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IONOSPHERIC DATA IN JAPAN

FOR JUNE 1962

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THE RADIO RESEARCH LABORATORIES
MINISTRY OF POSTS AND TELECOMMUNICATIONS
KOKUBUNJI, TOKYO, JAPAN

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THE RADIO RESEARCH LABORATORIES

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CONTENTS

SITES OF THE RADIO WAVE OBSERVATORIES

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

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

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

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

SYMBOLS AND TERMINOLOGY

A. IONOSPHERE

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

Terminology

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

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

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

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

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

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

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

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

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

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

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

a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

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

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

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

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

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

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

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

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

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

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

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

O Measurement refers to the ordinary component.

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Intermittent trace.

Z Third magneto-ionic component present.

b. Qualifying Symbols

Used as a preceeding symbol on monthly tabulation sheets.

D *greater than......*

E *less than......*

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magnetoionic component.

c. Description of Standard Types of E_s

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

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

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

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

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

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

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

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

f An E_s trace which shows no appreciable increase of height with frequency. The trace is usually relatively solid at most latitudes. This classification may only be used at night; apparently flat E_s traces observed in the daytime are classified according to their virtual height: *h* or *l*.

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

d. Multiple Reflections from E_s

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

B. SOLAR RADIO EMISSION

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

a. Daily Data

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

Variability Variability is expressed in four grades as follows:

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

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

b. Outstanding occurrences

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

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

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

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

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

activity

M : multiple peaks separated by relatively long period of quietness

F : multiple peaks separated by relatively short period of quietness

E : sudden commencement or rise of activity

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

Maximum intensity

Instantaneous: The highest value above the base level.

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

C. RADIO PROPAGATION CONDITIONS

a. Radio Propagation Quality Figures

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

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

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

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

N = normal
U = unstable
W = disturbed

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

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

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

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

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

Circuits and Drop-out intensity

WS......WWV 20 Mc, 15 Mc and 10 Mc (Washington)

SF......Various commercial circuits (San Francisco)

HA......WWVH 15 Mc and 10 Mc (Hawaii)

TO......JJY 15 Mc and 10 Mc (Tokyo)

SH......BPV 15 Mc and 10 Mc (Shanghai)

LN......Various commercial circuit (London)

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

Start-times and Durations

Types

S : sudden drop-out and gradual recoverly

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

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

Importances

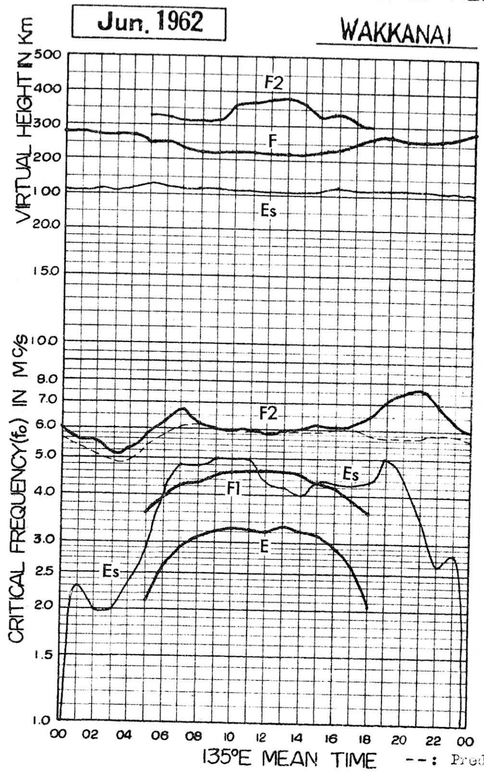
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out;

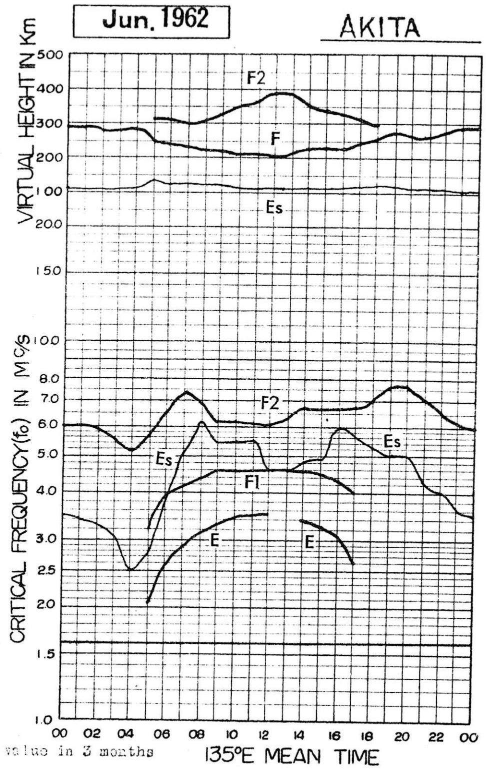
1−	1	1+
2−	2	2+
3−	3	3+

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

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

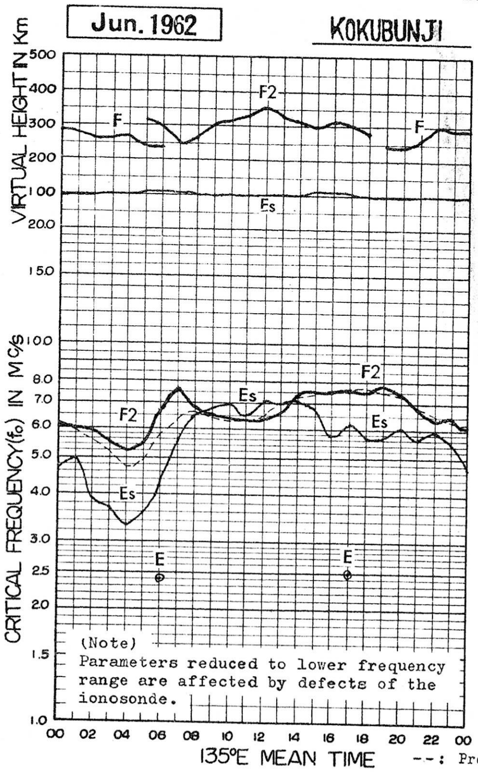
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

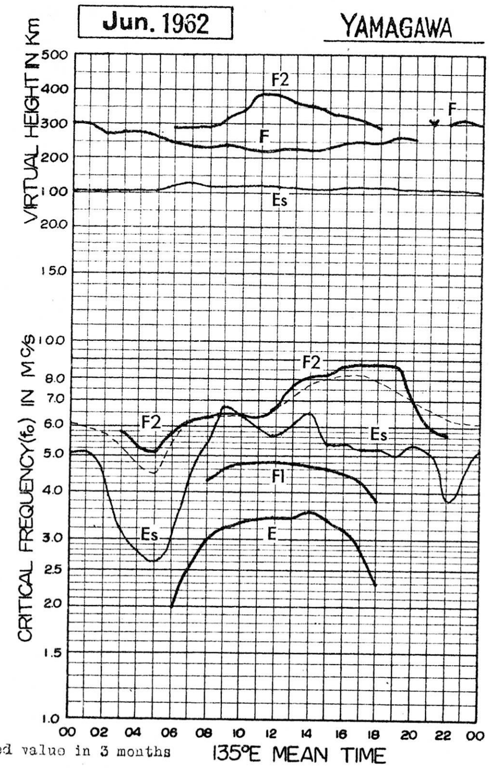




--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





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

IONOSPHERIC DATA

Jun. 1962

foF2

135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.0	U5.3S	F	F	SF	5.0	6.3	I5.4A	5.0	W	5.2	5.7	5.2	I5.4A	5.4	5.2	I5.2A	5.3	I5.8A	U6.7S	7.4	U6.8S	6.3	6.0
2	6.0	6.0F	5.6F	4.8	5.0	5.4	6.0	6.8	6.0	6.5	6.4	6.0	5.9	U6.3R	6.3	6.2	5.9	5.9	6.8	7.6	I8.6S	I8.0S	6.2	5.2
3	5.3	U5.2S	I5.1SF	5.0F	5.2	6.3	7.3	8.3	7.1	6.4	5.8	6.0	6.1	6.3	6.4	6.3	6.7	6.3	I6.3A	U7.3S	8.3	U8.1S	U6.6S	5.9
4	5.7	U5.6S	U5.5S	U5.3S	U5.3SH	5.9	6.3	7.0	5.7	5.1	5.9	6.1	6.2	6.1	6.1	6.1	5.4	5.5H	6.1H	U7.3S	8.2	8.6	7.1	6.0
5	5.8	5.0	5.3	5.2	5.3F	5.3	5.8	7.3	6.2	5.3	5.1	5.6	6.0	6.0	6.0	6.6	6.3	6.6	6.1	7.2	8.0	8.1	7.9	6.3
6	5.3	5.0	5.3	5.0	5.0	5.0H	5.5	6.1	6.0	6.4	5.3	5.2	5.8	6.0	C	C	C	6.0	7.2H	8.1	U7.3S	7.7	I7.4S	U6.6S
7	I6.4SF	5.6	4.8	4.3	4.3	4.8	5.8	6.2	6.3	6.1	I5.9A	I6.0A	6.0	U6.3R	6.1	6.4	I6.1A	6.3	5.9	I7.4S	S	S	S	S
8	U5.3S	5.5	I4.3A	I4.3FS	4.4	I5.1A	5.7	A	A	A	A	A	A	A	A	5.3	5.3	5.3	5.6	5.4	I5.8A	7.0	S	A
9	S	SF	SF	SF	SF	5.4	6.5	6.6	7.8	6.2	5.8	I6.4A	I6.6A	6.2	6.7	6.1	6.3	6.6	7.6	U7.4S	S	S	S	SF
10	U6.0SF	5.7	SF	SF	SF	5.7V	6.3	C	C	C	C	C	C	C	C	C	C	5.3	5.1	6.1	7.0	6.6	6.0	5.3
11	5.0	U4.6S	4.5	4.6	4.3	5.0	5.5	5.5	5.3	5.0	5.0	5.0	5.3	5.3	I5.2A	5.0	I5.3A	5.8	I6.0A	6.3	U6.5S	I6.6S	6.4	5.9
12	5.8	5.3	5.0	4.7	5.0H	5.8	5.8H	6.2	I5.9A	5.8	5.2	5.2	5.6	I5.1R	5.1	5.5	U5.6R	5.3	I5.6C	U6.8S	I7.6S	U7.8S	6.3	5.6
13	5.3	4.8	5.0	5.0	5.8H	6.3H	6.3	6.5	6.2	5.0	I5.2A	I5.3A	5.3	5.1	5.6	5.6	5.8	5.8	6.2	6.4	6.4	6.3	S	A
14	SF	5.3SF	5.1	5.1	5.0F	5.5H	5.7	6.2	7.0	5.9	5.3	I5.7A	5.8	5.7	6.3	6.5	5.4	5.9	6.3	I7.4S	8.7	7.6	U6.6S	5.3
15	5.3	5.3	5.4	5.1	5.1H	5.8	6.8	6.8	6.8	6.7	6.4	5.8	5.7	5.6	W	6.2	I6.3A	6.3	I6.1A	I6.3A	7.5	U7.7S	U7.2S	6.5
16	6.3	6.2	6.0	5.6	I5.6A	6.1	7.8	9.5	7.6	5.5H	I6.5A	I6.7A	I6.5A	6.7	U6.7R	6.7	6.8	6.9	7.5	7.7	U8.3S	8.3	I8.0S	7.4
17	6.8	6.5	5.7	5.3	6.0F	6.8	I7.6S	7.8	6.8	I5.4A	I5.4A	I5.2R	I5.3R	5.3	I5.4R	5.3	5.4	5.9	6.3	I7.0A	7.7	7.2	I6.9S	I6.4SF
18	6.0F	I5.9FS	5.5F	5.2	5.8H	7.2H	7.2	7.3	7.1	7.1	U6.3R	6.0	5.9	5.7	6.6	6.7	6.8	6.9	7.2	I7.2A	U7.6S	U7.8S	I7.2S	U6.5S
19	6.5	6.1	6.1	6.1	5.6	6.1	6.7	U7.5S	8.3	7.3	7.3	6.8	6.3	6.3	5.8H	6.2	6.0	6.2	6.7	I7.7S	8.6	I7.5S	7.1	7.0
20	U7.2S	I6.8S	6.6	6.0	6.1H	6.9H	7.0	7.2	6.6	6.6	6.0	6.0	5.7	5.6	5.8	5.6	5.5	6.0	6.7	7.0	I7.2S	7.2	7.0	6.7
21	6.3	6.0	5.9	5.7	5.8	6.3	7.8	7.8	8.3	6.9	6.1	6.0	6.0	6.3	6.0	6.0	6.1	6.1	6.5	6.8	U7.3S	U7.8S	7.3	U7.0S
22	U7.0S	U6.5S	6.5	6.2	6.9	5.8H	6.5	7.8	U7.1R	7.0	6.9	U7.0R	5.8	6.5	7.2	6.8	5.8	6.5	6.0	6.0	6.8	U7.3S	I7.3S	6.4
23	6.1	6.1	5.9	5.8	5.9	6.8H	8.0	8.8	8.6	U7.8S	6.1	6.2	7.1	6.8	7.1	I7.1A	6.8	7.9	7.3	I7.3S	I7.9S	I8.0S	I7.7S	7.3
24	6.9	6.8	6.3	5.5	5.7	6.0	6.1	6.5	6.0	5.5	6.0	6.1	5.6	6.0	6.0	6.5	6.4	5.5	5.6	6.1	7.1	7.0	U6.8S	U7.0S
25	6.5	6.3	5.7	5.1	5.1H	6.2	6.8	6.9	6.0	5.6	5.9	6.1	6.0	6.6	6.1	7.0	6.2	6.4	6.8	6.3	I6.5A	6.3	U6.1S	6.2
26	5.3	5.2	5.2	5.0	5.1F	5.0FH	6.5F	I6.2A	I6.8A	6.2	6.0	I5.8A	I5.7A	I5.8A	6.2	6.3	6.3	6.0	6.5	U7.3S	U7.4S	S	S	SF
27	SF	SF	SF	SF	FS	5.5	5.7	6.0	6.3	6.0	I5.7A	6.0	6.3	6.0	6.1	6.3	6.1	6.8	7.9	8.8	7.9	I8.0S	I7.4S	7.3
28	I6.7SF	I6.2SF	5.6	I4.5A	4.0	I4.6A	I5.2A	5.0H	I5.0A	I5.7A	5.0	I5.1A	I5.0B	5.3	I5.4A	5.8	6.2	I6.2A	6.5	7.0	8.6	U8.0S	6.3	6.0
29	5.3	5.3	5.6	5.1	4.7	5.3	6.0	6.1	5.8	6.0	6.0	5.3	5.5	5.3	5.6	6.3	5.6	6.5	6.8	I7.5S	6.8	5.6	5.9	5.7
30	5.5	5.3	4.6	4.4	4.3	4.5	5.1	5.8	6.2	I5.1A	5.0	5.6	5.5	5.2	5.3	5.7	6.9	7.7	7.9	7.0	I7.0S	6.0	6.3	6.0
31																								
No.	27	28	26	26	26	30	30	28	28	27	28	28	28	28	26	28	28	30	30	30	28	27	25	25
Median	6.0	5.6	5.5	5.1	5.2	5.8	6.3	6.7	6.2	6.0	5.9	6.0	5.8	6.0	6.0	6.2	6.1	6.2	6.4	7.1	7.4	7.6	6.9	6.3
U.Q	6.5	6.2	5.9	5.5	5.8	6.2	6.8	7.4	7.0	6.6	6.1	6.1	6.0	6.3	6.3	6.5	6.3	6.5	6.8	7.4	8.1	8.0	7.3	6.8
L.Q	5.3	5.3	5.1	4.8	5.0	5.1	5.8	6.2	6.0	5.5	5.2	5.4	5.6	5.4	5.6	5.6	5.6	5.8	6.0	6.4	7.0	6.8	6.3	5.9
Q.R	1.2	0.9	0.8	0.7	0.8	1.1	1.0	1.2	1.0	1.1	0.9	0.7	0.4	0.9	0.7	0.9	0.7	0.7	0.8	1.0	1.1	1.2	1.0	0.9

foF2

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

The Radio Research Laboratories, Japan.

W. 1

IONOSPHERIC DATA

Jun. 1962

f_oF1

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						A	I3.6A	I3.9A	I4.2A	I4.4R	4.4	I4.4A	4.4	I4.4A	4.3	A	A	A						
2							4.0	I4.2A	5.0	4.5	4.7	4.7	4.7	4.6	4.5	I4.3A	I4.1A	I3.9A	L					
3						L	A	A	A	4.4	I4.6A	4.7	4.6	4.6	4.5	4.4	4.2	3.9						
4						3.3	4.0	I4.1A	4.2	4.5L	I4.6A	4.6	4.5	4.5	4.4	4.3	4.1							
5						3.3	3.8	I4.1A	4.3	4.5	4.6	4.6	4.6	4.5	4.8	A	A	A	A					
6							3.9	A	A	A	A	4.6	4.6	4.6	C	C	C	4.0						
7						3.5	4.0	I4.2A	A	A	A	A	A	A	4.4	I4.4A	I4.2A	4.0H	L					
8						A	A	A	A	A	A	A	A	A	A	A	A	A	3.5					
9						A	4.0	A	A	A	I4.8A	I4.7A	I4.6A	I4.6A	I4.4A	4.4	4.3	I4.0A						
10							A	C	C	C	C	C	C	C	C	C	C	A	A	L				
11						3.6	3.8	4.0	4.2	4.3	I4.4A	4.5	4.5	4.6	I4.4A	4.3	A	A	A					
12						3.4		A	A	4.4	4.7	4.6	I4.6A	I4.6A	I4.5A	4.3	4.1	4.1	C					
13							I4.0A	4.1	I4.2A	A	A	A	I4.5A	4.5	4.4	A	4.2	4.0	3.6					
14							3.9	A	A	A	U4.6R	I4.7A	4.8	4.6	4.4	I4.5A	I4.5A	I4.1A	3.6					
15						3.7	4.0	4.1	4.3	I4.5R	4.5	4.6	4.7	4.7	4.5	A	A	A	A					
16						3.7	I4.0A	4.3	I4.4A		A	A	A	B		G	4.6H	I4.1A	L					
17						3.7	A	A	A	A	A	I4.7R	4.7H	4.6	I4.4R	4.4	4.3	A	A					
18							A	A	4.5	I4.6A	4.7	4.7	4.9H	4.8	4.7	4.5	I4.3A	I4.1A	A					
19							4.2	I4.3A	I4.5A	4.6	I4.6A	I4.8A	4.9	4.8		4.4	4.3	A	A					
20							4.2	I4.3A	I4.4A	4.5	4.6	4.7	4.7	4.6	4.6	4.4	4.4	4.0	A					
21						3.7	4.0	A	A	A	A	4.7	4.8	4.7	4.7	4.7	4.3	4.1	A	A				
22							4.1	4.2	4.4	I4.5A	4.6	I4.6A	4.9	4.5	4.6	I4.4A	4.2	4.0	L					
23							4.0	4.2	I4.3A	I4.5A	A	A	A	I4.6A	4.6	I4.3A	4.2	4.0H	3.6L					
24							A	4.4	I4.2A	I4.5A	4.4	I4.5A	I4.6A	4.6	4.5	4.2	4.2	3.8						
25						3.5	A	A	A	A	4.5	4.6	4.6	4.5	4.5	4.3	4.2	4.0	3.5					
26							4.0	A	A	A	A	A	A	I4.5A	4.5	4.3	I4.2A	A	A					
27							I4.0A	I4.2A	4.3	4.4	I4.6A	I4.5A	4.5	4.6	I4.5A	4.3	4.3	A	A					
28							A		A	A	4.5	A	B	R	I4.3A	4.3	A	A	A					
29					2.8	3.6	3.9	4.1	4.3	4.3	4.4	4.5	4.6	A	A	A	A	A	A					
30						A	A	A	A	I4.3A	I4.0A	4.4	4.5	4.4	4.4	4.3	4.1	3.9	A					
31																								
No.					1	11	20	16	16	17	20	22	23	24	24	21	21	17	5					
Median					2.8	3.6	4.0	U4.2	4.3	4.5	4.6	4.6	4.6	4.6	4.5	4.3	4.2	3.9	3.6					

f_oF1

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

The Radio Research Laboratories, Japan.

W 2

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					1.25	2.00	2.50	2.85	3.00	3.15	3.25	3.35	3.45	3.45	3.30	3.15	2.80	2.50	2.05	S				
2					1.40	2.20	2.65	2.95	3.20	3.30	I3.30B	3.30	3.20	I3.00B	3.40	3.15	2.90	2.50	S	S				
3					1.20	2.10	2.60	2.90	3.05	3.20	3.25	3.15	3.00	A	A	A	2.95	2.50	2.00	S				
4					1.40	2.05	2.60	2.90	3.00	3.10	3.15	3.05	A	A	R	3.15	2.95	2.45	2.05	S				
5					A	2.05	2.50	2.90	3.05	3.20	3.25	3.20	3.25	3.00	A	A	A	A	2.05	S				
6					1.20	2.05	2.45	2.90	3.05	3.20	3.15	3.10	3.10	3.25	C	C	C	2.50	2.05	S				
7					1.45	2.05	2.50	2.85	3.15	3.20	3.30	3.25	3.00	A	A	A	A	2.55	2.10	S				
8					A	I2.05A	2.55	2.85	3.05	3.20	3.15	3.10	3.15	2.95	3.00	2.85	2.85	2.70	2.05	S				
9					A	2.10	2.60	2.85	3.10	3.20	3.25	3.30	3.25	A	A	A	3.00	2.75	2.05	S				
10					A	2.10	2.60	C	C	C	C	C	C	C	C	C	C	2.75	2.15	S				
11					1.35	2.00	2.45	2.90	3.05	3.25	3.25	3.30	3.30	3.30	3.20	3.00	2.90	2.50	2.05	S				
12					1.25	1.95	2.60	2.90	3.15	3.25	3.30	3.35	3.35	I3.25B	3.00	A	A	A	I2.15C	S				
13					A	2.10	2.55	2.90	3.05	3.15	3.00	A	A	A	3.30	3.20	2.85	2.55	2.05	S				
14					A	2.05	2.70	3.05	3.20	3.25	U3.30R	3.30	3.20	I3.10B	3.05	3.00	I2.95A	2.80	2.15	S				
15					S	2.00	U2.60R	I2.80B	3.00	I3.15B	3.25	I3.35B	3.60	I3.45B	3.25	I3.30A	I3.00A	2.70	A	S				
16					1.15	2.10	2.60	2.90	3.05	B	B	B	B	B	3.20	3.25	I3.00B	2.60	2.00	S				
17					A	I2.15S	2.70	2.95	B	B	B	3.25	I3.30B	I3.35B	I3.15B	2.95	2.85	2.80	2.20	S				
18					A	2.25	2.80	3.00	3.15	3.20	I3.30B	I3.40B	3.60	I3.40A	I3.30B	3.35	3.00	2.70	2.05	S				
19					1.55	2.20	2.70	3.00	3.15	3.25	3.25	3.20	3.10	A	A	A	3.00	2.70	2.15	S				
20					I1.50S	2.15	2.70	2.90	3.20	3.25	3.25	3.25	I3.10B	I3.35A	3.35	I3.15A	2.90	2.80	2.20	S				
21					S	2.15	2.60	2.90	3.10	3.20	3.20	3.25	3.35	3.30	3.15	3.15	3.00	2.70	2.05	S				
22					1.50	2.15	2.65	2.90	3.15	3.20	I3.20B	3.15	3.10	A	A	A	A	2.70	2.20	S				
23					1.50	2.15	2.60	2.95	3.10	3.20	3.25	3.25	3.25	I3.15B	3.15	3.20	2.90	2.60	2.10	S				
24					S	2.05	2.60	2.90	3.05	3.20	3.35	I3.35B	3.20	3.30	3.10	2.90	2.70	2.65	2.10	S				
25					1.30	2.15	2.60	2.90	3.05	3.20	3.25	3.25	3.10	3.00	I3.10A	3.15	3.00	A	A	S				
26					A	2.15	2.50	2.95	3.10	3.20	I3.25B	3.25	I3.30A	3.30	3.25	3.15	I2.95B	2.50	2.15	S				
27					A	2.10	2.60	2.90	3.10	3.20	3.20	I3.20B	3.10	3.35	I3.25A	I3.15A	2.90	2.70	2.05	S				
28					A	2.00	2.40	2.60	3.00	3.20	3.30	3.35	I3.40B	I3.40R	3.30	3.15	2.90	2.50	2.05	S				
29					1.50	2.20	2.50	2.60	2.95	3.00	3.10	3.00	I3.10A	3.20	3.00	3.15	2.90	2.55	2.05	S				
30					I1.50A	2.00	2.45	2.80	3.05	3.15	3.15	3.20	3.00	3.00	I3.20A	3.10	2.95	2.50	S	S				
31																								
No.					16	30	30	29	28	27	27	27	26	21	21	21	24	27	26					
Median					1.40	2.10	2.60	2.90	3.05	3.20	3.25	3.25	3.20	3.30	3.20	3.15	2.90	2.60	2.05					

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

The Radio Research Laboratories, Japan.

W 3

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	J2.9	J8.3Y	J4.3	J4.6	3.3	J5.7	J8.1	4.4	3.0	3.7	4.6	G	5.6	4.0	5.0	J5.3	J5.3	J6.0	J3.3	J6.1	E	E	2.5
2	E	E	J3.0	J2.4	2.3	3.3	J4.3	J4.6	4.2	4.2	3.8	4.3	J5.2	3.8	4.3	J7.3	J13.0	J5.0	J4.3	J4.3	2.9	J3.3	J3.1	3.0
3	J2.3	J2.3	E	E	2.8	3.3	J5.0	J5.1	4.6	4.3	4.6	5.0	4.0	J4.3	4.0	3.6	3.4	J4.3	J9.0	J3.3	J5.0	3.0	E	E
4	E	E	1.6	E	G	G	4.0	4.3	J4.3	3.8	J4.7	4.3	3.8	3.5	G	G	G	G	2.7	J4.3	J3.0	J3.5	2.1	E
5	E	J2.3	J3.3	E	J2.3	2.9	3.8	4.2	4.1	3.6	3.7	3.6	G	G	4.1	J5.6	J5.7	J4.5	3.8	3.0	2.5	E	E	E
6	E	E	E	E	2.0	2.5	J4.1	J6.3	4.6	J5.3	J5.0	3.9	3.7	G	C	C	C	3.8	3.0	3.0	J3.0	J3.0	J2.1	J6.3
7	E	E	J2.0	E	G	G	3.4	4.3	J5.0	J5.3	J5.2	J6.6	J7.0	J6.0	J4.3	J6.3	J9.0	G	J6.3	J12.0	J13.0	J10.3	J7.3	J8.3
8	J4.3	J6.0	J11.3	J6.5	J4.0	J6.3	5.8	J6.3	J9.5	J9.6	J14.3	J12.4	J9.1	J11.0	J9.4	J4.6	4.3	J5.3	3.0	J3.3	J9.1	J8.0	J4.3	J7.4
9	J2.3	J5.3	J5.0	J3.0	J3.1	3.8	4.0	J6.3	4.5	J5.2	J5.7	J6.4	J8.1	J4.8	J6.6	3.3	4.3	4.3	3.7	J6.3	E	J8.3	J7.6	J5.0
10	J6.3	J3.3	J4.3	J4.3	2.5	3.3	4.3	C	C	C	C	C	C	C	C	C	C	4.4	J4.8	J5.6	E	E	E	3.1
11	E	E	E	E	1.9	3.0	3.0	G	4.3	4.0	5.0M	J6.3	4.5	4.2	J8.8	3.6	J7.6	J15.0	J11.0	J4.6	5.0	J3.3	J2.5	E
12	E	J2.0	J5.3	J3.1	2.5	3.1	4.3	J6.8	J12.6	J5.0	J5.0	4.2	4.7	5.0	J6.3	3.7	4.0	3.8	C	J7.3	J2.6	J2.4	J3.3	J6.3
13	J3.1	J3.3	J2.0	J3.3	J2.0	2.5	J5.0	J4.3	J5.4	J6.3	J6.0	J6.0	J5.0	4.3	4.0	J6.3	J5.6	J4.3	J3.3	J6.5	J4.3	J4.3	6.0	J8.0
14	J3.6	J5.3	J5.3	J4.3	J3.5	J3.8	3.6	5.0	J8.9	J6.3	4.3	J5.9	4.3	4.2	J4.6	J5.9	5.0M	J6.0	3.3	4.3	2.5	J2.3	E	J2.5
15	E	E	E	E	S	G	G	3.5	3.5	3.9	G	B	G	4.0	G	5.0	J8.8	J6.0	J11.3	J14.3	J7.0	J6.3	3.0	E
16	E	J3.0	E	4.2M	J7.0	2.9	J5.8	3.8	J6.2	G	5.0	J9.3	J6.1	B	G	J4.4	J7.3	5.1	3.3	J5.3	J9.3	J3.3	J2.8	J4.3
17	J3.5	J3.0	E	J2.1	2.4	3.1	5.0	J6.5	J7.5	J5.6	5.0	3.8	3.6	B	4.0	4.0	G	J4.3	J6.3	J5.0	J6.4	J6.3	J5.3	J4.3
18	J4.3	J3.1	J3.0	E	J2.8	2.8	5.9	J6.7	4.2	J5.6	J6.0	B	G	4.0	B	4.0	J6.5	J5.3	J4.5	J11.5	J6.1	J7.1	J3.3	J4.3
19	J3.0	J2.5	J2.9	J2.5	G	2.9	3.5	J5.3	J4.8	4.0	5.1	7.0	3.7	5.2	J4.1	4.0	G	4.3	3.9	J6.4	J2.5	J2.3	J2.4	E
20	J2.5	J2.1	E	E	S	G	J5.0	4.8	J5.2	J5.0	4.0	3.8	4.0	3.8	G	3.3	G	G	3.8	J5.0	J3.0	J2.4	E	E
21	E	2.3	E	1.5	S	G	3.8	J5.0	4.8	J5.5	J5.0	4.0	G	G	G	G	2.8G	3.7	J4.6	J4.0	J2.5	E	E	E
22	E	2.3	E	E	G	3.3	3.7	J5.0	4.3	5.6	J4.3	J5.5	J4.6	J4.3	3.5	J4.9	4.0	3.5	3.3	J4.3	J5.3	J3.5	E	E
23	J2.3	E	E	E	G	G	3.3	3.8	J5.5	4.3	J5.6	5.0	5.0	5.3M	G	J7.5	G	G	3.3	J5.2	J5.7	E	J2.5	E
24	E	E	2.0	E	S	2.5	J5.3	3.7	5.0	5.0	3.9	4.8	4.3	4.0	3.5	4.3	G	G	J4.0	J5.0	J2.8	J3.3	J3.1	E
25	J3.1	E	E	E	G	G	4.1	4.3	J5.6	4.7	4.3	G	4.0	3.6	3.6	G	3.5	J3.5	J3.3	J3.5	J8.3	J6.3	J3.3	J3.3
26	E	E	E	1.8	J3.3	2.8	3.5	J7.8	J8.5	J5.6	J9.3	J5.6	J9.0	J11.0	4.0	4.5	5.0	J5.0	J5.8	5.0M	J5.3	J7.3	J9.0	J4.5
27	J5.3	J5.3	J4.9	J4.3	J3.0	2.8	4.3	J5.3	4.3	J5.0	J7.3	J5.3	J4.5	G	J7.0	J3.3	G	4.0	J5.3	2.7	J7.5	J4.0	3.7	J5.0
28	J5.3	J2.5	J8.3	J8.3	J6.1	J6.3	J6.3	3.2	5.6	J9.0	4.6	5.0M	B	4.0	J6.3	J5.9	4.3	J10.6	J6.3	J7.3	J3.3	J3.3	E	E
29	E	J2.5	J2.3	J2.5	G	G	G	3.3	3.6	3.5	3.8	4.1	J4.5	J5.0	J4.3	J5.0	4.8	J4.7	J4.8	J6.0	J4.5	J2.3	J2.8	2.8
30	J3.1	J8.8	J4.3	J3.0	2.3	J3.6	J4.3	J4.8	J5.9	J6.3	J6.1	4.5	3.7	G	3.5	3.9	3.6	3.8	J5.5	J3.3	J2.5	J5.0	E	2.8
31																								
No.	30	30	30	30	26	30	30	29	29	29	29	27	28	27	27	28	28	30	29	30	30	30	30	30
Median	E	2.3	2.0	2.0	2.4	2.9	4.2	4.8	4.8	5.0	5.0	5.0	4.3	4.2	4.0	4.4	4.3	4.3	4.3	5.0	4.4	3.3	2.6	2.8
UQ	3.1	3.1	4.3	3.3	3.1	3.3	5.0	6.3	5.8	5.6	5.6	6.0	5.0	5.0	4.6	5.0	5.6	5.1	5.9	6.3	6.1	6.3	3.3	4.5
LQ	E	E	E	E	E	E	3.6	4.0	4.3	4.0	4.3	4.1	3.7	3.6	3.5	3.6	G	3.7	3.3	3.5	2.6	2.3	E	E
QR							1.4	2.3	1.5	1.6	1.3	1.9	1.3	1.4	1.1	1.4		1.4	2.6	2.8	3.5	4.0		

foEs

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

The Radio Research Laboratories, Japan.

W 4

IONOSPHERIC DATA

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

Wakkanai Lat. 45° 23.6' N Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		2.3	E	E	4.0	3.2	5.7	A	4.2	G	G	4.6		A	4.0	4.6	A	4.1	A	3.2	4.2			E
2			E	E	G	G	3.3	4.3	4.1	4.2	G	G	4.0	G	G	4.5	5.0	4.0	2.7	3.0	2.7	3.0	3.0	E
3	E	E			2.7	3.0	4.1	4.9	4.5	4.2	4.5	4.3	4.0	4.2	3.6	3.4	G	3.3	A	2.8	E	E		
4			E				3.8	4.3	G	G	4.6	4.2	3.8	3.5					G	4.2	E	3.3	E	
5		E	E		1.6	G	G	4.1	G	G	G	G			3.7	4.4	5.7	4.2	3.7	2.9	2.5			
6					G	G	G	5.0	4.5	5.3	4.5	G	G		C	C	C	3.3	G	2.8	2.8	2.9	E	E
7			E				G	4.2	4.4	4.6	A	A	4.8	4.4	3.5	4.5	A		3.3	4.4	E	5.0	4.5	4.2
8	3.2	E	A	E	2.7	A	5.3	A	A	A	A	A	A	A	A	4.3	4.2	4.0	G	3.1	A	5.0	3.1	A
9	E	E	3.2	E	2.0	3.6	3.9	6.1	4.3	4.8	5.2	A	A	4.5	4.7	3.3	4.0	4.0	3.0	4.0		3.3	3.0	E
10	3.0	E	2.7	2.3	2.1	G	4.1	C	C	C	C	C	C	C	C	C	C	4.3	4.4	2.0				E
11					G	G	G		4.0	G	4.6	G	G	G	A	G	A	4.7	A	4.1	4.8	E	E	
12		E	E	E	G	G	3.6	5.7	A	G	G	4.0	4.6	A	4.5	3.5	3.3	3.6	C	4.3	E	E	2.7	E
13	E	E	E	E	1.6	G	4.5	G	4.9	4.4	A	A	4.6	4.0	G	4.3	G	G	3.0	4.1	2.9	4.2	4.3	A
14	2.6	3.1	4.0	3.0	2.1	2.7	G	4.1	5.0	5.0	G	A	G	G	4.1	4.9	4.5	4.2	3.0	4.3	E	E		E
15					S			G	G	E3.9R		B		E4.0R		4.2	A	5.7	A	A	4.3	E	E	
16		E		4.0	A	G	4.3	G	6.2		A	A	A	B		G	G	4.3	3.1	5.0	3.0	3.0	E	3.0
17	3.2	E		E	2.0	3.1	A	5.4	5.0	A	A	A	G	B	E4.0R	G		4.3	5.2	A	5.0	E	3.1	E
18	4.3	E	E		1.9	G	5.5	5.8	G	5.6	4.6	B		4.0	B	3.9	6.2	4.6	4.1	A	5.2	3.5	E	4.3
19	2.8	2.3	E	E		G	G	5.1	4.6	4.0	4.6	4.9	G	4.3	3.6	3.3		4.2	3.9	6.0	E	E	E	
20	E	E			S		G	4.5	4.6	4.2	G	G	4.0	3.8		3.2			3.8	4.3	2.8	E		
21		E		E	S		G	4.5	4.5	5.2	4.8	G					2.7	G	4.0	4.0	E			
22		E				G	G	4.0	G	4.8	4.0	5.0	4.3	3.7	3.5	4.5	3.1	G	3.0	4.0	4.8	3.2		
23	E						G	G	4.7	4.3	5.6	4.8	4.6	4.8		A			G	A	4.8		E	
24			E		S	G	4.4	G	4.5	4.4	G	4.6	4.3	G	G	2.5			3.3	G	2.8	3.0	2.8	
25	2.4						4.0	4.2	5.0	4.7	G		G	G	3.5		G	3.1	3.0	3.5	A	4.4	2.6	E
26				E	1.8	2.0	G	A	A	5.1	5.5	A	A	A	G	G	4.1	4.5	5.8	4.6	4.1	4.5	4.4	E
27	E	3.0	E	E	1.8	G	4.2	5.0	G	G	A	5.0	G		4.5	3.2		4.0	5.2	G	5.0	4.0	3.7	E
28	E	E	3.2	A	2.2	A	A	G	A	A	G	A	B	E4.0R	A	G	4.1	A	5.5	4.6	2.2	2.7		
29		E	E	E				G	G	G	G	G	3.9	4.6	4.4	4.3	4.3	4.3	4.4	A	4.5	E	E	E
30	3.0	E	E	E	2.0	3.3	4.0	4.3	5.4	A	4.3	4.0	G		3.5	G	G	3.8	4.2	G	E	4.7		E
31																								
No.																								
Median																								

fbEs

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

The Radio Research Laboratories, Japan.

W 5

IONOSPHERIC DATA

Jun. 1962 | f-min | 135° E Mean Time (G.M.T. + 9h.)

Wakkanai — Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E1.80S	E	E	E	E	1.60	2.00	1.85	2.15	2.00	2.30	3.00	3.00	2.30	2.30	2.00	2.00	2.00	E1.90S	E1.90S	E1.90S	E1.90S	E1.80S	E2.00S
2	E1.90S	E	E	E	E	1.40	2.00	2.00	2.15	2.50	3.50	2.80	2.35	3.10	2.50	2.00	2.00	2.00	E1.80S	E1.80S	E1.70S	E1.90S	E1.80S	E1.80S
3	E1.80S	E	E	E	E	1.50	2.00	2.00	2.00	2.40	2.50	2.00	2.10	2.15	2.50	2.20	2.00	1.90	1.80	E1.90S	E1.90S	E1.70S	E1.80S	E2.00S
4	E1.90S	E1.50S	E	E	E	E1.80S	1.80	1.80	1.85	2.00	2.00	2.30	2.30	2.50	2.10	2.00	2.00	1.85	1.70	E1.90S	E1.80S	E1.90S	E1.80S	E2.00S
5	E1.90S	E1.20S	E	E	E	E	2.00	2.00	2.20	2.00	2.45	2.20	2.00	2.20	2.15	2.00	2.00	1.80	E1.90S	E2.00S	E1.90S	E1.80S	E2.00S	E1.90S
6	E1.85S	E1.80S	E	E	E	1.80	1.80	2.00	2.00	2.00	2.00	2.00	2.20	2.00	C	C	C	1.90	E1.90S	E2.00S	E1.95S	E1.80S	E1.85S	E1.90S
7	E1.80S	E	E	E1.70S	E	1.60	1.80	1.90	2.00	2.00	2.00	2.20	2.20	2.75	2.20	2.00	2.00	1.85	E1.85S	E1.80S	E2.00S	E1.90S	E2.00S	E1.80S
8	E1.90S	E	E	E	E	1.40	2.00	2.00	2.00	2.25	2.30	2.15	2.20	2.10	2.00	2.00	2.00	2.00	E2.00S	E1.80S	E1.70S	E1.70S	E1.90S	E1.90S
9	E1.80S	E	E	E	E	1.25	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.90	2.00	2.00	2.00	1.80	E1.90S	E2.00S	E2.10S	E1.80S	E2.00S	E1.80S
10	E1.80S	E	E	E	E	E1.80S	1.80	C	C	C	C	C	C	C	C	C	C	1.90	1.90	E1.80S	E1.90S	E2.00S	E2.00S	E2.00S
11	E1.80S	E1.20S	E1.80S	E	E	1.40	1.90	2.00	2.00	2.00	2.00	2.50	2.20	2.30	2.00	1.85	1.90	2.00	1.70	E1.90S	E1.80S	E1.80S	E2.00S	E2.00S
12	E2.00S	E	E	E	E	E	2.00	2.00	2.10	2.10	2.40	2.50	2.60	3.30	2.40	2.50	2.00	1.80	I1.75C	E1.75S	E2.00S	E1.80S	E1.70S	E1.90S
13	E1.85S	E	E	E	E	1.60	1.80	2.00	2.00	2.10	2.30	2.80	2.60	2.20	2.20	2.00	2.00	1.85	E1.85S	E2.00S	E1.85S	E2.00S	E2.00S	E1.80S
14	E1.80S	E	E	E	E	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.10	3.25	2.00	2.00	2.00	2.00	1.80	E2.15S	E1.80S	E1.70S	E1.80S	E1.80S
15	E1.85S	E1.20S	E1.20S	E	E1.90S	1.50	2.10	3.00	2.00	3.20	2.80	4.00	3.00	3.30	2.70	2.10	2.70	2.00	1.90	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
16	E1.85S	E	E	E	E	1.20	1.90	2.20	2.00	3.50	3.50	3.40	3.40	5.50	2.60	2.00	3.00	2.00	1.80	E2.00S	E2.00S	E1.95S	E2.00S	E1.80S
17	E1.80S	E	E	E	E	E2.10S	2.00	2.00	3.30	3.35	3.40	2.80	3.15	4.30	3.15	2.20	2.00	2.00	1.90	E2.40S	E1.90S	E1.80S	E1.90S	E1.80S
18	E1.85S	E1.20S	E	E1.80S	E	1.60	2.00	2.20	2.00	2.25	3.40	4.20	3.00	2.90	4.30	2.40	2.00	1.90	1.90	E1.70S	E1.85S	E1.80S	E1.85S	E1.80S
19	E1.80S	E	E	E1.50S	E	1.60	2.00	2.00	2.00	2.00	2.00	2.00	2.15	2.60	2.40	2.00	2.00	1.85	1.80	E1.80S	E1.80S	E1.90S	E1.90S	E1.90S
20	E1.70S	E	E	E	E1.70S	1.20	1.80	2.00	2.50	2.00	2.50	2.00	3.10	3.00	2.30	1.90	1.80	1.90	1.85	E1.80S	E1.80S	E2.00S	E1.80S	E2.00S
21	E1.85S	E1.80S	E	E	E1.50S	1.60	1.90	2.00	2.00	2.00	2.10	2.20	3.00	2.10	2.10	2.00	2.00	2.00	1.90	E1.90S	E1.90S	E1.90S	E1.80S	E2.00S
22	E1.90S	E	E	E	E	1.60	1.90	2.00	2.00	2.50	3.25	2.50	2.00	3.00	3.00	2.30	2.00	2.00	1.85	E1.90S	E2.00S	E1.80S	E1.90S	E2.00S
23	E1.70S	E	E	E	E	1.15	2.00	2.00	2.00	2.00	2.00	2.40	2.50	3.20	1.90	2.50	2.00	2.00	1.70	E2.00S	E2.00S	E2.00S	E1.80S	E2.00S
24	E1.90S	E1.80S	E	E	E1.60S	1.60	2.00	2.00	2.20	2.00	2.50	3.30	2.00	3.00	2.20	2.00	2.00	2.00	1.95	E1.80S	E1.60S	E2.00S	E1.80S	E2.00S
25	E1.80S	E	E1.50S	E	E	1.35	1.90	2.00	2.00	2.50	2.40	2.00	2.00	2.50	2.00	2.00	2.00	1.90	1.80	E2.00S	E1.80S	E1.90S	E1.80S	E1.80S
26	E2.00S	E1.20S	E	E	E	1.20	1.85	2.00	2.10	2.50	3.40	2.50	3.20	3.00	3.00	2.30	3.00	2.00	1.80	E2.00S	E2.00S	E2.00S	E1.90S	E1.70S
27	E1.80S	E	E	E	E	1.20	1.90	2.00	1.90	2.80	3.00	3.20	2.40	3.00	2.50	2.00	2.00	2.00	E2.00S	E2.00S	E1.90S	E1.80S	E1.80S	E2.00S
28	E1.90S	E	E	E	E	1.40	2.00	2.00	2.00	2.00	2.50	2.70	I2.60B	2.40	2.10	2.30	2.30	1.90	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
29	E2.00S	E	E	E	E	1.30	2.00	2.00	2.00	2.05	2.15	2.00	2.00	2.15	2.15	2.00	2.25	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
30	E2.00S	E1.60S	E	E	E	1.50	2.00	2.00	2.00	2.00	2.35	2.40	2.30	2.20	2.20	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
31																								
No.	30	20	27	27	26	27	30	29	29	29	29	29	29	29	28	28	28	30	19	30	30	30	30	30
Median	E1.85	E	E	E	E	1.40	2.00	2.00	2.00	2.00	2.40	2.40	2.30	2.75	2.20	2.00	2.00	2.00	1.80	E1.95	E1.90	E1.90	E1.90	E1.95

f-min

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

The Radio Research Laboratories, Japan.

W 6

IONOSPHERIC DATA

Jun. 1962

M(3000)F2

135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.70	U2.85S	F	F	SF	2.60	3.10	I3.00A	2.70	W	2.25	3.00	2.60	I2.85A	2.95	3.10	I2.85A	2.85	I2.90A	U3.05S	2.90	U2.90S	2.90	2.70
2	2.85	2.80F	2.85F	2.90	3.10	2.95	3.10	3.15	2.95	3.15	2.80	2.95	2.95	U2.95R	3.15	3.15	3.10	2.95	2.85	2.90	I3.05S	I3.10S	2.90	2.90
3	2.85	U2.85S	I2.80SF	2.80F	2.95	2.95	3.05	3.10	3.35	3.30	2.95	2.85	3.05	2.90	3.05	3.00	3.15	3.05	I2.95A	U2.85S	3.00	U3.15S	U3.05S	3.00
4	3.00	U2.85S	U2.85S	U2.90S	U2.90SH	3.15	3.20	3.35	3.10	3.25	2.90	3.10	3.05	2.85	3.10	2.90	2.95	3.00H	2.80H	U2.75S	2.95	3.10	3.15	2.90
5	2.95	2.90	2.85	2.85	2.80F	2.85	2.85	3.20	2.90	3.20	2.95	2.95	3.05	3.00	2.85	3.05	2.95	3.05	2.90	2.80	2.90	2.95	3.10	3.05
6	2.85	2.80	3.00	2.95	3.05	3.00H	2.90	3.10	3.15	3.30	3.00	2.30	2.75	2.80	C	C	C	2.90	2.80H	3.05	U2.90S	2.75	I2.95S	U2.90S
7	I2.80SF	2.90	2.95	2.70	2.95	2.90	3.00	3.10	3.10	3.30	I3.05A	I3.00A	3.10	U3.00R	3.10	3.20	I3.05A	3.05	2.80	I2.75S	S	S	S	S
8	U2.85S	3.00	I3.00A	I2.90FS	2.85	I3.00A	2.95	A	A	A	A	A	A	A	A	2.90	3.00	3.20	3.20	2.95	I3.00A	2.85	S	A
9	S	SF	SF	SF	SF	3.00	3.00	2.90	3.25	3.30	2.95	I2.95A	I2.85A	2.90	3.05	3.15	2.90	2.90	3.00	U3.10S	S	S	S	SF
10	U2.80SF	2.80	SF	SF	SF	3.20Y	2.85	C	C	C	C	C	C	C	C	C	C	3.00	2.75	2.90	2.85	2.90	2.85	3.00
11	2.80	U2.85S	2.80	3.00	2.80	2.80	3.00	2.85	2.85	2.90	2.30	2.30	2.85	2.75	I2.80A	2.65	I3.10A	3.05	I3.05A	2.95	U2.85S	I2.85S	2.90	2.80
12	2.85	2.85	3.15	2.75	2.85H	3.05	2.60H	2.50	I2.75A	3.05	2.50	2.75	3.00	I2.70R	2.80	2.90	U3.10R	2.95	I2.90C	U2.75S	I2.95S	U3.00S	3.00	2.80
13	2.90	2.75	2.70	3.00	3.05H	3.15	2.95	3.10	3.10	3.15	I2.90A	I2.85A	2.90	2.55	2.90	3.00	3.05	3.00	3.05	3.10	2.80	2.85	S	A
14	SF	2.85SF	2.80	3.00	2.95F	2.80H	2.80	2.75	3.20	3.05	3.00	I2.80A	3.05	2.80	2.90	3.10	3.00	2.90	2.85	I2.75S	3.10	3.10	U3.20S	2.80
15	2.85	2.85	2.80	3.10	2.85H	2.70	3.00	3.05	2.95	3.10	3.15	2.95	3.00	2.80	W	2.90	I3.05A	3.00	I2.95A	I2.70A	2.75	U3.00S	U2.80S	2.75
16	2.85	2.80	2.90	2.80	I2.90A	2.95	2.65	3.25	I3.30R	3.40H	I3.10A	I3.05A	I2.95A	2.95	U3.00R	3.00	3.05	2.95	3.00	2.85	U2.80S	2.85	I2.95S	2.85
17	2.80	2.90	2.85	2.75	2.70F	2.65	I2.95S	3.00	2.70	I2.65A	I2.80A	I2.40R	I2.70R	3.00	I2.85R	2.70	2.85	2.95	2.90	I2.85A	2.90	2.90	I3.00S	I2.90SF
18	2.85F	I2.90FS	3.00F	2.90	2.95H	2.85H	2.95	2.95	3.00	3.15	U2.85R	3.15	2.80	2.65	2.75	3.00	2.95	3.00	2.95	I2.95A	U2.80S	U2.80S	I2.90S	U2.90S
19	2.90	2.95	2.80	3.10	3.05	2.90	2.70	U2.80S	3.00	3.00	3.05	3.10	2.90	2.90	2.70H	3.05	2.95	2.95	2.85	I2.90S	3.00	I3.00S	2.80	2.85
20	U2.80S	I2.85S	3.00	2.85	2.80H	2.75H	2.85	2.80	2.85	3.20	2.85	3.10	3.00	2.80	2.80	2.95	2.85	3.00	3.00	2.90	I2.85S	2.85	2.75	2.85
21	2.85	2.90	2.95	3.00	2.95	2.80	2.80	2.80	3.25	3.15	3.00	3.05	2.95	2.90	3.00	3.00	3.10	3.00	3.05	3.00	U2.80S	U2.80S	2.85	U2.90S
22	U2.85S	U2.90	2.85	2.90	3.25	2.85H	2.90	3.00	U3.10R	2.90	3.05	U3.05R	2.75	2.75	2.90	2.95	2.90	3.00	3.15	2.90	2.65	U2.85S	I3.05S	2.85
23	2.80	2.90	2.90	2.95	2.90	2.65H	3.00	3.00	3.25	U3.25S	2.85	2.95	2.85	3.05	2.95	I3.00A	3.00	3.10	3.00	I2.85S	I2.90S	I2.85S	I2.85S	2.90
24	2.90	2.95	2.90	2.85	3.00	3.15	3.20	3.10	3.45	3.45	3.00	3.10	2.85	3.00	3.00	3.10	2.95	3.25	3.05	2.95	2.95	2.75	U2.80S	U2.90S
25	2.90	2.95	3.00	2.95	2.80	2.90	3.10	3.20	3.50	3.15	3.00	3.10	2.85	3.10	2.90	3.15	3.05	2.95	3.25	3.00	I3.00A	2.85	U2.80S	3.05
26	2.85	2.90	3.10	3.00	3.20F	3.05EH	2.85F	I3.00A	I3.15A	3.25	3.10	I3.20A	I3.05A	I3.00A	3.05	3.05	3.15	3.05	3.20	U2.90S	U3.10S	S	S	SF
27	SF	SF	SF	SF	FS	3.20	3.00	3.15	3.15	3.20	I2.90A	2.95	3.15	2.90	2.95	3.15	2.90	2.95	2.80	2.85	2.85	I2.90S	I2.70S	2.85
28	I2.90SF	I2.90SF	2.95	I2.85A	2.85	I2.90A	I3.00A	3.20H	I2.60A	I2.70A	2.80	I2.65A	I2.50B	2.75	I3.00A	3.05	2.95	I3.10A	3.10	2.65	3.00	U3.00S	2.85	3.00
29	2.85	2.85	2.95	2.95	2.85	3.05	3.05	3.20	3.10	3.35	3.30	3.20	3.05	2.95	3.00	3.15	2.85	3.10	3.10	I3.00S	3.10	2.85	2.75	2.80
30	2.95	3.00	2.95	3.00	3.00	2.90	3.00	3.00	3.40	I3.25A	3.30	3.00	3.15	2.90	2.90	2.80	2.90	3.15	3.10	3.05	I3.00S	3.00	2.85	2.85
31																								
No.	27	28	26	26	26	30	30	28	28	28	28	28	28	28	27	28	28	30	30	30	28	27	25	25
Median	2.85	2.90	2.90	2.90	2.90	2.90	3.00	3.00	3.10	3.20	2.95	3.00	2.95	2.90	2.95	3.00	3.00	3.00	3.00	2.90	2.90	2.90	2.90	2.90

M(3000)F2

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

The Radio Research Laboratories, Japan.

W 7

IONOSPHERIC DATA

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

Wakkanai — Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	I3.80A	I4.15R	4.40	I3.80A	3.90	I3.70A	3.75	A	A	A						
2							3.40	I3.60A	3.45H	I3.75A	3.45	3.50	3.35	3.50	3.55	I3.55A	I3.65A	I3.60A	L					
3						L	A	A	A	A	A	A	A	I3.70A	3.60	3.65	3.50	A						
4						3.70	I3.45A	I3.80A	3.95	3.80L	I3.85A	I3.80A	4.00	3.80	3.70	3.55	3.80							
5						3.40	3.40	I3.70A	3.85	3.80	3.90	3.80	3.70	3.80	3.35	A	A	A	A					
6							3.40	A	A	A	A	3.90	3.75	3.70	C	C	C	A						
7						3.35	3.65	I3.70A	A	A	A	A	A	A	3.85	I3.70A	I3.50A	3.55H	LA					
8						A	A	A	A	A	A	A	A	A	A	A	A	A	3.50					
9						A	A	A	A	A	A	A	A	I4.00A	I3.90A	3.50	I3.60A	I3.50A						
10							A	C	C	C	C	C	C	C	C	C	C	A	A	L				
11						3.35	3.45	3.75	I3.70A	4.15	I4.05A	3.80	3.90	3.75	I3.65A	3.70	A	A	A					
12						3.55		A	A	3.85	3.60	A	A	A	A	3.70	3.80	A	C					
13							I3.65A	4.00	I3.85A	A	A	A	I3.85A	3.80	3.80	A	3.70	3.45	A					
14							3.55	A	A	A	U3.70R	I3.75A	3.60	3.80	A	A	A	E3.40A	A					
15						3.25	3.50	3.85	4.00	I3.90A	4.10	4.15	3.85	I3.85R	3.60	A	A	A	A					
16						3.40	I3.50A	3.65	I4.00A		A	A	A	B	3.55	3.55	3.50H	I3.55A	LA					
17						A	A	A	A	A	A	I3.70R	3.85H	I3.95B	I3.50R	3.40	3.55	A	A					
18							A	A	3.70	I3.85A	I3.90A	I3.95B	3.90H	3.60	I3.70B	3.60	A	A	A					
19							3.70	I3.80A	I3.85A	3.95	I3.95A	I3.90A	3.65	I3.70A		3.80	3.45	A	A					
20							3.55	A	A	A	4.15	3.85	3.90	3.70	3.70	3.70	3.45	3.50	A					
21						3.10	3.50	A	A	A	A	3.85	3.85	3.80	3.55	3.45	3.65	3.60	A	A				
22							3.60	I3.65A	3.65	A	A	A	A	4.05	3.70	I3.70A	3.60	3.50	LA					
23							3.55	3.60	A	A	A	A	A	A	3.60	I3.85A	3.70	3.55H	3.60L					
24							A	3.80	I4.00A	I3.75A	3.90	I3.80A	I3.90A	3.70	3.80	3.80	3.60	3.70						
25						3.35	A	A	A	A	4.00	3.90	3.70	3.80	3.85	3.70	3.60	3.50	A					
26							3.55	A	A	A	A	A	A	I3.90A	3.85	3.75	I3.60A	A	A					
27							I3.60A	I3.70A	3.70	3.95	I3.75A	I3.85A	3.80	3.75	I3.75A	3.75	3.55	A	A					
28							A		A	A	3.80	A	B	R	I3.65A	3.70	A	A	A					
29					3.20	3.60	3.70	3.65	3.80	3.75	4.10	3.80	3.70	A	A	A	A	A	A					
30						A	A	A	A	I4.00A	I3.90A	4.05	3.95	3.85	3.75	3.65	3.75	3.65	A					
31																								
No.					1	10	18	14	14	[illegible]	17	18	19	22	23	21	19	13	2					
Median					3.20	3.40	3.55	U3.70	3.80	3.90	3.90	3.80	3.85	3.80	3.70	3.70	3.60	3.55	3.55					

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

The Radio Research Laboratories, Japan.

W 8

IONOSPHERIC DATA

Jun. 1962 | h'F2 | 135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						410	I390A	I375A	430	W	575	375	490	I420A	400	360	I385A	360						
2							320	310	375	320	370	325	375	345	320	310	320A	I330A	305					
3						315	275	280	275	310	340	390	345	375	330	330	300	300						
4						280	275	270	290	350	385	320	345	380	330	300	355							
5						375	350	290	335	335	415	390	350	350	420	320	I325A	300	300					
6							360	I310A	310	295	350	570	420	400	C	C	C	350						
7						370	325	290	325	300	I350A	I355A	330	330	340	310	I325A	310	U325L					
8						A	A	A	A	A	A	A	A	A	A	410	370	310	300					
9						325	310	I310A	270	280	I365A	I370A	I350A	370	330	320	350	310						
10							330	C	C	C	C	C	C	C	C	C	C	A	A	L				
11						375	345	370	410	420	570	580	415	440	I425A	460	I355A	300	A					
12						310		I365A	I380A	350	530	420	380	I465A	450	395	335	370	I355C					
13							330	310	310	350	I410A	I430A	410	500	400	370	340	325	300					
14							390	365	300	I295A	400	I420A	360	420	355	335	I410A	350	320					
15						370	310	310	340	325	320	390	390	410	W	360	I330A	I310A	A					
16						305	345	270	I260A		I335A	I385A	I370A	I360B	325	330	310	310	280					
17						340	I320A	I295A	320	I470A	I440A	I555R	I470R	390	460	455	405	340	A					
18							A	A	290	300	370	330	420	450	380	335	I330A	310	300					
19							360	340	300	300	315	320	370	355		325	340	330	310					
20							315	350	355	295	400	350	380	425	400	370	405	335	305					
21						345	320	305	270	305	340	345	360	380	360	360	330	315	290	270				
22							320	300	320	330	320	315	420	380	345	I320A	360	310	275					
23							285	280	270	260	I360A	360	355	340	345	I310A	325	295	275					
24							280	340	250	290	355	345	410	360	350	315	300	290						
25						320	275	280	280	360	360	330	390	325	370	310	325	330	270					
26							325	I320A	I310A	I295A	I340A	I335A	I320A	I335A	350	320	305	345	A					
27							340	315	310	305	I395A	390	320	375	360	325	375	320						
28							A		I450A	I360A	450	I480A	I515B	450	I380A	350	335	A	A					
29					345	315	325	300	320	300	305	360	375	400	390	325	400	300	A					
30						325	365	330	305	I335A	350	380	360	425	420	400	340	270	280					
31																								
No.					1	15	26	26	28	27	28	28	28	28	26	28	28	27	16	1				
Median					345	325	325	310	310	310	360	370	375	380	365	330	340	310	300	270				

h'F2

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

The Radio Research Laboratories, Japan.

W 9

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	275	320	280	335	A	A	A	A	I225A	230	190	I235A	220	I255A	260	A	A	A	A	A	A	250	260	300
2	285	285	285	275	260	250	275A	A	245AH	I230A	260	230	260	250	250	I260A	I245A	I245A	275A	A	250A	I245A	I235A	260
3	300	295	270	275	275A	260A	A	A	A	A	A	A	A	I210A	225	230	240	A	A	A	260	250	225	255
4	275	295	300	270	280H	260	I250A	I270A	220	220	I230A	I230A	220	220	225	225	220	245H	275H	I280A	270	I255A	240	260
5	220	295	280	280	275	255	250	I245A	225	200	200	205	225	220	230	A	A	A	A	I275A	280A	260	250	230
6	285	300	270	270	275	240H	260	A	A	A	A	205	210	220	C	C	C	A	260H	A	A	A	255	255
7	275	255	255	300	275	260	250	I240A	A	A	A	A	A	A	225	I225A	I225A	230H	I255A	I270A	260	I255A	I250A	I280A
8	I290A	285	I310A	265	A	A	A	A	A	A	A	A	A	A	A	A	A	A	260	A	A	A	I255A	I270A
9	295	295	I305A	305	270	I250A	A	A	A	A	A	A	A	I220A	I235A	235	I250A	I255A	I255A	I250A	300	I260A	I260A	270
10	I280A	285	270	280	260	260H	A	C	C	C	C	C	C	C	C	C	C	I270A	I275A	280	260	260	260	270
11	280	250	280	260	280	250	245	240	I235A	210	I210A	235	220	240	I235A	230	A	A	A	A	A	285	265	280
12	275	270	260	290	280H	280	260H	I255A	I255A	250	225	A	A	A	A	215	235	I245A	I260C	I275A	265	250	260A	275
13	290	310	290	300	275H	235H	I240A	220	I215A	A	A	A	I220A	250A	235	A	235	270	I255A	I255A	275A	A	A	A
14	290	A	A	A	275	250H	260	A	A	A	230	I230A	225	230	A	A	A	I260A	I250A	I265A	255	235	230	250
15	290	280	285	245	260H	260	230	230	210	I215A	220	210	230	250A	235	A	A	A	A	A	A	260	270	275
16	270	285	260	I290A	I285A	250	I250A	240	I235A	205H	A	A	A	B	220	250	240H	I245A	A	A	A	A	250	I260A
17	I270A	265	260	300	275	A	A	A	A	A	A	I225A	215H	I225B	I235A	250	230	A	A	A	A	250	I270A	270
18	A	300	255	270	265H	250H	A	A	230	I220A	I215A	I210B	210H	215	I210B	245	A	A	A	A	A	I255A	230	I260A
19	285A	280A	285	250	255	235	225	A	I225A	225	I230A	I225A	230	I225A	210H	220	235	A	A	A	260	245	260	290
20	290	260	260	250	275H	245H	250	A	A	A	215	260	240	230	225	215	230	250	A	A	A	265	260	270
21	275	265	255	275	260	240	260	A	A	A	A	215	200	250	230	230	230	250	I270A	I265A	265	265	265	275
22	270	275	290	250	245	255H	255	I250A	250	A	A	A	A	200	210	I220A	240	260	A	A	A	A	250	235
23	275	280	270	260	250	240H	250	250	A	A	A	A	A	A	230	I220A	220	215H	255	I275A	I270A	275	250	260
24	250	260	250	285	270	240	I260A	210	I210A	I230A	210	I225A	I220A	230	210	235	235	230	I250A	265	280A	I295A	280A	265
25	270	260	235	260	285H	260	A	A	A	A	215	200	230	230	210	225	225	250	I240A	A	A	A	290A	260
26	260	275	260	260	250	220H	240	A	A	A	A	A	A	I200A	200	220	I250A	A	A	A	A	A	A	270
27	270	I280A	275	300	275	240	I250A	I240A	215	210	I220A	I225A	225	210	I220A	220	230	I250A	I250A	250	I250A	I250A	I260A	280
28	280	260	I275A	I295A	350A	I345A	I335A	230H	I210A	I220A	225	A	B	A	I260A	235	A	A	A	I280A	260	250	250	270
29	300	310	290	295	265	240	225	240	210	200	200	220	220	A	A	A	A	A	A	A	A	300	315	310
30	I295A	275	275	270	275	I260A	A	A	A	I220A	I225A	225	220	220	230	230	250	250	I260A	250	255	I275A	290	300
31																								
No.	29	29	29	29	28	27	21	14	16	15	17	18	19	22	24	21	19	17	16	14	17	23	28	29
Median	280	280	275	275	275	250	250	240	U225	220	220	225	220	225	230	230	235	250	260	270	260	255	260	270

h'F

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

The Radio Research Laboratories, Japan.

W 10

IONOSPHERIC DATA

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

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

h'Es

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

The Radio Research Laboratories, Japan.

W 11

IONOSPHERIC DATA

Jun. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		f	f	f2	c4	c3	c2	c3	c	c	c	c		h	h	c	c	c	c2	c	f2			f
2			f2	f	c	c	c	c	c	c	c	c	c	c	h	h	c2	c	c2	c3	f2	f2	f2	f
3	f2	f			c2	c2	c	c2	c	c	c	c	c	l	c.l	l	h	c2	c3	c2	f	f2		
4			f				c2	c	c	c	c	c	l	l					h	c3	f2	f2	f	
5		f2	f		l	h	c	c	c	c	c	c			l	h.l	h2.l2	h2.l	c	c	f			
6					c	h	c	c2	c	c2	c	c	c					c	c	c	f2	f3	f	f
7			f				c	c2	c	c2	c	c2	c	l	l	l2	l3		c2	c3	f2	f·f2	f4	f2
8	f2	f2	f6	f2	l	c4l	c2	c2	c2	c2	c2	c3	c3	c2	c2	c2	c2	c2	c	c2	f4	f5	f3	f4
9	f	f2	f3	f3	l	c	c	c3	c	c	c2	c2	c2	l	l	l	c	c2	c	c		f2	f2	f2
10	f2	f2	f2	f2	l	c	c3											c	c2	c				f
11					c	c	h		c	c	c	c	c	c	c2	c	c4	c	c3	c2	f2	f2	f	
12		f2	f	f2	c2	c2	c	c2	c3	c	c	c	c	c	c	l	l	c.l		c2	f	f	f4	f2
13	f	f2	f	f	l	h	c2	c	c2	c2	c	l	l	l.c	h	c	c	c	c2	c2	f2	f2	f3	f4
14	f2	f4	f4	f4	l2	c2	c	h	c2	c2	c	c2	c	c	c	c2	l	c2	c.l	c	f	f		f
15								c	c	c				c		h.l	c.l	c3	c3	c2	f3	f	f	
16		f		f5	c3	c	c2	c	c2		c	c	c2			h	c	c	c2	c	f2	f2	f2	f2
17	f2	f		f	l	h	c2	c2	c2	c	c	c	c		c	c		c	c4	c	f3	f	f	f2
18	f3	f2	f		l	h	c2	c2	c	c	c			l		h	c3	c2	c3	c3	f3	f3	f	f3
19	f2	f2	f	f		h	h	c	c	c	c	c2	c	l2	l	l		c	c2	c2	f2	f	f	
20	f	f					c	c2	c	c	c	c	l	l		l			c	c2	f2	f2		
21		f		f			c	c2	c	c2	c2	c					l	c	c2	c2	f2			
22		f				c	c	c	c	c	c	c	c	l	l	l2	l	h	c	c2	f2	f2		
23	f						h	c	c	c	c2	c	c	c		c2			c	c4	f2		f	
24			f			h	c	h	c	c	c	c	c	c	c	c.l			c2	c	f2	f2	f2	
25	f2						c	c	c2	c	c		c	c	l		h	l	l	c	f	f	f	f
26				f	c.l	h.l	h	c2	c	c	c2	c2	c.l	c2	h	c	c	c	c3	c2	f2	f2	f2	f2
27	f2	f5	f2	f2	l	h	c	c	c	c	l2	c	c		c	l		c	c2	c	f2	f2	f4	f
28	f2	f2	f2	f3	l2	c2	c2	c	c	c2	c	c		h.l	c	c	c	c4	c2	c2	f	f		
29		f	f	f				c	c	c	c	c	l	c	c	c	c2	c2	c3	c2	f2	f	f	f
30	f2	f·f	f·f	f2	l	c5	c	c	c	c	c	c	c		l	h	c	c	c3	c	f	f3		f
31																								
No.																								
Median																								

Types of Es

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

The Radio Research Laboratories, Japan.

W 12

IONOSPHERIC DATA

Akita Lat. 39° 43.5' N Long. 140° 08.2' E

Jun. 1962 | foF2 | 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	F	F	F	6.1	5.4	5.5	I6.0F	I5.7A	I5.5A	I5.6A	I5.9A	I5.8A	5.4	I5.6A	I6.0A	I5.6A	5.3	I5.7A	I6.1A	7.3	7.7	I7.4F	6.8	6.2F
2	I6.0F	5.9F	F	F	4.9	5.4	6.4	7.1	7.7	I6.6C	6.6	C	C	C	C	C	A	6.7	7.0	8.4	I8.2R	F	F	F
3	F	RF	F	F	F	5.9	C	C	C	C	6.1	6.1	6.6	7.4	7.6	7.3	6.6	6.7	7.0	7.9	I8.3RF	I8.2F	I6.6F	6.2
4	5.8	5.6	5.1F	5.1F	I5.1F	5.9F	8.1F	7.2	5.6	5.7H	6.5	7.9	6.0	6.7	6.9	6.4	5.9	5.7	6.3	7.7	U8.8R	8.0	6.4	I6.7F
5	6.5	5.9	5.9	5.8F	F	F	A	7.5	I6.8RF	5.7RH	5.6	6.0	I6.2A	5.9	6.3	7.3	7.4	7.0	6.9	7.9	8.8R	8.2	RF	RF
6	F	F	5.9	5.5	I5.3F	5.0	I6.5A	8.1	7.0	I6.0A	I5.8A	I5.4A	6.1	7.0	7.3	7.4	7.0	6.6	7.3	8.0	7.8R	A	A	RF
7	A	F	F	4.5	I4.4F	I4.9RS	6.5	7.8R	6.0	I6.2A	5.7	6.7	I6.0A	6.7	7.4	6.7	I6.7A	6.8	6.7	8.0	8.2	7.1F	F	F
8	F	6.9	F	F	F	I4.9RS	6.2R	6.9RH	6.0	J6.1R	A	A	A	5.8	6.6	6.3	6.3	5.7	5.1	A	R	A	F	F
9	F	A	4.5R	A	F	5.0	6.8	7.5	7.2	I6.7A	6.5	6.9	6.7	7.1	7.5R	6.3R	6.6	I7.6A	8.3R	7.5	6.8F	6.7R	F	F
10	RF	F	6.0	I5.2RF	4.6	6.0	6.1	7.5	6.9	6.6	6.0R	5.6R	5.8	5.8R	J5.7R	5.6	5.5R	J5.5R	5.8	6.5	7.1	6.7	6.0	5.3
11	5.0	5.1	4.8R	4.6R	4.1	I4.7RH	5.6R	5.6	5.7	I5.1R	J5.2R	I5.8A	5.8	5.7	5.9	6.1	6.2	6.6	6.5	6.6	I7.0R	I6.7F	6.4F	I6.2F
12	I6.0F	5.4	5.3	5.0	I5.0R	5.3H	6.9	6.5	6.5	I6.2R	I6.2A	I5.8A	I5.7R	5.9	5.9	5.8	5.9	6.0	6.3	7.6	7.9	F	F	5.9F
13	F	RF	F	F	F	6.4F	6.5	6.3	6.2	I6.2A	I6.1A	I5.8A	I5.8R	6.1	6.5	6.6	6.3	6.2	I6.6A	6.6	6.6	6.3	6.5	6.3
14	5.8	F	RF	RF	I5.1RF	I5.2R	6.5	7.7	7.3	A	A	A	I6.1R	6.0	6.2	7.0	6.4	6.6R	7.4	U9.1R	I8.2R	6.7	5.9	5.6R
15	5.6	RF	RF	RF	RF	RF	I6.7A	7.0R	7.3F	7.2	6.9	6.4	5.9	6.2	6.4	6.5	7.0	7.0	6.6	6.9	7.4R	I7.6F	7.0	I6.4F
16	6.6R	F	F	RF	RF	6.0	7.7	8.5	7.4	I6.6R	I6.6A	6.7	7.1	7.4	7.4	7.2	7.3	7.1	7.4	8.0	R	F	RF	F
17	F	F	RF	5.8	I5.9RF	6.2	R	R	6.4	I6.2R	I5.8R	5.8	I5.7A	5.9	6.0	6.1	6.3	6.9	7.1	7.6	7.7	7.3F	6.6	I6.4F
18	I6.4A	6.2S	A	F	RF	RF	6.9	7.8	7.5	7.0	6.7	6.4	C	C	C	C	7.9	8.1	8.3	I8.3A	I8.6R	RS	F	F
19	F	RF	6.4F	6.0	5.7F	5.6R	6.4	7.5	I8.0R	8.1	6.7	I6.5A	7.0	7.4	7.0	7.4	I7.2A	7.5	I8.2A	I8.8R	U8.6R	F	F	F
20	F	F	F	F	RF	F	7.4F	8.0	8.3R	6.9	6.3	I6.4R	6.0	I6.1R	6.7	5.9	6.3	6.8	7.5	I7.5A	7.6	6.8	6.9	6.9
21	6.7	6.4	6.1	5.6	5.9	6.9	7.9	I8.2R	8.1	6.6	6.2	I5.8R	I6.0A	6.5	7.5	6.8	6.6	I6.3A	6.5	6.9	7.6	I7.8F	7.6	7.2
22	7.3	F	RF	F	F	U6.1R	I6.6FH	6.9	U8.7R	7.1	6.9	7.3	6.9	6.8	8.3	U8.5R	6.7	6.7R	I7.0A	7.2	7.4	I7.5R	I7.2RF	6.8
23	6.0	6.0F	5.9F	6.0	5.6	6.2R	7.9	8.6	8.1	6.3	6.5R	6.3	7.0	8.0	8.1	8.8R	7.5	7.7	7.6R	7.7	8.2R	F	F	A
24	RF	F	F	6.2F	I6.2RF	6.3F	7.0H	7.4	6.8	6.4R	I6.0A	6.4	5.8	6.7	7.1	7.7	7.5	I6.7A	6.1	6.3	6.8	6.6	F	F
25	F	RF	F	I5.3F	5.0R	5.7	6.8R	7.4	6.3R	I6.3A	7.0	7.0	6.9	7.8	8.0	7.5	6.9	6.8	7.2	7.4	I7.0A	A	A	A
26	A	A	RF	F	F	4.8R	6.3	7.6F	7.9	6.0	6.7	5.8	I6.0A	I6.0R	7.0	7.6	7.4	7.1	6.6R	7.3	6.9	6.0	F	A
27	F	A	A	F	F	5.2	5.7	6.8	7.0	I6.4A	6.3	6.1	6.2	I6.4A	7.2	7.0	7.0	7.5	8.1	8.4R	A	F	F	F
28	F	8.2H	7.4	6.7R	A	A	5.7	I5.8A	I5.8A	5.8	I5.6A	A	A	R	5.8	6.3	I7.0C	6.5	C	C	C	C	C	5.7
29	5.4	F	F	F	F	5.7	5.4R	6.2	5.8	6.0	5.8	A	A	A	6.0	6.5	I6.6A	7.3	7.9	7.3	6.7	6.0	6.0	6.1
30	6.1	6.0	5.5	5.4	I4.7RF	4.9	6.2	7.1RH	5.8	I6.0R	6.1	I5.7A	I6.0R	5.9	5.8	6.7	7.9	A	A	A	R	R	6.4F	A
31																								
No.	14	11	12	16	16	25	27	28	29	28	28	25	25	26	28	28	29	29	28	27	25	18	14	15
Median	6.0	6.0	5.9	5.6	U5.1	5.6	6.5	7.4	6.9	6.2	6.2	6.1	6.0	6.3	6.8	6.7	6.7	6.7	7.0	7.6	7.7	7.0	6.6	6.2
U.Q	6.5	6.4	6.0	6.0	5.6	6.0	6.9	7.8	7.6	6.6	6.6	6.6	6.6	7.0	7.4	7.4	7.2	7.1	7.4	8.0	8.2	7.6	6.9	6.7
L.Q	5.8	5.6	5.2	5.2	4.8	5.0	6.2	6.8	6.0	6.0	5.8	5.8	5.8	5.9	6.0	6.3	6.3	6.4	6.5	7.2	7.0	6.7	6.4	5.9
Q.R	0.7	0.8	0.8	0.8	0.8	1.0	0.7	1.0	1.6	0.6	0.8	0.8	0.8	1.1	1.4	1.1	0.9	0.7	0.9	0.8	1.2	0.9	0.5	0.8

foF2 Sweep 1.60 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 1

IONOSPHERIC DATA

Jun. 1962

foF1

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						I3.2A	3.8	A	A	A	A	A	A	A	A	A	A	A	A					
2						L	A	A	4.3	I4.6C	4.7	C	C	C	C	C	A	A	3.7					
3							C	C	C	C	A	A	A	A	4.5	I4.6A	I4.2L	4.0L	L					
4							A	A	4.6	I4.8L	I4.6A	I4.6R	4.6	4.7H	4.6L	4.5	I4.4L	4.0H	3.7					
5						3.3	I3.8A	I4.1A	4.4	4.7L	4.7R	A	A	I4.6A	A	A	A	A	A					
6							A	A	A	A	A	A	4.7	4.6R	4.6	4.5	4.2	A	A					
7						I3.1L	3.9H	A	A	A	R	A	A	A	A	R	A	A	L					
8						A	I4.5A	I4.1R	4.3	A	A	A	A	A	R	I4.6R	I4.2A	4.0						
9						3.6L	4.6L	A	A	A	A	A	R	I4.6R	I4.6A	I4.5R	I4.4A	A	L					
10						A	A	A	R	A	A	I4.6R	I4.6R	I4.6R	I4.6R	4.4R	4.2H	A	A					
11							3.8	I4.2R	4.3	I4.6R	4.6R	A	R	A	A	R	I4.4A	A	A					
12							3.9H	R	A	A	A	A	R	R	I4.5R	4.6R	4.2R	4.0L	A					
13						L	A	I4.4R	R	A	A	A	R	4.5	A	A	A	A	A					
14							3.9	I4.2A	A	A	A	A	R	R	A	R	A	A	L					
15						A	A	A	A	4.6R	4.7R	A	R	A	A	A	I4.4A	A	A					
16						L	A	L	4.8R	R	A	R	R	A	R	4.5R	L	A	L					
17						L	I4.0A	I4.3RH	A	R	R	R	A	A	A	A	I4.4A	A	L					
18							L	L	A	A	A	A	C	C	C	C	A	A	A					
19							RS	4.6R	I4.4A	A	A	A	A	4.8R	A	A	A	A	A					
20						A	L	I4.3R	A	R	I4.8R	I4.8R	R	R	R	A	A	A	A					
21						L	A	A	A	A	R	A	A	A	A	A	A	A	A					
22							L	A	A	R	R	R	R	R	R	4.7R	4.3L	R	A					
23						L	4.0L	4.3L	A	A	A	A	A	A	A	I4.6A	4.3	I4.0A	L					
24						L	4.0L	R	A	A	A	R	A	4.7R	I4.6R	4.5	I4.3A	A	A					
25							L	A	A	A	A	4.7R	4.7S	4.7R	4.6	I4.5A	A	A	A					
26						LH	L	A	A	4.3R	I4.5A	4.7R	I4.7A	4.6R	I4.6R	4.5L	4.5H	4.0L	A					
27							4.0L	I4.2A	A	A	A	A	A	A	4.6	A	A	A	A					
28							I3.6A	I3.9A	I4.2A	R	A	A	A	4.5R	4.5R	4.3R	C	A	C					
29						L	3.9L	I4.0L	4.4L	4.6	4.6	A	A	A	4.5H	A	A	A	L					
30						3.2	A	4.1	A	A	4.6R	I4.6A	4.6	I4.6R	4.6R	I4.4R	A	A	A					
31																								
No.						5	14	13	9	7	9	6	6	12	13	15	14	6	2					
Median						3.2	3.9	U4.2	4.4	4.6	4.6	U4.6	4.6	4.6	4.6	4.5	U4.3	4.0	3.7					

foF1

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

The Radio Research Laboratories, Japan.

A 2

IONOSPHERIC DATA

Jun. 1962

foE

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	285	310	325	I335A	340R	R	A	A	320	295	255	I200A					
2						A	255	I290A	315	C	B	C	C	C	C	C	305	A	B					
3						A	C	C	C	C	A	A	A	A	A	A	A	A	A					
4						205	I250A	280	A	A	335	R	A	A	330	A	A	255	A					
5						205	A	A	A	A	A	A	A	A	A	A	A	A	A					
6						A	260	I285A	I310A	I335A	A	A	A	A	A	A	A	A	A					
7						R	I250A	280	I315A	340	A	A	A	A	A	A	A	A	A					
8						A	250	280	I310A	A	A	A	I355R	A	A	325	I310A	280	A					
9						A	A	290	A	A	A	A	A	A	A	A	A	A	A					
10						A	255	I295R	320	I335R	I345R	I350R	I355B	350	R	A	295	I265R	A					
11						B	I245A	I275R	I300R	I325R	I345R	350	R	R	R	R	A	A	A					
12						A	255	295R	315	A	R	B	A	A	A	A	A	A	A					
13						A	A	290	310	R	A	A	A	355	345	325	305	A	A					
14						A	I255A	295	320	R	R	A	A	A	350	I330R	A	A	A					
15						A	A	A	A	B	R	A	355	A	R	A	A	A	200					
16						A	A	I300A	320R	R	R	R	R	B	355	345	A	A	A					
17						A	255	A	A	B	B	A	A	A	A	A	315	A	A					
18						A	I265A	I295A	I320A	350	B	A	C	C	C	C	330	290	A					
19						A	I270A	295	A	A	A	B	R	A	A	A	A	A	A					
20						A	A	I285R	320	A	R	B	A	A	A	A	A	B	A					
21						A	A	A	325	I335A	R	B	A	A	A	A	A	A	A					
22						A	A	295	315	A	R	R	A	R	A	A	305	I275R	220					
23						205	A	A	A	R	A	A	R	A	335	320	A	A	A					
24						A	A	285	R	B	B	335	I350R	350	335	I320A	305	A	B					
25						R	255	295	I310A	330	R	A	A	A	A	A	A	A	A					
26						205	I270R	290	310	I330A	I345R	355	I355R	355	A	A	305	A	A					
27						210	A	A	A	A	A	A	A	A	A	A	A	A	A					
28						A	A	A	A	A	A	I350A	I355R	R	R	R	C	260	C					
29						A	A	A	A	A	A	A	A	A	A	A	A	260	B					
30						A	A	295	A	A	R	R	B	A	A	R	A	A	A					
31																								
No.						5	14	21	17	9	5	6	6	4	6	7	10	8	3					
Median						2.05	U2.55	2.90	3.15	U3.35	U3.45	3.50	U3.55	3.50	3.40	3.25	3.10	2.60	2.00					

The Radio Research Laboratories, Japan.

foE

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

A 3

IONOSPHERIC DATA

Jun. 1962

foEs

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J4.9Y	J2.3	J1.8	J2.3	J2.4	3.2	3.2	J7.4	J7.3	J9.4	J6.3	J6.1	J6.0	J6.0	J6.6	J5.9	J6.9	J8.5	J6.8	J6.0	J3.5	J4.2	3.8	E
2	J3.0	J3.0	J4.5	J6.5	J3.4	2.8	J4.9	J5.2Y	3.9	C	4.2	C	C	C	C	C	J6.5	J7.3	J7.6	J3.0	J3.0	J5.1	3.1	J3.8
3	J4.2	J3.5	J3.1	J2.3	J1.7	J4.4	C	C	C	C	J5.1	J5.3	4.6	J6.5	J4.1	J5.0	J3.5	J3.1	J2.9	J3.3	J4.0	J3.1	E	E
4	E	E	E	E	E	2.4	J4.0	J6.1	4.1	J5.3	J5.2	3.7	3.7	3.5	G	J3.4	J5.9	2.8	2.4	1.8	E	2.5	4.0	J5.0
5	J3.1	J2.9	J3.3	J6.0	J3.5	G	J7.5	6.1	3.9	4.0	4.3	J5.0	J7.3	J5.9	J5.6Y	J5.5	J7.2	J6.3	J4.8	J4.8	J2.4	J3.0	3.2	J4.0
6	E	E	J1.9	J2.9	J3.5	3.1	J7.1	J7.1	J6.3	J7.5	J7.0	J5.3	4.2	3.9	3.8	3.8	J3.8	J5.0	J6.0	J4.1	J6.1	J7.5	11.0	J7.5
7	J7.5	J6.0	J3.3	J2.3	J3.0	2.8	3.1	4.5	J5.7	J7.6	4.4	J5.8	J7.4	J7.3	J8.0	J6.1	J12.6	J7.4	J7.1	J2.4	J3.4	J4.2	6.0	J3.8
8	J6.1	J3.6	J3.0	J3.3	J1.8	3.0	J5.4	3.9	3.8	J5.0	J7.3	J6.8	J5.3	J6.5	4.1	3.7	J7.2	G	J3.3	J8.3	J12.0Y	J12.2	5.2	J6.4
9	J4.3	J6.0	J4.0	J3.8	J3.0	2.7	J4.0	J5.1	J7.8	J7.9	J8.4	J6.9Y	3.9	4.3	J5.8	4.5	J4.4	J7.6	J3.6	J7.3	J6.1	J5.9	8.3	J6.5
10	J7.2	J5.7Y	J4.0	J3.5	J5.9	J4.3	4.1	J7.6	4.2	J7.4	J5.3	G	4.0	4.1	4.3	3.4	G	4.1	J5.5	J6.0	J2.8	J2.0	E	J1.9
11	J1.8	E	J1.9	J2.3	E	G	3.2	J5.1Y	4.0	4.0	4.1	J7.3	4.0	4.6	J6.1	4.0	J6.0	J4.4	J5.3	J6.1	J3.1	J5.1Y	7.5	J4.5
12	J2.8	J2.9	J2.3	E	E	2.3	3.1	3.9	J7.4	J6.0	J11.6	J6.3	4.6	4.5	4.3	4.3	J4.2	J3.6	J3.5	J2.8	J7.0	J2.8	6.0	J3.5
13	J3.5	J7.5	J3.8	J6.3	J2.5	2.6	J3.8	3.3	4.0	J8.6	J11.7	J7.2	4.1	4.1	J5.6	J6.0	J5.3	J8.0	J7.9	J6.1Y	J2.3	J3.8	2.8	J2.5
14	J4.0	J3.3	J3.8	J3.8	J3.4	J3.2	3.2	J5.8	J5.0	J9.9	J14.0	J7.8	4.1	4.6	J5.0	3.9	J14.3Y	J11.7Y	J3.0	J3.8	J7.3Y	J3.1	6.1	J2.5
15	J3.0	J3.5	J3.8	J3.3	J2.4	J5.8	J7.8	J7.8	J7.4	3.9	3.9	J5.9Y	G	4.6	J5.8	J6.3	J5.3	J5.8	J4.1	J5.0	J6.1	J4.1	5.2	J3.1
16	J2.8	J3.6	J4.0	J4.0	J4.0	J3.8	J7.3	J8.0	G	4.4	J7.8	4.5	4.5	J7.0Y	4.5	4.1	J9.4Y	J5.3Y	J3.3	J2.8	J7.9Y	J5.3	J6.0	J3.6
17	J3.4	J4.0	J2.8	J3.3	J2.7	J2.2	J4.0	3.7	J5.0	4.5	4.5	4.1	J5.0	J5.1	J5.9	J6.0	J5.6	J5.7Y	J3.5	J3.5	J6.3	J5.2Y	J4.0	J5.0Y
18	J6.6	J3.8	J7.6	J2.8	J3.3	J2.9	3.5	4.1	J7.8	J8.3	J6.0	J7.1	C	C	C	C	J5.7	4.2	J4.9	J7.8	J7.4	J7.3Y	J2.8	J6.3
19	J5.9	J3.4	J2.8	J2.8	J2.9	J2.5	3.5	4.0	J6.6	J7.5	J4.9	J6.2	J5.6	4.0	J6.2	J6.9	J8.5	4.6	J7.6	J7.5	J2.4	J3.8	J2.5	J3.6
20	J3.6	J3.4	J3.8	J3.6	J5.1	J3.7	J3.1	4.0	J7.6	4.2	G	J5.3	4.0	4.2	4.0	J5.8Y	J5.3Y	J6.8	J6.2	J7.5	J5.2Y	J2.3	J2.3	E
21	J3.5	J2.3	J1.8	J2.3	J2.4	2.7	J6.0	J6.0	J6.0	J4.4	4.2	J5.5	J6.0	J5.3	J7.4	J7.0	J5.1Y	7.3	J3.8	J2.8	J5.0Y	J5.2	E	E
22	E	J3.6	J3.5	J2.8	E	J3.3	3.4	J4.3	J8.0	4.3	3.6	G	3.6	G	3.8	3.7	G	G	J6.4	J7.7	J3.0	J3.8	J3.2	J2.1
23	E	J1.9	E	E	E	G	2.6	3.9	4.2	4.6	J6.1	J5.5	4.7	4.8	J5.9	J4.8	3.5	J5.7	2.6	J1.9	J3.1	J6.0	J6.2Y	J8.3
24	J6.3	J3.2	J3.8	J3.5	J2.5	3.0	3.2	4.2	J5.4	J5.1Y	J7.6	4.5	J7.3	3.8	G	4.1	J6.3	J7.5	J6.4Y	J5.0	J2.9	J3.1	J3.3	J3.0
25	J3.8	J3.1	J2.3	E	E	2.6	3.1	J3.8	J6.8	J8.3	J6.3	J5.3	4.3	3.9	J5.0	J7.5	J6.1	J7.4	J8.0	J8.0	J8.3	J8.3	J8.2	J7.8
26	J7.3	J7.2	J5.8	J3.8	J2.4	G	3.0	J4.8	J7.3	J7.8	J5.8	4.0	J7.0	G	J6.0	3.7	6.5	4.1	J7.2	J4.3	J5.3	J3.3	J5.0	J8.0
27	J3.5	J8.8	J6.3	J4.5	J2.3	G	3.2	J5.9	J7.5	J7.6	J6.5	J6.7	J5.8	J8.5	4.2	J6.2	J8.6	4.9	J7.1	J8.3	J12.8	J8.3	J5.8	J3.6
28	J5.3	J2.9	J7.3	J7.3	J8.0	J8.3	J4.0	J5.2	J7.3	4.7	J5.6	J6.5	J6.4	4.1	4.0	J6.0	C	J5.4	C	C	C	C	C	J2.8
29	J1.7	J1.8	J3.3	J2.3	1.9	J2.5	2.9	J5.2	J7.4	J5.5	J5.3	J6.0	J8.2	J7.5	4.1	J6.5	J11.4	J5.3Y	J3.8	J3.3	J3.5	J2.4	J2.4	E
30	2.5	J1.9	J2.8	J2.9	J2.8	2.5	J6.0	J4.4	J6.3	4.5	4.2	J5.5Y	4.1	4.1	4.1	G	7.6	J12.0Y	J8.6	J12.1	J12.4	J7.3	J8.4	J7.3
31																								
No.	30	30	30	30	30	30	29	29	29	28	30	29	28	28	28	28	29	30	29	29	29	29	29	30
Median	3.5	3.4	3.3	3.1	2.5	2.8	3.8	5.1	6.3	5.4	5.4	5.5	4.6	4.6	4.8	4.9	6.0	5.6	5.3	5.0	5.0	4.2	4.0	3.6
U.Q	5.3	3.8	4.0	3.8	3.4	3.2	5.2	6.0	7.4	7.7	7.0	6.6	6.0	6.0	5.9	6.0	7.4	7.4	7.1	7.5	7.2	6.0	6.0	6.3
L.Q	2.8	2.3	2.3	2.3	1.8	2.4	3.2	4.0	4.2	4.4	4.3	4.8	4.0	4.0	4.1	3.8	4.8	4.2	3.5	3.2	3.0	3.1	2.8	2.5
Q.R	2.5	1.5	1.7	1.5	1.6	0.8	2.0	2.0	3.2	3.3	2.7	1.8	2.0	2.0	1.8	2.2	2.6	3.2	3.6	4.3	4.2	2.9	3.2	3.8

foEs

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

The Radio Research Laboratories, Japan.

A 4

IONOSPHERIC DATA

Jun. 1962

f_bEs

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.7	E	E	1.9	1.8	3.2	3.0	A	A	A	A	A	5.1	A	A	A	4.5	A	A	5.6	3.4	3.3	2.8	
2	E	2.0	1.8	3.4	2.5	2.7	4.8	4.3	3.6	C	U4.2R	C	C	C	C	C	A	6.2	3.3	2.2	1.8	3.8	2.0	2.4
3	2.9	2.0	E	E	E	3.9	C	C	C	C	5.0	5.2	U4.6R	5.1	4.0	4.7	3.5	3.1	2.5	2.7	3.0	E		
4						2.1	4.0	4.0	4.0	3.7	4.8	3.6	3.7	U3.5R		3.4	3.8	2.8	2.3	1.8		2.5	2.9	2.8
5	3.1	2.1	3.0	2.5	2.7		A	4.7	3.4	3.7	4.0	4.8	A	4.8	4.6	U5.5R	6.4	6.3	4.8	E4.8R	2.4	1.8	2.5	3.0
6			1.7	2.0	1.8	2.2	A	6.8	6.0	A	A	A	4.2	3.8	3.5	3.6	3.4	3.9	5.6	3.0	5.5	A	A	6.2
7	A	3.1	1.9	E	2.0	2.1	3.0	4.5	5.5	A	E4.4R	5.4	A	5.4	5.5	4.0	A	6.1	2.4	2.4	2.8	3.0	3.3	2.0
8	2.4	2.2	2.0	E	E	E3.0R	5.5	3.6	3.6	E5.0R	A	A	A	5.5	3.9	3.6	4.1		3.2	A	2.6	A	5.0	5.3
9	4.0	A	3.4	A	2.9	2.5	U4.0R	E5.1R	6.7	A	5.4	5.2	E3.9R	E4.3R	5.5	3.9	E4.4R	A	3.3	5.4	5.5	4.8	3.2	5.0
10	5.2	2.2	3.5	3.2	2.0	E4.3R	4.1	6.0	E4.2R	6.2	U5.3R		U4.0R	E4.1R	3.9	3.4		E4.1R	5.5	3.5	1.8	E		1.8
11	E		1.7	1.8			3.0	3.4	3.5	E4.0R	4.0	A	3.8	U4.6R	5.7	3.7	5.3	E4.4R	5.1	6.0	2.5	3.0	2.5	2.0
12	1.7	1.8	E			2.1	2.9	3.5	6.0	5.3	A	A	E4.6R	E4.5R	E4.3R	3.6	3.3	3.3	E3.5R	2.4	3.3	2.0	5.0	3.3
13	2.3	2.0	2.2	2.8	1.8	2.5	3.8	3.2	4.0	A	A	A	4.0	4.1	5.4	5.6	U5.3R	5.2	A	1.9	E	3.0	2.5	2.5
14	4.0	3.0	2.8	3.0	3.0	3.2	3.0	4.5	4.8	A	A	A	E4.1R	E4.6R	E5.0R	E3.9R	5.5	5.3	3.0	U3.8R	4.7	3.1	4.6	1.8
15	1.8	2.7	2.5	2.2	1.8	4.6	A	5.5	5.5	3.7	U3.9R	4.9		U4.6R	5.5	4.7	5.3	4.9	E4.1R	E5.0R	3.8	3.0	4.0	E
16	E	E	2.5	2.6	2.6	3.3	5.0	4.1		4.0	A	4.3	E4.5R	5.0	3.8	3.9	3.4	4.6	2.7	E	5.6	3.3	3.3	2.8
17	3.0	3.5	2.2	2.5	2.0	2.2	4.0	3.4	5.0	E4.5R	E4.5R	4.1	A	U5.1R	5.4	5.9	5.2	5.4	3.3	3.0	2.3	1.7	U4.0R	3.3
18	A	2.5	A	1.8	2.1	2.5	3.3	4.1	6.3	6.5	E6.0R	5.2	C	C	C	C	5.0	4.2	U4.9R	A	3.2	2.5	E	4.0
19	3.4	1.9	E	E	2.5	2.3	3.2	3.7	5.1	7.0	4.9	A	5.3	4.0	5.4	5.5	A	4.5	A	5.6	E	3.0	E	3.0
20	3.2	2.6	3.2	2.8	3.5	3.3	3.0	4.0	6.5	4.0		E5.3R	E4.0R	E4.2R	E4.0R	5.1	U5.3R	4.5	6.1	A	5.1	1.9	1.8	
21	1.8	E	1.7	1.8	1.8	2.3	5.5	5.4	5.1	E4.4R	E4.2R	E5.5R	A	U5.3R	5.5	5.5	5.1	A	E3.8R	2.7	E5.0R	E5.2R		
22		2.1	3.0	2.0		2.5	3.4	E4.3R	5.4	E4.3R	E3.6R		E3.6R		3.7	3.6			A	5.1	2.2	2.0	2.7	E
23		E					U2.6R	3.7	E4.2R	E4.6R	5.7	5.4	E4.7R	U4.8R	5.5	U4.8R	3.4	5.7	2.4	1.9	1.8	2.1	2.3	A
24	5.3	3.0	3.0	3.0	2.4	2.5	3.0	E4.2R	5.1	E5.1R	A	E4.5R	5.4	3.8		3.8	5.8	A	3.4	5.0	2.9	2.1	2.0	2.2
25	2.0	2.0	E			2.1	3.0	U3.8R	5.7	A	5.7	4.0	3.9	3.8	4.3	5.3	5.2	5.5	5.2	4.7	A	A	A	A
26	A	A	3.4	2.6	1.7		3.0	4.8	5.9	3.8	4.6	4.0	A		4.0	3.7	3.4	3.8	4.7	3.9	5.3	U3.3R	4.5	A
27	2.4	A	A	3.5	1.9		2.8	5.8	6.3	A	5.7	5.3	5.5	A	3.9	6.0	5.2	E4.9R	5.5	5.5	A	5.3	1.8	2.1
28	E	E	1.8	2.1	A	A	3.7	A	A	E4.7R	A	A	A	4.0	3.9	4.0	C	5.1	C	C	C	C	C	2.3
29	E	E	2.2	1.8	E	2.1	2.8	3.9	3.8	4.1	4.0	A	A	A	4.0	5.5	A	5.0	3.3	2.7	2.6	E	E	
30	2.5	E	1.8	2.3	E	2.5	5.4	3.9	5.5	E4.5R	3.9	A	4.0	4.0	3.8		6.4	A	A	A	6.3	5.5	3.0	A
31																								
No.																								
Median																								

f_bEs

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

The Radio Research Laboratories, Japan.

A 5

IONOSPHERIC DATA

Jun. 1962

f-min

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	1.70	1.70	1.85	200	1.90	200	205	205	205	205	1.85	1.80	1.75	1.70	1.70	E	E	E	E
2	E	E	E	E	E	1.70	1.80	1.75	205	I220C	345	C	C	C	C	C	205	1.80	1.75	E	1.65	E	E	E
3	E	E	E	E	E	1.70	C	C	C	C	205	200	280	205	200	1.95	1.75	1.75	1.70	1.70	E	E	E	E
4	E	E	E	E	E	1.70	1.75	1.75	1.80	1.90	1.90	200	205	1.90	205	1.90	1.85	1.70	1.75	1.70	E	E	E	E
5	E	E	E	E	E	1.70	1.75	1.75	1.75	1.85	1.90	1.85	200	1.90	200	205	1.90	1.70	1.75	E	E	E	E	E
6	E	E	E	E	E	1.65	1.75	1.75	1.80	205	1.95	1.85	200	200	1.80	210	1.70	1.70	1.70	1.70	E	1.70	E	E
7	E	E	E	E	E	1.70	1.75	200	1.90	200	300	250	200	200	240	1.95	1.95	1.70	1.70	1.65	1.70	1.65	E	E
8	E	E	E	E	E	1.70	1.70	1.80	1.80	200	200	205	245	210	200	200	1.85	1.85	1.70	E	E	E	E	E
9	E	E	E	E	E	1.75	1.85	1.75	1.85	200	330	305	300	205	200	1.75	200	1.75	1.70	1.70	1.70	1.65	1.65	E
10	1.70	1.70	1.70	1.70	1.70	1.75	1.80	200	200	210	1.90	205	370	200	250	200	1.75	1.75	1.75	1.70	E	E	E	E
11	E	1.70	E	E	E	205	1.75	200	1.95	200	200	200	200	200	1.95	1.95	1.75	1.80	1.70	1.70	E	1.65	E	E
12	E	E	E	E	E	1.75	1.80	1.95	200	1.95	240	350	275	200	200	205	1.80	1.75	1.70	1.70	E	E	E	E
13	E	E	E	E	E	1.70	1.90	1.80	1.85	205	275	215	205	260	220	1.80	1.95	1.75	1.80	1.70	E	1.70	E	1.70
14	1.65	1.70	1.65	1.70	E	1.70	1.70	1.80	1.80	1.90	205	200	1.85	245	200	1.90	1.85	1.80	1.75	1.70	1.70	E	E	E
15	1.65	1.70	1.70	1.70	1.65	1.70	1.70	1.95	1.85	305	200	255	205	220	200	210	1.80	1.80	1.75	1.70	1.70	E	E	E
16	E	E	E	E	E	1.70	1.75	1.75	200	200	205	200	205	375	205	200	1.95	1.90	1.70	E	1.70	E	E	E
17	E	E	1.65	E	E	1.70	1.75	1.95	200	350	340	315	325	310	250	200	1.90	205	1.80	1.85	1.70	1.65	1.70	1.65
18	1.70	1.65	1.70	1.70	1.70	1.75	1.85	1.95	1.85	200	340	325	C	C	C	C	1.75	200	1.75	1.90	1.65	E	E	E
19	E	E	E	E	E	1.70	1.75	1.85	1.95	1.75	200	350	200	300	315	205	220	200	1.75	1.70	E	E	E	1.70
20	E	E	E	E	E	1.70	1.75	1.75	200	305	200	345	200	300	305	200	200	300	1.80	1.70	1.75	1.70	1.70	E
21	E	E	E	E	E	1.70	1.75	1.85	200	1.95	260	325	325	205	250	210	205	1.80	1.80	1.80	1.70	1.70	E1.90S	E
22	E	E	E	E	E	1.75	1.90	205	1.85	200	250	1.90	255	305	240	200	1.80	1.85	1.75	1.75	1.75	1.70	E	E
23	E	E	E	E	1.70	1.70	1.80	1.85	205	220	200	205	205	205	200	200	1.80	1.85	1.75	1.70	1.70	1.75	1.70	E
24	E	1.70	1.75	1.70	1.70	1.75	1.80	200	200	350	350	220	210	200	200	200	1.80	205	1.95	1.70	1.70	E	1.70	E
25	1.70	1.65	E	E	E	1.70	1.75	210	200	200	225	200	1.95	200	200	1.75	1.75	1.75	1.75	1.70	1.70	1.65	E	E
26	1.65	1.70	E	1.65	1.65	1.70	1.75	1.80	200	1.80	205	200	250	200	220	200	1.90	1.85	1.80	1.70	1.65	1.65	1.70	E
27	E	1.65	1.65	1.70	1.70	1.70	1.70	1.80	1.85	1.90	1.80	205	200	200	250	1.90	1.75	1.80	1.75	1.70	1.70	1.70	1.65	1.65
28	1.70	1.70	E	E	1.75	1.75	1.75	1.80	1.80	200	1.95	205	330	255	200	200	I1.90C	1.80	C	C	C	C	C	E
29	E	E	1.70	E	E	1.80	1.80	1.75	1.75	1.80	200	200	205	1.95	1.80	205	1.80	1.80	1.75	1.75	1.65	E	E	E
30	1.65	E	1.65	E	E	1.65	1.75	1.80	1.90	200	1.95	205	320	205	205	210	210	205	1.75	1.75	1.65	1.70	1.75	1.70
31																								
No.	30	30	30	30	30	30	29	29	29	29	30	29	28	28	28	28	30	30	29	29	29	29	28	30
Median	E	E	E	E	E	1.70	1.75	1.80	1.90	2.00	2.00	2.05	2.05	2.05	2.00	2.00	1.85	1.80	1.75	1.70	1.70	E	E	E

f-min

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

The Radio Research Laboratories, Japan.

A 6

IONOSPHERIC DATA

Jun. 1962 — M(3000)F2 — 135° E Mean Time (G.M.T. + 9h.)

Akita — Lat. 39° 43.5' N, Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	F	295	265	270	I 300F	A	A	A	I 270A	I 280A	280	I 270A	I 300A	I 290A	270	A	A	295	290	I 280F	270	275F
2	I 270F	280F	F	F	300	310	305	325	345	I 295C	310	C	C	C	C	C	A	300	300	290	I 320R	F	F	F
3	F	RF	F	F	F	280	C	C	C	C	285	265	285	300	310	310	290	310	295	290	I 310RF	I 325F	I 300F	290
4	280	290	280F	280F	I 300F	280F	320F	350	325	290H	290	330	275	280	305	310	345	295	280	280	U 295R	310	285	I 285F
5	300	280	290	280F	F	F	A	310	I 330RF	305RH	260	295	I 300A	295	280	290	290	300	285	280	300R	310	RF	RF
6	F	F	275	300	I 310F	305	I 310A	335	360	I 335A	I 310A	I 270A	270	290	295	315	310	295	290	290	290R	A	A	RF
7	A	F	F	290	I 285F	I 295RS	300	350R	320	I 315A	285	320	I 300A	300	305	320	I 310A	315	285	295	310	300F	F	F
8	F	305	F	F	F	I 270RS	295R	300RH	295	J 295R	A	A	A	280	290	305	325	320	300	A	R	A	F	F
9	F	A	295R	A	F	280	320	315	340	I 325A	305	300	300	285	310R	290R	280	I 300A	300R	320	295F	285R	F	F
10	RF	F	295	I 295RF	310	315	315	300	295	320	285R	260R	275	285R	IJ 290R	270	290R	J 295R	I 290A	280	285	285	285	290
11	280	290	295R	300R	310	I 290RH	290R	I 290R	310	I 275R	IJ 265R	I 280A	295	280	I 310A	300	300	310	305	295	I 290R	I 290F	285F	I 295F
12	I 295F	290	305	285	I 305R	270H	300	285	I 305A	I 290R	I 305A	I 285A	I 270R	290	290	280	300	300	290	300	305	F	F	280F
13	F	RF	F	F	F	330F	340	310	290	I 305A	I 310A	I 300A	I 280R	275	290	310	305	310	I 315A	290	295	290	280	290
14	290	F	RF	RF	I 290RF	I 260R	290	330	330	A	A	A	I 290R	290	280	305	285	275R	300	U 305R	I 315R	315	280	275R
15	280	RF	RF	RF	RF	RF	I 300A	290R	295F	320	300	300	280	290	280	285	300	320	310	280	280R	I 290F	295	I 275F
16	280R	F	F	RF	RF	270	300	340	300	I 360R	I 315A	295	300	305	300	315	310	310	290	280	R	F	RF	F
17	F	F	RF	295	I 280RF	280	R	R	310	I 325R	I 310R	280	I 290A	265	285	I 290A	285	310	310	300	300	290F	295	I 280F
18	I 290A	295S	A	F	RF	RF	305	315	330	A	A	270	C	C	C	C	290	300	300	I 295A	I 300R	RS	F	F
19	F	RF	300F	305	300F	310R	270	310	I 300R	320	310	I 280A	300	300	295	300	I 295A	290	I 295A	I 295R	U 310R	F	F	F
20	F	F	F	F	RF	F	285F	290	305R	335	305	I 300R	290	I 280R	310	290	290	315	320	I 305A	305	280	270	285
21	290	285	300	290	280	290	280	I 305R	325	340	310	I 295R	I 295A	285	310	300	310	I 310A	305	285	285	I 285F	295	280
22	290	F	RF	F	F	U 305R	I 300FH	300	U 325R	280	310	300	280	270	290	U 300R	290	290R	I 305A	300	290	I 285R	I 295RF	295
23	275	290F	290F	295	295	300R	310	310	335	310	315R	280	290	290	295	310R	300	300	280R	290	295R	F	F	A
24	RF	F	F	300F	I 290RF	285F	290H	325	330	320R	I 295A	300	310	290	295	305	310	I 320A	310	320	300	280	F	F
25	F	RF	F	I 285F	285R	285	300R	330	290R	I 295A	310	300	305	300	300	310	315	300	305	300	I 320A	A	A	A
26	A	A	RF	F	F	285R	300	305F	355	315	340	315	I 275A	I 270R	300	305	310	325	310R	315	310	295	F	A
27	F	A	A	F	F	345	310	315	320	I 315A	310	270	295	I 280A	295	310	295	300	300	295R	A	F	F	F
28	F	300H	310	305R	A	A	320	I 305A	I 295A	295	I 310A	A	A	R	280	290	I 315C	320	C	C	C	C	C	280
29	270	F	F	F	F	320	320R	325	320	305	330	A	A	A	305	310	I 300A	310	320	320	295	285	275	280
30	280	290	290	290	I 290RF	280	305	340RH	A	R	275	I 280A	I 300R	295	280	280	295	A	A	A	R	R	285F	A
31																								
No.	14	11	12	16	16	25	27	27	27	25	27	25	25	26	28	28	29	28	27	27	25	18	14	15
Median	2.80	2.90	2.95	2.95	U 2.90	2.85	3.00	3.10	3.20	3.15	3.10	2.95	2.90	2.90	2.95	3.00	3.00	3.05	3.00	2.95	3.00	2.90	2.85	2.80

M(3000)F2 Sweep 1.60 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

A 7

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						I 3.15 A	3.50	A	A	A	A	A	A	A	A	A	A	A	A					
2						L	A	A	3.85	I 3.85 C	I 4.00 A	C	C	C	C	C	A	A	A					
3							C	C	C	C	A	A	A	A	3.65	I 3.55 A	I 3.60 L	3.50 L	L					
4							A	A	3.50	I 3.65 L	I 4.00 A	I 4.10 R	4.10	3.80 H	3.70 L	3.60	I 3.50 L	3.45 H	3.20					
5						3.40	A	A	3.80	3.70 L	3.80 R	A	A	I 3.90 A	A	A	A	A	A					
6							A	A	A	A	A	A	3.60	3.80 R	3.70	3.60	3.50	A	A					
7						I 3.40 L	3.55 H	A	A	A	R	A	A	A	A	R	A	A	L					
8						A	A	I 3.75 R	4.00	A	A	A	A	A	R	I 3.50 R	I 3.60 A	3.55						
9						3.35 L	A	A	A	A	A	A	R	I 3.80 R	I 3.65 A	I 3.55 R	A	A	L					
10						A	A	A	R	A	A	R	R	R	I 3.65 R	3.80 R	3.55 H	A	A					
11							3.50	I 3.45 R	3.70	I 3.65 R	3.90 R	A	R	A	A	R	A	A	A					
12							3.45 H	R	A	A	A	A	R	R	I 3.70 R	3.55 R	3.75 R	3.40 L	A					
13						L	A	I 3.65 R	R	A	A	A	R	4.00	A	A	A	A	A					
14							3.50	A	A	A	A	A	R	R	A	R	A	A	L					
15						A	A	A	A	4.10 R	4.00 R	A	R	A	A	A	I 3.50 A	A	A					
16						L	A	L	3.80 R	R	A	R	R	A	R	3.65 R	L	A	L					
17						L	I 3.55 A	I 3.80 R A	A	R	R	R	A	A	A	A	I 3.60 A	A	L					
18							L	L	A	A	A	A	C	C	C	C	A	A	A					
19							R S	3.40 R	I 3.80 A	A	A	A	A	3.90 R	A	A	A	A	A					
20						A	L	I 3.60 R	A	R	I 3.85 R	I 4.00 R	R	R	R	A	A	A	A					
21						L	A	A	A	A	R	A	A	A	A	A	A	A	A					
22							L	A	A	R	R	R	R	R	R	3.60 R	3.65 L	R	A					
23						L	3.55 L	3.60 L	A	A	A	A	A	A	A	I 3.60 A	3.50	I 3.55 A	L					
24						L	3.60 L	R	A	A	A	R	A	3.75 R	I 3.70 R	3.65	A	A	A					
25							L	A	A	A	A	4.00 R	3.75 S	3.80 R	I 3.80 A	I 3.65 A	A	A	A					
26						L H	L	A	A	3.70 R	I 3.85 A	4.00 R	I 3.90 A	3.95 R	I 3.90 R	3.85 L	3.35 H	A	A					
27							3.60 L	I 3.70 A	A	A	A	A	A	A	3.85	A	A	A	A					
28							I 3.55 A	I 3.75 A	I 3.80 A	R	A	A	A	3.60 R	3.60 R	3.70 R	C	A	C					
29						L	3.60 L	I 3.50 L	3.55 L	3.95	3.85	A	A	A	3.80 H	A	A	A	L					
30						3.35	A	A	A	A	4.30 R	I 3.95 A	3.70	I 3.60 R	3.60 R	I 3.60 R	A	A	A					
31																								
No.						5	11	10	9	7	9	5	5	11	13	15	11	5	1					
Median						3.35	3.55	4 3.60	3.80	3.70	3.90	4 4.00	3.75	3.80	3.70	3.60	3.55	3.50	3.20					

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

The Radio Research Laboratories, Japan.

A 8

IONOSPHERIC DATA

Jun. 1962

h'F2

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						360	305	A	A	A	A	I 410 A	A	A	I 360 A	I 400 A	445	A	A					
2						300	305	295	280	I 320 C	345	C	C	C	C	C	A	I 320 A	310					
3							C	C	C	C	295	445	365	345	310	305	300	305	295					
4							265	245	355	365	390	295	395	370	345	305	285	345	345					
5						350	I 320 A	295	255	335	455	375	I 345 A	345	395	340 A	I 335 A	I 310 A	310					
6							A	A	260	I 315 A	I 350 A	I 405 A	425	355	350	300	310	305	I 310 A					
7						I 325 L	330	255	I 305 A	I 325 A	395	315	I 380 A	345	330	335	I 335 A	I 305 A	320					
8						415	I 340 A	340	360	380	A	A	A	I 450 A	355	345	300	315						
9						270	300	290	A	A	345	330	I 375 R	350	305	355	370	I 310 A	295					
10						A	260	320 A	330 R	I 395 A	I 405 A	I 440 R	I 410 R	I 430 R	I 395 R	I 400 R	380	365	A					
11							325	I 345 R	345	R	R	A	I 390 R	405	I 350 A	355	I 335 A	320	305					
12							320	375	I 340 A	A	A	A	R	I 385 R	375	395	345	340	320					
13						255	250	330	390	A	A	I 390 A	I 475 R	I 395 R	355	345 A	I 325 A	330 A	I 310 A					
14							345	285	280	A	A	A	R	R	A	335	I 355 A	395	295					
15						A	A	335 A	345	315	345	350	I 400 R	385	I 340 A	380	335	295	290 R					
16						355	305	255	345	I 270 R	I 355 A	350	350	330	335	310	305	295	300					
17						310	295	255	325	I 320 R	I 370 R	I 440 R	I 420 A	445	I 410 A	I 385 A	370	320	295					
18							280	295	295	A	A	425	C	C	C	C	340	310	295					
19							R	315	280	I 295 A	295	I 380 A	360	340	345	340	I 330 A	330	I 310 A					
20						305	330	335	I 285 A	290	390	I 350 R	395	I 390 R	330	I 355 A	I 345 A	300	I 295 A					
21						315	345 A	295	250	285	350	A	A	395	330	350	310	I 325 A	310					
22							330	305	290	405	350	345	390	405	345	300	325	335	I 300 A					
23						325	280	275	255	345	330	395	380	345	335	300	315	300	275					
24						295	305	290	280	305	I 330 A	350	I 470 A	375	355	315	I 295 A	I 295 A	290					
25							290	255	I 330 A	I 345 A	320	350	345	325	320	310	305	I 300 A	300					
26						300 L	305	295	250	305	295	325	I 390 A	I 425 R	345	315	310	295	A					
27							305	320 A	I 310 A	I 320 A	I 335 A	I 350 A	375	I 390 A	350	I 350 A	345	295	310					
28							300	I 340 A	I 355 A	380	A	A	A	445	370 R	370	I 330 C	300	C					
29						270	295	295	305	330	295	A	A	A	355	340	I 330 A	305	260					
30						355	I 310 A	260	A	R	445	I 385 A	I 360 R	390	I 390 R	375	I 325 A	A	A					
31																								
No.						16	26	27	26	21	22	22	21	25	27	28	29	28	24					
Median						310	305	295	305	320	350	360	U 390	385	350	340	330	310	300					

h'F2

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

The Radio Research Laboratories, Japan.

A 9

IONOSPHERIC DATA

Jun. 1962 — h'F — 135° E Mean Time (G.M.T. + 9h.)

Akita Lat. 39° 43.5' N Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	290	320	280	280	330	I 265 A	250	A	A	A	A	A	A	A	A	A	A	A	A	A	290 A	275	300 A	295
2	300	290 A	305	290 A	265	285	A	A	215	I 220 C	I 200 A	C	C	C	C	C	A	A	A	275	230	I 230 A	230 A	290 A
3	I 295 A	310	295	270	280	290 A	C	C	C	C	A	A	A	A	I 230 A	I 240 A	245 A	245	255	285	290	235	240	260
4	285	275	285	290	260	250	A	A	230	230	I 205 A	195 H	195	195 H	210	210	I 225 A	220 H	250	280	255	245	I 295 A	305
5	290	285	300 A	275	310 A	250	A	A	210	210	210	A	A	I 220 A	A	A	A	A	A	310 A	280	235	255	I 250 A
6	255	290	290	270	255	260	A	A	A	A	A	I 215 A	I 205 A	205	235	245	240	A	A	255	310 A	A	A	A
7	I 290 A	275 A	240 A	280	320	245	245 H	A	A	A	A	A	A	A	A	A	A	I 245 A	240	285	255	250 A	I 280 A	310
8	305	250	240 A	255	285	A	A	235	205	A	A	A	A	I 235 A	225	240	I 220 A	220	250	A	A	A	A	A
9	A	A	A	A	A	255	A	A	A	A	A	A	I 205 R	I 200 A	I 205 A	I 210 A	A	A	A	270 A	A	A	A	A
10	A	295 A	I 275 A	I 250 A	255	I 250 A	A	A	A	A	A	I 220 R	I 210 R	I 210 A	205	225	225	A	A	305 A	290 A	250	250	260
11	290	275	265	290	265	255	250	240	235	I 220 R	215	I 210 A	205	A	A	200	A	A	A	A	255	I 270 A	295 A	285
12	255	260	260	275	285	245	230	220	A	A	A	A	A	A	I 230 A	230	205	245	I 260 A	290	270 A	260	I 270 A	I 295 A
13	310 A	305	305	290 A	280	245	I 235 A	210	220	A	A	A	225	215	A	A	A	A	A	250	245	295 A	295	275
14	I 275 A	305 A	I 315 A	275 A	I 285 A	I 260 A	250	A	A	A	A	A	R	A	A	R	A	A	A	280	245	245	I 250 A	285
15	295	I 300 A	300 A	260 A	265	A	A	A	A	205	200	I 210 A	I 230 R	A	A	A	A	A	A	A	I 295 A	295 A	270 A	275
16	285	310	315	300 A	290 A	A	A	A	200	240	I 220 A	230 A	A	A	235	235 A	240	I 230 A	255	260	I 285 A	305 A	280	260
17	275	270	270	295	310	250	I 240 A	225 H	A	R	R	205	A	A	A	A	I 230 A	A	A	275	260	255	I 280 A	330 A
18	I 305 A	295	I 285 A	260	285	250	240	A	A	A	A	A	C	C	C	C	A	A	A	A	260	250	290	I 280 A
19	270 A	260	260	255	260 A	240	240	240	I 220 A	A	A	A	I 205 A	200	A	A	A	I 250 A	I 275 A	280 A	230	I 265 A	300	295 A
20	I 295 A	290 A	260 A	290 A	I 325 A	I 280 A	225	I 240 A	I 220 A	205	205	I 200 A	A	R	A	A	A	A	A	A	I 250 A	255	295	285
21	285	290	275	290	295	250	A	A	A	A	A	A	A	A	A	A	A	A	A	255	I 290 A	I 270 A	255	280
22	280	295	I 290 A	275	245	245	245	A	A	R	I 195 R	I 195 R	R	R	215	230	245	245	A	A	270 A	285	280 A	245
23	290	270	280	275	285	245	240	240 A	A	A	A	A	A	A	A	A	225	I 250 A	240	255	270	255	270	A
24	A	295 A	290 A	290 A	290	250	245	A	A	A	A	A	A	200	200	225	A	A	A	I 260 A	265	290	330	275
25	260	290	250	280	270	240	255	A	A	A	A	205	200	220	I 210 A	I 225 A	I 235 A	I 240 A	I 255 A	A	A	A	A	A
26	A	A	A	290 A	285	210 H	245	A	A	230 A	I 200 A	200	I 240 A	205	235	205	220	A	A	255	I 250 A	280 A	A	A
27	260 A	I 275 A	I 260 A	I 270 A	280 A	250	245	I 230 A	A	A	A	A	A	A	215	A	A	A	A	A	A	A	265	300 A
28	290	270	245	250	A	A	A	A	A	A	A	A	A	A	235	A	C	A	C	C	C	C	C	290 A
29	295	305	I 310 A	300	290	245	245	I 240 A	240 A	220	220	A	A	A	235 H	A	A	A	A	245	260 A	255	305	300
30	300	295	290	295	255	A	A	A	A	A	195	I 215 A	225	230 A	240	235	A	A	A	A	A	A	A	A
31																								
No.	26	28	28	29	28	25	17	10	10	9	11	12	11	12	16	14	12	10	9	19	24	23	23	23
Median	290	290	280	280	285	250	245	240	220	220	205	U 210	U 205	210	230	230	230	U 245	255	275	260	255	280	285

h'F — Sweep 1.60 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

A 10

IONOSPHERIC DATA

Jun. 1962

f-min

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

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

f-min

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

The Radio Research Laboratories, Japan.

A 11

IONOSPHERIC DATA

Jun. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f2	f	f	f2	f	h3	h2	c3	c3	c4	c2	c2	c2	c2	h2	h2	h2	c2	h3	h4	f6	f3	f2	
2	f2	f2	f2	f3	f3	h3	h2	h3	h		c						h2	c2	c2	f2	f	f4	f2	f2
3	f3	f2	f2	f2	f	h2					c	c	c	c	c2	c2	c2	l3	h2	f3	f2	f		
4						h2	h2	c	c2	c	c2	h	c	c		l2	l2	h	h	h		f2	f3	f2
5	f7	f2	f4	f3	f5		c6	c3	c	h	h2	c	c2	c2	c	h2	h3	h3	c2	f6	f2	f	f2	f2
6			f2	f2	f2	h	h3	h2	c3	c3	c2	c	c2	c2	c	h	l	l	c2	c2	f3	f3	f4	f4
7	f3	f2	f3	f2	f2	h	h	h	h2	h2	h	c2	c	c2	c	c	c2	c3	c2	c2	f3	f2	f2	f2
8	f	f3	f2	f3	f	h2	h5	h2	h	h	c2	c2	h	c2	h	h	c		h2	f4	f2	f4	f4	f3
9	f3	f3	f3	f2	f3	h3	h2	h	c3	c2	c	l	l	l	c	l2	c2	l3	l2	f2	f4	f3	f3	f3
10	f2	f2	f5	f2	f2	h3	h3	h2	h2	h2	h		h	h	h	h		h2	h2	f2	f3	f		f2
11	f		f2	f2			h2	h	h	h	h	h2	h	h	c2	c2	c3	c	l2	f3	f2	f2	f2	f2
12	f2	f2	f			h	h	h	h2	h	c2	c	c	c	c	c	l	l	l3	f3	f2	f2	f3	f3
13	f2	f2	f3	f2	f2	h2	h2	h	h	c	c	l	l	h	h	h2	h2	c2	c3	f2	f	f2	f2	f2
14	f2	f3	f2	f2	f2	f3	l	h2	h2	h2	c2	c2	c	h	h	h	c2	c2	c3	f2	f2	f2	f2	f2
15	f	f2	f2	f2	f	c2	c2	c	c2	h	c	c		c	c	c	h	h	c2	f3	f3	f3	f2	f2
16	f2	f2	f3	f5	f2	h3	c2	h		h	c	h	h	h	h	h	h	h	c	f	f3	f3	f3	f3
17	f3	f2	f3	f3	f	l	c2	h	c2	h	c	l	l	l	l	l2	h	c2	c2	f	f	f2	f2	f3
18	f5	f3	f5	f2	f2	l2	h	h2	h3	c2	c2	c					h2	h2	c2	f3	f2	f2	f2	f3
19	f2	f2	f	f	f2	l	h	h	c2	c2	c	c	c2	l	l	l2	c	h	c3	f2	f	f2	f	f3
20	f3	f3	f2	f	f3	l2	l2	h	c3	h		c	c	l	l	l	l2	h2	h2	f2	f2	f	f	
21	f2	f	f	f	f2	c	h2	h2	c2	c2	c	c	l2	l2	l	l	h	h2	l	f2	f2	f3		
22		f2	f	f		h2	h	h2	c2	h	h		c		l	l			h2	f3	f2	f2	f2	f
23		f					h	h2	h2	h	c	c2	h	h	h	h	h2	c2	h2	f	f2	f2	f2	f3
24	f3	f3	f3	f2	f	c2	h2	h2	h	h	h	h	h	h		h	h2	c3	h2	h3	f5	f3	f2	f4
25	f2	f2	f			h	h	h	h2	c2	c	c	c	c	l2	l2	l2	l3	h2	f3	f4	f4	f2	f3
26	f3	f2	f2	f2	f		h2	h2	h2	c2	c2	h	h2		h	h	h	h2	c3	f2	f4	f5	f3	f4
27	f2	f5	f3	f5	f2		h2	c2	c3	c3	c2	c	c	c2	c	c2	c2	h2	c2	f2	f5	f2	f	f2
28	f2	f	f	f3	f3	l3	l3	c2	c2	c	h	h3	h2	h	h	h		c2						f2
29	f	f2	f2	f2	f	h	h2	c2	c2	c2	c2	c	c2	c3	h	h2	h2	h2	c4	f4	f4	f	f	
30	f	f2	f2	f2	f	h3	c4	h2	h2	h2	h	c	c	c	c		c2	c3	l2	f3	f4	f2	f3	f3
31																								
No.																								
Median																								

Types of Es

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

The Radio Research Laboratories, Japan.

A 12

IONOSPHERIC DATA

Jun. 1962

foF2

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J8.6R	7.1	U7.8S	U6.8S	I6.4A	J6.3R	J6.5R	I5.8A	I5.8A	I6.5A	AS	A	C	6.0	I6.2C	I6.0A	5.8	5.8	6.3	6.7AS	7.2S	6.8S	I6.8A	6.5S
2	C	C	C	C	C	C	C	C	C	A	6.7	6.5	A	7.6	S	7.5	A	A	7.9S	8.8S	J7.7S	A	5.8S	6.2S
3	6.0S	6.0S	5.7S	5.0S	4.3	5.5	8.0	7.2	7.5S	7.3S	A	6.5	S	9.0S	9.1	J9.0S	6.8	7.1	7.0	J8.7S	S	7.0S	A	6.8S
4	6.1S	5.8	J5.5S	J5.2S	5.0	5.7	8.2	6.9	6.0	6.6	S	7.2	6.7	7.6S	U8.0S	7.3S	6.1	6.1	6.7	7.4	J8.9S	6.3	6.4	6.9S
5	7.5S	6.7S	6.0S	6.2S	6.2	6.3	7.1	7.7S	AS	A	A	I6.4R	U6.7R	I6.1R	6.4	J7.4R	7.7	I7.6A	I7.6C	I8.0A	8.6	I7.0A	I6.1S	I6.0A
6	I5.8A	I5.8A	U6.0S	6.1F	J5.4R	5.6	5.9	8.2	A	A	A	S	A	A	8.5R	8.7	8.1	I7.1R	U7.0R	I7.4A	J8.0R	S	S	U6.0S
7	I5.9S	I6.1A	I6.3R	I5.4A	I4.1A	J5.3R	I6.3R	8.4	7.0R	A	A	A	A	A	A	J7.6A	7.4	J7.6R	J7.5S	J8.3R	J7.5R	U6.8R	7.0	U6.1R
8	U6.2R	6.8	5.8	5.1	4.9	J5.0R	6.2	6.9S	I6.0A	U5.4S	I5.8A	R	S	S	I7.1A	U6.8S	I6.4A	5.6	J5.1S	5.7	I6.2A	I5.8A	I5.8S	U5.9S
9	U6.0S	J5.5S	J5.5S	J4.5R	4.0	U4.9S	6.7	J7.6R	A	A	S	A	A	S	I7.8S	U7.2S	A	A	J9.0R	I8.2A	I6.7A	I6.3A	6.3	I6.2S
10	J6.5R	U6.2S	I6.1S	6.1	I5.7A	U5.2R	5.6	7.0	U7.7S	I7.0A	6.4	I5.9A	U6.0S	A	A	6.2R	6.0	U6.3S	J6.7R	I6.6A	I6.7A	U6.7S	6.3	5.8
11	J5.3R	J5.5S	J5.3R	4.5S	4.3	I4.8R	R	S	S	C	C	AS	S	S	A	A	I6.5A	U7.3S	6.8	I6.7S	I6.8S	I6.3S	I6.3S	I6.6S
12	I5.9A	U5.8S	5.1	5.3S	4.0	5.2S	I6.1S	7.0	6.2S	U6.8S	U6.3S	A	A	A	A	5.8	S	U8.2S	6.7S	I7.3S	7.3	J6.8S	U6.3S	I6.1A
13	U6.0S	I6.1A	6.2	I6.2F	U6.4F	J7.4R	I7.2S	A	A	A	I6.1S	I6.2S	I6.2S	C	C	C	C	C	6.6	U6.4S	6.5	U5.9S	6.4	U6.5S
14	6.2	U5.1S	4.8	J4.5RF	J4.5F	I4.8S	I6.8S	8.5S	7.3	I5.5S	I5.8S	I6.0A	I6.2S	I6.4A	I6.7A	7.4	U7.2R	I8.0A	I8.9A	I10.4S	J8.4R	U6.2S	A	A
15	U5.9S	F	A	A	A	S	A	A	7.3	8.0	I6.8A	6.9	I6.4S	7.2	I7.2AS	6.9	7.2	8.0	7.4	7.4	7.0	U6.8S	I7.0S	J6.6S
16	6.0	5.7	6.3	J6.4F	5.8	5.9	U6.2R	J9.0R	A	A	A	7.3	7.4	J8.2R	8.2	7.6	7.6	A	A	A	I7.5A	7.1	J8.1S	U8.4R
17	U7.4S	7.2	7.1	6.4	6.4	I6.2S	9.0	I8.2R	A	A	A	A	A	A	I6.4A	6.9	7.4	7.9	I8.2A	I8.0S	I7.6A	J7.0R	U7.3S	I7.0F
18	6.3	U5.7R	I5.9A	J5.5F	5.3	5.8	6.7	I7.8A	A	4.9	A	A	A	A	A	J8.7R	I8.4R	I9.0S	I9.2A	U9.0S	9.1	U6.5R	I6.6F	J8.1S
19	7.6S	6.9	I6.8F	J6.3R	5.6	5.3	6.3	I8.4S	8.7	A	A	6.0S	7.0	A	A	U7.5S	I8.2A	J9.0S	I9.2S	9.4S	I7.2S	I7.2S	I7.1S	U6.8S
20	6.8	6.5S	J7.0R	6.5	5.3	5.5	7.1	I8.6S	I8.9R	I7.2A	I6.6A	A	A	S	I7.2A	I7.4S	I7.5A	I7.6A	8.1	I7.6S	I6.8A	I6.8A	J6.7S	6.5
21	6.5	6.2	5.9	5.8	5.3	5.9	U7.4S	9.2	J8.3R	J6.5R	I6.0A	I6.0A	A	A	I8.2A	I8.5A	7.5	I6.8R	U6.7R	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	J6.6R	I6.8R	6.6R	7.6	I7.9R	9.3	9.8R	7.5	J7.0R	U7.5R	J7.7R	I7.4R	I6.8A	I6.5A	I6.8A
23	U6.7R	U6.1F	6.1	5.7	5.7	5.8	J7.7R	J8.1R	I6.6R	I6.4S	6.7	U6.6R	J6.6R	J8.7R	J9.2R	I9.1R	8.4	7.6	U7.7S	J8.2R	I8.2S	J8.0R	I6.9S	J7.0S
24	J6.8S	7.2	6.5	6.5	6.0	6.6	U7.1R	J8.3R	U6.2R	A	A	A	A	J6.2R	7.9	J8.5R	9.0	8.1R	7.0	U6.5R	6.3	6.0	U5.7R	I5.7A
25	J5.8R	J5.6R	5.4	5.2	5.0	J5.4R	6.5	5.7	6.4	6.6	7.5R	I7.6A	8.1R	8.0R	8.2R	7.9	U7.6S	I7.6A	7.7	J8.3R	J8.4R	A	A	S
26	I5.6S	J5.4F	5.1	4.4R	4.0	U4.5S	I6.4S	J8.4S	7.3	6.9	I6.4S	I6.6S	I6.1A	J6.5S	7.6	8.4	U8.3S	7.0	7.4R	7.3S	6.2	5.5	A	A
27	S	J5.4R	5.2	I4.7A	4.4	5.2	5.6	I6.8R	I7.2A	6.2	6.8	I6.4R	J6.1R	I6.2A	U7.4R	U7.9R	J8.0R	I8.5R	I8.2A	J8.5R	J7.9R	I8.0R	J7.9R	6.6S
28	I7.8S	J8.0F	7.6R	I6.8	J5.2R	I5.0A	5.8	5.8	I5.4A	U5.9R	I6.3A	U5.8R	U5.7R	I5.8S	J6.5R	I7.2A	A	A	7.4R	9.3	9.9	I6.5S	5.7	U5.2S
29	5.3	5.0	U5.1S	I5.4F	4.8F	5.4	I6.1R	J6.6S	I6.3S	5.8	S	A	A	I6.6R	6.6	I6.8S	S	A	I8.2S	5.8	I6.2A	J5.8S	I5.7S	I6.0S
30	I6.1S	5.9	5.5	5.4	I5.0S	5.3	6.9R	I7.2A	I5.6A	R	A	I5.4S	I5.8A	I6.4S	I6.6A	I7.5A	J8.4R	U9.4R	J8.7R	I8.6R	I6.5S	6.6	J5.6F	I5.6A
31																								
No.	27	27	27	27	27	27	26	25	20	18	15	18	15	17	22	28	24	24	29	28	28	26	24	26
Median	6.1	6.0	5.9	5.5	5.2	5.4	6.6	7.7	U6.8	6.6	U6.4	U6.4	U6.4	6.6	U7.5	7.5	7.5	U7.6	7.5	7.8	7.4	U6.8	U6.4	U6.5
U.Q.	6.8	6.7	6.3	6.3	5.7	5.9	7.1	8.4	7.4	6.9	6.8	6.6	7.0	8.0	8.2	8.4	8.2	8.0	8.2	8.6	8.1	7.0	7.0	6.8
L.Q.	5.9	5.6	5.4	5.1	4.4	5.2	6.2	7.0	6.1	5.9	6.1	6.0	6.1	6.2	6.6	7.0	7.0	7.0	6.8	7.0	6.7	6.3	6.0	6.0
Q.R.	0.9	1.1	0.9	1.2	1.3	0.7	0.9	1.4	1.3	1.0	0.7	0.6	0.9	1.8	1.6	1.4	1.2	1.0	1.4	1.6	1.4	0.7	1.0	0.8

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

foF2

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

The Radio Research Laboratories, Japan.

K 1

IONOSPHERIC DATA

Jun. 1962

foF1

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	AS	A	C	S	C	A	A	S	S					
2						C	C	C	C	A	L	A	A	S	A	A	A	A	A					
3								A	A	A	A	A	S	A	A	A	A	S	A					
4						L			S	A	A	S	S	S	S	S	L	L	L					
5						A	S	L	AS	A	A	L	L	5.2L	L	A	A	A	C					
6							A	A	A	A	A	S	A	A	A	A	L	A	A					
7							A	A		A	A	A	A	A	B	A	A	L	L					
8						L	U 3.6S	S	A	L	A	L	S	S	A	A	A	A						
9							A	A	A	B	S	A	A	S	L	A	A	A	A					
10							A	A	A	A	B	A	S	A	A	S	B	AS	A					
11								S	S	C	C	AS	S	S	A	A	A	L	S					
12							S	L	B	5.1L	S	A	B	A	A	A	S	S	S					
13							S	A	A	A	S	S	S	C	C	C	C	C	L					
14						S	S	S	S	S	S	A	S	A	A	U 4.9L	U 4.9L	A	A					
15						S	A	A	A	A	A	A	U 4.4S	S	AS	U 5.0R	A	A	A					
16							L	L	S	A	A	A	A	R	R	S	L	A	A					
17						S	S	S	A	A	A	B	A	A	A	A	A	A	A					
18						L	L	A	A	A	A	A	A	A	A	S	L	A	A					
19							L	A	A	A	A	S	A	A	A	A	A	A	AS					
20						A	A	S	A	A	A	A	A	S	A	S	A	A	A					
21						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
22						C	C	C	C	AS	A	S	U 4.9L	5.1L	4.8	S	S	S	L					
23							L	L	L	S	S	S	S	S	A	S	A	A	S					
24							S	S	S	A	A	A	A	S	A	A	S	4.2L						
25								A	L	A	S	A	5.0R	A	A	B	L	A	S					
26								L	A	L	S	S	A	S	L	L	S		A					
27								A	A	A	A	A	A	A	A	A	AS	A	A					
28						A	A	S	A	A	A	A	A	S	S	A	A	A	A					
29								S	S	A	S	A	A	S	A	S	S	A	A					
30						L	A	A	A	A	A	S	A	S	A	A	A	A						
31																								
No.							1			1			3	2	1	2	1	1						
Median							U 3.6			5.1			U 4.9	5.2	4.8	U 5.0	U 4.9	4.2						

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

foF1

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

The Radio Research Laboratories, Japan.

K 2

IONOSPHERIC DATA

Jun. 1962

foE

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	A	A	C	S	C	A	I2.75S	I2.40S	S					
2						C	C	C	C	A	A	A	A	S	A	3.25R	A	A	A					
3						S	2.30R	I2.75S	A	A	S	S	A	A	A	A	A	A	A					
4						A	I2.30S	S	S	S	A	S	A	A	S	A	3.00	2.45R	I1.90S					
5						S	A	A	A	A	A	B	A	B	U3.55R	A	A	2.65R	C					
6						I1.90S	I2.40A	I2.80A	3.10	A	A	B	A	A	A	A	A	A	A					
7						S	A	A	B	B	A	A	B	A	B	B	A	I2.60A	S					
8						S	A	S	S	A	A	A	S	S	A	A	A	A	S					
9						A	A	A	A	B	S	A	A	S	A	B	A	B	B					
10						A	A	B	A	A	B	B	S	A	A	S	B	A	B					
11						S	B	S	A	C	C	A	S	S	A	A	S	S	S					
12						S	S	B	B	S	S	S	B	A	A	A	S	S	S					
13						S	S	B	A	B	A	S	S	C	C	C	C	C	S					
14						S	S	S	S	S	S	S	S	A	A	S	S	S	A					
15						B	B	B	A	A	A	A	B	B	B	A	B	S	B					
16						B	S	S	S	B	A	A	A	B	B	S	S	A	S					
17						A	S	S	A	S	B	B	S	B	B	B	S	A	A					
18						A	A	I3.00B	A	A	B	A	B	A	B	S	I3.40B	A	S					
19						S	A	A	B	A	B	S	S	B	B	B	S	S	S					
20						B	S	A	S	B	B	B	B	S	B	S	B	B	S					
21						S	I2.40S	3.00	B	B	S	B	B	B	A	B	B	S	S					
22						C	C	C	C	B	B	A	S	B	B	S	S	A	B					
23						S	I2.60S	S	B	S	S	S	S	S	S	S	S	S	S					
24						S	S	S	S	S	S	S	S	S	S	A	S	S	S					
25						S	S	S	S	S	S	B	S	A	S	B	S	S	S					
26						S	S	S	B	S	S	S	S	S	S	S	S	2.50	B					
27						S	A	A	A	B	A	A	A	A	A	A	S	S	S					
28						S	S	S	A	S	S	A	S	S	S	A	B	S	S					
29						S	S	A	A	S	S	S	S	S	S	S	S	S	S					
30						S	S	A	A	S	A	S	S	A	S	S	S	A	S					
31																								
No.						1	5	4	1						1	1	3	5	1					
Median						U1.90	U2.40	U2.90	3.10						U3.55	3.25	U3.00	2.50	U1.90					

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

foE

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

The Radio Research Laboratories, Japan.

K 3

IONOSPHERIC DATA

Jun. 1962

foEs

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	4.4	2.8	J3.9	4.5	J8.6Y	4.6	4.5	6.2	6.8Y	J6.2	5.8M	12.3M	C	4.0	C	J5.2	J5.2	J3.8	J3.8	J6.8	J6.3	J5.2	J6.3	J5.3
2	C	C	C	C	C	C	C	C	C	8.2M	4.3	5.5	J9.1	3.9	J5.2	J7.2	D19.0D	J7.7	J6.8	3.3	J4.9	J8.6	J4.0	J5.5
3	J6.0	J3.4	J4.8	J3.5	J2.0	J3.8	J3.6	J6.7	J5.2	J6.0	5.9MY	4.1	J5.1	J5.6	J5.5	J5.0	J4.6	J3.7	J4.8	J3.5	S	J5.9	J8.1	S
4	S	S	2.4	S	E	2.1	J4.2	J3.6	J4.8	J5.3	J5.0	3.7	4.1	4.1	S	3.4	G	3.1	2.5	E	2.3	J3.5	J2.2	3.7
5	J3.8	J3.7	3.2	J3.3	J4.0	J5.6	J3.5	J3.8	J5.4	J9.4	6.8Y	4.2Y	4.4Y	B	3.8	6.8	J5.8Y	7.0	C	J10.4Y	9.9M	J9.1Y	7.5M	J8.3
6	J8.1	6.8M	J6.4	3.7M	2.7Y	3.1	3.9	7.0M	6.8	13.1	6.2	6.3	7.6Y	8.0M	J6.9	6.7M	4.0	J4.0	4.0	J6.7Y	3.9Y	5.2Y	9.1	5.8Y
7	J5.8Y	J6.0Y	5.7M	4.7	4.2	3.4	5.6Y	4.4	4.4	10.0M	7.4Y	J6.9	8.0Y	14.2Y	13.6Y	8.4M	6.9Y	4.2	3.0	4.1M	2.1	2.9	6.4M	4.4
8	3.7	4.5M	J3.9	2.7	J3.3	G	4.0	S	J10.8Y	4.3	5.9Y	4.2	S	S	6.3Y	8.0Y	13.2MY	5.8Y	4.4Y	3.9M	5.8M	7.8M	4.4M	4.5M
9	2.2S	2.9	J3.4	2.6	2.7Y	2.4	4.3	4.4	7.5Y	7.5M	5.4Y	9.8	6.9Y	S	4.1	6.8Y	8.0M	12.7M	4.4	6.7M	6.8M	7.7Y	S	J5.3Y
10	4.5M	6.1Y	3.3	4.2M	8.6M	J3.8	J7.4Y	4.4	6.2	13.6Y	7.1Y	6.8Y	S	7.4M	5.9Y	S	B	4.3	4.2	5.9Y	J6.8Y	J5.7Y	S	S
11	S	S	2.6Y	1.2	1.5	S	B	4.2S	J4.4Y	C	C	4.9	S	S	J11.6	9.1M	U5.7Y	S	S	S	4.1M	3.8Y	S	S
12	6.1Y	6.6M	3.6M	E	E	S	S	B	B	4.5	S	8.8Y	11.3	11.0M	8.4M	6.8M	S	S	S	S	S	4.4M	S	8.0M
13	4.7M	11.7	4.3	3.4M	7.2M	2.5	S	7.3M	7.9	18.5M	4.8	S	S	C	C	C	C	C	S	S	6.0M	S	S	S
14	S	S	E	E	E	S	S	S	S	S	S	6.9Y	S	9.3M	6.4Y	S	S	15.6Y	14.6	S	S	3.2Y	6.8Y	8.6M
15	6.5M	6.9M	12.2M	14.9M	14.2M	4.4	14.8Y	12.1M	7.8M	7.9M	7.5	6.5Y	B	4.8	7.4	5.4	7.9M	6.4M	6.4Y	4.5M	3.0	S	4.9	S
16	3.0	4.8M	6.6Y	3.9M	3.3M	B	S	S	8.8	8.5M	8.2	7.8M	6.9M	4.8	B	4.7	4.9	8.9M	12.6	14.6	9.4M	S	5.9M	S
17	4.4Y	4.8	4.4M	4.0M	2.9	5.4Y	S	S	12.2	13.6M	9.2M	6.1M	9.4	6.9	8.7M	J6.0	5.5M	9.4M	8.6Y	6.0M	12.0M	5.5M	5.0M	5.9M
18	6.0M	6.3M	7.5M	6.2M	5.8M	3.2	4.4	7.4M	8.9M	6.9Y	12.1M	8.6	12.1M	9.0M	8.5	S	B	7.2	8.7	3.9M	7.4M	6.0M	4.4	5.0M
19	5.4M	5.5M	S	3.7	3.9M	4.4	3.0	5.5	8.1Y	8.8M	6.0M	S	9.4M	8.9M	12.3Y	7.5M	12.1Y	6.9M	5.8	7.3M	S	6.0M	S	S
20	S	6.0M	6.0M	6.8M	4.7M	5.0M	6.0M	6.2M	6.1M	9.0M	13.7M	9.5M	7.0Y	S	8.5M	S	13.6Y	7.0Y	6.0M	5.7	7.7M	6.2M	4.4M	S
21	4.4M	3.1M	3.9M	5.8M	3.3	S	3.8Y	5.0M	6.7M	6.4	7.3Y	6.4M	7.1M	7.1M	8.6M	8.7M	7.1	4.7	5.7M	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	5.6Y	7.3	4.2	S	B	B	S	S	4.1	3.0	4.2S	9.1M	6.8Y	6.4M	6.2M
23	6.0Y	S	2.1	2.2	2.1	2.6Y	S	S	B	S	S	S	S	S	7.2	6.8	7.3M	5.5	S	S	S	S	5.9M	4.1M
24	5.6Y	5.1M	3.8Y	2.1	E	S	S	S	S	5.9M	9.1M	11.5M	7.1M	S	5.8	5.6M	S	S	5.7Y	S	5.0M	5.6M	6.0M	6.2M
25	S	S	3.1Y	2.2	E	S	S	4.0	5.5Y	6.8M	S	8.6M	S	6.9M	7.8	7.4	5.6	11.7Y	S	8.8M	S	9.1M	9.1M	S
26	S	S	S	S	3.4	S	S	S	4.7	S	S	S	8.9Y	S	S	S	S	4.4	4.5	5.2M	5.4	4.4M	5.8M	5.8Y
27	4.0Y	4.0	6.0M	5.4M	3.0	S	J3.8	6.0M	8.4M	6.0	6.0	5.7	5.6	6.5	7.0M	5.7Y	5.6M	4.0	7.2M	S	S	S	S	3.2
28	5.7M	5.6M	J7.8	12.8M	4.7	5.8M	4.5	S	5.3Y	5.4Y	7.2Y	6.4Y	5.4Y	S	4.4	7.1M	8.8M	9.3M	6.0M	8.8	6.0	6.2M	3.4M	3.9M
29	3.9	2.3	2.1	3.9M	3.6	3.3	S	3.8S	6.6	6.0M	5.4S	7.0Y	6.4Y	S	4.5	6.2Y	5.7Y	9.8M	7.1S	5.7M	9.0M	3.3M	S	S
30	S	3.4M	S	3.4	3.3	S	5.0M	7.3M	6.3M	5.4	8.5Y	5.0M	8.7Y	5.8	7.8Y	9.0Y	5.8Y	6.0M	S	S	5.8M	3.5	S	6.2M
31																								
No.	21	22	25	26	28	18	17	19	24	26	24	26	20	18	24	23	22	26	23	21	22	24	20	19
Median	4.7	5.0M	3.9	3.7	3.3	3.6	4.3	5.5	6.6	6.8	7.0	6.4	7.1	6.9	7.1	6.8	5.8	6.2	5.7	5.7	6.0M	5.6	5.9M	5.5
U.Q.	6.0	6.1	6.0	4.7	4.4	4.6	5.3	7.0	8.0	9.0	7.8	8.6	9.0	8.9	8.5	7.5	8.0	8.9	7.1	7.0	7.7	6.5	6.6	6.2
L.Q.	4.0	3.4	3.2	2.6	2.0	2.6	3.8	4.2	5.4	5.9	5.8	5.0	6.0	4.8	5.6	5.6	5.5	4.2	4.2	4.0	4.9	4.1	4.4	4.4
Q.R.	2.0	2.7	2.8	2.1	2.4	2.0	1.5	2.8	2.6	3.1	2.0	3.6	3.0	4.1	2.9	1.9	2.5	4.7	2.9	3.0	2.8	2.4	2.2	1.8

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

foEs

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

The Radio Research Laboratories, Japan.

K 4

IONOSPHERIC DATA

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.2	E	2.1	4.0	A	4.5	E 4.5R	A	A	A	AS	A	C	4.0	C	A	4.9	E 3.8S	3.8	5.8	5.2	4.9	A	4.6
2	C	C	C	C	C	C	C	C	C	A	4.0	5.0	A	E 3.9S	5.0	5.1	5.4	A	5.5	E 3.3S	2.1	A	3.2	5.0
3	4.1	2.0	2.4	2.5	1.7	E 3.8S	3.2	6.2	4.9	4.8	A	E 4.1S	S	5.5	5.2	5.0	4.6	E 3.7S	4.8	3.5	S	5.0	A	S
4	S	S	2.0	S		2.0	4.1	3.5	4.7	5.0	5.0	3.7	4.1	4.1	S	3.4		3.0	2.4		E	2.0	2.0	E
5	2.5	2.2	1.7	2.1	1.9	3.3	3.4	3.5	AS	A	A	E 4.2S	4.2	B	3.8	6.3	5.5	A	C	A	8.0	A	5.0	A
6	A	A	4.0	2.5	1.6	2.6	3.8	6.4	A	A	A	S	A	A	6.8	5.5	E 4.0R	4.0	E 4.0R	A	E	S	6.4	5.1
7	5.2	A	5.2	A	A	3.4	4.6	E 4.4R	4.2	A	A	A	A	A	B	A	6.1	3.5	2.2	3.0	2.0	2.1	6.3	3.6
8	2.6	3.1	2.5	1.8	1.6		3.1	S	A	4.0	A	4.2	S	S	A	5.5	A	3.9	2.9	2.9	A	A	4.4	3.8
9	2.1	2.0	2.0	E	1.8	2.1	4.3	4.4	A	B	S	A	A	S	E 4.1S	6.3	A	A	4.0	A	A	A	S	5.0
10	4.4	1.7	2.4	2.5	A	2.6	4.6	4.4	5.8	A	B	A	S	A	A	S	B	E 4.3S	E 4.2S	A	A	5.2	S	S
11	S	S	1.8	1.1	1.4	S	B	S	S	C	C	AS	S	S	A	A	A	S	S	S	4.1S	S	S	S
12	A	5.2	1.7	E	E	S	S	B	B	U 4.4S	S	A	B	A	A	5.1	S	S	S	S	S	3.5	S	A
13	3.7	A	2.6	1.8	5.1	E 2.5S	S	A	A	A	S	S	S	C	C	C	C	C	S	S	4.0	S	S	S
14	S	S				S	S	S	S	S	S	A	S	A	A	S	S	A	A	S	S	E	A	A
15	5.1	5.2	A	A	A	S	A	A	6.2	6.3	A	5.2	B	4.5	AS	4.1	6.3	5.7	5.1	4.0	3.9	S	S	S
16	2.6	3.8	3.0	1.8	1.7	B	S	S	S	A	A	6.2	5.3	E 4.8R	B	4.5	S	A	A	A	A	S	5.1	S
17	3.4	4.8	4.0	3.5	2.6	S	S	S	A	A	A	B	A	A	A	5.8	5.1	5.4	A	5.4	A	2.4	2.9	3.1
18	5.1	4.6	A	3.5	3.4	2.3	3.8	A	A	4.3	A	A	A	A	A	S	B	6.2	A	3.6	6.9	4.9	2.9	4.5
19	4.4	2.4	S	2.0	2.6	2.9	2.8	4.3	6.1	A	A	S	6.1	A	A	6.4	A	E 6.9S	5.6	5.8	S	5.1	S	S
20	S	E	3.8	3.2	2.6	4.0	5.0	E 6.2S	6.0	A	A	A	A	S	A	S	A	A	6.0	S	A	A	3.0	S
21	2.9	2.0	2.2	2.2	2.5	S	3.2	4.4	6.0	5.7	A	A	A	A	A	A	6.0	4.6	4.6	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	E 5.6S	6.1	E 4.1S	S	B	B	S	S	E 4.1S	2.8	3.0	4.4	A	A	A
23	E	S	E	E	1.8	2.5	S	S	B	S	S	S	S	S	6.8	E 6.8S	7.3	5.3	S	S	S	S	5.1	E
24	3.5	3.2	2.6	1.9		S	S	S	S	A	A	A	A	S	4.7	4.6	S	S	3.1	S	4.6	4.5	4.4	A
25	S	S	2.5	E		S	S	4.0	S	6.2	S	A	S	6.0	6.3	B	S	A	S	6.0	S	A	A	S
26	S	S		S	E	S	S	S	4.7	S	S	S	A	S	S	S	S	4.0	4.2	4.1	4.7	3.5	A	A
27	S	3.6	4.2	A	1.9	S	3.3	6.0	A	5.0	6.0	5.0	5.3	A	6.3	4.7	E 5.6S	3.9S	A	S	S	S	S	3.0
28	S	3.5	4.3	A	2.8	A	4.5	S	A	5.0	A	5.2	5.1	S	E 4.4S	A	A	A	4.5	2.8	3.5	S	E	2.3
29	2.3	E	E	2.7	2.1	2.9	S	E 3.8S	S	4.7	S	A	A	S	4.5	S	S	A	6.3	4.1	A	E	S	S
30	S	2.4	S	1.9	3.2	S	4.5	A	A	4.5	A	S	A	S	A	A	5.8	6.0	S	S	4.7	2.8	S	A
31																								
No.																								
Median																								

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

fbEs

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

The Radio Research Laboratories, Japan.

K 5

IONOSPHERIC DATA

Jun. 1962

f-min

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11
1	E1.80S	E1.80S	E	E	1.00	1.50	2.00	E2.00S	2.50	2.20	3.40	3.50
2	C	C	C	C	C	C	C	C	C	2.55	3.15	3.45
3	E1.80S	E1.90S	1.30	E	E	E1.60S	1.65	E2.75S	2.05	3.00	E3.65S	E3.60S
4	E1.90S	E1.80S	1.40	E1.70S	1.20	1.70	E2.25S	2.15	2.30	E3.50S	2.95	E3.50S
5	E1.90S	E1.90S	1.20	1.55	E	E1.95S	2.05	2.00	2.20	3.20	3.20	3.70
6	E1.80S	E1.90S	E1.50S	E	1.10	E1.90S	E1.90S	2.10	2.10	3.35	3.10	3.70
7	E1.50S	E1.50S	E1.80S	E1.50S	E	E1.85S	1.70	E2.70S	3.50	3.60	3.55	3.20
8	E1.80S	E1.50S	1.00	1.00	E	E1.50S	1.80	E4.50S	E3.20S	3.25	3.50	3.65
9	E1.50S	E1.50S	E1.80S	E1.50S	1.00	1.10	1.60	2.50	3.10	5.10	3.50	3.50
10	E2.00S	E1.50S	1.40	E	1.70	E1.90S	1.80	3.00	3.20	3.10	5.40	3.60
11	E2.50S	E1.50S	1.00	E	1.00	E1.90S	2.20	E2.95S	2.50	C	C	3.00
12	E2.00S	E2.00S	1.30	1.10	1.40	E2.10S	S	4.20	5.10	2.90	E5.30S	E4.40S
13	E2.10S	E1.80S	1.10	1.10	1.70	E2.10S	E4.60S	3.40	E2.40S	4.00	3.10	S
14	E1.80S	E2.10S	1.20	1.50	1.40	S	S	E4.50S	E5.20S	E3.80S	S	E4.20S
15	E1.90S	E2.10S	E1.80S	E1.80S	1.80	2.00	2.95	3.50	3.15	3.10	3.00	3.00
16	E1.50S	E2.10S	1.80	1.40	1.40	2.00	E3.50S	E3.50S	E6.10S	4.10	3.50	3.40
17	E1.80S	E2.00S	1.40	1.50	E1.50S	E2.00S	E4.50S	E4.95S	3.00	E4.40S	3.90	5.00
18	E2.20S	E1.70S	1.40	1.50	1.50	E2.00S	E2.00S	3.00	3.00	3.20	3.60	3.70
19	E2.00S	E1.90S	E1.50S	1.40	1.70	E1.95S	2.20	2.50	3.45	3.10	4.55	E5.20S
20	E1.70S	E2.00S	E2.00S	2.50	E2.10S	2.20	E2.95S	E3.10S	E3.50S	4.70	4.20	4.40
21	E1.80S	E1.80S	E1.80S	1.70	1.85	E2.10S	E2.80S	2.70	3.20	3.50	E3.60S	3.70
22	C	C	C	C	C	C	C	C	C	3.50	3.65	3.50
23	E1.50S	E1.90S	E1.50S	E1.80S	E1.50S	E1.60S	E2.90S	E3.30S	3.60	S	E5.80S	E5.15S
24	E2.80S	E2.50S	E1.50S	1.50	1.50	E2.20S	E2.80S	E3.80S	E4.60S	E3.65S	E3.80S	E3.70S
25	E2.00S	E2.10S	E1.80S	E1.80S	E1.40S	E2.40S	E3.30S	E3.50S	E4.50S	E3.50S	E5.20S	3.95
26	S	E1.90S	E2.50S	E1.50S	1.90	E2.20S	S	E4.00S	3.00	E3.95S	S	S
27	E2.20S	E1.80S	E1.50	E1.80S	1.60	E2.10S	2.10	E2.30S	E2.00S	3.70	3.15	3.70
28	E2.60S	E2.20S	E1.80S	E1.90S	E1.95S	E2.30S	E3.00S	E4.40S	2.20	E3.60S	E3.95S	3.20
29	E1.90S	E1.90S	E1.80S	1.60	1.80	E2.00S	E3.20S	E2.70S	E2.50S	E3.60S	E3.80S	E3.70S
30	E2.20S	E2.00S	E1.60S	1.80	1.80	E2.20S	E2.30S	2.20	2.80	E3.60S	E3.50S	E3.60S
31												
No.	27	28	28	22	24	27	25	28	22	19	19	22
Median	E1.90	E1.90	E1.50	E1.50	1.40	E2.00	E2.25	E3.00	2.90	3.25	3.50	E3.60

Day	12	13	14	15	16	17	18	19	20	21	22	23
1	C	E3.60S	C	2.20	2.00	E2.30S	2.00	1.80	1.70	1.40	E1.80S	E1.80S
2	3.10	E3.45S	3.05	2.30	2.25	2.40	1.80	1.05	E1.70S	E1.55S	E1.60S	E1.55S
3	3.10	3.45	3.25	3.15	2.30	2.50	2.25	2.10	S	E1.75S	E1.55S	E2.10S
4	3.35	3.20	E7.25S	2.60	2.20	1.90	E2.00S	E1.95S	1.40	1.55	E1.80S	1.40
5	3.50	4.40	3.20	2.40	2.30	1.90	C	E1.70S	E1.50S	E1.75S	E1.80S	E1.90S
6	3.50	3.20	3.10	2.20	2.90	2.60	1.50	E2.50S	E1.70S	E1.70S	E1.60S	E2.00S
7	3.70	3.50	6.50	3.50	3.10	2.10	E1.90S	E1.50S	E1.80S	E1.80S	E1.80S	1.80S
8	S	S	2.70	2.50	3.50	2.40	E2.20S	E1.50S	E1.50S	E1.70S	E1.70S	E1.50S
9	3.50	S	3.40	3.60	2.60	3.50	2.50	E2.00S	E2.00S	E1.90S	E2.00S	E1.95S
10	E5.10S	3.10	3.50	E4.95S	4.80	E2.00S	2.20	E1.50S	E1.50S	E1.80S	E1.50S	E1.90S
11	S	S	3.30	3.00	E2.50S	E3.20S	E4.00S	E3.00S	E2.50S	E2.60S	S	E3.00S
12	5.20	3.40	3.40	3.00	S	E7.30S	E5.20S	S	E2.60S	E2.40S	E3.20S	E1.90S
13	S	C	C	C	C	C	E2.80S	E5.70S	E1.90S	E1.50S	E3.30S	E2.20S
14	S	E3.50S	E2.90S	E3.60S	E3.90S	E3.50S	E2.10S	S	E2.00S	E2.10S	E1.90S	E2.00S
15	3.40	3.70	3.50	2.90	4.00	E2.80S	2.80	E2.00S	E1.80S	E2.20S	E1.80S	E2.50S
16	3.20	3.80	3.90	E4.20S	E4.60S	2.90	E2.60S	E2.80S	E1.95S	E2.10S	E2.00S	E2.00S
17	E5.00S	4.50	4.10	3.65	E3.80S	2.10	E1.50S	E1.90S	E1.95S	E2.00S	E1.50S	E2.50S
18	4.50	3.70	3.70	E5.40S	3.80	2.30	E3.95S	E2.10S	E2.10S	E2.50S	E1.50S	E2.00S
19	E4.40S	3.95	3.85	4.10	E4.00S	E4.95S	E4.10S	E3.10S	E2.50S	E2.30S	E1.50S	E1.90S
20	4.90	S	5.10	S	5.00	2.95	E2.80S	E3.30S	E1.70S	E2.40S	E1.80S	E1.95S
21	3.80	3.95	3.10	3.90	3.70	E4.10S	E2.80S	C	C	C	C	C
22	E4.40S	4.30	4.20	E4.60S	E4.60S	2.20	2.40	E2.80S	E2.00S	E2.30S	E2.10S	E1.70S
23	E5.30S	E5.20S	E4.40S	E4.90S	E3.10S	E3.50S	E4.80S	E1.80S	E3.00S	E2.20S	E2.50S	E2.80S
24	E3.60S	E5.15S	E3.50S	2.80	E4.00S	E3.50S	E2.30S	E3.00S	E1.80S	E2.30S	E2.70S	E2.80S
25	E4.10S	3.00	E4.90S	5.60	E3.70S	E4.95S	E4.00S	E4.95S	E3.95S	E4.00S	E2.10S	E5.50S
26	E4.10S	E5.60S	E4.40S	E4.00S	E5.30S	2.25	2.50	E2.20S	E1.90S	E2.40S	E2.30S	E1.90S
27	3.55	3.20	3.25	3.10	E2.70S	E2.30S	E2.30S	E2.30S	E2.40S	E1.80S	E2.10S	E2.10S
28	E4.30S	S	E3.50S	E3.20S	3.20	E2.80S	E2.40S	E2.20S	E2.20S	E2.30S	E1.80S	E1.90S
29	E3.80S	E5.00S	E3.95S	E3.70S	E3.80S	E3.65S	E3.50S	E2.60S	E2.10S	E2.20S	E1.95S	E2.10S
30	E3.80S	3.20	E4.00S	E3.60S	E3.20S	E2.50S	E3.20S	E2.50S	E2.80S	E2.10S	E2.85S	E2.30S
31												
No.	14	19	20	18	17	29	29	27	28	29	28	29
Median	3.50	E3.50	3.40	3.00	2.90	E2.60	E2.50	E2.20	E1.95	E2.10	E1.80	E2.00

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

f-min

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

The Radio Research Laboratories, Japan.

K 6

IONOSPHERIC DATA

Jun. 1962

M(3000)F2

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J2.80R	2.70	U2.85S	U2.85S	I2.70A	J2.70R	J2.80R	I2.75A	I2.70A	2.80A	AS	A	C	2.85	I2.90C	I2.80A	2.95	2.95	3.00	2.75AS	3.00S	2.75S	I2.65A	2.85S
2	C	C	C	C	C	C	C	C	C	A	2.85	2.80	A	2.95	S	2.90	A	A	3.05S	3.05S	J3.05S	A	2.75S	2.70S
3	2.70S	2.70S	2.75S	3.00S	2.85	3.00	3.15	3.05	3.10S	3.10S	A	2.90	S	2.90S	3.00	J3.10S	2.80	2.85	2.85	J2.95S	S	3.00S	A	2.80S
4	2.80S	2.90	J2.75S	S	2.65	3.00	3.30	3.35	2.90	2.85	S	3.15	2.85	2.90S	U2.90S	2.95S	2.80	2.85	2.75	2.85	J3.00S	2.80	2.80	2.50S
5	2.90S	2.80S	2.55S	2.45S	2.60	2.65	2.90	3.20S	AS	A	A	I2.90R	U2.95R	I2.85R	2.90	I2.85R	2.85	A	C	I2.95A	3.10	I3.20A	I2.90S	I2.85A
6	I2.75A	I2.75A	U2.85S	2.95F	J2.80R	3.00	2.95	3.30	A	A	A	S	A	A	2.95R	3.00	2.95	I2.90R	U2.80R	I2.95A	J3.10R	S	S	U2.95S
7	S	A	I2.90R	I2.80A	I2.75A	J2.80R	I3.00R	3.45	3.40R	A	A	A	A	A	A	I3.00A	2.95	J2.90R	J3.05S	J3.00R	J3.05R	U2.95R	2.85	U2.75R
8	U2.80R	2.80	3.00	2.90	2.75	J2.60R	2.90	3.05S	I3.00A	U2.80S	I2.70A	R	S	S	I2.90A	U2.95S	I3.05A	3.25	J2.95S	3.05	I2.95A	I2.75A	I2.75S	U2.80S
9	U2.85S	J2.75S	J2.90S	J2.85R	2.75	U2.85S	3.10	J3.30R	A	A	S	A	A	S	I2.90S	U2.85S	A	A	J3.00R	I3.10A	I2.90A	I2.80A	2.85	I2.75S
10	J2.75S	U2.75S	I2.80S	3.05	I2.90A	U3.05R	2.90	2.85	U2.85S	I2.80A	2.95	I3.05A	U2.80S	A	A	2.90R	2.80	U2.85S	J3.00R	I2.90A	I2.80A	U3.00S	2.80	2.75
11	J2.70R	J2.70S	J2.90R	2.85S	2.75	R	R	S	S	C	C	AS	S	S	A	A	A	U3.15S	3.05	S	S	S	S	S
12	A	U2.95S	3.00	3.00S	3.20	2.95S	S	3.15	2.90S	U3.05S	U2.85S	A	A	A	A	3.10	S	U3.05S	2.90S	S	3.20	J2.95S	U2.85S	A
13	U2.80S	A	2.90	F	U3.15F	J3.35R	S	A	A	A	S	S	S	C	C	C	C	C	3.10	U2.85S	3.00	U3.15S	2.90	U2.90S
14	3.05	U3.05S	3.05	J2.90RF	J2.90F	S	S	3.35S	3.15	S	S	A	S	A	A	2.85	U2.85R	A	A	S	J3.25R	U2.80S	A	A
15	U3.05S	F	A	A	A	S	A	A	2.85	3.25	A	3.20	S	2.85	AS	2.90	3.05	2.85	3.10	3.10	2.95	U2.95S	S	S
16	2.85	2.80	2.85	J2.90F	2.95	2.85	U3.00R	J3.50R	A	A	A	2.75	2.85	J2.95R	3.15	3.05	3.15	A	A	A	A	3.10	J2.75S	U2.85R
17	U3.10S	2.95	2.95	3.05	2.80	S	3.25	R	A	A	A	A	A	A	I2.80A	2.85	2.85	3.05	I3.15A	I3.10S	I3.00A	J2.85R	U2.90S	I2.90F
18	3.00	U2.80R	I3.00A	I3.00F	2.80	2.95	3.30	I3.25A	A	2.80	A	A	A	A	A	J2.80R	I2.95R	I3.00S	I3.10A	U3.20S	3.10	U3.25	I3.10F	J2.95S
19	3.15S	3.05	I3.00F	J2.70R	2.90	3.00	2.85	I3.05S	3.30	A	A	2.65S	2.85	A	A	U3.10S	A	J3.05S	I3.10S	3.20S	I3.10S	I2.85S	I2.90S	U2.95S
20	2.80	2.95S	J3.00R	2.95	2.85	2.75	2.80	I3.00S	I3.10R	I3.05A	I2.95A	A	A	S	I2.90A	I2.95S	I2.95A	I3.20A	3.05	I3.10S	I3.00A	I2.85A	J2.80S	2.90
21	2.90	2.80	2.85	2.95	2.85	2.75	U3.10S	3.60	J3.35R	J3.40R	I3.00A	I2.90A	A	A	I3.00A	I3.15A	3.05	I3.20R	U3.15R	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	J2.95R	I2.85R	2.75R	3.00	I2.75R	2.90	3.05R	2.95	J2.85R	U2.95R	J3.10R	I3.05R	I2.90A	I2.95A	I2.90A
23	U2.95R	U3.10F	2.90	3.00	2.95	3.10	J3.15R	J3.40R	R	S	3.15	U2.90R	J2.85R	J2.85R	J2.95R	I3.15R	3.10	2.90	U3.10S	R	S	J2.90R	I2.90S	J2.85S
24	J2.80S	2.80	2.90	3.05	3.00	3.15	U3.10R	J3.25R	U3.15R	A	A	A	A	J3.00R	2.90	J2.95R	3.10	3.10R	3.40	U3.35R	2.80	2.85	U2.80R	I2.95A
25	J2.85R	J2.95R	3.00	3.05	3.00	J3.15R	3.35	2.95	3.10	A	C	A	C	C	C	C	C	A	C	C	R	A	A	S
26	S	C	C	C	C	S	S	C	C	3.05	S	S	A	S	3.05	3.00	U3.00S	3.35	2.95R	3.00S	2.90	2.95	A	A
27	S	J3.00R	3.05	I2.85A	2.95	3.25	3.05	I3.15R	I3.30A	3.05	3.30	I2.90R	J2.80R	I2.90A	U3.15R	U2.95R	J2.90R	R	A	J3.10R	J2.80R	I2.80R	J2.75R	2.90S
28	I2.95S	J3.00F	3.00R	I2.90A	J3.00R	I2.75A	3.30	3.00	I3.10A	I3.05R	I3.00A	U2.95R	U2.80R	I2.85S	J2.65R	I3.05A	A	A	2.80R	3.00	3.25	I3.10S	2.65	U2.85S
29	2.75	2.80	U3.00S	I2.90F	2.90F	3.35	I3.10R	J3.20S	I3.25S	3.25	S	A	A	I2.95R	2.95	I3.10S	S	A	S	3.30	I2.90A	J2.95S	I2.65S	I2.85S
30	I2.80S	2.85	3.05	2.95	I2.90S	2.95	3.30R	I3.55A	A	R	A	I2.80S	I2.80A	I2.85S	I2.85A	I2.90A	J2.95R	U3.00R	J3.20R	I3.25R	I3.00S	2.95	J2.90F	I2.90A
31																								
No.	24	24	26	24	26	23	22	23	17	15	10	14	10	14	19	27	21	20	24	23	24	25	22	23
Median	2.80	2.80	2.90	2.90	2.90	2.95	3.10	3.20	3.10	3.05	U2.95	U2.90	2.85	2.90	2.90	2.95	2.95	3.00	3.05	3.05	3.00	U2.95	U2.80	U2.85

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

M(3000)F2

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

The Radio Research Laboratories, Japan.

K 7

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	AS	A	C	S	C	A	A	S	S					
2						C	C	C	C	A	L	A	A	S	A	A	A	A	A					
3								A	A	A	A	A	S	A	A	A	A	S	A					
4						L			S	A	A	S	S	S	S	S	L	L	L					
5						A	S	L	AS	A	A	L	L	3.45^L	L	A	A	A	C					
6							A	A	A	A	A	S	A	A	A	A	L	A	A					
7							A	A		A	A	A	A	A	B	A	A	L	L					
8						L	u3.05^S	S	A	L	A	L	S	S	A	A	A	A						
9							A	A	A	B	S	A	A	S	L	A	A	A	A					
10							A	A	A	A	B	A	S	A	A	S	B	AS	A					
11								S	S	C	C	AS	S	S	A	A	A	L	S					
12							S	L	B	L	S	A	B	A	A	A	S	S	S					
13							S	A	A	A	S	S	S	C	C	C	C	C	L					
14						S	S	S	S	S	S	A	S	A	A	L	L	A	A					
15						S	A	A	A	A	A	A	S	S	AS	R	A	A	A					
16							L	L	S	A	A	A	A	R	R	S	L	A	A					
17						S	S	S	A	A	A	B	A	A	A	A	A	A	A					
18						L	L	A	A	A	A	A	A	A	A	S	L	A	A					
19							L	A	A	A	A	S	A	A	A	A	A	A	AS					
20						A	A	S	A	A	A	A	A	S	A	S	A	A	A					
21						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
22						C	C	C	C	AS	A	S	u3.45^L	3.35^L	3.35	S	S	S	L					
23							L	L	L	S	S	S	S	S	A	S	A	A	S					
24							S	S	S	A	A	A	A	S	A	A	S	3.55^L						
25								A	L	A	S	A	R	A	A	B	L	A	S					
26								L	A	L	S	S	A	S	L	L	S		A					
27								A	A	A	A	A	A	A	A	A	AS	A	A					
28						A	A	S	A	A	A	A	A	S	S	A	A	A	A					
29								S	S	A	S	A	A	S	A	S	S	A	A					
30						L	A	A	A	A	A	S	A	S	A	A	A	A	A					
31																								
No.							1						1	2	1			1						
Median							u3.05						u3.45	3.40	3.35			3.55						

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

M(3000)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

Jun. 1962 | h'F2 | 135° E Mean Time (G.M.T. + 9h.)

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						E350A	E340R	A	A	A	AS	A	C	E405S	C	A	350	345	295					
2						C	C	C	C	A	250	355	A	310	305	305	305	A	300					
3								E305A	255	255	A	E355S	S	315	275	280	345	300	300					
4						280			E330A	350	315	S	355	325	355	305	310	330	310					
5						305	300	295	AS	A	A	310	350	360	350	E340A	310	A	C					
6							310A	260	A	A	A	S	A	A	310	300	300	300	E350R					
7							295	245		A	A	A	A	A	A	A	310	300	280					
8						340	340	295	A	325	A	360	S	S	A	300A	A	255						
9							260	245	A	A	S	A	A	S	300	E360A	A	A	260					
10							305A	295	340A	A	310	A	E390S	A	A	E345S	350	345	E300S					
11								S	S	C	C	AS	S	S	A	A	A	300	E250A					
12							S	280	E350B	325	E370S	A	A	A	A	E340A	S	E410S	E290S					
13							255	A	A	A	S	S	S	C	C	C	C	C	280					
14						S	S	245	275	S	S	A	S	A	A	360	365	A	A					
15						S	A	A	E345A	290	A	300A	S	365	AS	365	E350A	270A	290					
16							300	245	A	A	A	E420A	370	320	305	325	300	A	A					
17						S	265	225	A	A	A	A	A	A	A	300	320	295	A					
18						290	260	A	A	E390A	A	A	A	A	A	300	310	E290A	A					
19							305	265	265	A	A	E410S	E390A	A	A	E340A	A	E340S	260A					
20						390	300	S	E250A	A	A	A	A	S	A	S	A	A	260					
21						310	300	245	245	280	A	A	A	A	A	A	300A	E290A	280					
22						C	C	C	C	340	380	E420S	300	370	305	260	300	310	275					
23							260	240	245	S	340	345	360	325	320	E300S	290A	305	260					
24							245	245	250	A	A	A	A	320	340	300	295	295						
25								290A	310	E340S	350	A	395	410	345	345	345	A	E350S					
26								310	325	295	S	S	A	E400S	310	310	280		295					
27								E300A	A	E290A	E290A	310A	E395A	A	310	305	E300S	295	A					
28						A	290A	E300S	A	E390A	A	E360A	E395A	S	E355S	A	A	A	E340A					
29								E290A	S	300A	S	A	A	315	340	S	S	A	E250A					
30						310	250A	A	A	345	A	S	A	S	A	A	310	E295S						
31																								
No.						7	17	16	10	11	7	6	6	11	14	16	20	17	16					
Median						310	295	250	260	300	315	330	360	325	310	300	310	300	280					

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

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

Jun. 1962

h'F

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300A	290	290	300A	A	A	A	A	A	A	AS	A	C	S	C	A	A	S	S	E350A	E345A	E315A	A	E310S
2	C	C	C	C	C	C	C	C	C	A	205	A	A	S	A	A	A	A	A	250	230	A	305	E355A
3	350	265	295	295	255	E300A	250	A	A	A	A	A	S	A	A	A	A	S	A	255	I230S	295	I320A	255
4	295	275	260	295	280	255	250	225	S	A	A	E275S	S	S	S	S	255	210	250	260	245	205	300	325
5	255	265	300	325	310	A	S	235	AS	A	A	E260A	E250A	290A	210	I245A	A	A	C	A	E350A	A	E300A	A
6	A	A	E350A	260A	250	250A	I240A	I245A	A	A	A	S	A	A	A	A	E290R	A	A	I250A	250	S	E350A	E310A
7	E300A	A	E350A	A	A	E350A	I225A	I245A	245	A	A	A	A	A	B	A	A	E250A	245	250A	245	250	E360A	E350A
8	300A	280A	250A	260	295	250	E255S	S	A	225	I240A	250A	S	S	A	A	A	A	250A	250A	A	A	E340A	E340A
9	295	250A	255	295	300A	250A	I250A	A	A	B	S	A	A	S	E250S	A	A	A	A	I255A	A	A	300	E340A
10	E300S	300	260	250A	I250A	250A	A	A	A	A	B	A	S	A	A	S	B	AS	A	A	A	320A	255	295
11	E300S	255	245	250	250	255	225	S	S	C	C	AS	S	S	A	A	A	225	I250S	I260S	E260S	S	S	E290S
12	I300A	E350A	260	245	245	250	I250S	250A	I260B	250A	S	A	B	A	A	A	S	S	S	S	225	310A	E310S	I305A
13	E340A	A	320A	260	E290A	245	S	A	A	A	S	S	S	C	C	C	C	C	260	E310S	E300A	250	E290S	295
14	260	E250S	255	265	275	I290S	I270S	I220S	I205S	S	S	A	S	A	A	245	245	A	A	S	205	295	A	A
15	E325A	E350A	A	A	A	S	A	A	A	A	A	I245A	245	E310S	I260AS	E310A	A	A	A	260A	300A	315	310S	315
16	290	E350A	300A	250	295	245	245	210	S	A	A	A	A	R	205	E255A	E255S	A	A	A	A	225	E340A	300
17	295	E300A	310A	290A	295	I250S	I270S	S	A	A	A	B	A	A	A	A	A	A	A	E290A	I270A	290	270	250A
18	E300A	E340A	I300A	300A	E300A	245	245	A	A	A	A	A	A	A	A	S	245	A	A	245A	E260A	E250A	345	290A
19	270A	245	245	245	250A	245	215	A	A	A	A	S	A	A	A	A	A	A	AS	260A	240	E310S	300	255
20	255	295	260	250A	290A	A	A	S	A	A	A	A	A	S	A	S	A	A	A	S	A	A	290A	290
21	290A	260	260	270	260	245	245	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	AS	A	S	E290A	260	E295B	S	I245S	I250S	245	245	290	I260A	I260A	I275A
23	245	260	250	250	260	245	245	225	200	S	S	S	S	S	A	S	A	A	S	250	255	260	E340A	300
24	E300A	290	260	245	250	225	I230S	S	S	A	A	A	A	S	A	A	I245S	245	245	245	E340A	340A	E360A	A
25	260	290	260	260	250	205	245	A	E290S	A	S	A	E300S	A	A	B	E305S	A	S	E350A	280	A	A	E260S
26	S	345	315	310	315	280	I320S	E325S	A	200	I250S	S	A	S	E255A	245	I230S	260A	I255A	250A	E300A	E260A	A	A
27	S	E300A	E300A	A	295	260	245	A	A	A	A	A	A	A	A	A	AS	A	A	245	245	255	295	310A
28	I290S	300A	260	I250A	290	A	A	S	A	A	A	A	A	S	S	A	A	A	A	260A	240	I220S	300	300
29	310	300	275	340	290	245	260	S	S	A	S	A	A	S	A	S	S	A	A	225A	I270A	300	355	305
30	305	300	255	260	225A	250B	A	A	A	A	A	S	A	S	A	A	A	A	E255S	225	E290A	290	300S	I305A
31																								
No.	18	19	24	25	23	21	19	8	4	3	3	4	4	2	6	3	6	5	8	19	16	19	17	19
Median	290	280	260	260	275	250	245	230	U225	225	U240	E255	E270	275	E250	245	U245	245	250	250	245	260	300	295

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

h'F

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

The Radio Research Laboratories, Japan.

K 10

IONOSPHERIC DATA

Jun. 1952

h'Es

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	100	105	105	100	105	100	100	105	105	105	105	C	110	C	110	110	105	110	105	110	105	105	105
2	C	C	C	C	C	C	C	C	C	105	105	105	105	110	120	110	105	105	105	100	100	105	100	100
3	100	105	105	105	105	110	105	105	100	105	105	105	105	105	105	105	100	100	100	100	S	105	105	S
4	S	S	115	S	E	120	105	110	105	105	105	105	100	105	S	110	G	130	105	E	105	105	105	110
5	100	100	125	110	100	100	100	100	105	105	100	110	105	B	145	100	110	110	C	100	105	105	100	100
6	100	100	100	100	110	115	110	105	105	100	100	100	100	100	100	100	100	110	100	105	105	100	100	100
7	100	100	100	100	100	100	110	110	105	105	105	100	100	100	105	105	100	105	115	100	105	100	100	100
8	100	100	100	110	115	G	115	S	105	105	105	105	S	S	105	105	105	105	100	105	100	100	100	100
9	105	100	100	100	100	115	105	105	105	100	100	100	100	S	105	100	100	100	100	100	100	100	S	100
10	100	100	100	100	100	125	100	105	110	105	105	110	S	100	100	S	B	105	100	110	105	105	S	S
11	S	S	100	100	100	S	B	110	105	C	C	110	S	S	105	100	110	S	S	S	115	110	S	S
12	105	100	100	E	E	S	S	B	B	110	S	105	100	100	100	100	S	S	S	S	S	105	S	105
13	100	100	105	100	100	105	S	105	100	100	110	S	S	C	C	C	C	C	S	S	100	S	S	S
14	S	S	E	E	E	S	S	S	S	S	S	120	S	110	125	S	S	105	105	S	S	110	105	105
15	100	125	100	100	100	110	105	105	105	100	100	100	B	105	155	100	100	100	105	105	100	S	105	S
16	100	100	100	100	100	B	S	S	100	105	100	100	100	110	B	125	110	115	105	105	100	S	100	S
17	100	100	100	95	100	100	S	S	100	100	100	100	100	100	100	105	110	100	100	100	100	100	100	100
18	100	100	100	100	100	100	110	100	100	100	100	100	100	100	100	S	B	100	100	100	100	100	100	100
19	100	100	S	100	100	100	100	100	100	100	100	S	100	100	100	100	100	100	100	100	S	100	S	S
20	S	100	100	100	100	105	100	100	100	100	100	100	100	S	100	S	100	100	100	100	100	100	100	S
21	100	100	100	100	100	S	105	100	100	100	100	100	100	100	100	100	110	110	105	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	100	100	100	S	B	B	S	S	100	100	100	105	105	100	100
23	105	S	100	100	100	100	S	S	B	S	S	S	S	S	100	100	100	100	S	S	S	S	110	100
24	100	100	100	100	E	S	S	S	S	110	105	100	100	S	100	105	S	S	105	S	105	105	100	100
25	S	S	100	100	E	S	S	110	105	100	S	100	S	100	100	115	110	110	S	105	S	100	100	S
26	S	S	S	S	100	S	S	S	110	S	S	S	110	S	S	S	S	110	100	100	100	100	100	100
27	100	100	100	100	100	S	110	105	100	100	100	100	100	100	100	110	100	100	100	S	S	S	S	105
28	105	105	100	100	100	100	100	S	110	110	115	115	110	S	110	110	110	105	105	100	100	100	100	100
29	100	100	100	100	100	100	S	105	100	100	100	100	100	S	120	105	105	100	100	100	100	110	S	S
30	S	100	S	100	100	S	110	100	100	100	100	100	100	100	115	110	110	105	S	S	110	100	S	100
31																								
No.	21	22	24	24	23	17	17	19	24	26	24	26	20	18	24	23	21	26	23	20	22	24	20	19
Median	100	100	100	100	100	105	105	105	105	100	100	100	100	100	100	105	105	105	100	100	100	100	100	100

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

h'Es

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

The Radio Research Laboratories, Japan.

K11

IONOSPHERIC DATA

Jun. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

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

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

Types of Es

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

The Radio Research Laboratories, Japan.

K12

IONOSPHERIC DATA

Jun. 1962

hpF2

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J355R	390	U355S	U350S	I385A	J400R	J355R	A	A	A	AS	A	C	S	I340C	I365A	350	345	305	355AS	355S	355S	I350A	350S
2	C	C	C	C	C	C	C	C	C	A	350	355	A	310	S	320	A	A	305S	295S	J295S	A	350S	355S
3	350S	350S	345S	300S	345	305	265	S	295S	285S	A	355	S	335S	305	J295S	355	325	310	J325S	S	300S	A	350S
4	325S	325	J345S	S	375	300	280	255	S	355	S	295	355	345S	S	305S	325	345	355	315	J305S	345	375	450S
5	335S	370S	395S	400S	375	355	315	S	AS	A	A	R	U355R	I370R	350	I350R	340	A	C	A	A	A	S	A
6	A	A	U355S	350F	J350R	305	310	290	A	A	A	S	A	A	345R	320	315	I340R	U390R	I310A	J300R	S	S	A
7	S	A	R	I350A	I370A	J350R	I330R	255	250R	A	A	A	A	A	A	I340A	325	J320R	J310S	J305R	J300R	U305R	A	U365R
8	U350R	340	305	305	355	J395R	355	300S	I335A	G	A	R	S	S	I350A	U310S	I300A	285	J305S	300	I330A	I370A	I380S	U365S
9	U340S	J340S	J320S	J350R	380	U340S	305	J255R	A	A	S	A	A	S	I330S	A	A	A	J305R	A	A	A	355	I355S
10	J355R	U390S	I365S	305	I330A	U300R	340	345	U350S	I355A	350	A	S	A	A	350R	B	U350S	J325R	I335A	I380A	U320S	360	395
11	J390R	J355S	J320R	345S	350	R	R	S	S	C	C	AS	S	S	A	A	A	U315S	310	S	S	S	S	S
12	A	A	330	320S	310	325S	S	300	350S	U310S	U345S	A	A	A	A	305	S	U310S	345S	S	295	J345S	U350S	A
13	U375S	A	355	F	U300F	J280R	S	A	A	A	S	S	S	C	C	C	C	C	305	U355S	325	U305S	330	U330S
14	320	U310S	315	J325RF	J330F	S	S	275S	300	S	S	A	S	A	A	365	U380R	A	A	S	J300R	U355S	A	A
15	U310S	F	A	A	A	S	A	A	350	300	A	310	S	370	AS	370	340	360	310	310	330	U345S	S	S
16	350	360	350	J330F	320	355	U310R	J260R	A	A	A	350	340	340	310	325	305	A	A	A	A	305	J385S	U350R
17	U300S	325	330	320	360	S	290	R	A	A	A	A	A	A	A	355	350	310	I300A	I300S	I320A	J350R	U340S	I310F
18	305	U350R	I345A	F	355	305	275	I290A	A	A	A	A	A	A	A	J350R	I340R	I320S	I300A	U295S	290	U275R	F	J340S
19	310S	305	I305F	J355R	350	305	345	I330S	295	A	A	S	S	A	A	S	A	S	I305S	300S	I300S	I350S	I340S	U320S
20	355	340S	J305R	315	350	390	350	I325S	I320R	I320A	I340A	A	A	S	A	S	A	I300A	300	I300S	I305A	I350A	J355S	355
21	335	350	350	320	350	365	U305S	250	J260R	A	A	A	A	A	A	A	300	I300R	U295R	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	J345R	R	S	340	I380R	345	300R	340	J340R	U315R	J305R	I300R	I335A	I350A	I340A
23	U345R	U345F	350	340	340	305	J300R	J270R	R	S	S	U345R	J370R	J350R	J345R	I315R	300	350	U305S	R	S	J340R	I345S	J350S
24	J350S	380	345	305	320	300	U300R	J295R	U295R	A	A	A	A	J320R	350	J315R	300	300R	255	U265R	355	355	A	A
25	J345R	J350R	305	310	305	J290R	275	305	310	A	C	A	C	C	C	C	C	A	C	C	R	A	A	S
26	S	C	C	C	C	S	S	C	C	305	S	S	A	S	315	310	U305S	290	340R	340S	330	325	A	A
27	S	J305R	300	I340A	325	295	300	I315R	I290A	305	A	R	A	A	U310R	U330R	J345R	R	A	J300R	J365R	I360R	J365R	350S
28	I350S	J350F	325R	I340A	J315R	A	295	330	A	R	A	A	A	S	J395R	I335A	A	A	360R	325	285	I310S	395	U355S
29	375	360	U320S	I340F	345F	260	I290R	J295S	S	A	S	A	A	R	350	I320S	S	A	S	245	I340A	J350S	S	I355S
30	I355S	350	330	320	I345S	345	280R	I260A	A	R	A	S	A	S	I360A	I350A	J330R	U315R	J295R	I290R	I310S	330	J345F	I350A
31																								
No.	23	22	25	23	26	22	22	20	13	9	4	6	5	9	15	23	19	19	24	21	22	23	17	20
Median	350	350	330	330	350	305	300	290	300	310	350	350	355	345	345	325	330	320	305	305	310	U345	350	U350

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

hpF2

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

The Radio Research Laboratories, Japan.

K13

IONOSPHERIC DATA

Jun. 1962

ypF2

135° E Mean Time (G.M.T. + 9h.)

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J140R	105	U90S	U145S	I140A	J100R	J100R	A	A	A	AS	A	C	S	I70C	I75A	60	55	90	95AS	55S	95S	I90A	105S
2	C	C	C	C	C	C	C	C	C	A	95	95	A	90	S	85	A	A	95S	100S	J100S	A	95S	95S
3	85S	105S	105S	105S	100	95	80	S	100S	110S	A	90	S	75S	100	J105S	80	80	90	J115S	S	95S	A	100S
4	90S	90	J90S	S	50	95	95	95	S	95	S	80	80	55S	S	90S	75	80	80	90	J95S	105	80	105S
5	110S	105S	115S	105S	75	105	100	S	AS	A	A	R	U45R	I125R	95	I80R	60	A	C	A	A	A	S	A
6	A	A	U90S	95F	J145R	90	95	55	A	A	A	S	A	A	100R	85	85	I70R	U90R	I80A	J95R	S	S	A
7	S	A	R	I125A	I130A	J95R	I50R	55	55R	A	A	A	A	A	A	I55A	80	J125R	J85S	J100R	J95R	U100R	A	U130R
8	U95R	105	95	140	95	J105R	90	105S	I100A	G	A	R	S	S	I75A	U95S	I70A	60	J95S	95	I95A	I120A	I100S	U85S
9	U105S	J115S	J125S	J95R	125	U105S	60	J65R	A	A	S	A	A	S	I70S	A	A	A	J90R	A	A	A	100	I135S
10	J140R	U105S	I105S	90	I100A	U95R	115	150	U55S	I110A	55	A	S	A	A	55R	B	U95S	J65R	I80A	I60A	U75S	135	100
11	J110R	J140S	J125R	100S	100	R	R	S	S	C	C	AS	S	S	A	A	A	U70S	95	S	S	S	S	S
12	A	A	70	100S	75	85S	S	80	65S	U90S	U75S	A	A	A	A	60	S	U75S	65S	S	55	J55S	U55S	A
13	U75S	A	55	F	U65F	J45R	S	A	A	A	S	S	S	C	C	C	C	C	85	U90S	75	U90S	85	U70S
14	80	U85S	85	J80RF	J75F	S	S	70S	55	S	S	A	S	A	A	80	U45R	A	A	S	J50R	U90S	A	A
15	U85S	F	A	A	A	S	A	A	55	55	A	50	S	80	AS	75	55	50	85	85	70	U70S	S	S
16	65	90	65	J70F	85	90	U85R	J65R	A	A	A	60	80	65	55	50	80	A	A	A	A	60	J60S	U75R
17	U70S	70	75	65	90	S	55	R	A	A	A	A	A	A	A	70	140	105	I65A	I80S	I85A	J65R	U75S	I85F
18	90	U95R	I45A	F	90	90	45	I70A	A	A	A	A	A	A	A	J95R	I70R	I85S	I80A	U55S	100	U80R	F	J65S
19	90S	90	I85F	J90R	95	100	60	I60S	50	A	A	S	S	A	A	S	A	S	I85S	65S	I90S	I80S	I90S	U85S
20	90	55S	J90R	85	95	55	100	I75S	I50R	I60A	I60A	A	A	S	A	S	A	I55A	100	I85S	I105A	I100A	J90S	90
21	65	90	95	80	80	85	U70S	50	J55R	A	A	A	A	A	A	A	95	I60R	U50R	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	J55R	R	S	65	I70R	75	90R	75	J70R	U130R	J90R	I90R	I100A	I90A	I70A
23	U60R	U50F	95	60	60	90	J95R	J75R	R	S	S	U60R	J45R	J55R	J55R	I60R	60	95	U85S	R	S	J70R	I60S	J65S
24	J95S	65	55	85	80	55	U55R	J55R	U100R	A	A	A	A	J75R	95	J85R	60	95R	90	U80R	100	90	A	A
25	J60R	J95R	95	85	95	J55R	70	95	85	A	C	A	C	C	C	C	C	A	C	C	R	A	A	S
26	S	C	C	C	C	S	S	C	C	90	S	S	A	S	75	85	U75S	55	65R	55S	85	80	A	A
27	S	J90R	95	I100A	75	50	45	I55R	I60A	110	A	R	A	A	U45R	U85R	J110R	R	A	J95R	J130R	I110R	J85R	60S
28	I55S	J50F	70R	I90A	J80R	A	50	75	A	R	A	A	A	S	J50R	I65A	A	A	85R	70	65	I70S	100	U95S
29	80	85	U75S	I75F	100F	65	I55R	J55S	S	A	S	A	A	R	55	I80S	S	A	S	100	I90A	J50S	S	I70S
30	I90S	90	60	75	I80S	50	65R	I50A	A	R	A	S	A	S	I90A	I75A	J65R	U75R	J55R	I45R	I85S	65	J70F	I65A
31																								
No.	23	22	25	23	26	22	22	20	13	9	4	6	5	9	15	23	19	19	24	21	22	23	17	20
Median	90	90	90	90	90	90	70	70	55	90	U70	70	65	75	75	80	75	75	85	85	90	U80	90	U85

Note: Parameters reduced to lower frequency range are affected by defects of the ionosonde.

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

Jun. 1962

foF2

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	F	FS	FS	FS	5.7	6.4	I6.1A	I5.7A	6.1	6.6	6.6	I6.2C	6.3S	6.2	6.4	6.4S	I6.8S	S	A	S	S
2	S	S	S	4.9	I4.3S	4.1	5.5S	5.4	6.3	A	A	I6.4A	8.1	8.4	J8.6S	9.9	J10.1S	9.3S	J9.8S	J9.8S	7.0	5.2	J5.2S	I5.5A
3	J5.3S	I5.5S	FS	J4.9S	I4.6S	I5.1S	J6.3S	6.6	I6.5A	I6.3A	I6.7A	7.8H	9.0	J9.7S	9.5	8.8	9.0	9.1	J9.5S	I9.5S	8.5S	I6.9S	S	S
4	S	FS	F	S	J4.9S	5.3Z	I5.8S	6.5	6.6	8.1	8.6	7.2	I8.0C	8.7	9.1	9.1	9.0	8.8	J8.5S	I8.8S	I9.2S	SH	S	S
5	S	S	S	S	FS	5.7	6.8S	6.7	6.9	J7.8C	8.0	I6.6C	6.4	I6.6A	6.8	7.8	8.2	J8.2S	J8.8S	I9.1S	S	S	S	S
6	S	A	S	S	FS	S	6.0	J7.6S	I6.3S	5.6	I5.9A	6.5	I7.4S	8.6	J9.6S	10.3	8.7	7.8	SH	S	S	6.8	S	S
7	A	S	S	S	I4.8A	4.6	I6.1S	I7.2S	I6.1A	6.3	A	A	J7.1S	8.7	8.9	A	A	9.2	9.0	I9.0S	8.6	I7.4A	6.4	I5.8S
8	I6.5S	I6.7S	I6.7S	5.8	5.7	J5.5S	J6.3S	I5.9A	5.3	I5.8S	5.8	I5.5A	5.7	6.4S	I7.2S	7.7	7.2	5.5	I5.3S	A	A	A	J5.3S	I5.3S
9	J5.2S	S	FS	S	S	5.0	6.2	5.8	5.5	6.4	I6.5C	6.1	6.6	8.0	8.6	I9.0A	9.3S	I11.2S	J9.9S	S	S	5.6	J5.7S	I6.1S
10	6.5S	U6.1S	5.9	5.6	4.5S	J5.5S	5.1	6.5H	7.3SH	I7.6A	I6.5C	I7.0A	J8.0C	8.6	8.9	8.2	6.9	7.9S	I7.6S	S	S	S	S	A
11	S	A	S	S	4.6	4.5	5.7	6.0S	I6.1S	I6.4A	I6.7A	6.7	I6.4A	I7.4S	7.7	7.2	I7.2S	I7.4S	I7.2S	I6.4SH	S	S	S	S
12	S	S	S	J5.2S	I5.1S	J5.1S	5.3	6.1S	I7.5S	8.1	6.6	7.1S	J7.3S	8.2S	8.0	J8.1S	J8.5S	8.6S	8.7S	I8.4S	S	S	S	S
13	S	S	S	S	5.5S	I5.0A	I5.2A	5.5	5.9SH	6.7	6.1	I6.4S	J7.3S	8.1	8.0	7.9	7.6	7.1S	7.0S	I7.5S	S	S	S	S
14	S	S	S	S	J5.1S	I4.6S	5.9S	I6.3S	6.4SH	5.4H	5.7	J5.3S	6.1	6.5	I6.9S	J7.8S	8.7S	I10.0S	J11.1S	I9.8S	I6.2S	S	S	S
15	S	S	S	J4.6S	I4.5S	4.4S	4.8	I6.5S	J7.7S	6.7	6.7	6.1	6.7	J7.6S	J7.6S	I7.8S	8.6	9.2S	I9.3S	S	S	S	S	S
16	S	A	S	I6.1S	5.3	I5.2S	5.6SH	I6.9S	7.0SH	6.7	5.3	6.7	7.8	I8.5A	I8.9A	8.7	J7.5S	7.3	J7.2S	S	S	S	S	S
17	S	S	S	S	I6.2S	S	SH	6.2SH	7.0S	A	A	A	I5.9A	I6.7A	J7.6S	8.3	9.1	I10.2S	I9.5S	I8.6S	S	S	S	A
18	A	A	C	FS	FS	J5.1S	5.8	I6.1A	I6.7S	6.5	6.1	I6.8A	7.8S	8.0	I8.4C	9.1	I9.9A	I10.6A	I11.0A	A	S	A	8.3S	S
19	S	S	A	S	FS	FS	I6.1S	I8.2S	I7.9A	I6.9A	I6.0A	I6.3A	6.6S	7.2S	7.8	8.2	I9.2C	I10.6S	I11.0S	S	S	S	S	S
20	S	S	S	6.0S	5.2	I5.2S	5.5	8.4	A	A	A	A	6.1	6.9	7.6	8.2S	I8.1A	J8.5S	I8.8A	8.4	A	A	A	S
21	A	I5.9S	I6.2S	5.8	I5.2S	J5.2S	I6.2S	J8.1S	7.7	I6.2A	I5.7S	5.6	I5.9A	I7.0A	J8.2S	8.3	8.1	7.5S	7.0	I6.5S	S	S	S	S
22	S	S	S	FS	I5.3S	FS	4.8	6.8	7.9	I6.6A	I6.7C	I7.8C	I8.6C	I9.2C	J9.7S	9.9	J7.7S	J6.7S	J8.5S	I8.4S	I7.3S	A	A	S
23	A	A	A	S	S	5.2S	6.0	7.1	6.5SH	J6.6S	6.4	6.1	6.9	8.7	9.2	9.6	I8.8S	8.6S	9.0	I9.6S	S	S	S	I7.7S
24	I8.1S	I8.1S	I8.0S	J6.7S	6.1	5.5S	6.1	I7.1SH	6.0	6.0	6.2	J6.6S	I6.6C	7.5	8.9	I9.3S	J10.4S	I9.9S	J8.2S	I6.6S	5.9	6.1S	A	S
25	J5.8S	I6.0S	FS	FS	4.9S	4.4	4.8	5.8	I6.6A	6.5	7.3	7.5	I6.9A	J7.4S	8.9	9.2	9.1	9.3	I9.5S	8.8S	I8.5S	5.7	S	A
26	S	S	S	A	A	4.0	J5.5SH	6.0	6.1S	U6.8S	I6.1A	6.0	6.2	I7.0A	7.9	8.9	U9.3S	I9.2S	C	C	A	6.0	5.6S	S
27	A	S	S	FS	FS	S	4.8	6.1	6.4	I7.4A	J7.4S	6.2	6.9	J7.8S	8.6	I9.5A	8.9	I9.2S	J8.7S	J9.5S	S	S	I9.0S	I9.0S
28	I9.3S	I9.4S	I8.6S	6.9	I5.7S	I5.0A	5.4H	5.9H	5.6	I6.0A	6.6	6.2	6.2	I6.0A	7.2	7.0	6.7S	A	A	I10.6S	U6.1S	A	A	S
29	S	A	S	S	A	S	6.0S	6.1	A	A	A	I6.1A	6.6	7.0	6.3	6.7	7.6S	8.9	I9.3S	I7.6S	6.3S	I6.2S	6.1S	I6.1S
30	6.0	A	S	6.2S	5.8	5.5	S	6.1	5.4S	J5.4A	5.5	I5.8A	J6.3S	6.8	I8.0A	9.4	U9.4S	I9.4S	I10.3S	I9.4S	J5.3S	5.7	5.6	I5.5S
31																								
No.	8	7	5	12	20	23	27	30	28	26	25	27	30	30	30	29	29	29	27	21	11	10	9	8
Median	6.2	U6.1	U6.7	5.8	5.2	5.1	5.8	6.2	6.4	6.5	6.4	6.4	6.6	7.6	8.1	8.3	8.7	8.9	8.8	U8.8	7.0	6.0	5.7	U6.0
U.Q	7.3	8.2	8.3	6.2	5.6	5.2	6.1	6.9	7.0	6.8	6.7	6.8	7.4	8.5	8.9	9.2	9.2	9.4	9.5	9.5	8.5	6.8	7.4	6.9
L.Q	5.6	5.9	6.0	5.0	4.7	4.5	5.3	6.0	6.1	6.1	5.8	6.1	6.3	6.9	7.6	7.8	7.6	7.6	7.6	7.6	6.1	5.7	5.4	5.5
Q.R	1.7	2.3	2.3	1.2	0.9	0.7	0.8	0.9	0.9	0.7	0.9	0.7	1.1	1.6	1.3	1.4	1.6	1.8	1.9	1.9	2.4	1.1	2.0	1.4

foF2

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

The Radio Research Laboratories, Japan.

Y 1

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							3.6	L	I4.3A	A	A	4.8	A	A	4.6	4.6	4.5	4.1	L					
2									I4.4A	A	A	A	A	A	A	R	4.5	4.3	3.8L					
3								A	A	A	A	4.9	I4.9A	A	A	I4.7C	4.5	4.3H	3.8					
4								L	L	A	A	5.4H	I4.9C	I4.7C	I4.8A	4.6	I4.5A	I4.2A	A	L				
5							L	L	4.3L	I4.7C	I4.5C	4.8	A	A	A	4.4	I5.1A	4.3	A					
6							L	L	A	L	I4.8A	I4.9A	C	A	A	A	C	A						
7								A	A	A	A	A	A	A	A	A	A	A	A					
8									4.4	4.6	A	A	C	C	A	A	4.4	A	A					
9									A	4.7	I4.9A	A	I4.8A	C	A	A	A	A	A					
10										I4.9A	5.1	4.9	4.5	I5.0A	A	A	4.4	4.5	A					
11								L	L	A	A	4.9	A	A	4.8	4.6	L	I4.4A	L					
12								I4.4LH	I4.4A	I4.6A	4.8	I4.8A	4.8	4.8	4.7	I4.6A	A	A	3.7					
13								A	4.5	4.7	L	A	A	A	A	A	4.4	A	3.9L					
14								L	4.0		5.2H	I4.8L	4.8	4.8	4.8C	4.9H	4.5H	I4.2A	3.8					
15								A	A	I4.8L	4.7	A	A	I4.9A	A	I4.8A	4.6	A	A	A				
16										4.7	4.8	I4.8R	A	A	A	A	L	A	A					
17									A	A	A	A	A	A	A	4.8	I4.7A	4.3	A					
18								A	A	A	4.9	A	A	A	C	A	A	A	A					
19							L	A	A	A	A	A	A	A	A	A	C	I4.2A	I3.8A					
20								A	A	A	A	A	5.0C	4.9	4.9C	4.7	I4.5A	A	A					
21							L	4.1L	L	A	A	A	A	A	A	A	4.4	4.3L	L					
22							A	A	A	A	C	C	C	C	C	A	4.6	4.3	L					
23								4.4		4.5H	4.8	A	A	A	I4.7A	A	A	A	A					
24									L	4.5H	4.6	4.9	5.0	4.8	4.6	4.6	4.5	4.2	L					
25								L	I4.3A	4.6	A	A	A	A	A	4.7	4.9S	A	A					
26									A	I4.5A	I5.1A	A	A	A	A	A	A	4.2	C					
27								L	A	A	A	A	A	A	A	A	A	A	A					
28									4.3L	I4.6A	4.8	4.8	4.6H	I4.7A	A	A	A	A	A					
29								A	A	A	A	A	4.7	I4.7A	4.7	4.6	I4.5C	4.2	3.7					
30							L	3.7	3.9	A	A	A	4.8	A	A	A	I4.4A	4.3	3.8L					
31																								
No.							1	4	10	13	13	12	11	9	9	13	18	16	8					
Median							3.6	4.2	4.3	4.6	4.8	4.8	4.8	U4.8	4.7	4.6	4.5	4.3	3.8					

foF1 — Sweep 1.0 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan

Y 2

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							1.90	2.40	2.90	3.20	I3.20A	3.30	A	A	A	A	I3.05A	2.70	2.30					
2							2.00	2.55	3.00	3.10	R	A	A	R	R	C	3.20R	2.80	2.20					
3							1.90	2.50	3.00	3.15	3.25R	3.40	C	A	A	A	A	A	I2.35A					
4							2.00	2.60	3.00	3.20	I3.30C	C	C	A	A	A	A	A	I2.20A					
5							2.10	A	A	A	3.30C	A	A	A	A	R	3.15	2.80	2.40					
6							2.00	2.50	2.90	I3.05C	3.15	3.30	3.30	C	A	A	C	A	2.50					
7							A	2.65	3.10	3.30	C	C	C	C	C	I3.40A	3.15	2.70	2.20					
8							2.10	I2.30A	I2.80A	I3.25C	I3.40C	I3.45C	I3.60C	C	C	3.30	3.10	2.80	2.10					
9							A	I2.50A	3.05	I3.20A	C	C	A	A	A	A	A	A	A					
10							2.00	A	A	A	3.50	C	C	C	C	A	A	A	2.40					
11							1.90	2.60	3.00	I3.25C	I3.35C	3.45	A	A	3.60	3.30	3.05	2.70	2.10					
12							S	2.45	2.95	3.10	3.30	3.40	I3.40A	3.65	3.30	A	A	A	A					
13							A	A	A	A	A	C	A	A	A	A	3.20	2.75	A					
14							A	2.55	3.00H	C	C	C	C	3.70	I3.60A	3.40	3.20	I2.90A	I2.35A					
15							A	A	A	A	3.20	3.40	3.40	3.40	3.45	3.50	3.20	2.80	2.25	2.10				
16							A	A	A	A	A	I3.70R	A	C	3.60	3.35	3.25	3.00	2.40					
17							A	A	3.20	I3.40A	3.50	3.50	C	C	C	I3.55C	I3.30A	3.00	2.40					
18							A	2.70	3.10	I3.20A	I3.50A	I3.65C	C	C	C	C	3.30	3.05	2.65					
19							A	2.60	2.95	A	A	A	A	A	A	C	C	A	A					
20							A	2.50	3.05	3.15	3.40	3.40	C	C	C	C	3.20	3.00	2.40					
21							A	A	A	A	A	A	I3.20C	I3.20C	A	A	A	A	A					
22							2.15	2.60	3.05	3.30	C	C	C	C	C	A	A	A	A					
23							2.05	2.45	A	A	A	A	A	C	C	C	3.20	2.85	2.20					
24							1.80	2.60	3.00	3.10	3.40	3.50	A	A	A	C	3.30	2.90	I2.40S					
25							A	2.70	3.00	3.20	I3.35C	I3.35C	I3.30C	A	A	A	A	A	A					
26							A	A	2.90	3.05	I3.30A	I3.40C	I3.35C	A	A	A	A	2.70	C					
27							2.00	2.50	2.95	3.20	3.30	3.40	C	C	3.40	3.30	3.10	2.85	A					
28							A	A	2.90	3.20	C	C	C	C	C	3.40C	3.20	2.85	2.20					
29							A	A	A	A	A	A	C	C	C	I3.30C	I3.10C	2.80	2.30					
30							A	2.50	2.90	3.10	3.35	3.30C	I3.50C	3.40	A	A	A	A	I2.25A	S				
31																								
No.							13	20	22	20	18	16	8	5	6	10	18	19	21	1				
Median							2.00	2.50	3.00	3.20	3.30	3.40	4 3.40	3.40	3.50	3.40	3.20	2.80	2.30	2.10				

foE

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

The Radio Research Laboratories, Japan.

Y 3

IONOSPHERIC DATA

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

Yamagawa Lat. 31° 12.5' N Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.8M	7.0M	5.1	2.6	5.2	2.2	4.5	5.4	4.6	10.1	12.7	3.8	5.4	5.4	3.9	4.0	3.1	3.4	3.3	3.0	5.2	6.0	6.0	5.1
2	5.4	5.1	4.2	2.6	2.3	1.9S	2.6	3.9	6.2	8.1	11.2	11.5	5.8	6.5	8.5	4.3	4.9	3.3	3.2	3.2	4.9	5.1	2.9	5.3
3	5.1	3.2	2.2	3.2	5.2	5.9	3.6	5.8	8.3	9.5	8.3	5.6	6.7	7.2	6.5	4.1	3.5	3.1	3.1	3.5	5.9	3.1	5.3	5.8M
4	5.0M	2.4	2.5	2.2	2.2	E	3.2	4.8	5.8	6.2	6.4	5.2	4.2	4.1	7.6	3.9	9.3	5.3	3.5	2.1	S	S	2.2	2.1
5	S	3.4	5.3	2.5	2.5	S	2.5	3.6	3.7	3.8	3.9	5.2	9.4M	12.4	11.5M	G	5.6	3.8	5.2	5.4	6.0	5.2	2.8	3.7
6	5.0	8.3	4.0	E	E	2.0	3.1	4.5	4.3	7.0M	9.6	5.4	3.9	4.7	6.3	5.7	C	5.1	3.0	3.9	4.5	S	2.3	4.2
7	7.8	5.2	5.0	4.4	5.1	3.9	3.3	6.6	7.3	4.6	7.9	8.1	12.7	9.2	10.2	12.3	16.3M	8.6	5.8	5.0	5.3	11.2	2.8	2.4
8	2.1	3.5	4.2	3.4	3.0	S	2.7	8.4	5.4	5.7	5.5	5.5	4.1	4.3	7.1	11.4	4.9	5.1	5.4	6.0	11.1	6.8M	4.2	3.1
9	2.4	2.8	3.2	3.2	3.1	2.4	3.3	3.3	4.4	5.2	5.4	5.7	5.5	4.3	7.3	10.0	10.6M	8.2	6.5	5.9	4.4	3.8	2.6	3.7
10	3.1	2.3	2.4	E	1.5	1.5	2.5	3.3	3.1	12.0	3.7	11.2	4.5	5.4	8.6	7.6	5.6	3.4	5.4	4.4	5.1	3.0	3.9	6.9M
11	5.3	10.5	3.8	2.1	2.4	2.4	3.7	5.3	5.2	8.0	11.5	9.2	7.8	6.1	6.1	5.4	11.4	6.3	6.0	2.9	3.9	2.1	S	3.7
12	4.7	3.1	2.3	3.4	2.6	3.2	2.0	3.1	5.4	5.4	4.3	7.8	3.9	G	5.6	5.5	5.3	6.0	3.9	2.9	2.3	2.6	2.3	3.2
13	2.2	S	5.1	6.3M	4.2	5.4	5.3	4.2	3.4	5.4	4.5	5.4	5.8	5.5	5.2	4.7	3.8	5.2	5.1	5.4	7.0	5.2	3.8	4.3
14	3.9	2.6	2.4	3.2	2.2	2.0	3.0	3.0	3.6	3.8	G	4.2	4.1	4.3	3.9	G	G	4.3	3.3	5.2	3.6	4.8	5.7	3.7
15	4.2	4.0	3.9	3.8	3.4	4.5	3.2	6.6	6.0	5.2	6.1	6.6	8.5	7.1	6.0M	5.5	3.7	4.5	4.8	5.4	6.2	5.0	4.4	4.3
16	4.9	7.8M	5.4	3.5	5.1	2.9	2.6	4.5	3.3	4.9	4.8	3.8	6.5	10.2	11.2	9.2M	3.8	7.9	8.2	5.3	8.6M	3.0	3.2	5.1
17	6.1	3.2	2.5	2.5	2.5	2.2	2.8	3.2	6.1	7.4	11.2	15.4	10.1	8.4	10.8	4.3	5.4	3.3	8.1	6.0	5.9	6.3	5.3	8.6
18	8.5	9.3	C	4.3	2.7	5.2	4.2	9.0	16.4	10.9	7.7	10.4	5.3	8.5	C	6.0	12.2	15.5	14.2	12.8	8.4	8.4	3.8	8.3
19	5.3	5.4	5.8	6.0	2.6	2.2	2.4	6.2	9.9	9.0	13.3	13.7	9.1	8.6	8.4	5.4	C	8.5	7.8	4.9	5.4	5.1	2.7	2.2
20	2.7	2.5	2.4	2.5	3.0	2.3	2.5	6.0	12.7	16.1M	14.8	13.5	12.0M	4.8	4.9	5.0	13.8	6.3	9.2	5.9	9.1M	7.9	8.6	5.7
21	6.3	4.1	4.9	3.0	3.0	3.3	2.9	3.7	4.4	13.6	5.5	6.0	6.2	8.0	5.5	10.6	4.0	3.4	2.6	3.7	4.1	5.9	5.0	4.9
22	5.4	3.3	4.8M	2.6	2.4	S	5.2	5.1	7.8	12.7	C	C	C	C	9.2	7.7	3.8	3.5	3.1	3.0	6.7	8.4	9.3M	5.2
23	6.7M	9.1M	8.6	5.3	2.3	2.2	2.4	2.8	3.1	3.4	4.4	5.9	5.7	5.8	5.4	7.4	8.5	6.7	6.1	3.5	2.5	S	S	2.5
24	2.7	5.3	3.8	2.0	1.9	2.3	3.3	4.3	3.4	3.6	3.9	4.1	5.5	3.9	3.7	3.1G	G	G	3.3	2.1	2.4	6.1	6.0	4.4
25	5.2	6.0	5.2	4.5	3.7	3.1	3.0	3.0	7.5	4.5	5.7	7.4M	9.8	6.6	5.5	3.9	3.9	6.2	3.8	8.2	5.3	3.8	S	5.4
26	5.1	5.1	5.2	6.3	4.4	5.0	3.1	5.2	5.5	5.4	7.1	5.5	6.7	8.3	10.3	5.0	5.6	5.6	C	C	7.4	4.2	4.4	5.8M
27	10.2	5.3	6.2	3.0	1.9	S	2.9	3.8	5.4	10.4	7.9	8.3	5.5	5.3	9.3	11.5	6.3	8.4	8.4	8.9	5.4	6.0	2.3	2.1
28	S	S	5.2	8.4	8.4	5.5	5.1	3.8	3.9	7.3	4.1	4.4	G	13.3	4.8	4.6	6.8	17.0	16.3	8.4	3.2	9.0	8.4	5.3
29	4.9	9.2	3.2	6.9	13.1	4.7	5.9	10.8	14.1	13.8	13.5	12.1	G	5.2	6.0	5.3	5.2	13.6	16.1	5.3	5.4	4.4	3.2	5.2
30	6.3	8.4	5.8	5.2	3.4	3.0	3.8	3.2	3.6	6.5	9.1	7.2	4.9	8.6	14.4	9.1	7.1	4.3	3.9	2.6	2.3	2.3	2.6	2.4
31																								
No.	28	28	29	30	30	26	30	30	30	30	29	29	29	29	29	30	28	30	29	29	29	27	27	30
Median	5.1	5.1	4.2	3.2	2.8	2.6	3.1	4.4	5.4	6.8	6.4	6.0	5.7	6.1	6.5	5.4	5.4	5.2	5.2	5.0	5.3	5.1	3.8	4.4
U.Q	6.2	7.4	5.2	4.5	4.2	4.5	3.7	5.8	7.3	10.1	10.4	9.8	8.2	8.4	9.2	7.7	7.8	7.9	8.0	5.9	6.4	6.3	5.3	5.3
L.Q	4.0	3.2	2.8	2.5	2.3	2.2	2.6	3.3	3.7	5.2	4.4	5.3	4.4	4.8	5.4	4.3	3.8	3.5	3.3	3.1	4.0	3.8	2.7	3.2
Q.R	2.2	4.2	2.4	2.0	1.9	2.3	1.1	2.5	3.6	4.9	6.0	4.5	3.8	3.6	3.8	3.4	4.0	4.4	4.7	2.8	2.4	2.5	2.6	2.1

foEs

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

The Radio Research Laboratories, Japan.

Y 4

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	4.2	2.2	1.2	2.0	3.4	3.9	4.4	A	A	E3.8^{R}	4.7	5.2	3.7	3.9	E3.1^{C}	3.4	2.8	2.7	4.1	A	A	5.0
2	4.4	4.0	3.7	1.9	2.2	S	G	2.9	5.3	A	A	A	5.5	E6.5^{R}	5.0	E4.3^{R}	G	3.2	3.1	2.7	4.2	4.5	2.2	A
3	3.6	A	1.8	1.9	2.2	2.6	2.9	5.5	A	A	A	4.6	E6.7^{C}	6.6	5.2	E4.1^{C}	3.5	3.0	2.7	3.4	4.7	2.1	2.2	2.0
4	A	2.0	2.0	2.0	2.0		A	3.6	3.8	4.8	5.7	4.7	E4.2^{C}	E4.1^{C}	6.4	3.9	8.1	5.2	3.5	2.1	S	S	E2.2^{S}	1.9
5	S	2.8	2.0	1.6	1.8	S	2.0	G	3.4	E3.8^{C}	E3.9^{C}	4.2	4.9	A	4.9		5.3	3.8	5.0	A	A	A	2.3	A
6	3.7	A	A			2.0	2.6	3.3	E4.3^{R}	4.0	A	5.3	3.9	E4.7^{C}	5.1	5.0	C	4.8	2.6	E3.9^{S}	3.5	S	A	2.1
7	A	A	A	3.0	A	3.1	3.3	A	A	4.6	A	A	5.2	7.7	7.1	A	A	8.3	4.6	4.8	E5.3^{S}	A	2.5	2.4
8	E2.1^{S}	3.5	2.5	2.9	2.0	S	2.5	A	3.4	4.3	5.1	A	4.1	E4.3^{C}	A	4.7	4.2	4.6	A	A	A	A	E4.2^{S}	A
9	2.1	2.0	2.0	2.6	2.5	2.1	2.6	3.3	4.3	4.1	E5.4^{C}	5.0	5.4	E4.3^{C}	5.0	A	5.2	A	E6.5^{S}	4.3	4.4	3.5	2.2	E3.7^{S}
10	E3.1^{S}	2.1	2.3		E1.5^{S}	E1.5^{S}	2.5	3.2	E3.1^{R}	A	E3.7^{C}	4.8	4.3	5.1	8.2	4.9	3.4	3.1	A	A	4.7	2.9	A	A
11	A	A	2.0	1.3	1.8	2.0	A	3.5	4.1	A	A	4.3	A	6.1	4.3	4.5	4.2	4.6	3.2	2.3	2.9	2.1	S	2.3
12	A	2.2	1.8	2.3	2.3	E	G	G	5.3	4.9	3.9	5.2	3.9		4.1	5.3	5.0	6.0	3.6	2.6	2.0	2.3	E	2.0
13	E	S	2.0	2.8	2.0	A	A	4.2	3.4	4.4	4.4	A	5.7	5.4	5.1	4.7	3.8	4.2	3.0	4.1	A	2.6	2.4	A
14	E	2.0	1.9	2.1	1.7	2.0	2.2	3.0	3.5	3.8		4.2	4.1	4.3	E3.9^{C}			4.3	A	A	3.3	A	A	A
15	A	A	2.7	2.6	2.3	3.4	2.9	5.5	5.3	4.4	3.9	5.5	5.2	7.0	4.8	5.5	3.5	4.2	4.4	A	A	3.7	A	A
16	A	A	4.1	2.7	3.8	1.8	2.3	3.5	G	4.1	4.6	E3.8^{R}	5.8	A	A	7.3	3.5	5.7	6.7	2.4	2.5	E	2.1	3.4
17	A	2.4	2.0	2.0	2.0	1.8	2.4	3.0	4.5	A	A	A	A	A	5.2	4.2	5.4	G	6.3	3.1	4.3	A	4.7	A
18	A	A	C	2.3	2.2	2.2	4.0	A	4.4	5.1	4.7	A	4.9	5.1	C	5.0	A	A	2.0	A	7.4	A	2.2	2.2
19	5.3	4.6	A	4.0	2.3	2.0	2.3	A	A	A	A	A	5.1	5.7	6.7	5.0	C	A	4.7	4.2	A	5.0	2.3	2.2
20	2.3	2.3	2.3	1.8	2.3	E	2.4	5.2	A	A	A	A	4.3	4.2	4.5	4.5	A	4.6	A	2.9	A	A	A	A
21	A	3.7	2.8	A	2.8	2.7	2.6	3.7	4.1	A	4.9	5.4	A	A	5.0	5.7	3.9	3.4	E2.6^{R}	3.6	3.7	5.1	A	A
22	2.3	2.1	1.7	1.9	1.3	S	4.2	5.1	6.8	A	C	C	C	C	C	5.4	3.8	3.5	2.8	2.6	5.5	A	A	A
23	A	A	A	2.8	1.7	1.5	2.3	G	G	E3.4^{R}	4.4	5.2	5.3	5.7	5.2	7.4	A	E6.7^{S}	E6.1^{S}	3.5	2.2	S	S	E
24	2.3	4.4	2.3	1.5	1.7	E	3.3	2.9	3.2	3.5	3.8	3.7	4.2	3.9	3.7	E3.1^{C}			2.6	2.0	E	5.5	A	A
25	4.1	4.2	4.6	3.2	2.6	2.2	2.6	G	A	4.1	A	6.4	A	5.2	4.7	3.7	E3.9^{R}	5.6	3.8	4.4	4.8	3.2	S	A
26	A	A	4.0	A	A	2.5	2.3	3.8	4.2	4.9	A	5.2	5.5	A	6.2	5.0	4.6	3.7	C	C	A	4.1	3.5	A
27	A	A	2.7	1.8	1.5	S	2.4	3.3	5.2	A	A	4.9	5.4	5.0	5.1	A	4.4	5.7	5.2	6.6	4.6	A	2.1	2.0
28	S	S	2.1	4.1	1.9	A	2.1	2.8	3.8	A	3.9	4.4		A	E4.8^{S}	4.6	4.9	A	A	2.8	2.2	A	A	A
29	A	A	E3.2^{S}	2.5	A	2.7	4.6	5.3	A	A	A	A		5.0	4.1	3.8	C	3.8	3.2	2.2	1.9	2.3	E3.2^{S}	A
30	5.2	A	4.7	3.9	2.7	2.4	2.7	2.8	3.5	A	5.2	A	4.3	5.0	A	7.3	5.1	4.0	3.2	2.2	1.7	2.2	1.7	E
31																								
No.																								
Median																								

fbEs

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

The Radio Research Laboratories, Japan.

Y 5

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E1.70S	E1.80S	E	E	E	1.35	E1.50S	1.60	2.00	2.30	2.35	2.30	2.50	2.70	2.45	2.20	2.20	1.80	E1.60S	E1.40S	E1.50S	E1.80S	E1.50S	E1.60S
2	E1.40S	E1.85S	E1.70S	E	E	E1.80S	E1.50S	2.00	2.20	2.20	2.20	2.80	2.50	2.50	2.30	2.25	2.25	2.00	E1.60S	E1.50S	E1.35S	E1.80S	E1.80S	E1.75S
3	E1.60S	E1.80S	1.25	E	E	1.15	E1.60S	E1.50S	1.95	1.95	2.25	2.40	2.55	2.50	2.50	2.30	2.20	1.80	1.90	E1.80S	E1.65S	E1.70S	E1.80S	E1.70S
4	E1.50S	E1.80S	1.35	E	E	1.60	E1.50S	1.50	2.05	2.00	2.50	2.25	2.30	2.30	2.25	2.50	2.00	2.00	E1.50S	E1.60S	E1.80S	E1.80S	E1.60S	E1.60S
5	E1.80S	E1.90S	1.20	1.15	E	E1.40S	E1.40S	1.60	2.20	2.00	2.00	2.40	2.50	2.50	2.30	2.00	2.00	2.00	1.80	E1.90S	E2.00S	E1.90S	E1.70S	E1.80S
6	E1.85S	E1.90S	E1.80S	2.10	1.80	1.30	E1.90S	2.10	2.00	2.00	2.30	2.30	2.20	2.40	2.25	2.25	E7.00C	E1.65S	E1.95S	E2.00S	E1.80S	E2.20S	E1.70S	E1.50S
7	E1.70S	E1.80S	E1.80S	E	E	E1.40S	1.40	1.60	2.10	2.30	2.50	2.55	2.35	2.30	2.40	2.30	2.05	1.90	E1.90S	E1.60S	E2.00S	E1.60S	E1.95S	E1.80S
8	E1.50S	E1.85S	E1.60S	E	1.15	E1.90S	E1.70S	E1.70S	1.90	2.00	2.25	2.60	2.50	2.70	2.30	2.20	2.30	1.95	E1.60S	E1.90S	E1.90S	E1.80S	E1.70S	E1.70S
9	E1.80S	E1.80S	E1.50S	1.15	E	1.35	E1.40S	1.80	2.00	2.25	2.40	2.40	2.25	2.55	2.60	2.20	2.00	1.95	E1.80S	2.00	E1.70S	E1.70S	E1.80S	E1.70S
10	E1.80S	E1.80S	E1.90S	2.20	E	1.20	E1.80S	1.60	1.80	2.00	2.00	2.45	2.40	2.60	2.55	2.05	2.25	2.00	2.00	E1.80S	E1.80S	E1.70S	E1.90S	E1.80S
11	E1.70S	E1.85S	E	E	E	1.30	E1.50S	1.70	1.80	2.20	2.30	2.25	2.20	2.20	2.30	2.00	1.95	E1.70S	E1.70S	E1.70S	E1.40S	E1.70S	E1.80S	E1.60S
12	E1.80S	E1.80S	E1.40S	E	1.30	E1.70S	E1.80S	E1.60S	1.90	1.85	2.00	2.00	2.20	2.25	2.20	2.20	1.90	1.80	E1.60S	1.30	E1.70S	E1.65S	E1.70S	E1.70S
13	E2.00S	E1.70S	E1.60S	E	E	E1.35S	E1.60S	E1.60S	1.60	1.80	1.90	2.00	2.20	2.25	2.20	2.00	1.85	E1.50S	E1.60S	E1.60S	E1.60S	E1.90S	E1.70S	E1.65S
14	E1.75S	E1.80S	1.30	E	E	E1.40S	E1.75S	1.30	1.80	1.80	2.20	2.20	2.20	2.00	2.20	2.20	1.80	1.80	E1.50S	1.25	E1.70S	E1.70S	E1.50S	E1.70S
15	E1.70S	E1.70S	E1.80S	E	E	1.10	E1.50S	1.90	1.80	1.80	2.05	2.15	2.30	2.40	2.25	2.40	2.00	1.80	E1.60S	E1.70S	E1.60S	E1.70S	E1.70S	E1.70S
16	E1.80S	1.35	E1.70S	E	E	E1.70S	E1.70S	E1.70S	1.90	1.80	2.20	2.00	2.55	2.40	2.30	1.95	2.00	1.70	E1.70S	E1.60S	E1.70S	E1.60S	E1.60S	E1.70S
17	E1.70S	E1.70S	1.20	E	E	1.30	E1.50S	1.80	2.20	2.20	2.20	2.00	2.30	2.70	2.60	2.20	1.95	1.80	1.30	E1.75S	E1.70S	E1.70S	E1.70S	E1.70S
18	E1.75S	E1.80S	C	E	E	E1.40S	E1.60S	1.80	2.00	2.20	2.20	2.20	2.25	2.20	I2.45C	2.20	2.10	1.85	E1.60S	E1.50S	E1.70S	E1.70S	E1.80S	E1.80S
19	E1.90S	E1.80S	E1.70S	E	E	1.30	E1.80S	E1.70S	2.20	1.80	2.00	2.45	2.70	2.50	2.50	2.50	E4.40C	1.80	E1.50S	E1.90S	E1.60S	E1.70S	E1.70S	1.00
20	E1.70S	E1.40S	E1.80S	E	E	E1.80S	E1.80S	E1.80S	2.20	1.80	2.40	2.20	2.50	2.40	2.20	2.20	1.95	1.80	E1.40S	E1.60S	E1.70S	E1.80S	E1.80S	E1.90S
21	E1.70S	E1.50S	E1.60S	E	E	E1.70S	1.15	1.70	1.85	1.70	2.40	2.45	2.40	2.45	2.70	2.40	2.05	1.70	E1.40S	E1.60S	E1.60S	E1.70S	E1.60S	E1.60S
22	E1.70S	E1.75S	E1.60S	E	E	E1.70S	E1.70S	1.70	2.00	1.90	I2.20C	I2.30C	I2.55C	C	E7.80C	2.25	2.00	1.60	E1.60S	E1.60S	E1.70S	E1.70S	E1.60S	E1.60S
23	1.30	E1.50S	E	E	1.00	E	E1.70S	E1.60S	1.60	2.00	2.20	2.40	2.50	2.30	2.30	2.25	2.30	2.20	E1.60S	E1.70S	E2.00S	E1.60S	E2.20S	E1.70S
24	E1.60S	E1.40S	E1.40S	E	E	E1.40S	E1.60S	E1.50S	2.00	2.20	2.40	2.40	2.25	2.50	2.20	2.40	2.20	1.70	E1.50S	E1.60S	E1.70S	E1.70S	E1.60S	E1.70S
25	E1.70S	E1.70S	E	E	E	1.20	E1.60S	1.20	1.60	1.70	2.20	2.30	2.40	2.55	2.20	2.20	2.00	1.60	E1.50S	E1.60S	E1.70S	E1.60S	E1.60S	E1.50S
26	E1.65S	E1.45S	E1.40S	E	E	1.15	E1.55S	1.60	1.70	2.00	2.35	2.25	2.25	2.20	2.30	2.30	2.20	1.70	C	C	E1.60S	E1.50S	1.15	E1.80S
27	E1.60S	E1.65S	1.20	E	E	E1.40S	1.10	1.50	1.80	2.25	2.20	2.20	2.20	2.30	2.20	2.20	1.95	1.60	1.20	1.20	E1.60S	E1.90S	E1.90S	E1.70S
28	E2.10S	E2.30S	E1.60S	1.15	E	1.20	E1.70S	E1.60S	1.60	1.95	2.20	2.20	2.25	2.20	2.25	2.30	1.70	2.20	E1.60S	E1.50S	E1.60S	E1.95S	E1.60S	E1.60S
29	E1.60S	E1.60S	E	E	E	E	E1.65S	E1.55S	1.50	1.80	2.05	2.20	2.20	2.20	2.20	2.20	E4.50C	1.85	1.80	E1.50S	E1.60S	E1.60S	E1.70S	E1.80S
30	E1.60S	E1.70S	E1.70S	E	E	1.05	E1.60S	E1.55S	1.70	1.90	2.30	2.20	2.25	2.50	2.35	2.30	1.90	1.50	E1.60S	E1.90S	E1.60S	E1.60S	E1.60S	E1.60S
31																								
No.	30	30	29	30	30	16	30	26	30	30	30	30	30	29	29	30	27	30	29	29	30	30	30	30
Median	E1.70	E1.80	E1.50	E	E	1.20	E1.60	1.60	1.90	2.00	2.20	2.30	2.30	2.40	2.30	2.20	2.00	1.80	E1.60	E1.60	E1.70	E1.70	E1.70	E1.70

f-min | Sweep 1.0 Mc to 20.0 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 6

IONOSPHERIC DATA

Jun. 1962

M(3000)F2

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	F	FS	FS	FS	3.00	3.05	A	A	2.65	2.85	3.05	I2.90C	2.90S	2.90	3.00	3.15S	I3.20S	S	A	S	S
2	S	S	S	3.05	I3.10S	3.15	3.25S	3.10	2.95	A	A	I2.75A	2.75	2.85	J2.70S	2.95	J3.10S	2.95S	J3.15S	J3.35S	3.55	2.85	J2.70S	I2.75A
3	J2.85S	I2.90S	FS	J3.05S	I3.05S	I3.35S	J3.45S	3.35	I3.30A	I3.00A	I2.85A	2.60H	2.65	J3.00S	3.05	2.85	2.85	2.85	J3.10S	I3.10S	3.10S	I2.95S	S	S
4	S	FS	F	S	J2.90S	3.00I	I3.30S	3.25	3.10	2.95	3.25	2.70	I2.80C	2.85	2.90	2.95	3.00	3.20	J2.80S	I2.85S	I3.15S	SH	S	S
5	S	S	S	S	FS	3.10	3.10S	3.10	3.15	J2.75C	3.35	I3.00C	2.90	I2.90A	2.85	2.80	2.85	J2.70S	J2.85S	I3.10S	S	S	S	S
6	S	A	S	S	FS	S	3.15	J3.40S	I3.35S	3.20	I2.90A	2.75	I2.80S	2.70	J2.90S	3.15	3.10	2.95	SH	S	S	2.70	S	S
7	A	S	S	S	I3.10A	3.05	I3.30S	I3.40S	I3.35A	3.15	A	A	J2.75S	2.85	2.85	A	A	2.95	3.00	I2.90S	3.05	I2.95A	2.80	I2.80S
8	I2.80S	I2.95S	I3.10S	2.95	3.00	J2.90S	J3.50S	I3.40A	2.70	I2.90S	3.05	I2.75A	2.65	2.85S	I2.85S	3.10	3.25	3.40	I3.10S	A	A	A	J2.90S	I2.95S
9	J2.75S	S	FS	S	S	3.25	3.55	3.45	3.15	3.15	I3.10C	2.80	2.80	2.75	2.75	I2.65A	2.75S	I2.90S	J3.20S	S	S	2.85	J2.65S	I2.70S
10	3.05S	J2.85S	3.05	3.10	3.10S	J2.90S	3.10	3.10H	3.15SH	I3.40A	I3.40C	I2.95A	J2.65C	2.80	2.90	3.05	3.00	2.95S	I3.30S	S	S	S	S	A
11	S	A	S	S	3.00	2.90	3.05	2.85S	I3.10S	I3.00A	I3.15A	3.15	I2.85A	I2.95S	3.00	2.95	I3.00S	I3.00S	I3.20S	I3.00SH	S	S	S	S
12	S	S	S	J2.90S	I2.80S	J3.15S	2.80	3.25S	I2.90S	2.95	2.90	2.70S	J2.75S	2.80S	2.95	J2.85S	J2.85S	2.90S	3.00S	I3.00S	S	S	S	S
13	S	S	S	S	3.25S	I3.35A	I3.20A	3.05	2.90SH	3.30	2.85	I2.75S	J2.75S	2.95	2.80	2.90	2.95	2.85S	2.95S	I2.90S	S	S	S	S
14	S	S	S	S	J2.75S	I3.05S	3.25S	I3.50S	2.95SH	3.15H	2.65	J3.00S	2.75	2.90	I2.70S	J2.50S	2.65S	I2.85S	J3.35S	I3.25S	I3.55S	S	S	S
15	S	S	S	J3.05S	I3.10S	3.10S	2.85	I3.20S	J3.20S	3.05	3.05	2.95	2.70	J2.75S	J2.75S	I2.75S	2.75	2.95S	I3.15S	S	S	S	S	S
16	S	A	S	I3.30S	3.20	I2.95S	3.05SH	I3.20S	2.85SH	3.30	3.30	2.70	2.80	I2.80A	I2.80A	2.90	J2.95S	2.90	J2.95S	S	S	S	S	S
17	S	S	S	S	I2.95S	S	SH	3.50SH	3.55S	A	A	A	I2.85A	I2.75A	J2.70S	2.65	2.80	I3.00S	I3.10S	I3.05S	S	S	S	A
18	A	A	C	FS	FS	J3.10S	3.20	I3.25A	I3.15S	3.10	2.70	I2.65A	2.60S	2.65	I2.60C	2.65	I2.75A	I2.90A	I3.05A	A	S	S	2.75S	S
19	S	S	A	S	FS	FS	I3.20S	I3.20S	I3.35A	I3.25A	I3.00A	I2.85A	2.80S	2.65S	2.70	2.65	I2.70C	I2.90S	I3.20S	S	S	S	S	S
20	S	S	S	3.15S	2.90	I2.80S	2.95	3.45	A	A	A	A	2.65	2.75	2.80	2.80S	I2.90A	J2.95S	I3.20A	3.35	A	A	A	S
21	A	I2.85S	I2.75S	3.10	I2.90S	J2.90S	I3.10S	J3.35S	3.45	I3.40A	I3.15S	2.75	I2.50A	I2.75A	J2.85S	2.90	3.00	3.15S	3.05	I3.00S	S	S	S	S
22	S	S	S	FS	I2.85S	FS	2.95	3.10	3.30	I2.75A	I2.35C	I2.45C	I2.60C	I2.75C	J2.85S	3.05	J3.00S	J2.80S	J3.00S	I2.95S	I2.80S	A	A	S
23	A	A	A	S	S	3.10S	3.05	3.25	3.10SH	J3.20S	3.10	2.75	2.50	2.75	2.85	2.95	I2.85S	S	2.80	I2.90S	S	S	S	I2.85S
24	I2.80S	I2.90S	I3.10S	J2.90S	2.85	3.10S	3.10	I3.35SH	3.35	3.10	2.75	J2.90S	I2.65C	2.55	2.80	I2.90S	J3.05S	I3.10S	J3.30S	I3.25S	2.90	2.60S	A	S
25	J2.85S	I2.90S	FS	FS	2.95S	3.00	3.00	3.00	I3.20A	2.90	2.95	3.15	I2.75A	J2.75S	2.85	3.00	2.80	2.85	I2.95S	3.10S	I3.20S	3.10	S	A
26	S	S	S	A	A	3.00	J3.25SH	3.55	3.15S	U3.40S	I2.90A	3.00	2.80	I2.85A	2.90	2.80	U3.00S	I3.00S	C	C	A	3.00	2.90S	S
27	A	S	S	FS	FS	S	3.15	3.10	2.85	I3.10A	J3.10S	2.85	2.65	J2.70S	2.75	I2.95A	2.80	I2.90S	J3.00S	J3.00S	S	S	I2.75S	I2.65S
28	I2.80S	I3.00S	I3.20S	3.20	I3.10S	I3.10A	3.40H	3.40H	3.25	I3.00A	3.05	3.05	3.05	I2.85A	2.85	3.15	2.60S	A	A	I3.30S	U3.55S	A	A	S
29	S	A	S	S	A	S	3.05S	3.10	A	A	A	I2.90A	3.15	2.95	2.95	2.75	3.05S	3.00	I3.20S	I3.20S	2.75S	I2.80S	2.85S	I2.80S
30	2.80	A	S	2.85S	2.95	2.95	S	3.45	3.35S	A	2.75	I2.80A	J2.90S	2.80	I2.80A	2.95	U2.90S	I2.80S	I3.20S	I3.35S	J3.05S	2.75	2.70	I2.60S
31																								
No.	8	7	5	12	20	23	27	30	28	24	24	27	30	30	30	29	29	28	27	21	11	10	9	8
Median	2.80	U2.90	U3.10	3.05	3.00	3.05	3.15	3.25	3.15	3.10	3.00	2.80	2.75	2.80	2.85	2.90	2.90	2.95	3.10	U3.10	3.10	2.85	2.75	U2.80

M(3000)F2

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

The Radio Research Laboratories, Japan.

Y 7

IONOSPHERIC DATA

Jun. 1962

M(3000)F1

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	L	I3.50A	A	A	3.55	A	A	3.90	3.70	3.40	3.55	L					
2									A	A	A	A	A	A	A	R	3.55	3.55	3.45L					
3								A	A	A	A	A	A	A	A	I3.45C	3.50	3.50H	3.45					
4								L	L	A	A	3.20H	I3.85C	I3.80C	A	3.75	A	I3.60A	A	L				
5							L	L	3.65L	I3.50C	I3.90C	3.65	A	A	A	3.65	I3.45A	A	A					
6							L	L	A	L	I3.40A	I3.60A	C	A	A	A	C	A						
7								A	A	A	A	A	A	A	A	A	A	A	A					
8									3.85	A	A	A	C	C	A	A	A	A	A					
9									A	3.30	I3.50A	A	I3.85A	C	A	A	A	A	A					
10										I3.55A	3.60	A	4.20	A	A	A	3.70	3.55	A					
11								L	L	A	A	3.65	A	A	3.75	A	L	I3.60A	L					
12								LH	A	A	3.75	I3.90A	3.75	3.70	3.80	I3.80A	A	A	A					
13								A	3.80	A	L	A	A	A	A	A	3.85	A	3.40L					
14								L	4.00		3.50H	I3.80L	3.95	3.95	3.75C	3.35H	3.75H	I3.50A	3.70					
15								A	A	I3.70L	3.80	A	A	A	A	I3.60A	3.50	A	A	A				
16										3.65	A	I3.75R	A	A	A	A	L	A	A					
17									A	A	A	A	A	A	A	3.55	A	3.50	A					
18								A	A	A	A	A	A	A	C	A	A	A	A					
19							L	A	A	A	A	A	A	A	A	A	C	A	A					
20								A	A	A	A	A	3.85C	3.85	3.35C	A	A	A	A					
21							L	3.75L	L	A	A	A	A	A	A	A	3.65	3.55L	L					
22							A	A	A	A	C	C	C	C	C	A	3.50	3.50	L					
23								3.60		3.75H	3.55	A	A	A	A	A	A	A	A					
24									L	3.75H	3.80	3.30	3.60	3.95	3.85	3.70	3.40	3.50	L					
25								L	I3.55A	3.70	A	A	A	A	A	3.65	3.40S	A	A					
26									A	I3.70A	A	A	A	A	A	A	A	3.45	C					
27								L	A	A	A	A	A	A	A	A	A	A	A					
28									3.55L	I3.40A	3.70	A	3.65H	I3.80A	A	A	A	A	A					
29								A	A	A	A	A	4.00	I3.80A	3.55	3.50	C	3.35	3.50					
30							L	3.85	3.90	A	A	A	3.60	A	A	A	A	A	3.45L					
31																								
No.								3	8	10	10	9	10	7	7	11	12	13	6					
Median								3.75	3.70	U3.70	3.65	3.65	3.85	3.80	3.75	3.65	3.50	3.50	3.45					

M(3000)F1

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

The Radio Research Laboratories, Japan.

Y 8

IONOSPHERIC DATA

Jun. 1962

h'F2

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							445F	345	335	A	A	440	380	340	370	380	375	330	300					
2									E340A	A	A	A	375	E375R	370	330	300	305	280					
3								290	I320A	A	A	345H	375	315	305	345	330	325	285					
4								285	290	330	270	380	360	340	330	305	E350A	290	300	305				
5							285	265	290	340	290	350	375	I360A	375	350	325	345	310					
6							300	260	260	320	I395A	405	380	375	330	290	305	310						
7								A	I300A	310	A	A	390	E375A	350	A	A	E360A	290					
8									400	I390A	350	I460A	455	385	I370A	305	290	300	A					
9									305	340	350	400	400	355	350	I370A	355	I325A	300					
10										I310A	375	420	360	345	E380A	300	330	340	I270A					
11								310	350	I350A	I320A	335	I390A	350	325	330	305	320	270					
12								300	350	290	345	390	385	350	330	340	340	320	290					
13								290	300H	300	380	I420A	390	335	350	300	330	305	330					
14								245	245H		475	I390C	430	360	400	405	375	320	265					
15								E320A	300	305	325	390	400	E450A	375	350	350	300	275	I265A				
16										300	320	400	360	A	I365A	350	320	340	E420A					
17									250	A	A	A	A	A	390	375	340	300	300					
18								A	280	330	425	I430A	390	375	I385C	355	I360A	I280A	I305A					
19							295	I300A	I310A	A	A	A	400	405	400	375	I350C	I320A	280					
20								265	A	A	A	A	450	400	365	330	A	300	A					
21							275	255	250	I295A	300	450	I490A	I395A	345	340	310	300	300					
22							E325A	300	285	I445A	I470C	C	I425C	I360C	360	300	305	355	290					
23								260		290	345	395	450	350	330	340	A	I380S	E380S					
24									270	320	355	355	410	400	350	340	300	280	255					
25								305	I290A	350	340A	310	A	385	330	300	350	310	300					
26									270	285	A	360	400	I370A	350	330	300	300	C					
27								310	350	I335A	A	365	350	350	350	I330A	320	315	305					
28									290	A	325	355	340	I400A	355	300	415	A	A					
29								330	A	A	A	I375A	335	350	360	380	330	305	280					
30							260	250	275	A	E450A	A	370	385	I360A	340	310	330	260					
31																								
No.							6	18	24	20	19	23	28	25	29	29	26	28	23	2				
Median							290	290	290	320	345	390	390	360	355	340	330	310	290	U285				

The Radio Research Laboratories, Japan.

h'F2

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

Y 9

IONOSPHERIC DATA

Jun. 1962

h'F

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	300	245	230	300	I265A	E300A	A	A	A	250	I250A	I230A	215	240	240	250	270	280	300	I330A	I355A	350
2	350	325	260	255	260	270	245	240	A	A	A	A	A	A	A	A	290	230	255	250	240	E370A	345	I355A
3	350	300A	270	270	280	250	245	A	A	A	A	A	A	I230A	I220A	I215C	250	240H	250	275	255	250	300	250
4	I300A	300	275	305	300	250	250A	265	250	A	A	E300AH	A	E275C	A	240	A	I250A	A	275	250	225H	300	280
5	300	290	260	250	250	260	245	210	225	I200C	I240C	250	I250A	A	A	230	I245A	E300A	A	A	A	I250A	250	I340A
6	340	A	A	255	250	250	250	245	I240A	225	A	A	200	A	A	A	C	A	250H	300	250	300	I300A	290
7	A	A	A	295	I305A	305	275	A	A	A	A	A	A	A	A	A	A	A	A	300	285	A	300	310
8	300	300	250	300	270	260	260	I250A	200	E330A	A	A	200	A	A	A	A	A	A	A	A	A	I305A	I300A
9	305	285	275	350	290	250	240	240	I250A	300	I260A	I220A	I245A	A	A	A	A	A	A	255	E290A	305	350	375
10	300	290	275	240	250	300	250	250H	255H	I255A	245	I220A	220	A	A	A	225	250	I250A	I290A	300	350	A	A
11	A	A	255	250	270	300	245A	250	E300A	A	A	245	I240A	I245A	250	A	A	I225A	260	240H	290	295	285	300
12	I290A	290	260	290	290	250	240	230H	I240A	I265A	200	I200A	205	210	240	I240A	A	A	A	260	250	250	270	340
13	300	300	300	255	245	I255A	A	I220A	240	A	E250A	A	A	A	A	I230A	230	A	250	305	I290A	275	275	I335A
14	260	295	300	305	300	280	245	230	225	225H	205H	200	200	240	225	250H	215H	I260A	260A	I235A	240	A	A	A
15	A	A	275	295	275	E320A	285	I250A	I250A	E260A	205	A	A	A	A	I255A	250	I260A	A	A	I265A	320	A	A
16	A	A	300	265	285	255	255H	250	230H	250	I210A	200	A	A	A	A	235	A	A	260	340	265	255	305
17	I300A	300	300	290	290	240	240H	225H	A	A	A	A	A	A	A	250	I250A	250	I255A	260	295	I345A	360	A
18	A	A	C	300	290	260	285	A	A	A	E300A	A	A	A	C	A	A	A	A	A	E350A	A	275	300
19	340	290	I310A	315	325	310	250	A	A	A	A	A	A	A	A	A	C	A	A	245	A	E345A	330	310
20	320	280	250	240	290	300	250	A	A	A	A	A	220	210	E300A	A	A	A	A	250	A	A	A	A
21	A	345	300	295A	350	315	250	250	A	A	A	A	A	A	A	A	250	240	225	285	305	345	I340A	I315A
22	295	275	255	260	255	255	A	A	A	A	C	C	C	C	C	A	245	245	250	285	250	A	A	A
23	I270A	I265A	A	260	250	255	240	240	200H	200H	260	A	A	A	A	A	A	A	A	280	245	255	300	290
24	300	310	250	250	275	260	275	230H	205	200H	225	240	240	200	225	220	235	240	235	235	250	E450A	A	A
25	350	325	345	270	295	255	270	250	I250A	250	A	A	A	A	A	220	255	A	A	250	250	230	275	I345A
26	I335A	I330A	315	I330A	I335A	300	250H	250	I220A	I240A	A	A	A	A	A	A	A	270	C	C	A	E300A	320	A
27	A	A	270	300	245	225	240	240	A	A	A	A	A	A	A	A	A	A	A	305	260	I330A	300	310
28	300	275	230	250	250	I250A	210H	240H	250	I250A	250	E300A	240H	I225A	A	A	A	A	A	250	210	A	A	A
29	A	A	350	300	I290A	275	E295A	A	A	A	A	A	190	A	260	220	C	E290A	255	240	260	300	E375S	I370A
30	E390A	I360A	325	320	285	270	250	215	230	A	A	A	250	A	A	A	A	I250A	250	240	220	300	305	320
31																								
No.	20	21	26	30	30	29	27	22	17	12	10	9	14	8	7	12	14	14	14	25	23	20	22	21
Median	300	300	275	280	280	260	250	240	240	245	230	220	230	U230	225	235	245	250	250	260	255	E300	300	310

h'F

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

The Radio Research Laboratories, Japan.

Y 10

IONOSPHERIC DATA

Jun, 1962

h'Es

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

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

The Radio Research Laboratories, Japan.

h'Es

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

Y 11

IONOSPHERIC DATA

Jun. 1962

Types of Es

135° E Mean Time (G.M.T. + 9h.)

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f3	f3	f4	f2	f2	f	C3	C3	h	C3	l4	h	l	l2	l	l2	l	h2	h4	f2	f3	f3	f4	f4
2	f3	f4	f3	f2	f2	f	h	h2	C2	C2	C4	l2	l	h	h2	h	h	h	C2	f2	f3	f5	f2	f3
3	f3	f2	f2	f2	f2f	f2	C4	h3	C2	C3	C3	C2	C2	l2	l2	l	l	l2	h2l2	f5	f3f2	f	f	f2
4	f3	f2	f2	f	f		C5	h2	C2	C2	C2	C	h	l	l2	l	l3	l2	h5l	C			f	f
5		f3	f2	f	f		lCl	h3l	hl	l	h	l	l	l3	l2		h2	h	h4	f2	f	f4	f2	f3
6	f3	f2	f2			f	C2	h2	h	h	C3	C3	h	C	l2	l		hl2	hl	f	f3		f2	f2
7	f2	f2	f3	f5	f3	f6	h2l	h4	h2	h	h2	h	h	h2	h2	l3	h3	C5	C3	f2	f5	f2	f3	f2
8	f	f4	f3	f2	f2		h4	l2	l	h	h	h	h	h	h2	h	h	C2	C4	f3	f2	f3	f3	f2
9	f	f	f2	f2	f2	f2	h2l2	hl2	h2	l	l2	l	l	l	l	l2	l2	l3	l4	f3	f2f	f4f2	f2	f2f2
10	f2	f	f		f2	f	C2	h2l	l	h4l	h	l2	h	h	h2	l2h	l2	l	h4	f	f4	f2	f5	f3
11	f2	f3	f2	f3	f2	f2	C3	h2	h	h2	h2	C	l2	hl	h	h2	h2	h2	C2	f2	f3	f		f f2
12	f2	f2f2	f2	f2	f3	f2	h	h2	h2	h2	h	C2	l		h	l2	l3	l4	l5	f3	f	f3	f	f
13	f		f2	f2	f3	f5	l4	l5	l2	l3	hl	h	hl	hl	hl2	hl2	hl3	h2l2	h2l2	f f2	f3f	f2	f2	f2
14	f2	f2	f2	f2	f2	f	l2	hl	h	h		h	h	h	l			hl	h3l	f4	f4	f4	f4	f2
15	f4	f2	f4	f4	f4	f4	l4	C2l2	l2	Cl	C2l	C3l	C	C3	hh	h2h	h	hh	h3	hl	f f2	f2	f	f3
16	f4	f4	f5	f3	f3	f2	l2	l3	hl2	h2l	h2l	h	h2l	h2	h3	h2	h	h3	h3	f4	f2	f	f4	f3
17	f2	f2	f2	f2	f2	f	h2l	l2	h2	h3l	C	C3	C3	C2	h2	h	h2l	hl	h2l	f2	f2	f2	f3	f f3
18	f f3	f f2		f2f2	f2	f2	l2	C4	C2	l2	h2l	h2	h	h		h2	h2	h2	l2	f3	f3	f2	f3	f2
19	f	f3	f2	f f3	f2	f	l	C2	C4	l4	l3	l3	l	l2	l3	l2		l2	l2	f3	f2	f3	f2	f2
20	f2	f	f2	ff	f	f2	l2	h2l	h3	C2	C3	C3	C	h	hl2	h2l	C3l	hl	C3	f2	f2	f3	f3	f3
21	f5	f3	f f2	f4	f2	f3	l2	l2	l2	l4	l2	l2	C2	C3	l	l2	hl	l2	l3	l3	f2	f f3	f2	f5
22	f2	f	f2	f2f	f2		C2	h2	h2	h3					l	l2	l2	l3	l2C2	f2	f2	f f2	f2f	f4
23	f2	f3	f4	f4	f	f2	h	hl	l2	l2	h2l	h2l	h2l	h2	h	h	h4	C4	C2	f2	f			f2
24	f3	f3	f2	f2	f	f2	C4	h2	h	h	h	h	l	l	l	l			Cl	f	f	f4	f4	f3
25	f3	f3	f3	f5	f3	f2	l3	hl	h3	h2	C3	C2	C4	l2	l2	l2	l2	l3	l3	f3	f4	f2		f3
26	f3	f4	f3	f3	f2f	f4	l2	l3	C2	h	h3l	hh2	hC2	l2	l3	l4	l2	h2l			f2f3	f2f	f3	f2
27	f5	f3	f3	f2	f2		lC4	h2	h3l	h2	h3	h2	h	h	h2	C3	C	C4	l3	f4	f2	f3	f	f
28			f f	f2	f2	f2	l2	l2	h	h2	h	h		h	h	h	h	C4	C3l	f4	f2	f2	f2	f2
29	f3	f f3	f3	f2f3	f3	f2	l3	l2	l3	l3	l2	h2l		h	h	h	h	h	C2	f2	f	f4	f3	f3
30	f4	f4	f3	f5	f7	f4	l3	h3	h2	h2	h2	h2	h	h2	l3	l3	l3	h2l2	h2l2	C2	f	f	f2	f
31																								
No.																								
Median																								

Types of Es

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

The Radio Research Laboratories, Japan.

Y 12

SOLAR RADIO EMISSION 200 Mc/s

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

HIRAISO

Time in U.T.

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

<u>Note</u> No observations during the following periods:

10th all day
18th before 01 and after 04
19th after 05

No outstanding occurrence.

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Jun. 1962	Whole Day Index	L. N. 06-12	L. N. 12-18	L. N. 18-24	W W V 00-06	W W V 06-12	W W V 12-18	W W V 18-24	S. F. 00-06	S. F. 06-12	S. F. 12-18	S. F. 18-24	W W V H 00-06	W W V H 06-12	W W V H 12-18	W W V H 18-24	Warning 00-06	Warning 06-12	Warning 12-18	Warning 18-24	Principal magnetic storms Start	End	ΔH
1	3+	3	3	2	3	3	4	3	4	4	4	4	4	5	5	4	U	U	N	N	---	16xx	
2	4-	4	3	4	4	4	4	4	4	4	3	4	4	5	4	4	N	U	N	N			
3	4o	4	3	4	4	4	4	5	4	4	4	4	4	4	4	4	N	N	N	N			
4	4-	4	3	4	4	3	3	5	4	3	3	4	4	5	5	4	N	N	N	N			
5	4-	3	3	3	4	C	C	C	3	4	5	4	4	5	(4	4)	N	N	N	N			
6	3+	3	4	3	C	C	C	C	4	3	3	3	4	5	(4	4)	N	N	N	N			
7	3+	4	4	4	C	C	3	3	3	3	3	4	4	5	5	4	N	U	U	U			
8	4o	4	5	5	3	4	5	5	4	2	3	4	4	4	4	4	N	N	N	N			
9	4-	4	4	4	4	3	3	3	4	4	4	3	4	5	4	4	N	N	N	N			
10	3o	3	2	3	3	3	3	3	3	3	3	4	4	4	4	4	N	U	U	U			
11	4-	4	4	3	3	3	4	4	4	4	4	3	3	4	4	4	N	N	N	N			
12	4-	4	4	4	4	3	3	4	3	4	4	4	4	5	4	3	N	N	N	N			
13	4o	4	4	4	4	4	5	4	4	4	4	4	3	4	4	3	N	N	N	N			
14	4+	4	4	4	4	4	4	5	4	5	4	5	3	4	4	3	N	N	N	N			
15	4-	4	4	4	4	4	4	4	4	3	3	4	3	4	4	4	N	N	N	N			
16	5-	4	5	5	4	4	5	5	5	5	4	4	4	4	4	4	N	N	N	N			
17	5-	5	5	5	5	5	5	5	(4)	5	5	(4)	4	5	5	4	N	N	N	N			
18	5-	5	5	5	5	4	5	5	4	5	5	5	4	5	5	4	N	N	N	N			
(19)	5-	4	4	4	5	4	5	5	5	5	5	5	4	5	5	4	N	N	N	N			
(20)	5-	5	4	4	5	4	4	5	5	5	5	5	4	5	4	4	N	N	N	N			
(21)	5-	5	4	5	4	4	4	5	5	5	5	5	4	5	5	4	N	N	N	N			
22	4+	4	4	3	4	4	4	5	5	4	4	5	4	5	5	4	N	N	N	N			
23	4-	4	4	3	4	4	4	3	4	4	4	4	4	5	4	4	N	N	N	N			
24	4-	3	4	3	3	3	4	4	4	5	4	4	4	5	4	4	N	N	N	N			
25	4+	4	4	4	4	4	4	5	5	5	4	5	4	5	5	4	N	N	N	N			
26	5-	4	4	4	5	5	5	5	5	5	5	5	4	5	5	4	N	N	N	N	0849	---	77γ
27	3+	4	3	3	4	3	3	3	5	3	3	4	4	5	5	4	N	N	U	U	---	---	
28	3-	3	2	3	2	2	2	4	3	4	3	2	4	5	4	4	U	U	U	U	---	---	
29	3o	3	3	3	3	2	3	4	2	3	4	4	4	4	4	4	U	U	U	U	---	---	
30	3+	4	3	3	4	3	3	3	4	4	4	3	4	4	4	4	U	U	U	U	---	22xx	

* = day of Special World Interval

( ) = inaccurate

[ ] = Regular World Day

C = artificial accident

\- = impossible to evaluate

--- = continuing magnetic storm

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Jun. 1962	S W F									S E A			Correspondence		
	Drop-out Intensities (db)					Start-time	Dura-tion	Type	Imp.	Start-time	Dura-tion	Imp.	Flare	Solar Noise	Mag.
	WS	SF	HA	TO	LN										
7		20		-		00:00	29	Slow	1+	00:00	45	1		x	
14	14"			19"/16		21:47	33	Slow	2+				x		

IONOSPHERIC DATA IN JAPAN FOR JUNE 1962
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