F — 161

IONOSPHERIC DATA IN JAPAN

FOR MAY 1962

Vol. 14 No. 5

Issued in July 1962

Prepared by

THE RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

KOKUBUNJI, TOKYO, JAPAN

F – 161

IONOSPHERIC DATA IN JAPAN

FOR MAY 1962

Vol. 14 No. 5

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

CONTENTS

SITES OF THE RADIO WAVE OBSERVATORIES

Ionospheric observation is carried out at the following four observatories in Japan.

	Latitude	Longitude	Site
Wakkanai	45°23.6'N.	141°41.1'E.	Wakkanai-shi, Hokkaido
Akita	39°43.5'N.	140°08.2'E.	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	35°42.4'N.	139°29.3'E.	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	31°12.5'N.	130°37.7'E.	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

Solar radio emission and radio propagation conditions are observed at Hiraiso Radio Wave Observatory.

	Latitude	Longitude	Site
Hiraiso	36°22.0'N.	140°37.5'E.	Hiraiso-machi, Nakaminato-shi, Ibaragi-ken

SYMBOLS AND TERMINOLOGY

A. IONOSPHERE

All symbols and terminology in the table of ionospheric data are used in accordance with the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, September 2, 1956, and the Second Report of the Committee, May, 1957, supplementary to the First Report.

Terminology

f_0F2, f_0F1, f_0E — The ordinary-wave critical frequency for the $F2$, $F1$ and E layers respectively.

f_0E_s — The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.

f_bE_s — The ordinary wave frequency at which the highest blanketing E_s layer becomes effectively transparent. This is usually determined from the minimum frequency at which reflections from layers at greater heights are observed.

f-min — That frequency below which no echoes are observed.

$(M\,3000)F2$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.

$(M\,3000)F1$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F1$ layer.

$h'F2$ — The minimum virtual height, $h'F2$, refers to the highest, most stable stratification observed in the F region and can only be scaled when such stratification is present.

$h'F$ — The natural and most significant F region virtual height parameter is that for lowest F region stratification. This will be denoted by $h'F$. Thus $h'F$ is identical with the current $h'F2$ when F region stratification is absent, e. g., at night, and with the current $h'F1$ when $F1$ stratification is present.

$h'E_s$ The lowest virtual height of the trace used to give the f_0E_s.

$hpF2$ The virtual height of the $F2$ layer measured on the ordinary-wave branch at a frequency equal to 0.834 f_0F2.

$ypF2$ The semi-thickness of the $F2$ layer deduced from a parabolic fit to the "nose" of the electron density distribution with height and based on the observed $h'f$ trace. (The difference between $hpF2$ and the virtual height at 0.969 f_0F2).

a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example E_s.

B Measurement influenced by, or impossible because of, absorption in the vicinity of f-min.

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range. Used in a qualifying sense, see below.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range. Used in a qualifying sense, see below.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced or impossible because the ionization density is too small compared with that of a lower thick layer.

H Measurement influenced by, or impossible because of, the presence of a stratification.

L Measurement influenced by or impossible because the trace has no sufficiently definite cusp between layers.

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot readily be interpreted, for example, in the presence of oblique echoes.

O Measurement refers to the ordinary component.

R Measurement influenced by, or impossible because of, absorption in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Intermittent trace.

Z Third magneto-ionic component present.

b. Qualifying Symbols

Used as a preceeding symbol on monthly tabulation sheets.

D *greater than.....*

E *less than.....*

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magnetoionic component.

c. Description of Standard Types of E_s

The nine standard types of E_s are identified by small (lower case) letters: *l*, *c*, *h*, *q*, *r*, *a*, *s*, *f*, *n*. These letters are suggestive of the names low, cusp, high, equatorial, retardation, auroral, slant, flat and unclassified, respectively; it is strongly emphasized that these names are suggestive, not restrictive. The standard types are:

l At flat E_s trace at or below the normal E layer minimum virtual height. Use in daytime only.

c An E_s trace showing a relatively symmetrical cusp at or below f_0E. This is usually continuous with the normal E trace though, when the deviative absorption is large, part or all of the cusp may be missing. Use in daytime only.

h An E_s trace showing a discontinuity *in height* with the normal E layer trace at or above f_0E. The cusp is not symmetrical, the low frequency end of the E_s trace lying clearly above the high frequency end of the normal E trace. Use in daytime only.

q An E_s trace which is diffuse and non-blanketing over a wide frequency range. The spread is most pronounced at the upper edge of the trace. (This type is common in daytime in the vicinity of the magnetic equator.)

r An E_s trace which is non-blanketing over part or all of its frequency range showing an increase in virtual height at the high frequency end similar to group retardation. This is distinguished at present from true group retardation (a blanketing thich layer included in the E layer tables: f_0E, $h'E$) by the lack of group retardation in the F traces at corresponding frequencies.

a An E_s pattern having a well defined flat or gradually rising lower edge with stratified and diffuse (spread) traces present above it. These sometimes exceed over several hundred kilometers of virtual height.

s A diffuse E_s trace which rises steadily with frequency. This usually emerges from another E_s trace which should be classified separately. At high latitudes the slant trace usually starts to rise from a horizontal E_s trace, *l*, *h* or *f*, and frequencies which greatly exceed the E layer critical frequency (e.g. about 6 Mc/s) whereas at low latitudes it usually rises from equatorial type E_s, *q*, at frequencies near the E region critical frequency.

f An E_s trace which shows no appreciable increase of height with

frequency. The trace is usually relatively solid at most latitudes. This classification may only be used at night; apparently flat E_s traces observed in the daytime are classified according to their virtual height: *h* or *l*.

n An E trace which cannot be classified into one of the standard types. This must not be used for intermediate cases between any two classes. A choice should always be made whenever possible, even if it is doubtful.

d. Multiple Reflections from E_s

When the ionogram shows the presence of multiple reflections from E_s, the number of traces seen should be recorded after the letter indicating the type.

B. SOLAR RADIO EMISSION

Solar radio emission is received on 200 Mc at Hiraiso Radio Wave Observatory using a 6×4 dipole broadside array and an ordinary superheterodyne receiver. The type of observation is of intensity recording of both steady flux and outstanding occurrences.

a. Daily Data

Steady flux The mean value of recorded base level. Outstanding occurrences are to be omitted except the phenomena with duration of hours or more.

Variability Variability is expressed in four grades as follows:

0=no burst
1=a few bursts
2=many bursts
3=exceptionally many bursts

Number of bursts is determined relatively in comparison with the base level. If the number of bursts be fixed, the variability is greater, when bursts are widely distributed, than in the case of being concentrated in a short period.

b. Outstanding occurrences

Starting time When the start is not obvious, 20% rise time of smoothed flux is adopted and *x* is suffixed. (e.g. 0234*x*)

Maximum time When the instantaneous maximum can not be taken, the smoothed maximum is used and *x* is suffixed. (e.g. 0539*x*)

Time of end When the phenomena have ended obscurely the time of 20% of maximum smoothed flux is written.

Type Outstanding emissions are classified as follows: On another point of view, the classification in the URSI Interchange code is to be added.

S : simple rise and fall of intensity
C : complex variation of intensity
A : appears to be part of general activity
D : distinct from (i.e. apparently superposed upon) the general

activity

M : multiple peaks separated by relatively long period of quietness

F : multiple peaks separated by relatively short period of quietness

E : sudden commencement or rise of activity

Combined letters express one phenomenon (e.g. SD, ECD); letters joined by + express some phenomena occurring in parallel; the preceding term is more important (e.g. SD+F, SA+C).

Maximum intensity

Instantaneous: The highest value above the base level.

Smoothed: By multiplying the duration, the approximate total power of the phenomenon con be estimated.

C. RADIO PROPAGATION CONDITIONS

a. Radio Propagation Quality Figures

Radio propagation quality figures are usually expressed on the scale that ranges from one to five as follows:

1=very poor (very disturbed)
2=poor (disturbed)
3=rather poor (unstable)
4=normal
5=good

The tabulated circuits contain London (Commercial circuit), WWV (frequencies 10, 15, 20 Mc broadcast from Washington, D.C.), San Francisco (commercial circuit) and WWVH (frequencies 10, 15 Mc broadcast from Hawaii), which are received at Hiraiso Radio Wave Observatory near Tokyo.

Warnings of radio propagation broadcast from JJY station are expressed in three grades:

N=normal
U=unstable
W=disturbed

The letter W expresses disturbed condition expected to be during the following 12 hours after issue. The letter U and N means also unstable or normal conditions, respectively.

Whole day radio quality indices are the averages of the 6-hourly indices of London, WWV and S. F.

Start- and end-time of principal geomagnetic storms closely correlated to radio propagation conditions are tabulated from observations at Kakioka.

b. Sudden Ionospheric Disturbances (S. I. D.)

The data of short wave fade-out (SWF) are preparated from the field intensity records on following circuits received at Hiraiso. Characteristics of the phenomenon are classified as follows.

Circuits and Drop-out intensity

W S .....WWV 20 Mc, 15 Mc and 10 Mc (Washington)

S F .....Various commercial circuits (San Francisco)

H A.....WWVH 15 Mc and 10 Mc (Hawaii)

T O.....JJY 15 Mc and 10 Mc (Tokyo)

S H .....BPV 15 Mc and 10 Mc (Shanghai)

L N .....Various commercial circuit (London)

Start-time and Duration, Types and Importances are described from the data of a circuit whose Drop-out Intensity is underlined. Drop-out Intensities of 10 Mc ('), 15 Mc (none) and 20 Mc (").

Start-times and Durations

Types

S : sudden drop-out and gradual recoverly

Slow : slow drop-out taking 5 to 15 minutes and gradual recoverly

G : gradual disturbances ; fade irregular in both drop-out and recoverly

Importances

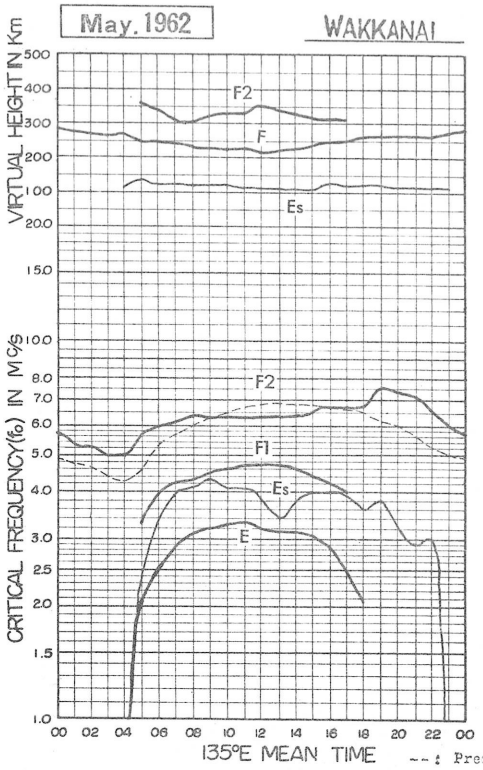
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out ;

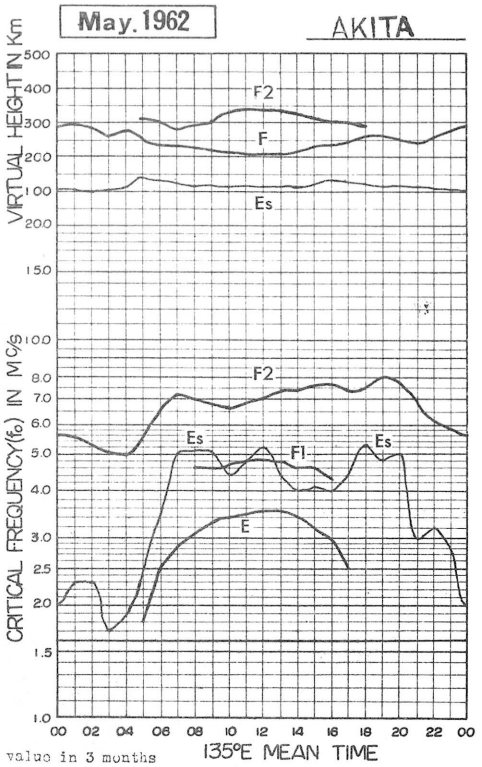
1—	1	1+
2—	2	2+
3—	3	3+

The data of sudden enhancement of atmospheric (SEA) observed on 28 kc are tabulated on each *Start-time, Duration and Importance.*

Besides, the time associated phenomena of SID's, that is, solar flare, solar radio noise outburst and crochet (solar flare effect in magnetic record) are given in this table from interchange messages or measurements at Hiraiso.

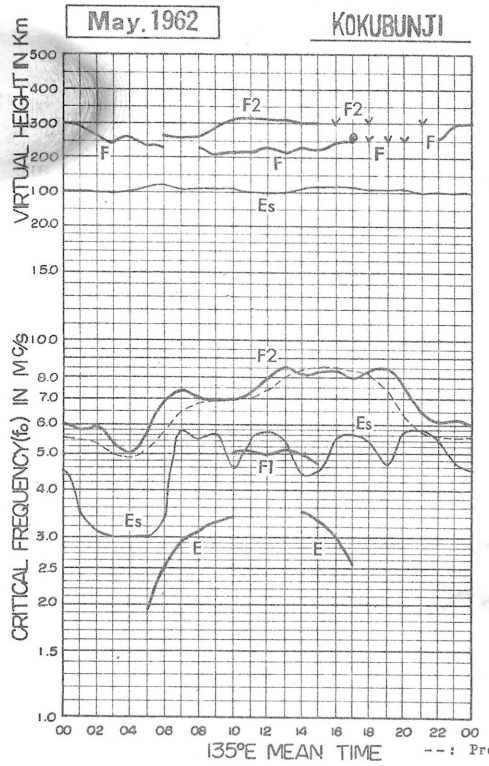
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

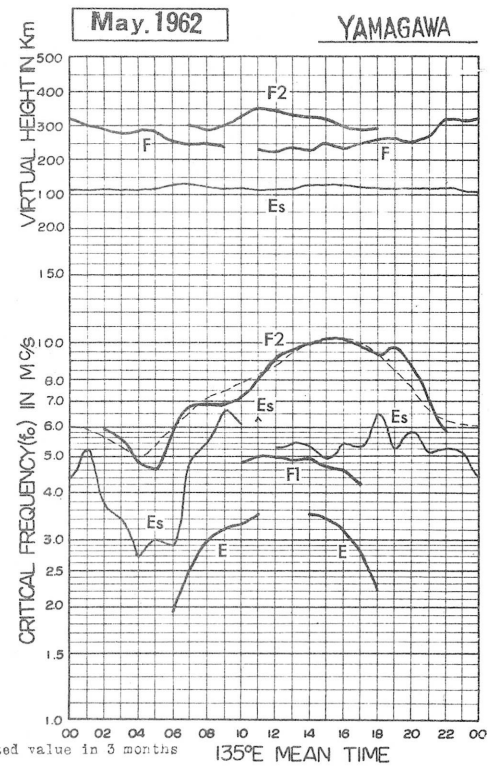




--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA

May. 1962 | foF2 | 135° E Mean Time (G.M.T. + 9h.) | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.3	5.3	4.8	4.5	4.1	4.3H	4.5H	5.0H	5.8	6.1	6.4	6.5	7.3	7.8	7.8	7.9	7.7H	6.6H	6.3	6.0	6.0	6.2	5.8	5.8
2	5.7	U5.4S	5.0F	5.1	4.8	4.9	6.0	6.8H	7.1	6.7	6.3	6.8	7.3	7.2	7.4	7.5	7.5H	6.8	6.7	7.6	6.8	6.8	6.0	5.3
3	5.3	5.3F	5.2	4.4	4.4	4.4	5.0	6.4H	6.4	6.3	6.8	7.5	6.9	6.9	7.5	8.1	7.2H	7.6H	7.3	7.6	7.8	U7.5S	6.1	5.4
4	5.4	5.3	I5.0F	I5.0F	5.0F	5.5	5.8	6.6H	6.8	I7.0C	7.5	7.5	6.8	6.7	7.0	7.6	7.9	8.0H	7.9	7.9	7.1	6.3	5.6	5.7
5	5.4	5.2	4.8	4.8	5.0	5.5	6.0	5.8	6.3	6.4	6.8	6.8	6.8	6.4	6.4	6.6	6.5	6.7H	6.5	7.3	7.2	6.8	5.9	5.4
6	5.0	4.9	4.9	4.6	4.6	5.4	6.1H	5.8H	5.9H	5.9	6.4	7.1	7.2	6.4	6.8	6.4	7.2	7.0H	7.1	8.2	U7.8S	7.1	6.1	5.8
7	5.7	5.4	5.2	4.5	4.3	4.3	4.1	4.6	W	4.6	W	5.7	5.7	5.3	6.3	6.3	6.1	6.2H	6.5	7.0	6.4	5.6	5.5	5.4
8	5.0	5.0	4.7	4.6	5.0	5.8	5.6H	5.7H	6.9	6.6	6.1	6.1	5.8	6.0	5.9	6.2	5.8	5.8H	6.5	7.8	7.8	7.0	6.3	5.6
9	5.3F	5.2	5.2	I5.0F	5.0F	6.0	6.9H	7.0	7.1	6.1	5.6	6.3	6.8	6.7	6.2	6.6	6.7	6.9	7.8	8.0	8.2	7.1	5.3	5.0
10	5.0	4.8	4.8	4.7	4.6	4.9	5.8	6.8	6.8	6.3	6.1	5.8	6.0	6.0	6.1	6.5	6.8	6.7H	7.2	8.4	8.0	7.2	6.4	6.5
11	6.3	5.9	5.8	5.3	5.9	6.8	6.3H	5.5	5.7	5.8	6.3	6.3	6.1	6.3	6.3	6.4	5.8	5.8	6.0	7.0	7.3	7.1	6.8	6.2
12	6.0	5.8	5.5	5.3	5.0	5.8	5.2	5.3	6.0	5.1	5.1	5.0	5.5	5.6	5.8	5.9	6.1	I6.3A	I6.5A	6.8	7.0	6.6	6.0	5.4
13	5.3	5.2	5.3	5.0	5.0	6.0	6.3H	5.9	6.6	6.5	7.7	V7.4R	7.0	6.6	6.7	6.6	6.9	7.1H	7.1	7.2	U7.3S	7.2	6.6	6.1
14	5.8	6.0F	5.8	5.0	4.9	5.7H	5.5	5.6	6.5	6.2	5.8	6.1	6.2	6.4	I6.6A	6.8	A	A	A	6.3	U6.7S	U6.5S	6.0	5.9
15	5.6	5.6	5.1	5.0	4.4	4.3	4.6	I5.2A	5.7	5.7	I6.0A	5.8	5.8	6.0	6.0	6.3	7.0	7.3	6.6	U7.3S	I7.4S	7.0	I6.7SF	5.8
16	5.2	5.3	5.3	5.2	U4.6SF	4.7	5.6	6.0	5.3	5.6	I5.6A	5.7	6.4	6.6	6.4	I5.9A	I6.1A	I6.4A	I6.7A	7.5	6.9	I6.9S	I7.0S	U6.3S
17	I5.6SF	5.3	4.9	4.3	4.1H	4.6	I4.7A	5.3	5.6	I6.0A	I6.0A	I5.7A	I5.5A	5.7	5.5	5.8	6.0	I5.9A	6.0	6.4	7.0	7.0	6.3	5.8
18	5.3	5.1	5.2	5.0	5.0	5.7	6.6HF	7.3	7.3	7.0	6.6	6.9	7.0	6.3	6.4	6.7	7.0	7.0	6.7	7.0	7.1	7.0	I6.8SF	I6.6SF
19	I6.4SF	6.1	6.0	5.8F	5.7F	6.1	6.3H	6.2H	6.8	I7.1C	6.9	6.7	6.1	6.0	6.2	6.7	6.7	6.5	7.1H	8.3	U8.8S	8.3	7.9	7.1
20	6.4	6.3	5.8	5.3	5.4	5.2	I5.5A	5.9	I5.6A	I5.2A	5.0	5.3	5.2	5.3	5.6	5.6	5.8	5.9	I5.9A	6.3	6.7	6.8	6.8	6.1
21	5.4	5.3	4.8	5.0	5.0	4.8	5.6	6.5	I6.3A	I6.0A	I6.0A	I6.0A	I6.0A	6.3	I6.3A	I6.2A	I6.4A	I6.3A	6.3	I6.9A	S	SF	A	A
22	5.7F	5.2	5.2	I5.3F	I5.2SF	5.6	I6.5A	7.5	7.5	7.6	I7.5A	6.4	6.7	7.0	6.8	6.4	7.0	6.8	7.0	7.6	7.8	SF	SF	S
23	6.2	5.1	5.2	5.1	5.4	6.7	7.4	7.9	7.9	7.3	7.5	6.9	6.5	6.6	6.7	6.8	6.5	I6.5C	7.1	8.2	8.7	8.8	U7.8S	6.5
24	5.8	5.7	5.7	5.6	5.2	5.8	6.5	7.1	7.0	6.3	6.1	6.1	6.1	6.4	6.4	6.0	6.3	6.3H	6.1	6.8	7.5	7.6	U7.3S	6.8
25	6.2	5.3	5.2	5.0	5.1	6.4	7.4H	7.8	7.6	7.2	7.2	6.5	6.5	6.8	6.7	6.4	6.1	5.8H	6.3	7.4	8.0	I7.3S	U6.6S	6.2
26	5.8	5.5	5.4	5.1	5.6	6.0	6.7	6.7	6.0H	6.7	6.4	6.0	6.3	6.7	7.1	7.4	6.8	6.4H	6.6H	U7.3S	7.8	U7.3S	U7.1S	I7.0SF
27	6.8	I6.7FS	I6.3FS	U6.0F	U5.8F	6.3	6.9H	C	C	C	C	C	C	C	C	C	7.3	7.5	I7.6S	8.4	8.5	8.2	7.1	I7.2SF
28	U7.0S	6.6	U5.6S	5.6	5.9	5.8	5.0	5.3	6.2	6.0	6.4	6.3	6.4	6.7	6.7	6.7	6.4	6.4	7.3	I7.7A	U8.1S	8.5	U7.8SI	7.2S
29	6.3	6.1	5.6	5.7	5.3F	5.7	6.3	5.3	5.9	5.7	I5.7A	6.0	I6.4AJ	6.5A	6.3	6.9	7.1	6.7	6.9	7.6	7.0	U6.6S	U6.5SI	6.4SF
30	I6.4FS	6.3	6.5	6.1F	6.0	7.1H	8.1	6.6	6.2	6.5	5.9	6.4	5.6	5.6	6.0	6.3	6.4	6.7	7.1	7.9	7.8	I7.1S	6.6F	U6.3S
31	5.7	5.5	5.5	5.4F	5.7F	6.3	6.6	7.3	U6.8R	6.6	6.6	6.0	6.4	6.5	6.3	6.5	6.6	7.0	7.8	9.0	9.7	9.2	I7.2S	U6.8S
No.	31	31	31	31	31	31	31	30	29	30	29	30	30	30	30	30	30	30	30	31	30	29	29	29
Median	5.7	5.3	5.2	5.0	5.0	5.7	6.0	6.1	6.4	6.3	6.3	6.3	6.4	6.4	6.4	6.5	6.6	6.6	6.7	7.5	7.4	7.1	6.6	6.1
U.Q	6.2	5.9	5.6	5.3	5.4	6.0	6.6	6.8	7.0	6.7	6.8	6.8	6.8	6.7	6.7	6.8	7.0	7.0	7.1	7.9	8.0	7.4	7.0	6.5
L.Q	5.3	5.2	5.0	4.8	4.6	4.9	5.5	5.5	5.9	5.9	6.0	6.0	6.0	6.0	6.2	6.3	6.1	6.3	6.5	7.0	7.0	6.8	6.0	5.6
Q.R	0.9	0.7	0.6	0.5	0.8	1.1	1.1	1.3	1.1	0.8	0.8	0.8	0.8	0.7	0.5	0.5	0.9	0.7	0.6	0.9	1.0	0.6	1.0	0.9

foF2

Sweep 1.0 Mc to 18.0 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 1

IONOSPHERIC DATA

May. 1962 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									4.2	4.3	4.5	4.6	4.6	4.5	4.4	4.2								
2									4.2	4.4	4.8	4.8	4.5	4.5	4.3	4.3								
3									4.2	4.3	4.4	4.6	4.6	4.3	4.5	4.3								
4									4.2	I4.4C	4.6	4.6	4.6	4.7	4.5	4.3	4.1							
5								4.0	4.2	4.3	4.5	4.5	4.6	4.5	4.5	4.2L	4.1L							
6										4.5	4.6	4.6	4.6	4.8	4.5	4.2L	4.1							
7						3.0	3.6	3.7	4.0	4.1	U4.3R	I4.4R	4.5	4.6	4.3	4.2	4.1							
8									4.3	4.4	4.5	I4.5A	4.5	4.6	4.3	4.3	4.1							
9								4.1	4.3	4.4	4.6	4.7	4.6	4.6H	4.5	4.3	4.2							
10							4.0	4.1	4.2	4.4	4.5	4.6	4.8	4.8	4.6	4.6H	4.2							
11								4.3	4.3	4.6	4.6	4.6	4.7	4.7	4.4	4.3	4.1							
12						3.2	4.0	4.1	4.4	4.4	4.8	4.7	4.6	4.5	4.5	4.3	A							
13									4.6	4.7	4.7	4.8	4.9	4.8	4.6	4.4	4.2							
14							4.0	I4.2A	I4.4A	4.6	4.7	4.7	4.7	4.6	A	A	A							
15							A	A	A	4.5	I4.6A	I4.7A	I4.8L	4.8	4.6	4.5	4.2							
16						3.5	I3.6A	I3.4A	4.5	I4.4L	I4.6A	4.7	I4.6A	4.7	4.5	A	A							
17						3.3	A	A	A	A	A	A	A	4.6	4.6	4.4	A	A						
18								4.1	4.3	4.6	4.8	4.7	4.7	4.8	I4.7A	4.6	4.2	L						
19									4.5	I4.5C	4.7	4.8	4.8	4.9	4.7	4.5	I4.3A	I4.1A						
20						3.3	A	A	A	A	4.5	4.6	4.6	4.6	I4.6A	I4.3A	4.2	4.0						
21							3.9	A	A	A	A	A	A	A	A	A	A	A						
22							A	4.3	A	A	A	A	4.6	4.8	4.6	4.5	4.3	4.0						
23								4.4	I4.5A	4.6	I4.7A	I4.8A	4.9	4.8	I4.7A	4.5	4.3	C						
24						3.5	A	A	A	A	4.7	4.7	4.8	4.8	4.7	4.6	I4.6A							
25								4.3	4.4	I4.6A	I4.7A	4.8	4.8	4.7	I4.6A	4.5	I4.2A							
26							4.1	4.2		4.6	I4.6A	4.8	4.9	I4.8A	4.6	I4.5A	I4.3A							
27								4.2	C	C	C	C	C	C	C	C	4.1	I4.0A						
28								4.2	4.3	I4.5A	I4.5A	I4.7A	4.8	4.8	I4.6A	4.5	I4.3A							
29						A	A	A	A	A	A	A	A	A	4.5	A	A	A						
30								A	I4.4A	I4.5A	4.5	4.6	4.7	4.6	4.6	4.4	4.2	A						
31									A	4.6	4.7	4.7	4.7	4.7	4.5	4.4	4.2	I3.8A	I3.3A					
No.						6	7	15	20	24	26	26	27	28	28	26	22	5	1					
Median						3.3	4.0	4.2	4.3	4.5	4.6	4.7	4.7	4.7	4.6	4.4	4.2	U4.0	U3.3					

foF1

Sweep 1.0 Mc to 18.0 Mc in 1 min/sec in automatic operation.

IONOSPHERIC DATA

May. 1962 | foE | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					E	S	2.30	2.70	3.00	3.20	3.25	I3.30B	3.30	3.25	3.05	2.85	I2.60B	2.30	S	S				
2					E	S	2.45	2.70	3.00	3.15	3.30	3.20	3.15	3.30	3.10	3.00	2.40	I2.30B	S	S				
3					E	I1.80S	2.30	2.80	3.00	3.15	3.25	3.25	3.15	A	A	A	A	R	S	S				
4					E	2.00	2.25	2.70	2.95	I3.10C	3.25	3.20	3.05	3.00	3.00	I2.95A	I2.75A	2.30	S	S				
5					E	2.00	2.45	2.90	3.00	3.15	3.25	3.20	3.00	I3.15A	3.15	3.00	2.75	2.35	S	S				
6					E	2.00	2.50	2.80	3.00	3.15	3.25	3.20	3.00	I3.10A	3.20	3.00	2.85	2.40	S	S				
7					E	1.70	2.40	2.70	2.95	3.15	3.25	3.20	3.10	I3.05R	3.10	I3.00A	2.80	A	S	S				
8					E	I2.05S	2.30	2.70	2.90	3.10	3.20	3.15	3.00	I3.10A	I3.20A	3.10	2.85	2.35	S	S				
9					1.15	1.80	2.35	2.70	3.00	3.05	I3.10B	3.20	3.30	3.20	I3.25R	3.20	2.75	A	S	S				
10					E	2.05	2.40	2.80	3.00	3.15	3.25	3.25	3.20	3.25	3.15	3.15	2.90	2.50	S	S				
11					E	2.10	2.40	2.80	3.10	3.20	3.25	3.30	I3.15B	3.30	3.30	3.10	2.90	2.45	S	S				
12					S	I1.90S	2.30	2.75	3.05	3.00	3.45	3.35	3.40	3.35	3.25	3.10	2.90	2.40	S	S				
13					S	1.95	2.50	2.95	3.10	3.25	3.25	3.25	3.35	3.25	3.15	3.05	2.80	2.50	S	S				
14					S	1.80	2.40	2.85	3.00	3.20	3.30	3.30	3.25	3.05	3.25	3.05	2.85	2.45	S	S				
15					A	2.10	2.45	2.80	3.10	3.25	3.25	3.30	A	A	A	3.20	2.85	2.50	2.00	S				
16					1.20	2.00	2.50	2.80	2.90	3.15	3.15	3.30	I3.20S	3.35	3.20	3.00	2.95	2.35	S	S				
17					1.15	1.90	2.50	2.90	3.10	3.25	3.25	3.10	3.05	I2.95A	I3.05A	3.20	3.00	2.50	S	S				
18					A	2.15	2.55	2.90	3.05	3.25	3.30	3.40	3.30	3.35	2.80	3.05	2.95	2.50	S	S				
19					S	2.25H	2.55	2.95	3.20	I3.30C	3.30	3.35	3.20	I3.15A	3.35	3.25	2.80	2.60	S	S				
20					1.40	2.00	2.50	2.90	3.15	3.25	3.30	3.35	3.20	3.00	A	A	A	2.50	A	S				
21					A	2.05	2.70	3.00	3.20	3.25	3.45	3.50	3.30	3.10	3.00	I2.90A	2.80	A	A	S				
22					A	2.15	2.75	3.05	3.25	3.35	3.35	3.30	3.10	3.15	I3.35A	I3.20A	3.10	2.75	2.15	S				
23					1.25	2.20	2.60	3.00	3.15	3.25	3.40	3.40	3.40	3.40	3.10	2.80	2.60	I2.35C	2.00	S				
24					1.20	2.15	2.60	2.90	3.10	3.20	3.25	3.30	3.50	3.50	3.40	3.20	3.00	2.60	2.10	S				
25					S	2.15	2.75	2.95	3.10	3.30	3.35	3.30	3.15	3.00	A	A	A	2.80	2.00	S				
26					1.25	2.05	2.60	3.00	3.25	3.30	3.40	3.40	3.25	3.00	3.05	I3.00A	I2.95A	2.75	2.10	S				
27					S	2.10	2.55	2.90	C	C	C	C	C	C	C	C	3.00	2.55	S	S				
28					1.15	2.10	2.60	2.95	3.15	3.25	3.30	3.35	3.40	3.10	3.05	2.85	2.75	2.50	2.05	S				
29					A	2.10	2.60	2.95	3.10	3.25	3.30	3.20	3.05	A	A	A	A	A	A	S				
30					1.35	2.15	2.60	2.90	3.15	3.25	3.35	3.35	3.25	3.30	I3.25A	3.20	2.95	2.55	S	S				
31					1.20	2.05	2.65	2.95	3.10	3.05	2.95	3.25	3.35	3.25	I3.10A	3.20	2.95	2.50	S	S				
No.					20	29	31	31	30	30	30	30	29	27	25	27	27	26	7					
Median					E	2.05	2.50	2.90	3.10	3.20	3.25	3.30	3.20	3.15	3.15	3.05	2.85	2.50	2.05					

foE

Sweep 1.0 Mc to 18.0 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 3

IONOSPHERIC DATA

May. 1962 | foEs | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	S	G	3.5	3.8	4.3	G	B	G	G	G	G	B	G	3.1	S	E	2.7	J2.3	E
2	E	E	E	E	E	S	G	3.1	3.9	3.8	4.1	G	G	G	G	G	G	B	3.2	2.3	2.5	E	E	E
3	E	E	E	E	E	S	G	G	G	3.9	4.1	3.9	3.8	4.2	4.1	4.8M	3.6	G	2.4	E	E	E	E	E
4	E	E	E	E	E	G	G	G	3.7	C	G	3.8	G	3.5	G	J4.2	3.6	G	7.3	S	E	E	E	E
5	E	E	E	E	1.2	G	G	3.3	G	3.8	G	G	G	3.5	G	G	G	G	S	S	E	E	E	E
6	E	E	E	E	E	G	G	G	3.3	G	G	3.7	3.4	3.3	2.6G	G	G	G	2.2	S	E	E	E	E
7	E	E	E	E	E	2.1	G	3.2	3.6	3.5	4.0	3.6	3.9	G	G	3.9	3.6	3.5	2.7	3.3	E	E	E	E
8	E	E	E	E	E	2.3	2.9	3.2	4.1	4.1	3.6	5.3M	3.7	3.3	3.3	G	3.9	3.3	2.9	3.0	2.6	E	E	E
9	E	E	E	E	G	G	2.9	3.7	4.3	4.0	3.5	G	G	G	G	3.0G	4.0	4.3	3.5	J3.5	E	E	E	E
10	E	E	E	E	E	G	3.4	3.8	4.0	4.0	4.1	3.8	3.8	G	G	G	3.3	3.2	2.8	3.1	J3.3	E	E	E
11	E	E	E	E	E	G	3.3	4.0	3.8	4.1	4.1	G	3.8	G	G	G	4.0	J4.3	3.5	J5.0	J3.5	E	E	E
12	J3.3	E	E	E	E	S	3.0	3.3	G	3.5	G	G	4.7	G	G	3.9	J6.4	J11.0	J6.4	J5.0	J4.3	J4.3	J3.0	J4.3
13	2.4	E	J2.3	E	S	G	3.3	4.0	J5.6	4.3	4.0	4.1	3.8	G	G	G	G	3.9	J5.0	2.5	J2.3	E	J2.5	J2.9
14	E	E	E	E	S	2.5	3.5	4.4	4.6	4.3	4.7	4.5	4.0	G	J8.6	J11.7	J8.3	J10.0	J13.7Y	J5.0	J3.3	J3.1	3.0	E
15	E	E	E	J2.1	J3.1	J3.8	4.0	J5.1	J5.3	J4.7	J7.3	J7.3	J5.8	J5.0	3.8	G	3.5	J4.3	J5.1	J6.6	J6.3	J6.3	6.0	E
16	J2.9	1.6	E	E	G	2.3	4.3	5.0	4.1	4.6	J10.0	J5.4	5.1	4.1	4.0	J14.3	J8.0	D	J11.5	J5.5	5.0	J6.3	J6.5	J6.3
17	E	E	E	E	G	2.6	J6.1	J5.4	J5.0	J6.1	J5.6	J8.6	6.3	4.0	3.5	G	4.6	J7.1	J3.8	2.6	J3.9	5.8	J3.3	E
18	E	E	J2.0	J1.8	J2.0	G	3.0	3.3	3.9	4.0	4.4	4.0	4.0	G	6.0	G	3.7	3.6	J5.0	S	E	J2.9	E	E
19	E	E	E	E	S	G	G	3.6	G	C	4.0	3.9	4.3	4.0	G	G	4.6	J6.3	J5.0	J4.0	J6.0	J2.3	E	E
20	E	E	E	1.4	G	3.1	J6.5	J5.5	J5.5	J5.3	3.9	4.1	3.9	4.1	J6.3	J6.5	J3.6	3.5	J7.3	J5.5	4.0	J3.3	4.0	E
21	E	E	E	E	2.1	G	3.5	4.8	J6.5	J12.0	J5.0	J10.2	J7.5	J7.0	J14.3	J13.8	J16.0	J14.0	J3.3	J7.3	J5.3	J4.5	J8.0	J11.0
22	E	E	E	1.6	2.1	3.1	J6.3	J8.4	J6.0	J6.5	J8.3	J6.4	J4.5	J6.3Y	J6.5	J5.0	4.0	G	2.9	3.0	J3.1	J5.0	J4.3	2.8
23	E	E	E	E	G	G	3.3	4.4	J5.0	4.5	5.1	J5.9	4.3	4.3	J5.3	J5.5	J5.0	C	J5.9	J11.0	J6.3	J3.3	J6.1	E
24	E	J2.0	1.3	E	1.8	2.8	3.8	4.6	J5.4	5.0	J4.9	4.0	G	G	4.0	4.0	4.3	3.6	3.4	2.9	2.8	J3.0	J4.0	2.5
25	E	J3.0	J2.4	1.8	S	2.6	3.6	4.3	3.6	5.0	4.5	J4.6	3.8	3.9	J5.4	J5.0	J6.6	G	3.3	J3.3	J4.3	J5.0	J3.3	2.6
26	E	E	E	E	G	2.5	3.1	3.8	3.8	J7.0	5.5	5.2	4.3	J5.1	4.4	J5.0	J4.3	3.3	G	J3.2	J3.3	2.3	J3.3	E
27	J3.3	E	E	E	S	2.7	3.6	D6.0C	C	C	C	C	C	C	C	C	G	J8.3	J4.3	J6.0	3.3	J4.1	J3.3	J4.6
28	J3.5	J2.8	J2.6	J3.8	2.7	2.8	3.2	3.3	4.1	4.7	5.0	6.0	J6.1	J4.6	J5.0	J4.3	J5.0	J5.3	J4.8	J7.0	J3.4	3.7	J3.3	J2.3
29	E	E	J3.3	E	2.2	3.5	J4.4	4.3	4.5	5.1	J7.0	6.0M	J6.6	J6.5	J5.6	J7.3	J5.4	J6.3	J5.0	J4.6	J5.1	J5.3	J5.0	J3.1
30	J5.0	E	E	1.5	G	G	4.6	5.1	J6.5	J5.0	4.3	4.3	4.0	G	J4.3	4.0	3.3	J4.3	3.1	2.5	E	J2.5	J4.3	J4.3
31	J2.8	J2.8	J2.3	J3.6	J6.5	J5.0	J6.5	J7.0	J7.3	4.2	4.0	4.3	G	G	3.7	4.0	G	J6.5	J4.3	J4.3	J3.0	J5.0	J5.6	J3.3
No.	31	31	31	31	26	27	31	31	30	28	30	29	30	30	30	30	30	29	30	26	31	31	31	31
Median	E	E	E	E	G	2.3	3.3	4.0	4.1	4.3	4.1	4.1	3.9	3.4	3.8	4.0	4.0	3.9	3.6	3.8	3.3	2.9	3.0	E
U.Q	E	E	E	1.4	2.0	2.8	4.0	5.0	5.3	5.0	5.0	5.6	4.5	4.2	5.3	5.0	5.0	6.4	5.0	5.5	4.3	4.5	4.3	2.9
L.Q	E	E	E	E	E	G	G	3.3	3.7	4.0	3.9	3.8	3.4	G	G	G	3.3	G	3.1	3.0	E	E	E	E
Q.R								1.7	1.6	1.0	1.1	1.8	1.1				1.7		1.9	2.5				

foEs

Sweep 1.0 Mc to 18.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

May. 1962 | f_bEs | 135° E Mean Time (G.M.T. + 9h.) | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						S		G	G	G		B					B		3.0	S		E	E	
2						S		G	3.9	G	G							B	3.0	G	E			
3						S				G	G	G	G	3.3	3.7	4.3	3.3		G					
4									G	C		G		G		3.5	3.5		4.9	S				
5					G			G		G				3.4					S	S				
6									G			G	G	3.3	2.6				G	S				
7						G		G	G	G	G	E3.6R	G			3.9	G	2.8	G	3.0				
8						G	G	G	3.9	G	G	4.9	G	E3.3R	3.3		3.9	G	2.8	2.9	E			
9							G	G	4.0	G	G					2.9	3.9	4.2	3.2	3.3				
10							G	G	4.0	G	G	G	G				G	G	2.8	3.0	3.0			
11							G	3.9	3.8	3.9	G		G				G	4.0	3.1	4.6	3.3			
12	E					S	G	G		G			4.3			G	6.0	A	A	4.7	2.8	3.1	E	2.8
13	E		E		S		G	G	4.3	4.2	G	G	G					3.8	4.5	G	E		E	E
14					S	G	G	4.3	4.3	4.0	G	G	G		A	4.8	A	A	A	3.6	E	E	E	
15				E	2.1	3.8	4.0	A	4.6	4.3	A	4.7	3.8	3.9	3.4		G	4.3	5.0	5.0	3.3	4.2	3.8	
16	E	E				G	4.0	5.0	G	G	A	G	4.8	G	G	A	A	A	A	5.3	4.3	3.0	5.1	E
17						G	A	4.2	4.5	A	A	A	A	3.5	3.4		4.5	A	3.7	2.6	3.6	4.3	3.0	
18			E	E	1.3		G	G	G	G	4.4	G	G		4.8		G	G	4.7	S		E		
19					S			G		C	G	G	G	3.7			4.5	6.0	2.4	G	5.0	E		
20				E		2.9	A	5.0	A	A	G	G	G	G	5.0	5.5	3.5	G	A	4.2	4.0	E	E	
21					1.6		3.2	4.6	A	A	A	A	A	A	A	A	A	A	2.7	A	5.0	3.2	A	A
22				E	1.8	2.9	A	G	5.0	6.2	A	6.1	G	G	4.3	4.3	G		G	3.0	2.9	3.0	3.2	E
23							G	4.3	4.4	4.3	4.9	5.0	4.0	G	4.8	G	G	C	6.0	4.3	3.2	3.2	E	
24		E	E		G	G	3.8	4.3	5.1	4.8	G	G			G	G	4.2	G	3.0	2.9	2.7	2.7	E	E
25		E	E	E	S	G	G	4.2	G	5.0	4.5	4.2	G	G	4.8	3.7	4.2		3.0	2.7	4.2	3.2	E	E
26						G	G	G	G	G	4.8	G	G	4.8	4.3	4.6	4.3	G		3.1	3.1	E	2.3	
27	E				S	G	G	G	C	C	C	C	C	C	C	C		5.0	2.1	G	2.7	E	E	E
28	E	E	E	E	G	G	G	G	4.0	4.7	4.9	6.0	4.4	G	4.9	3.9	4.1	3.2	4.4	A	3.2	E	E	E
29			E		1.6	3.3	4.2	4.0	4.4	5.0	A	5.6	A	A	4.0	4.8	4.7	4.2	4.0	4.2	3.5	4.1	4.1	E
30	E			E			4.0	4.8	5.5	4.7	G	G	G		3.7	3.9	G	4.0	3.0	G		E	E	E
31	E	E	E	2.5	2.7	3.2	4.7	6.2	4.5	G	G	G			3.5	G		6.4	4.2	3.2	E	3.7	4.3	3.0
No.																								
Median																								

f_bEs

Sweep 1.0 Mc to 18.0 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 5

IONOSPHERIC DATA

May. 1962 | f-min | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E2.10S	E	E	E	E	E2.00S	1.70	2.00	2.00	2.10	2.50	4.00	2.30	2.20	2.00	2.20	3.00	1.80	E2.00S	E2.10S	E2.10S	E2.10S	E2.00S	E2.00S
2	E2.00S	E1.20S	E	E1.50S	E	E2.00S	2.00	2.10	2.10	2.20	2.90	2.50	2.10	2.20	2.00	2.10	2.10	2.60	E1.80S	E1.80S	E2.10S	E1.90S	E2.00S	E2.10S
3	E2.00S	E2.00S	E1.70S	E	E	E2.00S	2.00	2.10	2.00	2.10	2.00	2.40	2.10	2.30	2.10	2.20	2.80	2.00	E2.10S	E2.00S	E2.00S	E2.00S	E2.10S	E2.00S
4	E2.00S	E1.60S	E2.00S	E	E	1.70	2.10	2.15	2.10	I2.15C	2.50	2.50	2.40	2.15	2.40	2.00	2.00	2.00	E1.80S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S
5	E2.00S	E1.20S	E1.40S	E	E	1.40	2.10	2.00	2.40	2.10	2.00	2.15	2.50	2.15	2.30	2.00	2.00	1.90	E2.10S	E2.10S	E2.10S	E2.00S	E2.10S	E2.00S
6	E2.00S	E1.80S	E1.80S	E	E	1.80	1.80	2.15	2.20	2.20	2.70	2.50	2.30	2.40	2.30	2.10	2.10	2.00	E2.00S	E1.90S	E2.00S	E2.00S	E2.10S	E2.00S
7	E2.00S	E1.20S	E	E	E	1.50	2.00	2.15	2.10	2.00	2.30	2.40	2.40	2.90	2.15	2.20	1.90	1.85	E2.00S	E2.00S	E2.10S	E2.10S	E2.10S	E1.95S
8	E2.10S	E1.20S	E	E	E	E1.90S	2.00	2.10	2.50	2.10	2.70	2.30	2.20	2.10	2.40	2.50	2.30	2.00	E2.00S	E2.00S	E2.10S	E1.90S	E2.00S	E2.00S
9	E2.00S	E1.20S	E2.10S	E	E	1.60	2.20	2.00	2.00	2.10	3.10	2.10	2.10	2.40	2.40	2.10	2.00	2.00	E1.90S	E2.10S	E2.10S	E2.00S	E2.00S	E1.90S
10	E2.00S	E	E	E	E	1.80	1.85	2.00	2.10	2.30	2.50	2.30	2.50	2.50	2.00	2.20	2.00	2.10	E2.00S	E2.10S	E2.00S	E2.00S	E2.20S	E2.15S
11	E2.00S	E1.20S	E	E1.50S	E	1.80	2.15	2.10	2.50	2.20	2.15	2.15	3.00	2.30	2.20	2.10	2.50	2.10	E2.00S	E1.90S	E1.90S	E2.10S	E2.00S	E2.00S
12	E2.00S	E1.90S	E1.70S	E1.80S	E2.00S	E2.40S	2.00	2.15	2.40	2.20	3.00	3.00	2.10	2.60	2.70	2.00	2.10	1.90	E2.00S	E2.00S	E1.70S	E1.80S	E2.00S	E2.00S
13	E2.00S	E	E	E2.00S	E1.30S	1.80	2.00	2.10	2.00	E2.70C	2.10	2.50	2.00	2.40	2.10	2.00	2.00	2.15	E1.90S	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S
14	E2.80S	E	E1.15S	E	E1.60S	1.35	1.80	2.10	2.00	2.00	2.00	2.10	2.30	2.00	2.00	2.00	2.00	2.00	E1.80S	E1.90S	E2.00S	E1.80S	E1.90S	E1.90S
15	E1.50S	E	E1.20S	E	E	1.70	1.85	2.00	2.00	2.20	2.20	2.20	2.00	2.20	2.00	2.00	2.00	2.00	E1.90S	E1.80S	E1.80S	E1.70S	E1.70S	E2.00S
16	E1.80S	E	E	E	E	1.20	1.90	1.80	2.00	2.00	2.10	2.00	E3.15S	2.20	2.05	2.10	2.00	1.90	E2.00S	E2.00S	E1.85S	E1.70S	E1.95S	E2.00S
17	E1.80S	E1.50S	E	E	E	1.50	2.00	2.00	2.00	2.20	2.00	2.15	2.00	2.20	2.00	2.10	2.00	2.00	E1.90S	E1.80S	E1.80S	E1.80S	E1.70S	E2.00S
18	E2.00S	E1.60S	E	E	E	1.80	2.00	2.10	2.00	2.00	2.20	2.15	2.30	2.00	2.00	2.00	2.00	1.90	E1.95S	E2.00S	E2.00S	E1.90S	E1.80S	E2.00S
19	E1.80S	E	E	E	E	1.20	2.00	2.00	2.00	I2.20C	2.30	2.60	2.50	2.00	2.20	2.10	2.00	1.90	E2.00S	E2.00S	E1.85S	E2.00S	E1.80S	E2.00S
20	E1.80S	E	E	E	E	1.50	1.90	2.00	2.00	2.10	2.10	2.40	2.10	2.50	2.00	2.00	2.00	2.00	1.70	E2.00S	E2.00S	E1.90S	E1.90S	E2.00S
21	E1.80S	E1.20S	E	E	E	1.65	1.90	2.00	2.00	2.40	3.00	2.50	2.60	2.90	2.30	2.00	2.00	2.00	E1.80S	E1.85S	E1.80S	E1.60S	E1.85S	E2.00S
22	E1.60S	E	E	E	E	1.70	1.80	2.00	2.00	2.00	2.10	2.30	2.30	2.30	2.50	2.00	2.00	1.95	1.80	E2.00S	E1.80S	E1.70S	E1.70S	E1.90S
23	E1.80S	E	E	E	E	1.30	1.80	1.90	1.90	2.40	2.20	2.40	2.00	2.00	2.00	2.00	1.80	I2.00C	E1.90S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S
24	E1.90S	E	E	E	E	1.70	2.00	2.00	2.00	2.00	2.10	2.00	2.40	2.20	2.00	2.00	2.10	2.00	1.80	E1.80S	E1.80S	E1.70S	E1.70S	E2.00S
25	E1.90S	E1.50S	E	E	E1.60S	1.70	2.00	2.00	2.00	2.30	2.30	2.15	2.00	2.20	2.00	2.00	2.00	1.80	1.85	E2.00S	E1.80S	E1.40S	E1.85S	E1.80S
26	E2.00S	E	E	E	E	1.40	1.70	2.00	2.00	2.40	2.30	2.20	2.00	2.30	2.20	2.00	2.00	1.80	2.00	E1.90S	E1.70S	E1.70S	E1.80S	E1.85S
27	E1.80S	E1.20S	E	E	E1.50S	1.50	1.85	1.90	C	C	C	C	C	C	C	C	2.20	1.90	E2.00S	E2.00S	E2.00S	E1.80S	E2.00S	E1.70S
28	E1.70S	E1.20S	E	E	E	1.30	1.85	2.00	2.00	2.50	2.00	2.50	2.05	2.00	2.30	2.25	2.00	1.90	E2.00S	E1.70S	E1.80S	E1.70S	E2.00S	E1.70S
29	E1.80S	E	E	E	E	1.50	1.90	2.00	2.10	2.00	2.90	2.30	2.50	3.00	2.00	2.00	2.00	1.80	1.80	E2.00S	E1.80S	E1.70S	E1.80S	E2.00S
30	E1.80S	E1.50S	E	E	E	1.35	1.80	1.85	2.00	2.00	2.00	2.40	2.00	2.10	2.00	1.90	1.90	2.00	E2.00S	E1.90S	E1.80S	E1.90S	E1.80S	E1.80S
31	E1.20S	E	E	E	E	1.60	2.00	2.00	2.00	2.05	2.00	2.50	2.20	2.00	2.60	2.00	2.15	2.00	E2.00S	E1.80S	E2.00S	E2.00S	E1.90S	E1.80S
No.	31	31	23	27	26	26	31	31	30	29	30	30	29	30	30	30	31	31	31	31	31	31	31	31
Median	E2.00	E1.20	E	E	E	1.55	2.00	2.00	2.00	2.10	2.20	2.35	2.20	2.20	2.10	2.00	2.00	2.00	E2.00	E2.00	E2.00	E1.90	E1.90	E2.00

f-min

Sweep 1.0 Mc to 18.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

W 6

IONOSPHERIC DATA

May. 1962 | M(3000)F2 | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.90	2.75	2.85	2.90	2.75	3.05H	3.35H	3.20H	3.30	3.30	3.15	2.90	3.05	3.10	3.05	3.15	3.15H	3.35H	3.20	3.00	2.85	2.95	2.85	2.85
2	2.85	U2.80S	2.80F	2.95	3.00	2.95	3.05	3.30H	3.40	3.35	3.00	3.00	3.05	3.05	3.00	3.05	3.15H	3.15	3.10	3.15	2.90	3.05	3.00	2.85
3	2.85	2.80F	2.90	2.80	3.00	3.05	3.00	3.40H	3.60	3.15	3.10	3.20	3.25	3.05	3.00	3.20	3.20H	3.10H	3.05	2.95	2.95	U3.05S	3.05	2.90
4	2.85	2.90	I2.95F	I3.00F	3.00K	3.25	3.30	3.35H	3.35	I3.20C	3.15	3.35	3.15	3.15	3.05	3.05	3.05	3.15H	3.25	3.15	3.15	3.00	3.05	2.95
5	2.95	2.95	2.90	2.90	3.05	3.35	3.20	3.30	3.15	3.25	3.25	3.25	3.25	3.15	3.10	3.10	3.15	3.30H	3.10	3.00	3.05	3.10	3.05	3.00
6	2.95	2.90	2.90	3.05	3.15	3.40	3.55H	3.45H	3.15H	3.00	2.95	3.10	3.05	2.95	3.15	2.95	3.05	3.00H	2.85	2.95	U3.10S	3.05	2.95	2.80
7	2.75	2.70	2.75	2.60	2.65	2.75	2.50	2.85	W	2.45	W	3.00	2.70	2.65	2.95	3.05	3.00	3.15H	3.10	3.15	3.15	3.05	2.85	2.95
8	2.80	2.95	3.00	2.85	3.00	3.30	3.40H	3.15H	3.10	3.35	2.95	3.10	2.95	2.90	3.05	3.05	3.10	3.05H	2.90	2.95	3.05	3.00	3.00	2.95
9	2.85F	2.85	2.85	I2.90F	2.85F	3.00	3.10H	3.05	3.40	3.20	3.20	3.00	3.00	3.30	2.85	3.05	3.05	3.05	3.10	3.00	3.05	3.30	3.00	2.80
10	2.80	2.75	2.90	3.05	3.20	3.10	3.20	3.40	3.40	3.35	3.25	3.25	3.00	3.00	2.95	2.90	3.15	3.05H	3.05	3.05	3.15	2.90	2.90	2.85
11	2.90	2.90	3.00	3.00	3.00	3.25	3.25H	3.10	3.05	2.85	3.00	3.15	3.00	3.00	3.10	3.30	3.20	3.15	3.00	2.90	3.00	2.95	2.95	2.80
12	2.85	2.95	2.95	2.85	2.70	2.90	3.10	3.00	3.05	2.95	2.80	2.60	2.90	2.85	3.00	2.95	U2.95A	I3.00A	I3.10A	2.95	2.95	3.00	2.85	2.95
13	2.85	2.90	3.00	2.95	3.00	3.10	3.35H	3.10	3.05	2.90	3.05	U3.00R	3.10	2.90	3.00	3.00	3.05	3.10H	3.10	2.95	U2.80S	2.85	2.90	2.80
14	2.75	2.85F	3.05	2.90	2.85	2.90H	2.80	2.90	3.10	3.05	2.90	2.95	2.95	2.90	I2.95A	3.05	A	A	A	2.85	U2.75S	U2.70S	2.90	2.85
15	2.80	2.90	2.90	3.00	3.00	2.65	2.70	I2.85A	3.00	2.85	I3.10A	3.00	2.85	2.95	2.95	2.90	3.00	3.20	3.05	U2.90S	U2.95S	2.85	I3.00SF	3.05
16	2.80	2.80	2.85	2.90	U2.90SF	2.65	2.85	3.15	2.65	2.90	I2.95A	2.90	3.10	3.15	3.30	I2.90A	I2.90A	I2.90A	I2.95A	2.95	2.95	I2.95S	I2.95S	U2.90S
17	I2.90SF	2.85	2.85	2.80	2.70H	3.00	I2.80A	2.85	2.95	I3.05A	I3.00A	I3.05A	I3.00A	3.15	3.00	3.10	2.95	I3.20A	3.05	2.85	2.90	2.90	2.90	3.05
18	2.90	2.90	2.90	3.05	3.00	3.05	2.90HF	3.30	3.25	3.05	3.05	3.05	3.15	3.15	3.00	3.00	3.10	3.15	3.05	3.00	3.10	2.85	I2.85SF	I2.85SF
19	I2.85SF	2.90	2.85	2.95F	3.00F	3.15	3.15H	3.05H	3.25	I3.20C	3.20	3.05	2.95	2.90	2.90	3.05	3.05	2.95	2.80H	2.90	U2.95S	3.00	2.95	2.95
20	2.80	2.85	2.85	2.75	2.95	2.75	I2.95A	3.00	I3.10A	I2.60A	2.80	2.80	2.80	2.80	2.80	I2.90A	2.95	3.05	I2.95A	2.85	2.85	2.75	2.95	2.95
21	2.85	2.85	2.70	2.95	2.80	2.75	3.05	3.10	I3.30A	I3.15A	I3.00A	I2.90A	I2.85A	I2.95A	I3.10A	I3.00A	I2.95A	I3.00A	2.90	I2.85A	S	SF	A	A
22	2.80F	2.90	2.90	I2.85F	I2.95SF	3.00	I2.90A	2.95	2.80	3.15	I3.00A	I2.90A	3.00	3.05	3.00	3.05	2.95	3.20	2.90	2.90	2.90	SF	SF	S
23	3.00	2.95	2.90	2.95	2.95	2.95	3.00	2.90	3.00	3.05	3.05	3.20	3.05	3.05	3.10	3.00	3.10	I3.05C	2.80	2.80	2.85	3.05	U3.10S	2.90
24	2.85	2.90	2.85	2.90	2.85	2.75	2.80	2.95	3.15	3.15	3.15	3.05	2.90	3.05	3.15	3.05	3.15	3.15H	3.05	2.90	2.80	2.85	U2.90S	3.10
25	3.05	2.90	2.90	2.95	2.95	2.95	3.00H	3.10	2.95	3.05	3.05	3.05	2.90	3.05	3.00	3.15	3.10	3.05H	3.00	2.95	3.00	I3.05S	U2.95S	2.90
26	2.95	2.95	2.95	2.95	3.05	3.35	3.30	3.30	3.15H	3.20	2.95	3.00	2.85	3.00	2.95	3.05	3.00	3.10H	2.90H	U3.05S	2.95	U2.90S	U2.90S	I2.85SF
27	2.80	I2.90FS	I3.00FS	U3.00F	U2.95F	2.90	2.95H	C	C	C	C	C	C	C	C	C	2.90	2.85	I2.75S	2.90	3.00	2.95	2.80	I2.65SF
28	U2.70S	2.85	U2.75S	2.80	2.90	3.35	3.00	3.10	3.25	3.10	3.15	I2.95A	2.95	3.00	3.05	3.05	3.05	2.85	3.00	I2.90A	U2.85S	2.95	U2.95S	I2.85S
29	2.85	2.85	2.85	2.70	2.85F	2.95	2.95	2.85	2.90	3.10	I3.10A	I2.95A	I2.85A	I2.90A	2.75	2.95	3.10	3.00	2.95	3.05	3.05	U2.90S	U2.90S	I2.90SF
30	I2.85FS	2.90	2.90	3.00F	2.90	2.90H	3.10	3.20	2.75	3.10	3.05	3.25	3.20	3.05	2.95	3.00	2.95	2.95	2.95	3.05	3.05	I3.00S	2.80F	U2.80S
31	2.90	2.80	2.90	2.90F	3.15F	3.00	2.95	3.15	U3.40R	3.10	3.05	3.05	2.95	2.95	2.95	3.10	2.90	2.70	2.70	2.95	2.90	3.05	I2.80S	U2.55S
No.	31	31	31	31	31	31	31	30	30	30	30	30	30	30	30	30	30	30	30	31	30	29	29	29
Median	2.85	2.90	2.90	2.90	2.95	3.00	3.00	3.10	3.10	3.10	3.05	3.00	3.00	3.00	3.00	3.05	3.05	3.05	3.00	2.95	2.95	2.95	2.95	2.90

M(3000)F2 Sweep 10 Mc to 180 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

W 7

IONOSPHERIC DATA

May. 1962 | M(3000)F1 | 135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									3.65	3.70	3.60	3.55	3.70	3.60	3.65	3.75								
2									I3.60A	3.65	3.60	3.55	3.80	3.80	3.50	3.55								
3									3.80	3.85	3.85	3.55	3.70	3.90	3.55	A								
4									3.80	I3.75C	3.55	3.55	3.75	3.60	3.55	3.50	3.70							
5								3.80	3.75	3.80	3.80	3.80	3.70	3.65	3.60	3.60L	3.65L							
6										3.70	3.50	3.60	3.70	3.55	3.60	3.65L	3.60							
7						3.20	3.30	3.80	3.80	3.90	U3.80R	I3.55R	3.75	3.35	3.55	I3.60A	3.45							
8									3.65	3.65	3.80	I3.75A	3.60	3.70	3.75	3.55	A							
9								3.75	I3.70A	3.85	3.70	3.80	3.70	3.70H	3.45	3.50	A							
10							3.50	3.70	I3.80A	3.90	4.00	3.90	3.55	3.60	3.50	3.50H	3.60							
11								I3.70A	3.65	3.70	3.70	3.70	3.65	3.55	3.80	3.70	3.65							
12						3.45	3.50	3.70	3.50	3.40	3.65	3.40	I3.60A	3.65	3.80	3.70	A							
13									A	A	3.65	3.55	3.50	3.65	3.70	3.50	3.55							
14							3.60	I3.65A	I3.65A	I3.70A	3.65	3.65	3.60	3.70	A	A	A							
15							A	A	A	A	A	I3.70A	I3.60L	3.60	3.60	3.50	3.55							
16						3.20	I3.50A	I3.65A	3.55	I3.60L	I3.65A	3.55	I3.80A	3.55	3.80	A	A							
17						3.40	A	A	A	A	A	A	A	3.80	3.65	3.60	A	A						
18								3.65	3.95	3.90	I3.70A	4.10	3.80	3.65	I3.50A	3.50	3.55	L						
19									3.60	I3.75C	3.75	3.95	3.65	3.55	3.55	3.55	I3.60A	I3.50A						
20						A	A	A	A	A	4.00	3.75	3.75	3.65	I3.50A	I3.60A	3.50	3.50						
21							A	A	A	A	A	A	A	A	A	A	A	A						
22							A	3.65	A	A	A	A	4.10	3.70	I3.85A	I3.60A	3.60	3.65						
23								I3.65A	I3.75A	A	A	A	3.75	3.60	I3.55A	3.60	3.60	C						
24						3.30	A	A	A	A	3.85	3.90	3.65	3.55	3.60	3.50	I3.40A							
25								I3.65A	3.80	A	A	A	3.95	3.60	I3.70A	3.80	I3.70A							
26							3.65	3.80		3.85	I3.80A	3.65	3.60	I3.55A	I3.50A	A	A							
27								3.70	C	C	C	C	C	C	C	C	3.75	I3.50A						
28								3.65	I3.70A	A	A	A	A	3.55	I3.60A	I3.55A	I3.60A							
29						A	A	A	A	A	A	A	A	A	3.75	A	A	A						
30								A	I3.75A	I3.70A	3.85	3.75	3.85	3.75	3.50	3.65	3.60	A						
31									A	3.75	3.85	3.65	3.75	3.85	3.65	3.50	3.55	A	A					
No.						5	6	15	19	19	22	23	26	28	28	24	19	4						
Median						3.30	3.50	3.70	3.70	3.75	3.70	3.65	3.70	3.60	3.60	3.60	3.60	U3.50						

M(3000)F1 Sweep 1.0 Mc to 18.0 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

W 8

IONOSPHERIC DATA

May. 1962 | h'F2 | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									285	300	300	320	320	295	310	290								
2									270	270	330	340	310	315	310	285								
3									255	285	300	300	300	310	300	280								
4									265	[285]C	290	265	305	315	310	300	290							
5								270	300	290	290	290	300	300	310	295	290							
6										350	325	300	310	350	305	320	295							
7						375	345	400	W	560	W	365	405	460	355	350	320							
8									305	290	345	320	350	360	330	310	310							
9								310	270	300	310	350	325	300	370	320	305							
10							300	265	270	290	305	310	345	360	345	345	295							
11								340	325	390	350	320	350	340	320	290	290							
12						335	310	355	325	360	420L	490	410	410	355	350	A							
13									340	360	320	315	320	350	330	320	300							
14							370	370	315	320	395	370	355	360	[330]A	320	A							
15							420	A	350	375	[330]A	350	400L	375	365	340	310							
16						400	370	305	470	[400]L	[405]A	400	340	325	310	[320]A	[330]A							
17						340	[385]A	400	360	[335]A	[355]A	[370]A	385	345	330	345	345	A						
18								265	275	320	320	325	305	320	325	320	300	275						
19									290	[305]C	300	320	335	390	355	320	310	[315]A						
20						365	[350]A	360	[345]A	[490]A	470	440	450	450	420	[380]A	360	310						
21							345	320	[300]A	[355]A	[380]A	A	A	A	A	A	[340]A	[320]A						
22							A	310	315	310A	[335]A	[365]A	360	330	330	325	325	295						
23								310	280	310	325	300	355	340	325	330	305	C						
24						360	335	315	300	320	315	340	375	340	320	330	300							
25								280	295	310	310	325	360	320	330	315	305							
26							270	265		310	370	365	390	345	330	315	305							
27								275	C	C	C	C	C	C	C	C	320	320						
28								325	295	345	340	[370]A	365	335	320	320	310							
29						310	325	350	355	[330]A	[360]A	A	A	A	400	340	300	300						
30								295	425	330	340	320	340	360	355	340	325	310						
31									275	320	345	320	365	350	340	330	320	[320]A	[315]A					
No.						7	12	21	28	30	30	28	28	28	29	29	26	9	1					
Median						360	345	310	300	320	330	325	350	340	330	320	310	310	315					

h'F2 | Sweep 10 Mc to 180 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 9

IONOSPHERIC DATA

May. 1962 | h'F | 135° E Mean Time (G.M.T. + 9h.) | **Wakkanai** | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	300	300	280	290	265^{H}	250^{H}	260^{H}	250	250	230	E250^{B}	220	210	230	220	250^{H}	250^{H}	250	265	280	270	275	280
2	290	300	300	265	250	235	255	250^{H}	I250^{A}	240	240	225	220	215	220	245	245^{H}	240	260	245	270	250	250	295
3	300	310	260	260	265	265	240	230^{H}	235	230	230	225	230	210	250	I245^{A}	260^{H}	235^{H}	245	260	255	250	250	285
4	290	260	275	235	265	230	245	240^{H}	240	I220^{C}	220	230	230	220	210	260	255	255^{H}	I250^{A}	250	240	250	270	290
5	285	260	270	270	250	245	235	230	225	235	215	210	205	205	220	235	240	250^{H}	260	260	255	250	250	265
6	280	300	290	255	260	245	230^{H}	225^{H}	225^{H}	225	235	230	210	215	220	230	250	250^{H}	250	265	250	250	265	300
7	310	300	300	310	315	275	265	250	245	225	220	I230^{A}	230	230	260	I270^{A}	275	270^{H}	275	260^{A}	250	265	300	275
8	315	270	265	260	270	250	245^{H}	225^{H}	I230^{A}	235	210	I240^{A}	230	220	210	250	I265^{A}	260^{H}	270	265	250	250	250	260
9	290	285	305	280	280	245	240^{H}	235	I240^{A}	220	215	210	215	220	250	260	A	A	A	A	255	230	260	280
10	300	300	285	255	245	250	260	250	I240^{A}	225	210	200	225	210	220	235^{H}	250	260^{H}	270^{A}	260^{A}	255^{A}	250	270	280
11	280	270	260	260	270	240	250^{H}	I245^{A}	240^{A}	230^{A}	230	215	215	225	245	240	245	A	A	A	A	265	260	280
12	305	270	260	300	280	270	235	240	230	230	235	260	I235^{A}	225	230	250	A	A	A	A	270^{A}	275^{A}	260	290^{A}
13	310	275	275	260	260	255	250^{H}	260	I240^{A}	I235^{A}	225	230	220	215	220	260	260	I260^{AH}	I260^{A}	260	260	260	275	300
14	310	285	260	265	295	260^{H}	250	A	A	A	225	230	240	230	A	A	A	A	A	A	275	300	270	275
15	305	280	270	260	260	A	A	A	A	A	A	I230^{A}	225	230	225	235	250	A	A	A	A	A	A	250
16	300	300	285	260	290	250	I255^{A}	I240^{A}	235	235	I230^{A}	230	I230^{A}	230	225	A	A	A	A	A	A	A	A	270
17	250	280	265	285	290	265	A	A	A	A	A	A	A	210	225	235	A	A	A	275	A	A	A	255
18	280	280	295	260	260	235	245^{H}	250	220	230	I215^{A}	200	225	210	I240^{A}	235	265	250	I260^{A}	265	250	270	270	260
19	270	275	270	250	255	240	240^{H}	245^{H}	220	I220^{C}	260	210	220	220	220	235	I265^{A}	I260^{A}	260^{H}	275	I260^{A}	260	250	250
20	280	270	260	295	295	A	A	A	A	A	205	225	225	225	I235^{A}	I250^{A}	250^{A}	240	A	A	A	295	275	260
21	265	275	290	285	220	250	A	A	A	A	A	A	A	A	A	A	A	A	260	A	I285^{A}	A	A	A
22	275	290	270	280	240	265	I265^{A}	250	A	A	A	A	210	225	I220^{A}	I230^{A}	235	230	260	265^{A}	275^{A}	I270^{A}	I260^{A}	250
23	260	250	260	275	270	260	240^{H}	I245^{A}	I230^{A}	A	A	A	220	230	I230^{A}	230	235	C	A	A	A	I245^{A}	250	250
24	270	285	265	280	275	270	A	A	A	A	230	210	225	220	250	250	I245^{A}	265^{H}	270^{A}	270^{A}	285^{A}	275^{A}	275	260
25	250	260	280	285	270	250	250^{H}	I240^{A}	225	A	A	A	210	230	I220^{A}	225	I230^{A}	230^{H}	A	A	A	A	260	270
26	275	275	265	265	260	225	230	225	210^{H}	210	I225^{A}	230	230	I230^{A}	A	A	A	245^{H}	260^{H}	I270^{A}	I260^{A}	260	275	275
27	275	265	250	250	260	245	250^{H}	230	C	C	C	C	C	C	C	C	225	I245^{A}	255^{H}	260	260^{A}	260	260	330
28	285	270	310	295	300	250	245	250	I240^{A}	A	A	A	A	230	I230^{A}	I230^{A}	I250^{A}	300^{A}	A	A	A	260	260	255
29	275	260	275	300	280	A	A	A	A	A	A	A	A	A	250	A	A	A	A	A	A	A	A	300
30	270	265	250	235	250	260^{H}	I250^{A}	I250^{A}	A	A	220	235	215	210	205	250^{A}	250	I260^{A}	I260^{A}	250	250	250	275	280
31	280	295	270	280	270^{A}	A	A	A	A	220	210	230	220	210	220	265	245	A	A	A	270	I255^{A}	I305^{A}	340^{A}
No.	31	31	31	31	31	27	24	23	20	18	22	22	26	28	27	25	23	20	18	18	22	25	26	30
Median	280	275	270	265	270	250	250	245	235	230	225	230	220	220	225	240	250	250	260	260	260	260	260	275

h'F

Sweep 1.0 Mc to 18.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

May. 1962 | h'Es | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	S	G	140	125	125	G	B	G	G	G	G	B	G	140	S	E	125	120	E
2	E	E	E	E	E	S	G	145	125	125	125	G	G	G	G	G	G	B	140	135	125	E	E	E
3	E	E	E	E	E	S	G	G	G	125	120	120	115	105	110	105	110	G	150	E	E	E	E	E
4	E	E	E	E	E	G	G	G	125	C	G	115	G	115	G	110	115	G	110	S	E	E	E	E
5	E	E	E	E	140	G	G	140	G	125	G	G	G	110	G	G	G	G	S	S	E	E	E	E
6	E	E	E	E	E	G	G	G	140	G	G	115	115	110	110	G	G	G	130	S	E	E	E	E
7	E	E	E	E	E	150	G	140	125	125	125	130	115	G	G	150	145	110	135	125	E	E	E	E
8	E	E	E	E	E	150	140	130	125	125	120	115	110	110	110	G	140	135	130	120	120	E	E	E
9	E	E	E	E	G	G	135	125	120	115	120	G	G	G	G	110	145	130	125	120	E	E	E	E
10	E	E	E	E	E	G	135	130	125	125	125	120	120	G	G	G	145	140	130	120	120	E	E	E
11	E	E	E	E	E	G	125	120	125	120	120	G	115	G	G	G	140	125	125	120	115	E	E	E
12	110	E	E	E	E	S	125	125	G	120	G	G	125	G	G	150	125	120	120	120	115	115	115	110
13	110	E	110	E	S	G	135	130	125	125	125	120	125	G	G	G	G	135	120	130	125	E	115	115
14	E	E	E	E	S	140	125	125	120	120	120	120	120	G	125	115	120	120	115	130	150	115	115	E
15	E	E	E	105	105	130	125	120	120	120	110	110	115	105	110	G	150	125	120	120	115	120	115	E
16	110	110	E	E	G	150	125	115	115	120	115	115	115	120	125	115	125	115	130	125	120	120	115	120
17	E	E	E	E	G	140	125	125	120	115	115	110	110	115	110	G	125	120	115	120	115	115	110	E
18	E	E	105	105	105	G	140	130	125	125	120	130	125	G	110	G	140	125	120	S	E	110	E	E
19	E	E	E	E	S	G	G	125	G	C	125	115	115	115	G	G	125	120	115	115	115	115	E	E
20	E	E	E	105	G	130	125	120	120	115	125	125	115	115	125	120	110	120	115	115	115	105	120	E
21	E	E	E	E	110	G	135	125	115	115	115	115	110	110	110	105	110	110	120	115	120	115	115	115
22	E	E	E	105	105	150	125	125	115	115	110	110	110	120	125	110	130	G	140	125	120	120	115	110
23	E	E	E	E	G	G	130	125	115	115	115	110	115	120	115	110	110	C	120	115	115	115	115	E
24	E	105	105	E	140	130	125	120	115	115	115	120	G	G	160	140	140	130	125	120	115	110	110	110
25	E	120	105	105	S	145	130	125	125	115	115	110	115	110	105	105	105	G	120	115	115	115	110	110
26	E	E	E	E	G	145	130	125	130	125	120	115	115	110	110	105	105	125	G	125	115	110	110	E
27	110	E	E	E	S	140	125	115	C	C	C	C	C	C	C	C	G	115	115	115	120	115	115	110
28	110	110	125	125	125	140	135	130	125	120	120	115	110	115	115	110	115	130	120	115	110	125	110	110
29	E	E	110	E	110	130	125	125	120	115	110	110	105	105	125	105	105	105	120	115	110	105	110	110
30	110	E	E	110	G	G	125	120	115	115	125	115	115	G	105	145	145	125	120	125	E	115	110	105
31	105	110	115	125	115	115	120	115	120	120	115	120	G	G	115	170	G	115	115	125	140	120	110	110
No.	7	5	7	8	9	15	23	28	26	27	25	24	23	17	19	18	24	22	29	25	23	20	19	12
Median	110	110	110	105	110	140	125	125	120	120	120	115	115	110	110	110	125	120	120	120	115	115	115	110

h'Es

Sweep 1.0 Mc to 18.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

W 11

IONOSPHERIC DATA

May. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								h	c	c									c			f	f	
2								h	c	c	c								c	c	f			
3										c	c	c	c	e	e	e	e		h					
4									c			c		c		e2	e		e3					
5					c			h		c				e										
6									c			c	c	e	e				c					
7						h		c	c	c	c	c	c			h·e	h	e·h	c	c				
8						c	c	c	c	c	c	c	c	e	e		h	c	c	c2	f			
9							c	c	c	c	c					e	h·e	c·e	c·e	c·e				
10							h	c	c	c	c	c	c				h	c	c	c	f2			
11							c	c	c	c	c		c				h	c2	c2	c5	f3			
12	f						c	c		c			c			h	c2	c4	c4	c2	f2	f3	f	f2
13	f		f				c	c	e·c	c	c	c	c					c	c3	c	f		f	f2
14						c·e	c	c	c	c	c	c	c		c	c2	c3	c2	c4	c2	f	f2	f	
15				f	e2	c3	c	c2	c2	c	c2	c2	e	e	e		h	c	c2	c4	f2	f4	f2	
16	f2	f2				h	c2	c3	c2	c	c	c	c	c	c	c2	c2	c3	c2	c2	f5	f2	f3	f
17						c	c2	c2	c2	c2	c2	c3	c2	e	e		c	c3	c2	c	f2	f3	f2	
18			f	f	e		h	c	c	c	c2	h	c		c2		h	c	c2			f		
19								c			c	c	c	e			c	c	c2	c	f3	f		
20				f		c	c2	c	c	c2	c	c	c	c	c·e	c·e	e	c·e	c2·e2	c2	f4	f	f·f	
21					e		h	c	c2	c3	c	c3	c2	c2	c3	e3	c3	e2	e2	c4	f3	f3	f5	f4
22				f	e2	h	c3	c	c2	c2	c3	c2	c	c	c·e	e	h		h	c	f	f3	f3	f
23							c	c2	c2	c	c	c	c	c	c	c2	c		c5	c3	f2	f	f2	
24		f	f		h	c	c	c2	c	c	c	c			h	h	h	c	c	c2	f2	f2	f2	f
25		f	f	f		c	c	c	c	c	c	c	c	c	e2	e	e2		c	c2	f2	f	f2	f
26						h	c	c	c	c	c	c	c	c2	c	e2	e2	c		c2	f2	f	f2	
27	f2					h	c	c										c2	c	c2	f	f	f	f2
28	f	f	f3	f	c2	h	h	c	c	c2	c	c2	c	c	c	c	c2	c	c2	c2	f2	f·f	f2	f
29			f2		e	c	c2	c2	c	c2	c2	c	c2	e2	c·e	e3	e2	e2	c2·e2	c2	f·f	f2	f6	f2
30	f2			f			c	c	c2	c2	h	c	c		e	h	h·e	c	c2	c		f	f3	f2
31	f	f	f2	f2-f	c2	c2	c2	c2	c	c	c	c			e	h		c3	c2	c2	f	f3	f2	f2
No.																								
Median																								

Types of Es

Sweep 1.0 Mc to 18.0 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 12

IONOSPHERIC DATA

May. 1962 | foF2 | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.5 F	5.5 F	5.2 F	4.6	4.5	4.9	4.9	5.5	6.1	6.3	6.6	6.9	7.0	8.1	8.8 R	8.8 R	8.7 R	7.1	6.4	6.9	6.5	6.0 V	5.4	5.2
2	5.5	5.3	5.2	5.1	4.7 F	I 5.6 F	6.6	7.5	7.5	7.0	6.8	8.1	8.3	8.2	8.3	U 9.3 R	8.6	8.2	8.2	R	C	6.5	6.0	5.4
3	5.5	5.3	5.1	I 5.0 F	4.4 F	4.6	6.6	7.8	6.9	6.1	6.8	7.4	8.2	7.4	8.3	9.3 R	I 8.8 R	8.4	7.5	8.1	8.6 R S	6.8	5.8	5.6
4	I 5.4 R E	5.4 F	I 5.1 F	4.9	4.6	5.1	6.8 F	6.9	7.1	7.0	8.0	8.4	8.2	8.3	8.2	9.4 R	A	R	R	I 8.4 R	6.9	6.1	5.8	5.8
5	5.5	5.3 R	5.1	5.0	5.0	5.7	6.7	6.4	6.7	7.3	7.0	7.1	7.4	7.9	7.5	8.1	8.1	7.5	7.4	7.8	8.0	6.8	5.5	5.2
6	5.1	5.0 R	4.7	4.8	4.4	5.6	6.0	5.8	6.2 R	6.2	6.7	8.0	8.3	8.2	8.1	7.8	7.9	8.1	8.4	I 8.9 R	I 8.4 R	6.8	6.3	5.9
7	5.6	5.3	5.2	4.9	4.5	4.5	4.8	A	A	A	5.3	6.2	6.6	6.7	6.8	7.6	7.4	7.3	7.2	7.9	6.8	5.6	5.5	5.5
8	5.2	5.2	5.0	4.5	4.6	5.8	5.9	7.2	7.1	6.8	6.1	7.0	7.3	7.6	6.8	6.9	7.1	6.2	7.3	8.6 R	8.2	6.7	5.9	5.5
9	4.9	4.9 S	4.9	4.9 F	4.9	I 6.0 F	I 7.4 F	7.9	7.0	6.2	6.1	6.9	7.6	7.7	6.5	7.4	7.7	8.0	8.6 R	I 8.4 R	7.9	6.6	5.6	5.4
10	5.3 F	F	F	F	F	5.4	7.3	7.7	7.1	6.6	I 6.4 C	6.3	I 6.6 C	6.8	7.0	7.4	7.7	7.5	7.9	I 8.6 R	8.0	7.4	7.0	6.7
11	6.5	6.4	6.4	5.8	5.5	I 6.4 F	6.6	7.2	7.0	7.4	8.4	8.4	7.9	7.9	7.7	7.0	6.3	6.4	I 6.9 A	I 7.6 A	7.9	6.9	6.5	6.3 R
12	5.7	I 5.8 F	5.9	I 5.4 F	5.1 F	5.5	6.9	6.0	6.6	6.1	I 5.7 A	5.6	I 6.3 A	6.3	6.9	6.9	7.1	I 7.2 A	I 7.5 A	7.9	I 7.6 R E	F	A	R F
13	I 5.9 F	6.2	I 6.2 F	I 6.0 F	I 5.9 F	I 5.8 F	≈6.4	6.3	6.3	7.2	I 7.8 A	I 8.4 A	8.4	7.7	I 7.4 A	7.4	7.3	7.3	7.9	8.4	8.0	7.0	6.8	6.5
14	6.1	6.0	I 6.2 F	5.3 F	4.9	5.7 E	6.6	6.2 V	6.9	7.3	6.4	6.6	7.4	7.6	I 8.2 A	8.1	7.8	6.5	6.3	I 6.8 A	I 6.8 R	I 6.6 R	I 6.4 R F	I 6.1 R F
15	I 5.8 F	5.9 F	I 5.4 F	I 5.1 F	I 4.8 R F	4.8	J 5.2 R	I 5.9 A	I 6.4 A	I 6.5 A	6.5	6.2	6.5	6.8	6.8	7.6	7.9	7.5	A	A	I 7.1 F	R	A	A
16	F	R F	F	F	A	5.3 F	6.3 R	6.8	5.8	5.7	6.6	I 7.1 A	I 7.7 A	I 7.9 A	7.5	6.7	6.5	7.5	7.6	I 8.2 A	7.4	A	A	A
17	A	A	F	F	F	5.0	I 5.3 R	I 5.6 A	I 6.1 A	6.4	6.3	6.5	A	A	6.3	6.2	6.6	I 6.8 A	6.6	6.9	I 7.2 F	I 7.1 F	I 6.8 F	6.1 F
18	5.4	5.3 R	5.1	U 5.0 R	4.8	5.8	7.2	7.4	8.0	7.1	6.8	7.0	7.1	7.0	7.0	7.4	7.8	7.6	I 7.6 A	7.7	I 7.3 F	I 7.2 F	7.1	7.0
19	6.6	6.3 F	6.1	6.0	6.0	6.5	6.4	7.3	8.4	7.6	7.0	6.4	6.6	6.6	6.9	7.7	7.6	I 7.4 A	I 8.0 A	8.6	I 8.4 R	8.1	F	F
20	I 6.8 F	6.5	6.4 F	I 5.8 F	I 5.8 F	5.5	5.8 F	A	A	A	A	C	A	I 6.0 A	I 6.1 A	6.0	I 6.2 A	6.5	6.2	6.8	A	A	A	F
21	5.8	5.3	F	F	F	5.5	6.6	7.5	7.8	A	A	A	I 6.8 A	I 7.0 A	I 7.1 A	7.0	I 7.0 C	7.1	7.0	I 7.9 C	R F	F	F	F
22	A	F	F	F	5.1 F	5.4 F	6.5	I 7.7 A	I 8.0 A	I 8.0 A	7.6	6.9	I 6.9 A	8.0	8.6 R	8.1	8.1	7.8	7.3	7.7	F	F	F	F
23	F	F	F	5.4 F	I 6.0 F	6.5	8.0	I 9.0 R	8.0	7.4	7.2	7.2	7.0	7.5	7.4	7.2	7.0	6.9	7.6	8.6	F	R S	7.2 F	6.0
24	5.6	5.6 F	5.8 F	5.1	I 5.3 F	6.2	7.6	7.5	8.4	7.4	6.6	6.8	6.7	7.4	I 7.4 A	A	A	A	I 6.6 A	J 7.0 R	F	F	F	F
25	F	F	F Z	F Z	F Z	6.4	7.9	8.0	7.1	6.9	7.1	6.9	7.5	7.3	7.9	8.0	7.4	6.9	7.2	8.4	7.6	7.4	R F	F
26	F	5.9	5.6	I 5.4 F	5.5	5.8	6.2	5.9	6.6	6.0	6.5	6.6	6.7	7.2	8.1	8.5	8.3	7.3	7.3	7.6	7.3	R F	A	F
27	F	F	F	F	F	F	7.3 F	7.8 H	7.5	6.5	6.2	6.3	6.7	7.6	8.1	8.1	8.0	8.4 R	8.4	I 8.6 R	U 8.8 R	7.8 S	F	F
28	F	F	F	F	F	7.3 F	6.4 F	6.1	7.0	6.4	6.2	6.5	7.9	8.3	7.4	7.0	7.0	7.3	7.8	8.6 R	8.6 R	I 8.6 F	F	F
29	F	A	F	F	I 5.4 F	I 5.4 A	6.0	A	A	A	A	A	I 6.7 A	6.7	I 6.7 A	7.7	8.3	8.0	I 7.6 A	7.9	6.3 S	F	A	A
30	R F	6.6	6.1	5.6 F	6.0	6.8	8.1	7.6	7.7 F	8.1	8.2	7.3 F	6.5	5.9	6.7	7.5	7.4	7.8	8.3	8.7	8.2	6.2 E S	F	F
31	F	F	F	I 5.4 F	5.0	5.7	6.5	7.2	7.0	6.6	I 6.8 A	7.1	6.8	7.4	7.0	7.5	7.8	8.2	8.4	R	R	7.7	A	F
No.	20	21	20	22	24	30	31	28	28	27	28	28	29	30	31	30	29	29	29	28	24	21	16	16
Median	5.6	5.5	5.3	5.1	5.0	5.6	6.6	7.2	7.0	6.8	6.6	6.9	7.0	7.4	7.4	7.6	7.7	7.4	7.5	8.0	7.8	6.8	6.2	5.8
U.Q	5.8	6.1	6.1	5.4	5.5	6.0	7.2	7.6	7.6	7.3	7.0	7.2	7.6	7.9	8.1	8.1	8.0	7.9	8.0	8.6	8.2	7.4	6.8	6.2
L.Q	5.4	5.3	5.1	4.9	4.6	5.4	6.0	6.2	6.6	6.3	6.4	6.5	6.7	6.8	6.8	7.0	7.0	7.0	7.1	7.6	7.2	6.6	5.7	5.4
Q.R	0.4	0.8	1.0	0.5	0.9	0.6	1.2	1.4	1.0	1.0	0.6	0.7	0.9	1.1	1.3	1.1	1.0	0.9	0.9	1.0	1.0	0.8	1.1	0.8

foF2 | Sweep 1.60 Mc to 2.00 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

A 1

21

IONOSPHERIC DATA

May. 1962 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	L	L	4.5 L	I 4.6 L	I 4.7 R	I 4.9 L	4.9	4.6 L	I 4.4 L	L	L						
2								L	L	4.6 L	I 4.6 L	I 4.8 L	I 4.8 R	I 4.5 L H	4.5 H	4.3 L	L	L						
3								L	A	4.5 L	4.6 L	4.7 L	I 4.7 L	I 4.6 L	4.5	4.4 L	L	A						
4								L	L	4.5 L	4.7 H	4.6 L	I 4.8 L	4.8	I 4.7 L	4.6	A	L						
5								L	L	4.5 L	4.5 L	4.7 L	4.8 L	3.7 L H	I 4.6 L	4.5 L	L	L						
6								L	4.4 L	4.4 L	4.8 L	4.8 L H	4.8 L	4.6 L	4.5	4.5 L	4.3 L	L	A					
7						2.7	3.5	A	A	A	4.6	4.5	4.5	4.8 H	4.6	I 4.4 L	A	A						
8								4.1 L	4.3	I 4.6 A	4.5	4.7	I 4.7 R	I 4.6 A	I 4.4 L	A	A	A	A					
9							L	A	A	L	I 4.6 L	4.8	I 4.8 L	4.8	4.6 H	A	A	A	A					
10							L	L	A	4.6	I 4.6 C	I 4.8 L	I 4.8 C	4.8 L	4.7 H	4.5 L	4.3 L	A	A					
11								4.5 L	I 4.7 L	4.7	4.7	4.8	5.0	I 4.8 A	I 4.8 A	4.5	L	A						
12							L	L	A	4.7 L	A	A	A	4.7 R	4.8 L	I 4.5 A	L	A	A					
13								A	4.9 L	A	A	A	A	A	I 4.8 A	I 4.6 A	4.3	A						
14							L	A	A	I 4.7 A	I 4.9 L	I 4.8 A	5.0	I 4.8 A	A	A	A	A	A					
15							A	A	A	A	4.7	4.8 L	4.8 R	4.8	4.7	A	A	A	A					
16							A	A	A	A	A	A	A	A	A	R	A	A	A					
17						3.1 L	A	A	A	A	A	A	A	A	A	I 4.6 R	4.2 L	A	A					
18							L	L	4.5	I 4.6 L	4.7 L	I 4.8 R	5.0 L	I 4.9 A	I 4.8 R	4.6 L	I 4.4 A	L	A					
19							L	A	A	I 4.6 A	4.7	4.7 L	5.0 L	4.8 L	4.7	4.6	A	A	A					
20						A	A	A	A	A	A	C	A	A	A	A	A	A	A					
21							L	A	A	A	A	A	A	A	A	A	C	L	L					
22							A	A	A	A	A	A	I 5.0 A	I 4.8 R	4.8 R	4.6 L	4.4 H	R	A					
23							L	A	A	A	4.7	A	A	A	I 4.6 A	4.6 L	I 4.4 L	I 4.0 R	L					
24						3.4 L	4.0	L	A	A	A	A	A	A	A	A	A	A						
25								A	L	A	A	A	A	I 4.8 L	4.7	4.6	4.3 L	A	A					
26								A	A	I 4.8 A	L	A	A	A	4.8	I 4.6 L	I 4.2 L	L	L						
27							A	A	A	L	4.7 L	4.9	I 5.0 A	I 4.6 R	4.6	4.6	I 4.4 L	A	A						
28							A	A	4.6	4.7 L	4.8 L	I 5.0 A	I 4.7 A	4.7	4.6	4.8 L	4.3 L	4.1 L	A						
29						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
30						L	A	A	A	A	A	A	I 4.8 A	5.2	4.6 L	4.6 L	4.3 L	L	A						
31							L	A	4.6	4.6	I 4.8 A	4.6	4.7 R	4.8	I 4.6 R	A	A	A	A					
No.						3	2	2	7	16	19	18	20	22	24	21	12	2						
Median						3.1	3.8	4.3	4.6	4.6	4.7	4.8	U 4.8	4.8	4.6	4.6	4.3	U 4.0						

foF1

Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

May. 1962 | foE | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						R	2.30	A	A	A	3.40	I 3.45 R	I 3.55 A	A	A	R	2.95	2.55	R					
2						1.80	2.45	2.80	3.05	3.30	A	A	3.55	I 3.50 R	3.35	I 3.10 A	2.80	2.40	B					
3						B	2.40	2.75	3.10	3.35	3.40	I 3.45 A	3.50	A	A	A	A	A	R					
4						R	2.50	2.85	I 3.10 A	3.35	I 3.40 R	3.45	A	A	A	A	A	2.45	A					
5						R	2.45	I 2.80 A	I 3.10 A	A	A	A	A	I 3.45 A	3.35	A	A	A	B					
6						1.80	2.50	2.85	I 3.10 A	I 3.30 A	3.40	A	A	A	I 3.40 R	3.20	2.95	2.50	B					
7						R	A	2.80.	A	A	A	A	3.45 R	I 3.50 R	3.25	3.05	2.80	2.40	B					
8						B	A	2.70	3.05	A	A	A	R	I 3.50 A	3.30	3.15	2.90	2.40	B					
9						A	A	2.80	A	A	A	A	A	A	3.45	3.10	I 2.85 A	2.45	B					
10						1.80	2.40	I 2.80 A	3.05	A	C	R	C	I 3.45 A	I 3.30 R	3.10	2.90	2.50	B					
11						1.80	2.55	I 2.85 A	I 3.00 A	A	A	A	3.55	3.55	3.45	I 3.25 R	2.95	2.55	B					
12						E	A	A	A	A	A	A	A	3.55	3.45	I 3.25 A	3.05	2.60	B					
13						A	A	2.85	3.20	3.40	3.45	3.50	3.55	3.50	3.35	3.15	3.00	2.50	S					
14						A	A	2.90	I 3.10 A	3.30	3.35	I 3.50 A	I 3.55 A	I 3.50 A	3.35	3.15	2.95	I 2.45 A	B					
15						A	A	I 2.90 A	I 3.10 A	I 3.30 A	3.40	A	A	A	R	A	A	2.45	A					
16						A	2.55	A	A	A	A	A	A	A	A	3.25	3.05	A	B					
17						A	2.45	2.85	3.15	A	A	A	A	A	A	A	A	A	A					
18						A	2.45	I 2.85 A	3.10	3.30	A	A	A	A	R	3.25	I 3.05 A	I 2.60 A	B					
19						2.00	2.70	3.05	A	A	A	A	A	A	A	3.35	3.05	A	B					
20						A	A	A	A	3.35	R	C	R	A	A	A	A	A	A					
21						R	A	A	A	A	A	A	A	A	A	A	C	A	A					
22						A	2.70	3.05	I 3.30 A	3.40	3.55	A	A	R	I 3.45 A	I 3.35 R	3.05	A	A					
23						B	I 2.50 A	2.95	I 3.25 A	A	A	A	A	I 3.55 B	I 3.45 A	3.30	3.05	2.75	A					
24						A	A	I 2.90 A	3.10	3.35	I 3.40 A	I 3.50 A	3.55	I 3.50 A	I 3.40 R	3.25	3.00	A	A					
25						A	I 2.65 A	3.05	3.25	3.45	A	A	A	A	A	A	A	A	A					
26						R	A	A	A	3.50	A	A	A	A	A	A	I 3.00 A	2.70	I 1.90 R					
27						A	A	A	A	I 3.40 A	I 3.50 R	R	R	3.50	3.45	3.20	3.05	A	B					
28						2.05	2.55	2.95	3.10	I 3.40 A	3.50	3.55	A	A	B	A	3.05	A	A					
29						A	A	2.95	I 3.20 A	A	A	A	A	A	A	A	A	A	A					
30						A	2.60	I 2.90 A	3.25	3.45	A	A	A	A	A	I 3.30 R	2.95	2.65	A					
31						A	A	A	A	A	A	A	A	A	A	3.20	3.00	I 2.50 A	1.95					
No.						7	17	23	20	16	11	7	8	12	15	19	22	18	2					
Median						1.80	2.50	2.85	3.10	3.35	3.40	u 3.50	3.55	u 3.50	3.40	3.20	3.00	2.50	u 1.90					

foE

Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

A 3

IONOSPHERIC DATA

May. 1962 | foEs | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J2.5	E	E	E	J3.1	G	2.6	3.8	J4.3	4.3	3.6	4.1	3.9	4.0	3.9	G	G	G	2.1	E	J1.8	J2.8	J1.9	E
2	E	J1.8	E	E	E	G	2.9	3.7	3.9	4.0	3.9	3.8	G	G	G	3.6	G	2.7	2.7	J2.2	C	J2.1	J3.2	E
3	E	E	E	E	E	J3.0Y	2.9	3.5	3.9	4.0	4.1	3.8	3.7	3.9	4.0	J4.0	3.7	J4.3	2.7	J3.2	J5.1	E	E	E
4	E	E	E	E	E	G	G	G	3.5	G	3.9	4.0	4.5	4.6	4.4	4.0	J13.8	G	J3.3	J6.0	J5.0Y	J3.5	E	E
5	E	E	E	E	E	2.0	2.7	3.5	3.9	3.8	3.9	3.7	3.6	3.9	3.1q	3.0q	J3.7	3.2	J3.3	J2.1	E	E	E	E
6	E	E	E	E	E	G	J2.8Y	3.1	3.5	3.6	3.6	4.0	3.5	3.5	3.1q	G	3.5	3.1	J3.8	J2.8	J1.8	E	E	E
7	E	E	E	E	E	G	3.4	J5.1	4.5	4.1	3.9	4.1	3.8	G	J5.3Y	3.6	4.3	J5.3	J4.0	J3.5	J2.9	E	E	E
8	E	J2.8Y	E	E	E	2.6	3.1	3.8	3.9	J4.6	3.8	3.9	G	4.5	G	4.4	J5.6	J5.0	J3.9	J3.1	J2.4	J2.3	E	E
9	E	E	E	E	E	2.0	2.9	J4.1	J4.8	J4.6	J4.4	J5.1	4.5	4.0	G	J5.5	J6.1	J6.3	J6.3	J4.9	J5.2	E	E	E
10	E	E	J2.7	J2.1	E	G	3.4	4.1	J4.4	4.3	C	G	C	J7.8	G	3.5	3.7	J4.4	J5.1	J3.4	J2.8	J2.4	J1.8	E
11	J2.0	J2.3	J2.3Y	E	E	2.1	3.0	3.5	J4.6	4.1	4.4	4.5	4.3	J5.4	J6.4	4.0	3.7	J4.2	J7.5	J8.3	J7.6Y	J2.4	J4.9Y	E
12	J2.2	J2.8	J2.3	J1.8	J1.7	2.1	3.1	J5.2	J6.1	4.3	J7.5	J7.3	J8.6	4.1	4.0	4.6	3.9	J8.3	J7.6	J5.7	J7.8	J5.0	J6.1	J3.8
13	E	E	J2.3	E	J2.4	J3.0	3.9	J5.0	J13.5Y	J5.1	J9.5	J8.5	J5.7	4.8	J7.5	J6.8	3.2	J7.8	J4.4	J3.6	J2.5	J2.0	J2.1	E
14	J2.0	J2.3	J2.4	E	E	2.2	3.6	J4.7	J6.5	J5.8	J5.3	J5.9	J5.9Y	J7.1	J12.6Y	J7.7	J6.0	J3.9	J7.6	J8.5	J6.0	J5.1	J5.2	J5.0
15	J7.8	J2.7	J3.7	J2.5	J2.6	2.5	J5.1	J6.5	J7.3	J8.2	J4.4	4.1	J6.0	4.4	G	J6.2	J7.4	J4.1	J7.4	J10.3	J6.5	J5.3Y	J8.3	J8.4
16	J6.0Y	E	J3.0	J6.0	J7.6	3.1	4.0	J5.0	J6.0Y	J7.5	J9.5Y	J12.5	J12.6	J13.9	J6.5	4.2	J6.3	J5.4	J7.3	J7.5	J3.1	J8.2	J10.8Y	J12.0Y
17	J8.3	J8.1	J5.9	J2.9	J1.9	2.5	3.9	J6.4	J10.0Y	J5.3	J6.0	J7.9	J11.8	J12.7	J8.5	4.2	4.1	J14.5	J6.5	J6.3	J5.3	J4.5	J2.9	J2.4
18	E	J2.1	J2.4	J2.9	E	J2.8	3.0	3.6	4.1	3.8	4.0	3.9	4.3	J6.5	G	G	J11.0	J3.5	J8.6	J3.2	J5.3	J2.9	J1.8	J2.4
19	J2.5	J2.4	J2.3	J1.7	J1.8	G	3.7	J5.0	J4.8	J5.8	4.0	3.8	4.0	3.7	3.8	4.5	8.5	J12.1Y	J12.8Y	J7.5	J7.8	J2.9	J6.4	J3.1
20	J2.0	J2.2	J2.4	J2.1	J2.8	J3.3	J5.0	J6.5	J10.0Y	J12.3	J7.6	C	J6.9	J7.4	J8.4	J5.6	J7.3	J7.5	J5.3	J6.0	J8.5	J8.0	J8.4	J2.3
21	J3.3	J2.4	E	J3.5	J2.5	G	3.4	J6.0	J7.6	J7.2	J7.5	J9.4Y	J11.9	J7.8	J8.1	J5.1	C	J7.4	J7.4	C	J4.0	J5.0	J6.0Y	J7.4
22	J7.8	J2.9	J1.8	J2.4	J6.3	J2.8	J4.8	J8.6	J9.8	J8.3	J5.9	J7.9	J7.6	G	3.6	G	3.7	4.4	J4.1	J6.8	J6.0	J7.5	J7.8	J6.0
23	J3.2	J3.5	J2.2	E	J2.3	2.5	3.9	J5.0	J6.5	J7.1	J5.2Y	J6.1	J5.1	J5.3	J5.0	G	3.5	J4.0	2.8	J2.9	J5.1Y	J3.0	J2.8	J2.8
24	E	E	E	E	E	2.7	3.5	4.0	J5.8	J5.1	J7.2	J5.5	4.9	J6.8	J6.4	J8.5	J10.2	J16.1Y	J12.5	J7.6	J3.4	J6.0Y	J8.0	J7.5
25	J6.0	J3.0	J5.6	J3.8	J2.4	J3.3	J4.0	J6.5	4.2	J5.5	J7.6	J8.5	J5.4	4.1	3.8	4.1	J3.6	J4.5	J7.1	J7.3Y	J6.3	J5.0Y	J3.2	J5.0Y
26	J2.5	J3.5	J3.5	J3.0	J2.4	2.8	3.5	J5.0	J5.1	J5.4	4.4	J6.1	J5.3	J5.0	J4.0	3.7	J5.3	G	2.4	J2.9	J6.0	J8.2Y	J8.1	J6.0
27	J7.4Y	J2.8	J3.7	J2.5	J2.8	J3.0	J3.9	J5.9	J6.9	J5.3	4.1	4.4	J7.2	4.1	3.7	4.0	3.8	J5.1	J5.1	J2.4	J2.4	E	J7.6Y	J6.0
28	J3.5	J3.5	J3.1	J6.0	J3.1	2.6	J4.4	4.6	4.6	4.0	4.3	J7.1	J7.5	4.3	J6.0	J4.1	G	3.0	J5.3	J5.5	J6.0Y	J4.5	J7.8	J3.3
29	E	J10.7Y	J3.0	J3.8	J6.1	J7.3	J4.6	J7.5	J10.4	J12.3Y	J12.4	J17.9Y	J12.4	J5.8	J8.0	J6.6	J6.3	J6.0	J7.5	J4.9	J4.1	J5.0	J7.7	J7.7
30	J7.6	J4.1	J2.0	E	J3.1	J2.8	J4.0	J4.8	J7.5	6.8	J8.0	J7.3	J6.0	3.8	3.8	3.7	3.9	4.0	J3.7	J2.1Y	J2.2Y	J3.2	J3.0	J2.9
31	J3.2	J3.2	J2.3	J1.8	J2.4	J5.2	J3.9	J7.4	J6.1	3.6	J12.0Y	3.9	4.1	4.1	3.7	J6.9	J7.7	J7.8	J5.9	J6.0	J3.8	J2.4	J7.8	J6.0
No.	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	30	31	31	30	30	31	31	31
Median	2.0	2.3	2.3	1.7	1.9	2.5	3.5	5.0	5.1	5.1	4.4	4.8	5.2	4.4	4.0	4.1	4.0	4.4	5.3	4.9	5.0	3.0	3.2	2.8
U.Q	3.5	3.0	3.0	2.9	2.8	3.0	4.0	6.0	7.3	6.8	7.5	7.3	7.2	6.5	6.4	5.5	6.3	7.4	7.4	6.8	6.0	5.0	7.8	6.0
L.Q	E	E	E	E	E	G	3.0	3.8	4.2	4.0	4.0	3.9	4.0	3.9	3.1	3.6	3.7	3.5	3.7	2.9	2.8	2.1	1.8	E
Q.R							1.0	2.2	3.1	2.8	3.5	3.4	3.2	2.6	3.3	1.9	2.6	3.9	3.7	3.9	3.2	2.9	6.0	

foEs

Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

May. 1962 | f_bEs | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E				E		2.6	3.4	4.0	4.1	3.6	$^{E}4.1^{R}$	3.7	3.6	3.5				1.9		E	2.5	E	
2		E					2.7	3.4	3.5	3.7	3.8	3.7				3.2		2.6	2.5	1.8	C	2.3	E	
3						1.9	2.6	3.3	$^{U}3.9^{R}$	3.9	3.6	3.8	3.7	3.7	3.6	3.3	3.5	4.2	2.6	2.5	5.1			
4									3.3		3.8	3.8	4.5	4.4	4.3	3.4	A		$^{U}3.3^{R}$	5.5	E	$^{U}3.5^{R}$		
5						2.0	2.6	3.5	3.6	3.8	3.8	3.6	3.6	3.5	2.9[q]	2.9[q]	3.4	3.2	3.3	2.1				
6							G	3.1	3.3	3.5	3.5	3.7	3.5	3.5	2.7[q]		3.3	2.8	$^{U}3.8^{R}$	2.5	1.7			
7							3.3	A	A	A	3.8	3.8	$^{U}3.8^{R}$		2.3	3.6	$^{U}4.3^{R}$	5.3	4.0	2.2	2.5			
8		E				2.5	3.0	3.6	3.7	4.6	3.8	3.8		$^{U}4.5^{R}$		$^{U}4.4^{R}$	5.5	$^{U}5.0^{R}$	$^{U}3.9^{R}$	3.0	1.7	2.0		
9						1.8	2.9	4.1	4.5	4.4	4.4	4.5	4.4	4.0		5.1	6.1	6.3	$^{U}6.3^{R}$	4.3	4.1			
10			2.5	E			3.1	4.0	4.4	4.2	C		C	4.6		3.5	3.6	4.4	5.1	3.4	2.1	2.0	E	
11	E	2.0	E			2.1	2.8	3.5	4.4	3.9	4.4	4.4	$^{U}4.3^{R}$	5.4	6.3	4.0	3.6	4.1	A	A	4.7	E	E	
12	E	1.8	1.8	E	E	1.8	2.9	3.7	6.1	4.3	A	4.8	A	4.0	3.7	$^{U}4.6^{R}$	3.9	A	A	5.1	5.4	3.5	A	3.3
13			E		1.7	1.9	3.7	4.9	3.5	5.0	A	A	5.6	$^{E}4.8^{R}$	A	5.7	3.2	5.8	3.5	2.5	1.8	E	2.0	
14	E	1.8	E			2.1	3.2	4.5	5.6	4.8	4.0	4.9	4.6	7.0	A	7.0	5.3	3.5	4.6	A	5.5	$^{E}5.1^{R}$	5.0	5.0
15	2.6	E	2.3	1.7	1.8	2.3	$^{E}5.1^{R}$	A	A	A	4.0	4.0	4.4	4.3		5.9	5.5	$^{U}4.1^{R}$	A	A	2.9	5.2	A	A
16	2.8		E	4.0	A	2.2	4.0	4.8	4.7	5.2	5.2	A	A	A	6.5	$^{E}4.2^{R}$	5.4	5.3	5.2	A	2.8	A	A	A
17	A	A	2.1	E	E	2.1	$^{U}3.9^{R}$	A	A	5.2	5.9	5.3	A	A	5.6	$^{E}4.2^{R}$	4.0	A	5.4	5.2	5.0	$^{E}4.5^{R}$	E	1.8
18		2.0	2.1	E		2.0	2.9	3.4	4.0	3.8	3.9	3.9	4.3	5.5			5.2	3.0	A	2.0	1.8	2.0	1.7	1.8
19	1.8	1.8	1.8	E	E		3.3	5.0	4.7	5.0	3.9	$^{U}3.8^{R}$	3.9	3.7	3.7	4.0	6.1	A	A	4.5	4.2	1.9	5.1	1.7
20	E	E	E	E	1.8	3.3	4.6	A	A	A	A	C	A	A	A	5.0	A	6.0	5.1	5.3	A	A	A	1.8
21	2.1	2.1		2.2	1.8		3.3	6.0	7.0	A	A	A	A	A	A	5.0	C	3.4	2.4	C	$^{E}4.0^{R}$	4.2	5.1	5.2
22	A	2.5	E	E	3.3	2.5	4.8	A	A	A	4.4	5.5	A		$^{U}3.6^{R}$		3.5	3.5	4.0	6.5	5.0	5.3	5.3	5.2
23	1.7	2.9	E		1.8	2.4	3.8	5.0	6.1	6.0	4.3	5.5	5.0	5.3	5.0		3.4	3.8	2.8	$^{U}2.9^{R}$	5.0	E	$^{E}2.8^{R}$	E
24						2.4	3.1	4.0	5.7	5.0	5.1	5.1	$^{U}4.2^{R}$	6.8	A	A	A	A	A	5.4	2.4	3.5	5.4	5.5
25	5.0	2.1	3.0	1.9	E	2.8	3.7	6.5	3.7	5.1	6.8	5.6	5.2	3.9	3.6	3.7	3.4	$^{E}4.5^{R}$	5.8	6.1	5.5	2.4	E	2.8
26	1.7	2.0	2.0	2.2	2.0	2.3	2.9	$^{U}5.0^{R}$	4.6	5.3	$^{U}4.4^{R}$	6.1	5.2	5.0	4.0	3.7	4.0		2.3	1.9	$^{E}6.0^{R}$	3.3	5.1	5.3
27	2.3	1.7	1.8	E	2.1	2.5	3.9	5.2	6.1	4.9	4.0	4.3	5.1	$^{E}4.1^{R}$	3.7	3.8	3.6	$^{U}5.1^{R}$	3.5	2.1	2.3		4.8	E
28	1.7	2.8	2.2	2.5	E	2.5	$^{E}4.4^{R}$	4.6	4.5	3.7	4.2	5.7	5.5	4.1	5.1	3.7		2.9	5.3	5.4	2.0	4.3	E	2.7
29		A	2.1	2.0	2.6	A	4.6	A	A	A	A	A	A	5.0	A	6.1	4.5	4.7	A	4.9	$^{E}4.1^{R}$	4.6	A	A
30	4.0	$^{U}4.1^{R}$	1.7		2.4	2.1	4.0	4.3	5.7	5.6	5.7	5.0	5.3	3.8	3.6	3.6	3.8	4.0	$^{U}3.7^{R}$	1.9	E	$^{U}3.2^{R}_{S}$	2.0	2.0
31	2.5	2.0	E	1.8	1.8	4.6	3.4	5.0	3.6	3.6	A	3.8	4.1	$^{U}4.1^{R}$	3.6	5.5	5.8	6.4	5.9	$^{U}6.0^{R}$	1.8	E	A	5.2
No.																								
Median																								

f_bEs Sweep 1.60 Mc to 2.00 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 5

IONOSPHERIC DATA

May. 1962 | f-min | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	E	1.70	1.70	1.90	1.95	2.70	1.95	1.95	1.75	1.80	1.95	1.80	1.70	E	E	E	E	E
2	E	E	E	E	E	E	1.75	1.75	1.75	1.95	1.95	2.00	1.80	1.90	1.80	1.70	1.70	1.80	1.70	E	C	E	E	E
3	E	E	E	E	E	1.65	1.65	1.80	1.80	1.95	2.20	1.95	2.05	2.00	1.85	1.80	2.20	1.75	1.65	E	E	E	E	E
4	E	E	E	E	E	E	1.70	1.70	1.80	1.95	1.75	2.15	2.00	2.20	2.20	2.10	1.70	1.75	1.65	E	E	E	E	E
5	E	E	E	E	E	E	1.70	1.70	1.80	1.80	2.00	2.05	1.95	2.25	1.75	2.00	1.75	1.75	1.75	1.65	E	E	E	E
6	E	E	E	E	E	E	1.65	1.70	1.75	1.75	1.70	1.80	2.05	2.00	2.00	1.70	1.70	1.70	1.70	E	E	E	E	E
7	E	E	E	E	E	1.65	1.75	1.75	1.80	1.90	1.75	1.90	1.75	1.80	1.90	1.70	1.70	1.70	1.75	E	E	E	E	E
8	E	E	E	E	E	1.70	1.70	1.70	1.70	1.90	1.75	1.80	2.20	1.95	1.75	1.80	1.80	1.75	1.80	E	E	E	E	E
9	E	E	E	E	E	E	1.70	1.70	1.75	1.65	1.95	1.95	2.20	2.05	2.05	1.70	1.85	1.75	1.75	E	E	E	E	E
10	E	E	E	E	E	E	1.65	1.75	1.75	1.75	I 1.90 C	2.05	I 2.00 C	2.00	1.95	1.80	1.80	1.75	1.75	E	E	E	E	E
11	E	E	E	E	E	E	1.70	1.80	1.70	1.70	1.80	1.95	2.00	2.00	2.05	1.95	1.80	1.70	1.70	E	E	E	E	E
12	E	E	E	E	E	E	E	1.70	1.70	1.70	2.00	2.00	1.80	2.05	1.80	1.85	1.90	1.75	1.70	E	E	E	E	E
13	E	E	E	E	E	E	1.70	1.75	2.05	2.05	1.95	2.10	2.10	1.75	2.00	1.80	1.80	1.65	E 2.00 S	E	E	E	E	E
14	E	E	E	E	E	1.70	1.70	1.75	1.75	1.75	1.75	2.50	2.00	1.70	2.00	1.85	2.00	1.80	1.75	E	E	E	E	E
15	E	E	E	E	E	E	1.70	1.75	1.95	2.00	2.00	2.05	1.95	2.00	2.00	1.85	1.70	1.70	1.65	1.65	E	E	E	E
16	E	E	E	E	E	E	1.75	1.80	1.75	1.90	2.00	1.80	2.10	2.00	2.05	2.00	1.80	1.90	1.70	E	E	E	E	E
17	E	E	E	E	E	1.65	1.70	1.80	1.75	2.00	2.45	2.00	2.00	2.00	1.80	1.75	2.00	1.75	1.75	1.65	E	E	E	E
18	E	E	E	E	E	E	1.70	1.75	2.20	2.05	2.05	2.00	2.50	2.05	2.05	1.70	1.75	1.70	1.80	E	E	E	E	E
19	E	E	E	E	E	1.65	1.75	1.80	1.80	1.75	2.00	2.00	1.95	2.30	1.75	1.80	1.75	1.85	1.75	1.70	E	E	E	E
20	E	E	E	E	E	1.70	1.70	1.75	1.80	2.00	2.05	C	2.05	2.05	2.00	1.75	1.75	1.80	1.70	E	E	E	E	E
21	E	E	E	E	E	1.65	1.75	1.80	1.80	2.00	2.60	2.00	2.75	2.00	2.05	2.05	I 1.80 C	1.70	1.70	I 1.65 C	E	E	E	E
22	E	E	E	E	E	1.70	1.75	1.75	1.80	1.95	2.00	1.95	2.55	2.05	2.00	2.00	1.70	1.95	1.70	1.65	E	E	E	E
23	E	E	E	E	E	1.75	1.75	1.80	1.85	2.10	2.00	2.55	2.05	3.50	2.05	1.80	1.90	1.70	1.70	E	E	E	E	E
24	E	E	E	E	E	1.65	1.70	1.70	2.00	1.75	2.00	1.80	2.20	2.00	2.00	2.00	2.05	1.95	1.75	1.70	1.65	E	E	E
25	E	E	E	1.65	E	1.75	1.70	2.00	2.00	1.95	2.00	2.25	2.00	2.00	2.05	2.05	1.80	1.80	1.70	1.70	E	E	E	E
26	E	E	E	E	E	1.70	1.75	1.80	1.75	2.30	2.00	2.00	2.00	1.95	2.00	2.00	2.00	1.85	1.75	1.70	1.70	E	E	E
27	E	E	E	E	E	1.70	1.70	1.75	1.80	1.75	2.05	2.20	1.95	2.00	2.00	1.95	2.00	1.80	1.75	1.65	E	1.75	E	E
28	E	E	E	E	E	1.70	1.75	1.85	1.75	2.05	2.00	2.00	2.05	2.05	3.25	1.90	1.90	1.75	1.65	1.75	E	E	E	E
29	E	E	E	E	E	1.70	1.75	1.85	1.75	1.80	2.00	2.20	2.00	2.65	1.85	1.85	1.80	1.75	1.70	1.75	1.70	1.70	E	E
30	1.70	E	E	E	E	1.70	1.75	1.75	1.75	1.80	1.90	2.00	2.00	1.85	1.95	1.85	1.75	1.80	1.75	1.70	E	E 2.00 S	E	E
31	E	E	E	E	1.70	1.70	1.75	1.75	1.75	1.95	2.00	2.05	2.00	2.00	2.00	1.95	1.85	1.80	1.80	1.70	1.70	E	E	E
No.	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	30	31	30	30	31	31
Median	E	E	E	E	E	1.65	1.70	1.75	1.75	1.90	2.00	2.00	2.00	2.00	2.00	1.85	1.80	1.75	1.70	E	E	E	E	E

f-min

Sweep 1.60 Mc to 2.00 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 6

IONOSPHERIC DATA

May. 1962 | M(3000)F2 | 135° E Mean Time (G.M.T. + 9h.) | **Akita** | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	275 F	280 F	285 F	300	285	325	310	325	350	330	305	320	305	305	320 R	320 R	335 R	345	315	315	310	300 V	290	290
2	290	285	295	300	280 F	I 300 F	335	340	340	330	295	305	305	310	300	U 315 R	315	320	305	R	C	290	295	290
3	280	280	305	I 310 F	305 F	325	340	350	360	345	330	310	320	310	320	315 R	I 325 R	315	310	300	325 E	320	300	290
4	I 290 E	295 F	I 290 F	290	305	320	350 F	345	345	335	320	315	310	320	300	310 R	A	R	R	I 340 R	325	295	295	300
5	310	290 R	280	285	300	330	350	350	345	345	330	310	315	315	310	300	330	325	310	310	325	330	300	295
6	290	285 R	300	305	305	340	360	360	335 R	330	295	305	300	310	315	295	310	305	305	I 310 R	I 320 R	300	295	285
7	270	270	275	270	260	280	295	A	A	A	270	290	320	315	290	310	325	320	310	320	320	285	280	285
8	285	290	290	300	295	330	320	335	340	330	305	300	300	305	320	315	340	310	300	310 R	325	310	300	295
9	290	275 S	275	295 F	280	I 290 F	I 315 F	340	345	335	290	315	305	315	295	300	300	310	310 R	I 320 R	315	295	285	280
10	275 F	F	F	F	F	320	335	360	350	340	I 325 C	305	I 315 C	325	320	320	315	315	310	I 305 R	310	290	290	290
11	290	295	305	295	300	I 320 F	335	330	315	305	305	305	310	320	325	330	340	300	I 310 A	I 300 A	305	305	290	290 R
12	275	I 285 F	285	I 280 F	285 F	280	330	300	335	330	I 310 A	300	I 305 A	290	315	310	310	I 315 A	I 310 A	320	I 305 E	F	A	R F
13	I 290 F	295	I 300 F	I 305 F	I 310 F	I 310 F	345	305	305	305	I 290 A	I 300 A	300	300	I 310 A	300	305	300	305	310	310	295	280	280
14	280	280	I 300 F	295 F	290	280 E	320	290 V	310	320	280	285	305	I 295 A	I 310 A	315	330	310	305	I 305 A	I 295 R	I 280 R	I 280 E	I 275 F
15	I 280 F	290 F	I 290 F	I 300 F	I 300 E	290	U 280 R	I 295 A	315	I 315 A	325	305	300	315	305	310	320	320	A	A	I 300 F	R	A	A
16	F	R F	F	F	A	295 F	295 R	340	325	265	300	I 305 A	I 300 A	I 320 A	310	315	300	310	305	I 305 A	300	A	A	A
17	A	A	F	F	F	295	I 295 R	I 285 A	I 305 A	325	I 310 A	305	A	A	320	310	320	I 315 A	325	300	I 300 F	I 300 F	I 300 F	290 F
18	290	290 R	280	U 305 R	295	305	330	310	350	330	310	300	300	305	315	300	320	315	I 310 A	300	300 F	305	290	300
19	280	285 F	290	290	305	330	320	330	330	330	300	315	315	305	300	310	315	I 300 A	I 285 A	280	I 300 R	300	F	F
20	I 285 F	280	295 F	I 280 F	I 285 F	295	305 F	A	A	A	A	C	A	I 285 A	I 290 A	290	I 295 A	300	295	295	A	A	A	F
21	295	285	F	F	F	300	300	315	330	A	A	A	I 295 A	I 300 A	I 310 A	305	I 305 C	310	295	I 300 C	R F	F	F	F
22	A	F	F	F	300 F	305 F	290	I 305 A	I 310 A	I 315 A	305	310	I 280 A	295	300 R	300	305	310	300	300	F	F	F	F
23	F	F	F	290 F	I 295 F	300	300	I 320 R	310	325	300	295	300	300	300	310	305	290	280	290	F	R S	335	290
24	280	270 F	285 F	290	I 280 F	285	305	300	315	300	290	310	300	310	I 315 A	A	A	A	I 305 A	U 290 R	F	F	F	F
25	F	F	F E	F E	F E	310	320	330	310	305	I 305 A	305	300	290	300	305	320	310	295	305	305	300	R F	F
26	F	295	295	I 310 F	315	325	335	330	320	310	290	I 305 A	295	295	300	300	320	310	310	300	305	R F	A	F
27	F	F	F	F	F	F	300 F	330	330	310	300	280	300	295	290	305	290	290 R	290	I 295 R	U 290 R	300 S	F	F
28	F	F	F	F	F	320 F	325 F	300	320	325	305	290	295	315	320	295	300	305	285	295 R	290 R	315 F	F	F
29	F	A	F	F	I 270 F	I 300 A	295	A	A	A	A	A	A	300	I 280 A	300	295	320	I 315 A	320	300 S	F	A	A
30	R F	305	310	295 F	290	300	300	290	295 F	305	320	310 F	315	270	290	310	300	310	305	310	335	290 E	F	F
31	F	F	F	I 305 F	310	320	315	330	310	315	I 295 A	315	295	305	290	290	280	300	280	R	R	290	A	F
No.	20	21	20	22	24	30	31	28	28	27	28	28	28	30	31	30	29	29	29	28	24	21	16	16
Median	285	285	290	295	295	305	320	330	330	325	305	305	300	305	310	310	315	310	305	305	305	300	290	290

M(3000)F2

Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

May. 1962 | M(3000)F1 | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	L	L	375 L	I 375 L	I 375 R	I 370 L	350	350 L	I 360 L	L	L						
2								L	L	370 L	I 380 L	I 375 L	I 365 R	I 390 H	360 H	350 L	L	L						
3								L	A	385 L	375 L	370 L	I 370 L	I 375 L	375	350 L	L	A						
4								L	L	380 L	380 H	395 L	L	A	L	335	A	L						
5								L	L	380 L	390 L	390 L	375 L	460 H	I 370 L	355 L	L	L						
6								L	375 L	380 L	360 L	375 H	370 L	380 V	370	340 L	355 L	L	A					
7						300	A	A	A	A	370	380	355	390 H	410	I 345 L	A	A						
8								370 L	375	I 380 A	390	380	I 380 R	I 360 A	L	A	A	A	A					
9							L	A	A	L	L	A	I 390 L	390	405 H	A	A	A	A					
10							L	L	A	380	I 390 C	I 370 L	I 340 C	I 350 A L	360 H	355 L	360 L	A	A					
11								350 L	I 350 L	370	I 380 A	I 380 A	355	I 360 A	I 360 A	365 L	L	A						
12							L	L	A	A	A	A	A	375 R	345 L	I 350 A	L	A	A					
13								A	350 L	A	A	A	A	A	A	A	355	A						
14							L	A	A	A	L	I 360 A	I 375 L A	I 370 A	A	A	A	A	A					
15							A	A	A	A	365	370 L	365 R	360	365	A	A	A	A					
16							A	A	A	A	A	A	A	A	A	K	A	A	A					
17						350 L	A	A	A	A	A	A	A	A	A	I 340 R	A L	A	A					
18							L	L	360	I 385 L	390 L	I 390 R	380 L	I 370 A	I 380 R	370 L	I 355 A	L	A					
19							L	A	A	A	400	400 L	365 L	380 L	365	A	A	A	A					
20						A	A	A	A	A	A	C	A	A	A	A	A	A	A					
21							L	A	A	A	A	A	A	A	A	A	C	L	L					
22							A	A	A	A	A	A	I 370 A	I 380 R	350 R	350 L	340 H	K	A					
23							L	A	A	A	400	A	A	A	A	350 L	I 350 L	I 345 R	L					
24						340 L	345	L	A	A	A	A	A	A	A	A	A	A						
25								A	L	A	A	A	A	L	365	345	370 L	A	A					
26								A	A	I 375 A	L	A	A	A	355	I 360 L	I 360 L	L	L					
27							A	A	A	L	390 L	370	I 390 A	I 390 R	380	355	I 350 L	A	A					
28							A	A	A	370 L	380 L	I 390 A	I 380 A	370	I 365 A	340 L	355 L	350 L	A					
29						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
30						L	A	A	A	A	A	A	I 385 A	350	380 L	350 L	355 L	L	A					
31							L	A	375 L	395	I 380 A	395	390 R	I 380 A	K	A	A	A	A					
No.						3	1	2	6	13	17	17	19	20	19	19	11	2						
Median						340	345	360	370	380	380	380	U 370	U 375	365	350	355	U 350						

M(3000)F1 | Sweep 1.60 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 8

IONOSPHERIC DATA

May. 1962 | h'F2 | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							325	295	280	295	330	300	345	330	290	285	260	250						
2								260	270	280	305L	305	310	305	300	295	280	270						
3								250	245	255	295	300	295	305	290	290	255	275						
4								255	260	290	295	300	295	280	310	300	I280A	255						
5								255	280	280	295	325	305	295	300	305	275	290						
6								245	290	295	345	315	300	295	295	320	300	295	270					
7						380	345	A	A	A	430	375	330	325	350	305	295	295						
8								280	265	295	310	350	345	335	320	305	295	305	290					
9							260	255	265	285	345	330	330	305	345	330	330A	310	A					
10							255	245	255	270	I300C	350	I340C	330	310	300	295	290	295					
11								295	300	315	295	310	310	295	295A	290	280	305						
12							280	345	I300A	305	I325A	350A	I355A	370	345	340	310	A	A					
13								300	355	330	I335A	I330A	315	320	I320A	345	305	I290A						
14							260	305	340	305	360L	390	345	I345A	I320A	I305A	285	A	295					
15							A	A	A	A	320	355	350	345	345	315	300	260	A					
16							305	250	290	I325A	370	I340A	I340A	I310A	340A	320	345A	305	290					
17						300	340	I345A	I325A	310	I350A	345	A	A	345	340	310	I300A	A					
18							255	295	250	300	330	345	340	310	325	330	295	295	A					
19							275	285	280	280	305	305	345	350	350	305	I320A	A	A					
20						305	335	A	A	A	A	C	A	I375A	I305A	375	I360A	I335A	340A					
21							305	300	305A	A	A	A	I365A	I350A	I330A	345	I315C	300	305					
22							320	I300A	I305A	I300A	300	340	I420A	345	310	305	300	295	285					
23							300	270	I290A	I295A	345	335	345	345	345	300	315	330	300					
24						340	300	300	295	315	355	345	350	I330A	I315A	A	A	A						
25								280A	300	320	I330A	340A	335	355	330	310	295	305A	I305A					
26								I270A	310	I335A	345	I350A	355	345	325	305	290	305	285					
27							290	260	290A	335	330	410	350	335	330	305	325	320	295					
28							280A	345	305	300	350	395A	340	300	300	345	300	310	305A					
29						A	345	A	A	A	A	A	A	345	I350A	330A	305	290	A					
30						295	295	255	310	330	295	305	330	445	355	310	310	305	285					
31							295	295	295	305	I370A	330	355	335	360	345	355	330	330A					
No.						5	20	27	27	26	28	28	28	30	31	30	30	27	15					
Median						305	300	280	295	300	330	340	340	330	325	310	300	300	295					

h'F2 Sweep 160 Mc to 200 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

A 9

29

IONOSPHERIC DATA

May. 1962 | h'F | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	305	295	295	265	295	250	240	A	A	A	205	I230 R	210	200	220	215	245	245	255	245	245	260 A	260	295
2	290	295	270	255	280	280	245	245	245	235	220	220	200	200 H	220	210	245	245	255	245	C	255	260	275
3	295	295	245	245	240	245	245	250	I230 A	230	205	200	205	205	230	235	I245 A	I250 A	245	260	255	240	245	285
4	275	280	260	260	245	245	245	235	225	205	205 H	195	A	A	A	220	I235 A	250	250	250 A	240	I250 A	280	275
5	255	270	295	285	255	245	240	245	230	205	220	200	200	195 H	215	205	230 A	250	255	250	245	230	240	270
6	280	295	290	255	255	245	235	220	205	205	200	200 H	200	205	210	215	250	250	I265 A	250	240	240	255	280
7	315	320	300	295	315	300	A	A	A	A	235	230	I220 A	215 H	200	250 A	A	A	255 A	255	245	245	295	295
8	290	270	255	255	270	255	245	I235 A	220	I210 A	200	205	220	I205 A	200	A	A	A	A	255	235	245	250	255
9	290	305	300	295	295	250 H	245	A	A	A	A	I235 A	I235 A	220	195 H	A	A	A	A	255	250 A	235	255	285
10	295	295	290 A	280	290	245	A	A	A	240 A	I210 C	200	I200 C	I215 A	200 H	245	250 A	A	A	255	245	255	255	280
11	285	280	250	255	255	240	240	230	I230 A	220	I230 A	I230 A	A	A	A	I240 A	255	I255 A	I270 A	I300 A	280 A	245	255	275
12	295	295	280	295	275	245	245	250 A	I230 A	A	A	A	A	215	245	I235 A	A	A	A	290 A	I260 A	270 A	I260 A	I285 A
13	280	290	260	245	245	245	255	I225 A	200	A	A	A	A	A	A	A	240	I245 A	250 A	250	240	235	290 A	285
14	300	295	260	245	260	250	I250 A	A	A	A	235	I215 A	I235 A	A	A	A	A	260	I265 A	I290 A	I295 A	A	A	I330 A
15	340 A	275	270 A	255	250	260	.A	A	A	A	240 A	220	I230 A	I215 A	240	A	A	A	A	A	I265 A	I245 A	A	A
16	290 A	295	295	I290 A	I280 A	250	A	A	A	A	A	A	A	A	A	A	A	A	A	I280 A	245 A	A	A	A
17	A	A	290 A	295	300	255	A	A	A	A	A	A	A	A	A	I250 A	A	A	A	I285 A	I290 A	I285 A	255	245
18	275	290 A	290	250	255	255	245	230	I225 A	215	210	200	205	I210 A	200	240	I230 A	235	I260 A	255	250	250	260	255
19	285	295	285	250	250	240	245	A	A	A	200	205	210	200	220	A	A	A	A	A	255	245	I285 A	245
20	270	295	270	295	295	A	A	A	A	A	A	C	A	A	A	A	A	A	A	340 A	A	A	I250 A	235
21	280	290	295	I305 A	295	250	255	A	A	A	A	A	A	A	A	A	C	255	260	I270 C	I250 A	A	A	A
22	A	295 A	270	245	I270 A	245	A	A	A	A	A	A	I230 A	200	245	245	230 H	265 A	I265 A	I290 A	I300 A	I265 A	A	A
23	230 A	I275 A	290	290	285	250	A	A	A	A	220	A	A	A	A	215	230	I250 A	260 A	285	I275 A	255	I225 A	245
24	295	295	270	255	310	265	245	A	A	A	A	A	A	A	A	A	A	A	A	A	295	320 A	A	A
25	I290 A	275	I290 A	295	290	260	270	I245 A	I245 A	A	A	A	A	195	205	220	235	I240 A	I275 A	I285 A	I265 A	250	285	275 A
26	275	300	295	280	240	240	220	I235 A	I240 A	I230 A	A	A	A	A	230 A	200	I220 A	230	250	240	I265 A	I240 A	I250 A	I255 A
27	300 A	285	295	250	260	245	A	A	A	A	210	I210 A	I205 A	205 A	205	220	250 A	A	A	255	255	245	315	270
28	305	285	300 A	295 A	285	255	I265 A	I255 A	I240 A	230	220	I220 A	I230 A	230	I235 A	240	245	245	I275 A	295 A	255	280 A	260	290 A
29	290	I275 A	260	285	300 A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	265	I250 A	A	A	A
30	A	290 A	245	240	290	255	I245 A	A	A	A	A	A	I215 A	210	200	245	A	A	A	250	230	I240 A	290 A	300 A
31	I310 A	300	280	245	245	I255 A	I250 A	I240 A	210	205	I200 A	210	220	I210 A	A	A	A	A	A	300	245	245	A	A
No.	28	30	31	31	31	29	21	14	14	12	18	18	18	19	19	19	16	16	17	28	29	26	23	24
Median	290	295	285	260	275	250	245	240	u230	220	210	210	u210	205	215	235	240	250	260	260	250	245	260	275

h'F

Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

May. 1962 | h'Es | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	E	E	E	105	G	150	135	130	130	135	120	135	105	110	G	G	G	145	E	125	120	120	E
2	E	105	E	E	E	G	145	140	135	130	120	125	G	G	G	130	G	150	145	135	C	115	115	E
3	E	E	E	E	E	120	145	130	130	130	140	130	125	110	110	115	125	110	140	125	110	E	E	E
4	E	E	E	E	E	G	G	G	130	G	125	120	110	110	110	110	105	G	130	115	110	110	E	E
5	E	E	E	E	E	145	145	135	135	125	120	120	110	110	105	105	125	145	125	120	E	E	E	E
6	E	E	E	E	E	G	105	145	145	130	135	120	115	105	105	G	145	140	115	105	110	E	E	E
7	E	E	E	E	E	G	135	125	120	120	125	120	165	G	105	160	145	135	130	125	115	E	E	E
8	E	100	E	E	E	135	135	130	130	115	115	120	G	125	G	155	135	130	125	115	115	110	E	E
9	E	E	E	E	E	140	130	120	110	110	110	110	105	110	G	145	140	135	125	120	115	E	E	E
10	E	E	100	100	E	G	135	130	125	120	C	G	C	105	G	160	145	135	120	110	105	110	105	E
11	105	105	100	E	E	160	145	135	120	120	110	120	145	135	120	145	145	130	120	115	110	110	110	E
12	110	105	100	105	105	135	135	120	110	115	105	105	105	140	125	110	145	130	125	120	110	110	105	105
13	E	E	105	E	105	125	120	130	115	120	110	110	120	125	115	115	160	135	140	120	115	120	110	E
14	105	105	100	E	E	145	130	125	110	120	110	120	120	125	115	120	120	130	125	120	120	115	110	110
15	105	105	105	100	105	145	120	120	110	110	120	110	110	110	G	110	105	130	125	120	105	110	110	110
16	105	E	105	105	100	125	130	120	115	110	110	110	110	105	115	145	135	120	110	120	120	120	110	110
17	105	105	105	105	145	145	135	120	120	120	110	110	105	105	105	120	145	115	115	110	120	110	105	105
18	E	105	100	105	E	105	145	135	135	140	135	120	110	110	G	G	120	130	120	115	115	110	105	105
19	105	100	100	105	105	G	140	130	120	110	110	110	110	120	130	145	125	120	110	110	110	110	105	105
20	100	100	100	105	105	140	135	120	110	110	110	C	110	105	110	105	105	120	120	110	135	115	110	105
21	105	105	E	105	105	G	135	120	115	115	110	110	110	105	105	125	C	110	110	C	110	120	110	105
22	105	105	105	105	105	105	135	120	115	110	110	105	105	G	120	G	140	125	120	120	130	120	110	110
23	105	105	105	E	100	145	130	120	110	110	115	110	110	110	110	G	145	140	130	120	115	110	110	105
24	E	E	E	E	E	140	135	125	110	110	110	110	115	110	110	125	135	125	140	135	130	120	115	105
25	105	100	125	100	100	145	140	135	135	120	105	105	105	105	120	120	110	105	105	105	110	105	105	105
26	105	100	100	100	100	135	125	115	130	115	110	105	110	105	110	130	120	G	145	115	115	115	115	115
27	105	105	105	125	105	145	130	125	120	115	125	125	120	125	135	140	140	110	105	105	105	E	110	105
28	105	105	110	140	110	145	140	130	130	130	125	110	105	115	110	110	G	120	130	115	110	110	110	105
29	E	105	100	105	100	100	130	120	110	110	105	105	105	110	105	105	105	105	105	110	110	120	120	110
30	105	105	105	E	105	105	120	130	115	115	110	110	110	105	105	150	145	125	120	100	110	105	105	105
31	105	100	100	100	130	110	115	110	110	120	105	105	115	110	110	120	130	110	120	115	130	120	105	105
No.	18	20	20	16	18	23	30	30	31	30	30	29	28	28	25	26	27	28	31	29	29	25	24	19
Median	105	105	100	105	105	140	135	125	120	120	110	110	110	110	110	120	135	130	125	115	115	110	110	105

h'Es | Sweep 1.60 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 11

IONOSPHERIC DATA

May. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

32

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	fz				f		hz	hz	hz	hz	h	h	h	cz	c				h		f	f3	f	
2		f					hz	hz	hz	hz	h	h				h		h	hz	f		fz	f	
3						h	h	hz	hz	hz	h	h	h	c	c	c	h	c4	hz	f5	fz			
4									h		h	h	cz	cz	cz	cz	l3		h3	f7	f	f3		
5						hz	hz	hz	hz	hz	h	h	c	c	lz	lz	hz	hz	h3	fz				
6							l	hz	h	h	h	h	c	lz	l		h	hz	c3	f3	f			
7							h4	hz	hz	hz	h	h	h		l	h	hz	h3	h3	f5	f3			
8		f				h3	h4	hz	hz	cz	c	h		h		hz	hz	h3	h4	f3	f	fz		
9						h	h3	hz	cz	cz	cz	cz	cz	c		hz	hz	h5	h3	f5	fz			
10			f3	fz			h3	hz	hz	h3				cz		h	hz	hz	hz	f3	f3	fz	f	
11	f	fz	f			hz	hz	hz	hz	h	cz	h	h	h	hz	h	hz	hz	hz	f4	f4	f	fz	
12	fz	fz	fz	fz	f	h	hz	hz	cz	hz	cz	cz	cz	h	h	cz	hz	h3	h4	f6	f3	f3	f6	fz
13			f		fz	h	hz	hz	cz	hz	c4	c3	h	h	cz	cz	h	hz	hz	f5	f	f	fz	
14	fz	fz	fz			hz	h3	hz	cz	hz	c	hz	h	hz	c3	hz	hz	hz	hz	fz	fz	f4	f4	f5
15	fz	fz	fz	fz	fz	h	h3	h3	c3	c3	h	c	c	c		c3	cz	hz	h4	f7	fz	fz	f3	f3
16	f3		fz	f4	f3	h	h3	hz	hz	cz	c	cz	cz	c3	cz	h	hz	cz	c3	f3	fz	f4	f4	fz
17	f4	f3	fz	fz	f	h	hz	hz	h3	h	cz	cz	c3	c3	cz	h	hz	cz	c3	fz	fz	fz	f	fz
18		fz	f3	fz		l	hz	h	hz	h	h	h	c	c			hz	h	h4	fz	fz	fz	fz	fz
19	f3	fz	fz	f	f		hz	h3	hz	cz	c	c	c	h	h	hz	hz	h3	cz	f3	f3	fz	f3	f
20	fz	f	f	f	fz	h3	hz	h3	c4	c4	c3		cz	cz	cz	cz	lz	h3	hz	fz	f4	f4	f4	fz
21	fz	f3		f4	f		hz	h3	cz	cz	cz	cz	c3	c3	cz	h		c	c		f4	f3	f3	fz
22	f3	fz	f	fz	f3	lz	h4	hz	cz	c3	cz	cz	cz		h		h	hz	hz	fz	f3	f5	f4	fz
23	f3	f4	fz		f	hz	h4	hz	c3	cz	c	cz	c	c	c		h	hz	hz	f3	fz	f	fz	fz
24						hz	h3	h3	cz	c	cz	c	h	cz	c	h3	h4	hz	h3	f4	f6	fz	f3	f3
25	f5	fz	f3	fz	fz	h3	h3	hz	h	hz	c3	cz	c	c	h	h	cz	l3	l3	f3	f4	fz	fz	fz
26	fz	fz	fz	fz	fz	h	h	cz	hz	cz	c	cz	c	cz	c	h	hz		hz	f	f4	fz	f3	f3
27	fz	fz	fz	f	fz	hz	hz	hz	hz	c	h	h	h	h	h	h	hz	c3	cz	fz	fz		f4	f
28	f3	fz	fz	fz	f	hz	h3	hz	hz	h	h	cz	cz	cz	cz	c		cz	h4	fz	fz	f3	fz	fz
29		f3	fz	fz	fz	lz	hz	hz	c4	cz	c3	cz	cz	c	cz	l4	lz	lz	l4	f3	f3	f3	f4	f4
30	fz	f5	f		f3	lz	h4	hz	cz	cz	cz	c	c	c	c	h	hz	h3	hz	f	f	fz	fz	f
31	fz	fz	f	f	f	c4	cz	cz	c	h	cz	c	c	c	c	hz	h3	cz	c4	f4	f	fz	f3	f4
No.																								
Median																								

Types of Es

Sweep 1.60 Mc to 20.0 Mc in 20 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

A 12

IONOSPHERIC DATA

May. 1962 | foF2 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.4	5.2	5.1	4.8	4.5	4.7	5.6	5.5	6.5	6.6	6.8	7.0	7.7	8.5	9.9	10.1	9.4	7.9	7.6	7.4	6.9	5.1	4.9	5.0
2	4.9	5.0	4.8	4.4	4.3	5.2	6.6	7.6	7.7	6.7	7.6	9.1	8.9	9.3	9.4	10.3	9.7	9.1	9.4	9.8	8.3	5.9	5.9	5.8
3	5.6	5.5	5.8	5.3	3.9	5.0	6.9	7.4	6.9	6.7	6.9	7.3	8.9	8.8	9.2	10.0	10.5	8.5	9.1	9.6	9.1	6.8	6.0	5.9
4	5.8	5.6	5.4	5.2	4.5	5.8	7.1	7.0	7.7	7.0	7.9	8.9	9.8	9.5	10.2	11.0	11.4	10.7	10.1	9.7	6.8	5.9	6.0	6.0
5	5.5	5.2	4.9	5.2	5.0	5.9	7.0	7.5	7.0	7.1	7.0	7.3	8.2	9.0	9.0	9.1	9.3	8.6	8.8	8.8	8.6	7.0	C	C
6	C	C	C	C	C	C	C	C	C	6.1	6.8	8.5	9.4	9.9	9.0	9.0	8.9	9.5	9.8	9.6	9.0	8.1	6.3	6.0
7	5.6	5.4	5.4	5.2	4.9	4.8	5.5	5.3	R	A	5.8	6.5	7.6	7.2	6.9	8.0	8.1	8.1	8.1	7.9	6.4	6.0	5.9	5.8
8	5.4	5.3	5.1	4.5	4.3	5.1	6.6	8.7	6.9	6.6	6.0	6.9	8.5	8.7	7.9	7.7	7.9	7.1	7.5	8.8	9.2	6.2	5.3	5.7
9	5.0	5.0	4.9	4.7	5.0	5.8	8.1	7.6	6.5	6.0	6.6	7.4	8.6	8.8	7.8	7.3	8.8	8.9	9.6	9.7	7.4	5.7	5.4	5.6
10	5.3	5.3	5.0	4.7	4.5	5.8	7.9	7.4	6.8	6.4	6.6	6.8	6.8	8.0	8.1	8.2	8.6	8.5	8.6	8.8	7.6	6.5	7.4	7.0
11	6.5	6.0	6.7	6.3	5.6	5.8	6.0	7.6	7.5	8.4	9.0	9.6	9.6	9.4	8.8	7.6	6.9	6.8	7.5	9.4	7.8	6.8	6.0	6.3
12	6.0	5.7	5.9	5.2	5.2	5.1	7.2	7.9	6.6	6.1	6.6	7.4	6.9	7.5	8.1	7.9	8.1	8.0	8.5	7.5	7.4	6.6	6.3	6.1
13	5.9	6.0	6.4	6.3	5.2	5.9	6.1	6.5	6.2	7.3	7.8	8.6	9.4	8.7	8.6	8.4	8.2	7.8	8.4	9.3	8.1	6.0	6.4	6.4
14	6.3	6.0	5.9	5.4	4.9	5.3	6.9	6.8	6.7	7.6	7.4	7.2	8.0	8.6	9.8	9.8	8.4	7.0	6.9	6.7	6.6	6.3	5.9	6.4
15	6.8	6.0	6.0	6.1	4.4	4.7	5.7	6.7	7.1	7.2	7.0	7.0	7.2	7.5	8.2	9.5	8.6	8.1	7.0	7.0	6.9	6.4	5.6	A
16	A	A	A	A	5.0	5.9	7.0	8.4	A	A	A	8.6	9.5	9.1	8.4	7.7	7.2	7.2	8.9	8.4	7.8	6.4	6.3	A
17	A	A	A	5.1	4.3	5.7	5.8	6.6	7.4	7.0	6.3	A	A	6.8	7.1	7.4	7.5	7.9	7.2	7.0	7.1	7.3	7.0	6.4
18	6.0	5.6	5.1	5.1	4.9	5.5	7.2	8.0	7.7	7.1	7.0	6.8	7.4	7.3	8.0	8.4	8.4	7.9	7.4	8.0	7.5	6.5	6.2	6.4
19	6.6	6.3	6.3	6.5	6.0	6.1	6.7	7.2	8.1	7.8	6.9	6.4	6.6	7.6	7.6	8.2	8.4	8.2	8.4	8.8	7.6	6.5	6.4	6.4
20	6.5	6.3	6.2	5.8	5.9	6.3	A	A	A	6.0	6.0	A	A	A	A	A	A	A	A	6.7	7.1	6.1	A	A
21	5.4	5.0	4.9	4.4	4.7	5.9	7.0	7.6	7.9	6.2	A	A	A	A	8.0	8.0	8.0	7.5	8.0	8.0	8.0	6.6	6.0	6.2
22	6.0	6.0	6.1	5.6	5.6	5.2	6.4	8.4	A	A	A	6.3	6.3	9.1	9.8	9.8	8.4	8.8	8.2	8.3	A	A	7.1	6.1
23	6.6	6.6	6.3	5.8	6.0	6.0	7.8	9.4	8.3	7.2	A	R	A	7.6	8.0	8.0	7.4	7.4	7.8	8.2	9.1	7.4	6.6	6.5
24	6.6	6.0	6.0	5.5	5.2	6.2	8.4	8.2	8.3	7.4	7.6	7.4	S	S	8.4	7.9	6.8	6.7	6.6	6.8	7.0	6.5	8.3	8.5
25	8.0	7.3	6.0	6.2	5.9	6.2	7.8	7.2	A	A	A	R	A	7.7	8.3	9.1	8.4	7.9	7.4	8.6	6.4	6.2	5.9	
26	5.9	6.0	6.2	6.2	5.1	5.7	6.5	6.0	6.2	6.5	6.3	7.2	7.5	8.1	9.0	9.4	9.4	8.5	7.7	7.8	7.2	6.2	6.0	6.2
27	6.0	6.3	6.0	5.8	5.6	6.0	7.9	8.0	A	A	A	A	A	8.2	9.0	8.9	8.8	A	A	A	8.7	7.4	7.1	7.0
28	7.2	7.1	6.8	6.5	6.6	7.3	7.4	A	A	8.1	6.3	7.7	9.0	9.5	8.1	8.2	8.1	8.0	8.4	C	8.8	8.5	A	A
29	6.8	5.7	A	6.0	5.6	5.6	6.4	7.0	6.3	A	A	A	A	A	8.1	A	9.2	9.0	8.5	A	6.1	6.0	5.7	5.8
30	6.1	6.0	5.4	4.6	5.1	5.5	6.7	8.0	8.5	8.9	9.0	8.1	7.1	6.8	7.2	8.2	8.2	A	9.2	9.7	7.9	5.8	5.5	5.4
31	5.5	5.3	5.4	5.2	5.2	5.4	6.6	6.8	7.0	A	6.9	7.1	7.0	7.2	7.6	8.3	8.8	8.8	8.6	10.4	9.7	8.6	7.2	7.8
No.	28	28	27	29	30	30	29	28	23	24	24	24	23	27	30	29	30	28	29	28	30	30	28	26
Median	6.0	5.8	5.9	5.3	5.0	5.7	6.9	7.4	7.0	7.0	6.9	7.3	8.0	8.5	8.2	8.3	8.4	8.0	8.4	8.5	7.7	6.5	6.1	6.2
U.Q	6.5	6.0	6.2	6.0	5.6	5.9	7.3	8.0	7.7	7.4	7.5	8.3	9.0	9.1	9.0	9.4	8.9	8.7	8.8	9.5	8.7	7.0	6.6	6.4
L.Q	5.5	5.3	5.1	5.0	4.5	5.2	6.4	6.8	6.6	6.4	6.4	7.0	7.1	7.5	8.0	8.0	8.1	7.6	7.5	7.6	7.0	6.0	5.9	5.8
Q.R.	1.0	0.7	1.1	1.0	1.1	0.7	0.9	1.2	1.1	1.0	1.1	1.3	1.9	1.6	1.0	1.4	0.8	1.1	1.3	1.9	1.7	1.0	0.7	0.6

foF2

Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 1

IONOSPHERIC DATA

May 1962 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N, Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									A	L	L	L	L	u 5.1 L	u 5.1 L	4.6 L								
2								L	A	L	L	u 4.8 L	L	L	4.9 L	u 4.5 L	L	L						
3								L	L	L	L	u 5.0 L	L	L	4.6 L	4.7 L								
4								L	L	L	u 4.7 L	L	L	A	A	4.6 L	AS	A						
5								L	L	L	5.0 L	L	u 5.0 L u 5.0 L		4.6 L	4.5 L	L	L						
6						C	C	C	C	L	L	5.1 L	u 5.0 L	5.0 L	L	u 4.5 L	L	L	A					
7						L	3.5 L	A	A	A	A	u 5.1 L	L	L	L	A	A	A						
8							L	A	A	L	u 5.0 L	5.1 L	u 5.1 L	L	A	L	L	A	A					
9							L	A	A	A	5.0 L	u 5.2 L	A	5.0 L	L	A	4.2	A						
10									A	L	L	L	A	u 5.1 L	5.0 L	L	L	L						
11								L	L	5.1 L	5.0 L u	5.2 L	5.2 L	A	A	L	A	A						
12						L		A	A	A	L	A	S	5.1	A	L	4.4 L	L						
13							L	A	A	4.9 L u	5.2 L	5.2 L	u 4.2 L	A	A	u 4.7 L	L	A						
14							L	A	A	A	A	AS	A	A	A	L	L	L						
15							A	A	A	A	A	A	5.0	5.0 L	A	A	L	A						
16							A	A	A	A	A	A	A	A	A	A	AS	A	A					
17							S	A	A	A	L	A	A	A	L	u 4.9 L	L	A	A					
18							L	L	L	L	L	B	R	L	L	A	A	A	A					
19							L	L	A	A	A	A	A	5.2 L	B	A	A	A	A					
20							A	A	A	A	A	A	A	A	A	A	A	A	A					
21							L	A	A	A	A	A	A	A	5.0 L	A	A	A	A					
22							A	A	A	A	A	S	A	A	5.1 L	5.0 L	A	L						
23							A	A	L	A	A	AS	A	A	u 5.1 L	5.1	L	A	A					
24							A	A	R	A	L	A	S	S	A	A	A	A	A					
25						A	A	A	A	A	A	R	A	L	A	A	A	A						
26							L	A	A	A	A	A	5.0	5.1	u 5.1 L	L	u 5.1 L	L						
27							A	A	A	A	A	A	A	A	L	L	A	A	A					
28								A	A	A	u 4.9 L	R	L	L	S	L	A	L						
29						L	4.0 L	A	A	A	A	A	A	A	A	A	A	A	A					
30								A	L	A	A	A	A	A	5.2	4.8	A	A	A					
31						A	A	A	A	A	A	A	R	A	A	A	L	A	A					
No.							2			2	7	8	7	9	10	11	3							
Median							3.8			5.0	u 5.0	u 5.1	u 5.0	5.1	5.0	4.7	4.4							

foF1

Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 2

IONOSPHERIC DATA

May. 1962 | foE | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N, Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						S	2.35	2.85	I 3.10 A	3.35	3.40	R	B	B	R	A	A	A	S					
2						u 1.75 R	I 2.40 A	2.90	3.15	I 3.30 A	B	B	B	R	R	3.25	I 2.80 B	2.40	A					
3						S	2.30	2.80	3.10	3.20	u 3.40 R	R	B	B	3.20 R	I 3.15 A	I 2.90 B	I 2.50 A	I 1.85 S					
4						S	2.40	I 2.80 B	3.20	3.25	B	B	A	A	A	A	3.10	I 2.50 A	S					
5						S	2.30	2.85	I 3.10 R	I 3.30 R	B	A	A	A	A	3.15	I 2.95 A	2.60	S					
6						C	C	C	C	I 3.20 R	I 3.35 R	R	A	A	I 3.35 R	I 3.20 R	3.00	2.45	S					
7						S	2.30	2.75	3.05	I 3.30 A	R	R	R	B	I 3.45 B	3.35	3.00	2.55	A					
8						A	2.30	I 2.75 A	3.10	I 3.25 A	R	A	B	B	3.55	3.40 R	3.00	2.55	A					
9						A	2.25	2.65	3.00	3.15	A	A	A	B	3.50	3.30	2.95	I 2.45 A	S					
10						A	I 2.20 A	2.80	2.95	A	A	R	A	3.70	u 3.60 R	3.35	3.00 R	2.45	B					
11						u 1.50 S	I 2.50 S	3.10	3.10	3.30	R	R	u 3.60 R	3.65 R	I 3.50 R	3.35	3.10 R	2.45	A					
12						1.75	2.40	2.95	3.20	I 3.30 A	I 3.60 B	I 3.70 B	I 3.60 A	R	A	R	3.10	I 2.60 S	A					
13						1.55 S	2.30	2.95	3.15	I 3.35 R	3.40	B	B	R	I 3.50 A	I 3.30 B	I 3.10 R	2.60	A					
14						1.95	2.35	3.00	u 3.30 A	R	A	R	3.65	I 3.70 B	B	R	A	A	B					
15						I 1.85 A	2.50	I 2.90 A	3.15	I 3.40 A	B	A	A	A	A	A	R	I 2.55 A	A					
16						S	2.55	2.90	3.20	3.25 R	A	A	A	A	A	S	A	A	A					
17						A	S	I 2.70 S	I 3.00 S	A	B	A	A	A	R	u 3.55 S	u 3.00 S	I 2.55 A	S					
18						S	2.60	u 3.05 R	u 3.30 R	A	A	B	B	R	R	3.40	A	u 2.55 A	A					
19						u 1.95 S	2.50	I 3.00 A	A	A	A	A	A	A	B	3.50 R	I 3.10 R	2.50	A					
20						S	2.55	I 2.95 A	3.30	R	A	A	A	A	A	A	I 3.10 A	2.65 S	S					
21						2.05	2.60	I 3.00 A	I 3.20 A	A	A	A	A	A	3.65	R	A	A	S					
22						2.05	I 2.60 A	I 3.00 A	I 3.30 A	R	A	B	A	A	A	B	S	A	A					
23						u 2.05 A	I 2.50 A	A	R	A	B	A	A	A	A	A	A	2.80	A					
24						1.85	A	A	A	B	A	B	S	S	B	B	A	B	S					
25						S	2.55	2.95	u 3.20 S	B	B	B	B	A	A	A	B	A	B					
26						I 2.05 S	I 2.65 A	A	A	A	A	A	A	A	A	A	A	A	S					
27						A	2.60	A	A	B	A	A	A	B	A	u 3.45 A	B	A	S					
28						2.05	2.65	I 3.05 A	u 3.20 R	3.50	A	A	A	A	B	u 3.20 R	A	A	S					
29						2.00	2.50	I 3.10 A	A	u 3.50 A	A	A	A	A	A	A	A	A	S					
30						A	A	3.00	3.25	I 3.50 A	A	A	A	A	A	3.50	3.00	2.70	A					
31						A	2.40	I 2.85 A	A	A	A	A	A	A	A	3.35 R	A	A	B					
No.						14	27	26	23	17	5	1	3	3	9	17	16	19	1					
Median						1.95	2.50	2.95	3.15	u 3.30	u 3.40	u 3.70	u 3.60	3.70	u 3.50	3.35	3.00	2.55	u 1.85					

foE

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 3

IONOSPHERIC DATA

May. 1962 | foEs | 135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.5M	3.0M	S	E	S	S	2.9	3.8	4.5M	4.2	3.9	4.1	B	B	G	3.3	P 4.6R	T 5.0Y	T 3.2	2.3M	3.0M	2.6M	3.2M	S
2	S	S	E	E	E	G	3.0	3.8	T 4.8Y	4.3M	B	B	B	G	G	G	B	3.1	2.5	3.1M	2.9M	3.1M	S	4.2M
3	3.0M	S	2.4M	T 2.6	E	S	2.8	3.3	3.4	3.6	3.9	G	4.1	4.0	4.2	4.6M	4.3	2.5	2.3	T 2.8	2.7M	4.6M	S	S
4	S	S	E	E	E	S	G	3.2M	3.6	3.6	B	B	3.9	7.8Y	10.4M	4.3M	3.7	4.5M	4.4M	4.6M	3.1	T 6.4	6.9Y	4.5M
5	T 5.2Y	2.1	E	T 2.8	2.6M	T 3.0	2.9	3.7	4.2	G	3.9	4.3	4.6	4.3	4.4	7.0Y	3.9	3.3	4.6	4.5M	3.2M	2.4M	C	C
6	C	C	C	C	C	C	C	C	C	3.9	G	G	4.6	4.0M	G	3.8	3.9	3.3	7.0M	4.7M	4.4M	3.1M	S	S
7	E	S	E	E	E	2.1	3.0	4.6M	5.5Y	6.3Y	4.6	3.8	G	B	4.5	T 6.9	6.8M	7.7M	T 3.9	4.7M	4.3M	4.3M	2.5	S
8	S	S	E	T 2.4	E	T 2.8	3.1	4.6	4.5	3.9	3.8	3.9	B	6.0M	T 6.3	4.5	4.6	6.3M	6.9M	T 8.0Y	T 7.0Y	T 9.0Y	T 2.9	T 3.8
9	T 4.0	4.0M	T 3.0	2.9M	3.4M	T 3.8	T 3.2	5.6M	T 5.2Y	4.5	4.3	5.9Y	9.3M	B	3.8	6.0M	12.7Y	7.7	7.4M	6.8M	T 5.3Y	4.5M	6.9Y	S
10	T 2.2S	T 2.8	3.1M	2.8M	E	2.1	4.3	6.0M	4.6	T 5.0Y	4.6	G	9.1M	4.2	G	4.0	G	3.3	3.1	4.7	4.4M	4.6M	3.5M	S
11	S	E	E	E	E	G	G	G	4.6	4.3	4.1	4.2	4.4	9.0	5.8Y	3.9	5.5Y	T 8.3Y	4.1M	2.9	T 5.4Y	7.3M	4.5M	4.6M
12	2.5M	S	T 2.4	T 2.8	E	2.1	3.2	5.7Y	5.9M	6.3Y	4.2	5.4Y	3.9	4.1	5.4Y	G	G	3.3	4.6M	8.7Y	T 7.3Y	T 8.5Y	4.4M	4.3M
13	3.0M	2.9M	T 3.4	4.3M	T 3.8	T 10.4Y	T 3.5	7.6M	7.4M	4.0	4.3	4.1	B	6.2Y	9.3Y	B	G	5.7Y	4.3	4.6M	6.9Y	5.9Y	4.5M	T 4.8Y
14	2.9M	2.4	E	2.5Y	T 2.7	G	3.0	4.5	T 5.1M	T 8.2	T 8.5Y	5.4Y	6.6Y	7.7M	6.9Y	4.3	3.5Y	T 3.8	T 3.5Y	4.1M	T 7.0Y	T 5.9Y	4.4M	4.5M
15	5.9Y	9.0M	T 8.9Y	9.3M	3.0M	2.4	5.5Y	6.9M	10.0M	7.4M	7.7Y	9.5Y	4.4	3.9	10.6M	T 11.9	G	T 4.8	2.7	6.0Y	T 9.4	T 8.4Y	T 3.4	T 8.9Y
16	13.1M	T 11.9	9.4M	T 8.9	4.5M	4.6M	4.6	6.8	8.2	T 12.6	8.6M	T 5.0	T 6.1	T 5.1	10.2M	5.3	T 5.5	T 5.3	T 5.6	4.2M	T 5.3	T 5.8	T 6.0	T 8.5
17	T 11.6	T 9.2	T 6.7	T 3.8	T 3.7	T 3.2	3.7	4.4	T 5.6	11.6Y	4.4	7.0Y	6.2Y	T 5.4Y	4.1	G	4.3	T 5.7Y	T 5.4Y	6.4M	T 3.8	4.5M	4.2M	2.9M
18	3.5M	3.1M	2.8M	T 2.8	1.3	S	2.9	4.0	4.2	4.4	4.5	B	4.3	4.6	4.4	T 5.1Y	T 5.4Y	T 5.6Y	T 9.2Y	4.4	T 8.7	T 8.9	T 6.4Y	2.9M
19	T 3.5	T 3.6	4.1M	3.4M	E	G	2.8	4.5M	6.9M	T 5.4Y	7.4Y	6.9Y	5.8Y	4.3	B	T 6.9	7.9M	T 9.8Y	T 9.4Y	4.6	12.6M	4.6M	6.0M	6.4M
20	5.4M	T 2.8	T 4.0	T 3.9	5.6Y	4.7	7.0	10.0M	12.6	5.5Y	12.5M	6.2M	6.9	T 8.5	7.0Y	T 9.2	8.9M	6.9M	7.5M	4.6	T 5.0Y	T 5.8	T 8.5	T 9.4
21	2.6M	4.5M	T 3.8	4.3M	T 3.7	G	2.9	T 6.8	8.4M	6.1Y	9.0M	9.3M	9.8	T 13.0	4.4	T 5.1Y	5.8Y	7.1M	T 7.7Y	11.6M	5.7M	T 3.9	T 6.2	T 11.4
22	4.6M	T 3.4	4.3M	4.6	6.0	T 3.4Y	T 6.2	T 6.6	12.3	12.4	13.9	5.8Y	5.6	5.6Y	4.3	B	6.2	4.1	3.9	5.6Y	T 8.8Y	8.9M	5.4Y	6.4M
23	6.1M	2.6Y	3.4	3.4	2.9	T 3.6	4.4	7.7	4.4	7.3M	T 6.9	5.4Y	11.6	8.9	4.2	4.4	T 4.1	4.6	5.8	5.3Y	4.5	T 3.5	T 5.6Y	T 3.6
24	4.0M	2.9M	2.3Y	T 2.8Y	T 3.4	2.6	4.4	6.8Y	4.0	5.3M	4.6	5.6Y	S	S	T 13.0Y	T 6.2Y	T 8.9	7.3M	T 8.1Y	10.4Y	5.6	6.9M	T 8.9	8.8M
25	8.1Y	8.8Y	4.5	6.0M	T 3.8	T 8.9	4.6	7.0	8.0	9.5M	7.6Y	6.1Y	12.3	4.1	5.3Y	6.9Y	8.8M	6.2	2.8M	T 7.0Y	T 9.2	T 7.0Y	T 7.8Y	4.3M
26	T 5.3	6.3M	4.5M	2.9	2.2	S	3.1	T 12.0	8.8	T 5.7	5.6Y	T 5.6	4.4	3.7	4.4	5.8Y	6.0Y	4.2	T 6.1	T 8.7	T 7.4	T 5.8Y	T 6.0Y	6.4M
27	T 5.0Y	T 6.0	6.5M	T 3.9	T 3.4	4.5	4.4	7.6	12.4M	7.6M	T 9.9	T 16.5	11.5	9.0M	4.4	4.0	12.5	12.2Y	11.7	8.6M	6.0M	3.8	5.5Y	T 4.2
28	5.6Y	T 5.0Y	4.2M	4.4	4.7M	3.9	3.8	8.2M	8.4	5.6Y	4.3	4.5	4.6Y	4.3	3.8	3.8	T 4.9Y	4.0M	3.9S	C	6.3Y	T 8.0	T 8.2	T 9.4
29	6.9M	5.8	T 9.6	6.0M	4.3M	3.0	4.3	5.8Y	5.4Y	6.3Y	7.6M	12.0M	13.8M	T 13.0	11.9	8.8	7.4	16.3	T 7.3	9.1M	7.0M	T 5.2Y	4.3	6.2M
30	8.9M	6.0M	T 2.8	6.2	T 3.4	4.3	4.4	5.9	5.5Y	T 7.9	6.1Y	8.8M	T 7.8	6.0	4.6	3.9	7.4	12.3M	8.0M	4.6	5.8M	T 3.9	4.4	T 4.9Y
31	4.4M	2.5M	3.1	3.1	3.4	4.4	T 6.3	7.4M	9.1	9.3	5.8Y	8.0	4.6	9.0M	10.4Y	6.1Y	5.7Y	6.9	9.0M	T 7.0Y	T 9.8Y	T 7.4	T 5.8Y	4.4
No.	26	24	29	30	29	25	30	30	30	31	29	28	26	27	30	29	29	31	31	30	31	31	27	24
Median	4.5M	3.5	3.1	3.0	3.0	3.0	3.4	5.8	5.5	5.6	4.6	5.5	5.7	5.4	4.4	4.5	5.5	5.6	5.4	4.7M	5.7	5.8	5.5	4.7M
U. Q.	5.9	6.0	4.4	4.3	3.8	4.4	4.4	7.0	8.4	7.6	7.6	7.0	9.1	8.5	7.0	6.2	7.4	7.3	7.5	7.0	7.3	7.3	6.4	7.4
L. Q.	3.0	2.8	E	2.6	E	2.1	2.9	4.4	4.5	4.3	4.2	4.2	4.4	4.1	4.2	3.8	3.9	4.0	3.9	4.5	4.4	3.9	4.3	4.2
2. R	2.9	3.2		1.7		2.3	1.5	2.6	3.9	3.3	3.4	2.8	4.7	4.4	2.8	2.4	3.5	3.3	3.6	2.5	2.9	3.4	2.1	3.2

The Radio Research Laboratories, Japan.

foEs

Sweep 1.0 Mc to 20.0 Mc in 20 min/sec in automatic operation.

IONOSPHERIC DATA

May. 1962 | f_bEs | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N, Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.9	E	S		S	S	2.9	3.5	4.2	4.2	3.8	3.8	B	B		3.3	4.3	3.8	2.5	2.0	2.0	2.1	2.6	S
2	S	S					2.8	3.3	4.8	3.7	B	B	B				B	3.0	2.5	2.0	2.0	1.9	S	2.5
3	E	S	E	1.8		S	2.5	3.2	3.3	3.6	3.8		4.1	3.8	3.8	3.8	4.3	2.5	2.0	1.8	1.8	4.2	S	S
4	S	S				S		2.2[9]	3.4	3.6	B	B	3.9	5.1	A	4.2	E 3.7[S]	3.9	3.9	3.8	3.0	4.6	A	2.2
5	E	E		1.3	E	S	2.8	3.1	3.7		3.7	3.6	4.2	4.0	3.8	2.9[9]	3.5	3.0	4.5	4.0	2.9	1.9	C	C
6	C	C	C	C	C	C	C	C	C	3.7			4.1	3.7		3.8	3.5	3.3	6.7	4.0	2.9	2.1	S	S
7		S				1.9	2.6	4.2	5.4	A	4.3	3.8		B	4.5	6.8	A	7.0	3.4	3.8	3.0	3.1	E	S
8	S	S		1.5		1.9	2.8	4.5	4.4	3.9	3.8	U 3.8[R]	B	4.8	5.8	4.0	4.0	5.3	6.6	4.1	6.2	3.1	1.9	2.0
9	2.0	U 3.9[S]	1.9	1.7	2.4	3.3	3.0	5.2	4.8	4.5	3.8	4.6	6.5	B	3.8	5.9	3.5	7.2	2.9	6.5	4.1	4.0	4.8	S
10	E	1.9	1.9	1.7		2.0	3.8	5.1	4.6	4.4	4.3		A	4.2		3.8		3.0	3.0	4.5	3.6	4.6	2.1	S
11	S								4.3	4.3	4.1	4.2	4.4	8.4	5.2	3.8	5.0	A	2.9	2.0	4.6	A	3.1	3.5
12	2.0	S	E	1.5		G	3.2	4.5	5.1	4.8	4.2	5.2	E 3.9[S]	4.1	5.2			3.0[S]	4.2	5.6	5.2	A	3.6	3.7
13	2.5	1.8	1.8	1.5	2.0	2.1	3.1	6.1	A	3.9	4.2	E 4.1[S]	B	5.7	A	B		4.6	3.2	4.2	5.4	5.1	3.5	2.5
14	2.0	E		1.6	1.5		2.9	4.5	4.9	6.4	6.0	E 5.4[S]	6.4	7.1	6.1	4.3	2.8	3.5	2.9	3.2	A	5.6	4.1	4.0
15	5.1	5.0	A	4.1	1.6	2.0	5.1	5.3	A	6.1	A	A	4.2	3.7	A	8.0		4.4	2.2	5.9	A	A	1.8	A
16	A	A	A	A	3.8	4.6	4.0	6.8	A	A	A	E 5.0[S]	5.2	5.0	A	5.0	AS	4.9	4.6	3.7	AS	AS	A	A
17	A	A	A	E 3.2[A]	E	2.8	E 3.7[S]	4.4	5.5	A	4.4	A	A	5.4	4.1		4.1	4.1	4.2	A	2.5	3.5	2.2	2.0
18	2.1	1.7	1.8	1.9	1.1	S	2.9	3.6	4.1	U 4.2[R] U	4.4[S]	B	E 4.2[R]	4.6	4.2	5.1	4.6	5.1	A	4.0	5.1	5.0	A	1.8
19	2.6	2.9	2.9	2.1			2.8	4.0	6.1	5.1	5.3	5.2	U 5.8[S]	4.1	B	6.5	5.9	A	A	4.5	A	4.5	A	A
20	5.1	E	2.0	2.9	3.8	4.4	A	A	A	5.2	A	A	A	A	A	A	A	A	A	4.0	2.9	S	A	A
21	2.0	2.6	3.5	3.1	2.6		2.9	6.6	A	5.4	A	A	A	A	4.4	5.0	5.5	A	5.0	A	3.9	3.5	5.1	A
22	4.2	2.8	3.0	3.6	4.5	B	5.2	6.0	A	A	A	S	5.1	5.5	4.0	B	6.2	3.2	3.2	4.6	A	A	2.3	5.0
23	6.1	1.9	2.6	2.4	2.0	3.5	4.1	7.2	3.6	6.5	A	E 5.4[S]	A	6.8	4.2	4.3	4.1	4.2	5.4	4.6	4.2	U 3.2[S]	5.1	1.9
24	2.2	1.9	E	2.0	1.9	2.5	4.3	U 6.8[S] E	4.0[R]	5.0	4.5	E 5.6[R]	S	S	6.1	6.2	A	A	6.2	A	5.1	5.2	A	5.1
25	5.1	7.0	2.5	3.9	1.8	A	4.6	6.1	A	A	A	R	A	3.6	5.1	6.9	A	5.6	2.5	6.1	5.4	6.5	A	2.1
26	3.8	5.0	3.5	1.9	1.9	S	2.8	A	A	5.2	A	5.0	4.2	3.6	4.4	4.6	4.4	3.4	6.0	3.5	2.6	4.1	4.0	A
27	U 5.0[S]	5.0	5.0	1.7	2.0	2.8	4.3	6.9	A	A	A	A	A	A	4.3	3.8	A	A	A	A	5.5	2.4	5.1	1.8
28	3.6	3.8	2.6	2.1	3.9	3.5	3.6	A	A	5.2	E 4.3[S] E	4.5[R]	4.4	4.3	U 3.8[S]	3.8	3.0	3.0	2.9	C	5.5	5.1	A	A
29	A	A	A	5.0	2.1	2.6	3.5	5.1	5.0	A	A	A	A	A	A	A	7.0	A	5.9	A	5.2	4.3	E 4.3[S]	5.1
30	A	4.8	E	2.0	1.4	3.0	3.5	5.1	4.5	6.0	5.0	7.0	5.1	5.3	4.2	3.7	6.9	A	7.3	4.5	5.0	3.3	3.4	3.1
31	2.6	1.9	1.9	2.0	1.2	3.6	4.9	A	5.0	A	5.8	A	R	A	A	5.3	4.6	6.1	A	5.5	5.9	A	5.1	4.4
No.																								
Median																								

f_bEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 5

IONOSPHERIC DATA

May. 1962 | f-min | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E 1.80 SE 1.50 SE 1.50 S	1.10	1.80	1.50	1.80	1.80	2.25	2.20	3.00	4.20	3.80	2.55	2.00	2.90	1.95	E 1.90 SE 1.70 S	E 1.60 SE 1.80 SE 1.70 SE 1.50 S							
2	E 1.50 SE 1.60 S	1.05	1.00	1.05	1.40	E 1.80 S	1.80	2.10	2.40	3.70	3.80	4.20	2.70	2.50	2.30	2.80	1.80	E 1.50 SE 1.70 S	E 1.70 SE 1.50 SE 1.50 SE 1.50 S					
3	E 1.50 SE 1.80 SE 1.50 S	E	1.20	E 1.50 S	1.50	1.80	1.90	2.50	2.90	3.65	3.45	2.25	2.00	3.40	E 1.80 SE 1.80 SE 1.50 S	E 1.50 SE 1.60 SE 1.60 SE 1.80 S								
4	E 1.60 SE 1.50 S	1.40	1.40	1.10	E 1.50 SE 1.90 S	1.90	2.00	2.50	3.60	4.15	3.20	2.45	3.20	2.00	2.10	1.60	E 1.80 SE 1.70 SE 1.80 SE 1.50 SE 1.80 SE 1.80 S							
5	E 1.60 SE 1.50 S	1.20	E	1.30	E 1.60 S	1.70	1.90	2.25	2.40	2.40	2.50	2.60	2.50	2.40	2.20	2.00	1.70	E 1.60 SE 1.70 SE 1.50 SE 1.50 S	C	C				
6	C	C	C	C	C	C	C	C	C	2.20	2.60	2.35	2.90	2.40	2.40	2.20	2.00	1.70	E 1.50 SE 1.50 SE 1.90 SE 1.80 SE 1.50 SE 1.60 S					
7	1.15	E 1.50 SE 1.50 S	1.10	1.00	1.05	E 1.50 S	1.60	1.90	1.80	2.10	2.65	2.40	2.30	4.90	3.60	2.20	2.00	1.90	1.50	E 1.55 SE 1.60 SE 1.60 SE 1.50 SE 1.70 S				
8	E 1.50 SE 1.50 S	1.00	1.05	1.30	1.10	1.70	1.60	2.10	2.40	2.70	2.70	4.20	3.80	2.65	2.30	2.20	1.40	1.40	E 1.50 SE 1.50 SE 1.60 SE 1.50 SE 1.50 S					
9	E 1.80 SE 1.60 S	1.00	E	E	1.40	2.00	1.60	1.80	2.30	2.90	3.00	2.50	3.80	2.40	2.20	2.00	1.60	E 1.50 SE 1.60 SE 1.70 SE 1.80 SE 1.60 SE 1.70 S						
10	E 1.70 SE 1.50 S	1.60 S	1.00	1.10	E 1.60 SE 1.80 S	1.90	2.00	2.40	3.50	3.10	3.50	2.90	2.55	2.20	2.20	1.70	1.95	E 1.70 SE 1.60 SE 1.50 SE 1.50 SE 1.50 S						
11	E 1.80 S	1.40	1.40	1.00	1.05	1.10	1.90	2.10	2.40	2.30	2.40	2.80	2.50	2.80	2.80	2.40	2.00	2.10	E 1.80 SE 1.50 SE 1.50 SE 1.85 SE 1.70 SE 1.50 S					
12	E 1.60 SE 1.80 SE 1.50 S	E	1.00	E 1.10 E 2.00 S	1.80	2.20	2.60	3.65	3.90	2.80	2.95	2.20	2.30	2.10	1.60	1.50	E 1.90 SE 1.50 SE 1.60 SE 1.80 SE 1.80 S							
13	E 1.50 S	1.30	E 1.50 S	1.00	1.10	1.60	2.20	2.00	2.35	2.30	3.50	3.80	3.20	3.10	3.20	2.65	2.05	1.40	E 1.60 SE 1.75 SE 1.80 SE 1.80 SE 1.60 S					
14	E 1.50 SE 1.60 S	1.20	1.05	E	1.50	1.80	1.60	2.50	2.40	3.50	2.50	2.50	3.90	3.60	2.50	2.50	2.05	2.10 E 1.80 S	1.50	E 1.60 SE 1.50 SE 1.70 S				
15	E 1.80 SE 1.50 SE 1.50 S	E	1.00	1.60	1.70	2.10	2.10	2.65	3.55	3.30	3.20	3.20	3.20	2.50	2.15	1.70	E 1.60 SE 1.90 SE 1.60 SE 1.50 SE 1.50 SE 1.50 S							
16	E 1.50 SE 1.80 SE 1.50 S	E	E	E 1.60 S	1.90	1.75	2.10	2.10	3.10	3.30	3.50	2.60	2.90	2.85	2.00	2.10	1.85	2.00	1.90	1.85	1.70	1.70		
17	1.50	1.50	E 1.75 S	1.40	1.50	1.20	1.30	E 3.40 S	2.10	3.25	3.80	2.95	3.00	3.20	2.75	3.10	2.30	1.75	1.90	E 1.50 SE 1.70 SE 1.80 SE 1.80 SE 1.70 S					
18	E 1.80 SE 1.55 SE 1.50 S	1.00	E	E 1.50 S	2.00	1.70	2.00	3.00	3.00	5.10	3.70	2.40	2.60	2.40	2.40	1.60	E 1.80 SE 1.60 SE 1.50 SE 1.70 SE 1.50 SE 1.70 S							
19	E 1.80 SE 1.70 SE 1.60 S	1.30	1.10	E 1.55 S	2.00	1.60	2.40	2.65	3.00	3.50	3.20	3.40	5.05	2.50	2.60	1.55	1.60	E 1.80 SE 1.50 SE 1.70 SE 1.50 SE 1.70 S						
20	E 1.70 S	1.30	E 1.80 S	1.00	1.10	E 1.70 S	1.90	2.10	2.00	2.90	3.60	3.50	3.15	3.50	3.10	2.40	2.00	E 2.30 SE 1.80 SE 1.50 SE 1.70 SE 1.60 SE 1.80 S	1.10					
21	E 1.50 SE 1.50 S	1.20	E	E	1.40	1.80	1.70	2.00	2.50	3.00	3.50	3.50	3.10	2.90	2.90	2.50	1.70	E 1.60 SE 1.50 SE 1.90 SE 1.70 SE 1.80 SE 1.80 S						
22	E 1.80 SE 1.70 SE 1.80 S	1.30	1.70	1.65	1.80	2.30	2.20	2.45	3.20	3.70	3.00	2.95	2.60	3.20	E 3.50 S	1.90	1.50	1.50	E 1.80 SE 1.80 SE 1.50 SE 1.50 S					
23	E 1.85 S	1.10	1.10	E	1.10	E 1.50 S	1.80	2.40	2.50	3.00	3.65	3.60	3.00	3.50	3.10	2.55	2.50	1.95	1.90	E 1.80 SE 1.80 SE 1.60 SE 1.80 SE 1.70 S				
24	E 1.80 SE 1.50 S	1.10	E	1.00	1.60	1.50	2.90	3.45	3.50	3.65	3.80	S	S	3.80	4.00	3.20	3.00	E 1.55 S	1.30	E 1.60 SE 1.80 SE 1.50 SE 1.60 S				
25	E 1.60 SE 1.80 S	1.00	1.00	1.00	E 1.80 S	1.90	1.90	2.40	3.65	3.85	3.95	3.80	2.90	3.00	3.20	3.20	1.80	2.10 E 1.90 SE 1.50 SE 1.50 SE 1.50 SE 1.40						
26	E 1.50 S	1.10	1.10	E	E 1.50 SE 2.20 S	1.30	2.00	E 1.95 S	2.55	2.60	3.20	3.30	2.60	3.00	2.20	2.00	1.80	E 2.00 SE 1.90 SE 1.50 SE 1.70 E 1.50 SE 1.70 S						
27	E 1.50 SE 1.30 SE 1.70 S	1.15	1.00	E 1.70 S	1.60	2.20	2.50	3.50	3.45	3.10	3.00	3.50	3.20	3.25	3.20	1.80	E 1.90 SE 1.90 SE 1.80 S	1.30	E 1.10 SE 1.50 S					
28	E 1.80 SE 1.80 S	1.30	1.00	1.00	1.10	1.90	2.50	2.20	2.45	3.40	3.50	3.20	3.60	3.50	2.40	2.10	E 1.90 SE 2.00 S	C	E 1.80 SE 1.50 SE 1.50 SE 2.60 S					
29	E 1.80 S	1.10	E	1.00	1.00	1.40	1.80	2.40	2.50	3.30	2.60	3.45	3.20	3.15	3.00	2.20	2.20	2.00	E 1.80 SE 1.90 SE 1.80 SE 1.50 S	1.20	E 1.50 S			
30	E 1.50 SE 1.70 S	E	E	E	1.80	1.70	E 2.00 S	2.40	3.05	3.50	3.70	3.40	3.10	3.10	2.40	1.90	1.85	E 1.80 SE 1.50 S	1.40	E 1.50 SE 1.80 SE 1.80 S				
31	E 1.50 SE 1.50 S	1.10	E	1.00	1.10	1.20	2.00	1.80	2.60	3.20	2.95	3.50	2.80	2.60	2.60	2.35	2.30	2.00	E 1.50 SE 1.50 SE 1.50 SE 1.50 SE 1.90 S					
No.	30	30	17	30	28	16	28	28	30	31	31	31	30	30	31	31	30	29	31	30	31	31	30	30
Median	E 1.60	E 1.50	1.10	1.00	1.00	1.40	E 1.80	1.90	2.10	2.50	3.20	3.30	3.20	3.10	2.90	2.40	2.20	1.80	E 1.80	E 1.65	E 1.60	1.60	E 1.50	E 1.70

f-min

Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 6

IONOSPHERIC DATA

May. 1962 | M(3000)F2 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.75	2.85	2.85	2.80	2.80	3.10	3.40	3.25	3.25	3.15	3.05	3.00	2.85	2.95	3.10	3.05	3.20	3.20	3.05	3.25	3.20	2.95	2.75	2.80
2	2.75	2.80	2.90	2.80	2.75	3.05	3.20	3.30	3.40	3.00	2.90	3.00	3.05	3.00	3.00	3.05	3.05	3.00	3.20	3.15	3.40	2.80	2.80	2.70
3	2.80	2.75	3.10	3.20	2.80	2.95	3.50	3.25	3.35	3.30	3.05	2.85	3.15	3.15	3.00	3.05	3.15	3.05	2.95	3.25	3.15	3.05	2.85	2.80
4	2.80	2.90	2.95	2.85	2.85	3.10	3.40	3.45	3.25	3.15	2.90	2.95	2.95	3.05	3.00	3.10	3.15	3.25	3.15	3.30	3.25	2.85	2.90	3.00
5	2.85	2.85	2.80	2.85	2.90	3.05	3.45	3.35	3.40	3.25	3.00	2.95	2.95	3.00	2.90	3.05	3.10	3.05	3.05	3.15	3.25	3.30	C	C
6	C	C	C	C	C	C	C	C	C	3.10	2.85	2.85	2.95	3.00	3.00	3.00	2.85	3.05	2.95	3.25	3.10	3.05	3.00	2.75
7	2.65	2.70	2.75	2.75	2.60	2.80	3.10	3.00	R	A	2.80	2.75	3.00	2.95	2.85	3.00	3.00	3.10	3.20	3.15	2.90	2.75	2.80	2.80
8	2.80	2.85	3.00	2.90	2.80	3.05	3.15	3.40	3.25	3.10	2.80	2.75	2.95	3.10	3.05	2.95	3.15	2.95	2.95	3.05	3.15	3.05	2.75	2.80
9	2.95	2.70	2.80	2.85	2.95	2.90	3.30	3.55	3.35	3.15	3.00	2.85	3.00	3.05	3.00	2.90	2.95	3.00	3.15	3.30	3.25	2.90	2.95	2.85
10	2.85	2.70	2.80	2.75	2.85	3.10	3.40	3.65	3.50	3.15	3.05	2.95	2.95	3.00	3.05	3.05	3.05	3.15	3.05	3.05	2.90	2.90	2.95	2.80
11	2.80	3.10	3.00	2.90	3.00	3.05	3.05	3.05	3.05	2.95	3.00	2.90	2.95	3.05	3.10	3.05	3.05	2.90	2.90	2.75	3.10	2.85	2.95	2.80
12	2.80	2.85	2.95	2.65	2.70	2.75	3.05	3.20	3.05	2.80	2.90	3.00	2.90	2.90	2.95	2.95	3.00	3.05	2.95	3.20	3.00	2.85	2.75	2.90
13	2.80	2.85	2.95	3.05	3.10	3.05	3.15	3.15	2.90	2.90	2.85	2.90	2.95	3.00	2.95	2.95	3.00	3.05	2.95	3.10	3.20	2.75	2.80	2.65
14	2.75	2.75	2.80	2.95	2.65	3.00	3.05	3.10	3.00	2.90	3.10	2.80	2.80	3.00	3.05	3.15	3.10	3.05	3.00	2.95	2.95	2.85	2.75	S
15	S	2.75	2.80	2.85	2.75	3.00	2.95	3.00	3.05	2.90	3.00	2.90	2.90	2.95	3.00	3.10	3.15	3.20	3.05	3.25	3.10	2.90	A	A
16	A	A	A	A	2.80	2.90	3.00	3.25	A	A	A	2.90	2.85	3.00	3.00	2.85	3.00	3.05	2.95	2.75	3.00	2.80	2.80	A
17	A	A	A	2.75	2.60	3.00	2.95	2.80	3.10	3.05	2.90	A	A	2.95	2.95	2.95	3.05	3.05	3.05	3.05	2.95	2.85	2.90	A
18	2.80	2.80	2.75	2.85	2.80	3.05	3.30	3.15	3.25	2.85	3.00	3.00	2.85	3.05	2.95	3.00	3.00	3.05	3.05	2.90	2.85	2.95	3.00	2.95
19	2.95	2.70	2.70	2.90	3.00	3.10	3.25	3.15	3.20	3.30	3.05	R	R	2.90	2.90	2.95	3.00	3.05	3.00	2.95	2.90	2.85	2.95	2.85
20	2.80	2.85	2.90	2.95	2.75	2.85	A	A	A	2.90	2.80	A	A	A	A	A	A	A	A	3.10	2.95	2.75	A	A
21	2.80	2.70	2.75	2.55	2.65	3.05	3.10	3.15	3.10	2.95	A	A	A	A	2.85	3.00	3.00	2.90	2.85	2.90	3.00	3.10	2.85	2.90
22	2.80	2.80	2.95	3.00	2.80	2.90	2.95	3.10	A	A	A	S	2.75	2.75	3.00	3.05	3.00	2.95	3.05	3.00	A	A	3.25	2.95
23	3.00	2.90	2.70	2.80	2.80	2.85	2.95	3.20	3.15	3.05	A	R	A	2.90	2.90	3.00	2.85	2.95	2.85	2.90	3.00	R	S	2.80
24	2.70	2.80	2.85	2.85	2.85	2.75	3.10	2.80	3.00	3.10	2.90	2.85	S	S	3.10	3.10	3.10	3.00	3.00	2.85	2.75	2.90	A	S
25	S	S	3.00	2.90	3.00	3.10	3.35	3.30	A	A	A	R	A	R	R	3.00	A	S	3.10	3.10	3.00	2.90	2.95	3.05
26	2.85	2.80	2.90	3.05	2.95	3.20	3.25	3.25	3.10	2.95	2.85	3.00	2.95	2.85	2.90	2.90	3.00	3.10	3.00	2.95	3.00	2.90	2.85	2.80
27	2.75	2.80	2.80	2.85	2.90	3.15	3.05	3.35	A	A	A	A	A	2.80	2.90	3.00	2.90	A	A	A	3.00	2.95	2.85	2.75
28	2.80	2.85	2.65	2.75	2.95	2.95	3.25	A	A	3.20	2.70	R	2.90	3.15	3.00	2.95	C	C	S	C	3.15	S	A	A
29	A	A	A	S	2.85	2.70	2.95	3.15	3.00	A	A	A	A	A	A	A	2.95	3.10	3.05	A	3.10	2.65	2.75	A
30	2.80	2.85	3.05	2.90	2.85	3.15	2.80	2.90	2.95	2.90	2.95	3.00	2.95	2.80	2.80	2.95	R	A	3.00	3.30	3.25	2.75	2.75	2.80
31	2.65	2.85	2.75	3.10	2.90	3.15	3.05	3.10	3.10	A	2.75	2.85	2.90	2.85	2.80	2.90	2.95	2.85	2.70	3.00	3.30	2.90	2.80	2.80
No.	25	26	27	28	30	30	29	28	23	24	24	21	22	26	28	29	27	26	28	28	30	28	26	23
Median	2.80	2.80	2.85	2.85	2.80	3.05	3.10	3.20	3.10	3.05	2.90	2.90	2.95	3.00	3.00	3.00	3.00	3.05	3.00	3.10	3.10	2.90	2.85	2.80

M(3000)F2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 7

IONOSPHERIC DATA

May. 1962 | M(3000)F1 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									A	L	L	L	L	U 3.35 L	U 3.20 L	3.45 L								
2								L	A	L	L	U 3.55 L	L	L	3.45 L	U 3.45 L	L	L						
3								L	L	L	L	U 3.60 L	L	L	3.45 L	3.60 L								
4								L	L	L	U 3.80 L	L	L	A	A	3.40 L	AS	A						
5								L	L	L	3.60 L	L	U 3.40 L	U 3.40 L	3.70 L	3.55 L	L	L						
6						C	C	C	C	L	L	3.50 L	U 3.60 L	3.40 L	L	U 3.55 L	L	L	A					
7						L	3.15 L	A	A	A	A	U 3.50 L	L	L	L	A	A	A						
8							L	A	A	L	U 3.80 L	3.35 L	U 3.15 L	L	A	L	L	A	A					
9							L	A	A	A	3.40 L	U 3.30 L	A	3.60 L	L	A	3.55	A						
10									A	L	L	L	A	U 3.35 L	3.40 L	L	L	L						
11								L	L	3.50 L	3.60 L	U 3.65 L	3.65 L	A	A	L	A	A						
12						L		A	A	A	L	A	S	3.35	A	L	3.45 L	L						
13							L	A	A	3.65 L	U 3.45 L	3.65 L	U 3.25 L	A	A	U 3.90 L	L	A						
14							L	A	A	A	A	AS	A	A	A	L	L	L						
15							A	A	A	A	A	A	3.40	3.60 L	A	A	L	A						
16							A	A	A	A	A	A	A	A	A	A	AS	A	A					
17							S	A	A	A	L	A	A	A	L	U 3.55 L	L	A	A					
18							L	L	L	L	L	B	R	L	L	A	A	A	A					
19							L	L	A	A	A	A	A	3.25 L	B	A	A	A	A					
20							A	A	A	A	A	A	A	A	A	A	A	A	A					
21							L	A	A	A	A	A	A	A	3.30 L	A	A	A	A					
22							A	A	A	A	A	S	A	A	3.40 L	3.40 L	A	L						
23							A	A	L	A	A	AS	A	A	U 3.35 L	3.40	L	A	A					
24							A	A	R	A	L	A	S	S	A	A	A	A	A					
25						A	A	A	A	A	A	R	A	L	A	A	A	A						
26							L	A	A	A	A	A	3.40	3.55	U 3.70 L	L	U 3.35 L	L						
27							A	A	A	A	A	A	A	A	L	L	A	A	A					
28								A	A	A	L	R	L	L	S	L	A	L						
29						L	3.50 L	A	A	A	A	A	A	A	A	A	A	A	A					
30								A	L	A	A	A	A	A	3.50	3.40	A	A	A					
31						A	A	A	A	A	A	A	R	A	A	A	L	A	A					
No.							2			2	6	8	7	9	10	11	3							
Median							3.30			3.60	U 3.60	U 3.50	U 3.40	3.40	3.40	3.45	3.45							

M(3000)F1 | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 8

40

IONOSPHERIC DATA

May. 1962 | h'F2 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									z60	z90	350	300	310	320	z90	z55								
2								z55	z40	z60	305	300	300	300	300	z75	z60	z60						
3								z45	z40	z55	z80	325	z90	z90	z90	z85								
4								z40	z55	z60	z90	300	300	z60	A	z65	z50	z50A						
5								z50	z50	z55	z90	300	305	z90	300	z65	z75	z75						
6						C	C	C	C	z90	320	325	z95	z90	z95	z75	300	z80	Ez90A					
7						310	300	310	z50A	A	300A	400	310	305	330	340	A	305						
8							z60	z50	z50	z85	375	350	310	300	300	300	z80	Ez90A	Ez40A					
9							z50	z25	z45	z60	325	330	305	300	300	330	300	E305A						
10									z50A	300	305	325	A	305	305	300	z85	z60						
11								300	z60	305	z95	300	300	E310A	z80A	z80	E300A	A						
12						300		z55	z90A	E310A	360	310	315	345	310	300	300	z75						
13							z50	E405A	A	340	310	300	305	300	A	300	z90	z60						
14							z55	z50A	z90A	E340A	300	E400A	E350A	350A	300	z75	z60	z60						
15							E350A	E315A	A	310A	A	A	325	320	A	E300A	z60	Ez55A						
16							z80	z60A	A	A	A	315	z95	z85	A	305	AS	z95	z85					
17							E305S	E305A	E305A	A	345	A	A	315	320	305	z90	z60A	z60A					
18							z55	z50	z50	345	z80	345	305	325	315	300	z80	z60A	A					
19							z50	z75	z60A	z55	300A	310A	z90A	325	325	320	300A	A	A					
20							A	A	A	E350A	A	A	A	A	A	A	A	A	A					
21							z60	E300A	A	E340A	A	A	A	A	300	300	300A	A	300A					
22							E305A	z80A	A	A	A	A	320A	310A	300	z90	300A	z90						
23							z60	Ez50A	z55	A	A	E340S	A	E370A	305	305	305	300	310A					
24							z60	E350A	300R	300A	310	E350R	S	S	z90	E300A	A	A	E350A					
25						A	z50A	z50A	A	A	A	R	A	325	310A	E300A	A	E300A						
26							z50	A	A	320A	A	310	340	345	305	300	300	z55						
27							z60	z60	A	A	A	A	A	A	300	z90	A	A	A					
28								A	A	z60	405	R	340	z60	310	z90	300	z30						
29						305	300	z60	300A	A	A	A	A	A	A	A	310	A	Ez60A					
30								300A	305	300A	300	310A	305	340	350	300	E340A	A	E305A					
31						250A	z80A	A	z70	A	350A	A	R	A	A	315	300	310A	A					
No.						4	16	19	19	18	21	18	20	23	24	26	22	18	9					
Median						300	z60	z55	z55	z90	305	310	305	305	300	300	E300	z60	E300					

h'F2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 9

IONOSPHERIC DATA

May. 1962 | h'F | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	300	260	255	290	225	240	E250A	I240A	E255A	210	205	220	225	225	225	240	245A	240	215	210	245	340	300
2	300	295	255	250	255	250	240	E250A	I235A	205	205	205	245	210	205	225	225	245	245	215	205	255	250	300
3	300	305	245	210	250	255	225	215	205	200	205	200	E255A	205	200	225	E250A	225	250	240	215	E250A	250	260
4	300	255	250	245	250	245	215	205	205	210	205	205	200	I200A	I210A	225	I230S	I225A	225	210	210	E340A	A	250
5	250	260	280	255A	255	225	210	225	230	205	205	205	250A	245	200	225	245	210	E250A	E250A	240	205	C	C
6	C	C	C	C	C	C	C	C	C	210	225	200	205	205	200	225	250	E250A	A	E250A	225	245	245	300
7	305	305	300	260	305	290	250A	A	A	A	A	200	E250R	E305B	250A	A	A	A	E250A	E250A	250A	310A	265	295
8	260	255	245	245	300	245	245	I240A	I225A	205	200	225	E260B	250A	I255A	250A	245	A	A	E250A	E250A	240A	250A	295
9	300	E290A	300	260	260A	E290A	230	A	A	A	205	E260A	A	205	205	I250A	215	I240A	260A	E250A	240A	E300A	E300A	255
10	255	300	300	300	250	240	245	215	A	E250A	250A	205	I235A	250	210	225	250A	E255A	255A	E250A	260A	E300A	250A	255
11	285	250	250	240	210	205	210	205	I250A	245	225	205	210	I260A	I250A	250A	I245A	I245A	255A	240A	240A	I300A	300A	E345A
12	300	260	250	300	295	245	E250A	A	A	A	250A	I220A	I210S	245	I230A	225	205	215	E250A	E255A	E290A	A	310A	310A
13	300A	295	255	240	240	245	225	A	A	200	210	205	250B	A	A	205	210	I250A	E260A	E250A	E250A	E380A	310A	300A
14	300	300	250	245	250A	245	235	I245A	A	A	A	AS	A	A	A	E260A	210	250A	250A	E260A	I255A	E350A	E350A	E350A
15	350A	E350A	A	E310A	250A	250	A	A	A	A	A	A	E250A	210	I250A	I235A	245	I225A	245	E260A	A	A	255	A
16	A	A	A	A	E310A	E310A	A	A	A	A	A	A	A	A	A	A	I300S	A	A	255	I295A	AS	A	A
17	A	A	A	E305A	305	270	S	A	A	A	E300A	A	A	I210A	E250A	225	245	A	A	I280A	300A	E305A	255	250A
18	290	260	290	250A	240	245	245	245	245	260A	260A	B	R	E300A	E290A	A	A	A	I260A	260A	E310A	E310A	I260A	255
19	290	310	300A	255	225	210	245	E250A	A	A	A	A	A	240	I215B	A	A	A	A	E260A	I255A	E250A	A	A
20	E340A	260	250	250A	345A	E300A	A	A	A	A	A	A	A	A	A	A	A	A	A	E260A	250A	S	A	A
21	240	300A	340A	E400A	300A	245	245	A	A	A	A	A	A	A	260A	A	A	A	A	A	250A	230A	E350A	A
22	E350A	300A	260A	250A	E350A	250	A	A	A	A	A	A	A	A	245	215	I245A	245	250A	E260A	A	A	245	E350A
23	E350A	250A	300	275	260	E250A	A	A	225	A	A	AS	A	A	240	245	250A	A	A	E290A	E260A	E250A	E300A	295
24	290	300	255	250A	290	290	A	A	R	A	E260A	A	S	S	A	A	A	A	A	A	E310A	E350A	A	E305A
25	E300A	E340A	250A	E300A	255	A	A	A	A	A	A	R	A	E250A	A	A	A	A	245A	E250A	E300A	E350A	A	245
26	300A	E350A	260A	245	245	215	215	A	A	A	I230A	I210A	260A	215	210	E250A	250A	E250A	E260A	250A	250A	260A	E350A	A
27	E350A	E355A	E350A	255	250A	250A	I250A	A	A	A	A	A	A	A	260A	205	A	A	A	A	E260A	250A	E310A	300
28	310A	300A	295	290	300A	E300A	245	A	A	A	E310S	I235R	250A	200	E255S	225	A	215	E250A	C	250A	E310A	A	A
29	A	A	A	E350A	255	255	250A	A	A	A	A	A	A	A	A	A	A	A	A	A	E350A	E360A	E350A	E360A
30	I255A	E350A	215	250A	250	250A	250A	A	260A	A	A	A	A	A	245	225	A	A	A	E250A	250A	250A	305	300A
31	305	290	260	245	225	A	A	A	A	A	I260A	I245A	R	A	A	A	E260A	A	A	E290A	240A	A	E350A	E360A
No.	23	22	25	24	28	23	20	8	9	9	15	15	11	16	20	19	18	13	16	26	22	25	15	17
Median	300	295	260	250	255	245	240	220	230	205	210	205	235	210	230	225	245	240	E250	E250	E250	E300	255	295

h'F | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

May. 1962 | h'Es | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	100	S	E	S	S	120	115	105	105	110	155	B	B	G	105	105	100	105	110	105	105	105	S
2	S	S	E	E	E	G	130	110	110	105	B	B	B	G	G	G	B	130	120	110	110	105	S	100
3	100	S	100	100	E	S	120	115	130	125	110	G	110	105	105	100	105	105	120	110	110	105	S	S
4	S	S	E	E	E	S	G	110	110	110	B	B	110	100	100	100	125	110	110	100	100	100	100	100
5	110	100	E	100	100	100	120	110	110	G	105	100	100	100	100	105	110	125	105	105	105	100	C	C
6	C	C	C	C	C	C	C	C	C	105	G	G	100	100	G	155	130	120	100	100	100	100	S	S
7	E	S	E	E	E	145	125	105	105	105	105	115	G	B	155	130	115	115	110	105	105	105	100	S
8	S	S	E	100	E	115	115	105	105	105	105	105	B	155	145	140	115	115	110	110	105	100	100	110
9	100	100	110	100	110	110	110	105	105	105	105	100	100	B	150	120	110	110	105	105	105	100	105	S
10	110	105	100	100	E	115	110	105	105	105	105	G	100	150	G	125	G	120	105	105	100	100	100	S
11	S	E	E	E	E	G	G	G	105	100	110	110	140	110	125	155	125	115	105	105	105	105	100	105
12	100	S	110	100	E	115	115	110	105	105	115	125	110	110	105	G	G	120	105	105	105	100	100	100
13	100	105	100	100	100	105	115	105	105	110	105	105	B	110	105	B	G	110	105	105	105	105	105	105
14	100	100	E	100	100	G	110	110	105	105	105	105	115	110	110	110	110	110	120	110	105	105	100	100
15	100	100	100	100	100	120	110	105	100	100	100	100	105	105	100	100	G	105	105	105	105	105	105	100
16	100	100	100	100	100	100	110	105	105	100	100	105	105	110	105	115	110	105	105	105	105	105	105	105
17	100	105	105	105	100	120	110	110	110	100	100	100	100	100	125	G	110	110	105	100	110	105	100	100
18	100	100	100	100	100	S	145	110	110	105	105	B	105	105	105	115	110	105	105	105	105	105	105	100
19	100	100	100	100	E	G	120	105	105	100	100	100	100	100	B	110	110	105	100	100	100	100	100	100
20	100	100	100	100	100	110	115	105	105	105	100	100	100	100	100	105	105	105	105	100	100	100	100	100
21	100	100	100	100	100	G	125	105	100	100	100	100	100	100	110	110	105	100	100	100	100	100	105	100
22	100	100	100	100	100	115	100	105	105	100	100	100	100	100	100	B	105	110	110	105	105	100	100	100
23	100	100	100	100	100	115	110	105	105	100	100	105	100	100	100	100	105	110	110	105	105	100	100	100
24	100	105	105	100	100	120	110	105	105	105	100	105	S	S	100	125	115	110	110	110	110	100	100	100
25	100	100	100	100	125	110	110	110	100	100	100	100	100	105	100	100	100	100	100	100	105	100	100	100
26	100	100	100	100	100	S	105	100	100	100	100	100	100	100	100	110	105	100	100	105	100	100	105	105
27	100	100	100	100	100	100	115	105	105	105	105	100	100	105	105	130	105	100	100	100	100	100	100	100
28	100	100	100	100	110	110	120	105	105	105	105	105	110	105	105	105	105	105	100	C	100	100	100	100
29	100	100	100	100	100	110	110	110	105	105	100	100	100	100	100	100	100	100	100	100	100	105	100	100
30	100	100	100	100	100	100	100	100	105	100	105	100	100	100	100	145	110	105	105	105	100	100	100	100
31	100	105	100	100	110	105	100	100	100	100	105	100	100	100	105	120	105	100	100	105	105	100	100	100
No.	25	23	22	25	20	20	28	29	30	30	28	25	25	26	26	26	26	31	31	30	31	31	27	24
Median	100	100	100	100	100	110	110	105	105	105	105	100	100	100	105	110	110	110	105	105	105	100	100	100

h'Es

Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 11

IONOSPHERIC DATA

May. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	f					Cz	C	l	C	C	h				l	l	lz	l	f	f	f	f3	
2							h	C	Cz	l								h	l	f	fz	fz		fz
3	fz		f	f			C	Cz	h	h	C		l	l	C	l	lz	l	l	fz	f	f3		
4								l	C	C			l	lz	l3	lz	h	l	lz	f3	f3	f3	f3	f3
5	f	f		fz	f	l	C	C	C		C	l	lz	l	lz	l	l	h	lz	f4	fz	f		
6										C			lz	lz		h	h	Cz	l3	f3	f3	f3		
7						h	C	Cz	Cz	lz	C	C			h	hz	Cz	C4	l3	f3	f3	f3	f	
8				fz		l	C	l	C	l	C	l		h	hz	h	C	Cz	l3	f3	f3	f4	fz	fz
9	fz	f3	fzfz	f	f4	l3	C	Cz	Cz	C	l	lz	lz		h	hz	Cz	l3	l3	f3	f3	f3	fz	
10	f	fz	fz	fz		l	lz	Cz	Cz	l	l		lz	h		h		C	lz	f3	f3	f3	fz	
11									C	l	C	C	h	Cz	h	h	hz	Cz	lz	fz	f3	f3	f3	fz
12	fz		f	fz		C	C	Cz	Cz	l	l	h	l	C	l			C	lz	fz	f3	f4	f3	f3
13	f3	fz	fz	f3	f3	lz	C	Cz	Cz	C	C	l		lz	lz			C	lz	fz	f4	f3	f4	f3
14	fz	fz		fz	fz		C	C	C	Cz	lz	C	C	lz	l	C	l	l	lz	f	f4	f3	f4	f4
15	f3	f3	f3	f3	fz	l	Cz	l3	Cz	l	l3	l3	l	l	lz	lz		lz	l	f3	f4	f3	f2	f3
16	f3	f3	f3	f3	f3	lz	C	Cz	C3	lz	l	l	l	l	lz	ll	l	lz	l3	f3	fz	f3	f4	f4
17	f3	f3	f4	f3	fz	l	l	l	l	lz	l	l	lz	l	h		C	l	lz	f3	f3	f4	fz	fz
18	fz	fz	fz	fz	f		h	C	C	l	l		l	l	C	C	l	C	lz	fz	f3	f3	f3	fz
19	f3	fz	f3	fz			C	l	l2	l	l	l	l	l		C2	C3	Cz	lz	f3	f3	f3	fz	f4
20	f3	fz	fz	f3	f3	lz	C3	l3	C3	l	l2	l2	lz	lz	lz	lz	lz	C3	l3	f3	fz	f3	f3	f4
21	fz	f3	f4	f3	f3		h	l3	lz	l	l	l	lz	lz	C	C	lz	l3	l	f3	f3	f3	f3	f3
22	f3	f3	f3	f3	f3	l	l3	l3	l4	C3	l2	l2	l	l	l		lz	lz	l	fz	f3	fz	fz	f3
23	f3	fz	fz	f3	fz	C	lz	l3	C	l	l	l	lz	lz	l	l	lh	Cz	l3	f3	f3	fz	f3	fz
24	fz	fz	f	fz	f3	C	l	l3	l	l	l	l			lz	h	lz	lz	l3	fz	f	f3	f3	f3
25	f3	f3	f3	f3	ffz	lz	Cz	Cz	Cz	lz	lz	l	lz	l	l	lz	lz	lz	lz	f3	f3	f3	f3	fz
26	f3	f3	fz	fz	f		l	lz	l	lz	lz	l	l	l	l	llz	llz	lz	lz	fz	fz	f3	f3	f3
27	f3	f3	fz	fz	fz	l	C	lz	lz	lz	l	lz	l3	lz	l	h	lz	l3	l3	f4	f3	fz	f3	fz
28	f3	f3	fz	fz	f3	Cz	C	l3	l3	C	l	l	l	l	l	C	l	l	lz		f3	f3	f4	f3
29	f3	f3	f3	f3	fz	Cz	C	l	lz	lz	lz	lz	l3	lz	l3	lz	lz	l3	l3	f4	f3	f3	f3	f4
30	f3	f4	fz	f3	fz	lz	lz	C3	C	lz	lz	lz	l	lz	l	Al	Czl	C3	l3	f3	f3	f3	f3	f3
31	f3	fz	fz	fz	f	l3	C3	l3	lz	l	l	l	l	lz	lz	C2	lz	l3	l4	f3	f3	f3	fz	
No.																								
Median																								

Types of Es

Sweep 10 Mc to 200 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 12

IONOSPHERIC DATA

May. 1962 | ypF2 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	130R	100R	U145R	100	95	U 55R	50	45	35	95	55	T 85R	90	95R	90R	T 90R	80	60	100	55R	70	T 135R	120	I100S
2	115	T100S	65	95	95	T 95R	85	55	55	100	U 70R	95	U100R	I 95R	70	T 90R	95	85	U 95S	U 55S	T 50S	135	I120S	55
3	100	100	60	T 70R	95	135	50	95	50	50	90	95	50	T 85R	95	90R	T 55R	105	105	U 50S	I 60S	I 80S	95	90
4	U 80S	65	95	105	65	95	50	55	65	60	140	I 90R	65	90	I 80A	60	50	T 50R	60	50S	90	A	A	90S
5	T 70R	105	U100S	U 95S	U100R	100	55	T 70S	50	90	85	80	65	T 70R	110R	90	60	85	T 85S	T 55R	60	55	C	C
6	C	C	C	C	C	C	C	C	C	90	140	95	80	95	90	110	105	100	90	60	T 65R	I 65R	U135R	140
7	110	T 90R	105	T100R	105S	U105S	95	85	R	A	R	100	80R	90	90	A	A	A	50	90	125	100	95	140
8	130	T 95R	95R	100	145	90	50	55	100	95	70	T110R	60R	T 85R	85	125	85	95	A	T 90R	50	95	T 95R	90
9	U 90R	I130S	95	95	T 80R	60	T 70R	50S	60	105	55R	60R	90	U 85R	I 70R	T 60S	T 90R	90	55	65	80	120	A	90
10	T 90R	U110S	100	90	85	60	90	U 50S	30	90	75	65	I 70A	85	85	T 80R	90	80R	90R	T 90R	115	T 55R	70	I 90S
11	95	90	90	135	100	T 95R	85	U 80S	55	T 70R	95	100	90	A	T 60R	65	80	I 80A	95	U 95S	T 55R	I100A	75	T100R
12	135	95	95	110	105	T100R	65	60	100	90R	80	80	55	I100R	80	70	85	85S	T135R	U 70S	U 85S	I100A	T100S	T 90S
13	95	95	115	95	95	U 95S	75	A	A	55	75R	T100R	70R	I100R	I100A	T 75R	T115R	95	T100R	I 70R	70	A	T 95S	T120S
14	105	T105R	T105S	95	145	145	55	60	100	105	90	R	I 80R	50R	T 80R	90	90	90	100	T 90R	I125A	T 65S	105	S
15	S	140	A	A	U105S	95	A	90	I 95A	A	I 90A	I105A	75	60	I 60A	85	50	50	100	U 85R	I110A	I 95A	T 60R	A
16	A	A	A	A	110R	105	105	U 65S	A	A	A	85	100	100	I 90A	80R	I 80AS	70S	90	I 95S	I 90AS	I 80AS	I 65A	A
17	A	A	A	95	90	100	100	100	90	I 80A	95R	A	A	U 90R	75R	75	90R	95	55	I125A	90S	I 70S	U 60S	95
18	145	T 90R	140	145	150	90	55	T 70R	T 50R	95	100	R	95	T 65R	I 90R	90	140	T 95R	I 65A	I125A	I100R	U 95R	I 90A	I130R
19	55	110	U140S	120	140	105	70	45	55	I 40R	U 90R	R	R	100	55R	100	85R	A	I135A	T 80R	I 70A	U 65R	A	A
20	U 95R	100R	95	I 85F	U100S	105	A	A	A	A	A	A	A	A	A	A	A	A	A	T 50S	90	S	A	A
21	110R	145	140	U140F	115	90	90	55	A	A	A	A	A	A	T100R	T 85S	125	I 80A	T 95R	I100A	T 95R	U 70S	A	A
22	U105S	I100R	75	U 95R	T100R	100R	U125R	95	A	A	A	S	110	100	I 70R	T 85R	T145R	T105R	85R	90	A	A	U 50R	90
23	A	I100R	T110R	T100R	100R	95	105	60	T 55R	A	A	R	A	A	T 65S	U 75R	100	U 80R	90R	I 90S	90	R	S	T100S
24	65	75	95	T140S	100	140	90	T 95R	95	I 60R	75	R	S	S	T 90A	U 60S	I 50A	A	A	I 85A	I 60S	T 95S	A	S
25	S	S	U130S	U 65F	50	I 70A	40S	55	A	A	A	R	A	R	R	90	A	S	I 60R	T 95S	I 65S	A	I 75A	100
26	U 95S	105SI	100S	I 75SF	105	75	T 50R	A	A	U 65R	A	70	55R	150R	T 65R	T105R	80	55	90	100	85	100	R	A
27	A	U100SI	120S	145	85R	90	90	A	A	A	A	A	A	A	T100R	T 95R	A	A	A	A	90	I 95S	95	75S
28	U100S	95	U130R	T 90S	U 55S	85	65	A	A	60	G	R	T 95R	50	105S	T120R	C	C	S	C	T 55S	S	A	A
29	A	A	A	S	55	150	90	65	90	A	A	A	A	A	A	A	100	I 90A	95	A	A	105	F	A
30	A	85	95	100	U155R	55	145	100	55	75	R	A	80	I 80R	90	70	R	A	T 80R	55	I 60R	110	130	T105R
31	95	95	T105S	T 55R	145	80	90	I 80A	90	A	145	I120A	R	A	A	R	75	T100R	I105A	50	T 80S	I135A	U 70S	I 80S
No.	22	26	26	27	30	30	28	25	20	20	19	17	21	22	27	27	25	23	26	28	29	24	20	20
Median	100	100	100	95	100	95	80	65	60	85	90	95	80	90	85	85	85	85	90	85	80	U 95	95	90

ypF2

Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 14

IONOSPHERIC DATA

May. 1962 | foF2 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	360R	350R	u350R	350	350	u300R	250	280	285	300	350	J305R	350	350R	305R	J300R	300	290	300	295R	270	J310R	370	I365S
2	375	J355S	350	350	355	J300R	265	290	250	305	u330R	305	u305R	I310R	320	J305R	300	310	u290S	u295S	J250S	360	I375S	390
3	390	390	300	J280R	350	310	250	255	250	260	300	350	300	J305R	310	305R	J295R	300	305	u295S	I295S	I305S	350	360
4	u375S	350	310	340	340	300	250	250	285	290	310	I330R	330	305	I320A	305	295	J295R	290	255S	260	A	A	310S
5	J340R	340	u350S	u350S	u345R	290	250	J260S	255	265	305	320	340	J310R	330R	305	305	305	J305S	J295R	280	255	C	C
6	C	C	C	C	C	C	C	C	C	300	350	355	325	310	310	310	340	305	305	290	J285R	I300R	u310R	355
7	390	J400R	390	J350R	400S	u350S	305	350	R	A	R	400	320R	310	350	A	A	A	300	300	320	395	360	355
8	360	J350R	300R	300	350	300	300	255	250	300	380	J355R	345R	J305R	305	320	305	305	A	J300R	300	300	J350R	360
9	u355R	I370S	350	350	J325R	340	J280R	250S	250	295	340R	350R	310	u305R	I325R	J345S	J310R	305	300	265	260	325	A	360
10	J355R	u390S	350	360	320	300	255	u245S	250	300	305	340	L340A	315	310	J310R	305	300R	305R	J300R	330	J350R	340	I350S
11	355	305	310	310	305	J300R	305	u305S	300	J330R	310	345	320	A	J300R	300	305	I320A	310	u300S	J295R	I325A	330	J345R
12	360	350	310	385	390	J355R	300	290	300	360R	360	315	345	I350R	330	330	310	305S	J310R	u270S	u305S	I350A	J390S	J355S
13	350	350	330	300	300	u300S	280	A	A	350	340R	J345R	335R	L340R	I345A	J335R	J330R	310	J345R	I300R	280	A	J355S	J380S
14	390	J390R	J345S	305	355	300	300	290	305	345	300	R	I370R	350R	J315R	300	300	300	305	J305R	I320A	J385S	390	S
15	S	355	A	A	u340S	305	A	315	I300A	A	I315A	I340A	330	345	I350A	305	300	300	295	u260R	I335A	I320A	J345R	A
16	A	A	A	A	390R	340	305	u290S	A	A	A	345	315	300	I315A	325R	I315AS	305S	310	I300S	I330AS	I330AS	I355A	A
17	A	A	A	355	375	300	335	325	305	I300A	350R	A	A	u315R	330R	320	305R	300	295	I340A	355S	I345S	u305S	310
18	350	J355R	355	350	345	300	290	J285R	J260R	350	300	R	350	J325R	I340R	310	305	J300R	I320A	I320R	I320R	u350A	I330A	I345R
19	345	385	u355S	325	305	290	275	300	295	I280R	u310R	R	R	345	350R	345	315R	A	I345A	J310R	I300A	u290R	A	A
20	u355R	350R	310	I320F	u395S	350	A	A	A	A	A	A	A	A	A	A	A	A	A	J300S	310	S	A	A
21	340R	350	355	u405F	385	300	300	300	A	A	A	A	A	A	J345R	J310S	320	I345A	J350R	I325A	J305R	u285S	A	A
22	u390S	I365R	340	u300R	J355R	300R	u320R	300	A	A	A	S	390	355	I340R	J305R	J300R	J340R	305R	315	A	A	u295R	355
23	A	I350R	J390R	J355R	350R	350	340	290	J300R	A	A	R	A	A	J340S	u315R	345	u315R	350R	I330S	305	R	S	J355S
24	390	380	350	J305S	340	355	300	J355R	305	I300R	340	R	S	S	J305A	u300S	I305A	I300A	A	I360A	I385S	J350S	A	S
25	S	S	u315S	u340F	345	I300A	270S	255	A	A	A	R	A	R	R	305	A	S	I300R	J300S	I340S	A	I330A	305
26	u355S	390S	I340S	I305SF	300	280	J255R	A	A	u340R	A	320	340R	350R	J330R	J340R	320	300	300	305	305	305	R	A
27	A	u395S	I375S	350	320R	300	300	A	A	A	A	A	A	A	J345R	J300R	A	A	A	A	305	I320S	350	380S
28	u390S	350	u365R	J355S	u340S	305	280	A	A	290	G	R	J350R	300	340S	J325R	C	C	S	C	J300S	S	A	A
29	A	A	A	S	345	350	310	290	315	A	A	A	A	A	A	A	345	I300A	300	A	A	395	F	A
30	A	360	295	300	u340R	295	350	345	350	330	R	A	325	I355R	355	330	R	A	J320R	290	I290R	390	365	J345R
31	355	350	J390S	J295R	305	280	300	I290A	300	A	355	I355A	R	A	A	R	330	J345R	I380A	345	J265S	I340A	u385SI	J370S
No.	22	26	26	27	30	30	28	25	20	20	19	17	21	22	27	27	25	24	26	28	29	24	20	20
Median	360	355	350	340	345	300	300	290	300	300	330	345	335	315	330	310	305	305	305	300	305	325	350	355

foF2

Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 13

IONOSPHERIC DATA

May. 1962 | foF2 | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	S	7.1C	7.3S	8.2	9.6S	10.5	11.2	11.3S	10.9	9.6S	9.3S	8.8S	6.6S	4.8S	S	S
2	S	4.4	4.2	4.0	3.7S	3.7	5.5	6.7S	7.3S	6.7	8.1S	9.5C	9.3S	9.7S	10.6	10.9	10.7	10.5S	10.9S	10.8	7.9S	5.8	5.9S	S
3	S	S	6.0S	5.1S	4.5S	4.3S	6.2S	6.7S	6.6	7.3S	6.1S	6.9	9.3S	10.5	10.4S	11.6	12.4S	10.8S	11.1S	10.5S	8.9C	7.3S	6.4S	5.7S
4	5.3S	5.1S	4.8C	4.5	4.2S	4.3C	6.1S	7.8S	7.0S	6.6	7.2	8.4	10.1	12.0	12.5	12.8	13.4	11.6	10.3	10.0	8.2S	7.0S	5.7	S
5	S	S	S	S	S	S	6.4S	8.1	7.4S	7.0	7.2	8.3S	9.9S	10.6	10.9	11.2S	11.0	10.0S	9.6S	9.8A	10.4S	7.3S	5.5S	S
6	S	S	4.8S	5.0	5.4	4.6S	5.7	6.4S	5.5	6.4	6.7	8.5	10.2S	10.6	9.9S	10.6	11.0	A	A	11.3	9.6S	S	S	S
7	5.6	5.6S	5.3S	4.8S	4.4	5.1	S	4.6	A	A	A	6.6	8.1	7.9	7.3S	8.3	9.1	8.6S	8.7	A	A	6.0S	5.8S	5.7A
8	S	S	5.9	5.6S	S	F5	S	8.2	6.0	6.2A	6.9A	8.2S	10.1	9.9S	9.7S	10.4	9.8S	8.5	8.6	10.0S	S	A	S	S
9	S	A	3.9S	3.7	3.7	3.6	6.8S	6.9S	6.0	6.0A	6.5	7.9A	9.1	10.2S	10.0S	10.3S	11.1	11.7S	11.4	10.7	S	S	5.7	C
10	C	C	C	C	C	C	C	C	C	A	6.8	8.0	9.5	10.7S	11.4S	11.3S	11.3S	11.0	10.6	9.8S	8.8S	7.3S	7.8S	S
11	S	S	8.7S	8.4S	6.0	5.6	6.3	8.2S	7.8H	8.4	8.2	9.3S	9.7	9.8	9.6	10.2S	10.5	10.0S	10.0S	10.6S	9.8S	6.8S	S	S
12	S	5.8S	5.7S	5.2	4.8S	4.6	6.9S	8.3S	5.8	6.0	7.0	7.8	8.4	9.5S	9.6S	9.9	9.9	9.9S	9.8S	10.0S	7.8S	6.2S	6.3S	6.4S
13	6.4S	6.3S	6.8S	7.4S	5.0S	4.0	5.3	5.8	6.9	7.8	8.6	8.2A	8.0A	9.5A	10.1S	10.5	10.6	10.1S	11.0	11.7	8.4S	5.8A	A	A
14	S	S	S	5.7	3.6S	3.6S	5.3	7.2S	6.8	6.9	7.4S	8.1	9.4	11.0	11.3S	10.7	9.4A	8.8A	8.6	7.8S	A	S	S	5.9S
15	6.2S	5.9	6.5S	5.6	5.5S	4.6	5.6	6.4	7.1	7.1	7.6A	7.9	9.1	10.3	11.8	11.8S	10.9C	9.9SH	9.0S	7.0S	S	S	S	S
16	S	A	A	S	4.7S	4.8S	5.9	7.1H	6.2	6.3A	7.8A	9.4	9.5	9.6	9.4	9.2	9.0	8.7	9.3S	9.9S	8.6	S	S	A
17	A	A	A	S	S	5.4S	6.2S	7.7S	8.5	A	A	7.8	8.8	8.5	8.4	9.2	9.3C	9.1	A	S	S	S	A	S
18	S	S	6.1S	5.6A	5.5S	5.7	6.4	7.2	6.9	6.7	6.8	7.3S	8.3	9.2	9.1	8.5	8.2	7.7S	7.6A	8.3S	S	S	S	S
19	S	S	S	F	F	F	5.7	7.0	8.2	7.3A	A	A	9.2	9.8S	10.1S	10.0S	10.1S	A	A	A	A	A	S	A
20	S	A	S	S	S	S	6.7S	7.0	6.6	6.3	6.9	7.9A	8.1	7.9	8.2	A	A	A	8.7	9.0S	8.6	6.6S	5.8S	A
21	A	A	S	S	S	4.4	5.9	6.4	A	A	A	A	7.7	8.7	9.2	9.5S	9.5S	9.6S	9.3S	8.8	8.2S	6.9S	5.7A	A
22	S	A	A	F5	F5	4.9	5.7	6.8SH	7.1	7.3	7.0	7.2	8.3	10.0S	11.1	11.1	10.8	10.7	9.6S	9.0	8.6S	6.7	5.8	S
23	S	S	S	S	S	5.6	7.1S	8.4C	8.5	6.9C	7.0C	7.7C	8.9	9.2A	9.0	9.4S	9.8S	9.6S	9.8S	9.5S	8.9S	7.8S	7.7S	S
24	A	S	S	5.6	S	S	5.7S	6.6	7.9S	8.1	8.0S	8.1S	9.1	9.4S	10.1	8.9	7.7S	6.8	7.4S	8.2S	8.6S	8.3S	S	S
25	S	S	S	S	F5	6.6S	6.9S	6.0	6.4A	6.9	7.3	8.4	8.8	9.2	10.2	11.2A	10.6	9.6S	8.5	7.6S	S	S	S	S
26	S	S	S	5.2S	4.1S	3.7S	5.1S	5.9	6.4S	6.2A	7.1	7.5	8.4	9.4	9.9	10.1S	10.5	9.2	8.6SH	8.0S	7.2S	S	S	S
27	A	S	F5	S	S	S	A	A	A	5.8	6.0	7.0	8.0	7.9	8.6	9.2	9.0	9.0	9.7S	10.3S	9.4S	8.5S	7.4S	6.6S
28	6.7S	6.7S	6.6	6.7S	6.8S	6.8S	6.9S	6.5	7.3A	7.7A	7.8A	8.4	9.8	10.2	10.4	11.0A	11.0S	10.5S	9.2S	9.3S	8.4	6.9S	S	S
29	A	S	S	F5	F5	S	5.8	7.4S	5.9	A	A	A	A	8.9	9.1A	9.4S	9.7S	10.1S	9.7S	7.4S	6.4A	5.8A	S	S
30	S	A	A	F5	A	3.7S	5.1	6.6S	8.3F	8.3	8.6F	8.2	7.9	8.1R	8.5	8.7	9.8S	10.7	10.5S	9.6A	S	A	S	S
31	S	S	S	6.1S	4.8	4.6S	5.4	6.4	A	6.7	7.7S	7.7S	7.8S	8.7A	9.7S	10.3	10.0S	8.6	8.4	9.9S	9.8S	8.5S	9.1	S
No.	5	7	13	17	16	22	26	28	25	26	26	28	30	31	31	30	30	28	28	28	21	19	14	5
Median	6.2	5.8	5.9	5.6	4.8	4.6	5.9	6.8	6.9	6.9	7.2	8.0	9.1	9.6	9.9	10.3	10.3	9.8	9.4	9.7	8.6	6.9	5.8	5.9
U.Q	6.6	6.3	6.6	5.9	5.4	5.4	6.4	7.6	7.6	7.3	7.8	8.4	9.5	10.3	10.6	11.1	10.9	10.5	10.2	10.2	9.2	7.8	7.4	6.5
L.Q	5.4	5.1	4.8	4.9	4.2	4.0	5.6	6.4	6.3	6.3	6.9	7.7	8.3	8.9	9.1	9.4	9.5	8.9	8.6	8.6	8.0	6.0	5.7	5.7
Q.R	1.2	1.2	1.8	1.0	1.2	1.4	0.8	1.2	1.3	1.0	0.9	0.7	1.2	1.4	1.5	1.7	1.4	1.6	1.6	1.6	1.2	1.8	1.7	0.8

foF2

Sweep 1.0 Mc to 20.0 Mc in 30 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 1

IONOSPHERIC DATA

May. 1962 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	A	C	A	L	5.0	$^{L}4.8^{C}$	4.8	4.6	L	L						
2										L	4.9^{L}	$^{I}4.8^{C}$	L	L	4.8	$^{I}4.7^{L}$	$^{I}4.5^{L}$	L						
3										L	L	L	L	5.0	$^{I}4.9^{CH}$	4.7	B	L						
4									L	L	A	L	5.0	4.8	4.7	4.6	4.3	L						
5									L	L	L	L	4.7	4.7	$^{I}4.8^{A}$	4.6	L	A						
6										L	$^{I}4.6^{L}$	5.0	4.8	4.9	$^{I}4.9^{L}$	A	A	A						
7									A	A	A	4.7	4.7	4.7	5.0^{R}	$^{I}4.7^{A}$	4.5	A						
8										A	A	$^{I}4.9^{A}$	4.9	4.9	$^{I}5.0^{A}$	4.7	A	A						
9										A	A	A	A	4.9	4.9	A	A	A						
10							C	C	C	A	L	5.0	5.0	A	A	A	A	A						
11										A	5.1 L	A	A	A	A	4.8^{H}	4.6	4.3						
12											A	5.0	5.3	5.0	$^{I}5.0^{A}$	4.7	$^{I}4.6^{A}$	L						
13									L	A	4.8	A	A	A	5.0^{H}	4.9	$^{I}4.6^{A}$	A						
14									L	L	A	A	A	A	4.9	A	A	A						
15								A	A	A	A	5.2	$^{I}5.0^{A}$	4.8	A	A	A							
16										A	A	4.7	$^{I}5.0^{R}$	A	A	A	A	A	A					
17								A	A	A	A	A	A	4.9^{R}	$^{I}5.0^{A}$	$^{I}4.7^{A}$	C	A	A					
18									A	$^{I}4.9^{A}$	R	A	A	5.1	$^{I}4.9^{A}$	4.8	A	A	A					
19										A	A	A	A	A	A	A	A	A	A					
20									A	A	A	A	A	A	A	A	A	A	A					
21									A	A	A	A	A	5.0	4.9	4.8	4.7	4.4	L					
22									4.6^{L}	A	L	5.3	5.1	4.8	4.8^{H}	C	A	A	A					
23									A	A	A	A	L	A	A	4.8	4.7	A	A					
24								L	A	A	L	5.0	5.0^{LH}	5.0	4.8	4.8^{H}	4.6^{L}	L	A					
25									A	4.7	A	5.0	A	A	A	A	A	4.2	L					
26									L	A	4.8	$^{I}5.0^{A}$	5.2	$^{I}4.9^{A}$	4.8	4.7^{H}	4.5	4.1						
27									A	A	A	A	A	A	A	A	A	A	A					
28									A	A	A	A	A	$^{I}4.9^{A}$	A	A	A	A	A					
29							L	A	A	A	A	A	A	4.8^{R}	A	A	4.5	$^{I}4.1^{A}$	A					
30								L	A	A	A	A	5.2	A	A	A	A	A	A					
31								A	A	5.0^{L}	$^{I}4.8^{A}$	$^{I}5.0^{A}$	4.8	A	A	4.7^{H}	4.5	A	A					
No.									1	3	6	13	15	18	18	17	12	5						
Median									4.6	4.9	4.8	5.0	5.0	4.9	4.9	4.7	4.6	4.2						

foF1

Sweep 1.0 Mc to 20.0 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 2

IONOSPHERIC DATA

May, 1962 | foE | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	2.90	I 3.20 C	3.40	B	R	R	R	R	B	2.80	2.40					
2							1.60	2.40	2.90	3.15	I 3.25 S	C	R	R	R	3.20 R	3.10	2.70	2.05					
3							R	2.50 H	2.90	I 3.25 R	C	R	B	R	R	R	B	2.60	2.20 H					
4							B	2.40	2.90	3.20	3.20	R	A	A	A	A	A	2.65	2.20					
5							S	2.50	2.80	3.10	3.40	A	A	A	A	A	3.20	2.70	2.10					
6							S	2.50	2.90	3.20	3.30	A	A	A	A	A	3.20	2.70	2.10					
7							S	2.40	2.80	3.00	3.10	A	R	A	3.60	3.30	3.10	2.80	2.20					
8							1.90	2.40	2.80	3.20	3.20 S	R	R	R	I 3.50 R	I 3.40 R	3.15	2.70	2.20					
9							2.00	2.50	3.00	3.10	3.25	R	R	R	I 3.50 R	I 3.35 R	3.15	2.70 H	2.20					
10							C	C	C	3.00	3.10	A	A	A	A	R	3.20 R	2.70	2.20 H					
11							A	I 2.60 A	2.90	A	A	A	A	R	R	R	3.20	2.80 H	2.20					
12							1.90	2.40	2.90	3.10	R	A	A	A	A	R	3.20	2.80	2.20					
13							B	2.65	3.10	3.20	3.20	R	R	R	I 3.50 R	3.40 R	3.20	2.80	2.20					
14							1.90	2.50	2.90	3.20	3.20	R	R	R	3.50 R	I 3.40 R	3.05	2.60	2.25					
15							2.10	2.60 H	3.00	3.25	3.40 R	B	B	R	R	R	A	I 2.90 A	2.30					
16							S	2.60 H	3.00	3.30	R	R	R	B	R	R	R	2.85	2.20					
17							1.95	2.50	A	A	A	A	A	A	R	R	I 3.20 C	2.75	2.10					
18							2.00	2.60	3.00	3.30 R	I 3.45 R	3.60	R	A	A	A	3.30 R	2.90	2.20					
19							1.95	2.50	3.05	3.30	3.40	B	R	R	A	A	3.40 H	2.80 H	2.35					
20							S	2.50	3.05	I 3.50 A	I 3.50 A	A	A	R	R	R	3.35	2.95	2.40					
21							A	A	3.20	3.40	3.45	B	B	B	A	A	3.15	2.90	2.30					
22							A	A	3.10	A	A	A	A	R	R	C	A	A	A					
23							2.10	2.70	3.10	C	C	C	3.70	3.40	I 3.35 A	3.40 R	3.35 R	2.90	2.35					
24							2.00	2.60	3.00	3.30	I 3.45 R	3.80	B	R	R	R	3.30	2.80	2.20					
25							2.00	2.60	3.00	3.20 R	3.35	3.35	3.40	A	A	A	A	A	A					
26							A	2.80	3.05	3.30	3.30	I 3.35 R	A	A	A	3.55	I 3.25 A	I 2.90 A	A					
27							A	A	A	3.40 R	I 3.60 A	3.60	R	R	R	R	3.20	A	A					
28							2.10	2.65	3.10	3.25	3.40	3.45	R	R	A	A	A	A	A					
29							1.95	2.55	3.05	3.15	3.30	3.50	3.40	R	A	A	A	A	2.30					
30							A	A	I 3.15 A	I 3.35 A	3.40	A	A	B	R	3.50 R	A	A	A					
31							1.90	2.60	2.95	3.10	3.30	3.35	A	A	3.60	3.50 R	3.15	2.70	2.20					
No.							15	25	28	27	24	8	3	1	7	10	21	25	25					
Median							1.95	2.50	3.00	3.20	3.30	3.50	3.40	3.40	U 3.50	3.40	3.20	2.80	2.20					

foE

Sweep 1.0 Mc to 20.0 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 3

IONOSPHERIC DATA

May. 1962 | foEs | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	4.3	C	↓5.4	4.3	4.1	3.8	4.2	3.2^{G}	B	G	2.7	4.5	↓3.1	↓2.6	3.1^{M}	↓2.3
2	↓2.6	↓3.7	S	E	E	↓2.3	3.3	3.5	↓5.2	↓5.4	4.8	C	G	G	G	G	G	3.4	↓5.1	2.0	↓2.6	↓2.6	1.8	S
3	S	E	E	↓3.1	↓2.6	↓3.0	2.1	3.2	3.6	3.7	5.2	3.9	B	G	G	G	B	G	2.5	2.1	↓3.9	↓3.8	↓1.9^{S}	S
4	S	S	S	E	E	S	B	G	3.1	5.5	↓5.1	3.8	4.1	↓5.1	4.6	4.7	3.5	3.1	2.5	S	1.8	↓5.5	5.0	↓5.1
5	↓5.3	↓5.3	2.9	2.8	↓2.7	↓2.3	2.9	3.3	3.8	↓4.3	3.8	3.6	4.0	4.3	↓8.1	↓5.3	4.0	5.0	↓6.6	11.4	↓5.2	3.1	S	↓3.9
6	S	S	E	E	E	S	2.0	3.1	3.7	4.0	3.8	4.1	4.0	3.8	4.4	5.3	↓7.7	↓12.8	16.0^{M}	↓10.3	D11.5^{S}	↓8.6	5.7	↓2.5
7	S	S	S	E	E	2.9	2.4	3.1	6.2	↓10.1	6.1^{M}	4.5	4.5	3.6	4.4	↓5.7	4.4	7.2	8.0	8.1	6.8	↓5.0	↓5.4	↓6.2
8	↓4.2	↓5.3	↓5.6	↓5.4	↓4.3	5.3^{M}	↓4.7	↓7.5	↓5.4	12.7	8.2	↓9.2	G	↓5.4	5.8	4.4	6.5	5.2	5.8	↓4.4	5.8^{M}	↓8.5	↓5.3	↓5.2
9	↓5.3	6.0^{M}	3.2	↓3.8	↓2.7	↓2.1	2.3	↓5.3	4.6	↓8.4	↓5.8	8.9	↓6.5	4.8	4.2	4.9	↓5.5	↓4.8	↓8.7	6.3^{M}	D9.2^{M}	6.0^{M}	3.6^{M}	C
10	C	C	C	C	C	C	C	C	C	7.1	↓5.1	5.3	4.5	↓9.8	7.3	↓5.6	↓5.5	↓5.7	↓9.7	↓4.8	↓3.7	4.3	↓5.0	3.8
11	↓2.3	S	S	1.5	1.3	↓2.2	↓3.8	2.9	3.9	4.3	4.8	6.0	↓5.7	↓7.7	↓7.2	G	4.0	3.9	↓4.9	↓3.7	↓8.5	6.9^{M}	↓5.3	S
12	↓3.9	↓2.6	↓2.9	E	↓2.4	S	2.7	↓5.1	6.4	↓5.0	↓7.0	4.3	↓5.0	↓5.4	↓6.2	G	5.0	3.7	6.0	3.0	↓3.6	↓5.3	5.1	↓5.1
13	↓3.8	↓3.7	↓3.7	↓2.6	E	S	2.3	3.1	4.0	↓5.9	4.7	10.5	↓12.6	↓12.7	3.7	4.9	↓5.0	4.6	↓4.9	↓5.4	8.8^{M}	6.0^{M}	6.0^{M}	5.9
14	4.3	2.2	↓2.5	3.2	↓2.4	S	2.9	3.6	4.1	5.1	↓7.2	↓7.5	↓6.1	↓8.6	D14.3^{S}	↓8.6	↓10.5	↓14.4	↓3.6	↓3.5	↓10.9	↓3.7	↓5.3	↓5.0
15	↓5.4	↓5.1	↓3.9	↓4.2	↓3.5	↓3.5	2.6	↓5.5	↓7.4	7.0	↓7.8	4.4	↓8.0	4.5	↓5.6	4.9	↓5.2	4.1	8.5	3.2	6.0	5.9	5.9^{M}	↓5.2
16	6.0^{M}	↓8.6	↓8.6	↓3.4	3.5^{M}	↓2.6	3.1	3.5	↓4.5	↓6.4	↓8.2	4.8	4.4	5.5	↓5.5	5.6	↓7.6	↓5.6	↓6.4	↓4.9	↓4.9	6.0^{M}	6.0	↓8.5
17	7.0^{M}	↓6.4	5.9	↓5.2	3.1	S	3.9	6.6	↓8.5	↓8.6	↓10.1	7.8	↓5.0	4.5	↓6.7	↓5.5	C	↓7.2	↓8.2	6.8	↓6.3	↓5.1	↓8.5	↓2.5
18	3.0	2.8	4.9	6.2	↓5.3	5.4	2.7	4.2	8.7	↓5.4	↓5.2	↓8.3	↓8.1	4.9	↓8.8	↓4.3	4.9	↓8.5	11.5^{M}	↓8.1	5.9^{M}	6.9^{M}	3.5^{M}	↓5.1
19	↓4.9	↓3.6	E	3.2	↓2.3	E	2.5	↓5.0	↓7.3	↓7.7	↓1.3	↓10.8	↓9.0	↓8.7	6.4	↓8.2	6.0	↓12.5	↓12.8	↓13.3	↓12.5	↓11.0	↓8.6	↓7.8
20	4.2	↓8.3	6.1	↓5.8	↓5.1	↓3.6	3.4	↓5.4	↓6.3	↓6.5	↓5.9	↓12.3	6.8	↓6.0	5.3	↓11.0	↓12.7	↓9.2	↓6.1	6.0	↓5.2	3.3	↓4.2	6.0
21	5.9	9.0	S	↓3.9	3.2	2.0	↓3.6	↓4.9	↓9.4	↓8.7	↓12.4	↓12.3	12.3	4.7	3.7	3.5	2.8^{G}	2.7^{G}	2.6	4.3	↓5.2	↓5.1	5.8	↓5.2
22	↓3.1	9.2	↓8.7	4.6	5.9	↓3.8	3.9	5.5	4.0	↓10.8	5.4	3.8	3.8	G	G	C	D7.1^{C}	D5.7^{C}	D4.1^{C}	↓3.6	↓2.3	S	3.2	↓3.2
23	↓3.4	4.6	3.1	↓2.6	1.7	↓5.1	3.1	↓5.5	↓5.0	D6.2^{C}	D6.2^{C}	D6.3^{C}	4.5	↓10.4	↓6.2	G	3.8	4.8	↓6.6	↓7.1	↓3.4	↓5.1	↓5.1	6.0^{M}
24	9.2^{M}	↓5.3	↓5.2	3.9	↓3.6	4.3	↓5.1	5.8	6.0	↓8.4	G	G	B	G	G	4.0	G	5.7	↓8.6	4.4	↓6.0	↓3.2	4.4	3.2
25	↓3.0	↓3.2	↓5.4	↓4.0	↓3.3	2.2	↓5.0	9.0	↓8.5	↓5.7	↓6.1	↓6.3	↓1.1	↓9.2	↓1.4	↓3.0	8.2	5.3	↓5.2	↓3.2	↓2.7	↓2.6	↓6.1	↓5.4
26	4.4^{M}	↓5.4	↓5.4	↓5.2	↓2.8	↓3.5	↓2.5	3.4	↓8.5	↓8.6	↓6.3	9.2^{M}	4.8	6.5	↓4.9	3.8	4.1	3.3	4.4	6.0^{M}	5.7	↓5.1	↓3.4	4.7
27	↓8.5	5.7	3.2	6.8	↓4.0	↓8.4	↓8.6	↓8.6	↓0.2	6.0	↓8.4	11.4	↓8.2	6.3	5.2	9.1	↓10.3	↓11.5	9.1^{M}	↓4.0	4.5	S	↓5.1	↓2.3
28	2.2	S	S	↓2.4	E	S	2.5	↓5.0	↓9.0	↓11.8	↓10.2	↓7.9	↓8.5	8.1	↓5.2	↓3.8	↓10.8	↓11.4	↓8.5	6.0^{M}	7.3^{M}	↓6.1	↓7.2	↓4.7
29	7.0^{M}	3.6	↓2.5	3.2	↓2.1	↓2.4	2.8	5.1	↓4.5	6.7	6.9^{M}	↓7.6	↓8.3	4.5	↓10.2	↓6.9	5.5	↓5.1	4.6	↓6.2	13.3^{M}	↓12.7	5.8	↓5.1
30	↓5.2	↓6.0	10.8	↓5.4	↓5.9	↓5.4	↓5.2	↓4.4	↓5.4	↓8.5	↓8.5	↓8.7	↓5.6	5.5	5.3	↓6.1	↓8.7	↓8.1	↓10.3	↓9.6	9.1	↓8.5	↓3.9	↓5.0
31	↓5.2	↓3.8	↓2.6	↓3.4	↓2.7	↓3.1	2.6	↓3.8	↓8.7	↓8.4	↓5.6	5.1	↓5.2	↓4.4	↓6.3	4.0	↓5.4	6.2^{M}	↓9.0	7.9	6.7^{M}	4.5	5.8	4.5^{M}
No.	25	24	23	29	29	22	28	29	30	29	31	30	29	31	31	30	28	31	30	30	31	29	30	27
Median	4.4	5.2	3.7	3.4	2.7	3.0	2.9	4.9	5.4	6.7	6.1	D6.3	5.2	5.4	5.3	4.9	5.4	5.3	6.5	5.2	5.8	5.1	5.2	5.1
U.Q	5.6	6.0	5.6	4.9	3.6	4.3	3.8	5.5	8.5	8.6	8.2	8.9	8.2	8.1	6.7	6.1	7.6	8.1	8.7	7.1	8.5	6.5	5.8	5.4
L.Q	3.2	3.6	2.6	2.5	1.5	2.3	2.5	3.4	4.1	5.4	5.1	4.3	4.2	4.3	4.2	3.8	4.0	3.9	4.9	3.7	3.7	3.8	3.9	3.8
Q.R	2.4	2.4	3.0	2.4	2.1	2.0	1.3	2.1	4.4	3.2	3.1	4.6	4.0	3.8	2.5	2.3	3.6	4.2	3.8	3.4	4.8	2.7	1.9	1.6

foEs

Sweep 1.0 Mc to 20.0 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

May. 1962 | foEs | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	4.3	C	5.3	4.3	4.1	E_s 3.8^R	3.9	E_s 3.2^R	B		G	4.5	E_s 1.5^S	E_s 2.6^S	2.2	E
2	2.0	2.5	S			2.3	3.3	3.5	4.6	4.0	4.3	C						3.4	4.9	2.0	2.3	2.3	1.8	S
3	S			2.6	2.6	2.4	G	3.2	3.6	3.7	4.3	E_s 3.9^R	B				B		G	2.1	A	2.5	S	S
4	S	S	S			S	B		G	G	4.9	E_s 3.8^R	4.1	4.2	4.4	4.1	E_s 3.5^R	G	G	S	E_s 1.8^S	4.4	2.6	2.7
5	A	2.5	A	2.1	2.0	2.0	2.5	3.2	3.7	4.1	3.6	E_s 3.6^R	E_s 4.0^R	4.2	7.5	4.3	4.0	5.0	6.6	A	3.5	2.3	S	A
6	S	S				S	G	3.0	3.6	3.9	E_s 3.8^R	4.1	4.0	E_s 3.8^R	4.3	4.7	6.9	A	A	8.7	7.7	4.6	A	1.9
7	S	S	S			2.1	2.3	2.7	A	A	A	4.5	E_s 4.5^R	E_s 3.6^R	4.4	5.6	3.8	5.2	5.7	A	A	A	A	A
8	A	A	5.2	3.7	A	2.6	4.6	7.5	5.4	A	A	A		4.8	5.8	4.3	5.8	5.2	4.8	4.3	E_s 5.8^S	A	A	A
9	A	A	2.3	2.5	1.5	E	G	4.9	4.3	A	5.3	A	6.5	4.8	4.2	4.9	5.3	4.7	5.3	5.5	A	A	2.3	C
10	C	C	C	C	C	C	C	C	C	A	4.7	4.6	4.5	9.7	6.5	5.5	5.4	5.5	E_s 9.7^S	4.7	3.0	3.7	4.2	2.2
11	E	S	S	1.3	1.3	2.2	2.5	G	3.8	4.2	4.6	5.5	5.7	7.3	E_s 7.2^S		E_s 4.0^R	3.9	3.8	3.6	A	A	2.8	S
12	2.3	2.0	E		2.2	S	2.6	4.7	5.2	4.5	6.8	4.2	4.5	4.2	5.7		4.7	3.5	5.7	2.9	E_s 3.6^S	A	4.5	2.4
13	2.8	2.5	2.3	2.2		S	G	2.9	3.7	5.5	4.7	A	A	A	E_s 3.7^R	4.7	4.7	4.6	4.8	E_s 5.4^R	6.3	A	A	A
14	2.8	E	2.2	1.8	2.2	S	2.8	3.4	4.0	4.5	6.8	6.9	5.5	8.2	4.4	8.6	A	A	3.2	3.3	A	E_s 3.7^S	A	A
15	A	A	3.5	2.3	2.2	2.7	2.4	5.3	5.5	6.7	A	4.3	7.3	E_s 4.5^R	5.4	4.8	4.6	3.6	7.9	E_s 3.2^R	A	A	A	A
16	A	A	A	2.0	2.0	2.3	2.5	3.4	4.1	A	A	4.6	4.4	5.4	5.0	5.3	E_s 7.6^R	5.4	4.9	4.7	4.7	A	A	A
17	A	A	A	A	A	S	3.8	6.5	8.2	A	A	7.5	4.9	4.3	6.7	4.9	C	7.2	A	A	A	A	A	2.5
18	2.5	E	4.1	A	4.8	4.0	2.5	4.2	4.8	5.2	4.5	6.7	5.6	4.8	5.7	4.1	4.9	5.4	A	4.7	4.0	2.3	2.0	A
19	A	2.2		1.8	2.0		2.5	5.0	6.6	A	A	A	8.3	8.4	5.4	8.2	6.0	A	A	A	A	A	5.3	A
20	2.0	A	4.1	5.4	2.1	2.1	3.4	5.4	5.9	5.2	5.7	A	5.5	5.7	5.3	A	A	A	6.1	E_s 6.0^S	E_s 5.2^S	E_s 3.3^S	2.5	A
21	A	A	S	2.0	2.0	1.9	2.3	4.8	A	A	A	A	5.4	4.4	E_s 3.7^R	E_s 3.5^R	2.6^G	2.5^G	G	E_s 4.3^R	3.6	2.8	A	A
22	A	A	A	4.4	2.8	3.5	3.7	3.4	3.9	5.4	4.3	E_s 3.8^R	E_s 3.8^R			C	$D_{7.1}^C$	5.0	4.1	3.3	2.1	S	2.3	A
23	E_s 4.4^S	4.4	2.5	2.3	1.7	4.1	2.8	5.5	4.5	5.4	5.6	A	4.5	A	6.2		3.6	4.8	6.4	E_s 7.1^S	A	4.9	5.0	A
24	A	A	4.2	2.3	2.3	2.0	3.1	3.6	4.9	5.4			B			4.0		3.8	6.5	4.3	5.7	2.6	2.7	2.7
25	2.8	E_s 2.2^S	4.8	A	2.9	2.2	5.0	4.2	A	4.4	5.3	4.3	8.4	8.9	8.7	A	7.1	3.7	3.3	3.1	2.2	2.6	A	A
26	2.6	A	2.7	3.3	2.3	2.4	2.3	3.4	4.0	A	4.1	6.1	4.2	5.4	3.9	E_s 3.8^R	3.6	3.3	4.1	A	4.6	2.4	2.5	2.5
27	A	A	2.5	2.5	2.2	2.4	A	A	A	5.3	5.3	5.2	5.9	6.3	5.0	7.5	7.6	7.8	5.1	3.6	4.5	S	4.1	1.9
28	E	S	S	1.3		S	G	4.4	A	A	A	6.8	8.2	7.6	5.2	A	7.8	A	5.4	E_s 6.0^S	6.5	A	4.1	3.4
29	A	2.6	E	2.1	1.6	1.8	2.5	4.5	4.1	A	A	A	A	4.2	A	6.8	4.1	4.7	4.1	A	A	A	4.5	A
30	4.7	A	A	3.7	A	2.6	3.2	4.0	4.7	7.4	7.9	7.4	4.6	5.4	5.1	6.0	8.4	8.1	A	A	A	A	E_s 9.9^S	4.7
31	3.5	3.7	2.4	2.4	2.6	2.2	2.4	E_s 3.8^R	A	4.7	5.3	5.1	4.0	A	5.8	3.8	3.8	4.3	5.4	5.9	5.3	3.6	5.1	A
No.																								
Median																								

foEs

Sweep 1.0 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 5

IONOSPHERIC DATA

May. 1962 | **f-min** | 135° E Mean Time (G.M.T. + 9h.) | **Yamagawa** | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	2.20	C	2.30	3.70	2.65	2.80	2.30	2.25	3.90	E1.80S	E1.60S	E1.70S	E1.85S	E1.90S	E1.90S	E1.90S
2	E1.70S	E1.70S	E1.90S	E	1.85	E1.60S	E1.50S	E1.60S	1.90	2.00	2.30	I2.45C	2.50	2.70	2.45	2.30	2.25	E1.65S	1.85	E1.60S	E1.70S	E1.70S	E1.50S	E2.00S
3	E2.00S	1.80	1.85	E	E	E1.70S	E1.70S	E1.60S	2.00	2.45	2.30	2.60	3.70	2.60	2.50	2.40	4.80	2.05	E1.60S	E1.70S	E1.80S	E1.60S	E1.80S	E2.05S
4	E1.70S	E2.10S	E3.20C	1.80	1.80	E1.80S	2.20	E1.70S	1.90	2.35	2.25	2.40	2.50	2.30	2.60	2.25	1.90	E1.50S	E1.85S	E1.80S	E1.50S	E1.70S	E1.60S	E1.90S
5	E1.75S	E2.00S	E1.80S	E	1.10	E1.80S	E1.80S	E1.80S	1.80	2.30	2.20	2.20	2.35	2.20	2.30	2.05	2.00	E1.70S	E1.90S	E1.70S	E1.70S	E1.60S	E1.90S	E1.90S
6	E1.80S	E1.90S	1.60	E	E	E1.80S	E1.60S	E1.65S	1.80	2.20	2.05	2.10	2.25	2.30	2.30	2.30	2.20	1.80	E1.60S	E1.60S	E1.80S	E1.80S	E1.90S	E1.70S
7	E1.80S	E2.00S	E1.90S	1.10	1.05	1.30	E1.60S	E1.70S	1.60	2.00	2.05	2.40	2.50	2.60	2.20	2.00	1.90	E1.80S	1.40	E1.60S	1.30	E1.60S	E1.90S	E1.70S
8	E1.60S	E1.90S	E1.60S	1.10	1.40	1.30	E1.55S	E1.60S	1.90	1.85	2.30	2.25	2.20	2.30	2.05	2.00	1.85	1.90	E1.70S	E1.70S	E2.00S	E1.90S	E1.90S	E1.70S
9	E1.80S	E1.90S	1.30	E	E	E2.00S	E1.70S	E1.60S	1.90	1.80	2.00	2.30	2.40	2.25	2.45	1.90	2.00	E1.90S	E1.80S	E1.70S	E1.80S	E1.90S	E1.80S	C
10	C	C	C	C	C	C	C	C	C	1.90	2.20	2.55	3.50	2.55	2.40	2.40	2.25	2.00	E1.80S	E1.70S	E1.70S	E1.80S	E1.80S	E1.70S
11	E1.80S	E1.40S	E1.60S	E	E	E1.40S	E1.70S	E1.50S	2.05	2.20	2.20	2.30	2.70	2.40	2.40	2.40	2.20	1.80	E1.60S	E1.60S	E1.70S	E1.80S	E1.80S	E2.10S
12	E1.85S	E1.70S	E1.60S	1.30	1.20	E1.70S	1.70	1.85	1.90	2.20	2.35	2.30	2.65	2.30	2.30	2.00	2.10	1.70	1.85	E1.50S	E1.40S	E2.00S	E1.80S	E1.60S
13	E1.75S	E1.90S	E1.60S	1.40	1.35	E1.40S	1.90	1.75	1.85	2.00	2.00	2.20	2.50	2.60	2.55	2.30	2.00	1.90	E1.65S	2.00	E1.90S	E1.80S	E1.70S	E1.50S
14	E1.60S	E1.70S	1.30	E	E	E1.90S	E1.50S	1.80	2.00	2.20	2.25	2.40	2.40	2.40	2.25	2.55	2.30	1.80	1.80	1.35	E1.70S	E1.70S	E1.80S	E1.90S
15	E1.80S	E1.50S	1.90	1.20	1.35	1.35	E1.80S	1.85	1.50	2.35	2.40	3.65	3.60	2.40	2.40	2.40	2.25	2.25	E1.80S	E1.80S	E1.60S	E1.80S	E1.90S	E1.80S
16	E1.80S	E2.05S	E1.75S	E	1.00	E1.60S	E1.85S	E1.60S	1.95	2.40	2.45	2.40	2.50	4.15	2.45	2.40	2.25	E1.75S	E1.85S	E1.80S	E1.70S	E1.60S	E1.90S	E1.80S
17	E1.90S	E1.90S	E1.75S	E	E	E1.60S	E1.80S	E1.60S	1.90	2.20	2.25	2.30	2.40	2.50	2.40	2.25	I2.10C	E1.70S	E1.70S	2.00	E1.70S	E1.90S	E1.90S	E1.70S
18	E1.90S	E2.00S	E1.60S	E	E	E1.70S	E1.80S	E1.60S	1.90	2.30	2.20	2.50	2.50	2.40	2.50	2.30	2.30	1.90	E1.60S	1.35	E1.90S	E1.60S	E1.80S	E1.80S
19	E1.80S	E1.60S	1.95	1.40	1.20	1.70	E1.60S	1.90	1.90	2.25	2.50	3.45	2.45	2.70	3.00	2.40	2.05	1.95	E1.50S	1.95	E1.70S	E1.70S	E1.70S	E1.90S
20	E1.70S	E1.60S	E1.90S	1.90	1.10	1.30	E1.80S	1.85	1.95	2.40	2.35	2.30	2.50	2.90	2.45	2.40	2.30	2.30	E1.60S	E1.80S	E1.90S	E1.80S	E1.50S	E1.50S
21	E1.80S	E1.60S	E1.60S	E	1.20	1.40	E1.50S	E1.60S	2.20	2.20	2.40	3.60	3.80	3.50	2.75	2.50	2.25	2.10	E1.80S	E1.60S	E1.60S	E1.80S	E2.20S	E1.90S
22	E1.90S	E1.90S	E1.90S	E	E	E1.50S	E1.60S	1.80	1.75	2.20	2.25	2.60	2.50	2.40	2.30	E6.00C	E2.30C	E2.30C	E2.00C	E1.45S	E1.60S	E1.60S	E2.00S	E1.90S
23	E1.70S	E1.90S	E1.80S	E	1.00	1.25	E2.00C	E2.00C	E2.50C	E3.60C	E4.10C	E4.10C	2.40	2.40	2.30	2.25	2.20	E1.90S	E1.60S	E1.50S	E1.60S	E1.70S	E1.60S	E1.60S
24	E1.60S	E1.90S	E1.70S	E	E	E1.60S	E1.45S	E1.60S	1.70	1.80	1.90	2.20	4.15	2.65	2.60	2.50	2.00	E1.90S	E1.90S	E1.60S	E2.00S	E1.60S	E1.90S	E1.65S
25	E1.60S	E1.60S	E1.70S	1.90	1.70	E1.40S	E1.60S	E1.55S	1.90	2.20	2.25	2.25	2.30	2.30	2.30	2.20	2.30	E1.80S	E1.70S	E1.60S	E1.60S	E1.70S	E1.60S	E1.70S
26	E1.50S	E1.40S	E1.70S	E	E	1.25	1.30	E1.50S	2.00	1.90	2.25	2.45	2.70	2.55	2.30	2.40	2.00	1.80	E1.60S	1.05	E1.60S	1.10	E1.60S	E1.60S
27	E1.60S	E1.70S	E1.40S	E	E	1.20	E1.60S	E1.60S	1.80	1.85	2.20	2.30	2.20	2.50	2.40	2.20	1.90	1.90	E1.70S	E1.55S	E1.60S	E1.60S	E1.70S	E1.60S
28	E1.60S	E2.00S	E1.70S	E	E	E1.70S	E1.60S	E1.70S	1.40	2.00	2.20	2.40	2.40	2.30	2.75	2.25	2.20	1.90	E1.60S	E1.50S	E1.70S	E1.70S	E1.80S	E1.70S
29	E1.60S	E1.50S	E1.50S	E	E	E1.40S	1.20	E1.60S	2.20	2.00	2.55	2.30	2.45	2.30	2.25	2.60	2.00	2.05	E1.50S	E1.60S	E1.50S	E1.50S	E1.50S	1.00
30	E1.70S	E1.90S	E1.80S	E	E	1.25	E1.40S	E1.55S	2.00	2.20	2.50	2.50	2.60	3.50	2.45	2.50	2.25	2.00	E1.90S	E1.50S	E1.70S	E1.50S	E1.60S	E1.60S
31	E1.60S	E1.60S	E	E	E	1.40	E1.80S	1.75	1.60	2.00	2.25	2.20	2.45	2.40	2.00	2.25	2.00	E1.70S	E1.60S	E1.60S	E1.70S	E1.80S	E1.70S	E1.50S
No.	29	29	29	29	29	29	29	29	29	29	30	30	31	31	31	30	30	27	31	31	31	31	31	30
Median	E1.75	E1.90	E1.70	E	E	E1.50	E1.60	E1.60	1.90	2.20	2.25	2.40	2.50	2.40	2.40	2.30	2.20	1.80	E1.70	E1.60	E1.70	E1.70	E1.80	E1.70

f-min

Sweep 1.0 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

May. 1962 | M(3000)F2 | 135° E Mean Time (G.M.T. + 9h.) | **Yamagawa** | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	S	I 3.20 C	V 3.15 D	2.75	I 2.80 D	3.05	3.10	3.10	3.20	V 3.15 D	I 3.20 D	I 3.35 D	V 3.65 D	I 3.10 D	S	S
2	S	3.00	3.00	2.90	V 2.85 D	2.80	3.25	I 3.50 D	V 3.40	2.95	V 3.00 D	I 3.10 C	2.85 D	V 2.95 D	3.05	3.05	3.10	3.15	I 3.10 D	3.45	I 3.15	2.75	2.85 D	S
3	S	S	3.25	V 3.15 D	I 3.00 D	V 3.00 D	I 3.40 D	I 3.55 D	3.45	3.55	V 3.30 D	3.00	3.00 D	3.15	V 3.00 D	3.05	3.15	3.05	3.05	V 3.10 D	I 3.10 C	V 3.10 D	I 3.00 D	I 2.90 D
4	V 2.75 D	I 3.00 D	I 3.10 C	3.00	I 2.95 D	I 3.10 C	3.50 D	I 3.50 D	3.55	3.30	3.00	2.65	2.90	3.10	3.10	3.15	3.35	3.20	3.15	3.25	V 3.30 D	I 3.15 D	3.05	S
5	S	S	S	S	S	S	V 3.45 D	3.45	V 3.50 D	3.35	3.20	V 2.65 D	V 2.95 D	3.00	2.95	3.05 D	3.15	I 3.10 D	V 3.20 D	I 3.30 A	V 3.35 D	I 3.40 D	I 3.10 D	S
6	S	S	V 3.10 D	3.20	3.35 D	V 3.20 D	3.65	V 3.60 D	3.45	3.15	3.00	2.70	V 2.95 D	3.10	V 2.95 D	2.95	2.95	A	A	3.30	I 3.30 D	S	S	S
7	2.70	V 2.70 D	V 2.90 D	I 2.90 D	2.65	2.80	S	3.30	A	A	A	2.90	3.10	2.95	V 2.90 D	2.90	3.15	V 3.10 D	3.25	A	A	I 2.85 D	I 2.75 D	I 2.75 A
8	S	S	3.00	V 2.90 D	S	F S	S	3.65	3.65	I 3.45 A	I 3.50 A	V 2.75 D	3.00	I 3.10 D	V 3.00 D	3.10	V 3.15 D	3.05	3.00	V 3.20 D	S	A	S	S
9	S	A	I 2.85 D	2.85	2.90	2.90	3.45 D	I 3.30 D	3.55	I 3.30 A	3.00	I 2.85 A	2.90	V 2.90 D	V 2.80 D	2.85	2.95	3.10 D	3.25	3.25	S	S	2.75	C
10	C	C	C	C	C	C	C	C	C	A	2.95	2.70	2.85	3.00 D	V 3.00 D	V 2.95 D	3.00 D	3.05	3.10	I 3.20 D	I 2.95 D	V 2.80 D	I 2.75 D	S
11	S	S	I 3.20 D	I 3.40 D	3.25	2.85	3.00	3.40 D	3.15 H	3.15	2.70	2.90 D	2.95	3.00	2.90	V 2.90 D	3.05	V 3.00 D	V 3.00 D	I 3.20 D	I 3.25 D	I 3.20 D	S	S
12	S	I 2.80 D	I 3.00 D	2.90	I 2.85 D	2.85	I 3.25 D	V 3.75 D	3.45	2.95	A	2.95	2.90	V 2.95 D	V 2.85 D	2.95	3.05	V 3.15 D	I 3.20 D	V 3.20 D	I 3.20 D	I 2.90 D	V 2.75 D	I 2.75 D
13	I 2.80 D	I 2.75 D	I 3.20 D	V 3.40 D	V 3.40 D	3.00	3.40	3.30	3.10	3.15	3.00	A	A	A	2.80 D	2.90	2.95	V 2.90 D	3.05	3.25	I 3.20 D	I 2.80 A	A	A
14	S	S	S	3.45	I 3.05 D	V 2.85 D	3.20	V 3.35 D	3.10	2.90	V 3.10 D	2.60	2.75	2.95	3.05 D	3.05	A	I 2.90 A	3.25	V 3.10 D	A	S	S	I 2.85 D
15	I 2.80 D	3.05	I 3.05 D	3.10	V 3.15 D	3.00	3.25	3.15	2.95	2.95	A	2.75	2.75	2.90	3.05	V 3.15 D	3.10 C	V 3.25 M	V 3.10 D	3.00 D	S	S	S	S
16	S	A	A	S	3.05 S	I 3.10 D	3.25	3.55 H	3.35	I 2.90 A	I 2.85 A	3.00	3.05	3.00	2.95	2.95	3.00	2.95	3.00 D	V 3.05 D	3.15	S	S	A
17	A	A	A	S	S	I 3.05 D	3.25 D	V 3.15 D	A	A	A	2.80	3.05	2.95	3.00	3.05	I 3.15 C	3.30	A	S	S	S	A	S
18	S	S	2.90 S	I 3.00 A	I 3.10 D	3.20	3.25	3.35	3.25	3.35	3.05	2.80 D	2.70	2.90	3.05	3.05	3.10	V 3.05 D	I 3.00 A	V 2.90 D	S	S	S	S
19	S	S	S	F	F	F	3.30	3.30	3.40	I 3.20 A	A	A	2.75	V 2.85 D	V 2.85 D	2.90 D	2.95 D	A	A	A	A	A	S	A
20	S	A	S	S	S	S	I 3.10 D	3.25	3.05	3.00	2.80	I 2.85 A	2.95	2.95	3.05	A	A	A	2.90	I 3.00 D	3.10	I 3.15 D	I 2.80 D	A
21	A	A	S	S	S	3.00	3.40	3.30	A	A	A	A	2.70	2.70	2.75	2.80 D	V 2.95 D	2.95	I 3.00 D	2.95	V 3.10 D	I 3.00 D	I 2.95 A	A
22	S	A	A	F S	F S	3.05	3.15	I 3.25 M	3.10	3.15	3.05	2.55	2.55	2.70 S	2.95	2.95	2.85	3.00	I 3.05 D	2.95	V 3.00 D	3.15	2.80	S
23	S	S	S	S	S	3.00	V 3.15 D	V 3.15 C	3.35	I 3.25 C	I 2.95 C	I 2.75 C	2.75	I 2.85 A	2.80	2.80 D	V 2.90 D	V 2.85 D	V 2.85 D	I 3.05 D	I 3.20 D	I 3.10 D	I 2.90 D	S
24	A	S	S	3.20	S	S	3.10 D	3.05	V 2.80 D	3.00	I 2.90 D	V 2.70 D	2.80 D	V 2.85 D	3.15	3.05	V 3.10 D	2.95	2.95	V 2.80 D	V 2.95 D	V 3.15 D	S	S
25	S	S	S	S	F S	I 3.35 D	I 3.45 D	3.15	I 3.10 A	3.05	2.80	2.80	A	A	2.85	I 2.95 A	3.10	I 3.10 D	3.00	I 3.00 D	S	S	S	S
26	S	S	S	I 3.30 D	I 3.00 D	V 3.15 D	3.35	3.20	V 3.30 D	I 3.10 A	3.00	2.90	2.75 D	2.80	2.85	2.85 D	3.05 D	3.15	V 2.90 M	I 2.90 D	3.25 D	S	S	S
27	A	S	F S	S	S	S	A	A	A	3.45	2.75	2.85	2.90	2.80	2.95	2.90	2.85	2.70	I 2.90 D	3.00 D	3.10 D	V 2.95 D	I 3.30 D	I 3.30 D
28	I 2.75 D	I 2.80 D	2.65	I 2.70 D	I 2.85 D	I 3.05 D	3.35	2.90	I 3.20 A	I 3.00 A	I 2.90 A	2.70	2.85	2.85	2.80	I 2.85 A	2.90 D	V 3.05 D	3.00 D	3.10 D	3.10	I 3.00 D	V 3.00 D	S
29	A	S	S	F S	F S	S	3.05	I 3.35 D	3.25	A	A	A	A	2.85	I 2.85 A	V 2.85 D	2.95 D	V 2.95 D	V 3.00 D	I 3.25 D	I 2.95 A	I 2.70 A	S	S
30	S	A	A	F S	A	V 3.15 D	2.95	2.90 D	2.90 F	3.00	I 3.00 F	2.80	2.80	2.75 R	2.80	2.80	V 2.90 D	3.05	I 3.20 S	I 3.20 A	S	A	S	S
31	S	S	S	V 3.30 D	3.00	V 3.05 D	3.10	3.15	A	2.80	2.85	V 2.85 D	2.75 D	I 2.70 A	V 2.85 D	3.05	V 3.10 D	3.00	2.75	I 3.05 D	I 3.20 D	V 2.80 D	2.55	S
No.	5	7	13	17	16	22	26	28	24	26	24	27	28	29	31	30	29	28	28	28	21	19	14	5
Median	V 2.75 D	V 2.95 D	3.00	3.10	3.00	3.00	3.25	3.30	3.30	3.15	3.00	2.80	2.85	2.95	2.95	2.95	3.05	3.05	3.05	3.10	3.15	V 3.00 D	V 2.80 D	V 2.85 D

M(3000)F2 | Sweep 1.0 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 7

IONOSPHERIC DATA

May. 1962 | M(3000)F1 | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	A	C	A	L	3.60	U 3.55 C	3.55	3.60	L	L						
2										L	3.45 L	I 3.65 C	L	L	3.55	I 3.45 L	I 3.60 L	L						
3										L	L	L	L	3.70	I 3.60 CH	3.50	B	L						
4									L	L	A	L	3.65	3.50	A	3.55	3.70	L						
5									L	L	L	L	4.05	3.80	A	A	L	A						
6										L	I 3.85 L	3.60	3.75	3.60	I 3.60 L	A	A	A						
7									A	A	A	A	A	3.30	3.00 R	I 3.20 A	3.40	A						
8										A	A	A	3.65	A	A	A	A	A						
9										A	A	A	A	A	3.50	A	A	A						
10							C	C	C	A	A	3.45	3.50	A	A	A	A	A						
11										A	A	A	A	A	A	3.70 H	3.35	3.50						
12											A	3.70	3.25	3.50	I 3.50 A	3.95	I 3.50 A	L						
13									L	A	A	A	A	A	3.60 H	A	A	A						
14									L	L	A	A	A	A	3.55	A	A	A						
15								A	A	A	A	3.45	A	A	A	A	A							
16										A	A	A	I 3.80 R	A	A	A	A	A	A					
17								A	A	A	A	A	A	3.65 R	I 3.45 A	I 3.50 A	C	A	A					
18									A	I 3.90 A	R	A	A	A	A	3.55	A	A	A					
19										A	A	A	A	A	A	A	A	A	A					
20									A	A	A	A	A	A	A	A	A	A	A					
21									A	A	A	A	A	3.60	3.75	3.50	3.45	3.45	L					
22									3.70 L	A	L	3.50	3.70	4.00	3.95 H	C	A	A	A					
23									A	A	A	A	L	A	A	3.65	3.40	A	A					
24								L	A	A	L	3.80	4.00 H	3.60	3.80	3.45 H	3.55 L	L	A					
25									A	A	A	3.50	A	A	A	A	A	3.55	L					
26									L	A	3.75	I 3.60 A	3.60	I 3.70 A	3.75	3.45 H	3.55	3.65						
27									A	A	A	A	A	A	A	A	A	A	A					
28									A	A	A	A	A	A	A	A	A	A	A					
29							L	A	A	A	A	A	A	3.55 R	A	A	A	A	A					
30								L	A	A	A	A	3.25	A	A	A	A	A	A					
31								A	A	A	A	I 3.50 A	3.95	A	A	3.70 H	3.60	A	A					
No.									1	1	3	10	13	13	14	14	10	4						
Median									3.70	4 3.90	3.75	3.55	3.65	3.60	3.60	3.50	3.50	3.50						

M(3000)F1 Sweep 1.0 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

May. 1962 | h'F2 | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	275	I290C	295	345	340	310	300	290	280	260						
2										350	325	I295C	340	280	305	295	290	265						
3										250	280	340	320	290	315	300	275	280						
4									245	265	305	L	345	305	300	295	270	255						
5									250	275	290	340	325	310	325	290	280	280						
6										300	305	375	315	295	315	315	330	A						
7									A	A	A	390	325	320	350	335	290	290						
8										A	A	I350A	310	295	320	300	285	295						
9										A	330	A	345	330	330	330	320	280						
10							C	C	C	A	305	350	340	370	300	305	290	280						
11										300	350	330	310	325	300	325	300	300						
12											I345A	330	350	325	330	330	300	285						
13									315	300	320	I350A	I370A	I360A	345	330	310	300						
14									260	340	E375A	425	360	340	295	325	A	A						
15								305	350	E395A	A	360	350	335	305	290	280							
16										I365A	A	325	300	325	310	310	350	310	295					
17								305	A	A	A	E450A	310	320	340	310	I300C	290	A					
18									290	295	330	E400A	380	340	310	300	300	300	A					
19										A	A	A	400	E370A	325	350	310	A	A					
20									E350A	350	395	I345A	335	335	330	A	A	A	325					
21									A	A	A	A	365	370	350	340	310	305	290					
22									290	290	320	440	400	360	315	320	E380C	〃300C	〃290C					
23									〃278C	〃305C	E420A	A	350	A	340	335	325	300	300					
24								300	305	320	310	355	345	330	300	300	300	300	E350A					
25									I300A	310	360	340	E470A	I380A	370	A	295	280	290					
26									290	I335A	340	350	380	345	330	325	300	260						
27									A	300	425	355	340	380	340	350	350	E405A	315					
28									A	A	A	390	360	345	340	A	310	A	290					
29							300	290	290	A	A	A	A	340	I350A	340	300	295	260					
30								320	300	350	E375A	400	360	350	340	350	360	310	A					
31								290	A	350	340	310	350	A	345	305	295	300	350					
No.							1	6	14	20	19	23	29	28	31	28	28	24	10					
Median							300	300	290	300	325	350	345	330	325	320	300	290	290					

h'F2

Sweep 1.0 Mc to 20.0 Mc in 30 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 9

IONOSPHERIC DATA

May. 1962 | h'F | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	A	C	A	250	225	240	235	245	E_{270}^{B}	240	260	250	240	260	∞	∞
2	∞	∞	260	280	∞	∞	275	250	275	250	E_{270}^{A}	I_{230}^{C}	235	210	210	250	245	255	255	230	230	270	∞	∞
3	∞	∞	255	265	∞	285	250	240	240	225	245	225	220	210	205^{H}	255	B	225	250	235	I_{250}^{A}	250	250	280
4	∞	∞	∞	250	270	260	240	235	230	220	I_{230}^{A}	210	225	255	I_{250}^{A}	250	245	230	235	250	240	270	260	∞
5	I_{350}^{A}	∞	I_{290}^{A}	290	∞	250	250	240	250	255	200	205	200	240	A	A	A	A	E_{290}^{A}	A	240	220	240	I_{310}^{A}
6	∞	∞	290	255	240	240	230	230	235	235	205	205	225	220	E_{250}^{A}	A	A	A	A	E_{280}^{A}	250	270	I_{340}^{A}	∞
7	∞	∞	∞	280	∞	∞	255	250	A	A	A	I_{250}^{A}	I_{250}^{A}	E_{300}^{R}	A	A	290	A	E_{275}^{A}	A	A	I_{335}^{A}	A	A
8	A	A	E_{350}^{A}	∞	I_{330}^{A}	∞	270	E_{270}^{A}	E_{250}^{A}	A	A	A	225	A	A	A	A	A	E_{300}^{A}	255	275	A	A	A
9	A	A	∞	∞	280	∞	250	235	250	A	A	A	A	A	250	A	A	A	265	250	I_{280}^{A}	I_{300}^{A}	∞	C
10	C	C	C	C	C	C	C	C	C	A	A	E_{280}^{A}	E_{275}^{A}	A	A	A	A	A	E_{350}^{S}	250	250	∞	∞	∞
11	∞	280	255	230	205	290	255	240	230^{H}	I_{230}^{A}	E_{275}^{A}	A	A	A	A	210^{H}	E_{300}^{A}	E_{285}^{A}	E_{290}^{A}	260	A	I_{265}^{A}	∞	290
12	∞	∞	280	270	∞	∞	260	230	E_{270}^{A}	E_{275}^{A}	A	225	∞	250	A	230	I_{230}^{A}	255	275	250	250	A	E_{350}^{A}	∞
13	∞	∞	270	240	205	240	230	225	250	A	A	A	A	A	255^{H}	I_{250}^{A}	I_{255}^{A}	I_{250}^{A}	E_{290}^{A}	270	250	A	A	A
14	∞	270	255	240	285	∞	255	250	250	E_{285}^{A}	A	A	A	A	270	A	A	A	280	260	I_{255}^{A}	E_{350}^{S}	A	A
15	A	∞	295^{A}	295	250	255	290	250	A	A	A	A	250	I_{265}^{A}	A	A	A	A	255^{H}	E_{330}^{A}	250	A	A	I_{305}^{A}	I_{320}^{A}
16	I_{315}^{A}	A	A	260	280	∞	255	245^{H}	250	A	A	A	250	A	A	A	A	A	A	275	260	A	A	A
17	A	A	A	I_{310}^{A}	I_{300}^{A}	275	290	A	A	A	A	A	A	250	A	A	C	A	A	A	A	I_{280}^{A}	I_{330}^{A}	∞
18	∞	245	∞	I_{300}^{A}	∞	290	255	250	I_{260}^{A}	I_{240}^{A}	240	A	A	A	A	250	A	A	A	295	250	250	250	I_{320}^{A}
19	A	∞	280	255	265	250	240	260	275	A	A	A	A	A	A	A	A	A	A	A	A	A	∞	A
20	∞	I_{320}^{A}	250	285	∞	∞	260	E_{290}^{A}	A	A	A	A	A	A	A	A	A	A	A	∞	290	270	260	I_{275}^{A}
21	I_{250}^{A}	I_{255}^{A}	250	∞	∞	270	245	275	A	A	A	A	A	250	220	250	225	240	250	280	265	250	I_{325}^{A}	I_{315}^{A}
22	I_{300}^{A}	I_{295}^{A}	I_{295}^{A}	∞	275	∞	280	250^{H}	250	I_{250}^{A}	250	230	210	200	200^{H}	C	A	A	A	260	250	235	290	I_{360}^{A}
23	∞	∞	∞	255	270	∞	$"255^{C}$	$"265^{C}$	A	A	A	A	E_{295}^{A}	A	A	210	240	A	A	E_{300}^{S}	I_{270}^{A}	285	∞	I_{350}^{A}
24	I_{320}^{A}	I_{325}^{A}	∞	250	285	∞	270	250	I_{240}^{A}	I_{225}^{A}	200	205	200^{H}	245	220	E_{250}^{AH}	230	E_{280}^{A}	A	E_{295}^{A}	∞	250	255	∞
25	∞	∞	E_{350}^{A}	I_{300}^{A}	260	240	250	E_{265}^{A}	A	E_{300}^{A}	A	250	A	A	A	A	A	250	270	255	255	250	I_{330}^{A}	I_{270}^{A}
26	∞	A	290	275	290	275	250	245	250	I_{240}^{A}	225	A	220	I_{220}^{A}	225	255^{H}	240	245	I_{250}^{AH}	A	270	270	∞	250
27	A	I_{300}^{A}	295	∞	295	280	A	A	A	A	A	A	A	A	A	A	A	A	A	285	240	240	∞	∞
28	∞	∞	∞	295	290	250	240	245	A	A	A	A	A	A	A	A	A	A	A	E_{350}^{S}	∞	A	∞	∞
29	I_{310}^{A}	275	275	∞	∞	285	260	I_{270}^{A}	I_{255}^{A}	A	A	A	A	250	A	A	A	A	A	I_{275}^{A}	A	A	E_{380}^{A}	I_{355}^{A}
30	∞	I_{310}^{A}	I_{275}^{A}	∞	I_{300}^{A}	275	260	E_{300}^{A}	A	A	A	A	E_{300}^{A}	A	A	A	A	A	A	A	A	A	∞	∞
31	∞	∞	255	250	255	290	240	I_{250}^{A}	A	E_{300}^{A}	A	A	210	A	A	240^{H}	250	A	A	∞	250	∞	∞	A
No.	23	24	25	29	29	29	28	22	17	10	8	12	15	13	11	13	10	10	10	21	24	21	24	23
Median	∞	∞	290	280	290	290	255	250	250	240	230	230	225	240	225	250	240	250	260	260	250	270	∞	∞

h'F

Sweep 1.0 Mc to 20.0 Mc in ∞ ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 10

IONOSPHERIC DATA

May. 1962 | h'Es | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	130	C	120	125	125	140	120	110	B	G	150	120	125	120	125	125
2	110	110	S	E	E	105	135	130	125	120	125	C	G	G	G	G	G	150	130	130	125	120	120	S
3	S	E	E	110	110	115	150	135	135	130	120	125	B	G	G	G	B	G	155	130	120	120	S	S
4	S	S	S	E	E	S	B	G	145	110	110	120	110	110	110	120	110	150	145	S	125	115	110	110
5	110	110	100	115	110	120	135	130	125	130	130	110	120	110	110	120	150	130	125	125	120	120	S	120
6	S	S	E	E	E	S	145	140	130	130	125	110	115	115	130	155	140	130	120	120	120	120	115	110
7	S	S	S	E	E	110	140	130	125	115	110	115	155	115	185	150	150	140	130	125	130	120	125	115
8	110	110	110	110	110	105	130	130	125	125	120	130	G	130	155	150	130	130	120	120	120	120	110	110
9	110	105	105	105	105	105	145	130	130	120	120	110	115	125	170	145	140	130	125	125	120	115	120	C
10	C	C	C	C	C	C	C	C	C	110	110	110	110	110	140	145	140	130	130	120	115	115	115	115
11	120	S	S	110	115	110	110	150	130	135	130	125	130	135	135	G	180	150	125	135	125	125	120	S
12	110	110	110	E	105	S	135	125	120	130	120	150	115	110	110	G	130	140	125	125	125	125	120	115
13	110	110	110	115	E	S	155	145	130	115	120	115	110	110	130	130	130	130	130	130	125	125	125	120
14	110	110	105	105	110	S	130	130	130	120	110	110	135	125	125	125	120	120	130	125	120	120	120	120
15	115	110	110	110	110	110	140	130	125	120	120	125	115	135	140	145	150	155	130	130	110	125	120	120
16	115	110	110	110	110	120	140	145	135	125	120	125	125	130	130	140	130	125	125	120	120	120	120	115
17	110	110	110	105	100	S	130	130	120	110	110	110	110	110	130	145	C	135	120	120	120	120	120	125
18	120	110	105	110	105	110	130	130	125	125	125	120	110	110	110	110	135	130	125	120	120	120	120	120
19	110	110	E	105	105	E	140	125	120	120	110	110	110	110	110	110	140	130	130	120	120	120	120	120
20	110	115	110	110	110	115	140	130	125	120	125	115	120	110	140	130	125	125	130	125	125	120	125	120
21	110	110	S	110	110	115	110	130	125	120	110	110	115	120	120	120	105	105	145	125	120	120	110	110
22	120	120	110	110	110	110	110	115	125	110	110	110	115	G	G	C	4 105 C	4 105 C	4 105 C	105	105	S	110	110
23	115	110	110	110	120	130	4 130 C	4 125 C	4 125 C	4 120 C	4 115 C	4 120 C	110	110	110	G	150	140	130	130	120	120	120	115
24	120	110	110	110	140	125	130	135	125	120	G	G	B	G	G	175	G	140	130	125	120	120	115	110
25	105	105	120	105	120	140	130	125	120	125	110	110	110	110	110	110	110	110	110	105	105	100	125	110
26	110	105	105	105	100	110	100	135	130	120	120	110	120	110	120	140	110	110	105	120	105	105	130	110
27	105	110	110	105	105	105	110	105	130	130	125	120	125	125	130	125	120	120	120	115	110	S	110	105
28	100	S	S	130	E	S	145	130	120	120	120	115	110	110	110	110	110	105	105	105	105	105	105	105
29	100	100	100	100	100	145	135	125	130	120	120	115	110	125	135	130	110	130	130	120	120	120	110	115
30	110	110	110	110	110	110	110	115	110	120	115	110	110	155	155	145	135	130	125	125	125	120	110	110
31	130	105	105	105	105	130	130	135	125	120	115	110	110	130	140	150	140	125	125	120	110	110	110	105
No.	25	23	20	24	23	21	28	28	30	30	30	29	27	27	27	25	26	29	31	30	31	29	29	27
Median	110	110	110	110	110	110	130	130	125	120	120	115	115	115	130	130	130	130	125	120	120	120	120	115

h'Es | Sweep 1.0 Mc to 20.0 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 11

IONOSPHERIC DATA

May. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									h		h	h	h	h	h	l			h	f4	f4	f2	f2	f
2	f	f2				f	C2	h3	h2	h	h							h2	C3	f	f	f	f	
3				f3	f5	f2	h	h2	h	h	C	h							h	f	f2	f2	f	
4									h	l h	C2	C	l	l	l2	l	l2 h2 l2	h l			f	f4	f2	f3
5	f3	f3	f2	f f	f3	f	C3	h2	h	h	h	l	l	l	l2	l	h	h2	C5	f	f3	f2		f2
6							h	h2	h	h	h	l	l	l	h	h2 l	h2	h2	C4	f7	f3	f2	f3	f
7						f2	C2	h3	h4	h2	C3	l	h	l	h	h	h	h2	h4	f5	f7	f3	f3	f6
8	f3	f4	f5	f3	f5	f3	C3	h3	h2	h2	h2	h2		h	h2	h	h2	h2	C3	f2	f3	f3	f2	f3
9	f2	f3	f4	f2	f2	f	C	h3	h	h2	h2	C3	C2	h2	h	h	h2	h3	C4	f2	f2	f2	f2	
10										C4	C2	l	l	l2	h3 l	h2	h2	h2	C4	f2	f6	f3	f4	f2
11	f			f	f	f2	l2	C2 l2	h2	h l	h l	h2 l	h l	h2	h2		h	h	C4 h2	f f2	f4	f2	f2	
12	f2	f2	f2		f2		C2	C4	h3	h2 h	h2	h l	l	l	l2		h	h	C3	f2	f4	f4	f4	f2
13	f3	f3	f3	f3			h	h	h	h2	h3 h	C3	C4	C5	h	h	h2	h	h2	f3	f2	f2	f3	f6
14	f4	f	f3	f2	f2		C	h2	h	h2	C2	C4	h2 C	h2	h	h2	h2	h3	C3	f5	f2	f2	f3	f5
15	f3	f4	f3	f2	f3	f3	C3	h3	h2	h2	h2	h	l	h	h h	h h	h l	h l	h4	f2	f2	f4	f3	f3
16	f3	f2	f2	f2	f4	f2	h2	h2	h2	h2	h3	h	h	h	h	h3	h4	h3	C3	f2	f3	f2	f3	f2
17	f3	f4	f3	f2	f2		C3	h4	C4 l	l2	l3	l3	l	l2	h	h3		h4 h	C4	f2	f3	f2	f2	f3
18	f3	f	f5	f3	f2	f2	h2	h2	h2	h2	h	C2	C2	l2	l2	l	h3	h3	C3	f2	f2	f3	f2	f4
19	f2	f2		f	f		C2	h3	C3	C3	C4	C2	C2	C3	l2	l3	h2	h3	C5 l	f2	f2 f	f2	f6	f2
20	f2	f4	f3	f6	f2	f3	h3	h	h2	l2	h2 l	l2	l2	C2	h h	h3	h2	C3	h7	f	f2	f2	f4	f5
21	f4	f3		f2	f2	f	l2	h2 l3	h2	C4	C3	C3	C3	C	l	l	l	l	h l	f3 f2	f2	f2	f2	f2
22	f3	f3	f2	f7	f3	f4	l3	l2	h	l3	l	l	l				l2	l2	l2	f5	f2		f2	f2
23	f3	f4	f4	f2	f	f2	h2	C2	h	h	h	h	C	C2	l3		h	h	C4	f3	f3	f3	f6	f5
24	f2	f3	f3	f3	f f	f	C4	h3	h2	h3						h		h2	C2	f3	f4	f3	f2	f3
25	f2	f3	f f2	f2	f2 f3	f	C3	h3	C2	h2	C2	C2	C3	l3	l3	l5	l2	l2	l4	f3	f4	f3	f3 f3	f2
26	f2	f3	f3	f4	f2	f f2	l	h2	h	h3	h	C2	l	l3	l	h	l	l2	l4	f f5	f7	f2	f f2	f3
27	f3	f3	f3	f2	f4	f3	l4	l5	h3 l2	h l	h2 l	h2	h2	h2	h	h2	h2	l2	l2	f3	f3		f4	f3
28	f			f f2			h	h2	h3	h2	h2	C2	C2	C3	l	l3	l2	l4	l4	f3	f4	f6	f3	f4
29	f3	f5	f2	f3	f	f	h3	h2	h	h3	C3	C2	C3	h	h2 l	h2 l	l h	h l2	h2 l	f2	f2 f2	f2 f	f3	f6
30	f4	f4	f2	f4	f3	f2	l2	l3	l	l3	C3	l2	l	h l	h	h2	h2 l2	h5 l3	h7 l5	f2 f3	f2 f	f4	f4	f3
31	f f3	f4	f4	f2	f3	f f2	C3 l	h3	h4	h2	C2	C2	l	h2 l2	h2 h	h	h2	h2	C3	f3	f3	f4	f4	f4
No.																								
Median																								

Types of Es

Sweep 1.0 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 12

SOLAR RADIO EMISSION 200 Mc/s

Flux in 10^{-22} w.m.$^{-2}$ (c/s)$^{-1}$, 2 polarizations

HIRAISO

Time in U.T.

May 1962	Steady Flux					Variability				
	00-03	03-06	06-09	21-24	mean	00-03	03-06	06-09	21-24	mean
1	6	6	6	(6)	6	0	0	0	(0)	0
2	6	6	6	(6)	6	0	0	0	(0)	0
3	6	5	6	(6)	6	0	0	0	(0)	0
4	6	6	-	5	6	0	0	-	0	0
5	5	5	(5)	5	5	0	0	(0)	0	0
6	5	5	6	-	6	0	0	0	-	0
7	(5)	(5)	(5)	-	(5)	(0)	(0)	(0)	-	(0)
8	6	6	6	-	6	0	0	0	-	0
9	7	5	6	-	6	0	0	0	-	0
10	5	6	6	-	6	0	0	0	-	0
11	8	11	11	-	10	1	1	1	-	1
12	5	6	6	-	6	1	0	1	-	0
13	7	6	7	-	7	0	0	0	-	0
14	7	6	6	-	6	0	0	0	-	0
15	6	6	6	-	6	0	0	0	-	0
16	6	5	5	-	5	0	0	0	-	0
17	(6)	6	-	-	6	(0)	0	-	-	0
18	5	6	6	-	6	0	0	0	-	0
19	-	5	5	(6)	5	-	0	0	(0)	0
20	6	6	6	-	6	0	0	0	-	0
21	6	6	6	(9)	6	0	0	0	(1)	0
22	10	12	13	(15)	11	1	2	1	(2)	1
23	11	12	12	(6)	12	1	1	1	(1)	1
24	9	8	7	26	8	0	0	0	2	0
25	18	21	20	15	20	2	2	2	2	2
26	9	24	21	17	18	1	1	1	1	1
27	9	14	26	5	15	1	1	1	0	1
28	6	5	6	-	6	0	0	0	-	0
29	6	6	6	-	6	0	0	0	-	0
30	6	6	6	-	6	0	0	0	(1)	0
31	6	-	-	-	(6)	(0)	-	-	0	(0)

No outstanding occurrence.

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

May 1962	Whole Day Index	L. N. 06 12	L. N. 12 18	L. N. 18 24	W W V 00 06	W W V 06 12	W W V 12 18	W W V 18 24	S. F. 00 06	S. F. 06 12	S. F. 12 18	S. F. 18 24	W W V H 00 06	W W V H 06 12	W W V H 12 18	W W V H 18 24	Warning 00 06	Warning 06 12	Warning 12 18	Warning 18 24	Principal magnetic storms Start	End	ΔH
1	4+	4	4	4	4	-	-	C	5	5	4	4	4	5	5	5	N	N	N	N			
2	4o	3	4	4	C	-	-	C	4	4	(4)	4	5	4	4	4	N	N	N	N			
3	3+	3	3	4	C	-	-	C	4	3	3	4	4	5	5	5	N	N	U	U			
4	4+	4	4	4	4	-	4	4	5	4	4	5	4	4	5	4	U	N	N	N			
5	4+	5	4	4	4	-	4	5	5	4	4	5	4	4	4	4	N	N	N	N			
6	4+	5	4	5	5	-	-	3	5	5	4	3	4	5	4	3	N	N	N	N			
7	3+	3	3	4	2	-	-	3	3	3	4	4	4	4	(4	4)	U	U	U	U			
8	4o	4	4	4	3	-	-	3	5	4	4	4	4	4	4	4	U	N	N	N			
9	4o	4	4	4	3	-	-	4	4	5	5	4	4	4	4	4	N	N	N	N			
10	4o	4	4	4	3	4	4	5	4	4	4	4	4	4	4	4	N	N	N	N			
11	4o	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	N	N	N	N			
12	4+	4	4	5	4	4	5	5	4	4	4	4	4	5	5	4	N	N	N	N			
13	4+	5	4	4	5	-	4	4	4	5	4	4	4	4	4	4	N	N	N	N			
14	4o	3	4	4	(4)	-	(4	4)	3	5	5	4	4	5	4	4	N	N	N	N			
(15)	4o	4	4	4	(4)	-	4	(3)	4	4	4	4	4	4	4	4	N	N	N	N			
(16)	4-	4	5	4	3	-	-	4	3	3	4	4	4	4	4	4	N	N	N	N			
(17)	4o	4	4	3	4	4	4	4	(4)	4	4	(4)	4	4	4	4	N	N	N	N			
18	4+	4	4	4	4	4	5	5	(4)	4	4	4	4	4	4	4	N	N	N	N			
19	4o	5	4	3	4	4	4	4	(4)	4	5	(4)	4	4	5	4	N	N	N	N			
20	4o	5	4	3	3	4	4	4	(4)	5	5	4	4	4	5	4	N	N	N	N			
21	4+	5	4	3	4	4	5	5	(4)	5	5	4	4	4	4	4	N	N	N	N			
22	4+	5	4	4	4	4	5	5	(4)	5	5	4	4	5	4	4	N	N	N	N			
23	4o	4	4	4	5	5	4	4	3	4	4	4	5	5	4	4	N	N	N	N			
24	4+	5	4	4	5	4	5	4	4	4	5	4	4	4	4	4	N	N	N	N			
25	4+	4	4	4	3	4	4	5	(5	5)	4	4	4	5	5	4	N	N	N	N			
26	4+	4	5	4	4	4	5	5	(4)	5	5	(3)	4	4	4	4	N	N	N	N			
27	4-	4	3	3	4	4	4	4	(3)	4	4	4	4	5	5	4	N	N	N	N	0413	---	64γ
28	4-	4	4	4	4	3	3	3	(4)	4	4	(4)	4	4	4	3	N	N	N	N	---	01xx	
29	4o	4	4	4	3	4	4	4	(4	4)	4	4	4	4	4	4	N	N	N	N			
30	4+	4	4	4	4	4	4	5	4	4	4	5	4	5	4	4	N	N	N	N			
31	3+	4	3	2	4	3	3	4	4	3	2	3	4	4	3	3	N	N	U	U	04xx	---	111γ

* = day of Special World Interval

( ) = Regular World Day

- = impossible to evaluate

( ) = inaccurate

C = artificial accident

--- = continuing magnetic storm

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

May 1962	S W F								S E A			Correspondence		
	Drop-out Intensities (db)					Start-time	Dura-tion	Type	Imp.	Start-time	Dura-tion	Imp.	Flare	Solar Noise	Mag.
	WS	SF	HA	TO	LN										
1		7	15'		10	06:44	15	S	2-	06:48	75	2			

IONOSPHERIC DATA IN JAPAN FOR MAY 1962

第 14 号　第 5 巻

昭和 37 年 7 月 25 日　印　刷
昭和 37 年 7 月 30 日　発　行　（不許複製非売品）

編集兼
発行人　　精　　谷　　績
東京都小金井市貫井北町 4の573

発行所　　郵政省電波研究所
東京都小金井市貫井北町 4の573
電話 (0423) (2) 1211 (代)

印刷所　　山内欧文社印刷株式会社
東京都豊島区日ノ出町 2の228
電話 (971) 9341