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HOURLY VALUES OF EQUATORIAL Dst FOR THE IGY

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Abstract

Using eight magnetic stations in low latitudes, hourly values of Dst are determined for the IGY. Three-hourly mean Dst values are compared with corresponding values based on Kertz's Dst indices. Three-hourly mean Dst is also compared with ap indices. It is found that Dst correlates well with ap in gross features and that during magnetic storms activity represented by ap recovers more rapidly than Dst.

author

1. Introduction

Among transient variations of the earth's magnetic field the most outstanding in both magnitude and duration ,are those of magnetic storms. Though their form and severity vary considerably from one event to another, the majority of magnetic storms have certain common characteristics.

One of the characteristics is the decrease of the horizontal force, H, all over the world in the equatorial and moderate latitudes. This decrease is very nearly axially symmetric and does not depend on longitude or local time.

Superimposed on the general decrease in H there are variations in all three components that depend on local time; these variations are of large amplitude in the polar regions.

It is thus convenient to analyze the storm variation D into two parts, Dst and DS. Given an instant of time Dst is the average of D over all longitudes. DS is defined by D - Dst. The two variations Dst and DS may be obtained for a specified latitude, or for a belt of finite width centered at some latitude. These definitions apply to all three magnetic components.

For a well-defined storm Dst and DS can be determined as functions of storm time that is measured from the onset of the storm.

Statistical analyses of magnetic storm variations have been made essentially in the manner described above by Moos (1910), Chapman (1918, 1927, 1935, 1952), Vestine et al. (1947), Yokouchi (1957, 1958), Sugiura and Chapman (1960) and others.

However, the determination of Dst need not be limited to times of magnetic storms, but can be extended to periods of less magnetic activity or even to magnetically quiet times. In fact, Dst may be determined continuously as a function of universal time regardless of occurrence of magnetic storms. Dst so determined should provide a measure of magnetic activity.

Vestine et al. (1947) have published such continuous Dst; they gave hourly Dst curves for the Second Polar Year, September 1932 to August 1933 (Carnegie Institution of Washington Publication 580 pp.230-231). The hourly Dst values were obtained by averaging hourly departures from the annual mean for San Juan, Alibag and Honolulu, all in low geomagnetic latitude and spaced approximately evenly in longitude.

More recently Dr. Akasofu and Professor Chapman determined Dst for several magnetic storms (c.f., Akasofu and Chapman, 1961), and their Dst curves have been extensively used by other workers.. Such Dst data are now in great demand by those who concern themselves with solar cosmic rays, solar plasma, earth's radiation belts and other related geophysical phenomena.

Professor Chapman, Dr. Akasofu and the present author initiated determination of hourly Dst values for the IGY with a hope that such data will be published on a routine basis in the future. The work was carried out with assistance from Dr. J. C. Cain of NASA and Mr. E. J. Chernosky of Air Force Cambridge Research Laboratories.

Dr. Kertz has derived three-hourly index for Dst for the IGY by a method different from the one adopted here. In Section 5, three-hourly

Dst values obtained by our method are compared with the corresponding values based on Dr. Kertz's indices.

2. Magnetic Stations Used

The selection of magnetic stations was made with the following considerations. (1) Stations in low latitudes should be used to eliminate as much as possible disturbances originating in the auroral zones. (2) Stations near the magnetic equator should be avoided, because the equatorial electrojet may introduce undesired variations; also magnetic storm variations are irregular and often augmented at the magnetic equator.

TABLE 1

Magnetic stations used - in the order of increasing geographic east longitude.

	Geomagnetic		Geographic	
	latitude	longitude (E)	latitude	longitude (E)
Hermanus	S 33°3	80°3	S 34° 25'	19° 13'
Alibag	N 9°5	143°7	N 18° 38'	72° 53'
Kakioka	N 26°0	206°0	N 36° 14'	140° 11'
Apia	S 16°0	260°2	S 13° 48'	188° 14'
Honolulu	N 21°0	266°4	N 21° 18'	201° 54'
San Juan	N 29°9	3°2	N 18° 23'	293° 53'
Pilar	S 20°3	4°6	S 31° 40'	296° 07'
M'Bour	N 21°2	55°1	N 14° 24'	343° 03'

(3) Stations should be distributed over longitude as uniformly as possible. (4) Reliable hourly H values are already available.

The magnetic stations used are listed in Table 1 in the order of geographic longitude. Of the eight stations, five are in the northern and three in the southern hemisphere. The geomagnetic latitudes of the stations range from $9^{\circ}.5$ to $33^{\circ}.3$.

3. Method of derivation of Dst

For station i, the observed magnetic field $H^{(i)}$ at universal time t may be considered as the sum of the permanent field $H_0^{(i)}$ (including secular variation), solar daily variation $Sq^{(i)}$, lunar daily variation $L^{(i)}$ and disturbance $D^{(i)}$; i.e.

$$H^{(i)}(t) = H_0^{(i)}(t) + Sq^{(i)}(t) + L^{(i)}(t) + D^{(i)}(t) \qquad (1)$$

Let the mean of $H^{(i)}(t)$ over the 18 months from July 1957 to December 1958 be denoted by $H_{00}^{(i)}$, and let this mean be a zero order approximation for $H_0^{(i)}(t)$. Let the deviation of $H_0^{(i)}(t)$ from $H_{00}^{(i)}$ be $\Delta H_0^{(i)}(t)$; i.e.,

$$H_0^{(i)}(t) = H_{00}^{(i)} + \Delta H_0^{(i)}(t) \qquad (2)$$

We denote the deviation of observed $H^{(i)}(t)$ from $H_{00}^{(i)}$ by $\Delta H^{(i)}(t)$; i.e.,

$$\Delta H^{(i)}(t) = H^{(i)}(t) - H_{00}^{(i)} \qquad (3)$$

Substituting (1) and (2) in (3), we have

$$\Delta H^{(i)}(t) = \Delta H_0^{(i)}(t) + Sq^{(i)}(t) + L^{(i)}(t) + D^{(i)}(t) \qquad (4)$$

For hour t we take the mean of $\Delta H^{(i)}(t)$ over the stations:

$$\overline{\Delta H(t)} = \overline{\Delta H_0(t)} + \overline{Sq(t)} + \overline{L(t)} + \overline{D(t)} \quad (5)$$

where the upper bar in each term signifies the average over the stations.

Since the lunar variation L is small, we assume that the average of L is negligible, and ignore $\bar{L}$ altogether. Then we have

$$\overline{\Delta H(t)} = \overline{\Delta H_0(t)} + \overline{Sq(t)} + \overline{D(t)} \quad (6)$$

For station i for month M (where M = 1, 2, ...18 for the 18 months), we take the mean daily variation of the five international quiet days from Greenwich midnight to Greenwich midnight, and subtract from each of the 25 hourly mean values the linear change obtained by linearly connecting the two midnight values. This linear change is assumed to represent the non-cyclic change that should be subtracted from Sq. It should be noted that Sq is measured from midnight level instead of its daily mean level.

The Sq variations so obtained were averaged over the stations. One would hope this mean Sq to be nearly zero, or at least very small. But our results showed that Sq was not comietely averaged out, and that the mean Sq had ranges of 8 to 19 gammas, a not quite negligible amount. The form of the residual Sq varied systematically with season.

To represent Sq by a smoothly varying function throughout the whole period the mean Sq was expanded in a double Fourier series with month number M and Greenwich time T as two variables.

$$\sum_{n=1}^{6} \sum_{m=1}^{6} A_n^m \cos (mT + \alpha_m) \cos (nM + \beta_n)$$

Coefficients up to n = m = 6 were determined.

For each day mean Sq was synthesized with this series. In the computation a month number with one decimal was assigned to each day. The synthesized mean Sq was assumed to represent $\overline{Sq\ (t)}$ in (6), and was removed from $\overline{\Delta H(t)}$.

We are thus left with $\overline{\Delta H_0(t)} + \overline{D\ (t)}$. When this quantity was plotted for the entire IGY, points remained near a fixed level during quiet periods and did not show any systematic drift all through the IGY. This was taken to mean that the secular variations were very nearly averaged out. Therefore, $\overline{\Delta H_0(t)}$ was assumed to be a constant. This constant determines the zero level for Dst.

In determining the value of this constant it is important to exclude, as much as possible, days that are in the recovery phase of magnetic storms; inclusion of such days will lower the zero level of Dst.

All the quiet periods in which two or more successive days had ap not exceeding 7 were selected, and the quantity $\overline{\Delta H\ (t)} - \overline{Sq\ (t)}$ (= $\overline{\Delta H_0} + \overline{D\ (t)}$ was averaged over all these selected quiet days. This average, which was 31 gamma, was taken to be the constant $\overline{\Delta H_0}$.

Removing this constant from all the hourly values, we obtain $\overline{D(t)}$. This average disturbance variation is the sum of Dst(t) and the average $\overline{DS(t)}$. Since the selected eight stations are all in low latitudes and are distributed approximately uniformly over longitudes, $\overline{DS(t)}$ is assumed to be negligible, and we take $\overline{D(t)}$ to represent Dst(t).

Summarizing, Dst is determined by

$$Dst(t) = \overline{H(t) - H_{00}} - \overline{Sq(t)} - \overline{\Delta H_0} \qquad (7)$$

Here, the first term is the average over the stations of the hourly H value measured from the mean H for the IGY, the second term represents the mean Sq, and the third term is the mean Dst for the quiet periods.

Since Dst varies with latitude, it is desirable to normalize to the variation appropriate to the equator. Assuming that the Dst field is uniform and parallel to the geomagnetic axis, we multiply the hourly Dst values obtained in the manner described above by sec θ_m, where θ_m is the mean geomagnetic latitude of the eight stations. In our case θ_m is 22° and the normalization factor is 1.08.

We will call the values normalized to the magnetic equator the equatorial Dst values.

4. Tabulations and Graphs of Dst

Hourly equatorial Dst values determined by the method described in the preceding section are tabulated in Table 2. In the tabulations, hourly values are given in units of gamma.

The same equatorial hourly Dst values are graphically shown in Figure 1. Like Dr. Bartel's Kp diagram each line represents one solar rotation of 27 days.

To compare our Dst with the three-hourly index ap, the hourly equatorial Dst values were averaged over each of the same three-hourly intervals as for ap, and the three-hourly Dst values so obtained are plotted together with ap in Figure 2. Since Dst is negative during disturbed periods, the ap indices are plotted with negative sign.

Comparison of Dst with ap is made in Section 7.

5. Comparison with Kertz's Dst Indices

Dr. Kertz has determined Dst indices by a different method (see his article, pp. in this volume).

To compare his results with ours, Dr. Kertz's indices were converted to three-hourly values in gammas. This conversion was made by multiplying his indices by -3.

In Figure 3, our three-hourly Dst (marked A) and Dr. Kertz's Dst (marked B) are plotted parallel to each other.

Since Dr. Kertz took weighted overlapping means of three-hourly intervals, the curves representing his Dst values are on the whole smoother than ours.

There appears to be a diurnal component not averaged out in Dr. Kertz's Dst. Examples are: September 10 to 20, 24 to 28, 1957; May 22 to 24, 1958; October 14 to 17, 19 to 21, 1958; November 15 to 22, 1958. These diurnal components are probably due to DS not being averaged out.

The method we used does not involve any smoothing process. Hence our hourly Dst plots in Figure 1 show variations in greater detail than the plots in Figure 3 based on Dr. Kertz's results. For instance in Figure 1 an increase in H in the initial phase can be seen in many of the storms.

6. Discussions

It is generally thought that the Dst field during a magnetic storm is due to a ring current. According to Chapman (1952) such a ring current was first suggested by Störmer in 1911, though Störmer's current ring was

not a complete ring, but a stream of electrons deflected round the earth on the afternoon side. Chapman further refers to A. Schmidt's study made in 1924 on an electrically neutral ring current.

Chapman and Ferraro (1933, 1941) investigated a mechanism of formation of a ring current, its equilibrium, stability and decay.

Singer (1957) proposed for the main phase decrease of the magnetic field during a magnetic storm a mechanism, in which charged particles trapped in the earth's magnetic field drift longitudinally, thereby constituting net westward current.

With stimulus from the discovery of the trapped radiation belts the problem drew renewed interest in the recent years. Thus Dessler and Parker (1959) gave a hydromagnetic interpretation of the effect of a ring current consisting of trapped particles. The magnetic field of a model ring current has been computed by Akasofu and Chapman (1961), and Akasofu, Cain and Chapman (1961).

As to direct magnetic observation of a ring current by satellite or space probe there has been no definitive determination of the position of a ring current. However, Vanguard 3 magnetic measurements definitely indicate that the ring current must be above a few thousand kilometers from the earth's surface. (Cain et al., 1962).

We believe that the Dst field is essentially due to a ring current, and hence that our hourly Dst values represent the magnetic field variations of the ring current. The positive variations in Dst in the beginning of magnetic storms are due to the currents on the interface between the magnetosphere and solar plasma, but these are small compared with the ring current effect.

The hourly Dst plots as shown in Figure 1 demonstrate the development and decay of a magnetic storm ring current very clearly. Even when there is no well-defined magnetic storm there often appears to be weak ring current activity lasting continuously for a considerable length of time. Some of these variations may be due to polar disturbances not completely eliminated.

The magnetic field observed on the earth's surface is modulated by the strength of solar wind. Such an effect may be included in the Dst variations.

7. Comparison of Dst with ap Indices

Figure 2 gives a graphical comparison of three-hourly mean Dst with three-hourly magnetic indices ap. The latter indices are averages of three-hourly ranges for twelve stations lying between 48^{o} and 63^{o} geomagnetic latitude. The three-hourly Dst values presented here are based on hourly values of H for eight stations between 9^{o} and 34^{o} geomagnetic latitude.

The Dst field is due to the electric currents flowing at great distances from the earth, whereas the currents responsible for the magnetic disturbance represented by ap flow in the ionosphere.

Though the two indices differ widely in their derivations and represent magnetic fields produced by currents flowing in so different altitudes, the curves in Figure 2 for these indices are remarkably parallel. Major Dst changes are accompanied by large ap variations of nearly equal magnitude. Correlation can often be seen between secondary peaks in Dst and those in ap.

It is uncertain how far the details of our Dst are due to DS that is not completely eliminated. However, it is very unlikely that all the minor changes and irregularities in our Dst are due to DS not being averaged out.

There is a tendency for ap to recover more rapidly than Dst after a magnetic storm. This means that in a magnetic storm, polar disturbance dies away more quickly than does the ring current.

8. A Remark on the Induction in the Earth and in the Ionosphere

If a magnetic field varying with time is applied to the earth, the magnetic induction within the conducting earth will modify the applied field. The effect is to increase the variation in H, and the magnitude of the effect depends on the time scale of the applied field. Since Dst involves variations with periods of wide range, the effect of the magnetic induction in the earth cannot be accurately estimated by a simple method.

The earth, to some degree, is shielded by the ionosphere from varying magnetic fields produced by sources external to the ionosphere. This shielding effect depends on the rate of change of the applied magnetic field.

To deduce the magnetic field of a ring current from our Dst values appropriate corrections must be made for the induced magnetic fields.

Acknowledgements

Professor S. Chapman initiated the publication of the hourly Dst data in the Annals of the IGY. I wish to express my thanks to him for his discussions and advice regarding the presentation ; to Dr. J. C. Cain for his advice on machine computation and for discussions; to Dr. S. -I. Akasofu for his participation in the original planning and discussions; and to Mr. E. J. Chernosky and Miss M. P. Hagan for their contribution in the laborious task of getting the observatory data on punch cards.

I am greatly indebted to Mrs. Shirley Hendricks who performed the computation with an IBM 7090, and supervised plotting with an automatic plotter.

Our sincere thanks are extended to the directors of the magnetic observatories who made the necessary data available to us. Assistance received from the World Data Center A for Geomagnetism is gratefully acknowledged.

References

Akasofu, S. -I., and S. Chapman

1961 J. Geophys. Research, 66, 1321

Akasofu, S. -I., J. C. Cain and S. Chapman

1961 J. Geophys. Research, 66, 4013

Chapman, S. 1918 Proc. Roy. Soc. London, A, 95, 61

1927 ibid., 115, 242

1935 Terr. Mag., 40, 349

1952 Annali di Geofisica, 5, 481

Chapman, S. 1952 Ann. Geophys., 8, 205

Chapman S., and V. C. A. Ferraro

1933 Terr. Mag., 38, 79

1941 ibid., 46, 1

Dessler, A. J., and E. N. Parker

1959 J. Geophys.Research, 64, 2239

Cain, J. C., I. R. Shapiro, J. D. Stolarik and J. P. Heppner

1962 J. Geophys. Research, 67, 5055

Moos, N. A. F. 1910 Magnetic Observations Made at the Government Observatory, Bombay, for the Period 1846 to 1905, and their Discussion, Part II. The Phenomenon and its Discussion, Bombay.

Singer, S. F. 1957 Trans. Am. Geophys. Union, 38, 175

Sugiura, M., and S. Chapman

1960 Abh. Akad. Wiss. Göttingen, Math-Phys. Klasse, Sonderheft Nr. 4, Göttingen

Vestine, E. H., L. Laporte, I. Lange and W. E. Scott

1959 The Geomagnetic Field, Its Description and Analysis, Carnegie Institution of Washington Publication 580, Washington, D.C.

Yokouchi, Y. 1957 Mem. Kakioka Observatory, 8, (1), 27

1958 ibid., 8, (2), 13

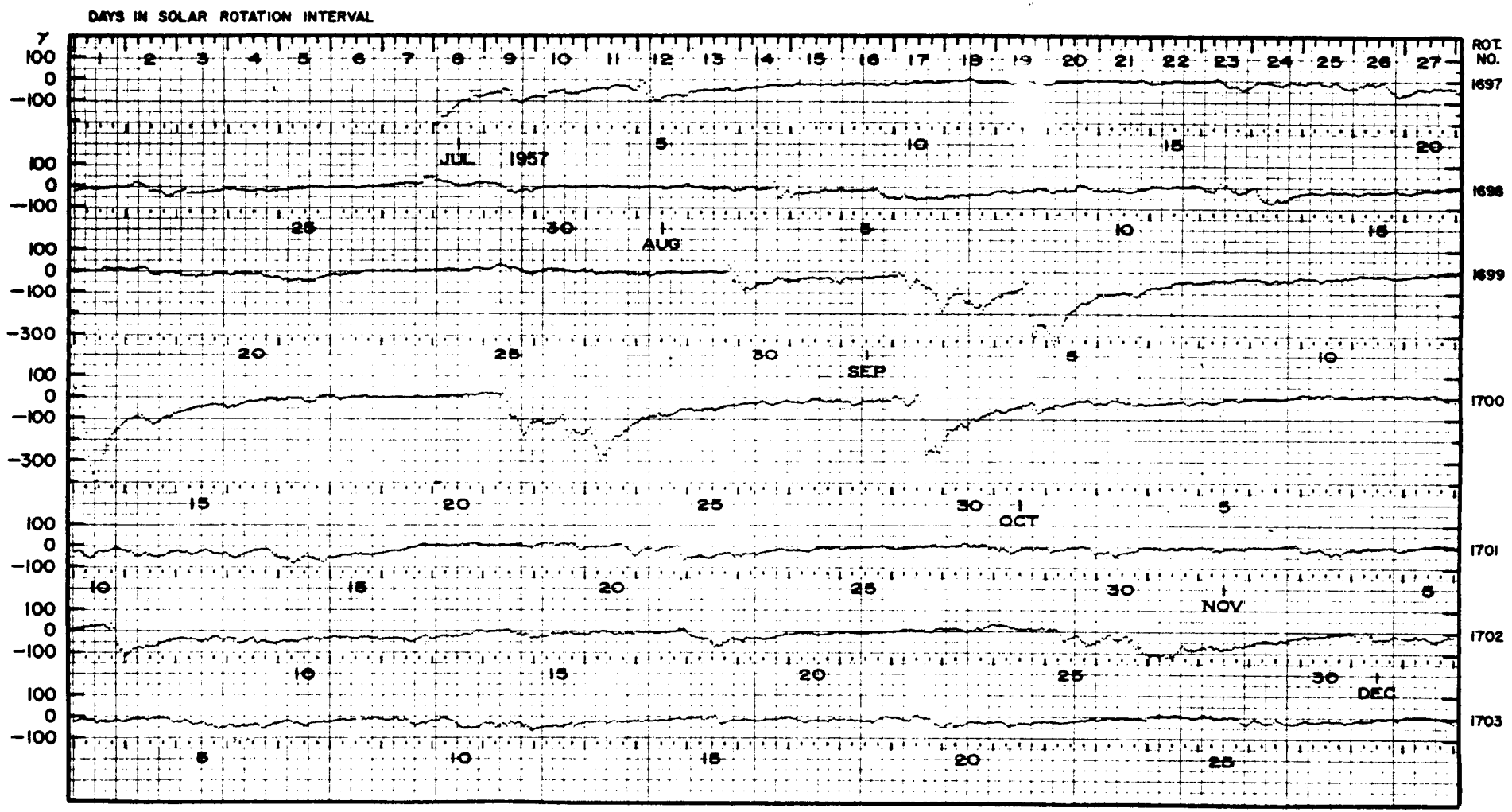


Figure 1: HOURLY Dst PLOTS

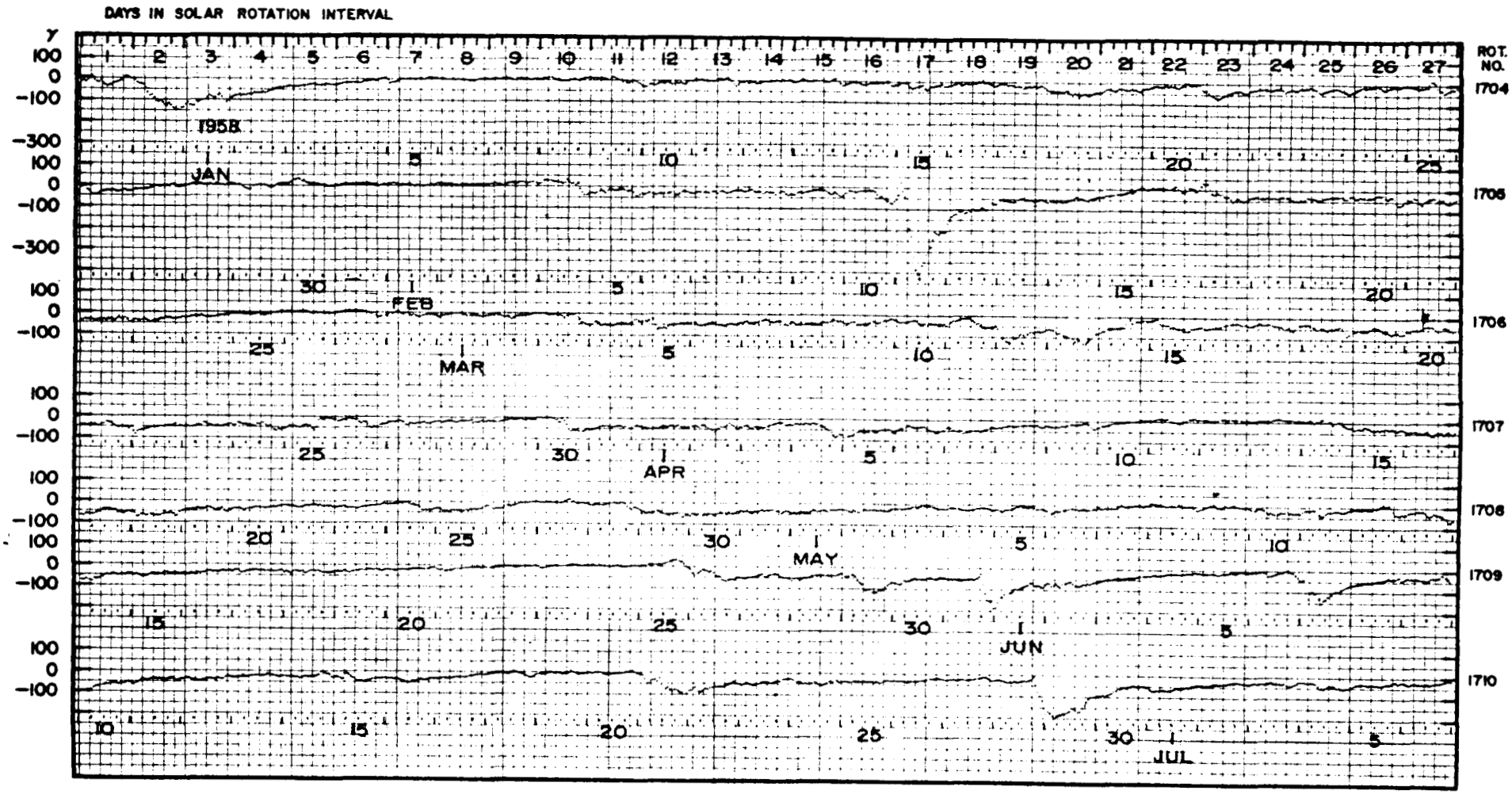


Figure I cont.: HOURLY Dst PLOTS

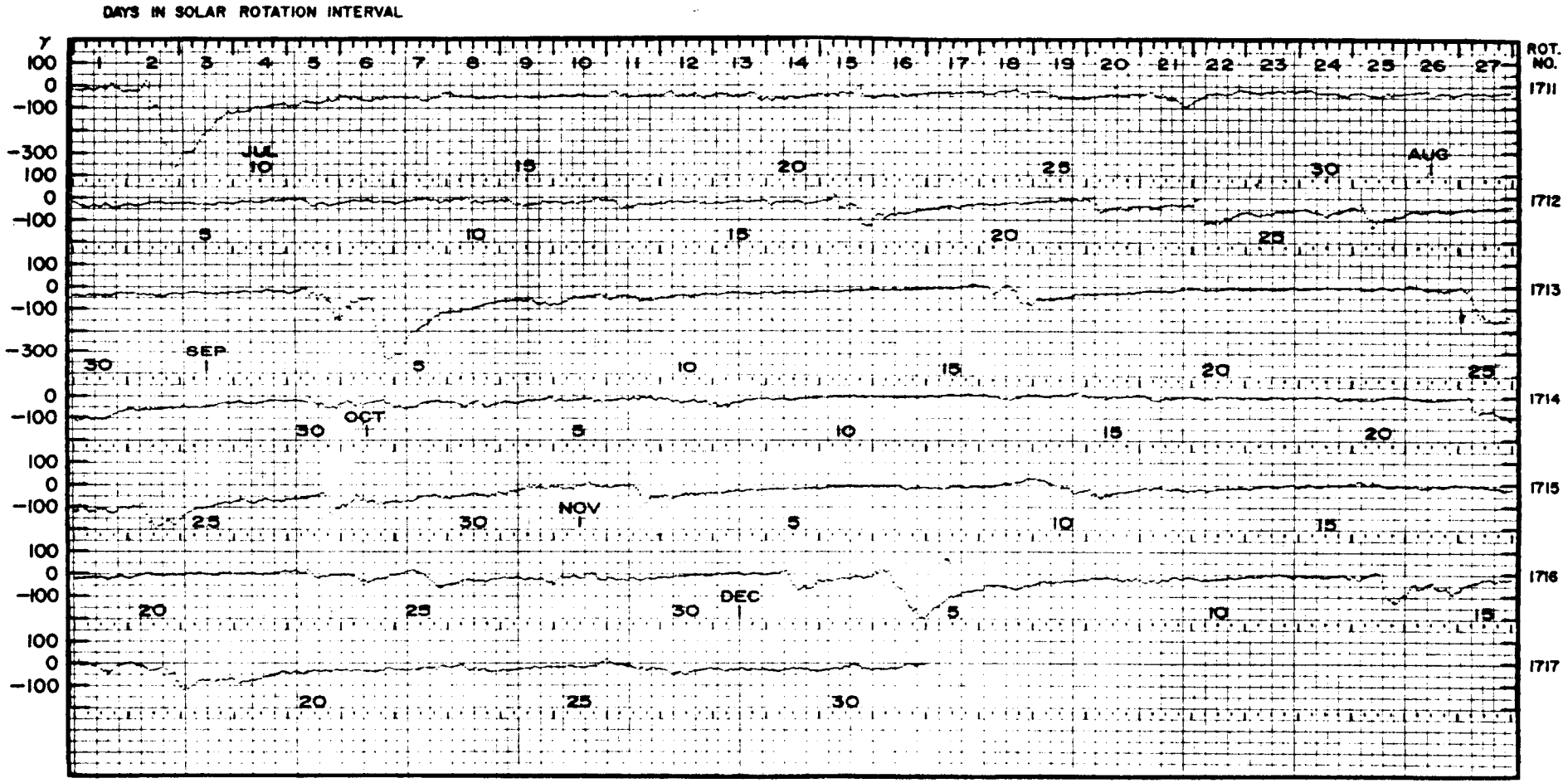


Figure I cont.: HOURLY Dst PLOTS

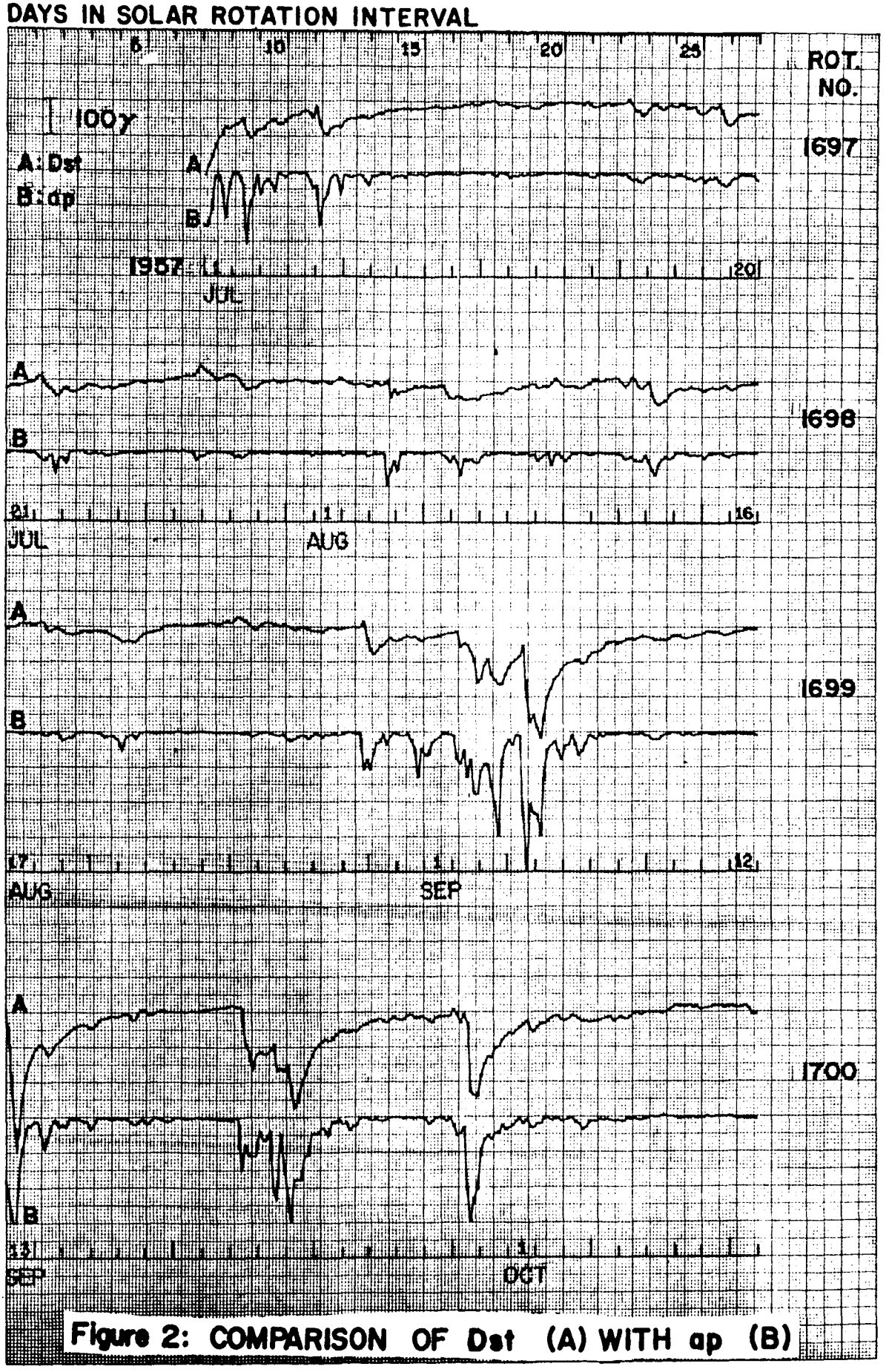


Figure 2: COMPARISON OF Dst (A) WITH ap (B)

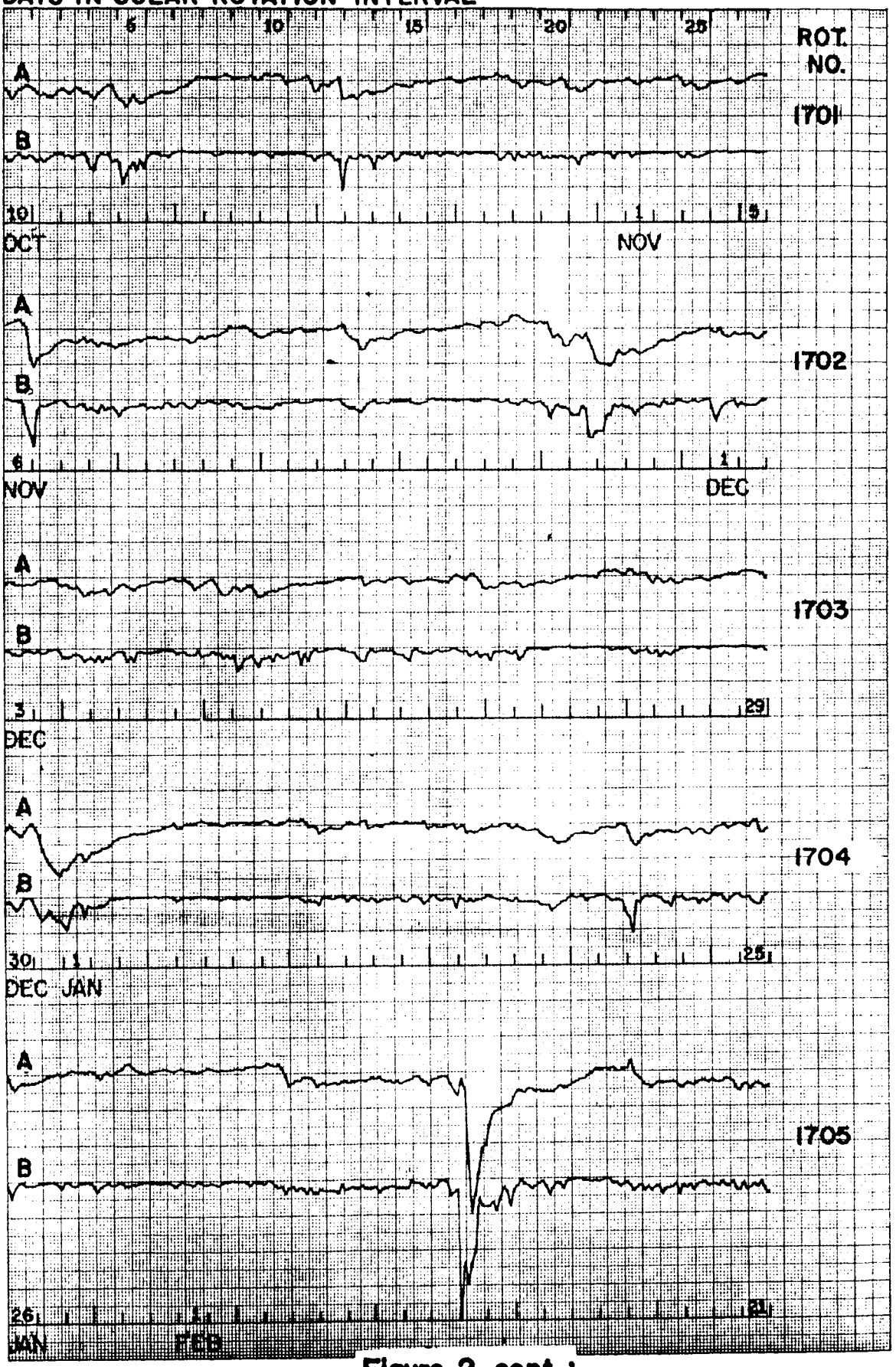
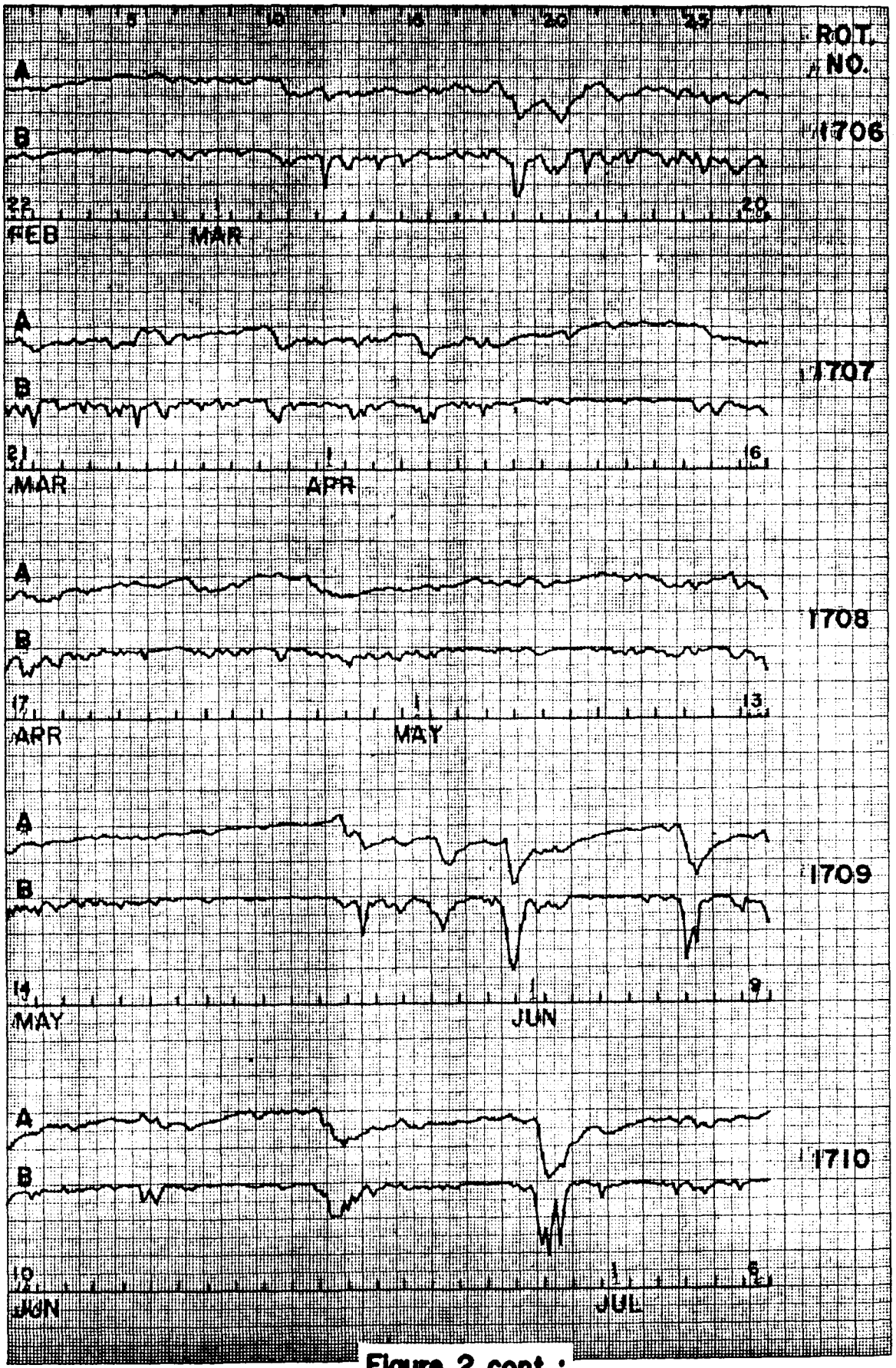


Figure 2 cont.:

DAYS IN SOLAR ROTATION INTERVAL



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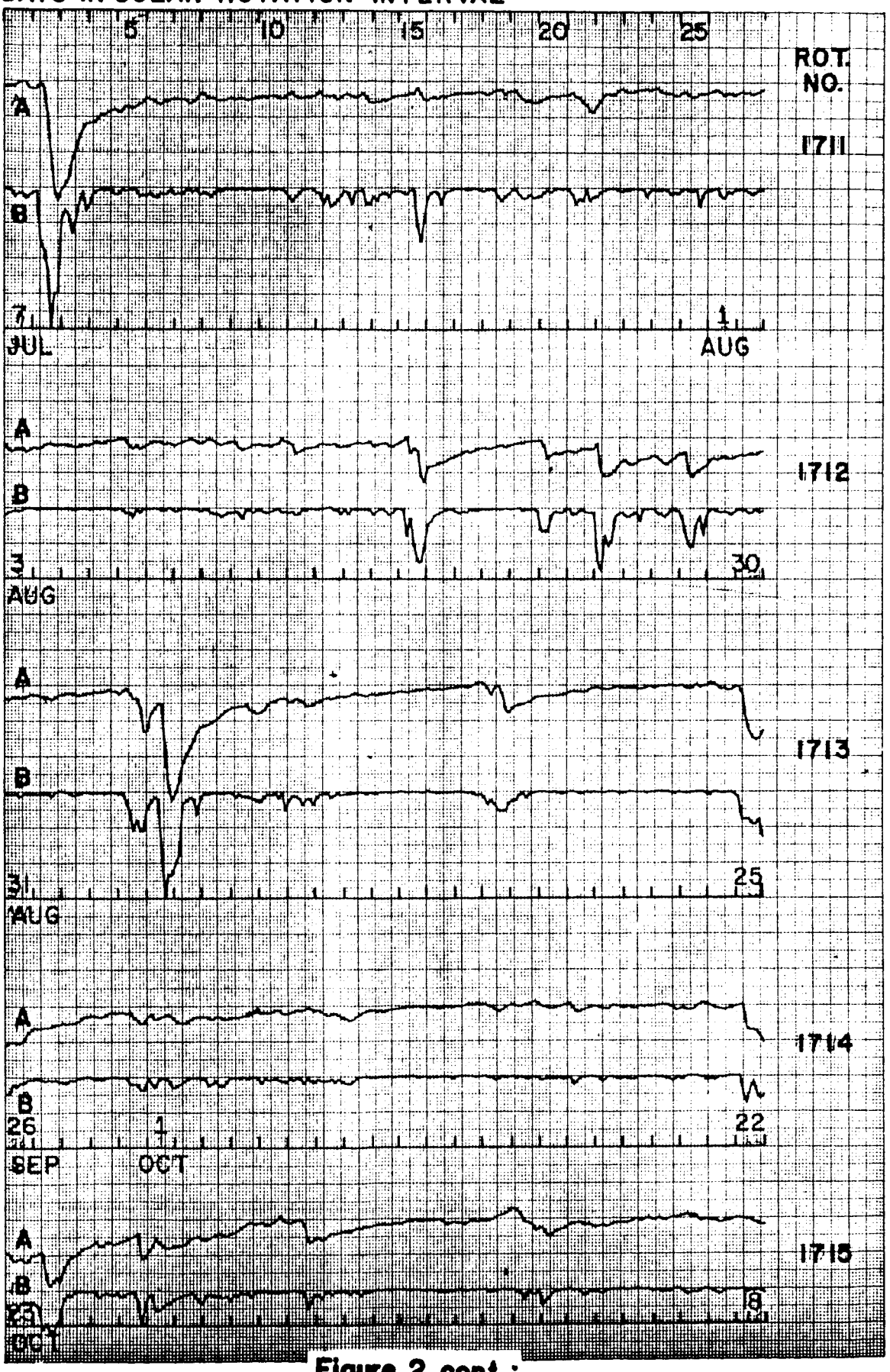

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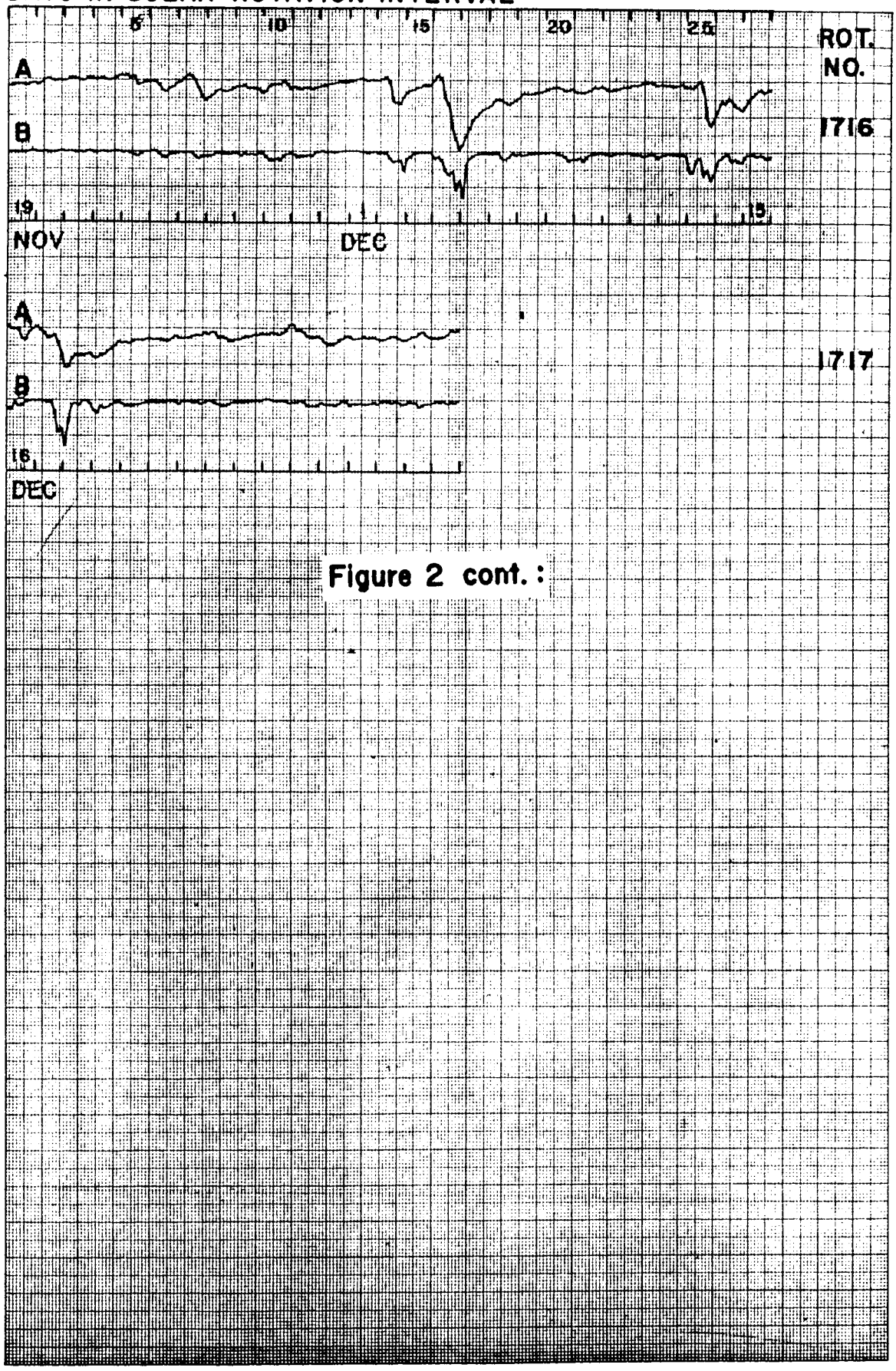

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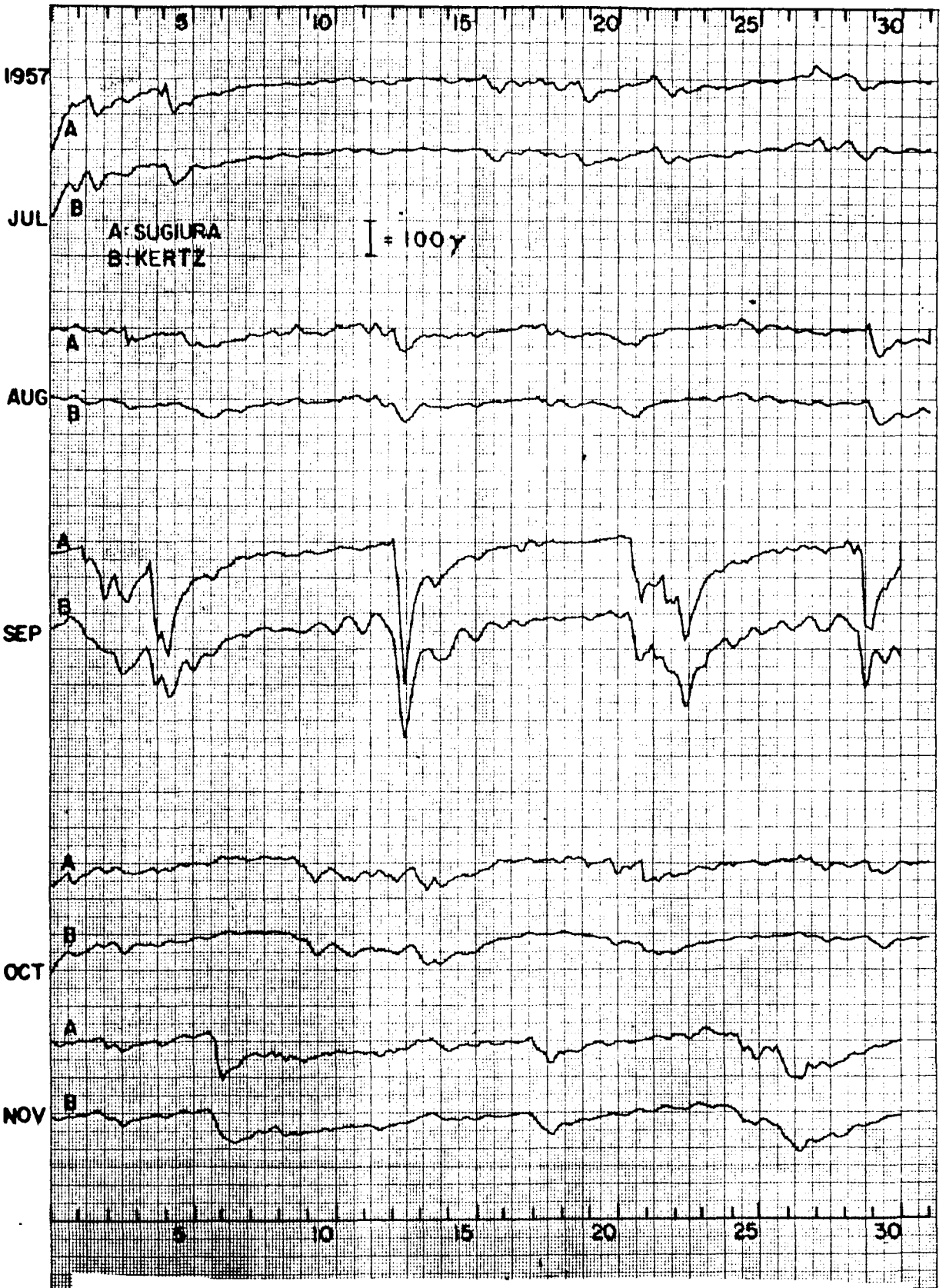
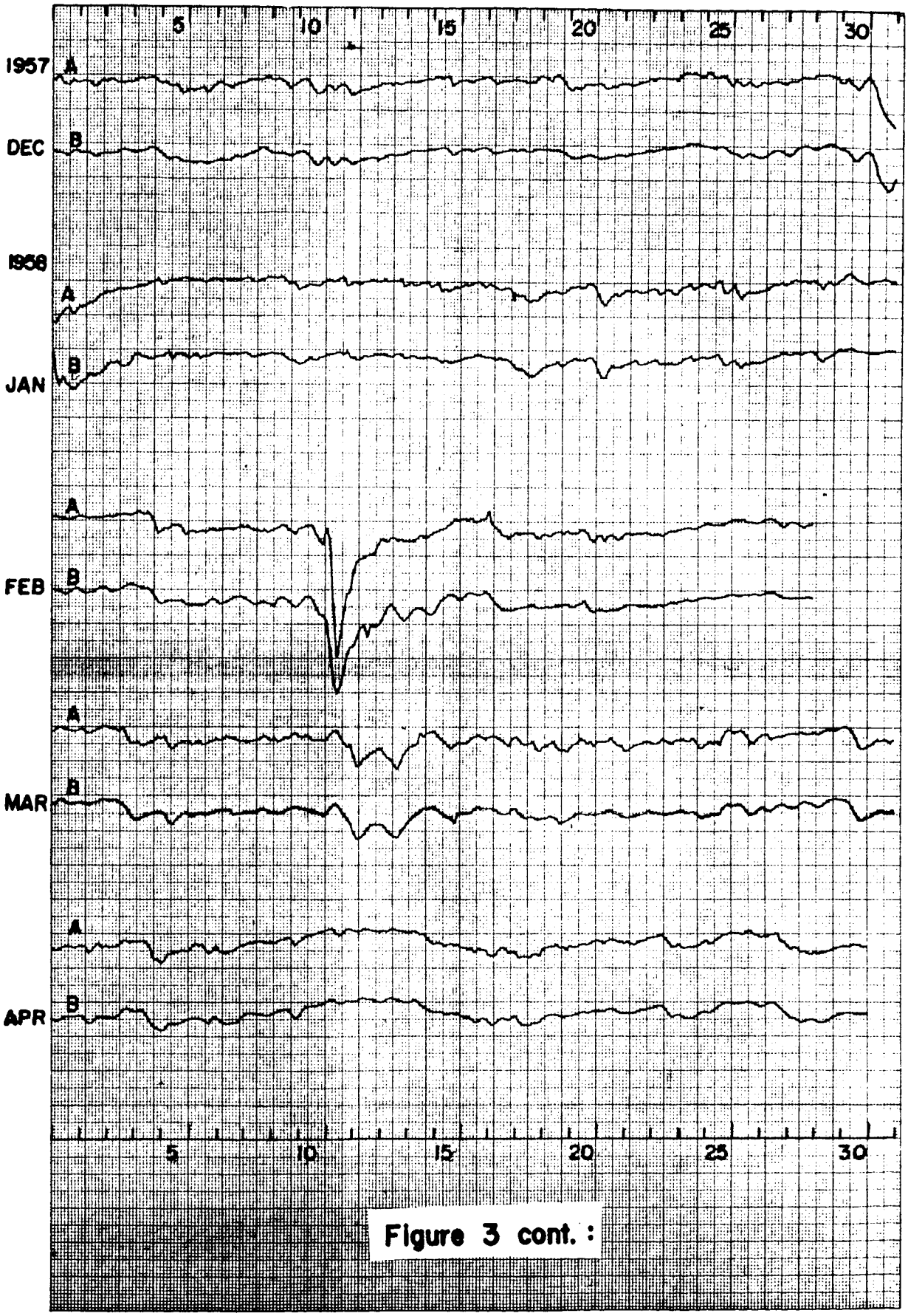


Figure 3 : COMPARISON OF Dst DETERMINED IN THIS PAPER (A) WITH Dst BASED ON KERTZ'S INDICES (B)



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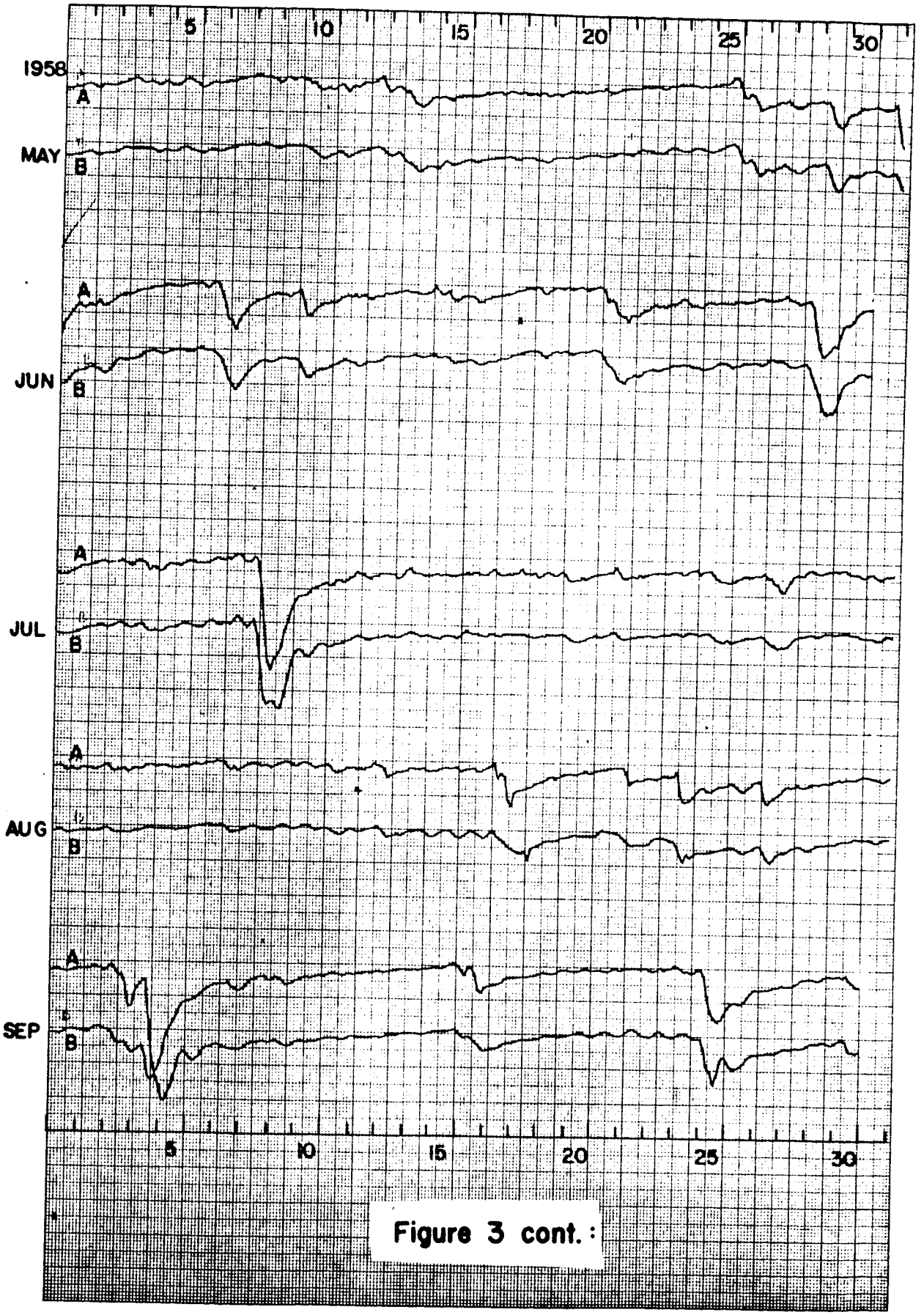

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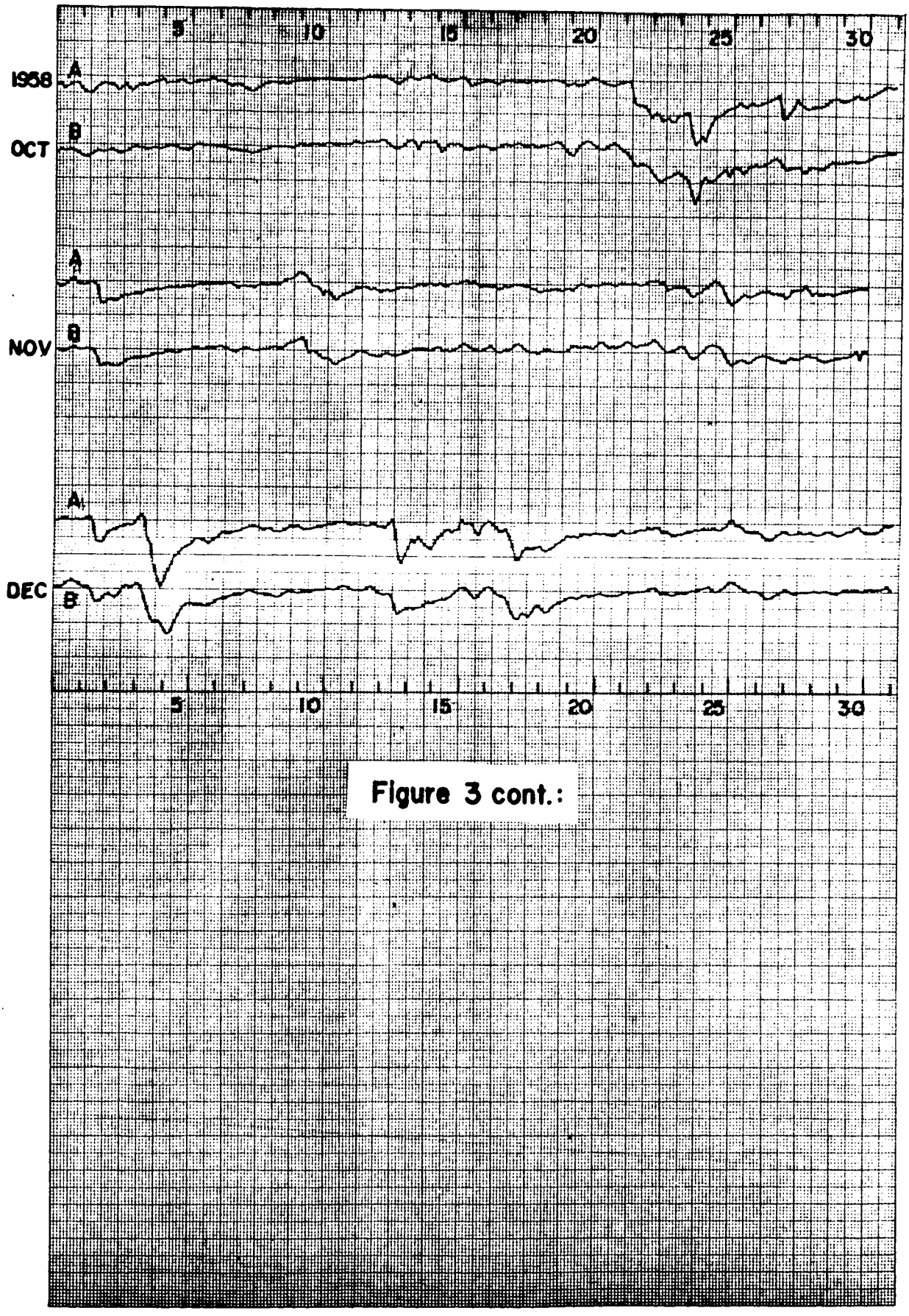

Figure 3 cont.:

HOURLY EQUATORIAL DST VALUES

AUGUST 1957

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-6	-7	-4	-5	-2	-4	-2	-0	0	-2	-4	-3	-9	-11	-8	-5	-3	-1	3	2	1	2	9	13
2	10	3	0	-4	-5	-3	-4	-7	-9	-12	-12	-8	-9	-11	-8	-6	-8	-8	-6	-9	-14	-19	-16	-12
3	-15	-14	-10	-5	-4	-3	-2	-7	-11	-13	-14	-11	-9	-7	-7	-3	23	-9	-46	-54	-39	-28	-18	-24
4	-47	-35	-32	-27	-26	-32	-30	-30	-28	-24	-24	-25	-25	-24	-19	-16	-14	-16	-19	-17	-20	-18	-13	-10
5	-12	-16	-18	-18	-17	-17	-16	-15	-15	-17	-17	-18	-15	-14	-13	-12	-9	-19	-30	-35	-39	-44	-49	-49
6	-47	-51	-53	-54	-40	-29	-39	-48	-46	-49	-53	-57	-51	-51	-54	-52	-46	-49	-48	-50	-49	-53	-54	-51
7	-41	-38	-38	-39	-37	-39	-40	-38	-35	-35	-37	-35	-34	-33	-34	-34	-34	-33	-34	-35	-34	-31	-27	-21
8	-18	-17	-18	-16	-16	-20	-24	-20	-20	-21	-24	-21	-16	-15	-13	-13	-15	-15	-14	-4	-6	-6	-8	-10
9	-13	-22	-23	-20	-14	-16	-15	-13	-11	-15	-15	-15	-14	-8	10	13	9	9	5	-1	-4	-12	-14	-10
10	-11	-15	-13	-13	-15	-13	-11	-12	-12	-14	-14	-14	-17	-19	-20	-19	-16	-13	-8	-8	-9	-9	-4	-3
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15	-23	-28	-28	-25	-22	-19	-15	-15	-21	-21	-19	-19	-19	-20	-19	-17	-17	-13	-11	-8	-13	-22	-18	-19
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19	-13	-12	-18	-21	-21	-21	-22	-20	-20	-30	-25	-19	-18	-22	-22	-23	-20	-18	-15	-13	-13	-14	-13	-13
20	-16	-19	-18	-14	-14	-13	-13	-13	-13	-13	-14	-15	-15	-15	-15	-13	-16	-25	-24	-26	-30	-33	-28	-28
21	-30	-36	-41	-37	-48	-44	-44	-43	-40	-37	-39	-43	-45	-46	-44	-45	-44	-42	-34	-32	-29	-28	-24	-19
22	-18	-17	-16	-17	-19	-19	-17	-15	-15	-13	-12	-12	-13	-12	-7	-4	0	2	1	2	1	1	-0	-1
23	3	1	2	2	2	1	1	2	2	3	1	0	2	1	-1	0	2	3	4	5	6	6	5	7
24	7	6	6	5	7	8	10	11	11	10	9	8	4	3	3	4	5	6	7	14	15	15	14	13
25	11	10	8	12	13	19	26	28	29	27	23	19	15	15	18	14	13	7	5	0	-6	-11	-13	-11
26	-6	-2	1	3	7	10	10	10	11	11	10	11	9	8	5	6	3	0	-1	-2	3	3	7	8
27	2	-2	4	9	-4	-12	-11	-6	-11	-7	-8	-3	-3	-4	-4	-5	-2	-4	-3	-12	-11	-14	-10	-11
28	-12	-13	-13	-12	-10	-15	-22	-18	-13	-12	-8	-9	-8	-4	-2	-4	-2	-2	-4	-4	-4	-8	-9	-7
29	-7	-6	-5	-3	-5	-5	-4	-2	-3	-2	-0	0	-2	-2	-3	-4	-5	-2	-0	29	13	-41	-43	-19
30	-50	-70	-83	-77	-78	-84	-80	-70	-65	-58	-51	-56	-56	-54	-53	-51	-40	-32	-28	-33	-29	-39	-39	-39
31	-40	-41	-40	-38	-38	-33	-31	-33	-30	-28	-27	-27	-29	-34	-30	-30	-28	-28	-30	-33	-42	-28	-43	-54

HOURLY EQUATORIAL DST VALUES

SEPTEMBER 1957

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-40	-34	-27	-27	-31	-33	-29	-31	-31	-32	-29	-25	-29	-26	-29	-26	-24	-22	-21	-21	-22	-23	-18	-16
2	-16	-21	-16	-8	-14	-18	-38	-62	-75	-61	-45	-33	-39	-57	-59	-71	-74	-73	-79	-98	-110	-131	-172	-185
3	-167	-152	-125	-118	-108	-104	-76	-100	-101	-131	-139	-144	-136	-152	-166	-169	-170	-157	-180	-162	-155	-147	-129	-126
4	-117	-110	-115	-110	-96	-96	-93	-91	-92	-89	-85	-80	-75	-38	-50	-137	-205	-286	-306	-275	-245	-246	-248	-259
5	-274	-284	-319	-336	-318	-306	-284	-248	-227	-212	-195	-185	-181	-177	-162	-153	-142	-147	-146	-140	-135	-129	-119	-115
6	-107	-106	-112	-103	-105	-103	-101	-102	-99	-98	-95	-91	-90	-96	-100	-97	-111	-112	-112	-104	-93	-88	-82	-77
7	-74	-71	-72	-70	-73	-70	-67	-67	-67	-65	-63	-53	-47	-45	-43	-49	-45	-40	-39	-38	-45	-47	-46	-46
8	-46	-44	-43	-43	-39	-36	-33	-34	-35	-36	-36	-36	-36	-37	-36	-35	-33	-29	-28	-27	-25	-24	-30	-31
9	-29	-29	-31	-31	-32	-35	-35	-41	-43	-44	-37	-33	-34	-37	-38	-35	-36	-38	-37	-35	-31	-28	-25	-23
10	-24	-26	-27	-26	-26	-25	-25	-32	-38	-36	-32	-28	-28	-31	-30	-28	-24	-28	-28	-23	-20	-24	-21	-20
11	-19	-17	-13	-12	-13	-13	-15	-15	-14	-14	-17	-15	-14	-15	-13	-15	-18	-22	-22	-23	-23	-23	-23	-22
12	-20	-20	-16	-15	-14	-11	-12	-13	-13	-14	-13	-10	-6	-5	-8	-6	-4	-5	-6	-7	-6	-4	-4	-11
13	-1	36	-9	-51	-123	-125	-173	-283	-326	-364	-434	-395	-351	-299	-272	-255	-232	-200	-179	-169	-160	-150	-138	-129
14	-120	-115	-106	-107	-97	-94	-92	-103	-88	-101	-114	-108	-121	-130	-127	-122	-117	-107	-98	-93	-91	-96	-90	-78
15	-80	-74	-70	-70	-67	-64	-62	-57	-54	-49	-45	-48	-47	-45	-43	-41	-38	-37	-37	-37	-39	-39	-39	-45
16	-52	-49	-43	-43	-44	-39	-33	-32	-29	-22	-20	-21	-23	-22	-19	-17	-16	-18	-17	-11	-10	-11	-13	-17
17	-16	-13	-14	-13	-7	-4	-6	-7	-9	-7	-6	-14	-23	-24	-25	-25	-23	-18	-5	2	4	5	7	8
18	1	5	7	-4	-11	-14	-8	-6	-4	-1	3	4	1	0	2	4	6	7	1	-2	-0	3	2	-1
19	1	2	-1	-3	-0	1	2	1	2	1	-1	-1	1	-0	-2	-0	2	4	2	1	-0	0	1	3
20	1	2	5	6	7	6	6	5	8	10	9	8	8	8	8	12	14	11	14	10	9	13	14	16
21	19	21	18	17	17	15	16	14	11	16	41	-19	-83	-92	-92	-91	-111	-132	-158	-178	-168	-141	-121	-110
22	-118	-114	-110	-111	-121	-128	-123	-124	-117	-122	-111	-101	-90	-80	-107	-156	-186	-169	-152	-161	-168	-164	-175	-172
23	-160	-153	-140	-173	-224	-235	-267	-293	-266	-269	-268	-236	-240	-198	-181	-186	-183	-175	-161	-159	-144	-134	-126	-120
24	-116	-106	-95	-54	-99	-92	-87	-87	-86	-87	-73	-76	-86	-80	-87	-84	-79	-77	-73	-67	-58	-56	-56	-59
25	-54	-51	-56	-62	-60	-61	-60	-58	-53	-56	-52	-50	-56	-61	-53	-46	-43	-42	-38	-38	-38	-36	-36	-38
26	-31	-30	-28	-26	-29	-26	-25	-27	-28	-24	-19	-17	-21	-25	-29	-32	-32	-28	-26	-23	-20	-17	-13	-15
27	-18	-21	-22	-23	-21	-24	-24	-21	-19	-15	-10	-8	-7	-9	-10	-14	-17	-20	-16	-16	-18	-15	-10	-12
28	-15	-19	-17	-17	-21	-33	-37	-30	-28	-22	-11	-17	-15	-15	-15	-16	-15	-11	-10	-15	-16	-14	-14	-13
29	1	9	8	-3	-3	-16	-31	-35	-31	-19	-14	12	14	-14	-97	-197	-264	-248	-242	-251	-228	-251	-257	-227
30	-159	-178	-169	-149	-153	-143	-137	-130	-119	-132	-134	-136	-116	-100	-98	-108	-102	-91	-84	-82	-75	-74	-68	-67

HOURLY EQUATORIAL DST VALUES
OCTOBER 1957

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-59	-58	-61	-64	-69	-65	-57	-50	-51	-48	-44	-40	-37	-34	-34	-32	-26	-21	-31	-55	-72	-67	-57	-50
2	-46	-42	-43	-39	-34	-31	-34	-36	-35	-31	-26	-24	-22	-15	-14	-12	-14	-15	-11	-11	-13	-19	-27	-26
3	-26	-23	-26	-26	-23	-15	-11	-10	-11	-11	-14	-15	-19	-25	-19	-21	-32	-32	-31	-23	-24	-26	-32	-31
4	-28	-29	-28	-26	-28	-25	-25	-25	-23	-21	-19	-20	-19	-17	-14	-13	-13	-21	-27	-30	-25	-22	-20	-18
5	-12	-16	-14	-17	-21	-23	-23	-20	-20	-14	-12	-8	-6	-4	-3	1	-5	-10	-13	-9	-9	-5	-4	-3
6	-3	-1	-0	-1	-3	-3	-2	-1	-1	-1	-2	-3	-5	-6	-4	-2	-1	2	1	4	4	9	12	15
7	19	18	16	15	15	13	14	15	15	11	13	19	19	18	16	11	12	11	13	14	14	9	6	5
8	6	9	12	12	11	10	11	12	14	16	17	17	17	17	16	17	17	17	15	12	12	12	14	15
9	16	15	17	14	13	10	11	11	9	13	13	14	18	18	17	13	9	3	-5	-9	-10	-2	-3	-14
10	-26	-29	-24	-23	-33	-41	-47	-54	-59	-52	-46	-34	-26	-27	-28	-26	-28	-23	-19	-18	-11	-16	-19	-20
11	-23	-28	-29	-23	-34	-45	-45	-47	-45	-37	-32	-43	-40	-45	-51	-51	-52	-49	-46	-43	-36	-31	-30	-28
12	-26	-25	-27	-30	-30	-28	-35	-39	-41	-35	-34	-28	-22	-22	-18	-21	-26	-33	-38	-36	-38	-37	-34	-31
13	-37	-45	-50	-58	-56	-49	-47	-39	-36	-33	-29	-27	-23	-19	-19	-16	-14	-17	-15	-15	-20	-32	-41	-45
14	-53	-58	-56	-59	-62	-60	-77	-79	-72	-64	-72	-53	-47	-34	-48	-56	-57	-61	-64	-63	-73	-75	-64	-52
15	-48	-55	-54	-50	-48	-43	-41	-40	-41	-42	-39	-36	-32	-37	-34	-36	-36	-38	-37	-40	-37	-36	-34	-33
16	-32	-30	-29	-27	-22	-20	-18	-20	-20	-21	-18	-15	-12	-7	-5	-5	-3	-1	5	9	10	8	7	5
17	4	4	7	9	7	6	5	3	2	4	6	6	2	7	13	9	9	9	14	14	15	13	11	10
18	5	5	3	5	6	4	5	5	6	9	9	7	6	7	9	10	10	12	10	3	1	-1	-2	-2
19	1	6	11	13	15	18	15	12	16	15	7	8	13	15	15	14	11	15	15	12	-3	-14	-15	-11
20	-2	-2	-2	-2	-2	-2	-2	-1	0	-0	1	0	6	6	9	11	12	12	2	-4	-11	-20	-36	-41
21	-38	-28	-20	-15	-10	-9	-10	-9	-18	-20	-18	-14	-7	-6	-6	3	-1	-1	2	9	2	-35	-63	-59
22	-50	-48	-55	-49	-46	-43	-42	-45	-48	-52	-56	-52	-45	-40	-38	-34	-35	-31	-31	-28	-29	-38	-44	-38
23	-36	-40	-34	-32	-32	-32	-31	-30	-35	-34	-29	-27	-24	-22	-21	-19	-18	-16	-13	-10	-10	-10	-15	-16
24	-17	-17	-15	-16	-14	-16	-18	-19	-23	-22	-17	-12	-10	-6	-3	-3	-3	-4	-4	-10	-4	-2	-2	-1
25	-14	-12	-9	-4	-2	-2	-4	-3	-1	0	-1	-0	0	-0	0	3	4	3	2	6	6	3	-2	-6
26	-4	-8	-8	-7	-6	-6	-5	-4	-3	-1	1	4	5	4	2	4	5	5	8	8	10	4	4	6
27	7	3	4	6	9	7	7	8	8	17	18	16	10	5	11	8	6	7	13	12	10	-7	-3	1
28	-1	-7	-17	-8	-6	-12	-17	-27	-27	-23	-17	-14	-10	-5	-5	-3	-4	-2	-12	-3	1	-4	-5	-3
29	-3	-10	-22	-16	-13	-13	-12	-8	-13	-7	-2	-5	1	-4	-2	2	7	7	2	1	-1	-13	-28	-33
30	-25	-23	-24	-24	-19	-19	-26	-32	-40	-35	-29	-27	-24	-23	-24	-19	-17	-17	-15	-11	-3	0	0	-0
31	1	-1	-2	-4	-4	-5	-6	-7	-8	-6	-4	-1	-6	-6	-6	-0	2	0	-3	-0	-5	-3	1	3

HOURLY EQUATORIAL DST VALUES

NOVEMBER 1957

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	6	5	2	-3	-2	-4	-12	-11	-9	-13	-14	-7	-4	-4	-4	-2	2	-3	-7	-4	-6	-6	-2	5
2	4	5	4	3	5	2	0	0	3	4	-0	3	4	6	7	9	11	8	9	12	13	16	6	-11
3	-15	-16	-18	-13	-12	-11	-11	-9	-4	-10	-14	-24	-23	-28	-32	-23	-18	-26	-30	-21	-14	-12	-9	-9
4	-8	-8	-10	-10	-8	-4	-3	-3	-4	-3	-2	-2	-2	-0	2	3	0	4	1	-2	-6	-12	-13	-9
5	-8	-8	-4	-2	-2	0	2	3	6	9	11	10	12	12	14	14	17	17	14	16	13	13	12	11
6	9	8	14	12	15	16	16	16	23	22	19	23	25	25	30	20	15	11	35	12	-34	-67	-89	-87
7	-111	-113	-105	-92	-85	-84	-82	-75	-79	-80	-70	-70	-72	-72	-71	-67	-63	-57	-53	-48	-44	-43	-42	-39
8	-37	-37	-35	-33	-33	-36	-37	-33	-37	-38	-40	-44	-48	-43	-36	-43	-35	-28	-27	-27	-27	-37	-48	-39
9	-31	-32	-34	-36	-38	-55	-59	-55	-47	-45	-38	-35	-32	-43	-59	-53	-45	-42	-46	-52	-54	-56	-56	-58
10	-53	-46	-42	-42	-47	-46	-42	-45	-48	-47	-42	-37	-36	-38	-31	-31	-29	-37	-34	-40	-38	-31	-31	-31
11	-29	-27	-23	-26	-30	-31	-29	-29	-26	-29	-35	-33	-32	-34	-28	-27	-27	-28	-26	-30	-33	-32	-30	-37
12	-38	-35	-35	-32	-33	-33	-32	-31	-32	-33	-35	-36	-38	-42	-48	-47	-41	-35	-31	-29	-23	-19	-24	-32
13	-36	-32	-28	-27	-23	-22	-22	-23	-21	-25	-24	-21	-24	-23	-19	-12	-12	-15	-17	-10	-1	5	4	5
14	4	0	-5	-0	2	1	2	4	1	4	7	8	6	-1	-4	-2	-13	-12	-19	-16	-11	-14	-29	-30
15	-27	-29	-28	-23	-23	-23	-23	-21	-11	-9	-12	-9	-10	-10	-10	-8	-10	-6	-10	-13	-14	-14	-11	-13
16	-15	-15	-12	-6	-1	-4	-5	-3	1	4	-0	-1	-4	-7	-13	-13	-9	-9	-11	-7	-7	-7	-8	-9
17	1	-1	-1	-1	-3	-3	-3	-3	-5	-7	-5	-5	-3	-4	-4	-3	-1	-1	0	4	12	11	12	9
18	-4	-15	-20	-23	-25	-27	-27	-33	-35	-32	-33	-44	-57	-70	-60	-68	-63	-51	-51	-41	-35	-29	-34	-35
19	-34	-37	-38	-34	-28	-27	-29	-30	-29	-29	-31	-32	-34	-32	-32	-29	-27	-25	-20	-18	-16	-14	-9	-11
20	-11	-12	-10	-7	-4	-4	-7	-7	-4	-3	-5	-6	-11	-15	-13	-13	-12	-12	-11	-8	-7	-1	-1	-0
21	-2	-4	-3	-1	-1	-3	-4	-4	-7	-6	-6	-7	-6	-5	-2	0	0	-2	-2	-1	2	1	4	4
22	2	3	5	6	8	10	13	12	13	15	11	8	8	9	11	9	3	3	2	3	9	16	18	18
23	17	15	14	16	16	17	17	12	14	11	5	4	6	9	6	13	21	19	12	19	26	29	33	40
24	37	35	33	34	33	33	31	26	21	24	19	16	16	15	15	16	20	18	12	12	15	17	23	19
25	7	13	18	13	18	14	6	-9	-36	-37	-28	-26	-24	-17	-15	-16	-31	-41	-47	-62	-55	-56	-51	-48
26	-39	-39	-22	-27	-21	-10	-9	-26	-31	-31	-34	-31	-20	-14	-16	-37	-30	-58	-72	-61	-64	-89	-98	-97
27	-102	-107	-101	-99	-103	-109	-103	-102	-112	-112	-106	-110	-107	-94	-84	-69	-57	-68	-75	-79	-75	-78	-78	-76
28	-72	-67	-66	-71	-59	-58	-66	-70	-68	-71	-80	-75	-72	-71	-73	-74	-64	-58	-61	-58	-64	-60	-59	-56
29	-54	-51	-46	-40	-41	-38	-36	-36	-38	-40	-40	-43	-45	-40	-34	-34	-37	-35	-30	-25	-23	-21	-24	-20
30	-19	-12	-15	-23	-19	-18	-17	-18	-13	-14	-15	-13	-9	-8	-4	-5	-4	-3	-6	-4	-2	0	-1	-1

HOURLY EQUATORIAL DST VALUES

DECEMBER 1957

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-1	-8	-32	-31	-14	-2	7	1	-10	-11	-28	-32	-29	-26	-27	-29	-27	-27	-20	-13	-13	-17	-25	-22
2	-19	-23	-24	-23	-21	-13	-15	-23	-21	-16	-19	-25	-30	-35	-36	-35	-33	-32	-27	-22	-17	-13	-17	-15
3	-22	-24	-19	-13	-13	-11	-14	-17	-17	-14	-24	-29	-22	-21	-23	-22	-24	-25	-24	-22	-16	-18	-22	-25
4	-22	-20	-17	-12	-11	-12	-11	-9	-10	-7	-13	-16	-10	-7	-9	-8	-8	-8	-6	-9	-9	-14	-22	-28
5	-23	-23	-26	-22	-16	-19	-24	-29	-35	-34	-34	-30	-26	-24	-34	-41	-39	-38	-48	-51	-60	-51	-50	-49
6	-43	-37	-38	-44	-48	-45	-46	-41	-40	-41	-40	-39	-38	-32	-35	-41	-56	-56	-49	-43	-41	-35	-31	-31
7	-28	-25	-23	-21	-18	-20	-22	-32	-27	-27	-33	-35	-40	-41	-35	-30	-28	-26	-24	-25	-26	-22	-24	-25
8	-23	-22	-18	-16	-15	-14	-12	-13	-16	-18	-14	-12	-13	-15	-15	-14	-10	-11	-7	-11	-5	-2	-3	-8
9	-9	-12	-13	-14	-14	-11	-7	-6	-10	-17	-17	-9	-13	-15	-29	-32	-41	-36	-31	-28	-27	-29	-24	-19
10	-16	-17	-17	-17	-8	-6	-5	-8	-13	-16	-19	-29	-33	-40	-49	-54	-52	-49	-51	-51	-49	-48	-48	-38
11	-30	-26	-29	-31	-27	-33	-48	-40	-39	-30	-32	-39	-31	-20	-27	-31	-25	-24	-37	-43	-37	-47	-59	-61
12	-58	-56	-53	-51	-46	-45	-41	-42	-43	-40	-39	-39	-45	-42	-37	-37	-34	-30	-26	-39	-36	-31	-29	-28
13	-23	-22	-23	-22	-22	-23	-20	-18	-20	-19	-30	-27	-23	-19	-15	-23	-21	-25	-23	-21	-23	-20	-18	-18
14	-17	-15	-19	-21	-16	-15	-15	-19	-17	-16	-17	-15	-14	-14	-16	-12	-11	-10	-9	-8	-7	-8	-10	-10
15	-5	-2	-3	-2	-4	-2	-1	-8	-12	-6	-3	3	1	8	-7	-25	-30	-25	-25	-20	-15	-12	-12	-15
16	-13	-13	-10	-9	-12	-12	-11	-14	-17	-18	-16	-14	-11	-9	-8	-9	-9	-8	-8	-8	-2	-5	-3	1
17	-0	-3	-7	-8	-15	-13	-20	-25	-21	-17	-14	-14	-13	-13	-18	-15	-15	-15	-18	-12	-8	-4	-9	-12
18	-11	-10	-8	-14	-12	-9	-11	-14	-12	-14	-15	-18	-16	-14	-15	-22	-19	-12	-8	-5	-3	3	4	2
19	-0	-1	-0	-3	-6	-8	-11	-11	-15	-7	8	8	13	5	-0	-4	-3	-5	-3	-17	-30	-29	-35	-41
20	-43	-36	-31	-25	-24	-39	-35	-36	-33	-33	-32	-26	-21	-18	-19	-22	-20	-19	-22	-24	-23	-18	-18	-21
21	-21	-16	-17	-16	-21	-27	-35	-35	-32	-31	-32	-28	-25	-25	-25	-26	-26	-28	-21	-20	-20	-18	-18	-16
22	-17	-18	-16	-18	-19	-20	-23	-23	-22	-20	-18	-16	-15	-14	-14	-13	-12	-11	-11	-10	-7	-4	-1	1
23	-9	-7	-5	-2	1	2	2	-1	-2	-3	-1	1	1	-1	-1	-3	-3	-1	-1	-1	-3	-6	-7	-7
24	8	12	12	11	12	17	15	14	11	10	8	16	16	16	15	12	10	9	9	5	1	1	2	6
25	13	18	20	14	10	17	5	-2	1	1	4	5	8	5	8	8	4	3	-0	-15	-19	-23	-27	-19
26	-11	-6	-3	-9	-9	-16	-22	-23	-22	-19	-21	-12	-2	-10	-12	-18	-22	-20	-24	-23	-25	-21	-21	-16
27	-14	-10	-8	-12	-13	-15	-15	-14	-13	-10	-10	-10	-10	-8	-13	-11	-10	-9	-11	-13	-19	-17	-17	-16
28	-11	-8	-8	-8	-8	-9	-10	-9	-6	-4	-3	1	4	3	0	0	3	5	6	5	-3	-6	2	6
29	8	12	11	11	11	11	11	12	12	13	12	10	11	9	6	5	7	4	5	6	4	-4	-12	-19
30	-14	-9	-14	-5	4	9	-8	-16	-17	-7	-22	-28	-35	-29	-29	-21	-18	-15	-11	-5	4	12	11	3
31	0	-3	-17	-22	-23	-27	-45	-64	-80	-76	-90	-100	-107	-103	-112	-123	-124	-116	-124	-135	-139	-145	-146	-135

HOURLY EQUATORIAL DST VALUES

JANUARY 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-133	-118	-110	-123	-126	-125	-105	-107	-103	-99	-98	-87	-75	-80	-85	-88	-76	-71	-84	-100	-108	-101	-88	-84
2	-78	-76	-72	-78	-74	-75	-71	-71	-72	-64	-64	-63	-63	-62	-64	-61	-54	-50	-46	-43	-42	-39	-40	-38
3	-33	-31	-32	-33	-33	-32	-31	-31	-29	-27	-26	-23	-22	-20	-22	-25	-26	-26	-25	-22	-22	-24	-24	-24
4	-23	-20	-17	-16	-16	-15	-16	-15	-14	-13	-15	-15	-12	-8	-6	-5	-4	-2	-5	-2	-0	4	7	8
5	-1	-17	-12	-11	-9	-4	1	4	4	2	4	5	5	3	4	6	5	0	5	12	12	11	11	10
6	7	8	8	5	4	3	5	5	2	3	3	3	2	0	-1	-4	-2	-0	2	6	7	7	9	8
7	7	8	9	6	5	6	8	9	8	10	7	2	2	5	7	9	8	8	6	5	4	7	6	4
8	6	12	12	10	12	15	10	6	3	2	-1	-0	-1	-1	3	6	8	4	3	5	9	12	14	15
9	12	12	12	11	11	12	13	8	5	11	18	13	10	6	3	-3	-8	-9	-9	-4	2	-3	-10	-14
10	-24	-27	-26	-19	-14	-16	-20	-15	-11	-9	-9	-8	-5	-10	-17	-12	-9	-12	-8	-13	-15	-10	-1	-0
11	-0	8	5	5	7	3	0	0	1	-2	-1	6	10	12	7	12	13	9	1	-14	-23	-15	-7	-3
12	-3	0	-7	-6	-4	-9	-10	-9	-8	-2	1	-1	-0	-1	1	6	2	2	6	3	3	5	1	-3
13	-3	-1	5	6	7	3	2	-0	1	3	3	2	4	4	-1	-1	-0	5	11	12	-0	-9	-19	-17
14	-12	-9	-4	-2	-2	-2	-4	-10	-16	-12	-12	-6	-7	-8	-3	-4	-3	-7	-2	1	1	-16	-18	-13
15	-12	-9	-4	-2	-3	-10	-24	-30	-26	-22	-20	-18	-14	-30	-35	-28	-22	-22	-17	-15	-15	-10	-21	-20
16	-16	-14	-13	-10	-7	-5	-13	-11	-7	-7	-11	-4	-3	-5	1	0	4	-3	-5	-6	-11	-15	-17	-14
17	-9	-7	-5	-8	-14	-11	-13	-16	-19	-17	-20	-28	-23	-22	-17	-21	-16	-19	-20	-16	-15	-23	-32	-35
18	-37	-36	-40	-40	-40	-42	-40	-36	-39	-49	-59	-49	-53	-66	-55	-53	-51	-55	-58	-54	-48	-43	-42	-43
19	-40	-34	-28	-27	-28	-33	-35	-32	-25	-24	-25	-30	-31	-30	-26	-29	-30	-35	-36	-29	-26	-24	-23	-18
20	-16	-13	-11	-15	-15	-13	-9	-14	-9	-15	-14	-18	-20	-13	-9	-7	2	-2	-8	-5	-5	-3	-2	-27
21	-33	-32	-40	-52	-57	-62	-70	-66	-60	-56	-51	-49	-44	-37	-34	-33	-34	-31	-37	-41	-42	-36	-31	-29
22	-25	-26	-23	-25	-22	-24	-27	-28	-28	-24	-22	-23	-17	-27	-38	-32	-28	-26	-25	-30	-27	-22	-19	-20
23	-20	-20	-13	-17	-20	-25	-33	-38	-34	-31	-28	-26	-22	-20	-16	-17	-20	-27	-27	-33	-38	-38	-32	-30
24	-24	-19	-14	-11	-11	-12	-11	-11	-9	-5	-3	-8	-17	-22	-17	-15	-12	-8	-6	-6	-8	-6	-1	-1
25	-0	-5	-7	-9	-11	-15	-14	-13	-13	-7	1	18	17	10	-12	-22	-24	-37	-34	-27	-24	-20	-19	-14
26	-9	-6	-5	-22	-31	-45	-47	-45	-44	-37	-31	-28	-26	-25	-26	-25	-27	-30	-31	-28	-23	-23	-27	-29
27	-28	-23	-20	-20	-19	-17	-16	-17	-16	-12	-6	-4	-4	-4	-4	-3	-4	-3	-3	5	5	-3	-8	-5
28	-3	-1	0	3	5	8	10	12	11	9	6	4	3	9	4	4	12	8	4	3	1	7	13	10
29	10	6	5	5	-4	-11	-15	-16	-16	-1	0	3	5	4	4	1	-5	-7	-6	-2	7	9	10	10
30	10	12	15	19	28	28	34	31	23	24	18	16	12	10	11	7	8	6	5	3	-0	-1	-2	1
31	4	3	5	8	8	9	9	8	9	8	10	12	13	12	12	13	12	8	9	9	0	3	7	6

HOURLY EQUATORIAL DST VALUES

FEBRUARY 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	7	12	13	15	12	10	7	7	7	8	7	10	7	2	6	6	2	1	3	5	9	8	7	10
2	14	14	14	13	11	12	10	7	8	7	4	7	9	11	10	9	9	8	7	9	9	9	9	10
3	11	13	14	15	11	10	9	10	12	15	16	17	18	16	19	20	20	17	15	18	20	21	17	12
4	14	16	29	28	27	28	25	23	22	21	19	15	17	33	22	14	16	9	15	-11	-28	-37	-39	-34
5	-29	-30	-31	-25	-21	-15	-22	-28	-21	-12	-13	-16	-16	-16	-8	-8	-14	-20	-19	-17	-26	-41	-46	-35
6	-31	-34	-31	-27	-28	-31	-33	-35	-33	-31	-32	-31	-32	-28	-26	-23	-38	-38	-30	-26	-21	-21	-23	-29
7	-29	-29	-26	-23	-25	-28	-24	-25	-27	-23	-21	-25	-29	-23	-19	-23	-29	-25	-25	-20	-17	-14	-15	-15
8	-19	-22	-18	-13	-12	-19	-23	-22	-21	-32	-27	-22	-25	-25	-24	-35	-35	-26	-20	-21	-31	-37	-31	-32
9	-34	-27	-22	-24	-27	-25	-22	-19	-17	-13	-13	-12	-13	-12	-13	-18	-26	-32	-31	-24	-31	-39	-42	-39
10	-25	-26	-15	-15	-21	-22	-17	-15	-15	-14	-15	-12	-14	-14	-19	-31	-44	-40	-49	-55	-61	-70	-73	-61
11	-54	-32	25	-13	-40	-103	-193	-228	-322	-385	-406	-409	-363	-348	-314	-299	-279	-243	-206	-213	-217	-208	-207	-206
12	-167	-149	-132	-124	-121	-109	-108	-104	-118	-113	-105	-106	-98	-103	-103	-102	-92	-94	-103	-99	-85	-68	-73	-73
13	-59	-54	-52	-54	-56	-60	-62	-62	-61	-53	-49	-45	-45	-51	-52	-53	-57	-63	-58	-53	-50	-54	-59	-62
14	-57	-56	-60	-58	-56	-58	-61	-60	-56	-53	-50	-44	-37	-41	-43	-44	-47	-52	-53	-45	-43	-42	-38	-36
15	-35	-34	-29	-28	-29	-27	-25	-23	-23	-23	-22	-19	-15	-12	-8	-14	-9	3	6	7	6	1	2	5
16	6	5	5	6	7	5	5	4	2	5	10	15	6	0	-9	-12	-3	12	10	9	-0	-5	6	19
17	33	29	29	9	-14	-19	-16	-14	-19	-18	-28	-33	-30	-39	-53	-47	-39	-39	-46	-50	-49	-47	-38	-33
18	-32	-30	-31	-36	-36	-37	-33	-35	-36	-34	-34	-36	-34	-33	-32	-34	-34	-37	-44	-47	-48	-49	-47	-48
19	-42	-32	-34	-39	-37	-38	-43	-44	-40	-35	-34	-34	-31	-31	-31	-27	-30	-28	-31	-39	-37	-27	-26	-28
20	-37	-35	-29	-33	-33	-35	-34	-33	-31	-27	-23	-21	-23	-20	-33	-37	-30	-29	-37	-55	-67	-67	-59	-46
21	-39	-41	-43	-32	-34	-51	-55	-62	-49	-44	-41	-37	-33	-33	-47	-45	-41	-41	-52	-54	-53	-54	-43	-39
22	-35	-36	-33	-33	-34	-32	-36	-36	-36	-35	-38	-33	-36	-32	-32	-35	-38	-31	-23	-31	-33	-26	-33	-45
23	-47	-36	-34	-37	-38	-33	-31	-34	-42	-46	-41	-35	-37	-33	-29	-29	-24	-25	-23	-28	-28	-28	-27	-25
24	-22	-21	-21	-22	-19	-18	-17	-17	-18	-15	-17	-22	-19	-20	-20	-20	-19	-16	-14	-14	-13	-12	-8	-6
25	-5	-6	-4	-5	-6	-8	-9	-7	-9	-9	-9	-4	-3	-8	-11	-12	-9	-5	-2	-0	-2	2	5	8
26	6	6	9	8	5	5	5	7	7	9	8	3	2	-0	0	1	1	1	1	-1	-1	-3	-2	-2
27	-3	1	2	6	6	8	9	10	10	11	11	9	9	6	5	2	0	-2	1	-13	-19	-18	-14	-10
28	-10	-6	-1	-2	2	5	6	-2	-6	-2	1	-8	-11	-7	-13	-16	-16	-13	-9	-8	-5	-5	-4	-9

HOURLY EQUATORIAL DST VALUES
MARCH 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-14	-16	-12	-11	-10	-7	-3	-1	-1	-2	-1	-1	-4	-7	-11	-12	-10	-7	-10	-10	-11	-13	-14	-12
2	-12	-10	-6	-5	-4	-7	-10	-14	-15	-15	-18	-26	-20	-14	-11	-12	-11	-10	-9	-7	-5	-3	3	1
3	0	2	0	0	-3	-6	-4	-4	-6	-5	-6	-12	-18	-11	-7	-4	-4	-1	-16	-24	-41	-41	-47	-49
4	-54	-49	-41	-36	-42	-52	-53	-49	-52	-54	-54	-54	-49	-45	-46	-46	-43	-44	-46	-44	-38	-29	-25	-34
5	-37	-35	-31	-33	-29	-20	-21	-51	-70	-66	-66	-61	-65	-56	-50	-50	-48	-47	-47	-43	-45	-43	-42	-44
6	-41	-40	-40	-50	-54	-52	-50	-48	-44	-40	-38	-42	-49	-51	-51	-53	-53	-47	-44	-41	-47	-50	-44	-38
7	-40	-34	-32	-40	-39	-40	-38	-37	-34	-32	-27	-24	-27	-36	-34	-35	-32	-31	-31	-36	-46	-49	-42	-32
8	-34	-42	-45	-41	-45	-46	-41	-41	-41	-39	-41	-43	-41	-35	-34	-36	-34	-32	-27	-23	-28	-30	-29	-33
9	-37	-40	-40	-33	-31	-33	-43	-44	-41	-42	-41	-39	-35	-29	-29	-35	-36	-31	-26	-24	-24	-19	-15	-15
10	-21	-27	-32	-29	-32	-31	-29	-25	-22	-21	-25	-35	-41	-40	-37	-42	-37	-38	-38	-38	-39	-41	-39	-39
11	-47	-38	-29	-24	-25	-21	-16	-11	-11	-12	-10	-11	-21	-28	-38	-35	-46	-53	-60	-58	-54	-57	-57	-47
12	-62	-86	-103	-103	-119	-121	-126	-101	-104	-101	-88	-83	-89	-98	-84	-77	-72	-78	-74	-72	-74	-73	-67	-62
13	-61	-62	-63	-72	-81	-77	-85	-91	-94	-97	-89	-102	-116	-105	-110	-122	-126	-122	-115	-107	-99	-87	-79	-76
14	-74	-67	-64	-58	-57	-57	-56	-53	-53	-52	-51	-49	-29	-18	-9	-29	-35	-21	-17	-19	-15	-13	-18	-15
15	-15	-14	-9	-8	-29	-37	-34	-37	-36	-44	-40	-45	-53	-53	-55	-63	-63	-64	-62	-51	-49	-48	-46	-44
16	-41	-48	-52	-50	-47	-46	-46	-43	-43	-38	-33	-33	-31	-28	-26	-26	-25	-23	-28	-31	-29	-29	-35	-35
17	-35	-29	-26	-25	-25	-29	-28	-28	-26	-31	-34	-35	-36	-37	-41	-50	-49	-45	-55	-58	-49	-38	-32	-31
18	-28	-29	-27	-33	-38	-41	-51	-51	-46	-46	-52	-55	-48	-49	-48	-44	-44	-37	-50	-63	-83	-74	-76	-61
19	-59	-56	-58	-57	-55	-58	-56	-47	-43	-40	-41	-44	-52	-59	-64	-61	-68	-73	-69	-64	-64	-73	-73	-70
20	-56	-56	-60	-51	-51	-49	-51	-46	-43	-35	-33	-34	-33	-38	-45	-52	-50	-41	-38	-41	-48	-51	-59	-53
21	-41	-43	-44	-43	-44	-40	-41	-41	-46	-47	-40	-38	-31	-28	-33	-35	-44	-51	-56	-51	-51	-52	-52	-61
22	-52	-71	-85	-71	-68	-65	-62	-60	-57	-53	-53	-52	-53	-50	-49	-49	-46	-44	-42	-44	-40	-38	-45	-45
23	-46	-48	-48	-45	-49	-49	-48	-45	-41	-43	-29	-32	-40	-40	-43	-47	-45	-45	-46	-45	-43	-40	-37	-37
24	-44	-40	-28	-30	-38	-37	-37	-42	-42	-44	-44	-34	-35	-29	-29	-39	-47	-43	-52	-63	-66	-57	-60	-58
25	-55	-51	-43	-42	-42	-44	-47	-51	-44	-41	-38	-41	-41	-54	-63	-48	-16	-9	-11	-7	-7	-7	-7	-12
26	-12	-20	-18	-13	-14	-15	-9	-6	-9	-11	-12	-23	-30	-24	-25	-34	-45	-51	-44	-48	-48	-37	-35	-33
27	-30	-25	-22	-22	-23	-20	-17	-18	-25	-36	-37	-30	-29	-32	-30	-29	-29	-25	-23	-30	-29	-29	-24	-21
28	-19	-19	-25	-22	-18	-16	-16	-16	-21	-23	-19	-17	-14	-15	-15	-15	-12	-24	-20	-21	-20	-14	-13	-18
29	-14	-15	-15	-17	-22	-22	-16	-15	-12	-11	-8	-6	-8	-7	-6	-6	-6	-10	-9	-7	-9	-7	-7	1
30	4	1	-0	1	1	2	0	-2	-8	-19	-20	-3	-13	-31	-54	-64	-57	-57	-58	-61	-69	-62	-57	-52
31	-53	-55	-52	-49	-46	-40	-37	-38	-35	-38	-42	-41	-39	-36	-36	-37	-41	-39	-42	-47	-45	-37	-34	-36

HOURLY EQUATORIAL DST VALUES

APRIL 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-38	-41	-43	-44	-48	-49	-44	-46	-46	-42	-38	-36	-39	-38	-33	-35	-37	-35	-32	-39	-42	-42	-42	-40
2	-36	-36	-34	-34	-40	-32	-32	-37	-43	-48	-52	-63	-57	-48	-38	-39	-37	-31	-22	-28	-34	-40	-48	-39
3	-39	-33	-32	-36	-43	-43	-37	-38	-39	-38	-39	-39	-34	-31	-27	-24	-20	-17	-17	-18	-26	-29	-25	-26
4	-27	-22	-20	-23	-24	-24	-18	-22	-24	-20	-19	-23	-21	-30	-32	-38	-47	-53	-63	-76	-84	-81	-71	-72
5	-85	-90	-82	-79	-75	-74	-63	-58	-56	-57	-60	-59	-56	-53	-53	-58	-57	-50	-49	-46	-47	-46	-47	-57
6	-59	-50	-46	-41	-41	-35	-27	-26	-32	-33	-36	-36	-33	-32	-30	-40	-48	-49	-53	-59	-58	-54	-50	-47
7	-36	-32	-34	-46	-50	-56	-51	-50	-61	-60	-55	-52	-51	-49	-49	-48	-53	-50	-44	-42	-42	-36	-33	-36
8	-36	-34	-33	-30	-28	-26	-25	-25	-26	-27	-26	-23	-23	-22	-22	-22	-22	-23	-21	-21	-28	-31	-26	-23
9	-23	-25	-26	-29	-27	-28	-24	-24	-25	-20	-16	-15	-15	-16	-14	-14	-12	-9	-8	-14	-26	-33	-37	-30
10	-28	-24	-21	-20	-19	-17	-11	-8	-8	-5	-4	-5	-5	-4	-1	-0	-1	-1	1	4	8	8	5	7
11	10	9	9	13	15	13	13	12	14	3	1	-1	-2	-5	-5	-1	3	5	11	12	13	17	10	13
12	10	10	10	10	7	6	7	7	9	12	14	14	12	14	15	13	10	12	12	9	7	12	6	5
13	4	6	8	10	9	9	8	5	6	11	14	15	15	15	13	12	10	9	10	10	6	7	9	7
14	4	4	7	10	5	-2	4	7	10	15	2	0	5	1	-11	-3	2	5	-4	-13	-19	-22	-22	-24
15	-35	-30	-27	-30	-26	-21	-24	-26	-34	-39	-36	-32	-34	-30	-29	-28	-31	-30	-29	-36	-37	-32	-30	-31
16	-40	-41	-40	-40	-40	-42	-44	-44	-46	-40	-39	-48	-55	-56	-49	-43	-43	-45	-53	-46	-40	-47	-53	-40
17	-47	-69	-71	-63	-64	-65	-64	-64	-59	-51	-50	-42	-41	-41	-39	-43	-44	-45	-58	-55	-59	-59	-53	-51
18	-53	-52	-60	-75	-74	-64	-63	-69	-68	-65	-65	-71	-69	-70	-69	-64	-57	-61	-60	-57	-61	-71	-70	-53
19	-48	-45	-41	-40	-41	-41	-40	-39	-35	-39	-38	-37	-31	-31	-33	-39	-44	-41	-33	-35	-45	-51	-44	-43
20	-38	-35	-35	-34	-39	-42	-40	-36	-36	-35	-31	-28	-30	-31	-31	-33	-33	-29	-29	-25	-27	-25	-22	-21
21	-19	-19	-19	-23	-21	-24	-27	-28	-25	-24	-21	-18	-20	-16	-13	-15	-21	-17	-21	-23	-22	-23	-21	-26
22	-28	-25	-24	-24	-23	-24	-30	-29	-28	-30	-33	-32	-27	-24	-24	-23	-22	-19	-18	-18	-17	-16	-12	-9
23	-10	-11	-11	-11	-10	-8	-5	-5	-6	-4	-2	-7	-12	-14	-16	-18	-26	-37	-39	-38	-38	-40	-37	-32
24	-29	-30	-32	-41	-41	-42	-45	-39	-38	-38	-37	-39	-41	-40	-37	-38	-35	-35	-33	-34	-33	-31	-27	-19
25	-16	-18	-26	-31	-29	-29	-28	-28	-24	-16	-15	-16	-13	-11	-9	-5	-2	-1	-2	-1	-0	1	4	6
26	4	1	0	0	3	3	2	1	0	1	0	-2	1	9	14	16	4	6	-2	-1	-2	-1	-3	-3
27	-8	-11	-10	-8	-8	-7	-8	-10	-8	-3	-1	-1	1	-1	-1	2	2	-1	-17	-25	-29	-20	-21	-25
28	-31	-39	-39	-45	-43	-46	-42	-41	-36	-37	-41	-48	-51	-53	-58	-52	-53	-48	-46	-59	-67	-64	-55	-58
29	-60	-51	-51	-57	-54	-63	-58	-53	-56	-52	-52	-57	-57	-48	-43	-45	-44	-50	-43	-40	-47	-46	-38	-39
30	-35	-39	-37	-31	-39	-43	-40	-37	-38	-33	-29	-35	-34	-33	-30	-31	-33	-35	-36	-44	-39	-33	-36	-41

HOURLY EQUATORIAL DST VALUES

MAY 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-43	-39	-43	-39	-38	-41	-41	-41	-41	-38	-31	-34	-37	-35	-33	-30	-33	-37	-29	-27	-29	-29	-26	-25
2	-27	-28	-30	-34	-38	-30	-34	-39	-39	-30	-25	-27	-28	-28	-28	-26	-29	-30	-28	-30	-31	-32	-28	-23
3	-21	-21	-22	-20	-22	-20	-18	-18	-16	-12	-11	-13	-10	-7	-6	-6	-7	-7	-11	-13	-17	-20	-20	-19
4	-20	-20	-16	-14	-15	-17	-16	-20	-22	-25	-24	-26	-26	-24	-20	-17	-15	-14	-14	-15	-16	-20	-25	-24
5	-23	-22	-29	-31	-25	-22	-22	-20	-16	-12	-7	-5	-5	-7	-8	-10	-9	-5	-9	-19	-18	-18	-18	-22
6	-26	-33	-37	-33	-27	-28	-27	-23	-21	-19	-16	-14	-13	-15	-16	-19	-17	-16	-16	-19	-19	-18	-15	-14
7	-10	-11	-13	-11	-13	-13	-12	-12	-12	-9	-3	5	-1	-4	-5	-3	-1	1	2	2	3	-2	0	3
8	7	11	11	9	7	6	5	5	1	-1	3	3	1	10	7	1	-2	-1	-1	-0	0	-5	-17	-18
9	-14	-10	-7	-3	2	7	10	5	-6	-8	-7	-1	4	-1	3	5	4	2	-0	-3	-3	-3	-3	-4
10	-11	-16	-14	-10	-9	-9	-14	-25	-30	-26	-32	-34	-37	-31	-25	-26	-26	-22	-29	-28	-31	-29	-29	-31
11	-23	-17	-15	-16	-14	-12	-14	-25	-36	-42	-40	-31	-25	-23	-23	-21	-18	-17	-21	-23	-23	-18	-13	-11
12	-9	-8	-10	-11	-10	-9	-7	-10	-9	-6	-5	-6	-1	4	9	7	7	11	1	-18	-34	-36	-38	-30
13	-35	-32	-23	-22	-22	-21	-17	-17	-19	-15	-23	-35	-41	-34	-26	-30	-32	-36	-39	-48	-53	-67	-67	-58
14	-57	-74	-76	-70	-74	-78	-80	-67	-70	-66	-63	-57	-51	-49	-52	-47	-45	-48	-51	-50	-47	-48	-48	-43
15	-44	-51	-48	-47	-51	-57	-59	-56	-53	-48	-43	-45	-45	-45	-48	-46	-39	-37	-42	-44	-41	-33	-41	-44
16	-43	-41	-42	-45	-41	-41	-43	-42	-38	-41	-39	-37	-35	-31	-31	-35	-35	-37	-33	-30	-29	-32	-30	-30
17	-33	-27	-26	-30	-37	-37	-34	-31	-30	-26	-26	-25	-28	-27	-28	-31	-30	-30	-27	-32	-31	-29	-27	-27
18	-35	-30	-35	-38	-31	-29	-29	-31	-32	-31	-37	-36	-30	-26	-29	-29	-27	-30	-35	-37	-35	-36	-37	-32
19	-30	-30	-30	-30	-29	-28	-34	-37	-31	-30	-28	-28	-23	-23	-25	-23	-20	-21	-23	-22	-22	-22	-26	-24
20	-22	-21	-22	-24	-25	-24	-23	-22	-20	-21	-22	-21	-19	-15	-16	-17	-15	-16	-18	-18	-16	-13	-10	-11
21	-17	-21	-22	-18	-25	-25	-24	-22	-19	-16	-15	-15	-13	-12	-12	-12	-11	-10	-9	-9	-9	-9	-9	-9
22	-9	-9	-9	-11	-7	-6	-6	-5	-3	-2	-3	-3	-5	-7	-6	-4	-4	-3	-2	-1	-2	-2	-1	-0
23	-5	-10	-10	-10	-7	-4	-0	1	2	2	0	1	0	1	2	5	7	6	6	3	4	3	4	5
24	6	7	7	5	3	4	4	3	2	0	-1	-0	1	5	4	1	-0	-1	-0	1	3	5	7	4
25	2	4	5	7	9	11	13	10	10	9	10	11	13	17	19	25	28	32	33	27	23	14	0	-7
26	-13	-31	-41	-38	-31	-22	-14	-16	-19	-26	-19	-28	-42	-45	-45	-61	-65	-71	-62	-60	-59	-60	-54	-50
27	-51	-54	-53	-52	-49	-49	-46	-45	-42	-37	-34	-44	-47	-41	-37	-36	-34	-35	-40	-47	-51	-51	-53	-53
28	-64	-55	-52	-54	-59	-54	-51	-52	-49	-45	-41	-38	-38	-39	-38	-38	-41	-39	-39	-40	-40	-39	-35	-29
29	-33	-42	-43	-42	-36	-33	-42	-59	-71	-78	-102	-107	-104	-104	-117	-115	-115	-107	-109	-102	-93	-83	-76	-71
30	-69	-72	-75	-78	-73	-60	-64	-62	-60	-54	-50	-52	-52	-53	-55	-55	-51	-46	-49	-52	-51	-49	-44	-45
31	-47	-50	-55	-51	-53	-55	-56	-58	-57	-54	-54	-54	-51	-53	-54	-47	-40	-27	-76	-120	-148	-154	-157	-196

HOURLY EQUATORIAL DST VALUES

JUNE 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-185	-160	-136	-136	-123	-111	-120	-114	-106	-96	-100	-96	-90	-86	-82	-77	-68	-67	-81	-81	-77	-85	-87	-75
2	-68	-69	-82	-77	-71	-78	-86	-72	-70	-67	-61	-60	-69	-79	-79	-79	-78	-72	-73	-68	-72	-66	-63	-61
3	-60	-57	-54	-49	-50	-48	-47	-45	-44	-43	-42	-43	-45	-42	-41	-40	-38	-42	-37	-35	-33	-32	-32	-31
4	-30	-29	-27	-25	-29	-28	-27	-25	-23	-21	-20	-20	-19	-20	-21	-21	-19	-19	-18	-16	-15	-13	-12	-14
5	-15	-16	-16	-17	-17	-17	-15	-16	-21	-22	-18	-16	-16	-14	-12	-9	-12	-12	-10	-8	-8	-8	-11	-10
6	-9	-7	-5	-6	-5	-4	-5	-10	-25	-25	-21	-17	-12	-9	-7	-5	-2	2	-2	-7	-11	-19	-30	-44
7	-47	-41	-103	-130	-104	-98	-107	-102	-129	-152	-138	-134	-122	-119	-111	-101	-97	-96	-94	-88	-81	-77	-72	-68
8	-66	-64	-62	-60	-59	-56	-54	-52	-52	-53	-51	-49	-47	-44	-45	-43	-39	-33	-38	-38	-37	-31	-27	-42
9	-40	-35	-30	-34	-36	-38	-36	-36	-38	-41	-42	-45	-40	-31	-30	-31	-29	-27	-16	-17	-27	-33	-46	-78
10	-99	-97	-95	-99	-94	-95	-92	-82	-75	-73	-73	-70	-67	-64	-67	-60	-59	-58	-61	-63	-59	-61	-55	-50
11	-51	-58	-63	-59	-53	-47	-39	-41	-45	-41	-37	-36	-35	-35	-36	-38	-39	-41	-36	-35	-32	-39	-45	-42
12	-38	-35	-32	-32	-32	-40	-44	-40	-45	-46	-45	-42	-38	-37	-36	-35	-38	-35	-33	-38	-36	-30	-24	-26
13	-28	-30	-29	-29	-27	-26	-25	-26	-25	-23	-22	-22	-20	-20	-20	-21	-18	-14	-18	-19	-22	-23	-26	-23
14	-22	-23	-24	-25	-24	-24	-25	-28	-31	-28	-24	-23	-25	-24	-24	-23	-20	-16	-4	1	-11	-12	-15	-26
15	-30	-23	-25	-30	-33	-10	-11	-15	-25	-31	-38	-45	-43	-43	-45	-47	-43	-39	-35	-34	-32	-32	-31	-31
16	-31	-32	-32	-32	-33	-33	-31	-36	-42	-43	-49	-49	-49	-43	-43	-41	-38	-35	-36	-38	-35	-32	-31	-30
17	-31	-30	-29	-29	-27	-28	-29	-28	-26	-24	-23	-24	-24	-24	-23	-22	-18	-17	-16	-13	-13	-12	-12	-12
18	-12	-9	-7	-5	-5	-5	-6	-4	-5	-4	-7	-5	-0	4	2	-3	-5	-7	-13	-17	-22	-25	-21	-13
19	-10	-8	-8	-8	-5	-1	-1	1	-3	-4	-2	-4	-7	-6	-4	-2	7	1	-3	-3	-9	-6	-5	-2
20	1	2	-4	1	3	3	1	-1	-7	-7	-6	-7	-4	-5	-2	-1	-2	-1	3	5	7	9	4	-2
21	-1	-7	-11	-28	-49	-48	-40	-33	-30	-39	-24	-56	-81	-74	-67	-78	-87	-76	-78	-83	-91	-94	-100	-96
22	-81	-79	-72	-65	-83	-89	-85	-80	-74	-74	-70	-65	-63	-63	-63	-63	-62	-59	-55	-50	-46	-39	-47	-50
23	-51	-55	-49	-46	-47	-53	-58	-54	-50	-49	-45	-40	-42	-43	-42	-45	-43	-39	-39	-37	-31	-28	-27	-25
24	-24	-29	-34	-39	-38	-42	-48	-45	-49	-47	-45	-40	-44	-51	-55	-55	-50	-46	-39	-38	-41	-35	-34	-40
25	-35	-35	-37	-39	-40	-39	-35	-36	-36	-37	-36	-37	-36	-38	-38	-40	-37	-37	-41	-41	-34	-30	-28	-34
26	-33	-31	-32	-33	-31	-33	-36	-36	-34	-33	-33	-32	-31	-30	-29	-31	-26	-22	-21	-21	-22	-19	-20	-23
27	-25	-27	-26	-24	-23	-26	-28	-27	-24	-23	-26	-27	-25	-23	-23	-20	-19	-16	-14	-12	-12	-20	-26	-29
28	-28	-24	-24	-28	-28	-33	-37	-34	-38	-30	-32	-34	-30	-29	-27	-29	-25	-21	-7	-45	-79	-97	-117	-152
29	-175	-166	-174	-187	-197	-188	-182	-181	-176	-175	-172	-166	-152	-153	-160	-170	-165	-150	-137	-123	-108	-101	-93	-97
30	-94	-95	-91	-89	-95	-90	-86	-81	-74	-70	-62	-61	-58	-56	-57	-55	-50	-46	-49	-52	-51	-48	-50	-53

HOURLY EQUATORIAL DST VALUES

JULY 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-53	-62	-71	-70	-67	-69	-66	-66	-67	-69	-67	-67	-62	-58	-59	-58	-58	-53	-52	-50	-49	-48	-44	-39
2	-39	-41	-43	-43	-43	-42	-39	-35	-35	-36	-37	-35	-35	-33	-30	-28	-29	-27	-26	-29	-31	-32	-34	-33
3	-34	-31	-27	-30	-32	-29	-28	-30	-26	-24	-22	-28	-30	-30	-31	-32	-30	-37	-42	-43	-40	-35	-29	-23
4	-23	-24	-26	-28	-27	-26	-26	-31	-41	-53	-52	-53	-47	-41	-40	-43	-40	-50	-50	-52	-55	-54	-52	-50
5	-44	-40	-34	-32	-32	-32	-31	-33	-36	-33	-33	-34	-35	-36	-38	-37	-31	-29	-29	-25	-21	-20	-28	-23
6	-20	-23	-27	-31	-29	-26	-27	-29	-27	-29	-28	-27	-28	-29	-27	-24	-23	-22	-21	-18	-14	-12	-12	-15
7	-15	-16	-18	-20	-20	-17	-13	-13	-14	-18	-18	-12	-6	-5	-10	-14	-3	10	8	-7	-11	-13	-22	-26
8	-24	-22	-22	-23	-22	-23	-20	-10	7	21	-4	-71	-98	-88	-88	-130	-236	-254	-266	-314	-351	-300	-362	-354
9	-327	-303	-297	-296	-294	-293	-288	-281	-261	-243	-220	-216	-201	-199	-195	-184	-163	-150	-142	-140	-133	-123	-117	-123
10	-125	-120	-114	-118	-119	-118	-114	-112	-108	-100	-95	-94	-98	-97	-95	-93	-90	-87	-86	-85	-84	-83	-80	-81
11	-88	-92	-86	-89	-89	-86	-78	-68	-71	-71	-73	-75	-76	-78	-78	-77	-73	-70	-65	-60	-69	-68	-64	-56
12	-43	-49	-46	-47	-52	-58	-50	-53	-60	-58	-64	-66	-67	-66	-66	-63	-56	-56	-65	-57	-51	-55	-50	-49
13	-50	-52	-53	-50	-52	-54	-54	-53	-52	-53	-49	-54	-63	-65	-66	-65	-62	-57	-54	-54	-52	-49	-35	-34
14	-33	-33	-36	-43	-47	-48	-47	-49	-51	-49	-50	-47	-52	-55	-57	-56	-54	-55	-53	-54	-55	-54	-51	-48
15	-48	-49	-50	-52	-54	-53	-52	-50	-49	-51	-51	-51	-53	-54	-55	-54	-54	-54	-52	-53	-53	-51	-48	-47
16	-49	-50	-47	-44	-43	-46	-48	-48	-49	-46	-44	-41	-42	-44	-45	-47	-48	-48	-49	-50	-48	-47	-48	-50
17	-47	-39	-29	-29	-30	-38	-48	-45	-40	-42	-52	-50	-50	-50	-49	-46	-46	-45	-45	-46	-47	-46	-44	-44
18	-46	-45	-40	-34	-31	-27	-36	-46	-50	-46	-41	-45	-51	-43	-43	-40	-37	-46	-49	-57	-56	-50	-50	-47
19	-43	-40	-41	-37	-38	-40	-39	-45	-49	-52	-47	-47	-47	-46	-43	-39	-35	-35	-35	-42	-59	-62	-67	-60
20	-56	-63	-70	-66	-58	-57	-59	-60	-65	-61	-52	-52	-54	-59	-58	-55	-53	-53	-48	-46	-44	-48	-46	-40
21	-40	-41	-45	-44	-42	-40	-39	-43	-44	-35	-34	-37	-39	-38	-36	-38	-21	-4	-20	-40	-52	-52	-51	-57
22	-58	-57	-49	-50	-48	-46	-48	-48	-47	-47	-51	-56	-39	-42	-48	-51	-45	-43	-41	-43	-42	-41	-39	-39
23	-40	-38	-36	-36	-37	-36	-35	-36	-36	-35	-36	-38	-38	-36	-36	-36	-35	-35	-33	-33	-33	-33	-34	-32
24	-29	-34	-41	-41	-40	-41	-40	-36	-30	-29	-29	-27	-27	-30	-26	-24	-21	-29	-40	-37	-41	-34	-26	-31
25	-29	-28	-30	-28	-29	-29	-33	-45	-45	-45	-48	-61	-58	-56	-59	-58	-57	-59	-59	-63	-61	-59	-61	-61
26	-62	-58	-53	-53	-51	-50	-48	-48	-45	-43	-42	-41	-45	-44	-43	-43	-45	-45	-42	-41	-39	-40	-41	-41
27	-42	-40	-39	-37	-29	-30	-43	-46	-49	-50	-38	-48	-63	-66	-62	-62	-64	-70	-79	-89	-92	-94	-88	-81
28	-74	-68	-64	-60	-53	-50	-39	-37	-39	-36	-35	-37	-36	-38	-40	-39	-38	-37	-29	-26	-20	-19	-22	-21
29	-26	-30	-29	-30	-31	-32	-33	-33	-29	-27	-27	-29	-27	-25	-22	-25	-25	-28	-21	-23	-21	-29	-27	-23
30	-21	-21	-21	-19	-18	-20	-27	-30	-34	-33	-33	-33	-34	-34	-33	-32	-32	-39	-41	-43	-42	-47	-39	-34
31	-32	-32	-32	-31	-30	-32	-38	-41	-42	-44	-45	-46	-47	-43	-40	-31	-33	-42	-38	-36	-36	-37	-36	-33

HOURLY EQUATORIAL DST VALUES

AUGUST 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-33	-31	-29	-30	-29	-27	-27	-27	-25	-23	-27	-48	-48	-40	-37	-35	-34	-36	-34	-34	-40	-43	-41	-38
2	-37	-33	-30	-30	-29	-33	-36	-34	-33	-33	-32	-31	-37	-38	-39	-35	-34	-35	-32	-29	-30	-30	-29	-18
3	-18	-21	-26	-32	-35	-38	-43	-45	-39	-35	-35	-36	-40	-38	-31	-28	-34	-40	-42	-44	-44	-40	-36	-34
4	-32	-29	-29	-32	-34	-34	-34	-33	-29	-27	-24	-21	-21	-22	-21	-21	-21	-24	-26	-25	-24	-26	-24	-24
5	-23	-24	-24	-24	-23	-25	-25	-26	-29	-29	-26	-28	-30	-29	-30	-32	-28	-26	-21	-22	-24	-25	-25	-26
6	-26	-24	-21	-18	-15	-16	-18	-16	-14	-19	-20	-20	-20	-19	-17	-14	-12	-9	-9	-15	-12	-13	-12	-10
7	-8	-6	-6	-9	-10	-7	-5	-7	-13	-17	-25	-34	-37	-35	-28	-25	-24	-26	-31	-36	-35	-32	-29	-26
8	-26	-25	-23	-19	-17	-15	-15	-14	-15	-15	-14	-14	-14	-13	-16	-23	-21	-20	-17	-18	-19	-21	-21	-21
9	-24	-27	-26	-22	-19	-17	-16	-16	-15	-12	-10	-11	-10	-7	-6	-5	-8	-12	-11	-12	-16	-23	-21	-14
10	-13	-17	-15	-13	-7	-6	-7	-11	-6	-0	-10	-25	-19	-16	-22	-23	-26	-20	-20	-17	-17	-14	-19	-18
11	-13	-14	-18	-16	-13	-21	-30	-34	-31	-31	-40	-39	-36	-32	-31	-30	-30	-31	-29	-19	-20	-23	-25	-23
12	-22	-21	-22	-23	-26	-28	-27	-26	-22	-25	-28	-28	-23	-21	-21	-23	-22	-17	-10	-5	-6	-11	-14	-13
13	-13	-17	-16	-16	-21	-32	-43	-54	-47	-38	-45	-43	-41	-37	-32	-31	-34	-31	-31	-33	-33	-33	-31	-28
14	-27	-29	-28	-22	-19	-20	-23	-21	-21	-21	-21	-25	-24	-24	-22	-22	-19	-22	-29	-26	-26	-29	-29	-29
15	-31	-26	-24	-26	-27	-25	-24	-22	-20	-19	-19	-18	-18	-17	-18	-20	-20	-20	-18	-17	-18	-18	-13	-15
16	-17	-30	-36	-30	-24	-21	-22	-22	-21	-19	-21	-21	-20	-18	-18	-21	-26	-32	-28	-27	-26	-25	-23	-20
17	-18	-16	-15	-15	-12	-11	13	7	-20	-43	-44	-49	-37	-31	-31	-36	-39	-48	-97	-122	-124	-130	-125	-126
18	-99	-83	-77	-76	-80	-95	-89	-82	-76	-78	-79	-71	-72	-73	-74	-73	-72	-69	-66	-63	-60	-59	-58	-59
19	-57	-54	-54	-50	-51	-50	-46	-43	-41	-40	-42	-41	-44	-46	-47	-45	-40	-39	-36	-34	-36	-37	-33	-31
20	-30	-31	-33	-32	-35	-35	-34	-33	-34	-32	-29	-28	-28	-26	-25	-24	-23	-26	-31	-29	-28	-27	-25	-23
21	-23	-20	-21	-22	-20	-19	-18	-18	-18	-19	-20	-16	-12	-14	-15	-11	-12	-19	-11	-11	-12	-15	-13	-8
22	-10	-16	-4	-0	-29	-55	-68	-63	-58	-56	-49	-49	-48	-48	-45	-42	-52	-54	-53	-45	-41	-41	-42	-41
23	-41	-40	-35	-40	-42	-45	-46	-45	-43	-40	-39	-37	-36	-34	-34	-33	-35	-37	-37	-34	-39	-37	-33	-36
24	-36	-14	-9	-72	-100	-117	-113	-112	-111	-113	-113	-101	-114	-107	-91	-92	-96	-91	-85	-82	-75	-70	-67	-67
25	-66	-67	-68	-76	-76	-81	-80	-76	-77	-71	-74	-75	-70	-64	-63	-63	-63	-64	-64	-60	-62	-61	-57	-57
26	-53	-52	-52	-54	-57	-63	-67	-64	-67	-71	-73	-81	-83	-75	-70	-68	-66	-66	-66	-61	-55	-51	-47	-45
27	-43	-47	-53	-28	-42	-66	-88	-96	-128	-130	-112	-99	-103	-103	-92	-96	-93	-93	-87	-87	-86	-85	-82	-74
28	-70	-65	-62	-60	-59	-62	-67	-66	-62	-64	-61	-55	-55	-55	-56	-60	-61	-62	-65	-60	-63	-62	-58	-56
29	-55	-53	-52	-51	-50	-53	-55	-55	-50	-51	-48	-50	-48	-46	-48	-50	-52	-50	-50	-44	-41	-42	-41	-41
30	-39	-37	-36	-39	-44	-44	-40	-35	-35	-38	-37	-36	-36	-36	-40	-38	-37	-38	-37	-33	-29	-26	-27	-29
31	-28	-32	-29	-28	-29	-33	-34	-35	-33	-34	-36	-36	-36	-38	-40	-39	-43	-46	-40	-34	-31	-31	-30	-29

HOURLY EQUATORIAL DST VALUES
SEPTEMBER 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-30	-30	-29	-27	-26	-25	-25	-23	-23	-26	-27	-29	-31	-30	-28	-31	-31	-30	-28	-26	-28	-28	-25	-23
2	-23	-25	-24	-22	-20	-18	-20	-22	-25	-21	-20	-20	-23	-23	-16	-12	-13	-16	-19	-20	-19	-18	-18	-19
3	-26	-29	-27	-21	-19	-17	-14	-8	-7	-5	-38	-27	-26	-38	-56	-38	-32	-46	-60	-63	-72	-118	-141	-140
4	-143	-132	-115	-91	-90	-67	-70	-70	-68	-57	-57	-57	-56	-47	-59	-111	-177	-225	-253	-271	-320	-327	-329	-323
5	-313	-305	-305	-306	-265	-254	-231	-220	-206	-201	-200	-193	-184	-178	-175	-169	-160	-149	-137	-134	-131	-120	-117	-118
6	-116	-115	-114	-114	-113	-114	-112	-107	-104	-103	-102	-101	-98	-93	-89	-87	-85	-81	-78	-76	-73	-72	-70	-67
7	-65	-64	-64	-65	-63	-62	-61	-61	-62	-60	-65	-64	-62	-56	-56	-64	-73	-77	-78	-75	-70	-76	-84	-83
8	-76	-78	-81	-78	-71	-68	-66	-58	-51	-47	-46	-49	-49	-47	-47	-40	-42	-41	-43	-38	-36	-34	-38	-45
9	-37	-56	-57	-51	-49	-45	-40	-40	-39	-42	-44	-46	-46	-46	-55	-63	-63	-59	-60	-58	-60	-62	-56	-54
10	-52	-49	-49	-49	-46	-45	-43	-40	-37	-38	-37	-38	-41	-41	-44	-40	-38	-38	-37	-35	-34	-32	-35	-32
11	-34	-34	-35	-35	-33	-32	-28	-27	-26	-25	-27	-28	-27	-29	-28	-30	-31	-33	-32	-30	-34	-31	-28	-26
12	-28	-28	-26	-29	-32	-31	-29	-26	-25	-25	-26	-27	-27	-26	-24	-22	-22	-24	-25	-25	-25	-24	-21	-19
13	-19	-19	-20	-20	-20	-20	-21	-22	-23	-21	-19	-19	-18	-17	-17	-15	-15	-15	-16	-15	-15	-16	-13	-11
14	-11	-13	-11	-15	-15	-15	-15	-16	-13	-10	-13	-15	-16	-16	-11	-11	-12	-13	-13	-9	-10	-9	-10	-12
15	-10	-8	-8	-7	-5	-6	-7	-7	-5	-7	-8	-9	-9	-7	-5	-3	-0	2	-0	6	9	9	7	4
16	1	2	-1	-0	-12	-29	-34	-28	-25	-16	-5	1	2	2	-16	-14	-21	-46	-69	-75	-80	-75	-78	-83
17	-74	-61	-57	-56	-62	-60	-58	-58	-58	-59	-54	-52	-51	-53	-51	-49	-48	-46	-42	-33	-36	-35	-34	-34
18	-34	-34	-35	-34	-33	-33	-32	-32	-32	-32	-32	-31	-31	-31	-31	-32	-30	-31	-28	-27	-29	-30	-25	-24
19	-23	-21	-19	-19	-18	-19	-19	-21	-20	-21	-21	-19	-20	-22	-21	-21	-19	-17	-14	-10	-11	-12	-10	-8
20	-9	-9	-11	-11	-13	-14	-15	-13	-13	-14	-14	-13	-13	-12	-10	-8	-6	-7	-7	-6	-6	-9	-12	-12
21	-10	-11	-12	-11	-10	-9	-8	-9	-8	-10	-12	-12	-12	-13	-12	-11	-11	-11	-7	-5	-3	-2	-5	-9
22	-12	-10	-8	-7	-6	-4	-3	-4	-4	-5	-4	-4	-2	-2	-2	-2	-3	-3	-6	-4	-3	-3	-4	-4
23	-3	-2	-3	-5	-11	-12	-11	-11	-12	-11	-9	-3	1	1	-2	-4	-7	-11	-9	-2	2	-1	-4	-3
24	3	8	9	5	2	1	-0	-5	-9	-11	-15	-11	-9	-8	-10	-12	-15	-19	-17	-14	-9	-7	-7	-3
25	-0	-4	-12	-21	-13	-45	-70	-96	-120	-140	-124	-137	-153	-141	-154	-157	-156	-157	-147	-152	-150	-132	-137	-123
26	-112	-110	-114	-109	-106	-95	-95	-100	-106	-107	-101	-105	-103	-106	-103	-101	-94	-92	-85	-79	-76	-72	-70	-67
27	-63	-60	-60	-60	-63	-66	-66	-62	-61	-61	-65	-60	-61	-61	-61	-59	-57	-56	-55	-52	-53	-56	-54	-51
28	-52	-46	-46	-50	-53	-50	-50	-48	-50	-52	-49	-46	-45	-44	-43	-44	-40	-35	-33	-31	-29	-30	-31	-31
29	-29	-28	-26	-26	-28	-32	-32	-31	-30	-32	-33	-30	-28	-26	-25	-22	-20	-18	-18	-19	-18	-21	-22	-21
30	-19	-20	-20	-18	-18	-21	-23	-22	-25	-27	-9	-14	-28	-35	-38	-33	-36	-48	-52	-52	-46	-48	-55	-38

HOURLY EQUATORIAL DST VALUES
OCTOBER 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23 G.M.T.	24
1	-33	-31	-26	-21	-25	-29	-40	-43	-34	-34	-37	-35	-30	-28	-28	-26	-24	-23	-21	-18	-28	-32	-32	-38
2	-48	-48	-45	-44	-53	-57	-55	-52	-51	-47	-45	-41	-35	-31	-29	-28	-27	-24	-23	-22	-22	-25	-26	-27
3	-27	-27	-27	-27	-31	-33	-38	-43	-48	-42	-35	-32	-30	-23	-23	-27	-37	-46	-49	-46	-42	-37	-36	-32
4	-30	-28	-26	-25	-27	-29	-30	-31	-32	-28	-26	-23	-20	-19	-21	-20	-17	-19	-17	-16	-15	-11	-6	-10
5	-23	-25	-18	-18	-21	-22	-23	-21	-21	-20	-19	-16	-16	-12	-12	-13	-14	-13	-23	-22	-21	-22	-29	-24
6	-20	-20	-21	-19	-18	-15	-14	-12	-14	-16	-17	-13	-9	-13	-17	-11	-7	-9	-11	-7	-10	-16	-20	-14
7	-11	-12	-16	-14	-17	-23	-26	-23	-24	-31	-30	-27	-26	-26	-23	-19	-24	-29	-29	-28	-24	-26	-38	-42
8	-34	-33	-45	-46	-44	-41	-40	-44	-36	-32	-31	-30	-30	-26	-22	-19	-18	-19	-17	-16	-15	-14	-15	-15
9	-13	-14	-17	-18	-18	-16	-16	-14	-15	-17	-19	-20	-17	-16	-16	-14	-12	-12	-12	-11	-11	-10	-10	-11
10	-8	-8	-9	-10	-9	-7	-5	-4	-5	-6	-6	-6	-4	-4	-4	-2	-2	-6	-6	-4	-7	-8	-6	-4
11	-7	-7	-5	-5	-6	-7	-7	-6	-7	-9	-9	-11	-8	-8	-8	-6	-6	-5	-4	-7	-9	-5	-6	-9
12	-6	-2	-2	-3	-5	-5	-3	-1	1	1	4	4	3	2	-1	-0	2	4	6	7	4	1	1	2
13	2	2	3	1	-5	-6	-6	-5	-6	-13	-17	-14	-13	-20	-20	-15	-10	-10	-10	-3	-1	1	3	1
14	1	3	1	-1	-3	-7	-6	-6	-3	0	0	2	2	2	0	4	5	8	10	12	13	10	2	2
15	-2	-6	-2	-4	-5	-7	-4	-5	-14	-14	-11	-8	-3	-6	-6	-7	-5	-5	2	-3	-4	1	3	3
16	3	4	2	-3	-10	-18	-19	-22	-23	-20	-15	-13	-10	-12	-14	-12	-11	-10	-8	-5	-7	-6	-5	-3
17	-4	-9	-7	-8	-12	-13	-10	-10	-11	-11	-17	-6	-1	-0	-1	-2	-6	-2	-6	-3	-5	-6	-11	-11
18	-7	-5	-8	-6	-4	-7	-12	-10	-11	-11	-9	-4	-2	-2	-4	-3	-7	-8	-6	-4	-3	-6	-7	-5
19	-4	-2	-1	-3	-3	-3	-3	-0	0	1	-0	-3	-6	-2	1	-0	-7	-13	-18	-16	-13	-11	-11	-14
20	-9	-7	-10	-15	-13	-14	-13	-14	-15	-16	-13	-8	-6	-4	-2	-0	1	6	6	3	5	3	0	3
21	1	-4	-6	-9	-8	-8	-9	-13	-13	-13	-15	-13	-15	-15	-13	-13	-12	-8	-13	-9	-4	-5	-7	-3
22	-3	-3	-3	12	1	-13	-41	-65	-85	-78	-71	-70	-71	-71	-71	-66	-81	-84	-90	-90	-92	-97	-112	-113
23	-102	-94	-91	-89	-99	-108	-114	-121	-117	-117	-120	-107	-107	-113	-107	-116	-121	-123	-126	-121	-113	-102	-100	-99
24	-101	-103	-101	-93	-96	-98	-101	-83	-100	-133	-170	-167	-179	-197	-184	-182	-179	-171	-163	-160	-168	-178	-177	-171
25	-153	-139	-135	-128	-121	-118	-112	-108	-102	-104	-103	-101	-100	-98	-97	-92	-87	-84	-82	-82	-78	-77	-79	-79
26	-75	-73	-70	-62	-63	-64	-71	-76	-77	-79	-77	-71	-69	-66	-61	-64	-67	-69	-74	-70	-69	-73	-71	-66
27	-64	-65	-63	-61	-59	-61	-57	-58	-59	-55	-51	-50	-49	-47	-48	-36	-36	-50	-79	-122	-133	-114	-103	-105
28	-94	-87	-91	-87	-80	-72	-66	-45	-55	-70	-63	-67	-77	-71	-71	-74	-85	-84	-76	-83	-78	-79	-77	-74
29	-75	-73	-76	-77	-73	-74	-71	-71	-73	-69	-64	-57	-54	-54	-50	-50	-51	-49	-45	-48	-56	-55	-60	-58
30	-58	-61	-57	-55	-52	-53	-51	-48	-50	-46	-44	-40	-37	-40	-43	-48	-47	-49	-53	-52	-43	-45	-44	-33
31	-36	-40	-41	-39	-29	-30	-28	-29	-24	-22	-18	-19	-9	-13	-14	-5	-16	-10	-12	-13	-20	-19	-11	-7

HOURLY EQUATORIAL DST VALUES
NOVEMBER 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-9	-10	-9	-15	-18	-19	-17	-14	-17	-19	-10	-3	-5	-1	3	16	11	3	-1	-8	-6	-11	-11	-9
2	-10	-12	-12	-9	-7	-7	-5	-4	-3	-5	-6	-2	-7	-16	-26	-44	-65	-84	-81	-61	-55	-57	-56	-57
3	-53	-55	-48	-49	-68	-63	-58	-55	-55	-52	-46	-42	-41	-44	-39	-42	-45	-43	-42	-37	-41	-38	-37	-37
4	-38	-38	-38	-37	-37	-37	-32	-29	-30	-30	-27	-24	-28	-31	-27	-25	-23	-22	-24	-25	-27	-25	-22	-23
5	-22	-21	-19	-19	-18	-18	-19	-19	-19	-17	-17	-18	-18	-20	-19	-19	-17	-16	-17	-15	-15	-14	-16	-17
6	-18	-17	-16	-12	-9	-9	-9	-9	-9	-9	-10	-8	-6	-6	-6	-8	-9	-9	-10	-9	-6	-7	-8	-5
7	-6	-8	-9	-7	-6	-6	-6	-6	-5	-4	-4	-5	-6	-12	-17	-22	-18	-16	-15	-15	-11	-14	-13	-11
8	-13	-15	-16	-15	-14	-14	-17	-18	-17	-16	-12	-7	-5	-5	-6	-7	-9	-11	-12	-10	-9	-6	-5	-8
9	-9	-10	-8	-7	-8	-8	-6	-3	-2	2	4	7	8	7	7	9	11	12	12	16	21	26	28	27
10	26	28	23	21	21	18	12	7	4	0	-9	-27	-14	-11	-13	-12	-14	-28	-38	-39	-33	-29	-28	-24
11	-25	-19	-45	-39	-42	-53	-60	-56	-45	-40	-46	-40	-38	-36	-35	-33	-32	-32	-31	-29	-28	-25	-24	-21
12	-19	-17	-13	-14	-18	-17	-14	-13	-12	-11	-15	-19	-19	-22	-23	-19	-17	-17	-20	-25	-23	-27	-29	-23
13	-24	-25	-22	-19	-20	-22	-26	-26	-23	-23	-22	-19	-17	-17	-16	-14	-15	-16	-14	-16	-15	-14	-14	-14
14	-14	-17	-16	-12	-10	-9	-7	-5	-3	-3	-4	-5	-7	-8	-10	-7	-4	-2	-1	0	1	1	-6	-10
15	-8	-5	-4	-1	2	1	-4	-9	-6	-7	-7	-4	-1	-1	-2	0	0	-0	-2	-2	-1	1	4	6
16	5	2	13	16	10	6	-0	-2	4	13	5	5	2	-3	-4	-10	-8	-8	-8	-5	-4	-6	-5	-6
17	-10	-9	-7	-6	-4	-11	-14	-14	-15	-14	-15	-12	-5	-6	-7	-8	-12	-[illegible]	-8	-5	-2	-2	-1	-2
18	-3	-3	-0	-1	-6	-5	-5	-7	-8	-5	-3	-7	-11	-14	-15	-14	-14	-15	-17	-24	-26	-23	-22	-20
19	-17	-20	-18	-18	-17	-16	-16	-15	-14	-14	-15	-15	-13	-15	-18	-21	-20	-17	-16	-13	-11	-9	-11	-14
20	-16	-18	-15	-12	-8	-6	-3	-1	2	4	2	-0	-2	-4	-5	-5	-7	-5	-4	-2	-2	-3	-4	-4
21	-4	-4	-1	2	4	3	1	1	6	6	1	1	0	-2	-4	-5	-4	-2	2	4	3	4	4	1
22	3	1	1	2	1	2	2	3	2	3	0	-1	-2	-3	1	1	-1	2	4	6	7	9	11	13
23	11	10	11	15	15	8	5	4	6	18	12	0	-12	-17	-17	-14	-10	-12	-10	-6	-6	-6	-7	-6
24	-6	-5	-5	-4	-6	-8	-9	-15	-23	-33	-30	-31	-37	-36	-29	-26	-22	-21	-22	-21	-20	-16	-8	-5
25	-7	-6	-3	1	3	9	11	13	17	14	10	3	2	-0	-7	-17	-26	-32	-40	-53	-60	-62	-58	-51
26	-48	-48	-47	-43	-41	-39	-34	-30	-27	-26	-27	-30	-32	-33	-32	-31	-32	-35	-34	-28	-25	-24	-25	-23
27	-21	-17	-17	-18	-18	-20	-19	-16	-16	-21	-25	-28	-23	-22	-22	-25	-27	-25	-21	-26	-33	-36	-39	-38
28	-43	-30	-22	-14	-16	-17	-15	-18	-12	-10	-12	-18	-19	-19	-4	1	-2	2	-2	-14	-24	-27	-28	-28
29	-18	-19	-19	-22	-27	-27	-26	-26	-27	-30	-20	-18	-19	-24	-26	-31	-28	-23	-22	-22	-24	-23	-21	-17
30	-17	-15	-15	-17	-18	-15	-13	-11	-11	-11	-11	-12	-10	-8	-6	-7	-7	-7	-6	-5	-7	-9	-8	-6

HOURLY EQUATORIAL DST VALUES
DECEMBER 1958

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-6	-4	-1	-1	-5	-2	-1	1	3	4	4	5	2	-2	-5	-4	-2	-1	2	1	-1	-2	-2	-3
2	-4	-3	1	3	2	1	5	10	12	12	-5	-33	-52	-64	-73	-71	-64	-58	-67	-68	-65	-61	-44	-31
3	-32	-35	-36	-29	-30	-31	-31	-28	-25	-22	-19	-19	-20	-22	-19	-17	-12	-12	-12	-17	-19	-14	-13	-14
4	-7	9	4	17	14	14	9	12	-11	-38	-64	-60	-66	-69	-81	-119	-140	-152	-166	-161	-178	-197	-195	-198
5	-189	-178	-166	-160	-150	-146	-141	-133	-126	-115	-106	-99	-105	-102	-98	-94	-84	-84	-81	-78	-80	-77	-76	-73
6	-74	-72	-61	-55	-54	-54	-56	-56	-53	-56	-57	-57	-61	-61	-64	-68	-70	-68	-64	-62	-56	-53	-56	-54
7	-50	-47	-42	-37	-35	-35	-39	-36	-38	-39	-38	-36	-38	-37	-32	-31	-32	-33	-33	-31	-30	-27	-26	-26
8	-27	-24	-20	-18	-19	-18	-18	-19	-17	-15	-18	-21	-22	-19	-26	-28	-30	-28	-23	-25	-29	-23	-18	-27
9	-25	-35	-39	-36	-29	-29	-26	-37	-37	-33	-27	-27	-29	-27	-19	-16	-13	-17	-21	-22	-20	-15	-14	-16
10	-18	-22	-22	-25	-29	-27	-24	-28	-25	-23	-23	-23	-22	-22	-20	-18	-16	-15	-17	-18	-18	-15	-13	-13
11	-11	-8	-8	-11	-13	-11	-9	-9	-7	-3	-7	-5	-5	-1	-3	-1	-3	-4	-5	-7	-10	-15	-12	-7
12	-4	-6	-12	-12	-9	-9	-9	-10	-9	-9	-15	-14	-14	-12	-12	-9	-11	-8	-7	-7	-7	-11	-18	-18
13	-9	-12	-23	-28	-17	-10	-11	-9	-1	1	6	6	3	-29	-59	-93	-110	-112	-123	-127	-125	-113	-98	-91
14	-92	-77	-64	-49	-45	-63	-67	-63	-58	-51	-44	-42	-40	-59	-64	-68	-69	-67	-64	-75	-85	-88	-80	-76
15	-73	-64	-53	-49	-45	-43	-40	-38	-38	-33	-25	-22	-24	-22	-23	-27	-35	-31	-23	-26	-24	-25	-25	-21
16	-4	-0	17	-8	-6	-2	-4	-2	-9	-12	-3	-1	-27	-37	-33	-39	-38	-32	-15	-11	-11	-7	-3	0
17	1	3	4	-3	-8	-8	-12	-12	-19	-25	-32	-30	-30	-28	-26	-21	-10	-26	-29	-50	-46	-45	-80	-82
18	-106	-120	-109	-114	-115	-102	-96	-85	-78	-76	-74	-77	-75	-75	-82	-82	-78	-75	-75	-74	-75	-73	-69	-69
19	-72	-86	-90	-88	-83	-83	-81	-77	-74	-76	-75	-72	-70	-61	-59	-61	-60	-55	-55	-50	-46	-38	-38	-38
20	-42	-45	-41	-38	-40	-41	-45	-46	-42	-38	-38	-35	-32	-34	-35	-36	-35	-33	-34	-36	-37	-32	-29	-31
21	-32	-32	-29	-31	-34	-36	-32	-32	-31	-35	-36	-35	-35	-36	-37	-38	-37	-34	-33	-33	-25	-21	-22	-23
22	-28	-31	-30	-30	-30	-32	-31	-30	-29	-26	-29	-26	-24	-21	-21	-20	-21	-21	-20	-28	-20	-14	-12	-14
23	-17	-19	-18	-16	-13	-12	-7	-9	-20	-27	-31	-31	-23	-22	-31	-30	-26	-30	-35	-36	-38	-35	-37	-36
24	-33	-30	-32	-34	-33	-31	-29	-29	-26	-26	-25	-25	-24	-26	-22	-17	-17	-21	-22	-20	-17	-15	-16	-17
25	-17	-17	-18	-18	-19	-18	-14	-12	-14	-16	-18	-17	-19	-19	-20	-16	-14	-13	-12	-12	-6	3	7	19
26	20	6	3	-4	-9	-8	-7	-8	-9	-12	-11	-14	-20	-24	-29	-24	-21	-30	-32	-26	-22	-22	-26	-26
27	-26	-29	-30	-33	-40	-47	-50	-45	-41	-41	-45	-54	-50	-41	-40	-34	-35	-34	-32	-30	-29	-26	-23	-22
28	-27	-27	-23	-28	-31	-35	-34	-31	-27	-31	-28	-29	-25	-23	-27	-31	-31	-27	-26	-26	-29	-31	-23	-27
29	-29	-34	-33	-32	-33	-36	-35	-32	-27	-27	-28	-23	-23	-24	-24	-23	-24	-26	-26	-28	-34	-32	-35	-36
30	-36	-33	-31	-29	-30	-26	-25	-21	-23	-28	-25	-16	-15	-16	-9	-6	-9	-10	-15	-24	-22	-24	-24	-29
31	-27	-26	-25	-26	-28	-27	-28	-26	-22	-22	-24	-23	-19	-17	-11	-4	-3	-4	-6	-12	-9	-5	-3	-4