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IONOSPHERIC DATA IN JAPAN

FOR JANUARY 1962

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THE RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

KOKUBUNJI, TOKYO, JAPAN

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THE RADIO RESEARCH LABORATORIES

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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°03.2′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 nomal 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

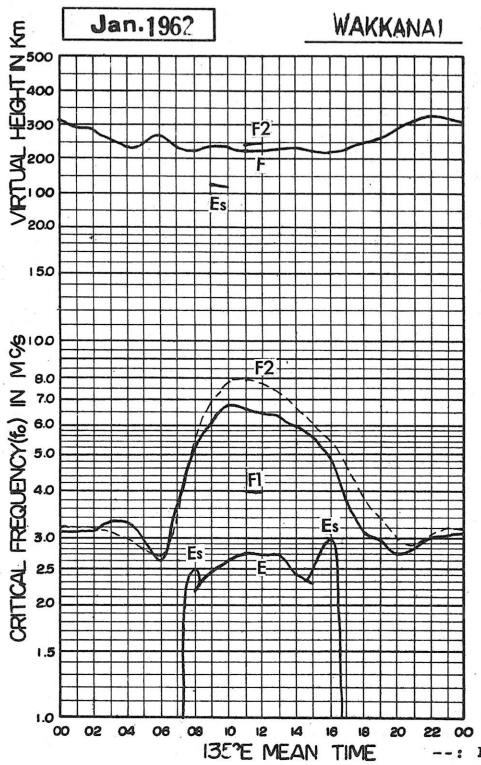
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out ;

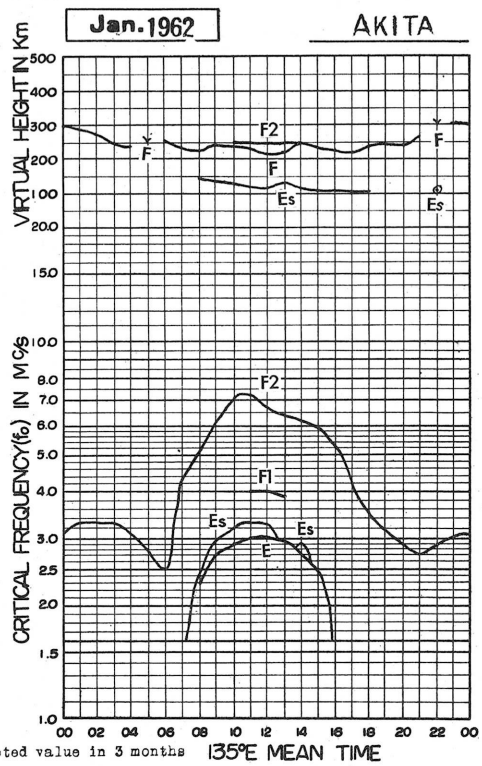
1—	1	1+
2—	2	2+
3—	3	3+

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.

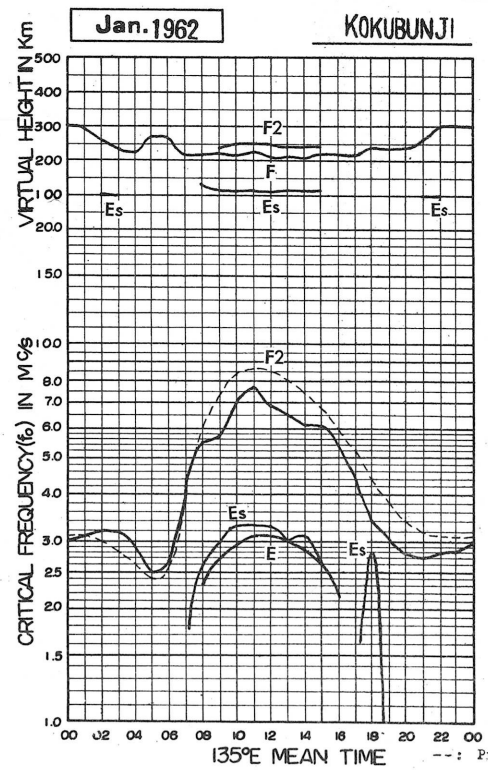
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

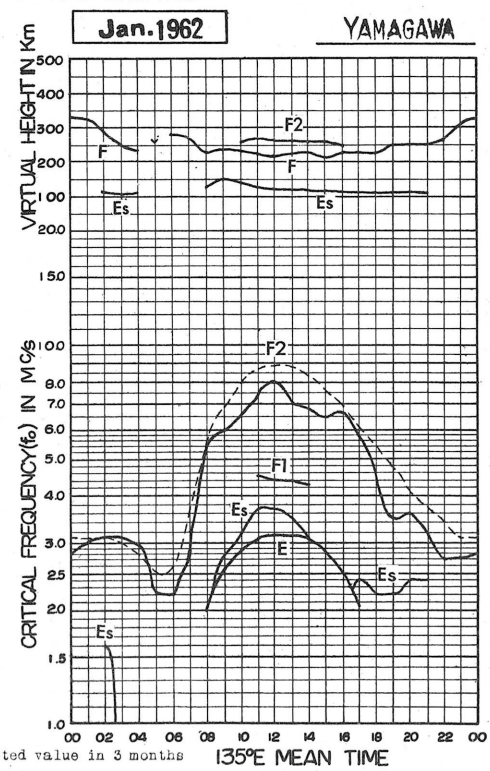




--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





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

IONOSPHERIC DATA

Jan. 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	2.8	3.0	3.0	3.3	I 2.6 SF	2.3	J 1.9 S	3.7	U 5.9 S	6.4	6.0	7.4 H	8.8	6.4 H	6.4	5.5	5.0	3.5	3.1	2.6	2.7	2.5	2.6	2.8
2	3.3	3.1	3.2	3.3 F	U 3.5 SF	U 3.3 SF	2.9	3.6	4.8	5.6	6.5 H	7.7 H	7.9	6.9 H	6.2 H	5.3	5.0	3.5	3.3	2.9	I 2.8 C	I 2.9 C	3.1	3.2
3	3.1	3.1	3.2	3.4	3.0	2.8	2.9	3.5	5.6	6.2	6.5	6.3	7.0 H	6.9 H	6.6	6.4	4.3	2.9	3.3	2.9	2.7	I 2.7 S	2.6	2.6
4	3.0	3.1	3.1	3.2	2.9	2.8	3.0	4.1	5.2	5.5	6.5 H	5.8 H	7.4	6.4 H	5.6	5.0	6.1	3.6	3.3	3.0	I 2.7 A	2.3	2.6	2.8
5	3.0	2.8	3.0	2.9	2.6	2.8	2.8	3.8	5.0	5.0	6.0	6.0	5.4	5.7 H	5.4	6.0	4.8	2.6	2.9	2.6	I 2.3 S	2.4	2.5	2.7
6	2.8	2.8	2.8	2.8	2.7	2.5	2.3	3.8	5.0	5.2	6.5	5.3 H	6.0 H	6.8 H	5.2 H	5.3 H	4.3	4.0	3.0	2.3	I 2.6 S	I 2.6 S	2.7	3.1
7	3.1	3.3	3.2	3.4	3.3	4.1	3.0	3.3	5.1	5.1 H	6.4	5.6	6.3	5.6	5.1	5.4	4.0	3.0	3.1	3.0	2.9	2.8	3.2	FS
8	FS	FS	3.0 F	3.3 F	3.3	2.6	I 2.4 S	3.3	4.3	5.3	6.8	6.2	6.9 H	5.6 H	6.0	6.3	3.9	3.6	2.4	2.7	3.4	4.0	SF	F
9	F	F	3.1	3.0	3.0	2.3	2.3	3.5	5.4	5.5	6.8 H	6.3 H	5.5 H	6.1	6.0	5.0	4.6	3.8	I 2.4 SA	I 2.5 S	I 2.5 S	2.6	2.8	I 2.9 FS
10	3.0	2.6	F	F	FS	3.0	I 2.6 S	3.5	5.0	6.1 H	5.9	7.3 H	6.2 H	5.9	5.7	5.3	5.6	4.3	3.0	3.0 F	2.5	3.0	2.9	2.6
11	3.0	3.2	2.6	2.0	A	A	A	3.3	7.2	6.0	8.9 H	6.4	6.3 H	5.9	6.1	5.1	5.0	3.8	2.8	3.0	2.9	3.3	F	F
12	FS	3.0 F	2.8 F	3.0	2.8	2.6	I 2.8 S	3.0	5.6	6.5	6.8 H	6.7	6.0	6.9 H	6.1	4.9	5.0	3.5	3.5	3.8	I 3.7 SF	I 3.3 FS	I 3.0 SF	2.8
13	2.9	2.9	3.1	I 3.8 F	SF	SF	SF	4.1	5.2	5.3	5.8	5.7 H	6.6 H	6.3	7.5	5.3 H	4.0	4.5	3.3	2.3	2.6	2.7	3.0	3.2
14	F	F	F	F	F	F	2.6	3.6 H	4.2	5.4 H	U 6.7 R	U 6.6 R	U 5.3 RH	U 7.0 R	5.7	5.8	4.8	3.1	I 2.8 A	3.3	2.8	3.1	I 3.6 S	F
15	FS	FS	F	F	F	FS	I 4.2 FS	3.3	4.8	7.5	7.1 H	6.6	7.8	7.0	5.7	6.0	4.9	4.8	3.1	3.1	3.5	I 3.4 SF	3.5	I 3.8 SF
16	4.1	3.5	3.4 F	3.3 F	U 3.8 F	U 3.2 F	I 3.1 F	3.7	5.1	6.8	5.4	6.0	6.1	6.3 H	5.9 H	5.4	4.8	4.1	3.6	3.3	2.9	I 3.0 SA	SF	F
17	FS	FS	FS	F	FS	F	F	3.7	5.6	6.9	7.7 H	7.4 H	6.4 H	7.3 H	6.0	5.4	4.9	3.8	2.5	I 2.5 S	2.5	2.8	3.0	3.1
18	3.4	3.4	3.3 F	3.3 F	3.3 F	U 3.3 S	U 2.3 S	3.3	5.1	U 6.2 SH	5.7	5.6	6.7	6.2	7.0	5.5 H	4.9	3.8	I 3.2 AS	2.6	2.6	3.0	SF	SF
19	SF	3.3 F	3.3 F	3.4 F	I 3.4 F	I 3.0 F	U 2.8 S	3.5	5.3	U 6.7 S	5.0	7.0	6.0	5.5 H	6.0	5.6	5.7	3.6	4.1	3.0	2.6	3.0	3.1	U 3.3 F
20	3.6	3.8	3.5 F	3.8	I 4.3 S	I 3.0 SF	2.7	3.5	5.4	6.2	6.7 H	7.6	6.9	6.3	6.0 H	5.7	4.1	I 3.7 C	I 3.1 C	2.8	I 2.5 S	2.6	U 3.0 F	U 2.9 F
21	3.0	2.9	2.8	3.0	2.1	2.2	2.3	3.7	5.0	6.8	7.1 H	5.9	5.8	5.8 H	5.8	5.3	4.8	3.3	3.0	2.6	2.6	2.5	2.6	2.6
22	3.0	2.9	3.0	2.9	2.8	2.5	2.4	3.6	6.2	7.1	7.0 H	U 6.1 R	5.5 H	5.6	6.1	5.8	4.9	3.5	2.5	S	A	A	FS	F
23	F	3.1 F	F	F	FS	FS	2.2	3.6	5.1	7.0	7.7	6.8	5.7 H	5.7	6.4	5.2	4.2	3.8	3.6	2.9	2.8	I 2.5 A	3.0	3.0
24	3.2	3.1	3.1	3.1	3.3	3.6	2.5	3.5	5.0	6.1	7.0	6.6	6.9	5.7	5.8	6.3	4.4	3.9	2.7	2.4	2.7	U 3.0 S	3.1	3.2
25	2.8	2.7	2.8	2.8	2.7	2.3	I 2.5 S	4.0	5.2	6.3	7.6	7.3	6.1	6.1	6.8	6.2	5.3	3.4	3.5	3.1	U 2.7 S	3.0	3.0	3.2
26	3.3	3.3	3.2	3.2	3.3	3.5	3.0	4.0	4.8	6.5	5.7 H	6.3	7.1	6.6 H	6.3	5.8	5.3	3.8	3.1	3.3	2.6	I 3.0 FS	3.3 F	3.2
27	3.3	3.3	3.1	3.4	I 3.4 SF	I 3.6 SF	3.0	4.3	5.8	6.9 H	8.1	6.6 H	7.0	6.8 H	6.6 H	5.8 H	5.7	4.5	4.2	4.4	3.6	3.4	3.5	3.9
28	3.9	3.8	3.8	3.8	3.6	3.4	2.6	U 4.3 S	C	C	C	C	C	C	C	C	5.6	3.5	4.0	3.5	2.8	2.6	2.8	3.0
29	3.0	3.3	3.2	3.1	3.0	3.3	2.4	4.2	5.9 H	6.3	6.8	7.8 H	7.3	8.5	7.1 H	6.5	5.2	4.0	3.3	2.8	U 2.6 S	2.6	3.0	3.1
30	3.2	3.0	U 3.4 F	3.8	3.3	1.9	J 2.1 S	4.3	6.8	6.6	7.1 H	6.5 H	6.8	6.6	7.0	5.8	5.9	3.8	4.3	4.2	3.0	2.6	2.7	3.0
31	3.3	3.1	3.5 F	3.6	3.8	3.4	2.7	4.3	5.7	6.6	7.7 H	7.1 H	6.6	6.3	7.0	5.9	5.0	4.6	3.5	3.1	3.2	3.4	3.2	3.4
No.	23	26	26	26	24	25	28	31	30	30	30	30	30	30	30	30	31	31	31	30	30	30	26	24
Median	3.1	3.1	3.1	3.3	3.3	3.0	2.6	3.6	5.2	6.2	6.8	6.6	6.5	6.3	6.0	5.6	4.9	3.8	3.1	3.0	2.7	2.8	3.0	3.0
U.Q	3.3	3.3	3.3	3.4	3.4	3.4	2.9	4.0	5.6	6.7	7.1	7.1	7.0	6.8	6.6	5.9	5.3	3.9	3.5	3.1	2.9	3.0	3.1	3.2
L.Q	3.0	2.9	3.0	3.0	2.8	2.6	2.4	3.5	5.0	5.5	6.0	6.0	6.0	5.8	5.8	5.3	4.4	3.5	2.9	2.6	2.6	2.6	2.7	2.8
Q.R	0.3	0.4	0.3	0.4	0.6	0.8	0.5	0.5	0.6	1.2	1.1	1.1	1.0	1.0	0.8	0.6	0.9	0.4	0.6	0.5	0.3	0.4	0.4	0.4

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

Jan. 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																								
2																								
3																								
4													L											
5																								
6																								
7																								
8											L													
9																								
10																								
11																								
12												L												
13																								
14											A													
15																								
16																								
17																								
18													L											
19												I4.0 L	4.0											
20												U4.0 L	3.7	3.9										
21												U4.0 L	3.8											
22												U4.0 L	4.0											
23												4.1												
24											U4.0 L		4.1											
25												4.0	I4.0 B	4.0	B									
26																								
27													U4.0 L											
28									C	C	C	C	C	C	C	C								
29													4.3	4.0										
30																								
31																								
No.											1	6	8	3										
Median											U4.0	U4.0	4.0	4.0										

foF1

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

The Radio Research Laboratories, Japan.

W 2

10

IONOSPHERIC DATA

Jan. 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								S	2.00	2.20	2.35	2.60	2.90	2.70	2.30	S								
2									S	2.25	2.60	2.45	I 2.65 A	2.70	2.35	S								
3									2.25	2.40	2.50	2.50	2.45	2.50	2.45	S	S							
4									S	2.30	2.55	2.75	2.75	2.75	2.30	S	S							
5									S	2.35	2.50	2.70	2.50	2.30	A	S	S							
6									S	2.45	2.50	2.60	2.50	2.80	2.60	S								
7									2.05	2.30	2.65	2.70	2.70	2.60	2.20	S	S							
8									S	2.50	2.80	2.80	2.55	2.45	2.15	S								
9									2.15	2.35	2.65	2.75	2.55	2.50	2.30	S								
10									S	2.20	2.65	2.65	2.65	2.55	2.30	A								
11									S	A	2.50	2.60	2.65	2.35	2.10	S								
12									A	A	2.50	2.85	B	B	B	S	S							
13									A	A	2.40	2.65	I 2.70 B	2.60	2.30	B								
14									S	2.45	B	B	B	B	B	B								
15									S	B	2.45	I 2.60 A	2.60	I 2.70 B	2.40	S	S							
16									A	A	A	2.30	2.70	2.70	2.55	S	S							
17									S	2.45	2.55	I 2.70 A	2.70	2.70	2.55	S	S							
18									A	2.45	2.55	2.80	2.80	2.60	S	S	S							
19									S	2.50	2.80	2.85	2.85	2.70	2.40	S	S							
20									S	A	A	A	2.85	I 2.85 S	A	A	A							
21								S	S	2.30	2.60	2.75	2.85	2.60	S	S	S							
22								S	2.15	2.50	2.65	U 2.85 S	2.75	2.70	2.55	S	S							
23								A	2.00	2.50	2.85	2.70	B	B	B	B	S							
24								S	U 2.30 R	A	B	A	2.85	2.70	I 2.50 B	S	S							
25									A	B	B	B	B	B	B	A	A							
26								S	S	B	B	B	U 2.90 R	2.90	I 2.75 B	2.30	S							
27								S	S	2.60	2.80	2.95	3.00	2.95	2.65	2.20	S							
28								S	C	C	C	C	C	C	C	C	S							
29								S	S	2.65	2.95	3.00	2.95	2.90	2.60	2.35	S							
30								S	2.25	2.50	2.90	2.85	2.95	2.95	2.60	2.35	S							
31								S	2.25	2.60	2.80	3.00	3.00	2.90	2.70	2.25	S							
No.									9	21	24	25	26	26	22	5								
Median									2.15	2.45	2.60	2.70	2.70	2.70	2.40	2.30								

foE

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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	E	E	S	G	2.8	3.0	G	G	G	G	S	E	E	E	E	E	E	E	E
2	$J_{2.3}$	E	E	E	E	E	E	E	S	G	3.2	3.5	$J_{3.3}$	G	G	S	E	E	E	E	C	C	E	E
3	E	E	E	E	E	E	E	E	G	G	G	3.2	G	G	G	S	S	E	E	E	E	S	E	2.5
4	3.0^{M}	$J_{2.0}$	2.2^{M}	E	E	E	E	E	S	G	G	G	G	G	3.0	3.0	S	E	E	E	3.2	E	E	E
5	E	E	E	E	E	E	E	E	S	G	G	G	3.0	G	$J_{3.3}$	3.0	S	E	E	E	S	E	E	E
6	E	3.0	E	E	1.6	E	E	E	S	G	G	3.7	3.4	G	G	S	E	E	E	E	S	S	E	2.4
7	E	1.5	E	E	E	E	E	E	G	G	G	G	G	3.3	3.1	S	S	E	E	E	E	E	E	E
8	E	E	E	3.3	E	E	S	E	S	G	G	G	G	3.0	G	S	E	E	E	E	E	E	E	E
9	E	E	E	E	E	E	E	E	G	3.0	G	G	G	3.1	G	2.2	2.9	2.9	2.9	S	S	E	E	E
10	E	E	E	E	E	E	S	E	S	2.8	G	G	G	G	G	2.5	5.0	E	E	E	E	E	E	E
11	E	E	E	1.6	$J_{3.3}$	$J_{5.3}$	$J_{3.3}$	2.8	S	6.0	G	G	G	G	G	S	E	E	2.3	E	E	E	2.4	E
12	E	2.5	$J_{2.3}$	$J_{2.7}$	E	$J_{2.3}$	S	3.0	6.3	$J_{6.3}$	G	G	B	B	B	S	S	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	2.3	$J_{3.3}$	3.0	G	G	B	G	G	B	3.0	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	S	G	3.8	B	B	B	3.5	B	E	$J_{5.3}$	$J_{4.3}$	E	E	E	E	3.0
15	E	E	$J_{2.7}$	E	3.1	$J_{2.3}$	E	E	S	2.6	3.2	$J_{5.3}$	G	B	G	S	S	E	E	E	E	E	E	$J_{2.3}$
16	$J_{2.5}$	$J_{2.3}$	$J_{2.5}$	2.3	E	E	E	E	2.7	3.1	3.4^{M}	2.9	G	G	G	S	S	$J_{2.3}$	E	$J_{2.5}$	E	$J_{3.0}$	E	E
17	2.5	E	E	E	E	E	E	E	S	3.4	G	3.3	G	2.5^{G}	G	S	S	E	E	S	E	E	E	$J_{2.4}$
18	E	E	E	2.5	$J_{2.1}$	E	E	E	$J_{4.3}$	G	G	G	G	G	3.1	3.2	$J_{6.1}$	E	$J_{3.3}$	$J_{3.3}$	$J_{3.0}$	$J_{2.6}$	E	E
19	E	E	E	E	E	E	E	2.5	S	G	G	G	G	G	G	$J_{4.3}$	4.3	$J_{4.6}$	E	3.0	E	E	E	E
20	E	E	E	E	1.8	E	2.9	E	$J_{5.3}$	11.3	5.3	3.0	G	S	3.0	$J_{3.3}$	$J_{4.3}$	C	C	E	S	E	E	E
21	E	E	E	E	E	E	E	S	2.7	G	G	G	G	G	S	S	S	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	S	G	G	G	G	G	G	G	S	S	E	E	S	$J_{3.3}$	$J_{4.3}$	3.3	E
23	E	E	E	E	$J_{2.3}$	1.9	3.1	2.5	2.5	2.9	G	G	B	B	B	B	S	E	E	E	E	$J_{4.3}$	E	E
24	E	2.5	E	1.8	E	E	E	S	G	3.0	B	3.4	G	G	B	S	S	2.8	E	E	E	$J_{2.9}$	E	E
25	E	E	E	E	E	E	S	$J_{2.6}$	2.8	B	B	B	B	B	B	$J_{4.3}$	6.0	E	E	E	3.0	E	E	E
26	E	E	E	E	E	E	E	S	S	B	B	B	G	G	B	G	S	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	2.6	S	G	G	G	G	G	G	G	S	E	E	E	E	E	2.3	E
28	E	E	E	E	E	E	E	S	C	C	C	C	C	C	C	C	S	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	S	3.5	G	G	G	G	G	G	G	S	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	S	G	G	3.4	G	G	G	G	G	$J_{4.3}$	4.3	$J_{3.0}$	$J_{2.3}$	E	2.3	E	E
31	E	E	E	E	E	E	E	S	G	G	G	G	G	G	G	G	S	E	E	E	E	E	E	E
No.	31	31	31	31	31	31	27	22	17	28	27	27	25	24	24	13	14	31	31	28	26	28	31	31
Median	E	E	E	E	E	E	E	E	2.5	G	G	G	G	G	G	2.5	3.0	E	E	E	E	E	E	E
U.Q	E	E	E	E	E	E	E	2.5	3.4	3.0	3.0	3.0	G	G	G	3.2	4.3	E	E	E	E	E	E	E
L.Q	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E	E
Q.R																								

foEs

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

Jan. 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								S		G	G.					S								
2	E								S		G	G	3.1			S					C	C		
3												G				S	S					S		E
4	E	E	E						S						G	G	S				A			
5									S				G		3.0	G	S				S			
6		E			E				S			G	G			S					S	S		E
7		E												G	G	S	S							
8				E			S		S					G		S								
9										G				G		G	E	E	A	S	S			
10							S		S	G						2.1	3.2							
11				E	A	A	A	E	S	4.1						S			E				E	
12		E	E	E		E	S	E	3.0	3.0			B	B	B	S	S							
13								E	2.1	2.7			B			B	E							
14									S		3.8	B	B	B	G	B		E	A					E
15			E		E	E			S	G	G	3.6		B		S	S							E
16	E	E	E	E					2.3	2.9	2.8	G				S	S	E		E		As		
17	E								S	G		2.9		2.5		S	S			S				E
18				E	E				2.3						G	G	G		As	E	E	E		
19								E	S							G	G	3.0		E				
20					E		E		3.2	4.1	3.0	3.0		S	2.5	3.0	3.0				S			
21								S	G						S	S	S							
22								S								S	S			S	A	A	E	
23					E	E	1.9	2.2	G	G			B	B	B	B	S					A		
24		E		E				S		2.9	B	3.0			B	S	S	E				E		
25							S	E	2.8	B	B	B	B	B	B	2.5	3.4				E			
26								S	S	B	B	B			B		S							
27								G	S								S						E	
28								S	C	C	C	C	C	C	C	C	S							
29								S	G								S							
30								S			G						4.0	E	E	E		E		
31								S									S							
No.																								
Median																								

foEs

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

Jan. 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	E2.00S	E1.70S	E1.70S	E2.00S	E1.20S	E1.70S	E2.00S	E1.60S	1.85	2.00	2.00	2.00	2.00	2.00	2.00	E2.20S	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E1.70S
2	E2.00S	E1.80S	E	E	E	E	E1.90S	E2.00S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	E2.10S	E2.00S	E2.00S	E1.90S	E1.95S	C	C	E1.90S	E1.90S
3	E2.00S	E2.00S	E1.90S	E	E	E1.50S	E1.80S	E1.90S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.05S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	S	E2.00S	E1.90S
4	E1.90S	E	E	E	E	E	E2.00S	E1.80S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S
5	E2.00S	E1.90S	E	E1.85S	E	E2.00S	E2.00S	E2.00S	E2.00S	2.00	2.05	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S	S	E2.00S	E2.00S	E2.00S
6	E2.00S	E	E	E	E	E1.80S	E1.60S	E2.00S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E1.80S	E1.90S	E2.00S	S	S	E1.95S	E1.90S
7	E1.90S	E	E1.90S	E1.60S	E	E1.50S	E1.70S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.05S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
8	E2.00S	E	E	E	E	E1.60S	S	E2.00S	E2.10S	2.15	2.00	2.00	2.00	2.00	2.00	E2.10S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
9	E2.00S	E	E	E	E	E1.20S	E2.00S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E2.00S	S	S	E1.85S	E2.00S	E2.00S
10	E1.80S	E	E	E	E	E1.20S	S	E1.80S	E2.10S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E1.90S	E1.80S	E2.00S	E2.00S	E2.00S	E2.00S
11	E2.00S	E2.00S	E	E	E	E	E1.90S	E1.90S	E2.10S	2.00	2.00	2.00	2.10	2.00	2.00	E2.00S	E2.00S	E1.85S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E1.95S
12	E2.00S	E1.60S	E	E	E	E	S	E1.85S	1.90	2.00	2.00	2.15	3.00	3.00	2.70	E2.00S	E2.05S	E1.80S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E1.90S
13	E1.90S	E	E2.00S	E	E	E1.70S	E1.90S	E1.80S	E1.95S	2.00	2.20	2.40	3.10	2.40	2.20	2.05	E2.00S	E1.90S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E1.90S
14	E2.00S	E	E	E	E1.60S	E	E1.85S	E1.60S	E2.00S	2.00	3.00	4.10	3.20	3.60	2.80	2.90	E2.10S	E1.90S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E1.90S
15	E1.85S	E1.60S	E	E	E	E	E1.90S	E2.00S	E2.10S	2.25	2.00	2.05	2.00	2.80	2.00	E2.00S	E2.00S	E1.80S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
16	E1.90S	E	E	E	E	E1.20S	E1.90S	E1.95S	2.00	2.00	2.00	2.00	2.00	2.10	2.10	E2.10S	E2.00S	E1.90S	E2.00S	E1.90S	E2.00S	E2.00S	E1.90S	E1.95S
17	E2.00S	E	E	E	E	E	E1.85S	E2.00S	E2.20S	2.00	2.00	2.00	2.00	2.00	2.00	E2.10S	E2.10S	E2.00S	E2.00S	S	E2.00S	E2.00S	E2.00S	E2.00S
18	E1.90S	E2.00S	E	E	E	E	E1.90S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	E2.30S	E2.10S	E2.05S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
19	E2.00S	E2.00S	E2.00S	E2.00S	E	E1.90S	E2.00S	E2.00S	E2.20S	2.00	2.00	2.00	2.00	2.00	2.00	E2.10S	E2.00S	E1.90S	E1.50S	E2.00S	E1.80S	E1.90S	E2.00S	E2.00S
20	E1.80S	E	E1.20S	E	E	E2.00S	E1.70S	E2.10S	E2.00S	2.00	2.00	2.00	2.00	E2.80S	2.00	2.00	E2.00S	C	C	E2.00S	S	E2.00S	E1.90S	E2.00S
21	E2.00S	E1.50S	E1.80S	E	E	E	E2.00S	E1.90S	E2.00S	2.00	2.00	2.00	2.10	2.00	E2.20S	E2.20S	E2.00S	E2.00S	E2.00S	E1.80S	E2.00S	E1.90S	E2.00S	E2.00S
22	E1.90S	E1.60S	E1.20S	E	E	E1.85S	E1.80S	E2.00S	1.95	2.00	2.00	2.00	2.20	2.10	2.00	E2.20S	E2.00S	E1.95S	E1.50S	S	E2.00S	E1.90S	E2.00S	E2.00S
23	E1.90S	E1.50S	E	E	E	E1.20S	E1.80S	E1.90S	1.85	2.00	2.10	2.20	3.00	3.30	3.10	2.70	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
24	E2.00S	E2.00S	E2.00S	E	E	E1.70S	E1.90S	E2.00S	2.00	2.00	3.00	2.10	2.15	2.15	2.80	E2.20S	E2.00S	E1.90S	E2.00S	E1.85S	E2.00S	E2.00S	E2.00S	E2.00S
25	E2.00S	E2.00S	E2.00S	E1.60S	E	E1.20S	S	E1.70S	2.10	3.00	3.00	2.95	4.10	3.20	4.30	2.00	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.10S	E2.00S	E2.10S
26	E2.00S	E2.00S	E2.00S	E2.00S	E1.70S	E1.70S	E2.00S	E1.90S	E2.20S	2.90	3.10	3.10	2.30	2.30	2.90	2.00	E2.10S	E2.00S	E1.90S	E2.10S	E2.00S	E2.00S	E1.90S	E1.80S
27	E2.00S	E	E1.50S	E	E	E	E1.90S	E1.90S	E2.30S	2.00	2.10	2.00	2.15	2.00	2.00	1.95	E2.00S	E1.95S	E2.00S	E2.00S	E2.00S	E1.95S	E1.70S	E1.95S
28	E1.80S	E1.20S	E	E	E	E1.50S	E1.90S	E1.90S	C	C	C	C	C	C	C	C	E2.00S	E1.90S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S
29	E2.00S	E1.40S	E	E	E	E1.20S	E1.95S	E1.90S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.05S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
30	E2.00S	E1.90S	E	E	E	E1.40S	E2.00S	E2.00S	2.00	2.00	1.85	2.00	2.00	2.05	2.00	1.90	E2.05S	E2.00S	E1.85S	E2.00S	E2.00S	E1.85S	E2.00S	E1.80S
31	E2.00S	E1.50S	E	E	E	E	E2.00S	E1.90S	2.00	2.00	2.00	2.00	1.90	2.00	2.00	2.00	E2.00S	E2.00S	E1.60S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
No.	31	31	19	25	28	31	27	31	30	30	30	30	30	29	28	30	31	30	30	28	26	28	31	31
Median	E2.00	E1.50	E	E	E	E1.20	E1.90	E1.90	E2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.00	E2.00	E1.95	E2.00	E2.00	E2.00	E2.00	E2.00	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

Jan. 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	2.85	2.95	2.85	3.10	I 3.45 SF	3.40	J 3.60 S	3.40	U 3.35 S	3.15	3.60	3.40 H	3.55	3.75 H	3.55	3.45	3.45	3.30	3.30	3.40	3.00	2.90	2.80	2.85
2	2.75	2.95	2.90	2.95 F	U 2.90 FS	U 3.40 SF	3.15	3.35	3.65	3.55	3.40 H	3.50 H	3.40	3.20 H	3.35 H	3.60	3.55	3.25	3.10	3.10	I 3.00 C	I 2.90 C	2.85	2.80
3	3.00	2.90	2.90	3.05	3.05	3.20	3.05	3.45	3.55	3.40	3.45	3.50	3.55 H	3.40 H	3.50	3.65	3.45	3.05	3.35	3.20	3.20	I 3.25 S	2.90	3.10
4	2.85	2.90	3.25	2.95	3.10	3.25	3.25	3.45	3.65	3.80	3.45 H	3.20 H	3.55	3.75 H	3.45	3.45	3.70	3.35	3.35	3.25	I 3.45 A	3.15	3.00	2.95
5	3.00	3.10	3.00	3.05	3.45	3.15	3.20	3.55	3.75	3.70	3.70	3.35	3.70	3.85 H	3.65	3.40	3.55	3.10	3.25	3.25	I 3.00 S	2.90	2.90	2.90
6	2.90	2.95	2.95	3.05	3.25	3.30	3.25	3.40	3.85	3.35	3.65	3.45 H	3.30 H	3.70 H	3.75 H	3.60 H	3.75	3.40	3.15	3.40	I 3.30 S	I 2.95 S	2.95	2.85
7	2.90	3.05	3.15	3.20	3.35	3.40	3.45	3.20	3.70	3.30 H	3.45	3.55	3.50	3.75	3.45	3.85	3.60	3.05	3.55	3.50	3.10	3.05	3.15	FS
8	FS	FS	3.00 F	3.20 F	3.05	3.40	I 3.00 S	3.20	3.55	3.60	3.50	3.50	3.60 H	3.55 H	3.50	3.60	3.60	3.45	3.15	3.35	3.20	3.00	S F	F
9	F	F	3.00	3.00	3.25	3.05	3.45	3.30	3.60	3.50	3.55 H	3.35 H	3.50 H	3.40	3.65	3.60	3.50	3.40	I 3.30 SA	I 3.10 S	I 2.90 S	3.00	2.75	I 2.95 FS
10	3.10	3.10	F	F	FS	3.35	I 3.20 S	3.30	3.35	3.45 H	3.60	3.55 H	3.60 H	3.40	3.05	3.65	3.40	3.45	3.25	3.15 F	3.00	2.65	2.60	2.75
11	2.70	3.15	2.80	2.55	A	A	A	3.05	3.45	3.20	3.60 H	3.60	3.70 H	3.40	3.60	3.55	3.30	3.40	3.40	3.35	3.10	3.05	F	F
12	FS	2.90 F	3.05 F	3.35	3.20	3.30	I 3.30 S	3.35	3.55	3.55	3.55 H	3.65	3.35	3.50 H	3.70	3.55	3.55	3.35	3.15	3.15	I 2.85 SF	I 2.80 FS	I 2.95 SF	3.20
13	3.05	2.95	2.95	I 2.95 F	S F	S F	S F	3.45	3.70	3.60	3.50	3.50 H	3.65 H	3.50	3.55	3.70 H	3.65	3.35	3.35	3.40	3.15	2.95	2.90	3.15
14	F	F	F	F	F	F	3.40	3.60 H	3.70	3.35 H	U 3.50 R	U 3.75 R	U 3.25 RH	U 3.55 R	3.60	3.50	3.60	3.40	I 3.15 A	3.25	2.90	2.95	I 3.30 S	F
15	FS	FS	F	F	F	F S	I 3.05 FS	3.50	3.60	3.35	3.50 H	3.55	3.55	3.45	3.35	3.50	3.55	3.35	3.30	3.25	2.90	I 2.90 SF	3.05	I 2.90 SF
16	2.90	3.15	2.95 F	3.10 F	U 2.90 F	U 2.95 F	I 3.05 F	3.35	3.55	3.60	3.75	3.40	3.60	3.35 H	3.45 H	3.65	3.55	3.15	3.35	3.35	3.10	I 3.00 SA	S F	F
17	FS	FS	FS	F	FS	F	F	3.25	3.45	3.50	3.25 H	3.55 H	3.65 H	3.30 H	3.70	3.70	3.60	3.40	3.20	I 3.30 S	3.05	2.95	3.00	2.85
18	2.95	3.30	2.80 F	3.05 F	3.20 F	U 3.40 S	U 3.05 S	3.40	3.45	U 3.85 SH	3.50	3.60	3.50	3.45	3.45	3.10 H	3.65	3.15	I 3.40 AS	3.25	3.10	3.00	S F	S F
19	S F	2.80 F	2.95 F	3.45 F	I 3.55	I 3.40 F	U 3.30 S	3.40	3.40	U 3.50 S	3.65	3.55	3.65	3.25 H	3.45	3.40	3.45	3.10	3.45	3.55	3.10	3.00	2.85	U 2.75 F
20	2.85	2.95	2.85 F	2.90	I 3.20 S	I 3.10 SF	3.25	3.45	3.50	3.50	3.45 F	3.30	3.55	3.50	3.50 H	3.65	3.55	I 3.35 C	I 3.25 C	3.45	I 3.20 S	3.10	U 2.65 F	U 2.95 S
21	3.05	2.85	3.05	3.45	3.40	3.10	3.15	3.45	3.20	3.55	3.40 H	3.60	3.50	3.25 H	3.45	3.60	3.60	3.20	3.05	3.25	3.05	3.10	2.75	3.05
22	2.95	2.95	2.95	3.10	3.20	3.20	2.90	3.35	3.25	3.40	3.45 H	U 3.60 R	3.50 H	3.40	3.50	3.80	3.55	3.30	3.20	S	A	A	F S	F
23	F	3.15 F	F	F	F S	F S	2.80	3.55	3.45	3.40	3.50	3.70	3.60 H	3.15	3.60	3.60	3.40	3.15	3.35	3.30	3.30	I 3.15 A	2.90	2.95
24	2.90	2.95	2.95	3.20	3.10	3.30	3.30	3.40	3.30	3.60	3.30	3.50	3.50	3.50	3.40	3.65	3.75	3.30	3.25	3.15	3.05	U 2.80 S	2.90	2.80
25	3.05	3.05	3.10	3.20	3.10	3.15	I 3.20 S	3.40	3.65	3.50	3.55	3.55	3.60	3.50	3.50	3.65	3.65	3.25	3.30	3.25	U 2.95 S	2.70	2.85	2.80
26	3.05	3.05	2.95	2.95	3.05	3.15	3.40	3.40	3.40	3.60	3.25 H	3.35	3.55	3.35 H	3.65	3.55	3.45	3.40	3.00	3.35	3.10	I 2.80 FS	2.95 F	2.75
27	2.95	3.05	3.00	3.25	I 3.35 SF	I 3.25 SF	3.35	3.25	3.60	3.25 H	3.60	3.45 H	3.55	3.45 H	3.50 H	3.50 H	3.40	3.35	3.10	3.40	3.15	3.00	2.90	2.85
28	2.85	3.10	3.05	3.10	3.15	3.30	3.15	U 3.35 S	C	C	C	C	C	C	C	C	3.80	3.25	3.10	3.30	2.95	3.10	2.90	2.80
29	2.95	2.80	2.90	3.00	3.00	3.35	3.45	3.35	3.15 H	3.05	3.25	3.40 H	3.30	3.40	3.40 H	3.55	3.60	3.40	3.05	3.20	U 3.10 S	3.10	2.80	2.70
30	2.75	3.00	U 2.95 F	3.35	3.40	3.35	J 2.95 S	3.50	3.70	3.55	3.50 H	3.30 H	3.25	3.50	3.35	3.30	3.45	3.25	3.25	3.10	3.30	3.10	2.90	2.85
31	2.65	2.90	3.00 F	3.05	3.30	3.30	2.95	3.55	3.25	3.40	3.45 H	3.55 H	3.40	3.35	3.50	3.70	3.40	3.15	3.25	3.25	3.15	3.00	3.15	2.90
No.	23	26	26	26	24	25	28	31	30	30	30	30	30	30	30	30	31	31	31	31	30	30	26	24
Median	2.90	2.95	2.95	3.10	3.20	3.30	3.20	3.40	3.55	3.50	3.50	3.50	3.55	3.45	3.50	3.60	3.55	3.30	3.25	3.25	3.10	3.00	2.90	2.85

M(3000)F2

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

The Radio Research Laboratories, Japan.

W 7

IONOSPHERIC DATA

Jan. 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																								
2																								
3																								
4													L											
5																								
6																								
7																								
8											L													
9																								
10																								
11																								
12												L												
13																								
14											A													
15																								
16																								
17																								
18													L											
19												I3.75 L	3.75											
20												U3.75 L	4.00	3.75										
21												U4.00 L	4.00											
22												U3.80 L	3.90											
23												3.85												
24											U3.80 L		3.70											
25												3.70	I3.70 B	3.70	B									
26																								
27													U3.90 L											
28									C	C	C	C	C	C	C	C								
29													3.70	3.75										
30																								
31																								
No.											1	6	8	3										
Median											U3.80	U3.80	3.80	3.75										

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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																								
2																								
3																								
4													245											
5																								
6																								
7																								
8											260													
9																								
10																								
11																								
12												245												
13																								
14											275													
15																								
16																								
17																								
18																								
19													225											
20												245	230											
21												260	250	245										
22												235	260											
23												245	240											
24												240												
25											275		260											
26												245	250	260	B									
27																								
28													240											
29									C	C	C	C	C	C	C	C								
30													285	260										
31																								
No.											3	7	10	3										
Median											275	245	250	260										

h'F2 Sweep 1.0 Mc to 18.0 Mc in 1 min sec in automatic operation.

The Radio Research Laboratories, Japan.

W 9

17

IONOSPHERIC DATA

Jan. 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	310	320	320	270	280	250	350	235	240	220	230	240^{H}	245^{H}	205^{H}	210	220	220	235	250	270	275	300	335	350
2	330	285	290	285	255	235	240	240	215	230	245^{H}	240^{H}	240^{H}	215^{H}	230^{H}	225	225	250	265	270	I285^{C}	I325^{C}	330	320
3	260	300	305	250	230	250	320	250	230	235	225	240	230^{H}	235^{H}	230	225	225	235	250	270	280	I300^{S}	380	355
4	325	300	275	260	250	250	270	225	220	220	250^{H}	230^{H}	230	220^{H}	230	230	215	240	250	255	I270^{A}	300	330	315
5	300	290	265	260	225	290	260	220	210	210	240	220^{H}	220^{H}	240^{H}	225	225	205	310	250	270	I275^{S}	325	360	325
6	300	300	300	270	255	265	275	235	210	230	240	220^{H}	225^{H}	230^{H}	220^{H}	210^{H}	210	230	245	270	I280^{S}	I320^{S}	330	310
7	300	270	280	260	250	225	225	260	220	220^{H}	245	245	240	230	220	210	215	250	250	250	260	310	290	330
8	310	290	300	260	230	210	I300^{S}	250	215	240	250	240	225^{H}	220^{H}	245^{H}	230	210	225	300	260	280	260	310	300
9	345	270	260	250	235	275	280	245	225	230	240^{H}	215^{H}	210^{H}	245	240	225	205	225	I300^{SA}	I290^{S}	I315^{S}	330	350	340
10	270	265	285	250	210	210	I275^{S}	245	225	245^{H}	225	240^{H}	225^{H}	220^{H}	240	225	245	220	245	270	315	375	385	410
11	360	265	205	350	A	A	A	285	240	I230^{A}	220^{H}	235	215^{H}	205^{H}	240	220	230	230	240	250	265	275	335	310
12	310	290	310	270	230	260	I260^{S}	275	250	235	245^{H}	225	245	220^{H}	230	215	220	225	260	260	285	280	275	270
13	285	260	295	300	250	235	300	235	205	235	230^{H}	220^{H}	220^{H}	230	240	220^{H}	210	230	230	240	290	330	315	265
14	275	300	270	250	205	250	245	210	210	245	I240^{A}	E240^{B}	230^{H}	250	240	235	220	235	I275^{A}	250	310	295	250	270
15	270	270	300	280	270	280	225	205	225	255	240^{H}	240	225^{H}	230^{H}	230^{H}	235	210	235	230	250	300	290	300	290
16	295	270	290	270	220	270	270	240	230	235	225	220^{H}	220	240^{H}	245^{H}	225	215	250	245	260	290	I295^{AS}	300	290
17	270	295	240	225	225	260	275	245	230	240	235^{H}	220^{H}	225^{H}	230^{H}	235^{H}	230	220	230	300	I280^{S}	340	320	300	325
18	300	265	270	255	225	205	300	240	220	240^{H}	220	230^{H}	225	230	250	240	220	250	I260^{AS}	280	285	310	320	310
19	325	320	300	250	220	240	250	240	230	250	230	245	220	210^{H}	240	250	230	I245^{A}	230	245	325	290	310	325
20	310	260	310	280	260	330	270	220	245	I250^{A}	250^{H}	225	210	210	215^{H}	230	240	I265^{C}	I280^{C}	250	I305^{S}	310	340	350
21	290	305	290	220	210	290	325	235	245	245^{H}	230^{H}	230	200	210^{H}	260	230	220	255	270	250	375	305	350	350
22	305	300	310	260	240	260	285	240	245	250	230^{H}	225	205	240	250	225	210	250	275	S	A	A	350	350
23	310	275	280	250	230	255	350^{A}	230	230	245	250^{H}	230	210^{H}	230	240	225	225	255	240	265	260	I330^{A}	330	320
24	315	315	300	275	245	245	250	250	225	225	240	240^{H}	235	225	230	225	215	250	270	280	310	370	330	335
25	320	270	305	260	220	285	I280^{S}	245	220	245	245	240	I230^{B}	220	I240^{B}	220	220	220	250	260	385	365	335	335
26	300	280	300	305	275	250	260	220	220	220	230^{H}	240	245	235^{H}	235	235	220	210	275	260	300	350	310	310
27	315	270	285	250	245	260	225	245	220	240^{H}	235	230^{H}	230	225^{H}	235^{H}	230^{H}	230	230	250	235	265	255	300	305
28	300	255	260	255	245	250	285	240	C	C	C	C	C	C	C	C	210	220	260	250	280	305	345	350
29	335	300	290	270	260	225	230	220	225	225	225^{H}	230^{H}	205	245	235^{H}	230^{H}	215	240	260	265	310	325	335	350
30	345	310	280	235	200	370	350	240	235	240	240^{H}	225^{H}	225^{H}	235	240	230	I230^{A}	225	250	250	250	310	325	310
31	320	315	290	250	240	220	270	240	220	240	240^{H}	230^{H}	215^{H}	230	235	230	215	240	250	270	275	290	280	305
No.	31	31	31	31	30	30	30	31	30	30	30	29	30	30	30	30	31	31	31	30	30	30	31	31
Median	310	290	290	260	240	250	270	240	225	240	240	230	225	230	235	225	220	235	250	260	285	310	330	320

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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	E	E	S	G	135	125	G	G	G	G	S	E	E	E	E	E	E	E	E
2	120	E	E	E	E	E	E	E	S	G	125	125	115	G	G	S	E	E	E	E	C	C	E	E
3	E	E	E	E	E	E	E	E	G	G	G	125	G	G	G	S	S	E	E	E	E	S	E	120
4	115	115	120	E	E	E	E	E	S	G	G	G	G	G	125	120	S	E	E	E	110	E	E	E
5	E	E	E	E	E	E	E	E	S	G	G	G	125	G	115	120	S	E	E	E	S	E	E	E
6	E	120	E	E	110	E	E	E	S	G	G	125	120	G	G	S	E	E	E	E	S	S	E	115
7	E	125	E	E	E	E	E	E	G	G	G	G	G	125	125	S	S	E	E	E	E	E	E	E
8	E	E	E	120	E	E	S	E	S	G	G	G	G	125	G	S	E	E	E	E	E	E	E	E
9	E	E	E	E	E	E	E	E	G	155	G	G	G	130	G	125	120	115	110	S	S	E	E	E
10	E	E	E	E	E	E	S	E	S	150	G	G	G	G	G	110	110	E	E	E	E	E	E	E
11	E	E	E	120	115	115	110	110	S	105	G	G	G	G	G	S	E	E	110	E	E	E	110	E
12	E	110	110	140	E	135	S	115	110	110	G	G	B	B	B	S	S	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	150	105	105	G	G	B	G	G	B	110	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	S	G	150	B	B	B	130	B	E	115	105	E	E	E	E	125
15	E	E	110	E	110	110	E	E	S	130	130	110	G	B	G	S	S	E	E	E	E	E	E	115
16	110	110	110	110	E	E	E	E	120	120	115	120	G	G	G	S	S	110	E	110	E	130	E	E
17	110	E	E	E	E	E	E	E	S	130	G	115	G	110	G	S	S	E	E	S	E	E	E	120
18	E	E	E	115	110	E	E	E	105	G	G	G	G	G	120	110	120	E	110	110	115	115	E	E
19	E	E	E	E	E	E	E	110	S	G	G	G	G	G	G	115	120	105	E	110	E	E	E	E
20	E	E	E	E	110	E	150	E	110	105	105	105	G	S	105	105	105	C	C	E	S	E	E	E
21	E	E	E	E	E	E	E	S	150	G	G	G	G	G	S	S	S	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	S	G	G	G	G	G	G	G	S	S	E	E	S	110	105	115	E
23	E	E	E	E	110	115	120	110	155	150	G	G	B	B	B	B	S	E	E	E	E	110	E	E
24	E	105	E	110	E	E	E	S	G	105	B	100	G	G	B	S	S	110	E	E	E	110	E	E
25	E	E	E	E	E	E	S	115	110	B	B	B	B	B	B	120	110	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	S	S	B	B	B	G	G	B	G	S	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	120	S	G	G	G	G	G	G	G	S	E	E	E	E	E	110	E
28	E	E	E	E	E	E	E	S	C	C	C	C	C	C	C	C	S	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	S	125	G	G	G	G	G	G	G	S	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	S	G	G	145	G	G	G	G	G	115	110	110	110	E	110	E	E
31	E	E	E	E	E	E	E	S	G	G	G	G	G	G	G	G	S	E	E	E	E	E	E	E
No.	4	6	4	6	6	4	3	7	9	12	7	8	3	4	6	8	8	6	5	4	4	6	3	5
Median	110	110	110	120	110	115	120	115	110	125	125	120	120	125	120	120	110	110	110	110	110	110	110	120

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

Jan. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

20

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	f										C	C	l											
3												C												f
4	f	f	f												C	C					f			
5													C		l	C								
6		f			f							C	C											f
7		f												C	C									
8				f										C										
9										h				C		C	f	f	f					
10										h						l	f							
11				f	f3	f5	f3	f2		l									f				f	
12		f	f	f		f		f2	l2	l														
13								f	l	l							f							
14											C				C			f	f					f
15			f		f2	f				C	C	l												f
16	f	f	f	f					l	l	l	C						f		f2		f2		
17	f									C		l		l										f
18				f	f				l						C	C	C		f2	f	f	f		
19								f								C	C	f2		f				
20					f		f		C	l	l.C	l			l	l	l							
21									h															
22																					f3	f2	f	
23					f	f	f2	l	h	h												f		
24		f		f						l		l						f				f		
25								f	l							l	l				f			
26																								
27								C															f	
28																								
29									C															
30											h						C2	f	f	f		f		
31																								
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

Jan. 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	2.9	2.9	2.9	3.0	3.1	2.6F	2.4S	4.4S	5.1	7.0	7.0	7.1	9.4	8.0	6.3	8.2	5.4	4.0	2.8	2.8	3.0	2.6	2.9	3.0
2	I3.0B S	3.1	3.3	3.3	3.4F	3.1	2.8S	4.3S	5.1	5.4	6.0	8.0	7.6	7.1	6.1	6.3	5.6	4.2	3.3	3.3	3.1	2.6	3.0.	3.2F
3	3.6	3.5	3.5	3.5	I3.4F	3.2F	2.5	4.1	5.4	6.0	I7.0C	7.1	7.0	6.7	6.9	6.6	5.3	3.6	3.0	3.8	3.0	2.4	2.5	2.3
4	I3.2F	3.3F	I3.4F	I3.4F	I3.2F	I3.0F	2.8F	4.3	5.6	5.5	5.5	6.8	7.1	7.0	5.8	5.8	5.3	4.8	4.1	3.2	2.6F	2.5	2.4	2.8
5	2.9	3.0	2.9	3.1	2.7	2.5	2.8	4.6S	4.8S	5.5	5.4	6.6	6.9	6.1	5.5	5.3	5.3	3.6	I2.8F	3.1	2.5	2.2	I2.4B S	2.6
6	I2.6F	2.7F	2.8	2.8	2.6	I2.4C	2.3	4.4S	5.0	4.9	5.8	6.3	6.6	6.3	5.5	5.5	4.6	3.8	I3.8C	I2.6C	2.4	2.5	2.6	2.8
7	3.0	3.2	3.4F	3.6	3.4	3.3	2.8	4.1S	4.8	5.2	5.9	I5.8C	6.0	7.1	5.0	6.2	5.3	3.6	3.0	3.3	2.9	2.4	I2.8F	I2.8B F
8	I2.8F	2.8F	3.0	3.1	2.9	2.3	2.0S	3.6S	4.6	5.3	7.6	6.3	I7.2R H	6.0	5.4	6.1	4.9	3.5	2.8	2.9	I3.0C	3.1	F	F
9	F	F	F	R F	C	F	I2.5E S	4.1S	4.6	5.5	6.5	7.4	6.5	5.8	6.1	5.4	4.2	3.9	3.9	I2.8A	2.3	2.3	2.6F	C
10	C	F	F	F	F	F	F	4.1	5.1	5.5	6.3H	6.2	6.7	6.0	5.8	5.5	5.3	5.4	2.5	2.7S	2.7	2.6	2.8S	2.6
11	2.9S	4.0	F	R	A	A	A	3.9	7.3	8.6	7.2	6.9	6.0	5.6	6.0	5.5	4.6	4.5	3.5	2.5S	2.3	3.0	F	F
12	F	3.3F	3.3S	2.9	2.4S	2.0	I2.2S	3.9S	4.5	6.2	7.4	7.7	6.1	6.5	6.8	4.9	4.6	4.2	3.1	3.3	F	F	F	F
13	F	F	F	F	F	3.3F	2.6S	3.8S	4.9	5.5	6.4	6.6	6.2	6.8	5.4	6.5	5.4	3.8	4.9	3.0F	F	F	F	F
14	F	2.9	2.9F	2.6F	2.9F	I2.8F	I2.8F	U4.3R	5.1	4.6H	C	C	C	C	C	C	C	C	2.9	2.8	2.8S	2.7S	I3.2F	F
15	F	F	F	F	F	F	R S	3.9	4.8	6.1	7.8	6.8	6.7	6.6	6.2	5.9	5.6	4.6	4.1	3.4	3.3	F	F	C
16	C	C	C	C	C	C	C	C	C	C	C	5.7	5.6	6.0	6.6	5.9	5.1	4.6	4.3	2.9	3.1	2.9	F	F
17	F	F	F	F	F	F	2.6F	3.9S	5.7	7.5	8.0	8.5	6.1	6.2	6.8	5.7	5.0	5.1	3.9	2.5	2.5	3.1	3.0	3.1
18	3.2	3.3	3.3	3.1	3.3	3.1	2.5S	3.9	5.1	6.6	6.8	6.7	6.1	5.9	7.1	5.8H	5.0	4.1	3.6	3.2	I3.2A	I3.0A	2.9	3.3
19	3.4F	I3.3F	3.1	2.9	I3.2E	2.6	2.1	3.7	4.9	6.0	7.4	6.4	6.6	I6.5C	5.8	6.0	5.1	4.7	3.9S	2.9	2.4	2.9	2.9	3.1
20	3.4	I3.6E S	I3.7E S	I3.8F	3.9F	2.8	2.3S	4.4	5.6	6.3	8.3	8.1	6.9	6.6	6.3	5.9	5.2	3.6	3.1	3.3	I2.9S	2.7	2.9	I3.0E S
21	3.1F	3.1S	3.2	3.1	2.3	I2.3E	I2.3F	4.3S	5.7	5.9	8.1	7.7	6.0	5.1	6.4	5.9	4.8	4.8	3.6	3.6	I2.6S	2.7	I2.9S	2.9S
22	3.0	3.3	3.1	3.2	3.1E S	2.7S	I2.6E S	4.3	5.2	6.3	8.1	8.0	5.8	5.3	6.6	6.2	5.0	3.9	3.1	I2.6A	I2.6A	2.6	3.0	2.9
23	3.1	3.4F	3.3	3.3	2.4	F	F	4.5	4.8	5.6	7.4	9.0	6.3	5.5	5.6V	6.1	4.8	3.7	3.6	3.3	3.0	2.5	2.9F	F
24	F	F	F	3.3	3.2	3.1S	2.5S	3.9	C	C	C	C	C	C	C	C	C	4.0S	3.4	3.2S	I2.6A	2.6F	F S	F
25	F	I3.1F	3.0	3.2	A	A	I2.4A	4.2	5.1	6.3	7.6	8.0	7.1	6.0	6.2	6.4	5.3	4.1	3.5	I3.7A	3.5	3.2	3.2	3.1
26	I3.3B F	3.4	3.4	3.4	3.1	I3.0F	I3.4B F	4.7	5.5	6.6	7.3	U7.3R	7.3	6.4	6.7	6.5	5.1	4.3	3.2	3.0	I3.3E S	3.1	3.3S	I3.4S
27	3.5	3.4	3.7	I3.4E S	3.1	3.1	I2.9B S	4.6	5.6	6.9	8.0	7.2	6.6	6.8	6.7	6.0	5.6	4.9	4.3	4.6S	I3.8E S	3.5	I3.2E S	3.4
28	3.5	3.6	I3.6B S	3.9	3.9	3.0	2.7	4.6R	6.0	6.2	6.6	7.7	7.4	6.4	7.5	6.7	6.0	4.2	3.8	4.1	3.4	2.8	2.9S	3.0
29	I3.2S	3.2	3.4	3.4	3.3	2.8	I2.6S	4.9S	6.2	6.1	6.9	8.4	7.1	7.2	7.9	6.5	5.8	4.3	3.5	2.8	2.7	2.9	I3.2R	3.2
30	3.1	3.3	I3.6F	4.0F	I3.0F	2.0	2.1S	4.9	6.2S	7.2	6.9	7.9	7.6	6.5	6.0H	7.2	6.6	4.7	3.9	4.4	3.5	I2.7A	2.9	3.0
31	3.2	3.2	3.3	3.6	3.4	2.7	I2.5S	I4.6R	5.3	6.2	7.3	7.5	7.4	6.9	6.2	6.1	5.5	4.2	4.3	3.6	3.1	2.9	3.1	F
No.	21	24	23	24	23	23	26	30	29	29	28	29	29	29	29	29	29	30	31	31	29	28	24	20
Median	3.1	3.3	3.3	3.3	3.1	2.8	2.5	4.3	5.1	6.1	7.1	7.2	6.7	6.4	6.2	6.0	5.3	4.2	3.5	3.2	2.9	2.7	2.9	3.0
U.Q	3.4	3.4	3.4	3.4	3.4	3.1	2.8	4.5	5.6	6.4	7.6	8.0	7.2	6.8	6.7	6.4	5.4	4.6	3.9	3.4	3.2	3.0	3.0	3.2
L.Q	3.0	3.1	3.0	3.1	2.9	2.5	2.3	3.9	4.8	4.8	6.4	6.6	6.1	6.0	5.8	5.8	5.0	3.8	3.1	2.8	2.6	2.6	2.8	2.8
Q.R	0.4	0.3	0.4	0.3	0.5	0.6	0.5	0.6	0.8	1.6	1.2	1.4	1.1	0.8	0.9	0.6	0.4	0.8	0.8	0.6	0.6	0.4	0.2	0.4

foF2

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

The Radio Research Laboratories, Japan.

A 1

21

IONOSPHERIC DATA

Jan. 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									
2												L	L											
3													L											
4											L	L	3.7 L	L										
5											L	L M	L M	L										
6										L			L	L										
7													L	L										
8												4.0		A	L									
9											L	4.0	4.1 L											
10											L	I 4.0 L	I 4.0 L	L										
11											L	L	4.0 L	I 3.7 L	L									
12										L	L	L	L	I 3.8 L	L									
13												L	L	3.8	I 3.4 L	L								
14											C	C	C	C	C	C								
15											L	L	L	L	L	L								
16										C	C	L	L	L	L									
17											L	4.1 L	I 4.0 L	L	L									
18											L	I 4.0 L	I 4.0 L	I 4.0 L	A	A								
19											L	L	4.1 L	I 4.0 C										
20										L	L	L	4.1 L	I 4.0 L	L	3.0								
21											L	L	L	L		C								
22											L	L	L	3.8 L	L									
23											L	L	L	L	I 3.6 L									
24										C	C	C	C	C	C	C	C							
25											L	C	L	L	L	L								
26										L		L	L	L	L	L								
27											L	L	L	L										
28											L	L	L	L	L									
29											L	L	4.2 L	I 4.2 L	L	L								
30											L	L	L	L	L									
31											L	L	L	L	L	L								
No.												5	9	8	2	1								
Median												4.0	4.0	U 3.9	U 3.5	3.0								

foF1

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

The Radio Research Laboratories, Japan.

A 2

IONOSPHERIC DATA

Jan. 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									2.25	2.75	I 2.90 A	I 2.95 A	I 3.05 A	2.95	2.60	2.45	E							
2									2.40 H	2.70	A	A	A	A	2.75	2.45	E							
3									I 2.40 R	I 2.70 A	I 2.85 C	3.00	I 3.00 A	2.95	R	A	R							
4									I 2.30 R	I 2.70 A	2.90	I 2.95 A	I 3.00 A	2.90	I 2.70 A	2.50	R							
5									2.20	I 2.65 R	2.85	3.00	3.05	R	S	A	E							
6									R	I 2.50 R	2.80	3.05	A	A	A	A	A							
7									R	2.55	2.80	I 2.95 C	3.05	2.80	I 2.65 A	2.55	E							
8									R	I 2.60 R	2.95	I 2.95 A	I 2.95 R	A	A	A	B							
9									2.05	2.55	2.75	2.90	3.00	I 2.85 A	2.60	A								
10									R	2.55	2.75	2.95	3.00	2.85	2.55	2.20								
11									A	A	2.70	I 2.80 A	2.90	2.80	2.60	R	E							
12								A	A	A	A	I 2.90 A	I 2.95 A	2.80	2.60	2.35	E							
13									R	2.60	A	A	2.95	2.75	A	R	E							
14									R	I 2.50 A	C	C	C	C	C	C	C							
15									R	2.65	2.90	I 3.00 A	3.05	A	A	R	A							
16									C	C	C	A	A	3.00	2.75	A	B							
17									R	A	A	A	3.05	2.95	2.75	A	A							
18									R	A	A	A	3.05	2.95	A	A	A							
19									R	A	R	3.05	3.05	C	A	2.55	R							
20								R	A	A	A	A	I 3.05 A	3.00	I 2.80 A	2.50	A							
21									A	2.70	2.90	3.05	3.05	2.95	2.75	I 2.40 C								
22									A	R	A	A	3.05	3.05	2.80	2.45	A							
23									R	I 2.80 A	3.00	3.05	I 3.10 A	2.95	R	A	A							
24									C	C	C	C	C	C	C	C	C							
25									2.40	A	A	C	A	A	A	A	B							
26									B	R	3.05	3.10	3.10 R	3.05	A	A	B							
27									2.25	2.80	I 2.95 A	I 3.10 A	3.15	3.05	3.00	2.70	R							
28									R	A	A	3.10	3.15	3.10	3.00	2.70	I 2.10 R							
29									2.35	2.75	3.00	3.10	3.10	3.05	2.95	2.55	2.00							
30									2.45	2.85	I 3.00 A	3.10	3.15	3.05	3.00	2.60	R							
31									A	A	3.05	3.10	3.15	3.05	2.95	2.55	I 2.10 R							
No.									10	18	18	21	25	22	18	15	10							
Median									2.30	2.70	2.90	3.00	3.05	2.95	2.75	2.50	E							

foE

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

The Radio Research Laboratories, Japan.

A 3

IONOSPHERIC DATA

Jan. 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	E	E	E	E	E	E	E	E	G	G	3.2	3.7	J5.2	J3.5	G	G	G	J2.3Y	E	E	E	E	E	E
2	E	J2.0	E	E	E	E	E	E	G	G	3.4	3.5	J3.4	J3.2	3.1	G	G	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	G	3.3	C	G	J3.3	G	G	3.2	G	E	E	E	E	E	E	J1.9
4	J2.0	E	E	E	E	E	E	E	G	3.2	G	J3.3	3.4	G	J3.6	G	G	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	2.9	G	G	G	G	G	S	J3.7	G	E	E	E	E	E	E	E
6	E	E	E	E	E	C	E	E	G	G	G	G	3.9	J3.6	J3.2	J5.0	J2.9	J2.8	C	C	E	E	E	E
7	E	J2.0	E	E	J1.8	E	E	E	G	3.0	3.2	C	3.5	3.7	3.2	G	G	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	G	G	G	3.1	G	3.9	3.0	J2.9	G	E	E	E	C	E	J2.8	J3.2
9	E	E	J2.4	E	C	E	E	E	G	G	3.2	3.5	3.5	3.6	3.6	3.0	J2.8	J2.4	J2.0	J3.3	J1.8	J1.8	E	C
10	C	E	E	E	E	E	E	E	2.8	3.1	3.1	G	G	3.2	G	G	C	E	J3.8	J2.8	J1.9	E	E	E
11	E	E	E	E	J3.7	J4.3	J7.8	J2.9	2.5	J5.0	G	3.6	G	G	G	G	G	E	E	E	E	E	J1.9	E
12	E	E	E	E	J1.7	J1.7	E	2.5	J3.2	J6.8	3.1	J3.4	3.5	G	G	G	G	E	E	E	E	E	J2.3	J1.8
13	E	E	E	E	E	E	E	E	G	3.1	3.2	J3.5	2.6G	3.0	3.1	G	G	E	J2.4	E	J2.4	J2.4	J3.3	J3.1
14	J2.4	E	E	E	E	E	E	E	2.6	2.9	C	C	C	C	C	C	C	C	E	E	E	E	E	E
15	E	J2.4	E	E	E	E	E	E	3.0	3.5	3.2	3.6	3.6	3.2	3.0	G	J2.2Y	J2.4	E	E	E	E	E	C
16	C	C	C	C	C	C	C	C	C	C	C	J3.5	3.1	2.8G	G	2.7	B	E	E	E	E	E	J2.9	J2.4
17	J2.9	J2.5	E	J1.8	E	E	E	E	J2.4	3.3	J4.3	J3.2	J3.3	2.7G	G	J3.2	J3.3	E	E	E	E	E	E	E
18	E	J2.5	E	E	J1.8	E	S	E	J2.5	3.1	J3.2	J3.9	3.4	3.5	3.7	J4.2	J8.3	J2.3Y	J2.3	J2.4	J3.1	J3.0	E	E
19	E	E	E	E	E	E	E	E	J2.9	J3.1	J3.5	G	3.7	C	J3.2	2.9	G	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	G	J2.9	J3.0	J4.2	3.5	3.5	G	3.3	G	J2.5	J2.5	E	E	S	E	J2.1	E
21	E	E	E	E	E	E	E	E	2.5	G	G	3.4	J3.4	G	G	C	S	E	E	E	E	E	E	E
22	J2.4	E	J1.8	E	E	E	E	E	2.9	J3.0	J4.0	J3.1	G	G	G	G	J3.6	J2.0	J2.3Y	J3.1	J5.0	J3.2	J2.5	J2.9
23	J1.9	E	E	E	E	J2.6	E	E	3.1	J3.2	3.5	2.6G	J3.2	G	2.8	3.2	J2.3	J2.8	J1.9	J1.8	E	E	J1.8	E
24	J2.2	E	E	E	E	E	E	S	C	C	C	C	C	C	C	C	C	J1.8	J2.4	J2.8	J2.5	E	E	E
25	E	J1.8	E	E	J5.8Y	J2.8	J3.0	J2.4	G	3.2	J4.3	C	J4.8	3.0	3.1	3.6	J3.9	J2.8	J2.4	J3.3	E	E	E	E
26	E	E	E	E	E	E	E	E	2.8	3.4	J5.0	G	G	3.2	3.1	2.7	2.2	E	J2.9	J2.4	E	E	E	E
27	E	E	E	E	E	E	E	E	G	2.7G	J3.8	J4.0	J3.3	G	G	3.0	G	E	E	E	E	J1.7	J2.0	E
28	J1.9	E	E	E	E	E	E	E	G	J3.0	J3.2	G	G	G	G	G	G	E	E	E	E	E	E	E
29	S	E	E	E	E	E	S	E	G	G	G	3.5	3.4	G	G	G	G	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	E	G	G	3.8	G	G	G	G	G	G	E	E	E	E	E	E	E
31	E	E	E	E	E	E	S	E	J2.9	3.6	G	G	G	G	3.1	2.7	G	E	E	E	J2.8	J3.3	E	J2.0
No.	28	30	30	30	29	29	27	29	29	29	27	27	29	28	28	28	26	30	30	30	29	31	31	29
Median	E	E	E	E	E	E	E	E	2.4	3.0	3.2	3.3	3.3	G	2.9	G	G	E	E	E	E	E	E	E
U.Q	E	E	E	E	E	E	E	E	2.9	3.2	3.8	3.5	3.5	3.2	3.2	3.1	2.5	2.3	2.0	1.8	E	E	1.9	E
L.Q	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
Q.R																								

foEs

Sweep 1.60 Mc to 2.00 Mc in 2.0 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 4

IONOSPHERIC DATA

Jan. 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											3.2	3.4	3.2	2.7				E						
2		E									3.1	3.2	3.1	3.1	G									
3										2.9	C		3.2			2.6								E
4	E									2.9		3.2	3.1		2.9									
5									G						S	3.6								
6						C							3.4	3.0	2.8	2.6	2.0	2.5	C	C				
7		E			E					3.0	3.1	C	3.4	3.4	3.0									
8												3.1		3.9	2.9	2.8					C		2.0	E
9			E		C						3.2	3.2	3.2	3.2	3.3	2.8	2.6	E	E	A	E	E		C
10	C								2.6	2.8	3.1			2.9			C		1.8	E	1.8			
11					A	A	A	E	2.3	3.1		3.0											E	
12					1.7	E		2.4	2.5	3.1	3.1	3.4	3.3										E	E
13										3.0	3.1	3.4	2.1[9]	3.0	2.8				E		E	E	E	E
14	E								2.5	2.8	C	C	C	C	C	C	C	C						
15		E							2.5	3.3	3.2	3.2	3.3	3.0	3.0	C	2.0	2.2						C
16	C	C	C	C	C	C	C	C	C	C	C	3.1	3.1	2.5[9]		2.5	B						E	E
17	E	E		E					2.4	2.9	3.0	3.0	2.8	2.5[9]		2.5	2.3							
18		E			E		S		2.5	3.0	3.1	3.4	3.4	3.4	3.6	4.2[R]	A	E	E	E	A	A		
19									2.8	3.0	3.2		3.5	C	3.0	2.0								
20									2.5	3.0	3.2	3.1	3.4		3.2		2.4	2.3			S		E	
21									2.5			2.8	2.3			C	S							
22	E		E						2.9	2.9	3.2	3.2					2.4	1.9	E	A	A	1.8	E	2.2
23	E					E			2.8	3.2	2.6	2.5[9]	3.2		2.8	2.7	2.3	2.0	1.9	E			E	
24	E							S	C	C	C	C	C	C	C	C	C	E	1.9	1.8	A			
25		E			A	A	A	1.8		3.2	3.5	C	3.3	3.0	3.1	3.3	3.9	E	E	A				
26									2.8	3.4	2.1			3.2	3.1	2.7	2.2		E	1.8				
27										2.4[9]	3.5	3.3	2.7			3.0						E	E	
28	E									3.0	3.2													
29	S						S					3.4	3.4											
30											3.2										E	A		E
31									2.6	3.0					3.1	2.7								
No.																								
Median																								

fbEs | Sweep 1.60 Mc to 2.00 Mc in 2.0 sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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	E	1.65	1.70	1.65	1.70	1.75	1.75	1.70	1.70	1.70	E	E	E	E	E	E	E
2	E	E	E	E	E	E	E	E	1.70	1.70	1.65	1.75	1.75	1.70	1.65	1.70	1.70	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	1.65	1.70	I 1.70 C	1.70	1.75	1.75	1.70	1.70	E	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	E	1.70	1.70	1.70	1.80	1.75	1.75	1.75	1.70	1.70	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	1.65	1.65	1.70	1.75	2.00	1.70	E 3.30 S	1.70	1.70	E	E	E	E	E	E	E
6	E	E	E	E	E	C	E	E	1.80	1.70	1.70	1.70	1.75	1.70	1.80	1.70	1.70	E	C	C	E	E	E	E
7	E	E	E	E	E	E	E	E	1.70	1.70	1.90	I 1.75 C	1.70	1.75	1.90	1.70	1.65	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	1.65	1.70	2.20	1.75	1.80	1.70	1.80	1.75	2.00	E	E	E	C	E	E	E
9	E	E	E	E	C	E	E	E	1.65	1.70	1.70	1.70	1.75	1.75	1.70	1.75	1.65	E	E	E	E	E	E	C
10	C	E	E	E	E	E	E	E	1.65	1.70	1.75	1.70	1.75	1.75	1.70	1.75	E 2.50 C	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	1.70	1.75	1.70	1.80	1.80	1.80	1.70	1.70	1.65	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	1.70	1.70	2.00	2.05	1.80	2.05	2.00	1.70	1.75	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	1.70	1.80	2.00	1.65	1.75	2.00	1.75	1.70	1.90	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	1.70	1.75	C	C	C	C	C	C	C	C	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	1.70	2.30	2.00	1.80	1.85	1.75	2.00	1.70	1.70	E	E	E	E	E	E	C
16	C	C	C	C	C	C	C	C	C	C	C	1.70	2.00	2.10	2.00	1.75	2.10	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	1.70	1.80	1.70	1.70	1.75	1.70	1.95	1.70	1.70	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E 2.00 S	E	1.65	1.90	1.70	1.70	1.70	2.05	1.80	1.80	1.75	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	E	1.70	1.65	1.75	1.65	1.70	I 1.80 C	1.75	1.70	1.70	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	1.70	1.75	1.75	E 2.10 C	2.05	1.80	2.00	1.70	1.70	E	E	E	S	E	E	E
21	E	E	E	E	E	E	E	E	1.65	1.80	1.95	1.75	1.70	1.70	1.85	E 4.95 C	2.00	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	1.70	1.75	1.70	1.75	1.70	1.75	1.75	1.65	1.75	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	1.65	1.75	2.10	1.95	1.85	2.05	2.10	2.00	1.70	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	E 2.40 S	C	C	C	C	C	C	C	C	C	E	E	E	E	E	E	E
25	E	E	E	E	E	E	E	1.70	1.75	1.75	2.00	E 4.50 C	2.20	2.15	2.20	2.00	2.05	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	2.30	2.10	1.80	2.05	2.70	2.80	2.70	2.05	1.90	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	E	1.75	1.75	1.70	1.75	1.70	1.85	1.75	1.65	1.70	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	1.70	1.65	1.65	1.70	1.90	1.75	1.90	1.70	1.70	1.70	E	E	E	E	E	E	E
29	S	E	E	E	E	E	S	1.65	1.65	1.75	1.75	1.70	1.70	1.70	1.70	1.70	1.65	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	1.90	1.70	1.70	1.75	1.75	1.75	1.80 S	1.90	1.70	1.70	E	E	E	E	E	E	E
31	E	E	E	E	E	E	S	E	1.70	1.75	1.70	1.70	1.80	1.75	1.70	1.70	1.70	E	E	E	E	E	E	E
No.	28	30	30	30	29	29	27	29	29	29	28	27	29	29	28	28	28	30	30	30	29	31	31	29
Median	E	E	E	E	E	E	E	E	1.70	1.75	1.70	1.75	1.75	1.75	1.80	1.70	1.70	E	E	E	E	E	E	E

f-min

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

IONOSPHERIC DATA

Jan. 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	295	310	290	300	355	285F	275S	325S	340	355	335	340	350	365	330	360	360	320	295	320	320	290	285	270
2	I285R S	290	285	290	320F	325	300S	325S	370	360	335	345	355	360	350	355	355	315	320	305	325	270	275	270F
3	295	290	320	315	I320F	345F	310	330	345	325	I350C	355	360	330	360	355	365	340	305	340	340	310	270	280
4	I285F	290F	I320F	I310F	I300F	I290F	290F	330	355	360	360	325	350	350	360	350	360	335	330	345	290F	310	275	290
5	295	305	285	330	350	290	320	330S	395S	350	360	355	360	365	360	355	360	360	I325F	325	330	280	I280R S	280
6	I295F	310F	270	290	325	I320C	260	325S	360	370	345	370	350	365	365	365	370	330	I335C	I330C	285	290	280	270
7	300	285	305F	335	325	355	315	345S	345	370	360	I360C	355	355	370	360	380	330	335	360	330	305	I285F	I285R S
8	I275F	275F	305	325	330	285	310S	350S	355	340	370	350	I370R H	370	330	350	370	325	330	295	I330C	310	F	F
9	F	F	F	R F	C	F	I330R S	335S	340	355	340	360	365	355	350	365	355	310	335	I325A	305	285	270F	C
10	C	F	F	F	F	F	F	330	350	360	335H	355	360	350	355	350	345	350	305	320S	295	255	265S	240
11	270S	340	F	R	A	A	A	330	330	360	355	365	355	360	330	365	330	335	345	330S	275	295	F	F
12	F	290F	295S	325	340S	305	I315S	340S	350	325	340	375	350	350	360	380	340	340	340	335	F	F	F	F
13	F	F	F	F	F	310F	340S	340S	345	350	345	370	360	350	350	330	375	310	360	325F	F	F	F	F
14	F	320	315F	320F	295F	I315F	I345F	U350R	390	345H	C	C	C	C	C	C	C	C	325	310	290S	280S	I300F	F
15	F	F	F	F	F	F	R S	350	360	335	340	370	350	345	345	330	335	325	340	320	300	F	F	C
16	C	C	C	C	C	C	C	C	C	C	C	365	370	335	365	360	345	330	330	295	320	320	F	F
17	F	F	F	F	F	F	330F	330S	335	340	330	345	360	370	350	370	355	350	350	305	285	310	300	295
18	290	305	310	310	330	350	325S	335	355	355	350	315	360	330	360	350H	320	350	340	340	I320A	I310A	280	280
19	290F	I290F	280	295	I335R S	330	315	355	340	340	350	350	360	I360C	340	320	335	355	320S	320	260	285	280	290
20	290	I290R S	I290R S	I300F	315F	330	280S	320	360	335	345	350	355	340	375	350	330	340	295	330	I320S	280	260	I280R S
21	270F	300S	310	325	310	I290R S	I295F	330S	365	325	350	355	370	365	345	350	335	335	310	340	I300S	285	I280S	280S
22	275	300	290	315	325R S	295S	I290R S	330	355	340	340	360	375	360	350	355	360	340	330	I325A	I310A	290	285	280
23	260	280F	300	335	345	F	F	330	360	340	340	370	365	380	320V	360	355	330	320	350	320	290	285F	F
24	F	F	F	310	325	320S	325S	335	C	C	C	C	C	C	C	C	C	345S	320	325S	I300A	260F	F S	F
25	F	I300F	325	345	A	A	I300A	340	360	355	345	350	350	335	355	360	360	340	320	I310A	310	285	280	295
26	I300R S	300	280	300	330	I305F	I310R S	340	330	315	345	U320R	350	345	345	360	375	330	330	305	I300R S	295	280S	I300S
27	290	305	310	I330R S	305	300	I315R S	330	375	320	335	370	320	340	345	355	345	330	305	320S	I320R S	320	I275R S	275
28	290	285	I300R S	305	330	285	300	340R	335	355	345	340	345	320	340	345	370	340	290	320	340	285	280S	270
29	I270S	285	280	300	320	325	I305S	325S	355	330	335	350	340	350	365	350	360	330	320	320	300	300	I280R	280
30	270	270	I310F	345F	I340F	295	305S	330	340S	370	325	345	355	355	320H	350	350	340	285	320	325	I290A	280	275
31	290	270	295	310	325	355	I300S	I340R	350	355	355	350	355	360	360	360	350	335	325	320	325	305	285	F
No.	21	24	23	24	23	23	26	30	29	29	28	29	29	29	29	29	29	30	31	31	29	28	24	20
Median	290	290	300	310	325	310	310	330	355	350	345	355	355	355	350	355	355	335	325	320	310	290	280	280

M(3000)F2

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

The Radio Research Laboratories, Japan.

A 7

27

IONOSPHERIC DATA

Jan. 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									
2												L	L											
3													L											
4											L	L	3.90L	L										
5											L	L H	L H	L										
6										L			L	L										
7													L	L										
8												4.00		A	L									
9											L	3.80	3.90L											
10											L	I 3.75L	I 3.80L	L										
11											L	L	3.90L	I 3.80L	L									
12										L	L	L	L	I 4.00L	L									
13												L	L	3.95	I 4.10L	L								
14											C	C	C	C	C	C								
15											L	L	L	L	L	L								
16										C	C	L	L	L	L									
17											L	3.90L	I 3.95L	L	L									
18											L	I 3.80L	I 3.90L	I 3.90L	A	A								
19											L	L	3.70L	I 4.35C										
20										L	L	L	3.90L	I 3.80L	L	4.05								
21											L	L	L	L		C								
22											L	L	L	4.00L	L									
23											L	L	L	L	I 4.15L									
24										C	C	C	C	C	C	C	C							
25											L	C	L	L	L	L								
26										L		L	L	L	L	L								
27											L	L	L	L										
28											L	L	L	L	L									
29											L	L	4.10L	I 3.90L	L	L								
30											L	L	L	L	L									
31											L	L	L	L	L	L								
No.												5	9	8	2	1								
Median												3.80	3.90	U 3.90	U 4.10	4.05								

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

The Radio Research Laboratories, Japan.

A 8

28

IONOSPHERIC DATA

Jan. 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													250		240									
2												260	245											
3													250											
4											245	260L	255	245										
5											245	280	255	250										
6										230			270	245										
7													270	250										
8												255		245	245L									
9											265	250	245											
10											255	250	250	260										
11											250	250	250	245	245L									
12										290L	255	235	255	245	235									
13												250	260	275	240	250								
14											C	C	C	C	C	C								
15											265	245	270	255	250	245								
16										C	C	245	245	255	250									
17											250	250	245	250	250									
18											250	250	250	250	250	245A								
19											250	250	275	245C										
20										280	255	250	250	250	230	245								
21											250	250	245	245	250	250								
22											270	245	245	245	250									
23											270	245	245	245	245									
24										C	C	C	C	C	C	C	C							
25											275	245	255	260L	250	245								
26										290		300	250	275	260	245								
27											280	245	250L	255										
28											250	250	260	250L	280									
29											250	245	255	260	245	245								
30											250L	250	250	245	250									
31											245	250	260	250	250	245								
No.										4	20	25	28	25	19	9								
Median										285	250	250	250	250	250	245								

h'F2 | Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

A 9

29

IONOSPHERIC DATA

Jan. 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	300	290	260	285	240	290	E305E	245	230	245	240	245	245	240	200	245	220	235	240	240	245	260	305	340
2	305	300	300	295	255	250	260	245	225	240	245	245	210	240	245	245	230	245	240	250	245	280	305	335
3	295	285	255	260	255	220	270	245	240	240	I240C	245	230	240	245	245	230	215	280	245	240	255	E300E	345
4	315	290	255	250	255	250	270	245	225	240	235	225	210	210	245	245	235	215	245	205	E300E	295	E300E	300
5	300	285	300	245	205	300	260	220	200	235	200	230M	245H	235	245	225	220	200	E290E	245	240	E320E	E340E	310
6	290	290	300	295	245	I260C	E300E	240	210	205	245	245	245	235	230	240	210	250A	I220C	I230C	E290E	240	310	305
7	295	295	275	240	245	220	245	240	235	240	245	I230C	245	250	210	250	225	220	230	215	235	255	300	290
8	290	305	290	250	245	E250E	E320E	225	230	245	245	200	245	I230A	200	245	210	210	220	250	I245C	245	290A	330
9	300	305	280	225	I235C	245	E295E	230	205	245	245	240	220	240	245	235	205	230	220	I230A	250	300	350	I330C
10	I260C	235	E295E	290	235	E295E	E295E	240	240	235	245	220	230	200	245	245	245	220	255A	220	295A	E380E	340	385
11	340	245	245	245	A	A	A	245	260	240	230	220	225	210	210	245	245	225	235	I240A	E300E	275	255	305
12	295	290	265	245	240	E305E	E340E	235	230	245	250	I240A	235	205	220	220	210	210	230	240	290	245	230	280
13	240	245	270	240	255	245	245	205	230	245	245	245	215	205	205	205	220	225	220	230	E295E	250	340	E300E
14	290	260	270	255	260	280	245	210	220	205	C	C	C	C	C	C	C	C	240	245	250	E290E	290	250
15	295	285	295	290	255	300	205	240	225	250	245	240	225	240	235	220	230H	240	220	250	245	290	295	C
16	C	C	C	C	C	C	C	C	C	C	C	240	220	220	240	245	240	240	230	250	255	245	340	260
17	290	245	250	230	230	245	255	245	240	250	240	230	210	200	245	245	230	230	230	260	E300E	255	270	295
18	300	295	260	255	245	215	S	245	210	250	245	245	240	220	I235A	I225A	240	220	220	210	I240A	I265A	295	300
19	295	295	325	270	240	210	E295E	210	245	250	250	245	240	I230C	245	250	245	210	245	245	E300E	E300E	300	300
20	295	270	270	265	255	240	305	245	245	250	250	245	215	210	225	200	240	225A	260	250	S	E300E	310	E300E
21	300	290	285	240	250	E300E	E340E	245	240	245	245	220	205	200	275	I250C	240	235	245	245	255	300	295	295
22	300	295	300	250	245	280	255	240	245	240	250	245	215	200	245	240	220	205	245	I245A	I255A	I290A	300	I300A
23	340	290	290	245	210	E340E	E280E	245	230	240	245	245	210	205	200	250	245	245	240	230	245	E295E	275	250
24	300	300	295	255	245	220	245	240	C	C	C	C	C	C	C	C	C	210	260	245	A	E350E	E330E	255
25	300	270	255	225	A	A	A	240	235	250	245	I240C	210	205	205	I220A	230A	205	245	I255A	255	280	305	295
26	290	280	295	250	240	265	240	245	245	245	250	225	240	240	210	235	220	225	220	290A	275	275	300	250
27	295	295	255	230	245	280	260	250	230	245	240	220	210	200	245	245	245	235	255	230	245	245	E300E	305
28	290	290	295	255	235	290	245	240	245	245	235	220	215	220	240	245	235	205	295	245	230	E290E	E305E	305
29	I300S	295	300	260	245	230	S	245	230	245	210	245	200	255	245	220	230	210	245	245	250	275	295	300
30	345	330	300	225	205	E355E	E300E	245	245	245	225	235	220	220	205	250	245	220	255	245	240	I275A	295	340
31	300	315	295	260	240	200	S	245	220	245	230	240	240	245	240	225	240	220	245	235	245	255	295	295
No.	30	30	29	30	28	23	15	30	29	29	28	29	29	29	29	29	29	30	30	31	23	23	28	30
Median	300	290	280	250	245	E250	255	240	230	245	245	240	220	220	240	245	230	220	240	245	245	265	E300	300

h'F

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

The Radio Research Laboratories, Japan.

A 10

IONOSPHERIC DATA

Jan. 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	E	E	E	E	E	E	E	E	G	G	135	125	110	105	G	G	G	105	E	E	E	E	E	E
2	E	110	E	E	E	E	E	E	G	G	140	135	120	125	105	G	G	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	G	140	C	G	120	G	G	125	G	E	E	E	E	E	F	115
4	115	E	E	E	E	E	E	E	G	150	G	130	130	G	100	G	G	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	145	G	G	G	G	G	S	110	G	E	E	E	E	E	E	E
6	E	E	E	E	E	C	E	E	G	G	G	G	125	115	110	105	105	100	C	C	E	E	E	E
7	E	110	E	E	105	E	E	E	G	145	145	C	155	145	145	G	G	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	G	G	G	135	G	120	125	110	G	E	E	E	C	E	105	105
9	E	E	110	E	C	E	E	E	G	G	155	135	145	140	125	135	110	110	105	105	105	125	E	C
10	C	E	E	E	E	E	E	E	150	145	145	G	G	135	G	G	C	E	105	105	105	E	E	E
11	E	E	E	E	145	135	135	125	130	105	G	135	G	G	G	G	G	E	E	E	E	E	105	E
12	E	E	E	E	110	105	E	130	125	105	150	105	105	G	G	G	G	E	E	E	E	E	100	100
13	E	E	E	E	E	E	E	E	G	155	145	100	100	150	140	G	G	E	110	E	105	100	105	105
14	100	E	E	E	E	E	E	E	150	145	C	C	C	C	C	C	C	C	E	E	E	E	E	E
15	E	120	E	E	E	E	E	E	150	145	145	145	135	140	120	G	105	105	E	E	E	E	E	C
16	C	C	C	C	C	C	C	C	C	C	C	115	120	115	G	105	b	E	E	E	E	E	110	105
17	105	105	E	105	E	E	E	E	140	135	125	105	105	105	G	105	105	E	E	E	E	E	E	E
18	E	120	E	E	105	E	S	E	145	135	100	100	140	135	120	115	110	110	120	105	105	105	E	E
19	E	E	E	E	E	E	E	E	125	105	130	G	145	C	110	105	G	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	G	135	105	105	145	145	G	130	G	100	100	E	E	S	E	105	E
21	E	E	E	E	E	E	E	E	145	G	G	105	105	G	G	C	S	E	E	E	E	E	E	E
22	100	E	105	E	E	E	E	E	160	130	135	105	G	G	G	G	105	120	110	105	105	105	100	100
23	100	E	E	E	E	105	E	E	145	105	100	100	100	G	105	105	100	100	100	100	E	E	100	E
24	100	E	E	E	E	E	E	S	C	C	C	C	C	C	C	C	C	105	105	105	105	E	E	E
25	E	105	E	E	110	120	110	110	G	165	105	C	105	110	120	130	115	110	105	105	E	E	E	E
26	E	E	E	E	E	E	E	E	150	155	105	G	G	145	145	130	110	E	105	105	E	E	E	E
27	E	E	E	E	E	E	E	E	G	110	105	100	100	G	G	145	G	E	E	E	E	105	105	E
28	105	E	E	E	E	E	E	E	G	130	110	G	G	G	G	G	G	E	E	E	E	E	E	E
29	S	E	E	E	E	E	S	E	G	G	G	145	145	G	G	G	G	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	E	G	G	145	G	G	G	G	G	G	E	E	E	105	105	E	105
31	E	E	E	E	E	E	S	E	125	145	G	G	G	G	145	140	G	E	E	E	E	E	E	E
No.	7	6	2	1	5	4	2	3	15	20	19	18	20	14	15	14	10	10	9	8	7	6	9	7
Median	100	110	110	105	110	110	120	125	145	140	130	120	120	130	120	110	105	105	105	105	105	105	105	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

Jan. 1962 | Types of 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											hz	hz	c	cz				f						
2		f									hz	hz	c	h	l									
3										h			cz			h								f
4	f									hz		h	h		l									
5									h							l3								
6													hz	c	cz	cz	l	fz						
7		f			f					hz	hz		h	hz	h									
8												h		cz	cz	l3							f	fz
9			f								h	hz	h	hz	cz	hz	f3	f	f	fz	f	f		
10									h	hz	hz			h					fz	f	fz			
11					f6	f	f5	f	hz	l		h											f	
12					fz	f		hz	cz	cz	h	cz	l										fz	f
13										h	h	cz	l	h	h				f		f	f	fz	fz
14	f								hz	h														
15		f							h	hz	hz	hz	hz	h	cz		l	f						
16												c	c	l		cz							fz	fz
17	fz	f		f					h	hz	c	l	l	l		l	l							
18		fz			f				h	hz	l	cz	hl	hz	c	cz	cz	f	f	f	f3	fz		
19									c	c	h		hz		c	l								
20									hz	l	cz	hl	h		h		l	f					f	
21									hz			l	l											
22	f		f						hl	h	cz	ch					l	f	f	fz	fi	fz	fz	f
23	f					fz			h	czh	l	l	l		l	l	l	f	f	f			f	
24	f																	f	fz	f	f			
25		f			f3	f	f	f		hl	cz		l	c	c	h	cz	f	fz	fz				
26									h	h	l			h	h	h	c		f	f				
27										l	cz	cz	l			hz						f	f	
28	f									h	c													
29												h	h											
30											h										f	fz		f
31									h	h					hz	hz								
No.																								
Median																								

Types of Es | Sweep 160 Mc to 200 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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	3.0	3.1	3.0	3.4	2.9	2.5	2.5	4.4	5.6	6.7	7.6	8.2	8.1	8.4	7.1	7.0	6.0	4.0	3.4	3.3	2.7	2.9	2.8	2.8
2	2.8	3.0	3.1	3.2	3.4	2.8	2.6	4.4	5.4	5.7	6.2	7.6	7.4	7.2	5.9	6.6	5.6	4.7	3.3	3.2	3.3	3.4	2.9	2.8
3	3.2	3.4	3.4	3.4	3.4	2.9	2.6	4.7	5.5	6.0	7.0	7.3	7.7	6.7	7.0	6.3	6.3	3.9	2.5	3.3	2.9	2.4	2.3	2.5
4	2.9	3.1	3.2	3.4	3.1	2.4	2.4	4.0	6.0	5.8	6.1	6.1	6.2	6.8	6.1	5.5	5.3	4.5	3.8	3.0	2.4	2.5	2.5	2.5
5	2.9	2.8	2.8	3.2	3.1	2.3	2.7	4.1	5.4	5.2	5.5	5.7	6.4	6.5	6.0	5.1	5.7	4.6	3.0	2.8	3.0	2.1	2.3	2.3
6	2.7	2.8	2.7	2.8	2.7	2.1	1.9	4.6	4.7	5.1	5.5	6.8	6.1	5.7	6.4	6.2	5.0	3.9	3.3	2.8	2.4	2.4	2.6	2.8
7	2.9	3.0	3.4	3.3	2.9	2.5	2.6	4.3	5.1	5.4	5.5	6.6	5.3	7.1	5.6	4.7	5.5	3.6	2.8	2.9	2.8	2.4	2.3	2.4
8	2.6	2.6	2.8	2.9	2.5	2.3	2.3	4.1	4.8	5.1	6.2	7.1	7.1	6.7	5.7	5.0	5.1	3.6	3.0	2.8	2.6	2.8	3.1	2.8
9	2.8	2.6	2.8	3.2	2.2	2.4	2.2	4.0	5.2	5.5	5.9	7.3	7.5	5.9	5.8	6.5	4.4	3.9	4.6	2.9	2.7	2.4	2.5	2.4
10	2.9	3.0	2.4	2.6	2.7	2.4	2.4	4.0	5.1	6.4	6.7	6.6	7.4	6.5	6.7	6.0	5.2	5.3	3.2	2.9	3.0	2.8	3.0	2.8
11	3.3	5.4	3.9	2.4	A	A	3.8	5.0	6.4	9.1	7.5	6.9	6.6	5.6	5.6	5.8	4.8	5.3	3.6	1.9	2.5	2.6	2.7	2.8
12	3.1	3.0	3.0	2.5	2.2	2.2	2.1	3.9	5.6	5.8	7.5	7.8	6.4	6.9	6.0	5.8	4.4	4.4	3.7	3.0	2.8	3.2	2.6	2.8
13	3.5	3.9	3.2	3.2	3.0	3.0	3.3	3.7	4.9	5.6	4.9	7.6	6.7	6.5	6.1	5.9	6.6	4.2	3.9	3.6	2.5	2.2	2.6	2.8
14	2.6	3.0	3.1	2.4	2.3	2.5	3.2	3.8	5.1	5.2	5.1	6.2	6.9	5.7	5.6	6.5	5.4	4.7	3.1	2.6	2.8	2.8	2.9	3.2
15	3.1	3.1	3.3	3.0	3.4	3.1	3.4	4.3	5.9	6.0	8.0	8.1	5.7	6.7	6.6	5.8	5.5	4.9	4.0	3.3	2.9	2.8	3.1	3.5
16	3.3	3.1	3.2	3.2	2.4	2.4	2.8	4.1	5.4	5.7	7.4	6.7	5.8	5.8	6.2	6.0	5.3	4.5	4.1	2.9	3.0	2.9	2.9	3.0
17	3.1	3.1	3.3	3.1	2.5	3.4	2.7	4.0	5.5	6.6	10.9	8.3	6.8	6.0	6.7	6.3	5.2	4.9	3.7	2.6	2.4	2.9	2.9	3.0
18	3.0	3.2	3.4	2.8	3.5	3.1	2.5	4.0	5.4	4.8	6.8	6.4	6.9	6.5	6.0	7.0	4.5	5.2	3.4	3.2	2.8	2.6	2.8	3.0
19	3.0	3.0	2.9	2.9	3.2	2.5	2.4	3.9	4.9	5.0	7.0	7.0	6.6	6.7	5.7	5.8	5.9	4.3	3.2	3.0	2.5	2.8	2.8	3.1
20	3.1	3.1	3.4	3.6	3.5	3.6	2.6	4.4	5.6	7.3	9.2	10.0	7.7	6.6	5.9	5.4	5.1	4.0	2.5	3.4	2.9	2.5	2.6	2.7
21	3.0	3.2	3.5	3.8	2.0	2.1	2.6	4.3	5.6	6.3	7.5	8.9	7.5	5.5	5.3	6.8	5.2	4.9	4.9	4.0	3.0	2.6	3.0	3.0
22	3.0	3.2	3.3	3.3	2.6	2.6	2.8	4.7	6.3	5.2	7.7	9.7	6.5	5.6	6.0	6.1	5.1	4.2	3.2	2.9	2.5	2.6	3.0	3.0
23	2.9	3.2	3.5	3.7	2.0	S	S	5.3	5.9	5.4	6.5	9.7	6.9	6.1	5.1	6.1	5.7	4.2	3.4	3.7	2.8	2.6	2.8	2.5
24	2.8	2.9	3.0	3.1	3.1	3.0	3.0	4.4	4.9	4.8	7.0	8.1	7.1	7.3	6.4	5.9	5.2	4.5	3.2	3.6	2.9	2.4	2.5	2.8
25	2.9	3.2	3.4	2.8	A	A	A	4.4	5.5	5.2	7.1	8.9	7.9	6.5	6.0	5.8	5.5	4.4	3.3	3.3	3.6	3.1	3.0	3.3
26	3.4	3.3	3.3	3.6	2.9	2.6	3.0	4.5	5.7	6.2	7.8	7.4	7.2	6.5	6.8	6.5	5.4	4.4	3.4	3.0	3.5	3.4	3.4	3.4
27	3.3	3.5	4.0	3.3	2.8	2.5	2.9	4.7	6.1	6.1	7.7	8.6	6.2	6.9	6.5	6.0	5.6	5.1	4.2	4.4	3.2	3.4	2.8	3.2
28	3.3	3.4	3.5	3.7	5.0	2.8	2.9	4.8	5.7	6.4	7.4	8.0	6.6	7.2	6.6	6.9	6.3	4.8	3.3	3.9	3.5	2.6	2.9	2.9
29	2.9	3.0	3.3	3.5	3.7	2.4	3.0	5.2	6.5	6.0	6.6	9.1	8.4	6.7	7.5	6.3	6.1	4.8	3.7	3.1	2.8	2.9	2.8	3.0
30	3.0	3.0	3.1	4.2	2.2	2.1	2.8	4.8	6.2	5.6	7.5	9.0	8.6	6.3	6.4	6.3	6.6	5.1	3.6	3.9	3.7	3.1	2.6	2.5
31	3.0	2.9	3.1	3.7	C	C	C	C	C	6.4	7.0	7.6	7.5	7.5	6.2	6.4	6.0	4.8	4.4	5.0	3.0	2.7	2.5	2.6
No.	31	31	31	31	28	27	28	29	30	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31
Median	3.0	3.1	3.2	3.2	2.9	2.5	2.6	4.4	5.5	5.7	7.0	7.6	6.9	6.5	6.1	6.1	5.4	4.5	3.4	3.1	2.8	2.7	2.8	2.8
U. Q.	3.1	3.2	3.4	3.5	3.3	2.9	3.0	4.7	5.9	6.3	7.5	8.6	7.5	6.9	6.6	6.5	5.9	4.9	3.8	3.6	3.0	2.9	3.0	3.0
L. Q.	2.9	3.0	3.0	2.9	2.4	2.4	2.4	4.0	5.1	5.2	6.2	6.8	6.4	6.0	5.8	5.8	5.1	4.2	3.2	2.9	2.6	2.5	2.6	2.6
Q. R.	0.2	0.2	0.4	0.6	0.9	0.5	0.6	0.7	0.8	1.1	1.3	1.8	1.1	0.9	0.8	0.7	0.8	0.7	0.6	0.7	0.4	0.4	0.4	0.4

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

Jan. 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										L	L		L		L									
2												L	L	L										
3											L		L											
4													L	L										
5											L		L	L	L									
6										L	L	L	L	L	L									
7												L	L	L										
8										L		L	4.1 L	L	L									
9									L		L	L		A										
10										L	L	4.2 L	4.2 L	U 4.1 L	L									
11										L	A	L	L	L										
12											L		L	L	L									
13											L		L	L	U 3.5 L	L								
14									L				4.1 L		L									
15											L	L	L	L										
16											L	L	L	L	L									
17										L	L	L	L	L										
18												L	L	L	L									
19											L	L	L	A	L									
20										L	L	L	L	L	L									
21											4.3 L	4.4 L	L	L	LH	L								
22										L		L		L										
23											L			L	L									
24										L	A	L	L	L	L	L								
25											L	L	L	L	L									
26										L	L	L	L	L	L	L								
27											L	L	L	LH	S	S								
28											L	L	L	L	L	L								
29												L	L	L	L	L								
30											L	L	L	L	L									
31								C	C		L	L	L	L		L								
No.											1	2	3	1	1									
Median											4.3	4.3	4.1	U 4.1	U 3.5									

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

Jan. 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	2.40	2.80	2.90	A	A	A	2.80	I2.50R	B							
2								S	2.15	2.60	2.80	2.90	I3.00A	3.00	A	A	S							
3								U1.70SI	2.50A	2.75	2.80	U2.90R	A	A	U2.85R	A	B							
4								B	2.20	2.75	I2.90A	3.00	3.05	3.00	2.90	2.45	2.10							
5								S	2.30	I2.90A	I3.00A	I3.05A	3.10	I3.10R	2.70	2.45	R							
6								B	2.10	2.85	2.90	3.10	I3.15AI	3.10A	I2.90A	A	S							
7								S	2.15	2.60	2.90	3.05	3.05	3.10	2.90	2.60	B							
8								S	2.10	2.50	2.95	2.90	2.90A	A	A	A	B							
9								S	2.15	2.55	2.85	3.00	3.00	3.00	2.75	A	B							
10								S	2.15	2.65R	I2.95R	3.15	U3.10S	3.00	I2.85A	2.60	S							
11								A	A	A	I2.80A	3.05	2.90	I2.80A	I2.65A	A	A							
12								S	A	2.80	2.80	3.00R	I2.90B	2.95	2.85	I2.45B	B							
13								S	2.25	2.50	2.75S	3.00	3.05	3.00	2.85	2.40	S							
14								S	1.95	2.60	2.80	I3.20A	3.10	2.95	2.70	I2.45A	U1.95S							
15								S	2.30	2.75	3.00	3.00	I3.00A	2.90	I2.80A	2.60	U2.00S							
16								S	I2.30A	I2.55A	A	A	A	I2.95A	2.80	R	B							
17								S	A	A	A	A	A	A	A	I2.60A	B							
18								1.65	I2.25A	2.60	3.00	3.10	3.10	I3.05S	2.90	I2.55A	U2.20S							
19								S	I2.40AI	2.70A	3.10	3.10	3.00	I3.00AU	3.00AI	2.70A	I2.25S							
20								S	A	2.75	3.05	3.25	I3.10A	2.90	I2.75A	I2.55A	S							
21								S	2.40	I2.60A	2.95	R	A	R	2.90	2.50	B							
22								S	2.45	2.70	I3.05SI	3.20SI	3.30SI	3.10SI	2.95SI	2.75S	S							
23								S	U2.40S	I2.80A	2.90	A	A	3.15	I3.00R	I2.60A	R							
24								S	I2.40A	2.70	I3.00A	I3.15A	3.10	3.00R	2.90	2.65	S							
25								S	A	2.70	I3.00A	3.20	3.25RU	3.00SI	2.85A	2.70	A							
26								S	S	2.80	3.10	3.20RI	3.15AI	3.05R	3.00	A	B							
27								S	2.10	2.70R	I3.00S	I3.15R	I3.20R	3.20	S	S	B							
28								S	S	A	A	3.20	I3.30R	I3.10AI	3.05A	2.80	S							
29								S	2.50	2.80	U3.05A	A	A	I3.20A	3.20	I2.70R	B							
30								S	A	3.00	I3.00R	I3.05R	I3.20BI	3.20AI	3.10AI	2.55R	S	S						
31								C	C	A	S	I3.20A	U3.25S	3.25	I3.00B	I2.65S	I2.20B	S						
No.								2	22	27	27	25	24	26	27	22	6							
Median								U1.70	2.30	2.70	2.95	3.10	U3.10	3.00	2.90	U2.60	U2.15							

foE

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

The Radio Research Laboratories, Japan.

K 3

35

IONOSPHERIC DATA

Jan. 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	E	S	S	S	E	S	S	G	G	2.5[G]	3.3	4.8[M]	[J]3.8	[J]5.6	G	G	B	S	E	E	E	E	E	E
2	E	E	E	E	E	E	S	S	G	G	3.1	3.8	[J]3.3	G	4.2[M]	2.7	S	S	S	E	E	E	S	E
3	E	E	S	E	E	E	E	G	2.8	3.1	3.4	G	3.3	3.1	3.2	2.9	B	S	S	E	E	E	3.7[M]	E
4	3.0[M]	E	E	S	E	E	S	B	G	G	3.0	2.7[G]	G	G	G	3.0	2.3	S	E	S	S	E	E	E
5	E	E	E	E	E	E	E	S	G	3.0	3.1	3.1	G	G	G	G	G	S	E	E	E	E	S	S
6	E	3.0[M]	[J]2.8	2.1	S	E	S	B	G	G	G	3.4	3.2	3.4	3.2	2.8	2.2	S	S	S	E	E	S	E
7	E	2.1	2.1	1.8	E	S	S	S	2.7	3.0	3.4	3.2	G	G	G	G	B	S	S	E	E	S	E	E
8	E	E	E	E	C	S	S	S	G	2.7	3.3	3.3	3.1	3.3	3.0	2.6	B	S	E	E	E	E	E	E
9	E	E	2.2[M]	E	S	S	S	S	G	3.1	3.3	G	4.0	5.8[M]	4.6[M]	2.9	B	[J]2.8	6.0[M]	E	3.1[M]	2.4[M]	2.8[M]	E
10	E	E	E	2.1[M]	1.9	S	S	S	2.7	2.5[G]	3.0[G]	G	G	G	2.9	G	S	S	S	S	S	2.5	S	S
11	S	S	S	[J]2.8	[J]3.1	[J]4.1	[J]2.0	[J]5.6	[J]4.8	2.7	[J]5.3	G	2.5[G]	3.0	4.7	[J]3.8	3.1[M]	2.8[M]	3.2[M]	3.5[M]	3.4[M]	2.9	S	E
12	E	E	E	2.1[M]	E	S	S	S	[J]3.1	[J]3.0	3.3	2.8[G]	B	G	G	B	B	S	E	E	E	E	E	E
13	E	E	2.2[M]	E	1.8[M]	E	S	S	2.9	3.2	G	G	G	G	G	G	S	S	[J]2.3	4.0[M]	S	E	E	E
14	E	2.4	E	E	E	2.1[M]	S	S	2.3	3.3	3.1	4.5[M]	3.4	3.5	3.3	[J]3.8	G	3.3[M]	2.6[M]	[J]2.4	S	[J]2.6	S	2.7[M]
15	S	E	2.1[M]	1.5	E	E	E	S	2.6	3.1	3.3	3.6	3.3	3.2	[J]3.7	2.4[G]	G	[J]2.4	[J]2.4[Y]	E	E	S	E	2.3[Y]
16	[J]3.4[S]	[J]3.3	E	E	S	S	S	S	2.4	[J]3.2	3.7	4.0	3.3	3.9	G	G	B	S	E	E	E	E	[J]2.7	[J]3.4
17	3.2[M]	4.0	[J]3.3	[J]3.4	2.3	S	S	S	3.4[M]	[J]3.7	3.8	[J]3.8	2.9[M]	[J]3.8	[J]4.2	3.0	B	2.3	S	S	S	E	E	2.7[M]
18	E	E	E	E	E	E	S	G	[J]2.6	3.2	3.5	3.4	3.4	G	3.2	3.2	G	S	S	S	[J]2.7	S	S	S
19	E	E	E	2.0[M]	E	S	S	S	2.9	3.3	3.5	3.5	3.5	4.4[M]	3.5	3.4	S	S	S	C	S	S	E	S
20	S	S	2.0[M]	E	E	2.3[M]	S	S	2.2	G	3.3	3.8	3.8[S]	3.9	3.1	2.9	S	S	S	E	E	2.4[M]	3.1[M]	3.7[M]
21	2.1[M]	2.4[M]	E	E	S	S	S	S	2.9	3.2	3.1	G	3.2	3.0[G]	G	G	B	S	[J]4.7	3.1[M]	4.5[M][J]	3.0	[J]3.4	3.0[M]
22	4.2	2.3[M]	2.1[M]	2.4[M]	S	S	S	S	G	3.0	S	3.6[S]	S	S	3.2	S	S	S	S	[J]2.3[S]	3.5[M][J]	3.3	2.4[M]	2.4[M]
23	S	S	E	E	2.3	S	S	S	G	[J]3.3	3.4	[J]4.0	3.8	2.7[G]	G	3.2	G	S	S	E	S	S	E	S
24	S	E	E	S	S	S	S	S	2.7	G	[J]6.5	3.7[M]	3.4	G	3.5	G	S	S	E	2.4	3.4[M][J]	3.0	2.4	E
25	E	S	E	2.0[M]	3.4	[J]3.8[S]	3.9[M]	S	[J]3.0	3.2	3.5	2.9[G]	G	3.3	3.2	G	2.3	S	[J]5.4	E	[J]2.4	[J]2.4	S	S
26	E	S	E	S	E	S	S	S	S	3.0	3.5	3.4	[J]3.7	2.5[G]	G	3.0	B	[J]2.5	S	[J]2.5	E	E	E	E
27	E	E	2.0	E	E	S	S	S	G	G	G	G	G	G	S	S	3.0	B	E	E	S	E	S	S
28	S	S	S	E	E	S	S	S	S	[J]3.4	3.0[G]	G	3.0[G]	3.2	3.2	G	S	S	S	S	2.1	E	[J]3.0	S
29	S	S	2.3	S	E	S	S	S	2.8	G	3.3	3.9	4.1	3.7	G	G	B	S	S	E	E	E	E	E
30	S	S	S	E	S	S	S	S	[J]2.8	[J]3.2	G	G	B	3.4	3.1	2.7[G]	S	S	S	S	E	E	2.3[M]	2.9[M]
31	S	S	S	S	C	C	C	C	C	[J]3.3[S]	S	3.2	G	G	B	S	B	S	S	S	E	S	S	E
No.	22	21	25	25	22	12	5	4	28	31	29	31	28	30	29	27	10	6	15	22	23	25	21	23
Median	E	E	E	E	E	E	E	G	2.6	3.0	3.3	3.3	3.3	3.0	3.1	2.6	G	2.8	E	E	E	E	E	E
U. Q.	E	2.4	2.1	2.0	1.8	2.2	3.0	G	2.8	3.2	3.5	3.8	3.6	3.5	3.4	3.0	2.3	3.3	3.2	2.4	2.7	2.4	2.8	2.7
L. Q.		E	E	E	E	E	E		G	G	3.0	G	G	G	G	G	G	2.4	E	E	E	E	E	E
Q. R.																		0.9						

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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		S	S	S		S	S			2.5[q]	3.3	3.7	3.6	3.8			B	S						
2							S	S			3.1	3.7	3.2		3.4	2.6	S	S	S				S	
3			S						2.5	G	3.2		3.1	3.1	3.2	2.8	B	S	S				1.9	
4	2.1			S			S	B			3.0	2.7[q]				3.0	2.3	S		S	S			
5								S		2.8[q]	3.0	E 3.1[R]						S					S	S
6		E	E	E	S		S	B				3.4	3.2	3.1	3.0	2.7	2.1	S	S	S			S	
7		E	E	E		S	S	S	2.6	3.0	3.2	3.2					B	S	S			S		
8					C	S	S	S		2.7	3.3	3.2	3.1	3.2	2.9	2.5	B	S						
9			E		S	S	S	S		3.1	3.3		4.0	A	4.1	2.9	B	E	3.1		E	E	E	
10				E	E	S	S	S	G	2.2[q]	E 3.0[R]				2.9		S	S	S	S	S	E	S	S
11	S	S	S	E	A	3.3	1.8	2.8	2.8	2.5	5.2		2.5[q]	3.0	S	3.7	2.5	E	2.4	A	A	A	S	
12				E		S	S	S	3.1	U 2.4[A]	3.2	2.6[q]	B			B	B	S						
13			E		E		S	S	2.7	3.0							S	S	E	2.1	S			
14		E				E	S	S	2.3	3.3	3.1	3.7	3.3	3.5	3.2	3.2		2.2	1.8	2.1	S	1.9	S	1.9
15	S		E	E				S	2.5	3.0	3.2	3.4	3.3	3.2	3.4	2.2[q]		2.0	2.0			S		E
16	E	2.5			S	S	S	S	2.4	3.0	3.2	3.3	3.2	3.4			B	S					E	E
17	2.0	A	1.9	2.5	E	S	S	S	2.6	3.2	3.3	3.5	3.2	3.5	3.7	3.0	B	2.1	S	S	S			E
18							S		2.3	3.2	3.5	3.4	3.4		3.2	U 3.2[S]		S	S	S	E	S	S	S
19				E		S	S	S	2.7	3.1	3.5	3.4	3.3	4.2	3.2	2.8	S	S	S	C	S	S		S
20	S	S	E			S	S	S	2.1		3.2	3.7	3.6[S]	3.8	2.9	2.4	S	S	S			E	1.9	1.8
21	E	E			S	S	S	S	2.7	3.1	3.1		3.2	E 3.0[S]			B	S	2.8	2.0	A	1.8	2.0	2.4
22	2.1	E	E	1.8	S	S	S	S		2.8	S	3.6	S	S	3.1[S]	S	S	S	S	2.2	1.9	1.9	E	2.1
23	S	S			A	S	S	S		3.2	3.3	4.0	3.7	2.7[q]		2.9		S	S		S	S		S
24	S			S	S	S	S	S	2.5		6.2	3.4	3.4		3.4		S	S		E	2.1	1.8	E	
25		S		E	A	A	A	S	2.5	3.1	3.5	U 2.5[A]		3.3	3.1		E 2.3[S]	S	A		1.7	1.9	S	S
26		S		S		S	S	S	S	3.0	3.4	3.4	3.4	2.5[q]		3.0	B	2.6	S	1.9				
27			E			S	S	S							S	S	3.0	B			S		S	S
28	S	S	S			S	S	S	S	3.2	E 3.0[S]		E 3.0[R]	3.2	3.1		S	S	S	S	2.0		A	S
29	S	S	E	S		S	S	S	2.8		3.2	3.5	3.9	3.6			B	S	S					
30	S	S	S		S	S	S	S	2.6	2.4[q]			B	3.4	3.1	E 2.7[R]	S	S	S	S			E	1.8
31	S	S	S	S	C	C	C	C	C	3.1	S	3.1			B	S	B	S	S	S		S	S	
No.																								
Median																								

foEs

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

The Radio Research Laboratories, Japan.

K 5

IONOSPHERIC DATA

Jan. 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	1.40	E 1.80 S	E 1.70 S	E 1.90 S	1.30	E 1.50 S	E 1.70 S	E 1.30 S	2.10	2.00	2.10	2.20	2.00	2.00	1.80	2.00	2.45	E 1.80 S	1.40	1.40	1.40	1.60	1.50	1.50
2	E 1.90 S	1.50	1.40	1.20	1.20	E 1.80 S	E 1.70 S	E 1.80 S	1.85	2.10	2.00	2.00	2.30	2.20	2.00	2.00	E 2.30 S	E 1.80 S	E 1.70 S	1.40	1.20	1.40	E 1.60 S	1.40
3	1.30	1.30	E 1.60 S	1.40	1.30	1.40	1.30	1.40	1.95	2.05	2.05	2.00	2.20	2.10	2.60	2.20	2.10	E 1.80 S	E 1.50 S	1.40	1.40	1.40	1.40	1.40
4	E 1.60 S	1.20	1.50	E 1.30 S	1.20	1.40	E 1.90 S	1.40	1.85	1.85	2.20	2.25	2.20	2.30	1.90	1.80	1.75	E 1.85 S	1.50	E 1.70 S	E 2.00 S	1.50	1.50	E 1.50 S
5	1.40	1.45	1.20	1.10	1.40	1.40	1.30	E 1.70 S	1.80	2.10	2.10	2.30	2.20	1.90	2.10	2.00	1.60	E 1.80 S	1.40	1.50	1.40	1.50	E 1.95 S	E 1.70 S
6	1.40	1.30	1.40	1.20	E 1.50 S	1.30	E 1.40 S	1.40	E 1.70 S	2.35	2.00	2.05	1.95	2.10	2.20	1.90	E 1.80 S	E 1.60 S	E 1.60 S	E 1.60 S	1.40	1.50	S	1.40
7	1.40	E 1.60 S	1.20	1.30	1.30	E 1.70 S	E 1.70 S	E 1.80 S	1.80	2.00	2.10	2.25	2.15	2.00	2.00	1.80	2.20	E 1.80 S	E 1.60 S	1.30	1.60	S	1.50	1.40
8	1.40	1.40	1.40	1.20	C	S	E 1.75 S	E 1.50 S	1.80 S	1.95	1.90	2.00	2.10	2.20	1.90	2.00	2.00	E 1.70 S	1.20	1.50	1.50	1.20	1.50	1.50
9	1.40	1.30	1.20	1.20	E 1.50 S	E 1.70 S	E 1.60 S	E 1.50 S	1.90	1.90	2.00	1.90	2.00	2.20	2.00	E 1.90 S	2.10	E 1.55 S	E 1.70 S	1.40	E 1.60 S	1.40	1.40	1.30
10	1.40	E 1.70 S	1.30	1.10	1.00	S	E 1.70 S	E 1.80 S	1.80	1.75	2.15	1.95	2.00	2.00	2.00	1.95	E 2.10 S	E 1.90 S	E 1.95 S	E 1.70 S	E 2.00 S	E 1.90 S	E 1.90 S	E 2.00 S
11	E 2.00 S	E 2.00 S	E 1.70 S	1.60	1.10	E 1.90 S	E 1.25 S	E 1.90 S	E 1.90 S	1.90	2.10	2.25	2.00	1.90	2.20	1.80	2.00	E 1.75 S	E 1.90 S	E 1.50 S	E 1.95 S	E 1.70 S	S	1.40
12	1.40	1.30	1.30	1.30	1.10	S	E 1.50 S	E 1.80 S	1.85	2.00	1.90	2.20	3.10	2.30	2.10	2.45	2.25	E 1.70 S	1.20	1.40	1.45	1.40	1.40	1.40
13	1.30	1.40	1.20	1.10	1.00	1.40	E 1.50 S	E 1.50 S	1.85	2.00	1.95	2.20	2.15	2.30	1.90	1.90	E 2.20 S	E 1.80 S	E 1.60 S	E 1.70 S	E 1.70 S	1.40	1.40	1.20
14	1.45	E 1.50 S	1.40	1.10	1.00	E 1.50 S	E 1.50 S	E 1.80 S	1.50	1.90	2.10	2.10	2.20	2.40	1.80	E 1.80 S	E 1.70 S	E 1.80 S	E 1.50 S	E 1.70 S	E 2.20 S	E 1.80 S	E 1.95 S	1.40
15	E 1.70 S	1.40	1.20	1.10	1.10	1.20	1.10	E 1.50 S	2.00	1.90	2.30	2.20	2.10	2.20	2.20	1.90	E 1.70 S	E 1.70 S	E 1.60 S	1.40	1.40	E 2.00 S	1.40	1.40
16	E 1.70 S	E 1.70 S	1.20	1.00	S	S	S	E 1.50 S	1.80	2.10	2.25	2.00	2.20	2.20	2.15	2.15	2.20	E 1.70 S	1.40	1.40	1.40	1.70	1.40	1.50
17	E 1.60 S	1.40	1.40	1.00	E 1.50 S	E 1.50 S	E 1.50 S	E 1.90 S	2.00	2.00	2.20	2.30	2.15	2.40	1.90	1.90	2.40	E 1.70 S	E 1.70 S	E 1.95 S	E 1.90 S	1.50	1.50	1.50
18	1.40	1.30	1.20	1.30	1.30	1.40	E 1.50 S	1.30	1.85	2.20	2.20	2.20	2.25	2.40	2.20	2.10	E 1.80 S	E 1.90 S	E 1.80 S	E 1.80 S	E 1.70 S	E 1.70 S	E 1.65 S	E 1.70 S
19	1.30	1.30	1.30	1.30	1.00	E 1.90 S	S	E 1.60 S	1.65	2.20	2.20	2.15	2.05	2.10	1.90	1.70	E 2.50 S	E 1.95 S	E 1.90 S	C	E 1.90 S	E 2.10 S	1.40	E 1.80 S
20	E 1.50 S	E 1.50 S	E 1.60 S	1.40	1.30	E 1.85 S	E 1.80 S	E 1.80 S	1.50	2.10	2.10	2.20	2.00	2.20	2.20	E 1.90 S	E 2.50 S	E 1.75 S	E 1.80 S	1.40	1.40	E 1.70 S	E 1.70 S	E 1.50 S
21	E 1.60 S	E 1.50 S	1.10	1.30	E 1.50 S	S	E 1.80 S	E 1.60 S	1.80	2.20	2.15	2.20	2.10	2.25	2.10	2.20	2.20	E 2.00 S	E 1.60 S	E 1.70 S	E 1.70 S	E 1.70 S	E 1.80 S	E 1.50 S
22	E 1.60 S	E 1.50 S	1.30	E 1.50 S	E 1.50 S	E 1.50 S	S	E 2.00 S	E 2.05 S	2.00	E 3.50 S	E 2.80 S	E 3.30 S	E 3.10 S	E 2.90 S	E 2.80 S	E 2.50 S	E 1.60 S	S	E 1.80 S	E 1.80 S	E 1.80 S	E 1.90 S	E 1.70 S
23	E 1.85 S	E 1.80 S	1.30	1.45	E 1.50 S	S	S	E 2.50 S	E 2.10 S	2.20	2.15	2.00	2.40	2.45	2.60	2.20	E 1.95 S	E 1.80 S	E 1.80 S	1.30	E 1.70 S	E 1.50 S	1.20	E 1.90 S
24	E 1.70 S	1.50	1.40	E 1.50 S	S	S	S	E 2.00 S	1.90	2.10	1.85	2.00	2.30	2.25	2.20	2.00	E 2.60 S	E 1.90 S	1.40	1.40	E 1.70 S	E 1.50 S	E 1.50 S	1.40
25	1.50	E 1.90 S	1.20	1.40	E 1.50 S	E 1.90 S	E 1.70 S	E 1.50 S	E 1.90 S	2.10	2.00	2.10	2.40	2.20	2.30	2.00	1.90	E 1.80 S	E 1.60 S	1.40	E 1.40 S	E 1.60 S	E 1.90 S	E 1.60 S
26	1.30	E 1.70 S	1.30	E 1.50 S	1.30	S	S	E 2.10 S	E 2.20 S	2.20	2.20	2.40	1.80	2.10	2.50	2.20	2.60	E 1.70 S	E 1.85 S	E 1.50 S	1.30	1.00	1.20	1.40
27	1.30	1.30	1.30	1.30	1.20	S	E 1.60 S	S	1.70	2.30	2.70	2.70	2.80	2.35	S	S	2.65	1.80	1.40	1.20	E 1.70 S	1.30	E 1.80 S	E 1.80 S
28	E 1.80 S	E 1.50 S	E 1.50 S	1.40	1.20	S	S	E 2.00 S	E 2.00 S	2.30	2.20	2.25	2.45	2.10	2.45	2.30	E 2.50 S	E 1.80 S	E 1.50 S	E 1.70 S	E 1.75 S	1.40	E 1.50 S	E 1.95 S
29	E 1.70 S	E 1.70 S	E 1.50 S	E 1.50 S	1.30	E 1.50 S	S	E 2.40 S	1.90	2.20	2.30	2.15	2.80	2.70	2.40	2.30	2.20	E 1.95 S	E 1.95 S	1.40	1.30	1.40	1.40	1.40
30	E 1.80 S	E 1.90 S	E 1.50 S	1.20	S	S	S	E 2.00 S	E 1.95 S	2.20	2.30	2.70	3.60	2.40	2.40	2.10	E 2.30 S	E 1.70 S	E 1.50 S	E 1.90 S	1.30	1.20	E 1.70 S	E 1.70 S
31	S	E 1.50 S	S	E 1.50 S	C	C	C	C	C	E 2.40 S	E 3.20 S	2.50	2.85	2.80	3.00	E 2.90 S	2.80	E 1.80 S	E 1.50 S	E 1.70 S	1.30	S	E 1.75 S	1.30
No.	16	31	23	25	19	19	21	29	23	30	29	30	30	30	29	28	23	31	30	16	31	17	15	18
Median	1.40	E 1.50 S	1.30	E 1.30 S	1.20	E 1.50 S	E 1.60 S	E 1.80 S	1.85	2.10	2.10	2.20	2.20	2.20	2.15	2.00	2.10	E 1.80 S	E 1.60 S	1.40	E 1.60 S	1.40	1.40	1.40

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

Jan. 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	J 2.85 R	2.90	I 3.15 S	3.40	3.10	U 2.80 R	U 3.00 R	3.40	3.55	J 3.60 R	3.40	J 3.55 R	3.30 R	3.45	3.40	3.30	3.65	3.25	3.25	3.35	2.95	3.05	2.75	J 2.65 R
2	2.75	2.85	2.90	3.00	3.20	3.20	2.90	3.25	3.60	3.50	3.40	3.40	3.50	3.45	3.55	3.35	3.55	3.45	3.30	3.10	3.05	I 3.25 S	J 2.80 S	2.70
3	2.75	2.95 SU	3.10 S	3.05	3.20	3.45	2.95	3.20 S	3.50	3.50	3.45	3.40	3.65	3.15	3.40	3.50	3.65	3.45	3.15	3.35	3.05	3.35	3.00	2.75
4	2.75	2.90	3.10 S	3.20	3.25 S	3.30 R	J 2.90 S	J 3.20 S	3.65 SI	3.50 R	3.45	3.60	3.55	3.35	3.45	3.60	3.55	U 3.35 S	3.40	3.35	U 2.90 S	2.95	3.00	2.90
5	2.80	2.85	J 2.95 S	3.30	3.25	3.05	3.00 I	3.35 SI	3.70 R I	3.60 R J	3.45 S J	3.35 R	3.45	3.40	3.65	U 3.50 SJ	J 3.30 S	3.70	3.35	2.85	3.65	3.10	J 3.00 R	J 3.00 R
6	3.00	2.80	J 2.95 S	3.05	3.25	2.85	U 2.65 SJ	J 3.50 R	3.60 I	3.30 R	3.25 S	3.55	J 3.30 S	3.15	3.35	3.70	3.50	3.35	3.35	3.55	J 3.00 R	J 3.00 R I	2.80 S	2.80
7	2.80	2.95	U 3.25 S	3.45	3.45	J 3.45 R	2.90	U 3.40 S	J 3.50 S	3.50	3.65	3.35	3.55 R	3.40	3.55	3.55	3.65	3.35	3.15	3.25	3.50	I 3.20 S	2.80	3.10
8	2.90	2.75	3.20	3.15	I 3.10 CI	3.05 S	3.10	J 3.40 SI	3.50 SI	3.50 SI	3.40 S	3.70 S	3.35	3.60	J 3.70 R	J 3.40 S	3.70	3.35	3.35	3.25	J 3.45 R	3.05	J 3.15 R	2.70
9	2.85 FI	L 2.80 F	2.80	3.45	3.15	3.25	3.10	U 3.30 S	J 3.45 SJ	3.45 S	3.20	J 3.35 R	3.55	I 3.50 A	3.25	3.45	3.70	3.25	J 3.15 S	3.40	3.30	2.90	2.80	2.70 F
10	J 2.70 FJ	2.80 F	2.90	3.10	3.35	I 3.10 S	3.00	J 3.45 S	U 3.70 S	3.30	J 3.25 S	3.35	3.50	I 3.20 C	3.45	J 3.35 S	3.30	U 3.40 S	3.45	3.10	2.80 S	2.45	2.55	2.50 S
11	2.65 SU	3.30 S	2.85 SJ	2.95 R	A	A	I 2.90 SI	3.00 SJ	3.15 S	3.50 R	3.75	3.60	3.35	J 3.50 R I	3.50 S U	3.45 S	3.45	U 3.40 S	3.35	I 3.50 A	I 3.35 A	I 2.90 R	I 2.95 S	3.05
12	U 2.90 F	3.00	3.15	3.35	3.20	I 3.00 SI	3.15 S	3.60 S	J 3.55 S	3.45	3.45	3.70	3.60	3.70	3.50	J 3.35 S	3.65	3.40	3.35	3.35	I 3.00 F	2.80 F	3.35	2.85
13	3.25	3.20	I 3.30 F	3.10 F	3.00 FJ	2.85 F	3.35	I 3.30 S	3.45	3.75 S	3.15	3.55	3.60	J 3.50 S	3.60	I 3.50 CJ	J 3.45 R	3.45	3.30	3.35	3.50	3.20	J 2.75	J 2.80 R
14	2.80 F	2.75	3.50	3.00	3.10	2.90	3.40	3.65	3.55	3.50 R	3.55	3.10	3.60	3.50	3.55	3.50	3.50	3.40	3.25	3.25	I 3.15 S	2.85	2.95	3.15
15	3.15 F	2.85 F	J 2.05 F	2.95 F	2.95 FJ	U 2.85 FJ	J 2.95 F	3.45	3.40	3.10	J 3.40 RI	3.60 R	3.35	3.30	3.45	3.45	3.45	3.25	3.45	3.20	3.25	J 2.60 R	2.75 F	3.10
16	3.05 L	I 3.15 F	3.00	3.30	I 3.15 S	I 2.90 SI	2.80 SJ	3.35 S	J 3.55 SI	3.50 S	3.55 S	3.60	3.30 R	3.30	J 3.45 RI	3.40 R	3.45	3.35	3.30	3.10	3.25	2.95 R	2.75	2.65
17	2.75 FI	3.00 A	3.30	3.55	3.00	3.25	2.95	3.25	J 3.45 S	3.25	J 3.30 R	3.50	3.55	J 3.35 R	3.15	3.50	3.45	3.45	3.45	3.45	3.20	2.90	3.00	2.80
18	2.85	2.85	3.25 S	3.20	3.35	3.20	3.10	3.50	I 3.40 S	3.50	3.55	U 3.60 R	3.60	3.50	I 3.25 R	3.70	3.35	U 3.45 S	3.35	3.45	2.95	2.90	J 2.85 R	2.65
19	2.60	2.85	2.95	3.10	3.45	U 3.15 SI	3.15 S	3.35 S	3.50	3.40 R	3.25	3.55	U 3.20 R	3.40	J 3.30 R	3.30	U 3.55 RI	3.50 S	I 3.25 CJ	I 3.15 CJ	3.15 R	2.85	2.85	2.85
20	2.90	2.90	3.05 S	3.05	3.00	I 3.40 SU	3.05 SI	3.35 SI	I 3.30 S	3.40 S	3.25	J 3.40 R U	3.50 RJ	3.45 R	3.55 S	3.55	3.50	3.40	U 3.20 R	3.25	3.45	U 3.00 S	2.70	2.80
21	2.65	2.80	3.15	3.55	U 3.05 SI	2.95 SI	2.90 SJ	J 3.20 S	3.55	3.00 I	3.45 CI	3.55 C	3.50	3.60	3.10 R	3.40	3.65	3.45	3.30	3.25	I 3.20 A	2.80	2.85	2.95
22	2.85	2.85	3.05 S	3.15	2.95	J 2.90 SI	3.00 SI	3.25 S	J 3.50 S	3.20 S	3.25 S	3.70 S	3.65 RI	3.45 R I	3.40 SU	3.45 S	3.55 S	3.30 I	3.40 S	3.15	U 3.05 R	2.90	2.85	2.85
23	J 2.70 S	2.80	2.95	J 3.50 S	A	S	S	I 3.35 S	I 3.70 SU	3.30 R	3.40	3.50 R	3.60	3.60	3.50	3.35	U 3.50 R	3.15 S	3.25	3.25	3.30	J 3.05 R	2.90	3.00
24	J 2.85 R	2.80	2.95	3.15	I 3.25 SI	I 3.10 SI	I 3.05 SI	3.45 SI	3.70 S	3.50	3.30	J 3.35 R	3.25	3.45 R	3.45	I 3.50 R	U 3.50 S	3.55 S	3.45	3.35	3.25	2.90	2.70	J 2.80 R
25	2.75	2.95	3.25	J 3.55 R	A	A	A	J 3.40 S	I 3.45 SI	3.20 S	3.25	3.45	J 3.45 R	3.50	3.35	I 3.55 S	J 3.45 S	3.40	I 3.30 A	3.05	3.20 S	3.00	2.65 S	2.75
26	2.90	J 3.00 S	3.00 SJ	3.30 S	3.40	I 2.90 SI	3.10 SU	3.55 SI	I 3.40 SI	3.45 RJ	3.45 S	3.40	J 3.75 R	3.55	3.35	3.40	3.70	3.40	3.10	3.00	2.85	3.25	2.90	2.95
27	2.75	2.85	3.15	3.35 S	3.50 SI	2.90 SJ	2.95 SI	3.35 S	3.65 SJ	3.20 S	3.40 S	3.50	3.20	3.45	I 3.50 SI	J 3.55 S	3.25	3.35	J 3.15 S	3.40 S	3.30	2.90 S	2.80	U 2.80 S
28	2.75	2.80	U 2.85 SU	3.15 SI	I 3.50 SI	3.10 SI	3.00 SI	3.40 S	J 3.50 R	3.45	3.50	3.40	3.25	3.35	3.20	3.45	3.45	3.35	3.00	3.10	3.40 S	3.05	I 2.75 SI	I 3.00 S
29	2.75	I 2.80 SI	3.00 SI	3.10 SI	3.25 SI	3.10 SI	3.10 SJ	3.45 SI	3.50 S	J 3.65 SI	3.20 R	3.35	J 3.45 R	3.30	3.45	J 3.50 S	3.60	3.45	2.85	3.20	2.90	3.05	2.95	2.85
30	I 2.70 SJ	2.40 SJ	2.90 SJ	3.20 S	I 3.45 SI	3.00 SI	2.90 SI	I 3.25 S	I 3.50 S	3.40	3.20	3.55	J 3.50 R	I 3.35 R	I 3.20 SL	3.30 R	3.45	3.60	J 3.30 SL	3.20 S	3.20	J 3.05 S	2.90	2.75
31	I 2.65 S	2.80 HI	3.10 SU	3.20 S	C	C	C	C	C	3.45	3.45	U 3.45 S	3.35	3.45	3.40 S	J 3.45 S	3.50	3.45	3.00	I 3.40 S	3.30	I 2.90 S	J 3.10 S	2.80
No.	31	31	31	31	27	27	28	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Median	2.80	2.85	3.05	3.20	3.20	U 3.05	U 3.00	3.35	3.50	3.45	3.40	3.50	3.50	3.45	3.45	3.45	3.50	3.40	3.30	3.25	3.20	2.95	2.85	2.80

The Radio Research Laboratories, Japan.

M(3000)F2 | Sweep 1.0 Mc to 20.0 Mc in 20 min/sec in automatic operation.

K 7

IONOSPHERIC DATA

Jan. 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										L	L		L		L									
2												L	L	L										
3											L		L											
4													L	L										
5											L		L	L	L									
6										L	L	L	L	L	L									
7												L	L	L										
8										L		L	3.90	L	L									
9									L		L	L		A										
10										L	L	3.80	3.60	L	L									
11										L	A	L	L	L										
12											L		L	L	L									
13											L		L	L	"4.00	L								
14									L				3.65		L									
15											L	L	L	L										
16											L	L	L	L	L									
17										L	L	L	L	L										
18												L	L	L	L									
19											L	L	L	A	L									
20										L	L	L	L	L	L									
21											C	L	L	L	LH	L								
22										L		L		L										
23											L			L	L									
24										L	A	L	L	L	L	L								
25											L	L	L	L	L									
26										L	L	L	L	L	L	L								
27											L	L	L	LH	S	S								
28											L	L	L	L	L	L								
29												L	L	L	L	L								
30											L	L	L	L	L									
31								C	C		L	L	L	L		L								
No.												1	3		1									
Median												3.80	3.65		"4.00									

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

The Radio Research Laboratories, Japan.

K 8

IONOSPHERIC DATA

Jan. 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										240	250		255		240									
2												250	240	240										
3											245		250											
4													240	250										
5											240		250	240	240									
6										215	250	245	250	240	245									
7												255	230	240										
8										230		240	260	245	240									
9									215		260	255		A										
10										255	250	250	250	260	250									
11										240	225	240	245	230										
12											255		240	240	240									
13											230		250	240	240	255								
14									210				250		250									
15											260	225	240	255										
16											250	240	240	255	250									
17										255	245	240	245	240										
18												240	250	245	210									
19											265	250	260	250 A	240									
20										255	280	240	250	240	245									
21											250	255	245	245	290	245								
22										300		245		250										
23											255			240	245									
24										225 E	300 A	250	250	250	240	225								
25											260	250	250	245	240									
26										240	250	255	250	245	245	245								
27											260	250	250	250	S	S								
28											250	250	250	250	250	245								
29												260	250	255	255	240								
30											260	250	250	245	255									
31								C	C		250	250	260	250		240								
No.									2	10	22	23	28	27	20	7								
Median									210	240	250	250	250	245	245	245								

h'F2 | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 9

41

IONOSPHERIC DATA

Jan. 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	290	265	245	240	300	300	240	205	E 250A	210	240	210	245	205	240	210	205	210	225	290	260	260	340
2	E 350S	310	300	260	245	245	305	205	210	225	225	240	205	205	235	240	225	215	240	250	255	225	260	345
3	310	255	255	230	245	210	280	240	210	225	225	225	210	215	235	225	215	200	255	215	210	245	F 320A	345
4	310	295	255	245	210	245	255	240	210	230	230	210	200	225	245	215	205	215	205	210	E 305S	295	295	295
5	260	295	250	240	200	295	255	205	205	230	180	210	205	210	205	210	210	210	225	260	210	255	E 350S	E 345S
6	320	310	300	250	240	305	E 350S	215	200	205	180	240	225	200	205	225	205	205	215	210	280	265	I 275S	305
7	305	260	240	210	200	200	280	220	210	230	220	210	205	215	215	205	205	200	260	225	205	I 270S	310	295
8	300	305	255	230	I 220S	I 270S	265	215	210	210	E 260S	210	190	245	205	205	200	200	225	210	210	260	260	300
9	285	315	255	205	E 260S	E 290S	300	205	205	225	245	240	240	I 225A	E 250A	240	200	240	240A	205	250A	305	340	345
10	315	255	280	240	225	I 270S	260	225	215	230	245	205	200	215	205	230	205	200	225	255	300	390	355	400
11	345	210	245	215	I 300A	275	260	I 220S	240	240	I 220A	210	200	200	I 230S	240A	210	210	250A	A	A	A	I 270S	215
12	260	280	250	240	250	I 290S	260	215	210	220	210	225	210	200	185	210	200	220	200	210	255	255	200	260
13	245	210	250	215	250	280	210	210	215	215	200	240	225	205	190	200	230	210	245	240A	215	250	300	310
14	305	300	220	240	225	300	210	200	170	225	210	E 250A	245	245	225	245	220	225	225	260A	260	300A	310	260
15	265	295	255	255	250	300	225	205	215	245	240	230	210	215	E 250A	205	220	215	215	240	245	E 315S	300	255
16	255	E 300A	255	210	I 225S	I 270S	I 280S	250	210	225	240	230	200	210	205	210	220	210	210	250	240	250	300	305
17	300A	I 255A	250A	E 250A	290	235	295	230	230	230	250A	220	200	205	E 260A	240A	210	215	210	240	E 280S	255	270	305
18	300	285	245	230	210	250	260	210	210	210	240	220	245	220	205	230	205	240	230	205	245	310	260	295
19	300	290	290	255	205	E 290S	I 270S	210	225	225	245	240	225	I 230A	205	245	225	210	250	I 230C	260	E 340S	305	300
20	300	300	255	255	250	250	305	240	245	240	210	245	210	225	210	210	225	205	240	240	210	300	E 350A	310
21	305	305	250	200	E 300S	I 310S	310	225	210	205	220	205	205	200	175H	180	205	240	250A	240	I 245A	300A	305	E 310A
22	E 340A	300	250	245	250	290	I 270S	230	220	205	E 255S	250	215	205	240	225	215	205	I 240S	260A	305	E 300A	305	310
23	E 305S	305	255	205	A	S	S	245	225	205	205	240A	225	220	200	245	225	240	245	225	320	290	255	E 295S
24	300	300	290	250	I 220S	I 220S	I 240S	205	205	180	I 210A	245	205	200	230	205	205	205	200	210	E 250A	350A	340	300
25	310	E 295S	220	205	A	A	A	205	205	230	215	225	205	205	200	200	215	210	I 220A	245	245	250A	E 355S	300
26	275	290	275	245	205	I 285S	I 260S	205	215	200	245	235	205	205	205	230	205	240	255	255A	285	240	265	295
27	300	300	250	210	200	I 290S	255	I 220S	225	235	205	205	205	180H	I 205S	I 220S	225	205	230	230	205	250	305	285
28	300	295	295	250	200	I 270S	I 270S	210	210	225	210	200	200	205	205	225	230	205	245	255	210	290	I 330A	310
29	305	300	285	245	200	265	I 300S	210	240	225	220	245	225	205	240	200	225	205	255	210	265	255	300	290
30	E 300S	400	295	205	S	S	S	235	205	210	205	205	225	205	200	215	225	205	240	250	230	245	295	310A
31	I 310S	300	I 295S	245	C	C	C	C	C	230	225	210	210	215	210	205	230	210	255	205	245	I 240S	295	300
No.	28	30	31	30	25	25	26	30	30	30	29	30	31	31	28	31	31	31	31	30	27	27	27	29
Median	300	295	255	240	225	270	270	215	210	225	220	225	210	210	205	220	215	210	240	235	245	255	300	300

h'F

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

The Radio Research Laboratories, Japan.

K 10

IONOSPHERIC DATA

Jan. 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	E	S	S	S	E	S	S	G	G	110	110	100	105	100	G	G	B	S	E	E	E	E	E	E
2	E	E	E	E	E	E	S	S	G	G	140	105	105	G	100	140	S	S	S	E	E	E	S	E
3	E	E	S	E	E	E	E	G	110	115	110	G	105	100	155	145	B	S	S	E	E	E	110	E
4	110	E	E	S	E	E	S	B	G	G	110	110	G	G	G	125	130	S	E	S	S	E	E	E
5	E	E	E	E	E	E	E	S	G	110	110	110	G	G	G	G	G	S	E	E	E	E	S	S
6	E	110	100	100	S	E	S	B	G	G	G	150	110	105	100	100	100	S	S	S	E	E	S	E
7	E	105	105	105	E	S	S	S	150	150	145	140	G	G	G	G	B	S	S	E	E	S	E	E
8	E	E	E	E	C	S	S	S	G	150	E 180 B	115	130	115	110	110	B	S	E	E	E	E	E	E
9	E	E	115	E	S	S	S	S	G	180	140	G	120	110	110	110	B	105	100	E	105	100	100	E
10	E	E	E	100	105	S	S	S	140	115	115	G	G	G	110	G	S	S	S	S	S	100	S	S
11	S	S	S	160	135	125	140	110	110	110	100	G	100	115	110	100	105	100	100	100	100	100	S	E
12	E	E	E	105	E	S	S	S	110	110	150	100	B	G	G	B	B	S	E	E	E	E	E	E
13	E	E	100	E	100	E	S	S	160	140	G	G	G	G	G	G	S	S	100	100	S	E	E	E
14	E	105	E	E	E	100	S	S	140	140	150	100	140	130	120	100	G	100	100	100	S	100	S	100
15	S	E	105	100	E	E	E	S	150	150	145	120	120	130	105	105	G	100	100	E	E	S	E	105
16	105	100	E	E	S	S	S	S	135	110	105	105	105	105	G	G	B	S	E	E	E	E	120	105
17	100	100	100	100	100	S	S	S	115	115	110	105	105	100	100	100	B	100	S	S	S	E	E	100
18	E	E	E	E	E	E	S	G	130	110	110	110	115	G	110	110	G	S	S	S	100	S	S	S
19	E	E	E	100	E	S	S	S	115	110	150	145	120	110	100	100	S	S	S	C	S	S	E	S
20	S	S	100	E	E	110	S	S	125	G	155	130	110	110	110	105	S	S	S	E	E	100	100	100
21	100	105	E	E	S	S	S	S	140	110	110	G	105	105	G	G	B	S	100	105	100	100	100	100
22	100	100	100	100	S	S	S	S	G	105	S	115	S	S	105	S	S	S	S	100	100	100	100	100
23	S	S	E	E	100	S	S	S	G	115	120	110	100	105	G	105	G	S	S	E	S	S	E	S
24	S	E	E	S	S	S	S	S	105	G	100	100	150	G	115	G	S	S	E	100	100	100	100	E
25	E	S	E	110	105	110	110	S	105	110	105	105	G	115	105	G	130	S	100	E	100	100	S	S
26	E	S	E	S	E	S	S	S	S	E 150 A	145	150	100	100	G	115	B	100	S	100	E	E	E	E
27	E	E	100	E	E	S	S	S	G	G	G	G	G	G	S	S	110	B	E	E	S	E	S	S
28	S	S	S	E	E	S	S	S	S	110	105	G	105	105	110	G	S	S	S	S	100	E	100	S
29	S	S	100	S	E	S	S	S	140	G	115	100	105	110	G	G	B	S	S	E	E	E	E	E
30	S	S	S	E	S	S	S	S	110	110	G	G	B	110	110	110	S	S	S	S	E	E	100	100
31	S	S	S	S	C	C	C	C	C	115	S	110	G	G	B	S	B	S	S	S	E	S	S	E
No.	5	7	10	10	6	4	2	1	18	23	24	22	20	19	18	16	5	6	7	7	8	9	9	8
Median	100	105	100	100	100	110	125	110	130	110	110	110	105	110	110	110	110	100	100	100	100	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

Jan. 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										l	C	l z	l	l										
2											h	C	l		l	h l								
3									h l	C	C		l	l z	h	h							f z	
4	f										l	l				C	C							
5										l	l	l												
6		f z	f z	f								h	l	l	l	l	l							
7		f	f	f					h	h	h	h												
8										h	h	C	h	l	l	l								
9			f							h	h		C z	C	C z	l		f	f 3		f z	f z	f z	
10				f z	f				h	l	l				l							f		
11				f	f 3	f z	f	l z	l z	l	l		l	C l	C z	l z	l h	f	f 3	f 3	f z	f		
12				f					l z	l	l	l												
13			f z		f				h	h									f z	f z				
14		f				f			C	h	h	l z	h	h	C l	l z		f z	f	f		f		f z
15			f	f					h z	h l	h	C	l	h	l z	l		f	f					f
16	f z	f z							l	l	l	l	l	l				f	f					f
17	f z	f z	f z	f z	f				l	l	l	l	l	l	l z	l		f					f z	f z
18									h	C	C	C	C		C	l					f			f
19				f					l	l	h	h	h l	C l	C l	l								
20			f			f			l		h	h	l	C	l	l z						f	f z	f z
21	f	f							h	l z	C		l	l					f z	f z	f 3	f	f z	f z
22	f z	f	f	f z						l h		l			l					f z	f z	f z	f	f
23					f					l	C	l z	l z	l		l					f z	f z	f	f
24									l z		l z	l	h		C						f			
25				f	f z	f z	f z		l	C	l z	l		C	l		l		f z		f	f z	f z	f
26										h	h	h	l	l		l		f			f z	f		
27			f														l							
28										l	l		l	l	l									
29			f						h		C	l	l	l							f		f	
30									l	l				l	l	l								
31										l		l											f	f
No.																								
Median																								

Types of Es

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

The Radio Research Laboratories, Japan.

K 12

IONOSPHERIC DATA

Jan. 1962 | hpF2 | 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	T340R	310	I290S	255	300	U325RU	305R	250	230	T245R	255	T250R	285R	255	255	280	245	275	255	255	310	300	350	T395R
2	380	355	345	310	295	290	320	250	245	250	250	260	250	255	250	255	250	250	255	305	300	I265S	T305S	400
3	360	305	SU300S	285	300	245	310	265S	250	250	260	255	240	280	260	255	250	250	295	255	295	255	320	385
4	350	340	300S	265	250S	255RT	345S	T280U	250S	I250R	255	240	245	260	255	245	240	U250S	250	240	I305S	305	305	315
5	320	320	T300S	255	255	305	300	I245SL	I215RL	I230RT	255ST	245R	255	250	240	U250S	T250S	230	250	315	245	300	T350RT	350R
6	370	345	T330S	300	280	350	U350S	T250R	230	I250R	275S	255	T260S	255	260	245	250	250	250	240	T305RS	300RI	360S	350
7	345	315	U255S	250	250	T250R	310	U250S	T245S	250	250	270	250R	250	245	245	245	250	305	250	245I	280S	370	305
8	335	350	290	290	I280CL	290S	295	T250SL	I250SL	I250SL	255S	245S	285	250	T250RT	T255S	215	250	250	255	T250R	310	T300R	380
9	340FL	360F	315	240	290	300	300	U250S	T250ST	255S	295	T280R	250	I250A	260	250	220	270	T260S	250	255	330	355	390F
10	T390FT	355F	310	295	255	I300S	300	T255SU	245S	290	T250S	250	250	I260C	255	T255S	250	U245S	250	265	300S	405	395	415S
11	380SU	275S	315S	T315R	A	A	I300SL	290S	255S	255R	245	250	255	T245RL	I255SU	255S	245	U255S	255	I250A	I260AL	I330AL	I305S	300
12	U315F	305	290	255	305	I310SL	I290S	250S	T245S	250	255	240	250	245	250	T250S	240	255	255	250	I315F	310F	250	315
13	280	265	I265F	285F	305FT	310F	250	I250S	250	230S	255	255	250	T250S	250	I260C	T250R	250	305	250	250	280	350	T365R
14	350F	355	250	290	280	310	250	210	245	250R	245	305	250	255	250	255	250	255	255	280	I280S	335	340	300
15	305F	340F	T305F	320F	305FU	U355FT	300F	255	255	305	T280RL	I250R	255	280	260	250	250	255	250	280	260	T355R	300F	300
16	305	I300F	310	255	I280SL	I330SL	390S	T260S	T250SL	I260S	250S	250	255R	280	T255RL	I260R	250	250	280	280	275	290R	340	360
17	345FL	I310A	280	250	305	280	310	275	T250S	295	T255R	250	250	T255R	300	255	250C	255	250	240	280	310	305	350
18	350	330	280S	280	255	265	300	250	I250S	245	250	U250R	250	250	I290R	240	265	U255S	265	250	300	345	T305R	375
19	345	350	320	295	240	U300SL	I300S	295S	250	250R	290	250	U285R	255	T255R	275	U250RL	I245SL	I270CL	I290C	T305R	350	350	350
20	305	345	305S	305	305	I255SU	U315S	I270SL	I275	280S	295	T255RL	U250RT	250R	250S	250	250	245	U250R	280	250	U305S	355	350
21	380	355	280	245	U300SL	I320SL	330SL	T290S	245	300	I270CL	I260C	250	250	295R	255	240	275	260	270	I280A	340	350	315
22	350	345	305S	280	300	T310SL	I310SL	I260SL	T250S	305S	305S	250S	L250RL	I265RL	280SL	U255S	250S	250	I280S	280	U310R	310	350	345
23	T385S	355	305	T250S	A	S	S	I275SL	I240SU	260R	280	255R	250	250	250	260	U250R	280S	290	255	255	T305R	305	305
24	T335R	345	320	300	I260SL	I280SL	I300SL	I270SL	I230S	250	I295AT	255R	260	255R	250	I250RL	U245S	245U	245	255	265	355	390	T360R
25	355	315	280	T230R	A	A	A	T250SL	I250SL	I275S	285	255	T255R	250	255	I250ST	T250S	250	I270A	290	255S	305	390S	355
26	310	T315S	330S	T275S	250	T345SL	I290SU	U250SL	I250SL	I250RT	T260S	260	T250R	255	255	255	250	250	300	300	330	280	340	310
27	350	350	300	250S	240SL	I310ST	305SL	I265S	245ST	280S	275S	250	275	260	I250SL	I245S	250	255	T285S	245S	255	305S	345	U345S
28	345	355	U355SU	295SL	I250SL	I300SL	I320SL	I270SL	T250R	250	255	255	275	270	300	255	255	250	300	300	250S	310	L355AL	355S
29	350	I350RL	I320L	I290SL	I260SL	I290SL	I300SL	T250SL	I250ST	240SL	I275R	290	T255R	280	260	T250S	250	250	305	260	305	300	310	345
30	I360SL	T450ST	T305ST	T270SL	I265SL	I320SL	I330SL	I280SL	I250S	255	295	250	T250RL	I270RL	I270SL	I270R	255	250	T260SL	I285S	290	T290S	315	355
31	I355S	350RL	I325SU	265S	C	C	C	C	C	260	255	U260S	295	255	255S	T270S	250	250	305	I250S	275	I270ST	T305S	350
No.	31	31	31	31	27	27	28	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Median	350	345	305	280	280	U300	U300	255	250	250	255	255	250	255	255	255	250	250	260	255	280	305	340	350

hpF2

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

The Radio Research Laboratories, Japan.

K 13

45

IONOSPHERIC DATA

Jan. 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	J 60R	85	I 60S	50	55	U 70R	U 95R	50	50	J 35R	45	J 45R	20R	45	50	65	75	80	90	55	85	90	90	J 60R
2	65	50	55	70	55	60	90	90	50	50	55	45	50	45	45	50	40	50	85	50	55	I 80S	J 90S	45
3	85	95S U	55S	50	90	55	85	80S	45	50	50	45	20	70	45	50	45	55	60	75	100	50	75	60
4	65	65	50S	85	60S	55R	J 60S	J 70S	45S	I 50R	45	35	60	45	40	35	40	U 50S	50	65	I 65S	90	90	85
5	85	85	J 55S	90	90	85	95	I 75S	I 50R	I 40R	J 45S	J 60R	45	45	25	U 55S	J 55S	50	50	90	50	95	J 45R	J 45R
6	75	60	J 65S	65	75	60	U 100S	J 55R	50	I 65R	70S	45	J 80S	100	70	15	50	95	50	55	J 90R	J 95R	I 90S	90
7	60	80	U 50S	50	50	J 50R	90	U 55S	J 50S	45	25	35	35R	50	30	50	20	55	50	60	50	I 60S	70	90
8	65	90	60	60	I 85C	I 60C	55	J 50S	I 50S	I 50S	I 45S	20S	30	20	J 20R	J 50S	60	60	60	90	J 50R	45	J 50R	65
9	65F	I 55F	90	60	65	45	55	U 50S	J 45S	J 45S	60	J 30R	45	I 45A	85	50	35	80	J 85S	55	50	70	90	65F
10	J 55F	J 85F	90	100	90	I 80S	90	J 50S	U 20S	65	J 70S	60	60	I 60C	50	J 60S	75	U 80S	100	85	85S	120	70	95S
11	85S U	105S	90S	J 85R	A	A	I 95S	I 95A	95S	50R	15	40	45	J 35R	I 45S	U 45S	65	U 50S	90	I 40A	I 50A	I 80A	I 90S	95
12	U 80F	85	60	50	60	I 90S	I 90S	40S	J 30S	55	45	20	30	30	50	J 55S	50	50	50	60	I 70F	95F	55	90
13	65	80	L 85F	70F	90F	J 95F	55	I 80S	55	30S	85	25	40	J 45S	45	I 40C	J 45R	55	35	60	50	75	90	J 80R
14	55F	90	50	105	75	85	55	65	45	50R	50	50	30	40	40	45	45	65	90	65	I 85S	70	55	55
15	90F	100	J 85F	80F	90F	U 55F	J 90F	50	50	85	J 25R	I 40R	45	30	40	50	50	60	55	70	85	J 90R	85F	55
16	85	I 50F	85	90	I 75S	I 65S	I 85S	J 45S	J 40S	I 25S	45S	30	50R	60	J 55R	I 50R	50	70	40	75	80	105R	105	85
17	65F	I 80A	65	50	90	70	80	70	J 50S	55	J 80R	50	40	J 50R	30	40	45S	50	55	40	10	90	90	65
18	55	75	70S	65	45	80	55	50	I 50S	60	45	U 30R	50	50	I 60R	20	50	U 45S	40	50	100	65	J 95R	75
19	55	60	75	60	60	U 55S	I 55S	40S	50	95R	50	50	U 65R	45	J 50R	75	U 50R	I 40S	I 85C	L 75C	J 40R	65	60	55
20	95	50	85S	85	90	I 70S	U 85S	L 55S	L 50S	25S	40	J 50R	U 40R	J 50R	45S	40	50	60	U 60R	75	50	U 90S	90	90
21	70	85	65	45	U 90S	I 70S	I 70S	J 55S	55	80	I 30C	I 35C	55	45	55R	45	50	30	85	85	I 50A	60	55	80
22	50	60	85S	70	90	J 90S	I 70S	L 70S	J 40S	45S	45S	40S	L 25R	I 30R	I 25S	U 50S	40S	95	I 70S	70	U 25R	85	55	70
23	J 60S	90	90	J 50S	A	S	S	I 70S	I 35S	U 90R	25	45R	30	10	50	50	U 50R	110S	60	90	50	J 90R	95	85
24	J 70R	60	80	50	L 50S	I 65S	I 70S	L 35S	I 30S	50	I 50A	J 45R	80	50R	50	I 50R	U 55S	50S	60	50	80	50	65	J 85R
25	90	80	70	J 70R	A	A	A	J 55S	L 50S	I 60S	55	50	J 40R	40	75	I 50S	J 50S	55	I 65A	65	45S	90	65S	90
26	90	J 80S	70S	J 65S	55	I 60S	I 75S	U 50S	I 60S	I 50R	J 40S	45	J 45R	30	75	35	40	55	90	90	75	40	65	90
27	90	60	55	55S	55S	I 85S	J 90S	L 60S	35S	J 65S	30S	50	70	45	I 50S	I 40S	90	50	J 70S	100S	90	90S	100	U 60S
28	70	90	U 85S	U 60S	I 50S	I 60S	I 50S	L 30S	J 50R	50	45	45	70	55	50	50	50	95	95	55	90S	85	I 90A	I 90S
29	95	I 70S	I 80S	I 80S	I 90S	I 90S	I 80S	J 50S	I 50S	J 50S	I 70R	25	J 40R	35	45	J 60S	40	50	100	90	95	95	85	65
30	I 90S	J 95S	J 85S	J 80S	I 55S	I 80S	L 80S	I 50S	I 45S	45	45	55	J 55R	I 50R	I 55S	I 60R	45	50	J 50S	I 90S	60	J 105S	80	90
31	I 100S	55S	I 90S	U 85S	C	C	C	C	C	45	55	U 50S	15	45	75	J 35S	50	50	90	I 60S	80	I 80S	J 85S	95
No.	31	31	31	31	27	27	28	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Median	70	80	70	65	75	U 70	U 80	55	50	50	45	45	45	45	50	50	50	55	60	65	70	85	85	80

ypF2

Sweep 10 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 14

IONOSPHERIC DATA

Jan. 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	2.7	2.6	3.1^{H}	3.1	$_{J}$3.2^{S}	$_{I}$3.0^{S}	2.8	3.1	5.9	5.9	7.2^{S}	$_{J}$7.5^{S}	8.5	9.1^{H}	10.9^{H}	$_{I}$9.4^{C}	$_{J}$8.2^{SH}	5.8^{H}	4.7	3.5	3.2	2.8	C	C
2	C	C	C	C	C	C	C	C	C	$_{J}$6.6^{S}	6.9^{SH}	7.3	7.2	7.6^{SH}	6.7	7.2^{H}	8.6^{S}	7.7^{S}	4.6^{S}	4.0^{S}	4.3	$_{I}$4.0^{S}	$_{I}$3.0^{S}	$_{J}$2.5^{S}
3	$_{I}$2.6^{S}	3.0	$_{J}$3.3^{S}	3.2	3.2	3.0	2.5	3.1	5.6	6.8^{SH}	7.2	7.1	6.7^{H}	7.0	6.8^{H}	$_{I}$7.2^{SH}	$_{J}$7.5^{S}	5.5	$_{J}$3.7^{R}	3.2	3.5	3.2	2.7	2.3
4	2.4	2.6	2.9	3.0	3.2	3.0	$_{J}$1.9^{S}	2.9	5.6	6.8	6.6^{S}	6.7	6.0	6.0	6.8^{S}	$_{J}$6.3^{S}	5.6	5.2	4.3	5.3	$_{J}$3.9^{S}	3.4^{S}	$_{I}$3.0^{S}	2.5
5	2.5	2.7	2.8	2.8	3.0	2.2	2.2	2.6^{S}	6.1^{S}	6.9	5.9	5.8^{H}	7.4	7.1	6.5	5.5^{H}	6.7^{H}	6.1^{S}	4.0	3.0	2.9	$_{I}$2.7^{S}	$_{J}$2.5^{S}	$_{J}$2.5^{S}
6	2.5^{S}	$_{I}$2.7^{S}	2.8	2.9	2.9	2.2	2.4	3.0	5.2	5.5	5.7	6.2	$_{J}$6.2^{S}	6.7	7.0	5.5	6.7^{H}	5.7	3.5	3.2	$_{J}$3.6^{S}	2.4	$_{I}$2.4^{S}	2.4
7	2.4	$_{I}$2.7^{S}	3.2^{S}	3.2	3.2	$_{J}$1.9^{S}	$_{J}$2.2^{S}	$_{I}$3.0^{S}	5.1	5.4	6.5	5.3	6.9	6.6	6.9	5.4	$_{J}$6.2^{S}	6.2	3.6	3.1	$_{J}$4.2^{S}	2.7	$_{I}$2.2^{S}	2.3
8	2.4	2.6	2.8	2.9	2.9	2.2	$_{J}$2.1^{S}	2.8	5.1	4.7^{H}	6.5^{H}	6.3	6.5	6.8	7.2	5.5	7.1^{H}	5.0	3.2	3.1	$_{I}$2.9^{S}	$_{I}$2.7^{S}	2.5	2.7^{S}
9	$_{I}$2.7^{A}	2.7	$_{I}$3.0^{S}	$_{J}$3.4^{S}	$_{J}$3.5^{S}	$_{J}$2.0^{S}	$_{J}$2.0^{S}	2.5	5.2^{S}	$_{J}$6.1^{S}	5.7^{H}	7.0	8.5	$_{J}$7.3^{S}	6.6	5.9	5.5^{H}	$_{J}$5.6^{S}	3.8	$_{J}$5.4^{S}	$_{J}$4.2^{S}	3.5	$_{I}$2.7^{A}	$_{I}$2.8^{S}
10	2.7	3.2^{S}	$_{I}$3.5^{S}	$_{J}$3.6^{S}	$_{J}$2.1^{S}	$_{J}$2.0^{S}	$_{J}$2.0^{S}	2.5	4.3	$_{I}$5.7^{S}	5.7^{H}	6.8	8.1	10.6^{S}	$_{J}$9.2^{S}	6.8^{S}	5.8	5.2	$_{J}$4.1^{S}	$_{I}$3.5^{A}	3.0	3.0	3.5^{S}	3.4^{S}
11	$_{I}$5.1^{S}	S	2.9	3.5	$_{I}$3.4^{A}	A	S	S	$_{I}$6.5^{S}	$_{I}$6.9^{A}	6.9	5^{H}	7.0	6.1^{H}	5.8	$_{J}$6.5^{S}	$_{I}$6.3^{S}	5.0	$_{J}$5.5^{S}	3.2	$_{I}$2.5^{A}	$_{J}$2.3^{S}	$_{J}$2.1^{S}	$_{I}$2.5^{A}
12	2.6	2.8	3.0	2.9	$_{J}$2.0^{S}	$_{J}$1.9^{S}	$_{J}$1.8^{S}	$_{J}$2.9^{S}	4.9^{S}	5.3	6.6	8.0	8.3	7.0	6.1	6.0	5.9^{SH}	4.8	3.6	3.1	3.1	S	S	2.9^{S}
13	$_{I}$2.6^{S}	F	F^{S}	F	2.2^{F}	F	F	$_{J}$2.6^{S}	4.9	5.0	5.6	5.7	7.2^{S}	$_{J}$7.6^{SH}	$_{J}$7.7^{SH}	5.8^{H}	$_{J}$7.6^{SH}	$_{J}$8.0^{S}	4.1	3.4	3.1	3.2	$_{I}$2.4^{A}	$_{I}$2.6^{A}
14	2.6	2.8	2.9	$_{I}$2.9^{S}	3.0	$_{J}$2.6^{S}	2.7	3.0	$_{J}$5.1^{S}	5.0^{H}	$_{J}$6.2^{SH}	5.8	7.8	$_{J}$6.6^{R}	$_{J}$6.2^{SH}	7.2^{H}	7.0^{S}	7.2^{S}	4.8	3.1	2.9	2.7^{S}	2.7^{S}	$_{J}$2.6^{S}
15	$_{I}$2.9^{S}	2.8	$_{I}$2.8^{F}	$_{J}$2.8^{S}	S	F^{S}	F^{S}	$_{J}$3.2^{S}	4.4	5.3	8.1	S	6.5	6.2	6.7	6.9^{S}	6.5	$_{J}$6.2^{S}	4.4	3.3	3.4	2.7	2.7	$_{I}$3.0^{S}
16	$_{J}$3.5^{S}	$_{I}$3.3^{S}	$_{I}$2.8^{A}	2.6^{S}	2.2	$_{I}$1.8^{S}	$_{J}$1.8^{S}	2.5^{S}	5.5^{S}	5.3	6.5	8.0	6.9^{S}	6.6	6.5	6.0	$_{J}$6.6^{SH}	6.1	$_{J}$4.7^{S}	4.5	$_{I}$3.8^{S}	$_{J}$3.6^{S}	$_{I}$2.6^{S}	2.6
17	$_{I}$2.8^{S}	3.1	3.1	2.4	2.4	2.2	2.3	2.8	5.5	6.1	7.6	8.7	8.7	6.6	7.0	6.8	7.2	5.6	4.9	$_{J}$4.2^{S}	2.8	$_{I}$2.7^{S}	2.7^{S}	2.8
18	$_{I}$2.8^{S}	3.0	3.2	3.2	2.8	2.7	2.7	$_{J}$2.7^{S}	$_{J}$5.2^{S}	$_{J}$5.5^{S}	5.1^{S}	5^{H}	8.0	6.5	5.4	$_{J}$6.2^{SH}	$_{I}$6.1^{C}	$_{I}$5.1^{C}	5.2	3.3	$_{J}$3.7^{S}	$_{I}$3.0^{A}	$_{I}$2.6^{S}	$_{I}$2.7^{S}
19	$_{I}$2.9^{S}	3.1	$_{I}$3.1^{S}	3.0	3.2	2.5	S	2.9	5.0	5.7	7.3	7.1	9.1	8.1^{S}	6.1^{SH}	$_{J}$7.7^{SH}	6.6^{H}	5.8	4.4	4.4	$_{J}$3.6^{S}	2.8^{S}	2.9	3.0
20	3.2	3.2^{S}	3.9	3.0	$_{J}$2.6^{S}	2.8	2.6	3.0^{S}	4.9^{H}	6.6^{H}	$_{J}$9.3^{SH}	11.3	S	S	6.5	6.1	6.0^{H}	5.4	3.7	3.2	3.5	2.6	2.5	2.7
21	2.8	2.9	3.3	3.1	2.2	$_{J}$2.1^{S}	$_{J}$2.1^{S}	2.6	$_{J}$6.2^{S}	S	C	C	11.3^{S}	$_{J}$9.1^{S}	5.9	$_{J}$6.4^{SH}	$_{J}$7.3^{SH}	6.0	4.9	$_{J}$4.1^{S}	$_{I}$4.4^{S}	$_{I}$4.2^{S}	$_{J}$3.4^{S}	3.1
22	3.1	3.2	3.8	3.6	2.6	2.4	$_{I}$2.6^{S}	3.5^{S}	5.6	5.3^{H}	$_{J}$6.4^{S}	$_{J}$10.3^{S}	6.8	5.8	6.0	6.6	6.0	5.5	4.1	$_{I}$3.3^{A}	3.4	3.4^{S}	2.8	3.0
23	2.8	2.8	3.2	$_{J}$3.7^{S}	2.1	$_{J}$2.0^{S}	$_{J}$2.1^{S}	2.9	$_{J}$6.4^{S}	$_{J}$6.5^{S}	6.1^{S}	$_{J}$7.5^{S}	10.2^{S}	$_{J}$8.1^{S}	5.9	5.7^{H}	6.9	6.0	4.2	3.9	$_{I}$5.0^{S}	4.8	3.0	2.6
24	2.7	2.8	2.9	2.9	3.2	2.5	2.2	$_{I}$2.8^{S}	5.8	5.9^{H}	5.7^{H}	8.2	10.6	8.4	7.0	6.2	5.9	5.2	3.9	3.2	3.6	$_{I}$2.3^{S}	$_{I}$2.4^{S}	$_{I}$2.6^{S}
25	$_{I}$2.9^{S}	3.0	$_{J}$3.4^{S}	3.0	1.9	$_{I}$1.8^{S}	$_{J}$1.8^{S}	2.8	5.6	6.4	6.4	$_{J}$8.5^{S}	10.3^{S}	$_{J}$9.6^{S}	6.5^{C}	6.3^{C}	5.6	6.0	4.7	$_{J}$4.7^{S}	4.3	4.2^{S}	3.4^{S}	$_{J}$3.4^{S}
26	3.3	3.3^{S}	3.4	$_{J}$3.5^{S}	4.1^{S}	2.3	2.3	3.2	5.7	$_{J}$6.3^{S}	7.4^{S}	8.9	11.3	$_{J}$10.4^{S}	8.4	8.9^{H}	6.9	5.8	4.7	4.3	$_{J}$4.6^{S}	$_{J}$4.7^{S}	$_{I}$4.6^{S}	$_{I}$4.2^{S}
27	$_{I}$4.1^{S}	4.1	4.4	4.6^{S}	3.2	2.2	2.4	3.6	5.7	5.8	6.8	8.2	7.3	6.8	7.0	6.9^{S}	5.7	6.0	5.0	4.3	3.8	3.3^{S}	3.0	2.9
28	3.2	3.1	3.1	3.5	4.4	2.1^{S}	2.3	3.4^{S}	5.4	7.0	$_{J}$8.0^{S}	9.1	8.2	8.9	9.2^{S}	9.3^{S}	$_{J}$8.2^{S}	7.2	5.1	3.4	$_{J}$4.3^{S}	3.8	3.5	3.3
29	3.2^{S}	3.1^{S}	$_{J}$3.6^{S}	3.6	3.2	2.2	$_{J}$2.1^{S}	3.2	$_{J}$6.4^{S}	$_{J}$7.3^{S}	8.1	$_{J}$8.3^{S}	9.0	9.2^{S}	9.0	$_{J}$10.2^{S}	8.2^{S}	$_{I}$7.8^{S}	5.9	$_{J}$4.0^{S}	4.0^{S}	3.8	3.7	3.2
30	3.1	$_{J}$3.1^{S}	$_{J}$3.3^{S}	3.7	2.5	2.2	$_{J}$2.2^{S}	3.1	$_{I}$5.9^{S}	7.2^{S}	6.3^{SH}	8.6	$_{J}$9.5^{S}	6.8	6.8	6.8	$_{J}$8.2^{SH}	S	5.1	$_{J}$4.1^{S}	$_{J}$4.8^{S}	$_{I}$4.1^{S}	$_{J}$3.7^{S}	$_{I}$2.7^{S}
31	$_{I}$3.0^{S}	$_{I}$3.1^{S}	3.0	3.2	4.0^{S}	1.9	$_{J}$1.9^{S}	3.1	$_{J}$5.9^{S}	6.4	7.6	7.2	8.3	$_{J}$9.4^{S}	$_{I}$8.0^{C}	$_{J}$8.2^{S}	7.1	6.6^{H}	5.1	4.8	$_{J}$4.5^{S}	$_{I}$3.6^{S}	2.8	2.9
No.	30	28	29	29	29	27	26	29	30	30	30	27	30	30	31	31	31	30	31	31	31	30	29	30
Median	2.8	3.0	3.1	3.1	3.0	2.2	2.2	2.9	5.6	6.0	6.6	7.5	8.0	7.0	6.8	6.5	6.7	5.8	4.4	3.5	3.6	3.2	2.7	2.7
U Q	3.1	3.1	3.3	3.5	3.2	2.5	2.4	3.1	5.9	6.6	7.3	8.5	9.0	8.9	7.2	7.2	7.3	6.2	4.9	4.3	4.3	3.8	3.2	3.0
L Q	2.6	2.8	2.9	2.9	2.3	2.0	2.0	2.8	5.1	5.4	6.1	6.7	6.9	6.6	6.2	6.0	6.0	5.4	3.9	3.2	3.1	2.7	2.5	2.6
Q R	0.5	0.3	0.4	0.6	0.9	0.5	0.4	0.3	0.8	1.2	1.2	1.8	2.1	2.3	1.0	1.2	1.3	0.8	1.0	1.1	1.2	1.1	0.7	0.4

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

Jan. 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												4.5L	4.3			C								
2							C	C	C			L	4.3L		L									
3												L												
4											L	L	L	I4.2L	L	L								
5													4.3	I4.3L	4.2L									
6											L	L	L	A	R	L								
7											L	L	4.3	I4.3L	L	L								
8												L	L	I4.2L	4.2	L								
9												L	4.3L	4.3	I4.1L	L								
10												4.1L	4.3	4.4L	4.2L	L								
11													L H	4.2H	4.0H	3.3H	2.6H							
12											L	4.3L	4.3LH	4.3L	L	L								
13												L	4.3L											
14												4.4	4.1L	4.5L										
15											L	L	L	L	I4.3L	4.1L	I3.2L							
16												4.4L	4.4L	4.4L	I4.3L	L								
17											L	4.4	L	L	4.3L									
18													4.5	4.5L	4.3L		C	C						
19											L	4.6L	4.5	4.5										
20												L H	4.5	4.4	L	L								
21											C	C	4.5	I4.5L										
22											L	4.5	I4.5C	4.4L	L	L								
23												L H	4.4	I4.4L	L									
24												4.4	4.6H	4.6	4.4	4.3L	3.2							
25											L	4.5L	4.6H	4.6	C	L	L							
26											L	L	4.6L	I4.6LH	4.5									
27											L	4.5	L	L	L	L	L							
28											L	4.5	I4.6L	4.6L	4.5	L								
29											L	4.6	L4.8C	L	L	L H	L							
30												4.5	4.5	L	L	L								
31											L	L	L H	L	C	L	L							
No.												14	22	20	12	3	3							
Median												4.5	4.4	4.4	4.3	4.1	3.2							

foF1 | Sweep 10 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 2

IONOSPHERIC DATA

Jan. 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								S	2.00	2.55	2.90	A	A	R	3.20	I2.95C	I2.60A	S						
2							C	C	C	2.55	2.80	3.10	3.00	I3.10A	I3.10A	A	A	S						
3								S	S	2.50	2.85	I3.00A	3.05	3.20R	3.10	2.80	2.50	S						
4								S	2.00	2.50	2.90	3.00	2.90	I3.05A	3.10	2.85	2.40	A						
5								S	2.00	2.60	2.80	3.00	A	A	3.00	2.70	2.35	S						
6								S	S	2.35	2.50	3.00	I3.10A	I3.15A	3.10	I2.85A	2.50	A						
7								S	1.90	2.50	2.90	I3.05A	3.20	3.00	3.10	2.80	2.40	A						
8								S	1.70	2.50	2.80	3.00	3.15	3.15	I3.00A	2.80	2.35	S						
9								S	.S	2.40H	2.70	3.00	3.15	3.10	3.00	I2.70A	2.35	S						
10								S	1.70	2.45	I2.90A	I3.10A	3.15R	I3.15A	I3.00A	2.75	2.30	A						
11								S	1.90	I2.35A	I2.70A	I3.00A	3.10	3.10	2.95	2.70	2.30	A						
12								S	1.80	2.40	2.55	A	A	3.10	3.00	2.70	2.30H	S						
13								S	2.10H	2.50	2.90	3.10	3.10	3.10	3.00	2.85	2.50	A						
14								S	S	2.60H	2.75	3.00	3.10	3.15	3.00	2.80	2.40	S						
15								S	2.10	2.55	I2.85A	3.10	3.15	I3.15A	3.15	3.00	2.60	1.90						
16								S	2.20H	2.65H	2.90	3.05	A	A	3.20	2.90	2.50	S						
17								S	2.10	2.60R	3.05	I3.15A	I3.15A	I3.10A	I3.00A	2.90	2.40	A						
18								S	1.90	2.50	2.70	3.00	3.20	3.25	3.15	A	C	C						
19								S	1.90	2.45	3.05	3.20	3.25	3.25	3.10	2.80	2.60	2.05						
20								S	A	A	A	A	A	A	3.10	I2.90A	A	A						
21								S	1.95	2.70H	C	C	A	A	R	A	2.60	S						
22								S	1.95	2.60	A	A	A	A	A	2.90	A	A						
23								S	S	2.40	I2.95S	I3.20R	3.20	R	A	A	A	2.20R						
24								S	A	2.60	3.00	3.10	I3.15R	R	A	2.85	2.60	1.90						
25								S	2.15	I2.65A	3.10	A	A	A	A	A	A	A						
26								S	I2.00S	2.80H	3.10	I3.10A	3.20	I3.15A	I3.20A	3.00	A	A						
27								S	2.05H	2.70H	I3.05A	3.20	3.25	3.20	I3.15A	3.10	2.70	2.00						
28								S	2.10	2.80H	A	A	A	3.40	3.30	3.15	2.80	2.20						
29								S	I2.25A	2.65	3.05	3.20	I3.20A	3.30	3.25	3.00	2.70	2.15						
30								S	S	2.55	2.90	3.20	3.30	3.30	3.15	I2.90A	I2.55A	2.05						
31								S	2.10	2.70	3.10	3.10	I3.20A	3.25	I3.25C	3.10	2.70	2.05						
No.									22	30	27	24	22	22	26	26	24	9						
Median									2.00	2.55	2.90	3.10	3.15	3.15	3.10	2.85	2.50	2.05						

foE

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

The Radio Research Laboratories, Japan.

Y 3

IONOSPHERIC DATA

Jan. 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	S	S	E	E	E	S	S	S	G	G	3.2	3.6	↓5.3	3.1G	3.2	C	↓3.0	S	S	↓2.2	S	S	C	C
2	C	C	C	C	C	C	C	C	C	3.0	3.2	3.3	3.6	↓3.8	↓5.0	↓5.3	4.0	S	S	↓1.8S	↓1.8S	S	S	S
3	S	S	S	1.7	1.6	S	S	S	G	↓2.7	3.2	3.2	3.8	3.2	G	3.1	2.8	2.2	S	S	S	S	S	S
4	S	↓2.1	3.3	1.2	E	S	S	↓2.1	G	G	2.8G	3.2	3.2	3.4	G	↓4.4	3.2	3.3	E	S	S	S	S	S
5	S	S	E	E	E	S	S	S	G	2.8	3.1	3.7	3.6	↓4.4	3.1	2.4G	3.0	S	S	S	S	S	S	S
6	E	S	E	E	E	E	S	S	S	G	G	3.6	↓5.3	↓6.5	5.1	↓5.1	4.1	↓2.4	S	S	S	S	S	S
7	S	S	E	1.7	↓1.9	S	S	S	G	3.1	3.1	4.5	3.8	3.3	G	G	1.8G	3.1	3.1	↓2.1	S	S	S	S
8	S	S	E	E	E	S	S	S	G	G	G	3.7	3.3	3.6	3.1	G	G	G	S	1.9	S	↓2.1	↓2.2	S
9	3.3	S	S	E	E	S	S	S	G	2.7	3.1	3.4	3.7	3.8	3.2	3.0	2.2G	S	S	S	S	↓3.5	2.8	2.5
10	↓2.2	↓4.1	↓1.6	E	E	S	S	S	G	G	3.2	3.2	3.1G	3.2	3.1	G	G	↓2.3	S	↓3.7	S	S	S	S
11	S	S	S	↓3.0	↓5.3	↓3.4	2.8	S	↓3.3	↓13.7	↓12.8	3.2	3.3	G	G	2.2G	G	1.9	↓2.2	S	2.5	↓1.7	S	2.8
12	↓2.2	↓2.0	S	2.4	2.0	S	S	S	G	G	↓5.4	4.5	↓4.1	G	2.7G	G	1.9G	S	S	S	S	S	S	S
13	S	S	S	E	E	S	S	S	2.2	2.9	3.2	3.3	3.2	3.1G	G	G	2.2G	2.4	↓2.7	↓2.3	↓2.4	2.4	3.1	3.0
14	S	S	1.6	E	1.6	S	S	S	G	3.2	4.0	↓5.6	↓5.2	4.0	G	↓2.6G	G	↓2.5	↓1.8	S	2.3	S	S	S
15	S	2.8	↓2.4	↓1.9	↓2.0	↓1.9	2.3	↓2.1	1.9G	2.8	3.9	3.9	4.1	3.8	3.1G	2.7G	2.4G	G	S	2.4	2.5	S	S	S
16	3.2	↓3.5	3.9	↓2.3	↓1.9	↓2.0	S	S	G	2.8	3.5	3.9	↓5.4	5.0	3.1G	2.9G	G	S	S	2.2	S	S	↓2.1	S
17	S	S	3.0	↓2.2	E	2.2	S	S	G	G	3.5	4.4	↓4.9	5.8	↓3.5	2.7G	2.7	3.3	2.2	S	↓2.3	S	S	S
18	S	S	E	3.0	↓2.4	S	S	S	G	2.9	3.3	3.2	3.8	3.7	3.8	3.3	C	C	3.2	↓3.2	S	3.2	S	S
19	S	S	S	↓2.0	E	S	S	S	G	3.2	3.3	4.1	3.1G	G	G	G	↓3.7	G	1.8	S	S	S	S	S
20	S	S	↓2.1	E	E	S	S	S	2.2	3.0	3.3	↓5.3	3.8	4.6	G	3.0	2.8	2.8	S	3.3	3.2	S	↓2.2	S
21	S	S	↓1.7	E	1.2	S	S	S	G	G	C	C	↓4.5	↓3.9	4.3	3.6	3.0	↓3.4	2.2	↓2.4	↓2.4	3.8M	↓2.4	↓2.2
22	↓2.2	S	↓3.1	S	E	S	S	S	3.1	2.8	3.2	↓3.5	↓4.7	↓4.1	↓3.7	2.8G	↓4.8	3.1	3.3	6.8M	↓2.3	S	S	S
23	S	S	S	E	1.5	S	S	S	2.5	2.9	S	3.1G	3.1G	3.1G	4.0	3.5	4.5	2.8	↓2.6	3.3	9.2M	2.9	S	S
24	S	S	S	E	E	↓2.2	2.2	S	↓2.2	G	G	3.8	3.7	4.6	↓3.8	2.4G	G	G	↓2.1	S	S	S	S	4.7M
25	↓2.2	S	S	E	E	S	↓2.2	S	↓2.7	3.3	4.0	3.8	3.7	↓4.3	3.5	3.4	3.1	2.9	1.8	S	↓2.4	↓2.3	2.3	S
26	S	S	E	E	E	S	S	S	G	3.1	G	↓3.8	2.5G	3.3	↓5.6	3.7	↓3.8	↓3.8	↓2.3	↓2.2	S	S	S	S
27	S	S	E	E	E	S	S	S	G	2.9	3.1	3.1G	G	G	3.4	2.8G	G	G	S	S	S	S	S	S
28	S	S	S	E	E	S	S	S	G	G	3.6	3.8	3.3	3.3G	3.1G	G	G	G	↓2.2	↓2.1	2.4	2.3	S	S
29	S	S	E	E	E	E	S	S	2.5	2.9	3.3	3.8	3.8	G	G	G	G	G	S	S	S	S	S	S
30	S	S	S	E	E	S	S	S	G	G	G	3.6	3.7	3.5	3.8	3.4	2.8	1.9G	↓2.4	S	S	S	S	S
31	S	S	↓2.2	E	E	E	S	S	G	G	3.7	3.9	↓3.7	3.1G	C	G	G	G	↓2.1	↓2.1	↓2.4	↓2.0S	S	S
No.	7	5	19	29	30	8	4	2	29	31	29	30	31	31	30	30	30	24	17	16	13	10	7	5
Median	2.2	2.8	1.6	E	E	2.0	2.2	2.1	G	2.8	3.2	3.7	3.7	3.5	3.1	G	G	2.4	2.2	2.2	2.4	2.4	2.3	2.8
U.Q	3.2	3.8	2.4	1.8	1.6	2.2	2.6		2.2	3.0	3.6	3.9	4.1	4.1	3.8	3.4	3.1	3.0	2.6	3.2	2.5	3.2	2.8	3.8
L.Q	2.2	2.0	E	E	E	E	2.2		G	G	3.1	3.3	3.3	G	G	G	G	G	2.0	2.1	2.3	2.2	2.2	2.4
Q.R	1.0	1.8					0.4				0.5	0.6	0.8						0.6	1.1	0.2	1.0	0.6	1.4

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1962 | f_bE_s | 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	S	S				S	S	S			3.2	3.4	3.4	3.0^{G}	2.7	C	2.6	S	S	E	S	S	C	C
2	C	C	C	C	C	C	C	C	C	G	G	G	3.4	G	3.4	3.4	3.0	S	S	S	S	S	S	S
3	S	S	S	1.4	1.4	S	S	S		2.1	G	G	3.5	3.0		G	G	2.1	S	S	S	S	S	S
4	S	E	E	1.1		S	S	E			2.8^{G}	G	G	3.4		2.5	2.2	2.5		S	S	S	S	S
5	S	S				S	S	S		G	$E_{3.1}{}^{R}$	3.4	3.5	3.5	2.6	2.4^{G}	2.1	S	S	S	S	S	S	S
6		S					S	S	S			3.4	3.5	4.3	2.7	3.4	2.3	2.1	S	S	S	S	S	S
7	S	S		1.2	1.2	S	S	S		G	G	3.4	3.3	G			1.8^{G}	2.5	2.2	2.0	S	S	S	S
8	S	S				S	S	S				3.4	3.3	3.4	$E_{3.1}{}^{R}$				S	1.9	S	2.1	1.9	S
9	A	S	S			S	S	S		2.7	G	G	3.6	3.5	$E_{3.2}{}^{R}$	2.8	2.2^{G}	S	S	S	S	2.3	A	2.0
10	2.1	2.2	1.5			S	S	S			G	G	2.7^{G}	G	G			G	S	A	S	S	S	S
11	S	S	S	2.9	A	A	2.3	S	2.2	A	5.2	G	2.3			2.0^{G}		G	2.2	S	A	A	S	A
12	2.1	$E_{2.0}{}^{S}$	S	E	A	S	S	S			3.5	3.4	3.2		2.6^{G}		1.9^{G}	S	S	S	S	S	S	S
13	S	S	S			S	S	S	G	2.9	G	3.3	G	3.0^{G}			2.2^{G}	2.4	2.2	E	2.4	2.4	A	A
14	S	S	1.3		1.5	S	S	S		3.0	3.9	3.7	3.5	3.7		2.4^{G}		2.4	1.6	S	2.0	S	S	S
15	S	E	2.0	1.5	1.2	1.8	1.8	G	1.7^{G}	G	3.2	3.7	4.0	3.5	2.9^{G}	2.5^{G}	2.3^{G}		S	2.0	E	S	S	S
16	2.4	2.0	A	1.9	1.5	S	S	S		2.8	3.3	3.3	3.5	3.7	3.0^{G}	2.8^{G}		S	S	2.1	S	S	1.8	S
17	S	S	2.1	2.2		2.1	S	S			3.3	3.4	4.0	4.1	3.3	2.6^{G}	G	2.8	1.7	S	E	S	S	S
18	S	S		2.3	2.0	S	S	S		G	3.2	G	3.4	3.6	3.7	3.2	C	C	3.0	2.7	S	A	S	S
19	S	S	S	1.3		S	S	S		G	3.3	3.5	2.7^{G}				2.5		$E_{1.8}{}^{S}$	S	S	S	S	S
20	S	S	1.9			S	S	S	2.1	G	3.1	3.4	$E_{3.8}{}^{R}$	3.4		G	2.7	2.5	S	2.6	2.6	S	2.1	S
21	S	S	$E_{1.7}{}^{S}$		1.2	S	S	S			C	C	3.7	3.5	4.3	3.4	3.0	3.3	2.2	$E_{2.4}{}^{S}$	2.2	2.8	2.3	$E_{2.2}{}^{S}$
22	2.0	S	2.3	S		S	S	S	1.6	2.2	3.2	3.4	3.4	3.5	3.4	2.8^{G}	3.4	2.9	3.0	A	2.2	S	S	S
23	S	S	S		1.4	S	S	S	G	G	S	2.9^{G}	2.9^{G}	$E_{3.1}{}^{R}$	3.9	3.3	4.0	2.6	2.1	2.3	2.0	2.0	S	S
24	S	S	S			E	1.7	S	2.0			$E_{3.8}{}^{R}$	3.7	4.4	3.5	2.4^{G}			E	S	S	S	S	2.1
25	2.0	S	S			S	S	S	G	2.9	3.4	3.4	3.4	3.5	3.4	3.4	3.0	2.7	$E_{1.8}{}^{S}$	S	2.1	2.1	E	S
26	S	S				S	S	S		G		3.4	2.4^{G}	$E_{3.3}{}^{R}$	4.0	3.4	3.5	3.7	E	2.0	S	S	S	S
27	S	S				S	S	S		G	G	2.8^{G}			3.4	2.7^{G}			S	S	S	S	S	S
28	S	S	S			S	S	S			3.3	3.4	G	3.0^{G}	2.9^{G}				S	$E_{2.1}{}^{S}$	E	2.0	S	S
29	S	S					S	S	2.3	2.9	G	3.6	3.5						S	S	S	S	S	S
30	S	S	S			S	S	S				3.5	3.5	3.5	3.4	3.3	2.7	1.8^{G}	2.0	S	S	S	S	S
31	S	S	2.1				S	S			3.4	3.9	3.4	3.0^{G}	C				2.0	E	2.0	S	S	S
No.																								
Median																								

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

The Radio Research Laboratories, Japan.

Y 5

IONOSPHERIC DATA

Jan. 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	E1.75S	E1.90S	1.20	1.80	1.40	E1.50S	E1.60S	E1.60S	1.40	1.40	1.50	1.50	1.60	2.05	2.00	I1.50C	1.20	E1.80S	E1.85S	1.35	E2.00S	E1.60S	C	C
2	C	C	C	C	C	C	C	C	C	1.30	1.60	2.00	2.20	2.00	1.70	1.60	1.60	E2.15S	E2.00S	E1.95S	E1.85S	E1.60S	E2.10S	E1.90S
3	S	E2.20S	E2.00S	E	1.20	E1.80S	E1.50S	E1.90S	1.90	1.60	1.50	1.15	2.00	2.20	2.00	2.00	2.00	E1.80S	E2.00S	E2.00S	E1.70S	E2.00S	E1.50S	E1.90S
4	E1.80S	E2.00S	1.70	E	E	E2.00S	E2.20S	E1.50S	E1.60S	1.60	1.80	2.00	2.00	1.75	2.00	1.60	1.95	E1.50S	2.10	E1.80S	E2.00S	E1.95S	E2.00S	E2.00S
5	E1.35S	E1.80S	1.50	E	E	E1.80S	E2.10S	E1.90S	E1.80S	1.30	1.70	1.60	1.90	1.85	1.80	1.50	E1.60S	E2.10S	E1.80S	E2.05S	E2.00S	E2.00S	E2.00S	E2.10S
6	1.20	S	1.90	E	E	E	E2.00S	E1.50S	E1.60S	1.60	1.60	1.60	1.55	2.00	2.00	1.80	1.60	E1.40S	E1.95S	E2.00S	E2.00S	E2.05S	S	E2.20S
7	E1.90S	S	1.30	E	E	E2.00S	E2.00S	E1.60S	E1.60S	1.30	1.50	1.55	2.00	1.90	1.95	1.70	E1.50S	E1.50S	E1.50S	E1.90S	E1.50S	E1.40S	S	E2.00S
8	E1.95S	E1.80S	1.90	E	E	E1.70S	E1.90S	E1.50S	E1.40S	1.40	1.70	2.00	2.05	2.00	1.95	1.90	1.90	E1.80S	E1.60S	E1.50S	E1.60S	E1.80S	E1.70S	E2.00S
9	E1.50S	E1.90S	E1.70S	E	E	E2.00S	E1.90S	E2.05S	E1.70S	1.40	1.90	1.60	1.80	2.00	2.00	1.70	E1.60S	E2.00S	E1.95S	E1.55S	E2.05S	E1.40S	E2.00S	E1.60S
10	E1.70S	E1.90S	1.10	1.40	E	E1.80S	E1.35S	E1.80S	E1.50S	1.45	1.40	2.00	2.05	2.10	2.10	2.00	2.00	E1.50S	E2.00S	E1.50S	E2.00S	E2.10S	E2.30S	E2.00S
11	E2.00S	E2.10S	E1.50S	E	E	E2.00S	E1.80S	E1.90S	E1.40S	1.50	1.60	2.00	2.05	2.00	2.10	1.60	E1.70S	E1.50S	E1.60S	E1.80S	E1.90S	E1.50S	E2.20S	E2.00S
12	E2.00S	E1.80S	E1.60S	1.35	E	E1.80S	E2.00S	E1.80S	E1.60S	1.50	1.55	2.00	2.00	2.00	1.95	2.00	E1.50S	E2.15S	E2.00S	E1.90S	E1.60S	E2.10S	E1.80S	E2.10S
13	E2.00S	E2.00S	E1.50S	E	E	E1.80S	E1.80S	E1.40S	E1.70S	E1.60S	1.80	2.00	2.00	2.00	2.00	2.00	1.90	E1.40S	E1.90S	E1.40S	E1.50S	E1.80S	E1.80S	E1.80S
14	E2.00S	E2.10S	E	E	E	E2.10S	E1.50S	E1.50S	E1.80S	1.50	1.40	1.90	2.00	2.05	2.00	1.90	E1.70S	E1.80S	E1.30S	E2.00S	E1.70S	E1.80S	E2.00S	E1.80S
15	E1.70S	E2.00S	1.10	E	E	E1.50S	E1.70S	E1.30S	E1.40S	1.40	1.50	1.50	2.00	2.05	2.00	1.95	E1.70S	E1.60S	E2.00S	E1.90S	E2.10S	E2.25S	E2.00S	E2.15S
16	E1.50S	E1.75S	1.35	E	E	E1.70S	E2.00S	E1.90S	E1.90S	1.60	1.60	1.30	1.60	2.00	2.00	1.80	E1.70S	E2.10S	E2.00S	E1.70S	E2.00S	E2.00S	E1.40S	E2.00S
17	E1.95S	E2.00S	1.30	E	1.10	E1.90S	E1.80S	E1.90S	E1.60S	1.50	2.00	2.00	2.05	2.00	2.00	1.60	E1.70S	E1.50S	E1.60S	E2.00S	E1.80S	S	E2.00S	E2.15S
18	S	E2.00S	1.70	E	E	E1.50S	E1.40S	E1.80S	E1.50S	1.60	2.00	1.80	2.05	2.00	2.20	2.15	C	C	E1.95S	E2.10S	E1.70S	E1.90S	S	E1.90S
19	E1.85S	E1.80S	E2.10S	E	1.40	E1.70S	S	E1.75S	E1.70S	1.95	1.60	1.70	1.60	1.60	2.00	2.00	E1.60S	E1.95S	1.15	E2.00S	E2.00S	E2.05S	E2.15S	E2.00S
20	E2.10S	E1.90S	E	E	1.90	E1.80S	E1.60S	E1.70S	E1.60S	1.60	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E1.75S	E2.00S	E2.00S	E1.70S
21	E2.05S	E1.80S	1.20	E	E	E2.10S	E2.10S	E1.80S	E1.50S	1.60	C	C	2.00	2.00	2.00	2.00	1.95	E2.10S	E1.65S	E1.50S	E1.70S	E1.80S	E1.90S	E1.60S
22	E1.60S	E2.50S	E1.70S	1.35	1.60	E1.80S	E1.80S	E2.00S	E1.50S	1.50	1.50	1.95	2.00	2.00	2.00	2.00	1.90	E1.60S	E1.90S	E1.70S	E2.00S	E2.00S	E1.80S	E2.10S
23	E2.00S	E1.90S	E1.70S	1.00	E	E2.10S	E2.00S	E1.60S	E1.90S	1.55	E3.55S	2.00	2.20	2.20	2.20	2.20	1.90	E1.70S	E1.45S	E1.90S	E1.65S	E1.55S	E1.90S	E2.00S
24	E1.85S	E2.00S	E1.50S	E	1.40	E1.40S	E1.55S	E1.90S	E1.60S	1.70	1.85	2.00	2.10	2.00	2.00	1.95	2.00	E1.60S	E2.00S	E1.60S	E1.65S	S	S	E1.70S
25	E1.70S	E2.00S	E1.80S	E	1.30	S	E1.90S	E1.50S	E1.60S	E1.60S	1.70	2.00	2.00	2.20	2.10	2.05	2.20	2.00	E1.60S	E1.85S	E1.60S	E1.80S	E2.00S	E2.00S
26	E2.10S	E2.00S	1.30	1.10	E	E1.50S	E1.90S	E1.50S	E1.90S	1.30	1.90	2.00	1.75	2.00	1.55	1.60	2.20	E1.80S	E1.65S	E1.80S	E2.00S	E2.00S	E1.95S	E2.05S
27	E2.30S	E1.60S	1.60	1.30	E	E2.00S	E2.00S	E1.50S	1.30	1.50	1.95	2.00	2.00	1.90	2.00	2.00	1.80	E1.50S	E1.95S	E1.70S	E2.00S	E2.10S	E1.80S	E1.70S
28	E2.00S	E2.00S	E1.30S	1.40	1.00	E1.70S	E2.00S	E1.80S	E1.70S	E1.50S	1.70	2.00	2.25	2.00	2.00	2.00	E1.90S	E1.70S	E2.00S	E1.50S	E1.60S	E1.80S	E1.60S	E1.90S
29	E2.00S	E1.65S	2.00	E	E	1.10	E1.90S	E1.50S	E1.80S	1.60	2.00	2.00	2.05	2.00	2.00	1.90	E1.70S	E1.80S	E1.60S	E2.00S	E1.70S	E2.00S	E2.10S	E2.10S
30	E2.00S	E2.10S	E2.00S	E	1.10	E2.00S	E1.90S	E2.05S	E1.80S	1.60	1.95	2.20	2.00	2.10	2.20	2.10	E1.60S	E1.50S	E1.80S	E1.60S	E2.05S	E2.00S	E1.90S	S
31	E1.90S	E2.35S	E	1.50	1.30	E	E1.70S	E1.50S	E1.50S	1.55	1.80	2.00	2.00	2.00	I2.00C	2.00	2.00	E1.60S	E1.50S	E2.00S	E1.70S	E1.95S	E2.20S	E2.00S
No.	28	28	19	30	30	29	29	30	30	29	29	30	31	31	31	31	29	30	31	31	31	29	26	29
Median	E1.90	E2.00	1.30	E	E	E1.80	E1.90	E1.70	E1.60	1.50	1.70	2.00	2.00	2.00	2.00	1.95	E1.70	E1.75	E1.90	E1.85	E1.80	E1.95	E2.00	E2.00

f-min

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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	2.95	2.90	3.05H	3.15	3.20S	3.30S	3.05	2.75	3.40	3.45	3.40S	3.40S	3.15	3.10H	3.40H	3.45C	3.35SH	3.55H	3.65	3.20	3.15	3.20	C	C
2	C	C	C	C	C	C	C	C	C	3.40S	3.60H	3.45	3.05	3.30SH	3.60	3.30H	3.30S	3.60S	3.50S	2.85S	3.00	3.15S	3.20S	3.25S
3	2.70S	2.75	3.05S	3.15	3.15	3.20	3.00	2.95	3.40	3.45SH	3.50	3.70	3.55H	3.55	3.45H	3.30SH	3.55S	3.65	3.25S	3.00	3.15	3.05	3.30	2.85
4	2.80	2.75	2.90	3.00	3.25	3.40	3.15S	2.90	3.40	3.50	3.40S	3.65	3.45	3.25	3.40S	3.60S	3.55	3.65	3.05	3.55	3.20S	3.25S	3.30S	2.85
5	2.95	2.80	2.95	3.05	3.25	3.35	2.90	3.10S	3.45S	3.50	3.50	3.60H	3.40	3.55	3.65	3.45H	3.35H	3.50S	3.65	3.00	2.85	3.20S	3.20S	2.90S
6	3.00S	2.90S	2.95	3.15	3.45	3.00	3.35	3.15	3.60	3.45	3.55	3.35	3.30S	3.60	3.55	3.65	3.40H	3.90	3.35	3.00	3.60S	3.00	3.20S	2.90
7	2.90	2.95S	3.45S	3.65	3.75	2.65S	3.20S	3.20S	3.55	3.55	3.65	3.60	3.40	3.05	3.75	3.40	3.50S	3.80	3.35	2.90	3.35S	3.45	3.30S	3.05
8	2.95	2.90	2.95	2.95	3.40	2.90	2.95S	3.05	3.70	3.45H	3.45H	3.35	3.25	3.55	3.60	3.20	3.55H	3.70	3.25	3.15	3.20S	3.10S	3.20	2.95S
9	2.95A	2.95	2.95S	3.20S	3.75S	2.85S	3.50S	3.20	3.50S	3.50S	3.35H	3.25	3.65	3.60S	3.60	3.40	3.35H	3.60S	2.90	3.35S	3.30S	3.30	3.20A	3.05S
10	2.85	2.65S	3.10S	3.40S	3.45S	2.90S	2.90S	3.10	3.50	3.50S	3.20H	3.45	3.20	3.40S	3.50S	3.35S	3.40	3.65	3.35S	3.40A	3.15	2.75	2.55S	2.65S
11	2.80S	S	3.30	2.75	2.75A	A	S	S	3.40S	3.55A	3.50	SH	3.55	3.30H	3.60	3.25S	3.45S	3.50	3.65S	3.45	3.15A	3.30S	2.95S	3.00A
12	2.90	3.00	3.00	3.45	3.25S	3.00S	3.35S	2.95S	3.75S	3.55	3.60	3.50	3.60	3.60	3.50	3.40	3.70SH	3.95	3.15	3.25	3.25	S	S	3.10S
13	3.40S	F	FS	F	3.20F	F	F	3.50S	3.70	3.65	3.40	3.40	3.25S	3.70SH	3.65SH	3.15H	3.20SH	3.65S	3.40	3.25	3.25	3.60	3.05A	2.80A
14	2.85	3.05	3.05	3.00S	3.25	3.10S	3.20	3.25	3.35S	3.40H	3.45H	2.85	3.35	3.35R	3.30SH	3.40H	3.60S	3.50S	3.55	3.15	3.40	3.10S	3.35S	2.80S
15	3.00S	3.05	3.05F	2.95S	S	FS	FS	3.45S	3.40	3.25	3.25	S	3.55	3.25	3.35	3.35S	3.45	3.55S	3.30	3.20	3.20	3.05	2.85	3.10S
16	3.30S	3.15S	3.20A	3.35S	3.25	2.85S	2.95S	3.00S	3.55S	3.60	3.45	3.50	3.60S	3.25	3.55	3.05	3.35SH	3.60	3.20S	3.25	3.25S	3.20S	3.05S	2.85
17	2.90S	2.85	3.40	3.15	3.25	2.75	2.90	2.95	3.55	3.40	3.30	3.45	3.50	3.40	3.45	3.45	3.70	3.55	3.45	3.60S	3.20	3.00S	2.75S	3.15
18	3.10S	2.80	3.15	3.45	3.05	3.10	2.95	3.35S	3.65S	3.55S	3.55S	SH	3.70	3.70	3.70	3.25SH	3.35C	3.45C	3.65	3.10	3.50S	3.10A	2.90S	2.80S
19	2.85S	2.90	2.90S	2.85	3.35	3.75	S	3.10	3.60	3.30	3.55	3.20	3.35	3.60S	3.35SH	3.40SH	3.35H	3.70	3.40	3.25	3.40S	2.95S	2.95	2.65
20	2.80	2.90S	3.35	3.60	2.75S	2.90	2.85	3.05S	3.30H	3.20H	3.05SH	3.35	S	S	3.55	3.30	3.50H	3.60	3.30	2.70	3.45	3.10	2.95	2.75
21	2.70	2.80	3.05	3.70	3.85	2.75S	2.85S	2.95	3.60S	S	C	C	3.35S	3.25S	3.45	3.15SH	3.45SH	3.50	3.35	3.20S	3.10S	3.20S	3.05S	3.00
22	2.75	2.80	3.05	3.60	3.20	2.90	2.95S	3.30S	3.55	3.60H	3.15S	3.50S	3.60	3.45	3.35	3.30	3.35	3.45	3.25	2.85A	3.25	3.25S	2.85	2.95
23	2.75	2.85	3.00	3.80S	2.85	2.75S	2.95S	3.10	3.70S	3.55S	2.90S	3.35S	3.45S	3.35S	3.25	3.00H	3.35	3.50	3.55	3.10	3.15S	3.25	3.00	2.90
24	2.95	2.90	2.95	3.15	3.45	3.35	2.85	3.00S	3.60	3.50H	2.55H	3.05	3.30	3.60	3.55	3.45	3.45	3.55	3.45	3.15	3.60	3.20S	2.80S	2.85S
25	2.95S	2.85	3.25S	3.60	3.65	2.90S	2.95S	3.20	3.35	3.45	3.05	3.20S	3.30S	3.45S	3.40C	3.65C	3.20	3.45	3.40	3.20S	3.10	3.35S	2.80S	2.95S
26	2.90	2.75S	2.80	3.15S	3.40S	2.75	2.85	3.10	3.55	3.45S	3.20S	3.05	3.20	3.40S	3.00	3.25H	3.35	3.45	3.30	3.10	3.05S	3.10S	3.10S	3.00S
27	2.80S	2.85	2.95	3.35S	3.65	2.75	2.80	3.35	3.55	3.55	3.25	3.50	3.40	3.15	3.40	3.40S	3.35	3.35	3.50	3.25	3.20	2.90S	3.05	2.95
28	2.70	2.90	2.75	3.05	3.70	3.45S	2.85	3.05S	3.50	3.30	3.15S	3.45	3.20	3.15	3.00S	3.10S	3.05S	3.35	3.35	2.55	3.10S	3.20	3.00	2.75
29	2.80S	2.75S	3.05S	3.30	3.55	2.90	2.70S	3.15	3.45S	3.50S	3.40	3.15S	3.05	3.15S	3.05	3.45S	2.95S	3.25S	3.20	2.85S	3.05S	3.20	3.15	2.95
30	2.80	2.75S	3.15S	3.40	3.55	2.80	2.85S	2.95	3.50S	3.50S	3.30SH	3.40	3.55S	3.25	3.40	3.40	3.30SH	S	3.35	3.00S	3.30S	3.25S	3.05S	3.10S
31	2.75S	2.75S	2.75	2.95	3.50S	3.40	3.15S	3.10	3.55S	3.60	3.45	3.25	3.20	3.55S	3.20C	3.25S	3.40	3.40H	3.25	3.35	3.35S	3.35S	3.00	2.95
No.	30	28	29	29	29	27	26	29	30	30	30	27	30	30	31	31	31	30	31	31	31	30	29	30
Median	2.90	2.85	3.05	3.15	3.35	2.90	2.95	3.10	3.55	3.50	3.40	3.40	3.40	3.40	3.45	3.35	3.35	3.55	3.35	3.15	3.20	3.20	3.05	2.95

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

Jan. 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												3.80L	3.95			C								
2							C	C	C			L	3.95L		L									
3												L												
4											L	L	L	I 3.90L	L	L								
5													3.70	I 3.70L	3.80L									
6											L	L	L	A	R	L								
7											L	L	3.70	I 3.65L	L	L								
8												L	L	I 3.75L	3.60	L								
9												L	3.55L	3.55	I 3.80L	L								
10												3.70L	3.70	3.65L	3.65L	L								
11													L H	4.10H	4.25H	4.05H	4.30H							
12											L	3.70L	3.70 LH	3.70L	L	L								
13												L	3.80L											
14												3.85	3.65L	3.75L										
15											L	L	L	L	I 3.65L	3.65L	I 3.80L							
16												3.50L	3.70L	3.70L	I 3.70L	L								
17											L	3.75	L	L	3.75L									
18													3.60	3.75L	4.05L		C	C						
19											L	3.65L	3.60	3.75										
20												L H	3.65	3.65	L	L								
21											C	C	3.60	I 3.90L										
22											L	3.70	I 3.70L	3.75L	L	L								
23												L H	3.90	I 3.85L	L									
24												3.70	3.65H	3.60	3.80	3.85L	4.15							
25											L	3.65L	3.60H	3.70	C	L	L							
26											L	L	3.75L	I 3.75 LH	3.75									
27											L	3.90	L	L	L	L	L							
28											L	3.70	I 3.70L	3.70L	3.65	L								
29											L	3.75	H 3.60C	L	L	L H	L							
30												3.60	3.80	L	L	L								
31											L	L	L H	L	C	L	L							
No.												14	22	20	12	3	3							
Median												3.70	3.70	3.70	3.75	3.85	4.15							

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

The Radio Research Laboratories, Japan.

Y 8

IONOSPHERIC DATA

Jan. 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												250	290			C								
2							C	C	C			250	245		245									
3												235												
4											250	250	260	250	255	245								
5													280	250	250									
6											255	280	300	255	250	240								
7											250	250	280	295	235	250								
8												275	305	255	250	250								
9												290	245	250	250	250								
10												255	290	255	240	255								
11													255	275 H	250	260	250							
12											270	255	255	250	255	255								
13												270	295											
14												390	280	260										
15											300	240	255	290	275	275	250							
16												275	250	295	255	260								
17											275	250	250	255	280									
18													250	245	245		C	C						
19											255	300	270	250										
20												265	255	260	250	255								
21											C	C	255	240										
22											L	300	245	270	280	260								
23												280	255	245	265									
24												305	260	250	255	255	240							
25											300	280	260	250	255	245	245							
26											280	295	280	240	285									
27											280	240	260	260	270	255	235							
28											250	250	280	260	270	270								
29											250	270	300	270	280	240	250							
30												265	255	250	265	260								
31											255	255	290	250	270 D	255	250							
No.											13	27	30	27	25	19	7							
Median											255	265	260	255	255	255	250							

h'F2

Sweep 10 Mc to 200 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 9

IONOSPHERIC DATA

Jan. 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	305	315	260H	250	255	250	260	275	225	230	245	230	205	200H	210H	I235C	230	205H	220	230	270	250	C	C
2	C	C	C	C	C	C	C	C	C	240	230H	235	205	190H	225	240H	245	225	205	250	290	220	260	255
3	S	330	300	255	260	240	255	290	230	200H	240	225	190H	245	210H	205H	240	230	210	255	275	255	260	370
4	370	355	310	270	250	235	S	280	230	245	215	240	210	220	240	240	235	225	255	235	245	240	260	E350S
5	305	330	295	260	240	E255S	I280S	300	250	240	225	210H	240	250	205	210H	205H	235	205	285	E255S	E275S	S	E350S
6	260	S	305	250	225	270	280	250	230	240	240	225	200	A	230	240	230H	210	220	280	205	E340S	I290S	S
7	360	S	250	215	210	S	S	260	225	235	240	225	220	210	230	200	245	225	240	290	240	240	S	E350S
8	E345S	300	300	270	225	305	I305S	260	235	210H	190H	200	200	250	225	200	200H	220	210	250	220	325	260	300
9	I320A	330	350	250	200	S	S	300	245	240	210H	255	235	240	220	200	210H	225	260	225	220	245	I280A	280
10	340	350	270	240	200	I310S	250	260	230	240	205H	230	220	250	240	210	235	220	240	I245A	255	E350S	355	380
11	305	230	225	E350A	A	I380A	450	310	240	I255A	250	200H	230H	205H	210H	205H	200H	225	240	235	A	A	S	I340A
12	350	325	270	240	I250A	S	S	285	230	235	E260A	240	200H	220	205	210	200H	230	225	265	230	E300S	235	310
13	240	355	285	240	205	E330S	260	270	230	230	230	210	205	205H	240H	210H	200H	230	230	225	285	250	A	A
14	E330S	300	305	250	260	E300S	250	205	230	225H	I245AH	235	250	230	235H	190H	245	240	225	240	250	250	270	340
15	275	E300S	300	305	320	275	290	250	235	250	255	A	A	235	225	220	220	240	225	240	250	E310S	E310S	305
16	250	280	A	270	240	S	S	E300S	235	235	250	245	225	240	240	220	200H	235	235	250	240	240	260	E350S
17	305	290	250	E325A	240	E430A	320	300	240	240	245	230	A	E250A	205	255	240	240	225	240	250	I310S	E310S	290
18	I325S	330	275	250	290	270	275	250	240	230	205	80H	245	225	210	200H	I205C	I225C	235	E300A	225	A	I350S	315
19	325	310	295	300	250	205	S	275	240	240	245	225	235	235	200H	250H	225H	230	230	250	240	305	325	355
20	340	325	250	210	360	320	300	280	210H	250H	225H	200H	A	210	230	205	205H	240	220	E370A	250	E300S	E325A	330
21	370	340	280	210	200	I340S	I350S	300	250	240	C	C	245	220	260	225H	250H	230	235	255	260	260	300	E345S
22	355	370	290	225	240	E350S	E305S	255	230	225H	215	240	225	215	210	200	250	230	250	A	255	250	330	300
23	E350S	350	290	210	320	I335S	S	275	250	235	220	215H	205	230	240	210H	275	230	230	260	240	230	260	300
24	350	340	300	250	240	240	330	310	230	230H	180H	250	235H	I240A	215	220	200	230	210	250	225	I295S	I360S	350
25	350	320	270	205	205	S	S	270	240	245	240	225	235H	225	205	230	205	240	230	235	255	255	305	295
26	320	325	305	260	230	225	350	260	230	240	230	215	210	230H	230	220H	250	240	235	240	250	255	250	280
27	315	300	275	240	205	E400S	E380S	250	230	230	230	230	200	220	220	225	210	245	225	240	250	300	255	305
28	305	305	320	280	220	E250S	E350S	255	230	245	230	215	210	215	225	230	230	235	230	E330S	270	250	260	320
29	330	325	300	245	205	250	S	270	240	240	240	220	205	205	205	200H	230	240	210	250	260	250	255	300
30	340	350	290	230	200	E380S	S	295	240	245	235H	230	220	210	240	210	220H	240	220	250	250	240	265	S
31	345	325	350	290	240	205	S	275	230	240	235	240	195H	225	I210C	220	230	225H	220	240	245	230	E300S	305
No.	26	28	29	28	29	19	16	29	30	31	29	29	28	29	31	31	31	31	31	27	29	23	22	22
Median	325	325	290	250	240	E255	285	275	230	240	230	225	215	225	225	210	230	230	225	250	250	250	260	305

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 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	S	S	E	E	E	S	S	S	G	G	155	110	110	110	110	C	105	S	S	100	S	S	C	C
2	C	C	C	C	C	C	C	C	C	165	155	145	125	120	105	105	105	S	S	S	S	S	S	S
3	S	S	S	105	105	S	S	S	G	110	170	110	130	120	G	105	150	140	S	S	S	S	S	S
4	S	110	110	105	E	S	S	105	G	G	120	145	140	110	G	105	105	100	E	S	S	S	S	S
5	S	S	E	E	E	S	S	S	G	165	140	125	115	110	110	120	105	S	S	S	S	S	S	S
6	E	S	E	E	E	E	S	S	S	G	G	130	110	110	110	105	105	100	S	S	S	S	S	S
7	S	S	E	110	110	S	S	S	G	170	160	110	120	130	G	G	105	105	105	105	S	S	S	S
8	S	S	E	E	E	S	S	S	G	G	G	130	145	130	120	G	G	G	S	110	S	110	110	S
9	115	S	S	E	E	S	S	S	G	155	150	145	130	125	135	115	120	S	S	S	S	105	105	110
10	110	105	110	E	E	S	S	S	G	G	115	120	110	110	110	G	G	110	S	105	S	S	S	S
11	S	S	S	165	140	135	150	S	125	120	120	115	120	G	G	105	G	105	105	S	105	105	S	110
12	110	110	S	115	110	S	S	S	G	G	120	115	120	G	105	G	105	S	S	S	S	S	S	S
13	S	S	S	E	E	S	S	S	155	140	155	150	145	120	G	G	125	115	115	115	110	115	110	110
14	S	S	110	E	110	S	S	S	G	170	150	140	140	130	G	110	G	105	105	S	105	S	S	S
15	S	125	120	110	110	105	110	105	105	160	105	130	130	120	110	115	115	G	S	105	105	S	S	S
16	115	120	110	105	105	105	S	S	G	150	140	130	115	110	125	125	G	S	S	120	S	S	120	S
17	S	S	110	105	E	105	S	S	G	G	140	120	120	120	115	110	115	105	105	S	120	S	S	S
18	S	S	E	105	105	S	S	S	G	140	130	135	125	125	120	120	C	C	110	110	S	105	S	S
19	S	S	S	105	E	S	S	S	G	150	150	140	110	G	G	G	105	G	100	S	S	S	S	S
20	S	S	115	E	E	S	S	S	140	125	120	115	110	120	G	120	110	110	S	110	110	S	110	S
21	S	S	110	E	105	S	S	S	G	G	C	C	120	120	190	180	150	150	155	145	110	105	105	105
22	105	S	110	S	E	S	S	S	105	105	120	120	115	120	120	115	110	110	110	105	105	S	S	S
23	S	S	S	E	105	S	S	S	155	145	S	120	120	110	110	110	110	150	115	110	110	105	S	S
24	S	S	S	E	E	105	105	S	120	G	G	140	150	130	120	110	G	G	110	S	S	S	S	110
25	105	S	S	E	E	S	125	S	120	120	135	120	115	120	120	120	120	120	110	S	105	105	105	S
26	S	S	E	E	E	S	S	S	G	155	G	120	105	105	105	125	120	110	120	110	S	S	S	S
27	S	S	E	E	E	S	S	S	G	160	115	115	G	G	120	120	G	G	S	S	S	S	S	S
28	S	S	S	E	E	S	S	S	G	G	115	120	120	115	110	G	G	G	S	110	110	110	S	S
29	S	S	E	E	E	E	S	S	130	180	150	130	120	G	G	G	G	G	S	S	S	S	S	S
30	S	S	S	E	E	S	S	G	G	G	G	140	135	130	125	120	120	120	110	S	S	S	S	S
31	S	S	105	E	E	E	S	S	G	G	130	125	120	120	C	G	G	G	105	105	100	S	S	S
No.	6	5	10	10	10	5	4	2	9	19	24	30	30	26	21	21	20	16	15	15	12	9	7	5
Median	110	110	110	105	110	105	120	105	125	150	140	125	120	120	115	115	110	110	110	110	110	105	110	110

h'Es

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

The Radio Research Laboratories, Japan.

Y 11

IONOSPHERIC DATA

Jan. 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	l	l	l	l		l2			f				
2										h2 l	h	h	h	l2	l2	l2	l2			f	f			
3				f	f					l	h	l	h	l		l h	h	C						
4		f	f	f				l			l	h	h	l		l2	l	l2						
5										h l	h2	h2	l2	l2	l	l2	l2							
6												h	l	l2	l	l2	l2	l						
7				f	f					h2	h2	l	h	h			l	l2	f2	f				
8												h	h	h2	l					f		f2	f	
9	f2									h2	h	h	h	h	h	l2	l2					f3	f	f
10	f	f2	f								l	l	l	l2	l			l		f3				
11				f3 f2	f4	f3	f		C	l2	l2	l	l			l		l	f2		f4	f		f
12	f	f2		f	f3						C3	l	l		l2		l							
13									h2	h3	h	h	h	l2			l	l2	f	f	f4	f2	f4	f3
14			f		f2					h	h2	h2	h	h		l		l3	f		f			
15		f	f2	f2	f2	f2	f	l2	l	h l	l3	h2	h2	l2	l	l	l			f	f			
16	f2	f	f4	f3	f2	f2				h2	h2	h	l	l2	l	l				f			f3	
17			f2	f3		f2					h2	l	l	l2	l2	l2	l	l3	f		f			
18				f2	f2					h2	h2	h	h	h	C2	l			f3	f		f2		
19				f						h2	h	h2 l	l				l2 h		f					
20			f						l	l2	l	l	l	l		l2	l2	l2		f3	f2		f	
21			f		f								l2	l	h l	h l2	h2	h3	f	f	f3	f2	f	f2
22	f		f2						l h	l2	l2	l	l	l	l	l	l2	l2	f4	f4	f2			
23					f				h2	h2 l		l	l	l	l	l2	l3	h2 l	f	f2	f2	f2		
24						f2	f		l			h	h	h	l	l			f					f2
25	f						f		l	l	h	l	l	l	l	l	l2	l2	f		f	f	f	
26										h		l	l2	l2	l2	C l	l2	l3	f2	f2				
27										h	l	l			l	l								
28											l	l	l	l	l				f	f2	f	f2		
29									l	h	h	h2	l											
30												h	h	h	h	l	l	l	f					
31			f2								h	h2	l	l					f	f	f2	f		
No.																								
Median																								

Types of Es | Sweep 1.0 Mc to 20.0 Mc in 30 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.

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

No outstanding occurrence.

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Jan. 1962	Whole Day Index	L. N. 06 12 18 / 12 18 24	W W V 00 06 12 18 / 06 12 18 24	W. F. 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Warning 00 06 12 18 / 06 12 18 24	Principal magnetic storms Start	End	ΔH
1	3+	3 4 (C)	- - - 4	(4) 3 3 3	4 4 (3 4)	N N N N			
2	4-	(C C C)	- - - 4	(4) 3 4 (4)	4 4 4 4	N N N N			
3	4o	4 (C C)	- - - 4	(4) 4 5 (4)	4 4 4 4	N N N N			
4	4-	5 4 3	- - - 4	(3) 3 4 (3)	4 3 4 4	N N N N			
5	4-	4 4 4	- - - (4)	(3) 3 4 3	4 4 2 4	N N N N			
6	4-	4 5 4	- - - 3	3 3 4 4	4 4 4 4	N N N N			
7	4o	4 4 4	- - - (4)	3 4 5 4	4 4 3 4	N N N N			
8	4o	5 5 4	- - - 3	3 4 4 4	4 4 4 4	N N N N			
9	4-	4 (C C)	- - - 3	4 4 4 4	5 5 4 5	N N N N			
10*	3-	3 1 1	- - - 2	3 3 4 4	5 4 4 4	N U U U	0212	---	175γ
11*	3o	3 3 2	- - - 2	3 4 3 4	5 5 4 5	U U U U	---	23xx	
12	4o	4 4 3	- - - 3	5 5 4 4	4 4 4 4	N N N N			
13	4-	5 4 3	- - - 3	3 4 4 3	4 4 4 4	N N N N			
14	4o	5 (C) 3	- - - (5)	4 4 4 4	4 5 5 4	N N N N			
15	4+	5 5 5	- - - 4	3 4 4 4	4 5 4 4	N N N N			
(16)	5-	5 5 4	- - - 4	5 5 5 5	5 5 5 4	N N N N			
(17)	4-	3 3 4	- - - 3	4 4 4 4	4 4 4 4	N N N N			
(18)	4-	4 3 4	- - - 3	4 4 4 4	4 4 3 4	N N N N			
19	4-	4 3 5	- - - (C)	3 4 3 3	4 4 3 4	N N N N	0113	---	54γ
20	3+	4 (3) 4	- - - 3	4 3 3 4	4 4 3 4	N N N N	---	10xx	
21	4o	4 4 4	- - - 3	4 4 4 4	4 4 4 4	N N N N			
22	4+	4 5 4	- - - 4	4 5 4 4	5 4 3 4	N N N N			
23	4o	5 4 3	- - - 3	4 4 4 5	4 4 4 4	N N N N			
24	4-	5 3 4	- - - 3	3 4 4 4	4 5 4 4	N N N N			
25	4-	4 4 4	- - - 4	3 3 4 4	4 4 3 4	N N N N			
26	4o	4 4 5	- - - 4	3 3 4 4	4 5 4 4	N N N N			
27	4o	4 4 4	- - - 4	4 4 4 4	4 4 4 4	N N N N			
28	3+	4 4 3	- - - 4	3 3 3 3	4 4 3 4	N N N N			
29	3+	3 3 3	- - - 5	3 3 4 3	4 3 4 4	N N N N			
30	3+	3 4 4	- - - 4	3 3 4 3	4 4 3 4	N N N N			
31	4+	5 5 5	- - - 5	3 4 4 3	4 4 3 5	N N N N			

* = day of Special World Interval

( ) = Regular World Day

( ) = inaccurate

C = artificial accident

- = impossible to evaluate

--- = continuing magnetic storm

Note: Estimation of propagation quality figures has been revised from July 1961 issue. See Symbols and Terminology.

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Jan. 1962	S W F									S E A			Correspondence		
	Drop-out Intensities (db) WS	SF	HA	TO	LN	SH	Start-time	Dura-tion	Type	Imp.	Start-time	Dura-tion	Imp.	Flare	Solar Noise	Mag.
	None															

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