2	31.6	10.0
28	ϵ Cancrī.....	9	40 48.83	0.76	6.48	8 40 41.57	2.72	330 51 42.80	41.82	10.2	29 7 23.8	25.3	7.7
29	ϵ Ursæ Majoris.....	8	52 33.16	1.59	[6.48]	8 52 25.06	3.27	311 33 25.70	24.78	9.9	48 26 1.2	2.4	+ 2.5
30	σ^2 Ursæ Majoris.....	9	1 50.63	- 3.46	[-6.49]	9 1 40.66	-4.66	292 27 21.32	20.90	32.2	+67 32 27.8	28.4	- 1.9

1900 APRIL 1.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

31	24 Lyncis.....	9	34 45.27	- 2.00	[-7.04]	7 34 36.18	-3.30	301 2 54.52	....	21.0	+58 56 43.4	....	- 5.3
32	κ Geminorum.....	9	38 34.68	0.51	7.12	7 38 27.07	2.34	335 20 51.12	....	14.7	24 38 11.1	....	+ 5.9
33	ϕ Geminorum.....	9	47 32.81	0.58	7.08	7 47 25.13	2.43	332 57 42.42	....	12.2	27 1 22.3	....	5.8
34	ω^1 Cancrī.....	9	55 2.98	- 0.54	-7.11	7 54 55.33	-2.45	334 19 9.50	....	13.6	+25 39 53.8	....	+ 6.5

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.				Eq. Pt. Cor. from stars.		
								No.	A.	B.
d h m	cm.	°	°						"	"
28 8 13	75.68	6.5	6.3	2. Bisections at c_2 and VI.				1	+42.3	+41.3
8 58	75.67	5.6	5.2	10, 11, 18, 30. Bisections at III and V.				7	43.4	43.9
13 0	....	....	3.8	12, 14, 16, 17, Bisection at IV.				8	43.7	43.2
13 46	75.70	4.3	4.1	31, 32, 33, 34, Bisections at V, c_5 , c_1 and III.				9	40.9	41.3
30 13 12	75.12	1.3	0.6	13, 15. Bisections at IV and V.				19	42.6	41.4
14 0	75.10	1.3	0.5	23. Adopted Equator Point Corrections.				20	40.5	40.8
31 7 33	75.56	5.7	5.3					26	42.2	43.3
8 10	75.59	5.1	4.4					27	43.3	41.7
8 55	75.62	4.5	3.9	Notes.				28	40.5	+42.0
1 7 47	75.80	11.2	10.0	13, 15. Through clouds.				32	43.8	....
								33	42.0	....
								34	+43.5	....

SIX-INCH TRANSIT CIRCLE.

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900. 0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900. 0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	W. B. ₂ VII. 1646 ...	9	2 28. 22	-0. 54	- 7. 11	8 2 20. 57	-2. 49	334 8 35. 90	....	13. 5	+25 50 27. 5	....	+ 6. 8
2	Bradley 1147.	9	7 16. 98	4. 89	[7. 03]	8 7 4. 97	5. 82	283 56 9. 82	....	43. 8	76 3 50. 9	....	- 7. 6
3	λ Cancri	5	14 45. 57	0. 50	7. 12	8 14 37. 95	2. 51	335 38 54. 45	....	15. 1	24 20 7. 3	....	+ 7. 9
4	σ Ursæ Majoris	9	22 10. 53	2. 18	[6. 95]	8 22 1. 22	3. 76	298 56 30. 15	....	23. 6	61 3 10. 3	....	- 3. 1
5	η Cancri	9	27 5. 69	0. 41	7. 14	8 26 58. 15	2. 51	339 12 16. 28	....	19. 0	20 46 41. 6	....	+ 9. 9
6	γ Cancri	9	37 40. 14	0. 44	7. 10	8 37 32. 56	2. 57	338 9 25. 80	....	17. 8	21 49 33. 3	....	10. 0
7	ι Cancri	9	40 49. 39	-0. 64	- 7. 17	8 40 41. 61	-2. 71	330 51 43. 65	....	10. 0	+29 7 23. 3	....	+ 7. 7

LITTELI, OBSERVER.

1900 APRIL 3.

CLAMP EAST.

UPDEGRAFF, ASSISTANT.

8	24	Lyncis	9	34 45.89	-1.74	[- 7.99]	7 34 36.03	-3.23	301 2 54.72	54.52	20.9	+58 56 42.1	43.9	-5.4
9	κ	Geminorum	9	38 35.56	0.44	8.10	7 38 27.00	2.31	335 20 50.58	53.10	14.6	24 38 10.6	9.9	+5.9
10	φ	Geminorum	9	47 33.74	0.50	8.12	7 47 25.14	2.40	332 57 40.60	42.80	12.1	27 1 23.1	22.7	5.7
11		Lal. 15590	9	55 13.37	0.42	8.10	7 55 4.85	2.38	336 7 38.38	41.65	15.5	23 51 21.9	20.5	7.1
12		W. B. ₂ VII. 1646...	7	2 28.93	0.47	8.09	8 2 20.37	2.44	334 8 35.12	.....	13.4	25 50 27.2	.....	+6.8
13		Bradley 1147.....	9	7 16.81	-4.25	[- 7.66]	8 7 4.48	-5.66	283 56 9.52	10.02	43.5	+76 3 49.7	50.8	-7.8
14	λ	Canci	9	14 46.42	-0.43	- 8.07	8 14 37.92	-2.48	335 38 53.20	57.42	15.0	+24 20 7.6	5.2	+7.9
15	σ	Ursæ Majoris	9	22 11.09	1.89	[7.87]	8 22 1.14	3.69	298 56 29.05	29.20	23.4	61 3 10.3	11.7	-3.3
16	η	Canci	9	27 6.50	0.35	8.04	8 26 58.09	2.48	339 12 15.32	16.55	18.9	20 46 41.6	42.2	+9.8
17	γ	Canci	9	37 40.98	0.38	8.03	8 37 32.56	2.54	338 9 24.72	27.65	17.7	21 49 33.4	32.3	9.9
18	ι	Canci	9	40 50.17	-0.55	- 8.07	8 40 41.58	-2.68	330 51 41.72	42.35	9.9	+29 7 24.1	25.4	+7.5

UPDEGRAFF, OBSERVER.

1900 APRIL 5.

CLAMP WEST.

LITTELL, ASSISTANT.

19	κ	Geminorum	9	38 37.73	-0.26	-10.49	7 38 27.00	-2.27	24 38 26.50	.....	14.6	+24 38 9.7	....	+5.8
20	φ	Geminorum	9	47 35.81	0.28	10.45	7 47 25.06	2.36	27 1 38.05	.....	12.1	27 1 23.8	....	5.6
21		Lal. 15590	9	55 15.60	0.25	10.48	7 55 4.87	2.34	23 51 38.85	.....	15.5	23 51 21.2	....	7.1
22		W. B. ₂ VII. 1646...	9	2 31.17	0.27	10.49	8 2 20.41	2.41	25 50 41.75	.....	13.4	25 50 26.2	....	+6.8
23		Bradley 1147.....	9	7 17.01	-1.68	[-10.69]	8 7 4.84	-5.40	76 3 9.85	.....	43.5	+76 3 51.2	....	-8.0
24	λ	Canceri	9	14 48.69	-0.26	-10.50	8 14 37.93	-2.44	24 20 22.70	.....	15.0	+24 20 5.5	....	+7.9
25	σ	Ursæ Majoris	6	22 12.48	0.78	[10.44]	8 22 1.19	3.62	61 2 52.32	.....	23.4	61 3 13.5	....	-3.5
26	η	Canceri	9	27 8.83	0.23	10.52	8 26 58.09	2.45	20 47 2.98	.....	18.9	20 46 41.9	....	+9.7
27	γ	Canceri	9	37 43.30	0.24	10.52	8 37 32.54	2.51	21 49 51.80	.....	17.7	21 49 31.9	....	9.7
28	ι	Canceri	9	40 52.31	-0.29	-10.51	8 40 41.50	-2.64	29 7 38.32	.....	9.9	+29 7 26.2	....	+7.4

UPDEGRAFF, OBSERVER.

1900 APRIL 5.

CLAMP WEST.

LITTELL, ASSISTANT.

29	ζ	Hydræ	9	50 19.62	−0.14	−10.56	8 50	....	....	6 19 57.65	58.00	36.8	+	6 19 18.6	21.2	...
30	10	Ursæ Majoris	9	54 22.94	0.42	10.53	8 54	....	....	42 10 37.18	37.45	3.3		42 10 38.0	40.8	...
31	κ	Ursæ Majoris	9	57 2.17	0.49	10.46	8 56	....	....	47 32 58.98	57.35	8.8		47 33 5.3	6.2	...
32	σ ²	Ursæ Majoris	9	1 51.98	1.02	10.49	9 1	....	....	67 31 57.55	56.88	31.4		67 32 26.4	28.2	...
33	θ	Hydræ	9	9 22.88	0.12	10.57	9 9	....	....	2 44 39.18	36.45	42.1		2 43 54.8	54.3	...
34	40	Lyncis	9	15 11.66	0.34	10.54	9 15	....	....	34 48 54.42	53.98	4.1		34 48 47.9	49.7	...
35	1	H. Draconis	9	23 14.21	2.87	10.72	9 23	....	....	81 45 20.50	16.45	53.4		81 46 11.0	9.4	...
36	θ	Ursæ Majoris	9	26 24.81	−0.57	−10.48	9 26	....	....	52 7 45.52	43.05	13.5	+	52 7 56.5	56.6	...
37	10	Leonis Minoris	7	28 19.96	−0.36	−10.66	9 28	....	....	36 50 27.32	25.22	2.1	+	36 50 22.7	23.4	...
38	0	Leonis	9	36 2.25	0.16	10.60	9 35	....	....	10 21 9.68	7.75	31.4		10 20 36.0	36.3	...
39	ε	Leonis	9	40 24.28	0.26	10.64	9 40	....	....	24 14 11.02	8.90	15.1		24 13 53.5	53.7	...
40	ν	Ursæ Majoris	9	44 8.13	0.73	10.52	9 43	....	....	59 30 10.90	10.68	21.7	+	59 30 30.1	32.4	...
41	6	Sextantis	9	46 24.95	0.09	10.57	9 46	....	....	356 14 7.02	5.95	53.2	−	3 46 48.4	47.2	...
42		Groombridge 1586.	9	49 44.68	1.40	10.60	9 49	....	....	73 20 40.52	40.35	39.5	+	73 21 17.4	19.7	...
43	19	Leonis Minoris	9	51 47.83	−0.42	−10.53	9 51	....	....	41 31 46.52	45.30	2.6	+	41 31 46.7	48.0	...

[illegible]

NO.	NAME.	THDS.	MEAN THREAD.	ϵ' SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	π Leonis	9	m s 55 9.18	s -0.15	s -10.56	h m s 9 54	s	° ' " 8 31 46.45	" 44.58	" 33.8	° ' " + 8 31 10.4	" 10.7	"
2	η Leonis	9	2 6.51	0.21	10.67	10 1 ....	....	17 15 12.30	11.10	22.9	+17 14 47.1	48.1	....
3	λ Hydræ	9	5 56.06	-0.04	10.60	10 5 ....	....	348 9 14.48	14.70	70.6	-11 51 58.3	55.8	....
4	24 Cephei S. P.	8	8 0.69	+1.28	10.60	22 7 ....	....	108 6 41.25	37.22	150.6	+71 50 50.6	51.6	....
5	λ Ursæ Majoris	9	11 18.32	-0.44	10.50	10 11 ....	....	43 24 40.02	37.20	4.5	43 24 42.1	41.8	....
6	μ Ursæ Majoris	9	16 36.61	0.42	10.52	10 16 ....	....	41 59 58.95	59.08	3.1	41 59 59.6	62.3	....
7	31 Leonis Minoris	9	22 20.28	-0.37	-10.58	10 22 ....	....	37 13 5.80	3.22	1.7	+37 13 1.6	1.3	....
8	36 Ursæ Majoris	9	24 28.87	-0.66	-10.54	10 24 ....	....	56 29 14.62	13.55	18.3	+56 29 30.4	31.9	....
9	9 H. Draconis	9	26 55.12	1.70	10.52	10 26 ....	....	76 12 58.30	54.82	43.9	+76 13 39.5	38.5	....
10	33 Sextantis	9	36 32.48	0.10	10.65	10 36 ....	....	358 47 35.85	31.95	48.6	-1 13 15.0	16.6	....
11	42 Leonis Minoris	9	40 32.31	0.31	10.59	10 40 ....	....	31 12 31.42	27.40	7.8	+31 12 21.2	19.4	....
12	1 Leonis	9	44 13.76	-0.17	10.56	10 44 ....	....	11 4 44.40	40.62	30.5	-11 4 11.6	10.1	....
13	1 Cephei S. P.	5	46 15.65	+0.94	10.37	22 46 ....	....	114 15 56.52	57.75	217.0	65 40 29.0	24.9	....
14	Groombridge 1706	9	52 17.98	-2.01	-10.76	10 52 ....	....	78 17 33.35	29.75	47.3	+78 18 17.9	16.8	....
15	α Ursæ Majoris	9	57 49.25	-0.81	-10.56	10 57 ....	....	62 16 58.70	56.12	24.9	+62 17 21.1	21.0	....
16	χ Leonis	9	0 5.19	0.15	10.61	10 59 ....	....	7 52 55.52	51.90	34.7	7 52 18.5	17.2	....
17	ρ^3 Leonis	7	2 1.79	0.12	10.60	11 1 ....	....	2 30 20.28	18.32	42.5	2 29 35.5	35.8	....
18	ψ Ursæ Majoris	7	4 16.92	0.46	10.43	11 4 ....	....	45 2	11.72	6.2	45 2	18.0	....
19	ν Ursæ Majoris	9	13 18.84	0.33	10.62	11 13 ....	....	33 38 17.38	18.45	5.3	33 38 9.6	12.9	....
20	Groombridge 1771	9	17 11.01	0.91	10.64	11 16 ....	....	64 52 7.20	5.30	28.1	64 52 32.7	33.4	....
21	τ Leonis	9	23 1.36	-0.12	-10.62	11 22 ....	....	3 24 49.65	47.42	41.1	+3 24 6.3	6.3	....
22	λ Draconis	9	25 45.22	-1.15	-10.65	11 25 ....	....	69 52 18.05	15.52	34.6	+69 52 50.0	50.0	....
23	ξ Hydræ	9	28 18.66	+0.06	10.65	11 28 ....	....	328 44 3.38	1.38	158.6	-31 18 37.3	37.0	....
24	ν Leonis	9	32 3.42	-0.10	10.65	11 31 ....	....	359 44 13.20	9.58	47.0	-0 16 36.0	37.4	....
25	ζ Draconis	9	37 10.18	1.01	10.55	11 36 ....	....	67 17 16.65	14.68	31.1	+67 17 45.2	45.7	....
26	χ Ursæ Majoris	9	41 0.83	0.50	10.51	11 40 ....	....	48 19 43.02	41.60	9.6	48 19 50.1	51.2	....
27	β Leonis	9	44 11.41	0.19	10.65	11 44 ....	....	15 8 2.30	0.65	25.4	15 7 34.6	35.2	....
28	γ Ursæ Majoris	9	48 49.31	-0.61	-10.59	11 48 ....	....	54 14 38.55	35.78	15.8	+54 14 51.8	51.6	....

1900 APRIL 7.

CLAMP WEST.

LITTELL, OBSERVER.

UPDEGRAFF, ASSISTANT.

29	ζ Hydræ	9	50 20.67	-0.09	-11.69	8 50 ....	....	6 19 56.75	55.00	35.7	+ 6 19 19.5	20.4	....
30	10 Ursæ Majoris	9	54 23.71	+0.03	11.80	8 54 ....	....	42 10 37.78	38.10	3.2	42 10 39.5	42.2	....
31	κ Ursæ Majoris	9	57 2.83	0.04	11.70	8 56 ....	....	47 32 59.82	56.65	8.5	47 33 6.9	6.0	....
32	σ^2 Ursæ Majoris	9	1 51.86	+0.17	11.65	9 1 ....	....	67 31 59.20	56.62	30.5	67 32 28.1	27.9	....
33	θ Hydræ	9	9 23.98	-0.10	11.71	9 9 ....	....	2 44 38.60	34.80	40.9	2 43 56.2	55.0	....
34	40 Lyncis	9	15 12.42	0.00	-11.68	9 15 ....	....	34 48 56.48	53.70	4.0	+34 48 50.8	50.6	....
35	1 H. Draconis	7	23 11.41	+0.49	-11.52	9 23 ....	....	81 45 21.30	17.12	51.9	+81 46 11.3	9.5	....
36	θ Ursæ Majoris	9	26 25.32	+0.06	11.68	9 26 ....	....	52 7 45.78	42.85	13.1	52 7 57.4	56.8	....
37	10 Leonis Minoris	9	28 20.54	0.00	11.63	9 28 ....	....	36 50 26.48	25.62	2.0	36 50 23.0	24.5	....
38	α Leonis	9	36 3.27	-0.08	11.72	9 35 ....	....	10 21 8.35	5.95	30.5	10 20 36.3	36.5	....
39	ϵ Leonis	9	40 25.11	-0.04	11.72	9 40 ....	....	24 14 11.72	8.18	14.7	24 13 55.4	54.5	....
40	ν Ursæ Majoris	9	44 8.40	+0.08	-11.66	9 43 ....	....	59 30 11.50	9.48	21.0	+59 30 31.0	31.3	....
41	6 Sextantis	9	46 26.14	-0.12	-11.76	9 46 ....	....	356 14 6.42	4.12	51.6	- 3 46 46.7	46.3	....
42	Groombridge 1586	9	49 44.24	+0.20	11.87	9 49 ....	....	73 20	39.42	38.4	+73 21	18.5	....
43	19 Leonis Minoris	9	51 48.57	+0.01	11.75	9 51 ....	....	41 31 46.38	44.52	2.6	+41 31 47.5	48.0	....
44	π Leonis	9	55 10.26	-0.08	11.73	9 54 ....	....	8 31 46.92	43.28	32.9	8 31 12.5	11.5	....
45	η Leonis	9	2 7.44	0.06	11.77	10 1 ....	....	17 15 12.38	9.78	22.3	+17 14 48.5	48.5	....
46	λ Hydræ	9	5 57.30	-0.14	-11.77	10 5 ....	....	348 9 13.90	12.12	68.6	-11 51 56.1	55.3	....
47	24 Cephei S. P.	9	8 3.37	-0.17	-11.72	22 7 ....	....	108 6 43.70	41.80	146.4	+71 50 50.8	50.9	....
48	λ Ursæ Majoris	9	11 19.04	+0.01	11.70	10 11 ....	....	43 24 39.60	36.40	4.4	43 24 42.6	41.7	....
49	μ Ursæ Majoris	9	16 37.32	0.00	11.65	10 16 ....	....	41 59 58.42	58.40	3.0	42 0 0.0	2.3	....
50	31 Leonis Minoris	9	22 20.97	-0.01	11.66	10 22 ....	....	37 13 4.18	2.18	1.7	37 13 0.7	1.4	....
51	36 Ursæ Majoris	9	24 29.33	+0.05	11.75	10 24 ....	....	56 29 14.30	11.62	17.8	56 29 30.6	30.3	....
52	9 H. Draconis	9	26 54.54	+0.21	-11.98	10 26 ....	....	76 12 58.75	55.62	42.7	+76 13 39.8	39.0	....

Time.

Barom.

Att.
Ther.Ext.
Ther.

Bisections are made at II and VI, except as noted below.

d h m

cm.

°

°

4, 5, 6, 8, 9, 14, 15, 20, 22, 25, 26, 28, 30, 31, 32, }
35, 36, 37, 40, 42, 43, 47, 48, 49, 51, 52. }

Bisections at III and V.

Bisections at c_4 and V.Bisection at b_3 .

Notes.

4. First bisection 5" late.

10. Unsteady.

13. Last bisection 5" late.

Adopted Equator Point Corrections.

A. B.

1-28, from nadir..... -3.5 -0.7

29-52, from nadir..... -2.2 -0.2

SIX-INCH TRANSIT CIRCLE.

NO.	NAME.	THDS.	MEAN THREAD.	c_0 ' SEC δ + N TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED TO 1900.0
								A.	B.		A.	B.	
1	33 Sextantis.....	9	m s 36 33.61	s -0.11	s -11.79	h m s 10 36	s	o ' " 358 47 33.12	" 30.10	" 47.3	o ' " - 1 13 15.7	" 16.1	"
2	42 Leonis Minoris ...	9	40 33.12	0.03	11.69	10 40 ....	....	31 12 31.82	27.60	7.6	+31 12 22.5	20.9	....
3	1 Leonis	9	44 14.79	0.08	11.76	10 44 ....	....	11 4 44.52	39.90	29.6	11 4 13.4	11.4	....
4	2 Cephei s. p.	9	46 18.09	-0.09	11.73	22 46 ....	....	114 16 2.12	0.45	211.1	65 40 27.7	27.6	....
5	Groombridge 1706 ..	9	52 16.68	+0.22	11.80	10 52 ....	....	78 17 32.90	29.95	46.0	78 18 17.2	16.6	....
6	α Ursæ Majoris.....	9	57 49.51	+0.06	11.73	10 57 ....	....	62 16 58.68	55.68	24.3	62 17 21.5	20.8	....
7	χ Leonis	9	0 6.26	-0.09	-11.75	10 59 ....	....	7 52 55.05	51.40	33.8	+ 7 52 19.7	18.7	....
8	β^3 Leonis	9	2 2.89	-0.10	-11.73	11 1 ....	....	2 30 23.50	17.08	41.4	+ 2 29 35.6	36.8	....
9	ψ Ursæ Majoris	9	4 17.65	0.00	11.65	11 4 ....	....	45 2 13.38	11.20	6.0	+45 2 17.9	18.1	....
10	β Crateris	9	6 59.22	0.18	11.78	11 6 ....	....	327 44 34.00	30.25	101.7	-22 17 9.1	10.2	....
11	δ Leonis	9	9 2.22	0.06	11.70	11 8 ....	....	21 4 23.75	20.40	18.1	+21 4 4.0	3.3	....
12	ν Ursæ Majoris.....	9	13 19.58	-0.03	11.67	11 13 ....	....	33 38 20.20	18.22	5.2	33 38 13.3	13.9	....
13	Groombridge 1771 ..	9	17 11.07	+0.06	11.72	11 16 ....	....	64 52 7.10	4.35	27.3	64 52 32.9	32.5	....
14	τ Leonis	9	23 2.44	-0.10	-11.73	11 22 ....	....	3 24 50.62	46.38	40.1	+ 3 24 9.0	7.4	....
15	λ Draconis	9	25 45.03	+0.09	-11.75	11 25 ....	....	69 52 20.52	15.85	33.7	+69 52 52.6	50.3	....
16	ϵ Hydræ	9	28 20.08	-0.21	11.82	11 28 ....	....	328 43 60.05	55.80	154.5	-31 18 35.8	37.4	....
17	ν Leonis	9	32 4.52	-0.11	11.75	11 31 ....	....	359 44 11.80	8.18	45.8	- 0 16 35.5	36.5	....
18	3 Draconis	9	37 10.27	+0.06	11.75	11 36 ....	....	67 17 16.82	13.28	30.3	+67 17 45.6	44.4	....
19	χ Ursæ Majoris.....	9	41 1.47	0.00	11.66	11 40 ....	....	48 19 42.20	41.70	9.3	48 19 50.0	51.9	....
20	β Leonis	9	44 12.36	-0.07	11.73	11 44 ....	....	15 7 62.40	59.58	24.8	15 7 36.0	35.8	....
21	γ Ursæ Majoris.....	9	48 49.73	+0.01	-11.65	11 48 ....	....	54 14 38.92	36.52	15.4	+54 14 52.8	52.8	....

UPDEGRAFF, OBSERVER.

1900 APRIL 9.

CLAMP WEST.

LITTELL, ASSISTANT.

22	ζ Hydræ	9	50 20.87	-0.11	-11.90	8 50 ....	....	6 19 55.45	57.75	37.1	+ 6 19 19.2	20.1	....
23	10 Ursæ Majoris	9	54 24.02	0.18	11.94	8 54 ....	....	42 10 35.55	39.20	3.3	42 10 39.8	41.7	....
24	κ Ursæ Majoris	9	57 3.27	0.21	11.93	8 56 ....	....	47 32 56.22	57.98	8.8	47 33 6.0	6.0	....
25	6 α Ursæ Majoris	9	1 52.63	0.40	11.94	9 1 ....	....	67 31 56.08	57.95	31.7	67 32 28.6	28.8	....
26	θ Hydræ	9	9 24.23	0.11	11.98	9 9 ....	....	2 44 36.48	37.48	42.4	2 43 55.0	54.5	....
27	40 Lyncis	9	15 12.82	0.17	11.94	9 15 ....	....	34 48 53.12	53.05	4.2	34 48 49.6	48.1	....
28	1 H. Draconis	9	23 13.19	-1.14	-11.92	9 23 ....	....	81 45 17.78	17.42	53.9	+81 46 12.2	10.1	....
29	θ Ursæ Majoris	8	26 25.76	-0.25	-11.86	9 26 ....	....	52 7 43.58	43.98	13.7	+52 7 58.2	56.9	....
30	10 Leonis Minoris ...	7	28 20.96	0.18	11.90	9 28 ....	....	36 50 24.78	26.40	2.1	36 50 23.9	23.5	....
31	α Leonis	9	36 3.54	0.12	11.98	9 35 ....	....	10 21 6.85	7.42	31.7	10 20 36.0	35.1	....
32	ϵ Leonis	9	40 25.43	0.15	11.96	9 40 ....	....	24 14 9.98	9.98	15.3	24 13 55.4	54.0	....
33	ν Ursæ Majoris.....	9	44 9.00	0.32	11.92	9 43 ....	....	59 30 8.32	11.25	21.9	+59 30 31.1	32.3	....
34	6 Sextantis	9	46 26.27	0.10	11.93	9 46 ....	....	356 14 5.30	6.70	53.6	- 3 46 47.4	47.4	....
35	Groombridge 1586 ..	9	49 45.24	-0.60	-12.18	9 49 ....	....	73 20 37.95	41.65	39.9	+73 21 18.6	20.6	....
36	19 Leonis Minoris ...	7	51 49.01	-0.20	-12.01	9 51 ....	....	41 31 44.35	46.80	2.7	+41 31 48.2	48.5	....
37	π Leonis	9	55 10.48	0.12	11.94	9 54 ....	....	8 31 45.22	45.05	34.2	- 8 31 11.9	10.2	....
38	η Leonis	9	2 7.79	0.13	12.07	10 1 ....	....	17 15 10.98	11.45	23.1	+17 14 48.7	47.7	....
39	λ Hydræ	9	5 57.45	-0.09	11.99	10 5 ....	....	348 9 13.18	15.30	71.3	-11 51 57.1	56.5	....
40	24 Cephei s. p.	7	8 2.86	+0.58	11.84	22 7 ....	....	108 6 35.98	37.10	152.2	+71 50 50.3	51.4	....
41	λ Ursæ Majoris.....	9	11 19.46	-0.22	11.92	10 11 ....	....	43 24 37.95	39.10	4.6	43 24 43.5	42.9	....
42	μ Ursæ Majoris.....	9	16 37.72	-0.22	-11.89	10 16 ....	....	41 59 57.15	60.00	3.1	+42 0 1.2	2.3	....
43	31 Leonis	9	22 21.41	-0.20	-11.94	10 22 ....	....	37 13 3.30	4.82	1.7	+37 13 2.3	2.3	....
44	36 Ursæ Majoris.....	9	24 29.77	0.32	11.86	10 24 ....	....	56 29 11.60	13.15	18.5	56 29 31.0	30.8	....
45	9 H. Draconis	9	26 55.44	0.80	11.98	10 26 ....	....	76 12 54.88	56.88	44.5	+76 13 40.1	40.4	....
46	33 Sextantis	9	36 33.76	0.10	11.96	10 36 ....	....	358 47	32.42	49.2	- 1 13	17.3	....
47	42 Leonis Minoris ...	9	40 33.51	0.18	11.96	10 40 ....	....	31 12 29.25	29.10	7.9	+31 12 22.3	20.5	....
48	1 Leonis	9	44 15.02	-0.13	11.95	10 44 ....	....	11 4 43.28	40.20	30.9	11 4 13.2	8.7	....
49	2 Cephei s. p.	9	46 17.74	+0.46	-11.85	22 46 ....	....	114 15 51.82	54.15	220.2	+65 40 26.5	26.5	....

Time. Barom. Att. Ther. Ext. Ther.

Bisections are made at II and VI, except as noted below.

d h m	cm.	o	o	
7 11 10	74.89	14.8	14.6	4, 5, 6, 9, 13, 15, 18, 19, 21, 23, 24, }
11 52	74.90	14.5	14.9	25, 28, 29, 33, 35, 41, 42, 44, 45, 49. }
9 8 45	75.54	9.0	8.2	30.
9 12	75.57	8.5	7.8	36.
9 59	75.60	7.8	7.4	40.
				47.

Notes.

10. Very unsteady.
16. Fuzzy.
40. First bisection hurried.

Bisections at III and V.
Bisections at IV and VI.
Bisections at IV and VII.
Bisections at III and d.
Bisections at III and VI.

Adopted Equator Point Corrections.

A. B.
1-21, from nadir. -2.2 -0.2
22-49, from nadir. +0.2 -1.8

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Groombridge 1706.	9	m 52 17.87	s -0.99	-11.91	h m s 10 52	s	78 17	30.22	48.0	+78 18 18.9	17.1	....
2	α Ursæ Majoris	9	57 50.24	0.42	12.03	10 57 ....	....	62 16 55.95	55.92	25.3	62 17 22.1	20.4	....
3	χ Leonis	9	0 6.48	0.12	11.95	10 59 ....	....	7 52 53.88	53.70	35.3	7 52 19.4	17.8	....
4	p^3 Leonis	9	2 3.09	0.11	11.93	11 1 ....	....	2 30 18.48	19.50	43.2	2 29 36.2	35.7	....
5	ψ Ursæ Majoris	9	4 18.08	0.25	11.85	11 4 ....	....	45 2 10.95	14.05	6.3	+45 2 18.2	19.6	....
6	β Crateris	9	6 59.30	0.07	11.98	11 6 ....	....	337 44 36.22	36.52	106.1	-22 17 8.9	10.0	....
7	δ Leonis	9	9 2.56	-0.15	-11.96	11 8 ....	....	21 4 22.70	22.20	18.9	+21 4 4.6	2.5	....
8	ν Ursæ Majoris	9	13 19.98	-0.20	-11.91	11 13 ....	....	33 38 17.72	17.70	5.4	+33 38 13.0	11.5	....
9	Groombridge 1771.	9	17 11.79	0.48	11.94	11 16 ....	....	64 52 4.22	6.35	28.5	64 52 33.6	34.0	....
10	τ Leonis	9	23 2.68	0.11	11.97	11 22 ....	....	3 24 48.55	48.95	41.8	3 24 7.6	6.6	....
11	λ Draconis	9	25 46.01	0.61	12.08	11 25 ....	....	69 52 18.52	17.02	35.2	+69 52 54.5	51.3	....
12	ξ Hydræ	9	28 20.09	0.06	11.99	11 28 ....	....	328 44 4.65	3.70	161.4	-31 18 35.7	38.1	....
13	ν Leonis	9	32 4.71	0.11	11.95	11 31 ....	....	359 44 10.95	10.95	47.8	-0 16 36.0	37.4	....
14	3 Draconis	9	37 11.11	-0.55	-12.02	11 36 ....	....	67 17 14.62	14.90	31.7	+67 17 47.2	45.7	....
15	χ Ursæ Majoris	9	41 1.96	-0.29	-11.88	11 40 ....	....	48 19 41.22	42.48	9.7	+48 19 51.9	51.4	....
16	β Leonis	9	44 12.73	0.14	12.04	11 44 ....	....	15 8 0.72	0.78	25.8	15 7 35.7	34.3	....
17	γ Ursæ Majoris	9	48 50.34	0.35	11.92	11 48 ....	....	54 14 36.48	37.45	16.1	+54 14 53.5	52.7	....
18	ϵ Virginis	9	57 27.04	0.14	11.93	12 57 ....	....	11 30 0.15	2.10	30.6	+11 29 30.9	30.8	....
19	θ Virginis	9	5 1.47	-0.10	11.97	13 4 ....	....	355 0 17.98	21.92	56.8	-5 0 37.5	35.6	....
20	α Ursæ Minoris S. P.	7	21 54.34	+12.41	-11.95	1 21 ....	....	91 12 4.68	3.62	76.4	+88 46 35.5	39.1	....

1900 APRIL 10.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

21	ζ Hydræ	9	50 21.36	-0.13	-12.39	8 50 ....	....	6 19 55.92	57.62	37.7	+6 19 20.1	19.8	....
22	10 Ursæ Majoris	9	54 24.62	0.36	12.38	8 54 ....	....	42 10 35.42	38.75	3.4	42 10 40.8	41.8	....
23	κ Ursæ Majoris	9	57 3.86	0.42	12.34	8 56 ....	....	47 32 55.88	56.92	9.0	47 33 6.8	5.6	....
24	σ^2 Ursæ Majoris	9	1 53.38	0.87	12.27	9 1 ....	....	67 31 53.92	56.72	32.2	67 32 28.0	28.5	....
25	θ Hydræ	9	9 24.66	0.12	12.41	9 9 ....	....	2 44 36.62	36.90	43.1	2 43 55.4	53.7	....
26	40 Lynxis	9	15 13.43	0.30	12.44	9 15 ....	....	34 48 52.40	53.90	4.2	34 48 49.9	49.4	....
27	1 H. Draconis	9	23 14.78	-2.49	-12.29	9 23 ....	....	81 45 15.28	16.58	54.7	+81 46 11.5	10.5	....
28	θ Ursæ Majoris	9	26 26.42	-0.50	-12.29	9 26 ....	....	52 7 41.48	43.30	13.9	+52 7 57.3	56.8	....
29	10 Leonis Minoris	9	28 21.50	0.32	12.32	9 28 ....	....	36 50 23.48	26.75	2.1	36 50 23.3	24.3	....
30	σ Leonis	9	36 3.95	0.16	12.36	9 35 ....	....	10 21 6.50	7.50	32.1	10 20 36.2	35.2	....
31	ϵ Leonis	9	40 25.94	0.23	12.40	9 40 ....	....	24 14 8.50	9.42	15.5	24 13 54.7	53.7	....
32	ν Ursæ Majoris	9	44 9.69	0.66	12.30	9 43 ....	....	59 30 7.78	10.80	22.2	+59 30 31.9	32.6	....
33	6 Sextantis	9	46 26.69	0.09	12.37	9 46 ....	....	356 14 6.45	7.25	54.4	-3 46 46.0	47.2	....
34	Groombridge 1586.	9	49 46.15	-1.26	-12.48	9 49 ....	....	73 20 37.18	39.85	40.5	+73 21 19.5	19.8	....
35	19 Leonis Minoris	7	51 49.61	-0.38	-12.45	9 51 ....	....	41 31 43.98	46.20	2.7	+41 31 48.9	48.6	....
36	π Leonis	9	55 10.92	0.15	12.36	9 54 ....	....	8 31 45.08	44.78	34.6	8 31 12.3	10.0	....
37	η Leonis	9	2 8.25	0.20	12.48	10 1 ....	....	17 15 10.20	11.65	23.5	+17 14 48.5	47.9	....
38	λ Hydræ	9	5 57.83	-0.05	12.42	10 5 ....	....	348 9 12.98	16.05	72.3	-11 51 57.4	56.3	....
39	24 Cephei S. P.	9	8 2.87	+1.18	12.39	22 7 ....	....	108 6 32.48	35.90	154.4	+71 50 50.6	50.0	....
40	λ Ursæ Majoris	9	11 20.03	-0.41	12.32	10 11 ....	....	43 24 36.98	38.98	4.6	43 24 43.8	43.2	....
41	μ Ursæ Majoris	9	16 38.30	-0.40	-12.30	10 16 ....	....	41 59 56.25	60.15	3.2	+42 0 1.4	3.0	....
42	31 Leonis Minoris	9	22 21.92	-0.35	-12.31	10 22 ....	....	37 13 3.15	3.92	1.8	+37 13 3.0	1.8	....
43	36 Ursæ Majoris	9	24 30.54	0.62	12.36	10 24 ....	....	56 29 11.82	14.00	18.7	56 29 32.4	32.3	....
44	9 H. Draconis	9	26 56.39	1.60	12.19	10 26 ....	....	76 12 54.02	56.32	45.1	+76 13 40.8	40.8	....
45	33 Sextantis	9	36 34.19	0.10	12.40	10 36 ....	....	358 47 32.70	32.68	49.9	-1 13 15.3	17.3	....
46	42 Leonis Minoris	9	40 33.98	0.30	12.32	10 40 ....	....	31 12 29.60	28.05	8.0	+31 12 23.3	19.7	....
47	l Leonis	9	44 15.50	-0.16	12.41	10 44 ....	....	11 4 42.92	41.82	31.3	11 4 13.5	10.3	....
48	ι Cephei S. P.	9	46 17.97	+0.89	-12.47	22 46 ....	....	114 15 49.15	51.10	223.0	+65 40 25.4	26.3	....

Bisections are made at II and VI, except as noted below.

Time.	Barom.	Att. Ther.	Ext. Ther.		
d h m	cm.	°	°		
9 11 12	75.67	6.7	5.7	1, 2, 5, 9, 11, 14, 15, 17, 22, 23, 24, } Bisections at III and V. 27, 28, 32, 34, 39, 41, 43, 44, 48. } 20. 35, 40. Bisections at d ₁ and b ₂ . Bisections at IV and V.	
11 52	75.59	6.3	5.6		
13 12	75.75	5.2	3.8		
10 8 47	76.12	7.0	6.2		
9 13	76.15	6.6	5.8	Notes. 20. Star diffuse and unsteady. 29. First bisection 10 ^s late.	
9 58	76.17	5.8	5.5		
				Adopted Equator Point Corrections.	
				A.	B.
				1-17, from nadir.....	+0.2 -1.8
				18-20, from nadir.....	+0.3 -1.7
				21-48, from nadir.....	+1.2 -1.4

SIX-INCH TRANSIT CIRCLE.

NO.	NAME.	THDS.	MEAN THREAD.	c_0 ' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Groombridge 1706.	9	m 52 18.92	-1.90	-12.11	h m s 10 52 ....	....	78 17 28.42	29.88	48.6	+78 18 18.7	17.8	....
2	α Ursæ Majoris	8	57 50.91	0.77	12.37	10 57 ....	....	62 16 54.55	57.05	25.6	62 17 22.3	22.2	....
3	χ Leonis	9	0 6.97	0.15	12.42	10 59 ....	....	7 52 52.18	53.15	35.7	7 52 18.3	17.3	....
4	β^3 Leonis	9	2 3.51	0.12	12.35	11 1 ....	....	2 30 18.80	19.88	43.8	2 29 36.9	36.0	....
5	ψ Ursæ Majoris	9	4 18.65	-0.44	12.24	11 4 ....	....	45 2 10.72	13.90	6.4	+45 2 19.1	20.0	....
6	β Crateris	9	6 59.70	0.00	-12.46	11 6 ....	....	337 44 35.15	37.55	107.5	-22 17 10.3	9.9	....
7	δ Leonis	7	9 3.00	-0.22	-12.34	11 8 ....	....	21 4	21.68	19.1	+21 4	2.3	....
8	ν Ursæ Majoris	9	13 20.55	0.32	12.37	11 13 ....	....	33 38 15.75	17.45	5.5	33 38 11.9	11.6	....
9	Groombridge 1771.	9	17 12.61	0.86	12.40	11 16 ....	....	64 52 4.52	5.22	28.9	64 52 35.3	33.7	....
10	τ Leonis	9	23 3.16	0.12	12.44	11 22 ....	....	3 24 48.18	48.88	42.4	3 24 7.6	6.3	....
11	λ Draconis	9	25 46.70	1.10	12.31	11 25 ....	....	69 52 16.75	17.42	35.7	+69 52 54.3	52.6	....
12	ζ Hydræ	9	28 20.41	-0.05	-12.32	11 28 ....	....	328 44 5.22	4.48	163.8	-31 18 36.5	39.2	....
13	ν Leonis	9	32 5.16	-0.10	-12.41	11 31 ....	....	359 44 11.40	11.28	48.5	-0 16 35.2	37.3	....
14	β Draconis	9	37 11.82	0.96	12.34	11 36 ....	....	67 17 12.78	14.80	32.1	+67 17 46.7	46.5	....
15	χ Ursæ Majoris	9	41 2.54	0.48	12.28	11 40 ....	....	48 19 40.72	42.28	9.9	48 19 52.6	51.8	....
16	β Leonis	9	44 13.18	0.19	12.44	11 44 ....	....	15 7 59.25	60.75	26.3	15 7 34.8	34.3	....
17	γ Ursæ Majoris	9	48 50.93	-0.58	-12.29	11 48 ....	....	54 14 35.32	36.75	16.3	+54 14 53.5	52.7	....

UPDEGRAFF, OBSERVER.

1900 APRIL 14.

CLAMP WEST.

LITTELL, ASSISTANT.

18	ζ Hydræ	9	50 22.40	-0.12	-13.50	8 50 ....	....	6 19 53.45	55.98	37.1	+6 19 19.3	20.3	....
19	ι Ursæ Majoris	9	54 25.51	0.24	13.47	8 54 ....	....	42 10 34.40	37.75	3.3	42 10 40.8	42.2	....
20	κ Ursæ Majoris	9	57 4.70	0.27	13.42	8 56 ....	....	47 32 55.12	56.78	8.8	47 33 7.0	6.7	....
21	σ^2 Ursæ Majoris	9	1 53.98	0.54	13.38	9 1 ....	....	67 31 54.72	55.75	31.7	67 32 29.4	28.5	....
22	θ Hydræ	9	9 25.74	0.11	13.56	9 9 ....	....	2 44 34.48	34.32	42.5	2 43 55.0	53.2	....
23	α Lyncis	9	14 14.33	0.21	13.50	9 15 ....	....	34 48 51.52	52.80	4.2	34 48 50.1	49.8	....
24	ι H. Draconis	9	23 14.44	-1.55	-13.41	9 22 ....	....	81 45 15.48	16.18	54.0	+81 46 12.1	10.9	....
25	θ Ursæ Majoris	8	26 27.24	-0.32	-13.39	9 26 ....	....	52 7 42.05	42.92	13.7	+52 7 58.8	57.8	....
26	ι Leonis Minoris	9	28 22.44	0.22	13.43	9 28 ....	....	36 50 23.00	25.55	2.1	36 50 23.7	24.6	....
27	σ Leonis	9	36 5.05	0.13	13.54	9 35 ....	....	10 21 4.30	6.72	31.8	10 20 35.4	36.2	....
28	ϵ Leonis	9	40 26.99	0.17	13.57	9 40 ....	....	24 14 7.05	8.05	15.3	24 13 54.6	54.0	....
29	ν Ursæ Majoris	9	44 10.51	0.42	13.48	9 43 ....	....	59 30 6.88	10.78	21.9	+59 30 31.8	33.8	....
30	δ Sextantis	9	46 27.82	-0.10	-13.54	9 46 ....	....	356 14 3.55	4.35	53.8	-3 46 47.2	48.0	....
31	Groombridge 1586.	9	49 46.69	-0.80	-13.71	9 49 ....	....	73 20 36.55	40.18	40.0	+73 21 19.4	21.2	....
32	ι Leonis Minoris	6	51 50.51	0.26	13.54	9 51 ....	....	41 31 42.52	45.35	2.7	41 31 48.3	49.2	....
33	π Leonis	9	54 2.00	0.15	13.60	9 54 ....	....	8 31 42.62	42.72	34.3	8 31 11.3	9.8	....
34	η Leonis	9	2 9.27	0.15	13.60	10 1 ....	....	17 15 9.15	10.08	23.2	+17 14 48.9	48.2	....
35	λ Hydræ	9	5 58.97	-0.08	13.58	10 5 ....	....	348 9 10.65	13.25	71.5	-11 51 57.8	56.8	....
36	α Cephei s. p.	9	8 4.77	+0.75	-13.61	22 7 ....	....	108 6 33.92	36.12	152.7	+71 50 49.7	50.0	....
37	λ Ursæ Majoris	9	11 20.92	-0.27	-13.42	10 11 ....	....	43 24 35.48	37.72	4.6	-43 24 43.2	43.5	....
38	μ Ursæ Majoris	9	16 39.24	0.27	13.44	10 16 ....	....	41 59 54.68	59.58	3.1	+42 0 0.9	3.9	....
39	β Leonis Minoris	9	22 22.91	0.24	13.47	10 22 ....	....	37 13 1.72	3.12	1.7	37 13 2.8	2.6	....
40	β Ursæ Majoris	9	24 31.29	0.41	13.41	10 24 ....	....	56 29 11.68	13.45	18.5	56 29 33.2	33.1	....
41	η H. Draconis	9	26 56.72	1.03	13.34	10 26 ....	....	76 12 53.60	56.12	44.5	+76 13 40.9	41.5	....
42	β Sextantis	9	36 35.32	-0.10	-13.57	10 36 ....	....	358 47 31.02	31.22	49.3	-1 13 15.3	16.7	....
43	α Leonis Minoris	9	40 34.97	-0.22	-13.43	10 40 ....	....	31 12 28.42	27.88	7.9	+31 12 23.3	21.2	....
44	γ Leonis	9	44 16.55	-0.14	13.51	10 44 ....	....	11 4 41.10	40.72	30.9	11 4 13.1	11.1	....
45	ι Cephei s. p.	9	46 19.54	+0.60	13.58	22 46 ....	....	114 15 51.05	52.50	220.2	65 40 25.2	26.2	....
46	Groombridge 1706.	9	52 19.34	-1.28	13.41	10 52 ....	....	78 17 28.88	29.32	48.0	78 18 19.6	18.2	....
47	α Ursæ Majoris	9	57 51.68	0.53	13.50	10 57 ....	....	62 16 55.32	56.62	25.3	62 17 23.6	23.0	....
48	χ Leonis	9	0 8.04	-0.13	-13.54	10 59 ....	....	7 52 50.90	51.75	35.2	+7 52 18.7	17.9	....

Time. Barom. Att. Ther. Ext. Ther.

Bisections are made at II and VI, except as noted below.

d h m	cm.	°	°	1, 5, 9, 11, 14, 15, 17, 19, 20, 21, 24, 25, 29, 31, 32, 36, 37, 38, 40, 41, 45, 46, 47. } 2. Notes. Last bisection 10 ^s late. First bisection doubtful. Last bisection 8 ^s late.
10 10 48	76.19	5.2	4.8	
11 20	76.20	4.7	3.8	
11 52	76.20	4.4	3.5	
14 8 53	76.04	10.5	9.5	1. 9, 25, 30, 41. 41.
9 18	76.08	10.0	8.8	
9 58	76.12	9.2	8.3	
10 39	76.14	8.5	8.0	

Bisections at III and V.
Bisections at IV and V.

Adopted Equator Point Corrections.

	A.	B.
1-17, from nadir.....	+1.2	-1.4
18-48, from nadir.....	+2.3	+0.1

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	β^3 Leonis	9	m s 2 4.59	s -0.11	s -13.47	h m s 11 1 ....	....	° ' " 2 30 16.85	" 18.08	" 43.2	° ' " + 2 29 36.6	" 36.2	....
2	ψ Ursæ Majoris	9	4 19.59	0.31	13.36	11 4 ....	....	45 2 11.00	13.35	6.3	+45 2 20.4	20.8	....
3	β Crateris	9	7 0.83	0.05	13.57	11 6 ....	....	337 44 32.60	32.02	106.0	-22 17 10.3	12.5	....
4	δ Leonis	9	9 4.14	0.18	13.55	11 8 ....	....	21 4 20.22	21.05	18.9	+21 4 4.2	3.4	....
5	ν Ursæ Majoris	9	13 21.54	0.24	13.47	11 13 ....	....	33 38 16.12	16.68	5.4	33 38 13.5	12.5	....
6	Groombridge 1771	9	17 13.37	0.61	13.50	11 16 ....	....	64 52 3.80	6.00	28.5	64 52 35.3	35.6	....
7	τ Leonis	9	23 4.26	-0.12	-13.56	11 22 ....	....	3 24 47.08	47.48	41.8	+3 24 8.3	7.0	....
8	λ Draconis	9	25 47.47	-0.78	-13.52	11 25 ....	....	69 52 17.32	17.18	35.2	+69 52 55.4	53.4	....
9	ξ Hydræ	9	28 21.61	0.02	13.57	11 28 ....	....	328 44 0.95	0.25	161.3	-31 18 37.1	39.5	....
10	ν Leonis	9	32 6.29	0.10	13.56	11 31 ....	....	359 44 9.38	9.22	47.8	-0 16 35.4	37.2	....
11	γ Draconis	9	37 12.59	0.70	13.46	11 36 ....	....	67 17 13.50	14.30	31.7	+67 17 48.2	47.1	....
12	χ Ursæ Majoris	9	41 3.53	0.36	13.43	11 40 ....	....	48 19 40.10	42.55	9.7	48 19 52.9	53.4	....
13	β Leonis	9	44 14.23	0.16	13.53	11 44 ....	....	15 7 58.38	60.15	25.8	15 7 35.7	35.7	....
14	γ Ursæ Majoris	9	48 51.82	-0.44	-13.36	11 48 ....	....	54 14 36.42	36.32	16.1	+54 14 55.6	53.6	....

LITTELL, OBSERVER.

1900 APRIL 19.

CLAMP EAST.

NO ASSISTANT.

15	θ Virginis	9	5 3.31	+0.03	-13.90	13 4 ....	....	82 49 53.05	51.78	54.2	-5 0 34.1	35.5	....
16	α Ursæ Minoris S. P. ..	9	22 46.89	-37.72	12.51	1 21 ....	....	346 36 60.38	56.42	72.7	+88 46 33.0	32.8	....
17	m Virginis	9	36 38.81	-0.01	-13.83	13 36 ....	....	86 1 23.05	21.98	60.5	-8 12 10.4	12.0	....

UPDEGRAFF, OBSERVER.

1900 APRIL 24.

CLAMP EAST.

LITTELL, ASSISTANT.

18	ζ Hydræ	9	50 20.16	+0.18	-11.70	8 50 ....	....	71 30 15.30	15.48	35.1	+6 19 21.3	18.9	....
19	ι Ursæ Majoris	9	54 22.52	0.86	11.80	8 54 ....	....	35 39 32.25	32.15	3.1	42 10 42.6	40.3	....
20	κ Ursæ Majoris	9	57 1.43	1.02	11.68	8 56 ....	....	30 17 13.25	10.35	8.4	47 33 6.9	7.4	....
21	σ Ursæ Majoris	9	1 49.02	2.21	11.65	9 1 ....	....	10 18 11.22	8.58	30.0	67 32 30.4	30.6	....
22	θ Hydræ	9	9 23.53	0.13	11.74	9 9 ....	....	75 5 35.90	35.45	40.2	2 43 55.6	53.9	....
23	λ Lyncis	9	15 11.54	0.67	11.78	9 15 ....	....	43 1 16.48	16.88	4.0	34 48 51.0	48.5	....
24	ι H. Draconis	9	23 3.90	+6.23	-11.99	9 22 ....	....	356 4 48.45	47.62	51.0	+81 46 13.9	12.3	....
25	θ Ursæ Majoris	9	26 23.92	+1.19	-11.84	9 26 ....	....	25 42 25.55	24.28	12.9	+52 7 59.1	57.9	....
26	ι Leonis Minoris	9	28 19.67	0.72	11.79	9 28 ....	....	40 59 44.92	42.78	2.0	36 50 24.6	24.5	....
27	α Leonis	9	36 2.75	0.24	11.75	9 35 ....	....	67 29 3.80	3.72	30.0	10 20 37.8	35.8	....
28	ϵ Leonis	9	40 24.41	0.46	11.77	9 40 ....	....	53 36 2.02	0.28	14.5	24 13 55.0	54.6	....
29	ν Ursæ Majoris	9	44 6.54	1.55	11.80	9 43 ....	....	18 19 57.60	56.62	20.7	+59 30 34.8	33.4	....
30	δ Sextantis	9	46 25.81	0.03	11.79	9 46 ....	....	81 36 7.95	5.72	50.9	-3 46 47.1	47.0	....
31	Groombridge 1586	9	49 40.42	+3.01	-11.86	9 49 ....	....	4 29 25.40	24.58	37.9	+73 21 24.1	22.5	....
32	ι Leonis Minoris	9	51 47.48	+0.83	-11.79	9 51 ....	....	36 18 23.50	22.15	2.5	+41 31 50.8	49.7	....
33	π Leonis	9	55 9.79	0.21	11.77	9 54 ....	....	69 18 25.52	24.08	32.5	8 31 13.6	12.9	....
34	η Leonis	9	2 6.90	+0.34	11.85	10 1 ....	....	60 34 62.42	59.20	22.0	+17 14 47.2	48.3	....
35	λ Hydræ	9	5 57.02	-0.08	11.75	10 5 ....	....	89 40 60.75	59.90	67.8	-11 51 56.8	58.1	....
36	λ Cephei S. P.	8	8 7.10	-2.73	11.80	22 7 ....	....	329 43 27.00	22.78	144.7	+71 50 49.9	48.7	....
37	λ Ursæ Majoris	9	11 18.00	+0.88	11.84	10 11 ....	....	34 25 32.35	29.65	4.4	43 24 43.8	44.1	....
38	μ Ursæ Majoris	9	16 36.35	+0.84	-11.84	10 16 ....	....	35 50 10.30	9.45	3.0	+42 0 4.5	2.9	....
39	β Leonis Minoris	9	22 20.08	+0.72	-11.76	10 22 ....	....	40 37 5.88	3.88	1.7	+37 13 3.9	3.7	....
40	δ Ursæ Majoris	8	24 27.50	1.37	11.66	10 24 ....	....	21 20 54.95	53.95	17.6	56 29 34.4	33.0	....
41	η H. Draconis	8	26 49.44	3.64	11.40	10 26 ....	....	1 37 10.38	8.15	42.3	+76 13 43.5	43.3	....
42	β Sextantis	9	36 33.25	0.07	11.78	10 36 ....	....	79 2 41.12	37.90	46.9	-1 13 16.3	15.2	....
43	λ Leonis Minoris	9	40 32.35	0.59	11.75	10 40 ....	....	46 37 42.25	39.75	7.5	+31 12 21.8	22.1	....
44	ι Leonis	9	44 14.27	+0.24	11.71	10 44 ....	....	66 45 29.60	27.32	29.4	11 4 12.6	12.8	....
45	ν Cephei S. P.	9	46 20.82	-1.98	-11.81	22 46 ....	....	323 34 6.72	2.30	209.6	+65 40 24.8	23.4	....

Bisections are made at II and VI, except as noted below.

		1 her.	1 her.		
d h m	cm.	°	°	2, 6, 8, 11, 12, 14, 19, 20, 21, 24 } Bisections at III and V.	
14 11 20	76. 15	8. 0	7. 6	25, 29, 31, 32, 37, 38, 40, 41, 45. }	
11 51	76. 16	7. 6	7. 2	15, 17. } Bisection at IV.	
19 13 8	75. 92	16. 6	17. 5	16. } Bisections at d ₁ , c ₅ , c ₁ , and b ₃ .	
13 57	75. 92	17. 0	18. 2	36. } Bisections at IV and V.	
24 9 0	75. 40	22. 4	22. 2		
9 32	75. 40	21. 8	21. 6	Notes.	
9 57	75. 41	21. 3	20. 4	13. First bisection 10° late.	
10 40	75. 45	20. 0	19. 0	23, 37. First bisection doubtful.	
				39. Unsteady; blurred.	
				41. Observation poor.	
				Adopted Equator Point Corrections.	
				A. B.	
				1-14, from nadir..... +2.3 + 0.1	
				15-17, from nadir..... -77° 50' 14.1 11.5	
				18-45, from nadir..... 13.0 10.3	

NO.	NAME.	THDS.	MEAN THREAD.	C_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Groombridge 1706.	9	m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
2	α Ursæ Majoris	9	52 11.42	+4.28	-11.80	10 52	....	359 32 35.08	33.18	45.7	+78 18 22.1	21.6	....
3	χ Leonis	9	57 47.49	1.70	11.79	10 57	....	15 33 10.80	8.35	24.1	62 17 25.0	25.0	....
4	ϕ^3 Leonis	9	0 5.81	0.20	11.73	10 59	....	69 57 19.25	15.80	33.6	7 52 19.0	20.0	....
5	ψ Ursæ Majoris	9	2 2.51	0.12	11.71	11 1	....	75 19 53.38	52.72	41.1	2 29 37.4	35.7	....
6	β Crateris	9	4 16.46	+0.92	11.61	11 4	....	32 47 56.58	54.25	6.0	+45 2 21.2	21.1	....
7	δ Leonis	9	6 59.08	-0.23	-11.73	11 6	....	100 5 43.25	39.80	101.0	-22 17 12.4	11.1	....
8	ν Ursæ Majoris	9	9 1.57	+0.40	-11.66	11 8	....	56 45 48.82	48.15	18.0	+21 4 4.8	3.3	....
9	τ Leonis	9	13 18.79	0.53	11.62	11 13	....	44 11 52.58	52.68	5.2	33 38 13.7	11.5	....
10	λ Draconis	9	23 2.12	0.13	11.74	11 22	....	74 25 24.52	21.48	39.8	3 24 7.4	8.3	....
11	ν Leonis	9	32 4.26	0.08	11.77	11 25	....	7 57 49.55	46.12	33.5	+69 52 55.9	56.6	....
12	3 Draconis	9	37 7.84	+2.12	-11.82	11 31	....	78 6 2.98	0.78	45.4	-0 16 36.7	36.6	....
13	χ Ursæ Majoris	9	41 0.32	+1.02	-11.73	11 36	....	10 32 51.98	48.22	30.1	+67 17 49.8	51.1	....
14	β Leonis	9	37 7.84	+2.12	-11.82	11 40	....	29 30 27.10	23.88	9.2	+48 19 53.9	54.6	....
15	ν Ursæ Majoris	9	44 11.92	0.30	11.75	11 44	....	62 42 12.32	9.82	24.6	15 7 34.7	35.1	....
16	β Andromedæ	8	48 48.34	1.25	11.72	11 48	....	23 35 30.42	27.82	15.3	54 14 56.6	56.8	....
17	α Ursæ Minoris	9	4 19.54	0.50	11.48	1 4	....	42 44	....	....	35 5	....	....
			21 38.43	+30.42	-10.95	1 22	....	349 4 45.90	41.95	67.6	+88 46 32.4	33.1	....

UPDEGRAFF, OBSERVER.

1900 APRIL 25.

CLAMP EAST.

LITTELL, ASSISTANT.

18	ζ Hydræ	9	50 19.19	+0.04	-10.61	8 50	....	71 30 14.90	14.20	36.1	+6 19 21.1	19.5	....
19	10 Ursæ Majoris	9	54 22.54	-0.30	10.68	8 54	....	35 39 32.85	32.10	3.2	42 10 42.6	40.8	....
20	κ Ursæ Majoris	9	57 1.77	0.38	10.65	8 56	....	30 17 14.22	10.42	8.6	47 33 6.6	7.8	....
21	σ^2 Ursæ Majoris	9	1 51.03	-0.90	10.59	9 1	....	10 18 11.75	9.45	30.8	67 32 31.2	30.9	....
22	θ Hydræ	9	9 22.53	+0.06	10.68	9 9	....	75 5 35.92	34.08	41.4	2 43 54.8	54.4	....
23	0 Lyncis	9	15 11.39	-0.22	10.76	9 15	....	43 1 17.60	17.18	4.1	34 48 50.2	48.4	....
24	1 H. Draconis	9	23 11.36	-2.71	-10.65	9 22	....	356 4 49.40	49.45	52.5	+81 46 14.9	12.2	....
25	0 Ursæ Majoris	9	26 24.41	-0.48	-10.70	9 26	....	25 42 26.22	24.92	13.3	+52 7 59.2	58.0	....
26	10 Leonis Minoris	9	28 19.57	0.25	10.73	9 28	....	40 59 44.32	43.90	2.1	36 50 25.5	23.6	....
27	0 Leonis	9	36 1.97	0.00	10.74	9 35	....	67 29 2.78	2.40	30.8	10 20 38.5	36.6	....
28	ϵ Leonis	9	40 23.98	0.13	10.77	9 40	....	53 35 62.00	59.38	14.9	24 13 55.1	55.5	....
29	ν Ursæ Majoris	9	44 7.62	-0.67	10.70	9 43	....	18 19 58.32	57.58	21.3	+59 30 35.1	33.3	....
30	6 Sextantis	9	46 24.63	+0.12	10.72	9 46	....	81 36 6.52	5.00	52.3	-3 46 46.7	47.4	....
31	Groombridge 1586.	9	49 43.76	-1.36	-10.89	9 49	....	4 29 26.85	26.88	38.9	+73 21 24.1	21.5	....
32	19 Leonis Minoris	9	51 47.56	-0.32	-10.74	9 51	....	36 18 23.10	22.58	2.6	+41 31 51.7	49.7	....
33	π Leonis	9	55 8.89	+0.01	10.68	9 54	....	69 18 25.35	24.10	33.3	8 31 13.4	12.4	....
34	η Leonis	9	2 6.20	-0.06	10.77	10 1	....	60 34 62.05	58.68	22.5	+17 14 47.5	48.6	....
35	λ Hydræ	9	5 55.74	+0.20	10.76	10 5	....	89 40 59.15	57.25	69.4	-11 51 56.4	56.7	....
36	24 Cephei s. p.	9	8 2.20	+1.26	10.82	22 7	....	329 43 29.25	25.60	148.3	+71 50 48.2	47.6	....
37	λ Ursæ Majoris	9	11 18.04	-0.36	10.66	10 11	....	34 25 31.60	29.58	4.5	43 24 45.1	44.6	....
38	μ Ursæ Majoris	9	16 36.49	-0.34	-10.81	10 16	....	35 50 10.62	11.12	3.1	+42 0 4.7	1.7	....
39	31 Leonis Minoris	9	22 19.99	-0.28	-10.68	10 22	....	40 37 5.72	4.12	1.7	+37 13 4.5	3.8	....
40	36 Ursæ Majoris	9	26 54.06	-1.74	10.71	10 24	....	21 20 56.20	54.52	18.0	56 29 34.2	33.1	....
41	9 H. Draconis	7	26 54.06	-1.74	10.71	10 26	....	1 37 12.22	9.80	43.3	+76 13 43.0	42.9	....
42	33 Sextantis	9	36 32.15	+0.10	10.72	10 36	....	79 2 40.65	36.32	48.0	-1 13 16.5	14.4	....
43	42 Leonis Minoris	9	40 32.07	-0.21	10.68	10 40	....	46 37 40.98	39.28	7.7	+31 12 23.4	22.7	....
44	ι Leonis	9	44 13.47	-0.01	10.67	10 44	....	66 45 28.25	26.45	30.1	11 4 13.7	13.3	....
45	τ Cephei s. p.	9	46 16.87	+0.94	-10.72	22 46	....	323 34 10.40	7.52	214.5	+65 40 23.2	23.4	....

Time. Barom. Att. Ther. Ext. Ther.

Bisections are made at II and VI, except as noted below.

d h m	cm.	°	°	I, 2, 5, 12, 13, 15, 19, 20, 21, 24, 25, } 29, 31, 32, 36, 37, 38, 41, 45. }	Bisections at III and V. Bisections at III and VI. Bisection at V. Bisections at b ₃ and d ₂ . Bisections at IV and V.
24 11 12	75.48	19.3	18.4		
11 43	75.50	19.1	18.9	4.	
1 33	75.98	15.2	14.2	10.	
25 8 49	75.76	17.3	16.2	17.	
9 11	75.80	16.7	15.7	40.	
9 58	75.80	15.8	15.2		
10 39	75.81	14.8	14.0		

Notes.

8. Through clouds.
9. Last bisection doubtful.
17. Seeing bad; observation poor.
42. First bisection 6^s late; doubtful.

Adopted Equator Point Corrections.

	°	A.	B.
1-15, from nadir	....	-77 50	13.0 10.3
16-17, from nadir	....		13.3 9.6
18-45, from nadir	....		13.4 10.6

OBSERVATIONS OF STANDARD STARS.

D 21

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Groombridge 1706.	9	m 52 16.63	s -2.09	-10.72	h 10 52	...	359 32 36.85	33.75	46.8	78 18 21.8	22.4	...
2	α Ursæ Majoris	9	57 49.00	-0.81	10.83	10 57	...	15 33 11.88	10.48	24.7	62 17 24.9	23.8	...
3	χ Leonis	9	0 4.92	+0.02	10.67	10 59	...	69 57 18.32	14.98	34.4	7 52 19.4	20.5	...
4	β^3 Leonis	9	2 1.48	+0.06	10.63	11 1	...	75 19 53.40	51.92	42.1	2 29 36.6	35.9	...
5	ψ Ursæ Majoris	8	4 16.84	-0.40	10.69	11 4	...	32 47 57.82	55.32	6.1	45 2 20.5	20.4	...
6	β Crateris	9	6 57.59	+0.31	10.79	11 6	...	100 5 40.70	36.42	103.5	22 17 11.9	9.9	...
7	δ Leonis	9	9 1.11	0.11	10.70	11 8	...	56 45 49.35	45.65	18.4	21 4 4.2	5.7	...
8	ν Ursæ Majoris	9	13 18.64	0.25	10.70	11 13	...	44 11 52.60	51.42	5.3	33 38 14.0	12.9	...
9	Groombridge 1771.	9	17 10.64	-0.92	10.79	11 16	...	12 58 3.12	0.25	27.8	64 52 36.8	37.1	...
10	τ Leonis	9	23 1.12	+0.06	10.68	11 22	...	74 25 23.58	20.82	40.8	3 24 7.7	8.2	...
11	λ Draconis	9	25 44.79	-1.19	10.82	11 25	...	7 57 48.98	46.25	34.3	69 52 57.4	57.6	...
12	ξ Hydrae	9	28 18.22	+0.42	10.71	11 28	...	109 6 14.68	12.30	157.5	31 18 39.9	39.7	...
13	ν Leonis	9	32 3.17	+0.09	10.69	11 31	...	78 5 61.80	59.15	46.7	0 16 36.4	36.0	...
14	3 Draconis	9	37 9.90	-1.05	10.74	11 36	...	10 32 53.02	48.78	30.9	67 17 50.0	51.7	...
15	χ Ursæ Majoris	9	41 0.81	0.47	10.74	11 40	...	29 30 28.15	24.58	9.5	48 19 53.5	54.6	...
16	β Leonis	9	44 11.16	0.05	10.64	11 44	...	62 42 10.80	9.30	25.3	15 7 35.9	35.2	...
17	γ Ursæ Majoris	9	48 49.12	-0.60	10.67	11 48	...	23 35 30.98	29.52	15.7	54 14 56.9	55.8	...

1900 APRIL, 26.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

18	ζ Hydrae	9	50 19.27	+0.04	-10.71	8 50	...	71 30 13.20	16.22	35.4	+6 19 20.9	18.8	...
19	10 Ursæ Majoris	9	54 22.52	-0.23	10.75	8 54	...	35 40 30.85	33.22	3.2	42 10 41.9	40.2	...
20	κ Ursæ Majoris	9	57 1.74	0.29	10.73	8 56	...	30 17 11.52	11.30	8.4	47 33 6.4	7.4	...
21	ϵ Ursæ Majoris	9	1 50.94	-0.72	10.78	9 1	...	10 18 9.58	9.62	30.2	67 32 30.1	30.7	...
22	0 Hydrae	9	9 22.61	+0.07	10.78	9 9	...	75 5 33.32	35.70	40.6	2 43 55.6	54.2	...
23	40 Lyncis	9	15 11.40	-0.17	10.84	9 15	...	43 1 14.95	17.92	4.0	34 48 50.4	48.3	...
24	1 H. Draconis	7	23 10.81	-2.16	-10.79	9 22	...	356 4 46.52	48.68	51.6	+81 46 14.9	12.7	...
25	0 Ursæ Majoris	9	26 24.29	-0.38	-10.70	9 26	...	25 42 22.90	24.60	13.1	+52 7 59.8	58.7	...
26	10 Leonis Minoris	9	28 19.59	-0.19	10.83	9 28	...	40 59 42.45	44.20	2.0	36 50 24.8	24.0	...
27	0 Leonis	8	36 1.98	+0.01	10.78	9 35	...	67 29 0.85	3.18	30.3	10 20 38.3	36.9	...
28	ϵ Leonis	9	40 23.98	-0.09	10.82	9 40	...	53 35 59.45	61.28	14.6	24 13 55.3	54.5	...
29	ν Ursæ Majoris	9	44 7.49	-0.53	10.74	9 43	...	18 19 55.62	58.35	21.0	+59 30 34.9	32.9	...
30	6 Sextantis	9	46 24.71	+0.11	-10.80	9 46	...	81 36 5.30	6.15	51.4	-3 46 47.2	47.0	...
31	Groombridge 1586.	9	49 43.41	-1.09	-10.88	9 49	...	4 29 23.98	26.70	38.2	+73 21 23.6	21.6	...
32	19 Leonis Minoris	9	51 47.54	-0.25	10.81	9 51	...	36 18 21.08	24.32	2.5	41 31 51.0	48.5	...
33	π Leonis	9	55 8.97	+0.02	10.79	9 54	...	69 18 25.02	24.92	32.7	8 31 11.8	12.8	...
34	η Leonis	9	2 6.23	-0.04	10.83	10 1	...	60 34 59.35	59.70	22.2	+17 14 47.9	48.5	...
35	λ Hydrae	9	5 55.77	+0.18	10.79	10 5	...	89 40 58.72	59.52	68.3	-11 51 57.4	57.3	...
36	24 Cephei S. P.	9	8 2.47	+1.02	-10.78	22 7	...	329 43 25.70	24.60	145.9	+71 50 49.6	48.4	...
37	λ Ursæ Majoris	9	11 18.03	-0.28	-10.75	10 11	...	34 25 29.60	30.88	4.4	+43 24 44.4	43.8	...
38	μ Ursæ Majoris	9	16 36.32	0.27	10.74	10 16	...	35 50 7.85	12.90	3.0	42 0 4.7	0.4	...
39	31 Leonis Minoris	9	22 20.02	0.22	10.79	10 22	...	40 37 3.05	4.72	1.7	37 13 4.5	3.8	...
40	36 Ursæ Majoris	9	24 28.43	0.50	10.78	10 24	...	21 20 52.05	54.05	17.7	56 29 35.2	33.9	...
41	9 H. Draconis	9	27 53.53	-1.41	10.59	10 26	...	1 37 7.88	9.20	42.6	+76 13 44.1	43.5	...
42	33 Sextantis	9	36 32.23	+0.18	-10.85	10 36	...	79 2 37.62	38.88	47.1	-1 13 15.2	15.5	...
43	42 Leonis Minoris	9	40 32.07	-0.16	-10.75	10 40	...	46 37 38.98	41.02	7.6	+31 12 22.8	21.7	...
44	1 Leonis	9	44 13.47	0.00	10.70	10 44	...	66 45 26.40	27.65	29.6	11 4 13.5	13.2	...
45	1 Cephei S. P.	9	46 17.13	+0.76	10.75	22 46	...	323 34 4.88	4.30	210.5	65 40 24.3	23.6	...
46	Groombridge 1706.	9	52 16.59	-1.71	11.13	10 52	...	359 32 32.95	33.20	45.9	78 18 22.2	22.7	...
47	α Ursæ Majoris	9	57 48.86	-0.66	10.88	10 57	...	15 33 7.60	9.32	24.2	62 17 26.1	25.1	...
48	χ Leonis	9	0 5.02	+0.03	-10.79	10 59	...	69 57 15.82	16.35	33.7	+7 52 20.0	20.4	...

Time.

Barom.

Att.
Ther.Ext.
Ther.

Bisections are made at II and VI, except as noted below.

d	h	m	cm.	°	°	1, 2, 5, 9, 11, 14, 15, 17, 19, 20, 21, 25, } Bisections at III and V. 29, 31, 32, 36, 37, 38, 40, 41, 45, 46, 47. } Bisections at IV and V. 24.
25	11	12	75.80	14.1	13.0	
	11	43	75.78	13.5	12.2	
26	9	6	75.30	19.7	19.4	
	9	31	75.30	19.0	18.4	Notes. 17, 25. First bisection doubtful. 41. Last bisection 8° late.
	9	57	75.30	18.2	17.6	
	10	49	75.30	17.0	17.1	

Adopted Equator Point Corrections.

I-17, from nadir. -77 50 13.4 10.6
 18-48, from nadir. 10.8 11.2

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ρ^1 Leonis.....	9	2 1.58	+0.07	-10.75	11 1	....	75 19 51.62	53.35	41.3	+ 2 29 36.6	35.8	....
2	ψ Ursæ Majoris.....	9	4 16.81	-0.32	10.76	11 4	....	32 47 54.08	54.25	6.0	+45 2 21.5	22.0	....
3	β Crateris.....	9	6 57.61	+0.28	10.79	11 6	....	100 5 39.95	39.92	101.5	-22 17 11.8	10.8	....
4	δ Leonis.....	9	9 1.15	-0.08	10.78	11 8	....	56 45 47.08	47.85	18.1	+21 4 4.2	4.4	....
5	ν Ursæ Majoris.....	9	13 18.62	0.20	10.74	11 13	....	44 11 50.32	52.45	5.2	33 38 13.8	12.6	....
6	Groombridge 1771.....	9	17 10.58	-0.76	10.91	11 16	....	12 57 59.75	59.88	27.3	64 52 37.0	37.6	....
7	τ Leonis.....	9	23 1.20	+0.06	10.78	11 22	....	74 25 21.85	22.62	40.0	+ 3 24 7.6	7.8	....
8	λ Draconis.....	9	25 44.56	-0.99	-10.83	11 25	....	7 57 45.80	45.78	33.6	+69 52 57.2	57.9	....
9	ξ Hydræ.....	9	28 18.41	+0.38	10.87	11 28	....	109 6 14.88	17.02	154.3	-31 18 39.5	40.7	....
10	ν Leonis.....	9	31 3.25	-0.09	10.79	11 31	....	78 5 59.92	60.20	45.7	- 0 16 36.1	35.4	....
11	β Draconis.....	9	37 9.72	-0.87	10.78	11 36	....	10 32 49.35	48.32	30.3	+67 17 50.4	52.1	....
12	χ Ursæ Majoris.....	9	41 0.75	0.39	10.79	11 40	....	29 30 24.78	25.90	9.3	48 19 54.1	53.7	....
13	β Leonis.....	9	44 11.26	0.03	10.77	11 44	....	62 42 8.85	9.40	24.7	15 7 35.9	36.3	....
14	γ Ursæ Majoris.....	9	48 49.07	0.49	-10.75	11 48	....	23 35 28.02	28.52	15.4	+54 14 56.9	57.1	....

1900 APRIL 27.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

15	ζ Hydræ.....	9	50 19.53	+0.06	-11.00	8 50	....	71 30 11.98	16.92	35.3	+ 6 19 20.0	18.8	....
16	κ Ursæ Majoris.....	9	54 22.75	-0.15	11.08	8 54	....	35 39 28.08	33.35	3.1	42 10 42.4	40.6	....
17	ι Ursæ Majoris.....	9	57 1.94	0.19	11.05	8 56	....	30 17 9.62	12.08	8.4	47 33 6.2	7.2	....
18	σ^2 Ursæ Majoris.....	6	1 50.82	-0.47	10.91	9 1	....	10 18 6.30	9.55	30.1	67 32 31.4	31.3	....
19	θ Hydræ.....	9	9 22.86	+0.07	11.05	9 9	....	75 5 32.38	36.02	40.4	2 43 54.5	54.6	....
20	α Lyncis.....	9	15 11.57	-0.10	11.10	9 15	....	43 1 12.68	18.30	4.0	34 48 50.4	48.6	....
21	Γ H. Draconis.....	9	23 9.78	-1.41	-10.64	9 22	....	356 4 44.25	49.02	51.3	+81 46 14.0	12.7	....
22	θ Ursæ Majoris.....	9	26 24.43	-0.23	-11.02	9 26	....	25 42 20.82	25.48	13.0	+52 7 59.5	58.4	....
23	ι Leonis Minoris.....	9	28 19.77	-0.11	11.11	9 28	....	40 59 39.95	44.85	2.0	36 50 25.1	24.0	....
24	ν Leonis.....	9	36 2.29	+0.03	11.13	9 35	....	67 28 58.50	64.45	30.2	10 20 38.6	36.4	....
25	ϵ Leonis.....	9	40 24.22	-0.04	11.12	9 40	....	53 35 57.72	61.98	14.5	24 13 55.0	54.5	....
26	ν Ursæ Majoris.....	9	44 7.66	-0.33	11.14	9 43	....	18 19 53.40	59.30	20.8	+59 30 34.7	32.3	....
27	6 Sextantis.....	9	46 25.08	+0.11	11.18	9 46	....	81 36 3.25	7.90	51.1	- 3 46 47.0	47.9	....
28	Groombridge 1586.....	9	49 43.35	-0.68	-11.29	9 49	....	4 29 21.35	26.65	38.0	+73 21 23.8	22.0	....
29	ι Leonis Minoris.....	9	51 47.78	-0.14	-11.18	9 51	....	36 18 19.38	25.02	2.5	+41 31 50.5	48.3	....
30	π Leonis.....	9	55 9.30	+0.04	11.15	9 54	....	69 18 22.05	26.48	32.6	8 31 12.6	12.0	....
31	η Leonis.....	9	2 6.53	0.00	11.19	10 1	....	60 34 57.58	60.62	22.1	+17 14 47.5	48.3	....
32	λ Hydræ.....	9	5 56.21	+0.15	11.21	10 5	....	89 40 56.00	62.68	68.0	-11 51 56.6	59.5	....
33	λ Ursæ Majoris.....	9	11 18.29	-0.16	11.15	10 11	....	34 25 27.78	31.30	4.4	+43 24 44.0	44.0	....
34	μ Ursæ Majoris.....	9	16 36.65	0.15	11.21	10 16	....	35 50 6.80	12.68	3.0	42 0 3.6	1.2	....
35	β Leonis Minoris.....	9	22 20.21	-0.12	-11.10	10 22	....	40 37 0.78	4.45	1.7	+37 13 4.6	4.7	....
36	β Ursæ Majoris.....	8	24 28.60	-0.29	-11.19	10 24	....	21 20 49.78	55.05	17.6	+56 29 35.2	33.4	....
37	η H. Draconis.....	8	26 53.29	-0.86	10.98	10 26	....	1 37 5.40	9.12	42.4	76 13 44.1	43.9	....
38	ι Leonis.....	9	44 13.88	+0.03	11.15	10 44	....	66 45 25.10	28.78	29.5	11 4 12.7	12.7	....
39	Groombridge 1706.....	9	52 16.30	-1.08	11.57	10 52	....	359 32 30.10	35.32	45.8	78 18 22.8	21.0	....
40	α Ursæ Majoris.....	9	57 48.88	-0.41	11.18	10 57	....	15 33 6.15	9.28	24.1	62 17 25.3	25.6	....
41	χ Leonis.....	9	0 5.39	+0.04	11.18	10 59	....	69 57 14.15	16.78	33.6	7 52 19.5	20.7	....
42	ρ^3 Leonis.....	9	2 1.99	+0.07	-11.17	11 1	....	75 19 48.62	53.72	41.2	+ 2 29 37.5	36.2	....
43	ψ Ursæ Majoris.....	9	4 17.04	-0.19	-11.14	11 4	....	32 47 51.75	55.58	6.0	+45 2 21.6	21.3	....
44	δ Leonis.....	9	9 1.47	0.03	11.16	11 8	....	56 45 44.30	47.88	18.0	21 4 4.9	5.1	....
45	ν Ursæ Majoris.....	9	13 18.94	0.11	11.16	11 13	....	44 11 47.90	53.08	5.2	33 38 14.0	12.6	....
46	Groombridge 1771.....	9	17 10.62	-0.48	11.26	11 16	....	12 56 56.30	60.08	27.2	64 52 38.2	37.9	....
47	τ Leonis.....	9	23 1.58	+0.07	11.17	11 22	....	74 25 18.28	23.15	39.9	3 24 9.1	8.0	....
48	λ Draconis.....	9	25 44.52	-0.64	11.18	11 25	....	7 57 43.10	46.32	33.6	+69 52 57.7	58.0	....
49	ν Leonis.....	9	32 3.71	+0.09	11.26	11 31	....	78 5 57.70	61.60	45.6	- 0 16 36.0	36.1	....

Bisections are made at II and VI, except as noted below.

Time.	Barom.	Att. Ther.	Ext. Ther.		
d h m	cm.	°	°		
26 11 11	75.32	16.7	16.7	2, 6, 8, 11, 12, 14, 16, 17, 21, 22, 26, 28,	} Bisections at III and V.
11 48	75.33	16.1	16.4	29, 33, 34, 36, 37, 39, 40, 43, 46, 48,	
27 9 0	75.30	21.1	20.6	18.	} Bisections at IV and V.
9 34	75.33	20.3	19.9		
9 58	75.35	19.7	19.5	Notes.	
10 38	75.43	19.0	18.7	24, 37. First bisection doubtful.	
11 11	75.48	18.5	18.2	28. Faint.	
Adopted Equator Point Corrections.					
° ' " A. B.					
1-14, from nadir -77 50 10.8 11.2					
15-49, from nadir 8.6 11.8					

NO.	NAME.	THDS.	MEAN THREAD.	c_0 /SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	3 Draconis	9	37 9.77	-0.57	-11.16	11 36	....	10 32 46.12	48.98	30.3	+67 17 51.5	52.1	....
2	χ Ursæ Majoris	9	41 0.91	0.24	11.11	11 40	....	29 30 21.75	25.12	9.3	48 19 54.9	55.0	....
3	β Leonis	9	44 11.59	0.01	11.13	11 44	....	62 42 6.30	10.12	24.7	15 7 36.2	36.2	....
4	γ Ursæ Majoris	9	48 49.25	-0.32	-11.11	11 48	....	23 35 25.45	29.82	15.4	+54 14 57.3	56.4	....

UPDEGRAFF, OBSERVER.

1900 JUNE 5.

CLAMP EAST.

LITTELL, ASSISTANT.

5	43 H. Cephei s. p.	9	55 18.41	+5.01	[-21.99]	0 55 1.91	+0.04	94 15 14.30	12.58	80.5	+85 43 11.0	10.9	+4.4
6	α Ursæ Minoris s. p.	7	22 31.86	16.70	[22.99]	1 22	....	91 12 10.82	8.82	72.2	+88 46 21.9	23.9	....
7	m Virginis	9	36 46.25	0.10	[21.40]	13 36	....	351 48 36.22	33.22	60.2	-8 12 9.5	11.8	....
8	83 Virginis	9	39 30.62	0.16	21.44	13 39 9.30	-3.34	344 20 12.62	9.80	78.5	15 40 51.9	52.6	18.5
9	89 Virginis	9	44 50.89	0.18	21.49	13 44 29.59	-3.39	312 22 41.95	39.88	84.5	-17 38 28.5	28.5	18.6
10	50 Cassiopeiae s. p.	9	55 15.08	+1.14	[-21.63]	1 54 54.75	-1.39	108 1 7.45	5.82	145.5	+71 56 12.6	12.6	+3.5
11	94 Virginis	9	1 24.71	+0.10	-21.49	14 1 3.35	-3.34	351 35 40.38	36.38	60.7	-8 25 6.3	8.2	+15.4
12	Rad. 1890, 3678	9	8 45.48	0.13	21.46	14 8 24.15	-3.42	348 38 26.20	25.45	67.4	11 22 27.2	25.8	15.7
13	W. B., XIV. 184	9	13 51.09	0.13	21.45	14 13 29.77	-3.45	348 24 33.72	31.45	68.0	11 36 20.3	20.4	15.5
14	Anonymous	9	18 42.85	0.13	21.45	14 18 21.53	-3.49	347 29 7.72	6.38	70.3	12 31 48.6	47.8	15.4
15	Mayer 589	9	22 44.79	+0.14	-21.45	14 22 23.48	-3.52	347 6 6.78	5.55	71.3	-12 54 50.5	49.6	+15.2
16	Mayer 592	9	32 5.33	+0.13	-21.40	14 31 44.02	-3.52	348 7 50.58	51.18	68.7	-11 53 4.1	1.4	+14.2
17	8 Libræ	9	45 34.23	+0.16	21.47	14 45 12.96	-3.67	344 25 56.80	54.92	78.6	-15 35 7.8	7.5	+14.2
18	β Andromedæ	9	4 31.44	-0.34	[21.44]	1 4	....	35 5 16.20	16.48	3.7	+35 5 26.1	26.3	....
19	α Ursæ Minoris	9	23 12.43	0.16	[22.62]	1 22	....	88 45 2.98	1.55	65.7	88 46 21.9	20.3	....
20	β Arietis	9	49 30.06	-0.16	[-21.47]	1 49	....	20 19 20.05	18.68	18.6	+20 19 15.0	13.6	....

UPDEGRAFF, OBSERVER.

1900 JUNE 6.

CLAMP EAST.

LITTELL, ASSISTANT.

21	83 Virginis	9	39 30.87	+0.13	-21.66	13 39 9.29	-3.34	344 20 12.28	10.50	78.0	-15 40 52.0	52.6	+18.4
22	89 Virginis	9	44 51.14	0.14	21.70	13 44 29.58	-3.39	342 22 42.98	41.22	84.0	-17 38 27.3	27.9	18.6
23	50 Cassiopeiae s. p.	9	55 15.63	0.78	[21.75]	1 54 54.72	1.46	108 1 8.28	8.42	144.7	+71 56 12.9	12.1	3.6
24	94 Virginis	9	1 24.97	0.08	21.73	14 1 3.37	-3.34	351 35 39.70	38.32	60.4	-8 25 7.0	7.3	15.3
25	Rad. 1890, 3678	9	8 45.71	0.10	21.67	14 8 24.14	-3.42	348 38 26.18	26.48	67.0	11 22 27.1	25.7	15.7
26	W. B., XIV. 184	9	13 51.27	+0.10	-21.66	14 13 29.71	-3.45	348 24 32.88	31.20	67.6	-11 36 21.0	21.6	+15.4
27	W. B., XIV. 283	9	18 49.36	+0.11	-21.66	14 18 27.81	-3.49	347 31 29.38	27.55	69.8	-12 29 26.7	27.4	+15.3
28	Mayer 589	9	22 45.02	0.11	21.65	14 22 23.48	-3.51	347 6 6.48	5.90	70.8	12 54 50.6	50.1	15.2
29	Mayer 592	9	32 5.53	0.10	21.57	14 31 43.99	-3.52	348 7 50.58	50.58	68.3	11 53 4.0	2.9	14.2
30	8 Libræ	9	45 34.38	0.13	21.59	14 45 12.89	-3.67	344 25 56.32	55.68	78.1	15 35 8.0	7.6	14.1
31	ζ Libræ	9	23 2.30	+0.13	-21.67	15 22 40.86	-3.83	343 38 50.90	49.78	80.5	-16 22 15.9	15.9	+11.4

UPDEGRAFF, OBSERVER.

1900 JUNE 7.

CLAMP EAST.

LITTELL, ASSISTANT.

32	α Ursæ Minoris s. p.	7	22 46.00	+3.03	[-21.66]	1 22	....	91 12 12.35	10.55	70.4	+88 46 21.5	23.9	....
33	83 Virginis	9	39 31.12	0.08	21.37	13 39 9.33	-3.33	344 20 11.08	8.22	76.7	-15 40 51.3	52.2	+18.4
34	89 Virginis	9	44 51.36	0.08	21.87	13 44 29.57	-3.38	342 22 40.00	38.48	82.5	-17 38 28.2	27.8	18.6
35	50 Cassiopeiae s. p.	9	55 15.63	0.78	21.75	1 54	....	108 1 10.18	10.72	142.1	+71 56 13.0	11.0	3.7
36	94 Virginis	9	1 25.12	+0.06	-21.87	14 1 3.31	-3.33	351 35 37.72	35.55	59.3	-8 25 7.3	7.6	+15.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.				Eq. Pt. Cor. from stars.		
								No.	A.	B.
d h m	cm.	°	°							
27 11 52	75.54	17.7	17.0					8	+12.4	+14.9
5 13 13	75.98	21.5	20.1					9	13.3	15.1
14 4	75.96	20.3	19.0					11	11.9	15.6
14 51	75.95	19.4	18.2					16	14.6	13.7
1 3	75.96	18.7	21.3					17	13.5	15.0
1 57	75.96	20.7	22.5					21	12.3	13.7
6 13 38	75.76	21.6	20.4					22	11.8	13.2
14 11	75.76	21.0	19.7					24	12.4	13.5
15 18	75.74	19.8	18.8					29	14.2	13.9
7 13 13	75.31	25.5	24.2					30	13.5	13.9
13 42	75.34	25.0	23.8					31	[12.9]	[13.7]
								33	12.2	14.7
								34	13.3	14.5
								36	+13.4	+15.3

I, 2, 4, 10, 23, 35.
5, 6, 19, 32.
18, 20.

Note.
14. Another star n. f.

Bisections at III and V.
Bisections at c_2 and c_1 .
Bisection at IV.

Adopted Equator Point Corrections.

$\begin{matrix} \circ & \wedge & \text{A.} & \text{B.} \\ \text{I-4, from nadir} & \dots & -77.50 & 8.6 & 11.8 \\ \text{6, 7, from nadir} & \dots & +13.6 & +13.7 \\ \text{5, 8-17, from stars} & \dots & +13.1 & +14.9 \\ \text{18-20, from nadir} & \dots & +12.6 & +12.5 \\ \text{21-31, from stars} & \dots & +12.8 & +13.6 \\ \text{32, from nadir} & \dots & +14.3 & +13.7 \\ \text{33-36, from stars} & \dots & +13.4 & +15.0 \end{matrix}$

NO.	NAME.	THDS.	MEAN THREAD.	$c_0' \text{ SEC } \delta$ + $n \text{ TAN } \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Rad. 1890, 3678 ...	9	m 8 45.89	s +0.07	-21.87	14 8 24.09	-3.42	348 38 24.72	23.78	65.8	-11 22 26.8	25.8	+15.6
2	W. B., XIV. 184 ...	9	13 51.52	0.07	21.87	14 13 29.72	3.45	348 24 31.55	29.35	66.4	11 36 20.5	20.8	15.3
3	W. B., XIV. 283 ...	9	18 49.58	0.07	21.87	14 18 27.78	3.49	347 31 27.70	25.85	68.6	12 29 26.6	26.5	15.2
4	Mayer 589 ...	9	22 45.20	0.07	21.87	14 22 23.40	3.51	347 6 4.85	3.60	69.6	12 54 50.4	49.8	15.1
5	Mayer 592 ...	9	32 5.82	0.07	21.84	14 31 44.03	3.49	348 7 48.95	48.38	67.2	11 53 3.9	2.6	14.1
6	Librae ...	9	45 34.70	0.08	21.86	14 45 12.92	3.67	344 25 55.18	53.08	76.8	15 35 7.3	7.5	14.1
7	Librae ...	9	23 2.53	+0.09	-21.86	15 22 40.76	-3.83	343 38 49.38	47.95	79.2	-16 22 14.7	15.1	+11.4
8	Librae ...	9	30 21.46	+0.08	-21.85	15 29 59.69	-3.81	345 33 27.65	24.40	73.8	-14 27 31.0	33.3	+10.4
9	Librae ...	9	36 36.74	0.10	21.89	15 36 14.99	3.95	340 39 46.08	46.48	88.7	19 21 27.5	26.0	10.6
10	Librae ...	9	49 39.26	0.10	21.85	15 49 17.51	3.98	340 55 47.50	47.75	87.8	19 5 25.2	23.8	9.3
11	Lal. 29044 ...	9	53 45.09	0.11	21.85	15 53 23.35	4.01	340 21 60.25	59.38	89.8	19 39 14.4	14.1	9.0
12	Lal. 29156 ...	9	57 44.13	0.11	21.85	15 57 22.39	4.02	340 27 20.60	20.15	89.5	19 33 53.8	53.0	8.6
13	O. A. 15199 ...	9	0 15.57	0.12	21.85	15 59 53.84	4.08	338 27 15.98	16.22	96.9	21 34 5.8	4.3	8.6
14	Scorpii ...	9	1 58.12	+0.11	-21.84	16 1 36.39	-4.06	339 25 15.42	14.35	93.2	-20 36 2.6	2.5	+8.3
15	Scorpii ...	9	6 36.70	+0.11	-21.84	16 6 14.97	-4.03	340 49 1.80	2.82	88.2	-19 12 11.2	9.0	+7.8
16	Lal. 29552 ...	8	9 18.73	0.10	21.84	16 8 56.99	4.01	341 44 17.70	...	85.2	18 16 52.4	...	7.5
17	B. D. -18° 4266 ...	9	15 7.44	0.11	21.84	16 14 45.71	4.03	341 34 5.82	4.18	85.8	18 27 4.8	5.2	7.0
18	Lal. 29770 ...	8	17 18.97	0.12	21.84	16 16 57.25	4.16	337 8 22.98	22.48	102.2	22 53 4.0	3.2	7.0
19	Ophiuchi ...	9	21 39.39	0.11	21.84	16 21 17.66	4.03	341 47 16.98	17.08	85.1	18 13 53.0	51.6	6.3
20	B. D. -21° 4366 ...	8	23 50.38	0.12	21.84	16 23 28.66	4.12	338 40 24.12	...	96.1	21 20 56.8	...	6.3
21	Ophiuchi ...	9	26 38.32	+0.12	-21.84	16 26 16.60	-4.13	338 46 4.95	5.48	95.7	-21 15 15.6	13.6	+6.0
22	Lal. 30207 ...	9	32 45.71	+0.13	-21.84	16 32 24.00	-4.18	337 19 56.02	53.88	101.5	-22 41 30.3	31.0	+5.5
23	Mayer 671 ...	9	35 6.56	0.12	21.84	16 34 44.84	4.11	339 48 22.18	23.00	91.9	20 12 54.6	52.3	5.2
24	O. A. 15868 ...	9	37 31.30	0.12	21.84	16 37 9.58	4.14	338 52 7.25	7.15	95.4	21 9 13.0	11.6	5.0
25	Lal. 30551 ...	9	44 2.97	0.12	21.83	16 43 41.26	4.16	338 20 42.15	41.45	97.4	21 40 40.0	39.3	4.3
26	Ophiuchi ...	9	51 12.00	0.13	21.78	16 50 50.30	4.21	337 1 53.30	52.75	102.8	22 59 34.3	33.4	3.6
27	Ophiuchi ...	7	5 4.25	0.10	21.82	17 4 42.52	4.01	344 24 ...	54.32	77.2	15 36 ...	6.1	2.2
28	Ophiuchi ...	9	9 37.86	+0.15	21.89	17 9 16.18	-4.32	333 34 20.28	18.65	119.6	-26 27 24.1	24.0	+2.2

1900 JUNE 8.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

29	β Andromedæ ...	9	4 31.71	-0.07	-21.88	1 4 ...	...	35 5 15.85	15.35	3.7	+35 5 26.8	26.9	...
30	α Ursæ Minoris ...	8	22 57.16	5.98	22.29	1 22 ...	...	88 45 2.78	0.32	64.9	88 46 21.9	20.0	...
31	β Arietis ...	9	49 30.43	-0.01	-21.91	1 49 ...	...	20 19 19.08	16.85	18.4	+20 19 15.4	13.6	...

1900 JUNE 9.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

32	α Ursæ Minoris S. P. ...	7	22 51.86	-1.95	[-20.49]	1 22 ...	...	91 12 12.85	10.75	70.9	+88 46 21.2	23.0	...
33	83 Virginis ...	9	39 31.11	+0.04	21.83	13 39 9.32	-3.32	344 20 11.35	8.35	77.1	-15 40 52.3	52.7	+18.3
34	89 Virginis ...	9	44 51.32	+0.04	21.80	13 44 29.53	3.37	342 22 41.32	38.68	82.9	-17 38 28.1	28.2	18.6
35	50 Cassiopeiæ S. P. ...	9	55 16.83	-0.10	[21.86]	1 54 54.90	1.67	108 1 10.25	8.78	142.8	+71 56 13.1	12.5	4.0
36	94 Virginis ...	9	1 25.11	+0.04	21.85	14 1 3.33	3.32	351 35 40.00	36.88	59.6	-8 25 6.2	6.7	15.1
37	Rad. 1890, 3678 ...	9	8 45.96	0.05	21.82	14 8 24.19	3.41	348 38 25.02	24.88	66.1	11 22 27.7	25.2	15.5
38	W. B., XIV. 184 ...	9	13 51.48	+0.05	-21.82	14 13 29.71	-3.44	348 24 31.75	29.60	66.6	-11 36 21.4	21.0	+15.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.				Eq. Pt. Cor. from stars.		
				No.	A.	B.				
d h m	cm.	°	°							
7 14 12	75.36	24.2	23.1	14, 25.	Bisections at IV and VI.		5	+14.8	+15.1	
14 56	75.35	23.5	22.3	16, 27.	Bisection at VI.		6	13.4	15.2	
15 27	75.34	23.0	21.9	20, 29, 31.	Bisection at IV.		7	13.1	14.2	
16 30	75.32	22.3	21.4	30, 32.	Bisections at c_1 and c_5 .		8	13.4	16.4	
17 7	75.30	22.1	21.0	35.	Bisections at III and V.		9	14.9	14.2	
8 1 15	75.43	22.4	22.8				26	15.2	15.5	
9 13 37	75.72	24.5	23.8				27	...	15.4	
14 11	75.72	24.0	23.6				28	14.3	15.6	
				11.	Double; observed brighter s. f.		33	12.4	15.1	
				16, 17, 18, 20.	Clouds		34	12.3	14.7	
				30.	Seeing good.		36	+11.5	+14.3	
				Adopted Equator Point Corrections.						
				A. B.						
				1-6, from stars ... +13.4 +15.0						
				7-28, from stars ... +14.2 *						
				29-31, from nadir ... +13.7 +14.2						
				32, from nadir ... +13.6 +13.9						
				33-38, from stars ... +12.5 +14.9						
				* Interpolated from diagram.						

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	W. B., XIV. 283 ..	9	m 18 49.61	s +0.05	s -21.82	h m s 14 18 27.84	s -3.48	347 31 29.35	26.00	68.8	-12 29 26.0	26.8	+15.1
2	Mayer 589	9	22 45.23	0.05	21.82	14 22 23.46	3.51	347 6 5.15	3.55	69.8	12 54 51.2	50.2	15.0
3	Mayer 592	9	32 5.78	0.05	21.78	14 31 44.01	3.51	348 7 50.05	49.22	67.3	11 53 3.8	2.0	14.0
4	8 Libræ	9	45 34.70	0.05	21.83	14 45 12.93	3.67	344 25 56.32	53.08	77.0	15 35 7.3	7.9	14.0
5	5' Libræ	9	23 2.54	0.06	21.83	15 22 40.79	3.84	343 38 50.20	48.38	79.4	16 22 14.9	14.5	11.2
6	7' Libræ	9	30 21.45	0.06	21.81	15 29 59.70	3.82	345 33 28.30	24.35	74.1	14 27 31.5	33.3	10.4
7	κ Libræ	9	36 36.71	+0.06	-21.81	15 36 14.96	-3.96	340 39 47.38	46.20	89.0	-19 21 27.3	26.3	+10.5
8	47 Libræ	9	49 39.27	+0.07	-21.80	15 49 17.54	-3.99	340 55 50.90	47.78	88.3	-19 5 23.0	24.0	+9.3
9	Lal. 29044	9	53 45.16	0.07	21.79	15 53 23.44	4.02	340 22 3.25	1.08	90.3	19 39 12.7	12.9	9.0
10	Lal. 29156	9	57 44.09	0.07	21.79	15 57 22.37	4.03	340 27 22.82	21.75	90.0	19 33 52.8	51.9	8.6
11	O. A. 15199	9	0 15.66	0.07	21.79	15 59 53.94	4.09	338 27 20.25	18.52	97.5	21 34 2.9	2.6	8.6
12	ω ² Scorpii	9	1 58.19	0.07	21.79	16 1 36.47	4.07	339 25 16.88	15.90	93.8	20 36 2.6	1.5	8.3
13	ν Scorpii	9	6 36.73	0.07	21.79	16 6 15.01	4.05	340 49 3.85	3.50	88.9	19 12 10.7	9.0	7.7
14	Lal. 29552	9	9 18.69	+0.07	-21.79	16 8 56.97	-4.02	341 44 20.75	19.68	85.9	-18 16 50.8	49.9	+7.4
15	Piazzi XVI. 28.	9	11 34.22	+0.07	-21.79	16 11 12.50	-4.07	340 9 50.12	49.55	91.3	-19 51 26.8	25.4	+7.3
16	B. D. -18° 4266 ..	9	15 7.36	0.07	21.79	16 14 45.64	4.04	341 34 8.10	6.05	86.5	18 27 4.1	4.1	6.9
17	Lal. 29770	9	17 18.99	0.08	21.78	16 16 57.29	4.17	337 8 25.15	24.62	103.2	22 53 3.7	2.3	7.0
18	χ Ophiuchi	9	21 39.37	0.07	21.78	16 21 17.66	4.05	341 47 20.02	18.60	85.9	18 13 51.5	51.0	6.2
19	B. D. -21° 4366 ..	9	23 50.37	0.08	21.78	16 23 28.67	4.14	338 40 26.78	25.48	97.0	21 20 55.9	55.2	6.2
20	ω Ophiuchi	9	26 38.27	0.08	21.78	16 26 16.57	4.14	338 46 7.50	7.70	96.6	21 15 14.7	12.6	6.0
21	O. A. 15742	9	29 21.32	+0.08	-21.78	16 28 59.62	-4.10	340 17 16.52	16.95	91.0	-19 43 60.1	57.8	+5.6
22	O. A. 15773	8	32 7.16	+0.08	-21.78	16 31 45.46	-4.17	338 10 9.32	8.35	99.0	-21 51 15.3	14.4	+5.5
23	Mayer 671	9	35 6.56	0.08	21.78	16 34 44.86	4.12	339 48 24.80	24.52	92.7	20 12 53.6	51.9	5.1
24	O. A. 15868	9	37 31.24	0.08	21.78	16 37 9.54	4.16	338 52 9.75	8.78	96.2	21 9 12.1	11.1	4.9
25	Lal. 30551	9	44 3.01	0.08	21.77	16 43 41.32	4.18	338 20 45.12	44.05	98.3	21 40 38.8	38.1	4.3
26	24 Ophiuchi	9	51 12.02	0.09	21.74	16 50 50.34	4.23	337 1 56.32	54.08	103.8	22 59 32.9	33.5	3.6
27	η Ophiuchi	9	5 4.24	0.08	21.77	17 4 42.55	4.03	344 24 57.90	55.98	77.9	15 36 5.7	5.8	2.1
28	36 Ophiuchi	9	9 37.83	+0.10	-21.79	17 9 16.17	-4.34	333 34 21.42	20.48	120.7	-26 27 24.9	24.0	+2.2

UPDEGRAFF, OBSERVER.

1900 JUNE 11.

CLAMP EAST.

LITTELL, ASSISTANT.

29	θ Virginis	9	5 10.95	+0.03	[-21.73]	13 4 .....	....	355 0 .....	....	....	-5 0 .....	....	....
30	α Ursæ Minoris S. P.	4	23 4.20	-10.62	[22.02]	1 22 .....	....	91 12 13.00	5.65	70.0	+88 46 21.6	22.6	....
31	83 Virginis	9	39 31.03	0.01	21.71	13 39 9.27	-3.31	344 20 10.25	1.08	76.2	-15 40 51.0	52.0	+18.2
32	89 Virginis	9	44 51.35	0.02	21.78	13 44 29.59	3.36	342 22 39.45	29.68	82.0	-17 38 27.6	29.2	18.5
33	50 Cassiopeiae S. P.	9	55 17.37	-0.70	[21.66]	1 54 54.93	1.81	108 1 10.90	5.55	141.2	+71 56 12.6	10.2	4.2
34	94 Virginis	9	1 25.01	+0.01	21.73	14 1 3.29	3.31	351 35 37.35	29.00	58.9	-8 25 6.7	6.8	15.0
35	Rad. 1890, 3678 ..	9	8 45.82	+0.01	-21.73	14 8 24.10	-3.40	348 38 23.82	16.48	65.4	-11 22 26.7	25.8	+15.4
36	W. B., XIV. 184 ..	9	13 51.44	+0.01	-21.72	14 13 29.73	-3.43	348 24 30.55	21.75	65.9	-11 36 20.4	21.0	+15.1
37	W. B., XIV. 283 ..	9	18 49.47	0.00	21.72	14 18 27.75	3.47	347 31 27.52	18.15	68.1	12 29 25.7	26.8	15.0
38	Mayer 589	9	22 45.11	0.00	21.72	14 22 23.39	3.50	347 5 64.80	55.58	69.1	12 54 49.4	50.4	14.9
39	Mayer 592	9	32 5.73	0.01	21.70	14 31 44.03	3.50	348 7 47.52	41.02	66.7	11 53 4.3	2.5	13.9
40	8 Libræ	9	45 34.64	0.00	21.73	14 45 12.94	3.66	344 25 53.72	46.78	76.2	15 35 7.6	6.3	13.9
41	5' Libræ	9	23 2.44	0.00	21.67	15 22 40.76	3.84	343 38 48.38	41.42	78.6	16 22 14.7	14.5	11.2
42	7' Libræ	9	30 21.35	+0.01	-21.66	15 29 59.68	-3.82	345 33 26.28	17.35	73.3	-14 27 31.5	33.3	+10.3
43	κ Libræ	9	36 36.64	0.00	-21.68	15 36 14.96	-3.96	340 39 45.08	38.92	88.1	-19 21 27.5	26.5	+10.4
44	47 Libræ	9	49 39.24	0.00	21.68	15 49 17.56	4.00	340 55 47.95	40.80	87.2	19 5 23.7	23.7	9.2
45	Lal. 29044	9	53 45.07	0.00	21.68	15 53 23.39	4.03	340 21 60.82	52.05	89.2	19 39 12.8	14.5	8.9
46	Lal. 29156	9	57 44.04	0.00	21.68	15 57 22.36	4.04	340 27 17.95	13.78	88.9	19 33 55.4	52.4	8.5
47	O. A. 15199	9	0 15.60	-0.01	21.68	15 59 53.91	4.10	338 27 15.42	9.32	96.2	21 34 5.2	4.2	8.5
48	ω ² Scorpii	9	1 58.08	0.00	-21.67	16 1 36.41	-4.08	339 25 14.65	7.70	92.6	-20 36 2.4	2.2	+8.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.				Eq. Pt. Cor. from stars.		
								No.	A.	B.
d h m	cm.	°	°						"	"
9 14 39	75.73	23.9	23.5	13. Bisections at IV and VI.				3	+13.9	+14.4
15 34	75.74	23.3	22.6	30. Bisections at c ₅ and c ₂ .				4	12.6	15.5
16 20	75.77	22.0	20.4	33. Bisections at III and V.				5	12.7	14.2
16 47	....	....	20.4	Notes.				6	13.1	16.7
17 7	75.80	21.0	20.2	1. Very unsteady.				7	14.0	14.8
II 13 38	75.68	28.0	26.9	25. Seeing bad; very cold wave.				26	13.2	15.1
14 16	75.67	27.4	26.2	30. Through clouds.				27	13.0	14.6
15 33	75.68	26.2	25.0	44. 46. First bisection doubtful.				28	14.3	14.9
				Seeing bad.				31	12.7	21.6
				Adopted Equator Point Corrections.				32	13.4	22.9
				A. B.				34	13.6	21.6
				1-4, from stars..... +12.5 +14.9				39	16.0	22.1
				5-28, from stars..... +13.4 *				40	14.5	21.1
				29, 30, from nadir..... +14.0 +20.6				41	13.7	20.3
				31-40, from stars..... +14.0 +21.9				42	14.4	23.0
				41-48, from stars..... +14.6 +21.4				43	+15.5	+21.3
				* Interpolated from diagram.						

NO.	NAME.	THDS.	MEAN THREAD.	c_0 ' SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ν Scorpii.....	9	m 6 36.66	0.00	-21.67	16 6 14.99	-4.05	340 48 61.00	54.90	87.7	-19 12 11.2	10.1	+7.7
2	Lal. 29552.....	9	s 9 18.63	0.00	-21.67	16 8 56.96	4.03	341 44 17.70	9.88	84.6	18 16 51.4	52.1	7.3
3	B. D. -18° 4266 ..	8	s 15 7.35	0.00	-21.67	16 14 45.68	4.05	341 33 64.10	57.28	85.2	18 27 5.5	5.3	6.8
4	ψ Ophiuchi.....	9	s 18 40.71	0.00	-21.67	16 18 19.04	4.10	340 12 55.85	48.35	89.8	19 48 18.4	18.8	6.6
5	χ Ophiuchi.....	9	s 21 39.36	0.00	-21.67	16 21 17.69	4.06	341 47 16.68	10.45	84.5	18 13 52.3	51.4	6.2
6	B. D. -21° 4366...	8	s 23 50.37	0.00	-21.67	16 23 28.70	4.16	338 40 23.60	17.30	95.5	21 20 56.3	55.5	6.2
7	ω Ophiuchi.....	9	s 26 38.22	0.00	-21.67	16 26 16.55	-4.16	338 45 63.45	58.70	95.2	-21 15 16.2	13.8	+5.9
8	O. A. 15742.....	9	s 29 21.27	0.00	-21.67	16 28 59.60	4.12	340 17 13.45	7.30	89.6	-19 43 60.6	59.6	+5.5
9	Lal. 30207.....	9	s 32 45.64	0.00	-21.67	16 32 23.97	4.21	337 19 54.60	47.72	100.9	22 41 30.7	30.5	5.4
10	Mayer 671.....	9	s 35 6.54	0.00	-21.67	16 34 44.87	4.14	339 48 20.78	14.78	91.4	20 12 55.1	54.0	5.0
11	O. A. 15868.....	9	s 37 31.24	0.00	-21.67	16 37 9.57	4.17	338 52 6.85	0.82	94.8	21 9 12.4	11.3	4.8
12	Lal. 30551.....	9	s 44 2.99	0.00	-21.66	16 43 41.33	4.20	338 20 40.22	34.70	96.9	21 40 41.1	39.5	4.2
13	24 Ophiuchi.....	9	s 51 12.03	0.00	-21.64	16 50 50.37	4.25	337 1 54.12	47.15	102.3	22 59 32.6	32.5	3.5
14	36 Ophiuchi.....	9	s 9 37.85	0.00	-21.68	17 9 16.19	-4.37	333 34 18.60	11.85	119.0	-26 27 24.8	24.4	+2.2

1900 JUNE 19.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

15	ζ Librae.....	9	s 23 2.41	+0.14	-21.78	15 22 40.77	-3.84	343 38 49.55	43.28	81.9	-16 22 16.0	15.5	+11.2
16	γ Librae.....	9	s 30 21.32	0.13	-21.74	15 29 59.67	3.83	345 33 27.92	20.90	76.4	14 27 32.2	32.4	10.1
17	κ Librae.....	9	s 36 36.62	0.16	-21.81	15 36 15.01	3.97	340 39 49.38	42.75	91.7	19 21 26.0	25.9	10.5
18	47 Librae.....	9	s 49 39.16	0.16	-21.76	15 49 17.56	4.02	340 55 50.95	44.30	90.8	19 5 23.5	23.6	9.3
19	Lal. 29044.....	9	s 53 45.07	0.16	-21.76	15 53 23.47	4.05	340 21 61.98	56.60	92.8	19 39 14.5	13.3	9.0
20	Lal. 29156.....	9	s 57 44.03	+0.16	-21.76	15 57 22.43	-4.06	340 27 22.50	16.95	92.5	-19 33 53.7	52.7	+8.6
21	O. A. 15199.....	9	s 0 15.46	+0.18	-21.76	15 59 53.88	-4.13	338 27 19.42	13.62	100.2	-21 34 4.4	3.8	+8.7
22	ν Scorpii.....	9	s 6 36.66	0.16	-21.75	16 6 15.07	4.08	340 48 64.08	58.90	91.3	19 12 10.9	9.6	7.7
23	Lal. 29552.....	9	s 9 18.63	0.16	-21.75	16 8 57.04	4.06	341 44 21.90	15.15	88.1	18 16 49.9	50.3	7.4
24	Piazzi XVI. 28 ..	9	s 11 34.18	0.17	-21.75	16 11 12.60	4.12	340 9 51.48	45.55	93.6	19 51 25.8	25.4	7.4
25	B. D. -18° 4266 ..	9	s 15 7.35	0.16	-21.75	16 14 45.76	4.09	341 34 8.40	0.85	88.7	18 27 4.0	5.2	6.8
26	Lal. 29770.....	9	s 17 18.99	+0.19	-21.75	16 16 57.43	-4.22	337 8 25.30	19.62	105.8	-22 53 4.1	3.5	+7.2
27	χ Ophiuchi.....	9	s 21 39.37	+0.16	-21.75	16 21 17.78	-4.10	341 47 20.65	14.32	88.0	-18 13 51.0	51.1	+6.2
28	B. D. -21° 4366 ..	9	s 23 50.32	0.18	-21.74	16 23 28.76	4.20	338 40 27.13	20.40	99.4	21 20 55.9	56.4	6.4
29	ω Ophiuchi.....	9	s 26 38.26	0.18	-21.74	16 26 16.70	4.20	338 46 8.25	2.08	99.0	21 15 14.4	14.3	6.1
30	O. A. 15742.....	6	s 29 21.28	0.17	-21.74	16 28 59.71	4.16	340 17 16.50	11.75	93.2	19 43 60.3	59.0	5.6
31	Uranus.....	9	s 32 41.06	0.18	-21.74	16 32 19.50	....	338 8 34.80	29.02	101.5	21 52 50.3	50.0	....
32	Mayer 671.....	9	s 35 6.58	+0.17	-21.74	16 34 45.01	-4.19	339 48 24.78	19.98	95.0	-20 12 53.9	52.6	+5.1
33	O. A. 15868.....	9	s 37 31.23	+0.18	-21.74	16 37 9.67	-4.23	338 52 9.65	3.92	98.6	-21 9 12.6	12.3	+5.0
34	Lal. 30551.....	9	s 44 2.98	0.18	-21.73	16 43 41.43	4.25	338 20 45.08	39.20	100.7	21 40 39.3	39.1	4.4
35	24 Ophiuchi.....	9	s 51 11.86	0.19	-21.60	16 50 50.32	4.31	337 1 56.60	51.15	106.3	22 59 33.3	32.9	3.7
36	η Ophiuchi.....	9	s 5 4.27	0.14	-21.77	17 4 42.69	4.12	344 24 58.40	51.65	79.8	15 36 5.1	6.1	1.6
37	36 Ophiuchi.....	9	s 9 37.82	+0.22	-21.79	17 9 16.32	-4.45	333 34 27.20	21.28	123.5	-26 27 19.9	20.1	+2.6

1900 JUNE 20.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

38	α Ursæ Minoris S. P.	8	s 22 56.62	+5.45	[-21.99]	1 22 ....	....	91 12 9.90	3.58	71.6	+88 46 20.6	22.4	....
39	83 Virginis.....	7	s 39 31.23	0.09	-22.08	13 39 9.21	-3.24	344 20 10.75	2.60	77.9	-15 40 51.5	52.0	+18.0
40	89 Virginis.....	9	s 44 51.49	0.10	-22.11	13 44 29.48	3.29	342 22 40.52	32.55	83.8	-17 38 27.6	28.0	18.4
41	50 Cassiopeiæ S. P.	9	s 55 17.43	0.41	[22.16]	1 54 55.73	2.48	108 1 6.88	2.20	144.4	+71 56 12.7	12.2	4.8
42	94 Virginis.....	9	s 1 25.26	+0.07	-22.08	14 1 3.23	-3.27	351 35 38.62	31.05	60.3	-8 25 6.1	6.0	+14.6

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°				
11 16 39	75.68	25.2	24.2	3, 6, 30, 37. Bisections at IV and VI.	13	+14.0	+20.7
17 6	75.70	25.0	23.8	38. Bisections at c_3 and c_4 .	14	15.4	21.8
19 15 28	75.98	16.5	15.1		15	15.8	21.8
16 14	76.00	16.0	*58.5		16	16.1	22.8
16 40	76.01	15.7	*58.2	6. Hurried.	17	14.7	21.0
17 8	76.01	15.5	14.6	18-37. Very unsteady.	35	15.3	20.5
20 13 17	75.86	23.7	21.9	37. Poor.	36	14.9	21.3
13 58	75.84	23.0	20.8	38. Seeing good.	37	[10.9]	[16.5]
					39	14.1	21.9
					40	14.2	21.9
					42	+14.1	+21.3
				Adopted Equator Point Corrections.			
					A.	B.	
					"	"	
				I-14, from stars.....	+14.6	+21.4	
				15-37, from stars.....	+15.4	+21.2	
				38, from nadir.....	+16.4	+21.0	
				39-42, from stars.....	+14.7	+22.0	
		*Fahr.					

*Fahr.

NO.	NAME.	THDS.	MEAN THREAD.		$c_0' \text{ SEC } \delta + n \text{ TAN } \delta.$	$\Delta T + m.$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
			m	s					A.	B.		A.	B.	
1	κ Virginis	9	7	59.01	+0.07	-22.14	14 7 36.98	-3.32	350 11 63.90	55.78	63.3	-9 48 43.8	44.3	+14.8
2	λ Virginis	9	14	7.28	0.08	22.12	14 13 45.26	3.41	347 5 59.90	53.40	70.7	12 54 55.2	54.1	15.2
3	2 Libræ	9	18	28.14	0.08	22.10	14 18 6.12	3.40	348 45 10.10	(2.12)	66.7	11 15 41.0	41.4	14.5
4	Bradley 1861	9	19	43.76	0.08	22.10	14 19 21.74	3.41	348 47	34.95	66.6	11 13	8.6	14.4
5	Mayer 589	8	22	45.40	0.08	22.09	14 22 23.39	3.45	347 5 64.78	57.82	70.7	12 54 50.2	49.6	14.6
6	Mayer 592	9	32	5.95	0.08	22.03	14 31 43.94	3.46	348 7 49.60	42.10	68.2	11 53 3.0	2.9	13.6
7	8 Libræ	9	45	34.89	+0.09	-22.10	14 45 12.90	-3.63	344 25 54.90	47.55	78.0	-15 35 7.5	7.2	+13.8
8	ζ' Libræ	9	23	2.74	+0.10	-22.07	15 22 40.77	-3.84	343 38 48.42	42.45	80.5	-16 22 15.4	14.5	+11.1
9	γ Libræ	9	30	21.65	0.09	22.03	15 29 59.67	3.83	345 33 26.80	18.90	75.1	14 27 31.5	32.7	10.0
10	κ Libræ	9	36	37.01	0.10	22.14	15 36 15.04	3.97	340 39 46.70	40.15	90.2	19 21 26.7	26.4	10.5
11	47 Libræ	9	49	39.58	0.10	22.07	15 49 17.61	4.02	340 55 47.85	41.12	89.3	19 5 24.5	24.4	9.2
12	Lal. 29044	9	53	45.44	0.11	22.07	15 53 23.48	4.05	340 21 60.35	53.72	91.3	19 39 14.0	13.8	9.0
13	Lal. 29156	9	57	44.39	+0.11	-22.07	15 57 22.43	-4.06	340 27 20.68	15.25	91.0	-19 33 53.3	51.9	+8.6
14	O. A. 15199	9	0	15.88	+0.11	-22.07	15 59 53.92	-4.13	338 27 16.15	10.80	98.5	-21 34 5.3	3.8	+8.7
15	ω^2 Scorpii	9	1	58.44	0.11	22.07	16 1 36.48	4.10	339 25 14.62	8.82	94.7	20 36 3.0	2.0	8.4
16	ν Scorpii	9	6	37.03	0.10	22.07	16 6 15.06	4.08	340 48 62.80	56.02	89.7	19 12 9.9	9.7	7.7
17	Lal. 29552	9	9	18.98	0.10	22.07	16 8 57.01	4.06	341 44 18.68	12.12	86.6	18 16 50.9	50.5	7.3
18	Piazzi XVI. 28	9	11	34.51	0.11	22.07	16 11 12.55	4.12	340 9 49.50	42.20	92.0	19 51 25.5	25.8	7.3
19	B. D. -18° 4 266	9	15	7.69	0.10	22.07	16 14 45.72	4.09	341 33 66.32	58.92	87.2	18 27 3.7	4.3	6.8
20	Lal. 29770	9	17	19.31	+0.12	-22.07	16 16 57.36	-4.23	337 8 22.65	15.98	103.9	-22 53 4.1	3.8	+7.0
21	χ Ophiuchi	9	21	39.74	+0.10	-22.07	16 21 17.77	-4.10	341 47 18.12	11.72	86.4	-18 13 51.1	50.6	+6.1
22	B. D. -21° 4366	9	23	50.69	0.11	22.07	16 23 28.73	4.20	338 40 23.90	17.22	97.6	21 20 56.5	56.3	6.4
23	ω Ophiuchi	9	26	38.62	0.11	22.07	16 26 16.66	4.20	338 46 4.60	0.28	97.3	21 15 15.5	12.8	6.0
24	O. A. 15742	9	29	21.64	0.11	22.07	16 28 59.68	4.16	340 17 15.08	8.82	91.6	19 43 59.3	58.6	5.6
25	Lal. 30207	8	32	45.99	0.12	22.07	16 32 24.04	4.26	337 19 56.62	49.48	103.2	22 41 29.3	29.5	5.6
26	Mayer 671	9	35	6.91	0.11	22.07	16 34 44.95	4.19	339 48 22.20	16.88	93.3	20 12 53.8	52.2	5.1
27	O. A. 15868	9	37	31.61	+0.11	-22.07	16 37 9.65	-4.23	338 52 6.92	0.52	96.9	-21 9 12.7	12.4	+5.1
28	Lal. 30551	9	44	3.31	+0.11	-22.07	16 43 41.35	-4.26	338 20 42.62	35.28	99.0	-21 40 39.0	39.4	+4.3
29	24 Ophiuchi	9	51	12.37	0.12	22.03	16 50 50.42	4.32	337 1 54.22	47.15	104.5	22 59 32.9	33.0	3.7
30	η Ophiuchi	9	5	4.67	0.09	22.11	17 4 42.69	4.13	344 24 55.48	48.38	78.4	15 36 5.5	5.6	1.6
31	36 Ophiuchi	9	9	38.19	+0.13	22.06	17 9 16.25	-4.46	333 34 18.78	12.12	121.4	-26 27 25.1	25.6	+2.6
32	β Andromedæ	9	4	32.52	-0.16	[22.18]	1 4	....	35 5 14.65	10.90	3.7	+35 5 27.7	28.4	....
33	α Ursæ Minoris	9	23	16.93	-12.24	[-24.10]	1 22	....	88 45 57.85	52.12	65.9	+88 46 20.2	18.7	....

1900 JUNE 21.

CLAMP EAST.

LITTELL, ASSISTANT.

UPDEGRAFF, OBSERVER.

34	α Ursæ Minoris S. P.	7	23	3.71	-0.39	[-22.19]	1 22	....	91 12 10.40	3.92	71.2	+88 46 19.9	21.9	....
35	83 Virginis	9	39	31.61	+0.06	22.44	13 39 9.25	-3.23	344 20 8.92	1.18	77.4	-15 40 52.1	52.5	+18.0
36	89 Virginis	9	44	51.84	0.06	22.43	13 44 29.48	3.28	342 22 38.60	31.28	83.3	-17 38 28.3	28.3	18.4
37	50 Cassiopeiæ S. P.	9	55	18.20	0.06	[22.51]	1 54 55.84	2.55	108 1 9.08	3.22	143.4	+71 56 10.7	9.7	4.8
38	94 Virginis	9	1	25.57	0.05	22.39	14 1 3.20	3.25	351 35 37.38	29.88	59.8	-8 25 6.0	6.2	14.5
39	κ Virginis	9	7	59.32	+0.05	-22.44	14 7 36.95	-3.31	350 11 63.50	55.00	62.8	-9 48 42.9	44.1	+14.6
40	λ Virginis	9	14	7.63	+0.06	-22.45	14 13 45.27	-3.41	347 5 59.50	52.65	70.1	-12 54 54.2	53.7	+15.1
41	2 Libræ	9	18	28.46	0.06	22.42	14 18 6.10	3.39	348 45 8.35	....	66.1	11 15 41.4	....	14.4
42	Bradley 1861	9	19	44.04	0.05	22.42	14 19 21.67	3.40	348 47 38.38	31.60	66.1	11 13 11.3	10.8	14.3
43	Mayer 592	9	32	5.95	0.06	22.42	14 31 43.94	3.46	348 7 49.60	41.60	67.7	11 53 3.2	2.4	13.5
44	8 Libræ	9	45	35.20	+0.06	-22.38	14 45 12.84	-3.63	344 25 53.80	46.68	77.4	-15 35 7.2	7.0	+13.7

Eq. Pt. Cor. from stars.

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.			No.	A.	B.
d h m	cm.	°	°					"	"
20 14 47	75.83	21.1	20.0	4, 32.	Bisection at IV.	I	+13.9	+21.7	
15 33	75.825	20.2	19.0	5.	Bisections at IV and VI.	2	15.7	21.9	
16 20	75.815	19.5	18.8	33, 37.	Bisections at III and V.	6	15.7	22.9	
17 7	75.80	19.1	18.5	34.	Bisections at c_5 and c_1 .	7	15.2	22.2	
1 18	75.75	18.0	20.0	41.	Bisection at II.	8	15.7	21.3	
1 57	75.74	19.4	21.6	Notes.			9	16.0	23.6
21 13 18	75.41	23.0	21.7	3.	Each microscope on circle B increased 10".	10	15.9	22.1	
13 58	75.40	22.4	21.2	36.	First bisection doubtful.	29	15.9	22.7	
14 48	75.40	21.5	20.4				30	16.4	23.2
							31	17.2	23.6
							35	15.5	22.9
							36	15.7	22.7
							38	14.9	22.1
							39	14.0	22.2
							40	15.6	22.1
							43	16.8	23.0
							44	+15.8	+22.6
							Adopted Equator Point Corrections.		
							A.	B.	
							1-7, from stars	+14.7	+22.0
							8-31, from stars	+15.87	*
							17 2	+16.50.	
							32, 33, from nadir	+15.8	+20.2
							34, from nadir	+17.0	+21.6
							35-44, from stars	+15.5	+22.5
							*Interpolated from diagram.		

1900 JUNE 22.										CLAMP EAST.										HAMMOND, ASSISTANT.									
UPDEGRAFF, OBSERVER.																													
NO.	NAME.	TIDS.	MEAN THREAD.	c' SEC δ + n TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0																
								A.	B.		A.	B.																	
1	α Ursæ Minoris S. P.	7	m s 23 9.49	s -4.26	[-23.01]	h m s 1 22	s	° ' " ° ' "	"	"	° ' " ° ' "	"	"																
2	δ ₃ Virginis	9	39 31.77	+0.03	22.58	13 39 9.22	-3.22	344 20 7.98	0.08	77.2	+88 46 20.1	22.4																	
3	89 Virginis	9	44 52.04	+0.03	22.61	13 44 29.49	3.27	342 22 38.45	30.20	83.1	-15 40 51.6	52.3	+17.9																
4	50 Cassiopeiæ S. P. . . .	9	55 18.73	-0.24	[22.66]	1 54 55.92	2.63	108 1 6.55	2.85	143.2	-17 38 27.0	28.0	18.3																
5	Anonymous	9	1 51.19	+0.04	-22.57	14 1 28.66	-3.25	351 10 19.08	9.10	60.6	+71 56 12.2	9.2	4.9																
6	κ Virginis	9	7 59.46	+0.04	-22.57	14 7 36.93	-3.31	350 11 61.22	53.60	62.7	-8 50 23.9	26.7	+14.5																
7	λ Virginis	9	14 7.72	0.04	22.53	14 13 45.19	3.40	347 5 57.82	51.05	70.0	9 48 43.9	44.3	+14.5																
8	2 Libræ	9	18 28.61	0.04	22.56	14 18 6.09	3.39	348 45 6.82	1.60	66.1	12 54 54.6	54.1	15.1																
9	Bradley 1861	9	19 44.25	0.04	22.56	14 19 21.73	3.39	348 47 37.62	31.08	66.0	11 15 41.7	39.8	14.3																
10	Mayer 592	9	32 6.49	+0.04	-22.54	14 31 43.97	-3.45	348 7 47.22	41.25	67.6	11 13 10.8	10.1	14.2																
11	8 Libræ	9	45 35.34	+0.04	-22.51	14 45 12.83	-3.62	344 26 52.68	45.88	77.3	-11 53 2.8	1.5	+13.4																
12	ζ ¹ Libræ	9	23 3.26	0.05	22.55	15 22 40.78	3.83	344 26 52.68	45.88	77.3	-15 35 7.0	6.6	+13.7																
13	γ Libræ	9	30 22.17	0.04	22.51	15 29 59.68	3.82	343 38 47.12	40.02	79.7	16 22 14.8	14.6	11.0																
14	κ Libræ	9	36 37.50	0.05	22.58	15 36 15.03	3.97	345 33 24.30	16.80	74.3	14 27 32.3	32.5	9.9																
15	β Scorpii	9	0 3.91	+0.05	-22.51	15 59 41.45	-4.07	340 39 45.25	38.05	89.2	19 21 26.2	26.1	10.4																
								340 29 11.08	3.32	89.9	-19 32 1.1	1.5	+8.3																

1900 JUNE 23.										CLAMP EAST.										HAMMOND, ASSISTANT.									
UPDEGRAFF, OBSERVER.																													
16	α Ursæ Minoris S. P.	7	23 14.63	-8.37	[-22.90]	1 22		91 12 11.05	4.00	70.7	+88 46 19.6	22.1																	
17	δ_3 Virginis	9	39 31.93	+0.01	22.73	13 39 9.22	-3.21	340 19 69.32	59.88	77.0	-15 40 51.2	52.2	+17.9																
18	δ_9 Virginis	9	44 52.16	0.00	22.71	13 44 29.44	3.26	342 22 38.80	29.95	82.8	-17 38 27.5	27.9	18.3																
19	δ_0 Cassiopeiæ S. P. . . .	9	55 19.08	-0.51	[22.66]	1 54 55.86	2.71	108 1 8.38	3.62	142.7	+71 56 12.0	8.8	4.9																
20	δ_4 Virginis	9	1 25.93	+0.02	22.74	14 1 3.25	3.23	351 35 36.42	28.35	59.5	-8 25 6.6	6.3	14.3																
21	κ Virginis	9	7 59.56	+0.02	-22.66	14 7 36.88	-3.30	350 11 63.05	53.58	62.5	-9 48 43.0	44.0	+14.4																
22	λ Virginis	9	14 7.91	+0.01	-22.70	14 13 45.22	-3.39	347 5 58.85	50.98	69.7	-12 54 54.3	53.8	+15.0																
23	δ_2 Libræ	9				14 18		348 45 6.20		65.8	11 15 43.1		14.2																
24	Bradley 1861	9	19 44.44	0.02	22.69	14 19 21.77	3.39	348 47 37.58	30.55	65.7	11 13 11.6	10.2	14.1																
25	Mayer 592	9	32 6.63	0.02	22.67	14 31 43.97	3.44	348 7 48.25	40.20	67.3	11 53 2.5	2.2	13.4																
26	δ Libræ	9	45 35.54	+0.01	22.68	14 45 12.88	-3.62	344 25 52.22	45.02	76.9	-15 35 8.2	6.9	+13.6																

UPDEGRAFF, OBSERVER.										1900 JUNE 25.										CLAMP EAST.										HAMMOND, ASSISTANT.									
27	ζ^1	Libræ	.....	9	23	3.64	-0.08	22.80	15	22	40.76	-3.83	343	38	45.00	37.08	78.4	-16	22	15.6	15.2	+10.9																	
28	γ	Libræ	.....	9	30	22.52	0.06	22.77	15	29	59.66	3.81	345	33	23.25	13.70	73.1	14	27	32.0	33.2	9.8																	
29	κ	Libræ	.....	9	36	37.87	0.10	22.81	15	36	14.96	3.96	340	39	44.42	34.88	87.8	19	21	25.5	26.6	10.3																	
30	λ	Libræ	.....	9	47	58.62	0.10	22.84	15	47	35.71	4.03	340	8	57.62	50.10	89.6	19	52	14.1	13.1	9.4																	
31		Piazzi XV. 210	....	9	51	47.90	-0.11	22.81	15	51	24.98	-4.08	338	49	26.35	16.95	94.4	-21	11	50.2	51.0	+9.3																	
32		Lal. 2904	.....	9	55	41.42	-0.11	22.82	15	55	18.49	-4.09	339	8	43.08	35.85	93.2	-20	52	32.3	30.9	+8.9																	
33	β	Scorpii	.....	9	0	4.28	0.10	22.82	15	59	41.36	4.06	340	29	8.60	0.08	88.4	19	32	1.9	1.7	8.3																	
34		Piazzi XVI. 10	....	9	8	14.72	0.11	22.82	16	7	51.79	4.15	338	52	27.32	19.75	94.2	21	8	48.9	47.8	7.7																	
35		Piazzi XVI. 28	....	9	11	35.46	-0.10	22.82	16	11	12.54	-4.13	340	9	46.48	36.80	89.6	-19	51	25.3	26.1	+7.1																	

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	Piazz XVI. 39....	9	m s 13 43.36	s -0.10	s -22.82	h m s 16 13 20.44	s -4.14	° ' " 340 2 40.15	" 29.82	" 90.0	° ' " -19 58 32.0	" 33.5	+ 7.0
2	Lal. 29770.....	9	17 20.34	0.13	22.83	16 16 57.38	4.24	337 8 17.78	.....	101.2	22 53 5.5	....	7.1
3	ψ Ophiuchi.....	9	18 42.06	0.10	22.83	16 18 19.13	4.15	340 12 53.88	45.05	89.4	19 48 17.7	17.6	6.4
4	ω Ophiuchi.....	9	26 39.64	0.11	22.83	16 26 16.70	4.22	338 45 61.55	54.35	94.7	21 15 15.3	13.5	5.9
5	Lal. 30207.....	9	32 47.06	-0.13	-22.83	16 32 24.10	-4.28	337 19 52.55	44.25	100.4	-22 41 30.0	29.3	+ 5.5
6	Bradley 2115.....	9	36 28.01	-0.10	-22.84	16 36 5.07	-4.20	340 17 9.22	1.12	89.2	-19 44 2.1	1.1	+ 4.7
7	15 Ophiuchi.....	9	39 35.04	0.13	22.84	16 39 12.07	4.31	337 1 26.52	18.02	101.7	22 59 57.3	56.7	4.8
8	24 Ophiuchi.....	9	51 13.43	0.13	22.81	16 50 50.46	4.35	337 1 50.72	.....	101.7	22 59 33.1	....	3.6
9	η Ophiuchi.....	9	5 5.57	0.07	22.82	17 4 42.65	4.16	344 24 53.32	43.10	76.4	15 36 5.3	6.0	1.4
10	36 Ophiuchi.....	9	9 39.37	-0.16	-22.92	17 9 16.36	-4.49	333 34 15.35	7.25	118.3	-26 27 25.1	23.7	+ 2.5

UPDEGRAFF, OBSERVER.				1900 JUNE 26.				CLAMP EAST.				HAMMOND, ASSISTANT.			
11	ζ^1 Libræ.....	9	23 3.80	-0.20	-22.85	15 22 40.72	-3.82	343 38 45.95	37.62	78.9	-16 22 15.2	14.3	+10.9		
12	γ Libræ.....	9	30 22.71	0.18	22.84	15 29 59.66	3.81	345 33 24.35	13.52	73.6	14 27 31.5	33.0	9.8		
13	κ Libræ.....	9	36 38.09	0.24	22.89	15 36 14.98	3.96	340 39 43.95	34.92	88.4	19 21 26.6	26.4	10.3		
14	λ Libræ.....	9	47 58.83	0.24	22.91	15 47 35.72	4.03	340 8 57.45	48.65	90.2	19 52 14.8	14.4	9.5		
15	Piazz XV. 210....	9	51 48.11	0.26	22.87	15 51 24.98	4.08	338 49 26.15	17.02	95.0	21 11 50.9	50.7	9.3		
16	Lal. 29094.....	9	55 41.61	0.26	22.86	15 55 18.49	4.09	339 8 44.25	35.40	93.8	20 52 31.5	31.1	8.9		
17	β Scorpii.....	9	0 4.51	-0.24	-22.86	15 59 41.41	-4.06	340 28 69.20	58.60	89.0	-19 32 1.7	3.0	+ 8.2		
18	Piazz XVI. 10....	9	8 14.88	-0.26	-22.86	16 7 51.76	-4.15	338 52 28.02	18.85	94.9	-21 8 48.7	48.7	+ 7.7		
19	Piazz XVI. 28....	9	11 35.63	0.24	22.86	16 11 12.53	4.12	340 9 45.65	35.30	90.2	19 51 26.4	27.4	7.2		
20	Piazz XVI. 39....	9	13 43.52	0.24	22.86	16 13 20.42	4.14	340 2 40.25	29.75	90.6	19 58 32.2	33.4	7.0		
21	ψ Ophiuchi.....	9	18 42.24	0.24	22.86	16 18 19.14	4.15	340 12 54.30	44.50	90.0	19 48 17.5	17.9	6.5		
22	O. A. 15647.....	9	21 45.55	0.27	22.86	16 21 22.42	4.22	338 7 39.40	31.58	97.9	21 53 40.2	38.7	6.5		
23	B. D. -18° 4287...	9	24 21.38	0.22	22.85	16 23 58.31	4.13	341 33 47.88	37.85	85.5	18 27 19.4	20.1	5.7		
24	Lal. 30046.....	9	26 59.64	-0.25	-22.85	16 26 36.54	-4.20	339 28 52.80	42.95	92.7	-20 32 21.6	22.1	+ 5.8		
25	B. D. -18° 4295...	9	30 8.56	-0.22	-22.85	16 29 45.49	-4.15	341 32 66.45	55.75	85.5	18 28 0.7	2.1	+ 5.1		
26	Lal. 30207.....	9	32 47.25	0.28	22.85	16 32 24.12	4.29	337 19 52.75	42.98	101.1	22 41 30.0	30.4	5.5		
27	Bradley 2115.....	9	36 28.25	0.24	22.85	16 36 5.16	4.21	340 16 68.62	59.92	89.8	19 44 2.8	2.2	4.7		
28	15 Ophiuchi.....	9	39 35.23	0.28	22.85	16 39 12.10	4.32	337 1 27.30	16.52	102.4	22 59 56.6	58.1	4.9		
29	24 Ophiuchi.....	9	51 13.57	0.28	22.80	16 50 50.44	4.35	337 1 51.10	41.70	102.4	22 59 32.7	32.8	3.6		
30	η Ophiuchi.....	9	5 5.78	0.19	22.91	17 4 42.75	4.16	344 24 53.48	43.22	76.9	15 36 4.8	5.6	1.3		
31	36 Ophiuchi.....	9	9 39.49	-0.33	-22.86	17 9 16.32	-4.50	333 34 13.62	4.65	119.0	-26 27 26.7	26.2	+ 2.6		
32	ξ Ophiuchi.....	9	15 28.02	-0.26	-22.79	17 15 4.92	-4.35	339 0 55.52	45.52	94.5	-21 0 20.2	20.8	+ 0.9		
33	Mayer 701.....	9	19 10.62	0.26	22.84	17 18 47.52	4.36	338 40 24.30	14.70	95.8	21 20 52.7	52.9	0.5		
34	Lal. 31733.....	9	22 45.79	0.26	22.84	17 22 22.69	4.34	339 8 25.55	16.35	94.0	20 52 49.7	49.5	+ 0.1		
35	C^2 Ophiuchi.....	9	25 46.34	0.30	22.76	17 25 23.20	4.44	336 8 19.28	11.12	106.4	23 53 8.3	7.0	0.0		
36	X Sagittarii.....	9	41 43.74	0.35	22.82	17 41 20.56	4.61	332 14 14.90	7.40	126.8	27 47 32.9	31.0	- 1.5		
37	Mayer 722.....	9	50 29.47	0.23	22.84	17 50 6.42	4.31	341 13 66.42	57.28	86.7	18 47 1.2	0.9	2.8		
38	C. Z. XVIII. II...	9	2 8.67	-0.29	-22.82	18 1 45.56	-4.44	336 54 29.92	19.45	103.1	23 6 54.0	55.1	- 3.9		
39	O. A. 17753.....	9	5 9.72	-0.28	-22.82	18 4 46.62	-4.42	337 45 54.68	46.25	99.5	-22 15 25.6	24.6	- 4.3		
40	μ Sagittarii.....	9	8 14.42	0.26	22.82	18 7 51.34	4.38	338 56 14.50	6.00	94.9	21 5 1.2	0.2	4.5		
41	Lal. 33591.....	8	12 22.26	0.28	22.82	18 11 59.16	4.42	337 38 42.65	32.12	100.0	22 52 38.1	39.2	5.0		
42	Lac. 7686.....	9	16 26.86	0.28	22.82	18 16 3.76	4.44	337 3 26.25	13.25	102.4	22 57 56.9	60.4	5.4		
43	λ Sagittarii.....	9	22 15.69	-0.32	-22.89	18 21 52.55	-4.52	334 32 63.72	54.12	114.1	25 28 31.0	31.2	5.8		
44	Bradley 2335.....	9	.. ..	....	....	18 33 .....	....	338 53 18.35	8.88	95.1	-21 7 57.3	57.3	- 7.1		

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.								Eq. Pt. Cor. from stars.		
												No.	A.	B.
d h m	cm.	°	°										"	"
25 16 29	75.51	25.7	25.1	2, 8. Bisection at II.								8	+16.7	....
17 8	75.50	25.3	24.6									9	16.8	+26.6
26 15 22	75.41	24.5	23.2									10	17.7	25.4
15 54	75.42	24.2	23.1									11	16.7	24.7
16 35	75.42	23.8	22.8									12	17.1	27.6
17 12	75.40	23.7	22.6									13	17.0	25.7
17 49	75.40	23.4	22.2									14	16.7	25.2
18 37	75.40	23.5	22.2									29	17.0	26.1
												30	17.2	27.1
												31	[20.0]	28.6
												32	17.7	27.4
												35	19.1	27.0
												36	18.6	25.8
												37	18.4	27.2
												43	17.8	27.1
												44	+19.0	+28.1

Notes.
8. Through clouds; faint.
10. Through clouds; poor.
36-44. Seeing poor.

Adopted Equator Point Corrections.
A. B.
1-10, from stars..... +16.9 *
11-44, from stars..... * *

*Interpolated from diagram.

1900 JUNE 27.														CLAMP EAST.														NO ASSISTANT.													
UPDEGRAFF, OBSERVER.																																									
NO.	NAME.	THDS.	MEAN THREAD.		C ₀ ' SEC δ H TAN δ.	ΔT + m.	APPARENT R. A.			RED. TO 1900.0	CIRCLE READING.				REFR.	APPARENT DECL.				RED. TO 1900.0																					
			m	s			h	m	s		A.	B.	A.	B.																											
1	ζ ¹ Librae	9	23	3.88	-0.30	-22.83	15	22	40.75	-3.82	343	38	....	38.32	77.8	-16	22	....	14.4	+10.9																					
2	γ ¹ Librae	9	30	22.78	0.27	22.82	15	29	59.69	3.81	345	33	....	15.35	72.6	14	27	....	32.1	9.7																					
3	κ ¹ Librae	9	36	38.14	0.36	22.82	15	36	14.96	3.96	340	39	....	35.70	87.2	19	21	....	26.5	10.4																					
4	O. A. 15773	9	32	8.62	0.39	22.79	16	31	45.44	4.26	338	9	....	56.70	96.5	21	51	....	15.0	5.5																					
5	Bradley 2115	9	36	28.28	0.35	22.79	16	36	5.14	4.21	340	17	....	2.40	88.7	19	44	....	1.5	4.7																					
6	15 Ophiuchi	9	39	35.26	0.40	22.79	16	39	12.07	4.32	337	1	....	18.82	101.2	22	59	....	57.6	4.9																					
7	24 Ophiuchi	9	51	13.71	-0.40	-22.81	16	50	50.53	-4.36	337	1	....	44.00	101.2	-22	59	....	32.5	+3.7																					
8	η Ophiuchi	9	5	5.78	-0.27	-22.83	17	4	42.73	-4.16	344	24	....	45.18	76.0	-15	36	....	6.2	+1.3																					
9	36 Ophiuchi	9	9	39.56	0.47	22.79	17	9	16.32	4.50	333	34	....	6.95	117.7	26	27	....	26.1	2.6																					
10	ε Ophiuchi	9	15	28.07	0.36	22.74	17	15	4.94	4.35	339	0	....	48.38	93.4	21	0	....	20.4	+1.0																					
11	C ² Ophiuchi	9	25	46.54	0.42	22.82	17	25	23.36	4.46	336	8	....	13.95	105.2	23	53	....	6.7	0.0																					
12	X Sagittarii	9	41	43.80	0.49	22.73	17	41	20.56	4.62	332	14	....	8.32	125.4	27	47	....	32.6	-1.4																					
13	Mayer 722	9	50	29.39	0.32	22.66	17	50	6.33	4.31	341	14	....	0.22	85.8	18	47	....	1.2	2.9																					
14	C. Z. XVIII. 11	9	2	8.69	-0.40	-22.73	18	1	45.56	-4.46	336	54	....	22.22	102.0	-23	6	....	55.4	-3.9																					
15	O. A. 17753	9	5	9.71	-0.38	-22.73	18	4	46.60	-4.43	337	45	....	49.45	98.5	-22	15	....	24.6	-4.3																					
16	μ Sagittarii	9	8	14.51	0.36	22.73	18	7	51.42	4.40	338	56	....	9.28	93.9	21	5	....	0.3	4.5																					
17	Lal. 33591	9	12	22.30	0.38	22.72	18	11	59.20	4.43	337	38	....	35.78	99.0	22	22	....	38.9	5.0																					
18	Lac. 7686	9	16	26.87	0.39	22.72	18	16	3.76	4.45	337	3	....	18.85	101.4	22	57	....	58.3	5.4																					
19	λ Sagittarii	9	22	15.66	0.44	22.73	18	21	52.50	4.53	334	32	....	58.65	112.9	25	28	....	30.0	5.8																					
20	Bradley 2335	9	33	23.10	-0.36	-22.69	18	33	0.04	-4.37	338	53	....	12.55	94.1	-21	7	....	57.3	-7.2																					

1900 JUNE 30.														CLAMP EAST.														NO ASSISTANT.													
UPDEGRAFF, OBSERVER.																																									
NO.	NAME.	THDS.	MEAN THREAD.		C ₀ ' SEC δ H TAN δ.	ΔT + m.	APPARENT R. A.			RED. TO 1900.0	CIRCLE READING.				REFR.	APPARENT DECL.				RED. TO 1900.0																					
			m	s			h	m	s		A.	B.	A.	B.																											
21	α Ursae Minoris S. P.	7	23	46.90	-34.37	-21.81	1	22	....	....	91	12	11.80	5.40	71.1	+88	46	20.1	22.7	....																					
22	η Bootis	9	50	19.50	+0.25	[21.57]	13	49	....	....	18	54	53.12	48.60	20.1	+18	53	49.9	49.2	....																					
23	ζ ¹ Librae	9	23	2.47	-0.20	21.54	15	22	40.72	-3.80	343	38	....	44.58	80.1	-16	22	....	15.2	+10.9																					
24	γ ¹ Librae	9	30	21.36	0.17	21.52	15	29	59.65	3.79	345	33	....	21.15	74.7	14	27	....	33.2	9.6																					
25	κ ¹ Librae	9	36	36.77	0.23	21.59	15	36	15.00	3.95	340	39	....	43.20	89.7	19	21	....	26.2	10.4																					
26	λ Librae	9	47	57.42	0.24	21.51	15	47	35.65	4.02	340	8	....	57.55	91.6	19	52	....	13.7	9.5																					
27	Piazzi XV. 210	9	51	46.76	-0.25	-21.52	15	51	24.99	-4.07	338	49	....	25.20	96.5	-21	11	....	51.0	+9.4																					
28	Lal. 29094	9	55	40.22	-0.24	-21.52	15	55	18.46	-4.08	339	8	....	44.55	95.3	-20	52	....	30.4	+9.0																					
29	β Scorpii	9	0	3.01	0.23	21.51	15	59	41.27	4.06	340	29	....	7.55	90.4	19	32	....	2.5	8.2																					
30	Piazzi XVI. 10	9	8	13.52	0.24	21.51	16	7	51.77	4.15	338	52	....	26.98	96.4	21	8	....	49.1	7.8																					
31	Piazzi XVI. 39	9	13	42.12	0.23	21.50	16	13	20.39	4.13	340	2	....	39.55	92.0	19	58	....	32.1	7.0																					
32	ψ Ophiuchi	9	18	40.87	0.22	21.50	16	18	19.15	4.15	340	12	....	53.25	91.5	19	48	....	17.9	6.5																					
33	B. D. -21° 4366	9	23	50.46	0.24	21.49	16	23	28.73	4.22	338	40	....	20.95	97.3	21	20	....	56.1	6.3																					
34	B. D. -18° 4295	9	30	7.13	-0.20	-21.48	16	29	45.45	-4.15	341	33	....	6.08	86.9	-18	28	....	0.5	+5.2																					
35	O. A. 15797	9	33	11.05	-0.20	-21.48	16	32	49.37	-4.17	341	23	....	31.98	87.5	-18	37	....	35.2	+4.9																					
36	Bradley 2115	9	36	26.83	0.22	21.48	16	36	5.13	4.21	340	17	....	10.10	91.3	19	44	....	0.9	4.8																					
37	15 Ophiuchi	9	39	33.76	0.25	21.47	16	39	12.04	4.32	337	1	....	26.78	104.1	22	59	....	57.0	5.0																					
38	24 Ophiuchi	9	51	12.12	0.25	21.37	16	50	50.41	4.36	337	1	....	51.32	104.2	22	59	....	32.6	3.8																					
39	η Ophiuchi	9	5	4.36	0.16	21.51	17	4	42.75	4.17	344	24	....	51.68	78.2	15	36	....	6.2	1.2																					
40	36 Ophiuchi	9	9	38.09	-0.29	-21.48	17	9	16.35	-4.52	333	34	....	16.72	121.2	-26	27	....	24.2	+2.8																					

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at IV, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°				
27 15 33	75.29	27.3	26.5	21. Bisections at c ₂ and c ₄ .	1	....	+23.2
16 35	75.26	26.6	25.7		2	....	25.1
17 55	75.24	25.7	24.5		3	....	23.9
18 20	75.23	25.5	24.3		7	....	22.8
30 13 17	75.64	24.5	22.8		8	....	24.5
15 17	75.70	21.5	20.2	Notes. 3, 7, 20. Clouds. 23-40. Very unsteady; seeing bad.	9	....	25.3
16 3	75.75	20.9	19.9		10	....	23.6
17 3	75.79	20.0	19.1		11	....	23.2
					12	....	23.7
					13	....	23.8
					19	....	21.7
					20	....	23.8
					23	....	19.2
					24	....	21.5
					25	....	18.9
					26	....	17.9
					38	....	18.4
					39	....	20.3
					40	....	+18.9

Adopted Equator Point Corrections.

	A.	B.
1-20, from stars.	....	*
21, 22, from nadir	+15.9	+19.7
23-40, from stars.	....	+19.3

* Interpolated from diagram.

OBSERVATIONS OF ZODIACAL STARS.

D 31

NO.	NAME.	THDS.	MEAN THREAD.	C_0 SEC δ + n TAN δ .	ΔT + m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ξ Ophiuchi	9	m s 15 26.63	s -0.22	s -21.43	h m s 17 15 4.96	s -4.36	339 0	56.10	96.2	21 0	19.8	+1.0
2	Mayer 701	9	19 9.21	0.23	21.44	17 18 47.54	4.38	338 40	24.52	97.6	21 20	52.8	0.6
3	Lal. 31733	9	22 44.31	0.22	21.44	17 22 22.65	4.37	339 8	27.32	95.8	20 52	48.2	0.2
4	C^2 Ophiuchi	9	25 45.04	0.26	21.47	17 25 23.34	4.47	336 8	21.40	108.4	23 53	6.7	+0.2
5	X Sagittarii	9	41 42.31	-0.30	-21.41	17 41 20.58	-4.64	332 14	16.32	129.3	-27 47	32.7	-1.2
6	Mayer 722	9	50 28.05	-0.19	-21.43	17 50 6.44	-4.34	341 14	6.52	88.5	-18 47	1.7	-2.8
7	C. Z. XVIII. 11	9	2 7.22	0.24	21.41	18 1 45.57	4.48	336 54	29.62	105.2	23 6	55.3	3.8
8	O. A. 17753	9	5 8.29	0.23	21.41	18 4 46.65	4.46	337 45	55.75	101.5	22 15	25.4	4.2
9	μ Sagittarii	8	8 13.03	0.22	21.40	18 7 51.41	4.43	338 56	16.92	96.8	21 4	59.6	4.5
10	Lal. 33591	9	12 20.87	-0.23	-21.40	18 11 59.24	-4.46	337 38	41.65	102.0	-22 22	40.1	-5.0
11	Lac. 7686	9	16 25.36	-0.24	-21.39	18 16 3.73	-4.48	337 3	26.52	104.5	-22 57	57.7	-5.4
12	λ Sagittarii	9	22 14.17	0.26	21.39	18 21 52.52	4.56	334 33	4.72	116.4	25 28	31.4	5.8
13	Bradley 2335	9	33 21.67	-0.21	21.37	18 33 0.09	-4.41	338 53	19.80	97.0	-21 7	56.9	-7.1
14	β Andromedæ	9	4 31.52	+0.30	[21.28]	1 4	....	35 5 16.12	13.12	3.8	+35 5 28.9	29.0	...
15	α Ursæ Minoris	9	22 52.71	19.71	[21.26]	1 22	....	88 44 57.98	52.20	66.8	88 46 20.9	18.6	...
16	γ Andromedæ	8	58 8.92	+0.38	[-21.23]	1 57	....	41 50 40.62	36.98	2.9	+41 50 60.1	59.6	...

1900 JULY 1.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

NO ASSISTANT.

17	ζ^1 Libræ	9	23 2.05	-0.13	-21.19	15 22 40.76	-3.80	343 38	45.00	79.9	-16 22	15.1	+10.8
18	γ Libræ	9	30 20.92	0.11	21.14	15 29 59.65	3.79	345 33	22.35	74.5	14 27	32.4	9.6
19	κ Libræ	9	36 36.25	0.16	21.15	15 36 14.93	3.94	340 39	43.60	89.5	19 21	26.1	10.4
20	λ Libræ	9	47 56.99	0.17	21.16	15 47 35.66	4.01	340 8	57.75	91.3	19 52	13.8	9.5
21	Lal. 29094	9	55 39.78	0.18	21.15	15 55 18.45	4.08	339 8	44.45	95.0	20 52	30.8	9.0
22	β Scorpii	9	0 2.67	0.16	21.15	15 59 41.36	4.06	340 29	7.65	90.1	19 32	2.6	8.3
23	ω^2 Scorpii	9	1 57.80	-0.18	-21.15	16 1 36.47	-4.10	339 25	11.45	93.9	-20 36	2.7	+8.3
24	Piazzì XVI. 10	9	8 13.10	-0.18	-21.15	16 7 51.77	-4.14	338 52	28.12	96.0	-21 8	48.1	+7.8
25	Piazzì XVI. 39	9	13 41.77	0.17	21.14	16 13 20.46	4.13	340 2	38.88	91.7	19 58	33.0	7.0
26	B. D.—19° 4368	9	20 1.32	0.16	21.14	16 19 40.02	4.15	340 24	40.02	90.4	19 36	30.6	6.4
27	O. A. 15647	9	21 43.69	0.19	21.14	16 21 22.36	4.22	338 7	39.92	99.0	21 53	39.3	6.6
28	B. D.—18° 4287	9	24 19.48	0.15	21.14	16 23 58.19	4.13	341 33	46.30	86.5	18 27	20.4	5.7
29	Lal. 30046	8	26 57.82	0.17	21.14	16 26 36.51	4.20	339 28	52.85	93.7	20 32	21.1	5.8
30	B. D.—18° 4295	9	30 6.74	-0.15	-21.14	16 29 45.45	-4.15	341 33	5.12	86.5	-18 28	1.6	+5.2
31	O. A. 15797	9	33 10.71	-0.15	-21.14	16 32 49.42	-4.17	341 23	31.88	87.0	-18 37	35.3	+4.9
32	Bradley 2115	9	36 26.44	0.16	21.13	16 36 5.15	4.21	340 17	9.50	90.8	19 44	1.5	4.8
33	15 Ophiuchi	9	39 33.43	0.20	21.13	16 39 12.10	4.32	337 1	26.72	103.7	22 59	57.2	5.0
34	24 Ophiuchi	9	51 11.82	0.20	21.12	16 50 50.49	4.36	337 1	50.12	103.6	22 59	33.7	3.8
35	7 Ophiuchi	9	5 3.98	0.12	21.16	17 4 42.74	4.18	344 24	51.28	77.8	15 36	6.7	1.1
36	36 Ophiuchi	9	9 37.70	0.24	21.14	17 9 16.35	4.52	333 34	16.02	120.5	26 27	24.7	2.8
37	ξ Ophiuchi	9	15 26.24	-0.18	-21.07	17 15 4.96	-4.37	339 0	55.18	95.7	-21 0	20.7	+1.0
38	Mayer 701	6	19 8.72	-0.18	-21.09	17 18 47.45	-4.38	338 40	24.40	97.0	-21 20	52.8	+0.6
39	Lal. 31733	9	22 43.98	0.18	21.09	17 22 22.71	4.37	339 8	26.82	95.3	20 52	48.7	0.2
40	C^2 Ophiuchi	9	25 44.54	0.21	21.02	17 25 23.25	4.47	336 8	21.20	107.8	23 53	6.8	+0.2
41	X Sagittarii	9	41 41.99	0.26	21.13	17 41 20.68	4.64	332 14	16.62	128.6	27 47	32.2	-1.2
42	Mayer 722	9	50 27.61	0.16	21.01	17 50 6.40	4.35	341 14	8.00	88.0	18 47	0.2	2.8
43	C. Z. XVIII. 11	9	2 6.88	0.20	21.05	18 1 45.63	4.49	336 54	29.48	104.6	23 6	55.3	3.8
44	O. A. 17753	9	5 7.95	-0.19	-21.05	18 4 46.71	-4.46	337 45	57.15	101.0	-22 15	24.0	-4.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at IV, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°				
30 17 54	75.78	19.0	18.0	15. Bisections at c_1 and c_4 .	1	....	+18.7
18 32	75.77	18.5	18.0		4	....	18.8
1 17	75.92	16.7	16.9		5	....	19.4
1 15 21	75.98	22.5	21.9		6	....	20.1
16 37	76.00	22.0	21.8		12	....	19.1
17 13	76.02	21.6	21.4		13	....	19.4
17 55	76.05	21.0	20.4		17	....	18.7
					18	....	20.2
					19	....	18.3
					20	....	17.5
					34	....	19.0
					35	....	20.4
					36	....	18.9
					37	....	19.1
					40	....	18.4
					41	....	18.4
					42	....	+18.1

Notes.
15. Seeing unusually good
41, 42. Very unsteady.

Adopted Equator Point Corrections.

	A.	B.
1-13, from stars.	....	+19.3
14-16, from nadir.	+15.6	+18.7
17-44, from stars.	....	+18.8

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	ΔT m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.			REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.	"		A.	B.	
1	μ Sagittarii.....	9	m s 8 12.67	s -0.18	s	21.05 18 7 51.44	-4.43	338 56	16.90	96.3	"	21 4	59.6	-4.5
2	Lal. 33591.....	9	12 20.45	0.19	21.05 18 11 59.21	4.47	337 38	42.80	101.5	22 22	38.9	4.9		
3	Lac. 7686.....	9	16 25.04	0.20	21.05 18 16 3.79	4.49	337 3	26.40	104.0	22 57	57.8	5.4		
4	λ Sagittarii.....	6	22 13.82	0.23	21.06 18 21 52.54	4.57	334 33	4.98	115.8	25 28	31.0	5.8		
5	Bradley 2335.....	9	33 21.32	-0.18	21.04 18 33 0.09	4.42	338 53	19.70	96.5	21 7	57.0	-7.1		

1900 JULY 2.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

6	ζ^1 Librae.....	9	23 1.81	0.13	20.96 15 22 40.72	3.79	343 38 50.45	45.05	80.1	-16 22 15.0	14.3	+10.8
7	γ Librae.....	9	30 20.69	0.11	20.92 15 29 59.62	3.78	345 33 28.78	21.10	74.8	14 27 31.3	33.4	9.5
8	κ Librae.....	9	36 36.09	0.16	20.99 15 36 14.98	3.94	340 39 47.85	42.42	89.8	19 21 27.2	27.0	10.3
9	λ Librae.....	9	.....	.....	15 47 .....	.....	340 8 62.45	58.72	91.6	19 52 14.3	12.5	9.5
10	Piazzi XV. 210.....	.....	.....	.....	15 51 .....	.....	338 49 30.08	25.25	96.6	21 11 51.7	50.9	9.4
11	Lal. 29094.....	.....	.....	.....	15 55 .....	.....	339 8 48.32	44.25	95.4	20 52 32.2	30.7	8.9
12	β Scorpii.....	.....	.....	.....	15 59 .....	.....	340 29 13.20	6.72	90.5	-19 32 2.3	3.3	+8.3
13	Piazzi XVI. 10.....	9	8 12.83	0.17	20.94 16 7 51.72	-4.14	338 52 33.15	28.38	96.5	-21 8 48.4	47.6	+7.8
14	Piazzi XVI. 39.....	9	13 41.47	0.16	20.93 16 13 20.38	4.13	340 2 44.65	38.90	92.1	19 58 32.5	32.7	7.0
15	B. D. -19° 4368.....	9	20 1.04	0.16	20.93 16 19 39.95	4.14	340 24 45.42	39.58	90.8	19 36 30.3	30.7	6.3
16	O. A. 15647.....	9	21 43.51	0.18	20.93 16 21 22.40	4.22	338 7 43.92	39.40	99.5	21 53 40.5	39.5	6.6
17	B. D. -18° 4287.....	8	24 19.31	0.15	20.93 16 23 58.23	4.13	341 33 52.08	45.90	86.9	18 27 19.8	20.4	5.7
18	Lal. 30046.....	9	26 57.58	0.17	20.93 16 26 36.48	4.20	339 28 57.25	52.95	94.3	-20 32 22.0	20.8	+5.8
19	B. D. -18° 4295.....	9	30 6.50	0.15	20.93 16 29 45.42	4.15	341 33 10.72	4.55	86.9	-18 28 1.1	1.8	+5.1
20	O. A. 15797.....	9	33 10.41	0.15	20.92 16 32 49.34	4.17	341 23 37.98	31.32	87.5	18 37 34.5	35.6	4.9
21	24 Ophiuchi.....	9	51 11.57	0.19	20.87 16 50 50.47	4.37	337 1 56.40	50.62	104.2	22 59 32.6	32.0	3.8
22	η Ophiuchi.....	9	5 3.76	0.12	20.94 17 4 42.73	4.18	344 24 57.60	51.65	78.2	15 36 5.4	5.9	1.1
23	36 Ophiuchi.....	9	9 37.50	0.23	20.95 17 9 16.36	4.52	333 34 21.18	14.92	121.2	26 27 24.7	25.6	2.9
24	ϵ Ophiuchi.....	9	15 26.03	0.17	20.87 17 15 4.95	4.37	339 0 60.98	55.88	96.2	-21 0 19.9	19.6	+1.0
25	Mayer 701.....	.....	.....	.....	17 18 .....	.....	338 40 28.38	23.78	97.5	-21 20 53.8	53.0	+0.6
26	Lal. 31733.....	9	22 43.76	0.17	20.90 17 22 22.69	-4.38	339 8 30.35	26.35	95.7	20 52 50.0	48.6	0.2
27	C^2 Ophiuchi.....	9	25 44.43	0.20	20.91 17 25 23.33	4.48	336 8 25.18	20.90	108.3	23 53 7.6	6.6	+0.2
28	X Sagittarii.....	9	41 41.76	0.24	20.91 17 41 20.62	4.65	332 14 20.95	15.38	129.0	27 47 32.5	32.8	+1.2
29	Mayer 722.....	9	50 27.47	0.15	20.88 17 50 6.43	4.35	341 14 11.22	5.90	88.2	18 47 1.4	1.5	2.9
30	C. Z. XVIII. 11.....	8	2 6.65	-0.19	-20.88 18 1 45.58	-4.50	336 54 34.38	28.25	104.9	-23 6 54.8	55.8	-3.8
31	O. A. 17753.....	8	5 7.75	-0.18	20.88 18 4 46.69	-4.47	337 45 59.72	55.02	101.3	-22 15 25.9	25.4	-4.2
32	μ Sagittarii.....	8	8 12.45	0.17	20.88 18 7 51.40	4.44	338 56 18.68	15.28	96.6	21 5 2.3	0.4	4.5
33	Lal. 33591.....	9	12 20.21	0.18	20.87 18 11 59.16	4.48	337 38 44.95	42.05	101.8	22 22 41.2	38.9	4.9
34	Lac. 7686.....	9	16 24.84	0.19	20.87 18 16 3.78	4.50	337 3 30.00	24.95	104.3	22 57 58.5	58.5	5.3
35	λ Sagittarii.....	9	22 13.67	0.22	20.91 18 21 52.59	4.58	334 33 9.58	4.05	116.2	25 28 30.8	31.2	5.8
36	Bradley 2335.....	9	33 21.09	-0.17	-20.81 18 33 0.06	-4.43	338 53 23.40	18.62	96.8	-21 7 57.5	57.2	-7.1

1900 JULY 7.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

37	ζ^1 Librae.....	9	22 59.79	-0.09	-19.01 15 22 40.66	-3.76	343 38	56.18	77.8	-16 22	13.7	+10.5
38	γ Librae.....	9	30 18.71	0.08	19.00 15 29 59.59	3.75	345 33	31.58	72.5	14 27	33.0	9.3
39	κ Librae.....	9	36 34.11	0.10	19.10 15 36 14.98	3.91	340 39	53.60	87.1	19 21	25.5	10.1
40	B. D. -18° 4295.....	9	30 4.52	0.09	18.97 16 29 45.46	4.14	341 33	16.15	84.3	18 28	0.2	4.9
41	O. A. 15797.....	8	33 8.43	-0.09	-18.97 16 32 49.37	-4.16	341 23	42.80	84.8	-18 37	34.0	+4.6

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.			Eq. Pt. Cor. from stars.		
							No.	A.	B.
d h m	cm.	°	°					"	"
1 18 31	76.02	20.5	20.3	1-5.	Bisection at IV.		4	....	+18.2
2 15 21	76.14	22.9	21.6	11, 17, 19.	Bisections at III and VI.		5	....	19.0
15 58	76.14	22.4	21.1	37-41.	Bisection at VI.		6	+13.5	18.6
16 48	76.14	21.8	20.7				7	14.2	21.6
17 17	76.15	21.5	20.3				8	14.5	19.6
17 55	76.15	21.3	20.1				9	13.1	16.5
18 35	76.15	21.0	19.8				21	13.3	18.8
7 15 20	75.37	29.7	27.0				22	14.6	20.2
16 36	75.30	27.6	26.5				23	14.3	20.3
							24	13.9	18.6
							27	14.9	18.9
							28	14.4	19.7
							29	15.2	20.2
							35	14.0	19.2
							36	+15.6	20.1
							37	....	5.5
							38	....	9.0
							39	....	+5.9

Adopted Equator Point Corrections.

1-5, from stars..... +18.8
 6-36, from stars..... *
 37-41, from stars..... + 6.7
 *Interpolated from diagram.

OBSERVATIONS OF ZODIACAL STARS.

D 33

NO.	NAME.	THDS.	MEAN THREAD.		c_0 SEC δ + # TAN δ .	$\Delta T + m$.	APPARENT R. A.			RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
			m	s			h	m	s		A.	B.		A.	B.	
1	24 Ophiuchi.....	9	51	9.55	-0.11	-18.94	16	50	50.49	-4.36	337 1 59.32	60.25	101.0	22 59 33.9	32.8	-3.7
2	7 Ophiuchi.....	9	5	1.65	0.06	18.89	17	4	42.66	4.18	344 25 3.52	3.28	75.8	15 36 4.6	4.6	1.0
3	36 Ophiuchi.....	8	9	35.37	0.12	18.93	17	9	16.32	4.52	333 34 25.08	24.18	117.5	26 27 24.6	25.3	2.9
4	5 Ophiuchi.....	9	15	24.03	0.03	18.94	17	15	5.02	4.38	339 1 4.95	4.00	93.2	21 0 20.5	21.2	0.9
5	Lal. 31552.....	9	17	24.39	0.08	-18.92	17	17	5.39	-4.35	339 54 14.82	15.38	90.0	-20 7 7.4	6.7	0.4
6	Mayer 701.....	8	19	6.55	-0.09	-18.92	17	18	47.54	-4.39	338 40 34.38	33.92	94.5	-21 20 52.5	52.6	0.4
7	Lal. 31733.....	9	22	41.75	0.09	18.91	17	22	22.75	4.39	339 8 34.55	.....	92.8	20 52 50.5	.....	0.0
8	O. A. 16844.....	9	24	13.04	0.08	18.91	17	23	54.05	4.34	340 37 46.45	46.18	87.5	19 23 33.3	33.4	0.4
9	X Sagittarii.....	9	41	39.66	-0.12	-18.91	17	41	20.65	-4.67	332 14 24.95	25.08	125.1	27 47 32.3	32.0	1.2

1900 JULY 8.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

10	γ Librae.....	9	36	33.23	-0.04	18.29	15	29	.....	.....	345 33 31.20	32.80	71.9	14 27 31.5	32.2	9.3
11	κ Librae.....	9	36	33.23	-0.04	18.29	15	36	14.88	3.90	340 39 51.75	53.48	86.4	19 21 25.3	25.9	10.1
12	λ Librae.....	8	47	53.99	0.04	18.32	15	47	35.65	3.98	340 9 5.20	8.18	88.2	19 52 13.7	13.1	9.2
13	Piazz XV. 210.....	9	51	43.22	0.04	18.29	15	51	24.89	4.04	338 49 33.95	35.35	93.0	21 11 49.8	50.7	9.2
14	ω Scorpii.....	9	1	19.73	0.04	18.28	16	1	1.41	4.06	339 37 19.38	21.75	90.1	20 24 1.5	1.4	8.1
15	Piazz XVI. 10.....	9	8	10.02	-0.04	-18.27	16	7	51.71	-4.12	338 52 34.95	.....	92.9	-21 8 48.7	.....	7.5
16	Piazz XVI. 17.....	9	9	19.76	-0.04	-18.27	16	9	1.45	-4.16	337 53 44.00	45.68	96.7	-22 7 43.4	44.0	7.7
17	O. A. 15541.....	9	15	10.32	0.04	18.26	16	14	52.02	4.17	338 25 17.60	21.08	94.6	21 36 7.7	6.5	7.0
18	B. D.—19°4368.....	9	19	58.22	0.03	18.26	16	19	39.93	4.13	340 24 48.45	50.15	87.4	19 36 29.7	30.3	6.1
19	O. A. 15647.....	9	21	40.61	0.03	18.26	16	21	22.32	4.20	338 7 46.18	49.68	95.8	21 53 40.3	39.1	6.4
20	B. D.—18°4287.....	9	24	16.46	0.03	18.25	16	23	58.18	4.12	341 33 56.50	56.48	83.7	18 27 18.0	20.3	5.4
21	Lal. 30046.....	9	26	54.68	-0.03	-18.25	16	26	36.40	-4.19	339 29 2.15	2.42	90.7	-20 32 19.3	21.3	5.6
22	B. D.—18°4295.....	9	30	3.67	-0.02	-18.25	16	29	45.40	-4.14	341 33 14.00	16.05	83.7	-18 28 0.5	0.7	4.9
23	O. A. 15773.....	8	32	3.65	0.03	18.24	16	31	45.38	4.25	338 10 11.70	12.60	95.7	21 51 14.7	16.1	5.4
24	15 Ophiuchi.....	9	39	30.28	0.03	18.23	16	39	12.02	4.32	337 1 33.70	36.42	100.3	22 59 57.3	56.9	4.9
25	24 Ophiuchi.....	9	51	8.73	0.02	18.21	16	50	50.49	4.36	337 1 57.85	59.85	100.3	22 59 33.2	33.5	3.7
26	7 Ophiuchi.....	9	5	0.91	0.01	18.20	17	4	42.70	4.18	344 25 1.60	3.80	75.4	15 36 4.6	4.7	0.9
27	36 Ophiuchi.....	7	9	34.58	-0.02	-18.23	17	9	16.36	-4.53	333 34 22.38	25.32	116.7	-26 27 25.0	24.4	2.9
28	ξ Ophiuchi.....	9	15	23.19	-0.02	-18.17	17	15	4.99	-4.38	339 1 2.38	5.48	92.7	-21 0 21.1	20.2	0.8
29	Lal. 31552.....	9	17	23.51	0.01	18.18	17	17	5.32	4.35	339 54 14.02	15.78	89.5	20 7 6.2	6.8	0.4
30	Mayer 701.....	9	19	5.66	0.01	18.18	17	18	47.47	4.39	338 40 31.55	34.30	94.0	21 20 53.2	52.7	0.4
31	O. A. 16844.....	9	24	12.19	0.01	18.17	17	23	54.01	4.35	340 37 45.12	48.05	87.0	19 23 32.6	32.0	0.4
32	X Sagittarii.....	9	41	38.78	0.01	18.14	17	41	20.63	4.67	332 14 21.85	24.60	124.5	27 47 33.3	32.9	1.1
33	Mayer 722.....	9	50	24.58	-0.01	-18.10	17	50	6.45	-4.38	341 14 14.80	16.55	85.2	-18 47 1.1	1.7	3.1
34	Mayer 734.....	9	1	34.14	0.00	-18.10	18	1	16.04	-4.48	338 34 14.15	17.22	94.6	-21 27 11.2	10.4	4.0
35	I Sagittarii.....	9	5	59.89	0.00	18.09	18	5	41.80	4.56	336 18 2.25	25.05	103.8	23 43 12.3	11.7	4.3
36	14 Sagittarii.....	9	8	38.07	0.00	18.09	18	8	19.98	4.50	338 17 8.12	12.08	95.7	21 44 18.3	16.6	4.8
37	Lal. 33516.....	9	10	50.29	0.00	18.08	18	10	32.21	4.57	336 5 38.02	.....	104.8	23 55 57.5	.....	4.8
38	λ Sagittarii.....	7	22	10.67	0.00	-18.08	18	21	52.61	-4.63	334 33 11.98	.....	112.1	-25 28 30.8	.....	5.8

1900 JULY 9.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

39	ζ Librae.....	9	22	57.86	+0.11	-17.29	15	22	40.67	-3.75	343 38 54.72	59.00	79.6	-16 22 14.6	14.9	+10.4
----	---------------------	---	----	-------	-------	--------	----	----	-------	-------	--------------	-------	------	-------------	------	-------

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.			Eq Pt. Cor. from stars.		
							No.	A.	B.
d h m	cm.	°	°						
7 17 12	75.27	27.0	25.7	3, II, 23, 27.	Bisections at IV and VI.		I	+7.3	+6.1
18 0	75.26	26.4	25.2	6, 29.	Bisections at III and VI.		2	6.4	6.3
8 15 32	74.86	29.9	27.5	7, 15, 38.	Bisection at II.		3	6.7	7.3
16 3	74.85	28.5	26.8	37.	Bisection at III.		4	7.0	7.6
16 35	74.86	27.8	26.7				9	6.5	6.1
17 9	74.855	27.0	26.0				10	9.1	7.2
17 44	74.85	26.2	25.3				11	7.3	5.3
18 34	74.84	25.8	25.0				12	7.2	4.0
9 15 20	75.39	22.9	20.6				25	8.1	5.8
							26	8.0	5.5
							27	8.6	5.4
							28	9.2	5.7
							32	8.9	5.9
							33	8.8	6.8
							38	7.5	...
							39	+9.2	+4.6

Adopted Equator Point Corrections.		
I-9, from stars.....	+6.8	+6.7
10-38, from stars.....	+8.3	+5.7
39, from stars.....	+9.4	+4.5

NO.	NAME.	THDS.	MEAN THREAD.	c_0 ' SEC δ + H TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	γ Librae	9	m 30 16.81	+0.09	-17.28	15 29 59.61	-3.74	345 33 32.55	35.20	74.3	-14 27 31.4	33.4	+ 9.3
2	κ Librae	9	s 36 32.06	0.13	17.29	15 36 14.90	3.90	340 39 53.00	56.98	89.2	19 21 25.8	26.5	10.1
3	λ Librae	9	s 47 52.79	0.14	17.30	15 47 35.65	3.98	340 9 7.62	11.82	91.1	19 52 13.1	13.5	9.2
4	Piazzi XV. 210	9	s 51 42.04	0.15	17.27	15 51 24.92	4.03	338 49 34.52	39.75	96.1	21 11 51.2	50.6	9.2
5	ω Scorpii	9	s 1 18.54	0.15	17.27	16 1 1.42	4.06	339 37 20.25	26.90	93.1	20 24 2.5	0.4	8.0
6	Piazzi XVI. 17	7	s 9 18.69	+0.16	-17.26	16 9 1.59	-4.15	337 53 45.00	51.00	99.8	-22 7 44.4	43.3	+ 7.7
7	ψ Ophiuchi	7	s 18 36.23	+0.15	-17.25	16 18 19.13	-4.13	340 13 3.55	7.22	91.1	-19 48 17.2	18.1	+ 6.2
8	O. A. 15647	9	s 21 39.46	0.17	17.25	16 21 22.38	4.20	338 7 49.98	53.68	99.0	21 53 38.6	39.5	6.4
9	B. D.-18° 4287	9	s 24 15.35	0.14	17.24	16 23 58.25	4.11	341 33 56.90	61.55	86.5	18 27 19.3	19.2	5.4
10	O. A. 15797	9	s 33 6.51	0.14	17.24	16 32 49.41	4.16	341 23 42.52	47.18	87.1	18 37 34.2	34.1	4.6
11	Bradley 2115	9	s 36 22.20	0.15	17.23	16 36 5.12	4.20	340 17 18.22	23.98	90.9	19 44 2.3	1.1	4.5
12	ξ Ophiuchi	9	s 15 22.07	+0.18	-17.25	17 15 5.05	-4.38	339 1 4.85	10.42	95.8	-21 0 20.6	19.6	+ 0.8
13	Lal. 31552	9	s 17 22.43	0.17	-17.20	17 17 5.40	-4.35	339 54 16.02	20.72	92.5	-20 7 6.1	6.0	+ 0.4
14	O. A. 16844	9	s 24 11.03	0.16	17.19	17 23 54.00	4.35	340 37 46.22	52.40	89.9	19 23 33.3	31.7	- 0.4
15	X Sagittarii	9	s 41 37.53	0.26	17.15	17 41 20.62	4.68	332 14 25.25	30.62	128.5	27 47 32.8	32.0	1.1
16	Mayer 722	9	s 50 23.45	0.17	17.14	17 50 6.46	4.39	341 14 16.80	21.25	87.9	18 47 0.8	0.9	3.2
17	Mayer 734	9	s 1 32.88	-0.20	-17.15	18 1 15.93	-4.49	338 34 16.82	22.30	97.7	-21 27 10.5	9.6	- 4.1
18	I Sagittarii	9	s 5 58.73	+0.22	-17.14	18 5 41.81	-4.57	336 18 23.72	30.00	107.3	-23 43 13.2	11.5	- 4.3
19	I4 Sagittarii	9	s 8 36.91	0.20	17.14	18 8 19.97	4.50	338 17 9.22	16.30	98.9	21 44 19.3	16.8	4.8
20	Lal. 33516	9	s 10 49.21	0.23	17.14	18 10 32.30	4.58	336 5 40.58	46.62	108.3	23 55 57.3	55.9	4.8
21	λ Sagittarii	9	s 22 9.49	0.25	17.14	18 21 52.62	4.64	334 33 14.78	19.02	115.9	25 28 30.7	31.1	5.8
22	Bradley 2335	9	s 33 17.06	0.20	-17.09	18 33 0.15	-4.49	338 53 28.38	34.68	96.7	-21 7 58.0	56.2	- 7.4

1900 JULY 10.

CLAMP EAST.

UPDEGRAFF, OBSERVER.

HAMMOND, ASSISTANT.

23	ζ Librae	9	s 22 57.12	+0.20	-16.65	15 22 40.63	-3.74	343 38 52.58	58.52	79.2	-16 22 15.8	14.3	+10.4
24	γ Librae	9	s 30 16.10	0.18	16.67	15 29 59.59	3.73	345 33 32.08	35.55	73.9	14 27 30.9	32.0	9.2
25	κ Librae	9	s 36 31.36	0.24	16.71	15 36 14.92	3.89	340 39 51.78	56.40	88.8	19 21 26.1	26.0	10.0
26	λ Librae	9	s 47 52.09	0.24	16.71	15 47 35.65	3.97	340 9 6.05	10.68	90.7	19 52 13.6	13.7	9.2
27	ω Scorpii	9	s 1 17.81	0.25	16.67	16 1 1.39	4.06	339 37 19.70	25.12	92.7	20 24 1.8	1.2	8.0
28	Piazzi XVI. 17	9	s 9 17.93	0.27	16.66	16 9 1.54	4.15	337 53 43.70	48.75	99.4	22 7 44.4	44.3	7.7
29	O. A. 15541	9	s 15 8.47	0.27	-16.66	16 14 52.08	-4.16	338 25 17.35	23.75	97.3	-21 36 8.6	7.2	+ 7.0
30	B. D.-19° 4368	9	s 19 56.40	0.24	16.66	16 19 39.98	-4.12	340 24 48.00	53.28	90.0	-19 36 30.6	30.3	+ 6.1
31	O. A. 15647	9	s 21 38.76	0.27	16.66	16 21 22.37	4.20	338 7 46.72	52.88	98.5	21 53 40.4	39.2	6.4
32	B. D.-18° 4287	9	s 24 14.66	0.23	16.65	16 23 58.24	4.11	341 33 55.30	60.10	86.1	18 27 19.5	19.6	5.4
33	Lal. 30046	9	s 26 52.86	0.26	16.65	16 26 36.47	4.18	339 29 0.62	5.40	93.4	20 32 21.4	21.6	5.6
34	O. A. 15773	9	s 32 1.81	0.27	16.65	16 31 45.43	4.24	338 10 11.88	17.02	98.4	21 51 15.1	15.0	5.4
35	O. A. 15797	4	s 33 5.77	0.23	16.65	16 32 49.35	4.15	341 23	44.32	86.7	18 37	36.0	4.5
36	24 Ophiuchi	9	s 51 6.79	+0.29	16.58	16 50 50.44	-4.36	337 1 58.50	64.45	103.2	-22 59 33.1	32.4	+ 3.6
37	η Ophiuchi	9	s 4 59.20	+0.20	16.70	17 4 42.77	-4.18	344 25 1.02	6.22	77.5	-15 36 4.7	4.9	+ 0.9
38	36 Ophiuchi	9	s 9 32.63	0.34	16.64	17 9 16.35	4.53	333 34 23.75	28.70	120.1	26 27 24.6	25.0	2.9
39	ξ Ophiuchi	9	s 15 21.32	0.27	16.59	17 15 4.98	4.38	339 1 2.72	9.28	95.3	21 0 20.7	19.6	0.8
40	Lal. 31552	9	s 17 21.71	0.26	16.61	17 17 5.36	4.35	339 54 13.98	19.10	92.1	20 7 6.3	6.6	+ 0.4
41	O. A. 16844	9	s 24 10.38	0.25	16.60	17 23 54.03	4.35	340 37 44.48	50.98	89.5	19 23 33.2	32.2	- 0.5
42	X Sagittarii	9	s 41 36.87	0.37	16.60	17 41 20.66	4.68	332 14 22.78	28.80	128.1	27 47 33.2	32.9	1.1
43	Mayer 722	9	s 50 22.78	+0.25	16.55	17 50 6.46	-4.39	341 14 15.00	20.10	87.6	-18 47 0.4	1.1	- 3.2

Eq. Pt. Cor. from stars.

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.				No.	A.	B.
d h m	cm.	°	°						"	"
9 16 4	75.45	21.5	20.0	6.	Bisection at IV.			1	+10.1	+7.2
16 40	75.46	21.0	19.5	7.	Bisections at IV and VI.			2	8.9	4.7
17 24	75.48	20.2	18.9	35.	Bisection at VI.			3	7.7	3.2
17 53	75.47	19.8	18.6					12	9.8	3.9
18 35	75.48	19.4	17.8					15	9.5	3.8
10 15 19	75.79	25.6	23.6	Notes.				16	8.7	4.9
16 3	75.82	24.1	22.6	1-22. Through clouds.				21	8.5	4.0
16 54	75.80	23.0	21.8	6. Poor observation.				22	10.9	4.2
17 46	75.80	22.0	20.9	8. Declination poor.				23	10.9	4.6
				23-43. Seeing good.				24	10.3	6.5
				35. Hurried.				25	9.9	4.9
Adopted Equator Point Corrections.								26	8.9	4.0
								36	10.4	4.2
								37	10.6	5.1
								38	10.7	5.4
								39	11.4	4.5
								42	11.6	5.3
								43	+11.1	+5.7
								* Interpolated from diagram.		

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	Mayer 734	9	1 32.30	+0.28	-16.57	18 1 16.01	-4.49	338 34 14.42	19.75	97.3	-21 27 10.6	11.2	-4.1
2	1 Sagittarii	9	5 58.07	0.32	16.57	18 5 41.82	4.57	336 18 21.38	27.58	106.9	23 43 13.2	12.9	4.3
3	14 Sagittarii	9	8 36.29	0.29	16.56	18 8 20.02	4.51	338 17 7.45	13.92	98.5	21 44 48.8	18.2	4.8
4	Lal. 33516	9	10 48.49	0.32	16.56	18 10 32.25	4.58	336 5 37.82	44.68	107.8	23 55 57.7	56.7	4.8
5	λ Sagittarii	9	22 8.87	0.35	16.61	18 21 52.66	4.65	334 33 12.40	17.48	115.3	25 28 30.5	31.4	5.8
6	Bradley 2335	9	33 16.39	+0.29	-16.50	18 33 0.13	-4.50	338 53 26.15	32.72	96.2	-21 7 57.6	57.1	-7.4

1900 JULY 11.

CLAMP EAST.

HAMMOND, ASSISTANT.

UPDEGRAFF, OBSERVER.

7	ζ Libræ	9	22 56.80	+0.17	-16.31	15 22 40.64	-3.73	343 38 51.05	56.80	78.3	-16 22 14.9	13.9	+10.4
8	γ Libræ	9	30 15.74	0.15	16.29	15 29 59.57	3.72	345 33 28.62	33.25	73.0	14 27 32.0	32.2	9.2
9	κ Libræ	9	36 31.03	0.20	16.35	15 36 14.91	3.88	340 39 48.62	54.20	87.7	19 21 26.6	25.9	10.0
10	λ Libræ	9	47 51.74	0.21	16.34	15 47 35.63	3.96	340 9 4.02	8.15	89.6	19 52 13.0	13.9	9.2
11	ω Scorpil	9	1 17.53	0.22	16.31	16 1 1.44	4.04	339 37 16.35	22.72	91.6	20 24 2.5	1.3	8.0
12	Piazzl XVI. 17....	9	9 17.61	0.24	16.30	16 9 1.55	4.14	337 53 41.00	46.50	98.2	22 7 44.3	44.1	7.7
13	O. A. 15541	9	15 8.14	+0.23	-16.30	16 14 52.07	-4.16	338 25 15.12	22.10	96.2	-21 36 8.1	6.5	+7.0
14	B. D. -19° 4368...	9	19 56.11	+0.21	-16.30	16 19 40.02	-4.12	340 24 46.05	51.52	88.9	-19 36 29.9	29.8	+6.0
15	B. D. -21° 4366...	9	23 44.78	0.23	16.30	16 23 28.71	4.19	338 40 25.52	31.05	95.3	21 20 56.8	56.7	6.1
16	O. A. 15742	9	29 15.73	0.22	16.29	16 28 59.66	4.16	340 17 16.18	22.80	89.5	19 43 60.3	59.1	5.2
17	O. A. 15773	9	32 1.48	0.24	16.29	16 31 45.43	4.24	338 10 9.25	15.60	97.4	21 51 15.1	14.2	5.4
18	O. A. 15797	8	33 5.46	0.20	16.29	16 32 49.37	4.15	341 23 36.70	42.35	85.8	18 37 35.9	35.7	4.6
19	24 Ophiuchi	9	51 6.46	0.26	16.22	16 50 50.44	4.36	337 1 55.60	62.12	102.2	22 59 33.2	32.5	3.7
20	η Ophiuchi	9	4 58.86	+0.18	-16.34	17 4 42.76	-4.18	344 24 58.65	64.35	76.7	-15 36 4.6	4.8	+0.8
21	36 Ophiuchi	9	9 32.32	+0.30	-16.29	17 9 16.35	-4.53	333 34 19.82	25.18	118.8	-26 27 25.5	26.0	+2.9
22	ε Ophiuchi	9	15 21.02	0.24	16.25	17 15 5.00	4.39	339 1 0.90	6.50	94.4	21 0 19.9	20.3	0.8
23	Lal. 31552	9	17 21.36	0.23	16.26	17 17 5.33	4.36	339 54 11.35	17.12	91.1	20 7 6.2	6.4	+0.4
24	O. A. 16844	9	24 10.06	0.22	16.25	17 23 54.03	4.35	340 37 42.15	48.88	88.6	19 23 32.8	32.1	+0.5
25	X Sagittarii	9	41 36.53	0.32	16.21	17 41 20.62	4.68	332 14 19.92	26.32	126.6	27 47 32.8	32.7	1.1
26	Mayer 722	9	50 22.49	+0.22	-16.23	17 50 6.49	-4.39	341 14 12.58	18.70	86.6	-18 47 0.1	0.3	-3.2
27	Mayer 734	9	1 31.99	+0.25	-16.23	18 1 16.01	-4.50	338 34 11.52	18.05	96.2	-21 27 10.6	10.6	-4.1
28	1 Sagittarii	9	5 57.77	0.28	16.23	18 5 41.82	4.58	336 18 18.15	25.15	105.6	23 43 13.3	12.9	4.3
29	14 Sagittarii	9	8 35.98	0.26	16.24	18 8 20.00	4.52	338 17 4.30	11.80	97.3	21 44 18.8	17.9	4.8
30	Lal. 33516	9	10 48.24	0.28	16.24	18 10 32.28	4.59	336 5 34.55	41.35	106.6	23 55 57.8	57.7	4.8
31	λ Sagittarii	9	22 8.62	0.30	16.31	18 21 52.67	4.65	334 33 8.18	14.20	114.0	25 28 31.4	32.2	5.8
32	Bradley 2335	9	33 16.13	+0.25	-16.19	18 33 0.13	-4.51	338 53 23.28	30.98	95.0	-21 7 57.3	56.4	-7.5

1900 JULY 16.

CLAMP EAST.

HAMMOND, ASSISTANT.

UPDEGRAFF, OBSERVER.

33	ζ Libræ	9	22 55.23	+0.15	-14.76	15 22 40.60	-3.69	343 38 45.92	52.98	77.4	-16 22 14.5	14.5	+10.3
34	γ Libræ	9	30 14.19	0.13	14.76	15 29 59.55	3.68	345 33 23.60	30.18	72.2	14 27 31.6	32.1	9.0
35	κ Libræ	9	36 29.42	0.17	14.75	15 36 14.82	3.84	340 39 43.28	50.70	86.7	19 21 26.4	26.0	10.1
36	λ Libræ	9	47 50.19	+0.18	-14.80	15 47 35.61	-3.92	340 9 58.30	65.65	88.6	-19 52 13.2	13.0	+9.2
37	Lal. 29094	9	55 32.98	+0.18	-14.74	15 55 18.42	-3.99	339 8 43.65	52.88	92.2	-20 52 31.4	29.3	+8.8
38	ω Scorpil	9	1 15.99	0.18	14.74	16 1 1.43	4.01	339 37 11.72	19.75	90.5	20 24 1.5	0.8	8.1
39	Piazzl XVI. 17....	9	9 16.06	0.19	14.73	16 9 1.52	4.11	337 53 35.42	43.60	97.1	22 7 44.4	43.5	7.8
40	O. A. 15541	9	15 6.59	+0.19	-14.72	16 14 52.06	-4.12	338 25 9.35	18.32	95.1	-21 36 8.4	6.8	+7.1

Eq. Pt. Cor. from stars.

Eq. Pt. Cor. from stars						
No.						
A.						
B.						
Time.						
Barom.						
Att. Ther.						
Ext. Ther.						
Bisections are made at II and VI, except as noted below.						
d h m						
cm.						
°						
°						
18. Bisections at IV and VII.						
21. Bisections at IV and VI.						
Notes.						
1-6. Seeing good.						
14. Faint.						
Adopted Equator Point Corrections.						
A.						
B.						
"						
1-6, from stars..... *						
7-32, from stars..... *						
33-40, from stars..... *						
* Interpolated from diagram.						
5 +10.3						
6 12.6						
7 11.5						
8 12.9						
9 11.9						
10 9.8						
19 12.2						
20 12.3						
21 13.3						
22 12.3						
25 13.0						
26 12.6						
31 13.2						
32 14.4						
33 15.9						
34 17.3						
35 16.2						
36 +14.6						
+4.9						
5.7						
5.4						
7.9						
6.0						
5.4						
5.4						
6.3						
7.6						
6.4						
6.3						
6.1						
6.9						
6.3						
8.5						
10.4						
8.4						
+6.9						

Adopted Equator Point Corrections.

	A.	B.
1-6, from stars.....	*	+5.1
7-32, from stars.....	*	+6.3
33-40, from stars.....	*	+8.7

* Interpolated from diagram.

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	ΔT + m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ψ Ophiuchi.....	9	18 33.71	+0.18	-14.72	16 18 19.17	-4.09	340 12 52.85	61.20	88.6	-19 48 18.4	17.4	+6.3
2	λ Ophiuchi.....	9	21 32.23	0.16	14.71	16 21 17.68	4.06	341 47 14.38	23.22	83.4	18 13 51.7	50.2	5.6
3	χ Ophiuchi.....	9	51 4.94	0.20	14.66	16 50 50.46	4.34	337 1 49.75	58.05	101.0	22 59 33.7	33.0	3.8
4	η Ophiuchi.....	9	4 57.28	0.14	14.73	17 4 42.76	4.17	344 24 53.95	60.35	75.8	15 36 4.3	5.5	0.6
5	ζ Ophiuchi.....	9	9 30.72	0.23	14.68	17 9 16.29	4.52	333 34 14.22	21.45	117.5	26 27 25.6	26.0	3.2
6	ζ^2 Ophiuchi.....	9	25 37.78	0.21	14.65	17 25 23.34	4.50	336 8 19.35	28.50	105.0	23 53 7.9	6.5	+0.3
7	Λ Sagittarii.....	9	41 35.02	0.24	14.61	17 41 20.62	-4.69	332 14 14.30	22.22	125.1	-27 47 33.0	32.8	-0.8
8	Mayer 722.....	9	50 20.92	0.17	14.60	17 50 6.46	-4.40	341 14 7.78	14.90	85.6	-18 47 0.0	0.7	-3.2
9	Mayer 734.....	9	1 30.41	0.19	14.63	18 1 15.97	4.51	338 34 5.72	14.75	95.1	21 27 11.4	10.4	4.0
10	ι Sagittarii.....	9	5 56.18	0.21	14.63	18 5 41.75	4.59	336 18 12.75	22.00	104.4	23 43 13.7	12.4	4.1
11	ι^4 Sagittarii.....	9	8 34.42	0.19	14.62	18 8 19.99	4.53	338 16 58.60	67.92	96.2	21 44 19.6	18.3	4.7
12	Lal. 33516.....	9	10 46.64	0.21	14.62	18 10 32.23	4.61	336 5 29.22	37.82	105.4	23 55 58.2	57.6	4.6
13	λ Sagittarii.....	9	22 7.09	0.22	14.68	18 21 52.69	4.67	334 33 3.62	12.10	112.7	25 28 31.0	30.6	5.7
14	Bradley 2335.....	9	33 14.58	+0.19	- 14.55	18 33 0.16	-4.54	338 53 18.75	26.85	94.0	-21 7 57.2	57.2	-7.3

UPDEGRAFF, OBSERVER.

1900 NOVEMBER 11.

CLAMP WEST.

NO ASSISTANT.

15	μ Andromedæ.....	9	51 40.26	+0.16	- 23.07	0 51.....	....	37 57.....	....	....	....	....	....
16	43 H. Cephei.....	9	55 47.06	2.80	23.30	0 55.....	....	85 43.....	....	....	....	....	....
17	β Andromedæ.....	9	4 36.18	0.14	23.16	1 4.....	....	35 5.....	....	....	....	....	....
18	α Ursæ Minoris.....	9	24 21.79	9.85	23.52	1 24.....	....	88 45.....	....	....	....	....	....
19	α Canum Venat.....	9	51 45.92	+0.10	23.27	12 51.....	....	38 51.....	....	....	....	....	....
20	α Ursæ Minoris s. P.....	8	24 37.29	-5.94	23.42	1 24.....	....	91 12.....	....	....	....	....	....
21	η Bootis.....	9	50 20.66	+0.04	-23.38	13 49.....	....	18 54.....	....	....	....	....	....

UPDEGRAFF, OBSERVER.

1900 NOVEMBER 12.

CLAMP WEST.

NO ASSISTANT.

22	μ Andromedæ.....	7	51 40.66	+0.12	- 23.44	0 51.....	....	37 57.....	....	....	....	....	....
23	43 H. Cephei.....	9	55 47.82	2.07	23.43	0 55.....	....	85 43.....	....	....	....	....	....
24	β Andromedæ.....	9	4 36.51	0.11	23.47	1 4.....	....	35 5.....	....	....	....	....	....
25	α Ursæ Minoris.....	9	24 22.78	+7.27	- 23.32	1 24.....	....	88 45.....	....	....	....	....	....

UPDEGRAFF, OBSERVER.

1900 NOVEMBER 13.

CLAMP WEST.

NO ASSISTANT.

26	μ Andromedæ.....	9	51 40.99	+0.22	- 23.88	0 51.....	....	37 57.....	....	....	....	....	....
27	43 H. Cephei.....	9	55 46.92	3.70	23.29	0 55.....	....	85 43.....	....	....	....	....	....
28	β Andromedæ.....	9	4 36.88	0.20	23.93	1 4.....	....	35 5.....	....	....	....	....	....
29	α Ursæ Minoris.....	9	24 16.34	+12.98	- 22.04	1 24.....	....	88 45.....	....	....	....	....	....
30	α Canum Venat.....	9	51 46.69	+0.13	- 24.02	12 51.....	....	38 51.....	....	....	....	....	....
31	43 H. Cephei s. P.....	4	55 53.45	-2.22	23.97	0 55.....	....	94 14.....	....	....	....	....	....
32	α Ursæ Minoris s. P.....	6	24 39.18	-7.79	24.36	1 24.....	....	91 12.....	....	....	....	....	....
33	η Bootis.....	9	50 21.37	+0.05	- 24.07	13 49.....	....	18 55.....	....	....	....	....	....

UPDEGRAFF, OBSERVER.

1900 NOVEMBER 14.

CLAMP WEST.

NO ASSISTANT.

34	μ Andromedæ.....	9	51 41.42	+0.13	- 24.22	0 51.....	....	37 57.....	....	....	....	....	....
35	43 H. Cephei.....	9	55 49.06	2.12	23.98	0 55.....	....	85 43.....	....	....	....	....	....
36	β Andromedæ.....	9	4 37.28	0.12	24.26	1 4.....	....	35 5.....	....	....	....	....	....
37	α Ursæ Minoris.....	9	24 23.03	+7.44	- 23.70	1 24.....	....	88 46.....	....	....	....	....	....

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and VI, except as noted below.	Eq. Pt. Cor. from stars.			
					No.	A.	B.	
d h m	cm.	°	°	Notes. 15-18, 30-33. Seeing good. 19-21. Seeing fair; floating clouds. 22-25, 26-29. Seeing rather poor.				
16 16 24	75.79	30.0	28.7		3	"	"	
17 11	75.80	29.0	27.7		4	+16.8	+8.2	
17 44	75.80	28.5	27.5		5	16.3	9.6	
18 32	75.81	28.0	27.0		6	17.3	9.7	
Adopted Equator Point Corrections.					7	17.4	7.9	
					8	16.8	8.5	
					13	16.4	8.9	
					14	16.4	7.6	
						+17.7	+9.3	
I-14, from stars..... *								

OBSERVATIONS OF STANDARD STARS.

D 37

1900 NOVEMBER 15. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
NO.	NAME.	THDS.	MEAN THREAD.	$C'/\text{SEC } \delta$ + "TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	α Canum Venat.....	9	51 47.73	+ 0.01	-24.89	12 51 ....	....	38 51 ....	....	....	....	....	....
2	ϵ Virginis.....	9	57 39.31	+ 0.01	24.98	12 57 ....	....	11 30 ....	....	....	....	....	....
3	α Ursæ Minoris S. P..	9	24 30.67	- 0.45	-24.19	1 24 ....	....	91 12 ....	....	....	....	....	....
1900 NOVEMBER 16. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
4	μ Andromedæ.....	9	51 42.45	+ 0.03	-25.17	0 51 ....	....	37 57 ....	....	....	....	....	....
5	43 H. Cephei.....	9	55 51.34	0.48	24.90	0 55 ....	....	85 43 ....	....	....	....	....	....
6	β Andromedæ.....	9	4 38.38	0.03	25.28	1 4 ....	....	35 5 ....	....	....	....	....	....
7	α Ursæ Minoris.....	9	24 29.49	+ 1.68	-25.37	1 24 ....	....	88 46 ....	....	....	....	....	....
1900 NOVEMBER 22. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
8	μ Andromedæ.....	9	51 44.24	+ 0.41	-27.38	0 51 ....	....	37 57 ....	....	....	....	....	....
9	43 H. Cephei.....	9	55 46.94	6.73	27.69	0 55 ....	....	85 43 ....	....	....	....	....	....
10	γ Piscium.....	9	13 10.32	0.05	27.33	1 12 ....	....	3 5 ....	....	....	....	....	....
11	α Ursæ Minoris.....	9	24 7.57	+23.66	-27.72	1 24 ....	....	88 46 ....	....	....	....	....	....
1900 NOVEMBER 27. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
12	μ Andromedæ.....	6	51 43.84	- 0.39	-26.23	0 51 ....	....	37 57 ....	....	....	....	....	....
13	43 H. Cephei.....	9	55 57.60	6.79	25.71	0 55 ....	....	85 43 ....	....	....	....	....	....
14	β Andromedæ.....	6	4 39.68	0.35	26.28	1 4 ....	....	35 5 ....	....	....	....	....	....
15	α Ursæ Minoris.....	9	24 50.44	-23.87	-25.80	1 24 ....	....	88 46 ....	....	....	....	....	....
1900 NOVEMBER 29. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
16	α Ursæ Minoris S. P..	9	23 53.61	+31.72	-26.29	1 23 ....	....	91 12 ....	....	....	....	....	....
17	η Bootis.....	9	50 24.30	- 0.24	26.38	13 49 ....	....	18 54 ....	....	....	....	....	....
18	α Bootis.....	9	11 34.75	- 0.25	-26.44	14 11 ....	....	19 42 ....	....	....	....	....	....
1900 NOVEMBER 30. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
19	43 H. Cephei.....	9	55 50.50	+ 1.86	-27.84	0 55 ....	....	85 43 ....	....	....	....	....	....
20	γ Piscium.....	9	13 11.13	- 0.64	27.50	1 12 ....	....	3 5 ....	....	....	....	....	....
21	α Ursæ Minoris.....	9	24 19.93	+ 6.56	27.79	1 23 ....	....	88 45 ....	....	....	....	....	....
22	α Canum Venat.....	9	51 51.31	+ 0.03	28.07	12 51 ....	....	38 51 ....	....	....	....	....	....
23	43 H. Cephei S. P....	9	55 52.76	- 0.51	27.83	0 55 ....	....	94 14 ....	....	....	....	....	....
24	α Ursæ Minoris S. P..	9	24 27.07	- 1.79	26.90	1 23 ....	....	91 12 ....	....	....	....	....	....
25	α Bootis.....	9	11 36.16	+ 0.01	-28.08	14 11 ....	....	19 42 ....	....	....	....	....	....
1900 DECEMBER 1. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
26	μ Andromedæ.....	9	51 45.43	+ 0.15	-28.40	0 51 ....	....	37 57 ....	....	....	....	....	....
27	43 H. Cephei.....	9	55 49.68	2.69	28.05	0 55 ....	....	85 43 ....	....	....	....	....	....
28	β Andromedæ.....	9	4 41.25	0.14	28.37	1 4 ....	....	35 5 ....	....	....	....	....	....
29	α Ursæ Minoris.....	9	24 15.49	+ 9.47	-26.89	1 23 ....	....	88 45 ....	....	....	....	....	....
30	α Canum Venat.....	9	51 51.61	+ 0.12	-28.42	12 51 ....	....	38 51 ....	....	....	....	....	....
31	43 H. Cephei S. P....	9	55 54.78	- 2.11	28.45	0 55 ....	....	94 14 ....	....	....	....	....	....
32	α Ursæ Minoris S. P..	9	24 33.44	- 7.41	28.25	1 23 ....	....	91 12 ....	....	....	....	....	....
33	η Bootis.....	9	50 26.11	+ 0.05	-28.43	13 49 ....	....	18 54 ....	....	....	....	....	....
Notes.													
3. Star unsteady at times. 4-7, 16-18, 22-33. Seeing good. 8-11. Stars very unsteady.													

1900 DECEMBER 2. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	μ Andromedæ.....	9	m s 51 45.65	s + 0.25	-28.73	h m s 0 51	s	° ' " 37 57	" 88 43	"	° ' "	"	"
2	43 H. Cephei	9	55 48.43	4.43	28.74	0 55 .....	.....	37 57	88 43 .....	.....	.....	.....	.....
3	β Andromedæ.....	9	4 41.53	0.22	28.74	1 4 .....	.....	35 5	88 45 .....	.....	.....	.....	.....
4	α Ursæ Minoris.....	9	24 12.33	+15.61	-30.45	1 23 .....	.....	88 45 .....	.....	.....	.....	.....	.....

1900 DECEMBER 5. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
5	μ Andromedæ.....	9	51 46.98	+ 0.19	-30.04	0 51 .....	.....	37 57 .....	.....	.....	.....	.....	.....
6	43 H. Cephei	9	55 50.26	3.17	29.93	0 55 .....	.....	85 43 .....	.....	.....	.....	.....	.....
7	γ Piscium	9	13 13.05	0.02	30.12	1 12 .....	.....	3 5 .....	.....	.....	.....	.....	.....
8	α Ursæ Minoris.....	9	24 14.67	+11.15	-29.97	1 23 .....	.....	88 45 .....	.....	.....	.....	.....	.....

1900 DECEMBER 6. CLAMP WEST. NO ASSISTANT.													
UPDEGRAFF, OBSERVER.													
9	43 H. Cephei	9	55 51.42	+ 2.79	-30.92	0 55 .....	.....	85 43 .....	.....	.....	.....	.....	.....
10	γ Piscium	9	13 13.42	0.01	30.49	1 12 .....	.....	3 5 .....	.....	.....	.....	.....	.....
11	α Ursæ Minoris.....	9	24 16.28	9.81	30.82	1 23 .....	.....	88 45 .....	.....	.....	.....	.....	.....
12	γ Piscium	9	36 48.79	+ 0.01	-30.53	1 36 .....	.....	4 59 .....	.....	.....	.....	.....	.....

1900 DECEMBER 8. CLAMP WEST. LITTELL, ASSISTANT.													
UPDEGRAFF, OBSERVER.													
13	43 H. Cephei	9	55 50.29	+ 4.28	[-31.73]	0 55 .....	.....	85 42 34.02	35.45	63.21	+85 43 57.9	56.1	.....
14	α Ursæ Minoris.....	9	24 10.33	14.82	[31.20]	1 23 .....	.....	88 45 32.35	37.82	70.37	88 47 3.2	5.4	.....
15	α Trianguli.....	9	47 59.63	0.16	31.71	1 47 28.05	-5.33	29 5 48.48	51.92	10.29	29 5 59.3	59.0	-28.9
16	β Arietis	7	49 43.60	0.11	31.79	1 49 11.97	5.08	20 19 34.08	38.85	20.00	20 19 35.1	36.3	26.7
17	γ Andromedæ.....	9	58 22.94	0.26	31.73	1 57 51.46	5.97	41 51 7.22	9.85	3.05	41 51 31.3	30.2	30.6
18	B. D. +38° 413	9	2 58.91	+ 0.23	-31.74	2 2 27.40	-5.87	38 55 26.75	30.52	0.01	+38 55 47.8	47.8	-29.5
19	B. D. +36° 428	9	6 30.82	+ 0.21	-31.74	2 5 59.29	-5.79	36 29 54.60	58.82	2.51	+36 30 13.1	13.6	-28.7
20	B. D. +36° 470	9	17 50.56	0.21	31.74	2 17 19.03	5.92	37 6 24.40	28.98	1.88	37 6 43.5	44.4	27.5
21	B. D. +36° 491	9	21 46.35	0.21	31.74	2 21 14.82	5.92	36 31 10.08	13.28	2.49	36 31 28.5	28.1	26.9
22	B. D. +35° 490	9	25 19.24	0.20	31.74	2 24 47.70	5.91	35 40 29.70	32.90	3.37	35 40 47.3	46.8	26.4
23	B. D. +34° 457	9	27 6.74	0.19	31.75	2 26 35.18	5.89	34 49 27.48	31.52	4.26	34 49 44.2	44.6	26.0
24	B. D. +33° 462	7	29 8.47	+ 0.18	-31.75	2 28 36.90	-5.84	33 28 42.38	45.05	5.66	+33 28 57.7	56.7	-25.5
25	B. D. +34° 476	9	32 22.34	+ 0.19	-31.75	2 31 50.78	-5.92	34 43 50.30	53.85	4.35	+34 44 6.9	6.8	-25.4
26	B. D. +33° 493	9	37 8.61	0.18	31.75	2 36 37.04	5.90	33 20 33.92	38.12	5.81	33 20 49.1	49.6	24.6
27	B. D. +32° 498	9	39 41.79	0.17	31.75	2 39 10.21	5.87	32 20 0.38	4.72	6.87	32 20 14.4	15.2	24.1
28	B. D. +33° 512	9	42 4.96	0.18	31.75	2 41 33.39	5.93	33 13 11.30	13.92	5.93	33 13 26.2	25.3	23.9
29	B. D. +32° 517	9	46 34.43	0.17	31.75	2 46 2.85	5.92	32 19 56.68	60.05	6.87	32 20 10.7	10.5	23.2
30	B. D. +31° 500	9	48 41.96	+ 0.17	-31.75	2 48 10.38	-5.91	31 55 53.28	56.88	7.29	+31 56 6.9	6.9	-22.9
31	B. D. +30° 469	9	52 35.70	+ 0.16	-31.75	2 52 4.11	-5.90	31 7 2.48	5.22	8.14	+31 7 15.2	14.4	-22.3
32	B. D. +30° 479	9	56 44.33	0.16	31.75	2 56 12.74	5.90	30 35 39.68	43.08	8.70	30 35 51.9	51.7	21.6
33	B. D. +30° 482	9	59 9.24	0.16	31.75	2 58 37.65	5.93	30 55 19.58	23.08	8.35	30 55 32.1	32.3	21.4
34	B. D. +29° 522	9	1 25.62	0.15	31.75	3 0 54.02	5.91	30 8 37.90	41.00	9.18	30 8 49.6	49.4	21.0
35	B. D. +28° 499	9	4 13.18	0.14	31.75	3 3 41.57	5.86	28 41 52.92	55.60	10.72	28 42 3.1	2.2	20.4
36	B. D. +28° 507	7	8 12.41	+ 0.14	-31.75	3 7 40.80	-5.89	28 51 38.20	40.00	10.54	+28 51 48.6	46.8	-19.9
37	ζ Arietis	9	9 46.31	+ 0.10	-31.74	3 9 14.66	-5.55	20 40 .....	.....	.....	.....	.....	.....
38	B. D. +26° 565	9	24 57.23	0.13	31.75	3 24 25.61	5.88	26 40 57.25	60.58	12.89	+26 41 5.2	5.3	-17.4
39	B. D. +27° 519	9	27 11.18	0.14	31.75	3 26 39.57	5.95	28 1 43.60	44.42	11.43	28 1 53.0	50.6	17.3
40	B. D. +26° 572	9	29 34.73	0.12	31.75	3 29 3.10	5.88	26 16 33.95	36.32	13.33	26 16 41.4	40.6	16.8
41	B. D. +25° 580	9	31 47.43	+ 0.12	-31.75	3 31 15.80	-5.87	25 40 12.65	17.00	13.99	+25 40 19.5	20.6	-16.4

Time.						Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.						Eq. Pt. Cor. from stars.						
															No.	A.	B.				
d	h	m	cm.	°	°																
8	1	25	75.58	3.8	1.8	13.	Bisection at IV.										15	"	"		
	2	44	75.50	2.4	1.4	14.	Bisections at c ₁ and c ₅ .										16	+19.9	+17.0		
	3	23	75.49	2.3	1.6	15, 17-22,	Adopted Equator Point Corrections.										17	+19.1	+17.0		
						24-32, 35, 36.						Bisections at II and VI.									
						16.						Bisections at IV and VI.									
						23.	Bisections at III and VI.														
						Notes.															
						2, 11. Seeing excellent.															
						13, 14, from nadir { 0 ^h 35 ^m .. +19.47 +16.19															
						{ 1 43 .. +20.05 +16.95															
						15-41, from stars..... * +16.8															
						* Interpolated from diagram.															

NO.	NAME.	THDS.	MEAN THREAD.		c_0 SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
			m	s					A.	B.		A.	B.	
1	B. D. +26° 590	9	34	7.18	+0.13	-31.76	3 33 35.55	-5.93	26 53 56.05	57.28	12.66	+26 54 4.2	2.2	-16.2
2	B. D. +25° 598	9	38	16.15	0.12	31.76	3 37 44.51	5.90	25 48 38.10	41.32	13.84	25 48 45.1	45.1	15.5
3	B. D. +24° 562	9	41	39.26	0.11	31.76	3 41 7.61	5.84	24 12 47.45	49.40	15.60	24 12 52.7	51.4	14.9
4	B. D. +23° 561	7	44	1.62	0.11	31.76	3 43 29.97	5.85	24 4 42.35	45.52	15.74	24 4 47.3	47.4	14.6
5	B. D. +24° 583	9	46	3.24	0.11	31.76	3 45 31.59	5.89	24 51 48.62	51.10	14.88	24 51 54.5	53.8	14.4
6	B. D. +25° 641	9	48	10.61	0.12	31.76	3 47 38.97	5.92	25 23 16.80	20.02	14.30	25 23 23.2	23.3	14.1
7	B. D. +22° 613	9	54	48.91	+0.10	-31.76	3 54 17.25	-5.84	23 7 5.48	8.28	16.82	+23 7 9.4	8.9	-13.0
8	B. D. +23° 609	9	59	0.30	+0.11	-31.76	3 58 28.65	-5.89	23 49 58.08	61.65	16.02	+23 50 2.8	3.2	-12.5
9	B. D. +23° 617	9	1	17.06	0.10	31.76	4 0 45.40	5.87	23 15 1.20	3.00	16.67	23 15 5.3	4.0	12.1
10	B. D. +22° 637 ²	9	3	33.89	0.10	31.76	4 3 2.23	5.85	22 50 7.75	11.95	17.13	22 50 11.4	12.4	11.8
11	B. D. +22° 649	9	7	32.89	0.10	31.77	4 7 1.22	5.84	22 9 30.92	35.00	17.89	22 9 33.8	34.7	11.2
12	B. D. +21° 610	9	9	55.39	0.09	31.77	4 9 23.71	5.83	21 50 50.90	54.48	18.25	21 50 53.4	53.9	10.8
13	B. D. +21° 618	9	13	5.52	0.09	31.77	4 12 33.84	5.82	21 20 15.42	18.02	18.83	21 20 17.3	16.8	10.4
14	B. D. +20° 744	9	17	7.23	+0.09	-31.77	4 16 35.55	-5.79	20 35 15.32	18.30	19.71	+20 35 16.3	16.2	-9.8
15	B. D. +21° 642	9	20	2.04	+0.09	-31.77	4 19 30.36	-5.86	22 4 2.75	4.38	18.00	+22 4 5.4	4.0	-9.5
16	B. D. +21° 647	9	22	42.11	0.09	31.77	4 22 10.43	5.84	21 23 57.12	59.15	18.76	21 23 59.0	58.0	9.0
17	B. D. +19° 733	9	26	0.24	0.08	31.77	4 25 28.55	5.78	19 55 11.20	14.22	20.46	19 55 11.4	11.4	8.5
18	B. D. +20° 778	9	29	29.26	0.09	31.77	4 28 57.58	5.83	20 53 51.72	53.62	19.34	20 53 53.0	51.9	8.1
19	B. D. +19° 774	9	40	20.91	0.08	31.78	4 39 49.21	5.78	19 8 46.10	47.42	21.37	19 8 45.4	43.7	6.5
20	B. D. +19° 782	7	42	28.79	+0.08	-31.78	4 41 57.09	-5.78	19 8 29.22	31.75	21.38	+19 8 28.5	28.0	-6.2
21	B. D. +18° 743	8	46	8.88	+0.07	-31.78	4 45 37.17	-5.76	18 40 .....	.....	.....	+18 40 ....	.....	.....
22	B. D. +16° 811	9	49	43.06	0.08	31.78	4 49 11.36	5.79	19 19 29.98	33.10	21.16	19 19 29.4	29.6	-5.2
23	B. D. +18° 765	8	53	7.63	0.07	31.78	4 52 35.92	5.77	18 50 25.32	26.68	21.72	18 50 24.2	22.6	4.8
24	ϵ Tauri.....	9	57	44.63	0.09	31.76	4 57 12.94	5.88	21 27 .....	.....	.....	21 27 ....	.....	.....
25	B. D. +17° 841	9	1	6.23	0.07	31.79	5 0 34.51	5.73	17 40 57.92	60.25	23.10	17 40 55.4	54.8	3.6
26	B. D. +15° 752	9	4	35.90	+0.06	-31.79	5 4 4.17	-5.64	15 28 18.42	22.25	25.79	+15 28 13.2	14.1	-3.2
27	β Orionis.....	9	10	20.73	-0.04	-31.89	5 9 48.90	-4.90	351 41 44.18	47.72	64.18	-8 18 59.4	58.8	-2.4
28	B. D. +15° 787	9	14	32.16	+0.06	31.79	5 14 0.43	5.66	15 41 1.98	4.10	25.52	+15 40 57.0	56.2	1.8
29	B. D. +15° 799	9	17	15.65	0.06	31.79	5 16 43.92	5.67	16 1 41.38	42.90	25.10	16 1 36.9	35.4	1.5
30	B. D. +15° 813	9	20	48.06	0.06	31.80	5 20 16.32	5.64	15 22 0.78	2.92	25.91	15 21 55.4	54.6	1.0
31	B. D. +14° 934	9	26	30.52	0.06	31.80	5 25 58.78	5.62	14 51 19.12	21.95	26.54	14 51 13.1	13.0	0.2
32	B. D. +14° 947	9	28	50.67	+0.05	-31.80	5 28 18.92	-5.60	14 14 16.08	17.90	27.31	+14 14 9.3	8.2	-0.0
33	B. D. +14° 958	9	31	23.29	+0.05	-31.80	5 30 51.54	-5.61	14 35 44.00	47.92	26.86	+14 35 37.6	38.7	+0.4
34	B. D. +14° 973	9	34	3.23	0.05	31.80	5 33 31.48	5.60	14 30 3.30	6.08	26.98	14 29 56.8	56.7	0.7
35	B. D. +13° 957	9	37	8.54	0.05	31.81	5 36 36.78	5.57	13 32 38.20	40.35	28.19	13 32 30.5	29.8	1.1
36	B. D. +12° 882	9	39	42.01	0.05	31.81	5 39 10.25	5.52	12 22 28.28	30.20	29.68	12 22 19.1	18.2	1.4
37	B. D. +13° 979	9	42	39.99	0.05	31.81	5 42 8.23	5.57	13 51 53.78	56.20	27.78	13 51 46.5	46.1	1.8
38	B. D. +11° 964	9	49	34.21	+0.04	-31.81	5 49 2.44	-5.49	11 44 48.20	50.05	30.49	+11 44 38.2	37.2	+2.6
39	B. D. +12° 963	9	53	4.66	+0.05	-31.82	5 52 32.89	-5.52	12 52 19.82	22.40	29.03	+12 52 11.2	11.0	+3.1
40	B. D. +11° 995	9	55	36.46	0.04	31.82	5 55 4.68	5.49	11 59 8.62	11.08	30.18	11 58 58.8	58.6	3.4
41	B. D. +11° 1007	9	58	21.36	0.04	31.82	5 57 49.58	5.46	11 8 21.40	24.65	31.29	11 8 10.5	11.0	3.6
42	ν Orionis.....	9	2	29.12	0.06	31.83	6 1 57.36	5.59	14 46 52.48	54.90	26.61	14 46 46.3	45.9	4.5
43	η Geminorum.....	9	9	28.06	0.09	31.76	6 8 56.32	5.88	22 32 0.15	2.48	17.46	22 32 3.0	2.6	6.1
44	μ Geminorum.....	9	17	32.33	+0.09	-31.90	6 17 0.58	-5.86	22 33 42.75	46.45	17.43	+22 33 45.6	46.6	+7.3

UPDEGRAFF, OBSERVER.

1900 DECEMBER 9.

CLAMP WEST.

NO ASSISTANT.

45	α Canum Venat.....	9	51	55.90	+0.06	-32.39	12 51 .....	.....	38 51 .....	.....	.....	+38 51 ....	.....	.....
46	43 H. Cephei S. P.....	9	55	56.23	-0.96	32.77	0 55 .....	.....	94 14 13.98	16.80	89.08	85 43 56.6	56.8	.....
47	α Ursæ Minoris S. P..	9	24	28.39	-3.38	32.24	1 23 .....	.....	91 11 13.92	17.02	79.69	88 47 5.5	5.5	.....
48	η Bootis.....	9	50	30.37	+0.02	-32.45	13 49 .....	.....	18 53 35.22	36.35	22.51	+18 53 33.1	31.2	.....

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.		Eq. Pt. Cor. from stars.		
						No.	A.	B.
d h m	cm.	°	°				"	"
8 3 57	75.47	+2.2	+1.6	7.	Bisections at II and VI.	27	+19.8	+16.6
4 47	75.42	2.1	1.4	16, 27, 44.	Bisections at III and V.	42	18.1	16.1
5 19	75.40	2.0	1.2	46, 48.	Bisection at IV.	43	19.2	17.2
6 13	75.36	+1.8	+1.4	47.	Bisections at c ₁ and c ₅ .	44	+20.4	+17.0
9 13 16	76.40	-4.7	-5.2					
Notes.								
35. Observation poor.								
45-48. Seeing excellent.								
Adopted Equator Point Corrections.								
						A.	B.	
						"	"	
1-44, from stars.						*	+16.8	
46-48, from nadir.						+19.39	+16.37	
* Interpolated from diagram.								

UPDEGRAFF, OBSERVER.				1900 DECEMBER 10.				CLAMP WEST.				LAWTON, ASSISTANT.			
NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0		
								A.	B.		A.	B.			
1	α Ursæ Minoris.....	9	m s 24 18.50	s +5.38	[-31.52]	h m s 1 23	s	o ' " / " / "	88 45 32.41	37.42	71.90	+88 47 5.5	6.4		
2	α Trianguli.....	7	48 0.71	0.05	32.69	1 47 28.04	-5.32	29 5 47.35	51.80	10.51	29 5 58.4	59.3	-29.0		
3	β Arietis.....	7	49 44.67	0.02	32.77	1 49 11.96	5.08	20 19	38.38	20.43	29 19	36.0	26.7		
4	γ Andromedæ.....	9	58 24.09	0.09	32.72	1 57 51.45	5.96	41 51 4.15	9.90	3.12	41 51 28.7	30.9	30.8		
5	B. D. +37° 480	7	0 47.73	0.08	32.74	2 0 15.07	5.78	37 49	7.82	1.16	37 49	24.7	29.7		
6	B. D. +38° 413	9	3 0.09	0.08	32.74	2 2 27.43	5.85	38 55 25.98	30.98	0.01	38 55 47.5	48.5	29.7		
7	B. D. +38° 423	5	5 20.21	+0.08	-32.74	2 4 47.55	-5.84	38 14 1.75	5.25	0.72	+38 14 22.5	22.0	-29.3		
8	B. D. +37° 505	8	8 31.09	+0.08	-32.74	2 7 58.43	-5.86	37 56 29.58	34.30	1.03	+37 56 50.0	50.7	-28.9		
9	B. D. +36° 446	9	10 31.37	0.07	32.74	2 9 58.70	5.80	36 18 29.48	33.72	2.77	36 18 48.2	48.7	28.4		
10	B. D. +36° 458	9	13 11.32	0.07	32.75	2 12 38.64	5.84	36 36 27.45	31.85	2.45	36 36 46.4	47.1	28.1		
11	B. D. +36° 464	9	15 36.02	0.07	32.75	2 15 3.34	5.86	36 36 54.75	59.08	2.44	36 37 13.8	14.2	27.8		
12	B. D. +36° 470	9	17 51.60	0.07	32.75	2 17 18.92	5.91	37 6 25.68	29.50	1.92	37 6 45.2	45.2	27.7		
13	B. D. +34° 432	9	20 3.76	0.06	32.75	2 19 31.07	5.81	34 35 33.22	36.85	4.59	34 35 50.1	49.9	27.0		
14	B. D. +35° 477	9	22 39.69	+0.06	-32.75	2 22 7.00	-5.87	35 29 10.00	15.38	3.64	+35 29 27.8	29.2	-26.8		
15	B. D. +35° 490	9	25 20.25	+0.06	-32.75	2 24 47.56	-5.90	35 40 30.48	34.08	3.44	+35 40 48.5	48.1	-26.5		
16	B. D. +33° 454	9	27 28.85	0.06	32.76	2 26 56.15	5.85	34 6 14.05	18.40	5.13	34 6 30.4	30.8	26.0		
17	B. D. +34° 469	7	30 21.16	0.06	32.76	2 29 48.46	5.88	34 15 17.08	19.55	4.96	34 15 33.6	31.7	25.7		
18	B. D. +34° 476	9	32 23.32	0.06	32.76	2 31 50.62	5.92	34 43 50.80	53.92	4.45	34 44 7.8	6.9	25.5		
19	B. D. +35° 483	9	34 24.17	0.06	32.76	2 33 51.47	5.86	33 4 3.12	6.05	6.23	33 4 18.3	17.2	25.0		
20	B. D. +33° 493	9	37 9.65	0.06	32.76	2 36 36.95	5.89	33 20 34.65	38.88	5.93	33 20 50.1	50.3	24.7		
21	B. D. +32° 522	9	48 13.33	+0.05	-32.77	2 47 40.61	-5.93	32 30 41.85	47.58	6.84	+32 30 56.4	58.0	-23.2		
22	B. D. +30° 469	9	52 36.85	+0.05	-32.77	2 52 4.13	-5.90	31 7 2.92	8.65	8.33	+31 7 15.9	17.4	-22.4		
23	B. D. +30° 477	9	54 52.12	0.05	32.77	2 54 19.40	5.90	30 43 50.55	53.10	8.75	30 44 3.1	1.5	22.0		
24	B. D. +30° 482	9	59 10.27	0.05	32.78	2 58 37.54	5.93	30 55 20.05	23.55	8.54	30 55 32.8	32.1	21.5		
25	B. D. +29° 522	9	1 26.73	0.04	32.78	3 0 53.99	5.91	30 8 38.60	42.30	9.38	30 8 50.6	49.9	21.1		
26	B. D. +28° 499	9	4 14.24	0.04	32.78	3 3 41.50	5.86	28 41 54.72	56.48	10.96	28 42 5.1	2.5	20.5		
27	B. D. +30° 503	9	7 29.45	0.04	32.78	3 6 56.71	5.96	30 28 46.48	50.25	9.02	30 28 58.8	58.1	-20.4		
28	ζ Arietis.....	9	9 47.45	+0.02	-32.79	3 9 14.69	-5.57	20 40 .....	.....	.....	+20 40 ....	....	....		
29	B. D. +28° 511	9	11 40.41	+0.04	-32.78	3 11 7.67	-5.89	28 23 35.65	38.55	11.30	+28 23 45.6	44.2	-19.5		
30	B. D. +27° 492	9	14 16.63	0.04	32.78	3 13 43.89	5.85	27 10 53.08	56.78	12.64	27 11 1.7	1.0	19.0		
31	B. D. +27° 500	9	16 50.20	0.04	32.78	3 16 17.46	5.87	27 15 4.38	7.55	12.58	27 15 13.1	11.8	18.7		
32	B. D. +28° 526	9	19 24.21	0.04	32.78	3 18 51.47	5.93	28 18 6.25	11.18	11.40	28 18 16.1	16.6	18.5		
33	B. D. +27° 509	9	22 15.27	0.04	32.79	3 21 42.52	5.90	27 24 19.92	22.70	12.39	27 24 28.8	27.0	18.0		
34	B. D. +26° 565	9	24 58.29	0.03	32.79	3 24 25.53	5.88	26 40 58.30	61.25	13.20	26 41 6.4	4.8	17.5		
35	B. D. +27° 519	9	27 12.33	+0.04	-32.79	3 26 39.58	-5.96	28 1 41.60	45.48	11.71	+28 1 51.1	50.5	-17.4		
36	B. D. +26° 572	9	29 35.77	+0.03	-32.79	3 29 3.01	-5.89	26 16 31.20	37.32	13.65	+26 16 38.8	40.3	-16.8		
37	B. D. +25° 580	9	31 48.58	0.03	32.79	3 31 15.82	5.87	25 40 12.45	18.18	14.33	25 40 19.4	20.5	16.5		
38	B. D. +26° 590	9	34 8.33	0.03	32.79	3 33 35.57	5.94	26 53 55.72	59.08	12.96	26 54 4.0	2.7	16.3		
39	B. D. +24° 534	9	36 21.54	0.03	32.39	3 35 48.78	5.87	25 3 5.02	8.45	15.03	25 3 11.2	10.0	15.8		
40	B. D. +25° 600	9	38 31.46	0.03	32.79	3 37 58.70	5.89	25 24 45.60	52.00	14.62	25 24 52.2	53.9	15.5		
41	B. D. +25° 611	9	40 36.97	0.03	32.79	3 40 4.21	5.91	25 45 57.90	61.92	14.23	25 46 4.9	4.0	15.3		
42	B. D. +26° 617	9	42 55.30	+0.03	-32.79	3 42 22.74	-5.95	26 16 57.22	60.78	13.66	+26 17 4.8	3.6	-15.0		
43	B. D. +24° 578	9	45 8.61	+0.03	-32.79	3 44 35.85	-5.86	24 11 40.00	43.78	16.01	+24 11 45.2	44.3	-14.5		
44	B. D. +24° 589	9	47 33.23	0.03	32.80	3 47 0.46	5.88	24 25 12.50	17.72	15.75	24 25 18.0	18.4	14.2		
45	B. D. +24° 595	9	49 46.25	0.03	32.80	3 49 13.48	5.91	24 48 49.10	53.12	15.31	24 48 55.0	54.2	13.9		
46	B. D. +24° 599	9	52 6.22	0.03	32.80	3 51 33.45	5.89	24 10 27.82	32.20	16.03	24 10 33.0	32.6	13.5		
47	B. D. +22° 612	9	54 35.89	0.02	32.80	3 54 3.11	5.84	22 56 10.20	14.88	17.46	22 56 13.9	13.7	13.0		
48	B. D. +23° 609	9	59 1.38	+0.02	-32.80	3 58 28.60	-5.90	23 49 59.45	62.92	16.43	+23 50 4.2	2.8	-12.6		

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.						
d h m	cm.	°	°	No.	A.	B.								
10 1 27	76.205	-1.3	-1.6	1.	Bisections at c_1 and c_5 .				2	+21.4	+17.2			
2 18	76.17	...	1.3	3.	Bisection at V.				3		17.3			
2 29		...	1.8	5.	Bisection at IV.				4	+22.4	+16.9			
2 52		...	-2.0	6, 41.	Bisections at II and VI.									
3 6	76.14	-1.5	...	7, 8.	Bisections at IV and VI.									
				9, 15, 17, 18, 27.	Bisections at III and V.									
Notes.														
5, 6. Through clouds.														
Adopted Equator Point Corrections.														
A. B.														
1, from nadir..... +20.60 +16.52														
2-48, from stars..... *														
* Interpolated from diagram.														

OBSERVATIONS OF EROS REFERENCE STARS.

D 41

NO.	NAME.	THDS.	MEAN THREAD.	$c_0' \text{ SEC } \delta$ + $n \text{ TAN } \delta$	$\Delta T + m$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.			APPARENT DECL.		RED. TO 1900.0
								A.	B.	REFR.	A.	B.	
1	γ Tauri.....	9	m 14 44.49	s 0.00	-32.79	h 4 14 11.69	-5.61	15 23 26.28	30.38	26.55	+15 23 20.9	19.9	-9.6
2	B. D.+20° 744	9	17 8.33	+0.02	32.80	4 16 35.55	5.81	20 35 15.60	20.15	20.23	20 35 16.5	16.0	9.8
3	B. D.+21° 642	9	20 3.19	0.02	32.80	4 19 30.41	5.88	22 4 2.12	4.70	18.46	22 4 4.7	2.3	9.5
4	B. D.+21° 647	9	22 43.23	0.02	32.81	4 22 10.44	5.86	21 23 57.12	60.38	19.24	21 23 58.9	57.1	9.0
5	B. D.+19° 731	9	25 4.54	0.01	32.81	4 24 31.74	5.79	19 37 30.32	33.40	21.34	19 37 30.0	28.0	8.6
6	B. D.+19° 735	9	27 48.88	0.01	32.81	4 27 16.08	5.77	19 8 20.82	23.25	21.92	19 8 19.9	17.3	8.2
7	B. D.+19° 740	9	30 26.51	+0.01	-32.81	4 29 53.71	-5.80	19 45 55.62	61.12	21.18	+19 45 55.5	55.8	-7.9
8	τ Tauri.....	8	36 53.28	+0.02	-32.82	4 36 20.49	-5.95	22 45 58.22	63.30	17.65	+22 46 1.5	1.5	-7.2
9	B. D.+19° 774	9	40 22.04	0.01	32.81	4 39 49.24	5.77	19 8 45.00	49.52	21.91	19 8 44.1	43.4	6.5
10	B. D.+19° 782	9	42 29.97	0.01	32.81	4 41 57.17	5.80	19 8 30.18	33.90	21.92	19 8 29.2	27.8	6.2
11	B. D.+19° 811	9	49 44.22	0.01	32.81	4 49 11.42	5.81	19 19 30.12	34.15	21.70	19 19 29.3	28.4	5.2
12	B. D.+16° 672	9	52 14.29	0.01	32.81	4 51 41.49	5.72	16 59 56.00	60.30	24.52	16 59 52.4	51.7	4.8
13	B. D.+16° 679	9	54 45.41	0.00	32.81	4 54 12.60	5.71	16 40 50.05	53.55	24.91	16 40 56.1	44.6	4.4
14	ι Tauri.....	9	57 45.78	+0.01	-32.80	4 57 12.98	-5.91	21 26 52.02	57.85	19.18	+21 26 53.7	54.6	-4.0
15	B. D.+17° 841	9	1 7.27	+0.01	-32.81	5 0 34.47	-5.76	17 40 59.92	61.50	23.68	+17 40 57.1	53.8	-3.6
16	B. D.+15° 752	9	4 37.01	0.00	32.81	5 4 4.20	5.67	15 28 17.85	24.22	26.43	15 28 12.3	13.8	3.1
17	B. D.+17° 857	6	7 2.69	0.00	32.81	5 6 29.88	5.74	17 8 33.68	36.85	24.34	17 8 30.1	28.6	2.8
18	B. D.+16° 735	9	9 12.36	0.00	32.81	5 8 39.55	5.72	16 33 48.82	52.42	25.06	16 33 44.6	43.5	2.5
19	B. D.+16° 741	9	11 33.81	0.00	32.81	5 11 1.00	5.73	16 54 37.42	40.98	24.63	16 54 33.6	32.5	2.1
20	B. D.+15° 787	9	14 33.31	0.00	32.81	5 14 0.50	5.68	15 41 0.30	5.15	26.15	15 40 55.0	55.1	1.7
21	B. D.+15° 797	7	16 53.32	0.00	-32.81	5 16 20.51	-5.70	15 59 45.68	49.12	25.76	+15 59 40.7	39.5	-1.4
22	B. D.+15° 810	9	20 32.56	0.00	-32.81	5 19 59.75	-5.68	15 29 33.72	38.62	26.39	+15 29 28.1	28.5	-0.9
23	B. D.+15° 826	9	22 39.30	0.00	32.82	5 22 6.48	5.69	15 47 29.35	32.75	26.02	15 47 24.1	23.0	0.7
24	B. D.+15° 837	9	25 21.19	0.00	32.82	5 24 48.37	5.67	15 17 5.45	9.28	26.66	15 16 59.6	58.9	-0.3
25	B. D.+15° 851	9	28 2.34	0.00	32.82	5 27 29.52	5.69	15 52 38.55	39.72	25.91	15 52 33.4	30.0	+0.1
26	B. D.+13° 927	9	30 5.55	0.00	32.82	5 29 32.73	5.59	13 20 52.98	58.42	29.15	13 20 44.6	45.6	0.3
27	B. D.+14° 973	9	34 4.39	0.00	32.82	5 33 31.57	5.64	14 30 2.88	6.22	27.66	14 29 55.9	54.9	0.8
28	B. D.+13° 957	9	37 9.62	0.00	-32.82	5 36 36.80	-5.60	13 32 38.70	42.82	28.89	+13 32 30.5	30.3	+1.2
29	B. D.+12° 882	9	39 43.14	0.00	-32.82	5 39 10.32	-5.55	12 22 28.10	32.65	30.42	+12 22 18.4	18.5	+1.5
30	B. D.+13° 979	9	42 41.08	0.00	32.82	5 42 8.26	5.60	13 51 53.40	57.68	28.47	13 51 45.6	45.6	2.0
31	B. D.+12° 925	9	47 15.96	0.00	32.82	5 46 43.14	5.56	12 51 17.42	20.50	29.79	12 51 8.3	7.2	2.5
32	B. D.+11° 964	9	49 35.33	-0.01	32.82	5 49 2.50	5.52	11 44 47.48	52.92	31.26	11 44 36.9	38.2	2.8
33	B. D.+12° 963	9	53 5.76	0.00	32.82	5 52 32.94	5.56	12 52 20.15	24.22	29.76	12 52 11.0	11.0	3.2
34	B. D.+11° 995	9	55 37.42	-0.01	-32.82	5 55 4.59	-5.52	11 59 9.18	14.20	30.94	+11 58 58.9	59.8	+3.5
35	B. D.+11° 1007	9	58 22.38	-0.01	-32.82	5 57 49.55	-5.49	11 8 22.00	25.58	32.09	+11 8 10.5	10.0	+3.8
36	B. D.+11° 1022	9	0 45.69	0.01	32.82	6 0 12.86	5.49	11 13 43.75	47.18	31.97	11 13 32.4	31.9	4.1
37	B. D.+12° 1032	9	3 45.54	-0.01	32.82	6 3 12.71	5.52	12 17 47.92	51.65	30.53	12 17 38.0	37.8	4.6
38	μ Geminorum.....	9	9 29.23	+0.01	32.82	6 8 56.42	5.91	22 32 0.98	3.48	17.91	22 32 3.6	2.3	6.1
39	η Geminorum.....	9	17 33.37	+0.01	32.82	6 17 0.56	5.90	22 33 45.18	47.72	17.87	22 33 47.8	46.6	7.3
40	8 Monocerotis.....	9	19 6.24	-0.02	-32.81	6 18 33.40	-5.25	4 38 53.35	57.20	41.48	+ 4 38 32.4	32.6	+5.8

1900 DECEMBER II.

CLAMP WEST.

NO ASSISTANT.

UPDEGRAFF, OBSERVER.

41	43 H. Cephei s. p.	9	55 57.24	-1.97	-33.23	0 55 .....	....	94 14 14.62	18.92	88.23	+85 43 56.7	56.9	....
42	α Ursæ Minoris s. p.	8	24 30.65	-5.98	33.63	1 23 .....	....	91 11 14.48	18.44	78.92	88 47 5.7	6.2	....
43	η Bootis.....	9	50 31.63	+0.04	-33.68	13 49 .....	....	18 53 35.10	37.45	22.29	+18 53 33.3	31.1	....

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made.at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°			"	"
10 4 13	76. 12	-1. 9	-2. 8	3, 17. Bisections at III and V.	I	+19. 2	+15. 4
4 39	76. 10	2. 2	2. 8	29. Bisections at II and VI.	8	20. 1	15. 3
5 0	76. 08	2. 2	2. 8	41, 43. Bisection at IV.	14	19. 7	14. 2
5 52	76. 04	2. 3	2. 8	42. Bisections at c, and c _s .	38	18. 8	16. 6
6 37	76. 02	2. 4	2. 8		39	18. 4	16. 1
11 13 15	76. 18	-4. 0	-3. 4	Note 41-43. Seeing excellent.	40	+18. 6	+15. 1
Adopted Equator Point Corrections.							
					A.	B.	
					"	"	
I-40, from stars.....					*	*	
41-43, from nadir.....					+19. 45	+14. 95	
*Interpolated from diagram.							

1900 DECEMBER 13.															CLAMP WEST.															LAWTON, ASSISTANT.														
UPDEGRAFF, OBSERVER.																																												
NO.	NAME.	THDS.	MEAN THREAD.		C ₀ ' SEC δ n TAN δ.	ΔT+m.	APPARENT R. A.			RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0																												
			m	s			h	m	s		A.	B.		A.	B.																													
1	α Ursæ Minoris.....	9	24	22.89	+1.29	[-34.46]	1	23	.....	.....	88	45	65.40	54.70	68.36	+88	47	6.1	6.4	.....																								
2	α Trianguli.....	9	48	3.09	0.02	35.07	1	47	28.00	-5.29	29	6	15.95	4.25	10.00	29	5	59.7	59.5	-29.0																								
3	β Arietis.....	9	49	47.04	0.01	35.15	1	49	11.94	5.06	20	19	61.38	50.50	19.44	20	19	35.8	36.1	26.7																								
4	γ Andromedæ.....	9	58	26.49	0.02	35.09	1	57	51.40	5.92	41	51	34.20	22.68	2.97	41	51	30.8	30.7	31.0																								
5	B. D. +37° 480	9	0	50.08	0.02	35.11	2	0	14.99	5.75	37	49	31.62	20.48	1.11	37	49	24.2	24.5	30.0																								
6	B. D. +38° 413	9	3	2.36	0.02	35.12	2	2	27.26	5.83	38	55	53.98	44.35	0.01	38	55	47.6	49.5	30.0																								
7	B. D. +38° 423	7	5	22.48	+0.02	-35.12	2	4	47.38	-5.82	38	14	29.38	18.60	0.69	+38	14	22.3	23.0	-29.6																								
8	B. D. +37° 505	9	8	33.37	+0.02	-35.12	2	7	58.27	-5.84	37	56	57.75	45.92	0.98	+37	56	50.3	50.0	-29.2																								
9	B. D. +36° 446	9	10	33.72	0.02	35.12	2	9	58.62	5.78	36	18	57.18	46.08	2.63	36	18	48.1	48.5	28.6																								
10	B. D. +36° 458	9	13	13.79	0.02	35.12	2	12	38.69	5.82	36	36	55.18	44.08	2.33	36	36	46.4	46.9	28.4																								
11	B. D. +36° 464	9	15	38.44	0.02	35.12	2	15	3.34	5.84	36	37	22.28	10.82	2.32	36	37	13.5	13.6	28.1																								
12	B. D. +36° 470	9	17	54.03	0.02	35.12	2	17	18.93	5.89	37	6	53.18	41.68	1.83	37	6	44.9	44.9	27.9																								
13	B. D. +34° 432	9	20	6.19	0.02	35.12	2	19	31.09	5.79	34	35	60.30	49.55	4.37	34	35	49.4	50.3	27.2																								
14	B. D. +35° 477	9	22	42.11	+0.02	-35.12	2	22	7.01	-5.86	35	29	38.65	27.98	3.47	+35	29	28.6	29.6	-27.0																								
15	B. D. +35° 490	9	25	22.68	+0.02	-35.12	2	24	47.58	-5.89	35	40	58.15	46.90	3.28	+35	40	48.3	48.7	-26.8																								
16	B. D. +33° 454	9	27	31.13	0.02	35.12	2	26	56.03	5.83	34	6	42.95	31.62	4.89	34	6	31.5	31.8	26.2																								
17	B. D. +34° 469	9	30	23.48	0.02	35.12	2	29	48.38	5.86	34	15	42.32	32.32	4.72	34	15	31.1	32.7	25.9																								
18	B. D. +34° 476	8	32	25.77	0.02	35.13	2	31	50.66	5.90	34	44	19.00	7.18	4.23	34	44	8.1	8.0	25.8																								
19	B. D. +32° 483	9	34	26.61	0.02	35.13	2	33	51.50	5.84	33	4	31.60	19.35	5.93	33	4	19.0	18.4	25.2																								
20	B. D. +33° 493	9	37	11.99	0.02	35.13	2	36	36.88	5.88	33	20	62.32	51.25	5.65	33	20	50.0	50.6	24.9																								
21	B. D. +32° 498	9	39	45.28	+0.01	-35.13	2	39	10.16	-5.85	32	20	29.30	17.58	6.68	+32	20	16.0	15.9	-24.4																								
22	B. D. +33° 512	9	42	8.43	+0.02	-35.13	2	41	33.32	-5.91	33	13	39.45	27.25	5.78	+33	13	26.9	26.5	-24.3																								
23	B. D. +32° 522	9	48	15.76	0.01	35.13	2	47	40.64	5.92	32	30	70.10	59.52	6.52	32	30	56.8	58.0	23.4																								
24	B. D. +30° 469	9	52	39.13	0.01	35.13	2	52	4.01	5.89	31	7	32.70	19.45	7.94	31	7	18.0	16.5	22.6																								
25	B. D. +30° 477	9	54	54.49	0.01	35.13	2	54	19.37	5.89	30	44	18.88	5.45	8.34	30	44	3.7	2.1	22.2																								
26	B. D. +30° 482	9	59	12.58	0.01	35.13	2	58	37.46	5.93	30	55	48.25	35.58	8.14	30	55	33.3	32.4	21.7																								
27	B. D. +29° 522	9	1	29.08	+0.01	-35.13	3	0	53.96	-5.91	30	8	67.78	54.52	8.95	+30	8	52.0	50.6	-21.3																								
28	B. D. +28° 499	9	4	16.57	+0.01	-35.14	3	3	41.44	-5.86	28	42	22.78	8.30	10.45	+28	42	5.5	2.9	-20.7																								
29	B. D. +30° 503	9	7	31.83	0.01	35.14	3	6	56.70	5.96	30	29	14.62	1.72	8.60	30	28	59.1	58.1	20.6																								
30	ζ Arietis.....	9	9	49.77	0.01	35.11	3	9	14.64	5.56	20	40	70.25	59.45	19.11	20	40	44.3	45.4	18.5																								
31	B. D. +28° 511	9	11	42.82	0.01	35.14	3	11	7.69	5.89	28	23	63.18	49.88	10.78	28	23	45.5	44.1	19.6																								
32	B. D. +27° 492	9	14	18.95	0.01	35.14	3	13	43.82	5.85	27	11	20.15	9.28	12.05	27	11	1.2	2.2	19.1																								
33	B. D. +27° 500	9	16	52.51	+0.01	-35.14	3	16	17.38	-5.87	27	15	33.18	20.70	12.00	+27	15	14.3	13.6	-18.8																								
34	B. D. +28° 526	9	19	26.57	+0.01	-35.14	3	18	51.44	-5.93	28	18	36.28	22.62	10.88	+28	18	18.5	16.7	-18.6																								
35	B. D. +27° 509	9	22	17.63	0.01	35.14	3	21	42.50	5.91	27	24	46.85	34.80	11.82	27	24	28.0	27.9	18.1																								
36	B. D. +26° 565	9	25	0.69	0.01	35.14	3	24	25.56	5.89	26	41	24.48	13.45	12.59	26	41	4.9	5.8	17.6																								
37	B. D. +27° 519	9	27	14.67	0.01	35.14	3	26	39.54	5.96	28	1	71.75	57.52	11.17	28	1	53.6	51.3	17.5																								
38	B. D. +26° 572	9	29	38.14	0.01	35.14	3	29	3.01	5.90	26	16	59.92	48.08	13.03	26	16	39.9	40.0	17.0																								
39	B. D. +25° 580	9	31	50.95	+0.01	-35.15	3	31	15.81	-5.88	25	40	41.12	28.95	13.67	+25	40	20.4	20.2	-16.5																								
40	B. D. +26° 590	9	34	10.69	+0.01	-35.15	3	33	35.55	-5.94	26	54	23.32	10.28	12.37	+26	54	3.9	2.8	-16.4																								
41	B. D. +24° 534	9	36	23.87	0.01	35.15	3	35	48.73	5.87	25	3	32.12	21.05	14.34	25	3	10.7	11.6	15.9																								
42	B. D. +25° 600	9	38	33.83	0.01	35.15	3	37	58.69	5.90	25	25	14.28	3.25	13.96	25	24	53.2	54.2	15.6																								
43	B. D. +25° 611	8	40	39.31	0.01	35.15	3	40	4.17	5.92	25	46	24.38	12.72	13.58	25	46	3.7	4.1	15.4																								
44	B. D. +26° 617	9	42	57.63	0.01	35.15	3	42	22.49	5.96	26	17	25.52	13.60	13.03	26	17	5.4	5.5	15.1																								
45	B. D. +24° 578	9	45	10.95	+0.01	-35.15	3	44	35.81	-5.87	24	11	67.75	55.32	15.28	+24	11	45.3	45.0	-14.5																								
46	B. D. +24° 589	9	47	35.58	+0.01	-35.15	3	47	0.44	-5.89	24	25	41.18	29.25	15.03	+24	25	19.0	19.1	-14.2																								
47	B. D. +24° 595	9	49	48.59	0.01	35.15	3	49	13.45	5.92	24	49	17.10	5.10	14.61	24	48	55.3	55.4	14.0																								
48	B. D. +24° 599	9	52	8.57	0.01	35.15	3	51	33.43	5.90	24	10	56.18	43.85	15.31	24	10	33.7	33.5	13.6																								
49	B. D. +22° 612	9	54	38.25	0.01	35.15	3	54	3.11	5.86	22	56	37.88	26.62	16.66	22	56	14.1	14.8	13.1																								
50	B. D. +23° 609	9	59	3.73	0.01	35.15	3	58	28.59	5.91	23	50	25.28	14.18	15.69	23	50	2.3	3.3	12.6																								
51	B. D. +21° 610	9	9	58.83	+0.01	-35.16	4	9	23.68	-5.86	21	51	17.98	5.85	17.89	+21	50	52.7	52.8	-10.9																								

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			Eq. Pt. Cor. from stars.		
							No.	A.	B.
d h m	cm.	°	°				2	"	"
13 1 20	75.34	8.9	8.7	1.	Bisections at c ₁ and c ₂ .		2	-7.7	+4.2
2 12	75.39	8.5	...	3.	Bisections at II and VI.		3	7.0	4.4
2 21	.....	...	8.6	5, 18, 43.	Bisections at III and V.		4	7.3	4.5
2 57	75.41	8.2	8.0	Notes.			30	-7.8	+3.3
3 24	.....	...	7.8	5, 7, 21. Faint; poor.					
Adopted Equator Point Corrections.									
A. B.									
1, from nadir..... -8.26 +2.76									
2-51, from stars..... *									
* Interpolated from diagram.									

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +21° 617	9	m s 12 35.97	s +0.01	s -35.16	h m s 4 12 0.82	s -5.88	° ' " 22 6 64.38	" 52.40	" 17.60	° ' " +22 6 39.4	" 39.6	" -10.5
2	γ Tauri.....	9	14 46.87	0.01	35.16	4 14 11.72	5.61	15 23 52.95	40.82	25.37	15 23 20.3	20.3	9.5
3	B. D. +20° 744	9	17 10.66	0.01	35.16	4 16 35.51	5.83	20 35 42.28	31.05	19.33	20 35 15.6	16.6	9.8
4	B. D. +21° 642	9	20 5.48	0.01	35.16	4 19 30.33	5.90	22 4 29.28	16.00	17.65	22 4 4.3	3.2	9.5
5	B. D. +21° 647	9	22 45.56	0.01	35.16	4 22 10.41	5.88	21 24 23.60	11.65	18.40	21 23 57.8	58.1	9.1
6	B. D. +19° 731	9	25 6.84	0.01	35.16	4 24 31.69	5.81	19 37 57.62	45.90	20.42	19 37 29.8	30.3	8.6
7	B. D. +19° 735	8	27 51.27	+0.01	-35.16	4 27 16.12	-5.80	19 8 47.05	35.08	20.97	19 8 18.6	18.9	-8.2
8	B. D. +19° 740	9	30 28.87	+0.01	-35.16	4 29 53.72	-5.83	19 46 23.95	12.22	20.27	19 45 56.2	56.8	-7.8
9	B. D. +20° 785	9	33 2.80	0.01	35.16	4 32 27.65	5.86	20 29 36.35	24.62	19.45	20 29 9.4	10.0	7.6
10	B. D. +19° 774	9	40 24.41	0.01	35.17	4 39 49.25	5.82	19 9 12.98	0.28	21.00	19 8 44.4	44.1	6.4
11	B. D. +19° 782	9	42 32.36	0.01	35.17	4 41 57.20	5.82	19 8 58.42	44.75	21.02	19 8 29.9	28.6	6.1
12	B. D. +18° 743	9	46 12.38	0.01	35.17	4 45 37.22	5.81	18 40 45.40	32.38	21.56	18 40 16.3	15.5	5.5
13	B. D. +19° 811	9	49 46.57	0.01	35.17	4 49 11.41	5.84	19 19 57.42	44.88	20.82	19 19 29.1	28.8	5.1
14	B. D. +16° 672	9	52 16.63	+0.01	-35.17	4 51 41.47	-5.75	17 0 23.70	11.10	23.54	+16 59 52.6	52.3	-4.7
15	B. D. +16° 679	9	54 47.88	+0.01	-35.17	4 54 12.72	-5.74	16 41 16.65	3.95	23.93	+16 40 45.1	44.8	-4.3
16	ϵ Tauri.....	9	57 48.17	0.01	35.17	4 57 13.01	5.93	21 27 19.92	7.98	18.43	21 26 53.9	54.3	4.0
17	B. D. +17° 841	9	1 9.76	0.01	35.17	5 0 34.60	5.79	17 41 24.65	13.28	22.78	17 40 54.4	55.2	3.5
18	B. D. +15° 752	9	4 39.36	0.01	35.17	5 4 4.20	5.70	15 28 47.25	33.85	25.44	15 28 14.3	13.1	2.9
19	B. D. +17° 867	9	7 5.01	0.01	35.18	5 6 29.84	5.78	17 8 59.35	47.45	23.43	17 8 28.5	28.6	2.6
20	B. D. +16° 735	9	9 14.78	0.01	35.18	5 8 39.61	5.75	16 34 15.95	3.42	24.13	16 33 44.4	44.0	2.3
21	B. D. +16° 741	9	11 36.28	+0.01	-35.18	5 11 1.11	-5.77	16 54 65.22	53.05	23.74	+16 54 34.1	34.1	-2.0
22	B. D. +15° 787	9	14 35.64	0.00	-35.18	5 14 0.46	-5.72	15 41 27.68	15.95	25.22	+15 40 55.0	55.3	-1.6
23	B. D. +15° 797	9	16 55.75	0.00	35.18	5 16 20.57	5.73	15 59 71.42	59.15	24.85	15 59 39.1	39.0	-1.3
24	B. D. +15° 810	9	20 34.91	+0.01	35.18	5 19 59.74	5.71	15 29 61.78	49.22	25.48	15 29 28.9	28.5	0.8
25	B. D. +15° 826	9	22 41.71	0.00	35.18	5 22 6.53	5.73	15 47 55.28	44.22	25.12	15 47 22.7	23.8	0.5
26	B. D. +15° 837	9	25 23.57	0.00	35.18	5 24 48.39	5.71	15 17 30.95	19.95	25.74	15 16 57.9	58.9	-0.1
27	B. D. +15° 851	9	28 4.78	0.00	35.18	5 27 29.60	5.73	15 52 64.60	51.92	25.02	15 52 32.3	31.6	+0.2
28	B. D. +13° 927	9	30 7.93	+0.01	-35.18	5 29 32.76	-5.63	13 21 18.98	9.20	28.15	+13 20 43.5	45.8	+0.5
29	B. D. +14° 973	9	34 6.69	0.00	-35.18	5 33 31.51	-5.68	14 30 29.68	18.85	26.71	+14 29 55.7	56.6	+1.0
30	B. D. +13° 957	9	37 11.98	0.00	35.18	5 36 36.80	5.64	13 32 65.12	53.25	27.91	13 32 29.9	30.0	1.4
31	B. D. +12° 882	9	39 45.54	+0.01	35.19	5 39 10.36	5.60	12 22 55.98	43.20	29.40	12 22 19.3	18.4	1.7
32	B. D. +13° 979	9	42 43.41	0.00	35.19	5 42 8.22	5.65	13 52 19.78	8.12	27.51	13 51 45.0	45.2	2.2
33	B. D. +12° 925	9	47 18.33	0.00	35.19	5 46 43.14	5.61	12 51 43.68	32.85	28.79	12 51 7.7	8.7	2.7
34	B. D. +11° 964	9	49 37.70	+0.01	35.19	5 49 2.52	5.57	11 45 15.85	4.98	30.21	11 44 38.4	39.4	3.0
35	B. D. +12° 963	8	53 8.14	0.00	-35.19	5 52 32.95	-5.60	12 52 47.40	36.28	28.77	+12 52 11.4	12.2	+3.5
36	B. D. +11° 995	9	55 39.82	0.00	-35.19	5 55 4.63	-5.57	11 59 36.70	23.88	29.91	+11 58 59.6	58.6	+3.8
37	B. D. +11° 1007	9	58 24.77	0.00	35.19	5 57 49.58	5.54	11 8 49.78	38.12	31.02	11 8 11.6	11.8	4.1
38	B. D. +11° 1022	9	0 48.09	0.00	35.19	6 0 12.90	5.54	11 13 70.20	58.45	30.90	11 13 32.1	32.2	4.4
39	B. D. +12° 1032	9	3 47.98	0.00	35.19	6 3 12.79	5.57	12 18 14.78	3.55	29.52	12 17 38.1	38.7	4.8
40	η Geminorum.....	9	9 31.63	0.00	35.15	6 8 56.43	5.97	22 32 27.80	15.32	17.32	22 32 3.2	2.6	6.3
41	δ Monocerotis.....	9	19 8.62	+0.01	35.18	6 18 33.43	5.29	4 39 17.75	7.72	40.13	4 38 30.6	32.2	6.2
42	ν Geminorum.....	9	23 42.62	0.00	-35.25	6 23 7.42	-5.84	20 16 51.45	38.72	19.89	+20 16 24.4	23.4	+8.0

1900 DECEMBER 14.

CLAMP WEST.

LAWTON, ASSISTANT.

LITTELL, OBSERVER.

43	α Trianguli.....	9	48 3.80	-0.16	-35.61	1 47 28.00	-5.28	29 6 3.68	7.70	10.68	+29 5 60.7	58.5	-29.1
44	β Arietis.....	9	49 47.67	0.11	35.67	1 49 11.92	5.05	20 19 49.05	55.50	20.76	20 19 36.0	36.3	26.7
45	γ Andromedæ.....	9	58 27.32	0.26	35.65	1 57 51.42	5.91	41 51 19.18	27.00	3.17	41 51 29.8	31.7	31.1
46	B. D. +37° 480	9	0 50.62	0.22	35.64	2 0 14.76	5.74	37 49 18.72	24.30	1.18	37 49 25.1	24.6	30.0
47	B. D. +37° 490	9	4 37.67	-0.23	-35.64	2 4 1.80	-5.80	38 11 48.30	54.18	0.78	+38 11 55.1	54.9	-29.7
48	B. D. +36° 428	9	6 34.84	-0.22	-35.64	2 5 58.98	-5.74	36 30 9.90	15.52	2.61	+36 30 14.8	14.4	-29.1
49	B. D. +37° 505	9	8 34.04	0.23	35.64	2 7 58.17	5.83	37 56 44.20	49.52	1.05	37 56 50.7	50.0	29.2
50	B. D. +36° 446	9	10 34.39	0.22	35.64	2 9 58.53	5.77	36 18 43.98	49.92	2.81	36 18 48.7	48.6	28.6
51	B. D. +36° 458	9	13 14.56	0.22	35.64	2 12 38.70	5.81	36 36 40.92	47.60	2.49	36 36 46.0	46.6	28.4
52	B. D. +36° 464	9	15 39.16	-0.22	-35.64	2 15 3.30	-5.84	36 37 8.90	14.92	2.48	+36 37 13.9	13.8	-28.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.		
								No.	A.	B.
d h m	cm.	°	°						"	"
13 4 19	75.50	+7.3	...	15, 18, 23, 35.	Bisections at III and V.			2	-8.8	+3.7
4 22	...	...	+6.9	19, 22, 29.	Bisections at II and VI.			16	8.9	3.3
4 45	75.52	6.8	6.1					40	8.8	4.0
5 20	75.55	6.0	4.5					41	7.6	2.9
6 12	75.60	+5.0	+4.4					42	-8.7	4.3
14 1 44	76.34	-3.5	-5.2					43	+5.3	1.6
Adopted Equator Point Corrections.								44	6.7	+0.5
1-42, from stars.....								45	+7.7	0.0
43-52, from stars.....								* Interpolated from diagram.		

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +36° 473	9	m 18.29	s -0.22	-35.64	2 17 42.43	-5.86	36 39 15.35	20.95	2.44	+36 39 20.4	19.9	-27.9
2	B. D. +34° 432	9	20 6.77	0.21	35.64	2 19 30.92	5.79	34 35 47.10	53.32	4.67	34 35 50.0	50.0	27.2
3	B. D. +35° 477	9	22 42.82	0.22	35.64	2 22 6.96	5.85	35 29 26.18	31.58	3.70	35 29 30.0	29.3	27.1
4	B. D. +33° 447	9	25 39.51	0.20	35.64	2 25 3.67	5.80	33 55 21.10	27.22	5.40	33 55 23.3	23.2	26.4
5	B. D. +33° 454	9	27 31.91	0.21	35.64	2 26 56.06	5.83	34 6 29.50	34.72	5.22	34 6 31.7	30.9	26.2
6	B. D. +34° 469	9	30 24.17	0.21	35.64	2 29 48.32	5.86	34 15 29.32	36.00	5.04	34 15 31.7	32.4	26.0
7	B. D. +34° 476	9	32 26.52	-0.21	-35.64	2 31 50.67	-5.90	34 44 5.72	12.70	4.52	+34 44 8.6	9.6	-25.8
8	B. D. +32° 483	9	34 27.33	-0.20	-35.64	2 33 51.49	-5.84	33 4 17.70	24.88	6.33	+33 4 18.8	20.0	-25.2
9	B. D. +32° 490	9	37 20.13	0.20	35.64	2 36 44.29	5.84	32 28 57.80	63.25	6.97	32 28 58.3	57.7	24.8
10	B. D. +32° 498	9	39 45.89	0.20	35.64	2 39 10.05	5.85	32 20 15.42	21.18	7.13	32 20 15.8	15.5	24.4
11	B. D. +33° 512	9	42 9.10	0.20	35.64	2 41 33.26	5.91	33 13 26.30	31.12	6.17	33 13 27.6	26.4	24.3
12	B. D. +32° 517	9	46 38.51	0.20	35.64	2 46 2.67	5.90	32 20 12.02	17.35	7.14	32 20 12.4	11.6	23.6
13	B. D. +31° 500	9	48 46.07	0.20	35.64	2 48 10.23	5.90	31 56 8.20	13.02	7.57	31 56 8.1	6.9	23.2
14	B. D. +30° 466	9	51 11.74	-0.19	-35.64	2 50 35.91	-5.85	30 28 59.42	63.85	9.17	+30 28 57.7	56.1	-22.7
15	B. D. +30° 477	9	54 55.23	-0.19	-35.64	2 54 19.40	-5.89	30 44 5.05	10.82	8.90	+30 44 3.6	3.2	-22.3
16	B. D. +29° 517	9	58 20.90	0.19	35.64	2 57 45.07	5.88	30 7 33.22	.....	9.57	30 7 31.0	.....	21.7
17	B. D. +29° 519	9	0 22.77	0.19	35.64	2 59 46.94	5.90	30 8 42.72	46.78	9.55	30 8 40.6	38.5	21.5
18	B. D. +30° 494	9	4 24.74	0.20	35.64	3 3 48.90	5.97	31 1 22.15	27.12	8.58	31 1 20.9	19.9	21.1
19	B. D. +30° 503	9	7 32.57	0.19	35.64	3 6 56.74	5.96	30 29 1.85	5.68	9.18	30 28 60.1	57.8	20.6
20	ζ Arietis.....	9	9 50.44	0.13	35.64	3 9 14.67	5.56	20 40 57.72	64.15	20.39	20 40 44.8	45.1	18.5
21	B. D. +28° 511	9	11 43.53	-0.18	-35.64	3 11 7.71	-5.89	28 23 50.38	54.25	11.50	+28 23 46.3	44.1	-19.7
22	B. D. +27° 492	9	14 19.66	-0.17	-35.64	3 13 43.83	-5.85	27 11 7.85	13.72	12.86	+27 11 2.4	2.2	-19.2
23	B. D. +27° 500	9	16 53.24	0.17	35.64	3 16 17.45	5.87	27 15 19.65	25.58	12.80	27 15 14.3	13.9	18.8
24	B. D. +28° 526	9	19 27.23	0.18	35.64	3 18 51.41	5.93	28 18 22.38	27.32	11.60	28 18 18.2	17.0	18.6
25	B. D. +27° 509	9	22 18.33	0.18	35.64	3 21 42.51	5.91	27 24 34.30	39.20	12.61	27 24 29.1	27.9	18.1
26	B. D. +27° 513	9	25 39.98	0.18	35.64	3 25 4.16	5.92	27 23 18.90	23.52	12.64	27 23 13.6	12.2	17.7
27	B. D. +26° 574	9	30 0.91	-0.17	-35.64	3 29 25.10	-6.01	26 31 22.70	27.25	13.61	+26 31 16.4	15.0	-17.0
28	B. D. +25° 584	9	34 10.74	-0.17	-35.64	3 33 34.93	-5.90	25 48 28.88	34.15	14.43	+25 48 21.8	21.0	-16.3
29	B. D. +24° 534	9	36 24.53	0.16	35.64	3 35 48.73	5.87	25 3 17.82	24.58	15.29	25 3 9.8	10.6	15.9
30	B. D. +25° 600	9	38 34.47	0.17	35.64	3 37 58.66	5.90	25 25 0.88	7.92	14.88	25 24 53.3	54.4	15.6
31	B. D. +25° 611	9	40 40.06	0.17	35.64	3 40 4.25	5.92	25 46 12.08	17.45	14.48	25 46 4.9	4.2	15.4
32	B. D. +26° 617	9	42 58.32	0.17	35.64	3 42 22.51	5.96	26 17 12.72	17.40	13.90	26 17 6.1	4.7	15.2
33	B. D. +24° 578	9	45 11.63	-0.16	-35.64	3 44 35.83	-5.88	24 11 54.35	60.00	16.29	+24 11 45.4	44.9	-14.6
34	B. D. +24° 589	9	47 36.14	-0.16	-33.64	3 47 0.34	-5.90	24 25 26.55	33.82	16.03	+24 25 17.8	19.0	-14.3
35	B. D. +24° 595	9	49 49.29	0.16	35.64	3 49 13.49	5.92	24 49 1.60	9.50	15.58	24 48 53.3	55.1	14.0
36	B. D. +22° 612	8	54 38.86	0.15	35.64	3 54 3.07	5.86	22 56 24.30	30.48	17.76	22 56 13.8	13.9	13.1
37	λ Tauri.....	5	55 49.54	0.09	35.65	3 55 13.81	5.45	12 13 .....	.....	.....	12 13 .....	.....	.....
38	B. D. +23° 606	9	58 30.54	0.16	35.64	3 57 54.74	5.92	24 7 52.90	60.30	16.38	+24 7 43.7	45.1	12.7
39	B. D. +23° 617	9	1 21.27	-0.16	-35.64	4 0 45.47	-5.90	23 15 14.25	20.78	17.41	+23 15 4.1	4.6	-12.2
40	B. D. +22° 637 ²	9	3 38.07	-0.15	-35.64	4 3 2.28	-5.89	22 50 22.20	28.40	17.89	+22 50 11.5	11.7	-11.9
41	B. D. +22° 649	9	7 37.07	0.15	35.64	4 7 1.28	5.87	22 9 46.05	51.85	18.69	22 9 34.6	34.4	11.2
42	B. D. +21° 610	9	9 59.51	0.15	35.64	4 9 23.72	5.86	21 51 4.38	11.55	19.06	21 50 52.6	53.7	10.9
43	B. D. +21° 618	9	13 9.66	0.15	35.64	4 12 33.87	5.85	21 20 27.60	34.85	19.67	21 20 15.2	16.4	10.4
44	γ Tauri.....	9	14 47.46	0.11	35.62	4 14 11.71	5.64	15 23 40.72	.....	27.03	15 23 21.0	.....	9.4
45	B. D. +20° 740	9	16 19.06	-0.14	-35.64	4 15 43.28	-5.84	20 48 32.35	38.52	20.31	+20 48 19.3	19.4	-9.9
46	B. D. +20° 751	9	18 20.36	-0.14	-35.64	4 17 44.58	-5.84	20 45 19.35	26.42	20.37	+20 45 6.2	7.2	-9.6
47	B. D. +19° 740	9	30 29.57	0.14	35.64	4 29 53.79	5.83	19 46 10.42	16.95	21.57	19 45 56.0	56.5	7.8
48	B. D. +19° 755	9	36 24.08	0.14	35.64	4 35 48.30	5.86	20 4 35.58	41.20	21.21	20 4 21.5	21.1	7.0
49	B. D. +18° 717	9	40 56.64	0.13	35.64	4 40 20.87	5.81	18 37 26.30	30.78	22.99	18 37 10.5	8.9	6.3
50	B. D. +17° 791	9	45 13.64	0.13	35.64	4 44 37.87	5.76	17 21 16.25	21.88	24.56	17 20 58.9	58.5	5.6
51	B. D. +18° 747	9	48 25.93	-0.14	-35.64	4 47 50.15	-5.83	18 54 46.52	53.05	22.64	+18 54 31.0	31.5	-5.3
52	π ⁵ Orionis.....	7	49 43.47	-0.03	-35.67	4 49 7.80	-5.24	2 17	26.62	46.21	+ 2 16	41.6	-4.1
53	B. D. +16° 672	9	52 17.27	0.12	35.64	4 51 41.51	5.76	17 0 10.38	16.60	25.02	16 59 52.5	52.7	4.6
54	B. D. +16° 679	9	54 48.46	0.12	35.64	4 54 12.70	5.75	16 41 2.82	9.75	25.42	16 40 44.6	45.5	4.3
55	B. D. +16° 685	9	56 50.02	0.12	35.64	4 56 14.26	5.75	16 41 35.00	40.70	25.42	16 41 16.7	16.4	4.0
56	ι Tauri.....	7	57 48.68	0.16	35.49	4 57 12.88	5.95	21 27 .....	.....	.....	21 27 .....	.....	.....
57	B. D. +18° 777	9	59 41.86	-0.13	-35.64	4 59 6.09	-5.81	18 7 14.22	19.32	23.63	+18 6 57.7	56.7	-3.7

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.		
d h m	cm.	°	°					No.	A.	B.
14 2 17	.....	...	-5.4	16.44.	Bisection at II.			20	+6.0	-0.1
2 29	.....	...	5.5	23.	Bisections at II and VI.			44	+5.0	...
2 53	76.34	-4.5	5.7	45.	Bisections at III and V.			52	...	+0.3
3 32	76.34	4.8	6.2	52.	Bisection at V.					
4 10	76.36	5.1	6.6							
4 33	76.37	-5.3	-6.8							

Adopted Equator Point Corrections.

A.	B.
"	"
"	"

1-57, from stars..... *
*Interpolated from diagram.

OBSERVATIONS OF EROS REFERENCE STARS.

D 45

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +16° 697	9	m s 1 56.19	s -0.12	s -35.64	h m s 5 1 20.43	s -5.76	° ' " 16 42 4.12	" 8.62	" 25.41	° ' " +16 41 45.8	" 44.2	" -3.3
2	B. D. +17° 862	9	5 33.49	0.13	35.64	5 4 57.72	5.79	17 19 13.15	18.45	24.64	17 18 55.6	54.8	2.8
3	B. D. +16° 735	9	9 15.40	0.12	35.64	5 8 39.64	5.76	16 34 4.35	10.38	25.58	16 33 45.9	45.8	2.3
4	B. D. +16° 741	9	11 36.85	0.13	35.64	5 11 1.08	5.78	16 54 52.75	59.30	25.15	16 54 34.7	35.2	2.0
5	B. D. +15° 789	9	14 59.99	0.12	35.64	5 14 24.23	5.74	16 1 28.50	33.85	26.28	16 1 9.3	8.6	1.5
6	B. D. +15° 797	9	16 56.33	0.12	35.64	5 16 20.57	5.74	15 59 58.78	65.00	26.31	15 59 39.5	39.7	1.2
7	B. D. +15° 810	9	20 35.53	-0.12	-35.64	5 19 59.77	-5.72	15 29 48.42	55.08	26.96	+15 29 28.5	29.2	-0.7
8	B. D. +15° 826	9	22 42.24	-0.12	-35.64	5 22 6.48	-5.74	15 47 43.12	49.35	26.58	+15 47 23.6	23.8	-0.4
9	B. D. +15° 837	9	25 24.23	0.12	35.64	5 24 48.47	5.72	15 17 19.22	26.22	27.23	15 16 59.1	60.0	-0.1
10	B. D. +15° 851	9	28 5.44	0.12	35.64	5 27 29.68	5.74	15 52 51.95	58.15	26.47	15 52 32.5	32.7	+0.3
11	B. D. +13° 927	9	30 8.60	0.10	35.64	5 29 32.86	5.64	13 21 6.85	14.48	29.77	13 20 44.1	45.8	0.6
12	B. D. +14° 978	9	34 47.03	0.12	35.64	5 34 11.27	5.70	14 44 57.30	63.80	27.92	14 44 36.4	36.9	1.2
13	B. D. +14° 991	9	37 58.95	-0.11	-35.64	5 37 23.20	-5.67	14 8 10.62	16.75	28.74	+14 7 48.9	49.0	+1.6
14	B. D. +13° 971	9	40 5.23	-0.11	-35.64	5 39 29.48	-5.65	13 32 21.15	27.12	29.53	+13 31 58.6	58.6	+1.9
15	B. D. +12° 912	9	44 37.20	0.10	35.64	5 44 1.46	5.61	12 37 32.68	38.55	30.76	12 37 8.9	8.7	2.4
16	B. D. +12° 925	9	47 19.01	0.10	35.64	5 46 43.27	5.62	12 51 31.38	37.55	30.44	12 51 7.9	8.1	2.8
17	B. D. +11° 965	9	49 43.33	0.09	35.94	5 49 7.60	5.57	11 28 22.15	28.72	32.34	11 27 56.8	57.3	3.1
18	B. D. +12° 965	9	53 25.61	0.10	35.64	5 52 49.87	5.62	12 59 0.12	6.80	30.28	12 58 36.7	37.5	3.6
19	B. D. +12° 980	9	55 21.36	-0.10	-35.64	5 54 45.62	-5.61	12 36 41.42	47.08	30.79	+12 36 17.5	17.2	+3.8
20	B. D. +12° 994	9	57 42.87	-0.10	-35.64	5 57 7.13	-5.61	12 40 35.18	42.30	30.71	+12 40 11.4	12.5	+4.1
21	B. D. +11° 1022	9	0 48.64	0.09	35.64	6 0 12.91	5.55	11 13 57.35	65.62	32.69	11 13 31.6	33.9	4.5
22	B. D. +12° 1032	9	3 48.51	0.10	35.64	6 3 12.77	5.59	12 18 2.35	8.78	31.22	12 17 38.0	38.5	4.9
23	η Geminorum.....	9	9 32.28	0.18	35.61	6 8 56.46	5.98	22 32 15.62	20.12	18.32	22 32 4.1	2.7	6.3
24	μ Geminorum.....	9	17 36.49	0.18	35.67	6 17 0.67	5.98	22 33 57.78	64.18	18.29	22 33 46.3	46.8	7.5
25	8 Monocerotis.....	9	19 9.19	-0.05	-35.65	6 18 33.50	-5.33	4 39 5.80	12.70	42.44	+4 38 30.3	31.2	+6.3

UPDEGRAFF, OBSERVER.

1900 DECEMBER 14.

CLAMP WEST.

NO ASSISTANT.

26	α Canum Venat.....	9	51 59.86	-0.29	-35.83	12 51.....	....	38 51.....	....	....	+38 51.....	....	....
27	43 H. Cephei S. P.....	9	55 52.58	+4.86	36.11	1 55.....	....	94 14 24.45	30.60	90.95	85 43 56.9	57.2	....
28	α Ursæ Minoris S. P.....	9	24 6.77	+17.10	35.40	1 23.....	....	91 11 24.28	30.88	81.36	88 47 6.2	6.1	....
29	η Bootis.....	9	50 34.07	-0.13	-35.87	13 49.....	....	18 53.....	....	....	+18 53.....	....	....

UPDEGRAFF, OBSERVER.

1900 DECEMBER 15.

CLAMP WEST.

NO ASSISTANT.

30	μ Andromedæ.....	9	51 53.54	-0.26	-36.28	0 51.....	....	37 57.....	....	....	+37 57.....	....	....
31	43 H. Cephei.....	9	56 1.32	4.24	35.87	0 55.....	....	85 42 44.18	51.18	65.78	85 43 55.8	56.5	....
32	α Ursæ Minoris.....	9	24 37.83	14.91	34.85	1 23.....	....	88 45 47.09	53.98	73.17	88 47 5.7	6.5	....
33	β Arietis.....	6	49 48.52	-0.13	-36.51	1 49.....	....	20 19.....	....	....	+20 19.....	....	....

UPDEGRAFF, OBSERVER.

1900 DECEMBER 16.

CLAMP WEST.

LITTELL, ASSISTANT.

34	μ Andromedæ.....	8	51 54.35	-0.26	[-37.10]	0 51.....	....	37 57.....	....	....	+37 57.....	....	....
35	43 H. Cephei.....	9	56 2.48	4.42	[37.09]	0 55.....	....	85 42 44.38	50.72	66.16	85 43 55.9	56.8	....
36	α Ursæ Minoris.....	9	24 39.84	15.55	[36.99]	1 23.....	....	88 45 47.31	53.74	73.47	88 47 5.7	6.7	....
37	α Trianguli.....	9	48 5.43	0.19	37.22	1 47 28.01	-5.27	29 6 5.25	9.90	10.74	29 5 60.3	59.3	-29.1
38	β Arietis.....	9	49 49.27	-0.13	-37.27	1 49 11.91	-5.03	20 19 50.90	56.20	20.86	+20 19 35.9	35.5	-26.7

							Eq. Pt. Cor. from stars.			
Time.		Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			No.	A.	B.
d	h m	cm.	°	°					"	"
14	5 13	76.37	-5.5	-7.2	27, 35.	Bisection at IV.		23	+4.4	+0.2
	5 33	.....	...	7.2	28, 31, 32, 36.	Bisections at c_1 and c_5 .		24	6.0	-0.1
	5 51	.....	...	7.4				25	6.6	+0.1
	6 20	76.38	5.8	7.6				37	3.8	-0.6
	13 15	76.60	8.0	9.8	Notes.			38	+4.9	-0.1
15	1 13	76.58	3.7	4.8	26-29. Seeing good.					
16	1 20	76.65	5.2	5.7	30-33. Seeing fine.		Adopted Equator Point Corrections.			
	1 40	76.63	-5.2	-5.4			A. B.			
							1-25, from stars..... * *			
							27, 28, from nadir..... +6.72 +0.20			
							31, 32, from nadir..... +4.88 -1.24			
							35, 36, from nadir..... +4.39 -1.10			
							37, 38, from stars..... +4.7 -0.7			
							*Interpolated from diagram.			

SIX-INCH TRANSIT CIRCLE.

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	γ Andromedæ	9	m s 58 28.89	s -0.30	-37.20	h m s 1 57 51.35	s -5.89	41 51 21.20	28.18	3.18	+41 51 30.1	31.5	-31.3
2	B. D. +37° 480	9	0 52.45	0.26	37.24	2 0 14.95	5.73	37 49 18.60	24.25	1.19	37 49 23.1	23.2	30.1
3	B. D. +37° 490	9	4 39.46	0.26	37.25	2 4 1.95	5.78	38 11 50.02	54.78	0.78	38 11 55.0	54.1	29.8
4	B. D. +36° 428	9	6 36.61	0.25	37.25	2 5 59.11	5.73	36 30 10.60	17.15	2.62	36 30 13.7	14.6	29.2
5	B. D. +37° 506	9	8 47.78	0.26	37.25	2 8 10.27	5.82	38 10 40.72	45.82	0.80	38 10 45.7	45.1	29.4
6	B. D. +36° 450	9	.....	.....	.....	2 10 .....	.....	36 41 24.85	.....	2.42	36 41 28.2	.....	28.8
7	B. D. +36° 464	9	15 40.82	-0.25	37.26	2 15 3.31	-5.82	36 37 10.58	16.50	2.50	+36 37 13.8	14.1	-28.3
8	B. D. +36° 473	9	18 20.02	-0.25	-37.26	2 17 42.51	-5.85	36 39 16.18	22.12	2.46	+36 39 19.5	19.8	-28.0
9	B. D. +36° 482	9	20 27.71	0.25	37.26	2 19 50.20	5.86	36 34 4.90	8.92	2.55	36 34 8.1	6.5	27.7
10	B. D. +35° 477	9	22 44.52	0.24	37.26	2 22 7.02	5.84	35 29 27.00	32.28	3.72	35 29 29.0	28.7	27.2
11	B. D. +33° 447	9	25 41.29	0.23	37.27	2 25 3.79	5.79	33 55 21.92	27.30	5.44	33 55 22.2	22.0	26.6
12	B. D. +34° 462	9	.....	.....	.....	2 28 .....	.....	34 43 6.02	12.45	4.57	34 43 7.2	8.0	26.4
13	B. D. +33° 476	9	33 13.52	0.23	37.27	2 32 36.02	5.86	33 56 28.15	33.15	5.42	33 56 28.5	27.8	25.7
14	B. D. +34° 488	7	35 8.19	-0.23	-37.28	2 34 30.68	-5.92	34 51 53.72	59.88	4.41	+34 51 55.1	55.6	-25.6
15	B. D. +32° 490	9	37 21.78	-0.22	-37.28	2 36 44.28	-5.82	32 28 59.80	63.18	7.02	+32 28 58.5	56.3	-24.9
16	B. D. +32° 498	9	39 47.51	0.21	37.28	2 39 10.02	5.84	32 20 16.50	21.68	7.18	32 20 15.1	14.6	24.6
17	B. D. +31° 483	9	43 52.82	0.21	37.28	2 43 15.33	5.84	31 42 14.80	17.12	7.88	31 42 12.7	9.3	23.9
18	B. D. +32° 517	9	46 40.23	0.21	37.29	2 46 2.73	5.89	32 20 13.42	18.32	7.18	32 20 12.0	11.3	23.7
19	B. D. +31° 500	9	48 47.78	0.21	37.29	2 48 10.28	5.89	31 56 10.02	14.18	7.62	31 56 8.2	6.7	23.4
20	B. D. +30° 466	9	51 13.40	0.20	37.29	2 50 35.91	5.84	30 28 59.92	63.90	9.23	30 28 56.5	54.8	22.8
21	B. D. +30° 474	9	54 35.93	-0.20	-37.30	2 53 58.43	-5.85	30 12 54.42	58.22	9.53	+30 12 50.7	48.8	-22.3
22	B. D. +30° 479	9	56 50.18	-0.20	-37.30	2 56 12.68	-5.89	30 35 55.75	59.62	9.10	+30 35 52.4	50.6	-22.1
23	B. D. +30° 484	9	59 34.79	0.20	37.30	2 58 57.29	5.91	30 39 20.38	25.70	9.04	30 39 17.1	16.8	21.8
24	B. D. +29° 522	9	1 31.51	0.20	37.30	3 0 54.01	5.90	30 8 55.02	58.25	9.60	30 8 51.2	48.8	21.4
25	B. D. +30° 494	7	4 26.42	0.20	37.30	3 3 48.92	5.96	31 1 23.45	28.00	8.63	31 1 20.6	19.5	21.2
26	B. D. +29° 534	9	6 37.66	0.19	37.31	3 6 0.16	5.90	29 27 40.08	44.45	10.36	29 27 35.5	34.2	20.6
27	ζ Arietis	9	9 52.11	0.13	37.31	3 9 14.67	5.56	29 40 58.38	64.88	20.49	20 40 43.7	44.5	18.5
28	B. D. +27° 488	9	11 45.41	-0.18	-37.31	3 11 7.92	-5.87	28 7 25.88	30.60	11.86	+28 7 19.8	18.9	-19.7
29	B. D. +27° 492	9	14 21.29	-0.18	-37.31	3 13 43.80	-5.85	27 11 7.70	14.15	12.92	+27 11 0.6	1.3	-19.2
30	B. D. +27° 501	9	17 41.38	0.18	37.32	3 17 3.88	5.88	27 20 9.80	14.18	12.74	27 20 2.9	1.6	18.8
31	B. D. +28° 532	9	21 14.75	0.18	37.32	3 20 37.25	5.94	28 22 24.52	28.15	11.57	28 22 18.7	16.7	18.5
32	B. D. +27° 513	9	25 41.71	0.18	37.32	3 25 4.21	5.92	27 23 20.95	25.70	12.68	27 23 14.1	13.1	17.8
33	B. D. +26° 574	9	30 2.60	0.17	37.33	3 29 25.10	6.01	26 31 24.22	28.58	13.66	26 31 16.4	15.0	17.0
34	B. D. +25° 584	9	34 12.41	0.16	37.33	3 33 34.92	5.90	25 48 30.30	34.58	14.47	25 48 21.7	20.2	16.3
35	B. D. +24° 534	8	36 26.31	-0.16	-37.33	3 35 48.82	-5.87	25 3	23.95	15.33	+25 3	8.7	-15.9
36	B. D. +25° 599	9	38 28.22	-0.17	-37.34	3 37 50.71	-5.93	26 4 12.52	19.02	14.17	+26 4 4.2	5.0	-15.8
37	B. D. +24° 553	9	40 40.26	0.16	37.34	3 40 2.76	5.86	24 14 56.70	63.35	16.26	24 14 46.3	47.2	15.2
38	B. D. +26° 617	9	43 0.02	0.17	37.34	3 42 22.51	5.96	26 17 13.05	17.60	13.92	26 17 4.9	3.8	15.2
39	B. D. +25° 624	9	45 1.53	0.16	37.34	3 44 24.03	5.93	25 17 4.18	9.20	15.06	25 16 54.9	54.3	14.8
40	B. D. +24° 587	9	46 55.99	0.16	37.34	3 46 18.49	5.92	24 52 24.62	29.98	15.53	24 52 14.9	14.6	14.5
41	B. D. +23° 584	9	49 47.92	0.15	37.35	3 49 10.42	5.88	23 40 10.85	16.60	16.93	23 39 59.7	59.8	13.9
42	B. D. +24° 599	9	52 11.00	-0.15	-37.35	3 51 33.50	-5.91	24 10 43.05	48.75	16.33	+24 10 32.5	32.5	-13.7
43	B. D. +24° 605	3	54 37.89	-0.16	-37.35	3 54 0.38	-5.93	24 25	11.50	16.05	+24 24	55.6	-13.4
44	B. D. +23° 606	9	58 32.36	0.15	37.35	3 57 54.86	5.93	24 7 54.80	61.05	16.38	24 7 44.3	44.8	12.8
45	B. D. +23° 617	9	1 23.03	0.15	37.35	4 0 45.53	5.90	23 15 14.90	21.30	17.41	23 15 3.3	4.0	12.3
46	B. D. +22° 637 ^a	9	3 39.81	0.14	37.36	4 3 2.31	5.89	22 50 22.42	28.12	17.89	22 50 10.4	10.3	11.9
47	B. D. +22° 649	9	7 38.80	0.14	37.36	4 7 1.30	5.88	22 9 47.00	53.25	18.68	22 9 34.2	34.7	11.3
48	B. D. +21° 612	9	11 21.11	0.14	37.36	4 10 43.61	5.87	21 39 57.68	63.72	19.27	21 39 44.3	44.6	10.7
49	B. D. +21° 618	9	13 11.42	-0.14	-37.36	4 12 33.92	-5.86	21 20 29.45	36.15	19.66	+21 20 15.6	16.6	-10.4
50	γ Tauri	9	14 49.20	-0.10	-37.37	4 14 11.73	-5.64	15 23 .....	.....	.....	+15 23 ....	.....	.....
51	B. D. +20° 740	8	16 20.87	0.13	37.37	4 15 43.37	5.85	20 48 33.90	37.95	20.30	20 48 19.5	17.8	-9.9
52	B. D. +20° 751	9	18 22.12	0.13	37.37	4 17 44.62	5.85	20 45 20.80	26.98	20.36	20 45 6.3	6.7	9.6
53	B. D. +19° 742	9	30 34.12	0.12	37.38	4 29 56.62	5.84	19 40 54.30	59.52	21.67	19 40 38.5	38.0	7.8
54	B. D. +20° 785	9	33 5.23	0.13	37.38	4 32 27.72	5.88	20 29 24.75	29.38	20.69	20 29 9.9	8.8	7.5
55	B. D. +19° 755	9	36 25.88	-0.13	-37.38	4 35 48.37	-5.87	20 4 36.28	42.52	21.19	+20 4 20.9	21.5	-7.0

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			Eq. Pt. Cor. from stars.		
				No.	A.	B.			
d h m	cm.	°	°						
16 2 25	.....	...	-6.0	6.	Bisection at II.		I	+5.8	-1.0
2 31	76.63	-5.3	6.2	14.	Bisections at III and V.		27	+5.5	-0.7
2 53	76.65	5.5	6.2	35.43.	Bisection at V.				
3 24	76.65	5.5	5.9						
4 9	76.60	-5.5	5.6						
4 35	.....	...	-5.8						
Notes.									
27. Declination poor.									
51. Observation poor.									
Adopted Equator Point Corrections.									
A. B.									
I-55, from stars. +4.7 -0.7									

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +18° 717	9	m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
2	B. D. +17° 789	9	40 58.42	-0.12	-37.39	4 40 20.91	-5.82	18 37 27.48	31.95	22.97	+18 37 10.4	9.1	-6.3
3	B. D. +17° 791	9	43 30.81	0.11	37.39	4 42 53.31	5.78	17 38 13.40	18.62	24.20	17 37 55.1	54.5	5.8
4	B. D. +18° 747	9	45 15.38	0.11	37.39	4 44 37.88	5.78	17 21 17.68	22.88	24.55	17 20 59.0	58.5	5.6
5	π^5 Orionis	6	48 27.65	0.12	37.39	4 47 50.14	5.85	18 54 47.62	53.92	22.62	18 54 30.9	31.4	5.2
6	B. D. +16° 671	9	49 45.23	0.02	37.42	4 49 7.82	5.26	2 17 .....	.....	.....	2 17 .....	.....	.....
7	B. D. +16° 679	9	51 45.08	0.10	37.40	4 51 7.58	5.76	16 35 1.18	6.22	25.53	16 34 41.5	40.8	4.6
8	B. D. +16° 679	9	54 50.17	-0.11	-37.40	4 54 12.66	-5.76	16 41 4.72	11.22	25.41	+16 40 45.2	45.9	-4.2
9	ι Tauri	9	57 50.56	-0.14	-37.37	4 57 13.02	-5.97	21 27 8.22	13.70	19.56	+21 26 54.5	54.3	-4.0
10	B. D. +18° 777	9	59 43.64	0.12	37.40	4 59 6.12	5.83	18 7 15.50	19.78	23.62	18 6 57.7	56.3	3.6
11	B. D. +16° 697	9	1 58.04	0.11	37.40	5 1 20.53	5.78	16 42 4.10	7.85	25.40	16 41 44.6	42.6	3.2
12	B. D. +17° 862	9	5 35.31	0.11	37.40	5 4 57.80	5.81	17 19 13.50	19.02	24.63	17 18 54.7	54.5	2.8
13	B. D. +16° 732	6	8 11.71	0.11	37.41	5 7 34.19	5.79	16 46 15.32	19.65	25.32	16 45 55.7	54.3	2.4
14	B. D. +15° 769	9	10 25.35	0.10	37.41	5 9 47.84	5.74	15 31 18.98	25.40	26.92	15 30 57.9	58.6	2.0
15	B. D. +15° 789	9	15 1.78	-0.10	-37.41	5 14 24.27	-5.76	16 1 28.95	33.72	26.27	+16 1 8.6	7.6	-1.4
16	B. D. +15° 799	9	17 21.52	-0.10	-37.41	5 16 44.01	-5.76	16 1 53.65	59.98	26.27	+16 1 33.3	33.9	-1.1
17	B. D. +15° 813	9	20 53.96	0.10	37.42	5 20 16.44	5.74	15 22 13.68	19.12	27.12	15 21 52.5	52.1	0.6
18	B. D. +15° 826	9	22 44.10	0.10	37.42	5 22 6.58	5.76	15 47 42.38	49.25	26.58	15 47 21.6	22.6	-0.4
19	B. D. +15° 837	9	25 25.97	0.10	37.42	5 24 48.45	5.74	15 17 20.78	26.65	27.23	15 16 59.4	59.6	0.0
20	B. D. +14° 947	9	28 56.43	0.09	37.42	5 28 18.92	5.70	14 14 31.35	36.80	28.61	14 14 8.6	8.3	+0.5
21	B. D. +14° 958	9	31 29.27	0.09	37.42	5 30 51.76	5.71	14 35 59.72	65.50	28.14	14 35 37.5	37.5	0.8
22	B. D. +14° 978	9	34 48.79	-0.09	-37.42	5 34 11.28	-5.72	14 44 57.68	63.88	27.94	+14 44 35.6	36.1	+1.3
23	B. D. +14° 991	9	38 0.73	-0.09	-37.43	5 37 23.21	-5.70	14 8 11.25	16.28	28.76	+14 7 48.4	47.7	+1.7
24	B. D. +13° 971	9	40 6.98	0.09	37.43	5 39 29.46	5.68	13 32 21.70	27.00	29.55	13 31 58.0	57.6	2.0
25	B. D. +12° 899	9	42 35.03	0.08	37.43	5 41 57.52	5.63	12 13 38.82	45.10	31.31	12 13 13.4	13.9	2.3
26	B. D. +12° 912	9	44 39.07	0.08	37.43	5 44 1.56	5.64	12 37 34.05	39.45	30.77	12 37 9.2	8.8	2.6
27	B. D. +11° 965	9	49 45.06	0.08	37.43	5 49 7.55	5.60	11 28 23.18	29.35	32.35	11 27 56.7	57.1	3.2
28	B. D. +12° 965	9	53 27.35	0.08	37.44	5 52 49.83	5.65	12 59 1.00	6.75	30.30	12 58 36.6	36.6	3.8
29	B. D. +12° 980	9	55 23.13	-0.08	-37.44	5 54 45.61	-5.64	12 36 41.42	47.22	30.81	+12 36 16.5	16.5	+4.0
30	B. D. +12° 994	9	57 44.65	-0.08	-37.44	5 57 7.13	-5.63	12 40 36.38	41.78	30.73	+12 40 11.5	11.2	+4.3
31	B. D. +11° 1022	9	0 50.48	0.07	37.44	6 0 12.97	5.58	11 13 57.98	64.60	32.70	11 13 31.2	32.1	4.6
32	B. D. +12° 1032	9	3 50.38	0.08	37.44	6 3 12.86	5.62	12 18 2.25	9.08	31.24	12 17 36.9	38.0	5.1
33	η Geminorum	9	9 34.10	0.14	37.43	6 8 56.52	6.02	22 32 14.95	19.10	18.33	22 32 2.5	0.9	6.3
34	μ Geminorum	9	17 38.27	0.14	37.45	6 17 0.68	6.02	22 33 58.92	65.70	18.30	22 33 46.5	47.5	7.5
35	8- Monocerotis	9	19 11.01	-0.04	-37.46	6 18 33.52	-5.35	4 39 8.00	14.20	42.47	+4 38 31.5	31.9	+6.6

1900 DECEMBER 18.

CLAMP WEST.

LITTELL, OBSERVER.

LAWTON, ASSISTANT.

35	α Trianguli	9	48 7.37	-0.06	-39.31	1 47 27.96	-5.25	29 6 3.30	8.40	10.33	+29 5 60.1	58.6	-29.1
36	β Arietis	9	49 51.30	0.04	39.40	1 49 11.90	5.02	20 19 48.95	56.45	20.08	20 19 36.0	36.9	26.7
37	γ Andromedæ	7	58 30.84	0.10	39.37	1 57 51.37	5.87	41 51 20.58	28.15	3.06	41 51 30.6	31.6	31.4
38	B. D. +38° 413	9	3 6.69	0.09	39.37	2 2 27.23	5.78	38 55 41.52	48.68	0.01	38 55 48.6	49.1	30.3
39	B. D. +38° 423	9	5 26.84	-0.08	-39.38	2 4 47.38	-5.77	38 14 16.60	24.78	0.71	+38 14 22.9	24.5	-29.9
40	B. D. +37° 505	9	8 37.75	-0.08	-39.38	2 7 58.29	-5.79	37 56 44.40	50.95	1.02	+37 56 50.4	50.3	-29.5
41	B. D. +36° 450	9	11 12.47	0.08	39.38	2 10 33.01	5.76	36 41 24.32	30.10	2.33	36 41 29.0	28.2	28.9
42	B. D. +36° 458	9	13 18.16	0.08	39.38	2 12 38.70	5.78	36 36 41.65	49.52	2.41	36 36 46.3	47.4	28.6
43	B. D. +36° 465	9	15 55.27	0.08	39.38	2 15 15.81	5.82	36 58 16.75	23.50	2.03	36 58 21.8	21.8	28.4
44	B. D. +36° 470	9	17 58.42	-0.08	-39.39	2 17 18.95	-5.85	37 6 40.28	45.80	1.89	+37 6 45.4	44.2	-28.3
45	B. D. +36° 478	9	19 55.13	-0.08	-39.39	2 19 15.66	-5.85	36 40 22.12	29.68	2.34	+36 40 26.7	27.6	-27.9
46	B. D. +36° 491	9	21 54.07	0.08	39.39	2 21 14.60	5.86	36 31 23.92	31.72	2.50	36 31 28.3	29.5	27.7
47	B. D. +35° 480	9	23 36.37	0.08	39.39	2 22 56.90	5.82	35 13 38.52	43.50	3.86	35 13 41.6	39.9	27.2
48	B. D. +33° 447	9	25 43.22	0.07	39.39	2 25 3.76	5.78	33 55 20.58	27.70	5.23	33 55 22.3	22.8	26.6
49	B. D. +34° 457	7	27 14.43	-0.07	-39.39	2 26 34.97	-5.83	34 49	48.95	4.28	+34 49	45.0	-26.7

Eq. Pt. Cor. from stars.

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				No.	A.	B.
d h m	cm.	°	°	12.	Bisections at IV and VI.	17.	Bisections at III and VI.	8	"	"
16 5 4	76.62	-5.6	-6.2	23.	Bisections at III and V.	32	5.0	32	5.0	+1.2
5 33	.....	.....	6.7	49.	Bisection at V.	33	4.8	33	4.8	-1.6
6 21	76.53	-6.4	-7.2			34	4.1	34	4.1	-1.7
18 1 45	75.93	+2.7	+2.0			35	5.3	35	5.3	+0.5
						36	6.1	36	6.1	-1.1
						37	+6.7	37	+6.7	-0.7
Note.										
43. Faint companion following.										
Adopted Equator Point Corrections.										
I-34, from stars..... +4.7										
35-49, from stars..... *										
*Interpolated from diagram.										

NO.	NAME.	THDS.	MEAN THREAD.		c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.			RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
			m	s			h	m	s		A.	B.		A.	B.	
1	B. D. +33° 462	9	29	16.30	-0.07	-39.40	2	28	36.83	-5.79	33 28 56.98	64.58	5.70	+33 28 58.3	59.2	-26.1
2	B. D. +33° 476	9	33	15.46	0.07	39.40	2	32	35.99	5.84	33 56 26.28	33.72	5.21	33 56 28.0	28.8	25.8
3	B. D. +34° 488	9	35	10.08	0.08	39.40	2	34	30.60	5.90	34 51 52.05	60.50	4.24	34 51 54.8	56.5	25.8
4	B. D. +32° 490	9	37	23.76	0.07	39.40	2	36	44.29	5.81	32 28 57.58	63.82	6.75	32 28 57.8	57.3	25.0
5	B. D. +33° 512	9	42	12.74	0.07	39.41	2	41	33.26	5.88	33 13 26.12	31.92	5.97	33 13 27.1	26.2	24.6
6	B. D. +31° 483	9	43	54.86	0.07	39.41	2	43	15.38	5.83	31 42 11.05	17.45	7.58	31 42 10.4	10.1	24.0
7	B. D. +32° 517	9	46	42.14	-0.07	-39.41	2	46	2.66	-5.88	32 20 11.22	17.98	6.91	+32 20 11.2	11.3	-23.8
8	B. D. +31° 500	9	48	49.69	-0.07	-39.41	2	48	10.21	-5.88	31 56 8.15	13.88	7.33	+31 56 7.7	6.8	-23.5
9	B. D. +30° 466	9	51	15.39	0.06	39.41	2	50	35.92	5.83	30 28 59.55	64.98	8.88	30 28 57.6	56.3	22.9
10	B. D. +30° 474	9	54	37.87	0.06	39.42	2	53	58.39	5.84	30 12 52.20	58.78	9.17	30 12 49.9	49.8	22.4
11	B. D. +30° 479	9	...	...	...	...	2	56	...	...	30 35 55.30	59.28	8.76	30 35 53.4	50.6	22.2
12	B. D. +29° 519	7	0	26.51	0.06	39.42	2	59	47.03	5.88	30 8 41.38	46.95	9.24	30 8 39.0	37.8	21.6
13	B. D. +28° 499	9	4	20.94	0.06	39.42	3	3	41.46	5.85	28 42 8.45	13.65	10.79	28 42 4.6	3.0	20.8
14	B. D. +29° 534	9	6	39.64	-0.06	-39.43	3	6	0.15	-5.90	29 27 39.32	44.50	9.98	+29 27 36.2	34.6	-20.7
15	♈ Arietis	9	9	54.12	-0.04	-39.42	3	9	14.65	-5.55	20 40 57.62	64.10	19.74	+20 40 44.8	44.5	-18.5
16	B. D. +27° 488	9	11	47.48	0.06	39.43	3	11	7.99	5.87	28 7 24.00	30.35	11.42	28 7 19.4	19.0	19.8
17	B. D. +28° 517	9	15	22.34	0.06	39.43	3	14	42.85	5.91	28 28 21.30	27.10	11.04	28 28 17.1	16.2	19.4
18	B. D. +27° 501	9	17	43.45	0.06	39.43	3	17	3.96	5.87	27 20 8.55	15.15	12.28	27 20 3.1	2.9	18.9
19	B. D. +28° 526	9	19	30.93	0.06	39.43	3	18	51.44	5.92	28 18 21.88	27.45	11.23	28 18 17.5	16.2	18.8
20	B. D. +28° 532	9	21	16.72	0.06	39.43	3	20	37.23	5.94	28 22 23.10	28.02	11.16	28 22 18.7	16.9	18.6
21	B. D. +27° 513	9	25	43.69	-0.06	-39.44	3	25	4.19	-5.92	27 23 18.82	25.20	12.23	+27 23 13.4	13.0	-17.8
22	B. D. +26° 574	9	30	4.64	-0.06	-39.44	3	29	25.14	-6.01	26 31 22.52	28.88	13.17	+26 31 16.2	15.7	-17.1
23	B. D. +25° 584	9	34	14.47	0.05	39.44	3	33	34.98	5.90	25 48 28.00	34.00	13.96	25 48 20.9	20.1	16.4
24	B. D. +24° 533	9	36	5.62	0.05	39.44	3	35	26.13	5.86	24 41 27.98	36.30	15.20	24 41 19.6	21.1	16.0
25	B. D. +25° 599	9	38	30.26	0.06	39.44	3	37	50.76	5.93	26 4 11.62	18.30	13.67	26 4 4.7	4.5	15.9
26	B. D. +24° 553	9	40	42.24	0.05	39.44	3	40	2.75	5.86	24 14 55.10	63.65	15.69	24 14 46.1	47.9	15.3
27	B. D. +24° 571	9	42	53.41	0.05	39.44	3	42	13.92	5.89	24 41 10.78	17.82	15.21	24 41 2.3	2.5	15.0
28	B. D. +25° 624	9	45	3.51	-0.05	-39.45	3	44	24.01	-5.93	25 17 2.58	9.05	14.54	+25 16 54.8	54.4	-14.8
29	B. D. +24° 587	9	46	57.88	-0.05	-39.45	3	46	18.38	-5.92	24 52 22.60	29.48	15.00	+24 52 14.3	14.4	-14.5
30	B. D. +23° 584	9	49	49.93	0.05	39.45	3	49	10.43	5.88	23 40 8.28	16.45	16.35	23 39 58.7	60.0	13.9
31	B. D. +24° 598	9	51	56.48	0.05	39.45	3	51	16.98	5.94	24 59 52.85	59.82	14.86	24 59 44.7	44.9	13.9
32	B. D. +23° 600	9	53	51.79	0.05	39.45	3	53	12.29	5.88	23 20 50.78	59.05	16.71	23 20 40.8	42.3	13.3
33	B. D. +22° 617	9	55	45.73	0.05	39.45	3	55	6.23	5.87	22 55 34.88	42.32	17.19	22 55 24.4	25.1	13.0
34	B. D. +23° 606	9	58	34.34	0.05	39.45	3	57	54.84	5.94	24 7 53.40	61.18	15.83	24 7 44.3	45.2	12.8
35	B. D. +23° 617	9	1	25.07	-0.05	-39.45	4	0	45.57	-5.91	23 15 13.75	21.50	16.82	+23 15 3.6	4.5	-12.3
36	B. D. +22° 637	9	3	41.67	-0.05	-39.45	4	3	2.17	-5.90	22 50 15.58	23.08	17.29	+22 50 4.9	5.6	-11.9
37	B. D. +20° 751	9	18	24.06	0.04	39.46	4	17	44.56	5.86	20 45 17.95	26.45	19.68	20 45 4.9	6.6	9.6
38	B. D. +20° 754	9	20	38.91	0.04	39.46	4	19	59.41	5.87	20 54 52.05	60.12	19.50	20 54 39.2	40.4	9.3
39	B. D. +20° 760	9	23	29.69	0.04	39.46	4	22	50.19	5.87	20 36 57.45	64.80	19.84	20 36 44.3	44.7	8.9
40	B. D. +19° 733	9	26	8.13	0.04	39.46	4	25	28.63	5.85	19 55 25.22	31.90	20.65	19 55 11.2	11.0	8.4
41	B. D. +19° 735	9	27	55.63	-0.04	-39.46	4	27	16.13	-5.82	19 8 33.30	40.60	21.57	+19 8 18.3	18.8	-8.1
42	B. D. +19° 742	9	30	36.12	-0.04	-39.46	4	29	56.62	-5.85	19 40 52.48	59.05	20.94	+19 40 38.1	37.8	-7.8
43	B. D. +20° 785	9	33	7.25	-0.04	-39.46	4	32	27.75	-5.89	20 29 22.08	29.10	19.99	20 29 8.6	8.8	7.5
44	B. D. +19° 755	9	...	...	...	...	4	35	...	...	20 4 33.68	40.70	20.47	20 4 19.8	20.0	7.0
45	B. D. +18° 717	9	...	...	...	...	4	40	...	...	18 37 24.35	31.20	22.19	18 37 8.7	8.6	6.2
46	B. D. +17° 789	9	...	...	...	...	4	42	...	...	17 38 11.38	17.32	23.38	17 37 54.6	53.6	5.8
47	B. D. +17° 791	9	...	...	...	...	4	44	...	...	17 21 14.70	22.30	23.71	+17 20 57.6	58.2	-5.5
48	B. D. +18° 747	9	...	...	...	...	4	47	...	...	18 54 45.42	52.52	21.85	+18 54 30.1	30.3	-5.2
49	♈ Orionis	9	49	47.29	-0.01	-39.48	4	49	7.81	-5.27	2 17 18.52	26.80	44.60	2 16 40.5	41.7	3.6
50	B. D. +16° 679	9	54	52.16	0.04	39.47	4	54	12.65	5.78	16 41 3.32	9.28	24.53	16 40 45.3	44.2	4.2
51	B. D. +16° 685	9	56	53.81	0.04	39.47	4	56	14.30	5.78	16 41 34.72	41.40	24.52	16 41 16.7	16.5	3.8
52	B. D. +18° 777	9	59	45.69	0.04	39.47	4	59	6.18	5.85	18 7 13.68	18.98	22.80	18 6 57.3	55.8	3.6
53	B. D. +16° 697	9	2	0.02	-0.04	-39.47	5	1	20.51	-5.79	16 42 1.52	8.12	24.52	+16 41 43.5	43.2	-3.2
54	B. D. +15° 752	9	4	43.73	-0.03	-39.47	5	4	4.23	-5.74	15 28 32.38	39.60	26.03	+15 28 12.8	13.1	-2.7
55	B. D. +15° 759	9	6	42.19	0.03	39.47	5	6	2.69	5.77	15 55 41.00	48.08	25.47	15 55 22.0	22.1	2.5
56	B. D. +16° 732	9	8	13.76	0.04	39.47	5	7	34.25	5.80	16 46 14.35	19.45	24.43	16 45 56.4	54.6	2.3
57	B. D. +15° 769	9	10	27.42	0.03	39.47	5	9	47.92	5.76	15 31 17.52	25.25	25.97	15 30 58.0	58.8	1.9
58	B. D. +15° 779	9	12	10.29	0.03	39.47	5	11	30.79	5.74	15 9 35.20	42.82	26.42	15 9 15.3	15.9	1.7
59	B. D. +15° 789	9	15	3.93	-0.03	-39.47	5	14	24.43	-5.78	16 1 26.22	34.05	25.35	+16 1 7.3	8.2	-1.3

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°			"	"
18 2 31	75.91	2.3	1.4	49. Bisections at III and VI.	15	+5.5	-0.7
3 13	75.88	2.0	1.0	50. Bisections at II and VI.	49	+6.0	-1.8
3 31	.....	...	0.8	Note.			
4 22	.....	...	0.5	12. Clouds.			
4 35	75.84	1.5	0.4				

Adopted Equator Point Corrections.

I-59, from stars.

*Interpolated from diagram.

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +15° 799	9	m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
2	B. D. +15° 813	9	17 23.52	-0.03	-39.47	5 16 44.02	-5.78	16 1 53.88	59.98	25.35	+16 1 35.0	34.2	-1.0
3	B. D. +14° 917	8	20 56.02	0.03	39.47	5 20 16.52	5.76	15 22 13.40	18.62	26.16	15 21 53.6	52.0	0.5
4	B. D. +14° 934	9	22 55.03	0.03	39.48	5 22 15.52	5.74	14 56 9.80	17.35	26.71	14 55 49.5	50.2	-0.2
5	B. D. +14° 947	9	26 38.47	0.03	39.48	5 25 58.96	5.74	14 51 30.70	38.35	26.79	14 51 10.3	11.0	+0.3
6	B. D. +14° 958	7	28 58.49	0.03	39.48	5 28 18.98	5.72	14 14 29.82	36.95	27.57	14 14 8.6	8.8	0.6
7	B. D. +14° 973	9	31 31.31	0.03	39.48	5 30 51.80	5.74	14 35 57.52	64.92	27.11	14 35 36.8	37.2	1.0
		9	34 11.18	-0.03	-39.48	5 33 31.67	-5.73	14 30 15.40	24.18	27.23	+14 29 54.6	56.4	+1.3
8	B. D. +13° 954	7	36 35.96	-0.03	-39.48	5 35 56.45	-5.68	13 6 9.38	16.88	29.02	+13 5 46.8	47.3	+1.7
9	B. D. +13° 971	9	40 8.98	0.03	39.48	5 39 29.47	5.70	13 32 19.45	27.92	28.44	13 31 57.4	58.9	2.1
10	B. D. +12° 899	9	42 37.03	0.03	39.48	5 41 57.52	5.65	12 13 36.65	43.30	30.14	12 13 12.9	12.6	2.5
11	B. D. +12° 912	9	44 41.03	0.03	39.48	5 44 1.52	5.66	12 37 32.00	39.02	29.62	12 37 8.7	8.7	2.8
12	B. D. +12° 925	9	47 22.84	0.03	39.48	5 46 43.33	5.67	12 51 29.30	37.58	29.31	12 51 6.3	7.4	3.1
13	B. D. +11° 965	9	49 47.04	0.03	39.48	5 49 7.53	5.62	11 28 20.50	27.90	31.11	11 27 55.7	56.1	3.4
14	B. D. +12° 965	9	53 29.42	-0.03	-39.48	5 52 49.91	-5.67	12 58 57.50	66.35	29.13	+12 58 34.7	36.6	+3.9
15	B. D. +12° 980	9	55 25.18	-0.03	-39.48	5 54 45.67	-5.66	12 36 37.90	46.12	29.62	+12 36 14.6	15.8	+4.2
16	B. D. +12° 994	9	57 46.73	0.03	39.48	5 57 7.22	5.66	12 40 33.85	40.88	29.54	12 40 10.6	10.7	4.4
17	B. D. +11° 1032	9	2 48.69	0.03	39.48	6 2 9.18	5.60	11 1 30.40	37.68	31.72	11 1 5.0	5.3	5.1
18	γ Geminorum.....	9	9 36.09	0.05	39.48	6 8 56.56	6.05	22 32 13.88	20.38	17.62	22 32 2.5	2.0	6.4
19	μ Geminorum.....	9	17 40.23	0.05	39.47	6 17 0.70	6.05	22 33 57.62	64.55	17.59	22 33 46.2	46.2	7.6
20	δ Monocerotis.....	9	19 13.04	-0.01	-39.49	6 18 33.55	-5.38	4 39 6.08	13.10	40.82	+4 38 31.5	31.5	+6.9

UPDEGRAFF, OBSERVER.

1900 DECEMBER 18.

CLAMP WEST.

NO ASSISTANT.

21	α Canum Venat.....	9	52 3.71	-0.13	-39.69	12 51.....	....	38 51.....	....	....	+38 51.....	....	....
22	43 H. Cephei S. P.....	9	55 58.38	+2.12	40.15	0 55.....	....	94 14 29.10	36.55	87.02	85 43 56.8	56.6	....
23	20 Canum Venat.....	9	13 45.89	-0.14	39.65	13 13.....	....	41 5 13.60	20.25	2.28	41 5 23.0	22.2	....
24	α Ursae Minoris S. P.....	9	24 17.34	+7.46	-39.28	1 23.....	....	91 11 26.59	34.26	77.77	+88 47 8.1	7.7	....

UPDEGRAFF, OBSERVER.

1900 DECEMBER 19.

CLAMP WEST.

LAWTON, ASSISTANT.

25	μ Andromedae.....	9	51 57.08	+0.11	-40.25	0 51.....	....	37 57.....	....	....	+37 57.....	....	....
26	43 H. Cephei.....	9	55 58.57	1.92	[40.27]	0 55.....	....	85 42 47.70	56.08	61.69	85 43 56.6	56.8	....
27	α Ursae Minoris.....	9	24 19.27	6.07	[40.18]	1 23.....	....	88 45 51.85	60.06	68.69	88 47 7.3	7.3	....
28	α Trianguli.....	9	48 8.18	0.06	40.25	1 47 27.93	-5.24	29 6 1.90	10.10	10.06	29 5 60.4	59.8	-29.1
29	β Arietis.....	9	49 52.19	0.04	40.38	1 49 11.92	5.01	20 19 46.20	55.65	19.56	20 19 35.3	35.9	26.7
30	γ Andromedae.....	9	58 31.56	0.10	40.30	1 57 51.35	5.86	41 51 19.70	28.10	2.99	41 51 31.2	30.9	31.5
31	B. D. +38° 418	9	3 43.67	+0.09	-40.31	2 3 3.45	-5.79	39 7 26.78	34.95	0.21	+39 7 35.4	35.0	-30.3
32	B. D. +38° 425	9	5 34.72	+0.09	-40.31	2 4 54.50	-5.78	38 34 25.98	33.80	0.35	+38 34 34.0	33.2	-30.0
33	B. D. +37° 506	9	8 50.43	0.09	40.31	2 8 10.21	5.80	38 10 37.55	45.45	0.76	38 10 45.2	44.5	29.6
34	B. D. +36° 450	9	11 13.16	0.08	40.31	2 10 32.93	5.75	36 41 22.60	30.50	2.27	36 41 28.8	28.0	29.0
35	B. D. +37° 518	9	12 35.19	0.09	40.31	2 11 54.97	5.81	37 37 50.80	58.68	1.31	37 37 57.9	57.2	29.0
36	B. D. +36° 465	9	15 56.00	0.08	40.31	2 15 15.77	5.81	36 58 16.05	23.78	1.99	36 58 22.4	21.6	28.5
37	B. D. +36° 473	9	18 22.75	0.08	40.31	2 17 42.52	5.82	36 39 14.05	21.52	2.31	36 39 20.1	19.0	28.2
38	B. D. +35° 480	9	23 37.12	+0.08	-40.31	2 22 56.89	-5.81	35 13 35.45	43.52	3.77	+35 13 40.0	39.6	-27.2
39	B. D. +34° 457	9	27 15.27	+0.08	-40.31	2 26 35.04	-5.82	34 49 40.35	49.05	4.18	+34 49 44.5	44.7	-26.7
40	B. D. +33° 462	9	29 17.03	0.07	40.31	2 28 36.79	5.78	33 28 55.85	63.82	5.57	33 28 58.7	58.0	26.2
41	B. D. +33° 476	9	33 16.21	0.08	40.31	2 32 35.98	5.84	33 56 25.48	32.82	5.09	33 56 28.6	27.5	25.8
42	B. D. +34° 488	9	35 10.91	0.08	40.31	2 34 30.68	5.90	34 51 51.82	61.12	4.14	34 51 55.9	56.8	25.8
43	B. D. +32° 490	9	37 24.46	0.07	40.31	2 36 44.22	5.80	32 28 56.35	63.65	6.59	32 28 58.0	56.9	25.0
44	B. D. +31° 477	9	41 5.09	0.07	40.31	2 40 24.85	5.80	31 34 52.75	59.75	7.51	31 34 53.5	52.0	24.4
45	B. D. +31° 483	9	43 55.64	0.07	40.31	2 43 15.40	5.82	31 42 11.22	17.55	7.38	31 42 12.1	10.0	24.1
46	B. D. +32° 522	9	48 20.89	+0.07	-40.31	2 47 40.65	-5.90	32 30 55.88	63.50	6.56	+32 30 57.5	56.7	-23.7

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.			
								No.	A.	B.	
d h m	cm.	°	°								
18 5 19	75.79	+0.9	0.0	12.	Bisections at II and VI.				18	"	"
5 46		...	+0.4	22, 26.	Bisection at IV.				19	+5.7	-0.9
5 51	75.77	0.7	0.6	24, 27.	Bisections at c_1 and c_5 .				20	5.3	1.3
6 21	75.78	+0.8	+0.4	Adopted Equator Point Corrections.				21	4.1	2.5	
13 25	75.89	-0.7	-0.6					28	6.5	1.4	
14 1	75.90	0.0	-0.2	Notes.				29	8.3	0.8	
19 1 6	75.91	+8.7	+9.7	5, 10, 18.	Seeing somewhat diffuse.				30	+7.7	-0.5
1 44	75.90	8.5	9.2	32.	Companion north.						
2 26	75.90	+8.0	+7.3	I-20, from stars							
				22-24, from nadir.....				+6.12	-1.16		
				26-27, from nadir.....				+6.25	-2.00		
				28-46, from stars				*	-1.0		
								* Interpolated from diagram.			

NO.	NAME.	THDS.	MEAN THREAD.	ζ_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +30° 466	9	m 51 16.16	s +0.06	-40.31	2 50 35.91	-5.83	30 28 58.95	65.00	8.64	+30 28 58.5	56.2	-22.9
2	B. D. +30° 474	9	54 38.69	0.06	40.31	2 53 58.44	5.84	30 12 52.55	58.60	8.92	30 12 51.8	49.5	22.4
3	B. D. +30° 479	9	56 52.88	0.06	40.31	2 56 12.63	5.87	30 35 54.68	59.72	8.52	30 35 54.3	51.0	22.2
4	B. D. +30° 482	9	59 17.71	0.07	40.31	2 58 37.47	5.91	30 55 34.70	40.85	8.18	30 55 34.7	32.5	22.0
5	B. D. +28° 493	9	2 2.55	0.06	40.31	3 1 22.30	5.83	28 44 39.12	46.05	10.45	28 44 36.9	35.4	21.2
6	B. D. +30° 494	9	4 29.08	0.07	40.31	3 3 48.84	5.95	31 1 21.95	28.55	8.08	31 1 22.0	20.3	21.4
7	B. D. +29° 534	9	6 40.36	+0.06	-40.31	3 6 0.11	-5.89	29 27 37.35	43.48	9.70	+29 27 35.8	33.6	-20.8
8	ζ Arietis	9	9 54.92	+0.04	-40.30	3 9 14.65	-5.55	20 40 55.48	64.12	19.19	+20 40 44.4	44.8	-18.5
9	B. D. +27° 488	9	11 48.19	0.06	40.31	3 11 7.94	5.86	28 7 24.50	30.32	11.10	28 7 21.5	19.0	19.8
10	B. D. +28° 517	7	15 23.10	0.06	40.30	3 14 42.86	5.90	28 28 20.40	26.68	10.74	28 28 17.8	15.8	19.4
11	B. D. +27° 501	9	17 44.14	0.06	40.30	3 17 3.90	5.87	27 20 7.20	14.72	11.94	27 20 3.4	2.6	18.9
12	B. D. +28° 532	9	21 17.50	0.06	40.30	3 20 37.26	5.94	28 22 22.62	28.55	10.84	28 22 19.9	17.5	18.6
13	B. D. +26° 566	9	25 46.91	0.06	40.30	3 25 6.67	5.89	26 46 37.78	44.45	12.54	26 46 33.3	31.7	17.7
14	B. D. +27° 525	9	30 6.99	+0.06	-40.30	3 29 26.75	-5.93	27 11 50.42	56.90	12.10	+27 11 46.3	44.6	-17.2
15	B. D. +25° 584	8	34 15.33	+0.05	-40.30	3 33 35.08	-5.90	25 48 27.30	34.75	13.60	+25 48 21.7	21.0	-16.4
16	B. D. +24° 533	9	36 6.46	0.05	40.30	3 35 26.21	5.86	24 41 26.80	36.75	14.81	24 41 20.0	21.8	16.0
17	B. D. +25° 598	9	38 24.82	0.05	40.30	3 37 44.57	5.92	25 48 51.52	58.58	13.61	25 48 45.9	44.8	15.9
18	B. D. +24° 553	9	40 43.00	0.05	40.30	3 40 2.75	5.86	24 14 55.28	63.65	15.31	24 14 47.9	48.2	15.3
19	B. D. +24° 571	8	42 54.09	0.05	40.30	3 42 13.84	5.89	24 41 9.50	17.92	14.85	24 41 2.6	2.9	15.1
20	B. D. +25° 624	9	45 4.34	0.05	40.30	3 44 24.09	5.93	25 17 1.30	8.82	14.20	25 16 55.0	54.4	14.9
21	B. D. +24° 587	9	46 58.72	+0.05	-40.30	3 46 18.47	-5.91	24 52 21.80	29.78	14.66	+24 52 15.1	14.9	-14.6
22	B. D. +23° 584	9	49 50.74	+0.05	-40.30	3 49 10.49	-5.88	23 40 6.50	15.75	15.99	+23 39 58.4	59.6	-13.9
23	ϵ Persei	9	51 55.42	0.09	40.25	3 51 15.21	6.77	39 43 23.15	30.98	0.82	39 43 31.8	31.6	16.1
24	B. D. +24° 605	9	54 40.67	0.05	40.30	3 54 0.42	5.93	24 25 2.88	11.82	15.18	24 24 55.6	56.5	13.4
25	ν Tauri	9	58 35.80	0.01	40.38	3 57 55.51	5.26	5 43 23.95	31.62	38.44	5 42 53.5	53.0	9.8
26	B. D. +23° 624	9	3 38.67	0.05	40.30	4 2 58.42	5.93	23 36 40.58	48.00	16.10	23 36 32.3	31.7	12.0
27	B. D. +23° 642	9	7 12.64	0.05	40.30	4 6 32.39	5.94	23 19 21.35	29.68	16.41	23 19 12.8	13.1	11.5
28	B. D. +22° 657	9	9 19.74	+0.04	-40.30	4 8 39.48	-5.89	22 12 17.05	23.72	17.64	+22 12 7.3	5.9	-11.1
29	B. D. +21° 612	9	11 23.94	+0.04	-40.30	4 10 43.68	-5.88	21 39 54.62	61.62	18.23	+21 39 44.2	43.2	-10.7
30	B. D. +20° 731	9	13 53.27	0.04	40.30	4 13 13.01	5.86	21 3 44.02	53.58	18.91	21 3 32.9	34.5	10.3
31	B. D. +20° 740	9	16 23.58	0.04	40.30	4 15 43.32	5.86	20 48 30.18	37.60	19.19	20 48 18.8	18.2	9.9
32	B. D. +21° 639	9	18 52.26	0.04	40.30	4 18 12.00	5.89	21 18 49.22	56.08	18.61	21 18 38.4	37.3	9.6
33	B. D. +21° 644	9	21 9.02	0.04	40.30	4 20 28.76	5.89	21 14 56.65	65.88	18.67	21 14 45.7	47.0	9.3
34	B. D. +20° 760	9	23 30.51	0.04	40.30	4 22 50.25	5.87	20 36 56.25	64.28	19.37	20 36 44.6	44.7	9.1
35	B. D. +19° 755	9	36 28.70	+0.04	-40.30	4 35 48.44	-5.89	20 4 33.12	40.75	19.94	+20 4 20.8	20.6	-7.0
36	B. D. +19° 777	9	41 30.26	+0.04	-40.30	4 40 50.00	-5.87	19 19 3.82	10.95	20.78	+19 18 50.7	50.0	-6.2
37	B. D. +17° 789	9	43 33.64	0.03	40.30	4 42 53.37	5.80	17 38 10.82	17.82	22.73	17 37 55.8	54.9	5.8
38	B. D. +17° 791	9	45 18.22	0.03	40.30	4 44 37.95	5.80	17 21 14.65	20.90	23.05	17 20 59.3	57.7	5.5
39	B. D. +18° 747	9	48 30.43	0.04	40.30	4 47 50.17	5.86	18 54 44.18	52.12	21.23	18 54 30.5	30.7	5.2
40	π^5 Orionis	7	49 48.11	0.00	40.31	4 49 7.81	5.27	2 17	.....	.....	2 17	.....	.....
41	B. D. +16° 671	9	51 47.94	0.03	40.30	4 51 7.67	5.78	16 34 57.82	65.92	23.97	16 34 41.4	41.8	4.5
42	ι Tauri	9	57 53.32	+0.04	-40.29	4 57 13.06	-5.99	21 27 4.70	12.52	18.38	+21 26 53.9	54.0	-4.0
43	B. D. +16° 697	7	2 0.91	+0.03	-40.30	5 1 20.64	-5.80	16 42 0.98	6.78	23.87	+16 41 44.7	42.8	-3.1
44	B. D. +17° 862	9	5 38.11	0.03	40.30	5 4 57.84	5.83	17 19 10.60	17.82	23.16	17 18 54.9	54.5	2.7
45	B. D. +16° 742	9	12 6.16	0.03	40.30	5 11 25.89	5.80	16 14 49.85	57.42	24.45	16 14 32.9	32.8	1.7
46	B. D. +14° 881	9	15 39.38	0.03	40.30	5 14 59.11	5.75	14 57 47.12	54.22	26.02	14 57 28.6	28.0	1.2
47	B. D. +15° 805	9	18 32.82	0.03	40.30	5 17 52.55	5.79	15 57 2.45	10.22	24.83	15 56 45.1	45.2	0.8
48	B. D. +15° 822	9	22 16.83	+0.03	-40.30	5 21 36.56	-5.76	15 10 36.60	44.20	25.78	15 10 18.2	18.3	-0.2
49	B. D. +14° 933	.	.....	.....	.....	5 25	.....	14 34 25.15	33.58	26.54	+14 34 6.0	6.9	+0.4
50	B. D. +15° 856	.	.....	.....	.....	5 28	.....	15 31 12.02	20.42	25.39	+15 30 54.0	54.9	+0.6
51	B. D. +14° 978	.	.....	.....	.....	5 34	.....	14 44 54.05	62.05	26.34	14 44 35.1	35.6	1.5
52	B. D. +14° 991	.	.....	.....	.....	5 37	.....	14 8 7.20	15.28	27.11	14 7 47.4	48.0	1.9
53	B. D. +12° 884	.	.....	.....	.....	5 39	.....	12 51 2.38	10.15	28.73	12 50 40.9	41.3	2.2
54	B. D. +12° 896	.	.....	.....	.....	5 41	.....	12 18 28.15	.....	29.42	12 18 6.0	.....	2.5
55	B. D. +12° 912	.	.....	.....	.....	5 43	.....	12 37 29.98	37.95	29.02	+12 37 8.3	8.8	+2.8

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.		
								No.	A.	B.
d h m	cm.	°	°							
19 2 53	.....	.....	8.6	10, 16. Bisections at III and V.				8	.....	.....
3 23	75.90	7.5	8.6	54. Bisection at II.				23	+7.1	-1.3
4 2	.....	.....	5.8					25	6.0	0.8
4 47	.....	.....	8.2					42	+6.2	1.2
5 25	75.87	6.6	6.6							-1.3
				Notes. 15, 16, 35. Poor; faint. 22. Very poor; clouds. 46, 47. Clouds.						
				Adopted Equator Point Corrections.						
				A. B. " " * -1.0						
				I-55, from stars. *						
				* Interpolated from diagram.						

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	B. D. +11° 960	.	..	...	...	5 47	...	11 47 58.08	65.72	30.10	+11 47 35.3	35.5	+ 3.3
2	B. D. +12° 950	.	..	...	...	5 50	...	12 59 21.78	30.10	28.58	12 59 0.5	1.4	3.6
3	B. D. +12° 968	.	..	...	...	5 53	...	12 48 12.85	20.70	28.82	12 47 51.2	51.7	4.0
4	B. D. +11° 1009	.	..	...	...	5 57	...	11 41 16.08	22.78	30.27	+11 40 53.0	52.4	+ 4.6
5	ν Orionis	.	..	...	...	6 1	...	14 47 3.82	11.22	26.36	+14 46 44.6	44.7	+ 5.3
6	η Geminorum	.	..	...	...	6 8	...	22 32 13.18	19.50	17.31	22 32 3.0	2.0	6.4
7	μ Geminorum	.	..	...	...	6 16	...	22 33 56.22	64.08	17.29	22 33 46.0	46.6	7.6
8	Monocerotis	.	..	...	...	6 18	...	4 39 3.62	11.42	40.13	+ 4 38 30.4	31.0	+ 7.0

1900 DECEMBER 20.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

9	μ Andromedæ	9	51 57.72	+0.09	[-40.88]	0 51	...	37 57	...	...	+37 57	...	...
10	43 H. Cephei	9	55 59.08	1.66	[40.77]	0 55	...	85 42 48.18	55.48	62.79	85 43 56.6	57.0	...
11	α Ursæ Minoris	9	24 19.78	5.54	[40.92]	1 23	...	88 45 51.34	58.78	70.03	88 47 6.5	7.1	...
12	α Trianguli	9	48 8.81	0.06	40.89	1 47 27.95	-5.23	29 6 3.05	9.72	10.26	29 5 59.7	59.1	-29.2
13	β Arietis	9	49 52.77	0.04	40.97	1 49 11.89	5.00	20 19 48.98	56.75	19.95	20 19 35.9	36.4	26.6
14	γ Andromedæ	9	58 32.12	0.09	40.87	1 57 51.29	5.84	41 51 21.80	29.10	3.05	41 51 31.5	31.6	31.6
15	B. D. +38° 418	9	3 44.24	+0.08	-40.92	2 3 3.40	-5.78	39 7 29.00	35.68	0.21	+39 7 35.9	35.4	-30.4
16	B. D. +38° 425	6	5 35.35	+0.08	-40.92	2 4 54.51	-5.77	38 34 28.50	35.70	0.36	+38 34 34.8	34.4	-30.1
17	B. D. +37° 506	9	8 51.03	0.08	40.92	2 8 10.19	5.79	38 10 39.50	46.10	0.77	38 10 45.4	44.7	29.6
18	B. D. +36° 450	9	11 13.78	0.07	40.92	2 10 32.93	5.74	36 41 24.62	32.78	2.31	36 41 28.9	29.9	29.0
19	B. D. +37° 518	9	12 35.73	0.07	40.92	2 11 54.88	5.80	37 37 52.60	59.15	1.34	37 37 57.9	57.2	29.1
20	B. D. +36° 465	9	15 56.57	0.07	40.92	2 15 15.72	5.80	36 58 17.88	23.82	2.02	36 58 22.5	21.2	28.6
21	B. D. +36° 473	9	18 23.32	0.07	40.92	2 17 42.47	5.82	36 39 16.10	22.55	2.35	36 39 20.4	19.6	28.2
22	B. D. +36° 482	9	20 30.93	+0.07	-40.92	2 19 50.08	-5.83	36 34 5.68	12.45	2.44	+36 34 9.8	9.3	-28.0
23	B. D. +35° 480	9	23 37.71	+0.06	-40.92	2 22 56.85	-5.80	35 13 37.85	44.88	3.84	+35 13 40.6	40.3	-27.3
24	B. D. +34° 454	9	26 49.91	0.06	40.92	2 26 9.05	5.78	34 14 35.42	42.92	4.87	34 14 37.1	37.3	26.7
25	B. D. +33° 461	9	28 59.24	0.06	40.92	2 28 18.38	5.76	33 21 38.55	43.08	5.79	33 21 39.3	36.6	26.2
26	B. D. +33° 476	9	33 16.79	0.06	40.92	2 32 35.93	5.83	33 56 28.28	33.35	5.18	33 56 29.7	27.4	25.9
27	B. D. +34° 488	9	35 11.48	0.06	40.92	2 34 30.62	5.89	34 51 54.02	62.48	4.22	34 51 56.2	57.5	25.9
28	B. D. +33° 494	9	38 3.37	+0.06	-40.92	2 37 22.51	-5.86	33 45 18.48	24.85	5.38	+33 45 19.6	18.7	-25.3
29	B. D. +31° 477	7	41 5.68	+0.05	-40.92	2 40 24.81	-5.79	31 34 53.78	60.52	7.66	+31 34 52.6	52.1	-24.4
30	B. D. +31° 483	9	43 56.25	0.05	40.92	2 43 15.38	5.82	31 42 12.98	18.38	7.53	31 42 11.9	10.1	24.1
31	B. D. +32° 522	9	48 21.51	0.05	40.92	2 47 40.64	5.89	32 30 57.78	64.90	6.70	32 30 57.5	57.3	23.8
32	B. D. +31° 509	9	51 59.72	0.05	40.92	2 51 18.85	5.87	31 32 19.95	25.45	7.71	31 32 18.6	16.9	23.1
33	B. D. +30° 474	9	54 39.29	0.05	40.92	2 53 58.42	5.84	30 12 54.12	59.18	9.11	30 12 51.4	49.2	22.5
34	B. D. +29° 517	9	58 25.88	+0.05	-40.92	2 57 45.01	-5.86	30 7 33.22	38.98	9.21	+30 7 30.4	28.9	-22.0
35	B. D. +29° 519	9	0 27.88	+0.04	-40.92	2 59 47.00	-5.88	30 8 42.25	47.55	9.19	+30 8 39.5	37.4	-21.7
36	B. D. +30° 494	9	4 29.77	0.05	40.92	3 3 48.90	5.94	31 1 24.15	29.58	8.26	31 1 22.2	20.3	21.4
37	B. D. +29° 534	9	6 41.01	0.04	40.92	3 6 0.13	5.89	29 27 39.48	45.68	9.92	29 27 35.9	34.8	20.8
38	ζ Arietis	9	9 55.57	0.03	40.94	3 9 14.68	5.55	20 40 57.70	64.55	19.62	20 40 44.4	44.0	18.5
39	B. D. +27° 488	9	11 48.88	0.04	40.92	3 11 8.00	5.86	28 7 26.92	31.65	11.36	28 7 21.9	19.2	19.8
40	B. D. +28° 517	9	15 23.73	+0.04	-40.92	3 14 42.85	-5.90	28 28 22.50	28.28	10.98	+28 28 17.7	16.2	-19.5
41	B. D. +27° 501	9	17 44.79	+0.04	-40.92	3 17 3.91	-5.87	27 20 9.18	14.85	12.21	+27 20 3.2	1.6	-18.9
42	B. D. +28° 532	9	21 18.14	0.04	40.92	3 20 37.26	5.93	28 22 24.20	29.00	11.09	28 22 19.3	16.8	18.7
43	B. D. +26° 566	9	25 47.56	0.03	40.92	3 25 6.67	5.89	26 46 40.02	45.65	12.82	26 46 33.4	31.6	17.8
44	B. D. +27° 525	9	30 7.57	0.04	40.92	3 29 26.69	5.93	27 11 51.58	58.75	12.36	27 11 45.3	45.2	17.3
45	B. D. +24° 533	9	36 6.99	0.03	40.92	3 35 26.10	5.86	24 41 28.88	36.60	15.11	24 41 19.9	20.3	16.0
46	B. D. +25° 598	9	38 25.43	+0.03	-40.92	3 37 44.54	-5.92	25 48 53.02	59.42	13.87	+25 48 45.3	44.4	-15.9

Eq. Pt. Cor. from stars.

Time.		Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.		No.	A.	B.
d h m	cm.	°	°	°					
19 6 32	75.84	6.0	4.8	8.	Bisections at IV and VI.		5	+5.8	-1.3
20 1 20	75.57	4.4	3.2	10.	Bisection at IV.		6	5.7	0.3
2 14	75.60	3.5	2.0	11.	Bisections at c_1 and c_2 .		7	6.4	1.1
3 2	.....	...	1.5	13, 22.	Bisections at III and V.		8	6.0	1.5
				16.	Bisections at III and VI.		12	5.6	0.8
					Notes.		13	5.9	1.6
					10. Seeing 3-4.		14	5.7	1.4
					12-46. Seeing 3.		38	+5.3	-1.3
Adopted Equator Point Corrections.									
A. B.									
1-8, from stars..... *									
10, 11, from nadir..... +4.60 -2.25									
12-46, from stars..... *									
*Interpolated from diagram.									

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +24° 553	9	m s 40 43.68	s +0.03	s -40.92	h m s 3 40 2.79	s -5.86	° ' " 24 14 56.98	" 64.88	" 15.60	° ' " +24 14 47.5	" 48.0	" -15.3
2	B. D. +24° 571	9	42 54.80	0.03	40.92	3 42 13.91	5.89	24 41 10.88	19.58	15.12	24 41 1.9	3.2	15.1
3	B. D. +25° 624	9	45 4.96	0.03	40.92	3 44 24.07	5.93	25 17 2.88	9.70	14.46	25 16 54.5	54.0	14.9
4	B. D. +24° 587	9	46 59.28	0.03	40.92	3 46 18.39	5.92	24 52 24.18	30.75	14.91	24 52 15.3	14.6	14.6
5	B. D. +23° 584	9	49 51.28	0.02	40.92	3 49 10.38	5.88	23 40 10.15	17.52	16.25	23 39 59.9	60.0	14.0
6	ϵ Persei.....	9	51 56.13	0.05	40.92	3 51 15.26	6.77	39 43 25.50	32.68	0.84	39 43 32.3	32.2	16.2
7	B. D. +23° 600	9	53 53.19	+0.02	-40.92	3 53 12.29	-5.88	23 20 52.40	60.02	16.61	+23 20 41.8	42.0	-13.4
8	B. D. +22° 617 ¹	9	55 47.17	+0.02	-40.92	3 55 6.27	-5.87	22 55 35.60	42.68	17.09	+22 55 24.5	24.2	-13.0
9	B. D. +23° 606	9	58 35.72	0.02	40.92	3 57 54.82	5.94	24 7 54.62	62.45	15.74	24 7 44.9	45.3	12.8
10	B. D. +22° 629	9	0 14.05	0.02	40.92	3 59 33.15	5.89	22 54 8.25	14.78	17.11	22 53 57.1	56.3	12.4
11	B. D. +22° 637 ¹	9	3 43.13	0.02	40.93	4 3 2.22	5.90	22 50 16.98	23.62	17.19	22 50 5.7	5.0	11.9
12	B. D. +21° 601	9	6 0.92	0.02	40.93	4 5 20.01	5.86	21 37 51.32	58.15	18.56	21 37 38.7	38.2	11.4
13	B. D. +22° 654	9	8 49.12	0.02	40.93	4 8 8.21	5.91	22 27 34.30	42.95	17.62	22 27 22.6	23.9	11.2
14	B. D. +21° 612	9	11 24.49	+0.02	-40.93	4 10 43.58	-5.88	21 39 56.20	63.28	18.52	+21 39 43.6	43.3	-10.7
15	B. D. +20° 731	9	13 53.88	+0.02	-40.93	4 13 12.97	-5.86	21 3 47.00	55.20	19.22	+21 3 33.6	34.5	-10.2
16	B. D. +20° 740	9	16 24.19	0.02	40.93	4 15 43.28	5.86	20 48 32.32	39.78	19.51	20 48 18.7	18.8	9.9
17	B. D. +21° 639	9	18 52.80	0.02	40.93	4 18 11.89	5.89	21 18 50.70	57.70	18.93	21 18 37.6	37.2	9.6
18	B. D. +21° 644	9	21 9.53	0.02	40.93	4 20 28.62	5.90	21 14 59.95	66.92	19.01	21 14 46.8	46.3	9.3
19	B. D. +20° 760	9	23 31.09	0.02	40.93	4 22 50.18	5.88	20 36 59.32	65.25	19.73	20 36 45.4	44.0	8.9
20	B. D. +19° 759	9	36 38.06	0.02	40.93	4 35 57.15	5.88	19 54 5.88	12.45	20.57	19 53 51.1	50.3	6.9
21	B. D. +19° 777	9	41 30.90	+0.01	-40.93	4 40 49.98	-5.87	19 19 6.05	12.02	21.26	+19 18 50.6	49.2	-6.2
22	B. D. +17° 789	8	43 34.28	+0.01	-40.93	4 42 53.36	-5.81	17 38 12.65	18.95	23.26	+17 37 55.1	54.1	-5.7
23	B. D. +17° 797	9	46 50.04	0.01	40.93	4 46 9.12	5.81	17 31 38.15	45.48	23.39	17 31 20.4	20.5	5.3
24	π^5 Orionis.....		.....	.....	.....	4 49 .....	.....	2 17 18.92	27.02	44.39	2 16 40.3	41.1	3.3
25	B. D. +16° 671	9	51 48.57	0.01	40.93	4 51 7.65	5.78	16 34 59.88	66.88	24.54	16 34 41.0	40.8	4.5
26	B. D. +16° 685	9	56 55.21	0.01	40.93	4 56 14.29	5.80	16 41 35.55	40.98	24.42	16 41 16.7	15.0	3.8
27	B. D. +16° 688	9	59 4.56	0.01	40.93	4 58 23.64	5.81	16 59 27.48	32.75	24.06	16 59 9.0	7.1	3.5
28	B. D. +16° 700	9	2 58.12	+0.01	-40.93	5 2 17.20	-5.81	16 51 13.72	20.95	24.23	+16 50 55.1	55.2	-3.0
29	B. D. +17° 862	9	5 38.72	+0.01	-40.93	5 4 57.80	-5.84	17 19 13.00	18.70	23.66	+17 18 54.9	53.5	-2.6
30	B. D. +16° 732	9	8 15.12	0.01	40.93	5 7 34.20	5.82	16 46 14.30	19.88	24.33	16 45 55.6	54.0	2.2
31	B. D. +15° 779	9	12 11.69	0.01	40.93	5 11 30.77	5.76	15 9 37.15	43.38	26.31	15 9 16.3	15.5	1.6
32	B. D. +15° 789	9	15 5.29	0.01	40.93	5 14 24.37	5.80	16 1 26.70	33.68	25.25	16 1 6.9	6.9	1.2
33	B. D. +15° 799	9	17 24.88	0.01	40.93	5 16 43.96	5.80	16 1 55.35	61.05	25.24	16 1 35.6	34.2	0.9
34	B. D. +15° 813	9	20 57.44	+0.01	-40.93	5 20 16.52	-5.78	15 22 14.72	20.25	26.06	+15 21 54.1	52.6	-0.4
35	B. D. +14° 917	9	22 56.45	+0.01	-40.93	5 22 15.53	-5.76	14 56 11.10	18.52	26.61	+14 55 50.0	50.4	-0.1
36	B. D. +14° 934	9	26 39.93	0.00	40.93	5 25 59.00	5.76	14 51 32.60	39.55	26.70	14 51 11.3	11.3	+0.4
37	B. D. +14° 948	9	29 6.22	0.00	40.93	5 28 25.29	5.75	14 25 36.85	42.98	27.25	14 25 15.0	14.2	0.8
38	B. D. +14° 958	9	31 32.74	0.00	40.93	5 30 51.81	5.76	14 35 59.35	65.48	27.03	14 35 37.7	36.9	1.1
39	B. D. +14° 978	9	34 52.24	0.00	40.93	5 34 11.31	5.76	14 44 56.62	63.80	26.84	14 44 35.2	35.4	1.5
40	B. D. +13° 964	9	38 10.24	0.00	-40.93	5 37 29.31	-5.70	13 6 10.30	15.82	28.94	+13 5 46.8	45.3	+2.0
41	B. D. +13° 971	9	40 10.43	0.00	-40.93	5 39 29.50	-5.72	13 32 20.42	27.30	28.37	+13 31 57.3	57.4	+2.3
42	B. D. +12° 899	8	42 38.48	0.00	40.93	5 41 57.55	5.67	12 13 37.00	44.12	30.07	12 13 12.2	12.5	2.6
43	B. D. +13° 988	8	44 32.00	0.00	40.93	5 43 51.07	5.73	13 53 42.70	49.55	27.92	13 53 20.1	20.1	2.8
44	B. D. +12° 927	9	47 36.77	0.00	40.93	5 46 55.84	5.67	12 18 42.18	49.75	29.96	12 18 17.5	18.2	3.3
45	B. D. +12° 946	9	50 24.59	0.00	40.93	5 49 43.66	5.69	12 52 58.22	65.05	29.21	12 52 34.3	34.3	3.6
46	B. D. +12° 965	9	53 30.84	0.00	-40.93	5 52 49.91	-5.70	12 59 0.12	6.88	29.09	+12 58 36.2	36.2	+4.0
47	B. D. +12° 980	9	55 26.62	0.00	-40.93	5 54 45.69	-5.69	12 36 40.00	46.70	29.57	+12 36 15.6	15.6	+4.3
48	B. D. +11° 1005	9	57 55.89	0.00	40.93	5 57 14.96	5.63	11 5 54.90	61.25	31.56	11 5 28.6	28.1	4.6
49	B. D. +11° 1032	9	2 50.05	0.00	40.93	6 2 9.12	5.62	11 1 31.48	38.38	31.66	11 1 5.0	5.2	5.2
50	η Geminorum.....	9	9 37.51	+0.01	40.94	6 8 56.59	6.07	22 32 15.15	20.05	17.59	22 32 2.6	0.9	6.4
51	μ Geminorum.....	9	17 41.70	0.00	40.96	6 17 0.76	6.08	22 33 59.28	66.75	17.56	22 33 46.8	46.7	7.6
52	8 Monocerotis.....	9	19 14.47	0.00	-40.91	6 18 33.53	-5.40	4 39 5.78	13.42	40.74	+4 38 30.2	30.2	+7.1

1900 DECEMBER 21.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

53	α Ursæ Minoris.....	9	24 27.34	-1.65	[-42.10]	I 23		88 45 50.91	57.18	70.63	+88 47 7.7	6.9	
----	----------------------------	---	----------	-------	----------	------------	------	-------------	-------	-------	------------	-----	------

Time.					Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.						
												No.	A.	B.				
d	h	m	cm.	°	°	53. Bisections at c_1 and c_5 . Notes. 1-52. Seeing 3. 26, 43. Faint. Adopted Equator Point Corrections. 1-52, from stars..... 53, from nadir..... +5.63 -1.42 * Interpolated from diagram.								6	"	"		
20	3	44	.....	...	1.1									...	...	24	+4.5	-2.4
			75.53	2.3	...									...	...	50	5.0	2.7
			75.54	2.0	0.8									...	...	51	4.0	0.6
			.....	...	0.5									...	...	52	3.6	3.5
			75.57	1.3	0.2										+4.1	-3.1		
			75.50	1.1	0.0													
21	I	18	75.33	0.6	0.1													

OBSERVATIONS OF EROS REFERENCE STARS.

D 53

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	α Trianguli	9	m s	s	s	h m s	s	o ' "	"	"	o ' "	"	"
2	β Arietis	9	48 9.38	-0.02	-41.39	1 47 27.93	-5.22	29 6 4.32	9.28	10.34	+29 5 60.0	59.6	-29.2
3	γ Andromedæ	9	49 53.30	0.02	41.45	1 49 11.85	4.99	20 19 50.25	55.58	20.10	20 19 36.2	36.1	26.5
4	B. D.+38° 418	9	58 32.82	0.04	41.45	1 57 51.35	5.83	41 51 21.65	27.72	3.07	41 51 30.6	31.4	31.6
5	B. D.+36° 427	9	3 44.80	0.04	41.43	2 3 3.33	5.76	39 7 28.48	34.75	0.21	39 7 34.6	35.5	30.4
6	B. D.+37° 506	9	6 12.45	0.04	41.43	2 5 30.98	5.69	36 53 17.68	22.48	2.12	36 53 21.5	20.9	29.6
7	B. D.+37° 518	9	8 51.72	0.04	41.43	2 8 10.25	5.78	38 10 39.40	46.00	0.77	38 10 44.6	45.7	29.7
		9	12 36.36	-0.04	-41.43	2 11 54.89	-5.79	37 37 52.88	57.75	1.34	+37 37 57.5	56.9	-29.1
8	B. D.+36° 465	9	15 57.24	-0.04	-41.43	2 15 15.77	-5.79	36 58 17.92	23.50	2.03	+36 58 21.8	22.0	-28.6
9	B. D.+36° 482	9	20 31.57	0.04	41.43	2 19 50.10	5.82	36 34 6.18	12.05	2.46	36 34 9.6	10.1	28.0
10	B. D.+35° 480	9	23 38.39	0.04	41.43	2 22 56.92	5.79	35 13 37.62	43.28	3.86	35 13 39.6	39.9	27.3
11	B. D.+34° 454	9	26 50.53	0.04	41.43	2 26 9.06	5.78	34 14 35.98	42.78	4.89	34 14 37.0	38.3	26.7
12	B. D.+34° 462	9	29 0.10	0.04	41.43	2 28 18.63	5.82	34 43 7.05	13.60	4.39	34 43 8.5	9.6	26.6
13	B. D.+34° 469	9	30 29.81	0.04	41.43	2 29 48.34	5.81	34 15 30.58	38.02	4.88	34 15 31.6	33.5	26.3
14	B. D.+34° 483	9	33 28.46	-0.04	-41.43	2 32 46.99	-5.86	34 50 45.50	53.78	4.26	+34 50 47.1	49.9	-26.1
15	B. D.+34° 492	9	35 38.99	-0.04	-41.43	2 34 57.52	-5.86	34 24 51.40	58.12	4.72	+34 24 52.5	53.8	-25.8
16	B. D.+33° 494	9	38 4.06	0.04	41.43	2 37 22.59	5.85	33 45 17.55	24.32	5.41	33 45 18.0	19.3	25.3
17	B. D.+31° 477	9	41 6.30	0.04	41.43	2 40 24.83	5.78	31 34 54.48	60.58	7.71	31 34 52.6	53.3	24.4
18	B. D.+32° 507	9	43 48.48	0.04	41.43	2 43 7.01	5.86	32 45 57.90	64.15	6.46	32 45 57.3	58.1	24.4
19	B. D.+31° 493	9	44 1.12	0.04	41.43	2 44 1.12	5.86	31 57 28.02	32.72	7.31	31 57 26.6	25.8	24.0
20	B. D.+32° 522	9	47 0.10	0.04	41.43	2 47 0.10	5.86	32 30 58.22	64.78	6.74	32 30 57.4	58.4	23.8
21	B. D.+30° 477	9	55 0.81	-0.04	-41.43	2 54 19.34	-5.86	30 44 5.95	11.48	8.62	+30 44 3.1	3.2	-22.6
22	B. D.+29° 517	9	58 26.49	-0.04	-41.43	2 57 45.02	-5.85	30 7 35.10	38.55	9.27	+30 7 31.6	29.6	-22.0
23	B. D.+29° 519	9	0 28.45	0.04	41.43	2 59 46.98	5.87	30 8 42.60	47.68	9.25	30 8 39.1	38.7	21.8
24	B. D.+29° 531	9	5 1.12	0.04	41.43	3 4 19.65	5.87	29 17 31.95	36.38	10.17	29 17 27.6	26.5	21.0
25	B. D.+30° 503	9	7 38.19	0.04	41.43	3 6 56.72	5.94	30 29 2.80	7.85	8.89	30 28 59.7	59.3	20.9
26	ζ Arietis	9	9 56.09	0.02	41.42	3 9 14.64	5.54	20 40 58.22	64.22	19.76	20 40 44.3	44.8	18.4
27	B. D.+28° 511	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
28	ξ Tauri	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
29	B. D.+26° 566	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
30	B. D.+27° 525	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
31	B. D.+25° 580	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
32	B. D.+26° 590	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
33	B. D.+24° 533	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
34	B. D.+25° 599	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
35	B. D.+25° 607	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
36	B. D.+24° 568	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
37	B. D.+24° 583	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
38	B. D.+25° 641	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
39	B. D.+23° 586	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
40	ϵ Persei	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
41	B. D.+23° 600	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
42	B. D.+22° 617	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
43	B. D.+22° 629	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
44	43 Tauri	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
45	B. D.+21° 601	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
46	B. D.+22° 657	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
47	B. D.+21° 612	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
48	B. D.+20° 731	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
49	B. D.+20° 740	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
50	B. D.+21° 639	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
51	B. D.+21° 644	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
52	B. D.+20° 760	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
53	B. D.+19° 733	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
54	B. D.+19° 736	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
55	α Tauri	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9
56	B. D.+20° 785	9	11 49.22	-0.04	-41.43	3 11 7.75	-5.87	28 23 50.50	56.05	11.14	28 23 45.2	45.2	19.9

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°			"	"
21 1 45	75.37	+0.5	-0.1	49. Bisections at III and V.	1	+4.4	-0.3
2 25	75.40	0.0	0.3		2	4.6	0.4
3 24	75.40	-0.7	1.2	Note.	3	5.8	0.1
3 58	.....	...	-1.2	15. Fainter companion n. p.	26	4.8	0.9
4 8	75.39	-1.0	...		28	[3.9]	[3.2]
Adopted Equator Point Corrections.					40	5.9	0.2
I-56, from stars.....					44	4.6	0.8
* Interpolated from diagram.					55	+5.1	-0.8

NO.	NAME.	THDS.	MEAN THREAD.	$c' \text{ SEC } \delta$ + $n \text{ TAN } \delta.$	$\Delta T + m.$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +19° 759	9	m s 36 38.68	s -0.03	s -41.43	h m s 4 35 57.22	s -5.89	° ' " 19 54 5.98	" 12.15	" 20.71	° ' " +19 53 50.9	" 51.4	" 6.9
2	B. D. +19° 777	9	41 31.47	0.03	41.43	4 40 50.01	5.88	19 19 5.45	11.65	21.39	19 18 49.6	50.2	6.2
3	B. D. +18° 734	9	43 38.11	0.03	41.43	4 42 56.65	5.85	18 32 57.40	61.90	22.31	18 32 40.6	39.5	5.8
4	B. D. +17° 797	9	46 50.58	0.03	41.43	4 46 9.12	5.82	17 31 40.10	45.15	23.54	17 31 22.1	21.4	5.2
5	π^5 Orionis	9	49 49.28	0.00	41.47	4 49 7.85	5.28	2 17 20.05	26.22	44.66	2 16 41.0	41.4	3.2
6	B. D. +16° 671	9	51 49.09	0.03	41.43	4 51 7.63	5.79	16 35 1.12	6.78	24.69	16 34 42.0	41.9	4.5
7	B. D. +16° 685	9	56 55.74	-0.03	-41.43	4 56 14.28	-5.80	16 41 35.18	41.60	24.56	+16 41 16.2	16.9	-3.8
8	B. D. +16° 688	9	59 5.11	-0.03	-41.43	4 58 23.65	-5.82	16 59 28.52	33.32	24.20	+16 59 9.9	9.0	-3.5
9	B. D. +16° 700	9	2 58.61	0.03	41.43	5 2 17.15	5.82	16 51 15.05	20.15	24.37	16 50 56.3	55.6	3.0
10	B. D. +16° 715	9	5 51.67	0.03	41.43	5 5 10.21	5.80	16 18 56.20	61.82	25.03	16 18 36.8	36.6	2.5
11	B. D. +16° 732	9	8 15.71	0.03	41.43	5 7 34.25	5.83	16 46 15.88	19.75	24.47	16 45 57.0	55.1	2.2
12	B. D. +15° 769	9	10 29.36	0.03	41.43	5 9 47.90	5.78	15 31 18.60	25.80	26.02	15 30 58.2	59.6	1.8
13	B. D. +15° 779	9	12 12.21	0.03	41.43	5 11 30.75	5.77	15 9 36.95	42.78	26.48	15 9 16.1	16.1	1.5
14	B. D. +15° 787	9	14 42.07	-0.03	-41.43	5 14 0.61	-5.79	15 41 15.52	21.78	25.81	+15 40 55.3	55.7	-1.2
15	B. D. +15° 797	9	17 2.15	-0.03	-41.43	5 16 20.69	-5.81	15 59 59.08	64.22	25.43	+15 59 39.2	38.5	-1.0
16	B. D. +15° 810	9	20 41.31	0.03	41.43	5 19 59.85	5.79	15 29 49.32	54.62	26.06	15 29 28.7	28.3	0.4
17	B. D. +14° 917	9	22 56.99	0.03	41.43	5 22 15.53	5.77	14 56 11.85	17.38	26.77	14 55 50.6	50.3	-0.1
18	B. D. +14° 934	9	26 40.44	0.03	41.43	5 25 58.98	5.77	14 51 32.68	39.65	26.87	14 51 11.3	12.5	+0.4
19	B. D. +14° 948	9	29 6.77	0.03	41.43	5 28 25.31	5.76	14 25 36.62	41.72	27.42	14 25 14.7	14.0	0.8
20	B. D. +14° 959	9	31 47.83	0.03	41.43	5 31 6.37	5.75	14 10 11.25	16.85	27.74	14 9 49.0	48.9	1.2
21	B. D. +13° 954	9	36 37.87	-0.02	-41.43	5 35 56.42	-5.71	13 6 10.35	16.70	29.12	+13 5 46.7	47.3	+1.9
22	B. D. +14° 998	9	38 37.37	-0.03	-41.43	5 37 55.91	-5.76	14 22 12.52	17.65	27.49	+14 21 50.5	49.8	+2.1
23	B. D. +12° 884	9	40 10.83	0.02	41.43	5 39 29.38	5.70	12 51 5.82	12.18	29.45	12 50 41.9	42.4	2.4
24	B. D. +12° 899	9	42 39.07	0.02	41.43	5 41 57.62	5.68	12 13 37.48	43.45	30.26	12 13 12.7	12.8	2.7
25	B. D. +13° 988	9	44 32.62	0.03	41.43	5 43 51.16	5.74	13 53 43.00	48.85	28.11	13 53 20.4	20.4	2.9
26	B. D. +12° 927	9	47 37.37	0.02	41.43	5 46 55.92	5.68	12 18 43.22	49.98	30.16	12 18 18.6	19.5	3.3
27	B. D. +12° 946	9	50 25.13	-0.03	-41.43	5 49 43.67	-5.70	12 52 58.98	64.92	29.42	+12 52 35.1	35.1	+3.7
28	B. D. +11° 995	9	55 46.26	-0.02	-41.43	5 55 4.81	-5.67	11 59 23.05	29.60	30.60	+11 58 57.8	58.6	+4.4
29	B. D. +11° 1005	9	57 56.44	0.02	41.43	5 57 14.99	5.64	11 5 55.52	61.12	31.79	11 5 29.1	28.9	4.7
30	B. D. +11° 1032	9	2 50.62	0.02	41.43	6 2 9.17	5.64	11 1 31.90	38.40	31.89	11 1 5.4	6.1	5.3
31	η Geminorum	9	9 38.06	0.05	41.41	6 8 56.58	6.09	22 32 14.80	19.98	17.72	22 32 2.4	1.8	6.4
32	μ Geminorum	9	17 42.24	0.05	41.45	6 17 0.76	6.08	22 33 59.30	65.10	17.69	22 33 47.0	46.9	7.6
33	8 Monocerotis	9	19 15.02	-0.01	-41.43	6 18 33.58	-5.42	4 39 5.62	12.25	41.06	+4 38 30.0	30.7	+7.3

UPDEGRAFF, OBSERVER.

1900 DECEMBER 28.

CLAMP WEST.

NO ASSISTANT.

34	α Ursæ Minoris	9	24 12.01	+9.20	-44.36	1 23	....	88 45 54.01	59.64	69.58	+88 47 7.5	7.6	....
35	β Arietis	9	49 55.54	0.06	43.84	1 49	....	20 19	....	....	20 19	....	....
36	γ Andromedæ	9	58 34.87	+0.17	-43.80	1 57	....	41 51	....	....	+41 51	....	....

UPDEGRAFF, OBSERVER.

1900 DECEMBER 29.

CLAMP WEST.

LAWTON, ASSISTANT.

37	α Ursæ Minoris	9	24 16.62	+3.47	[-44.12]	1 23	....	88 45 52.11	58.99	71.04	+88 47 7.9	8.7	....
38	α Trianguli	9	48 11.89	0.02	44.03	1 47	27.86	29 6 4.65	9.75	10.41	29 5 59.9	59.5	-29.1
39	β Arietis	9	49 55.86	0.00	44.11	1 49	11.81	20 19 49.38	55.72	20.23	20 19 34.9	35.6	26.3
40	γ Andromedæ	9	58 35.20	0.04	44.02	1 57	51.19	41 51 23.30	28.55	3.09	41 51 32.1	31.7	32.0
41	B. D. +38° 418	9	3 47.32	0.04	44.05	2 3	3.31	39 7 29.75	35.10	0.22	39 7 35.5	35.4	30.8
42	B. D. +36° 427	9	6 14.92	0.03	44.05	2 5	30.90	36 53 19.08	24.10	2.14	36 53 22.5	22.1	29.9
43	B. D. +36° 440	9	8 43.19	+0.03	-44.05	2 7	59.17	37 9 25.68	31.25	1.85	+37 9 29.4	29.5	-29.7

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°				
21 5 1	75.39	-1.5	-1.6	34. Bisections at c_1, c_3, c_4 and c_5 .	5	"	"
5 52	75.42	1.6	2.0	37. Bisections at c_1, c_2, c_4 and c_5 .	31	+4.1	-1.7
6 23	75.46	-1.6	-2.2	40. Bisections at III and V.	32	4.5	0.4
28 1 29	75.49	+4.9	+4.6		33	3.7	1.7
1 46	75.50	4.8	...	Note.	38	4.4	1.8
29 1 20	75.83	0.8	+0.4	34-36. Seeing bad.	39	4.1	0.8
2 2	75.82	+0.6	-0.5		40	5.4	0.6
				Adopted Equator Point Corrections.			
						A.	B.
						"	"
				1-33, from stars.....		*	*
				34, from nadir.....		+3.18	-2.40
				37, from nadir.....		+3.90	-1.86
				38-43, from stars.....		*	*
				* Interpolated from diagram.			

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +37° 514	9	m s 11 43.98	+0.03	-44.05	2 10 59.96	-5.69	37 41 22.30	27.85	1.29	+37 41 26.5	26.7	-29.6
2	o Ceti	9	15 6.34	-0.03	44.13	2 14 22.26	4.52	356 35 12.38	20.32	54.83	-3 25 36.7	34.3	16.5
3	B. D. +36° 478	9	19 59.58	+0.03	44.05	2 19 15.56	5.74	36 40 26.08	31.15	2.36	+36 40 29.3	28.8	28.4
4	B. D. +34° 437	9	21 34.89	0.03	44.05	2 20 50.87	5.68	35 10 17.18	22.78	3.95	35 10 18.8	18.8	27.9
5	B. D. +35° 494	9	25 54.80	0.03	44.05	2 25 10.78	5.74	35 19 11.40	16.08	3.79	35 19 13.1	12.3	27.4
6	B. D. +34° 454	4	26 53.13	0.02	44.05	2 26 9.10	5.70	34 14 37.68	43.12	4.93	34 14 38.2	37.9	27.0
7	B. D. +34° 462	9	29 2.67	+0.02	-44.05	2 28 18.64	-5.74	34 43 7.88	13.18	4.43	+34 43 8.9	8.8	-26.9
8	B. D. +34° 471	9	30 35.72	+0.02	-44.05	2 29 51.69	-5.74	34 17 44.78	50.10	4.88	+34 17 45.4	45.2	-26.6
9	B. D. +34° 483	9	33 30.96	0.02	44.05	2 32 46.93	5.79	34 50 47.80	54.55	4.29	34 50 49.0	50.3	26.4
10	B. D. +34° 492	9	35 41.47	0.02	44.05	2 34 57.44	5.79	34 24 52.58	59.22	4.75	34 24 53.3	54.5	26.1
11	B. D. +33° 494	9	38 6.50	0.02	44.05	2 37 22.47	5.78	33 45 20.02	25.20	5.45	33 45 20.0	19.8	25.6
12	B. D. +31° 477	9	41 8.78	0.02	44.05	2 40 24.75	5.72	31 34 55.52	60.45	7.77	31 34 53.2	52.7	24.7
13	B. D. +32° 507	9	43 50.98	0.02	44.05	2 43 6.95	5.79	32 45 59.45	64.50	6.50	32 45 58.3	58.0	24.7
14	B. D. +31° 493	7	45 45.83	+0.02	-44.05	2 45 1.80	-5.77	31 57 29.45	33.90	7.37	+31 57 27.5	26.5	-24.3
15	B. D. +30° 464	9	50 29.14	+0.01	-44.05	2 49 45.10	-5.76	30 38 41.62	46.70	8.77	+30 38 38.2	37.8	-23.4
16	B. D. +29° 508	9	55 14.74	0.01	44.05	2 54 30.70	5.78	30 10 45.10	50.15	9.27	30 10 41.2	40.8	22.7
17	B. D. +29° 517	9	58 28.95	0.01	44.05	2 57 44.91	5.80	30 7 35.75	40.30	9.33	30 7 31.8	30.9	22.3
18	B. D. +28° 488	9	0 8.08	0.01	44.05	2 59 24.04	5.77	29 9 37.98	42.05	10.83	29 9 33.0	31.6	21.8
19	B. D. +28° 493	9	2 6.18	0.01	44.04	3 1 22.15	5.77	28 44 42.28	47.05	10.83	28 44 36.8	36.1	21.5
20	B. D. +29° 531	9	5 3.57	0.01	44.04	3 4 19.54	5.82	29 17 33.98	37.60	10.23	29 17 29.0	27.3	21.2
21	B. D. +28° 507	9	8 24.75	+0.01	-44.04	3 7 40.72	-5.82	28 51 54.55	58.55	10.70	+28 51 49.2	47.8	-20.7
22	ζ Arietis	9	9 58.67	0.00	-44.06	3 9 14.63	-5.50	20 40	.....	.....	+20 40	.....	.....
23	B. D. +28° 514	9	13 14.63	+0.01	44.04	3 12 30.60	5.84	28 21 15.98	21.20	11.25	28 21 10.0	9.9	-20.0
24	B. D. +28° 517	9	15 26.83	+0.01	44.04	3 14 42.80	5.86	28 28 24.08	28.22	11.12	28 28 18.3	17.0	19.7
25	B. D. +26° 548	9	17 55.91	0.00	44.04	3 17 11.87	5.79	26 33 5.65	8.92	13.22	26 32 57.7	55.5	18.9
26	ξ Tauri	9	22 34.12	-0.02	43.98	3 21 50.06	5.20	9 23 48.22	52.95	34.14	9 23 19.2	18.5	13.9
27	B. D. +27° 514	9	25 50.84	0.00	44.04	3 25 6.80	5.88	27 23 48.72	55.18	12.29	27 23 41.6	42.7	18.1
28	B. D. +27° 526	9	30 12.46	0.00	-44.04	3 29 28.42	-5.92	27 31 10.62	15.92	12.16	+27 31 3.7	3.6	-17.6
29	B. D. +26° 596	9	35 1.81	0.00	-44.04	3 34 17.77	-5.90	26 34 12.32	16.52	13.21	+26 34 4.3	3.1	-16.7
30	B. D. +26° 601	9	37 17.58	0.00	44.04	3 36 33.54	5.90	26 15 37.05	41.55	13.55	26 15 28.7	27.8	16.3
31	B. D. +24° 546	9	40 1.47	0.00	44.04	3 39 17.43	5.84	24 31 57.08	63.05	15.88	24 31 46.7	47.4	15.6
32	B. D. +24° 568	9	42 36.91	0.00	44.04	3 41 42.87	5.88	25 5 3.90	10.58	14.86	25 4 54.2	55.5	15.4
33	B. D. +23° 561	9	44 13.93	0.00	44.04	3 43 29.89	5.85	24 4 58.68	65.98	15.98	24 4 47.8	49.8	14.9
34	B. D. +25° 627	9	46 7.24	0.00	44.04	3 45 23.20	5.95	26 3 32.50	36.98	13.78	26 3 23.8	23.0	15.1
35	B. D. +25° 641	9	48 23.02	0.00	-44.04	3 47 38.98	-5.93	25 23 33.80	38.45	14.52	+25 23 24.4	23.8	-14.6
36	B. D. +23° 586	9	50 40.67	0.00	-44.04	3 49 56.63	-5.86	23 32 35.62	40.65	16.60	+23 32 24.2	23.8	-13.9
37	ε Persei	9	51 59.26	+0.02	44.05	3 51 15.24	6.74	39 43	.....	.....	39 43	.....	.....
38	B. D. +23° 600	9	53 56.26	0.00	44.04	3 53 12.22	5.87	23 20 53.45	59.72	16.82	23 20 41.8	42.6	13.4
39	B. D. +22° 617 ¹	9	55 50.24	0.00	44.04	3 55 6.20	5.86	22 55 36.55	42.92	17.30	22 55 24.4	25.3	13.1
40	B. D. +22° 629	9	0 17.12	0.00	44.04	3 59 33.08	5.88	22 54 10.55	15.50	17.33	22 53 58.3	57.9	12.5
41	B. D. +22° 637 ¹	9	3 46.24	0.00	44.04	4 3 2.20	5.90	22 50 18.40	24.02	17.40	22 50 6.0	6.3	12.0
42	B. D. +20° 741	9	16 31.26	-0.01	-44.04	4 15 47.21	-5.88	20 57 23.70	29.85	19.58	+20 57 9.2	10.0	-9.8
43	B. D. +21° 635	9	18 17.07	-0.01	-44.04	4 17 33.02	-5.89	21 9 8.42	13.98	19.35	+21 8 54.1	54.4	-9.6
44	B. D. +21° 644	9	21 12.74	0.01	44.04	4 20 28.69	5.91	21 15 0.92	6.98	19.24	21 14 46.6	47.4	9.2
45	B. D. +19° 727	9	23 35.41	0.01	44.04	4 22 51.36	5.84	19 31 32.55	37.88	21.26	19 31 16.2	16.2	8.7
46	B. D. +19° 733	9	26 12.69	0.01	44.04	4 25 28.64	5.87	19 55 27.45	32.72	20.79	19 55 11.6	11.6	8.3
47	B. D. +19° 736	9	28 21.62	0.01	44.03	4 27 37.58	5.87	19 36 32.38	36.30	21.16	19 36 16.2	14.8	8.0
48	α Tauri	9	31 0.74	0.01	44.08	4 30 16.70	5.76	16 18 57.20	61.90	25.15	16 18 37.0	36.4	6.9
49	B. D. +18° 666	9	33 31.62	-0.01	-44.03	4 32 47.58	-5.84	18 32 25.32	29.98	22.44	+18 32 7.8	7.2	-7.0
50	B. D. +19° 759	9	36 41.16	-0.01	-44.03	4 35 57.12	-5.91	19 54 7.28	12.40	20.82	+19 53 51.4	51.2	-6.8
51	B. D. +17° 797	9	46 53.12	0.01	44.03	4 46 9.08	5.84	17 31 40.22	45.30	23.67	17 31 21.4	21.3	5.0
52	π ⁵ Orionis	9	49 51.89	0.03	44.03	4 49 7.83	5.30	2 17 20.78	26.30	44.91	2 16 40.8	41.0	2.3
53	B. D. +18° 765	9	53 20.08	0.01	44.03	4 52 36.04	5.92	18 50 40.92	45.88	22.08	18 50 23.7	23.4	4.3
54	B. D. +16° 688	9	59 7.68	0.01	44.03	4 58 23.64	5.86	16 59 28.50	33.68	24.33	16 59 9.0	8.9	3.2
55	B. D. +16° 700	9	3 1.20	0.02	44.03	5 2 17.15	5.86	16 51 15.18	20.80	24.50	16 50 55.5	55.5	2.7
56	B. D. +16° 715	9	5 54.26	-0.02	-44.03	5 5 10.21	-5.84	16 18 55.78	61.75	25.17	+16 18 35.4	36.1	-2.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			Eq. Pt. Cor. from stars.		
							No.	A.	B.
d h m	cm.	°	°						
29 2 40	.....	...	0.9	6, 26. Bisections at IV and VI.			2	[+4.2]	[-3.4]
2 49	75.84	+0.3	...	7. Bisections at III and V.			26	[1.4]	3.0
3 28	75.80	0.0	1.1				48	3.7	0.7
3 58	75.80	-0.2	-1.3				52	+2.7	-2.4
				Notes.			Adopted Equator Point Corrections.		
				1-56. Seeing 2-3.			A. B.		
				6. Hurried.			" "		
				10. Companion preceding.			1-56, from stars. *		
							* Interpolated from diagram.		

NO.	NAME.	TDS.	MEAN THREAD.	c_0' SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +17° 869	9	m s 7 32.29	s -0.02	s -44.03	h m s 5 6 48.24	s -5.88	° ' " 17 5 54.22	" 58.82	" 24.20	° ' " +17 5 34.8	" 34.2	" -2.1
2	B. D. +15° 769	9	10 31.97	0.02	44.03	5 9 47.92	5.82	15 31 19.68	24.90	26.16	15 30 58.3	58.3	1.5
3	B. D. +16° 742	9	12 9.88	0.02	44.03	5 11 25.83	5.86	16 14 52.95	58.30	25.25	16 14 32.5	32.6	1.3
4	B. D. +14° 881	9	15 43.04	0.02	44.03	5 14 58.99	5.81	14 57 50.32	54.80	26.86	14 57 28.2	27.5	0.7
5	B. D. +15° 805	9	18 36.56	0.02	44.03	5 17 52.51	5.86	15 57 5.88	10.90	25.63	15 56 44.9	44.8	-0.4
6	B. D. +15° 814	9	21 8.34	-0.02	-44.03	5 20 24.29	-5.85	15 35 21.28	26.52	26.09	+15 34 59.9	60.0	0.0
7	B. D. +14° 917	9	22 59.58	-0.02	-44.03	5 22 15.53	-5.82	14 56 12.40	17.38	26.91	+14 55 50.2	50.0	+0.3
8	B. D. +14° 933	9	26 38.46	0.02	44.03	5 25 54.41	5.82	14 34 29.12	34.15	27.38	14 34 6.4	6.3	0.9
9	B. D. +14° 948	9	29 9.35	0.02	44.03	5 28 25.30	5.82	14 25 36.62	42.55	27.57	14 25 13.7	14.4	1.2
10	B. D. +14° 959	9	31 50.42	0.02	44.03	5 31 6.37	5.81	14 10 12.35	16.80	27.90	14 9 49.1	48.3	1.6
11	B. D. +13° 954	9	36 40.47	0.02	44.03	5 35 56.42	5.77	13 6 11.40	16.58	29.29	13 5 46.8	46.7	2.4
12	B. D. +14° 998	9	38 39.94	-0.02	-44.03	5 37 55.89	-5.82	14 22 12.22	17.15	27.65	+14 21 49.3	48.9	+2.5
13	B. D. +12° 884	9	40 13.48	-0.02	-44.03	5 39 29.43	-5.77	12 51 5.50	11.62	29.62	+12 50 40.5	41.4	+2.9
14	B. D. +12° 896	9	42 24.89	0.02	44.03	5 41 40.84	5.75	12 18 30.82	37.05	30.34	12 18 5.1	6.2	3.2
15	B. D. +13° 988	9	44 35.18	0.02	44.03	5 43 51.13	5.81	13 53 43.20	48.95	28.27	13 53 19.5	20.1	3.4
16	B. D. +12° 927	9	47 39.97	0.02	44.03	5 46 55.92	5.76	12 18 44.10	49.55	30.35	12 18 18.4	18.6	3.9
17	B. D. +12° 946	9	50 27.77	0.02	44.03	5 49 43.72	5.78	12 52 59.28	64.70	29.59	12 52 34.3	34.6	4.2
18	B. D. +12° 963	9	53 17.16	-0.02	-44.03	5 52 33.11	-5.78	12 52 35.25	39.70	29.60	+12 52 10.2	9.5	+4.6
19	B. D. +11° 1005	9	57 58.98	-0.02	-44.03	5 57 14.93	-5.72	11 5 56.12	60.90	31.97	+11 5 28.8	28.4	+5.4
20	B. D. +11° 1032	9	2 53.29	0.02	44.02	6 2 9.25	5.72	11 1 32.90	38.32	32.07	11 1 5.3	5.6	6.0
21	γ Geminorum.....	9	9 40.72	0.02	44.01	6 8 56.68	6.18	22 32 15.68	20.55	17.82	22 32 2.3	2.1	6.4
22	μ Geminorum.....	9	17 44.91	0.02	44.04	6 17 0.87	6.19	22 33 59.95	65.28	17.79	22 33 46.6	46.8	7.7
23	δ Monocerotis.....	9	19 17.71	-0.03	-44.02	6 18 33.66	-5.50	4 39 6.12	11.40	41.29	+4 38 29.4	29.3	+8.3

UPDEGRAFF, OBSERVER.

1901 JANUARY 3.

CLAMP WEST.

LAWTON, ASSISTANT.

24	α Ursæ Minoris.....	9	24 15.73	+1.90	[-45.84]	1 23 .....	....	88 45	57.86	73.77	+88 47	8.3	....
25	α Trianguli.....	9	48 13.29	0.02	45.50	1 47 27.76	-5.06	29 6 5.70	11.72	10.79	29 5 59.4	59.4	-29.0
26	β Arietis.....	9	49 57.27	0.01	45.59	1 49 11.73	4.85	20 19 51.65	57.50	20.98	20 19 35.2	35.1	26.1
27	γ Andromedæ.....	9	58 36.67	0.04	45.57	1 57 51.16	5.64	41 51 24.65	30.55	3.20	41 51 32.2	32.2	32.0
28	B. D. +37° 490	9	4 47.25	0.03	45.55	2 4 1.73	5.56	38 11 54.35	59.42	0.79	38 11 58.0	57.1	30.5
29	B. D. +36° 427	9	6 16.26	+0.03	-45.55	2 5 30.74	-5.52	36 53 20.58	24.45	2.21	+36 53 22.8	20.7	-30.0
30	B. D. +36° 440	9	8 44.59	+0.03	-45.55	2 7 59.07	-5.56	37 9 26.75	31.75	1.92	+37 9 29.3	28.3	-29.8
31	B. D. +37° 514	9	11 45.37	0.03	45.55	2 10 59.85	5.62	37 41 23.92	29.85	1.34	+37 41 27.0	27.0	29.7
32	δ Ceti.....	9	15 7.73	0.00	45.59	2 14 22.18	4.48	356 35 15.12	23.28	56.85	-3 25 37.0	35.0	16.0
33	B. D. +36° 478	9	20 0.94	0.03	45.55	2 19 15.42	5.67	36 40 26.60	33.05	2.45	+36 40 28.6	29.1	28.5
34	B. D. +34° 437	9	21 36.27	+0.03	-45.55	2 20 50.75	-5.62	35 10 18.78	24.90	4.09	+35 10 19.1	19.3	-27.9

LITTELL, OBSERVER.

1901 JANUARY 5.

CLAMP WEST.

LAWTON, ASSISTANT.

35	α Ursæ Minoris.....	9	24 9.40	+6.88	[-46.43]	1 23 .....	....	88 45	59.26	71.70	+88 47	9.1	....
36	α Trianguli.....	9	48 14.01	0.07	46.30	1 47 27.71	-5.03	29 6 5.12	10.78	10.52	29 5 59.7	58.8	-29.0
37	β Arietis.....	9	49 58.03	0.04	46.41	1 49 11.70	4.82	20 19 50.12	56.82	20.44	20 19 34.8	34.9	26.0
38	γ Andromedæ.....	9	58 37.41	0.11	46.41	1 57 51.15	5.61	41 51 24.25	31.40	3.12	41 51 32.3	33.0	32.1
39	B. D. +37° 490	9	4 48.17	0.10	46.38	2 4 1.89	5.53	38 11 52.28	59.28	0.77	38 11 56.4	56.9	30.5
40	B. D. +36° 427	9	6 17.12	0.09	46.38	2 5 30.83	5.49	36 53 20.00	25.70	2.16	36 53 22.8	22.0	30.0
41	B. D. +36° 440	9	8 45.43	+0.09	-46.38	2 7 59.14	-5.53	37 9 26.12	31.80	1.87	+37 9 29.2	28.3	-29.8

					Eq. Pt. Cor. from stars.		
Time.		Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.		
					No.	A.	B.
d h m	cm.	°	°				
29 5 9	.....	...	-1.8	23. Bisections at II and VI.	21	"	"
5 14	75.76	-0.5	...	24. Bisections at c_1 and c_5 .	22	+3.7	-0.9
5 46	75.78	1.0	2.3	35. Bisections at c_2 and c_4 .	23	3.1	1.9
6 24	75.77	1.3	2.5		24	3.1	1.6
3 1 20	77.13	3.5	5.2	Notes.	25	3.3	2.4
1 46	77.13	4.0	5.3	1-23. Seeing 2-3.	26	3.7	1.9
2 50	77.12	-4.8	6.0	5. Companion preceding.	27	3.1	2.6
5 1 45	76.58	+0.5	-0.2	24-34. Seeing 1.	32	[2.9]	[4.8]
				28. Faint; very poor.	36	3.6	1.8
				35-41. Seeing 3.	37	4.6	1.8
					38	+3.6	-3.3
					Adopted Equator Point Corrections.		
					A.	B.	
					"	"	
					*	*	
					1-23, from stars.....		
					24, from nadir.....	-3.90	
					25-34, from stars.....	+3.4	-2.3
					35, from nadir.....	-2.75	
					36-41, from stars.....	*	*
					*Interpolated from diagram.		

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +37° 514	9	m s 11 46.22	s +0.09	s -46.38	h m s 2 10 59.93	s -5.59	° ' " 37 41 23.25	" 29.92	" 1.31	° ' " +37 41 26.9	" 27.0	" -29.7
2	o Ceti.....	9	15 8.56	-0.02	46.42	2 14 22.16	4.46	356 35 13.82	21.20	55.48	- 3 25 36.6	35.8	15.8
3	B. D. +36° 478	9	20 1.81	+0.09	46.38	2 19 15.52	5.64	36 40 27.52	33.02	2.39	+36 40 30.0	28.9	28.6
4	B. D. +34° 437	9	21 37.08	0.08	46.38	2 20 50.78	5.59	35 10 18.45	23.72	3.99	35 10 19.3	18.0	28.0
5	B. D. +34° 442	9	23 18.84	0.08	46.39	2 22 32.53	5.60	34 51 27.62	35.45	4.33	34 51 28.1	29.4	27.7
6	B. D. +35° 494	9	25 57.06	0.08	46.39	2 25 10.75	5.65	35 19 13.45	19.10	3.84	35 19 14.5	13.6	27.5
7	B. D. +34° 462	9	29 4.91	+0.08	-46.39	2 28 18.60	-5.65	34 43 9.78	15.72	4.48	+34 43 10.2	9.5	-27.0
8	B. D. +34° 471	9	30 37.99	+0.08	-46.39	2 29 51.68	-5.65	34 17 45.82	52.32	4.93	+34 17 45.8	45.7	-26.7
9	B. D. +34° 483	9	33 33.21	0.08	46.39	2 32 46.90	5.70	34 50 48.45	55.45	4.34	34 50 49.0	49.4	26.6
10	B. D. +34° 492	8	35 43.69	0.08	46.39	2 34 57.38	5.71	34 24 54.25	60.05	4.81	34 24 54.2	53.4	26.2
11	B. D. +32° 507	9	43 53.14	0.07	46.39	2 43 6.82	5.71	32 46 0.90	5.65	6.58	32 45 59.1	57.3	24.8
12	B. D. +31° 493	9	45 48.07	0.07	46.40	2 45 1.74	5.70	31 57 29.28	35.80	7.45	31 57 26.6	26.6	24.4
13	B. D. +31° 497	9	48 13.96	0.06	46.40	2 47 27.62	5.69	31 14 36.32	41.90	8.22	31 14 32.9	31.9	23.9
14	B. D. +30° 464	9	50 31.44	+0.06	-46.40	2 49 45.10	-5.68	30 38 42.60	47.45	8.87	+30 38 38.5	36.8	-23.5
15	B. D. +31° 509	9	52 5.04	+0.06	-46.40	2 51 18.70	-5.74	31 32 22.15	26.88	7.90	+31 32 19.0	17.1	-23.5
16	B. D. +29° 508	9	55 17.02	0.06	46.40	2 54 30.68	5.71	30 10 46.05	51.48	9.38	30 10 41.4	40.2	22.8
17	B. D. +28° 488	9	0 10.36	0.06	46.40	2 59 24.02	5.70	29 9 39.05	43.70	10.50	29 9 33.2	31.3	21.9
18	B. D. +28° 493	9	2 8.45	0.06	46.40	3 1 22.11	5.70	28 44 42.28	48.28	10.96	28 44 36.0	35.4	21.5
19	B. D. +29° 531	9	5 5.88	0.06	46.40	3 4 19.54	5.75	29 17 34.50	39.18	10.36	29 17 28.8	26.9	21.3
20	B. D. +28° 507	9	8 27.09	0.06	46.40	3 7 40.75	5.76	28 51 54.25	60.72	10.83	28 51 48.1	47.9	20.8
21	ζ Arietis	9	10 0.93	+0.03	-46.40	3 9 14.56	-5.45	20 40 59.30	66.15	20.12	+20 40 43.9	44.1	-18.2
22	B. D. +28° 514	7	13 17.01	+0.05	-46.41	3 12 30.65	-5.78	28 21 15.98	21.58	11.39	+28 21 9.3	8.2	-20.0
23	B. D. +28° 516	9	15 9.39	0.05	46.41	3 14 23.03	5.80	28 41 36.15	41.72	11.02	28 41 29.8	28.7	19.9
24	B. D. +26° 548	9	17 58.24	0.05	46.41	3 17 11.88	5.74	26 33 5.60	11.55	13.39	26 32 56.8	56.2	19.0
25	ε Tauri	9	22 36.53	0.01	46.46	3 21 50.13	5.16	9 23 47.38	53.28	34.59	9 23 17.5	16.6	13.5
26	B. D. +27° 514	9	25 53.13	0.05	46.41	3 25 6.77	5.83	27 23 49.42	53.98	12.46	27 23 41.6	39.4	18.2
27	B. D. +27° 526	9	30 14.79	0.05	46.42	3 29 28.42	5.86	27 31 10.60	18.20	12.33	27 31 2.9	3.8	17.7
28	B. D. +26° 596	9	35 4.23	+0.05	-46.42	3 34 17.86	-5.86	26 34 11.52	18.48	13.38	+26 34 2.7	3.0	-16.8
29	B. D. +26° 601	9	37 19.98	+0.04	-46.42	3 36 33.60	-5.86	26 15 38.05	43.65	13.73	+26 15 28.9	27.7	-16.4
30	B. D. +24° 546	9	40 3.83	0.04	46.42	3 39 17.45	5.80	24 31 58.38	64.42	15.68	24 31 47.2	46.6	15.6
31	B. D. +24° 568	9	42 39.35	0.04	46.42	3 41 52.97	5.84	25 5 3.12	9.80	15.06	25 4 52.6	52.6	15.4
32	B. D. +23° 561	9	44 16.32	0.04	46.42	3 43 29.94	5.81	24 4 58.52	66.48	16.20	24 4 46.8	48.1	14.9
33	B. D. +25° 627	9	46 9.62	0.04	46.42	3 45 23.24	5.91	26 3 31.88	37.70	13.96	26 3 22.4	21.6	15.2
34	B. D. +25° 641	9	48 25.34	0.04	46.42	3 47 38.96	5.89	25 23 34.08	40.05	14.72	25 23 23.9	23.2	14.7
35	B. D. +23° 586	8	50 43.02	+0.04	-46.42	3 49 56.64	-5.82	23 32 35.48	41.72	16.82	+23 32 23.2	22.7	-13.9
36	ε Persei	5	52 1.49	+0.08	-46.39	3 51 15.15	-6.69	39 43 .....	.....	.....	+39 43 .....	.....	.....
37	B. D. +24° 602	9	54 5.39	0.04	46.43	3 53 19.00	5.91	24 56 12.10	.....	15.23	24 56 1.4	.....	-13.8
38	B. D. +22° 615	9	55 27.11	0.04	46.43	3 54 40.72	5.81	22 32 56.00	61.32	17.97	22 32 42.6	41.1	13.0
39	B. D. +22° 629	9	0 19.48	0.04	46.43	3 59 33.09	5.85	22 54 10.72	16.75	17.56	22 53 57.7	56.9	12.5
40	B. D. +22° 637	9	3 48.57	0.04	46.43	4 3 2.18	5.87	22 50 17.95	25.30	17.64	22 50 4.7	5.4	12.0
41	B. D. +21° 601	7	6 6.37	0.03	46.43	4 5 19.97	5.83	21 37 52.52	59.48	19.05	21 37 37.9	38.2	11.4
42	B. D. +21° 635	9	18 19.48	+0.03	-46.44	4 17 33.07	-5.87	21 9 8.10	15.22	19.62	+21 8 52.9	53.2	-9.6
43	B. D. +20° 754	8	20 45.87	+0.03	-46.44	4 19 59.46	-5.87	20 54 55.60	62.25	19.90	+20 54 40.1	40.0	-9.2
44	B. D. +19° 727	9	23 37.80	0.03	46.44	4 22 51.39	5.83	19 31 32.90	38.78	21.56	19 31 15.8	14.8	8.5
45	B. D. +20° 772	9	26 37.93	0.03	46.44	4 25 51.52	5.88	20 34 28.68	35.68	20.32	20 34 12.7	12.9	8.3
46	B. D. +19° 736	9	28 24.09	0.03	46.44	4 27 37.68	5.85	19 36 32.82	37.82	21.47	19 36 15.7	13.9	7.8
47	B. D. +19° 742	9	30 43.07	0.03	46.44	4 29 56.66	5.87	19 40 56.38	61.95	21.39	19 40 39.4	38.1	7.5
48	B. D. +18° 666	9	33 34.03	0.03	46.44	4 32 47.62	5.83	18 32 25.82	30.45	22.77	18 32 7.4	5.2	6.9
49	B. D. +18° 684	9	37 53.66	+0.03	-46.44	4 37 7.25	-5.85	18 32 22.25	27.12	22.77	+18 32 3.8	1.9	-6.3
50	B. D. +18° 719	9	41 18.72	+0.03	-46.45	4 40 32.30	-5.86	18 33 38.02	43.70	22.74	+18 33 19.6	18.5	-5.8
51	B. D. +18° 734	9	43 43.11	0.03	46.45	4 42 56.69	5.87	18 32 58.65	63.30	22.76	18 32 40.2	38.0	5.5
52	B. D. +17° 797	9	46 55.63	+0.02	46.45	4 46 9.20	5.84	17 31 41.50	47.50	24.01	17 31 21.8	20.9	4.8
53	π ⁵ Orionis	9	49 54.28	-0.01	46.44	4 49 7.82	5.30	2 17 20.52	27.60	45.54	2 16 39.3	39.5	1.5
54	B. D. +18° 765	9	53 22.52	+0.03	46.45	4 52 36.10	5.92	18 50 41.58	47.98	22.40	18 50 23.4	23.0	4.2
55	ι Tauri	9	57 59.59	0.03	46.49	4 57 13.17	6.05	21 27 9.48	16.52	19.28	21 26 54.4	54.7	3.9
56	B. D. +18° 777	9	59 52.67	+0.02	-46.45	4 59 6.24	-5.91	18 7 15.42	20.92	23.29	+18 6 56.4	55.0	-3.1

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°				
5 2 12	76.58	-0.3	-1.1	22, 27, 41. Bisections at III and V.	2	"	"
3 20	76.58	1.1	1.7	37. Bisection at II.	21	[+2.7]	[-4.3]
3 57	.....	....	2.1	Notes.	25	[2.1]	3.4
4 32	76.58	-2.1	-2.5	1-56. Seeing 3. 10. Very faint; poor observation.	53	2.8	3.9
				Adopted Equator Point Corrections.	55	+2.3	-4.5
				A. B.			
				" "			
				1-56, from stars..... *			
				* Interpolated from diagram.			

SIX-INCH TRANSIT CIRCLE.

NO.	NAME.	THDS.	MEAN THREAD.	$c_0/\text{SEC } \delta$ + $n \text{ TAN } \delta.$	$\Delta T + m.$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +16° 700	8	m s 3 3.67	+0.02	-46.46	5 2 17.23	-5.87	16 51 15.20	21.45	24.85	+16 50 54.6	53.9	-2.4
2	B. D. +16° 715	9	5 56.71	0.02	46.46	5 5 10.27	5.85	16 18 57.45	63.90	25.52	16 18 36.2	35.7	2.0
3	B. D. +17° 869	9	7 34.72	0.02	46.46	5 6 48.28	5.89	17 5 54.50	60.35	24.54	17 5 34.1	33.1	1.8
4	B. D. +16° 735	9	9 26.13	0.02	46.46	5 8 39.69	5.88	16 34 6.05	12.08	25.20	16 33 45.0	44.2	1.5
5	B. D. +16° 742	9	12 12.37	0.02	46.46	5 11 25.93	5.87	16 14 54.28	60.92	25.60	16 14 32.9	32.7	1.1
6	B. D. +14° 881	9	15 45.56	0.02	46.46	5 14 59.12	5.83	14 57 51.15	57.92	27.23	14 57 28.1	28.0	0.4
7	B. D. +15° 805	9	18 38.97	+0.02	-46.46	5 17 52.53	-5.87	15 57 8.08	13.20	25.98	+15 56 46.3	44.5	-0.1
8	B. D. +15° 814	9	21 10.84	+0.02	-46.46	5 20 24.40	-5.86	15 35 20.50	28.58	26.44	+15 34 58.2	59.4	+0.3
9	B. D. +14° 933	9	26 40.97	0.02	46.47	5 25 54.52	5.84	14 34 29.42	36.12	27.74	14 34 5.9	5.6	1.2
10	B. D. +15° 856	9	29 8.51	0.02	46.47	5 28 22.06	5.88	15 31 16.30	23.22	26.53	15 30 54.0	53.9	1.4
11	B. D. +14° 959	9	31 52.99	0.02	46.47	5 31 6.54	5.84	14 10 11.60	19.85	28.27	14 9 47.5	48.7	2.0
12	B. D. +13° 954	9	36 42.96	0.02	46.47	5 35 56.51	5.80	13 6 12.22	17.95	29.67	13 5 46.7	45.5	2.8
13	B. D. +14° 998	9	38 42.47	+0.02	-46.47	5 37 56.02	-5.86	14 22 12.90	.....	28.01	+14 21 49.0	....	+2.9
14	B. D. +12° 884	9	40 15.96	+0.02	-46.47	5 39 29.51	-5.90	12 51 6.92	13.20	30.01	+12 50 41.0	40.3	+3.3
15	B. D. +12° 896	9	42 27.44	0.01	46.47	5 41 40.98	5.78	12 18 31.38	38.42	30.73	12 18 4.7	4.8	3.7
16	B. D. +12° 910	9	44 28.51	0.01	46.47	5 43 42.05	5.78	12 7 28.38	35.92	30.98	12 7 1.5	2.1	4.0
17	B. D. +11° 960	9	48 29.60	0.01	46.48	5 47 43.13	5.77	11 48 1.55	8.50	31.42	11 47 34.2	34.1	4.5
18	B. D. +12° 950	9	50 53.04	0.02	46.48	5 50 6.58	5.82	12 59 26.05	32.78	29.83	12 59 0.3	0.0	4.7
19	B. D. +12° 968	9	54 7.96	+0.02	-46.48	5 53 21.50	-5.82	12 48 16.10	23.25	30.08	+12 47 50.1	50.2	+5.2
20	B. D. +11° 1009	9	58 42.19	+0.01	-46.48	5 57 55.72	-5.78	11 41 19.12	26.45	31.58	+11 40 51.5	51.9	+5.9
21	Orionis	9	2 44.14	0.02	46.49	6 1 57.68	5.91	14 47 7.10	.....	27.50	14 46 43.6	....	6.2
22	B. D. +11° 1038	9	3 40.09	0.01	46.48	6 2 53.62	5.78	11 25	7.42	31.95	11 24	32.5	6.6
23	Geminorum	9	9 43.16	0.04	46.45	6 8 56.72	6.24	22 32 16.82	23.20	18.05	22 32 2.7	2.1	6.5
24	Geminorum	9	17 47.34	+0.04	46.46	6 17 0.89	6.26	22 34 1.28	7.40	18.02	22 33 47.1	46.3	7.8
25	Monocerotis	9	19 20.23	0.00	-46.51	6 18 33.74	-5.56	4 39 5.12	13.88	41.81	+4 38 27.3	29.0	+9.1

1901 JANUARY 8.

CLAMP WEST.

LAWTON, ASSISTANT.

LITTELL, OBSERVER.

26	α Trianguli	9	48 15.18	+0.18	-47.62	1 47 27.67	-4.99	29 6 5.68	11.55	10.30	+29 5 59.8	58.7	-28.9
27	β Arietis	9	49 59.26	0.12	47.75	1 49 11.69	4.79	20 19 51.10	57.45	20.02	20 19 35.5	34.9	25.9
28	γ Andromedæ	8	58 38.46	0.28	47.68	1 57 51.05	5.56	41 51 24.00	31.90	3.06	41 51 31.3	32.4	32.1
29	α Arietis	9	2 24.60	0.13	47.70	2 1 37.04	4.97	23 0 1.15	8.12	16.99	22 59 47.5	48.6	25.8
30	B. D. +38° 425	9	5 41.71	0.25	47.69	2 4 54.27	5.51	38 34 30.98	36.85	0.36	38 34 34.8	33.9	30.5
31	B. D. +36° 440	9	8 46.55	0.24	47.69	2 7 59.10	5.49	37 9 26.75	32.98	1.83	37 9 29.2	28.6	29.8
32	B. D. +37° 514	9	11 47.37	+0.24	-47.69	2 10 59.92	-5.54	37 41 23.50	30.62	1.28	+37 41 26.4	26.7	-29.7
33	B. D. +36° 478	9	20 2.98	+0.24	-47.70	2 19 15.52	-5.59	36 40 25.52	32.65	2.34	+36 40 27.4	27.7	-28.6
34	B. D. +34° 437	9	21 38.32	0.22	47.70	2 20 50.84	5.55	35 10 18.22	25.15	3.91	35 10 18.5	18.6	28.0
35	B. D. +34° 442	9	23 20.03	0.22	47.70	2 22 32.55	5.56	34 51 28.32	35.65	4.24	34 51 28.2	28.8	27.7
36	B. D. +35° 494	9	25 58.25	0.22	47.70	2 25 10.77	5.60	35 19 12.10	19.98	3.75	35 19 12.5	13.6	27.5
37	B. D. +33° 461	9	29 5.75	0.21	47.70	2 28 18.26	5.55	33 21 39.02	46.62	5.81	33 21 37.4	38.2	26.6
38	B. D. +34° 471	9	30 39.09	0.22	47.70	2 29 51.61	5.61	34 17 45.52	52.30	4.83	34 17 44.9	44.9	26.7
39	B. D. +32° 478	9	33 36.64	+0.21	-47.70	2 32 49.15	-5.58	32 59 39.90	45.72	6.19	+32 59 37.9	36.8	-26.0
40	B. D. +33° 494	9	38 9.94	+0.21	-47.70	2 37 22.45	-5.66	33 45 19.78	27.00	5.40	+33 45 18.5	19.0	-25.8
41	μ Ceti	9	40 24.74	0.05	47.79	2 39 37.09	4.90	9 42 19.68	26.08	33.37	9 41 50.6	50.2	17.9
42	B. D. +32° 507	9	43 54.40	0.20	47.70	2 43 6.90	5.67	32 45 59.68	67.48	6.44	32 45 57.3	58.4	24.8
43	B. D. +31° 493	8	45 49.27	0.20	47.70	2 45 1.77	5.66	31 57 29.90	36.42	7.29	31 57 26.7	26.5	24.4
44	B. D. +31° 497	9	48 15.14	0.19	47.70	2 47 27.63	5.65	31 14 36.82	42.95	8.05	31 14 32.8	32.3	23.9
45	B. D. +30° 464	9	50 32.64	+0.19	-47.70	2 49 45.13	-5.65	30 38 42.68	48.32	8.68	+30 38 38.1	37.0	-23.5
46	B. D. +31° 509	9	52 6.30	+0.19	-47.70	2 51 18.79	-5.70	31 32 21.78	26.72	7.74	+31 32 18.1	16.4	-23.5
47	B. D. +29° 508	9	55 18.18	0.18	47.70	2 54 30.66	5.67	30 10 47.35	52.55	9.18	30 10 42.3	40.8	22.8
48	B. D. +28° 488	9	0 11.52	0.18	47.71	2 59 23.99	5.67	29 9 39.12	44.60	10.27	29 9 33.0	31.7	21.9
49	B. D. +28° 493	9	2 9.64	0.17	47.71	3 1 22.10	5.67	28 44 43.70	49.25	10.72	28 44 37.1	35.9	21.5
50	B. D. +29° 531	9	5 7.01	0.18	47.71	3 4 19.48	5.72	29 17 33.90	39.92	10.13	29 17 27.8	27.2	21.3
51	B. D. +28° 507	9	8 28.25	+0.17	-47.71	3 7 40.71	-5.73	28 51 54.18	61.02	10.59	+28 51 47.6	47.8	-20.8

Eq. Pt. Cor. from stars.

				Eq. Pt. Cor. from stars.		
Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.		
d h m	cm.	°	°			
5 5 23	76.58	-2.6	-2.6	13, 21. Bisection at II.		21 +2.7 ...
5 46	.....	...	2.8	22. Bisection at V.		23 2.7 -3.4
6 15	76.57	-3.1	-3.0		Adopted Equator Point Corrections.	24 1.9 3.9
8 1 47	76.07	+4.0	+3.3		A. B.	25 3.8 4.5
2 36	.....	...	2.6	Notes.	" "	26 2.7 2.9
2 54	76.11	+3.5	+2.6	1-25. Seeing 3.	* *	27 3.1 3.0
				39. Close double.	1-25, from stars.....	28 4.0 3.8
					26-51, from stars.....	29 3.3 3.4
					* Interpolated from diagram.	41 [+1.8] -4.3

Adopted Equator Point Corrections.

1-25, from stars.....

26-51, from stars.....

* Interpolated from diagram.

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0 ' SEC δ + N TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ζ Arietis	9	m s 10 2.13	s +0.12	s -47.72	h m s 3 9 14.54	s -5.42	° ' " ° 20 40 59.40	" 66.25	" 19.68	° ' " ° +20 40 43.8	" 44.0	" -18.1
2	B. D. +28° 514	9	13 18.13	0.17	47.71	3 12 30.59	5.74	28 21 16.42	23.52	11.15	28 21 9.3	9.8	20.1
3	B. D. +28° 516	9	15 10.54	0.17	47.71	3 14 23.00	5.77	28 41 35.95	42.42	10.78	28 41 29.2	29.0	19.9
4	B. D. +26° 548	9	17 59.34	0.16	47.71	3 17 11.79	5.70	26 33 6.20	11.55	13.10	26 32 57.1	55.9	19.0
5	B. D. +27° 509	9	22 29.99	0.16	47.71	3 21 42.44	5.78	27 24 37.08	43.42	12.17	27 24 28.9	28.7	18.6
6	B. D. +27° 514	9	25 54.33	0.16	47.71	3 25 6.78	5.80	27 23 49.08	55.75	12.18	27 23 40.9	41.0	18.2
7	B. D. +27° 519	9	27 27.09	+0.17	-47.71	3 26 39.55	-5.84	28 2 0.42	6.75	11.49	+28 1 52.8	52.7	-18.2
8	B. D. +27° 526	9	30 15.94	+0.16	-47.71	3 29 28.39	-5.84	27 31 12.12	18.88	12.05	+27 31 4.0	4.2	-17.7
9	B. D. +26° 596	9	35 5.38	0.16	47.72	3 34 17.82	5.83	26 34 12.12	18.42	13.09	26 34 2.9	2.8	16.8
10	B. D. +26° 601	9	37 21.09	0.16	47.72	3 36 33.53	5.83	26 15 37.92	43.28	13.42	26 15 28.4	27.3	16.4
11	B. D. +24° 546	9	40 5.04	0.14	47.72	3 39 17.46	5.78	24 31 58.82	65.65	15.33	24 31 47.4	47.7	15.6
12	B. D. +24° 568	9	42 40.51	0.15	47.72	3 41 52.94	5.82	25 5 4.08	11.28	14.73	25 4 53.3	54.0	15.4
13	B. D. +23° 561	9	44 17.47	0.14	47.72	3 43 29.89	5.78	24 4 59.55	67.15	15.83	24 4 47.6	48.7	14.9
14	B. D. +25° 627	9	46 10.77	+0.15	-47.72	3 45 23.20	-5.88	26 3 32.75	38.20	13.65	+26 3 23.0	22.0	-15.2
15	B. D. +25° 639	9	48 21.68	+0.15	-47.72	3 47 34.11	-5.88	25 38 41.68	48.25	14.11	+25 38 31.4	31.6	-14.8
16	B. D. +23° 586	8	50 44.27	0.14	47.72	3 49 56.69	5.80	23 32 35.98	.....	16.44	23 32 23.4	.....	13.9
17	ϵ Persei	9	52 2.61	0.26	47.71	3 51 15.15	6.67	39 43	35.90	0.84	39 43	34.1	17.8
18	B. D. +24° 602	9	54 6.61	0.15	47.72	3 53 19.04	5.88	24 56 12.55	18.30	14.89	24 56 1.5	0.8	13.8
19	B. D. +22° 615	9	55 28.36	0.13	47.72	3 54 40.77	5.79	22 32 55.85	61.82	17.56	22 32 42.1	41.7	13.0
20	B. D. +23° 613	9	0 10.58	0.14	47.72	3 59 23.00	5.86	23 31 50.40	57.18	16.46	23 31 37.8	38.1	12.6
21	B. D. +23° 624	8	3 45.96	+0.14	-47.72	4 2 58.38	-5.88	23 36 43.20	50.52	16.36	+23 36 30.7	31.6	-12.2
22	B. D. +23° 642	9	7 20.01	+0.14	-47.72	4 6 32.43	-5.89	23 19 24.42	31.30	16.69	+23 19 11.6	12.0	-11.6
23	B. D. +20° 741	9	16 34.86	0.12	47.73	4 15 47.25	5.84	20 57 24.38	31.52	19.38	20 57 8.8	9.6	9.7
24	B. D. +21° 635	8	18 20.72	0.12	47.73	4 17 33.11	5.86	21 9 9.08	16.00	19.15	21 8 53.7	54.3	9.6
25	B. D. +20° 754	9	20 47.08	0.12	47.73	4 19 59.47	5.86	20 54 55.95	63.08	19.43	20 54 40.3	40.9	9.1
26	B. D. +19° 727	7	23 39.11	0.11	47.73	4 22 51.49	5.81	19 31 33.00	40.65	21.04	19 31 15.7	17.0	8.5
27	B. D. +19° 731	9	25 19.45	0.11	47.73	4 24 31.83	5.82	19 37 47.25	52.72	20.92	19 37 30.1	29.2	8.2
28	α Tauri	8	31 4.31	+0.09	-47.78	4 30 16.67	-5.73	16 18 57.72	63.42	24.88	+16 18 36.5	36.0	-6.6
29	τ Tauri	9	37 8.13	+0.13	-47.71	4 36 20.53	-6.02	22 46 15.80	21.78	17.31	+22 46 2.1	1.7	-7.2
30	B. D. +18° 719	9	41 19.94	0.11	47.73	4 40 32.32	5.85	18 33 38.98	44.00	22.18	18 33 20.5	19.2	5.8
31	B. D. +18° 734	9	43 44.33	0.11	47.73	4 42 56.71	5.86	18 32 58.25	.....	22.19	18 32 39.7	.....	5.4
32	B. D. +18° 743	9	46 24.91	0.11	47.73	4 45 37.29	5.89	18 40 34.25	39.72	22.03	18 40 15.9	15.1	5.0
33	B. D. +19° 811	5	49 59.18	0.11	47.74	4 49 11.55	5.92	19 19 46.28	52.28	21.27	19 19 28.7	28.4	4.7
34	B. D. +16° 672	9	52 29.20	0.10	47.74	4 51 41.56	5.83	17 0 12.20	19.02	24.04	16 59 51.8	52.4	3.9
35	ι Tauri	9	58 0.71	+0.12	-47.70	4 57 13.09	-6.05	21 27 8.75	16.35	18.80	+21 26 53.5	54.8	-3.9

1901 JANUARY 9.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

36	α Ursæ Minoris.....	6	23 41.80	+33.07	-49.37	1 23 .....	.....	88 45 57.00	65.38	68.75	+88 47 9.7	9.4	.....
37	γ Andromedæ.....	6	58 38.58	0.62	48.15	1 57 .....	.....	41 51 .....	.....	.....	41 51 .....	.....	.....
38	α Arietis	4	2 24.96	+0.28	-48.22	2 1 .....	.....	22 59 .....	.....	.....	+22 59 .....	.....	.....

1901 JANUARY 13.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

39	α Ursæ Minoris.....	9	24 2.70	+8.43	[-49.58]	1 23 .....	.....	88 45 54.46	62.78	70.52	+88 47 10.1	10.0	.....
40	α Trianguli.....	9	48 16.40	0.10	48.83	1 47 27.64	-4.92	29 6 4.35	10.70	10.32	29 5 59.5	58.6	-28.6
41	β Arietis	9	50 0.41	0.06	48.91	1 49 11.59	4.72	20 19 49.78	56.95	20.04	20 19 35.3	35.1	25.6
42	γ Andromedæ.....	9	58 39.69	+0.15	-48.87	1 57 50.96	-5.47	41 51 22.98	31.35	3.06	+41 51 31.4	32.5	-32.0

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			Eq. Pt. Cor. from stars.		
							No.	A.	B.
d h m	cm.	°	°						
8 3 24	76.10	3.4	2.3	16, 31.	Bisection at II.		I	+3.2	-3.3
3 58	76.07	3.1	2.1	17.	Bisection at V.		17	...	4.0
4 56	76.03	3.0	2.1	25, 29, 35.	Bisections at II and VI.		28	2.6	2.8
9 1 19	76.08	11.0	9.8	36, 39.	Bisections at c_1, c_2, c_4 and c_5 .		29	2.2	3.3
2 4	76.12	10.0	8.6				35	2.5	4.6
13 1 26	75.78	2.7	2.0				40	3.8	2.3
1 55	.....	.....	1.8				41	4.1	2.7
							42	+4.9	-3.3

Notes.
15, 16, 24, 26. Very faint; poor.
27, 31, 34, 37, 38. Clouds.
39-42. Seeing 4.

Adopted Equator Point Corrections.

A. B.

i-35, from stars..... * -3.4

36, from nadir..... +3.06 -5.31

39, from nadir..... +4.19 -3.88

40-42, from stars..... * *

* Interpolated from diagram.

NO.	NAME.	THDS.	MEAN THREAD.		c' SEC δ + n TAN δ.	ΔT+m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
			m	s					A.	B.		A.	B.	
1	α Arietis	9	2	25.78	+0.07	-48.88	2 1 36.97	-4.91	22 59 59.48	66.82	17.01	+22 59 48.0	47.9	-25.6
2	B. D. +37° 491	7	5	4.24	0.13	48.87	2 4 15.50	5.37	37 13 20.52	27.28	1.77	37 13 24.1	23.6	30.1
3	B. D. +36° 440	9	8	47.67	0.12	48.87	2 7 58.92	5.41	37 9 25.38	32.58	1.84	37 9 28.9	28.8	29.7
4	B. D. +37° 514	9	11	48.49	0.13	48.87	2 10 59.75	5.46	37 41 21.68	29.70	1.28	+37 41 25.7	26.5	29.6
5	o Ceti.	9	15	10.93	0.01	48.92	2 14 22.07	4.36	356 35 10.38	19.32	54.32	-3 25 38.3	36.8	15.1
6	B. D. +35° 470	9	20	14.86	0.12	48.87	2 19 26.11	5.47	35 31 35.55	42.50	3.54	+35 31 37.3	37.0	28.1
7	B. D. +36° 491	9	22	3.02	+0.12	-48.87	2 21 14.27	-5.53	36 31 26.62	34.78	2.50	+36 31 29.5	30.3	-28.3
8	B. D. +34° 448	9	25	58.32	+0.11	-48.87	2 25 9.56	-5.50	34 29 41.65	48.68	4.62	+34 29 42.3	42.1	-27.2
9	B. D. +33° 461	9	29	6.84	0.10	48.87	2 28 18.07	5.48	33 21 37.90	45.58	5.81	33 21 37.4	37.8	26.6
10	B. D. +32° 478	9	33	37.73	0.10	48.86	2 32 48.97	5.51	32 59 38.30	45.42	6.20	32 59 37.4	37.2	26.0
11	B. D. +33° 493	9	37	25.33	0.10	48.86	2 36 36.57	5.56	33 20 51.85	58.75	5.83	33 20 51.3	50.9	25.7
12	μ Ceti.	9	40	25.82	0.02	48.89	2 39 36.98	4.85	9 42 17.05	24.72	33.41	9 41 49.0	49.4	17.6
13	B. D. +32° 508	9	43	55.48	0.10	48.86	2 43 6.72	5.59	32 26 8.15	14.78	6.79	32 26 6.6	5.9	24.7
14	B. D. +31° 493	9	45	50.33	+0.10	-48.86	2 45 1.57	-5.59	31 57 29.22	34.78	7.30	+31 57 27.2	25.4	-24.4
15	B. D. +31° 497	9	48	16.24	+0.09	-48.86	2 47 27.47	-5.59	31 14 35.48	42.35	8.06	+31 14 32.6	32.2	-23.9
16	B. D. +30° 464	9	50	33.69	0.09	48.86	2 49 44.92	5.58	30 3 41.65	47.30	8.69	30 38 38.1	36.5	23.4
17	B. D. +30° 469	9	52	52.59	0.09	48.86	2 52 3.82	5.62	31 7 20.25	26.70	8.19	31 7 17.2	16.4	23.3
18	B. D. +29° 508	9	55	19.33	0.09	48.86	2 54 30.56	5.61	30 10 45.32	51.68	9.19	30 10 41.3	40.4	22.7
19	B. D. +28° 488	9	0	12.66	0.08	48.85	2 59 23.89	5.61	29 9 37.58	43.50	10.28	29 9 32.5	31.1	21.9
20	β Persei	9	2	34.44	0.13	48.82	3 1 45.72	6.17	40 34 32.40	39.38	1.73	40 34 39.2	39.0	24.9
21	B. D. +29° 531	9	5	8.16	+0.08	-48.85	3 4 19.39	-5.66	29 17 32.15	39.40	10.14	+29 17 27.2	27.2	-21.3
22	B. D. +30° 503	9	7	45.28	+0.09	-48.85	3 6 56.52	-5.73	30 29 3.50	9.38	8.87	+30 28 59.8	58.3	-21.4
23	ζ Arietis	9	10	3.29	0.06	48.87	3 9 14.50	5.37	20 40 57.50	66.05	19.70	20 40 43.0	44.2	18.0
24	B. D. +28° 514	9	13	19.28	0.08	48.85	3 12 30.51	5.69	28 21 15.82	22.38	11.16	28 21 9.8	9.0	20.1
25	B. D. +28° 516	9	15	11.68	0.08	48.85	3 14 22.91	5.72	28 41 35.20	40.95	10.79	28 41 29.5	28.0	19.9
26	B. D. +26° 548	9	18	0.51	0.07	48.85	3 17 11.73	5.65	26 33 5.15	11.08	13.11	26 32 57.2	55.8	18.9
27	ξ Tauri	9	22	38.85	0.02	48.86	3 21 50.02	5.09	9 23 45.70	52.72	33.86	9 23 17.1	16.7	13.0
28	B. D. +27° 515 ¹	9	26	12.19	+0.07	-48.85	3 25 23.41	-5.74	27 14 15.52	21.70	12.37	+27 14 8.3	7.2	-18.1
29	B. D. +27° 526	9	30	17.12	+0.07	-48.84	3 29 28.35	-5.79	27 31 10.70	18.05	12.06	+27 31 3.7	3.8	-17.7
30	Anonymous	9	35	1.63	0.07	48.84	3 34 12.86	5.78	26 34 40.52	46.02	13.10	26 34 32.4	30.6	16.8
31	B. D. +25° 593	9	38	1.77	0.06	48.84	3 37 12.99	5.75	25 22 11.88	17.68	14.42	25 22 2.5	1.0	16.1
32	B. D. +26° 608	7	40	6.66	0.07	48.84	3 39 17.89	5.82	26 35 4.35	10.50	13.09	26 34 56.2	55.1	16.2
33	B. D. +23° 562	9	44	23.14	0.06	48.84	3 43 34.36	5.73	23 56 58.05	65.78	16.00	23 56 47.1	47.5	14.8
34	B. D. +24° 583	9	46	20.31	0.06	48.84	3 45 31.53	5.79	24 52 3.82	10.92	14.98	24 51 53.9	53.7	14.8
35	B. D. +23° 589	9	51	35.35	+0.06	-48.84	3 50 46.57	-5.76	23 18 39.90	46.55	16.72	+23 18 28.2	27.5	-13.7
36	B. D. +24° 602	9	54	7.69	+0.06	-48.84	3 53 18.91	-5.84	24 56 10.98	18.10	14.91	+24 56 1.1	0.9	-13.8
37	B. D. +22° 615	9	55	29.49	0.05	48.84	3 54 40.70	5.75	22 32 54.10	60.95	17.59	22 32 41.4	41.1	13.0
38	B. D. +23° 613	9	0	11.68	0.06	48.83	3 59 22.91	5.82	23 31 49.75	57.75	16.48	23 31 38.2	38.9	12.6
39	B. D. +23° 624	9	3	47.08	0.06	48.83	4 2 58.31	5.84	23 36 42.50	50.45	16.39	23 36 31.0	31.7	12.1
40	B. D. +23° 642	9	7	21.15	0.06	48.83	4 6 32.38	5.85	23 19 24.30	31.30	16.72	23 19 12.5	12.2	11.6
41	B. D. +20° 741	9	16	35.07	+0.05	-48.83	4 15 47.19	-5.81	20 57 22.52	30.72	19.42	+20 57 8.0	8.9	-9.7
42	B. D. +21° 641	9	19	12.97	+0.05	-48.83	4 18 24.19	-5.84	21 30 39.92	47.85	18.78	+21 30 26.0	26.6	-9.5
43	B. D. +20° 754	9	20	48.16	0.05	48.83	4 19 59.38	5.83	20 54 54.48	62.35	19.47	20 54 39.9	40.4	9.1
44	B. D. +19° 727	9	23	40.12	0.04	48.83	4 22 51.33	5.78	19 31 32.10	39.98	21.09	19 31 15.9	16.4	8.4
45	B. D. +21° 657	9	27	6.67	0.05	48.82	4 26 17.90	5.88	21 25 26.10	33.55	18.89	21 25 12.1	12.2	8.3
46	B. D. +20° 778	9	29	46.44	0.05	48.82	4 28 57.67	5.88	20 54 6.22	14.20	19.49	20 53 51.6	52.2	7.8
47	B. D. +19° 744	9	31	37.72	+0.04	-48.82	4 30 48.94	-5.82	19 33 42.70	49.12	21.05	+19 33 26.5	25.6	-7.2
48	B. D. +18° 666	9	33	36.34	+0.04	-48.82	4 32 47.56	-5.79	18 32 23.88	30.62	22.26	+18 32 6.5	5.9	-6.7
49	B. D. +18° 684	9	37	55.99	0.04	48.82	4 37 7.21	5.81	18 32 20.52	26.30	22.26	18 32 3.0	1.6	6.1
50	B. D. +18° 719	9	41	21.09	0.04	48.82	4 40 32.31	5.83	18 33 37.35	43.05	22.24	18 33 19.9	18.3	5.6
51	B. D. +18° 734	9	43	45.41	0.04	48.82	4 42 56.63	5.84	18 32 56.62	62.28	22.26	18 32 39.1	37.4	5.3
52	B. D. +18° 743	9	46	26.04	0.04	48.82	4 45 37.26	5.87	18 40 32.65	39.58	22.12	18 40 15.3	14.9	4.9
53	B. D. +18° 747	9	48	38.98	+0.04	-48.82	4 47 50.20	-5.88	18 54 47.82	54.45	21.84	+18 54 30.7	30.0	-4.7
54	B. D. +17° 814	9	51	35.93	+0.04	-48.82	4 50 47.15	-5.85	17 51 5.25	12.92	23.12	+17 50 46.9	47.2	-4.0
55	B. D. +16° 688	9	59	12.45	0.03	48.81	4 58 23.67	5.84	16 59 28.28	34.58	24.18	16 59 8.9	7.8	2.8
56	B. D. +17° 841	9	1	23.47	0.04	48.81	5 0 34.70	5.88	17 41 12.55	19.40	23.35	17 40 53.9	53.5	2.6
57	B. D. +15° 749	9	3	16.26	0.03	48.81	5 2 27.48	5.80	15 43 49.30	55.88	25.74	15 43 28.2	27.6	1.9
58	B. D. +16° 715	9	5	59.08	0.03	48.81	5 5 10.30	5.84	16 18 55.50	62.70	25.03	16 18 35.1	35.0	1.7
59	B. D. +17° 869	9	7	37.08	+0.03	-48.81	5 6 48.30	-5.88	17 5 53.72	59.78	24.07	+17 5 34.3	33.1	-1.6

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°	14. 47. Bisections at III and V. 32. Bisections at IV and V. Note. 1-59. Seeing 4. Adopted Equator Point Corrections. A. B. 1-59, from stars. * Interpolated from diagram.	I	"	"
13 2 24	75.78	1.9	1.4		5	+4.8	-2.2
2 57	75.77	1.5	1.1		12	[4.2]	[4.3]
3 24	75.76	1.3	1.0		20	4.2	3.2
4 18	.....	.....	0.6		23	3.6	3.2
4 39	75.77	0.7	0.5		27	5.0	3.2
						[+2.5]	[-4.1]

OBSERVATIONS OF EROS REFERENCE STARS.

D 61

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +15° 779	9	12 19.64	+ 0.03	-48.81	5 11 30.86	-5.81	15 9 37.20	44.85	26.48	+15 9 15.4	15.7	- 0.6
2	B. D. +14° 881	9	15 47.89	0.03	48.81	5 14 59.11	5.82	14 57 49.65	57.60	26.72	14 57 27.6	28.2	0.0
3	B. D. +15° 805	9	18 41.36	0.03	48.81	5 17 52.58	5.87	15 57 5.75	12.58	25.49	15 56 44.9	44.4	+ 0.2
4	B. D. +15° 814	9	21 13.18	0.03	48.81	5 20 24.40	5.86	15 35 20.18	27.22	25.94	15 34 58.9	58.6	0.6
5	B. D. +14° 933	9	26 43.30	0.03	48.80	5 25 54.53	5.84	14 34 28.92	36.28	27.21	14 34 6.3	6.4	1.6
6	B. D. +15° 856	9	29 10.87	0.03	48.80	5 28 22.10	5.88	15 31 14.85	22.68	26.03	15 30 53.4	54.0	1.7
7	B. D. +14° 959	8	31 55.30	+ 0.02	-48.80	5 31 6.52	-5.84	14 10 9.82	18.18	27.73	+14 9 46.7	47.7	+ 2.4
8	B. D. +14° 978	7	35 0.21	+ 0.03	-48.80	5 34 11.44	-5.87	14 44 57.08	64.48	26.99	+14 44 34.7	34.7	+ 2.7
9	B. D. +14° 991	9	38 12.23	0.02	48.80	5 37 23.45	5.85	14 8 11.02	17.55	27.77	14 7 47.8	47.0	3.2
10	B. D. +12° 910	9	44 30.83	0.02	48.80	5 43 42.05	5.79	12 7 27.10	34.75	30.37	12 7 1.3	1.6	4.4
11	B. D. +11° 960	9	48 31.94	0.02	48.80	5 47 43.16	5.79	11 48 0.52	7.80	30.80	11 47 34.3	34.2	5.0
12	B. D. +12° 950	9	50 55.38	0.02	48.80	5 50 6.50	5.84	12 59 24.32	31.93	29.23	12 58 59.6	59.9	5.2
13	B. D. +12° 968	9	54 10.29	+ 0.02	-48.80	5 53 21.51	-5.84	12 48 14.70	22.05	29.46	+12 47 49.7	49.8	+ 5.6
14	B. D. +11° 1009	9	58 44.49	+ 0.02	-48.79	5 57 55.72	-5.80	11 41 17.75	25.42	30.91	+11 40 51.3	51.7	+ 6.4
15	γ Orionis	9	2 46.46	0.02	48.78	6 1 57.69	5.94	14 47	.....	.....	14 47	.....	.....
16	B. D. +11° 1038	9	3 42.44	0.02	48.79	6 2 53.67	5.80	11 24 59.12	66.82	31.25	11 24 32.4	32.7	7.2
17	η Geminorum	9	9 45.52	0.04	48.77	6 8 56.77	6.28	22 32 15.80	22.25	17.64	22 32 2.5	1.7	6.5
18	μ Geminorum	9	17 49.73	0.04	48.81	6 17 0.98	6.30	22 33 59.10	67.52	17.60	22 33 45.8	46.9	7.8
19	8 Monocerotis	9	19 22.55	+ 0.01	-48.81	6 18 33.77	-5.59	4 39 4.42	11.45	40.82	+ 4 38 28.0	27.7	+10.0

1901 JANUARY 15.

CLAMP WEST.

LITTELL, OBSERVER.

LAWTON, ASSISTANT.

20	α Ursæ Minoris	9	23 49.33	+21.05	[-50.59]	1 23	.....	88 45 57.70	66.16	67.69	+88 47 9.9	10.0	.....
21	α Trianguli	9	48 17.06	0.24	49.66	1 47	27.61	29 6 5.48	11.42	9.91	29 5 60.1	58.8	-28.5
22	β Arietis	9	50 1.03	0.16	49.65	1 49	11.50	20 19 49.78	56.98	19.27	20 19 35.1	35.0	25.5
23	γ Andromedæ	9	58 40.31	0.39	49.75	1 57	51.01	41 51 23.60	31.55	2.94	41 51 31.0	31.8	32.0
24	α Arietis	9	2 26.44	0.18	49.68	2 1	36.93	22 59 59.48	67.20	16.35	22 59 47.7	48.2	25.5
25	B. D. +36° 426	9	5 32.20	0.33	49.70	2 4	42.83	37 14 13.10	20.52	1.68	37 14 15.8	16.1	30.0
26	B. D. +38° 434	9	7 35.28	+ 0.35	-49.70	2 6	45.93	38 25 25.98	34.00	0.50	+38 25 29.9	30.8	-30.2
27	B. D. +37° 512	9	10 20.21	+ 0.34	-49.70	2 9	30.85	37 55 29.85	36.60	1.00	+37 55 33.3	32.9	-29.8
28	B. D. +37° 516	9	12 9.44	+ 0.33	49.70	2 11	20.07	37 22 36.10	42.65	1.55	+37 22 38.9	38.4	29.4
29	α Ceti	9	15 11.77	- 0.03	49.74	2 14	22.04	35 35 9.45	19.25	52.21	- 3 25 38.2	35.7	15.0
30	B. D. +36° 470	9	18 7.95	+ 0.33	49.70	2 17	18.58	37 6 43.22	49.58	1.81	+37 6 45.7	45.0	28.8
31	B. D. +35° 470	9	20 15.57	0.31	49.70	2 19	26.18	35 31 35.38	43.90	3.40	35 31 36.3	37.7	28.1
32	B. D. +34° 442	9	23 21.74	+ 0.30	-49.70	2 22	32.34	34 51 26.82	35.60	4.08	+34 51 27.1	28.7	-27.6
33	B. D. +34° 448	9	25 58.98	+ 0.30	-49.70	2 25	9.58	34 29 42.50	50.02	4.44	+34 29 42.4	42.8	-27.2
34	B. D. +33° 463	9	29 35.12	0.29	49.71	2 28	45.70	33 39 9.35	16.82	5.31	33 39 8.4	8.7	26.6
35	B. D. +32° 478	9	33 38.42	0.28	49.71	2 32	48.99	32 59 39.82	.....	5.96	32 59 38.2	.....	26.0
36	B. D. +32° 484	9	34 44.52	0.28	49.71	2 33	55.09	32 23 31.35	36.22	6.57	32 23 29.1	26.9	25.7
37	B. D. +33° 494	9	38 11.69	0.29	49.71	2 37	22.27	33 45 20.30	27.35	5.19	33 45 19.5	19.4	25.7
38	μ Ceti	9	40 26.61	+ 0.07	-49.76	2 39	36.97	9 42 18.18	24.80	32.11	+ 9 41 50.6	49.8	-17.5
39	B. D. +32° 508	9	43 56.12	+ 0.28	-49.71	2 43	6.69	32 26 9.28	15.92	6.53	+32 26 7.1	6.6	-24.7
40	B. D. +31° 490	9	45 18.28	0.27	49.71	2 44	28.84	31 34 3.28	9.72	7.42	31 33 60.2	59.5	24.3
41	B. D. +31° 497	8	48 16.90	0.26	49.71	2 47	27.45	31 14 36.20	43.35	7.75	31 14 32.7	32.8	23.8
42	B. D. +30° 465	9	50 45.63	0.26	49.71	2 49	56.18	31 10 57.58	64.10	7.81	31 10 54.0	53.5	23.6
43	B. D. +31° 511	8	53 0.79	0.27	49.71	2 52	11.35	31 37 23.48	29.15	7.36	31 37 20.4	18.9	23.4
44	B. D. +31° 524	9	56 5.57	+ 0.27	-49.71	2 55	16.13	31 33 57.68	63.98	7.42	+31 33 54.5	53.7	-23.1
45	B. D. +30° 484	9	59 46.42	+ 0.26	-49.71	2 58	56.97	30 39 22.98	28.98	8.35	+30 39 18.9	17.7	-22.4
46	β Persei	9	2 35.07	0.37	49.72	3 1	45.72	40 34 33.62	41.58	1.66	40 34 39.5	40.3	25.0
47	δ Arietis	9	6 49.42	0.15	49.72	3 5	59.85	19 21 28.22	35.55	20.45	19 21 12.1	12.2	17.9
48	ζ Arietis	9	10 3.99	0.16	49.70	3 9	14.43	20 40 58.68	65.65	18.97	20 40 44.1	43.8	18.0
49	B. D. +28° 516	9	15 12.31	0.24	49.72	3 14	22.83	28 41 35.62	42.28	10.39	28 41 29.5	28.4	19.9
50	B. D. +26° 550	9	18 27.56	+ 0.22	-49.72	3 17	38.06	27 3 11.58	17.92	12.10	+27 3 3.8	2.9	-19.0

Time.

Barom.

Att.
Ther.Ext.
Ther.

Bisections are made at II and V, except as noted below.

Eq. Pt. Cor. from stars.

No.

A.

B.

d h m

cm.

°

°

13 5 10

.....

.....

- 0.6

5 46

75.74

- 0.4

- 0.6

6 13

75.76

- 0.1

+ 0.2

15 1 51

75.18

+11.0

10.4

2 27

75.19

+10.5

9.8

2 42

.....

.....

9.6

3 4

.....

.....

+ 9.2

20. Bisections at c_1 , c_2 , c_4 and c_5 .
 23. Bisections at III and V.
 35. Bisection at II.
 38. Bisections at II and VI.
 49. Bisections at II and VII.

Notes.
 1-19. Seeing 4.
 20-50. Seeing 3-4.

Adopted Equator Point Corrections.

A. B.
 " " "
 1-19, from stars * *
 20, from nadir +3.96 -4.76
 21-50, from stars * *
 * Interpolated from diagram.

17

+3.3

-2.8

18

3.7

4.4

19

2.7

4.0

21

2.1

3.5

22

3.2

3.6

23

4.3

3.4

24

4.0

3.4

29

3.0

[6.4]

38

[1.6]

4.5

46

2.5

5.2

47

4.0

3.0

48

+3.1

-3.5

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECI.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ξ Tauri	9	m s 22 39.65	s +0.07	-49.74	h m s 3 21 50.00	-5.06	9 23 45.95	52.18	32.62	+ 9 23 17.7	16.7	-12.9
2	B. D. +27° 515 ¹	9	26 12.86	0.22	49.72	3 25 23.36	5.72	27 14 15.80	23.08	11.92	27 14 8.1	8.3	18.1
3	B. D. +27° 529	9	30 56.83	0.22	49.72	3 30 7.33	5.76	27 16 2.92	8.62	11.89	27 15 55.2	53.9	17.5
4	B. D. +24° 533	9	36 15.39	0.20	49.72	3 35 25.87	5.69	24 41 31.30	39.18	14.62	24 41 20.9	21.7	16.1
5	B. D. +25° 593	9	38 2.48	0.20	49.72	3 37 12.96	5.73	25 22 10.62	18.68	13.90	25 22 0.9	1.8	16.1
6	B. D. +26° 608	9	40 7.36	0.22	49.72	3 39 17.86	5.80	26 35 4.75	11.58	12.62	26 34 56.3	56.0	16.2
7	B. D. +24° 562	9	41 57.02	+0.20	-49.72	3 41 7.50	-5.71	24 13 1.80	9.52	15.14	+24 12 50.9	51.4	-15.2
8	B. D. +23° 562	9	44 23.91	+0.19	-49.72	3 43 34.38	-5.72	23 56 59.38	66.78	15.43	+23 56 48.2	48.4	-14.8
9	B. D. +25° 631	9	46 50.86	0.21	49.72	3 46 1.35	5.81	25 42 20.48	27.58	13.56	25 42 11.1	11.0	15.0
10	B. D. +25° 639	9	48 23.45	0.21	49.72	3 47 33.94	5.82	25 38 41.02	48.20	13.62	25 38 31.6	31.6	14.8
11	B. D. +23° 589	9	51 36.07	0.19	49.72	3 50 46.54	5.74	23 18 40.70	47.82	16.13	23 18 28.8	28.7	13.7
12	B. D. +23° 594	8	53 18.00	0.19	49.72	3 52 28.47	5.77	23 48 3.48	11.55	15.61	23 47 52.1	53.0	13.6
13	B. D. +22° 613	9	55 6.68	0.18	49.72	3 54 17.14	5.75	23 7 22.12	28.82	16.34	23 7 10.0	9.5	13.2
14	B. D. +23° 613	9	0 12.38	+0.19	-49.72	3 59 22.85	-5.80	23 31 49.75	57.82	15.91	+23 31 38.0	38.9	-12.6
15	B. D. +21° 593	9	3 15.41	+0.17	-49.72	4 2 25.86	-5.75	21 45 41.40	49.08	17.85	+21 45 27.7	28.3	-11.7
16	B. D. +23° 642	9	7 21.81	0.19	49.72	4 6 32.28	5.84	23 19 24.52	32.08	16.14	23 19 12.5	13.0	11.6
17	B. D. +22° 654	9	8 57.62	0.18	49.72	4 8 8.08	5.81	22 27 35.58	42.98	17.09	22 27 22.6	22.9	11.1
18	B. D. +22° 663	8	10 58.86	0.18	49.72	4 10 9.32	5.83	22 43 24.18	31.78	16.80	22 43 11.5	12.0	10.9
19	B. D. +21° 617	9	12 50.36	0.18	49.72	4 12 0.82	5.82	22 6 53.32	60.18	17.48	22 6 40.0	39.7	10.5
20	B. D. +21° 623	9	14 36.81	0.17	49.72	4 13 47.26	5.80	21 32 19.50	25.30	18.11	21 32 5.5	4.2	10.1
21	B. D. +20° 741	8	16 36.69	+0.16	-49.72	4 15 47.13	-5.79	20 57 23.85	31.12	18.76	+20 57 9.2	9.4	-9.7
22	B. D. +21° 641	9	19 13.63	+0.17	-49.72	4 18 24.08	-5.83	21 30 41.40	48.08	18.15	+21 30 27.4	26.9	-9.4
23	B. D. +20° 778	9	29 47.22	0.16	49.71	4 28 57.67	5.86	20 54 6.65	14.10	18.85	20 53 52.0	52.2	7.8
24	B. D. +19° 744	8	31 38.47	0.15	49.71	4 30 48.91	5.81	19 33 42.28	48.48	20.36	19 33 26.1	25.1	7.2
25	B. D. +18° 666	9	33 37.09	0.14	49.71	4 32 47.52	5.78	18 32 25.10	30.05	21.53	18 32 7.7	5.5	6.7
26	B. D. +18° 684	9	37 56.71	0.14	49.71	4 37 7.14	5.80	18 32 20.88	26.48	21.53	18 32 3.5	1.9	6.1
27	B. D. +18° 727	9	42 13.18	0.14	49.71	4 41 23.61	5.81	18 18 51.12	56.78	21.80	18 18 33.4	31.9	5.4
28	B. D. +18° 738	9	45 22.73	+0.15	-49.71	4 44 33.17	-5.86	19 1 32.08	39.40	20.98	+19 1 15.2	15.3	-5.2
29	B. D. +17° 814	9	51 36.71	+0.14	-49.71	4 50 47.14	-5.84	17 51 4.12	12.32	22.34	+17 50 45.9	46.9	-4.0
30	B. D. +18° 765	9	53 25.61	0.15	49.71	4 52 35.05	5.88	18 50 40.68	46.22	21.20	18 50 23.5	21.9	4.0
31	γ Tauri	9	58 2.63	0.17	49.70	4 57 13.09	6.02	21 27 8.20	15.58	18.26	21 26 54.0	54.3	3.8
32	B. D. +15° 749	9	3 17.05	0.12	49.70	5 2 27.47	5.80	15 43 49.10	55.85	24.85	15 43 28.3	27.8	1.9
33	B. D. +15° 759	9	6 52.27	0.12	49.70	5 6 2.69	5.82	15 55 42.72	49.98	24.63	15 55 22.2	22.2	1.4
34	B. D. +16° 735	9	9 29.28	0.13	49.70	5 8 39.71	5.85	16 34 3.92	10.55	23.86	16 33 44.1	43.3	1.2
35	B. D. +16° 742	8	12 15.44	+0.12	-49.70	5 11 25.86	-5.85	16 14 52.80	59.22	24.25	+16 14 32.6	31.8	-0.7
36	B. D. +15° 790	9	15 54.71	+0.12	-49.70	5 15 5.13	-5.84	15 32 28.90	35.02	25.10	+15 32 7.9	6.8	-0.1
37	B. D. +15° 805	9	18 42.08	0.12	49.70	5 17 52.50	5.86	15 57 5.02	11.32	24.61	15 56 44.4	43.6	+0.2
38	B. D. +15° 809	8	20 17.70	0.12	49.70	5 19 28.12	5.84	15 16 35.48	42.65	25.42	15 16 14.0	14.1	0.6
39	B. D. +15° 822	9	22 26.17	0.12	49.70	5 21 36.59	5.84	15 10 38.20	45.50	25.54	15 10 16.6	16.8	0.9
40	B. D. +15° 837	9	25 38.17	0.12	49.70	5 24 48.59	5.86	15 17 19.92	26.45	25.41	15 16 58.5	57.9	1.3
41	B. D. +14° 939	9	27 59.51	0.11	49.70	5 27 9.92	5.82	14 9 15.55	23.15	26.80	14 8 52.7	53.2	1.9
42	B. D. +13° 930	9	30 36.99	+0.10	-49.69	5 29 47.40	-5.79	13 13 32.62	38.70	27.95	+13 13 8.7	7.6	+2.4
43	σ Orionis	9	34 38.49	-0.02	-49.70	5 33 48.78	-5.24	357 21 12.78	21.92	51.48	- 2 39 34.6	32.7	+5.9
44	B. D. +13° 964	9	38 18.99	+0.10	49.69	5 37 29.40	5.81	13 6 9.58	16.98	28.11	+13 5 45.5	45.7	3.5
45	B. D. +12° 882	9	40 0.12	0.09	49.69	5 39 10.52	5.79	12 22 42.25	48.42	29.02	12 22 17.2	16.2	3.9
46	B. D. +12° 896	9	42 30.53	0.09	49.69	5 41 40.93	5.79	12 18 29.15	37.05	29.11	12 18 4.0	4.8	4.2
47	B. D. +12° 910	9	44 31.65	0.09	49.69	5 43 42.05	5.79	12 7 25.28	32.75	29.34	12 6 59.9	60.3	4.6
48	B. D. +11° 960	9	48 32.75	0.09	49.68	5 47 43.16	5.79	11 47 58.50	66.82	29.76	11 47 32.7	33.9	5.2
49	B. D. +12° 950	9	50 56.17	+0.10	-49.68	5 50 6.59	-5.84	12 59 23.12	31.18	28.26	+12 58 58.9	59.7	+5.3
50	B. D. +12° 968	9	54 11.07	+0.10	-49.68	5 53 21.49	-5.84	12 48 13.42	21.70	28.50	+12 47 48.9	49.9	+5.8
51	B. D. +11° 1009	8	58 45.31	0.09	49.68	5 57 55.72	5.81	11 41 16.58	24.70	29.92	11 40 50.6	51.5	6.5
52	ν Orionis	9	2 47.24	0.11	49.65	6 1 57.67	5.94	14 47 5.52	26.05	26.05	14 46 43.4	....	6.7
53	η Geminorum	8	9 46.29	0.18	49.68	6 8 56.80	6.28	22 32 16.25	21.88	17.10	22 32 3.0	1.5	6.5
54	μ Geminorum	9	17 50.46	0.18	49.67	6 17 0.97	6.31	22 33 59.32	67.52	17.07	22 33 46.1	47.2	7.8
55	δ Monocerotis	9	19 23.42	+0.03	-49.69	6 18 33.78	-5.60	4 39 2.48	10.28	39.62	+ 4 38 26.8	27.4	+10.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°	34. Bisections at II and VI. 52. Bisection at II.	1	"	"
15 3 24	75.19	9.6	8.8		31	[+0.9]	-4.9
4 1	75.18	9.0	8.0		43	2.4	4.7
4 25	.....	7.4	7.4		52	3.8	4.9
5 17	.....	6.6	6.6		53	2.3	....
6 13	75.14	7.2	6.1		54	2.3	3.0
					55	2.9	5.0
						+3.2	-4.2

Notes.
18, 30. Very faint.
1-55. Seeing 3-4.

Adopted Equator Point Corrections.

A. B.
1-55, from stars..... * *

*Interpolated from diagram.

UPDEGRAFF, OBSERVER.

1901 JANUARY 16.

CLAMP WEST.

LITTELL, ASSISTANT.

NO.	NAME.	THDS.	MEAN THREAD.	ϵ' SEC δ + TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	α Ursæ Minoris	9	m s 23 33.56	s +34.26	[-48.94]	h m s 1 23	s	88 46 0.38	8.95	66.22	+88 47 10.9	10.7	....
2	α Trianguli	9	48 17.20	0.40	49.98	1 47 27.60	-4.87	29 6 4.52	12.08	9.70	29 5 60.0	59.0	-28.4
3	β Arietis	9	50 1.30	0.26	50.04	1 49 11.56	4.68	20 19 48.38	57.20	18.86	20 19 34.8	35.0	25.4
4	γ Andromedæ	9	58 40.27	0.65	50.00	1 57 50.92	5.42	41 51 23.55	31.90	2.88	41 51 31.4	31.4	31.9
5	α Arietis	9	2 26.62	0.30	49.99	2 1 36.92	4.87	22 59 58.18	66.75	16.02	22 59 47.3	47.4	25.4
6	B. D. +36° 426	9	5 32.32	0.55	50.00	2 4 42.87	5.32	37 14 12.42	20.52	1.65	37 14 15.8	15.5	30.0
7	B. D. +38° 434	9	7 35.32	+0.57	-50.00	2 6 45.89	-5.39	38 25 25.22	33.38	0.49	+38 25 29.8	29.5	-30.2
8	B. D. +37° 512	9	10 20.18	+0.56	-50.00	2 9 30.74	-5.41	37 55 29.58	36.82	0.98	+37 55 33.6	32.4	-29.8
9	B. D. +37° 516	9	12 9.53	+0.55	50.00	2 11 20.08	5.40	37 22 34.88	42.72	1.51	+37 22 38.4	37.8	29.4
10	α Ceti	9	15 12.02	-0.06	49.98	2 14 21.96	4.32	356 35 8.08	16.85	51.16	-3 25 37.9	37.6	14.9
11	B. D. +35° 470	9	20 15.54	+0.51	50.00	2 19 26.05	5.43	35 31 35.30	43.82	3.33	+35 31 36.9	37.1	28.1
12	B. D. +34° 442	9	23 21.73	0.49	50.00	2 22 32.22	5.44	34 51 27.30	36.50	3.99	34 51 28.3	29.1	27.6
13	B. D. +34° 448	9	25 59.02	0.49	50.00	2 25 9.51	5.45	34 29 42.58	50.25	4.35	34 29 43.2	42.5	27.2
14	B. D. +33° 463	9	29 35.17	+0.47	-49.99	2 28 45.65	-5.46	33 39 9.02	16.48	5.20	+33 39 8.7	7.9	-26.6
15	B. D. +32° 478	9	33 38.46	+0.46	-49.99	2 32 48.93	-5.47	32 59 39.32	46.30	5.84	+32 59 38.4	37.1	-26.0
16	B. D. +32° 484	9	34 44.56	0.45	49.99	2 33 55.02	5.46	32 23 30.28	36.95	6.44	32 23 28.7	27.1	25.6
17	B. D. +32° 490	9	37 33.51	0.45	49.99	2 36 43.97	5.49	32 29 1.12	7.55	6.35	32 28 59.6	57.8	25.4
18	μ Ceti	9	40.26.79	0.11	49.99	2 39 36.91	4.81	9 42 16.50	24.45	31.46	9 41 50.0	49.6	17.4
19	B. D. +32° 508	9	43 56.22	0.44	49.99	2 43 6.67	5.55	32 26 8.68	16.22	6.40	32 26 7.1	6.4	24.7
20	B. D. +31° 490	9	45 18.31	0.43	49.99	2 44 28.75	5.53	31 34 1.32	9.42	7.26	31 33 58.8	58.8	24.3
21	B. D. +32° 522	9	48 29.87	+0.44	-49.99	2 47 40.32	-5.60	32 30 59.95	67.45	6.33	+32 30 58.4	57.7	-24.2
22	B. D. +30° 465	9	50 45.68	+0.42	-49.99	2 49 56.11	-5.57	31 10 56.92	64.68	7.65	+31 10 54.1	53.6	-23.6
23	B. D. +31° 511	9	53 0.77	0.43	49.99	2 52 11.21	5.61	31 37 22.85	29.70	7.21	31 37 20.4	19.1	23.4
24	B. D. +31° 524	9	56 5.62	0.43	49.99	2 55 16.06	5.63	31 33 57.65	64.92	7.27	31 33 55.1	54.3	23.1
25	B. D. +30° 484	9	59 46.48	0.41	49.99	2 58 56.90	5.63	30 39 22.70	29.98	8.18	30 39 19.2	18.4	22.4
26	β Persei	9	2 35.13	0.60	50.03	3 1 45.74	6.12	40 34 33.00	41.38	1.63	40 34 39.2	39.6	25.0
27	δ Arietis	9	6 49.58	0.24	49.98	3 5 59.83	5.28	19 21 27.82	35.50	20.04	19 21 12.5	12.1	17.9
28	ζ Arietis	9	10 4.14	+0.25	-49.95	3 9 14.40	-5.33	20 40 58.18	66.22	18.60	+20 40 44.3	44.2	-17.9
29	B. D. +28° 516	9	15 12.44	+0.37	-49.99	3 14 22.82	-5.68	28 41 35.40	41.82	10.19	+28 41 29.8	28.2	-19.9
30	B. D. +26° 550	9	18 27.68	0.35	49.98	3 17 38.05	5.64	27 3 10.25	17.45	11.88	27 3 3.0	2.2	19.0
31	ξ Tauri	9	22 39.86	0.10	49.99	3 21 49.98	5.05	9 23 44.88	51.35	32.03	9 23 17.6	16.0	12.8
32	B. D. +27° 515	9	26 12.92	0.35	49.98	3 25 23.29	5.71	27 14 14.90	23.68	11.70	27 14 7.8	8.6	18.1
33	B. D. +27° 529	9	30 56.94	0.35	49.98	3 30 7.31	5.75	27 16 1.92	8.18	11.67	27 15 54.8	53.1	17.5
34	B. D. +26° 590	9	34 25.04	+0.34	-49.98	3 33 35.40	-5.76	26 54 12.82	19.68	12.04	+26 54 5.3	4.3	-17.0
35	B. D. +25° 593	9	38 2.54	+0.32	-49.98	3 37 12.88	-5.72	25 22 11.18	18.70	13.64	+25 22 2.1	1.7	-16.1
36	B. D. +26° 608	9	40 7.44	0.34	49.98	3 39 17.80	5.79	26 35 3.55	11.15	12.38	26 34 55.7	55.4	16.2
37	B. D. +24° 562	9	41 57.11	0.30	49.98	3 41 7.43	5.70	24 13 1.65	10.22	14.85	24 12 51.3	52.0	15.2
38	B. D. +23° 562	9	44 23.98	0.30	49.98	3 43 34.30	5.71	23 56 58.68	66.90	15.13	23 56 48.1	48.4	14.8
39	B. D. +25° 631	9	46 50.97	0.32	49.98	3 46 1.31	5.80	25 42 20.55	27.45	13.29	25 42 11.7	10.8	15.0
40	B. D. +25° 639	9	48 23.58	+0.32	-49.98	3 47 33.92	-5.81	25 38 40.70	47.52	13.36	+25 38 31.8	30.8	-14.8
41	B. D. +23° 589	9	51 36.16	+0.28	-49.98	3 50 46.46	-5.73	23 18 39.20	47.75	15.81	+23 18 27.8	28.6	-13.7
42	B. D. +23° 594	9	53 18.08	0.29	49.98	3 52 28.39	5.76	23 48 3.75	11.75	15.30	23 47 52.9	53.1	13.6
43	B. D. +22° 613	9	55 6.81	0.28	49.98	3 54 17.11	5.74	23 7 20.42	28.32	16.01	23 7 8.9	8.9	13.2
44	B. D. +23° 613	9	0 12.52	0.29	49.98	3 59 22.83	5.80	23 31 48.92	57.80	15.58	23 31 37.7	38.8	12.6
45	B. D. +21° 593	9	3 15.56	0.26	49.98	4 2 25.84	5.74	21 45 41.05	49.55	17.48	21 45 27.9	28.7	11.7
46	B. D. +23° 632	9	5 12.96	+0.29	-49.98	4 4 23.27	-5.84	23 43 30.00	37.30	15.38	+23 43 19.0	18.5	-12.0
47	B. D. +23° 642	9	7 21.95	+0.28	-49.98	4 6 32.25	-5.83	23 19 23.48	32.45	15.81	+23 19 12.0	13.3	-11.6
48	B. D. +22° 654	9	8 57.75	0.27	49.98	4 8 8.04	5.80	22 27 35.48	43.12	16.73	22 27 23.1	23.0	11.1
49	B. D. +22° 663	9	10 59.02	0.27	49.97	4 10 9.32	5.83	22 43 23.12	31.68	16.45	22 43 11.0	11.8	10.9
50	B. D. +21° 617	9	12 50.45	0.26	49.97	4 12 0.74	5.81	22 6 51.55	60.38	17.10	22 6 38.8	39.9	10.5
51	B. D. +21° 623	6	14 36.97	0.26	49.97	4 13 47.26	5.80	21 32 19.28	27.10	17.73	21 32 5.7	5.8	10.1
52	B. D. +20° 744	9	17 25.19	+0.24	-49.97	4 16 35.46	-5.77	20 35 29.60	38.00	18.78	+20 35 15.1	15.8	-9.4

Eq. Pt. Cor. from stars.

No.	A.	B.
2	"	"
3	+2.8	-4.5
4	4.1	4.4
5	4.4	3.8
6	4.9	3.4
10	3.2	5.2
18	2.6	5.0
26	3.2	5.0
27	4.0	3.4
28	3.2	4.5
31	[+1.3]	-4.8

Bisections are made at II and V, except as noted below.

- Notes.
1-52. Seeing 3.
49. Unsteady
1. Bisections at c_1, c_2, c_4 and c_5 .
7, 16. Bisections at III and V.
51. Bisections at IV and VI.

Adopted Equator Point Corrections.

- A. B.
1, from nadir. +3.40 -4.99
2-52, from stars *
* Interpolated from diagram.

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +21° 641	9	m s 19 13.79	s +0.26	s -49.97	h m s 4 18 24.08	s -5.82	° ' " 21 30 40.58	" 48.62	" 17.75	° ' " +21 30 27.1	" 27.5	" -9.4
2	B. D. +20° 778	9	29 47.37	0.24	49.97	4 28 57.64	5.85	20 54 5.40	14.50	18.42	20 53 51.1	52.7	7.8
3	B. D. +19° 744	9	31 38.62	0.23	49.97	4 30 48.88	5.81	19 33 41.45	47.32	19.91	19 33 25.7	24.0	7.2
4	B. D. +18° 666	9	33 37.21	0.21	49.97	4 32 47.45	5.77	18 32 23.20	30.70	21.05	18 32 6.3	6.3	6.7
5	B. D. +18° 684	9	37 56.89	0.21	49.97	4 37 7.13	5.80	18 32 19.45	27.15	21.05	18 32 2.6	2.7	6.1
6	B. D. +18° 727	9	42 13.38	0.21	49.97	4 41 23.62	5.81	18 18 51.30	57.25	21.31	18 18 34.2	32.6	5.4
7	B. D. +18° 738	9	45 22.98	+0.22	-49.97	4 44 33.23	-5.85	19 1 32.22	39.05	20.52	+19 1 15.9	15.2	-5.1
8	π^5 Orionis	9	49 57.73	+0.01	-49.96	4 49 7.77	5.25	2 17 16.05	25.10	42.15	+2 16 38.1	39.6	-0.5
9	B. D. +17° 814	9	51 36.89	0.20	49.97	4 50 47.12	5.83	17 51 4.42	12.28	21.85	17 50 46.6	47.1	4.0
10	τ Tauri	9	58 2.82	0.25	49.98	4 57 13.10	6.01	21 27 7.38	15.58	17.86	21 26 53.6	54.4	3.8
11	B. D. +15° 749	9	3 17.19	0.17	49.96	5 2 27.40	5.79	15 43 48.70	55.08	24.32	15 43 28.4	27.4	1.8
12	B. D. +15° 759	9	6 52.52	0.17	49.96	5 6 2.73	5.81	15 55 42.38	49.55	24.10	15 55 22.3	22.1	1.4
13	B. D. +16° 742	9	12 15.62	+0.18	49.96	5 11 25.84	5.85	16 14 51.60	58.80	23.74	+16 14 31.8	31.7	-0.7
14	τ Orionis	7	13 40.21	-0.10	-50.02	5 12 50.15	-5.05	353 4	.....	.....	-6 56	.....	.....
15	B. D. +15° 790	9	15 54.89	+0.17	-49.96	5 15 5.10	-5.83	15 32 28.28	35.52	24.58	+15 32 7.6	7.6	0.0
16	B. D. +15° 809	9	20 17.79	0.16	49.96	5 19 27.99	5.84	15 16 34.88	42.55	24.91	15 16 13.9	14.3	+0.6
17	B. D. +15° 822	9	22 26.37	0.16	49.96	5 21 36.57	5.84	15 10 37.22	45.80	25.03	15 10 16.1	17.4	1.0
18	B. D. +14° 939	9	27 59.71	0.15	49.95	5 27 9.91	5.82	14 9 16.50	23.18	26.26	14 8 54.1	53.6	1.9
19	B. D. +13° 930	9	30 37.17	+0.14	49.95	5 29 47.36	5.79	13 13 31.68	39.10	27.39	+13 13 8.2	8.4	2.5
20	δ Orionis	9	34 38.74	-0.05	-49.91	5 33 48.74	-5.25	357 21 11.32	21.50	50.44	-2 39 35.2	32.3	+6.0
21	B. D. +13° 964	9	38 19.16	+0.14	-49.95	5 37 29.35	-5.81	13 6 8.45	16.45	27.54	+13 5 44.7	45.6	+3.6
22	B. D. +12° 884	9	40 19.29	0.13	49.95	5 39 29.47	5.80	12 51 3.58	11.90	27.85	12 50 39.5	40.7	3.9
23	B. D. +12° 896	9	42 30.74	0.13	49.95	5 41 40.92	5.79	12 18 29.20	36.62	28.52	12 18 4.5	4.8	4.3
24	B. D. +12° 910	9	44 31.83	0.12	49.95	5 43 42.00	5.79	12 7 25.80	34.02	28.75	12 7 0.8	1.9	4.6
25	B. D. +12° 937	9	49 17.85	0.13	49.95	5 48 28.03	5.81	12 24 39.35	46.68	28.41	12 24 14.6	14.9	5.2
26	B. D. +11° 970	9	50 58.57	+0.12	-49.94	5 50 8.75	-5.79	11 47 52.28	60.30	29.17	+11 47 26.8	27.8	+5.5
27	B. D. +11° 986	9	54 41.08	+0.12	-49.94	5 53 51.26	-5.80	11 45 36.22	45.12	29.22	+11 45 10.7	12.6	+6.0
28	B. D. +11° 1002	9	57 25.54	0.12	49.94	5 56 35.72	5.80	11 39 38.68	46.02	29.34	11 39 13.0	13.3	6.4
29	γ Orionis	9	2 47.43	0.15	49.89	6 1 57.64	5.93	14 47 6.05	.....	25.52	14 46 44.2	.....	6.8
30	η Geminorum	9	9 46.44	0.25	49.90	6 8 56.75	6.28	22 32 15.65	22.58	16.75	22 32 2.4	2.4	6.5
31	μ Geminorum	9	17 50.64	0.25	49.93	6 17 0.96	6.30	22 33 59.40	66.32	16.72	22 33 46.2	46.2	7.8
32	δ Monocerotis	9	19 23.74	+0.04	-50.02	6 18 33.85	-5.60	4 39 2.72	10.20	38.82	+4 38 27.5	28.0	+10.3

UPDEGRAFF, OBSERVER.

1901 JANUARY 18.

CLAMP WEST.

LAWTON, ASSISTANT.

33	α Ursæ Minoris	9	24 5.61	+0.74	[-49.38]	1 23	.....	88 45 58.85	.....	71.75	+88 47 14.3	.....	.....
34	α Trianguli	9	48 17.41	0.00	49.82	1 47 27.56	-4.84	29 6 5.38	11.72	10.54	29 5 59.5	58.8	-28.3
35	β Arietis	9	50 1.37	-0.01	49.86	1 49 11.52	4.66	20 19 50.02	57.48	20.48	20 19 34.3	34.6	25.2
36	γ Andromedæ	9	58 40.74	0.00	49.86	1 57 50.89	5.38	41 51 23.85	31.00	3.13	41 51 31.6	31.7	31.9
37	α Arietis	9	2 26.76	0.00	49.86	2 1 36.91	4.84	23 0 0.22	7.68	17.41	22 59 47.6	47.9	25.3
38	B. D. +36° 426	9	5 32.74	0.00	-49.86	2 4 42.88	-5.28	37 14 12.45	21.08	1.79	+37 14 15.3	16.9	-29.9
39	B. D. +38° 434	7	7 35.75	0.00	-49.86	2 6 45.89	-5.36	38 25 24.58	33.38	0.53	+38 25 28.6	30.4	-30.1
40	B. D. +37° 512	9	10 20.61	0.00	49.86	2 9 30.75	5.37	37 55 29.45	36.35	1.06	+37 55 32.9	32.9	29.7
41	B. D. +37° 516	9	12 9.97	0.00	49.86	2 11 20.11	5.37	37 22 35.30	41.88	1.65	+37 22 38.2	37.8	29.4
42	α Ceti	9	15 11.82	-0.01	49.85	2 14 21.95	4.30	356 35 11.72	20.85	55.60	-3 25 39.1	37.1	14.7
43	B. D. +34° 435	9	21 3.49	0.00	49.86	2 20 13.63	5.36	34 24 36.20	43.50	4.82	+34 24 35.9	36.3	27.6
44	B. D. +34° 442	9	23 22.19	0.00	-49.86	2 22 32.33	-5.40	34 51 27.28	35.68	4.34	+34 51 27.5	28.9	-27.5
45	B. D. +35° 497	9	26 55.14	0.00	-49.87	2 26 5.27	-5.47	35 42 40.92	47.55	3.43	+35 42 42.0	41.7	-27.4
46	B. D. +33° 463	9	29 35.53	0.00	49.87	2 28 45.66	5.42	33 39 9.15	15.92	5.65	33 39 8.1	7.9	26.5
47	B. D. +34° 483	9	33 36.48	0.00	49.87	2 32 46.61	5.51	34 50 48.35	56.15	4.36	34 50 48.4	49.4	26.5
48	B. D. +32° 484	9	34 44.86	0.00	49.87	2 33 54.99	5.43	32 23 30.55	36.35	7.00	32 23 28.0	27.0	25.6
49	μ Ceti	9	40 26.78	-0.01	-49.38	2 39 36.90	-4.90	9 42 18.98	25.68	34.20	+9 41 49.4	49.0	-17.3

Time.

Barom.

Att.
Ther.Ext.
Ther.

Bisections are made at II and V, except as noted below.

Eq. Pt. Cor. from stars.

No.

A.

B.

d h m
16 4 36
5 0
5 24
6 13
18 1 20
2 4

cm.
74.69
.....
74.70
74.70
75.55
75.58

°
+11.5
.....
10.5
+9.7
-4.4
-3.8

°
+11.6
11.2
10.4
+10.1
-3.0
-4.9

29. Bisection at II.
33. Bisections at ϵ_1 and IV.
39. Bisections at IV and V.
48. Bisections at III and V.

Notes.
1-32, 33-49. Seeing 3.
14. Observation hurried.
26. Faint; very poor.
27. Poor.

Adopted Equator Point Corrections.

1-32, from stars.....
33, from nadir..... +2.89
34-49, from stars.....
* Interpolated from diagram.

8
10
20
29
30
31
32
34
35
36
37
42
49

"
+2.8
[4.1]
1.2
2.6
2.5
2.1
2.7
3.9
3.8
4.1
3.8
+2.7

"
-5.8
[5.6]
...
4.0
4.1
5.0
3.4
3.2
3.1
3.0
4.9
-3.6

OBSERVATIONS OF EROS REFERENCE STARS.

D 65

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0 SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +32° 508	9	m 43 56.53	s 0.00	-49.87	2 43 6.66	-5.52	32 26 8.85	15.52	6.95	+32 26 6.4	6.1	-24.6
2	B. D. +31° 490	9	45 18.63	0.00	49.87	2 44 28.76	5.50	31 34 2.55	9.55	7.90	31 33 59.1	59.2	24.2
3	B. D. +30° 465	9	50 46.01	0.00	49.87	2 49 56.14	5.54	31 10 57.70	63.85	8.32	31 10 53.9	53.0	23.5
4	B. D. +31° 511	9	53 1.11	0.00	49.87	2 52 11.24	5.58	31 7 23.00	29.22	7.84	31 37 19.6	18.9	23.4
5	B. D. +31° 524	9	56 5.96	0.00	49.88	2 55 16.08	5.60	31 33 58.18	64.05	7.90	31 33 54.8	53.7	23.0
6	B. D. +30° 484	9	59 46.82	0.00	49.88	2 58 56.94	5.60	30 39 22.22	29.15	8.89	30 39 17.7	17.8	22.3
7	β Persei	9	2 35.61	0.00	-49.94	3 1 45.73	-6.09	40 34 33.32	40.30	1.77	+40 34 39.4	39.6	-25.1
8	δ Arietis	9	6 49.71	-0.01	-49.89	3 5 59.82	-5.25	19 21 29.90	36.35	21.76	+19 21 12.6	12.1	-17.9
9	ζ Arietis	9	10 4.31	0.01	49.89	3 9 14.42	5.30	20 40 58.82	66.08	20.18	20 40 43.1	43.4	17.9
10	B. D. +26° 550	9	18 27.98	0.00	49.88	3 17 38.10	5.62	27 3 11.58	16.95	12.87	27 3 3.1	1.6	19.0
11	ϵ Tauri	9	22 39.83	0.01	49.87	3 21 49.94	5.03	9 23 46.08	53.02	34.69	9 23 15.8	15.9	12.7
12	B. D. +27° 515	9	26 14.08	0.00	49.88	3 25 24.20	5.68	27 14 16.20	22.90	12.67	27 14 7.8	7.7	18.1
13	B. D. +27° 529	9	30 57.17	0.00	49.88	3 30 7.29	5.72	27 16 3.05	8.50	12.64	27 15 54.7	53.4	17.5
14	B. D. +24° 537	9	38 40.30	-0.01	-49.88	3 37 50.41	-5.68	24 46 17.75	25.15	15.45	+24 46 6.6	7.2	-15.8
15	B. D. +25° 607	5	40 28.53	-0.01	-49.88	3 39 38.64	-5.71	25 18 16.28	24.02	14.85	+25 18 5.7	6.7	-15.7
16	B. D. +24° 562	9	41 57.27	0.01	49.88	3 41 7.38	5.68	24 13 2.85	10.05	16.09	24 12 51.0	51.5	15.2
17	B. D. +23° 562	9	44 24.21	0.01	49.88	3 43 34.32	5.68	23 56 59.35	67.25	16.39	23 56 47.2	48.4	14.8
18	B. D. +25° 631	9	46 51.18	0.01	49.88	3 46 1.29	5.77	25 42 22.08	27.72	14.40	25 42 11.9	10.7	15.0
19	B. D. +25° 639	9	48 23.83	0.01	49.88	3 47 33.94	5.78	25 38 40.68	48.30	14.47	25 38 30.4	31.2	14.8
20	B. D. +23° 589	9	51 36.35	0.01	49.88	3 50 46.46	5.71	23 18 40.05	47.58	17.13	23 18 27.2	27.9	13.6
21	B. D. +23° 594	9	53 18.33	-0.01	-49.88	3 52 28.44	-5.74	23 48 4.98	12.02	16.57	+23 47 52.6	52.9	-13.6
22	B. D. +22° 617	9	55 56.47	-0.01	-49.88	3 55 6.58	-5.72	22 55 33.12	40.15	17.58	+22 55 19.8	20.0	-13.0
23	B. D. +23° 611	9	59 48.09	0.01	49.88	3 58 58.20	5.76	23 14 29.45	38.10	17.22	23 14 16.5	18.3	12.5
24	B. D. +21° 593	9	3 15.77	0.01	49.88	4 2 25.88	5.72	21 45 42.88	51.78	18.94	21 45 28.2	30.3	11.6
25	B. D. +23° 632	9	5 13.21	0.01	49.88	4 4 23.32	5.82	23 43 30.55	38.20	16.66	23 43 18.0	19.0	12.0
26	B. D. +23° 645	9	7 43.76	0.01	49.88	4 6 53.87	5.81	23 16 12.08	19.12	17.19	23 15 59.0	59.4	11.5
27	B. D. +22° 657	9	9 29.27	0.01	49.88	4 8 39.38	5.78	22 12 21.58	27.90	18.42	22 12 7.3	6.9	11.0
28	B. D. +22° 663	9	10 59.23	-0.01	-49.88	4 10 9.34	-5.81	22 43 25.05	31.10	17.82	+22 43 11.4	10.7	-10.9
29	B. D. +21° 623	9	14 37.12	-0.01	-49.88	4 13 47.23	-5.78	21 32 20.55	26.60	19.20	+21 32 5.5	4.8	-10.0
30	B. D. +21° 643	9	20 23.22	0.01	49.88	4 19 33.33	5.83	21 58 39.52	47.18	18.69	21 58 25.0	25.9	9.4
31	B. D. +20° 756	9	22 9.16	0.01	49.87	4 21 19.28	5.79	20 46 23.12	31.20	20.11	20 46 7.2	8.5	8.8
32	B. D. +20° 761	9	23 44.58	0.01	49.87	4 22 54.70	5.79	20 27 42.58	49.68	20.48	20 27 26.2	26.6	8.5
33	B. D. +21° 657	9	27 7.74	0.01	49.87	4 26 17.86	5.84	21 25 25.85	33.98	19.35	21 25 10.6	12.1	8.3
34	B. D. +19° 744	9	31 38.74	0.01	49.87	4 30 48.86	5.79	19 33 42.98	50.20	21.57	19 33 25.5	26.1	7.2
35	B. D. +18° 727	9	42 13.52	-0.01	-49.86	4 41 23.65	-5.79	18 18 51.92	57.18	23.08	+18 18 32.9	31.5	-1.4
36	B. D. +18° 738	7	45 23.01	-0.01	-49.86	4 44 33.14	-5.84	19 1 33.65	39.58	22.22	+19 1 15.4	14.8	-5.1
37	π^5 Orionis	9	49 57.60	0.01	49.82	4 49 7.73	5.24	2 17 20.40	26.72	45.63	2 16 38.9	38.6	0.3
38	B. D. +17° 814	9	51 36.96	0.01	49.86	4 50 47.09	5.82	17 51 7.75	14.02	23.65	17 50 48.2	47.8	3.9
39	B. D. +15° 749	8	3 17.26	0.01	49.85	5 2 27.40	5.78	15 43 50.45	56.32	26.31	15 43 28.1	27.3	1.8
40	B. D. +17° 867	8	7 19.79	0.01	49.84	5 6 29.94	5.86	17 8 48.18	54.58	24.53	+17 8 27.6	27.4	-1.6
41	τ Orionis	9	13 39.96	0.01	49.87	5 12 50.11	5.04	353 3 45.80	53.28	63.23	-6 57 13.3	12.6	+4.6
42	B. D. +15° 790	9	15 54.82	-0.01	-49.70	5 15 5.11	-5.82	15 32 31.12	36.28	26.55	+15 32 8.6	7.1	0.0
43	B. D. +15° 809	9	20 17.82	-0.01	-49.70	5 19 28.11	-5.83	15 16 38.05	43.95	26.89	+15 16 15.2	14.4	+0.7
44	B. D. +15° 822	9	22 26.27	0.01	49.70	5 21 36.56	5.83	15 10 39.80	46.40	27.01	15 10 16.7	16.7	1.0
45	χ Aurigæ	9	27 9.48	0.00	49.70	5 26 19.78	6.67	32 7 7.75	14.02	23.65	32 7 7.75	7.75	...
46	B. D. +14° 939	9	27 59.63	0.01	49.70	5 27 9.92	5.81	14 9 17.70	24.55	28.34	14 8 53.3	53.5	2.0
47	B. D. +13° 930	9	30 37.14	0.01	49.70	5 29 47.43	5.78	13 13 35.15	40.40	29.55	+13 13 9.5	8.2	2.6
48	σ Orionis	9	34 38.54	0.01	49.71	5 33 48.83	5.25	357 21 15.22	23.82	54.45	-2 39 35.2	33.3	6.3
49	B. D. +13° 964	9	38 19.13	-0.01	-49.70	5 37 29.42	-5.80	13 6 11.68	17.65	29.72	+13 5 45.9	45.3	+3.7
50	B. D. +13° 979	9	42 58.18	-0.01	-49.70	5 42 8.47	-5.84	13 52 10.10	15.38	28.71	+13 51 45.2	44.0	+4.2
51	B. D. +12° 937	9	49 17.65	0.01	49.70	5 48 27.94	5.81	12 24 42.12	48.55	30.63	12 24 15.3	15.3	5.3
52	B. D. +11° 970	8	50 58.46	0.01	49.70	5 50 8.75	5.79	11 47 55.92	61.25	31.46	11 47 28.3	27.1	5.6
53	B. D. +11° 986	9	54 40.96	0.01	49.70	5 53 51.25	5.80	11 45 38.78	45.20	31.51	11 45 11.1	11.0	6.2
54	B. D. +11° 1002	9	57 25.43	0.01	49.70	5 56 35.72	5.80	11 39 40.45	47.98	31.64	11 39 12.6	13.7	6.6
55	ν Orionis	9	2 47.39	0.01	49.68	6 1 57.68	5.94	14 47 7.30	13.45	27.52	14 46 43.6	43.3	6.8
56	η Geminorum	9	9 46.48	-0.01	-49.68	6 8 56.77	-6.28	22 32 16.95	22.85	18.06	+22 32 2.5	2.1	+6.5

Time.							Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			Eq. Pt. Cor. from stars.					
											No.	A.	B.					
d	h	m	cm.	°	°													
18	2	55	.....	...	-5.5	15. 17. 25. 36.	Bisections at III and V.							7	"	"		
	3	12	75.63	-4.6	...									8	+2.8	-4.0		
	3	58	.....	...	6.0	Note.								9	3.6	2.5		
	5	5	75.65	5.5	6.3	1-56. Seeing 3.								11	4.1	2.8		
	6	7	75.62	-5.7	-6.4									37	2.7	3.9		
											Adopted Equator Point Corrections.					41	1.8	4.2
											A.					48	2.9	4.1
											"					55	4.0	4.2
											1-56, from stars.....					56	1.9	3.9
											* Interpolated from diagram.					56	+2.6	-3.0

NO.	NAME.	THDS.	MEAN THREAD.	α' /SEC δ + μ TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	μ Geminorum	9	m s 17 50.70	s -0.01	s -49.72	h m s 6 17 0.99	s -6.31	° ' " 22 34 0.62	" 7.28	" 18.03	° ' " +22 33 46.2	" 46.5	" +7.8
2	8 Monocerotis	9	19 23.49	-0.01	-49.72	6 18 33.78	-5.60	4 39 4.55	12.42	41.83	+4 38 26.5	27.8	+10.5

1901 JANUARY 19.

CLAMP WEST.

LAWTON, ASSISTANT.

LITTELL, OBSERVER.

3	α Ursæ Minoris	8	24 6.42	+0.19	[-50.70]	1 23 .....	....	88 45 52.11	60.86	73.96	+88 47 9.5	10.5	....
4	α Trianguli	9	48 17.82	0.01	50.25	1 47 27.57	-4.83	29 6 7.25	13.35	10.84	29 5 59.6	58.3	-28.3
5	β Arietis	9	50 1.76	0.01	50.29	1 49 11.51	4.64	20 19 52.22	59.92	21.07	20 19 34.4	34.7	25.2
6	γ Andromedæ	9	58 41.11	0.01	50.26	1 57 50.84	5.36	41 51 24.95	33.05	3.22	41 51 31.3	32.1	31.8
7	α Arietis	9	2 27.15	0.01	50.28	2 1 36.88	4.82	23 0 2.18	9.95	17.89	22 59 47.5	47.9	25.3
8	B. D. +36° 421	9	4 59.55	0.01	50.29	2 4 9.27	5.23	36 19 29.35	36.98	2.84	36 19 29.7	29.9	29.6
9	B. D. +36° 435	9	7 40.79	+0.01	-50.29	2 6 50.51	-5.28	36 54 31.45	38.88	2.20	+36 54 32.4	32.5	-29.6
10	B. D. +37° 512	9	10 21.11	+0.01	-50.29	2 9 30.83	-5.35	37 55 30.90	38.15	1.09	+37 55 32.9	32.8	-29.7
11	B. D. +36° 453	9	12 4.03	0.01	50.30	2 11 13.74	5.34	37 1 39.65	47.25	2.07	+37 1 40.7	40.9	29.2
12	α Ceti	9	....	....	....	2 14 .....	....	356 35 15.15	25.02	57.15	-3 25 38.6	36.4	14.7
13	B. D. +36° 473	9	18 32.41	0.01	50.30	2 17 42.12	5.40	36 39 19.88	26.78	2.48	+36 39 20.5	20.0	28.5
14	B. D. +34° 435	9	21 3.96	0.01	50.31	2 20 13.66	5.34	34 24 36.65	45.08	4.95	34 24 34.9	35.8	27.6
15	B. D. +35° 477	9	22 56.92	0.01	50.31	2 22 6.62	5.40	35 29 30.92	38.22	3.76	35 29 30.3	30.2	27.7
16	B. D. +35° 497	9	26 55.58	+0.01	-50.31	2 26 5.28	-5.46	35 42 41.52	50.05	3.52	+35 42 41.1	42.2	-27.4
17	B. D. +33° 463	8	29 35.98	+0.01	-50.31	2 28 45.68	-5.41	33 39 10.65	18.52	5.81	+33 39 8.0	8.4	-26.5
18	B. D. +34° 476	9	32 40.56	0.01	50.31	2 31 50.26	5.48	34 44 10.05	18.62	4.60	34 44 8.6	9.7	26.5
19	B. D. +33° 481	9	34 42.76	0.01	50.32	2 33 52.45	5.46	33 31 35.00	43.18	5.94	33 31 32.1	32.9	26.0
20	μ Ceti	9	40 27.16	0.01	50.44	2 39 36.85	4.63	9 42 21.50	28.92	35.16	9 41 49.6	49.3	17.3
21	B. D. +32° 508	9	43 56.96	0.01	50.32	2 43 6.65	5.51	32 26 11.32	18.85	7.15	32 26 7.2	7.3	24.6
22	B. D. +31° 490	9	45 19.03	0.01	50.32	2 44 28.72	5.49	31 34 5.28	12.20	8.12	31 33 60.2	59.7	24.2
23	B. D. +30° 465	9	50 46.47	+0.01	-50.32	2 49 56.16	-5.52	31 10 59.38	66.82	8.55	+31 10 53.9	53.9	-23.5
24	B. D. +31° 512	9	53 8.75	+0.01	-50.33	2 52 18.43	-5.58	32 3 56.95	62.30	7.56	+32 3 52.5	50.4	-23.5
25	B. D. +31° 524	9	56 6.41	0.01	50.33	2 55 16.09	5.59	31 33 59.52	65.65	8.12	31 33 54.5	53.1	23.0
26	B. D. +30° 484	6	59 47.21	0.01	50.33	2 58 56.89	5.59	30 39 25.78	30.70	9.14	30 39 19.7	17.2	22.3
27	β Persei	9	2 36.01	0.01	50.36	3 1 45.69	6.08	40 34 35.18	43.90	1.82	40 34 40.0	41.3	25.1
28	δ Arietis	9	6 50.13	0.01	50.34	3 5 59.81	5.24	19 21 31.50	38.30	22.37	19 21 12.3	11.6	17.8
29	ζ Arietis	9	10 4.75	0.01	50.36	3 9 14.43	5.29	20 41 1.55	9.35	20.75	20 40 44.0	44.2	17.8
30	B. D. +28° 511	9	11 57.78	+0.01	-50.33	3 11 7.46	-5.60	28 23 55.15	59.75	11.70	+28 23 46.6	43.6	-20.2
31	B. D. +27° 492	9	14 33.92	+0.01	-50.33	3 13 43.60	-5.58	27 11 11.62	18.68	13.08	+27 11 1.6	1.1	-19.5
32	B. D. +27° 500	9	17 7.47	0.01	50.33	3 16 17.15	5.60	27 15 23.85	32.02	13.02	27 15 13.9	14.5	19.2
33	B. D. +28° 526	9	19 41.55	0.01	50.33	3 18 51.23	5.66	28 18 27.55	33.48	11.80	28 18 18.8	17.2	19.2
34	ϵ Tauri	9	22 40.21	0.01	50.28	3 21 49.89	5.02	9 23 50.30	56.22	35.67	9 23 17.8	16.1	12.6
35	B. D. +27° 515 ²	9	26 14.44	0.01	50.34	3 25 24.11	5.67	27 14 19.62	25.88	13.03	27 14 9.7	8.4	18.1
36	B. D. +26° 572	8	29 53.06	+0.01	-50.34	3 29 2.73	-5.66	26 16 52.42	....	14.14	+26 16 41.3	....	-17.3
37	B. D. +26° 579	9	31 2.02	+0.01	-50.34	3 30 11.69	-5.70	27 1 8.80	15.00	13.28	+27 0 58.5	57.2	-17.4
38	B. D. +26° 601	9	37 23.67	0.01	50.34	3 36 33.34	5.72	26 15 39.88	....	14.16	26 15 28.7	....	16.4
39	B. D. +24° 537	9	38 40.69	0.01	50.34	3 37 50.36	5.66	24 46 19.98	27.60	15.90	24 46 7.1	7.2	15.7
40	B. D. +25° 607	9	40 29.03	0.01	50.34	3 39 38.70	5.70	25 18 18.38	26.62	15.28	25 18 6.1	6.9	15.7
41	B. D. +25° 620	9	43 37.19	0.01	50.34	3 42 46.86	5.73	25 30 2.12	9.28	15.06	25 29 50.1	49.6	15.3
42	B. D. +23° 570	9	45 51.49	+0.01	-50.34	3 45 1.16	-5.67	23 40 1.48	8.28	17.21	+23 39 47.3	46.5	-14.5
43	B. D. +25° 637	9	48 2.73	+0.01	-50.34	3 47 12.40	-5.75	25 14 41.02	46.88	15.36	+25 14 28.7	26.9	-14.7
44	B. D. +24° 598	9	52 7.04	0.01	50.34	3 51 16.71	5.77	24 59 57.90	65.60	15.65	24 59 45.3	45.4	14.1
45	B. D. +24° 605	9	54 50.56	0.01	50.34	3 54 0.23	5.76	24 25 9.45	17.32	16.33	24 24 56.1	56.4	13.5
46	B. D. +22° 617 ²	9	55 56.85	0.01	50.34	3 55 6.52	5.71	22 55 35.78	43.38	18.10	22 55 20.7	20.7	13.0
47	B. D. +23° 611	9	59 48.49	0.01	50.34	3 58 58.16	5.75	23 14 33.75	40.60	17.73	23 14 19.1	18.3	12.5
48	B. D. +21° 593	9	3 16.18	+0.01	-50.34	4 2 25.85	-5.71	21 45 44.52	52.00	19.51	+21 45 28.1	27.7	-11.6

Eq. Pt. Cor. from stars.

						Eq. Pt. Cor. from stars.			
Time.		Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.		No.	A.	B.
		cm.	°	°				"	"
d h m							1	+2.6	-3.8
19 1 19		76.84	-5.5	-6.7	3.	Bisections at c_1, c_2, c_4 and c_5 .	2	3.0	4.4
2 1		.....	...	7.4	20, 48.	Bisections at II and VI.	4	1.1	4.7
2 47		77.00	6.7	7.8	22.	Bisections at III and V.	5	2.3	5.1
3 24		77.04	7.0	8.1	36, 38.	Bisection at II.	6	2.5	5.4
3 57		77.08	-7.5	-8.6			7	2.7	4.8
						Adopted Equator Point Corrections.			
						A.	B.		
						"	"		
						1, 2, from stars.....	+2.5	-3.6	
						3, from nadir.....	+2.51	-4.90	
						4-48, from stars.....	*	*	
						*Interpolated from diagram.			

Note.
3-48. Seeing 3-2.

Adopted Equator Point Corrections.

A. B.
1, 2, from stars..... +2.5 -3.6
3, from nadir..... +2.51 -4.90
4-48, from stars..... *
* Interpolated from diagram.

NO.	NAME.	THDS.	MEAN THREAD.	c_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +23° 632	9	m s 5 13.57	s +0.01	s -50.34	h m s 4 4 23.24	s -5.80	° ' " 23 43 32.28	" 39.98	" 17.16	° ' " +23 43 18.1	" 18.2	" -12.0
2	B. D. +23° 645	9	7 44.14	0.01	50.34	4 6 53.81	5.80	23 16 14.80	23.18	17.71	23 16 0.1	0.9	11.5
3	B. D. +23° 650	9	9 30.83	0.01	50.34	4 8 40.50	5.81	23 7 51.12	58.88	17.86	23 7 36.3	36.4	11.2
4	B. D. +22° 665	9	11 49.00	0.01	50.34	4 10 58.67	5.82	23 5 53.45	61.50	17.89	23 5 38.6	39.0	10.9
5	B. D. +20° 733	9	14 28.42	0.01	50.34	4 13 38.09	5.74	20 54 29.02	37.40	20.55	20 54 11.5	12.2	9.9
6	δ Tauri.....	9	18 5.90	0.01	50.29	4 17 15.57	5.62	17 19 .....	.....	.....	17 19 .....	.....	.....
7	B. D. +21° 643	9	20 23.61	+0.01	-50.34	4 19 33.28	-5.82	21 58 42.48	49.42	19.26	+21 58 26.2	25.5	-9.4
8	B. D. +20° 756	9	22 9.57	+0.01	-50.34	4 21 19.24	-5.78	20 46 25.15	32.85	20.72	+20 46 7.4	7.5	-8.8
9	B. D. +20° 761	9	23 44.99	0.01	50.34	4 22 54.66	5.78	20 27 45.02	53.20	21.10	20 27 26.9	27.4	8.5
10	B. D. +21° 657	9	27 8.17	0.01	50.34	4 26 17.84	5.84	21 25 28.65	36.90	19.93	21 25 11.7	12.3	8.3
11	B. D. +19° 745	9	31 47.49	0.01	50.34	4 30 57.16	5.77	19 17 49.75	55.52	22.55	19 17 30.2	28.3	7.1
12	B. D. +18° 725	9	42 0.08	0.01	50.33	4 41 9.76	5.81	18 54 21.80	25.75	23.04	18 53 61.7	58.0	5.5
13	B. D. +18° 738	9	45 23.47	0.01	50.33	4 44 33.15	5.83	19 1 34.05	42.32	22.89	19 1 14.1	14.8	5.1
14	B. D. +18° 754	7	50 16.08	+0.01	-50.33	4 49 25.76	-5.82	18 17 13.35	20.30	23.83	+18 16 52.5	51.7	-4.2
15	B. D. +16° 672	9	52 31.82	+0.01	-50.33	4 51 41.50	-5.78	17 0 14.75	20.92	25.46	+16 59 52.3	50.7	-3.6
16	ϵ Tauri.....	9	58 3.36	0.01	50.80	4 57 13.04	5.99	21 27 10.58	18.75	19.92	21 26 53.6	54.1	3.8
17	B. D. +18° 777	9	59 56.46	0.01	50.33	4 59 6.14	5.86	18 7 18.00	24.08	24.04	18 6 56.9	55.3	2.8
18	B. D. +16° 697	9	2 10.89	0.01	50.33	5 1 20.57	5.81	16 42 6.28	12.50	25.86	16 41 43.4	41.7	2.1
19	B. D. +15° 752	9	4 54.57	0.01	50.33	5 4 4.25	5.77	15 28 35.50	44.30	27.45	15 28 11.0	12.1	1.5
20	B. D. +16° 721	9	7 2.58	0.01	50.33	5 6 12.26	5.83	16 37 35.82	43.25	25.95	16 37 12.7	12.5	1.4
21	B. D. +16° 732	9	8 24.59	+0.01	-50.33	5 7 34.27	-5.84	16 46 17.90	24.28	25.78	+16 45 55.0	53.7	-1.3
22	B. D. +16° 741	9	11 51.45	+0.01	-50.33	5 11 1.13	-5.86	16 54 56.10	63.25	25.59	+16 54 33.4	32.9	-0.8
23	τ Orionis.....	9	13 40.40	0.02	50.84	5 12 50.09	5.04	353 3 50.10	57.42	65.18	- 6 57 12.2	12.5	+4.8
24	B. D. +15° 795	9	16 50.99	0.01	50.32	5 16 0.68	5.83	15 45 20.92	27.95	27.10	+15 44 56.7	56.1	0.2
25	B. D. +15° 809	9	20 18.41	0.01	50.32	5 19 28.10	5.82	15 16 39.08	47.00	27.73	15 16 14.2	14.5	0.7
26	B. D. +14° 914	7	22 55.68	0.01	50.32	5 22 5.37	5.79	14 3 28.08	35.48	29.35	14 3 1.6	1.3	+0.4
27	χ Aurigæ.....	9	27 10.07	0.01	50.31	5 26 19.76	6.66	32 7 13.82	20.00	7.56	32 7 9.0	7.5	-1.9
28	B. D. +13° 922	9	29 46.71	+0.01	-50.32	5 28 56.40	-5.80	13 56 31.68	38.50	29.53	+13 56 5.0	4.1	+2.4
29	B. D. +14° 958	9	31 42.17	+0.01	-50.32	5 30 51.86	-5.84	14 36 1.80	9.38	28.64	+14 35 36.1	35.9	+2.5
30	σ Orionis.....	9	34 39.08	0.02	50.32	5 33 48.78	5.25	357 21 18.60	27.50	56.17	- 2 39 34.6	33.6	6.4
31	B. D. +13° 957	9	37 27.35	0.01	50.32	5 36 37.04	5.81	13 42 55.02	62.72	30.06	+13 32 27.9	27.9	3.5
32	B. D. +12° 880	9	39 24.39	0.01	50.32	5 38 34.08	5.78	12 40 46.32	55.08	31.25	12 40 18.0	19.0	3.9
33	B. D. +12° 899	9	42 48.04	0.01	50.32	5 41 57.73	5.78	12 13 39.62	47.70	31.87	12 13 10.7	11.0	4.5
34	B. D. +13° 988	9	44 41.57	0.01	50.31	5 43 51.27	5.85	13 53 45.82	52.85	29.60	13 53 19.1	18.4	4.4
35	B. D. +12° 937	9	49 18.28	+0.01	-50.31	5 48 27.98	-5.80	12 24 42.60	51.28	31.63	+12 24 13.9	14.8	+5.4
36	B. D. +11° 970	9	50 59.04	+0.01	-50.31	5 50 8.74	-5.78	11 47 56.28	64.65	32.48	+11 47 26.7	27.3	+5.7
37	B. D. +11° 986	9	54 41.56	0.01	50.31	5 53 51.26	5.79	11 45 40.08	48.35	32.54	11 45 10.4	11.0	6.2
38	B. D. +11° 1002	9	57 26.02	0.01	50.31	5 56 35.72	5.80	11 39 42.08	50.18	32.68	11 39 12.3	12.7	6.6
39	ι Geminorum.....	9	58 59.13	0.01	50.29	5 58 8.83	6.35	23 16 17.90	24.70	17.77	23 16 2.9	2.1	4.6
40	B. D. +11° 1038	9	3 43.94	0.01	50.31	6 2 53.64	5.80	11 25 1.82	9.52	33.02	11 24 31.6	31.6	7.5
41	η Geminorum.....	9	9 47.09	0.01	50.31	6 8 56.80	6.28	22 32 19.20	.....	18.65	22 32 3.3	.....	6.5
42	μ Geminorum.....	9	17 51.32	0.01	50.36	6 17 1.03	6.31	22 34 1.75	10.22	18.62	22 33 45.9	46.6	7.8
43	θ Monocerotis.....	9	19 23.99	+0.02	-50.25	6 18 33.71	-5.60	4 39 6.78	15.42	43.21	+ 4 38 26.4	27.3	+10.6

UPDEGRAFF, OBSERVER.

1901 JANUARY 20.

CLAMP WEST.

LITTELL, ASSISTANT.

44	α Ursæ Minoris.....	9	24 1.89	+4.04	[-51.11]	1 23 .....	.....	88 45 55.23	64.22	71.73	+88 47 11.1	10.8	.....
45	α Trianguli.....	9	48 18.23	0.04	50.71	1 47 27.52	-4.81	29 6 5.18	12.20	10.49	29 5 59.3	58.4	-28.2
46	β Arietis.....	9	50 2.23	0.02	50.78	1 49 11.49	4.63	20 19 50.12	58.68	20.38	20 19 34.4	35.0	25.1
47	γ Andromedæ.....	9	58 41.49	0.08	50.73	1 57 50.80	5.34	41 51 23.70	32.10	3.11	41 51 31.4	31.8	31.8
48	α Arietis.....	9	2 27.68	+0.03	-50.84	2 1 36.93	-4.81	22 59 59.95	68.30	17.30	+22 59 47.3	47.6	-25.2

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				Eq. Pt. Cor. from stars.		
				No.	A.	B.				
d h m	cm.	°	°							
19 4 28	77.15	-7.6	-8.7	18, 30.	Bisections at II and VI.			16	+ 1.7	-6.2
5 18	77.18	7.8	9.0	23, 47.	Bisections at III and V.			23	[+ 0.5]	[6.5]
5 46	77.20	8.0	9.2	41.	Bisection at II.			27	[- 0.1]	6.0
6 21	77.23	-8.1	-9.3	44.	Bisections at c_1, c_2, c_4 and c_5 .			30	+ 2.2	6.2
20 1 20	76.63	+1.2	+0.5	Notes.						
1 45	76.62	+1.0	+0.4	I-43. Seeing 3-2.						
				II. Close double; observed mean; same declination.						
				44-48. Seeing 4.						
				Adopted Equator Point Corrections.						
				A. B.						
				I-43. from stars..... *						
				44. from nadir..... +3.21 -5.73						
				45-48. from stars..... +3.5 *						
				* Interpolated from diagram.						
								41	0.9	...
								42	2.0	6.1
								43	2.1	6.2
								45	2.7	4.0
								46	3.6	4.6
								47	3.8	4.3
								48	+ 4.2	-3.8

NO.	NAME.	THDS.	MEAN THREAD.	$c' \text{ SEC } \delta$ + $n \text{ TAN } \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
1	B. D. +36° 421	9	4 59.94	+0.06	-50.78	2 4 9.22	-5.21	36 19 28.00	35.50	2.75	+36 19 29.8	29.4	-29.6
2	B. D. +36° 435	9	7 41.21	0.07	50.78	2 6 50.50	5.26	36 54 29.18	37.42	2.13	36 54 31.6	31.9	29.5
3	B. D. +37° 512	9	10 21.41	0.07	50.79	2 9 30.69	5.33	37 55 28.72	37.92	1.05	37 55 32.2	33.5	29.6
4	B. D. +36° 453	9	12 4.32	+0.07	50.79	2 11 13.60	5.32	37 1 37.75	46.88	2.00	+37 1 40.3	41.5	29.2
5	o Ceti	9	15 12.81	-0.03	50.85	2 14 21.99	4.27	356 35 11.28	21.62	55.21	-3 25 39.1	37.0	14.6
6	B. D. +34° 435	9	21 4.25	+0.06	50.80	2 20 13.51	5.33	34 24 35.90	46.05	4.78	+34 24 35.7	37.8	27.5
7	B. D. +35° 497	9	26 55.96	+0.07	-50.81	2 26 5.22	-5.44	35 42 40.92	49.02	3.40	+35 42 42.1	42.1	-27.4
8	B. D. +34° 471	9	30 42.10	+0.06	-50.81	2 29 51.35	-5.42	34 17 45.68	53.55	4.91	+34 17 45.3	45.1	-26.6
9	B. D. +33° 481	9	34 43.11	0.06	50.82	2 33 52.35	5.44	33 31 33.30	41.00	5.73	33 31 32.1	31.8	25.9
10	μ Ceti	9	40 27.72	0.00	50.86	2 39 36.90	4.76	9 42 18.88	26.82	33.92	9 41 49.7	49.4	17.2
11	B. D. +32° 507	9	43 57.38	0.06	50.82	2 43 6.62	5.50	32 45 59.85	67.55	6.54	32 45 57.9	57.4	24.7
12	B. D. +32° 517	9	46 57.38	0.06	50.83	2 46 56.09	5.51	32 20 14.70	23.15	7.00	32 20 12.3	12.6	24.3
13	B. D. +30° 465	9	50 46.86	0.06	50.83	2 49 56.09	5.51	31 10 57.55	65.62	8.25	31 10 53.9	53.8	23.5
14	B. D. +31° 512	9	53 9.17	+0.06	-50.83	2 52 18.40	-5.57	32 3 53.72	60.88	7.30	+32 3 51.0	50.0	-23.5
15	B. D. +31° 524	9	56 6.78	+0.06	-50.83	2 55 16.01	-5.57	31 33 57.20	64.15	7.83	+31 33 53.9	52.7	-23.0
16	B. D. +28° 488	9	0 14.54	0.05	50.84	2 59 23.75	5.52	29 9 38.48	46.05	10.44	29 9 32.6	32.0	21.8
17	β Persei	9	2 36.44	0.09	50.89	3 1 45.69	6.06	40 34 33.00	42.52	1.76	40 34 39.3	40.7	25.1
18	δ Arietis	9	6 50.62	0.03	50.86	3 5 59.81	5.23	19 21 29.20	37.20	21.57	19 21 12.3	12.0	17.8
19	ζ Arietis	9	10 5.18	0.03	50.82	3 9 14.37	5.28	20 40 58.48	67.68	20.00	20 40 43.1	44.0	17.8
20	B. D. +28° 517	8	15 33.38	0.05	50.85	3 14 42.58	5.62	28 28 25.38	31.78	11.19	28 28 18.8	16.9	19.8
21	B. D. +26° 550	9	18 28.81	+0.05	-50.85	3 17 38.01	-5.59	27 3 12.20	18.68	12.75	+27 3 4.1	2.3	-19.0
22	ε Tauri	9	22 40.78	0.00	-50.85	3 21 49.93	-5.01	9 23 46.28	54.15	34.36	+9 23 16.6	16.1	-12.6
23	B. D. +27° 515	9	26 14.93	+0.05	50.85	3 25 24.13	5.66	27 14 16.60	24.40	12.55	27 14 8.7	8.2	18.1
24	B. D. +26° 579	8	31 2.46	0.05	50.86	3 30 11.65	5.69	27 1 5.95	14.48	12.79	27 0 57.8	57.9	17.4
25	B. D. +24° 537	9	38 41.19	0.05	50.86	3 37 50.38	5.65	24 46 17.52	26.45	15.30	24 46 6.8	7.4	15.7
26	B. D. +24° 547	9	40 11.66	0.04	50.86	3 39 20.84	5.64	24 9 38.78	47.72	15.99	24 9 27.4	28.0	15.4
27	B. D. +25° 620	9	43 37.64	+0.05	-50.87	3 42 46.82	-5.72	25 29 59.28	68.00	14.48	+25 29 49.4	49.7	-15.3
28	B. D. +23° 570	9	45 52.01	+0.04	-50.87	3 45 1.18	-5.66	23 39 58.72	68.08	16.55	+23 39 46.8	47.8	-14.5
29	B. D. +25° 637	9	48 3.16	0.05	50.87	3 47 12.34	5.74	25 14 37.62	46.55	14.76	25 14 27.5	28.0	14.7
30	B. D. +24° 595	9	50 4.10	0.05	50.87	3 49 13.28	5.74	24 49 5.50	14.08	15.24	24 48 54.9	55.1	14.3
31	B. D. +24° 598	9	52 7.56	0.05	50.87	3 51 16.74	5.76	24 59 55.20	63.90	15.04	24 59 44.8	45.1	14.1
32	B. D. +24° 605	9	54 51.05	0.05	50.87	3 54 0.23	5.75	24 25 7.40	16.45	15.69	24 24 56.3	57.0	13.5
33	B. D. +22° 617	7	55 57.37	+0.04	-50.87	3 55 6.54	-5.70	22 55 31.38	41.15	17.39	+22 55 18.6	20.0	-12.9
34	B. D. +23° 611	9	59 48.94	+0.04	-50.87	3 58 58.11	-5.74	23 14 30.20	39.85	17.03	+23 14 17.8	18.9	-12.5
35	B. D. +23° 624	9	3 49.00	0.04	50.87	4 2 58.17	5.78	23 36 44.20	52.48	16.61	23 36 32.2	32.0	12.1
36	B. D. +23° 632	9	5 14.08	0.05	50.88	4 4 23.25	5.79	23 43 29.98	38.08	16.48	23 43 18.1	17.7	11.9
37	B. D. +23° 645	9	7 44.59	0.04	50.88	4 6 53.75	5.79	23 16 12.75	22.02	17.00	23 16 0.4	1.1	11.5
38	B. D. +23° 650	9	9 31.29	0.04	50.88	4 8 40.45	5.79	23 7 48.62	57.55	17.15	23 7 36.1	36.5	11.2
39	B. D. +22° 665	9	11 49.48	+0.04	-50.88	4 10 58.64	-5.81	23 5 50.75	60.30	17.17	+23 5 38.2	39.3	-10.9
40	B. D. +20° 733	9	14 28.96	+0.04	-50.88	4 13 38.12	-5.73	20 54 27.15	36.35	19.73	+20 54 12.1	12.7	-9.8
41	B. D. +21° 635	9	18 23.79	0.04	50.88	4 17 32.95	5.76	21 9 8.75	17.55	19.44	21 8 54.0	54.2	9.4
42	B. D. +21° 643	9	20 24.12	0.04	50.88	4 19 33.28	5.81	21 58 39.70	48.80	18.48	21 58 25.9	26.5	9.4
43	B. D. +20° 756	9	22 10.08	0.04	50.88	4 21 19.24	5.77	20 46 22.20	31.35	19.88	20 46 7.0	7.5	8.8
44	B. D. +20° 761	9	23 45.52	0.04	50.88	4 22 54.68	5.77	20 27 42.20	50.90	20.25	20 27 26.6	26.7	8.5
45	B. D. +20° 772	7	26 42.26	+0.04	-50.88	4 25 51.42	-5.79	20 34 27.42	37.12	20.12	+20 34 11.9	13.0	-8.1
46	B. D. +19° 736	9	28 28.36	+0.04	-50.89	4 27 37.51	-5.76	19 36 32.45	40.02	21.26	+19 36 15.9	14.8	-7.6
47	B. D. +19° 745	9	31 47.92	0.04	50.89	4 30 57.07	5.76	19 17 46.20	53.90	21.64	19 17 29.2	28.3	7.0
48	B. D. +18° 725	9	42 0.62	0.04	50.89	4 41 9.77	5.80	18 54 19.52	29.02	22.10	18 54 2.1	3.0	5.5
49	B. D. +18° 754	9	50 16.64	0.03	50.89	4 49 25.78	5.82	18 17 11.25	19.12	22.85	18 16 53.1	52.2	4.2
50	ι Tauri	9	58 3.88	0.04	50.86	4 57 13.02	5.8	21 27 9.35	18.15	19.09	21 26 54.9	55.0	3.8
51	B. D. +16° 697	9	2 11.38	+0.03	-50.90	5 1 20.51	-5.80	16 42 3.82	11.08	24.77	+16 41 43.7	42.3	-2.1
52	B. D. +16° 721	9	7 3.07	+0.03	-50.90	5 6 12.20	-5.82	16 37 33.80	41.65	24.87	+16 37 13.6	12.7	-1.4
53	B. D. +16° 741	9	11 52.01	+0.03	50.90	5 11 1.14	5.85	16 54 53.30	62.95	24.50	+16 54 33.5	34.4	-0.8
54	τ Orionis	9	13 41.09	-0.04	50.98	5 12 50.15	5.03	353 3 44.70	53.52	62.42	-6 57 12.9	12.9	+4.9
55	B. D. +15° 795	9	16 51.47	+0.03	50.90	5 16 0.60	5.82	15 45 17.20	27.52	25.95	+15 44 55.9	57.4	0.2
56	B. D. +15° 814	9	21 15.18	0.03	50.90	5 20 24.31	5.83	15 35 19.72	26.15	25.92	15 34 58.3	59.6	0.8
57	B. D. +14° 914	9	22 56.21	+0.02	-50.90	5 22 5.33	-5.78	14 3 25.82	34.35	28.09	+14 3 2.4	2.1	+1.4

Time.					Barom.					Att. Ther.					Ext. Ther.					Bisections are made at II and V, except as noted below.					Eq. Pt. Cor. from stars.		
																									No.	A.	B.
d	h	m	cm.	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	17, 33. Bisections at III and V.					5	+3.7	[-6.2]
20	2	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....						10	2.4	5.2
			76.58	+0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						17	3.1	[6.2]
			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....						18	4.0	3.7
			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....						19	4.2	4.7
			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....						22	2.1	5.4
			76.48	-0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2						50	2.1	6.4
			.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....						54	+2.9	-5.5

Adopted Equator Point Corrections.

1-57, from stars. +3.5
 *Interpolated from diagram.

OBSERVATIONS OF EROS REFERENCE STARS.

D 69

NO.	NAME.	THDS.	MEAN THREAD.	c_0 SEC δ + " TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	χ Aurigæ.....	9	27 10.57	+0.09	-50.89	5 26 19.76	-6.66	32 7 11.85	19.32	7.23	+32 7 9.2	7.9	-2.0
2	B. D.+13° 922	9	29 47.28	+0.02	50.91	5 28 56.39	5.80	13 56 27.28	36.52	28.24	+13 56 3.7	4.1	+2.4
3	σ Orionis.....	9	34 39.72	-0.03	50.91	5 33 48.78	5.25	357 21 13.42	23.92	53.69	-2 39 35.5	33.9	6.5
4	B. D.+12° 880	9	39 24.95	+0.02	50.91	5 38 34.06	5.78	12 40 43.10	53.25	29.86	+12 40 17.9	19.2	4.0
5	B. D.+13° 979	9	42 59.34	+0.02	-50.91	5 42 8.45	-5.84	13 52 6.98	15.95	28.31	+13 51 43.4	43.4	+4.2
6	B. D.+12° 912	9	44 52.53	+0.02	-50.91	5 44 1.64	-5.80	12 37 31.92	41.35	29.92	+12 37 6.7	7.2	+4.8
7	B. D.+12° 941	9	49 25.72	0.02	50.91	5 48 34.83	5.79	12 2 56.12	64.90	30.66	12 2 30.2	30.0	5.5
8	B. D.+11° 970	9	50 59.58	0.02	50.91	5 50 8.69	5.78	11 47 53.82	62.70	31.01	11 47 27.5	27.4	5.7
9	B. D.+12° 975	9	54 47.59	0.02	50.91	5 53 56.70	5.82	12 28 5.68	15.58	30.12	12 27 40.3	41.2	6.1
10	B. D.+11° 1002	9	57 26.57	+0.02	-50.92	5 56 35.67	-5.79	11 39 39.58	47.88	31.19	+11 39 13.1	12.4	+6.7
11	γ Geminorum.....	9	58 59.64	+0.06	-50.91	5 58 8.78	-6.29	23 16 14.88	23.70	16.96	+23 16 2.6	2.5	+4.8
12	B. D.+11° 1038	9	3 44.56	0.02	50.92	6 2 53.66	5.80	11 24 59.25	67.58	31.50	11 24 32.5	31.8	7.6
13	η Geminorum.....	9	9 47.69	0.06	50.96	6 8 56.83	6.28	22 32 15.42	23.85	17.79	22 32 2.3	1.8	6.5
14	μ Geminorum.....	9	17 51.82	+0.06	50.91	6 17 0.96	6.31	22 33 59.62	69.45	17.75	22 33 46.5	47.3	7.8
15	δ Monocerotis.....	9	19 24.71	-0.01	-50.94	6 18 33.78	-5.60	4 39 3.32	12.42	41.18	+4 38 26.9	26.9	+10.7

1901 JANUARY 22.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LITTELL, ASSISTANT.

16	α Ursæ Minoris.....	8	23 45.60	+17.33	[-50.35]	1 23.....	....	88 45 55.82	64.42	70.27	+88 47 10.0	10.2	....
17	α Trianguli.....	9	48 19.37	0.20	52.04	1 47 27.50	-4.78	29 6 4.55	11.92	10.30	29 5 59.3	58.2	-28.1
18	β Arietis.....	9	50 3.44	0.13	52.13	1 49 11.49	4.60	20 19 49.40	58.05	20.02	20 19 34.4	34.7	25.0
19	α Arietis.....	9	2 28.78	0.15	52.09	2 1 36.83	4.78	22 59 59.10	68.15	17.00	22 59 47.0	47.7	25.0
20	B. D.+36° 421	9	5 1.09	0.26	52.10	2 4 9.25	5.18	36 19 28.08	36.08	2.70	36 19 30.2	29.9	29.5
21	B. D.+36° 435	9	7 42.32	+0.27	-52.11	2 6 50.48	-5.23	36 54 29.52	38.35	2.09	+36 54 32.3	32.7	-29.4
22	B. D.+36° 453	9	12 5.46	+0.27	-52.11	2 11 13.62	-5.28	37 1 37.08	46.40	1.97	+37 1 39.8	40.8	-29.1
23	B. D.+35° 470	9	20 17.88	0.25	52.11	2 19 26.01	5.32	35 31 35.52	45.48	3.54	35 31 36.7	38.2	27.9
24	B. D.+36° 491	9	22 6.07	0.26	52.12	2 21 14.21	5.38	36 31 28.62	36.85	2.50	36 31 30.9	30.7	28.0
25	ξ Ceti.....	9	23 47.09	0.05	52.12	2 22 55.02	4.56	8 1 32.25	40.78	35.69	8 1 1.5	1.4	18.0
26	B. D.+34° 449	9	26 3.94	0.25	52.12	2 25 12.07	5.37	34 57 48.35	58.40	4.13	34 57 49.0	50.6	27.2
27	B. D.+33° 462	9	29 28.29	+0.23	-52.13	2 28 36.39	-5.35	33 29 0.82	18.92	5.68	+33 28 59.8	59.5	-26.3
28	B. D.+34° 481	9	34 44.23	+0.23	-52.13	2 33 52.33	-5.41	33 31 32.62	41.95	5.64	+33 31 31.6	32.5	-25.8
29	μ Ceti.....	9	40 28.96	0.06	52.19	2 39 36.89	4.73	9 42 18.05	27.12	33.38	9 41 49.5	50.0	17.1
30	δ Arietis.....	9	45 2.99	0.18	52.17	2 44 11.03	5.26	26 51 25.38	33.45	12.76	26 51 17.2	16.8	22.4
31	B. D.+31° 512	9	53 10.34	0.22	52.14	2 52 18.42	5.54	32 3 54.08	61.50	7.18	32 3 51.5	50.4	23.4
32	β Persei.....	9	2 37.46	0.30	52.16	3 1 45.61	6.02	40 34 33.45	42.20	1.73	40 34 39.7	39.9	25.1
33	δ Arietis.....	9	6 51.79	+0.12	-52.15	3 5 59.76	-5.20	19 21 29.12	36.80	21.23	+19 21 12.4	11.5	-17.7
34	ξ Arietis.....	9	10 6.36	+0.13	-52.13	3 9 14.34	-5.25	20 40 59.05	67.60	19.69	+20 40 43.9	43.8	-17.7
35	B. D.+26° 548	9	18 3.56	0.17	52.15	3 17 11.58	5.54	26 33 6.68	12.62	13.10	26 32 58.1	55.3	18.8
36	ϵ Tauri.....	9	22 41.99	0.06	52.15	3 21 49.90	4.98	9 23 46.30	54.20	33.84	9 23 17.1	16.2	12.5
37	B. D.+26° 566	9	25 58.37	0.17	52.15	3 25 6.39	5.61	26 46 41.32	48.78	12.86	26 46 32.9	31.7	17.9
38	B. D.+26° 579	9	31 3.63	0.17	52.15	3 30 11.65	5.66	27 1 5.85	14.50	12.60	27 0 57.7	57.6	17.4
39	B. D.+25° 597	9	38 36.54	+0.16	-52.15	3 37 44.55	-5.65	25 27 37.18	44.92	14.31	+25 27 27.3	26.3	-15.9
40	B. D.+24° 547	9	40 12.80	+0.15	-52.15	3 39 20.80	-5.61	24 9 39.33	47.38	15.75	+24 9 28.1	27.3	-15.3
41	B. D.+25° 620	9	43 38.79	0.16	52.15	3 42 46.80	5.70	25 29 59.80	68.18	14.27	25 29 49.8	49.5	15.3
42	B. D.+23° 570	9	45 53.12	0.15	52.15	3 45 1.12	5.63	23 39 58.68	67.50	16.31	23 39 46.7	46.8	14.4
43	B. D.+25° 637	9	48 4.32	0.16	52.15	3 47 12.33	5.72	25 14 38.70	46.75	14.55	25 14 28.5	27.8	14.7
44	B. D.+24° 595	9	50 5.27	0.15	52.15	3 49 13.27	5.71	24 49 5.70	13.80	15.02	24 48 55.0	54.4	14.3
45	B. D.+24° 598	9	52 8.73	+0.16	-52.15	3 51 16.74	-5.73	24 59 55.32	64.45	14.82	+24 59 44.8	45.2	-14.0

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°	16. Bisections at c_2 , c_3 , c_4 and c_5 . Notes. 1-15, 16-45. Seeing 4. Adopted Equator Point Corrections. A. B. 1-15, from stars +3.5 * 16, from nadir..... +3.18 -5.42 17-45, from stars * * Interpolated from diagram.	1	+1.6	-5.6
20 6 22	76.38	-0.1	+0.2		3	4.8	5.3
22 1 19	76.24	+5.3	4.6		11	3.6	4.9
2 10	76.28	4.5	3.5		13	3.8	4.3
3 20	76.27	+3.5	+3.0		14	3.3	6.2
					15	3.4	5.3
					17	3.0	4.0
					18	3.9	4.5
					19	4.6	4.2
					25	3.2	4.9
					29	2.6	[6.1]
					30	3.1	4.7
					32	2.7	[5.8]
					33	3.7	3.7
					34	3.2	5.0
					36	[+1.4]	[-6.1]

NO.	NAME.	THDS.	MEAN THREAD.	ζ_0 / SEC δ + $n \tan \delta$.	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +24° 602	9	m s 54 10.81	s +0.15	s -52.15	h m s 3 53 18.81	s -5.74	° ' " 24 56 11.88	" 20.20	" 14.89	° ' " +24 56 1.3	" 0.8	" -13.8
2	B. D. +22° 617 ²	9	55 58.47	0.14	52.15	3 55 6.46	5.68	22 55 32.55	41.20	17.14	22 55 19.8	19.6	12.9
3	B. D. +23° 611	9	59 50.11	0.14	52.15	3 58 58.10	5.71	23 14 30.62	39.12	16.79	23 14 18.1	17.9	12.5
4	B. D. +22° 637 ²	9	3 54.11	0.14	52.15	-4 3 2.10	5.72	22 50 23.72	32.40	17.24	22 50 10.7	10.7	11.8
5	B. D. +23° 645	9	7 45.78	0.14	52.15	4 6 53.77	5.77	23 16 13.05	21.48	16.76	23 16 0.5	0.1	11.4
6	B. D. +23° 650	9	9 32.47	0.14	52.14	4 8 40.47	5.77	23 7 49.10	57.48	16.91	23 7 36.4	36.0	11.2
7	B. D. +22° 665	9	11 50.67	+0.14	-52.14	4 10 58.67	-5.79	23 5 51.12	59.12	16.93	+23 5 38.4	37.6	-10.8
8	B. D. +20° 733	9	14 30.08	+0.12	-52.14	4 13 38.06	-5.71	20 54 27.35	35.78	19.45	+20 54 12.1	11.8	-9.8
9	B. D. +20° 772	9	26 43.36	0.12	52.14	4 25 51.34	5.77	20 34 27.68	36.62	19.84	20 34 12.0	12.1	8.0
10	α Tauri	9	31 8.58	0.09	52.15	4 30 16.53	5.63	16 19	.....	.....	16 19	.....	.....
11	τ Tauri	9	37 12.40	0.14	52.09	4 36 20.41	5.92	22 46 15.08	23.75	17.33	22 46 1.9	1.6	7.2
12	B. D. +18° 743	9	46 29.18	0.11	52.13	4 45 37.16	5.80	18 40 33.95	41.20	22.07	18 40 15.9	14.3	-4.8
13	π^5 Orionis	9	49 59.89	+0.01	-52.16	4 49 7.78	-5.21	2 17 17.92	27.00	44.48	+2 16 37.6	37.7	0.0

1901 JANUARY 26.

CLAMP WEST.

LITTELL, OBSERVER.

LAWTON, ASSISTANT.

14	α Trianguli	9	48 21.12	+0.01	-53.66	1 47 27.46	-4.72	29 6 6.42	11.08	10.34	+29 5 58.9	57.8	-27.8
15	β Arietis	9	50 5.08	0.00	53.70	1 49 11.41	4.54	20 19 50.48	57.45	20.10	20 19 33.2	34.3	24.7
16	α Arietis	9	2 30.44	0.00	53.66	2 1 36.76	4.72	23 0 1.48	7.80	17.05	22 59 47.3	47.6	24.7
17	B. D. +38° 425	9	5 47.57	0.03	53.68	2 4 53.92	5.19	38 34 31.50	38.70	0.36	38 34 33.9	35.0	29.9
18	B. D. +36° 435	8	7 44.04	0.03	53.68	2 6 50.39	5.16	36 54 31.28	37.88	2.10	36 54 32.9	32.5	29.2
19	B. D. +36° 446	9	10 51.67	0.03	53.68	2 9 58.02	5.17	36 18 48.28	55.85	2.72	36 18 48.3	49.8	28.8
20	B. D. +34° 437	9	21 44.10	+0.02	-53.69	2 20 50.43	-5.26	35 10 18.05	26.08	3.92	+35 10 16.9	18.7	-27.5
21	ξ^2 Ceti	9	23 48.74	-0.02	-53.75	2 22 55.03	-4.51	8 1 34.02	41.30	35.78	+8 1 1.2	2.1	-17.7
22	B. D. +34° 454	9	27 2.31	+0.02	53.70	2 26 8.63	5.28	34 14 39.50	46.40	4.89	34 14 37.4	38.0	26.7
23	B. D. +33° 461	9	29 11.66	0.02	53.70	2 28 17.98	5.27	33 21 40.32	47.40	5.82	33 21 37.3	38.0	26.2
24	B. D. +33° 481	9	34 46.04	+0.02	53.70	2 33 52.36	5.34	33 31 34.40	41.18	5.65	33 31 31.5	31.9	25.7
25	μ Ceti	9	40 30.58	-0.01	53.79	2 39 36.86	4.68	9 42 19.80	27.15	33.45	9 41 49.3	50.1	16.8
26	41 Arietis	9	45 4.67	+0.01	53.74	2 44 10.97	5.20	26 51 25.75	32.58	12.79	26 51 15.8	16.0	22.2
27	B. D. +30° 464	9	50 38.46	+0.02	-53.71	2 49 44.77	-5.39	30 38 44.62	50.72	8.70	+30 38 38.7	38.2	-23.1
28	B. D. +31° 512	9	53 12.11	+0.02	-53.72	2 52 18.41	-5.47	32 3 55.85	61.65	7.20	+32 3 51.4	50.6	-23.3
29	β Persei	9	2 39.18	0.03	53.68	3 1 45.49	5.95	40 34 35.20	43.00	1.73	40 34 39.6	40.7	25.1
30	B. D. +28° 499	9	4 34.86	0.01	53.72	3 3 41.15	5.45	28 42 13.20	18.00	10.79	28 42 5.2	3.1	21.0
31	δ Arietis	9	6 53.46	0.00	53.75	3 5 59.74	5.15	19 21 31.05	37.70	21.27	19 21 12.6	12.4	17.5
32	ζ Arietis	9	10 8.03	0.00	53.72	3 9 14.30	5.20	20 40 59.38	67.68	19.72	20 40 42.5	43.9	17.6
33	B. D. +27° 500	9	17 10.76	+0.01	53.73	3 16 17.04	5.50	27 15 24.15	31.42	12.38	27 15 14.6	14.9	19.1
34	ξ Tauri	9	22 43.59	-0.01	-53.73	3 21 49.84	-4.93	9 23 48.82	54.20	33.91	+9 23 17.8	16.0	-12.2

1901 JANUARY 28.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

35	ξ Tauri	9	22 45.08	0.00	-55.26	3 21 49.83	-4.90	9 23 45.25	52.10	33.54	+9 23 15.2	15.4	-12.1
36	B. D. +27° 514	9	26 1.79	+0.02	55.25	3 25 6.56	5.55	27 23 49.18	55.62	12.08	27 23 40.5	40.4	18.0
37	B. D. +27° 529	9	31 2.43	0.02	55.25	3 30 7.20	5.59	27 16 3.80	10.10	12.22	27 15 55.0	54.7	17.4
38	B. D. +25° 597	9	38 39.75	+0.02	-55.25	3 37 44.52	-5.58	25 27 36.58	43.50	14.19	+25 27 25.8	26.1	-15.8
39	B. D. +24° 547	9	40 16.11	+0.02	-55.25	3 39 20.88	-5.53	24 9 40.12	46.90	15.62	+24 9 27.8	27.9	-15.2
40	η Tauri	9	42 33.13	0.02	55.30	3 41 37.89	5.53	23 48 11.70	19.28	16.02	23 47 59.1	60.1	14.7
41	B. D. +23° 570	9	45 56.36	0.02	55.26	3 45 1.12	5.56	23 39 59.32	66.92	16.17	23 39 46.6	47.6	14.3
42	ζ Persei	9	48 51.78	+0.03	-55.24	3 47 56.55	-5.92	31 35 33.42	39.95	7.63	+31 35 29.2	29.1	-16.5

Time.

Barom.

Att.
Ther.Ext.
Ther.

Bisections are made at II and V, except as noted below.

Eq. Pt. Cor. from stars.

No.

A.

B.

d h m
22 4 40
26 1 54
2 36
3 27
28 3 21

cm.
76.28
75.08
.....
75.00
74.21

+3.0
-0.2
.....
1.2
-0.8

+2.6
-1.2
1.5
2.0
-1.9

39. Bisections at IV and VI.

Notes.
1-13. Seeing 4.
10, 34. Clouds.
18. Poor; faint.
35-42. Seeing 3.
39. Observation hurried.

Adopted Equator Point Corrections.

A. B.
1-13, from stars..... * *
14-34, from stars..... +1.7 *
35-42, from stars..... +2.3 -4.0
* Interpolated from diagram.

11
13
14
15
16
21
25
26
29
31
32
34
35
40
42

+ 2.9
2.8
0.9
2.6
1.9
1.2
0.6
2.5
1.0
1.6
+ 2.8
[-1.3]
+ 1.8
3.5
+ 1.9

"
"
"
"
"
"
[6.4]
4.0
[6.6]
4.8
5.2
[6.3]
4.7
3.8
-4.3

NO.	NAME.	THDS.	MEAN THREAD.	$c_0' \text{ SEC } \delta$ + $n \text{ TAN } \delta.$	$AT+m.$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ϵ Persei	9	52 10.04	+0.05	-55.21	3 51 14.83	-6.39	39 43 30.12	36.90	0.83	+39 43 34.3	34.5	-18.6
2	B. D.+22° 612	9	54 58.09	0.02	55.26	3 54 2.85	5.59	22 56 26.68	34.50	16.99	22 56 13.1	14.3	12.9
3	B. D.+22° 637 ²	9	3 57.22	0.02	55.27	4 3 1.97	5.65	22 50 23.95	31.68	17.11	22 50 10.3	11.4	11.7
4	B. D.+21° 601	9	6 14.97	0.01	55.27	4 5 19.71	5.62	21 37 52.75	60.30	18.47	21 37 37.7	38.7	11.0
5	B. D.+22° 649	9	7 56.29	0.01	55.27	4 7 1.03	5.65	22 9 47.95	55.52	17.87	22 9 33.5	34.5	11.0
6	B. D.+21° 610	9	10 18.83	0.01	55.27	4 9 23.57	5.65	21 51 5.32	13.95	18.23	21 50 50.5	52.6	10.6
7	B. D.+21° 617	9	12 55.94	+0.01	-55.27	4 12 0.68	-5.68	22 6 53.00	60.85	17.93	+22 6 38.5	39.8	-10.3
8	B. D.+20° 733	9	14 33.24	+0.01	-55.27	4 13 37.98	-5.64	20 54 27.00	35.38	19.32	+20 54 11.1	12.9	-9.7
9	B. D.+20° 751	9	18 39.68	0.01	55.27	4 17 44.42	5.66	20 45 21.70	30.30	19.49	20 45 5.7	7.6	9.1
10	B. D.+21° 643	9	20 28.48	0.01	55.27	4 19 33.22	5.72	21 58 40.35	46.92	18.10	21 58 25.7	25.6	9.2
11	B. D.+21° 647	9	23 5.53	0.01	55.27	4 22 10.27	5.71	21 24 12.80	20.85	18.76	21 23 57.5	58.9	8.7
12	B. D.+19° 731	9	25 26.82	0.01	55.28	4 24 31.55	5.66	19 37 45.82	53.20	20.81	19 37 28.5	29.2	7.8
13	B. D.+21° 657	9	27 12.95	0.01	55.28	4 26 17.68	5.74	21 25 26.95	35.08	18.74	21 25 11.7	13.2	8.2
14	B. D.+19° 745	9	31 52.26	+0.01	-55.28	4 30 56.99	-5.68	19 17 46.72	53.40	21.21	+19 17 29.0	29.0	-7.9
15	τ Tauri	9	37 15.69	+0.02	-55.33	4 36 20.43	-5.85	22 46 15.42	22.25	17.23	+22 46 1.6	1.8	-7.1
16	B. D.+18° 725	9	42 5.06	0.01	55.28	4 41 9.79	5.72	18 54 19.88	27.20	21.68	18 54 1.7	2.4	5.3
17	B. D.+18° 754	9	50 20.94	+0.01	55.29	4 49 25.66	5.74	18 17 10.65	17.38	22.43	18 16 51.7	51.8	4.0
18	B. D.+16° 721	9	7 7.41	0.00	55.29	5 6 12.12	5.76	16 37 33.40	40.30	24.44	+16 37 12.4	12.7	-1.2
19	τ Orionis	9	13 45.31	-0.03	55.28	5 12 49.98	4.96	353 3	51.75	61.36	-6 57	12.7	+5.9
20	B. D.+15° 795	7	16 55.85	0.00	-55.30	5 16 0.55	-5.77	15 45 16.95	25.25	25.52	+15 44 54.9	56.6	+0.4
21	B. D.+14° 914	9	23 0.54	0.00	-55.30	5 22 5.24	-5.73	14 3 25.15	32.92	27.62	+14 3 1.0	2.1	+1.7
22	χ Aurigæ	9	27 14.95	+0.03	55.27	5 26 19.68	6.60	32 7 12.38	17.85	7.11	32 7 8.6	7.6	-2.3
23	B. D.+13° 922	9	29 51.61	0.00	55.30	5 28 56.31	5.75	13 56 27.12	34.28	27.78	+13 56 2.8	3.3	+2.7
24	δ Orionis	9	34 44.09	-0.02	55.37	5 33 48.76	5.17	357 21 12.15	21.10	52.84	-2 39 37.1	34.9	7.4
25	B. D.+12° 880	9	39 29.29	0.00	55.31	5 38 33.98	5.74	12 40 43.60	51.42	29.40	+12 40 17.7	18.9	4.3
26	B. D.+12° 941	9	49 30.12	0.00	-55.31	5 48 34.81	-5.75	12 2 56.15	63.38	30.21	+12 2 29.4	30.0	+5.9
27	B. D.+12° 975	9	54 51.98	0.00	-55.32	5 53 56.66	-5.79	12 28 5.80	14.28	29.68	+12 27 39.6	41.4	+6.5
28	B. D.+12° 994	9	58 2.62	0.00	55.32	5 57 7.30	5.80	12 40 33.82	41.68	29.42	12 40 7.9	9.1	6.9
29	ι Geminorum	6	59 4.11	+0.02	55.37	5 58 8.81	6.26	23 16	.....	.....	23 16	.....	.....
30	ν Orionis	9	2 52.96	0.00	55.30	6 1 57.64	5.90	14 47 6.05	13.32	26.74	14 46 42.8	43.4	7.1
31	η Geminorum	9	9 52.01	0.02	55.27	6 8 56.71	6.25	22 32 16.68	22.75	17.55	22 32 2.6	2.0	6.5
32	μ Geminorum	9	17 56.22	+0.02	-55.30	6 17 0.92	-6.28	22 33 59.70	65.40	17.53	+22 33 45.6	44.7	-7.7

1901 JANUARY 29.

CLAMP WEST.

LAWTON, ASSISTANT.

UPDEGRAFF, OBSERVER.

33	ξ^2 Ceti	9	23 50.97	-0.01	-56.03	2 22 54.94	-4.47	8 1 32.40	39.75	35.65	+8 1 1.1	0.9	-17.6
34	B. D.+34° 449	9	26 7.84	+0.11	56.02	2 25 11.93	5.24	34 57 48.75	56.42	4.12	34 57 48.8	49.0	26.8
35	B. D.+33° 454	9	27 51.36	0.10	56.02	2 26 55.44	5.23	34 6 32.35	39.75	5.03	34 6 31.5	31.4	26.4
36	B. D.+32° 484	9	34 50.76	0.10	56.02	2 33 54.84	5.25	32 23 31.15	37.28	6.82	32 23 28.4	27.1	25.2
37	B. D.+33° 493	9	37 32.29	+0.10	-56.02	2 36 36.37	-5.31	33 20 53.00	60.48	5.82	+33 20 51.2	51.3	-25.2
38	μ Ceti	9	40 32.79	0.00	-56.06	2 39 36.77	-4.63	9 42 18.42	25.78	33.34	+9 41 49.3	49.1	-16.7
39	δ^1 Arietis	9	45 6.89	+0.07	56.07	2 44 10.94	5.15	26 51 24.85	32.02	12.75	26 51 16.2	15.8	22.2
40	B. D.+31° 497	9	48 23.17	0.09	56.02	2 47 27.24	5.34	31 14 36.25	44.08	8.04	31 14 32.2	32.5	23.4
41	B. D.+31° 509	9	52 14.33	0.09	56.02	2 51 18.40	5.39	31 32 22.15	28.95	7.73	31 32 18.4	17.7	23.2
42	δ Arietis	9	6 55.63	+0.04	-56.01	3 5 59.65	-5.10	19 21 28.75	36.68	21.22	+19 21 11.5	11.8	-17.3
43	ζ Arietis	9	10 10.25	+0.04	-56.03	3 9 14.27	-5.15	20 40 58.60	66.65	19.68	+20 40 42.9	43.3	-17.4
44	ξ Tauri	9	22 45.82	0.00	56.01	3 21 49.80	4.89	9 23 46.35	53.50	33.85	9 23 16.4	15.9	12.0
45	B. D.+27° 513	9	25 59.79	0.07	56.02	3 25 3.84	5.53	27 23 21.62	29.18	12.20	27 23 13.1	13.1	18.0
46	B. D.+26° 574	9	30 20.73	0.07	56.02	3 29 24.78	5.65	26 31 25.00	31.95	13.14	26 31 15.6	14.9	17.2
47	B. D.+25° 584	9	34 30.62	+0.06	-56.03	3 33 34.65	-5.54	25 48 31.62	37.90	13.93	+25 48 21.4	20.0	-16.4

Eq. Pt. Cor. from stars.

				Eq. Pt. Cor. from stars.					
Time.		Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.				
d	h	m	cm.	°	°				
28	4	2	.....	...	-2.2	19. Bisection at V.			
	4	16	74.28	-1.6	...				
	4	29	.....	...	2.6				
	5	1	74.34	2.2	3.0	Notes.			
	5	52	74.40	2.6	3.1	1-32, 33-47. Seeing 3.			
	6	21	74.46	-2.7	3.1	32. Clouds.			
29	2	30	75.20	+1.0	0.1	33. Unsteady.			
	3	20	75.25	+0.3	-0.6				
						Adopted Equator Point Corrections.			
						A.	B.		
						"	"		
						1-32, from stars.....	+2.3	-4.0	
						33-47, from stars.....	*	*	
						*Interpolated from diagram.			
						No.	A.	B.	
						1	+2.3	-4.2	
						15	2.4	4.1	
						19	...	[5.8]	
						22	1.3	4.0	
						24	[4.3]	4.2	
						30	2.1	4.8	
						31	2.3	3.4	
						32	3.1	2.3	
						33	2.6	4.4	
						38	1.8	5.2	
						39	3.4	3.5	
						42	3.6	4.0	
						43	3.3	4.4	
						44	[+0.9]	[-5.9]	

NO.	NAME.	THDS.	MEAN THREAD.	C ₀ ' SEC δ + " TAN δ.	ΔT + m.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	B. D. +24° 534	9	m s 36 44.39	s +0.06	s -56.03	h m s 3 35 48.42	-5.53	° ' " 25 3 22.45	" 29.32	" 14.76	° ' " +25 3 11.3	" 10.6	" -15.9
2	B. D. +25° 597	9	38 40.44	0.06	56.03	3 37 44.47	5.56	25 27 36.38	44.48	14.32	25 27 25.7	26.2	15.8
3	B. D. +24° 547	9	40 16.71	0.06	56.03	3 39 20.74	5.52	24 9 40.80	47.62	15.77	24 9 28.6	27.9	15.2
4	B. D. +24° 571	9	43 9.56	0.06	56.03	3 42 13.59	5.56	24 41 13.15	22.58	15.18	24 41 1.6	3.3	15.0
5	B. D. +25° 627	9	46 18.89	0.07	56.03	3 45 22.93	5.64	26 3 32.88	38.62	13.66	26 3 22.8	20.9	15.0
6	B. D. +25° 637	9	48 8.25	0.06	56.03	3 47 12.28	5.62	25 14 37.35	45.42	14.57	25 14 26.3	26.8	14.6
7	B. D. +24° 599	9	52 29.17	+0.06	-56.03	3 51 33.20	-5.61	24 10 44.80	53.35	15.75	+24 10 32.6	33.4	-13.6
8	B. D. +22° 615	9	55 36.50	+0.05	-56.03	3 54 40.52	-5.57	22 32 55.90	63.08	17.59	+22 32 41.8	41.3	-12.7
9	B. D. +23° 609	9	59 24.39	0.06	56.03	3 58 28.42	5.64	23 50 15.42	23.68	16.14	23 50 2.8	3.4	12.6
10	B. D. +22° 657	9	9 35.25	0.05	56.03	4 8 39.27	5.65	22 12 21.55	28.60	18.00	22 12 7.0	6.3	10.8
11	B. D. +21° 618	9	13 29.67	0.04	56.03	4 12 33.68	5.64	21 20 30.60	38.78	18.99	21 20 15.0	15.4	10.0
12	γ Tauri.....	9	15 7.55	0.02	56.05	4 14 11.54	5.43	15 23 41.55	48.92	26.09	15 23 18.8	18.5	7.7
13	B. D. +21° 642	9	20 26.18	0.05	56.03	4 19 30.20	5.71	22 4 17.95	26.15	18.15	22 4 3.1	3.6	9.3
14	B. D. +20° 761	9	23 50.57	+0.04	-56.04	4 22 54.57	-5.67	20 27 43.98	51.00	20.02	+20 27 27.2	26.5	-8.3
15	B. D. +19° 735	9	28 11.98	+0.04	-56.04	4 27 15.98	-5.64	19 8 36.22	43.48	21.57	+19 8 17.9	17.4	-7.3
16	B. D. +19° 742	9	30 52.48	0.04	56.04	4 29 56.48	5.68	19 40 55.22	62.78	20.94	19 40 37.5	37.4	7.1
17	B. D. +20° 785	9	33 23.51	0.04	56.04	4 32 27.51	5.73	20 29 24.90	33.25	19.99	20 29 8.2	8.7	7.0
18	τ Tauri.....	9	37 16.35	0.05	56.03	4 36 20.36	5.84	22 46 16.15	23.50	17.38	22 46 1.9	1.5	7.1
19	B. D. +18° 717	9	41 16.82	0.03	56.04	4 40 20.81	5.70	18 37 28.60	34.38	22.20	18 37 9.6	7.6	5.4
20	B. D. +17° 791	9	45 33.83	+0.03	56.04	4 44 37.82	5.67	17 21 17.85	25.58	23.71	17 20 57.3	57.3	-4.4
21	π ⁵ Orionis.....	9	50 3.74	-0.03	-56.04	4 49 7.66	-5.14	2 17 18.68	27.38	44.61	+2 16 37.3	38.2	+0.6
22	ι Tauri.....	9	58 8.98	+0.04	-56.04	4 57 12.97	-5.90	21 27 9.60	16.78	18.89	+21 26 53.9	53.3	-3.7
23	B. D. +15° 752	9	5 0.23	0.02	56.05	5 4 4.20	5.69	15 28 35.92	42.90	26.03	15 28 13.1	11.3	1.2
24	B. D. +15° 759	9	6 58.68	+0.02	56.05	5 6 2.65	5.72	15 55 43.88	51.52	25.47	+15 55 21.6	21.5	-1.0
25	τ Orionis.....	9	13 46.14	-0.01	56.14	5 12 50.07	4.95	353 3 43.08	51.28	61.79	-6 57 15.4	15.0	+6.0
26	B. D. +15° 795	9	16 56.66	+0.02	56.06	5 16 0.62	5.76	15 45 18.02	26.80	25.69	+15 44 55.5	56.6	0.4
27	B. D. +14° 914	9	23 1.34	+0.02	-56.06	5 22 5.30	-5.72	14 3 25.02	32.78	27.82	+14 3 0.4	0.4	+1.8
28	χ Aurigæ.....	9	27 15.66	+0.09	-56.05	5 26 19.69	-6.59	32 7 12.80	19.65	7.16	+32 7 8.7	7.9	-2.4
29	B. D. +15° 856	9	29 18.04	+0.02	56.07	5 28 21.99	5.80	15 31 15.35	23.10	25.98	+15 30 52.6	52.6	+2.2
30	σ Orionis.....	9	34 44.86	-0.05	56.11	5 33 48.74	5.17	357 21 14.00	23.58	53.20	-2 39 35.9	34.2	7.5
31	B. D. +14° 998	9	38 52.00	+0.02	56.07	5 37 55.95	5.79	14 22 11.40	19.25	27.42	+14 21 47.2	47.3	3.9
32	B. D. +13° 988	9	44 47.29	0.02	56.08	5 43 51.23	5.80	13 53 41.85	50.10	28.02	13 53 17.0	17.5	4.8
33	B. D. +12° 941	9	49 30.91	+0.01	-56.08	5 48 34.84	-5.74	12 2 56.15	64.45	30.40	+12 2 29.0	29.5	+5.9
34	B. D. +12° 975	9	54 52.74	+0.01	-56.09	5 53 56.66	-5.78	12 28 6.10	15.08	29.87	+12 27 39.4	40.7	+6.6
35	B. D. +11° 1007	9	58 45.90	0.00	56.09	5 57 49.81	5.74	11 8 36.32	44.00	31.62	11 8 7.9	7.8	7.4
36	ν Orionis.....	9	2 53.75	0.02	56.11	6 1 57.68	5.90	14 47 6.15	14.30	26.90	14 46 42.4	42.8	7.2
37	η Geminorum.....	9	9 52.79	0.05	56.09	6 8 56.74	6.24	22 32 16.72	23.92	17.66	22 32 2.2	1.7	6.5
38	μ Geminorum.....	9	17 56.97	+0.05	56.09	6 17 0.92	6.27	22 34 1.42	8.78	17.64	22 33 46.9	46.6	7.7
39	8 Monocerotis.....	9	19 29.87	-0.02	-56.12	6 18 33.74	-5.57	4 39 3.38	11.72	40.93	+4 38 25.7	26.2	+11.5

UPDEGRAFF, OBSERVER.						1901 FEBRUARY 23.						CLAMP WEST.						LAWTON, ASSISTANT.					
40	58 Ursæ Majoris.....	9	25 26.01	-0.02	[-13.27]	11 25 12.61	....	43 42 33.98	39.78	5.14	+43 42 42.0	40.8	....										
41	υ Leonis.....	9	32 8.84	0.04	13.39	11 31 55.42	-5.69	359 43 52.88	59.50	50.03	-0 16 53.8	54.7	+36.9										
42	β Virginis.....	9	45 48.34	0.04	13.42	11 45 34.91	5.70	2 19 45.70	54.95	45.58	+2 19 3.5	5.2	37.5										
43	Groombridge 1830.....	9	47 32.56	0.02	[13.31]	11 47 19.14	....	38 25 20.92	28.18	0.53	38 25 23.3	23.6	....										
44	δ Virginis.....	9	55 8.67	0.04	13.39	11 54 55.23	5.61	4 12 44.95	52.58	42.55	4 12 5.7	5.9	37.3										
45	2 Canum Venat.....	9	11 25.92	0.02	[13.24]	12 11 12.48	....	41 12 14.60	20.58	2.45	+41 12 20.0	18.9	....										
46	η Virginis.....	9	15 6.41	-0.04	-13.40	12 14 52.95	-5.58	359 53 31.52	38.00	49.81	-0 7 14.9	16.0	+36.3										

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.	Eq. Pt. Cor. from stars.		
					No.	A.	B.
d h m	cm.	°	°			"	"
29 3 54	....	....	-1.0	3. Bisections at III and V.	12	+1.6	-5.5
4 36	75.28	-1.0	1.6		18	1.8	5.2
5 31	75.30	1.5	1.6		21	1.6	[6.7]
6 1	....	....	1.5	Notes.	22	1.5	5.3
6 33	75.34	1.8	1.9	1-39. Seeing 3.	25	2.8	5.0
23 11 58	75.03	-7.8	-8.5	20. Very faint; poor; clouds.	28	1.0	5.6
				40, 43, 45. Observed head north.	30	2.7	[6.4]
				40-46. Seeing 2-3.	36	2.1	5.7
					37	2.4	4.5
					38	1.5	5.6
					39	2.3	5.6
					41	1.3	4.9
					42	3.1	5.7
					44	3.2	4.1
					46	+0.9	-5.1

Adopted Equator Point Corrections.

A.

B.

1-39, from stars.....

40, 43, 45, from nadir.....

41, 42, 44, 46, from stars.....

* Interpolated from diagram.

+

-

1.91

-4.88

+2.1

-5.0

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ	$\Delta T + m.$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
				$n \tan \delta.$				A.	B.		A.	B.	
1	W. B., XII. 279...	9	m s 20 29.89	—0.04	—13.42	12 20 16.43	—5.56	359 29 14.58	22.68	50.54	—0 31 32.6	32.0	+36.0
2	W. B., XII. 363...	9	24 34.42	0.04	13.43	12 24 20.95	5.55	359 19 23.50	31.18	50.85	—0 41 24.0	23.8	35.8
3	B. D. +0° 2952	9	28 11.17	0.04	13.43	12 27 57.70	5.54	0 16 47.40	54.48	49.16	+0 16 1.6	1.2	35.9
4	Lal. 2358t	9	32 16.80	0.04	13.43	12 32 3.33	5.54	358 14 10.60	20.02	52.87	—1 46 38.9	37.0	35.3
5	9 Canum Venat.....	9	34 16.38	0.02	[13.34]	12 34 2.92	....	41 24 42.35	50.05	2.68	+41 24 48.0	48.6	....
6	Piazzi XII. 170....	9	39 22.28	—0.04	—13.44	12 39 8.80	—5.52	357 42 35.22	42.88	53.91	—2 18 15.3	15.2	+35.0
7	35 Virginis	9	43 4.84	—0.04	—13.44	12 42 51.36	—5.45	4 7 11.20	18.50	42.83	+4 6 31.7	31.5	+36.1
8	α Canum Venat.....	9	51 39.58	0.02	[13.37]	12 51 26.11	....	38 50 44.98	52.35	0.08	38 50 47.9	48.2	....
9	43 H. Cephei S. P ..	7	55 16.70	0.00	[13.36]	0 55 .....	....	94 14 33.92	41.62	89.00	85 43 54.1	53.1	....
10	14 Canum Venat.....	9	1 22.38	0.02	[13.31]	13 1 8.90	....	36 19 20.68	28.20	2.80	+36 19 20.9	21.3	....
11	0 Virginis	9	5 5.33	—0.04	—13.51	13 4 51.83	....	355 0 2.08	11.55	59.44	—5 0 54.2	51.9	....
12	20 Canum Venat.....	9	13 21.89	—0.02	[—13.38]	13 13 8.40	....	41 5 10.35	19.62	2.34	+41 5 15.7	17.9	....
13	α Ursæ Minoris S. P.	8	22 57.30	+0.24	[14.14]	1 22 .....	....	91 11 29.17	37.33	79.86	88 47 7.8	6.4	....
14	25 Canum Venat.....	9	33 19.26	—0.02	[13.43]	13 33 5.75	....	36 47 32.15	38.12	2.30	+36 47 32.8	31.7	....
15	m Virginis	9	36 40.73	0.04	13.50	13 36 27.20	....	351 48 37.40	46.52	66.65	—8 12 26.0	24.1	....
16	83 Virginis	9	39 25.13	—0.05	—13.47	13 39 11.59	....	344 20 20.30	28.45	87.02	—15 41 3.4	2.6	....

1901 FEBRUARY 24.

CLAMP WEST.

NO ASSISTANT.

UPDEGRAFF, OBSERVER.

17	β Andromedæ	7	4 25.61	+0.03	−13.85	I 4		35 5 55.48	62.88	3.99	+35 5 54.3	54.2	
18	α Ursæ Minoris	6	22 52.83	+3.68	13.41	I 22		88 45 49.94	59.40	70.84	88 47 3.6	5.2	
19	β Arietis	6	49 24.97	0.00	−14.01	I 49		20 19 48.95	56.10	20.18	+20 19 31.6	31.2	

1901 FEBRUARY 25.

CLAMP WEST.

LAWTON, ASSISTANT.

UPDEGRAFF, OBSERVER.

20	58	Ursæ Majoris	9	25 27. 68	+0. 22	[−15.15]	11 25 12. 62	....	43 42 32. 22	40. 00	4. 99	+43 42 40. 5	40. 0	....
21	<i>v</i>	Leonis	9	32 10. 73	−0. 05	15. 24	11 31 55. 40	−5. 72	359 43 49. 82	57. 62	48. 56	+ 0 16 55. 1	55. 5	+37. 1
22	<i>β</i>	Virginis	9	45 50. 26	−0. 04	15. 31	11 45 34. 94	5. 73	2 19 44. 38	53. 48	44. 25	+ 2 19 3. 9	4. 7	37. 7
23		Grombridge 1830. . .	9	47 34. 29	+0. 18	[15. 20]	11 47 19. 19	....	38 25 20. 15	29. 60	0. 52	38 25 23. 1	24. 1	....
24	<i>b</i>	Virginis	9	55 10. 59	−0. 03	15. 28	11 54 55. 28	−5. 65	4 12 43. 62	51. 68	41. 30	4 12 6. 2	5. 8	+37. 5
25	2	Canum Venat. . . .	9	11 27. 62	+0. 20	[−15. 12]	12 11 12. 53	....	41 12 14. 00	22. 55	2. 38	+41 12 20. 0	20. 0	....
26	<i>η</i>	Virginis	9	15 8. 36	−0. 05	−15. 30	12 14 53. 03	−5. 62	359 53 29. 05	37. 08	48. 36	+ 0 7 15. 2	15. 8	+36. 5
27		Lal. 23271	9	21 59. 83	0. 05	15. 28	12 21 44. 50	5. 59	0 22 20. 65	29. 62	47. 53	+ 0 21 37. 3	37. 6	36. 3
28		Lal. 23342	9	24 22. 92	0. 06	15. 28	12 24 7. 58	5. 61	358 7 36. 52	46. 35	51. 47	+ 1 53 10. 8	9. 7	35. 9
29		Mayer 531	9	29 36. 70	0. 05	15. 28	12 29 21. 37	5. 58	359 8 46. 78	55. 92	49. 67	+ 0 51 58. 6	58. 3	35. 8
30		Lal. 23581	9	32 18. 79	−0. 06	15. 28	12 32 3. 45	−5. 58	358 14 7. 48	18. 12	51. 29	+ 1 46 39. 5	37. 7	+35. 6
31	9	Canum Venat. . . .	9	34 18. 02	+0. 20	[−15. 16]	12 34 2. 92	....	41 24 41. 90	50. 60	2. 60	+41 24 48. 2	48. 2	....
32		Piazzî XII. 170. . .	9	39 24. 16	−0. 06	−15. 25	12 39 8. 82	−5. 57	357 42 32. 18	40. 90	52. 25	+ 2 18 15. 7	15. 9	+35. 2
33	35	Virginis	9	43 6. 74	0. 03	15. 31	12 42 51. 43	5. 49	4 7 8. 25	17. 50	41. 50	+ 4 6 31. 1	31. 4	36. 3
34	37	Virginis	9	46 52. 28	−0. 03	15. 29	12 46 36. 97	−5. 48	3 36 3. 98	13. 02	42. 31	+ 3 35 26. 0	26. 2	+36. 0
35	<i>α</i>	Canum Venat. . . .	9	51 41. 30	+0. 18	[15. 25]	12 51 26. 18	....	38 50 45. 00	54. 32	0. 08	+ 38 50 48. 8	49. 3	....
36	14	Canum Venat. . . .	9	1 24. 18	+0. 16	[−15. 24]	13 1 9. 04	....	36 19 20. 55	29. 18	2. 71	+36 19 21. 7	21. 5	....

Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.			Eq. Pt. Cor. from stars.		
							No.	A.	B.
d h m	cm.	°	°					"	"
23 12 26	.....	... —8.7	—8.7	5, 8, 10, 12, 14, 20,	} Bisections at III and V.		6	+2.1	—5.1
12 37	75.04	—8.2	9.0	23, 25, 31, 35, 36.			7	2.0	4.9
13 18	75.04	—8.5	10.2	9.	Bisections at c ₁ and c ₅ .		21	2.7	4.7
24 1 12	75.17	0.0	1.1	13.	Bisections at c ₁ , c ₂ , c ₄ and c ₅ .		22	2.9	5.8
1 28	75.18	+0.2	1.4	17, 19.	Bisection at IV.		24	3.0	4.6
25 11 50	75.18	—0.3	0.3	18.	Bisections at c ₂ , c ₃ , c ₄ and c ₅ .		26	1.7	5.9
12 13	75.16	0.5	0.6				32	3.3	5.0
12 36	75.14	—0.4	—0.8				33	3.4	5.4
				Notes.			34	+2.6	—6.1
				1-16.	Seeing 2-3.				
				5, 8, 10, 12, 14.	Observed head north.	Adopted Equator Point Corrections.			
				18.	Floating clouds; rather unsteady.				
				20-36.	Seeing 2.				
				20, 23, 25, }	Observed head south.	1-4, 6, 7, from stars	+2.1	—5.0	
				31, 35, 36. }		5, 8-16, from nadir	+1.91	—4.88	
				22.	Unsteady.	17-19, from nadir	+1.84	—5.70	
				27.	Faint.				
						20, 23, 25, 31, 35, 36, from nadir	{ 11 ^h 40 ^m +2.35	—5.75	
							{ 13 46 +3.06		
						21, 22, 24, 26-30, 32-34, from stars	{ 11 52 +2.58	—5.4	
							{ 12 43 +3.10		

NO.	NAME.	THDS.	MEAN THREAD.	c_0 ' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	0 Virginis	9	5 7.24	- 0.07	-15.35	13 4 51.86	....	354 59 59.92	72.12	57.48	- 5 0 53.4	50.2	....
2	20 Canum Venat.	7	13 23.56	+ 0.20	[15.22]	13 13 8.45	....	41 5 10.90	18.88	2.26	+41 5 17.1	16.2	....
3	α Ursæ Minoris S. P.	9	23 9.94	-12.05	[15.68]	1 22 .....	....	91 11 32.32	42.18	77.14	88 47 6.3	5.2	....
4	25 Canum Venat.	9	33 20.94	+ 0.16	[-15.23]	13 33 5.79	....	36 47 31.78	40.25	2.22	+36 47 33.6	33.1	....

1901 FEBRUARY 26.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

5	58 Ursæ Majoris	9	25 28.47	+ 0.17	[-15.87]	11 25 12.68	....	43 42 32.18	39.60	5.04	+43 42 40.6	40.4	....
6	ν Leonis	9	32 11.46	- 0.04	15.97	11 31 55.46	-5.73	359 43 51.65	58.42	49.07	- 0 16 53.4	54.7	+37.2
7	β Virginis	9	45 50.94	0.03	15.98	11 45 34.93	5.75	2 19 45.15	53.60	44.71	+ 2 19 4.5	4.9	37.7
8	δ Virginis	9	55 11.28	- 0.02	15.97	11 54 55.28	5.66	4 12 42.82	51.22	41.74	4 12 5.1	5.4	37.6
9	2 Canum Venat.	9	11 28.40	+ 0.15	[15.83]	12 11 12.56	....	41 12 14.85	21.62	2.41	+41 12 21.0	19.8	....
10	η Virginis	9	15 9.06	- 0.04	-16.00	12 14 53.03	-5.63	359 53 28.45	36.28	48.87	- 0 7 16.4	16.6	+36.6
11	W. B., XII. 279	9	20 32.48	- 0.04	-15.99	12 20 16.45	-5.63	359 29 12.40	21.32	49.58	- 0 31 33.1	32.3	+36.4
12	W. B., XII. 363	9	24 36.99	0.04	15.99	12 24 20.96	5.62	359 19 21.85	30.35	49.89	- 0 41 24.0	23.6	36.2
13	B. D. + 0° 2952	9	28 13.73	0.04	15.99	12 27 57.70	5.60	0 16 45.72	54.00	48.23	+ 0 16 1.6	1.7	36.2
14	Lal. 23581	9	32 19.46	- 0.05	16.00	12 32 3.41	5.61	358 14 8.85	18.75	51.84	- 1 46 38.9	37.1	35.7
15	9 Canum Venat.	9	34 18.81	+ 0.15	[15.87]	12 34 2.96	....	41 24 42.12	50.58	2.63	+41 24 48.6	49.0	....
16	Piazzii XII. 170	9	39 24.92	- 0.05	-16.00	12 39 8.87	-5.59	357 42 33.15	41.50	52.85	- 2 18 15.6	15.4	+35.4
17	35 Virginis	9	43 7.46	- 0.02	-16.02	12 42 51.44	-5.51	4 7 9.08	17.58	41.97	+ 4 6 31.2	31.6	+36.3
18	37 Virginis	9	46 52.99	- 0.03	15.98	12 46 36.96	-5.50	3 36 3.82	12.60	42.80	3 35 25.1	25.7	+36.1
19	α Canum Venat.	9	51 42.09	+ 0.13	[15.97]	12 51 26.22	....	38 50 45.30	53.42	0.08	38 50 49.2	49.2	....
20	43 H. Cephei S. P.	9	55 21.21	- 2.48	[15.82]	0 55 .....	....	94 14 35.85	43.62	87.20	85 43 53.0	52.6	....
21	14 Canum Venat.	9	1 24.89	+ 0.12	[-15.88]	13 1 9.01	....	36 19 21.45	28.80	2.74	+36 19 22.7	21.9	....
22	20 Canum Venat.	9	13 24.33	+ 0.15	[-15.91]	13 13 8.49	....	41 5 10.88	18.85	2.29	+41 5 17.2	17.0	....
23	α Ursæ Minoris S. P.	9	23 6.82	- 8.48	[16.74]	1 22 .....	....	91 11 31.04	39.65	78.16	88 47 6.4	5.9	....
24	25 Canum Venat.	9	33 21.67	+ 0.12	[15.90]	13 33 5.81	....	36 47 32.40	39.50	2.25	+36 47 34.4	33.1	....
25	m Virginis	9	36 43.32	- 0.08	15.98	13 36 27.27	....	351 48 36.30	45.45	65.19	- 8 12 24.4	23.8	....
26	83 Virginis	9	39 27.77	- 0.11	-15.96	13 39 11.69	....	344 20 18.78	27.52	85.08	-15 41 1.8	1.6	....

1901 FEBRUARY 28.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

27	58 Ursæ Majoris	9	25 29.59	+ 0.16	[-16.94]	11 25 12.69	....	43 42 33.75	43.60	5.13	+43 42 41.7	43.2	....
28	ν Leonis	9	32 12.57	- 0.05	17.05	11 31 55.45	-5.75	359 43 51.20	60.60	49.90	- 0 16 54.7	54.5	+37.4
29	β Virginis	9	45 52.08	- 0.04	17.09	11 45 34.97	5.77	2 19 46.05	54.20	45.47	+ 2 19 4.5	3.5	37.9
30	Groombridge 1830.	8	47 36.24	+ 0.12	[17.04]	11 47 19.29	....	38 25 21.22	30.48	0.53	38 25 23.4	24.4	....
31	δ Virginis	9	55 12.43	- 0.03	17.07	11 54 55.32	-5.70	4 12 44.28	53.30	42.42	4 12 5.8	5.6	+37.8
32	2 Canum Venat.	9	11 29.58	+ 0.14	[-16.96]	12 11 12.63	....	41 12 14.48	22.52	2.45	+41 12 19.7	19.4	....
33	η Virginis	9	15 10.20	- 0.05	-17.10	12 14 53.06	-5.66	359 53 29.68	38.60	49.66	- 0 7 16.0	16.3	+36.8
34	W. B., XII. 279	9	20 33.63	0.05	17.09	12 20 16.49	5.67	359 29 12.82	21.82	50.37	- 0 31 33.6	33.8	36.6
35	W. B., XII. 363	9	24 38.15	0.05	17.10	12 24 21.00	5.66	359 19 23.55	32.02	50.67	- 0 41 23.1	23.9	36.4
36	B. D. + 0° 2952	9	28 14.90	0.05	17.10	12 27 57.75	5.64	0 16 46.95	55.60	48.98	+ 0 16 1.9	1.4	36.5
37	Lal. 23581	8	32 20.62	- 0.06	17.10	12 32 3.46	-5.65	358 14 9.82	20.35	52.64	- 1 46 38.8	37.5	+36.0
38	9 Canum Venat.	9	34 19.99	+ 0.14	[-16.99]	12 34 3.02	....	41 24 42.80	51.42	2.67	+41 24 48.3	48.5	....

				Bisections are made at II and V, except as noted below.		Eq. Pt. Cor. from stars.		
Time.	Barom.	Att. Ther.	Ext. Ther.			No:	A.	B.
d h m	cm.	°	°				"	"
25 13 27	75. 11	-0. 5	-1. 2	2.	Bisections at V and VI.	6	+1. 3	-5. 1
26 11 28	75. 40	1. 4	2. 0	3, 23.	Bisections at c ₁ , c ₂ , c ₄ and c ₅ .	7	2. 6	5. 5
12 13	75. 44	1. 7	2. 3	4, 9, 15, 19, 21, 22, 24, 27, 32, 38.	Bisections at III and V.	8	4. 2	3. 8
12 37	75. 44	2. 0	2. 6	20.	Bisections at b ₃ and c ₅ .	10	2. 8	4. 7
13 9	.....	....	3. 2	30.	Bisections at IV and V.	16	2. 7	5. 2
13 32	75. 50	2. 5	3. 4	Notes. 2, 4, 27, 30, 32, 38. Observed head south. 3. Star unsteady. 5, 9, 15, 19, 21, 22, 24. Observed head north. 5-26, 27-38. Seeing 4. 30. Hurried.		17	3. 0	5. 1
28 11 51	76. 23	2. 7	3. 7			18	3. 1	5. 2
12 14	76. 23	-2. 6	-3. 8			28	2. 3	6. 7
						29	2. 3	5. 5
				Adopted Equator Point Corrections.		31	3. 2	5. 4
						33	+2. 1	-6. 4
							"	"
				1-4, from nadir { 11 ^h 40 ^m +2. 35 } -5. 75				
				{ 13 46 +3. 06 }				
				5, 9, 15, 19-26, from nadir { 11 39 +2. 47 } -4. 97				
				{ 13 50 +3. 22 }				
				6-8, 10-14, 16-18, from stars..... +2. 8 -4. 9				
				27, 30, 32, 38, from nadir..... +1. 72 -6. 34				
				28, 29, 31, 33-37, from stars..... +2. 7 -6. 1				

NO.	NAME.	THDS.	MEAN THREAD.	$\epsilon''/\text{SEC } \delta$ + $n \tan \delta.$	$\Delta T + m.$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
			m s	s	s	h m s	s	° ' "	"	"	° ' "	"	"
I	Piazzi XII. 170.	9	39 26.03	+ 0.06	-17.05	12 39 8.86	-5.64	357 42 33.38	42.92	53.63	- 2 18 16.3	15.9	+35.6
2	35 Virginis.	9	43 8.67	0.03	17.19	12 42 51.53	5.54	4 7 9.80	19.18	42.58	+ 4 6 31.2	31.2	36.5
3	37 Virginis.	9	46 54.15	- 0.04	17.08	12 46 37.00	-5.55	3 36 4.45	14.00	43.40	3 35 25.0	25.3	+36.3
4	α Canum Venat.	9	51 43.25	+ 0.12	[17.07]	12 51 26.25	....	38 50 46.05	52.78	0.08	38 50 48.8	47.2	....
5	43 H. Cephei S. P.	9	55 22.00	- 2.42	[17.08]	0 55 ....	....	94 14 35.85	44.62	88.35	85 43 53.0	52.2	....
6	14 Canum Venat.	9	1 26.03	+ 0.11	[-16.96]	13 1 9.01	....	36 19 21.42	29.35	2.78	+36 19 21.4	21.0	....
7	0 Virginis.	9	5 9.13	- 0.07	-17.18	13 4 51.93	....	355 0 1.28	11.95	58.93	- 5 0 54.6	52.4	....
8	α Ursæ Minoris S. P.	9	23 6.10	- 8.52	[17.30]	1 22 ....	....	91 11 31.83	41.26	78.98	+88 47 6.2	4.9	....
9	25 Canum Venat.	9	33 22.85	+ 0.11	[17.02]	13 33 5.81	....	36 47 32.50	40.50	2.28	+36 47 33.0	32.7	....
10	m Virginis.	9	36 44.51	- 0.08	17.12	13 36 27.28	....	351 48 37.40	46.58	65.80	- 8 12 25.4	24.7	....
11	83 Virginis.	9	39 29.03	- 0.12	-17.15	13 39 11.76	....	344 20 18.65	28.20	85.84	-15 41 4.1	3.1	....

UPDEGRAFF, OBSERVER.				1901 MARCH 2.				CLAMP WEST.				LAWTON, ASSISTANT.			
12	58	Ursæ Majoris	9	25 30.72	+ 0.56	[-18.44]	11 25 12.77	....	43 42 33.88	41.90	4.92	+43 42 42.1	41.0	....	
13	v	Leonis	9	32 14.07	- 0.04	18.54	11 31 55.51	-5.77	359 43 49.78	58.22	47.86	- 0 16 54.5	55.3	+37.6	
14	β	Virginis	9	45 53.51	- 0.02	18.52	11 45 34.98	5.79	2 19 44.00	52.70	43.64	- 2 19 3.9	3.5	38.0	
15		Groombridge 1830	9	47 37.41	+ 0.00	[18.50]	11 47 19.33	....	38 25 21.68	30.10	0.51	38 25 24.5	23.9	....	
16	b	Virginis	9	55 13.84	0.00	18.48	11 54 55.33	-5.73	4 12 42.65	52.50	40.74	4 12 5.5	6.3	+38.0	
17	2	Canum Venat.	9	11 30.70	+ 0.48	[-18.39]	12 11 12.66	....	41 12 15.92	23.25	2.35	+41 12 21.6	20.0	....	
18	η	Virginis	9	15 11.64	- 0.04	-18.52	12 14 53.09	-5.69	359 53 27.72	36.48	47.73	- 0 7 16.4	16.5	+37.0	
19		W. B., XII. 279	9	20 35.16	0.05	18.50	12 20 16.61	5.70	359 29 11.88	20.48	48.44	- 0 31 33.0	33.2	36.8	
20		W. B., XII. 363	9	24 39.68	0.05	18.50	12 24 21.13	5.69	359 19 20.42	29.80	48.74	- 0 41 24.7	24.1	36.7	
21		B. D. +0° 2952	9	28 16.32	0.04	18.50	12 27 57.78	5.68	0 16 44.60	53.78	47.12	+ 0 16 1.1	1.5	36.7	
22		Lal. 23581	9	32 21.97	- 0.06	18.50	12 32 3.41	-5.69	358 14 7.42	18.12	50.65	- 1 46 39.7	37.7	+36.2	
23	9	Canum Venat.	9	34 21.13	+ 0.47	[-18.41]	12 34 3.08	....	41 24 44.20	52.25	2.57	+41 24 50.1	49.3	....	
24		Piazzi XII. 170	9	39 27.48	- 0.07	-18.45	12 39 8.92	-5.68	357 42 31.85	40.10	51.61	- 2 18 16.2	16.5	+35.9	
25	35	Virginis	9	42 10.04	0.00	18.56	12 42 51.55	5.57	4 7 8.08	16.73	40.97	+ 4 6 30.7	30.7	36.6	
26	37	Virginis	9	46 55.53	0.00	18.46	12 46 37.04	-5.59	3 36 3.08	12.40	41.76	3 35 24.9	25.7	+36.5	
27	a	Canum Venat.	9	51 44.49	+ 0.41	[18.56]	12 51 26.38	....	38 50 45.98	54.32	0.08	38 50 49.2	48.8	....	
28	43	H. Cephei s. P.	9	55 27.72	- 7.21	[18.33]	0 55	....	94 14 38.38	48.35	85.05	85 43 53.2	51.7	....	
29	14	Canum Venat.	8	1 27.27	+ 0.37	[-18.40]	13 1 9.12	....	36 19 21.75	29.82	2.68	+36 19 22.4	21.7	....	
30	θ	Virginis	9	5 10.53	- 0.09	-18.52	13 4 51.92	....	354 59 59.72	70.22	56.74	- 5 0 53.5	51.8	....	
31	20	Canum Venat.	9	13 26.67	+ 0.45	[18.46]	13 13 8.60	....	41 5 13.00	20.42	2.23	+41 5 18.6	17.3	....	
32	a	Ursæ Minoris s. P.	9	23 21.89	-25.06	[18.04]	1 22	....	91 11 34.24	44.66	76.14	88 47 6.0	4.1	....	
33	25	Canum Venat.	9	33 24.11	+ 0.38	[18.50]	13 33 5.97	....	36 47 32.45	41.20	2.20	+36 47 33.6	33.7	....	
34	m	Virginis	9	36 46.04	- 0.12	18.57	13 36 27.40	....	351 48 33.78	44.15	63.47	- 8 12 26.1	24.5	....	
35	83	Virginis	9	39 30.52	- 0.20	-18.52	13 39 11.80	....	344 20 15.58	25.68	82.83	-15 41 3.6	2.3	....	

UPDEGRAFF, OBSERVER.										1901 MARCH 5.										CLAMP WEST.										LAWTON, ASSISTANT.									
36	58	Ursæ Majoris	9	25	31.96	+ 0.10	[−19.20]	11	25	12.68	....	43	42	33.50	41.00	5.19	+43	42	42.6	41.9	....																		
37	v	Leonis	9	32	14.91	− 0.04	19.36	11	31	55.49	−5.79	359	43	51.78	59.42	50.46	− 0	16	54.2	54.8	+37.8																		
38	β	Virginis	9	45	54.44	− 0.04	19.40	11	45	35.02	5.82	2	19	44.90	52.95	45.98	+ 2	19	3.4	3.2	38.2																		
39		Groombridge 1830.	9	47	38.61	+ 0.07	[19.29]	11	47	19.30	....	38	25	20.05	28.48	0.54	38	25	23.5	23.8	....																		
40	b	Virginis	9	55	14.77	− 0.03	19.36	11	54	55.37	−5.75	4	12	44.55	52.65	42.92	4	12	6.1	6.0	+38.0																		
41	2	Canum Venat.	9	11	31.97	+ 0.06	[−19.19]	12	11	12.66	....	41	12	13.22	21.70	2.48	+41	12	19.8	20.1	....																		

[illegible]

NO.	NAME.	THDS.	MEAN THREAD.	ϵ_0' SEC δ + n TAN δ .	$\Delta T + m$.	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	η Virginis.....	9	m 15 12.53	-0.04	-19.37	12 14 53.13	-5.73	359 53 28.80	36.90	50.28	-0 7 17.0	17.1	+37.2
2	Lal. 23271.....	9	s 22 3.98	0.04	19.35	12 21 44.59	5.72	0 22 22.60	28.92	49.43	+0 21 37.6	35.8	37.1
3	Lal. 23342.....	9	s 24 27.15	0.05	19.35	12 24 7.75	5.74	358 7 37.40	46.65	53.53	-1 53 11.6	10.6	36.7
4	B. D. + 0° 2952...	9	s 28 17.29	-0.04	19.35	12 27 57.90	-5.71	0 16 46.38	54.88	49.61	+0 16 1.2	1.5	+36.8
5	9 Canum Venat.....	9	s 34 22.44	+0.05	-19.25	12 34 3.13	....	41 24 42.32	50.32	2.70	+41 24 49.2	49.1	....
6	Piazz XII. 170....	9	s 39 28.44	-0.05	-19.40	12 39 9.04	-5.71	357 42 33.25	41.15	54.36	-2 18 16.6	17.0	+36.1
7	35 Virginis.....	9	s 43 10.88	0.04	19.31	12 42 51.50	5.62	4 7 9.18	18.00	43.17	+4 6 30.5	31.1	36.8
8	37 Virginis.....	9	s 46 56.47	-0.04	19.32	12 46 37.09	-5.63	3 36 4.30	13.02	44.01	3 35 24.7	25.3	+36.6
9	α Canum Venat.....	9	s 51 45.58	+0.03	19.21	12 51 26.26	....	38 50 45.02	53.18	0.08	38 50 49.2	49.3	....
10	43 H. Cephei s. P....	7	s 55 22.06	-0.85	-19.45	0 55 .....	....	94 14 35.12	43.25	89.64	+85 43 50.9	50.6	....
11	14 Canum Venat.....	9	s 1 28.48	+0.02	-19.21	13 1 9.16	....	36 19 20.72	28.15	2.82	+36 19 22.2	21.5	....
12	6 Virginis.....	9	s 5 11.39	-0.05	19.37	13 4 52.00	....	355 0 0.95	11.40	59.83	-5 0 54.3	52.1	....
13	20 Canum Venat.....	9	s 13 27.86	+0.03	19.16	13 13 8.55	....	41 5 10.80	18.75	2.35	+41 5 17.6	17.4	....
14	α Ursæ Minoris S. P.	9	s 22 59.81	-2.70	20.50	1 22 .....	....	91 11 30.49	39.26	80.22	88 47 4.6	3.8	....
15	25 Canum Venat.....	9	s 33 25.31	+0.02	-19.27	13 33 6.00	....	36 47 32.12	39.20	2.31	+36 47 34.3	33.2	....

1901 MARCH 6.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

16	58 Ursæ Majoris.....	9	s 25 32.53	0.00	-19.67	11 25 12.80	....	43 42 34.48	41.25	5.28	+43 42 43.6	41.8	....
17	v Leonis.....	9	s 32 15.29	-0.05	19.72	11 31 55.50	-5.80	359 43 52.38	61.75	51.29	-0 16 54.9	54.9	+37.9
18	β Virginis.....	9	s 45 54.83	0.04	19.77	11 45 35.06	5.84	2 19 45.95	55.02	46.69	+2 19 3.2	3.1	38.3
19	Groombridge 1830.	9	s 47 39.11	0.00	19.71	11 47 19.39	....	38 25 22.70	....	0.54	38 25 26.0	....	....
20	δ Virginis.....	9	s 55 15.14	-0.04	19.71	11 54 55.38	-5.76	4 12 45.78	54.75	43.55	4 12 6.2	6.1	+38.0
21	2 Canum Venat.....	9	s 11 32.48	0.00	-19.62	12 11 12.76	....	41 12 15.02	22.72	2.51	+41 12 21.4	20.7	....
22	η Virginis.....	9	s 15 12.88	-0.05	-19.70	12 14 53.12	-5.74	359 53 30.55	38.48	50.97	-0 7 16.5	17.3	+37.3
23	Lal. 23271.....	9	s 22 4.34	0.05	19.71	12 21 44.58	5.73	0 22 22.40	31.38	50.10	+0 21 36.3	36.5	37.1
24	Lal. 23342.....	9	s 24 27.47	0.05	19.70	12 24 7.72	5.74	358 7 37.60	47.50	54.25	-1 53 12.7	11.5	36.8
25	Mayer 531.....	9	s 29 41.17	0.05	19.70	12 29 21.42	5.72	359 8 48.62	57.28	52.34	-0 51 59.7	59.7	36.7
26	9 Canum Venat.....	9	s 34 22.89	0.00	19.64	12 34 3.17	....	41 24 44.30	52.50	2.74	+41 24 50.9	50.8	....
27	Piazz XII. 170....	9	s 39 28.71	-0.05	-19.66	12 39 8.96	-5.72	357 42 35.82	43.78	55.05	-2 18 15.3	15.8	+36.1
28	35 Virginis.....	9	s 43 11.31	-0.04	-19.72	12 42 51.58	-5.64	4 7 9.65	19.12	43.70	+4 6 29.9	30.9	+36.8
29	37 Virginis.....	9	s 46 56.86	0.04	19.70	12 46 37.13	-5.64	3 36 4.60	13.25	44.54	3 35 24.0	24.3	+36.6
30	α Canum Venat.....	9	s 51 46.19	0.00	19.77	12 51 26.47	....	38 50 48.12	54.32	0.08	38 50 51.9	49.9	....
31	43 H. Cephei s. P....	8	s 55 20.98	0.10	19.26	0 55 .....	....	94 14 34.08	43.15	90.70	85 43 51.4	50.1	....
32	14 Canum Venat.....	9	s 1 28.98	-0.01	-19.67	13 1 9.25	....	36 19 21.82	29.70	2.85	+36 19 22.8	22.6	....
33	6 Virginis.....	7	s 5 11.83	-0.05	-19.79	13 4 52.06	....	355 0 2.20	12.42	60.49	-5 0 54.2	52.3	....
34	20 Canum Venat.....	9	s 13 28.46	0.00	19.71	13 13 8.74	....	41 5 12.08	20.05	2.38	+41 5 18.3	18.2	....
35	α Ursæ Minoris S. P.	9	s 22 55.36	0.38	19.01	1 22 .....	....	91 11 29.26	39.36	81.17	88 47 5.5	3.2	....
36	25 Canum Venat.....	9	s 33 25.79	0.01	19.69	13 33 6.06	....	36 47 32.58	40.12	2.34	+36 47 34.1	33.6	....
37	m Virginis.....	9	s 36 47.23	-0.06	-19.73	13 36 27.45	....	351 48 37.02	46.35	67.67	-8 12 26.6	25.4	....

1901 MARCH 7.

CLAMP WEST.

UPDEGRAFF, OBSERVER.

LAWTON, ASSISTANT.

38	58 Ursæ Majoris	9	25 33.08	+0.26	[-20.48]	II 25 12.86		43 42 34.88	42. 15	5. 07	+43 42 44. 5	41. 9		
Time.	Barom.	Att. Ther.	Ext. Ther.	Bisections are made at II and V, except as noted below.								Eq. Pt. Cor. from stars.		
												No.	A.	B.
d h m	cm.	°	°	Notes.									"	"
5 12 17	75. 55	-8. 2	-9. 2	5, 9, II, I3, I5, } 16, 2I, 26, 30, } 32, 34, 36, 38. }	Bisections at III and V.			I-15.	Seeing 3.	I	+3. 2	-4. 5		
13 4	75. 53	8. 5	9. 8	10, 31. } 14, 35. }	Bisections at c ₁ and c ₅ .			2, 3.	Very diffuse.	6	3. 4	4. 0		
13 32	75. 52	8. 8	9. 9		Bisections at c ₁ , c ₂ , c ₄ and c ₅ .			5, 9, II, I3, I5, 38.	Observed head south.	7	3. 6	4. 8		
6 11 22	76. 26	10. 0	10. 4		Bisection at III.			14.	Good observation.	8	3. 4	5. 0		
11 57	76. 27	10. 0	10. 2	19.				16, 19, 21, 26, }	Observed head north.	17	2. 0	6. 9		
12 32	76. 25	9. 8	10. 3					30, 32, 34, 36. }	Seeing 2-4.	18	3. 2	5. 5		
13 4	.....	.....	10. 2					16-37.		20	2. 6	6. 0		
13 32	76. 25	10. 0	10. 4							22	2. 1	5. 5		
7 11 20	76. 08	-I. 0	-I. I				Adopted Equator Point Corrections.			27	1. 6	6. 0		
											A.	B.		
											"	"		
											I-4, 6-8, from stars	+3. 2	-4. 6	
											5, 9-15, from nadir {	11 ^h 40 ^m	+2. 88	-4. 98
											I3 45	+3. 48	-4. 39	
											I6, 19, 21, 26, 30-37, from nadir {	11 39	+5. 48	-5. 48
											I3 50	+2. 79	-4. 88	
											17, 18, 20, 22-25, 27-29, from stars {	11 52	+2. 69	-5. 98
											I2 43	-5. 37	-5. 37	
											38, from nadir.....	+3. 47	-6. 12	

OBSERVATIONS OF ZODIACAL STARS.

D 77

NO.	NAME.	THDS.	MEAN THREAD.	$\frac{1}{n} \sec \delta + \tan \delta$	$\Delta T + m$	APPARENT R. A.	RED. TO 1900.0	CIRCLE READING.		REFR.	APPARENT DECL.		RED. TO 1900.0
								A.	B.		A.	B.	
1	ν Leonis	9	32 16.08	- 0.05	-20.50	h m s 11 31 55.54	-5.81	359 43 49.72	58.42	49.34	- 0 16 55.4	55.9	+37.9
2	β Virginis	9	45 55.57	- 0.03	20.51	11 45 35.04	5.85	2 19 43.52	52.95	44.95	+ 2 19 2.8	3.1	38.3
3	Groombridge 1830	9	47 39.68	+ 0.21	[20.48]	11 47 19.39	....	38 25 20.30	30.45	0.52	38 25 24.3	24.6	....
4	δ Virginis	9	55 15.91	- 0.02	20.50	11 54 55.38	5.76	4 12 43.75	51.95	41.95	4 12 6.0	5.0	38.1
5	2 Canum Venat.	9	11 33.02	+ 0.24	[20.39]	12 11 12.74	....	41 12 14.42	24.35	2.42	+41 12 21.4	21.4	....
6	η Virginis	9	15 13.71	- 0.05	-20.51	12 14 53.13	-5.76	359 53 28.60	36.80	49.10	- 0 7 16.2	17.2	+37.3
7	Lal. 23271	9	22 5.20	- 0.04	-20.53	12 21 44.63	-5.74	0 22 20.60	29.82	48.27	+ 0 21 36.6	36.6	37.1
8	Lal. 23342	9	24 28.31	0.06	20.54	12 24 7.71	5.75	358 7 36.10	46.12	52.28	- 1 53 11.9	11.1	36.8
9	Mayer 531	9	29 42.05	0.05	20.54	12 29 21.46	5.73	359 8 46.38	55.88	50.44	0 51 59.8	59.5	36.7
10	Lal. 23581	9	32 24.14	- 0.06	20.54	12 32 3.54	5.74	358 14 7.68	18.95	52.08	- 1 46 40.1	38.1	36.5
11	9 Canum Venat.	9	34 23.51	+ 0.24	[20.49]	12 34 3.20	....	41 24 42.48	53.45	2.64	+41 24 49.7	50.8	....
12	Piazzi XII. 170	9	39 29.58	- 0.06	-20.51	12 39 8.97	-5.73	357 42 32.00	41.42	53.08	- 2 18 16.8	16.6	+36.2
13	35 Virginis	9	43 12.17	- 0.02	-20.59	12 42 51.60	-5.65	4 7 8.82	18.40	42.15	- 4 6 30.9	31.3	+36.9
14	37 Virginis	9	46 57.71	- 0.03	20.56	12 46 37.12	-5.64	3 36 3.68	13.55	42.96	3 35 25.0	25.6	36.6
15	α Canum Venat.	9	51 46.73	+ 0.22	[20.51]	12 51 26.39	....	38 50 45.88	55.02	0.08	38 50 50.4	49.6	....
16	43 H. Cephei S. P.	8	55 25.36	- 3.88	[19.98]	0 55 .....	....	94 14 37.30	46.88	87.50	85 43 50.6	49.6	....
17	14 Canum Venat.	9	1 29.61	+ 0.19	[-20.48]	13 1 9.23	....	36 19 20.55	30.65	2.75	+36 19 22.4	22.6	....
18	0 Virginis	9	5 12.71	- 0.08	-20.62	13 4 52.05	....	354 59 59.65	70.40	58.38	- 5 0 54.0	53.2	....
19	20 Canum Venat.	9	13 29.02	+ 0.24	[20.49]	13 13 8.68	....	41 5 10.95	20.45	2.30	+41 5 17.8	17.4	....
20	α Ursæ Minoris S. P.	9	23 9.89	-14.35	[20.12]	13 13 33.12	....	91 11 33.12	43.58	78.36	88 47 3.7	2.9	....
21	25 Canum Venat.	9	33 26.48	+ 0.20	[20.57]	13 33 6.08	....	36 47 32.32	40.38	2.26	+36 47 34.6	32.8	....
22	m Virginis	9	36 48.13	- 0.10	-20.58	13 36 27.43	....	351 48 34.52	45.18	65.31	- 8 12 26.0	25.4	....

UPDEGRAFF, OBSERVER.

1901 MARCH 8.

CLAMP WEST.

NO ASSISTANT.

23	β Andromedæ	9	4 32.37	+ 0.24	-20.94	1 4 .....	....	35 5 52.15	62.60	3.82	+35 5 54.5	54.2	....
24	α Ursæ Minoris	9	22 37.21	18.69	[20.73]	1 22 .....	....	88 45 48.60	60.36	67.66	88 47 2.7	3.8	....
25	β Arietis	9	49 31.73	+ 0.10	-21.00	1 49 .....	....	20 19 43.72	53.45	19.22	+20 19 30.7	29.7	....

UPDEGRAFF, OBSERVER.

1901 MARCH 12.

CLAMP WEST.

NO ASSISTANT.

26	β Andromedæ	9	4 34.46	- 0.25	-22.56	1 4 .....	....	35 5 41.15	47.72	3.78	+35 5 51.3	51.7	....
27	α Ursæ Minoris	8	23 8.95	13.52	[21.92]	1 22 .....	....	88 45 40.86	46.96	66.91	88 47 2.0	2.0	....
28	α Persei	9	17 39.18	0.26	22.52	3 17 .....	....	49 30 16.28	21.62	10.54	49 30 40.8	39.9	....
29	Nova Persei	9	24 52.19	0.22	22.51	3 24 29.46	-5.38	43 33 43.32	48.42	4.58	43 34 1.9	0.8	-20.5
30	δ Persei	9	36 16.58	0.24	22.50	3 35 .....	....	47 28 2.92	6.45	8.48	47 28 25.4	22.7	....
31	ν Persei	9	38 52.06	- 0.21	-22.50	3 38 .....	....	42 15 48.12	53.40	3.30	+42 16 5.4	4.5	....

UPDEGRAFF, OBSERVER.

1901 MARCH 15.

CLAMP WEST.

NO ASSISTANT.

32	β Andromedæ	9	4 34.36	- 0.36	-22.37	1 4 .....	....	35 5 41.82	45.75	3.79	+35 5 51.0	51.5	....
33	α Ursæ Minoris	5	23 17.22	21.92	[23.15]	1 22 .....	....	88 45 41.52	44.56	67.19	88 47 1.9	1.6	....
34	β Persei	9	2 7.31	0.36	22.40	3 1 .....	....	40 34 19.98	23.88	1.64	40 34 34.6	35.0	....
35	α Persei	9	17 39.19	0.47	22.39	3 17 .....	....	49 30 17.70	20.45	10.59	49 30 41.2	40.5	....
36	Nova Persei	9	24 52.20	- 0.39	-22.40	3 24 29.41	-5.34	43 33 43.92	46.90	4.60	+43 34 1.5	1.0	-20.2

				Bisections are made at II and V, except as noted below.		Eq. Pt. Cor. from stars.		
Time.	Barom.	Att. Ther.	Ext. Ther.			No.	A.	B.
d h m	cm.	°	°				"	"
7 12 14	76.08	— 1.3	— 1.4	3, 5, 11, 15, 17, 19, 21.	} Bisections at III and V.	1	+2.8	—6.5
12 45	76.06	1.2	1.7			2	3.9	5.2
13 35	76.05	— 1.3	— 2.1	16.	Bisections at c ₁ and c ₅ .	4	3.0	4.8
8 1 14	75.77	+11.8	+13.1	20, 24, 27, 33.	Bisections at c ₁ , c ₂ , c ₄ and c ₅ .	6	2.1	5.7
1 56	75.72	11.7	13.1	23, 25, 26, 28,	} Bisection at IV.	12	3.3	5.7
12 1 10	75.40	12.5	14.8	29, 30, 31, 32,		13	2.9	6.3
3 22	75.48	16.5	15.8	34, 35, 36.		14	+2.9	—6.5
15 1 20	74.82	11.0	11.5	Adopted Equator Point Corrections.				
3 16	74.76	+12.5	+11.8					
				Notes		A.	B.	
				Seeing 3.		"	"	
				3, 5, 11, 15, 17, 19, 21.	I, 2, 4, 6—10, 12—14, from stars. . . .	+ 3.0	—5.8	
				Observed head south.	3, 5, 11, 15—22, from nadir. . . .	+ 3.47	—6.12	
				24, 29.	23—25, from nadir. . . .	+ 5.17	—5.54	
				33.	26—31, from nadir. . . .	+12.96	+6.78	
				Good observations.	32—36, from nadir. . . .	+11.94	+8.50	
				Through clouds; star faint and unsteady.				

RESULTS
OF
OBSERVATIONS.

D 79

INDIVIDUAL RESULTS

OBSERVATIONS OF STARS.

REDUCED TO 1900.0.

Circle A. B.									
43 H. Cephei S. P.									
1900	h	m	s	°	'	"	°	'	"
June 5 U.	0	55	1.95	+85	43	15.4	15.3		
50 Cassiopeiae S. P.									
1900	h	m	s	°	'	"	°	'	"
June 5 U.	1	54	53.36	+71	56	16.1	16.1		
6 U.			53.26			16.5	15.7		
7 U.			53.23			16.7	14.7		
9 U.			53.12			17.1	16.5		
11 U.			53.25			16.8	14.4		
20 U.			53.29			17.5	17.0		
21 U.			53.29			15.5	14.5		
22 U.			53.29			17.1	14.1		
23 U.			53.15			16.9	13.7		
Mean . . .	1	54	53.244	+71	56	16.69	15.19		
B. D. +37° 480									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	2	0	9.29	+37	48	55.0	55.0		
13 U.			9.24			54.2	54.5		
14 L.			9.02			55.1	54.6		
16 U.			9.22			53.0	53.1		
Mean . . .	2	0	9.188	+37	48	54.10	54.30		
B. D. +38° 413									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	2	2	21.53	+38	55	18.3	18.3		
10 U.			21.58			17.8	18.8		
13 U.			21.43			17.6	19.5		
18 L.			21.45			18.3	18.8		
Mean . . .	2	2	21.493	+38	55	18.00	18.85		
B. D. +38° 418									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	2	2	57.66	+39	7	5.1	4.7		
20 U.			57.62			5.5	5.0		
21 U.			57.57			4.2	5.1		
29 U.			57.65			4.7	4.6		
Mean . . .	2	2	57.625	+39	7	4.88	4.85		
B. D. +37° 490									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	2	3	56.00	+38	11	25.4	25.2		
16 U.			56.17			25.2	24.3		
1901	h	m	s	°	'	"	°	'	"
Jan. 3 U.			56.17			[27.5]	26.6		
5 L.			56.36			25.9	26.4		
Mean . . .	2	3	56.166	+38	11	25.50	25.62		
B. D. +36° 421									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	2	4	4.04	+36	18	60.1	60.3		
20 U.			4.01			60.2	59.8		
22 U.			4.07			60.7	60.4		
Mean . . .	2	4	4.034	+36	19	0.33	0.17		
B. D. +37° 491									
1901	h	m	s	°	'	"	°	'	"
Jan. 13 U.	2	4	10.13	+37	12	54.0	53.5		
B. D. +36° 426									
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.	2	4	37.49	+37	13	45.8	46.1		
16 U.			37.55			45.8	45.5		
18 U.			37.60			45.4	47.0		
Mean . . .	2	4	37.541	+37	13	45.67	46.20		
B. D. +38° 423									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	2	4	[41.71]	+38	13	53.2	52.7		
13 U.			41.56			52.7	53.4		
18 L.			41.61			53.0	54.6		
Mean . . .	2	4	41.576	+38	13	52.97	53.57		
B. D. +38° 425									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	2	4	48.72	+38	34	4.0	3.2		
20 U.			48.74			4.7	4.3		
1901	h	m	s	°	'	"	°	'	"
Jan. 8 L.			48.76			4.3	3.4		
26 L.			48.73			4.0	5.1		
Mean . . .	2	4	48.729	+38	34	4.25	4.00		
B. D. +36° 427									
1900	h	m	s	°	'	"	°	'	"
Dec. 21 U.	2	5	25.29	+36	52	51.9	51.3		
29 U.			25.30			52.6	52.2		
1901	h	m	s	°	'	"	°	'	"
Jan. 3 U.			25.22			52.8	50.7		
5 L.			25.34			52.8	52.0		
Mean . . .	2	5	25.283	+36	52	52.52	51.55		
B. D. +36° 428									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	2	5	53.50	+36	29	44.4	44.9		
14 L.			53.24			45.7	45.3		
16 U.			53.38			44.5	45.4		
Mean . . .	2	5	53.368	+36	29	44.87	45.20		
B. D. +38° 434									
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.	2	6	40.52	+38	24	59.7	60.6		
16 U.			40.50			59.6	59.3		
18 U.			40.53			58.5	60.3		
Mean . . .	2	6	40.511	+38	24	59.27	60.07		
B. D. +36° 435									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	2	6	45.23	+36	54	2.8	2.9		
20 U.			45.24			2.1	2.4		
22 U.			45.25			2.9	3.3		
26 L.			45.23			3.7	3.3		
Mean . . .	2	6	45.229	+36	54	2.88	2.98		
B. D. +37° 505									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	2	7	52.57	+37	56	21.1	21.8		
13 U.			52.43			21.1	20.8		
14 L.			52.34			21.5	20.8		
18 L.			52.50			20.9	20.8		
Mean . . .	2	7	52.452	+37	56	21.15	21.05		
B. D. +36° 440									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	2	7	53.54	+37	8	59.7	59.8		
1901	h	m	s	°	'	"	°	'	"
Jan. 3 U.			53.51			59.5	58.5		
5 L.			53.61			59.4	58.5		
8 L.			53.61			59.4	58.8		
13 U.			53.51			59.2	59.1		
Mean . . .	2	7	53.549	+37	8	59.44	58.94		
B. D. +37° 506									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	2	8	4.45	+38	10	16.3	15.7		
19 U.			4.41			15.6	14.9		
20 U.			4.40			15.8	15.1		
21 U.			4.47			14.9	16.0		
Mean . . .	2	8	4.432	+38	10	15.65	15.42		
B. D. +37° 512									
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.	2	9	25.43	+37	55	3.5	3.1		
16 U.			25.33			3.8	2.6		
18 U.			25.38			3.2	3.2		
19 L.			25.48			3.2	3.1		
20 U.			25.36			2.6	3.9		
Mean . . .	2	9	25.389	+37	55	3.26	3.18		
B. D. +36° 446									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	2	9	52.90	+36	18	19.8	20.3		
13 U.			52.84			19.5	19.9		
14 L.			52.76			20.1	20.0		
1901	h	m	s	°	'	"	°	'	"
Jan. 26 L.			52.85			19.5	21.0		
Mean . . .	2	9	52.829	+36	18	19.72	20.30		
B. D. +36° 450									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	2	10	27.25	+36	40	59.4	59.3		
18 L.			27.25			60.1	59.3		
19 U.			27.18			59.8	59.0		
20 U.			27.19			59.9	60.9		
Mean . . .	2	10	27.201	+36	40	59.80	59.73		
B. D. +37° 514									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	2	10	54.27	+37	40	56.9	57.1		
1901	h	m	s	°	'	"	°	'	"
Jan. 3 U.			54.23			57.3	57.3		
5 L.			54.34			57.2	57.3		
8 L.			54.38			56.7	57.0		
13 U.			54.29			56.1	56.9		
Mean . . .	2	10	54.295	+37	40	56.84	57.12		
B. D. +36° 453									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	2	11	8.40	+37	1	11.5	11.7		
20 U.			8.28			11.1	12.3		
22 U.			8.34			10.7	11.7		
Mean . . .	2	11	8.334	+37	1	11.10	11.90		

Circle A. B.									
B. D. +37° 516									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	2	11	14.65	+37	22	9.5	9.0	
16	U.			14.68			9.0	8.4	
18	U.			14.74			8.8	8.4	
Mean		2	11	14.684	+37	22	9.10	8.60	
B. D. +37° 518									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	2	11	49.16	+37	37	28.9	28.2	
20	U.			49.08			28.8	28.1	
21	U.			49.10			28.4	27.8	
Mean		2	11	49.113	+37	37	28.70	28.03	
B. D. +36° 458									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	12	32.80	+36	36	18.3	19.0	
13	U.			32.87			18.0	18.5	
14	L.			32.89			17.6	18.2	
18	L.			32.92			17.7	18.8	
Mean		2	12	32.862	+36	36	17.90	18.62	
B. D. +36° 464									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	14	57.48	+36	36	46.0	46.4	
13	U.			57.50			45.4	45.5	
14	L.			57.46			45.7	45.6	
16	U.			57.49			45.5	45.8	
Mean		2	14	57.478	+36	36	45.65	45.82	
B. D. +36° 465									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	2	15	9.99	+36	57	53.4	53.4	
19	U.			9.96			53.9	53.1	
20	U.			9.92			53.9	52.6	
21	U.			9.98			53.2	53.4	
Mean		2	15	9.958	+36	57	53.60	53.12	
B. D. +36° 470									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	17	13.11	+37	6	16.0	16.9	
10	U.			13.01			17.5	17.5	
13	U.			13.04			17.0	17.0	
18	U.			13.10			17.1	15.9	
1901									
Jan. 15	L.			13.10			16.9	16.2	
Mean		2	17	13.069	+37	6	16.90	16.70	
B. D. +36° 473									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	2	17	36.57	+36	38	52.5	52.0	
16	U.			36.66			51.5	51.8	
19	U.			36.70			51.9	50.8	
20	U.			36.65			52.2	51.4	
1901									
Jan. 19	L.			36.72			52.0	51.5	
Mean		2	17	36.653	+36	38	52.02	51.50	
B. D. +36° 478									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	2	19	9.81	+36	39	58.8	59.7	
29	U.			9.82			60.9	60.4	
1901									
Jan. 3	U.			9.75			60.1	60.6	
5	L.			9.88			61.4	60.3	
8	L.			9.93			58.8	59.1	
Mean		2	19	9.828	+36	40	0.00	0.02	
B. D. +35° 470									
1901	h	m	s	°	'	''	°	'	''
Jan. 13	U.	2	19	20.64	+35	31	9.2	8.9	
15	L.			20.74			8.2	9.6	
16	U.			20.62			8.8	9.0	
22	U.			20.69			8.8	10.3	
Mean		2	19	20.668	+35	31	8.75	9.45	

Circle A. B.									
B. D. +34° 432									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	19	25.26	+34	35	23.1	22.9	
13	U.			25.30			22.2	23.1	
14	L.			25.13			22.8	22.8	
Mean		2	19	25.224	+34	35	22.70	22.93	
B. D. +36° 482									
1900	h	m	s	°	'	''	°	'	''
Dec. 16	U.	2	19	44.34	+36	33	40.4	38.8	
20	U.			44.25			41.8	41.3	
21	U.			44.28			41.6	42.1	
Mean		2	19	44.290	+36	33	41.27	40.73	
B. D. +34° 435									
1901	h	m	s	°	'	''	°	'	''
Jan. 18	U.	2	20	8.27	+34	24	8.3	8.7	
19	L.			8.32			7.3	8.2	
20	U.			8.18			8.2	10.3	
Mean		2	20	8.251	+34	24	7.93	9.07	
B. D. +34° 437									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	2	20	45.19	+35	9	50.9	50.9	
1901									
Jan. 3	U.			45.13			51.2	51.4	
5	L.			45.19			51.3	50.0	
8	L.			45.29			50.5	50.6	
26	L.			45.17			49.4	51.2	
Mean		2	20	45.184	+35	9	50.66	50.82	
B. D. +36° 491									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	21	8.90	+36	31	1.6	1.2	
18	L.			8.74			0.6	1.8	
1901									
Jan. 13	U.			8.74			1.2	2.0	
22	U.			8.83			2.9	2.7	
Mean		2	21	8.798	+36	31	1.58	1.92	
B. D. +35° 477									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	22	1.13	+35	29	1.0	2.4	
13	U.			1.15			1.6	2.6	
14	L.			1.11			2.9	2.2	
16	U.			1.18			1.8	1.5	
1901									
Jan. 19	L.			1.22			2.6	2.5	
Mean		2	22	1.151	+35	29	1.98	2.24	
B. D. +34° 442									
1901	h	m	s	°	'	''	°	'	''
Jan. 5	L.	2	22	26.93	+34	50	60.4	61.7	
8	L.			26.99			60.5	61.1	
15	L.			26.89			59.5	61.1	
16	U.			26.78			60.7	61.5	
18	U.			26.93			60.0	61.4	
Mean		2	22	26.894	+34	51	0.22	1.36	
B. D. +35° 480									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	2	22	51.08	+35	13	14.4	12.7	
19	U.			51.08			12.8	12.4	
20	U.			51.05			13.3	13.0	
21	U.			51.13			12.3	12.6	
Mean		2	22	51.081	+35	13	12.80	12.68	
B. D. +35° 490									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	24	41.79	+35	40	20.9	20.4	
10	U.			41.66			22.0	21.6	
13	U.			41.69			21.5	21.9	
Mean		2	24	41.713	+35	40	21.47	21.30	

Circle A. B.									
B. D. +33° 447									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	2	24	57.87	+33	54	56.9	56.8	
16	U.			58.00			55.6	55.4	
18	L.			57.98			55.7	56.2	
Mean		2	24	57.939	+33	54	56.07	56.13	
B. D. +34° 448									
1901	h	m	s	°	'	''	°	'	''
Jan. 13	U.	2	25	4.06	+34	29	15.1	14.9	
15	L.			4.12			15.2	15.6	
16	U.			4.06			16.0	15.3	
Mean		2	25	4.074	+34	29	15.43	15.27	
B. D. +35° 494									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	2	25	5.04	+35	18	45.7	44.9	
1901									
Jan. 5	L.			5.10			47.0	46.1	
8	L.			5.17			45.0	46.1	
Mean		2	25	5.092	+35	18	45.90	45.70	
B. D. +34° 449									
1901	h	m	s	°	'	''	°	'	''
Jan. 22	U.	2	25	6.70	+34	57	21.8	23.4	
29	U.			6.69			22.0	22.2	
Mean		2	25	6.695	+34	57	21.90	22.80	
B. D. +35° 497									
1901	h	m	s	°	'	''	°	'	''
Jan. 18	U.	2	25	59.80	+35	42	14.6	14.3	
19	L.			59.82			13.7	14.8	
20	U.			59.78			14.7	14.7	
Mean		2	25	59.794	+35	42	14.33	14.60	
B. D. +34° 454									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	2	26	3.27	+34	14	10.4	10.6	
21	U.			3.28			10.3	11.6	
29	U.			[3.40]			11.2	10.9	
1901									
Jan. 26	L.			3.35			10.7	11.3	
Mean		2	26	3.294	+34	14	10.65	11.10	
B. D. +34° 457									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	26	29.29	+34	49	18.2	18.6	
18	L.			29.14			18.0	18.3	
19	U.			29.22			17.8	18.0	
Mean		2	26	29.211	+34	49	18.00	18.30	
B. D. +33° 454									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	26	50.30	+34	6	4.4	4.8	
13	U.			50.20			5.3	5.6	
14	L.			50.23			5.5	4.7	
1901									
Jan. 29	U.			50.21			5.1	5.0	
Mean		2	26	50.231	+34	6	5.08	5.02	
B. D. +33° 461									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	2	28	12.62	+33	21	13.1	10.4	
1901									
Jan. 8	L.			12.71			10.8	11.6	
13	U.			12.59			10.8	11.2	
26	L.			12.71			11.1	11.8	
Mean		2	28	12.649	+33	21	10.90	11.25	

1903PUSNO...3D...1U

Circle A. B.									
B. D. +34° 462									
1900	h	m	s	°	'	''	°	'	''
Dec. 16	U.	2	28	...	+34	42	40.8	41.6	
21	U.			12.81			41.9	43.0	
29	U.			12.90			42.0	41.9	
1901									
Jan. 5	L.			12.95			43.2	42.5	
Mean	...	2	28	12.881	+34	42	41.98	42.25	
B. D. +33° 462									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	28	31.06	+33	28	32.2	31.2	
18	L.			31.04			32.2	33.1	
19	U.			31.01			32.5	31.8	
1901									
Jan. 22	U.			31.04			33.5	33.2	
Mean	...	2	28	31.033	+33	28	32.60	32.32	
B. D. +33° 463									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	2	28	40.23	+33	38	41.8	42.1	
16	U.			40.19			42.1	41.3	
18	U.			40.24			41.6	41.4	
19	L.			40.27			41.5	41.9	
Mean	...	2	28	40.224	+33	38	41.75	41.68	
B. D. +34° 469									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	29	42.58	+34	15	7.9	6.0	
13	U.			42.52			5.2	6.8	
14	L.			42.46			5.7	6.4	
21	U.			42.53			5.3	7.2	
Mean	...	2	29	42.518	+34	15	6.02	6.60	
B. D. +34° 471									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	2	29	45.95	+34	17	18.8	18.6	
1901									
Jan. 5	L.			46.03			19.1	19.0	
8	L.			46.00			18.2	18.2	
20	U.			45.93			18.7	18.5	
Mean	...	2	29	45.969	+34	17	18.70	18.58	
B. D. +34° 476									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	31	44.86	+34	43	41.5	41.4	
10	U.			44.70			42.3	41.4	
13	U.			44.76			42.3	42.2	
14	L.			44.77			42.8	43.8	
1901									
Jan. 19	L.			44.78			42.1	43.2	
Mean	...	2	31	44.767	+34	43	42.20	42.40	
B. D. +33° 476									
1900	h	m	s	°	'	''	°	'	''
Dec. 16	U.	2	32	30.16	+33	56	2.8	2.1	
18	L.			30.15			2.2	3.0	
19	U.			30.14			2.8	1.7	
20	U.			30.10			3.8	1.5	
Mean	...	2	32	30.133	+33	56	2.90	2.08	
B. D. +34° 483									
1900	h	m	s	°	'	''	°	'	''
Dec. 21	U.	2	32	41.13	+34	50	21.0	23.8	
29	U.			41.14			22.6	23.9	
1901									
Jan. 5	L.			41.20			22.4	22.8	
18	U.			41.10			21.9	22.9	
Mean	...	2	32	41.138	+34	50	21.98	23.35	
Circle A. B.									
B. D. +32° 478									
1901	h	m	s	°	'	''	°	'	''
Jan. 8	L.	2	32	43.57	+32	59	11.9	10.8	
13	U.			43.46			11.4	11.2	
15	L.			43.51			12.2	...	
16	U.			43.46			12.4	11.1	
Mean	...	2	32	43.492	+32	59	11.98	11.03	
B. D. +32° 483									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	2	33	45.61	+33	3	53.3	52.2	
13	U.			45.66			53.8	53.2	
14	L.			45.65			53.6	54.8	
Mean	...	2	33	45.634	+33	3	53.57	53.40	
B. D. +33° 481									
1901	h	m	s	°	'	''	°	'	''
Jan. 19	L.	2	33	46.99	+33	31	6.1	6.9	
20	U.			46.91			6.2	5.9	
22	U.			46.92			5.8	6.7	
26	L.			47.02			5.8	6.2	
Mean	...	2	33	46.952	+33	31	5.98	6.42	
B. D. +32° 484									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	2	33	49.62	+32	23	3.4	1.2	
16	U.			49.56			3.1	1.5	
18	U.			49.56			2.4	1.4	
29	U.			49.59			3.2	1.9	
Mean	...	2	33	49.578	+32	23	3.02	1.50	
B. D. +34° 488									
1900	h	m	s	°	'	''	°	'	''
Dec. 16	U.	2	34	24.76	+34	51	29.5	30.0	
18	L.			24.70			29.0	30.7	
19	U.			24.78			30.1	31.0	
20	U.			24.73			30.3	31.6	
Mean	...	2	34	24.738	+34	51	29.72	30.82	
B. D. +34° 492									
1900	h	m	s	°	'	''	°	'	''
Dec. 21	U.	2	34	51.66	+34	24	26.7	28.0	
29	U.			51.65			27.2	28.4	
1901									
Jan. 5	L.			51.67			28.0	27.2	
Mean	...	2	34	51.654	+34	24	27.30	27.87	
B. D. +33° 493									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	36	31.14	+33	20	24.5	25.0	
10	U.			31.06			25.4	25.6	
13	U.			31.00			25.1	25.7	
1901									
Jan. 13	U.			31.01			25.6	25.2	
29	U.			31.06			26.0	26.1	
Mean	...	2	36	31.054	+33	20	25.32	25.52	
B. D. +32° 490									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	2	36	38.45	+32	28	33.5	32.9	
16	U.			38.46			33.6	31.4	
18	L.			38.48			32.8	32.3	
19	U.			38.42			33.0	31.9	
1901									
Jan. 16	U.			38.48			34.2	32.4	
Mean	...	2	36	38.451	+32	28	33.42	32.18	
Circle A. B.									
B. D. +33° 494									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	2	37	16.65	+33	44	54.3	53.4	
21	U.			16.74			52.7	54.0	
29	U.			16.69			54.4	54.2	
1901									
Jan. 8	L.			16.79			52.7	53.2	
15	L.			16.71			53.8	53.7	
Mean	...	2	37	16.709	+33	44	53.58	53.70	
B. D. +32° 498									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	39	4.34	+32	19	50.3	51.1	
13	U.			4.31			51.6	51.5	
14	L.			4.20			51.4	51.1	
16	U.			4.18			50.5	50.0	
Mean	...	2	39	4.253	+32	19	50.95	50.92	
B. D. +31° 477									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	2	40	19.05	+31	34	29.1	27.6	
20	U.			19.02			28.2	27.7	
21	U.			19.05			28.2	28.9	
29	U.			19.03			28.5	28.0	
Mean	...	2	40	19.038	+31	34	28.50	28.05	
B. D. +33° 512									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	2	41	27.46	+33	13	2.3	1.4	
13	U.			27.41			2.6	2.2	
14	L.			27.35			3.3	2.1	
18	L.			27.38			2.5	1.6	
Mean	...	2	41	27.392	+33	13	2.68	1.82	
B. D. +32° 508									
1901	h	m	s	°	'	''	°	'	''
Jan. 13	U.	2	43	1.13	+32	25	41.9	41.2	
15	L.			1.12			42.4	41.9	
16	U.			1.12			42.4	41.7	
18	U.			1.14			41.8	41.5	
19	L.			1.14			42.6	42.7	
Mean	...	2	43	1.123	+32	25	42.22	41.80	
B. D. +32° 507									
1900	h	m	s	°	'	''	°	'	''
Dec. 21	U.	2	43	1.15	+32	45	32.9	33.7	
29	U.			1.16			33.6	33.3	
1901									
Jan. 5	L.			1.11			34.3	32.5	
8	L.			1.23			32.5	33.6	
20	U.			1.12			33.2	32.7	
Mean	...	2	43	1.147	+32	45	33.30	33.16	
B. D. +31° 483									
1900	h	m	s	°	'	''	°	'	''
Dec. 16	U.	2	43	9.49	+31	41	48.8	45.4	
18	L.			9.55			46.4	46.1	
19	U.			9.58			48.0	45.9	
20	U.			9.56			47.8	46.0	
Mean	...	2	43	9.541	+31	41	47.75	45.85	
B. D. +31° 490									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	2	44	23.30	+31	33	35.9	35.2	
16	U.			23.22			34.5	34.5	
18	U.			23.26			34.9	35.0	
19	L.			23.23			36.0	35.5	
Mean	...	2	44	23.244	+31	33	35.32	35.05	

SIX-INCH TRANSIT CIRCLE.

Circle A. B.									
B. D. +31° 493									
1900	h	m	s						
Dec. 21 U.	2	44	56.03	+31	57	2.6	1.8		
29 U.			56.03			3.2	2.2		
1901									
Jan. 5 L.			56.04			2.2	2.2		
8 L.			56.11			2.3	2.1		
13 U.			55.98			2.8	1.0		
Mean . . .	2	44	56.032+31	57		2.62	1.86		
B. D. +32° 517									
1900	h	m	s						
Dec. 8 U.	2	45	56.93	+32	19	47.5	47.3		
14 L.			56.77			48.8	48.0		
16 U.			56.84			48.3	47.6		
18 L.			56.78			47.4	47.5		
1901									
Jan. 20 U.			56.82			48.0	48.3		
Mean . . .	2	45	56.822+32	19	48.00	47.74			
B. D. +31° 497									
1901	h	m	s						
Jan. 5 L.	2	47	21.93	+31	14	9.0	8.0		
8 L.			21.98			8.9	8.4		
13 U.			21.88			8.7	8.3		
15 L.			21.89			8.9	9.0		
29 U.			21.90			8.8	9.1		
Mean . . .	2	47	21.906+31	14		8.86	8.56		
B. D. +32° 522									
1900	h	m	s						
Dec. 10 U.	2	47	34.68	+32	30	33.2	34.8		
13 U.			34.72			33.4	34.6		
19 U.			34.75			33.8	33.0		
20 U.			34.75			33.7	33.5		
21 U.			34.75			33.6	34.6		
1901									
Jan. 16 U.			34.72			34.2	33.5		
Mean . . .	2	47	34.724+32	30	33.65	34.00			
B. D. +31° 500									
1900	h	m	s						
Dec. 8 U.	2	48	4.47	+31	55	44.0	44.0		
14 L.			4.33			44.9	43.7		
16 U.			4.39			44.8	43.3		
18 L.			4.33			44.2	43.3		
Mean . . .	2	48	4.372+31	55	44.48	43.58			
B. D. +30° 464									
1900	h	m	s						
Dec. 29 U.	2	49	39.34	+30	38	14.8	14.4		
1901									
Jan. 5 L.			39.42			15.0	13.3		
8 L.			39.48			14.6	13.5		
13 U.			39.34			14.7	13.1		
26 L.			39.38			15.6	15.1		
Mean . . .	2	49	39.382+30	38	14.94	13.88			
B. D. +30° 465									
1901	h	m	s						
Jan. 15 L.	2	49	50.60	+31	10	30.4	29.9		
16 U.			50.54			30.5	30.0		
18 U.			50.60			30.4	29.5		
19 L.			50.64			30.4	30.4		
20 U.			50.58			30.4	30.3		
Mean . . .	2	49	50.585+31	10	30.42	30.02			
B. D. +30° 466									
1900	h	m	s						
Dec. 14 L.	2	50	30.06	+30	28	35.0	33.4		
16 U.			30.07			33.7	32.0		
18 L.			30.09			34.7	33.4		
19 U.			30.08			35.6	33.3		
Mean . . .	2	50	30.066+30	28	34.75	33.02			
Circle A. B.									
B. D. +31° 509									
1900	h	m	s						
Dec. 20 U.	2	51	12.98	+31	31	55.5	53.8		
1901									
Jan. 5 L.			12.96			55.5	53.6		
8 L.			13.09			54.6	52.9		
29 U.			13.01			55.2	54.5		
Mean . . .	2	51	13.002+31	31	55.20	53.70			
B. D. +30° 469									
1900	h	m	s						
Dec. 8 U.	2	51	58.21	+31	6	52.9	52.1		
10 U.			58.23			53.5	[55.0]		
13 U.			58.12			55.4	53.9		
1901									
Jan. 13 U.			58.20			53.9	53.1		
Mean . . .	2	51	58.190+31	6	53.92	53.02			
B. D. +31° 511									
1901	h	m	s						
Jan. 15 L.	2	52	5.73	+31	36	57.0	55.5		
16 U.			5.60			57.0	55.7		
18 U.			5.66			56.2	55.5		
Mean . . .	2	52	5.658+31	36	56.73	55.57			
B. D. +31° 512									
1901	h	m	s						
Jan. 19 L.	2	52	12.85	+32	3	29.0	26.9		
20 U.			12.83			27.5	26.5		
22 U.			12.88			28.1	27.0		
26 L.			12.94			28.1	27.3		
Mean . . .	2	52	12.866+32	3	28.18	26.92			
B. D. +30° 474									
1900	h	m	s						
Dec. 16 U.	2	53	52.58	+30	12	28.4	26.5		
18 L.			52.55			27.5	27.4		
19 U.			52.60			29.4	27.1		
20 U.			52.58			28.9	26.7		
Mean . . .	2	53	52.573+30	12	28.55	26.92			
B. D. +30° 477									
1900	h	m	s						
Dec. 10 L.	2	54	13.50	+30	43	41.1	39.5		
13 U.			13.48			41.5	39.9		
14 L.			13.51			41.3	40.9		
21 U.			13.48			40.5	40.6		
Mean . . .	2	54	13.484+30	43	41.10	40.22			
B. D. +29° 508									
1900	h	m	s						
Dec. 29 U.	2	54	24.92	+30	10	18.5	18.1		
1901									
Jan. 5 L.			24.97			18.6	17.4		
8 L.			24.99			19.5	18.0		
13 U.			24.95			18.6	17.7		
Mean . . .	2	54	24.949+30	10	18.80	17.80			
B. D. +29° 508									
1900	h	m	s						
Dec. 29 U.	2	54	24.92	+30	10	18.5	18.1		
1901									
Jan. 5 L.			24.97			18.6	17.4		
8 L.			24.99			19.5	18.0		
13 U.			24.95			18.6	17.7		
Mean . . .	2	54	24.949+30	10	18.80	17.80			
B. D. +31° 524									
1901	h	m	s						
Jan. 15 L.	2	55	10.48	+31	33	31.4	30.6		
16 U.			10.43			32.0	31.2		
18 U.			10.48			31.8	30.7		
19 L.			10.50			31.5	30.1		
20 U.			10.44			30.9	29.7		
Mean . . .	2	55	10.459+31	33	31.52	30.46			
Circle A. B.									
B. D. +30° 479									
1900	h	m	s						
Dec. 8 U.	2	56	6.84	+30	35	30.3	30.1		
16 U.			6.79			30.3	28.5		
18 L.			6.76			31.2	28.4		
19 U.			6.76			32.1	28.8		
Mean . . .	2	56	6.797+30	35	30.98	28.95			
B. D. +29° 517									
1900	h	m	s						
Dec. 14 L.	2	57	39.19	+30	7	9.3	...		
20 U.			39.15			8.4	6.9		
21 U.			39.17			9.6	7.6		
29 U.			39.11			9.5	8.6		
Mean . . .	2	57	39.151+30	7	9.20	7.70			
B. D. +30° 482									
1900	h	m	s						
Dec. 8 U.	2	58	31.72	+30	55	10.7	10.9		
10 U.			31.61			11.3	10.6		
13 U.			31.53			11.6	10.7		
19 U.			31.56			12.7	10.5		
Mean . . .	2	58	31.605+30	55	11.58	10.68			
B. D. +30° 484									
1900	h	m	s						
Dec. 16 U.	2	58	51.38	+30	38	55.3	55.0		
1901									
Jan. 15 L.			51.33			56.5	55.3		
16 U.			51.27			56.8	56.0		
18 U.			51.34			55.4	55.5		
19 L.			51.30			[57.4]	54.9		
Mean . . .	2	58	51.317+30	38	56.00	55.34			
B. D. +28° 488									
1900	h	m	s						
Dec. 29 U.	2	59	18.27	+29	9	11.2	9.8		
1901									
Jan. 5 L.			18.32			11.3	9.4		
8 L.			18.32			11.1	9.8		
13 U.			18.28			10.6	9.2		
20 U.			18.23			10.8	10.2		
Mean . . .	2	59	18.277+29	9	11.00	9.68			
B. D. +29° 519									
1900	h	m	s						
Dec. 14 L.	2	59	41.04	+30	8	19.1	17.0		
18 L.			41.15			17.4	16.2		
20 U.			41.12			17.8	15.7		
21 U.			41.11			17.3	16.9		
Mean . . .	2	59	41.096+30	8	17.90	16.45			
B. D. +29° 522									
1900	h	m	s						
Dec. 8 U.	3	0	48.11	+30	8	28.6	28.4		
10 U.			48.08			29.5	28.8		
13 U.			48.05			30.7	29.3		
16 U.			48.11			29.8	27.4		
Mean . . .	3	0	48.088+30	8	29.65	28.48			
B. D. +28° 493									
1900	h	m	s						
Dec. 19 U.	3	1	16.47	+28	44	15.7	14.2		
29 U.			16.38			15.3	14.6		
1901									
Jan. 5 L.			16.41			14.5	13.9		
8 L.			16.43			15.6	14.4		
Mean . . .	3	1	16.414+28	44	15.28	14.28			

<

SIX-INCH TRANSIT CIRCLE.

Circle A. B.									
B. D. +27° 515 ²									
1901	h	m	s	°	'	"	°	'	"
Jan. 18 U.	3	25	18.52	+27	13	49.7	49.6		
19 L.			18.44			51.6	50.3		
20 U.			18.47			50.6	50.1		
Mean . . .	3	25	18.471	+27	13	50.63	50.00		
B. D. +27° 519									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	3	26	33.62	+28	1	35.7	33.3		
10 U.			33.62			33.7	33.1		
13 U.			33.58			36.1	33.8		
1901									
Jan. 8 L.			33.71			34.6	34.5		
Mean . . .	3	26	33.628	+28	1	35.02	33.68		
B. D. +26° 572									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	3	28	57.22	+26	16	24.6	23.8		
10 U.			57.12			22.0	23.5		
13 U.			57.11			22.9	23.0		
1901									
Jan. 19 L.			57.07			24.0	....		
Mean . . .	3	28	57.126	+26	16	23.38	23.43		
B. D. +26° 574									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	3	29	19.09	+26	30	59.4	58.0		
16 U.			19.09			59.4	58.0		
18 L.			19.13			59.1	58.6		
1901									
Jan. 29 U.			19.13			58.4	57.7		
Mean . . .	3	29	19.102	+26	30	59.08	58.08		
B. D. +27° 525									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	3	29	20.82	+27	11	29.1	27.4		
20 U.			20.76			28.0	27.9		
21 U.			20.72			28.8	28.1		
Mean . . .	3	29	20.767	+27	11	28.63	27.80		
B. D. +27° 526									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	3	29	22.50	+27	30	46.1	46.0		
1901									
Jan. 5 L.			22.56			45.2	46.1		
8 L.			22.55			46.3	46.5		
13 U.			22.56			46.0	46.1		
Mean . . .	3	29	22.534	+27	30	45.90	46.18		
B. D. +27° 529									
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.	3	30	1.57	+27	15	37.7	36.4		
16 U.			1.56			37.3	35.6		
18 U.			1.57			37.2	35.9		
28 U.			1.61			37.6	37.3		
Mean . . .	3	30	1.573	+27	15	37.45	36.30		
B. D. +26° 579									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	3	30	5.99	+27	0	41.1	39.8		
20 U.			5.96			40.4	40.5		
22 U.			5.99			40.3	40.2		
Mean . . .	3	30	5.974	+27	0	40.60	40.17		
B. D. +25° 580									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	3	31	9.93	+25	40	3.1	4.2		
10 U.			9.95			2.9	4.0		
13 U.			9.93			3.9	3.7		
21 U.			9.93			2.2	3.4		
Mean . . .	3	31	9.935	+25	40	3.02	3.83		
Circle A. B.									
B. D. +25° 584									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	3	33	29.03	+25	48	5.5	4.7		
16 U.			29.02			5.4	3.9		
18 L.			29.08			4.5	3.7		
19 U.			[29.18]			5.3	4.6		
1901									
Jan. 29 U.			29.11			5.0	3.6		
Mean . . .	3	33	29.052	+25	48	5.14	4.10		
B. D. +26° 590									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	3	33	29.62	+26	53	48.0	46.0		
10 U.			29.63			47.7	46.4		
13 U.			29.61			47.5	46.4		
21 U.			29.65			47.3	48.0		
1901									
Jan. 16 U.			29.64			48.3	47.3		
Mean . . .	3	33	29.630	+26	53	47.76	46.82		
Anonymous									
1901	h	m	s	°	'	"	°	'	"
Jan. 13 U.	3	34	7.08	+26	34	15.6	13.8		
B. D. +26° 596									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	3	34	11.87	+26	33	47.6	46.4		
1901									
Jan. 5 L.			12.00			45.9	46.2		
8 L.			11.99			46.1	46.0		
Mean . . .	3	34	11.942	+26	33	46.53	46.20		
B. D. +24° 533									
1900	h	m	s	°	'	"	°	'	"
Dec. 18 L.	3	35	20.27	+24	41	3.6	5.1		
19 U.			[20.35]			4.0	5.8		
20 U.			20.24			3.9	4.3		
21 U.			20.22			3.8	5.7		
1901									
Jan. 15 L.			20.18			4.8	5.6		
Mean . . .	3	35	20.219	+24	41	4.02	5.30		
B. D. +24° 534									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	3	35	42.91	+25	2	55.4	54.2		
13 U.			42.86			54.8	55.7		
14 L.			42.86			53.9	51.7		
16 U.			42.95			....	[52.8]		
1901									
Jan. 29 U.			42.89			55.4	54.7		
Mean . . .	3	35	42.891	+25	2	54.88	54.82		
B. D. +26° 601									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	3	36	27.64	+26	15	12.4	11.5		
1901									
Jan. 5 L.			27.74			12.5	11.3		
8 L.			27.70			12.0	10.9		
19 L.			27.62			12.3	....		
Mean . . .	3	36	27.662	+26	15	12.30	11.23		
B. D. +25° 593									
1901	h	m	s	°	'	"	°	'	"
Jan. 13 U.	3	37	7.24	+25	21	46.4	44.9		
15 L.			7.23			44.8	45.7		
16 U.			7.16			46.0	45.6		
Mean . . .	3	37	7.204	+25	21	45.73	45.40		
B. D. +25° 598									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	3	37	38.61	+25	48	29.6	29.6		
19 U.			38.65			30.0	28.9		
20 U.			38.62			29.4	28.5		
Mean . . .	3	37	38.627	+25	48	29.67	29.00		
Circle A. B.									
B. D. +25° 597									
1901	h	m	s	°	'	"	°	'	"
Jan. 22 U.	3	37	38.90	+25	27	11.4	10.4		
26 L.			38.94			10.0	10.3		
29 U.			38.91			9.9	10.4		
Mean . . .	3	37	38.911	+25	27	10.43	10.37		
B. D. +24° 537									
1901	h	m	s	°	'	"	°	'	"
Jan. 18 U.	3	37	44.73	+24	45	50.8	51.4		
19 L.			44.70			51.4	51.5		
20 U.			44.73			51.1	51.7		
Mean . . .	3	37	44.714	+24	45	51.10	51.53		
B. D. +25° 599									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	3	37	44.78	+26	3	48.4	49.2		
18 L.			44.83			48.8	48.6		
21 U.			44.77			49.1	49.1		
Mean . . .	3	37	44.788	+26	3	48.77	48.97		
B. D. +25° 600									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	3	37	52.81	+25	24	36.7	38.4		
13 U.			52.79			37.6	38.6		
14 L.			52.76			37.7	38.8		
Mean . . .	3	37	52.781	+25	24	37.33	38.60		
B. D. +24° 546									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	3	39	11.59	+24	31	31.1	31.8		
1901									
Jan. 5 L.			11.65			31.6	31.0		
8 L.			11.68			31.8	32.1		
Mean . . .	3	39	11.629	+24	31	31.50	31.63		
B. D. +26° 608									
1901	h	m	s	°	'	"	°	'	"
Jan. 13 U.	3	39	12.07	+26	34	40.0	38.9		
15 L.			12.06			40.1	39.8		
16 U.			12.01			39.5	39.2		
Mean . . .	3	39	12.041	+26	34	39.87	39.30		
B. D. +24° 547									
1901	h	m	s	°	'	"	°	'	"
Jan. 20 U.	3	39	15.20	+24	9	12.0	12.6		
22 U.			15.19			12.8	12.0		
28 U.			[15.35]			12.6	12.7		
29 U.			15.22			13.4	12.7		
Mean . . .	3	39	15.203	+24	9	12.70	12.50		
B. D. +25° 607									
1900	h	m	s	°	'	"	°	'	"
Dec. 21 U.	3	39	33.02	+25	17	49.7	51.0		
1901									
Jan. 18 U.			32.93			50.0	51.0		
19 L.			33.00			50.4	51.2		
Mean . . .	3	39	32.978	+25	17	50.03	51.07		
B. D. +24° 553									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	3	39	56.90	+24	14	31.1	32.0		
18 L.			56.89			30.8	32.6		
19 U.			56.89			32.6	32.9		
20 U.			56.93			32.2	32.7		
Mean . . .	3	39	56.898	+24	14	31.68	32.55		

Circle A. B.									
B. D. +25° 611									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	39	58.30	+25	45	49.6	48.7		
13 U.			58.25			48.3	48.7		
14 L.			58.33			49.5	48.8		
Mean . . .	3	39	58.288	+25	45	49.13	48.73		
B. D. +24° 562									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	3	41	1.77	+24	12	37.8	36.5		
1901									
Jan. 15 L.			1.79			35.7	36.2		
16 U.			1.73			36.1	36.8		
18 U.			1.70			35.8	36.3		
Mean . . .	3	41	1.743	+24	12	36.35	36.45		
B. D. +24° 568									
1900	h	m	s	°	'	''	°	'	''
Dec. 21 U.	3	41	47.09	+25	4	38.2	39.0		
29 U.			46.99			38.8	40.1		
1901									
Jan. 5 L.			47.13			37.2	37.2		
8 L.			47.12			37.9	38.6		
Mean . . .	3	41	47.074	+25	4	38.02	38.72		
B. D. +24° 571									
1900	h	m	s	°	'	''	°	'	''
Dec. 18 L.	3	42	8.03	+24	40	47.3	47.5		
19 U.			7.95			47.5	47.8		
20 U.			8.02			46.8	48.1		
1901									
Jan. 29 U.			8.03			46.6	48.3		
Mean . . .	3	42	8.003	+24	40	47.05	47.92		
B. D. +26° 617									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	42	[16.79]	+26	16	49.8	48.6		
13 U.			16.53			50.3	50.4		
14 L.			16.55			50.9	49.5		
16 U.			16.55			49.7	48.6		
Mean . . .	3	42	16.538	+26	16	50.18	49.28		
B. D. +25° 620									
1901	h	m	s	°	'	''	°	'	''
Jan. 19 L.	3	42	41.13	+25	29	34.8	34.3		
20 U.			41.10			34.1	34.4		
22 U.			41.10			34.5	34.2		
Mean . . .	3	42	41.104	+25	29	34.47	34.30		
B. D. +23° 561									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	3	43	24.12	+24	4	32.7	32.8		
29 U.			24.04			32.9	34.9		
1901									
Jan. 5 L.			24.13			31.9	33.2		
8 L.			24.11			32.7	33.8		
Mean . . .	3	43	24.092	+24	4	32.55	33.68		
B. D. +23° 562									
1901	h	m	s	°	'	''	°	'	''
Jan. 13 U.	3	43	28.63	+23	56	32.3	32.7		
15 L.			28.66			33.4	33.6		
16 U.			28.59			33.3	33.6		
18 U.			28.64			32.4	33.6		
Mean . . .	3	43	28.626	+23	56	32.85	33.38		
B. D. +25° 624									
1900	h	m	s	°	'	''	°	'	''
Dec. 16 U.	3	44	18.10	+25	16	40.1	39.5		
18 L.			18.08			40.0	39.6		
19 U.			18.16			40.1	39.5		
20 U.			18.14			39.6	39.1		
Mean . . .	3	44	18.116	+25	16	39.95	39.42		

Circle A. B.									
B. D. +24° 578									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	44	29.99	+24	11	30.7	29.8		
13 U.			29.94			30.8	30.5		
14 L.			29.95			30.8	30.3		
Mean . . .	3	44	29.954	+24	11	30.77	30.20		
B. D. +23° 570									
1900	h	m	s	°	'	''	°	'	''
Jan. 19 L.	3	44	55.49	+23	39	32.8	32.0		
20 U.			55.52			32.3	33.3		
22 U.			55.49			32.3	32.4		
28 U.			55.56			32.3	33.3		
Mean . . .	3	44	55.511	+23	39	32.42	32.75		
B. D. +25° 627									
1900	h	m	s	°	'	''	°	'	''
Dec. 29 U.	3	45	17.25	+26	3	8.7	7.9		
1901									
Jan. 5 L.			17.33			7.2	6.4		
8 L.			17.32			7.8	6.8		
29 U.			17.29			7.8	5.9		
Mean . . .	3	45	17.289	+26	3	7.88	6.75		
B. D. +24° 583									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	3	45	25.70	+24	51	40.1	39.4		
21 U.			25.66			38.6	39.9		
1901									
Jan. 13 U.			25.74			39.1	38.9		
Mean . . .	3	45	25.700	+24	51	39.27	39.40		
B. D. +25° 631									
1901	h	m	s	°	'	''	°	'	''
Jan. 15 L.	3	45	55.54	+25	41	56.1	56.0		
16 U.			55.51			56.7	55.8		
18 U.			55.52			56.9	55.7		
Mean . . .	3	45	55.518	+25	41	56.57	55.83		
B. D. +24° 587									
1900	h	m	s	°	'	''	°	'	''
Dec. 16 U.	3	46	12.57	+24	51	60.4	60.1		
18 L.			12.46			59.8	59.9		
19 U.			12.56			60.5	60.3		
20 U.			12.47			60.7	60.0		
Mean . . .	3	46	12.511	+24	52	0.35	0.08		
B. D. +24° 589									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	46	54.58	+24	25	3.8	4.2		
13 U.			54.55			4.8	4.9		
14 L.			54.44			3.5	4.7		
Mean . . .	3	46	54.518	+24	25	4.03	4.60		
B. D. +25° 637									
1901	h	m	s	°	'	''	°	'	''
Jan. 19 L.	3	47	6.65	+25	14	14.0	12.2		
20 U.			6.60			12.8	13.3		
22 U.			6.61			13.8	13.1		
29 U.			6.66			11.7	12.2		
Mean . . .	3	47	6.626	+25	14	13.08	12.70		
B. D. +25° 639									
1901	h	m	s	°	'	''	°	'	''
Jan. 8 L.	3	47	28.23	+25	38	16.6	16.8		
15 L.			28.12			16.8	16.8		
16 U.			28.11			17.0	16.0		
18 U.			28.16			15.6	16.4		
Mean . . .	3	47	28.146	+25	38	16.50	16.50		
B. D. +25° 641									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	3	47	33.05	+25	23	9.1	9.2		
21 U.			33.11			9.0	10.0		
29 U.			33.05			9.8	9.2		
1901									
Jan. 5 L.			33.07			9.2	8.5		
Mean . . .	3	47	33.066	+25	23	9.28	9.22		
B. D. +23° 584									
1900	h	m	s	°	'	''	°	'	''
Dec. 16 U.	3	49	4.54	+23	39	45.8	45.9		
18 L.			4.55			44.8	46.1		
19 U.			4.61			44.5	45.7		
20 U.			4.50			45.9	46.0		
Mean . . .	3	49	4.546	+23	39	45.25	45.92		
B. D. +24° 595									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	49	7.57	+24	48	41.1	40.3		
13 U.			7.53			41.3	41.4		
14 L.			7.57			39.3	41.1		
1901									
Jan. 20 U.			7.54			40.6	40.8		
22 U.			7.56			40.7	40.1		
Mean . . .	3	49	7.551	+24	48	40.60	40.74		
B. D. +23° 586									
1900	h	m	s	°	'	''	°	'	''
Dec. 21 U.	3	49	50.82	+23	32	8.9	9.2		
29 U.			50.77			10.3	9.9		
1901									
Jan. 5 L.			50.82			9.3	8.8		
8 L.			50.89			9.5	...		
Mean . . .	3	49	50.816	+23	32	9.50	9.30		
B. D. +23° 589									
1901	h	m	s	°	'	''	°	'	''
Jan. 13 U.	3	50	40.81	+23	18	14.5	13.8		
15 L.			40.80			15.1	15.0		
16 U.			40.73			14.1	14.9		
18 U.			40.75			13.6	14.3		
Mean . . .	3	50	40.768	+23	18	14.32	14.50		
B. D. +24° 598									
1900	h	m	s	°	'	''	°	'	''
Dec. 18 L.	3	51	11.04	+24	59	30.8	31.0		
1901									
Jan. 19 L.			10.94			31.2	31.3		
20 U.			10.98			30.7	31.0		
22 U.			11.01			30.8	31.2		
Mean . . .	3	51	10.984	+24	59	30.88	31.12		
B. D. +24° 599									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	51	27.56	+24	10	19.5	19.1		
13 U.			27.53			20.1	19.9		
16 U.			27.59			18.8	18.8		
1901									
Jan. 29 U.			27.59			19.0	19.8		
Mean . . .	3	51	27.568	+24	10	19.35	19.40		
B. D. +23° 594									
1901	h	m	s	°	'	''	°	'	''
Jan. 15 L.	3	52	22.70	+23	47	38.5	39.4		
16 U.			22.63			39.3	39.5		
18 U.			22.70			39.0	39.3		
Mean . . .	3	52	22.671	+23	47	38.93	39.40		

SIX-INCH TRANSIT CIRCLE.

Circle A. B.									
B. D. +23° 600									
1900	h	m	s	°	'	''	°	'	''
Dec. 18 L.	3	53	6.41	+23	20	27.5	29.0		
20 U.			6.41			28.4	28.6		
21 U.			6.40			27.3	29.5		
29 U.			6.35			28.4	29.2		
Mean . . .	3	53	6.388	+23	20	27.90	29.08		
B. D. +24° 602									
1901	h	m	s	°	'	''	°	'	''
Jan. 5 L.	3	53	13.09	+24	55	47.6	....		
8 L.			13.16			47.7	47.0		
13 U.			13.07			47.3	47.1		
22 U.			13.07			47.5	47.0		
Mean . . .	3	53	13.089	+24	55	47.52	47.03		
B. D. +24° 605									
1900	h	m	s	°	'	''	°	'	''
Dec. 16 U.	3	53	54.45	+24	24	....	42.2		
19 U.			54.49			42.2	43.1		
1901									
Jan. 19 L.			54.47			42.6	42.9		
20 U.			54.48			42.8	43.5		
Mean . . .	3	53	54.468	+24	24	42.53	42.92		
B. D. +22° 612									
1900	h	m	s	°	'	''	°	'	''
Dec. 10 U.	3	53	57.27	+22	56	0.9	0.7		
13 U.			57.25			1.0	1.7		
14 L.			57.21			0.7	0.8		
1901									
Jan. 28 U.			57.26			0.2	1.4		
Mean . . .	3	53	57.243	+22	56	0.70	1.15		
B. D. +22° 613									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	3	54	11.41	+23	6	56.4	55.9		
1901									
Jan. 15 L.			11.39			56.8	56.3		
16 U.			11.37			55.7	55.7		
Mean . . .	3	54	11.384	+23	6	56.30	55.97		
B. D. +22° 615									
1901	h	m	s	°	'	''	°	'	''
Jan. 5 L.	3	54	34.91	+22	32	29.6	28.1		
8 L.			34.98			29.1	28.7		
13 U.			34.95			28.4	28.1		
29 U.			34.95			29.1	28.6		
Mean . . .	3	54	34.939	+22	32	29.05	28.38		
B. D. +22° 617 ¹									
1900	h	m	s	°	'	''	°	'	''
Dec. 18 L.	3	55	0.36	+22	55	11.4	12.1		
20 U.			0.40			11.5	11.2		
21 U.			0.41			11.8	11.6		
29 U.			0.34			11.3	12.2		
Mean . . .	3	55	0.373	+22	55	11.50	11.78		
B. D. +22° 617 ²									
1901	h	m	s	°	'	''	°	'	''
Jan. 18 U.	3	55	0.86	+22	55	6.8	7.0		
19 L.			0.81			7.7	7.7		
20 U.			0.84			[5.7]	7.1		
22 U.			0.78			6.9	6.7		
Mean . . .	3	55	0.818	+22	55	7.13	7.12		

Circle A. B.									
B. D. +23° 606									
1900	h	m	s	°	'	''	°	'	''
Dec. 14 L.	3	57	48.82	+24	7	31.0	32.4		
16 U.			48.93			31.5	32.0		
18 L.			48.90			31.5	32.4		
20 U.			48.88			32.1	32.5		
Mean . . .	3	57	48.874	+24	7	31.52	32.32		
B. D. +23° 609									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	3	58	22.76	+23	49	50.3	50.7		
10 U.			22.70			51.6	50.2		
13 U.			22.68			49.7	50.7		
1901									
Jan. 29 U.			22.78			50.2	50.8		
Mean . . .	3	58	22.730	+23	49	50.45	50.60		
B. D. +23° 611									
1901	h	m	s	°	'	''	°	'	''
Jan. 18 U.	3	58	52.44	+23	14	4.0	5.8		
19 L.			52.41			6.6	5.8		
20 U.			52.37			5.3	6.4		
22 U.			52.39			5.6	5.4		
Mean . . .	3	58	52.398	+23	14	5.38	5.85		
B. D. +23° 613									
1901	h	m	s	°	'	''	°	'	''
Jan. 8 L.	3	59	17.14	+23	31	25.2	25.5		
13 U.			17.09			25.6	26.3		
15 L.			17.05			25.4	26.3		
16 U.			17.03			25.1	26.2		
Mean . . .	3	59	17.069	+23	31	25.32	26.08		
B. D. +22° 629									
1900	h	m	s	°	'	''	°	'	''
Dec. 20 U.	3	59	27.26	+22	53	44.7	43.9		
21 U.			27.23			45.5	44.3		
29 U.			27.20			45.8	45.4		
1901									
Jan. 5 L.			27.24			45.2	44.4		
Mean . . .	3	59	27.228	+22	53	45.30	44.50		
B. D. +23° 617									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	4	0	39.53	+23	14	53.2	51.9		
14 L.			39.57			51.9	52.4		
16 U.			39.63			51.0	51.7		
18 L.			39.66			51.3	52.2		
Mean . . .	4	0	39.589	+23	14	51.85	52.05		
B. D. +21° 593									
1901	h	m	s	°	'	''	°	'	''
Jan. 15 L.	4	2	20.11	+21	45	16.0	16.6		
16 U.			20.10			16.2	17.0		
18 U.			20.16			16.6	[18.7]		
19 L.			20.14			16.5	16.1		
Mean . . .	4	2	20.119	+21	45	16.32	16.57		
B. D. +23° 624									
1900	h	m	s	°	'	''	°	'	''
Dec. 19 U.	4	2	52.49	+23	36	20.3	19.7		
1901									
Jan. 8 L.			52.50			18.5	19.4		
13 U.			52.47			18.9	19.6		
20 U.			52.39			20.1	19.9		
Mean . . .	4	2	52.458	+23	36	19.45	19.65		

Circle A. B.									
B. D. +22° 637 ¹									
1900	h	m	s	°	'	''	°	'	''
Dec. 18 L.	4	2	56.27	+22	49	53.0	53.7		
20 U.			56.32			53.8	53.1		
29 U.			56.30			54.0	54.3		
1901									
Jan. 5 L.			56.31			52.7	53.4		
Mean . . .	4	2	56.292	+22	49	53.38	53.62		
B. D. +22° 637 ²									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	4	2	56.38	+22	49	59.6	60.6		
14 L.			56.39			59.6	59.8		
16 U.			56.42			58.5	58.4		
1901									
Jan. 22 U.			56.38			58.9	58.9		
28 U.			56.32			58.6	59.7		
Mean . . .	4	2	56.375	+22	49	59.04	59.48		
B. D. +23° 632									
1901	h	m	s	°	'	''	°	'	''
Jan. 16 U.	4	4	17.43	+23	43	7.0	6.5		
18 U.			17.50			6.0	7.0		
19 L.			17.44			6.1	6.2		
20 U.			17.46			6.2	5.8		
Mean . . .	4	4	17.453	+23	43	6.32	6.38		
B. D. +21° 601									
1900	h	m	s	°	'	''	°	'	''
Dec. 20 U.	4	5	14.15	+21	37	27.3	26.8		
21 U.			14.16			26.6	27.3		
1901									
Jan. 5 L.			14.14			26.5	26.8		
28 U.			14.09			26.7	27.7		
Mean . . .	4	5	14.131	+21	37	26.78	27.15		
B. D. +23° 642									
1900	h	m	s	°	'	''	°	'	''
Dec. 19 U.	4	6	26.45	+23	19	1.3	1.6		
1901									
Jan. 8 L.			26.54			0.0	0.4		
13 U.			26.53			0.9	0.6		
15 L.			26.44			0.9	1.4		
16 U.			26.42			0.4	1.7		
Mean . . .	4	6	26.469	+23	19	0.70	1.14		
B. D. +23° 645									
1901	h	m	s	°	'	''	°	'	''
Jan. 18 U.	4	6	48.06	+23	15	47.5	47.9		
19 L.			48.01			48.6	49.4		
20 U.			47.96			48.9	49.6		
22 U.			48.00			49.1	48.7		
Mean . . .	4	6	48.003	+23	15	48.52	48.90		
B. D. +22° 649									
1900	h	m	s	°	'	''	°	'	''
Dec. 8 U.	4	6	55.38	+22	9	22.6	23.5		
14 L.			55.41			23.4	23.2		
16 U.			55.42			22.9	23.4		
1901									
Jan. 28 U.			55.38			22.5	23.5		
Mean . . .	4	6	55.393	+22	9	22.85	23.40		
B. D. +22° 654									
1900	h	m	s	°	'	''	°	'	''
Dec. 20 U.	4	8	2.30	+22	27	11.4	12.7		
1901									
Jan. 15 L.			2.27			11.5	11.8		
16 U.			2.24			12.0	11.9		
Mean . . .	4	8	2.264	+22	27	11.63	12.13		

INDIVIDUAL RESULTS OF OBSERVATIONS.

Circle A. B.									
B. D. +22° 657									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	4	8	33.59	+22	11	56.2	54.8	
21	U.			33.57			56.5	55.9	
1901									
Jan. 18	U.			33.60			56.3	55.9	
29	U.			33.62			56.2	55.5	
Mean		4	8	33.595	+22	11	56.30	55.52	
B. D. +23° 650									
1901	h	m	s	°	'	''	°	'	''
Jan. 19	L.	4	8	34.69	+23	7	25.1	25.2	
20	U.			34.66			24.9	25.3	
22	U.			34.70			25.2	24.8	
Mean		4	8	34.678	+23	7	25.07	25.10	
B. D. +21° 610									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	4	9	17.88	+21	50	42.6	43.1	
13	U.			17.82			41.8	41.9	
14	L.			17.86			41.7	42.8	
1901									
Jan. 28	U.			17.92			39.9	42.0	
Mean		4	9	17.866	+21	50	41.50	42.45	
B. D. +22° 663									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	4	10	3.49	+22	42	60.6	61.1	
16	U.			3.49			60.1	60.9	
18	U.			3.53			60.5	59.8	
Mean		4	10	3.498	+22	43	0.40	0.60	
B. D. +21° 612									
1900	h	m	s	°	'	''	°	'	''
Dec. 16	U.	4	10	37.74	+21	39	33.6	33.9	
19	U.			37.80			33.5	32.5	
20	U.			37.70			32.9	32.6	
21	U.			37.69			32.8	33.2	
Mean		4	10	37.732	+21	39	33.20	33.05	
B. D. +22° 665									
1901	h	m	s	°	'	''	°	'	''
Jan. 19	L.	4	10	52.85	+23	5	27.7	28.1	
20	U.			52.83			27.3	28.4	
22	U.			52.88			27.6	26.8	
Mean		4	10	52.848	+23	5	27.53	27.77	
B. D. +21° 617									
1900	h	m	s	°	'	''	°	'	''
Dec. 13	U.	4	11	54.94	+22	6	28.9	29.1	
1901									
Jan. 15	L.			55.00			29.5	29.2	
16	U.			54.93			28.3	29.4	
26	L.			55.00			28.2	29.5	
Mean		4	11	54.959	+22	6	28.72	29.30	
B. D. +21° 618									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	4	12	28.02	+21	20	6.9	6.4	
14	L.			28.02			4.8	6.0	
16	U.			28.06			5.2	6.2	
1901									
Jan. 29	U.			28.04			5.0	5.4	
Mean		4	12	28.031	+21	20	5.48	6.00	
B. D. +20° 731									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	4	13	7.15	+21	3	22.6	24.2	
20	U.			7.11			23.4	24.3	
21	U.			7.12			23.7	24.9	
Mean		4	13	7.127	+21	3	23.23	24.47	
B. D. +20° 733									
1901	h	m	s	°	'	''	°	'	''
Jan. 19	L.	4	13	32.35	+20	54	1.6	2.3	
20	U.			32.39			2.3	2.9	
22	U.			32.35			2.3	2.0	
28	U.			32.34			1.4	3.2	
Mean		4	13	32.353	+20	54	1.90	2.60	
B. D. +21° 623									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	4	13	41.46	+21	31	55.4	54.1	
16	U.			41.46			55.6	55.7	
18	U.			41.45			55.5	54.8	
Mean		4	13	41.451	+21	31	55.50	54.87	
B. D. +20° 740									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	4	15	37.44	+20	48	9.4	9.5	
16	U.			37.52			9.6	7.9	
19	U.			37.46			8.9	8.3	
20	U.			37.42			8.8	8.9	
21	U.			37.43			8.3	8.6	
Mean		4	15	37.451	+20	48	9.00	8.64	
B. D. +20° 741									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	4	15	41.33	+20	56	59.4	60.2	
1901									
Jan. 8	L.			41.41			59.1	59.9	
13	U.			41.38			58.3	59.2	
15	L.			41.34			59.5	59.7	
Mean		4	15	41.356	+20	56	59.08	59.75	
B. D. +20° 744									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	4	16	29.76	+20	35	6.5	6.4	
10	U.			29.74			6.7	6.2	
13	U.			29.68			5.8	6.8	
1901									
Jan. 16	U.			29.69			5.7	6.4	
Mean		4	16	29.718	+20	35	6.18	6.45	
B. D. +21° 635									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	4	17	27.13	+21	8	44.5	44.8	
1901									
Jan. 5	L.			27.20			43.3	43.6	
8	L.			27.25			44.1	44.7	
19	L.			27.19			44.6	44.8	
Mean		4	17	27.180	+21	8	44.12	44.48	
B. D. +20° 751									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	4	17	38.74	+20	44	56.6	57.6	
16	U.			38.77			56.7	57.1	
18	L.			38.70			55.3	57.0	
1901									
Jan. 28	U.			38.76			56.6	58.5	
Mean		4	17	38.734	+20	44	56.30	57.55	
B. D. +21° 639									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	4	18	6.11	+21	18	28.8	27.7	
20	U.			6.00			28.0	27.6	
21	U.			6.06			27.6	29.2	
Mean		4	18	6.057	+21	18	28.13	28.17	
B. D. +21° 641									
1900	h	m	s	°	'	''	°	'	''
Jan. 13	U.	4	18	18.35	+21	30	16.5	17.1	
15	L.			18.25			18.0	17.5	
16	U.			18.26			17.7	18.1	
Mean		4	18	18.281	+21	30	17.40	17.57	
B. D. +21° 642									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	4	19	24.50	+22	3	55.9	54.5	
10	U.			24.53			55.2	52.8	
13	U.			24.43			54.8	53.7	
1901									
Jan. 29	U.			24.49			53.8	54.3	
Mean		4	19	24.488	+22	3	54.92	53.82	
B. D. +21° 643									
1901	h	m	s	°	'	''	°	'	''
Jan. 18	U.	4	19	27.50	+21	58	15.6	16.5	
19	L.			27.46			16.8	16.1	
20	U.			27.47			16.5	17.1	
28	U.			27.50			16.5	16.4	
Mean		4	19	27.478	+21	58	16.35	16.52	
B. D. +20° 754									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	4	19	53.54	+20	54	29.9	31.1	
1901									
Jan. 5	L.			53.59			30.9	30.8	
8	L.			53.61			31.2	31.8	
13	U.			53.55			30.8	31.3	
Mean		4	19	53.560	+20	54	30.70	31.25	
B. D. +21° 644									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	4	20	22.87	+21	14	36.4	37.7	
20	U.			22.72			37.5	37.0	
21	U.			22.83			37.5	38.1	
29	U.			22.78			37.4	38.2	
Mean		4	20	22.800	+21	14	37.20	37.75	
B. D. +20° 756									
1901	h	m	s	°	'	''	°	'	''
Jan. 18	U.	4	21	13.49	+20	45	58.4	59.7	
19	L.			13.46			58.6	58.7	
20	U.			13.47			58.2	58.7	
Mean		4	21	13.468	+20	45	58.40	59.03	
B. D. +21° 647									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	4	22	4.59	+21	23	50.0	49.0	
10	U.			4.58			49.9	48.1	
13	U.			4.53			48.7	49.0	
1901									
Jan. 28	U.			4.56			48.8	50.2	
Mean		4	22	4.565	+21	23	49.35	49.08	
B. D. +20° 760									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	4	22	44.32	+20	36	35.4	35.8	
19	U.			44.38			35.5	35.6	
20	U.			44.30			36.5	35.1	
21	U.			44.34			35.7	37.0	
Mean		4	22	44.331	+20	36	35.78	35.88	
B. D. +19° 727									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	4	22	45.52	+19	31	7.5	7.5	
1901									
Jan. 5	L.			45.56			7.3	6.3	
8	L.			[45.68]			7.2	8.5	
13	U.			45.55			7.5	8.0	
Mean		4	22	45.538	+19	31	7.38	7.58	

		Circle A.		B.
		B. D. +20° 761		
1901	h m s	° / ' "	° / ' "	
Jan. 18 U.	4 22 48.91	+20 27	17.7	18.1
19 L.	48.88		18.4	18.9
20 U.	48.91		18.1	18.2
29 U.	48.90		18.9	18.2
Mean . . .	4 22 48.896	+20 27	18.28	18.35

		Circle A.		B.
		B. D. +19° 731		
1900	h m s	° / ' "	° / ' "	
Dec. 10 U.	4 24 25.95	+19 37	21.4	19.4
13 U.	25.88		21.2	21.7
1901				
Jan. 8 L.	26.01		21.9	21.0
28 U.	25.89		20.7	21.4
Mean . . .	4 24 25.928	+19 37	21.30	20.88

		Circle A.		B.
		B. D. +19° 733		
1900	h m s	° / ' "	° / ' "	
Dec. 8 U.	4 25 22.77	+19 55	2.9	2.9
18 L.	22.78		2.8	2.6
21 U.	22.81		2.8	3.3
29 U.	22.77		3.3	3.3
Mean . . .	4 25 22.778	+19 55	2.95	3.02

		Circle A.		B.
		B. D. +20° 772		
1901	h m s	° / ' "	° / ' "	
Jan. 5 L.	4 25 45.64	+20 34	4.4	4.6
20 U.	45.63		3.8	4.9
22 U.	45.57		4.0	4.1
Mean . . .	4 25 45.608	+20 34	4.07	4.53

		Circle A.		B.
		B. D. +21° 657		
1901	h m s	° / ' "	° / ' "	
Jan. 13 U.	4 26 12.02	+21 25	3.8	3.9
18 U.	12.02		2.3	3.8
19 L.	12.00		3.4	4.0
28 U.	11.94		3.5	5.0
Mean . . .	4 26 11.991	+21 25	3.25	4.18

		Circle A.		B.
		B. D. +19° 735		
1900	h m s	° / ' "	° / ' "	
Dec. 10 U.	4 27 10.31	+19 8	11.7	9.1
13 U.	10.32		10.4	10.7
18 L.	10.31		10.2	10.7
1901				
Jan. 29 U.	10.34		10.6	10.1
Mean . . .	4 27 10.316	+19 8	10.72	10.15

		Circle A.		B.
		B. D. +19° 736		
1900	h m s	° / ' "	° / ' "	
Dec. 21 U.	4 27 31.73	+19 36	6.9	6.2
29 U.	31.71		8.2	6.8
1901				
Jan. 5 L.	31.83		7.9	6.1
20 U.	31.75		8.3	7.2
Mean . . .	4 27 31.751	+19 36	7.82	6.58

		Circle A.		B.
		B. D. +20° 778		
1900	h m s	° / ' "	° / ' "	
Dec. 8 U.	4 28 51.75	+20 53	44.9	43.8
1901				
Jan. 13 U.	51.79		43.8	44.4
15 L.	51.81		44.2	44.4
16 U.	51.79		43.3	44.9
Mean . . .	4 28 51.781	+20 53	44.05	44.38

		Circle A.		B.
		B. D. +19° 740		
1900	h m s	° / ' "	° / ' "	
Dec. 10 U.	4 29 47.91	+19 45	47.6	47.9
13 U.	47.89		48.4	49.0
14 L.	47.96		48.2	48.7
Mean . . .	4 29 47.914	+19 45	48.07	48.53

		Circle A.		B.
		B. D. +19° 742		
1900	h m s	° / ' "	° / ' "	
Dec. 16 U.	4 29 50.78	+19 40	30.7	30.2
18 L.	50.77		30.3	30.0
1901				
Jan. 5 L.	50.79		31.9	30.6
29 U.	50.80		30.4	30.3
Mean . . .	4 29 50.776	+19 40	30.82	30.28

		Circle A.		B.
		B. D. +19° 744		
1901	h m s	° / ' "	° / ' "	
Jan. 13 U.	4 30 43.12	+19 33	19.3	18.4
15 L.	43.10		18.9	17.9
16 U.	43.07		18.5	16.8
18 U.	43.07		18.3	18.9
Mean . . .	4 30 43.086	+19 33	18.75	18.00

		Circle A.		B.
		B. D. +19° 745		
1901	h m s	° / ' "	° / ' "	
Jan. 19 L.	4 30 51.39	+19 17	23.1	21.2
20 U.	51.31		22.2	21.3
28 U.	51.31		21.1	21.1
Mean . . .	4 30 51.331	+19 17	22.13	21.20

		Circle A.		B.
		B. D. +20° 785		
1900	h m s	° / ' "	° / ' "	
Dec. 13 U.	4 32 21.79	+20 29	1.8	2.4
16 U.	21.84		2.4	1.3
18 L.	21.86		1.1	1.3
21 U.	21.83		1.2	1.7
1901				
Jan. 29 U.	21.78		1.2	1.7
Mean . . .	4 32 21.817	+20 29	1.54	1.68

		Circle A.		B.
		B. D. +18° 666		
1900	h m s	° / ' "	° / ' "	
Dec. 29 U.	4 32 41.74	+18 31	60.8	60.2
1901				
Jan. 5 L.	41.79		60.5	58.3
13 U.	41.77		59.8	59.2
15 L.	41.74		61.0	58.8
16 U.	41.68		59.6	59.6
Mean . . .	4 32 41.737	+18 31	60.34	59.22

		Circle A.		B.
		B. D. +19° 755		
1900	h m s	° / ' "	° / ' "	
Dec. 14 L.	4 35 42.44	+20 4	14.5	14.1
16 U.	42.50		13.9	14.5
18 L.	.....		12.8	13.0
19 U.	42.55		13.8	13.6
Mean . . .	4 35 42.491	+20 4	13.75	13.80

		Circle A.		B.
		B. D. +19° 759		
1900	h m s	° / ' "	° / ' "	
Dec. 20 U.	4 35 51.27	+19 53	44.2	43.4
21 U.	51.33		44.0	44.5
29 U.	51.21		44.6	44.4
Mean . . .	4 35 51.270	+19 53	44.27	44.10

		Circle A.		B.
		B. D. +18° 684		
1901	h m s	° / ' "	° / ' "	
Jan. 5 L.	4 37 1.40	+18 31	57.5	55.6
13 U.	1.40		56.9	55.5
15 L.	1.34		57.4	55.8
16 U.	1.33		56.5	56.6
Mean . . .	4 37 1.359	+18 31	57.08	55.88

		Circle A.		B.
		B. D. +19° 774		
1900	h m s	° / ' "	° / ' "	
Dec. 8 U.	4 39 43.43	+19 8	38.9	37.2
10 U.	43.47		37.6	36.9
13 U.	43.43		38.0	37.7
Mean . . .	4 39 43.443	+19 8	38.17	37.27

		Circle A.		B.
		B. D. +18° 717		
1900	h m s	° / ' "	° / ' "	
Dec. 14 L.	4 40 15.06	+18 37	4.2	2.6
16 U.	15.09		4.1	2.8
18 L.	.....		2.5	2.4
1901				
Jan. 29 U.	15.11		4.2	2.2
Mean . . .	4 40 15.081	+18 37	3.75	2.50

		Circle A.		B.
		B. D. +18° 719		
1901	h m s	° / ' "	° / ' "	
Jan. 5 L.	4 40 26.44	+18 33	13.8	12.7
8 L.	26.47		14.7	13.4
13 U.	26.48		14.3	12.7
Mean . . .	4 40 26.452	+18 33	14.27	12.93

		Circle A.		B.
		B. D. +19° 777		
1900	h m s	° / ' "	° / ' "	
Dec. 19 U.	4 40 44.13	+19 18	44.5	43.8
20 U.	44.11		44.4	43.0
21 U.	44.13		43.4	44.0
Mean . . .	4 40 44.123	+19 18	44.10	43.60

		Circle A.		B.
		B. D. +18° 725		
1901	h m s	° / ' "	° / ' "	
Jan. 19 L.	4 41 3.95	+18 53	56.2	[52.5]
20 U.	3.97		56.6	57.5
28 U.	4.07		56.4	57.1
Mean . . .	4 41 3.991	+18 53	56.40	57.30

		Circle A.		B.
		B. D. +18° 727		
1901	h m s	° / ' "	° / ' "	
Jan. 15 L.	4 41 17.80	+18 18	28.0	26.5
16 U.	17.81		28.8	27.2
18 U.	17.86		27.5	26.1
Mean . . .	4 41 17.818	+18 18	28.10	26.60

		Circle A.		B.
		B. D. +19° 782		
1900	h m s	° / ' "	° / ' "	
Dec. 8 U.	4 41 51.31	+19 8	22.3	21.8
10 U.	51.37		23.0	21.6
13 U.	51.38		23.8	22.5
Mean . . .	4 41 51.353	+19 8	23.03	21.97

		Circle A.		B.
		B. D. +17° 789		
1900	h m s	° / ' "	° / ' "	
Dec. 16 U.	4 42 47.53	+17 37	49.3	48.7
18 L.	.....		48.8	47.8
19 U.	47.57		50.0	49.1
20 U.	47.55		49.4	48.4
Mean . . .	4 42 47.550	+17 37	49.38	48.50

INDIVIDUAL RESULTS OF OBSERVATIONS.

D91

Circle A. B.										
B. D. +18° 734										
1900	h	m	s	°	'	"	°	'	"	
Dec. 21	U.	4	42	50.80	+18	32	34.8	33.7		
1901										
Jan. 5	L.			50.82			34.7	32.5		
8	L.			50.85			34.3	...		
13	U.			50.79			33.8	32.1		
Mean		4	42	50.806	+18	32	34.40	32.77		
B. D. +18° 738										
1901	h	m	s	°	'	"	°	'	"	
Jan. 15	L.	4	44	27.31	+19	1	10.0	10.1		
16	U.			27.38			10.8	10.1		
18	U.			27.30			10.3	9.7		
19	L.			27.32			9.0	9.7		
Mean		4	44	27.319	+19	1	10.02	9.90		
B. D. +17° 791										
1900	h	m	s	°	'	"	°	'	"	
Dec. 14	L.	4	44	32.11	+17	20	53.3	52.9		
16	U.			32.10			53.4	52.9		
18	L.			...			52.1	52.7		
19	U.			32.15			53.8	52.2		
1901										
Jan. 29	U.			32.15			52.9	52.9		
Mean		4	44	32.123	+17	20	53.10	52.72		
B. D. +18° 743										
1900	h	m	s	°	'	"	°	'	"	
Dec. 8	U.	4	45	31.41	+18	40	...	...		
13	U.			31.41			10.8	10.0		
1901										
Jan. 8	L.			31.40			10.9	10.1		
13	U.			31.39			10.4	10.0		
22	U.			31.36			11.1	9.5		
Mean		4	45	31.391	+18	40	10.80	9.90		
B. D. +17° 797										
1900	h	m	s	°	'	"	°	'	"	
Dec. 20	U.	4	46	3.31	+17	31	15.1	15.2		
21	U.			3.30			16.9	16.2		
29	U.			3.24			16.4	16.3		
1901										
Jan. 5	L.			3.36			17.0	16.1		
Mean		4	46	3.298	+17	31	16.35	15.95		
B. D. +17° 800										
1901	h	m	s	°	'	"	°	'	"	
Jan. 15	L.	4	46	15	+17	22	...	...		
18	U.			This star was looked for on these nights, but was never bright enough for observation.						
19	L.									
20	U.									
B. D. +18° 747										
1900	h	m	s	°	'	"	°	'	"	
Dec. 14	L.	4	47	44.32	+18	54	25.7	26.2		
16	U.			44.29			25.7	26.2		
18	L.			...			24.9	25.1		
19	U.			44.31			25.3	25.5		
1901										
Jan. 13	U.			44.32			26.0	25.3		
Mean		4	47	44.306	+18	54	25.52	25.66		
B. D. +19° 811										
1900	h	m	s	°	'	"	°	'	"	
Dec. 8	U.	4	49	5.57	+19	19	24.2	24.4		
10	U.			5.61			24.1	23.2		
13	U.			5.57			24.0	23.7		
1901										
Jan. 8	L.			5.63			24.0	23.7		
Mean		4	49	5.591	+19	19	24.08	23.75		

Circle A. B.									
B. D. +18° 754									
1901	h	m	s	°	'	"	°	'	"
Jan. 19	L.	4	49	19.94	+18	16	48.3	47.5	
20	U.			19.96			48.9	48.0	
28	U.			19.92			47.7	47.8	
Mean		4	49	19.934	+18	16	48.30	47.77	
B. D. +17° 814									
1901	h	m	s	°	'	"	°	'	"
Jan. 13	U.	4	50	41.30	+17	50	42.9	43.2	
15	L.			41.30			41.9	42.9	
16	U.			41.29			42.6	43.1	
18	U.			41.27			44.3	43.9	
Mean		4	50	41.286	+17	50	42.92	43.28	
B. D. +16° 671									
1900	h	m	s	°	'	"	°	'	"
Dec. 16	U.	4	51	1.82	+16	34	36.9	36.2	
19	U.			1.89			36.9	37.3	
20	U.			1.87			36.5	36.3	
21	U.			1.84			37.5	37.4	
Mean		4	51	1.855	+16	34	36.95	36.80	
B. D. +16° 672									
1900	h	m	s	°	'	"	°	'	"
Dec. 10	U.	4	51	35.77	+16	59	47.6	46.9	
13	U.			35.72			47.9	47.6	
14	L.			35.75			47.9	48.1	
1901									
Jan. 8	L.			35.73			47.9	48.5	
19	L.			35.72			48.7	47.1	
Mean		4	51	35.728	+16	59	48.00	47.64	
B. D. +18° 765									
1900	h	m	s	°	'	"	°	'	"
Dec. 8	U.	4	52	30.15	+18	50	19.4	17.8	
29	U.			30.12			19.4	19.1	
1901									
Jan. 5	L.			30.18			19.2	18.8	
15	L.			30.17			19.5	17.9	
Mean		4	52	30.146	+18	50	19.38	18.40	
B. D. +16° 679									
1900	h	m	s	°	'	"	°	'	"
Dec. 10	U.	4	54	6.89	+16	40	41.7	40.2	
13	U.			6.98			40.8	40.5	
14	L.			6.95			40.3	41.2	
16	U.			6.90			41.0	41.7	
18	L.			6.87			41.1	40.0	
Mean		4	54	6.911	+16	40	40.98	40.72	
B. D. +16° 685									
1900	h	m	s	°	'	"	°	'	"
Dec. 14	L.	4	56	8.51	+16	41	12.7	12.4	
18	L.			8.52			12.9	12.7	
20	U.			8.49			12.9	11.2	
21	U.			8.48			12.4	13.1	
Mean		4	56	8.492	+16	41	12.72	12.35	
♌ Tauri									
1900	h	m	s	°	'	"	°	'	"
Feb. 13	U.	4	57	7.09	+21	26	51.2	...	
14	U.			7.06			49.9	...	
15	U.			7.12			48.9	...	
18	U.			7.08			50.2	...	
19	U.			7.02			49.9	...	
20	U.			7.10			49.6	...	
23	U.			7.03			49.5	...	
25	U.			7.07			49.2	...	
26	U.			7.07			50.4	...	
27	U.			7.06			49.5	...	
Mar. 3	U.			7.00			50.1	...	
7	U.			7.07			50.4	...	
Mean		4	57	7.064	+21	26	49.90	...	

Circle A. B.									
B. D. +16° 688									
1900	h	m	s	°	'	"	°	'	"
Dec. 20	U.	4	58	17.83	+16	59	5.5	3.6	
21	U.			17.83			6.4	5.5	
29	U.			17.78			5.8	5.7	
1901									
Jan. 13	U.			17.83			6.1	5.0	
Mean		4	58	17.818	+16	59	5.95	4.95	
B. D. +18° 777									
1900	h	m	s	°	'	"	°	'	"
Dec. 14	L.	4	59	0.28	+18	6	54.0	53.0	
16	U.			0.29			54.1	52.7	
18	L.			0.33			53.7	52.2	
1901									
Jan. 5	L.			0.33			53.3	51.9	
19	L.			0.28			54.1	52.5	
Mean		4	59	0.288	+18	6	53.84	52.46	
B. D. +17° 841									
1900	h	m	s	°	'	"	°	'	"
Dec. 8	U.	5	0	28.78	+17	40	51.8	51.2	
10	U.			28.71			[53.5]	50.2	
13	U.			28.81			50.9	51.7	
1901									
Jan. 13	U.			28.82			51.3	50.9	
Mean		5	0	28.780	+17	40	51.33	51.00	
B. D. +16° 697									
1900	h	m	s	°	'	"	°	'	"
Dec. 14	L.	5	1	14.67	+16	41	42.5	40.9	
16	U.			14.75			41.4	39.4	
18	L.			14.72			40.3	40.0	
19	U.			14.84			41.6	39.7	
1901									
Jan. 19	L.			14.76			41.3	39.6	
20	U.			14.71			41.6	40.2	
Mean		5	1	14.733	+16	41	41.45	39.97	
B. D. +16° 700									
1900	h	m	s	°	'	"	°	'	"
Dec. 20	U.	5	2	11.39	+16	50	52.1	52.2	
21	U.			11.33			53.3	52.6	
29	U.			11.29			52.8	53.1	
1901									
Jan. 5	L.			11.36			52.2	51.5	
Mean		5	2	11.338	+16	50	52.60	52.35	
B. D. +15° 749									
1901	h	m	s	°	'	"	°	'	"
Jan. 13	U.	5	2	21.68	+15	43	26.3	25.7	
15	L.			21.67			26.4	25.9	
16	U.			21.61			26.6	25.6	
18	U.			21.62			26.3	25.5	
Mean		5	2	21.641	+15	43	26.40	25.68	
B. D. +15° 752									
1900	h	m	s	°	'	"	°	'	"
Dec. 8	U.	5	3	58.53	+15	28	10.0	10.9	
10	U.			58.53			9.2	10.7	
13	U.			58.50			11.4	10.2	
18	L.			58.49			10.1	10.4	
1901									
Jan. 19	L.			58.48			9.5	10.6	
29	U.			58.51			11.9	10.1	
Mean		5	3	58.501	+15	28	10.35	10.48	
B. D. +17° 862</									

SIX-INCH TRANSIT CIRCLE

Circle A. B.									
B. D. +16° 715									
1900	h	m	s	°	'	"	°	'	"
Dec. 21 U.	5	5	4.41	+16	18	34.3	34.1		
29 U.			4.37			33.2	33.9		
1901									
Jan. 5 L.			4.42			34.2	33.7		
13 U.			4.46			33.4	33.3		
Mean . . .	5	5	4.411	+16	18	33.78	33.75		
B. D. +15° 759									
1900	h	m	s	°	'	"	°	'	"
Dec. 18 L.	5	5	56.92	+15	55	19.5	19.6		
1901									
Jan. 15 L.			56.87			20.8	20.8		
16 U.			56.92			20.9	20.7		
29 U.			56.93			20.6	20.5		
Mean . . .	5	5	56.902	+15	55	20.45	20.40		
B. D. +16° 721									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	5	6	6.43	+16	37	11.3	11.1		
20 U.			6.38			12.2	11.3		
28 U.			6.36			11.2	11.5		
Mean . . .	5	6	6.384	+16	37	11.57	11.30		
B. D. +17° 867									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	5	6	24.14	+17	8	27.3	25.8		
13 U.			24.06			25.9	26.0		
1901									
Jan. 18 U.			24.08			26.0	25.8		
Mean . . .	5	6	24.093	+17	8	26.40	25.87		
B. D. +17° 869									
1900	h	m	s	°	'	"	°	'	"
Dec. 29 U.	5	6	42.36	+17	5	32.7	32.1		
1901									
Jan. 5 L.			42.39			32.3	31.3		
13 U.			42.42			32.7	31.5		
Mean . . .	5	6	42.384	+17	5	32.57	31.63		
B. D. +16° 732									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	5	7	28.40	+16	45	53.3	51.9		
18 L.			28.45			54.1	52.3		
20 U.			28.38			53.4	51.8		
21 U.			28.42			54.8	52.9		
1901									
Jan. 19 L.			28.43			53.7	52.4		
Mean . . .	5	7	28.409	+16	45	53.86	52.26		
B. D. +16° 735									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	5	8	33.83	+16	33	42.1	41.0		
13 U.			33.86			42.1	41.7		
14 L.			33.88			43.6	43.5		
1901									
Jan. 5 L.			33.81			43.5	42.7		
15 L.			33.86			42.9	42.1		
Mean . . .	5	8	33.838	+16	33	42.84	42.20		
108 Tauri									
1900	h	m	s	°	'	"	°	'	"
Feb. 14 U.	5	9	27.01	+22	10	12.8			
15 U.			26.99			13.6			
18 U.			26.98			12.3			
19 U.			26.97			13.6			
20 U.			27.01			13.8			
23 U.			26.98			13.9			
25 U.			27.04			13.4			
26 U.			27.04			12.9			
27 U.			26.98			13.6			
Mar. 3 U.			26.99			13.5			
5 U.			27.01			14.6			
7 U.			27.00			13.6			
Mean . . .	5	9	27.000	+22	10	13.47			

Circle A. B.									
B. D. +15° 769									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	5	9	42.10	+15	30	55.9	56.6		
18 L.			42.16			56.1	56.9		
21 U.			42.12			56.4	57.8		
29 U.			42.10			56.8	56.8		
Mean . . .	5	9	42.116	+15	30	56.30	57.02		
B. D. +16° 741									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	5	10	55.27	+16	54	31.5	30.4		
13 U.			55.34			32.1	32.1		
14 L.			55.30			32.7	33.2		
1901									
Jan. 19 L.			55.27			32.6	32.1		
20 U.			55.29			32.7	33.6		
Mean . . .	5	10	55.287	+16	54	32.32	32.28		
B. D. +16° 742									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	5	11	20.09	+16	14	31.2	31.1		
29 U.			19.97			31.2	31.3		
1901									
Jan. 5 L.			20.06			31.8	31.6		
15 L.			20.01			31.9	31.1		
16 U.			19.99			31.1	31.0		
Mean . . .	5	11	20.017	+16	14	31.44	31.22		
B. D. +15° 779									
1900	h	m	s	°	'	"	°	'	"
Dec. 18 L.	5	11	25.05	+15	9	13.6	14.2		
20 U.			25.01			14.7	13.9		
21 U.			24.98			14.6	14.6		
1901									
Jan. 13 U.			25.05			14.8	15.1		
Mean . . .	5	11	25.018	+15	9	14.42	14.45		
n Tauri									
1900	h	m	s	°	'	"	°	'	"
Feb. 13 U.	5	13	16.08	+21	59	36.2	....		
14 U.			16.10			35.7	....		
15 U.			16.04			36.1	....		
18 U.			16.07			36.3	....		
19 U.			16.12			35.5	....		
20 U.			16.08			35.6	....		
23 U.			16.09			36.3	....		
25 U.			16.06			35.3	....		
26 U.			16.06			35.5	....		
27 U.			16.06			35.6	....		
Mar. 2 U.			16.08			35.4	....		
3 U.			16.07			36.2	....		
5 U.			16.04			35.9	....		
7 U.			16.10			35.6	....		
Mean . . .	5	13	16.075	+21	59	35.80	....		
B. D. +15° 787									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	5	13	54.77	+15	40	55.2	54.4		
10 U.			54.82			53.3	53.4		
13 U.			54.74			53.4	53.7		
21 U.			54.82			54.1	54.5		
Mean . . .	5	13	54.788	+15	40	54.00	54.00		
B. D. +15° 789									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	5	14	18.49	+16	1	7.8	7.1		
16 U.			18.51			7.2	6.2		
18 L.			18.65			6.0	6.9		
20 U.			18.57			5.7	5.7		
Mean . . .	5	14	18.546	+16	1	6.68	6.48		

Circle A. B.									
B. D. +14° 881									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	5	14	53.36	+14	57	27.4	26.8		
29 U.			53.18			27.5	26.8		
1901									
Jan. 5 L.			53.29			27.7	27.6		
13 U.			53.29			27.6	28.2		
Mean . . .	5	14	53.276	+14	57	27.55	27.35		
B. D. +15° 790									
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.	5	14	59.29	+15	32	7.8	6.7		
16 U.			59.27			7.6	7.6		
18 U.			59.29			8.6	7.1		
Mean . . .	5	14	59.278	+15	32	8.00	7.13		
B. D. +15° 795									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	5	15	54.85	+15	44	56.9	56.3		
20 U.			54.78			56.1	57.6		
28 U.			54.78			55.3	57.0		
29 U.			54.86			55.9	57.0		
Mean . . .	5	15	54.813	+15	44	56.05	56.98		
B. D. +15° 797									
1900	h	m	s	°	'	"	°	'	"
Dec. 10 U.	5	16	14.81	+15	59	39.3	38.1		
13 U.			14.84			37.8	37.7		
14 L.			14.83			38.3	38.5		
21 U.			14.88			38.2	37.5		
Mean . . .	5	16	14.836	+15	59	38.40	37.95		
B. D. +15° 799									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	5	16	38.25	+16	1	35.4	33.9		
16 U.			38.25			[32.2]	32.8		
18 L.			38.24			34.0	33.2		
20 U.			38.16			34.7	33.3		
Mean . . .	5	16	38.221	+16	1	34.70	33.30		
B. D. +15° 805									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	5	17	46.76	+15	56	44.3	44.4		
29 U.			46.65			44.5	44.4		
1901									
Jan. 5 L.			46.66			46.2	44.4		
13 U.			46.71			45.1	44.6		
15 L.			46.64			44.6	43.8		
Mean . . .	5	17	46.677	+15	56	44.94	44.32		
Lalande 10107									
1900	h	m	s	°	'	"	°	'	"
Feb. 13 U.	5	19	13.79	+20	29	33.1	....		
14 U.			13.67			32.7	....		
15 U.			13.76			33.4	....		
18 U.			13.82			33.3	....		
19 U.			13.74			33.5	....		
20 U.			13.73			33.1	....		
23 U.			13.69			32.6	....		
25 U.			13.67			33.1	....		
Mean . . .	5	19	13.734	+20	29	33.10	....		
B. D. +15° 809									
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.	5	19	22.28	+15	16	14.6	14.7		
16 U.			22.15			14.5	14.9		
18 U.			22.28			15.9	15.1		
19 L.			22.28		</				

INDIVIDUAL RESULTS OF OBSERVATIONS.

D 93

Circle A. B.									
B. D. +15° 810									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	5	19	54.07	+15	29	27.2	27.6	
13	U.			54.03			28.1	27.7	
14	L.			54.05			27.8	28.5	
21	U.			54.06			28.3	27.9	
Mean		5	19	54.048	+15	29	27.85	27.92	
B. D. +15° 813									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	20	10.68	+15	21	54.4	53.6	
16	U.			10.70			51.9	51.5	
18	L.			10.76			53.1	51.5	
20	U.			10.74			53.7	52.2	
Mean		5	20	10.716	+15	21	53.28	52.20	
B. D. +15° 814									
1900	h	m	s	°	'	''	°	'	''
Dec. 29	U.	5	20	18.44	+15	34	59.9	60.0	
1901									
Jan. 5	L.			18.54			58.5	59.7	
13	U.			18.54			59.5	59.2	
20	U.			18.48			59.1	60.4	
Mean		5	20	18.496	+15	34	59.25	59.82	
B. D. +15° 822									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	21	30.80	+15	10	18.0	18.1	
1901									
Jan. 15	L.			30.75			17.5	17.7	
16	U.			30.73			17.1	18.4	
18	U.			30.73			17.7	17.7	
Mean		5	21	30.748	+15	10	17.58	17.98	
o Tauri									
1900	h	m	s	°	'	''	°	'	''
Feb. 23	U.	5	21	37.70	+21	51	5.3	...	
25	U.			37.73			6.2	...	
26	U.			37.62			5.7	...	
27	U.			37.75			5.6	...	
Mar. 2	U.			37.72			5.6	...	
3	U.			37.71			6.1	...	
5	U.			37.74			5.0	...	
7	U.			37.68			5.8	...	
Mean		5	21	37.706	+21	51	5.66	....	
W. B. 2 V. 541									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	21	51.37	+23	12	33.5	....	
14	U.			51.44			32.8	....	
18	U.			51.46			33.2	....	
19	U.			51.42			33.3	....	
20	U.			51.43			34.5	....	
Mean		5	21	51.424	+23	12	33.46	....	
B. D. +14° 914									
1901	h	m	s	°	'	''	°	'	''
Jan. 19	L.	5	21	59.58	+14	3	3.0	2.7	
20	U.			59.55			3.8	3.5	
28	U.			59.51			2.7	3.8	
29	U.			59.58			2.2	2.2	
Mean		5	21	59.551	+14	3	2.92	3.05	
B. D. +15° 826									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	5	22	0.79	+15	47	23.4	22.3	
13	U.			0.80			22.2	23.3	
14	L.			0.74			23.2	23.4	
16	U.			0.82			21.2	22.2	
Mean		5	22	0.783	+15	47	22.50	22.80	

Circle A. B.									
B. D. +14° 917									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	5	22	9.78	+14	55	49.3	50.0	
20	U.			9.77			49.9	50.3	
21	U.			9.76			50.5	50.2	
29	U.			9.71			50.5	50.3	
Mean		5	22	9.751	+14	55	50.05	50.20	
W. B. 2 V. 618									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	24	8.82	+21	18	5.7	...	
14	U.			8.81			5.3	...	
19	U.			8.86			5.6	...	
20	U.			8.77			5.7	...	
23	U.			8.82			5.9	...	
25	U.			8.83			6.0	...	
Mean		5	24	8.818	+21	18	5.70	....	
B. D. +15° 837									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	5	24	42.70	+15	16	59.3	58.6	
13	U.			42.68			57.8	58.8	
14	L.			42.75			59.0	59.9	
16	U.			42.71			59.4	59.6	
1901									
Jan. 15	L.			42.73			59.8	59.2	
Mean		5	24	42.707	+15	16	59.06	59.22	
B. D. +14° 933									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	25	...	+14	34	6.4	7.3	
29	U.			48.59			7.3	7.2	
1901									
Jan. 5	L.			48.68			7.1	6.8	
13	U.			48.69			7.9	8.0	
Mean		5	25	48.648	+14	34	7.18	7.32	
B. D. +14° 934									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	25	53.16	+14	51	12.9	12.8	
18	L.			53.22			10.6	11.3	
20	U.			53.24			11.7	11.7	
21	U.			53.21			11.7	12.9	
Mean		5	25	53.203	+14	51	11.72	12.18	
B. D. +14° 939									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	5	27	4.10	+14	8	54.6	55.1	
16	U.			4.09			56.0	55.5	
18	U.			4.11			55.3	55.5	
Mean		5	27	4.094	+14	8	55.30	55.37	
B. D. +15° 851									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	5	27	23.83	+15	52	33.5	30.1	
13	U.			23.87			32.5	31.8	
14	L.			23.94			32.8	33.0	
Mean		5	27	23.874	+15	52	32.93	31.63	
Mayer 219									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	27	42.15	+20	24	11.3	....	
14	U.			42.14			11.7	....	
15	U.			42.17			11.8	....	
18	U.			42.17			12.0	....	
19	U.			42.19			11.5	....	
Mar. 3	U.			42.16			11.7	....	
5	U.			42.14			11.5	....	
Mean		5	27	42.160	+20	24	11.64	....	
B. D. +14° 947									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	28	13.32	+14	14	9.3	8.2	
16	U.			13.22			9.1	8.8	
18	L.			13.26			9.2	9.4	
Mean		5	28	13.261	+14	14	9.20	8.80	
B. D. +15° 856									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	28	...	+15	30	54.6	55.5	
1901									
Jan. 5	L.			16.18			55.4	55.3	
13	U.			16.22			55.1	55.7	
29	U.			16.19			54.8	54.8	
Mean		5	28	16.191	+15	30	54.98	55.32	
B. D. +14° 948									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	5	28	19.54	+14	25	15.8	15.0	
21	U.			19.55			15.5	14.8	
29	U.			19.48			14.9	15.6	
Mean		5	28	19.523	+14	25	15.40	15.13	
B. D. +13° 922									
1901	h	m	s	°	'	''	°	'	''
Jan. 19	L.	5	28	50.60	+13	56	7.4	6.5	
20	U.			50.59			6.1	6.5	
28	U.			50.56			5.5	6.0	
Mean		5	28	50.578	+13	56	6.33	6.33	
Rümker 1471									
1900	h	m	s	°	'	''	°	'	''
Feb. 20	U.	5	28	53.83	+22	30	4.2	...	
23	U.			53.83			4.7	...	
25	U.			53.79			4.0	...	
26	U.			53.84			5.4	...	
27	U.			53.84			4.1	...	
Mar. 2	U.			53.75			4.2	...	
7	U.			53.83			5.3	...	
Mean		5	28	53.816	+22	30	4.56	....	
B. D. +13° 927									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	5	29	27.14	+13	20	44.9	45.9	
13	U.			27.13			44.0	46.3	
14	L.			27.22			44.7	46.4	
Mean		5	29	27.158	+13	20	44.53	46.20	
B. D. +13° 930									
1901	h	m	s	°	'	''	°	'	''
Jan. 15	L.	5	29	41.61	+13	13	11.1	10.0	
16	U.			41.57			10.7	10.9	
18	U.			41.65			12.1	10.8	
Mean		5	29	41.604	+13	13	11.30	10.57	
B. D. +14° 958									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	30	45.93	+14	35	38.0	39.1	
16	U.			46.05			38.3	38.3	
18	L.			46.06			37.8	38.2	
20	U.			46.05			38.8	38.0	
1901									
Jan. 19	L.			46.02			38.6	38.4	
Mean		5	30	46.015	+14	35	38.30	38.40	

1903PUSNO...3D.

Circle A. B.									
B. D. +14° 959									
1900	h	m	s	°	'	"	°	'	"
Dec. 21 U.	5	31	0.62	+14	9	50.2	50.1		
29 U.			0.56			50.7	49.9		
1901	h	m	s	°	'	"	°	'	"
Jan. 5 L.			0.70			49.5	50.7		
13 U.			0.68			49.1	50.1		
Mean . . .	5	31	0.636	+14	9	49.88	50.20		
ζ Tauri									
1900	h	m	s	°	'	"	°	'	"
Feb. 13 U.	5	31	40.08	+21	4	52.2			
14 U.			40.06			53.4			
15 U.			40.09			54.1			
18 U.			40.11			54.0			
19 U.			40.12			53.7			
20 U.			40.06			53.8			
23 U.			40.13			54.3			
25 U.			40.04			54.1			
26 U.			40.13			54.2			
Mar. 2 U.			40.07			53.8			
3 U.			40.08			53.1			
5 U.			40.08			53.3			
7 U.			40.09			53.0			
Mean . . .	5	31	40.088	+21	4	53.62			
B. D. +14° 973									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	5	33	25.88	+14	29	57.5	57.4		
10 U.			25.93			56.7	55.7		
13 U.			25.83			56.7	57.6		
18 L.			25.94			55.9	57.7		
Mean . . .	5	33	25.891	+14	29	56.70	57.10		
B. D. +14° 978									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	5	34	5.57	+14	44	37.6	38.1		
16 U.			5.56			36.9	37.4		
19 U.			5.55			36.6	37.1		
20 U.			5.55			36.7	36.9		
1901	h	m	s	°	'	"	°	'	"
Jan. 13 U.			5.57			37.4	37.4		
Mean . . .	5	34	5.558	+14	44	37.04	37.38		
B. D. +13° 954									
1900	h	m	s	°	'	"	°	'	"
Dec. 18 L.	5	35	50.77	+13	5	48.5	49.0		
21 U.			50.71			48.6	49.2		
29 U.			50.65			49.2	49.1		
1901	h	m	s	°	'	"	°	'	"
Jan. 5 L.			50.71			49.5	48.3		
Mean . . .	5	35	50.702	+13	5	48.95	48.90		
Anonymous									
1900	h	m	s	°	'	"	°	'	"
Feb. 18 U.	5	35	57.10	+22	30	4.6			
Piazz V. 184									
1900	h	m	s	°	'	"	°	'	"
Feb. 13 U.	5	36	1.25	+22	36	35.9			
14 U.			1.20			35.7			
15 U.			1.26			36.9			
19 U.			1.23			35.7			
Mean . . .	5	36	1.235	+22	36	36.05			
B. D. +13° 957									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	5	36	31.21	+13	32	31.6	30.9		
10 U.			31.20			31.7	31.5		
13 U.			31.16			31.3	31.4		
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.			31.23			31.4	31.4		
Mean . . .	5	36	31.196	+13	32	31.50	31.30		
Circle A. B.									
Anonymous									
1900	h	m	s	°	'	"	°	'	"
Feb. 20 U.	5	36	49.31	+21	20	24.1			
Piazz V. 192									
1900	h	m	s	°	'	"	°	'	"
Feb. 15 U.	5	37	15.13	+23	9	25.5			
Mar. 2 U.			15.16			26.0			
3 U.			15.16			25.0			
5 U.			15.13			25.3			
7 U.			15.19			25.4			
Mean . . .	5	37	15.154	+23	9	25.44			
B. D. +14° 991									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	5	37	17.53	+14	7	50.5	50.6		
16 U.			17.51			50.1	49.4		
19 U.			17.51			49.3	49.9		
1901	h	m	s	°	'	"	°	'	"
Jan. 13 U.			17.60			51.0	50.2		
Mean . . .	5	37	17.541	+14	7	50.22	50.02		
W. B. V. 1127									
1900	h	m	s	°	'	"	°	'	"
Feb. 23 U.	5	37	22.50	+21	22	8.6			
25 U.			22.52			9.3			
26 U.			22.59			8.5			
27 U.			22.53			8.4			
Mean . . .	5	37	22.535	+21	22	8.70			
B. D. +13° 964									
1900	h	m	s	°	'	"	°	'	"
Dec. 20 U.	5	37	23.61	+13	5	48.8	47.3		
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.			23.59			49.0	49.2		
16 U.			23.54			48.3	49.2		
18 U.			23.62			49.6	49.0		
Mean . . .	5	37	23.586	+13	5	48.92	48.68		
B. D. +14° 998									
1900	h	m	s	°	'	"	°	'	"
Dec. 21 U.	5	37	50.15	+14	21	52.6	51.9		
29 U.			50.07			51.8	51.4		
1901	h	m	s	°	'	"	°	'	"
Jan. 5 L.			50.16			51.9			
29 U.			50.16			51.1	51.2		
Mean . . .	5	37	50.131	+14	21	51.85	51.50		
B. D. +12° 880									
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.	5	38	28.30	+12	40	21.9	22.9		
20 U.			28.28			21.9	23.2		
28 U.			28.24			22.0	23.2		
Mean . . .	5	38	28.268	+12	40	21.93	23.10		
B. D. +12° 882									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	5	39	4.73	+12	22	20.5	19.6		
10 U.			4.77			19.9	20.0		
13 U.			4.76			21.0	20.1		
1901	h	m	s	°	'	"	°	'	"
Jan. 15 L.			4.73			21.1	20.1		
Mean . . .	5	39	4.743	+12	22	20.62	19.95		
B. D. +12° 884									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	5	39	23.68	+12	50	43.1	43.5		
21 U.			23.68			44.3	44.8		
29 U.			23.66			43.4	44.3		
1901	h	m	s	°	'	"	°	'	"
Jan. 5 L.			23.61			44.3	43.6		
16 U.			23.67			43.4	44.6		
Mean . . .	5	39	23.651	+12	50	43.70	44.16		
Circle A. B.									
B. D. +13° 971									
1900	h	m	s	°	'	"	°	'	"
Dec. 14 L.	5	39	23.83	+13	31	60.5	60.5		
16 U.			23.78			60.0	59.6		
18 L.			23.77			59.5	61.0		
20 U.			23.78			59.6	59.7		
Mean . . .	5	39	23.782	+13	31	59.90	60.20		
Lalande 10891									
1900	h	m	s	°	'	"	°	'	"
Feb. 13 U.	5	41	12.65	+22	29	28.5			
14 U.			12.68			27.8			
15 U.			12.68			28.7			
18 U.			12.67			28.5			
19 U.			12.65			28.3			
Mar. 3 U.			12.66			28.9			
5 U.			12.65			28.8			
Mean . . .	5	41	12.663	+22	29	28.50			
B. D. +12° 896									
1900	h	m	s	°	'	"	°	'	"
Dec. 19 U.	5	41	35.09	+12	18	8.5			
29 U.			35.09			8.3	9.4		
1901	h	m	s	°	'	"	°	'	"
Jan. 5 L.			35.20			8.4	8.5		
15 L.			35.14			8.2	9.0		
16 U.			35.13			8.8	9.1		
Mean . . .	5	41	35.132	+12	18	8.44	9.00		
Lalande 10913									
1900	h	m	s	°	'	"	°	'	"
Feb. 20 U.	5	41	40.26	+20	54	15.6			
23 U.			40.32			15.8			
25 U.			40.30			16.0			
26 U.			40.34			15.8			
27 U.			40.30			16.2			
Mar. 2 U.			40.37			15.8			
Mean . . .	5	41	40.315	+20	54	15.87			
B. D. +12° 899									
1900	h	m	s	°	'	"	°	'	"
Dec. 16 U.	5	41	51.89	+12	13	15.7	16.2		
18 L.			51.87			15.4	15.1		
20 U.			51.88			14.8	15.1		
21 U.			51.94			15.4	15.5		
1901	h	m	s	°	'	"	°	'	"
Jan. 19 L.			51.95			15.2	15.5		
Mean . . .	5	41	51.899	+12	13	15.30	15.48		
B. D. +13° 979									
1900	h	m	s	°	'	"	°	'	"
Dec. 8 U.	5	42	2.66	+13	51	48.3	47.9		
10 U.			2.66			47.6	47.6		
13 U.			2.57			47.2	47.4		
1901	h	m	s	°	'	"	°	'	"
Jan. 18 U.			2.63			49.4	48.2		
20 U.			2.61			47.6	47.6		
Mean . . .	5	42	2.626	+13	51	48.02	47.74		
B. D. +12° 910									
1901	h	m	s	°	'	"	°	'	"
Jan. 5 L.	5	43	36.27	+12	7	5.5	6.1		
13 U.			36.26			5.7	6.0		
15 L.			36.26			4.5	4.9		
16 U.			36.21			5.4	6.5		
Mean . . .	5	43	36.242	+12	7	5.28	5.88		
B. D. +13° 988									
1900	h	m	s	°	'				

Circle A. B.									
B. D. +12° 912									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	5	43	55.85	+12	37	11.3	11.1	
16	U.			55.92			11.8	11.4	
18	L.			55.86			11.5	11.5	
19	U.			.....			11.1	11.6	
1901									
Jan. 20	U.			55.84			11.5	12.0	
Mean				5 43 55.859	+12	37	11.44	11.52	
Lalande 11062									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	45	45.77	+23	21	22.0	....	
14	U.			45.74			21.8	....	
15	U.			45.81			22.2	....	
18	U.			45.75			21.6	....	
19	U.			45.78			22.2	....	
Mar. 3	U.			45.81			20.6	....	
5	U.			45.78			21.4	....	
Mean				5 45 45.777	+23	21	21.69	....	
B. D. +12° 925									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	5	46	37.58	+12	51	10.8	9.7	
13	U.			37.53			10.4	11.4	
14	L.			37.65			10.7	10.9	
18	L.			37.66			9.4	10.5	
Mean				5 46 37.596	+12	51	10.32	10.62	
B. D. +12° 927									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	5	46	50.17	+12	18	20.8	21.5	
21	U.			50.24			21.9	22.8	
29	U.			50.16			22.3	22.5	
Mean				5 46 50.190	+12	18	21.67	22.27	
Anonymous									
1900	h	m	s	°	'	''	°	'	''
Feb. 25	U.	5	47	11.19	+22	2	14.7	....	
B. D. +22° 1080									
1900	h	m	s	°	'	''	°	'	''
Feb. 20	U.	5	47	18.15	+22	3	2.6	....	
23	U.			18.16			2.2	....	
26	U.			18.21			3.0	....	
27	U.			18.16			3.0	....	
Mar. 2	U.			18.20			3.1	....	
Mean				5 47 18.176	+22	3	2.78	....	
B. D. +11° 960									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	47	.....	+11	47	38.6	38.8	
1901									
Jan. 5	L.			37.36			38.7	38.6	
13	U.			37.37			39.3	39.2	
15	L.			37.37			37.9	39.1	
Mean				5 47 37.355	+11	47	38.62	38.92	
B. D. +12° 937									
1901	h	m	s	°	'	''	°	'	''
Jan. 16	U.	5	48	22.22	+12	24	19.8	20.1	
18	U.			22.13			20.6	20.6	
19	L.			22.18			19.3	20.2	
Mean				5 48 22.171	+12	24	19.90	20.30	
χ ¹ Orionis									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	48	27.61	+20	15	26.3	....	
14	U.			27.63			26.9	....	
15	U.			27.61			28.0	....	
18	U.			27.60			27.4	....	
19	U.			27.66			27.0	....	
Mar. 5	U.			27.68			27.0	....	
7	U.			27.68			27.1	....	
Mean				5 48 27.639	+20	15	27.10	....	

Circle A. B.									
B. D. +12° 941									
1901	h	m	s	°	'	''	°	'	''
Jan. 20	U.	5	48	29.04	+12	2	35.7	35.5	
28	U.			29.06			35.3	35.9	
29	U.			29.10			34.9	35.4	
Mean				5 48 29.067	+12	2	35.30	35.60	
B. D. +11° 964									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	48	56.95	+11	44	40.8	39.8	
10	U.			56.98			39.7	41.0	
13	U.			56.95			41.4	42.4	
Mean				5 48 56.960	+11	44	40.63	41.07	
B. D. +11° 965									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	5	49	2.03	+11	27	59.9	60.4	
16	U.			1.95			59.9	60.3	
18	L.			1.91			59.1	59.5	
Mean				5 49 1.952	+11	27	59.63	60.07	
B. D. +12° 946									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	5	49	37.97	+12	52	37.9	37.9	
21	U.			37.97			38.8	38.8	
29	U.			37.94			38.5	38.8	
Mean				5 49 37.960	+12	52	38.40	38.50	
B. D. +12° 950									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	50	.....	+12	59	4.1	5.0	
1901									
Jan. 5	L.			0.76			5.0	4.7	
13	U.			0.76			4.8	5.1	
15	L.			0.75			4.2	5.0	
Mean				5 50 0.745	+12	59	4.52	4.95	
B. D. +11° 970									
1901	h	m	s	°	'	''	°	'	''
Jan. 16	U.	5	50	2.96	+11	47	32.3	33.3	
18	U.			2.96			33.9	32.7	
19	L.			2.96			32.4	33.0	
20	U.			2.91			33.2	33.1	
Mean				5 50 2.943	+11	47	32.95	33.02	
B. D. +12° 963									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	52	27.37	+12	52	14.3	14.1	
10	U.			27.38			14.2	14.2	
13	U.			27.35			14.9	15.7	
29	U.			27.33			14.8	14.1	
Mean				5 52 27.358	+12	52	14.55	14.52	
B. D. +12° 965									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	5	52	44.25	+12	58	40.3	41.1	
16	U.			44.18			40.4	40.4	
18	L.			44.24			38.6	40.5	
20	U.			44.21			40.2	40.2	
Mean				5 52 44.212	+12	58	39.88	40.55	
Anonymous									
1900	h	m	s	°	'	''	°	'	''
Feb. 15	U.	5	52	48.92	+20	39	17.9	....	

Circle A. B.									
W. B. 2 V. 1652									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	52	57.69	+20	40	1.6	....	
14	U.			57.69			0.8	....	
18	U.			57.71			1.6	....	
19	U.			57.73			0.8	....	
Mean				5 52 57.705	+20	40	1.20	....	
B. D. +12° 968									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	53	.....	+12	47	55.2	55.7	
1901									
Jan. 5	L.			15.68			55.3	55.4	
13	U.			15.67			55.3	55.4	
15	L.			15.65			54.7	55.7	
Mean				5 53 15.655	+12	47	55.12	55.55	
Lalande 11293									
1900	h	m	s	°	'	''	°	'	''
Mar. 2	U.	5	53	39.41	+21	35	47.9	....	
3	U.			39.30			47.7	....	
5	U.			39.36			47.3	....	
7	U.			39.42			47.1	....	
Mean				5 53 39.372	+21	35	47.50	....	
B. D. +11° 986									
1901	h	m	s	°	'	''	°	'	''
Jan. 16	U.	5	53	45.46	+11	45	16.7	18.6	
18	U.			45.45			17.3	17.2	
19	L.			45.47			16.6	17.2	
Mean				5 53 45.454	+11	45	16.87	17.67	
B. D. +12° 975									
1901	h	m	s	°	'	''	°	'	''
Jan. 20	U.	5	53	50.88	+12	27	46.4	47.3	
28	U.			50.87			46.1	47.9	
29	U.			50.88			46.0	47.3	
Mean				5 53 50.877	+12	27	46.17	47.50	
140 Tauri									
1900	h	m	s	°	'	''	°	'	''
Feb. 15	U.	5	54	24.54	+22	53	38.2	....	
20	U.			24.47			37.4	....	
23	U.			24.51			37.9	....	
25	U.			24.52			38.1	....	
26	U.			24.59			37.7	....	
27	U.			24.55			37.6	....	
Mean				5 54 24.530	+22	53	37.82	....	
B. D. +12° 980									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	5	54	40.01	+12	36	21.3	21.0	
16	U.			39.97			20.5	20.5	
18	L.			40.01			18.8	20.0	
20	U.			40.00			19.9	19.9	
Mean				5 54 39.989	+12	36	20.12	20.35	
B. D. +11° 995									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	54	59.19	+11	59	2.2	2.0	
10	U.			59.07			2.4	3.3	
13	U.			59.06			3.4	2.4	
21	U.			59.14			2.2	3.0	
Mean				5 54 59.115	+11	59	2.55	2.68	
B. D. +11° 1002									
1901	h	m	s	°	'	''	°	'	''
Jan. 16	U.	5	56	29.92	+11	39	19.4	19.7	
18	U.			29.92			19.2	20.3	
19	L.			29.92			18.9	19.3	
20	U.			29.88			19.8	19.1	
Mean				5 56 29.906	+11	39	19.32	19.60	

SIX-INCH TRANSIT CIRCLE.

Circle A. B.									
B. D. +12° 994									
1900	h	m	s	°	'	''	°	'	''
Dec. 14	L.	5	57	1.52	+12	40	15.5	16.6	
16	U.			1.50			15.8	15.5	
18	L.			1.56			15.0	15.1	
1901									
Jan. 28	U.			1.50			14.8	16.0	
Mean		5	57	1.512	+12	40	15.28	15.80	
B. D. +11° 1005									
1900	h	m	s	°	'	''	°	'	''
Dec. 20	U.	5	57	9.33	+11	5	33.2	32.7	
21	U.			9.35			33.8	33.6	
29	U.			9.21			34.2	33.8	
Mean		5	57	9.297	+11	5	33.73	33.37	
B. D. +11° 1007									
1900	h	m	s	°	'	''	°	'	''
Dec. 8	U.	5	57	44.12	+11	8	14.1	14.6	
10	U.			44.06			14.3	13.8	
13	U.			44.04			15.7	15.9	
1901									
Jan. 29	U.			44.07			15.3	15.2	
Mean		5	57	44.072	+11	8	14.85	14.88	
B. D. +11° 1009									
1900	h	m	s	°	'	''	°	'	''
Dec. 19	U.	5	57	.....	+11	40	57.6	57.0	
1901									
Jan. 5	L.			49.94			57.4	57.8	
13	U.			49.92			57.7	58.1	
15	L.			49.91			57.1	58.0	
Mean		5	57	49.912	+11	40	57.45	57.72	
1 Geminorum									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	5	58	2.55	+23	16	6.0	...	
14	U.			2.52			7.5	...	
15	U.			2.49			8.0	...	
19	U.			2.53			7.0	...	
20	U.			2.54			6.9	...	
23	U.			2.49			7.6	...	
25	U.			2.48			7.4	...	
26	U.			2.52			7.0	...	
27	U.			2.51			7.3	...	
Mar. 2	U.			2.53			7.0	...	
3	U.			2.51			7.3	...	
5	U.			2.48			7.0	...	
7	U.			2.53			6.9	...	
Mean		5	58	2.514	+23	16	7.15	....	
B. D. +11° 1022									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	6	0	7.37	+11	13	36.5	36.0	
13	U.			7.36			36.5	36.6	
14	L.			7.36			36.1	38.4	
16	U.			7.39			35.8	36.7	
Mean		6	0	7.366	+11	13	36.22	36.92	
B. D. +11° 1032									
1900	h	m	s	°	'	''	°	'	''
Dec. 18	L.	6	2	3.58	+11	1	10.1	10.4	
20	U.			3.50			10.2	10.4	
21	U.			3.53			10.7	11.4	
29	U.			3.53			11.3	11.6	
Mean		6	2	3.531	+11	1	10.58	10.95	
B. D. +11° 1038									
1901	h	m	s	°	'	''	°	'	''
Jan. 5	L.	6	2	47.84	+11	24	...	39.1	
13	U.			47.87			39.6	39.9	
19	L.			47.84			39.1	39.1	
20	U.			47.86			40.1	39.4	
Mean		6	2	47.844	+11	24	39.60	39.38	
B. D. +12° 1032									
1900	h	m	s	°	'	''	°	'	''
Dec. 10	U.	6	3	7.19	+12	17	42.6	42.4	
13	U.			7.22			42.9	43.5	
14	L.			7.18			42.9	43.4	
16	U.			7.24			42.0	43.1	
Mean		6	3	7.203	+12	17	42.60	43.10	
3 Geminorum									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	6	3	39.66	+23	7	48.2	....	
14	U.			39.70			47.6	....	
15	U.			39.69			47.3	....	
18	U.			39.62			46.8	....	
19	U.			39.65			47.5	....	
20	U.			39.65			47.7	....	
23	U.			39.67			46.6	....	
25	U.			39.69			46.9	....	
26	U.			39.70			47.0	....	
27	U.			39.67			46.1	....	
Mar. 2	U.			39.65			47.2	....	
3	U.			39.65			46.4	....	
5	U.			39.69			47.8	....	
7	U.			39.66			47.4	....	
Mean		6	3	39.668	+23	7	47.19	....	
7 Geminorum									
1900	h	m	s	°	'	''	°	'	''
Feb. 13	U.	6	8	50.50	+22	32	8.9	...	
14	U.			50.48			9.5	...	
15	U.			50.52			8.8	...	
18	U.			50.58			9.6	...	
19	U.			50.52			9.3	...	
20	U.			50.51			9.3	...	
23	U.			50.53			8.2	...	
25	U.			50.53			9.4	...	
26	U.			50.48			9.3	...	
27	U.			50.52			9.3	...	
Mar. 2	U.			50.52			9.8	...	
3	U.			50.54			9.3	...	
5	U.			50.53			8.9	...	
7	U.			50.52			9.4	...	
Mean		6	8	50.520	+22	32	9.21	....	
24 Lyncis									
1900	h	m	s	°	'	''	°	'	''
Mar. 12	U.	7	34	32.97	+58	56	38.1	39.6	
16	L.			32.94			35.7	38.1	
21	L.			32.81			37.4	38.8	
24	L.			32.73			37.3	39.0	
27	L.			32.79			37.7	...	
28	U.			32.86			38.5	39.6	
31	U.			32.86			38.8	40.3	
Apr. 1	U.			32.88			38.1	...	
3	L.			32.80			36.7	38.5	
Mean		7	34	32.849	+58	56	37.59	39.13	
κ Geminorum									
1900	h	m	s	°	'	''	°	'	''
Mar. 2	U.	7	38	24.72	+24	38	17.2	....	
3	U.			24.72			17.4	....	
7	U.			24.68			16.9	....	
9	U.			24.73			18.1	....	
12	U.			24.73			17.7	14.9	
16	L.			24.69			15.6	16.2	
17	L.			24.71			17.0	16.0	
21	L.			24.70			16.6	15.9	
24	L.			24.71			16.7	15.9	
27	L.			24.77			17.1	....	
28	U.			24.75			16.4	15.3	
31	U.			24.73			17.1	15.9	
Apr. 1	U.			24.73			17.0	....	
3	L.			24.69			16.5	15.8	
5	U.			24.73			15.5	....	
Mean		7	38	24.719	+24	38	16.85	15.74	
φ Geminorum									
1900	h	m	s	°	'	''	°	'	''
Mar. 2	U.	7	47	22.70	+27	1	27.7	....	
3	U.			22.69			28.1	....	
7	U.			22.70			28.4	....	
9	U.			22.65			27.7	....	
12	U.			22.69			28.1	28.8	
16	L.			22.74			29.1	28.2	
17	L.			22.67			28.6	27.9	
21	L.			22.74			28.3	28.2	
24	L.			22.72			29.0	28.1	
27	L.			22.66			28.3	....	
28	U.			22.68			28.9	28.3	
31	U.			22.70			27.9	28.2	
Apr. 1	U.			22.70			28.1	....	
3	L.			22.74			28.8	28.4	
5	U.			22.70			29.4	....	
Mean		7	47	22.699	+27	1	28.43	28.26	
ω ¹ Cancri									
1900	h	m	s	°	'	''	°	'	''
Mar. 2	U.	7	54	52.89	+25	39	60.7	....	
3	U.			52.90			60.4	....	
7	U.			52.93			60.7	....	
9	U.			52.93			59.8	....	
12	U.			52.90			61.3	59.3	
16	L.			52.89			60.9	59.1	
17	L.			52.93			60.7	60.0	
21	L.			52.87			61.9	59.6	
Apr. 1	U.			52.88			60.3	....	
Mean		7	54	52.902	+25	39	60.73	59.50	
Lalande 15590									
1900	h	m	s	°	'	''	°	'	''
Mar. 24	L.	7	55	2.53	+23	51	29.4	27.6	
27	L.			2.44			28.8	....	
28	U.			2.49			28.5	28.3	
31	U.			2.50			28.5	28.2	
Apr. 3	L.			2.47			29.0	27.6	
5	U.			2.53			28.3	....	
Mean		7	55	2.493	+23	51	28.75	27.92	
Anonymous									
1900	h	m	s	°	'	''	°	'	''
Mar. 16	L.	8	1	40.93	+25	1	36.0	36.1	
Lalande 15839									
1900	h	m	s	°	'	''	°	'	''
Mar. 9	U.	8	1	52.59					

INDIVIDUAL RESULTS OF OBSERVATIONS.

Circle A. B.									
ψ^2 Cancri									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	4	25.86	+25	48	40.0	....	....
3	U.			25.89			40.2	....	....
7	U.			25.92			40.3	....	....
9	U.			25.93			40.1	....	....
12	U.			25.86			40.0	....	....
16	L.			25.89			39.7	39.2	....
Mean	...	8	4	25.892	+25	48	40.05	39.20	....
Bradley 1147									
1900	h	m	s	°	'	"	"	"	"
Mar. 31	U.	8	6	59.26	+76	3	43.0	44.7	....
Apr. 1	U.			59.15			43.3	....	....
3	L.			58.82			41.9	43.0	....
5	U.			59.44			43.2	....	....
Mean	...	8	6	59.168	+76	3	42.85	43.85	....
Anonymous									
1900	h	m	s	°	'	"	"	"	"
Mar. 16	L.	8	7	37.25	+25	2	27.6	26.2	....
Lalande 16053									
1900	h	m	s	°	'	"	"	"	"
Mar. 17	L.	8	7	46.20	+23	26	20.1	17.8	....
21	L.			46.24			20.7	21.4	....
24	L.			46.25			19.7	19.3	....
27	L.			46.22			19.6	....	....
28	U.			46.23			19.8	19.3	....
Mean	...	8	7	46.228	+23	26	19.98	19.45	....
B. D. +25° 1880									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	8	44.29	+25	2	16.5	....	....
3	U.			44.28			16.1	....	....
7	U.			44.28			16.5	....	....
12	U.			44.24			17.1	15.7	....
Mean	...	8	8	44.272	+25	2	16.55	15.70	....
λ Cancri									
1900	h	m	s	°	'	"	"	"	"
Mar. 27	L.	8	14	35.47	+24	20	15.6	....	....
31	U.			35.52			15.5	13.1	....
Apr. 1	U.			35.44			15.2	....	....
3	L.			35.44			15.5	13.1	....
5	U.			35.49			13.4	....	....
Mean	...	8	14	35.472	+24	20	15.04	13.10	....
W. B. VIII. 252									
1900	h	m	s	°	'	"	"	"	"
Mar. 17	L.	8	14	41.18	+25	39	5.2	5.2	....
21	L.			41.25			5.6	5.3	....
24	L.			41.23			5.5	3.4	....
28	U.			41.22			5.9	4.5	....
Mean	...	8	14	41.220	+25	39	5.55	4.60	....
Lalande 16332									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	15	56.97	+23	16	12.7	....	....
3	U.			56.94			12.6	....	....
7	U.			56.98			12.8	....	....
12	U.			56.97			12.8	13.2	....
16	L.			56.97			11.2	12.2	....
Mean	...	8	15	56.966	+23	16	12.42	12.70	....
ν^1 Cancri									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	20	43.08	+24	51	46.9	....	....
3	U.			43.04			46.9	....	....
7	U.			43.05			46.5	....	....
9	U.			43.10			47.1	....	....
12	U.			43.05			46.6	46.3	....
Mean	...	8	20	43.064	+24	51	46.80	46.30	....

Circle A. B.									
Lalande 16554									
1900	h	m	s	°	'	"	"	"	"
Mar. 16	L.	8	21	31.86	+23	28	51.2	51.2	....
17	L.			32.00			51.1	49.9	....
21	L.			31.87			51.6	50.8	....
24	L.			32.02			51.1	50.5	....
28	U.			31.95			49.9	50.2	....
Mean	...	8	21	31.942	+23	28	50.98	50.52	....
σ Ursae Majoris									
1900	h	m	s	°	'	"	"	"	"
Mar. 31	U.	8	22	57.52	+61	3	7.7	9.4	....
Apr. 1	U.			57.46			7.2	....	....
3	L.			57.45			7.0	8.4	....
5	U.			57.57			10.0	....	....
Mean	...	8	22	57.500	+61	3	7.98	8.90	....
η Cancri									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	26	55.64	+20	46	51.3	....	....
3	U.			55.64			52.3	....	....
7	U.			55.60			51.3	....	....
9	U.			55.62			52.0	....	....
12	U.			55.59			51.4	53.3	....
16	L.			55.64			51.1	53.2	....
17	L.			55.60			51.8	53.2	....
21	L.			55.69			52.1	52.6	....
24	L.			55.65			51.6	51.9	....
27	L.			55.66			51.8	....	....
28	U.			55.61			52.3	53.2	....
31	U.			55.64			51.9	53.0	....
Apr. 1	U.			55.64			51.5	....	....
3	L.			55.61			51.4	52.0	....
5	U.			55.64			51.6	....	....
Mean	...	8	26	55.631	+20	46	51.69	52.80	....
γ Cancri									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	37	30.03	+21	49	42.7	....	....
3	U.			30.01			42.3	....	....
7	U.			30.04			42.4	....	....
9	U.			30.06			42.4	....	....
12	U.			30.04			42.4	42.1	....
16	L.			30.06			43.0	42.0	....
17	L.			30.07			42.0	41.6	....
21	L.			30.06			42.1	42.4	....
24	L.			29.99			42.8	42.1	....
27	L.			30.00			43.4	....	....
28	U.			30.03			42.8	42.7	....
31	U.			30.04			43.2	41.6	....
Apr. 1	U.			29.99			43.3	....	....
3	L.			30.02			43.3	42.2	....
5	U.			30.03			41.6	....	....
Mean	...	8	37	30.031	+21	49	42.65	42.09	....
ι Cancri									
1900	h	m	s	°	'	"	"	"	"
Mar. 2	U.	8	40	38.86	+29	7	31.9	....	....
3	U.			38.88			31.0	....	....
7	U.			38.89			31.8	....	....
9	U.			38.85			31.5	....	....
12	U.			38.90			30.7	33.0	....
16	L.			38.83			31.7	32.5	....
17	L.			38.86			31.1	....	....
21	L.			38.78			31.4	33.0	....
24	L.			38.89			31.6	33.4	....
27	L.			38.86			31.1	....	....
28	U.			38.90			31.1	31.9	....
31	U.			38.85			31.5	33.0	....
Apr. 1	U.			38.90			31.0	....	....
3	L.			38.90			31.6	32.9	....
5	U.			38.86			33.6	....	....
Mean	...	8	40	38.867	+29	7	31.51	32.81	....

Circle A. B.									
τ Ursae Majoris									
1900	h	m	s	°	'	"	"	"	"
Mar. 12	U.	8	52	21.88	+48	25	62.4	65.4	....
16	L.			21.75			59.8	62.9	....
17	L.			21.79			61.4	63.5	....
21	L.			21.69			62.2	65.2	....
24	L.			21.87			61.2	63.5	....
27	L.			22.00			62.0	....	....
28	U.			21.88			63.2	66.1	....
31	U.			21.79			63.7	64.9	....
Mean	...	8	52	21.831	+48	26	1.99	4.54	....
σ^2 Ursae Majoris									
1900	h	m	s	°	'	"	"	"	"
Mar. 12	U.	9	1	36.04	+67	32	24.7	25.4	....
16	L.			35.84			22.8	24.7	....
17	L.			35.92			23.6	25.1	....
21	L.			35.83			24.5	24.9	....
24	L.			35.76			24.4	25.0	....
27	L.			36.06			25.8	....	....
28	U.			35.94			25.3	24.8	....
31	U.			36.00			25.9	26.5	....
Mean	...	9	1	35.924	+67	32	24.62	25.20	....
ν Leonis									
1901	h	m	s	°	'	"	"	"	"
Feb. 23	U.	11	31	49.73	-0	16	16.9	17.8	....
25	U.			49.68			18.0	18.4	....
26	U.			49.73			16.2	17.5	....
28	U.			49.70			17.3	17.1	....
Mar. 2	U.			49.74			16.9	17.7	....
5	U.			49.70			16.4	17.0	....
6	U.			49.70			17.0	17.0	....
7	U.			49.73			17.5	18.0	....
Mean	...	11	31	49.714	-0	16	17.02	17.56	....
β Virginis									
1901	h	m	s	°	'	"	"	"	"
Feb. 23	U.	11	45	29.21	+2	19	41.0	42.7	....
25	U.			29.21			41.6	42.4	....
26	U.			29.18			42.2	42.6	....
28	U.			29.20			42.4	41.4	....
Mar. 2	U.			29.19			41.9	41.5	....
5	U.			29.20			41.6	41.4	....
6	U.			29.22			41.5	41.4	....
7	U.			29.19			41.1	41.4	....
Mean	...	11	45	29.200	+2	19	41.66	41.85	....
δ Virginis									
1901	h	m	s	°	'	"	"	"	"
Feb. 23	U.	11	54						

SIX-INCH TRANSIT CIRCLE.

1903PUSNO...3D.

Circle A. B.									
W. B. XII. 279									
1901	h	m	s	°	'	''	°	'	''
Feb. 23 U.	12	20	10.87	-	0	30	56.6	56.0	
26 U.			10.82				56.7	55.9	
28 U.			10.82				57.0	57.2	
Mar. 2 U.			10.91				56.2	56.4	
Mean . . .	12	20	10.855	-	0	30	56.62	56.38	
Lalande 23271									
1901	h	m	s	°	'	''	°	'	''
Feb. 25 U.	12	21	38.91	+	0	22	13.6	13.9	
Mar. 5 U.			38.87				14.7	12.9	
6 U.			38.85				13.4	13.6	
7 U.			38.89				13.7	13.7	
Mean . . .	12	21	38.880	+	0	22	13.85	13.52	
Lalande 23342									
1901	h	m	s	°	'	''	°	'	''
Feb. 25 U.	12	24	1.97	-	1	52	34.9	33.8	
Mar. 5 U.			2.01				34.9	33.9	
6 U.			1.98				35.9	34.7	
7 U.			1.96				35.1	34.3	
Mean . . .	12	24	1.980	-	1	52	35.20	34.18	
W. B. XII. 363									
1901	h	m	s	°	'	''	°	'	''
Feb. 23 U.	12	24	15.40	-	0	40	48.2	48.0	
26 U.			15.34				47.8	47.4	
28 U.			15.34				46.7	47.5	
Mar. 2 U.			15.44				48.0	47.4	
Mean . . .	12	24	15.380	-	0	40	47.68	47.58	
B. D. +0° 2952									
1901	h	m	s	°	'	''	°	'	''
Feb. 23 U.	12	27	52.16	+	0	16	37.5	37.1	
26 U.			52.10				37.8	37.9	
28 U.			52.11				38.4	37.9	
Mar. 2 U.			52.10				37.8	38.2	
5 U.			52.19				38.0	38.3	
Mean . . .	12	27	52.132	+	0	16	37.90	37.88	
Mayer 531									
1901	h	m	s	°	'	''	°	'	''
Feb. 25 U.	12	29	15.79	-	0	51	22.8	22.5	
Mar. 6 U.			15.70				23.0	23.0	
7 U.			15.73				23.1	22.8	
Mean . . .	12	29	15.740	-	0	51	22.97	22.77	
Lalande 23581									
1901	h	m	s	°	'	''	°	'	''
Feb. 23 U.	12	31	57.79	-	1	46	3.6	1.7	
25 U.			57.87				3.9	2.1	
26 U.			57.80				3.2	1.4	
28 U.			57.81				2.8	1.5	
Mar. 2 U.			57.72				3.5	1.5	
7 U.			57.80				3.6	1.6	
Mean . . .	12	31	57.798	-	1	46	3.43	1.63	
Piazzi XII. 170									
1901	h	m	s	°	'	''	°	'	''
Feb. 23 U.	12	39	3.28	-	2	17	40.3	40.2	
25 U.			3.25				40.5	40.7	
26 U.			3.28				40.2	40.0	
28 U.			3.22				40.7	40.3	
Mar. 2 U.			3.24				40.3	40.6	
5 U.			3.33				40.5	40.9	
6 U.			3.24				39.2	39.7	
7 U.			3.24				40.6	40.4	
Mean . . .	12	39	3.260	-	2	17	40.29	40.35	

Circle A. B.									
35 Virginis									
1901	h	m	s	°	'	''	°	'	''
Feb. 23 U.	12	42	45.91	+	4	7	7.8	7.6	
25 U.			45.94				7.4	7.7	
26 U.			45.93				7.5	7.9	
28 U.			45.99				7.7	7.7	
Mar. 2 U.			45.98				7.3	7.3	
5 U.			45.88				7.3	7.9	
6 U.			45.94				6.7	7.7	
7 U.			45.95				7.8	8.2	
Mean . . .	12	42	45.940	+	4	7	7.44	7.75	
37 Virginis									
1901	h	m	s	°	'	''	°	'	''
Feb. 25 U.	12	46	31.49	+	3	36	2.0	2.2	
26 U.			31.46				1.2	1.8	
28 U.			31.45				1.3	1.6	
Mar. 2 U.			31.45				1.4	2.2	
5 U.			31.46				1.3	1.9	
6 U.			31.49				0.6	0.9	
7 U.			31.48				1.6	2.2	
Mean . . .	12	46	31.469	+	3	36	1.34	1.83	
83 Virginis									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	13	39	5.96	-	15	40	33.4	34.1	
6 U.			5.95				33.6	34.2	
7 U.			6.00				32.9	33.8	
9 U.			6.00				34.0	34.4	
11 U.			5.96				32.8	33.8	
20 U.			5.97				33.5	34.0	
21 U.			6.02				34.1	34.5	
22 U.			6.00				33.7	34.4	
23 U.			6.01				33.3	34.3	
Mean . . .	13	39	5.986	-	15	40	33.48	34.17	
89 Virginis									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	13	44	26.20	-	17	38	9.9	9.9	
6 U.			26.19				8.7	9.3	
7 U.			26.19				9.6	9.2	
9 U.			26.16				9.5	9.6	
11 U.			26.23				9.1	10.7	
20 U.			26.19				9.2	9.6	
21 U.			26.20				9.9	9.9	
22 U.			26.22				8.7	9.7	
23 U.			26.18				9.2	9.6	
Mean . . .	13	44	26.196	-	17	38	9.31	9.72	
94 Virginis									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	0	60.01	-	8	24	50.9	52.8	
6 U.			60.03				51.7	52.0	
7 U.			59.98				52.1	52.4	
9 U.			60.01				51.1	51.6	
11 U.			59.98				51.7	51.8	
20 U.			59.96				51.5	51.4	
21 U.			59.95				51.5	51.7	
23 U.			60.02				52.3	52.0	
Mean . . .	14	0	59.992	-	8	24	51.60	51.96	
Anonymous									
1900	h	m	s	°	'	''	°	'	''
June 22 U.	14	1	25.41	-	8	50	9.4	12.2	
κ Virginis									
1900	h	m	s	°	'	''	°	'	''
June 20 U.	14	7	33.66	-	9	48	29.0	29.5	
21 U.			33.64				28.3	29.5	
22 U.			33.62				29.4	29.8	
23 U.			33.58				28.6	29.6	
Mean . . .	14	7	33.625	-	9	48	28.82	29.60	

Circle A. B.									
Radcliffe 1890, 3678									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	8	20.73	-	11	22	11.5	10.1	
6 U.			20.72				11.4	10.0	
7 U.			20.67				11.2	10.2	
9 U.			20.78				12.2	9.7	
11 U.			20.70				11.3	10.4	
Mean . . .	14	8	20.720	-	11	22	11.52	10.08	
W. B. XIV. 184									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	13	26.32	-	11	36	4.8	4.9	
6 U.			26.26				5.6	6.2	
7 U.			26.27				5.2	5.5	
9 U.			26.27				6.2	5.8	
11 U.			26.30				5.3	5.9	
Mean . . .	14	13	26.284	-	11	36	5.42	5.66	
λ Virginis									
1900	h	m	s	°	'	''	°	'	''
June 20 U.	14	13	41.85	-	12	54	40.0	38.9	
21 U.			41.86				39.1	38.6	
22 U.			41.79				39.5	39.0	
23 U.			41.83				39.3	38.8	
Mean . . .	14	13	41.832	-	12	54	39.48	38.82	
2 Libræ									
1900	h	m	s	°	'	''	°	'	''
June 20 U.	14	18	2.72	-	11	15	26.5	26.9	
21 U.			2.71				27.0	...	
22 U.			2.70				27.4	25.5	
23 U.			...				28.9	...	
Mean . . .	14	18	2.710	-	11	15	27.45	26.20	
Anonymous									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	18	18.04	-	12	31	33.2	32.4	
W. B. XIV. 283									
1900	h	m	s	°	'	''	°	'	''
June 6 U.	14	18	24.32	-	12	29	11.4	12.1	
7 U.			24.29				11.4	11.3	
9 U.			24.36				10.9	11.7	
11 U.			24.28				10.7	11.8	
Mean . . .	14	18	24.312	-	12	29	11.10	11.72	
Bradley 1861									
1900	h	m	s	°	'	''	°	'	''
June 20 U.	14	19	18.33	-	11	12	...	54.2	
21 U.			18.27				57.0	56.5	
22 U.			18.34				56.6	55.9	
23 U.			18.38				57.5	56.1	
Mean . . .	14	19	18.330	-	11	12	57.03	55.68	
Mayer 589									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	22	19.96	-	12	54	35.3	34.4	
6 U.			19.97				35.4	34.9	
7 U.			19.89				35.3	34.7	
9 U.			19.95				36.2	35.2	
11 U.			19.89				34.5	35.5	
20 U.			19.94				35.6	35.0	
Mean . . .	14	22	19.933	-	12	54	35.38	34.95	
Mayer 592									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	31	40.50	-					

Circle A. B.									
8 Librae									
1900	h	m	s	°	'	''	°	'	''
June 5 U.	14	45	9.29	-15	34	53.6	53.3		
6 U.			9.22			53.9	53.5		
7 U.			9.25			53.2	53.4		
9 U.			9.26			53.3	53.9		
11 U.			9.28			53.7	52.4		
20 U.			9.27			53.7	53.4		
21 U.			9.21			53.5	53.3		
22 U.			9.21			53.3	52.9		
23 U.			9.26			54.6	53.3		
Mean . . .	14	45	9.250	-15	34	53.64	53.27		
λ Librae									
1900	h	m	s	°	'	''	°	'	''
June 25 U.	15	47	31.68	-19	52	4.7	3.7		
26 U.			31.69			5.3	4.9		
30 U.			31.63			...	4.2		
July 1 U.			31.65			...	4.3		
2 U.			...			4.8	3.0		
8 U.			31.67			4.5	3.9		
9 U.			31.67			3.9	4.3		
10 U.			31.68			4.4	4.5		
11 U.			31.67			3.8	4.7		
16 U.			31.69			4.0	3.8		
Mean . . .	15	47	31.670	-19	52	4.42	4.13		
ζ Librae									
1900	h	m	s	°	'	''	°	'	''
June 6 U.	15	22	37.03	-16	22	4.5	4.5		
7 U.			36.93			3.3	3.7		
9 U.			36.95			3.7	3.3		
11 U.			36.92			3.5	3.3		
19 U.			36.93			4.8	4.3		
20 U.			36.93			4.3	3.4		
22 U.			36.95			3.8	3.6		
25 U.			36.93			4.7	4.3		
26 U.			36.90			4.3	3.4		
27 U.			36.93			...	3.5		
30 U.			36.92			...	4.3		
July 1 U.			36.96			...	4.3		
2 U.			36.93			4.2	3.5		
7 U.			36.90			...	3.2		
9 U.			36.92			4.2	4.5		
10 U.			36.89			5.4	3.9		
11 U.			36.91			4.5	3.5		
16 U.			36.91			4.2	4.2		
Mean . . .	15	22	36.930	-16	22	4.24	3.82		
γ Librae									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	15	29	55.88	-14	27	20.6	22.9		
9 U.			55.88			21.1	22.9		
11 U.			55.86			21.2	23.0		
19 U.			55.84			22.1	22.3		
20 U.			55.84			21.5	22.7		
22 U.			55.86			22.4	22.6		
25 U.			55.85			22.2	23.4		
26 U.			55.85			21.7	23.2		
27 U.			55.88			...	22.4		
30 U.			55.86			...	23.6		
July 1 U.			55.86			...	22.8		
2 U.			55.84			21.8	23.9		
7 U.			55.84			...	23.7		
8 U.			...			22.2	22.9		
9 U.			55.87			22.1	24.1		
10 U.			55.86			21.7	22.8		
11 U.			55.85			22.8	23.0		
16 U.			55.87			22.6	23.1		
Mean . . .	15	29	55.858	-14	27	21.86	23.07		
κ Librae									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	15	36	11.04	-19	21	16.9	15.4		
9 U.			11.00			16.8	15.8		
11 U.			11.00			17.1	16.1		
19 U.			11.04			15.5	15.4		
20 U.			11.07			16.2	15.9		
22 U.			11.06			15.8	15.7		
25 U.			11.00			15.2	16.3		
26 U.			11.02			16.3	16.1		
27 U.			11.00			...	16.1		
30 U.			11.05			...	15.8		
July 1 U.			10.99			...	15.7		
2 U.			11.04			16.9	16.7		
7 U.			11.07			...	15.4		
8 U.			10.98			15.2	15.8		
9 U.			11.00			15.7	16.4		
10 U.			11.03			16.1	16.0		
11 U.			11.03			16.6	15.9		
16 U.			10.98			16.3	15.9		
Mean . . .	15	36	11.022	-19	21	16.19	15.91		
λ Librae									
1900	h	m	s	°	'	''	°	'	''
June 25 U.	15	57	18.37	-19	33	45.2	44.4		
9 U.			18.34			44.2	43.3		
11 U.			18.32			46.9	43.9		
19 U.			18.37			45.1	44.1		
20 U.			18.37			44.7	43.3		
Mean . . .	15	57	18.354	-19	33	45.22	43.80		
β Scorpii									
1900	h	m	s	°	'	''	°	'	''
June 22 U.	15	59	37.38	-19	31	52.8	53.2		
25 U.			37.30			53.6	53.4		
26 U.			37.35			53.5	54.8		
30 U.			37.21			...	54.3		
July 1 U.			37.30			...	54.3		
2 U.			...			54.0	55.0		
Mean . . .	15	59	37.308	-19	31	53.48	54.17		
O. A. 15199									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	15	59	49.76	-21	33	57.2	55.7		
9 U.			49.85			54.3	54.0		
11 U.			49.81			56.7	55.7		
19 U.			49.75			55.7	55.1		
20 U.			49.79			56.6	55.1		
Mean . . .	15	59	49.792	-21	33	56.10	55.12		
ω ¹ Scorpii									
1900	h	m	s	°	'	''	°	'	''
July 8 U.	16	0	57.35	-20	23	53.4	53.3		
9 U.			57.36			54.5	52.4		
10 U.			57.33			53.8	53.2		
11 U.			57.40			54.5	53.3		
16 U.			57.42			53.4	52.7		
Mean . . .	16	0	57.372	-20	23	53.92	52.98		
ω ² Scorpii									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	1	32.33	-20	35	54.3	54.2		
9 U.			32.40			54.3	53.2		
11 U.			32.33			54.2	54.0		
20 U.			32.38			54.6	53.6		
July 1 U.			32.37			...	54.4		
Mean . . .	16	1	32.362	-20	35	54.35	53.88		
ν Scorpii									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	6	10.94	-19	12	3.4	1.2		
9 U.			10.96			3.0	1.3		
11 U.			10.94			3.5	2.4		
19 U.			10.99			3.2	1.9		
20 U.			10.98			2.2	2.0		
Mean . . .	16	6	10.962	-19	12	3.06	1.76		
Piazzi XVI. 10									
1900	h	m	s	°	'	''	°	'	''
June 25 U.	16	7	47.64	-21	8	41.2	40.1		
26 U.			47.61			41.0	41.0		
30 U.			47.62			...	41.3		
July 1 U.			47.63			...	40.3		
2 U.			47.58			40.6	39.8		
8 U.			47.59			41.2	...		
Mean . . .	16	7	47.612	-21	8	41.00	40.50		
Lalande 29552									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	8	52.98	-18	16	44.9	...		
9 U.			52.95			43.4	42.5		
11 U.			52.93			44.1	44.8		
19 U.			52.98			42.5	42.9		
20 U.			52.95			43.6	43.2		
Mean . . .	16	8	52.958	-18	16	43.70	43.35		
Piazzi XVI. 17									
1900	h	m	s	°	'	''	°	'	''
July 8 U.	16	8	57.29	-22	7	35.7	36.3		
9 U.			57.44			36.7	35.6		
10 U.			57.39			36.7	36.6		
11 U.			57.41			36.6	36.4		
16 U.			57.41			36.6	35.7		
Mean . . .	16	8	57.388	-22	7	36.46	36.12		

Circle A. B.									
Piazz XVI. 28									
1900	h	m	s	°	'	''	°	'	''
June 9 U.	16	11	8.43	-19	51	19.5	18.1		
19 U.			8.48			18.4	18.0		
20 U.			8.43			18.2	18.5		
25 U.			8.41			18.2	19.0		
26 U.			8.41			19.2	20.2		
Mean . . .	16	11	8.432	-19	51	18.70	18.76		
Piazz XVI. 39									
1900	h	m	s	°	'	''	°	'	''
June 25 U.	16	13	16.30	-19	58	25.0	26.5		
26 U.			16.28			25.2	26.4		
30 U.			16.26			...	25.1		
July 1 U.			16.33			...	26.0		
2 U.			16.25			25.5	25.7		
Mean . . .	16	13	16.284	-19	58	25.23	25.94		
B. D. -18° 4266									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	14	41.68	-18	26	57.8	58.2		
9 U.			41.60			57.2	57.2		
11 U.			41.63			58.7	58.5		
19 U.			41.67			57.2	58.4		
20 U.			41.63			56.9	57.5		
Mean . . .	16	14	41.642	-18	26	57.56	57.96		
O. A. 15541									
1900	h	m	s	°	'	''	°	'	''
July 8 U.	16	14	47.85	-21	35	60.7	59.5		
10 U.			47.92			61.6	60.2		
11 U.			47.91			61.1	59.5		
16 U.			47.94			61.3	59.7		
Mean . . .	16	14	47.905	-21	35	61.18	59.72		
Lalande 29770									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	16	53.09	-22	52	57.0	56.2		
9 U.			53.12			56.7	55.3		
19 U.			53.21			56.9	56.3		
20 U.			53.13			57.1	56.8		
25 U.			53.14			58.4	...		
Mean . . .	16	16	53.138	-22	52	57.22	56.15		
ψ Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 11 U.	16	18	14.94	-19	48	11.8	12.2		
25 U.			14.98			11.3	11.2		
26 U.			14.99			11.0	11.4		
30 U.			15.00			...	11.4		
July 9 U.			15.00			11.0	11.9		
16 U.			15.08			12.1	11.1		
Mean . . .	16	18	14.998	-19	48	11.44	11.53		
B. D. -19° 4368									
1900	h	m	s	°	'	''	°	'	''
July 1 U.	16	19	35.87	-19	36	...	24.2		
2 U.			35.81			24.0	24.4		
8 U.			35.80			23.6	24.2		
10 U.			35.86			24.5	24.2		
11 U.			35.90			23.9	23.8		
Mean . . .	16	19	35.848	-19	36	24.00	24.16		
χ Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	21	13.63	-18	13	46.7	45.3		
9 U.			13.61			45.3	44.8		
11 U.			13.63			46.1	45.2		
19 U.			13.68			44.8	44.9		
20 U.			13.67			45.0	44.5		
July 16 U.			13.62			46.1	44.6		
Mean . . .	16	21	13.640	-18	13	45.67	44.88		
O. A. 15647									
1900	h	m	s	°	'	''	°	'	''
June 26 U.	16	21	18.20	-21	53	33.7	32.2		
July 1 U.			18.14			...	32.7		
2 U.			18.18			33.9	32.9		
8 U.			18.12			33.9	32.7		
9 U.			18.18			32.2	33.1		
10 U.			18.17			34.0	32.8		
Mean . . .	16	21	18.165	-21	53	33.54	32.73		
B. D. -21° 4366									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	23	24.54	-21	20	50.5	...		
9 U.			24.53			49.7	49.0		
11 U.			24.54			50.1	49.3		
19 U.			24.56			49.5	50.0		
20 U.			24.53			50.1	49.9		
30 U.			24.51			...	49.8		
July 11 U.			24.52			50.7	50.6		
Mean . . .	16	23	24.533	-21	20	50.10	49.77		
B. D. -18° 4287									
1900	h	m	s	°	'	''	°	'	''
June 26 U.	16	23	54.18	-18	27	13.7	14.4		
July 1 U.			54.06			...	14.7		
2 U.			54.10			14.1	14.7		
8 U.			54.06			12.6	14.9		
9 U.			54.14			13.9	13.8		
10 U.			54.13			14.1	14.2		
Mean . . .	16	23	54.112	-18	27	13.68	14.45		
ω Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	26	12.47	-21	15	9.6	7.6		
9 U.			12.43			8.7	6.6		
11 U.			12.39			10.3	7.9		
19 U.			12.50			8.3	8.2		
20 U.			12.46			9.5	6.8		
25 U.			12.48			9.4	7.6		
Mean . . .	16	26	12.455	-21	15	9.30	7.45		
Lalande 30046									
1900	h	m	s	°	'	''	°	'	''
June 26 U.	16	26	32.34	-20	32	15.8	16.3		
July 1 U.			32.31			...	15.3		
2 U.			32.28			16.2	15.0		
8 U.			32.21			13.7	15.7		
10 U.			32.29			15.8	16.0		
Mean . . .	16	26	32.286	-20	32	15.38	15.66		
O. A. 15742									
1900	h	m	s	°	'	''	°	'	''
June 9 U.	16	28	55.52	-19	43	54.5	52.2		
11 U.			55.48			55.1	54.1		
19 U.			55.55			54.7	53.4		
20 U.			55.52			53.7	53.0		
July 11 U.			55.50			55.1	53.9		
Mean . . .	16	28	55.514	-19	43	54.62	53.32		
B. D. -18° 4295									
1900	h	m	s	°	'	''	°	'	''
June 26 U.	16	29	41.34	-18	27	55.6	57.0		
30 U.			41.30			...	55.3		
July 1 U.			41.30			...	56.4		
2 U.			41.27			56.0	56.7		
7 U.			41.32			...	55.3		
8 U.			41.26			55.6	55.8		
Mean . . .	16	29	41.298	-18	27	55.73	56.08		
O. A. 15773									
1900	h	m	s	°	'	''	°	'	''
June 9 U.	16	31	41.29	-21	51	9.8	8.9		
27 U.			41.18			...	9.5		
July 8 U.			41.13			9.3	10.7		
10 U.			41.19			9.7	9.6		
11 U.			41.19			9.7	8.8		
Mean . . .	16	31	41.196	-21	51	9.62	9.50		
Lalande 30207									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	32	19.82	-22	41	24.8	25.5		
11 U.			19.76			25.3	25.1		
20 U.			19.78			23.7	23.9		
25 U.			19.82			24.5	23.8		
26 U.			19.83			24.5	24.9		
Mean . . .	16	32	19.802	-22	41	24.56	24.64		
O. A. 15797									
1900	h	m	s	°	'	''	°	'	''
June 30 U.	16	32	45.20	-18	37	...	30.3		
July 1 U.			45.25			...	30.4		
2 U.			45.17			29.6	30.7		
7 U.			45.21			...	29.4		
9 U.			45.25			29.6	29.5		
10 U.			45.20			...	31.5		
11 U.			45.22			31.3	31.1		
Mean . . .	16	32	45.214	-18	37	30.17	30.41		
Mayer 671									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	34	40.73	-20	12	49.4	47.1		
9 U.			40.74			48.5	46.8		
11 U.			40.73			50.1	49.0		
19 U.			40.82			48.8	47.5		
20 U.			40.76			48.7	47.1		
Mean . . .	16	34	40.756	-20	12	49.10	47.50		
Bradley 2115									
1900	h	m	s	°	'	''	°	'	''
June 25 U.	16	36	0.87	-19	43	57.4	56.4		
26 U.			0.95			58.1	57.5		
27 U.			0.93			...	56.8		
30 U.			0.92			...	56.1		
July 1 U.			0.94			...	56.7		
9 U.			0.92			57.8	56.6		
Mean . . .	16	36	0.922	-19	43	57.77	56.68		
O. A. 15868									
1900	h	m	s	°	'	''	°	'	''
June 7 U.	16	37	5.44	-21	9	8.0	6.6		
9 U.			5.38			7.2	6.2		
11 U.			5.40			7.6	6.5		
19 U.			5.44			7.6	7.3		
20 U.			5.42			7.6	7.3		
Mean . . .	16	37	5.416	-21	9	7.60	6.78		
15 Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 25 U.	16	39	7.76	-22	59	52.5	51.9		
26 U.			7.78			51.7	53.2		
27 U.			7.75			...	52.7		
30 U.			7.72			...	52.0		
July 1 U.			7.78			...	52.2		
8 U.			7.70			52.4	52.0		

INDIVIDUAL RESULTS OF OBSERVATIONS.

D 101

Circle A. B.									
Lalande 30551									
1900	h	m	s	°	'	''	°	'	''
June 7	U.	16	43	37.10	-21	40	35.7	35.0	
9	U.			37.14			34.5	33.8	
11	U.			37.13			36.9	35.3	
19	U.			37.18			34.9	34.7	
20	U.			37.09			34.7	35.1	
Mean . . .	16	43	37.128	-21	40		35.34	34.78	

Circle A. B.									
ξ Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	17	15	0.57	-21	0	19.3	19.9	
27	U.			0.59			...	19.4	
30	U.			0.60			...	18.8	
July 1	U.			0.59			...	19.7	
2	U.			0.58			18.9	18.6	
7	U.			0.64			19.6	20.3	
8	U.			0.61			20.3	19.4	
9	U.			0.67			19.8	18.8	
10	U.			0.60			19.9	18.8	
11	U.			0.61			19.1	19.5	
Mean . . .	17	15	0.606	-21	0		19.56	19.32	

Circle A. B.									
X Sagittarii									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	17	41	15.95	-27	47	34.4	32.5	
27	U.			15.94			...	34.0	
30	U.			15.94			...	33.9	
July 1	U.			16.04			...	33.4	
2	U.			15.97			33.7	34.0	
7	U.			15.98			33.5	33.2	
8	U.			15.96			34.4	34.0	
9	U.			15.94			33.9	33.1	
10	U.			15.98			34.3	34.0	
11	U.			15.94			33.9	33.8	
16	U.			15.93			33.8	33.6	
Mean . . .	17	41	15.961	-27	47		33.99	33.59	

Circle A. B.									
24 Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 7	U.	16	50	46.09	-22	59	30.7	29.8	
9	U.			46.11			29.3	29.9	
11	U.			46.12			29.1	29.0	
19	U.			46.01			29.6	29.2	
20	U.			46.10			29.2	29.3	
25	U.			46.11			29.5	...	
26	U.			46.09			29.1	29.2	
27	U.			46.17			...	28.8	
30	U.			46.05			...	28.8	
July 1	U.			46.13			...	29.9	
2	U.			46.10			28.8	29.1	
7	U.			46.13			30.2	29.1	
8	U.			46.13			29.5	29.8	
10	U.			46.08			29.5	28.8	
11	U.			46.08			29.5	28.8	
16	U.			46.12			29.9	29.2	
Mean . . .	16	50	46.101	-22	59		29.53	29.25	

Circle A. B.									
Lalande 31552									
1900	h	m	s	°	'	''	°	'	''
July 7	U.	17	17	1.04	-20	7	7.0	6.3	
8	U.			0.97			5.8	6.4	
9	U.			1.05			5.7	5.6	
10	U.			1.01			5.9	6.2	
11	U.			0.97			5.8	6.0	
Mean . . .	17	17	1.008	-20	7		6.04	6.10	

Circle A. B.									
Mayer 701									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	17	18	43.16	-21	20	52.2	52.4	
30	U.			43.16			...	52.2	
July 1	U.			43.07			...	52.2	
2	U.			...			53.2	52.4	
7	U.			43.15			52.1	52.2	
8	U.			43.08			52.8	52.3	
Mean . . .	17	18	43.124	-21	20		52.58	52.28	

Circle A. B.									
Lalande 31733									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	17	22	18.35	-20	52	49.6	49.4	
30	U.			18.28			...	48.0	
July 1	U.			18.34			...	48.5	
2	U.			18.31			49.8	48.4	
7	U.			18.36			50.5	...	
Mean . . .	17	22	18.328	-20	52		49.97	48.58	

Circle A. B.									
O. A. 16844									
1900	h	m	s	°	'	''	°	'	''
July 7	U.	17	23	49.71	-19	23	33.7	33.8	
8	U.			49.66			33.0	32.4	
9	U.			49.65			33.7	32.1	
10	U.			49.68			33.7	32.7	
11	U.			49.68			33.3	32.6	
Mean . . .	17	23	49.676	-19	23		33.48	32.72	

Circle A. B.									
C ² Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	17	25	18.76	-23	53	8.3	7.0	
27	U.			18.90			...	6.7	
30	U.			18.87			...	6.5	
July 1	U.			18.78			...	6.6	
2	U.			18.85			7.4	6.4	
16	U.			18.84			7.6	6.2	
Mean . . .	17	25	18.833	-23	53		7.77	6.57	

Circle A. B.									
I Sagittarii									
1900	h	m	s	°	'	''	°	'	''
July 8	U.	18	5	37.24	-23	43	16.6	16.0	
9	U.			37.24			17.5	15.8	
10	U.			37.25			17.5	17.2	
11	U.			37.24			17.6	17.2	
16	U.			37.17			17.8	16.5	
Mean . . .	18	5	37.228	-23	43		17.40	16.54	

Circle A. B.									
Mayer 722									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	17	50	2.11	-18	47	4.0	3.7	
27	U.			2.02			...	4.1	
30	U.			2.10			...	4.5	
July 1	U.			2.05			...	3.0	
2	U.			2.08			4.3	4.4	
8	U.			2.07			4.2	4.8	
9	U.			2.07			4.0	4.1	
10	U.			2.07			3.6	4.3	
11	U.			2.10			3.3	3.5	
16	U.			2.06			3.2	3.9	
Mean . . .	17	50	2.073	-18	47		3.80	4.03	

Circle A. B.									
Mayer 734									
1900	h	m	s	°	'	''	°	'	''
July 8	U.	18	1	11.56	-21	27	15.2	14.4	
9	U.			11.44			14.6	13.7	
10	U.			11.52			14.7	15.3	
11	U.			11.51			14.7	14.7	
16	U.			11.46			15.4	14.4	
Mean . . .	18	1	11.498	-21	27		14.92	14.50	

Circle A. B.									
C. Z. XVIII. II									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	18	1	41.12	-23	6	57.9	59.0	
27	U.			41.10			...	59.3	
30	U.			41.09			...	59.1	
July 1	U.			41.14			...	59.1	
2	U.			41.08			58.6	59.6	
Mean . . .	18	1	41.106	-23	6		58.25	59.22	

Circle A. B.									
O. A. 17753									
1900	h	m	s	°	'	''	°	'	''
June 26	U.	18	4	42.20	-22	15	29.9	28.9	
27	U.			42.17			...	28.9	
30	U.			42.19			...	29.6	
July 1	U.			42.25			...	28.2	
2	U.			42.22			30.1	29.6	
Mean . . .	18	4	42.206	-22	15		30.00	29.04	

Circle A. B.									
36 Ophiuchi									
1900	h	m	s	°	'	''	°	'	''
June 7	U.	17	9	11.86	-26	27	21.9	21.8	
9	U.			11.83			22.7	21.8	
11	U.			11.82			22.6	22.2	
19	U.			11.87			[17.3]	[17.5]	
20	U.			11.79			22.5	23.0	
25	U.			11.87			22.6	21.2	
26	U.			11.82			24.1	23.6	
27	U.			11.82			...	23.5	
30	U.			11.83			...	21.4	
July 1	U.			11.83			...	21.9	
2	U.			11.84			21.8	22.7	
7	U.			11.80			21.7	22.4	
8	U.			11.83			22.1	21.5	
10	U.			11.82			21.7	22.1	
11	U.			11.82			22.6	23.1	
16	U.			11.77			22.4	22.8	
Mean . . .	17	9	11.826	-26	27		22.39	22.33	

Circle A. B.									
14 Sagittarii									
1900	h	m	s	°	'	''	°	'	''
June 26 U. 18	7	46.96	-21	5	5.7	4.7			
27 U.		47.02			...	4.8			
30 U.		46.98			...	4.1			
July 1 U.		47.01			...	4.1			
2 U.		46.96			6.8	4.9			
Mean . . . 18	7	46.986	-21	5	6.25	4.52			
Lalande 33516									
1900	h	m	s	°	'	''	°	'	''
July 8 U. 18	8	15.48	-21	44	23.1	21.4			
9 U.		15.47			24.1	21.6			
10 U.		15.51			23.6	23.0			
11 U.		15.48			23.6	22.7			
16 U.		15.46			24.3	23.0			
Mean . . . 18	8	15.480	-21	44	23.74	22.34			
Lalande 33591									
1900	h	m	s	°	'	''	°	'	''
June 26 U. 18	11	54.74	-22	22	43.1	44.2			
27 U.		54.77			...	43.9			
30 U.		54.78			...	45.1			
July 1 U.		54.74			...	43.8			
2 U.		54.68			46.1	43.8			
Mean . . . 18	11	54.742	-22	22	44.60	44.16			
Lacaille 7686									
1900	h	m	s	°	'	''	°	'	''
June 26 U. 18	15	59.32	-22	58	2.3	5.8			
27 U.		59.31			...	3.7			
30 U.		59.25			...	3.1			
July 1 U.		59.30			...	3.2			
2 U.		59.28			3.8	3.8			
Mean . . . 18	15	59.292	-22	58	3.05	3.92			
λ Sagittarii									
1900	h	m	s	°	'	''	°	'	''
June 26 U. 18	21	48.03	-25	28	36.8	37.0			
27 U.		47.97			...	35.8			
30 U.		47.96			...	37.2			
July 1 U.		47.97			...	36.8			
2 U.		48.01			36.6	37.0			
8 U.		47.98			36.6	...			
9 U.		47.98			36.5	36.9			
10 U.		48.01			36.3	37.2			
11 U.		48.02			37.2	38.0			
16 U.		48.02			36.7	36.3			
Mean . . . 18	21	47.995	-25	28	36.67	36.91			
Bradley 2335									
1900	h	m	s	°	'	''	°	'	''
June 26 U. 18	32	...	-21	8	4.4	4.4			
27 U.		55.67			...	4.5			
30 U.		55.68			...	4.0			
July 1 U.		55.67			...	4.1			
2 U.		55.63			4.6	4.3			
9 U.		55.66			5.4	3.6			
10 U.		55.63			5.0	4.5			
11 U.		55.62			4.8	3.9			
16 U.		55.62			4.5	4.5			
Mean . . . 18	32	55.648	-21	8	4.78	4.20			

CATALOGUE

OF

139 ZODIACAL STARS.

NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.	NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.
			A.	B.	Mean.					A.	B.	Mean.	
	h m s		° ' "	"	"		h m s		° ' "	"	"		
α Tauri.....	4 57 7.064	12	+21 26 49.90	....	....	12	35 Virginis.....	12 42 45.940	8	+ 4 7 7.44	7.75	7.60	8
α 8 Tauri.....	5 9 27.000	12	22 10 13.47	....	....	12	37 Virginis.....	12 46 31.469	7	+ 3 36 1.34	1.83	1.58	7
α Tauri.....	5 13 16.075	14	21 59 35.80	....	....	14	83 Virginis.....	13 39 5.986	9	-15 40 33.48	34.17	33.82	9
Lal. 10107.....	5 19 13.734	8	20 29 33.10	....	....	8	89 Virginis.....	13 44 26.196	9	17 38 9.31	9.72	9.52	9
α Tauri.....	5 21 37.706	8	21 51 5.66	....	....	8	94 Virginis.....	14 0 59.992	8	8 24 51.60	51.96	51.78	8
W. B. ₂ V. 541...	5 21 51.424	5	23 12 33.46	....	....	5	Anonymous.....	14 1 25.410	1	8 50 9.40	12.20	10.80	1
W. B. ₂ V. 618...	5 24 8.818	6	21 18 5.70	....	....	6	κ Virginis.....	14 7 33.625	4	9 48 28.82	29.60	29.21	4
Mayer 219.....	5 27 42.160	7	20 24 11.64	....	....	7	Rad. 1890, 3678.	14 8 20.720	5	11 22 11.52	10.08	10.80	5
Rümker 1471...	5 28 53.816	7	22 30 4.56	....	....	7	W. B. ₂ XIV. 184.	14 13 26.284	5	11 36 5.42	5.66	5.54	5
ζ Tauri.....	5 31 40.088	13	+21 4 53.62	....	....	13	λ Virginis.....	14 13 41.832	4	-12 54 39.48	38.82	39.15	4
Anonymous.....	5 35 57.100	1	+22 30 4.60	....	....	1	2 Libræ.....	14 18 2.710	3	-11 15 27.45	26.20	26.82	4
Piazzi V. 184.....	5 36 1.235	4	22 36 36.05	....	....	4	Anonymous.....	14 18 18.040	1	12 31 33.20	32.40	32.80	1
Anonymous.....	5 36 49.310	1	21 20 24.10	....	....	1	W. B. ₂ XIV. 283.	14 18 24.312	4	12 29 11.10	11.72	11.41	4
Piazzi V. 192.....	5 37 15.154	5	23 9 25.44	....	....	5	Bradley 1861.....	14 19 18.330	4	11 12 57.03	55.68	56.36	4
W. B. ₂ V. 1127...	5 37 22.535	4	21 22 8.70	....	....	4	Mayer 589.....	14 22 19.933	6	12 54 35.38	34.95	35.16	6
Lal. 10891.....	5 41 12.663	7	22 29 28.50	....	....	7	Mayer 592.....	14 31 40.509	8	11 52 49.70	48.46	49.08	9
Lal. 10913.....	5 41 40.315	6	20 54 15.87	....	....	6	8 Libræ.....	14 45 9.250	9	15 34 53.64	53.27	53.46	9
Lal. 11062.....	5 45 45.777	7	23 21 21.69	....	....	7	ζ Libræ.....	15 22 36.930	18	16 22 4.24	3.82	4.03	18
Anonymous.....	5 47 11.190	1	22 2 14.70	....	....	1	γ Libræ.....	15 29 55.858	17	14 27 21.86	23.07	22.46	18
B. D. +22° 1080	5 47 18.176	5	+22 3 2.78	....	....	5	κ Libræ.....	15 36 11.022	18	-19 21 16.19	15.91	16.05	18
χ Orionis.....	5 48 27.639	7	+20 15 27.10	....	....	7	λ Libræ.....	15 47 31.670	9	-19 52 4.42	4.13	4.28	10
Anonymous.....	5 52 48.920	1	20 39 17.90	....	....	1	47 Libræ.....	15 49 13.554	5	19 5 14.72	14.64	14.68	5
W. B. ₂ V. 1652...	5 52 57.705	4	20 40 1.20	....	....	4	Piazzi XV. 210...	15 51 20.892	5	21 11 41.48	41.52	41.50	6
Lal. 11293.....	5 53 39.372	4	21 35 47.50	....	....	4	Lal. 29044.....	15 53 19.394	5	19 39 4.70	4.74	4.72	5
α Tauri.....	5 54 24.530	6	22 53 37.82	....	....	6	Lal. 29094.....	15 55 14.396	5	20 52 22.98	21.62	22.30	6
1 Geminorum.....	5 58 2.514	13	23 16 7.15	....	....	13	Lal. 29156.....	15 57 18.354	5	19 33 45.22	43.80	44.51	5
3 Geminorum ..	6 3 39.668	14	23 7 47.19	....	....	14	β Scorpii.....	15 59 37.308	5	19 31 53.48	54.17	53.82	6
η Geminorum.....	6 8 50.520	14	22 32 9.21	....	....	14	O. A. 15199.....	15 59 49.792	5	21 33 56.10	55.12	55.61	5
κ Geminorum.....	7 38 24.719	15	24 38 16.85	15.74	16.30	15	ω Scorpii.....	16 0 57.372	5	20 23 53.92	52.98	53.45	5
ϕ Geminorum.....	7 47 22.699	15	+27 1 28.43	28.26	28.34	15	ω^2 Scorpii.....	16 1 32.362	5	-20 35 54.35	53.88	54.12	5
ω Cancri.....	7 54 52.902	9	+25 39 60.73	59.50	60.12	9	ν Scorpii.....	16 6 10.962	5	-19 12 3.06	1.76	2.41	5
Lal. 15590.....	7 55 2.493	6	23 51 28.75	27.92	28.34	6	Piazzi XVI. 10...	16 7 47.612	6	21 8 41.00	40.50	40.75	6
Anonymous.....	8 1 40.930	1	25 1 36.00	36.10	36.05	1	Lal. 29552.....	16 8 52.958	5	18 16 43.70	43.35	43.52	5
Lal. 15839.....	8 1 52.550	4	24 18 28.12	27.30	27.71	4	Piazzi XVI. 17...	16 8 57.388	5	22 7 36.46	36.12	36.29	5
B. D. +25° 1853	8 2 5.950	4	25 0 16.20	14.20	15.20	4	Piazzi XVI. 28...	16 11 8.432	5	19 51 18.70	18.76	18.73	5
W. B. ₂ VII. 1646.	8 2 18.050	4	25 50 33.84	33.00	33.42	5	Piazzi XVI. 39...	16 13 16.284	5	19 58 25.23	25.94	25.58	5
ψ Cancri.....	8 4 25.892	6	25 48 40.05	39.20	39.62	6	B. D. -18° 4266	16 14 41.642	5	18 26 57.56	57.96	57.76	5
Anonymous.....	8 7 37.250	1	25 2 27.60	26.20	26.90	1	O. A. 15541.....	16 14 47.905	4	21 35 61.18	59.72	60.45	4
Lal. 16053.....	8 7 46.228	5	23 26 19.98	19.45	19.72	5	Lal. 29770.....	16 16 53.138	5	22 52 57.22	56.15	56.68	5
B. D. +25° 1880	8 8 44.272	4	+25 2 16.55	15.70	16.12	4	ψ Ophiuchi.....	16 18 14.998	6	-19 48 11.44	11.53	11.48	6
λ Cancri.....	8 14 35.472	5	+24 20 15.04	13.10	14.07	5	B. D. -19° 4368	16 19 35.848	5	-19 36 24.00	24.16	24.08	5
W. B. ₂ VIII. 252.	8 14 41.220	4	25 39 5.55	4.60	5.08	4	χ Ophiuchi.....	16 21 13.640	6	18 13 45.67	44.88	45.28	6
Lal. 16332.....	8 15 56.966	5	23 16 12.42	12.70	12.56	5	O. A. 15647.....	16 21 18.165	6	21 53 33.54	32.73	33.14	6
ν Cancri.....	8 20 43.064	5	24 51 46.80	46.30	46.55	5	B. D. -21° 4366.	16 23 24.533	7	21 20 50.10	49.77	49.94	7
Lal. 16554.....	8 21 31.942	5	23 28 50.98	50.52	50.75	5	B. D. -18° 4287.	16 23 54.112	6	18 27 13.68	14.45	14.06	6
η Cancri.....	8 26 55.631	15	20 46 51.69	52.80	52.24	15	ω Ophiuchi.....	16 26 12.455	6	21 15 9.30	7.45	8.38	6
γ Cancri.....	8 37 30.031	15	21 49 42.65	42.09	42.37	15	Lal. 30046.....	16 26 32.286	5	20 32 15.38	15.66	15.52	5
ι Cancri.....	8 40 38.867	15	+29 7 31.51	32.81	32.16	15	O. A. 15742.....	16 28 55.514	5	19 43 54.62	53.32	53.97	5
ν Leonis.....	11 31 49.714	8	- 0 16 17.02	17.56	17.29	8	B. D. -18° 4295.	16 29 41.298	6	18 27 55.73	56.08	55.90	6
β Virginis.....	11 45 29.200	8	+ 2 19 41.66	41.85	41.76	8	O. A. 15773.....	16 31 41.196	5	-21 51 9.62	9.50	9.56	5
δ Virginis.....	11 54 49.619	8	+ 4 12 43.61	43.55	43.58	8	Lal. 30207.....	16 32 19.802	5	-22 41 24.56	24.64	24.60	5
η Virginis.....	12 14 47.391	8	- 0 6 39.20	39.72	39.46	8	O. A. 15797.....	16 32 45.214	7	18 37 30.17	30.41	30.29	7
W. B. ₂ XII. 279.	12 20 10.855	4	- 0 30 56.62	56.38	56.50	4	Mayer 671.....	16 34 40.756	5	20 12 49.10	47.50	48.30	5
Lal. 23271.....	12 21 38.880	4	+ 0 22 13.85	13.52	13.68	4	Bradley 2115.....	16 36 0.922	6	19 43 57.77	56.68	57.22	6
Lal. 23342.....	12 24 1.980	4	- 1 52 35.20	34.18	34.69	4	O. A. 15868.....	16 37 5.416	5	21 9 7.60	6.78	7.19	5
W. B. ₂ XII. 363.	12 24 15.380	4	- 0 40 47.68	47.58	47.63	4	15 Ophiuchi.....	16 39 7.748	6	22 59 52.20	52.33	52.26	6
B. D. +0° 2952	12 27 52.132	5	+ 0 16 37.90	37.88	37.89	5	Lal. 30551.....	16 43 37.128	5	21 40 35.34	34.78	35.06	5
Mayer 531.....	12 29 15.740	3	- 0 51 22.97	22.77	22.87	3	24 Ophiuchi.....	16 50 46.101	16	22 59 29.53	29.25	29.39	16
Lal. 23581.....	12 31 57.798	6	- 1 46 3.43	1.63	2.53	6	η Ophiuchi.....	17 4 38.551	15	15 36 3.75	4.37	4.06	15
Piazzi XII. 170...	12 39 3.260	8	- 2 17 40.29	40.35	40.32	8	36 Ophiuchi:...	17 9 11.826	16	-26 27 22.39	22.33	22.36	15

SIX-INCH TRANSIT CIRCLE.

NAME.	RIGHT ASCENSION 1900. 0	NO. OBS.	DECLINATION 1900. 0			NO. OBS.	NAME.	RIGHT ASCENSION 1900. 0	NO. OBS.	DECLINATION 1900. 0			NO. OBS.
			A.	B.	Mean.					A.	B.	Mean.	
	h m s		° ' "	"	"		h m s		° ' "	"	"		
ξ Ophiuchi.....	17 15 0.606	10	—21 0 19.56	19.32	19.44	10	O. A. 17753.....	18 4 42.206	5	—22 15 30.00	29.04	29.52	5
Lal. 31552.....	17 17 1.008	5	20 7 6.04	6.10	6.07	5	ι Sagittarii.....	18 5 37.228	5	23 43 17.40	16.54	16.97	5
Mayer 701.....	17 18 43.124	5	21 20 52.58	52.28	52.43	6	μ Sagittarii.....	18 7 46.986	5	21 5 6.25	4.52	5.38	5
Lal. 31733.....	17 22 18.328	5	20 52 49.97	48.58	49.28	5	14 Sagittarii.....	18 8 15.480	5	21 44 23.74	22.34	23.04	5
O. A. 16844.....	17 23 49.676	5	19 23 33.48	32.72	33.10	5	Lal. 33516.....	18 10 27.668	5	23 56 2.46	1.72	2.09	5
C ² Ophiuchi...	17 25 18.833	6	23 53 7.77	6.57	7.17	6	Lal. 33591.....	18 11 54.742	5	22 22 44.60	44.16	44.38	5
λ Sagittarii...	17 41 15.961	11	27 47 33.99	33.59	33.79	11	Lac. 7686.....	18 15 59.292	5	22 58 3.05	3.92	3.48	5
Mayer 722.....	17 50 2.073	10	18 47 3.80	4.03	3.92	10	λ Sagittarii.....	18 21 47.995	10	25 28 36.67	36.91	36.79	10
Mayer 734.....	18 1 11.498	5	21 27 14.92	14.50	14.71	5	Bradley 2335 . .	18 32 55.648	8	—21 8 4.78	4.20	4.49	9
C. Z. XVIII. II .	18 1 41.106	5	—23 6 58.25	59.22	58.74	5							

CATALOGUE

OF

EROS REFERENCE STARS.

NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.	NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.
			A.	B.	Mean.					A.	B.	Mean.	
	h m s		° ' "	"	"		h m s		° ' "	"	"		
B. D.+37° 480	2 0 9.188	4	+37 48 54.10	54.30	54.20	4	B. D.+34° 488	2 34 24.738	4	+34 51 29.72	30.82	30.27	4
B. D.+38° 413	2 2 21.493	4	38 55 18.00	18.85	18.42	4	B. D.+34° 492	2 34 51.654	3	34 24 27.30	27.87	27.58	3
B. D.+38° 418	2 2 57.625	4	39 7 4.88	4.85	4.86	4	B. D.+33° 493	2 36 31.054	5	33 20 25.32	25.52	25.42	5
B. D.+37° 490	2 3 56.166	4	38 11 25.50	25.62	25.56	4	B. D.+32° 490	2 36 38.451	5	32 28 33.42	32.18	32.80	5
B. D.+36° 421	2 4 4.034	3	36 19 0.33	0.17	0.25	3	B. D.+33° 494	2 37 16.709	5	33 44 53.58	53.70	53.64	5
B. D.+37° 491	2 4 10.130	1	37 12 54.00	53.50	53.75	1	B. D.+32° 498	2 39 4.253	4	32 19 50.95	50.92	50.94	4
B. D.+36° 426	2 4 37.541	3	37 13 45.67	46.20	45.94	3	B. D.+31° 477	2 40 19.038	4	31 34 28.50	28.05	28.28	4
B. D.+38° 423	2 4 41.576	2	38 13 52.97	53.57	53.27	3	B. D.+33° 512	2 41 27.392	4	33 13 2.68	1.82	2.25	4
B. D.+38° 425	2 4 48.729	4	38 34 4.25	4.00	4.12	4	B. D.+32° 508	2 43 1.123	5	32 25 42.22	41.80	42.01	5
B. D.+36° 427	2 5 25.283	4	+36 52 52.52	51.55	52.04	4	B. D.+32° 507	2 43 1.147	5	+32 45 33.30	33.16	33.23	5
B. D.+36° 428	2 5 53.368	3	+36 29 44.87	45.20	45.04	3	B. D.+31° 483	2 43 9.541	4	+31 41 47.75	45.85	46.80	4
B. D.+38° 434	2 6 40.511	3	38 24 59.27	60.07	59.67	3	B. D.+31° 490	2 44 23.244	4	31 33 35.32	35.05	35.18	4
B. D.+36° 435	2 6 45.229	4	36 54 2.88	2.98	2.93	4	B. D.+31° 493	2 44 56.032	4	31 57 2.62	1.86	2.24	5
B. D.+37° 505	2 7 52.452	4	37 56 21.15	21.05	21.10	4	B. D.+32° 517	2 45 56.822	4	32 19 48.00	47.74	47.87	5
B. D.+36° 440	2 7 53.549	5	37 8 59.44	58.94	59.19	5	B. D.+31° 497	2 47 21.906	5	31 14 8.86	8.56	8.71	5
B. D.+37° 506	2 8 4.432	4	38 10 15.65	15.42	15.54	4	B. D.+32° 522	2 47 34.724	5	32 30 33.65	34.00	33.82	6
B. D.+37° 512	2 9 25.389	5	37 55 3.26	3.18	3.22	5	B. D.+31° 500	2 48 4.372	4	31 55 44.48	43.58	44.03	4
B. D.+36° 446	2 9 52.829	4	36 18 19.72	20.30	20.01	4	B. D.+30° 464	2 49 39.382	5	30 38 14.94	13.88	14.41	5
B. D.+36° 450	2 10 27.201	3	36 40 59.80	59.73	59.76	4	B. D.+30° 465	2 49 50.585	5	31 10 30.42	30.02	30.22	5
B. D.+37° 514	2 10 54.295	5	+37 40 56.84	57.12	56.98	5	B. D.+30° 466	2 50 30.066	4	+30 28 34.75	33.02	33.88	4
B. D.+36° 453	2 11 8.334	3	+37 1 11.10	11.90	11.50	3	B. D.+31° 509	2 51 13.002	4	+31 31 55.20	53.70	54.45	4
B. D.+37° 516	2 11 14.684	3	37 22 9.10	8.60	8.85	3	B. D.+30° 469	2 51 58.190	4	31 6 53.92	53.02	53.47	4
B. D.+37° 518	2 11 49.113	3	37 37 28.70	28.03	28.36	3	B. D.+31° 511	2 52 5.658	3	31 36 56.73	55.57	56.15	3
B. D.+36° 458	2 12 32.862	4	36 36 17.90	18.62	18.26	4	B. D.+31° 512	2 52 12.866	4	32 3 28.18	26.92	27.55	4
B. D.+36° 464	2 14 57.478	4	36 36 45.65	45.82	45.74	4	B. D.+30° 474	2 53 52.573	4	30 12 28.55	26.92	27.74	4
B. D.+36° 465	2 15 9.958	4	36 57 53.60	53.12	53.36	4	B. D.+30° 477	2 54 13.484	4	30 43 41.10	40.22	40.66	4
B. D.+36° 470	2 17 13.069	5	37 6 16.90	16.70	16.80	5	B. D.+29° 508	2 54 24.949	4	30 10 18.80	17.80	18.30	4
B. D.+36° 473	2 17 36.653	5	36 38 52.02	51.50	51.76	5	B. D.+31° 524	2 55 10.459	5	31 33 31.52	30.46	30.99	5
B. D.+36° 478	2 19 9.828	5	36 40 0.00	0.02	0.01	5	B. D.+30° 479	2 56 6.797	3	30 35 30.98	28.95	29.96	4
B. D.+35° 470	2 19 20.668	4	+35 31 8.75	9.45	9.10	4	B. D.+29° 517	2 57 39.151	4	+30 7 9.20	7.70	8.45	4
B. D.+34° 432	2 19 25.224	3	+34 35 22.70	22.93	22.82	3	B. D.+30° 482	2 58 31.605	4	+30 55 11.58	10.68	11.13	4
B. D.+36° 482	2 19 44.290	3	36 33 41.27	40.73	41.00	3	B. D.+30° 484	2 58 51.317	5	30 38 56.00	55.34	55.67	5
B. D.+34° 435	2 20 8.251	3	34 24 7.93	9.07	8.50	3	B. D.+28° 488	2 59 18.277	5	29 9 11.00	9.68	10.34	5
B. D.+34° 437	2 20 45.184	5	35 9 50.66	50.82	50.74	5	B. D.+29° 519	2 59 41.096	4	30 8 17.90	16.45	17.18	4
B. D.+36° 491	2 21 8.798	4	36 31 1.58	1.92	1.75	4	B. D.+29° 522	3 0 48.088	4	30 8 29.65	28.48	29.06	4
B. D.+35° 477	2 22 1.151	5	35 29 1.98	2.24	2.11	5	B. D.+28° 493	3 1 16.414	4	28 44 15.28	14.28	14.78	4
B. D.+34° 442	2 22 26.894	5	34 51 0.22	1.36	0.79	5	B. D.+28° 499	3 3 35.641	5	28 41 44.02	42.06	43.04	5
B. D.+35° 480	2 22 51.081	4	35 13 12.80	12.68	12.74	4	B. D.+30° 494	3 3 42.931	4	31 0 60.15	58.72	59.44	4
B. D.+35° 490	2 24 41.713	3	35 40 21.47	21.30	21.38	3	B. D.+29° 531	3 4 13.749	5	29 17 6.86	5.80	6.33	5
B. D.+33° 447	2 24 57.939	3	+33 54 56.07	56.13	56.10	3	B. D.+29° 534	3 5 54.238	4	+29 27 15.12	13.58	14.35	4
B. D.+34° 448	2 25 4.074	3	+34 29 15.43	15.27	15.35	3	B. D.+30° 503	3 6 50.765	5	+30 28 38.72	37.54	38.13	5
B. D.+35° 494	2 25 5.092	3	35 18 45.90	45.70	45.80	3	B. D.+28° 507	3 7 34.936	4	28 51 27.82	27.02	27.42	4
B. D.+34° 449	2 25 6.695	2	34 57 21.90	22.80	22.35	2	B. D.+28° 511	3 11 1.821	5	28 23 26.06	24.46	25.26	5
B. D.+35° 497	2 25 59.794	3	35 42 14.33	14.60	14.46	3	B. D.+27° 488	3 11 2.093	4	28 6 60.88	59.25	60.06	4
B. D.+34° 454	2 26 3.294	3	34 14 10.65	11.10	10.88	4	B. D.+28° 514	3 12 24.816	4	28 20 49.55	49.18	49.36	4
B. D.+34° 457	2 26 29.211	3	34 49 18.00	18.30	18.15	3	B. D.+27° 492	3 13 37.989	5	27 10 42.30	42.36	42.33	5
B. D.+33° 454	2 26 50.231	4	34 6 5.08	5.02	5.05	4	B. D.+28° 516	3 14 17.176	5	28 41 9.66	8.56	9.11	5
B. D.+33° 461	2 28 12.649	4	33 21 10.90	11.25	11.08	4	B. D.+28° 517	3 14 36.947	5	28 27 58.38	56.86	57.62	5
B. D.+34° 462	2 28 12.881	3	34 42 41.98	42.25	42.12	4	B. D.+27° 500	3 16 11.540	5	27 14 55.12	54.82	54.97	5
B. D.+33° 462	2 28 31.033	4	+33 28 32.60	32.32	32.46	4	B. D.+27° 501	3 16 58.036	4	+27 19 44.28	43.30	43.79	4
B. D.+33° 463	2 28 40.224	4	+33 38 41.75	41.68	41.72	4	B. D.+26° 548	3 17 6.079	5	+26 32 38.46	36.82	37.64	5
B. D.+34° 469	2 29 42.518	4	34 15 6.02	6.60	6.31	4	B. D.+26° 550	3 17 32.426	4	27 2 44.50	43.25	43.88	4
B. D.+34° 471	2 29 45.969	4	34 17 18.70	18.58	18.64	4	B. D.+28° 526	3 18 45.514	5	28 17 59.08	58.00	58.54	5
B. D.+34° 476	2 31 44.767	5	34 43 42.20	42.40	42.30	5	B. D.+28° 532	3 20 31.308	4	28 21 60.55	58.38	59.46	4
B. D.+33° 476	2 32 30.133	4	33 56 2.90	2.08	2.49	4	B. D.+27° 509	3 21 36.609	4	27 24 10.50	9.68	10.09	4
B. D.+34° 483	2 32 41.138	4	34 50 21.98	23.35	22.66	4	B. D.+26° 565	3 24 19.683	3	26 40 48.00	47.80	47.90	3
B. D.+32° 478	2 32 43.492	4	32 59 11.98	11.03	11.50	4	B. D.+27° 513	3 24 58.269	4	27 22 55.72	55.02	55.37	4
B. D.+32° 483	2 33 45.634	3	33 3 53.57	53.40	53.48	3	B. D.+26° 566	3 25 0.780	3	26 46 15.38	13.88	14.63	4
B. D.+33° 481	2 33 46.952	4	33 31 5.98	6.42	6.20	4	B. D.+27° 514	3 25 0.954	4	27 23 23.02	22.75	22.88	4
B. D.+32° 484	2 33 49.578	4	+32 23 3.02	1.50	2.26	4	B. D.+27° 515	3 25 17.624	3	+27 13 49.97	49.93	49.95	3

NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.	NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.
			A.	B.	Mean.					A.	B.	Mean.	
	h m s		° ' "	"	"		h m s		° ' "	"	"		
B. D. +27° 515 ^a	3 25 18.471	3	+27 13 50.63	50.00	50.32	3	B. D. +22° 637 ^a	4 2 56.375	5	+22 49 59.04	59.48	59.26	5
B. D. +27° 519	3 26 33.628	4	28 1 35.02	33.68	34.35	4	B. D. +23° 632	4 4 17.453	4	23 43 6.32	6.38	6.35	4
B. D. +26° 572	3 28 57.126	4	26 16 23.38	23.43	23.40	4	B. D. +21° 601	4 5 14.131	4	21 37 26.78	27.15	26.96	4
B. D. +26° 574	3 29 19.102	4	26 30 59.08	58.08	58.58	4	B. D. +23° 642	4 6 26.469	5	23 19 0.70	1.14	0.92	5
B. D. +27° 525	3 29 20.767	3	27 11 28.63	27.80	28.22	3	B. D. +23° 645	4 6 48.003	4	23 15 48.52	48.90	48.71	4
B. D. +27° 526	3 29 22.534	4	27 30 45.90	46.18	46.04	4	B. D. +22° 649	4 6 55.393	4	22 9 22.85	23.40	23.12	4
B. D. +27° 529	3 30 1.573	4	27 15 37.45	36.30	36.88	4	B. D. +22° 654	4 8 2.264	3	22 27 11.63	12.13	11.88	3
B. D. +26° 579	3 30 5.974	3	27 0 40.60	40.17	40.38	3	B. D. +22° 657	4 8 33.595	4	22 11 56.30	55.52	55.91	4
B. D. +25° 580	3 31 9.935	4	25 40 3.02	3.83	3.42	4	B. D. +23° 650	4 8 34.678	3	23 7 25.07	25.10	25.08	3
B. D. +25° 584	3 33 29.052	4	+25 48 5.14	4.10	4.62	5	B. D. +21° 610	4 9 17.866	4	+21 50 41.50	42.45	41.98	4
B. D. +26° 590	3 33 29.630	5	+26 53 47.76	46.82	47.29	5	B. D. +22° 663	4 10 3.498	3	+22 43 0.40	0.60	0.50	3
Anonymous ...	3 34 7.080	1	26 34 15.60	13.80	14.70	1	B. D. +21° 612	4 10 37.732	4	21 39 33.20	33.05	33.12	4
B. D. +26° 596	3 34 11.942	3	26 33 46.53	46.20	46.36	3	B. D. +22° 665	4 10 52.848	3	23 5 27.53	27.77	27.65	3
B. D. +24° 533	3 35 20.219	4	24 41 4.02	5.30	4.66	5	B. D. +21° 617	4 11 54.959	4	22 6 28.72	29.30	29.01	4
B. D. +24° 534	3 35 42.891	5	25 2 54.88	54.82	54.85	4	B. D. +21° 618	4 12 28.031	4	21 20 5.48	6.00	5.74	4
B. D. +26° 601	3 36 27.662	4	26 15 12.30	11.23	11.76	4	B. D. +20° 731	4 13 7.127	3	21 3 23.23	24.47	23.85	3
B. D. +25° 593	3 37 7.204	3	25 21 45.73	45.40	45.56	3	B. D. +20° 733	4 13 32.353	4	20 54 1.90	2.60	2.25	4
B. D. +25° 598	3 37 38.627	3	25 48 29.67	29.00	29.34	3	B. D. +21° 623	4 13 41.451	3	21 31 55.50	54.87	55.18	3
B. D. +25° 597	3 37 38.911	3	25 27 10.43	10.37	10.40	3	B. D. +20° 740	4 15 37.451	5	20 48 9.00	8.64	8.82	5
B. D. +24° 537	3 37 44.714	3	+24 45 51.10	51.53	51.32	3	B. D. +20° 741	4 15 41.356	4	+20 56 59.08	59.75	59.42	4
B. D. +25° 599	3 37 44.788	3	+26 3 48.77	48.97	48.87	3	B. D. +20° 744	4 16 29.718	4	+20 35 6.18	6.45	6.32	4
B. D. +25° 600	3 37 52.781	3	25 24 37.33	38.60	37.96	3	B. D. +21° 635	4 17 27.180	4	21 8 44.12	44.48	44.30	4
B. D. +24° 546	3 39 11.629	3	24 31 31.50	31.63	31.56	3	B. D. +20° 751	4 17 38.734	4	20 44 56.30	57.55	56.92	4
B. D. +26° 608	3 39 12.041	3	26 34 39.87	39.30	39.58	3	B. D. +21° 639	4 18 6.057	3	21 18 28.13	28.17	28.15	3
B. D. +24° 547	3 39 15.203	3	24 9 12.70	12.50	12.60	4	B. D. +21° 641	4 18 18.281	3	21 30 17.40	17.57	17.48	3
B. D. +25° 607	3 39 32.978	3	25 17 50.03	51.07	50.55	3	B. D. +21° 642	4 19 24.488	4	22 3 54.92	53.82	54.37	4
B. D. +24° 553	3 39 56.898	4	24 14 31.68	32.55	32.12	4	B. D. +21° 643	4 19 27.478	4	21 58 16.35	16.52	16.44	4
B. D. +25° 611	3 39 58.288	3	25 45 49.13	48.73	48.93	3	B. D. +20° 754	4 19 53.560	4	20 54 30.70	31.25	30.98	4
B. D. +24° 562	3 41 1.743	4	24 12 36.35	36.45	36.40	4	B. D. +21° 644	4 20 22.800	4	21 14 37.20	37.75	37.48	4
B. D. +24° 568	3 41 47.074	4	+25 4 38.02	38.72	38.37	4	B. D. +20° 756	4 21 13.468	3	+20 45 58.40	59.03	58.72	3
B. D. +24° 571	3 42 8.003	4	+24 40 47.05	47.92	47.48	4	B. D. +21° 647	4 22 4.565	4	+21 23 49.35	49.08	49.22	4
B. D. +26° 617	3 42 16.538	3	26 16 50.18	49.28	49.73	4	B. D. +20° 760	4 22 44.331	4	20 36 35.78	35.88	35.83	4
B. D. +25° 620	3 42 41.104	3	25 29 34.47	34.30	34.38	3	B. D. +19° 727	4 22 45.538	3	19 31 7.38	7.58	7.48	4
B. D. +23° 561	3 43 24.092	4	24 4 32.55	33.68	33.12	4	B. D. +20° 761	4 22 48.896	4	20 27 18.28	18.35	18.32	4
B. D. +23° 562	3 43 28.626	4	23 56 32.85	33.38	33.12	4	B. D. +19° 731	4 24 25.928	4	19 37 21.30	20.88	21.09	4
B. D. +25° 624	3 44 18.116	4	25 16 39.95	39.42	39.68	4	B. D. +19° 733	4 25 22.778	4	19 55 2.95	3.02	2.98	4
B. D. +24° 578	3 44 29.954	3	24 11 30.77	30.20	30.48	3	B. D. +20° 772	4 25 45.608	3	20 34 4.07	4.53	4.30	3
B. D. +23° 570	3 44 55.511	4	23 39 32.42	32.75	32.58	4	B. D. +21° 657	4 26 11.991	4	21 25 3.25	4.18	3.72	4
B. D. +25° 627	3 45 17.289	4	26 3 7.88	6.75	7.32	4	B. D. +19° 735	4 27 10.316	4	19 8 10.72	10.15	10.44	4
B. D. +24° 583	3 45 25.700	3	+24 51 39.27	39.40	39.34	3	B. D. +19° 736	4 27 31.751	4	+19 36 7.82	6.58	7.20	4
B. D. +25° 631	3 45 55.518	3	+25 41 56.57	55.83	56.20	3	B. D. +20° 778	4 28 51.781	4	+20 53 44.05	44.38	44.22	4
B. D. +24° 587	3 46 12.511	4	24 52 0.35	0.08	0.22	4	B. D. +19° 740	4 29 47.914	3	19 45 48.07	48.53	48.30	3
B. D. +24° 589	3 46 54.518	3	24 25 4.03	4.60	4.32	3	B. D. +19° 742	4 29 50.776	4	19 40 30.82	30.28	30.55	4
B. D. +25° 637	3 47 6.626	4	25 14 13.08	12.70	12.89	4	B. D. +19° 744	4 30 43.086	4	19 33 18.75	18.00	18.38	4
B. D. +25° 639	3 47 28.146	4	25 38 16.50	16.50	16.50	4	B. D. +19° 745	4 30 51.331	3	19 17 22.13	21.20	21.66	3
B. D. +25° 641	3 47 33.066	4	25 23 9.28	9.22	9.25	4	B. D. +20° 785	4 32 21.817	5	20 29 1.54	1.68	1.61	5
B. D. +23° 584	3 49 4.546	4	23 39 45.25	45.92	45.58	4	B. D. +18° 666	4 32 41.737	5	18 31 60.34	59.22	59.78	5
B. D. +24° 595	3 49 7.551	5	24 48 40.60	40.74	40.67	5	B. D. +19° 755	4 35 42.491	3	20 4 13.75	13.80	13.78	3
B. D. +23° 586	3 49 50.816	4	23 32 9.50	9.30	9.40	4	B. D. +19° 759	4 35 51.270	3	19 53 44.27	44.10	44.18	4
B. D. +23° 589	3 50 40.768	4	+23 18 14.32	14.50	14.41	4	B. D. +18° 684	4 37 1.359	4	+18 31 57.08	55.88	56.48	4
B. D. +24° 598	3 51 10.984	4	+24 59 30.88	31.12	31.00	4	B. D. +19° 774	4 39 43.443	3	+19 8 38.17	37.27	37.72	3
B. D. +24° 599	3 51 27.568	4	24 10 19.35	19.40	19.38	4	B. D. +18° 717	4 40 15.081	3	18 37 3.75	2.50	3.12	4
B. D. +23° 594	3 52 22.671	3	23 47 38.93	39.40	39.16	3	B. D. +18° 719	4 40 26.452	3	18 33 14.27	12.93	13.60	3
B. D. +23° 600	3 53 6.388	4	23 20 27.90	29.08	28.49	4	B. D. +19° 777	4 40 44.123	3	19 18 44.10	43.60	43.85	3
B. D. +24° 602	3 53 13.089	4	24 55 47.52	47.03	47.28	4	B. D. +18° 725	4 41 3.991	3	18 53 56.40	57.30	56.85	3
B. D. +24° 605	3 53 54.468	4	24 24 42.53	42.92	42.72	4	B. D. +18° 727	4 41 17.818	3	18 18 28.10	26.60	27.35	3
B. D. +22° 612	3 53 57.243	4	22 56 0.70	1.15	0.92	4	B. D. +19° 782	4 41 51.353	3	19 8 23.03	21.97	22.50	3
B. D. +22° 613	3 54 11.384	3	23 6 56.30	55.97	56.14	3	B. D. +17° 789	4 42 47.550	3	17 37 49.38	48.50	48.94	4
B. D. +22° 615	3 54 34.939	4	22 32 29.05	28.38	28.72	4	B. D. +18° 734	4 42 50.806	4	18 32 34.40	32.77	33.58	4
B. D. +22° 617 ¹	3 55 0.373	4	+22 55 11.50	11.78	11.64	4	B. D. +18° 738	4 44 27.319	4	+19 1 10.02	9.90	9.96	4
B. D. +22° 617 ²	3 55 0.818	4	+22 55 7.13	7.12	7.12	4	B. D. +17° 791	4 44 32.123	4	+17 20 53.10	52.72	52.91	5
B. D. +23° 606	3 57 48.874	4	24 7 31.52	32.32	31.92	4	B. D. +18° 743	4 45 31.391	5	18 40 10.80	9.90	10.35	4
B. D. +23° 609	3 58 22.730	4	23 49 50.45	50.60	50.52	4	B. D. +17° 797	4 46 3.298	4	17 31 16.35	15.95	16.15	4
B. D. +23° 611	3 58 52.398	4	23										

*Too faint for observation.

NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.	NAME.	RIGHT ASCENSION 1900.0	NO. OBS.	DECLINATION 1900.0			NO. OBS.					
			A.	B.	Mean.						A.	B.	Mean.					
	h m s		° ' "	"	"			h m s			° ' "	"	"					
B. D.+18° 765	4 52 30.146	4	+18 50 19.38	18.40	18.89	4	B. D.+13° 927	5 29 27.158	3	+13 20 44.53	46.20	45.36	3					
B. D.+16° 679	4 54 6.911	5	16 40 40.98	40.72	40.85	5	B. D.+13° 930	5 29 41.604	3	13 13 11.30	10.57	10.94	3					
B. D.+16° 685	4 56 8.492	4	16 41 12.72	12.35	12.54	4	B. D.+14° 958	5 30 46.015	5	14 35 38.30	38.40	38.35	5					
B. D.+16° 688	4 58 17.818	4	16 59 5.95	4.95	5.45	4	B. D.+14° 959	5 31 0.636	4	14 9 49.88	50.20	50.04	4					
B. D.+18° 777	4 59 0.288	5	18 6 53.84	52.46	53.15	5	B. D.+14° 973	5 33 25.891	4	14 29 56.70	57.10	56.90	4					
B. D.+17° 841	5 0 28.780	4	17 40 51.33	51.00	51.16	4	B. D.+14° 978	5 34 5.558	4	14 44 37.04	37.38	37.21	5					
B. D.+16° 697	5 1 14.733	6	16 41 41.45	39.97	40.71	6	B. D.+13° 954	5 35 50.702	4	13 5 48.95	48.90	48.92	4					
B. D.+16° 700	5 2 11.338	4	16 50 52.60	52.35	52.48	4	B. D.+13° 957	5 36 31.196	4	13 32 31.50	31.30	31.40	4					
B. D.+15° 749	5 2 21.641	4	15 43 26.40	25.68	26.04	4	B. D.+14° 991	5 37 17.541	3	14 7 50.22	50.02	50.12	4					
B. D.+15° 752	5 3 58.501	6	+15 28 10.35	10.48	10.42	6	B. D.+13° 964	5 37 23.586	4	+13 5 48.92	48.68	48.80	4					
B. D.+17° 862	5 4 51.968	4	+17 18 52.30	51.60	51.95	4	B. D.+14° 998	5 37 50.131	4	+14 21 51.85	51.50	51.68	4					
B. D.+16° 715	5 5 4.411	4	16 18 33.78	33.75	33.76	4	B. D.+12° 880	5 38 28.268	3	12 40 21.93	23.10	22.52	3					
B. D.+15° 759	5 5 56.902	4	15 55 20.45	20.40	20.42	4	B. D.+12° 882	5 39 4.743	4	12 22 20.62	19.95	20.28	4					
B. D.+16° 721	5 6 6.384	3	16 37 11.57	11.30	11.44	3	B. D.+12° 884	5 39 23.651	4	12 50 43.70	44.16	43.93	5					
B. D.+17° 867	5 6 24.093	3	17 8 26.40	25.87	26.14	3	B. D.+13° 971	5 39 23.782	4	13 31 59.90	60.20	60.05	4					
B. D.+17° 869	5 6 42.384	3	17 5 32.57	31.63	32.10	3	B. D.+12° 896	5 41 35.132	4	12 18 8.44	9.00	8.72	5					
B. D.+16° 732	5 7 28.409	5	16 45 53.86	52.26	53.06	5	B. D.+12° 899	5 41 51.899	5	12 13 15.30	15.48	15.39	5					
B. D.+16° 735	5 8 33.838	5	16 33 42.84	42.20	42.52	5	B. D.+13° 979	5 42 2.626	5	13 51 48.02	47.74	47.88	5					
B. D.+15° 769	5 9 42.116	4	15 30 56.30	57.02	56.66	4	B. D.+12° 910	5 43 36.242	4	12 7 5.28	5.88	5.58	4					
B. D.+16° 741	5 10 55.287	5	+16 54 32.32	32.28	32.30	5	B. D.+13° 988	5 43 45.383	5	+13 53 22.88	22.96	22.92	5					
B. D.+16° 742	5 11 20.017	5	+16 14 31.44	31.22	31.33	5	B. D.+12° 912	5 43 55.859	4	+12 37 11.44	11.52	11.48	5					
B. D.+15° 779	5 11 25.018	4	15 9 14.42	14.45	14.44	4	B. D.+12° 925	5 46 37.596	4	12 51 10.32	10.62	10.47	4					
B. D.+15° 787	5 13 54.788	4	15 40 54.00	54.00	54.00	4	B. D.+12° 927	5 46 50.190	3	12 18 21.67	22.27	21.97	3					
B. D.+15° 789	5 14 18.546	4	16 1 6.68	6.48	6.58	4	B. D.+11° 960	5 47 37.355	3	11 47 38.62	38.92	38.77	4					
B. D.+14° 881	5 14 53.276	4	14 57 27.55	27.35	27.45	4	B. D.+12° 937	5 48 22.171	3	12 24 19.90	20.30	20.10	3					
B. D.+15° 790	5 14 59.278	3	15 32 8.00	7.13	7.56	3	B. D.+12° 941	5 48 29.067	3	12 2 35.30	35.60	35.45	3					
B. D.+15° 795	5 15 54.813	4	15 44 56.05	56.98	56.52	4	B. D.+11° 964	5 48 56.960	3	11 44 40.63	41.07	40.85	3					
B. D.+15° 797	5 16 14.836	4	15 59 38.40	37.95	38.18	4	B. D.+11° 965	5 49 1.952	3	11 27 59.63	60.07	59.85	3					
B. D.+15° 799	5 16 38.221	4	+16 1 34.70	33.30	34.00	4	B. D.+12° 946	5 49 37.960	3	+12 52 38.40	38.50	38.45	3					
B. D.+15° 805	5 17 46.677	5	+15 56 44.94	44.32	44.63	5	B. D.+12° 950	5 50 0.745	3	+12 59 4.52	4.95	4.74	4					
B. D.+15° 809	5 19 22.239	4	15 16 14.98	14.98	14.98	4	B. D.+11° 970	5 50 2.943	4	11 47 32.95	33.02	32.98	4					
B. D.+15° 810	5 19 54.048	4	15 29 27.85	27.92	27.88	4	B. D.+12° 963	5 52 27.358	4	12 52 14.55	14.52	14.54	4					
B. D.+15° 813	5 20 10.716	4	15 21 53.28	52.20	52.74	4	B. D.+12° 965	5 52 44.212	4	12 58 39.88	40.55	40.22	4					
B. D.+15° 814	5 20 18.496	4	15 34 59.25	59.82	59.54	4	B. D.+12° 968	5 53 15.655	3	12 47 55.12	55.55	55.34	4					
B. D.+15° 822	5 21 30.748	4	15 10 17.58	17.98	17.78	4	B. D.+11° 986	5 53 45.454	3	11 45 16.87	17.67	17.27	3					
B. D.+14° 914	5 21 59.551	4	14 3 2.92	3.05	2.98	4	B. D.+12° 975	5 53 50.877	3	12 27 46.17	47.50	46.84	3					
B. D.+15° 826	5 22 0.783	4	15 47 22.50	22.80	22.65	4	B. D.+12° 980	5 54 39.989	4	12 36 20.12	20.35	20.24	4					
B. D.+14° 917	5 22 9.751	4	+14 55 50.05	50.20	50.12	4	B. D.+11° 995	5 54 59.115	4	+11 59 2.55	2.68	2.62	4					
B. D.+15° 837	5 24 42.707	5	+15 16 59.06	59.22	59.14	5	B. D.+11° 1002	5 56 29.906	4	+11 39 19.32	19.60	19.46	4					
B. D.+14° 933	5 25 48.648	3	14 34 7.18	7.32	7.25	4	B. D.+12° 994	5 57 1.512	4	12 40 15.28	15.80	15.54	4					
B. D.+14° 934	5 25 53.203	4	14 51 11.72	12.18	11.95	4	B. D.+11° 1005	5 57 9.297	3	11 5 33.73	33.37	33.55	3					
B. D.+14° 939	5 27 4.094	3	14 8 55.30	55.37	55.34	3	B. D.+11° 1007	5 57 44.072	4	11 8 14.85	14.88	14.86	4					
B. D.+15° 851	5 27 23.874	3	15 52 32.93	31.63	32.28	3	B. D.+11° 1009	5 57 49.912	3	11 40 57.45	57.72	57.58	4					
B. D.+14° 947	5 28 13.261	3	14 14 9.20	8.80	9.00	3	B. D.+11° 1022	6 0 7.366	4	11 13 36.22	36.92	36.57	4					
B. D.+15° 856	5 28 16.191	3	15 30 54.98	55.32	55.15	4	B. D.+11° 1032	6 2 3.531	4	11 1 10.58	10.95	10.76	4					
B. D.+14° 948	5 28 19.523	3	14 25 15.40	15.13	15.26	3	B. D.+11° 1038	6 2 47.844	4	11 24 39.60	39.38	39.49	4					
B. D.+13° 922	5 28 50.578	3	+13 56 6.33	6.33	6.33	3	B. D.+12° 1032	6 3 7.203	4	+12 17 42.60	43.10	42.85	4					