TALLINNA TEHNIKAINSTITUUDI TOIMETUSED
PUBLICATIONS FROM THE TALLINN INSTITUTE OF TECHNOLOGY
Series A № 1 (June 1937)

Longitude and Latitude Determinations in Estonia from 1930 to 1933

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K. Mattieseni trükikoda o.-ü., Tartu 1937.

I. Instruments and Methods of Observation.

At the request of the Topo-Hydrographic Section of the Estonian Army Staff, longitude and latitude has been determined by the author at first-order triangulation stations since 1930. The present paper deals with the observations in the years 1930—1933. During this period I determined longitude and latitude at 23 field-points, and latitude at Tallinn. Of these points 21 belong to the triangulation chain running from Latvia across the Island of Saaremaa to Finland, while two points are in South Estonia. The scheme of these field-points is given in Fig. 1.

The Tallinn station is described in my paper "Die Längenbestimmung in Tallinn und Pulkovo", Special Publication of the Baltic Geodetic Commission, No. 2, pp. 77—78, Helsinki 1932. The station consists of a round concrete observation pier on the open Landskrona tower; this tower, solid and massive, forms the NE corner of the medieval Toompea castle. The height of the tower is 28 m. The station at Tallinn is a reference station for all the present longitude determinations. On the Isle of Ruhnu the field-point consists of a concrete plate mounted on a thick iron tube driven into the ground. All the other field-points consist of square concrete piers on the ground and are, in most cases, close to triangulation towers. The height of the piers from the ground is 1.10—1.20 m, their cross section being 45×65 cm.

The observations were carried out in summer. The instruments used were:

1) the Bamberg transit instrument No. 80 752;
2) the contact chronometer Ulysse Nardin No. 2451;
3) a writing chronograph by Wetzer;
4) a wireless receiving set, made by Betz and Co., Berlin;
5) relays, accumulators, various other accessories and tools.

To protect the instruments, a movable tent, about 2 m long and 2 m broad, was built by the Topo-Hydrographic Section. The

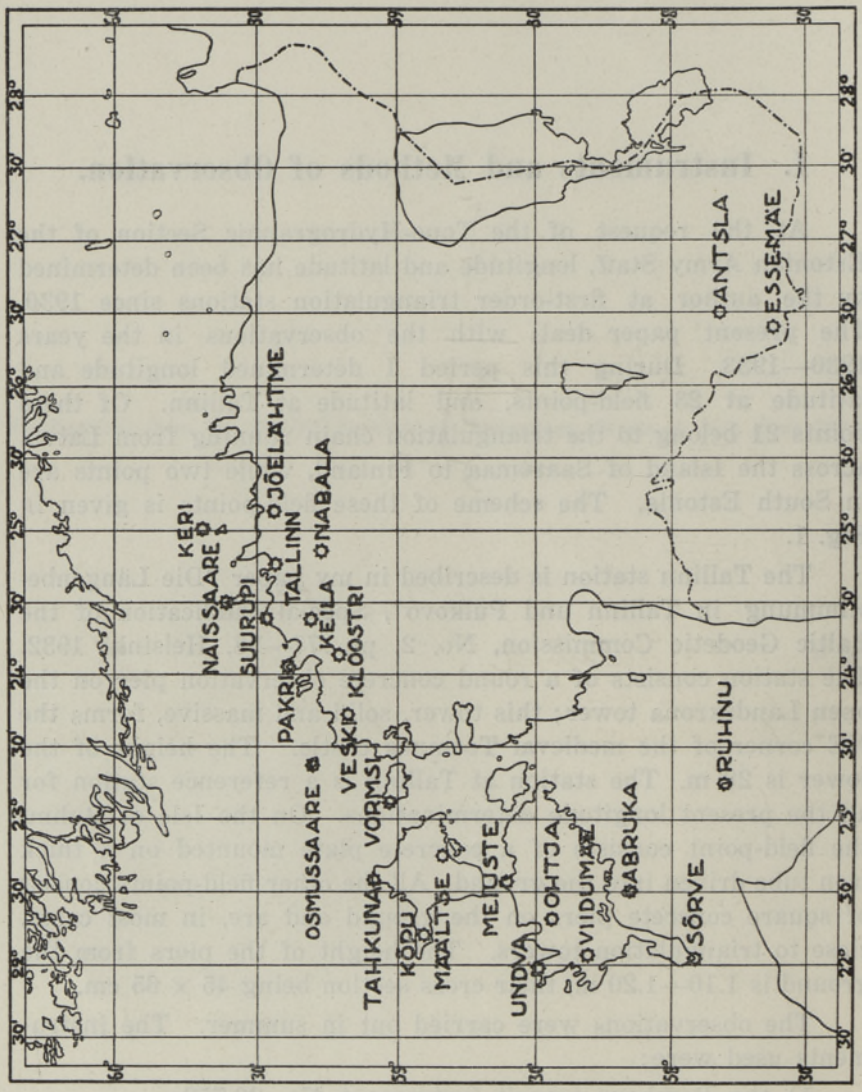

Fig. 1.

same tent served as living-room for the observer and his assistant. The walls of the tent were made of veneer on a light wooden framework. As roof a waterproof tarpaulin was used; for the time of observation it was removed. The ground was

covered with a wooden floor, with an opening in the middle for the pier. Fig. 2 shows the tent from the outside, and Fig. 3 gives a view into it through the open door.

The Bamberg transit instrument is fitted with an impersonal and a Talcott micrometer. All the determinations of time were made with the impersonal micrometer, while the Talcott micro-

Fig. 2.

meter was used for the latitude determinations. The optical parts of the transit instrument are of good quality, the object glass has an aperture of 70 mm, and the focal length is 65 cm. The magnifying powers used were 81 ×.

For the value of the dead lag of the impersonal micrometer we have

1929/30;	weight 5:	-0.0001_4	revolutions of the screw;
1933 ;	weight 1:	-0.0001_5	„ „ „ „ ;
	mean:	-0.0001_4	(negative!).

The duration of the contacts of the impersonal micrometer was found to be

1929/30;	weight	4;	0.0102	revolutions	of	the	screw;
1931 ;	„	1;	0.0102	„	„	„	„ ;
1932 ;	„	0.5;	0.0108	„	„	„	„ ;
1933 ;	„	2;	0.0105	„	„	„	„ ;
	mean:		0.0103	revolutions	of	the	screw.

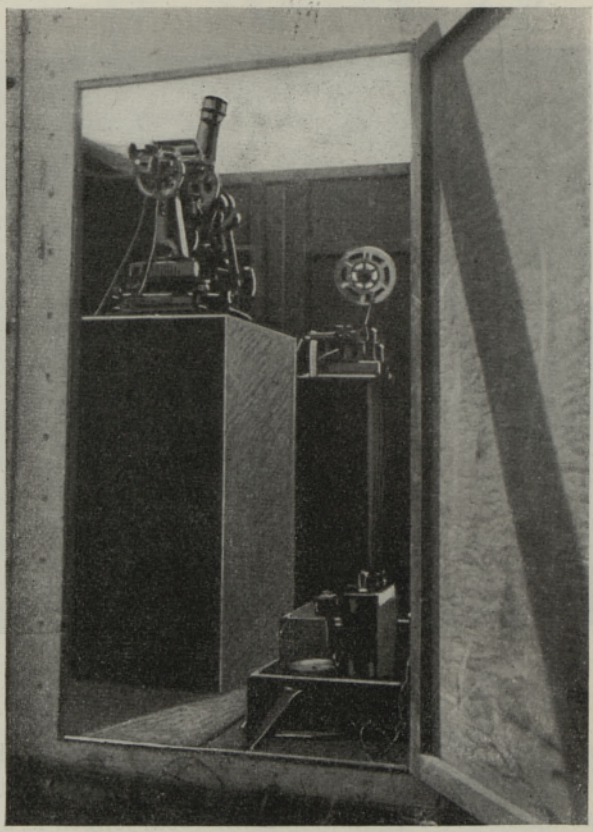

Fig. 3.

Since the value of one revolution of the micrometer screw is $10.^{s}56$, we have for *"half duration of contacts + dead lag"* $0.^{s}0528 \sec \delta$. The correction for diurnal aberration is $0.^{s}0110 \sec \delta$ for the mean latitude of Estonia. So we have for the total correction c = *"half duration of contacts + dead lag + diurnal aberration"*

$$\text{upper culmination:} \quad c = +0^{s}.0418 \sec \delta$$

$$\text{lower culmination:} \quad c = +0^{s}.0638 \sec \delta.$$

The inclination of the axis of the transit instrument was determined with a level of 70 divisions, attested as "good" by B. Wanach in Potsdam. The value of one division of this level is

$$\tau = 1''.150; \qquad \frac{\tau}{2} = 0^{s}.0383.$$

For the method of determining the dead lag and the duration of the contacts of the micrometer, and for detailed information concerning the above-mentioned level see R. Livländer, "Determination of the Longitude of the Tartu Observatory by Wireless", Second paper, pp. 16—18, Publications de l'Observatoire astronomique de l'Université de Tartu, Tome XXVII No 3.

For the determinations of latitude the transit instrument was fitted with two Horrebow-Talcott levels. These levels were tested by B. Wanach in Potsdam and attested as "very good".

The values for one division of these levels are

Level I		Level II	
Bamberg . . .	0".704	Bamberg . . .	0".875
B. Wanach . .	0.685	B. Wanach . .	0.821
Writer in Tartu 1930 .	0.714	Writer in Tartu 1930 .	0.829
Adopted mean:	0".700	Adopted mean:	0".830

The slide of the Talcott micrometer can be turned by 90°. This micrometer was also investigated by B. Wanach, and its screw was found practically free from periodic and systematic errors. The value of one revolution of the screw is round 79". The exact value was determined at each field-point by means of transit observations of stars, using the eye and ear method, and turning the micrometer by 90°, the mean error of a determination being between 0".01—0".03.

At each field-point, observations were made on 5 total (or a corresponding number of partial) nights, 3 nights for longitude and 2 for latitude. One total night for the determination of longitude consisted of the observation of 7—10 clock stars and

2—3 polar (azimuth) stars, and of the reception of 2—4 wireless time signals. On an average, a longitude night consisted of 9 clock stars, 2—3 polar (azimuth) stars, and 3 time signals. The mean azimuth factor ($\sin z \cdot \sec \delta$) of a time determination was 0.21. The rhythmic time signals of GBR 20^h, FYL 22^h, FLE $0^h\ 30^m$, and DFY 2^h (East European Time) were received. On the chronograph, glass pens and ordinary red ink were used.

The wireless receiving set, made by Betz and Co., Berlin, was a heterodyne receiver with a high frequency amplifier (one high frequency valve and one audion valve) and a low frequency amplifier (two low frequency valves). The aerial was a wire about 60 m. long. The time signals were received by means of a chronometer relay according to Hänni's method [1]).

The electric scheme for time determinations is shown in Fig. 4.

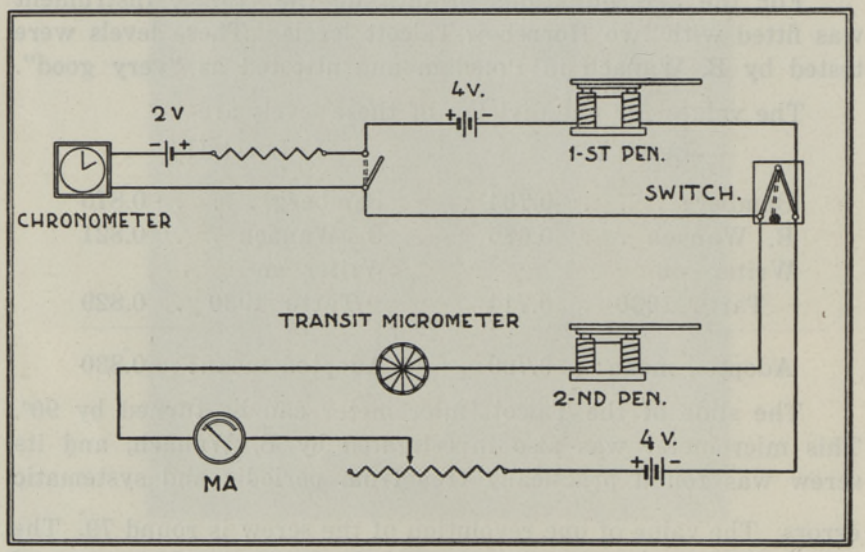

Fig. 4.

As seen from the scheme, only one timekeeper, the chronometer Ulysse Nardin No. 2451, was used. The parallax of the

[1]) F. Baeschlin. Uhrvergleichungen auf drahtlosem Wege nach der Koinzidenzmethode. Astronomische Nachrichten No. 5249.

G. A. Rune. Über Uhrvergleichungen auf drahtlosem Wege nach der Koinzidenzmethode. Astronomische Nachrichten No. 5426.

chronograph pens was determined before and after the observations by switching on the current into both electromagnets simultaneously ten times. The current used for operating the transit micrometer was always 65 MA.

For the latitude determinations the Horrebow-Talcott method was used. The pairs of stars were nearly all selected from Boss's Catalogue [1]), with a few exceptions which are mentioned in the observational data. For one field-point there were, on an average, 19 observations of pairs on two nights. The number of Talcott pairs for one field-point was on an average 13, a number of the pairs being thus repeated on both nights. Each star of a latitude pair was 5 times bisected by the micrometer, symmetrically to the meridian. If possible the programme for the latitude as well as the longitude determinations was slightly modified from night to night.

When proceeding from longitude determination to latitude determination, or *vice versa*, the micrometers on the transit instrument had to be changed. The focusing of both micrometers was done with the aid of scratched lines on the eyepiece tube. If at one field-point latitude was determined last, at the next point latitude determinations were made first, thus the position of the micrometer remained the same for two neighbouring points. Because of the abovesaid, the value adopted for one revolution of the screw for both points in question, was the weighted mean of the values determined at each point. In 1932 it was even possible to use one arithmetic mean for the whole summer.

Each year, with the exception of 1930, before starting the observations at the field-points and after finishing them, longitude determinations were made at the reference station at Tallinn on 2 or 3 nights.

II. Reduction of Observations and Precision of Results.

All the tapes of the transit observations were measured by the writer by means of the apparatus described in "Publications de l'Observatoire astronomique de l'Université de Tartu", Tome XXVII No. 3, pp. 23—24. The computed right ascensions of the stars contain short period nutation terms. The right ascensions

[1]) Lewis Boss. Preliminary General Catalogue 1910.

are in the system of Eichelberger [1]), since the published corrections for wireless time signals are given in the same system. The corrections for the time signals were taken from the "Bulletin Horaire" sub "Heures définitives des signaux horaires etc.". The time of the transmission of the wireless signals was taken into account, the velocity of transmission being accepted as 300.000 km per second. The azimuth of the transit instrument for the time of observation was computed by comparing each polar star with the mean of all the clock-stars. The azimuth used was the arithmetic mean of the azimuths obtained in this manner. The inclination was determined for each star from the observational data without adjustment. The rate of the chronometer was graphically derived from the time-signals received, and was adopted as being always linear. The value used for the parallax of the chronograph pens was the arithmetic mean of the measured values; an exception was made when the pens had deliberately been adjusted during the observation.

In computing the preliminary longitudes, the personal error of time determination was regarded as being equal to zero, this being justified, at least for the preliminary computations, by the author's observations in Pulkovo in 1929 [2]).

The personal error of the reception of time signals was determined twice, in 1929/30 and 1933. In both cases the reception of signals according to Hänni's method was compared with the automatic registration of the same signals on a chronograph. In 1929/30, a registering relay was lent to the author for this purpose by the Geodetic Institute in Potsdam. The observations were made in the Pulkovo and Tartu Observatories by recording the 10 first and 10 last beats of a signal on a chronograph, and in the meantime receiving the same signal by means of a headphone according to Hänni's method. Taking into account the lag of the registering relay, which was $+0.^{s}021$ in Pulkovo and $+0.^{s}016$ in Tartu, the personal error for the reception of signals according to Hänni's method, obtained from 38 comparisons was

$$+0.^{s}024 \pm 0.^{s}004 \text{ (mean error)}.$$

[1]) Astronomical Papers prepared for the use of the American Ephemeris and Nautical Almanac, vol. X, part I.

[2]) Publications de l'Observatoire astronomique de l'Université de Tartu, Tome XXVII No. 3.

In 1933 the determination of the personal error was repeated in the same manner by means of a relay lent to the author by the Astronomical Observatory in Riga. The lag of the relay was determined 11 times, and the figure obtained was $-0^{s}.003 \pm 0^{s}.003$. Because of the negative sign, the lag of the relay was adopted as being $0^{s}.000$, and the personal error obtained from 13 observations in 1933 was $+0^{s}.010 \pm 0^{s}.005$. If, however, we adopt for the lag of the Riga relay a number greater than zero, the personal error for the time signals received according to the method of Hänni in 1933, would also be correspondingly greater than $+0^{s}.010$. The difference of the personal errors as determined in 1929/30 and 1933, thus exceeds $0^{s}.01$. If, however, we compare the determinations of longitude made in Tallinn from 1930 to 1933, all computed with the personal error $+0^{s}.024$, it becomes evident that from these quantities a diminishing of the personal error by more than $0^{s}.01$ during the time in question, cannot be concluded. If, nevertheless, the personal error of the reception of time signals changed by the abovenamed quantity, then its effect was eliminated by a change in the contrary direction of the personal error of the time determinations. Thus a change of the personal error of the reception of time signals becomes doubtful, and was neglected. The preliminary longitudes were all computed with the personal error of time signal receptions being $+0^{s}.024$.

I should like to mention that the personal error of the reception of time signals depends also on the manner how the method of Hänni is applied, it being possible to short-circuit either the aerial or the headphone through the chronometer relay. A systematic difference between these two methods is obvious and was in my case $0^{s}.004$ in 1932, and $0^{s}.006$ in 1933. It is also conceivable that the audibility of a signal may systematically affect its reception. Therefore, in order to obtain good results with Hänni's method, conditions of reception should always be kept constant and good. It would, probably, be better to use some modification of Hänni's method, which would be free from the above-mentioned systematic effects. In the present longitude

determinations, however, Hänni's method was used for uniformity throughout without modification.

All the declinations of the Talcott pairs for the latitude determinations were computed in the system of Boss [1]). To this rule there are but a few exceptions, in cases when in preparing the list of pairs a star was selected from some other catalogue and was not contained in Boss's Catalogue. As Boss's declinations, in many cases, are already rather antiquated, the errors of the declinations influenced the observed results considerably. In many cases a systematic deviation of some pair is evident, when the same pair has repeatedly been observed at one and the same or at two neighbouring field-points. Nevertheless, I did not think I should have been justified in correcting any declination by means of my own observations, and all the observations are retained in one and the same, i. e. Boss's, system. So, in future, if desirable, it will be easy to convert the observed results to any modern system.

Short period nutation terms were computed for the mean instant of each night of observation.

The value for one revolution of the micrometer screw was found to be as follows.

Name of the field-point	Observed value	Value used for the calculation of latitude
	1930.	
Ruhnu	79".20 ± 0".04	79".20
Abruka	.26 ± 0.009	.26
Sõrve	.26 ± 0.025	.26
Viidumäe	.27 ± 0.020	.27
Tallinn	.286 ± 0.011	.285
	1931.	
Tallinn	79".26 ± 0".013	79".26
Undva	.18$_5$ ± 0.017	.19$_5$
Ohtja	.21 ± 0.028	
Meiuste	.24 ± 0.010	.24$_5$
Määltse	.26 ± 0.024	
Tahkuna	.29 ± 0.020	.26$_5$
Kõpu	.25 ± 0.013	

[1]) Lewis Boss. Preliminary General Catalogue 1910.

Name of the field-point	Observed value	Value used for the calculation of latitude
	1932.	
Veski	79".25 ± 0".022	Value used for the whole summer 1932: 79".25 $_5$
Kloostri	.25 ± 0.013	
Keila	.28 ± 0.020	
Pakri	.25 ± 0.016	
Osmussaare . . .	.25 ± 0.013	
Vormsi	.26 ± 0.011	
Tallinn	.24 ± 0.011	
	1933.	
Nabala	79".20 ± 0".014	79".20
Jõelähtme . . .	.21 ± 0.033	
Keri	.31 ± 0.024	.27
Naissaare . . .	.24$_5$ ± 0.015	
Suurupi	.28 ± 0.025	.29
Essemäe	.31 ± 0.031	
Antsla	.29 ± 0.016	.29

Brackets coupling observational results, indicate that the position of the micrometer was the same at the two marked field-points. Hence it was justifiable to use a common weighted mean of the revolution value of the screw for the two points.

The preliminary geographical longitudes were obtained by determining the arithmetic mean (in some cases, if necessary, the weighted mean) from the results of the individual nights (See chapter IV). The latitudes were obtained by determining the arithmetic mean from the results of individual pairs (not nights) of a field-point (See chapter V). The mean error for the longitudes and latitudes derived in this manner, was found to be on an average

for longitudes $\pm$ 0^s.010 $_5$

for latitudes $\pm$ 0".12 $_4$.

Of course, these figures express but the internal agreement of the observed results. The real mean error of the field-points must be greater, owing to various unknown factors.

An approximate estimate of the real mean errors could be obtained from repeated observations at the reference station at

Tallinn. The preliminary longitude data for Tallinn, freed from the variation of the terrestrial pole, are found to be

1930. July	$1^h\,38^m\,57.^s407 \pm 0.^s013$	(mean error)	3 nights
1931. Spring	$57.^s388 \pm 0.^s008$		3 „
1931. Autumn	$57.^s416 \pm 0.^s008$		2 „
1932. Spring	$57.^s424 \pm 0.^s004$		3 „
1932. Autumn	$57.^s400 \pm 0.^s001$		2 „
1933. Spring	$57.^s382 \pm 0.^s009$		3 „
1933. Autumn	$57.^s450 \pm 0.^s005$		2 „

Arithmetic mean $57.^s409_6 \pm 0.^s008$ (mean error)

Weighted mean $57.^s409_2 \pm 0.^s008$

(weights taken according to number of nights).

An obvious long periodic rate is not shown by the given data. Therefore, a clear continuous variation of the personal error cannot be concluded from them. It also does not seem advisable, to utilize the given quantities directly for interpolating the "personal error", since it has repeatedly been alluded to that the real error of a longitude determination of short duration is greater than the one derived from the internal agreement of the observations.

If we would assume that the given values for the longitude of Tallinn contain no variation of the personal error at all [1]), then we should conclude that the real mean error of one longitude determination is

$$\pm 0.^s008\sqrt{7} = \pm 0.^s021.$$

It is, however, probable that the values for the longitude of Tallinn, besides being subject to accidental observing errors, are slightly affected also by small variations of the personal error, and by other unknown factors. If these effects could be taken into account even to some extent, then we should obtain

[1]) By "variation of the personal error" we only mean a long periodic variation of the personal error. As shown below, the present measurements contain practically no short periodic systematic effects.

for the real mean error of the longitude of a field-point a value which would be

$$\text{between } \pm 0^{s}.010_5 \text{ and } \pm 0^{s}.021.$$

In accordance with the above-mentioned, the final longitudes, after a correction for the variation of the pole had been applied, were computed in two different manners as follows:

1) It was assumed that the personal error *(determination of time + reception of time signals)* did not vary during the period of observation 1930—1933.

2) The preliminary longitudes of Tallinn were directly utilized for interpolating the apparent "personal error"; the "personal error" obtained in this manner was taken into account at each field-point.

The mean was taken of both computed quantities, and this mean was adopted as the final longitude of a field-point. By computing in this manner, the author hopes that the real mean error of a field-point, being greater than $\pm 0^{s}.010_5$, is still less than $\pm 0^{s}.021$.

It is interesting to compare the values found for the precision of longitude determinations with the errors of longitude determinations deduced *a priori.*

On an average it was found for the whole period from 1930 to 1933 that

1) the mean error of a determination of time (computed from the internal agreement of the clock stars) was $= \pm 0^{s}.013$;

2) the mean error of an azimuth (computed from the internal agreement of individual azimuth values derived from the azimuth stars) was $= \pm 0^{s}.035$;

3) the mean azimuth factor for a time determination was $= 0.21$.

To the effects of these errors the following errors must be added:

4) The mean error of the reception of one time signal is according to the internal agreement of the coincidences considerably less than $\pm 0^{s}.01$. The real error must be greater and

for its value we adopt $\pm 0.^{s}012$ [1]). As there were, on an average, 3 signals received on a night, the error of the reception of time-signals is $\pm 0.^{s}012 : \sqrt{3} = \pm 0.^{s}007$.

5) For the real mean error of a definitive correction of an individual time signal taken from the "Bulletin Horaire", we adopt $\pm 0.^{s}010$ [2]). This error does not become smaller for the night in question whether one or more time-signals were received. Nor does the effect of this error greatly diminish for successive nights.

6) For the mean error of keeping time on the chronometer we may adopt at least $\pm 0.^{s}005$.

7) The mean error of the determination of the parallax of the chronograph pens we may also adopt as being $\pm 0.^{s}005$.

Thus the mean error of the longitude of one field-point deduced *a priori* (longitude determined on 3 nights) would be at least

$$\sqrt{\frac{(0.^{s}013)^2+(0.21\times 0.^{s}035)^2+(0.^{s}007)^2+(0.^{s}010)^2+(0.^{s}005)^2+(0.^{s}005)^2}{\sqrt{3}}} =$$

$$= \pm 0.^{s}012.$$

Taking into account that the mean error of the corrections of time signals given in the "Bulletin Horaire" may have a partly systematic and identical effect on successive nights, we find that the longitude error deduced *a priori*, is in very good accord with the longitude error $\pm 0.^{s}010_5$, which was derived from the internal agreement of the observing nights. From this we must conclude that the so-called systematic errors of one night which, however, assume an accidental character for several nights (the so-called short periodic zenith refraction, the variation of the personal error from night to night etc.) do

[1]) Baltische Geodätische Kommission, Sonderveröffentlichung No. 3, p. 24, Helsinki 1934.

[2]) Publications de l'Observatoire astronomique de Tartu, Tome XXVII No. 3, p. 12.

Baltische Geodätische Kommission, Sonderveröffentlichung No. 3, pp. 66 and 87.

not occur in the present longitudes. There do occur, however, systematical errors of a period much longer than one day, assuming an accidental character but in the course of several weeks or months. In computing the final longitudes, the effect of these systematic errors, which certainly is less than $\pm 0^{s}.018$, was diminished as far as possible, in the manner mentioned above (p. 15).

For the latitude of Tallinn the values, freed from the effect of the variation of the terrestrial pole, are

1930.	59° 26′	17″.39 ±	0″.09	(34 observations on 4 nights)
1931.		17.51 ±	0.10	(23 „ „ 3 „)
1932.		17.76 ±	0.15	(19 „ „ 2 „)
Arithmetic mean	59° 26′	17″.55 ±	0″.11	(mean error)
Weighted mean (according to number of nights).	59 26	17.51 ±	0.10	(„ „)

No variation of the personal error can be deduced from the values obtained, the data being too scarce. From the values obtained we might conclude for the real mean error of the latitude of one field-point

$$\pm 0''.10\sqrt{3} = \pm 0''.17.$$

This number, however, is too uncertain because of the scarcity of observational data.

In the present work, the obtained preliminary latitudes, freed from the variation of the pole, were adopted as final, the personal error for latitude determinations being always taken equal to zero.

The mean error of an individual pair for the period 1930—1933, was found to be

$$\pm 0''.54.$$

This figure is deduced from the internal agreement of the pairs on one night, and contains observational errors and errors of declination as well. As there were, on an average, 19 observ-

ations of pairs at one field-point, we find for the mean error of the latitude of one field-point deduced *a priori*

$$\pm 0''.54 : \sqrt{19} = \pm 0''.12_4.$$

This figure, however, is exactly the same as that which was found above (p. 13) for the mean error of the latitudes, derived from all the measurements of 2 (or more) nights at each field-point. It may be mentioned that $\pm 0''.12_4$ must be regarded as the minimum *a priori* error, since there are for a field-point, on an average, 19 observations of pairs, but only 13 Talcott pairs on 2 nights. Therefore, a number of pairs is repeated on both nights, and the effect of declination errors is for a deduced latitude not divided by $\sqrt{19}$ but by $\sqrt{13}$. We must, therefore, conclude that in the present latitude determinations the so-called systematic one-night errors do not occur. Because of the scarcity of data, no reliable conclusion can be drawn concerning the occurrence of systematic effects of a longer period.

If we compute the errors of the latitudes of the field-points not from the internal agreement of individual pairs but from the agreement of the results of individual observational nights, we find for the mean error of the latitude of one field-point, on an average,

$$\pm 0''.09.$$

This quantity is considerably smaller than the one given above from the internal agreement of pairs. We attribute this to the fact that at a field-point the greater part of the programme was the same on both nights, and hence the errors of the declinations affect, to a great extent, both nights in the same way. If we take the above-mentioned mean figures, 19 observations of pairs but 13 Talcott pairs for one field-point, we obtain on an average for one field-point 6 pairs common on both nights, and besides these for each night 3.5 pairs which are observed only on one night. Thus of the error $\pm 0''.12_4$ less than $\pm 0''.09$ must be ascribed to the observations, while the remaining part is caused by the errors of the declinations. Considering all that was mentioned above, we must conclude that

1) latitude determinations are considerably affected by errors of the declinations;

2) for a deduced latitude the effect of declination errors is not smaller than that of the errors of observation;

3) in the present work the so-called systematic night errors of a short period do not occur in latitude determinations. If any systematic effects do occur at all, they are of a long period of several weeks or even months.

III. Time Determinations.

The following tables give the observed time determinations in chronological order. In the tables we denote by

1) $*$ — the number of the observed star according to "Berliner Astronomisches Jahrbuch";

2) α — the right ascension of the star in the system of Eichelberger (contains also short period nutation terms);

3) t — the observed transit moment;

4) cC — the correction for the duration of the contacts and the dead lag of the micrometer, and for the diurnal aberration;

5) iI — the correction for the inclination of the horizontal axis; i is directly given by level observations, while $I = \cos z \cdot \sec \delta$;

6) p — the correction for the parallax of the chronograph pens;

7) αA — the correction for the azimuth error;

8) r — the correction for the rate of the chronometer (the rate being always accepted as linear);

9) ΔT — the chronometer correction;

10) a_1, a_2, a_3 — the azimuth values given by each polar (azimuth) star, in chronological order;

11) a_m — the mean (or weighted mean) of obtained individual azimuth values; this a_m was used in computing αA, where $\alpha = a_m$, and $A = \sin z \cdot \sec \delta$;

12) E — the mean epoch of observation (of clock stars).

From all mean ΔT, $0.^{s}500$ was subtracted in order to convert the instants of electric contacts of the chronometer to the moments indicated by the second-hand. This subtraction was necessary since the moments of the time signals are marked according to the second-hand.

Ruhnu. May 24-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
598	37.567	50.724	+ 80	— 46	+ 123	+ 102	— 42	46.626
614	56.140	9.564	+ 73	+ 67		— 230	— 23	.575
621	53.029	7.389	+ 56	+ 22		— 1.137	— 15	.591
627	0.811	14.048	+ 76	+ 92		— 93	— 4	.569
Ng	13.985	16.780	+ 299	+ 404		.....	+ 4	.....
636	31.810	46.110	+ 54	+ 131		— 1.241	+ 14	.618
191	53.573	18.330	+ 335	— 415		.....	+ 19	.....
650	55.083	8.891	+ 62	+ 221		— 792	+ 31	.547
655	50.245	3.464	+ 73	+ 215		— 252	+ 36	.586

$a_1 = -3.240^s$, $a_2 = -3.142^s$; $a_m = -3.191^s$ 46.587

$E = 16^h\,49^m$. — 0.500

s
46.087

Ruhnu. May 31-st, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
517	1.978	7.734	+ 47	+ 30	+ 118	— 1.848	— 81	55.978
531	51.539	56.152	+ 68	— 185		— 519	— 49	.954
536	51.934	55.710	+ 84	— 182		+ 314	— 39	.929
540	16.358	21.455	+ 58	— 127		— 1.040	— 31	.925
549	42.892	46.613	+ 82	— 87		+ 196	— 14	.984
105	35.579	50.957	+ 335	+ 163		.....	— 4	.....
563	42.973	48.535	+ 50	— 23		— 1.607	+ 17	.883
571	25.366	29.088	+ 81	— 59		+ 157	+ 31	.950
580	21.058	26.258	+ 55	— 55		— 1.269	+ 46	.902
590	38.057	36.765	+ 186	— 398		.....	+ 61	.....
621	53.094	58.343	+ 56	— 241		— 1.163	+ 120	.861

$a_1 = -3.292^s$, $a_2 = -3.244^s$; $a_m = -3.268^s$ 55.930

$E = 15^h\,0^m$. — 0.500

s
55.430

Ruhnu. June 2-nd, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
549	42.877	43.920	+ 82	— 581	+ 106	+ 197	— 50	59.203
105	35.747	48.400	+ 335	— 413		.....	— 42	.....
563	42.979	45.194	+ 50	+ 90		— 1.618	— 26	.183
571	25.360	25.566	+ 81	+ 231		+ 157	— 14	.233
580	21.036	22.832	+ 55	+ 134		— 1.277	— 2	.188

✳	α	t	cC	iI	p	aA	r	ΔT
590	38.016	32.166	+ 186	+ 868	+ 106	.....	+ 10	.....
595	10.518	11.159	+ 72	+ 273		— 282	+ 20	.171
601	36.259	37.578	+ 59	+ 259		— 1.022	+ 32	.247
608	40.665	41.865	+ 60	+ 245		— 934	+ 43	.280

$a_1 = -3.270^s$, $a_2 = -3.298^s$; $a_m = -3.290^s$ 59.215

$E = 15^h\,37^m$. — 0.500

58.715

Abruka. June 10-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
555	20.817	9.811	+ 55	+ 38	+ 160	— 35	— 76	10.864
115	17.439	6.203	+ 290	+ 25		.....	— 60	.....
571	25.257	14.130	+ 81	+ 15		+ 3	— 44	.912
576	8.493	57.444	+ 49	+ 9		— 47	— 35	.913
580	21.033	9.982	+ 55	+ 23		— 35	— 28	.876
590	37.697	26.309	+ 196	+ 17		.....	— 14	.....
595	10.467	59.351	+ 72	+ 23		— 9	— 1	.869
601	36.247	25.123	+ 59	— 8		— 28	+ 13	.926
608	40.661	29.495	+ 60	+ 26		— 26	+ 27	.919
614	56.174	44.989	+ 73	+ 13		— 8	+ 34	.913
621	53.129	41.992	+ 56	+ 5		— 32	+ 46	.902
627	0.892	49.687	+ 76	— 11		— 4	+ 62	.918
Ng	13.728	1.720	+ 299	+ 51		.....	+ 74	.....

$a_1 = -0.020^s$, $a_2 = -0.079^s$, $a_3 = -0.168^s$; $a_m = -0.089^s$ 10.901

$E = 15^h\,57^m$. — 0.500

10.401

Abruka. June 11-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
571	25.237	12.276	+ 81	— 30	+ 156	+ 7	— 70	12.817
573	27.210	14.386	+ 55	+ 2		— 78	— 63	.752
580	21.031	8.210	+ 55	— 18		— 80	— 54	.762
590	37.644	24.144	+ 196	+ 43		.....	— 40	.....
595	10.461	57.546	+ 72	— 10		— 20	— 28	.745
601	36.246	23.366	+ 59	00		— 64	— 15	.744
608	40.663	27.705	+ 60	— 17		— 59	00	.818
614	56.171	43.223	+ 73	— 3		— 17	+ 6	.733
621	53.134	40.208	+ 56	— 25		— 73	+ 18	.794
627	0.891	47.860	+ 76	— 7		— 8	+ 33	.781

✳	α	t	cC	iI	p	aA	r	ΔT
Ng	13.673	59.801	+ 299	00	+ 156	.....	+ 45	.....
191	54.011	41.424	+ 335	— 75		.....	+ 68	.....
663	31.671	18.607	+ 60	— 32		— 61	+ 102	.839[1])
671	21.753	8.616	+ 76	00		— 8	+ 121	.792

$a_1 = -0.222^s$, $a_2 = -0.200^s$, $a_3 = -0.186^s$; $a_m = -0.202$ 12.777

$E = 16^h\,18^m$. — 0.500

12.277

Abruka. June 12-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
571	25.225	10.344	+ 81	— 6	+ 162	+ 9	— 36	14.671
573	27.208	12.542	+ 55	+ 5		— 102	— 32	.578
580	21.032	6.398	+ 55	— 14		— 104	— 24	.559
590	37.592	22.128	+ 196	+ 87		.....	— 12	.....
595	10.457	55.686	+ 72	+ 7		— 25	— 2	.557
601	36.248	21.464	+ 59	+ 54		— 83	+ 9	.583
608	40.664	25.834	+ 60	+ 23		— 77	+ 20	.642
614	56.171	41.348	+ 73	+ 62		— 22	+ 26	.522
621	53.138	38.377	+ 56	+ 5		— 95	+ 35	.598
173	18.934	4.740	+ 257	— 81		.....	+ 43	.....
Ng	13.622	57.686	+ 299	— 64		.....	+ 58	.....

$a_1 = -0.270^s$, $a_2 = -0.228^s$, $a_3 = -0.297^s$; $a_m = -0.265^s$ 14.589

$E = 15^h\,58^m$. — 0.500

14.089

Sõrve. June 15-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
650	55.333	56.634	+ 62	— 91	+ 26	— 185	— 48	58.935
671	21.791	22.852	+ 76	— 111		— 24	— 23	.995
681	50.817	52.300	+ 47	— 40		— 410	— 12	.906
685	32.672	33.531	+ 96	— 114		+ 190	— 4	.947
694	55.924	56.970	+ 80	— 96		+ 21	+ 4	.919
248	15.285	18.476	+ 350	+ 236		.....	+ 15	.....
703	40.962	42.460	+ 44	— 49		— 477	+ 22	.936
707	12.712	13.665	+ 81	— 129		+ 35	+ 29	59.005
713	21.497	22.890	+ 49	— 55		— 374	+ 34	58.927

$a_1 = a_m = -0.737^s$ 58.946

$E = 18^h\,18^m$. — 0.500

58.446

[1]) weight 0.5

Sõrve. June 16-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
590	37.403	35.468	+ 196	— 295	+ 100	.....	— 69	.....
608	40.658	40.376	+ 60	— 71	+ 83	— 246	— 44	0.500
614	56.153	55.727	+ 73	— 89	+ 83	— 67	— 40	.456
621	53.144	52.924	+ 56	— 63	+ 83	— 306	— 33	.483
627	0.884	0.368	+ 76	— 104	+ 83	— 28	— 23	.512
Ng	13.430	10.291	+ 299	— 286	+ 83	.....	— 16	.....
636	32.028	31.740	+ 55	— 60	+ 83	— 334	— 6	.550
191	54.265	56.160	+ 335	+ 101	+ 83	.....	— 2	.....
650	55.334	54.976	+ 62	— 77	+ 83	— 214	+ 10	.494
655	50.498	49.957	+ 73	— 64	+ 83	— 70	+ 14	.505
671	21.796	21.182	+ 76	— 80	+ 83	— 28	+ 31	.532
681	50.826	50.681	+ 47	— 38	+ 83	— 475	+ 41	.487
685	32.679	31.838	+ 96	— 86	+ 83	+ 221	+ 48	.479

$a_1 = -0.906^s$, $a_2 = -0.851^s$, $a_3 = -0.803^s$; $a_m = -0.853^s$ 0.500

$E = 17^h\,13^m$. — 0.500

0.000

Sõrve. June 17-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
571	25.153	23.184	+ 81	— 209	+ 114	+ 41	— 47	1.989
573	27.183	25.488	+ 55	— 142		— 354	— 42	2.064
580	21.010	19.366	+ 55	— 121		— 362	— 34	1.992
590	37.356	33.900	+ 196	— 412		.....	— 23	.....
621	53.142	51.314	+ 56	— 78		— 331	+ 24	2.043
627	0.878	58.758	+ 76	— 130		— 30	+ 36	2.054
Ng	13.393	8.537	+ 299	— 370		.....	+ 46	.....
643	38.782	37.024	+ 48	— 107		— 415	+ 64	2.054

$a_1 = -0.935^s$, $a_2 = -0.911^s$; $a_m = -0.923^s$. 2.033

$E = 16^h\,9^m$. — 0.500

1.533

Sõrve. June 18-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
580	21.000	17.710	+ 55	— 52	+ 121	— 371	— 77	3.614
590	37.304	32.070	+ 196	— 251		.....	— 65	.....
595	10.406	6.832	+ 72	— 50		— 85	— 54	.570
601	36.226	32.835	+ 59	— 74		— 320	— 43	.648

✳	α	t	cC	iI	p	aA	r	ΔT
608	40.646	37.170	+ 60	— 24	+ 121	— 273	— 30	.622
621	53.136	49.698	+ 56	— 68		— 340	— 15	.684
627	0.871	57.145	+ 76	— 4		— 31	— 1	.565
Ng	13.344	6.668	+ 299	— 131		.....	+ 9	.....
636	32.027	28.573	+ 55	— 23		— 370	+ 23	.648
191	54.323	53.566	+ 335	+ 74		.....	+ 29	.....
650	55.337	51.774	+ 62	— 9		— 238	+ 44	.583
663	31.721	28.210	+ 60	— 66		— 280	+ 47	.629
684	30.370	26.860	+ 56	— 20		— 347	+ 98	.602

$a_1 = -0^s.975$, $a_2 = -0^s.921$, $a_3 = -0^s.946$; $a_m = -0^s.947$ 3.616

$E = 16^h\,45^m$. — 0.500

3.116

Viidumäe. June 30-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
636	32.032	42.520	+ 55	+ 71	000	+ 596	— 83	48.873
643	38.807	49.232	+ 52	+ 69		+ 679	— 75	.850
650	55.342	6.038	+ 62	+ 93		+ 387	— 60	.822
205	18.527	25.309	+ 244	— 154		.....	— 54	.....
663	31.753	42.306	+ 60	+ 89		+ 455	— 45	.888
675	39.817	52.602	+ 181	+ 270		.....	— 27	.....
685	32.717	43.978	+ 96	+ 185		— 364	— 2	.824
694	56.017	6.986	+ 80	+ 184		— 22	+ 9	.770
707	12.875	23.892	+ 81	+ 79		— 51	+ 42	.832
713	21.703	31.994	+ 49	+ 59		+ 766	+ 50	.785
726	31.561	42.298	+ 69	+ 60		+ 221	+ 73	.840
734	2.551	16.014	+ 224	+ 313		.....	+ 85	.....
738	36.150	46.734	+ 65	+ 59		+ 332	+ 96	.864

$a_1 = +1^s.550$, $a_2 = +1^s.446$, $a_3 = +1^s.480$; $a_m = +1^s.490$ 48.835

$E = 18^h\,15^m$. — 0.500

48.335

Viidumäe. July 1-st, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
614	55.989	5.652	+ 73	+ 61	— 100	+ 128	— 57	50.232
621	53.083	2.360	+ 56	— 10	— 100	+ 522	— 49	.304
627	0.746	10.475	+ 76	+ 10	— 100	+ 64	— 38	.259
Ng	12.372	26.192	+ 300	— 72	— 100	.....	— 30	.....
191	55.210	59.426	+ 335	+ 27	— 100	.....	— 14	.....
650	55.335	4.776	+ 62	— 55	— 100	+ 369	— 1	.284
655	50.473	0.129	+ 73	— 28	— 100	+ 134	+ 4	.263

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
667	45.337	54.333	+ 47	— 43	— 100	+ 816	+ 16	.268
694	56.015	5.498	+ 80	+ 24	+ 137	— 21	+ 51	.246
707	12.879	22.422	+ 81	— 116	+ 137	— 48	+ 76	.327
								s
$a_1 = +1.415$, $a_2 = +1.425$; $a_m = +1.420$								50.273
$E = 17^h\,26^m$.								— 0.500
								s
								49.773

Viidumäe. July 2-nd, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
614	55.971	3.920	+ 73	+ 27	+ 120	+ 98	— 53	51.786
621	53.073	0.745	+ 56	+ 10	+ 120	+ 401	— 46	.787
627	0.730	8.753	+ 76	— 4	+ 120	+ 49	— 36	.772
Ng	12.305	23.464	+ 300	— 38	+ 120	.....	— 28	.....
191	55.268	59.088	+ 335	+ 67	+ 120	.....	— 13	.....
650	55.329	3.080	+ 62	+ 14	+ 120	+ 284	— 2	.771
655	50.466	58.334	+ 73	+ 19	+ 120	+ 102	+ 3	.815
663	31.744	39.425	+ 60	— 3	+ 120	+ 334	+ 9	.799
667	45.336	52.746	+ 47	— 2	+ 120	+ 625	+ 14	.786
675	39.770	49.092	+ 181	+ 96	+ 132	.....	+ 21	.....
684	30.465	38.039	+ 56	+ 4	+ 132	+ 410	+ 39	.785
694	56.014	3.984	+ 80	+ 30	+ 132	— 16	+ 46	.758
								s
$a_1 = +1.104$, $a_2 = +1.082$, $a_3 = +1.082$; $a_m = +1.090$								51.784
$E = 17^h\,27^m$.								— 0.500
								s
								51.284

Viidumäe. July 3-rd, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
621	53.058	59.463	+ 56	— 34	— 57	+ 407	— 50	53.273
627	0.710	7.460	+ 76	— 18		+ 50	— 38	.237
Ng	12.205	22.202	+ 300	— 128		.....	— 28	.....
191	55.329	57.868	+ 335	+ 22		.....	— 10	.....
650	55.320	1.834	+ 62	— 31		+ 288	+ 4	.220
655	50.454	57.114	+ 73	— 28		+ 103	+ 10	.239
663	31.737	38.136	+ 60	— 31		+ 338	+ 17	.274
667	45.333	51.458	+ 47	— 16		+ 635	+ 23	.244
671	21.799	28.424	+ 76	— 56		+ 50	+ 35	.327
								s
$a_1 = +1.126$, $a_2 = +1.088$; $a_m = +1.107$								53.259
$E = 17^h\,21^m$.								— 0.500
								s
								52.759

Tallinn. July 12-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
650	55.259	8.316	+ 62	— 8	+ 48	+ 599	— 52	46.286
655	50.366	3.770	+ 73	— 33		+ 264	— 46	.290
675	39.371	55.556	+ 181	+ 65		.....	— 26	.....
685	32.612	46.600	+ 96	— 33		— 413	— 6	.320
694	55.974	9.472	+ 80	+ 16		+ 45	+ 2	.311
248	16.275	21.988	+ 347	+ 52		.....	+ 13	.....
707	12.892	26.382	+ 81	— 15		+ 9	+ 28	.359
713	21.795	34.222	+ 49	— 29		+ 1.104	+ 33	.368
719	50.505	3.102	+ 51	— 16		+ 1.016	+ 40	.264
								46.314
								— 0.500
								s 45.814

$a_1 = +2.069^s$, $a_2 = +2.062^s$; $a_m = +2.065^s$

$E = 18^h\,20^m$.

Tallinn. July 13-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
650	55.250	6.904	+ 62	— 16	+ 66	+ 588	— 23	47.669
655	50.354	2.348	+ 73	+ 13		+ 260	— 17	.611
663	31.691	43.240	+ 60	— 21		+ 673	— 11	.684
675	39.325	54.120	+ 181	+ 36		.....	+ 2	.....
685	32.599	45.220	+ 96	— 22		— 403	+ 21	.621
694	55.965	8.180	+ 80	— 6		+ 45	+ 30	.570
								47.631
								— 0.500
								s 47.131

$a_1 = a_m = +2.028^s$

$E = 17^h\,50^m$.

Tallinn. July 15-th, 1930.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
655	50.320	59.338	+ 73	+ 128	+ 2	+ 264	— 50	50.565
663	31.670	40.337	+ 60	+ 96		+ 686	— 44	.533
675	39.233	51.009	+ 181	+ 275		.....	— 31	.....
685	32.564	42.186	+ 96	+ 145		— 411	— 13	.559
694	55.942	5.136	+ 80	+ 134		+ 45	— 5	.550
248	16.450	18.278	+ 347	— 287		.....	+ 5	.....
707	12.871	22.064	+ 81	+ 99		+ 9	+ 18	.598
713	21.798	30.052	+ 49	+ 64		+ 1.110	+ 23	.498

✳	α	t	cC	iI	p	aA	r	ΔT
719	50.508	58.846	+ 51	+ 56	+ 2	+ 1.020	+ 30	.503
726	31.644	40.523	+ 69	+ 95		+ 372	+ 40	.543
								50.544
								— 0.500
								50.044

$a_1 = +2.056^s$, $a_2 = +2.076^s$; $a_m = +2.066^s$
$E = 18^h\,29^m$.

Tallinn. May 31-st, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
595	12.130	44.214	+ 72	— 124	+ 58	+ 448	— 46	27.508
601	38.355	9.639	+ 59	— 105		+ 1.150	— 37	.591
608	42.665	14.039	+ 60	— 140		+ 1.069	— 26	.605
615	6.585	39.390	+ 88	— 217		— 256	— 21	.543
623	41.111	18.450	+ 190	— 363		.....	— 11	.....
191	4.507	24.644	+ 333	+ 305		.....	+ 24	.....
650	56.952	28.412	+ 63	— 102		+ 955	+ 37	.529
655	51.664	23.640	+ 73	— 110		+ 421	+ 42	.540
663	33.413	4.683	+ 60	— 94		+ 1.097	+ 49	.560
								27.554
								— 0.500
								27.054

$a_1 = +3.288^s$, $a_2 = +3.297^s$; $a_m = +3.292^s$
$E = 16^h\,45^m$.

Tallinn. June 7-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
555	23.393	41.985	+ 55	— 72	+ 156	+ 1.447	— 59	39.881
115	25.334	34.218	+ 289	+ 116		.....	— 44	.....
571	26.857	46.863	+ 81	— 112		+ 27	— 29	.871
573	29.657	48.268	+ 55	— 58		+ 1.430	— 23	.829
580	23.470	42.058	+ 54	— 67		+ 1.453	— 15	.831
590	35.618	0.697	+ 197	— 96		.....	00	.....
595	12.126	31.710	+ 72	— 92		+ 465	+ 10	.807
598	38.853	58.798	+ 80	— 103		+ 79	+ 15	.828
601	38.382	57.178	+ 59	— 76		+ 1.196	+ 22	.847
608	42.698	1.543	+ 60	— 57		+ 1.110	+ 36	.850
615	6.562	26.855	+ 87	— 116		— 267	+ 42	.805
623	41.018	5.956	+ 190	— 135		.....	+ 54	.....
								39.838
								— 0.500
								39.338

$a_1 = +3.407^s$, $a_2 = +3.386^s$, $a_3 = +3.471^s$; $a_m = +3.421^s$
$E = 15^h\,48^m$.

Tallinn. June 8-th, 1931.

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						s
115	25.390	32.442	+ 289	00	+ 155	.....	— 45	.....
571	26.843	44.927	+ 81	+ 25		+ 28	— 31	41.658
573	29.651	46.332	+ 55	+ 5		+ 1.437	— 25	.692
580	23.465	40.168	+ 54	+ 19		+ 1.461	— 17	.625
590	35.551	58.704	+ 197	+ 35		.....	00	.....
595	12.117	29.748	+ 72	+ 43		+ 468	+ 7	.624
598	38.844	56.802	+ 80	+ 33		+ 79	+ 12	.683
601	38.379	55.245	+ 59	+ 26		+ 1.203	+ 19	.672
608	42.694	59.602	+ 60	+ 5		+ 1.116	+ 32	.724
								s
$a_1 = +3.478$, $a_2 = +3.402$; $a_m = +3.441$								41.668
$E = 15^h\,50^m$.								— 0.500
								s
								41.168

Undva. June 12-th, 1931.

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						s
639	38.543	46.934	+ 101	+ 69	+ 98	— 48	— 67	51.456
663	33.548	41.932	+ 60	+ 35		+ 48	— 31	.406
667	47.778	56.231	+ 47	+ 45		+ 89	— 24	.292
675	37.099	45.598	+ 181	+ 137		.....	— 12	.....
681	53.339	1.710	+ 47	+ 48		+ 87	+ 3	.346
685	33.006	41.442	+ 96	+ 88		— 36	+ 14	.304
694	56.829	5.226	+ 80	+ 100		— 1	+ 25	.301
248	26.593	34.461	+ 350	— 198		.....	+ 40	.....
719	52.459	0.788	+ 47	+ 57		+ 73	+ 78	.318
								s
$a_1 = +0.174$, $a_2 = +0.133$; $a_m = +0.154$								51.346
$E = 18^h\,3^m$.								— 0.500
								s
								50.846

Undva. June 14-th, 1931.

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						s
573	29.605	34.163	+ 55	+ 27	+ 24	+ 110	— 57	55.283
580	23.423	28.110	+ 55	+ 50		+ 111	— 50	.123
590	35.287	40.160	+ 196	+ 156		.....	— 36	.....
595	12.059	16.686	+ 72	+ 94		+ 52	— 25	.156
598	38.775	43.370	+ 80	+ 112		— 2	— 20	.211
601	38.352	42.880	+ 59	+ 83		+ 90	— 13	.229

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
608	42.674	47.162	+ 60	+ 92	+ 24	+ 83	00	.253
173	27.771	31.637	+ 257	— 327		.....	+ 26	.....
627	2.170	6.631	+ 76	+ 182		+ 14	+ 31	.212
Ng	6.86	11.286	+ 299	+ 669		.....	+ 40	.....
636	34.180	38.578	+ 54	+ 91		+ 112	+ 56	.265
650	57.080	1.526	+ 62	+ 108		+ 73	+ 79	.208

$a_1 = +0.286^s$, $a_2 = +0.325^s$, $a_3 = +0.234^s$; $a_m = +0.276^s$ 55.216

$E = 16^h\ 18^m$. — 0.500

54.716

Undva. June 17-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
571	26.694	25.664	+ 81	— 149	+ 70	— 8	— 49	1.085
573	29.599	28.340	+ 55	— 90		+ 132	— 42	.134
580	23.420	22.199	+ 55	— 86		+ 134	— 33	.081
590	35.104	34.462	+ 196	— 339		.....	— 18	.....
595	12.037	10.868	+ 72	— 73		+ 62	— 5	.043
598	38.746	37.592	+ 80	— 118		— 3	+ 1	.124
601	38.352	37.085	+ 59	— 68		+ 108	+ 9	.089
608	42.676	41.366	+ 60	— 98		+ 100	+ 24	.154
615	6.484	5.354	+ 83	— 133		— 38	+ 31	.117
623	40.706	40.184	+ 190	— 311		.....	+ 46	.....
173	27.973	25.196	+ 257	+ 208		.....	+ 54	.....
627	2.167	0.926	+ 76	— 134		+ 17	+ 60	.152

$a_1 = +0.244^s$, $a_2 = +0.377^s$, $a_3 = +0.372^s$; $a_m = +0.331^s$ 1.109

$E = 16^h\ 0^m$. — 0.500

0.609

Ohtja. June 25-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
191	5.528	3.298	+ 335	+ 240	+ 38	.....	— 88	.....
650	57.108	5.520	+ 63	— 130		+ 779	— 70	50.908
655	51.807	0.698	+ 73	— 107		+ 290	— 63	.878
663	33.617	41.840	+ 60	— 116		+ 903	— 55	.947
675	36.995	50.318	+ 181	— 254		.....	— 35	.....
681	53.481	0.908	+ 47	— 78		+ 1.660	— 20	.926
694	56.953	6.145	+ 80	— 142		— 32	+ 3	.861
700	10.130	23.780	+ 188	— 427		.....	+ 27	.....
707	13.784	22.982	+ 81	— 135		— 89	+ 37	.870

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
713	24.095	41.651	+ 49	— 90	+ 38	+ 1.547	+ 45	.855
719	52.677	0.403	+ 51	— 83		+ 1.412	+ 55	.801
726	32.989	41.620	+ 69	— 140		+ 446	+ 69	.887

$a_1 = +3.022$, $a_2 = +2.937$, $a_3 = +2.903$; $a_m = +2.954$ 50.881

$E = 18^h\,21^m$. — 0.500

50.381

Ohtja. June 26-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
608	42.612	48.968	+ 60	— 68	+ 94	+ 922	— 54	52.690
615	6.344	14.010	+ 83	— 132		— 366	— 48	.703
623	40.323	52.405	+ 190	— 227		.....	— 36	.....
627	2.087	9.204	+ 76	— 60		+ 148	— 25	.648
634	41.405	47.050	+ 48	— 44		+ 1.645	— 9	.621
191	5.605	1.534	+ 335	+ 58		.....	+ 6	.....
650	57.106	3.484	+ 63	— 27		+ 811	+ 21	.660
655	51.805	58.716	+ 73	— 12		+ 298	+ 28	.608
663	33.622	39.830	+ 60	— 43		+ 949	+ 36	.696
671	22.966	29.982	+ 76	— 36		+ 148	+ 52	.650

$a_1 = +3.102$, $a_2 = +3.043$; $a_m = +3.072$ 52.660

$E = 17^h\,6^m$. — 0.500

52.160

Ohtja. June 27-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
601	38.274	42.780	+ 59	— 61	+ 84	+ 992	— 64	54.472
608	42.606	47.154	+ 60	— 35		+ 913	— 49	.479
615	6.325	12.102	+ 83	— 88		— 362	— 42	.548
623	40.262	50.286	+ 190	— 67		.....	— 27	.....
627	2.078	7.355	+ 76	— 29		+ 146	— 14	.460
634	41.403	45.201	+ 48	— 2		+ 1.628	+ 5	.439
636	34.203	38.302	+ 55	— 19		+ 1.226	+ 15	.540
191	5.692	59.820	+ 355	— 8		.....	+ 23	.....
650	57.107	1.677	+ 63	— 14		+ 804	+ 41	.452
655	51.803	56.823	+ 73	+ 23		+ 295	+ 49	.456
663	33.623	38.012	+ 60	— 20		+ 941	+ 58	.388
675	36.948	46.336	+ 181	+ 20		.....	+ 78	.....

$a_1 = +3.064$, $a_2 = +3.053$, $a_3 = +3.008$; $a_m = +3.042$ 54.470

$E = 16^h\,54^m$. — 0.500

53.970

Meiuste. June 28-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s							s
650	57.108	7.536	+ 62	+ 25	+ 32	+ 525	— 60	48.988
655	51.801	2.510	+ 73	+ 77		+ 199	— 52	48.962
663	33.631	43.910	+ 60	+ 21		+ 613	— 44	49.039
675	36.919	50.326	+ 181	+ 145		.....	— 25	.....
681	53.512	3.323	+ 47	+ 19		+ 1.109	— 10	48.992
685	33.091	44.378	+ 96	+ 75		— 452	+ 1	48.961
248	26.945	30.328	+ 350	— 71		.....	+ 26	.....
707	13.817	24.670	+ 81	+ 45		— 49	+ 46	48.992
713	24.143	33.993	+ 49	— 2		+ 1.017	+ 53	49.001
719	52.726	2.712	+ 51	+ 26		+ 928	+ 64	48.913

$a_1 = +1.946^s$, $a_2 = +1.972^s$; $a_m = +1.959^s$ 48.981

$E = 18^h\,13^m$. — 0.500

48.481

Meiuste. June 30-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
614	57.489	4.472	+ 73	00	+ 84	+ 186	— 64	52.738
623	40.080	50.071	+ 190	— 37		.....	— 51	.....
627	2.048	9.000	+ 76	+ 52		+ 102	— 40	.774
634	41.414	47.478	+ 48	— 6		+ 1.017	— 25	.818
636	34.209	40.522	+ 55	+ 34		+ 767	— 16	.763
191	5.983	6.144	+ 335	— 87		.....	— 10	.....
650	57.110	3.617	+ 62	+ 93		+ 505	+ 5	.744
655	51.798	58.524	+ 73	+ 94		+ 194	+ 10	.819
663	33.634	39.970	+ 60	+ 99		+ 590	+ 19	.812
675	36.860	46.044	+ 181	+ 250		.....	+ 36	.....
681	53.534	59.416	+ 47	+ 68		+ 1.068	+ 50	.801
685	33.091	40.337	+ 96	+ 136		— 435	+ 59	.814

$a_1 = +1.948^s$, $a_2 = +1.882^s$, $a_3 = +1.815^s$; $a_m = +1.885^s$ 52.787

$E = 17^h\,20^m$. — 0.500

52.287

Meiuste. July 1-st, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
615	6.254	11.910	+ 87	+ 32	— 34	— 228	— 67	54.554
623	40.020	48.104	+ 190	+ 110		.....	— 55	.....
627	2.037	7.246	+ 76	+ 88		+ 100	— 42	.603
634	41.414	45.776	+ 48	+ 43		+ 995	— 27	.613

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
636	34.209	38.746	+ 55	+ 98	— 34	+ 750	— 17	.611
191	6.068	4.758	+ 335	— 274		.....	— 11	.....
650	57.108	1.848	+ 62	+ 142		+ 494	+ 6	.590
655	51.793	56.787	+ 73	+ 154		+ 187	+ 12	.614
663	33.632	38.252	+ 60	+ 148		+ 576	+ 20	.610
675	36.829	43.978	+ 181	+ 483		.....	+ 38	.....
681	53.541	57.706	+ 47	+ 130		+ 1.041	+ 52	.599
685	33.087	38.450	+ 96	+ 312		— 425	+ 62	.626
								s

$a_1 = +1.903$, $a_2 = +1.875$, $a_3 = +1.743$; $a_m = +1.841$ 54.602

$E = 17^h\,20^m$. — 0.500

s
54.102

Määltse. July 20-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
734	58.224	41.935	+ 223	+ 372	+ 62	.....	— 68	.....
738	38.046	26.313	+ 65	+ 177		— 443	— 58	11.930
742	51.624	40.054	+ 59	+ 131		— 631	— 49	11.998
310	55.098	48.480	+ 260	— 400		.....	— 17	.....
765	47.591	36.104	+ 54	+ 142		— 785	— 7	12.021
767	28.252	15.574	+ 91	+ 284		+ 279	+ 3	11.959
777	7.186	55.526	+ 59	+ 146		— 629	+ 15	12.007
782	40.889	28.664	+ 77	+ 205		— 89	+ 20	11.950
788	38.410	26.896	+ 55	+ 108		— 759	+ 33	12.015
792	27.566	16.024	+ 57	+ 135		— 674	+ 41	11.921
								s

$a_1 = -1.925$, $a_2 = -1.795$; $a_m = -1.860$ 11.975

$E = 20^h\,26^m$. — 0.500

s
11.475

Määltse. July 23-rd, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
671	22.712	4.706	+ 76	— 227	+ 204	— 116	— 66	18.135
681	53.528	36.365	+ 47	— 81		— 1.051	— 50	.094
685	32.785	14.192	+ 96	— 220		+ 407	— 38	.144
694	56.801	38.619	+ 80	— 124		— 6	— 25	.053
248	28.412	16.064	+ 350	+ 291		.....	— 10	.....
707	13.759	55.425	+ 81	— 75		+ 28	+ 11	.085
713	24.273	6.946	+ 49	— 57		— 961	+ 18	.074
719	52.868	35.485	+ 51	— 47		— 881	+ 31	.025
726	33.138	15.064	+ 69	— 102		— 299	+ 46	.156

✳	α	t	cC	iI	p	aA	r	ΔT
734	58.151	36.114	+ 223	— 192	+ 204	.....	+ 60	.....
738	38.048	20.139	+ 65	— 103		— 437	+ 71	.109

$a_1 = -1.783^s$, $a_2 = -1.886^s$; $a_m = -1.835^s$ 18.097

$E = 18^h\,42^m$. — 0.500

17.597^s

Määltse. July 24-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
681	53.526	34.354	+ 47	— 54	+ 36	— 1.076	— 111	20.330
685	32.762	12.074	+ 96	— 123		+ 417	— 99	.361
694	56.787	36.506	+ 80	— 70		— 6	— 87	.328
260	1.303	46.365	+ 282	+ 123		.....	— 51	.....
738	38.054	18.074	+ 65	— 3		— 448	+ 8	.322
742	51.642	31.834	+ 59	— 24		— 638	+ 19	.356
750	53.336	33.204	+ 68	+ 3		— 354	+ 33	.346
765	47.628	27.820	+ 54	+ 10		— 794	+ 65	.437
767	28.295	7.385	+ 91	+ 38		+ 282	+ 79	.384
770	29.543	6.806	+ 155	+ 84		.....	+ 84	.....[1]
777	7.234	47.292	+ 59	+ 41		— 636	+ 93	.349
Nk	46.09	19.618	+ 304	+ 157		.....	+ 104	.....

$a_1 = -1.867^s$, $a_2 = -1.936^s$ [1]), $a_3 = -1.864^s$; $a_m = -1.880^s$ 20.357

$E = 19^h\,29^m$. — 0.500

19.857^s

Tahkuna. August 2-nd, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
694	56.604	54.676	+ 80	— 265	+ 15	— 17	— 71	2.186
248	29.414	31.479	+ 350	+ 407		.....	— 58	.....
707	13.600	11.513	+ 81	— 210		+ 12	— 40	.229
713	24.251	22.924	+ 49	— 116		— 769	— 33	.181
719	52.845	51.485	+ 51	— 162		— 703	— 24	.183
726	33.050	31.276	+ 69	— 194		— 246	— 13	.143
734	57.646	53.034	+ 223	— 657		.....	— 1	.....
738	38.015	36.302	+ 65	— 180		— 353	+ 8	.154
742	51.634	50.046	+ 59	— 190		— 501	+ 18	.187
750	53.320	51.538	+ 68	— 196		— 280	+ 30	.145
759	18.247	14.200	+ 188	— 640		.....	+ 51	.....

[1]) Weight 0.5.

✳	α	t	cC	iI	p	aA	r	ΔT
765	47.672	46.090	+ 54	— 166	+ 15	— 616	+ 58	.237
767	28.292	25.993	+ 91	— 330		+ 203	+ 68	.252

$a_1 = -1.348^s$, $a_2 = -1.488^s$, $a_3 = -1.522^s$; $a_m = -1.453^s$ 2.190

$E = 19^h\,27^m$. — 0.500

1.690

Tahkuna. August 3-rd, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
248	29.460	30.260	+ 350	+ 240	— 116	.....	— 73	.....
707	13.587	9.570	+ 81	— 128		+ 12	— 55	4.223
713	24.244	21.072	+ 49	— 77		— 837	— 47	.200
719	52.839	49.588	+ 51	— 101		— 766	— 36	.219
726	33.051	29.295	+ 69	— 83		— 269	— 24	.179
734	57.62	50.510	+ 223	— 291		.....	— 9	.....
738	38.008	34.312	+ 65	— 68		— 386	+ 1	.200
742	51.628	48.082	+ 59	— 76		— 546	+ 11	.213
750	53.315	49.554	+ 68	— 81		— 307	+ 25	.172
759	18.234	11.730	+ 188	— 276		.....	+ 48	.....
765	47.671	44.190	+ 54	— 56		— 675	+ 57	.217
767	28.289	23.924	+ 91	— 158		+ 222	+ 68	.258

$a_1 = -1.466^s$, $a_2 = -1.620^s$, $a_3 = -1.664^s$; $a_m = -1.583^s$ 4.209

$E = 19^h\,34^m$. — 0.500

3.709

Tahkuna. August 4-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
248	29.551	28.476	+ 350	+ 156	— 46	.....	— 73	.....
707	13.565	7.340	+ 81	— 38		+ 13	— 55	6.270
713	24.232	18.873	+ 49	— 32		— 865	— 47	.300
719	52.828	47.426	+ 51	— 10		— 790	— 36	.233
726	33.037	27.012	+ 69	— 32		— 278	— 24	.336
734	57.559	47.834	+ 223	— 43		.....	— 9	.....
738	37.994	32.123	+ 65	— 37		— 398	+ 1	.286
742	51.620	45.910	+ 59	— 18		— 564	+ 11	.268
750	53.307	47.315	+ 68	— 42		— 317	+ 25	.304
759	18.213	9.380	+ 188	— 64		.....	+ 48	.....
765	47.671	41.996	+ 54	— 35		— 696	+ 57	.341
767	28.286	21.708	+ 91	— 34		+ 229	+ 68	.270

$a_1 = -1.519^s$, $a_2 = -1.727^s$, $a_3 = -1.652^s$; $a_m = -1.633^s$ 6.290

$E = 19^h\,34^m$. — 0.500

5.790

Kõpu. August 16-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
310	56.228	56.801	+ 260	+ 122	+ 2	.....	— 40	.....
765	47.659	50.158	+ 54	— 34		+ 292	— 30	57.217
767	28.176	31.060	+ 91	— 92		— 101	— 20	.236
777	7.299	9.821	+ 59	— 36		+ 235	— 7	.227
Nk	45.41	50.258	+ 304	— 188		.....	+ 3	.....
792	27.773	30.273	+ 57	— 8		+ 251	+ 20	.178
795	57.951	1.623	+ 194	— 14		.....	+ 25	.....[1])
803	58.704	1.498	+ 89	+ 4		— 87	+ 37	.161
	s	s	s			s		
$a_1 = +0.641$, $a_2 = +0.733$, $a_3 = +0.701$ [1]); $a_m = +0.690$								57.204
$E = 20^h\,45^m$.								— 0.500
								s 56.704

Kõpu. August 17-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
707	13.255	14.168	+ 81	— 124	+ 40	— 10	— 93	59.193
734	56.644	58.284	+ 223	+ 78		.....	— 52	.....
738	37.857	38.427	+ 65	+ 26		+ 168	— 42	.173
742	51.522	52.086	+ 59	+ 40		+ 239	— 33	.091
750	53.187	53.816	+ 68	+ 24		+ 133	— 20	.126
310	56.273	54.780	+ 260	— 150		.....	00	.....
765	47.649	48.040	+ 54	+ 33		+ 296	+ 10	.176
767	28.161	28.976	+ 91	+ 48		— 102	+ 20	.088
777	7.310	7.766	+ 59	+ 17		+ 238	+ 32	.158
Nk	45.37	47.958	+ 304	+ 170		.....	+ 42	.....
792	27.769	28.203	+ 57	+ 24		+ 255	+ 59	.131
798	5.481	6.113	+ 82	+ 72		— 20	+ 68	.126
	s	s	s			s		
$a_1 = +0.570$, $a_2 = 0.757$, $a_3 = +0.768$; $a_m = +0.700$								59.140
$E = 20^h\,11^m$.								— 0.500
								s 58.640

Kõpu. August 18-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
719	52.700	51.534	+ 51	— 162	— 41	+ 333	— 83	1.068
734	56.566	57.170	+ 223	— 540		.....	— 57	.....[1])
738	37.840	36.737	+ 65	— 159		+ 166	— 47	.119

[1]) Weight 0.5.

✳	α	t	cC	iI	p	aA	r	ΔT
742	51.509	50.328	+ 59	— 106	— 41	+ 235	— 37	.071
750	53.172	52.050	+ 68	— 135		+ 131	— 23	.122
310	56.323	52.796	+ 260	+ 114		.....	— 2	.....
765	47.642	46.242	+ 54	— 73		+ 292	+ 8	.160
767	28.146	27.162	+ 91	— 92		— 101	+ 19	.108
777	7.287	5.896	+ 59	— 57		+ 235	+ 32	.163
Nk	45.33	46.022	+ 304	— 131		.....	+ 42	.....
792	27.768	26.319	+ 57	— 45		+ 251	+ 61	.166
798	5.479	4.315	+ 82	— 19		— 19	+ 69	.092
								1.119
								— 0.500
								0.619

$a_1 = +0.682$ [1]), $a_2 = +0.712$, $a_3 = +0.674$; $a_m = +0.690$

$E = 20^h\,13^m$.

Tallinn. August 25-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
765	47.613	22.128	+ 54	+ 56	— 76	+ 181	— 78	25.348
767	28.038	2.730	+ 91	+ 50		— 55	— 66	.364
777	7.264	41.802	+ 59	+ 94		+ 151	— 50	.284
Nk	44.83	20.294	+ 304	+ 394		.....	— 38	.....
788	38.588	13.108	+ 55	+ 77		+ 180	— 28	.272
795	57.710	32.616	+ 194	+ 238		.....	— 11	.....
803	58.670	33.301	+ 89	+ 91		— 46	+ 3	.308
Ne	23.95	56.553	+ 433	— 205		.....	+ 18	.....
813	51.720	26.304	+ 77	+ 116		+ 31	+ 32	.236
821	17.217	51.680	+ 63	+ 72		+ 119	+ 42	.317
830	57.347	31.940	+ 90	+ 99		— 49	+ 69	.274
836	30.238	4.720	+ 78	+ 90		+ 22	+ 76	.328
								25.303
								— 0.500
								24.803

$a_1 = +0.466$, $a_2 = +0.375$, $a_3 = +0.446$; $a_m = +0.430$

$E = 21^h\,15^m$.

Tallinn. August 26-th, 1931.

✳	α	t	cC	iI	p	aA	r	ΔT
738	37.716	10.406	+ 65	— 3	— 82	+ 104	— 104	27.330
765	47.600	20.149	+ 54	— 52		+ 172	— 47	.406
767	28.013	0.771	+ 91	— 33		— 52	— 36	.354
777	7.252	39.808	+ 59	— 26		+ 144	— 22	.371
Nk	44.73	18.378	+ 304	— 58		.....	— 11	.....

[1]) Weight 0.5.

✳	α	t	cC	iI	p	aA	r	ΔT
788	38.578	11.121	+ 55	— 36	— 82	+ 172	— 2	.350
797	27.762	0.360	+ 57	— 30		+ 154	+ 8	.295
795	57.662	30.937	+ 194	— 104		.....	+ 14	.....
803	58.655	31.364	+ 89	— 50		— 44	+ 26	.352
830	57.341	30.097	+ 90	— 89		— 46	+ 85	.286
836	30.235	2.800	+ 78	— 63		+ 21	+ 92	.389
								27.348
								— 0.500
								26.848

$a_1 = +0.398^s$, $a_2 = +0.427^s$; $a_m = +0.410^s$

$E = 20^h\,56^m$.

Tallinn. May 27-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
531	56.204	35.057	+ 68	+ 19	— 56	— 118	— 80	21.314
536	55.740	34.500	+ 84	+ 16		+ 22	— 71	.245
549	46.427	25.140	+ 82	00		+ 3	— 43	.301
105	52.583	33.082	+ 334	— 28		.....	— 34	.....
565	55.379	33.916	+ 109	— 10		+ 214	— 11	.217
571	28.440	7.147	+ 81	+ 7		— 5	+ 2	.264
580	25.870	4.878	+ 55	— 24		— 244	+ 18	.243
590	33.554	11.211	+ 198	00		.....	+ 34	.....
595	13.734	52.514	+ 72	— 25		— 79	+ 47	.261
601	40.464	19.360	+ 59	— 16		— 201	+ 61	.257
608	44.671	23.469	+ 60	— 27		— 188	+ 76	.337
								21.271
								— 0.500
								20.771

$a_1 = -0.565^s$, $a_2 = -0.586^s$; $a_m = -0.575^s$

$E = 15^h\,22^m$.

Tallinn. May 28-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
531	56.191	32.866	+ 68	+ 108	— 115	— 118	— 74	23.456
536	55.721	32.218	+ 84	+ 93	— 115	+ 22	— 62	.481
540	21.393	58.198	+ 58	+ 72	— 115	— 206	— 51	.437
549	46.411	22.872	+ 82	+ 72	— 115	+ 3	— 28	.525
105	52.630	30.957	+ 334	— 183	— 115	.....	— 16	.....
563	48.367	25.201	+ 50	+ 29	— 58	— 301	+ 10	.436
571	28.434	4.854	+ 81	+ 75	— 58	— 5	+ 28	.459
573	32.066	8.742	+ 55	+ 41	— 58	— 240	+ 37	.490
580	25.870	2.615	+ 55	+ 55	— 58	— 244	+ 49	.398
590	33.545	8.790	+ 198	+ 167	— 58	.....	+ 68	.....

✳	α	t	cC	iI	p	aA	r	ΔT
598	40.144	16.536	+ 80	+ 77	— 58	— 13	+ 91	.431
606	49.967	25.390	+ 170	+ 137	— 58	.....	+ 112	.....
								s
$a_1 = -0.509$, $a_2 = -0.599$, $a_3 = -0.630$; $a_m = -0.575$								23.457
$E = 15^h\ 7^m$.								— 0.500
								s
								22.957

Tallinn. May 29-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
536	55.699	30.277	+ 84	+ 113	— 88	+ 22	— 55	25.346
540	21.380	56.229	+ 58	+ 55		— 198	— 47	.371
549	46.397	20.936	+ 82	+ 112		+ 3	— 29	.381
105	52.693	29.186	+ 334	— 150		.....	— 20	.....
565	55.347	29.761	+ 109	+ 72		+ 207	+ 2	.284
571	28.423	2.954	+ 81	+ 61		— 4	+ 15	.404
573	32.062	6.900	+ 55	+ 40		— 232	+ 21	.366
580	25.865	0.756	+ 55	+ 00		— 236	+ 30	.348
590	33.513	7.074	+ 198	+ 26		.....	+ 45	.....
598	40.139	14.735	+ 80	— 4		— 13	+ 63	.366
								s
$a_1 = -0.574$, $a_2 = -0.532$; $a_m = -0.555$								25.358
$E = 15^h\ 12^m$.								— 0.500
								s
								24.858

Veski. May 31-st, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
115	33.243	1.904	+ 289	+ 77	— 77	.....	— 31	.....
571	28.393	58.440	+ 81	+ 52		00	— 23	29.920
573	32.053	2.076	+ 55	+ 18		+ 140	— 20	.861
580	25.857	56.007	+ 55	— 79		+ 142	— 15	.824
590	33.458	4.090	+ 198	— 171		.....	— 8	.....
598	40.050	10.348	+ 80	— 127		+ 5	+ 1	.820
601	40.490	10.657	+ 59	— 108		+ 117	+ 5	.837
608	44.719	14.867	+ 60	— 174		+ 108	+ 13	.922
615	7.482	37.946	+ 87	— 265		— 31	+ 16	.806
621	57.402	27.604	+ 56	— 194		+ 132	+ 22	.859
Ng	0.393	32.252	+ 299	— 987		.....	+ 36	.....
								s
$a_1 = +0.390$, $a_2 = +0.286$, $a_3 = +0.343$; $a_m = +0.340$								29.856
$E = 15^h\ 58^m$.								— 0.500
								s
								29.356

Veski. June 1-st, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
540	21.346	50.113	+ 58	— 114	— 52	— 125	— 59	31.525
549	46.341	14.934	+ 82	— 158		+ 5	— 45	.575
105	52.916	21.858	+ 334	+ 296		.....	— 37	.....
565	55.282	23.806	+ 109	— 211		+ 136	— 18	.512
571	28.376	56.952	+ 81	— 175		00	— 7	.577
573	32.048	0.742	+ 55	— 106		— 146	— 2	.557
580	25.854	54.578	+ 55	— 120		— 149	+ 6	.536
590	33.415	1.416	+ 198	— 384		.....	+ 18	.....
598	40.123	8.693	+ 80	— 199		— 5	+ 33	.573
601	40.463	9.156	+ 59	— 152		— 122	+ 40	.534
608	44.676	13.140	+ 60	+ 48		— 113	+ 52	.541
								s
$a_1 = -0.288$, $a_2 = -0.425$; $a_m = -0.355$								31.548
$E = 15^h\,30^m$.								— 0.500
								s
								31.048

Veski. June 3-rd, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
549	46.307	10.856	+ 82	— 44	— 80	+ 16	— 68	35.545
105	53.098	21.500	+ 334	— 73		.....	— 59	.....
565	55.238	19.231	+ 109	+ 90		+ 463	— 37	.462
571	28.363	52.728	+ 81	+ 145		00	— 24	.513
573	32.045	56.959	+ 55	+ 86		— 496	— 18	.539
580	25.854	50.836	+ 55	+ 100		— 516	— 9	.468
590	33.333	55.318	+ 198	+ 410		.....	+ 6	.....
598	40.113	4.346	+ 80	+ 225		— 17	+ 24	.535
601	40.467	5.210	+ 59	+ 146		— 416	+ 32	.516
608	44.682	9.312	+ 60	+ 184		— 383	+ 46	.543
615	7.478	31.462	+ 87	+ 256		+ 111	+ 53	.589
623	38.191	0.002	+ 190	+ 708		.....	+ 67	.....
								s
$a_1 = -1.143$, $a_2 = -1.260$, $a_3 = -1.211$; $a_m = -1.205$								35.523
$E = 15^h\,42^m$.								— 0.500
								s
								35.023

Kloostri. June 11-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
580	25.847	58.491	+ 55	— 18	— 91	— 709	— 45	28.164
587	41.106	12.749	+ 91	— 84		+ 227	— 34	.248

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
595	13.679	45.737	+ 72	— 13	— 91	— 216	— 22	.212
598	40.070	11.874	+ 80	— 44		— 25	— 17	.293
601	40.476	12.899	+ 59	— 37		— 580	— 11	.237
608	44.699	17.025	+ 60	— 32		— 531	+ 1	.267
615	7.443	39.126	+ 87	— 48		+ 149	+ 7	.213
623	38.021	7.430	+ 190	— 166		.....	+ 19	.....
627	3.452	35.383	+ 76	00		— 121	+ 30	.175
Ng	0.070	26.945	+ 299	— 181		.....	+ 40	.....
191	15.821	53.046	+ 334	+ 18		.....	+ 60	.....
663	35.440	7.772	+ 60	— 88		— 545	+ 89	.243
	s	s		s		s		

$a_1 = -1.647$, $a_2 = -1.692$, $a_3 = -1.635$; $a_m = -1.660$ 28.228

$E = 16^h\,16^m$. — 0.500

s
27.728

Kloostri. June 12-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
571	28.260	58.263	+ 81	— 291	— 27	00	— 47	30.281
573	32.023	2.694	+ 55	— 182		— 685	— 41	.209
580	25.837	56.616	+ 55	— 190		— 709	— 34	.126
590	32.970	0.589	+ 198	— 596		.....	— 21	.....
598	40.057	10.161	+ 80	— 303		— 25	— 6	.177
601	40.469	11.019	+ 59	— 205		— 581	+ 1	.203
608	44.693	15.154	+ 60	— 222		— 531	+ 13	.246
615	7.433	37.336	+ 87	— 328		+ 149	+ 19	.197
621	57.450	28.042	+ 56	— 219		— 644	+ 29	.213
173	36.668	10.598	+ 255	+ 366		.....	+ 37	.....
Ng	0.042	25.862	+ 299	— 1.042		.....	+ 52	.....
636	36.358	6.922	+ 55	— 172		— 697	+ 65	.212
	s	s		s		s		

$a_1 = -1.686$, $a_2 = -1.651$, $a_3 = -1.649$; $a_m = -1.660$ 30.207

$E = 16^h\,6^m$. — 0.500

s
29.707

Kloostri. June 13-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
571	28.242	56.306	+ 81	— 284	— 38	00	— 37	32.214
573	32.013	0.688	+ 55	— 171		— 685	— 31	.195
580	25.829	54.582	+ 55	— 178		— 709	— 24	.141
590	32.924	58.437	+ 198	— 488		.....	— 12	.....
595	13.657	41.900	+ 72	— 198		— 216	— 2	.139

✳	α	t	cC	iI	p	aA	r	ΔT
	s							
598	40.044	8.080	+ 80	— 232	— 38	— 25	+ 3	.176
601	40.463	8.992	+ 59	— 157		— 581	+ 9	.179
608	44.688	13.124	+ 60	— 138		— 531	+ 21	.190
615	7.422	35.228	+ 87	— 246		+ 149	+ 26	.216
621	57.446	25.991	+ 56	— 124		— 644	+ 36	.169
173	36.700	8.634	+ 255	+ 314		.....	+ 44	.....
	s							
$a_1 = -1.701$,		$a_2 = -1.622$;		$a_m = -1.660$				32.180
$E = 15^h\,58^m$.								— 0.500
								s 31.680

Keila. June 17-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
608	44.672	9.414	+ 60	+ 48	— 58	— 1.766	— 76	37.050
615	7.368	29.885	+ 87	+ 81		+ 0.472	— 69	36.970
627	3.421	26.774	+ 76	+ 88		— 0.422	— 43	37.006
Ng	59.749	6.420	+ 299	+ 362		.....	— 31	.....
636	36.375	1.650	+ 55	+ 15		— 2.321	— 15	37.049
191	16.092	58.106	+ 334	— 118		.....	— 8	.....
650	58.868	23.386	+ 62	+ 42		— 1.574	+ 9	37.001
655	53.121	16.766	+ 73	+ 21		— 0.680	+ 17	36.982
663	35.478	0.410	+ 60	— 54		— 1.810	+ 25	36.905
685	33.441	55.312	+ 96	— 28		+ 1.114	+ 71	36.934
694	57.880	20.944	+ 80	+ 33		— 0.104	+ 83	36.902
	s	s						s
$a_1 = -5.544$,		$a_2 = -5.429$;		$a_m = -5.486$				36.978
$E = 17^h\,18^m$								— 0.500
								s 36.478

Keila. June 19-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
587	40.955	58.938	+ 91	— 159	— 21	+ 1.016	— 51	41.141
595	13.593	33.528	+ 72	— 109		— 1.009	— 38	.170
598	39.965	59.036	+ 80	— 127		— 0.144	— 32	.173
601	40.443	1.988	+ 59	— 108		— 2.640	— 24	.189
608	44.671	6.005	+ 60	— 65		— 2.442	— 9	.143
615	7.346	25.522	+ 87	— 102		+ 0.652	— 2	.210
623	37.696	45.485	+ 190	— 88		.....	+ 11	.....
627	3.415	22.793	+ 76	— 67		— 0.584	+ 25	.193
Ng	59.604	56.527	+ 299	— 155		.....	+ 37	.....
636	36.391	58.368	+ 55	— 47		— 3.208	+ 53	.191

✳	α	t	cC	il	p	aA	r	ΔT
191	16.266	1.371	+ 334	+ 53	— 21	.....	+ 61	.....
650	58.822	19.865	+ 62	— 74		— 2.177	+ 79	.148

$a_1 = -7.530^s$, $a_2 = -7.643^s$, $a_3 = -7.575^s$; $a_m = -7.585^s$ 41.173

$E = 16^h\,25^m$. — 0.500

40.673^s

Keila. June 22-nd, 1932.

✳	α	t	cC	il	p	aA	r	ΔT
	s	s				s		s
595	13.563	26.692	+ 72	+ 99	— 44	— 1.027	— 53	47.824
598	39.929	52.098	+ 80	+ 81		— 0.147	— 47	.908
601	40.431	55.225	+ 59	+ 68		— 2.688	— 39	.850
608	44.662	59.214	+ 60	+ 68		— 2.487	— 25	.876
615	7.311	18.622	+ 87	+ 97		+ 0.664	— 18	.903
623	37.577	38.184	+ 190	+ 220		.....	— 4	.....
627	3.397	15.993	+ 76	+ 122		— 0.595	+ 10	.835
Ng	59.410	48.882	+ 299	+ 350		.....	+ 21	..,,,
636	36.400	51.667	+ 55	+ 86		— 3.268	+ 38	.866
191	16.459	55.822	+ 334	— 274		.....	+ 45	.....
650	58.891	13.058	+ 62	+ 117		— 2.217	+ 63	.852
655	53.132	5.990	+ 73	+ 120		— 0.958	+ 72	.879

$a_1 = -7.679^s$, $a_2 = -7.747^s$, $a_3 = -7.743^s$; $a_m = -7.725^s$ 47.866

$E = 16^h\,37^m$. — 0.500

47.366^s

Pakri. July 6-th, 1932.

✳	α	t	cC	il	p	aA	r	ΔT
	s	s						s
Ng	58.182	44.446	+ 299	+ 65	— 8	.....	— 95	.....
636	36.355	23.540	+ 54	+ 16		— 78	— 77	12.908
191	17.505	4.843	+ 334	— 23		.....	— 67	.....
650	58.842	46.004	+ 62	+ 34		— 53	— 45	.848
655	53.056	40.161	+ 73	+ 17		— 24	— 36	.873
663	35.496	22.604	+ 60	+ 3		— 62	— 25	.924
671	24.082	11.110	+ 76	— 7		— 15	— 2	.928
681	56.164	43.294	+ 48	+ 9		— 108	+ 18	.911
684	34.614	21.725	+ 56	— 12		— 74	+ 31	.896
694	57.940	44.941	+ 80	+ 15		— 4	+ 46	.870
700	6.731	53.236	+ 189	+ 25		.....	+ 62	.....
707	14.838	1.652	+ 81	+ 82		— 1	+ 89	.943

$a_1 = -0.206^s$, $a_2 = -0.131^s$, $a_3 = -0.228^s$; $a_m = -0.185^s$ 12.900

$E = 17^h\,54^m$. — 0.500

12.400^s

Pakri. July 7-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
Ng	58.070	41.318	+ 299	+ 310	— 47	.....	— 93	.....
636	36.345	20.912	+ 54	+ 85		— 106	— 77	15.524
191	17.593	2.722	+ 334	— 221		.....	— 66	.....
650	58.831	43.330	+ 62	+ 119		— 72	— 45	.484
655	53.042	37.405	+ 73	+ 128		— 32	— 36	.551
663	35.487	19.961	+ 60	+ 101		— 83	— 25	.520
671	24.069	8.352	+ 76	+ 107		— 20	— 2	.603
681	56.163	40.718	+ 48	+ 62		— 146	+ 18	.510
684	34.609	19.081	+ 56	+ 65		— 100	+ 31	.523
694	57.929	42.244	+ 80	+ 136		— 5	+ 46	.475
700	6.695	50.275	+ 189	+ 252		.....	+ 61	.....
707	14.832	58.982	+ 81	+ 128		— 1	+ 89	.600

$a_1 = -0.270^s$, $a_2 = -0.183^s$, $a_3 = -0.302^s$; $a_m = -0.250^s$ 15.532

$E = 17^h\,54^m$. — 0.500

15.032

Pakri. July 8-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
636	36.337	18.470	+ 55	— 6	— 44	— 68	— 83	18.013
191	17.658	0.008	+ 334	— 12		.....	— 74	.....
650	58.824	40.941	+ 62	— 6		— 46	— 54	17.971
655	58.396	40.524	+ 73	+ 17		— 20	— 45	17.891
663	35.482	17.546	+ 60	— 8		— 53	— 35	18.016
675	33.574	15.294	+ 181	— 24		.....	— 12	.....
681	56.162	38.308	+ 48	— 33		— 93	+ 6	17.970
685	33.401	15.412	+ 96	— 84		+ 32	+ 19	17.970
694	57.928	39.932	+ 80	— 72		— 3	+ 33	18.002
700	6.685	48.390	+ 189	— 134		.....	+ 48	.....
707	14.834	56.792	+ 81	— 111		00	+ 74	18.042
713	26.735	8.850	+ 49	— 37		— 85	+ 83	17.919

$a_1 = -0.150^s$, $a_2 = -0.152^s$, $a_3 = -0.182^s$; $a_m = -0.160^s$ 17.977

$E = 18^h\,1^m$. — 0.500

17.477

Osmussaare. July 11-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
707	14.821	31.354	+ 81	+ 97	— 107	00	— 65	43.461
713	26.799	43.741	+ 49	+ 49		— 341	— 56	.464

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
719	55.215	12.161	+ 51	+ 46	— 107	— 313	— 43	.420
726	34.678	51.336	+ 70	+ 108		— 112	— 27	.410
738	39.794	56.508	+ 65	+ 69		— 160	+ 2	.415
742	53.655	10.454	+ 59	+ 83		— 224	+ 14	.376
759	16.214	31.580	+ 189	+ 54		.....	+ 56	.....
765	49.881	46.677	+ 54	+ 56		— 288	+ 69	.420
[1])	38.931	53.644	+ 267	+ 185		.....	+ 88	.....
783	57.167	13.511	+ 87	+ 74		+ 53	+ 106	.443
								s
								43.426
								— 0.500
								s
								42.926

$a_1 = -0.695^s$, $a_2 = -0.594^s$; $a_m = -0.640^s$

$E = 19^h\,34^m$.

Osmussaare. July 12-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
650	58.777	13.220	+ 62	+ 92	— 86	— 184	— 83	45.756
655	52.973	7.296	+ 73	+ 122		— 79	— 73	.720
663	35.445	49.866	+ 60	+ 73		— 211	— 62	.805
675	33.412	46.454	+ 181	+ 194		.....	— 38	.....
681	56.151	10.803	+ 45	+ 1		— 371	— 18	.777
685	33.348	47.400	+ 96	+ 2		+ 130	— 4	.810
694	57.893	12.193	+ 80	— 44		— 12	+ 12	.750
248	39.076	55.188	+ 348	+ 3		.....	+ 30	.....
707	14.819	29.018	+ 81	— 49		00	+ 56	.799
719	55.222	9.840	+ 51	— 15		— 314	+ 80	.666
723	35.719	49.583	+ 109	— 81		+ 240	+ 92	.862
								s
								45.772
								— 0.500
								s
								45.272

$a_1 = -0.690^s$, $a_2 = -0.595^s$; $a_m = -0.640^s$

$E = 18^h\,16^m$.

Osmussaare. July 13-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
191	18.085	31.724	+ 334	+ 159	— 6	.....	— 111	.....
650	58.767	10.978	+ 62	— 120		— 189	— 91	48.133
671	24.004	35.961	+ 76	— 99		— 51	— 51	.174
681	56.153	8.456	+ 48	— 76		— 383	— 33	.147
685	33.336	45.175	+ 96	— 185		+ 134	— 20	.142
694	57.887	9.847	+ 80	— 140		— 12	— 6	.124

[1]) 75 Draconis. (Almanaque Nautico.)

✳	α	t	cC	iI	p	aA	r	ΔT
700	6.550	17.454	+ 189	— 285	— 6	.....	+ 8	.....
707	14.818	26.671	+ 81	— 144		00	+ 33	.183
713	26.750	38.991	+ 49	— 93		— 351	+ 42	.118
719	55.229	7.451	+ 51	— 113		— 324	+ 55	.115
726	34.687	46.696	+ 70	— 152		— 116	+ 70	.125
								48.140
								— 0.500
								47.640

$a_1 = -0.608^s$, $a_2 = -0.721^s$; $a_m = -0.660^s$

$E = 18^h\,27^m$.

Vormsi. July 29-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
742	53.732	56.808	+ 59	— 17	— 60	+ 1.456	— 112	55.598
750	55.068	58.824	+ 68	— 43	— 60	+ 0.815	— 93	.557
310	3.777	55.652	+ 258	+ 34	— 60	.....	— 65	.....
765	50.064	52.778	+ 54	— 35	— 60	+ 1.804	— 51	.574
788	41.018	43.731	+ 55	— 39	— 60	+ 1.748	+ 4	.546
795	56.865	7.808	+ 194	— 197	— 27	.....	+ 24	.....
803	0.255	5.257	+ 90	— 103	— 27	— 0.518	+ 40	.516
[1])	27.236	30.356	+ 60	— 72	— 27	+ 1.359	+ 54	.506[1])
813	53.637	57.844	+ 76	— 71	— 27	+ 0.115	+ 72	.628
821	19.470	22.718	+ 63	— 89	— 27	+ 1.104	+ 84	.617
								55.572
								— 0.500
								55.072

$a_1 = +4.250^s$, $a_2 = +4.249^s$; $a_m = +4.250^s$

$E = 20^h\,52^m$.

Vormsi. July 30-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
701	3.254	5.230	+ 100	— 16	+ 164	— 63	— 84	57.923
260	11.543	12.411	+ 280	— 64		.....	— 63	.....
713	26.764	28.532	+ 49	+ 32		+ 124	— 54	.917
719	55.244	57.074	+ 51	+ 62		+ 113	— 41	.821
726	34.639	36.350	+ 70	+ 100		+ 40	— 25	.940
734	53.809	55.312	+ 224	+ 499		.....	— 13	.....
738	39.833	41.496	+ 65	+ 126		+ 57	+ 3	.922
742	53.737	55.424	+ 59	+ 151		+ 81	+ 16	.842
750	55.070	56.700	+ 68	+ 155		+ 45	+ 32	.906
759	16.139	17.640	+ 189	+ 527		.....	+ 58	.....

[1]) München, Neue Annalen IV, B. D. 45°3549. Weight 0.5.

✳	α	t	cC	iI	p	aA	r	ΔT
765	50.073	51.667	+ 54	+ 128	+ 164	+ 100	+ 71	.889
767	29.444	31.054	+ 91	+ 226		— 33	+ 84	.858
								s 57.891

$a_1 = +0.326^s$, $a_2 = +0.150^s$, $a_3 = +0.227^s$; $a_m = +0.235^s$

$E = 19^h\,32^m$. — 0.500

s 57.391

Vormsi. July 31-st, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
694	57.620	57.102	+ 80	+ 174	— 2	+ 1	— 118	0.383
248	40.685	39.570	+ 348	— 494		.....	— 97	.....
707	14.623	13.882	+ 81	+ 249		— 1	— 70	.484
713	26.762	26.126	+ 49	+ 150		+ 61	— 59	.437
726	34.629	33.873	+ 70	+ 213		+ 19	— 25	.481
734	53.742	52.368	+ 224	+ 748		.....	— 6	.....
738	39.827	39.042	+ 65	+ 197		+ 28	+ 9	.488
742	53.736	52.969	+ 59	+ 219		+ 39	+ 24	.428
750	55.067	54.292	+ 68	+ 209		+ 22	+ 44	.434
759	16.106	14.944	+ 189	+ 526		.....	+ 75	.....
765	50.078	49.316	+ 54	+ 138		+ 49	+ 90	.433
767	29.441	28.580	+ 91	+ 229		— 16	+ 106	.453
								s 0.447

$a_1 = +0.256^s$, $a_2 = +0.030^s$, $a_3 = +0.057^s$; $a_m = +0.115^s$

$E = 19^h\,29^m$. — 0.500

s 59.947

Tallinn. August 8-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
821	19.583	25.453	+ 63	— 72	— 24	— 4	— 90	54.257
372	21.737	27.250	+ 217	+ 144		.....	— 73	.....
830	59.249	5.110	+ 90	— 87		+ 2	— 51	.209
836	32.402	38.190	+ 78	— 95		— 1	— 40	.294
844	55.776	1.576	+ 68	— 58		— 3	— 14	.231
847	41.395	47.171	+ 79	— 83		— 1	— 2	.255
875	2.928	8.712	+ 76	— 87		— 1	+ 87	.167
882	51.345	57.027	+ 88	— 130		+ 1	+ 110	.273
893	35.780	41.444	+ 185	— 245		.....	+ 142	.....
								s 54.241

$a_1 = -0.008^s$, $a_2 = -0.023^s$; $a_m = -0.015^s$

$E = 22^h\,28^m$. — 0.500

s 53.741

Tallinn. August 12-th, 1932.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
701	2.841	56.240	+ 100	+ 132	— 43	+ 11	— 191	6.592
734	52.983	45.972	+ 224	+ 114		.....	— 88	.....
738	39.721	33.226	+ 65	+ 60		— 11	— 69	.493
742	53.666	47.178	+ 59	+ 6		— 16	— 52	.534
750	54.984	48.495	+ 68	+ 31		— 9	— 29	.471
310	4.439	57.664	+ 258	— 22		.....	+ 6	.....
765	50.081	43.540	+ 54	00		— 20	+ 25	.525
767	29.368	22.768	+ 91	— 42		+ 6	+ 43	.545
777	9.600	3.027	+ 59	— 17		— 16	+ 65	.525
Nk	40.952	34.190	+ 304	— 132		.....	+ 83	.....
788	41.096	34.528	+ 55	— 13		— 19	+ 97	.491
792	30.216	23.634	+ 57	— 26		— 17	+ 113	.498
								s
$a_1 = -0.142$, $a_2 = +0.022$, $a_3 = -0.013$; $a_m = -0.045$								6.519
$E = 20^h\ 8^m$.								— 0.500
								s
								6.019

Tallinn. May 29-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
531	58.382	0.700	+ 68	+ 99	— 23	— 41	— 18	57.597
536	57.422	59.745	+ 84	+ 89		+ 8	— 17	.536
550	58.498	0.453	+ 152	+ 72		.....	— 14	.....
615	8.331	10.679	+ 87	+ 28		+ 16	— 00	.544
623	35.272	37.450	+ 190	— 20		.....	+ 1	.....
634	46.334	48.895	+ 48	— 4		— 111	+ 5	.524
636	38.402	40.897	+ 55	— 26		— 85	+ 6	.578
643	45.569	48.127	+ 52	— 21		— 96	+ 7	.523
650	0.464	2.994	+ 62	— 34		— 58	+ 9	.514
655	54.262	56.832	+ 73	— 71		— 26	+ 10	.467
								s
$a_1 = -0.308$, $a_2 = -0.111$; $a_m = -0.200$								57.535
$E = 16^h\ 26^m$.								— 0.500
								s
								57.035

Tallinn. May 31-st, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
536	57.391	58.992	+ 84	+ 4	— 20	+ 21	— 8	58.318
540	23.799	25.668	+ 58	+ 16		— 202	— 6	.285
549	47.988	49.559	+ 82	+ 12		+ 3	— 4	.356

✳	α	t	cC	iI	p	aA	r	ΔT
105	1.847	5.040	+ 333	— 99	— 20	.....	— 3	.....
563	51.016	52.994	+ 50	+ 15		— 296	— 1	.274
571	29.821	31.400	+ 81	+ 26		— 5	+ 1	.338
573	34.419	36.220	+ 55	+ 11		— 236	+ 2	.387
580	28.225	30.100	+ 54	+ 35		— 240	+ 3	.293
590	30.893	31.448	+ 197	— 124		.....	+ 5	.....
595	15.262	17.006	+ 72	— 39		— 76	+ 6	.313
598	41.334	42.987	+ 80	— 66		— 13	+ 7	.359
606	47.904	48.852	+ 169	— 68		.....	+ 9	.....

$a_1 = -0.^s487$, $a_2 = -0.^s677$, $a_3 = -0.^s541$; $a_m = -0.^s565$ 58.325

$E = 15^h\,17^m$. — 0.500

57.825

Tallinn. June 1-st, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
540	23.787	25.344	+ 59	+ 10	— 16	— 210	— 12	58.612
549	47.973	49.280	+ 82	+ 14		+ 3	— 8	.618
105	1.909	4.952	+ 333	— 46		.....	— 1	.....
563	51.012	52.718	+ 54	+ 1		— 308	— 1	.564
571	29.813	31.137	+ 81	— 4		— 5	+ 2	.618
573	34.415	35.982	+ 55	+ 1		— 245	+ 3	.635
580	28.221	29.842	+ 55	+ 2		— 250	+ 5	.583
590	30.873	31.082	+ 197	+ 14		.....	+ 8	.....
595	15.259	16.670	+ 72	— 15		— 79	+ 11	.616

$a_1 = -0.^s543$, $a_2 = -0.^s633$; $a_m = -0.^s588$ 58.607

$E = 15^h\,18^m$. — 0.500

58.107

Nabala. June 6-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
555	28.357	57.234	+ 55	— 38	— 56	+ 37	— 7	31.132
115	42.211	10.514	+ 289	+ 39		.....	— 6	.....
571	29.743	58.509	+ 81	— 11		+ 00	— 4	.224
573	34.390	3.243	+ 55	— 11		+ 36	— 3	.125
580	28.201	57.136	+ 54	— 54		+ 37	— 2	.087
590	30.556	59.466	+ 197	— 157		.....	— 0	.....
595	15.228	44.118	+ 72	— 85		+ 12	+ 1	.166
598	41.295	10.216	+ 80	— 93		+ 1	+ 2	.145
601	42.531	11.422	+ 58	— 79		+ 31	+ 3	.152
608	46.656	15.558	+ 60	— 66		+ 28	+ 4	.128

✳	a	t	cC	iI	p	aA	r	ΔT
615	8.309	37.340	+ 87	— 149	— 56	— 8	+ 5	.090
623	35.169	4.385	+ 190	— 274		.....	+ 7	.....
	s	s		s		s		
$a_1 = +0.092$,		$a_2 = +0.029$,		$a_3 = +0.143$;		$a_m = +0.088$		31.139
$E = 15^h\,48^m$.								— 0.500
								s 30.639

Nabala. June 7-th, 1933.

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						s
555	28.355	56.558	+ 54	— 24	00	+ 23	— 4	31.748
115	42.305	10.014	+ 289	+ 19		.....	— 3	.....
571	29.731	57.902	+ 81	— 19		+ 00	— 2	.769
573	34.391	2.605	+ 55	— 15		+ 22	— 2	.726
580	28.203	56.455	+ 54	— 41		+ 23	— 1	.713
590	30.616	58.721	+ 196	— 66		.....	0	.....
595	15.224	43.432	+ 72	— 16		+ 7	0	.729
598	41.288	9.522	+ 80	— 28		+ 1	+ 1	.712
601	42.534	10.760	+ 58	— 26		+ 19	+ 1	.722
615	8.304	36.596	+ 87	— 2		— 5	+ 2	.686
623	35.136	3.499	+ 190	— 126		.....	+ 3	.....
627	4.673	32.902	+ 76	+ 4		+ 4	+ 4	.683
	s	s		s		s		
$a_1 = +0.086$,		$a_2 = -0.020$,		$a_3 = +0.097$;		$a_m = +0.054$		31.721
$E = 15^h\,51^m$.								— 0.500
								s 31.221

Nabala. June 8-th, 1933.

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						s
555	28.354	55.801	+ 54	— 4	+ 16	+ 43	— 9	32.453
115	42.404	9.062	+ 289	— 26		.....	— 6	.....
571	29.720	57.176	+ 81	+ 7		+ 00	— 4	.444
573	34.391	1.870	+ 55	+ 2		+ 43	— 3	.408
580	28.206	55.688	+ 54	— 22		+ 43	— 2	.429
590	30.565	57.986	+ 196	— 35		.....	0	.....
595	15.221	42.708	+ 72	— 7		+ 14	+ 2	.416
598	41.282	8.780	+ 80	— 18		+ 2	+ 3	.419
601	42.538	10.039	+ 59	— 12		+ 36	+ 5	.415
606	47.710	15.198	+ 170	— 30		.....	+ 4	.....
614	0.542	28.062	+ 71	— 27		+ 12	+ 8	.400
	s	s		s		s		
$a_1 = +0.199$,		$a_2 = +0.025$,		$a_3 = +0.066$;		$a_m = +0.103$		32.423
$E = 15^h\,44^m$.								— 0.500
								s 31.923

Jõelähtme. June 14-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
587	42.011	1.081	+ 91	+ 40	+14	+ 414	— 9	40.380
595	15.190	35.176	+ 72	+ 92		— 443	— 6	.285
598	41.240	0.771	+ 80	+ 70		— 78	— 5	.388
601	42.537	3.274	+ 59	+ 37		— 1.135	— 3	.291
608	46.667	7.251	+ 60	+ 5		— 1.055	0	.392
615	8.267	27.520	+ 88	+ 37		+ 265	+ 2	.341
623	34.942	49.778	+ 190	— 42		.....	+ 4	.....
627	4.678	24.536	+ 76	+ 4		— 262	+ 7	.303
Ng	52.938	3.215	+ 300	— 168		.....	+ 10	.....
636	38.531	59.535	+ 54	— 33		— 1.375	+ 13	.323
191	26.975	57.442	+ 333	+ 150		.....	+ 15	.....

$a_1 = -3.222^s$, $a_2 = -3.263^s$, $a_3 = -3.218^s$; $a_m = -3.235^s$ 40.338

$E = 16^h\,18^m$. — 0.500

39.838

Jõelähtme, June 15-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
580	28.184	48.138	+ 54	+ 141	— 49	— 1.373	— 19	41.292
587	41.989	59.902	+ 91	+ 227		+ 412	— 14	.420
595	15.177	34.002	+ 72	+ 181		— 441	— 9	.421
598	41.225	59.624	+ 80	+ 201		— 77	— 6	.452
601	42.528	2.171	+ 59	+ 144		— 1.131	— 3	.337
608	46.720	6.190	+ 60	+ 100		— 1.050	+ 2	.467
615	8.253	26.418	+ 87	+ 127		+ 264	+ 5	.401
623	34.811	48.437	+ 190	+ 216		.....	+ 11	.....
627	4.670	23.454	+ 76	+ 77		— 261	+ 16	.357
Ng	52.902	1.909	+ 300	+ 90		.....	+ 20	.....
636	38.530	58.502	+ 54	+ 34		— 1.369	+ 27	.331
191	27.003	56.601	+ 333	— 31		.....	+ 30	.....

$a_1 = -3.196^s$, $a_2 = -3.268^s$, $a_3 = -3.203^s$; $a_m = -3.222^s$ 41.387

$E = 16^h\,13^m$. — 0.500

40.887

Jõelähtme. June 16-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s				s		s
573	34.353	53.482	+ 54	— 61	— 65	— 1.384	— 78	42.405
580	28.172	47.317	+ 54	— 81		— 1.421	— 74	.432

✳	α	t	cC	iI	p	aA	r	ΔT
590	30.200	42.806	+ 197	— 237	— 65	.....	— 68	.....
681	58.599	18.185	+ 47	— 47		— 1.941	+ 8	.412
685	33.818	50.770	+ 96	— 147		+ 664	+ 12	.488
694	58.842	16.586	+ 80	— 83		— 77	+ 18	.383
248	49.460	18.407	+ 364	+ 256		.....	+ 25	.....
707	15.665	33.304	+ 81	— 112		— 17	+ 33	.441
713	28.963	48.374	+ 49	— 76		— 1.788	+ 37	.432
719	57.311	16.582	+ 51	— 64		— 1.641	+ 41	.407
								42.425
								— 0.500
								41.925

$a_1 = -3.356^s$, $a_2 = -3.277^s$; $a_m = -3.316^s$

$E = 17^h\,50^m$.

Keri. June 19-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
621	59.559	38.154	+ 56	— 182	— 33	— 153	— 30	21.747
627	4.639	43.160	+ 76	— 284		— 34	— 22	.776
Ng	52.680	30.534	+ 300	— 1.015		.....	— 16	.....
636	38.532	17.150	+ 54	— 264		— 165	— 8	.798
191	27.181	5.572	+ 333	+ 812		.....	— 5	.....
650	0.620	39.225	+ 62	— 300		— 114	+ 4	.776
655	54.416	33.054	+ 73	— 327		— 52	+ 8	.693
663	37.353	15.957	+ 60	— 289		— 131	+ 12	.777
667	53.072	31.837	+ 47	— 187		— 229	+ 16	.621
671	25.251	3.758	+ 76	— 352		— 34	+ 21	.815
								21.750 [1]
								— 0.500
								21.250 [1]

$a_1 = -0.411^s$, $a_2 = -0.355^s$, $a_m = -0.383^s$.

$E = 17^h\,19^m$.

Keri, June 20-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
595	15.104	52.348	+ 72	+ 1	— 72	— 70	— 35	22.860
598	41.143	18.342	+ 80	+ 11		— 16	— 31	.829
601	42.489	19.892	+ 59	— 5		— 174	— 26	.815
608	46.625	23.962	+ 60	— 5		— 161	— 17	.858
615	8.180	45.302	+ 88	— 44		+ 35	— 12	.883
623	34.698	11.100	+ 190	— 31		.....	— 3	.....
627	4.631	41.870	+ 76	— 41		— 43	+ 6	.835
Ng	52.598	28.105	+ 300	— 155		.....	+ 14	.....

[1]) Weight 0.5 given to whole time determination; strong wind.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
636	38.533	15.952	+ 54	— 47		— 210	+ 25	.831
191	27.251	5.464	+ 333	+ 153		.....	+ 30	.....
650	0.623	37.997	+ 62	— 74		— 144	+ 42	.812
655	54.418	31.727	+ 73	— 72		— 67	+ 47	.782
								s
$a_1 = -0.477$, $a_2 = -0.557$, $a_3 = -0.423$; $a_m = -0.486$								22.834
$E = 16^h\,37^m$.								— 0.500
								s
								22.334

Keri. June 21-st, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
595	15.093	50.884	+ 72	+ 30	— 14	— 67	— 28	24.216
598	41.128	16.850	+ 80	+ 38		— 15	— 24	.213
601	42.484	18.429	+ 59	— 3		— 165	— 20	.198
608	46.621	22.560	+ 60	— 10		— 154	— 13	.192
615	8.166	43.856	+ 87	— 28		+ 33	— 9	.241
623	34.648	9.678	+ 190	— 31		.....	— 2	.....
627	4.624	40.442	+ 76	— 48		— 41	+ 5	.204
Ng	52.517	26.686	+ 300	— 99		.....	+ 11	.....
636	38.537	14.544	+ 54	— 61		— 200	+ 20	.194
191	27.322	4.156	+ 333	+ 130		.....	+ 24	.....
650	0.624	36.636	+ 62	— 95		— 136	+ 33	.138
655	54.416	30.350	+ 73	— 68		— 63	+ 37	.101
								s
$a_1 = -0.449$, $a_2 = -0.513$, $a_3 = -0.425$; $a_m = -0.462$								24.189
$E = 16^h\,37^m$.								— 0.500
								s
								23.689

Naissaare. July 4-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
Ng	51.436	52.808	+ 300	— 492	+ 26	.....	— 51	.....
636	38.505	3.026	+ 54	— 43		— 3.098	— 39	38.579
191	28.243	14.333	+ 334	+ 192		.....	— 33	.....
650	0.592	24.136	+ 62	— 51		— 2.123	— 21	.563
655	54.361	16.724	+ 73	— 62		— 961	— 15	.576
663	37.360	1.194	+ 60	— 50		— 2.441	— 9	.580
671	25.233	47.205	+ 76	— 76		— 628	+ 6	.624
681	58.731	24.307	+ 47	— 34		— 4.225	+ 17	.593
685	33.825	53.772	+ 96	— 99		+ 1.387	+ 26	.617

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
694	58.922	20.536	+ 80	— 59	+ 26	— 202	+ 34	.507
700	3.658	14.670	+ 189	— 172		.....	+ 44	.....
	s	s	s	s		s		
$a_1 = -7.217$,	$a_2 = -7.187$,	$a_3 = -7.261$;	$a_m = -7.222$					38.580
$E = 17^h\,47^m$.								— 0.500
								s 38.080

Naissaare. July 5-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
Ng	51.308	50.084	+ 300	+ 253	+ 10	.....	— 47	.....
636	38.502	1.384	+ 54	+ 80		— 3.140	— 37	40.151
191	28.353	13.704	+ 334	— 110		.....	— 33	.....
650	0.588	22.462	+ 62	+ 79		— 2.152	— 22	.149
655	54.352	15.002	+ 73	+ 77		— 974	— 18	.182
663	37.359	59.548	+ 60	+ 56		— 2.474	— 12	.171
671	25.228	45.524	+ 76	+ 63		— 637	— 1	.193
681	58.738	22.752	+ 47	+ 27		— 4.282	+ 9	.175
685	33.818	52.008	+ 96	+ 37		+ 1.405	+ 15	.247
694	58.921	18.838	+ 80	+ 67		— 205	+ 22	.119
700	3.630	12.784	+ 189	+ 77		.....	+ 30	.....
707	15.838	35.566	+ 81	+ 32		— 73	+ 43	.179
	s	s	s	s		s		
$a_1 = -7.314$,	$a_2 = -7.342$,	$a_3 = -7.304$,	$a_m = -7.320$					40.174
$E = 17^h\,54^m$.								— 0.500
								s 39.674

Naissaare. July 6-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
Ng	51.198	8.154	+ 300	+ 581	+ 66	.....	— 49	.....
636	38.502	56.900	+ 54	+ 115		— 126	— 40	41.535
191	28.471	47.864	+ 334	— 314		.....	— 34	.....
650	0.585	18.928	+ 62	+ 165		— 87	— 23	.474
655	54.345	12.568	+ 93	+ 168		— 39	— 18	.527
663	37.360	55.701	+ 60	+ 147		— 100	— 13	.499
671	25.224	43.404	+ 76	+ 154		— 26	— 1	.545
681	58.747	17.219	+ 47	+ 102		— 172	+ 9	.476
685	33.811	51.812	+ 96	+ 198		+ 57	+ 16	.566
694	58.919	17.076	+ 80	+ 189		— 8	+ 23	.493

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						
700	3.599	20.946	+ 189	+ 283	+ 66	.....	+ 31	.....
707	15.842	33.952	+ 81	+ 162		— 3	+ 45	.539

$a_1 = -0.228$, $a_2 = -0.273$, $a_3 = -0.386$; $a_m = -0.295$ — 41.517

$E = 17^h\,54^m$. — 0.500

41.017

Suurupi. July 8-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
650	0.578	48.092	+ 62	+ 74	+ 16	+ 461	— 29	11.902
655	54.331	42.016	+ 73	+ 104		+ 204	— 27	.945
685	33.793	21.847	+ 96	+ 176		— 312	— 7	.977
694	58.913	46.692	+ 80	+ 195		+ 38	— 3	.895
248	50.260	32.222	+ 349	— 374		.....	+ 2	.....
707	15.844	3.622	+ 81	+ 207		+ 10	+ 9	.899
713	29.237	16.267	+ 49	+ 97		+ 850	+ 12	.946
719	57.600	44.734	+ 51	+ 92		+ 780	+ 16	.911
734	50.560	40.923	+ 223	+ 321		.....	+ 25	.....
738	41.600	29.094	+ 64	+ 102		+ 403	+ 29	.892

$a_1 = +1.687$, $a_2 = +1.485$; $a_m = +1.585$ — 11.921

$E = 18^h\,30^m$. — 0.500

11.421

Suurupi. July 9-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
636	38.492	25.008	+ 54	+ 57	— 42	+ 661	— 40	12.794
191	28.775	10.320	+ 334	— 153		.....	— 36	.....
650	0.571	47.324	+ 62	+ 17		+ 451	— 26	.785
655	54.320	41.336	+ 73	+ 68		+ 201	— 22	.706
663	37.352	23.994	+ 60	+ 40		+ 518	— 17	.799
675	30.548	19.504	+ 181	+ 171		.....	— 6	.....
681	58.765	45.036	+ 47	+ 32		+ 904	+ 3	.785
685	33.782	21.174	+ 96	+ 119		— 305	+ 10	.730
694	58.908	46.006	+ 80	+ 65		+ 37	+ 17	.745
700	3.503	52.511	+ 189	+ 244		.....	+ 23	.....
707	15.842	2.841	+ 81	+ 75		+ 9	+ 36	.842
713	29.243	15.554	+ 49	+ 71		+ 831	+ 41	.739

$a_1 = +1.593$, $a_2 = +1.524$, $a_3 = +1.534$; $a_m = +1.550$ — 12.770

$E = 18^h\,1^m$. — 0.500

12.270

Suurupi. July 10-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
636	38.484	23.762	+ 54	+ 82	— 92	+ 682	— 21	14.017
191	28.857	9.048	+ 334	— 267		.....	— 19	.....
650	0.562	46.032	+ 62	+ 120		+ 466	— 14	13.888
655	54.309	40.012	+ 73	+ 160		+ 206	— 11	13.961
663	37.349	22.726	+ 60	+ 118		+ 535	— 9	14.011
675	30.509	18.224	+ 181	+ 455		.....	— 3	.....
681	58.764	43.804	+ 47	+ 101		+ 933	+ 2	13.969
685	33.770	19.870	+ 96	+ 247		— 315	+ 5	13.959
694	58.900	44.629	+ 80	+ 214		+ 38	+ 8	14.023
700	3.474	50.938	+ 189	+ 501		.....	+ 12	.....
707	15.839	1.546	+ 81	+ 233		+ 10	+ 19	14.042
713	29.247	14.301	+ 49	+ 144		+ 858	+ 21	13.966

$a_1 = +1.671^s$, $a_2 = +1.671^s$, $a_3 = +1.467^s$; $a_m = +1.600^s$ 13.982

$E = 18^h\,1^m$. — 0.500

13.482

Essemäe. July 26-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
671	24.940	49.896	+ 76	— 43	— 29	— 43	— 17	35.100
684	36.589	2.118	+ 56	— 47		— 648	+ 4	.135
694	58.698	23.540	+ 80	— 59		+ 68	+ 13	.085
700	2.797	24.845	+ 188	— 208		.....	+ 33	.....
260	20.881	51.044	+ 280	+ 102		.....	+ 40	.....

$a_1 = -1.820^s$, $a_2 = -1.780^s$; $a_m = -1.800^s$ 35.107

$E = 18^h\,10^m$. — 0.500

34.607

Essemäe. July 28-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
671	24.895	47.250	+ 76	— 172	— 28	+ 50	— 28	37.747
681	58.686	19.896	+ 47	— 88		+ 1.142	— 20	.737
694	58.659	21.166	+ 80	— 208		— 79	— 8	.736
700	2.695	28.528	+ 188	— 386		.....	— 1	.....
260	20.984	36.112	+ 280	+ 339		.....	+ 11	.....
713	29.249	50.574	+ 49	— 104		+ 1.040	+ 15	.703

✳	α	t	cC	iI	p	aA	r	ΔT
734	50.049	16.522	+ 223	— 308	— 28	.....	+ 34	.....
738	41.639	3.436	+ 64	— 108		+ 425	+ 41	.809
	s	s		s		s		
$a_1 = +2.128$, $a_2 = +2.052$, $a_3 = +2.037$; $a_m = +2.072$								37.744
$E = 18^h\,34^m$.								— 0.500
								s 37.244

Essemäe. July 29-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
671	24.869	45.732	+ 76	— 15	— 19	+ 6	— 56	39.145
681	58.675	19.430	+ 47	+ 3		+ 143	— 45	.116
694	58.638	19.510	+ 80	— 26		— 10	— 30	.133
700	2.640	23.720	+ 189	+ 20		.....	— 22	.....
260	21.040	40.719	+ 280	+ 63		.....	— 7	.....
713	29.244	50.006	+ 49	— 75		+ 130	— 2	.155
719	57.614	18.388	+ 51	— 42		+ 118	+ 5	.113
726	36.198	57.006	+ 69	— 18		+ 33	+ 14	.113
738	41.633	2.426	+ 64	— 71		+ 53	+ 30	.150
742	55.824	16.624	+ 58	— 47		+ 81	+ 37	.090
750	56.814	17.653	+ 68	— 75		+ 40	+ 46	.101
	s	s		s				
$a_1 = +0.240$, $a_2 = +0.278$; $a_m = +0.260$								39.124
$E = 18^h\,59^m$.								— 0.500
								s 38.624

Essemäe. July 31-st, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
681	58.665	17.020	+ 47	— 17	— 29	+ 130	— 69	41.584[1])
700	2.519	21.210	+ 189	— 50		.....	— 45	.....
260	21.193	38.402	+ 280	+ 60		.....	— 31	.....
713	29.234	47.518	+ 49	— 10		+ 118	— 25	.613
719	57.606	15.854	+ 51	— 21		+ 107	— 18	.662
726	36.187	54.421	+ 69	+ 8		+ 30	— 9	.697
734	49.920	8.432	+ 223	— 43		.....	0	.....
738	41.632	59.853	+ 64	+ 44		+ 48	+ 7	.645
742	55.827	14.007	+ 58	+ 6		+ 73	+ 14	.698
750	56.816	15.040	+ 68	+ 44		+ 36	+ 24	.633

[1]) ✳ 681 weight 0.5, clouds.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
758	53.461	11.637	+ 75	— 3	— 29	+ 9	+ 39	.733
765	52.478	10.610	+ 54	+ 18		+ 93	+ 46	.686
								41.166
								— 0.500
								s 41.666

$a_1 = +0.262^s$, $a_2 = +0.270^s$, $a_3 = +0.170^s$; $a_m = +0.235^s$

$E = 19^h\ 26^m$.

Antsla. August 2-nd, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
719	57.612	47.144	+ 51	+ 4	— 44	— 164	— 48	10.669
726	36.174	25.520	+ 69	+ 27		— 48	— 30	.680
734	49.799	38.244	+ 223	— 107		.....	— 23	.....
738	41.627	31.046	+ 64	— 15		— 75	— 17	.668
742	55.821	45.270	+ 58	— 42		— 112	— 10	.701
750	56.816	46.237	+ 68	— 11		— 57	— 3	.626
310	12.144	2.070	+ 258	+ 109		.....	+ 10	.....
765	52.494	41.936	+ 54	— 28		— 142	+ 17	.701
767	30.630	19.870	+ 91	— 92		+ 68	+ 22	.715
777	11.889	1.292	+ 59	— 37		— 112	+ 30	.701
783	58.849	48.062	+ 87	— 74		+ 49	+ 34	.735
								10.688
								— 0.500
								s 10.188

$a_1 = -0.400^s$, $a_2 = -0.315^s$; $a_m = -0.358^s$

$E = 19^h\ 58^m$.

Antsla. August 6-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
	s	s						s
694	58.470	41.938	+ 80	+ 48	— 52	+ 14	— 71	16.513
248	52.621	37.336	+ 348	— 307		.....	— 61	.....
713	29.225	12.858	+ 49	+ 61		— 215	— 38	.562
719	57.595	41.350	+ 51	+ 76		— 195	— 30	.395
726	36.129	19.642	+ 69	+ 114		— 56	— 19	.431
734	49.527	31.590	+ 223	+ 335		.....	— 12	.....
738	41.599	25.160	+ 64	+ 108		— 89	— 1	.409
742	55.816	39.433	+ 59	+ 106		— 133	+ 8	.395
759	13.888	56.093	+ 189	+ 385		.....	+ 32	.....
765	52.503	36.028	+ 54	+ 108		— 169	+ 43	.491

✳	α	t	cC	iI	p	aA	r	ΔT
767	30.606	13.854	+ 91	+ 210	— 52	+ 80	+ 51	.372
777	11.904	55.459	+ 59	+ 137		— 133	+ 62	.472

$a_1 = -0.281^s$, $a_2 = -0.499^s$, $a_3 = -0.496^s$; $a_m = -0.425^s$ 16.449

$E = 19^h\,35^m$. — 0.500

15.949

Antsla. August 8-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
783	58.824^s	39.050^s	+ 50	+ 73	— 67	+ 32	— 21	19.707^s
788	43.593	24.077	+ 55	+ 67		— 154	— 12	.627
795	55.836	35.160	+ 194	+ 273		.....	— 1	.....
803	1.996	42.126	+ 89	+ 131		+ 67	+ 7	.643
813	55.885	36.182	+ 76	+ 147		— 8	+ 25	.530

$a_1 = a_m = -0.400^s$ 19.627

$E = 21^h\,8^m$. — 0.500

19.127^s

Antsla. August 9-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
707	15.442^s	54.342^s	+ 81	+ 131	— 52	+ 17	— 29	20.952^s
713	29.189	8.410	+ 49	+ 64		— 170	— 23	.911
726	36.078	15.046	+ 69	+ 141		— 45	— 6	.925
734	49.343	27.403	+ 223	+ 307		.....	+ 3	.....
738	41.560	20.570	+ 64	+ 109		— 70	+ 11	.928
742	55.786	34.837	+ 59	+ 66		— 105	+ 18	.963
750	56.762	35.783	+ 68	+ 117		— 53	+ 28	.871
310	12.498	52.621	+ 258	— 122		.....	+ 44	.....

$a_1 = -0.271^s$, $a_2 = -0.399^s$; $a_m = -0.335^s$ 20.925

$E = 19^h\,22^m$. — 0.500

20.425^s

Tallinn. August 15-th, 1933.

✳	α	t	cC	iI	p	aA	r	ΔT
750	56.705^s	30.850^s	+ 68	+ 115	— 37	+ 68	— 112	25.753^s
310	12.785	45.966	+ 258	— 265	— 37	.....	— 88	.....
765	52.479	26.566	+ 54	+ 100	— 37	+ 145	— 75	.726

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						
777	11.893	45.970	+ 59	+ 85	+ 17	+ 118	— 49	.693
Nk	36.473	10.710	+ 304	+ 538	+ 17	.....	— 37	.....
788	43.607	17.650	+ 55	+ 79	+ 17	+ 141	— 27	.692
795	55.677	29.884	+ 194	+ 299	+ 17	.....	— 10	.....
803	2.011	36.100	+ 89	+ 133	+ 17	— 36	+ 4	.704
807	1.696	35.700	+ 60	+ 85	+ 17	+ 110	+ 18	.706
830	1.476	35.552	+ 90	+ 58	+ 17	— 38	+ 69	.728
836	34.901	8.939	+ 78	+ 65	+ 17	+ 17	+ 77	.708
844	58.579	32.573	+ 67	+ 42	+ 17	+ 71	+ 94	.715
								s
$a_1 = +0.434$, $a_2 = +0.272$, $a_3 = +0.287$; $a_m = +0.331$								25.714
$E = 21^h\,14^m$.								— 0.500
								s
								25.214

Tallinn. August 16-th, 1933.

✳	a	t	cC	iI	p	aA	r	ΔT
	s	s						s
707	15.270	47.526	+ 81	+ 263	— 60	+ 1	— 76	27.535
713	29.123	1.446	+ 49	+ 119		+ 123	— 68	.514
719	57.491	29.868	+ 51	+ 122		+ 113	— 58	.455
738	41.481	13.784	+ 64	+ 129		+ 58	— 23	.529
742	55.730	28.078	+ 59	+ 113		+ 81	— 13	.482
747	27.116	59.444	+ 120	+ 160		.....	— 7	.....
750	56.696	29.042	+ 68	+ 125		+ 47	0	.474
765	52.478	24.766	+ 54	+ 82		+ 100	+ 31	.505
767	30.521	2.868	+ 91	+ 80		— 29	+ 41	.530
777	11.893	44.210	+ 59	+ 73		+ 81	+ 54	.476
795	55.654	28.256	+ 194	+ 73		.....	+ 87	.....
803	2.011	34.372	+ 89	+ 40		— 25	+ 99	.496
Ne	42.264	13.105	+ 430	— 78		.....	+ 111	.....
								s
$a_1 = +0.120$, $a_2 = +0.258$, $a_3 = +0.284$; $a_m = +0.230$.								27.500
$E = 19^h\,54^m$.								— 0.500
								s
								27.000

IV. Time Signal Receptions and Preliminary Longitudes.

The following tables show the measured preliminary longitudes in chronological order. "Nardin — Time Signal Moment" gives the difference: *Chronometer Nardin* 2451 *minus moment of corresponding time signal.* The "Adjusted Mean" (of time signals) was graphically deduced for the epoch of observations,

the rate of the chronometer being accepted as linear. Δs is the correction for the personal error of the reception of time signals; Δ T gives the correction of the chronometer taken from Chapter III. λ_p is the deduced preliminary longitude, where λ_p = "Adjusted Mean" (of signals) + Δs + Δ T. In the tables, seconds are only given, while hours and minutes may be found in Chapter VI.

Date	Nardin — Time Signal Moment. GBR	FYL	FLE	DFY	Adjust. mean.	Δs	ΔT	λ_p
1930.				Ruhnu.				
	s	s	s	s	s	s	s	s
24. 5.	17.171	17.090	16.957	16.874	16.925	—0.024	46.087	2.988
31. 5.		7.614	7.426	7.298	7.555	„	55.430	2.961
2. 6.		4.404	4.245		4.322	„	58.715	3.013
								s s
							Mean	*2.987 ± 0.015*
								(mean error)
				Abruka.				
	s	s	s	s	s	s	s	s
10. 6.		50.075	49.879		49.985	—0.024	10.401	0.362
11. 6.		48.232	48.048		48.125	„	12.277	0.378
12. 6.	46.531	46.371	46.248	46.100	46.320	„	14.089	0.385
								s s
							Mean	*0.375 ± 0.007*
				Sõrve.				
		s	s	s	s	s	s	s
15. 6.		15.118	15.019		14.981	—0.024	58.446	13.403[1])
16. 6.		13.534	13.423	13.347	13.440	„	0.000	13.416
17. 6.		11.962	11.806		11.904	„	1.533	13.413
18. 6.		10.397	10.263	10.114	10.316	„	3.116	13.408
								s s
							Weighted mean	*13.411 ± 0.003*
				Viidumäe.				
	s	s	s	s	s	s	s	s
30. 6.			29.289	29.147	29.290	—0.024	48.335	17.601[2])
1. 7.	27.979	27.861	27.734	27.631	27.795	„	49.773	17.544
2. 7.	26.487	26.389	26.257		26.325	„	51.284	17.585
3. 7.	25.013	24.891	24.730	24.643	24.822	„	52.759	17.557
								s s
							Weighted mean	*17.567 ± 0.012*

[1]) weight 0.5.

[2]) FLE only one contact; weight of λ_p 0.5.

Date	Nardin — Time Signal Moment. GBR	FYL	FLE	DFY	Adjust. mean.	Δs	ΔT	λ_p
1930.				Tallinn.				
	s	s	s		s	s	s	s
12. 7.		11.719			11.646	—0.024	45.814	57.436[1])
13. 7.	10.451	10.315	10.195		10.282	„	47.131	57.389[2])
15. 7.	7.572	7.458	7.336		7.397	„	50.044	57.417
							Weighted mean	*57.414* ± *0.013*
1931.				Tallinn.				
	s	s	s	s	s	s	s	s
31. 5.	30.656	30.505	30.340	30.281	30.347	—0.024	27.054	57.377[3])
7. 6.	18.312	18.155	17.979	17.870	18.081	„	39.338	57.395
8. 6.	16.478	16.333	16.155		16.258	„	41.168	57.402
							Mean	*57.393* ± *0.008*
				Undva.				
	s	s	s	s	s	s	s	s
12. 6.	8.878	8.726	8.522	8.440	8.486	—0.024	50.846	59.308
14. 6.	4.866	4.715	4.542		4.625	„	54.716	59.317
17. 6.	58.939	58.772		58.441	58.709	„	0.609	59.294
							Mean	*59.306* ± *0.007*
				Ohtja.				
	s	s	s	s	s	s	s	s
25. 6.	38.053	37.887	37.690	37.596	37.689	—0.024	50.381	28.046
26. 6.	36.168	36.014	35.850		35.930	„	52.160	28.066[4])
27. 6.	34.353	34.175	33.988		34.099	„	53.970	28.045
							Mean	*28.052* ± *0.007*
				Meiuste.				
	s	s	s	s	s	s	s	s
28. 6.	32.184	32.029	31.846	31.727	31.862	—0.024	48.481	20.319
30. 6.	28.276	28.132	27.971		28.052	„	52.287	20.315
1. 7.	26.466	26.317	26.142		26.233	„	54.102	20.311
							Mean	*20.315* ± *0.002*
				Määltse.				
	s	s	s	s	s	s	s	s
20. 7.	46.914	46.747	46.574	46.495	46.550	—0.024	11.475	58.001
23. 7.	40.664	40.490	40.296		40.399	„	17.597	57.972
24. 7.	38.446	38.277	38.074	37.976	38.134	„	19.857	57.967
							Mean	*57.980* ± *0.011*

[1]) weight 0.5.
[2]) weight of Δ T and λ_p 0.5.
[3]) DFY poor.
[4]) GBR only one contact.

Date	Nardin — Time Signal Moment. GBR	FYL	FLE	DFY	Adjust. mean.	Δs	ΔT	λ_p
1931.				Tahkuna.				
	s	s	s	s	s	s	s	s
2. 8.	19.043	18.916	18.742		18.832	—0.024	1.690	20.498
3. 8.	17.088		16.743		16.836	„	3.709	20.521
4. 8.	15.004	14.842	14.671	14.548	14.761	„	5.790	20.527
							Mean	20.515 ± 0.009
				Kõpu.				
	s	s	s	s	s	s	s	s
16. 8.	51.367		51.041	50.919	51.108	—0.024	56.704	47.788
17. 8.	49.363	49.242	49.043	48.941	49.141	„	58.640	47.757[1])
18. 8.	47.408	47.250	47.091	46.958	47.186	„	0.619	47.781[2])
							Mean	47.775 ± 0.009
				Tallinn.				
	s	s	s	s	s	s	s	s
25. 8.	32.941	32.766	32.542	32.435	32.652	—0.024	24.803	57.431
26. 8.	30.827	30.674	30.475		30.592	„	26.848	57.416
							Mean	57.423 ± 0.008
1932.				Tallinn.				
	s	s	s	s	s	s	s	s
27. 5.	36.948	36.776	36.573		36.670	—0.024	20.771	57.417
28. 5.	34.798	34.604	34.336	34.209	34.495	„	22.957	57.428
29. 5.	32.839	32.675	32.478		32.593	„	24.858	57.427
							Mean	57.424 ± 0.004
				Veski.				
	s	s	s	s	s	s	s	s
31. 5.	28.400	28.321	28.220		28.252	—0.024	29.356	57.584
1. 6.	26.698	26.600	26.381		26.514	„	31.048	57.538[3])
3. 6.		22.721	22.502	22.417	22.610	„	35.023	57.609
							Weighted mean	57.585 ± 0.018
				Kloostri.				
	s	s	s	s	s	s	s	s
11. 6.	8.687	8.550		8.287	8.466	—0.024	27.728	36.170
12. 6.	6.652	6.513	6.344		6.444	„	29.707	36.127
13. 6.	4.653	4.513	4.365		4.466	„	31.680	36.122
							Mean	36.140 ± 0.015

[1]) FYL poor.

[2]) FLE poor.

[3]) The published signal correction of FLE erroneous by 0.1? λ_p taken with the weight 0.5.

Date	Nardin — Time Signal Moment. GBR	FYL	FLE	DFY	Adjust. mean.	Δs	ΔT	λ_p
1932.				Keila.				
	s	s	s	s	s	s	s	s
17. 6.	56.407	56.253	56.054	55.951	56.106	—0.024	36.478	32.560
19. 6.	52.163	51.995	51.796		51.926	„	40.673	32.575
22. 6.	45.475	45.296	45.115		45.234	„	47.366	32.576
							s	s
							Mean	*32.570* ± *0.005*
				Pakri.				
	s	s	s		s	s	s	s
6. 7.	57.446	57.255	57.017		57.135	—0.024	12.400	9.511
7. 7.	54.835	54.639	54.410		54.530	„	15.032	9.538
8. 7.	52.379	52.171	51.958		52.067	„	17.477	9.520
							s	s
							Mean	*9.523* ± *0.008*
				Osmussaare.				
	s	s	s	s	s	s	s	s
11. 7.	44.965	44.792	44.571	44.414	44.551	—0.024	42.926	27.453
12. 7.	42.506	42.287	42.051		42.168	„	45.272	27.416
13. 7.	40.078	39.876	39.665		39.757	„	47.640	27.373
							s	s
							Mean	*27.414* ± *0.023*
				Vormsi.				
	s	s	s	s	s	s	s	s
29. 7.	33.633	33.450	33.231	33.066	33.197	—0.024	55.072	28.245
30. 7.	31.222	31.028	30.807		30.906	„	57.391	28.273
31. 7.	28.746	28.505	28.254		28.377	„	59.947	28.300
							s	s
							Mean	*28.273* ± *0.016*
				Tallinn.				
	s	s	s	s	s	s	s	s
8. 8.	4.402	4.129	3.833	3.631	3.688	—0.024	53.741	57.405
12. 8.		51.539	51.227		51.412	„	6.019	57.407
							s	s
							Mean	*57.406* ± *0.001*
1933.				Tallinn.				
	s	s	s	s	s	s	s	s
29. 5.	0.404	0.396		0.348	0.370	—0.024	57.035	57.381
31. 5.	59.630	59.607	59.589		59.600	„	57.825	57.401
1. 6.	59.336	59.302	59.258		59.286	„	58.107	57.369
							s	s
							Mean	*57.384* ± *0.009*

Date	Nardin — Time Signal Moment. GBR	FYL	FLE	DFY	Adjust. mean.	Δs	ΔT	λ_p
1933.					Nabala.			
	s	s	s	s	s	s	s	s
6. 6.	56.408	56.386	56.365		56.376	—0.024	30.639	26.991
7. 6.	55.813	55.816		55.786	55.808	„	31.221	27.005
8. 6.	55.166	55.136	55.112		55.128	„	31.923	27.027
							Mean	*27.008* ± *0.010*
					Jõelähtme.			
	s	s	s	s	s	s	s	s
14. 6.	50.193	50.152	50.114		50.136	—0.024	39.838	29.950
15. 6.	49.183	49.108	49.047		49.088	„	40.887	29.951
16. 6.	48.166	48.089	48.007	47.980	48.012	„	41.925	29.913
							Mean	*29.938* ± *0.012*
					Keri.			
	s	s	s		s	s	s	s
19. 6.	44.398	44.310	44.228		44.250	—0.024	21.250	5.476 [1]
20. 6.	43.387	43.284	43.160		43.234	„	22.334	5.544
21. 6.	42.012	41.925	41.824		41.890	„	23.689	5.555
							Weighted mean	*5.535* ± *0.021*
					Naissaare.			
	s	s	s		s	s	s	s
4. 7.	25.538	25.411	25.275		25.344	—0.024	38.080	3.400
5. 7.	23.945	23.844	23.732		23.788	„	39.674	3.438
6. 7.	22.614	22.512	22.395		22.451	„	41.017	3.444
							Mean	*3.427* ± *0.014*
					Suurupi.			
	s	s	s	s	s	s	s	s
8. 7.	20.780	20.699	20.633	20.611	20.658	—0.024	11.421	32.055
9. 7.	19.943	19.851	19.755		19.805	„	12.270	32.051
10. 7.	18.675	18.624	18.564		18.599	„	13.482	32.057
							Mean	*32.054* ± *0.002*
					Essemäe.			
	s	s	s		s	s	s	s
26. 7.	0.136	0.047			0.036	—0.024	34.607	34.619 [2]
28. 7.	57.483	57.438	57.298		57.404	„	37.244	34.624 [2]
29. 7.	56.161	56.059	55.935		56.024	„	38.624	34.624
31. 7.	53.633	53.526	53.400		53.475	„	41.166	34.617
							Weighted mean	*34.621* ± *0.002*

[1]) Weight 0.5; strong wind.

[2]) ΔT and λ_p weight 0.5.

Date	Nardin — Time Signal Moment. GBR	FYL	FLE	DFY	Adjust. mean.	Δs	ΔT	λ_p
1933.				Antsla.				
	s	s	s	s	s	s	s	s
2. 8.	51.081	50.987	50.878		50.927	—0.024	10.188	1.091
6. 8.	45.327	45.211	45.061		45.166	„	15.949	1.091
8. 8.	42.260	42.150	42.012	41.941	42.031	„	19.127	1.134[1])
9. 8.	40.795	40.682	40.544		40.663	„	20.425	1.064
								s s
							Weighted mean	*1.090 ± 0.013*
				Tallinn.				
	s	s	s	s	s	s	s	s
15. 8.	32.608		32.224	32.092	32.270	—0.024	25.214	57.460
16. 8.	30.664	30.510	30.332	30.223	30.474	„	27.000	57.450
								s s
							Mean	*57.455 ± 0.005*

V. Latitude Determinations.

The following tables give the latitude determinations in chronological order. In the tables we denote by

1) $*$ — the number of the star in Boss's [2]) (B.) or Ambronn's [3]) (A.) catalogue. The number of the star is followed by the eyepiece position of the transit instrument (E = east, W = = west). Brackets show which stars compose a Talcott pair;

2) $\frac{\delta_n + \delta_s}{2}$ — the mean declination of the pair. This figure does not contain short period nutation terms. The mean declination is given in the system of Boss, with only a few exceptions for A. stars, marked in the tables;

3) m — the difference of the zenith distances of north and south star measured with the Talcott micrometer;

4) i — the correction for inclination given by the levels;

5) c — the correction for the curvature of the parallel;

6) r — the correction for differential refraction;

7) φ_p — the deduced preliminary latitude;

8) $\mathfrak{C}$ — the correction of the given night for short period nutation terms.

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[1]) ΔT and λ_p weight 0.5.

[2]) Lewis Boss. Preliminary General Catalogue 1910.

[3]) L. Ambronn. Sternverzeichnis 1907.

For each field-point, the mean φ_p is given with its mean error, where the effect of short period nutation terms has already been taken into account. The mean φ_p is computed from individual pairs (not nights).

Ruhnu. June 3-rd, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3847 E B. 3893 W	57 46 6.14	+ 1 56.47	— 0.21	+ 0.34	+ 0.04	57 48 2.78
A. 4890 W B. 3977 E	57 53 5.90	— 5 3.12	— 0.56	+ 0.18	— 0.08	2.32 [1]
A. 4949 E	57 49 23.46	— 1 20.11	— 0.56	+ 0.18	— 0.02	2.95 [1]
B. 4004 E B. 4021 W	57 41 48.96	+ 6 15.11	— 1.74	+ 0.18	+ 0.10	2.61
B. 4162 W B. 4186 E	57 52 23.28	— 4 20.20	— 1.02	+ 0.20	— 0.07	2.20
B. 4213 E	57 41 50.18	+ 6 13.17	— 1.24	+ 0.20	+ 0.11	2.42
B. 4432 E B. 4458 W	57 39 57.30	+ 8 5.64	+ 0.12	+ 0.18	+ 0.13	3.37
						57 48 2.67
						℄ — 0.10
						57 48 2.57

Ruhnu. June 4-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3847 W B. 3893 E	57 46 6.36	+ 1 55.60	+ 1.10	+ 0.20	+ 0.04	57 48 3.30
B. 3911 E B. 3930 W	57 53 58.06	— 5 54.93	— 1.44	+ 0.18	— 0.09	1.77
A. 4890 W B. 3977 E	57 53 6.16	— 5 4.24	+ 1.38	+ 0.14	— 0.08	3.36 [1]
A. 4949 E	57 49 23.72	— 1 21.73	+ 1.38	+ 0.14	— 0.02	3.49 [1]
B. 4004 W B. 4021 E	57 41 49.18	+ 6 13.62	+ 0.06	+ 0.18	+ 0.10	3.15
B. 4162 E B. 4186 W	57 52 23.58	— 4 20.95	— 0.14	+ 0.20	— 0.07	2.62
B. 4213 W	57 41 50.48	+ 6 13.23	— 0.70	+ 0.20	+ 0.11	3.33
B. 4327 W B. 4332 E	57 54 33.05	— 6 29.24	— 0.76	+ 0.12	— 0.12	3.06

[1]) Position of A. 4890 and A. 4949 taken from A. G. catalogue and R. Schorr, Eigenbewegungslexikon 1923.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4432 E B. 4458 W	57 39 57.59	+ 8 6.72	— 1.21	+ 0.18	+ 0.13	57 48 3.41
B. 4470 W B. 4494 E	57 52 32.71	— 4 30.21	+ 0.66	+ 0.14	— 0.08	3.22
B. 4591 E B. 4584 W	57 40 44.81	+ 7 17.10	+ 0.47	+ 0.26	+ 0.15	2.79
B. 4671 W B. 4707 E	57 52 17.48	— 4 15.09	+ 0.14	+ 0.18	— 0.07	2.64
B. 4730 E B. 4787 W	57 40 8.64	+ 7 54.50	— 0.52	+ 0.18	+ 0.13	3.93
						57 48 3.08
						€ — 0.11
						57 48 2.97

Mean for Ruhnu: $\varphi_p = 57\ 48\ 2.83 \pm 0.12$ (mean error).

Abruka. June 7-th, 1930.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3656 E B. 3666 W	58 5 7.65	+ 3 15.70	— 0.04	+ 0.18	+ 0.06	58 8 23.55
B. 599 W B. 3770 E	58 3 8.43	+ 5 17.17	— 1.51	— 0.02	+ 0.15	24.23
B. 3853 E B. 3893 W	58 0 57.44	+ 7 26.52	— 1.31	+ 0.17	+ 0.14	22.96
B. 4035 W B. 4057 E	58 4 41.52	+ 3 41.67	+ 0.11	+ 0.30	+ 0.08	23.68
B. 4151 E B. 4161 W	57 57 46.94	+ 10 37.68	— 0.99	+ 0.11	+ 0.19	23.93
B. 4510 E B. 4591 W	57 58 24.45	+ 10 0.88	— 0.97	+ 0.27	+ 0.23	24.86
						58 8 23.87
						€ 0.00
						58 8 23.87

Abruka. June 8-th, 1930.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3656 E B. 3666 W	58 5 7.70	+ 3 15.19	+ 0.08	+ 0.22	+ 0.06	58 8 23.25

B. 599 W B. 3770 E	58 3 8.12	+ 5 14.07	+ 1.22	+ 0.02	+ 0.15	58 8 23.58
B. 3853 E B. 3893 W	58 0 57.67	+ 7 25.09	+ 0.60	+ 0.20	+ 0.14	23.50
B. 4035 W B. 4057 E	58 4 41.77	+ 3 41.83	+ 0.44	+ 0.23	+ 0.08	24.35
B. 4151 E B. 4161 W	57 57 47.20	+ 10 36.89	− 0.31	+ 0.12	+ 0.19	24.09
B. 4382 W A. 5523 E	58 13 2.96	− 4 38.82	− 0.92	+ 0.21	− 0.07	23.36 [1]
B. 4510 E B. 4591 W	57 58 24.38	+ 10 0.31	− 0.78	+ 0.11	+ 0.23	24.25
B. 4602 W B. 4603 W B. 4639 E	58 0 33.94 58 0 39.70	+ 7 50.76 + 7 44.92	− 1.41 − 1.41	+ 0.36 + 0.36	+ 0.16 + 0.16	23.81 23.73
B. 1758 E B. 4820 W	58 13 32.26	− 5 8.13	+ 0.06	− 0.05	− 0.17	23.97

58 8 23.79
℄ + 0.03

58 8 23.82

Abruka. June 9-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3656 W B. 3666 E	58 5 7.91	+ 3 13.33	+ 2.10	+ 0.16	+ 0.06	58 8 23.36

Mean for Abruka: $\varphi_p = 58\ 8\ 23.81 \pm 0.11$ (mean error).

Sõrve. June 19-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3853 E B. 3893 W	58 1 0.27	− 6 25.50	+ 0.48	+ 0.09	− 0.07	57 54 35.27 [2]
B. 3911 W B. 3930 E	57 54 1.45	+ 0 36.11	− 1.34	+ 0.10	+ 0.02	36.34
A. 4890 E A. 4949 W	57 49 27.68	+ 5 9.71	− 0.05	+ 0.10	+ 0.13	37.57 [3]
B. 4021 W B. 4085 E	57 57 44.28	− 3 6.82	− 0.85	+ 0.09	+ 0.02	36.72

[1]) Position of A. 5523 taken from A. G. catalogue and R. Schorr, Eigenbewegungslexikon 1923.

[2]) Weight 0.5; too light.

[3]) Positions taken from A. G. catalogue and R. Schorr, Eigenbewegungslexikon 1923.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4162 E B. 4186 W	57 52 27.94	+ 2 9.60	+ 0.12	+ 0.13	+ 0.04	57 54 37.83
B. 4327 W B. 4332 E	57 54 37.37	— 0 1.16	+ 0.76	+ 0.12	+ 0.01	37.10
B. 4470 E B. 4494 W	57 52 37.66	+ 2 0.44	— 0.35	+ 0.12	+ 0.03	37.90
B. 4510 W B. 4591 E	57 58 27.94	— 3 51.90	+ 1.02	+ 0.12	— 0.08	37.10
B. 4603 E B. 4602 E	58 0 43.16	— 6 5.84	— 0.58	+ 0.20	— 0.12	36.82
B. 4639 W	58 0 37.40	— 6 0.00	— 0.58	+ 0.20	— 0.12	36.90
B. 4671 W B. 4707 E	57 52 22.54	+ 2 14.49	+ 0.19	+ 0.08	+ 0.04	37.34
B. 4799 E B. 4829 W	57 53 20.34	+ 1 16.12	+ 0.68	+ 0.13	+ 0.03	37.30
B. 4948 W B. 4994 E	57 51 51.96	+ 2 45.60	— 0.42	+ 0.12	+ 0.05	37.31
B. 5014 E	57 48 56.09	+ 5 40.78	+ 0.14	+ 0.12	+ 0.09	37.22
						57 54 37.10
						€ — 0.08
						57 54 37.02

Sõrve. June 20-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3911 E B. 3930 W	57 54 1.66	+ 0 34.48	— 0.02	+ 0.10	+ 0.02	57 54 36.24
A. 4890 W A. 4949 E	57 49 27.90	+ 5 9.67	+ 0.44	+ 0.12	+ 0.13	38.26 [1]
B. 4021 E B. 4085 W	57 57 44.50	— 3 8.34	+ 0.82	+ 0.09	+ 0.02	37.09
B. 4162 W B. 4186 E	57 52 28.18	+ 2 9.03	+ 0.16	+ 0.10	+ 0.04	37.51
B. 4327 E B. 4332 W	57 54 37.62	— 0 0.48	— 0.36	+ 0.12	0.00	36.90
B. 4470 W B. 4494 E	57 52 37.96	+ 2 0.73	— 1.54	+ 0.09	+ 0.03	37.25
B. 4510 E B. 4591 W	57 58 28.22	— 3 52.49	+ 0.62	+ 0.12	— 0.08	36.40

[1]) Positions taken from A. G. catalogue and R. Schorr, Eigenbewegungslexikon 1923.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4603 W B. 4602 W B. 4639 E	58 0 43.44 58 0 37.68	— 6 7.12 — 6 1.24	— 0.35 — 0.35	+ 0.08 + 0.08	— 0.12 — 0.12	57 54 35.94 36.05
B. 4671 E B. 4707 W	57 52 22.84	+ 2 13.79	+ 0.03	+ 0.08	+ 0.04	36.78
B. 4799 W B. 4829 E	57 53 20.64	+ 1 15.99	— 0.36	+ 0.13	+ 0.03	36.43
						57 54 36.81
						ℭ — 0.05
						57 54 36.76

Mean for Sõrve: $\varphi_p = 57\ 54\ 36.91 \pm 0.13$.

Viidumäe. June 26-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 830 W B. 4081 E	58 17 3.34	+ 1 23.10	— 0.90	— 0.06	+ 0.02	58 18 25.50
B. 4184 W B. 4223 E	58 19 57.84	— 1 32.65	+ 0.29	+ 0.10	— 0.04	25.54
B. 4382 E A. 5523 W	58 13 8.66	+ 5 16.33	+ 1.14	+ 0.12	+ 0.08	26.33 [1]
B. 4591 W B. 4542 E	58 24 7.54	— 5 40.08	— 1.30	+ 0.48	— 0.14	26.50
B. 1758 E B. 4820 W B. 4858 W	58 13 36.67 58 20 30.68	+ 4 49.68 — 2 5.18	+ 0.51 — 0.08	— 0.05 — 0.11	+ 0.17 — 0.06	26.98 25.26
B. 4948 W B. 5005 E	58 19 47.60	— 1 21.92	— 0.28	+ 0.13	— 0.03	25.50
B. 5200 E B. 5234 W	58 4 27.81	+ 13 59.02	+ 0.32	+ 0.13	+ 0.25	27.53
						58 18 26.14
						ℭ + 0.10
						58 18 26.24

[1]) Position of A. 5523 taken from A. G. catalogue and R. Schorr, Eigenbewegungslexikon 1923.

Viidumäe. June 27-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 830 W B. 4081 E	58 17 3.50	+ 1 23.10	— 0.87	— 0.06	+ 0.02	58 18 25.69
B. 4121 E B. 4161 W	58 25 40.70	— 7 14.64	— 1.18	+ 0.16	— 0.14	24.90
B. 4184 W B. 4223 E	58 19 59.10	— 1 32.90	+ 0.18	+ 0.10	— 0.04	26.44
B. 4382 E A. 5523 W	58 13 9.00	+ 5 15.55	+ 1.62	+ 0.12	+ 0.08	26.37 [1]
B. 4591 W B. 4542 E	58 24 7.88	— 5 40.56	— 1.04	+ 0.49	— 0.14	26.63
B. 1758 E B. 4820 W	58 13 36.94	+ 4 52.26	— 1.79	— 0.11	+ 0.17	27.47
B. 4858 W	58 20 30.94	— 2 2.40	— 2.82	— 0.11	— 0.06	25.55
B. 4948 W B. 5005 E	58 19 48.02	— 1 22.08	— 1.14	+ 0.13	— 0.03	24.90
B. 5200 E B. 5234 W	58 4 28.19	+ 13 59.44	— 0.55	+ 0.13	+ 0.25	27.47
						58 18 26.16
						€ + 0.08
						58 18 26.24

Mean for Viidumäe: $\varphi_p = 58\ 18\ 26.24 \pm 0.21$.

Tallinn. July 16-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4591 E A. 5764 W	59 25 4.58	+ 1 11.94	— 0.18	+ 0.24	+ 0.03	59 26 16.61 [2]
B. 4790 W B. 4790 E	59 18 7.10	+ 8 11.19	— 0.81			17.48
B. 4923 E B. 4948 W	59 24 30.42	+ 1 47.24	+ 0.04	+ 0.13	+ 0.03	17.86
B. 5218 W A. 6624 E	59 27 55.76	— 1 39.12	+ 1.42	+ 0.10	— 0.03	18.13 [2]
B. 5412 E B. 5453 W	59 25 47.60	+ 0 30.37	— 0.90	+ 0.18	+ 0.01	17.26

[1]) Position of A. 5523 taken from A. G. catalogue and R. Schorr, Eigenbewegungslexikon 1923.

[2]) Position of A. 5764 and A. 6624 taken from Pulkovo Publications vol. XXXV.

✳	$\frac{\delta n + \delta s}{2}$	m	i	c	r	φ_p
[1]) W						
B. 5481 W	59 13 55.58	+ 12 22.34	+ 0.37	+ 0.09	+ 0.22	59 26 18.60
B. 5535 E	59 14 13.10	+ 12 4.38	+ 0.37	+ 0.09	+ 0.21	18.14
B. 5593 W						
B. 5614 E	59 24 40.72	+ 1 38.58	— 1.42	+ 0.09	+ 0.02	17.99
						59 26 17.75
						€ — 0.09
						59 26 17.66

Tallinn. July 22-nd, 1930.

✳	$\frac{\delta n + \delta s}{2}$	m	i	c	r	φ_p
B. 4591 E						
A. 5764 W	59 25 7.28	+ 1 9.54	+ 0.56	+ 0.24	+ 0.03	59 26 17.65 [2])
B. 4790 W						
B. 4790 E	59 18 9.04	+ 8 7.54	+ 0.69			17.27
B. 4923 E						
B. 4948 W	59 24 32.44	+ 1 45.31	— 0.22	+ 0.13	+ 0.03	17.69
B. 5218 W						
A. 6624 E	59 27 57.41	— 1 40.95	+ 0.87	+ 0.10	— 0.03	17.40 [2])
B. 5412 E						
B. 5453 W	59 25 49.76	+ 0 28.04	— 0.22	+ 0.18	+ 0.01	17.77
[1]) W						
B. 5535 E	59 13 57.73	+ 12 20.20	— 0.16	+ 0.09	+ 0.22	18.08
B. 5593 W						
B. 5614 E	59 24 42.78	+ 1 34.19	— 0.14	+ 0.19	+ 0.02	17.04
						59 26 17.56
						€ + 0.05
						59 26 17.61

Tallinn. July 24-th, 1930.

✳	$\frac{\delta n + \delta s}{2}$	m	i	c	r	φ_p
B. 4591 E						
A. 5764 W	59 25 7.74	+ 1 9.33	+ 0.44	+ 0.14	+ 0.03	59 26 17.67 [2])
B. 4923 E						
B. 4948 W	59 24 32.88	+ 1 44.66	— 0.56	+ 0.13	+ 0.03	17.14

[1]) Hels. 12048.

[2]) Position of A. 5764 and A. 6624 taken from Pulkovo Publications vol. XXXV.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5218 W A. 6624 E	59 27 58.18	— 1 41.53	+ 0.34	+ 0.18	— 0.03	59 26 17.15 [1]
B. 5412 E B. 5453 W	59 25 50.48	+ 0 26.54	— 0.13	+ 0.18	+ 0.01	17.08
[2] W B. 5481 W	59 13 58.46	+ 12 19.53	— 0.16	+ 0.18	+ 0.22	18.23
B. 5535 E	59 14 15.96	+ 12 1.73	— 0.16	+ 0.18	+ 0.21	17.92
B. 5593 W B. 5614 E	59 24 43.56	+ 1 33.71	— 0.09	+ 0.19	+ 0.02	17.39
B. 5639 E B. 5678 W	59 31 40.65	— 5 24.04	— 0.25	+ 0.11	— 0.08	16.40
B. 5685 W B. 5721 E	59 27 58.73	— 1 41.30	— 0.20	+ 0.11	— 0.03	17.21
						59 26 17.36
						ℭ + 0.09
						59 26 17.45

Tallinn. July 27-th, 1930.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4591 E A. 5764 W	59 25 8.44	+ 1 9.60	— 0.01	+ 0.14	+ 0.03	59 26 18.20 [1]
B. 4688 W B. 4688 E	59 30 10.07	— 3 55.24	+ 1.25			16.08
B. 4790 E B. 4790 W	59 18 10.59	+ 7 26.69	+ 0.14			17.42
B. 4833 W B. 4894 E	59 31 15.39	— 4 58.97	+ 0.50	+ 0.13	— 0.08	16.97
B. 4923 E B. 4948 W	59 24 34.09	+ 1 43.52	— 0.25	+ 0.13	+ 0.03	17.52
B. 5014 W B. 5057 E	59 36 44.23	— 10 28.36	+ 0.70	+ 0.13	— 0.18	16.52
B. 5153 E B. 5183 W	59 27 46.70	— 1 29.34	— 0.28	+ 0.14	— 0.03	17.19
B. 5218 W A. 6624 E	59 27 59.20	— 1 41.94	+ 0.02	+ 0.15	— 0.03	17.40 [1]
B. 5412 E B. 5453 W	59 25 50.92	+ 0 26.59	— 0.72	+ 0.18	+ 0.01	16.98

[1]) Position of A. 5764 and A. 6624 taken from Pulkovo Publications vol. XXXV.

[2]) Hels. 12048.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5481 W B. 5535 E	59 14 16.39	+ 12 1.44	+ 0.03	+ 0.18	+ 0.21	59 26 18.27
B. 5593 W B. 5614 E	59 24 43.97	+ 1 33.70	— 0.78	+ 0.19	+ 0.02	17.10
						59 26 17.24
						€ 0.00
						59 26 17.24

Mean for Tallinn (1930): $\varphi_p = 59\ 26\ 17.47 \pm 0.09$.

Tallinn. May 27-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3744 E B. 3809 W	59 34 5.63	— 7 47.55	— 0.70	+ 0.06	— 0.14	59 26 17.30
B. 3945 E B. 3949 W	59 19 16.52	+ 7 0.03	+ 0.81	+ 0.18	+ 0.12	17.66
B. 3982 W	59 21 14.10	+ 5 2.69	+ 0.81	+ 0.14	+ 0.09	17.83
B. 4021 W B. 4047 E	59 25 7.69	+ 1 10.29	+ 0.21	+ 0.12	+ 0.01	18.32
B. 4161 E B. 4223 W	59 29 21.28	— 3 4.39	— 0.20	+ 0.11	— 0.08	16.72
B. 1235 W B. 4400 E	59 28 53.98	— 2 37.67	+ 1.06	— 0.05	— 0.08	17.24
B. 4591 E A. 5764 W	59 24 50.01	+ 1 28.13	— 0.62	+ 0.06	+ 0.02	17.60 [1]
						59 26 17.52
						€ — 0.03
						59 26 17.49

Tallinn. May 28-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3597 W B. 3626 E	59 23 9.98	+ 3 7.09	+ 0.17	+ 0.10	+ 0.04	59 26 17.38
B. 3744 E B. 3809 W	59 34 5.86	— 7 49.31	+ 0.04	+ 0.10	— 0.14	16.55
B. 3945 W B. 3949 W	59 19 16.79	+ 6 59.82	+ 0.96	+ 0.11	+ 0.12	17.80
B. 3982 E	59 21 14.38	+ 5 2.42	+ 0.96	+ 0.08	+ 0.09	17.93

[1]) Position of A. 5764 taken from Pulkovo Publications vol. XXXV.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4021 E B. 4047 W	59 25 7.46	+ 1 10.22	+ 0.04	+ 0.12	+ 0.01	59 26 17.58
B. 4161 W B. 4223 E	59 29 21.61	— 3 5.23	+ 0.44	+ 0.12	— 0.08	16.86
B. 1235 E B. 4400 W	59 28 54.28	— 2 35.94	— 0.30	— 0.05	— 0.08	17.91
B. 4591 W A. 5764 E	59 24 50.30	+ 1 26.91	+ 0.07	+ 0.06	+ 0.02	17.36 [1]
						59 26 17.46
						€ 0.00
						59 26 17.46

Tallinn. May 30-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3597 E B. 3626 W	59 23 10.44	+ 3 5.71	+ 0.80	+ 0.14	+ 0.04	59 26 17.13
B. 3744 W B. 3809 E	59 34 6.38	— 7 50.01	+ 0.58	+ 0.10	— 0.14	16.91
B. 3945 E B. 3949 E	59 19 17.36	+ 7 0.25	+ 0.04	+ 0.11	+ 0.12	17.88
B. 3982 W	59 21 14.94	+ 5 2.77	+ 0.04	+ 0.08	+ 0.09	17.92
B. 4021 W B. 4047 E	59 25 8.06	+ 1 8.81	+ 0.49	+ 0.10	+ 0.01	17.47
B. 4161 E B. 4223 W	59 29 22.21	— 3 6.18	+ 0.64	+ 0.12	— 0.08	16.71
B. 1235 W B. 4400 E	59 28 54.98	— 2 37.16	— 0.29	— 0.05	— 0.08	17.40
B. 4591 E A. 5764 W	59 24 50.88	+ 1 25.19	+ 0.76	+ 0.06	+ 0.02	16.91 [1]
						59 26 17.29
						€ + 0.06
						59 26 17.35

[1]) Position of A. 5764 taken from Pulkovo Publications vol. XXXV.

Tallinn. May 31-st, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3597 W B. 3626 E	59° 23′ 10.65	+ 3′ 7.15	— 0.64	+ 0.14	+ 0.04	59° 26′ 17.34

Mean for Tallinn (1931): $\varphi_p = 59\ 26\ 17.43 \pm 0.10$

Undva. June 19-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3958 E B. 4004 W	58° 30′ 30.73	— 0′ 59.91	— 0.09	+ 0.10	— 0.02	58° 29′ 30.81 [1]
B. 4121 W B. 4161 E	58 25 27.40	+ 4 1.61	— 0.55	+ 0.10	+ 0.08	28.64
B. 4184 E B. 4223 W	58 19 47.22	+ 9 43.22	— 0.74	+ 0.11	+ 0.18	29.99
B. 4234 W B. 4255 E	58 19 1.36	+ 10 27.59	+ 0.36	+ 0.06	+ 0.20	29.57
B. 4293 W	58 20 29.58	+ 8 59.88	+ 0.18	+ 0.10	+ 0.17	30.01
B. 4381 W A. 5564 E	58 32 25.70	— 2 55.50	— 0.68	+ 0.06	— 0.06	29.52 [2]
B. 4458 E B. 4460 E	58 34 36.20	— 5 5.36	— 0.26	+ 0.10	— 0.08	30.60
B. 4470 W	58 34 15.62	— 4 44.88	— 0.26	+ 0.10	— 0.08	30.50
B. 4591 W B. 4582 E	58 34 46.32	— 5 16.60	— 0.44	+ 0.06	— 0.11	29.23
B. 4661 E B. 4724 W	58 28 43.14	+ 0 46.84	— 0.66	+ 0.10	+ 0.02	29.44
B. 4749 E	58 30 50.88	— 1 20.76	— 0.36	+ 0.10	— 0.03	29.83
B. 4790 E B. 4822 W	58 30 36.26	— 1 7.54	+ 1.05	+ 0.18	— 0.02	29.93
B. 1871 W B. 4960 E	58 33 11.68	— 3 42.24	+ 0.57	— 0.01	— 0.10	29.90
						58° 29′ 29.80
						ℰ 0.00
						58° 29′ 29.80

[1]) Weight 0.5.

[2]) Position of A. 5564 taken from Pulkovo 1915, Greenwich 1925, Berlin Veröffentlichungen Bd. I H. 2 and Leiden Annalen XIII$_3$ catalogues.

Undva. June 20-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4121 W B. 4161 E	58 25 27.66	+ 4 1.12	+ 0.08	+ 0.10	+ 0.08	58 29 29.04
B. 4184 E B. 4223 W	58 19 47.50	+ 9 40.71	+ 1.25	+ 0.06	+ 0.18	29.70
B. 4234 W B. 4293 W B. 4255 E	58 19 1.66	+ 10 27.68	+ 0.24	+ 0.06	+ 0.20	29.84
	58 20 29.84	+ 8 59.41	+ 0.43	+ 0.10	+ 0.17	29.95
B. 4458 W B. 4460 W B. 4470 E	58 34 36.53	— 5 5.67	— 0.31	+ 0.14	— 0.08	30.61
	58 34 15.95	— 4 45.04	— 0.31	+ 0.14	— 0.08	30.66
B. 4591 E B. 4582 W	58 34 46.62	— 5 16.30	— 0.80	+ 0.02	— 0.11	29.43
B. 4661 W B. 4724 E B. 4749 W	58 28 43.44	+ 0 46.46	— 0.46	+ 0.10	+ 0.02	29.56
	58 30 51.20	— 1 22.11	+ 0.54	+ 0.10	— 0.03	29.70
B. 4790 W B. 4822 E	58 30 36.56	— 1 5.64	— 1.10	+ 0.10	— 0.02	29.90
						58 29 29.84
						℄ — 0.06
						58 29 29.78

Mean for Undwa: $\varphi_p = 58\ 29\ 29.79 \pm 0.11$.

Ohtja. June 23-rd, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4121 W B. 4161 E	58 25 28.42	+ 0 8.38	+ 0.05	+ 0.10	0.00	58 25 36.95
B. 4184 E B. 4223 W	58 19 48.28	+ 5 49.80	— 0.33	+ 0.06	+ 0.12	37.93
B. 4234 W B. 4255 E B. 4293 W	58 19 2.46	+ 6 34.54	+ 0.47	+ 0.10	+ 0.12	37.69
	58 20 30.68	+ 5 7.32	+ 0.04	+ 0.10	+ 0.10	38.24
B. 4381 W A. 5564 E	58 32 26.88	— 6 49.94	+ 0.73	+ 0.06	— 0.13	37.60 [1]
B. 4458 E B. 4460 E B. 4470 W	58 34 37.48	— 8 58.55	— 0.18	+ 0.10	— 0.15	38.70
	58 34 16.90	— 8 37.98	— 0.18	+ 0.10	— 0.15	38.69

[1]) Position of A. 5564 taken from Pulkovo 1915, Greenwich 1925, Berlin Veröffentlichungen Bd. I H. 2 and Leiden Annalen XIII 3 catalogues.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4591 W B. 4582 E	58 34 47.50	— 9 9.77	+ 0.06	+ 0.06	— 0.21	58 25 37.64
B. 4661 E B. 4724 W B. 4749 E	58 28 44.56 58 30 52.29	— 3 6.14 — 5 14.70	— 0.33 + 0.50	+ 0.09 + 0.09	— 0.06 — 0.10	38.12 38.08
B. 4788 E B. 4805 W	58 25 50.86	— 0 12.51	+ 0.16	+ 0.10	— 0.01	38.60
B. 1871 W B. 4960 E	58 33 12.70	— 7 34.56	— 0.28	— 0.01	— 0.22	37.63
						58 25 37.99
						ℰ — 0.09
						58 25 37.90

Ohtja. June 24-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4121 E B. 4161 W	58 25 28.64	+ 0 8.77	— 0.54	+ 0.10	0.00	58 25 36.97
B. 4184 W B. 4223 E	58 19 48.54	+ 5 49.55	— 0.13	+ 0.06	+ 0.12	38.14
B. 4234 E B. 4255 W B. 4293 E	58 19 2.73 58 20 30.96	+ 6 34.40 + 5 7.90	+ 0.30 — 0.66	+ 0.10 + 0.10	+ 0.12 + 0.10	37.65 38.40
B. 4381 E A. 5564 W	58 32 27.18	— 6 49.71	+ 0.88	+ 0.06	— 0.13	38.28 [1]
B. 4458 W B. 4460 W B. 4470 E	58 34 37.81 58 34 17.24	— 8 57.93 — 8 37.28	— 0.88 — 0.88	+ 0.10 + 0.10	— 0.15 — 0.15	38.95 39.03
						58 25 38.20
						ℰ — 0.05
						58 25 38.15

Mean for Ohtja: $\varphi_p = 58\ 25\ 37.99 \pm 0.14$.

[1]) Position of A. 5564 taken from Pulkovo 1915, Greenwich 1925, Berlin Veröffentlichungen Bd. I H. 2 and Leiden Annalen XIII$_3$ catalogues.

Meiuste. July 2-nd, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 1124 E B. 4311 W	58 43 40.20	— 8 4.51	— 0.46	— 0.01	— 0.24	58 35 35.00
B. 4381 W A. 5564 E	58 32 29.44	+ 3 7.04	— 1.86	+ 0.06	+ 0.06	34.74 [1]
B. 4458 E B. 4460 E	58 34 40.48	+ 0 56.05	+ 0.00	+ 0.10	+ 0.02	36.65
B. 4470 W	58 34 19.90	+ 1 16.66	+ 0.00	+ 0.10	+ 0.02	36.68
B. 4535 W B. 4603 E	58 37 34.82	— 1 59.26	— 0.34	+ 0.12	— 0.04	35.30
B. 4602 E	58 37 29.06	— 1 53.37	— 0.34	+ 0.06	— 0.04	35.37
B. 4661 E B. 4724 W	58 28 47.31	+ 6 48.05	— 0.23	+ 0.10	+ 0.12	35.35
B. 4749 E	58 32 38.06	+ 2 57.36	+ 0.20	+ 0.10	+ 0.06	35.78
B. 4790 E B. 4822 W	58 30 40.80	+ 4 54.48	+ 0.43	+ 0.18	+ 0.08	35.97
B. 4863 W B. 4930 E	58 35 27.18	+ 0 8.85	— 0.48	+ 0.10	+ 0.00	35.65
B. 4948 E B. 4988 W	58 34 46.78	+ 0 48.05	+ 0.80	+ 0.10	+ 0.00	35.73
B. 5075 W B. 5149 E	58 43 3.14	— 7 28.33	+ 0.08	+ 0.10	— 0.13	34.86
B. 5165 E B. 5218 W	58 29 7.66	+ 6 29.35	— 0.50	+ 0.10	+ 0.11	36.62

58 35 35.67
℄ + 0.02

58 35 35.69

Meiuste. July 4-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 1124 W B. 4311 E	58 43 40.48	— 8 4.86	+ 0.06	— 0.01	— 0.24	58 35 35.43
B. 4381 E A. 5564 W	58 32 30.00	+ 3 4.98	+ 0.84	+ 0.12	+ 0.06	36.00 [1]
B. 4458 W B. 4460 W	58 34 40.96	+ 0 55.43	— 0.20	+ 0.10	+ 0.02	36.31
B. 4470 E	58 34 20.38	+ 1 16.08	— 0.20	+ 0.10	+ 0.02	36.38

[1]) Position of A. 5564 taken from Pulkovo 1915, Greenwich 1925, Berlin Veröffentlichungen Bd. I H. 2 and Leiden Annalen XIII 3 catalogues.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4591 E B. 4582 W	58° 34′ 50.″70	+ 0′ 45.″19	— 0.″75	+ 0.″06	+ 0.″01	58° 35′ 35.″21
B. 4661 W B. 4724 E	58 28 47.94	+ 6 48.19	— 0.45	+ 0.06	+ 0.12	35.86
B. 4747 W	58 32 38.69	+ 2 56.54	+ 0.18	+ 0.06	+ 0.06	35.53
B. 4790 W B. 4822 E	58 30 41.46	+ 4 54.74	— 0.55	+ 0.12	+ 0.08	35.85
B. 4948 E B. 4988 W	58 34 47.48	+ 0 47.63	+ 0.36	+ 0.10	+ 0.00	35.57
B. 5075 W B. 5149 E	58 43 3.81	— 7 28.32	— 0.04	+ 0.10	— 0.13	35.42
B. 5165 E B. 5218 W	58 29 8.30	+ 6 27.63	+ 0.34	+ 0.10	+ 0.11	36.48
						58° 35′ 35.″82
						℄ — 0.05
						58° 35′ 35.″77

Mean for Meiuste: $\varphi_p = 58° 35' 35.''73 \pm 0.''11$.

Määltse. July 12-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4535 E B. 4603 W	58° 37′ 37.″74	+ 13′ 13.″48	+ 0.″56	+ 0.″06	+ 0.″26	58° 50′ 52.″10

Määltse. July 13-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4354 W B. 4382 E	58° 45′ 24.″25	+ 5′ 27.″14	+ 0.″08	+ 0.″18	+ 0.″10	58° 50′ 51.″75
B. 4391 E A. 5564 W	58 46 50.66	+ 3 59.99	+ 1.33	+ 0.01	+ 0.09	52.16 [1]
B. 4535 W B. 4603 E	58 37 38.08	+ 13 14.76	— 2.19	+ 0.12	+ 0.25	51.02
B. 4686 E B. 4711 W	58 54 31.42	— 3 40.53	+ 0.08	+ 0.19	— 0.06	51.10
B. 4730 W B. 4745 E	58 57 55.28	— 7 4.93	+ 0.34	+ 0.11	— 0.12	50.68
B. 4782 E B. 4814 W	58 55 45.80	— 4 55.13	+ 0.49	+ 0.10	— 0.09	51.17

[1]) Position of A. 5564 taken from Pulkovo 1915, Greenwich 1925, Berlin Veröffentlichungen Bd. I H. 2 and Leiden Annalen XIII 3 catalogues.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4842 W B. 4909 E	58 59 11.46	— 8 20.38	— 0.83	+ 0.20	— 0.14	58 50 50.31
B. 4948 E B. 4980 W	58 52 45.36	— 1 54.48	+ 0.44	+ 0.19	— 0.03	51.48
B. 5149 W B. 5163 E	58 47 34.77	+ 3 16.70	— 0.02	+ 0.19	+ 0.06	51.70
B. 5199 E B. 5205 W	58 49 34.31	+ 1 16.68	+ 0.15	+ 0.11	+ 0.03	51.28
B. 5234 W B. 5271 E	58 49 18.38	+ 1 33.03	+ 0.40	+ 0.20	+ 0.03	52.04
						58 50 51.42
						℄ + 0.03
						58 50 51.45

Määltse. July 15-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4842 E B. 4909 W	58 59 12.16	— 8 21.41	— 2.00	+ 0.20	— 0.14	58 50 48.81 [1]
B. 4948 W B. 4980 E	58 52 46.07	— 1 55.54	+ 0.46	+ 0.19	— 0.03	51.15
B. 5149 E B. 5163 W	58 47 35.52	+ 3 15.93	+ 0.02	+ 0.19	+ 0.06	51.72
						58 50 50.91
						℄ + 0.08
						58 50 50.99

Määltse. July 20-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4535 E B. 4603 W	58 37 40.02	+ 13 11.58	— 0.27	+ 0.12	+ 0.25	58 50 51.70
B. 4686 W B. 4711 E	58 54 33.64	— 3 41.89	+ 0.08	+ 0.10	— 0.06	51.87
B. 4730 E B. 4745 W	58 57 57.54	— 7 6.35	— 0.02	+ 0.18	— 0.12	51.23

[1]) Weight 0.5.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4782 W B. 4814 E	58 55 48.18	— 4 57.65	+ 0.79	+ 0.10	— 0.09	58 50 51.33
						58 50 51.53
						€ — 0.11
						58 50 51.42

Mean for Määltse: $\varphi_p = 58\ 50\ 51.38 \pm 0.15$.

Tahkuna. August 5-th, 1931.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4730 E B. 4745 W	58 58 2.29	+ 7 25.17	+ 0.24	+ 0.18	+ 0.13	59 5 28.01
B. 4782 W B. 4814 E	58 55 52.90	+ 9 35.05	+ 0.66	+ 0.10	+ 0.17	28.88
B. 4842 E B. 4909 W	58 59 18.85	+ 6 9.41	+ 0.12	+ 0.20	+ 0.10	28.68
B. 5013 W B. 5026 E	59 2 49.66	+ 2 38.85	+ 0.34	+ 0.19	+ 0.04	29.08
B. 5165 E B. 5191 W	59 4 35.07	+ 0 53.07	+ 0.54	+ 0.18	+ 0.02	28.88
B. 5218 W B. 5270 E	58 58 20.00	+ 7 8.58	+ 0.38	+ 0.19	+ 0.11	29.26
B. 5333 E B. 5362 W	59 1 51.49	+ 3 37.55	+ 0.17	+ 0.19	+ 0.06	29.46
B. 5412 W B. 5412 E	59 10 8.71	— 4 44.01	+ 2.52			27.22 [1]
B. 5453 E B. 5481 W	59 1 2.70	+ 4 25.62	+ 0.11	+ 0.18	+ 0.08	28.69
[2] W	59 0 43.7	+ 4 43.45	+ 0.07	+ 0.18	+ 0.08	27.48
B. 5565 W B. 5608 E	58 59 23.88	+ 6 5.11	+ 0.03	+ 0.18	+ 0.10	29.30
B. 5639 E B. 5687 W	59 6 52.15	— 1 24.03	+ 0.09	+ 0.18	— 0.03	28.36
B. 5716 W B. 5764 E	59 5 43.67	— 0 15.41	+ 0.24	+ 0.10	— 0.00	28.60
						59 5 28.66
						€ — 0.08
						59 5 28.58

[1]) Weight 0.5.
[2]) Hels. 12048.

Tahkuna. August 6-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4730 E B. 4745 W	58 58 2.54	+ 7 25.56	— 0.07	+ 0.14	+ 0.13	59 5 28.30
B. 4787 W B. 4829 E	59 1 33.89	+ 3 53.97	— 0.21	+ 0.11	+ 0.07	27.83
B. 4869 W	59 13 43.38	— 8 15.49	— 0.42	+ 0.11	— 0.14	27.44
B. 5013 W B. 5026 E	59 2 49.93	+ 2 38.45	+ 0.08	+ 0.15	+ 0.04	28.65
B. 5165 E B. 5191 W	59 4 35.40	+ 0 53.52	— 0.74	+ 0.18	+ 0.02	28.38
B. 5234 W B. 5251 E	58 54 27.30	+ 11 0.75	+ 0.60	+ 0.06	+ 0.20	28.91
B. 5412 W B. 5412 E	59 10 9.07	— 4 42.28	+ 0.30			27.09 [1]
B. 5447 E B. 5488 W	58 55 50.46	+ 9 38.20	+ 0.02	+ 0.19	+ 0.16	29.03
B. 5565 W B. 5608 E	58 59 24.22	+ 6 4.42	+ 0.00	+ 0.18	+ 0.10	28.92
B. 5667 E B. 5727 W	59 2 34.72	+ 2 53.36	+ 0.52	+ 0.18	+ 0.06	28.84
						59 5 28.40
						℄ — 0.06
						59 5 28.34

Mean for Tahkuna: $\varphi_p = 59\ 5\ 28.46 \pm 0.13$.

Kõpu. August 10-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5149 W B. 5163 E	58 47 44.43	+ 7 10.07	+ 2.02	+ 0.19	+ 0.13	58 54 56.84
B. 5199 E B. 5205 W	58 49 43.72	+ 5 12.52	+ 0.12	+ 0.11	+ 0.10	56.57
B. 5234 W B. 5271 E	58 49 28.22	+ 5 28.34	+ 0.14	+ 0.10	+ 0.10	56.90
B. 5321 E B. 5344 W	58 47 41.16	+ 7 16.82	— 1.46	+ 0.18	+ 0.13	56.83
B. 5453 W B. 5481 E	59 1 4.52	— 6 9.16	+ 0.02	+ 0.18	— 0.10	55.46
B. 5565 E B. 5608 W	58 59 25.70	— 4 29.19	— 0.24	+ 0.16	— 0.08	56.35
B. 5661 W B. 5734 E	58 58 32.32	— 3 36.58	— 0.50	+ 0.15	— 0.06	55.33

[1]) weight 0.5.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5784 E B. 5806 W	58 59 29.51	— 4 33.71	+ 0.06	+ 0.06	— 0.08	58 54 55.84
B. 5843 W B. 5896 E	58 53 3.38	+ 1 53.03	— 0.29	+ 0.16	+ 0.04	56.32
B. 5931 W	58 57 11.68	— 2 14.62	— 1.10	+ 0.16	— 0.02	56.10
						58 54 56.25
						ℭ + 0.06
						58 54 56.31

Kõpu. August 11-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4842 W B. 4909 E	58 59 20.50	— 4 25.28	+ 0.40	+ 0.20	— 0.08	58 54 55.74
B. 4948 E B. 4980 W	58 52 54.81	+ 2 0.43	+ 0.42	+ 0.18	+ 0.03	55.87
B. 5149 W B. 5163 E	58 47 44.84	+ 7 12.45	— 0.64	+ 0.17	+ 0.13	56.95
B. 5784 E B. 5806 W	58 59 29.83	— 4 33.22	— 0.23	+ 0.06	— 0.08	56.36
						58 54 56.23
						ℭ + 0.08
						58 54 56.31

Kõpu. August 15-th, 1931.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5565 W B. 5608 E	58 59 27.52	— 4 30.14	— 1.04	+ 0.16	— 0.08	58 54 56.42
B. 5818 W B. 5833 E	58 52 29.88	+ 2 26.43	— 0.01	+ 0.06	+ 0.06	56.42

Kõpu. August 16-th, 1931.

B. 4730 W B. 4745 E	58 58 5.04	— 3 10.12	+ 0.68	+ 0.18	— 0.05	55.73
						58 54 56.19
						ℭ — 0.04
						58 54 56.15

Mean for Kõpu: $\varphi_p = 58\ 54\ 56.28 \pm 0.12$.

Veski. June 4-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3856 E B. 3930 W	59° 11′ 55.39	— 1′ 11.88	+ 1.58	+ 0.19	— 0.02	59° 10′ 45.26
B. 3979 W B. 4035 E	59 17 13.12	— 6 27.87	+ 0.00	+ 0.11	— 0.11	45.25
B. 4056 E B. 4079 W	59 15 49.85	— 5 5.20	— 0.45	+ 0.10	— 0.09	44.21
B. 4181 W B. 4220 E	59 14 30.20	— 3 45.49	— 0.26	+ 0.10	— 0.07	44.48
B. 4327 E B. 4358 W	59 5 2.11	+ 5 42.22	+ 0.64	+ 0.14	+ 0.12	45.23
B. 4382 W B. 4458 E	59 5 14.38	+ 5 30.98	— 0.86	+ 0.19	+ 0.10	44.79
B. 4460 E	59 4 53.81	+ 5 51.78	— 0.86	+ 0.19	+ 0.10	45.02
B. 4479 E B. 4504 W	59 6 30.18	+ 4 15.46	— 0.85	+ 0.23	+ 0.07	45.09
B. 4505 W	59 6 44.86	+ 4 0.85	— 0.85	+ 0.23	+ 0.07	45.16
B. 4609 W B. 4623 E	59 18 56.86	— 8 10.73	— 0.97	+ 0.18	— 0.14	45.20
B. 4671 E B. 4688 W	59 7 40.42	+ 3 4.30	+ 0.08	+ 0.18	+ 0.05	45.03
B. 4727 W B. 4765 E	59 9 56.76	+ 0 47.89	+ 0.17	+ 0.18	+ 0.01	45.01
B. 4829 W B. 4869 E	59 13 28.38	— 2 43.66	+ 0.09	+ 0.19	— 0.05	44.95
						59° 10′ 44.98
						ℭ + 0.10
						59° 10′ 45.08

Veski. June 6-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3833 W B. 3841 E	59° 7′ 48.68	+ 2′ 55.77	+ 0.15	+ 0.06	+ 0.05	59° 10′ 44.71
B. 3856 E B. 3930 W	59 11 56.14	— 1 11.29	— 0.14	+ 0.19	— 0.02	44.88
B. 3979 W B. 4035 E	59 17 13.67	— 6 28.98	+ 0.56	+ 0.11	— 0.11	45.25
B. 4056 E B. 4079 W	59 15 50.49	— 5 5.65	— 0.16	+ 0.09	— 0.09	44.68

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4479 W B. 4504 E	59° 6′ 30.84″	+4′ 13.86″	+0.52″	+0.23″	+0.07″	59° 10′ 45.52″
B. 4671 E B. 4688 W	59 7 41.08	+3 3.52	+0.53	+0.16	+0.05	45.34
						59° 10′ 45.06″
						℄ +0.07
						59° 10′ 45.13″

Mean for Veski: $\varphi_p = 59°\ 10'\ 45.10'' \pm 0.07''$.

Kloostri. June 9-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4181 E B. 4220 W	59° 14′ 31.70″	−1′ 19.71″	+0.10″	+0.10″	−0.02″	59° 13′ 12.17″
B. 4327 W B. 4358 E	59 5 3.62	+8 9.31	−0.24	+0.14	+0.16	12.99
B. 4382 E B. 4458 W	59 5 16.04	+7 55.93	+0.40	+0.19	+0.14	12.70
B. 4460 W	59 4 55.46	+8 16.85	+0.40	+0.19	+0.14	13.04
B. 4479 W B. 4504 E	59 6 31.88	+6 40.12	+0.74	+0.10	+0.12	12.96
B. 4505 E	59 6 46.56	+6 25.34	+0.74	+0.10	+0.12	12.86
B. 4609 E B. 4623 W	59 18 58.60	−5 46.52	+0.38	+0.18	−0.10	12.54
B. 4671 W B. 4688 E	59 7 41.98	+5 30.18	−0.34	+0.18	+0.08	12.08
B. 4727 E B. 4765 W	59 9 58.46	+3 13.92	−0.09	+0.19	+0.05	12.53
B. 4790 W B. 4790 E	59 18 3.61	−4 51.33	−0.08	+0.59		12.79 [1]
B. 4829 E B. 4869 W	59 13 30.03	−0 18.14	−0.23	+0.19	−0.01	11.84
						59° 13′ 12.58″
						℄ −0.05
						59° 13′ 12.53″

[1]) Weight 0.5.

Kloostri. June 10-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3856 E B. 3930 W	59° 11′ 57.″06	+1′ 15.″04	−1.″83	+0.″19	+0.″01	59° 13′ 10.″47 [1]
B. 3979 W B. 4035 E	59 17 14.73	−4 2.22	−1.10	+0.11	−0.08	11.44
B. 4056 E B. 4079 W	59 15 51.61	−2 40.26	+0.30	+0.09	−0.05	11.69
B. 4181 W B. 4220 E	59 14 32.04	−1 19.22	−0.78	+0.10	−0.02	12.12
B. 4327 E B. 4358 W	59 5 3.92	+8 8.61	−0.78	+0.14	+0.16	12.05
B. 4382 W B. 4458 E	59 5 16.36	+7 56.37	−1.09	+0.19	+0.14	11.97
B. 4460 E	59 4 55.80	+8 17.06	−1.09	+0.19	+0.14	12.10
B. 4479 E B. 4504 W	59 6 32.16	+6 39.76	+0.72	+0.09	+0.12	12.85
B. 4609 W B. 4623 E	59 18 58.92	−5 46.45	−0.02	+0.18	−0.10	12.53
B. 4671 E B. 4688 W	59 7 42.45	+5 30.32	−0.27	+0.18	+0.08	12.76
B. 4727 W B. 4765 E	59 9 58.80	+3 12.68	+0.40	+0.19	+0.05	12.12
B. 4790 E B. 4790 W	59 18 3.94	−4 52.78	+1.18	+0.59		12.93 [1]
B. 4829 W B. 4869 E	59 13 30.36	−0 18.53	+0.13	+0.19	−0.01	12.14
						59° 13′ 12.″13
						℄ −0.08
						59° 13′ 12.″05

Mean for Kloostri: $\varphi_p = 59°\ 13'\ 12.''28 \pm 0.''11$.

Keila. June 23-rd, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4021 E B. 4047 W	59° 25′ 2.″77	−5′ 42.″45	+0.″16	+0.″19	−0.″10	59° 19′ 20.″57
B. 4090 W B. 4159 E	59 19 54.81	−0 34.03	−0.24	+0.18	−0.02	20.70
B. 4181 E B. 4220 W	59 14 35.65	+4 45.48	+0.07	+0.06	+0.09	21.35

[1]) Weight 0.5.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4293 W B. 4364 E	59 14 42.40	+ 4 38.49	— 0.02	+ 0.11	+ 0.08	59 19 21.06
B. 4470 E B. 4531 W	59 24 9.48	— 4 48.08	+ 0.98	+ 0.18	— 0.09	22.47
B. 4609 W B. 4623 E	59 19 3.36	+ 0 17.17	+ 0.82	+ 0.19	+ 0.00	21.54
B. 1673 E B. 4761 W	59 13 43.22	+ 5 37.48	+ 1.04	— 0.06	+ 0.16	21.84
B. 4790 W B. 4790 E	59 18 8.43	+ 1 12.04	+ 0.23	+ 0.59		21.29
B. 4829 E B. 4869 W	59 13 34.82	+ 5 45.79	— 0.01	+ 0.19	+ 0.08	20.87
B. 4923 W B. 4948 E	59 24 36.64	— 5 16.86	+ 0.51	+ 0.19	— 0.09	20.39
						59 19 21.21
						℄ — 0.08
						59 19 21.13

Keila. June 26-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4021 E B. 4047 W	59 25 3.50	— 5 42.87	— 0.28	+ 0.19	— 0.10	59 19 20.44
B. 4090 W B. 4159 E	59 19 55.60	— 0 34.97	— 0.86	+ 0.18	— 0.02	19.93
B. 4181 E B. 4220 W	59 14 36.46	+ 4 44.56	— 1.19	+ 0.10	+ 0.09	20.02
B. 4293 W B. 4364 E	59 14 43.30	+ 4 36.02	— 0.44	+ 0.11	+ 0.08	19.07
B. 4484 E B. 4539 W	59 19 42.14	— 0 21.55	— 0.92	+ 0.11	+ 0.00	19.78
B. 4609 W B. 4623 E	59 19 4.38	+ 0 16.65	— 0.18	+ 0.18	+ 0.00	21.03
B. 4727 E B. 4765 W	59 10 4.32	+ 9 16.90	— 0.79	+ 0.19	+ 0.14	20.76
B. 4790 W B. 4790 E	59 18 9.49	+ 1 10.22	+ 0.94	+ 0.59		21.24
B. 4829 E B. 4869 W	59 13 35.88	+ 5 45.16	— 0.96	+ 0.19	+ 0.08	20.35
B. 4923 W B. 4948 E	59 24 37.70	— 5 17.47	+ 0.08	+ 0.18	— 0.09	20.40

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5020 E B. 5083 W	59° 9′ 0.88″	+10′ 20.09″	—1.18″	+0.10″	+0.18″	59° 19′ 20.07″
						59° 19′ 20.28″
						℄ —0.08″
						59° 19′ 20.20″

Mean for Keila: $\varphi_p = 59^\circ\,19'\,20.64'' \pm 0.16''$.

Pakri. June 27-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4293 W B. 4364 E	59° 14′ 43.58″	+8′ 31.57″	—0.31″	+0.11″	+0.15″	59° 23′ 15.10″
B. 1235 E B. 4400 W	59 28 57.08	—5 40.39	—1.16	—0.05	—0.17	15.31
B. 4484 W B. 4539 E	59 19 42.46	+3 32.30	—0.12	+0.11	+0.06	15.81
B. 4602 E B. 4603 E	59 22 18.46	+0 57.10	—1.00	+0.12	+0.02	14.70
B. 4614 W	59 22 24.24	+0 51.25	—1.00	+0.12	+0.02	14.63
B. 4688 W B. 4688 E	59 30 4.91	—6 51.06	+0.22	+0.59		14.66
B. 4763 E B. 4822 W	59 20 51.72	+2 24.16	—0.98	+0.19	+0.04	15.13
B. 4923 W B. 4948 E	59 24 38.05	—1 23.52	+0.08	+0.19	—0.03	14.77
						59° 23′ 15.01″
						℄ —0.06″
						59° 23′ 14.95″

Pakri. July 3-rd, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4293 E B. 4364 W	59° 14′ 45.20″	+8′ 30.17″	—0.74″	+0.12″	+0.15″	59° 23′ 14.90″
B. 1235 W B. 4400 E	59 28 58.40	—5 42.71	—0.06	—0.05	—0.17	15.41
B. 4470 E B. 4531 W	59 24 12.28	—0 57.36	+0.70	+0.18	—0.02	15.78

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4609 W B. 4623 E	59 19 6.74	+ 4 8.48	+ 0.25	+ 0.18	+ 0.07	59 23 15.72
B. 4688 E B. 4688 W	59 30 6.97	— 6 52.66	— 0.23	+ 0.59		14.67
B. 4763 W B. 4822 E	59 20 53.79	+ 2 21.94	— 0.51	+ 0.19	+ 0.04	15.45
B. 4923 W B. 4948 E	59 24 40.17	— 1 25.75	+ 0.24	+ 0.18	— 0.03	14.81
B. 5153 E B. 5183 W	59 28 0.91	— 4 45.25	— 1.50	+ 0.20	— 0.08	14.28
B. 5218 W A. 6624 E	59 28 15.94	— 5 0.76	+ 0.18	+ 0.19	— 0.09	15.46 [1]
						59 23 15.16
						ℰ + 0.10
						59 23 15.26

Pakri. July 5-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 1235 E B. 4400 W	59 28 58.82	— 5 43.22	— 0.03	— 0.05	— 0.17	59 23 15.35
B. 4484 W B. 4539 E	59 19 44.64	+ 3 30.40	— 0.37	+ 0.11	+ 0.06	14.84
						59 23 15.10
						ℰ 0.00
						59 23 15.10

Mean for Pakri: $\varphi_p = 59\ 23\ 15.11 \pm 0.10$.

Osmussaare. July 14-th, 1932.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4484 E B. 4539 W	59 19 47.48	— 1 35.34	— 1.25	+ 0.11	— 0.03	59 18 10.97
B. 4609 W B. 4623 E	59 19 10.26	— 0 58.26	— 0.02	+ 0.18	— 0.02	12.14
B. 4727 E B. 4765 W	59 10 10.42	+ 8 1.24	— 0.16	+ 0.19	+ 0.13	11.82

[1]) Position of A. 6624 taken from Pulkovo 1925 catalogue.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4790 W B. 4790 E	59 18 15.72	— 0 3.17	—0.50	+0.59		59 18 12.64
B. 4829 E B. 4869 W	59 13 42.14	+ 4 30.10	—0.46	+0.19	+0.08	12.05
B. 4923 W B. 4948 E	59 24 44.00	— 6 32.20	—0.40	+0.19	—0.11	11.48
B. 5020 E B. 5083 W	59 9 7.17	+ 9 4.81	+0.34	+0.10	+0.16	12.58
B. 5191 W B. 5225 E	59 11 57.64	+ 6 14.84	+0.24	+0.18	+0.11	13.01
B. 5236 E B. 5293 W	59 13 45.74	+ 4 25.49	+1.18	+0.13	+0.09	12.63
B. 5308 W	59 13 22.19	+ 4 49.43	+1.18	+0.13	+0.09	13.02
B. 5388 W B. 5433 E	59 21 20.34	— 3 8.25	+0.30	+0.12	—0.07	12.44
						59 18 12.25
						ℭ +0.08
						59 18 12.33

Osmussaare. July 16-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4470 W B. 4531 E	59 24 16.50	— 6 3.34	—0.66	+0.18	—0.11	59 18 12.57
B. 4609 E B. 4623 W	59 19 10.88	— 0 58.96	+0.18	+0.19	—0.02	12.27
B. 1673 W B. 4761 E	59 13 49.21	+ 4 23.28	+0.10	—0.06	+0.12	12.65
B. 4790 E B. 4790 W	59 18 16.49	— 0 4.42	—0.04	+0.59		12.62
B. 4829 W B. 4869 E	59 13 42.81	+ 4 28.78	+0.06	+0.19	+0.08	11.92
B, 4923 E B. 4948 W	59 24 44.72	— 6 33.63	+0.67	+0.19	—0.11	11.84
B. 5020 W B. 5083 E	59 9 7.90	+ 9 4.78	—0.44	+0.10	+0.16	12.50
B. 5153 E B. 5183 W	59 28 5.56	— 9 54.29	+0.31	+0.20	—0.17	11.61
B. 5218 W A. 6624 E	59 28 20.56	—10 8.54	+0.44	+0.19	—0.17	12.48 [1]

[1]) Position of A. 6624 taken from Pulkovo 1925 catalogue.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5290 E B. 5365 W	59 15 41.42	+ 2 30.25	+ 0.96	+ 0.10	+ 0.04	59 18 12.77
B. 5388 W B. 5433 E	59 21 21.04	— 3 9.03	+ 0.22	+ 0.12	— 0.07	12.28
						59 18 12.32
						ℰ + 0.11
						59 18 12.43

Mean for Osmussaare: $\varphi_p = 59\ 18\ 12.38 \pm 0.11$.

Vormsi. July 26-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4782 E B. 4814 W	58 55 55.29	+ 5 48.05	— 0.60	+ 0.10	+ 0.10	59 1 42.94
B. 4842 W B. 4909 E	58 59 22.38	+ 2 20.68	— 0.94	+ 0.20	+ 0.04	42.36
B. 4948 E B. 4980 W	58 52 58.02	+ 8 45.01	— 0.06	+ 0.19	+ 0.15	43.31
B. 5013 W B. 5026 E	59 2 55.73	— 1 12.81	+ 0.55	+ 0.18	— 0.01	43.64
B. 5165 W B. 5191 E	59 4 43.84	— 3 0.76	— 0.29	+ 0.18	— 0.05	42.92
B. 5234 E B. 5251 W	58 54 37.30	+ 7 6.72	— 0.16	+ 0.20	+ 0.12	44.18
B. 5276 W B. 5346 E	59 3 42.20	— 1 59.68	— 0.14	+ 0.18	— 0.02	42.54
B. 5394 W	59 6 0.44	— 4 17.26	— 0.32	+ 0.18	— 0.06	42.98
B. 5447 W B. 5488 E	58 56 3.40	+ 5 39.54	— 0.30	+ 0.18	+ 0.10	42.92
B. 5565 E B. 5608 W	58 59 38.78	+ 2 4.94	— 0.44	+ 0.18	+ 0.04	43.50
						59 1 43.13
						ℰ — 0.04
						59 1 43.09

Vormsi. July 27-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4634 W B. 4653 E	58 54 34.74	+ 7 10.30	— 1.10	+ 0.20	+ 0.13	59 1 44.27
B. 4730 W B. 4745 E	58 58 3.80	+ 3 38.45	+ 0.60	+ 0.18	+ 0.07	43.10
B. 4825 E B. 4846 W	59 1 21.62	+ 0 19.93	+ 1.50	+ 0.10	+ 0.00	43.15
B. 4948 W B. 4980 E	58 52 58.35	+ 8 44.14	+ 0.70	+ 0.11	+ 0.15	43.45
B. 5165 E B. 5191 W	59 4 44.16	— 3 0.48	— 0.68	+ 0.09	— 0.05	43.04
						59 1 43.40
						€ + 0.02
						59 1 43.42

Vormsi. July 29-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4479 E B. 4504 W	59 6 46.53	— 5 3.45	— 0.30	+ 0.07	— 0.09	59 1 42.76
B. 4634 W B. 4653 E	58 54 35.16	+ 7 8.62	— 0.26	+ 0.20	+ 0.13	43.85
B. 4686 E B. 4711 W	58 54 39.31	+ 7 3.17	+ 1.10	+ 0.19	+ 0.12	43.89
B. 4730 W B. 4745 E	58 58 4.39	+ 3 38.69	— 0.24	+ 0.18	+ 0.07	43.09
B. 4787 E B. 4829 W	59 1 38.68	+ 0 5.08	— 0.66	+ 0.19	+ 0.00	43.29
						59 1 43.38
						€ + 0.10
						59 1 43.48

Mean for Vormsi: $\varphi_p = 59\ 1\ 43.27 \pm 0.12$.

Tallinn. August 12/13-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5721 W B. 5756 E	59 29 2.28	— 2 45.21	+ 0.70	+ 0.18	— 0.05	59 26 17.90
B. 5810 E B. 5827 W	59 19 37.52	+ 6 40.93	— 0.64	+ 0.10	+ 0.12	18.03

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5848 W B. 5887 E	59 23 17.15	+ 2 59.74	+ 0.55	+ 0.19	+ 0.05	59 26 17.68
A. 7442 E B. 5955 W	59 23 50.60	+ 2 26.28	+ 1.37	+ 0.18	+ 0.04	18.47 [1]
B. 5987 W B. 6001 E	59 23 11.54	+ 3 7.34	— 0.62	+ 0.10	+ 0.05	18.41
B. 6044 E B. 6080 W	59 24 20.32	+ 1 57.04	— 0.50	+ 0.10	+ 0.03	16.99
						59 26 17.91
						€ + 0.07
						59 26 17.98

Tallinn. August 13-th, 1932.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4923 W B. 4948 E	59 24 53.68	+ 1 24.19	— 0.48	+ 0.19	+ 0.03	59 26 17.61
B. 5057 E B. 5137 W	59 32 41.38	— 6 24.75	— 0.08	+ 0.20	— 0.11	16.64
B. 5153 W B. 5183 E	59 28 15.26	— 2 0.10	+ 1.92	+ 0.20	— 0.03	17.25
B. 5208 E B. 5293 W	59 30 51.98	— 4 35.32	— 0.06	+ 0.13	— 0.09	16.64
B. 5308 W	59 30 28.48	— 4 11.50	— 0.06	+ 0.13	— 0.09	16.96
B. 5412 W B. 5453 E	59 26 29.35	— 0 12.05	+ 0.69	+ 0.18	— 0.00	18.17
B. 5593 W B. 5614 E	59 25 27.48	+ 0 50.66	— 0.52	+ 0.18	+ 0.02	17.82
B. 5639 E B. 5678 W	59 32 26.03	— 6 9.98	+ 0.28	+ 0.19	— 0.10	16.42
B. 5721 W B. 5756 E	59 29 2.61	— 2 45.14	— 0.01	+ 0.18	— 0.05	17.59
B. 5810 E B. 5827 W	59 19 37.84	+ 6 40.33	— 0.04	+ 0.10	+ 0.12	18.35
B. 5848 W B. 5887 E	59 23 17.48	+ 2 59.58	+ 0.42	+ 0.19	+ 0.05	17.72

[1]) Position of A. 7442 taken from Pulkovo 1925 and Leiden Annalen X_3 catalogues.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5955 E	59 24 29.22	+ 1 48.51	+ 0.41	+ 0.12	+ 0.03	59 26 18.29
B. 5969 E / B. 6016 W	59 21 50.44	+ 4 27.52	+ 0.41	+ 0.18	+ 0.08	18.63
						59 26 17.54
						℄ + 0.12
						59 26 17.66

Mean for Tallinn (1932): $\varphi_p = 59\ 26\ 17.76 \pm 0.15$.

Nabala. June 9-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3856 W / B. 3930 E	59 11 42.65	+ 3 57.33	+ 0.15	+ 0.19	+ 0.07	59 15 40.39 [1]
B. 4021 W / B. 4047 E	59 24 47.65	— 9 6.15	— 0.06	+ 0.19	— 0.15	41.48
B. 4112 E / B. 4160 W	59 19 54.66	— 4 13.51	— 0.57	+ 0.10	— 0.08	40.60
B. 4181 W / B. 4220 E	59 14 23.76	+ 1 16.60	+ 0.78	+ 0.10	+ 0.03	41.27
B. 4240 E / B. 4317 W	59 10 24.98	+ 5 16.60	+ 0.06	+ 0.18	+ 0.09	41.91
B. 4479 W / B. 4504 E	59 6 30.64	+ 9 8.90	+ 1.52	+ 0.10	+ 0.16	41.32
B. 4505 E	59 6 45.29	+ 8 54.14	+ 1.52	+ 0.10	+ 0.16	41.21
B. 4602 E / B. 4603 E	59 22 13.46	— 6 33.39	— 0.20	+ 0.12	— 0.12	39.87 [1]
B. 4614 W	59 22 19.24	— 6 39.29	— 0.20	+ 0.12	— 0.12	39.75 [1]
B. 4727 W / B. 4765 E	59 10 3.22	+ 5 36.99	+ 0.42	+ 0.19	+ 0.09	40.91
B. 4790 E / B. 4790 W	59 18 8.94	— 2 28.33	+ 0.14			40.75
B. 4829 W / B. 4869 E	59 13 36.57	+ 2 3.53	+ 0.61	+ 0.19	+ 0.03	40.93
						59 15 40.98
						℄ + 0.09
						59 15 41.07

[1]) Weight 0.5, too faint.

Nabala. June 10-th, 1933.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3856 E B. 3930 W	59° 11′ 42.″91	+3′ 56.″73	—0.″03	+0.″19	+0.″07	59° 15′ 39.″87
B. 3945 W B. 3949 W	59 18 54.12	—3 13.53	+0.48	+0.12	—0.03	41.16
B. 3982 E	59 20 51.80	—5 10.74	+0.48	+0.08	—0.07	41.55
B. 4042 E B. 4056 E	59 12 1.48	+3 39.55	—0.01	+0.10	+0.05	41.17
B. 4079 W	59 15 40.78	—0 0.05	+0.12	+0.10	—0.02	40.93
B. 4112 W B. 4160 E	59 19 55.02	—4 14.48	—0.13	+0.10	—0.08	40.43
B. 4181 E B. 4220 W	59 14 24.06	+1 17.54	—0.35	+0.10	+0.03	41.38
B. 4479 W B. 4504 E	59 6 30.96	+9 10.38	—0.06	+0.10	+0.16	41.54
B. 4505 E	59 6 45.61	+8 55.76	—0.06	+0.10	+0.16	41.57
						59° 15′ 41.″07
						C +0.01
						59° 15′ 41.″08

Mean for Nabala: $\varphi_p = 59° 15′ 41.″07 \pm 0.″07$.

Jõelähtme. June 12-th, 1933.

*	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3958 E A. 4949 W	59° 38′ 26.″88	—11′ 36.″58	+0.″77	+0.″12	—0.″20	59° 26′ 50.″99 [1]
B. 3977 W	59 34 44.82	—7 53.96	+0.78	+0.06	—0.14	51.56
B. 4021 W B. 4047 E	59 24 48.52	+2 2.62	+0.57	+0.19	+0.03	51.93
B. 4161 E B. 4223 W	59 29 8.88	+2 17.79	+0.42	+0.12	—0.04	51.59
B. 4270 W B. 4317 E	59 33 4.24	—6 13.20	+0.76	+0.19	—0.10	51.89
B. 1235 W B. 4400 E	59 28 49.90	—1 58.12	—0.22	—0.05	—0.03	51.48
B. 4470 E B. 4531 W	59 24 4.72	+2 47.34	+0.65	+0.18	+0.05	52.94
B. 4609 W B. 4623 E	59 19 1.66	+7 49.74	—0.24	+0.18	+0.14	51.48

[1]) Position of A. 4949 taken from Pulkovo 1925 catalogue.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4763 W B. 4822 E	59 20 51.99	+ 5 59.04	— 0.36	+ 0.19	+ 0.09	59 26 50.95
						59 26 51.65
						℄ — 0.03
						59 26 51.62

Jõelähtme. June 13-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 3945 W	59 18 54.93	+ 7 57.35	— 0.16	+ 0.12	+ 0.18	59 26 52.42
B. 3949 W B. 3982 E	59 20 52.60	+ 5 59.02	— 0.16	+ 0.08	+ 0.14	51.68
B. 4021 E B. 4047 W	59 24 48.79	+ 2 2.95	— 0.26	+ 0.19	+ 0.03	51.70
B. 4161 W B. 4223 E	59 29 9.16	— 2 17.99	+ 0.98	+ 0.12	— 0.04	52.23
B. 4270 E B. 4317 W	59 33 4.59	— 6 12.54	— 0.30	+ 0.18	— 0.10	51.83
B. 1235 W B. 4400 E	59 28 50.14	— 1 57.44	— 0.85	— 0.05	— 0.03	51.77
B. 4464 E B. 4511 W	59 29 3.41	— 2 11.13	+ 0.06	+ 0.10	— 0.04	52.40
B. 4591 W A. 5764 E	59 24 55.86	— 1 56.34	— 0.73	+ 0.10	+ 0.04	51.61 [1]
B. 4609 E B. 4623 W	59 19 1.96	+ 7 49.35	— 0.05	+ 0.19	+ 0.14	51.59
B. 4688 W B. 4688 E	59 30 3.96	— 3 12.46	— 0.66			50.84 [2]
						59 26 51.86
						℄ — 0.10
						59 26 51.76

Mean for Jõelähtme: $\varphi_p = 59\ 26\ 51.69 \pm 0.12$.

[1]) Position of A. 5764 taken from Pulkovo 1925 catalogue.
[2]) Weight 0.5.

Keri. June 22-nd, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4160 W B. 4214 E	59° 38′ 51.04″	+ 3′ 2.65″	+ 0.41″	+ 0.11″	+ 0.06″	59° 41′ 54.27″
B. 4322 E B. 4354 W	59 53 45.32	— 11 50.96	+ 0.22	+ 0.20	— 0.20	54.58
B. 4368 W A. 5523 E	59 38 18.82	+ 3 36.80	— 0.20	+ 0.19	+ 0.06	55.67 [1]
B. 4483 E B. 4511 W	59 47 26.67	— 5 32.82	+ 0.38	+ 0.21	— 0.10	54.34
B. 4602 W B. 4603 W	59 43 47.42	— 1 52.83	— 0.07	+ 0.12	— 0.04	54.60
B. 4661 E	59 43 53.20	— 1 58.71	— 0.07	+ 0.12	— 0.04	54.50
B. 4707 E B. 4730 W	59 43 37.84	— 1 43.47	— 0.11	+ 0.18	— 0.03	54.41
B. 4788 W B. 4814 E	59 36 14.99	+ 5 39.85	— 0.18	+ 0.10	+ 0.09	54.85
B. 4911 E B. 4958 W	59 51 2.90	— 9 9.57	— 0.08	+ 0.10	— 0.12	53.23
B. 5011 E B. 5014 E	59 37 0.46	+ 4 53.92	+ 0.19	+ 0.22	+ 0.09	54.88
B. 5057 W	59 37 40.90	+ 4 13.55	+ 0.19	+ 0.19	+ 0.09	54.91
						59° 41′ 54.57″
						ℰ + 0.10
						59° 41′ 54.67″

Keri. June 27-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4368 E A. 5523 W	59° 38′ 20.40″	+ 3′ 34.07″	+ 1.20″	+ 0.20″	+ 0.06″	59° 41′ 55.93″ [1]
B. 4483 W B. 4511 E	59 47 28.30	— 5 33.71	— 0.12	+ 0.21	— 0.10	54.58
B. 4602 E B. 4603 E	59 43 49.04	— 1 54.21	— 0.74	+ 0.12	— 0.04	54.17
B. 4661 W	59 43 54.81	— 2 0.47	— 0.74	+ 0.12	— 0.04	53.68
B. 4707 W B. 4730 E	59 43 39.57	— 1 45.31	— 0.06	+ 0.19	— 0.03	54.36

[1]) Position of A. 5523 taken from Pulkovo 1925 catalogue.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4788 E B. 4814 W	59° 36′ 16.69	+5′ 38.67	−0.20	+0.10	+0.09	59° 41′ 55.35
						59° 41′ 54.68
						ℰ −0.07
						59° 41′ 54.61

Mean for Keri: $\varphi_p = 59^\circ\,41'\,54.64 \pm 0.15$.

Naissaare. July 1-st, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4270 E B. 4317 W	59° 33′ 10.13	+3′ 4.49	−0.82	+0.12	+0.05	59° 36′ 13.97
B. 4368 W A. 5523 E	59 38 21.63	−2 8.22	+0.19	+0.18	−0.04	13.74 [1]
						59° 36′ 13.86
						ℰ −0.03
						59° 36′ 13.83

Naissaare. July 2-nd, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4270 E B. 4317 W	59° 33′ 10.30	+3′ 4.01	−0.45	+0.18	+0.05	59° 36′ 14.09
B. 1235 W B. 4400 E	59 28 54.60	+7 19.77	+0.36	−0.05	+0.18	14.86
B. 4464 W B. 4511 E	59 29 9.61	+7 4.90	−0.49	+0.20	+0.11	14.33
B. 4602 W B. 4603 W B. 4661 E	59 43 50.66	−7 36.64	−0.48	+0.12	−0.15	13.51
	59 43 56.44	−7 42.60	−0.48	+0.12	−0.15	13.33
B. 4707 E B. 4730 W	59 43 41.34	−7 27.87	−0.37	+0.19	−0.14	13.15
B. 4788 W B. 4814 E	59 36 18.42	−0 4.65	+0.14	+0.10	−0.01	14.00

[1]) Position of A. 5523 taken from Pulkovo 1925 catalogue.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4869 E B. 4890 W	59 34 42.12	+ 1 32.33	— 0.49	+ 0.19	+ 0.02	59 36 14.17
B. 4909 W B. 4988 E	59 33 48.96	+ 2 25.39	— 0.52	+ 0.20	+ 0.03	14.06
B. 5014 E B. 5057 W	59 37 3.98	— 0 50.52	— 0.13	+ 0.20	— 0.02	13.51
B. 5097 W B. 5165 E	59 34 20.44	+ 1 53.07	+ 0.01	+ 0.18	+ 0.02	13.72
B. 5218 W A. 6624 E	59 28 28.94	+ 7 45.09	+ 0.98	+ 0.13	+ 0.13	15.27 [1]
B. 5249 E B. 5308 W	59 42 20.44	— 6 6.24	— 0.52	+ 0.14	— 0.12	13.70
						59 36 13.98
						ℰ — 0.04
						59 36 13.94

Naissaare. July 3-rd, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 1235 W B. 4400 E	59 28 54.82	+ 7 19.63	+ 0.17	— 0.05	+ 0.18	59 36 14.75
B. 4464 W B. 4511 E	59 29 9.90	+ 7 3.82	+ 0.44	+ 0.20	+ 0.11	13.47
B. 4909 E B. 4988 W	59 33 49.32	+ 2 24.66	+ 0.07	+ 0.20	+ 0.03	14.28
B. 5011 W B. 5014 W	59 37 44.80	— 1 31.54	+ 0.76	+ 0.24	— 0.02	14.24
B. 5057 E	59 37 4.38	— 0 51.43	+ 0.76	+ 0.22	— 0.02	13.91
B. 5097 E B. 5165 W	59 34 21.27	+ 1 52.44	+ 0.46	+ 0.18	+ 0.02	14.37
						59 36 14.17
						ℰ 0.00
						59 36 14.17

Mean for Naissaare: $\varphi_p = 59\ 36\ 13.97 \pm 0.11$.

[1]) Position of A. 6624 taken from Pulkovo 1925 catalogue.

Suurupi. July 11-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 1235 E B. 4400 W	59° 28′ 56.51	−1′ 2.12	−0.10	−0.06	−0.02	59° 27′ 54.21
B. 4464 W B. 4511 E	59 29 12.36	−1 19.31	−0.22	+0.21	−0.03	53.01
B. 4602 E B. 4603 E	59 22 24.52	+5 28.03	+0.33	+0.12	+0.10	53.10
B. 4614 W	59 22 30.30	+5 23.42	+0.33	+0.12	+0.10	54.27
B. 4788 E B. 4814 W	59 36 21.39	−8 28.76	+0.30	+0.10	−0.14	52.90
B. 4833 W B. 4894 E	59 31 28.42	−3 34.42	−1.23	+0.18	−0.07	52.88
B. 4923 E B. 4948 W	59 24 51.36	+3 1.80	+0.36	+0.19	+0.05	53.76
B. 5014 W B. 5057 E	59 37 7.23	−9 14.52	+0.10	+0.20	−0.17	52.84
B. 5137 W	59 32 41.32	−4 48.71	+0.27	+0.20	−0.09	52.99
B. 5153 W B. 5183 E	59 28 16.26	−0 22.59	−0.60	+0.20	−0.00	53.27
B. 5218 E A. 6624 W	59 28 32.14	−0 37.62	−0.30	+0.19	−0.02	54.39 [1]
B. 5249 W B. 5312 E	59 32 17.56	−4 23.96	−0.42	+0.14	−0.09	53.23
B. 5412 E B. 5453 W	59 26 33.86	+1 19.85	−0.18	+0.18	+0.02	53.73
						59° 27′ 53.43
						ℰ −0.07
						59° 27′ 53.36

Suurupi. July 13/14-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4869 E B. 4890 W	59° 34′ 45.99	−6′ 52.85	−0.81	+0.19	−0.11	59° 27′ 52.41
B. 4923 W B. 4948 E	59 24 52.02	+3 2.01	−0.43	+0.19	+0.05	53.84
B. 5014 E B. 5057 W	59 37 7.92	−9 15.91	−0.29	+0.21	−0.17	51.76
B. 5218 E A. 6624 W	59 28 32.86	−0 38.82	+0.02	+0.19	−0.02	54.23 [1]

[1]) Position of A. 6624 taken from Pulkovo 1925 catalogue.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5250 W B. 5270 E	59 35 32.68	— 7 39.31	— 0.44	+ 0.20	— 0.13	59 27 53.00
						59 27 53.05
						ℰ — 0.08
						59 27 52.97

Mean for Suurupi: $\varphi_p = 59\ 27\ 53.24 \pm 0.16$.

Essemäe. July 23-rd, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4554 E B. 4589 W	57 43 57.96	— 5 39.25	+ 0.88	+ 0.06	— 0.11	57 38 19.54
B. 4620 W B. 4672 E	57 25 13.46	+ 13 6.76	— 0.12	+ 0.10	+ 0.24	20.44
B. 4730 E B. 4787 W	57 40 38.28	— 2 18.15	— 0.70	+ 0.18	— 0.04	19.57
A. 6260 E A. 6260 W	57 31 6.62	+ 7 13.56	— 0.64			19.54 [1]
B. 5031 W B. 5079 E	57 43 54.78	— 5 36.16	— 0.08	+ 0.21	— 0.10	18.65 [2]
B. 5265 W B. 5333 E	57 34 13.16	+ 4 6.48	+ 0.24	+ 0.18	+ 0.07	20.13
B. 5453 E B. 5472 W	57 36 50.20	+ 1 30.25	— 0.75	+ 0.18	+ 0.02	19.90
B. 5532 W B. 5543 E	57 46 52.72	— 8 33.94	+ 0.48	+ 0.10	— 0.16	19.20
B. 5567 E B. 5603 W	57 29 29.86	+ 8 50.71	— 0.24	+ 0.09	+ 0.15	20.57
						57 38 19.80
						ℰ + 0.02
						57 38 19.82

[1]) Position taken from Pulkovo 1925 catalogue; weight 0.5, too faint.
[2]) Weight 0.5, too faint.

Essemäe. July 24-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
A. 6260 W A. 6260 E	57° 31′ 7.30	+ 7′ 12.38	+ 0.25			57° 38′ 19.93 [1]
B. 5009 E B. 5031 W	57 27 24.46	+ 10 55.93	— 0.60	+ 0.20	+ 0.19	20.18
B. 5048 W B. 5079 E	57 31 57.14	+ 6 23.75	— 0.84	+ 0.10	+ 0.10	20.25
B. 5265 W B. 5333 E	57 34 13.44	+ 4 7.12	— 0.88	+ 0.19	+ 0.07	19.94
B. 5453 E B. 5472 W	57 36 50.46	+ 1 30.36	— 1.14	+ 0.18	+ 0.02	19.88
B. 5532 W B. 5543 E	57 46 53.08	— 8 33.20	— 0.64	+ 0.10	— 0.16	19.18 [2]
						57° 38′ 19.96
						℄ — 0.01
						57° 38′ 19.95

Essemäe. July 25-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4554 E B. 4589 W	57° 43′ 58.82	— 5′ 38.90	— 0.84	+ 0.10	— 0.11	57° 38′ 19.07
B. 4620 W B. 4672 E	57 25 14.02	+ 13 6.92	— 0.70	+ 0.10	+ 0.24	20.58
B. 5153 E B. 5200 W	57 35 45.20	+ 2 34.77	— 0.88	+ 0.20	+ 0.04	19.33
						57° 38′ 19.66
						℄ — 0.08
						57° 38′ 19.58

Mean for Essemäe: $\varphi_p = 57^\circ\ 38'\ 19.82 \pm 0.12$.

Antsla. August 9/10-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5394 W B. 5412 E	57° 54′ 17.74	— 5′ 30.77	+ 0.46	+ 0.18	— 0.09	57° 48′ 47.52
B. 5447 E B. 5480 W	57 47 50.92	+ 0 57.29	— 0.67	+ 0.16	+ 0.03	47.73

[1]) Position taken from Pulkovo 1925 catalogue; weight 0.5.
[2]) Weight 0.5, clouds.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 5565 W B. 5593 E	57 49 52.72	— 1 4.99	+ 0.14	+ 0.18	— 0.01	57 48 48.04
B. 5650 E B. 5664 W	57 56 5.32	— 7 17.46	— 0.18	+ 0.18	— 0.12	47.74
B. 5734 W B. 5792 E	57 46 15.02	+ 2 32.56	— 0.08	+ 0.10	+ 0.04	47.64
B. 5827 E B. 5856 W	57 52 49.14	— 4 1.76	+ 0.21	+ 0.10	— 0.08	47.61
B. 5891 W B. 5942 E	57 46 11.08	+ 2 36.26	— 0.72	+ 0.18	+ 0.05	46.85
						57 48 47.59
						ℭ — 0.05
						57 48 47.54

Antsla. August 11-th, 1933.

✳	$\frac{\delta_n + \delta_s}{2}$	m	i	c	r	φ_p
B. 4890 W B. 4910 E	57 54 40.61	— 5 54.11	+ 0.34	+ 0.18	— 0.10	57 48 46.92
B. 4948 E B. 4994 W	57 52 34.09	— 3 46.78	— 0.42	+ 0.18	— 0.06	47.01
B. 5014 W	57 49 39.30	— 0 51.70	— 0.66	+ 0.18	— 0.01	47.11
B. 5031 W B. 5079 E	57 44 1.00	+ 4 46.32	— 0.14	+ 0.10	+ 0.09	47.37
B. 5130 E B. 5162 W	57 47 12.24	+ 1 36.07	— 0.05	+ 0.12	+ 0.03	48.41
B. 5194 W B. 5218 E	57 48 49.25	— 0 0.95	— 0.35	+ 0.18	— 0.00	48.13
B. 5394 E B. 5412 W	57 54 18.44	— 5 30.91	— 0.08	+ 0.18	— 0.09	47.54
B. 5478 W B. 5495 W	57 52 26.04	— 3 38.49	+ 0.32	+ 0.19	— 0.06	48.00
B. 5525 E	57 48 41.21	+ 0 6.94	+ 0.34	+ 0.19	+ 0.01	48.69
B. 5565 E B. 5593 W	57 49 53.40	— 1 4.95	— 0.56	+ 0.18	— 0.01	48.06
B. 5667 W B. 5714 E	57 46 33.90	+ 2 14.69	— 0.84	+ 0.18	+ 0.05	47.98
						57 48 47.75
						ℭ — 0.07
						57 48 47.68

Mean for Antsla: $\varphi_p = 57\ 48\ 47.63 \pm 0.12$.

VI. Final Results.

The longitude of the reference station Tallinn is given according to the determinations of longitude arranged by the Baltic Geodetic Commission in 1929 [1]). From the obtained results the longitudes were independently computed by F. Pavel and I. Bonsdorff. F. Pavel found for the longitude of Tallinn the value $1^h\,38^m\,57.406^s$ [2]), and I. Bonsdorff $1^h\,38^m\,57.398^s$ [3]) east of Greenwich. The 9-th Conference of the Baltic Geodetic Commission decided to adopt for final longitudes the arithmetic means of F. Pavel's and I. Bonsdorff's computations, thus for Tallinn the quantity $1^h\,38^m\,57.402^s$ east of Greenwich [4]).

The following table gives the values for Tallinn obtained by the author from his measurements in 1930—1933. λ_p denotes the mean preliminary longitudes, with their mean error according to their internal agreement, taken from Chapter IV, $\Delta\lambda$ denotes the reduction to the mean position of the terrestrial pole. $\Delta\lambda$ was computed according to the formula

$$\Delta\lambda = (x \cdot \sin\lambda_p - y \cdot \cos\lambda_p) \cdot \tan\varphi_p - \Delta\lambda'$$

where x and y denote the co-ordinates of the pole, λ_p and φ_p the mean preliminary longitude and latitude of the point in question, while $\Delta\lambda'$ indicates the effect of the variation of the pole on the so-called "mean observatory" ("observatoire moyen"). The co-ordinates of the pole were adopted according to H. Kimura from the Bulletin Géodésique sub "Provisional Results of the Work of International Latitude Service". $\Delta\lambda'$ denotes the arithmetic mean of the effects of the variation of the pole on those observatories according to whose time determinations the "Bulletin Horaire" publishes its definitive corrections for time signals. For 1930 $\Delta\lambda'$ was computed by the author. For the years 1931—1933 $\Delta\lambda'$ was taken from the "Bulletin Horaire" (Nos. 67, 74, and 80).

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[1]) Baltische Geodätische Kommission, Sonderveröffentlichung No. 2, Helsinki 1932.

[2]) Baltische Geodätische Kommission, Sonderveröffentlichung No. 3, p. 49. Helsinki 1934.

[3]) Baltische Geodätische Kommission, Sonderveröffentlichung No. 3, p. 91. Helsinki 1934.

[4]) Comptes Rendus de la neuvième session de la Commission Géodésique Baltique, p. 44. Helsinki 1937.

Tallinn.

Date.	λ_p	$\Delta\lambda$	$\lambda_1=\lambda_p+\Delta\lambda$	Number of nights.
	h m s s	s	h m s	
1930. July	1 38 57.414 ± 0.013	—0.007	1 38 57.407	3
1931. Spring	57.393 ± 0.008	—0.005	57.388	3
1931. Autumn	57.423 ± 0.008	—0.007	57.416	2
1932. Spring	57.424 ± 0.004	0.000	57.424	3
1932. Autumn	57.406 ± 0.001	—0.006	57.400	2
1933. Spring	57.384 ± 0.009	—0.002	57.382	3
1933. Autumn	57.455 ± 0.005	—0.005	57.450	2

Simple mean $1^h\,38^m\,57^s.409_6 \pm 0^s.008$ (mean error)

Weighted mean $57^s.409_2 \pm 0^s.008$ „ „

(weight taken according to number of nights).

The individual λ_1 and the obtained mean value may be compared with the above-mentioned longitude of Tallinn accepted by the Baltic Geodetic Commission. But considering the value of the mean error ($\pm 0^s.008$), nothing definite can be inferred concerning the value of the personal error or its variations. Therefore, we do not consider it advisable to correct all the preliminary longitudes of the field-points by a constant quantity

$$-0^s.007 = 1^h\,38^m\,57^s.402 - 1^h\,38^m\,57^s.409.$$

Neither do we, however, consider it advisable, to utilize the given values for directly interpolating and computing the personal error by comparing each λ_1 with the longitude accepted by the Baltic Geodetic Commission. The reasons were examined in Chapter II. As mentioned in Chapter II, the final longitudes of the field-points were deduced as follows:

1) We compute $\lambda_1 = \lambda_p + \Delta\lambda$, where λ_p equals the mean preliminary longitude taken from Chapter IV, and $\Delta\lambda$ denotes the reduction to the mean position of the terrestrial pole, computed in the same manner as mentioned above.

2) We compute $\lambda_2 = \lambda_p + \Delta\lambda +$ *"personal error"*. The *"personal error"* was linearly interpolated for the given moment by utilizing the computed λ_1 for Tallinn, which were compared with the longitude $1^h\,38^m\,57^s.402$ adopted by the Baltic Geodetic Commission.

3) For the final longitude of a field-point the value

$$\lambda = \frac{\lambda_1 + \lambda_2}{2}$$

was adopted.

The following table gives the final longitudes of the field-points determined from 1930 to 1933. The field-points are arranged in the chronological order of the observations. λ_p are taken from Chapter IV, $\Delta\lambda$, λ_1, λ_2, and the final longitudes λ of the astronomical piers are computed as mentioned above. r denotes the reduction from the astronomical observation pier to the geodetic centre; for triangulation towers this reduction is given to the sub-surface mark (s), for lighthouses (l) and churches (ch) however, to the geodetic observation point (pier). λ_r denotes the final longitudes of the geodetic centres.

The reduction to the centre was made by the Topo-Hydrographic Section of the Army Staff, with the exception of Keri where the measurements were made by the author.

Final Longitudes.

Name	λ_p	$\Delta\lambda$	λ_1	λ_2	$\lambda = \frac{\lambda_1 + \lambda_2}{2}$ in time	in arc	r	$\lambda_r = \lambda + r$
	h m s	s	s	s	h m s	° ′ ″	″	° ′ ″
Ruhnu	1 33 2.987 ± 0.015	— 0.003	2.984	2.979	1 33 2.982	23 15 44.73	— 3.26 l	23 15 41.47
Abruka	1 30 0.375 ± 0.007	— 0.004	0.371	0.366	1 30 0.368	22 30 5.52	+ 2.67 s	22 30 8.19
Sõrve	1 28 13.411 ± 0.003	— 0.005	13.406	13.401	1 28 13.404	22 3 21.06	+ 1.78 l	22 3 22.84
Viidumäe	1 28 17.567 ± 0.012	— 0.006	17.561	17.556	1 28 17.558	22 4 23.37	— 1.84 s	22 4 21.53
Undva	1 27 59.306 ± 0.007	— 0.007	59.299	59.309	1 27 59.304	21 59 49.56	— 2.52 s	21 59 47.04
Ohtja	1 29 28.052 ± 0.007	— 0.007	28.045	28.051	1 29 28.048	22 22 0.72	— 1.86 s	22 21 58.86
Meiuste	1 30 20.315 ± 0.002	— 0.008	20.307	20.309	1 30 20.308	22 35 4.62	—21.57 s	22 34 43.05
Määltse	1 30 57.980 ± 0.011	— 0.008	57.972	57.970	1 30 57.971	22 44 29.56	+ 4.38 s	22 44 33.94
Tahkuna	1 30 20.515 ± 0.009	— 0.008	20.507	20.501	1 30 20.504	22 35 7.56	— 0.48 l	22 35 7.08
Kõpu	1 28 47.775 ± 0.009	— 0.009	47.766	47.756	1 28 47.761	22 11 56.41	— 4.61 l	22 11 51.80

Name	λ_p	$\Delta\lambda$	λ_1	λ_2	$\lambda = \frac{\lambda_1 + \lambda_2}{2}$ in time	in arc	r	$\lambda_r = \lambda + r$
	h m s	s	s	s	h m s	° ′ ″	″	° ′ ″
Veski	1 34 57.585 ± 0.018	— 0.002	57.583	57.564	1 34 57.574	23 44 23.61	+ 2.16 *s*	23 44 25.77
Kloostri	1 36 36.140 ± 0.015	— 0.003	36.137	36.122	1 36 36.130	24 9 1.95	+ 1.52 *s*	24 9 3.47
Keila	1 37 32.570 ± 0.005	— 0.003	32.567	32.555	1 37 32.561	24 23 8.42	+ 1.56 *s*	24 23 9.98
Pakri	1 36 9.523 ± 0.008	— 0.005	9.518	9.510	1 36 9.514	24 2 22.71	+ 5.65 *l*	24 2 28.36
Osmussaare	1 33 27.414 ± 0.023	— 0.005	27.409	27.404	1 33 27.406	23 21 51.09	— 4.92 *l*	23 21 46.17
Vormsi	1 32 28.273 ± 0.016	— 0.006	28.267	28.266	1 32 28.266	23 7 3.99	— 1.22 *l*	23 7 2.77
Nabala	1 39 27.008 ± 0.010	— 0.003	27.005	27.016	1 39 27.010	24 51 45.15	+ 0.31 *s*	24 51 45.46
Jõelähtme	1 40 29.938 ± 0.012	— 0.003	29.935	29.938	1 40 29.936	25 7 29.04	+ 3.17 *ch*	25 7 32.21
Keri	1 40 5.535 ± 0.021	— 0.004	5.531	5.525	1 40 5.528	25 1 22.92	+ 4.22 *l*	25 1 27.14
Naissaare	1 38 3.427 ± 0.014	— 0.005	3.422	3.408	1 38 3.415	24 30 51.22	+ 2.50 *l*	24 30 53.72
Suurupi	1 37 32.054 ± 0.002	— 0.005	32.049	32.027	1 37 32.038	24 23 0.57	— 1.73 *l*	24 22 58.84
Essemäe	1 45 34.621 ± 0.002	— 0.005	34.616	34.585	1 45 34.600	26 23 39.00	+ 2.10 *s*	26 23 41.10
Antsla	1 46 1.090 ± 0.013	— 0.005	1.085	1.045	1 46 1.065	26 30 15.97	— 1.45 *s*	26 30 14.52

The following table gives final results for the latitudes. The observed preliminary latitudes φ_p are taken from Chapter V. The reduction to the mean position of the terrestrial pole $\Delta\varphi$ was computed according to the known formula

$$\Delta\varphi = -(x \cdot \cos\lambda + y \cdot \sin\lambda),$$

where λ denotes the longitude of the point in question, while x, y are the co-ordinates of the terrestrial pole in the system of H. Kimura, as mentioned above. For the final latitude of the astronomical piers of all the field-points the value

$$\varphi = \varphi_p + \Delta\varphi$$

was adopted. Corrections for personal or any other systematic errors were not applied. (See Chapter II.)

r in the table denotes the reduction from the astronomical observing pier to the geodetic centre, analogically to the reduction for the final longitudes. φ_r denotes the final latitudes of the geodetic centres.

For the final latitude of Tallinn the weighted mean of the 3 given values was accepted, the weights being according to the number of nights.

Final Latitudes.

Name	φ_p	$\Delta\varphi$	φ	r	$\varphi_r = \varphi + r$
	° ′ ″	″	° ′ ″		
Tallinn 1930.	59 26 17.47	— 0.08	59 26 17.39		
	± 0.09				
Tallinn 1931.	17.43	+ 0.08	17.51		
	± 0.10				
Tallinn 1932.	17.76	0.00	17.76		
	± 0.15				
Weighted mean for Tallinn			59 26 17.51		
			± 0.10		
Ruhnu	57 48 2.83	+ 0.03	57 48 2.86	+ 2.33 l	58 48 5.19
	± 0.12				
Abruka	58 8 23.81	+ 0.02	58 8 23.83	+ 0.45 s	58 8 24.28
	± 0.11				
Sõrve	57 54 36.91	0.00	57 54 36.91	— 1.88 l	57 54 35.03
	± 0.13				
Viidumäe	58 18 26.24	— 0.01	58 18 26.23	+ 1.59 s	58 18 27.82
	± 0.21				
Undva	58 29 29.79	0.00	58 29 29.79	+ 1.72 s	58 29 31.51
	± 0.11				
Ohtja	58 25 37.99	0.00	58 25 37.99	+ 2.90 s	58 25 40.89
	± 0.14				
Meiuste	58 35 35.73	— 0.02	58 35 35.71	+ 17.34 s	58 35 53.05
	± 0.11				
Määltse	58 50 51.38	— 0.07	58 50 51.31	— 0.58 s	58 50 50.73
	± 0.15				
Tahkuna	59 5 28.46	— 0.11	59 5 28.35	+ 3.23 l	59 5 31.58
	± 0.13				
Kõpu	58 54 56.28	— 0.12	58 54 56.16	+ 2.09 l	58 54 58.25
	± 0.12				
Veski	59 10 45.10	+ 0.13	59 10 45.23	+ 1.26 s	59 10 46.49
	± 0.07				
Kloostri	59 13 12.28	+ 0.13	59 13 12.41	+ 0.21 s	59 13 12.62
	± 0.11				

Name	φ_p	$\Delta\varphi$	φ	r	$\varphi_r = \varphi + r$
	° ′ ″	″	° ′ ″	″	° ′ ″
Keila	59 19 20.64	+ 0.10	59 19 20.74	— 0.03 *s*	59 19 20.71
	± 0.16				
Pakri	59 23 15.11	+ 0.10	59 23 15.21	+ 2.62 *l*	59 23 17.83
	± 0.10				
Osmussaare	59 18 12.38	+ 0.03	59 18 12.41	— 1.02 *l*	59 18 11.39
	± 0.11				
Vormsi	59 1 43.27	+ 0.02	59 1 43.29	— 1.88 *l*	59 1 41.41
	± 0.12				
Nabala	59 15 41.07	+ 0.14	59 15 41.21	— 0.76 *s*	59 15 40.45
	± 0.07				
Jõelähtme	59 26 51.69	+ 0.14	59 26 51.83	— 0.37 *ch*	59 26 51.46
	± 0.12				
Keri	59 41 54.64	+ 0.13	59 41 54.77	— 0.72 *l*	59 41 54.05
	± 0.15				
Naissaare	59 36 13.97	+ 0.12	59 36 14.09	+ 1.22 *l*	59 36 15.31
	± 0.11				
Suurupi	59 27 53.24	+ 0.09	59 27 53.33	+ 0.35 *l*	59 27 53.68
	± 0.16				
Essemäe	57 38 19.82	+ 0.08	57 38 19.90	— 0.11 *s*	57 38 19.79
	± 0.12				
Antsla	57 48 47.63	+ 0.04	57 48 47.67	— 0.08 *s*	57 48 47.59
	± 0.12				

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Tallinna Tehnikainstituut.

Toimetused. Ser. A.

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14.10.86	Joogomägi 1930		
27.11.90.	Tanvaldu 2669		
9.01.91.	Saapar	5402	

Vorm nr. 11

Trükikoda „Ühiselu", Tallinn. Tell. 2054. VI 1963. Tiraaž 200000.