

9. On the Changes in the Heights of Mean Sea-levels, before and after the Great Earthquakes.

By Seiti YAMAGUTI,

Earthquake Research Institute.

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Introduction

Investigations on the changes in the heights of the mean sea-levels have been made, and the results have already been reported in my recent papers.¹⁾

To arrange the results finally and also to make the probable error of the monthly mean sea-level smaller than the preceding one when corrected, the next procedure was taken.

First, I will explain here once more in detail the value of the change in the height of monthly mean sea-level.

We have calculated the secular mean values of sea-level, L_m , barometric pressure, b_m , sea-water temperature at the depth of one meter from the surface, T_m , for 40 years, at Aburatubo, Hososima, Wazima and Osyoro, and obtained the next Table 1. Those for Kôti, Kainan, Asamusi, Nezugaseki, and Kasiwazaki, during the period of 5~9 years, are also shown in Table 1.

Table 1. Secular mean Sea-level, Barometric Pressure and Sea-water Temperature.

	Aburatubo	Hososima	Wazima	Osyoro	Koti	Kainan	Asamusi	Nezugaseki	Kasiwazaki
L_m , in mm	3336	2594	1916	1593	2877	2626	2908	2094	2534
b_m , in mmHg	760.6	761.5	761.3	759.3	762.5	760.8	761.2	761.8	761.9
T_m , in °C	16.8	19.0	15.6	11.3	20.1	18.6	12.6	15.4	16.8

Monthly deviations of sea-levels from 40 years' mean for each month are calculated with the corrections shown in Table 2, a, b, and denoted by $\Delta L'$.

1) S. YAMAGUTI, *Bull. Earthq. Res. Inst.*, **19** (1941), **21** (1943), **33** (1955), and *Bull. Geog. Surv. Inst.*, **1** (1948), **2** (1950).

Table 2, a, b. Corrections, deduced from 40 years' annual mean of Sea-level, Sea-water Temperature, and Barometric Pressure.

(a)

Month	Corrections to ΔL , ΔT , and Δb											
	Aburatubo			Hososima			Wazima			Osyoro		
	ΔL	ΔT	Δb	ΔL	ΔT	Δb	ΔL	ΔT	Δb	ΔL	ΔT	Δb
January	38	5.0	-1.6	124	5.1	-4.6	54	4.8	-3.3	29	6.6	-0.8
February	54	6.0	-1.4	128	5.7	-3.4	117	6.2	-3.1	69	7.5	-1.2
March	79	5.3	-1.3	118	5.1	-2.1	142	6.4	-2.4	75	7.2	-1.1
April	73	3.1	-0.7	80	2.9	-0.2	133	4.9	-0.5	59	5.1	0.1
May	23	0.4	1.3	20	0.1	2.0	58	2.1	1.5	2	2.0	1.0
June	-25	-2.1	3.4	-53	-2.4	4.4	-34	-1.4	3.9	-54	-1.6	2.3
July	-56	-5.2	3.0	-81	-4.6	4.4	-103	-4.5	4.2	-105	-5.7	2.8
August	-78	-6.9	2.8	-145	-6.8	4.4	-172	-7.8	3.7	-139	-9.4	1.9
September	-97	-6.7	0.7	-137	-6.1	2.5	-125	-7.4	1.7	-107	-8.5	-0.1
October	-82	-3.6	-2.1	-106	-3.1	-1.3	-68	-3.8	-2.1	-54	-4.8	-2.7
November	-43	-0.5	-3.1	-9	0.1	-3.5	-51	-0.7	-3.7	-41	-0.2	-3.0
December	-5	2.7	-3.2	78	3.1	-4.2	-7	2.7	-3.1	-15	4.0	-1.5

(b)

Month	Corrections to ΔL , ΔT , and Δb														
	Koti			Kainan			Asamusi			Nezugaseki			Kasiwazaki		
	ΔL	ΔT	Δb	ΔL	ΔT	Δb	ΔL	ΔT	Δb	ΔL	ΔT	Δb	ΔL	ΔT	Δb
January	118	5.8	-2.6	96	7.9	-3.5	29	4.4	0.5	19	6.7	-1.3	62	5.9	-2.1
February	135	6.2	-1.8	136	8.6	-2.9	59	6.0	0.7	126	8.0	-1.1	110	7.4	-2.2
March	110	5.0	-1.5	143	6.9	-2.2	101	6.2	-0.5	136	7.7	-2.0	137	7.8	-1.5
April	88	2.8	-0.3	108	3.0	-0.7	107	5.0	-0.3	159	5.4	-1.1	131	5.4	-0.7
May	7	0.2	1.5	19	-0.3	1.5	32	2.4	1.9	68	1.0	1.3	64	1.7	1.6
June	-91	-2.8	4.0	-107	-4.0	4.3	-5	-0.3	2.2	-9	-3.2	2.7	-26	-2.4	3.1
July	-81	-5.5	3.4	-108	-7.7	5.1	-58	-3.0	2.3	-106	-7.3	2.9	-117	-6.3	4.5
August	-109	-7.9	3.2	-123	-9.0	4.4	-100	-6.1	2.2	-132	-10.6	2.9	-149	-8.3	3.2
September	-138	-5.7	2.3	-124	-6.8	2.5	-71	-7.6	0.0	-81	-8.7	0.4	-83	-7.6	0.9
October	-105	-2.6	-1.0	-92	-3.1	-1.2	-43	-5.7	-2.3	-42	-4.5	-2.0	-42	-4.3	-1.6
November	-3	0.6	-3.7	-5	0.7	-3.8	-21	-2.6	-3.9	-53	0.2	-3.2	-44	0.2	-3.2
December	72	3.9	-4.2	67	4.7	-4.4	-26	1.3	-0.8	-48	4.3	-1.7	-20	3.7	-2.5

 ΔL is measured in millimetre, ΔT in degree centigrade and Δb in mmHg.

Similarly, monthly deviations of barometric pressure, and those of sea-water temperature from 40 years' mean for each month are calculated and denoted by $\Delta b'$ and $\Delta T'$, respectively. Residual values of $\Delta L'$, corrected with $\Delta b'$ and $\Delta T'$, represented by the equation

$$\Delta L'' = \Delta L' - p\Delta b' - q\Delta T', \text{ were calculated.}$$

In this equation, as the value of p , theoretical value, 13.2 was taken for all stations commonly, and as the values of q , 13.3, 19.7, 16.5, 11.2, 17.1, 15.6, 14.0, 12.6 and 15.5 were taken for Aburatubo, Hososima, Wazima, Osyoro, Kôti, Kainan, Asamusi, Nezugaseki and Kasiwazaki, respectively, by the method of least squares, $\Delta L'$ being measured in millimetres, $\Delta b'$ in mmHg, and $\Delta T'$ in degrees centigrade.

Next, we have smoothed the value of $\Delta L''$, by taking $\Delta L''_m = \frac{1}{4}(\Delta L''_{n-1} + 2\Delta L''_n + \Delta L''_{n+1})$ instead of $\Delta L''_n$, where n is the order of the months, the probable error of $\Delta L''_m$, ± 15 mm being obtained from preceding results.

The magnitudes of the great earthquakes, M in Gutenberg's or Pasadena scale, used here, were calculated mostly by Prof. H. Kawasumi, Prof. Ch. Tsuboi in Tokyo University, and partly by members of the Earthquake Section of the Meteorological Agency, and printed by Meteorological Agency.

The values of the observed monthly mean sea-level, L , barometric pressure, b , and sea-water temperature, T , and those deviations from annual mean for 40 years, $\Delta L'$, $\Delta b'$ and $\Delta T'$, and also the values of the corrected, $\Delta L''$ and the smoothed, $\Delta L''_m$ of the monthly mean sealevels, are calculated and L , $\Delta L''$, $\Delta b'$, $\Delta T'$ are shown in Table 3.

Method of Investigation, and Results

After taking the monthly mean sea-levels, corrected and smoothed, $\Delta L''_m$ for Aburatubo, Hososima, Wazima, during the period of about 60 years, for Osyoro during the period of about 54 years, and for Kôti, Kainan, Asamusi, Nezugaseki, Kasiwazaki, during the period of about 5~9 years, diagrams were plotted with these values as ordinates against the months taken as abscissa as shown in Fig. 1.

On these diagrams, we have marked the months of great earthquakes with magnitudes M , equal to or greater than 7, whose epicentral distances from the mareographic stations, d , being less than 200 kilometers, 300km,

400km, and 500km, corresponding to the magnitudes, $M = 7.0 \sim 7.3$, $M = 7.4 \sim 7.6$, $M = 7.7 \sim 7.9$, and $M \geq 8.0$, respectively.

The values of $\Delta L''_m$ for the months of equal phase measured from the month of earthquake, were averaged for different earthquakes and plotted as ordinate against the months as shown in Fig. 2. a, b.

In this case, in order to avoid the accidental distribution of the curve, or of the appearance of a false period of half an year, we have taken the means of $\Delta L''_m$, till 18 months preceding the month of earthquake.

In the case of taking the average of $\Delta L''_m$ for different earthquakes with magnitude M , greater than 7, which occurred in wide regions, within epicentral distances, d , equal and less than 500km, not considering the variation of M and d , the feature of the curve shows rather random or irregular distribution of the curve. This fact may be considered to show that, according to the magnitude of earthquakes, only such mareographic stations as are situated in proper distances, within 500km, namely, $d \leq 200$ km, 300km, 400km, and 500km, are affected by earthquakes with corresponding sufficiently great magnitude.

From Fig. 2, we may be able to say that, in the time over 12 months preceding the earthquake, the monthly mean sea-level does not fluctuate so violently, but from about half an year before the earthquake, it begins to fluctuate with large amplitude and the value of its curve reaches maximum at about 4 months before and becomes minimum at about 1 or 2 months before the earthquake. Rather conspicuous maximum and minimum of the curve, i. e. rather conspicuous subsidence and upheaval of the earth's crust may be observed in the months, about 4 and 1 or 2 preceding an earthquake respectively.

The mean errors ϵ , of the mean of $\Delta L''_m$ for many earthquakes, were also calculated and tabulated as shown in Table 4. These values of ϵ are satisfactorily small when compared with the values of the mean $\Delta L''_m$ in the curve, shown in Fig. 2.

It is interesting to note that the mean sea-levels, $\Delta L''_m$ for many earthquakes are negative in the month of earthquake in both cases for Aburatubo ($N_1=53$), and for taking other 4 stations, Hososima, Wazima, Osyro, Kôti, together with Aburatubo ($N_2=99$). In former case, mean of $\Delta L''_m = (-6.6 \pm 3.2)$ mm, and in the latter, mean of $\Delta L''_m = (-4.8 \pm 2.3)$ mm, the secular mean of sea-level for 40 years (1900~1939), being taken as zero.

Incidentally, we want to note that the values of $\Delta L''_m$, in the curve,

Table 4. Mean errors of the mean sea-level, $\Delta L_m''$ for each month before and after the great earthquakes.

month			month		
-18	± 2.4	± 1.4	-2	± 2.0	± 1.2
-17	± 2.9	± 1.7	-1	± 1.8	± 1.3
-16	± 3.5	± 1.9	0		
-15	± 3.4	± 1.8	1	± 1.5	± 1.1
-14	± 3.3	± 1.6	2	± 1.7	± 1.2
-13	± 3.3	± 1.7	3	± 2.3	± 1.4
-12	± 3.2	± 1.6	4	± 2.2	± 1.5
-11	± 3.2	± 1.6	5	± 2.3	± 1.4
-10	± 3.3	± 1.6	6	± 2.7	± 1.7
-9	± 3.0	± 1.6			
-8	± 2.8	± 1.6			
-7	± 2.9	± 1.8			
-6	± 2.7	± 1.4			
-5	± 2.7	± 1.4			
-4	± 2.7	± 1.3			
-3	± 2.4	± 1.3			
				for Aburatubo only $N_1=53$	for Aburatubo, Hososima, Wazima, Osyoro, Koti $N_2=99$

N_1 and N_2 are number of earthquakes. 0-month denotes the month, in which earthquake occurred.

shown in Fig. 1, as well as in Table 3, may have the same reliability as those data obtained by Levelling Survey. The comparison of these two values are already made and reported in my recent paper.²⁾

Finally, yearly mean sea-levels were calculated from the values of monthly mean sea-levels, corrected and smoothed, $\Delta L_m''$, and plotted against the year, as shown in Fig. 3.

Many oceanographers in the world say that the total mass of ocean water has been increasing lately, but the result of my investigation on the change in the height of mean sea-level during the period of about 60 years at four stations, Aburatubo in Kanagawa Prefecture, Hososima in Miyazaki Prefecture, Wazima in Isikawa Prefecture, Osyoro in Hokkaido, in Japan, as shown in Fig. 1, and 3, shows no increasing tendency in the height of mean sea-level, except the slight fluctuation of sea-level with long period of about 18 years around the secular mean of 40 years. So called rise of mean sea-level, may be the apparent phenomena caused by the oceanic and meteorological tides which govern the change in the height of mean sea-level. So that, if proper corrections due to oceanic and meteorological tides may be added to the observed value of mean

2) S. YAMAGUTI, *Bull. Earthq. Res. Inst.*, **37** (1959).

sea-level as in the case of my investigation, apparent increase in the height of mean sea-level would vanish, and actual small subsidence of earth's crust relative to the mean sea-level would be observed, along various coasts of the world.

I hope many oceanographers in the world will try, first, the correction due to annual change of mean sea-levels, obtained from secular years, as long as possible, second, correction due to residual changes of barometric height and sea-water temperature, similarly to the method of my investigation here explained.

In conclusion, I wish to express my hearty thanks to the Geographical Survey Institute, as well as to the Meteorological Agency in Japan for the kindness of putting abundant valuable data at my disposal throughout the whole investigation. The writer also wishes to express hearty thanks to Miss K. Ogata in his laboratory, who has rendered laborious assistance in aranging Tables and Diagrams in the paper.

9. 大地震前後の平均海水面変化について

地震研究所 山口 生 知

1. 平均海水面変化についてはこれまで度々報告しているように、永年の値より求めた年周変化の値を先づ取り去つた後、更に海水温度や気圧の変化による残差修正を施して、その値を $\Delta L''$ としておつたが、この度は $\Delta L''$ 曲線の細かい変化をなくして滑かにするため $\Delta L'_m = \frac{1}{3} \{ \Delta L''_{n-1} + 2\Delta L''_n + \Delta L''_{n+1} \}$ を計算して $\Delta L'_m$ 曲線を示した。ここに n は月の順番を示したものである。

2. この曲線の上に magnitude M が 7 以上の地震を盛り込んで見たのであるが、験潮場から震源までの距離 d は magnitude の大きさに応じて適当に採つた。すなわち

$M=7.0\sim 7.3$ は $d=200$ km まで

$M=7.4\sim 7.6$ は $d=300$ " "

$M=7.7\sim 7.9$ は $d=400$ " "

$M\geq 8$ は $d\leq 500$ " "

とした

3. 地震のあつた月の 18ヶ月前から 6ヶ月後までの各月毎の $\Delta L'_m$ の平均をとつてみると、 $\Delta L'_m$ の値は地震の 1ヶ年以前にはそれ程大きな変動がないが約半年前頃より大きく変動を始めて約 4ヶ月前にその値は最大に達し、1ヶ月か 2ヶ月前に最小になる傾向を示している。この $\Delta L'_m$ の変動は相対的な地盤の変動とみることが出来る。

Table 3. Monthly mean values of Sea-level, Sea-water Temperature and Barometer.
(a) Aburatabo

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1900	mm				1904	mm				1908	mm			
1	3404	-20	0.8	1.5	1	3409	-11	-0.8	1.0	1	3393	-6	0.8	1.8
2	3479	-84	0.6	1.0	2	3490	-71	0.0	2.2	2	3340	33	1.6	0.3
3	3485	-80	0.7	-0.1	3	3457	-29	-0.1	0.9	3	3464	-42	0.1	0.6
4	3473	-49	0.4	1.5	4	3511	-78	0.4	2.2	4	3469	-47	0.3	1.3
5	3408	-85	0.9	-1.8	5	3411	-53	0.1	0.0	5	3381	-25	0.2	0.0
6	3460	-140	1.4	2.1	6	3359	-49	0.4	0.3	6	3334	-37	0.4	-0.7
7	3423	-159	-0.7	-1.9	7	3273	-12	1.1	-0.3	7	3186	100	-1.0	-0.5
8	3400	-131	-0.1	1.1	8	3250	-1	1.3	0.6	8	3409	-141	0.4	1.1
9	3397	-158	0.3	0.3	9	3228	-17	0.5	-1.6	9	3272	-8	-1.0	0.9
10	3401	-143	1.2	1.5	10	3291	-56	0.6	-0.8	10	3297	-44	0.0	-0.1
11	3372	-106	2.1	0.1	11	3337	-69	-0.1	-2.0	11	3234	26	-0.2	-3.0
12	3455	-139	0.6	-0.5	12	3336	-29	0.6	-1.2	12	3336	-15	0.2	-0.5
1901					1905					1909				
1	3463	-81	1.3	1.9	1	3385	-33	1.0	-0.7	1	3339	48	0.4	1.4
2	3471	-146	1.2	-3.7	2	3428	-64	0.6	-1.4	2	3403	-38	0.7	-1.2
3	3517	-112	1.7	1.0	3	3518	-51	-0.5	3.4	3	3416	23	-0.2	1.6
4	3525	-106	0.9	1.7	4	3421	-2	-0.4	0.4	4	3386	17	0.2	-0.2
5	3458	-135	2.4	-0.3	5	3392	-10	-0.5	1.2	5	3366	-19	0.7	-0.2
6	3404	-115	0.7	-1.0	6	3352	-55	0.8	-0.2	6	3372	-72	0.6	-0.2
7	3341	-64	-0.9	-1.1	7	3350	-75	0.6	0.2	7	3339	-28	-0.2	2.1
8	3310	-40	0.1	1.0	8	3320	-57	-0.6	-0.2	8	3241	-6	1.1	-0.6
9	3271	-62	0.9	-1.4	9	3274	-1	-0.8	1.7	9	3190	28	1.2	-0.4
10	3243	-4	0.9	-0.2	10	3281	-23	0.4	0.7	10	3197	49	0.3	-0.3
11	3395	-117	0.0	-1.1	11	3286	15	0.7	1.3	11	3336	-45	-0.4	-0.5
12	3398	-83	-0.3	-1.5	12	3369	-68	1.7	-0.5	12	3367	-38	-0.2	-0.4
1902					1906					1910				
1	3442	-63	-0.7	-0.3	1	3421	-47	0.6	0.6	1	3340	18	0.8	-0.4
2	3571	-138	-0.6	2.7	2	3435	-51	-0.8	-1.3	2	3383	-26	0.1	-2.4
3	3502	-87	0.3	0.3	3	3416	-10	-0.2	-0.9	3	3419	-16	-0.1	-1.0
4	3468	-77	0.6	-0.8	4	3397	-11	0.5	-1.2	4	3456	-27	-0.3	1.2
5	3383	-28	0.4	0.1	5	3380	-14	0.3	0.8	5	3339	23	0.4	0.6
6	3400	-103	0.2	-0.8	6	3348	-27	-0.1	0.7	6	3358	-71	0.9	-0.9
7	3396	-119	-1.3	-1.5	7	3295	-45	-0.3	-2.6	7				-0.7
8	3345	-58	-1.5	0.7	8	3251	-19	0.8	-1.1	8				-1.7
9	3295	-72	-0.3	-1.5	9	3211	39	-0.3	0.5	9	3305	-63		0.2
10	3323	-56	0.4	1.4	10	3253	8	0.0	0.5	10	3209	79	-2.0	0.6
11	3407	-102	0.9	1.8	11	3330	-24	0.4	1.4	11	3306	-21	0.1	-0.5
12	3314	-20	0.3	-2.5	12	3388	-102	0.0	-3.4	12	3367	-48	-0.6	-1.5
1903					1907					1911				
1	3423	-49	0.6	0.6	1	3340	45	0.3	1.1	1	3406	4	-0.9	1.8
2	3464	-83	1.8	1.1	2	3427	-37	-0.1	-0.1	2	3483	-53	0.0	3.0
3	3522	-84	0.4	2.1	3	3492	-74	0.3	0.5	3	3348	64	0.5	0.3
4	3506	-83	0.8	1.9	4	3465	-36	-0.2	1.3	4	3361	17	0.5	-1.8
5	3417	-46	0.0	0.9	5	3416	-94	0.6	-2.2	5	3406	-11	-0.3	2.4
6	3328	-14	-1.5	-1.3	6	3371	-63	0.0	-0.2	6	3260	44	0.5	0.0
7	3340	-24	-3.3	-0.6	7	3258	30	-0.6	0.0	7	3162	113	-0.3	-0.1
8	3318	-12	-2.3	1.3	8	3303	-74	0.7	-1.5	8	3269	-8	0.3	0.5
9	3341	-62	-2.2	0.8	9	3213	26	0.3	0.3	9	3219	36	0.3	1.5
10	3301	-23	-1.7	0.1	10	3217	35	0.4	0.2	10	3254	-32	0.5	-1.9
11	3330	-1	-2.8	-0.1	11	3293	4	0.6	0.9	11	3269	23	0.6	0.5
12	3409	-54	-3.6	-1.8	12	3318	-10	0.1	-1.7	12	3297	38	0.2	0.5

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1912	mm				1916	mm				1920	mm			
1	3356	27	-0.1	0.6	1	3402	-29	1.4	1.4	1	3340	11	-0.1	-1.8
2	3363	18	0.6	-0.1	2	3378	-21	1.0	-1.5	2	3406	29	-0.9	2.5
3	3381	42	-1.4	-0.8	3	3425	-26	-0.3	-1.5	3	3479	-4	-0.9	3.6
4	3381	20	0.4	-0.2	4	3402	17	0.5	1.3	4	3445	-31	0.6	1.0
5	3332	13	0.5	-0.5	5	3356	-17	1.9	0.4	5	3264	36	0.7	-3.8
6	3275	5	0.5	-1.8	6	3347	-46	1.4	0.7	6	3280	10	1.2	-0.4
7	3290	-33	0.2	-1.5	7	3320	-56	0.2	-1.0	7	3223	47	1.9	1.1
8	3183	72	0.8	0.6	8	3182	43	0.8	-1.7	8	3214	18	1.6	-1.1
9	3244	-11	-0.4	-0.8	9	3270	-43	1.5	0.6	9	3165	84	0.1	0.8
10	3364	-90	-0.6	0.9	10	3288	-19	0.4	1.5	10	3214	26	0.2	-0.8
11	3257	40	-0.6	-0.3	11	3311	25	-0.5	2.7	11	3229	52	0.8	-0.1
12	3237	122	-0.2	1.9	12	3296	23	0.2	-0.7	12	3271	52	0.7	0.1
1913					1917					1921				
1	3381	17	-0.6	1.2	1	3330	23	-0.3	-1.9	1	3373	13	-0.3	0.6
2	3333	47	0.2	-0.5	2	3394	-36	-0.9	-3.3	2	3354	27	-0.6	-1.3
3	3431	-17	-0.8	-0.9	3	3473	-41	-0.7	0.6	3	3352	43	-0.4	-1.9
4	3403	18	0.1	1.0	4	3438	-62	0.5	-2.0	4	3412	16	0.2	1.7
5	3315	21	0.2	-1.5	5	3372	-59	1.6	-1.9	5	3333	6	0.3	-1.2
6	3288	-3	0.2	-1.7	6	3297	20	-0.5	-0.1	6	3321	-2	-0.5	0.1
7	3235	33	-0.3	-1.2	7	3287	-3	0.8	1.1	7	3289	5	0.5	1.6
8	3105	111	0.4	-2.8	8	3196	46	1.1	-0.1	8	3243	-4	0.8	-0.6
9	3137	110	-0.6	0.0	9	3240	11	0.4	1.3	9	3242	17	-0.8	0.7
10	3228	6	0.3	-1.2	10	3242	-9	0.7	-0.9	10	3198	52	-0.5	-0.8
11	3346	-12	-0.9	2.2	11	3276	8	-0.5	-1.2	11	3386	-100	-1.3	-1.8
12	3373	-45	-1.1	1.4	12	3294	-22	-0.9	-5.4	12	3392	-42	-1.5	-0.1
1914					1918					1922				
1	3428	-43	-0.5	0.3	1	3390	-29	-1.2	-2.2	1	3396	10	-1.8	0.6
2	3383	36	-0.5	1.7	2	3404	30	-0.5	2.8	2	3417	-4	-0.5	1.2
3	3342	76	0.6	0.8	3	3454	-23	-0.3	0.9	3	3436	-17	-0.4	-0.1
4	3377	4	0.0	-2.1	4	3422	9	-0.4	1.3	4	3415	6	-0.3	0.6
5	3315	57	0.5	1.5	5	3371	-11	-0.1	0.0	5	3378	-12	0.5	0.9
6	3295	-1	1.0	-0.3	6	3356	-46	0.0	-0.1	6	3302	-26	1.4	-1.2
7	3239	6	1.1	-1.6	7	3318	-65	0.9	-1.1	7	3329	-51	1.3	1.1
8	3219	7	1.6	-0.8	8	3193	53	2.0	1.1	8	3243	-22	1.9	-0.9
9	3190	48	1.4	1.4	9	3196	9	1.2	-1.4	9	3225	14	1.5	1.5
10	3272	-21	0.6	0.4	10	3224	42	0.2	1.1	10	3263	-25	0.8	-0.4
11	3337	-48	0.9	0.6	11	3209	92	0.2	0.8	11	3252	33	-0.4	-1.0
12	3332	-38	0.5	-2.3	12	3253	91	-0.6	0.4	12	3309	-18	-0.8	-3.9
1915					1919					1923				
1	3329	63	0.2	1.6	1	3322	60	-0.3	0.3	1	3407	-1	-0.8	1.6
2	3305	68	0.1	-1.2	2	3327	85	-0.8	0.8	2	3360	18	-0.4	-1.3
3	3348	48	0.1	-1.4	3	3293	95	0.8	-1.2	3	3480	-16	-0.1	3.6
4	3355	58	0.0	0.3	4	3300	77	1.2	-1.2	4	3354	52	0.2	0.0
5	3289	62	-0.3	-0.9	5	3307	56	0.3	0.6	5	3328	31	0.3	0.3
6	3293	22	0.6	0.9	6	3231	68	-0.2	-1.1	6	3182	111	0.5	-0.8
7	3270	3	0.2	-0.3	7	3273	27	0.0	1.5	7	3240	31	-0.2	-0.9
8	3179	-82	1.3	-3.3	8	3247	11	0.4	0.4	8	3319	-87	1.4	-0.5
9	3271	-44	0.9	0.0	9	3202	11	1.0	-1.0	9	3220	7	0.8	-0.1
10	3245	-23	1.7	-0.7	10	3191	39	0.6	-1.2	10	3249	-1	0.4	-0.1
11	3280	42	0.5	2.7	11	3283	00	0.7	-0.1	11	3353	-81	0.3	-1.3
12	3355	-48	0.6	-1.2	12	3305	-2	-0.1	-2.2	12	3455	-139	-0.4	-1.5

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1924	mm				1928	mm				1932	mm			
1	3423	- 33	-0.2	1.0	1	3463	- 75	0.2	1.3	1	3441	- 33	0.6	3.8
2	3422	- 65	0.4	-2.1	2	3473	- 68	-0.2	0.9	2	3353	27	0.1	-0.1
3	3488	- 51	-0.5	1.1	3	3402	3	0.1	-0.7	3	3453	- 61	-0.2	-1.4
4	3406	3	1.0	1.0	4	3437	- 23	-0.1	0.3	4	3428	- 42	-0.5	-1.7
5	3393	- 56	0.0	-1.7	5	3435	- 75	0.5	0.6	5	3394	- 28	-0.2	0.9
6	3281	32	0.1	0.2	6	3362	- 51	-0.3	-0.3	6	3240	91	-0.8	1.3
7	3379	- 46	-0.7	3.3	7	3391	- 76	-1.8	0.8	7	3295	- 26	-0.6	-0.8
8	3360	-107	-0.3	-0.7	8	3211	57	-2.1	-1.4	8	3328	- 67	-0.2	0.6
9	3345	- 95	-0.8	0.0	9	3330	- 73	-0.4	1.0	9	3268	- 35	-0.5	-0.4
10	3288	- 14	-0.4	1.1	10	3315	- 48	-0.4	0.6	10	3262	- 17	-0.6	-0.7
11	3355	- 86	-0.7	-2.5	11	3359	- 43	-0.5	1.2	11	3285	- 13	-0.3	-1.3
12	3358	- 32	0.0	-0.4	12	3320	10	-0.5	-0.6	12	3398	- 69	0.4	0.8
1925					1929					1933				
1	3404	- 38	0.0	-0.6	1	3362	32	-1.4	0.1	1	3375	8	0.7	2.0
2	3477	- 65	-0.3	1.4	2	3373	24	-1.5	-1.0	2	3413	- 50	1.2	-0.2
3	3471	- 71	-0.4	-1.5	3	3484	- 54	-1.4	-0.3	3	3410	- 17	0.7	-0.4
4	3427	8	-0.4	1.6	4	3436	- 43	-0.1	-1.3	4	3418	- 12	0.8	1.2
5	3361	10	-0.5	0.4	5	3413	- 43	-0.6	0.2	5	3344	9	0.8	1.0
6	3304	7	-0.3	-0.3	6	3396	- 79	-0.4	0.1	6	3286	11	1.0	0.5
7	3326	- 9	-1.2	1.6	7	3324	- 32	-0.1	0.8	7	3328	- 40	0.3	1.5
8	3357	- 69	-1.1	1.1	8	3310	- 76	1.2	-0.6	8	3211	35	0.1	-0.2
9	3292	- 49	-0.1	0.2	9	3292	- 44	-1.2	-0.5	9	3245	- 18	-0.4	-0.7
10	3266	- 30	0.2	-1.1	10	3242	- 2	0.8	-0.2	10	3306	- 72	0.4	-0.5
11	3307	- 27	0.6	-0.4	11	3284	31	-0.8	0.8	11	3303	- 14	-0.1	0.3
12	3424	-136	0.4	-2.9	12	3374	- 31	0.1	1.0	12	3262	- 14	1.5	-4.2
1926					1930					1934				
1	3489	-118	0.5	0.3	1	3408	- 2	-0.9	2.1	1	3357	- 32	1.7	-1.4
2	3487	- 90	1.3	1.8	2	3405	- 5	-0.5	0.8	2	3366	- 54	2.4	-2.9
3	3478	- 86	1.1	-0.5	3	3480	- 43	-0.1	2.2	3	3411	- 52	1.1	-2.5
4	3464	-106	0.5	-3.3	4	3432	- 38	0.3	-0.2	4	3464	- 55	0.3	0.9
5	3412	- 31	0.0	1.7	5	3456	- 91	0.1	1.1	5	3445	- 68	-0.7	1.3
6	3351	- 20	-0.2	1.3	6	3281	14	0.4	-0.2	6	3345	- 34	-0.4	0.2
7	3333	- 42	-1.2	-0.4	7	3212	38	0.5	-1.1	7	3289	- 2	-1.7	-0.6
8	3223	- 57	-0.8	-0.2	8	3315	- 77	0.9	0.0	8	3362	- 68	-2.7	0.6
9	3354	-124	0.1	-0.6	9	3237	7	-0.1	0.9	9	3293	- 37	-2.1	-0.2
10	3329	- 89	-0.3	-1.4	10	3237	5	-0.4	-0.7	10	3278	11	-1.1	2.1
11	3371	- 80	0.2	0.1	11	3318	- 30	-0.6	-0.3	11	3283	- 7	-0.5	-1.2
12	3332	- 36	0.5	-2.1	12	3376	- 32	-1.2	0.4	12	3353	- 12	1.2	2.6
1927					1931					1935				
1	3465	-108	1.0	-0.3	1	3372	15	-1.2	0.4	1	3340	- 9	1.8	-1.0
2	3459	- 65	0.1	0.4	2	3386	35	-1.6	1.4	2	3383	- 10	2.0	1.4
3	3470	- 38	0.1	1.4	3	3376	38	-0.6	-0.1	3	3356	10	1.8	-1.3
4	3451	- 27	0.1	1.2	4	3446	- 54	-0.8	-1.5	4	3423	- 15	0.3	0.8
5	3438	- 87	0.3	-0.3	5	3405	- 30	-1.1	0.7	5	3335	11	0.1	-0.3
6	3442	-121	-0.4	0.4	6	3395	-103	0.8	0.0	6	3291	39	-1.7	0.3
7	3371	- 90	0.0	0.1	7	3320	- 37	-2.1	-1.3	7	3209	96	-2.5	0.0
8	3352	-113	0.3	-1.1	8	3361	- 80	-0.7	1.7	8	3214	57	-2.8	-1.2
9	3291	- 49	-1.5	-1.3	9	3325	- 74	-0.9	0.6	9	3184	60	-1.6	-0.6
10	3273	- 15	0.0	0.3	10	3279	- 15	-0.5	0.8	10	3255	- 26	0.1	-1.2
11	3313	- 51	0.2	-2.1	11	3300	12	-0.5	1.5	11	3316	- 2	0.0	2.2
12	3436	-149	0.3	-3.0	12	3361	- 32	-0.4	0.1	12	3360	- 42	0.0	-0.4

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1936	mm				1940	mm				1944	mm			
1	3353	-15	0.0	-2.1	1	3279	41	-0.8	-4.3	1	3341	88	0.0	4.2
2	3363	-7	0.0	-2.0	2	3374	27	-0.5	0.9	2	3293	125	0.0	2.1
3	3440	3	-0.6	2.1	3	3364	16	-0.2	-2.3	3	3299	116	-0.5	-0.5
4	3376	25	-1.1	-1.1	4	3379	12	-0.2	-1.0	4	3429	-19	-1.2	-1.1
5	3349	29	-0.2	1.8	5	3392	-40	-0.4	-0.3	5	3400	-36	-0.9	-0.5
6	3268	69	-1.4	1.1	6	3312	1	-0.1	0.7	6	3374	-67	-0.5	-0.8
7	3268	5	-0.7	-0.6	7	3215	68	-0.2	0.6	7	3327	-41	-0.7	-0.2
8	3286	-26	-1.3	-0.5	8	3220	61	-0.5	1.8	8	3217	37	0.0	-0.3
9	3235	2	-0.2	0.2	9	3174	56	-0.6	-0.7	9	3169	37	0.5	-2.0
10	3257	-25	-0.2	-1.3	10	3251	7	0.0	0.9	10	3243	-5	0.1	-1.1
11	3259	46	-0.5	1.0	11	3263	27	0.6	1.0	11	3240	37	-0.1	-1.3
12	3317	2	0.8	0.5	12	3243	46	0.4	-2.2	12	3265	90	-0.6	1.2
1937					1941					1945				
1	3372	00	0.9	1.4	1	3298	94	0.5	1.9	1	3289	69	-1.0	-2.2
2	3421	-47	1.3	0.7	2	3377	116	0.1	2.9	2	3338	65	-1.8	-0.8
3	3371	-4	1.2	-1.8	3	3317	100	0.5	0.4	3	3453	-9	-0.1	2.1
4	3352	74	0.6	2.5	4	3341	59	-0.2	-0.9	4	3432	-27	-0.2	-0.5
5	3214	106	-1.0	-1.4	5	3289	67	-0.4	-0.6	5	3324	18	-1.1	-2.4
6	3228	132	-2.0	2.3	6	3327	-23	-0.7	-1.2	6	3260	71	-1.4	0.1
7	3184	125	-2.8	0.0	7	3157	95	-1.5	-3.6	7	3369	-78	-2.2	-1.4
8	3195	116	-2.0	2.6	8	3096	140	-1.4	-3.1	8	3339	-40	-0.9	2.2
9	3199	44	-0.5	0.4	9	3186	47	-1.5	-2.0	9				
10	3237	20	-0.2	0.6	10	3266	1	-0.1	0.9	10				
11	3235	35	0.3	-0.8	11	3250	42	0.1	0.0	11				
12	3293	-28	0.3	-4.1	12	3292	46	0.1	0.6	12				
1938					1942					1947				
1	3337	89	0.8	1.6	1	3276	129	-0.1	2.3	1				
2	3378	-33	0.3	-2.5	2	3291	141	-0.9	2.3	2				
3	3402	9	0.3	0.6	3	3388	37	0.9	1.7	3	3442	-15	-1.1	-0.2
4	3329	37	-0.1	-2.7	4	3413	5	0.5	1.2	4	3476	-59	-0.8	-2.3
5	3285	56	-0.1	0.8	5	3291	49	-0.1	-1.5	5	3381	-31	0.9	0.2
6	3216	71	0.0	-1.2	6	3221	72	0.1	-1.3	6	3386	-77	0.5	0.4
7	3220	77	-1.8	0.1	7	3132	136	0.1	-0.8	7	3376	-104	1.5	0.9
8	3214	67	-0.7	1.7	8	3136	65	0.9	-3.1	8	3322	-66	2.0	1.9
9	3112	111	-0.6	-1.2	9	3215	-13	1.1	-1.6	9	3168	36	1.0	-1.7
10	3172	70	-0.1	-0.4	10	3192	42	0.8	-0.7	10	3164	80	0.4	-1.1
11	3216	57	-0.3	-1.2	11	3242	57	0.1	0.5	11	3287	-16	1.1	-0.5
12	3269	41	-0.2	-1.2	12	3293	46	-0.3	0.3	16	3322	-15	0.7	-1.5
1939					1943					1948				
1	3308	82	-0.8	1.0	1	3364	61	-0.4	3.5	1	3334	-11	2.6	-1.2
2	3387	14	-0.5	0.9	2	3364	69	-0.4	3.1	2	3290	51	3.3	-0.4
3	3360	33	-0.3	-1.4	3	3344	63	-0.5	-1.1	3	3437	-32	2.4	1.7
4	3391	36	-0.8	1.1	4	3385	46	-1.0	0.7	4	3386	-5	2.2	0.1
5	3286	65	-0.5	-0.5	5	3289	60	-0.4	-1.1	5	3427	-68	1.2	0.6
6	3272	36	-1.0	-0.6	6	3291	8	-0.2	-1.1	6	3262	-6	2.3	-1.8
7	3273	-5	0.9	0.6	7	3300	-33	-1.2	-2.2	7	3230	-13	3.5	-1.2
8	3214	39	-0.3	-0.1	8	3253	-10	0.2	-0.9	8	3208	-4	2.5	-1.6
9	3207	11	0.0	-0.9	9	3217	-26	2.1	-1.5	9	3172	34	1.9	-0.6
10	3195	47	0.5	0.2	10	3229	-2	0.8	-1.2	10	3206	18	1.7	-0.5
11	3246	29	0.5	-0.2	11	3309	-2	0.1	1.1	11	3289	1	1.6	1.4
12	3303	49	-0.3	1.9	12	3325	146	0.1	3.3	12	3301	12	2.3	1.0

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1949	mm				1953	mm				1957	mm			
1	3286	42	2.6	-0.8	1	3203	110	2.9	-1.7	1	3289	65	2.2	0.7
2	3268	37	2.1	-4.3	2	3333	63	2.4	2.9	2	3275	84	3.3	1.0
3	3367	6	2.0	-1.2	3	3340	14	2.3	-2.3	3	3286	71	2.4	-2.0
4	3314	49	1.8	-1.7	4	3316	63	2.2	-0.1	4	3325	56	3.0	0.9
5	3314	7	1.9	-1.0	5	3302	23	2.5	-0.1	5	3286	60	1.3	0.3
6	3314	-15	0.8	-0.1	6	3191	63	2.0	-2.3	6	3184	110	1.2	-0.1
7	3262	-15	2.2	-0.3	7	3210	32	1.3	-1.6	7	3167	79	1.1	-1.4
8	3200	27	2.7	0.4	8	3087	124	1.7	-1.8	8	3238	-2	2.2	0.5
9	3244	-12	0.3	-0.2	9	3090	122	0.8	-1.2	9	3187	16	2.6	-0.1
10	3171	61	0.5	-1.1	10	3116	118	1.0	-0.5	10	3164	110	0.1	-1.4
11	3189	116	0.5	1.4	11	3142	125	1.4	-0.5	11	3222	73	1.1	1.3
12	3211	83	0.5	-2.3	12	3242	70	2.7	1.3	12	3221	58	2.4	-1.5
1950					1954					1958				
1	3278	-20	0.9	-2.3	1	3164	147	3.9	-0.8	1	3357	19	1.0	1.1
2	3385	-14	1.1	-0.3	2	3315	22	3.6	-0.4	2	3348	17	2.2	0.3
3	3411	-11	0.9	-0.2	3	3330	52	2.5	0.0	3	3333	42	2.2	-0.8
4	3321	45	2.7	-0.5	4	3315	25	3.3	-1.9	4	3385	6	2.0	0.7
5	3255	49	3.8	-0.3	5	3313	5	1.8	-1.3	5	3237	93	2.4	0.2
6	3166	80	3.7	-1.2	6	3167	112	1.2	-1.2	6	3193	84	2.9	0.4
7	3248	24	4.0	-0.2	7	3160	83	0.7	-2.1	7	3216	31	1.5	-1.0
8	3148	17	3.5	-2.9	8	3138	63	2.9	-1.4	8	3229	24	1.2	0.8
9	3146	55	2.3	-0.5	9	3190	-9	1.9	-2.5	9	3146	65	0.2	-1.9
10	3185	68	0.6	0.5	10	3061	169	0.5	-1.3	10	3220	60	-0.4	1.6
11	3178	101	0.9	-0.9	11	3169	91	1.2	-1.3	11	3180	128	0.4	1.5
12	3293	-4	0.6	-2.4	12	3210	79	2.3	-0.8	12	3247	54	1.6	-0.7
1951					1955					1959				
1	3326	27	2.2	0.6	1	3226	105	2.4	-0.8	1	3262	86	1.1	-0.8
2	3311	47	2.3	-0.1	2	3257	39	2.9	-4.2	2	3358	44	2.4	3.3
3	3333	29	2.8	-1.2	3	3289	102	2.2	0.4	3	3336	75	2.4	2.1
4	3352	30	1.7	-0.1	4	3320	49	2.3	-0.7	4	3289	79	3.1	0.0
5	3260	53	2.5	-1.0	5	3184	102	2.8	-2.7	5	3299	30	2.5	0.2
6	3168	84	2.0	-2.4	6	3215	39	2.5	-1.8	6	3149	134	1.9	-0.2
7	3266	-15	1.6	-0.6	7	3173	38	3.3	-1.9	7	3125	113	1.9	-1.3
8	3197	28	2.7	0.2	8	3136	65	2.5	-1.8	8	3112	99	1.6	-2.0
9	3054	173	0.0	-0.9	9	3162	64	0.4	-0.6	9	3099	151	1.1	-0.9
10	3118	106	0.9	-1.2	10	3208	44	0.2	0.1	10				
11	3231	30	0.5	-1.9	11	3197	149	-0.2	3.8	11				
12	3318	-13	-0.3	-2.3	12	3164	136	2.3	0.0	12				
1952					1956									
1	3328	-5	2.4	-1.4	1	3259	94	2.4	0.8					
2	3279	75	3.1	0.4	2	3313	69	1.1	0.5					
3	3251	110	1.9	-2.2	3	3360	93	1.7	4.6					
4	3335	38	2.3	-0.4	4	3337	80	1.5	2.1					
5	3321	11	1.7	-0.3	5	3345	35	1.2	2.8					
6	3261	-8	2.2	-2.2	6	3179	110	2.6	1.0					
7	3211	13	1.8	-2.4	7	3117	129	2.2	-0.4					
8	3099	100	3.3	-1.1	8	3185	41	1.6	-0.8					
9	3104	90	1.5	-1.9	9	3217	31	0.6	1.3					
10	3146	84	0.9	-0.9	10	3160	106	0.7	1.6					
11	3133	126	2.0	-0.5	11	3149	137	1.4	0.9					
12	3203	82	3.1	-0.4	12	3266	27	2.0	0.8					

Table 3, b. Hososima

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1900	mm				1904	mm				1908	mm			
1	2572	140	0.5	0.3	1	2716	40	-1.1	1.2	1	2685	51	-0.5	0.6
2	2714	12	0.4	0.9	2	2701	31	-0.3	0.3	2	2651	57	0.7	0.0
3	2734	-37	0.7	-0.1	3	2660	48	-0.4	-0.9	3	2667	50	0.1	0.5
4	2602	57	0.7	-0.1	4	2667	10	0.6	1.1	4	2678	-30	1.3	0.0
5	2579	21	-0.3	-1.5	5	2617	-26	0.8	-0.5	5	2663	-52	-0.1	-0.4
6	2535	26	-0.1	1.4	6	2552	-6	0.2	0.7	6	2586	-70	0.9	-0.5
7	2448	65	-0.6	-0.9	7	2422	67	0.8	-0.6	7	2404	107	-0.7	-1.2
8	2331	105	0.2	-0.7	8	2415	1	1.3	-0.5	8	2457	-4	-0.6	-0.7
9	2441	13	0.1	-0.1	9	2423	15	0.4	-0.8	9	2430	44	-0.8	0.1
10	2552	-48	-0.2	0.9	10	2477	-1	0.2	-0.6	10	2556	-72	-0.4	-0.9
11	2540	41	-0.2	-0.6	11	2630	-58	0.6	-0.1	11	2605	-7	-1.1	-0.7
12	2649	24	0.4	0.7	12	2627	50	-0.1	0.2	12	2671	64	-3.1	0.1
1901					1905					1909				
1	2657	34	0.9	-0.7	1	2592	40	2.3	-3.0	1	2681	62	-2.0	-1.1
2	2703	28	-1.3	-1.3	2	2683	-23	2.3	-1.2	2	2764	-10	-2.0	-0.6
3	2718	3	0.6	1.6	3	2663	38	1.0	0.7	3	2689	50	-1.0	0.5
4	2570	74	0.9	-0.9	4	2618	22	1.5	-0.3	4	2580	75	0.2	-1.1
5	2533	67	0.3	-0.6	5	2591	17	0.9	0.9	5	2639	-25	0.0	0.0
6	2502	20	-0.1	-1.6	6	2559	-71	1.6	-1.6	6	2610	-99	0.7	-1.2
7	2442	71	-0.8	-1.2	7	2548	-66	1.5	-0.1	7	2507	10	1.0	1.8
8	2403	51	0.5	1.1	8	2452	10	-0.7	-0.1	8	2370	39	-0.3	-3.5
9	2475	-19	-0.5	-0.8	9	2456	25	0.0	1.8	9	2447	-1	-0.3	-1.3
10	2455	3	0.2	-2.0	10	2457	38	-0.4	-0.1	10	2554	-55	-0.5	0.1
11	2640	-40	-0.8	-0.1	11	2510	102	-0.8	0.8	11	2583	1	-0.3	-0.5
12	2724	-13	-1.7	0.4	12	2543	98	1.1	-0.7	12	2812	-111	-0.7	1.1
1902					1906					1910				
1	2736	-5	-1.0	-0.5	1	2668	42	0.6	0.4	1	2707	-2	-0.8	-2.2
2	2788	-32	0.3	3.0	2	2693	13	-0.9	-2.6	2	2807	-88	-0.5	-1.0
3	2703	-10	0.6	-0.5	3	2640	63	0.4	-0.1	3	2764	-25	-1.4	-0.1
4	2683	1	-0.5	0.0	4	2642	12	1.0	0.0	4	2725	-23	-1.4	0.0
5	2556	53	-0.3	-0.8	5	2552	52	0.3	-0.3	5	2611	-12	0.5	-0.4
6	2494	22	0.0	-1.9	6	2552	-20	-0.1	-0.8	6	2644	-102	-0.4	-0.5
7	2531	-18	-0.4	-0.6	7	2461	-11	0.4	-4.2	7	2534	-40	0.1	-1.3
8	2460	0.0	-0.9	-0.5	8	2493	-57	0.3	-0.5	8	2355	73	0.0	-1.6
9	2395	60	-1.3	-2.1	9	2470	-12	0.5	0.8	9	2494	-36	-0.5	-0.7
10	2494	27	-1.0	1.0	10	2448	-1	1.8	-0.4	10	2466	24	-0.5	-0.6
11	2581	16	-0.4	0.3	11	2510	79	0.2	0.6	11	2651	-64	-0.3	-0.3
12	2532	89	0.9	-2.5	12	2772	-95	-0.9	-1.0	12	2737	-37	-0.8	0.9
1903					1907					1911				
1	2681	40	-0.7	-0.8	1	2696	18	-0.4	-0.9	1	2765	-43	-0.8	-0.9
2	2701	21	0.9	1.4	2	2679	48	-0.4	-0.2	2	2828	-64	-0.4	2.6
3	2620	60	0.8	-1.8	3	2700	11	-0.3	-0.5	3	2651	47	0.1	-0.9
4	2641	28	0.4	0.2	4	2742	-60	-0.4	0.0	4	2680	-10	-0.2	-0.6
5	2587	40	0.0	1.0	5	2687	-95	0.3	-1.2	5	2684	-56	0.1	1.2
6	2468	55	-0.1	-1.5	6	2590	-44	-0.7	-0.7	6	2563	-29	0.0	-0.5
7	2426	102	-0.9	-0.2	7	2522	-17	-0.9	-2.0	7	2508	8	0.1	0.4
8	2489	-18	0.4	2.3	8	2444	-28	0.0	-2.5	8	2474	-28	-0.5	-1.0
9	2455	-2	0.6	0.6	9	2394	-14	-0.3	-1.9	9	2435	37	0.0	1.1
10	2427	42	0.2	-1.1	10	2447	42	-0.5	-0.7	10	2482	7	-0.5	-0.7
11	2596	4	-0.8	-0.1	11	2565	63	-2.3	-0.2	11	2606	-16	-0.1	0.2
12	2638	67	-1.6	0.1	12	2736	3	-3.0	0.5	12	2688	7	-0.1	1.6

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1912	mm				1916	mm				1920	mm			
1	2720	18	-0.6	0.6	1	2702	5	1.0	0.7	1	2788	-79	-0.3	-1.1
2	2661	44	0.3	-0.8	2	2675	-1	0.6	-2.7	2	2765	-25	0.1	1.5
3	2688	9	0.2	-0.8	3	2723	-4	-0.4	-0.1	3	2757	-22	-0.3	1.3
4	2726	-39	0.1	1.1	4	2654	31	-0.1	0.7	4	2760	-81	0.2	0.7
5	2641	-33	-0.1	-0.6	5	2572	27	0.6	-0.2	5	2572	-16	0.2	-4.1
6	2513	-50	2.2	-2.6	6	2508	5	1.2	-0.3	6	2589	-64	0.0	-1.2
7	2571	-61	-0.2	-0.5	7	2492	4	0.7	-0.2	7	2521	-5	0.1	0.4
8	2458	8	-0.7	0.2	8	2325	75	0.6	-2.8	8	2508	-98	-0.3	-3.4
9	2416	33	-0.2	-0.9	9	2490	-38	0.9	1.0	9	2480	-15	-0.6	-0.3
10	2546	-41	-0.8	0.1	10	2455	26	0.7	0.5	10	2500	-31	0.4	-0.8
11	2639	-37	-0.6	0.4	11	2430	138	0.8	-0.1	11	2626	-61	0.8	-0.3
12	2585	111	0.1	2.0	12	2577	68	1.2	-0.2	12	2657	12	0.3	0.2
1913					1917					1921				
1	2666	67	-0.2	0.8	1	2648	85	-0.6	0.2	1	2785	-57	-0.1	0.6
2	2667	63	-0.4	0.0	2	2748	-24	-1.0	-1.4	2	2759	-49	0.0	-0.9
3	2722	-5	-0.4	-0.2	3	2813	-85	-0.4	0.6	3	2770	-69	0.1	-0.7
4	2664	-10	0.6	-0.6	4	2758	-106	-0.1	-1.8	4	2698	-24	0.3	0.4
5	2604	-16	0.5	-1.2	5	2706	-90	-0.5	-0.6	5	2627	-42	0.4	-1.6
6	2491	30	0.0	-1.5	6	2580	-24	-0.9	-0.2	6	2549	-10	-0.9	-1.5
7	2492	17	-0.4	-0.9	7	2590	-78	0.7	1.0	7	2508	2	0.7	0.8
8	2351	66	0.1	-2.3	8	2474	-36	0.2	-0.5	8	2462	-48	0.7	-1.6
9	2473	7	-0.9	0.4	9	2529	-67	0.3	0.8	9	2524	-61	-0.3	0.0
10	2485	-19	-0.1	-1.8	10	2524	-56	0.0	-1.5	10	2497	-2	-0.7	-0.5
11	2621	-18	0.0	1.4	11	2662	-50	-0.8	0.7	11	2715	-82	-1.8	0.9
12	2763	-80	-0.1	0.7	12	2767	-95	-1.0	-1.5	12	2718	-17	-0.8	1.0
1914					1918					1922				
1	2816	-85	-0.4	0.4	1	2852	-111	-1.3	-0.2	1	2790	-36	-1.4	0.6
2	2718	9	-0.3	-0.1	2	2786	-24	-0.6	2.1	2	2719	0.0	-0.5	-1.0
3	2613	81	0.3	-0.9	3	2815	-99	0.2	0.6	3	2750	-25	-0.6	0.1
4	2656	9	-0.2	-1.0	4	2777	-100	0.2	0.5	4	2674	14	-0.7	0.0
5	2586	29	0.2	0.4	5	2713	-92	-0.4	-0.1	5	2575	5	1.5	-0.3
6	2539	5	-0.3	-0.2	6	2684	-118	-0.9	0.5	6	2508	-6	1.3	-1.0
7	2496	-31	2.0	-0.6	7	2579	-89	-0.5	-2.5	7	2487	37	-0.1	0.7
8	2445	-30	0.8	-1.4	8	2539	-69	-0.6	0.7	8	2461	-25	0.7	0.1
9	2404	42	0.8	0.4	9	2420	21	0.0	-1.2	9	2450	26	0.1	1.6
10	2498	16	-0.5	1.2	10	2507	-12	0.0	0.5	10	2537	-54	0.0	-0.4
11	2558	28	0.0	0.1	11	2560	37	0.2	1.2	11	2568	29	-0.6	0.0
12	2677	-6	-0.2	-0.4	12	2669	5	0.1	0.3	12	2715	-26	-0.8	0.1
1915					1919					1923				
1	2666	61	-0.1	0.5	1	2702	10	-0.1	-0.6	1	2757	11	-1.6	1.4
2	2620	62	0.6	-2.1	2	2662	63	-0.3	-0.2	2	2704	12	-0.9	-1.8
3	2635	72	0.1	-0.2	3	2646	35	1.1	-0.7	3	2744	-48	-0.9	-2.6
4	2597	73	0.2	0.0	4	2647	20	0.1	-0.4	4	2634	43	0.0	0.2
5	2604	7	-0.3	-0.7	5	2642	-27	0.5	0.8	5	2555	40	0.2	-1.1
6	2489	69	-0.3	0.8	6	2517	-14	0.6	-2.0	6	2478	55	0.0	-0.6
7	2532	-21	0.1	0.0	7	2524	-4	0.0	0.5	7	2522	-6	-0.3	-0.2
8	2403	-26	0.9	-4.1	8	2483	-29	-0.6	-0.5	8	2508	-60	0.4	0.5
9	2413	8	0.7	-1.6	9	2555	-93	-0.6	-0.5	9	2381	36	0.2	-2.7
10	2459	-13	1.0	-1.7	10	2543	-56	-0.4	-0.7	10	2449	25	0.1	-0.9
11	2534	51	1.0	1.5	11	2596	-40	1.0	-0.7	11	2640	-48	-0.8	-0.7
12	2689	-33	0.6	-0.3	12	2730	-57	0.3	0.5	12	2715	-6	-0.8	1.6

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1924	mm				1928	mm				1932	mm			
1	2762	-34	-0.3	0.3	1	2772	-65	0.8	0.4	1	2694	12	2.1	2.3
2	2750	-36	-0.5	-1.4	2	2741	0.0	-0.1	1.3	2	2615	74	1.9	0.1
3	2758	9	-1.5	1.9	3	2671	11	0.9	-0.9	3	2740	-49	1.1	0.1
4	2667	17	-0.5	0.0	4	2614	41	0.8	-0.2	4	2727	-62	-0.1	-0.8
5	2613	-20	0.0	-1.6	5	2617	-28	1.0	-0.4	5	2630	-2	-0.3	0.6
6	2475	55	0.1	-0.7	6	2519	-3	0.6	-1.0	6	2438	109	0.1	0.6
7	2516	27	0.5	3.0	7	2505	-8	0.6	-0.3	7	2501	15	0.1	0.4
8	2340	72	0.2	-2.5	8	2316	54	1.2	-4.2	8	2419	13	-0.4	-1.9
9	2492	-17	-0.5	0.6	9	2441	-7	1.1	-0.1	9	2466	-18	0.2	-0.4
10	2450	48	-0.4	0.1	10	2502	-38	1.0	-0.3	10	2501	-17	0.4	0.3
11	2569	47	-1.8	-0.4	11	2602	-32	1.2	0.7	11	2562	-2	0.9	-0.5
12	2626	82	-1.4	0.6	12	2626	17	1.8	0.5	12	2612	37	1.6	0.7
1925					1929					1933				
1	2641	70	-0.3	-1.0	1	2718	-29	1.5	0.1	1	2687	13	1.7	1.2
2	2694	59	-0.8	1.1	2	2744	-47	1.2	-0.1	2	2722	-13	0.4	-0.4
3	2763	-32	-0.9	0.1	3	2761	-70	1.1	0.1	3	2652	49	0.1	-0.7
4	2692	30	-1.1	2.0	4	2727	-62	0.3	-0.2	4	2648	28	0.1	0.3
5	2577	52	-1.1	-0.5	5	2632	-17	-0.4	-0.5	5	2585	41	0.0	0.9
6	2533	-1	-0.2	-1.0	6	2546	-28	0.4	-1.1	6	2519	5	0.7	-0.2
7	2508	10	0.1	0.5	7	2533	-11	0.1	0.8	7	2540	-32	1.0	1.1
8	2440	4	-0.3	-0.8	8	2457	-23	0.6	-0.2	8	2404	26	0.5	-0.7
9	2365	75	0.0	-1.3	9	2455	-9	0.2	-0.5	9	2426	12	0.9	-0.1
10	2440	39	0.0	-0.7	10	2453	33	-0.8	-1.4	10	2492	-26	1.1	0.0
11	2539	49	-0.4	-0.4	11	2596	62	-3.2	0.7	11	2521	45	0.8	-0.2
12	2746	-55	-0.9	0.1	12	2653	10	0.2	-0.4	12	2534	68	1.8	-2.6
1926					1930					1934				
1	2819	-59	-1.3	1.2	1	2760	-34	0.0	0.6	1	2722	-19	0.9	0.2
2	2784	-25	-0.6	1.9	2	2700	26	-0.6	-0.6	2	2687	9	0.5	-1.2
3	2743	-10	-0.7	0.5	3	2692	41	-0.7	0.5	3	2732	-42	0.0	-1.7
4	2731	-32	-2.1	-1.3	4	2646	31	-0.8	-1.0	4	2702	-7	-0.7	0.5
5	2596	45	-1.2	0.2	5	2677	-20	-1.7	0.7	5	2677	-41	-0.5	0.9
6	2514	40	-0.2	0.7	6	2550	134	-2.2	-0.1	6	2604	-49	-0.3	0.6
7	2568	-40	-0.2	0.8	7	2464	60	-1.1	-0.8	7	2574	-78	1.0	0.2
8	2513	-52	0.2	1.2	8	2463	-1	-1.3	-1.0	8	2635	-175	0.5	1.6
9	2455	-19	1.2	0.2	9	2530	-19	-1.8	1.4	9	2539	-93	0.3	-0.4
10	2563	-82	-0.1	-0.7	10	2474	38	-2.0	-1.2	10	2521	-13	0.0	1.5
11	2641	-35	-0.6	0.7	11	2598	24	-1.3	0.8	11	2661	-81	0.2	-0.1
12	2661	24	-0.7	-0.1	12	2685	6	-0.5	0.7	12	2646	17	0.9	0.7
1927					1931					1935				
1	2723	4	-0.9	-0.7	1	2718	-14	-0.2	-1.4	1	2711	-42	1.6	-1.3
2	2752	-19	-0.5	0.1	2	2713	12	-0.7	-0.8	2	2723	-13	0.8	0.3
3	2716	6	-0.3	0.3	3	2691	42	-1.1	-0.1	3	2700	-13	0.5	-1.1
4	2678	-11	0.7	0.5	4	2697	10	-1.9	-0.4	4	2654	26	-0.5	-0.3
5	2653	-41	0.1	0.0	5	2608	51	-2.0	0.4	5	2568	45	-0.1	-0.2
6	2609	-69	0.1	0.1	6	2550	127	-2.6	-1.2	6	2547	-9	0.0	-0.2
7	2599	-97	1.2	1.0	7	2588	-20	-3.3	-0.8	7	2503	14	-0.2	0.0
8	2506	-69	0.4	-0.3	8	2499	-13	-1.3	0.8	8	2454	-38	0.2	-2.2
9	2479	-31	-0.3	-1.1	9	2508	-57	0.5	0.3	9	2355	77	-0.2	-2.2
10	2452	41	0.3	0.8	10	2475	4	0.9	0.7	10	2558	-91	0.4	-0.7
11	2566	-32	1.5	-1.6	11	2493	60	1.6	0.0	11	2602	-18	0.8	1.1
12	2711	-94	2.1	-1.0	12	2599	43	2.1	0.9	12	2696	-26	0.7	0.9

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1936	mm				1940	mm				1944	mm			
1	2762	- 58	0.7	0.0	1	2756	- 96	1.3	-2.4	1	2668	28	1.9	1.2
2	2689	7	0.2	-1.7	2	2819	- 79	0.0	1.4	2	2639	54	1.5	0.1
3	2764	- 6	-0.2	3.2	3	2751	- 67	0.0	-2.1	3	2615	72	0.4	-1.3
4	2665	7	-0.7	-1.3	4	2735	- 52	-0.5	-0.1	4	2619	39	0.4	-0.6
5	2639	13	-1.3	0.9	5	2727	- 94	-0.6	0.5	5	2639	- 30	0.4	0.2
6	2538	32	-0.9	0.8	6	2661	- 93	-0.7	1.0	6	2592	- 50	0.1	0.2
7	2563	- 23	-1.4	-0.1	7	2554	- 16	0.0	1.9	7	2516	4	0.7	1.2
8	2607	-108	-2.1	0.6	8	2499	- 29	0.0	1.6	8	2488	- 20	-0.1	1.3
9	2471	1	-0.5	0.4	9	2445	- 12	0.3	-1.4	9	2386	56	0.6	-0.2
10	2384	76	0.6	-1.2	10	2515	- 49	1.1	0.0	10	2388	70	1.3	-0.3
11	2505	53	1.8	0.7	11	2586	- 32	1.9	0.5	11	2439	105	1.5	-1.7
12	2614	15	2.2	0.1	12	2647	- 18	2.0	-0.2	12	2564	73	1.9	0.2
1937					1941					1945				
1	2698	- 21	1.9	-0.2	1	2723	- 42	1.6	-1.1	1	2679	39	0.1	-1.1
2	2759	- 83	1.7	-0.9	2	2752	- 42	1.2	0.9	2	2624	102	-0.6	-0.4
3	2712	- 62	1.6	-2.3	3	2673	14	1.0	-0.4	3	2677	60	0.1	2.3
4	2662	16	0.8	1.5	4	2705	- 46	0.5	-0.4	4	2656	21	0.6	0.1
5	2566	25	0.6	-0.8	5	2621	4	-0.5	0.1	5	2540	56	-0.3	-1.6
6	2483	67	0.0	0.7	6	2591	- 37	-0.8	-0.2	6	2443	102	-0.4	-0.1
7	2444	34	1.1	-1.0	7	2426	88	-1.5	-2.2	7	2432	71	-0.2	-0.9
8	2493	- 6	0.3	3.3	8	2332	117	-1.0	-1.5	8	2419	95	-0.7	1.7
9	2497	- 33	0.1	0.7	9	2418	62	-1.3	-0.2	9	2465	18	0.4	0.5
10	2495	- 13	0.3	0.0	10	2577	- 55	-0.6	1.7	10	2435	60	0.4	-0.8
11	2583	- 51	2.1	-0.9	11	2571	7	0.1	-0.4	11	2523	57	0.7	-0.5
12	2729	- 92	1.0	-1.1	12	2598	47	1.1	-0.4	12	2636	32	0.0	-1.1
1938					1942					1946				
1	2751	- 34	1.1	1.6	1	2662	29	0.9	-0.7	1	2696	23	-0.2	0.0
2	2792	- 95	0.5	-1.1	2	2593	127	0.3	0.3	2	2609	101	0.6	0.2
3	2734	- 36	0.3	-0.6	3	2651	63	0.5	0.9	3	2579	143	0.1	1.1
4	2702	- 52	0.3	-1.4	4	2694	2	0.0	1.7	4	2677	14	-0.6	0.6
5	2604	5	0.4	0.2	5	2521	100	-0.9	-0.8	5	2391	172	3.1	-0.3
6	2563	- 52	0.6	-1.4	6	2427	140	-1.5	-0.3	6	2347	225	-0.1	1.1
7	2561	- 45	-0.1	0.0	7	2380	151	-0.5	0.6	7	2391	68	1.3	-1.9
8	2433	12	-0.6	-1.2	8	2327	102	0.0	-1.5	8	2362	68	0.3	-1.0
9	2440	10	0.0	-0.5	9	2447	19	-0.3	0.2	9	2406	54	0.0	0.2
10	2482	- 34	1.2	-1.2	10	2458	11	1.0	0.1	10	2471	28	0.0	0.8
11	2636	- 67	1.0	0.3	11	2587	- 35	1.7	0.1	11	2491	17	0.9	-1.0
12	2711	- 36	0.2	0.5	12	2659	- 26	1.5	-0.7	12	2630	30	-0.2	-1.0
1939					1943					1947				
1	2710	17	0.0	0.7	1	2770	- 71	1.3	0.5	1	2692	9	-0.1	-1.2
2	2803	- 78	0.5	1.0	2	2697	22	0.9	1.1	2	2721	- 27	0.8	-0.7
3	2737	- 53	0.2	-1.8	3	2613	52	1.1	-1.9	3	2740	- 33	0.7	0.9
4	2676	3	0.0	0.4	4	2630	52	0.4	1.2	4	2719	- 32	-1.0	-0.3
5	2619	- 8	-0.1	-0.4	5	2558	39	0.6	-0.4	5	2544	86	-1.0	-0.1
6	2525	13	-0.3	-0.7	6	2527	19	-0.3	-0.1	6	2504	64	-1.5	0.0
7	2497	26	-0.1	0.6	7	2448	58	-0.2	-0.8	7	2534	8	-1.0	0.9
8	2415	2	0.6	-1.5	8	2460	8	-0.5	0.7	8	2521	- 5	-1.3	3.3
9	2505	- 59	0.5	-0.1	9	2480	- 15	-0.2	0.3	9	2427	10	0.4	-0.7
10	2462	11	0.4	-0.5	10	2483	- 10	0.5	-0.4	10	2384	94	0.8	0.7
11	2560	- 3	1.2	-0.3	11	2616	- 44	1.1	0.7	11	2546	15	1.3	1.2
12	2636	46	1.5	3.0	12	2629	45	1.4	2.3	12	2632	19	1.1	1.2

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1948	mm				1952	mm				1956	mm			
1	2672	32	0.3	-0.4	1	2699	20	-0.8	-1.1	1	2618	82	-0.1	-1.5
2	2649	49	0.7	-0.5	2	2657	92	-0.9	0.7	2	2670	50	-0.5	-0.9
3	2598	110	0.6	0.8	3	2602	98	-0.2	-1.2	3	2683	75	-0.5	2.7
4	2618	36	0.9	0.1	4	2584	75	0.1	-1.0	4	2598	95	-0.1	1.3
5	2606	14	0.1	0.8	5	2570	38	-0.5	-1.2	5	2499	173	-1.0	2.9
6	2469	58	0.1	-0.7	6	2488	45	-1.4	-2.7	6	2453	147	-0.4	3.9
7	2433	93	-0.2	0.9	7	2387	94	-0.9	-3.8	7	2447	108	0.2	3.5
8	2376	69	-0.4	-0.7	8	2349	64	-0.2	-3.0	8	2429	19	0.3	0.4
9	2384	40	2.1	0.9	9	2353	69	-0.1	-2.8	9	2450	20	-0.2	0.7
10	2329	133	1.2	0.1	10	2419	39	0.2	-1.9	10	2420	76	0.2	0.9
11	2536	30	1.7	1.4	11	2410	115	1.0	-3.0	11	2470	139	0.0	2.0
12	2614	24	1.6	0.1	12	2563	102	0.6	0.4	12	2661	28	1.0	2.8
1949					1953					1957				
1	2598	77	1.7	-0.7	1	2633	84	-0.7	-1.1	1	2644	41	1.7	0.1
2	2632	29	1.4	-2.5	2	2649	119	-0.9	2.1	2	2615	96	1.8	1.8
3	2668	22	1.1	0.0	3	2597	75	0.3	-2.6	3	2596	100	1.2	0.6
4	2572	117	-0.4	0.5	4	2589	86	-0.5	-0.7	4	2672	5	1.3	1.4
5	2559	58	-0.2	-0.1	5	2462	131	-0.6	-2.5	5	2530	63	1.3	0.4
6	2445	80	-0.2	-1.5	6	2446	63	-1.1	-4.1	6	2461	54	1.3	0.0
7	2467	71	-1.0	0.4	7	2503	9	-1.1	-3.1	7	2477	19	0.7	-0.2
8	2279	161	-0.2	-1.0	8	2374	13	0.4	-4.1	8	2422	15	0.4	-0.3
9	2398	63	0.2	0.6	9	2277	121	0.3	-4.0	9	2338	138	-1.0	-0.1
10	2368	112	0.2	-0.3	10	2403	17	0.7	-4.1	10	2507	20	0.2	0.2
11	2418	162	0.6	0.5	11	2513	20	0.9	-2.6	11	2566	24	0.5	1.1
12	2541	78	1.9	-1.2	12	2596	45	1.0	-0.8	12	2622	33	0.7	-0.2
1950					1954					1958				
1	2639	37	0.1	-3.0	1	2554	79	1.0	-4.9	1	2737	-38	1.9	1.4
2	2697	19	-0.1	-0.6	2	2652	26	0.7	-2.3	2	2667	15	2.1	0.1
3	2649	48	0.6	-0.2	3	2688	65	0.4	3.7	3	2629	40	2.4	0.3
4	2493	146	1.5	-0.4	4	2638	58	0.5	2.4	4	2723	-69	1.8	1.1
5	2433	134	2.0	-0.6	5	2628	31	-0.6	2.5	5	2592	22	0.4	0.6
6	2430	84	1.1	-0.4	6	2430	153	-0.8	2.0	6	2429	88	1.4	0.3
7	2401	83	0.4	-1.6	7	2459	116	-1.2	2.9	7	2487	-16	2.3	0.2
8	2238	167	0.5	-2.6	8	2434	83	-0.7	4.1	8	2523	56	0.2	1.7
9	2288	157	0.2	-0.6	9	2407	65	-0.1	1.0	9	2417	26	0.7	0.0
10	2423	62	-0.1	-0.4	10	2342	198	-0.5	3.2	10	2496	7	0.3	1.6
11	2404	160	0.0	-1.6	11	2490	176	-2.9	1.8	11	2524	39	1.7	0.9
12	2615	42	-1.1	-2.8	12	2567	139	0.5	3.3	12	2675	-39	1.9	0.1
1951					1955					1959				
1	2666	34	-0.1	-1.5	1	2669	91	-0.1	3.0	1	2740	-45	1.3	0.2
2	2613	95	-0.3	-1.5	2	2626	88	-0.2	-0.9	2	2717	-35	2.7	1.0
3	2612	87	0.1	-0.8	3	2635	105	0.4	2.7	3	2718	-27	2.7	2.4
4	2590	98	-0.5	0.9	4	2603	103	0.2	2.7	4	2657	-22	2.0	0.0
5	2493	126	-0.6	-0.5	5	2546	97	-0.2	1.9	5	2587	5	1.5	0.6
6	2396	142	-0.6	-1.1	6	2523	84	-0.8	3.8	6	2467	26	2.1	-0.5
7	2410	96	-1.1	-2.2	7	2492	76	-0.5	3.4	7	2445	40	1.6	0.3
8	2429	10	-0.6	-1.7	8	2460	59	-0.6	4.4	8	2474	-61	1.0	-1.2
9	2308	131	-0.9	-2.7	9	2478	35	-0.4	3.6	9	2516	-70	0.2	-0.5
10	2384	74	0.0	-2.3	10	2483	20	0.3	1.6	10				
11	2598	-43	0.0	-2.3	11	2610	22	-0.5	2.8	11				
12	2685	-19	-1.3	-2.4	12	2585	84	0.5	0.5	12				

Table 3, c. Wazima

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1900	mm				1904	mm				1908	mm			
1	1891	108	-0.7	1.3	1	2038	-36	-1.2	0.9	1	2009	1	-1.2	1.5
2	1994	66	-0.9	0.9	2	2071	-16	-0.6	0.9	2	2042	1	-0.6	0.0
3	2011	45	-0.3	-0.5	3	2126	-56	-0.3	0.5	3	2055	15	-0.4	0.4
4	2028	39	-0.2	1.1	4	2121	-50	0.1	1.8	4	2116	-34	-1.0	1.2
5	1921	28	-0.2	-2.1	5	2041	-70	-0.5	-0.8	5	2001	-23	-0.8	-0.7
6	1976	-74	0.1	1.7	6	1854	15	0.7	-0.1	6	1879	-5	-0.3	-1.0
7	1827	-31	0.0	-1.3	7	1795	0.0	1.4	0.4	7	1825	-2	-1.4	-1.0
8	1742	11	-0.5	0.1	8	1741	-9	0.8	0.1	8	1779	-20	-1.2	-0.4
9	1838	-50	0.7	0.7	9	1752	28	-0.3	-1.2	9	1819	-2	-1.5	0.4
10	1869	-6	-0.1	1.0	10	1851	-2	-0.5	-0.5	10	1921	-67	-0.6	-0.3
11	1910	-45	0.0	0.0	11	1841	16	-1.1	-2.0	11	1863	-7	-1.4	-2.4
12	1930	-12	0.2	0.9	12	1931	-20	-0.3	-0.2	12	1998	-59	-1.0	1.0
1901					1905					1909				
1	2040	-66	0.7	1.2	1	1974	-54	1.8	-1.5	1	2033	-37	-0.9	0.8
2	2000	-25	0.5	-3.8	2	2074	-65	0.5	-1.2	2	2045	-18	-0.9	-1.6
3	2108	-41	0.5	1.3	3	2218	-119	0.0	3.1	3	2111	-20	-0.8	1.5
4	2111	-53	0.4	1.2	4	2091	-23	-0.5	0.8	4	2029	15	-0.4	-0.9
5	2007	-48	0.5	-0.5	5	1993	-10	-0.3	0.3	5	2011	-27	-0.6	0.0
6	1925	-65	0.3	-1.3	6	1915	-36	-0.8	-1.2	6	1948	-69	-0.5	-0.8
7	1845	-35	-0.6	-1.0	7	1852	-43	0.0	-0.3	7	1866	-13	-0.4	2.5
8	1699	49	0.5	0.9	8	1734	36	-2.1	-0.7	8	1806	-97	0.9	-1.5
9	1834	-63	0.7	-0.6	9	1729	102	-1.4	1.3	9	1815	-8	-1.2	-0.3
10	1913	-74	-0.1	-0.8	10	1771	66	0.5	-0.2	10	1869	-3	-1.0	0.1
11	1885	-26	-0.6	-1.2	11	1859	33	-0.7	1.1	11	1893	-22	-1.0	-0.8
12	1919	4	-1.0	-0.2	12	1886	14	0.7	0.2	12	1991	-67	-0.7	1.0
1902					1906					1910				
1	2025	-42	-1.0	-0.3	1	1975	5	-0.2	0.5	1	2044	-84	-0.4	-1.3
2	2129	-56	-0.6	2.3	2	2034	-21	-0.3	-1.9	2	2114	-95	-0.7	-1.8
3	2104	-52	0.1	-0.3	3	2002	44	-0.3	-1.3	3	2104	-46	-0.5	-0.6
4	2088	-37	-0.3	-0.2	4	2003	45	-0.5	-0.7	4	2161	-78	-1.0	1.3
5	1953	22	-0.6	-0.7	5	1985	1	-0.7	0.0	5	2033	-31	-1.2	0.6
6	1908	-43	0.1	-1.1	6	1951	-63	-0.8	-0.5	6	1919	-48	-0.4	-1.4
7	1869	-45	-1.6	-1.1	7	1854	-77	-0.7	-3.6	7	1859	-47	-0.7	-1.0
8	1825	-44	-2.2	0.1	8	1822	-66	-1.7	-1.2	8	1675	56	-0.8	-2.0
9	1800	-32	-0.1	-1.9	9	1791	38	-1.8	0.6	9	1860	-31	-2.1	0.2
10	1873	-4	-0.3	1.2	10	1944	13	-0.8	-0.3	10	1963	-103	-0.3	0.5
11	1979	-95	-0.2	1.2	11	1929	-26	-1.1	1.5	11	1933	-138	3.8	-0.5
12	1957	-79	0.6	-1.6	12	1936	-41	-1.1	-2.4	12	1968	-72	1.0	0.3
1903					1907					1911				
1	2030	-78	0.6	-0.6	1	2036	-45	-1.0	0.3	1	2072	-99	0.6	1.0
2	2103	-71	1.0	1.2	2	2047	-13	-0.5	-0.5	2	2132	-75	1.1	3.2
3	2138	-86	1.0	0.8	3	2126	-61	-0.5	-0.1	3	2086	-42	1.1	0.3
4	2085	-38	1.1	1.2	4	2144	-75	-0.5	0.9	4	2061	-21	0.1	-0.5
5	1983	0.0	0.1	0.8	5	1998	-63	0.2	-2.7	5	2084	-69	-0.9	2.0
6	1880	-18	0.0	-1.5	6	1954	-81	-0.1	-0.8	6	1911	-26	-0.5	-0.4
7	1787	44	-1.4	-0.4	7	1886	-84	0.0	-0.8	7	1794	11	0.7	0.3
8	1772	23	-1.8	1.6	8	1763	-52	-0.2	-2.7	8	1800	-69	0.8	0.0
9	1871	-71	0.1	0.8	9	1885	-74	-1.4	-0.2	9	1742	54	0.7	1.3
10	1891	16	-3.8	-0.3	10	1871	-7	-1.0	-0.1	10	1782	24	1.3	-1.6
11	1909	-34	-0.9	-0.4	11	1901	-26	-0.4	0.2	11	1869	-30	1.6	0.0
12	1922	-9	-0.9	-0.8	12	1929	-3	-1.3	-0.3	12	1923	-10	1.2	1.8

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1912	mm				1916	mm				1920	mm			
1	2003	-44	1.4	0.9	1	1994	-74	4.0	1.2	1	1913	-42	4.5	-1.9
2	1988	2	1.7	-1.1	2	2017	-57	2.5	-2.4	2	2031	-12	2.6	2.2
3	2056	-31	1.7	-0.4	3	2003	69	-1.9	-1.3	3	2135	-42	0.3	3.0
4	2043	-1	0.6	0.2	4	2033	60	-1.7	1.2	4	2108	-46	0.4	1.5
5	2002	-38	0.1	-0.6	5	1949	73	-3.1	-0.2	5	2003	-68	-0.8	-3.2
6	1913	-51	-0.5	-2.1	6	1845	65	-2.5	-1.0	6	1951	-40	-2.5	-0.9
7	1871	-64	-0.4	-1.0	7	1764	99	-3.6	-0.7	7	1816	41	-1.9	1.0
8	1801	-49	-0.2	0.4	8	1753	-73	2.1	-2.2	8	1837	-80	-2.7	-2.4
9	1822	-18	-1.0	-0.3	9	1795	-28	2.3	1.1	9	1868	-29	-2.2	0.9
10	1926	-55	-0.9	0.6	10	1903	-65	1.4	1.0	10	1897	-51	-0.3	-0.5
11	1899	-6	-1.5	0.2	11	1965	-96	1.5	2.2	11	1920	-73	1.1	0.0
12	1892	105	-3.1	2.8	12	1891	-28	3.0	0.3	12	1942	-33	1.2	1.5
1913					1917					1921				
1	1949	-1	2.1	1.0	1	1880	7	3.3	-2.1	1	2012	-53	1.1	0.5
2	1996	-14	2.4	-0.8	2	2015	-78	3.4	-3.0	2	2042	-43	1.3	-1.0
3	2075	-68	2.4	-0.8	3	2102	-95	3.5	0.5	3	2026	5	0.6	-1.3
4	2122	-113	3.1	0.8	4	2093	-148	5.1	-1.5	4	2027	48	-0.5	1.4
5	2013	-95	2.4	-1.2	5	2002	-119	4.2	-1.7	5	2004	-16	-1.6	-0.9
6	1861	-53	3.2	-1.6	6	1941	-110	3.0	-0.1	6	1990	-57	-3.3	-0.2
7	1811	-47	2.7	-0.3	7	1857	-53	1.5	1.2	7	1830	69	-4.2	1.3
8	1734	-47	1.7	-2.2	8	1745	-36	1.8	-0.4	8	1810	-14	-3.8	-0.8
9	1837	-42	0.3	0.7	9	1774	9	2.0	1.1	9	1826	26	-3.2	0.6
10	1931	-116	0.9	-1.4	10	1870	1	-2.4	-1.0	10	1891	-30	-1.1	-0.4
11	1967	-93	0.8	1.7	11	1842	56	-2.5	-0.6	11	1868	2	-1.0	-0.9
12	2001	-110	0.9	-0.2	12	1834	77	-3.1	-3.7	12	1942	-10	-0.1	1.6
1914					1918					1922				
1	2020	-79	1.2	-0.7	1	1974	34	-3.5	-1.5	1	2005	-16	-0.2	1.2
2	2129	-106	1.5	1.1	2	2049	59	-2.5	2.6	2	2025	22	0.3	0.7
3	2043	-35	2.8	-0.3	3	2077	-2	-0.1	1.1	3	2046	11	0.3	0.3
4	2062	-64	2.3	-1.0	4	2065	-46	2.6	1.0	4	2047	23	-0.7	0.7
5	1993	-62	3.0	0.5	5	1997	-103	4.4	-0.5	5	2001	1	-1.3	0.5
6	1868	-41	2.9	-0.5	6	1930	-103	3.1	-0.3	6	1857	29	-1.3	-1.3
7	1757	-13	3.4	-1.0	7	1838	-71	1.8	-1.2	7	1763	78	-1.0	0.8
8	1702	-4	1.8	-1.2	8	1765	-46	2.3	1.0	8	1710	45	-0.9	-0.3
9	1719	60	1.7	1.2	9	1739	-4	2.6	-1.0	9	1746	72	-0.3	1.7
10	1785	51	1.0	0.4	10	1805	9	2.8	0.9	10	1816	34	-0.6	-0.6
11	1866	-35	1.8	-0.3	11	1798	44	2.1	0.9	11	1697	155	0.0	-1.0
12	1925	-39	0.6	-1.0	12	1915	-20	2.2	1.7	12	1861	33	-0.3	-1.5
1915					1919					1923				
1	1937	25	0.8	0.4	1	1904	34	2.1	0.2	1	1923	75	-0.4	1.6
2	1997	-18	1.7	-2.0	2	1959	47	2.1	0.6	2	2013	-12	0.5	-1.8
3	1986	11	2.5	-1.5	3	1985	7	3.3	-0.8	3	2059	35	0.3	3.1
4	2044	-39	3.1	0.5	4	1947	25	4.1	-0.7	4	1988	56	-0.3	0.0
5	1969	-43	2.2	-0.9	5	1954	-64	5.4	0.4	5	1935	48	-1.1	-0.7
6	1862	-31	3.3	0.3	6	1839	-67	5.2	-1.8	6	1843	53	-1.5	-0.8
7	1832	-91	4.4	0.1	7	1861	-101	4.4	1.5	7	1789	52	-1.9	-0.2
8	1729	-115	4.7	-3.9	8	1795	-90	2.6	0.3	8	1715	57	-1.4	0.4
9	1827	-103	3.6	-0.6	9	1839	-114	3.7	-0.4	9	1781	-6	-0.7	-2.1
10	1859	-49	1.5	-1.0	10	1817	-57	4.1	-1.5	10	1793	54	-0.7	-1.0
11	1880	1	0.8	2.2	11	1890	-93	3.7	-0.5	11	1823	52	-1.7	-1.4
12	1930	-58	2.2	-0.1	12	1930	-88	3.8	-0.3	12	1908	19	0.0	1.4

(to be continued)

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Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1924	mm				1928	mm				1932	mm			
1	1978	- 4	0.2	0.5	1	1736	237	0.4	0.9	1	2033	- 4	-0.9	3.3
2	2004	7	-0.2	-1.9	2	1768	261	0.9	1.0	2	2031	13	-0.7	-0.1
3	2086	4	-0.5	1.8	3	1740	300	0.6	-0.6	3	2072	- 6	-1.3	-1.0
4	2051	8	-0.3	0.4	4	1791	267	-0.1	0.7	4	2041	5	-0.8	-1.2
5	1993	- 24	-1.0	-1.7	5	1781	211	-1.5	-0.4	5	1942	23	1.0	0.6
6	1873	19	-1.0	-0.5	6	1730	180	-2.5	-0.8	6	1868	6	0.9	0.5
7	1805	43	0.4	3.2	7	1703	169	-3.7	0.0	7	1791	7	1.1	0.2
8	1746	- 31	0.7	-1.3	8	1622	155	-4.3	-2.7	8	1738	- 14	2.0	-0.2
9	1894	- 91	-0.3	0.5	9	1708	119	-1.9	0.5	9	1847	- 55	-0.1	-0.1
10	1888	- 19	-0.7	0.7	10	1773	82	-0.3	0.3	10	1818	34	-0.5	-0.3
11	1832	21	-1.3	-2.5	11	1839	35	0.0	0.8	11	1803	61	-0.6	-0.8
12	1939	- 9	-0.8	0.6	12	1806	116	-0.1	1.0	12	1920	30	-0.9	2.0
1925					1929					1933				
1	1974	- 1	-0.5	-0.4	1	1712	272	-0.4	0.5	1	2001	16	-1.5	1.7
2	2058	1	-0.6	1.2	2	1937	87	0.0	-0.7	2	2041	29	-2.4	-0.2
3	2055	5	-1.0	-1.1	3	2039	21	-0.2	-0.1	3	2083	24	-2.9	0.1
4	2061	37	-1.3	2.1	4	2027	22	-0.7	-0.9	4	2073	22	-1.8	1.2
5	1958	29	-1.2	-0.5	5	2010	- 2	-1.9	0.2	5	1945	37	0.0	0.6
6	1894	- 2	-1.6	-1.2	6	1915	- 1	-2.6	-0.8	6	1872	- 10	1.4	0.2
7	1891	- 33	-1.8	1.1	7	1806	64	-2.8	0.8	7	1813	- 33	3.2	1.5
8	1761	- 2	-1.2	-0.3	8	1640	129	-2.2	-0.8	8	1671	23	2.6	-0.5
9	1787	3	-0.2	-0.3	9	1773	48	-2.1	-0.4	9	1709	61	1.3	0.0
10	1868	- 29	0.1	-0.5	10	1899	- 42	-0.8	-0.3	10	1822	22	0.2	-0.1
11	1846	4	0.4	-0.6	11	1876	13	-0.7	0.9	11	1841	41	-0.8	0.3
12	1832	29	1.2	-2.1	12	1916	10	0.7	2.2	12	1825	64	-0.7	-2.4
1926					1930					1934				
1	1949	7	0.9	0.1	1	2049	- 40	-0.4	2.4	1	1917	66	-1.7	-1.1
2	2023	12	1.2	1.7	2	1981	52	0.7	0.9	2	1988	48	-1.9	-2.1
3	2017	19	0.9	-0.5	3	1927	144	0.9	2.1	3	1996	66	-2.4	-2.7
4	2007	17	-0.4	-2.4	4	1898	156	0.2	0.6	4	2093	12	-2.2	1.5
5	1974	34	-1.6	0.6	5	1827	175	-0.9	1.0	5	2012	- 9	-1.0	0.9
6	1913	13	-1.9	1.0	6	1688	232	-2.3	0.0	6	1862	7	0.8	0.0
7	1812	17	-0.9	0.1	7	1642	211	-2.9	-0.6	7	1809	- 13	1.1	0.0
8	1644	112	-0.7	0.0	8	1688	108	-3.6	-0.5	8	1756	6	-0.2	1.1
9	1695	81	0.7	-0.2	9	1794	3	1.1	1.8	9	1739	50	-0.1	-0.3
10	1823	5	-0.3	-1.9	10	1761	66	0.8	-0.6	10	1894	- 7	-0.6	2.2
11	1890	1	-1.0	0.7	11	1721	154	-0.6	0.0	11	1816	61	-1.4	-0.8
12	1844	52	0.1	-0.8	12	1742	215	-1.2	2.1	12	1967	14	-1.4	3.7
1927					1931					1935				
1	1952	- 2	0.8	-0.5	1	1988	8	-1.4	0.2	1	1939	45	-1.5	-0.8
2	1997	33	0.4	0.3	2	2073	8	-2.0	1.1	2	2032	47	-1.9	1.1
3	2004	69	0.1	1.3	3	2039	47	-1.3	0.5	3	2043	24	-1.2	-0.8
4	2040	46	-0.8	1.8	4	2015	48	-1.3	-0.5	4	2053	14	-0.6	0.6
5	1926	74	-1.9	-0.4	5	1952	41	-0.6	0.6	5	1901	54	0.6	-0.7
6	1868	64	-3.2	-0.2	6	1906	- 26	-0.2	-0.4	6	1839	33	1.3	0.8
7	1774	107	-3.8	0.4	7	1876	- 74	0.2	-0.6	7	1778	- 19	1.2	0.3
8	1729	52	-3.3	-1.2	8	1742	17	0.2	1.4	8	1759	- 43	0.7	-1.2
9	1754	85	-4.0	-1.2	9	1806	- 7	0.2	0.8	9	1775	5	0.0	-0.8
10	1688	185	-1.7	-0.1	10	1860	12	0.1	1.4	10	1821	7	0.4	-1.0
11	1807	46	-0.5	-1.4	11	1863	28	-0.6	1.2	11	1927	- 34	0.1	2.3
12	1831	51	0.5	-1.3	12	1911	25	-0.4	1.5	12	1957	- 33	-0.2	0.9

(to be continued)

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Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1936	mm				1940	mm				1944	mm			
1	1932	41	-1.5	-1.7	1	1907	44	-1.5	-3.8	1	1990	24	-1.3	1.6
2	2014	39	-2.5	-1.6	2	2073	14	-1.8	1.4	2	1956	90	-1.7	-1.3
3	2106	28	-2.6	2.5	3	2055	2	-1.5	-2.4	3	1987	61	-1.3	-2.5
4	2068	4	-2.1	-0.9	4	2031	20	-0.8	-1.3	4	2040	23	-1.7	-1.2
5	2026	-29	-0.5	1.1	5	1991	-31	0.8	-0.5	5	2014	-39	-0.2	-0.3
6	1906	-26	0.6	0.6	6	1887	-7	0.9	0.5	6	1957	-101	1.3	-0.5
7	1816	-16	0.7	-0.1	7	1775	50	1.8	1.2	7	1810	-16	2.1	0.3
8	1746	-10	0.3	-0.2	8	1723	27	1.2	1.5	8	1726	3	1.7	0.8
9	1736	40	0.9	0.0	9	1897	-105	0.0	-0.4	9	1679	83	1.6	-0.4
10	1750	74	0.4	-1.3	10	1899	-48	0.5	0.4	10	1831	12	0.4	0.0
11	1802	90	-0.9	0.9	11	1886	-22	0.9	0.6	11	1848	1	-0.1	-1.5
12	1914	28	-1.1	1.1	12	1869	18	1.0	-0.8	12	1883	16	-0.8	-1.9
1937					1941					1945				
1	2010	7	-1.8	1.2	1	1883	43	0.6	-2.7	1	1974	4	-2.3	-2.4
2	2125	-66	-1.5	0.0	2	2072	-12	-0.3	1.5	2	2012	71	-3.2	-0.4
3	2081	-30	-0.8	-1.6	3	2014	32	-0.1	-1.2	3	2085	42	-2.6	1.4
4	2064	31	-0.9	2.3	4	2027	14	-0.3	-1.1	4	2065	5	-1.4	-0.2
5	1910	52	-0.3	-1.4	5	1962	5	0.6	0.1	5	1941	24	-1.4	-2.6
6	1862	37	0.3	1.6	6	1906	-31	0.3	-0.3	6	1877	8	-0.8	-0.9
7	1772	7	1.7	-0.5	7	1789	3	0.2	-1.5	7	1812	6	-0.9	-0.9
8	1736	3	2.6	2.8	8	1722	33	-1.2	-0.8	8	1745	22	0.2	1.8
9	1786	-12	1.6	0.6	9	1815	6	-1.2	0.6	9	1807	-11	0.5	0.5
10	1826	12	0.9	0.3	10	1892	-27	0.0	1.1	10	1887	-35	0.2	0.2
11	1882	-34	0.4	-0.8	11	1947	-71	0.0	0.7	11	1818	58	-1.2	-1.0
12	1842	-57	-0.5	-2.5	12	1937	-29	0.7	0.7	12	1904	30	-0.7	-2.9
1938					1942					1946				
1	1997	31	-1.8	1.7	1	1913	39	-0.6	-2.3	1	1990	-12	-2.0	0.1
2	2055	-3	-2.7	-2.4	2	2011	40	-0.8	0.2	2	2049	18	-1.5	0.4
3	2119	-25	-1.8	0.0	3	2125	-40	-0.2	1.7	3	2065	44	-1.5	1.7
4	2004	35	-0.7	-2.1	4	2081	-14	0.0	1.2	4	2028	30	-0.4	-0.2
5	1919	45	0.9	-0.1	5	2006	-33	-0.1	-0.4	5	1906	73	-0.3	0.2
6	1875	-25	1.3	-0.3	6	1861	9	0.4	-0.5	6	1818	93	-1.6	0.1
7	1857	-44	0.8	0.5	7	1724	56	1.8	-0.4	7	1747	42	0.6	-1.4
8	1782	-56	1.4	-0.1	8	1711	-10	1.7	-1.3	8	1678	45	1.0	-0.6
9	1735	22	1.7	-0.9	9	1777	-4	1.0	-0.2	9	1660	117	0.9	-0.2
10	1863	4	-1.2	-0.5	10	1831	4	0.7	-0.2	10	1816	5	2.7	0.9
11	1858	-4	0.5	-0.7	11	1866	-14	-0.3	-1.5	11	1950	-107	1.4	-0.2
12	1901	23	0.0	0.7	12	1920	-22	-0.6	-1.7	12	1878	65	0.3	-3.3
1939					1943					1947				
1	1972	44	-1.2	1.5	1	2005	-13	-1.9	-0.8	1	2040	-44	-0.8	0.7
2	2081	-4	-1.1	1.5	2	2063	8	-1.9	0.4	2	2002	20	-1.5	-2.7
3	2094	-33	-0.8	-1.2	3	2085	-7	-1.8	-0.9	3	2071	4	-1.5	-0.6
4	2068	13	-0.6	1.2	4	2072	19	-1.4	1.3	4	2077	-31	-1.1	-1.9
5	1983	-10	0.2	-0.3	5	1998	-17	-0.3	0.0	5	2033	-37	-0.9	0.2
6	1815	39	0.8	-1.6	6	1918	-37	0.2	0.0	6	1923	-22	-1.2	-0.4
7	1801	-7	2.3	1.0	7	1889	-75	0.8	0.9	7	1831	14	-0.2	0.6
8	1776	-67	2.0	-0.6	8	1824	-95	1.7	0.8	8	1756	10	0.6	2.1
9	1735	17	2.2	-0.7	9	1818	-52	1.6	-0.1	9	1719	49	0.9	-0.9
10	1834	-13	1.8	-0.2	10	1893	-69	0.9	-0.8	10	1783	52	0.1	0.1
11	1837	13	1.0	-0.3	11	1923	-50	-0.3	0.1	11	1822	61	-0.6	0.6
12	1909	53	-0.1	3.4	12	1875	67	-0.4	1.8	12	1898	45	-1.6	0.3

(to be continued)

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Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1948	mm				1952	mm				1956	mm			
1	1965	27	-2.0	-1.1	1	1978	- 9	-0.4	-0.6	1	1917	24	-0.8	-3.2
2	2017	49	-1.7	0.1	2	2051	- 6	-0.8	-0.1	2	2020	- 1	-1.4	-2.8
3	2113	8	-1.5	1.8	3	2084	- 45	-0.9	-2.6	3	2111	- 21	-0.7	1.5
4	2071	- 9	-0.5	0.2	4	2005	44	0.3	0.4	4	2072	- 9	0.2	1.3
5	1941	31	0.6	0.3	5	2019	- 57	0.9	0.2	5	1974	4	1.5	2.2
6	1875	- 18	0.5	-0.9	6	1879	- 5	1.8	1.7	6	1866	19	2.0	2.7
7	1726	71	1.2	0.0	7	1801	19	1.8	2.8	7	1786	32	1.9	2.7
8	1752	- 34	1.3	-0.7	8	1717	63	1.1	4.1	8	1737	- 25	1.7	-0.3
9	1782	14	0.7	1.0	9	1644	168	1.2	3.1	9	1768	30	0.5	1.1
10	1829	32	0.4	1.2	10	1768	100	0.5	2.1	10	1856	3	0.4	1.4
11	1905	5	-0.3	2.7	11	1836	63	0.2	2.8	11	1822	63	0.0	1.5
12	1924	19	-0.2	2.1	12	1871	68	0.1	2.4	12	1878	49	-0.4	0.8
1949					1953					1957				
1	1863	77	-0.1	-2.4	1	1892	80	-1.0	-1.1	1	2011	- 6	-1.2	1.1
2	1946	41	0.3	-3.9	2	2039	62	-1.7	3.0	2	2034	31	-1.3	0.8
3	2069	- 1	-0.8	-0.2	3	2031	22	-0.4	-0.9	3	2021	38	-1.1	-1.3
4	1979	86	-1.2	-0.3	4	2050	20	0.3	2.0	4	2066	- 8	0.1	0.8
5	1947	15	0.2	-0.7	5	1954	36	1.1	2.6	5	1961	- 17	1.8	0.0
6	1922	- 58	0.6	-0.6	6	1813	70	1.2	1.6	6	1900	- 41	1.7	0.4
7	1880	- 60	0.3	0.9	7	1778	61	1.1	3.3	7	1775	0.0	1.5	-1.0
8	1728	- 22	1.8	-0.6	8	1697	72	1.2	3.4	8	1761	- 29	0.8	0.1
9	1795	- 25	1.7	0.5	9	1714	123	0.1	3.6	9	1845	- 36	-0.4	0.8
10	1790	38	0.7	-0.6	10	1792	87	-0.2	2.1	10	1812	30	0.1	-0.3
11	1843	58	-1.2	1.2	11	1843	64	-0.8	2.2	11	1894	- 13	0.3	1.6
12	1833	89	-1.5	-0.9	12	1930	32	-0.4	3.5	12	1872	26	0.5	-0.2
1950					1954					1958				
1	1936	27	-2.0	-3.0	1	1940	39	-0.6	-0.1	1	1999	- 15	-0.6	0.3
2	2068	- 25	-0.9	-0.4	2	2046	6	-0.6	0.7	2	2052	- 6	-0.6	0.2
3	2065	- 3	-0.8	-0.7	3	2095	1	-0.1	2.7	3	2050	- 2	-0.2	-1.0
4	2050	8	0.0	0.7	4	2057	- 2	1.4	2.2	4	2100	- 53	0.6	0.6
5	1915	24	1.7	-0.5	5	2019	- 47	1.7	2.0	5	1996	- 61	2.3	-0.1
6	1862	- 2	0.4	-1.1	6	1909	11	0.0	2.9	6	1841	- 1	2.8	0.3
7	1799	- 25	0.4	-2.4	7	1851	- 7	0.1	2.5	7	1783	- 28	3.2	-0.4
8	1708	- 36	0.8	-4.5	8	1811	- 21	0.4	4.0	8	1768	- 37	1.5	0.9
9	1740	26	0.6	-1.1	9	1851	- 49	0.6	1.6	9	1764	14	0.6	-0.2
10	1863	- 24	0.3	-0.3	10	1824	63	-0.1	2.8	10	1875	- 4	-0.4	1.2
11	1850	- 7	0.1	-1.5	11	1885	16	-0.2	2.5	11	1938	- 42	-0.8	1.4
12	1902	- 27	-0.1	-2.7	12	1877	63	0.1	2.5	12	1944	- 32	0.1	0.4
1951					1955					1959				
1	2020	- 41	-0.8	-0.3	1	1934	60	-1.0	0.5	1	1976	- 11	-0.7	-1.3
2	2049	- 31	-0.9	-2.3	2	1958	41	-0.5	-3.2	2	2155	- 78	-0.2	3.1
3	2039	1	-0.3	-1.7	3	2104	- 7	-0.1	2.8	3	2124	- 51	0.4	1.7
4	2040	2	0.1	-0.4	4	2072	2	0.7	2.8	4	2006	8	1.4	-0.9
5	1923	11	1.1	-1.7	5	1946	43	0.0	1.1	5	1986	- 53	2.3	-0.2
6	1774	52	1.6	-2.3	6	1867	1	2.6	2.2	6	1837	- 6	2.4	-0.8
7	1780	- 16	1.2	-2.2	7	1759	33	4.0	3.4	7	1696	71	2.1	-0.8
8	1720	- 32	2.1	-1.6	8	1748	8	2.4	3.9	8	1738	- 33	0.6	-2.2
9	1601	154	1.2	-1.2	9	1842	- 19	0.8	3.4	9	1669	114	0.2	-0.4
10	1786	17	1.3	-1.8	10	1979	- 115	-0.2	1.0	10				
11	1831	- 4	0.7	-2.0	11	1903	- 8	-0.6	1.5	11				
12	1905	- 19	0.4	-1.2	12	1879	17	0.1	-0.8	12				

Table 3, d. Osyoro

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1906	mm				1910	mm				1914	mm			
1	1658	- 25		0.8	1	1698	- 73	0.9	1.0	1	1644	- 34	0.1	-0.8
2	1696	- 31		0.2	2	1653	- 47	0.7	-3.6	2	1691	- 6	0.8	2.4
3	1646	7		-1.2	3	1682	- 38	0.2	-1.7	3	1647	16	1.1	0.5
4	1631	8		-1.0	4	1741	- 68	0.6	2.1	4	1649	- 1	0.4	0.0
5	1612	- 21		0.0	5	1629	- 25	0.2	1.1	5	1589	- 16	1.7	0.1
6	1623	- 66	0.0	1.4	6	1565	- 61	0.9	-1.9	6	1557	- 39	0.5	-1.1
7	1550	- 81	0.7	-0.8	7	1541	- 52	0.3	0.3	7	1458	0.0	0.5	-1.8
8	1537	-100	1.2	-0.3	8	1494	- 32	-0.1	0.5	8	1450	- 1	0.1	-0.3
9	1526	- 36	0.0	0.3	9	1514	- 32	0.0	-0.3	9	1473	26	0.3	1.2
10	1578	- 28	-0.2	0.7	10	1645	- 71	0.6	3.2	10	1512	27	0.4	0.3
11	1610	- 26	-0.9	1.7	11	1629	- 84	-0.1	-0.6	11	1551	8	-0.4	0.2
12	1613	- 73	-0.2	-3.0	12	1641	- 40	-1.3	0.6	12	1582	- 7	-1.1	-1.1
1907					1911					1915				
1	1669	- 10	1.1	3.7	1	1739	- 59	-1.9	2.8	1	1601	63	-1.6	1.8
2	1692	- 26	0.7	0.9	2	1788	- 68	-1.9	2.8	2	1621	32	-0.4	-1.0
3	1733	- 64	0.5	0.5	3	1657	58	-1.9	2.0	3	1590	49	0.7	-1.6
4	1718	- 49	0.8	2.0	4	1710	- 37	-1.8	0.1	4	1604	50	0.3	0.4
5	1578	- 60	2.4	-3.5	5	1702	- 78	-1.3	1.4	5	1581	17	-0.3	0.3
6	1576	- 43	0.2	-0.3	6	1580	- 38	-1.0	-0.6	6	1509	21	0.1	-0.6
7	1575	- 75	0.1	1.0	7	1506	3	-1.8	0.1	7	1498	- 2	-0.8	-0.1
8	1485	- 70	2.4	-0.9	8	1522	- 26	-3.0	0.6	8	1437	- 17	-0.3	-2.8
9	1576	- 73	0.8	2.0	9	1474	44	-1.8	0.9	9	1513	- 29	1.0	0.7
10	1558	- 15	-0.7	-0.3	10	1549	- 6	-2.6	-1.9	10	1542	- 22	1.3	-0.3
11	1629	- 49	-0.3	1.9	11	1590	- 11	-2.0	0.2	11	1608	- 20	-0.2	2.6
12	1646	- 85	-0.6	-1.8	12	1600	- 3	-0.4	1.1	12	1573	- 9	-0.2	-1.2
1908					1912					1916				
1	1667	7	-0.2	3.5	1	1669	- 36		0.8	1	1598	38	0.7	1.7
2	1678	- 13	0.2	0.4	2	1690	- 32	0.4	0.0	2	1700	- 49	0.5	-0.4
3	1704	- 18	-0.3	1.1	3	1695	- 34	0.3	-0.3	3	1739	- 99	-0.2	-2.3
4	1747	- 66	0.6	2.7	4	1666	- 28	-0.3	-1.3	4	1673	7	-0.5	1.7
5	1672	- 54	-1.7	0.6	5	1641	- 52	0.1	-0.1	5	1574	22	-0.1	0.3
6	1588	- 54	0.0	-0.4	6	1552	- 32	0.6	-0.9	6	1530	- 13	1.3	-0.5
7	1537	- 37	-0.4	0.6	7	1519	- 53	0.6	-1.1	7	1495	- 16	1.6	0.7
8	1513	- 72	1.5	0.3	8	1522	- 48	0.0	1.5	8	1479	- 56	2.7	-0.1
9	1541	- 45	1.1	1.7	9	1542	- 51	-0.4	0.1	9	1512	- 38	1.0	-0.1
10	1576	- 45	0.7	0.0	10	1618	- 47	-1.5	1.1	10	1609	- 46	-0.2	1.7
11	1585	- 83	-0.4	-4.0	11	1597	- 23	-2.2	-0.2	11	1692	- 86	0.4	4.4
12	1641	- 58	-0.4	0.1	12	1640	20	-2.4	4.2	12	1647	- 48	0.0	1.6
1909					1913					1917				
1	1756	- 59	-1.4	4.5	1	1684	- 13	-1.9	2.1	1	1590	3	0.0	-2.2
2	1695	- 55	-1.0	-2.5	2	1665	- 5	-0.9	-0.9	2	1659	- 57	2.0	-2.9
3	1736	- 29	-0.2	2.8	3	1688	- 33	-1.1	-1.9	3	1776	- 90	0.4	1.7
4	1658	- 7	0.7	0.5	4	1712	- 43	0.3	1.5	4	1727	- 91	-0.1	-1.3
5	1632	- 62	1.8	-0.1	5	1645	- 70	-0.1	-1.3	5	1600	- 47	-0.4	-3.2
6	1599	- 91	2.4	-0.3	6	1551	- 31	-0.5	-1.9	6	1596	- 63	-0.6	-1.0
7	1552	- 56	1.4	1.8	7	1534	- 18	-2.1	0.3	7	1538	- 37	-0.1	0.9
8	1523	- 85	1.4	0.0	8	1459	- 16	-1.6	-2.2	8	1446	- 8	1.0	-0.4
9	1521	- 50	1.3	0.0	9	1561	- 47	-2.6	-0.1	9	1514	- 14	0.4	1.4
10	1599	- 70	-0.3	-1.0	10	1645	- 87	-1.6	0.1	10	1571	- 41	0.0	-0.7
11	1621	- 78	-1.3	-1.8	11	1666	- 73	-2.1	1.3	11	1557	- 25	-0.7	-2.1
12	1642	- 47	-0.9	0.5	12	1711	-118	-1.3	0.0	12	1499	- 5	0.8	-5.7

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1918	mm				1922	mm				1926	mm			
1	1556	- 1	1.5	-3.8	1	1700	- 65	-0.2	0.8	1	1618	- 28	1.8	-0.9
2	1682	- 5	1.3	2.3	2	1765	- 55	-0.2	3.5	2	1671	- 16	1.0	0.3
3	1699	- 32	0.5	0.4	3	1736	- 64	-0.8	-0.4	3	1663	- 26	1.0	-1.5
4	1724	- 43	0.4	2.5	4	1690	- 17	0.0	1.6	4	1606	- 8	-0.4	-4.4
5	1632	- 58	0.0	-1.3	5	1607	3	-0.3	1.2	5	1629	- 10	-0.7	1.5
6	1541	- 24	-0.2	-1.8	6	1513	10	0.0	-1.2	6	1554	- 1	-0.8	0.4
7	1484	- 2	-0.5	-0.9	7	1463	32	-0.2	0.4	7	1471	10	-0.8	-1.2
8	1443	21	0.1	0.8	8	1425	8	-0.3	-1.8	8	1406	46	-1.3	-1.3
9	1375	92	0.1	-1.4	9	1449	53	0.0	1.2	9	1450	26	-0.3	-1.0
10	1496	51	0.4	0.9	10	1542	- 19	0.6	-0.7	10	1507	7	-1.3	-3.0
11	1516	54	-0.1	1.3	11	1505	19	1.3	-1.0	11	1562	- 5	-1.4	-0.8
12	1569	28	0.2	1.6	12	1521	- 3	1.1	-3.6	12	1528	21	-0.1	-2.3
1919					1923					1927				
1	1592	35	-0.5	-0.1	1	1652	- 21	0.5	1.1	1	1618	- 18	0.7	-1.0
2	1652	42	-0.7	1.8	2	1695	- 40	0.5	-0.1	2	1679	- 12	-0.8	-0.3
3	1621	32	-0.2	-1.3	3	1709	- 10	0.8	3.0	3	1674	21	-0.9	1.3
4	1587	52	0.1	-0.9	4	1641	12	-0.2	-0.1	4	1705	4	-0.2	4.2
5	1572	20	-0.1	0.0	5	1602	- 2	-0.1	0.6	5	1598	- 12	-0.6	-0.9
6	1500	20	0.2	-1.3	6	1528	12	-0.8	-0.6	6	1561	- 17	-1.4	-0.8
7	1545	- 42	0.9	1.9	7	1493	- 14	-0.6	-1.2	7	1496	- 4	-1.0	-0.5
8	1530	- 64	-0.3	0.7	8	1449	9	-0.8	-0.6	8	1450	- 33	1.5	-1.5
9	1514	- 30	0.1	-0.1	9	1486	- 16	-0.1	-1.3	9	1504	- 20	-0.5	-0.6
10	1526	- 5	0.6	-0.8	10	1530	2	-0.8	-1.8	10	1443	91	0.2	-0.2
11	1557	- 7	0.8	0.5	11	1509	9	0.2	-2.4	11	1498	27	0.6	-1.5
12	1615	- 48	0.2	-0.7	12	1597	- 16	0.9	1.0	12	1570	- 21	0.6	-1.7
1920					1924					1928				
1	1602	- 20	1.0	-2.2	1	1632	1	0.5	1.3	1	1618	14	0.7	1.4
2	1745	- 39	0.8	4.0	2	1647	- 16	-0.2	-2.5	2	1674	- 10	0.3	0.4
3	1814	- 92	1.0	4.9	3	1713	- 12	-1.1	1.6	3	1644	15	0.7	-0.1
4	1763	- 90	1.4	2.8	4	1678	- 1	-0.4	1.6	4	1653	12	1.1	1.9
5	1674	-105	1.0	-0.8	5	1613	- 47	-0.4	-2.2	5	1594	- 12	0.5	-0.2
6	1606	- 87	1.0	-0.7	6	1559	- 11	-0.2	0.5	6	1550	- 12	-0.2	-0.2
7	1517	- 46	2.3	0.7	7	1453	49	0.2	1.2	7	1517	- 2	-0.5	1.6
8	1522	-110	2.4	-1.1	8	1457	- 17	0.9	-0.3	8	1453	7	0.2	0.6
9	1584	- 85	0.7	1.6	9	1535	- 47	-0.1	0.1	9	1494	- 16	1.3	0.5
10	1616	- 68	-1.1	-0.2	10	1577	- 32	-0.2	0.3	10	1551	- 5	1.0	1.4
11	1601	- 41	-0.3	0.4	11	1525	- 22	-0.1	-3.8	11	1555	- 2	0.6	0.6
12	1663	- 42	-0.6	2.7	12	1572	7	0.7	0.7	12	1528	54	-0.4	0.0
1921					1925					1929				
1	1708	- 65	-0.5	1.1	1	1607	6	0.7	-0.1	1	1585	36	-0.6	-0.6
2	1703	- 33	-0.6	-1.1	2	1693	- 15	-0.4	0.9	2	1637	15	-0.7	-1.4
3	1677	- 29	0.2	-1.4	3	1663	- 10	-0.8	-1.8	3	1681	- 23	-0.2	-0.9
4	1678	- 1	0.7	2.5	4	1680	8	-0.4	2.4	4	1652	- 7	-0.1	-0.6
5	1637	- 55	1.2	0.3	5	1589	14	0.1	1.0	5	1647	- 30	-0.4	1.7
6	1621	- 79	0.7	0.8	6	1524	- 2	0.2	-1.1	6	1583	- 37	-0.5	0.1
7	1500	- 5	1.5	1.8	7	1533	- 19	0.0	2.0	7	1489	9	-0.6	0.2
8	1486	- 54	1.3	-0.5	8	1474	- 9	0.1	0.9	8	1382	47	0.0	-1.9
9	1563	- 60	0.8	2.0	9	1504	- 15	0.2	0.4	9	1484	14	-0.7	0.3
10	1594	- 37	1.0	2.2	10	1552	- 33	0.6	-1.0	10	1562	- 18	0.3	0.6
11	1561	- 64	0.9	-3.4	11	1566	- 34	0.6	-1.0	11	1593	- 19	0.4	2.0
12	1632	- 53	0.5	0.5	12	1526	- 4	1.6	-2.9	12	1686	- 47	0.2	4.8

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1930	mm				1934	mm				1938	mm			
1	1730	22	-1.3	3.4	1	1601	63	0.9	-1.4	1	1610	93	0.9	1.6
2	1728	52	-0.3	3.4	2	1618	70	0.5	-2.9	2	1650	29	0.7	-3.4
3	1744	44	0.1	3.9	3	1604	78	0.4	-3.9	3	1714	36	0.9	1.7
4	1721	23	0.5	2.1	4	1669	70	-0.4	1.0	4	1587	84	0.5	-3.4
5	1639	31	-0.1	0.6	5	1626	50	-0.3	0.9	5	1567	86	0.8	0.1
6	1533	74	-0.1	-0.2	6	1548	54	0.3	-0.3	6	1531	61	0.5	-0.8
7	1454	104	0.0	0.0	7	1517	51	0.2	0.9	7	1551	28	-0.1	1.5
8	1440	79	0.2	-0.2	8	1509	39	-1.7	0.4	8	1519	27	0.7	2.3
9	1505	71	0.2	1.7	9	1471	99	-0.9	0.3	9	1434	82	1.1	-2.1
10	1499	100	0.9	0.0	10	1604	50	-0.7	2.8	10	1566	48	0.4	0.7
11	1512	94	0.3	-1.0	11	1504	86	0.0	-2.4	11	1566	38	0.6	-0.8
12	1599	19	0.1	2.2	12	1623	82	0.2	4.5	12	1598	46	0.0	-0.3
1931					1935					1939				
1	1661	53	-0.6	1.1	1	1634	47	0.3	-0.6	1	1649	64	-0.9	0.8
2	1719	55	-0.9	2.4	2	1658	77	0.9	1.0	2	1705	43	-1.1	0.3
3	1664	73	-0.4	-0.4	3	1643	60	0.8	-2.0	3	1707	19	-0.3	-1.1
4	1636	70	-0.4	-1.5	4	1677	64	-0.9	1.4	4	1687	65	-0.5	1.8
5	1580	94	-0.9	0.2	5	1561	86	-0.5	-1.5	5	1622	39	0.0	0.0
6	1591	49	-2.0	0.7	6	1509	93	-0.4	-0.8	6	1519	76	0.1	-1.0
7	1566	28	-2.6	0.5	7	1451	109	-0.2	0.0	7	1495	72	-0.1	0.6
8	1465	95	-2.5	0.6	8	1459	74	-1.4	-0.5	8	1507	16	0.0	-0.1
9	1498	85	-1.4	0.8	9	1481	93	-0.9	0.6	9	1482	44	1.3	-1.1
10	1524	86	0.4	0.4	10	1494	79	0.7	-2.1	10	1532	81	0.7	0.9
11	1543	97	0.6	1.9	11	1611	32	1.0	2.4	11	1579	32	0.6	-0.3
12	1608	61	0.3	1.8	12	1637	28	-0.1	1.2	17	1578	93	0.8	2.4
1932					1936					1940				
1	1664	71	1.3	4.4	1	1580	63	0.0	-3.6	1	1579	47	1.0	-4.2
2	1667	72	1.0	1.4	2	1581	106	1.1	-2.5	2	1677	50	0.9	0.4
3	1653	45	1.0	-2.2	3	1681	77	0.4	1.8	3	1653	59	1.0	-1.1
4	1620	77	0.4	-1.6	4	1656	65	-0.3	-0.3	4	1656	53	-0.2	-1.1
5	1542	110	0.4	-0.4	5	1629	57	-0.4	1.6	5	1597	39	0.0	-1.9
6	1527	106	0.7	2.4	6	1543	65	0.0	-0.1	6	1566	51	-0.5	0.2
7	1481	76	0.1	0.0	7	1488	59	-0.1	-0.9	7	1449	102	0.3	-0.3
8	1470	70	-1.1	0.3	8	1458	64	-0.6	-0.7	8	1473	82	-0.6	1.8
9	1555	29	-1.0	1.3	9	1472	85	0.3	0.3	9	1564	10	-0.5	0.9
10	1469	15	-0.1	-2.0	10	1446	127	0.2	-2.6	10	1584	34	0.0	0.7
11	1485	115	0.8	-1.0	11	1490	142	-0.5	0.3	11	1571	48	1.1	0.7
12	1576	85	1.2	2.0	12	1552	117	0.1	1.7	12	1567	50	1.4	-1.1
1933					1937					1941				
1	1682	47	0.4	3.1	1	1652	79	-0.9	2.2	1	1600	- 4	0.9	-1.2
2	1695	49	-1.0	0.1	2	1781	- 18	-0.5	1.9	2	1679	- 8	0.7	1.3
3	1713	58	-1.4	1.3	3	1705	9	-0.4	-2.1	3	1642	2	0.4	-1.5
4	1697	66	-0.6	2.6	4	1657	108	-0.2	3.1	4	1621	17	-0.1	-1.1
5	1608	75	-0.5	1.2	5	1520	123	-0.5	-1.8	5	1600	- 3	0.3	0.7
6	1542	68	0.3	0.3	6	1553	94	-0.4	2.6	6	1610	- 67	-0.6	-0.2
7	1505	58	1.3	1.5	7	1455	82	1.4	-0.4	7	1503	- 9	-0.6	0.0
8	1425	89	1.2	0.2	8	1436	91	1.5	1.5	8	1456	23	-1.9	0.4
9	1436	105	0.5	-0.7	9	1524	46	-0.1	1.0	9	1505	- 4	-0.7	0.6
10	1563	52	-0.3	0.2	10	1534	81	-0.2	0.5	10	1579	- 35	-0.8	-0.3
11	1550	75	-0.3	0.0	11	1590	23	0.7	-0.1	11	1621	- 30	0.1	3.0
12	1564	51	0.3	-2.3	12	1532	63	0.0	-4.0	11	1654	- 63	0.6	1.5

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1942	mm				1946	mm				1950	mm			
1	1618	- 25	0.0	-2.2	1	1629	- 2	0.8	0.2	1	1608	- 2	-0.8	-1.9
2	1649	32	-0.2	1.2	2	1678	- 17	0.4	-0.2	2	1696	- 37	0.5	0.2
3	1736	- 37	0.2	2.4	3	1722	- 13	-0.8	1.5	3	1672	- 24	0.7	-0.9
4	1675	- 31	-0.3	-0.8	4	1621	26	-0.2	-1.4	4	1692	- 24	2.0	2.9
5	1620	- 33	-0.3	-0.5	5	1562	16	-1.1	0.9	5	1566	- 12	2.7	-0.5
6	1555	- 26	-0.2	-0.8	6	1500	31	0.3	-1.1	6	1539	- 44	3.1	-0.7
2	1461	10	0.1	-1.1	7	1454	- 13	4.6	-0.3	7	1471	- 46	3.3	-2.0
8	1483	- 20	-1.0	-0.2	8	1399	53	1.3	0.3	8	1432	- 73	4.4	-3.5
9	1499	- 14	-0.7	-0.6	9	1491	- 29	0.9	-1.7	9	1506	- 57	1.5	-1.5
10	1579	- 41	-0.3	-0.3	10	1476	78	0.6	0.9	10	1597	- 45	-0.4	0.7
11	1552	- 46	0.1	-3.3	11				1.0	11	1588	- 35	-0.7	-0.5
11	1624	- 62	0.4	-0.9	12				-4.7	12	1600	- 37	-0.8	-1.8
1943					1947					1951				
1	1649	- 61	0.4	-1.8	1				2.0	1	1654	- 7	-0.7	1.3
2	1686	- 26	0.2	0.0	2	1642	- 2	0.0	-2.5	2	1695	- 18	-0.2	1.0
3	1687	- 22	0.3	0.0	3	1656	7	0.6	-0.7	3	1674	- 13	-0.1	-0.6
4	1682	- 18	-0.1	0.8	4	1619	- 14	0.3	-4.2	4	1663	- 11	0.8	0.6
5	1638	- 40	-0.3	0.3	5	1637	- 40	0.0	-0.4	5	1560	- 14	1.1	-2.5
6	1584	- 47	0.2	0.0	6	1576	- 6	-0.2	1.4	6	1459	26	1.5	-2.8
7	1581	- 71	0.5	2.1	7	1487	11	0.1	0.1	7	1500	- 36	1.2	-0.8
8	1530	- 83	1.3	0.7	8	1491	- 9	-0.3	1.1	8	1407	- 20	2.3	-3.1
9	1548	- 78	1.4	0.1	9	1473	15	-0.1	-0.7	9	1352	98	0.6	-2.2
10	1602	- 75	0.7	-0.3	10	1517	54	-0.8	1.0	10	1503	35	-0.6	-0.6
11	1628	- 76	-0.3	-0.2	11	1495	57	-0.5	-1.2	11	1591	- 45	-0.9	-1.2
12	1602	- 4	-0.6	1.0	12	1551	34	-1.7	-1.7	12	1586	- 4	0.0	0.3
1944					1948					1952				
1	1656	- 4	-0.8	1.6	1	1548	- 19	2.2	-1.5	1	1646	- 20	-0.3	0.1
2	1645	5	-1.2	-1.9	2	1617	33	1.7	-0.3	2	1685	8	-1.2	1.4
3	1675	- 4	-0.2	0.1	3	1692	12	1.3	3.0	3	1716	- 28	-0.8	0.8
4	1688	- 28	-0.6	0.1	4	1660	- 12	2.8	1.2	4	1630	25	0.8	0.9
5	1643	- 58	0.2	-0.3	5	1589	- 19	2.6	-0.2	5	1617	- 54	1.7	-0.7
6	1606	- 84	0.0	-1.3	6	1529	- 30	2.4	-1.8	6	1515	- 37	2.5	-2.5
7	1515	- 44	0.7	-0.6	7	1434	8	2.9	-1.8	7	1473	- 36	2.4	-1.8
8	1475	- 21	0.3	0.3	8	1462	- 59	3.5	-1.7	8	1428	- 15	1.4	-1.9
9	1466	4	0.6	-0.6	9	1466	14	-0.5	-1.7	9	1385	65	0.6	-2.2
10	1601	- 53	0.2	1.0	10	1547	0.0	0.3	0.1	10	1487	40	0.4	-0.6
11	1604	- 61	0.1	-0.6	11	1616	- 41	0.2	1.8	11	1554	43	-1.2	2.4
12	1599	- 49	-0.8	-2.8	12	1624	- 1	0.3	2.8	12	1611	24	-2.4	2.3
1945					1949					1953				
1	1622	5	-1.1	-2.2	1	1548	33	1.3	-2.2	1	1582	36	-0.8	-1.0
2	1561	- 2	-0.7	-2.2	2	1612	- 3	2.1	-2.2	2	1650	50	-0.4	2.6
3	1710	- 14	-1.0	0.4	3	1651	- 6	0.6	-1.2	3	1684	- 26	0.6	-0.2
4	1646	1	-0.3	-1.6	4	1609	34	0.5	-0.2	4	1650	- 3	1.1	0.5
5	1588	- 15	-1.0	-2.5	5	1543	- 1	1.7	-2.3	5	1567	18	1.5	0.8
6	1558	17	-1.7	0.5	6	1591	- 42	2.4	2.8	6	1505	- 1	1.7	-1.2
7	1553	- 20	-2.3	0.7	7	1533	- 63	1.7	0.1	7	1477	- 22	1.3	-1.4
8	1492	19	-2.2	1.7	8	1456	- 47	1.8	-1.9	8	1432	- 13	1.0	-1.8
9	1553	- 46	-0.4	0.5	9	1473	- 20	1.1	-1.6	9	1454	18	0.1	-1.0
10	1633	- 53	-0.2	1.9	10	1522	- 7	0.7	-1.2	10	1517	16	0.3	-0.2
11	1577	- 30	0.0	-1.2	11	1555	27	-0.7	1.7	11	1547	7	-1.0	-0.7
12	1558	- 16	-0.4	-3.8	12	1565	17	-0.7	-0.3	12	1596	31	-0.7	3.1

(to be continued)

(continued)

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1954	mm				1956	mm				1958	mm			
1	1607	27	0.3	1.1	1	1589	- 34	0.2	-4.9	1	1604	18	1.1	0.9
2	1670	- 4	0.4	0.6	2	1633	- 54	0.4	-6.0	2	1663	20	1.3	2.7
3	1716	- 27	0.3	1.8	3	1700	- 52	1.3	-0.4	3	1609	26	0.8	-1.8
4	1678	- 41	1.4	0.1	4	1605	- 31	1.5	-4.6	4	1658	- 5	0.6	0.6
5	1599	- 47	1.2	-1.9	5	1539	- 41	2.5	-4.9	5	1567	- 7	1.6	-1.0
6	1594	- 44	0.9	1.6	6	1517	- 21	1.8	-1.7	6	1500	2	3.2	-0.1
7	1557	- 76	0.9	0.2	7	1483	- 14	0.6	-0.9	7	1450	- 13	3.6	-0.8
8	1530	- 80	-0.8	-1.0	8	1463	- 19	-0.2	-0.9	8	1472	- 25	1.8	1.0
9	1526	- 65	0.0	-1.9	9	1483	12	0.4	1.0	9	1482	- 2	0.3	-0.2
10	1523	39	-1.2	0.7	10	1539	24	0.4	2.1	10	1584	- 8	-0.7	2.2
11	1562	18	-0.9	1.4	11	1496	78	0.1	1.7	11	1613	- 20	-0.4	2.8
12	1582	26	0.0	2.3	12	1530	41	-0.1	-0.6	12	1635	- 47	-0.1	0.7
1955					1957					1959				
1	1603	30	0.1	0.9	1	1606	20	0.3	0.5	1	1641	- 21	-0.9	-0.9
2	1567	47	1.0	-2.8	2	1647	33	0.7	2.0	2	1739	- 39	1.3	4.0
3	1677	13	0.9	2.4	3	1614	18	0.4	-2.4	3	1746	- 54	1.6	3.2
4	1663	- 21	0.9	0.0	4	1620	13	1.3	-0.3	4	1603	8	1.9	-1.5
5	1598	- 19	1.1	0.0	5	1566	- 4	2.2	-0.3	5	1565	- 13	2.8	-0.6
6	1513	- 24	1.9	-2.2	6	1521	- 3	2.3	0.4	6	1517	- 16	3.5	0.1
7	1446	- 34	3.5	-2.8	7	1470	- 25	3.1	-0.6	7	1405	30	2.7	-1.7
8	1453	- 52	2.6	-1.8	8	1473	- 43	1.7	-0.4	8	1475	- 48	1.1	-1.1
9	1583	-101	0.0	-0.3	9	1498	- 12	-0.3	-0.2	9	1444	22	0.7	-0.9
10	1615	-101	-0.4	-2.2	10	1487	36	-0.6	-1.7	10				
11	1578	- 54	-0.5	-2.6	11	1554	24	-0.2	1.8	11				
12	1531	- 28	0.4	-5.4	12	1577	- 5	-0.1	-0.5	12				

Table 3, e. Kôti

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1951	mm				1954	mm				1957	mm			
1	2992	-36	0.6	-2.2	1	2892	73	0.6	-1.5	1	3004	-11	0.2	0.1
2	2978	-35	0.7	-4.3	2	3004	10	0.9	1.3	2	3018	18	-0.5	1.1
3	2995	-64	0.1	-4.1	3	3033	-15	0.2	2.6	3	2926	47	-0.2	-1.3
4	2999	-71	-0.2	-3.0	4	3003	-33	0.2	0.6	4	2964	-12	0.6	-0.2
5	2872	-42	0.3	-3.7	5	2975	-80	0.4	1.4	5	2880	-11	-0.1	-1.3
6	2743	0.0	-0.3	-3.9	6	2780	41	-1.1	0.9	6	2792	-36	0.6	-1.5
7	2788	-7	-1.2	-2.7	7	2799	24	-0.9	0.9	7	2790	-31	0.3	-2.5
8	2734	8	-0.2	-2.2	8	2772	28	-0.1	2.3	8	2798	-49	-0.6	-2.2
9	2634	70	-0.1	-2.8	9	2738	14	-0.5	0.3	9	2674	71	-1.4	-1.4
10	2752	-8	0.5	-1.4	10	2675	130	-0.4	2.0	10	2795	-31	-0.3	-1.0
11	2986	-130	0.1	-1.2	11	2839	35	0.3	0.4	11	2913	-46	0.0	-0.5
12	3084	-131	-0.7	-0.6	12	2931	33	0.3	1.5	12	2890	29	0.3	-1.9
1952					1955					1958				
1	3115	-88	-1.0	1.1	1	3006	34	-0.4	2.9	1	3070	-64	0.5	1.5
2	3039	11	-1.0	1.6	2	2979	22	-0.1	-1.0	2	2999	-2	0.9	0.0
3	3009	-13	-0.6	-0.1	3	2965	45	0.1	1.9	3	2940	25	0.6	-0.9
4	2988	-31	-0.5	-1.3	4	2964	18	0.4	1.8	4	2995	-38	0.4	-0.1
5	2917	-39	0.1	-0.3	5	2861	26	0.5	0.9	5	2906	-40	0.2	-1.2
6	2863	-49	-0.1	1.7	6	2884	-77	0.7	2.5	6	2757	5	0.9	-0.7
7	2725	82	-0.1	0.7	7	2850	-39	0.8	2.2	7	2753	-2	1.6	-1.4
8	2661	141	0.4	3.1	8	2811	-14	0.0	2.2	8	2804	-42	-0.1	-0.6
9	2650	101	1.7	3.1	9	2860	-88	0.2	2.7	9	2690	9	1.1	-1.6
10	2775	21	-0.1	1.7	10	2847	-69	-0.1	0.3	10	2829	-47	-0.1	0.6
11	2752	123	0.1	0.2	11	2959	-53	-0.6	0.9	11	2798	53	0.7	-0.8
12	2929	39	0.1	1.6	12	2990	-59	0.0	-1.4	12	2944	-47	1.4	-1.4
1953					1956					1959				
1	2987	20	-0.4	0.4	1	3010	-32	0.1	-1.1	1	3079	-96	0.4	-0.4
2	3026	25	-0.6	2.2	2	3072	-62	-0.4	-0.7	2	3096	-79	0.7	1.3
3	3014	-22	-0.3	0.0	3	3044	-34	-0.2	1.5	3	3014	-21	0.8	1.5
4	2937	63	-0.4	2.1	4	2957	8	0.2	0.2	4	2904	36	0.5	-1.2
5	2834	81	-0.6	1.6	5	2870	36	-0.3	1.3	5	2844	-2	1.5	-1.2
6	2739	77	-0.8	0.9	6	2729	66	1.1	2.1	6	2759	-21	1.3	-2.0
7	2800	36	-0.6	2.3	7	2742	44	1.5	1.2	7	2730	14	1.3	-2.3
8	2687	103	0.4	2.2	8	2773	-34	0.2	-2.0	8	2777	-51	-0.4	-3.7
9	2649	111	0.4	2.1	9	2773	-23	-0.7	-0.1	9	2807	-115	1.3	-1.9
10	2740	60	0.0	2.1	10	2803	-25	-0.4	-0.1	10				
11	2860	22	0.6	1.4	11	2799	81	-0.3	0.1	11				
12	2961	4	0.7	2.1	12	2971	1	-0.8	0.7	12				

Table 3, f. Kainan

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1953	mm				1956	mm				1959	mm			
1					1	2743	- 63	-0.4	-3.6	1	2741	8	-1.0	0.8
2	2772	23	0.0	2.5	2	2794	- 58	-1.4	-3.6	2	2824	- 46	1.1	2.5
3	2855	-105	0.2	-1.2	3	2789	- 32	-0.4	-1.4	3	2764	27	0.8	2.6
4	2741	16	-1.2	0.3	4	2695	12	0.4	-1.6	4	2677	60	-0.1	0.1
5	2641	- 4	0.3	-0.2	5	2626	17	0.2	0.1	5	2573	66	0.7	0.4
6	2474	31	-0.1	-1.2	6	2482	25	0.6	-0.2	6	2472	44	0.2	0.0
7	2545	- 22	-0.5	-0.2	7	2469	11	1.4	-1.2	7	2423	104	0.1	0.8
8	2462	39	-0.6	-0.8	8	2496	7	0.8	0.9	8	2512	- 11	-0.6	-0.8
9	2410	87	0.4	0.1	9	2521	- 9	1.0	2.0	9	2533	- 21	-0.6	0.1
10	2496	29	0.6	0.0	10	2544	6	0.8	2.1	10				
11	2621	- 2	0.1	0.0	11	2542	102	0.4	2.2	11				
12	2727	- 28	0.4	0.9	12	2726	25	-1.6	2.5	12				
1954					1957									
1	2636	49	1.0	-1.6	1	2743	0.0	-0.2	1.4					
2	2765	- 14	0.7	0.0	2	2753	52	-0.7	2.4					
3	2784	- 4	0.6	1.5	3	2737	57	-1.4	0.2					
4	2759	- 28	0.4	0.2	4	2763	- 8	-0.3	1.2					
5	2728	- 70	-0.3	0.6	5	2633	35	-0.7	0.9					
6	2515	47	-1.4	1.6	6	2507	21	-0.1	0.5					
7	2540	25	-1.5	1.8	7	2475	54	-0.1	0.7					
8	2512	- 13	0.0	-0.3	8	2496	14	0.1	0.7					
9	2510	- 39	0.1	-2.2	9	2421	112	-1.0	1.1					
10	2428	121	-0.7	0.3	10	2548	- 5	0.0	0.7					
11	2600	0.0	0.6	-0.9	11	2647	- 8	0.2	1.6					
12	2677	7	1.0	0.5	12	2613	77	-0.1	-0.4					
1955					1958									
1	2718	24	-0.1	1.4	1	2768	- 9	-0.3	2.4					
2	2713	5	0.7	-2.5	2	2773	- 3	0.6	1.3					
3	2726	44	1.0	0.5	3	2719	52	0.1	0.3					
4	2712	6	0.5	0.0	4	2719	- 3	0.2	1.1					
5	2597	19	0.6	-1.5	5	2626	15	0.6	0.4					
6	2618	-121	0.9	-0.6	6	2463	48	1.1	0.7					
7	2562	- 67	0.7	-0.9	7	2470	45	1.2	1.2					
8	2548	- 51	-0.1	-0.6	8	2512	4	0.8	1.9					
9	2610	-118	-0.3	-1.1	9	2391	102	0.9	0.4					
10	2653	-152	-0.5	-3.1	10	2546	28	-0.5	2.4					
11	2694	- 94	-1.1	-2.9	11	2536	98	0.2	1.2					
12	2720	- 74	0.1	-3.4	12	2662	30	0.5	0.5					

Table 3, g. Asamusi

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1954	mm				1956	mm				1958	mm			
1					1	2908	- 9	0.6	-2.3	1	2948	- 9	0.2	0.4
2					2	2952	- 11	0.0	-2.0	2	2999	- 23	0.2	0.9
3					3	3062	- 29	0.0	1.8	3	2970	13	0.0	-2.0
4					4	2997	13	-0.1	-0.8	4	3027	- 29	0.3	-1.0
5					5	2932	44	-0.3	0.2	5	2946	- 20	0.1	-1.0
6	2972	- 32	-0.8	2.0	6	2870	27	0.7	0.3	6	2870	1	0.3	-2.1
7	2929	- 39	-1.3	1.7	7	2846	8	0.3	0.6	7	2813	- 22	1.1	-3.3
8	2866	- 12	-1.2	2.2	8	2792	- 20	0.4	-2.3	8	2802	- 25	0.7	-1.6
9	2872	- 12	-0.8	0.9	9	2816	15	0.2	-0.2	9	2795	17	-0.3	-2.2
10	2850	51	-0.5	2.2	10	2881	- 7	0.4	1.1	10	2909	- 30	-0.4	0.6
11	2900	6	-0.4	1.0	11	2851	32	0.2	-0.1	11	2927	- 35	-0.1	0.3
12	2933	- 21	0.2	2.5	12	2847	35	-0.8	-0.8	12	2943	4	0.1	0.3
1955					1957					1959				
1	2939	13	-0.2	0.9	1	2953	8	-0.6	1.2	1	2961	- 32	-0.1	-0.7
2	2914	37	0.2	-1.0	2	3004	- 3	-0.3	2.3	2	3112	- 95	0.8	4.6
3	3046	3	0.3	3.3	3	2956	- 90	-0.2	-3.0	3	3094	- 74	0.7	1.6
4	3031	- 5	0.1	0.9	4	3005	- 4	-0.2	-1.3	4	2972	1	0.7	-2.4
5	2955	28	-1.0	0.1	5	2928	- 4	0.0	-1.2	5	2960	- 46	0.6	-1.4
6	2881	25	-0.4	-0.2	6	2888	- 16	0.4	-1.9	6	2899	- 32	0.5	-2.2
7	2794	63	0.6	1.1	7	2831	- 29	0.4	-3.2	7	2775	14	0.5	-4.1
8	2776	42	1.3	2.1	8	2800	- 25	0.5	-2.0	8	2787	- 38	0.9	-3.5
9	2853	- 25	2.1	1.5	9	2807	2	0.0	-2.1	9	2759	25	0.6	-3.4
10	2914	- 59	0.5	-0.2	10	2816	15	-0.4	-3.0	10				
11	2907	- 24	0.1	-0.2	11	2889	- 10	0.0	-0.6	11				
12	2871	- 10	0.2	-1.4	12	2879	- 11	0.5	-0.5	12				

Table 3, h. Kasiwazaki

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1955	mm				1957	mm				1959	mm			
1					1	2615	- 4	0.0	1.1	1	2573	12	0.1	-0.7
2					2	2645	16	-0.4	0.8	2	2758	- 93	1.2	3.0
3					3	2625	38	-0.8	-1.5	3	2722	- 46	1.3	1.9
4					4	2687	- 9	-0.6	0.3	4	2613	26	0.6	-1.3
5					5	2581	20	-0.5	-0.4	5	2593	- 9	0.1	-0.9
6	2510	- 6	0.8	0.6	6	2525	- 27	-0.5	-1.4	6	2469	2	0.3	-2.4
7	2405	7	2.7	2.8	7	2418	- 19	-0.2	-1.6	7	2327	56	1.2	-1.1
8	2382	- 13	2.8	2.1	8	2388	- 31	1.0	-0.9	8	2347	- 25	1.1	-3.5
9	2480	- 19	0.5	1.4	9	2460	- 20	-0.1	-1.0	9	2326	84	1.1	-1.8
10	2559	- 60	-0.2	0.3	10	2435	46	-0.1	-1.0	10				
11	2525	3	-1.6	1.0	11	2509	- 10	0.4	1.1	11				
12	2552	- 26	-1.5	-0.8	12	2440	37	1.9	-0.5	12				
1956					1958									
1	2519	54	-0.7	-2.6	1	2655	- 52	0.7	1.4					
2	2622	- 13	-0.6	-3.3	2	2666	- 32	0.9	0.3					
3	2732	- 44	0.2	1.5	3	2655	5	0.7	0.0					
4	2698	- 44	0.5	-0.2	4	2701	- 36	0.0	0.0					
5	2616	- 6	0.3	1.3	5	2598	- 15	0.2	-0.9					
6	2490	32	-0.2	0.8	6	2480	1	0.7	-1.2					
7	2428	- 17	-0.6	-1.1	7	2400	- 6	0.8	-0.8					
8	2385	- 24	0.5	-1.2	8	2377	- 14	1.2	-0.2					
9	2412	40	-0.3	-0.3	9	2383	39	0.2	-2.0					
10	2481	14	0.4	0.7	10	2479	39	-0.9	0.9					
11	2437	51	1.2	1.3	11	2536	- 31	0.3	1.5					
12	2462	77	-0.5	1.3	12	2561	- 55	0.8	0.3					

Table 3, i. Nezugaseki

Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$	Date	L	$\Delta L''$	$\Delta T'$	$\Delta b'$
1955	mm				1957	mm				1959	mm			
1					1	2167	- 21	-0.9	1.7	1	2093	23	0.3	0.5
2					2	2196	47	0.2	2.0	2	2318	- 37	0.7	5.3
3	2291	- 41	0.8	2.3	3	2132	80	-0.8	-2.1	3	2277	- 31	1.0	2.2
4	2268	- 8	0.6	1.1	4	2228	31	-0.7	-0.2	4	2162	63	1.7	-0.5
5	2155	5	0.4	0.2	5	2137	20	-0.3	-0.7	5	2169	- 17	1.2	0.4
6	2085	9	-0.1	0.6	6	2094	- 18	-0.6	-1.3	6	2056	11	0.4	-1.0
7	1979	9	2.0	1.9	7	1979	- 17	-0.8	-2.7	7	1900	61	0.8	-1.3
8	1944	33	1.5	2.6	8	1983	- 31	-0.4	-1.1	8	1932	- 2	-0.5	-2.9
9	2047	- 23	0.5	1.3	9	2010	- 5	-0.6	-1.2	9	1890	67	1.2	-3.1
10	2122	- 64	-0.2	0.2	10	1986	49	-0.2	-1.5	10				
11	2092	- 22	-1.2	1.4	11	2059	- 14	1.0	1.3	11				
13	2062	- 25	0.0	-0.7	12	2003	25	1.1	-0.3	12				
1956					1958									
1	2103	- 29	0.2	-2.7	1	2068	49	0.6	0.9					
2	2198	- 8	-0.5	-2.7	2	2236	- 9	0.3	0.8					
3	2307	- 58	-0.3	1.1	3	2190	18	0.3	-1.4					
4	2254	- 9	0.3	-0.3	4	2260	- 14	-0.1	-0.6					
5	2186	- 12	0.5	1.4	5	2170	- 26	0.4	-1.0					
6	2075	11	0.6	0.7	6	2051	5	1.0	-1.2					
7	2010	2	-1.2	0.7	7	1963	- 3	0.2	-1.9					
8	1958	- 4	-1.0	-1.6	8	1943	27	-1.2	-0.5					
9	1983	26	0.1	-0.2	9	1929	60	-0.5	-2.3					
10	2048	16	0.3	1.2	10	2054	30	-0.9	1.6					
11	1972	85	0.3	1.5	11	2097	- 16	0.0	3.0					
12	1982	90	-1.0	1.0	12	2070	- 7	0.6	1.9					

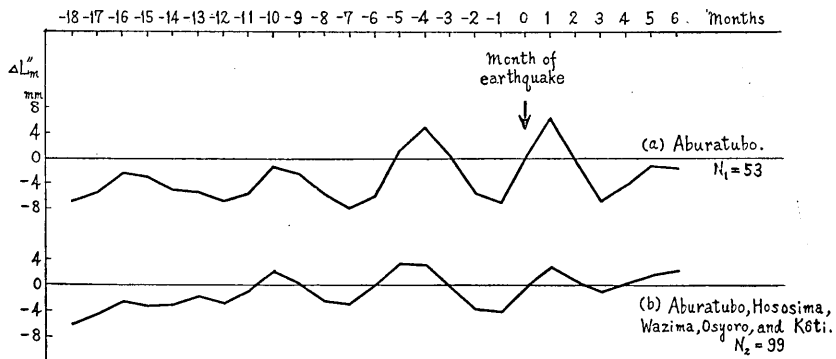


Fig. 2, a, b. The average change of $\Delta L''_m$ for different earthquakes with magnitude M , greater than 7.

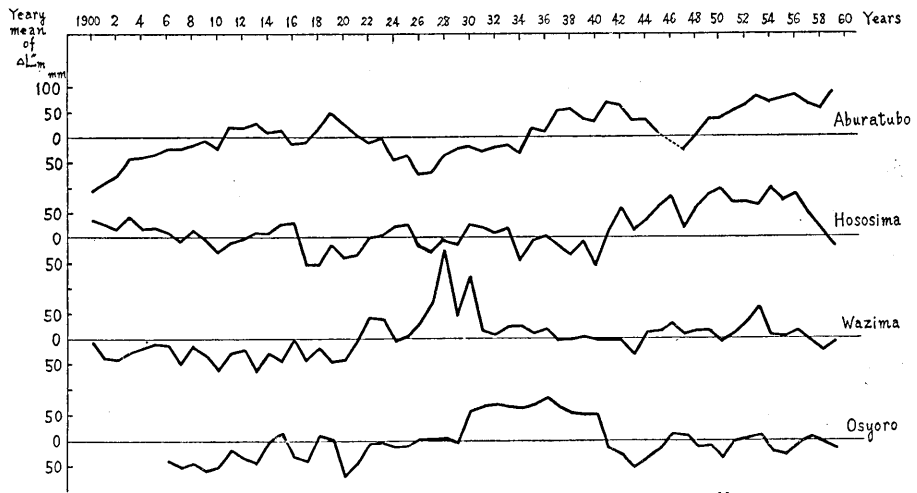


Fig. 3. Yearly mean sea-levels, calculated from $\Delta L''_m$.

[S. YAMAGUTI]

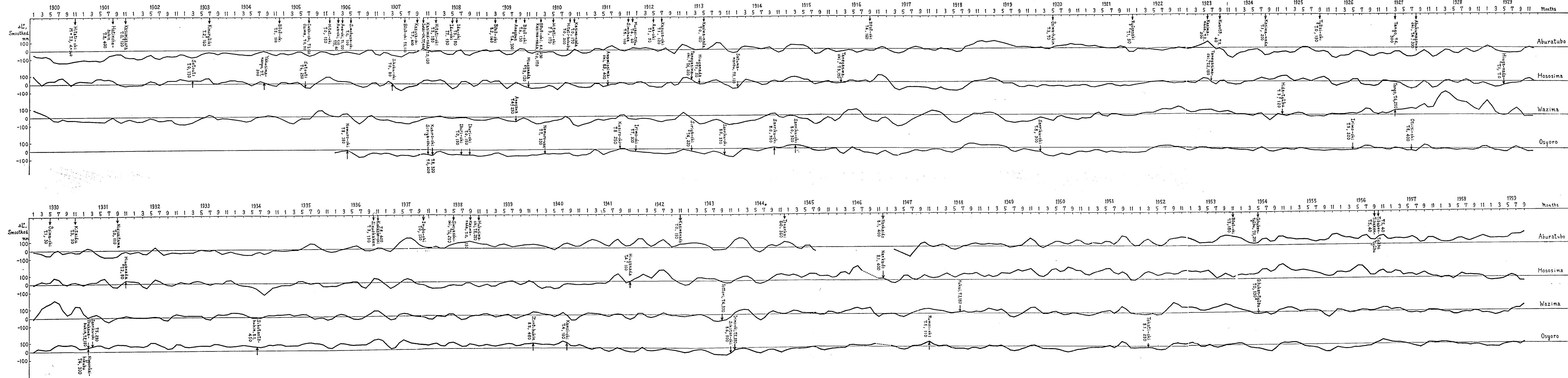


Fig. 1, a. Monthly mean sea-levels, corrected and smoothed. Great earthquakes of magnitude greater than 7 are indicated by arrows.

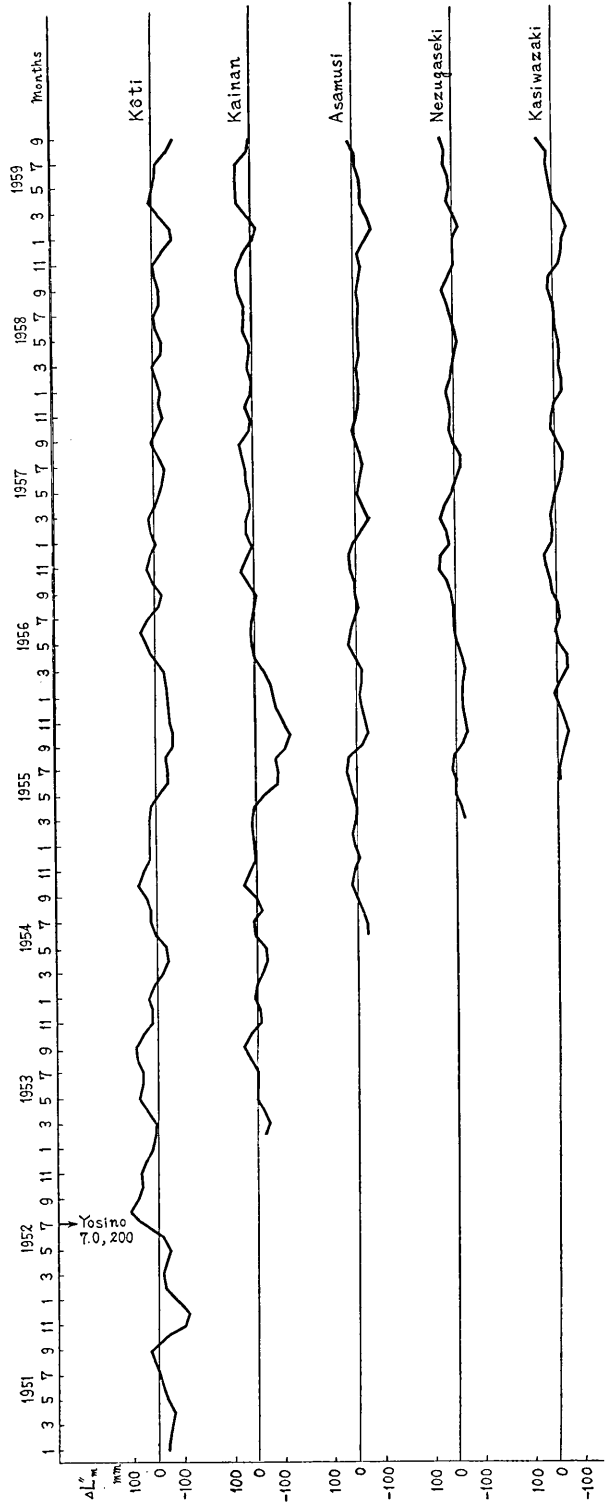


Fig. 1, b. Monthly mean sea-levels, corrected and smoothed. Great earthquakes of magnitude greater than 7 are indicated by arrows.