DIAGRAMS FOR THE HARMONIC PREDICTION OF TIDES.

by

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Under the title " A Calendar of the Fundamental Harmonic Tides and Diagrams for their Graphical Prediction " we gave in the *Hydrographic Review* (Volume XIV, N° 2, November 1937, pages 53 to 60, and Volume XVI, N° 1, May 1939, pages 59 to 64), a summary on the convenience, when predicting tides by the harmonic method, of utilising the initial arguments of the various constituents as measurements of time and not in degrees as customary up to now.

Consequently, the direct utilisation of Harmonic Constants (now already known for more than 2200 ports all over the world), once these constants are transformed into time, becomes very easy, if one establishes for each year and for the fundamental components of the tide a very simple Calendar, which is, in a way, a Year-Book of potential (or static) High Water at Greenwich, this place being chosen as fundamental reference station for all the tides of the whole world.

All the explanations relative to the compilation and use of this particular Year-book have already been given in the above mentioned articles in the Hydrographic Review, and we will not repeat them here. We will merely give below, as an example, the 12 pages which constitute the Year-book of Fundamental Harmonic Tides for the year 1941. The International Hydrographic Bureau issued in December 1939 in a special pamphlet, as an annex to the articles in question, a similar Year-book for the year 1940. (*)

The publication of similar tables for subsequent years, should they be required, would be easily effected.

After the tables which constitute the Year-Book, we give under the title of " Conversion Table for establishments " a series of permanent tables by means of which the phase lags expressed in degrees of the usual constituents of the tide, can be transformed into hours.

(*) For the calculation of the Year-Book given hereunder for the year 1941, tables I, II and III appearing on pages 60 and 61 of the Hydrographic Review, Vol. XVI, N° I, May 1939, have been used. In order to take into account the slight variation of the slowly varying portion of the potential argument for certain constituents during the year, a correction has been made for tides K_1, K_2 and O_1 & Q_1, for the different months in terms of the increment du of the portion of argument u in relation to its mean value on the 2nd July. This correction is very small and never exceeds $\pm$ 10 minutes in time.

The semi-amplitudes, as well as the phase lags g° for the various waves which constitute the tide are furnished by the Lists of Harmonic Constants published by certain Hydrographic Offices as well as by the International Hydrographic Bureau in its Special Publication N° 26.

If the phase lag of the constituent is not referred to the Greenwich, but to the local meridian (number Kappa), it will be necessary, before utilising it as above, to refer it first of all to the Greenwich meridian, by means of the formula :

$$g^\circ = (\text{Kappa})^\circ + (\text{Table c}) + \text{p.d.S}^\circ$$

in which p is equal to 1, 2 or 4, according to the periodicity of the constituent, and where dS° represents the intercept between the local longitude and the central meridian of the time-zone which fixes the standard time utilised in that region. A developed table c, with detailed explanations, was published in the Preface of December 1930 to Special Publication N° 26 of the International Hydrographic Bureau. We give hereunder an extract thereof in connection with a few fundamental tides.

For the annual and semi-annual constituents Sa and Ssa, we have given in the Table for converting establishments, the dates of the year when these waves have a maximum influence, taking into account their respective local phase lags. By an easy interpolation of their amplitudes, it is easy to deduce the correction, either minus or plus, to be made to the mean level at different times of the year.

The calendar gives, for each day of the year 1940, the hour Tm at which the potential High Water (static tide) occurs for the Greenwich meridian of each of the fundamental component waves of the tide :

$$M_2\ S_2\ N_2\ K_2,\ K_1\ O_1\ P_1\ Q_1,\ M_4 \text{ and } MS_4$$

expressed in zone-time (Table Tm).

To obtain the time of actual High Water for each of these component tides at a given place, expressed in the time there used, it suffices to add to the hour Tm taken from the calendar for the given day and wave, the "establishment" $\frac{g^\circ}{n}$ peculiar to that place, n being the velocity of the constituent in degrees per hour.

This establishment $\frac{g^\circ}{n}$ hours is easily deduced from the harmonic constant g°, generally given by lists or tables in degrees of arc, by means of the permanent conversion table referred to above, which furnishes for each constituent the quantity $\frac{g^\circ}{n}$ hours with respect to g° (degrees).

In the calendar, we have given *only one* of the hours of High Waters of the semi-diurnal or quarter-diurnal waves. The other, or the others, are

deduced therefrom, by addition or substraction of the period indicated below, for the different constituents :

M_2 12 h. 25 m.	K_1 23 h. 56 m.	M_4 6 h. 13 m.
S_2 12 h. 00 m.	O_1 25 h. 49 m.	MS_4 6 h. 06 m.
N_2 12 h. 39 m.	P_1 24 h. 04 m.	
K_2 11 h. 58 m.	Q_1 26 h. 52 m.	

Once the Calendar is established, it is possible to utilise directly the harmonic constants for the prediction of tides without effecting the tedious calculation of the initial phase of each constituent. As the time of High Water for each day and for each constituent is given, lengthy calculations are avoided, and this simplifies a process which, notwithstanding its advantages, is generally considered as too long and too complicated.

In the last paragraph of page 58, Volume XIV, N° 2, November 1937 of the Hydrographic Review, we mentioned an harmonic tide calculator comprising two diagrams and a set of sinusoidal reglettes, which, by means of simple graphic calculations, enables one to obtain, at a glance, for a given day, the hourly ordinates of each component wave which enters into the calculation of the tide.

Although very simple in construction, the placing in coincidence of the sinusoidal curves on bands of celluloid is somewhat delicate, and, further, arrangement in length of the sinusoidal curves in connection with each harmonic constituent wave is rather cumbersome, as it is impossible to reduce it below 70 centimetres without impeding the reading of the ordinates by interpolation.

We have therefore endeavoured to nullify this drawback and to furnish, in a simple and easy form, the means of obtaining the hourly elements of each wave, with all desirable rapidity and in a manner sufficiently precise to cover all practical requirements.

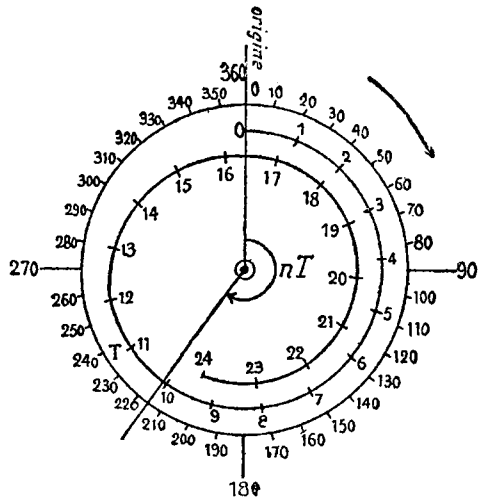

FIG. 1.

For this purpose, use can be made of the device which we described in July 1926, in the Appendix to Special Publication N° 13 of the International Hydrographic Bureau entitled " Tide Predicting Machines ". We showed, on pages 86 and 87 of this publication, that by means of a graph similar to that of Fig. 1, on the opposite page, it is possible to determine, with a particular spiral for each component wave, the angular increment $E = n\ T$ of the argument (expressed in degrees of arc) corresponding to the round hours of T (legal time) which are inscribed on the spiral for the whole day.

This correspondance of angles and hours for the various usual components retained, is shown, further, in the following table which expresses in degrees the special hours of each constituent :

HOURLY RATE OF PRINCIPAL CONSTITUENTS, IN DEGREES.

Hours	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	29°	30°	28°	30°	15°	14°	15°	13°	58°	59°
2	58	60	57	60	30	28	30	27	116	118
3	87	90	85	90	45	42	45	40	174	117
4	116	120	114	120	60	56	60	54	232	236
5	145	150	142	150	75	70	75	67	290	295
6	174	180	171	180	90	84	90	80	348	354
7	203	210	199	211	105	98	105	94	46	53
8	232	240	228	241	120	112	120	107	104	112
9	261	270	256	271	135	125	135	121	162	171
10	290	300	284	301	150	139	150	134	220	230
11	319	330	313	331	165	153	165	147	278	289
12	348	360	341	1	180	167	180	161	336	348
13	17	30	10	31	196	181	194	174	34	47
14	46	60	38	61	211	195	209	188	92	106
15	75	90	67	91	226	209	224	201	150	165
16	104	120	95	121	241	223	239	214	207	224
17	133	150	123	151	256	237	254	228	265	283
18	162	180	152	181	271	251	269	241	323	342
19	191	210	180	212	286	265	284	255	21	41
20	220	240	209	242	301	279	299	268	79	100
21	249	270	237	272	316	293	314	281	137	159
22	278	300	266	302	331	307	329	295	195	218
23	307	330	294	332	346	321	344	308	253	277
24	336	360	323	362	1	335	359	322	311	336

Retaining a vertical axis as origin of the angles, and rotating the origin of the spiral of the angle g in a direction contrary to the arrow (g being the phase lag of the constituent counted in degrees on the exterior circle, or g°/n hours being counted in hours on the spiral) it is possible to realize graphically on fig. 2 the angle (E — g) known as the " High Water Angle ", of the constituent in question. If such a device is drawn in the middle of a circle, the radius of which is f H (Fig. 3), f H being the semi-amplitude of the component wave in question, the perpendicular projection of radius f H on the diameter of origin will provide graphically the elementary in-

fluence f H cos (E — g) above mean level, corresponding to the action of the component under consideration for time T.

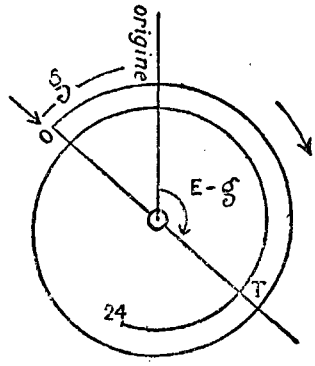

FIG. 2.

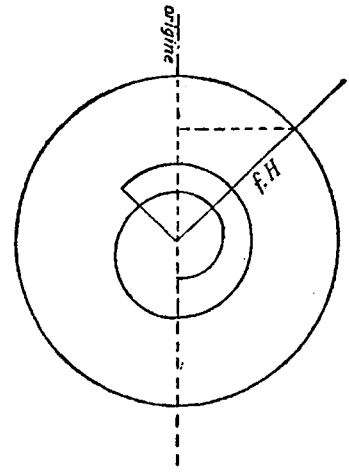

FIG. 3.

The High Water of the constituent corresponds to the upper intersection of the diameter of origin and of the circle; the Low Water to the lower intersection, while the horizontal diameter represents the mean level.

Let us take for radius of the exterior circle the value 100 (that is: f H = 100) and let us mark on the circle divisions representing the extremities of arcs α for which

$$100 \cos \alpha = 0, 10, 20, 30, \ldots\ldots\ldots 90, 100.$$

Let us note, further, that $\alpha = (E - g)$, angle of High Water, referred to above.

We thus obtain Diagram A shown on the opposite page (Fig. 4), a specimen of which is enclosed in the jacket to be found at the end of this volume. This jacket also contains a series of spirals corresponding to constituents M_2, N_2, S_2 and K_2, K_1 and P_1, O_1, Q_1, M_4, MS_4, S_a and S_{sa} ; each one traced on a sheet of transparent paper in accordance with the data of the above table.

Let us take one of these transparent templates, N_2 for instance, and center it on Diagram A: the arrow HW.PM will show the High Water of N_2, resulting from the use of the yearly calendar. This is read on the divisions carried by the spiral N_2, for instance 1 h. 40 m. (see fig. 5).

This arrangement is valid for the whole day, and the device of figure 5 shows, further, that with the contents of the jacket, it is easy to find for each of the round hours of the day, as indicated on the spiral, the corresponding hundredths of amplitude of N_2 : the interpolation of the hundredths is obtained at a glance by the template N_2 on Diagram A, the colour (blue or

red) giving the sign + or — of the corresponding elementary influence as regards the Mean Level.

Thus, on figure 5, the compilation for N_2 of the hundredths of amplitude relative to the successive hours 0, 1, 2, 3, 4 etc... 22, 23, 24 of the day, would be: + 66, + 94, + 98, + 82, + 42 etc... — 80, — 41, + 8.

The determination of the hundredths of the amplitude of wave N_2 relative to each round hour (or any other interpolation) of the day is, however, only an intermediary factor which it is not necessary to note in writing, as, at the same time as Diagram A and spiral N_2, use could be made of Diagram B, given in the jacket, and of the appropriate reglette for the amplitude of wave N_2, in order to determine directly the metric value of the hundredths in question.

In this way, by one adjustment of spiral N_2 and of the amplitude reglette, the whole 24 ordinates relative to wave N_2 can be speedily obtained for a whole day.

By repeating this operation for each of the required constituent waves, the component terms will be obtained and their algebraic sum will give the height of the tide above the Mean Level at the hour T.

A form already prepared, as shown on Fig. 6, is very quickly filled in and the calculations to be made are so easy that they can readily be entrusted even to persons who are not experts.

The whole of the spirals traced on transparent paper correspond in a way to each of the component cranks in Thomson's Tide Predictor, and it is realised that the above various graphic operations represent the manner in which each one of the components comes into play, in the production of the tide. It is thus readily seen which of the constituents must be taken into account in the calculations and which can be left aside.

The table below gives an idea of the maximum values observed in the world for the various amplitudes of the usual constituents. It serves as a guide to establish an appropriate set of metric reglettes to be used in conjunction with Diagram B, and covering the majority of cases.

MAXIMUM AMPLITUDES.

Wave	*Place*	*Amplitude*		
M_2	Avonmouth	428 cm.	=	14.04 feet
S_2	»	153 »		5.02 »
N_2	»	82 »		2.69 »
K_2	»	43 »		1.41 »
K_1	Whampoa	333 »		10.92 »
O_1	Cape Astronomicheski (Okhotsk Sea)	155 »		5.08 »
P_1	»	84 »		2.76 »
M_4	Knik Arm (Alaska)	29 »		0.95 »
MS_4	Moulmein	23 »		0.75 »

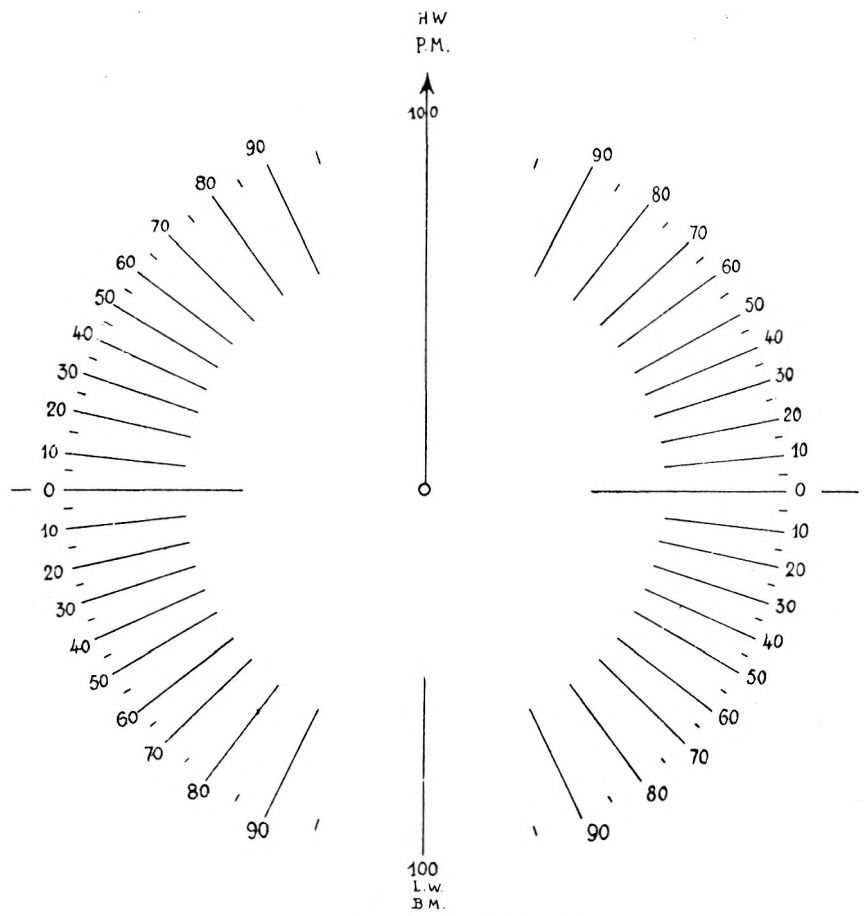

FIG. 4. — ABAQUE (A).

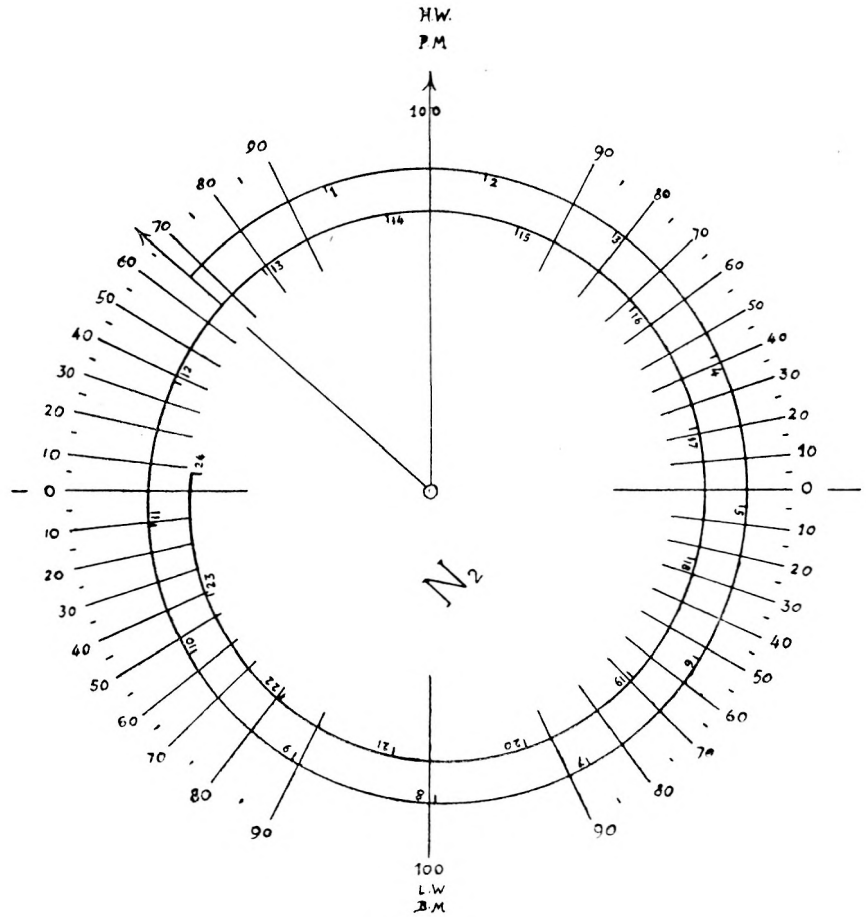

FIG. 5.

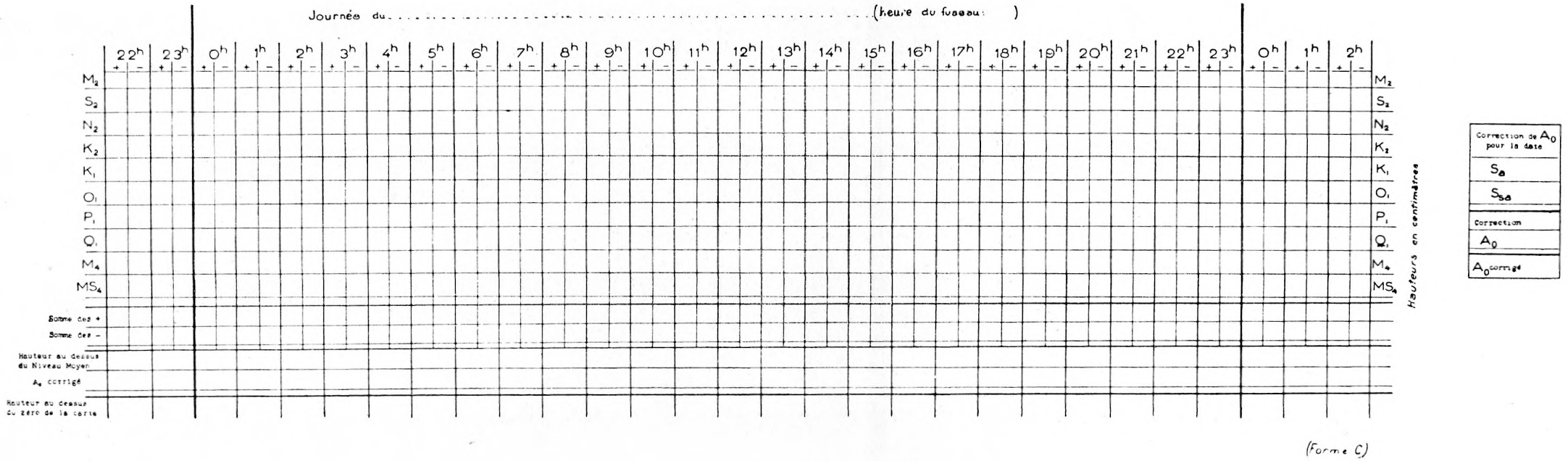
Journée du ..... (heure du fuseau :)
22h 23h 0h 1h 2h 3h 4h 5h 6h 7h 8h 9h 10h 11h 12h 13h 14h 15h 16h 17h 18h 19h 20h 21h 22h 23h 0h 1h 2h
+ −
M2
S2
N2
K2
K1
O1
P1
Q1
M4
MS4
Somme des +
Somme des −
Hauteur au dessus du Niveau Moyen
A0 corrigé
Hauteur au dessus du zéro de la carte
Hauteurs en centimètres
Correction de A0 pour la date
Sa
Ssa
Correction
A0
A0 corrigé
(Forme C)

FIG. 6.

When the amplitudes in question are very small, but it is not wished to neglect them, the use of an interpolation table such as that of figure 7 can be substituted with advantage for that of Diagram B.

100	1	2	3	4	5	6	7	8	9	10	11	12	13
90	1	2	2.	3.	4.	5.	6.	7	8	9	10	11	11.
80	1	1.	2.	3	4	5	5.	6.	7	8	9	9.	10.
70	0.	1.	2	3	3.	4	5	5.	6.	7	7.	8.	9
66	0.	1	2	2.	3	3.	4	5	5.	6	6.	7	8
50	0.	1	1.	2	2.	3	3.	4	4.	5	5.	6	6.
40	0.	1	1	1.	2	2.	3	3	3.	4	4.	5	5
30	0.	0.	1	1	1.	2	2	2.	2.	3	3.	3.	4
20	0	0.	0.	1	1	1	1.	1.	2	2	2	2.	2.
10	0	0	0.	0.	0.	0.	0.	1	1	1	1	1	1.
0	0	0	0	0	0	0	0	0	0	0	0	0	0

FIG. 7.

In place of Diagram B and of the amplitude reglette, it may also be advantageous to utilise numerical tables of hundredths already calculated, such as table V given on pages 345 to 349 of the Admiralty Tide Tables, Part II, Standard Edition 1932, issued by the Hydrographic Department of the British Admiralty.

We give hereunder an example of computations based on a few round hours of the day and another example of computations for any hour of the day. This method is particularly interesting for application in ports where a great diurnal inequality exists in the tides.

EXAMPLE I. — *Required the height of tide at* Pak Hoi *on* 6 *November* 1940 *at* 9 h. 00 *above the datum.*

Ondes :		M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	Z_0
H cm	=	38	12	7	3	103	113	34	22	297
fH cm	=	39.5	12	7.3	2.3	91.7	92.7	34	18.0	
$g/^{heures}_{n}$	=	05.39	06.42	05.38	06.41	04.47	02.39	04.49	02.32	
Annuaire 1940 6 Nov.	=	04.52	12.00	08.29	08.49	02.48	07.10	21.03	14.51	
P.M. = H.W.	=	10.31	06.42	14.07	15.30	07.35	09.49	25.52	17.23	
				01.28	03.32			01.48		
Abaque A pour 9 h. 00 m.	=	+ 71	+ 31	— 76	— 96	+ 93	+ 98	— 30	— 40	
Abaque B	=	+ 28.0	+ 3.7	— 5.5	— 2.2	+ 85.3	+ 90.8	— 10.2	— 7.2	

Somme des + = 207.8
Somme des — = 25.1
\+ 182.7
Z_0 = 297
480 cm.

(The Tide Tables for the French Colonies and the China Seas for the year 1940, page 90 gives 48 decimeters).

EXAMPLE II. — *Required the height of tide at* Pontianak (outer bar) *on* 15 *December* 1940 *from* 5 h. *to* 9 h. *at the threshold of the bar.*

Ondes :		M_2	S_2	N_2	K_1	O_1	P_1	Z_0
H cm	=	16	9	3	39	32	10	80
fH cm	=	16.6	9.0	3.1	34.7	27.2	10.0	
g°	=	142	165	119	132	063	134	
Table g/n	=	4.54	5.30	4.11	8.47	4.31	8.58	
Annuaire 1940 15 décembre	=	0.25	12.00	9.11	0.13	0.39	23.39	
P.M. = H.W.	=	5.19	5.30	13.22 0.43	9.00	5.11	32.37 8.33	

	5h	6h	7h	8h	9h
M_2	+ 97 15.8	+ 94 15.3	+ 66 10.8	+ 20 3.2	— 30 4.9
S_2	+ 96 8.6	+ 96 8.6	+ 71 6.6	+ 25 2.3	— 25 2.3
N_2	— 51 1.5	— 86 2.5	— 100 3.1	— 90 2.5	— 57 1.8
K_1	+ 50 17.3	+ 71 24.4	+ 87 30.0	+ 97 33.5	+ 100 34.7
O_1	+ 99 27.1	+ 97 26.3	+ 92 25.0	+ 80 21.9	+ 64 17.5
P_1	+ 61 6.1	+ 79 7.9	+ 92 9.2	+ 98 9.8	+ 99 9.9

Z_0 = 80 cm.
(outer bar) = 255
\+ 335

	5h	6h	7h	8h	9h
Somme des +	74.9	82.5	81.6	70.7	62.1
Somme des —	1.5	2.5	3.1	2.5	9.0
	+ 73.4	+ 80.0	+ 78.5	+ 68.2	+ 53.1
	335	335	335	335	335
décimètres :	40.8	41.5	41.4	40.3	38.8
(Les "Getijtafels" (Pontianak) 1940 publiées par l'Observatoire de Batavia donnent respectivement :	41.3	42.0	41.8	40.8	39.1

(See following Tables and pocket at end of Volume).

FACTEURS D'AMPLITUDE POUR L'ANNÉE 1941

AMPLITUDE FACTORS FOR THE YEAR 1941

M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1.04	1.00	1.04	0.75	0.88	0.81	1.00	0.81	1.08	1.04

S_a	S_{sa}
1.00	1.00

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

JANVIER 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	02.19	12.00	06.15	5.14	23.12	05.37	00.41	14.07	2.19	1.08
2	03.09	12.00	07.34	5.10	23.08	07.26	00.45	16.59	3.09	1.33
3	04.00	12.00	08.53	5.06	23.04	09.15	00.49	19.51	4.00	1.57
4	04.50	12.00	10.12	5.02	23.00	11.04	00.53	22.43	4.50	2.22
5	05.41	12.00	11.31	4.58	22.56	12.54	00.57	25.35	5.41	2.47
6	06.31	12.00	00.10	4.54	22.52	14.43	01.01	01.35	0.18	3.12
7	07.22	12.00	01.29	4.50	22.48	16.32	01.05	04.27	1.08	3.36
8	08.12	12.00	02.48	4.46	22.45	18.21	01.09	07.20	1.59	4.01
9	09.03	12.00	04.07	4.43	22.41	20.10	01.13	10.12	2.49	4.26
10	09.53	12.00	05.26	4.39	22.37	21.59	01.17	13.04	3.40	4.51
11	10.44	12.00	06.45	4.35	22.33	23.49	01.21	15.56	4.30	5.16
12	11.34	12.00	08.04	4.31	22.29	25.37	01.25	18.48	5.21	5.40
13	00.00	12.00	09.23	4.27	22.25	01.37	01.28	21.40	6.11	6.05
14	00.51	12.00	10.42	4.23	22.21	03.27	01.32	24.32	0.49	0.24
15	01.41	12.00	12.01	4.19	22.17	05.16	01.36	00.32	1.39	0.49
16	02.31	12.00	00.41	4.15	22.13	07.05	01.40	03.24	2.30	1.13
17	03.22	12.00	02.00	4.11	22.09	08.54	01.44	06.16	3.20	1.38
18	04.12	12.00	03.19	4.07	22.05	10.43	01.48	09.09	4.11	2.03
19	05.03	12.00	04.38	4.03	22.01	12.33	01.52	12.01	5.01	2.28
20	05.53	12.00	05.58	3.59	21.57	14.22	01.56	14.53	5.52	2.53
21	06.44	12.00	07.17	3.55	21.53	16.11	02.00	17.45	0.29	3.17
22	07.34	12.00	08.36	3.51	21.50	18.00	02.04	20.37	1.19	3.42
23	08.25	12.00	09.55	3.48	21.46	19.49	02.08	23.29	2.10	4.07
24	09.15	12.00	11.15	3.44	21.42	21.38	02.12	26.21	3.00	4.32
25	10.06	12.00	12.34	3.40	21.40	23.28	02.16	02.21	3.51	4.57
26	10.56	12.00	01.14	3.36	21,36	25.17	02.20	05.13	4.41	5.21
27	11.47	12.00	02.33	3.32	21.30	01.17	02.24	08.05	5.32	5.46
28	00.12	12.00	03.52	3.28	21.26	03.06	02.28	10.57	0.09	0.05
29	01.03	12.00	05.11	3.24	21.22	04.55	02.32	13.49	0.59	0.29
30	01.53	12.00	06.30	3.20	21.18	06.44	02.36	16.41	1.50	0.53
31	02.44	12.00	07.49	3.16	21.14	08.33	02.40	19.33	2.40	1.18

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

FEVRIER 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	03.33	12.00	09.05	3.13	21.11	10.21	2.43	22.23	3.33	1.44
2	04.23	12.00	10.24	3.09	21.07	12.10	2.47	25.15	4.23	2.09
3	05.14	12.00	11.43	3.06	21.03	13.59	2.51	01.15	5.14	2.34
4	06.04	12.00	00.22	3.02	20.59	15.48	2.55	04.07	6.04	2.56
5	06.55	12.00	01.41	2.58	20.55	17.37	2.59	06.59	0.42	3.21
6	07.45	12.00	03.00	2.54	20.51	19.26	3.03	09.51	1.32	3.46
7	08.36	12.00	04.19	2.50	20.47	21.15	3.07	12.43	2.23	4.11
8	09.26	12.00	05.38	2.46	20.43	23.05	3.11	15.32	3.13	4.36
9	10.17	12.00	06.57	2.42	20.39	24.54	3.15	18.28	4.04	5.00
10	11.07	12.00	08.16	2.38	20.36	00.54	3.19	21.20	4.54	5.25
11	11.58	12.00	09.35	2.34	20.32	02.43	3.23	24.12	5.45	5.50
12	00.23	12.00	10.54	2.30	20.28	04.32	3.27	00.12	0.22	0.09
13	01.14	12.00	12.13	2.26	20.23	06.21	3.31	03.04	1.12	0.33
14	02.04	12.00	00.53	2.22	20.19	08.10	3.35	05.56	2.03	0.58
15	02.55	12.00	02.12	2.18	20.15	09.59	3.39	08.48	2.53	1.23
16	03.45	12.00	03.31	2.14	20.11	11.49	3.43	11.40	3.44	1.48
17	04.36	12.00	04.50	2.10	20.07	13.48	3.47	14.32	4.34	2.13
18	05.26	12.00	06.09	2.07	20.04	15.27	3.51	17.25	5.25	2.37
19	06.17	12.00	07.28	2.03	20.00	17.16	3.54	20.17	0.02	3.02
20	07.17	12.00	08.47	1.59	19.56	19.05	3.58	23.09	0.52	3.27
21	07.58	12.00	10.06	1.55	19.52	20.54	4.02	26.01	1.43	3.52
22	08.48	12.00	11.25	1.51	19.48	22.44	4.06	02.01	2.33	4.17
23	09.39	12.00	00.03	1.47	19.44	24.33	4.10	04.55	3.24	4.41
24	10.29	12.00	01.22	1.43	19.40	00.33	4.14	07.45	4.14	5.06
25	11.20	12.00	02.41	1.39	19.36	02.22	4.18	10.37	5.05	5.31
26	12.10	12.00	04.00	1.35	19.32	04.11	4.22	13.29	5.55	5.56
27	00.35	12.00	05.19	1.31	19.28	06.00	4.26	16.21	0.33	0.14
28	01.26	12.00	06.38	1.27	19.24	07.49	4.30	19.13	1.23	0.39

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

MARS 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	02.16	12.00	07.59	1.24	19.22	09.38	4.34	22.06	2.16	1.07
2	03.06	12.00	09.18	1.20	19.18	11.28	4.38	24.58	3.06	1.32
3	03.57	12.00	10.37	1.26	19.14	13.17	4.42	00.58	3.57	1.57
4	04.47	12.00	11.56	1.13	19.10	15.06	4.46	03.50	4.47	2.22
5	05.38	12.00	00.35	1.09	19.06	16.55	4.50	06.42	5.38	2.47
6	06.28	12.00	01.54	1.05	19.02	18.44	4.53	09.34	0.15	3.11
7	07.19	12.00	03.13	1.01	18.58	20.33	4.57	12.26	1.05	3.36
8	08.09	12.00	04.32	0.57	18.55	22.23	5.01	15.18	1.56	4.00
9	09.00	12.00	05.51	0.53	18.51	24.12	5.05	18.10	2.46	4.25
10	09.50	12.00	07.10	0.49	18.47	00.12	5.09	21.02	3.37	4.50
11	10.41	12.00	08.29	0.45	18.43	02.01	5.13	23.54	4.27	5.15
12	11.31	12.00	09.48	0.41	18.39	03.50	5.17	26.46	5.18	5.40
13	12.22	12.00	11.07	0.37	18.35	05.39	5.21	02.46	6.08	6.05
14	00.47	12.00	12.26	0.33	18.32	07.28	5.25	05.38	0.45	0.23
15	01.38	12.00	01.05	0.29	18.28	09.17	5.29	08.30	1.35	0.48
16	02.28	12.00	02.24	0.26	18.24	11.06	5.33	11.23	2.26	1.13
17	03.19	12.00	03.43	0.22	18.20	12.56	5.37	14.15	3.16	1.38
18	04.09	12.00	05.02	0.18	18.16	14.45	5.41	17.07	4.07	2.02
19	05.00	12.00	06.21	0.14	18.12	16.34	5.45	19.59	4.57	2.27
20	05.50	12.00	07.40	0.10	18.08	18.23	5.49	22.51	5.48	2.52
21	06.41	12.00	08.59	00.06	18.04	20.12	5.53	25.43	0.25	3.17
22	07.31	12.00	10.18	00.02	18.00	22.01	5.57	01.43	1.15	3.42
23	08.22	12.00	11.37	11.58	17.56	23.51	6.01	04.35	2.06	4.06
24	09.12	12.00	00.17	11.52	17.52	25.40	6.05	07.27	2.56	4.31
25	10.03	12.00	01.36	11.48	17.48	01.40	6.09	10.19	3.47	4.56
26	10.53	12.00	02.55	11.44	17.44	03.29	6.12	13.11	4.37	5.21
27	11.43	12.00	04.14	11.40	17.40	05.17	6.16	16.03	5.28	5.46
28	00.09	12.00	05.33	11.36	17.36	07.06	6.20	18.55	0.05	0.04
29	00.59	12.00	06.52	11.32	17.33	08.55	6.24	21.47	0.55	0.29
30	01.50	12.00	08.11	11.29	17.29	10.45	6.28	24.39	1.46	0.54
31	02.40	12.00	09.30	11.25	17.25	12.34	6.32	00.39	2.36	1.19

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

AVRIL 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	03.30	12.00	10.49	11.21	17.21	14.21	6.37	03.30	3.31	1.42
2	04.20	12.00	12.08	11.17	17.17	16.10	6.41	06.22	4.21	2.07
3	05.11	12.00	00.47	11.13	17.13	17.59	6.45	09.14	5.12	2.32
4	06.01	12.00	02.06	11.09	17.09	19.48	6.49	12.06	6.02	2.57
5	06.52	12.00	03.25	11.05	17.05	21.37	6.53	14.59	0.40	3.22
6	07.42	12.00	04.44	11.01	17.01	23.27	6.57	17.50	1.30	3.46
7	08.33	12.00	06.03	10.57	16.57	25.16	7.01	20.42	2.21	4.11
8	09.23	12.00	07.22	10.53	16.53	01.16	7.05	23.34	3.11	4.36
9	10.14	12.00	08.41	10.50	16.49	03.05	7.09	26.26	4.02	5.01
10	11.04	12.00	10.00	10.46	16.46	04.54	7.13	02.26	4.52	5.26
11	11.55	12.00	11.19	10.42	16.42	06.43	7.17	05.18	5.43	5.51
12	00.20	12.00	12.38	10.38	16.38	08.32	7.21	08.10	0.20	0.09
13	01.10	12.00	01.18	10.34	16.34	10.22	7.25	11.02	1.10	0.34
14	02.01	12.00	02.37	10.30	16.30	12.11	7.28	13.54	2.01	0.59
15	02.51	12.00	03.56	10.26	16.26	14.00	7.32	16.46	2.51	1.24
16	03.42	12.00	05.15	10.22	16.22	15.47	7.36	19.38	3.42	1.48
17	04.32	12.00	06.34	10.18	16.18	17.38	7.40	22.30	4.32	2.13
18	05.23	12.00	07.53	10.14	16.14	19.27	7.44	25.22	5.23	2.38
19	06.13	12.00	09.12	10.10	16.10	21.16	7.48	01.22	0.00	3.03
20	07.04	12.00	10.31	10.06	16.06	23.06	7.52	04.14	0.50	3.28
21	07.54	12.00	11.50	10.02	16.02	24.55	7.56	07.06	1.41	3.52
22	08.45	12.00	00.29	09.58	15.58	00.55	8.00	09.58	2.31	4.17
23	09.35	12.00	01.48	09.55	15.54	02.44	8.04	12.50	3.22	4.42
24	10.26	12.00	03.07	09.51	15.51	04.33	8.08	15.43	4.12	5.07
25	11.16	12.00	04.26	09.47	15.47	06.22	8.12	18.35	5.03	5.32
26	12.07	12.00	05.45	09.43	15.43	08.11	8.16	21.27	5.53	5.56
27	00.32	12.00	07.04	09.39	15.39	10.01	8.20	24.19	0.31	0.15
28	01.22	12.00	08.23	09.35	15.35	11.50	8.24	00.19	1.21	0.40
29	02.13	12.00	09.42	09.31	15.31	13.39	8.28	03.11	2.12	1.05
30	03.03	12.00	11.01	09.27	15.27	15.28	8.32	06.03	3.02	1.29

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

MAI 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	03.54	12.00	12.22	09.25	15.25	17.16	08.35	08.55	3.55	1.55
2	04.45	12.00	01.01	09.21	15.21	19.05	08.39	11.47	4.45	2.20
3	05.35	12.00	02.20	09.17	15.17	20.55	08.43	14.39	5.36	2.45
4	06.25	12.00	03.39	09.14	15.13	22.44	08.47	17.31	0.14	3.10
5	07.16	12.00	04.58	09.10	15.09	24.33	08.51	20.23	1.04	3.34
6	08.06	12.00	06.17	09.06	15.05	00.33	08.55	23.16	1.55	3.59
7	08.57	12.00	07.36	09.02	15.01	02.22	08.59	26.08	2.45	4.24
8	09.47	12.00	08.55	08.58	14.57	04.11	09.03	02.08	3.36	4.48
9	10.38	12.00	10.14	08.54	14.53	06.00	09.07	05.00	4.26	5.13
10	11.28	12.00	11.33	08.50	14.49	07.50	09.11	07.52	5.17	5.38
11	12.19	12.00	00.13	08.46	14.45	09.39	09.15	10.44	6.09	6.03
12	00.44	12.00	01.32	08.42	14.41	11.27	09.19	13.36	0.47	0.21
13	01.34	12.00	02.51	08.38	14.37	13.16	09.23	16.29	1.37	0.46
14	02.25	12.00	04.10	08.34	14.33	15.06	09.27	19.21	2.28	1.11
15	03.15	12.00	05.29	08.30	14.29	16.55	09.31	22.13	3.18	1.36
16	04.06	12.00	06.48	08.26	14.25	18.44	09.35	25.05	4.09	2.01
17	04.56	12.00	08.07	08.22	14.21	20.33	09.39	01.05	4.59	2.25
18	05.47	12.00	09.26	08.18	14.17	22.22	09.43	03.58	5.50	2.50
19	06.37	12.00	10.45	08.15	14.14	24.11	09.47	06.50	0.27	3.15
20	07.28	12.00	12.04	08.11	14.10	00.11	09.50	09.42	1.17	3.40
21	08.18	12.00	00.44	08.07	14.06	02.00	09.54	12.34	2.08	4.05
22	09.09	12.00	02.03	08.03	14.02	03.50	09.58	15.26	2.58	4.29
23	09.59	12.00	03.22	07.59	13.58	05.39	10.02	18.19	3.49	4.54
24	10.50	12.00	04.41	07.55	13.54	07.28	10.06	21.11	4.39	5.19
25	11.40	12.00	06.01	07.51	13.50	09.17	10.10	24.03	5.30	5.44
26	00.06	12.00	07.20	07.47	13.46	11.06	10.14	26.56	0.07	0.02
27	00.56	12.00	08.39	07.43	13.42	12.55	10.18	02.56	0.57	0.27
28	01.47	12.00	09.58	07.39	13.38	14.45	10.22	05.48	1.48	0.52
29	02.37	12.00	11.17	07.35	13.34	16.34	10.26	08.40	2.38	1.17
30	03.28	12.00	12.36	07.31	13.30	18.23	10.30	11.32	3.29	1.42
31	04.18	12.00	01.14	07.27	13.26	20.12	10.34	14.18	4.19	2.06

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

JUIN 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	05.08	12.00	02.32	07.25	13.25	22.01	10.38	17.11	5.08	2.31
2	05.58	12.00	03.51	07.22	13.22	23.50	10.42	20.03	5.58	2.56
3	06.49	12.00	05.10	07.18	13.18	25.40	10.46	22.55	0.36	3.21
4	07.39	12.00	06.29	07.12	13.14	01.40	10.50	25.47	1.26	3.46
5	08.30	12.00	07.48	07.08	13.10	03.29	10.54	01.47	2.17	4.11
6	09.21	12.00	09.07	07.04	13.06	05.18	10.58	04.39	3.07	4.35
7	10.11	12.00	10.26	07.00	13.02	07.07	11.01	07.31	3.58	5.00
8	11.01	12.00	11.45	06.56	12.58	08.56	11.05	10.23	4.48	5.25
9	11.52	12.00	00.25	06.52	12.54	10.45	11.09	13.15	5.39	5.50
10	00.17	12.00	01.44	06.48	12.50	12.35	11.13	16.07	0.16	0.08
11	01.07	12.00	03.03	06.44	12.46	14.24	11.17	18.59	1.06	0.33
12	01.58	12.00	04.22	06.40	12.42	16.12	11.21	21.51	1.57	0.58
13	02.48	12.00	05.41	06.36	12.38	18.01	11.25	24.43	2.47	1.23
14	03.39	12.00	07.00	06.33	12.34	19.51	11.29	00.43	3.38	1.48
15	04.29	12.00	08.19	06.29	12.31	21.40	11.33	03.35	4.28	2.12
16	05.20	12.00	09.38	06.25	12.27	23.28	11.37	06.27	5.19	2.37
17	06.10	12.00	10.57	06.21	12.23	25.17	11.41	09.19	6.09	3.02
18	07.01	12.00	12.16	06.17	12.19	01.17	11.45	12.11	0.47	3.27
19	07.51	12.00	00.55	06.13	12.15	03.06	11.49	15.04	1.37	3.52
20	08.42	12.00	02.14	06.09	12.11	04.55	11.53	17.55	2.28	4.16
21	09.32	12.00	03.33	06.05	12.07	06.44	11.57	20.47	3.18	4.41
22	10.23	12.00	04.52	06.01	12.03	08.34	12.01	23.39	4.09	5.06
23	11.13	12.00	06.11	05.57	11.59	10.24	12.05	26.32	4.59	5.31
24	12.04	12.00	07.30	05.53	11.55	12.12	12.09	02.32	5.50	5.56
25	00.29	12.00	08.49	05.49	11.51	14.00	12.13	05.24	0.27	0.14
26	01.19	12.00	10.08	05.45	11.47	15.50	12.17	08.16	1.17	0.39
27	02.10	12.00	11.27	05.41	11.43	17.33	12.20	11.08	2.08	1.04
28	03.00	12.00	00.06	05.37	11.39	19.29	12.24	14.00	2.58	1.29
29	03.51	12.00	01.25	05.34	11.35	21.18	12.28	16.52	3.49	1.53
30	04.41	12.00	02.44	05.30	11.32	23.07	12.32	19.44	4.39	2.18

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

JUILLET 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	05.32	12.00	04.04	05.27	11.27	24.55	12.37	22.35	5.32	2.42
2	06.21	12.00	05.23	05.23	11.23	00.55	12.41	25.27	0.09	3.07
3	07.12	12.00	06.42	05.19	11.19	02.44	12.45	01.27	0.59	3.32
4	08.02	12.00	08.01	05.15	11.15	04.33	12.49	04.19	1.50	3.56
5	08.53	12.00	09.20	05.11	11.11	06.22	12.53	07.12	2.40	4.21
6	09.43	12.00	10.39	05.07	11.07	08.12	12.57	10.04	3.31	4.46
7	10.34	12.00	11.58	05.03	11.03	10.01	13.01	12.56	4.21	5.11
8	11.24	12.00	00.38	04.59	10.59	11.50	13.05	15.48	5.12	5.36
9	12.15	12.00	01.57	04.55	10.55	13.39	13.09	18.40	6.02	6.01
10	00.40	12.00	03.16	04.52	10.51	15.28	13.13	21.32	0.40	0.19
11	01.30	12.00	04.35	04.48	10.48	17.17	13.17	24.24	1.30	0.44
12	02.21	12.00	05.54	04.44	10.44	19.05	13.21	00.24	2.21	1.09
13	03.11	12.00	07.13	04.40	10.40	20.54	13.25	03.16	3.11	1.33
14	04.02	12.00	08.32	04.36	10.36	22.43	13.28	06.08	4.02	1.58
15	04.52	12.00	09.51	04.32	10.32	24.32	13.32	09.01	4.52	2.23
16	05.43	12.00	11.10	04.28	10.28	00.32	13.36	11.53	5.43	2.48
17	06.33	12.00	12.29	04.24	10.24	02.21	13.40	14.47	0.20	3.13
18	07.24	12.00	01.08	04.20	10.20	04.10	13.44	17.37	1.10	3.37
19	08.14	12.00	02.27	04.16	10.16	06.00	13.48	20.29	2.01	4.02
20	09.05	12.00	03.46	04.12	10.12	07.49	13.52	23.21	2.51	4.27
21	09.55	12.00	05.05	04.08	10.08	09.38	13.56	26.13	3.42	4.52
22	10.46	12.00	06.24	04.04	10.04	11.27	14.00	02.13	4.32	5.17
23	11.36	12.00	07.43	04.00	10.00	13.16	14.04	05.05	5.23	5.41
24	00.02	12.00	09.02	03.57	09.57	15.05	14.08	07.57	0.00	0.00
25	00.52	12.00	10.21	03.53	09.53	16.56	14.12	10.49	0.50	0.25
26	01.43	12.00	11.40	03.49	09.49	18.44	14.16	13.41	1.41	0.50
27	02.33	12.00	00.20	03.45	09.45	20.33	14.20	16.33	2.31	1.14
28	03.24	12.00	01.39	03.41	09.41	22.22	14.24	19.25	3.22	1.39
29	04.14	12.00	02.58	03.37	09.37	24.11	14.28	22.17	4.12	2.04
30	05.05	12.00	04.17	03.33	09.33	00.11	14.32	25.09	5.03	2.29
31	05.55	12.00	05.36	03.29	09.29	02.00	14.36	01.09	5.53	2.54

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

AOUT 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS
1	06.46	12.00	06.55	03.26	09.26	03.50	14.39	04.03	0.33	3.19
2	07.36	12.00	08.14	03.22	09.22	05.39	14.43	06.55	1.23	3.44
3	08.27	12.00	09.33	03.18	09.18	07.28	14.47	09.47	2.14	4.09
4	09.17	12.00	10.52	03.15	09.14	09.17	14.51	12.39	3.04	4.34
5	10.08	12.00	12.11	03.11	09.10	11.06	14.55	15.32	3.55	4.59
6	10.58	12.00	00.51	03.07	09.06	12.55	14.59	18.24	4.45	5.23
7	11.49	12.00	02.10	03.03	09.02	14.44	15.03	21.16	5.36	5.48
8	00.14	12.00	03.29	02.59	08.58	16.34	15.07	24.08	0.13	0.07
9	01.04	12.00	04.48	02.55	08.54	18.23	15.11	00.08	1.03	0.31
10	01.55	12.00	06.07	02.51	08.50	20.12	15.15	03.00	1.54	0.56
11	02.45	12.00	07.26	02.47	08.46	22.01	15.19	05.52	2.44	1.21
12	03.36	12.00	08.45	02.43	08.42	23.50	15.23	08.44	3.35	1.46
13	04.26	12.00	10.04	02.39	08.38	25.39	15.27	11.36	4.25	2.11
14	05.17	12.00	11.23	02.35	08.34	01.39	15.31	14.28	5.16	2.35
15	06.07	12.00	00.02	02.31	08.30	03.28	15.35	17.21	6.06	3.00
16	06.58	12.00	01.21	02.27	08.26	05.17	15.39	20.13	0.44	3.25
17	07.48	12.00	02.40	02.23	08.22	07.07	15.43	23.05	1.34	3.50
18	08.39	12.00	03.59	02.19	08.18	08.56	15.47	25.57	2.25	4.15
19	09.29	12.00	05.18	02.16	08.15	10.45	15.51	01.57	3.15	4.39
20	10.20	12.00	06.37	02.12	08.11	12.34	15.54	04.49	4.06	5.04
21	11.10	12.00	07.56	02.08	08.07	14.23	15.58	07.41	4.56	5.29
22	12.01	12.00	09.15	02.04	08.03	16.12	16.02	10.33	5.47	5.54
23	00.26	12.00	10.34	02.00	07.59	18.02	16.06	13.25	0.24	0.12
24	01.17	12.00	11.53	01.56	07.55	19.51	16.10	16.17	1.14	0.37
25	02.07	12.00	00.32	01.52	07.51	21.40	16.14	19.09	2.05	1.02
26	02.57	12.00	01.52	01.48	07.47	23.29	16.18	22.01	2.55	1.27
27	03.48	12.00	03.11	01.44	07.43	25.18	16.22	24.53	3.46	1.52
28	04.38	12.00	04.30	01.40	07.39	01.18	16.26	00.53	4.36	2.16
29	05.29	12.00	05.49	01.36	07.35	03.07	16.30	03.45	5.27	2.41
30	06.19	12.00	07.08	01.32	07.31	04.57	16.34	06.37	0.04	3.06
31	07.10	12.00	08.27	01.28	07.27	06.37	16.38	09.29	0.54	3.31

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

SEPTEMBRE 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	08.00	12.00	09.44	01.26	07.26	08.37	16.42	12.18	1.47	3.56
2	08.50	12.00	11.03	01.22	07.22	10.21	16.46	15.10	2.37	4.20
3	09.41	12.00	12.22	01.19	07.19	12.10	16.50	18.02	3.28	4.55
4	10.31	12.00	01.01	01.15	07.15	13.59	16.54	20.54	4.18	5.10
5	11.22	12.00	02.20	01.11	07.11	15.49	16.58	23.46	5.09	5.35
6	12.12	12.00	03.39	01.07	07.07	17.38	17.01	26.38	5.59	6.00
7	00.38	12.00	04.58	01.03	07.03	19.27	17.05	02.38	0.37	0.19
8	01.28	12.00	06.17	00.59	06.59	21.16	17.09	05.30	1.27	0.44
9	02.19	12.00	07.36	00.55	06.55	23.05	17.13	08.22	2.18	1.09
10	03.09	12.00	08.55	00.51	06.51	24.54	17.17	11.15	3.08	1.34
11	04.00	12.00	10.14	00.47	06.47	00.55	17.21	14.07	3.59	1.59
12	04.50	12.00	11.33	00.43	06.43	02.45	17.25	16.59	4.49	2.23
13	05.41	12.00	00.13	00.40	06.39	04.34	17.29	19.51	5.40	2.48
14	06.31	12.00	01.32	00.36	06.35	06.23	17.33	22.43	0.17	3.13
15	07.22	12.00	02.51	00.32	06.32	08.12	17.37	25.35	1.07	3.38
16	08.12	12.00	04.10	00.28	06.28	10.01	17.41	01.35	1.58	4.03
17	09.03	12.00	05.29	00.24	06.24	11.50	17.45	04.27	2.48	4.27
18	09.53	12.00	06.48	00.20	06.20	13.39	17.49	07.19	3.39	4.52
19	10.44	12.00	08.07	00.16	06.16	15.28	17.53	10.11	4.29	5.17
20	11.34	12.00	09.26	00.12	06.12	17.18	17.57	13.03	5.20	5.42
21	00.00	12.00	10.45	00.08	06.08	19.07	18.01	15.55	6.10	0.00
22	00.50	12.00	12.04	00.02	06.04	20.56	18.05	18.47	0.48	0.25
23	01.41	12.00	00.43	11.58	06.00	22.45	18.09	21.39	1.38	0.50
24	02.31	12.00	02.02	11.54	05.56	24.34	18.13	24.31	2.29	1.15
25	03.22	12.00	03.21	11.50	05.52	00.34	18.17	00.31	3.19	1.40
26	04.12	12.00	04.40	11.46	05.48	02.23	18.20	03.23	4.10	2.04
27	05.03	12.00	05.59	11.43	05.44	04.13	18.24	06.15	5.00	2.29
28	05.53	12.00	07.18	11.39	05.40	06.02	18.28	09.07	5.51	2.54
29	06.44	12.00	08.37	11.35	05.36	07.51	18.32	11.59	0.28	3.19
30	07.34	12.00	09.56	11.31	05.33	09.40	18.36	14.51	1.18	3.44

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

OCTOBRE 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	08.23	12.00	11.16	11.27	05.29	11.27	18.40	17.44	2.12	4.07
2	09.14	12.00	12.35	11.23	05.25	13.17	18.44	20.36	3.02	4.32
3	10.04	12.00	01.14	11.18	05.21	15.06	18.48	23.28	3.53	4.57
4	10.54	12.00	02.33	11.15	05.17	16.55	18.52	26.20	4.43	5.22
5	11.45	12.00	03.52	11.11	05.13	18.44	18.56	02.20	5.34	5.47
6	00.10	12.00	05.11	11.07	05.09	20.33	19.00	05.12	0.11	0.05
7	01.00	12.00	06.30	11.03	05.05	22.22	19.04	08.04	1.01	0.30
8	01.51	12.00	07.49	10.59	05.01	24.11	19.08	10.56	1.52	0.54
9	02.41	12.00	09.08	10.56	04.57	00.11	19.12	13.48	2.42	1.19
10	03.32	12.00	10.27	10.52	04.54	02.01	19.16	16.40	3.33	1.44
11	04.22	12.00	11.46	10.48	04.50	03.50	19.20	19.32	4.23	2.09
12	05.13	12.00	00.26	10.44	04.46	05.39	19.24	22.24	5.14	2.34
13	06.03	12.00	01.45	10.40	04.42	07.28	19.28	25.16	6.04	2.58
14	06.54	12.00	03.04	10.36	04.38	09.18	19.31	01.16	0.42	3.23
15	07.44	12.00	04.23	10.32	04.34	11.07	19.35	04.08	1.32	3.48
16	08.35	12.00	05.42	10.28	04.30	12.56	19.39	07.01	2.23	4.13
17	09.25	12.00	07.01	10.24	04.26	14.45	19.43	09.53	3.13	4.38
18	10.16	12.00	08.20	10.20	04.22	16.34	19.47	12.45	4.04	5.02
19	11.06	12.00	09.39	10.16	04.18	18.23	19.51	15.37	4.54	5.27
20	11.57	12.00	10.58	10.12	04.14	20.13	19.55	18.29	5.45	5.52
21	00.22	12.00	12.17	10.08	04.10	22.02	19.59	21.21	0.22	0.11
22	01.12	12.00	00.56	10.04	04.06	23.51	20.03	24.13	1.12	0.35
23	02.03	12.00	02.15	10.01	04.02	25.40	20.07	00.13	2.03	1.00
24	02.53	12.00	03.34	09.57	03.59	01.40	20.11	03.05	2.53	1.25
25	03.44	12.00	04.53	09.53	03.55	03.29	20.15	05.57	3.44	1.50
26	04.34	12.00	06.12	09.49	03.51	05.18	20.19	08.50	4.34	2.15
27	05.25	12.00	07.31	09.45	03.47	07.08	20.23	11.42	5.25	2.39
28	06.15	12.00	08.50	09.41	03.43	08.57	20.27	14.34	0.02	3.04
29	07.06	12.00	10.09	09.37	03.39	10.46	20.31	17.26	0.52	3.29
30	07.56	12.00	11.28	09.33	03.35	12.35	20.35	20.18	1.43	3.54
31	08.47	12.00	00.07	09.29	03.31	14.24	20.39	23.10	2.33	4.19

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

NOVEMBRE 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	09.38	12.00	01.28	09.26	03.28	16.12	20.42	26.01	3.25	4.43
2	10.28	12.00	02.47	09.22	03.24	18.02	20.46	02.01	4.15	5.08
3	11.19	12.00	04.06	09.18	03.20	19.51	20.50	04.53	5.06	5.33
4	12.09	12.00	05.25	09.14	03.16	21.40	20.54	07.35	5.56	5.58
5	00.35	12.00	06.44	09.10	03.13	23.29	20.58	10.37	0.34	0.16
6	01.25	12.00	08.03	09.06	03.09	25.19	21.02	13.29	1.24	0.41
7	02.16	12.00	09.22	09.02	03.05	01.19	21.06	16.21	2.15	1.06
8	03.06	12.00	10.41	08.58	03.01	03.08	21.10	19.13	3.05	1.30
9	03.57	12.00	12.00	08.54	02.57	04.57	21.14	22.05	3.56	1.55
10	04.47	12.00	00.40	08.49	02.53	06.46	21.18	24.57	4.46	2.20
11	05.38	12.00	01.59	08.46	02.49	08.35	21.22	00.57	5.37	2.45
12	06.28	12.00	03.18	08.42	02.45	10.24	21.26	03.49	0.14	3.10
13	07.19	12.00	04.37	08.38	02.41	12.13	21.30	06.41	1.04	3.34
14	08.09	12.00	05.56	08.34	02.37	14.03	21.34	09.33	1.55	3.59
15	09.00	12.00	07.15	08.30	02.33	15.52	21.38	12.25	2.45	4.24
16	09.50	12.00	08.34	08.26	02.29	17.49	21.42	15.18	3.36	4.48
17	10.41	12.00	09.53	08.22	02.25	19.38	21.46	18.10	4.26	5.13
18	11.31	12.00	11.12	08.18	02.21	21.27	21.50	21.02	5.17	5.38
19	12.22	12.00	12.31	08.15	02.17	23.17	21.54	23.54	6.07	6.03
20	00.47	12.00	01.10	08.11	02.14	25.06	21.57	26.46	0.45	0.21
21	01.37	12.00	02.29	08.07	02.09	01.06	22.01	02.46	1.35	0.46
22	02.28	12.00	03.48	08.03	02.06	02.55	22.05	05.38	2.26	1.11
23	03.18	12.00	05.07	07.59	02.02	04.44	22.09	08.30	3.16	1.36
24	04.09	12.00	06.26	07.55	01.58	06.33	22.13	11.22	4.07	2.01
25	04.59	12.00	07.45	07.51	01.54	08.22	22.17	14.14	4.57	2.25
26	05.50	12.00	09.04	07.47	01.50	10.12	22.21	17.07	5.48	2.50
27	06.40	12.00	10.23	07.43	01.46	12.01	22.25	19.59	0.25	3.15
28	07.31	12.00	11.41	07.39	01.42	13.50	22.29	22.51	1.15	3.40
29	08.21	12.00	00.21	07.35	01.38	15.39	22.33	25.43	2.06	4.05
30	09.12	12.00	01.40	07.31	01.34	17.28	22.37	01.43	2.56	4.29

HEURES DES POTENTIELS MAXIMA A GREENWICH
TIMES OF POTENTIAL HIGH WATERS AT GREENWICH

DECEMBRE 1941 TABLE Tm

JOUR DU MOIS	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4
1	10.01	12.00	02.59	07.29	01.31	19.07	22.42	04.34	3.49	4.55
2	10.51	12.00	04.18	07.25	01.27	20.56	22.46	07.26	4.39	5.20
3	11.42	12.00	05.37	07.22	01.23	22.46	22.50	10.18	5.30	5.45
4	00.07	12.00	06.56	07.18	01.20	24.35	22.54	13.10	0.07	0.03
5	00.57	12.00	08.15	07.14	01.16	00.35	22.58	16.02	0.57	0.28
6	01.48	12.00	09.34	07.10	01.12	02.24	23.01	18.54	1.48	0.53
7	02.38	12.00	10.53	07.06	01.08	04.13	23.05	21.46	2.38	1.18
8	03.29	12.00	12.12	07.02	01.04	06.02	23.09	24.38	3.29	1.43
9	04.19	12.00	00.51	06.58	01.00	07.51	23.13	00.38	4.19	2.07
10	05.10	12.00	02.10	06.54	00.56	09.40	23.17	03.30	5.10	2.32
11	06.00	12.00	03.29	06.50	00.52	11.30	23.21	06.22	6.00	2.57
12	06.51	12.00	04.48	06.46	00.48	13.19	23.25	09.14	0.38	3.22
13	07.41	12.00	06.07	06.42	00.44	15.08	23.29	12.06	1.28	3.47
14	08.32	12.00	07.26	06.39	00.40	16.57	23.33	14.58	2.19	4.12
15	09.22	12.00	08.45	06.35	00.37	18.46	23.37	17.50	3.09	4.36
16	10.13	12.00	10.04	06.31	00.33	20.34	23.41	20.41	4.00	5.01
17	11.03	12.00	11.23	06.27	00.29	22.24	23.45	23.33	4.50	5.26
18	11.54	12.00	00.03	06.23	00.25	24.13	23.49	26.25	5.41	5.51
19	00.19	12.00	01.22	06.19	00.21	00.13	23.53	02.25	0.18	0.09
20	01.09	12.00	02.41	06.15	00.17	02.02	23.57	05.17	1.08	0.34
21	02.00	12.00	04.00	06.11	00.13	03.51	24.01	08.09	1.59	0.59
22	02.50	12.00	05.19	06.07	00.09	05.40	00.01	11.02	2.49	1.24
23	03.41	12.00	06.38	06.03	00.03	07.29	00.05	13.54	3.40	1.49
24	04.31	12.00	07.57	05.59	23.59	09.18	00.09	16.46	4.30	2.13
25	05.22	12.00	09.16	05.55	23.55	11.08	00.13	19.38	5.21	2.38
26	06.12	12.00	10.35	05.51	23.51	12.57	00.17	22.30	6.11	3.03
27	07.03	12.00	11.54	05.47	23.47	14.46	00.20	25.22	0.49	3.28
28	07.53	12.00	00.33	05.43	23.43	16.35	00.24	01.22	1.39	3.53
29	08.44	12.00	01.52	05.40	23.39	18.24	00.28	04.14	2.31	4.17
30	09.34	12.00	03.11	05.36	23.35	20.33	00.32	07.06	3.21	4.42
31	10.25	12.00	04.30	05.32	23.31	22.03	00.36	09.58	4.12	5.07

TABLE C pour la correction des situations. for phase lag correction.

Table $(p-\frac{n}{15})$ S°

(S = longitude du méridien central du fuseau,
n = vitesse horaire de la composante).
(S = longitude of the central meridian of the zone,
n = hourly speed of the component).

S	S°	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
0	0	0°	0°	0°	−0°	−0°	0°	0°	0°	0°	0°	−0°	−0°
1	15	1.0	0	1.6	−0.1	−0.0	1.0	0.0	1.6	2.0	1.0	−0.0	−0.1
2	30	2.0	0	3.1	−0.1	−0.1	2.1	0.1	3.2	4.1	2.0	−0.1	−0.1
3	45	3.0	0	4.7	−0.2	−0.1	3.2	0.1	4.8	6.1	3.0	−0.1	−0.2
4	60	4.1	0	6.2	−0.3	−0.2	4.2	0.2	6.4	8.1	4.1	−0.2	−0.3
5	75	5.1	0	7.8	−0.4	−0.2	5.3	0.2	8.0	10.2	5.1	−0.2	−0.4
6	90	6.1	0	9.4	−0.5	−0.2	6.3	0.2	9.6	12.2	6.1	−0.2	−0.5
7	105	7.1	0	10.9	−0.6	−0.3	7.4	0.3	11.2	14.2	7.1	−0.3	−0.6
8	120	8.1	0	12.5	−0.7	−0.3	8.5	0.3	12.8	16.2	8.1	−0.3	−0.7
9	135	9.1	0	14.0	−0.7	−0.4	9.5	0.4	14.3	18.3	9.1	−0.4	−0.7
10	150	10.2	0	15.6	−0.8	−0.4	10.6	0.4	16.0	20.3	10.2	−0.4	−0.8
11	165	11.2	0	17.2	−0.9	−0.4	11.6	0.4	17.6	22.3	11.2	−0.4	−0.9
12	180	12.2	0	18.7	−1.0	−0.5	12.7	0.5	19.2	24.4	12.2	−0.5	−1.0

If S is West of Greenwich use sign in Table.
If S is East of Greenwich reverse sign in Table.

Si S est Ouest de Greenwich, prendre le signe de la Table
Si S est Est de Greenwich, changer le signe de la Table.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g °	M_2 h m	S_2 h m	N_2 h m	K_2 h m	K_1 h m	O_1 h m	P_1 h m	Q_1 h m	M_4 h m	MS_4 h m	S_a	S_{sa}
001	00.02	00.02	00.02	00.02	00.04	00.04	00.04	00.05	00.01	00.01	22 MARS	22 MARS - SEPT.
002	00.04	00.04	00.04	00.04	00.08	00.09	00.08	00.09	00.02	00.02	23 "	22 " "
003	00.06	00.06	00.06	00.06	00.12	00.13	00.12	00.13	00.03	00.03	24 "	23 " "
004	00.08	00.08	00.08	00.08	00.16	00.17	00.16	00.18	00.04	00.04	25 "	23 " "
005	00.10	00.10	00.11	00.10	00.20	00.22	00.20	00.22	00.05	00.05	26 MARS	24 MARS - SEPT.
006	00.12	00.12	00.13	00.12	00.24	00.26	00.24	00.27	00.06	00.06	27 "	24 " "
007	00.14	00.14	00.15	00.14	00.28	00.30	00.28	00.31	00.07	00.07	28 "	25 " "
008	00.17	00.16	00.17	00.16	00.32	00.34	00.32	00.36	00.08	00.08	29 "	25 " "
009	00.19	00.18	00.19	00.18	00.36	00.39	00.36	00.40	00.09	00.09	30 "	26 " "
010	00.21	00.20	00.21	00.20	00.40	00.43	00.40	00.45	00.10	00.10	31 MARS	26 MARS - SEPT.
011	00.23	00.22	00.23	00.22	00.44	00.47	00.44	00.49	00.11	00.11	1er AVR.	27 MARS - SEPT.
012	00.25	00.24	00.25	00.24	00.48	00.52	00.48	00.54	00.12	00.12	2 "	27 " "
013	00.27	00.26	00.27	00.26	00.52	00.56	00.52	00.58	00.14	00.13	3 "	28 " "
014	00.29	00.28	00.30	00.28	00.56	01.00	00.56	01.03	00.15	00.14	4 "	28 " "
015	00.31	00.30	00.32	00.30	01.00	01.05	01.00	01.07	00.16	00.15	5 AVR.	29 MARS - SEPT.
016	00.33	00.32	00.34	00.32	01.04	01.09	01.04	01.12	00.17	00.16	6 "	29 " "
017	00.35	00.34	00.36	00.34	01.08	01.13	01.08	01.16	00.18	00.17	7 "	30 " "
018	00.37	00.36	00.38	00.36	01.12	01.18	01.12	01.21	00.19	00.18	8 "	30 MARS - SEPT.
019	00.39	00.38	00.40	00.38	01.16	01.22	01.16	01.25	00.20	00.19	9 "	31 MARS - 1er OCT.
020	00.41	00.40	00.42	00.40	01.20	01.26	01.20	01.30	00.21	00.20	10 AVR.	31 MARS - 1er OCT.
021	00.43	00.42	00.44	00.42	01.24	01.30	01.24	01.34	00.22	00.21	11 AVR.	1er AVR. - 1er OCT.
022	00.46	00.44	00.46	00.44	01.28	01.35	01.28	01.39	00.23	00.22	12 "	1er AVR. - 2 OCT.
023	00.48	00.46	00.49	00.46	01.32	01.39	01.32	01.43	00.24	00.23	14 "	2 AVR. - 2 OCT
024	00.50	00.48	00.51	00.48	01.36	01.43	01.36	01.48	00.25	00.24	15 "	2 AVR. - 2 OCT
025	00.52	00.50	00.53	00.50	01.40	01.48	01.40	01.52	00.26	00.25	16 AVR	3 AVR. - OCT.
026	00.54	00.52	00.55	00.52	01.44	01.52	01.44	01.56	00.27	00.26	17 "	3 " "
027	00.56	00.54	00.57	00.54	01.48	01.56	01.48	02.01	00.28	00.28	18 "	4 AVR. - OCT.
028	00.58	00.56	00.59	00.56	01.52	02.01	01.52	02.05	00.29	00.29	19 "	4 " "
029	01.00	00.58	01.01	00.58	01.56	02.05	01.56	02.10	00.30	00.30	20 "	5 " "
030	01.02	01.00	01.03	01.00	02.00	02.09	02.00	02.14	00.31	00.31	21 AVR	5 AVR. - OCT.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g °	M_2 h m	S_2 h m	N_2 h m	K_2 h m	K_1 h m	O_1 h m	P_1 h m	Q_1 h m	M_4 h m	MS_4 h m	S_a	S_{sa}
031	01.04	01.02	01.05	01.02	02.04	02.13	02.04	02.19	00.32	00.32	22 AVR	6 AVR - OCT
032	01.06	01.04	01.08	01.04	02.08	02.18	02.08	02.23	00.33	00.33	23 "	6 " "
033	01.08	01.06	01.10	01.06	02.12	02.22	02.12	02.28	00.34	00.34	24 "	7 " "
034	01.10	01.08	01.12	01.08	02.16	02.26	02.16	02.32	00.35	00.35	25 "	7 " "
035	01.12	01.10	01.14	01.10	02.20	02.31	02.20	02.37	00.36	00.36	26 AVR.	8 AVR. - OCT.
036	01.15	01.12	01.16	01.12	02.24	02.35	02.24	02.43	00.37	00.37	27 "	8 " "
037	01.17	01.14	01.18	01.14	02.28	02.39	02.28	02.46	00.38	00.38	28 "	9 " "
038	01.19	01.16	01.20	01.16	02.32	02.44	02.32	02.50	00.39	00.39	29 AVR.	9 " "
039	01.21	01.18	01.22	01.18	02.36	02.48	02.36	02.55	00.40	00.40	30 AVR.	10 " "
040	01.23	01.20	01.24	01.20	02.40	02.52	02.40	02.59	00.41	00.41	1er MAI	10 AVR. - OCT.
041	01.25	01.22	01.27	01.22	02.44	02.56	02.44	03.04	00.42	00.42	2 MAI	11 AVR. - OCT.
042	01.27	01.24	01.29	01.24	02.48	03.01	02.48	03.08	00.44	00.43	3 "	11 " "
043	01.29	01.26	01.31	01.26	02.52	03.05	02.53	03.13	00.45	00.44	4 "	12 " "
044	01.31	01.28	01.33	01.28	02.56	03.09	02.57	03.17	00.46	00.45	5 "	12 AVR. - OCT
045	01.33	01.30	01.36	01.30	03.00	03.14	03.01	03.22	00.47	00.46	6 MAI	13 "
046	01.35	01.32	01.37	01.32	03.04	03.18	03.05	03.26	00.48	00.47	7 "	14 "
047	01.37	01.34	01.39	01.34	03.08	03.22	03.09	03.30	00.49	00.48	8 "	15 AVR - OCT
048	01.39	01.36	01.41	01.36	03.12	03.27	03.13	03.35	00.50	00.49	9 "	15 "
049	01.41	01.38	01.43	01.38	03.16	03.31	03.17	03.39	00.51	00.50	10 "	16 "
050	01.43	01.40	01.46	01.40	03.20	03.35	03.21	03.44	00.52	00.51	11 MAI	16 AVR. - OCT
051	01.46	01.42	01.48	01.42	03.24	03.40	03.25	03.48	00.53	00.52	12 MAI	17 AVR - OCT
052	01.48	01.44	01.50	01.44	03.28	03.44	03.29	03.53	00.54	00.53	13 "	17 "
053	01.50	01.46	01.52	01.46	03.31	03.48	03.33	03.57	00.55	00.54	14 "	18 "
054	01.52	01.48	01.54	01.48	03.35	03.52	03.37	04.02	00.56	00.55	15 "	18 "
055	01.54	01.50	01.56	01.50	03.39	03.57	03.41	04.06	00.57	00.56	16 MAI	19 AVR - OCT
056	01.56	01.52	01.58	01.52	03.43	04.01	03.45	04.11	00.58	00.57	17 "	19 "
057	01.58	01.54	02.00	01.54	03.47	04.05	03.49	04.15	00.59	00.58	18 "	20 "
058	02.00	01.56	02.02	01.56	03.51	04.10	03.53	04.20	01.00	00.59	19 "	20 "
059	02.02	01.58	02.05	01.58	03.55	04.14	03.57	04.24	01.01	01.00	20 "	21 "
060	02.04	02.00	02.07	02.00	03.59	04.18	04.01	04.29	01.02	01.01	21 MAI	21 AVR. - OCT

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
061°	h. m. 02.06	h. m. 02.02	h. m. 02.09	h. m. 02.02	h. m. 04.03	h. m. 04.23	h. m. 04.05	h. m. 04.33	h. m. 01.03	h. m. 01.02	22 MAI	22 AVR. - OCT.
062	02.08	02.04	02.11	02.04	04.07	04.27	04.09	04.38	01.04	01.03	23 "	22 " "
063	02.10	02.06	02.13	02.06	04.11	04.31	04.13	04.42	01.05	01.04	24 "	23 " "
064	02.12	02.08	02.15	02.08	04.15	04.35	04.17	04.47	01.06	01.05	25 "	23 " "
065	02.15	02.10	02.17	02.10	04.19	04.40	04.21	04.51	01.07	01.06	26 MAI	24 AVR. - OCT.
066	02.17	02.12	02.19	02.12	04.23	04.44	04.25	04.56	01.08	01.07	27 "	24 " "
067	02.19	02.14	02.21	02.14	04.27	04.48	04.29	05.00	01.09	01.08	28 "	25 " "
068	02.21	02.16	02.24	02.16	04.31	04.53	04.33	05.05	01.10	01.09	30 "	25 " "
069	02.23	02.18	02.26	02.18	04.35	04.57	04.37	05.09	01.11	01.10	31 MAI	26 " "
070	02.25	02.20	02.28	02.20	04.39	05.01	04.41	05.14	01.13	01.11	1er JUIN	26 AVR.-OCT.
071	02.27	02.22	02.30	02.22	04.43	05.06	04.45	05.18	01.14	01.12	2 JUIN	27 AVR.-OCT.
072	02.29	02.24	02.32	02.24	04.47	05.10	04.49	05.22	01.15	01.13	3 "	27 " "
073	02.31	02.26	02.34	02.26	04.51	05.14	04.53	05.27	01.16	01.14	4 "	28 " "
074	02.33	02.28	02.36	02.28	04.55	05.18	04.57	05.31	01.17	01.15	5 "	28 " "
075	02.35	02.30	02.38	02.30	04.59	05.23	05.01	05.36	01.18	01.16	6 JUIN	29 AVR.-OCT.
076	02.37	02.32	02.40	02.32	05.03	05.27	05.05	05.40	01.19	01.17	7 "	29 " "
077	02.39	02.34	02.42	02.34	05.07	05.31	05.09	05.45	01.20	01.18	8 "	30 " "
078	02.41	02.36	02.45	02.36	05.11	05.36	05.13	05.49	01.21	01.19	9 "	30 AVR. - OCT.
079	02.44	02.38	02.47	02.38	05.15	05.40	05.17	05.54	01.22	01.20	10 "	1er MAI - 31 OCT.
080	02.46	02.40	02.49	02.40	05.19	05.44	05.21	05.58	01.23	01.21	11 JUIN	1er MAI - 1er NOV.
081	02.48	02.42	02.51	02.42	05.23	05.49	05.25	06.03	01.24	01.22	12 JUIN	2 MAI - NOV.
082	02.50	02.44	02.53	02.44	05.27	05.53	05.29	06.07	01.25	01.23	13 "	2 " "
083	02.52	02.46	02.55	02.46	05.31	05.57	05.33	06.12	01.26	01.24	14 "	3 " "
084	02.54	02.48	02.57	02.48	05.35	06.02	05.37	06.16	01.27	01.25	15 "	3 " "
085	02.56	02.50	02.59	02.50	05.39	06.06	05.41	06.21	01.28	01.27	16 JUIN	4 MAI - NOV.
086	02.58	02.52	03.01	02.52	05.43	06.10	05.45	06.25	01.29	01.28	17 "	4 " "
087	03.00	02.54	03.04	02.54	05.47	06.14	05.49	06.30	01.30	01.29	18 "	5 " "
088	03.02	02.56	03.06	02.56	05.51	06.19	05.53	06.34	01.31	01.30	19 "	5 " "
089	03.04	02.58	03.08	02.58	05.55	06.23	05.57	06.39	01.32	01.31	20 "	6 " "
090	03.06	03.00	03.10	03.00	05.59	06.27	06.01	06.43	01.33	01.32	21 JUIN	6 MAI - NOV.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
091°	h. m. 03.08	h. m. 03.02	h. m. 03.12	h. m. 03.02	h. m. 06.03	h. m. 06.32	h. m. 06.05	h. m. 06.48	h. m. 01.34	h. m. 01.33	22 JUIN	7 MAI - NOV.
092	03.10	03.04	03.14	03.04	06.07	06.36	06.09	06.52	01.35	01.34	23 "	7 " "
093	03.12	03.06	03.16	03.06	06.11	06.40	06.13	06.56	01.36	01.35	24 "	8 " "
094	03.15	03.08	03.18	03.08	06.15	06.45	06.17	07.01	01.37	01.36	25 "	8 " "
095	03.17	03.10	03.20	03.10	06.19	06.49	06.21	07.05	01.38	01.37	26 JUIN	9 MAI - NOV.
096	03.19	03.12	03.23	03.12	06.23	06.53	06.25	07.10	01.39	01.38	27 "	9 " "
097	03.21	03.14	03.25	03.14	06.27	06.57	06.29	07.14	01.40	01.39	28 "	10 " "
098	03.23	03.16	03.27	03.16	06.31	07.02	06.33	07.19	01.41	01.40	29 "	10 " "
099	03.25	03.18	03.29	03.18	06.35	07.06	06.37	07.23	01.43	01.41	30 JUIN	11 " "
100	03.27	03.20	03.31	03.20	06.39	07.10	06.41	07.28	01.44	01.42	1er JUIL.	11 MAI - NOV.
101	03.29	03.22	03.33	03.21	06.43	07.15	06.45	07.32	01.45	01.43	2 JUIL.	12 MAI - NOV
102	03.31	03.24	03.35	03.23	06.47	07.19	06.49	07.37	01.46	01.44	3 "	12 " "
103	03.33	03.26	03.37	03.25	06.51	07.23	06.53	07.41	01.47	01.45	4 "	13 " "
104	03.35	03.28	03.39	03.27	06.55	07.28	06.57	07.46	01.48	01.46	5 "	13 " "
105	03.37	03.30	03.42	03.29	06.59	07.32	07.01	07.50	01.49	01.47	6 JUIL.	14 MAI - NOV.
106	03.39	03.32	03.44	03.31	07.03	07.36	07.05	07.55	01.50	01.48	7 "	14 " "
107	03.42	03.34	03.46	03.33	07.07	07.40	07.09	07.59	01.51	01.49	8 "	15 " "
108	03.44	03.36	03.48	03.35	07.11	07.45	07.13	08.04	01.52	01.50	9 "	15 " "
109	03.46	03.38	03.50	03.37	07.15	07.49	07.17	08.08	01.53	01.51	10 "	16 " "
110	03.48	03.40	03.52	03.39	07.19	07.53	07.21	08.13	01.54	01.52	11 JUIL.	16 MAI - NOV.
111	03.50	03.42	03.54	03.41	07.23	07.58	07.25	08.17	01.55	01.53	12 JUIL.	17 MAI - NOV.
112	03.52	03.44	03.56	03.43	07.27	08.02	07.29	08.22	01.56	01.54	13	17 " "
113	03.54	03.46	03.58	03.45	07.31	08.06	07.33	08.26	01.57	01.55	15 "	18 " "
114	03.56	03.48	04.01	03.47	07.35	08.11	07.37	08.31	01.58	01.56	16 "	18 " "
115	03.58	03.50	04.03	03.49	07.39	08.15	07.41	08.35	01.59	01.57	17 JUIL.	19 MAI - NOV.
116	04.00	03.52	04.05	03.51	07.43	08.19	07.45	08.39	02.00	01.58	18	19 " "
117	04.02	03.54	04.07	03.53	07.47	08.24	07.49	08.44	02.01	01.59	19 "	20 " "
118	04.04	03.56	04.09	03.55	07.51	08.28	07.53	08.48	02.02	02.00	20 "	20 " "
119	04.06	03.58	04.11	03.57	07.55	08.32	07.57	08.52	02.03	02.01	21 "	21 " "
120	04.08	04.00	04.13	03.59	07.59	08.36	08.01	08.57	02.04	02.02	22 JUIL.	21 MAI - NOV

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
121	04.10	04.02	04.15	04.01	08.03	08.41	08.05	09.02	02.05	02.03	23 JUIL.	22 MAI - NOV.
122	04.13	04.04	04.17	04.03	08.07	08.45	08.09	09.06	02.06	02.04	24 "	22 " "
123	04.15	04.06	04.20	04.05	08.11	08.49	08.13	09.11	02.07	02.05	25 "	23 " "
124	04.17	04.08	04.22	04.07	08.15	08.54	08.17	09.15	02.08	02.06	26 "	23 " "
125	04.19	04.10	04.24	04.09	08.19	08.58	08.21	09.20	02.09	02.07	27 JUIL.	24 MAI - NOV.
126	04.21	04.12	04.26	04.11	08.23	09.02	08.25	09.24	02.10	02.08	28 "	24 " "
127	04.23	04.14	04.28	04.13	08.27	09.07	08.29	09.29	02.12	02.09	29 "	25 " "
128	04.25	04.16	04.30	04.15	08.31	09.11	08.33	09.33	02.13	02.10	30 "	25 " "
129	04.27	04.18	04.32	04.17	08.35	09.15	08.37	09.38	02.14	02.11	31 JUIL.	26 " "
130	04.29	04.20	04.34	04.19	08.39	09.19	08.41	09.42	02.15	02.12	1er AOUT	26 MAI - NOV.
131	04.31	04.22	04.36	04.21	08.43	09.24	08.45	09.47	02.16	02.13	2 AOUT	27 MAI - NOV.
132	04.33	04.24	04.39	04.23	08.47	09.28	08.49	09.51	02.17	02.14	3 "	27 " "
133	04.35	04.26	04.41	04.25	08.51	09.32	08.54	09.56	02.18	02.15	4 "	28 " "
134	04.37	04.28	04.43	04.27	08.55	09.37	08.58	10.00	02.19	02.16	5 "	28 " "
135	04.39	04.30	04.45	04.29	08.59	09.41	09.02	10.05	02.20	02.17	6 AOUT	29 MAI - NOV.
136	04.42	04.32	04.47	04.31	09.03	09.45	09.06	10.09	02.21	02.18	7 "	30 MAI - 29 NOV
137	04.44	04.34	04.49	04.33	09.07	09.50	09.10	10.14	02.22	02.19	8 "	31 MAI - 30 NOV
138	04.46	04.36	04.51	04.35	09.11	09.54	09.14	10.18	02.23	02.20	9 "	31 MAI - 30 NOV.
139	04.48	04.38	04.53	04.37	09.15	09.58	09.18	10.22	02.24	02.21	10 "	1er JUIN - DEC.
140	04.50	04.40	04.55	04.39	09.19	10.03	09.22	10.27	02.25	02.22	11 AOUT.	1er JUIN - DEC.
141	04.52	04.42	04.58	04.41	09.23	10.07	09.26	10.32	02.26	02.23	12 AOUT	2 JUIN - DEC
142	04.54	04.44	05.00	04.43	09.27	10.11	09.30	10.36	02.27	02.24	13 "	2 " "
143	04.56	04.46	05.02	04.45	09.30	10.15	09.34	10.40	02.28	02.26	14 "	3 " "
144	04.58	04.48	05.04	04.47	09.34	10.20	09.38	10.45	02.29	02.27	15 "	3 " "
145	05.00	04.50	05.06	04.49	09.38	10.24	09.42	10.49	02.30	02.28	16 AOUT	4 JUIN - DEC.
146	05.02	04.52	05.08	04.51	09.42	10.28	09.46	10.54	02.31	02.29	17 "	4 " "
147	05.04	04.54	05.10	04.53	09.46	10.33	09.50	10.58	02.32	02.30	18 "	5 " "
148	05.06	04.56	05.12	04.55	09.50	10.37	09.54	11.03	02.33	02.31	19 "	5 " "
149	05.08	04.58	05.14	04.57	09.54	10.41	09.58	11.07	02.34	02.32	20 "	6 " "
150	05.11	05.00	05.17	04.59	09.58	10.46	10.02	11.12	02.35	02.33	21 AOUT	6 JUIN - DEC.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
151	05.13	05.02	05.19	05.01	10.02	10.50	10.06	11.16	02.36	02.34	22 AOUT	7 JUIN - DEC.
152	05.15	05.04	05.21	05.03	10.06	10.54	10.10	11.20	02.37	02.35	23 "	7 " "
153	05.17	05.06	05.2.	05.05	10.10	10.58	10.14	11.25	02.38	02.36	24 "	8 " "
154	05.19	05.08	05.25	05.07	10.14	11.03	10.18	11.30	02.39	02.37	25 "	8 " "
155	05.21	05.10	05.27	05.09	10.18	11.07	10.22	11.34	02.40	02.38	26 AOUT	9 JUIN - DEC
156	05.23	05.12	05.29	05.11	10.22	11.11	10.26	11.39	02.42	02.39	27 "	9 " "
157	05.25	05.14	05.31	05.13	10.26	11.16	10.30	11.43	02.43	02.40	28 "	10 " "
158	05.27	05.16	05.33	05.15	10.30	11.20	10.34	11.48	02.44	02.41	30 "	10 " "
159	05.29	05.18	05.35	05.17	10.34	11.24	10.38	11.52	02.45	02.42	31 AOUT	11 " "
160	05.31	05.20	05.38	05.19	10.38	11.29	10.42	11.57	02.46	02.43	1er SEPT.	11 JUIN - DEC.
161	05.33	05.22	05.40	05.21	10.42	11.33	10.46	12.01	02.47	02.44	2 SEPT.	12 JUIN - DEC.
162	05.35	05.24	05.42	05.23	10.46	11.37	10.50	12.05	02.48	02.45	3 "	12 " "
163	05.37	05.26	05.44	05.25	10.50	11.41	10.54	12.10	02.49	02.46	4 "	13 " "
164	05.39	05.28	05.46	05.27	10.54	11.46	10.58	12.14	02.50	02.47	5 "	13 " "
165	05.42	05.30	05.48	05.29	10.58	11.50	11.02	12.19	02.51	02.48	6 SEPT.	14 JUIN - DEC.
166	05.44	05.32	05.50	05.31	11.02	11.54	11.06	12.23	02.52	02.49	7 "	14 " "
167	05.46	05.34	05.52	05.33	11.06	11.59	11.10	12.28	02.53	02.50	8 "	15 " "
168	05.48	05.36	05.54	05.35	11.10	12.03	11.14	12.32	02.54	02.51	9 "	15 " "
169	05.50	05.38	05.57	05.37	11.14	12.07	11.18	12.37	02.55	02.52	10 "	16 " "
170	05.52	05.40	05.59	05.39	11.18	12.12	11.22	12.41	02.56	02.53	11 SEPT.	16 JUIN - DEC.
171	05.54	05.42	06.01	05.41	11.22	12.16	11.26	12.46	02.57	02.54	12 SEPT.	17 JUIN - DEC.
172	05.56	05.44	06.03	05.43	11.26	12.20	11.30	12.50	02.58	02.55	13 "	17 " "
173	05.58	05.46	06.05	05.45	11.30	12.25	11.34	12.55	02.59	02.56	14 "	18 " "
174	06.00	05.48	06.07	05.47	11.34	12.29	11.38	12.59	03.00	02.57	15 "	18 " "
175	06.02	05.50	06.09	05.49	11.38	12.33	11.42	13.04	03.01	02.58	16 SEPT.	19 JUIN - DEC.
176	06.04	05.52	06.11	05.51	11.42	12.37	11.46	13.08	03.02	02.59	17 "	19 " "
177	06.06	05.54	06.13	05.53	11.46	12.42	11.50	13.13	03.03	03.00	18 "	20 " "
178	06.08	05.56	06.16	05.55	11.50	12.46	11.54	13.17	03.04	03.01	19 "	20 " "
179	06.11	05.58	06.18	05.57	11.54	12.50	11.58	13.22	03.05	03.02	20 "	21 " "
180	06.13	06.00	06.20	05.59	11.58	12.55	12.02	13.26	03.06	03.03	21 SEPT.	21 JUIN - DEC.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
181	06.15	06.02	06.22	06.01	12.02	12.59	12.06	13.31	03.07	03.04	22 SEPT.	22 JUIN - DEC.
182	06.17	06.04	06.24	06.03	12.06	13.03	12.10	13.35	03.08	03.05	23 "	22 " "
183	06.19	06.06	06.26	06.05	12.10	13.08	12.14	13.40	03.09	03.06	24 "	23 " "
184	06.21	06.08	06.28	06.07	12.14	13.12	12.18	13.44	03.10	03.07	25 "	23 " "
185	06.23	06.10	06.30	06.09	12.18	13.16	12.22	13.48	03.12	03.08	26 SEPT.	24 JUIN - DEC.
186	06.25	06.12	06.32	06.11	12.22	13.20	12.26	13.53	03.13	03.09	27 "	24 " "
187	06.27	06.14	06.35	06.13	12.26	13.25	12.30	13.57	03.14	03.10	28 "	25 " "
188	06.29	06.16	06.37	06.15	12.30	13.29	12.34	14.02	03.15	03.11	29 "	25 " "
189	06.31	06.18	06.39	06.17	12.34	13.33	12.38	14.06	03.16	03.12	30 SEPT.	26 " "
190	06.33	06.20	06.41	06.19	12.38	13.38	12.42	14.11	03.17	03.13	1er OCT.	26 JUIN - DEC
191	06.35	06.22	06.43	06.21	12.42	13.42	12.46	14.15	03.18	03.14	2 OCT.	27 JUIN - DEC.
192	06.37	06.24	06.45	06.23	12.46	13.46	12.50	14.20	03.19	03.15	3 "	27 " "
193	06.40	06.26	06.47	06.25	12.50	13.51	12.54	14.24	03.20	03.16	4 "	28 " "
194	06.42	06.28	06.49	06.27	12.54	13.55	12.58	14.29	03.21	03.17	5 "	28 " "
195	06.44	06.30	06.51	06.29	12.58	13.59	13.02	14.33	03.22	03.18	6 OCT.	29 JUIN - DEC.
196	06.46	06.32	06.54	06.31	13.02	14.03	13.06	14.38	03.23	03.19	7 "	29 " "
197	06.48	06.34	06.56	06.33	13.06	14.08	13.10	14.42	03.24	03.20	8 "	30 " "
198	06.50	06.36	06.58	06.35	13.10	14.12	13.14	14.47	03.25	03.21	9 "	30 JUIN - DEC
199	06.52	06.38	07.00	06.37	13.14	14.16	13.18	14.51	03.26	03.22	10 "	1er JUIL. - 31 DEC
200	06.54	06.40	07.02	06.39	13.18	14.21	13.22	14.56	03.27	03.23	11 OCT.	1er JUIL - 1er JANV
201	06.56	06.42	07.04	06.41	13.22	14.25	13.26	15.01	03.28	03.25	12 OCT.	2 JUIL. - 2 JANV.
202	06.58	06.44	07.06	06.43	13.26	14.29	13.30	15.05	03.29	03.26	13 "	2 " "
203	07.00	06.46	07.08	06.45	13.30	14.34	13.34	15.09	03.30	03.27	15 "	3 " "
204	07.02	06.48	07.10	06.47	13.34	14.38	13.38	15.14	03.31	03.28	16 "	3 " "
205	07.04	06.50	07.13	06.49	13.38	14.42	13.42	15.18	03.32	03.29	17 OCT.	4 JUIL. - JANV.
206	07.06	06.52	07.15	06.51	13.42	14.47	13.46	15.22	03.33	03.30	18 "	4 " "
207	07.09	06.54	07.17	06.53	13.46	14.51	13.50	15.27	03.34	03.31	19 "	5 " "
208	07.11	06.56	07.19	06.55	13.50	14.55	13.54	15.31	03.35	03.32	20 "	5 " "
209	07.13	06.58	07.21	06.57	13.54	14.59	13.58	15.36	03.36	03.33	21 "	6 " "
210	07.15	07.00	07.23	06.59	13.58	15.04	14.02	15.40	03.37	03.34	22 OCT.	6 JUIL - JANV.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
211	07.17	07.02	07.25	07.01	14.02	15.08	14.06	15.45	03.38	03.35	23 OCT.	7 JUIL. - JANV
212	07.19	07.04	07.27	07.03	14.06	15.12	14.10	15.49	03.39	03.36	24 "	7 " "
213	07.21	07.06	07.29	07.05	14.10	15.17	14.14	15.54	03.41	03.37	25 "	8 " "
214	07.23	07.08	07.32	07.07	14.14	15.21	14.18	15.58	03.42	03.38	26 "	8 " "
215	07.25	07.10	07.34	07.09	14.18	15.25	14.22	16.03	03.43	03.39	27 OCT.	9 JUIL. - JANV.
216	07.27	07.12	07.36	07.11	14.22	15.30	14.26	16.07	03.44	03.40	28 "	9 " "
217	07.29	07.14	07.38	07.13	14.26	15.34	14.30	16.12	03.45	03.41	29 "	10 " "
218	07.31	07.16	07.40	07.15	14.30	15.38	14.34	16.16	03.46	03.42	30 "	10 " "
219	07.33	07.18	07.42	07.17	14.34	15.42	14.38	16.21	03.47	03.43	31 OCT.	11 " "
220	07.35	07.20	07.44	07.19	14.38	15.47	14.42	16.25	03.48	03.44	1er NOV.	11 JUIL. - JANV.
221	07.37	07.22	07.46	07.21	14.42	15.51	14.46	16.30	03.49	03.45	2 NOV.	12 JUIL. - JANV.
222	07.40	07.24	07.48	07.23	14.46	15.55	14.50	16.34	03.50	03.46	3 "	12 " "
223	07.42	07.26	07.51	07.25	14.50	16.00	14.54	16.39	03.51	03.47	4 "	13 " "
224	07.44	07.28	07.53	07.27	14.54	16.04	14.59	16.43	03.52	03.48	5 "	13 " "
225	07.46	07.30	07.55	07.29	14.58	16.08	15.03	16.48	03.53	03.49	6 NOV.	14 JUIL. - JANV.
226	07.48	07.32	07.57	07.31	15.02	16.13	15.07	16.52	03.54	03.50	7 "	15 " "
227	07.50	07.34	07.59	07.33	15.06	16.17	15.11	16.57	03.55	03.51	8 "	15 " "
228	07.52	07.36	08.01	07.35	15.10	16.21	15.15	17.01	03.56	03.52	9 "	16 " "
229	07.54	07.38	08.03	07.37	15.14	16.25	15.19	17.05	03.57	03.53	10 "	16 " "
230	07.56	07.40	08.05	07.39	15.18	16.30	15.23	17.10	03.58	03.54	11 NOV.	17 JUIL. - JANV.
231	07.58	07.42	08.07	07.41	15.22	16.34	15.27	17.14	03.59	03.55	12 NOV.	17 JUIL. - JANV.
232	08.00	07.44	08.10	07.43	15.26	16.38	15.31	17.19	04.00	03.56	13 "	18 " "
233	08.02	07.46	08.12	07.45	15.30	16.43	15.35	17.23	04.01	03.57	14 "	18 " "
234	08.04	07.48	08.14	07.47	15.33	16.47	15.39	17.28	04.02	03.58	15 "	19 " "
235	08.06	07.50	08.16	07.49	15.37	16.51	15.43	17.32	04.03	03.59	16 NOV.	19 JUIL. - JANV.
236	08.09	07.52	08.18	07.51	15.41	16.56	15.47	17.37	04.04	04.00	17 "	20 " "
237	08.11	07.54	08.20	07.53	15.45	17.00	15.51	17.41	04.05	04.01	18 "	20 " "
238	08.13	07.56	08.22	07.55	15.49	17.04	15.55	17.46	04.06	04.02	19 "	21 " "
239	08.15	07.58	08.24	07.57	15.53	17.09	15.59	17.50	04.07	04.03	20 "	21 " "
240	08.17	08.00	08.26	07.59	15.57	17.13	16.03	17.55	04.08	04.04	21 NOV.	22 JUIL. - JANV.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
241	08.19	08.02	08.28	08.01	16.01	17.17	16.07	17.59	04.09	04.05	22 NOV.	23 JUIL.-JANV.
242	08.21	08.04	08.31	08.03	16.05	17.21	16.11	18.04	04.11	04.06	23 "	23 " "
243	08.23	08.06	08.33	08.05	16.09	17.26	16.15	18.08	04.12	04.07	24 "	24 " "
244	08.25	08.08	08.35	08.07	16.13	17.30	16.19	18.13	04.13	04.08	25 "	24 " "
245	08.27	08.10	08.37	08.09	16.17	17.34	16.23	18.17	04.14	04.09	26 NOV.	25 JUIL.-JANV.
246	08.29	08.12	08.39	08.11	16.21	17.39	16.27	18.22	04.15	04.10	27 "	25 " "
247	08.31	08.14	08.41	08.13	16.25	17.43	16.31	18.26	04.16	04.11	28 "	26 " "
248	08.33	08.16	08.43	08.15	16.29	17.47	16.35	18.31	04.17	04.12	29 "	26 " "
249	08.35	08.18	08.45	08.17	16.33	17.52	16.39	18.35	04.18	04.13	30 NOV.	27 " "
250	08.38	08.20	08.47	08.19	16.37	17.56	16.43	18.40	04.19	04.14	1er DEC.	27 JUIL.-JANV.
251	08.40	08.22	08.50	08.21	16.41	18.00	16.47	18.44	04.20	04.15	2 DEC.	28 JUIL.-JANV.
252	08.42	08.24	08.52	08.23	16.45	18.04	16.51	18.48	04.21	04.16	3 "	28 " "
253	08.44	08.26	08.54	08.25	16.49	18.09	16.55	18.53	04.22	04.17	4 "	29 " "
254	08.46	08.28	08.56	08.27	16.53	18.13	16.58	18.57	04.23	04.18	5 "	29 " "
255	08.48	08.30	08.58	08.29	16.57	18.17	17.03	19.02	04.24	04.19	6 DEC.	30 JUIL.-JANV.
256	08.50	08.32	09.00	08.31	17.01	18.22	17.07	19.06	04.25	04.20	7 "	30 " "
257	08.52	08.34	09.02	08.33	17.05	18.26	17.11	19.11	04.26	04.21	8 "	31 " "
258	08.54	08.36	09.04	08.35	17.09	18.30	17.15	19.15	04.27	04.22	9 "	31 JUIL.-JANV.
259	08.56	08.38	09.06	08.37	17.13	18.35	17.19	19.20	04.28	04.24	10 "	1er AOUT-FEV.
260	08.58	08.40	09.09	08.39	17.17	18.39	17.23	19.24	04.29	04.25	11 DEC.	1er AOUT-FEV.
261	09.00	08.42	09.11	08.41	17.21	18.43	17.27	19.29	04.30	04.26	12 DEC.	2 AOUT-FEV.
262	09.02	08.44	09.13	08.43	17.25	18.47	17.31	19.33	04.31	04.27	13 "	2 " "
263	09.04	08.46	09.15	08.45	17.29	18.52	17.35	19.38	04.32	04.28	14 "	3 " "
264	09.07	08.48	09.17	08.47	17.33	18.56	17.39	19.42	04.33	04.29	15 "	3 " "
265	09.09	08.50	09.19	08.49	17.37	19.00	17.43	19.47	04.34	04.30	16 DEC.	4 AOUT-FEV.
266	09.11	08.52	09.21	08.51	17.41	19.05	17.47	19.51	04.35	04.31	17 "	4 " "
267	09.13	08.54	09.23	08.53	17.45	19.09	17.51	19.56	04.36	04.32	18 "	5 " "
268	09.15	08.56	09.25	08.55	17.49	19.13	17.55	20.00	04.37	04.33	19 "	5 " "
269	09.17	08.58	09.28	08.57	17.53	19.18	17.59	20.05	04.38	04.34	20 "	6 " "
270	09.19	09.00	09.30	08.59	17.57	19.22	18.03	20.09	04.40	04.35	21 DEC.	6 AOUT-FEV.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g	M_2	S_2	N_2	K_2	K_1	O_1	P_1	Q_1	M_4	MS_4	S_a	S_{sa}
°	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
271	09.21	09.02	09.32	09.01	18.01	19.26	18.07	20.14	04.41	04.36	22 DEC.	7 AOUT-FEV.
272	09.23	09.04	09.34	09.03	18.05	19.31	18.11	20.18	04.42	04.37	23 "	7 " "
273	09.25	09.06	09.36	09.05	18.09	19.35	18.15	20.23	04.43	04.38	24 "	8 " "
274	09.27	09.08	09.38	09.07	18.13	19.39	18.19	20.27	04.44	04.39	25 "	8 " "
275	09.29	09.10	09.40	09.09	18.17	19.43	18.23	20.31	04.45	04.40	26 DEC.	9 AOUT-FEV.
276	09.31	09.12	09.42	09.11	18.21	19.48	18.27	20.36	04.46	04.41	27 "	9 " "
277	09.33	09.14	09.44	09.13	18.25	19.52	18.31	20.40	04.47	04.42	28 "	10 " "
278	09.35	09.16	09.47	09.15	18.28	19.56	18.35	20.45	04.48	04.43	29 "	10 " "
279	09.38	09.18	09.49	09.17	18.32	20.01	18.39	20.49	04.49	04.44	30 "	11 " "
280	09.40	09.20	09.51	09.19	18.37	20.05	18.43	20.54	04.50	04.45	31 DEC.	11 AOUT-FEV.
281	09.42	09.22	09.53	09.21	18.41	20.09	18.47	20.58	04.51	04.46	1er JANV.	12 AOUT-FEV.
282	09.44	09.24	09.55	09.23	18.45	20.14	18.51	21.03	04.52	04.47	2 "	12 " "
283	09.46	09.26	09.57	09.25	18.49	20.18	18.55	21.07	04.53	04.48	3 "	13 " "
284	09.48	09.28	09.59	09.27	18.53	20.22	18.59	21.12	04.54	04.49	4 "	13 " "
285	09.50	09.30	10.01	09.28	18.57	20.26	19.03	21.16	04.55	04.50	5 JANV.	14 AOUT-FEV.
286	09.52	09.32	10.03	09.30	19.01	20.31	19.07	21.21	04.56	04.51	6 "	14 " "
287	09.54	09.34	10.06	09.32	19.05	20.35	19.11	21.25	04.57	04.52	7 "	15 " "
288	09.56	09.36	10.08	09.34	19.09	20.39	19.15	21.30	04.58	04.53	8 "	15 " "
289	09.58	09.38	10.10	09.36	19.13	20.44	19.19	21.34	04.59	04.54	9 "	16 " "
290	10.00	09.40	10.12	09.38	19.17	20.48	19.23	21.39	05.00	04.55	10 JANV.	16 AOUT-FEV.
291	10.02	09.42	10.14	09.40	19.21	20.52	19.27	21.43	05.01	04.56	11 JANV.	17 AOUT-FEV.
292	10.04	09.44	10.16	09.42	19.25	20.57	19.31	21.48	05.02	04.57	12 "	17 "
293	10.07	09.46	10.18	09.44	19.29	21.01	19.35	21.52	05.03	04.58	13 "	18 "
294	10.09	09.48	10.20	09.46	19.33	21.05	19.39	21.57	05.04	04.59	14 "	18 "
295	10.11	09.50	10.22	09.48	19.37	21.10	19.43	22.01	05.05	05.00	15 JANV.	19 AOUT-FEV.
296	10.13	09.52	10.25	09.50	19.41	21.14	19.47	22.06	05.06	05.01	16 "	19 " "
297	10.15	09.54	10.27	09.52	19.45	21.18	19.51	22.10	05.07	05.02	17 "	20 " "
298	10.17	09.56	10.29	09.54	19.49	21.22	19.55	22.14	05.08	05.03	18 "	20 " "
299	10.19	09.58	10.31	09.56	19.53	21.27	19.59	22.19	05.09	05.04	19 "	21 " "
300	10.21	10.00	10.33	09.58	19.57	21.31	20.03	22.23	05.11	05.05	20 JANV.	21 AOUT-FEV.

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g °	M_2 h m	S_2 h m	N_2 h m	K_2 h m	K_1 h m	O_1 h m	P_1 h m	Q_1 h m	M_4 h m	MS_4 h m	S_a	S_{sa}
301	10.33	10.02	10.35	10.00	20.01	21.35	20.07	22.28	05.12	05.06	21 JANV.	22 AOUT-FEV.
302	10.35	10.04	10.37	10.01	20.05	21.40	20.11	22.32	05.13	05.07	22 "	22 " "
303	10.27	10.06	10.39	10.04	20.09	21.44	20.15	22.37	05.14	05.08	23 "	23 " "
304	10.29	10.08	10.41	10.06	20.13	21.48	20.19	22.41	05.15	05.09	24 "	23 " "
305	10.31	10.10	10.44	10.08	20.17	21.53	20.23	22.46	05.16	05.10	25 JANV.	24 AOUT-FEV.
306	10.33	10.12	10.46	10.10	20.21	21.57	20.27	22.50	05.17	05.11	26 "	24 " "
307	10.36	10.14	10.48	10.12	20.25	22.01	20.31	22.55	05.18	05.12	27 "	25 " "
308	10.38	10.16	10.50	10.14	20.29	22.06	20.35	22.59	05.19	05.13	28 "	25 " "
309	10.40	10.18	10.52	10.16	20.33	22.10	20.39	23.04	05.20	05.14	29 "	26 " "
310	10.42	10.20	10.54	10.18	20.37	22.14	20.43	23.08	05.21	05.15	30 JANV.	26 AOUT-FEV.
311	10.44	10.22	10.56	10.20	20.41	22.18	20.47	23.13	05.22	05.16	31 JANV.	27 AOUT-FEV
312	10.46	10.24	10.58	10.22	20.45	22.23	20.51	23.17	05.23	05.17	1er FEV.	27 " "
313	10.48	10.26	11.00	10.24	20.49	22.27	20.55	23.22	05.24	05.18	2 "	28 " "
314	10.50	10.28	11.02	10.26	20.53	22.31	20.59	23.26	05.25	05.19	3 "	28 " "
315	10.52	10.30	11.05	10.28	20.57	22.36	21.04	23.31	05.26	05.20	4 FEV.	29 AOUT-28 FEV.
316	10.54	10.32	11.07	10.30	21.01	22.40	21.08	23.35	05.27	05.21	5 "	29 AOUT -29 FEV
317	10.56	10.34	11.09	10.32	21.05	22.44	21.12	23.40	05.28	05.23	6 "	30 AOUT - 29 FEV
318	10.58	10.36	11.11	10.34	21.09	22.48	21.16	23.44	05.29	05.24	7 "	31 AOUT-1er MARS
319	11.00	10.38	11.13	10.36	21.13	22.53	21.20	23.49	05.30	05.25	8 "	1er SEPT.-MARS
320	11.02	10.40	11.15	10.38	21.17	22.57	21.24	23.53	05.31	05.26	9 FEV.	1er SEPT.-MARS
321	11.05	10.42	11.17	10.40	21.21	23.01	21.28	23.57	05.32	05.27	10 FEV.	2 SEPT.-MARS
322	11.07	10.44	11.19	10.42	21.25	23.06	21.32	24.02	05.33	05.28	11 "	2 " "
323	11.09	10.46	11.21	10.44	21.29	23.10	21.36	24.06	05.34	05.29	12 "	3 " "
324	11.11	10.48	11.24	10.46	21.33	23.14	21.40	24.11	05.35	05.30	13 "	3 " "
325	11.13	10.50	11.26	10.48	21.37	23.19	21.44	24.15	05.36	05.31	14 FEV.	4 SEPT.-MARS
326	11.15	10.52	11.28	10.50	21.41	23.23	21.48	24.20	05.37	05.32	15 "	4 " "
327	11.17	10.54	11.30	10.52	21.44	23.27	21.52	24.24	05.39	05.33	16 "	4 " "
328	11.19	10.56	11.32	10.54	21.48	23.32	21.56	24.29	05.40	05.34	17 "	5 " "
329	11.21	10.58	11.34	10.56	21.52	23.36	22.00	24.33	05.41	05.35	18 "	6 " "
330	11.23	11.00	11.36	10.58	21.56	23.40	22.04	24.38	05.42	05.36	19 FEV.	6 SEPT.-MARS

TABLE DE CONVERSION DES ETABLISSEMENTS
CONVERSION TABLE FOR ESTABLISHEMENTS

TABLE g (HEURES) (HOURS)

g °	M_2 h m	S_2 h m	N_2 h m	K_2 h m	K_1 h m	O_1 h m	P_1 h m	Q_1 h m	M_4 h m	MS_4 h m	S_a	S_{sa}
331	11.25	11.02	11.38	11.00	22.00	23.44	22.08	24.42	05.43	05.37	20 FEV.	7 SEPT.-MARS
332	11.27	11.04	11.40	11.02	22.04	23.49	22.12	24.47	05.44	05.38	21 "	7 " "
333	11.29	11.06	11.43	11.04	22.08	23.53	22.16	24.51	05.45	05.39	22 "	8 " "
334	11.31	11.08	11.45	11.06	22.12	23.57	22.20	24.56	05.46	05.40	23 "	8 " "
335	11.33	11.10	11.47	11.08	22.16	24.02	22.24	25.00	05.47	05.41	24 FEV.	9 SEPT.-MARS
336	11.36	11.12	11.49	11.10	22.20	24.06	22.28	25.05	05.48	05.42	25 "	9 " "
337	11.38	11.14	11.51	11.12	22.24	24.10	22.32	25.09	05.49	05.43	26 "	10 " "
338	11.40	11.16	11.53	11.14	22.28	24.15	22.36	25.14	05.50	05.44	27 "	10 " "
339	11.42	11.18	11.55	11.16	22.32	24.19	22.40	25.18	05.51	05.45	28 FEV.	11 " "
340	11.44	11.20	11.57	11.18	22.36	24.23	22.44	25.23	05.52	05.46	1er MARS	11 SEPT.-MARS
341	11.46	11.22	11.59	11.20	22.40	24.27	22.48	25.27	05.53	05.47	2 MARS	12 SEPT.-MARS
342	11.48	11.24	12.02	11.22	22.44	24.32	22.52	25.31	05.54	05.48	3 "	12 " "
343	11.50	11.26	12.04	11.24	22.48	24.36	22.56	25.36	05.55	05.49	4 "	13 " "
344	11.52	11.28	12.06	11.26	22.52	24.40	23.00	25.40	05.56	05.50	5 "	13 " "
345	11.54	11.30	12.08	11.28	22.56	24.45	23.04	25.45	05.57	05.51	6 MARS	14 SEPT.-MARS
346	11.56	11.32	12.10	11.30	23.00	24.49	23.08	25.49	05.58	05.52	7 "	14 " "
347	11.58	11.34	12.12	11.32	23.04	24.53	23.12	25.54	05.59	05.53	8 "	15 " "
348	12.00	11.36	12.14	11.34	23.09	24.58	23.16	25.58	06.00	05.54	9 "	15 " "
349	12.02	11.38	12.16	11.36	23.12	25.02	23.20	26.03	06.01	05.55	10 "	16 " "
350	12.05	11.40	12.18	11.38	23.16	25.06	23.24	26.07	06.02	05.56	11 MARS	16 SEPT.-MARS
351	12.07	11.42	12.21	11.40	23.20	25.10	23.28	26.12	06.03	05.57	12 MARS	17 SEPT.-MARS
352	12.09	11.44	12.23	11.42	23.24	25.15	23.32	26.16	06.04	05.58	13 "	17 " "
353	12.11	11.46	12.25	11.44	23.28	25.19	23.36	26.21	06.05	05.59	14 "	18 " "
354	12.13	11.48	12.27	11.46	23.32	25.23	23.40	26.25	06.06	06.00	15 "	18 " "
355	12.15	11.50	12.29	11.48	23.36	25.28	23.44	26.30	06.07	06.01	16 MARS	19 SEPT.-MARS
356	12.17	11.51	12.31	11.50	23.40	25.32	23.48	26.34	06.09	06.02	17 "	19 " "
357	12.19	11.54	12.33	11.52	23.44	25.36	23.52	26.39	06.10	06.03	18 "	20 " "
358	12.21	11.56	12.35	11.54	23.48	25.01	23.56	26.43	06.11	06.04	19 "	20 " "
359	12.23	11.58	12.37	11.56	23.52	25.45	24.00	26.48	06.12	06.05	20 "	21 " "
360	12.25	12.00	12.40	11.58	23.56	25.49	24.04	26.52	06.13	06.06	21 MARS	21 SEPT.-MARS