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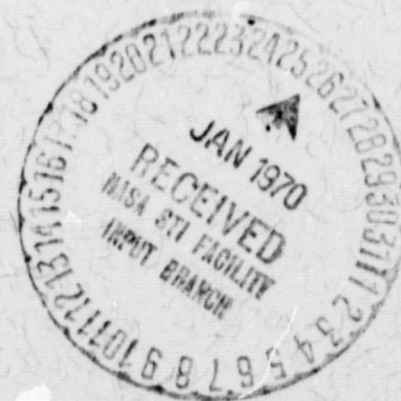
X-612-70-3

NASA TM X- **63796**

PROVISIONAL HOURLY VALUES OF EQUATORIAL Dst FOR 1968

M. SUGIURA

S. J. CAIN

JANUARY 1970

GSFC ——— **GODDARD SPACE FLIGHT CENTER** ———

GREENBELT, MARYLAND

PROVISIONAL HOURLY VALUES OF EQUATORIAL Dst FOR 1968

M. SUGIURA

S. J. CAIN

JANUARY 1970

Previous Reports on Dst

The present report is a sequel to the following three reports:

[1] Hourly Values of Equatorial Dst for the IGY, M. Sugiura, <u>Annals of the International Geophysical Year</u>, Vol. 35, p. 9, Pergamon Press, 1964.

[2] Provisional Hourly Values of Equatorial Dst for 1961, 1962, and 1963, M. Sugiura and S. Hendricks, NASA Technical Note, NASA TN D-4047, National Aeronautics and Space Administration, Washington, D. C., August 1967.

[3] Provisional Hourly Values of Equatorial Dst for 1964, 1965, 1966, and 1967, M. Sugiura and S. J. Cain, X-612-69-20, Goddard Space Flight Center, Greenbelt, Maryland, February 1969.

Observatories

The observatories used are the same as in the previous publications 2 and 3 listed above, namely, Hermanus, San Juan, and Honolulu. The locations of these observatories are given in Table 1.

Table 1. Coordinates of the observatories used.

| Observatory | Geographic | | Geomagnetic |
	Latitude	Longitude	Dipole Latitude
Hermanus	$- 34.4^{\circ}$	$19.2^{\circ}E$	$- 33.7^{\circ}$
Honolulu	21.3°	201.9°	21.1°
San Juan	18.4°	293.9°	29.9°

Reference Level

The reference level for each observatory was defined taking into account the secular variation. For each observatory the reference level was expressed by a power series in time, and the coefficients for terms up to the quadratic were determined by the method of least squares using the annual means of the "international quiet days". The power series is of the following form:

$$y = y_o + a_1 t + a_2 t^2$$

where, y_o, a_1, and a_2 are constants and t is time measured in years from 1960.5.

The constants y_o, a_1, and a_2 for the three observatories are listed in Table 2.

Table 2. Values of y_0, a_1, and a_2: unit γ

Coefficient	Honolulu	Hermanus	San Juan
y_0	28107.228	12833.100	27472.100
a_1	- 11.357	- 43.700	23.100
a_2	0.928	- 3.500	- 1.500

to examine the fit to the observed data the computed and observed values of H are given in Table 3.

Table 3. Comparison of the computed and observed values of H.

Honolulu:
Standard Deviation = 2.3γ

Epoch	Observed	Computed	Difference
1964.5	28046γ	28047γ	- 1γ
1965.5	28029	28027	2
1966.5	28006	28006	0
1967.5	27980	27982	- 2
1968.5	27958	27957	1

Hermanus:
Standard Deviation = 1.3γ

Epoch	Observed	Computed	Difference
1964.5	12602γ	12602γ	0γ
1965.5	12528	12527	1
1966.5	12444	12445	- 1
1967.5	12356	12356	0

San Juan:*

Standard Deviation = 0.4γ

Epoch	Observed	Computed	Difference
1965.5	27550γ	27550γ	0 γ
1966.5	27557	27557	0
1967.5	27560	25560	0
1968.5	27561	27561	0

*The San Juan Observatory was moved in 1965 from the old
 site at 18°23'N, 293°53'E to a new location at 8°06.8'N,
 293°51.2'E, and the move resulted in a decrease in the
 horizontal component by 110γ. The present determinations
 are based only on the observations made at the new site.

Figure and Tables of Dst for 1968

Hourly values of equatorial Dst for the year 1968 are shown graphically
and are tabulated below.

Daily mean and monthly mean Dst values are given in a table following
the hourly tabulations.

Acknowledgements

We wish to thank the Hermanus Magnetic Observatory and the Environ-
mental Science Service Administration for making the data available. We
are indebted to the staff of the World Data Center-A for Geomagnetism
for their assistance in obtaining the data.

PROVISIONAL DST FOR 1968

SCALE VALUES FOR MONTHLY PLOTS   UPPER   80
                                 LOWER - 220

3-C 07/12/87
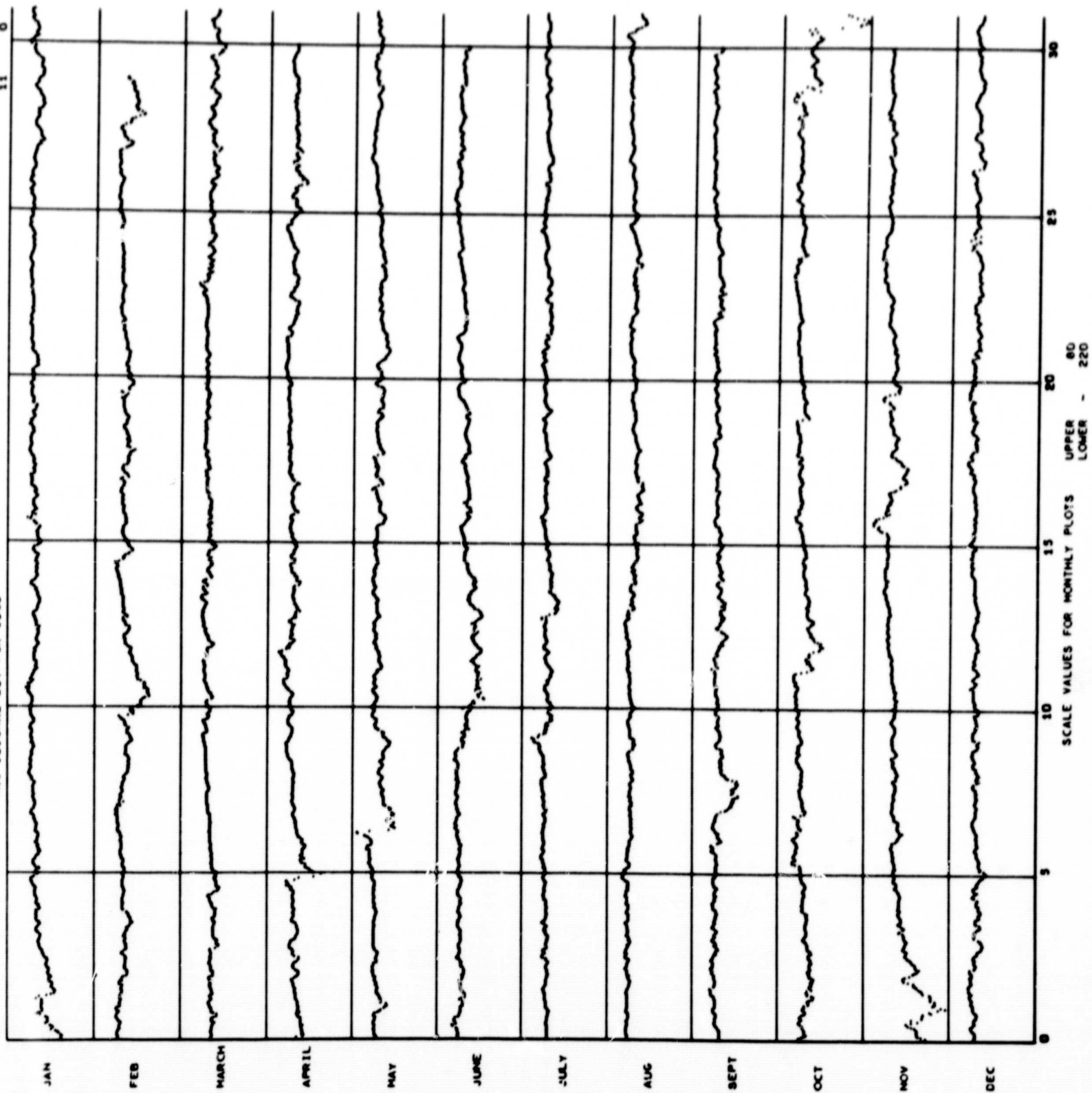
JANUARY 1968

UNIT=GAMMAS

S.W.T.

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2	-40	-44	-42	-44	-37	-23	-34	-58	-73	-84	-98	-83	-31	-72	-77	-76	-76	-69	-55	-67	-73	-73	-67	-64
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FEBRUARY 1968

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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MARCH 1953

UNIT=GAMMAS

G.M.T.

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25	-9	-15	-22	-25	-20	-28	-34	-29	-18	-20	-26	-17	-21	-21	-19	-23	-16	-12	-14	-18	-26	-27	-25	-25
26	-16	-16	-15	-15	-14	-14	-18	-13	-11	-10	-12	-9	-12	-12	-13	-18	-21	-21	-23	-21	-16	-15	-17	-26
27	-34	-39	-35	-32	-33	-32	-40	-42	-33	-26	-25	-27	-25	-24	-23	-27	-28	-21	-22	-40	-48	-47	-34	-31
28	-26	-21	-20	-21	-23	-23	-20	-24	-30	-29	-22	-15	-14	-11	-5	-3	-6	-5	-16	-20	-19	-24	-23	-21
29	-17	-13	-27	-17	-31	-32	-29	-28	-35	-40	-41	-40	-35	-26	-24	-23	-11	-9	-19	-20	-27	-22	-24	-33
30	-32	-32	-27	-26	-32	-32	-32	-34	-26	-26	-26	-25	-19	-12	-10	-18	-39	-46	-52	-49	-58	-60	-59	-40
31	-42	-37	-33	-32	-32	-30	-29	-35	-33	-36	-32	-23	-20	-19	-19	-15	-11	-30	-25	-33	-31	-36	-39	-35

APRIL 1953

UNIT=GAMMAS

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	-26	-30	-53	-46	-47	-44	-46	-43	-41	-50	-42	-41	-40	-41	-40	-34	-28	-25	-35	-32	-32	-33	-33	-32
2	-30	-29	-32	-26	-23	-23	-22	-21	-21	-19	-19	-21	-19	-16	-14	-14	-12	-10	-8	-20	-27	-31	-32	-35
3	-30	-24	-15	-17	-9	-15	-18	-25	-32	-32	-32	-19	-10	-10	-15	-12	-7	-1	1	-0	-2	-4	-10	-18
4	-24	-24	-27	-30	-32	-33	-29	-28	-27	-26	-22	-19	-7	-7	-11	-12	-13	-13	-10	-14	-17	-13	-13	-12
5	-13	-11	-14	-14	-14	-12	-11	-11	-13	-14	-11	-5	-6	-1	-10	6	9	10	-13	-35	-84	-126	-112	-87
6	-80	-73	-62	-58	-55	-57	-46	-40	-39	-51	-45	-39	-44	-47	-44	-45	-46	-51	-55	-52	-46	-41	-45	-43
7	-37	-31	-23	-25	-27	-25	-27	-23	-22	-23	-24	-20	-21	-13	-18	-14	-10	-10	-12	-15	-13	-13	-17	-15
8	-12	-10	-8	-9	-9	-10	-11	-9	-9	-10	-10	-12	-12	-11	-11	-12	-13	-12	-13	-13	-15	-11	-16	-14
9	-11	-9	-7	-8	-7	-10	-6	-6	-5	-0	5	7	9	3	3	11	10	11	13	13	15	11	6	4
10	3	-1	-2	-5	-7	-7	-6	-8	-6	-0	4	7	9	9	3	6	3	-2	-9	-12	-12	-3	-3	2
11	2	2	-1	2	-0	1	-3	-9	-10	-5	-2	3	9	13	16	20	22	23	22	21	12	8	7	10
12	7	3	3	7	13	14	18	15	18	15	21	23	23	34	35	41	31	17	5	13	12	3	-8	-15
13	-10	-2	0	-7	-7	-2	-2	-4	-8	-8	-7	-15	-2	-6	-3	-7	-19	-20	-16	-17	-20	-35	-25	-21
14	-22	-17	-17	-10	-9	-12	-12	-7	-6	-10	-10	-11	-15	-12	-12	-13	-29	-32	-32	-22	-20	-21	-21	-17
15	-13	-8	-5	-3	-7	-2	-12	-1	-3	-0	-16	-13	-3	2	-4	-10	-9	-12	-14	-20	-21	-19	-14	-11
16	-13	-14	-8	-4	-3	-0	-3	-0	2	1	4	2	-1	-1	-3	-6	-2	-2	-2	-5	-13	-24	-24	-16
17	-10	-9	-7	-6	-5	-5	-5	-6	-6	-7	-5	-5	-3	-5	-2	-10	-10	-17	-28	-22	-12	-7	-2	-1
18	-2	-3	0	0	-2	-2	-2	-2	-11	-3	-1	-6	5	5	5	4	5	5	6	5	5	0	6	-12
19	-3	6	7	7	-3	7	8	9	-4	-4	5	7	5	9	3	2	2	4	5	6	7	7	6	-5
20	5	6	7	6	6	7	9	10	8	10	8	7	7	9	9	10	10	6	1	0	2	8	11	13
21	14	14	15	14	15	17	19	21	20	17	17	16	14	13	11	10	13	13	11	12	14	12	15	14
22	12	15	19	16	19	13	3	-0	0	-3	6	12	11	5	-2	-5	-8	-7	-11	-14	-12	-14	-22	-18
23	-14	-18	-20	-19	-24	-27	-28	-21	-11	-3	-4	6	6	6	-4	-7	-6	-6	-14	-20	-17	-15	-19	-23
24	-24	-19	-15	-17	-15	-9	-8	-4	-4	-4	-4	-2	-4	-6	-9	-10	-7	-11	-18	-19	-17	-11	-7	-5
25	-4	-2	-7	-2	-1	-2	-1	9	8	11	1	17	20	19	-0	6	3	4	3	-0	-8	-9	-15	-17
26	-27	-30	-25	-17	-13	-13	-10	-11	-13	-11	-2	3	-1	-5	-12	-14	-11	-7	-20	-31	-50	-53	-47	-35
27	-41	-35	-23	-23	-21	-17	-11	-11	-15	-21	-17	-4	-4	-13	-20	-19	-15	-11	-14	-32	-26	-23	-14	-10
28	-10	-14	-17	-17	-15	-13	-13	-17	-12	-15	-12	-8	-6	-6	-11	-17	-16	-11	-12	-15	-14	-13	-16	-17
29	-10	-10	-9	-7	-6	-12	-13	-5	-8	-14	-10	-7	-10	-15	-20	-20	-20	-14	-14	-13	-18	-14	-15	-20
30	-14	-8	-7	-2	-1	-2	-1	1	-1	1	1	3	4	-1	-0	-3	-3	-6	3	-9	-15	-15	-15	-13

MAY   1968

UNIT=GAMMAS

JUNE 1958

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
																							G.M.T.	
1	2	5	4	5	6	7	7	10	20	25	12	15	18	20	14	3	-2	-2	-3	-4	-3	-3	-5	-12
2	-13	-15	-11	-2	-10	-13	-20	-20	-17	-11	-7	-4	-5	-4	-3	-4	-1	1	-8	-13	-11	-7	-14	-16
3	-14	-15	-11	-7	-4	-5	-9	-6	-1	7	11	4	3	-1	-1	-1	-1	2	2	4	1	-4	-6	-3
4	-3	-4	-2	-5	-3	-4	-2	2	6	8	6	5	7	4	-1	-3	-2	0	2	5	4	3	2	-0
5	-5	-4	-2	-2	-3	0	2	6	7	7	6	4	-0	-0	-1	-5	-5	-6	-5	-2	2	3	7	8
6	8	8	5	2	4	3	3	3	6	8	5	3	-1	-1	-1	1	2	-2	-6	-4	4	4	4	7
7	6	10	7	10	8	5	11	19	14	11	17	14	13	-1	10	10	4	-1	2	6	9	9	9	10
8	13	14	14	12	12	8	9	11	13	15	14	11	10	7	10	12	4	3	13	8	9	11	10	14
9	13	13	10	8	7	6	7	-7	13	21	18	16	15	17	19	15	10	7	-6	-7	-7	-11	-13	-4
10	-4	-7	-15	-17	-11	-6	-17	-7	-20	-23	-17	-20	-24	-23	-21	-20	-20	-21	-24	-22	-27	-34	-7	-37
11	-32	-33	-48	-43	-46	-82	-80	-64	-52	-55	-71	-53	-54	-68	-59	-57	-60	-51	-63	-58	-70	-61	-61	-60
12	-63	-58	-54	-52	-58	-63	-52	-47	-44	-36	-41	-48	-52	-57	-54	-68	-70	-73	-69	-62	-56	-53	-43	-47
13	-44	-41	-39	-44	-41	-53	-60	-44	-44	-47	-52	-51	-39	-49	-53	-62	-56	-72	-74	-72	-68	-69	-60	-51
14	-46	-43	-36	-31	-31	-28	-22	-29	-27	-28	-35	-34	-36	-45	-52	-50	-45	-41	-49	-52	-45	-49	-47	-39
15	-34	-30	-27	-26	-25	-22	-23	-25	-22	-18	-13	-11	-10	-13	-13	-14	-11	-14	-19	-22	-17	-16	-13	-12
16	-11	-10	-11	-10	-10	-9	-5	-4	-2	0	0	3	-6	-9	-11	-14	-17	-22	-29	-21	-21	-20	-33	-31
17	-29	-30	-23	-21	-23	-8	-19	-23	-29	-27	-25	-30	-23	-27	-28	-26	-25	-24	-24	-23	-20	-18	-23	-24
18	-23	-20	-18	-10	-15	-14	-13	-12	-14	-12	-7	-1	-4	-9	-14	-12	-15	-22	-29	-27	-25	-27	-25	-26
19	-25	-25	-19	-19	-17	-14	-14	-13	-11	-14	-15	-16	-18	-20	-24	-22	-22	-27	-25	-20	-15	-16	-26	-28
20	-22	-20	-15	-14	-13	-12	-8	-4	-4	-4	7	9	12	11	11	11	13	12	12	9	2	-9	-10	-6
21	-1	0	-1	1	2	3	3	1	1	2	4	7	12	13	14	13	9	10	10	8	7	5	4	3
22	2	4	5	9	15	16	17	-13	3	-5	-9	-11	-12	-10	-10	-13	-15	-14	-13	-17	-12	-13	-15	-15
23	-12	-13	-12	-10	-8	-9	-8	-7	-10	-9	-9	-7	-6	-6	-7	-5	-1	-2	-2	-4	-5	-7	-7	-3
24	-3	-1	-2	-3	-2	-0	3	5	5	5	5	6	6	6	7	8	9	13	15	14	9	5	-1	1
25	2	3	3	6	-1	5	5	6	7	12	12	11	5	10	11	11	14	19	17	14	15	16	19	15
26	15	18	21	21	21	16	18	20	23	27	29	30	23	27	26	22	23	23	15	11	11	12	6	11
27	12	13	11	10	10	11	9	10	11	14	19	16	13	20	13	11	7	8	12	16	10	5	0	-1
28	3	11	9	8	6	7	9	9	7	4	9	14	15	15	12	12	8	7	4	4	-5	-4	-1	3
29	3	0	7	11	2	-0	11	11	12	1	12	14	13	15	15	6	7	6	11	12	-4	-5	-1	-5
30	-3	-0	-1	-4	-1	-0	2	3	1	1	3	6	5	2	-1	-3	-5	-6	-1	1	-1	-10	-15	-12

JULY 1958

UNIT=GAMMAS

G.M.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-5	-10	-10	-9	-8	-9	-9	-9	-8	-9	-4	-3	-7	-7	-8	-9	-13	-11	-14	-14	-12	-7	-6	-4
2	-3	-6	-5	-2	-1	0	0	-2	-1	2	3	5	4	1	-5	-4	-6	-4	-4	-7	-8	-10	-10	-9
3	-9	-9	-5	-5	-3	-7	-10	-13	-6	-3	7	9	5	0	3	5	1	-7	-6	-3	-4	-8	-9	-9
4	-11	-11	-8	-3	-2	-3	2	-2	-7	-5	4	9	2	-2	-4	-4	-5	-7	-4	-4	-4	-4	-7	-5
5	-5	-4	-4	-3	2	3	3	5	3	2	1	2	2	-1	1	-0	-5	1	4	5	6	3	0	0
6	-0	-2	-0	6	3	2	5	7	8	12	16	13	10	5	3	5	7	9	8	5	4	2	4	5
7	6	5	5	8	10	8	6	7	4	3	5	5	-1	0	0	1	4	6	5	-0	-3	-4	2	3
8	8	8	5	5	7	6	10	7	5	7	7	9	10	11	12	13	10	15	13	11	8	1	-1	1
9	2	3	5	8	10	8	5	6	6	8	9	9	8	9	14	19	19	21	21	19	20	24	35	41
10	39	50	27	23	7	1	3	-6	-2	-2	-9	-1	-4	-15	-22	-17	-18	-22	-16	-10	-14	-12	-16	-17
11	-22	-20	-16	-17	-9	-5	-10	-9	-9	-8	-4	-1	3	3	5	1	-5	-7	-7	-5	-11	-15	-18	-17
12	-19	-24	-22	-18	-15	-10	-7	-4	-1	-2	0	4	4	-1	-5	-9	-13	-6	2	6	7	3	-2	-4
13	-3	-3	-2	1	4	1	1	2	-1	2	4	5	3	0	0	0	16	14	-2	-13	-33	-33	-36	-40
14	-31	-39	-37	-42	-44	-43	-37	-33	-33	-30	-22	-15	-12	-14	-17	-20	-20	-15	-20	-19	-15	-15	-19	-19
15	-21	-24	-19	-15	-12	-12	-15	-14	-12	-11	-7	-3	-5	-8	-11	-12	-11	-8	-7	-2	0	-4	-6	-6
16	-6	-4	-2	2	-1	1	3	4	5	1	4	7	8	8	11	13	3	12	19	17	12	7	3	2
17	1	-3	-2	-1	0	1	3	4	3	4	5	4	0	3	3	4	3	2	3	1	-4	1	6	6
18	2	-3	1	-3	-2	-3	-1	-1	-0	3	6	7	-0	-5	-13	-16	-12	-9	-9	-3	-0	-1	-1	-0
19	0	1	2	5	3	5	4	4	2	5	9	10	8	7	5	4	3	7	11	12	7	-0	-2	-8
20	-16	-13	-5	1	3	3	5	8	9	7	8	6	5	4	5	6	7	10	11	10	7	4	3	4
21	4	3	5	7	7	8	9	9	12	15	20	18	10	3	6	11	13	11	8	14	16	9	2	-2
22	-3	3	5	5	5	-5	-6	0	5	-11	-13	-11	-13	-15	-14	-13	-8	-7	-13	-12	-14	-15	-12	-11
23	-10	-9	-8	-9	-12	-13	-13	-11	0	2	5	3	-1	-7	-10	-12	-6	-0	-1	-3	-7	-12	-12	-12
24	-13	-7	-0	1	0	0	0	-1	-3	-2	-1	2	6	6	3	9	10	10	10	9	8	5	2	1
25	0	3	3	4	5	6	7	6	10	11	15	19	25	17	12	12	13	16	16	14	12	11	9	12
26	10	13	13	9	10	10	11	11	9	8	5	9	7	5	2	3	0	-1	6	-1	1	10	10	1
27	-3	-3	-5	-1	-2	-4	-1	1	4	5	4	0	-9	-11	-10	-13	-12	-13	-9	-5	-3	-2	-1	-0
28	-0	2	1	2	5	3	6	6	6	6	8	11	7	4	2	4	-0	-0	-1	3	5	1	-1	-0
29	0	-0	1	2	5	8	7	6	7	8	8	10	11	13	10	6	3	-1	-3	1	3	6	6	4
30	1	3	6	11	13	13	14	14	13	14	13	11	7	4	5	12	17	17	18	17	16	12	9	8
31	3	4	3	10	8	8	10	12	10	11	11	5	3	3	3	1	2	5	7	9	10	12	12	10

AUGUST 1968

UNIT=GAMMAS

S.M.T.

DAY

SEPTEMBER 1968

UNIT=GAMMAS

| | | | | | | | | | | | | | | | | | | | | | | G.M.T. | |
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-16	-18	-15	-17	-18	-18	-17	-14	-7	-3	3	1	-0	-2	-2	-3	-4	-3	-3	2	5	5	1	-3
2	-2	-0	-0	-1	-18	4	7	8	13	14	13	15	18	4	2	0	-1	-3	-3	1	4	4	3	9
3	8	5	13	15	7	7	7	7	14	11	8	6	6	-3	-2	-4	-12	-3	-6	-1	-6	-7	6	11
4	5	3	2	2	-4	-9	-3	2	8	5	4	0	3	-1	-3	-5	-3	-5	-6	-6	-3	-1	6	-5
5	7	6	8	3	0	3	0	-5	1	1	0	-3	-10	-5	2	3	5	5	5	4	5	0	-1	-7
6	-3	-2	-4	-4	-2	-6	-8	-7	-5	-4	-3	-5	-6	-3	3	10	13	6	6	12	14	-9	-15	-25
7	-17	-13	-9	-8	-11	-7	-1	-4	7	10	8	5	5	-2	-2	0	-3	-7	-5	-9	-19	-34	-42	-50
8	-56	-54	-62	-58	-66	-62	-69	-79	-79	-59	-62	-65	-59	-65	-71	-77	-79	-74	-75	-61	-47	-39	-34	-31
9	-23	-20	-21	-25	-22	-16	-21	-21	-17	-19	-13	-19	-25	-29	-25	-22	-23	-23	-17	-5	-1	-3	-7	-11
10	-15	-15	-18	-20	-17	-15	-15	-14	-9	-1	-9	-13	-9	-10	-10	-11	-12	-14	-10	-2	-1	-2	-7	-9
11	-9	-9	-12	-10	-7	-9	-10	-9	-7	-2	-2	-0	-1	-2	-4	-4	-1	2	1	3	4	3	2	-2
12	-1	-1	2	1	13	-7	-7	-1	-1	-2	-1	4	8	-2	-9	-4	-1	-7	-8	-11	-15	-13	-26	-22
13	-23	-28	-35	-39	-42	-38	-31	-24	-19	-10	-2	-9	-18	-15	-17	-23	-29	-21	-30	-23	-16	-20	-18	-22
14	-30	-31	-21	-31	-36	-28	-23	-18	-13	-10	-13	-18	-19	-19	-19	-19	-13	-6	-7	-7	-14	-28	-25	-21
15	-17	-13	-19	-22	-15	-15	-18	-12	-13	-11	-5	-4	-8	-13	-3	-17	-6	-7	-12	-17	-13	-21	-22	-17
16	-12	-15	-14	-11	-12	-17	-20	-18	-15	-14	-13	-12	-11	-4	2	4	8	6	3	-1	-5	-3	2	-5
17	-5	-6	-10	-8	-5	-3	-2	-3	-1	-4	-3	-5	3	-2	-9	-3	0	-0	-6	-6	-1	-1	-4	-1
18	-5	-9	-10	-8	-5	-2	-1	-11	9	8	9	8	6	5	-2	1	-1	-1	-1	-1	-1	-1	-3	2
19	7	-3	11	2	-8	-3	-13	-5	-4	-6	-8	-9	-10	-11	-11	-9	-4	-3	-1	-1	-1	0	-2	1
20	-2	-3	-9	-10	-1	2	-1	-1	2	2	2	2	-1	-4	-1	1	3	7	6	-1	-1	-1	-2	1
21	3	5	5	4	2	2	2	-7	-5	-2	-1	-1	-1	-4	2	1	0	4	3	9	2	2	6	10
22	9	3	3	6	6	8	6	6	7	8	7	-8	3	4	5	7	11	15	15	10	-5	-5	-17	-8
23	-1	-7	-7	-20	-21	-13	-10	-11	-8	-11	-15	-8	-3	-5	-17	-26	-18	-10	-10	-14	-19	-22	-23	-17
24	-15	-13	-11	-1	-6	-5	-5	-5	-4	-5	-6	-6	-6	-6	-6	-0	-3	-2	-4	-11	-15	-13	-25	-9
25	-5	-2	-2	-1	-1	2	2	1	2	0	2	1	-2	-4	-4	-0	4	7	6	1	4	12	10	11
26	8	7	7	9	13	12	11	10	12	17	17	13	13	14	11	8	7	11	14	19	20	19	19	17
27	10	14	14	16	13	14	16	18	17	15	13	12	11	12	13	13	18	20	21	18	16	14	13	16
28	17	14	16	17	19	19	19	17	20	22	16	17	15	14	13	13	19	21	21	21	20	16	17	17
29	13	12	13	12	8	8	9	9	16	17	15	15	16	16	16	19	25	25	17	12	9	13	20	21
30	18	16	14	14	16	18	20	21	23	22	20	15	15	14	15	19	19	23	24	17	4	-1	-3	-1

OCTOBER 1958

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	8	-4	-12	-20	-13	-12	-14	-12	-11	-13	-5	4	6	2	-5	-3	3	-6	-12	-17	-16	-8	-10	-14
2	-12	-26	-29	-25	-33	-41	-47	-38	-23	-25	-21	-22	-38	-31	-34	-39	-39	-35	-44	-45	-39	-32	-30	-28
3	-31	-24	-34	-31	-31	-31	-33	-37	-37	-34	-31	-27	-26	-33	-39	-35	-29	-25	-24	-24	-24	-20	-15	-12
4	-9	-13	-17	-20	-22	-19	-19	-19	-15	-15	-17	-20	-21	-22	-25	-25	-22	-22	-23	-15	-11	-5	-7	-8
5	-7	-7	-10	-9	-8	-9	-11	-14	-14	-13	-9	-10	-14	-17	-13	-17	-12	-9	-7	-5	-3	-2	-4	-1
6	-2	-2	-2	0	0	0	16	27	27	17	18	23	24	21	15	15	18	18	12	10	15	14	18	22
7	27	26	17	8	11	11	15	-1	-0	4	5	8	9	7	8	6	17	25	-0	-12	-17	-15	-8	-9
8	-9	-4	-4	-7	-7	-5	-3	-1	3	4	1	3	5	2	-2	-7	-3	2	-1	-4	-3	-2	-6	-7
9	-1	-6	-7	-6	-3	-1	4	4	11	13	12	13	13	9	3	6	13	7	8	8	10	3	-2	-4
10	-6	-0	0	2	6	8	6	3	7	11	12	12	10	6	5	7	13	14	11	7	5	7	8	14
11	16	18	14	15	17	18	16	13	18	21	19	18	18	15	10	10	13	19	18	18	23	26	24	23
12	26	18	-2	-21	-35	-44	-37	-32	-31	-21	-28	-19	-17	-27	-29	-29	-27	-41	-61	-66	-76	-69	-59	-59
13	-56	-48	-44	-42	-41	-33	-35	-31	-28	-25	-24	-21	-30	-36	-42	-44	-35	-27	-24	-20	-20	-19	-20	-25
14	-25	-18	-22	-28	-25	-27	-27	-27	-25	-23	-20	-14	-13	-11	-17	-21	-18	-16	-13	-17	-16	-15	-12	-12
15	-9	-9	-13	-10	-9	-10	-12	-12	-11	-11	-7	-5	-8	-11	-16	-18	-15	-15	-14	-11	-10	-9	-9	-8
16	-6	-5	-7	-7	-4	-2	-7	-3	-1	-1	3	5	6	4	-3	1	11	19	17	16	19	10	6	7
17	5	8	4	-1	1	-0	-5	-4	0	-3	3	4	3	5	0	0	7	5	1	-0	-4	-7	1	-2
18	9	7	9	10	7	7	5	5	-1	-3	3	8	8	3	0	3	13	15	15	10	10	13	9	8
19	9	9	9	3	5	3	6	3	6	10	15	14	13	15	15	13	15	15	16	-3	-24	-21	-18	-12
20	-9	-10	-8	-8	-8	-9	-11	-15	-13	-11	-10	-6	-6	-6	-4	-2	-2	-7	-7	-8	-5	-3	1	2
21	3	4	4	4	4	-2	6	6	5	5	6	8	7	8	8	5	7	6	13	13	20	24	28	24
22	13	15	16	16	15	14	12	13	15	15	15	13	14	18	19	15	14	13	4	2	9	3	10	17
23	12	13	15	12	13	14	14	13	15	18	18	16	15	13	17	21	20	20	23	25	25	24	25	11
24	29	27	23	28	32	27	22	22	21	22	24	24	22	18	11	16	21	11	-6	-13	-4	-2	-1	3
25	3	6	8	7	5	4	6	5	-0	1	0	-1	-1	-0	-4	-4	-1	3	6	5	3	2	5	3
26	11	11	12	11	12	11	7	6	11	18	21	30	19	16	14	9	11	14	19	20	20	24	28	24
27	13	16	15	12	13	13	5	5	11	15	15	15	13	15	13	10	12	12	9	9	9	3	15	17
28	13	13	12	10	11	9	14	14	19	25	28	27	25	21	16	13	15	15	12	14	13	27	24	11
29	-1	-1	5	7	8	4	8	15	15	35	42	43	39	29	32	35	18	-45	-25	-17	-2	-42	-51	-49
30	-45	-40	-37	-28	-25	-26	-25	-28	-27	-22	-14	-19	-22	-28	-36	-34	-33	-23	-22	-16	-13	-13	-18	-19
31	-20	-29	-30	-31	-40	-45	-54	-44	-44	-15	-11	-34	-6	-25	-118	-183	-184	-199	-211	-208	-192	-170	-153	-140

G.M.T.

NOVEMBER 1958

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-138	-121	-112	-109	-109	-106	-108	-107	-101	-87	-77	-69	-89	-111	-88	-124	-128	-131	-129	-159	-154	-183	-210	-192
2	-164	-172	-171	-173	-157	-156	-156	-156	-153	-123	-127	-120	-116	-109	-105	-97	-95	-79	-61	-55	-59	-57	-81	-91
3	-59	-62	-114	-103	-100	-101	-97	-90	-86	-82	-75	-71	-61	-67	-70	-71	-66	-59	-63	-66	-67	-70	-73	-69
4	-65	-62	-61	-61	-57	-45	-47	-57	-61	-54	-46	-41	-47	-51	-52	-50	-46	-43	-43	-41	-48	-46	-40	-42
5	-44	-44	-45	-43	-44	-44	-46	-47	-46	-45	-43	-39	-35	-33	-31	-35	-35	-34	-25	-25	-27	-27	-29	-26
6	-25	-23	-20	-10	-23	-29	-30	-28	-25	-23	-23	-25	-25	-22	-21	-20	-19	-17	-12	-15	-18	-13	-13	-28
7	-37	-34	-38	-43	-46	-53	-30	-39	-35	-35	-36	-41	-39	-39	-30	-24	-23	-23	-24	-21	-18	-18	-18	-20
8	-19	-19	-19	-21	-21	-24	-27	-25	-25	-26	-26	-23	-30	-29	-30	-32	-29	-27	-20	-21	-30	-32	-34	-36
9	-38	-30	-31	-32	-30	-23	-21	-20	-24	-22	-25	-18	-18	-29	-35	-36	-33	-26	-23	-21	-19	-20	-20	-18
10	-20	-19	-19	-20	-20	-25	-28	-29	-27	-27	-27	-23	-21	-18	-13	-18	-22	-25	-27	-24	-27	-29	-28	-27
11	-22	-20	-32	-28	-23	-32	-34	-29	-25	-28	-29	-30	-32	-26	-23	-23	-21	-23	-20	-14	-15	-16	-17	-18
12	-18	-14	-15	-16	-17	-13	-18	-16	-13	-13	-14	-16	-15	-15	-12	-8	-8	-6	-4	-4	-4	-3	-3	-4
13	-3	-2	-1	1	-1	-4	-3	-2	3	1	0	-1	0	2	2	-1	-4	-4	-1	-3	-11	-11	-7	-6
14	-7	-6	-9	-2	-1	-0	-0	3	5	4	5	6	9	12	13	10	9	3	7	6	6	-3	4	3
15	9	10	3	10	10	10	9	3	3	2	1	2	3	2	1	-0	-3	-2	-1	1	0	1	1	1
16	1	1	3	1	1	-0	0	1	6	20	27	37	37	33	49	50	49	43	42	33	19	5	-5	8
17	6	-3	3	-1	-1	-3	-10	-7	-14	-15	-11	-9	-5	-2	-11	-22	-29	-42	-42	-44	-57	-65	-66	-61
18	-54	-50	-54	-51	-51	-63	-67	-70	-67	-53	-48	-46	-43	-37	-29	-25	-14	-11	-13	-13	-15	-22	-27	-27
19	-28	-23	-24	-27	-30	-34	-35	-30	-23	-17	-16	-18	-19	-13	-11	-9	-7	-4	-4	-8	-12	-10	-7	-4
20	-5	-3	-6	-18	-17	-15	-4	-2	-3	18	21	17	12	-3	-20	-36	-33	-40	-40	-39	-31	-24	-19	-18
21	-17	-14	-15	-19	-22	-21	-20	-24	-29	-27	-26	-25	-24	-21	-19	-20	-24	-25	-28	-23	-18	-18	-23	-22
22	-20	-19	-17	-15	-15	-11	-14	-16	-19	-20	-16	-13	-11	-10	-5	-1	-0	1	3	-1	-1	-3	-3	-1
23	-0	-2	-5	-8	-10	-0	-3	-6	-8	-12	-11	-10	-8	-3	-1	2	4	8	9	8	8	11	8	16
24	20	22	19	16	16	15	17	18	19	19	17	17	15	15	13	19	29	28	25	24	25	25	21	21
25	16	12	14	16	18	17	15	18	18	13	8	6	3	-2	1	-1	-3	-0	-3	-7	-3	-1	-1	-1
26	-1	3	5	5	5	12	10	9	4	0	-3	2	4	7	4	-0	-3	-3	-3	-2	-3	-1	-4	-6
27	-0	1	-1	-5	-4	-3	-4	-8	-9	-9	-15	-4	-1	0	3	1	-3	6	8	-7	-11	-10	-5	-7
28	-9	-14	-1	-1	-8	5	3	3	-3	-8	-12	-12	-9	-4	-5	-3	-3	1	-2	-2	5	4	8	7
29	8	10	12	10	5	9	5	2	1	-1	-3	6	-1	-0	-5	4	0	-1	2	3	5	4	4	8
30	4	0	5	2	8	4	7	8	8	5	6	6	0	0	1	1	3	2	-1	-1	-3	-1	-1	-3

DECEMBER 1958

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24 S.M.T.
1	-4	-9	-9	-8	-9	-7	-2	3	4	4	-4	-9	-5	-8	-8	-12	-15	-17	-14	-12	-7	-1	-2	-3
2	-2	-1	-4	-3	-3	6	8	9	7	2	10	12	14	12	12	9	3	4	6	6	6	10	2	1
3	-3	8	8	-4	-11	-13	-8	-5	-8	-8	-8	-3	-7	-12	-15	-15	-25	-32	-31	-35	-37	-33	-30	-27
4	-2C	-7	-6	-6	-9	-8	-9	-18	-26	-27	-23	-15	-11	-10	-11	-17	-25	-21	-21	-27	-27	-21	-22	-22
5	-21	-15	-12	-14	-18	-18	-5	3	-3	-11	-16	-7	-3	-4	-10	-16	-15	-18	-22	-26	-29	-36	-42	-45
6	-48	-40	-25	-29	-25	-22	-21	-22	-25	-23	-20	-17	-15	-14	-12	-12	-9	-8	-11	-14	-16	-14	-12	-12
7	-15	-12	-10	-13	-13	-12	-10	-7	-5	-3	-1	2	2	1	0	-3	-7	-10	-10	-12	-9	-9	-9	-12
8	-12	-10	-7	-8	-10	-11	-12	-15	-11	-11	-12	-11	-10	-9	-1	0	-4	-3	-12	-21	-16	-10	-13	-21
9	-17	-13	-11	-11	-4	-4	0	6	-2	-6	-5	-8	-1	-2	3	3	0	2	-5	-13	-19	-17	-17	-14
10	-21	-6	2	-2	-3	3	2	-3	-6	-9	-5	-8	-12	-12	-11	-10	-10	-6	-4	-4	-1	-6	-3	-19
11	-13	-5	-2	-4	-3	-3	0	3	3	2	2	3	-1	1	3	11	7	-1	-4	-9	-1	-8	3	4
12	-10	-10	-17	-14	-12	-7	0	-2	-0	-6	-3	-1	-2	-5	-5	-3	-6	-7	-10	-16	-13	-8	-9	-12
13	-12	-10	-9	-8	-12	-9	3	9	13	1	-2	26	25	19	-1	-5	-11	-13	-11	-5	-13	-13	-14	-17
14	-15	-10	-11	-11	-11	-5	-5	-2	-1	-2	-5	-1	0	4	-4	-3	-12	-1	-3	-4	-1	-6	-2	-3
15	3	4	2	10	9	8	4	2	7	9	3	6	6	11	14	7	3	6	6	4	-1	-6	-2	4
16	1C	15	11	4	3	1	-0	3	5	1	-2	-3	-1	-3	-1	0	-3	-7	-4	-9	-2	-5	3	-6
17	-7	-7	-15	-14	-2	-7	-5	-2	-0	-6	-1	-1	-1	0	3	4	-4	4	7	4	3	3	-5	-1
18	2	5	-3	3	5	13	13	9	13	18	21	26	25	19	12	9	11	16	13	8	5	-4	-5	-6
19	-3	-5	-11	1	-6	-5	-11	-7	-11	6	8	12	8	4	7	5	2	-3	-5	0	9	0	3	4
20	7	11	17	13	12	12	11	8	7	7	21	21	19	17	13	20	15	11	11	12	11	3	4	7
21	5	8	3	2	2	6	4	3	4	1	5	2	3	10	13	11	2	-11	-5	1	3	-3	-16	-9
22	-12	-9	-5	7	11	13	-7	-15	-19	-19	-15	-9	-9	-4	-4	-2	-7	-14	-9	-4	-4	-5	-5	-5
23	-2	-5	-4	-2	-6	-0	6	6	-1	-7	-13	-11	-6	-13	-21	-21	-17	-15	-13	-4	-9	-10	-17	-17
24	-11	-10	-11	-5	-5	-6	12	14	14	8	6	6	-7	-17	-15	-10	-8	-9	-9	-15	-7	-2	6	22
25	-12	11	17	5	-10	-8	26	14	-0	11	7	7	5	5	3	-9	-6	-4	-1	0	-5	-2	-4	-6
26	-4	7	3	2	3	3	5	8	6	2	-1	-5	-4	-5	-3	-2	1	5	5	10	7	7	10	12
27	6	7	7	7	13	22	19	15	-2	-1	-15	-17	-21	-21	-24	-20	-15	-11	-7	-4	-11	-3	-11	-14
28	-14	-10	-8	-9	-0	8	8	14	12	8	6	6	-6	-3	-3	-3	-8	-3	-2	-4	-7	-4	-1	-4
29	-7	-3	-3	2	9	9	12	14	14	11	7	7	2	0	-1	-2	-1	-13	-14	-15	-15	-15	-8	-22
30	-17	-13	-9	-5	-6	-6	-3	-1	-0	0	-4	-2	-4	-7	-7	-2	-6	-6	-7	0	-0	4	2	-5
31	-10	-5	1	-1	1	3	4	3	1	5	7	11	13	9	5	4	2	-4	-7	-9	-10	-13	-14	-13

DAILY MEANS OF EQUATORIAL DST FOR 1968

DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	-69	-3	-32	-39	-7	6	-9	11	-5	-8	-123	-6
2	-63	-17	-20	-22	-10	-10	-3	7	4	-32	-119	6
3	-49	-28	-31	-15	0	-2	-8	10	4	-29	-80	-15
4	-28	-35	-33	-19	1	1	-4	10	-0	-17	-53	-17
5	-17	-20	-37	-24	4	0	1	14	1	-10	-37	-17
6	-23	-16	-27	-50	17	3	6	8	-2	14	-23	-19
7	-18	-2	-23	-21	-32	9	4	-2	-3	6	-32	-7
8	-10	-17	-12	-11	-23	11	8	-1	-62	-2	-25	-11
9	-4	-36	-5	3	-30	7	14	-1	-18	5	-26	-6
10	-5	-36	-9	-1	-6	-20	-2	2	-11	7	-24	-8
11	-0	-39	-11	7	3	-59	-9	2	-4	18	-25	-0
12	-19	-49	-7	15	-9	-56	-6	9	-1	-33	-11	-7
13	-22	-27	-1	-10	-1	-54	-5	13	-23	-32	-2	-6
14	-22	-11	-4	-16	4	-39	-26	-6	-23	-19	4	-4
15	-22	-18	-21	-9	1	-19	-10	-15	-14	-11	3	5
16	-18	-22	-15	-6	-13	-13	5	-21	-8	3	19	0
17	-11	-17	-13	-8	-3	-24	2	-28	-5	1	-21	-0
18	-7	-32	-7	4	-6	-17	-3	-18	1	7	-40	10
19	-0	-28	-4	5	-5	-19	4	-10	-4	5	-17	2
20	-8	-29	-10	7	-16	-1	9	-7	-1	-7	-13	12
21	-12	-33	-7	15	-22	5	2	-2	2	7	-22	2
22	-1	-17	-5	1	-24	-4	-7	4	5	13	-9	-9
23	-3	-11	2	-12	-12	-7	-7	-10	-13	18	-1	-7
24	-1	-11	-17	-10	-22	5	3	-14	-8	15	20	-9
25	-1	-8	-20	4	-10	10	11	-4	3	3	6	3
26	-1	-2	-13	-19	-1	20	7	-1	13	16	2	3
27	-9	-3	-32	-19	12	11	-4	7	15	12	-3	-3
28	-22	-33	-13	-13	10	7	3	10	13	17	-2	-2
29	-25	-49	-25	-13	-3	8	5	13	15	4	3	-4
30	-20	0	-34	-5	5	-2	11	16	15	-26	3	-1
31	-5	0	-29	0	-1	0	7	-2	0	-91	0	-1
MEAN	-17	-24	-17	-9	-7	-8	0	-0	-4	-5	-22	-4

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