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IONOSPHERIC DATA IN JAPAN

FOR AUGUST 1957

Vol. 9 No. 8

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Prepared by

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

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CONTENTS

SITES OF THE RADIO WAVE OBSERVATORIES

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

	Latitude	Longitude	Site
Wakkanai	45°23.6′N.	141°41.1′E.	Wakkanai-shi, Hokkaido
Akita	39°43.5′N.	140°03.2′E.	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	35°42.4′N.	139°29.3′E.	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	31°12.5′N.	130°37.7′E.	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

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

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

SYMBOLS AND TERMINOLOGY

A. IONOSPHERE

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

Terminology

f_0F2, f_0F1, f_0E	The ordinary-wave critical frequency for tne $F2$, $F1$ and E layers respectively.
f_0E_s	The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.
f_bE_s	The ordinary wave frequency at which the highest blanketing E_s layer becomes effectively transparent. This is usually determined from the minimum frequency at which reflections from layers at greater heights are observed.
f-min	That frequency below which no echoes are observed.
(M 3000) $F2$	The maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.
(M 3000) $F1$	The maximum usable frequency factor for a path of 3000 km for transmission by $F1$ layer.
$h'F2$	The minimum virtual height, $h'F2$, refers to the highest, most stable stratification observed in the F region and can only be scaled when such stratification is present.
$h'F$	The natural and most significant F region virtual height parameter is that for lowest F region stratification. This will be denoted by $h'F$. Thus $h'F$ is identical with the current $h'F2$ when F region stratification is absent, e.g., at night, and with the current $h'F1$ when $F1$ stratification is present.

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

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

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

a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

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

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

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

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

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

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 extraodinary 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 determind 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	A 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 thick 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*, at frequencies which greatly exceed the E layer critical frequency (e.g. about 6 Mc/s) whereas at low latitudes it usually rises from equatorial type E_s, *q*, at frequencies near the E region critical frequency.
f	An E_s trace which shows no appreciable increase of height with

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

d. Multiple Reflections from E_s

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

B. SOLAR RADIO EMISSION

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

a. Daily Data

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

Variability — Variability is expressed in four grades as follows:

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

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

b. Outstanding occurrences

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

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

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 can 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 prepared from the field intensities of 5 circuits received at Hiraiso, and are given in the tabulated form.

Start-time
Duration
Importance

Degrees of SWF are classified in 5 grades as follows:

1−=slight
1=small
2=moderate

3=great
3+=very great

Types

S-SWF: sudden drop-out and gradual recovery
Slow S-SWF: slow drop-out taking 5 to 15 minutes and gradual recovery
G-SWF: gradual disturbance; fade irregular in both drop out and recovery

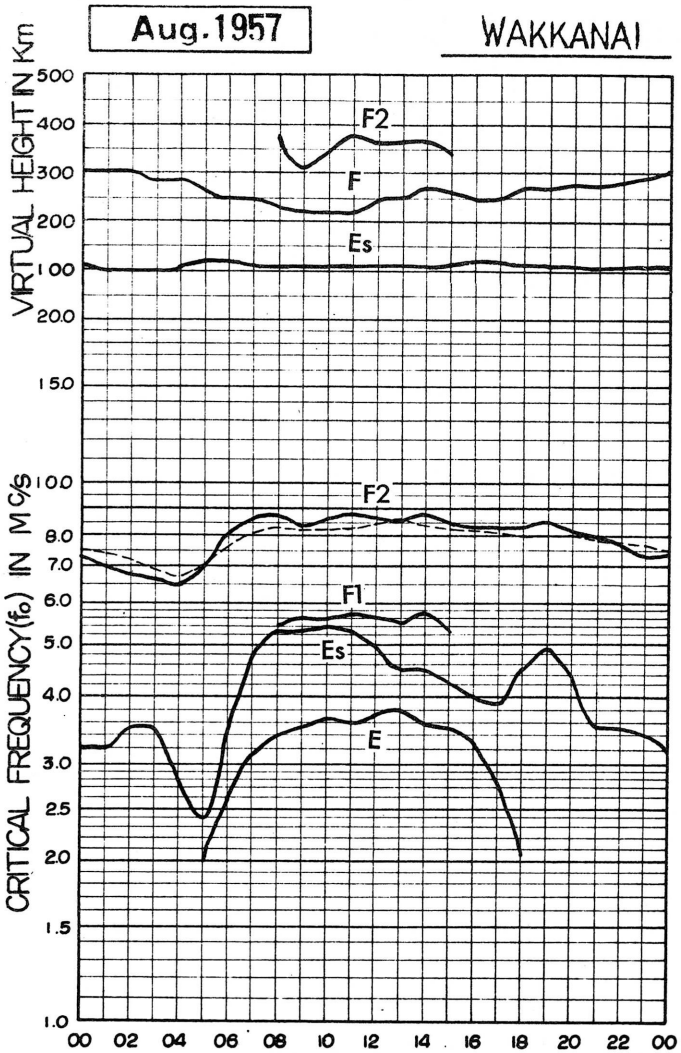
Circuits

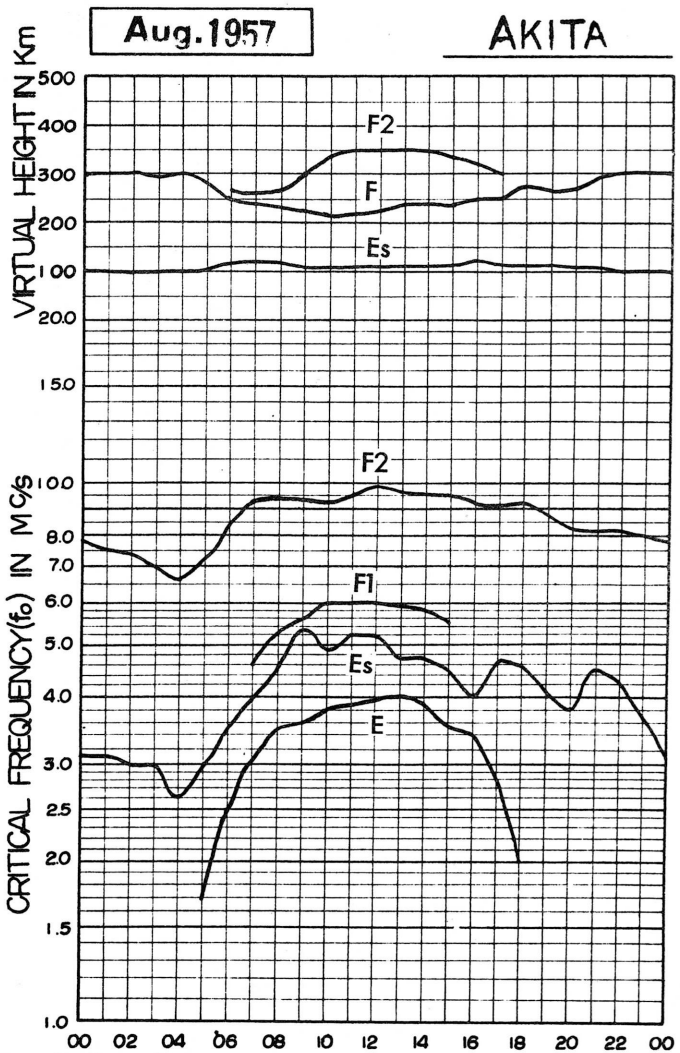
WS.....WWV 20, 15 and 10 Mc (Washington, D.C.)
HA.....WWVH 15 and 10 Mc (Hawaii)
SF.....WNA-27 7.6550 Mc; WND-20 10.4925 Mc
WNC-93 13.7525 Mc; WNC-37 17.4200 Mc (San Francisco)
LN.....GIJ-37 14.6702 Mc (London)
MN.....DZM-28 14.5850 Mc (Manila)

The data of sudden enhancement of atmospherics (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.

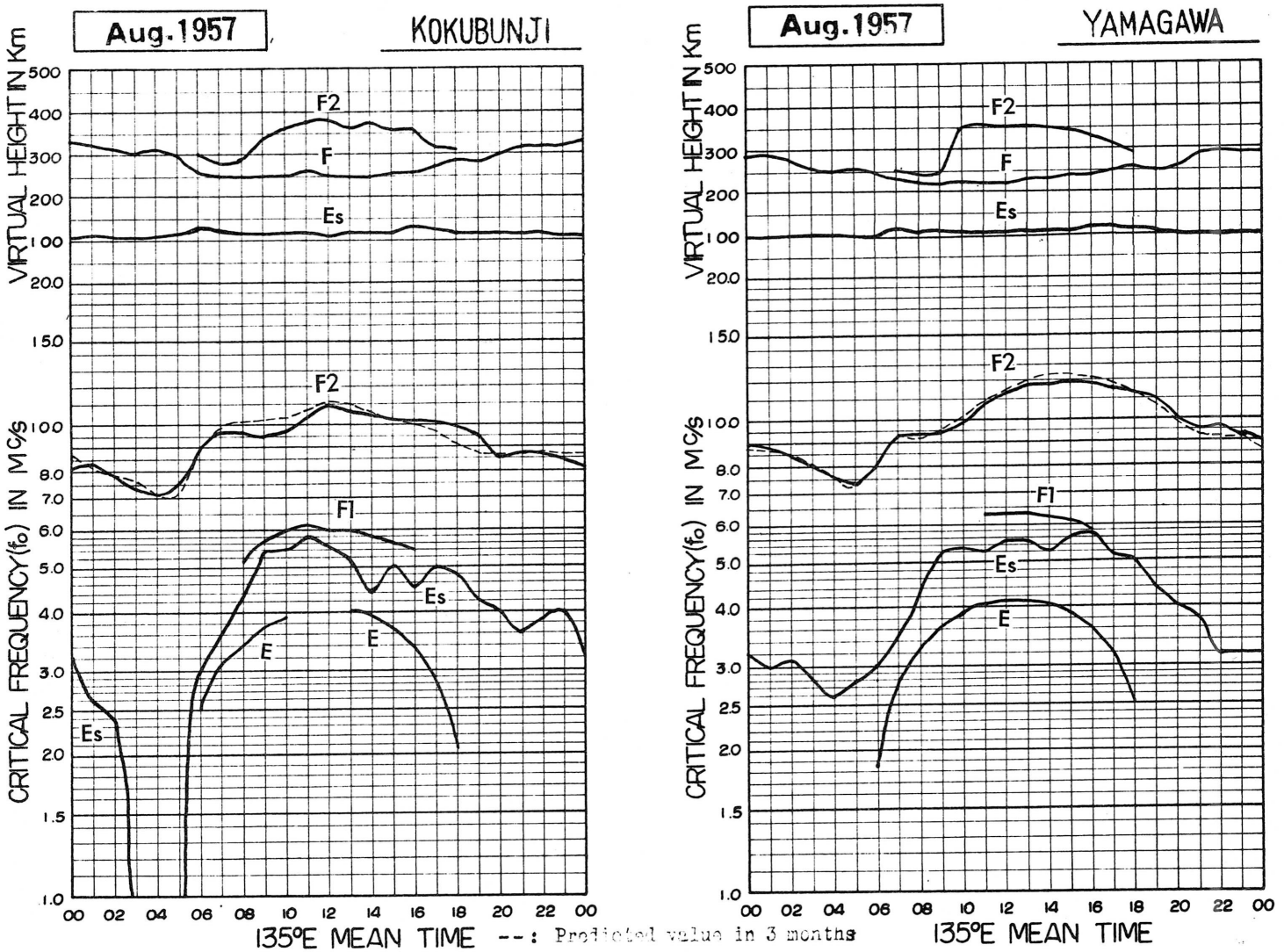
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





-- : 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

Aug. 1957 | 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	$^{u}8.1^{S}$	F.S	S	$^{u}7.7^{S}$	7.9	7.9	8.6	9.0	8.7	A	7.9	A	A	8.5	8.3	8.4	7.9	8.2	8.7	8.8	8.2	A	S	.8.1
2	7.6	7.3	6.8	6.8	7.0	$^{u}8.0^{R}$	8.1	8.1	8.0	8.3	A	A	A	A	8.7	8.2	8.3	8.0	7.9	A	S	S	$^{u}8.7^{S}$	$^{J}7.5$
3	7.3	7.3	6.8	7.1	7.2	7.3	7.7	9.2	8.9	R	8.3	8.5	$^{I}9.0^{A}$	9.6	9.1	8.7	8.6	8.3	8.8	9.3	S	S	8.0	7.8
4	7.3	S	7.2	6.1	F	6.5	7.8	7.3	7.6	$^{I}7.6^{R}$	7.7	A	A	8.9	9.2	8.7	8.2	$^{I}8.2^{A}$	A	A	A	A	S	$^{J}8.3$
5	7.5	S	6.9^{F}	6.6^{F}	$^{I}6.2^{A}$	$^{u}6.1^{F}$	6.6	6.8	7.1	7.8^{H}	7.7	$^{I}8.2^{A}$	8.5	8.7	8.8	8.6	8.3	8.0	8.0	S	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	8.8	9.1	9.5	9.0	9.5	9.5	8.7	9.3	9.5	9.3	8.7	S	8.9	S
7	$^{u}6.5^{S}$	6.5	5.8	5.7	5.3	6.0	6.7	6.5	7.0^{H}	$^{u}7.0^{SA}$	R	7.3	$^{I}7.6^{C}$	$^{u}7.8^{R}$	8.0	7.7	7.4	8.0	7.8	$^{I}8.2^{S}$	S	S	7.8	7.4
8	7.4	7.2	6.9	6.9	6.7^{F}	7.2	7.4	8.5	8.3	R	8.3	7.3	8.0	8.1	8.0	7.8	7.8	7.5	7.9	$^{I}8.3^{S}$	8.1	$^{u}7.8^{S}$	A	8.0
9	7.6	7.3	7.1	7.0	7.2	7.6	8.4^{S}	8.5	9.0	10.0	8.3	9.1	9.0	8.5	9.2	9.2	8.0	7.8	7.9	$^{I}8.8^{S}$	S	8.3	$^{u}8.7^{S}$	**8.0**
10	7.6	7.1	7.0	6.9	6.8	7.9	10.0	10.2	9.7	8.9	8.6	9.0	8.7	8.6	8.7	8.7	8.6	8.3	8.5	$^{J}8.5^{S}$	8.2	8.0	$^{u}8.2^{S}$	8.1
11	8.0	$^{u}7.6^{S}$	$^{J}7.5^{S}$	6.3^{H}	5.9	6.0	7.4	7.2	A	6.1	A	5.8	$^{I}5.6^{A}$	5.6	5.6	5.9	5.9	5.8	5.7	6.3	$^{u}7.2^{S}$	$^{u}7.3^{S}$	S	7.1
12	6.7	6.1	6.1	6.1	6.2	6.9	8.0	$^{u}8.6^{R}$	$^{u}8.9^{R}$	8.6	8.8	8.7	$^{u}8.1^{R}$	8.5	$^{u}8.8^{R}$	$^{u}8.6^{R}$	8.1	7.8	7.7	S	S	$^{u}8.2^{S}$	S	7.0
13	6.8	6.7	6.4	6.4	6.3	6.7	$^{u}8.8^{S}$	8.8	R	A	$^{J}9.9^{R}$	9.4^{H}	9.9	9.2^{H}	9.2	9.1	9.3	8.8	$^{u}8.4^{S}$	$^{u}8.0^{S}$	S	S	S	$^{u}7.2^{S}$
14	$^{u}7.2^{S}$	S	5.9	6.0	6.3	7.3	10.0	$^{u}9.0^{R}$	7.9^{H}	8.0	8.8	9.0	8.9	7.8	8.0	7.8	7.9	8.3	8.6	9.2	9.2	S	S	$^{u}7.3^{S}$
15	7.5	7.3	7.2	6.8	6.4	7.3	7.7	8.7	8.8	8.0	8.5	8.9	8.8	8.3	8.5	8.3	8.0	8.0	8.2	8.3	S	S	8.0	7.8
16	7.3	7.0	6.9	6.9	6.9	7.7	8.3	8.2	9.0	9.0	9.0	8.6	8.9	8.3	8.5	8.5	8.0	S	8.3	8.1	S	S	7.3	6.8
17	$^{u}7.3^{S}$	S	6.7	6.7	6.8	7.1	8.7	8.9	9.0	9.3	9.4	9.6	9.2	9.5	8.8	8.3	8.4	8.1	8.0	$^{u}8.2^{S}$	S	S	8.3	8.1
18	7.7	7.3	7.5	7.3	7.2	7.8	8.8	9.2	10.0	10.3	10.3	10.8	9.5^{H}	9.1	9.4	9.3	8.8	8.6	8.6	9.0	8.7	8.5	$^{u}7.6^{S}$	7.8
19	$^{u}7.5^{S}$	7.8	7.3	7.1	7.1	7.3	8.0	8.7	9.2	9.7	10.1	9.3	8.7	R	R	9.3	9.0	8.3	8.2	7.9	S	$^{I}8.1^{S}$	$^{J}7.9^{S}$	$^{J}7.3$
20	7.0	6.6	6.6	6.5	6.0	6.7	7.0	R	$^{u}7.8^{R}$	R	9.0	9.0	8.7	8.7	8.8	8.7	8.2	8.6	9.0	9.3	8.7	7.7	7.6	7.1
21	6.7	6.5	6.3	6.4	6.2	7.0	9.2	10.9	8.7	9.8	$^{J}7.3$	R	6.5	6.5	6.5	6.5	6.6	7.3	7.9	7.8	S	7.2	6.7	6.5
22	6.8	6.5	6.3	5.9	6.2	6.5	7.0	A	6.8	6.8	A	6.1	6.0	6.1	$^{I}6.2^{A}$	A	6.6	$^{I}6.6^{A}$	6.9	7.0	6.8	6.9	6.5	6.2
23	6.2	6.0	5.8	5.6	5.6	5.8	7.1	8.3	8.6	8.1	8.0	8.3	8.0	8.0	7.8	8.1	A	8.2	A	8.8	8.1	7.3	6.8	6.8
24	6.7	6.7	6.5	6.5	6.2	6.6	8.5	10.0	10.3	9.4	8.7	8.8	8.8	8.6	8.8	8.2	9.0	9.4	9.3	8.7	8.3	8.1	7.5	7.1
25	7.1	6.9	7.1	7.0	6.5	6.9	9.1	C	C	C	C	C	C	C	C	C	C	C	10.0	9.8	8.6	S	7.4	7.4
26	7.2	7.3	7.3	6.6	6.5	6.8	8.3	9.6	C	8.3^{H}	8.0^{H}	8.4	8.2	8.3	8.3	8.4	8.9	9.0	9.7	9.1	S	S	7.8	7.5
27	7.3	7.1	7.0	6.7	6.7	7.6	9.5	9.8	9.6	8.9	9.3	9.1	9.3	10.0	9.5	8.9	9.3	8.8	8.3	8.1	8.7	8.0	S	7.1
28	7.1	6.8	6.6	6.5	6.3	6.5	7.2	7.0	7.2	7.1	7.5	8.1	8.4	8.3	C	8.4	8.3	8.3	8.2	8.3	8.2	8.1	7.3	7.2
29	7.2	6.6	6.8	6.7	$^{I}7.0^{C}$	7.3	7.8	8.8	9.1	9.3	9.2	8.4	8.3	8.5	8.5	8.7	8.7	9.2	8.5	S	8.1	S	7.6	7.6
30	7.3	7.3	7.3	7.0	$^{I}7.0^{C}$	7.3	C	C	9.0	9.2	8.9	9.4	8.7	9.2	9.1	8.5	8.9	8.6	8.1	S	8.0	8.0	$^{u}7.3^{S}$	6.7^{F}
31	6.2^{F}	F	6.0^{F}	F	F	5.7^{F}	7.3	7.7^{UH}	7.7	8.0	8.6	8.3	9.4	10.2	9.6	8.7	8.9	9.1	10.0	9.0	S	$^{I}7.6^{S}$	7.2	7.2
No.	30	24	29	29	28	30	29	26	26	24	26	26	27	28	28	29	29	29	29	25	16	16	22	29
Median	7.3	7.0	6.8	6.7	6.5	7.0	8.0	8.7	8.8	8.4	8.6	8.8	8.7	8.5	8.8	8.5	8.3	8.3	8.3	8.5	8.2	7.8	7.6	7.3
U.Q	7.5	7.3	7.2	7.0	7.0	7.3	8.8	9.2	9.0	9.3	9.0	9.1	9.0	9.0	9.2	8.7	8.8	8.7	8.8	9.0	8.7	8.1	8.0	7.8
L.Q	6.8	6.6	6.4	6.4	6.2	6.5	7.4	8.1	7.8	7.9	8.0	8.3	8.1	8.2	8.2	8.2	8.0	8.0	7.9	8.1	8.1	7.3	7.3	7.1
R.Q	0.7	0.7	0.8	0.6	0.8	0.8	1.2	1.1	1.2	1.4	1.0	0.8	0.9	0.8	1.0	0.5	0.8	0.7	0.9	0.9	0.6	0.8	0.7	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

10

IONOSPHERIC DATA

Aug. 1957 | 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							L	U4.8 L	A	A	LH	A	A	5.7 0	5.8	5.3	A	L						
2								L	U5.8 L	5.5	A	A	A	A	A	A	A	A						
3							L	L	A	6.0	5.7	A	A	L	5.4	L	L	L						
4							L	L	A	I5.8 A	A	A	A	A	5.4	A	A	A						
5						L	I4.2 L	L	A	A	5.1	A	A	5.8	5.8	A	L							
6							C	C	C	C	A	6.0	6.0	5.8	5.5	5.4	5.5	L						
7						L	4.0 H	L	5.2	L	R	5.5	C	5.3	5.7	L	L	L						
8							L	L	A	5.4	5.5	L	5.5	5.5	5.2	LH	I5.2 L	L	L					
9								A	5.4	5.7	L	5.8	5.8 H	LH	5.8	5.2	L	L						
10							L	L	L	A	U6.2 LH	5.9 H	S	6.3	5.9	L	L	L						
11						L	4.3 H	4.5	A	A	A	5.3	I5.2 A	5.1	5.2	5.2	U5.0 L	L						
12							L	L	L	6.0	5.6	A	5.7	5.6 H	5.7 H	5.5	L	L						
13							L	L	5.4	A	L	I6.0 L	U5.6 L	5.3	A	L	L							
14							L	L	L	L	5.6	5.7	5.7	6.2	5.8	L	L							
15									L	L	LH	5.8	5.5	5.5	5.6 H	LH	L	L						
16							L	L	L	LH	LH	LH	A	A	L	U5.5 L	L	L						
17							L	L	L	A	L	L	L	6.0	L	L	L	L						
18								L	L	5.5	L	5.7	5.5	L	L	L	L	L						
19							L	L	L	L	L	L	L	L	5.8	L	L	L						
20							L	LH	5.4	L	L	5.7	L	LH	L	L	L	L						
21								A	L	5.5	5.3	5.3	5.3	5.4	5.2	5.2 H	L	A						
22							L	A	4.8	4.8 H	A	5.2	5.3	5.3	A	A	L							
23								L	L	L	5.6	5.7 H	L	L	L	LH	A							
24							L	L	L	L	L	L	L	L	L	L	L	L						
25							C	C	C	C	C	C	C	C	C	C	C	C						
26							L	L	C	L	L	LH	L	LH	5.8	LH	A							
27									L	A	A	A	5.9	LH	LH	L	L							
28							L	L	L	L	5.5	5.8	L	L	C	L	L	L						
29								L	L	U5.8 L	L	L	L	5.5	L	L	L	L						
30							C	C	L	L	L	L	L	L	L	L	L							
31								L	L	L H	L	LH	6.0	L	L	L	L							
No.							3	2	6	10	9	14	13	15	16	7	3							
Median							4.2	4.6	5.4	5.6	5.6	5.7	5.6	5.5	5.7	5.3	5.2							

foF1

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

The Radio Research Laboratories, Japan.

W 2

IONOSPHERIC DATA

Aug. 1957 | 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						2.15	2.85	3.30	3.50	3.60	3.60	3.60	I3.50A	A	A	A	A	3.00	A					
2						I2.25A	2.90	3.25	3.50	3.75	4.00	3.90	3.70	3.40	3.05	A	A	A	A					
3						2.25	2.70	3.15	3.45	3.55	3.55	3.60	A	A	3.90	3.60	3.40	2.85	2.20					
4						2.05	2.75	3.20	3.50	3.50	3.55	3.45	3.10	A	A	3.70	3.30H	2.80	2.00					
5						A	2.50	2.95	3.20	3.50	A	3.50	3.80	3.60	3.50	U3.25L	A	A	A					
6						C	C	C	C	C	3.50	3.65	3.65	3.50	R	3.50	3.30	2.80	2.05					
7					1.50	2.25	2.65	3.05	3.30	A	A	I3.75A	I3.80C	3.95	3.75	3.55	3.30	2.75	A					
8							A	2.80	3.20	A	3.25	R	A	3.80H	3.85H	3.70H	3.50H	3.00	A					
9						R	2.60	3.10	A	A	÷	A	A	A	A	U3.60R	3.30	2.85	R					
10						2.00	2.70	3.20	3.40	3.60	3.85	R	A	A	A	A	A	2.80	2.00					
11						U2.15R	I2.40R	3.10	3.40	A	A	R	R	R	A	3.50	3.25	2.75						
12						1.75	A	3.10	3.10	A	A	A	A	A	A	3.60	3.40	2.75						
13						R	2.70	R	3.60	3.70	3.70	A	A	A	R	3.50	3.25	2.90	2.25					
14					1.15	1.90	2.55	3.05	3.35	3.50	3.50	3.60	3.45	A	3.60	A	U3.30R	2.70	2.00					
15						1.75	2.65	3.00	U3.25S	3.15	3.20	A	R	3.75	3.70	3.60H	3.20	2.80						
16						A	2.60	3.10	3.40	3.50	4.00	3.75	3.55	3.50	U3.30L	A	A	A						
17						2.00	2.60	3.25	3.55	3.70	3.60	A	A	R	R	3.50	3.35	A	2.20					
18						2.05	2.60	3.20	3.50H	3.75	I3.80A	3.95	3.90	3.90	3.80	3.60	3.35	2.75	2.05					
19						A	2.70	3.15	3.45	A	A	A	A	R	R	R	3.20	2.70	B					
20						A	2.40	3.00	3.35	R	A	A	3.70	3.95	A	A	3.20	2.60						
21						1.75	2.55H	3.05H	3.45	3.60	3.70	3.80	3.85	3.80	3.70	3.50	3.20	2.70						
22						2.00	2.55	3.00	3.50	3.50	3.50	A	3.70	U3.60R	3.75H	3.50	3.25	2.60						
23							2.25	A	3.25	A	3.70	3.60	3.50	A	A	A	3.40	2.65						
24						A	2.35	2.80	3.20	A	A	A	A	3.80	A	3.50	U3.20A	2.60H	U1.65B					
25						A	2.35	C	C	C	C	C	C	C	C	C	C	C						
26						1.90	2.60	3.10	3.25	3.60	3.55	R	3.80	A	3.60	3.50	3.20	I2.50C						
27						1.80	2.70	3.05	3.35	3.45	3.55	A	3.95	3.80	3.55	3.50	3.20	2.45						
28						U1.55S	2.55	3.00	3.40	3.60	3.70	3.50	A	A	C	3.55	3.20	2.55	A					
29						B	2.50	3.00	3.45	3.50	3.60	3.65	A	A	A	A	A	A						
30						U1.60B	C	C	3.45	3.50	3.50	3.55	3.50	3.50	3.50	A	A	2.55H						
31						B	2.70	3.15	3.50	3.55	3.75	3.70	A	3.85	3.60	R	3.40	2.70						
No.					2	18	27	26	28	20	22	16	16	15	15	19	23	25	9					
Median					1.30	2.00	2.60	3.10	3.40	3.55	3.65	3.60	3.70	3.80	3.60	3.50	3.30	2.75	2.05					

foE

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

The Radio Research Laboratories, Japan.

W 3

12

IONOSPHERIC DATA

Aug. 1957 | 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	6.0 M	4.0 M	4.0 M	4.6 M	3.0 M	2.8	4.9 M	5.3 M	5.8 M	9.5 M	11.5 M	10.6 M	10.2 M	6.5 M	8.5 M	5.7 M	8.0 M	5.5 M	6.0 M	U 8.0 SM	5.0 M	12.1 M	6.5 M	2.8 M
2	E	E	2.4 M	2.6 M	3.2 M	3.5 M	3.1	4.6	4.0	4.8	9.1 M	11.7 M	13.0 M	9.5 M	7.5 M	8.0 M	6.7 M	6.6 M	7.0 M	9.0 M	7.0 M	6.4 M	6.0 M	4.1 M
3	3.3 M	4.0 M	3.5 M	3.7 M	3.2 M	2.6	4.5 M	3.5 M	7.8 M	6.5 M	6.4 M	8.2 M	9.7 M	6.5 M	G	4.1	6.0 M	3.6	4.5 M	7.2 M	8.0 M	3.5 M	2.5	U 4.0 MS
4	6.0 M	4.2 M	6.0 M	5.0 M	3.5 M	2.4	3.5 M	5.6 M	6.1 M	6.6 M	7.9 M	14.5 M	14.5 M	9.5 M	6.8 M	6.5 M	6.1 M	9.0 M	12.6 M	12.8 M	12.8 M	12.2 M	6.5 M	6.0 M
5	10.5 M	5.7 M	3.8 M	2.7 M	8.5 M	4.2 M	3.5 M	9.5	13.0 M	8.0 M	12.8 M	10.5 M	6.5 M	6.0 M	6.1 M	6.5 M	9.2 M	5.0 M	6.5 M	5.5 M	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	12.0 M	5.7 M	7.0 M	4.1	G	4.2	G	5.0 M	6.2 M	5.0 M	6.0 M	9.0 M	4.7 M	3.5 M
7	2.5 M	3.2 M	2.2 M	2.0 M	2.3 M	3.5 M	3.3	4.5 M	4.3 M	10.5 M	4.9 M	6.0 M	C	4.1	4.3	4.2	3.5	3.5	3.5 M	4.0 M	5.0 M	3.4 M	4.3 M	6.0 M
8	7.5 M	4.0 M	4.7 M	3.5 M	5.3 M	6.3 M	5.0 M	5.6 M	9.0 M	4.0 M	5.9 M	G	4.6 M	G	G	G	G	G	4.7 M	3.5 M	4.2 M	4.0 M	10.0 M	7.0 M
9	6.0 M	4.0 M	3.4 M	3.8 MY	2.4 MY	3.5 M	3.5 M	5.8 MY	5.3 M	6.0 M	6.0 M	5.3 MY	4.9 M	4.5 M	5.0 M	5.0 M	4.0	3.9	3.6 M	4.2 M	4.2 M	5.8 M	4.2 M	4.5 M
10	2.7 M	6.0 M	5.8 M	4.4 MF	3.2 MY	2.3	G	6.4 MY	4.0	7.6 M	5.8 M	5.3 M	5.6 M	6.3 M	5.4 M	5.6 M	4.4 M	3.2 M	4.3 M	4.8 M	6.2 M	5.6 M	E	3.2 M
11	5.8 M	3.6 M	4.0 MF	2.0 MY	2.9 M	G	G	4.3	7.9 M	11.4 M	7.9 M	5.5 M	8.0 M	6.9 M	5.5 M	5.7 M	4.2 M	3.6	2.7	U 4.2 SM	4.1 M	U MS 4.0	U MS 11.0	5.9 M
12	5.2 M	6.0 M	4.3 M	5.0 M	3.6 M	3.6 M	5.8 M	5.6 M	5.8 M	7.6 M	3.5 MY	7.8 MY	7.2 M	8.0 MY	6.1 M	4.0 M	3.9	3.5	4.7 MY	6.5 M	U 5.5 MS	4.9 MY	U 3.2 MS	3.0 M
13	5.0 MS	3.6 M	3.6 M	2.4 M	2.8 MY	G	G	6.0 M	6.2 M	13.0 M	5.8 M	5.8 M	5.3 M	5.6 M	7.1 M	G	3.6 M	6.8 M	6.2 M	U 4.9 SM	4.0 M	3.5 M	4.0 M	3.5 M
14	2.5 M	3.2 M	3.2 M	U 3.2 MS	G	2.3 M	2.8 M	4.2 M	4.2 M	4.4 M	4.7	4.1	5.0 M	4.0	4.4	4.5	4.0	5.5 M	6.0 M	4.1 M	6.7 M	E	E	3.0 M
15	2.9 M	2.5 M	3.5 M	E	E	2.4	4.5 M	5.8 M	6.2 M	4.2 M	5.0 M	5.5 SY	G	4.5	4.0	4.4	3.6	3.5	6.2 M	U 6.0 S	6.0 M	3.5 M	2.9 M	2.3 M
16	E	2.4 M	3.5 M	4.0 M	3.5	3.5 M	3.5 M	5.0 M	4.0	4.0	G	4.3	8.7 M	6.3 M	5.7 M	5.8 M	5.2 M	4.7 M	3.5 M	3.5 M	6.0 M	8.6 M	7.8 M	2.7 M
17	2.8 M	2.7 M	2.5 M	2.4 M	2.4 M	G	3.2	3.5	5.3 M	7.2 M	4.2	4.2 M	4.8 M	G	G	G	3.6	4.1	3.5 M	3.5 M	3.1 M	3.6 M	5.8 M	3.5 M
18	3.5 M	2.3 M	3.5 M	2.5 M	E	G	3.3	4.0	4.1	4.7	5.0	G	4.7	4.5	G	G	3.8	G	2.8	8.0 M	3.0 M	3.5 M	3.5 M	3.5 M
19	3.5 M	3.3 M	3.5 M	2.3 M	3.5 M	2.2 M	3.2	3.8	5.7 M	5.6 M	4.1	4.0	4.1	G	G	G	3.4	3.0	3.5 M	2.0	5.0 M	2.7 M	2.4 M	3.0 M
20	2.4 M	2.0	2.4 M	2.4 M	2.4	2.3	3.5	3.5	4.1	G	5.3 M	4.0	4.4	G	6.0 M	5.0 M	4.0	5.0 M	8.0 MF	4.1 M	3.5 M	U 3.0 S	3.5 M	2.5 M
21	E	E	E	E	2.3 M	G	2.8	7.6 M	6.0 M	4.3	4.4	5.0	5.5 M	4.4	4.8	4.0	4.8	5.8 M	4.2 M	6.5 M	4.2 M	3.5 M	7.2 M	3.5 M
22	5.2 M	E	E	2.5 M	1.3	2.6	3.5	8.0 M	11.0 M	J 4.5	12.7 M	10.5 M	5.7 M	G	6.8 M	7.1 M	5.6 M	10.3 M	7.2 M	7.2 M	10.5 M	6.3 M	5.9 M	5.0 M
23	4.6 M	6.2 M	3.5 M	3.5 M	3.5 M	3.5 M	5.2 M	5.8 M	3.9	4.7 M	6.0 M	6.2 M	4.0	5.9 M	5.5 M	3.9	8.0 M	10.5 M	9.3 M	4.0 M	3.5 M	2.9 M	2.3 M	2.8 M
24	3.5 M	2.6 M	3.5 M	3.5 M	3.5 M	2.3 M	3.4 M	3.5	3.7	4.8 M	4.8 M	5.3 M	5.0 M	4.2	4.5	G	3.8	3.4	2.4	2.5 M	2.5 M	2.9 M	2.3 M	2.3 M
25	2.9 M	2.9 M	E	E	2.3 MY	3.5 M	2.8	C	C	C	C	C	C	C	C	C	C	C	3.5 M	3.0 M	E	3.5 M	E	E
26	E	E	E	3.0 M	E	G	3.5 M	3.8	D 5.0 C	4.0	4.1	G	G	4.2	G	G	6.0 M	C	2.8	3.4 M	6.0 M	E	E	2.4 M
27	E	E	E	E	E	G	G	5.3	5.7	8.1 M	9.6 M	9.0 M	G	4.5	4.2	5.3 M	4.8 M	3.0	4.5 M	4.0 M	3.0 M	4.0 M	6.0 M	3.5 M
28	3.0 M	3.5 M	3.3 M	2.3 M	3.0 M	2.8	3.0	3.7	4.1	4.0	4.0	4.1	4.0	5.0 M	C	G	3.8	4.5 M	3.1 M	6.0 M	3.5 M	4.0 M	3.2 M	2.3 M
29	E	E	E	E	E	3.5 M	4.5 M	3.8	4.4	5.3 M	4.6	5.1 M	4.1 M	4.1 M	5.0 M	4.0	6.1 M	5.5 M	4.1 M	5.0 M	4.3 M	4.5 M	3.5 M	E
30	E	3.1 M	4.1 M	3.5 M	C	1.8	C	C	4.4	6.1 M	5.2 M	4.1	4.3	4.0	G	4.8	3.5	3.2	5.0 M	5.5	4.4 M	3.0 M	E	2.3 M
31	3.5 M	2.6 M	3.5 M	E	E	1.8	G	3.8	4.0	4.0	5.5 M	3.9	4.0	G	G	G	G	3.5	3.5 M	3.1 M	3.1 M	3.0 M	3.5 M	4.2 M
No.	30	30	30	30	29	30	29	28	30	29	30	30	29	30	29	30	30	29	31	31	30	30	30	30
Median	3.2 M	3.2 M	3.5 M	3.5 M	2.8 M	2.4	3.4	4.8 M	5.3 M	5.3 M	5.4 M	5.3 M	5.0 M	4.5	4.5	4.2	4.0	3.9 M	4.5 M	4.9 M	4.4 M	3.5 M	3.5 M	3.4 M
U.Q	5.2	4.0	3.8	3.5	3.5	3.5	4.0	5.8	6.2	7.6	7.9	7.8	7.1	6.3	6.0	5.6	6.0	5.5	6.2	6.5	6.0	5.6	6.0	4.1
L.Q	2.4	2.3	2.4	2.0	1.3	1.8	2.8	3.8	4.1	6.0	4.6	4.1	4.1	4.0	G	G	3.6	3.4	3.5	3.5	3.5	3.0	2.4	2.5
R.Q	2.8	1.7	1.4	1.5	2.2	1.7	1.2	2.0	1.9	1.6	3.3	3.7	3.0	2.3			2.4	2.2	2.7	3.0	2.5	2.6	3.6	1.6

foEs

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

The Radio Research Laboratories, Japan.

W 4

IONOSPHERIC DATA

Aug. 1957 | 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	3.0	E	E	2.1	E	G	3.7	4.5	5.0	A	4.5	A	A	5.0	4.8	4.1	5.0	G	3.1	4.5	2.8	A	4.5	E
2	E	E	E	E	E	G	G	G	G	4.8	A	A	A	A	5.8	7.3	u7.3 S	4.9	6.0	A	5.0	A	3.8	2.0
3	E	E	E	E	E	G	G	G	7.7	5.5	5.5	8.0	A	5.0	G	G	G	3.5	3.2	u8.5 S	u5.0 S	2.0	E	2.0
4	2.6	E	E	E	E	G	3.4	3.7	4.7	5.8	6.5	A	A	5.6	4.7	5.0	4.9	A	A	A	A	A	4.5	3.5
5	4.6	3.6	2.8	E	A	G	G	3.7	6.5	5.5	4.6	A	5.5	5.0	5.2	5.0	3.8	4.0	5.5	4.5	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	5.5	4.8	4.7	4.5	G	G	G	G	4.8	2.6	4.6	E	3.2	E
7	2.0	E	E	E	G	G	G	G	4.5	G	G	4.2	C	G	G	G	G	G	G	2.0	3.8	2.3	2.5	2.4
8	E	2.3	2.6	E	3.8	5.0	3.8	4.4	7.0	u4.8 B	4.9	G	G	G	G	G	G	G	2.7	2.3	3.5	2.2	4.7	2.5
9	u3.5 S	u2.9 S	1.9	E	E	G	G	4.3	3.8	4.5	4.3	4.1	4.1	4.6	4.4	4.1	G	3.8	2.8	2.4	E	A	2.1	2.7
10	E	3.7	E	E	E	G	G	G	G	6.7	4.9	4.8	4.8	5.5	4.0	3.8	G	G	3.6	2.2	2.9	2.1	E	E
11	E	2.2	E	E	E	G	G	4.2	5.3	5.4	A	4.6	A	4.5	4.1	G	4.0	G	G	E	E	E	S A	E
12	u2.6	2.6	2.2	2.4	E	2.8	3.8	4.3	3.8	4.9	4.3	5.7	5.5	4.5	4.3	G	G	G	u3.4 S	A	A	2.7	E	E
13	2.2	E	E	E	E	G	G	G	4.8	4.8	4.7	4.6	4.5	4.8	6.0	G	G	4.7	5.5	3.8	3.1	2.2	3.2	E
14	E	E	E	E	G	G	G	3.9	4.2	4.5	4.8	u4.2 B	4.3	4.3	4.4	4.1	G	4.6	3.0	2.6	4.6	E	E	2.0
15	E	E	E	E	E	G	G	4.1	G	4.1	3.8	4.1	G	G	u4.2 B	G	G	G	4.7	E	E	2.5	E	E
16	E	E	E	E	E	G	G	3.7	G	G	G	G	7.3	5.0	4.7	4.7	4.2	4.0	2.5	2.5	2.9	4.6	6.0	E
17	E	1.7	E	E	E	G	G	G	4.6	7.0	G	u4.5 B	4.3	G	G	G	G	G	G	2.1	2.0	2.1	4.5	2.2
18	E	E	E	E	E	G	G	G	4.4	G	G	G	4.6	4.4	G	G	G	G	2.6	7.6	E	E	E	E
19	E	E	E	E	E	G	G	3.8	4.6	4.8	4.5	u4.3 B	u4.5 B	G	G	G	G	G	G	E	2.6	E	E	E
20	E	E	E	E	E	G	3.4	G	G	G	4.1	u4.5 B	4.5	G	4.5	G	G	3.5	2.2	2.7	2.6	E	E	E
21	E	E	E	E	E	G	G	6.9	3.7	G	4.0	5.0	4.8	4.5	4.5	4.2	4.7	4.8	2.3	4.5	E	2.7	5.0	2.6
22	3.0	E	E	E	E	G	G	A	G	G	A	4.5	4.3	G	5.2	A	4.1	A	6.3	6.0	2.5	4.0	4.3	3.8
23	3.7	3.0	E	E	E	2.1	4.5	3.8	3.8	3.8	G	4.8	4.5	4.7	4.4	3.9	A	4.5	A	2.9	2.2	E	E	E
24	E	E	E	E	E	G	G	3.5	G	G	G	4.4	G	G	G	G	G	G	G	E	E	E	E	E
25	E	E	E	E	E	2.7	2.8	C	C	C	C	C	C	C	C	C	C	C	2.3	E	E	E	E	E
26	E	E	E	E	E	G	G	G	4.7	G	G	G	G	G	G	G	5.0	E	2.4	2.5	3.0	E	E	E
27	E	E	E	E	E	G	G	4.5	4.7	7.2	7.3	6.7	G	G	G	G	G	G	2.5	3.2	2.1	2.7	5.0	2.7
28	2.0	E	E	E	E	2.8	G	G	G	G	G	u4.5 B	G	G	C	G	G	3.1	2.2	5.0	E	2.8	E	E
29	E	E	E	E	E	G	G	3.6	4.3	4.5	4.5	G	G	G	G	G	G	G	3.3	2.0	u5.5 S	E	2.1	E
30	E	E	E	E	C	G	C	C	4.4	4.7	4.0	G	G	u4.4 B	G	G	G	G	2.1	4.0	3.5	E	E	E
31	E	E	E	E	E	G	G	G	G	G	4.7	G	G	G	G	G	G	G	E	E	E	E	2.6	2.1
No.	30	30	30	30	29	30	29	28	29	29	30	30	29	30	29	30	30	30	31	31	30	30	30	30
Median	E	E	E	E	E	G	G	3.7	4.3	4.5	4.5	4.5	4.5	4.4	4.1	G	G	G	2.7	2.6	2.7	2.1	2.1	E

foEs

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

The Radio Research Laboratories, Japan.

W 5

IONOSPHERIC DATA

Aug. 1957 | 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	E	1.20	E	E	E	1.55	1.65	1.70	1.80	1.90	1.85	2.30	2.90	2.15	1.80	2.00	1.80	1.80	1.65	1.60	E	E	E	1.70
2	E	1.35	E	E	E	1.50	1.75	1.80	1.75	2.05	3.00	2.95	2.05	2.05	2.80	2.10	1.90	1.70	1.65	1.60	1.60	1.60	E	1.60
3	E	E	E	E	E	1.60	1.70	1.75	1.80	2.05	2.10	2.10	2.15	2.40	2.10	1.85	2.00	1.80	1.60	1.60	1.60	E	1.60	E
4	E	1.25	E	E	E	1.60	1.60	1.75	1.80	2.05	1.80	2.10	2.10	2.00	2.00	1.90	1.80	1.90	1.60	E	1.60	1.60	1.60	1.60
5	E	E	E	E	E	1.55	1.65	1.75	1.80	1.95	2.00	2.00	2.05	2.10	2.05	1.95	1.80	1.75	1.65	1.60	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	1.95	2.05	2.00	2.05	1.95	1.85	1.85	1.75	1.70	1.60	E	E	E	E
7	E	1.25	E	E	E	1.50	1.75	1.75	1.80	1.75	1.90	2.00	F 2.00 C	2.05	1.95	2.00	1.85	1.75	1.60	1.60	1.60	1.60	E	E
8	E	1.25	E	E	E	1.40	1.70	1.75	1.85	2.20	2.00	2.10	2.15	2.15	2.00	2.15	1.80	1.75	1.70	1.70	E	1.70	E	1.65
9	E	1.25	E	E	E	1.65	1.70	1.80	1.80	2.20	2.05	2.00	2.00	2.35	2.00	1.75	2.20	1.70	1.80	1.65	1.65	1.65	1.60	1.70
10	1.65	1.35	E	E	1.10	1.60	1.80	1.90	1.80	1.75	2.20	3.10	2.70	2.50	2.10	2.00	2.00	1.75	1.75	1.65	1.70	1.65	E	1.70
11	E	E	E	E	1.05	1.60	1.65	1.80	2.05	2.05	U 2.20 S	2.50	2.45	2.20	2.00	U 1.75 S	1.70	1.80	1.75	U 2.00 S	1.75	E	E	1.65
12	E	E	E	E	E	1.60	1.80	2.15	U 1.90 S	2.05	2.40	2.45	2.65	U 2.20 S	U 2.15 S	2.00	U 2.00 S	1.70	E 1.65 S	U 1.75 S	1.90	1.80	1.75	1.70
13	1.65	1.40	E	1.10	1.70	1.70	1.90	1.75	2.05	1.80	2.05	U 2.00 S	2.05	2.00	2.00	U 2.00 S	U 1.75 S	1.75	1.65	1.70	1.65	1.60	1.60	1.70
14	1.60	1.25	1.05	E	E	1.55	1.90	1.80	1.80	1.85	1.95	2.05	2.50	2.00	1.90	1.85	1.80	1.80	1.80	1.60	1.60	1.60	E	E
15	E	1.25	E	E	1.25	1.60	1.70	1.80	1.80	1.85	1.80	2.05	2.00	2.00	2.00	1.80	1.75	1.70	1.60	1.60	1.60	E	E	1.60
16	E	1.25	E	E	E	1.50	1.60	1.75	1.80	1.90	2.00	2.50	2.50	2.35	1.80	1.80	1.75	1.60	1.60	1.60	1.60	E	1.60	1.60
17	E	E	E	1.10	E	1.60	1.65	1.60	1.80	1.80	2.00	2.30	2.15	2.00	1.95	1.80	1.75	1.60	1.60	1.60	E	1.60	1.60	E
18	E	1.20	E	1.25	1.25	1.60	1.75	1.80	1.80	2.00	2.05	2.10	2.05	2.00	1.80	1.80	1.85	1.75	1.70	1.60	1.60	1.60	1.60	E
19	1.60	1.20	E	E	E	1.55	1.75	1.65	1.85	1.95	2.25	1.90	2.50	2.50	2.20	2.20	1.75	1.80	1.65	1.60	1.60	1.60	1.60	E
20	E	1.20	1.10	E	E	1.55	1.60	1.80	1.80	1.85	2.00	1.95	2.10	2.00	2.00	1.95	1.85	1.65	1.65	1.60	1.60	1.60	1.60	1.60
21	E	1.25	1.20	1.25	1.10	1.40	1.80	1.80	1.80	1.80	2.00	2.05	1.90	1.75	1.80	1.95	1.80	1.80	1.70	1.60	1.60	1.60	E	1.60
22	E	1.20	1.15	1.20	E	1.40	1.80	1.80	1.80	1.80	2.05	2.10	1.95	2.05	1.50	1.80	1.80	1.80	1.60	1.65	1.60	1.60	1.60	1.60
23	E	E	E	E	E	1.40	1.60	1.60	1.85	1.80	1.80	2.00	2.00	2.20	1.95	2.10	1.50	1.70	1.60	1.60	1.60	E	E	E
24	E	1.25	E	E	E	1.40	1.60	1.75	1.75	1.85	1.90	2.10	1.95	2.00	2.00	1.80	1.60	1.60	1.60	1.60	1.60	E	1.60	1.60
25	E	1.20	1.15	E	E	1.50	1.65	C	C	C	C	C	C	C	C	C	C	C	1.60	1.60	1.80	1.80	1.60	1.70
26	1.60	1.30	1.25	E	E	1.55	1.60	1.75	1.85	2.35	2.50	2.05	2.60	2.20	2.35	2.00	1.80	F 1.80 C	1.60	1.60	1.60	1.70	1.60	1.60
27	E	1.10	1.10	1.10	1.25	1.60	1.70	2.00	1.80	1.80	1.80	2.40	2.05	2.00	2.00	1.85	1.70	1.80	1.60	1.60	1.60	1.60	1.60	1.60
28	E	1.50	E	E	E	1.55	1.80	1.70	1.80	2.00	2.05	1.95	2.10	1.85	C	2.00	1.75	1.60	1.60	1.60	1.60	1.60	1.60	1.60
29	E	1.45	1.20	E	E	1.80	1.80	1.75	1.80	2.00	1.95	1.80	2.05	2.00	2.00	2.50	1.80	1.60	1.60	1.60	1.85	1.60	E	E
30	E	1.20	E	E	F 1.40 C	1.60	C	C	2.00	2.00	2.00	2.10	2.20	2.50	2.05	1.85	1.80	1.70	1.80	1.60	E	E	E	E
31	E	1.25	E	1.10	E	1.60	1.80	1.80	2.05	1.80	2.00	2.50	2.90	2.10	2.00	2.50	2.15	1.80	1.60	1.60	E	E	E	1.60
No.	30	30	30	30	30	30	29	28	29	29	30	30	30	30	29	30	30	30	31	31	30	30	30	30
Median	E	1.25	E	E	E	1.55	1.70	1.75	1.80	1.90	2.00	2.10	2.10	2.05	2.00	1.95	1.80	1.75	1.60	1.60	1.60	1.60	1.60	1.60

Note : Lowest limit of observable frequency is 1.60 Mc/s due to radio interference except from 01.00 to 05.00

f-min

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

The Radio Research Laboratories, Japan.

W 6

IONOSPHERIC DATA

Aug. 1957 | (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	$u_{2.60}{}^{S}$	F	S	$u_{2.60}{}^{S}$	2.60	2.80	2.65	2.90	3.10	A	2.70	A	A	2.70	2.65	2.70	2.65	2.75	2.80	2.80	2.70	A	S	2.95
2	2.60	2.75	2.60	2.65	2.65	$u_{3.00}{}^{R}$	2.90	2.80	2.50	2.75	A	A	A	A	2.70	2.70	2.70	2.75	2.80	A	S	S	$u_{2.80}{}^{S}$	2.55
3	2.55	2.50	2.50	2.55	2.70	2.95	2.75	2.90	2.80	R	2.75	2.70	$I_{2.70}{}^{A}$	2.75	2.80	2.80	2.80	2.75	2.80	2.75	S	S	2.70	2.55
4	2.55	S	2.60	2.40	F	2.75	3.10	2.85	2.90	$I_{2.75}{}^{R}$	2.50	A	A	2.70	2.75	2.80	2.75	$I_{2.80}{}^{A}$	A	A	A	A	S	$J_{2.75}$
5	2.55	S	2.60^{F}	2.55^{F}	$I_{2.50}{}^{A}$	$u_{2.70}{}^{F}$	2.65	2.70	2.65	2.75^{H}	3.05	$I_{2.80}{}^{A}$	2.80	2.80	2.85	2.85	2.95	2.80	2.90	S	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	2.80	2.55	2.65	2.70	2.65	2.70	2.50	2.70	2.65	2.65	2.65	S	2.75	S
7	$u_{2.65}{}^{S}$	2.35	2.35	2.45	2.45	2.45	2.85	3.15	2.70^{H}	$u_{2.90}{}^{S}$	R	2.60	$I_{2.80}{}^{C}$	$u_{2.90}{}^{R}$	2.85	2.85	2.75	2.90	2.75	$I_{2.80}{}^{S}$	S	S	2.50	2.50
8	2.45	2.55	2.55	2.50	2.55^{F}	2.75	2.80	2.70	3.05	R	2.70	3.15	2.80	2.85	2.85	2.90	2.80	2.85	2.85	3.00^{S}	2.85	$u_{2.60}{}^{S}$	A	2.65
9	2.70	2.55	2.70	2.55	2.85	2.90	3.00^{S}	2.95	2.90	2.70	2.90	2.80	2.75	2.70	2.70	2.80	2.90	2.85	2.70	$I_{2.75}{}^{S}$	S	2.50	$u_{2.75}{}^{S}$	2.90
10	2.70	2.65	2.65	2.65	2.65	2.70	2.90	2.85	2.90	2.75	2.65	2.75	2.80	2.65	2.70	2.75	2.85	2.85	2.90	$I_{2.90}{}^{S}$	2.75	$u_{2.75}{}^{S}$	$u_{2.60}{}^{S}$	2.65
11	2.80	$u_{2.75}{}^{S}$	$I_{2.80}{}^{S}$	2.75^{H}	2.45	2.45	2.60	2.65	A	2.50	A	2.35	$I_{2.30}{}^{A}$	2.40	2.35	2.70	2.65	2.85	2.80	2.70	$u_{2.70}{}^{S}$	$u_{2.75}{}^{S}$	S	2.65
12	2.80	2.55	2.50	2.50	2.65	3.05	2.85	$u_{3.00}{}^{R}$	$u_{2.90}{}^{R}$	2.80	2.80	2.75	$u_{2.80}{}^{R}$	2.70	$u_{2.65}{}^{R}$	$u_{2.70}{}^{R}$	2.85	2.80	2.75	S	S	$u_{2.80}{}^{S}$	S	2.65
13	2.65	2.55	2.55	2.45	2.45	2.55	$u_{2.90}{}^{S}$	2.85	R	A	$J_{2.80}{}^{R}$	2.65^{H}	2.70	2.65^{H}	2.70	2.65	2.80	2.80	$u_{2.85}{}^{S}$	$u_{2.85}{}^{S}$	S	S	S	$u_{2.50}{}^{S}$
14	$u_{2.50}{}^{S}$	S	2.55	2.50	2.55	2.75	2.90	$u_{3.25}{}^{R}$	2.55^{H}	2.85	2.75	2.70	2.80	2.60	2.60	2.70	2.80	2.85	2.85	2.75	2.75	S	S	$u_{2.55}{}^{S}$
15	2.55	2.55	2.55	2.50	2.55	2.75	2.85	2.65	2.95	3.00	2.60	2.65	2.75	2.75	2.70	2.75	2.95	2.85	2.80	2.70	S	S	2.55	2.60
16	2.65	2.55	2.55	2.55	2.60	2.85	3.15	2.80	2.85	2.80	2.85	2.65	2.65	2.80	2.70	2.85	2.85	S	2.90	2.80	S	S	2.45	2.65
17	$u_{2.60}{}^{S}$	S	2.50	2.65	2.60^{F}	2.90	2.80	2.80	3.00	2.80	2.70	2.70	2.70	2.75	2.80	2.90	2.80	2.85	2.80	$u_{2.75}{}^{S}$	S	S	2.75	2.75
18	2.60	2.60	2.55	2.60	2.65	2.95	2.80	2.80	2.80	2.80	2.70	2.75	2.65^{H}	2.75	2.70	2.75	2.80	2.85	2.85	2.70	2.75	2.70	$u_{2.55}{}^{S}$	2.40
19	$u_{2.45}{}^{S}$	2.50	2.45	2.45	2.60	2.65	2.90	2.65	2.70	2.85	2.70	2.75	2.75	R	R	2.75	2.65	2.90	2.90	2.55	S	S	$I_{2.55}{}^{S}$	$J_{2.65}$
20	2.50	2.60	2.55	2.70	2.65	2.75	2.80	R	$u_{2.60}{}^{R}$	R	2.85	2.85	2.75	2.75	2.90	2.80	2.75	2.40	2.75	2.80	2.75	2.70	2.65	2.55
21	2.50	2.50	2.40	2.55	2.50	2.45	2.80	3.10	2.85	2.75	$J_{2.75}$	R	2.25	2.40	2.35	2.50	2.50	2.70	2.90	2.65	S	2.55	2.50	2.45
22	2.35	2.45	2.55	2.45	2.60	2.70	2.80	A	2.55	2.65	A	2.45	2.45	2.40	$I_{2.40}{}^{A}$	A	2.80	$I_{2.90}{}^{A}$	2.90	2.85	2.50	2.65	2.55	2.60
23	2.55	2.60	2.50	2.60	2.55	2.70	2.75	2.90	2.95	2.85	2.75	2.80	2.75	2.85	2.75	2.75	A	2.85	A	2.85	2.75	2.65	2.60	2.50
24	2.55	2.55	2.60	2.60	2.65	2.80	2.75	2.85	3.00	2.95	2.80	2.85	2.80	2.80	2.85	2.80	2.80	2.95	2.95	2.80	2.75	2.70	2.65	2.55
25	2.55	2.55	2.55	2.65	2.75	2.75	2.95	C	C	C	C	C	C	C	C	C	C	C	2.90	2.85	2.85	S	2.60	2.60
26	2.60	2.55	2.60	2.55	2.55	2.50	2.85	2.95	C	2.90^{H}	2.80^{H}	2.85	2.85	2.75	2.80	2.75	2.80	2.80	2.85	2.85	S	S	2.60	2.60
27	2.60	2.45	2.50	2.45	2.45	2.80	2.80	2.95	2.95	2.85	2.65	2.75	2.70	2.70	2.65	2.70	2.75	2.85	2.90	2.65	2.85	2.65	S	2.45
28	2.55	2.50	2.50	2.50	2.40	2.55	2.75	3.05	2.75	2.55	2.70	2.75	2.90	2.85		2.85	2.80	2.90	2.90	2.80	2.70	2.60	2.70	2.65
29	2.50	2.55	2.40	2.60	2.65	2.80	2.80	3.05	3.05	2.95	3.05	2.75	2.60	2.85	2.85	2.85	2.85	2.95	2.95	S	2.70	S	2.60	2.65
30	2.65	2.65	2.65	2.55	$I_{2.60}{}^{C}$	2.80	C	C	2.70	2.80	2.65	2.70	2.75	2.70	2.75	2.85	2.80	2.90	2.85	S	2.65	2.75	$u_{2.45}{}^{S}$	2.55^{F}
31	$u_{2.60}{}^{F}$	F	2.45^{F}	F	F	2.45^{F}	2.85	3.05^{VH}	3.20	2.95	3.00	2.80	2.65	2.75	2.80	2.85	2.80	2.85	2.85	2.90	S	$I_{2.60}{}^{S}$	2.65	2.50
No.	30	24	29	29	28	30	29	26	26	24	26	26	27	28	28	29	29	29	29	25	16	15	22	29
Median	2.60	2.55	2.55	2.55	2.60	2.75	2.80	2.90	2.90	2.80	2.75	2.75	2.75	2.75	2.70	2.75	2.80	2.85	2.85	2.80	2.75	2.65	2.60	2.60

(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

Aug. 1957 | (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							L	A	A	A	LH	A	A	3.50	3.10	3.20	A	L						
2								L	$^{u}3.35^{L}$	3.30	A	A	A	A	A	A	A	A						
3							L	L	A	3.85	A	A	A	L	3.40	L	L	L						
4							L	L	A	$^{I}3.50^{A}$	A	A	A	A	3.50	A	A	A						
5						L	3.35	L	A	A	3.65	A	A	3.35	3.40	A	L							
6						C	C	C	C	C	A	3.15	3.25	3.30	3.35	3.30	3.20	L						
7						L	3.05^{H}	L	3.30	L	R	3.60	C	3.60	3.35^{H}	L	L	L						
8							L	L	A	3.35	3.45	L	3.80	3.25^{H}	3.55	LH	$^{I}3.30^{L}$	L	L					
9								A	3.65	3.30	L	3.45	3.35^{H}	LH	3.30	3.55	L	L						
10							L	L	L	A	$^{u}3.40^{LH}$	3.35^{H}	$^{I}3.40^{S}$	3.15	3.20^{H}	L	L	L						
11						L	3.10^{H}	A	A	A	A	3.50	$^{I}3.60^{A}$	3.70	3.55	3.30	$^{u}3.20^{L}$	L						
12							L	L	L	3.35	3.40	A	A	3.40^{H}	3.20^{H}	3.25	L	L						
13							L	L	2.55	A	L	$^{I}3.30^{L}$	$^{u}3.50^{L}$	3.60	A	L	L							
14							L	L	L	L	3.30	3.35	3.25	3.20	3.30	L	L							
15									L	L	LH	3.45	3.45	3.55	3.50^{H}	LH	L	L						
16							L	L	L	LH	LH	LH	A	A	L	$^{u}3.45^{L}$	L	L						
17							L	L	L	A	L	L	L	3.30	L	L	L	L						
18								L	L	3.80	L	3.70	3.65	L	L	L	L	L						
19							L	L	L	L	L	L	L	L	3.25	L	L	L						
20							L	LH	3.25	L	L	3.60	L	LH	L	L	L	L						
21								A	L	3.65	3.55	A	A	3.35	3.25	3.05^{H}	L	A						
22							L	A	3.55	3.60^{H}	A	3.55	3.35	3.45	A	A	L							
23								L	L	L	3.55	3.45^{H}	L	L	L	LH	A							
24							L	L	L	L	L	L	L	L	L	L	L	L						
25							C	C	C	C	C	C	C	C	C	C	C	C						
26							L	L	C	L	L	LH	L	LH	3.40	LH	A							
27									L	A	A	A	3.60	LH	LH	L	L							
28							L	L	L	L	3.50	3.35	L	L	C	L	L	L						
29								L	L	$^{u}3.45^{L}$	L	L	L	3.45	L	L	L	L						
30								C	L	L	L	L	L	L	L	L	L							
31								L	L	LH	L	LH	3.35	L	L	L	L							
No.							3		6	10	8	13	12	15	16	17	3							
Median							3.10		3.30	3.50	3.50	3.45	3.40	3.40	3.35	3.30	3.20							

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | 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							L	310	275	A	L	A	A	360	390	360	A	L						
2								L	$^{U}400^{L}$	370	A	A	A	A	360^{A}	A	A	A						
3							L	L	A	$^{I}290^{R}$	330	A	A	L	375	L	L	L						
4							L	L	300	$^{I}390^{A}$	440	A	A	380	330	310	320	A						
5						L	$^{I}330^{L}$	L	A	290^{AH}	300	$^{I}380^{A}$	350	350	340	300^{A}	L							
6						C	C	C	C	C	345	425	370	370	350	340	400	L						
7						L	330	L	380^{H}	L	R	420	C	350	350	L	L	L						
8							L	$^{I}325^{L}$	A	275	330	L	375	335	340	L	L	L	L					
9								$^{U}250^{A}$	300	300	L	350	355	L	375	310	L	L						
10							L	L	L	A	$^{U}370^{L}$	350	S	395	375	L	L	L						
11						L	370	375	420	A	A	600	$^{I}610^{A}$	580	600	440	425	L						
12							L	L	L	335	350	A	390	400	375	365	L	L						
13							L	L	330	A	L	LH	340	310^{H}	$^{U}365^{A}$	L	L							
14							L	L	L	L	360	370	350	420	400	L	L							
15									L	L	L	390	355	360	375	350	L	L						
16							L	L	L	L	L	L	A	A	L	$^{U}340^{L}$	L	L						
17							L	L	L	A	L	L	L	350	L	L	L	L						
18								L	L	305	L	330	275^{H}	L	L	L	L	L						
19							L	L	L	L	L	L.	L	L	360	L	L	L						
20							L	L	375	L	L	335	L	L	L	L	L	L						
21								A	L	350	360	510	550	510	510	465	L	A						
22							L	A	400	400	A	500	550	530	A	A	L							
23								L	L	L	350	370	L	L	L	L	A							
24							L	L	L	L	L	L	L	L	L	L	L	L						
25								C	C	C	C	C	C	C	C	C	C	C						
26							L	L	C	LH	LH	L	L	L	360	L	A							
27									L	A	A	A	360	L	L	L	L							
28							L	L	L	L	365	355	L	L	C	L	L	L						
29								L	L	$^{U}310^{L}$	L	L	L	320	L	L	L	L						
30								C	L	L	L	L	L	L	L	L	L							
31								L	L	L	L	L	370	L	L	L	L							
No.							3	4	9	11	11	14	14	16	18	10	3							
Median							330	320	375	310	350	380	365	365	370	345	400							

h'F2 | Sweep 1.0 Mc to 20.7 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 9

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Aug. 1957

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	A	295	290	310	295	260	260	A	A	A	230^{H}	A	A	260^{A}	A	250	A	250	A	A	A	A	A	300
2	300	260	255	300	310	260	250	^{I}245^{A}	220	A	A	A	A	A	A	A	A	A	A	A	A	A	^{I}260^{A}	300
3	300	295	320	285	290	265	255	245	A	230^{A}	A	A	A	A	235	250	240	250	275^{A}	A	A	250	260	290
4	310	300	290	325	340	250	230	A	A	^{I}260^{A}	A	A	A	A	^{I}260^{A}	A	A	A	A	A	A	A	A	A
5	A	A	^{U}310^{A}	300	A	280	255	250^{A}	A	A	230	A	A	A	A	A	250^{A}	A	A	A	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	A	250^{A}	250	270	^{I}270^{A}	275^{A}	250	270	^{I}270^{A}	275^{A}	A	275	290^{A}	290
7	280	310	315	340	335	275	250^{H}	250	300^{A}	220	200	225	235	255	250	275	235	255	250	275	300	270	285	A
8	300	325	310^{A}	300	360^{A}	A	A	A	A	B	A	250	270	270	^{I}250^{A}	265	270	270	^{I}250^{A}	265	280^{A}	290	A	295
9	^{U}315^{S}	^{U}330^{S}	295	280	275	250	245	A	225	250^{A}	230	210	225	A	260	275	225	A	260	275	265	A	285	275
10	275	A	300	295	290	280	240	245	230	A	A	^{U}250^{A}	235	245	275	265	235	245	275	265	275	280	300	300
11	290	285	275	225^{H}	335	300	270^{H}	A	A	A	A	A	^{U}250^{A}	^{U}245^{A}	270	295	^{U}250^{A}	^{U}245^{A}	270	295	290	275	S	290
12	^{U}275^{S}	^{U}325^{A}	^{U}325^{A}	330	290	270	^{U}255^{A}	^{U}270^{A}	225	275	225	A	250	240	275	A	250	240	275	A	A	285	260	280
13	320	305	310	305	320	250	250	240	265	A	260	230	235	295	300	^{U}270^{S}	235	295	300	^{U}270^{S}	^{U}320^{S}	285	300	280
14	310	270	265	320	315	275	^{U}250^{A}	250	230	245	^{I}230^{A}	215	250	A	A	A	250	A	A	A	A	250	260	300
15	325	320	300	285	310	260	255	260	220	235	200^{H}	220	250	260	A	270	250	260	A	270	280	290	280	275
16	280	305	295	300	280	265	250	240	220	200	220^{H}	200	A	A	270	265	A	A	270	265	285	A	A	280
17	300	300^{A}	300	300	280	260	250	240	A	A	220	220	250	245	255	260	250	245	255	260	280	280	A	280
18	300	300	305	290	270	250	225	250	260	220	210	215	235	235	270	A	235	235	270	A	270	270	280	330
19	335	310	300	280	290	275	250	235	250	260^{A}	A	220	245	250	270	265	245	250	270	265	A	290	270	275
20	300	275	290	260	260	280	A	220^{H}	250	220	230	200	230	270	265	265	230	270	265	265	260	250	280	280
21	320	305	325	290	295	280	245	A	235	215	220	A	A	A	270	A	A	A	270	A	A	A	A	A
22	A	300	290	280	300	280	270	A	220	210^{H}	A	A	A	A	A	A	A	A	A	A	275	A	A	A
23	A	A	310	280	280	290	A	A	220	220	225	A	A	A	A	270^{A}	A	A	A	270^{A}	250	240	270	305
24	300	300	295	280	280	260	240	250	230	225	210	225^{A}	245	260	260	245	245	260	260	245	255	255	245	290
25	300	320	290	275	260	270^{A}	250	C	C	C	C	C	C	C	A	250	C	C	A	250	250	250	275	305
26	300	295	290	275	290	260	255	240	C	220	215	200^{H}	A	C	270	250	A	C	270	250	270	270	280	280
27	290	310	300	290	300	260	240	260^{A}	A	A	220	210^{H}	260	290^{A}	270^{A}	285^{A}	260	290^{A}	270^{A}	285^{A}	270^{A}	285^{A}	^{I}275^{A}	310
28	290	300	310	290	320	290	260	255	230	220	200	235	260	240	275	A	260	240	275	A	275	290	290	275
29	280	300	310	290	290	260	250	250	250	230	A	220	250	260	250	270	250	260	250	270	A5	255	290	295
30	280	295	300	285	^{I}296	245	C	C	270	A	220	220	250	250	270	A	250	250	270	A	310^{A}	275	275	265
31	280	290	300	310	320	290	260	240	245	215^{H}	A	205^{H}	250	270	270	240	250	270	270	240	260	260	300^{A}	305^{A}
No.	26	27	30	30	29	29	26	20	20	19	19	20	22	20	22	19	22	20	22	19	20	23	22	26
Median	300	300	300	290	290	265	250	250	230	220	220	220	250	250	270	265	250	250	270	265	275	275	280	290

The Radio Research Laboratories, Japan.

h'F

Sweep 1.0 Mc to 29.7 Mc in 1 ~~sec~~ min in automatic operation.

W 10

IONOSPHERIC DATA

Aug. 1957 | f'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	100	100	100	105	130	125	115	120	105	110	105	105	100	130	110	105	105	105	100	100	100	105	110
2	E	E	105	105	100	110	145	125	125	120	110	110	105	105	105	105	100	100	105	105	100	100	105	105
3	105	100	100	100	100	130	115	130	110	110	105	105	105	105	G	135	125	120	120	110	105	105	105	105
4	100	105	100	100	100	125	125	120	120	105	105	105	105	105	105	120	120	110	110	110	110	110	105	105
5	105	100	100	100	100	105	110	110	110	110	105	125	110	110	105	105	105	105	105	110	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	105	105	105	105	G	125	G	125	115	110	110	110	110	110
7	115	105	105	105	110	115	120	125	110	105	105	105	C	120	120	120	110	115	120	110	110	110	110	105
8	105	100	105	105	105	105	105	105	105	105	105	G	105	G	G	G	G	G	105	105	100	100	110	105
9	100	100	100	100	100	105	120	115	110	110	105	110	110	110	100	120	150	125	125	115	110	110	105	100
10	105	100	100	120F	100	135	G	110	120	110	110	110	105	105	110	105	105	130	120	115	115	110	E	105
11	100	100	105	100	105	G	G	120	110	110	120	120	105	105	100	100	120	120	110	100	120	U105S	U105S	110
12	105	100	100	105	110	120	110	115	115	105	110	115	100	105	105	120	105	120	100	100	100	100	105	105
13	100	100	100	110	115	G	G	125	115	110	110	110	105	110	105	G	150	125	120	120	115	110	110	110
14	105	105	105	105	G	135	U125B	125	120	120	110	115	105	110	115	105	130	120	115	110	110	E	E	110
15	105	105	100	E	E	120	110	110	110	120	120	105	G	105	105	130	125	120	105	105	105	100	100	100
16	E	110	105	105	105	105	105	125	110	110	G	120	105	105	105	105	100	100	100	100	100	110	110	110
17	110	100	100	100	105	G	120	105	120	105	110	106	105	G	G	G	100	100	105	105	105	100	115	100
18	100	110	105	100	E	G	120	120	120	120	105	G	120	130	G	G	130	G	130	120	115	105	105	100
19	100	100	105	100	105	120	125	115	110	110	105	105	110	G	G	G	150	130	100	120	110	110	110	105
20	105	105	105	100	105	105	110	115	110	G	105	105	110	G	105	105	110	115	115F	100	100	100	105	105
21	E	E	E	E	110	G	130	110	110	120	120	110	110	150	135	160	130	120	120	110	110	105	105	100
22	100	E	E	110	125	125	120	110	145	120	105	105	115	G	125	125	125	110	115	110	110	110	110	105
23	105	105	105	100	110	105	110	105	110	105	110	105	110	110	110	115	110	120	110	110	105	105	105	105
24	100	130	100	105	100	110	120	105	105	105	105	100	100	100	100	G	110	120	115	115	110	105	105	105
25	105	105	E	E	125	115	120	C	C	C	C	C	C	C	C	C	C	C	120	100	E	100	E	E
26	E	E	E	100	E	G	100	130	110	120	115	G	G	105	G	G	125	C	120	110	105	E	E	105
27	E	E	E	E	E	G	G	115	110	105	105	105	G	155	115	120	120	120	125	115	115	110	105	105
28	105	110	105	105	105	125	125	120	120	120	125	110	105	105	C	G	130	120	105	100	100	100	100	100
29	E	E	E	E	E	115	105	120	110	105	110	115	105	105	105	105	105	100	110	110	110	105	105	E
30	E	100	100	100	C	145	C	C	120	110	115	115	110	115	G	105	110	130	115	110	105	105	E	100
31	100	100	100	E	E	160	G	130	125	125	110	120	110	G	G	G	G	105	100	100	100	100	110	105
No.	23	24	24	24	22	23	24	28	29	28	29	27	26	24	20	21	27	27	31	31	29	28	25	28
Median	105	100	100	100	105	120	120	115	110	110	110	110	105	105	105	115	120	120	115	110	110	105	105	105

f'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

Aug. 1957

Types of Es

135° E Mean Time (G.M.T.+ 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f2	f2	f2	f2	f	h	h	h	h	~	h	C	l	l	h l	h l	l2	C	l	f	f3	f2 f2	f2	f
2			f	f	f2	l	h	h	h	h	C	C	C	C	C	l2	l	l2	l3	f2	f4	f3	f2	f
3	f	f2	f3	f	f	h	C	h	h	h	C	C	l	l		h	h	h	C	f5	f	f	f	f2
4	f4	f	f2	f2	f	h	h	h	h	C	C	C	C	l	s	h	h	C	l3	f3	f3	f4	f4	f5
5	f5	f5	f3	f2	f4	l2	h	h	h	h	l	h C	h	C	C	C	l	l	l2	f4				
6											C	C	C	C		h		h	l	f3	f3	f	f3	f3
7	f	f	f	f	l	h	h	h	h	a	l	a		h	h	h	C	h	l	f3	f4	f3	f3	f3
8	f	f2	f3	f2	f7	f3	l2	C	C	l	C2		l						l3	f2	f5	f2	f3	f2
9	f3	f4	f2	f	f	l	h	h2	l	l2	l	l	l	l	l2	h	h	h	l3	f4	f2	f5	f3	f3
10	f2	f4	f2	f.f	f	C		C	h	h3	C2	C	l	l2	l2	l2	l	h	l4	f5	f4	f3		f
11	f2	f4	f	f	f			h2	C	l2	h l	h	l2	C	l	l h	h	h	f	f	f.f	f2	f3	f2
12	f3	f3	f2	f2	f2	l3	l2	C2	h	l2	l	l2	l2	l2	l2	h	l	h	f4	f3	f3	f3	f2	f2
13	f2	f	f2	f	f			h	h	C2	C2	l	l	l2	l2	C	h	h	l4	f5	f5	f4	f7	f
14	f2	f2	f2	f2		h	h2	h3	h	h	C	C	C	l	l	l	h	h	C3	f6	f3			f
15	f	f2	f2			C	C	C	C	h	h	l		C	C	h	h	h	f4	f2	f2	f2	f2	f
16		f	f	f	f2	l	l h	h	C	h l		h	C3	C	C	l2	l	l	f	f2	f2	f3	f5	f
17	f	f4	f	f	f		h	h	h	C	C	l	l				l h	l2	l0	f2	f2	f	f.f	f.2
18	f	f	f	f			h	h	h	h	l		h	h			h		C	f6	f	f3	f2	f
19	f	f2	f	f	f	l	C	C	C	l	l	l	l				h	h	l h	f	f3	f	f	f2
20	f	f	f	f	r	l	C	h	C		l	l	C		l	l	C	C.l	f	f4	f4	f	f2	f
21					f		C	C	C	C	h	C	C	h	h	h	h	h	f4	f4	f3	f3	f3	f3
22	f3			f	f	C	C	C	h h	C	C	l	C		h2	h2	h	C3	f3	f3	f3	f3	f5	f5
23	f h	f4	a	f	f2	f3	C	l	C	l	C	C	C	l	l	r	C	h3	f2	f2	f2	f2	f	f
24	f	f	f	f	f2	l	C	C2	C	l	l	l	l2	l	l		l	h	C	f	f	f	f	f
25	f	f			f	l	f												h l	f		f		
26				f			l	h	C	C	C			l			h		f	f2	f3			f
27								C	C	C	C	C		h	C	h	h	h	f f	f2	f2	f3	f4	f2
28	f2	f	f2	f	f	C	C	C	h	h	h	C	l	l			h	h	f	f4	f2	f2	f2	f
29						l	l C	C	C	C	C	h	l	l	l	l	l	l2	f3	f4	f3	f2	f2	
30		f	f	f		h			h	C	C	C	C	C		l	l	h	f	f3	f4	f2		f2
31	f2	f2	f			h		h	h	h	C	C	l					l.C	f	f2	f	f	f2	f2
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

Aug. 1957 | 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	1 8.6 R	8.9	R	8.2	8.2	8.5	9.1	9.7	10.1	8.5	8.2	9.3	9.1	9.2	9.1	9.5	9.4	9.7	9.5	8.8	7.7	7.8	R	8.2
2	8.2	8.2	7.7 F	7.5 F	7.7	8.0	8.9	8.7	8.4	8.9	9.5	9.7	9.9	A	A	9.2	9.2	8.9	8.9	8.5	8.2	8.2	8.4	8.4
3	8.3	8.3	7.8	7.6	7.6	7.9	8.4	9.8	9.9	9.8	9.6	9.6	10.3	10.9	10.8	10.3	9.8	9.5	9.7	10.1	9.0	9.4	9.7	8.5
4	8.1	8.0	8.1 Z	6.9	6.3 V	7.0 V	7.5	8.0	7.2	7.7	8.1	8.8	10.4	9.7	10.3	1 9.4 R	8.8	8.8	8.5	8.8	9.0	8.6	8.6	8.7
5	8.4	8.1	8.1	7.0	6.5	6.4	6.5	7.0	7.9	A	8.6	9.4	9.9	9.9	9.8	9.7	9.2	8.8	8.2	8.2	8.1	8.1	8.4	8.5
6	8.2	1 8.0 A	7.5	6.5 F	6.5 Z	6.8	8.3	9.5	9.1 H	A	9.4	9.5	10.5	9.6	10.1	10.5	9.5	10.0	10.9	9.7	8.5	9.5	1 9.5 R	9.2
7	8.4	7.6	7.5	6.9	6.5	6.5	7.4	7.4	6.4	1 7.4 C	7.2 H	7.4	9.0	9.3	9.0	8.9	J 8.7	1 8.8 A	8.9	9.0	8.9	8.4	7.9	8.0
8	8.1	7.6	7.7	7.5	7.4	7.4	8.4	9.3 H	8.1	8.4	8.8	9.5	9.1	8.5	8.9	8.8	8.1	8.6	9.2	9.6	8.0	R	R	8.5
9	8.4	8.0	7.6	7.4	7.0	8.0	8.9	9.3	9.6	8.7	8.8	8.6 H	9.0	9.5	9.5	9.5	C	8.2	8.2	1 9.0 C	8.6	8.7	8.4	8.4
10	7.8	7.5	7.6	7.8	7.4	7.8	10.6	11.1	9.4	8.5 H	9.1	9.6	9.8	9.6	9.3	9.3	9.5	9.1	8.9	8.4	8.2	8.4	8.4	8.4
11	8.5	8.4	8.3	7.5	6.7	7.0	8.9	8.8	7.7	7.9	C	6.5	6.2	6.1	5.9	6.1	6.2	6.1	6.2	6.5	7.1	7.5	8.0	7.0
12	6.7	6.8	6.6	6.4	6.5	6.7	8.4	9.6	9.2	8.5	9.1	10.0	9.9	9.3	9.7	9.3	8.9	8.8	8.6	8.5	8.1	8.2	8.2	7.5
13	7.3	7.2	6.9	6.9	6.5	6.9	9.2	10.0	8.4	9.7	11.0	10.9	11.1	10.7	10.4	10.3	10.3	9.9	9.5	8.4	8.1	8.3	8.2	7.7
14	7.1	7.6	6.6	6.1	6.4	7.6	10.5	11.0	9.3	9.7	10.5	10.9	10.5	9.6	9.2	1 8.8 A	8.9	8.6	9.1	9.4	9.2	8.6	8.2	7.9
15	7.6	7.4	7.6	7.1	6.9	6.9	8.1	8.9	9.5	8.8	9.1	9.6	9.7	9.5	9.2	9.3	8.8	8.6	8.5	8.0	8.2	8.0	7.6	R
16	7.6	7.5	7.1	7.1	7.0	7.9	8.4	9.2	9.5	9.6	10.1	9.4	9.6	9.7	9.4	9.5	9.0	9.2	9.1	8.9	7.8	7.7	7.1	6.9 F
17	7.1	7.3	7.2	7.0 Z	6.8	7.2	8.3	9.1	9.1	10.2	10.5	10.5	10.7	10.5	10.3	9.6	9.0	8.8	8.8	8.7	1 8.6 R	8.7	9.0	8.6
18	8.2	8.1	8.2	8.1	8.0	8.1	9.0	8.9	10.3	11.0	11.0	10.3	10.6	10.5	10.5	10.0	9.7	9.5	9.8	9.6	8.9	8.4	8.0	8.1
19	8.0	8.3	7.6	7.5	7.3	7.6	8.4	9.3	10.4	11.0	11.2	10.0	10.4	10.4	10.5	10.5	9.6	9.1	8.5	8.2	8.4	8.0	8.1	7.7
20	7.5	7.5	7.3	7.2	6.1	6.3	8.2	8.6	9.4 H	10.8	10.6	9.7	10.0	9.7	9.4	9.7	R	9.4	9.9	10.0	8.5	7.8	8.1	8.2
21	7.8	7.0	6.7	7.1	6.5	6.6	9.5	11.2	10.9	10.4	10.2	9.5	8.5	8.0	7.3	7.3	7.1	7.5	8.1	7.6	7.1	7.0	7.0	7.1
22	7.3	7.0	7.0	6.5	6.4	6.9	7.4	7.0	6.6	6.6	6.9	7.0	6.8	6.8	7.0	7.3	7.2	7.2	8.0	7.6	6.8	7.2	7.0	6.8
23	6.6	6.5	6.3	5.9	5.8	6.1	7.4	9.0	9.4	9.4	1 8.8 R	8.9	9.0	8.9	8.9	8.9	9.1	8.8	9.2	8.6	8.1	7.9	7.6	7.4
24	7.4	7.2	7.0	6.9	6.3	7.0	8.4	10.1	10.4	9.5	9.0	9.7	10.0	9.5	9.3	9.4	9.3	9.9	9.6	9.0	8.2	8.1	8.1	7.7
25	7.6	7.5	7.6	7.1	7.3	7.2	9.5	10.4	10.4	10.0	9.4	10.1	10.2	10.2	9.6	9.5	9.2	10.0	10.7	10.0	8.1	7.7	8.1	8.2
26	8.2	8.1	7.8	7.0	6.7	7.3	9.4	11.0	10.8	9.4	8.9	9.4	9.3	9.0	9.0	9.5	9.3	9.9	11.0	10.0	8.4	8.5	8.1	8.1
27	7.8	7.4	7.2	6.8	6.9	7.7	9.8	11.5	10.5	9.4	9.7	10.1	10.4	11.3	10.6	9.5	9.7	10.0	9.7	8.8	8.8	7.2	7.6	7.4
28	7.2	7.1	6.8	6.8	6.5	6.9	7.5	7.5	7.9	8.1	8.8	9.9	9.9	9.6	9.5	9.4	9.2	9.0	9.5	9.3	8.2	8.1	8.2	8.1
29	8.0	7.2	7.1	7.0	6.7	7.4	9.4	10.0	10.0	9.5	9.4	9.3	9.6	9.1	9.5	9.4	9.6	9.1	9.5	8.6	7.9	8.1	7.6	8.0
30	7.6	7.5	7.4	7.2	6.7	7.4	8.2	8.9	9.3 H	10.5	9.8	10.5	10.7	10.4	10.4	9.5 H	9.3	9.4	9.2	8.5	A	8.9	8.3	7.8
31	7.2	7.0	6.8	6.5	6.5	6.8	8.8	8.6	8.4	8.5 H	8.7	10.1	10.3	11.0	10.9	9.9	9.5	10.0	10.2	9.6	7.8	8.1	8.1	7.6
No.	31	31	30	31	31	31	31	31	31	29	30	31	31	30	30	31	29	31	31	31	30	30	29	30
Median	7.8	7.5	7.4	7.0	6.7	7.2	8.4	9.3	9.4	9.4	9.2	9.6	9.9	9.6	9.5	9.5	9.2	9.1	9.2	8.8	8.2	8.1	8.1	8.0
U.Q	8.2	8.1	7.7	7.5	7.3	7.7	9.2	10.0	10.1	9.9	10.1	10.1	10.4	10.4	10.3	9.7	9.5	9.7	9.7	9.6	8.6	8.5	8.4	8.4
L.Q	7.3	7.2	7.0	6.9	6.5	6.8	8.2	8.7	8.4	8.5	8.8	9.3	9.1	9.2	9.1	9.2	8.8	8.8	8.5	8.4	8.0	7.8	7.8	7.6
Q.R	0.9	0.9	0.7	0.6	1.8	0.9	1.0	1.3	1.7	1.4	1.3	0.8	1.3	1.2	1.2	0.5	0.7	0.9	1.2	1.2	0.6	0.7	0.6	0.8

foF2

Sweep 0.85 Mc to 22.0 Mc in 2 min sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | 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	A	L	5.2	A	A	5.6	5.9	5.6	5.3	A	L	L					
2							L	4.4 L	5.6	A	A	A	A	A	A	5.5	5.0	L						
3							A	L	L	A	A	A	5.6	5.7	5.5	L	L	L						
4								L	L	5.5	5.5	5.7	5.5	I 5.6 L	5.5 L	L	L	A						
5							L	4.7	L	A	6.5	A	A	A	L	A	A	L						
6							L	A	A	A	5.5	5.7	A	5.6	5.8	5.5 L	L	A	A					
7						3.0 L	4.1 L	4.5 L	I 5.5 L	C	6.0 H	5.5 H	5.9 H	6.0 H	5.8 H	L H	L	A						
8							L	L H	L H	5.5	L H	6.1 H	A	A	A	L	L	L						
9								L	L	L	5.6	L	6.1	6.0	L	5.5	C	5.0						
10							L	L	L	A	6.1	6.1 L	6.2	5.8	5.5	L	L	4.0 L						
11							I 3.9 L	I 4.6 L	5.3	I 5.4 A	C	5.4	I 5.4 R	5.3	5.4	5.2	4.8	4.8 L	L					
12								A	L	5.7	5.9	5.7 H	6.1 H	5.6	5.4 H	5.0	5.2 L	L						
13							L	L	A	A	5.5	I 5.8 L	5.9	5.8	I 5.8 L	5.5	L	L						
14							L	L	4.9	L	L	6.0	6.3	6.0	6.0	A	A	A						
15							L	L	A	A	6.0	L	6.1	5.7	6.1 H	5.5 H	L H	L						
16							L	4.3	L H	I 5.6 LH	L	L H	5.8	6.1 H	6.0 H	5.0	L H	L						
17								L	4.6	L	A	A	I 6.5 A	5.6	6.0	A	L	A						
18								L	5.6 L	6.0 H	5.8	6.5	I 6.0 LH	6.0 L	6.0	5.5	5.0 L	L						
19							L	L	L H	6.0	L	5.5	6.0	6.4	6.0	5.5 L	L	L						
20								L	L	5.6	5.5	6.5 L	6.0	L H	L	5.3 LH	L	L						
21							L	L	L	L	6.5	A	I 5.2 A	5.4	5.5	5.0 H	A	A						
22							L	4.8	5.2	5.2	R	5.5	5.8	5.9 H	5.4	5.1	A	A	A					
23							L	L	A	5.6 L	L H	I 5.8 LH	5.9 H	6.5 H	5.5	5.5	A	A						
24							L	L	L	L H	L	6.0	6.0	6.5 L	6.3 L	5.5	L	L						
25							L	L	L	A	L	6.1 L	5.8 L	6.0 L	L	5.5 L	L	L						
26							L	L	4.6 L	L	L	L	L H	6.0 H	6.1	5.3	L	L						
27							L	L	L	L	L	6.1	L H	5.9	L	5.6 L	L							
28								L	5.5 L	L	6.5	6.4	6.4	B	6.3 LH	I 5.6 L	L	L						
29								L	L	L	L	L	L	6.0	L	A	L							
30								L	L	L	6.0 H	6.2	L	L	L	L	L							
31								L	L	L	6.2	L	6.2	5.5	6.0 L	L	A	A						
No.						1	2	6	9	11	15	19	23	25	22	20	4	3						
Median						3.0	4.0	4.6	5.3	5.6	6.0	6.0	6.0	5.9	5.8	5.5	5.0	4.8						

foF1

Sweep 0.85 Mc to 22.0 Mc in 2 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

A 2

IONOSPHERIC DATA

Aug. 1957 | foE | 135° E Mean Time (G.M.T.+ 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						2.00	2.55	3.10	3.50	3.70	3.95	3.90	3.95	4.00	3.70	3.50	2.55	A						
2						2.00	2.75	3.30	3.60	3.80	4.00	4.05	3.90	3.75	A	A	3.55	3.10	2.35					
3						1.90	2.50	3.05	3.45	3.60	3.80	3.75	4.00	4.00	3.95	3.75	3.45	2.80	2.20					
4						1.80	2.50	3.00	3.50	3.50	3.60	A	A	A	3.95	3.55	3.40	3.00	2.05					
5							A	A	3.50	3.60	3.55	3.90	3.95	3.75	3.80	I 3.25 A	2.85	A	2.30					
6						1.70	2.50	3.00	3.40	3.55	3.80	3.70	3.70	A	A	A	3.30	2.80	2.10					
7						1.70	2.50	3.00	3.35	C	A	3.90	4.05	4.00	3.90	3.65	3.40	2.80	A					
8						A	I 2.50 A	3.10	A	A	A	A	A	A	A	A	A	2.80						
9						F	2.80	3.10	A	A	A	A	A	A	A	3.70 A	C	3.60	2.00					
10						1.70	2.75	3.25	3.35	3.60	3.60	A	A	A	A	A	A	3.00						
11						A	2.50	3.00	3.00	A	C	4.00	R	4.00	3.90	3.60	3.45	2.90	A					
12						R	2.50	3.00	A	A	A	4.00	A	R	3.80	A	3.40	2.90	2.00					
13						1.70	2.70	3.20	3.45	3.80	A	A	A	A	A	3.50	3.15	2.80						
14						1.60	2.45	3.00	3.40	3.55	3.65	3.60	I 3.50 A	A	3.60	3.65	3.40	2.90						
15							2.50	3.00	3.30	3.50	•3.50	A	A	A	3.75	3.50	3.30	2.80	A					
16							A	3.20	3.35	I 3.65 A	3.80	I 3.70 A	I 3.75 A	3.95	A	3.50	3.45	3.00	2.00					
17						1.55	2.60	3.05	3.55	3.80	I 3.80 A	3.75	A	A	3.90 A	3.75 A	3.45 A	2.85						
18						F	2.70	3.15	3.50	3.90	4.00	4.05	4.05	4.05	4.00	3.70	3.40	2.70						
19							I 2.20 A	3.00	3.50	3.55	3.50	A	A	4.05	A	3.50	3.30	2.85	2.00					
20							2.50	3.00	3.50	3.60	3.75	3.80	4.05	3.80	3.75	3.55	3.25	2.60	1.70					
21						1.70	2.45	3.00	3.45	3.50	3.80	3.95	4.00	3.85	3.80	3.50	3.20	2.75	A					
22							2.45	3.00	3.30	3.50	3.65	3.60	I 3.65 R	3.50	A	3.55	3.25	2.80	A					
23							A	3.05	A	A	A	A	4.00	4.00	3.95	3.60	3.30	2.75						
24						A	2.40	A	A	A	A	A	A	A	A	3.50	3.25	2.70	A					
25						A	A	3.10	A	3.50	A	A	A	A	A	A	3.30	2.70	A					
26						A	2.45	3.00	3.45	3.55	A	3.75	4.00	3.90	3.85	3.70	3.45	2.70						
27							2.50	3.20	3.50	3.80	3.90	A	A	4.00	4.00	3.80	3.25	2.75	1.80					
28							2.40	3.00	3.50	A	A	A	A	A	R	R	3.30 F	A						
29						R	2.50	3.05	3.50	3.75	3.80	3.95	3.95	3.80	A	A	A	A						
30							A	3.10	3.45	3.60	3.80	3.60	3.55	A	A	A	3.20	2.50	A					
31							2.50	3.10	3.50	3.70	3.80	A	3.75	A	A	R	3.50	2.75						
No.						11	26	29	25	23	20	18	17	16	16	21	27	27	11					
Median						1.70	2.50	3.05	3.50	3.60	3.80	3.90	3.95	4.00	3.90	3.55	3.40	2.80	2.00					

foE.

Sweep 0.85 Mc to 22.0 Mc in 2 min sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | 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	6.5M	6.8M	6.6M	7.0M	4.6M	3.0M	4.5M	7.0M	6.5M	5.0M	7.5M	8.0M	6.5M	G	5.7M	6.5M	7.0M	6.5M	5.6M	4.2M	3.2M	4.3M	3.5M	6.5M
2	6.5M	8.0M	8.0M	7.0M	4.0M	3.0M	3.4	4.0	4.2	6.8M	6.6M	6.6M	7.0M	10.5M	16.3M	8.0M	4.1	4.4M	4.5M	6.0M	4.1M	4.5M	6.5YM	4.5M
3	6.6M	4.5M	4.1M	3.1M	6.1M	3.1M	6.5M	5.5M	4.8M	8.6M	8.5M	9.7M	4.4	4.5	4.3	4.1	4.0	4.5M	5.2M	4.6M	5.0M	6.5M	5.6M	4.4M
4	4.5M	3.4M	3.5M	3.1M	2.1YM	2.6M	3.5M	4.2M	4.5M	5.2M	4.8M	5.2M	5.2M	6.8M	4.7M	G	3.7	5.5M	4.5M	6.7M	4.5M	7.0M	11.5M	8.0M
5	9.5M	6.7M	4.4M	4.9M	6.8M	6.5M	8.0M	5.2M	10.0M	12.0M	7.5M	8.0M	10.5M	8.0M	11.0M	7.4M	8.7M	4.9M	3.0M	4.7M	2.6M	6.8M	11.5M	4.5M
6	4.2M	7.0M	3.0M	4.1M	4.7M	2.1M	3.1	6.0M	11.7M	11.3M	7.0M	5.0M	7.2M	5.5M	5.4M	5.0M	G	5.5M	9.6M	6.7M	5.1M	6.6M	5.7M	3.5M
7	3.5M	3.1M	3.5M	2.7M	3.3M	3.0M	G.	3.6	4.0	C	4.5	G	4.5	4.7	5.1M	4.5	6.5M	10.0M	4.2M	4.5M	3.2M	3.5M	4.5M	6.7M
8	3.1M	3.8M	2.6MF	3.5M	1.4	3.5M	4.4M	G	4.3M	4.9M	4.7M	4.9M	10.3M	8.0M	6.5M	5.3M	4.4M	4.7M	5.2M	5.2M	4.4M	4.4MF	3.2M	3.7M
9	3.1M	3.5MF	2.4MF	2.0MF	2.2Y	2.2M	3.5	3.8	4.4M	5.3M	8.0M	6.9M	5.0M	4.5M	4.5M	4.5M	C	6.6M	5.3M	4.6M	6.5M	4.6M	6.9M	3.7M
10	2.5M	2.1YM	2.8YM	2.5M	3.0M	3.0M	3.2	3.5	5.5M	7.5M	6.5M	7.6M	7.7M	6.6M	6.3M	4.6M	4.1M	4.9M	5.7M	4.8M	4.5M	6.5M	3.3M	3.7M
11	4.1M	3.2M	3.0M	3.0M	2.2M	3.1M	G	5.0M	6.7M	8.0M	C	4.2	5.0	4.4	4.2	4.2	4.0	3.5	3.5M	3.0M	4.2M	4.2M	3.2M	3.2M
12	E	6.5MVF	3.5MF	3.0MF	2.2MF	1.9	4.2M	6.0M	9.7M	6.5M	3.8	G	4.5M	G	G	4.3M	G	3.5M	24	3.4M	3.3M	4.4M	3.1M	3.3M
13	3.0M	3.1M	2.6M	2.0M	2.2YM	3.5M	G	4.0	6.5M	8.0M	5.0M	5.2M	6.0M	5.8M	5.3M	G	G	G	3.1M	3.1M	4.5M	5.6M	4.5M	4.2M
14	4.1M	3.0M	2.2M	2.3M	2.5M	2.1	3.5	4.5M	4.5	6.2M	6.1M	5.9M	6.5M	5.0M	6.2M	10.0M	9.7M	6.5M	4.6M	3.1M	3.1M	5.7M	6.6M	3.0M
15	2.3M	3.1YM	2.5M	3.5M	3.5M	3.2M	4.2M	4.6M	5.6M	6.2M	7.0M	8.0M	6.6M	4.7M	4.0	4.1	3.5	3.2	4.4M	3.5M	3.5M	3.0M	2.6M	3.7M
16	3.1M	3.1MF	2.1MF	3.0M	2.1M	3.2M	3.5M	G	G	4.2M	G	4.5M	5.2M	G	4.5M	G	3.9	3.5M	4.0M	2.0YM	E	1.8YM	9.6M	5.6M
17	6.9M	8.0M	6.8M	4.1M	4.5M	3.6M	3.0	4.0	4.2	4.6	8.0M	6.4M	6.5M	5.1M	7.0M	9.5M	7.2M	7.2M	7.0M	3.5M	3.8M	3.5M	3.7M	4.2M
18	2.4M	2.6M	2.2M	2.9M	2.3MF	2.2MF	2.4G	3.6	4.2	4.4	4.5	G	4.5	4.7	G	G	3.9	3.7	6.5M	2.9M	8.0M	5.7M	6.6M	4.2M
19	3.5M	3.0M	4.2M	2.4M	2.1M	2.0M	3.5M	4.4M	4.0	4.4	4.5	6.8M	4.5	4.4M	5.0M	G	G	G	2.2	2.4M	E	5.2M	4.2M	2.7M
20	2.0YM	E	3.0M	2.2M	2.9M	2.5M	3.6M	3.5	4.9M	5.3M	5.3M	5.3M	4.5	5.0M	4.5	4.5M	5.3M	4.7M	5.5M	3.1M	2.4M	2.6M	2.2M	2.7M
21	2.4M	E	2.2M	3.8M	2.6M	G	G	3.5M	3.7	5.2M	5.5M	7.5M	6.1M	G	4.0	4.2	6.5M	8.0M	6.5M	2.7M	3.5M	7.0M	4.5M	4.2M
22	3.6M	3.0M	4.0MF	3.2MF	1.4	3.5M	4.0M	5.0M	6.3M	5.3M	4.2	4.2	5.5M	4.2	4.7M	3.8	6.1M	6.5M	6.5M	2.7M	4.5M	4.5MF	3.5MF	2.4M
23	E	E	1.1	8.0M	6.5MF	4.0MF	3.4	3.8	7.1M	6.2M	4.8M	5.0M	G	G	4.2	4.5	6.4M	4.9M	5.0M	7.5M	8.0M	3.5M	3.1MF	2.5MF
24	2.5M	2.8MF	2.2MF	2.4MF	2.1MF	2.5	G	3.4	4.2M	4.5M	4.5M	4.9M	4.5M	5.1M	4.4M	4.0	3.7	4.4M	2.3	2.2M	2.3M	3.7MF	2.3M	3.2M
25	2.6M	3.0MF	3.0MF	3.0MF	2.7MF	2.0M	3.5M	4.2M	4.7M	5.7M	5.6M	6.1M	5.2M	5.2M	5.2M	3.9M	3.9	3.1	3.8M	3.0M	3.8M	3.5M	3.1M	2.4YM
26	3.5YM	2.3YM	2.7M	2.1YM	1.2	2.2M	3.0	3.5	G	5.2M	5.0M	G	G	G	4.0	5.0	5.5M	4.5M	3.8M	4.9M	3.0M	3.7M	4.1M	E
27	2.2M	E	2.7M	2.2MF	2.3MF	3.2MF	2.8	3.7	5.5M	G	4.2	5.0M	6.1M	G	4.5	5.2M	4.0	3.1	G	3.1M	6.6M	4.6M	4.2M	4.7M
28	4.2M	2.2M	3.1M	3.2M	2.6M	G	4.4M	4.6M	4.1	4.4M	4.0	4.2	4.0M	4.0M	G	G	3.5M	4.2M	7.2M	6.9MF	2.4M	2.4M	3.2M	2.5M
29	2.2M	E	E	3.0MF	2.2MF	2.0	3.5	3.8	4.4	5.7M	4.7	6.5M	6.6M	6.0M	5.7M	9.5M	5.0M	4.9M	6.0M	4.6M	4.2M	6.9M	6.5M	5.0M
30	3.6M	3.3YM	3.5M	4.6M	3.3M	3.6M	3.6M	3.7	5.5M	5.9M	4.3	6.8M	6.0M	7.5M	5.9M	4.5M	G	3.0	2.2M	5.9M	10.8M	8.0M	5.6M	3.2M
31	3.1MF	3.7M	3.0M	3.6M	4.0M	3.2M	2.7	3.8	4.0	5.0M	4.2	4.2	5.1M	5.3M	5.2	4.5	8.0M	6.5M	6.5M	4.1M	3.1YM	2.2YM	2.1YM	4.2M
No.	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	30	31	31	31	31	31	31	31
Median	3.1M	3.1M	3.0M	3.0M	2.6M	3.0M	3.5	4.0	4.5M	5.3M	4.9M	5.2M	5.2M	4.7M	4.7M	4.5	4.0	4.7M	4.6M	4.1M	3.8M	4.5M	4.2M	3.7M
U.Q	4.2	3.8	3.5	3.8	4.0	3.2	4.0	4.6	6.3	6.5	6.6	6.8	6.5	5.8	5.7	5.2	6.4	6.5	6.0	5.2	4.5	6.5	6.5	4.5
L.Q	2.4	2.3	2.4	2.4	2.2	2.1	2.8	3.6	4.2	4.9	4.5	4.2	4.5	4.0	4.2	3.9	3.7	3.5	3.5	3.0	3.1	3.5	3.2	3.0
Q.R	1.8	1.5	1.1	1.4	1.8	1.1	1.2	1.0	2.1	1.6	2.1	2.6	2.0	1.8	1.5	1.3	2.7	3.0	2.5	2.2	1.4	3.0	3.3	1.5

foEs

Sweep 0.85 Mc to 22.0 Mc in 2 min sec in automatic operation.

IONOSPHERIC DATA

Aug.1957 | fbEs | 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	1.5	2.2	A	3.0	A	G	4.0	6.2	4.3	G	6.6	7.4	5.5	G	4.0	4.1	5.5	3.5	2.6	2.7	2.1	2.5	1.9	1.6
2	A	2.5	A	A	1.6	G	G	G	4.2	5.7	6.1	6.0	6.1	A	A	4.3	G	G	3.3	4.5	2.9	3.0	2.5	2.5
3	3.0	1.8	1.6	2.0	3.9	G	5.6	4.5	G	8.5	7.5	A	G	G	G	G	4.0	3.5	4.0	4.0	4.6	1.6	4.0	2.4
4	1.9	1.6	1.6	1.3	E	G	G	G	G	4.8	4.5	4.4	G	5.5	G	G	G	4.8	3.2	3.4	3.0	2.3	7.0	5.5
5	5.5	5.3	2.3	A	5.1	2.9	3.0	4.6	4.5	A	5.0	7.6	7.5	7.1	G	5.4	8.5	3.7	A	2.5	1.6	1.8	2.5	1.9
6	1.6	A	E	1.2	1.2	G	G	4.8	6.5	6.1	5.1	4.7	U 7.5 B	4.8	5.0	4.4	G	4.8	7.0	5.9	3.5	2.5	A	2.9
7	2.9	1.2	2.3	1.1	1.6	G	G	G	G	C	4.0	G	G	G	G	G	G	A	3.0	2.5	2.0	2.9	2.4	5.5
8	1.6	2.5	1.6	1.6	1.0	G	G	G	G	4.1	4.0	4.5	8.5	7.0	5.5	4.4	3.6	3.9	5.0	4.0	3.4	2.0	2.1	2.5
9	1.5	1.1	E	E	E	G	G	G	3.6	4.0	5.4	4.3	4.5	G	4.4	G	C	4.0	4.0	4.0	1.9	1.9	3.0	E
10	E	1.5	E	E	1.0	G	G	G	4.8	6.0	G	5.8	5.5	4.5	4.0	4.0	G	G	4.5	4.0	A	2.4	1.6	2.4
11	2.1	1.8	1.5	1.3	1.8	G	G	G	4.2	5.5	C	4.2	4.7	4.4	G	4.1	G	3.5	2.8	2.0	2.5	2.5	1.8	1.9
12	E	1.4	E	E	1.1	1.8	3.2	5.5	3.6	4.1	G	G	4.4	G	G	G	G	G	G	2.3	2.6	2.5	2.0	2.0
13	1.7	1.7	A	E	E	G	G	G	5.5	7.5	4.4	4.5	4.9	4.5	4.0	G	G	G	G	2.1	A	2.9	A	2.5
14	2.6	1.5	E	1.1	1.3	2.0	G	G	4.5	5.5	5.3	5.3	4.5	4.4	4.9	A	A	5.8	3.4	2.4	1.9	E	4.0	1.9
15	E	1.3	1.2	A	1.5	2.2	G	3.8	5.0	5.5	5.2	5.2	5.0	4.1	G	G	G	G	3.0	1.9	2.3	1.9	E	2.7
16	1.7	1.6	1.6	2.0	1.0	2.0	G	G	G	G	G	G	4.5	G	G	G	G	G	3.3	E	E	E	E	3.5
17	6.3	1.6	4.0	A	2.0	2.5	G	G	4.1	4.4	5.7	5.9	6.0	4.5	4.6	6.0	5.2	6.4	5.5	2.3	2.6	1.8	1.9	1.9
18	1.6	1.7	1.3	1.2	1.0	G	G	G	G	4.0	G	G	G	4.6	G	G	G	G	3.5	2.0	4.5	2.0	2.1	E
19	2.0	1.9	A	A	1.0	1.7	G	G	G	4.0	4.2	4.5	4.5	G	4.2	G	G	G	G	1.8	E	2.9	A	E
20	E	E	1.0	1.2	1.5	1.7	G	G	G	4.7	G	G	G	G	4.5	G	4.9	3.9	3.5	1.6	E	E	1.9	1.9
21	E	E	E	1.7	1.2	G	G	G	G	4.5	5.0	6.0	5.5	G	G	4.0	5.5	6.0	5.0	E	2.7	2.7	E	2.5
22	2.5	2.5	2.5	2.2	1.2	2.6	3.4	4.2	4.6	4.5	G	4.2	5.0	4.2	4.4	G	5.5	5.9	5.5	E	2.5	2.0	1.9	E
23	E	E	E	3.3	2.5	1.9	2.5	G	5.2	5.0	4.0	4.0	G	G	G	G	5.5	4.4	5.0	5.5	5.5	2.5	1.9	E
24	1.5	E	E	E	E	1.7	G	G	G	G	4.0	4.2	4.0	4.4	3.9	G	G	3.5	2.3	E	E	2.0	E	2.5
25	1.5	1.6	1.8	1.7	1.3	G	G	G	3.9	5.0	4.6	5.5	4.5	4.8	4.5	G	G	G	G	1.8	2.8	2.5	1.9	E
26	E	1.2	1.3	1.0	E	G	G	G	G	4.4	G	G	G	G	4.0	G	4.6	3.4	3.0	2.6	2.0	2.5	2.5	E
27	1.4	E	E	E	1.2	1.8	G	G	5.0	G	G	4.5	4.6	G	4.4	G	4.0	G	G	1.9	3.0	2.0	1.9	3.4
28	1.8	1.3	1.6	1.2	E	G	3.3	G	G	4.0	G	G	B	B	G	G	G	3.5	5.5	4.9	E	E	E	1.8
29	1.4	E	E	1.2	1.2	1.8	G	G	G	5.0	4.8	5.6	5.5	5.1	4.3	8.5	G	4.0	2.9	1.9	2.4	2.9	2.5	4.8
30	1.6	1.3	1.5	A	1.3	2.3	G	G	A	5.2	4.2	5.5	5.4	5.4	4.2	3.7	G	G	G	4.9	5.5	5.2	2.5	2.0
31	1.5	2.8	1.8	2.1	2.1	2.1	G	G	3.9	4.0	G	4.3	B	4.5	G	G	7.0	5.8	5.1	2.5	1.6	E	E	2.0
No.	31	31	31	31	31	31	31	31	31	30	30	31	29	30	31	31	30	31	31	31	31	31	31	31
Median	1.6	1.6	1.5	1.3	1.2	G	G	G	3.9	4.6	4.2	4.5	4.6	4.4	4.0	G	G	3.5	3.3	2.4	2.5	2.3	2.0	2.0

fbEs

Sweep 0.85 Mc to 22.0 Mc in 2 min ~~sec~~ in automatic operation.

IONOSPHERIC DATA

Aug. 1957 | f-min | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	E	E	1.80	2.10	2.40	2.30	3.00	2.30	2.00	2.20	1.90	1.60	1.60	E	E	E	1.60	E
2	E	E	E	E	E	E	1.55	1.80	2.00	2.05	3.30	3.00	2.10	2.40	2.90	2.30	1.95	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	1.70	2.05	2.00	2.10	2.40	2.40	2.50	2.30	1.90	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	E	1.60	1.90	2.00	1.95	2.05	2.45	2.05	2.00	1.95	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	1.55	1.90	2.00	2.05	2.40	2.25	2.00	2.00	1.55	1.95	E	E	1.60	E	E	E
6	E	E	E	E	E	E	1.60	1.60	1.95	1.95	2.10	2.30	2.40	2.50	2.00	1.95	1.80	1.60	E	E	E	E	E	E
7	E	E	E	E	E	E	E	1.55	1.85	C	2.00	2.20	2.50	2.05	2.20	2.05	1.90	E	E	E	E	E	E	E
8	1.40	E	E	E	E	E	E	E	1.90	2.55	2.05	2.55	2.30	2.50	2.25	1.90	1.90	E	E	E	E	E	E	E
9	1.40	E	E	E	E	E	E	E	1.80	2.00	2.00	2.05	2.50	2.50	1.85	1.80	C	1.60	E	E	E	E	E	E
10	E	E	E	E	E	E	E	1.95	1.95	1.90	1.95	3.20	2.90	2.40	1.95	1.95	1.90	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	1.55	2.00	2.20	C	2.55	2.55	2.50	2.25	2.25	1.90	E	1.60	E	E	E	1.60	E
12	1.50	E	E	E	E	E	1.85	2.00	2.00	1.90	2.20	2.50	2.40	2.55	2.00	1.80	E	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	1.60	2.00	2.30	2.30	2.05	2.05	2.05	1.95	1.60	1.60	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	1.70	1.90	2.05	2.30	2.50	2.30	1.95	1.95	1.80	1.65	E	E	E	E	E	E
15	E	E	E	E	E	E	E	1.60	1.95	1.90	1.90	2.05	2.05	1.90	2.30	2.00	1.75	E	E	E	E	E	E	E
16	1.50	E	E	E	E	E	E	E	1.60	2.00	2.00	2.40	2.05	2.30	2.05	1.80	1.85	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	2.00	2.05	2.55	2.55	2.50	2.30	2.55	2.30	1.60	E	E	E	E	E	E
18	1.40	1.20	E	E	E	E	E	1.70	1.90	2.00	2.05	2.30	2.30	2.40	1.95	1.95	1.95	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	1.60	1.60	2.00	2.05	2.00	2.50	2.40	2.00	1.90	2.20	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	1.55	2.00	2.00	2.05	2.50	2.45	1.90	1.90	1.80	1.60	E	E	E	E	E	E
21	E	1.20	E	E	E	E	E	E	1.70	2.00	2.45	2.05	2.40	2.55	1.90	1.90	1.80	1.80	E	E	E	E	E	E
22	1.60	E	E	E	E	E	E	1.90	1.80	1.90	2.25	2.25	2.40	2.30	2.00	1.90	1.90	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	2.00	1.95	2.00	2.05	2.10	2.00	2.00	1.80	1.75	1.60	E	E	E	E	E	E
24	1.50	E	E	E	E	E	E	E	E	1.80	2.00	2.00	2.10	2.00	2.00	2.00	1.60	E	E	E	E	E	E	E
25	1.40	E	E	E	E	E	E	E	1.90	1.90	2.50	2.50	2.40	2.00	2.00	2.00	1.90	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	1.80	1.90	2.10	2.50	2.30	2.30	2.05	1.90	1.90	1.80	1.90	E	E	E	E	E	E
27	1.40	E	E	E	E	E	1.90	1.90	1.90	1.95	2.00	2.00	2.05	1.95	2.00	1.90	1.80	1.60	E	E	E	E	E	E
28	E	E	E	E	E	E	E	1.55	1.80	2.10	2.90	2.00	2.50	3.00	2.90	2.90	1.80	E	E	E	E	E	E	E
29	1.40	E	E	E	E	E	E	1.80	1.90	2.00	2.00	2.50	2.40	2.00	2.00	2.70	1.60	1.80	E	E	E	E	E	E
30	E	E	E	E	E	E	1.55	1.70	1.95	2.05	2.00	2.05	2.50	2.90	2.30	1.90	1.80	1.60	E	E	E	E	E	E
31	1.50	E	E	E	E	E	E	1.80	2.00	1.95	2.00	2.65	3.05	3.00	2.00	2.90	2.40	E	E	E	E	E	E	E
No.	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	30	31	31	31	31	31	31	31
Median	E	E	E	E	E	E	E	1.55	1.85	2.00	2.00	2.30	2.40	2.40	2.00	1.95	1.80	E	E	E	E	E	E	E

Note : Lowest limit of observable frequency is 1.50 Mc/s due to radio interference except from 00.00 to 05.00

f-min

Sweep 0.85 Mc to 22.0 Mc in 2 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

A 6

IONOSPHERIC DATA

Aug. 1957 | (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	I 2.70 R	2.80	R	2.55	2.70	2.80	2.85	2.80	2.85	3.05	2.95	2.70	2.75	2.70	2.65	2.65	2.65	2.80	2.85	2.85	2.55	2.55	R	2.45
2	2.55	2.60	2.45 F	2.55	2.60	3.00	3.05	3.00	2.85	2.65	2.65	2.65	2.55	A	A	2.60	2.70	2.80	2.75	2.85	2.55	2.70	2.75	2.60
3	2.55	2.70	2.55	2.75	2.85	2.90	2.80	2.85	2.70	3.05	2.40	2.65	2.70	2.70	2.75	2.70	2.75	2.75	2.80	2.95	2.70	2.65	2.80	2.70
4	2.65	2.55	2.65 Z	2.60	2.40 V	3.10 V	2.90	3.15	3.25	3.00	2.70	2.60	2.75	2.60	2.75	I 2.75 R	2.80	2.85	2.80	2.80	2.80	2.90	2.60	2.60
5	2.70	2.55	2.55	2.70	2.65	2.75	2.90	2.90	2.75	A	2.75	2.75	2.80	2.80	2.75	2.90	2.90	2.80	2.90	2.75	2.60	2.70	2.75	2.80
6	2.80	I 2.70 A	2.70	2.75 F	2.50 Z	2.65	2.90	2.95	2.50 H	A	2.65	2.60	2.70	2.65	2.55	2.65	2.60	2.55	2.75	2.80	2.70	2.50	I 2.60 R	2.65
7	2.70	2.45	2.40	2.40	2.45	2.60	2.90	3.00	2.35	I 2.90 C	2.75 H	3.00	2.90	2.90	2.80	2.80	J 2.80	I 2.85 A	2.80	2.80	2.75	2.80	2.40	2.45
8	2.60	2.60	2.60	2.55	2.55	2.55	2.90	3.00 H	3.10	2.80	2.70	2.70	A	2.70	2.70	2.80	2.65	2.80	2.80	2.90	2.85	R	R	2.70
9	2.55	2.55	2.65	2.70	2.65	2.80	2.85	2.90	3.00	2.95	2.85	2.65 H	2.65	2.65	2.65	2.70	C	2.80	2.80	I 2.70 C	2.85	2.75	2.85	2.85
10	2.60	2.50	2.50	2.55	2.55	2.60	2.95	3.15	3.00	2.70 H	2.65	2.65	2.65	2.70	2.70	2.65	2.80	2.80	2.90	2.85	2.55	2.60	2.65	2.75
11	2.80	2.90	2.80	2.55	2.65	2.55	2.70	2.85	2.60	2.65	C	2.45	2.45	2.45	2.30	2.45	2.60	2.70	2.75	2.65	2.55	2.60	2.60	2.70
12	2.60	2.65	2.60	2.50	2.60	2.75	2.90	2.80	3.00	2.85	2.65	2.70	2.70	2.60	2.55	2.70	2.75	2.75	2.90	2.85	2.65	2.65	2.75	2.65
13	2.60	2.55	2.60	2.45	2.50	2.45	2.95	3.05	2.70	2.60	2.70	2.55	2.70	2.60	2.60	2.70	2.70	2.80	2.85	2.85	2.40	2.65	2.55	2.60
14	2.45	2.70	2.75	2.50	2.50	2.70	3.05	2.90	3.10	2.60	2.60	2.75	2.70	2.70	2.65	I 2.75 A	2.70	2.90	2.90	2.85	2.80	2.90	2.70	2.55
15	2.65	2.50	2.60	2.65	2.60	2.70	2.75	3.00	2.75	2.85	2.75	2.65	2.60	2.65	2.65	2.85	2.80	2.80	3.00	2.65	2.55	2.80	2.65	R
16	2.65	2.40	2.60	2.70	2.65	2.80	2.85	2.95	2.95	2.65	2.75	2.65	2.65	2.75	2.65	2.75	2.80	2.80	2.95	2.90	2.60	2.60	2.65	2.50 F
17	2.55	2.55	2.60	2.60 Z	2.65	2.85	2.95	3.10	2.85	2.75	2.85	2.70	2.80	2.75	2.70	2.80	2.75	2.80	2.85	2.80	I 2.70 R	2.65	2.70	2.70
18	2.70	2.55	2.55	2.65	2.65	2.85	3.10	3.15	2.65	2.95	2.85	2.70	2.65	2.70	2.70	2.75	2.70	2.85	2.95	2.90	2.80	2.75	2.60	2.40
19	2.40	2.60	2.55	2.50	2.60	2.65	2.75	2.70	2.70	2.80	2.80	2.70	2.65	2.70	2.70	2.80	2.80	2.75	2.80	2.70	2.70	2.60	2.60	2.70
20	2.50	2.60	2.60	2.75	2.60	2.60	2.90	3.15	2.75 H	2.95	2.90	2.80	2.80	2.80	2.75	2.90	R	2.90	2.90	2.95	2.95	2.70	2.55	2.55
21	2.55	2.55	2.55	2.55	2.60	2.45	2.90	3.00	2.85	2.80	2.55	2.60	2.35	2.30	2.25	2.60	2.55	2.65	2.85	2.75	2.55	2.45	2.55	2.55
22	2.60	2.60	2.55	2.55	2.45	2.70	2.85	2.70	2.60	2.50	2.55	2.45	2.50	2.50	2.65	2.75	2.70	2.80	3.00	2.90	2.65	2.55	2.60	2.65
23	2.60	2.60	2.55	2.55	2.70	2.70	2.75	2.90	2.90	3.00	I 2.75 R	2.70	2.80	2.70	2.70	2.75	2.75	2.85	2.80	2.80	2.80	2.65	2.65	2.70
24	2.65	2.65	2.70	2.60	2.70	2.60	2.85	2.95	2.90	2.85	2.80	2.70	2.80	2.75	2.70	2.75	2.90	2.90	2.85	2.80	2.80	2.70	2.80	2.60
25	2.65	2.60	2.65	2.70	2.75	2.80	2.95	3.10	2.95	3.00	2.85	2.75	2.75	2.75	2.80	2.75	2.75	2.90	2.90	3.00	2.85	2.65	2.60	2.65
26	2.65	2.70	2.70	2.70	2.55	2.60	2.85	3.10	3.10	3.10	2.75	2.75	2.75	2.70	2.70	2.75	2.70	2.90	2.90	2.80	2.60	2.65	2.60	2.60
27	2.60	2.40	2.60	2.55	2.50	2.65	2.85	3.10	2.95	2.70	2.85	2.75	2.60	2.75	2.80	2.65	2.70	2.80	2.95	2.80	2.85	2.65	2.65	2.55
28	2.60	2.65	2.65	2.50	2.45	2.60	2.90	2.80	2.80	2.80	2.75	2.80	2.85	2.75	2.80	2.70	2.80	2.80	2.75	2.70	2.85	2.65	2.55	2.60
29	2.60	2.50	2.55	2.70	2.55	2.65	3.00	3.05	3.05	2.90	2.70	2.95	2.90	2.75	2.85	2.70	2.90	2.85	2.95	2.80	2.70	2.60	2.55	2.60
30	2.70	2.55	2.55	2.70	2.65	2.95	3.05	2.75	2.70 H	2.85	2.85	2.60	2.80	2.70	2.70	2.65 H	2.70	2.75	2.70	2.80	A	2.60	2.70	2.60
31	2.55	2.55	2.50	2.45	2.50	2.50	2.85	3.25	2.95	2.85 H	2.80	2.85	2.80	2.80	2.80	2.80	2.75	2.85	2.95	3.00	2.70	2.55	2.55	2.65
No.	31	31	30	31	31	31	31	31	31	29	30	31	30	30	30	31	29	31	31	31	30	30	29	30
Median	2.60	2.60	2.60	2.55	2.60	2.70	2.90	3.00	2.85	2.85	2.75	2.70	2.70	2.70	2.70	2.75	2.75	2.80	2.85	2.80	2.70	2.65	2.60	2.60

(M3000)F2

Sweep 0.85 Mc to 22.0 Mc in 2 min sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | (M3000)F1 | 135° E Mean Time (G.M.T. + 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	A	L	3.65	A	A	I 3.35 A	3.40	3.40	3.40	A	L	L					
2							L	3.85 L	3.45	A	A	A	A	A	A	3.25	3.35	L						
3							A	L	L	A	A	A	3.40	3.35	3.35	L	L	L						
4								L	L	3.55	3.45	3.35	3.30	L 3.40 L	3.30 L	L	L	A						
5							L	A	L	A	3.10	A	A	A	L	A	A	L						
6							L	A	A	A	3.45	3.35	A	3.45	3.10	3.45 L	L	A	A					
7						3.65 L	4.45 L	3.55 L	I 3.30 L	C	3.50 H	3.45 H	3.35 H	3.35 H	3.35 H	L H	L	A						
8							L	L H	L H	3.55	L H	3.15 H	A	A	A	L	L	L						
9								L	L	L	3.40	L	3.15	3.15	L	3.35	C	3.20						
10							L	L	L	A	3.50	A	3.20	3.35	3.30	L	L	3.75 L						
11							I 3.50 L	I 3.45 L	3.35	L 3.40 A	C	3.60	I 3.40 R	3.40	3.35	3.25	3.35	3.35 L	L					
12								A	L	3.45	3.25	3.35 H	3.25 H	3.50	3.50 H	3.55	3.25 L	L						
13							L	L	A	A	3.50	I 3.40 L	3.25	3.40	I 3.30 L	3.15	L	L						
14							L	L	3.65	L	L	3.30	3.30	3.30	3.20	A	A	A						
15							L	L	A	A	3.50	L	3.30	3.40	3.15 H	3.25 H	L H	L						
16							L	3.85	L H	I 3.35 LH	L	L H	3.40	3.30 H	3.20 H	3.60	L H	L						
17								L	3.90	L	A	A	I 3.30 A	3.50	3.25	A	L	A						
18								L	3.55 L	3.65 H	3.45	3.45	I 3.40 LH	3.35 L	3.20	3.50	3.60 L	L						
19							L	L	L H	3.45	L	3.65	3.30	3.15	3.25	3.30 L	L	L						
20								L	L	3.75	3.65	3.50 L	3.30	L H	L	3.60 LH	L	L						
21							L	L	L	L	3.40	A	I 3.60 A	3.25	3.20	3.30 H	A	A						
22							L	3.35	3.15	3.45	R	3.35	3.00	3.05 H	3.35	3.35	A	A	A					
23							L	L	A	3.60 L	L H	I 3.50 LH	3.40 H	3.10 H	3.45	3.30	A	A						
24							L	L	L	L H	L	3.25	3.35	3.40 L	3.35 L	3.30	L	L						
25							L	L	L	A	L	3.40	3.45	3.35	L	3.60	L	L						
26							L	L	3.90	L	L	L	L H	3.35 H	3.30	3.45	L	L						
27							L	L	L	L	L	3.40	L H	3.40	L	3.40	L							
28								L	3.30	L	3.10	3.45	3.30	B	3.35 LH	I 3.45 L	L	L						
29								L	L	L	L	L	L	3.45	L	A	L							
30								L	L	L	3.65 H	3.15	L	L	L	L	L							
31								L	L	L	3.40	L	3.40	3.65	3.35 L	L	A	A						
No.						1	2	5	9	11	15	18	23	25	22	20	4	3						
Median						3.65	4.00	3.55	3.45	3.55	3.45	3.40	3.35	3.35	3.30	3.40	3.35	3.35						

(M3000)F1 Sweep 0.85 Mc to 22.0 Mc in 2 min sec in automatic operation.

The Radio Research Laboratories, Japan.

A 8

IONOSPHERIC DATA

Aug. 1957 | 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							290	300	320	260	310	I 375 A	340	375	370	350	350	320	290					
2							250	250	350	390	360	390	350	A	A	380	350	300						
3							300 A	295 L	260	A	A	A	340	345	330	335	310 L	300						
4								290	250	320	400	400	340	340	340	I 330 L	290 L	295						
5							L	330	305	A	405	350 A	350	355	310	310	I 290 A	I 290 AL						
6							270	300	305 H	A	350	400	350	340	385	340 L	L	340	315					
7						345	330	290	L	C	360 H	340	340	340	320	300	L	A						
8							290	L H	L	345	300	380	A	A	330	I 325 L	325 L	345						
9								250	290	300	340	L	395	390	360	345	C	340						
10							270	260	L	A H	390	380	375	345	360	L	315	290						
11							290	300	360	395	C	495	530	520	600	520	450	390	L					
12								300	290	330	395	355	380	390	395	300	345	300 L						
13							280 L	250	A	A	330	L	350	360	360	350	330 L	290 L						
14							260 L	250 L	250	350	345 L	340	370	345	390	I 350 A	A	310						
15							L	255	260	290	355	350	380	340	395	340	300 L							
16							L	260	280 L	I 335 L	L	350 L	360	370	390	330	345	300						
17								L	255	310 L	310	345	340	325	350	330	350 L	A						
18								250	320	300	320	370	L	350	350	335	295	I 305 L						
19							270 L	250	L	325	335	290	370	355	355	340	290 L	L						
20								250 L	250 H	295	270	340	350	L	300 L	310	300 L	300 L						
21							290 L	255	250	290 L	405	390	470	470	525	400	410	A						
22							275	345	445	455	460	480	460	450	420	380	355	A	300 A					
23							250	265	280	300	I 315 L	340 L	360	400	350	345	330	290						
24							260 L	270 L	270	260 L	L	360	340	350	340 L	340	290 L	290						
25							250	245	260	260	260 L	350	320	345	L	330 L	L	300 L						
26							290	260	245	260	270 L	350 L	L	350	350	330	L	290						
27							270 L	255	I 260 L	L	L	360	I 355 L	345	320 L	345	L	290 L						
28								L	340 L	L	380	320	345	310	340	310 H	L	L						
29								270 L	270	255	255	310	340	350	340 L	A	300 L							
30								L	260 H	280 L	310	380	295	350	I 320 L	280 H	L							
31								255	250	250 H	350	310 L	345	320	300	L	A	300						
No.						1	18	27	26	23	26	28	28	28	29	28	21	22	3					
Median						345	270	260	270	300	340	350	350	350	350	340	325	300	300					

h'F2

Sweep 0.85 Mc to 22.0 Mc in 2 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

A 9

30

IONOSPHERIC DATA

Aug. 1957 | h'F | 135° E Mean Time (G.M.T.+ 9h.) | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	295	300^{A}	300	310^{A}	245	255^{A}	A	240	225	A	A	A	235	200	250	A	260	260	250	250	320	300	320
2	330^{A}	290	310^{A}	310^{A}	300	250	245	235	240	A	A	A	A	A	A	250	245	260	295	295	300	300	305	340
3	330	300	300	300	300	250	A	A	240	A	A	A	230	240	230	245	250	250	300	270	300	300	290	290
4	300	310	290	295	350	250	240	250	245	I 220^{A}	205	250	205	I 250^{A}	240	270	250	I 250^{A}	280	290	300	260	A	350^{A}
5	350	355	295	305	A	290	250	A	A	A	250	A	A	A	235	A	A	250^{A}	255	260	275	300	300	270
6	290	I 290^{A}	240	260	340	280	245	A	A	A	A	250	A	250^{A}	I 235^{A}	250	250	A	A	300	295	300	I 300^{A}	300
7	300	290	340	325	310	295	250	245	210	C	205^{H}	200^{H}	225^{H}	210^{H}	220^{H}	210^{H}	240	I 250^{A}	260	270	270	280	295	I 320^{A}
8	310	310	300	310	300	250	240	230^{H}	220^{H}	205	190^{H}	205^{H}	A	A	A	280	230	285	295	280	260	300	330	300
9	300	290	290	260	260	270	230	220	230	215	I 205^{A}	200	200	200	225	240	C	240^{A}	300	300	260	290	300	270
10	270	300	300	290	290	280	245	230	255^{A}	A	240	A	A	250^{A}	235	240	240	250	290^{A}	295	300	310	310	325
11	300	290	255	245	300	280	250	270	250	A	C	225	245	240^{H}	230	230^{H}	245	250	270	300	305	305	295	280
12	275	305	290	300	295	280	250	I 260^{A}	230	220	200	200^{H}	240^{H}	230	210^{H}	225	245	250	270	260	300	300	280	295
13	310	310	300	310	295	270	250	245	A	A	215	250	240	210	205	240	250	250	270	260	340^{A}	310	330^{A}	280
14	310^{A}	290	240	250	300	290	250	245	A	A	I 250^{A}	A	250	270	A	A	A	A	290	285	250	250	300	300
15	325	305	300	295	300	250	245	240	A	A	260	L	290	225	220^{H}	220^{H}	225^{H}	250	280	260	305	280	280	310
16	290	310	305	300	270	260	230	205	210^{H}	205^{H}	220	200^{H}	250	200^{H}	200^{H}	235	250^{H}	250	280	255	250	270	260	400^{A}
17	I 375^{A}	320	355	300	300	250	250	240	225	245	A	A	A	210	250	A	A	A	A	270	290	305	300	290
18	300	325	300	290	270	250	240	240	220	240^{H}	240	250	250^{H}	240	240	240	240	250	290	270	300^{A}	270	300^{A}	340
19	350	300	300^{A}	295^{A}	295	290	250	245	240^{H}	225	200	230	220	240	240	245	250	250	260	260	295	305	310^{A}	285
20	300	295	300	260	250	270	245	240	200	240	220	220	225	230^{H}	240	240^{H}	I 245^{A}	I 265^{A}	285	260	250	250	300	300
21	300	300	295	310	290	295	250	245	240	240	250	A	I 210^{A}	250	245	250^{H}	A	A	A	240	280	A	320	350
22	340	300^{A}	310	295	300	290	270	280	A	250	210	230	I 240^{A}	230^{H}	240	230	A	A	A	240	270	295	300	290
23	295	290	300	360^{A}	305	290	240	245	A	A	205^{H}	200^{H}	205^{H}	240^{H}	240	240	A	A	A	A	I 255^{A}	290	280	290
24	300	295	290	270	250	300	250	240	220	200^{H}	200	210	225	240	240	230	245	260	260	245	250	260	270	295
25	300	300	300	285	280	270	240	240	210	A	A	A	230	250	240	240	250	250	270	250	250	290	300	300
26	295	290	280	260	295	295	250	245	230	230	200	200	210^{H}	200^{H}	245	245	A	270	280	250	250	300	300	300
27	295	320	290	280	305	250	250	245	A	230	210	235	210^{H}	250	250	270	260	250	250	270	300	260	300	305
28	300	300	290	300	320	295	280	250	240	225	220	200	255	B	210^{H}	I 240^{B}	250	250	A	390^{A}	245	280	300	300
29	280	300	310	275	280	295	250	245	240	A	A	A	A	270	250	A	250	250	260	250	260	300	320	350
30	290	300	300	300^{A}	285	250	250	250	A	A	200^{H}	A	A	A	240	255	250	255	250	I 290^{A}	A	A	290	290
31	290	330^{A}	310	330	340	310	260	250	245	240	210	230	A	230	250	250	A	A	275	250	245	290	295	310
No.	31	31	31	31	30	31	30	27	22	17	23	19	21	26	28	27	21	24	25	30	30	29	30	31
Median	300	300	300	295	300	280	250	240	235	225	210	220	225	240	240	240	250	250	275	265	270	295	300	300

h'F

Sweep 0.85 Mc to 22.0 Mc in 2 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

A 10

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Aug. 1957

h'Es

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

h'Es

Sweep .085 Mc to 22.0 Mc in 2 min sec in automatic operation.

IONOSPHERIC DATA

Aug. 1957

Types of Es

135° E Mean Time (G.M.T.+ 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f2	f2	f2	f2	f4	l	C	c2	C	C	c2	C	C		C	C	C	l	f2	f	f	f2	f	f
2	f2	f2	f2	f2	f3	l	C	C	h	C	C	C	C	C	l	l	C	C	C	f2	f	f2	f2	f
3	f2	f2	f2	f2	f2	C	c2	c2	C	c2	C	c2	C	h	h	h	h	C	c2	f4	f	f	f	f
4	f	f	f2	f	f	C	l	h	h	C	C	l	l	l	C		h	c2	c2	f2	f2	f	f3	f2
5	f3	f3	f4	f3	f3	f2	l	f2	C	c2	C	C	C	C	C	l	c2	l	C	f	f	f	f	f2
6	f2	f3	f	f2	f2	C	C	c2	c2	c2	C	C	C	l	l	l		h	c2	f2	f2	f2	f2	f
7	f2	f	f2	f	f2	l		C	h		C		h	h	h	h	C	C	C	f2	f2	f2	f3	f3
8	f4	f3	f2	f2	f	C	l		l	l	l	l	l	l	l	l	l	C	f3	f3	f3	f2	f2	f2
9	f2	f	f	f	f	l	C	C	l	l	C	C	C	C	l	C		C	c2	f2	f	f2	f	f2
10	f	f	f	f	f	l	C	C	C	C	C	C	C	l	l	l	l	l	f4	f2	f2	f2	f	f2
11	f2	f	f	f	f	C		C	C	C		h	h	h	h	h	h	C	C	f2	f2	f2	f	f
12		f2	f	f	f2	C	C	C	C	l	l		l			l		l	h	f	f	f2	f	f
13	f	f	f2	f	f	l		h	c2	c2	l	l	l	C	l				f	f	f4	f2	f3	f2
14	f4	f2	f2	f	f	C	C	C	C	c2	c2	C	C	C	C	C	c2	c2	f3	f4	f2	f	f2	f
15	f2	f	f	f2	f2	f	c2	c2	c2	c2	c2	C	c2	C	C	C	h	h	c2	f	f2	f2	f	f2
16	f2	f2	f2	f2	f2	f2	l			l		l	l		l		h	h	C	f		f	f	f4
17	f3	f4	f3	f3	f3	c2	c2	c2	C	h	C	C	C	C	h	h2	h	C	f2	f2	f2	f2	f2	f2
18	f2	f2	f	f2	f	l	l	h	h	C	h		h	C			h	C	f3	f3	f2	f3	f2	f2
19	f2	f2	f4	f3	f	f	l	C	C	C	C	l	l	l	C2				h	f		f2	f4	f
20	f		f2	f2	f3	f	C	C	C	C	C	C	C	C	C	C	C	C2	C3	f	f	f	f	f
21	f2		f	f2	f2			l	C	h	C	h	h		h	h	c2	c2	c4	f	f3	f3	f2	f3
22	f3	f8	f2	f5	f2	C	C	C3	C2	h	h	h	C	h	C	h	h2	C2	C5	f	f3	f3	f2	f
23			f	f4	f3	f3	l	h	C	C2	C	C			h	h	h2	C2	f7	f3	f3	f2	f2	f
24	f	f	f	f	f	h		C	C	C	C	C	C	C2	C2	C	h	h2	C	f	f	f2	f2	f3
25	f	f	f2	f4	f2	h	l	l	C	C2	l	l	l	l	l	l	C	h	C2	f	f2	f4	f2	f
26	f	f	f2	f2	f	l	C	h		C	C				h	h	h3	h	f2	f3	f2	f2	f2	
27	f		f	f	f2	f	h	h	h2		C	l	l		h	h	h	C		f	f2	f2	f2	f2
28	f2	f	f2	f2	f2		C2	C	C	C	h	h	C	C			l	l	f3	f4	f	f	f2	f2
29	f			f	f2	h	C	h	h	C2	C	C	C	C	l	C2	C2	C2	f2	f2	f2	f2	f2	f3
30	f2	f	f2	f3	f2	f3	C2	h	C2	C	h	C	C	C	l	C		C	l	f7	f2	f3	f3	f3
31	f2	f4	f4	f3	f4	f2	h	h	h	C	C	l	C	l	hl	h	h2	C2	f6	f2	f	f	f	f2
No.																								
Median																								

Types of Es

Sweep .085 Mc to 22.0 Mc in 2 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

A 12

33

IONOSPHERIC DATA

Aug. 1957 | 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	9.0 S	9.6 R	8.6 S	8.2	8.2 RS	9.1	9.5	10.7	10.6	9.6	9.2	9.5	10.2	10.2	10.1	10.9	11.2	11.0	10.6 RS	9.1	7.5 R	I 7.9 R	8.5	8.2
2	8.0 S	8.3	7.6	7.4 R	7.5	8.5	9.4	8.8	8.5	8.6	9.6 R	10.1	10.4	10.5	10.6	10.4	10.1	10.1 R	10.1 R	8.6 S	8.6	8.4	8.7	8.6
3	8.5 RS	9.1	J 8.4	8.0	7.8	8.1	8.8	10.2	10.6	9.8	9.2	10.5	11.2	11.3	11.4	11.4	11.2	11.0	11.2	10.9	9.4	9.8	10.2 R	9.8 R
4	9.0	8.7	9.0	7.4	6.5 V	7.8	8.5	7.8	7.5 H	7.8 ZH	8.5	9.1	11.0	11.5	11.0	10.9	10.0	10.0	9.3	9.3	9.4	9.4	8.6	8.6
5	8.8	8.6 F	8.7	7.6	6.9	6.9	6.7	6.8	8.3	8.6	9.4	10.3	11.1	11.7	11.1	10.7	10.2	10.1	9.6	U 8.8 S	8.7	9.1	8.8 V	8.7
6	9.2	D 9.0 F	7.2	6.8	6.2	6.2	8.6	9.3	9.2	9.0	9.6	10.2	11.3	10.7 R	10.8	11.2	I 11.0 C	11.0	11.8	11.0	9.5 S	9.8 RS	10.2 R	9.9 R
7	9.5	8.6	8.2	7.7	7.5	7.5	7.7	7.3	7.2	8.3	8.5	8.1	9.6	10.3 H	10.1	I 9.6 C	9.4	9.7	9.8 S	9.5	8.8	8.5	7.8	8.2
8	8.5	8.1	8.2	7.8	7.4	8.0	9.1	9.0	8.7	8.6 H	9.5	10.0	10.6	9.5	9.5	9.3	8.7	9.5	10.4	10.1 S	8.0	U 8.5 S	8.7	9.0
9	9.2	8.8	8.3	7.7	7.2	7.5	9.1	10.2	9.6	8.7	9.0	8.8	9.4	10.1	10.1	9.5	9.2	8.8	9.2	9.7	9.3	9.3	8.7	8.5
10	8.0 S	7.9	7.7	7.7	7.6	7.9 S	10.8	10.5	8.1	8.7	9.5	10.0	11.0	10.8	10.1	10.3	10.6	10.2	8.9	8.0	I 8.4 S	8.9	9.1	9.2
11	9.1	8.6	8.1	7.5	7.1	7.3	9.0	9.5	8.3 H	7.8	7.2	6.8	6.6	6.2	6.1	6.4	6.6	6.8	6.8	6.9	7.3 S	7.5 S	7.7 S	6.8
12	7.0	7.0	6.8	6.5	6.5	6.8	8.3	9.8	9.4	8.8	9.6	10.8 R	11.1	10.3	10.3 R	10.5 R	10.0 R	10.1	9.9 RS	9.2	8.1	8.6 R	8.6	7.7
13	7.5	7.2	7.1	6.7	6.6	6.8	9.5	9.0	9.1	9.8 R	11.1	11.8	11.9	11.9	11.5	11.4	11.1	10.7	10.0 RS	8.6	8.0	8.7 RS	8.5	7.8
14	7.4	8.3	7.5	6.1	6.4	7.8	10.9 R	10.2	10.2	10.6	11.2	11.7	11.5	11.1	10.2 R	10.2 R	9.6	9.4	9.6 S	9.9 S	9.6	9.0	8.7	8.3
15	8.5	8.4 R	7.9	7.7	7.0 V	7.2	8.8	9.8	9.5	9.5	9.9 R	I 10.3 R	10.5	10.4 R	10.4	10.2	9.7	9.4	8.6	8.3 S	8.5	8.8	8.2 R	8.1
16	8.0 S	7.7	7.8	7.7	7.1	7.3	9.1	10.1 R	9.9	9.8	10.5	10.7	10.7 R	10.6	10.7	10.7	10.5	10.7	11.0 RS	9.8 RS	8.0 S	8.0 RS	8.1	8.3 RS
17	7.5 F	7.9	7.7	7.4	7.3	7.7	8.7	9.2	9.6	10.3	11.0	11.2	11.9	11.3	11.0 R	10.3	9.9 R	9.8 R	9.7 S	9.5 S	8.7	9.1	9.1	8.8
18	I 8.8 RS	8.7	I 8.6 RS	8.4	8.1 S	8.1	8.9	9.6	10.6	11.6	11.1	10.8	11.3	11.6	11.4	11.0	10.8	10.8	10.9 RS	10.6 RS	9.2	8.9	U 8.2 S	8.7
19	8.6	9.0	8.6	8.0	7.7	7.8 RS	8.8	10.3	11.3	11.4 H	11.5	11.7	11.7 H	12.1	11.7	11.3	10.6	9.4	9.0	9.2	9.0	8.6	8.7	8.3
20	U 7.8 S	7.8	7.4	7.3	5.9	6.0	8.1	9.4	9.8	11.1	10.9	10.5 H	10.7	11.0	10.9	10.1 H	10.5	J 10.5	11.2	10.8	9.0	8.6 S	9.2	9.3
21	9.1	8.4	7.7	7.4	7.1	7.0	9.6	11.8	12.0	10.6 H	9.9	10.6	9.5	10.0 R	8.5	8.0	7.8	8.0	8.6	8.4	I 7.2 A	7.1	7.4	7.7
22	8.1	8.4	7.5	7.1	6.7	7.2	8.4	7.7	6.9	6.7	7.6	7.9	7.7	7.5	7.5	7.6	7.8	8.2	8.6	8.1	7.2	7.2	7.7	7.5
23	7.3	6.9	6.6	6.5	6.2	6.2	7.8	9.7	9.9 R	9.5	9.3	9.4	9.9 S	10.0	10.3	9.9	9.8	9.6	9.7 S	8.8	8.0	I 8.4 A	8.9	8.2
24	7.6 S	7.6	7.7 S	7.2	6.7	6.9	8.7	10.1	10.2	9.2	9.8	10.6	11.1	J 10.7	10.0 H	10.1	10.2	9.7	9.8	9.8	8.7	U 8.6 S	8.5	8.4
25	8.0	8.1	7.7	7.5	7.2	7.6	9.9	10.6	10.5	10.0 R	9.4 R	J 10.6	11.5	11.3	11.0 R	J 10.8	10.5	10.8	11.4	10.5	8.7	9.2	10.1 RS	10.1 R
26	9.7 S	9.7	8.7	7.6	7.6 S	8.0 S	10.3	12.3	11.2	9.6 H	9.0	9.7	10.1	9.9	9.8 R	10.2 R	10.5 R	11.0	11.5	10.2 RS	9.0	I 9.0 S	8.8	8.6
27	8.5 R	7.7	7.6	7.3	7.0	7.7	10.4 R	11.8	9.7	9.2	10.5 R	10.7	11.4	12.3	11.6	10.3 R	10.2	11.1	11.6	9.8 S	8.5	7.5 S	8.0	7.9 S
28	I 7.6 S	7.2	7.1 S	6.8	6.6 S	6.9	8.0	8.8	8.9	10.0	11.0 R	11.3	J 11.0 H	11.6	11.5	11.1	10.5 R	9.8 S	10.2 RS	10.0 RS	8.3 S	8.4 RS	8.3	I 8.4 RS
29	I 7.9 A	7.6	7.5	7.4	7.1	7.7	U 10.4 C	9.8	9.3	10.1	9.4 H	9.8	10.4 R	10.3	10.1	10.2	10.1	10.1	9.8 S	9.3	8.4 RS	8.1 S	7.7	7.6 S
30	7.8 S	7.5	7.9	7.4	7.0	7.2	8.2	8.6	10.1 R	10.7	10.1	10.4	12.1	10.8 RH	11.6	10.2 R	9.7 H	10.5	10.7 S	9.1	8.5	8.8	8.4	8.4
31	8.0 S	7.8	7.4 R	7.1	7.2	7.4	9.4	8.7	9.1	9.2	9.5	10.8	11.8	11.8	11.9	11.7	11.5	11.3	11.0	10.0 RS	8.5	9.1	9.7	8.9
No.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Median	8.1	8.3	7.7	7.4	7.1	7.5	8.9	9.7	9.6	9.5	9.6	10.4	11.0	10.7	10.6	10.3	10.2	10.1	9.9	9.5	8.5	8.6	8.6	8.4
U. Q.	9.0	8.7	8.3	7.7	7.5	7.8	9.5	10.2	10.2	10.1	10.5	10.8	11.4	11.5	11.4	10.9	10.6	10.8	11.0	10.0	9.0	9.1	8.9	8.8
L. Q.	7.8	7.7	7.5	7.1	6.6	6.9	8.4	8.8	8.7	8.7	9.2	9.7	10.2	10.3	10.1	10.1	9.7	9.5	9.3	8.8	8.0	8.4	8.2	8.1
Q. R.	1.2	1.0	0.8	0.6	0.9	0.9	1.1	1.4	1.5	1.4	1.3	1.1	1.2	1.2	1.3	0.8	0.9	1.3	1.7	1.2	1.0	0.7	0.7	0.7

The Radio Research Laboratories, Japan.

foF2

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

K 1

IONOSPHERIC DATA

Aug. 1957 | foF1 | 135° E Mean Time (G.M.T.+ 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	A	A	R	A	5.7 L	I 5.8 A	5.6	5.5	A	A	A					
2								L	L	6.9 LH	B	A	5.6	L	A	A	A	L	A					
3									L	A	L	5.9	I 5.7 L	L	L	L	L	L	L					
4								L		5.2 L	6.4	I 5.8 L	5.7	6.1 LH	6.1 L	5.6	A							
5								A	5.5	I 5.7 L	I 5.6 A	6.0 L	I 5.8 A	5.8	6.1 L	L	5.4 L	L						
6							L	L	5.4	A	L	L	A	L	5.9	5.5 L	C	L						
7							L	L	L	6.0 L	5.4 L	6.4	6.3	5.2	6.0	C	L	L						
8								4.2 L	6.2 L		5.5 R	I 6.2 L	5.5	6.3 L	6.1 H	5.4 L	6.2 L	A						
9								L	4.8	6.4 H	5.7 L	I 6.4 A	I 6.2 A	U 6.0 R	5.8 L	6.0 L	I 5.7 L	L						
10							L	4.5 L	I 4.8 L	6.1	6.0	6.0 L	I 6.0 A	6.0	5.7	I 5.8 A	5.7 L	4.7 L						
11							L	L	5.3	5.3	5.4	I 5.3 A	5.4	5.3	5.3	5.3	5.0	L	L					
12								L	L	A	I 6.0 A	6.1 L	5.9 R	5.6 L	5.8	5.5	L	L						
13									L	A	L	L	I 6.0 L	6.0 L	5.7 L	L	L	L						
14										L	A	A	A	A	6.0	L	A	A						
15										L	A	A	I 6.0 R	5.9	L	L	A	A						
16								L	L	L	L	6.2	I 6.1 L	6.2	I 5.8 L	I 5.8 L	L	L						
17										A	L	L	R	6.1	L	L	A							
18										L	L		6.4	L	L	L	L	A	L					
19								L	L	L	5.8 L	6.5	6.2 L	6.1	6.1	5.7 L	5.5 L							
20									L	5.3	6.6		6.7 L	6.2	5.8 L	I 5.9 L	5.4 L	L	A					
21								L	L			6.1	6.3 L	5.8	5.4	5.2	I 5.1 A	A						
22								4.5 L	5.1 L	A	5.6	I 5.6 A	I 6.0 A	5.8	5.8	I 5.4 L	5.3 L	4.5 L	A					
23								L	L	A	6.6 LH	6.7 L	6.1	5.5	6.2 L	5.9 L	5.4 L	A						
24								I 4.9 L	5.1 L	I 5.1 L	6.5 L	6.1 L	6.2 L	6.1 L	6.4 L	5.7 L	5.4 L							
25								L	5.1 L	L		L	L	L		L	L	A						
26												6.3	L	6.2 R	L	L	A	A						
27											A	L	L	6.1	L	L	A	L						
28									L	L	L	L	I 5.8 L	6.0 L	B	L	A							
29										L		I 6.4 L	I 6.0 A	I 6.0 A	L	A								
30										C	L	A	6.4		H L	5.8 L		L						
31									L	L	6.8 L	I 5.8 L		6.5 L	L	L								
No.								4	9	9	14	18	24	24	19	16	11	2						
Median								4.5	5.1	5.7	6.0	6.1	6.0	6.0	5.8	5.6	5.4	4.6						

foF1

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

IONOSPHERIC DATA

Aug. 1957 | 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							2.65	3.10	3.45^{R}	3.80	I3.90^{B}	B	I4.00^{B}	4.00	A	A	A	A	A					
2							R	R	3.60	R	B	B	B	A	A	A	A	A	2.15					
3							2.80	3.05	3.40^{R}	3.60	I3.60^{B}	B	B	4.00^{R}	B	B	R	2.90	2.05					
4							2.45	3.00^{R}	3.40	3.30^{S}	I3.70^{B}	A	B	B	3.85	3.65	3.40	3.00	B					
5							A	A	A	3.80	3.90	I4.10^{R}	4.10	B	B	3.50^{R}	3.00^{A}	2.50	A					
6						A	2.50	3.10^{A}	3.30	I3.75^{B}	A	B	A	A	B	3.70^{R}	I3.50^{C}	2.90	2.20					
7							R	R	I3.40^{R}	3.85	4.05^{R}	I4.10^{B}	I4.10^{B}	R	B	C	I3.50^{B}	3.05	B					
8							B	A	3.60^{R}	B	A	R	B	A	B	B	3.60^{R}	3.00	B					
9							2.25	I3.10^{A}	A	A	R	A	A	A	R	I3.70^{R}	3.50	A	A					
10							B	B	B	B	B	B	A	A	A	A	3.65^{R}	I2.80^{B}	1.95					
11							2.40	2.90	3.35	B	B	B	B	B	B	3.85^{R}	3.40	2.85	B					
12							B	3.05	3.40^{A}	B	A	B	B	R	R	R	R	2.95^{R}	B					
13							B	R	3.40^{A}	I3.70^{B}	A	R	A	A	R	A	R	2.95	A					
14							2.40	3.10	B	B	B	B	B	B	B	3.85	3.30^{R}	2.80						
15							B	3.05	3.45	B	B	A	A	A	A	A	A	A	A					
16							R	I3.00^{R}	3.40	R	R	B	A	B	B	B	B	2.90	B					
17							B	3.25	R	B	I3.95^{B}	B	B	R	I4.00^{B}	I3.90^{B}	3.45	2.95	B					
18							2.55^{R}	3.15	3.50^{R}	R	B	B	B	B	4.00^{R}	I3.75^{B}	3.55^{R}	2.50	B					
19							R	3.10	B	B	A	A	A	B	A	3.90	I3.40^{B}	2.90	B					
20							2.50	3.20	3.60	I3.80^{A}	3.95^{R}	A	B	I3.90^{B}	I3.80^{A}	I3.50^{A}	3.40	2.80	A					
21							2.50	3.10	I3.35^{R}	3.75	S	B	B	R	B	3.65	3.25	2.75						
22							2.35	3.00	B	B	A	B	A	4.20^{A}	3.90^{R}	3.75	3.40	2.65	B					
23							A	3.30	I3.50^{A}	3.70	3.90^{M}	B	A	I4.00^{B}	4.00	3.70	3.30	2.90	B					
24							2.50	2.70	3.15	A	A	A	A	R	R	A	3.30^{R}	2.75^{A}	A					
25							2.55^{R}	A	B	B	B	B	B	B	A	A	3.45^{A}	I2.90^{A}	I2.00^{A}					
26							B	3.00	3.25^{A}	B	A	A	B	B	B	B	3.35^{R}	2.80^{R}						
27							B	3.20	B	B	B	B	B	B	B	B	I3.50^{B}	2.80						
28							2.40	3.00	3.35^{R}	B	B	B	B	B	R	A	3.25	2.70^{A}						
29							I2.35^{A}	3.10	3.50^{R}	B	B	B	B	B	B	B	A	A						
30							A	R	B	3.80	3.90	3.95	R	B	B	R	B	A						
31							B	R	B	B	B	B	B	A	B	B	B	2.75						
No.							15	22	20	11	9	3	3	5	6	13	21	25	5					
Median							2.50	3.10	3.40	3.75	3.90	4.10	4.10	4.00	3.95	3.70	3.40	2.85	2.05					

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

Aug. 1957 | 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	5.7 MS	9.3 M	4.0	6.5 M	5.0 MS	3.1 M	5.5 M	8.1 M	5.8 M	6.7 M	6.0	7.9 M	B	6.4 M	4.0	6.0	11.2 M	7.3 M	13.0 M	5.3 M	4.5 M	2.4 M	2.9	3.1 M
2	2.7 M	E	E	E	E	E	G	G	G	G	B	9.1	B	6.7 M	9.8 MY	7.3 M	8.6 M	4.5 M	4.9 M	6.3 M	8.9 M	6.0 M	3.9 M	2.4
3	7.4 MY	7.2 M	7.1 MS	5.3 MY	3.0 M	3.0	3.3	4.6 MS	7.0 MY	12.1 M	5.4	6.9 MY	B	4.7	B	B	3.9	5.7 M	5.6 M	3.1 M	6.8 M	6.1 M	5.4 M	3.9 M
4	3.0 M	2.7 M	4.8 M	2.9 M	E	E	G	G	G	3.9	4.1	7.1 M	B	B	G	4.3	7.8 M	4.0	3.9 M	3.5 M	5.2 M	4.2 M	7.2 M	12.0 M
5	9.6 M	7.9	6.0	5.8 M	2.9	6.1	6.0	7.5	4.0	11.6 M	5.7 M	5.1	7.2 M	11.7 MY	B	5.7 M	4.3 S	4.4 M	5.4 M	7.4 M	9.4	4.4 M	3.1 M	4.9 M
6	9.0 M	6.0 M	3.0 M	3.3 M	E	2.4	3.0	4.8 M	4.9 M	6.2 M	7.0 M	11.4 M	8.3 M	5.8 M	5.2 M	G	C	3.2	3.2	4.0 M	E	3.2 M	10.5 MY	E
7	5.8 M	6.7 M	3.7 M	2.7 M	8.2 M	4.2 M	3.0	3.6	3.9 Y	G	G	5.3	5.0	7.1 M	B	C	5.6 M	4.0	4.2 M	E	6.6	3.0 M	4.7 M	6.0 M
8	4.8 M	4.9 M	5.8 M	E	3.3 M	5.5 M	B	2.9	4.0	B	5.0 MY	G	B	4.5 M	B	B	4.5	5.4 M	4.7 M	7.8 M	8.5 M	5.2 M	E	E
9	2.1 M	E	E	E	E	B	G	3.7 M	4.0	5.8 M	3.9 G	8.7 M	7.3 M	5.0 M	3.5 G	G	4.5	5.7 M	6.0 M	5.7	5.0 M	5.5 M	2.6 M	5.5 M
10	3.2 S	E	S	E	E	S	B	3.4	B	4.7 S	B	6.1 M	12.7 M	4.0 MY	5.7 M	7.5 M	8.0 M	6.0 M	2.5	5.3 M	5.7 M	6.0 M	6.5 M	5.3 M
11	2.1 M	B	E	E	E	E	3.2 Y	6.0 M	3.9	B	4.8	5.7	B	4.7 M	4.3	G	3.8	3.9	3.2 M	E	2.3 M	3.6 M	2.5	E
12	E	E	E	E	E	E	4.6 M	5.2 M	5.6 M	6.9 M	6.5 M	B	B	G	G	G	G	G	B	E	4.0 M	E	E	E
13	E	E	E	E	E	E	B	G	5.6 M	6.5	5.2 M	6.4 M	6.6 M	5.8 M	G	3.9 M	3.4 M	G	3.0 MY	2.4 MY	4.2	4.3 MS	7.5 M	5.6
14	5.4 M	4.4 M	4.8 M	E	E	3.0	4.3 M	5.5 M	6.5 M	5.5	7.4 M	7.5 M	9.4 M	7.5 M	4.8	5.9	7.5	7.5 M	12.1 M	9.1	5.9 M	5.7 M	4.5	6.6
15	4.8 S	5.3 MY	E	2.5 M	E	2.7	4.4 M	5.3 M	5.4 M	6.4 M	8.4 MY	11.5 M	5.2 M	5.0 MS	6.2 M	5.6 M	5.8 M	8.4 M	4.8 MS	4.2 MS	3.6	7.0 M	4.0	E
16	E	E	E	E	E	E	G	G	G	G	G	B	5.5 M	B	B	B	B	3.5	B	E	2.4	E	E	9.2 M
17	7.0	6.5	5.7 M	3.6	3.1	E	4.0	4.2	5.5 M	7.5 M	4.5	6.3 M	5.8	5.9 M	5.9 M	6.3	9.7	5.9 M	5.0 M	6.0 M	3.9 M	3.0 M	4.0	3.5 M
18	3.5 M	E	E	E	E	E	2.9	3.5	4.5 S	4.5	4.5	B	B	5.5	5.4	5.0 M	G	10.2 M	2.6	E	E	E	6.5	4.3 M
19	3.0 M	E	E	E	E	E	2.4	3.8	4.0	5.2 M	6.0 M	5.0	5.0 M	B	4.1 M	3.2 G	B	3.9	2.7	E	2.3 M	2.4 M	E	4.0 M
20	3.5 M	E	E	E	E	E	3.0	3.6	4.0	4.0	4.6	5.6 M	4.5	5.3 M	5.8 M	4.2	4.0	3.5	6.0 M	5.0 M	2.1 M	2.2 M	2.4 M	E
21	E	E	E	E	E	E	G	3.5	3.7	4.6	5.2	B	4.5	G	B	5.0	6.5	5.0 M	5.5 M	4.3	7.4 M	6.2	4.5 M	5.9
22	4.0 M	4.6 M	4.0 M	3.2 M	2.5 MY	E	3.0	3.6	4.4	5.8 M	6.1 M	5.8	7.4 M	4.7	5.5	4.2	4.0	3.0	5.2 M	4.6 M	5.9 M	3.9 M	E	E
23	3.2 M	E	2.4 M	E	E	6.8 M	5.0 M	G	4.4	7.0	3.8 G	B	3.9	B	4.4	J 6.2	G	5.8 M	B	3.6 MY	4.0 M	11.3 MY	4.5 M	3.5 M
24	3.2 MS	E	S	2.1 M	E	2.8 M	3.0	3.5	3.9	4.6 M	5.7 M	4.6	4.8 M	4.6 M	3.8 G	3.5 G	4.0	3.7	3.7 M	2.3	E	E	E	E
25	E	E	E	E	E	2.5 M	3.2 M	J 4.2	B	4.2	5.5	B	B	B	4.5	5.5	3.9	6.0 M	5.6 M	5.1 M	2.7 M	E	E	4.3 M
26	3.0 M	2.5 M	E	E	2.3 M	E	2.7	3.5	5.0	4.2 M	4.5	4.1	B	5.2	B	B	8.7 M	6.8	7.5 M	5.5	7.1	3.0 M	4.0 M	E
27	2.7 M	E	E	2.4 M	E	E	B	3.8	6.0 M	5.8	7.5 M	5.8 M	5.1 M	B	B	B	6.3 M	3.0	4.4 MS	3.0 M	3.5 M	5.7	3.9 M	5.8 M
28	3.9	4.4 MS	2.5	2.7	E	E	2.9	3.9	4.2	5.2 M	4.5 M	4.5 M	4.9 M	B	G	4.5	9.3	6.2 M	5.1 M	3.0 M	3.8 M	5.3 MS	2.8 M	6.0
29	14.2 M	10.2 M	5.6	3.9 M	4.0 MS	4.9 M	3.6	4.2	5.4 M	4.5	5.5 M	5.7 M	9.3 M	7.0	7.5 M	6.0 M	7.8 M	10.4 M	5.8 M	5.3 M	3.6 M	E	10.3 M	7.5 MS
30	6.5 M	4.0 M	4.3 MS	4.0	5.5 M	5.9 M	2.6	3.4	7.0 M	6.5 M	6.1 M	7.5 M	5.5	B	B	G	3.0	3.9 M	3.9 M	7.2 MY	3.7 M	3.5 MS	6.8 M	7.5 MS
31	2.7 M	2.8 M	2.5 M	E	2.2 M	E	2.8	3.3	B	B	6.0	5.8 M	B	5.0	4.2	5.2 M	B	7.2 M	7.5 M	3.5 M	2.8 M	E	E	E
No.	31	30	29	31	31	29	27	31	28	28	29	25	20	23	22	25	27	31	28	31	31	31	31	31
Median	3.2 M	2.6	2.4	E	E	E	3.0	3.6	4.4	5.4 M	5.4	5.8 M	5.5 M	5.2 M	4.4	5.0	4.5	5.0 M	4.8 M	4.2 M	4.0 M	3.6 M	3.9 M	4.0 M
U. Q.	5.7	5.3	4.6	3.2	2.9	3.0	4.0	4.6	5.6	6.5	6.0	7.5	7.4	6.4	5.7	6.0	7.8	6.2	5.7	5.5	5.9	5.7	4.7	5.9
L. Q.	2.7	E	E	E	E	E	2.6	3.4	4.0	4.4	4.5	5.2	5.0	4.7	3.8	3.4	3.9	3.7	3.8	2.4	2.7	2.2	E	E
Q. R.	3.0						1.4	1.2	1.6	2.1	1.5	2.3	2.4	1.7	1.9	2.6	3.9	2.5	1.9	3.1	3.2	3.5		

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | 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	2.7	A	3.8^{S}	3.8	3.4	2.4	4.5^{S}	4.5	5.1^{S}	5.8	5.6	6.2	B	5.8	B	4.6	5.1	4.4	5.2	2.9	3.1	2.0	2.1	2.1
2	2.4	E	E	E	E	E	G	G	G	G	B	8.1	B	5.5	9.8	5.4	5.5	3.5	4.3	5.9	4.8	3.3^{S}	2.1	2.0
3	3.1	2.1	3.6	2.1	2.2	2.3	G	4.1^{S}	4.8^{S}	9.0	4.6^{S}	4.9	B	4.5	B	B	3.8	4.0	4.2	2.7	3.6	5.0	4.1	2.6
4	2.0	E	3.3	1.7	E	E	G	G	G	^{U}4.1^{B}	^{U}4.4^{B}	5.4	B	B	G	4.3	5.5	3.9	3.2	2.6	4.3	2.6	2.0	5.2
5	6.8	6.1	5.0	2.8	1.9	4.2	4.4	5.1	^{U}4.2^{B}	5.8	5.6	5.0	6.0	5.1	B	4.5	4.1	3.5	2.4	6.3	6.1	3.2	2.2	3.6
6	3.4	2.2	2.3	2.2	E	2.2	3.0	3.8	4.1	5.5	5.5	5.1	6.2	4.9	4.2	G	C	3.1	3.2	3.4	E	2.3	5.4	E
7	3.0	A	2.5	1.9	3.5	3.1	2.8	3.5	3.7	G	G	5.2	4.9	4.6	B	C	4.8	3.7	3.4	E	4.1	1.9	3.0	2.2
8	2.9	2.4	E	E	1.8	3.6	B	^{U}3.9^{B}	4.0	B	4.4	G	B	^{U}4.6^{B}	B	B	4.3	4.7	3.4	3.6	3.6	3.0	E	E
9	E	E	E	E	E	B	G	3.5	3.8	4.1	B	6.7	5.8	S	B	G	4.5	3.4	3.3	3.8	2.6	2.6	E	3.2
10	2.1	E	S	E	E	S	B	^{U}3.5^{B}	B	4.3	B	5.4	7.4	^{U}4.8^{B}	4.8	7.2	4.0	3.2	^{U}2.7^{B}	2.8	2.3	2.8	2.1	2.8
11	1.6	B	E	E	E	E	2.8	3.4	^{U}4.2^{S}	B	4.8	5.7	B	4.7	4.3	G	3.7	3.6	2.6	E	B	2.0	E	E
12	E	E	E	E	E	E	3.9	4.1^{S}	4.2^{S}	6.0	6.1	B	B	G	G	G	G	G	B	E	2.2	E	E	E
13	E	E	E	E	E	E	B	G	4.6	5.3	4.5^{S}	5.1	5.9	5.1	G	3.8	G	G	2.3	2.0	3.1	3.3	3.2	3.1
14	3.3	3.4	3.2	E	E	2.3	3.4	4.8^{S}	4.1^{S}	5.5	7.4	7.4	8.5	6.0	4.8	5.2	6.7	7.4	3.0	5.6	3.8	3.8	3.6	3.2
15	3.0	2.1	E	1.7	E	2.1	3.5	4.0	4.8	A	8.6	8.3	4.8	4.9^{S}	5.4	4.7	5.3	7.5	4.0^{S}	3.7	3.1	4.7^{S}	1.8	E
16	E	E	E	E	E	E	G	G	G	G	G	B	5.0	B	B	B	B	3.4	B	E	E	E	E	4.8^{S}
17	3.7	2.7	2.9	2.6	2.0	E	3.7	4.1	4.4	7.5	4.5	5.6	5.4	5.0	4.4	5.3	8.2	5.0	3.8	5.2	2.5	2.9	3.2	2.6
18	2.3	E	E	E	E	E	2.8	3.4	4.1^{S}	4.5	4.5	B	B	5.4	4.4	4.7^{S}	G	10.2	2.5	E	E	E	1.8	3.4
19	1.9	E	E	E	E	E	B	3.6	^{U}4.1^{B}	4.5	4.6	5.0	4.7	B	^{U}4.4^{B}	G	B	3.8	^{U}2.8^{B}	E	E	E	E	2.3
20	2.0^{S}	E	E	E	E	E	2.9	3.6	^{U}4.1^{B}	^{U}4.5^{B}	4.6	5.3	^{U}4.8^{B}	4.7	4.5	4.1	^{U}4.2^{B}	3.5	5.2	4.3	E	E	1.8	E
21	E	E	E	E	E	E	G	^{U}3.7^{B}	^{U}3.8^{B}	4.6	5.2	B	4.5	G	B	5.0	5.7	4.6	4.8	3.5	A	^{U}4.8^{S}	3.4	4.3
22	3.8	3.2	2.7	2.1	1.8	E	3.0	3.6	4.4	5.5	5.1	5.8	6.7	4.7	5.4	4.2	3.8	3.0	4.7	3.9	2.1	2.4	E	E
23	2.4	E	E	E	E	4.5	4.0	G	4.0	5.1	G	B	B	B	4.4	5.6	G	5.3	B	2.3	3.8	A	3.3	E
24	2.5^{S}	E	S	E	E	1.9	2.9	3.1	3.9	4.5	5.1	^{U}5.1^{B}	4.7	^{U}4.6^{B}	B	B	4.0	3.7	3.0	2.2	E	E	E	E
25	E	E	E	E	E	B	G	3.5	B	4.2	5.5	B	B	B	4.5	5.1	3.9	5.1	5.0	4.0	2.1	E	E	2.8
26	2.4	1.8	E	E	E	E	^{U}2.8^{B}	^{U}3.8^{B}	4.0	B	^{U}5.0^{B}	^{U}4.3^{B}	B	5.2	B	B	8.6	^{U}7.3^{B}	5.1	3.0	5.2	2.5	1.9	E
27	2.2	E	E	E	E	E	B	3.4	5.0	5.8	7.1	5.4	^{U}5.3^{B}	B	B	B	5.9	^{U}3.1^{B}	3.4	E	2.9	3.1	2.3	2.1
28	2.2	2.2	E	2.0	E	E	2.8	3.4	4.2^{S}	4.7^{S}	4.5	^{U}4.7^{B}	^{U}5.0^{B}	B	G	4.4	8.5	4.0	3.2	2.0	2.7	4.0^{S}	2.2	3.8
29	A	4.8	3.2	A	2.0	3.2	3.5	4.1	4.7	4.4	5.0	5.4	8.1	6.0	5.1	5.1	7.3	5.7	3.1	3.3	2.6	E	2.2	3.0
30	2.9	3.1	2.7	3.2	3.0	3.8	2.6	^{U}3.5^{B}	6.4	4.6	5.5	5.7	^{U}5.6^{B}	B	B	G	B	3.1	2.8	2.5	1.9	3.0	2.6	4.8^{S}
31	2.3	1.9	E	E	E	E	2.8	3.3	B	B	5.8	5.2	B	4.4	^{U}4.4^{B}	5.0	B	5.5	6.9	2.5	1.9	E	E	E
No.	31	30	29	31	31	28	26	31	28	27	28	25	19	22	19	24	26	31	28	31	30	31	31	31
Median	2.4	E	E	E	E	E	2.8	3.5	4.1	4.6	5.0	5.4	5.4	4.8	4.4	4.6	4.4	3.8	3.4	2.8	2.6	2.6	2.1	2.3

foEs

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

The Radio Research Laboratories, Japan.

K 5

IONOSPHERIC DATA

Aug. 1957 | f-min | 135° E Mean Time (G.M.T.+ 9h.)

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.40	1.40	1.50	2.20	1.40	1.70	2.00	2.20	2.20	2.60	4.20	4.30	4.50	3.45	3.70	2.60	2.20	2.15	1.60	1.50	1.40	1.30	1.70	1.40
2	1.20	1.70	1.90	1.60	1.70	2.60	2.00	2.25	2.25	3.30	5.80	4.30	4.50	3.80	3.60	3.30	2.25	1.90	1.60	1.40	1.50	1.20	1.30	1.50
3	1.30	1.50	1.30	1.30	1.30	1.80	1.80	1.80	2.35	2.40	3.80	3.65	4.35	3.60	4.50	4.05	2.20	2.20	1.70	1.40	1.50	1.35	1.30	1.50
4	1.60	1.50	1.60	1.40	1.40	2.00	1.90	2.00	2.20	2.70	3.75	3.60	3.90	4.40	3.50	3.30	2.40	1.90	2.00	1.55	1.50	1.15	1.20	1.15
5	1.80	1.50	1.30	1.80	1.20	1.90	1.90	1.80	2.15	2.60	3.45	3.65	3.70	4.10	4.55	2.20	2.00	1.75	1.40	1.40	1.40	1.60	1.40	1.40
6	1.60	1.60	1.60	1.60	1.35	1.45	1.95	2.00	2.25	3.75	3.60	3.80	3.70	3.60	3.50	2.40	I 2.05 C	1.90	1.80	1.50	1.40	1.40	1.40	1.90
7	1.40	1.60	1.50	1.50	1.60	1.50	1.80	2.10	2.30	2.70	3.30	4.40	4.30	3.70	4.50	I 3.40 C	3.70	2.30	2.20	2.00	2.00	1.50	1.85	1.65
8	1.80	1.70	1.85	1.50	1.50	1.90	2.80	2.15	2.55	5.25	2.85	3.20	5.00	3.85	4.10	5.10	3.15	2.30	2.20	2.00	1.70	1.80	1.80	1.80
9	1.80	1.65	1.70	1.60	1.50	2.30	1.75	2.20	3.10	3.30	3.20	3.10	3.40	3.80	3.25	3.00	2.95	1.85	1.75	1.60	1.65	1.75	1.60	1.70
10	1.90	1.70	1.75	1.50	1.80	2.20 S	2.90	3.20	3.90	3.70	4.40	4.60	3.65	3.70	3.10	2.80	2.85	2.90	1.85	1.60	1.80	1.60	1.60	1.65
11	1.60	1.70	1.65	1.75	1.85	1.95	2.15	2.30	3.00	4.10	4.20	4.20	4.40	4.20	4.10	2.90	2.35	2.60	1.70	1.90	1.70	1.70	1.80	1.55
12	1.70	1.60	1.70	1.60	1.70	2.20	3.55	2.55	3.00	3.50	3.55	4.60	4.65	3.70	2.90	3.50	2.30	2.30	2.60	2.10	1.90	1.80	2.20	3.60
13	1.90	1.60	1.80	1.70	1.80	3.00	3.20	2.05	2.80	4.10	3.50	3.80	3.70	3.40	2.90	2.50	2.00	2.15	2.00	1.60	2.10	1.70	1.70	1.70
14	1.95	1.75	1.80	1.75	1.70	1.70	1.90	2.30	3.50	3.60	4.05	3.90	4.00	4.40	4.10	3.65	2.80	2.20	1.80	1.80	1.70	1.90	1.60	1.70
15	1.80	1.80	1.70	1.60	1.60	1.70	2.55	2.30	2.50	3.70	4.10	3.80	3.60	3.70	3.10	2.60	2.20	1.90	1.70	1.90	1.80	1.80	1.70	1.90
16	2.00	1.80	1.60	1.80	1.65	2.80	2.00	2.30	2.30	3.15	3.20	4.60	3.60	4.70	4.20	4.00	3.50	2.30	2.25	1.60	1.60	1.70	2.05	1.80
17	1.80	1.70	1.70	1.70	1.60	3.10	2.80	2.30	2.30	3.90	4.10	4.10	4.20	3.80	4.15	4.05	2.30	2.00	1.80	1.90	1.60	1.85	1.60	1.90
18	1.80	2.30	1.90	1.80	2.00	1.70	1.80	2.30	2.30	2.80	4.10	4.80	4.40	4.30	3.80	3.80	2.30	2.10	1.90	1.90	1.65	1.70	1.70	1.70
19	1.75	1.90	1.70	1.70	1.75	2.30	1.90	2.50	3.40	3.70	3.85	3.80	3.80	4.40	3.05	2.70	3.50	2.15	1.90	1.75	1.70	1.65	1.70	1.70
20	1.80 S	1.55	1.30	1.80	1.80	1.85	2.20	2.30	3.10	3.10	3.05	3.80	4.15	4.30	3.65	2.90	2.40	2.25	1.85	1.75	1.65	1.75	1.75	1.60
21	1.80	1.65	1.70	1.80	1.80	1.90	2.00	2.25	2.60	2.90	2.90	4.70	4.25	3.20	4.20	2.80	2.20	2.25	1.95	1.65	1.90 S	1.80	1.70	1.75
22	1.75	1.60	1.70	1.75	1.60	1.80	2.05	2.10	3.50	3.70	3.85	4.15	3.85	3.65	3.20	3.50	2.75	2.20	2.10	1.90	1.60	1.90	1.85	1.80
23	1.60	1.90	1.70	1.80	1.70	1.70	1.90	2.50	3.30	3.15	3.30	4.80	3.20	4.50	3.65	3.00	2.70	2.05	2.20	1.70	1.60	1.70	1.70	1.80
24	1.80	1.70	1.90	1.70	1.60	1.55	1.80	1.95	2.75	3.50	3.55	3.50	3.70	3.50	3.20	2.80	2.25	1.80	1.90	1.65	1.80	1.80	1.90	1.80
25	1.70	1.65	1.65	1.65	1.75	1.95	1.90	2.65	4.10	3.60	3.80	4.60	4.80	4.75	3.65	3.25	2.25	2.00	C	C	C	C	1.65	1.75
26	1.90	1.60	1.80	2.00	1.80 S	1.80	2.20	2.20	1.75	3.75	3.60	3.15	5.10	4.30	4.80	4.10	2.20	2.40	1.90	1.75	1.90	1.60	1.55	2.30
27	1.60	1.55	1.80	1.60	1.60	2.50	2.75	3.20	3.70	4.05	4.10	4.30	4.30	4.80	4.60	5.10	3.50	2.20	1.80	1.80	1.80	1.80	1.70	1.60
28	1.80	1.60	1.90	1.75	2.40 S	2.10	1.90	2.10	2.30	3.75	3.90	4.10	4.10	4.70	3.75	3.50	2.40	1.80	1.90	1.60	1.65	1.50	1.80	1.60
29	1.80	1.90	1.90	1.65	1.80	1.70	2.00	2.25	3.05	3.90	4.15	4.20	4.30	4.10	3.85	4.10	3.05	2.30	1.85	1.75	1.80	2.50	1.80	1.80
30	1.80	1.60	1.80	1.80	1.80	1.80	1.90	2.30	3.65	3.15	3.00	3.10	3.50	5.50	4.10	2.90	2.25	2.10	1.90	1.80	1.80	1.80	1.80	1.70
31	1.80	1.65	1.80	1.80	1.60	1.85	2.40	2.20	4.00	4.30	4.05	4.00	5.20	3.60	4.10	4.40	4.60	2.20	1.90	1.80	1.70	1.50	1.70	1.70
No.	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31
Median	1.80	1.65	1.70	1.70	1.70	1.90	2.00	2.25	2.75	3.60	3.80	4.10	4.15	3.85	3.75	3.30	2.35	2.15	1.90	1.75	1.70	1.70	1.70	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

Aug. 1957 | (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	2.45 S	2.80 R	2.75 S	2.50	2.60 RS	2.75	2.75	2.80	2.85	2.90	2.55	2.55	2.50	2.55	2.50	2.50	2.60	2.75	2.85 RS	2.90	2.55 R	I 2.35 R	2.45	2.50
2	2.35 S	2.65	2.60	2.70 R	2.55	2.80	3.00	2.95	2.60	2.45	2.60 R	2.50	2.45	2.35	2.40	2.45	2.55	2.60 R	2.65 R	2.75 S	2.45	2.35	2.45	2.50
3	2.40 RS	2.60 J	2.60	2.60	2.75	2.70	2.65	2.55	2.75	I 2.70 A	2.60	2.50	2.50	2.55	2.55	2.60	2.60	2.65	2.70	2.75	2.50	2.55	2.55 R	2.55 R
4	2.55	2.50	2.80	2.55	2.30 V	2.80	3.15	3.25	3.10 H	2.55 ZH	2.60	2.40	2.50	2.50	2.55	2.65	2.60	2.75	2.70	2.60	2.60	2.55	2.55	2.40
5	2.40	2.40 F	2.65	2.75	2.70	2.85	2.75	2.95	2.80	2.60	2.65	2.65	2.70	2.65	2.70	2.70	2.75	2.75	2.85	U 2.40 S	2.55	2.55	2.65 V	2.75
6	2.85 I	2.80 F	2.65	2.55	2.50	2.60	2.90	2.90	2.85	2.30	2.40	2.40	2.60	2.50 R	2.50	2.55	I 2.50 C	2.50	2.70	2.70	2.55 S	2.40 RS	2.45 R	2.65 R
7	2.55	2.45	2.45	2.35	2.45	2.65	2.85	2.75	2.95	2.70	2.80	2.60	2.70	2.75 H	2.70	I 2.80 C	2.75	2.80	2.85 S	2.75	2.70	2.65	2.45	2.45
8	2.40	2.50	2.55	2.60	2.55	2.75	2.65	3.00	2.85	2.55 H	2.75	2.55	2.75	2.75	2.65	2.75	2.65	2.70	2.75	2.85 S	2.45	U 2.40 S	2.55	2.55
9	2.55	2.60	2.60	2.65	2.50	2.55	2.90	2.85	3.15	2.80	2.90	2.60	2.50	2.55	2.65	2.65	2.70	2.60	2.60	2.65	2.65	2.65	2.55	2.60
10	2.60 S	2.50	2.55	2.55	2.55	2.65 S	2.95	3.15	2.95	2.70	2.45	2.50	2.55	2.65	2.55	2.60	2.70	2.85	2.80	2.65	I 2.40 S	2.45	2.55	2.50
11	2.55	2.65	2.65	2.50	2.50	2.50	2.55	2.55	2.55 H	2.45	2.45	2.40	2.35	2.40	2.35	2.40	2.65	2.65	2.65	2.55	2.45 S	2.50 S	2.60 S	2.45
12	2.45	2.45	2.55	2.45	2.50	2.55	2.80	2.80	2.75	2.50	2.40	2.50 R	2.55	2.45	2.50 R	2.50 R	2.50 R	2.55	2.75 RS	2.75	2.50	2.45 R	2.55	2.60
13	2.45	2.40	2.50	2.40	2.45	2.45	2.95	2.90	2.80	2.45 R	2.50	2.55	2.50	2.50	2.50	2.50	2.55	2.70	2.80 RS	2.65	2.30	2.40 RS	2.55	2.45
14	2.45	2.55	2.85	2.40	2.45	2.65	2.95 R	2.80	2.65	2.50	2.55	2.60	2.55	2.50	2.55 R	2.65 R	2.70	2.75	2.70 S	2.70 S	2.70	2.55	2.50	2.50
15	2.55	2.55 R	2.60	2.65	2.45 V	2.50	2.75	2.95	2.75	2.65	2.65 R	I 2.55 R	2.50	2.60 R	2.60	2.65	2.70	2.75	2.90	2.55 S	2.45	2.60	2.55 R	2.50
16	2.55 S	2.40	2.55	2.50	2.50	2.60	2.90	2.85 R	2.90	2.65	2.60	2.60	2.50 R	2.50	2.50	2.60	2.65	2.70	2.75 RS	2.85 RS	2.50 S	2.40 RS	2.50	2.45 RS
17	2.35 F	2.40	2.60	2.55	2.60	2.75	2.95	2.90	2.80	2.70	2.60	2.50	2.60	2.60	2.55 R	2.60	2.60 R	2.65 R	2.70 S	2.70 S	2.55	2.45	2.50	2.55
18	I 2.50 RS	2.50	I 2.50 RS	2.60	2.70 S	2.70	2.85	2.70	2.65	2.45	2.65	2.50	2.50	2.50	2.55	2.60	2.55	I 2.60 A	2.65 RS	2.75 RS	2.55	2.45	U 2.45 S	2.35
19	2.40	2.55	2.55	2.55	2.45	2.60 RS	2.30	2.85	2.65	2.65 H	2.50	2.55	2.45 H	2.55	2.50	2.60	2.60	2.65	2.55	2.60	2.50	2.45	2.50	2.55
20	U 2.45 S	2.55	2.55	2.85	2.55	2.50	2.90	2.90	2.80	2.70	2.65	2.55 H	2.60	2.65	2.70	2.60 H	2.70	J 2.70	2.75	2.85	2.70	2.50 S	2.50	2.55
21	2.55	2.50	2.45	2.55	2.50	2.35	2.60	2.95	2.95	2.75 H	2.55	2.40	2.35	2.25 R	2.35	2.50	2.60	2.65	2.80	2.75	I 2.45 A	2.40	2.40	2.40
22	2.45	2.55	2.55	2.60	2.50	2.55	2.85	2.75	2.80	2.40	2.40	2.70	2.70	2.55	2.65	2.65	2.70	2.80	2.90	2.75	2.55	2.45	2.55	2.60
23	2.50	2.55	2.60 S	2.65	2.60	2.70	2.95	2.90	2.95 R	2.75	2.55	2.50	2.55 S	2.50	2.60	2.65	2.75	2.80	2.90 S	2.75	2.65	I 2.50 A	2.60	2.60
24	2.65 S	2.60	2.60 S	2.65	2.55	2.60	2.90	2.85	2.95 R	2.60	2.60	2.65	2.70	J 2.70	2.60 H	2.70	2.80	2.80	2.85	2.75	2.55	U 2.65 S	2.60	2.60
25	2.55	2.60	2.60	2.55	2.70	2.75	2.95	3.10	2.95	2.90 R	2.75 R	J 2.60	2.60	2.65	2.65 R	J 2.65	C	C	C	C	C	C	2.50 RS	2.55 R
26	2.70 S	2.70	2.75	2.50	2.45 S	2.55 S	2.80	2.95	3.05	3.00 H	2.80	I 2.45 C	2.55	2.65	2.60 R	2.65 R	2.65 R	2.75	2.90	2.85 RS	2.55	I 2.50 S	2.50	2.55
27	2.45 R	2.45	2.50	2.50	2.35	2.50	2.90 R	3.05	3.00	2.80	2.65 R	2.55	2.55	2.60	2.60	2.55 R	2.55	2.70	2.80	2.85 S	2.60	2.35 S	2.40	2.55 S
28	I 2.50 S	2.50	2.45 S	2.45	2.40 S	2.50	2.90 C	2.80	2.90	2.70	2.65 R	2.70	J 2.65 H	2.65	2.65	2.65	2.60 R	2.65 S	2.75 RS	2.90 RS	2.75 S	2.45 RS	2.50	I 2.55 RS
29	I 2.50 A	2.45	2.40	2.60	2.45	2.65	U 3.15 C	3.10	2.90	3.00	2.70 H	2.70	2.65 R	2.60	2.75	2.75	2.75	2.85	2.85 S	2.85	2.75 RS	2.60 S	2.55	2.45 S
30	2.55 S	2.50	2.70	2.75	2.60	2.80	3.10	2.65	2.95 R	C	C	C	C	2.60 HR	2.65	2.75 R	2.65 H	2.70	2.70 S	2.65	2.50	2.50	2.50	2.50
31	2.55 S	2.45	2.45 R	2.40	2.40	2.45	2.95	3.00	3.10	3.05	2.65	2.65	2.65	2.65	2.70	2.65	2.65	2.75	2.80	2.80 RS	2.45	2.50	2.55	2.65
No.	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	30	30	30	30	30	30	31	31
Median	2.50	2.50	2.60	2.55	2.50	2.60	2.90	2.90	2.85	2.70	2.60	2.55	2.55	2.55	2.60	2.65	2.65	2.70	2.75	2.75	2.55	2.50	2.50	2.55

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | (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								L	A	A	A	A	3.35 L	I 3.30 A	3.50	3.20	A	A	A					
2								L	L	3.10 LH	B	A	3.55	L	A	A	A	L	A					
3									L	A	L	3.25	I 3.40 L	L	L	L	L	L	L					
4								L		3.75	3.15	I 3.30 L	3.50	3.10 LH	3.10 L	3.25	A							
5								A	3.25	I 3.30 L	I 3.40 A	3.25 L	I 3.40 A	3.35	3.25 L	L	3.40 L	L						
6							L	L	3.50	A	L	L	A	L	3.20	3.30 L	C	L						
7							L	L	L	3.20 L	3.75 L	3.30	3.35	3.85	3.35	C	L	L						
8								L	3.85 L		3.60 R	I 3.20 L	3.40	3.15 L	2.95 H	B	3.20 L	A						
9								L	3.80	3.30 H	3.35 L	I 3.20 A	I 3.15 A	I 3.35 S	I 3.25 B	I 3.20 L	I 3.20 L	L						
10							L	3.80 L	I 3.80 L	3.25	3.35	3.20 L	A	3.15	3.45	I 3.30 A	3.25 L	L						
11							L	L	3.40	3.55	3.55	I 3.50 A	3.45	3.70	3.60	3.20	3.20	L	L					
12								L	L	A	I 3.30 A	3.10 L	3.45 R	3.40 L	3.30	3.40	L	L						
13									L	A	L	L	I 3.35 L	3.35 L	3.35 L	L	L	L						
14										L	A	A	A	A	3.30	L	A	A						
15										L	A	A	I 3.40 R	3.20	L	L	A	A						
16								L	L	L	L	3.25	I 3.30 L	3.25	I 3.40 L	I 3.30 L	L	L						
17										A	L	L	R	3.35	L	L	A							
18										L	L		3.30	L	L	L	L	A	L					
19								L	L	L	3.50 L	3.10	3.30 L	3.30	3.10	3.20 L	3.25 L							
20									L	3.75	3.35		3.15 L	3.30	3.45 L	I 3.40 L	L	L	A					
21								L	L			3.45	3.15 L	3.30	3.35	A	A	A						
22								L	I 3.45 L	A	3.20	I 3.40 A	I 3.20 A	3.05	I 3.25 A	I 3.30 L	3.20 L	L	A					
23								L	L	A	3.10 LH	3.05 L	3.30	3.65	I 3.20 L	I 3.20 A	3.35 L	A						
24								L	L	L	3.25 L	3.30 L	3.25 L	I 3.40 L	I 3.25 L	3.50 L	L							
25								L	L	L		L	L	L	L	L	L	A						
26												C	L	3.30 R	L	L	A	A						
27											A	L	L	3.30	L	L	A	L						
28									L	L	L	L	I 3.50 L	3.35 L	B	L	A							
29										L		I 3.30 L	I 3.40 A	I 3.45 A	L	A								
30										C	L	A	3.35		H L	3.40 L		L						
31									L	L	3.30 L	I 3.40 L		3.30 L	L	L								
No.								1	7	8	14	17	23	24	19	14	8							
Median								3.80 L	3.50	3.30	3.35	3.25	3.35	3.30	3.30	3.30	3.20							

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

The Radio Research Laboratories, Japan.

K 8

IONOSPHERIC DATA

Aug. 1957 | 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								310	300	320	400	370	375	370	400	390	355	325	300					
2								255	L	455	400	I 375 A	400	410	I 410 A	380	375	330	305					
3									305	I 310 A	380	410	350	325	370	350	350	320	320					
4								260		275 H	430	400 L	380	355	360	350	355							
5							300	330	355	375	340	350	350	345	350	325	330	310						
6							280	300	330	355	370	400	370	360	395	360	I 360 C	370						
7							300	I 295 L	265	360	280	425	380	310 H	340	I 340 C	320	310						
8								260	350	300 H	370	340 B	340	360	395	355	375	345						
9								275	280	350	315	395	395	395	370	350	330	310						
10							325	250	260	370	350	350	380	355	380	380	350	310						
11							310	320	310 H	455	460	500	540	560	585	510	420	375	315					
12								300	300	325	420	400	385	395	405	395	370	305						
13									285	I 360 L	L	375	390	380	400	380	310	300						
14										I 345 L	350	355	385	380	360	370	355	355						
15										365	330	410 A	360	400	390	355	385	355 A						
16								280	300	350	350	380	400	410	375	370	350	320						
17										350	350	360	355	360	375	335	A							
18										340	300		405	385	385	355	340	I 350 A	300					
19								260	270	255 H	300	375	310 H	380	370	350	330							
20									270	300	360		370	360	350	280 H	335	305	305					
21								270	275			415	460	450	450	440	390	360						
22								310	325	520	U 470 B	400	420 A	450	420	400 L	370	330	300					
23								300	290	300	400	390	395	355	355	355	340	315						
24								270	280	265	360	360	360	335 B	LH	340	325							
25								255	255	270		370	350	350		345	C	C	C					
26												C	315	380	380	365	400 A	350 B						
27											370	400	390	365	350	370	360	320						
28									300	290	285	310	280 H	345	350	340	A							
29										300		310	355 A	320	355	310								
30										C	C	C	C	290 H	330	340		305						
31									270	260	405	305		380	350	350								
No.							5	18	21	27	25	27	29	31	29	31	25	23	7					
Median							300	280	290	340	360	375	380	365	375	355	355	320	305					

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

Aug. 1957 | h'F | 135° E Mean Time (G.M.T.+ 9h.)

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	350	330A	300	350A	345A	270	260	300A	A	A	A	A	210	I260A	250	300A	A	A	A	270	310A	350	325	330
2	350	300	300	305	320	290	260	235	220	220H	B	A	210	A	A	A	A	280	I295A	330A	360A	355	320	325
3	400A	315	315	310	270	280	255	255S	300SA	I280A	230	255	250	250	255	240	255	300A	270A	280	295A	350A	320A	305
4	315	330	300	270	390	255	250	255	225H	225	210	I280A	250	240H	250	255	I280A	290	285	295	330	300	290	405
5	410A	420A	345	300	295	305	A	A	250	320A	I280A	E300A	A	285A	255	270A	260	270	275	A	E400A	325	350	330
6	310	300	275	300	340	295	275	250	240	I255A	I255A	I250A	I240A	280	210	250	I250C	270	300	280	285	330A	360A	310
7	310	340A	370A	350	355A	340	270	250	250	230	245	270	250	230	250	I255C	275	275	295	270	300A	280	300	355
8	350	325	325	305	300	305	255	I240B	245	I265B	220	260	I260B	250	250H	I270B	255	I285A	300	270	290A	355	325	320
9	325	300	300	275	295	290	255	250	230	210	240	A	I240A	I240S	I265B	250	290A	260	305A	320	290	300	285	310
10	310	345	330	300	310	300	255	230	225	230	205	A	A	250	260	I260A	275	250	270	290	340	355	345	345
11	310	295	325	290	300	300	265	260	275	240	290	A	250	230	240	245	250	280	300A	305	325	310	300	255
12	305	310	305	305	305	305	290	250A	250	A	I220A	250	240	210	230	255	250	250	280	260	295	320	300	310
13	330	330	310	350	335	320	270	245	260A	I255A	250	270A	I205A	I220A	230	210	250	255	280	280	350A	340A	330	300
14	350A	340A	270	330	350	310	255	250	250	290A	A	A	A	A	255	A	A	A	290	I305A	300A	310A	325A	350A
15	350A	320	310	290	300	295	255	260	280A	A	A	I270A	250	255AI	I270A	290A	A	A	280A	305	345A	350A	300	320
16	305	340	320	300	300	290	255	255	240	215	250	245	260	250	215	255	255	270	280	260	260	300	310	355A
17	405A	350	340	340	300	300	255	255	250	I260A	250	305A	I255A	270	270	A	A	320A	285	310A	290A	340A	320	320
18	340A	350	330	300	300	255	245	250	255	250	200	270	220	I260A	255	260	250	I280A	295	275	270	280	330	400A
19	370	320	300	300	305	300	255	240A	250	245	240	260	250	250	250	255	250	275	280	295	305	320	300	310
20	325	325	300	275	245	320	260	250	240	250	250	255H	250	255	250	250	270	270	I300A	280A	260	285	325	310
21	300	325	310	305	300	300	260	260	250	255H	280H	230	225	250	255	A	A	A	300A	280	A	400A	380A	405A
22	380A	320	330	300	325	310	275	270	260	A	A	A	A	280A	I285A	260	250	270	A	290A	275	315	310	300
23	325	325	330	310	310	I300A	280A	250	240	A	250H	250	250	230	280	I290A	250	I265A	280	270	305AI	360A	330	295
24	325	300	305	280	295	310	270	245	230	250	260	270	250	255	250	255	260	270A	280	270	255	295	300	300
25	325	320	300	300	280	295	255	240	240	235	280	220	255	255	260A	A	C	C	C	C	C	C	315	320
26	305	300	290	270	345	310	270	260	250	260H	265AI	I210C	260	265	260	250	A	A	295A	260	350A	305	310	320
27	330	350	305	305	345	310	265	250	250	295A	I270A	270A	I250B	280	250	B	A	280	270	265	300	350A	350A	300
28	340	315	305	345	350	320	255	250	255	250	255	240	255	250	I270B	270	I280A	300A	300A	270	260	355A	335	350A
29	A	405A	365	320A	320	320	260	260	250	230	255H	A	A	I255A	I285AH	I250A	I300A	300A	280	280A	285	300	310	350A
30	350A	350A	305	300	320	290	250	255	280A	C	C	C	C	I210B	245H	255	250H	280	285	280	300	340	340	360A
31	305	325	340	330	340	340	260	250	250	245	260	270	I260E	230	250	280A	300B	300A	300A	255	250	305	305	305
No.	30	31	31	31	31	31	30	30	30	25	25	21	25	29	30	25	22	25	28	29	28	30	31	31
Median	330	325	310	300	310	300	260	250	250	250	250	260	250	250	250	255	255	275	285	280	300	320	320	320

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | h'Es | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	110	105	105	105	145	125	120	120	120	120	120	B	120	120	110	105	105	105	105	105	105	105	105
2	105	E	E	E	E	E	G	G	G	G	B	115	B	110	105	110	105	110	120	120	120	105	105	100
3	110	115	105	110	120	125	130	120	120	110	120	115	B	145	B	B	150	120	125	115	110	105	105	105
4	105	110	110	115	E	E	G	G	G	125	125	110	B	B	G	140	125	125	125	120	115	110	110	115
5	115	110	115	110	115	110	110	110	110	120	125	135	120	130	B	125	125	125	120	120	115	105	100	110
6	110	115	100	125	E	150	125	125	120	120	120	120	110	115	120	G	C	150	125	120	E	120	120	E
7	120	120	110	115	110	115	130	130	130	G	G	130	130	130	B	C	125	130	125	E	125	125	110	115
8	110	120	110	E	125	110	B	115	115	B	110	G	B	110	B	B	130	125	115	110	110	110	E	E
9	105	E	E	E	E	B	G	125	120	110	110	105	110	115	125	G	130	130	105	100	110	120	115	105
10	110	E	S	E	E	S	B	145	B	120	B	110	110	110	110	135	130	130	130	120	110	105	105	105
11	105	B	E	E	E	E	130	125	125	B	130	120	B	140	150	G	150	120	120	E	120	105	110	E
12	E	E	E	E	E	E	120	120	120	110	110	B	B	G	G	G	G	G	B	E	120	E	E	E
13	E	E	E	E	E	E	B	G	120	120	120	110	105	105	G	105	105	G	105	105	120	110	110	110
14	105	110	105	E	E	140	125	125	130	120	115	115	110	115	130	135	130	120	120	110	105	105	105	105
15	105	120	E	105	E	130	125	120	120	110	110	110	110	120	105	105	130	130	120	120	120	115	120	E
16	E	E	E	E	E	E	G	G	G	G	G	B	115	B	B	B	B	145	B	E	120	E	E	110
17	110	110	105	105	110	E	135	135	130	120	120	120	115	150	145	140	130	120	120	120	110	110	105	105
18	110	E	E	E	E	E	110	145	130	130	140	B	B	125	125	120	G	115	125	E	E	E	110	105
19	110	E	E	E	E	E	135	120	120	125	120	115	110	B	105	110	B	125	125	E	125	120	E	105
20	105	E	E	E	E	E	135	130	130	125	120	120	130	115	120	120	130	125	120	115	110	105	100	E
21	E	E	E	E	E	E	G	130	145	130	130	B	150	G	B	145	125	125	120	115	115	110	105	105
22	105	105	110	110	110	E	130	125	125	125	125	120	110	150	130	140	130	140	120	120	115	115	E	E
23	110	E	110	E	E	110	110	G	120	120	120	B	105	B	170	130	G	125	B	120	110	110	105	110
24	105	E	S	105	E	115	150	120	120	115	110	110	110	110	110	110	135	130	125	110	E	E	E	E
25	E	E	E	E	E	125	120	120	B	115	110	B	B	B	120	110	150	125	120	105	115	E	E	105
26	105	105	E	E	105	E	140	125	120	120	115	110	B	130	B	B	120	120	120	115	110	110	105	E
27	105	E	E	105	E	E	B	140	130	125	120	120	130	B	B	B	130	150	120	120	115	115	115	110
28	105	110	105	105	E	E	140	120	120	120	120	120	115	B	G	120	130	120	105	105	105	105	110	110
29	110	110	105	105	105	105	130	120	125	130	130	120	120	120	120	110	110	110	105	105	105	E	110	110
30	110	105	105	105	105	105	115	160	120	130	125	120	120	B	B	G	110	110	120	110	110	110	110	110
31	105	105	105	E	110	E	155	155	B	B	115	110	B	110	155	140	B	125	120	120	115	E	E	E
No.	26	16	15	14	11	13	22	26	25	25	27	24	20	21	18	20	24	29	28	25	28	24	23	21
Median	105	110	105	105	110	115	130	125	120	120	120	120	110	120	120	120	130	125	120	115	115	110	110	105

h'Es

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

The Radio Research Laboratories, Japan.

K 11

IONOSPHERIC DATA

Aug. 1957

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	f3	fz	fz	f	f	C	Cz	C	C	l	l		C	l	l	l	l	lz	fz	fz	f	fz	f
2	f											l		l	l	l	l	l	l	fu	fz	fz	f	f
3	f	f	f	fz	f	f	h	C	C	Cz	l	l		h			h	C	C	fz	fz	f3	fz	f
4	f	f	f	fz						h	h	l				h	C	Cz	l	fz	fu	fz	fz	f3
5	f3	f5	fu	fz	fz	fz	lz	lz	l	Cz	C	h	C	h		h	h	Cz	l	f3	f3	f3	fz	fz
6	fz	fz	fz	f		C	C	C	C	l	l	l	l	l	l			h	C	f		fu	f	
7	fz	f3	f3	fz	fz	fz	h	h	h			h	h	h			l	C	l		f	f	f3	f
8	f	f	f		f	fz		l	C		l			l			h	Cz	lz	fz	fz	f		
9	f							l	l	l	l	lz	l	l	l		C	hl	l	fz	f	f	f	f
10	f							h		l		l	l	l	l	hzl	hl	h	C	ff	f	fz	f	fz
11	f						C	C	C		h	l		h	h		h	C	l		f	f	f	
12							l	C	C	l	l										f			
13									C	l	l	C	l	l		l	l		l	f	fz	fz	fz	fz
14	f	fz	f			f	C	C	h	l	lz	lz	l	l	h	h	C	C	f	f3	fz	fz	f3	fz
15	fz	f		f		f	l	C	C	l	l	l	l	l	l	lz	hl	hzl	l	fz	f	fz	f	
16													l					h			f			fz
17	f3	f	fz	f	f		h	h	h	l	l	l	l	h	h	h	hz	C	l	f3	fz	f	fz	f
18	f						l	h	h	h	h			l	C	l		Cz	l				fz	f3
19	f						h	C	l	l	l	l	l		l	l		C	l		f	f		fz
20	f						C	h	C	l	C	l	h	l	l	l	h	C	lz	f3	f	f	fz	
21								h	h	h	h		h			h	Cz	Cz	fz	fz	f3	fu	fu	f
22	f3	f3	fz	fz	fz		C	C	l	l	l	l	l	hl	h	h	h	h	l3	f3	fz	f		
23	f		f			fz	lz		l	C	l		l		h	hz		Cz		f	fz	f3	fz	f
24	f			f		f	h	C	C	l	lz	l	l	l	l	l	hl	Cl	fz	ff				
25						f	C	l		l	l				l	l	hl	hzlz	l3	fz	fz			fz
26	fz	f			f		h	C	C	l	l	l		h			C	Cz	f3	fz	fz	f	fz	
27	f			f				h	h	l	lz	l	h				h	h	fz	f	fz	fz	f	fz
28	fz	f	f	f			h	C	C	l	l	l	l			l	hz	Cl	f3	f	f3	f3	f	f
29	fz	fz	fz	fu	fz	fz	h	C	C	h	h	l	l	l	l	l	lz	l	fz	f	f		f	fz
30	f	fz	fz	fz	fz	fz	l	h	l	h	C	Cz	C				l	l	f	fz	f	fz	fzf	fz
31	f	f	f		fz		h	h			l	l		l	h	h		C	fu	f5	f			
No.																								
Median																								

Types of Es

Sweep 1.6 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 12

IONOSPHERIC DATA

Aug. 1957 | h_pF2 | 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	450S	370R	390S	440	415RS	360	350	355	340	350	420	405	410	410	440	440	410	375	355RS	330	420R	I470R	450	440
2	475S	400	405	400R	425	350	305	320	400	455	410R	410	440	460	I450A	425	415	400R	380R	370S	450	460	450	440
3	500RS	400	J400	415	365	375	375	400	370	I380A	405	450	405	410	420	400	400	400	390	355	415	410	410R	410R
4	420	450	365	405	500V	345	290	285	305H	420ZH	430	450	430	420	405	400	400	365	390	400	405	405	420	455
5	455	450F	400	390	395	350	360	330	385	400	400	390	380	395	395	390	380	375	350	U380S	435	400	400V	400
6	380	I380F	400	420	445	405	330	445	360	500	465	455	410	425R	445	420	I420C	445	370	360	420S	450RS	480R	405R
7	425	450	465	475	440	405	350	370	300	385	350	430	400	375H	380	I380C	380	365	350S	380	385	390	460	470
8	460	440	425	425	405	380	400	325	365	G	390	420	365	390	415	385	400	395	380	345S	425	U455S	440	435
9	435	420	I410C	395	410	395	340	350	310	385	350	405	445	425	400	400	390	395	400	390	400	400	415	405
10	420S	455	430	420	420	390S	320	300	325	400	435	425	430	400	425	410	400	370	370	400	I470S	450	450	445
11	420	400	390	425	440	425	400	430	500H	455	460	G	G	G	G	G	415	400	390	410	470S	420S	400S	435
12	430	425	410	440	415	400	350	350	355	410	450	440R	425	440	440R	440R	420R	405	375RS	365	425	450R	405	405
13	445	450	430	460	450	450	325	340	355	440R	440	420	450	420	445	425	420	390	370RS	390	490	440RS	420	440
14	455	425	340	480	450	450	320R	345	395	420	415	400	400	420	420R	400R	375	375	365S	385S	370	425	425	450
15	445	430R	405	395	420V	405	360	315	355	405	400R	I420R	420	415R	410	400	365	360	345	405S	450	405	410R	435
16	415S	455	425	420	420	400	345	345R	340	400	405	405	435R	445	425	410	405	390	380RS	340RS	420S	455RS	420	460RS
17	500F	450	405	410	395	370	340	340	360	390	400	430	400	400	410R	400	405R	400R	380S	380S	405	450	420	420
18	I440RS	440	I420RS	405	380S	365	345	365	390	380	395	430	450	425	430	405	415	I400A	390RS	365RS	405	440	U450S	500
19	490	410	410	415	440	400RS	475	340	390	400H	420	415	450H	420	405	400	400	380	400	400	430	445	430	420
20	U445S	425	420	350	415	420	330	340	355	365	400	430H	415	395	400	405H	395	J380	375	350	385	445S	450	425
21	405	440	445	425	420	470	400	325	320	360H	410	455	495	510R	480	450	405	400	355	360	I445A	470	475	475
22	470	420	420	400	445	405	345	360	350	520	I485B	400	I430A	450	420	405	390	370	350	365	400	445	425	405
23	430	430	425	405	405	400	350	350	330R	350	440	430	430S	425	400	400	375	360	350S	385	395	I435A	405	400
24	400S	405	405S	390	425	400	340	330	330	400	405	400	400	J390	410H	400	370	375	360	375	410	U400S	410	410
25	435	420	410	405	375	370	340	305	355	350R	355RJ	420	400	400	400RJ	400	C	C	C	C	C	C	450RS	415R
26	395S	400	365	420	450S	415S	355	320	300	325	355	I440C	395	400	400R	400R	400R	390	370	350RS	410	I425S	440	420
27	445R	455	420	420	470	410	350R	305	310	365	400R	440	440	405	400	415R	430	390	350	355S	400	450S	460	405S
28	I430S	425	430S	450	460S	430	325	355	340	370	380R	365	J405H	400	390	400	400R	380S	360RS	350RS	360S	450RS	440	I425RS
29	I435A	455	450	400	435	400	U300C	300	325	330	395H	365	395R	400	395	380	390	360	350S	350	380RS	400S	415	450S
30	415S	440	395	355	400	350	305	385	320R	C	C	C	C	410HR	385	380R	405H	390	370S	400	420	440	445	440
31	415S	450	440R	455	455	440	330	310	305	305	420	400	370	400	390	400	390	360	350	355RS	450	440	415	420
No.	31	31	31	31	31	31	31	31	31	29	30	29	29	30	30	30	30	30	30	30	30	30	31	31
Median	435	430	410	415	420	400	345	340	350	390	405	420	415	410	410	400	400	385	370	370	420	440	425	425

h_pF2 | Sweep 10 Mc to 20.0 Mc in 20 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

K 13

IONOSPHERIC DATA

Aug. 1957 | 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	110 S	70 R	80 S	100	85 RS	140	160	125	110	90	150	145	130	160	140	130	130	100	145 RS	120	120 R	I 125 R	120	110
2	125 S	100	125	100 R	125	150	115	130	200	145	100 R	120	110	165	I 140 A	155	125	120 R	170 R	120 S	150	140	140	110
3	100 RS	110	J 110	135	115	125	185	150	140	I 130 A	105	100	155	130	110	125	140	115	110	145	150	120	105 R	120 R
4	120	105	165	145	105 V	165	165	85	125 H	180 ZH	80	170	125	135	125	95	115	110	100	100	105	120	130	105
5	145	100 F	105	90	105	120	160	120	90	130	140	145	120	125	110	130	105	100	105	U 125 S	115	155	105 V	95
6	75	I 85 F	120	100	105	140	120	130	120	200	160	135	155	115 R	130	140	I 170 C	135	130	130	180 S	130 RS	135 R	105 R
7	125	130	105	125	125	105	150	130	225	90	135	85	75	95 H	120	I 110 C	115	125	100 S	130	115	115	130	105
8	135	120	120	100	105	120	125	145	85	G	110	145	110	110	110	105	145	105	100	120 S	165	U 135 S	85	115
9	115	110	I 100 C	105	140	125	115	95	85	90	125	145	145	105	110	130	110	155	140	115	100	145	110	150
10	95 S	115	100	130	105	120 S	85	75	175	150	155	145	130	135	115	115	100	90	135	100	I 120 S	120	110	130
11	130	110	125	130	125	135	200	125	220 H	115	130	G	G	G	G	G	90	100	150	140	120 S	160 S	150 S	140
12	140	155	140	185	165	165	130	200	145	205	190	110 R	135	150	80 R	150 R	130 R	115	110 RS	135	125	125 R	150	135
13	110	130	125	140	140	140	125	270	175	155 R	150	120	120	130	140	160	150	115	130 RS	135	140	120 RS	130	160
14	105	130	110	120	100	110	135 R	180	140	160	155	135	150	130	95 R	105 R	140	125	135 S	115 S	130	125	125	90
15	105	80 R	110	95	130 V	145	140	125	145	125	150 R	I 115 R	155	125 R	140	100	185	120	110	135 S	150	120	115 R	95
16	125 S	145	125	150	130	140	95	155 R	115	125	145	145	140 R	105	130	140	120	115	130 RS	110 RS	150 S	175 RS	145	140 RS
17	100 F	110	115	110	105	120	110	115	140	130	150	160	110	140	145 R	140	150 R	110 R	145 S	130 S	145	150	170	130
18	I 120 RS	120	I 150 RS	135	90 S	115	135	185	140	120	170	130	115	135	150	145	145	I 140 A	140 RS	150 RS	155	140	U 100 S	110
19	110	140	140	110	120	150 RS	175	145	125	120 H	150	130	145 H	120	145	140	125	120	150	135	125	155	135	115
20	U 110 S	120	100	95	135	145	120	130	145	130	115	120 H	125	115	100	100 H	100	J 120	105	100	135	110 S	120	115
21	140	110	120	120	120	160	150	125	105	120 H	150	145	110	140 R	145	125	150	140	120	130	I 185 A	155	125	125
22	130	90	100	125	135	120	125	190	175	60	I 70 B	110	I 110 A	75	85	110	110	80	100	140	145	130	120	115
23	130	120	120	115	140	110	105	115	130 R	200	110	120	130 S	140	120	120	125	115	105 S	135	110	I 105 A	120	125
24	125 S	105	115 S	120	125	150	105	115	95	170	120	120	125	J 100	110 H	135	90	125	115	115	140	U 100 S	100	115
25	85	100	110	135	100	105	130	85	55	80 R	195 R	J 100	130	120	140 RJ	125	C	C	C	C	C	C	100 RS	95 R
26	115 S	100	100	135	110 S	100 S	115	140	100	110 H	195	I 135 C	155	125	125 R	110 R	120 R	110	110	130 RS	170	I 150 S	115	130
27	105 R	110	135	130	150	145	100 R	95	130	160	100 R	120	150	125	105	105 R	120	110	150	120 S	150	150 S	130	145 S
28	I 100 S	115	120 S	120	130 S	135	135	170	130	140	170 R	145	J 100 H	130	110	130	140 R	120 S	110 RS	100 RS	130 S	105 RS	110	I 125 RS
29	I 110 A	105	110	105	165	100	U 70 C	100	55	80	110 H	135	110 R	155	65	120	95	90	100 S	115	130 RS	105 S	160	120 S
30	105 S	115	95	105	100	125	85	135	100 R	C	C	C	C	120 HR	115	110 R	145 H	110	170 S	130	170	140	130	110
31	135 S	110	110 R	135	145	140	130	130	115	145	80	105	130	100	110	100	145	120	100	120 RS	125	100	125	120
No.	31	31	31	31	31	31	31	31	31	29	30	29	29	30	30	30	30	30	30	30	30	30	31	31
Median	115	110	115	120	125	135	125	130	130	130	140	130	130	125	120	125	125	115	120	130	140	130	125	115

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

Aug. 1957 | 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	J 10.4 S	J 10.0 S	u 11.5 S	S	u 9.5 S	9.9 SH	10.6	10.8	9.7 S	7.9 H	8.1 H	8.7 H	9.4	10.2	10.8	12.4	13.6	13.7 S	12.6	10.9	J 10.6 S	J 10.7 S	10.4 S	8.7
2	9.2 S	8.6 R	J 8.1	7.9	7.5	7.6	8.0	8.2	7.8	8.6 H	9.3	9.7	10.0	10.2	10.7	11.4	11.4	11.5	10.8	J 10.1 S	8.9 H	8.7 H	9.6 S	9.6 S
3	9.0	9.2	9.1 S	7.8	7.6	6.7	7.6	8.8	9.5	9.0	8.9 H	9.7	10.7 H	11.4	11.8	11.9	12.3	12.8	12.1	10.9	I 10.0 S	9.5 S	u 9.8 S	9.8
4	I 9.4 S	8.9 V	8.5	7.6	F	6.5	8.5	7.0	7.9	8.2 H	8.9 H	9.5	11.1	11.9	12.4	12.6	12.4	12.3	11.4	11.4	10.6	10.7	10.5	9.8 S
5	8.8	8.7	u 8.5 S	J 8.0	6.7	6.1	u 6.2 C	6.9	7.9	8.3 H	I 9.6 C	11.0	11.5	11.6	I 11.6 A	11.5	11.7	11.8	11.7	11.6	11.2	I 10.8 S	I 11.4 S	12.3 S
6	J 11.5 S	9.4	I 9.4 S	8.9	7.6	7.6 H	J 7.9	9.0	8.9	N	I 9.4 SH	10.2	10.6	11.4	11.7	12.4	13.1	12.9	u 13.2 S	12.4 S	11.3	10.0	10.5	I 10.2 SH
7	S	8.3	7.8 H	7.7 H	7.7	6.9	I 6.6 C	6.7	7.2	8.5 H	9.7 H	9.7 H	11.2	11.7 H	11.2 H	11.9	12.1	12.8	13.3	12.5	J 10.6	9.5 S	J 10.6 S	I 11.4 S
8	u 12.2 S	S	FS	S	S	8.5	9.0	u 9.4 S	9.0 S	9.5 H	10.2 H	11.6 H	11.4	10.4 H	J 10.0	10.0	J 10.2 S	10.5	11.2	I 10.2 S	9.5 S	u 9.7 S	u 9.5 S	9.6 S
9	10.1 S	9.5 S	8.9	9.2 S	J 7.9 S	7.4	7.9 S	9.3	9.1 S	9.2 H	9.0 H	8.9 H	10.1	10.8	10.6	10.6	10.7	10.4	10.7	10.5	10.8	9.3 S	8.6	8.5
10	u 8.6 S	8.5	8.2	J 8.1	7.9 S	7.1	8.6	9.1 S	8.1	8.4 H	9.4	10.8	12.0	12.0	11.8	12.2	12.3	11.4 H	10.8	9.4	9.0	9.5	9.6	9.3
11	9.1 H	8.9	8.7	8.6	7.7	7.4	7.7	J 10.2 H	10.1 H	10.2	9.5	9.1	9.0	9.0 H	8.0	J 8.1	8.7	8.8	9.2	9.3	9.0	J 8.5 S	8.7	8.8
12	9.3 S	9.3 S	I 8.8 S	J 8.4 S	J 7.8	7.3	I 8.0 C	9.4 S	9.3	8.4 H	9.0 H	10.1	11.5	11.4	11.1	11.3	11.7	11.7	11.2	S	I 8.6 S	8.6 S	J 8.5 S	I 8.0 S
13	7.4 H	7.2	6.8	6.4	6.5	6.4	7.6	J 8.4	S H	9.0 H	9.9 H	11.1	12.5	13.5	13.7 S	13.3	13.2	12.8	11.1	9.5	I 9.2 S	9.2	8.8	8.5
14	J 7.8	7.9	8.0	5.9 H	5.9	6.4	8.5	9.4	9.1	9.3	11.0	12.4	13.2	13.2	13.0	12.8	12.0	11.4	10.9	I 10.3 A	J 9.7 S	9.3 S	9.5 S	I 9.0 S
15	8.9	9.4 H	9.0	8.6	J 7.9 H	7.4 H	J 8.3	10.0 H	9.4 H	10.1 H	10.0	10.4 H	10.5	11.7	11.5	10.9	10.6	10.3	10.2	9.6 S	9.0	9.2 S	u 8.9 S	9.0
16	8.8	J 8.5	8.3	8.0	7.2	7.0	8.0	9.6	9.7 S	9.5 H	10.0 H	10.3 H	11.4	11.4	11.4	11.7	11.9	11.7	11.6	10.4	8.9	9.0 S	9.6 S	S
17	S	8.2	7.9	7.6 H	7.6 S	6.8	7.8	8.6	9.2 H	9.9 H	10.1	11.3	12.1	11.5	11.6	11.1	10.8	10.9	I 10.6 A	J 10.4 S	9.2	9.2	8.8 S	9.3
18	9.0	9.0	8.8	J 8.2	J 7.9	u 7.9 S	7.8	9.7	10.4 H	10.5 H	10.3 H	11.0 H	11.3 H	11.9	12.1	12.1 H	12.6	12.1 H	11.9	11.4	J 10.2 S	11.1	u 12.1 S	I 11.5 S
19	11.1 S	u 11.5 S	11.0	u 9.3 S	J 8.2	u 7.7 S	J 8.0	10.2	10.5	11.0 H	10.9 H	12.2	12.5	13.1	12.5	12.4	12.0	11.2 H	11.2	A	10.5	9.4 S	8.8	8.4
20	J 7.9	J 7.6	J 7.9	7.2	6.7	5.7	6.4	9.1 S	9.7	10.3 H	10.9 H	11.4	11.8	12.3	11.7	11.5 H	11.5	11.6	12.0	12.0	J 10.2 S	10.7 S	J 11.6 S	J 11.6 S
21	11.1 S	u 9.8 S	9.1 S	8.4	8.3	J 7.9 H	8.4	11.8 S	11.6	9.7 H	9.9	10.9	11.3	12.1	12.8	12.5	11.3	11.1 H	11.8	11.9	9.3 S	8.8	I 8.9 C	9.0
22	8.8	J 8.5	8.4	I 7.8 S	7.0 H	7.0	J 8.3	9.5	8.2 H	I 9.2 C	10.2	11.0	11.3	10.7	J 10.2	C	C	10.4 H	10.9 S	11.0	I 10.0 SH	9.5 SH	J 10.0 S	I 9.6 S
23	9.1 S	J 8.8	J 8.4	J 7.9	7.4 S	6.0	6.7	9.0	10.7	9.3	9.4 H	11.0	12.0 H	12.5	12.4	12.1	11.9	11.4 S	11.4 S	u 11.7 S	u 11.5 S	u 11.5 S	u 11.3 S	J 10.6 S
24	9.4	F	F	I 8.2 S	7.8	7.2	8.5	10.8	9.1 S	8.7	10.5	11.0	11.9	11.3 H	10.9 H	11.2	10.7	10.1	10.4	J 9.7 S	9.3 S	9.2 S	9.6 S	9.0
25	J 8.7	9.4 SH	9.8 S	J 8.8	J 7.8	J 7.8	8.2	10.5	9.9	8.8	10.2 H	11.4 H	12.8	12.2 H	11.9	12.0	12.0	12.0	11.8	10.5	10.0 S	11.5	I 11.5 S	10.8 H
26	10.7	10.5	I 9.2 SH	J 8.6	7.8	J 8.0	10.1 S	I 11.6 S	10.7	9.4 H	9.2 H	10.0	11.1 H	11.0	11.0	11.0	11.6	11.6	11.6	11.0	9.5 S	I 9.5 S	S	9.9 S
27	9.6 S	9.4	8.5	J 8.1	7.5 S	J 7.9	I 9.4 S	10.9	9.6	9.4 H	10.9	11.8	13.1	J 14.0	13.0	12.7	12.7	14.1 S	I 13.6 S	11.0	8.4	J 8.0 H	S	J 8.4
28	8.3	J 7.6	J 7.7	u 7.5 S	6.8 H	6.8	7.8	9.6 S	9.4 H	10.7 H	11.8 H	11.5 H	12.3	13.2	13.5 H	13.8 S	13.4	12.9 S	12.6 S	J 12.6 S	I 10.0 S	8.7	8.8	J 8.6
29	8.0	J 7.6	7.1 H	7.1	7.1	7.1	J 7.0	9.0	9.6 H	9.5 H	9.3 H	10.7 H	11.8 H	12.4	12.0 H	11.6	11.7	11.6	11.1 S	11.0	11.0	9.5	J 8.5	J 8.2
30	J 8.4	u 8.2 SH	J 8.7 S	J 8.6 S	J 7.8	6.5 H	6.7	7.8 S	10.7 H	10.1 H	9.5 H	9.8 H	12.2	12.0	12.0	11.1 H	11.1 H	12.4 S	13.6 S	12.3 S	J 10.0 S	9.5 S	9.5 S	9.1 S
31	8.9	J 8.1	I 7.8 S	7.5	7.6	J 7.6	J 7.9	I 9.4 S	10.6	9.5 H	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	29	29	29	29	29	31	31	31	30	30	30	30	30	30	30	29	29	30	30	28	30	30	28	29
Median	9.0	8.8	8.5	8.0	7.6	7.3	8.0	9.4	9.4	9.4	9.8	10.8	11.4	11.7	11.7	11.9	11.9	11.6	11.4	11.0	10.0	9.5	9.6	9.3
U.Q	9.8	9.4	9.0	8.6	7.8	7.7	8.5	10.2	10.1	9.9	10.2	11.3	12.1	12.3	12.4	12.4	12.4	12.4	12.0	11.6	10.6	10.4	10.5	10.0
L.Q	8.6	8.2	8.0	7.6	7.2	6.7	7.6	8.8	9.0	8.7	9.3	9.8	10.7	11.3	11.0	11.2	11.2	11.1	10.9	10.2	9.2	9.1	8.8	8.6
Q.R	1.2	1.2	1.0	1.0	0.6	1.0	0.9	1.4	1.1	1.2	0.9	1.5	1.4	1.0	1.4	1.2	1.2	1.3	1.1	1.4	1.4	1.3	1.7	1.4

foF2

Sweep 1.0 Mc to 20.0 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

Y 1

IONOSPHERIC DATA

Aug. 1957 | foF1 | 135° E Mean Time (G.M.T.+ 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									4.8^{L}				6.2	6.3	6.3	5.6	5.6^{L}	A	4.5					
2									L		6.2^{H}	6.3	6.0	6.2	5.9	6.0	5.6	5.1	L					
3								L	L	4.8		5.9	L	6.3	6.2	6.0	5.4	5.3	L					
4										4.9		6.8^{H}	L	6.1	6.1	6.1^{L}	L	L						
5								L^{H}			C	A	A	A	A	A	L	A	A					
6								L				6.2	L	6.2	6.0	6.2	5.9	5.0^{L}	L					
7									L				6.6	A		L^{H}	6.2^{L}	L						
8								L					6.2		5.9	5.9	6.0^{L}	4.8	L					
9								L	L				6.3	6.2^{H}	5.8	6.3^{L}	5.9	L	L					
10											6.5^{LH}	6.5	L	L	6.0	6.0	A							
11										L	L^{H}	6.5^{L}	5.8	A	5.8	5.5	5.4	L	L					
12								L	L			6.3	6.5^{H}	6.2	6.0	6.1^{H}	5.6^{H}	L	4.1					
13												6.3	6.3	6.5	6.2	A	A	L	L					
14											6.3	A	6.3^{H}	6.3	6.6	6.1^{H}	L	A	A					
15													6.3	5.6	6.4	6.2	L	L						
16									L				6.2	6.3	6.5	6.1	5.7^{L}	L	L					
17												A	6.3^{H}	6.6^{L}	6.5	6.6	A	A						
18														A	L		L							
19												6.3	L	6.5	L	6.1	L		A					
20									L			L	6.5	6.3	L		6.2^{LH}	L						
21									L		L	L	L	6.6	6.1	L	L							
22										C	A	L	A	L	6.5	C	C		A					
23									L	L		L		5.7	6.2^{H}	6.0	L	L						
24									L	L	L^{H}	L	6.1			6.2	L	A						
25										L			6.0		6.4	6.4	6.0	A						
26												6.6^{L}		L	6.5	L^{H}	L	A						
27											6.7^{H}	L	6.7	5.9	6.3	6.3	5.9	L						
28													L	6.3^{H}		6.3	5.7	L						
29														6.2		A	L							
30									L				6.6	6.5	6.2			L						
31									L		C	C	C	C	C	C	C	C	C					
No.									1	2	4	10	17	20	22	20	14	4	2					
Median									4.8	4.8	6.4	6.3	6.3	6.3	6.2	6.1	5.8	5.0	4.3					

foF1

Sweep 1.0 Mc to 20.0 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 2

IONOSPHERIC DATA

Aug. 1957 | foE | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	2.75	3.40	3.55	3.90	4.00	S	3.90	4.00^{S}	S	$^{I}3.55^{S}$	3.40^{H}	R					
2							2.35	2.90	$^{I}3.25^{R}$	3.60	S	S	4.20	4.05	$^{I}3.90^{S}$	3.65	A	A	2.70					
3							2.05	A	A	A	R	4.10^{R}	A	A	A	A	3.60	3.20	2.65					
4							S	2.75	R	3.55	C	3.90	$^{I}4.15^{S}$	4.25	4.10	$^{I}3.90^{S}$	3.65	3.25	2.60					
5							1.90	2.85	A	A	C	4.10	4.20	4.15	4.00	3.80	3.55	3.20	2.40	S				
6							2.05	2.60	3.15	3.50	R	4.00	4.00	3.90	3.90	A	A	A	2.50					
7							1.85	A	R	3.60	3.95	4.10	4.10	4.15	4.05	4.00	3.90	3.30	2.65	S				
8							1.80	2.70	$^{I}3.30^{A}$	A	A	4.15	$^{I}4.20^{A}$	4.30	4.20	$^{I}4.20^{S}$	3.75	$^{I}3.20^{R}$	2.60^{R}					
9							2.10	2.75	3.35^{R}	3.70^{R}	S	A	A	A	A	A	3.60	3.20	2.60	S				
10							S	2.85	3.35	3.60	3.80	R	R	R	A	A	A	A	A					
11							S	2.60^{R}	A	C	A	4.10	$^{I}4.10^{R}$	4.10	$^{I}4.10^{A}$	3.90	3.60	3.20	2.60					
12							1.80	2.70^{R}	3.20	$^{I}3.70^{R}$	4.15	R	R	A	$^{I}4.00^{A}$	$^{I}4.00^{H}$	3.65	3.10	2.55	S				
13							1.80	2.75	$^{I}3.35^{A}$	3.65	3.90	3.90	3.90	A	A	A	A	A	A					
14							1.75	2.65	3.10	3.55	3.65	4.00	4.00	3.75^{S}	$^{I}4.00^{R}$	3.90	3.60	3.20	R	S				
15							S	R	A	3.55	3.80	3.90	4.00^{R}	R	A	A	A	3.25	R	S				
16							A	A	A	3.65	R	A	A	A	4.00^{R}	$^{I}3.80^{A}$	3.65	3.20	2.55					
17							S	2.75	3.35	3.65	4.10	4.15^{S}	4.15	4.05	3.80	R	R	R	2.50	S				
18							S	2.75	3.35	3.70	4.00	4.10	4.20	4.30	4.10	4.00^{R}	3.60	2.80	A					
19							S	2.70	3.25	3.60	3.90	4.00	C	A	A	A	3.60	3.25	2.60	S				
20							S	2.75	3.30	3.65^{R}	$^{I}3.90^{C}$	4.15	4.05	$^{I}4.00^{R}$	A	A	3.60	3.20^{H}	2.50	S				
21							1.75	2.60	3.15	3.80^{C}	$^{I}4.00^{C}$	4.20	A	A	$^{I}4.00^{S}$	3.80	3.50	3.05	2.40	S				
22							A	2.75	3.35	$^{I}3.65^{C}$	3.80	3.95^{S}	4.05	4.10^{S}	4.00^{H}	C	C	3.10	2.35	S				
23							S	2.70	A	A	R	S	4.00	4.10	4.10	3.90	3.60	A	$^{I}2.15^{R}$					
24							1.85	2.95	$^{I}3.10^{R}$	3.40	A	A	A	A	A	R	R	C	R	S				
25							S	2.50	3.05	S	A	3.95	A	A	R	A	A	A	A					
26							S	2.60	3.15	3.55	C	R	R	S	4.05	$^{I}3.80^{R}$	3.60	3.10	2.15					
27							S	2.80	3.40	$^{I}3.70^{C}$	3.95	4.00	$^{I}4.00^{C}$	4.00	4.00	3.70	3.65	3.15	2.20					
28							S	2.65^{H}	3.20	3.65	3.70	R	C	A	A	A	3.90	3.20	2.40					
29							S	2.70	3.30^{R}	$^{I}3.80^{C}$	3.90	$^{I}4.05^{R}$	4.20	4.25	4.00	4.00^{R}	3.65	A	2.30					
30							A	2.80	3.35	3.65	3.90	4.15	4.10	$^{I}4.05^{R}$	4.00^{R}	$^{I}3.75^{C}$	3.50	3.05^{R}	2.50					
31							S	2.70	$^{I}3.25^{R}$	R	C	C	C	C	C	C	C	C	C	C				
No.							12	27	22	24	17	21	18	17	20	16	21	21	22					
Median							1.85	2.75	3.30	3.65	3.90	4.05	4.10	4.10	4.00	3.90	3.60	3.20	2.50					

foE

Sweep 1.0 Mc to 20.0 Mc in 1 ~~sec~~ min in automatic operation.

IONOSPHERIC DATA

Aug. 1957 | 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	2.7^{m}	E	2.6^{m}	2.8^{m}	2.7^{m}	3.2^{m}	3.0^{m}	3.8	4.1	5.8^{m}	5.0	4.9	12.0^{m}	^{J}5.3	G	G	4.7	6.6^{m}	3.6	5.8^{m}	5.6^{m}	2.7^{m}	S	2.2^{m}
2	3.2^{m}	3.1^{m}	S	3.1^{m}	5.9^{m}	3.2^{m}	3.7^{m}	3.7^{m}	4.2	G	4.3	G	4.5	4.6	4.5	^{J}5.3	4.1	4.3^{m}	3.8^{m}	3.2^{m}	3.2^{m}	3.2^{m}	3.2^{m}	2.7^{m}
3	2.8^{m}	2.8^{m}	2.7^{m}	2.2^{m}	1.3	2.8^{m}	3.1^{m}	3.6^{m}	5.5^{m}	5.4^{m}	G	G	4.5	12.2^{m}	4.3^{m}	4.5	3.9	3.8	3.4	3.4^{m}	3.5^{m}	3.0^{m}	3.1^{m}	3.2^{m}
4	7.2^{mF}	5.8^{mF}	3.8^{m}	3.2^{m}	2.5^{m}	3.1^{m}	3.0^{m}	3.7	6.4^{m}	5.1	^{J}5.7	5.0	G	5.0	6.5	^{J}5.3	^{J}5.9	4.3	3.2	3.0	3.2^{m}	3.5^{m}	3.1	2.8^{m}
5	2.7^{m}	2.8^{m}	8.9^{m}	6.4^{m}	7.5^{m}	7.3^{m}	3.1^{m}	3.5^{m}	7.6^{m}	5.8^{m}	C	10.8^{m}	9.5^{m}	^{J}7.4	13.8^{m}	7.6^{m}	^{J}5.8	7.2^{m}	^{J}6.1	7.2^{m}	6.2^{m}	9.2^{m}	^{P}5.9^{C}	5.2^{m}
6	7.0^{m}	5.9^{m}	5.9^{m}	5.7^{m}	3.2^{m}	3.2^{m}	3.1^{m}	3.0	9.1^{m}	6.8	6.5^{m}	^{J}5.5	^{J}5.3	7.5^{m}	5.7^{m}	5.7^{m}	5.8^{m}	4.3^{m}	G	7.2^{m}	4.3^{m}	3.2^{m}	2.7^{m}	S
7	6.8^{m}	7.5^{m}	5.8^{m}	5.5^{m}	6.5^{m}	5.7^{m}	5.1^{m}	4.0^{m}	5.9^{m}	5.9^{m}	5.1	5.5	6.2	6.8	6.2	4.8	5.1	4.0	5.8^{m}	4.4	2.9^{m}	3.9^{m}	3.1^{m}	4.3^{m}
8	2.8^{m}	S	2.7^{m}	4.4^{m}	E	2.3^{m}	2.5^{m}	3.0	5.0^{m}	4.9^{m}	5.7^{m}	4.8	5.3	4.8	5.1	4.7	4.5	5.0	6.5^{m}	7.6^{m}	5.9^{m}	3.9^{m}	2.5^{m}	S
9	S	S	S	E	E	2.7^{m}	3.1^{m}	3.7^{m}	G	6.3^{m}	4.4	7.5^{m}	5.5^{m}	4.8^{m}	5.6	6.2^{m}	4.3	4.0	3.3	5.8^{m}	4.7^{m}	2.7^{m}	2.3^{m}	S
10	S	2.4^{m}	E	E	2.2^{m}	2.3^{m}	2.7^{m}	4.3	G	4.3	4.3	G	6.3	G	6.2^{m}	5.4^{m}	9.0^{m}	9.3^{m}	7.7^{m}	6.8^{m}	9.5^{m}	5.5^{m}	7.0^{m}	5.8^{m}
11	6.8^{m}	2.9^{m}	5.3^{m}	3.9^{m}	2.6	S	2.4	3.8	6.5^{m}	6.1^{m}	4.9^{m}	5.5^{m}	^{J}5.3	6.1	5.9^{m}	5.9^{m}	6.2^{m}	4.0	3.8	3.6^{m}	2.5^{m}	S	S	S
12	S	3.2^{m}	3.2^{m}	3.8^{m}	3.1^{m}	3.1^{m}	2.8	3.0	5.5^{m}	13.6^{m}	9.5^{m}	6.1^{m}	G	5.5^{m}	4.7	G	G	3.3	3.1^{m}	2.2	2.8^{m}	2.5^{m}	2.3^{m}	S
13	S	S	S	E	S	S	2.7^{m}	3.6	3.8^{m}	5.7^{m}	4.6	4.7	9.6^{m}	5.4^{m}	5.9^{m}	7.7^{m}	6.8^{m}	5.6^{m}	3.7^{m}	3.7^{m}	3.3^{m}	2.8^{m}	3.3^{m}	6.1^{m}
14	3.5^{m}	5.6^{m}	5.7^{m}	4.0	4.3^{m}	3.8^{m}	2.1	4.9^{m}	5.2	4.9	5.8^{m}	7.5^{m}	4.4	G	G	4.4	5.7	7.2^{m}	7.8^{m}	11.3^{m}	9.5^{m}	5.9^{m}	5.3^{m}	4.3^{m}
15	5.2^{m}	3.9^{m}	3.2^{m}	2.5^{m}	3.2^{m}	3.7^{m}	2.3	3.7	5.0^{m}	5.9^{m}	6.0	5.5^{m}	G	5.8^{m}	13.5^{m}	10.5^{m}	8.1^{m}	6.8^{m}	5.8^{m}	4.0^{m}	3.5^{m}	4.3^{m}	2.5^{m}	2.3^{m}
16	3.6^{m}	3.2^{m}	2.8^{m}	2.3^{m}	2.5^{m}	2.6^{m}	3.0^{m}	3.2^{m}	4.4^{m}	7.6^{m}	^{J}5.3	5.4	5.5^{m}	5.5^{m}	4.4	5.8^{m}	5.5^{m}	G	3.1	3.2^{m}	2.8^{m}	2.5^{m}	3.2^{m}	3.1^{m}
17	3.2^{m}	3.8^{m}	3.1^{m}	2.3^{m}	2.3^{m}	2.5^{m}	2.3	2.9	G	4.4	5.6	8.0	4.7	5.6	5.7	7.2^{m}	12.6^{m}	10.5^{m}	12.5^{m}	9.5^{m}	5.9^{m}	5.4^{m}	5.7^{m}	5.7^{m}
18	3.1^{m}	2.8^{m}	2.5^{m}	E	S	S	S	3.6^{m}	3.7	4.3	5.0	5.4	5.7^{m}	9.0^{m}	6.0	6.2	6.6^{m}	11.0^{m}	5.9^{m}	3.7^{m}	2.3^{m}	3.6^{m}	3.2^{m}	3.1^{m}
19	2.6^{m}	E	S	E	S	2.4^{m}	G	4.6^{m}	5.9^{m}	5.4^{m}	6.8^{m}	6.1	10.8^{m}	6.3^{m}	5.5^{m}	4.8^{m}	5.3	5.5	7.2	11.0	5.7^{m}	5.0^{m}	3.7^{m}	3.1^{m}
20	2.3^{m}	3.0^{m}	2.1^{m}	S	S	S	2.9^{m}	3.1^{m}	5.5^{m}	4.4	4.0	4.6	5.6	4.8	6.4^{m}	11.3^{m}	4.3	4.8	5.9^{m}	6.9	6.2^{m}	3.2^{m}	3.4^{m}	3.1^{m}
21	3.0^{m}	S	S	S	2.2^{m}	2.3^{m}	3.2^{m}	G	3.8	G	5.6^{m}	4.8	5.6^{m}	5.8^{m}	G	5.8^{m}	4.0	3.9	3.7	3.7^{m}	2.5^{m}	S	C	4.3^{m}
22	3.2^{m}	3.7^{m}	5.5^{m}	6.3	3.8^{m}	2.7^{m}	3.2^{m}	3.8	4.9	C	8.2^{m}	5.7	6.4	5.7	5.3	C	C	13.5	7.1^{m}	2.4	4.8^{m}	5.8^{m}	5.3^{m}	3.2^{m}
23	3.0^{m}	2.9^{m}	S	3.3^{m}	2.7^{m}	3.7^{m}	3.2^{m}	G	5.6^{m}	5.1^{m}	4.5	4.6	4.5	4.6	4.9	5.6	^{J}5.1	5.4^{m}	4.3^{m}	5.9^{m}	2.3^{m}	5.8^{m}	2.3^{m}	S
24	2.8^{m}	2.5^{m}	2.3^{m}	E	E	2.1^{m}	2.2	2.9	3.5	5.1^{m}	4.4	4.4	4.6	4.9	^{J}4.9	5.1	4.9	5.2	^{J}6.0	5.8^{m}	3.6^{m}	9.5^{m}	5.8^{m}	5.9^{m}
25	4.7^{m}	3.3^{m}	2.5^{m}	S	E	S	2.2^{m}	3.1	4.2	4.0	6.3	^{J}6.2	5.9^{m}	5.5^{m}	5.0	5.8^{m}	7.5^{m}	9.0^{m}	7.0^{mF}	4.3^{m}	3.7^{m}	3.2^{m}	3.7^{m}	4.3^{m}
26	3.7^{m}	3.3^{m}	4.6^{m}	3.2^{m}	2.2^{m}	S	S	3.0	3.9	7.5^{m}	6.5	4.4	4.5	4.7	4.3	5.2	5.0	5.6	9.0^{m}	6.9^{m}	3.6^{m}	5.8^{m}	3.0^{m}	5.9^{m}
27	3.7^{m}	3.0^{m}	2.8^{m}	S	S	S	2.1	3.2	3.9	4.5	4.9	5.0	6.8	4.2	4.5	4.3	6.0	G	2.6	3.1^{m}	5.0^{m}	5.7^{m}	3.9^{m}	9.5^{m}
28	3.8^{m}	3.2^{m}	3.1^{m}	2.6^{m}	2.6^{m}	S	S	3.9	5.9^{m}	5.9	4.7	5.1	6.7	5.5^{m}	4.5	4.5	5.9^{m}	3.7	2.5	3.6^{m}	5.9^{m}	3.5^{m}	2.5^{m}	2.5^{m}
29	2.8^{m}	S	2.1^{m}	E	S	S	2.5^{m}	3.3	3.7	4.5	6.3^{m}	5.0	4.3	5.7	^{J}5.1	9.0^{m}	8.1	6.2^{m}	5.6^{m}	10.9^{m}	5.8^{m}	7.2^{m}	3.5^{m}	3.2^{m}
30	3.1^{m}	2.6^{m}	2.6^{m}	2.8^{m}	2.4^{m}	2.4^{m}	3.9^{m}	3.4	4.1	6.2	5.5	5.3	7.6^{m}	6.3^{m}	5.7	12.5^{m}	6.7^{m}	4.8^{m}	3.2	3.6^{m}	8.9^{m}	3.6^{m}	2.4^{m}	3.2^{m}
31	3.2^{m}	2.6^{m}	3.1^{m}	2.6^{m}	3.2^{m}	2.7^{m}	3.1^{m}	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	27	26	25	27	25	22	28	31	31	30	29	30	30	30	30	29	29	30	30	30	30	28	27	24
Median	3.2^{m}	3.0^{m}	3.1^{m}	2.8^{m}	2.6^{m}	2.8^{m}	3.0^{m}	3.5	4.4	5.2^{m}	5.3	5.2	5.5	5.5	5.2	5.6^{m}	5.7	5.1	5.0^{m}	4.4^{m}	4.0^{m}	3.8^{m}	3.2^{m}	3.2^{m}
U.Q	3.8	3.7	5.0	3.9	3.2	3.2	3.1	3.8	5.6	5.9	6.2	5.7	6.4	6.1	5.9	6.7	6.6	6.8	6.5	6.9	5.9	5.8	3.9	5.4
L.Q	2.8	2.8	2.6	E	2.2	2.4	2.4	3.0	3.8	4.4	4.6	4.7	4.5	4.8	4.5	4.8	4.6	4.0	3.3	3.6	3.2	3.2	2.5	3.1
Q.R	1.0	0.9	2.4		1.0	0.8	0.7	0.8	1.8	1.5	1.6	1.1	1.9	1.3	1.4	1.9	2.0	2.8	3.2	3.3	2.7	2.6	1.4	2.3

foEs

Sweep 1.0 Mc to 20.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

Y 4

IONOSPHERIC DATA

Aug. 1957 | 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	E	1.3	1.9	E	S	2.3'	3.4	G	4.4	4.8	4.5	5.3	5.1	G	G	4.7	6.0	3.2	2.1	4.1	S	S	1.9
2	S	2.1	E	E	2.7	1.4'	2.4	G	G	G	u 4.5 B	G	4.4	G	u 4.6 B	4.5	3.8	3.3	G	2.2	1.7	S	S	S
3	2.1	1.7	1.7	E	1.3	2.0	G	G	3.9	3.8	G	G	4.4	5.0	4.1	4.3	3.9	3.6	3.3	2.5	2.8	S	S	S
4	A	3.3	2.0	1.9	1.3	S	G	3.4	4.7	4.1	4.5	4.2	G	4.6	5.3	4.8	4.5	3.9	3.2	2.9	1.9	2.9	2.2	1.7
5	S	S	A	4.2	4.6	A	G	G	4.7	4.7	C	9.1	7.1	7.2	A	6.5	5.4	6.1	6.0	u 6.5 C	4.1	A	4.7	2.0
6	3.6	2.5	2.1	2.3	1.8	1.8	G	G	5.0	6.1	5.3	4.8	4.8	5.0	4.6	4.5	4.8	3.2	G	4.6	3.4	2.4	2.0	S
7	2.5	4.0	1.8	2.7	3.5	2.1	G	3.2	3.4	4.1	5.0	5.2	A	5.6	4.6	4.5	4.6	3.9	4.1	4.2	S	2.4	1.8	A
8	S	E	1.3	1.8	E	S	2.1	u 3.6 B	3.9	4.3	4.6	4.5	4.6	4.6	4.7	4.4	4.2	4.2	3.4	A	S	S	S	S
9	S	E	E	E	E	S	G	G	G	G	4.4	5.3	4.5	4.7	4.9	4.5	3.9	3.6	3.2	2.0	2.8	1.8	2.0	S
10	S	E	E	E	E	E	2.1	3.8	G	4.1	u 4.2 S	G	5.2	G	4.5	4.7	6.7	4.6	4.5	5.7	3.3	3.9	A	1.8
11	3.4	1.7	2.9	3.5	1.1	E	2.3	A	4.0	4.5	4.4	4.8	5.0	6.0	4.6	4.3	3.8	3.8	3.4	2.1	E	S	S	S
12	S	E	1.7	E	E	1.2	2.1	2.9	3.5	4.0	G	4.2	G	4.7	4.7	G	G	3.3	G	1.9	E	E	S	S
13	S	E	E	E	E	E	2.1	A	3.4	4.4	4.1	4.6	4.8	A	4.5	6.1	5.8	3.9	2.8	2.2	A	1.8	2.4	2.4
14	1.9	1.7	3.3	1.8	2.6	1.8	2.0	4.0	4.5	4.7	A	6.8	4.4	G	G	4.3	5.0	6.5	7.4	A	6.7	3.4	A	S
15	2.7	2.6	1.9	1.4	1.9	1.9	2.2	A	4.2	4.2	A	4.5	G	4.9	5.2	5.8	4.3	4.6	3.8	2.7	2.7	2.6	S	S
16	2.0	2.1	1.7	1.2	1.1	1.4	2.1	G	3.6	4.8	4.2	4.5	4.6	4.5	G	4.3	4.1	G	2.8	1.9	1.7	S	1.8	1.9
17	1.9	2.4	1.3	1.1	E	1.5	2.0	G	G	4.3	5.6	7.0	4.6	5.4	5.2	5.4	8.9	6.0	A	8.3	3.2	S	A	2.2
18	1.8	1.7	1.9	E	E	S	S	G	u 3.8 C	4.2	4.7	5.2	4.8	8.6	5.5	5.4	4.5	3.9	2.7	2.1	S	2.0	1.7	2.1
19	E	E	E	E	E	E	G	3.8	A	4.1	4.9	4.6	4.6	5.0	4.4	4.7	5.2	5.3	↓ 7.6 S	A	3.3	3.0	2.9	2.1
20	S	S	S	E	E	S	1.9	G	3.8	4.2	G	4.5	4.4	A	4.9	5.2	3.9	3.8	5.0	u 7.9 B	3.0	1.7	2.4	2.0
21	A	S	S	S	1.3	S	2.0	G	3.5	G	4.6	G	G	4.5	G	G	4.0	3.4	3.6	2.9	2.4	S	C	E
22	S	1.7	3.7	4.4	1.8	1.4	1.9	3.8	4.6	C	7.7	5.5	6.4	5.5	5.1	C	C	G	6.7	2.3	2.6	1.8	A	2.0
23	E	1.6	E	E	1.4	2.6	2.2	G	G	3.9	4.1	G	4.5	4.6	4.4	5.5	4.2	4.2	3.4	4.7	S	2.6	S	S
24	S	1.7	E	E	E	E	2.2	G	G	4.2	4.2	u 4.6 B	4.6	4.8	4.9	4.5	4.9	5.1	6.0	3.3	2.2	1.7	4.5	3.5
25	3.5	1.9	1.3	E	E	E	G	3.0	4.2	4.0	4.4	5.0	A	4.5	4.4	4.5	4.3	6.5	3.9	3.1	2.9	2.2	2.0	A
26	2.0	2.0	3.3	2.0	1.3	S	S	G	u 4.2 B	4.1	4.7	4.3	4.5	4.6	4.3	4.6	A	4.9	7.8	3.1	2.3	A	S	3.3
27	2.6	1.7	1.7	E	E	E	2.0	3.1	3.9	4.1	4.7	4.6	5.5	u 4.4 B	u 4.6 B	4.3	5.0	G	G	2.3	3.4	2.5	3.5	5.3
28	2.2	1.9	1.3	1.7	S	S	S	u 4.0 B	4.1	5.3	4.4	5.0	5.5	4.6	4.4	4.4	4.1	3.6	G	2.1	4.8	2.6	S	1.8
29	1.7	S	1.7	E	E	S	G	3.0	u 3.8 C	4.3	5.0	4.6	4.3	5.5	5.0	8.0	5.1	4.2	3.2	10.3	2.6	4.0	2.3	2.2
30	1.7	2.0	1.3	1.8	E	1.7	3.0	3.4	4.1	A	A	5.1	5.0	4.6	5.4	4.1	4.1	3.8	G	2.3	5.7	S	S	1.9
31	S	2.0	1.7	1.7	1.7	1.8	1.8	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	19	27	29	30	30	21	28	31	31	30	29	30	30	30	30	29	29	30	30	30	26	21	18	20
Median	2.1	1.7	1.7	1.2	E	1.4	2.0	3.0	3.8	4.2	4.6	4.6	4.6	4.6	4.6	4.5	4.5	3.9	3.4	2.9	2.8	2.5	2.4	2.0

foEs

Sweep 1.0 Mc to 20.0 Mc in 1 min sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 5

IONOSPHERIC DATA

Aug.1957 | 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	E	1.25	E	1.00	E	E/1.25S	E	1.60	1.60	1.70	2.20	2.60	2.90	2.20	2.50	2.30	1.70	1.60	E/1.50S	E	E/1.65S	E	E	E
2	E	1.00	E	1.00	E	1.00	E/1.70S	E/1.70S	2.05	2.20	3.30	2.90	2.70	2.60	3.30	2.30	1.90	E/1.55S	E/1.50S	E	E	E	E	E/1.70S
3	E	E	1.05	1.05	E	1.10	E	1.60	1.60	1.60	1.80	1.70	2.30	2.20	2.20	2.20	1.70	1.60	1.50	E	E	E	E	E/1.70S
4	E	E	E	1.00	1.00	E/1.40S	E	1.70	1.55	1.60	1.70	2.20	2.20	2.20	2.20	2.20	1.60	1.60	E/1.55S	E	E	E	E	E
5	E/1.70S	E/1.25S	1.10	E	E	1.00	E	E	1.55	1.60	I/1.65C	1.70	2.20	1.90	2.20	1.70	1.55	E/1.50S	1.10	E	E	E/1.65S	E	E
6	E	E	E	1.05	1.00	1.20	E/1.70S	E	1.60	E/2.20S	1.70	2.00	2.20	2.20	2.30	2.20	1.95	E/1.50S	1.15	E	E	E	E	E/1.70S
7	E	1.00	1.00	E	E	E/1.25S	E	1.70	1.75	1.70	2.00	2.20	2.20	2.20	2.05	1.80	1.60	1.55	1.15	E	E/1.65S	E	E	E
8	E	1.00	1.00	1.00	1.00	E/1.60S	E	E	E/1.50S	2.20	1.95	2.20	2.20	2.20	2.40	2.20	1.80	E/1.55S	1.10	E	E	E	E/1.70S	E
9	E	E	E	E	1.00	1.15	E	E	E/1.60S	1.60	1.90	1.70	1.60	2.40	1.90	1.65	1.90	E/1.55S	1.10	E	E	E	E/1.70S	E
10	E	1.20	E	1.00	E	1.20	E	1.60	E/1.60S	1.60	1.90	E 3.20B	2.60	2.60	2.30	1.80	1.70	1.60	1.15	E	E/1.70S	E	E	E/1.65S
11	E	E/1.35S	1.00	1.05	E	1.10	E/1.70S	E	1.60	1.60	2.20	2.20	2.40	2.00	2.00	1.90	1.55	1.10	1.05	E/1.70S	E/1.65S	E/1.70S	E	E/1.70S
12	E	E	E	1.00	E	1.00	E	1.60	1.80	E/2.50C	2.00	2.30	2.40	2.20	2.20	1.90	1.90	1.55	1.30	E	E/1.70S	E/1.70S	E/1.65S	E/1.65S
13	E/1.70S	1.10	1.00	1.00	1.00	1.10	E	E	1.80	2.00	1.90	1.90	1.85	2.00	1.90	1.70	1.65	E/1.55S	1.20	E	E	E/1.70S	E/1.65S	E
14	E	1.00	1.00	E	E	1.25	E	E	E/1.60S	1.70	1.60	1.90	2.20	2.20	1.90	1.70	1.55	1.15	1.15	E	E/1.70S	E/1.65S	E/1.65S	E/1.70S
15	E	1.00	E	E	E	1.15	E	E	1.60	1.80	1.90	2.20	2.00	1.70	1.90	1.70	1.55	E/1.60S	1.15	E	E/1.70S	E	E	E
16	E	E	E	E	E	1.00	E	1.60	1.55	1.55	1.90	2.20	1.70	2.20	2.20	2.00	1.90	1.50	1.15	E	E	E	E	E
17	E	1.00	E	E	1.00	1.00	E/1.70S	E	1.60	1.80	1.60	1.60	2.20	2.20	2.00	2.00	1.90	1.55	E/1.50S	E	E	E/1.70S	E	E
18	E	E/1.35S	1.05	1.00	E	E/1.40S	E/1.90S	E	1.10	1.70	1.60	1.80	1.60	2.20	2.10	2.00	1.60	1.50	1.70	E	E	E	E	E/1.70S
19	E/1.70S	E/1.40S	E	1.00	1.05	1.10	E/1.70S	E	1.65	1.80	2.20	2.00	2.10	2.20	2.20	2.05	2.00	1.60	1.70	E	E	E	E	E/1.70S
20	E	E/1.60S	E/1.30S	1.00	1.00	E/1.30S	E/1.70S	E/1.75S	E/1.80S	1.90	2.10	2.30	2.20	2.10	2.25	1.80	1.70	1.30	E/1.50S	E	E	E	E	E
21	E/1.70S	E/1.75S	1.10	E/1.30S	E	1.00	E	1.60	1.60	1.75	2.20	1.95	2.20	2.40	1.90	1.70	1.65	1.60	1.60	E	E	E/1.65S	C	E/1.70S
22	E/1.70S	1.00	E	E	E	1.00	E	E	1.55	I/1.60C	1.80	1.75	2.00	2.20	1.70	C	C	E/1.50S	E/1.50S	E	E	E	E	E
23	E/1.70S	E/1.25S	1.10	1.10	1.00	1.15	E	E	E/1.60S	1.80	1.85	2.00	2.30	2.20	2.00	1.80	1.60	1.50	1.15	E	E/1.70S	E	E	E
24	E	E	1.00	1.05	1.05	E/1.40S	E	E	1.70	1.60	1.65	1.65	2.00	2.00	1.90	1.70	1.60	E/1.50S	E/1.50S	E	E	E	E	E/1.70S
25	E	1.00	1.05	1.00	1.00	1.35	E/1.70S	E	1.60	1.80	2.20	1.90	2.20	2.20	2.70	2.20	1.70	1.50	E/1.50S	E	E/1.70S	E	E/1.70S	E/1.70S
26	E	1.00	1.00	1.00	1.00	E/1.40S	E/1.90S	1.60	1.60	2.05	2.20	2.00	2.20	2.20	2.20	1.90	1.90	1.60	E/1.60S	E	E	E/1.70S	E/1.70S	E
27	E	E/1.40S	1.05	1.05	1.00	1.10	E	1.65	1.60	1.60	1.85	1.65	2.60	2.40	2.20	1.85	1.75	1.55	1.60	E	E	E/1.70S	E/1.65S	E
28	E/1.70S	1.00	1.00	1.30	1.25	E/1.25S	E/1.80S	E	1.60	1.70	1.75	2.20	2.40	2.20	2.70	2.20	1.90	1.70	1.60	E	E	E	E/1.70S	E
29	E	E/1.70S	1.05	1.10	1.05	E/1.30S	E/1.70S	E	1.60	1.75	1.85	1.90	2.20	2.40	2.20	E 3.40B	E/1.70S	E/1.65S	E	E	E	E	E/1.70S	E
30	E	1.00	1.05	1.05	1.00	E	E	1.80	2.20	2.20	2.20	2.20	2.30	2.70	2.00	1.70	1.80	1.50	E/1.60S	E	E/1.65S	E/1.70S	E/1.70S	E/1.65S
31	E	E/1.40S	1.00	1.05	1.00	E/1.40S	E/1.70S	E/1.70S	1.55	1.80	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	24	21	30	30	31	20	19	28	30	29	30	29	30	30	30	28	29	24	20	29	20	20	18	17
Median	E	1.00	1.00	1.00	1.00	1.10	E	E	1.60	1.70	1.90	2.00	2.20	2.20	2.20	1.90	1.70	1.50	1.15	E	E	E	E	E

Note : Lowest limit of observable frequency is 1.60 Mc/s due to radio interference except from 01.00 to 05.00 and from 08.00 to 18.00. | f-min

Sweep 1.0 Mc to 20.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

Y 6

IONOSPHERIC DATA

Aug. 1957 | (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	J2.80S	J2.80S	U2.55S	S	U2.75S	2.65SH	3.00	3.35	3.50S	3.35H	2.80H	2.70H	2.60	2.55	2.55	2.60	2.80	2.85S	3.00	2.75	J2.65S	J2.65S	2.70S	2.80
2	2.55S	2.70R	J2.85	2.80	2.80	2.95	3.25	3.30	2.95	2.90H	2.80	2.60	2.55	2.50	2.45	2.65	2.70	2.85	2.90	J2.90S	2.80H	2.50H	2.50S	2.70S
3	2.55	2.70	2.85S	2.70	2.95	2.90	3.15	2.95	3.05	2.90	2.75H	2.55	2.60H	2.65	2.70	2.75	2.80	2.90	2.90	2.95	I2.80S	2.65S	U2.65S	2.55
4	I2.60S	2.60V	2.90	3.05	F	2.70	3.55	3.30	3.10	2.90H	2.95H	2.60	2.75	2.75	2.75	2.85	2.85	2.80	2.80	2.85	2.80	2.80	2.70	2.70S
5	2.75	2.80	U2.65S	J3.00	3.15	2.70	U2.95C	3.05	3.05	2.90H	I2.85C	2.80	2.80	2.80	I2.80A	2.80	2.80	2.90	2.90	2.85	2.90	I2.75S	I2.75S	2.75S
6	J2.80S	2.70	I2.80S	2.80	2.80	2.65H	J2.85	3.10	3.20	N	I2.70S	2.60	2.70	2.70	2.65	2.65	2.75	2.70	U2.75S	2.95S	2.85	2.55	2.65	I2.70SH
7	S	2.55	2.40H	2.60H	2.85	2.85	I3.10C	2.90	3.25	2.95H	3.00H	3.00H	2.80	2.90H	2.80H	2.80	2.90	2.80	3.00	3.10	J2.90	J2.75S	J2.55S	I2.60S
8	U2.60S	S	FS	S	S	2.95	2.90	U3.10S	3.00S	2.95H	2.65H	2.85H	2.75	2.70H	J2.70	2.75	J2.75S	2.80	3.00	I2.90S	2.55S	U2.50S	U2.55S	2.70S
9	2.80S	2.85S	2.70	2.95S	J2.80S	2.85	3.15S	3.55	3.30S	3.05H	2.90H	2.65H	2.65	2.65	2.70	2.75	2.80	2.75	2.90	2.80	2.90	2.80S	2.70	2.65
10	U2.60S	2.65	2.80	J2.85	2.95S	2.95	3.15	3.65S	3.10	2.95H	2.70	2.60	2.75	2.65	2.70	2.80	2.80	2.80H	2.95	2.80	2.65	2.55	2.70	2.75
11	2.75H	2.60	2.75	2.80	2.70	2.95	2.65	J3.10H	2.85H	2.90	2.65	2.55	2.65	2.25H	2.60	J2.60	2.75	2.85	2.95	2.90	2.80	J2.65S	2.85	2.75
12	2.80S	2.80S	I2.80S	J2.85S	J2.80	2.90	I3.05C	3.15S	3.15	3.00H	2.70H	2.55	2.70	2.65	2.60	2.60	2.70	2.90	3.05	S	I2.60S	2.55S	J2.70S	I2.65S
13	2.60H	2.65	2.70	2.55	2.60	2.65	3.10	J3.00	SH	2.80H	2.60H	2.65	2.65	2.65	2.70S	2.70	2.75	2.80	2.95	2.70	I2.65S	2.70	2.75	2.85
14	J2.65	2.65	3.05	2.55H	2.55	2.75	3.25	3.40	3.30	2.80	2.60	2.60	2.70	2.70	2.70	2.75	2.80	2.85	2.95	I2.90A	J2.85S	2.70S	2.65S	I2.80S
15	2.60	2.70H	2.70	2.90	J2.80H	2.80H	J2.90	3.30H	3.20H	2.90H	2.80	2.70H	2.55	2.75	2.80	2.75	2.85	2.85	2.70	2.85S	2.70	2.65S	U2.75S	2.65
16	2.80	J2.75	2.80	2.90	2.65	2.80	2.95	3.15	3.20S	2.95H	2.75H	2.50H	2.70	2.65	2.65	2.70	2.80	2.80	3.00	2.90	2.70	2.60S	2.60S	S
17	S	2.70	2.80	2.70H	2.90S	2.95	3.10	3.25	3.10H	2.85H	2.80	2.75	2.70	2.65	2.70	2.75	2.70	2.80	I2.90A	J3.00S	2.75	2.65	2.65S	2.70
18	2.70	2.70	2.75	J2.80	J2.75	U2.95S	2.95	3.10	3.00H	2.85H	2.75H	2.75H	2.70H	2.65	2.65	2.65H	2.70	2.80H	2.80	2.85	J2.75S	2.60	U2.55S	I2.60S
19	2.60S	U2.75S	2.85	U2.80S	J2.75	U2.70S	J2.65	3.15	2.80	2.80H	2.60H	2.65	2.65	2.75	2.75	2.70	2.75	2.70H	2.80	A	2.80	2.60S	2.70	2.75
20	J2.65	J2.65	J2.80	2.85	3.00	2.70	2.80	3.20S	3.10	2.85H	2.75H	2.75	2.70	2.80	2.75	2.70H	2.80	2.80	2.90	3.00	J2.55S	2.60S	J2.60S	J2.75S
21	2.90S	U2.75S	2.70S	2.70	2.65	J2.65H	2.60	3.30S	3.20	3.00H	2.65	2.75	2.70	2.60	2.70	2.80	2.85	2.75H	2.90	3.10	2.75S	2.55	I2.60C	2.70
22	2.60	J2.80	2.75	I2.90S	2.40H	2.75	J3.00	3.35	2.85H	I2.70C	2.70	2.75	2.90	2.90	J2.80	C	C	2.85H	2.90S	2.95	I3.00SH	2.65SH	J2.65S	I2.70S
23	2.70S	J2.70	J2.75	J2.80	3.00S	2.95	3.00	3.00	3.15	3.05	2.65H	2.55	2.65H	2.70	2.80	2.80	2.85	2.80S	2.70S	U2.90S	U2.35S	U2.75S	U2.75S	J2.65S
24	2.85	F	F	I2.70S	2.85	2.85	2.90	3.40	3.35S	2.80	2.65	2.80	2.85	2.85H	2.75H	2.85	2.95	2.90	2.90	J2.85S	2.80S	2.65S	2.65S	2.70
25	J2.65	2.75SH	2.75S	J2.80	J2.90	J3.10	3.20	3.40	3.45	2.95	2.75H	2.70H	2.85	2.70H	2.70	2.80	2.85	2.95	3.05	3.05	2.65S	2.55	I2.60S	2.75H
26	2.85	2.90	I2.70SH	J2.70	2.65	J2.75	3.00S	I3.30S	3.25	3.15H	2.85H	2.80	2.80H	2.80	2.70	2.70	2.75	2.85	2.95	3.05	2.80S	I2.55S	S	2.65S
27	2.70S	2.65	2.75	J2.95	2.50S	J2.60	S	3.40	3.20	3.00H	2.75	2.70	2.70	J2.80	2.70	2.65	2.65	2.85S	I3.05S	3.20	2.60	J2.55H	S	J2.65
28	2.80	J2.75	J2.70	U2.75S	2.75H	2.70	3.05	3.25S	3.00H	3.05H	3.00H	2.85H	2.70	2.80	2.75H	2.75S	2.75	2.80S	2.95S	J3.10S	I3.00S	2.70	2.65	J2.60
29	2.65	J2.65	2.60H	2.60	2.70	2.95	J3.25	3.25	3.30H	3.20H	2.80H	2.70H	2.80H	2.80	2.75H	2.80	2.85	2.95	3.05S	2.95	3.10	2.95	J2.70	J2.60
30	J2.65	U2.60SH	J2.80H	J2.95S	J2.95	2.85H	3.25	3.05S	3.25H	3.30H	2.85H	2.65H	2.70	2.85	2.85	2.80H	2.70H	2.80S	2.95S	2.95S	J2.75S	2.65S	2.70S	2.65S
31	2.75	J2.70	I2.60S	2.55	2.70	J2.75	J3.10	I3.20S	3.25	3.15H	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	29	29	29	29	29	31	30	31	30	30	30	30	30	30	30	29	29	30	30	28	30	30	28	29
Median	2.70	2.70	2.75	2.80	2.80	2.80	3.00	3.25	3.20	2.95	2.75	2.70	2.70	2.70	2.70	2.75	2.80	2.80	2.90	2.90	2.80	2.65	2.65	2.70

(M3000)F2 Sweep 1.0 Mc to 20.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Aug. 1957 | (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									3.80^{L}				3.40	3.20	3.20	3.40	3.20^{L}	A	3.75					
2									L		3.25^{H}	3.20	3.50	3.40	3.40	3.15	3.25	3.35	L					
3								L	L	3.95		3.60	L	3.25	3.45	3.20	3.40	3.30	L					
4										3.95		3.25^{H}	L	3.40	3.95	3.20^{L}	L	L						
5								L^{H}			C	A	A	A	A	A	L	A	A					
6								L				3.25	L	3.25	3.50	3.10	3.25	3.40^{L}	L					
7									L				3.35	A		L^{H}	3.35^{L}	L						
8								L					3.40		3.40	3.55	3.35^{L}	3.55	L					
9								L	L				3.40	3.45^{H}	3.55	3.20^{L}	3.40	L	L					
10											3.40^{LH}	3.25	L	L	3.55	3.30	A							
11										L	L^{H}	3.10^{L}	3.50	A	3.45	3.55	3.45	L	L					
12								L	L			3.35	3.25^{H}	3.30	3.50	3.35^{H}	3.40^{H}	L	3.80					
13												3.40	3.35	3.25	3.25	A	A	L	L					
14											3.35	A	3.40^{H}	3.40	3.20	3.30^{H}	L	A	A					
15													3.50	3.75	3.10	A	L	L						
16									L				3.45	3.35	3.10	3.20	3.40^{L}	L	L					
17												A	3.35^{H}	3.35^{L}	3.25	3.20	A	A						
18														A	L		L							
19												3.50	L	3.25	L	3.30	L		A					
20									L			L	3.40	3.50	L		3.25^{LH}	L						
21									L		L	L	L	3.25	3.30	L	L							
22										C	A	L	A	L	3.25	C	C		A					
23									L	L		L		3.75	3.30^{H}	3.35	L	L						
24									L	L	L^{H}	L	3.35			3.25	L	A						
25										L			3.55		3.40	3.30	3.50	A						
26												3.35^{L}		L	3.25	L^{H}	L	A						
27											3.45^{H}	L	3.30	3.65	3.40	3.50	3.25	L						
28													L	3.40^{H}		3.35	3.45	L						
29														3.40		A	L							
30									L				3.35	3.25	3.45			L						
31									L		C	C	C	C	C	C	C	C	C					
No.									1	2	4	10	17	20	22	19	14	4	2					
Median									3.80	3.95	3.40	3.30	3.40	3.40	3.40	3.30	3.40	3.40	3.80					

(M3000)F1 Sweep 1.0 Mc to 20.0 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

Y 8

IONOSPHERIC DATA

Aug. 1957 | 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									245				395	400	400	380	330	305	275					
2											340	355	365	390	420	360	345	305	280					
3								250	245	245		385	300H	375	345	"330C	325	310	290					
4										245H		420	340	330	350	330	310	310						
5								255					320	330	A	340	320	305	295					
6								240				350	350	350	365	355	325	325	295					
7									245				355	290H		330	310	300						
8								250					340		340	365	350	305	285					
9								235	250				380	355	350	345	330	315	300					
10											375	360	325	L	355	335	330							
11										300	L	390	380	425H	405	405	360	325	295					
12								250	250			390	355	355	380	380	345	300	270					
13												375	355	365	350	340	340	300	265					
14											340	355	340	350	350	340	320	300	295					
15													400	345	330	350	305	300						
16									L				370	370	365	350	330	315	280					
17												350	345	355	350	355	E 370A	300						
18														390	360		335							
19												365	L	350	340	350	310		320					
20									240			300	340	350	330		320	305						
21									245		L	L	L	390	345	305	300							
22											350	340	320	310	335	C	C		300					
23									250	L		345		350	340	330	320	300						
24									230	230	L	L	330			340	305	280						
25								240		230			325		350	345	310	300						
26												340		L	355	350	330	290						
27											355	L	360	340	350	355	345	295						
28													360	330		340	310	305						
29														330		340	300							
30									260H				350	300	330			320						
31									245		C	C	C	C	C	C	C	C	C					
No.								7	11	5	5	15	24	25	25	26	27	24	14					
Median								250	245	245	350	355	350	350	350	345	325	305	290					

h'F2 | Sweep 1.0 Mc to 20.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

Y 9

IONOSPHERIC DATA

Aug. 1957 | 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	275	270	245	250	290	290H	250	235	235	230H	245H	220H	270	260	205	245	A	A	245	240	300	290	280	270
2	310	290	255	260	300	250	230	240	210	205H	230H	225	210	210	225	250	240	240	250	260	245H	290H	300	295
3	320	300	250	260	245	250	250	235	E240A	215	220H	210	210	I205A	200	240	230	235	250	260	255	270	295	300
4	310	325	255	245	350F	290	205	220	240A	205	225H	210H	210	235	E285A	A	270	240	250	270	255	285	265	270
5	290	290	300A	255	295	300A	235	220H	E265A	255H	C	A	A	A	A	A	A	A	A	290	275	300A	300	275
6	295	295	290	250	275	295H	240	225	255	I255A	255H	250	240	260	230	245	275	235	250	250	280	300	300	295H
7	290	345	345H	335H	300	250	240	230	230	220H	E250AH	265H	240A	I235A	230H	220H	250	255	280	250	240	275	290	300A
8	290	270	260F	250F	250	255	240	235	235	225H	240H	210H	225	235H	250	250	245	I250A	255	I250A	255	290	300	295
9	285	265	275	250	235	250	255	230	210	200H	225H	250H	205	230H	250	260	240	250	255	280	270	245	260	270
10	300	300	290	260	250	245	250	220	210	205H	200H	225	I230A	240	240	A	I280A	260H	265	300	305	340	325A	280
11	300H	275	285	285	240	255	250	230AH	240H	235	235H	250	250	I250A	245	230	230	250	260	260	250	265	270	270
12	245	250	260	260	250	250	245	235	235	210H	205H	210	200H	235	270	215H	220H	245	250	250	250	290	280	250
13	300H	300	290	300	300	300	240	230	210H	235H	215H	210	230	200A	225	A	I260A	255	250	260	285A	290	280	280
14	270	295	250	245H	350	300	245	235	245	240	225	I210A	200H	210	240	240H	A	A	A	A	E310A	270	300A	280
15	325	300H	290	245	270H	255H	250	235H	235H	230H	320A	220H	225	225	285	I265A	245	295	260	260	295	295	275	295
16	285	295	280	250	245	260	250	240	220	250H	200H	220H	215	210	205	235	245	240	250	250	245	290	295	290
17	290	300	290	275H	250	240	250	240	225H	220H	275	I240A	205H	275	A	280	A	A	A	330	290	290	300A	295
18	295	295	295	290	250	240	220	240	220H	230H	225H	255H	230H	A	A	AH	240	245H	255	255	250	285	295	305
19	310	290	260	250	245	250	270	245	225A	220H	240H	200	230	250	230	240	295	275H	A	A	290	290	295	290
20	290	305	290	245	230	260	255	240	235	225H	215H	200	220	215A	250	280H	230H	250	290	300	250	275	300	285
21	280A	285	290	270	255	285H	265	240	235	215H	205	200	200	225	220	225	230	245H	270	250	230	250	I270C	290
22	290	295	300	290	250H	290	250	245	235H	C	A	A	A	I280A	265	C	C	255H	E300A	250	250H	245H	300A	295
23	285	290	275	280	250	250	270	245	230	200	205H	205	225H	220	205H	I220A	240	255	255	270	245	275	280	275
24	260	280F	260	240	250	240	270	240	220	210	190H	235	230	240H	250H	255	270	A	285	260	275	300	325	300
25	345	295H	255	250	240	240	250	230	240	215	205H	245H	200A	240H	225	230	250	I255A	260	245	270	300	300	300A
26	275	270	265	275	290	290	265	220	230	210H	230H	200	200H	225	225	240H	240A	I270A	295	250	250	300A	295	325
27	300	300	300	255	295	300	240	225	220	240H	210H	220	I200A	205	230	240	I240A	245	250	240	260	270H	345	350
28	285	260	280	285	250H	275	250	225	225H	265H	215H	250H	250	230H	225H	240	230	235	260	250	250	270	290	290
29	280	295	305H	275	270	270	230	240	225H	225H	245H	210H	205H	I230A	250H	A	A	270	250	I250A	250	265	250	300
30	300	305H	275	250	240	210H	235	245	240	235H	225AH	250H	255	240	I245A	225H	240H	255	260	245	320	270	275	285
31	250	295	300	295	300	280	245	240	235	220H	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	31	31	31	31	31	31	31	31	29	30	27	28	28	28	26	23	24	25	25	28	29	30	30	30
Median	290	295	280	260	250	255	250	235	230	220	225	220	220	230	230	240	240	250	255	250	255	290	295	290

h'F

Sweep 1.0 Mc to 20.0 Mc in 1 min in automatic operation.

The Radio Research Laboratories, Japan.

Y 10

57

IONOSPHERIC DATA

Aug. 1957 | h'Es | 135° E Mean Time (G.M.T.+ 9h.) | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	E	110	100	110	105	100	125	130	110	110	105	105	105	G	G	130	115	110	100	100	100	S	100
2	100	105	S	140	105	105	100	105	120	G	115	G	115	110	110	105	100	100	100	100	100	115	100	100
3	100	100	100	100	110	100	100	105	110	100	G	G	105	100	105	100	160	135	120	100	105	100	100	100
4	100	100	110	105	100	110	100	145	120	130	115	125	G	140	120	120	115	120	115	100	100	100	100	100
5	100	110	100	100	100	100	100	105	100	105	C	115	110	115	110	115	115	110	105	105	105	100	100	100
6	100	105	100	105	100	105	100	110	110	105	105	110	110	105	115	105	100	100	G	100	100	100	100	S
7	110	110	110	110	100	100	105	105	105	105	130	125	125	120	120	130	115	125	120	110	120	100	100	100
8	100	S	100	100	E	100	100	150	100	105	100	100	105	140	125	130	140	130	120	105	100	100	100	S
9	S	S	S	E	E	105	100	100	G	100	150	100	100	105	100	100	125	125	120	110	110	105	100	S
10	S	100	E	E	125	130	100	120	G	120	115	G	110	G	110	120	100	100	100	115	110	105	105	120
11	100	100	100	100	100	S	120	110	105	130	100	100	130	120	105	100	100	125	110	100	100	S	S	S
12	S	100	100	105	110	105	160	105	100	140	130	130	G	100	110	G	G	E 180 B	100	115	100	100	100	S
13	S	S	S	E	S	S	100	125	110	115	115	105	100	100	100	100	100	100	100	100	100	100	100	100
14	100	100	100	100	100	100	120	115	120	115	110	110	E 140 B	G	G	175	125	120	110	110	105	105	100	100
15	100	105	100	100	105	105	120	120	105	105	110	120	G	100	100	100	100	120	110	105	105	100	100	105
16	105	100	105	105	110	105	105	110	100	120	120	100	100	100	110	100	125	G	130	100	100	100	100	100
17	100	100	100	105	105	100	150	140	G	130	115	115	125	110	100	125	120	125	110	110	105	100	100	100
18	100	100	100	E	S	S	S	100	145	145	130	125	100	120	120	110	110	110	110	100	100	100	100	100
19	100	E	S	E	S	100	G	120	110	120	105	105	100	100	105	100	130	125	120	115	105	100	100	100
20	100	100	105	S	S	S	100	100	100	120	120	115	105	105	100	100	140	125	110	100	105	100	100	100
21	100	S	S	S	105	105	100	G	120	G	100	105	100	100	G	100	140	125	115	110	105	S	C	100
22	100	100	100	100	105	105	100	120	120	C	110	110	115	115	120	C	C	140	115	115	105	100	100	100
23	100	100	S	105	100	100	100	G	100	105	120	120	150	140	140	120	125	100	100	100	100	100	105	S
24	110	105	110	E	E	100	145	150	105	105	100	100	100	100	100	135	125	120	110	120	100	120	100	100
25	100	100	100	S	E	S	100	110	105	120	100	100	100	100	100	100	100	100	100 F	100	110	100	100	100
26	100	100	100	100	100	S	S	120	120	110	105	120	150	150	170	130	120	110	105	105	105	100	100	100
27	100	100	100	S	S	S	145	125	130	125	120	115	105	125	115	120	115	G	115	105	100	100	100	100
28	100	100	100	100	100	S	S	120	100	110	110	105	105	100	105	105	100	135	150	105	100	100	100	100
29	100	S	100	E	S	S	100	130	130	120	110	120	E 145 B	115	115	115	110	105	120	110	110	100	100	100
30	100	100	100	100	100	100	100	130	125	115	115	115	110	120	115	120	120	125	120	105	100	100	100	100
31	100	100	100	100	100	100	100	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C
No.	27	24	24	20	21	22	27	28	27	27	28	27	25	28	27	27	28	27	29	30	30	28	27	24
Median	100	100	100	100	100	100	100	120	110	115	110	110	105	110	110	110	120	120	110	105	100	100	100	100

h'Es

Sweep 1.0 Mc to 20.0 Mc in 1 ~~sec~~ min in automatic operation.

The Radio Research Laboratories, Japan.

Y 11

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IONOSPHERIC DATA

Aug. 1957

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f		f	f	f	f	l	l3	h s	C2	C2	C	C2	C2			h l	C6	C5	f2	f4	f		f
2	f2f	f2		ff	f3	f3	l	l	C		C		C	C	C	C2	l2	l3	l3h	l2C	f2	ff2	f	f
3	f2	f	f	f	f2	f3	l	l2	l2	l			l	l2	l	l	h	h	h3	f4	f7	f	f	f
4	f2	f3	ff2	f2	f	f	lC2	h2	h2	h	h	h		h	h3	h	h2	h2	C3	C7l2	f3	f4	f5	f2
5	f2	f2	f5	f4	f5	f6	l	l2	l3	l2		h3	C3	h2	C4	C3	C4	C5	C7	C7l2	f5	f4	f6	f5
6	f3	f2	f3	f2	f2	f2	l	C3	C3	C2	C3	C3	C2	C2	C	l2	l3	l3		f4	f4	f3	f	
7	f4	f4	f3	f2	f3	f3	l	l3	C4	C	h3	h3	h2	h2	h2	h	h2	h2	C5	C6	f	f2	f	f7
8	f		f2	f3		f	lh2	hl	l3	lh	l2	l2	l	h	h	h	h	h3	h3	f4	f2	f2	f	
9						f2	l	l2h		l	h	l3	l2	l	l2	l2	C	h2	h3	C3	f5	f	f2	
10		f			f	f	lC2	C3		h	C		C2		lh	lh	l3	l3h	l3	f5f4	f2f3	f5	f4f3	f f2
11	f5	f2	f3	f5	f		h2	C3	l2	hl2	lh	lh	h2l	h2	lh	lh	l	h3	C6	f3	f			
12		f	f2	f	f	f2	h	C2	lh	h	h	h		l2	l			h	l2h	C3	f2	f2	f	
13							l	h2	l	C2	C	C2	C3	l2	l2	l3	l5	l5	l4	f5	f6	f2	f6	f3
14	f2	f2	f5	f3	f5	f6	h2l	C4l	C2	C3	C2	C3	h			h	h	h5	C4	C4	f6	f7	f4	f2
15	f2	f2f3	f2	f2	f4	f5	h4l	C4	l3	C2	C3	h		lh2	l2	l3	l3	C3l3	C2l5	C7	f4	f6	f	f2
16	f2	f3	f2	f2	f3	f4	l3	l2	l5	h3	cl2	l	l2	l	C	l2	h		h3l	f3	f	f	f2	f3
17	f2	f3	f	f	f	f2	hl	h		h2	C3	C3	h	C3	C2	h3l	h2l3	h3l3	C7	C8	f5f2	f2	f5	f3
18	f	f	f				l	h2	h	h	h	h	lh	C2	C3	C3	C2	C2	C3	f3	f	f2	f2	f2
19	f					ff		C3	C2	C	C2	C2	C2	l2	l2	l2h	h3l2	h2l	h8	C6l2	f7	f4	f2	f2
20	f	f	f				l	l	lh	h	h	C	C2	C2	l2	l3	h	h3	C5	C4	f4	f2	f8	f2
21	f3				f	f	lh2		h		l3	C	l2	l2		l	h	h2	C4	C4	f2			f
22	f	f2	f5	f5	f3	f2	lh	C4	C2		C3	C3	C3	C3	C2			h	C5	C3l	f3	f3	f7	f
23	f2	f		f	f2	f8	l3		ll2	l2	C	C	h	h	h	h3	h2l2	l3h2	C4l3	f3	f	f4	f	
24	f	f2	f			f	h	h	C3	C2	l	l	l	l	l2h	hl2	h2l4	h5l6	h6l6	h2l5	f4	ff7	f5	f3
25	f4	f2	f				l	C4	C2	C	l	C3	l2	ll	C	l2	l3	l6	l3	f4f3	f3f8	f4	f2f2	f4
26	f4	f2	f8	f3	f2			h2	C2	C2	C2	h	h	hl	h	h	h2	C3	C6	f3	f4	f5	f	f3
27	f2	f2	f				h	h2	h	h	C	C	C2	h	cl	C	C2		C2	f5	f7	f4	f3	f3
28	f4	f2	f	f	f			h3	lh2	C3	h	C2	C2	l2	l	l2	lh	h2	h2	f4	f4	f5	f	f
29	f2		f				lh	h4	h	h	C3	h	h	C2	C2	C	C3	l4	C4	f7	f5	f4	f3	f3
30	f2	f	f	f2	f	f	l6	h2l	h2	C2	C3	C2	C2	h	h2	h2	h2	h	h	f3	f6	f2	f	f2
31	f2	f2	f3	f	f	f2	l																	
No.																								
Median																								

Types of Es

Sweep 1.0 Mc to 20.0 Mc in 1 min ~~sec~~ in automatic operation.

The Radio Research Laboratories, Japan.

Y 12

SOLAR RADIO EMISSION 200 Mc/s

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

HIRAISO

Time in U.T.

Aug. 1957	Steady Flux					Variability				
	00-03	03-06	06-09	21-24	Day	00-03	03-06	06-09	21-24	Day
July 31				15					1	
1	13	12	10	10	12	1	0	0	0	1
2	10	10	12	10	10	1	1	1	0	1
3	10	10	12	12	10	0	0	(0)	1	0
4	12	14	11	10	12	1	1	1	0	1
5	11	9	13	10	11	1	1	(0)	1	1
6	11	10	13	14	11	1	1	1	1	1
7	14	11	11	-	13	1	1	1	-	1
8	12	10	11	12	11	1	1	1	(0)	1
9	14	16	12	-	13	1	1	1	-	1
10	21	15	14	9	17	1	1	-	1	1
11	14	12	14	17	12	1	1	1	1	1
12	15	23	23	17	20	1	1	1	0	1
13	18	18	14	15	17	1	0	1	0	0
14	14	12	11	11	13	1	0	1	(0)	0
15	12	11	12	14	12	0	0	1	0	0
16	12	12	12	11	12	0	0	0	0	0
17	13	12	15	11	13	(0)	0	1	0	0
18	16	12	11	10	12	1	0	0	0	0
19	11	14	10	11	12	0	0	0	0	0
20	12	14	13	-	13	0	0	0	-	0
21	12	12	13	13	12	1	0	1	0	1
22	13	12	11	14	12	0	0	0	0	0
23	14	13	12	12	13	0	0	0	0	0
24	12	12	12	13	12	0	1	0	0	0
25	13	13	12	15	13	0	1	1	1	0
26	16	15	12	16	14	1	(0)	0	0	1
27	16	13	14	15	15	1	1	1	0	1
28	14	12	15	44	14	1	1	1	1	1
29	36	24	30	-	34	1	1	1	1	1
30	37	36	63	78	45	1	2	2	2	2
31	120	173	153	244	131	3	2	2	3	2

Outstanding Occurrences

Aug. 1957	Start-time	Dura-tion	Type	Max. Int. Inst.	Max. Int. Smd.	Max. Time	Remarks
July 31	2120	30s	SD/4	610	120	-	
	2121	30s	SD/4	105	40	-	
2	0552	1m	SD/4	480	58	-	
4	0429	1m	SD/8	510	110	-	
6	0546	40s	SD/8	950	180	-	
	0559-30s	2m	CD/8	980	130	0600 *	
10	0127	1m *	CD/9	1000	480	0127	first part
	0129	5m		870	240	0131	plus part
21	0156-30s	1m	CD/8	580	250	0157	
24	0517	50s	CD/4	1110	-	-	
28	0130	40s	SD/8	1200	455	-	
	0710	13m		530	20	0719	
	2024 *	4m *	CA/8	1120	260	-	
30	0339	50s	CD/4	280	50	-	
	0403-30s	1m	CD/4	380	58	-	
	0406	2m	CD/8	900	35	0307-30s	
	0436	2m	CD/8	870	211	0436-30s	
	0450 *	1m30s *	CD/8	1150	128	0451	
	0854	2m	CD/8	1020	107	0855	
	2205	9m30s	CA/8	1120	230	2206	
31	2033	9m	CA/8	850	260	2035	
	2112	3m	CA/8	420	148	2112-10s	first peak
				650		2114	second peak

* = inaccurate

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Aug. 1957	Whole Day Index	W W V				S. F.				W W V H				Warning				Principal magnetic storms		
		00-06	06-12	12-18	18-24	00-06	06-12	12-18	18-24	00-06	06-12	12-18	18-24	00-06	06-12	12-18	18-24	Start	End	ΔH
1	1+	2	2	1	1	2	1	1	2	3	2	2	2	N	N	N	N			
2	1+	2	2	1	1	2	1	2	2	2	2	2	2	N	N	N	N			
3	2-	2	2	1	2	2	2	2	2	2	2	2	2	N	N	N	N			
4	2+	3	3	2	1	2	3	2	2	2	2	2	2	U	N	N	N			
5	2o	3	2	1	1	3	2	2	2	2	2	2	2	N	N	N	N			
6	3o	3	3	3	3	2	3	3	3	2	2	2	2	N	U	N	N			
7	3o	3	3	3	2	3	3	3	2	3	3	3	2	N	N	N	N			
8	2o	1	2	1	1	3	3	3	2	2	2	3	2	N	N	N	N			
9	2o	2	2	2	1	3	2	2	2	2	2	3	2	N	N	N	N			
10	3o	2	3	3	3	3	3	3	3	2	2	2	2	N	N	N	N			
11	3-	3	3	2	2	3	3	3	2	3	3	2	2	N	N	N	N			
[12]	2+	2	3	3	2	2	2	2	2	2	2	3	2	N	N	N	N			
13	2+	3	3	3	2	3	2	1	1	2	3	2	2	N	N	N	N			
14	2-	3	2	2	1	2	2	2	1	2	2	3	2	N	N	N	N			
15	1o	1	1	1	1	1	1	1	1	2	2	2	2	N	N	N	N			
16	1+	2	2	1	1	1	1	2	2	2	2	2	2	N	N	N	N			
17	1+	2	(2)	1	1	1	2	2	2	2	2	1	2	N	N	N	N			
18	1+	2	2	1	2	1	1	2	2	2	2	2	2	N	N	N	N			
19	3o	2	4	4	3	2	3	3	2	2	2	3	2	N	N	N	N			
20	3o	3	3	4	2	2	2	3	(3)	2	3	4	2	N	N	N	N			
21	4-	4	4	4	4	(3)	3	3	3	3	3	3	3	N	N	N	N			
22	3-	3	3	3	1	3	3	3	1	2	2	2	2	N	N	N	N			
23	2-	1	2	2	1	2	(2)	2	(2)	2	2	2	1	N	N	N	N			
24*	1+	1	2	1	1	2	(2)	2	(2)	2	2	2	3	N	N	N	N			
[25]	1+	1	1	1	2	1	(2)	2	2	3	2	2	2	N	N	N	N			
[26]	2-	2	2	2	1	2	(1)	2	2	3	2	2	3	N	N	N	N			
27	2o	1	3	2	2	2	2	2	2	3	2	2	3	N	N	N	N			
28	2o	2	2	2	2	2	2	2	2	(3)	2	2	2	N	N	N	N			
29*	2-	2	2	1	2	2	2	2	2	2	2	2	2	N	N	N	N	1920	---	
30*	3+	4	(3)	4	(3)	2	3	3	3	3	3	3	3	U	U	U	U	---	1500	140γ
31	3o	4	3	3	3	3	2	3	3	2	1	1	(2)	U	U	U	U	1810	---	115γ

* = day of Special World Interval
() = inaccurate
[] = Regular World Day
--- = continuing magnetic storm

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Aug. 1957	S W F					S E A			Correspondence		
	Start-time	Dura-tion	Imp.	Type	Circuits	Start-time	Dura-tion	Imp.	Flare	Solar noise	Mag.
1	02.48	40	2	Slow S-SWF	HA, SF, MN, WA						
"						09.00	55	1			
"	21.52	45	2	Slow S-SWF	SF, WA						x
"	22.37	32	1	S-SWF	SF						
2	00.55	38	2	"	SF, LN				x	x	
3	00.06	14	1	"	MN, SF, WA						
"	00.45	35	1	Slow S-SWF	SF						
"	18.09	33	2	"	SF, WA, HA				x		
4	07.18	71	2	G-SWF	SF						x
7	17.38	30	2	S-SWF	SF, HA						
"	18.26	19	2	"	HA, SF						
"	23.40	50	3	"	SF, HA, WA, MN				x	x	
8	01.53	30	1	Slow S-SWF	SF, MN						
"	03.05	47	2	"	SF, MN						
"	04.07	71	3	S-SWF	SF, MN						
9	00.41	19	1	"	MN, WA					x	x
"	01.24	17	2	"	MN, SF						
"	02.03	41	3	"	SF, WA, MN, HA						
"	06.32	8	1	"	MN	06.22	28	1	x		x
10	01.03	23	3	"	SF, MN, WA, HA	00.55	50	1			x
11	01.26	15	3	"	SF, MN, WA, HA					x	
13	18.16	23	2	Slow S-SWF	SF, HA						
17	21.35	19	2	S-SWF	SF, WA				x		x
"	22.04	22	1	"	SF					x	
18	22.58	35	2	"	SF, LN, WA						
21	23.11	58	3	"	SF						

22	03.46	56	2	Slow S-SWF	SF, MN						
"	05.26	43	2	"	SF						
"	18.50	80	2	G-SWF	SF						
23	04.18	20	1	S-SWF	SF						
25	23.47	16	1	"	SF, WA				x	x	
27	07.20	36	2	"	HA, SF, MN	07.25	20	1			
"	23.51	29	2	"	SF, WA, LN						x
28	01.18	33	1	"	WA				x	x	
"	19.00	37	2	G-SWF	SF, HA				x		
"	20.18	14	2	S-SWF	SF, HA				x	x	
29	05.51	29	2	"	HA, SF, MN				x	x	
"						18.23	27	1-			
"	21.01	29	3	S-SWF	SF, HA, WA, LN	21.00	70	1			
30	03.45	19	2	"	SF, HA, WA, MN	03.48	40	1-		x	
"	06.25	36	2	"	MN, SF, HA, WA	06.20	25	1	x	x	
"	19.28	20	2	"	SF				x	x	
"	22.12	38	3	"	SF, HA, WA, LN	22.12	41	2		x	
"						23.08	28	1			
31	00.10	18	1	Slow S-SWF	MN, SF, HA, WA	00.27	38	1-		x	
"	02.45	75	2	S-SWF	MN, HA				x	x	
"	05.48	26	2	"	MN, HA				x	x	
"	20.34	31	2	"	SF, WA						
"	23.04	48	1	G-SWF	SF, WA				x	x	

IONOSPHERIC DATA IN JAPAN FOR AUGUST 1957
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