F — 133

IONOSPHERIC DATA IN JAPAN

FOR JANUARY 1960

Vol. 12 No. 1

(Including Provisional Data at Showa Base)

Issued in March 1960

Prepared by

THE RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

KOKUBUNJI, TOKYO, JAPAN

F—133

IONOSPHERIC DATA IN JAPAN

FOR JANUARY 1960

Vol. 12 No. 1

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

CONTENTS

SITES OF THE RADIO WAVE OBSERVATORIES

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

	Latitude	Longitude	Site
Wakkanai	45°23.6′N.	141°41.1′E.	Wakkanai-shi, Hokkaido
Akita	39°43.5′N.	140°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 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.

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

The tabulated circuits contain 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 weighted averages of the 6-hourly indices of WWV and S.F., with half weight given to quality grade 2 (normal). This procedure is taken to avoid the concentration of the whole day indices to grade 2.

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 .....WNA-27 : 7.6550 Mc, WND-20 : 10.4925 Mc, WNC-93 : 13.7525 Mc, WMJ-30A2 : 20.8173 Mc (San Francisco)
H A .....WWVH 15 Mc and 10 Mc (Hawaii)
T O .....JJY 15 Mc and 10 Mc (Tokyo)
M N .....DZM-28 : 14.5850 Mc (Manila)
L N .....GIJ-34 : 14.6702 Mc (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 and 20 Mc for WWV, WWVH and JJY are marked ; 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

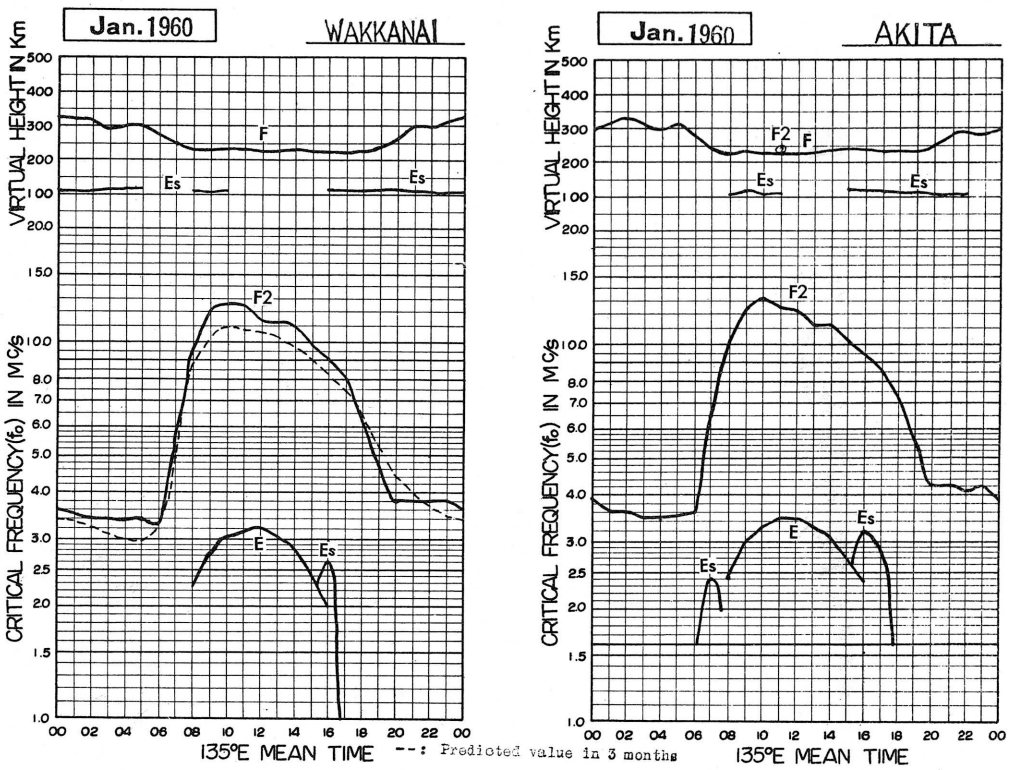
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out ;

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.*

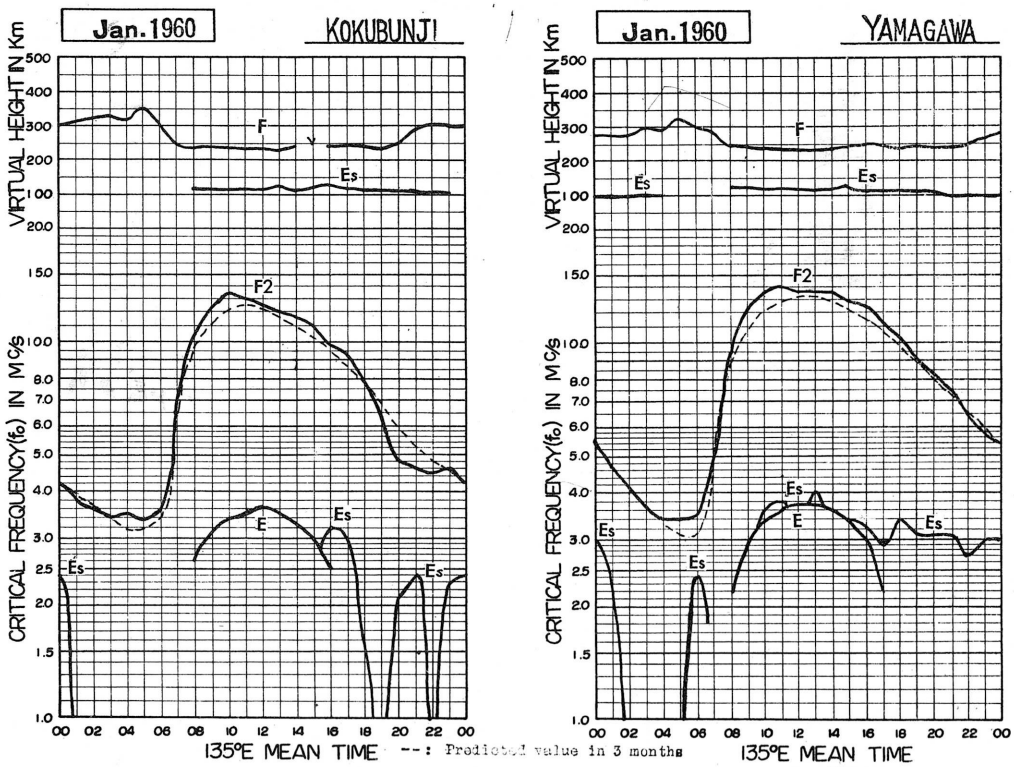
Besides, the time associated phenomena of SID's, that is, solar flare, solar radio noise outburst and crochet (solar flare effect in magnetic record) are given in this table from interchange messages or measurements at Hiraiso.

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. 1960 | 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	3.7	3.6	3.6	3.4	3.5	3.4	3.7	5.5	8.9	I11.4 R	11.3	12.0	11.3	11.6	10.8	9.8	9.3	7.0	5.8	3.9	3.3	3.4	3.3	3.3
2	3.3	3.3	3.3	3.5	3.5	3.6	4.0	5.9	9.9	10.5	12.3	11.2	11.3	11.1	10.1	8.9	U8.8 S	6.1	5.3	4.7	3.8	3.2	3.2	3.3
3	3.5	3.4	3.5	3.5	3.2	3.2	3.2	5.6	8.5	10.1	11.4	10.5	10.3	10.7	10.1	8.0	7.8	6.1	5.1	3.5	J2.6 A	2.9	3.0	3.2
4	3.3	3.3	3.4	3.1	2.8	3.3 F	3.4 F	6.1	11.5	10.4	12.0	10.7	10.5	10.4	10.7	9.0	8.3	6.8	5.8	4.0	3.5	3.7	3.8	3.8
5	3.8	3.6	3.5	3.5	3.8	3.7	2.2	5.3	8.3	12.4	12.6	13.0	11.8	11.9	11.5	9.8	10.1	8.1	6.1	4.4	4.2	4.3	4.3	4.2
6	3.8	3.8	3.8	3.6	3.0	2.7	2.6	5.9	10.0	13.3	12.8	12.7	13.0	11.8	10.6	10.1	10.5	8.3	4.6	3.5	3.0	3.4	3.5	3.8
7	3.3	3.0	3.1	3.1	3.2	3.0	2.8	5.3	9.0	13.3	12.3	12.6	12.8	12.1	11.3	9.1	10.0	8.3	6.1	4.6	I4.2 S	U4.3 S	3.8	4.1
8	4.1	4.2	4.0	3.8	3.6	3.5	3.8	6.4	8.7	12.6	11.8	10.8	10.6	11.3	11.4	10.2	8.9	7.5	6.8	5.5	4.4	4.0	4.0	3.8
9	3.7	3.6	3.4	3.3	3.3	3.3	3.3	5.3	9.5	12.2	12.3	10.6	9.7	9.6	9.5	9.0	8.0	6.8	4.8	4.0	3.5	3.6	3.5	3.8
10	4.0	3.5	3.2	3.4	3.4	3.3	3.0	4.8	8.3	11.3	12.3	10.6	9.7	9.7	9.5	8.3	7.8	6.8	4.1	4.0	3.7	3.8	4.1	4.3
11	3.8	3.6	3.0	3.2	3.4	3.3	I3.8 A	5.3	8.0	12.3	14.1	11.8	9.5	10.3	9.8	10.1	9.0	7.1	4.7	3.4	3.3	3.0	3.1	3.1
12	3.1	3.2	3.4	3.5	3.4	3.5	3.2	5.5	10.0	12.7	12.7	12.3	11.3	12.3	10.7	10.8	9.7	8.0	5.9	4.2	3.6	3.5	3.5	3.4
13	3.7	3.7	3.8	3.8	3.5	3.2	3.1	5.0	9.8	12.8	13.8	12.3	10.9	12.2	10.8	9.5	9.3	7.8	6.5	4.9	3.7	3.5	3.5	3.4 V
14	3.4	3.3	3.4	I3.9 F	I4.2 F	4.5	4.0	5.0	9.8	12.8	12.8	12.0	10.5	10.3	11.0	10.5	9.0	7.2	5.8	5.3	I4.7 F	4.8	4.3	3.8
15	3.1	3.0	3.0	3.0	3.0	2.4	2.8	5.1	6.3 H	9.3	9.5	12.3	10.8	U8.8 R	11.2	I11.2 A	8.3	5.8	I5.3 A	5.0	4.6	4.5	3.5	3.4
16	F	F	F	4.4 F	4.5 F	I5.1 F	5.3	I6.4 FS	10.5	U14.8 R	R	R	R	11.5	10.7	9.1	9.5	8.0	5.0	3.5	3.5	FS	F	F
17	3.1 F	3.3 F	3.2	3.3	3.2	2.8	2.5	5.7	10.5	11.3	13.7	13.5	11.3	11.0	10.3	9.8	8.7	7.1	6.5	4.8	3.8	3.3	3.4	3.6
18	3.6	3.4	3.4	3.4	3.6	3.5	I3.9 FS	6.2	9.3	11.8	12.8	13.0	11.3	11.0	10.8	9.8	9.0	I7.8 C	5.6	V4.1 S	I3.8 S	3.8	4.0	4.8
19	2.4	2.4	2.6	2.7	2.8	3.1	I3.2 A	5.3	8.6	10.2	12.9	U14.3 R	12.6	12.6	12.2	10.8	9.3	7.5	6.1	4.7	3.8	3.8	3.8	3.8
20	3.4	3.3	3.3	3.3	3.2	3.2	3.0	5.3	9.8	11.3	12.5	12.5	11.8	10.3	11.0	8.7	8.5	9.1	6.3	4.5	3.8	3.8	3.7	3.8
21	4.1	3.5	3.2	3.4	3.6	3.6	3.6	5.0	8.3	12.2	J13.8 R	I14.6 R	12.8 H	J12.8 R	12.0	I10.5 C	I9.2 C	8.0 S	6.1	4.9	4.9	4.8	4.2	4.2
22	4.2	5.3	2.9	3.0	3.0	2.8	2.7	5.3	8.8	11.3	13.3	I14.0 R	I13.0 R	12.0	10.5	I9.7 C	I8.8 C	8.0	6.5	3.5	3.2	3.5	3.4	3.4
23	3.5	3.4	3.4	3.3	3.4	3.5 F	3.3	5.3	9.8	12.2	12.8	13.3	12.5	11.6	10.1	9.2	9.1	I8.4 S	6.8	5.4	4.0	3.6	3.8	J3.8 S
24	I3.4 S	3.3	3.3	3.4	3.2	3.4	3.3	5.8	C	C	C	C	C	C	C	C	9.1	7.8	7.0	5.7	3.3	3.5	3.3	3.2
25	3.0	3.0	2.9	3.2	2.9	3.0	3.1	6.1	10.3	11.5	12.2	13.0	11.8	11.8	10.8	I9.8 S	8.9	9.1	7.8	5.3	I4.2 A	I3.6 A	3.5	3.5
26	3.5	3.5	3.5	3.3	3.3	3.5	3.8	6.8	I10.0 R	12.5	14.0	13.5	12.1	J10.6 R	10.3	9.8	8.9	I8.4 C	I7.9 C	5.6	4.5	4.5	4.5	4.1
27	4.0	4.1	3.8	3.7	3.9	3.8	3.9	7.7	9.8	12.2	12.8	13.5	12.1	11.3	11.8	I10.4 C	9.8	8.4	7.8	6.3	4.7	4.3	4.0	4.1
28	4.3	4.2	4.0	4.1	4.3	4.0	3.8	6.8	10.4	12.4	13.0	12.8	12.8	11.1	11.0	10.0	8.8	J8.6 S	7.1	5.3	4.6	4.8	4.3	3.7
29	3.5	3.8	3.6	3.6	3.6	3.7	4.0	6.8	9.8	12.5	12.6	12.1	12.2	11.1	11.2	11.1	9.3	9.1	7.5	6.2	4.9	4.8	4.8	4.7
30	4.4	4.5	4.6	4.3	4.1	4.2	4.4	7.5	J10.7 R	12.5	13.8	12.8	12.3	11.4	11.6	11.5	9.3	8.0	J8.3 S	6.5	5.0	4.8	4.0	4.0
31	4.2	4.0	4.0	4.0	4.0	4.0	4.0	6.8	9.9	12.7	12.5	11.6	11.1	10.0	9.7	9.8	9.0	9.0	7.8	6.7	5.3	I4.6 S	4.3	4.4
No.	30	30	30	31	31	31	31	31	30	30	29	29	29	30	30	30	31	31	31	31	31	30	30	30
Median	3.6	3.5	3.4	3.4	3.4	3.4	3.3	5.6	9.8	12.2	12.7	12.5	11.3	11.2	10.8	9.8	9.0	8.0	6.1	4.7	3.8	3.8	3.8	3.8
U.Q.	4.0	3.8	3.6	3.7	3.6	3.7	3.9	6.4	10.0	12.6	13.2	13.2	12.4	11.8	11.2	10.4	9.3	8.4	7.0	5.4	4.6	4.5	4.1	4.1
L.Q.	3.3	3.3	3.2	3.3	3.2	3.2	3.0	5.3	8.7	11.3	12.3	11.7	10.8	10.4	10.3	9.1	8.8	7.1	5.3	4.0	3.5	3.5	3.5	3.4
Q.R.	0.7	0.5	0.4	0.4	0.4	0.5	0.9	1.1	1.3	1.3	0.9	1.5	1.6	1.4	0.9	1.3	0.5	1.3	1.7	1.4	1.1	1.0	0.6	0.7

foF2

Sweep 1.0 Mc to 20.7 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 1

6

IONOSPHERIC DATA

Jan. 1960 | 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																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20															L									
21																C								
22																C								
23																								
24										C	C	C	C	C	C	C								
25												L	L											
26																								
27														L		C								
28																								
29														L										
30													L	L										
31																								
No.																								
Median																								

foF1

Sweep 1.0 Mc to 20.7 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | 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									$^{U}2.20^{S}$	$^{I}2.75^{A}$	3.05	3.00	3.10	3.00	$^{I}2.70^{S}$	$^{I}2.30^{S}$								
2									2.15	2.60	3.00	3.05	2.95	2.80	2.60	S	A							
3									2.25	2.70	3.00	3.15	3.15	3.05	2.80	S								
4									2.25	$^{I}2.55^{A}$	2.95	3.10	3.10	3.00	2.75	A	S							
5									2.20	2.70	3.00	3.10	3.10	2.95	2.75	2.35	S							
6									A	A	2.90	3.00	3.05	3.05	2.85	2.30	S							
7								S	A	A	3.00	3.15	3.30	3.00	2.75	$^{I}2.40^{A}$	S							
8									2.30	2.85	3.15^{H}	3.30	3.20	3.05	2.70	2.20	S							
9									2.20	2.75	3.05	3.20	3.20	3.00	2.75	2.45	S							
10									2.20	$^{I}2.60^{S}$	2.95	3.10	3.05	3.00	2.75	2.35	1.90							
11									A	2.70	2.90	3.10	3.05	3.00	2.65	2.20	S							
12									2.20	2.75	$^{I}2.90^{A}$	3.10	3.10	2.95	2.60	2.35								
13									S	A	A	3.05	$^{U}3.05^{A}$	$^{I}3.00^{S}$	2.80	A	A	S						
14									S	S	S	2.70	$^{I}2.85^{S}$	3.00	2.75	2.35	A							
15								1.60	S	S	S	S	3.20	3.10	$^{U}2.70^{S}$	2.35	A							
16									S	2.75	3.10	3.25	3.25	$^{I}3.05^{A}$	2.85	2.30	A							
17								S	$^{I}2.40^{S}$	2.80	3.05	3.25	3.30	3.05	2.95	2.55	S							
18									A	2.75	3.00	3.15	3.25	3.10	2.70	2.40	S							
19									2.30	2.75	3.00	3.00	3.15	3.05	2.80	2.40	1.90							
20									$^{I}2.15^{A}$	2.70	3.05	3.20	3.20	3.00	2.75	2.60	S							
21								S	2.25	2.70	3.00	3.15	3.20	3.10	2.80	C	C							
22									2.30	2.75	3.05	3.20	3.20	3.10	2.80	C	C							
23									2.20	2.75	3.05	3.10	3.10	2.95	2.80	2.50	2.20							
24								S	2.30	C	C	C	C	C	C	C	2.10							
25								S	2.30	2.70	2.95	3.10	$^{I}3.15^{S}$	S	S	R	A							
26								S	A	2.95	3.25	3.40	3.50	3.40	3.05	2.60	A							
27								S	A	2.90	3.20	3.45	3.35	3.15	2.90	C	A							
28								A	A	A	3.25	3.20	$^{I}3.20^{A}$	3.15	3.05	2.75	2.00							
29								S	2.30	2.75	3.10	3.35	3.45	3.25	3.05	2.70	S							
30								1.90	2.30	2.75	3.20^{H}	3.30	3.40	3.30	3.10	2.75	2.00							
31								1.75	2.40	2.90	3.10	3.30	3.20	3.25	3.05	2.80	2.10							
No.								3	20	24	27	29	30	29	29	22	7							
Median								1.75	2.25	2.75	3.05	3.15	3.20	3.05	2.80	2.40	2.00							

The Radio Research Laboratories, Japan.

foE

Sweep 1.0 Mc to 20.7 Mc in 1 min/~~sec~~ in automatic operation.

W 3

11

IONOSPHERIC DATA

Jan. 1960 | 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	3.2M	E	E	E	E	E	E	E	G	3.5M	3.5	G	G	G	S	S	5.7M	5.0M	E	2.7M	E	E	E	4.5
2	3.5M	3.5M	E	E	5.0M	3.5M	E	E	G	G	G	G	G	G	G	S	3.5M	E	E	E	E	E	E	E
3	E	E	E	E	2.5	E	E	E	G	G	G	G	G	G	G	S	E	3.2M	E	E	3.1M	3.5M	E	E
4	E	E	E	E	E	E	E	E	G	5.0M	4.0	3.5	G	5.0M	4.9M	4.5M	S	3.5M	E	E	E	E	3.1M	E
5	E	E	E	E	E	E	E	E	G	G	4.0M	G	G	G	G	G	S	E	E	E	E	3.0M	3.2M	3.2M
6	E	3.2M	3.1M	3.1M	E	E	E	3.4M	8.0M	5.0M	G	G	G	G	G	G	S	E	3.5M	4.0M	3.5M	4.0M	E	E
7	E	E	E	E	E	E	E	S	3.5M	4.5	G	G	G	G	G	4.7M	S	E	E	E	E	E	4.2M	4.4M
8	2.4M	2.4	2.5	2.3	3.0M	2.6	E	E	G	G	G	G	G	G	G	G	S	3.0M	3.5M	E	E	E	E	E
9	4.3M	3.2M	E	E	E	E	E	E	G	2.5G	5.8M	G	G	G	G	G	S	E	E	3.2M	E	E	E	E
10	E	2.5	3.2M	2.5	E	E	E	E	G	S	G	G	G	G	24G	G	G	E	2.6M	E	E	E	3.5M	4.7M
11	3.4M	2.5	2.3	E	E	2.5M	6.0M	3.0	3.0M	4.0M	G	G	G	G	G	G	S	E	E	E	E	E	E	E
12	E	E	E	E	3.5	2.6M	E	E	G	2.2G	3.3	G	G	G	G	G	E	E	E	E	E	E	E	E
13	E	E	2.4	2.4M	2.3M	2.8	E	E	S	5.0	5.0M	3.5	3.5	S	3.6	3.0	3.3	3.3M	E	3.4M	3.5M	3.1M	3.2M	E
14	E	E	6.0M	2.4M	4.0M	2.0	E	E	S	S	S	3.4	3.4	G	G	G	3.4	7.5M	3.5M	4.0	6.0M	3.5M	2.5	E
15	E	3.2M	3.5M	2.4M	2.4	E	E	G	S	S	S	S	3.5	5.5	3.5	15.2M	12.5M	6.0M	13.5M	5.8	5.2M	3.5M	3.4M	3.3M
16	3.5M	3.1M	3.2M	5.2M	6.5M	8.0M	6.0	5.0M	S	G	G	G	G	7.2M	G	G	4.0M	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	S	S	G	G	G	G	G	G	G	S	E	E	E	3.2M	3.5M	3.1M	E
18	E	E	E	E	E	E	E	6.2M	3.5M	G	G	G	G	G	G	G	S	C	3.1M	3.1M	E	E	E	E
19	E	E	1.6	2.4M	2.3M	E	8.0M	E	5.5M	G	G	G	G	G	G	G	G	E	E	5.8M	3.1M	E	E	E
20	E	2.8M	E	E	E	E	E	E	3.5	3.4	G	G	G	G	G	G	S	E	E	E	E	E	2.5	E
21	2.5M	E	E	E	E	E	E	G	G	G	2.8G	G	3.4	G	G	C	C	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	C	C	E	E	E	J2.8	E	E	E
23	E	E	E	E	E	E	E	J3.0	J2.8	J2.8	G	G	G	G	G	G	G	E	E	E	E	E	E	E
24	E	E	1.2	E	J2.4	J3.5	J2.5	S	G	C	C	C	C	C	C	C	G	E	E	E	E	E	E	E
25	E	E	E	E	E	E	E	S	G	3.0	G	G	S	S	S	G	2.5	J2.8	J2.5	J2.4	J5.3	J4.0	J3.1	J1.9
26	J2.3	J2.8	J2.4	E	1.4	E	E	S	J5.3	G	G	G	G	G	3.5	3.5	J2.8	C	C	J2.8	J2.8	J3.8	6.0	J2.0
27	E	E	E	E	E	E	E	J2.8	J2.8	3.5	3.5	3.5	4.0	3.5	3.5	C	J2.6	1.9	E	E	E	E	E	E
28	E	E	E	E	E	E	E	J2.8	J4.8	J3.3	G	G	3.6	G	3.5	3.4	G	J2.5	E	2.6	E	E	E	E
29	E	E	E	1.5	J1.8	E	E	S	G	J2.7	G	G	G	G	G	3.4	3.3	J2.5	J3.8	J2.5	E	J3.3	J2.3	J1.8
30	E	E	E	E	E	E	E	G	G	G	G	3.9	3.9	G	G	3.4	4.0	2.5	J2.7	J2.3	J2.5	J1.9	E	E
31	E	E	E	2.6	J2.4	J2.8	E	G	2.8	G	3.5	G	G	G	G	G	2.6	J3.7	E	E	E	E	E	E
No.	31	31	31	31	31	31	31	25	26	27	28	29	29	28	28	24	19	29	30	31	31	31	31	31
Median	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	2.6	E	E	E	E	E	E	E
U.Q	2.3	2.5	2.4	2.4	2.4	2.5	E	2.8	3.5	3.5	3.4	G	G	G	G	3.4	3.5	3.1	2.6	2.8	3.1	3.3	3.1	1.8
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 1.0 Mc to 20.7 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | f_bE_s | 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									2.9	2.8				S	S	E	2.5		E				E
2	E	E			E	E										S	1.9							
3					E											S		E			2.6	E		
4										2.8	2.4	2.4		2.4	G	2.5	S	E					E	
5											2.5						S					E	2.4	E
6		E	E	E				2.5	2.6	2.7							S		E	2.5	E	2.5		
7								S	2.4	2.8						2.5	S						E	2.4
8	E	E	E	E	E	E											S	E	E					
9	E	E								2.4G	2.6						S			2.4				
10		E	E	E						S					2.2				E				E	2.5
11	2.4	E	E			E	A	E	2.2	2.2							S							
12					E	E				2.1	3.3													
13			E	E	E	E			S	2.8	3.5	2.9	3.0	S	G	2.9	2.2	E		2.6	2.5	2.4	E	
14			2.6	E	2.5	E			S	S	S	G	G				2.2	E	2.5	E	E	2.8	E	
15		E	E	E	E				S	S	S	S	G	5.5	G	A	2.7	E	A	3.0	E	E	E	E
16	E	E	E	E	E	E	3.0	2.4	S					4.6			2.0							
17								S	S								S				E	E	E	
18								2.5	2.4								S	C	E	E				
19			E	E	E		A		G											E	E			
20		E							2.4	G							S						E	
21	E										G		2.5			C	C							
22																C	C				E			
23								E	G	G														
24			E		E	E	E	S		C	C	C	C	C	C	C								
25								S		2.0			S	S	S		2.3	2.7	2.1	2.2	A	A	2.5	E
26	E	E	E		E			S	4.0						G	G	2.5	C	C	E	E	E	2.5	E
27								G	2.6	2.4	G	2.6	G	G	G	C	2.4	E						
28								1.8	2.6	3.0			3.4		G	G		E		E				
29				F	E			S		G						G	2.9	E	2.5	E		E	E	E
30												G	G			G	3.5	2.4	E	E	E	E		
31				E	E	E			1.9		G						G	3.3						
No.	8	10	11	10	13	9	4	7	11	14	9	5	7	4	7	8	12	13	9	13	11	11	12	8
Median	E	E	E	E	E	E	A	1.8	2.4	2.4	2.5	2.4	G	3.5	G	G	2.2	E	E	E	E	E	E	E

f_bE_s | Sweep 1.0 Mc to 20.7 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 5

IONOSPHERIC DATA

Jan. 1960 | 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	E1.60S	E1.20S	E1.40S	E	E	E1.60S	E1.60S	E1.60S	1.70	2.00	E2.30S	E2.50S	E2.40S	E2.50S	E2.80S	E2.50S	E1.70S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
2	E1.60S	E1.20S	E1.30S	E	E	E1.60S	E1.60S	E1.60S	1.60	1.70	2.00	E2.40S	E2.45S	1.90	1.90	E2.50S	1.60	E1.80S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
3	E1.60S	E1.30S	E1.60S	E1.30S	E	E1.50S	E1.60S	E1.60S	1.85	2.00	E2.40S	E2.40S	E2.50S	E2.40S	E2.40S	E2.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
4	E1.65S	E1.30S	E1.30S	E	E	E1.50S	E1.60S	E1.60S	1.90	1.70	1.90	1.90	E2.40S	1.90	E2.40S	1.90	E1.70S	E1.70S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
5	E1.60S	E1.20S	E	E	E	E1.50S	E1.60S	E1.60S	1.85	1.90	1.90	1.90	2.00	1.90	1.70	1.75	E1.70S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
6	E1.60S	E	E	E	E	E1.50S	E1.60S	E1.60S	1.70	1.70	1.90	1.80	2.00	1.80	1.80	1.65	E1.80S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
7	E1.60S	E1.20S	E1.30S	E	E	E1.50S	E1.60S	E1.70S	1.60	1.70	2.20	1.90	1.90	2.00	1.80	1.75	E1.80S	E1.60S	E1.70S	E1.60S	E1.70S	E1.60S	E1.60S	E1.60S
8	E1.60S	E1.20S	E	E	E	E1.60S	E1.60S	E1.60S	1.70	1.90	E2.40S	2.00	E2.50S	E2.50S	E2.50S	1.80	E1.80S	E1.60S	E1.60S	E1.75S	E1.60S	E1.60S	E1.60S	E1.60S
9	E1.60S	E1.20S	E	E	E	E1.60S	E1.60S	E1.60S	1.90	1.60	2.10	E2.50S	E2.50S	E2.40S	1.95	1.90	E1.80S	E1.60S	E1.60S	E1.60S	E2.20S	E1.60S	E1.60S	E1.60S
10	E1.60S	E1.30S	E	E	E	E1.50S	E1.60S	E1.60S	1.60	E2.70S	E2.50S	1.90	1.90	1.65	1.70	1.70	E1.70S	E1.70S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
11	E1.60S	E1.30S	E	E	E	E1.60S	E1.60S	E1.60S	1.60	1.75	2.00	2.00	1.90	1.90	1.85	1.70	E2.10S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
12	E1.60S	E1.25S	E	E	E	E1.60S	E1.60S	E1.80S	1.90	1.70	1.90	2.20	E2.40S	2.00	1.85	1.80	E1.80S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
13	E1.60S	E1.40S	E	E	E	E1.60S	E1.60S	E1.60S	E2.40S	2.00	E2.50S	2.10	E2.50S	E3.10S	E2.40S	2.00	1.75	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
14	E1.60S	E1.60S	E	E	E	E1.60S	E1.60S	E1.60S	E2.40S	E2.80S	E3.00S	E2.40S	E2.70S	E2.40S	E2.40S	2.00	1.70	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
15	E1.60S	E1.30S	E	E	E	E1.60S	E1.60S	E1.50S	E2.40S	E2.60S	E3.00S	E3.50S	E2.70S	E2.40S	E2.70S	1.90	1.60	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
16	E1.60S	E1.40S	E	E	E	E1.60S	E1.60S	E1.60S	E2.60S	2.00	E2.50S	E2.60S	E2.50S	2.00	1.85	1.70	1.60	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
17	E1.60S	E1.40S	E1.20S	E	E	E1.60S	E1.60S	E1.60S	E2.80S	1.70	1.75	1.70	1.70	1.70	1.85	1.65	E1.90S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
18	E1.60S	E1.30S	E1.30S	E	E	E1.60S	E1.60S	E1.60S	1.60	1.70	1.70	1.80	2.00	2.00	E2.40S	1.70	E2.10S	C	C	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
19	E1.60S	E1.30S	E	E	E	E1.60S	E1.60S	E1.60S	1.60	1.70	1.80	1.80	1.90	1.70	1.65	1.80	1.70	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
20	E1.60S	E	E	E	E	E1.40S	E1.60S	E1.60S	1.60	1.70	1.70	2.00	2.15	2.20	1.70	1.80	E2.40S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
21	E1.60S	E1.30S	E1.30S	E	E	E1.50S	E1.60S	E1.50S	1.65	1.75	1.70	2.10	1.60	E2.50S	1.80	C	C	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
22	E1.60S	E1.60S	E	E1.25S	E	E1.60S	E1.60S	E1.60S	1.60	1.70	1.80	2.00	E2.40S	E2.50S	2.00	C	C	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
23	E1.60S	E	E	E	E	E1.60S	E1.60S	E1.60S	1.60	1.60	1.70	1.90	E2.45S	1.95	1.75	1.70	1.80	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
24	E1.60S	E1.60S	E	E	E	E1.50S	E1.60S	E1.60S	1.65	C	C	C	C	C	C	C	1.90	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
25	E1.60S	E1.40S	E1.20S	E	E	E1.60S	E1.60S	E1.60S	1.60	1.65	2.10	2.10	E3.50S	E3.50S	E3.10S	2.10	1.70	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
26	E1.60S	E1.20S	E	E	E	E1.60S	E1.60S	E1.70S	1.70	E2.40S	1.80	1.90	E2.50S	2.00	2.00	1.90	1.70	C	C	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
27	E1.60S	E1.30S	E1.20S	E	E	E1.60S	E1.60S	E1.80S	1.60	1.70	1.70	2.00	2.00	E2.40S	1.70	I1.70C	1.60	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
28	E1.60S	E1.60S	E1.20S	E1.10S	E	E1.60S	E1.60S	E1.60S	1.60	1.60	1.90	1.80	1.70	1.70	1.60	1.60	1.60	E1.60S	E1.60S	E1.60S	E2.10S	E1.60S	E1.60S	E1.60S
29	E1.60S	E1.60S	E	E	E	E1.60S	E1.60S	E1.70S	1.60	1.60	1.80	1.80	1.75	E2.40S	1.75	1.60	E1.70S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
30	E1.60S	E1.60S	E1.20S	E	E	E1.60S	E1.60S	1.60	1.60	1.60	1.60	1.70	1.70	1.65	1.60	1.80	E1.70S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
31	E1.60S	E1.40S	E1.20S	E	E	E1.60S	E1.60S	E1.60S	1.60	1.60	1.70	1.75	1.75	1.75	1.75	1.75	1.60	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S	E1.60S
No.	31	31	31	31	31	31	31	31	26	26	22	23	30	18	21	25	29	29	28	31	31	31	31	31
Median	E1.60	E1.30	E	E	E	E1.60	E1.60	E1.60	1.60	1.70	1.80	1.90	E2.30	1.90	1.80	1.75	E1.70	E1.60	E1.60	E1.60	E1.60	E1.60	E1.60	E1.60

f-min

Sweep 1.0 Mc to 20.2 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

W 6

IONOSPHERIC DATA

Jan. 1960 | (M3000)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	2.65	2.70	2.70	2.65	2.65	2.80	3.25	2.90	3.25	I3.25R	3.35	3.20	3.00	3.25	3.05	3.10	3.10	2.95	3.05	3.30	2.65	2.90	2.80	2.55
2	2.55	2.55	2.65	2.80	2.70	2.85	3.05	3.20	3.35	3.35	3.25	3.20	3.10	3.10	3.05	3.15	V3.20S	3.20	3.10	3.10	3.15	2.80	2.60	2.55
3	2.75	2.65	2.70	2.95	2.65	2.65	3.05	3.05	3.30	3.35	3.35	3.25	3.05	3.10	3.15	3.25	3.20	3.25	3.25	3.00	2.80	2.70	2.85	2.60
4	2.70	2.65	2.80	2.75	2.80	2.65F	2.90F	3.25	3.35	3.30	3.30	3.20	3.10	3.00	3.20	3.10	3.15	3.10	3.20	3.15	2.75	2.70	2.65	2.75
5	2.75	2.65	2.65	2.75	2.85	3.30	2.85	3.00	3.20	3.25	3.20	3.25	3.16	3.00	3.05	3.00	2.85	3.10	3.10	2.80	2.55	2.45	2.60	2.45
6	2.60	2.65	2.90	3.00	2.60	2.50	2.65	3.00	3.40	3.30	3.15	3.05	3.05	3.05	3.00	2.95	3.05	3.20	3.05	2.85	2.80	2.65	2.70	2.90
7	2.75	2.55	2.60	2.65	2.65	3.00	3.05	2.90	3.20	3.40	3.20	3.20	3.30	3.25	3.35	3.00	3.10	2.95	3.30	2.80	I2.80S	V2.80S	2.65	2.55
8	2.70	3.00	3.00	2.90	2.65	2.70	2.70	3.45	3.10	3.60	3.40	3.35	3.00	3.05	3.05	3.00	3.20	2.95	3.10	3.00	2.95	2.95	2.85	2.85
9	2.80	2.85	2.90	2.70	2.70	2.70	2.85	3.10	3.15	3.25	3.35	3.30	3.20	3.10	3.05	3.00	3.00	3.10	3.00	3.05	2.85	2.70	2.80	2.65
10	2.90	2.85	2.75	2.65	2.70	2.85	3.00	3.00	3.30	3.35	3.25	3.10	3.00	3.10	3.20	3.15	3.10	3.10	2.70	2.65	2.55	2.65	2.45	2.45
11	2.65	2.70	2.35	2.45	2.65	2.55	I2.70A	2.75	2.75	3.10	3.25	3.30	3.05	3.10	3.05	3.05	3.10	3.15	3.10	2.70	2.70	2.75	2.65	2.60
12	2.60	2.60	2.60	2.65	2.65	2.70	2.80	3.00	3.10	3.30	3.20	3.20	3.10	3.15	3.10	3.15	3.10	3.10	3.20	2.95	3.05	2.75	2.95	2.65
13	2.65	2.70	2.85	2.95	2.80	2.80	2.75	2.90	3.25	3.30	3.30	3.20	3.10	3.10	3.05	3.15	3.15	3.10	3.25	3.35	2.95	2.90	2.75	2.70V
14	2.65	2.65	2.60	I2.80F	I2.85F	2.90	2.85	2.60	3.05	3.20	3.30	3.20	2.95	3.00	3.10	3.05	2.90	3.05	3.05	2.85	I2.60F	2.70	2.90	2.80
15	2.55	2.65	2.55	2.60	2.65	2.75	2.95	2.90	3.00H	3.10	2.95	3.05	3.15	V3.05R	3.05	I3.15A	3.25	3.05	I2.95A	2.90	2.85	2.90	2.85	2.95
16	F	F	F	2.60F	2.60F	I2.90F	2.95	I2.95FS	3.15	V3.25R	R	R	R	3.15	3.20	3.20	3.15	3.10	3.20	3.10	2.95	Fs	F	F
17	3.00F	2.55F	2.70	2.65	2.70	3.05	2.90	2.95	3.35	3.10	3.15	3.20	3.10	3.10	3.15	3.15	3.10	3.00	3.05	3.10	3.25	2.65	2.70	2.65
18	2.75	2.70	2.60	2.75	2.70	2.75	I3.00S	3.05	3.20	3.30	3.10	3.15	3.20	2.90	3.15	3.10	3.00	I3.10C	3.05	V2.80S	I2.60S	2.55	2.45	3.55
19	2.75	2.80	2.60	2.60	2.60	2.85	I3.05A	2.85	3.25	2.95	3.15	V3.15R	3.10	3.10	3.10	3.05	3.10	3.10	3.25	2.90	2.90	2.80	2.85	2.90
20	2.80	2.65	2.55	2.75	2.85	2.80	2.90	3.20	3.35	3.35	3.30	3.10	3.35	3.00	3.20	3.10	3.10	3.10	3.15	3.10	2.65	2.65	2.60	2.70
21	2.70	2.80	2.60	2.60	2.65	2.85	3.05	2.90	3.25	3.15	I3.05R	I3.10R	3.10H	J3.10R	3.05	I3.05C	I3.05C	3.05S	2.95	2.85	2.70	2.65	2.45	2.40
22	2.55	3.10	3.15	2.45	2.45	2.50	2.60	2.75	3.25	3.10	3.15	I3.05R	I3.10R	3.15	3.05	J3.05C	I3.05C	3.05	3.30	2.75	2.80	2.80	2.75	2.65
23	2.70	2.65	2.70	2.80	2.90	2.85F	3.05	2.90	3.15	3.20	3.15	3.15	3.10	3.10	3.00	3.05	2.95	I3.05S	3.15	3.05	3.10	2.75	2.80	2.75
24	I3.50S	2.60	2.70	2.80	2.65	2.60	2.70	3.00	C	C	C	C	C	C	C	C	3.15	2.95	3.15	3.25	2.95	2.85	2.80	2.65
25	2.50	2.60	2.60	2.70	2.60	2.55	2.65	3.20	3.30	3.15	3.20	3.10	3.00	2.90	3.05	I2.95S	3.10	2.95	3.00	3.00	I2.90A	I2.90A	2.85	2.65
26	2.60	2.60	2.70	2.80	2.50	2.55	2.70	3.15	I3.15R	3.10	2.90	3.00	3.15	J3.00R	2.95	3.00	2.95	I3.05C	I3.15C	3.10	2.75	2.75	2.60	2.70
27	2.65	2.60	2.60	2.55	2.65	2.80	2.85	3.05	3.25	3.15	3.10	3.10	2.95	2.90	2.90	I3.00C	2.95	2.90	3.00	3.15	2.85	2.80	2.60	2.70
28	2.55	2.60	2.60	2.55	2.50	2.70	2.70	3.15	3.30	3.15	3.05	3.05	3.05	3.05	3.10	3.00	3.05	J2.90S	3.00	3.00	2.80	2.90	2.95	2.85
29	2.75	2.65	2.70	2.70	2.75	2.80	3.00	3.15	3.05	3.10	3.15	3.00	2.90	2.85	2.85	2.95	2.85	2.90	2.85	3.10	2.75	2.60	2.55	2.65
30	2.65	2.70	2.65	2.75	2.60	2.60	2.90	3.05	I3.25R	3.15	3.10	3.05	3.10	2.90	2.80	2.95	3.00	2.95	J3.15S	3.25	2.85	2.95	2.80	2.80
31	2.70	2.75	2.80	2.75	2.75	2.65	3.00	3.25	3.25	3.15	3.20	3.05	2.95	2.90	2.80	3.05	2.90	2.65	3.10	3.15	3.00	I2.80S	2.80	2.70
No.	30	30	30	31	31	31	31	31	30	30	2P	2P	2F	30	30	30	31	31	31	31	31	30	30	30
Median	2.70	2.65	2.70	2.70	2.65	2.75	2.90	3.00	3.25	3.20	3.20	3.15	3.10	3.10	3.05	3.05	3.10	3.05	3.10	3.00	2.85	2.75	2.75	2.70

(M3000)F2 Sweep 1.0 Mc to 20.7 Mc in 1 min sec in automatic operation.

The Radio Research Laboratories, Japan.

W 7

IONOSPHERIC DATA

Jan. 1960 | (M3000)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																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20															L						L			
21																C								
22																C								
23																								
24										C	C	C	C	C	C	C								
25												L	L											
26																								
27														L		C								
28																								
29														L										
30													L	L										
31																								
No.																								
Median																								

(M3000)F1 Sweep 1.0 Mc to 20.7 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 8

IONOSPHERIC DATA

Jan. 1960 | 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												L												
5																								
6																								
7																								
8														255										
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20															L									
21																C								
22																C								
23																								
24										C	C	C	C	C	C	C								
25												L	L											
26																								
27														L		C								
28																								
29														L										
30													L	L										
31																								
No.														1										
Median														255										

h'F2

Sweep 1.0 Mc to 20.7 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

W 9

17

IONOSPHERIC DATA

Jan. 1960 | h'F | 135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

18

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	350	310	300	280	300	300	235	215	225	240	225	225	230	240	225	220	230	245	225	220	280	275	270	360
2	385	375	320	280	270	300	260	225	235	230	230	220	235	225	230	220	235	230	260	225	260	265	360	350
3	340	300	310	275	285	310	260	240	220	220	225	225	220	240	230	220	220	225	225	220	I350 A	335	300	320
4	340	320	270	250	270	310	300	260	235	225	225	220	225	230	245	230	225	225	225	240	310	310	320	310
5	285	310	310	300	265	235	325	250	225	235	225	240	235	240	240	230	230	220	230	245	320	350	325	335
6	325	325	285	245	280	400	370	260	240	225	230	220	230	230	230	230	220	210	225	300	290	385	300	280
7	295	340	345	275	280	250	275	255	230	250	215	220	230	220	235	220	240	215	220	240	260	285	400	370
8	325	275	260	260	335	340	310	225	220	235	230	220	220	215	245	220	220	220	235	240	260	270	290	300
9	310	300	265	265	315	300	300	245	230	230	225	220	225	230	240	220	225	215	225	275	300	315	360	320
10	275	270	300	330	300	250	265	260	230	230	230	220	220	220	230	225	225	235	270	300	360	340	335	360
11	325	290	375	350	300	360	I290 A	300	235	240	240	230	225	240	240	230	220	210	220	290	315	270	325	350
12	400	350	325	295	335	270	275	265	240	235	230	225	220	240	220	225	225	215	225	250	260	280	290	340
13	360	320	280	270	220	285	300	270	230	230	230	215	225	240	225	225	220	225	230	220	270	300	290	340
14	350	360	400 A	315	300	250	285	280	245	220	230	240	230	240	240	225	210	220	250	265	360	300	240	275
15	335	360	345	350	300	280	275	260	240 H	235	240	235	210	I240 A	245	I230 A	210	250	I260 A	270	270	265	275	250
16	350	320	360	305	300	285	265	235	240	240	240	220	225	230	225	220	220	210	215	245	275	285	270	325
17	310	320	320	305	290	220	325	250	240	235	240	230	220	230	235	225	220	210	235	225	225	325	335	350
18	300	330	350	300	260	295	240	260	225	235	230	235	225	225	240	230	230	I220 C	235	290	345	365	345	220
19	365	355	370	360	340	310	I320 A	230	225	225	230	235	225	240	230	220	225	225	230	250	270	290	280	270
20	300	320	310	270	250	275	270	245	240	230	240	235	230	220	225	225	245	230	220	225	320	345	360	300
21	300	260	360	340	305	260	235	230	225	250	230	225	235 H	230	225	I225 C	I225 C	225	250	260	270	300	345	355
22	315	250	220	340	370	390	370	270	230	230	230	240	230	220	220	I220 C	I225 C	225	220	245	295	300	320	315
23	340	315	305	295	260	265	270	250	240	225	225	230	235	240	220	225	240	240	210	230	250	320	300	275
24	340	350	320	270	325	340	315	250	240	C	C	C	C	C	C	C	240	215	230	240	250	290	300	300
25	350	350	350	300	305	360	310	240	225	220	230	240	225	225	240	230	225	245	240	240	I280 A	I310 A	340	315
26	350	360	350	240	340	350	350	240	230	240	240	240	235	230	235	240	230	I230 C	I225 C	220	260	300	325 A	310
27	310	300	335	315	300	300	285	240	220	225	230	230	230	220	240	I220 C	235	215	240	220	250	270	310	305
28	325	310	340	310	290	290	260	250	225	225	235	230	225	230	230	225	220	240	230	225	300	265	270	265
29	325	320	310	300	270	305	260	240	220	230	230	230	230	220	245	240	220	250	250	240	260	320	325	275
30	290	300	280	275	275	340	250	240	225	225	230	230	230	210 H	240	245	240	230	245	220	250	270	280	320
31	290	290	285	290	290	320	250	240	220	240	230	220	220	230	240	245	230	245	230	240	245	255	280	290
No.	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31	31
Median	325	320	320	295	300	300	275	250	230	230	230	230	225	230	235	225	225	225	230	240	270	300	300	315

h'F

Sweep 1.0 Mc to 20.7 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

W 10

IONOSPHERIC DATA

Jan. 1960 | R'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	105	E	E	E	E	E	E	E	G	110	150	G	G	G	S	S	115	115	E	115	E	E	E	115
2	110	105	E	E	115	110	E	E	G	G	G	G	G	G	G	S	100	E	E	E	E	E	E	E
3	E	E	E	E	115	E	E	E	G	G	G	G	G	G	G	S	E	120	E	E	110	110	E	E
4	E	E	E	E	E	E	E	E	G	105	110	100	G	105	100	105	S	110	E	E	E	E	105	E
5	E	E	E	E	E	E	E	E	G	G	105	G	G	G	G	G	S	E	E	E	E	110	105	110
6	E	100	100	105	E	E	E	110	110	110	G	G	G	G	G	G	S	E	115	110	110	110	E	E
7	E	E	E	E	E	E	E	S	110	105	G	G	G	G	G	110	S	E	E	E	E	E	110	105
8	105	110	105	110	100	100	E	E	G	G	G	G	G	G	G	G	S	105	100	E	E	E	E	E
9	105	100	E	E	E	E	E	E	G	100	100	G	G	G	G	G	S	E	E	110	E	E	E	E
10	E	100	100	100	E	E	E	E	G	S	G	G	G	G	105	G	G	E	105	E	E	E	110	100
11	105	105	105	E	E	110	110	110	105	105	G	G	G	G	G	G	S	E	E	E	E	E	E	E
12	E	E	E	E	110	110	E	E	G	110	105	G	G	G	G	G	E	E	E	E	E	E	E	E
13	E	E	100	100	100	115	E	E	S	105	105	140	140	S	135	115	110	110	E	125	120	120	120	E
14	E	E	115	115	110	130	E	E	S	S	S	115	115	G	G	G	120	115	110	120	110	110	110	E
15	E	120	120	110	110	E	E	G	S	S	S	S	150	120	125	115	110	110	110	110	110	105	105	105
16	105	105	105	120	115	110	110	110	S	G	G	G	G	100	G	G	115	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	S	S	G	G	G	G	G	G	G	S	E	E	E	110	105	105	E
18	E	E	E	E	E	E	E	110	110	G	G	G	G	G	G	G	S	C	110	110	E	E	E	E
19	E	E	115	110	110	E	110	E	100	G	G	G	G	G	G	G	G	E	E	110	110	E	E	E
20	E	105	E	E	E	E	E	E	110	105	G	G	G	G	G	G	S	E	E	E	E	E	105	E
21	105	E	E	E	E	E	E	G	G	G	105	G	100	G	G	C	C	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	C	C	E	E	E	110	E	E	E
23	E	E	E	E	E	E	E	115	105	105	G	G	G	G	G	G	G	E	E	E	E	E	E	E
24	E	E	125	E	115	115	115	S	G	C	C	C	C	C	C	C	G	E	E	E	E	E	E	E
25	E	E	E	E	E	E	E	S	G	105	G	G	S	S	S	G	115	110	110	105	105	105	105	105
26	105	105	100	E	105	E	E	S	105	G	G	G	G	G	125	120	115	C	C	115	110	105	105	105
27	E	E	E	E	E	E	E	115	105	105	100	100	120	120	115	C	110	110	E	E	E	E	E	E
28	E	E	E	E	E	E	E	110	105	110	G	G	105	G	150	130	G	110	E	105	E	E	E	E
29	E	E	E	110	110	E	E	S	G	105	G	G	G	G	G	140	125	110	105	105	E	105	100	100
30	E	E	E	E	E	E	E	G	G	G	G	150	135	G	G	145	125	130	120	105	105	100	E	E
31	E	E	E	120	120	110	E	G	110	G	160	G	G	G	G	G	130	115	E	E	E	E	E	E
No.	8	10	11	10	12	9	4	7	11	14	9	5	7	4	7	8	12	13	9	13	11	11	12	8
Median	105	105	105	110	110	110	110	110	105	105	105	115	120	110	125	120	115	110	110	110	110	105	105	105

R'Es

Sweep 1.0 Mc to 20.7 Mc in 1 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

W 11

IONOSPHERIC DATA

Jan. 1960

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

Types of Es

Sweep 1.0 Mc to 20.7 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 12

IONOSPHERIC DATA

Jan. 1960 | 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	3.2	3.6	3.7	3.5	3.4	3.3	3.5	5.9	8.7	11.0	12.0	11.6	10.6	10.7	11.2	10.4	8.2	6.7	6.4	4.5	2.9H	3.1S	3.3S	3.3
2	3.5	3.5S	3.5	3.2	3.3	3.4	3.5	6.7	10.3	12.5	12.1	11.1	11.2	11.0	11.3	9.6	8.0	7.1	6.3	4.5	I 3.4A	3.2	3.3	3.4
3	3.6	3.9	3.8	3.5	3.6	3.6	4.3	6.5	9.5	12.3	12.8	11.3	11.1	12.1	11.7	10.3	9.2	7.8	6.7S	I 5.6A	3.5S	3.3	3.4	3.4S
4	3.2	3.5	3.5	3.6	3.9	4.1S	4.6	6.8	9.4	12.4	13.3	12.7	10.5	10.7	10.6H	9.6	8.6	7.3	6.9	5.3	3.5	3.9F	4.1	4.3
5	3.9	3.5	3.5	3.5	3.9	3.8	I 2.5S	5.5	8.5	11.4	13.7	12.8	12.5	11.7	11.7	10.9	9.7	9.3	7.5	5.8	5.1F	5.2	5.5F	5.0F
6	5.0	4.9	4.5	4.4	3.8	3.2	3.1	7.0	12.0	14.0	13.5	13.1	12.8	12.0	11.2	10.9	11.1	9.5	6.3	4.5	3.8	4.0	4.1	3.9
7	4.0	3.4	3.3	3.6	3.5	3.4	3.4	6.3	10.2	13.1	13.9	11.8	11.6	11.5	11.3	9.6	9.3	9.6	7.6	4.6	4.0S	4.4	3.7	3.9S
8	4.0	4.0	3.9	3.7	3.7	3.5	3.7S	7.0	9.8	11.9	12.6	11.1	10.9	9.9	11.5	10.7	10.3	8.7	7.5	6.6	5.5	5.3	4.5	3.9
9	4.3F	4.4F	3.6	3.5F	3.4	3.5	3.3	6.4	9.6	13.1	12.0	11.0	9.7	9.5	10.0	9.0	8.8	8.1	6.0	5.0	3.8	3.9	3.6	3.8F
10	3.9	3.5	3.5	3.4	3.5	3.4	3.1	6.0	8.6	12.5	12.4	11.1	9.4	9.3	9.7	9.0	8.4	7.1	5.4	5.6	5.1	5.5	6.2	6.0
11	5.5	4.9	4.2	4.5	4.5	4.5	5.0	6.1	11.6	13.8	14.1	11.1	9.2	10.4	9.5	10.4	9.9S	8.1	5.3	3.7	3.6S	4.2	3.1H	3.4S
12	3.1S	3.1S	3.3F	3.3S	3.4	3.7	4.0	6.6	10.1	12.9	13.5	11.7	10.6	11.1	12.6	10.5	9.8S	9.4S	7.0	5.1	I 4.0S	3.8S	3.9S	3.7F
13	3.5F	3.6F	4.1F	3.4	3.4	3.2	3.1S	5.7	10.5	13.6	14.7	13.9	10.7	11.5H	12.1	10.2	8.9	8.4	6.6	5.4	3.6	3.3	3.0	3.0
14	3.0	3.1	I 3.2A	3.4	3.4	3.1F	3.8F	5.6	9.4	12.7	12.0	11.5	11.1	11.1	12.1	11.0	9.1	7.8	6.6	6.3	5.0	5.7S	5.4	4.4
15	3.5	3.5	3.2	3.2	3.4	2.9S	3.0	6.4	11.0	14.2	13.7Z	12.1	12.5H	11.0H	13.0H	13.0	11.3	6.9	5.4	I 6.2A	5.5	4.9	4.4	4.4F
16	3.1	3.2	3.0	3.3	3.3	3.5F	I 4.3F	6.9Z	9.8	15.1	15.6	14.2	12.6	12.0	10.8	8.9	9.3	9.1	6.2	4.0	4.0S	3.9	3.6	3.8F
17	3.6	3.5	3.2	3.4	3.5S	3.3	3.0S	6.1	10.8	12.7	14.2	14.8	12.5	10.3	10.0	9.5	8.6	8.4	6.2	4.8	3.8S	3.2S	3.6S	3.9
18	4.0	3.6	3.6S	3.6	3.7	3.6	3.8S	6.1	10.8	12.3	12.8	12.8	12.5	10.4	10.5	10.2	9.5	8.7	7.9	4.6	I 4.2A	4.3	4.8	5.7
19	3.0	2.9	2.9	3.1	3.2	3.4	3.1	5.7	9.1	10.8	13.1	13.6	12.2	11.7	11.6	10.0	9.5	8.3	6.7	5.5	4.2S	4.1S	4.2S	4.2S
20	3.8S	3.8S	3.9	3.4	3.4	3.3	3.4	5.7	9.5	11.9	12.1	12.5	12.3	11.1	10.1H	9.7	8.8	9.4	8.0S	4.7	3.9S	4.1S	4.2S	4.5S
21	4.5	4.0S	3.5S	3.5S	3.8S	4.1S	4.1	6.2	9.1	11.3	14.7	15.7	13.0	12.1	12.5	10.8	9.4	8.6S	7.3	6.1	5.5	5.5F	4.6	4.7
22	4.8	5.2	4.2	3.0	3.2	3.3	2.9	6.5	10.5	C	C	C	C	12.8	11.0	10.5	I 10.2C	8.9	7.2	4.4	A	A	3.4	3.8S
23	3.7S	3.5	3.6F	3.5	4.0	3.4	3.6	6.5	8.7	12.1	14.2	13.6	12.9	11.5	10.6	9.8	8.9	9.2	8.9	5.6	4.2	4.1S	4.0	4.4
24	4.0S	3.7	3.6S	3.9S	3.4H	3.5S	3.4S	6.5	10.8	13.2	13.5	12.0	12.5	11.1H	10.4H	10.1	9.6	8.8	7.3	6.3	5.0	3.8	3.9	4.4S
25	3.8S	3.3	3.3	3.4	3.1	3.3	3.4	7.3	10.4	11.9	12.6	11.7	11.5H	10.5H	10.9	10.2	9.1	8.6	7.8	6.5	4.7	4.2S	4.1S	4.1S
26	4.2S	4.1	3.9	3.6	3.7	3.7	4.1	7.8	10.8	11.1	13.1	13.1	12.5	10.9	10.1H	10.4	9.5	9.1	9.0	6.7	4.6	4.6	5.0	4.5
27	4.0S	4.2	4.0	C	C	C	C	8.1	10.4	12.4	13.7	14.0	12.9	12.1	11.3H	11.3H	9.9S	10.3	9.1S	7.6S	4.9	4.3	4.3S	4.2S
28	4.2S	4.2S	4.0F	4.0	4.1F	4.4	4.6	7.6S	10.1	11.7	12.7	13.0	12.2	11.5H	10.5	10.3	8.9	8.6	8.7	6.5	5.1	5.3	5.2	4.3S
29	3.9	3.9	3.9S	3.9F	4.1	3.8S	4.2S	7.8	11.1	12.0	12.3	12.9	13.3	12.6	11.7	11.4	10.2	8.7	8.4	7.1	5.8	5.4	5.2	5.2
30	4.8	4.9	4.8	4.6	3.9H	4.0	4.6	8.6	11.3	11.9	12.8	13.6H	13.0	12.0H	11.1H	11.1	10.6	8.3	7.3	7.7	5.4	4.7	4.2	4.4
31	4.3	4.1	4.1	4.0	3.9	3.9	4.4	8.2	10.5	11.3	12.3	12.1	10.7H	10.6H	9.6H	10.1	9.5	8.6	7.9	7.1	6.1	4.8	4.6	4.7
No.	31	31	31	30	30	30	30	31	31	30	30	30	30	31	31	31	31	31	31	31	30	30	31	31
Median	3.9	3.6	3.6	3.5	3.5	3.5	3.6	6.5	10.2	12.4	13.1	12.6	12.2	11.1	11.1	10.3	9.4	8.6	7.2	5.6	4.2	4.2	4.1	4.2
UQ	4.2	4.1	4.0	3.7	3.9	3.8	4.2	6.9	10.8	13.1	13.7	13.5	12.5	12.0	11.7	10.8	9.9	9.1	7.9	6.5	5.1	5.3	4.6	4.5
LQ	3.5	3.5	3.3	3.4	3.4	3.3	3.1	6.1	9.4	11.9	12.4	11.6	10.7	10.6	10.4	9.7	8.9	8.1	6.3	4.6	3.8	3.9	3.6	3.8
QR	0.7	0.6	0.7	0.3	0.5	0.5	1.1	0.8	1.4	1.2	1.3	1.9	1.8	1.4	1.3	1.1	1.0	1.0	1.6	1.9	1.3	1.4	1.0	0.7

foF2

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

The Radio Research Laboratories, Japan.

A 1

IONOSPHERIC DATA

Jan. 1960 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											L		L	L										
2													L											
3										L	L	L	L	L										
4																								
5											L		L		L									
6																								
7														L										
8														L										
9												L												
10																								
11											L			L										
12										L			L											
13																								
14										L			L	L		L								
15											L													
16														L										
17											L	L												
18											L	L												
19											L	L		L	L									
20											L	L	L	L										
21										L	L	L	L	L										
22										C	C	C	C		L									
23										L	L	L	L	L	L									
24												L	L			L								
25											L		L		L									
26										L	L	L	L											
27											L	L		L										
28										L		L	L		L		L							
29										L	L	L	L	L	L	L								
30																								
31										L														
No.																								
Median																								

foF1

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

The Radio Research Laboratories, Japan.

A 2

22

IONOSPHERIC DATA

Jan. 1960 | 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								B	2.50	2.95	I3.20R	I3.40A	I3.45B	3.30	3.15	R	B							
2								A	2.30	2.90	3.15	3.25	3.40	I3.20B	3.05	2.60	1.90							
3								B	R	3.00	3.30	3.35	3.40	3.35	I3.10B	I2.60B	A							
4								A	2.30	2.90	I3.10A	I3.30A	I3.30A	3.20	3.05	2.65	B							
5								B	A	I2.90A	3.30	I3.40A	I3.45A	I3.30B	I3.10B	2.60	R							
6								B	A	A	A	A	3.35	3.30	3.05	2.70	B							
7									A	3.00	3.30	3.50	3.50	3.30	3.10	2.70	A							
8								B	2.50	3.05	3.25	3.50	I3.50R	3.25	3.00	A	A							
9								B	2.40	3.00	3.30	3.45	3.40	3.30	3.00	2.50	B							
10								B	2.40	2.90	3.25	3.35	3.45	3.15	2.80	2.50	1.90							
11									I2.30A	I2.90A	3.15	3.35	I3.30R	3.35	3.00	2.70	B							
12									A	2.85	3.05	3.35	3.30	3.25	2.95	2.20	B							
13									2.25	I2.75B	I3.10B	I3.30B	I3.30B	3.15	3.00	2.40	B							
14									R	I2.90B	R	R	I3.30R	3.35	I3.10R	2.60	B							
15								B	B	2.95	3.10	3.20	3.30	3.35	3.20	I2.60B	B							
16									A	A	A	A	B	3.40	3.25	2.65	B							
17								B	R	I3.05B	3.40	3.50	I3.50S	3.50	I3.15R	2.80	B							
18								B	I2.35A	2.90	I3.10A	3.30	3.50	I3.30B	3.10	2.80	B							
19								B	A	3.10	3.30	I3.40R	I3.30R	3.25	R	R	B							
20								B	I2.45B	3.00	3.25	3.50	3.50	I3.40R	I3.10R	I2.70R	R							
21									2.30	2.85	3.25	3.35	3.55	I3.35A	I3.00R	I2.60R	B	B						
22								B	A	C	C	C	C	3.35	3.05	2.90	C	B						
23								B	A	3.00	3.25	3.45	3.45	3.25	3.00	2.80	B	B						
24								A	2.50	I3.00S	3.30	3.45	3.50	3.45	3.20	2.80	2.35	B						
25								1.80	2.45	3.05	3.40	3.60	3.60	3.50	3.20	2.75	I2.20R	B						
26								B	2.60	3.05	I3.45A	3.70	3.75	I3.60R	3.50	2.80	B	B						
27								B	2.55	3.10	3.40	3.55	R	R	3.20	2.90	2.30	B						
28								B	2.40	3.10	3.55	3.75	3.75	I3.65R	3.30	3.00	2.45	A						
29								B	2.50	3.00	3.40	3.60	I3.60R	3.45	3.30	3.05	2.40	B						
30								B	2.55	3.00	3.20	3.50	3.50	3.45	3.20	3.00	2.55	B						
31								A	A	3.05	3.25	3.45	3.55	I3.30R	3.15	3.00	2.40							
No.								1	18	28	27	27	28	30	30	28	9							
Median								1.80	2.40	3.00	3.25	3.45	3.45	3.30	3.10	2.70	2.35							

foE

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

IONOSPHERIC DATA

Jan. 1960 | 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	B	G	G	G	6.3M	B	3.8	G	G	B	E	E	E	E	3.0M	3.7M	E
2	E	E	E	E	E	E	2.3M	3.2M	2.6M	G	G	G	G	B	G	G	2.2	3.0M	3.7M	4.8M	6.7M	4.8M	E	E
3	E	E	E	E	E	E	E	B	G	2.5q	G	G	G	G	B	B	8.6M	6.7M	13.2M	11.2M	3.2M	3.6M	E	2.5M
4	2.4M	E	E	E	2.2M	E	E	3.7M	G	G	4.0M	4.5M	5.2M	G	G	G	B	E	E	2.6M	E	2.4M	E	E
5	3.1M	E	E	E	E	E	E	B	4.3M	6.4M	4.4M	4.1M	4.3M	B	B	G	G	E	E	E	6.7M	E	E	3.1M
6	2.2M	4.0M	2.3M	2.5M	E	E	E	B	4.0M	6.0M	4.4M	5.1M	G	G	G	G	B	E	E	2.6M	E	5.7M	2.5M	3.5M
7	E	E	E	E	E	E	E	E	4.0M	G	2.8q	G	G	G	G	G	3.2M	3.1M	E	E	E	E	3.1M	2.6M
8	4.0M	4.4M	2.7M	3.5M	3.5M	2.2M	E	B	G	G	G	G	G	G	2.5q	4.4M	4.6M	3.0M	E	E	E	E	E	E
9	E	E	E	E	E	E	E	B	G	G	G	G	3.2q	G	G	G	B	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	B	G	G	G	G	G	G	G	G	2.2	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	7.0M	4.2M	6.7M	2.4q	2.4q	G	3.2	G	B	2.5M	E	E	E	E	E	E
12	E	E	E	E	E	E	E	3.6M	3.7M	3.2	3.4	G	G	G	3.6	2.7	B	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	G	3.2	B	B	B	3.7	4.0	3.3	3.6M	3.6M	3.2M	3.9M	3.0M	3.0M	3.0M	E
14	E	3.0M	3.7M	E	2.6M	3.5M	3.5M	E	G	B	G	G	4.0	3.8	G	G	4.6M	6.2M	5.0M	6.7M	6.7M	6.6M	3.7M	3.0M
15	2.5M	2.4M	E	3.1M	4.2M	E	E	B	B	G	G	G	G	G	G	2.8	B	4.1M	5.7M	9.0M	6.8M	6.7M	3.7M	4.0M
16	E	E	E	E	E	6.6M	9.5M	8.5M	8.0M	6.9M	5.8M	7.1M	B	G	G	G	B	E	2.3M	E	E	E	2.3M	E
17	E	E	E	E	E	E	E	B	G	B	G	G	S	G	G	G	2.6	3.5M	E	E	E	E	E	E
18	E	E	E	E	E	E	E	B	4.5M	G	4.0M	G	G	B	G	3.6	2.9	E	3.1M	9.0M	6.7M	4.2M	2.5M	E
19	E	9.0M	E	E	E	E	E	2.3	6.8M	3.7M	3.6	2.5q	G	G	G	G	B	E	E	E	3.1M	3.0M	E	E
20	E	E	2.3M	2.2M	E	E	E	B	B	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	E	G	G	G	G	G	4.4M	G	G	B	B	E	E	E	E	3.2M	2.4M
22	2.8M	E	E	E	E	E	E	B	3.5M	C	C	C	C	G	3.2	G	C	B	3.2M	5.7M	6.8M	6.8M	3.6M	E
23	E	E	E	E	E	E	2.3M	2.5M	3.7M	G	G	G	G	G	G	G	B	B	E	E	E	E	E	E
24	E	E	E	E	E	E	4.5M	4.0M	3.1M	S	G	G	G	G	G	G	G	B	E	E	E	E	E	E
25	E	E	E	E	E	E	E	G	G	G	G	3.7	3.8	3.8	4.0	3.2	2.7	3.0M	3.0M	E	E	E	E	3.1M
26	3.5M	3.2M	3.0M	3.1M	2.2M	E	E	B	G	3.3	5.0M	4.0	G	4.0	3.7	5.1M	3.7M	B	3.5M	E	E	E	E	E
27	4.2M	3.1M	2.5M	C	C	C	C	B	G	G	G	G	G	G	G	G	G	2.2	E	2.6M	2.3M	E	E	E
28	E	2.5M	E	E	E	E	E	B	G	G	G	G	G	G	G	3.5	3.2M	3.1M	3.6M	3.5M	2.5M	E	E	E
29	E	E	E	E	E	E	E	B	G	G	G	3.7	G	G	8.0M	4.5	5.2M	3.1M	4.0M	4.7M	4.5M	3.5M	3.0M	E
30	E	E	E	E	E	E	E	B	G	G	G	G	G	G	G	3.7	3.5	4.0M	5.7M	E	E	E	E	E
31	E	E	E	2.5M	2.5M	E	5.8M	5.9M	4.5M	4.0M	G	G	G	G	G	3.5	4.6M	4.0M	E	E	E	E	E	E
No.	31	31	31	30	30	30	30	14	29	27	29	29	26	28	29	30	19	26	31	31	31	31	31	31
Median	E	E	E	E	E	E	E	2.4M	G	G	G	G	G	G	G	G	3.2	2.8M	E	E	E	E	E	E
U. Q	2.2	2.4	E	E	E	E	E	3.7	4.0	3.3	3.8	3.7	G	G	2.8	3.3	4.6	3.5	3.5	3.9	3.2	3.5	3.0	2.4
L. Q	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	2.2	E	E	E	E	E	E	E
Q. R																	2.4							

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | f_bE_s | 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								B				3.5	B	3.8			B					E	E	
2							E	2.0	2.0					B			2.1	E	E	E	A	2.5		
3								B		2.2					B	B	3.5	E	E	A	E	E		E
4	E				E			G			3.4	3.5	3.6				B			2.0		E		
5	E							B	2.5	3.5	2.9	3.8	3.5	B							E			E
6	E	E	E	E				B	G	2.9	3.5	3.9					B			E		3.3	E	E
7									2.8		2.0						2.5	2.5					E	E
8	3.0	E	E	E	E	E		B							2.3	2.8	2.3	1.9						
9								B					2.7				B							
10								B									2.1							
11									4.0	3.2	2.0	2.4	2.1		3.2		B	E						
12								1.7	3.0	G	G				3.6	2.7	B							
13										3.1	B	B	B	3.6	4.0	2.9	2.8	E	1.9	3.0	1.8	2.3	1.8	
14		E	A		2.0	E	2.0			B			3.9	3.8			2.9	2.2	E	E	4.0	3.5	E	E
15	E	E		E	E			B	B							U 2.8 B	B	E	E	A	4.0	2.8	E	E
16						2.4	E	2.2	3.4	3.4	4.0	5.4	B				B		E				E	
17								B		B			S				2.6	E						
18								B	2.5		3.3			B		3.0	2.2		2.5	4.0	A	E	E	
19		E						1.9	3.0	2.5	3.6	2.3					B				E	E		
20			E	E				B	B															
21														2.9			B	B					E	E
22	E							B	G	C	C	C	C		G		C	B	E	E	A	A	E	
23							E	G	G								B	B						
24							E	2.0	2.3	S								B						
25												U 3.7 B	3.8	3.8	4.0	G	G	2.0	E					E
26	E	E	E	E	E			B		G	3.9	G		3.9	3.7	4.4	3.1	B	2.7					
27	E	E	E	C	C	C	C	B										G		E	E			
28		E						B								G	2.2	2.0	E	E	E			
29								B				G			4.8	4.3	3.5	2.5	E	E	E	E	E	
30								B								3.5	3.5	2.5	5.0					
31				2.0	E		E	2.3	2.7	2.5						3.5	3.0	2.0						
No.	8	8	6	6	6	3	6		13	10	10	10	6	6	8	11	15	15	13	12	12	12	11	8
Median	E	E	E	E	E	E	E	2.0	2.5	2.7	3.4	3.5	3.6	3.8	3.6	2.9	2.6	2.0	E	E	E	E	E	E

f_bE_s

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

The Radio Research Laboratories, Japan.

A 5

25

IONOSPHERIC DATA

Jan. 1960 | 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	2.00	1.70	1.90	2.75	2.30	3.80	2.80	2.40	2.05	2.20	E	E	E	E	E	E	E
2	E	E	E	E	E	E	E	E	1.75	1.90	2.00	2.30	2.15	3.50	2.00	1.80	1.70	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	1.70	2.00	2.00	2.50	2.45	2.80	2.80	3.20	2.80	2.00	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	1.75	1.95	2.05	2.00	2.00	2.00	2.00	2.05	2.00	2.10	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	1.80	1.90	2.00	2.00	2.50	1.90	3.50	3.30	2.00	1.80	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	1.80	1.80	1.75	2.00	1.90	2.00	2.10	2.00	1.75	2.00	E	E	E	E	E	E	E
7	E	E	E	E	E	E	E	E	1.75	1.90	1.75	2.10	2.00	1.90	2.00	1.80	1.65	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	1.85	1.75	2.10	2.55	2.95	3.00	2.30	2.00	1.75	1.75	1.75	E	E	E	E	E	E
9	E	E	E	E	E	E	E	1.70	1.80	2.05	2.05	2.20	1.95	1.75	1.75	1.75	2.20	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	1.80	1.70	1.75	2.00	2.00	2.05	2.10	2.05	1.80	1.70	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	1.70	2.00	1.80	1.75	1.80	2.00	1.90	2.30	2.10	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	1.70	1.75	2.00	2.50	1.90	2.00	2.00	1.90	2.10	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	1.90	2.95	3.60	3.60	3.55	2.05	2.00	1.90	2.40	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	1.90	2.95	3.00	2.80	2.90	2.20	2.80	2.40	2.45	1.70	E	E	E	E	E	E
15	E	E	E	E	E	E	E	1.80	2.80	2.00	2.00	2.05	2.05	2.00	2.00	2.50	2.20	E	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	1.90	1.90	2.00	2.00	3.55	2.00	2.00	2.00	2.45	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	1.80	2.60	3.60	2.80	2.35	E3.80^S	2.40	1.95	2.45	2.00	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E	1.85	1.80	2.00	2.00	3.00	2.60	3.50	2.70	2.05	1.80	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	1.70	1.70	1.70	2.00	1.95	2.40	2.20	2.00	2.00	2.30	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	1.90	2.50	2.20	2.00	2.00	2.30	2.00	2.00	2.10	1.90	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	E	2.00	2.10	2.10	2.00	2.90	2.00	2.40	1.90	2.05	2.00	E	E	E	E	E	E
22	E	E	E	E	E	E	E	1.75	1.80	C	C	C	C	2.40	2.10	2.00	E2.10^C	1.75	E	E	E	E	E	E
23	E	E	E	E	E	E	E	1.80	1.75	1.80	2.00	2.60	2.90	1.95	2.20	2.00	2.10	2.00	E	E	E	E	E	E
24	E	E	E	E	E	E	E	E	1.70	E3.90^S	1.95	2.00	2.00	2.10	2.00	2.10	1.80	1.80	E	E	E	E	E	E
25	E	E	E	E	E	E	E	E	1.90	1.80	2.10	1.90	1.90	2.10	2.00	2.00	2.00	1.80	E	E	E	E	E	E
26	E	E	E	E	E	E	E	1.90	1.75	2.10	2.10	2.10	2.70	2.25	2.40	2.05	2.00	1.90	E	E	E	E	E	E
27	E	E	E	C	C	C	C	1.70	1.80	1.95	2.00	2.05	2.60	2.00	2.00	2.00	2.00	1.80	E	E	E	E	E	E
28	E	E	E	E	E	E	E	1.80	1.90	2.00	2.45	2.00	2.00	2.00	2.00	1.90	1.80	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	1.80	1.80	1.95	2.40	2.70	1.90	2.00	2.10	1.80	1.90	1.90	E	E	E	E	E	E
30	E	E	E	E	E	E	E	1.90	1.90	1.80	2.00	2.00	2.05	2.20	2.05	1.90	2.00	2.00	E	E	E	E	E	E
31	E	E	E	E	E	E	E	E	1.75	1.80	1.95	2.10	2.00	2.55	2.00	2.00	1.75	E	E	E	E	E	E	E
No.	31	31	31	30	30	30	30	31	31	29	30	30	29	31	31	31	31	31	31	31	31	31	31	31
Median	E	E	E	E	E	E	E	1.75	1.80	2.00	2.00	2.10	2.05	2.10	2.00	2.00	2.00	E	E	E	E	E	E	E

f-min

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | (M3000)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	2.50	2.65	2.60	2.65	2.70	2.70	3.15	3.15	3.30	3.20	3.25	3.35	3.10	3.05	3.15	3.25	3.30	3.15	3.20	2.90	2.50H	2.50S	2.75S	2.50
2	2.60	2.60S	2.75	2.60	2.50	2.65	2.75	3.20	3.50	3.35	3.35	3.25	3.05	3.10	3.05	3.35	3.30	3.15	3.40	3.30	I 2.90A	2.55	2.70	2.45
3	2.60	2.60	2.80	2.70	2.75	2.65	3.00	3.40	3.25	3.30	3.20	3.10	3.05	3.05	3.10	3.10	3.20	3.20	3.15S	I 3.30A	2.90S	2.85	2.75	2.80S
4	2.50	2.50	2.60	2.65	2.60	2.80S	3.05	3.05	3.20	3.30	3.15	3.25	3.05	3.15	3.00H	3.30	3.15	3.15	3.25	3.45	2.80	2.70F	2.75	3.00
5	3.10	2.80	2.45	2.60	2.85	3.20	I 2.80S	3.10	3.40	3.45	3.15	3.20	3.05	2.90	3.00	3.05	3.00	3.10	3.30	3.05	2.65F	2.65	2.75F	2.60F
6	2.65	2.65	2.65	2.75	2.90	2.35	2.40	3.05	3.25	3.15	3.10	3.10	2.95	3.00	3.00	3.00	3.10	3.20	3.45	3.10	2.80	2.70	2.90	2.80
7	3.00	2.65	2.40	2.85	2.90	2.70	3.00	3.30	3.35	3.10	3.15	3.20	3.20	3.15	3.20	3.20	3.15	3.20	3.30	3.15	2.85S	3.10	2.75	2.50S
8	2.55	2.65	2.65	2.65	2.55	2.60	2.50S	3.40	3.35	3.30	3.40	3.25	3.25	3.00	3.05	3.10	3.20	3.10	3.10	3.05	2.90	2.85	2.95	3.00
9	2.60F	3.05F	3.05	2.45F	2.70	2.85	2.85	3.15	3.40	3.45	3.35	3.35	3.35	3.10	3.20	3.20	3.20	3.10	3.20	3.10	2.90	2.80	2.90	2.65F
10	2.85	2.90	2.80	2.70	2.80	2.85	2.90	3.25	3.35	3.35	3.35	3.45	3.40	3.10	3.25	3.35	3.20	3.20	2.90	3.00	2.65	2.60	2.70	2.70
11	2.75	2.50	2.30	2.45	2.45	2.50	2.85	2.65	3.20	3.20	3.10	3.25	3.20	3.00	3.05	3.20	3.20S	3.20	3.25	3.00	2.75S	3.10	2.40H	2.60S
12	2.40S	2.40S	2.40F	2.50S	2.45	2.70	3.05	3.05	3.30	3.25	3.20	3.35	3.20	3.00	3.20	3.15	3.10S	3.20S	3.30	3.30	I 2.80S	2.80S	2.70S	2.80F
13	2.60F	2.65F	2.95F	2.65	2.70	2.65	2.60S	2.90	3.15	3.25	3.25	3.15	3.20	3.05H	3.25	3.35	3.15	3.35	3.35	3.55	3.20	2.70	2.80	2.45
14	2.55	2.60	I 2.50A	2.60	2.70	2.60F	2.80F	3.00	3.30	3.30	3.25	3.10	3.05	3.05	3.05	3.10	3.20	3.10	3.10	3.15	2.65	2.80S	2.95	3.00
15	2.90	2.65	2.45	2.45	2.60	2.85S	2.55	3.20	3.10	3.05	3.20Z	3.00	3.05H	2.90H	2.95H	3.00	3.30	3.35	2.85	I 3.10A	3.25	2.90	2.95	3.00F
16	2.60	2.70	2.35	2.65	2.45	2.65F	I 2.90F	3.20E	3.10	3.30	3.35	3.10	3.20	3.10	3.15	3.30	3.15	3.20	3.45	3.10	3.00S	2.90	2.85	2.85F
17	2.80	2.70	2.55	2.60	2.75S	2.65	2.55S	3.05	3.20	3.30	3.15	3.15	3.20	3.10	3.10	3.15	3.10	3.10	3.15	3.10	3.00S	2.60S	2.55S	2.65
18	2.70	2.55	2.50S	2.75	2.75	2.70	2.85S	2.95	3.25	3.25	3.15	3.25	3.20	3.15	3.00	3.15	3.20	3.20	3.50	2.85	I 2.70A	2.45	2.80	3.05
19	3.15	2.55	2.50	2.45	2.50	2.70	2.95	3.25	3.30	3.15	3.15	3.15	3.10	3.10	3.05	3.10	3.15	3.20	3.20	3.30	3.10S	2.70S	2.90S	3.00S
20	2.70SH	2.80S	2.80	2.65	2.70	2.70	3.00	3.20	3.35	3.35	3.30	3.10	3.20	3.15	2.90H	3.20	3.20	3.15	3.40S	3.15	2.80S	2.70S	2.60S	2.70S
21	2.75	2.90S	2.35S	2.35S	2.65S	2.90S	3.20	3.10	3.20	3.00	3.10	3.20	3.05	2.90	3.00	3.00	3.10	3.05S	3.05	3.10	2.90	2.80F	2.65	2.70
22	2.65	3.10	3.20	2.35	2.20	2.35	2.50	3.10	3.15	C	C	C	C	3.10	3.00	3.00	I 3.10C	3.20	3.20	3.25	A	A	2.80	2.80S
23	2.55S	2.60	2.45F	2.55	2.80	2.65	2.90	3.25	3.25	3.20	3.25	3.10	3.10	3.05	2.95	3.05	3.05	3.15	3.25	3.20	3.05	2.70S	2.60	2.70
24	2.60S	2.70	2.60S	2.70S	2.40H	2.55S	2.55S	3.00	3.20	3.20	3.15	3.10	3.05	3.00H	2.85H	3.00	3.10	3.20	3.15	3.20	3.15	2.75	2.65	2.90S
25	2.10SH	2.40	2.40	2.55	2.55	2.40	2.60	3.20	3.25	3.20	3.20	3.10	3.05H	2.95H	2.85	3.10	3.10	3.05	3.15	3.20	2.95	2.90S	2.90S	2.55S
26	2.60S	2.60	2.55	2.65	2.45	2.60	2.70	3.35	3.35	3.10	3.10	3.05	3.05	3.00	2.90H	3.00	3.05	3.00	3.25	3.30	2.90	2.70	2.85	2.90
27	2.55S	2.60	2.50	C	C	C	C	3.20	3.20	3.15	3.05	3.00	2.90	2.85	2.85H	2.90H	2.90S	3.00	3.10S	3.20S	3.00	2.60	2.60S	2.60S
28	2.60S	2.60S	2.60F	2.60	2.55F	2.70	3.05	3.30S	3.30	3.15	3.10	3.00	2.95	3.00H	2.95	3.00	3.00	2.90	3.10	3.10	2.75	2.85	2.90	3.00S
29	2.45	2.50	2.70S	2.55F	2.80	2.70S	2.90S	3.10	3.25	3.10	3.10	2.90	2.85	2.80	2.80	2.90	2.95	2.90	3.05	3.10	2.90	2.60	2.65	2.90
30	2.70	2.70	2.80	2.95	2.45H	2.55	2.85	3.25	3.35	3.25	3.10	2.95H	2.80	2.85H	2.90H	2.95	3.05	3.10	2.95	3.25	3.20	2.95	2.90	2.80
31	2.80	2.80	2.90	2.70	2.70	2.65	3.05	3.40	3.25	3.40	3.10	3.20	2.95H	2.90H	2.80H	2.95	3.10	3.10	3.05	3.20	3.35	2.85	2.80	2.95
No.	31	31	31	30	30	30	30	31	31	30	30	30	30	31	31	31	31	31	31	31	30	30	31	31
Median	2.60	2.65	2.60	2.60	2.70	2.65	2.85	3.20	3.25	3.25	3.15	3.15	3.05	3.05	3.00	3.10	3.15	3.15	3.20	3.15	2.90	2.70	2.75	2.80

(M3000)F2 Sweep 1.60 Mc to 20.0 Mc in 20 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | (M3000)F1 | 135° E Mean Time (G.M.T.+ 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

28

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

(M3000)F1

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

The Radio Research Laboratories, Japan.

A 8

IONOSPHERIC DATA

Jan. 1960 | 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											L		L	L										
2													235											
3										L	L	230	L	L										
4																								
5											L		L		L									
6																								
7														L										
8														235										
9												240												
10																								
11											230			L										
12										L			L											
13																								
14										L			L	L		L								
15											230													
16														L										
17											I 245 L	240												
18											245	250												
19											L	I 240 L		L	L									
20											L	L	L	L										
21										L	L	230	235	L										
22										C	C	C	C		L									
23										L	L	230	L	L	L									
24												L	L			L								
25											L		L H		L									
26										L	L	L	L											
27											L	L		L										
28										L		L	L		L		L							
29										L	L	L	L	L	L	L								
30																								
31										245														
No.										1	4	7	2	1										
Median										245	240	240	235	235										

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

The Radio Research Laboratories, Japan.

A 9

IONOSPHERIC DATA

Jan. 1960 | 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	350	305	300	280	300	310	240	240	220	230	220	230	230	230	245	240	225	245	230	210	270H	310	290	330
2	320	330	295	295	330	310	295	255	220	240	225	210	210	245	245	245	220	215	220	230	I 260A	I 300A	305	340
3	340	320	280	300	300	320	255	205	230	245	225	210	230	240	230	225	240	220	230	I 235A	220	300	295	285
4	360	350	320	320	295	295	250	240	225	245	240	245	220	245	240H	245	245	220	245	220	250	300	295	270
5	250	295	340	345	290	240	250	240	230	240	230	240	240	225	240	240	225	230	225	225	290	310	295	260
6	290	300	250	285	250	375	350	260	240	240	245	230	225	245	245	245	245	205	205	240	255	I 300A	270	260
7	255	290	350	300	270	300	245	245	225	220	225	220	230	225	240	220	235	245	220	220	260	255	280	340
8	I 340A	310	290	310	350	345	300	230	220	245	240	240	240	220	245	240	240	235	220	240	225	250	255	255
9	270	255	245	330	310	290	260	250	230	245	235	210	225	220	245	240	245	230	230	245	250	285	290	330
10	290	260	275	305	300	290	260	245	235	245	240	230	225	240	245	245	235	240	245	245	300	300	260	255
11	255	300	255	365	300	300	290	295	255	240	230	230	230	240	230	245	230	230	210	240	310	250	300H	305
12	370	360	355	350	310	305	260	240	230	240	240	220	220	230	245	225	230	225	210	220	240	275	280	280
13	340	340	270	250	270	295	320	270	230	245	230	245	235	245H	245	240	240	215	220	240A	240	I 280A	I 275A	305
14	340	340	I 325A	300	I 275A	340	295A	265	240	230	230	230	240	250	250	240	230	220	240	240	I 280A	I 275A	240	250
15	260	310	350	375	310	250H	330	240	240	245	215	220	245H	220H	245H	245V	215	210	255	I 255A	250A	I 280A	260	260
16	260	300	360	330	340	I 315A	285	245	245	240	230	230	225	210	225	215	240	230	210	230	255	270	240	280
17	295	300	320	320	290	290	310	265	240	240	230	225	230	225	225	225	220	220	230	220	240	300	340	320
18	305	315	355	300	285	310	280	255	240	245	240	225	245	240	245	245	245	220	220	I 255A	I 305A	340	290	270
19	230	325	340	350	350	310	255	245	245	230	230	225	230	225	225	225	230	225	210	225	240	280	275	270
20	280H	300	290	290	305	300	250	240	225	230	230	225	230	220	225H	230	240	230	220	220	280	300	310	290
21	280	250	380	380	305	290	230	230	225	230	225	230	230	225	240	225	230	240	230	230	270	270	290	300
22	310	250	220	375	410	360	380	250	230	C	C	C	C	230	210	230	I 240C	225	220	220	A	A	290	285
23	305	330	360	340	285	295	280	250	220	230	230	225	230	230	230	235	230	245	230	210	240	295	325	290
24	285	335	330	295	300H	360	310	260	240	230	230	225	235	225H	225H	240	230	240	235	235	220	280	300	275
25	295H	365	360	345	325	370	340	245	220	225	230	230	220	230H	245	240	225	240	230	240	235	280	270	295
26	300	330	325	280	355	360	295	240	225	230	240	240	240	240	225H	250	240	240	245	220	240	280	270	255
27	300	330	350	C	C	C	C	245	220	225	230	235	235	220	220H	230H	230	245	240	230	210	260	300	290
28	310	320	330	330	310	310	255	240	210	225	230	240	230	230H	230	240	225	240	240	210	250	260	240	255
29	300	320	325	310	270	280	275	245	230	225	230	225	230	240	260A	255	245	235	240	240	240	300	300	260
30	270	290	280	270	250H	350	280	245	225	230	240	235H	240	240H	245H	250	245	225	I 250A	245	220	250	255	290
31	290	290	295	295	290	340	260	245	220	220	240	245	220H	235H	240H	245	245	235	250	245	235	250	290	280
No.	31	31	31	30	30	30	30	31	31	30	30	30	30	31	31	31	31	31	31	31	30	30	31	31
Median	295	310	325	310	300	310	280	245	230	235	230	230	230	230	240	240	235	230	230	230	250	280	290	280

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | 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	B	G	G	G	100	B	120	G	G	B	E	E	E	E	105	105	E
2	E	E	E	E	E	E	115	110	110	G	G	G	G	B	G	G	145	110	110	110	105	105	E	E
3	E	E	E	E	E	E	E	B	G	115	G	G	G	G	B	B	120	115	110	110	115	105	E	100
4	100	E	E	E	105	E	E	120	G	G	105	105	100	G	G	G	B	E	E	110	E	105	E	E
5	100	E	E	E	E	E	E	B	110	110	110	105	100	B	B	G	G	E	E	E	105	E	E	110
6	110	105	105	100	E	E	E	B	110	110	105	105	G	G	G	G	B	E	E	110	E	110	105	105
7	E	E	E	E	E	E	E	E	110	G	105	G	G	G	G	G	100	100	E	E	E	E	105	105
8	105	100	105	100	100	100	E	B	G	G	G	G	G	G	105	105	100	100	E	E	E	E	E	E
9	E	E	E	E	E	E	E	B	G	G	G	G	100	G	G	G	B	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	B	G	G	G	G	G	G	G	G	155	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	105	100	105	100	100	G	130	G	B	100	E	E	E	E	E	E
12	E	E	E	E	E	E	E	100	100	125	130	G	G	G	125	115	B	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	G	125	B	B	B	150	130	120	110	105	105	105	105	105	105	E
14	E	100	110	E	110	130	115	E	G	B	G	G	145	145	G	G	120	115	110	110	105	105	105	105
15	105	105	E	120	110	E	E	B	B	G	G	G	G	G	G	125	B	110	105	105	105	105	105	100
16	E	E	E	E	E	115	110	105	105	105	100	100	B	G	G	G	B	E	110	E	E	E	100	E
17	E	E	E	E	E	E	E	B	G	B	G	G	S	G	G	G	130	120	E	E	E	E	E	E
18	E	E	E	E	E	E	E	B	105	G	105	G	G	B	G	120	120	E	105	105	105	105	105	E
19	E	115	E	E	E	E	E	105	105	100	125	100	G	G	G	G	B	E	E	E	105	105	E	E
20	E	E	100	100	E	E	E	B	B	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	E	G	G	G	G	G	100	G	G	B	B	E	E	E	E	105	105
22	100	E	E	E	E	E	E	B	120	C	C	C	C	G	170	G	C	B	120	120	105	105	105	E
23	E	E	E	E	E	E	120	120	110	G	G	G	G	G	G	G	B	B	E	E	E	E	E	E
24	E	E	E	E	E	E	120	120	105	S	G	G	G	G	G	G	G	B	E	E	E	E	E	E
25	E	E	E	E	E	E	E	G	G	G	G	150	140	130	120	125	140	115	105	E	E	E	E	105
26	100	100	100	105	100	E	E	B	G	140	105	135	G	145	130	120	120	B	115	E	E	E	E	E
27	105	105	105	C	C	C	C	B	G	G	G	G	G	G	G	G	G	155	E	100	100	E	E	E
28	E	120	E	E	E	E	E	B	G	G	G	G	G	G	G	130	120	115	105	105	105	E	E	E
29	E	E	E	E	E	E	E	B	G	G	G	170	G	G	125	130	125	120	110	105	100	100	100	E
30	E	E	E	E	E	E	E	B	G	G	G	G	G	G	G	160	150	140	120	E	E	E	E	E
31	E	E	E	125	110	E	105	105	105	105	G	G	G	G	G	145	120	110	E	E	E	E	E	E
No.	8	8	6	6	6	3	6	8	13	10	10	10	6	6	8	11	15	15	13	12	12	12	11	8
Median	105	105	105	100	110	115	115	110	105	110	105	105	100	140	130	125	120	115	110	110	105	105	105	105

h'Es

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

The Radio Research Laboratories, Japan.

A 11

IONOSPHERIC DATA

Jan. 1960

Types of Es

135° E Mean Time (G.M.T.+ 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

32

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

Types of Es

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

The Radio Research Laboratories, Japan.

A 12

IONOSPHERIC DATA

Jan. 1960 | 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	3.1	3.4	u 3.4 s	3.1	3.1 s	3.1	3.5	6.0 s	9.0	11.9	13.3 s	11.8	11.7	u 12.2 s	12.3	u 12.3 s	I 9.8 s	J 8.0 s	7.1	J 6.6 s	4.3	3.8 s	3.6 s	3.6 s
2	u 3.7 s	3.7 s	C	C	C	C	C	S	10.7	12.3	14.1	12.2	12.9	12.4 s	13.1	11.5	8.9	8.2 s	J 7.6 s	5.1	3.2	3.2	C	C
3	C	C	C	C	C	C	C	C	9.3 v	12.1	12.9	12.4	11.7	12.4	12.3	10.9	9.2	8.8	u 7.5 s	6.4	4.5 s	3.6 s	4.2	u 4.1 s
4	I 3.6 s	3.6	3.7	3.6	3.8 s	4.2	4.4	6.9	u 10.0 s	13.2	S	S	u 13.0 s	11.7	11.2	10.5 s	8.9	I 8.6 s	I 7.7 s	I 6.4 s	u 3.8 s	S	S	I 4.7 s
5	I 4.2 s	J 3.5 s	3.2	3.4	I 3.4 s	3.4	2.5	S	S	11.6	13.9	13.4	13.0	12.7	12.5	11.9	J 10.8 s	J 10.3 s	J 8.3 s	J 7.1 s	6.2	6.0 s	6.0	6.0
6	6.0	6.1	5.1	4.3	4.2	3.5	3.4	J 8.0 s	12.2	I 13.7 s	13.6	u 13.5 s	11.8	u 12.2 R	11.6	11.5	11.2 s	I 10.2 s	I 7.7 s	5.2	4.5	I 4.7 s	5.2	4.4
7	u 4.2 s	3.9	3.3	3.5	J 3.6 s	I 3.4 s	3.8	6.7 s	u 9.7 s	J 14.3 s	13.7	13.0	12.0	10.8	11.6	J 10.7 s	J 8.3 s	9.8	I 8.8 s	u 6.1 s	u 4.3 s	u 4.5 s	J 3.5 s	I 3.5 A
8	4.4	3.9 s	3.5	3.4	3.3 s	3.4	u 3.6 s	7.0 s	9.3 s	10.9	12.8 s	J 11.6 s	11.5	10.7	11.2	J 11.6 s	10.8 s	I 10.1 s	u 8.5 s	u 7.2 s	6.2 s	J 5.6 s	I 5.6 s	I 4.8 s
9	u 5.3 s	u 4.9 s	3.8	I 3.4 s	3.5	3.5	3.4	I 6.6 s	I 10.8 s	u 12.2 s	12.6	u 11.5 s	10.0	9.9 s	10.7	u 9.8 s	u 8.7 s	I 8.3 s	I 7.6 s	6.7	4.7 s	I 3.7 C	3.7 s	3.4
10	3.5 s	I 3.4 s	3.3	3.4	3.5 s	3.4 s	3.4	I 6.5 s	J 9.2 s	12.8	12.5	11.0	9.9	9.0	10.3 s	I 9.8 s	J 8.1 s	J 8.0 s	u 6.6 s	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	S	D 12.1 R s	10.7	9.9	9.8	11.0 s	D 10.3 s	u 9.2 s	u 9.4 s	6.7	4.5	3.8 s	5.4 s	I 4.7 s	3.3
12	3.0	3.0	3.0	3.1	3.4	3.3	3.7 s	u 7.0 s	10.2 s	12.0	D 13.6 s	11.8	10.4	10.8	12.4	J 10.4 s	J 10.3 s	10.0	D 7.2 s	5.1	4.3	4.0 s	u 3.7 s	3.9
13	D 3.2 s	3.6	3.6	3.1	3.0	J 2.8 s	u 2.6 s	5.8	11.2	D 13.6 s	D 14.8 s	13.8	13.0	11.4	11.9	11.5	8.9	9.0 s	J 7.8 s	6.3 s	4.9	4.2 s	3.7	3.6
14	3.2 s	3.3	3.0	J 3.2 R	I 3.1 A	3.0	J 3.3 s	I 6.2 A	10.0	12.1	12.6	11.3	11.3	12.4	12.1	11.6	D 8.2 R	I 8.2 A	J 7.7 s	D 7.4 s	5.9	6.6	u 7.0 s	4.8 s
15	D 3.6 s	3.6 s	3.2	3.2	3.4	I 3.3 A	u 2.9 R	D 6.9 s	u 11.5 s	J 13.8 s	D 13.9 s	12.3	u 12.1 s	12.7 H	13.7	D 13.7 s	12.2 s	J 8.2 s	5.7	6.6	D 6.5 s	4.5	4.5	4.6
16	I 4.0 A s	u 3.2 s	J 3.0 s	3.2	3.0 s	3.3 s	3.2	J 6.5 s	10.4	D 14.6 s	D 15.1 s	J 14.0 s	13.7	12.3	11.6	J 9.8 s	8.7	8.9	7.8	5.9	5.6	I 4.9 s	5.1	4.9
17	C	C	C	C	C	C	C	C	C	u 14.2 R	D 15.2 s	D 15.6 s	13.1	10.7	u 10.0 s	9.5 s	I 9.5 s	9.0 s	6.5	5.6	4.5	I 3.8 s	3.8	4.0 s
18	I 4.2 s	I 3.8 s	u 3.7 s	3.9	3.6 s	u 3.7 s	3.9 s	u 6.7 s	11.4	12.9	13.3	13.6	12.6	12.1	11.2	J 10.4 s	J 10.6 s	u 9.4 s	J 8.2 s	I 5.6 A	4.6	J 5.3 s	5.9	5.3
19	4.3	3.6	3.2 s	3.6	3.3 s	3.2 s	J 3.3 s	J 6.6 s	J 9.4 s	11.5	13.1	12.9	12.3	11.7	11.2	10.7	8.6	9.4	J 8.3 s	6.0	4.5	u 4.0 s	4.2	4.6
20	I 4.2 s	3.8	4.2	2.7	u 2.9 s	3.2	C	C	C	11.8 R	11.8	13.1	13.6	12.1	11.0	10.9	I 9.7 s	9.2	7.8	5.7 s	J 4.5 s	J 4.6 s	u 4.9 s	4.8
21	I 5.2 s	4.1	3.1	3.4	J 3.5 s	4.0	J 3.7 s	6.7	C	C	D 14.7 s	D 14.6 s	13.3	13.2	13.2	11.5	J 9.5 s	9.2	u 8.0 s	u 7.1 s	5.8	6.1 s	u 4.4 s	4.7
22	4.6	4.4	3.9	C	C	C	C	C	C	u 14.4 s	D 15.3 s	u 14.1 s	14.2	13.9	13.0	12.3	u 12.0 s	9.6	u 7.6 s	5.5	u 4.1 s	u 4.2 s	I 4.1 A	4.1
23	J 3.3 s	u 3.4 s	3.2 s	3.3	3.7	3.2	3.5	6.6	9.2	12.1	I 14.4 s	J 14.3 s	13.1	11.9	11.3	10.8	u 9.8 s	9.3 s	J 8.2 R	7.1 s	4.5	4.3 s	J 4.3 s	J 4.5 s
24	4.1	4.0	I 3.8 s	4.0	I 3.5 s	3.5	I 4.4 C	u 6.7 s	11.5 s	13.1	13.4	12.4	12.5	12.0	11.1	11.4	J 10.9 s	C	C	C	6.4	I 4.2 C	4.3	C
25	C	C	C	C	C	C	C	C	C	C	C	C	11.5	10.9	10.4	10.7	9.2	8.0	8.1 R	6.9	5.1 R	4.5	J 4.5 s	J 4.4 s
26	4.3	J 4.4 s	3.8	3.5	J 3.5 s	I 3.6 C	I 4.0 C	I 7.6 C	10.9	11.4	12.8	13.0	13.1	11.4	10.5	10.6	J 9.9 s	9.2	8.6	7.3 s	5.7	5.0	5.3	5.2
27	4.3	4.0	3.9	3.8 s	I 3.8 C	4.0 s	I 4.4 C	7.8 s	11.3	12.4	14.1 s	13.8	14.1 s	12.8	11.9	11.7	11.1	10.8 s	J 10.0 s	9.1	6.7	5.1 s	4.9	4.7 s
28	4.2 s	4.2 s	4.1 s	I 3.7 s	3.7	4.1 s	4.6 s	8.3 s	10.0 s	11.3	12.7	12.1	12.2	11.7	10.7	10.4 s	J 9.5 s	8.8	8.5	J 8.3 s	I 6.3 s	I 6.0 s	I 6.4 s	5.3 s
29	J 3.9 s	3.9	3.9 s	3.8	4.0 s	3.5	3.8 s	8.2	11.6	12.1 s	13.0	13.7 s	I 13.8 s	I 13.7 s	13.1 s	12.5	11.2 s	9.2	9.0	J 8.4 s	7.1 s	I 6.6 s	I 6.8 s	I 6.3 s
30	I 6.0 s	I 5.5 s	5.0 s	4.7	I 3.5 s	3.7 s	4.3	u 9.3 s	12.0 s	12.1	12.8	13.6 s	u 13.9 s	13.4	12.4	11.5 H	11.4	9.4	6.9	J 7.8 s	6.6 s	5.1 s	I 4.9 s	J 4.9 s
31	4.6 s	4.3 s	4.3	4.1	3.7	3.6 s	4.1	8.0	11.2	11.2	11.0	12.1	11.2	11.3	10.4	10.1	10.0	9.0	7.3	7.7	6.9	I 5.6 s	5.0	5.1
No.	25	27	26	25	25	25	24	23	24	28	28	29	31	31	31	30	30	30	29	29	30	29	28	28
Median	4.2	3.8	3.6	3.4	3.5	3.4	3.6	6.7	10.6	12.2	13.4	13.0	12.5	12.0	11.6	10.9	9.8	9.2	7.8	6.4	4.8	4.6	4.5	4.6
U. Q	4.5	4.2	3.9	3.8	3.7	3.6	4.0	7.8	11.4	13.4	14.1	13.8	13.1	12.4	12.4	11.6	10.8	9.4	8.3	7.2	6.2	5.5	5.2	4.9
L. Q	3.6	3.5	3.2	3.2	3.3	3.2	3.4	6.6	9.6	11.8	12.8	12.0	11.5	10.9	11.0	10.4	8.9	8.6	7.4	5.6	4.5	4.1	4.2	4.0
Q. R.	0.9	0.7	0.7	0.6	0.4	0.4	0.6	1.2	1.8	1.6	1.3	1.8	1.6	1.5	1.4	1.2	1.9	0.8	0.9	1.6	1.7	1.4	1.0	0.9

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. 1960 | 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																								
2																								
3								C																
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11								C	C															
12																								
13																								
14																								
15																								
16																								
17								C	C	L					L									
18																								
19																								
20								C	C															
21									C	C	L	L												
22								C	C					L										
23																								
24																		C						
25								C	C	C	C	C												
26								C																
27																								
28																								
29																								
30																								
31														L										
No.																								
Median																								

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. 1960 | f_0E | 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								B	B	2.95^{A}	I3.20^{A}	3.30	U3.50^{A}	I3.50^{A}	3.40	3.05	S	B						
2								B	A	3.00	I3.25^{S}	3.45	3.55	3.40^{S}	3.30	3.00	2.20							
3								C	2.65	3.20	I3.40^{S}	I3.55^{S}	U3.55^{S}	3.60	I3.35^{A}	I3.00^{A}	S							
4								S	2.50	I2.70^{S}	3.30^{R}	3.50^{R}	I3.50^{S}	3.50	U3.30^{S}	I3.00^{S}	S	S						
5								B	A	I2.70^{S}	I3.35^{A}	I3.40^{A}	U3.40^{S}	3.40	3.20	A	A							
6								B	2.55	I2.90^{S}	I3.15^{A}	I3.35^{S}	3.50	3.50	3.30^{S}	2.90^{S}	S							
7								S	2.60	I3.15^{S}	U3.50^{S}	3.65	3.70	3.60	A	S	S							
8								S	2.65	U3.00^{S}	3.40	3.60^{R}	3.60	3.55	3.35	2.90	A S							
9								S	2.70	I3.15^{A}	3.40	3.55	3.50	3.40	3.20	2.70	S							
10								S	2.75^{H}	U3.20^{S}	3.30	3.50	3.60	3.40	I3.20^{S}	I3.00^{S}	S							
11								C	C	A	U3.40^{A}	U3.40^{R}	3.40	3.35	3.20^{S}	2.90^{S}	S							
12								S	2.50	3.20^{S}	3.25	3.30^{S}	I3.50^{A}	I3.45^{R}	3.20^{S}	I2.55^{A}	S							
13								B	U2.60^{S}	I3.20^{R}	I3.40^{A}	3.45	3.40	3.30	U3.30^{S}	S	A							
14								A	A	I3.30^{A}	A	A	A	U3.30^{A}	I3.10^{B}	2.75^{S}	B							
15								S	B	U3.00^{S}	3.30^{R}	U3.40^{R}	3.50	3.40	3.20	A	S							
16								A	2.60	I3.00^{S}	I3.40^{S}	3.60	U3.65^{R}	3.55	3.45	2.95	U2.40^{S}	S						
17								C	C	R	I3.45^{A}	I3.40^{R}	3.70	U3.50^{R}	3.25^{S}	3.00	I2.50^{S}	B						
18								S	2.60	I3.15^{S}	3.45	3.65^{S}	3.70	3.60	3.40	U3.00^{A}	S	S						
19							S	S	2.70^{S}	2.90	A	A	A	3.55	I3.30^{A}	I3.10^{R}	S	S						
20							C	C	C	I3.20^{A}	3.35	3.60	3.65	3.55	3.30	2.90	S	S						
21							S	S	C	C	3.35	3.50	I3.60^{S}	3.40	3.30^{S}	2.90	S	S						
22							C	C	C	A	A	3.60^{R}	I3.60^{A}	3.40	3.20	2.90	S	B						
23							S	S	2.60	A	I3.35^{A}	3.50	I3.50^{R}	3.40	I3.30^{B}	3.00	S	S						
24							C	S	2.70	3.20	I3.40^{A}	3.55	3.60^{R}	3.50	3.40	3.10^{R}	S	C						
25							C	C	C	C	C	C	U3.70^{S}	A	A	I3.10^{R}	I2.55^{S}	S						
26							C	C	2.90^{S}	3.30	3.50	3.60^{R}	I3.70^{A}	I3.60^{R}	3.55^{R}	A	S	S						
27							C	S	2.60	3.40	3.50	3.70	I3.70^{B}	3.60	I3.35^{R}	I3.05^{C}	I2.75^{S}	S						
28							S	S	2.50	3.25	3.55	I3.65^{A}	3.75	I3.70^{A}	3.50^{S}	3.10	S	A						
29							S	S	2.60	I3.10^{S}	3.45^{R}	I3.60^{R}	3.65^{R}	3.50^{R}	3.35	3.10^{R}	S	S						
30							B	S	2.70	3.25	3.40	3.45^{R}	I3.50^{A}	U3.55^{R}	3.55^{R}	3.00^{S}	I2.70^{S}	A S						
31							S	2.20	2.60	3.20^{R}	3.55	U3.70^{R}	I3.60^{B}	I3.50^{B}	3.45^{R}	3.10^{R}	S	S						
No.								1	20	25	27	28	29	30	29	26	6							
Median								2.20	2.60	U3.15	3.40	3.50	3.60	3.50	3.30	3.00	2.50							

f_0E

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

The Radio Research Laboratories, Japan.

K 3

IONOSPHERIC DATA

Jan. 1960 | 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	Tz.9	E	E	E	E	E	E	B	B	3.5	3.6	3.6	4.0	D4.7^{s}	2.7^{q}	3.5	T3.7	z.5	E	E	E	E	E	Tz.5
2	E	E	C	C	C	C	C	B	T5.6	z.9^{q}	G	z.7^{q}	z.9^{q}	G	z.4^{q}	G	3.0	T3.5	T5.8^{s}	T3.9	Tz.6	Tz.0	C	C
3	C	C	C	C	C	C	C	C	G	G	G	G	G	G	D3.5^{s}	3.4	S	z.4	3.1	T3.1	5.0	z.3^{s}	T3.9	Tz.8
4	S	S	E	E	E	E	E	S	G	T3.4	G	G	G	G	z.7^{q}	T3.3	S	Tz.5^{s}	Tz.4	E	Tz.1	E	T1.8^{s}	Tz.4
5	z.3	Tz.4	E	E	E	E	E	B	Tz.7	3.7	3.8	3.7^{s}	3.7^{q}	G	3.2	3.5	T3.5	T3.0^{s}	E	E	E	T3.7^{s}	Tz.9^{s}	Tz.3
6	z.5	3.0	E	E	E	E	E	B	z.5^{q}	T3.2^{s}	T3.6^{s}	G	G	G	G	G	S	E	E	E	T3.6	T3.3	Tz.5	T3.8
7	Tz.0	T3.4^{s}	E	E	E	3.0	E	S	G	3.8^{s}	G	G	G	3.6^{q}	4.4^{s}	S	S	S	S	S	S	S	S	T3.4
8	T3.3	S	S	z.5	E	E	S	S	G	G	G	G	3.8	G	G	G	3.0^{s}	S	z.9	E	E	E	E	S
9	E	E	E	E	E	S	E	S	3.1	3.3	G	G	G	G	G	G	S	E	E	E	E	C	E	E
10	S	S	E	E	E	E	E	S	G	G	G	G	G	G	S	S	S	S	S	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	T3.8	3.6	4.2	3.6	3.6	3.0^{q}	G	Tz.9	S	E	E	S	E	E	E
12	S	E	E	E	E	E	E	S	z.7	3.8	3.8	3.6	3.7	z.6^{q}	4.1	T3.5	S	E	E	E	E	S	E	E
13	S	E	E	E	E	E	S	B	G	G	3.4	G	G	3.7	G	T4.0	T7.7	T3.2	S	E	Tz.4	E	E	E
14	S	S	E	Tz.3	T5.0	Tz.5	3.1	T6.5	T3.2	3.8	4.3	T4.9	4.5	4.0	B	3.1	3.2	T10.1	T6.5	T6.3	Tz.8	3.4	Tz.5	S
15	T3.3	S	Tz.5	C	T5.7	T5.0	z.2	S	B	T3.2	G	3.2^{q}	G	G	7.0	3.8	S	S	T1.6	E	E	S	T5.3	T4.4
16	T3.9	3.v	S	Tz.6	3.2	S	Tz.6	T3.6	G	G	G	G	G	3.7	G	G	G	Tz.6	z.5^{s}	S	S	S	S	S
17	C	C	C	C	C	C	C	C	C	G	3.4	G	G	G	G	G	S	4.0	T3.5	T7.5	S	S	S	S
18	S	S	S	E	S	S	E	S	z.4^{q}	G	3.0^{q}	G	3.3^{q}	G	G	3.6	G	3.0^{s}	T3.6	5.9	S	S	T3.8	3.0
19	S	E	E	E	E	E	S	S	G	G	T9.6	T8.5	4.0	G	T3.4	z.9^{q}	S	S	S	S	E	S	T3.0	E
20	S	E	E	E	E	E	C	C	C	3.3	3.3^{q}	G	G	G	G	G	S	S	Tz.4^{s}	z.5^{s}	S	S	S	E
21	S	S	z.1	z.0	S	E	S	S	C	C	G	G	G	G	G	G	S	S	E	3.2^{s}	S	S	S	T3.6^{s}
22	z.9^{s}	S	E	C	C	C	C	C	C	T3.9	T3.8	3.5^{q}	3.6	G	G	G	S	T4.3	S	T3.0^{s}	T5.5	Dz.9^{s}	4.1^{s}	Tz.5
23	S	E	E	E	E	E	S	S	G	T3.1	T3.3	G	G	G	B	G	S	S	E	E	S	S	E	E
24	E	S	S	E	S	E	C	S	G	G	3.5	G	G	G	G	G	S	C	C	C	E	C	E	C
25	C	C	C	C	C	C	C	C	C	C	C	C	G	T5.2^{s}	3.9	G	S	S	E	S	E	E	E	E
26	E	E	E	E	E	C	C	C	G	3.9	4.4	G	T4.7	G	4.1	3.7	S	S	E	E	S	S	E	E
27	S	E	E	z.1	C	E	C	S	3.1	G	G	G	B	G	3.9	C	S	S	E	E	E	S	E	E
28	S	E	S	E	E	E	S	S	G	G	G	D3.8^{s}	G	4.2	4.4	T5.1^{s}	S	4.6^{M}	5.5	5.5	T3.8	Tz.8^{s}	z.1	E
29	S	E	S	z.4	E	E	S	S	z.9	G	G	G	G	4.0	T4.9	T4.2	T4.6	T8.1	T3.2	T3.4	T3.6	D2.9^{s}	S	Tz.9
30	S	E	Tz.9	3.1	E	E	B	S	G	G	G	G	4.1	3.8	G	G	S	z.6^{s}	T4.4	z.8^{s}	T3.1^{s}	S	S	Tz.4^{s}
31	S	S	z.2	Tz.6	S	S	S	S	G	z.4^{q}	G	G	B	B	G	3.6	T3.5	Tz.9	E	z.4^{M}	z.3	z.4^{s}	z.3^{M}	S
No.	12	17	20	24	20	20	12	2	23	29	30	30	29	30	28	28	11	18	25	25	21	17	22	23
Median	2.4	E	E	E	E	E	E	5.0	G	G	G	G	G	G	G	G	3.2	3.0	1.6	E	2.1	2.4	E	2.3
U.Q	3.1	E	E	2.2	E	E	E		2.7	3.4	3.6	G	3.6	3.7	3.9	3.6	3.7	4.0	3.4	3.2	3.4	D2.9	2.9	2.9
L.Q	E	E	E	E	E	E	E		G	G	G	G	G	G	G	G	2.9	2.5	E	E	E	E	E	E
Q.R																	0.8	1.5						

foEs

Sweep 1.0 Mc to 20.0 Mc in 2.0 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

K 4

IONOSPHERIC DATA

Jan. 1960 | foEs | 135° E Mean Time (G.M.T.+ 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.5							B	B	3.5	3.6	3.6^{s}	4.0	$^{D}4.7^{s}$	2.6^{q}	3.5	3.6^{s}	2.0						2.1
2			C	C	C	C	C	B	3.7^{s}	2.2^{q}		2.7^{q}	2.7^{q}		2.3^{q}		2.9	E	E	2.5	2.0	2.0	C	C
3	C	C	C	C	C	C	C	C							$^{D}3.5^{s}$	3.3	S	2.0	2.6	2.9	2.2	2.0	2.5	2.8
4	S	S						S		3.2					2.2	3.3	S	2.3^{s}	2.4		1.8		1.8	1.6
5	1.9	2.0						B	2.5^{s}	3.0	3.7	$^{E}3.7^{s}$	2.8^{q}		2.5	3.2	2.9	2.3				$^{u}2.5^{s}$	1.6	E
6	E	2.2						B	1.7^{q}	3.2^{s}	S						S				2.2	2.5	1.9	2.3
7	2.0	2.0				E		S		3.4				3.1[q]	$^{u}4.4^{s}$	S	S	S	S	S	S	S	S	A
8	$^{E}3.3^{s}$	S	S	2.0			S	S					3.7				2.7	S	2.7					S
9						S		S	G	2.8							S					C		
10	S	S						S							S	S	S	S	S	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	3.2	3.6	4.2	3.6	3.6	2.5^{q}		S	S			S			
12	S							S	2.7	3.7	3.6	3.6	3.7	2.6^{q}	4.1	3.1	S					S		
13	S						S	B			3.4			3.7		4.0^{s}	3.2	E	S		2.3			
14	S	S		C	A	E	2.4	A	3.0	3.4	3.8	4.9	4.5^{s}	3.6	B	3.1^{s}	3.2	A	3.7	3.8	E	E	2.1	S
15	3.2^{s}	S	E	C	1.9	A	2.1	S	B	3.1		2.7^{q}			3.7	3.2	S	S	1.2			S	3.5^{s}	E
16	AS	2.6	S	2.3	E	S	2.0	2.8						3.7				2.6	2.4	S	S	S	S	S
17	C	C	C	C	C	C	C	C	C		3.4						S	B	S	2.5	S	S	S	S
18	S	S	S		S	S		S	2.2^{q}		2.7^{q}		$^{u}2.7^{A}$			3.4		S	2.6	A	S	S	2.9	2.6
19	S						S	S			5.4	5.2	3.7		3.4	2.9^{q}	S	S	S	S		S	2.6	
20	S						C	C	C	3.1	2.9^{q}						S	S	1.9	2.2	S	S	S	
21	S	S	1.8	2.0	S		S	S	C	C							S	S		2.6	S	S	S	1.7
22	E	S		C	C	C	C	C	C	3.5	3.5	3.1[q]	3.6				S	4.0	S	$^{E}3.5^{s}$	3.2	2.4	A	2.5
23	S						S	S		3.1	3.3				B		S	S			S	S		
24		S	S		S		C	S			3.5						S	C	C	C		C		C
25	C	C	C	C	C	C	C	C	C	C	C	C		3.8	3.8		S	S		S				
26						C	C	C		G	4.3		4.6		4.1	3.7	S	S			S	S		
27	S			$^{E}2.1^{B}$	C		C	S	3.1				B		3.8	C	S	S				S		
28	S		S				S	S				$^{D}3.8^{s}$		4.2	4.0^{s}	5.1^{s}	S	4.4	2.9^{s}	3.2	3.3	$^{E}2.8^{s}$	E	
29	S		S	2.2			S	S	2.9					4.0	4.7	4.1	4.2^{s}	6.9^{s}	3.0	2.2	3.3	$^{D}2.9^{s}$	S	$^{E}2.9^{s}$
30	S		2.9^{s}	2.3			B	S					3.9	3.7			S	2.6	3.7^{s}	2.8	3.1	S	S	$^{E}2.4^{s}$
31	S	S	$^{E}2.2^{s}$	2.5	S	S	S	S		2.3^{q}			B	B		3.6	3.5^{s}	2.9		2.4	2.3	2.2	2.2	S
No.	7	4	3	7	3	3	3	2	9	16	14	9	12	11	14	14	8	13	12	11	11	8	11	10
Median	2.0	2.1	1.8	2.2	1.9	E	2.1	A	2.7	3.2	3.6	3.6	3.7	3.7	3.8	3.4	3.2	2.6	2.6	2.6	2.3	2.3	2.2	2.2

foEs

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

The Radio Research Laboratories, Japan.

K 5

37

IONOSPHERIC DATA

Jan. 1960 | 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	1.30	1.30	1.30	1.70	1.70	1.70	1.20^{s}	1.90	2.70	2.20	2.30	2.40	E3.00^{s}	2.40	2.10	1.50	E2.30^{s}	1.80	1.80	1.90	2.00	1.80	1.60	1.30
2	1.90	1.60	C	C	C	C	C	2.10	2.00	2.15	2.10	2.20	2.15	2.20	2.10	2.30	1.80	1.30	1.70	1.80	1.70	1.70	C	C
3	C	C	C	C	C	C	C	C	1.90	2.10	2.70	2.20	2.70	2.80	2.20	2.70	E2.30^{s}	1.70	1.65	1.70	1.40	1.50	1.40	1.60
4	E2.00^{s}	E1.90^{s}	1.60	1.60	1.70	1.70	1.40	E2.10^{s}	2.10	1.50^{s}	1.30	2.10	2.30	2.20	1.80	1.90	E2.70^{s}	E1.80^{s}	1.70	1.60	1.50	2.00	1.40	1.20^{s}
5	1.30	1.20	1.50	1.40	2.10^{s}	1.40	1.50	1.90	1.80	2.00	2.20	2.30	2.20	2.30	2.00	1.80	1.60	1.40	1.70	1.70	1.90	1.80	1.50	1.70
6	1.60	1.80	1.50	1.50	1.60	1.50	1.20	1.90	1.50	E1.40^{s}	E2.00^{s}	E2.00^{s}	2.50	2.20	2.00	1.90	E2.80^{s}	1.80	1.90	1.50	1.25	1.80	1.40	1.40
7	1.30	1.70	1.60	1.65	1.40	E	1.30	E1.70^{s}	E1.60^{s}	1.70	2.10	2.10	2.20	2.10	2.40	E2.20^{s}	E2.60^{s}	E2.90^{s}	E1.70^{s}	E2.60^{s}	E2.60^{s}	E2.50^{s}	E2.00^{s}	1.70
8	E2.10^{s}	E2.00^{s}	E2.10^{s}	1.50	1.20	1.50	E2.20^{s}	E2.00^{s}	1.95	2.40	2.10	3.10	1.50^{s}	1.50^{s}	E2.20^{s}	2.10	1.90	E2.40^{s}	1.50^{s}	2.60	1.80	1.90	1.90	E1.80^{s}
9	2.00	2.40	1.30	1.40	1.70	E2.60^{s}	1.80	E2.60^{s}	1.90	E2.10^{s}	2.70	2.20	2.00	2.30	2.20	E1.60^{s}	E2.50^{s}	2.70	2.60	1.90	2.20	C	2.00	1.70
10	E2.60^{s}	S	1.50	1.90	1.50	1.60	1.80	E2.70^{s}	1.90	E1.70^{s}	2.10	2.70	2.20	2.40	E3.20^{s}	1.90	E2.30^{s}	E2.60^{s}	E2.70^{s}	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	2.10	2.50	2.10	1.90	2.10	2.00	2.30	E2.80^{s}	E2.80^{s}	2.60	1.90	E2.60^{s}	2.00	2.10	1.60^{s}
12	E2.60^{s}	1.90	1.40	1.90	1.60	2.00	1.90	E2.40^{s}	1.90	2.00	2.60	2.60	2.10	2.10	1.90	2.20	E2.50^{s}	1.80	2.00	1.50^{s}	2.00	E2.40^{s}	2.00	1.90
13	E2.60^{s}	1.80	1.80	1.70	1.90	1.60	E1.90^{s}	2.40	1.90	2.30	2.30	1.90	2.40	1.60	E2.10^{s}	2.30	E1.60^{s}	2.00	E2.20^{s}	1.70^{s}	1.70	2.00	1.90	1.80
14	E2.40^{s}	E2.60^{s}	1.70	E1.80^{s}	1.80	1.30	E1.30^{s}	1.00	2.60	2.20	2.80^{s}	1.20	2.40	E2.70^{s}	3.30	2.10	2.60	2.10	2.00^{s}	1.60^{s}	2.10^{s}	2.00^{s}	E1.10^{s}	E2.80^{s}
15	E2.30^{s}	E2.10^{s}	1.70	E2.50^{s}	1.20	1.60^{s}	E1.80^{s}	E2.60^{s}	3.00	1.70^{s}	1.90	1.80	2.70	2.30	E2.60^{s}	1.90	E2.70^{s}	E2.60^{s}	E1.10^{s}	2.20	2.00^{s}	E2.60^{s}	E2.20^{s}	1.70
16	E1.20^{s}	1.80	S	1.30	1.50^{s}	E2.10^{s}	1.20	1.80^{s}	2.10	E2.30^{s}	2.50	2.85	2.90	2.65	2.50	2.30	1.70	E2.40^{s}	1.85	E2.10^{s}	E1.60^{s}	E2.20^{s}	E1.90^{s}	E2.00^{s}
17	C	C	C	C	C	C	C	C	C	2.50	2.60	2.95	2.85	E2.95^{s}	2.50	2.50	E2.90^{s}	1.80	E1.80^{s}	1.50	E2.10^{s}	E2.20^{s}	E1.90^{s}	1.90^{s}
18	S	S	E2.60^{s}	1.40	E1.95^{s}	E2.50^{s}	1.95	E2.50^{s}	1.90	E2.50^{s}	2.10	E2.90^{s}	2.30	2.50	E2.60^{s}	2.05	1.80	E2.50^{s}	1.70	1.95	E1.90^{s}	E2.10^{s}	1.90	1.85
19	E2.30^{s}	1.70	1.60	1.40	1.50	1.30	E1.90^{s}	E2.30^{s}	1.90	2.30	2.10	2.20	1.95	E3.10^{s}	2.00	2.20	E2.50^{s}	E2.80^{s}	E1.95^{s}	E2.40^{s}	1.50	E2.50^{s}	1.65	1.50
20	E2.00^{s}	1.50	1.60	1.20	1.50	1.60	C	C	C	2.05	2.80	2.40	2.40	2.60	2.80	2.10	E2.80^{s}	E2.30^{s}	1.40	1.60	E1.90^{s}	E2.10^{s}	E1.90^{s}	1.70
21	E2.00^{s}	E1.90^{s}	1.50	1.60	E2.00^{s}	1.60	E1.90^{s}	E2.60^{s}	C	C	2.10	2.20	2.50	2.10	E2.80^{s}	2.10	E2.55^{s}	E2.30^{s}	1.60	E1.90^{s}	E2.20^{s}	E2.20^{s}	E1.90^{s}	1.40
22	1.60	E2.00^{s}	1.50	C	C	C	C	C	C	2.40	2.45	2.40	2.50	2.00	2.20	2.20	E2.90^{s}	1.90	E1.90^{s}	E1.80^{s}	1.50	1.70	1.80	1.50
23	E3.00^{s}	1.70	1.80	1.60	1.60	1.60	E1.90^{s}	E2.30^{s}	1.60	1.60	1.50	1.70^{s}	1.90	1.90	3.50	2.10	E3.20^{s}	E2.90^{s}	2.10	1.90^{s}	E2.60^{s}	E2.10^{s}	2.20	1.50
24	1.20^{s}	E2.80^{s}	S	2.00	S	2.00	C	E2.20^{s}	1.50^{s}	2.10	2.20^{s}	1.70	E2.30^{s}	2.40	2.30	2.20	E3.00^{s}	C	C	C	2.50	E3.00^{c}	1.80	C
25	C	C	C	C	C	C	C	C	C	C	C	C	2.60	2.50	2.20	2.15	E2.80^{s}	E2.70^{s}	2.30	E2.20^{s}	2.00	1.90	1.90	1.90^{s}
26	1.00	2.10	1.90	2.50	2.10^{s}	C	C	C	2.00	2.30	2.25	1.40^{s}	2.00	2.20	1.80^{s}	2.80	E2.90^{s}	E2.90^{s}	2.50	1.80	E2.20^{s}	E1.80^{s}	2.00	1.90
27	E3.00^{s}	1.50	2.00	1.90	C	2.00	C	E2.50^{s}	1.60	1.90	1.80	2.00^{s}	4.10	2.60	2.20	E4.40^{c}	E3.70^{s}	E3.00^{s}	2.40	2.30	1.90	E2.30^{s}	1.50^{s}	2.30
28	E2.60^{s}	2.00	E2.60^{s}	2.20^{s}	2.00	1.90	E2.70^{s}	E2.80^{s}	1.70	2.00	E2.00^{s}	E2.65^{s}	2.00	2.30	E1.90^{s}	1.90	E3.20^{s}	2.00	1.20^{s}	E1.70^{s}	1.50	E1.30^{s}	1.10	2.00
29	E2.50^{s}	2.00	E2.30^{s}	1.70	1.90	1.90	E2.10^{s}	E3.00^{s}	1.60^{s}	2.10	2.00	3.00	3.00	2.30	E2.00^{s}	2.00	E2.20^{s}	E2.50^{s}	1.90	1.60^{s}	E1.50^{s}	1.40	E2.00^{s}	2.00
30	E2.60^{s}	2.00	1.10	1.80	1.20	1.90	1.90	E2.20^{s}	1.70	1.80	2.10	2.10	2.10	2.15	1.40^{s}	E2.50^{s}	E3.30^{s}	E1.95^{s}	E1.70^{s}	E1.80^{s}	1.30^{s}	E2.60^{s}	E3.40^{s}	1.65
31	E2.20^{s}	E2.20^{s}	1.60	1.10	E1.80^{s}	E1.80^{s}	E2.00^{s}	E1.70^{s}	E1.60^{s}	1.80	E2.00^{s}	E3.00^{s}	4.00	3.85	2.20	2.30	E2.60^{s}	E1.85^{s}	E2.40^{s}	1.60	1.55	E1.80^{s}	E1.90^{s}	E3.00^{s}
No.	26	17	20	23	20	20	12	24	25	27	30	27	30	28	27	28	31	30	25	24	22	29	25	23
Median	E2.05	1.80	1.60	1.60	1.60	1.60	1.45	E2.25	1.90	2.10	2.10	2.20	2.30	2.30	E2.20	2.10	E2.60	E2.30	E1.80	E1.80	1.70	E2.00	1.90	1.70

f-min

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

The Radio Research Laboratories, Japan.

K 6

IONOSPHERIC DATA

Jan. 1960 | (M3000)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	z.60	z.65	^{u}z.75^{s}	z.70	z.65^{s}	z.60	z.95	3.15^{s}	3.20	3.30	3.10^{s}	3.05	3.30	^{u}3.05^{s}	3.00	^{u}3.00^{s}	^{I}3.10^{s}	^{J}3.15^{s}	z.80	^{J}3.10^{s}	z.80	z.65^{s}	z.70^{s}	z.60^{s}
2	^{u}z.60^{s}	z.50^{s}	C	C	C	C	C	S	3.30	3.25	3.10	3.05	z.90	z.85^{s}	z.95	3.05	3.15	3.05^{s}	^{J}z.90^{s}	3.20	3.15	z.65	C	C
3	C	C	C	C	C	C	C	C	3.20^{v}	3.05	3.10	3.05	z.90	z.90	z.95	3.00	3.05	3.15	^{u}3.05^{s}	3.10	z.90^{s}	z.55^{s}	z.60	^{u}z.75^{s}
4	^{I}z.60^{s}	z.45	z.60	z.50	z.60^{s}	z.75	3.00	3.05	^{u}3.10^{s}	3.15	S	S	^{u}z.95^{s}	z.85	z.95	3.05^{s}	3.05	S	S	^{I}3.15^{s}	^{u}z.85^{s}	S	S	^{I}z.80^{s}
5	^{I}3.05^{s}	^{J}z.65^{s}	z.50	z.45	^{I}z.80^{s}	z.95	3.25	S	S	3.10	3.10	3.05	z.75	z.90	z.80	z.95	^{J}z.90^{s}	^{J}3.00^{s}	^{J}z.90^{s}	^{J}z.95^{s}	z.60	z.80^{s}	z.65	z.65
6	z.55	z.70	z.75	z.65	z.85	z.30	z.40	^{J}3.00^{s}	3.10	^{I}3.20^{s}	3.05	^{u}3.05^{s}	z.80	^{u}z.95^{R}	z.90	z.90	z.95^{s}	^{I}3.00^{s}	^{I}3.15^{s}	z.95	z.85	^{I}z.70^{s}	z.75	z.90
7	^{u}z.95^{s}	3.05	z.50	z.65	^{J}3.05^{s}	^{I}z.60^{s}	3.00	3.15^{s}	^{u}3.20^{s}	^{J}3.15^{s}	3.15	3.10	3.00	z.90	z.90	^{J}3.05^{s}	^{J}z.95^{s}	z.95	^{I}3.15^{s}	^{u}3.30^{s}	^{u}z.80^{s}	^{u}z.90^{s}	^{J}z.60^{s}	^{I}z.55^{R}
8	z.65	z.60^{s}	z.50	z.50	z.50^{s}	z.40	^{u}z.65^{s}	3.40^{s}	3.35^{s}	3.20	3.25^{s}	^{J}3.10^{s}	3.05	z.95	z.85	^{J}z.90^{s}	z.95^{s}	^{I}3.10^{s}	^{u}3.00^{s}	^{u}3.05^{s}	3.00^{s}	^{J}z.80^{s}	^{I}z.75^{s}	^{I}z.80^{s}
9	^{u}z.85^{s}	^{u}z.85^{s}	z.85	^{I}z.70^{s}	z.70	z.70	z.95	^{I}3.00^{s}	^{I}3.30^{s}	^{u}3.15^{s}	3.35	^{u}3.15^{s}	3.05	z.95^{s}	3.00	^{u}3.05^{s}	^{u}3.10^{s}	S	S	3.10	3.15^{s}	^{I}z.80^{C}	z.75^{s}	z.70
10	z.60^{s}	^{I}z.65^{s}	z.65	z.65	z.65^{s}	z.65^{s}	z.80	^{I}3.05^{s}	^{J}3.30^{s}	3.25	3.30	3.25	3.15	3.00	3.05^{s}	^{I}3.10^{s}	^{J}3.10^{s}	^{J}3.05^{s}	^{u}z.90^{s}	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	S	RS	3.05	3.05	z.85	3.00^{s}	^{I}3.00^{s}	^{u}z.95^{s}	^{u}3.30^{s}	3.10	3.05	z.45^{s}	3.00^{s}	^{I}z.80^{s}	z.50
12	z.55	z.55	z.35	z.40	z.40	z.55	z.90^{s}	^{u}3.00^{s}	3.25^{s}	3.10	^{I}3.20^{s}	3.15	3.00	z.95	3.00	^{J}3.00^{s}	^{J}3.05^{s}	3.10	^{I}3.20^{s}	3.25	3.00	3.00^{s}	^{u}z.80^{s}	z.75
13	^{I}z.65^{s}	z.70	z.70	z.60	z.95	^{J}z.65^{s}	^{u}z.70^{s}	z.90	3.10	S	S	z.95	3.15	z.85	3.00	3.15	3.05	3.10^{s}	^{J}3.20^{s}	3.15^{s}	z.85	z.80^{s}	z.70	z.70
14	z.70^{s}	z.60	z.55	^{J}z.60^{R}	^{I}z.65^{A}	z.70	^{J}z.75^{s}	^{I}3.00^{A}	3.20	3.15	3.15	3.00	z.90	z.95	z.75	3.15	R	A	^{J}3.10^{s}	^{I}3.05^{s}	z.90	z.85^{s}	^{u}z.85^{s}	z.90^{s}
15	^{I}z.60^{s}	z.55^{s}	z.50	z.45	z.55	^{I}z.75^{A}	^{u}z.60^{R}	^{I}z.90^{s}	^{u}3.10^{s}	^{J}z.95^{s}	^{I}3.20^{s}	z.95	^{u}z.90^{s}	z.95^{H}	z.90	^{I}z.95^{s}	3.10^{s}	^{J}3.15^{s}	z.85	z.90	^{I}3.15^{s}	z.85	z.90	3.00
16	^{I}z.90^{A}	^{u}z.70^{s}	^{I}z.50^{s}	z.55	z.45^{s}	z.60	z.80	^{J}z.90^{s}	3.20	S	S	^{J}3.05^{s}	3.00	z.95	3.10	^{J}3.15^{s}	3.10	3.25	3.35	3.10	z.95	^{I}z.90^{s}	z.65	z.65
17	C	C	C	C	C	C	C	C	C	^{u}3.10^{R}	S	S	3.00	3.00	^{u}3.00^{s}	z.95^{s}	^{I}3.00^{s}	3.10^{s}	3.10	3.00	3.10	^{I}z.65^{s}	z.60	z.75^{s}
18	^{I}z.70^{s}	^{I}z.70^{s}	^{u}z.45^{s}	z.55	z.55^{s}	^{u}z.50^{s}	z.55^{s}	^{u}3.05^{s}	3.15	3.10	3.10	3.10	z.95	z.95	z.85	^{J}z.90^{s}	^{J}3.00^{s}	^{u}3.05^{s}	^{J}z.90^{s}	^{I}z.95^{A}	z.65	^{J}z.50^{s}	z.70	z.65
19	z.75	z.65	z.50^{s}	z.30	z.40^{s}	z.50^{s}	^{J}z.45^{s}	^{J}3.05^{s}	^{J}3.20^{s}	3.20	3.10	3.10	z.95	z.90	z.95	3.00	3.05	3.05	^{J}3.10^{s}	3.15	z.95	^{u}z.75^{s}	z.70	z.85
20	^{I}z.80^{s}	z.70	z.95	z.55	^{u}z.70^{s}	z.65	C	C	C	3.30^{R}	3.20	3.10	3.10	z.90	z.90	3.00	^{I}3.05^{s}	3.05	3.05	3.00^{s}	^{J}z.65^{s}	^{J}z.35^{s}	^{u}z.65^{s}	z.70
21	^{I}z.85^{s}	3.15	z.25	z.35	^{J}z.55^{s}	z.75	^{J}z.95^{s}	3.05	C	C	S	S	z.85	z.80	z.80	z.90	^{J}3.05^{s}	z.95	^{u}3.00^{s}	^{u}3.25^{s}	z.80	z.80^{s}	^{u}z.70^{s}	z.65
22	z.80	z.75	3.10	C	C	C	C	C	C	^{u}3.15^{s}	^{I}3.10^{s}	^{u}z.90^{s}	z.90	z.90	z.85	z.85	^{u}3.00^{s}	3.15	^{u}z.90^{s}	3.10	^{u}z.80^{s}	^{u}z.65^{s}	^{I}z.70^{A}	z.70
23	^{I}z.60^{s}	^{u}z.60^{s}	z.40^{s}	z.45	z.70	z.65	z.85	3.25	3.25	3.05	^{I}3.15^{s}	^{J}3.05^{s}	z.90	z.85^{s}	z.90	z.95	^{u}3.05^{s}	3.05^{s}	^{J}3.05^{R}	3.05^{s}	3.05	z.75^{s}	^{J}z.65^{s}	^{J}z.65^{s}
24	z.75	z.75	^{I}z.70^{s}	z.80	^{I}z.55^{s}	z.50	^{I}z.70^{C}	^{u}3.00^{s}	3.20^{s}	3.25	3.00	3.00	z.95	z.90	z.80	z.90	^{J}z.80^{s}	C	C	C	z.95	^{I}z.95^{C}	z.65	C
25	C	C	C	C	C	C	C	C	C	C	C	C	z.95	z.85	z.95	3.00	3.05	3.10	3.10^{R}	3.10	z.75^{R}	z.90	^{J}z.75^{s}	^{J}z.65^{s}
26	z.70	^{J}z.70^{s}	z.80	z.35	^{J}z.45^{s}	^{I}z.50^{C}	^{I}z.75^{C}	^{I}3.10^{C}	3.30	3.20	z.95	z.95	z.85	z.80	z.80	z.90	^{J}3.05^{s}	3.05	z.95	3.15^{s}	z.85	z.70	z.85	z.95
27	z.65	z.75	z.40	z.65^{s}	^{I}z.45^{C}	z.55^{s}	^{I}z.70^{C}	3.15^{s}	3.35	3.00	3.00^{s}	z.85	z.90^{s}	z.85	z.70	z.75	z.80	z.85^{s}	^{J}3.20^{s}	3.20	3.00	z.55^{s}	z.65	z.75^{s}
28	z.70^{s}	z.65^{s}	z.75^{s}	^{I}z.60^{s}	z.50	z.60^{s}	z.85^{s}	3.35^{s}	3.30^{s}	3.10	3.00	z.95	z.90	z.90	z.80	z.85^{s}	^{J}z.90^{s}	z.90	z.85	^{J}3.15^{s}	^{I}z.90^{s}	^{I}z.75^{s}	^{I}z.80^{s}	z.90^{s}
29	^{J}z.70^{s}	z.55	z.65^{s}	z.65	z.90^{s}	z.70	z.75^{s}	3.10	3.30	3.10^{s}	z.90	z.80^{s}	^{I}z.80^{s}	^{I}z.75^{s}	z.75^{s}	z.80	z.95^{s}	z.90	z.90	^{J}3.00^{s}	z.80^{s}	^{I}z.60^{s}	^{I}z.60^{s}	^{I}z.70^{s}
30	^{I}z.60^{s}	^{I}z.75^{s}	z.80^{s}	3.00	^{I}z.80^{s}	z.45^{s}	z.80	^{u}3.20^{s}	3.30^{s}	3.15	z.95	z.85^{s}	^{u}z.85^{s}	z.80	z.75	z.70^{H}	z.95	z.90	z.85	^{J}3.00^{s}	z.95^{s}	z.75^{s}	^{I}z.85^{s}	^{J}z.75^{s}
31	z.85^{s}	z.75^{s}	z.80	z.75	z.65	z.55^{s}	z.85	3.35	3.50	3.40	3.10	3.05	z.95	z.85	z.90	z.85	3.00	3.10	z.90	3.10	3.05^{s}	^{I}z.80^{s}	z.70	z.80
No.	27	27	26	25	25	25	24	23	24	26	24	27	31	31	31	31	30	27	28	29	30	29	28	28
Median	^{u}2.70	2.70	2.60	2.60	2.65	2.60	2.80	3.05	3.20	3.15	3.10	3.05	2.95	2.90	2.90	2.95	3.05	3.05	3.00	3.10	2.90	2.75	2.70	2.70

(M3000)F2 Sweep 1.0 Mc to 20.0 Mc in 20 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

K 7

IONOSPHERIC DATA

Jan. 1960 | (M3000)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																								
2																								
3								C																
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11								C	C															
12																								
13																								
14																								
15																								
16																								
17								C	C	L														
18															L									
19																								
20								C	C															
21									C	C	L	L												
22								C	C					L										
23																								
24																		C						
25								C	C	C	C	C												
26								C																
27																								
28																								
29																								
30																								
31														L										
No.																								
Median																								

(M3000)F1 Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

Jan. 1960

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																								
2																								
3								C																
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11								C	C															
12																								
13																								
14																								
15																								
16																								
17								C	C	260														
18															270									
19																								
20								C	C															
21									C	C	260	245												
22								C	C					250										
23																								
24																		C						
25								C	C	C	C	C												
26								C																
27																								
28																								
29																								
30																								
31														305										
No.										1	1	1		2	1									
Median										260	260	245		280	270									

h'F2

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

The Radio Research Laboratories, Japan.

K 9

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Jan. 1960

h'F

135° E Mean Time (G.M.T.+ 9h.)

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	400	310	305	290	320	350	260	225	235	245	245^{S}	225^{S}	250	275	240	245	215	240	220	220	245	305	300	350
2	325	315	C	C	C	C	C	255	245^{S}	250	240	230	220	245	230	245	230	230	245	220	250	E360^{A}	C	C
3	C	C	C	C	C	C	C	C	230	240	240	230	245	250	250	240	230	230	250	230	240	300^{A}	350^{A}	340^{A}
4	U350^{S}	400	320	345	340	300	250	240	250	240	245	245^{S}	250	250^{S}	250	250	245^{S}	250	250	235	225	350	305	270
5	250	320	350	350	310	270	245	245	250^{S}	250	230	250	250	230	250	250	250	250	245	240	260	300^{A}	295	275
6	295	295	245	305	295	360	350	255	250	250	250^{S}	235	235^{S}	255^{S}	250	250	240^{S}	235	235	220	270^{A}	325	285	280
7	300	300	320	310	255	E310^{E}	255	235	230	250	240	230	255	230	250^{A}	245	220	250	240	240	E300^{S}	250	310	I350^{A}
8	E400^{S}	305	300	350	350	355	310^{S}	210	230	240	245	240	235	235	230^{S}	250	245	215	250	250	250	300	270	255^{S}
9	300	260	260	310	315	355^{S}	295	250	240	240	240	225	225	230^{S}	245	250	240^{S}	250	250	240	255	I280^{C}	300	300
10	E370^{S}	I320^{S}	300	325	305	325	300	250^{S}	240	250	240	240	225	225	250	245	235	240	270^{S}	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	250	230	250	245	240	250	250	235	250^{S}	240	215	E390^{S}	270	270	300
12	E460^{S}	350	350	400	355	355	290	250^{S}	240	250	250	245^{S}	245^{S}	220	250	230	250	220	225	215^{S}	270	270	305	300
13	E335^{S}	325	300	300	295	355	360^{S}	265	250	250	250	240	235	235	240	240	205^{S}	210	225	215	240	295	300	300
14	E360^{S}	E405^{S}	350	E335^{C}	I310^{A}	305	340^{A}	I285^{A}	230	245	240	240	250	250	250	250	230	I250^{A}	255	250	255	270^{S}	250	250^{S}
15	300	350	350	E450^{C}	355	I325^{A}	400	250	250	240	220	225	240	215^{H}	250	250	230	205	265^{S}	250	240	280^{S}	E350^{A}	280^{A}
16	I330^{A}	380^{A}	I430^{S}	375	305	350^{S}	305	255^{S}	245	250	250	230	235	240	240	230	240	235	240	250	240	255	300	295
17	C	C	C	C	C	C	C	C	C	245	250	230	230	230	250	245	250	240	230	255	250	310^{S}	340	320
18	I325^{S}	I320^{S}	E400^{S}	300	355	E355^{S}	340	260	255	250	250	250	250	245	245	250	255	245	245	I250^{A}	305	305	305^{A}	300
19	300	300	320	355	355	350	310	250	250	250	255	245	235	245	245	250	240	250	245	245	250	310	300	290
20	300	300	255	250	310	325	C	C	C	250	245	240	240	240	235	245	245	245	230	230	275	E310^{S}	300	305
21	255	250	430	400	350	295	250	250	C	C	230	230	230	210	245	240	245	245	245	245	285	280	300	320
22	295	260	250	C	C	C	C	C	C	250	245	235	245	205	225	245	250	245	245	250	E300^{A}	305	I310^{A}	300
23	I295^{S}	350	380	350	300	305	305	245	230	235	230	220^{S}	240	240	240	245	245^{S}	250	225	220	255^{S}	280^{S}	320	305
24	305	E350^{S}	I310^{S}	300	335	360	I330^{C}	255	240	240	235	240	240	240	240	230	245^{S}	I250^{C}	C	C	245	E300^{C}	305	C
25	C	C	C	C	C	C	C	C	C	C	C	C	240	215	245	250	235	215	250	220	250	260	285	290^{S}
26	305	305	290	405	400	I390^{C}	I330^{C}	I245^{C}	240	240	240	250	250	245	230	250	250^{S}	240^{S}	250	220	250^{S}	260^{S}	300	255
27	E305^{S}	305	355	385	I330^{C}	350	I320^{C}	255^{S}	240	230	240	225	245	240	240	E250^{C}	240	250	250	225	220	305^{S}	305	300
28	320^{S}	340	320^{S}	350	350	350	300	250	220	225	215	240	240	240	240	260^{S}	225	255	255^{S}	250	255	300^{A}	255	250
29	320^{S}	350	325^{S}	325	280	315	315	255^{S}	245	235	225	225	250	250	250	250	250	E300^{A}	260	245	255^{S}	305	275^{S}	300^{S}
30	300^{S}	285	300	260	230	380	305	255^{S}	240	240	240	225	240	240	235	240^{H}	250	225	255^{S}	265	250	260^{S}	E330^{S}	300
31	270	305	300^{S}	305^{A}	275^{S}	320	300^{S}	240^{S}	240	235	230	220	245	240	245	250	250	250	250	250	250	255	300	300
No.	21	25	25	23	25	24	24	25	25	29	30	30	31	31	31	31	31	30	30	29	27	27	27	28
Median	300	310	320	325	315	350	305	250	240	245	240	235	240	240	245	E250	240	245	245	240	250	295	300	300

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | R'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	110	E	E	E	E	E	E	B	B	130	120	125	130	105	100	155	150	140	E	E	E	E	E	110
2	E	E	C	C	C	C	C	B	120	110	G	110	110	G	105	G	145	110	110	110	110	105	C	C
3	C	C	C	C	C	C	C	C	G	G	G	G	G	G	115	110	S	110	110	110	110	110	100	100
4	S	S	E	E	E	E	E	S	G	110	G	G	G	G	105	100	S	125	110	E	110	E	105	105
5	105	105	E	E	E	E	E	B	120	110	110	105	105	G	110	100	100	100	E	E	E	110	110	110
6	115	110	E	E	E	E	E	B	120	110	110	G	G	G	G	G	S	E	E	E	110	110	115	105
7	105	105	E	E	E	105	E	S	G	115	G	G	G	105	100	S	S	S	S	S	S	S	S	105
8	105	S	S	105	E	E	S	S	G	G	G	G	115	G	G	G	105	S	105	E	E	E	E	S
9	E	E	E	E	E	S	E	S	120	120	G	G	G	G	G	G	S	E	E	E	E	C	E	E
10	S	S	E	E	E	E	E	S	G	G	G	G	G	G	S	S	S	S	S	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	120	150	140	150	105	105	G	120	S	E	E	S	E	E	E
12	S	E	E	E	E	E	E	S	155	125	120	140	100	100	140	120	S	E	E	E	E	S	E	E
13	S	E	E	E	E	E	S	B	G	G	120	G	G	160	G	120	110	110	S	E	110	E	E	E
14	S	S	E	115	115	125	115	110	110	115	110	105	105	135	B	E200q	140	110	110	110	110	105	105	S
15	110	S	110	C	110	115	120	S	B	140	G	105	G	G	125	120	S	S	105	E	E	S	105	105
16	105	105	S	110	105	S	115	105	G	G	G	G	G	E155s	G	G	G	140	110	S	S	S	S	S
17	C	C	C	C	C	C	C	C	C	G	120	G	G	G	G	G	S	120	115	105	S	S	S	S
18	S	S	S	E	S	S	E	S	110	G	105	G	105	G	G	130	G	110	110	110	S	S	105	105
19	S	E	E	E	E	E	S	S	G	G	105	100	100	G	105	120	S	S	S	S	E	S	105	E
20	S	E	E	E	E	E	C	C	C	130	115	G	G	G	G	G	S	S	110	110	S	S	S	E
21	S	S	105	105	S	E	S	S	C	C	G	G	G	G	G	G	S	S	E	105	S	S	S	110
22	105	S	E	C	C	C	C	C	C	110	105	110	110	G	G	G	S	105	S	105	105	105	105	105
23	S	E	E	E	E	E	S	S	G	105	105	G	G	G	B	G	S	S	E	E	S	S	E	E
24	E	S	S	E	S	E	C	S	G	G	110	G	G	G	G	G	S	C	C	C	E	C	E	C
25	C	C	C	C	C	C	C	C	C	C	C	C	G	120	110	G	S	S	E	S	E	E	E	E
26	E	E	E	E	E	C	C	C	G	135	125	G	105	G	130	120	S	S	E	E	S	S	E	E
27	S	E	E	110	C	E	C	S	135	G	G	G	B	G	120	C	S	S	E	E	E	S	E	E
28	S	E	S	E	E	E	S	S	G	G	G	120	G	150	140	125	S	115	105	105	105	105	105	E
29	S	E	S	110	E	E	S	S	135	G	G	G	G	155	150	150	130	115	110	110	105	105	S	125
30	S	E	115	110	E	E	B	S	G	G	G	G	110	E175q	G	G	S	125	120	120	110	S	S	105
31	S	S	115	110	S	S	S	S	G	105	G	G	B	B	G	150	130	120	E	110	105	105	105	S
No.	8	4	4	8	3	3	3	2	9	16	15	10	12	9	15	13	9	15	13	12	11	9	11	12
Median	105	105	110	110	110	115	115	110	120	115	110	110	110	120	110	120	130	115	110	110	110	105	105	105

R'Es

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f									C	l	C	C	l	l	k l	k	k						f
2									l	l		l	l		l		C	f	f	f	fz	f		
3															l	l		f	f	fz	fz	f	fz	f
4										l					l	l		l	f		f		fz	f
5	f	fz							l	l	l	l	l		l	l	lz	f				fz	f	f
6	f	fz							l	l	l										fz	f	fz	fz
7	f	fz				f				l				l	l									fz
8	fz			fz									l				l		f					
9									l	l														
10																								
11										l	k	k	l k	l	l		l							
12									k	C l	C	k	l	l	k	l								
13											l			k		C	l	f			f			
14				f	fz	f	fz	lz	l	l k	l	lz	lz	k		k	k	fz	f	fz	f	f	f	
15	f		f		f	f	f			k		l			C	l			f				f	f
16	f	f		fz	fz		f	l						k				k	f					
17											l							l	f	f				
18									l		l		l			k		l	f	f3			fz	fz
19											lz	lz	l		l	k							fz	
20										k	l								f	f				
21			fz	f																f				f
22	f									lz	l	l	l					lz		f	f	fz	fz	fz
23										l	l													
24											l													
25														l	l									
26										k	C		l		k	l								
27				f					k						C									
28												l		k l	k l	k		lz	f	f	fz	f	f	
29				f					k					k	k	k	k	lz	fz	f	fz	fz		f
30			f	fz									l	k				l	f	f	f			f
31			f	fz						l						k	k	l		f	f	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.

IONOSPHERIC DATA

Jan. 1960 | 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	405	400	"355S	370	400S	400	320	275S	280	300	305S	325	295	"325S	330	"305S	I300S	J300S	340	J300	340	400S	390S	410S
2	"400S	405S	C	C	C	C	C	S	270	295	305	310	340	345S	355	305	300	300S	J280S	275	290	395	C	C
3	C	C	C	C	C	C	C	C	275N	305	300	305	345	350	335	310	305	305	"305S	300	305S	400S	395	"355S
4	I410S	445	400	430	405S	380	300	300	"300S	310	S	S	"310S	350	325	310S	310	S	S	I300S	"330S	S	S	I350S
5	I305S	J400S	420	430	I350S	315	260	S	S	300	305	305	355	330	350	330	J335S	J325S	J305S	310S	385	350S	385	380
6	400	380	335	400	350	455	435	J305S	305	I295S	320	"305S	350	"340R	350	330	320S	I300S	I290S	300	350	I390S	350	330
7	"340S	350	420	400	J315S	"400S	315	275S	"300S	J305S	305	305	305	350	350	J305S	J325S	310	I300S	"280S	"355S	"315S	J355S	I405A
8	400	395S	360	410	430S	440	"380S	255S	260S	300	300S	J300S	310	315	350	J325S	340S	I305S	"305S	"305S	305S	J360S	I355S	I350S
9	"355S	"345S	355	I395S	375	390	315	I310S	I275S	"300S	275	"300S	305	320S	325	"305S	"300S	S	S	300	285S	I345C	360S	370
10	400S	I385S	395	355	390S	375S	350	I300S	I255S	300	275	290	290	310	320S	I300S	J300S	J300S	"345S	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	S	R S	325	315	350	330S	I320S	"305S	"275S	290	290	440S	315S	I360S	410
12	I420S	400	455	450	450	405	340S	"300S	280S	305	I300S	300	305	325	335	J305S	J300S	300	I290S	280	320	315S	"365S	370
13	I390S	400	380	385	325	J405S	"400S	340	300	S	S	320	300	350	325	300	300	300S	J300S	290S	325	355S	385	380
14	380S	405	405	J385R	I390A	380	J370S	I330A	300	300	315	315	340	360	355	300	R	A	"310S	I300S	350	350	"350S	325S
15	I410S	425S	425	450	420	I375A	"415R	I340S	"300S	"325S	I290S	320	"345S	340H	355	"325S	300S	"295S	350	305	J300S	350S	370	320
16	I350A	"380S	I430S	400	430S	390	355	J310S	300	S	S	J305S	310	330	305	J295S	305	280	275	300	300	I310S	385	365
17	C	C	C	C	C	C	C	C	C	"310R	S	S	310	310	"305S	305S	J305S	300S	285	300	295	I380S	400	390S
18	I370S	I380S	"430S	400	400S	"410S	400S	"300S	300	305	310	305	320	310	350	J340S	J320S	"305S	J305S	I325A	390	J400S	355	380
19	355	385	405S	490	445S	435S	J405S	J300S	I280S	300	305	300	325	325	345	320	305	300	J300S	295	305	"390S	360	350
20	I350S	350	315	355	"395S	390	C	C	C	290R	300	315	310	325	330	325	I300S	300	300	295S	J355S	"395S	"365S	375
21	I320S	290	465	450	J405S	350	J315S	300	C	C	S	S	345	355	355	330	J310S	305	"305S	"285S	345	340S	"360S	400
22	345	345	300	C	C	C	C	C	C	"305S	I300S	"325S	330	350	355	350	"315S	300	"305S	280	"350S	"395S	I350A	350
23	J375S	"400S	455S	430	360	380	350	295	260	305	I300S	J305S	335	350	350	320	"300S	305S	J300R	300S	300	350S	J390S	"375S
24	375	390	I390S	350	I400S	445	I390S	"320S	295S	295	355	315	335	350	350	350	J345S	C	C	C	305	I320C	395	C
25	C	C	C	C	C	C	C	C	C	C	C	C	325	350	350	325	300	305	310R	300	350R	340	J350S	J390S
26	380	J350S	365	460	J470S	I435C	I375C	I315C	300	300	325	325	355	355	350	340	J320S	305	325	305S	340	365	355	310
27	385	390	450	420S	I440C	425S	J370C	300S	280	305	315S	360	360S	355	365	355S	355	355S	J300S	290	300	400S	400	370S
28	375S	400S	370S	I405S	445	410S	350S	275S	270S	300	325	325	330	340	355	350S	J320S	325	350	J300	I335S	I360S	I340S	315S
29	J365S	425	400S	400	340S	365	380S	305S	285	300S	345	355S	I370S	I375S	375S	355	320S	345	340	J310S	345S	I390S	I390S	I360S
30	I380S	I360S	350S	310	I360S	430S	350S	"300S	275S	300	330	350S	"355S	350	370	395H	335	450	345	J310S	310S	355S	I350S	J355S
31	335S	350S	350	355	400	400S	340	270	270	280	305	310	335	355	325	355	305	300	340	300	305S	I350S	380	350
No.	27	27	26	25	25	25	24	23	24	26	24	27	31	31	31	31	30	27	28	29	30	29	28	28
Median	"375	390	400	400	400	400	350	300	280	300	305	310	330	350	350	325	305	300	305	300	330	355	360	370

hpF2

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

The Radio Research Laboratories, Japan.

K 13

IONOSPHERIC DATA

Jan. 1960 | 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	125	125	u100s	175	115s	125	90	125s	85	55	65s	80	7.0	u 95s	80	u140s	I 90s	J105s	105	J100s	150	120s	100s	105s
2	u125s	145s	C	C	C	C	C	S	80	60	80	90	105	100s	50	100	100	95s	J 75s	125	110	90	C	C
3	C	C	C	C	C	C	C	C	60v	90	90	80	60	60	70	95	95	75	u 85s	105	95s	100s	145	u100s
4	I110s	105	105	120	95s	115	100	100	u 95s	75	S	S	u160s	85	100	100s	110	S	S	I 90s	u130s	S	S	I120s
5	I 95s	J130s	120	115	I100s	95	120	S	S	90	90	90	95	115	100	115	J110s	J125s	J 95s	J 95s	115	105s	100	115
6	105	120	115	100	100	145	120	J100s	50	I 65s	80	u 95s	95	u 90R	85	95	90s	I 90s	I100s	105	125	I130s	115	110
7	u 75s	90	120	100	J 75s	I 80s	85	100s	u 55s	J 85s	80	80	90	100	95	J145s	J 90s	90s	I 70s	u 75s	u110s	u130s	J145s	I100A
8	100	105s	140	135	115s	110	u120s	60s	80s	85	55s	J 85s	105	115	95	J130s	95s	I 90s	u115s	u 95s	120s	J100s	I100s	I110s
9	u 75s	u105s	85	I105s	150	110	125	I110s	I 70s	u 70s	60	u 85s	90	95s	100	u 80s	u105s	S	S	100	105s	I120A	90s	120
10	90s	I115s	95	140	90s	110s	100	I100s	J 85s	55	75	70	95	105	80s	I 95s	J120s	J135s	u 80s	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	S	RS	75	75	105	80s	I 95s	u110s	u 65s	75	160	110s	105s	I120s	125
12	I 95s	140	145	135	125	110	100s	u100s	75s	85	I 60s	75	110	80	80	J 95s	J100s	100	I 90s	80	80	90s	u 60s	110
13	I100s	115	120	125	110	J105s	u100s	110	90	S	S	105	90	95	80	75	125	80s	J100s	100s	150	120s	140	145
14	110s	100	125	J140R	I130A	110	J120s	I110A	85	65	80	115	90	50	125	90	R	A	J115s	I100s	95	90	u 85s	105s
15	I110s	110s	120	105	110	I110A	u135R	I100s	u 95s	J 75s	I 90s	110	u100s	95H	95	I105s	100s	J100s	130	125	I 85s	140	80	100
16	I 90s	u130s	I135s	105	140s	120	95	J 90s	70	S	S	J100s	95	90	95	J 90s	90	75	70	95	105	I135s	80	130
17	C	C	C	C	C	C	C	C	C	u 55R	S	S	90	95	u 95s	95s	I100s	95s	110	105	105	I135s	100	105s
18	I110s	I115s	u120s	100	100s	u140s	110s	u 95s	50	90	85	95	85	95	95	J105s	J 85s	u 95s	J 90s	I 90A	105	J145s	110	105
19	130	120	145s	110	115s	115s	J140s	J 95s	J 70s	55	80	95	85	95	65	105	90	95	J 85s	105	100	u105s	120	100
20	I100s	100	105	140	u100s	110	C	C	C	55R	55	70	75	115	115	85	I100s	85	95	100s	J140s	J100s	u105s	115
21	I 95s	110	135	125	J 95s	100	J130s	95	C	C	S	S	75	90	95	110	J 85s	95	u 95s	u 65s	110	105s	I120A	100
22	100	105	95	C	C	C	C	C	C	u 80s	I 80s	u 80s	75	80	100	95	u130s	85	u 95s	115	u100s	u105s	I120A	105
23	I 90s	u100s	100s	120	140	120	110	60	85	95	I100s	J120s	120	110	90	105	u 95s	95s	J 90R	100s	110	120s	J110s	J110s
24	90	75	I 90s	95	I140s	100	I105C	u 80s	60s	55	70	90	90	80	125	100	J130s	C	C	C	145	I120C	100	C
25	C	C	C	C	C	C	C	C	C	C	C	C	100	100	80	75	115	80	75R	120	130R	95	J115s	J100s
26	100	J110s	135	140	J 80s	I115C	I110C	I 95C	70	70	100	105	80	95	105	85	J 80s	95	90	80s	110	110	110	105
27	115	90	130	75s	I120C	95s	I110C	90s	65	95	85s	100	75s	115	120	120	90	80s	J 80s	90	140	140s	180	130s
28	115s	100s	115s	I105s	105	130s	115s	75s	80s	100	80	100	90	100	95	105s	J120s	125	100	J100s	I105s	I110s	I120s	110s
29	J130s	100	90s	90	110s	125	105s	80	75	90s	85	100s	I110s	I120s	115s	110	105s	105	90	J105s	120s	I145s	I140s	I130s
30	I160s	I140s	110s	100	I120s	140s	100	u105s	75s	85	95	95s	u 95s	120	130	100H	105	85	140	J105s	145s	125s	I100s	J140s
31	175s	125s	125	100	140	145s	105	85	55	65	95	85	110	105	125	100	125	95	100	85	100	I 70s	115	100
No.	27	27	26	25	25	25	24	23	24	26	24	27	31	31	31	31	30	27	28	29	30	29	28	28
Median	u100	110	120	110	110	110	110	95	75	75	80	90	90	95	95	100	100	95	90	100	110	110	110	110

ypF2

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

The Radio Research Laboratories, Japan.

K 14

IONOSPHERIC DATA

Jan. 1960 | 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	3.5	C	C	C	C	C	C	C	S	C	C	C	14.3	14.2	14.8	14.5	13.4	11.2	9.3	9.9	8.4	5.7	4.8	5.2
2	4.2	3.6	3.5	3.6	3.2	3.3	3.5	5.6	9.5	11.0	12.3	13.5	13.9	14.2	15.2	15.1	S	11.9	10.4	8.8	5.8	5.5	5.5	5.6
3	5.4	5.0	5.1	4.0	3.8	3.5	3.6	5.8	9.3	11.3	13.1	13.3	13.9	13.8	13.6	12.5	12.3	11.1	10.6	9.0	7.9	6.6	5.5	4.6
4	4.3	3.6	3.5	3.3	3.5	3.8	4.0	5.1	9.7	13.4	15.1	15.7	15.2	14.7	14.5	14.0	13.4	11.4	10.9	10.1	7.5	5.8	6.4	6.7
5	5.6	4.1	4.0	4.2	4.7	3.2	3.1	4.8	8.4	10.6	11.4	12.4	13.3	13.7	14.4	14.4	13.7	11.2	10.7	11.3	10.0	S	6.6	6.8
6	7.3	7.8	7.2	5.4	4.1	3.6	3.4	6.4	10.2	13.4	13.2	14.6	12.1	11.4	11.8	12.8	12.4	11.4	9.8	8.8	7.6	7.0	6.8	6.4
7	4.0	4.2	3.7	3.8	3.8	3.4	3.5	5.1	9.2	11.2	14.0	14.1	13.7	13.3	13.8	14.5	14.5	12.4	12.5	R	S	7.9	5.2	4.8
8	5.3	4.8	4.1	3.0	2.9	2.9	3.2	6.5	10.2	11.0	12.6	13.4	14.0	14.4	13.7	15.0	15.6	14.8	14.5	11.5	S	9.3	6.3	6.1
9	5.3	4.5	3.8	3.0	2.7	2.7	2.8	4.5	8.8	12.4	14.3	14.6	12.9	13.8	14.3	13.7	12.6	10.7	10.7	10.2	7.8	6.0	4.3	4.3
10	3.6	3.5	3.1	3.0	2.8	3.2	3.4	4.8	9.7	11.6	12.9	11.4	11.3	10.3	10.4	11.7	9.9	9.4	8.5	8.9	10.2	9.1	8.2	6.6
11	7.3	6.1	5.1	4.9	5.4	5.6	5.4	5.8	11.6	S	15.4	14.2	13.7	12.7	13.4	12.4	11.0	9.6	10.1	8.0	5.9	6.6	6.1	5.3
12	4.0	4.0	3.4	3.0	3.3	3.7	4.1	5.1	10.2	11.8	13.2	12.9	11.5	10.9	10.9	11.8	11.0	10.5	10.0	8.4	6.3	5.4	4.9	4.5
13	4.5	4.2	4.0	3.0	3.4	3.1	3.1	4.1	8.8	12.6	14.4	14.9	14.7	14.4	14.0	15.0	S	12.5	11.3	9.2	8.4	6.5	5.8	5.6
14	5.7	5.4	4.8	4.1	3.7	3.4	3.4	4.3	8.9	12.5	14.2	12.5	13.1	13.8	13.8	15.6	14.0	11.7	10.2	7.7	9.2	8.5	6.6	6.9
15	6.4	4.1	2.5	2.5	2.5	3.0	2.9	4.4	9.4	10.4	12.2	12.2	12.2	12.7	14.2	13.3	11.5	10.4	11.4	8.6	7.1	7.3	8.1	5.5
16	3.4	3.0	2.9	3.0	3.1	3.1	2.5	4.5	9.6	14.1	15.8	15.7	16.1	15.1	13.1	12.5	9.8	9.3	9.2	9.2	10.0	8.8	8.2	7.9
17	7.1	6.6	7.2	4.9	3.1	3.4	3.5	4.5	9.2	11.7	15.6	S	15.0	13.8	12.4	12.3	12.2	11.1	9.6	7.9	6.6	5.6	5.9	5.4
18	4.8	4.3	4.1	3.8	3.4	3.6	3.5	4.8	9.8	13.1	14.6	14.9	15.2	15.2	S	14.8	13.4	12.5	10.8	8.8	8.4	7.8	8.4	7.4
19	7.0	6.8	5.4	4.8	4.4	3.9	4.0	5.9	10.1	10.5	13.2	13.4	12.1	12.8	12.7	12.2	11.9	10.8	10.4	8.5	6.8	5.4	5.1	4.9
20	4.8	4.5	4.5	2.7	2.6	2.9	2.9	4.6	9.2	12.5	12.9	13.2	14.7	14.4	13.6	12.9	12.8	11.3	9.4	7.9	7.9	8.4	7.0	5.8
21	6.4	4.6	3.0	3.0	3.3	3.6	3.3	4.1	C	C	C	C	C	C	C	C	C	14.5	13.4	10.7	7.7	S	6.1	5.6
22	6.0	3.2	3.0	2.7	3.0	3.0	2.9	3.6	9.8	13.3	16.0	16.1	15.4	15.2	15.4	15.7	15.6	13.4	11.1	9.4	9.0	6.2	6.1	5.6
23	5.6	4.4	4.0	3.5	3.5	3.4	3.3	5.0	9.1	12.4	14.1	14.3	13.4	13.3	13.4	13.0	12.2	11.2	10.1	8.3	8.1	7.7	6.1	5.5
24	5.0	4.6	4.5	3.9	3.4	3.7	3.7	4.4	9.6	12.4	13.5	14.3	13.6	14.7	14.6	S	14.1	13.4	11.1	9.0	8.9	8.2	6.5	6.2
25	5.5	3.8	3.9	3.6	3.5	3.5	3.6	5.4	9.7	11.6	13.6	13.5	13.0	13.3	13.0	12.3	12.0	10.7	9.6	9.7	9.6	8.6	8.0	7.4
26	6.4	5.4	5.0	3.4	3.1	3.2	3.4	5.5	10.7	12.0	12.4	14.0	14.8	14.3	12.6	11.9	12.0	11.0	9.5	8.9	9.1	8.9	8.6	7.9
27	7.3	6.1	5.4	4.6	4.1	4.1	4.5	5.6	10.8	13.0	14.0	14.4	14.5	14.6	13.2	12.9	13.7	13.5	12.4	12.5	11.0	10.2	S	S
28	7.0	5.7	5.4	4.9	4.3	3.8	3.8	5.3	10.5	11.4	12.4	12.6	13.5	13.3	12.2	11.8	11.5	11.1	9.9	9.6	9.3	7.1	7.1	6.9
29	5.9	4.7	4.6	4.1	4.0	3.7	3.6	5.2	10.0	13.4	13.8	15.0	RH	RH	S	SH	14.7	13.0	11.2	11.6	11.5	S	S	8.9
30	8.3	7.3	6.1	6.3	4.9	3.5	3.6	5.9	11.1	13.4	14.6	14.6	S	RH	S	SH	14.0	13.5	12.7	9.5	8.9	9.1	8.6	S
31	S	5.8	4.7	3.9	3.5	3.4	3.5	6.1	11.5	13.8	12.3	12.4	13.1	13.6	13.6	12.4	11.1	10.2	9.7	8.3	9.0	9.0	8.2	7.4
No.	30	30	30	30	30	30	30	30	29	28	29	28	28	28	27	27	28	31	31	30	29	28	29	29
Median	5.6	4.6	4.1	3.7	3.4	3.4	3.5	5.0	9.7	12.4	13.6	14.0	13.7	13.8	13.6	12.9	12.5	11.2	10.4	9.0	8.4	7.5	6.4	5.8
U.Q	6.4	5.7	5.1	4.2	4.0	3.7	3.6	5.6	10.2	13.2	14.5	14.6	14.7	14.4	14.3	14.5	13.8	12.5	11.2	9.9	9.2	8.7	8.0	6.9
L.Q	4.5	4.1	3.5	3.0	3.1	3.2	3.2	4.5	9.2	11.4	12.8	13.0	13.0	13.3	12.7	12.3	11.7	10.7	9.7	8.5	7.6	6.1	5.6	5.4
Q.R	1.9	1.6	1.6	1.2	0.9	0.5	0.4	1.1	1.0	1.8	1.7	1.6	1.7	1.1	1.6	2.2	2.1	1.8	1.5	1.4	1.6	2.6	2.4	1.5

foF2

Sweep 1.0 Mc to 20.3 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 1

IONOSPHERIC DATA

Jan. 1960 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C		C	C	C												
2																								
3										C														
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21									C	C	C	C	C	C	C	C	C							
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
No.																								
Median																								

foF1

Sweep 1.0 Mc to 20.3 Mc in 30 min sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 2

IONOSPHERIC DATA

Jan. 1960 | foE | 135° E Mean Time (G.M.T.+ 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								C	2.10	C	C	C	3.65	3.70	3.65	3.40	2.90R	2.00						
2								S	I2.10A	I2.70A	3.30	3.60	3.70	3.70	I3.55A	3.40	I2.90A	A						
3								S	2.20	I2.90C	3.40	3.60	3.70	3.80	3.55	3.35	3.00	2.10						
4								S	2.40H	2.80	3.00	3.60	I3.70A	I3.70A	3.60	3.30	I2.95A	A						
5								S	2.20	2.80R	I3.15A	3.60	3.70	A	A	A	A	A						
6								S	2.20	3.00	3.40	A	A	3.70	3.60	A	A	A						
7								S	2.20	3.00	I3.00A	3.60	I3.70A	3.70	3.70H	3.40	3.00	A						
8								S	A	A	A	3.55	I3.70A	I3.75A	3.60	3.40	2.90	A						
9								B	I2.15A	3.10	3.40	3.60	3.70	3.60	3.50	3.30	2.90	A						
10								S	A	2.90	3.40	3.50	3.60	3.60H	3.40H	3.20	2.70	2.20						
11								S	2.10	2.95	I3.20R	3.40	3.70	I3.60A	3.50	3.20	A	A						
12								S	2.30	2.90	3.30	3.45	3.55	3.65	3.40	3.10	I2.75A	A						
13								S	2.30H	3.00	3.30	3.50	3.55	3.60	3.40	3.10	2.40	S						
14								S	A	2.90	3.20	3.50	I3.60A	3.70	I3.50A	I3.35A	2.90	S						
15								S	2.20	A	A	A	A	A	3.40	3.15	2.50	A						
16								S	2.20	2.90	3.40	3.60	3.70	3.80	3.60	I3.30A	3.00	2.30R						
17								S	I2.55B	3.00	3.30	3.40	3.70	R	3.70	3.40	3.00	2.30						
18								S	2.10	3.00	3.40	3.60	3.80R	3.80	3.70	3.40	2.90	2.00						
19								S	2.20	3.00	3.40	3.50	3.60	I3.65A	I3.50A	3.30	3.00	2.20						
20								S	A	3.00	3.30	3.50	3.60	3.65	3.50	3.35	3.00	A						
21								S	C	C	C	C	C	C	C	C	C	2.20	S					
22								S	2.20	2.70	I3.15A	3.50	3.60	3.70	3.60	3.40	3.05	2.10	B					
23								S	2.35	2.90	I3.30A	3.50	3.60	3.70	3.60	3.40	3.10	A						
24								S	2.40	A	A	3.50	3.75	3.70	3.60	3.30	3.05	2.20						
25								S	2.50	3.05	3.40	3.60R	R	A	A	3.50	3.00	2.40						
26								S	2.50	3.20	3.60	I3.75A	4.00	4.00	3.90	3.80	A	A						
27								S	2.30	3.10	3.40	3.50	I3.85R	3.90	3.80	3.60	3.20	2.40						
28								S	2.60H	3.10H	3.50	A	A	A	R	3.50	3.30	2.00						
29								S	2.30	3.10	3.50	3.65	3.70	I3.85A	3.80	3.45	3.25	2.70						
30								S	A	3.20	3.55	3.70	I3.80A	3.80	3.75	3.45	3.10H	2.40						
31								A	2.20	3.10	3.45	3.70	3.75	3.80	3.75R	3.50	3.20	2.30						
No.									25	26	26	26	26	25	27	28	26	16						
Median									2.20	3.00	3.40	3.60	3.70	3.70	3.60	3.40	3.00	2.20						

foE

Sweep 1.0 Mc to 20.3 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 3

IONOSPHERIC DATA

Jan. 1960 | 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	C	C	C	C	C	C	C	G	C	C	C	4.4	4.1	G	3.8	3.9	3.6	3.7	6.1^{M}	S	3.1^{M}	S	2.3^{M}
2	E	S	E	E	E	E	E	G	3.1	5.8^{M}	6.1^{M}	3.6	3.1^{G}	G	6.7^{M}	3.7	9.0^{M}	5.0^{M}	2.3	S	S	S	2.3^{M}	S
3	2.9^{M}	2.1	E	E	E	E	S	G	2.4	C	3.4^{G}	3.5^{G}	3.4^{G}	G	G	G	G	G	3.4^{M}	5.3^{M}	3.7^{M}	3.1^{M}	2.3^{M}	S
4	E	E	E	E	2.3	2.9^{M}	2.5^{M}	2.2^{M}	G	3.2	3.7	G	6.1^{M}	5.1^{M}	G	6.6^{M}	4.2^{M}	3.6^{M}	5.9^{M}	2.3	2.2^{M}	S	S	2.5^{M}
5	3.0^{M}	2.2^{M}	2.6^{M}	1.4	3.0^{M}	E	2.8^{M}	G	G	3.2	6.2^{M}	4.2^{M}	G	4.4^{M}	3.8	6.2^{M}	3.1	2.5	3.6^{M}	2.8^{M}	S	2.4^{M}	2.5^{M}	5.9^{M}
6	3.0^{M}	2.2	2.8^{M}	3.6^{M}	E	E	2.0^{M}	G	G	3.5	G	3.8	4.1	3.6^{G}	G	3.5	5.7^{M}	5.6^{M}	6.1^{M}	5.7^{M}	3.9	3.0^{M}	4.0^{M}	5.1^{M}
7	3.6^{M}	2.2^{M}	2.5^{M}	2.4	E	E	S	G	G	G	3.5	G	3.7	3.3^{G}	G	G	G	3.5^{M}	3.3^{M}	4.1^{M}	3.2^{M}	3.3^{M}	3.1^{M}	3.0^{M}
8	2.1^{M}	2.0^{M}	E	E	E	E	S	G	2.5	3.5	4.2	G	5.5	4.1	3.4^{G}	3.1^{G}	G	2.9^{M}	3.1^{M}	3.0^{M}	3.1^{M}	3.2^{M}	2.6^{M}	2.3^{M}
9	S	S	E	E	E	E	S	G	2.9^{M}	4.0^{M}	G	G	G	G	G	G	G	3.0^{M}	2.5^{M}	S	S	S	S	E
10	S	S	E	E	E	E	S	S	2.2	G	G	G	G	G	G	3.4	2.9^{M}	2.1	2.5^{M}	3.2^{M}	S	S	S	S
11	S	E	E	E	E	E	S	S	G	3.2	4.2	4.0	4.3	5.3^{M}	4.0^{M}	3.6^{M}	3.9^{M}	2.7^{M}	2.6^{M}	3.5^{M}	3.7^{M}	3.9	3.0^{M}	S
12	S	S	2.7^{M}	1.3	E	E	S	S	G	G	3.8	4.1	4.0	4.1	3.6	3.6	3.6	4.4^{M}	4.5^{M}	2.9^{M}	2.8^{M}	2.4^{M}	2.4^{M}	S
13	S	S	E	E	E	2.9^{M}	S	G	3.0^{M}	G	G	3.8^{M}	4.5^{M}	6.0^{M}	4.2	3.6	5.7^{M}	7.3^{M}	9.1^{M}	6.0^{M}	3.6^{M}	2.8^{M}	S	C
14	S	S	E	E	E	E	2.8^{M}	5.7^{M}	9.0^{M}	G	3.7	4.8	9.1^{M}	3.9	6.2	3.5	G	2.2	5.8^{M}	3.1^{M}	S	S	S	S
15	S	S	E	E	E	E	S	S	G	9.0^{M}	9.1^{M}	4.5^{M}	8.2^{M}	7.0^{M}	4.0^{M}	3.4	5.3^{M}	3.5	3.6^{M}	3.1	5.8^{M}	5.8^{M}	6.0^{M}	3.8^{M}
16	2.5	3.0^{M}	3.7^{M}	3.6^{M}	3.0^{M}	2.6^{M}	E	G	G	G	3.8	4.5	4.4	4.4	3.8	3.5	3.4	2.9	3.6^{M}	2.5^{M}	2.1^{M}	3.0^{M}	S	S
17	S	S	E	E	E	E	S	S	B	3.3	3.6	G	G	G	G	G	G	G	S	2.1^{M}	S	2.9^{M}	S	S
18	S	S	E	E	E	E	3.1^{M}	2.3	2.1^{G}	G	G	G	G	G	G	G	G	G	S	2.2^{M}	2.1^{M}	S	S	S
19	S	3.4^{M}	3.0^{M}	1.3	E	E	S	G	G	G	G	4.5	3.1^{G}	5.2^{M}	4.0^{M}	2.9^{G}	3.1^{M}	G	S	S	S	S	S	2.8^{M}
20	3.0^{M}	2.9^{M}	E	E	E	E	S	G	2.1	G	G	G	3.9	3.7	G	G	3.1	3.4	3.6^{M}	3.1^{M}	3.0^{M}	3.2	2.1^{M}	S
21	S	E	E	E	E	E	S	G	C	C	C	C	C	C	C	C	C	2.3	G	S	S	S	S	S
22	S	S	E	E	1.5	E	S	S	2.5	3.1	3.8	5.5	G	8.3	G	G	3.7^{M}	2.3	G	3.5	4.5	2.8^{M}	2.8^{M}	3.1
23	5.4^{M}	2.4^{M}	2.1	E	E	E	S	G	2.5	3.2	3.8	G	G	G	G	G	3.6^{M}	3.6^{M}	3.0^{M}	3.1^{M}	3.2^{M}	S	S	S
24	S	E	E	E	E	E	S	G	G	3.2	4.3^{M}	3.8	G	G	G	G	G	G	E	S	S	S	5.9^{M}	2.9^{M}
25	2.1^{M}	S	E	E	E	E	S	G	G	G	G	4.0	G	3.9	4.0	G	G	2.7	2.2	2.3^{M}	2.1^{M}	S	S	S
26	2.1^{M}	S	E	E	E	E	S	G	G	3.4	4.0	4.5	G	4.4	4.6	4.3	4.0	3.5^{M}	2.1^{M}	S	S	S	S	S
27	S	S	3.0^{M}	3.0^{M}	3.0^{M}	2.1^{M}	S	G	2.4	G	G	3.6	3.8	4.0	5.6^{M}	G	G	G	E	3.1^{M}	2.9^{M}	3.1^{M}	2.3^{M}	S
28	S	2.1^{M}	E	E	E	E	S	G	G	G	3.6	3.9	4.2	5.2^{M}	5.0	5.1	5.5	5.7^{M}	4.0^{M}	2.5^{M}	S	S	2.2^{M}	3.7^{M}
29	3.7^{M}	3.0^{M}	2.4	1.5	2.2	3.0^{M}	2.4^{M}	2.7^{M}	G	G	G	G	G	4.5^{M}	4.1	3.9	3.4	G	3.5^{M}	4.0^{M}	2.2^{M}	6.2^{M}	2.8^{M}	2.9^{M}
30	3.9^{M}	2.5^{M}	E	E	E	E	2.3^{M}	G	4.2^{M}	G	G	G	4.0	G	G	G	G	3.1	2.8	5.4^{M}	6.8^{M}	5.1^{M}	5.7^{M}	3.0^{M}
31	S	E	3.3^{M}	2.8^{M}	2.9^{M}	2.9^{M}	3.0^{M}	3.1^{M}	G	G	G	4.0	G	G	4.0	4.3	4.9	5.1	4.3^{M}	3.1^{M}	2.2^{M}	2.9^{M}	S	S
No.	14	17	30	30	30	30	10	24	29	28	29	29	30	30	30	30	30	31	28	25	19	18	16	14
Median	3.0^{M}	2.2^{M}	E	E	E	E	2.4^{M}	G	G	G	3.6	3.8	G	4.0	G	3.4	3.2	2.9	3.4^{M}	3.1^{M}	3.1^{M}	3.1^{M}	2.7^{M}	3.0^{M}
U.Q	3.6	2.7	2.5	1.3	E	E	2.8	G	2.5	3.2	3.9	4.2	4.3	4.5	4.0	3.7	4.0	3.6	3.8	4.0	3.7	3.3	3.6	3.7
L.Q	2.1	E	E	E	E	E	2.0	G	G	G	G	G	G	G	G	G	G	2.1	2.4	2.6	2.2	2.9	2.3	2.5
Q.R	1.5						0.8											1.5	1.4	1.4	1.5	0.4	1.3	1.2

The Radio Research Laboratories, Japan.

foEs

Sweep 1.0 Mc to 20.3 Mc in 30 ~~min~~ sec in automatic operation.

Y 4

IONOSPHERIC DATA

Jan. 1960 | fbEs | 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	C	C	C	C	C	C	C		C	C	C	4.1	G		3.8	3.8	3.6	$^{D}3.7^{B}$	2.5	S	2.3	S	E
2		S							G	3.2	G	2.4	2.4		4.6	G	3.8	G	$^{D}2.3^{B}$	S	S	S	E	S
3	E	2.0					S		2.1	C	3.1	3.3	3.3						2.7	4.4	2.6	2.2	S	S
4					1.8	2.1	E	G		G	3.6		4.0	G		2.5	G	G	5.0	1.8	S	S	S	E
5	1.8	E	1.7	1.3	1.7		E			G	G	3.3		4.0	G	4.4	G	G	2.9	2.0	S	S	E	2.9
6	1.9	1.8	1.7	2.0			1.7			G		G	G	3.6		3.5	3.2	G	5.0	2.1	2.5	S	2.0	$^{E}3.6^{C}$
7	2.3	2.0	2.2	1.9			S				G		G	3.3				G	2.5	3.4	$^{E}2.9^{A}$	S	2.0	S
8	1.8	S					S		G	G	3.9		3.9	G	3.4	3.0		2.1	2.1	1.7	1.7	2.1	1.8	S
9	S	S					S		G	2.4								G	1.8	S	S	S	S	
10	S	S					S	S	2.1							G	2.5	1.9	E	2.4	S	S	S	S
11	S						S	S		G	G	G	G	4.5	2.4	2.5	G	G	1.9	2.0	3.1	3.8	2.8	S
12	S	S	1.3	1.2			S	S			3.6	4.0	G	4.1	G	G	G	3.6	3.2	1.8	1.9	S	S	S
13	S	S				E	S		G			2.9	3.0	3.4	G	3.4	4.6	6.5	5.4	3.8	2.6	1.8	S	C
14	S	S					E	A	4.4		G	4.3	4.0	G	5.0	3.5		G	1.8	1.8	S	S	S	S
15	S	S					S	S		5.9	5.3	G	6.6	4.6	2.5	G	3.8	3.4	2.5	2.0	4.0	2.8	5.0	2.6
16	2.1	1.9	1.9	1.6	1.7	E					3.8	4.4	4.3	4.2	G	G	G	G	2.1	E	S	2.0	S	S
17	S	S					S	S	B	G	G								S	E	S	1.8	S	S
18	S	S					S	S	2.0										S	E	E	S		
19	S	2.2	1.8	1.2			S					4.3	2.6	4.3	G	2.0	2.6		S	S	S	S	S	E
20	1.8	S					S		2.1				3.2	G			2.6	3.0	2.8	2.3	2.4	2.3	S	S
21	S						S		C	C	C	C	C	C	C	C	C	G		S	S	S	S	S
22	S	S			1.2		S	S	G	G	G	3.3		3.3			2.5	G		2.3	3.4	2.4	S	2.0
23	2.3	E	E				S		2.2	G	G						2.3	G	2.2	2.3	2.1	S	S	S
24	S						S			G	G	G								S	S	S	2.3	1.9
25	1.7	S					S					$^{D}4.0^{S}$		G	G			G	S	S	1.7	S	S	S
26	1.8	S					S			G	G	4.1		4.3	4.4	4.0	G	G	E	S	S	S	S	S
27	S	S	1.3	1.8	1.9	E	S		G			G	G	3.6	3.5					2.5	E	2.5	E	S
28	S	E					S				G	G	G	4.2	4.4	5.1	4.3	4.4	2.6	E	S	S	E	2.9
29	2.9	2.1	1.6	$^{D}1.5^{S}$	1.1	1.9	1.8	G						4.2	4.1	3.9	G		3.5	2.1	2.1	4.7	S	2.1
30	2.9	E					E		3.4				4.0					G	$^{D}2.8^{B}$	4.8	4.0	4.0	4.1	2.2
31	S		2.5	2.0	1.7	1.7	2.2	G				$^{D}4.0^{B}$			G	4.3	4.6	5.1	3.6	2.0	S	S	S	S
No.	12	10	10	8	7	6	7	4	13	13	17	18	18	20	16	18	19	24	22	24	15	13	11	10
Median	1.8	1.8	1.7	1.7	1.7	E	E	G	2.0	G	G	3.3	3.1	3.6	2.4	3.2	2.5	G	2.6	2.0	2.4	2.3	2.0	2.0

fbEs

Sweep 1.0 Mc to 20.3 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 5

51

IONOSPHERIC DATA

Jan. 1960 | 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	E1.65	C	C	C	C	C	C	C	1.70	C	C	C	2.30	2.55	2.40	2.20	2.20	1.80	1.50	E1.60	E1.60	E1.60	E1.75	E1.60
2	1.70	E1.80	1.40	1.40	1.10	1.20	1.40	1.70	1.55	1.80	1.65	1.80	1.80	2.00	1.85	1.90	1.70	E1.50	1.60	E1.60	E1.60	E1.60	E1.60	E1.80
3	E1.70	E1.70	1.70	1.10	1.00	1.70	E1.70	1.65	1.70	E1.80	1.90	2.00	2.20	2.20	2.20	2.00	2.00	1.85	1.65	1.35	E1.65	E1.70	E1.70	E1.80
4	1.70	1.70	1.70	1.10	E	1.00	E1.70	1.50	1.80	1.70	1.80	1.90	2.00	2.10	1.90	1.60	1.60	1.50	E1.80	E1.70	E1.60	E1.70	E1.60	E1.60
5	E1.70	E1.60	E	E	E	1.20	E1.50	E1.70	1.70	1.65	1.70	1.80	1.80	2.20	2.05	1.80	1.60	1.60	E1.60	E1.70	E1.70	E1.80	E1.70	E1.80
6	E1.70	1.60	1.10	E	1.10	1.35	E1.60	1.70	1.80	1.80	1.60	1.90	1.90	1.90	2.00	1.90	1.60	1.80	1.60	E1.60	E1.60	E1.70	E1.70	E1.70
7	E1.70	E1.70	1.30	1.30	1.10	1.30	E1.70	1.70	1.10	1.80	1.70	1.60	2.20	1.80	1.80	1.50	1.80	E1.60	E1.70	E1.75	E1.70	E1.70	E1.60	E1.70
8	E1.65	E1.70	E	E	E	1.65	E1.60	1.70	1.20	1.80	1.90	2.70	3.20	1.80	1.85	1.70	1.60	E1.60	E1.70	E1.50	E1.60	E1.70	E1.60	E1.70
9	E1.70	E1.80	1.50	1.10	E	1.40	E1.60	1.60	1.60	1.60	1.60	2.00	2.00	2.00	1.70	1.70	1.80	E1.70	E1.70	E1.80	E1.80	E1.70	E1.60	1.30
10	E1.60	E1.60	E	1.15	1.10	1.50	E1.60	1.60	1.60	1.60	1.70	1.85	1.80	1.70	1.80	1.70	1.30	1.70	1.60	E1.75	E1.80	E1.60	E1.60	E1.70
11	E1.60	1.70	1.10	E	E	1.40	E1.70	E1.60	1.70	1.70	1.70	1.80	1.90	1.80	1.65	1.50	1.60	1.20	E1.60	E1.75	E1.70	E1.70	E1.70	E1.60
12	E1.70	E1.60	E	E	E	1.20	E1.60	1.60	1.70	1.65	1.60	1.80	1.70	1.70	1.90	1.80	1.70	E1.80	E1.60	E1.70	E1.60	E1.80	E1.70	E1.70
13	E1.70	E1.70	E	E	1.80	1.00	E1.70	1.40	1.60	1.80	2.20	1.70	1.70	1.70	1.70	1.80	1.70	E1.80	E1.60	E1.60	E1.70	E1.60	E1.70	E3.00
14	E1.70	E1.60	1.00	E	E	1.10	E1.50	1.70	1.70	1.80	1.80	1.80	1.90	1.75	2.20	1.70	1.60	E1.70	1.60	E1.70	E1.70	E1.70	E1.80	E1.80
15	E1.70	E1.80	1.50	1.20	1.50	1.60	E1.60	E1.60	1.80	1.60	1.70	1.60	1.70	1.60	1.60	1.70	1.60	1.80	E1.70	E1.60	E1.70	E1.70	E1.60	E1.60
16	E1.80	E1.80	1.00	E	E	1.40	1.40	1.60	1.70	1.60	2.20	2.20	2.30	1.90	2.00	1.90	1.70	1.70	E1.70	E1.70	E1.80	E1.70	E1.80	E1.50
17	E1.80	E1.70	1.30	1.80	1.00	1.10	E1.60	1.70	3.00	1.70	1.80	1.90	2.00	2.00	1.80	1.70	1.60	E1.60	1.70	E1.70	E1.70	E1.60	E1.70	E1.80
18	E1.70	E1.80	1.70	E	E	1.30	E1.60	E1.70	1.80	1.80	1.85	2.00	2.00	2.00	1.80	1.80	1.70	1.60	E1.70	E1.60	E1.60	E1.80	E1.60	E1.80
19	E1.70	E1.60	1.00	E	E	1.10	E1.70	1.50	1.60	1.70	1.90	1.90	1.70	1.60	1.70	1.60	1.80	E1.80	E1.70	E1.70	E1.60	E1.70	E1.70	E1.70
20	E1.70	E1.70	1.60	E	E	1.60	E1.60	1.70	1.70	1.70	1.70	1.75	1.90	2.25	2.00	1.90	1.75	1.60	E1.70	E1.60	E1.65	E1.60	E1.70	E1.75
21	E1.80	E1.80	1.10	1.40	1.00	E1.75	E1.70	1.50	C	C	C	C	C	C	C	C	C	1.75	1.70	E1.75	E1.65	E1.70	E1.80	E1.80
22	E1.70	E1.70	1.20	1.30	E	1.20	E1.70	E1.70	1.70	1.75	1.75	1.80	1.80	1.80	1.90	1.70	1.65	1.80	1.60	E1.65	E1.70	E1.70	E1.65	E1.70
23	E1.70	E1.70	1.70	1.30	1.30	1.20	E1.70	1.60	1.70	1.60	1.80	1.65	1.90	1.90	1.65	1.50	1.70	1.80	E1.75	E1.75	E1.70	E1.70	E1.80	E1.75
24	E1.70	1.70	1.80	1.05	E	1.50	E1.70	1.65	1.60	1.70	1.80	1.75	1.75	1.60	2.15	1.80	1.90	1.80	1.80	E1.75	E1.70	E1.75	E1.65	E1.65
25	E1.60	E1.70	1.30	1.00	1.20	1.60	E1.70	1.70	1.60	1.80	1.65	1.65	2.20	1.95	2.20	1.80	1.70	1.85	E1.80	E1.75	E1.65	E1.60	E2.00	E1.70
26	E1.50	E1.70	1.05	1.00	E	1.10	E1.80	1.40	1.70	1.80	1.70	1.90	1.80	1.80	2.20	2.10	1.65	1.75	1.80	E1.70	E1.75	E1.70	E1.75	E1.80
27	E1.75	E1.75	E	E	E	1.20	E1.75	1.70	1.75	1.50	1.90	1.75	1.80	1.80	1.75	1.80	1.80	1.80	1.60	E1.80	E1.75	E1.70	E1.80	E1.70
28	E1.75	E1.70	1.80	1.40	1.20	1.40	E1.65	1.60	1.90	1.75	2.00	1.90	1.90	1.95	1.85	1.90	1.80	1.80	E1.75	E1.75	E1.80	E1.70	E1.80	E1.70
29	E1.70	1.70	1.10	E	E	E	E1.70	E1.60	1.60	1.50	1.75	1.70	1.75	1.80	1.90	1.80	1.50	1.50	1.60	E1.70	E1.75	E1.75	E1.80	E1.70
30	E1.60	E1.75	1.35	E	1.05	1.40	E1.50	1.60	1.60	1.60	1.65	1.60	1.70	1.60	1.80	1.60	1.80	E1.60	1.60	E1.70	E1.70	E1.60	E1.65	E1.60
31	E1.70	1.80	1.20	E	1.10	1.10	E1.60	1.30	1.70	1.60	1.60	1.70	1.90	1.80	1.70	1.80	1.70	1.40	1.60	1.30	E1.70	E1.70	E1.70	E1.60
No.	31	30	30	30	30	29	30	27	30	29	29	29	30	30	30	30	30	28	31	31	31	31	31	31
Median	E1.70	E1.70	1.20	E	E	1.30	E1.60	1.60	1.70	1.70	1.75	1.80	1.90	1.80	1.85	1.80	1.70	E1.70	E1.70	E1.70	E1.70	E1.70	E1.70	E1.70

f-min

Sweep 1.0 Mc to 20.3 Mc in 30 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

Jan. 1960 | (M3000)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	2.65	C	C	C	C	C	C	C	S	C	C	C	3.00^{S}	U 2.80^{S}	I 2.80^{SH}	2.85	U 2.95^{S}	I 3.00^{S}	U 2.80^{SH}	J 3.05^{S}	I 3.00^{S}	2.80	2.65	2.80^{S}
2	2.75	2.95	2.70	2.95	2.70	2.60	2.70	3.20	I 3.45^{S}	I 3.25^{S}	U 3.20^{S}	3.15	2.90^{S}	I 2.80^{SH}	I 2.85^{SH}	I 2.95^{S}	S	I 3.20^{S}	J 3.15^{S}	3.20	2.95^{H}	U 2.55^{S}	2.45	2.45^{S}
3	2.60^{S}	2.50	2.55^{S}	2.65	2.65	2.70	2.60	3.10	3.25^{S}	I 3.15^{C}	3.20	3.05	2.90^{SH}	2.90^{H}	2.90	2.90	3.00^{S}	3.00	3.10	3.10	J 3.05^{S}	U 3.15^{S}	2.60^{S}	2.60
4	2.50	2.50	2.50	2.50	2.50	2.75	2.90	2.80	U 3.05^{S}	3.15	3.15^{H}	I 3.10^{S}	I 3.05^{S}	2.85^{S}	J 2.85^{SH}	J 2.65^{S}	2.90^{S}	U 2.90^{S}	I 3.05^{S}	J 3.10^{S}	2.80^{S}	2.50	2.75^{S}	I 2.90^{S}
5	3.15	2.70	2.60	2.60	3.20	2.60	2.60	3.00	J 3.20^{S}	3.40^{S}	3.25	3.05^{SH}	2.95^{H}	2.75^{V}	J 2.70^{SH}	U 2.85^{S}	2.90^{S}	3.05	2.90	2.90	I 2.90^{S}	S	2.75^{S}	2.40
6	2.75^{S}	J 2.65^{S}	2.90	2.60	2.70	2.50	2.35^{S}	2.80	I 3.25^{S}	3.20	3.05	3.15	2.90	3.00^{H}	2.75^{H}	2.80	2.90	3.00	I 3.00^{S}	3.05^{S}	U 2.90^{S}	2.90	2.95	2.95
7	2.75	2.85	2.55	2.65	2.90	2.65	2.70	3.15	I 3.40^{S}	3.20^{S}	3.20	3.20	3.00	2.85	2.85^{S}	2.75^{S}	2.85^{S}	2.65^{S}	2.85^{S}	R	S	2.90^{S}	2.60	2.55
8	2.45	2.65	2.95	2.85	2.50	2.35	2.50	3.00^{S}	J 3.35^{S}	3.10^{S}	3.10	3.05	2.95^{S}	2.95	2.75	2.75^{SH}	I 2.90^{S}	2.90^{S}	2.95^{S}	2.85	S	2.95^{S}	2.70	2.85
9	2.85	2.80	2.90	2.65	2.55	2.60	2.70	2.80	3.30^{S}	J 3.20^{S}	3.20^{S}	3.15^{S}	2.85	2.75^{H}	2.80^{S}	2.85^{S}	2.85	I 2.90^{S}	3.00	3.05^{S}	J 3.20^{S}	2.85	2.70	2.80
10	2.80	2.85^{S}	2.80	2.75	2.60	2.55	2.70	2.90^{S}	U 3.30^{S}	3.35	3.25	3.15	3.10	2.90	2.85^{H}	3.05^{S}	U 3.05^{S}	3.10	3.00	2.90	U 2.95^{S}	3.20	J 2.75^{S}	2.90^{S}
11	2.75	2.65	2.55	2.35	2.60	2.60	2.70	2.60	2.80^{S}	S	3.10	2.95	2.75^{S}	2.75^{H}	2.90^{H}	2.80^{H}	3.05^{S}	2.95^{S}	3.05	J 3.25^{S}	2.60	2.75^{S}	3.05	U 2.80^{S}
12	2.50	2.60	3.00	2.30	2.40	2.55	2.70	2.80	3.15^{S}	3.20	2.95	3.10	2.95	2.95	2.75^{H}	2.95^{H}	2.95	2.95^{S}	U 3.10^{S}	J 3.05^{S}	3.20^{S}	2.95	2.65	2.70
13	2.70	2.75	2.85	2.35	2.65	2.60	2.85	2.70	3.30	3.15	3.10^{SH}	3.05	2.90	2.85^{H}	2.85	I 2.95^{S}	S	3.20	3.10	3.25	3.10	2.75^{S}	2.90	2.65
14	2.80	U 2.75^{S}	2.70	2.70	2.70	2.65^{H}	2.75	I 2.80^{A}	3.25	3.05	3.45	3.00	2.75^{H}	2.80	2.75	I 3.00^{S}	3.00	3.00^{S}	J 3.15^{S}	2.70	3.05	J 2.90^{S}	2.60	2.80
15	3.20	2.90	2.45	2.40^{F}	2.80^{F}	2.45	2.75	2.75	3.20^{S}	J 3.15^{S}	3.10	3.10^{S}	2.85	2.75^{H}	2.95^{SH}	2.90	3.10	2.90^{S}	3.20	3.25	2.75^{S}	2.60	U 2.85^{S}	2.90
16	2.60	2.70	2.40	2.35	2.50	2.60	2.35	2.70	I 3.25^{S}	3.15	J 3.15^{S}	3.15^{S}	2.95	2.90^{S}	2.90^{H}	3.05	I 3.10^{S}	3.10	3.05	3.25	J 3.30^{S}	2.80	I 2.80^{S}	J 2.70^{S}
17	2.60	2.70	3.00^{S}	3.25	2.60	2.55	2.85	2.85	2.95	3.00	3.05	S	3.00	2.90^{S}	2.80^{SH}	2.80^{H}	2.95	2.90^{S}	3.00^{S}	J 2.90^{S}	3.15	2.70	2.70	2.90
18	2.85	2.60	2.50	2.65	2.45^{H}	2.50	2.55	2.70	J 3.20^{S}	3.20	3.15	3.00	I 2.95^{C}	U 2.90^{S}	S	2.85^{H}	2.90^{S}	2.90	3.15	2.95^{S}	I 2.75^{S}	U 2.30^{S}	2.40	2.70^{S}
19	2.70	2.55	2.80	2.50	2.75	2.50	2.70	2.90	3.45^{S}	3.15	3.20	3.10	2.90^{H}	2.90	U 2.80^{S}	2.80	3.00^{S}	3.05^{S}	3.15	3.20	3.20	2.95^{S}	2.55^{S}	2.75^{S}
20	2.80	2.95	3.15	3.15	2.50	2.45	2.55	2.80	3.25	3.30	3.20	3.05	3.05	3.00	2.90	U 2.85^{S}	3.00	3.10	U 3.10^{S}	J 2.80^{S}	J 2.80^{S}	U 2.90^{S}	2.85	2.60
21	2.95^{S}	3.40	2.35	2.40	2.55	3.05	3.15	2.60	C	C	C	C	C	C	C	C	C	U 2.85^{S}	U 3.00^{S}	3.15	J 2.95^{S}	S	2.85	2.70
22	3.15	2.80	2.75	2.50	2.20	2.55	2.35	2.50	I 3.20^{S}	3.15	3.10	3.00	2.90	2.80^{SH}	2.80^{SH}	I 2.85^{SH}	2.90	3.00	2.90	3.10^{S}	3.10	2.80^{S}	2.80	2.90
23	2.85	2.80	2.85	2.65	2.75	2.75	2.85^{S}	3.00	3.35^{S}	3.30^{S}	3.15	3.00	2.95^{H}	2.80^{H}	2.85	2.85	2.65^{S}	3.00^{S}	3.05^{S}	2.90	J 2.90^{S}	I 2.85^{S}	2.70	2.75^{S}
24	2.80^{S}	2.75	J 2.95^{S}	2.55	2.40	2.45	2.50	2.80	I 3.10^{S}	3.15	3.10	2.95	2.85	2.70^{SH}	2.75^{SH}	SH	U 2.80^{S}	2.90	2.95	2.90^{S}	2.90	J 2.85^{S}	2.85^{S}	2.80^{S}
25	3.10	2.65	2.50	2.50	2.70	2.40	2.65	2.90	3.25^{S}	3.05^{S}	3.10^{S}	3.05	2.85	2.80^{H}	2.80	2.80	2.85	U 3.10^{S}	I 2.90^{S}	I 3.00^{S}	U 2.95^{S}	2.80	I 2.70^{S}	I 2.80^{S}
26	U 2.85^{S}	2.90	2.95	3.05	2.35^{H}	2.35	2.45	2.80	3.25	3.15	2.90	2.85	2.85^{SH}	2.80	2.70	2.65^{H}	2.75	2.95^{S}	3.00^{S}	2.85	2.95	3.05	J 2.60^{S}	J 2.80^{S}
27	2.75^{S}	2.70^{S}	2.70	2.55	2.50	2.55	2.65	2.65	3.20^{S}	3.20	3.00	3.00	2.80^{SH}	2.75	2.65^{H}	2.55^{H}	2.70^{S}	2.85	2.80	2.95^{S}	J 2.70^{S}	I 2.55^{S}	S	S
28	U 2.70^{S}	2.60^{S}	2.65	2.70	2.85	2.80	2.75	2.85	3.20	3.15	3.10^{H}	2.85	2.80	2.75	2.70^{S}	2.70^{SH}	2.80	2.90^{S}	J 2.85^{S}	2.90^{S}	3.00	2.80^{S}	I 2.70^{S}	I 2.90^{S}
29	2.70	2.70^{S}	2.80	2.70	2.75	2.80	2.70	2.80	3.00^{S}	3.05	3.05	2.75^{H}	RH	RH	S	SH	2.70	2.75^{S}	U 2.85^{S}	2.75^{S}	U 2.70^{S}	S	S	2.50^{S}
30	I 2.55^{S}	I 2.75^{S}	2.65	2.85	3.35	2.60	2.70	2.75	3.15^{S}	3.20	3.00	2.80	S	RH	S	SH	2.55	U 2.90^{S}	U 3.00^{R}	I 2.80^{S}	U 2.80^{S}	I 2.75^{S}	J 2.55^{S}	S
31	S	2.80	2.80^{S}	2.65	U 2.70^{S}	2.50	2.60^{S}	2.85^{S}	U 3.20^{S}	U 3.30^{S}	3.15	2.80	2.75^{H}	2.65^{H}	2.65^{S}	U 2.70^{S}	2.80^{S}	I 2.80^{S}	I 3.00^{S}	2.70	2.95	U 2.70^{S}	I 2.60^{S}	U 2.60^{S}
No.	30	30	30	30	30	30	30	30	29	28	29	28	28	28	27	27	28	31	31	30	29	28	29	29
Median	2.75	2.70	2.70	2.65	2.60	2.60	2.70	2.80	3.25	3.15	3.10	3.05	2.90	2.80	2.80	2.85	2.90	2.95	3.00	3.00	2.95	2.80	2.70	2.80

(M3000)F2

Sweep 1.0 Mc to 20.3 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 7

IONOSPHERIC DATA

Jan. 1960 | (M3000)F1 | 135° E Mean Time (G.M.T.+ 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C		C	C	C												
2																								
3										C														
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21									C	C	C	C	C	C	C	C	C							
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
No.																								
Median																								

(M3000)F1 Sweep 1.0 Mc to 20.3 Mc in 30 min sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 8

IONOSPHERIC DATA

Jan. 1960 | h'F2 | 135° E Mean Time (G.M.T.+ 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C		C	C	C												
2																								
3										C														
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21									C															
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
No.																								
Median																								

h'F2

Sweep 1.0 Mc to 20.3 Mc in 30 min sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 9

IONOSPHERIC DATA

Jan. 1960 | 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	310	C	C	C	C	C	C	C	240	C	C	C	245	245	200H	245	230	205	240H	245	200	250	275	280
2	270	300	300	260	255	320	300	265	235	235	225	220	205	220H	250H	250	230	220	235	205	200H	245	295	300
3	290	300	300	290	260	325	330	260	220	I 235E	245	220	215H	240H	245	245	250	235	230	245	220	230	245	295
4	300	340	345	310	345	315	275	270	245	245	225H	245	250	240	200H	250	250	245	230	235	210	220	275	250
5	250	275	330	315	250	295	300	250	245	250	240	215H	235H	250	245H	275	250	240	250	250	250	240	245	350
6	255	260	245	250	250	325	365	270	250	250	240	245	245	225H	245H	250	250	250	255	245	245	250	260	250
7	300	300	300	320	265	300	305	260	235	240	225	240	245	225	240	250	250	225	250	230	205A	210	250	300
8	275	300	250	250	300	405	350	250	225	240	240	240	230	230	240	230H	250	240	225	225	230	230	240	250
9	250	270	250	295	300	350	310	295	240	250	240	225	230	220H	225	245	245	240	250	240	225	225	250	255
10	290	280	250	290	250	350	300	280	250	245	245	240	230	225	245H	250	245	245	245	295	250	225	250	240
11	290	250	250	355	305	300	300	340	275	250	245	250	245	230H	200H	200H	250	240	250	210	275	310	250	260
12	300	315	250	350	350	300	280	275	250	230	250	250	240	240	225H	225H	250	240	250	210	225	245	250	280
13	290	275	255	225	300	275	295	300	250	225	225H	235	240	245H	250	225	250	250	250	240	240	275	E300C	250
14	290	275	280	285	260	250H	300	A	250	250	245	240	210H	245	265	250	245	225	215	250	245	225	250	250
15	250	250	350	370	300	350	300	295	250	250	250	240	255	250H	245H	245	250	250	250	210	300	300	300	250
16	300	E330A	E400A	400	350	300	400	300	240	250	245	240	240	240	220H	240	215	245	240	240	225	235	240	25
17	275	285	255	210	220	350	270	290	250	245	245	245	230	225	240H	240H	245	240	225	230	220	285	290	250
18	260	300	300	260	210H	325	350	300	250	250	235	245	245	225	230	220H	225	240	225	220	250	250	290	250
19	255	250	270	300	295	300	300	280	250	250	235	250	205H	250	245	225	245	245	235	230	205	235	280	290
20	290	255	250	240	300	360	340	290	250	250	245	220	225	245	230	230	250	240	240	250	250	240	245	280
21	260	240	300	400	305	250	250	315	I 250C	245	245	240	220	235	240	235	250	245	225	240	225	250	250	300
22	230	250	270	365	400	380	400	350	250	245	245	240	225	230H	225H	225H	250	235	220	245	240	240	250	275
23	270	290	255	280	300	270	295	280	245	245	245	230	210H	230H	240	245	245	245	235	250	245	235	245	275
24	275	300	280	250	240	350	350	310	250	245	240	230	240	240H	240H	245H	245	245	225	235	250	230	250	290
25	250	300	300	300	295	350	325	290	230	245	245	245	250	225H	250	245	245	245	240	250	230	240	250	260
26	250	295	260	210	200H	400	350	280	245	245	240	235	245H	250	245	245H	250	250	245	240	240	230	250	250
27	250	250	265	310	335	310	300	300	250	245	230	230	225H	250	250H	225H	250	245	245	250	220	245	260	260
28	250	260	300	295	250	250	290	295	245	235	240H	230	245	250	250	245H	250	250	240	250	250	205	250	270
29	275	295	280	300	275	250	300	300	250	250	235	200H	240H	245H	250	245H	250	245	250	250	250	290	250	290
30	280	250	260	255	210	300	300	290	250	250	245	240	225	230H	240	230H	250	260	245	245	275	255	280	270
31	250	250	295	300	290	340	350	285	250	245	220	230	210H	240H	250	245	250	260	245	250	245	210	245	250
No.	31	29	29	30	30	30	30	29	31	30	30	30	31	31	31	31	31	31	31	31	31	31	31	30
Median	275	275	270	295	290	320	300	290	250	245	240	240	235	240	240	245	250	245	240	245	240	240	250	270

h'F

Sweep 1.0 Mc to 20.3 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Jan. 1960 | R'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	C	C	C	C	C	C	C	G	C	C	C	135	140	G	155	150	140	130	120	S	105	S	100
2	E	S	E	E	E	E	E	G	120	110	145	100	100	G	105	125	115	120	110	S	S	S	100	S
3	100	100	E	E	E	E	S	G	130	C	110	115	115	G	G	G	G	G	125	105	105	100	100	S
4	E	E	E	E	100	100	100	100	G	125	120	G	100	100	G	100	100	100	125	120	100	S	S	110
5	100	105	105	100	100	E	130	G	G	140	110	110	G	105	105	100	105	110	105	110	S	110	110	105
6	100	100	105	100	E	E	100	G	G	135	G	110	110	110	G	120	110	110	110	110	110	105	100	100
7	100	100	100	100	E	E	S	G	G	G	110	G	110	110	G	G	G	105	105	105	105	105	100	100
8	100	100	E	E	E	E	S	G	140	115	110	G	120	115	115	110	G	105	100	100	100	100	100	100
9	S	S	E	E	E	E	S	G	120	120	G	G	G	G	G	G	G	100	100	S	S	S	S	E
10	S	S	E	E	E	E	S	S	105	G	G	G	G	G	G	180	100	100	105	120	S	S	S	S
11	S	E	E	E	E	E	S	S	G	155	135	135	130	100	100	100	100	100	100	100	125	125	100	S
12	S	S	110	110	E	E	S	S	G	G	175	140	140	140	130	125	115	105	100	105	100	100	100	S
13	S	S	E	E	E	125	S	G	100	G	G	100	100	100	120	130	110	105	110	100	100	100	S	C
14	S	S	E	E	E	E	110	105	100	G	135	125	110	130	115	115	G	125	110	100	S	S	S	S
15	S	S	E	E	E	E	S	S	G	100	100	100	100	100	100	140	115	115	110	100	100	100	100	100
16	100	100	100	100	100	100	E	G	G	G	150	150	150	145	150	110	145	140	110	105	100	100	S	S
17	S	S	E	E	E	E	S	S	B	140	130	G	G	G	G	G	G	G	S	100	S	100	S	S
18	S	S	E	E	E	E	110	120	120	G	G	G	G	G	G	G	G	G	S	100	100	S	S	S
19	S	100	100	100	E	E	S	G	G	G	G	130	100	100	100	100	100	G	S	S	S	S	S	110
20	100	100	E	E	E	E	S	G	120	G	G	G	110	160	G	G	110	105	105	105	105	100	100	S
21	S	E	E	E	E	E	S	G	C	C	C	C	C	C	C	C	C	195	G	S	S	S	S	S
22	S	S	E	E	100	E	S	S	130	130	105	105	G	100	G	G	100	150	G	110	110	100	100	100
23	100	100	100	E	E	E	S	G	125	120	105	G	G	G	G	G	100	100	100	100	105	S	S	S
24	S	E	E	E	E	E	S	G	G	105	110	125	G	G	G	G	G	G	E	S	S	S	100	100
25	100	S	E	E	E	E	S	G	G	G	G	150	G	110	110	G	G	150	110	100	100	S	S	S
26	100	S	E	E	E	E	S	G	G	150	140	110	G	140	135	130	100	100	100	S	S	S	S	S
27	S	S	100	100	100	100	S	G	150	G	G	145	100	100	100	G	G	G	E	125	125	100	100	S
28	S	100	E	E	E	E	S	G	G	G	140	100	100	105	140	140	130	120	110	110	S	S	100	100
29	100	100	105	105	105	105	105	105	G	G	G	G	G	100	150	150	160	G	115	110	110	100	100	100
30	100	100	E	E	E	E	110	G	100	G	G	G	110	G	G	G	G	165	135	110	100	100	100	100
31	S	E	105	105	105	105	100	100	G	G	G	140	G	G	180	145	130	125	110	105	105	100	S	S
No.	12	12	10	9	7	6	8	5	13	13	17	18	18	20	16	18	19	24	24	25	19	18	16	13
Median	100	100	100	100	100	100	110	105	120	125	120	120	110	110	115	125	110	110	110	105	105	100	100	100

R'Es

Sweep 1.0 Mc to 20.3 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 11

57

IONOSPHERIC DATA

Jan. 1960

Types of Es

135° E Mean Time (G.M.T.+ 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

58

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1													h	h		h	h	h4	f3	f3		f2		f
2									l2	l2	h	l2	l		l3	h	l	l2	f2				f	
3	f	f							e		l	l	l						f3	f4	f3	f4	f	
4					f2	f4	f2	l2		h2	h2		l2	l2		l2h	l2	l2h3	f2f4	f	f			f
5	f	f	f	f	f2		f			h	l	l		l2	l2	l2	l3	l4	f3	f2		f	f	f2
6	f	f	f	f3			f			h		l	l	l		l2	l2	l2	f3	f3	f2	f2	f2	f2
7	f2	f	f	f							l2		l2	l		l2		l4	f2	f4	f3	f	f2	f2
8	f	f							l2	l2	l2		l	l2	l2	l		l2	f4	f3	f3	f2	f	f
9									l3	l								l h	f					
10									l2							h	l2	l	f	f2				
11										h2	h l	h	f	l3	l3	l3	l5	l	f2	f	f6 f2	f4	f3	
12			f2	f2							h	h	h l	h2 l	h	h2	l2	l6	f4	f	f2	f2	f2	
13						f			l			l3	l2h	l3h2	h l2	h2	h4	l3	f4	f3	f2	f2		
14							f2	l4	l3		h	h2	l	h	l2	l2		C2	f	f2				
15										l3	l3	l3	l3	l2	l3h	h l2	C3	l2	f3	f	f2	f3	f4	f2
16	f	f	f2	f3	f2	f					h	h2	h2	h	h	l	h	h2	f3	f	f	f		
17										h	h									f		f		
18							f2	l	l2											f	f			
19		f4	f2	f								h	l2	l2	l2	l	l							f
20	f2	f							l2				l2	h			l2	l3	f2	f4	f4	f4	f	
21																		h						
22					f				h	h	l2	l		l2			l2	h		f2	f3	f3	f2	f2
23	f2	f	f						l2	h4	l2						l	l	f2	f	f3			
24										l3	l2	C											f3	f3
25	f											h		l	l3			h2	f	f3	f			
26	f									h	h	l		h	h	C	l2	l	f					
27			f	f2	f3	f			h			h	l2	l2	l2h					f3	f	f2	f	
28		f									h	l	l	l	h	h2	h2	C3	f2	f			f	f4
29	f5	f2	f	f3	f2	f2	f2	l2						l2h	h l2	h	h		f3	f3	f2	f3	f2	f2
30	f5	f					f2		l4				l2					h2	f2	f2	f3	f5	f5	f2
31			f9	f5	f2	f3	f4	l2				h			h	h2	h6	h4	f3	f2	f	f2		
No.																								
Median																								

Types of Es

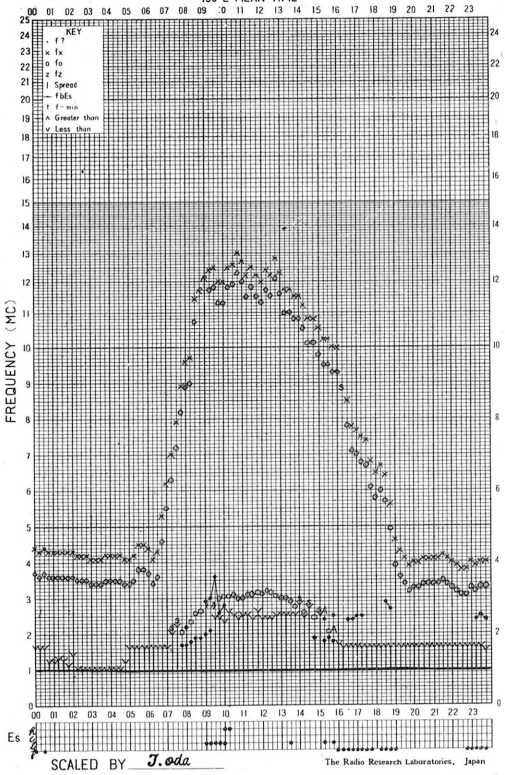
Sweep 1.0 Mc to 20.3 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 12

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 1. 1960

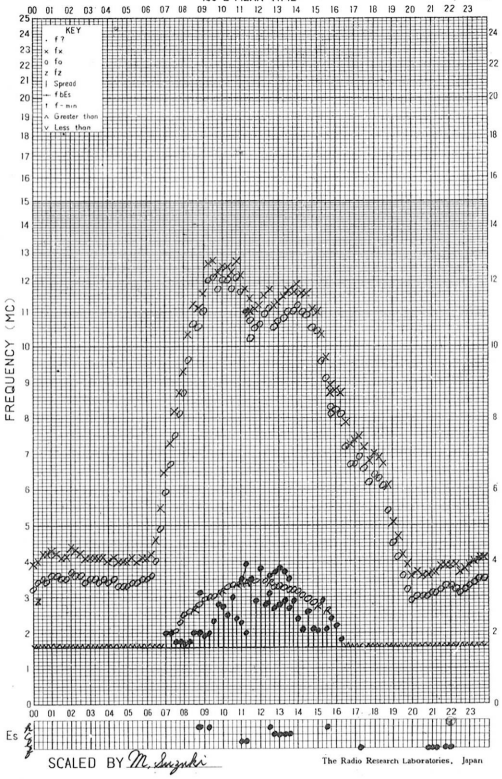


SCALED BY J. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 1, 1960

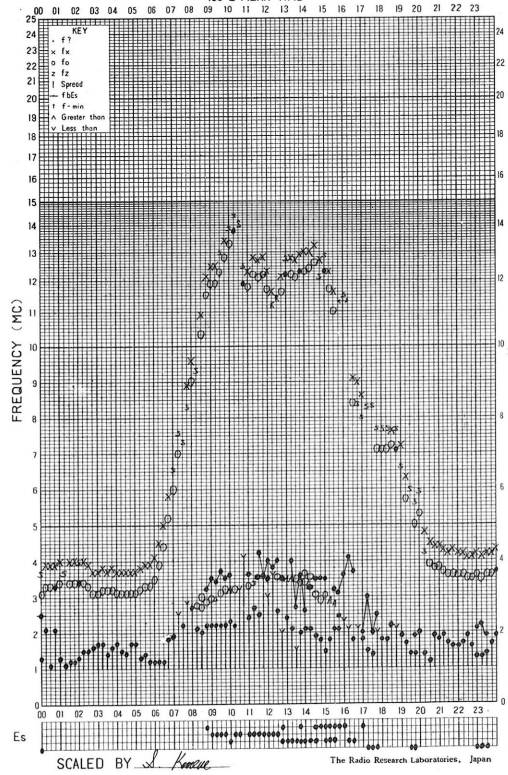


SCALED BY M. Suzuki

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 1, 1960

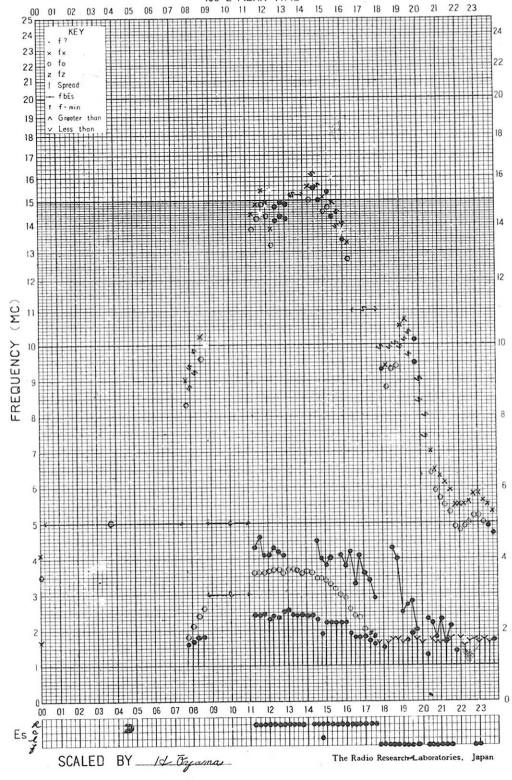


SCALED BY S. Konaka

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE Jan.-1, 1960

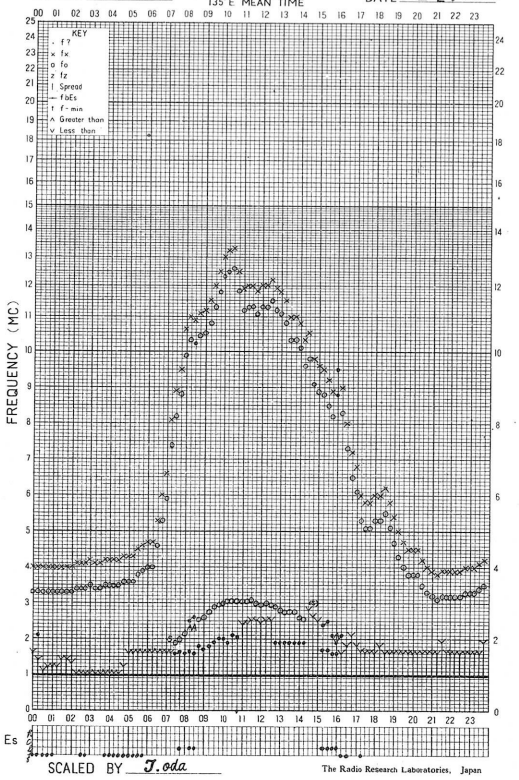


SCALED BY K. Toyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 2, 1960

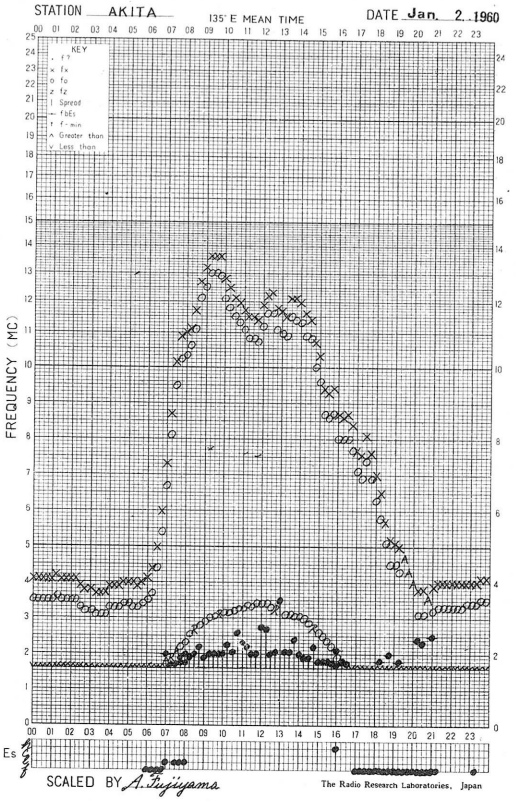


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 2, 1960

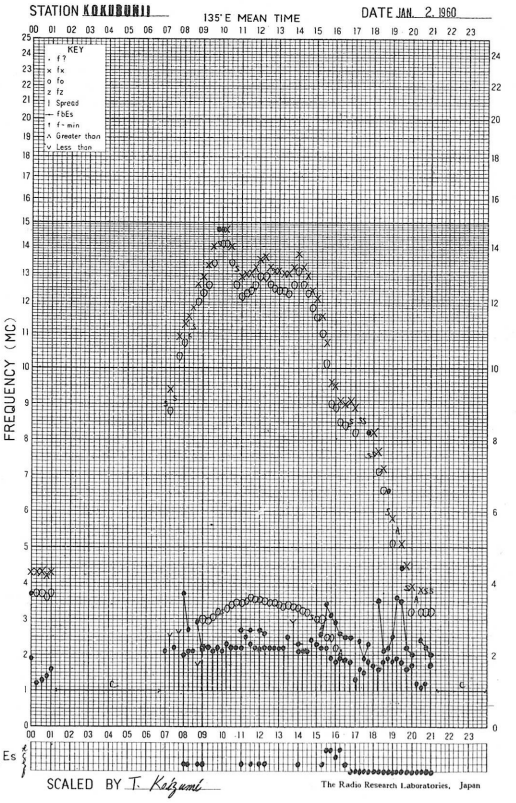


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 2, 1960

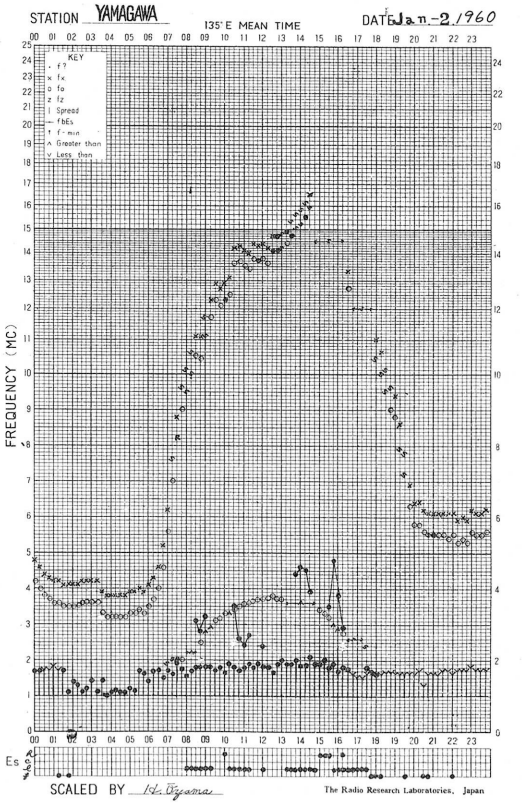


SCALED BY T. Katsumi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE Jan. 2, 1960

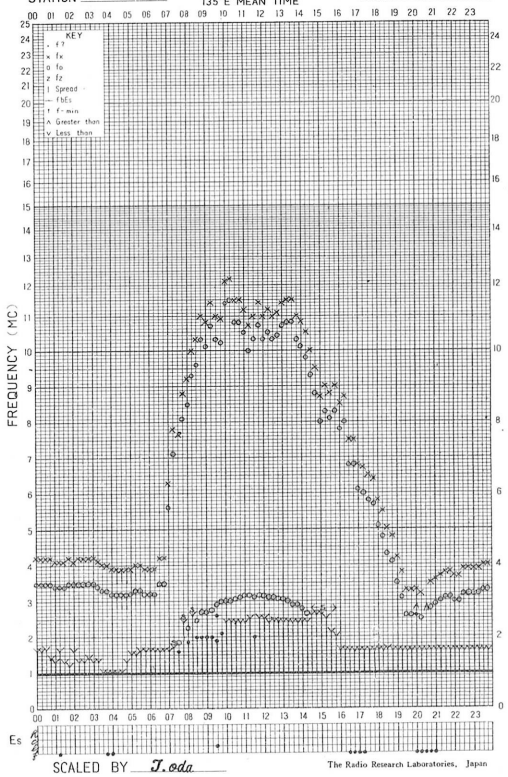


SCALED BY H. Ozawa

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 3. 1960

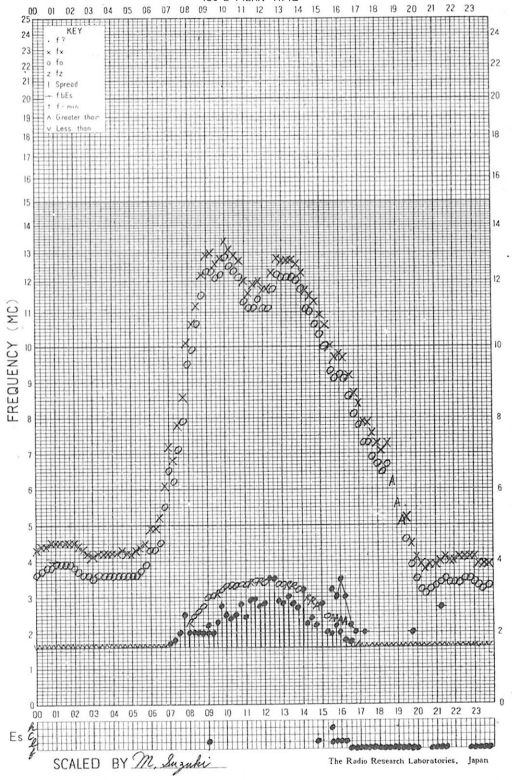


SCALED BY T. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 3. 1960

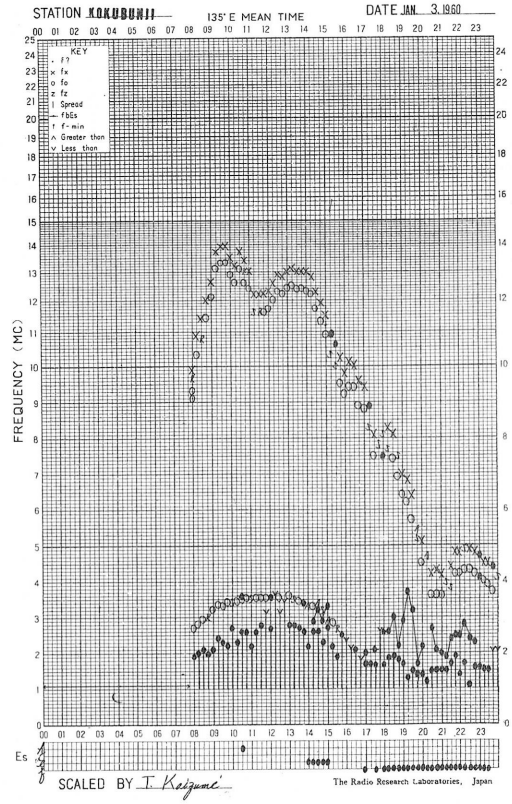


SCALED BY M. Suzuki

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 3. 1960

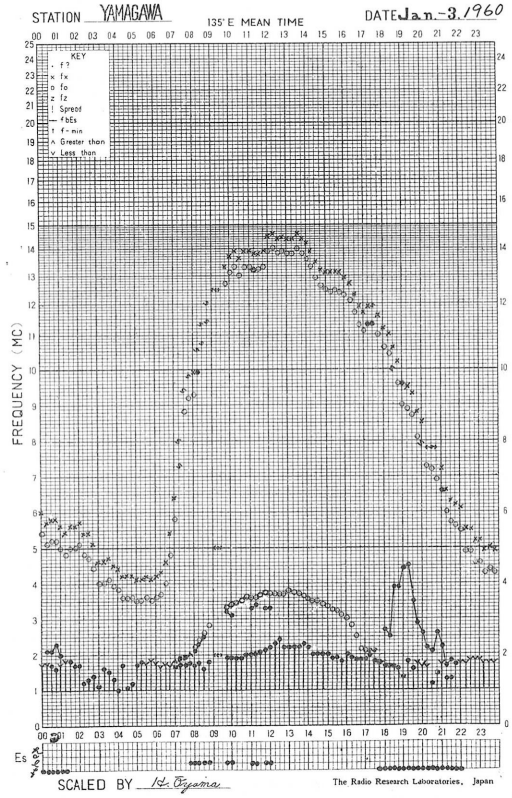


SCALED BY I. Kaizumi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 3. 1960

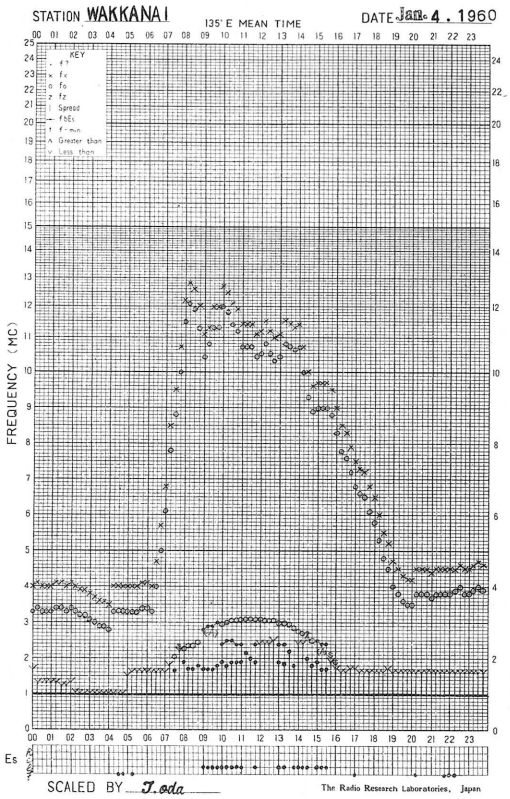


SCALED BY K. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

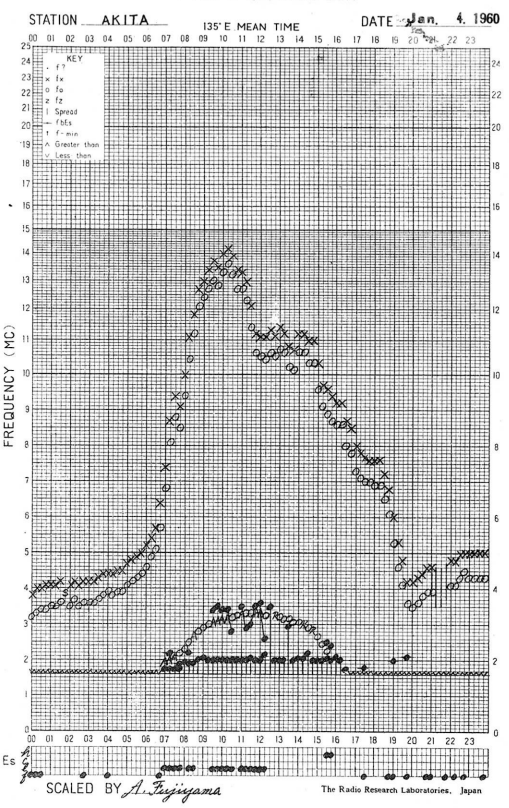
STATION WAKKANAI 135° E MEAN TIME DATE Jan. 4, 1960



SCALED BY T. Oda The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

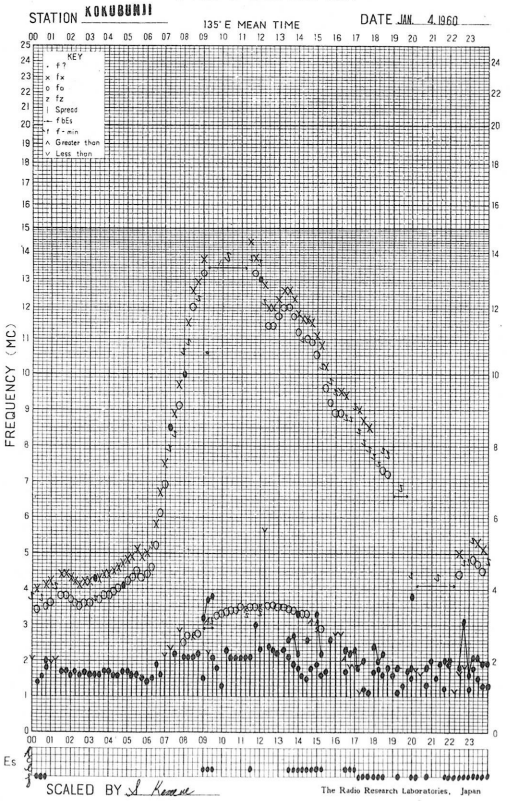
STATION AKITA 135° E MEAN TIME DATE Jan. 4, 1960



SCALED BY A. Fujiyama The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

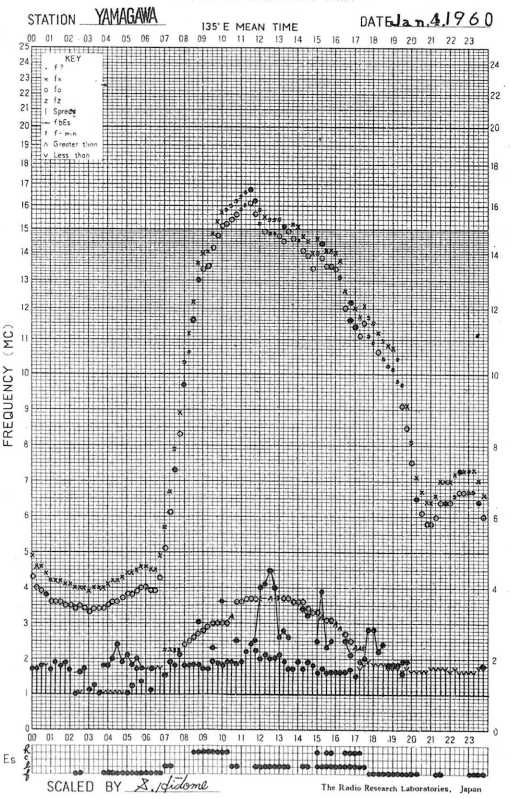
STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 4, 1960



SCALED BY S. Kenmi The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

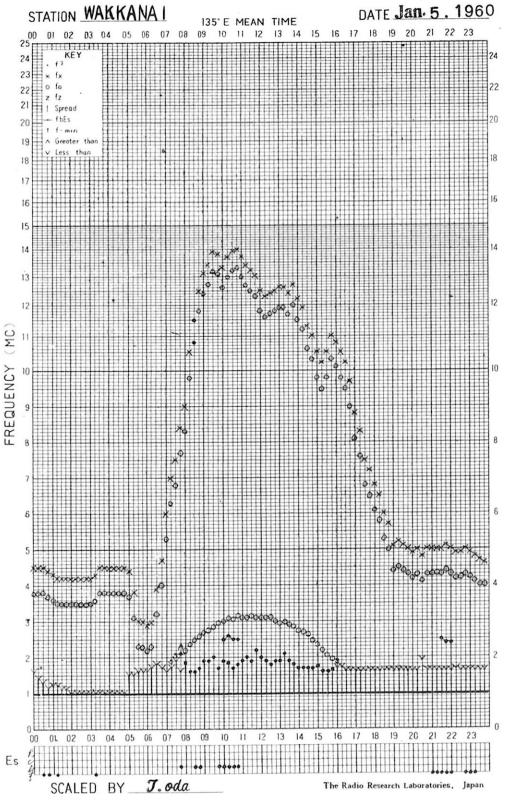
STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 4, 1960



SCALED BY S. Ichitomi The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 5, 1960

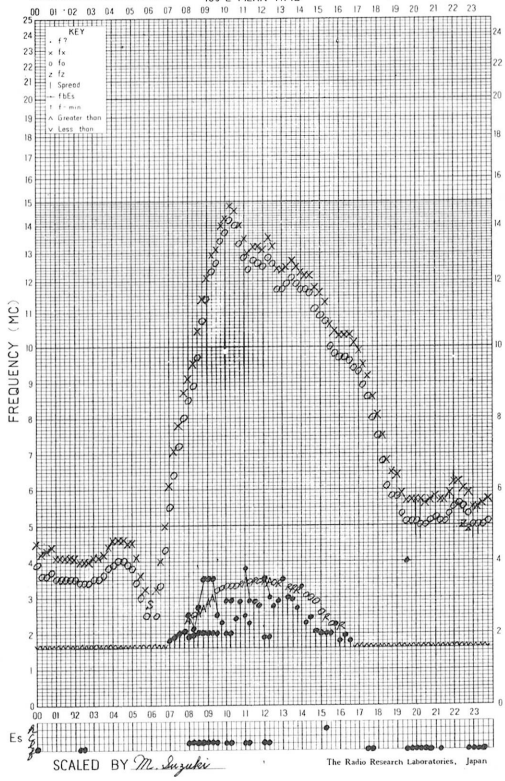


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 5, 1960

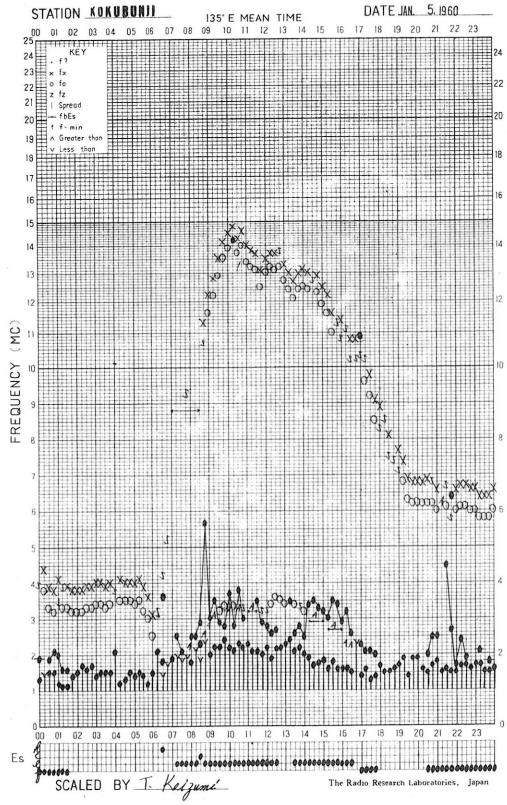


SCALED BY M. Suzuki

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 5, 1960

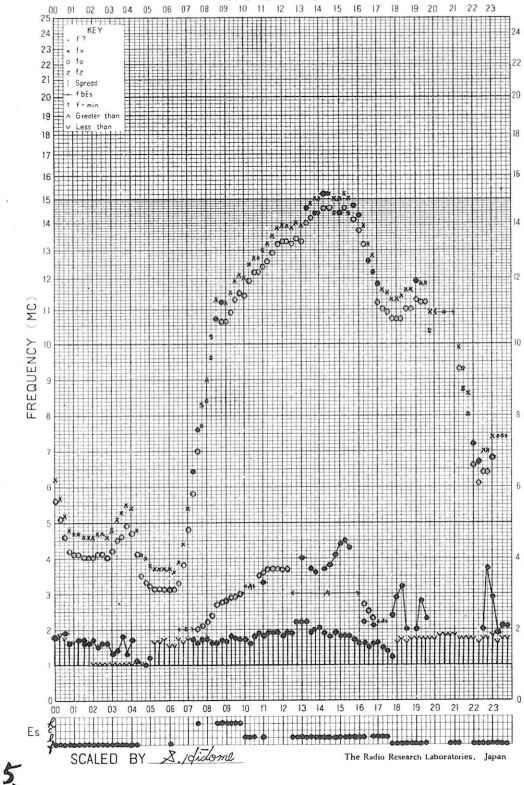


SCALED BY T. Kofzumi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

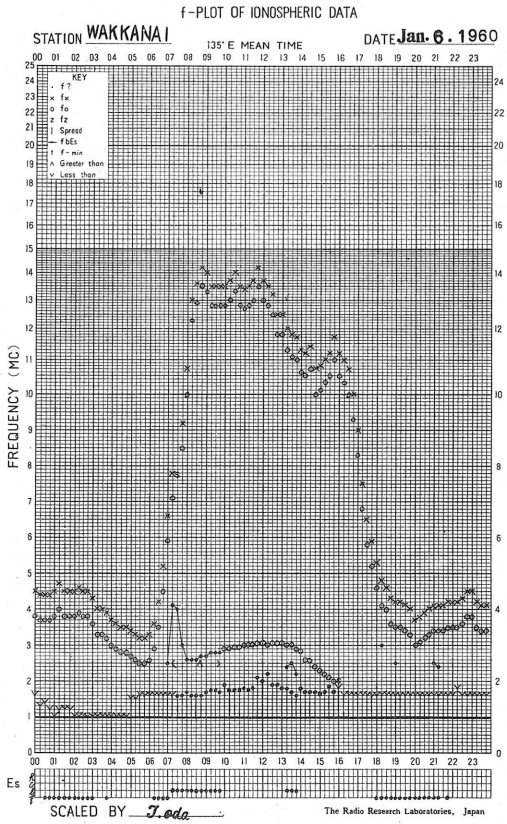
STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 5, 1960

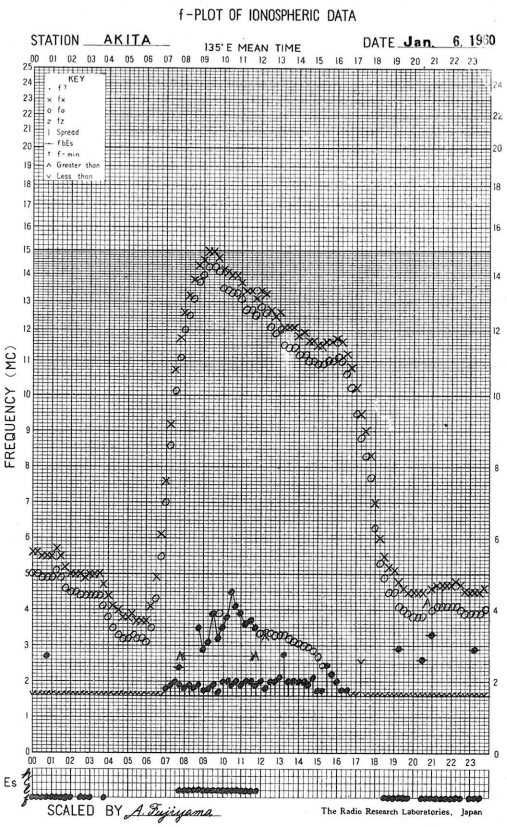


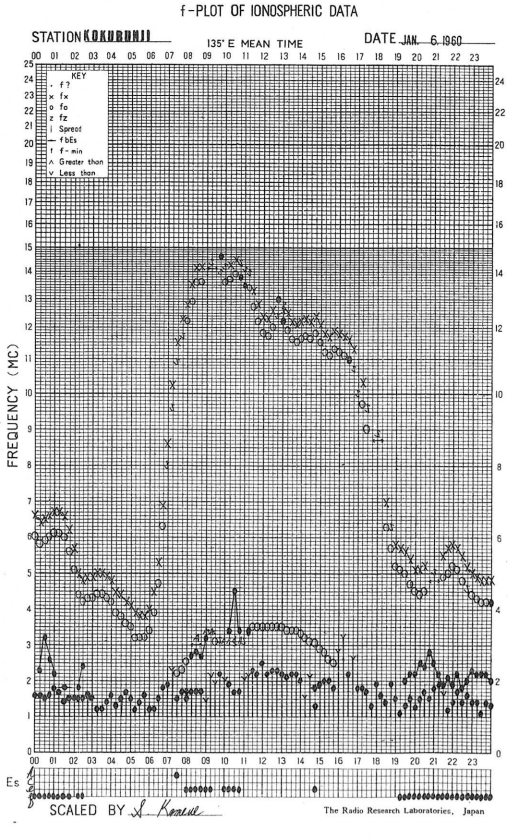
SCALED BY S. Ishidome

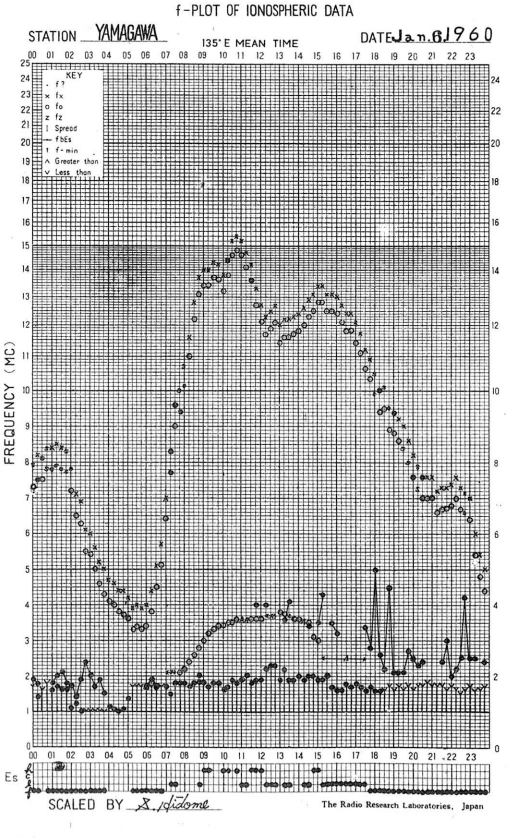
The Radio Research Laboratories, Japan

5.


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE Jan. 6. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
f f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY T. Oda
The Radio Research Laboratories, Japan

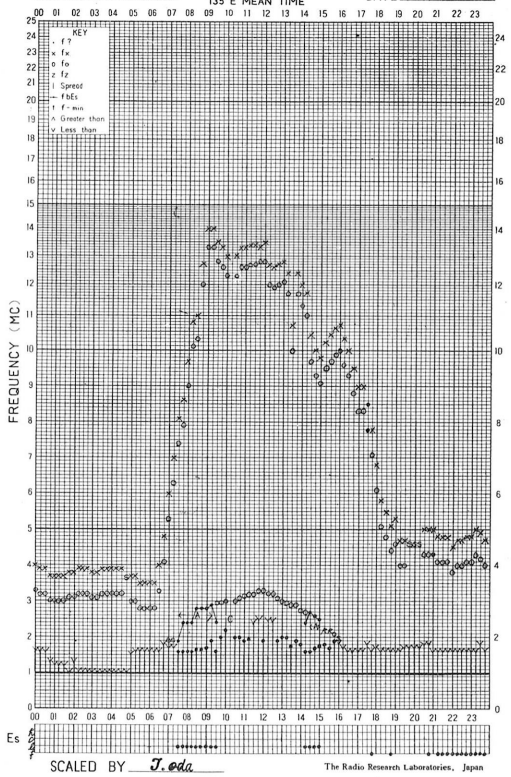

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE Jan. 6. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
f f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Fujiyama
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE JAN. 6. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
f f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY S. Konishi
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE Jan. 6. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
f f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY S. Shidome
The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 7. 1960

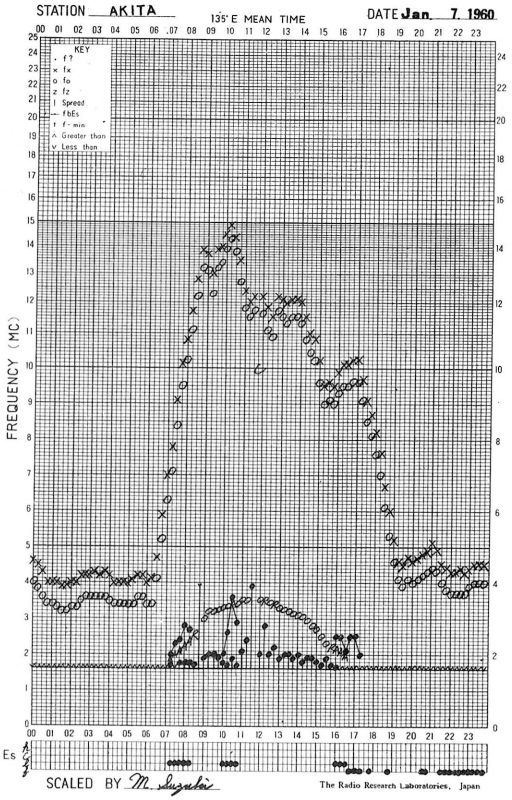


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 7. 1960

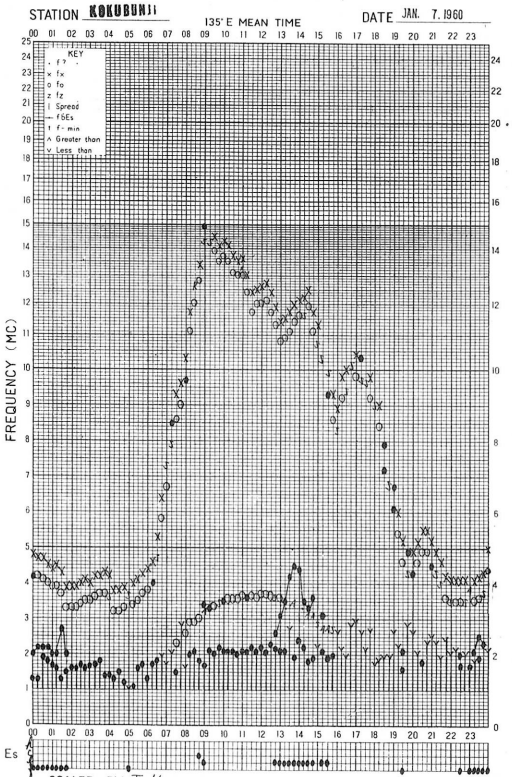


SCALED BY M. Suzuki

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 7. 1960

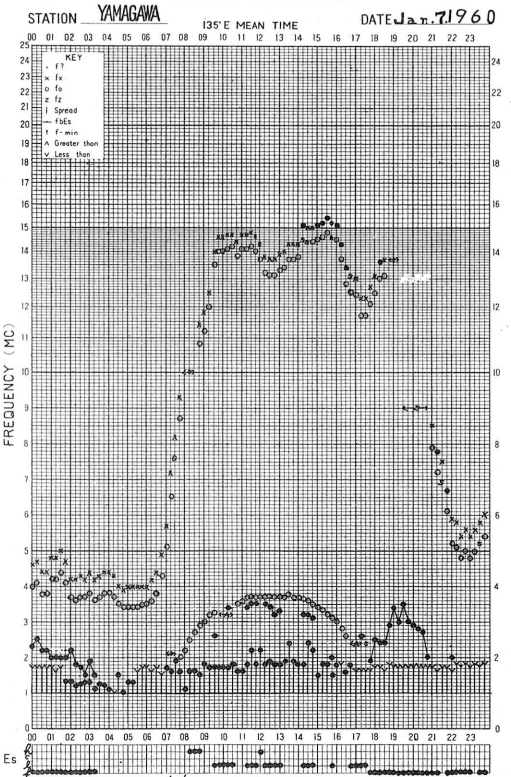


SCALED BY T. Keijumi

The Radio Research Laboratories, Japan

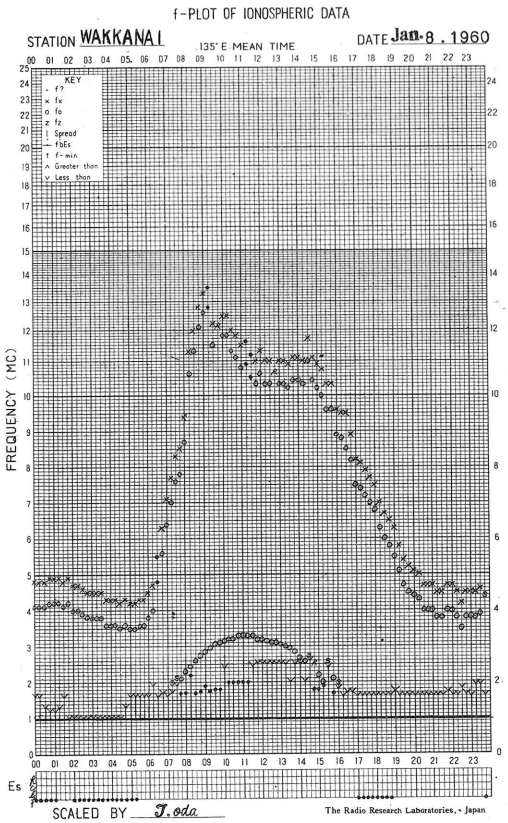
f-PLOT OF IONOSPHERIC DATA

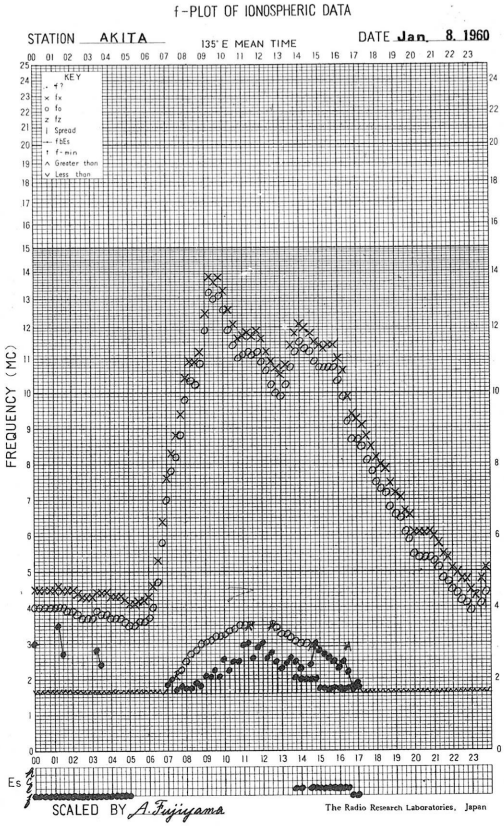
STATION YAMAGAWA 135°E MEAN TIME DATE Jan. 7. 1960

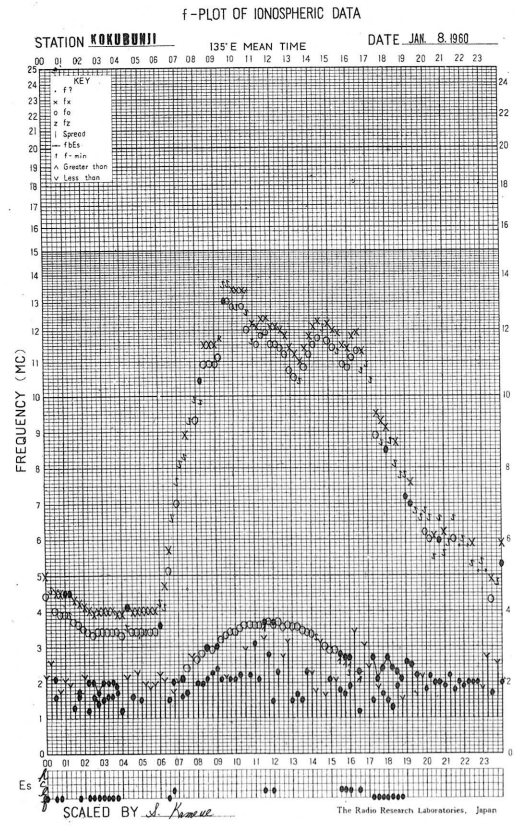


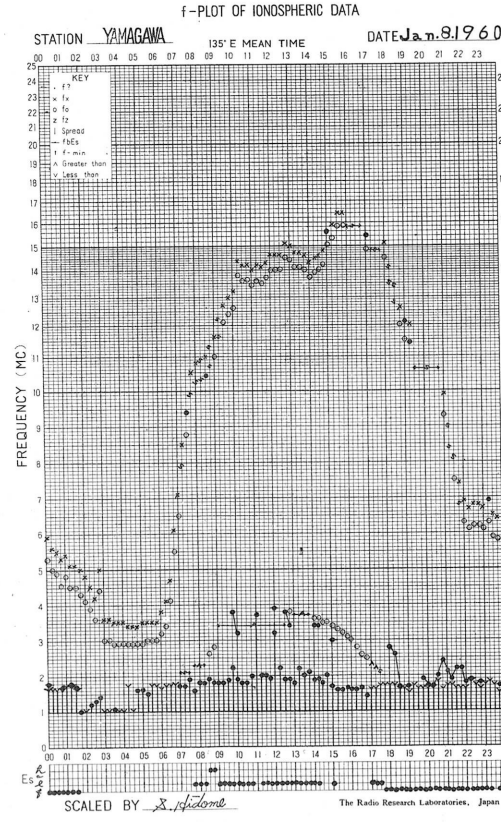
SCALED BY A. Ishizome

The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE Jan. 8, 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY T. Oda
The Radio Research Laboratories, Japan

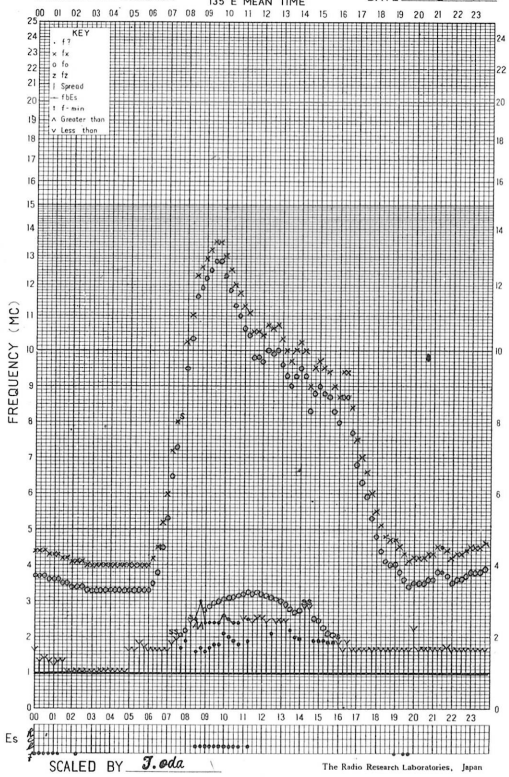

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE Jan. 8, 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Fujiyama
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE JAN. 8, 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY S. Kamae
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE Jan. 8, 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY S. Nidome
The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 9. 1960

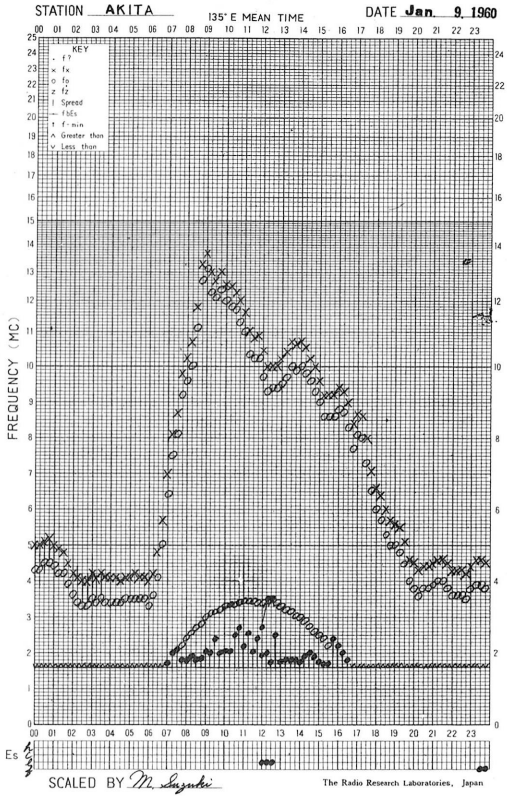


SCALED BY J. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 9. 1960

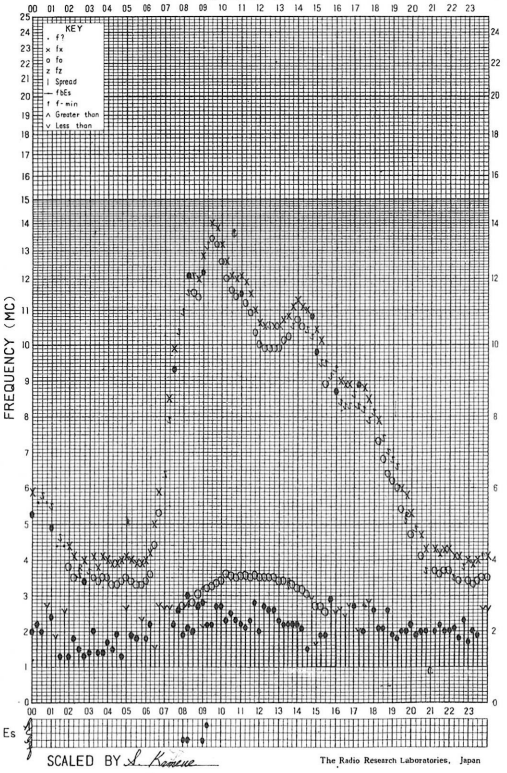


SCALED BY M. Suzuki

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 9, 1960

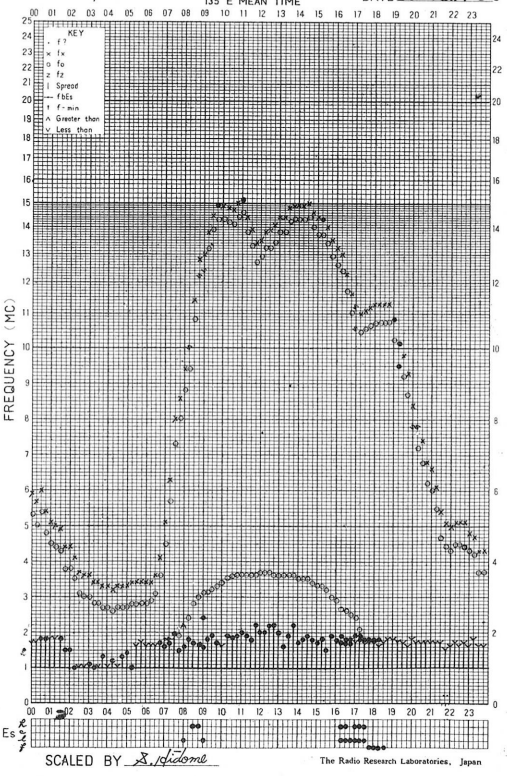


SCALED BY S. Kozaru

The Radio Research Laboratories, Japan

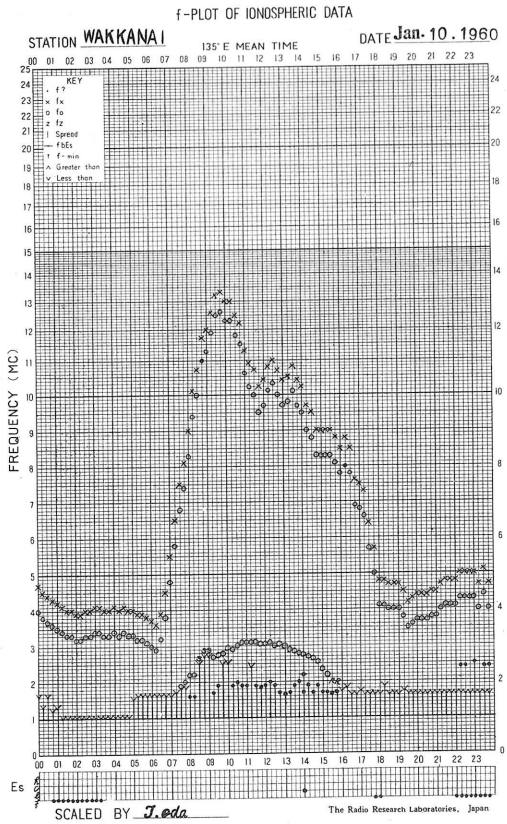
f-PLOT OF IONOSPHERIC DATA

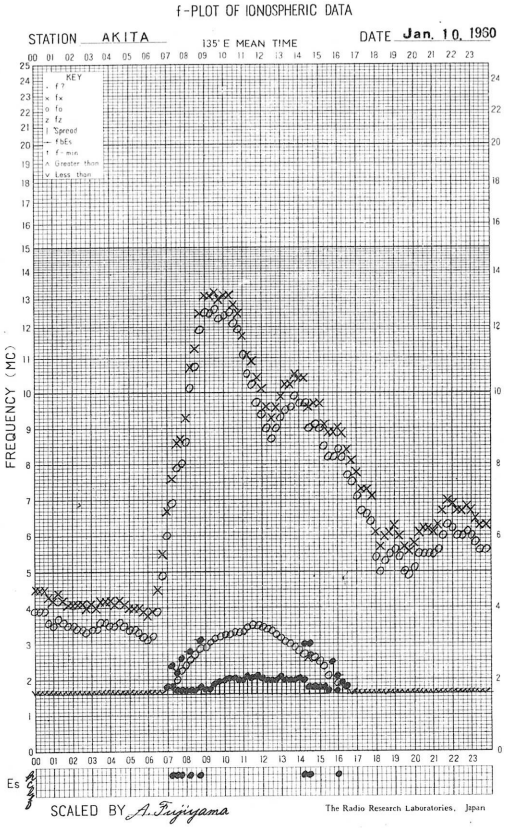
STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 9. 1960

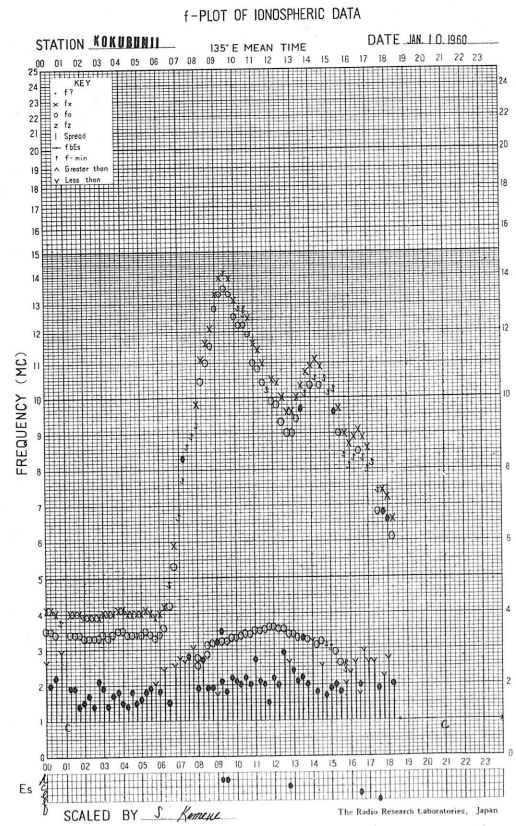


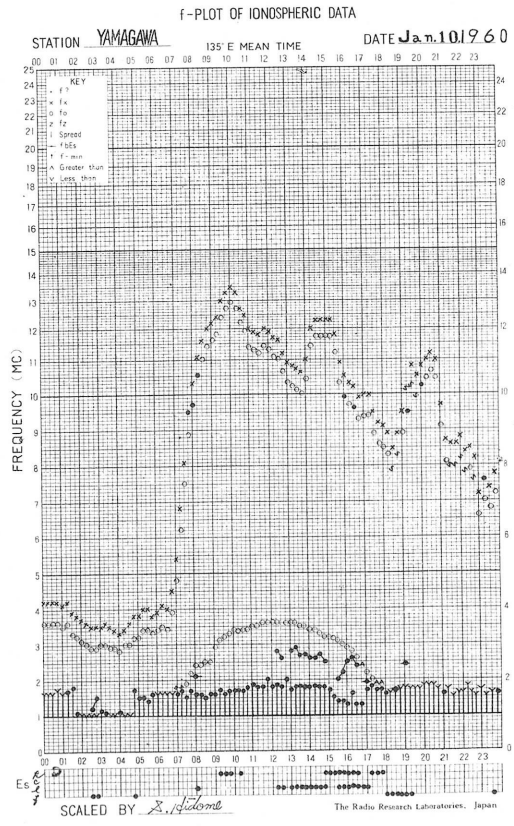
SCALED BY S. Kidome

The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE Jan. 10. 1960
KEY
FREQUENCY (MC)
Es
SCALED BY T. Oda
The Radio Research Laboratories, Japan

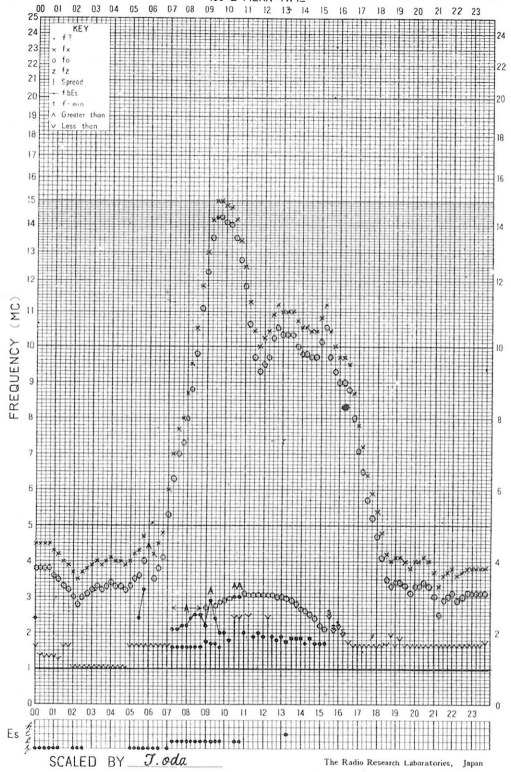

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE Jan. 10, 1960
KEY
FREQUENCY (MC)
Es
SCALED BY A. Fujiyama
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE JAN. 10. 1960
KEY
FREQUENCY (MC)
Es
SCALED BY S. Konishi
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE Jan. 10 1960
KEY
FREQUENCY (MC)
Es
SCALED BY K. Hidoma
The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 11, 1960

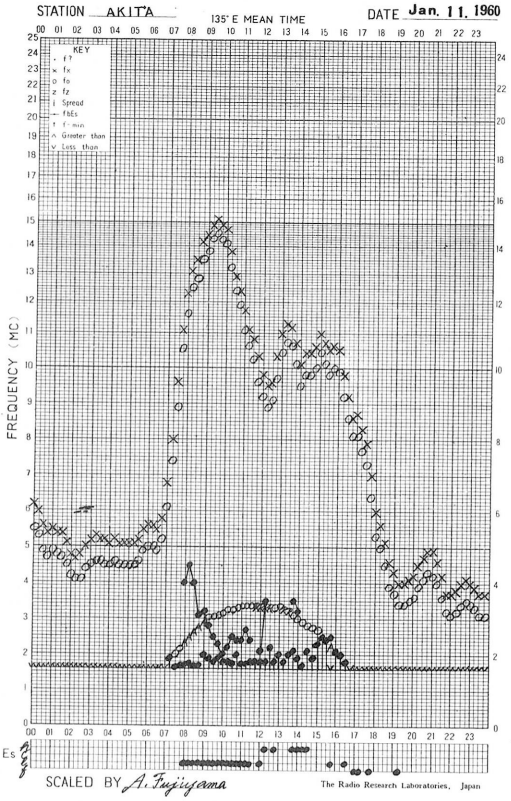


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 11, 1960

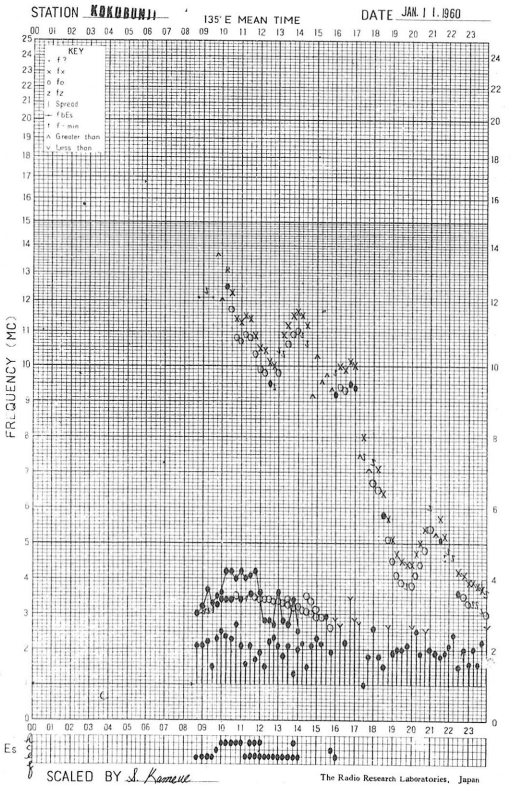


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 11. 1960

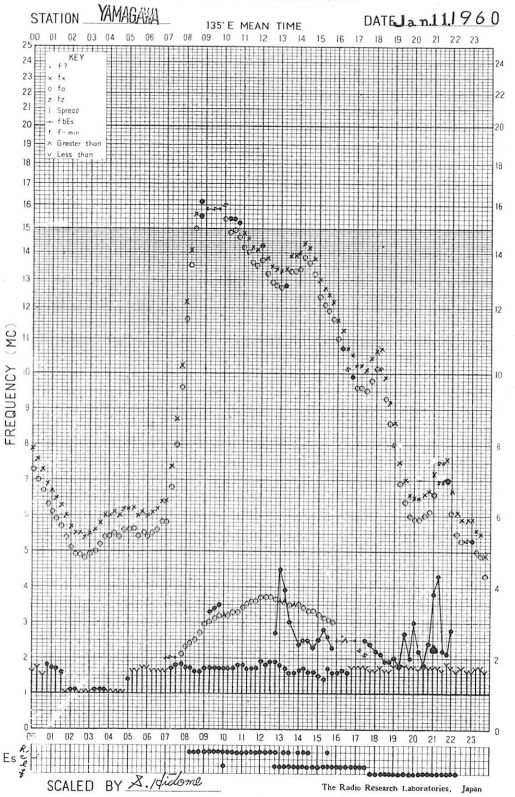


SCALED BY S. Komeue

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 11. 1960

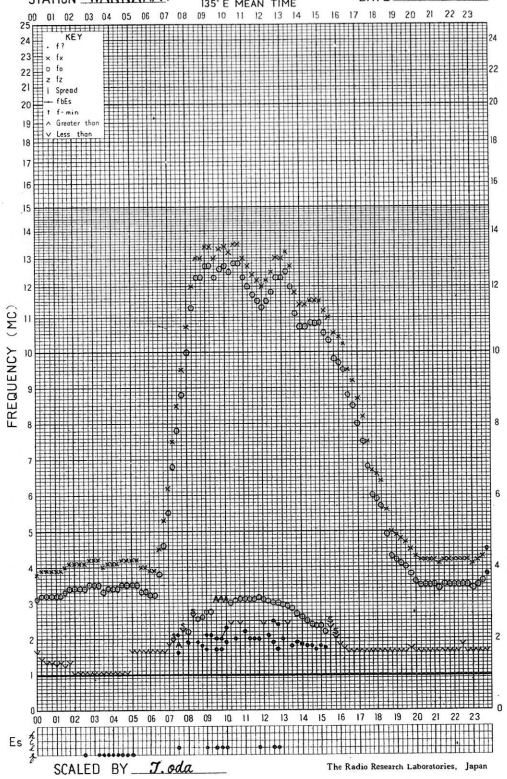


SCALED BY S. Ichitsume

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 12. 1960

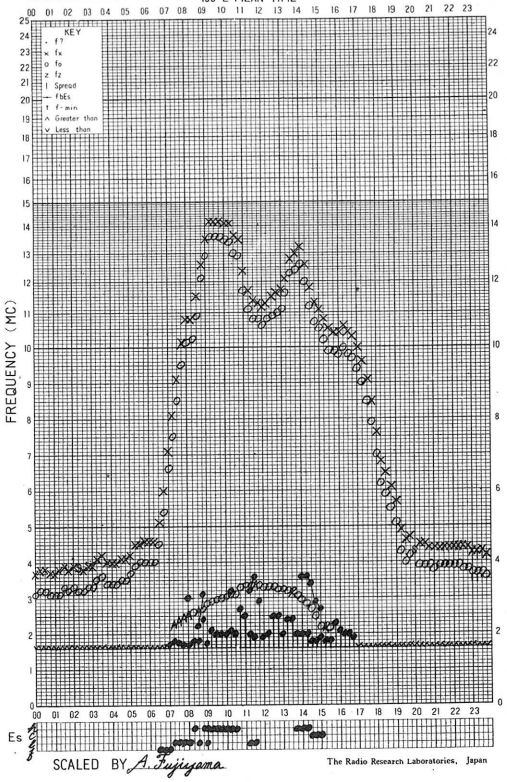


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 12. 1960

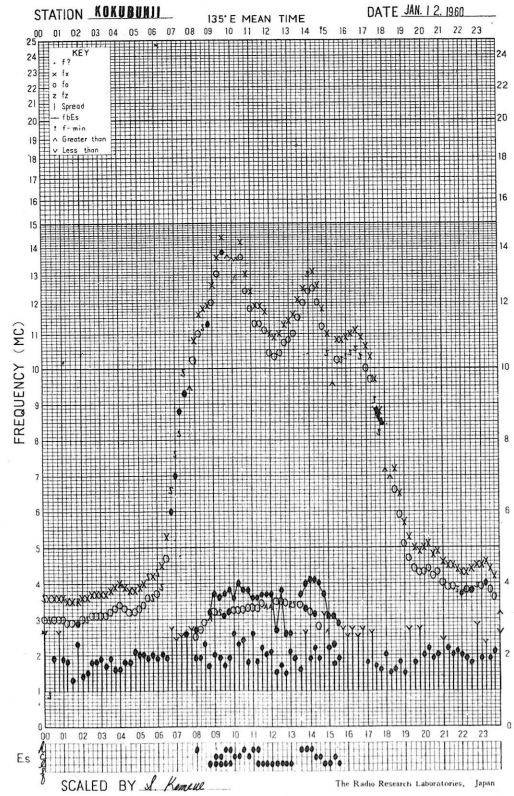


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 12. 1960

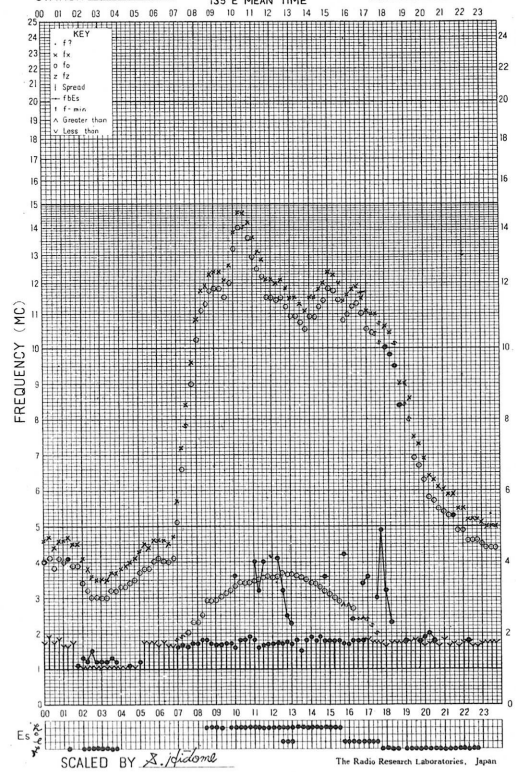


SCALED BY S. Kimura

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 12. 1960

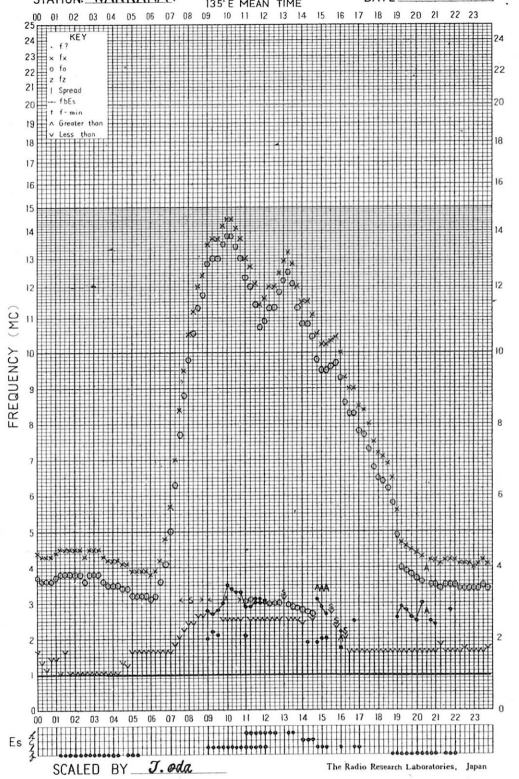


SCALED BY K. Ichidome

The Radio Research Laboratories, Japan

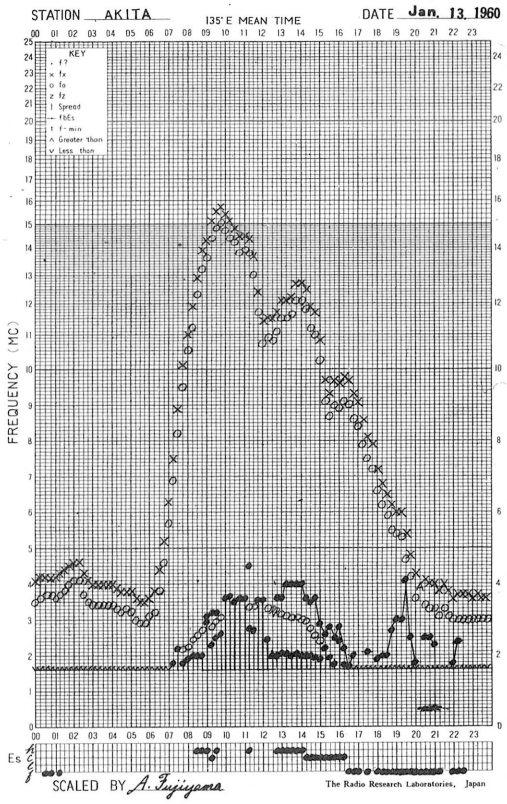
f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 13. 1960



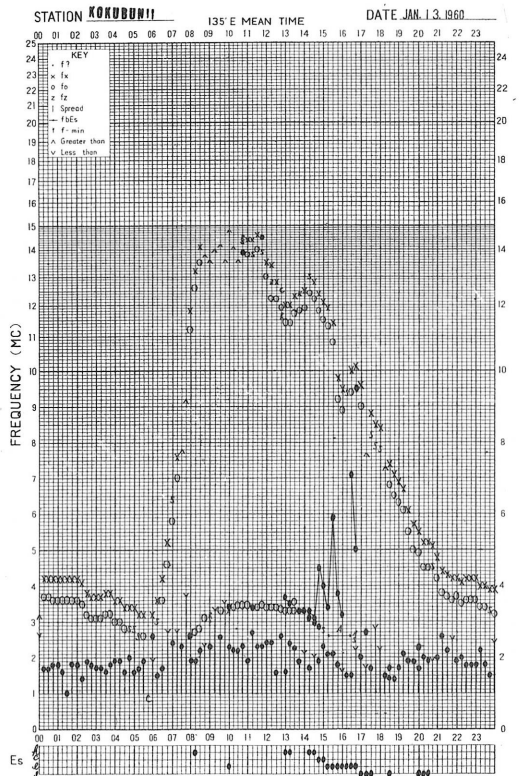
f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 13. 1960



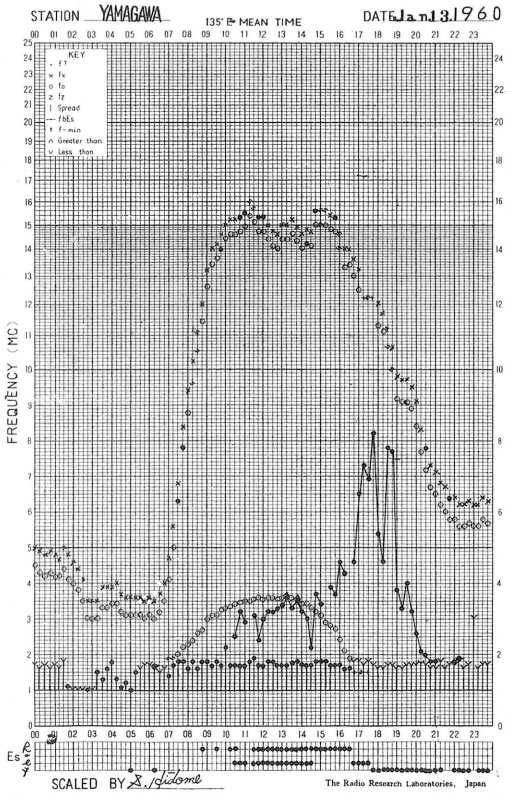
f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 13. 1960



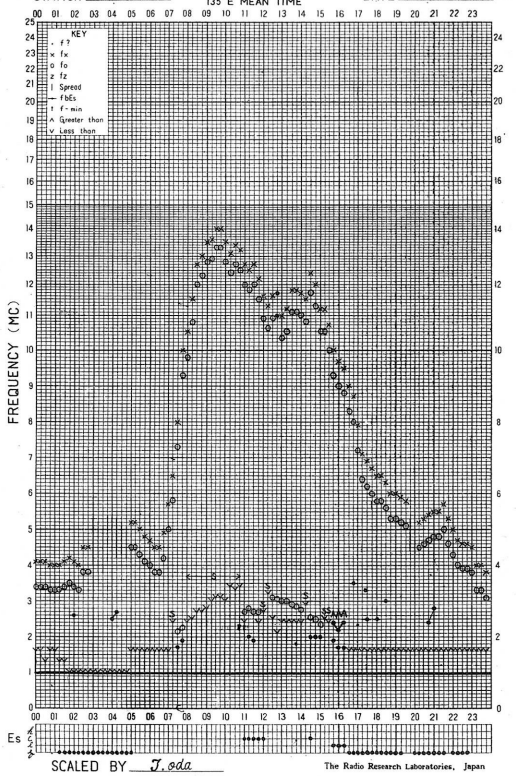
f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 13. 1960



f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 14. 1960

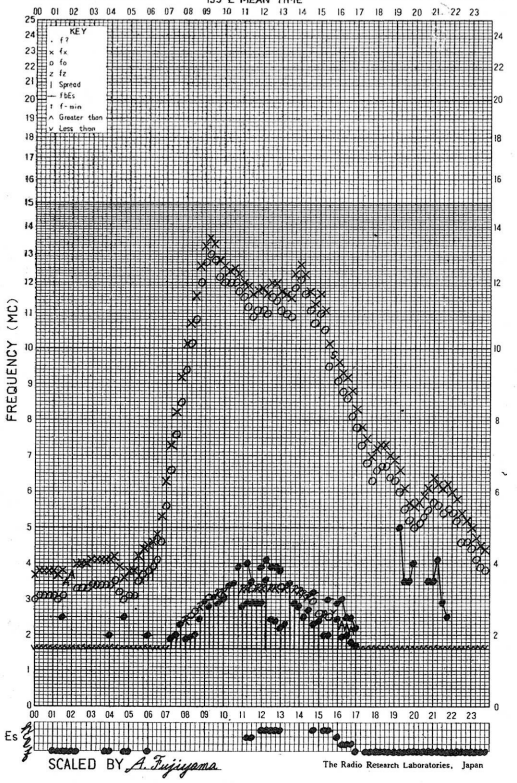


SCALED BY T. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 14, 1960

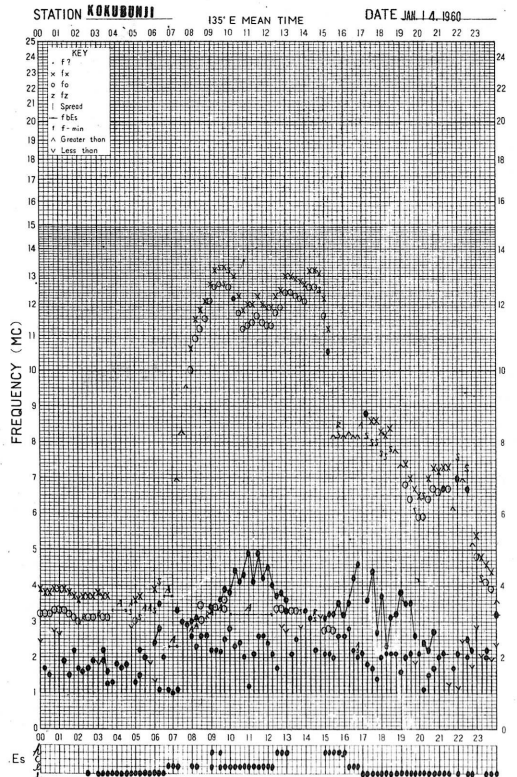


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 14. 1960

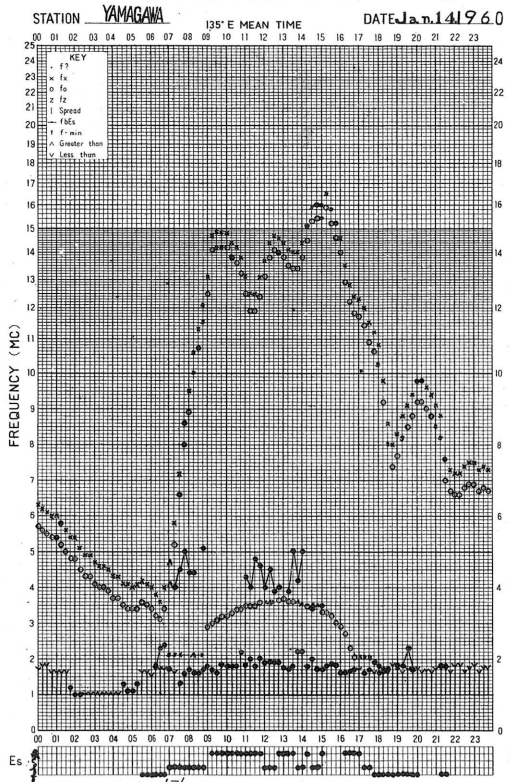


SCALED BY K. Komeno

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 14 1960

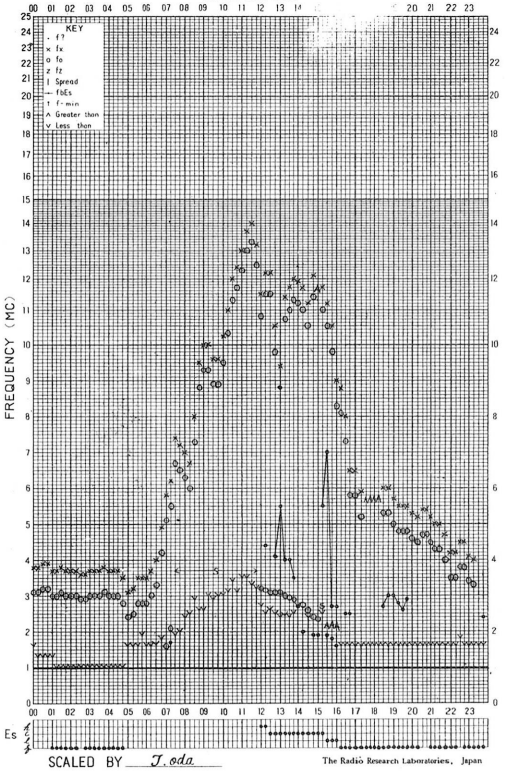


SCALED BY K. Akitomo

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHE

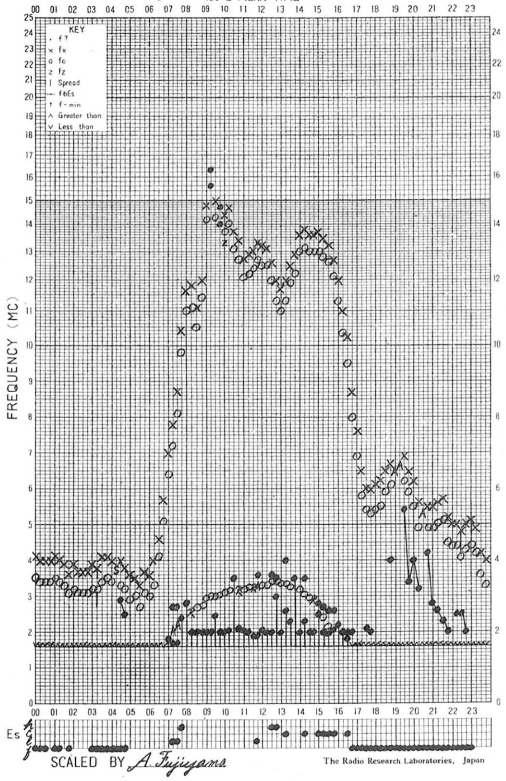
STATION WAKKANAI 135°E MEAN TIME Jan. 15. 1960



SCALED BY T. oda The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

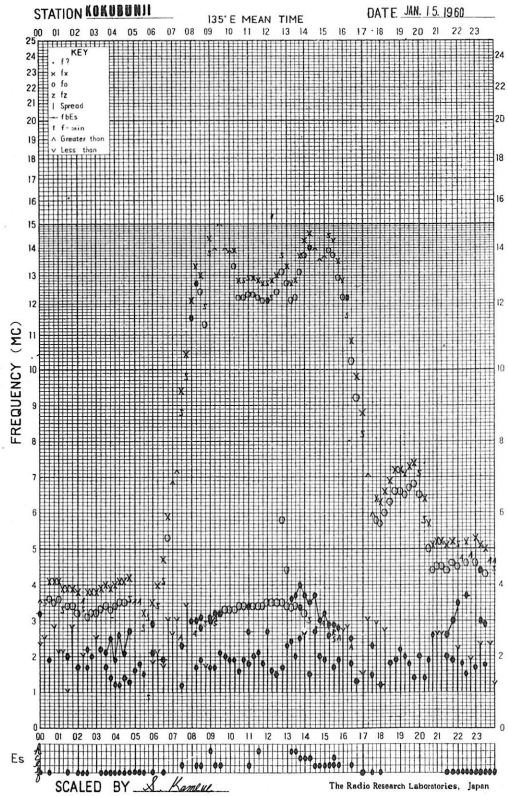
STATION AKITA 135°E MEAN TIME DATE Jan. 15. 1960



SCALED BY A. Fujiyama The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

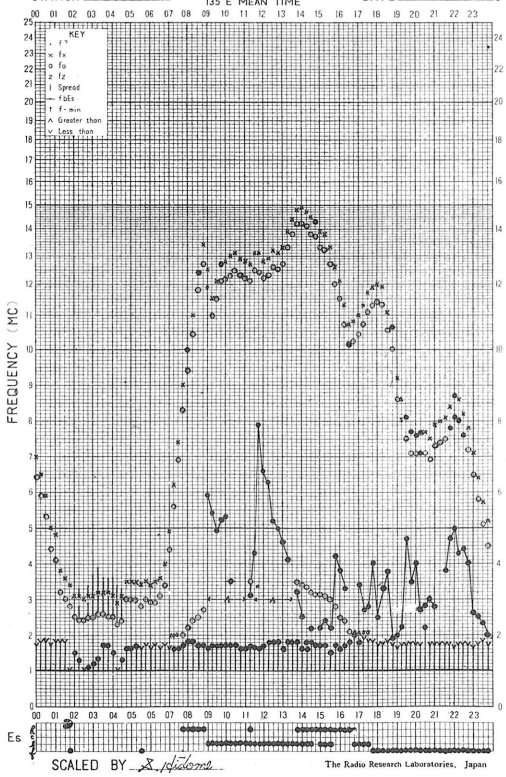
STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 15 1960



SCALED BY S. Kamei The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

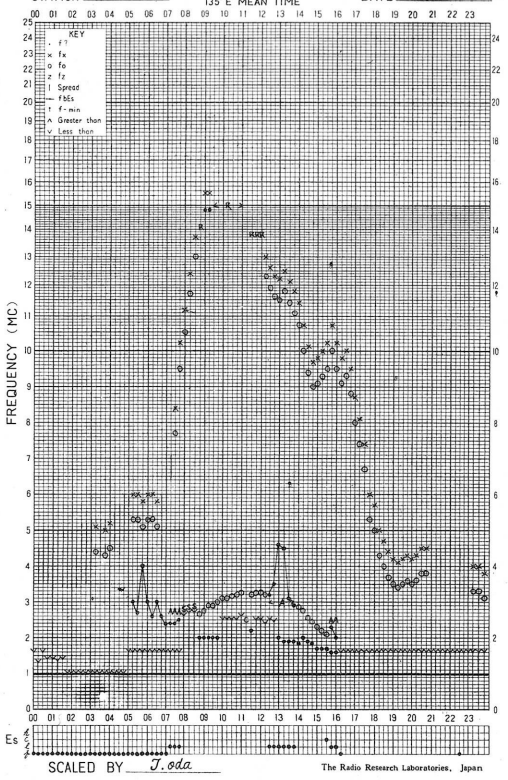
STATION YAMAGAWA 135°E MEAN TIME DATE Jan. 15. 1960



SCALED BY K. Hidomi The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 16. 1960

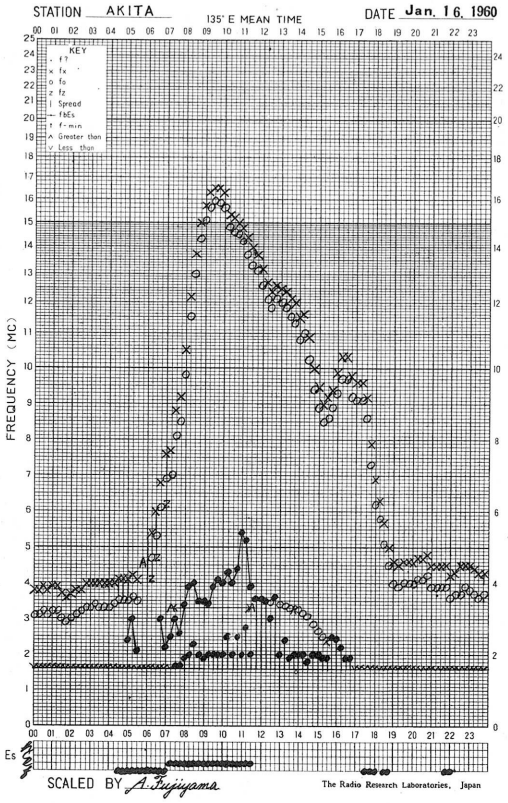


SCALED BY J. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 16. 1960

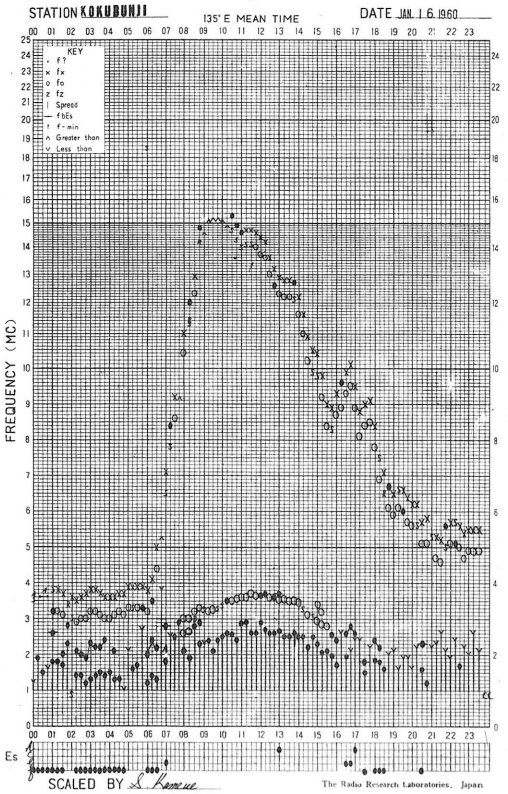


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 16 1960

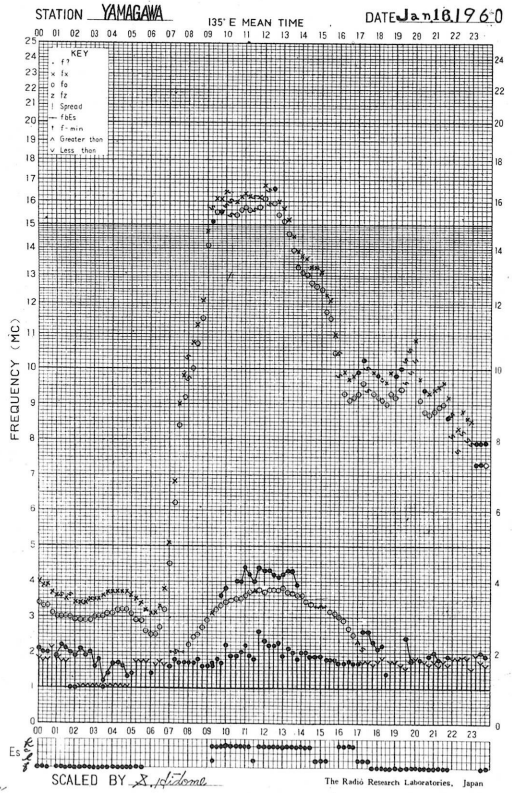


SCALED BY S. Konno

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan 16 1960

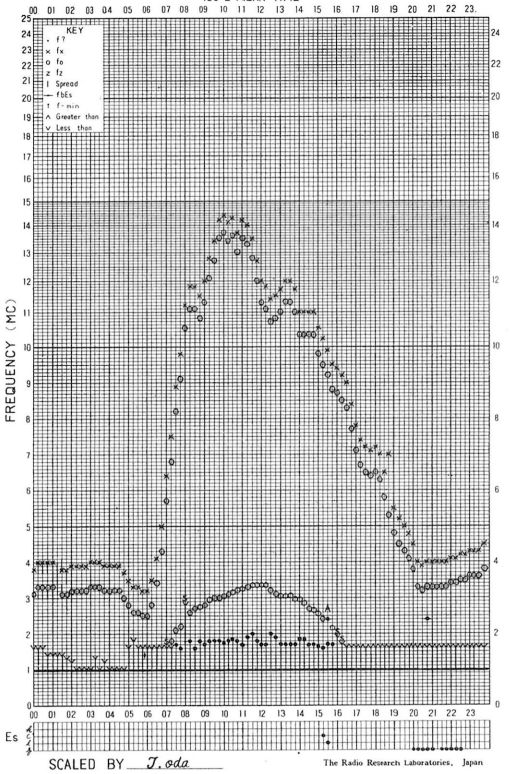


SCALED BY S. Hitotsume

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 17. 1960

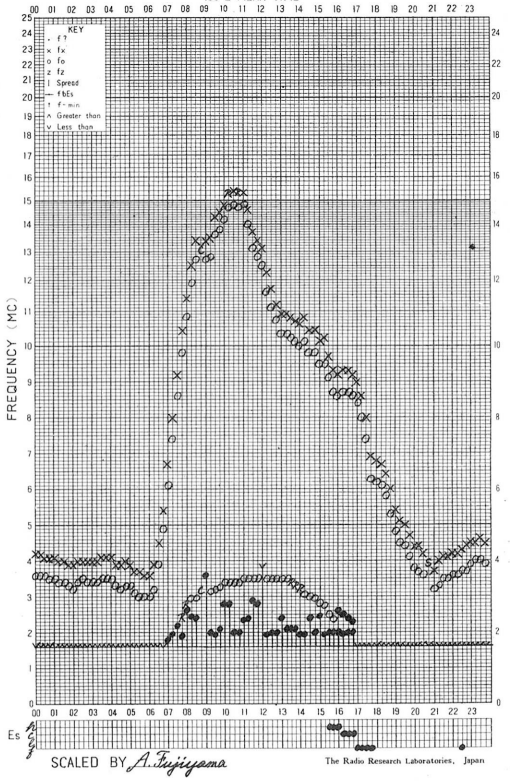


SCALED BY T. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 17. 1960

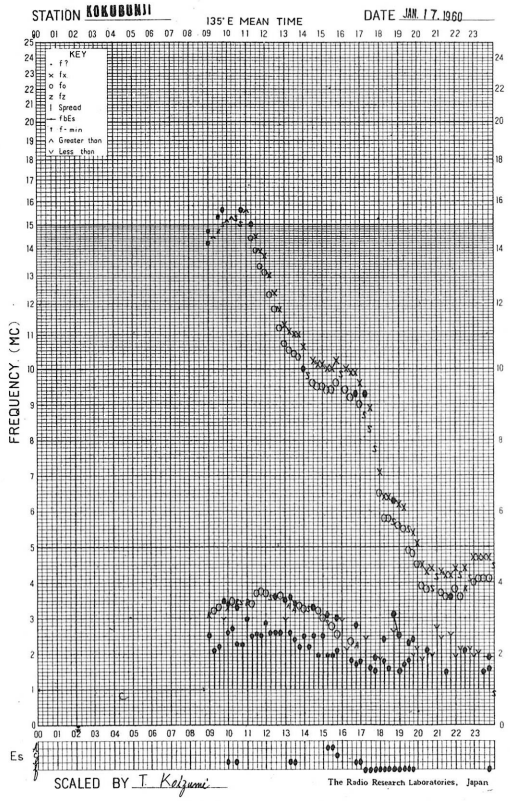


SCALED BY A. Tujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 17. 1960

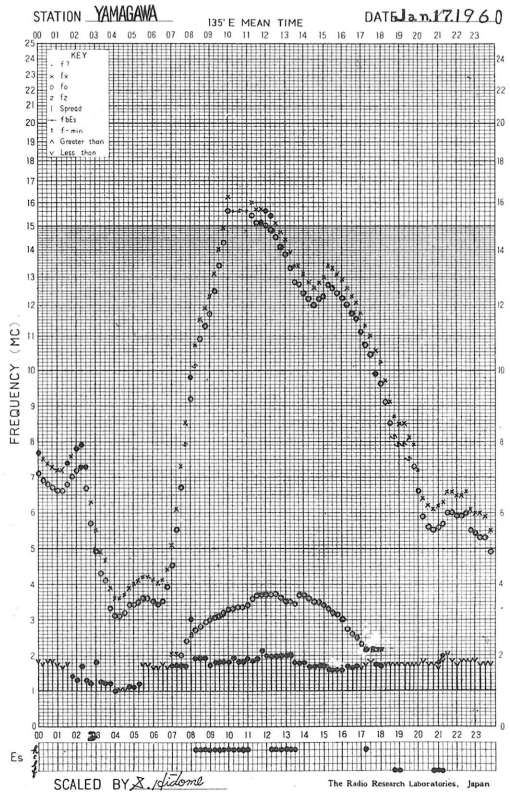


SCALED BY T. Kelzumi

The Radio Research Laboratories, Japan

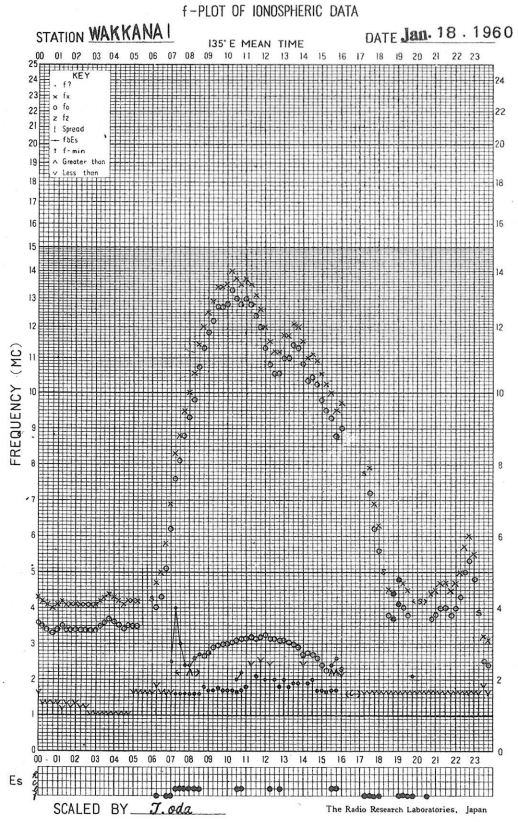
f-PLOT OF IONOSPHERIC DATA

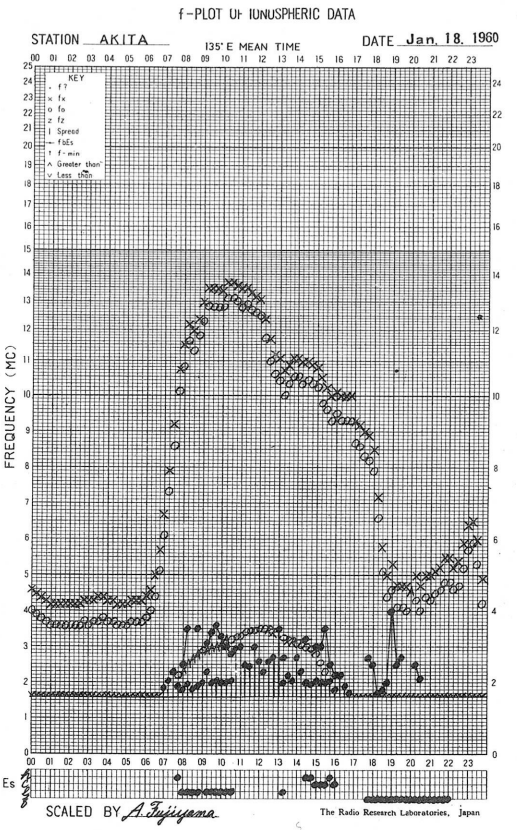
STATION YAMAGAWA 135°E MEAN TIME DATE Jan. 17. 1960

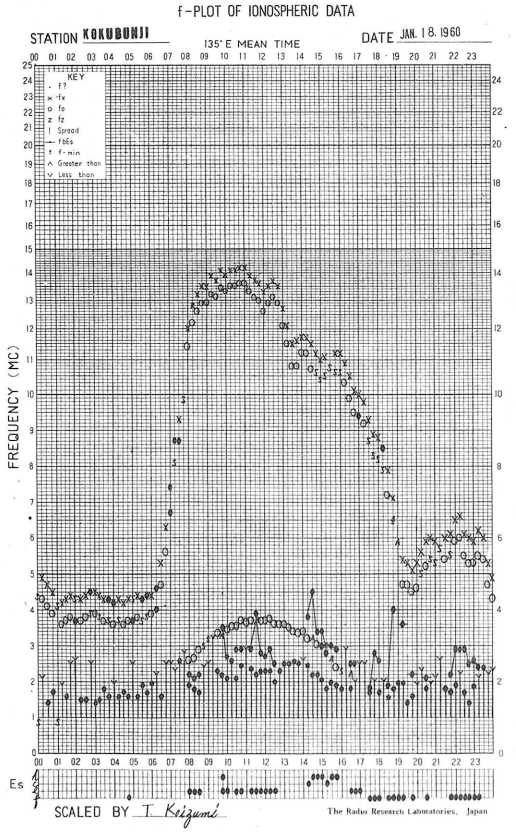


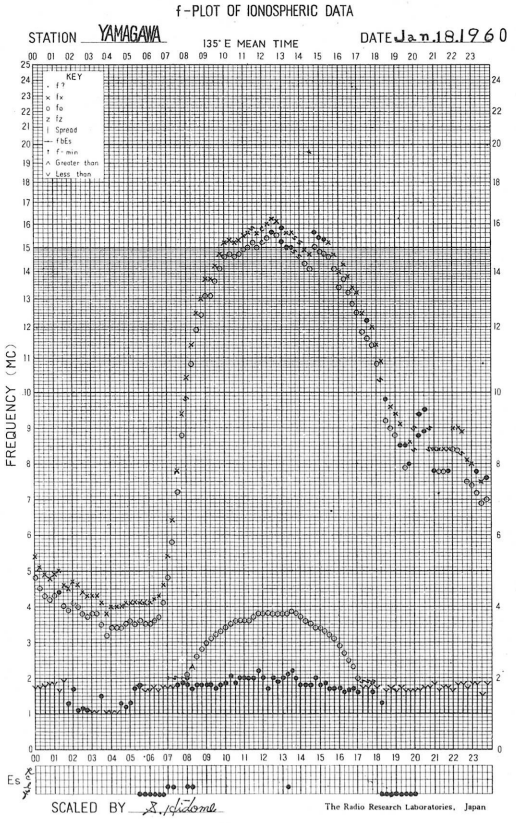
SCALED BY S. Hidome

The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE Jan. 18. 1960
KEY
FREQUENCY (MC)
Es
SCALED BY T. oda
The Radio Research Laboratories, Japan

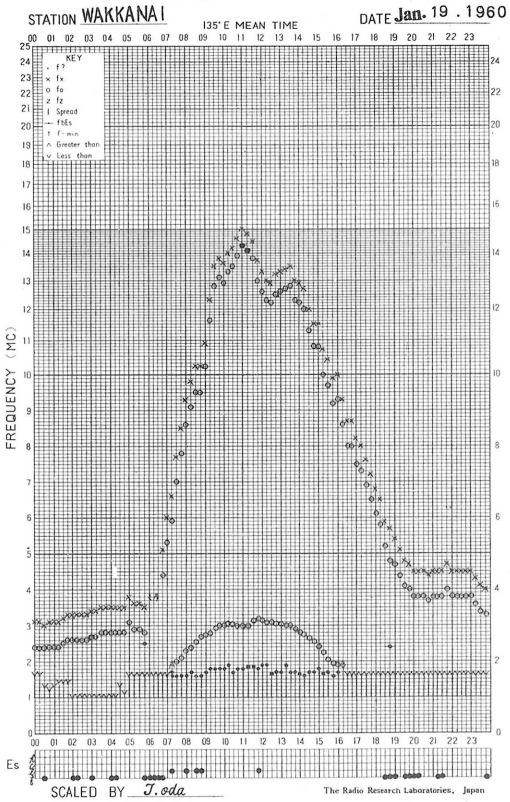

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE Jan. 18, 1960
KEY
FREQUENCY (MC)
Es
SCALED BY A. Fujiyama
The Radio Reserch Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE JAN. 18. 1960
KEY
FREQUENCY (MC)
Es
SCALED BY T. Kizumi
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE Jan. 18. 1960
KEY
FREQUENCY (MC)
Es
SCALED BY S. Shitome
The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 19. 1960

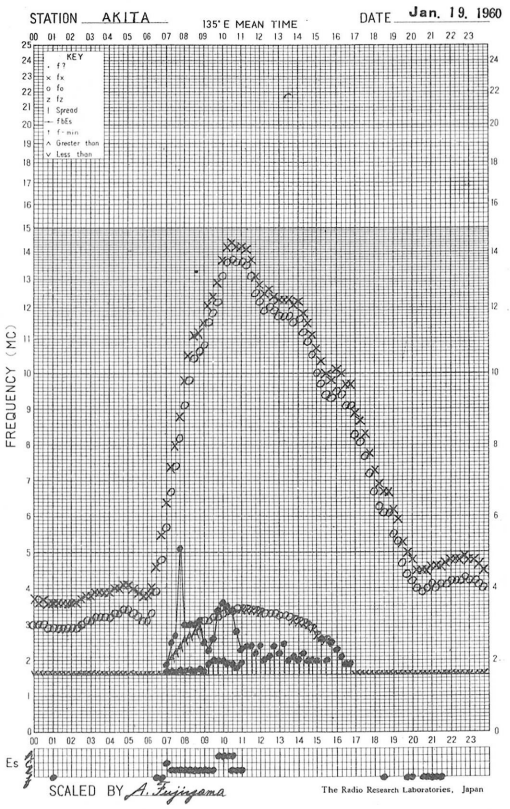


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 19. 1960

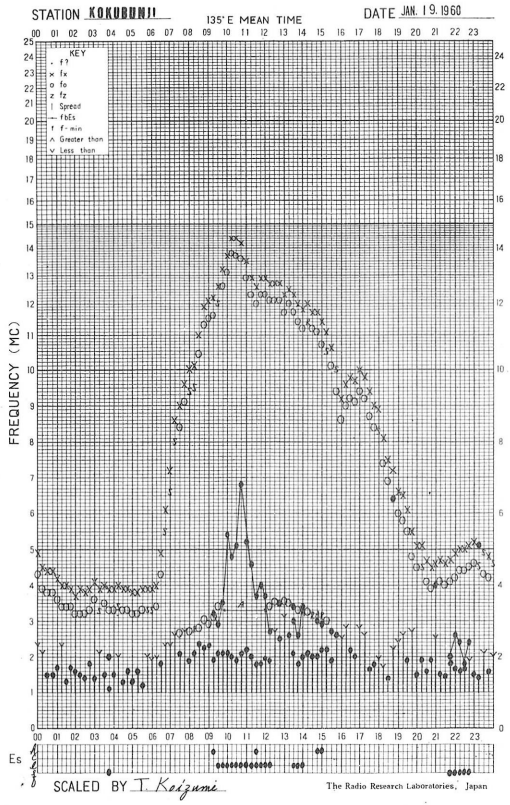


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 19. 1960

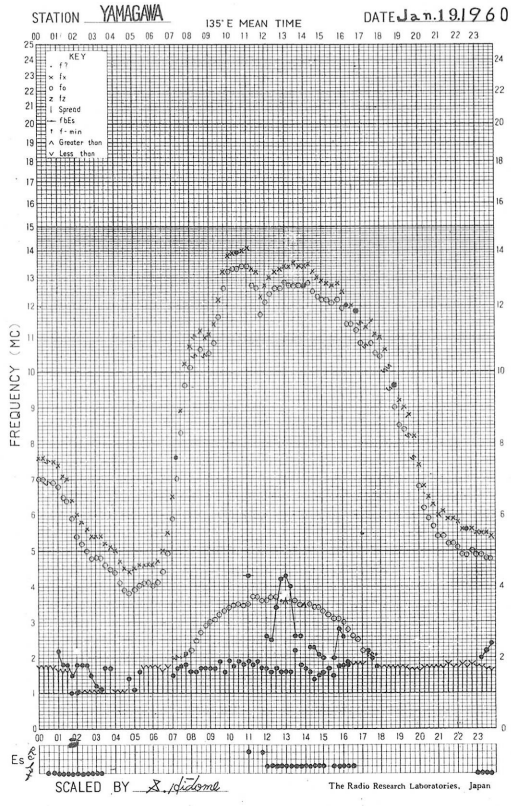


SCALED BY T. Koizumi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE Jan. 19. 1960

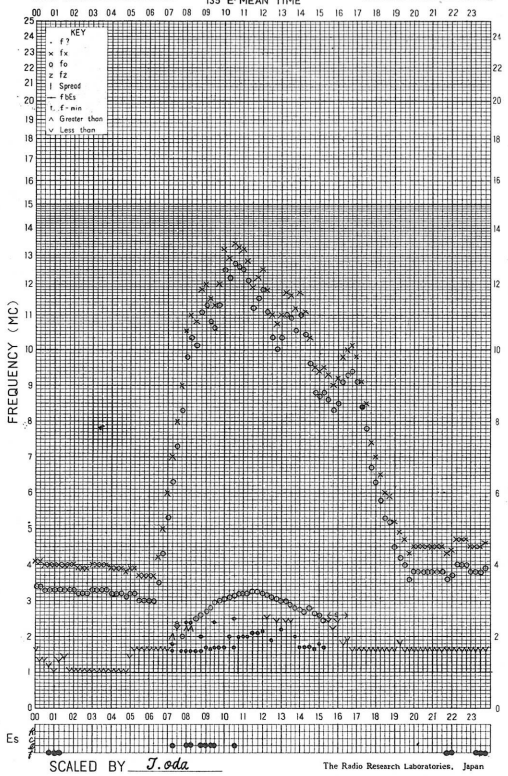


SCALED BY S. Nitome

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

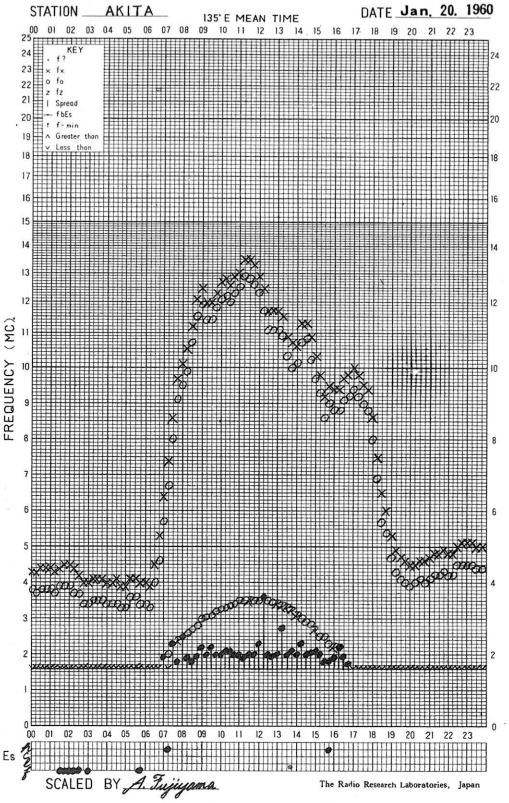
STATION WAKKANAI 135° E MEAN TIME DATE Jan. 20. 1960



SCALED BY T. Oda The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

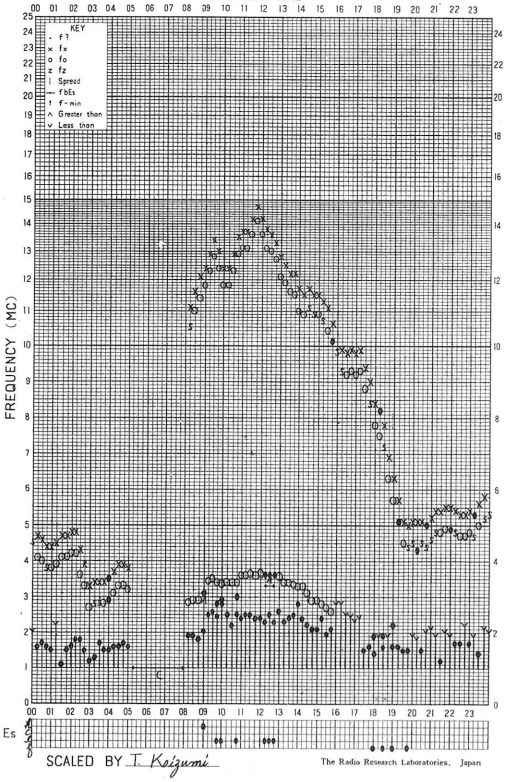
STATION AKITA 135° E MEAN TIME DATE Jan. 20. 1960



SCALED BY A. Fujiyama The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

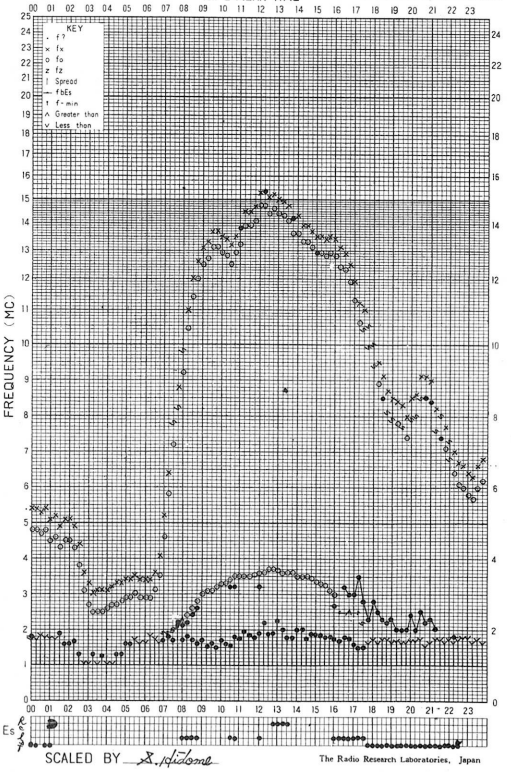
STATION KOKUBUNJI 135° E MEAN TIME DATE JAN 20. 1960



SCALED BY T. Kozumi The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

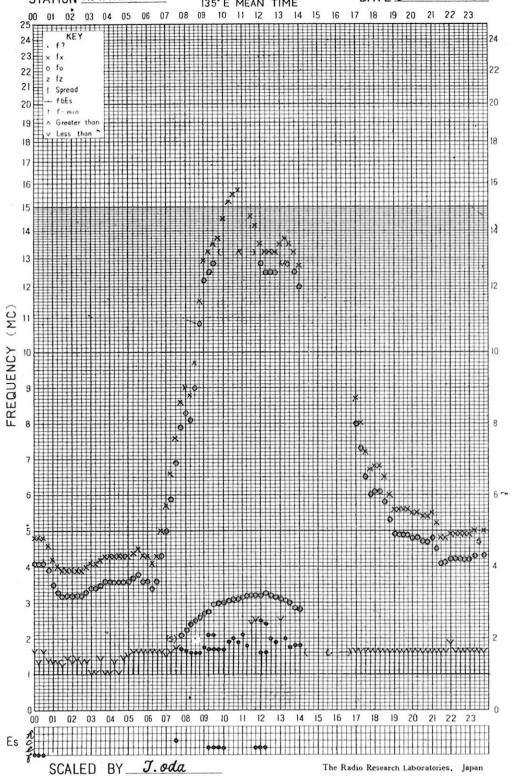
STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 20 1960



SCALED BY S. Ichijoma The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 21. 1960

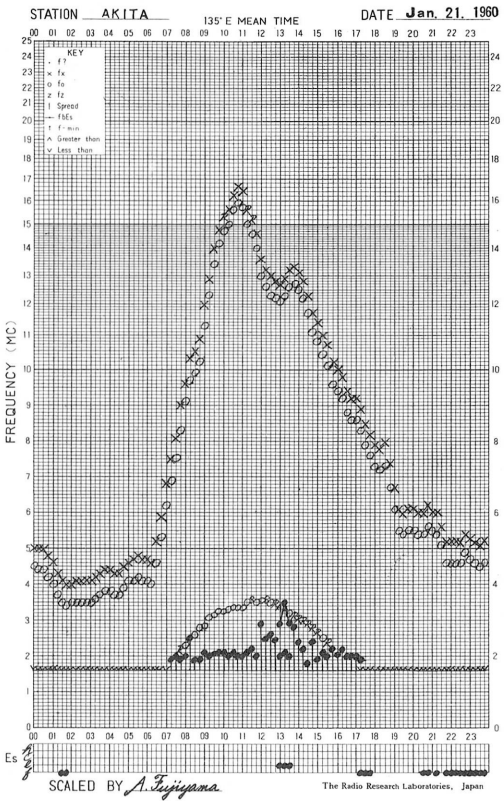


SCALED BY T. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 21, 1960

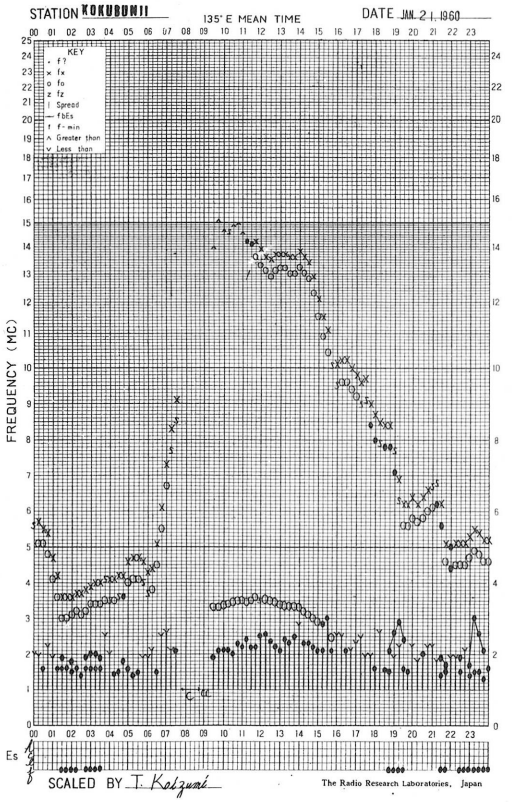


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN 21 1960

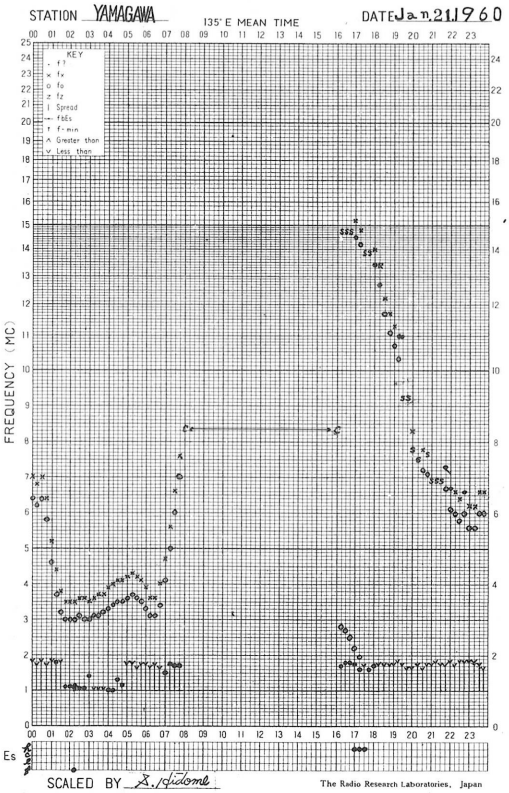


SCALED BY T. Katsuki

The Radio Research Laboratories, Japan

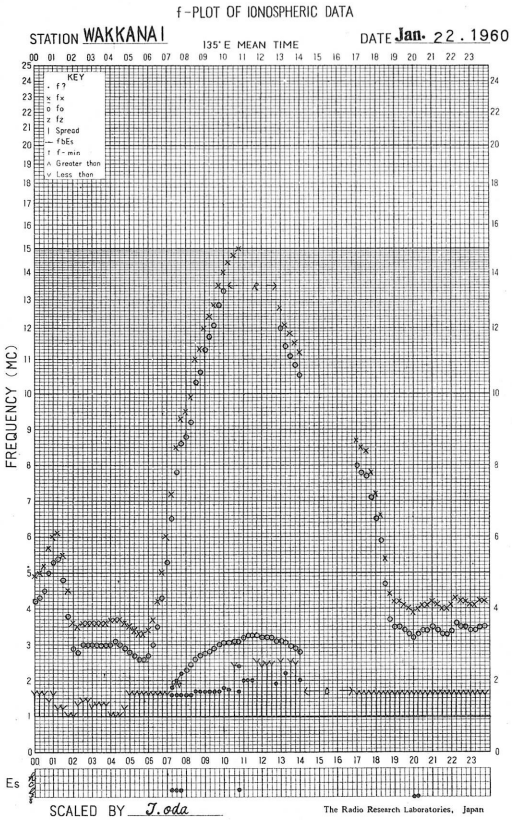
f-PLOT OF IONOSPHERIC DATA

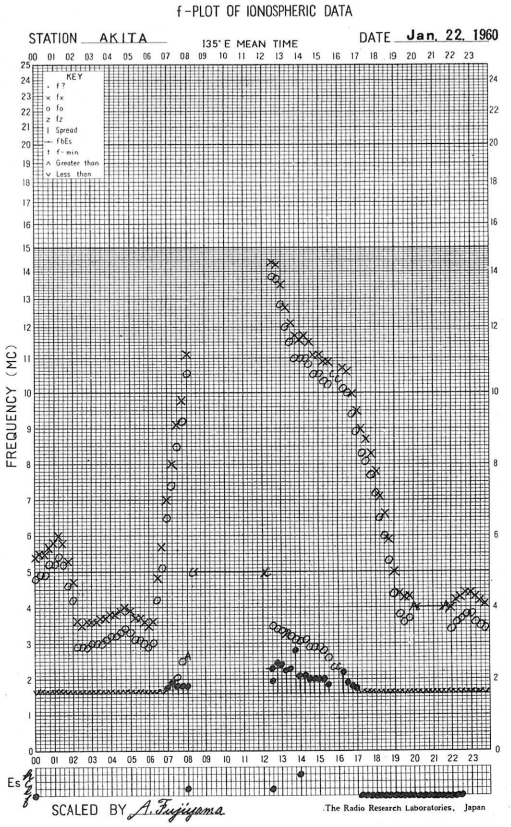
STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 21 1960

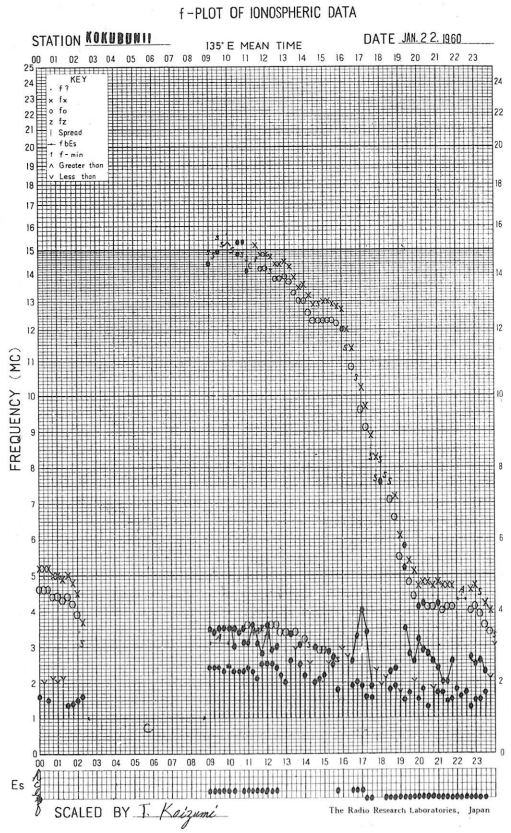


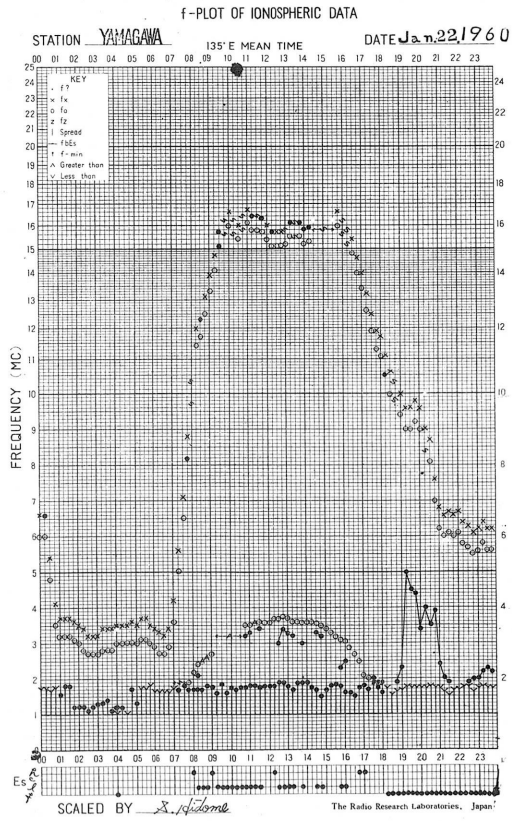
SCALED BY S. Hidome

The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE Jan. 22. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY T. Oda
The Radio Research Laboratories, Japan

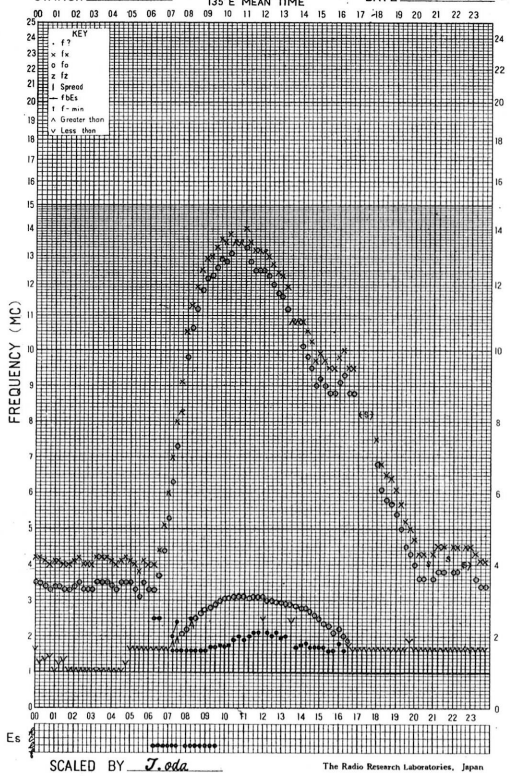

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE Jan. 22, 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Fujiyama
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE JAN. 22. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY T. Kaizumi
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE Jan. 22. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Ishimoto
The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 23. 1960

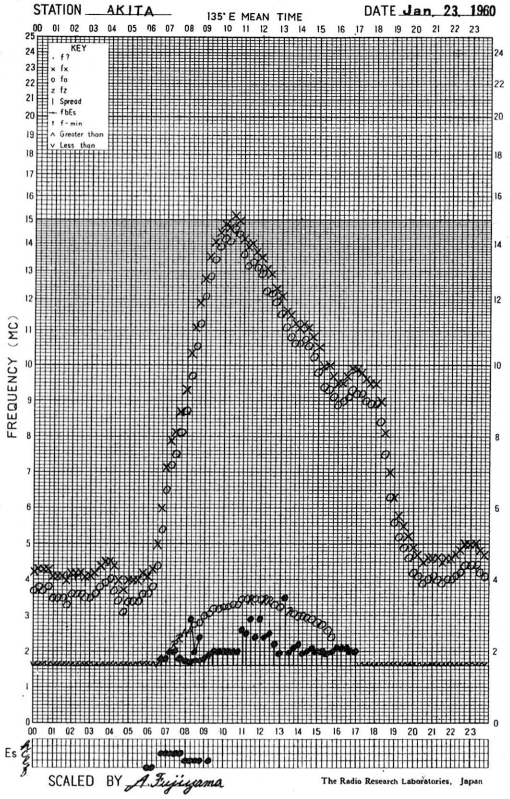


SCALED BY T. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 23. 1960

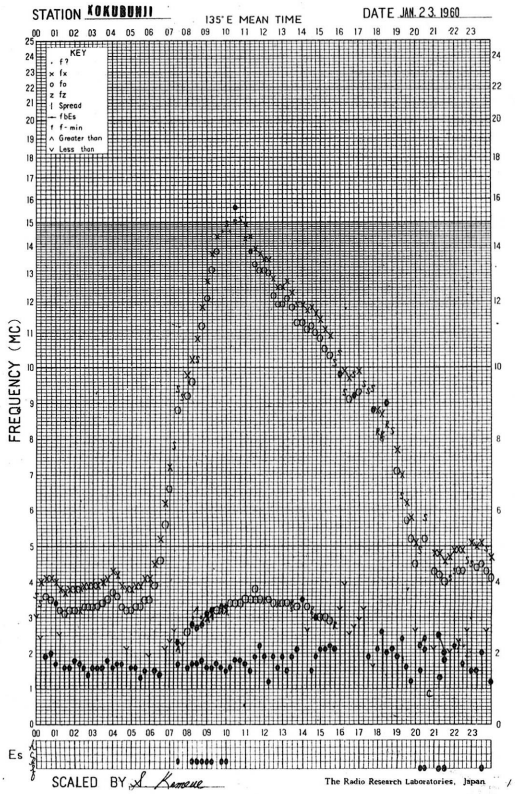


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 23. 1960

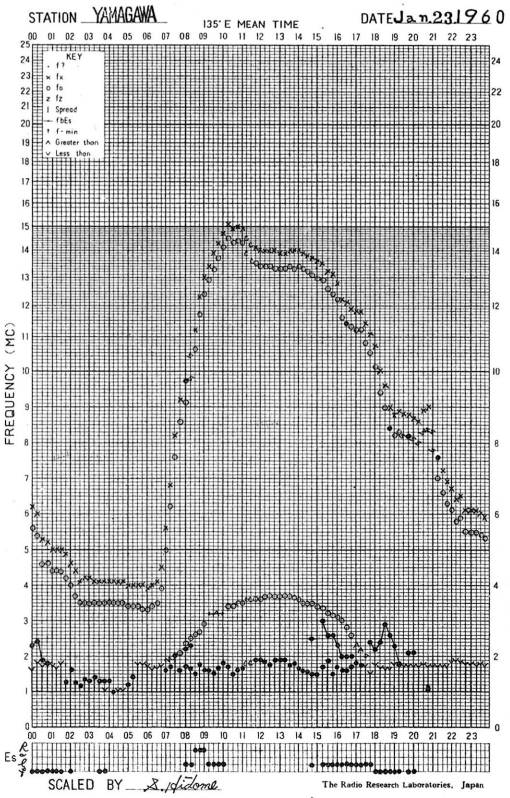


SCALED BY S. Kimura

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE Jan. 23. 1960

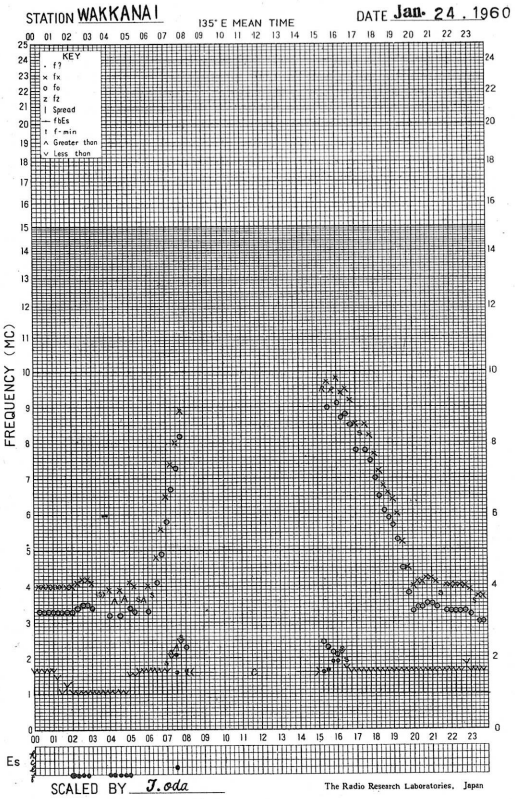


SCALED BY S. Hidome

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 24, 1960

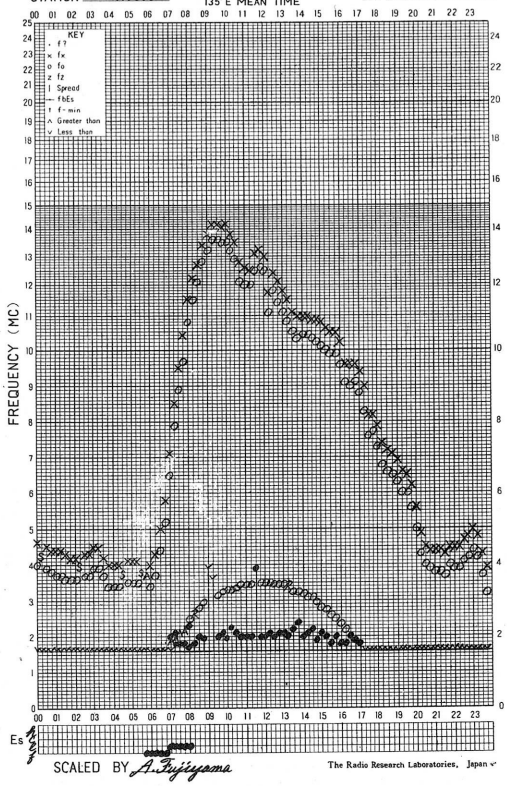


SCALED BY J. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 24, 1960

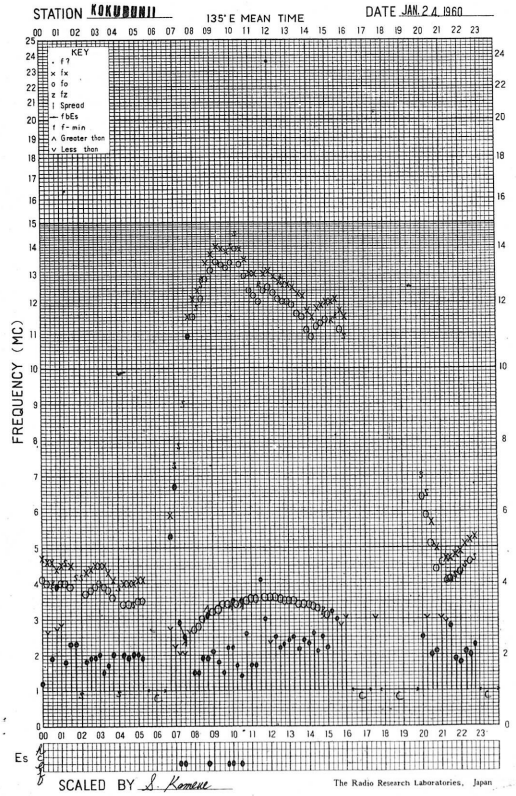


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 24 1960

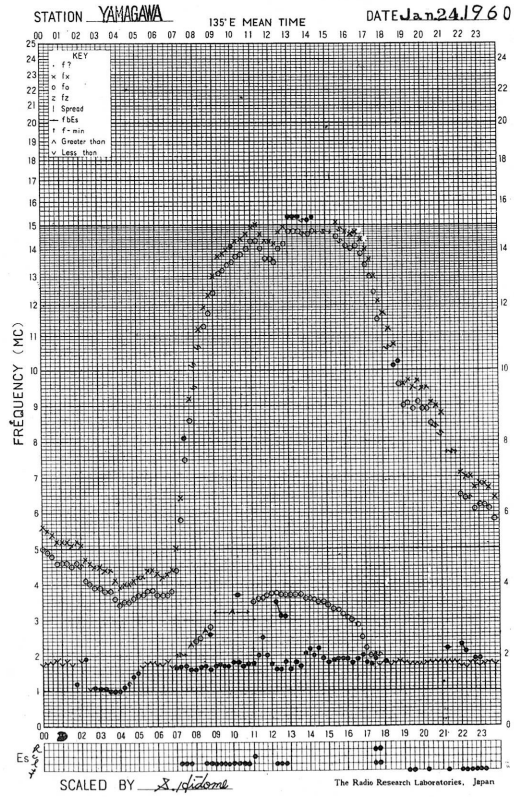


SCALED BY S. Komeue

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 24. 1960

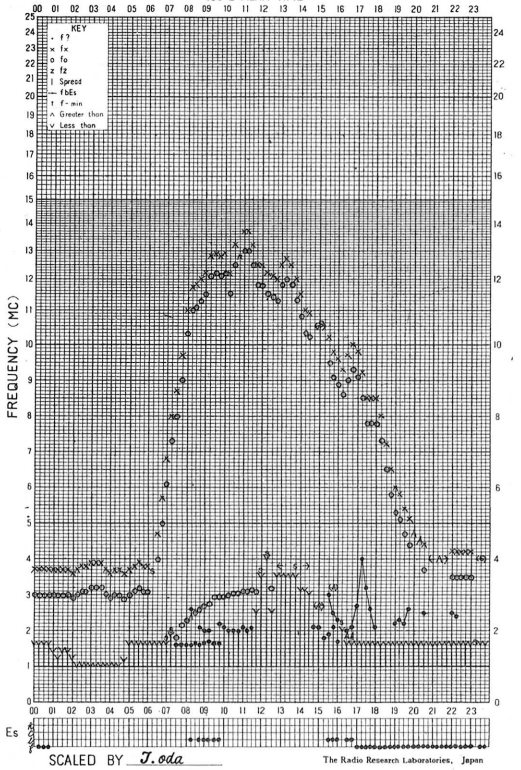


SCALED BY S. Shidomi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 25. 1960

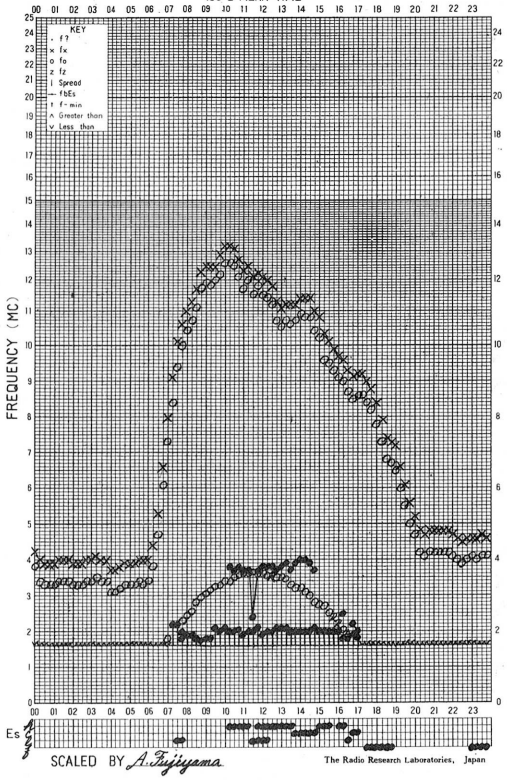


SCALED BY T. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 25. 1960

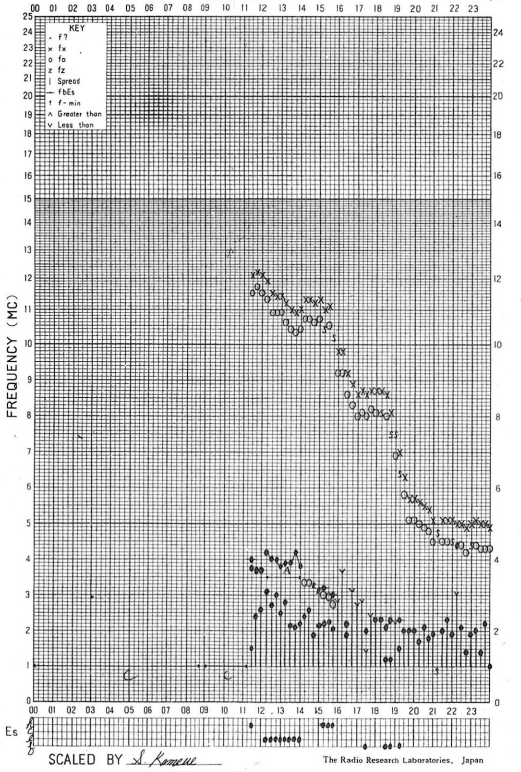


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 25. 1960

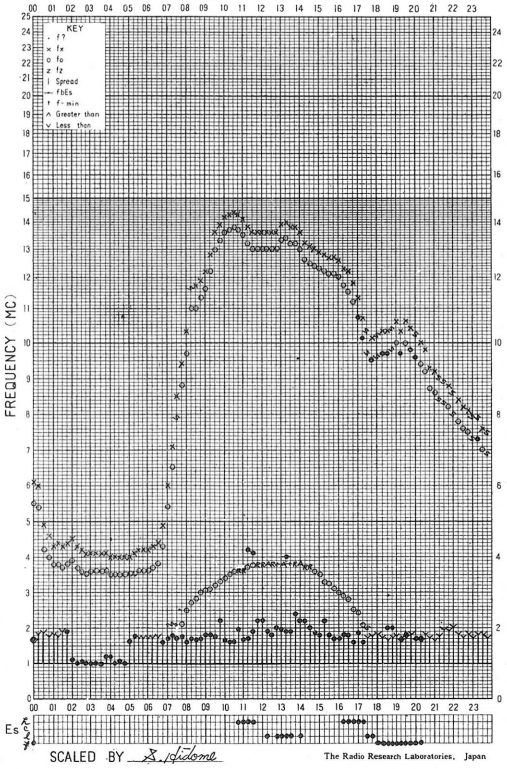


SCALED BY I. Komeiji

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan 25 1960

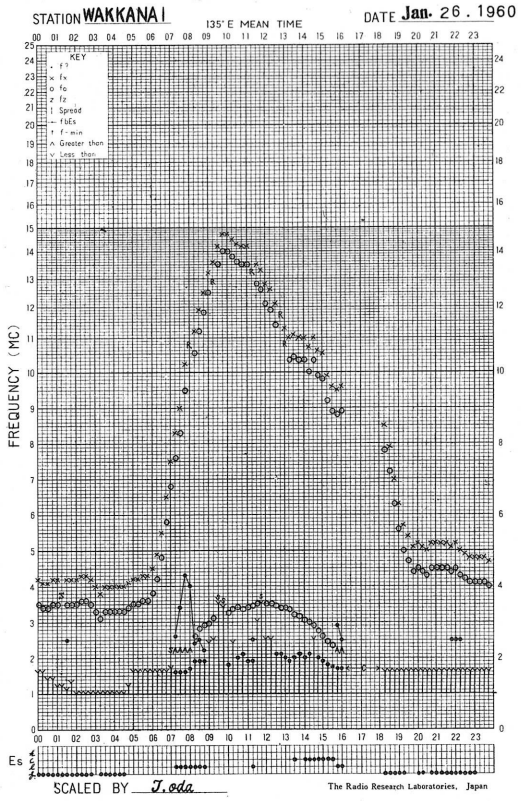


SCALED BY S. Shibano

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE Jan. 26. 1960

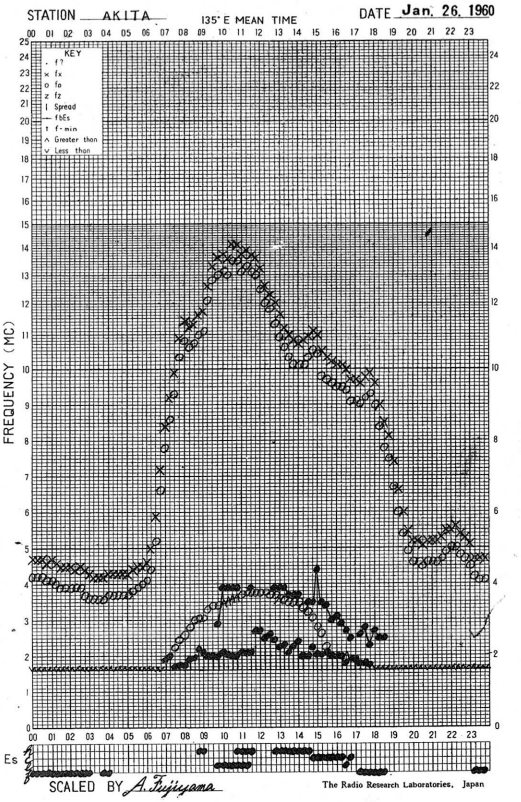


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Jan. 26, 1960

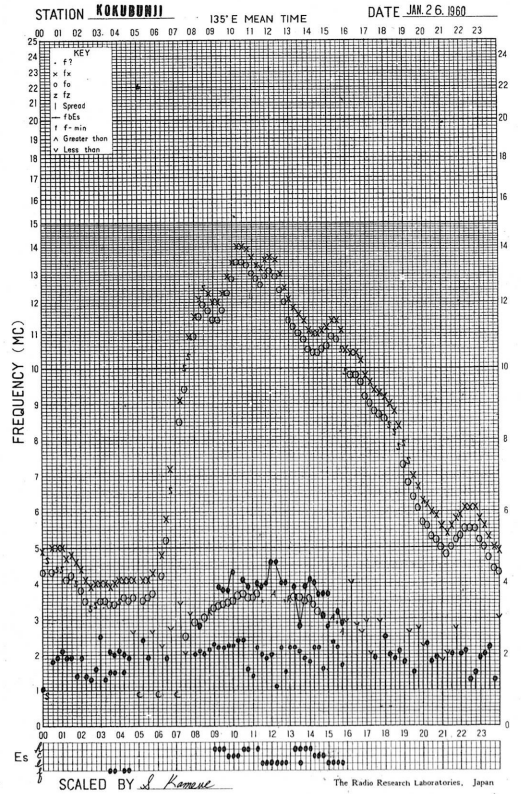


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JAN. 26. 1960

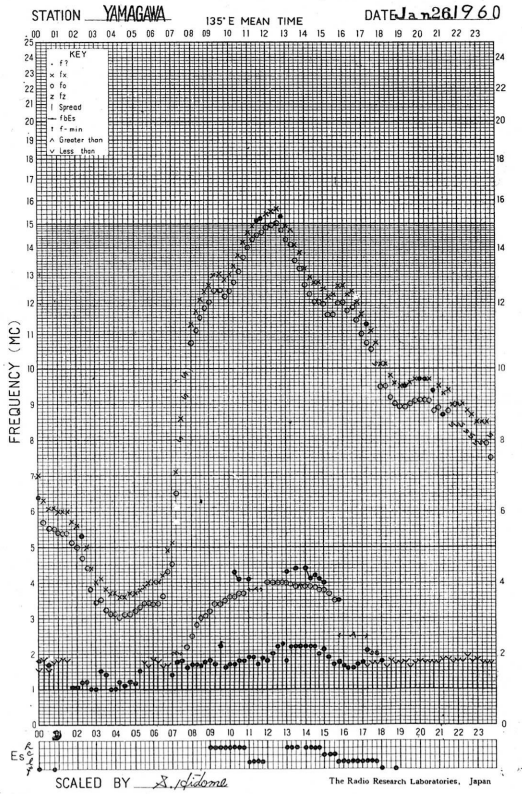


SCALED BY S. Komure

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE Jan 26 1960

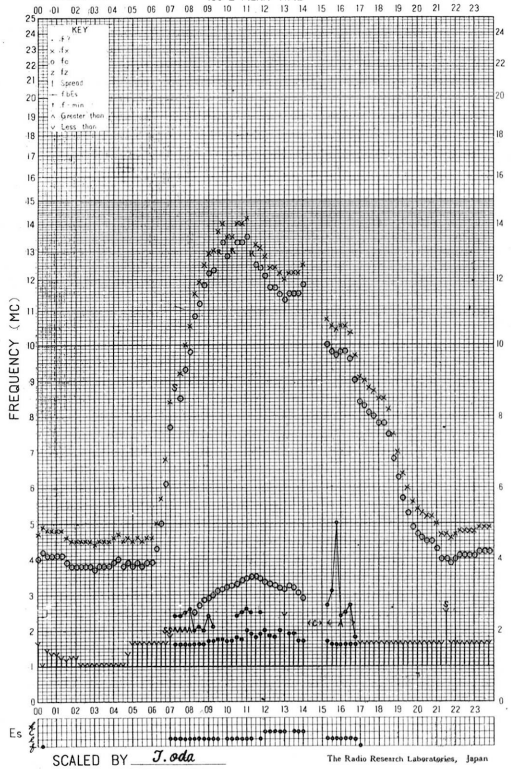


SCALED BY S. Ishidome

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 27. 1960

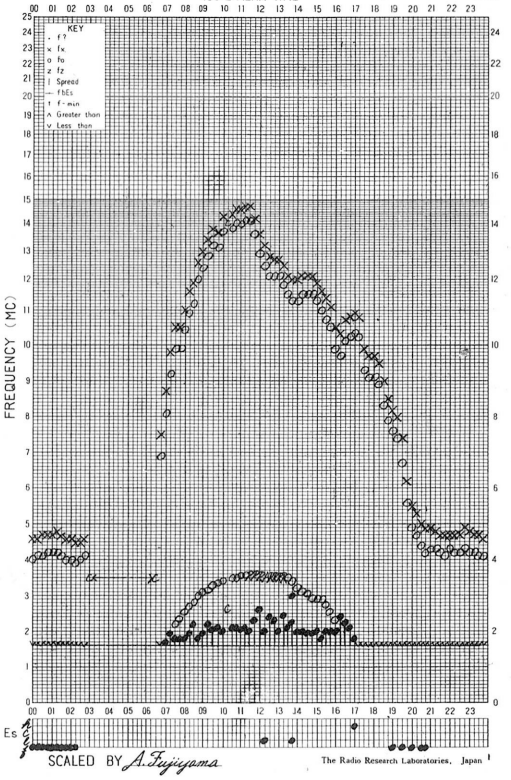


SCALED BY J. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 27. 1960

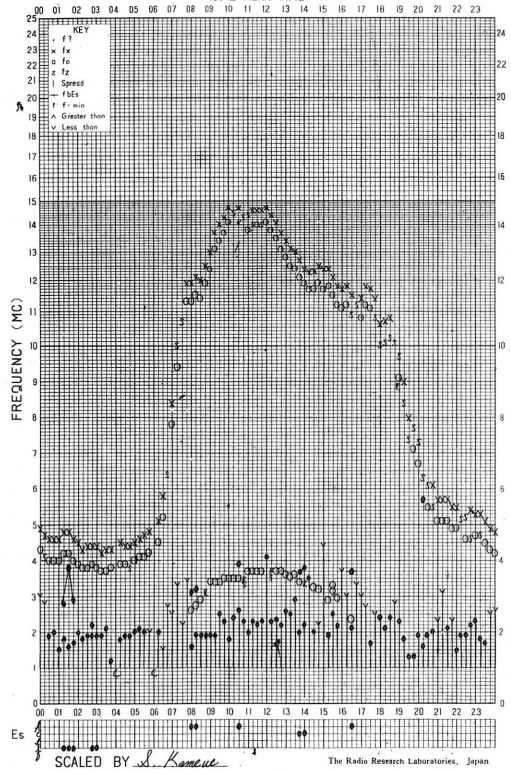


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 27. 1960

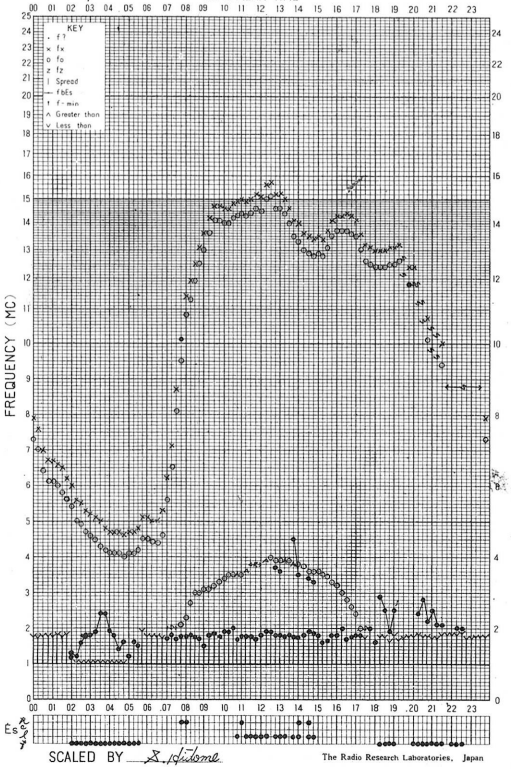


SCALED BY S. Kameue

The Radio Research Laboratories, Japan

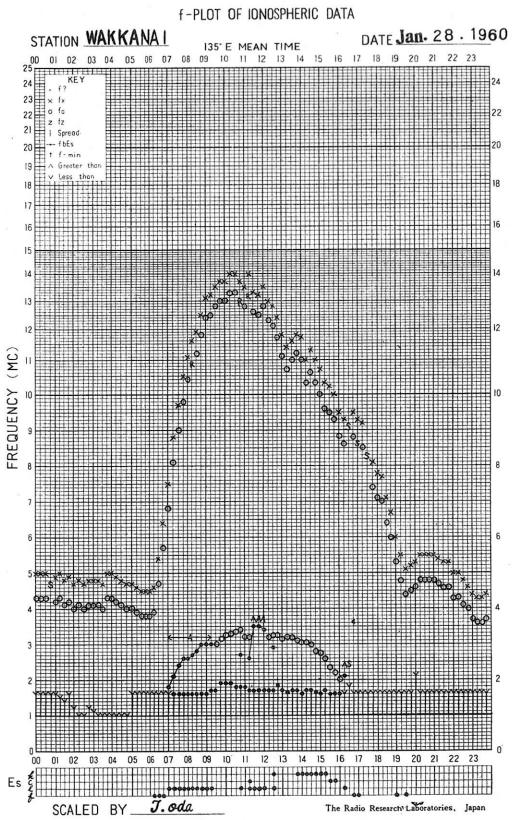
f-PLOT OF IONOSPHERIC DATA

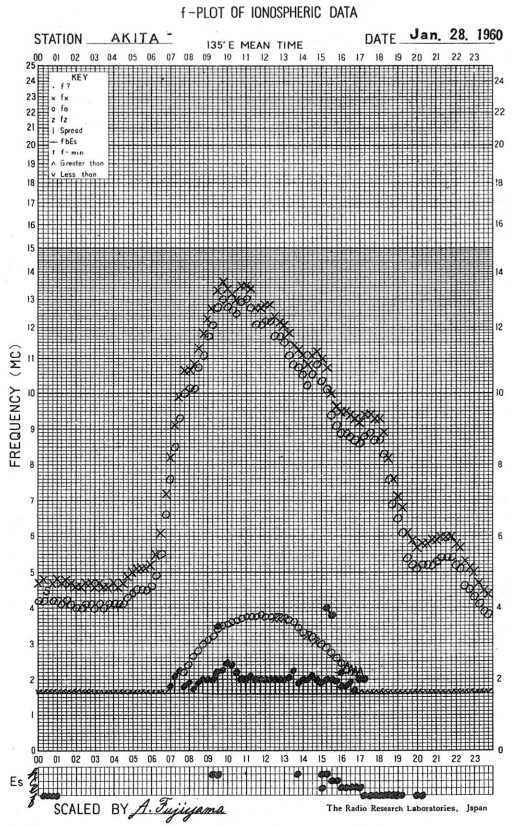
STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 27. 1960

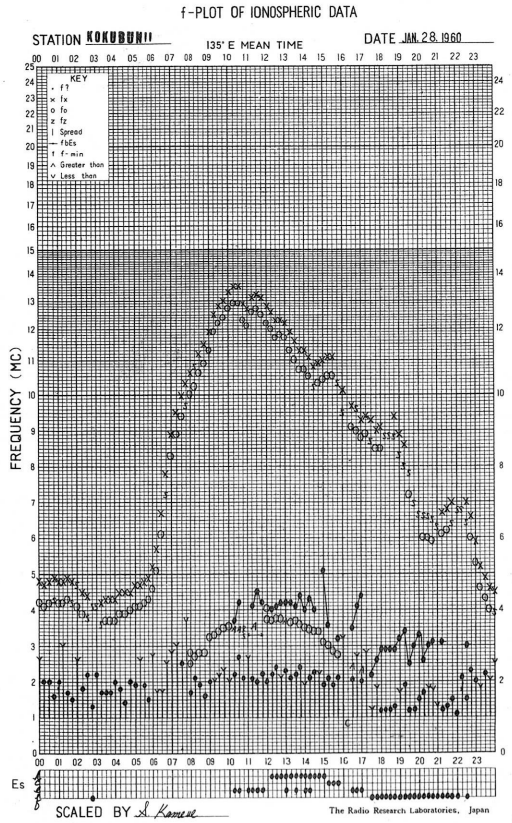


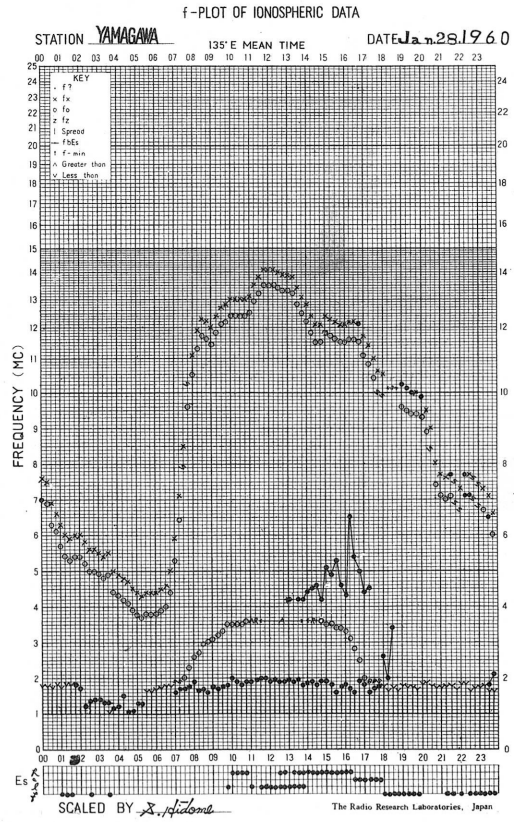
SCALED BY S. Hitsumi

The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE Jan. 28. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY T. Oda
The Radio Research Laboratories, Japan

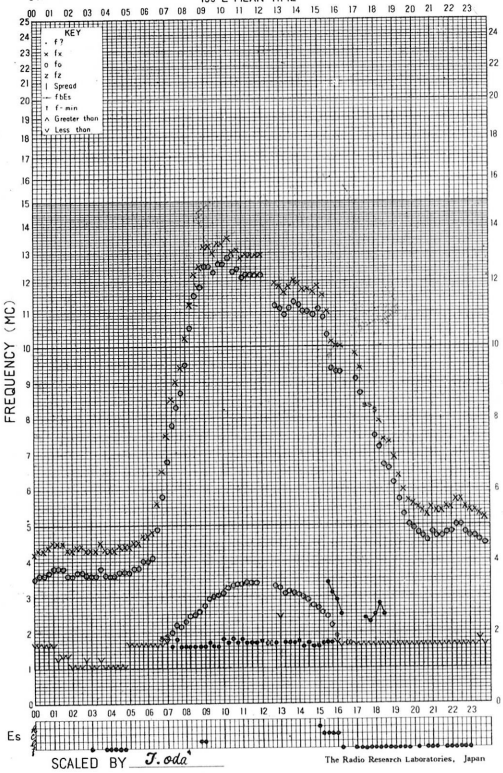

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE Jan. 28. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Fujiyama
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE JAN. 28. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Kamesu
The Radio Research Laboratories, Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE Jan. 28. 1960
KEY
. f?
× fx
o fo
z fz
| Spread
— fbEs
t f-min
^ Greater than
v Less than
FREQUENCY (MC)
Es
SCALED BY A. Ichiomi
The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 29. 1960

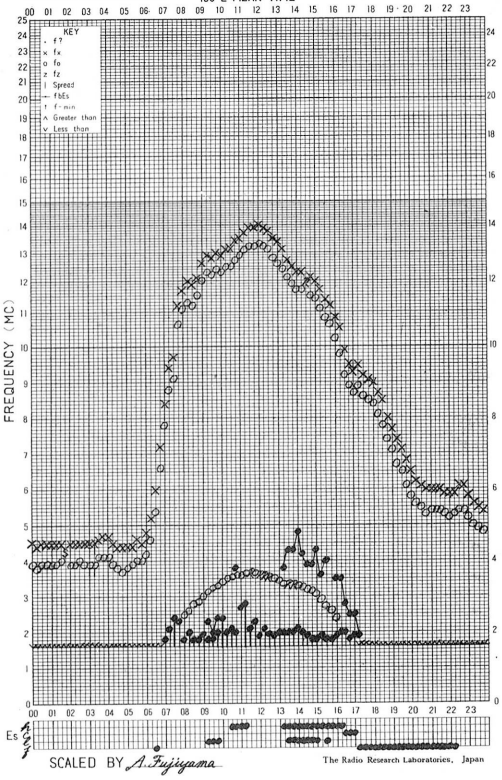


SCALED BY T. Oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 29. 1960

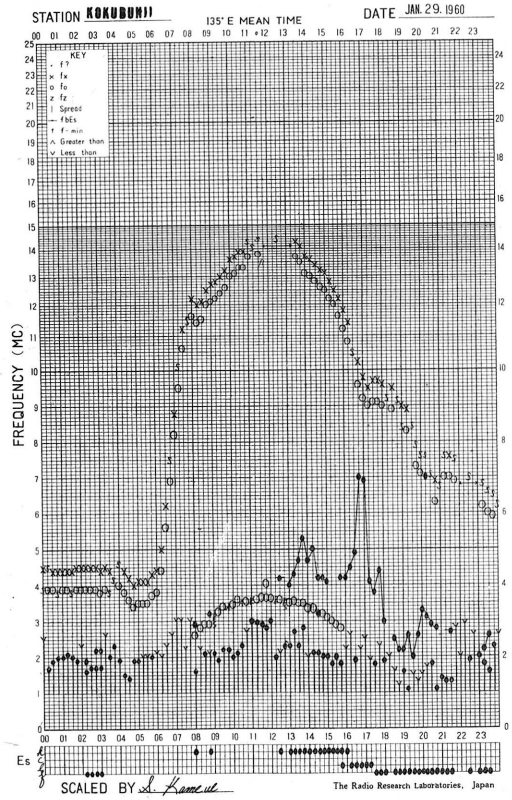


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 29. 1960

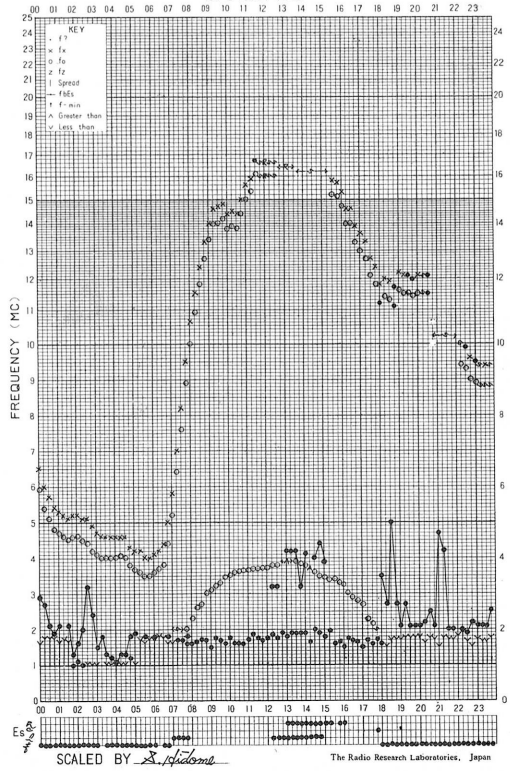


SCALED BY S. Kamei

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan 29, 1960

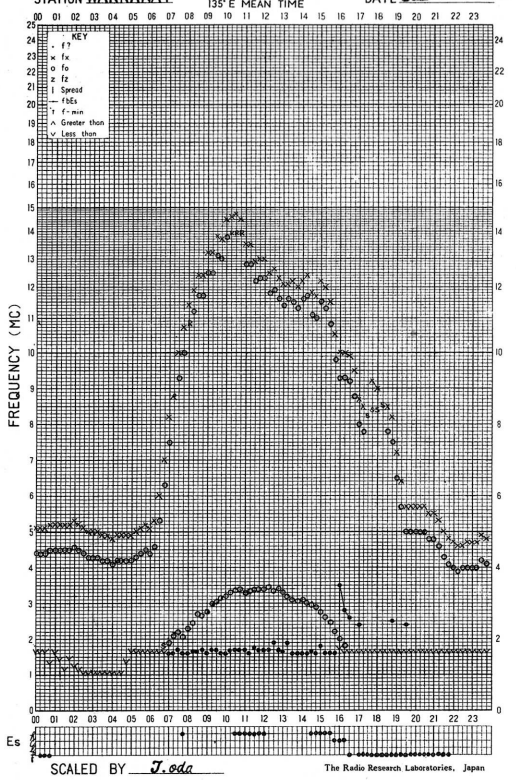


SCALED BY S. Ichidome

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 30. 1960

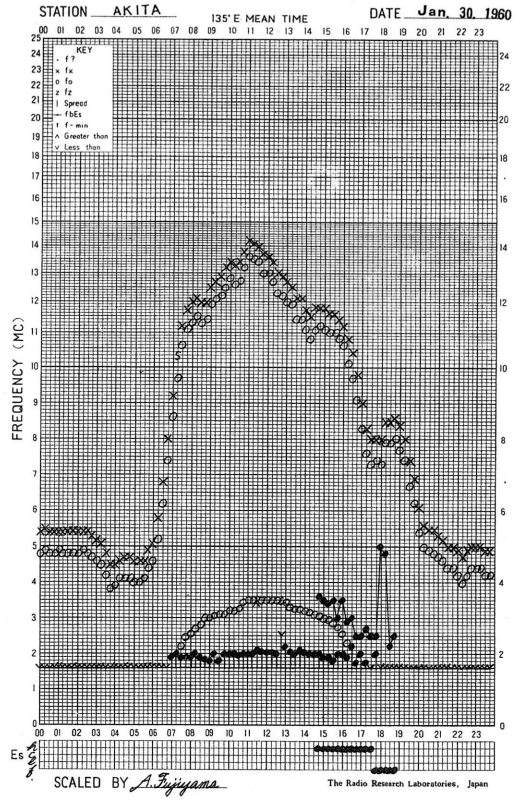


SCALED BY J. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 30. 1960

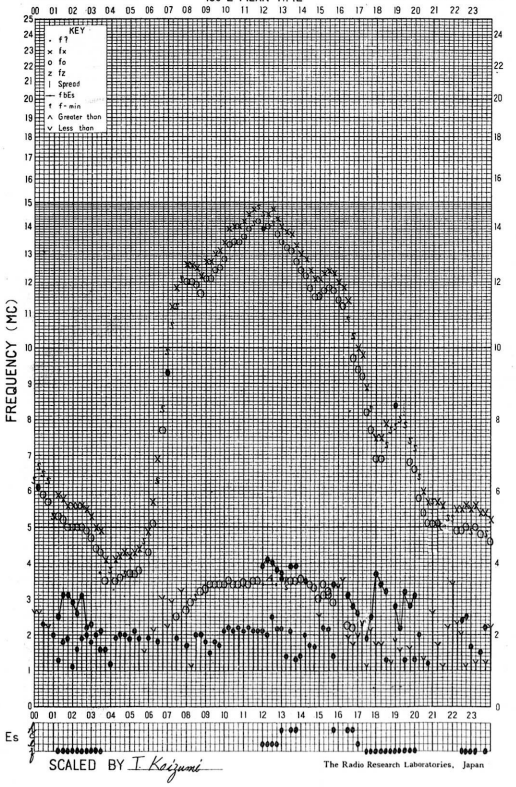


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 30 1960

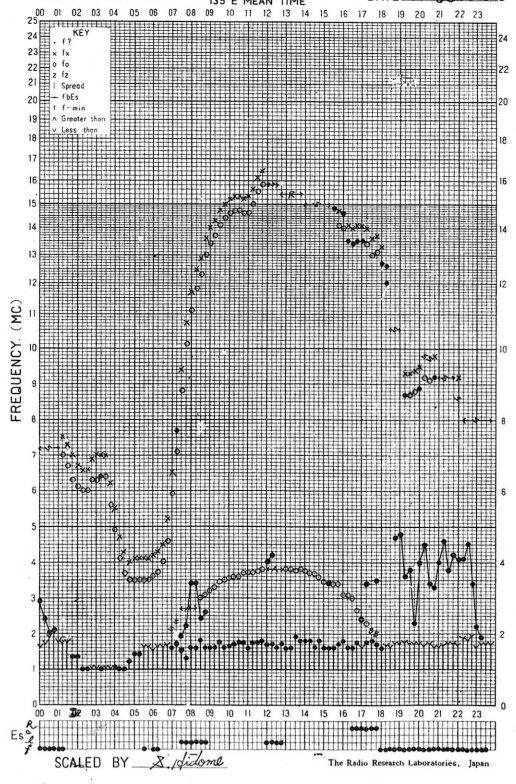


SCALED BY I. Kaizumi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan 30 1960

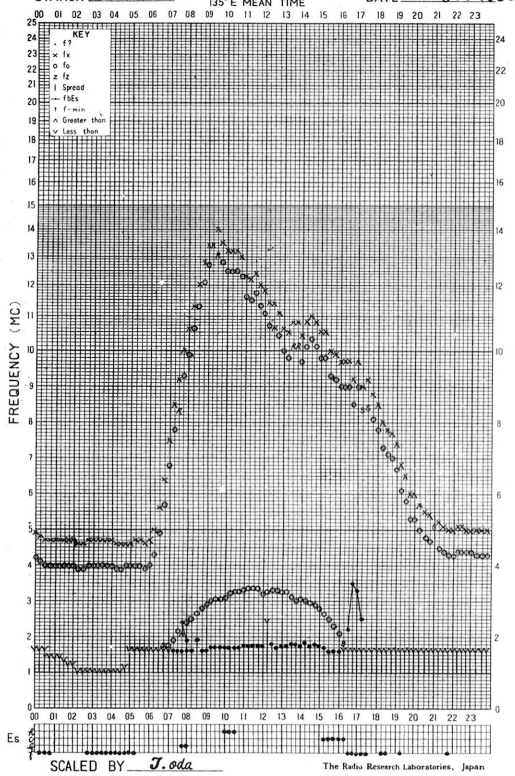


SCALED BY S. Fidome

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE Jan. 31. 1960

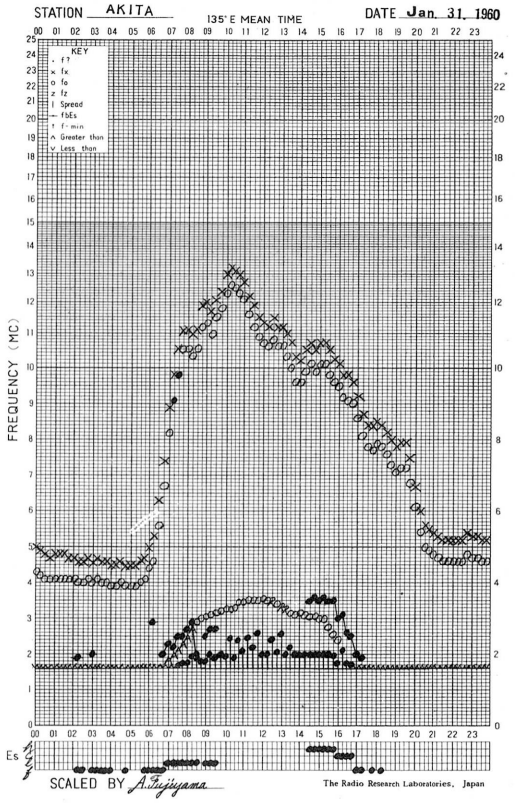


SCALED BY J. oda

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Jan. 31. 1960

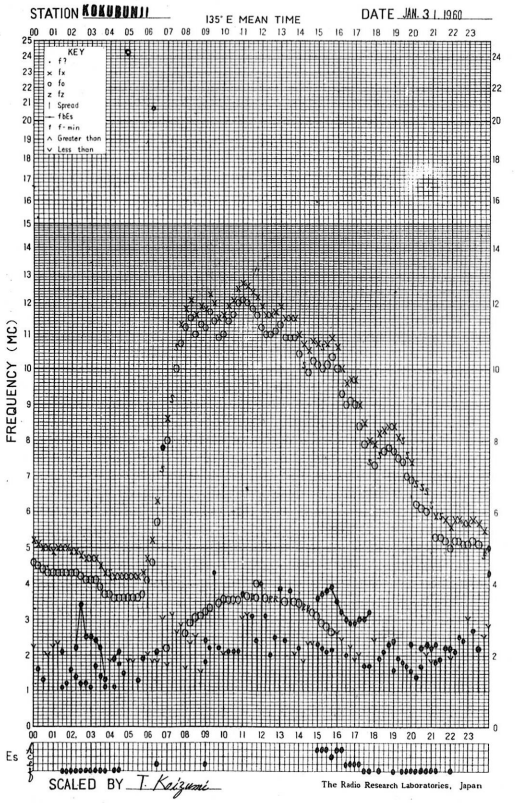


SCALED BY A. Fujiyama

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JAN. 31. 1960

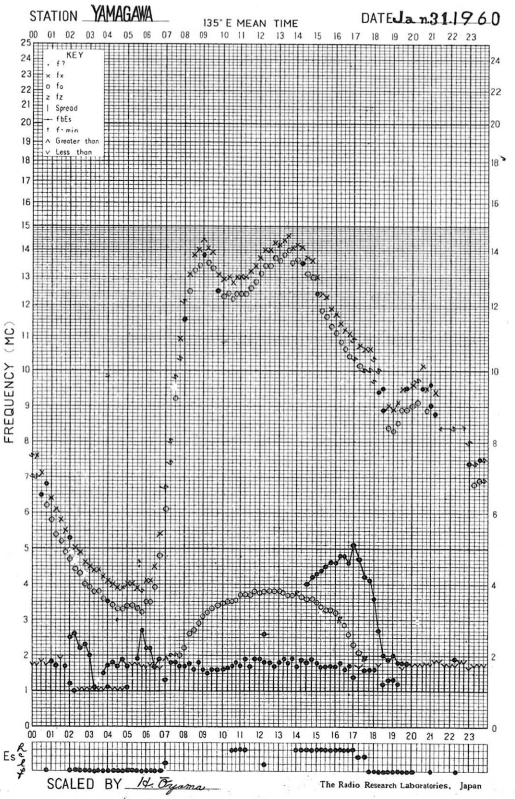


SCALED BY T. Keizumi

The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE Jan. 31. 1960



SCALED BY H. Ozawa

The Radio Research Laboratories, Japan

SOLAR RADIO EMISSION 200 Mc/s

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

HIRAISO — Time in U.T.

Jan. 1960	Steady Flux					Variability				
	00-03	03-06	06-09	21-24	Day	00-03	03-06	06-09	21-24	Day
1	9	16	9	15	11	1	1	0	0	1
2	10	11	10	11	11	1	0	0	-	0
3	11	11	(12)	10	11	0	0	0	-	0
4	18	16	(15)	25	15	0	1	1	0	1
5	14	9	(10)	10	15	0	0	0	0	0
6	-	11	-	12	10	-	0	-	0	0
7	8	8	9	9	9	0	0	0	0	0
8	12	8	-	-	10	0	0	-	-	0
9	(16)	9	14	12	11	1	0	0	0	0
10	9	9	10	19	10	0	0	0	1	0
11	15	19	11	244	16	1	1	-	2	1
12	114	111	(91)	(8)	140	2	2	2	1	2
13	21	16	(15)	16	16	1	1	1	1	1
14	21	20	15	(12)	19	1	1	0	0	1
15	(10)	10	(9)	8	10	1	1	0	1	1
16	12	8	(10)	15	10	1	1	0	1	1
17	19	12	(12)	-	15	1	1	1	-	1
18	(18)	10	(12)	-	14	1	1	1	-	1
19	7	(6)	-	-	(7)	1	1	-	-	0
20	-	10	-	-	(10)	-	1	-	-	0
21	10	6	6	6	8	0	0	0	0	0
22	6	6	6	8	6	0	0	0	0	0
23	8	8	(10)	10	8	0	0	0	0	0
24	9	10	(8)	-	9	0	0	0	-	0
25	11	11	11	-	11	0	0	0	-	0
26	10	9	-	11	10	0	0	-	0	0
27	8	8	(10)	8	9	0	0	0	0	0
28	14	9	(12)	-	10	1	0	0	-	0
29	11	8	(8)	(8)	9	0	0	0	0	0
30	10	10	(8)	-	9	1	0	0	-	0
31	11	11	8	8	10	0	0	0	0	0

* Flux of November and December of 1959 is to be multiplied by a factor of 1.25

Outstanding Occurrences

Jan. 1960	Start-time	Dura-tion	Type	Max. Inst.	Int. Smd.	Max. Time	Remarks
1	0010.6	2.2	CD/4	330	90	0010.9	
9	0053	~ 10	F/3	520	-	0101.9	
13	2318.6	1.4	CD/4	380	140	2319.3	
13	2354.0	1.5	CD/4	710	170	2354.7	
16	2247.8	5	CD/8	>1000	>700	-	off scale
20	0512.4	0.8	CD/4	810	290	-	
22	0150.9	0.9	CD/4	460	50	-	
28	0020.5	1.2	F/3	580	-	-	
28	0024.3	0.5	CD/4	270	70	-	

Errata

for		read	
Feb. 1958	Start-time	Feb. 1958	Start-time
9	0744	9	0744
	0747		0747
	2140	10	2140
	2158		2158
	2319		2319
10	0004-30s	11	0004-30s
	0021-30s		0021-30s
	0104		0104
	0143		0143
	0308-15s		0308-15s
11	2236		2236

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Jan. 1960	Whole Day Index	W W V 00 06 / 06 12	W W V 12 18 / 18 24	S. F. 00 06 / 06 12	S. F. 12 18 / 18 24	W W V H 00 06 / 06 12	W W V H 12 18 / 18 24	Warning 00 06 / 06 12	Warning 12 18 / 18 24	Principal magnetic storms Start	End	ΔH
1	1o	2 -	- 1	1 1	1 1	1 2	3 3	N N	N N			
2	1+	2 -	- 1	1 1	2 1	2 1	1 2	N N	N N			
3	1+	1 -	- 1	2 C	C 2	1 1	1 2	N N	N N			
4	2-	1 -	- 1	2 2	2 2	2 1	1 2	N N	N N			
5	1o	1 -	- 2	(1) 1	1 1	1 2	1 1	N N	N N	0201	---	
6	1o	1 -	- 1	1 1	1 1	1 1	2 2	N N	N N	---	1000	103γ
7	1o	1 -	- 1	2 1	1 1	(2) 2	3 3	N N	N N			
8	1o	1 -	- 1	2 1	1 1	(2 2	1 2)	N N	N N			
9	1+	2 -	- 1	2 (1)	1 1	2 (2	1 1)	N N	N N			
10	2+	2 -	- 3	1 3	2 2	(2 1	1 2)	N N	U U	0717	---	
11	2-	2 -	- 2	1 2	(3) 1	1 1	1 1	U U	U U	---	2200	175γ
[12]	1+	1 -	- 3	2 1	1 (1)	2 1	2 2	U N	N N			
[13]	2-	3 -	- 3	1 (1)	1 2	1 (2	2) 1	N N	N N	1859	---	
[14]	2-	3 -	- 2	2 (1)	1 2	1 1	1 1	N N	N N	---	---	
15	3-	4 -	- 3	2 2	2 2	2 (2)	2 (1)	U U	U U	---	2000	111γ
16	3-	3 -	- 3	2 (3)	2 3	1 1	2 3	U N	N N			
17	1+	1 -	- 1	2 2	1 2	2 1	2 1	N N	N N			
18	2+	1 -	- 1	2 3	4 2	(1 1)	1 3	N U	U U	0642	2300	138γ
19	2-	3 -	- 2	2 1	1 1	2 2	2 3	N N	N N			
20	1o	1 -	- 1	2 1	1 1	1 2	2 2	N N	N N			
21	2-	3 -	- 3	1 1	1 2	2 2	2 3	N N	N N			
22	2-	2 -	- 2	1 2	2 1	2 1	2 1	N N	N N			
23	1+	1 -	- 2	1 3	2 1	2 2	2 3	N N	N N			
24	1+	2 -	- 3	1 1	1 1	1 1	1 2	N N	N N			
25	3-	3 -	- 4	2 (2)	3 (1)	1 2	2 2	N N	N N			
26	1+	2 -	- 2	1 1	1 2	2 1	2 2	N N	N N			
27	1o	2 -	- 1	1 1	1 1	2 2	2 2	N N	N N			
28	1o	1 1	2 2	1 1	1 (1)	1 1	2 2	N N	N N			
29	1+	2 1	1 1	1 1	2 2	1 2	1 1	N N	N N	0205	---	
30	1o	1 1	- 1	1 1	2 1	2 1	2 1	N N	N N	---	0400	72γ
31	1+	1 1	- 1	1 2	2 2	2 2	2 1	N N	N N			

* = day of Special World Interval

[ ] = Regular World Day

( ) = inaccurate

--- = continuing magnetic storm

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Jan. 1960	S W F								S E A			Correspondence		
	Drop-out Intensities (db)					Start-time	Dura-tion	Type	Imp.	Start-time	Dura-tion	Imp.	Flare	Solar Noise	Mag.
	WS	SF	HA	TO	LN										
16		60	10		22	22.47	32	S	3+				X	X	X

PROVISIONAL IONOSPHERIC DATA

Oct. 1959 | foF2 | 45° E Mean Time (G.M.T.+3h.) | **Showa Base** | Lat. 69° 00.4′ S, Long. 39° 35.4′ E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	F	4.9^{F}	5.8^{F}	B	4.8	A	B	B	B	A	B	B	6.2	7.0	9.7	10.3	6.0	4.7	4.6	3.5	A	A	C
2	A	A	4.7	6.0	4.5^{F}	R	4.7^{F}	6.0^{F}	A	B	B	B	B	R	6.0	5.6	5.8	6.0	6.8	5.5	4.8	4.3^{F}	2.8^{F}	4.1
3	3.7^{F}	F	F	F	3.5	3.7^{F}	3.2^{F}	4.5^{F}	5.2	A	B	R	R	6.2	6.4	^{U}6.5^{F}	8.8	7.3	5.6	^{U}4.9^{F}	3.2^{F}	A	A	^{U}2.8^{F}
4	C	C	F	A	5.2	^{U}4.5^{R}	3.2	3.9	B	B	B	4.2	B	5.6	5.8	5.7	R	B	4.7	3.3	A	A	A	A
5	3.1	A	A	R	5.2^{F}	5.3^{F}	B	B	B	A	5.2	B	5.4	6.2	^{D}5.5^{R}	7.8	8.3	6.3	5.1	4.0^{F}	A	4.7^{F}	F	B
6	C	A	2.9	B	A	4.2	3.5	3.8	A	4.0	B	B	B	B	B	R	5.4	4.1	4.2	A	2.7	A	A	R
7	A	A	4.1	3.4	4.5	5.5	5.6	B	A	B	B	^{D}5.6^{R}	6.0	6.0	6.1	6.1	^{U}6.1^{R}	6.6	7.6	7.2	6.9	5.6	4.3	3.6
8	A	A	B	5.0	^{U}5.7^{R}	6.4	B	B	5.9	^{D}6.2^{R}	^{D}6.7^{R}	^{J}8.0^{R}	^{J}6.7^{R}	7.8	^{J}7.8^{R}	8.0	7.9	7.4	7.9	7.7	^{D}5.9^{R}	5.8	4.9	4.6
9	3.2	3.1	4.7	^{U}6.2^{R}	^{U}5.9^{R}	6.1	5.9	7.0	8.0	^{J}8.3^{R}	^{U}8.2^{R}	8.2	8.8	9.3	9.7	10.0	9.7	^{D}8.4^{R}	^{D}8.4^{R}	8.9	B	6.3	^{U}4.5^{F}	R
10	A	A	A	B	4.5	R	^{U}5.5^{R}	6.2	6.9	8.5	9.0	8.9	9.0	9.1	9.1	9.1	8.9	8.7	8.3	^{J}7.9^{R}	6.8	3.8	2.7	A
11	B	4.5^{F}	^{U}4.4^{F}	5.4^{F}	5.5	6.0	6.5	7.5	8.5	9.0	9.8	9.4	9.5	9.2	9.0	8.6	8.7	8.7	9.0	8.8	7.1	6.0	5.0	4.6
12	A	A	A	4.8	5.6^{F}	6.0^{F}	6.2	7.0	7.8	7.8	8.2	9.0	9.4	9.1	^{J}9.1^{R}	8.9	9.2	8.9	8.9	8.0	7.3	5.3	F	F
13	A	A	F	F	^{U}5.4^{F}	6.2^{F}	7.0^{F}	7.0	6.7	7.2	8.0	8.2	8.5	8.9	8.9	9.8	9.9	9.3	9.3	^{J}8.0^{R}	7.0	6.6	5.8	4.8
14	4.8^{F}	4.4^{F}	4.6^{F}	4.6^{F}	5.1^{F}	5.2^{F}	5.8	6.4	6.6	7.2	7.4	8.8	9.7	9.8	10.6	11.5	10.8	^{U}10.7^{R}	^{U}10.1^{R}	7.8	7.0	R	4.3	A
15	3.4^{F}	R	4.0^{F}	A	R	4.5	F	R	B	4.7	5.0	5.4	5.8	6.0	6.4	6.7	4.9	7.1	6.8	5.5	6.2	4.3	3.5	A
16	B	B	4.9	B	R	5.2	7.1	7.3	7.6	8.5	8.7	8.7	8.5	8.1	8.5	8.8	9.0	8.7	8.1	7.9	7.7	7.2	5.9	4.2^{F}
17	2.8^{F}	4.5^{F}	3.8^{F}	4.5	5.2	5.8	B	7.0	7.5	8.3	8.8	9.4	9.9	10.1	10.6	10.2	10.0	10.0	9.4	8.6	5.0	B	R	5.0
18	F	R	3.3^{F}	^{U}3.6^{F}	A	B	F	B	R	5.2	5.0	4.9	B	5.6	B	6.2	6.0	5.5	5.5	5.1	4.4	3.5	A	4.4
19	A	B	4.0	4.4	B	R	5.5	5.7	B	R	5.9	5.8	6.5	^{J}6.7^{R}	^{U}7.5^{R}	8.0	8.3	8.5	8.4	7.8	6.8	5.8	3.0^{F}	^{U}3.5^{R}
20	3.2^{F}	3.8	4.3^{F}	B	4.8	^{J}6.5^{S}	7.4	8.1	8.0	8.3	8.5	B	B	B	8.2	B	7.6	7.7	C	7.8	7.3	6.6	6.5	6.0
21	5.8	4.5	4.2^{F}	4.2^{F}	5.6	6.7	7.9	9.2	10.2	^{D}10.0^{R}	^{D}10.3^{R}	10.2	10.4	10.8	10.4	10.1	9.8	9.7	9.6	9.3	8.0	^{J}7.8^{R}	^{J}7.7^{R}	7.1
22	4.2	F	F	4.8^{F}	5.2^{F}	5.5^{F}	6.2	7.3	7.1	6.8	6.6	R	8.7	8.8	9.8	9.9	6.0	A	R	3.9	4.2	A	A	A
23	F	B	B	F	4.4^{F}	B	B	B	A	4.8	5.2	5.3	5.7	6.3	^{D}6.3^{R}	B	6.6	6.9	B	7.0	6.9	6.3	6.0	5.5^{F}
24	C	C	C	C	6.7	7.0	7.8	8.5	9.0	8.9	9.0	9.1	9.5	10.1	9.9	10.0	10.0	9.5	^{J}9.3^{R}	7.5	6.6	5.4^{F}	3.3^{F}	R
25	4.3	4.3^{F}	F	F	^{U}5.6^{F}	5.6	F	R	5.8	B	6.3	6.2	6.7	6.9	7.2	8.5	7.7	7.4	7.0	4.9	4.5	4.7	4.4	4.4
26	F	A	A	5.0	4.4^{F}	5.3	^{U}5.4^{F}	5.0^{F}	5.0	A	A	B	5.4	B	5.8	6.6	7.0	6.3	A	A	A	4.4^{F}	3.9	F
27	F	A	B	B	^{U}4.8^{R}	C	4.3^{F}	5.7^{F}	R	B	B	B	6.3	6.8	7.4	B	7.8	6.6	^{U}6.5^{R}	6.3	5.5	4.7	4.8	4.4^{F}
28	3.5^{F}	4.0^{F}	R	5.1^{F}	^{U}6.1^{R}	6.4	7.8	8.9	9.8	10.0	10.2	^{J}11.0^{R}	10.8	^{J}10.9^{R}	10.4	^{J}9.6^{R}	^{J}9.0^{R}	8.8	8.3^{R}	^{J}8.3^{R}	7.9	6.9	6.8	6.3
29	5.6^{F}	4.0^{F}	5.2^{F}	6.1	^{U}6.4^{R}	6.7	7.2	8.7	8.9	9.7	10.1	10.3	10.3	10.7	10.2	10.2	9.7	9.4	8.8	8.6	8.5	7.8	7.0	6.1
30	5.5	4.2^{F}	6.1^{F}	F	6.0^{F}	A	F	^{U}5.8^{F}	4.6	7.5	^{J}8.3^{R}	7.0	7.7	7.6	7.6	7.7	7.9	7.4	6.7	6.3	6.1	4.0	4.6^{F}	F
31	F	^{U}4.6^{F}	R	3.6	F	^{U}4.7^{F}	F	5.7^{F}	5.9	6.0^{F}	6.8	6.7	^{J}6.6^{R}	7.5	8.6	9.2	^{J}8.0^{R}	6.4	5.6^{F}	^{U}4.9^{F}	^{U}4.7^{F}	4.5^{F}	R	A
No.	13	11	16	17	24	24	21	23	20	20	22	21	24	27	27	27	30	29	27	29	26	24	21	17
Median	3.7	4.3	4.4	4.8	5.2	5.6	5.9	7.0	7.3	8.0	8.2	8.2	8.5	7.8	8.5	8.8	8.3	7.4	7.9	7.5	6.7	5.5	4.6	4.6
U.Q.	5.1	4.5	4.8	5.6	5.6	6.3	7.2	7.5	8.2	8.7	9.0	9.2	9.5	9.3	9.8	9.8	9.7	8.8	8.9	8.0	7.1	6.4	6.0	5.8
L.Q.	3.2	4.0	4.0	4.3	4.5	5.0	5.0	5.7	5.9	6.4	6.3	6.0	6.4	6.2	7.0	6.7	7.0	6.5	5.6	5.0	4.7	4.4	3.7	4.2
Q.R.	1.9	0.5	0.8	1.3	1.1	1.3	2.2	1.8	2.3	2.3	2.7	3.2	3.1	3.1	2.8	3.1	2.7	2.3	3.3	3.0	2.4	2.0	2.3	1.6

Observed by N. Wakai

foF2

Sweep 1.5 Mc to 20.0 Mc in 30 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

PROVISIONAL IONOSPHERIC DATA

Nov. 1959 | foF2 | 45° E Mean Time (G.M.T.+3h.)

Showa Base Lat. 69° 00.4′ S Long. 39° 35.4′ 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	3.9	F	4.3	5.0	5.3	5.4^{F}	R	A	B	B	B	B	B	B	6.0	5.3	^{E}4.2^{G}	A	4.3	4.5	A	A	R	^{U}3.2^{F}
2	A	4.0^{F}	F	3.8^{R}	A	A	A	B	B	4.4	C	B	B	B	5.8	6.0	R	B	4.5	A	4.3	A	3.5	R
3	B	B	5.5^{F}	B	4.7	5.2^{F}	B	A	B	B	B	B	^{E}4.5^{G}	6.8	B	6.2	5.6	4.8	B	R	4.8	R	B	4.5^{F}
4	B	4.4^{F}	4.5	4.7	5.5^{F}	6.6^{F}	^{U}7.7^{R}	7.3	7.0	B	B	B	B	B	B	^{D}6.4^{R}	R	5.1	4.3	B	4.3	4.2	A	R
5	A	^{U}6.1^{F}	R	4.4^{F}	R	R	4.7^{F}	6.2^{F}	B	B	B	B	B	B	7.4	B	B	5.8	5.0	5.2	5.7	5.0	4.3	4.0
6	4.2	4.7	F	5.3^{F}	B	B	B	B	5.4	B	R	B	6.8	6.3	B	7.3	8.7	B	7.2	5.8	4.7	4.4	4.5^{F}	A
7	^{U}4.3^{F}	B	6.0	5.7	6.1	7.5^{F}	7.9	6.5^{F}	6.1	6.0	6.3	6.3	6.3	6.6	6.5	6.8	7.0	7.0	6.9	6.3	5.7	4.7	4.5	4.7
8	B	4.7	5.6^{F}	^{U}6.8^{F}	7.3^{F}	7.2	6.4^{F}	F	5.7^{F}	6.0	R	6.8	^{D}6.3^{R}	6.7	B	6.7	6.8	6.8	5.7	R	5.4	R	3.4	^{J}4.5^{F}
9	B	4.9^{F}	5.4^{F}	6.0^{F}	^{U}6.7^{F}	7.4^{F}	7.4	8.0	8.1	8.5	8.5	8.3	8.4	8.3	R	7.8	7.6	7.0	^{U}7.4^{R}	6.8	6.8	4.3	4.5	A
10	A	4.4	5.1^{F}	4.4^{F}	A	4.2^{F}	3.7	^{U}5.0^{R}	^{E}4.5^{G}	^{E}4.5^{G}	5.0	5.7	6.0	6.8	6.8	6.9	6.8	6.6	6.4	6.0	5.4	4.6	4.9	4.6
11	4.9	R	A	4.6	4.3^{F}	4.2^{F}	4.5	5.3	6.0	6.0	6.4	6.8	6.7	6.8	7.0	R	6.5	5.8	5.7	5.6	5.7	5.8	5.4	4.4
12	4.5	4.7	4.3	F	3.4	A	A	A	A	5.5	5.6	5.8	5.9	6.1	6.2	6.7	6.3	6.2	6.0	5.9	6.0	5.8	R	4.9
13	5.0	4.2^{F}	R	A	4.7^{F}	4.8	4.3	4.6	5.1	5.4	5.7	6.3	6.7	7.0	7.4	7.0	7.5	6.5	6.0	6.4	5.7	5.3	C	4.8
14	A	4.4	^{U}4.4^{F}	3.5^{F}	3.7^{F}	A	A	3.8^{F}	A	4.7	A	5.0	4.9	5.2	5.4	5.4	5.2	4.6	4.0	4.6^{F}	4.7^{F}	4.5	4.5	4.6^{F}
15	A	A	4.3^{F}	A	4.9	5.1	5.5	6.0	6.7	7.0	6.8	6.4	6.2	6.0	6.0	6.3	7.0	7.3	7.6	7.6	7.7	7.0	6.9	6.8
16	5.3^{F}	5.1^{F}	5.4	6.0	6.5	7.4^{F}	8.3	8.7	8.9	9.0	8.7	8.4	8.1	7.9	7.7	7.6	7.1	7.0	7.2	6.8	4.6^{F}	4.5^{F}	4.6^{F}	4.5
17	4.3	5.0	F	6.0^{F}	7.1^{F}	5.6^{F}	^{U}4.9^{F}	B	A	B	5.5	5.7	5.8	5.9	^{U}6.5^{R}	7.5	^{D}6.2^{R}	6.1	5.9	6.7	6.6	6.4	5.8	6.2
18	7.8	F	5.2	5.6	5.7^{F}	5.8^{F}	A	A	A	5.5	5.5^{F}	5.8	6.2	6.7	c	c	c	c	c	c	C	c	4.2	4.6
19	5.7	5.1^{F}	5.8^{F}	5.3^{F}	5.5^{F}	5.7^{F}	5.2^{F}	5.9^{F}	6.1	6.4	7.0	B	B	B	B	^{J}7.7^{R}	^{D}6.0^{R}	^{J}6.3^{R}	6.4	5.1	5.7	6.2	5.6	6.0
20	5.5	5.7	5.5	A	6.0	A	6.0	7.2	7.8	8.0	8.8	9.3	9.1	9.2	9.4	9.5	8.4	8.4	7.9	7.6	7.3	7.4	6.7	6.8
21	6.3	^{U}5.8^{R}	5.8	6.0	6.2	^{D}6.5^{R}	R	B	B	6.0	6.2	6.3	6.8	^{D}6.1^{R}	C	C	C	R	A	F	5.2^{F}	F	5.3	5.4
22	3.8^{F}	4.7^{F}	4.5^{F}	5.3^{F}	4.7^{F}	5.0^{F}	5.3^{F}	B	B	^{E}4.4^{G}	^{U}5.1^{R}	5.0	5.2	5.4	5.4	5.2	5.8	5.8	5.8	5.7	5.5	4.6	A	4.4
23	5.0^{F}	F	^{U}5.7^{F}	5.6^{F}	F	A	A	F	^{U}4.6^{R}	4.8	F	^{E}4.6^{G}	B	^{E}4.6^{G}	5.3	5.8	4.6	R	R	5.5^{F}	^{U}4.7^{F}	4.4^{F}	4.9	3.8
24	A	4.4	5.1	B	5.5	5.5	5.6	5.4	5.6	6.4	6.6	6.6	6.6	6.3	6.3	6.5	6.3	6.4	5.9	5.3	5.8	5.3	5.0	4.9
25	4.7	5.0^{F}	5.8^{F}	5.5^{F}	5.8^{F}	6.4	5.7	7.0	7.0	7.4	7.4	7.7	8.0	7.3	7.8	8.0	8.0	7.7	5.9	5.8	5.4^{F}	^{U}4.9^{F}	4.5	4.6^{F}
26	5.2	5.5	F	5.5^{F}	5.5^{F}	^{U}5.4^{F}	4.7	5.5^{F}	F	6.3	6.4^{F}	6.2	6.2^{F}	6.6	7.2	^{U}7.6^{R}	7.6	5.6	5.7	5.5	5.6	5.5	5.5	5.4
27	6.2^{F}	F	F	^{U}5.5^{F}	6.2	4.8	4.2	^{U}4.3^{R}	^{E}4.6^{G}	5.2^{F}	5.2	5.5^{F}	5.6	6.1	6.4	6.2	6.3	6.4	6.3	6.3	5.9	4.2^{F}	4.5	5.0^{F}
28	4.3	4.5^{F}	4.3^{F}	4.2^{F}	R	4.2^{F}	A	A	B	^{E}4.7^{G}	A	^{E}4.7^{G}	^{E}4.5^{G}	R	^{E}4.4^{G}	^{E}4.4^{G}	4.8	5.0	5.0	5.1	4.8	4.8	4.1	4.4^{F}
29	A	4.3	4.8^{F}	5.3^{F}	5.5^{F}	F	A	A	4.8	5.2	5.3^{F}	5.4	5.7	5.7	6.2	7.0	8.6	^{U}6.9^{F}	5.5	5.2	5.7^{F}	5.4	5.3	4.3^{F}
30	4.4^{F}	R	^{U}5.3^{F}	4.6^{F}	F	5.5	B	A	5.5^{F}	5.9^{F}	5.6	6.2	^{U}6.5^{R}	6.5	6.2	6.7	F	5.1	F	4.5^{F}	^{U}5.8^{F}	5.4^{F}	A	A
31																								
No.	19	21	22	24	23	22	18	16	18	24	20	23	24	23	22	25	22	24	25	24	28	24	23	25
Median	4.9	4.7	5.2	5.3	5.5	5.5	5.4	6.0	5.8	6.0	6.2	6.2	6.2	6.6	6.4	6.7	6.8	6.4	5.9	5.8	5.6	5.0	4.6	4.6
U.Q.	5.5	5.1	5.6	5.6	6.2	^{D}6.5	6.4	7.1	7.0	6.4	6.9	6.8	6.8	6.8	7.2	7.6	7.6	7.0	6.6	6.4	5.8	5.6	5.4	5.2
L.Q.	4.3	4.4	4.5	4.6	4.7	5.0	4.7	5.2	5.1	5.0	5.5	5.5	5.8	6.0	6.0	6.1	5.8	5.7	5.2	5.2	4.8	4.5	4.5	4.4
Q.R.	1.2	0.7	1.1	1.0	1.5		1.7	1.9	1.9	1.4	1.4	1.3	1.0	0.8	1.2	1.5	1.8	1.3	1.4	1.2	1.0	1.1	0.9	0.8

Observed by N. Wakai

foF2

Sweep 1.5 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

PROVISIONAL IONOSPHERIC DATA

Dec.1959 | foF2 | 45° E Mean Time (G.M.T.+3h.) | **Showa Base** | Lat. 69° 00.4′ S | Long. 39° 35.4′ E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.1	4.6F	B	U4.5R	4.5	5.1F	U5.4F	5.0	E4.4G	A	B	B	R	R	6.7	7.1	E4.6G	E4.4G	5.3	5.9	5.5	6.2	5.7	4.4
2	B	5.8F	5.8	6.0	5.4	5.9	5.9F	5.9	B	B	B	R	5.9	6.0	6.8	7.0	B	B	R	4.9	5.1	5.0	4.3F	4.2F
3	4.6F	5.2	5.5F	4.4F	4.0	5.6	U4.3R	B	B	B	B	B	5.0	B	R	6.8	B	R	4.9	5.6F	5.1	5.2F	A	A
4	4.2	U4.2F	4.3F	U3.7R	5.8	F	4.8	R	E4.8G	5.7	5.6	U6.0R	B	6.2	6.3	6.4	U6.3R	6.3	6.0	6.0	5.6	5.6	5.3	5.0
5	U5.0R	5.8	F	F	5.5	U7.0F	7.6	8.0	8.7	8.6	8.3	7.8	7.6	7.2	7.9	7.5	A	F	4.6	E3.8G	E3.6G	3.8	4.2F	C
6	C	C	4.6	4.4F	4.3F	5.2	5.1F	5.5	4.8	5.2	5.7	5.4	5.9F	5.8	6.1	6.1	6.3	6.0	6.7	5.5	5.4	4.8	4.9	4.5
7	R	5.7	5.8F	5.7F	F	5.8	5.7F	6.4	C	7.2	6.3	6.2	6.0	6.4	6.3	6.2	6.3	6.1	5.9	5.7	6.2	6.3	5.7	5.8
8	5.8	5.3	5.4	5.6F	5.4F	5.8F	5.4	F	5.6	6.4	6.8	B	7.1	7.6	7.7	7.9	7.9	7.7	7.4	6.9	6.0	5.5	5.2	5.4
9	4.8	4.8	F	4.4F	4.7F	F	6.0F	6.0F	6.2	U6.1R	E4.9G	6.2F	6.5F	7.0	6.4	6.5	6.6	6.6	6.8	6.3	6.2	5.9	6.0	5.7
10	5.0F	F	4.5	F	4.2	4.6	4.8	5.3	5.2	5.6	6.0	6.5	6.4	6.9	6.7	6.8	6.7	6.5	6.4	6.0	5.8	6.2	6.0	5.0
11	4.6	4.5	4.9	5.6	6.0	6.3	7.0	5.8	F	5.8F	6.0F	5.8F	5.8F	6.1	6.2	6.3	6.5	6.6	6.2	5.8	6.2	6.4	5.8	5.2
12	4.5	U4.6R	4.5	A	5.7	R	B	B	B	D4.2R	D4.4R	B	B	B	B	B	B	B	D5.6R	5.8	4.5	4.6	R	
13	A	B	5.3	5.8	5.7	B	B	A	A	B	B	B	D4.4R	D4.3R	E4.5G	6.0	6.0	6.0	D4.4R	5.8	5.4	4.3	J4.7R	J5.1R
14	4.5	A	B	R	4.1	B	B	R	B	B	B	B	B	B	B	B	B	B	D3.7R	A	4.5	B	B	A
15	4.2	4.1	4.3	4.8	B	4.9	B	A	B	B	B	B	B	B	B	B	B	B	4.6	J5.1R	5.8	4.0	4.8	4.2
16	4.4	4.3	A	B	B	5.5	B	D5.8R	B	6.3	B	B	5.7	D5.8R	B	D5.7R	D6.3R	D5.5R	E4.2G	A	4.4	5.3	4.5	4.2
17	4.2	A	4.4	4.5	4.1	5.2	5.2	6.1	6.0	6.0	D6.2R	B	D6.3R	R	B	D6.8R	D6.0R	B	B	6.0	5.9	5.6	5.0	4.4
18	5.2	5.3F	U4.8R	5.2F	B	5.5	5.6	6.3	U7.0R	8.6	D7.0R	B	D6.8R	D6.6R	B	R	D7.3R	D6.9R	D7.0R	B	U5.7R	5.3	5.2	5.4
19	4.2	4.3	6.0	5.4	B	5.1	B	D4.2R	E4.2G	A	B	B	E4.5G	6.1	D6.3R	D7.3R	B	E4.4G	R	5.5	5.6	5.5	5.3	5.1
20	4.6	4.6	5.5F	5.1F	5.3F	5.4	5.3	5.5	5.4	6.2	6.8	J6.2R	6.5	B	R	D6.3R	D6.2R	U6.4R	U6.3R	6.1	5.3	4.4	U4.7R	5.3
21	5.3	5.2	5.4F	6.9F	5.6	J5.8R	5.8	6.3	U6.5R	B	B	B	B	B	B	B	B	B	B	B	B	D5.6R	D5.8R	U5.9R
22	B	B	B	5.7	B	B	D3.8R	D7.0R	J8.4R	U7.6R	7.5	7.2	6.8	6.5	6.6	6.7	6.6	6.7	6.7	6.3	6.0	4.9F	4.7F	5.2F
23	5.5F	U5.2F	5.3	5.4F	5.4F	5.2F	U4.9F	5.6F	6.3F	5.8	U5.2R	5.3	5.6F	6.0	C	7.2	7.2	7.0	6.4	4.2	U5.2F	A	R	5.0
24	4.2	F	4.6F	A	4.3	4.6F	F	5.2F	5.3F	5.8F	5.5F	6.2F	6.0	6.1	6.5	6.5	6.0	5.6	5.0	5.0F	5.3F	5.9	6.2	5.7
25	5.2	5.3	5.3F	U5.5F	5.5F	5.4	5.7F	5.6F	5.6F	5.9F	6.1F	6.2F	6.8	6.9	6.9	7.1	6.7	6.5	5.7	5.9	5.1	4.7	4.3	4.9
26	4.9	4.8	4.3	5.9F	5.4	5.6	5.5F	5.4	B	B	5.3	U6.0F	6.5F	5.9F	6.0	6.7	7.3	7.3	4.7	4.7	5.5F	5.1	B	B
27	3.8	4.9	4.9F	F	A	4.3	A	A	A	B	U5.7R	5.7F	5.7F	6.5F	6.3	U5.8R	4.5	5.0	5.3	R	5.0	4.2	A	A
28	B	4.7	B	B	B	A	4.2	5.9F	5.6	B	B	5.4F	5.5	5.6	7.3	7.2	U5.8R	5.6F	F	4.6	4.7F	A	4.3	4.3
29	4.1F	B	A	3.4	4.2	A	6.1	5.8	B	B	5.2	5.5	5.7	6.4	6.6	6.2	B	5.2	5.9	4.8	5.3	5.1	5.5	5.7
30	5.8	4.9	A	B	5.9	6.3	6.4	6.5	5.7	U6.0F	6.9	6.8	7.8	7.6	7.3	7.0	7.1F	5.6	5.7	5.0	5.5	5.3	C	4.9
31	5.1	5.5	5.0	5.9F	6.0F	6.2F	6.8	6.8	7.4	8.0	U9.7R	10.0	9.7	U9.1R	8.2	7.6	7.2	7.1	6.7	6.0	6.0	6.0	5.5	5.5
No.	25	23	22	22	23	23	23	21	19	18	20	18	24	21	19	24	19	22	23	25	30	28	25	25
Median	4.6	4.9	5.0	5.4	5.4	5.5	5.6	5.9	5.6	6.0	6.0	6.2	D6.0	6.4	6.6	6.8	6.6	6.4	5.9	5.7	5.5	5.3	5.2	5.1
U.Q.	5.1	5.3	5.4	5.7	5.7	5.8	6.0	6.4	6.5	7.2	6.8	6.5	6.8	7.0	7.3	7.2	7.2	6.7	6.7	6.0	5.8	D5.6	5.7	5.4
L.Q.	4.2	4.6	4.5	4.5	4.3	5.1	5.1	5.5	5.2	5.8	5.6	5.7	5.7	6.0	6.3	6.4	6.0	5.6	5.0	5.0	5.2	4.8	4.6	4.4
Q.R.	0.9	0.7	0.9	1.2	1.4	0.7	0.9	0.9	1.3	1.4	1.2	0.8	1.1	1.0	1.0	0.8	1.2	1.1	1.7	1.0	0.6		1.1	1.0

Observed by N. Wakai

foF2

Sweep 1.5 Mc to 20.0 Mc in 30 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA IN JAPAN FOR JANUARY 1960
電 波 観 測 報 告　第12巻 第1号

1960年3月20日 印　刷
1960年3月30日 発　行　（不許複製非売品）

編集兼発行人　岡　登　博　美
東京都小金井市貫井北町4—573

発行所　郵政省電波研究所
東京都小金井市貫井北町4—573
電話 国分寺 137—139, 151

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