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IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 1962

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THE RADIO RESEARCH LABORATORIES

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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.

$(M3000)F2$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.

$(M3000)F1$ — 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. 0234x)

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

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

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

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

activity

M : multiple peaks separated by relatively long period of quietness

F : multiple peaks separated by relatively short period of quietness

E : sudden commencement or rise of activity

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

Maximum intensity

Instantaneous: The highest value above the base level.

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

C. RADIO PROPAGATION CONDITIONS

a. Radio Propagation Quality Figures

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

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

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

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

N=normal
U=unstable
W=disturbed

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

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

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

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

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

Circuits and Drop-out intensity

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

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

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

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

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

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

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

Start-times and Durations

Types

S : sudden drop-out and gradual recoverly

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

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

Importances

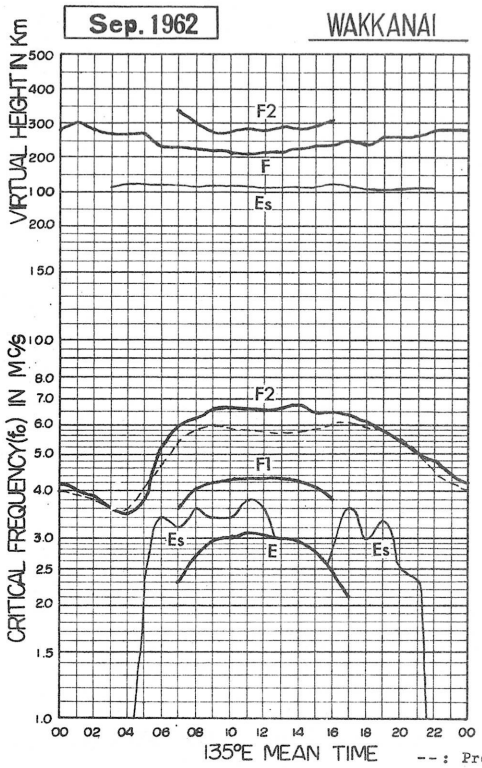
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out ;

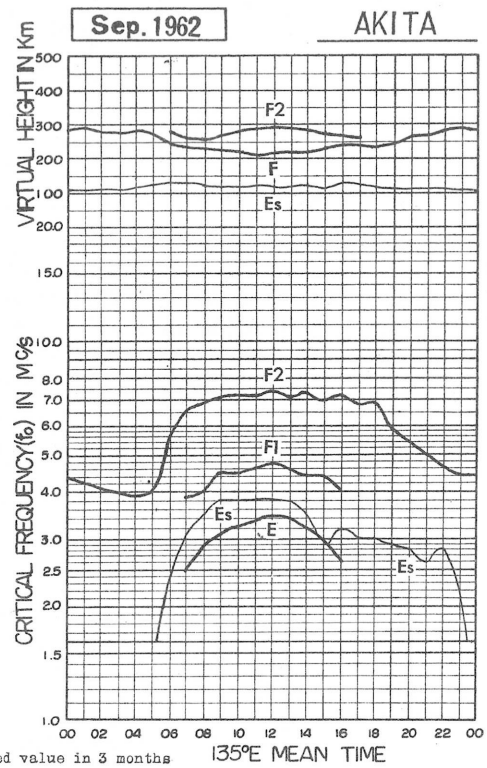
1–	1	1+
2–	2	2+
3–	3	3+

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

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

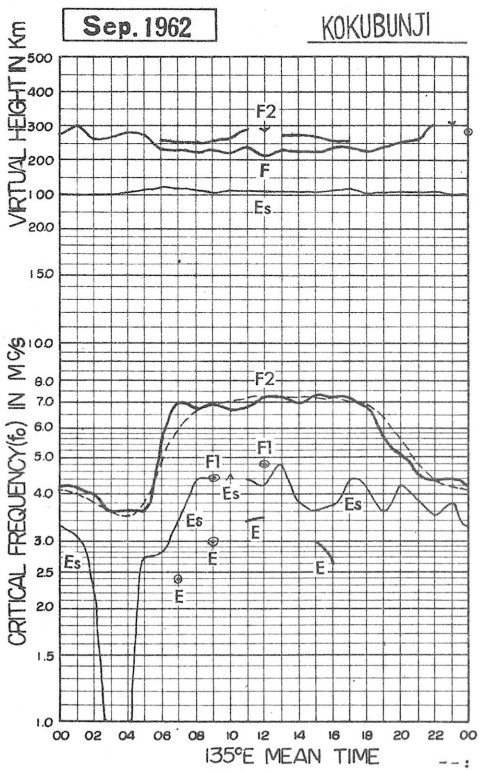
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

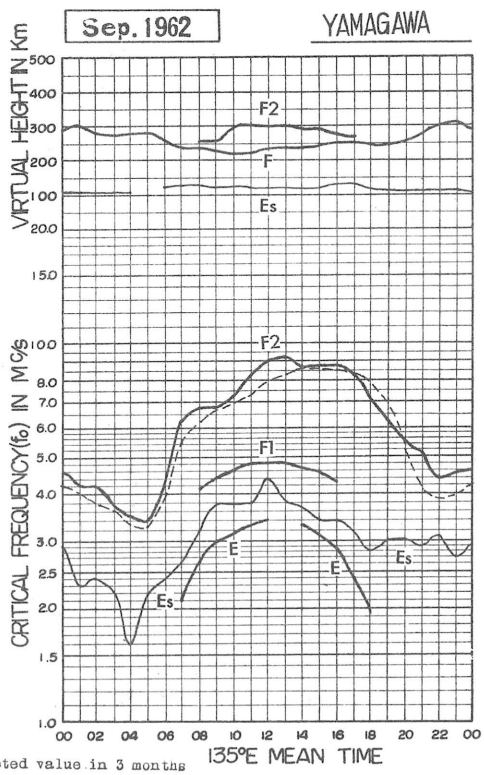




--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





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

IONOSPHERIC DATA

Sep. 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	3.7	3.3	3.3	3.0^{F}	2.6	3.2	3.8	4.6	5.3	4.5	4.7	5.0	^{I}4.6^{R}	^{I}4.6^{R}	^{I}4.6^{R}	4.6	4.7	5.0	5.7	^{I}6.5^{S}	6.3	5.0	^{U}4.3^{S}	^{I}3.2^{A}
2	3.2	3.6	3.5	3.3	3.3	3.3	^{I}4.2^{A}	5.0	5.4	^{I}4.5^{R}	5.1	4.8	4.9	5.3	4.7	^{I}4.9^{A}	5.0	5.3	^{I}5.5^{A}	5.5	5.1	4.7	^{U}4.2^{S}	3.6
3	3.5	3.3	3.8	3.1	3.2^{F}	^{I}3.4^{A}	^{I}3.6^{A}	^{I}3.8^{A}	^{I}4.5^{A}	^{I}4.9^{C}	^{I}4.8^{A}	^{I}4.7^{R}	A	A	A	5.0	5.4	^{I}5.0^{A}	4.7	4.5	^{U}4.6^{S}	^{I}4.0^{S}	3.8	3.7
4	3.7	3.1	SF	SF	SF	S	4.3	4.0	A	A	A	A	4.9	4.6^{H}	5.0	5.3	5.6	5.3	5.3	4.2	4.4	4.4	4.3	3.9
5	SF	A	SF	A	SF	3.3	4.6	^{I}4.8^{A}	4.4	5.0	^{I}5.1^{R}	5.3	5.0	5.0	5.1	5.4	5.6	5.5	5.0	5.1	4.9	5.0	^{U}4.8^{S}	4.1
6	3.5	SF	SF	FS	F	^{I}3.2^{A}	4.3	4.5	5.0	5.7	6.1	6.6	7.2	8.0	6.9	6.4	6.6	6.5	6.3	4.5	5.0	5.0	^{I}4.4^{S}	4.1
7	^{I}4.2^{A}	^{I}4.0^{A}	3.3	2.8	2.4	C	C	C	C	C	C	C	C	C	C	C	C	C	4.3	5.0	5.1	^{U}4.3^{S}	4.3	^{I}4.1^{S}
8	3.8	3.4	3.3	3.1	3.2	3.8	5.3	6.0	6.4	^{U}6.7^{S}	5.9	5.7	5.7	6.3	6.5	6.4	6.4	6.3	5.8	6.1	6.2	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	^{U}5.9^{S}	5.5	5.4	S	A	A	4.3
10	^{I}4.0^{S}	4.0	4.1	3.6	^{I}3.8^{S}	3.7	4.8	6.1	5.1^{H}	6.1	5.6	5.7	6.0	5.4	5.9	5.9	6.1	5.9^{H}	5.7	A	C	C	^{I}4.8^{S}	^{U}4.5^{S}
11	^{U}4.2^{S}	3.8	3.6	3.7	3.4	3.8	5.7	7.0	6.6	6.5	6.8	6.2	6.3	6.7	6.8	6.7	7.2	7.0	^{I}6.8^{C}	^{I}6.5^{C}	6.5	5.4	4.1	^{U}4.3^{S}
12	3.8	3.8	3.6	3.6	^{I}3.5^{A}	^{I}3.8^{A}	4.9	5.6^{H}	5.6	5.9	6.3	5.6	6.7	5.4^{H}	5.8	6.1	6.1^{H}	6.3^{H}	6.8	^{I}7.0^{S}	^{I}6.5^{S}	6.0	4.3	^{U}4.3^{S}
13	3.1	2.8	3.0	2.8	3.1	3.0	4.0	4.3^{H}	4.9	5.0	5.6	W	6.1	5.5	5.8	5.8	5.7^{H}	5.4	5.7	5.8	5.4	5.4	^{I}4.6^{A}	SF
14	SF	SF	FS	SF	A	^{U}3.8^{S}	5.3	5.9	6.3	7.2	6.5	6.6	^{I}6.4^{C}	^{I}6.5^{C}	6.9	7.1	6.8^{H}	6.1	6.8	6.7	6.2	5.5	5.2	4.6
15	4.3	4.0	4.0	3.6	3.7	4.1	5.8	7.5^{H}	7.2	8.6	6.8	^{I}6.6^{C}	6.8	6.6	6.5	6.6	6.7^{H}	7.0	^{I}7.3^{S}	5.9	5.3	4.6	4.8	4.9
16	^{I}4.5^{S}	4.3	4.2	4.2	3.7	4.0	6.0	6.5^{H}	6.5	^{I}6.5^{S}	6.6	6.6	6.2	6.7	7.0	6.3	6.3^{H}	6.3	7.0	6.8	6.6	6.0	5.5	5.3
17	5.5	5.4	5.4	4.7	4.1	4.2	5.4	6.7	6.9	7.3	6.5	6.4	6.3	6.9	6.8^{H}	6.6	6.5	6.8	6.1	5.7	5.8	5.2	5.1	4.6
18	^{I}4.4^{S}	^{I}4.5^{SF}	3.8	3.6	3.3	3.6	5.4	6.0	6.6	7.7	7.8	7.1	7.9	7.8	7.0	7.0	6.7	5.7	5.4	5.5	5.5	5.0	4.8	SF
19	SF	SF	4.8	4.2	^{I}3.5^{SF}	3.8	5.3	^{U}6.3^{S}	6.3^{H}	6.3	7.2	7.5	7.7	7.2	6.9	7.0^{H}	6.5^{H}	7.3	8.5	7.1	^{I}6.1^{S}	5.1	4.8	5.1
20	5.0	4.4	4.7	4.4	^{U}4.4^{S}	^{U}4.4^{S}	6.0	6.8	6.8	^{I}6.8^{R}	7.3	6.3^{H}	7.8	^{I}7.9^{A}	^{I}6.6^{A}	^{I}6.4^{A}	^{I}6.3^{A}	6.4	5.3	4.5	4.5	^{U}4.3^{S}	^{U}4.3^{S}	4.0
21	3.9	3.8	3.9	3.8	3.3	3.7	5.0	5.8	6.3^{H}	6.1	6.6	6.6	6.2	6.7	6.8	7.1	6.1^{H}	6.7	6.4	6.2	5.4	5.0	5.0	5.0
22	SF	SF	SF	SF	SF	S	5.6	6.2	6.8^{H}	7.1	7.8	8.3	6.8	6.6	7.2	7.8^{H}	7.0^{H}	6.3	^{I}6.2^{S}	5.4	5.3	4.8	4.9	4.7
23	4.3	4.1	4.3	SF	SF	SF	5.8	6.1^{H}	7.0^{H}	8.0	8.1	7.4	6.5^{H}	7.1	6.5	7.0^{H}	7.8^{H}	7.7	6.9	5.8	5.8	4.8	4.7	4.6
24	4.4	4.2	3.9	3.8	3.8	4.1	5.8	6.7	6.8^{H}	7.1	7.6	7.8	7.7	7.0	7.3	7.0^{H}	7.3	7.9	7.3	6.3	5.3	4.6	4.6	4.4
25	4.5	4.3	4.3	4.3	4.1	4.3	5.8	6.3	6.6	7.6	7.6	7.0	^{U}7.2^{S}	^{U}7.3^{SH}	6.4^{H}	6.7	7.3	7.7	6.8	6.3	6.0	5.3	5.0	4.9
26	4.3	4.8	4.5	4.2	4.5	4.3	5.8	6.8^{H}	^{I}9.3^{SH}	7.8^{H}	8.4	8.5	7.4	7.3	8.1^{H}	8.0^{H}	7.3	7.0	5.3	5.3	5.3	5.4	4.6	4.4
27	3.6	3.6	3.5	3.6	3.6	4.0	^{I}5.1^{SH}	5.4	6.1^{H}	6.7	7.9	7.2	6.6	6.7	7.0	6.9	6.5	6.7	6.5	5.4	6.2	5.7	6.0	5.4
28	5.3	5.0	4.4	4.5	4.3	4.6	5.1	5.5	6.3^{H}	8.0^{H}	9.6	8.0	6.7	6.5^{H}	6.5	6.2	7.0	7.1	7.1	7.0	6.1	5.8	^{I}5.1^{S}	5.0
29	4.6	4.3	4.3	4.4	4.3	4.2	5.6	6.1	7.0^{H}	7.7	7.8	7.5	8.0^{H}	7.5^{H}	7.6^{H}	6.6	6.5	6.9	6.8	7.0	6.5	5.1	4.8	3.6
30	3.7	3.6	3.5	3.6	3.1	3.0^{F}	^{U}4.3^{S}	5.6^{H}	7.6	6.8	6.7	6.8	7.3	6.7^{H}	7.8	6.3	6.8	7.6	^{U}6.3^{S}	5.3	5.1	4.3	4.3	4.1
31																								
No.	25	24	24	23	23	25	28	28	27	27	27	26	27	27	27	28	28	29	30	29	28	27	28	27
Median	4.2	4.0	3.9	3.6	3.5	3.8	5.3	6.0	6.3	6.7	6.7	6.6	6.6	6.7	6.8	6.5	6.5	6.4	6.2	5.8	5.4	5.0	4.8	4.4
U.Q	4.4	4.3	4.3	4.2	4.1	4.2	5.8	6.4	6.8	7.6	7.8	7.4	7.3	7.2	7.0	7.0	6.9	7.0	6.8	6.5	6.2	5.4	5.0	4.9
L.Q	3.7	3.6	3.5	3.3	3.2	3.4	4.4	5.2	5.4	5.9	5.9	5.7	6.1	5.5	5.9	6.0	6.1	5.8	5.5	5.4	5.1	4.6	4.3	4.1
Q.R	0.7	0.7	0.8	0.9	0.9	0.8	1.4	1.2	1.4	1.7	1.9	1.7	1.2	1.7	1.1	1.0	0.8	1.2	1.3	1.1	1.1	0.8	0.7	0.8

foF2

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

The Radio Research Laboratories, Japan.

W i

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								I3.6A	I3.9A	4.2	4.2	I4.2A	4.4	4.3	4.4	4.1	3.9	3.5						
2								A	4.1	4.2	4.3	4.3	4.3	4.3	A	A	A	A						
3								I3.3A	I3.8A	I4.1C	I4.2A	I4.3R	I4.2A	I4.2A	I4.1A	3.9	3.8							
4							3.0	3.5	A	A	A	A	A		I4.2A	4.1	3.8							
5								A	4.0	4.1	4.2	4.3	4.3	4.3	4.4	4.1	3.8							
6							A	U3.7L	I4.1A	I4.3A	A	A	A	A	I4.2A	U4.0L								
7							C	C	C	C	C	C	C	C	C	C	C	C						
8									4.1	4.2	4.4	4.4	4.3	4.3	4.4	4.1	A							
9							C	C	C	C	C	C	C	C	C	C	C							
10								3.9		4.2	4.3	I4.4A	4.6	I4.4A	I4.5A	4.2								
11								U4.0L	I4.1L	4.4	4.5	U4.5L	4.7	4.6	4.4	U4.1L	U4.0L							
12									4.2	4.4	4.4	4.5H	4.3		4.3	4.2H								
13									4.0	4.2	4.2	4.3H	4.4	4.3	4.1	4.1								
14									4.1	I4.2A	4.3	4.6	I4.6C	I4.5C	4.3	4.1								
15									4.2	4.3H	4.3	4.6	4.4	4.4H	4.2	4.1								
16										4.2L	4.2	4.5	4.4	4.4	4.2	4.0L								
17									4.0L	4.1	4.4	I4.3A	4.3	4.6		3.9								
18										4.2	4.3	4.4	4.6	4.2	4.2	A	A							
19										4.2	4.5	4.7	4.5	4.5	4.1									
20									A	4.2	4.4		I4.4A	I4.3A	A	A	A							
21										4.2	4.2	4.3	4.3	4.2	A	A								
22										4.2	4.5	4.3	4.3	4.0	4.1									
23										4.2L	4.2	4.3		4.3H	4.3L									
24										4.0	4.3	4.4	4.4	4.2	4.3									
25										4.2	4.3	4.1												
26											4.2	4.3	4.2H	U4.3L										
27										4.2	4.3	4.3	4.3	4.1	4.1									
28											4.4	4.4	4.3											
29										4.2	4.3	4.4												
30									4.0	4.2	4.2	U4.3L	4.3		4.2									
31																								
No.							1	6	13	25	26	25	23	21	20	14	5	1						
Median							3.0	U3.6	4.1	4.2	4.3	4.3	4.3	4.3	4.2	4.1	3.8	3.5						

foF1

Sweep 4.0 Mc to 18.0 Mc in 1 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

W 2

10

IONOSPHERIC DATA

Sep. 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						A	S	2.40	2.85	2.95	3.00	2.95	2.95	2.85	2.90	2.90	2.65	2.20	S					
2						S	S	2.30	2.65	I2.85R	U2.90R	2.95	3.05	3.00	3.15	2.90	2.50	2.05	S					
3						S	S	2.40	2.80	I2.95C	2.90	2.90	I3.00A	3.00	I2.80A	2.60	I2.45A	S	S					
4						S	S	2.35	2.70	2.95	3.00	3.20	3.20	3.00	3.00	2.75	A	A	S					
5						S	S	2.35	2.60	2.90	3.00	I2.90A	A	A	R	2.85	2.60	2.10	S					
6						S	2.05	2.50	2.90	3.05	3.20	3.20	3.25	3.05	2.95	2.50	2.60	2.20	S					
7						C	C	C	C	C	C	C	C	C	C	C	C	C	S					
8						S	S	2.35	2.70	2.95	3.00	3.00	3.15	3.10	3.10	2.95	2.50	S	S					
9						C	C	C	C	C	C	C	C	C	C	C	C	S						
10							S	A	2.75	2.95	3.10	3.10	3.00	3.00	I2.90A	I2.65A	2.45	A	S					
11						S	S	2.20	2.50	2.75	3.05	3.00	3.00	3.00	3.00	2.95	2.85	2.05	C					
12							S	A	A	R	3.20	3.25	3.00	3.20	3.10	2.85	2.45	A	S					
13							2.05	I2.30A	2.65	2.95	I2.95A	3.00	3.15	2.90	2.90	2.85	2.40	S	S					
14							S	A	2.50	2.75	A	A	C	C	3.00	2.80	2.35	S	S					
15							S	2.20	2.60	I2.85A	3.00	I3.10A	3.00	3.05	3.00	2.85	2.45	S	S					
16							S	2.15	2.40	2.90	2.85	3.15	3.15	3.20	3.00	I2.75A	2.40	S	S					
17							S	2.15	2.50	2.70	I3.00R	I3.20A	3.15	3.20	3.00	2.75	2.25	A	S					
18							A	A	2.60	I2.95A	I3.10A	I3.15A	I3.15A	3.05	2.90	A	A	S						
19							S	2.40	2.90	3.00	3.10	3.20	3.15	3.10	2.95	2.60	A	S						
20							S	2.30	2.85	2.95	3.10	3.20	3.10	3.00	2.80	2.35	S	S						
21							S	2.45	2.90	3.00	2.95	3.05	3.00	3.00	A	A	A	S						
22							S	2.45	2.70	3.00	3.15	3.15	3.15	3.00	2.95	2.65	S	S						
23							S	2.30	2.70	2.95	3.10	3.10	3.15	3.10	3.00	2.60	2.30	S						
24							S	2.35	2.80	3.00	3.00	A	A	A	2.85	2.60	2.25	S						
25							S	2.30	2.70	2.90	3.00	3.00	I3.00S	R	R	R	S	S						
26							S	2.30	2.60	2.85	2.90	2.90	3.00	3.00	I2.75A	I2.55A	S	S						
27							S	2.25	2.70	2.85	2.90	2.90	A	A	A	3.00	2.30	S						
28						S	S	2.15	2.50	A	A	A	A	3.00	I2.90R	A	A	A						
29							S	S	A	A	A	A	2.95	3.00	2.75	2.40	2.25	S						
30							S	A	A	2.70	2.80	2.90	2.90	3.00	I2.90A	2.60	2.25	A						
31																								
No.							2	22	25	25	25	24	23	23	24	24	19	5						
Median							2.05	2.30	2.70	2.95	3.00	3.10	3.05	3.00	2.95	2.75	2.45	2.10						

foE

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

Sep. 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	J2.5	E	E	J2.3	2.0	2.3	J3.4	J4.3	J4.3	3.7	3.6	J4.8	4.3	J4.3	G	3.6	3.2	3.3	J5.3	J5.3	J6.3	J4.6	J3.3	J5.3
2	E	E	E	E	E	J3.3	J5.2	J4.3	3.5	G	G	G	G	G	4.5	J7.3	4.3	J5.1	J6.4	J5.0	J7.3	J4.3	E	E
3	E	E	E	E	J3.4	J7.4	J5.0	J4.6	J5.4	C	J7.1	4.1	J5.1	J4.6	J8.0	G	J3.3	J7.0	J5.7	3.5	E	J3.0	E	E
4	E	E	E	J3.1	E	2.7	2.6	3.6	J4.3	J6.8	4.3	5.0	4.6	4.2	J5.1	4.1	3.3	4.2M	J2.8	J3.3	E	E	E	E
5	J3.1	J6.3	J5.3	J6.3	J3.3	2.6	2.3	J4.6	3.7	J5.4	4.7	3.5	3.8	3.3	G	G	G	3.6	2.5	J3.5	J3.3	J5.3	J5.0	E
6	J2.4	E	E	1.8	E	J2.9	3.5	3.6	4.0	4.3	4.4	J5.5	J5.4	5.0M	J5.1	J3.6	G	3.6	J2.8	E	J2.4	J5.3	J4.3	J3.0
7	J5.3	J4.6	E	E	1.4	C	C	C	C	C	C	C	C	C	C	C	C	C	J3.5	J3.3	J2.5	J2.3	J2.9	J2.3
8	E	E	E	E	E	S	S	G	G	J7.3Y	G	G	3.8	G	G	3.5	3.8	5.3	J5.3	E	J6.0	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S	5.0	J4.3	J6.3	J6.3	J6.3	J5.0
10	J3.5	J3.3	J3.6	J6.3	J3.1	J3.3	J5.3	3.6	3.7	3.6	4.0	J5.1	J4.3	J6.3	J4.5	J4.1	G	J2.3	S	J6.3	C	C	J8.3	J5.3
11	J3.5	J3.5	J2.1	J2.3	2.1	J3.0	J4.3	J4.1	3.6	G	G	4.1	4.0	3.3	3.2	3.6	3.7	J5.1	C	C	J2.5	J2.5	J3.3	J3.3
12	E	E	E	E	J5.3	J5.0	S	J3.1	J5.1	G	G	J5.3	G	G	G	G	G	J2.6	J3.4	E	E	E	E	E
13	E	E	E	J2.3	J2.1	E	2.5	2.6	G	J5.0	J5.3	G	G	G	G	G	G	J3.6	J3.0	J3.3	J2.5	2.4	J5.3	J3.3
14	J3.0	E	E	1.7	J4.3	J3.1	J4.3	J5.3	4.0	J5.0	3.3	3.6	C	C	G	G	3.0	J5.4	J5.0	J5.3	J4.1	E	J2.4	E
15	E	E	E	E	J2.3	E	J3.3	3.1	J3.3	J4.0	G	3.9	G	G	G	G	G	2.6	S	E	E	E	J3.3	E
16	J2.4	E	E	2.3	E	E	S	3.3	3.3	G	G	G	G	G	G	4.0	G	G	3.0	J2.3	E	E	E	J2.5
17	E	E	E	2.1	2.1	2.1	J3.3	J5.4	3.6	3.1	G	J4.5	G	G	2.5G	G	3.0	3.2	3.0	2.6	3.1	J3.0	J3.0	E
18	E	E	E	E	E	J2.3	J6.1	J3.1	3.8	3.8	J4.3	3.8	4.2	3.8	3.5	J4.3	J6.3	S	J4.3	J4.3	J3.0	J2.3	E	E
19	E	E	E	E	E	E	J3.0	G	J3.1	G	3.5	3.6	G	3.6	G	G	4.0M	S	J3.3	J4.3	J4.0	J3.1	J2.3	E
20	E	E	E	E	E	J2.3	J4.3	3.5	J5.0	3.4	G	3.7	J7.3	J8.0	6.4	J9.3	J14.0	J5.3	J3.0	E	J3.0	E	E	E
21	E	E	E	J2.0	E	E	S	G	G	J4.3	J4.3	3.8	3.9	3.6	J6.3	J6.3	2.6	S	2.5	J3.0	3.2	2.6	E	E
22	E	E	E	E	E	E	S	G	G	G	G	G	G	G	G	G	S	S	J5.0	J4.1	E	E	E	E
23	E	E	E	E	E	J3.0	2.5	G	G	G	G	G	G	G	G	G	G	S	E	E	E	E	E	E
24	E	E	E	E	E	E	S	G	G	G	G	4.4M	3.8	3.2	3.3	G	G	S	E	E	E	E	E	E
25	E	E	E	E	E	E	S	2.9	G	3.3	G	G	S	G	G	G	S	S	E	E	E	E	E	E
26	E	E	E	E	E	E	S	2.8	G	G	3.4	G	G	G	J3.3	G	S	2.2	3.1	E	E	E	E	E
27	E	E	E	E	E	E	S	3.8	3.3	3.3	3.6	3.5	3.3	J3.3	3.3	2.5G	2.8	J3.3	J3.0	J2.3	J3.0	J2.3	J2.3	E
28	E	E	E	E	E	S	S	2.7	3.0	3.3	3.9	4.3	4.0	G	G	3.3	4.0	3.4	2.7	3.0	J3.1	2.8	3.0	E
29	E	E	E	E	E	E	S	2.6	J4.3	J4.3	J4.1	4.3	G	G	G	G	G	S	E	J3.3	E	E	E	E
30	E	E	E	2.1	2.4	E	S	J4.3	4.0	3.6	G	G	3.3	G	3.0	G	G	3.5	3.5	J3.3	E	E	E	E
31																								
No.	29	29	29	29	29	26	16	28	28	27	28	28	26	27	28	28	25	20	27	29	29	28	29	29
Median	E	E	E	E	E	2.2	3.4	3.2	3.6	3.4	3.4	3.8	3.6	G	G	G	2.8	3.6	3.0	3.3	2.5	2.3	E	E
U.Q	2.4	E	E	2.2	2.2	3.0	4.6	4.2	4.0	4.3	4.2	4.4	4.2	3.8	4.0	3.8	3.8	5.1	5.0	4.2	3.2	3.0	3.3	2.4
L.Q	E	E	E	E	E	E	2.8	2.6	G	G	G	G	G	G	G	G	G	2.9	2.7	E	E	E	E	E
Q.R							1.8	1.6										2.2	2.3					

foEs

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E			E	E	2.0	G	4.0	4.1	G	G	4.5	G	G		G	G	3.1	4.8	3.2	5.2	E	3.2	A
2						2.3	A	4.1	3.3						4.3	A	4.0	4.7	A	E	3.2	E		
3					E	A	A	A	A	C	A	A	A	A	A		3.0	A	A	E		3.0		
4				E		2.3	G	3.3	A	A	A	A	4.5	4.2	4.3	G	3.1	3.2	2.4	2.3				
5	E	A	E	A	E	G	G	A	3.6	G	A	3.3	3.6	3.2				G	G	3.2	E	E	E	
6	E			E		A	3.2	3.4	4.0	4.2	4.4	5.0	4.8	4.7	4.5	G		3.6	2.4		E	E	3.0	2.7
7	A	A			E	C	C	C	C	C	C	C	C	C	C	C	C	C	3.2	3.0	E	E	E	E
8						S	S			G			G			G	3.8	4.7	G		3.1	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S	3.0	4.2	4.6	A	A	E
10	3.2	3.0	2.3	2.2	2.1	2.3	3.2	3.5	G	G	4.0	5.0	4.3	5.0	4.4	3.6		2.1	S	A	C	C	E	2.1
11	3.1	E	E	E	E	1.8	4.2	3.2	G			2.8	G	G	G	2.4	G	4.0	C	C	E	E	3.2	E
12					A	A	S	2.5	3.0			G						2.1	G					
13				E	E		G	2.5		G	3.3							3.3	G	E	E	E	A	E
14	E			E	A	E	3.2	4.4	G	4.5	3.2	3.5	C	C			G	3.2	4.8	3.0	E		E	
15					E		G	G	G	3.2		3.4						G	S				E	
16	E			E			S	G	G							3.0			2.9	E				E
17				E	E	E	G	5.1	3.5	G		4.3			2.5		G	2.3	2.1	E	E	E	E	
18						E	3.0	2.7	G	3.2	3.4	3.2	3.4	2.9	2.5	4.1	5.3	S	E	2.9	E	E		
19							G		2.4		G	G		G			3.1	S	E	3.1	E	E	E	
20						E	3.3	G	4.5	G		G	6.8	A	A	A	A	3.1	3.0		E			
21				E			S			G	G	G	G	G	4.6	6.1	2.3	S	E	2.6	E	E		
22							S										S	S	3.2	E				
23						E	G											S						
24							S					3.9	3.2	3.2	G			S						
25							S	G		G			S				S	S		E				
26							S	G			G				3.1		S	G	E					
27							S	3.8	G	G	G	G	3.1	3.2	3.1	2.5	G	G	E	E	E	E	E	
28						S	S	G	G	3.0	3.3	3.0	3.2			2.9	2.7	2.3	E	E	E	E	3.0	
29							S	G	3.2	3.2	3.6	3.7						S		3.2				
30				E	E		S	2.5	3.0	G			G		3.0			2.3	E	E				
31																								
No.																								
Median																								

foEs

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E2.00S	E2.00S	E1.60S	E	E	E	E2.00S	2.00	2.00	2.00	2.10	2.00	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S
2	E2.00S	E2.00S	E2.00S	E2.00S	E1.90S	E1.70S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.15	2.00	2.15	2.10	2.05	E2.00S	E2.00S	E2.00S	E1.90S	E1.90S	E2.00S	E2.00S
3	E2.00S	E2.00S	E2.00S	E2.00S	E	E1.80S	E2.00S	2.00	2.00	I2.10C	2.00	2.00	2.10	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
4	E1.80S	E2.00S	E2.00S	E	E1.60S	E1.90S	E2.00S	2.00	2.00	2.20	2.25	2.50	2.00	2.60	2.20	2.15	2.15	2.00	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S
5	E2.00S	E2.00S	E	E	E	E1.50S	E2.00S	1.90	2.00	2.00	2.20	2.20	2.30	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E1.85S	E2.00S	E1.90S	E2.00S
6	E2.00S	E1.60S	E1.60S	E	E	E1.50S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.15	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S
7	E1.80S	E	E2.00S	E1.70S	E	C	C	C	C	C	C	C	C	C	C	C	C	C	E1.90S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S
8	E2.00S	E2.00S	E1.80S	E	E1.70S	E1.70S	E2.05S	2.00	2.00	2.00	2.10	2.10	2.10	2.20	2.40	2.15	2.00	E2.00S	E2.00S	E2.00S	E2.00S	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E4.00S	E2.00S	E2.00S	E1.80S	E1.90S	E1.90S	E2.00S
10	E2.00S	E1.80S	E1.40S	E	E	E1.70S	E1.90S	1.90	2.40	2.15	2.00	2.00	2.10	2.15	2.10	2.00	2.00	1.95	E1.90S	E1.90S	C	C	E2.00S	E1.90S
11	E1.85S	E	E	E	E	E1.70S	E2.00S	E2.00S	2.00	2.00	2.05	2.00	2.20	2.50	2.00	2.00	2.15	1.90	C	C	E1.90S	E1.90S	E1.90S	E1.80S
12	E2.00S	E	E	E	E	E	E2.10S	1.85	2.00	2.15	2.00	2.00	2.10	2.10	2.00	2.00	2.00	E1.95S	E1.95S	E2.00S	E2.00S	E2.10S	E2.00S	E2.00S
13	E2.00S	E1.70S	E	E	E	E2.20S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.15	2.00	2.00	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S
14	E2.00S	E1.50S	E	E	E	E	E1.90S	2.00	2.00	2.00	2.00	2.10	I2.00C	I2.10C	2.10	2.00	2.00	E2.00S	E1.90S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S
15	E2.00S	E2.00S	E	E	E	E1.50S	E1.90S	2.00	2.00	2.00	2.00	2.10	2.05	2.35	2.00	2.00	2.00	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S
16	E1.90S	E2.00S	E1.80S	E	E	E	E2.00S	2.00	2.00	2.15	2.20	2.20	2.30	2.50	2.20	1.90	2.00	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E1.90S
17	E2.00S	E2.00S	E	E	E	E2.00S	E1.80S	E2.00S	2.00	2.10	2.30	2.10	2.10	2.15	2.00	2.15	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E1.95S	E2.00S	E2.00S
18	E2.00S	E	E	E	E	E1.70S	E1.90S	1.90	2.00	2.00	2.00	2.05	2.00	2.00	2.00	2.10	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S
19	E2.00S	E	E	E	E	E2.00S	E2.00S	2.00	2.00	2.00	2.00	2.00	2.00	2.15	2.10	2.00	E1.90S	E2.00S	E1.80S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S
20	E2.00S	E2.00S	E2.00S	E2.00S	E	E1.90S	E2.00S	2.00	2.15	2.15	2.00	2.01	2.30	2.10	2.10	2.00	E1.90S	E2.00S	E2.10S	E2.10S	E2.00S	E2.00S	E2.00S	E2.00S
21	E2.00S	E2.00S	E2.00S	E	E1.80S	E1.80S	E2.00S	2.00	2.10	2.10	2.00	2.00	2.20	2.05	2.05	2.00	1.95	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
22	E2.00S	E1.50S	E	E	E	E1.70S	E2.05S	2.00	2.05	2.00	2.20	2.05	2.20	2.20	2.20	2.00	E2.30S	E2.00S	E1.90S	E2.00S	E2.10S	E2.00S	E2.00S	E2.00S
23	E2.00S	E1.80S	E	E	E	E1.70S	E2.00S	2.00	2.00	2.00	2.15	2.40	2.00	2.10	2.00	2.00	2.00	E2.00S	E1.80S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
24	E2.00S	E2.00S	E2.00S	E1.60S	E	E2.00S	E2.10S	2.00	2.15	2.00	2.15	2.00	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
25	E2.00S	E1.60S	E1.60S	E	E	E1.60S	E2.00S	2.00	2.00	2.15	2.05	2.00	E4.00S	2.10	2.05	2.00	E2.30S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.10S
26	E2.00S	E	E2.00S	E	E1.80S	E1.70S	E2.10S	2.00	2.00	2.10	2.00	2.20	2.20	2.20	2.05	2.05	E2.40S	E2.00S	E1.80S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
27	E2.00S	E2.00S	E1.70S	E2.00S	E1.70S	E1.20S	E2.00S	2.00	2.00	2.00	2.15	2.00	2.15	2.00	2.20	2.10	E2.00S	E2.00S	E1.85S	E2.00S	E1.85S	E1.90S	E1.90S	E2.00S
28	E2.00S	E1.50S	E1.70S	E	E	E1.50S	E2.00S	2.00	2.00	2.15	2.00	2.00	2.00	2.00	2.30	2.05	1.90	1.80	E1.70S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S
29	E2.00S	E1.50S	E2.00S	E2.00S	E	E1.60S	E2.10S	E2.00S	2.05	2.00	2.00	2.00	2.25	2.05	2.00	2.10	1.90	E1.90S	E2.00S	E2.00S	E2.10S	E2.00S	E2.10S	E2.00S
30	E2.00S	E2.00S	E2.00S	E	E	E1.50S	E2.00S	2.00	2.00	2.00	2.00	2.05	2.10	2.20	2.10	2.00	2.00	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S
31																								
No.	29	29	29	22	23	28	28	28	28	28	28	28	27	28	28	28	25	29	29	29	29	29	29	29
Median	E2.00	E2.00	E2.00	E	E	E1.70	E2.00	2.00	2.00	2.00	2.00	2.00	2.10	2.10	2.05	2.00	2.00	E2.00	E2.00	E2.00	E2.00	E2.00	E2.00	E2.00

f-min

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

The Radio Research Laboratories, Japan.

W 6

IONOSPHERIC DATA

Sep. 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	3.40	3.05	2.95	2.95^{F}	3.10	3.15	3.15	3.00	3.20	2.50	2.60	3.20	^{I}3.10^{R}	^{I}3.05^{R}	^{I}2.95^{R}	2.75	3.00	3.00	3.00	^{I}3.05^{S}	3.15	3.15	^{U}3.15^{S}	^{I}2.85^{A}
2	2.80	2.80	2.80	2.75	2.75	3.10	^{I}3.10^{A}	2.95	3.35	^{I}3.30^{R}	3.05	2.90	2.90	3.25	3.00	^{I}3.00^{A}	3.10	3.20	^{I}3.15^{A}	3.05	2.95	3.15	^{U}2.95^{S}	2.70
3	2.90	2.75	2.90	2.75	2.90^{F}	^{I}3.20^{A}	^{I}3.35^{A}	^{I}3.15^{A}	^{I}2.85^{A}	^{I}2.95^{C}	^{I}3.00^{A}	^{I}2.85^{R}	A	A	A	3.05	3.25	^{I}3.15^{A}	^{I}3.00^{A}	2.85	^{U}2.85^{S}	^{I}2.90^{S}	2.95	2.85
4	3.05	2.75	SF	SF	SF	S	3.00	2.85	A	A	A	A	3.00	^{I}2.95^{AH}	2.90	3.00	3.15	3.10	3.20	2.85	2.95	2.80	2.80	2.80
5	SF	A	SF	A	SF	2.90	3.20	^{I}3.15^{A}	3.40	3.10	^{I}3.10^{R}	3.35	3.00	3.20	2.95	3.15	3.25	3.40	3.35	3.00	3.00	3.00	^{U}3.05^{S}	3.10
6	2.95	SF	SF	FS	F	^{I}2.80^{A}	3.00	3.35	3.20	3.35	3.05	3.05	2.95	3.30	3.35	3.30	3.20	3.15	3.35	3.00	2.85	2.85	^{I}2.85^{S}	2.90
7	^{I}2.85^{A}	^{I}3.10^{A}	3.05	3.15	2.90	C.	C	C	C	C	C	C	C	C	C	C	C	C	3.25	3.10	3.10	^{U}3.00^{S}	2.80	^{I}2.95^{S}
8	2.95	2.95	3.10	2.95	3.05	3.10	3.40	3.35	3.55	^{U}3.30^{S}	3.40	3.25	3.20	3.15	3.10	3.30	3.30	3.35	3.20	3.00	3.10	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	^{U}3.40^{S}	3.30	3.15	S	A	A	2.85
10	^{I}2.75^{S}	2.90	2.95	2.85	^{I}3.00^{S}	3.15	3.15	3.55	3.65^{H}	3.20	3.25	3.10	2.95	3.20	3.15	3.05	3.30	3.25^{H}	3.20	A	C	C	^{I}3.00^{S}	^{U}3.00^{S}
11	^{U}2.85^{S}	3.10	3.10	3.25	3.05	3.15	3.50	3.55	3.50	3.35	3.45	3.40	3.20	3.20	3.25	3.30	3.30	3.45	^{I}3.10^{C}	^{I}3.30^{C}	3.10	3.20	2.95	^{U}2.95^{S}
12	2.95	3.10	3.10	3.05	^{I}2.95^{A}	^{I}2.95^{A}	3.25	3.40^{H}	3.25	3.10	3.15	3.45	3.45	3.35^{H}	3.30	3.25	3.30^{H}	2.95^{H}	2.80	^{I}2.90^{S}	^{I}3.15^{S}	3.35	2.85	^{U}3.25^{S}
13	3.25	2.80	2.80	2.85	2.85	2.85	3.20	3.50^{H}	3.25	2.90	3.20	W	3.15	3.20	3.15	3.30	3.30^{H}	3.20	3.05	2.95	2.95	3.00	^{I}3.00^{A}	SF
14	SF	SF	FS	SF	A	^{U}2.95^{S}	3.20	3.40	3.50	3.50	3.35	3.25	^{I}3.15^{C}	^{I}3.20^{C}	3.25	3.40	3.40^{H}	3.30	3.10	3.00	3.05	3.05	3.10	2.90
15	2.90	3.00	3.00	3.10	3.15	3.15	3.30	3.45^{H}	3.20	3.50	3.55	^{I}3.20^{C}	3.25	3.25	3.40	3.20	3.35^{H}	3.25	^{I}3.30^{S}	3.20	2.90	3.00	2.75	3.05
16	^{I}3.05^{S}	3.00	2.90	3.10	3.10	3.00	3.50	3.25^{H}	3.50	^{I}3.35^{S}	3.40	3.35	3.25	3.15	3.35	3.35	3.35^{H}	3.20	3.15	3.10	3.10	3.10	2.95	2.90
17	2.80	2.85	3.05	3.20	2.95	3.35	3.35	3.55	3.35	3.40	3.40	3.40	3.35	3.20	3.35^{H}	3.35	3.30	3.40	3.25	3.20	3.15	3.05	2.95	3.05
18	^{I}2.85^{S}	^{I}3.05^{SF}	3.40	3.20	3.05	3.30	3.50	3.35	3.45	3.30	3.45	3.30	3.15	3.35	3.30	3.35	3.45	3.40	3.20	3.10	3.10	3.00	2.70	SF
19	SF	SF	3.05	3.40	^{I}3.10^{SF}	3.15	3.55	^{U}3.65^{S}	3.30^{H}	3.25	3.20	3.15	3.25	3.25	3.25	3.30^{H}	3.10^{H}	3.05	3.20	3.10	^{I}3.15^{S}	3.00	3.00	2.95
20	3.20	2.90	3.00	2.95	^{U}3.35^{S}	^{U}3.15^{S}	3.55	3.20	3.15	^{I}3.20^{R}	3.40	3.15^{H}	3.10	^{I}3.30^{A}	^{I}3.35^{A}	^{I}3.25^{A}	^{I}3.20^{A}	3.30	3.40	285	285	^{U}3.00^{S}	^{U}2.85^{S}	2.95
21	2.95	2.90	2.95	3.20	3.10	3.25	3.55	3.35	3.50^{H}	3.35	3.35	3.35	3.20	3.35	3.40	3.50	3.55^{H}	3.30	3.25	3.25	3.20	3.00	3.00	3.00
22	SF	SF	SF	SF	SF	S	3.55	3.40	3.55^{H}	3.25	3.20	3.40	3.25	3.20	3.20	3.35^{H}	3.45^{H}	3.35	^{I}3.20^{S}	3.00	3.00	3.00	2.90	2.95
23	3.00	2.95	3.00	SF	SF	SF	3.60	3.55^{H}	3.45^{H}	3.40	3.45	3.40	3.25^{H}	3.50	3.25	3.20^{H}	3.25^{H}	3.40	3.35	3.10	3.15	3.10	2.95	3.00
24	2.95	3.05	3.00	3.15	3.10	3.15	3.60	3.60	3.55^{H}	3.30	3.30	3.35	3.30	3.30	3.35	3.30^{H}	3.20	3.30	3.30	3.15	3.40	2.90	3.00	3.00
25	3.00	3.00	3.00	3.00	3.15	3.15	3.45	3.50.	3.35	3.30	3.45	3.35	^{U}3.20^{S}	^{U}3.40^{SH}	3.55^{H}	3.25	3.35	3.40	3.35	3.15	3.15	3.10	3.00	2.90
26	2.75	3.00	2.85	2.85	3.10	3.20	3.60	3.45^{H}	^{I}3.40^{SH}	3.20^{H}	3.25	3.35	3.30	3.10	3.15^{H}	3.25^{H}	3.40	3.45	3.20	2.95	3.00	3.15	3.10	3.15
27	2.80	3.05	2.85	2.80	3.05	3.10	^{I}3.40^{SH}	3.40	3.25^{H}	3.30	3.20	3.40	3.35	3.15	3.30	3.35	3.40	3.40	3.10	2.95	2.90	2.80	3.00	3.15
28	3.00	2.90	3.00	3.05	3.25	3.35	3.55	3.45	3.35^{H}	3.30^{H}	3.45	3.45	3.45	3.40^{H}	3.50	3.25	3.30	3.30	3.25	3.15	3.10	3.10	^{I}3.05^{S}	3.00
29	3.05	2.80	2.90	2.95	3.25	3.10	3.40	3.40	3.45^{H}	3.40	3.40	3.35	3.25^{H}	3.20^{H}	3.40^{H}	3.45	3.40	3.40	3.10	3.15	3.10	3.20	3.15	2.80
30	2.95	3.10	2.85	3.05	2.90	2.85^{F}	^{U}3.45^{S}	3.05^{H}	3.40	3.40	3.30	3.25	3.40	3.05^{H}	3.30	3.30	3.25	3.30	^{U}3.30^{S}	3.15	3.05	2.90	2.95	3.00
31																								
No.	25	24	24	23	23	25	28	28	27	27	27	27	27	27	27	28	28	29	30	29	28	27	28	27
Median	2.95	3.00	3.00	3.05	3.05	3.15	3.40	3.40	3.40	3.30	3.30	3.35	3.20	3.20	3.30	3.30	3.30	3.30	3.20	3.10	3.10	3.00	2.95	2.95

M(3000)F2

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

The Radio Research Laboratories, Japan.

W 7

IONOSPHERIC DATA

Sep. 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								I3.50A	I3.60A	3.70	3.65	I3.85A	3.70	3.60	3.40	3.55	3.45	A						
2								A	3.65	3.80	3.75	4.15	3.70	3.70	A	A	A	A						
3								A	A	I3.65C	I3.70A	I3.80B	I3.95A	I3.65A	I3.60A	3.60	3.50							
4							3.65	A	A	A	A	A	A		I3.65A	3.90	3.45							
5								A	I3.85A	4.10	I3.85A	4.05	3.75	3.70	3.50	3.60	3.65							
6							A	A	A	A	A	A	A	A	I3.65A	U3.65L								
7							C	C	C	C	C	C	C	C	C	C	C	C						
8									3.80	4.00	3.85	3.95	3.95	3.60	3.65	3.65	A							
9							C	C	C	C	C	C	C	C	C	C	C							
10								I3.70A		3.85	A	A	A	A	I3.70A	3.65								
11								U3.75L	I3.80L	3.85	3.80	I3.90A	3.60	3.75	3.65	U3.80L	U3.75L							
12									3.70	3.70	3.85	3.75H	4.15		3.75	3.55H								
13									3.75	3.60	4.00	3.90H	3.60	3.75	3.85	3.50								
14									3.90	I3.85A	4.00	3.70	I3.60C	I3.55C	3.55	3.75								
15									3.80L	3.70H	4.00	3.80	3.85	3.65H	3.80	3.75								
16										3.80L	4.00	3.70	3.90	3.65	3.65	3.85L								
17									3.90L	3.90	3.85	I3.95A	3.95	3.40		3.70								
18										3.75	3.75	3.85	3.70	3.85	3.80	A	A							
19										4.05	3.75	3.60	3.80	3.80	3.85									
20									A	3.80	3.80		I3.80A	I3.75A	A	A	A							
21										3.85	3.80	3.95	3.90	3.80	A	A								
22										4.05	3.80	4.00	3.95	3.95	3.90									
23										3.90L	4.05	3.95		3.70H	3.65L									
24										4.00	3.95	I3.95A	3.85	3.95	3.80									
25										3.85	3.95	4.00												
26											4.10	3.85	3.95H	U3.75L										
27										3.65	3.70	3.90	3.80	3.90	3.80									
28											3.75	3.95	3.95											
29										3.80	3.80	3.85												
30									3.75	3.55	3.65	U3.85L	3.60		3.60									
31																								
No.							1	3	11	24	25	24	22	20	20	14	5							
Median							3.65	U3.70	3.80	3.80	3.80	3.90	3.80	3.70	3.65	3.65	3.50							

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

IONOSPHERIC DATA

Sep. 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								375	320	530	470	350	$^{I}390^{R}$	$^{I}405^{R}$	$^{I}420^{R}$	440	375	330						
2								350	305	$^{I}370^{R}$	380	440	430	340	400	$^{I}370^{A}$	345	A						
3								$^{I}340^{A}$	$^{I}375^{A}$	$^{I}390^{C}$	$^{I}400^{A}$	$^{I}440^{R}$	A	A	A	360	305							
4							360	410	A	A	A	A	400		400	370	315							
5								A	325	360	$^{I}375^{A}$	310	350	350	385	320	290							
6							335	300	340	310	335	350	320	275	285	275								
7							C	C	C	C	C	C	C	C	C	C	C	C						
8									255	300	290	310	320	315	310	285	275							
9							C	C	C	C	C	C	C	C	C	C	C							
10								255		300	300	370	345	$^{I}350^{A}$	330	345								
11								250	270	275	270	280	300	310	300	280	270							
12									300	320	300	285	275		305	305								
13									310	390	325	W	320	320	310	295								
14									255	255	300	305	$^{I}320^{C}$	$^{I}310^{C}$	295	270								
15									290	250	250	300	285	295	280	295								
16										250	265	285	280	305	275	265								
17									250	250	280	260	265	300		260								
18										260	260	275	280	270	275	260	A							
19										260	295	295	270	280	270									
20									305	275	270		$^{I}305^{A}$	$^{I}270^{A}$	A	A	A							
21										275	265	270	275	275	270									
22										280	290	260	270	260	290									
23										255	250	260		255	280									
24										250	265	265	270	270	265									
25										265	245	260												
26											265	260	260	290										
27										290	280	265	270	260	260									
28											255	250	260											
29										260	260	270												
30									255	290	285	$^{U}285^{L}$	270		290									
31																								
No.							2	7	14	25	27	26	24	21	21	16	7	1						
Median							350	$^{U}340$	300	275	280	285	280	295	290	295	305	330						

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

Sep. 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	250	300	280	305	305	290A	260	245A	255A	235	235	230A	240	260	240	260	260	A	A	A	A	250	255A	300A
2	325	330	340	300	330	300	A	A	A	225	210	205	220	205	A	A	A	A	A	250	260A	275	285	345
3	300	360	295	325	350	A	A	A	A	235C	230A	225A	210A	235A	240A	245	240	265A	290A	310	295	310A	310	315
4	285	365	360	340	350	360A	250	A	A	A	A	A	A	A	245A	230	260	250A	240	305	290	310	300	325
5	285	310A	320	325A	330	330	270	245A	250A	215	215A	200	240	205	235	230	250	250	250	270A	300	285	265	260
6	310	310	325	305	320	A	A	A	A	A	A	A	A	A	230A	240	250H	250A	230	250	300	290	300A	325A
7	290A	270A	270	285	330	C	C	C	C	C	C	C	C	C	C	C	C	C	A	275A	275	275	300	290
8	280	310	285	270	290	270	250H	235H	215	205	205	210	200	250	245	250	250A	255A	250	265	A	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	260S	A	A	A	280A	300
10	355A	335A	300	345	290	290	275A	255A	230H	220	A	A	A	A	230A	250	240H	235H	245	290A	C	C	290	275
11	285A	275	260	260	275	275	250A	245	225	205	200	210A	230	225	215	250	235	A	C	C	250	240	265A	280
12	275	270	270	270	285A	300A	245H	225H	220	215	230	210H	200	220H	210	210H	245H	250H	295	305	260	220	270	265
13	275	360	310	370	325	350	280	230H	210	235	225	230H	230	220	230	235	250H	265A	260	285	285	260	285A	310
14	340	350	320	260	270A	310	260A	245A	240	225A	195	230	210C	215C	225	245	245H	255	260A	260A	255	260	260	270
15	275	300	270	260	280	260	240	245H	215	200H	215	200	200	200H	230	230	240H	250	225	250	260	280	325	270
16	275	270	280	265	250	265	250	230	220H	200	195	200	210	200	220	230	230H	250	255	260	250	260	270	295
17	300	290	260	235	260	250	235	240A	230A	215	220	210A	210	210	200H	235	250	240	250	250	260	270	290	270
18	320	300	225	240	250	260	230	235	225H	215	210	215	205	200	225	225A	225A	230	250	260A	260	295	325	300
19	270	260	260	220	270	260	225	235	225H	205	230	215	215	220	210H	235H	245AH	250	245	245A	250	290	290	280
20	250	305	270	285	250	300	235	260	235A	220	220	210H	230A	240A	A	A	)	250A	250A	275	310	300	295	280
21	290	310	300	260	270	250	245	225	210H	230	225	210	220	240	235A	250A	235H	250	240	255A	250	285	270	275
22	285	305	300	300	260	250	230	235	235H	210	225	200	230	215	210	250H	225H	240	245A	260	265	270	300	295
23	300	295	260	280	270	265	230	220H	25H	230	210	200	215H	190H	220	210H	210H	235	225	260	255	260	295	275
24	285	270	280	260	265	270	225	235	220H	210	220	210A	220	220	220	210H	240	245	230	230	235	260	270	300
25	280	285	270	260	250	250	230	235	220	21?	210	205	250S	210H	210	230	250	240	240	250	250	260	280	300
26	320	285	305	275	275	230	220	240H	220H	220H	200	195	200H	210	250H	250H	245	240	245	275	300	260	260	275
27	265	300	320	325	290	260	230H	250A	240H	230	220	230	210	215	240	250H	250	245	250	290	300	290	280	265
28	275	285	265	270	250	230	220	235	220H	195	240	225	210	215H	220	235	260	245	240	250	260	260	270A	270
29	260	310	300	290	260	260	230	225	230H	220	240	210	205H	205H	230H	220H	250	240	255	265A	260	235	265	265
30	305	275	315	275	310	315	235	260H	250	230	220	215	205	220H	250	250	260	245	245	260	270	260	280	285
31																								
No.	29	29	29	29	29	26	24	25	24	26	25	25	24	25	26	26	26	25	25	27	26	27	29	29
Median	285	300	285	275	275	270	235	235	225	220	220	210	215	215	230	235	245	250	245	260	260	270	280	280

h'F

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

The Radio Research Laboratories, Japan.

W 10

IONOSPHERIC DATA

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

Sep. 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	f	l	C	C2	C2	C	C	C2	C	C		h	h	C2	C4	f4	f4	f2	f2	f2
2						C2	C3	C3	C						h	C2	C2	C4	C4	f	f2	f3		
3					f2	C2	C2	C2	C2		C2	C	l	C2	l2		l	C3	C5	f2		f3		
4				f		C	C	C	C	C	C	C	C	C	C2	C	l	l2	C	f2				
5	f2	f4	f3	f4	f2	C	C	C2	C	C	C2	l	l	l				C	C	f2	f2	f2	f	
6	f2			f		C	C2	C2	C	C	C	C	C	C	C2	C		C2	C		f	f2	f2	f
7	f3	f3			f														C2	f2	f	f	f2	f2
8										C			l			h	C	C2	C		f2			
9																			f2	f3	f-f	f	f2	f
10	f2	f2	f	f2	f2	f2	C2	C.l	C	C	C	C2	C	C2	l2	l2		l		f4			f2	f2
11	f2	f2	f	f	f2	C.l	C2	C2	C			C.l	C	C	l	h.l	C	C2			f	f	f2	f2
12					f3	f2		l	l			l						l	C2					
13				f2	f		C	l		C	l							C2	C	f	f2	f	f3	f2
14	f2			f	f2	f2	C2	C2	C	C2	l	l					C	C3	C2	f2	f		f	
15					f		C	C	C	l		l						C					f	
16	f			f				C	C							l			C	f				f
17				f	f	f	C2	C3	C	C		l			l		C	l	l	f	f	f	f	
18						f	l2	l2	h	l	l2	l	l2	l.C	C.l	C3	l2		f	f2	f	f		
19							C		l		h	h		h			l		f2	f3	f	f	f	
20						f	C	C	C2	C		h	C3	C	C	C3	C5	C2	f2		f			
21				f2						C	C	C	C	C	l2	l2	l		f	f2	f	f		
22																			f2	f2				
23						f	C																	
24												l2	l	l	l									
25								h		C										f				
26								h			C				l			h	f					
27								C	C	C	C	C	l	l	l	l	h	C	f	f	f	f	f	
28								C	C	l	l	l	l			l	l	l2	f	f	f3	f	f	
29								C	l2	l	l2	l2								f2				
30				f	f			l	l2	C			C		l			l	f	f				
31																								
No.																								
Median																								

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

The Radio Research Laboratories, Japan.

W 12

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.0	3.1	3.5	3.7	3.5	3.5	4.6	4.6	5.9	5.8	5.4	5.0	R	R	4.7	4.8	5.1	5.6	6.5	7.7	6.2	4.9	A	A
2	3.5	3.5	3.4	3.4	3.4	3.7	4.6	5.9	5.7	6.2	A	A	A	5.6	5.9	5.9	5.7	5.3	5.3	5.9	5.6	5.4	5.0	R
3	R	F	F	F	A	A	A	4.4	4.8	5.1	5.1	5.3	5.3	5.2	5.4	5.6	5.3	5.2	4.7	4.3	4.5	4.4	4.3	F
4	A	A	A	F	R	F	4.0	G	4.5	A	A	A	5.8	6.3	6.0	C	C	6.5	6.3	4.5	4.6	4.5	4.5	4.3
5	4.3	3.9	3.1	3.1	3.2	3.5	5.1	5.4	5.4	6.5	5.6	5.7	5.5	5.8	5.9	5.8	6.3	6.3	5.7	4.9	5.0	4.9	4.4	4.0
6	3.7	3.9	4.0	4.1	4.0	4.0	5.1	5.6	6.3	7.1	7.3	7.5	8.4	8.5	8.1	6.8	6.8	6.7	7.1	6.1	5.4	5.5	5.4	5.2
7	5.1	4.8	3.5	3.1	3.0	3.0	G	4.5	5.0	5.1	5.8	5.6	C	C	C	C	C	5.9	5.1	5.3	5.2	4.8	4.6	4.6
8	4.2	4.0	4.1	3.8	3.6	3.6	5.8	6.1	6.1	5.9	6.7	6.0	6.3	6.3	7.3	7.1	7.2	7.5	7.0	5.8	5.9	5.5	4.4	4.3
9	4.1	4.0	4.0	4.0	4.0	4.0	5.6	5.8	6.0	5.7	5.9	6.3	6.5	6.3	6.8	6.3	6.6	6.5	6.3	6.0	5.6	5.0	4.8	4.6
10	4.6	4.6	4.6	4.3	4.2	4.0	5.2	6.8	6.1	5.9	6.2	6.1	6.1	6.3	6.4	6.5	7.2	6.7	6.5	5.1	4.4	4.5	4.4	4.4
11	4.2	4.2	4.4	3.7	2.9	3.5	5.5	7.5	7.4	6.4	6.8	7.2	6.7	6.9	7.3	7.5	8.1	7.7	C	C	R	5.4	4.8	4.4
12	4.1	4.1	4.0	4.1	3.7	3.6	6.0	6.3	6.7	6.5	7.4	6.7	6.5	6.4	6.2	6.6	7.0	6.5	6.9	7.4	7.7	6.4	4.1	4.1
13	3.5	3.3	3.6	3.3	3.5	3.6	C	C	6.3	6.6	6.2	6.2	7.0	7.0	6.2	6.3	6.6	6.5	6.3	6.5	F	R	F	4.6
14	4.4	4.0	4.1	4.0	3.9	3.9	4.9	6.6	7.4	7.1	6.6	7.0	7.4	7.2	7.8	7.1	6.7	6.4	7.6	7.2	6.6	5.4	F	S
15	R	4.6	4.6	4.1	3.9	4.1	6.3	7.2	7.4	8.4	7.8	C	C	7.6	7.1	7.4	7.5	6.9	7.6	5.0	4.6	S	F	F
16	F	F	F	3.9	3.9	4.1	6.6	7.5	7.5	6.9	6.8	7.1	7.2	7.2	7.2	6.9	6.6	7.2	7.4	6.9	6.2	6.1	5.4	5.4
17	5.2	5.4	5.2	5.1	4.8	4.6	6.3	6.7	7.2	7.3	7.4	7.3	6.4	6.4	7.7	7.7	6.8	6.6	6.9	6.3	5.9	S	S	S
18	S	S	S	F	F	F	5.1	5.9	7.0	8.3	7.8	7.2	7.9	8.9	7.6	6.9	6.6	6.3	5.3	5.8	R	R	F	F
19	F	R	5.2	3.3	3.5	4.4	5.4	6.8	6.9	7.3	7.4	7.9	8.2	8.1	7.5	7.7	7.5	7.7	8.0	7.3	6.1	5.2	5.1	5.2
20	5.3	5.1	5.2	4.9	5.3	4.5	7.2	6.2	6.9	7.4	8.2	6.7	8.0	9.3	8.1	6.9	7.4	6.8	5.1	4.4	4.2	4.2	4.1	4.3
21	4.0	3.9	4.2	4.0	3.8	4.0	5.4	5.9	6.4	6.9	6.9	7.0	7.3	7.2	7.6	7.5	7.3	6.4	7.4	6.6	5.4	4.6	R	R
22	4.4	4.4	4.4	4.1	4.0	4.3	5.4	6.6	7.5	8.5	8.1	8.1	8.5	7.6	7.3	8.4	7.9	7.9	6.7	5.4	5.0	R	S	S
23	S	4.4	4.3	3.9	4.0	4.0	6.1	7.0	7.3	8.5	7.4	7.1	7.5	7.4	7.3	7.5	8.3	9.2	7.9	5.5	5.4	4.8	S	S
24	4.7	4.4	4.1	4.0	4.0	4.2	6.5	7.3	7.1	7.4	7.3	8.1	8.9	8.1	7.5	7.2	8.2	8.5	8.2	6.6	4.9	4.6	S	S
25	4.6	4.5	4.5	4.4	4.1	4.1	5.7	6.7	6.9	7.6	7.0	7.4	8.3	8.1	7.4	6.8	8.0	8.0	7.9	6.6	6.1	5.3	4.9	4.7
26	4.6	4.7	4.6	4.3	4.4	4.3	5.7	7.3	8.8	8.0	7.0	8.6	8.7	7.7	8.3	8.7	8.2	7.6	6.6	5.4	5.2	5.2	4.9	4.4
27	4.6	4.4	3.9	3.7	3.9	3.5	5.1	7.6	7.6	9.3	8.4	8.6	7.5	7.6	7.4	7.3	7.6	7.5	7.0	5.7	F	F	F	R
28	F	S	S	S	S	4.2	6.1	6.3	6.7	8.3	9.2	8.1	7.4	6.9	6.5	6.6	7.4	8.1	7.6	6.8	6.4	R	R	R
29	R	F	F	F	4.2	4.4	5.6	8.0	7.8	8.1	7.8	7.8	8.8	8.7	7.9	7.2	6.8	7.8	7.9	7.1	6.1	5.3	4.5	3.9
30	3.6	4.1	3.3	3.5	3.3	3.2	6.0	6.6	9.7	7.9	7.4	8.6	7.7	7.6	7.5	8.7	7.7	8.3	6.9	5.0	4.6	4.4	S	S
31																								
No.	21	23	24	25	26	27	28	29	30	29	28	27	26	28	29	28	28	30	29	29	26	23	17	16
Median	4.4	4.2	4.1	4.0	3.9	4.0	5.6	6.6	6.9	7.1	7.2	7.1	7.4	7.2	7.3	7.0	7.2	6.8	6.9	5.9	5.4	5.0	4.6	4.4
U.Q	4.6	4.6	4.6	4.1	4.0	4.2	6.0	7.1	7.4	8.0	7.6	7.9	8.2	7.9	7.6	7.5	7.6	7.7	7.6	6.7	6.1	5.4	5.0	4.6
L.Q	4.0	3.9	3.8	3.6	3.5	3.6	5.1	5.8	6.1	6.3	6.4	6.2	6.5	6.4	6.3	6.6	6.6	6.4	6.3	5.2	4.9	4.6	4.4	4.3
Q.R	0.6	0.7	0.8	0.5	0.5	0.6	0.9	1.3	1.3	1.7	1.2	1.7	1.7	1.5	1.3	0.9	1.0	1.3	1.3	1.5	1.2	0.8	0.6	0.3

foF2

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

The Radio Research Laboratories, Japan.

A 1

21

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	A	A	A	4.3	4.4	4.4	I 4.5 R	I 4.4 L	4.2	A	A	A					
2							3.8	I 3.8 L	4.1	4.4	A	A	A	A	4.2	A	A	A	A					
3							A	A	I 4.0 A	4.1	I 4.4 A	R	R	C	4.2	4.1	4.0	L						
4								3.9	I 4.0 A	A	A	A	A	4.7	4.5	C	C	A						
5							L	A	I 4.1 L	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	L						
6									A	I 4.6 A	I 4.8 A	I 4.8 L	I 4.8 C	I 4.6 A	4.7	4.5 L	4.0	L	L					
7							3.2	3.7	3.9	I 4.3 A	4.4	R	C	C	C	C	C							
8							L	4.0 L	4.3 L	4.5 L	4.7	4.7 R H	4.8 R	4.8 L	4.7	4.6 H	4.1	A						
9							L	R	A	A	4.6 R	4.6 R	I 4.8 A	I 4.6 A	4.5	I 4.3 A	L	A						
10								4.0	4.3	I 4.6 L	I 4.8 A	I 4.8 A	4.8 R	4.7 L	4.6	4.4	4.0	L						
11									L	I 4.5 A	4.3	C	C	C	C	C	C	A						
12							C	C	4.0 L	I 4.2 R	4.4	I 4.5 R H	4.3	4.5	I 4.5 L	L	L	L						
13								C		4.1 H I	4.2 R	I 4.4 R	4.7 R	4.5 L	L	L	L							
14							A	L	I 4.0 L	L	L H	A	I 4.7 R H	I 4.5 R	L	L	L							
15							L	L	L	I 4.5 L	4.5 L H	C	C	I 4.6 R S	I 4.4 L	L	L							
16								L	L	I 4.4 L	4.5	I 4.6 L	4.8 L	4.6	I 4.4 L	L	L							
17								L	L	4.5 L I	4.5 L	L	L	4.3 L	L	L	L							
18								L	L	A	L	L	R	A	L	L	A							
19									L	4.5 L I	4.5 R	I 4.5 R	I 4.5 R S	I 4.5 R	I 4.3 L	L								
20									A	A	4.6	A	A	4.6 L	L	S	L							
21									L	L	L	L	R	4.2 L	S	L	L							
22									L	L	L	R	R	L	4.1	I 4.0 L								
23									L	L	L	L	L	L	L	L	L							
24									L	L	R	L	R	L	L		L							
25									L	R	R S	R	4.5 R	L	L	L								
26									L	L	L	L	R	L	L	L								
27										L	A	L	L	A	L	L	L							
28									L	I 4.4 L	L	L	L	A	A	A	A							
29									L	L	L	L	L	L	L									
30								L	L	L	S	R	A	L	A	L	L							
31																								
No.							2	5	9	15	16	10	12	16	14	8	5							
Median							3.5	3.9	4.0	U 4.5	4.5	U 4.6	4.7	4.6	4.4	4.4	4.0							

foF1

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

The Radio Research Laboratories, Japan.

A 2

IONOSPHERIC DATA

Sep. 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	A	3.10^{A}	A	A	A	A	3.20	3.05	2.75	A	A					
2							B	A	A	A	A	A	A	A	3.45	A	A	A	B					
3							B	2.50	2.80	A	A	A	R	C	A	A	2.70	A	B					
4							A	2.55	2.90	B	A	B	A	A	A	C	C	A	B					
5							A	A	A	A	A	A	A	3.40	R	A	A	A	B					
6							A	A	A	A	A	A	C	A	A	3.20	2.90	A	A					
7							A	2.55	^{I}2.85^{A}	3.05	^{I}3.20^{A}	R	C	C	C	C	C	A	B					
8							R	R	2.95	R	R	R	R	3.50	3.50^{R}	R	A	A	B					
9							A	A	A	A	R	A	A	A	A	A	A	A						
10							A	A	A	R	A	R	A	A	A	A	A	B						
11								A	A	A	R	C	C	C	C	C	C	C						
12							C	C	3.00	R	R	R	R	R	^{I}3.10^{R}	3.00	2.60	A						
13							C	C	2.80	R	R	R	R	R	C	3.05	2.65	A						
14							B	A	A	A	A	A	3.50	^{I}3.35^{C}	^{I}3.20^{R}	3.05	A	B						
15							A	A	A	A	A	C	C	3.35	3.25	3.05	A	B						
16							B	A	A	A	^{I}3.25^{R}	3.40	3.45	^{I}3.40^{R}	^{I}3.20^{A}	3.00	A	A						
17							R	S	A	A	3.25	A	A	A	3.10	2.95	A	A						
18							1.80	^{I}2.40^{A}	2.85	^{I}3.05^{A}	3.20	3.30	3.40^{R}	A	A	A	A	B						
19							R	2.55	2.90	^{I}3.15^{R}	^{I}3.30^{A}	3.35	R	R	A	2.95	A	A						
20							R	2.50	2.80	3.10^{R}	3.20	R	R	R	A	3.00	2.60	A						
21							B	A	2.95	^{I}3.15^{A}	A	R	B	R	A	A	A	B						
22							B	2.45	2.90^{R}	3.15^{R}	3.30	^{I}3.45^{R}	^{I}3.50^{R}	R	R	2.95	2.45	B						
23							2.00	A	A	3.20	^{I}3.25^{R}	3.35	3.45	^{I}3.40^{R}	3.30	^{I}3.00^{R}	2.65	R						
24							B	A	A	^{I}3.10^{A}	^{I}3.25^{A}	3.35	^{I}3.45^{A}	^{I}3.35^{A}	^{I}3.20^{R}	2.95	2.45	B						
25							A	^{I}2.65^{A}	2.90	B	R	A	R	R	A	A	2.75	A						
26							R	A	A	R	A	A	R	A	A	2.90	A	B						
27							B	A	A	3.05	A	A	A	A	A	3.00	2.55	B						
28							R	A	A	^{I}3.10^{A}	^{I}3.35^{R}	R	R	A	A	A	A	A						
29							B	A	A	A	A	A	R	^{I}3.20^{A}	^{I}3.05^{A}	^{I}2.90^{R}	2.40	B						
30							B	2.50	A	A	A	A	A	A	A	3.00	A	A						
31																								
No.							2	9	12	11	10	6	6	8	11	17	12							
Median							1.90	2.50	2.90	3.10	^{U}3.25	3.35	3.45	^{U}3.40	3.20	3.00	2.60							

foE

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	J1.8	J2.5	J2.8	J3.2	J5.5	J4.7	J4.5	4.2	3.8	J4.5	4.1	G	G	4.2	J5.4	J5.0	J2.9	J3.3	J2.4	J5.8	J6.4
2	E	J2.2	J1.9	J1.7	E	2.5	2.4	4.1	J3.5	J7.4	J6.3	J8.2	J7.4	4.7	3.7	4.7	J5.5	J6.0	J4.3	J7.5	J6.2 Y	J3.3	J7.0	J3.9
3	J3.5	S	J2.3	J1.8	J3.2	J4.8	J5.2	4.0	J4.8	3.7	4.5	3.7	4.5	C	3.8	J4.3	3.3	2.7	J3.9	J3.1	E	J3.3	J2.9	J6.1 Y
4	J4.5	J6.1	J3.5	J3.3	J3.8	E	2.6	3.4	J4.6	4.7	4.8	J6.6	4.5	3.7	4.3	C	C	J4.8	J5.9	J3.3	J2.5	J3.0	J3.0	J2.0
5	J2.5	J3.1	J5.3	J2.9	E	J2.8	2.8	4.1	J3.6	4.2	4.0	4.1	3.5	G	G	J3.3	J3.8	J3.1	J2.9	J4.3	J2.5	J3.3	J3.3	J3.2
6	J7.7	J3.6	J3.3	J2.5	J2.3	J2.0	J3.8	4.0	4.5	4.6	4.7	J5.3	C	J5.0	J4.6	G	G	2.8	J3.4	J2.9	J5.0	J3.6	J6.5	J5.0
7	J3.3	J2.5	J1.9	J2.5	E	J2.6	3.0	3.3	J5.3	J4.4	4.0	4.6	C	C	C	C	C	3.0	J3.4	J3.3	J3.3	J2.0	J3.0	E
8	E	J2.8	J2.5	E	J1.9	2.5	G	G	3.4	G	G	G	G	G	G	3.6	3.5	J3.5	J2.5	J1.8	E	E	J3.0	J3.8
9	J3.7	J2.0	E	E	E	E	2.3	J2.6	J5.3	J7.4	4.2	4.0	J4.7	J7.6	J3.5	J6.8	J5.0	J3.5	J5.8	J6.3	J2.8	J2.6	J1.8	1.8
10	E	E	E	E	E	E	2.2	3.0	J3.3	J3.8	J5.2 Y	J3.8	J5.3	J5.3	J3.6	J3.8	J3.3	J2.3	J2.9	E	J2.8	J3.3	J4.0 S	J2.8
11	J1.8	J1.9	J1.8	E	E	J2.3	J3.1	J5.3	J7.2	J6.3	G	C	C	C	C	C	C	J3.3	C	C	J3.3	J2.8	C	C
12	C	C	C	C	C	C	C	C	G	G	G	G	G	G	3.6	G	2.9	2.9	E	J3.5	J2.9	J2.5	E	E
13	E	E	J1.9	E	J2.8	J1.9	C	C	G	3.5	G	G	G	G	C	G	3.5	J3.3	J3.5	J2.8	J3.3	J3.2	J2.4	J2.9
14	J3.3	E	E	E	J2.3	E	J3.3	2.8	3.0	J3.9	3.5	J4.2	G	C	G	G	J3.4	3.2	J3.0	J3.3	J2.5	J2.6	J2.5	E
15	J1.8	E	E	E	E	E	J2.8	J3.6	J4.2	J3.5	3.7	C	C	G	G	3.6	3.2	J3.8	J5.2	J2.8	J2.8	J3.3	J3.4	E
16	J2.9	E	E	J2.1	J2.0	E	2.2	3.0	3.5	3.3	G	G	G	G	J3.2 G	G	2.9	J3.9	J5.3	J3.5	J3.1	J2.5	J2.8	J3.5
17	J3.3	J2.5	J2.5	J2.0	J1.8	E	2.2	2.8	3.0	4.0	G	3.4	3.8	J3.5	G	G	3.2	2.6	E	E	E	J2.0	J3.1	E
18	E	J1.8	E	E	E	E	2.2	3.0	3.3	J6.5	4.0	4.0	3.8	J5.9	3.7	3.9	J5.3	G	E	E	J3.0	J2.5	J2.5	J2.7
19	E	E	E	E	J2.1	E	2.7	3.7	3.2	3.5	3.9	G	3.7	3.8	3.5	3.0	3.0	J7.6	J3.6	J2.9	J2.5	S	E	S
20	E	E	E	E	S	E	2.4	2.9	J4.3	J7.1	3.7	J5.5	J7.0	4.1	4.0	G	G	J12.3 Y	J7.5	J2.9	J3.1	J2.9	J2.7	J2.1
21	E	E	E	E	E	E	2.1	3.2	3.6	3.7	3.8	4.0	4.0	G	J5.0	J4.1	J2.8	G	E	E	E	E	E	E
22	E	E	E	E	E	E	2.2	2.7	G	G	3.0 G	G	G	G	G	G	G	G	E	J2.5	S	J3.0	S	S
23	E	E	E	E	E	E	G	3.0	3.5	3.5	3.7	G	G	3.5	G	G	G	G	E	E	E	E	E	E
24	E	E	E	E	E	E	2.4	3.2	3.7	3.8	4.1	3.8	4.1	4.0	3.5	G	2.9	2.4	J2.7	E	E	E	E	E
25	E	E	E	E	E	E	2.5	2.8	3.3	4.0	4.1	3.5	G	G	3.5	J3.6	G	2.5	E	E	E	E	E	E
26	J2.3	E	E	S	C	E	G	3.0	3.6	3.7	3.7	3.5	4.0	4.0	3.3	G	3.0	2.7	J2.2	J3.6	J2.0	E	J2.0	J1.8
27	E	E	E	E	E	E	2.2	3.5	J4.3	3.6	4.4	3.4	J3.8	J4.3	3.5	G	3.0	J3.0	2.2	J2.5	J3.0	J2.4	J2.5	J2.5
28	J2.8	J3.5	E	E	E	E	G	3.3	3.2	3.7	G	G	G	J4.6	J4.1	J4.1	J4.5	J3.3	S	E	J2.5	J3.6	J3.3	J2.8
29	J3.0	J2.5	J2.3	E	E	E	2.1	2.7	3.5	J3.9	J3.3	3.3	G	G	3.5	G	G	2.2	E	E	E	E	J2.5	E
30	E	E	E	E	E	E	2.4	2.7	J2.9	3.6	3.9	4.3	J5.1	J7.0 Y	J5.3	G	3.4	J5.3	J4.6	J3.6	J5.9	J3.6	J3.5	J2.5
31																								
No.	29	28	29	28	27	29	28	28	30	30	30	28	26	26	27	27	27	30	28	29	29	29	28	27
Median	E	E	E	E	E	E	2.4	3.1	3.5	3.8	3.8	3.8	3.8	3.8	3.5	G	3.2	3.0	3.0	2.9	2.8	2.6	2.8	2.1
U.Q.	3.2	2.5	2.1	1.8	2.1	2.2	2.8	3.6	4.3	4.5	4.2	4.2	4.5	4.6	3.8	3.8	3.5	3.8	4.4	3.4	3.2	3.3	3.3	3.2
L.Q	E	E	E	E	E	E	2.2	2.8	3.2	3.5	3.6	G	G	G	G	G	2.8	2.5	E	E	E	E	1.9	E
Q.R.							0.6	0.8	1.1	1.0	1.2						0.7	1.3					1.4	

foEs

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

The Radio Research Laboratories, Japan.

A 4

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				E	E	1.8	2.6	A	4.7	4.3	4.1	3.7	3.9	3.6			4.1	A	u5.0R	2.0	2.8	2.0	A	A
2		1.8	E	1.7		2.1	2.4	4.0	3.5	3.8	A	A	A	E4.7R	3.5	4.7	4.5	A	E4.3R	4.8	1.8	1.8	2.9	E3.9R
3	2.8	S	E	E	A	A	A	A	A	3.6	4.5	3.6	3.8		3.8	3.5	3.3	2.5	E3.9R	3.0		2.9	2.9	E
4	A	A	A	1.7	2.0		2.6	3.3	A	A	A	A	4.6	u3.7R	4.2	C	C	4.8	2.0	2.0	2.3	2.5	1.8	1.8
5	2.0	2.6	A	2.0		2.3	2.5	4.0	3.6	4.0	3.6	3.9	u3.5R			3.1	3.0	2.8	2.7	3.1	2.0	2.1	1.8	2.3
6	E	2.0	2.2	E	E	2.0	u3.8R	u4.0R	4.4	u4.6R	4.7	4.7	C	u5.0R	3.7			2.7	2.5	2.8	2.0	E3.6R	2.2	3.5
7	E	E	E	1.8		2.4	2.7	3.3	3.7	A	3.8	3.8	C	C	C	C	C	2.7	u3.4R	3.0	2.9	E2.0R	3.0	
8		2.5	2.2		E	1.9			3.1							3.6	3.3	3.4	u2.5R	E			E	2.2
9	2.1	E					2.2	u2.6R	A	A	3.9	4.0	u4.7R	A	3.4	5.6	3.8	u3.5R	3.5	4.7	2.5	E	E	E
10							2.2	2.6	E3.3R	E3.8R	5.0	E3.8R	3.8	3.9	u3.6R	3.1	2.7	2.3	2.5		2.1	2.0	2.7	2.0
11	E	E	E			2.0	2.8	4.5	3.4	5.8		C	C	C	C	C	C	E3.3C	C	C	3.0	2.1	C	C
12	C	C	C	C	C	C	C	C							3.6		2.9	2.9		2.0	E	1.9		
13			1.8		2.0	E	C	C		3.5					C		3.1	2.9	1.8	E	2.1	2.5	1.8	2.9
14	1.9				1.9		E3.3R	E2.8R	u3.0R	3.8	3.5	E4.2R		C			3.2	3.1	2.0	2.0	1.8	1.8	1.9	
15	E						2.5	2.8	3.5	3.5	3.4	C	C			3.4	2.9	u3.8R	5.0	E	E	1.9	E	
16	1.8			E	E		2.1	3.0	3.1	3.2					2.5G		2.8	3.0	4.5	2.2	2.1	1.8	2.0	2.8
17	3.3	2.5	2.0	E	E		2.1	2.6	3.0	3.8		u3.4R	3.7	3.5			2.7	2.2				1.9	2.0	
18		E					2.0	3.0	3.3	5.3	4.0	4.0	3.8	5.8	3.2	3.9	4.3				2.1	2.5	2.2	1.9
19					E		2.4	3.7	3.2	3.5	3.5		3.7	3.8	3.4	2.0	3.0	A	3.4	2.0	2.0	S		S
20					S		2.3	2.8	E4.3R	A	3.7	5.2	6.4	3.5	3.8			A	A	2.0	2.0	3.3	2.1	2.0
21							2.0	3.2	3.2	3.5	3.8	3.8	E4.0R		E5.0S	3.8	2.8S							
22							2.2	2.7			2.1G									2.1	S	1.8	S	S
23								2.7	3.2	3.4	3.7			3.5										
24							2.2	3.0	3.2	3.4	4.1	3.8	3.6	3.7	3.4		2.9	2.4	2.7					
25							2.2	2.8	3.3	E4.0R	4.0	3.5			3.3	3.3		2.5						
26	2.2			S	C			3.0	3.3	3.7	3.7	3.5	4.0	3.5	3.3		3.0	2.6	2.0	2.5	E		2.0	1.9
27							2.1	3.0	4.1	3.5	4.4	u3.4R	3.7	u4.3R	3.4		3.0	2.9	2.2	1.8	E	2.4	E2.5RS	E2.5RS
28	2.5	3.5						3.1	u3.2R	3.6				E4.3R	E4.1R	u4.1R	E4.5R	2.8	S		2.0	3.0	2.7	E
29	2.7	2.4	E				2.1	2.7	3.2	3.8	u3.3R	3.3			3.2			2.2					2.0	
30							2.2	2.6	2.9	3.4	3.8	E4.3R	5.0	3.7	u5.3R		2.7	2.8	4.0	3.5	A	3.1	3.2	2.2
31																								
No.																								
Median																								

foEs

Sweep 2.0 Mc to 20.0 Mc in 20 min/sec in automatic operation.

The Radio Research Laboratories, Japan.

A 5

25

IONOSPHERIC DATA

Sep. 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	1.65	1.70	1.75	1.75	1.75	1.85	2.00	2.00	2.05	2.00	2.00	1.80	1.75	1.75	1.70	1.70	1.70	E	1.70	1.70
2	E	E	E	E	1.70	1.70	1.75	1.70	1.80	1.80	2.00	2.00	2.00	2.00	2.00	1.90	1.70	1.75	1.90	1.75	1.70	E	1.70	1.70
3	1.65	E	1.70	1.70	1.70	1.70	1.80	1.90	1.75	1.85	2.00	2.00	2.10	I 2.00 C	2.00	1.75	1.75	1.75	1.75	1.70	1.70	1.70	1.70	1.65
4	1.70	1.70	1.65	E	1.70	E	1.80	1.80	1.75	3.30	2.10	3.60	2.80	2.15	2.10	C	C	1.80	1.80	1.80	1.65	1.70	1.65	1.70
5	1.75	1.70	1.65	1.70	1.65	1.70	1.75	1.75	1.90	2.00	2.05	2.10	2.05	2.10	2.10	1.80	1.70	1.85	1.80	1.80	E	1.70	1.70	1.75
6	1.70	1.70	1.70	1.70	1.70	1.70	1.75	1.80	1.85	1.85	2.15	2.70	I 2.15 C	2.10	2.00	1.90	1.85	1.75	1.70	1.70	1.70	1.65	1.75	1.75
7	1.75	1.70	1.65	1.65	E	1.75	1.70	1.75	1.85	1.80	2.00	1.90	C	C	C	C	C	2.05	1.75	1.70	1.70	1.65	1.75	1.70
8	1.90	1.90	1.75	1.70	1.80	1.85	1.90	2.00	1.80	2.00	1.95	2.15	2.10	2.20	2.25	2.05	2.00	1.80	1.80	1.75	1.75	1.75	1.70	1.80
9	1.70	1.75	1.75	1.75	1.75	1.75	1.90	1.90	1.80	2.00	2.05	2.00	2.20	2.00	2.15	1.95	1.80	1.85	1.75	1.75	1.75	1.70	1.80	1.80
10	1.75	1.70	1.70	1.70	1.70 S	1.70	1.85	1.85	1.80	1.80	2.10	2.50	2.15	2.00	2.00	1.90	1.75	1.80	1.80	1.75	1.70	1.70	1.75	1.80
11	1.80	1.75	1.70	2.00 S	1.65	1.75	1.70	1.90	2.00	1.90	2.00	C	C	F 5.90 C	F 6.70 C	C	E 5.28 C	E 2.05 C	C	C	1.75	1.85	C	F 1.90 C
12	F 2.00 C	E 1.80 C	E 2.00 C	F 1.95 C	F 1.75 C	F 2.00 C	C	C	2.05	2.10	2.05	2.10	2.00	2.00	2.00	2.00	2.00	1.80	1.85	1.75	1.70	1.70	1.70	1.70
13	1.70	E	1.70	1.70	1.70	1.70	F 2.05 C	C	1.80	2.00	2.00	2.05	F 2.60 C	2.20	F 3.40 C	2.00	2.00	1.75	1.70	1.70	1.70	1.70	1.70	1.70
14	1.80	1.70	1.70	E	1.70	1.80	1.80	1.80	1.90	1.95	2.00	2.05	F 3.20 C	F 2.50 C	2.00	1.90	1.70	1.80	1.70	1.70	1.65	1.70	1.70	1.65
15	E	1.65	E	E	1.70	1.75	1.70	1.90	1.80	1.90	1.95	C	C	2.10	2.70	1.80	1.70	1.80	1.85	1.70	1.65	1.65	1.70	E
16	1.70	E	E	E	E	E	1.70	1.85	1.95	2.00	2.00	3.05	1.90	1.90	1.80	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
17	1.70	1.65	1.65	E	E	E	1.70	1.90 S	1.90	2.70	2.05	2.10	2.05	1.80	1.80	2.00	1.70	1.70	1.70	1.70	E	E	1.65	E
18	1.70	E	1.70	E	E	E	1.70	1.90	2.00	2.00	2.30	2.05	2.45	2.20	2.00	2.00	1.80	2.00	1.70	1.80	E	1.70	1.65	1.70
19	E	E	1.75	E	1.70	1.70	1.70	2.00	1.90	1.80	2.00	1.95	3.05	2.40	2.00	1.90	1.80	1.80	1.70	1.70	1.65	F 2.60 S	E	S
20	E	E	1.65	1.70	F 2.20 S	1.65	1.70	1.80	1.80	2.20	2.00	2.20	2.05	2.05	2.10	2.00	1.90	1.80	1.70	1.70	1.70	1.70	1.70	1.70
21	E	E	E	E	E	1.70	1.70	2.00	2.05	2.05	2.05	2.05	3.40	2.00	2.00	1.90	1.75	1.80	1.65	1.70	1.70	1.70	1.70	E
22	1.70 S	E	E	1.75	1.65	E	1.85	1.85	1.70	2.00	1.90	3.15	2.05	2.05	2.00	1.90	1.75	1.95	1.70	1.65	F 2.10 S	1.70	S	F 2.20 S
23	1.70	E	E	1.65	E	E	1.70	1.90	1.95	2.00	1.85	2.00	2.05	2.05	2.05	1.95	1.70	1.70	1.70	E	1.70	E	E	E
24	1.70	E	E	E	E	F 1.75 S	1.75	1.75	2.00	1.90	2.00	2.00	2.05	1.95	1.95	1.85	1.85	1.85	1.70	1.70	E	1.70	E	E
25	E	E	E	1.70	E	E	1.70	1.75	2.00	3.45	1.85	2.00	2.00	2.00	F 2.00 S	1.80	1.75	1.70	1.70	E	E	1.70	1.70	E
26	1.70	E	E	S	C	E	1.75	1.85	1.85	2.00	2.00	2.15	2.30	2.00	2.00	2.00	1.70	1.70	1.70	1.70	E	1.70	1.70	1.75
27	F 2.00 S	E	E	E	E	E	1.70	1.75	1.70	2.00	1.90	2.05	2.00	1.80	1.95	1.85	1.90	1.70	1.75	1.70	1.70	1.65	1.70	1.70
28	1.70	1.70	E	E	E	E	1.70	1.80	1.75	2.30	2.00	2.30	2.00	2.00	2.00	1.80	1.70	1.70	F 1.90 S	1.75	1.70	1.70	1.70	E
29	1.70	1.70	1.70	E	E	E	1.70	1.80	1.80	2.00	1.85	2.05	2.10	2.00	1.80	1.75	1.70	1.75	1.70	E	E	E	1.70	E
30	1.70	E	E	E	E	E	1.70	1.70	1.90	1.80	2.00	2.00	2.05	1.95	1.85	1.85	1.70	1.70	1.70	1.70	1.65	1.70	1.65	E
31																								
No.	28	29	29	28	27	28	28	28	30	30	30	28	25	27	27	27	27	29	28	29	29	29	28	27
Median	1.70	E	1.65	E	1.65	1.70	1.70	1.80	1.85	2.00	2.00	2.05	2.05	2.00	2.00	1.90	1.75	1.80	1.70	1.70	1.70	1.70	1.70	1.70

f-min

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

IONOSPHERIC DATA

Sep. 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	3.25	2.65	2.90	3.05	3.10	3.00	3.30	2.75	3.15	3.30	3.10	3.10	R	R	2.90	2.75	2.85	3.00	2.95	3.30	3.30	2.95	A	A
2	2.85	2.70	2.70	2.70	2.70	3.05	2.95	3.00	3.00	3.45	A	A	A	2.90	3.15	3.05	3.35	3.20	3.05	2.95	2.95	2.90	2.85	R
3	R	F	F	F	A	A	A	2.80	2.50	2.00	2.85	R	R	2.70	2.85	3.05	3.25	3.30	3.30	2.90	2.75	2.70	2.70	F
4	A	A	A	F	R	F	3.20	G	2.75	A	A	A	3.00	3.20	3.20	C	C	3.10	3.40	3.10	2.75	2.70	2.90	2.70
5	3.00	3.20	3.00	2.90	2.95	2.80	3.10	3.40	3.20	3.50	3.20	3.10	3.20	3.30	3.15	3.15	3.10	3.40	3.25	3.00	2.85	2.95	3.20	2.75
6	2.85	2.80	2.60	2.90	2.90	2.60	3.40	3.25	3.25	3.30	3.30	3.05	3.15	3.20	3.35	3.30	3.30	3.35	3.40	3.20	2.80	2.85	2.80	2.85
7	2.85	2.95	3.60	2.75	2.80	2.70	G	2.45	2.95	2.85	3.00	2.60	C	C	C	C	C	3.55	3.40	2.90	2.80	2.85	3.55	2.90
8	2.90	2.70	3.00	2.95	3.00	2.90	3.30	3.50	3.50	3.25	3.15	3.20	3.10	3.20	3.20	3.30	3.40	3.40	3.50	2.95	2.95	2.80	3.20	2.90
9	2.75	2.75	2.75	2.95	2.90	3.10	3.10	3.10	3.50	3.20	3.05	3.50	3.15	3.10	3.40	3.20	3.50	3.30	3.25	3.15	3.05	3.00	2.85	2.90
10	2.80	2.80	2.80	2.80	2.85	3.00	3.10	3.60	3.60	3.10	3.10	3.10	3.00	3.15	3.30	3.10	3.35	3.30	3.30	3.35	2.95	2.65	2.85	2.95
11	3.00	3.05	3.20	3.00	2.80	3.00	3.30	3.25	3.45	3.45	3.20	3.25	3.10	3.10	3.15	3.25	3.40	3.45	C	C	R	2.90	3.00	3.05
12	3.00	2.85	2.80	2.90	3.00	2.95	3.30	3.40	3.50	3.35	3.45	3.45	3.35	3.35	3.10	3.25	3.35	3.10	2.75	2.70	3.05	3.20	2.85	3.00
13	3.00	2.55	2.80	2.60	2.75	2.95	C	C	3.35	3.55	3.05	3.20	3.05	3.35	3.20	3.25	3.25	3.30	3.05	3.00	F	R	F	2.90
14	2.85	2.55	2.75	2.95	2.95	3.05	3.20	3.30	3.45	3.30	3.40	3.05	3.40	3.20	3.35	3.35	3.35	3.15	3.20	3.30	3.15	2.95	F	S
15	R	2.90	3.10	3.00	2.95	3.00	3.30	3.60	3.40	3.35	3.35	C	C	3.25	3.25	3.15	3.35	3.40	3.35	3.25	2.70	S	F	F
16	F	F	F	2.90	3.05	3.05	3.45	3.50	3.50	3.45	3.30	3.30	3.25	3.35	3.35	3.35	3.30	3.30	3.25	3.20	3.10	3.00	3.10	2.85
17	2.75	3.00	2.95	3.05	3.00	3.10	3.40	3.50	3.45	3.25	3.50	3.35	3.25	3.05	3.30	3.25	3.40	3.25	3.30	3.10	3.10	S	S	S
18	S	S	S	F	F	F	3.45	3.35	3.35	3.40	3.30	3.25	3.20	3.25	3.35	3.30	3.40	3.40	3.25	2.95	R	R	F	F
19	F	R	3.30	3.10	3.00	3.25	3.35	3.50	3.50	3.35	3.30	3.15	3.30	3.25	3.35	3.20	3.40	3.10	3.20	3.30	3.15	3.05	2.90	2.90
20	2.95	2.90	3.10	2.80	3.10	3.10	3.55	3.45	3.30	3.25	3.25	3.15	3.00	3.20	3.50	3.30	3.35	3.55	3.25	3.00	2.75	2.90	3.00	2.95
21	3.00	2.90	3.00	3.15	3.10	3.05	3.40	3.45	3.50	3.40	3.30	3.30	3.25	3.15	3.35	3.35	3.40	3.20	3.35	3.35	3.10	2.95	R	R
22	3.00	2.80	2.90	2.75	2.85	3.00	3.40	3.35	3.30	3.40	3.30	3.10	3.30	3.30	3.05	3.15	3.35	3.50	3.35	3.05	2.95	R	S	S
23	S	3.00	3.05	2.90	2.95	2.95	3.35	3.60	3.50	3.40	3.55	3.15	3.30	3.30	3.40	3.25	3.25	3.30	3.40	3.20	3.00	3.00	S	S
24	2.90	3.00	2.95	3.00	2.90	3.05	3.45	3.60	3.60	3.55	3.40	3.35	3.25	3.35	3.25	3.20	3.30	3.40	3.45	3.40	3.05	2.95	S	S
25	2.95	2.80	2.90	3.00	3.00	3.10	3.50	3.75	3.50	3.55	3.40	3.30	3.30	3.25	3.35	3.35	3.30	3.35	3.40	3.25	3.10	3.10	3.05	2.90
26	2.75	2.85	3.00	2.95	2.90	2.95	3.25	3.65	3.40	3.60	3.35	3.10	3.15	3.05	3.05	3.25	3.45	3.40	3.30	3.00	2.75	2.90	2.95	3.00
27	2.90	2.95	2.70	2.75	2.90	2.95	3.05	3.40	3.30	3.40	3.40	3.30	3.35	3.30	3.30	3.35	3.35	3.40	3.30	3.10	F	F	F	R
28	F	S	S	S	S	3.20	3.10	3.60	3.20	3.30	3.30	3.25	3.40	3.40	3.30	3.20	3.35	3.40	3.30	3.20	3.30	R	R	R
29	R	F	F	F	3.10	3.00	3.25	3.60	3.50	3.45	3.30	3.30	3.20	3.20	3.25	3.35	3.35	3.25	3.25	3.20	3.15	3.10	2.95	3.10
30	2.85	3.00	2.75	3.00	2.90	2.65	3.30	3.25	3.35	3.35	3.10	3.10	3.15	3.15	3.20	3.25	3.30	3.35	3.30	3.05	2.95	3.00	S	S
31																								
No.	21	23	24	25	26	27	28	29	30	29	28	26	25	28	29	28	28	30	29	29	26	23	17	16
Median	2.90	2.85	2.90	2.95	2.95	3.00	3.30	3.40	3.40	3.35	3.30	3.20	3.20	3.20	3.25	3.25	3.35	3.30	3.30	3.10	3.00	2.95	2.95	2.90

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

The Radio Research Laboratories, Japan.

A 7

27

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	A	A	A	A	3.70	3.85	I3.60R	I3.70L	3.50	A	A	A					
2							3.35	I3.60L	3.70	3.55	A	A	A	A	3.85	A	A	A	A					
3							A	A	I3.65A	3.80	I3.80A	R	R	C	3.55	3.65	3.50	L						
4								3.50	I3.70A	A	A	A	A	3.50	3.45	C	C	A						
5							L	A	L	3.45	3.90	4.10	4.00	3.80	3.75	3.40	3.50	L						
6									A	A	A	I3.65L	I3.60C	I3.75A	3.40	3.55L	3.60	L	L					
7							3.35	3.30	I3.45A	I3.55A	3.65	R	C	C	C	C	C							
8							L	3.70L	3.70L	3.90L	3.70	3.60OHR	3.65R	3.55L	3.40	3.25H	3.65	A						
9							L	R	A	A	3.70R	3.50R	I3.75A	I3.80A	3.55	I3.60A	L	A						
10								3.50	I3.70A	L	A	A	3.65R	3.50L	3.40	3.50	3.50	L						
11									L	I3.80A	4.20	C	C	C	C	C	C	A						
12							C	C	3.75LI	3.85R	4.00	I4.05RH	4.30	3.80	I3.60L	L	L	L						
13								C		3.90H	I3.85RI	3.70R	3.50R	3.75L	L	L	L							
14							A	L	I3.80L	L	L H	A	I3.50RH	I3.65R	L	L	L							
15							L	L	L	I3.85L	3.90OHL	C	C	I3.70SR	I3.65L	L	L							
16								L	L	I4.10L	4.10	I3.85L	3.65L	3.65	I3.65L	L	L							
17								L	L	3.80LI	3.70L	L	L	4.00L	L	L	L							
18								L	L	A	L	L	R	A	L	L	A							
19									L	3.75LI	3.70RI	4.00R	I4.05SR	I3.80RI	3.75L	L								
20									A	A	3.60	A	A	3.50L	L	S	L							
21									L	L	L	L	R	3.95L	S	L	L							
22									L	L	L	R	R	L	3.90	I3.70L								
23									L	L	L	L	L	L	L	L	L							
24									L	L	R	L	R	L	L		L							
25									L	R	RS	R	3.70R	L	L	L								
26									L	L	L	L	R	L	L	L								
27										L	A	L	L	A	L	L	L							
28									L	I3.90L	L	L	L	A	A	A	A							
29									L	L	L	L	L	L	L									
30								L	L	L	S	R	A	L	A	L	L							
31																								
No.							2	5	8	13	13	9	12	16	14	8	5							
Median							3.35	3.50	U3.70	3.80	3.80	U3.70	3.70	3.70	3.60	3.50	3.50							

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

The Radio Research Laboratories, Japan.

A 8

28

IONOSPHERIC DATA

Sep. 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							280	I 414 A	335	300	350	350	R	R	L	425	380	I 330 δ	A					
2							395	345 H	345	295	A	A	A	I 355 A	340	330	280 A	A	A					
3							A	I 430 A	I 550 A	700	330	R	R	I 455 C	400	345	325	280						
4								G	I 460 A	A	A	A	370	325	310	C	C	300						
5							295 L	260	305	280	335	350	350	315	340	335	290	260						
6									300	285	310	340	I 310 C	285	280	285	285	265	240					
7							G	495	I 375 A	I 400 A	345	R	C	C	C	C	C							
8							255	275	270	300 L	315	300	350	335	320	285	275	255						
9							285 L	315	I 275 A	I 330 A	330 R	280	315	I 350 A	300	I 280 A	270	260						
10								260	255	350 L	330	I 315 A	355	335	300	320	275	250						
11									240	I 270 A	290	C	C	C	I 310 C	I 295 C	270	255						
12								I 260 C	270	290	290	290	295	295	290	290	280	280						
13								I 260 C		270	305	320	340	285	300	295	280							
14							250	260	250	255	270	340	275	300	270	270	265							
15							275	240	260	260	270	C	C	295	295	290	265							
16								250	240	255	295	285	300	290	280	270	275							
17								250	255	280	255	280	295	315	290	280	260							
18								240	255	255	270	280	295	285	270	260	250							
19									250	290	275	290	285	275	270	285								
20									255	I 280 A	290	300	I 320 A	275	255	280	270							
21									255	255	280	290	290	290	280	275	250							
22									270	250	260	305	275	255	260	260								
23									250	245	245	260	285	290	280	280	265							
24									245	250	265	275	280	280	275		260							
25									250	240	250	275	280	255	260	255								
26									255	230	270	295	270	260 L	295	270								
27										250	255	280	265	285	265	265	255							
28									245	280	245	260	260	270	270 R	270	280							
29									245	245	270	275	280	270	260									
30								270	250	265	I 290 S	285	275	260	300	280	260							
31																								
No.							8	17	28	29	28	24	24	27	28	26	23	10	1					
Median							280	260	255	270	285	290	290	290	285	280	270	260	240					

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

Sep. 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	240	250	290	275	260	275	I245A	A	A	A	A	235	230	230	205	235	A	A	A	240	235	250	I260A	I280A
2	295	325	345	325	330	290	240	I240A	240A	225	A	A	A	A	225	A	A	A	A	I280A	255	270	I290A	I315A
3	340A	320S	280	240	A	A	A	A	I235A	230	I225A	195	230	C	A	230A	245	245	I265A	I290A	300	A	A	295
4	A	A	A	330	I280A	275	250	255	I250A	A	A	A	A	225	A	C	C	A	240	245	300A	335	300	315A
5	285	260	I300A	325	295	300	250	A	A	A	220	200	205	220	230	220	240	I240A	240	280	300	275	250	300
6	305	325	325	300	300	305	270	300	A	A	A	A	C	I230A	225	225	225	I250A	I250A	270	300	I320A	330	350
7	295	270	215	310	320	I305A	I260A	I250A	A	A	235	225	C	C	C	C	C	255	255A	295	I290A	280A	I300A	290
8	285	320A	290	280	280	305	245	225	210	200	205	200H	200	235	245	I245AH	250	I240A	230	265	270	260	200	320
9	310	325	300	290	280	280	250	230	A	A	225A	I240A	I230A	I220A	230	I230A	I235A	I245A	250	I250A	260	260	285	300
10	315	315	295	290	295	275	250	235	I230A	A	A	A	220	230	I230A	230	235	240	245	225	285	345	325	285
11	280	265	250	240S	325	285	250	260	240	I215A	200	C	C	C	C	C	I240C	A	C	C	A	270	I250C	265
12	285	290	295	295	280	295	I245C	I235C	205	230	210	200H	195	205	245	235	240	I260A	295	320	255	220	255	260
13	280	335	325	340	305	300	250H	I240C	225	200H	245	240	240	220	215	220	245	260	255	255	290	290	245	I295A
14	295	315	290	260	285	255	I230A	225A	220	210	195H	I200A	245H	220	220	240	250A	255	255	230	250	255	300	260
15	290	295	245	270	275	255	250	240	220	220	190	C	C	205	220	240	245	245	245A	230	245	305	270	255
16	260	260	275	260	260	255	250	235	205	205	195	190	225	220	230	235	245	255	255	240	250	270	250	300A
17	I315A	290	260	240	260	245	245	240	220	225	230	225	205	205	210	235	230	245	240	245	240	250	290	295
18	270	255	240	245	250	270	240	220	220	I240A	I230A	240	215	I210A	205	I230A	I220A	245	230	255	260	245	320	310
19	280	275	225	250	290	245	225	245	240	230	240	200	210	205	220	205	255	I250A	245	220	245	260S	285	I290S
20	265	290	255	280	255	245	255	245	I240A	I235A	230	A	A	245	I230A	I240S	245	I235A	I235A	255	320A	295	280	275
21	255	295	280	240	255	255	245	240	230	225	240	220	I230A	205	I210A	I215A	240	245	240	240	245	255	295	270
22	270	290	290	305	275	255	225	245	240	230	220	200	240	200	210	240	245	245	230	250	260	290	I300S	290S
23	285	270	255	265	280	260	245	235	240	225	210	220	205	205	205	240	245	245	220	210	255	255	280	285
24	260	250	255	255	275	270	225	235	225	210	I210A	220	215	225	215	255	250	245	235	215	245	270	275	280
25	255	290	270	255	255	255	235	230	240	I240A	220	205	195	190	220	240	255	245	225	230	245	235	270	280
26	335	300	255	I270S	I265C	260	210	240	240	220	195	200	I220A	230	230	245	245	245	240	250A	300	250	255	I280A
27	260	270	305	320	290	270	220	245	270A	230	I210A	205	220	I230A	230	245	245	240	240	235	320	305A	I295A	290A
28	290A	I290A	270	255	245	240	245	235	220	205	205	230	205	A	A	A	A	245	240	240	240	240A	I305A	305
29	I300A	I305A	310	285	260	290	240	240	235	I210A	215	205	200	195	205	240	245	250	240	230	250	275	270A	245
30	300	245	300	285	260	335	245	245	240	225	230	I220A	I215A	250	I235A	250	245	240	240A	255A	A	A	A	260
31																								
No.	29	29	29	30	29	29	29	27	25	23	25	23	23	25	25	25	25	26	27	29	28	28	28	30
Median	285	290	280	280	280	270	245	240	235	225	220	205	215	220	220	235	245	245	240	245	260	265	280	290

h'F

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

The Radio Research Laboratories, Japan.

A 10

IONOSPHERIC DATA

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

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

h'Es

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

The Radio Research Laboratories, Japan.

A 11

IONOSPHERIC DATA

Sep. 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				f	f2	f2	h5	C3	Cz	C3	hz	h	C	l			h3	h4	h4	f4	f3	fz	f6	f4
2		fz	f4	fz		hz	hz	C3	Cz	Cz	C3	C4	C3	hz	h	hz	h4	h4	hz	fz	f	fz	fz	f4
3	f3		f	f	fz	f6	h3	h5	h3	hz	Cz	h	C		hz	Cz	hz	hz	C3	f3		fz	fz	fz
4	f4	f5	f6	f3	fz		h	hz	h3	h	h	h	C	C	Cz			l3	l	fz	fz	fz	f3	f
5	fz	f4	fz	fz		fz	h3	hz	hz	C	Cz	l	l			lz	lz	lz	l	f3	fz	f4	f3	f3
6	fz	fz	f3	fz	f	f	h	h4	hz	Cz	Cz	h		Cz	lz			hC	l	fz	fz	f3	f3	f3
7	fz	f	f	fz		C4	h3	h3	hz	hz	h	C						h	h3	f4	f4	fz	fz	
8		f3	f		fz	C			h							h	h	C	f	f			f	fz
9	fz	fz					C	C	hz	hz	h	h	C	lz	C	lz	l3	lz	fz	f3	fz	f	f	f
10							h	C	lz	h	C	l	l	l	l	l	l	l	fz		fz	fz	fz	fz
11	fz	fz	f			fz	fz	Cz	C	Cz								h			fz	f		
12												1			h		h	hz		fz	fz	f		
13			f		f3	f				h							h	hz	f	f	fz	fz	fz	f4
14	fz				fz		h3	C	Cz	C	C	Cz					hz	C4	fz	f	f	f	fz	
15	f						hz	C	Cz	C	l					hz	h	C3	f3	f	f	f	fz	
16	fz			f	f		hz	C3	Cz, l	C					l		h	h4	fz	f	fz	f	fz	fz
17	f3	f4	fz	f	fz		h	h	h	Cz		l	l	lz			l	l				f	f	
18		f					h	hz	h	l	h	h	h	hz	h	Cz	lz				fz	fz	fz	f
19					f		h	hz	h	h	lz		h	h	h	l	l	lz	f	f	f			
20							h	hz	hz	h	h	hz	Cz	h	h			l4	fz	fz	fz	f	fz	fz
21							h	h	h	h	h	h	h		Cz	C3	C							
22							hz	h			l									fz		fz		
23								h	h	h	h			h										
24							h	hz	h	h	h	h	h	h	h		h	h	fz					
25							h	hz	h	h	hz	h			C	Cz		hz						
26	fz							h	hz	h	h	h	C	C	C		hz	h3	f	f	fz		fz	f
27							h	h3	hz	h	C	Cz	lz	lz	h		hz	hz	hz	f	fz	f3	f3	fz
28	fz	fz						hz	h	h				lz	lz	l4	lz	lz			fz	f3	fz	fz
29	fz	fz	fz				h	h	C	Cz	lz	lz			l			h			fz			
30							hz	h	l	lz	l	lz	lz	lz	l3		h	Cz	f3	f4	fz	f4	f3	fz
31																								
No.																								
Median																								

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

The Radio Research Laboratories, Japan.

A 12

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IONOSPHERIC DATA

Sep. 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	I 4.2^{S}	I 3.5^{S}	3.0	3.1	3.7	I 3.8^{S}	I 4.4^{S}	I 5.7^{S}	I 6.2^{S}	I 6.3^{Su}	I 6.2^{R}	I 5.7^{Su}	5.2^{R}	S	S	S	5.2	5.9	6.8	J 7.0^{S}	5.5	3.9	3.4^{Su}	3.9^{S}
2	3.4	I 3.4^{A}	3.3	3.3	3.1	3.1	I 4.2^{A}	5.7	6.0^{R}	6.1	5.9	I 6.0^{R}	5.6^{RI}	6.0^{S}	6.4	6.9	6.1	5.3	5.2	I 6.1^{A}	6.1	J 5.4^{RI}	5.0^{A}	4.2
3	4.1^{S}	4.3	4.9	3.8	3.0	J 3.5^{S}	I 4.7^{A}	A	A	S	A	I 5.3^{A}	I 5.3^{S}	5.4	5.7	I 6.2^{S}	5.5	5.5	J 5.2^{SI}	4.4^{AI}	4.2^{SI}	4.0^{A}	3.7^{S}	4.1
4	3.6^{S}	3.5^{SI}	3.2^{A}	3.2	3.4	3.3^{S}	4.4	S	S	S	5.4^{S}	5.6^{S}	6.5	7.2^{S}	6.8	6.3	I 6.6^{A}	6.6	7.0	4.9	4.0	4.1	4.0	4.0
5	I 4.2^{S}	3.3	3.1	2.5	2.6	3.4	5.0^{S}	6.0	6.3	6.9	6.1	I 5.7^{A}	6.1	6.3	6.4	6.3	6.5	6.4	6.0	4.4	4.5	J 4.8^{RI}	3.8^{AI}	J 3.6^{S}
6	3.4	3.4	3.2	3.4	3.6	3.3	5.4	6.9	7.4	6.9	7.8	8.5	8.7	8.9	8.8	7.9	6.5	6.4	6.6	6.3	4.3	5.0	5.5^{F}	5.6^{F}
7	5.1^{F}	5.2^{F}	4.1^{F}	2.8	3.0	2.5	3.3	I 4.5^{S}	5.0	5.4	I 5.7^{A}	6.1	6.4^{S}	6.0	6.3	6.3	6.1	6.7	5.5	4.6^{SI}	I 4.6^{A}	4.7	I 4.4^{A}	4.5
8	3.8	I 3.8^{A}	3.6	3.6	3.1	3.2	5.6	7.0	5.9	6.1	6.0	6.6	6.4	6.7	6.9^{u}	8.3^{R}	8.0	J 8.4^{RI}	J 7.9^{R}	5.3	5.4	5.4	4.7	4.1
9	u 3.8^{S}	3.7	3.7	J 3.7^{S}	3.8	u 3.9^{S}	5.6	7.6	6.4	5.9	6.6	6.8	6.4	6.7	7.0	6.7	6.7	7.0	7.0	6.0	5.5	4.9	4.6	I 4.6^{S}
10	4.4	4.3	4.3	4.1	u 3.8^{S}	4.0	5.5	6.9	5.7	6.2	6.0	6.2	6.3	6.9^{S}	6.7	6.7	7.9	7.3	6.9	4.8	4.5^{S}	4.5^{S}	4.2	4.3^{S}
11	4.2	4.1	4.1	2.1	2.4	2.7	5.4	6.7	7.0	7.1	6.3	7.4	7.6	7.1^{R}	7.4	8.0	8.1	J 7.6^{S}	6.9	6.0	6.1^{S}	5.0	5.0	4.4
12	4.0	3.7	3.6	3.8	3.5	J 3.8^{R}	5.9	6.9	6.4	7.1^{R}	6.8	7.4	6.4	6.6	6.9	7.4	7.0	6.6	6.6	6.8	I 6.7^{R}	6.3	3.9	4.0
13	3.5	3.5	3.4	3.4	J 3.4^{S}	3.6	6.2	D 7.3^{R}	5.9	5.8	5.5^{RJ}	7.0^{RJ}	7.2^{RI}	8.4^{R}	6.7	6.1	7.0	7.0	6.9^{S}	6.9	5.1^{SI}	5.2^{A}	5.2	4.6
14	4.2	4.1	4.0	3.7	3.4	J 3.6^{R}	J 5.0^{S}	6.6	6.6^{RI}	6.6^{SI}	6.6^{SI}	6.8^{S}	8.2	7.6^{S}	8.3^{S}	7.3	6.5^{S}	6.5^{SI}	7.2^{SI}	7.0^{S}	6.2	5.1^{L}	4.4^{SI}	4.4^{S}
15	4.4	4.5	4.3	4.0	3.9	3.5	5.8	7.5^{S}	7.6^{S}	7.5^{u}	7.4^{R}	7.6^{R}	7.3^{RI}	7.4^{RJ}	8.0^{RI}	7.4^{D}	8.0^{RJ}	7.9^{S}	7.3	4.7	I 4.3^{Au}	4.2^{S}	4.3^{S}	4.4
16	4.1	3.6	3.6	J 3.5^{R}	J 3.5^{R}	3.7	6.3	D 8.4^{R}	7.1	6.1^{Ru}	6.5^{R}	6.9^{u}	8.1^{RI}	7.6^{R}	6.9^{R}	7.3	6.9^{J}	7.3^{RI}	7.4^{A}	6.2	5.9	5.5^{u}	5.0^{R}	5.0^{R}
17	5.0	J 4.8^{R}	4.9	4.9	4.4	4.3	6.1	J 7.4^{R}	7.0	7.2^{S}	7.3^{SI}	7.4^{S}	7.2^{S}	6.2	J 6.9^{SI}	8.1^{SI}	7.6^{S}	6.0	6.9^{S}	6.0	5.5	5.4	5.0^{S}	4.7
18	4.8	4.6	4.6	3.9	3.0	L 3.4^{S}	5.4	6.9	6.3^{S}	7.7^{S}	7.5^{SI}	7.4^{Su}	8.2^{Su}	8.1^{SI}	7.6^{Su}	7.0^{S}	6.4	6.2	6.1	5.7	5.2^{SI}	4.9^{SI}	4.3^{S}	4.2^{S}
19	4.4	4.7	3.9	3.0	3.1	3.1	5.6	6.8^{S}	6.3^{SI}	L 7.4^{CI}	7.3^{S}	S	S	S	I 8.1^{S}	7.6^{S}	7.7^{S}	7.1^{SI}	8.5^{S}	6.7^{S}	5.4	4.4	4.6	4.5
20	4.9	4.5^{S}	4.9	3.8	4.5	4.1	I 5.6^{SI}	6.7^{S}	7.4^{Su}	7.7^{RI}	7.4^{Su}	6.7^{RI}	8.4^{Ru}	9.9^{RJ}	8.8^{R}	7.5^{u}	7.3^{Ru}	7.5^{R}	5.1	4.3	4.0	3.9^{u}	4.1^{R}	4.0
21	4.0	3.9	4.0	4.1	3.8	J 3.4^{R}	5.6	5.8	6.4^{J}	6.4^{RI}	7.3^{R}	7.6	R	R	R	7.6	7.8^{I}	7.2^{RI}	6.8^{RI}	6.4^{R}	5.0^{u}	4.4^{R}	4.3^{J}	4.5^{S}
22	u 4.1^{S}	J 4.1^{S}	4.1	J 3.6^{R}	3.9	3.4	5.4	J 6.3^{RI}	I 7.6^{Ru}	9.5^{RI}	8.2^{R}	R	R	R	I 7.5^{R}	8.0	R	R	6.9^{J}	4.8^{SJ}	4.3^{SI}	4.4^{RJ}	4.4^{S}	4.5
23	4.3^{RJ}	4.0^{S}	4.1	3.6	J 3.4^{S}	3.6	6.1	I 7.4^{S}	7.4^{L}	7.2^{R}	7.1^{RI}	6.8^{Su}	7.0^{R}	R	R	I 7.5^{RI}	8.8^{Ru}	9.3^{R}	8.3	5.6	4.6^{J}	4.4^{S}	4.3^{Su}	4.4^{S}
24	I 4.4^{S}	4.2	3.8	J 3.6^{R}	3.7^{R}	3.9	6.3	I 7.0^{Ru}	7.2^{RI}	6.8^{RI}	6.8^{RI}	7.4^{SI}	8.3^{SJ}	8.0^{RJ}	7.2^{RI}	7.7^{RI}	8.5RD	8.5^{RI}	8.0^{R}	5.6	4.5	4.3^{J}	4.3^{R}	4.4
25	I 4.4^{C}	4.3^{S}	4.1	4.1	3.8	3.7	6.0	7.1^{S}	7.3	7.3^{S}	6.3	L 7.8^{SI}	8.4^{S}	8.7^{SI}	8.6^{S}	7.7^{SI}	7.4^{SI}	8.4^{S}	8.0^{S}	6.4	5.5	4.7^{I}	4.2^{S}	4.5
26	4.5	4.3	4.5	4.1	3.7^{S}	3.9	6.3	L 7.2^{S}	S	S	6.5	S	S	S	S	8.4^{SI}	8.1^{S}	7.4^{SI}	6.7^{S}	5.6	I 5.0^{S}	4.0	5.0	4.8^{S}
27	5.1^{S}	4.8	4.0	3.7	3.7	3.1	5.3	7.2^{SI}	8.4^{SJ}	9.3^{R}	R	R	u 7.5^{RI}	7.3^{Ru}	7.1^{Ru}	7.7^{RI}	I 7.9^{RI}	8.3^{Ru}	7.3^{R}	5.3	I 4.6^{RI}	4.5^{S}	4.4	J 4.5^{S}
28	4.7	4.4	4.7	4.3	4.0	J 3.6^{R}	5.3	L 7.0^{R}	R	S	R	R	R	R^{u}	6.8^{RI}	6.7^{RI}	I 7.0^{RJ}	8.4^{RI}	7.6^{RI}	6.6^{R}	5.9	4.4^{u}	3.8^{RI}	3.9^{A}
29	3.9	I 3.7^{S}	3.6	4.1	3.9^{SJ}	J 3.6^{R}	5.8	I 8.8^{RI}	8.5^{RI}	7.3^{R}	R	S	S	R	R	R	R	R	R	R	5.3	4.4^{RI}	4.2^{RI}	4.0^{S}
30	3.5^{S}	3.7	J 3.0^{R}	J 3.1^{RJ}	3.0^{R}	3.5^{R}	6.0^{RI}	7.6^{RI}	7.8^{R}	R	R	R	9.3	7.8	7.0^{R}	9.0	J 8.9^{RI}	8.0^{R}	6.9	4.9	A	A	S	3.8
31																								
No.	30	30	30	30	30	30	30	28	26	25	25	23	24	22	25	28	28	28	29	29	29	29	29	30
Median	4.2	4.1	4.0	3.6	3.6	3.6	5.6	7.0	6.8	6.9	6.6	6.8	7.2	7.2	7.0	7.4	7.2	7.2	6.9	5.7	5.1	4.5	4.3	4.4
U.Q.	4.4	4.4	4.3	4.0	3.8	3.8	6.0	7.4	7.4	7.4	7.3	7.4	8.2	8.0	7.8	7.8	8.0	8.0	7.4	6.4	5.5	5.0	4.8	4.5
L.Q.	3.9	3.6	3.6	3.3	3.1	3.3	5.3	6.6	6.3	6.2	6.0	6.1	6.4	6.6	6.8	6.7	6.5	6.4	6.6	4.8	4.5	4.4	4.2	4.0
Q.R.	0.5	0.8	0.7	0.7	0.7	0.5	0.7	0.8	1.1	1.2	1.3	1.3	1.8	1.4	1.0	1.1	1.5	1.6	0.8	1.6	1.0	0.6	0.6	0.5

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

Sep. 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						S	S	S	S	A	L	S	S	S	S	S	S	A	A					
2							A	A	A	A	A	A	S	S	S	L								
3							A	A	A	S	A	A	S	S	S	S	S		A					
4								S	S	S	S	S	S	A	S	A	A	A						
5									S	4.4	4.6H	A	A	A	A	4.4	L							
6							L	A	L	L	S	L	L	S	L	L	L							
7								S	A	A	A	A	A	S	S	L	L	L						
8							L	L	L	4.4L	L	U 4.7L	4.8	L	U 4.7L	L	L	L						
9							L	U 3.9L	L	U 4.4L	A	4.7L	U 4.6L	A	4.6L	L	A	A						
10							L	L	U 4.1L	L	A	A	A	A	L	A	A							
11									S	L	L	4.9	U 4.8L	L	4.5L	U 4.3L	L							
12								L	L	U 4.5L	L	B	4.7L	4.7L	4.5L	4.4L	L		A					
13							L	L	L	U 4.2L	L	U 4.8L	5.0L	L	L	L	L							
14										S	S	S	S	S	S	S	S							
15										A	L	B	L	L	B	L	A							
16									L	L	S	L	A	B	L	L	L	A	A					
17									S	S	S	S	S	S	S	S	S							
18										S	L	S	S	S	S	S	L							
19										C	S	S	S	S	S	S	L	L						
20										L	S	L	L	S	L	L								
21											S	L	L	L	L	L	L							
22									L	B	L	L	S	S	S	L	L							
23							L		L	L	S	S	S	L	L	L	L							
24									L	A	L	S	S	L	S	L	L							
25									L		S	S	S	S	S	S	S							
26									S		S	S	S	S	S	S								
27									L	A	A	S	L	A	S	L	S							
28										S	S	S	S	S	S	L	S							
29									L	L	S	S	S	S	S	S								
30									L	S	S	S	S	L	S	S								
31																								
No.								1	1	5	1	4	5	1	4	3								
Median								U 3.9	U 4.1	U 4.4	4.6	U 4.8	4.8	4.7	4.6	4.4								

foF1 | Sweep 1.0 Mc to 20.0 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 2

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						S	S	S	S	A	A	A	S	S	S	S	S	A	A					
2						S	A	S	S	3.00	A	A	A	S	S	S	2.80	u2.05s	A					
3						S	A	A	A	S	A	S	A	S	S	S	A	A	S					
4						B	S	S	S	S	S	S	S	S	S	A	A.	S	S					
5						S	S	S	A	A	I3.40A	A	A	A	A	3.10	I2.70A	I2.30s	S					
6						B	2.00	I2.35A	2.85s	I3.05A	I3.20A	3.40	I3.45A	I3.35s	3.25	2.80	B	A	S					
7						B	S	I2.40A	I2.80A	I3.00A	A	A	A	A	A	S	2.60	S	A					
8							S	A	A	R	R	S	S	B	3.35R	3.05	2.60	A	S					
9							R	u2.40B	I2.60A	2.95	I3.10A	I3.30A	u3.40A	A	A	2.85	A	A	S					
10							B	I2.40A	2.65	I3.00A	3.10R	3.20	I3.20s	3.15	A	A	A	A	B					
11							A	B	A	A	A	I3.50R	3.50R	B	R	I3.00s	2.60	A	S					
12							S	A	A	A	R	B	I3.45BI	3.30BI	3.15A	3.00	2.65	S	S					
13							u2.15R	S	S	B	B	B	R	B	B	S	B	A	S					
14							R	A	A	S	S	S	S	S	S	S	A	A	S					
15							S	A	A	A	B	B	B	B	B	B	A	A	B					
16							u2.10R	S	A	B	S	3.40R	A	B	R	A	S	A	B					
17							S	R	S	S	S	S	S	S	S	S	S	S	B					
18							A	S	S	A	S	B	A	S	A	S	B	S	B					
19							S	A	S	C	S	S	S	S	S	S	S	S	B					
20							S	A	S	R	S	A	A	S	S	S	S	A	S					
21							S	2.40s	R	S	S	S	S	S	R	A	S	B	B					
22							S	I2.50s	S	B	B	S	S	S	S	S	S	S	S					
23							B	I2.60R	S	S	S	S	S	S	B	S	S	A	B					
24							S	S	S	S	B	A	S	S	S	B	S	B	B					
25							S	S	S	S	S	A	S	S	S	S	S	A	S					
26							S	S	S	S	S	S	S	S	S	A	S	S	B					
27							S	S	S	A	B	S	A	B	S	S	S	A	S					
28							S	B	S	S	S	S	S	S	S	S	S	S	S					
29							S	A	A	S	S	S	S	S	S	S	S	S	S					
30							S	S	S	A	S	S	A	A	S	S	S	S	S					
31																								
No.							3	7	4	5	4	5	5	3	3	6	6	7						
Median							u2.10	u2.40	u2.70	u3.00	u3.15	3.40	u3.45	u3.30	3.25	3.00	2.60	u2.20						

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	S	S	S	S	S	S	5.4M	J 4.8Y	4.4S	S	4.6S	S	S	3.4	4.9	6.2M	6.1M	4.4M	3.3	S	S
2	3.4M	J 5.1	S	E	E	S	5.0M	J 4.4Y	4.6	4.9	5.0	5.0	4.3	5.3Y	S	S	J 4.1	J 4.7	5.8M	J 6.3	J 7.0Y	J 4.4	J 7.0	J 5.4
3	S	E	J 3.8	2.4	2.0M	3.8	5.0M	4.8	6.0M	4.3	6.9	J 6.3	J 4.2	S	S	S	4.4	3.3	5.6	5.9	S	4.7	2.9	S
4	3.4	3.2	J 4.1	1.9	J 2.6	3.2	S	3.4	4.5	4.4	4.3	S	4.6	J 6.4	3.8	5.4	6.2	6.3	J 6.1	J 3.1	S	S	S	S
5	S	3.1	2.8	S	S	S	S	S	3.4	3.5	J 3.9	J 7.5	7.3M	6.1M	J 5.7	J 3.5	J 2.6	2.1Y	S	S	J 7.1Y	J 8.0	8.9M	7.0M
6	J 3.4	2.4	J 3.0	2.0	J 2.3	2.3	J 3.7	5.2	5.2M	4.2	J 5.3	3.3	3.6	3.1	G	3.4	3.1	J 3.3	J 5.2	J 3.5	J 2.6	3.1	J 3.9	S
7	S	J 5.9	2.3	2.9	S	B	S	3.7	J 4.7	4.9	J 7.6	5.5	4.8	3.4	3.8	S	3.2	S	3.6	J 4.5	5.7	J 5.0	J 4.8	J 2.2
8	S	J 6.0	J 4.5	J 4.7	J 4.0	2.7	S	3.4	3.3	G	G	S	S	4.0	3.7	3.8	3.5	J 4.7	4.4	S	J 3.4	S	S	S
9	S	S	S	E	E	S	G	3.4	3.1	4.8M	6.6	4.0	4.1	8.0M	8.7Y	3.2	J 4.8	5.4M	4.2	3.3	3.0M	S	S	3.8M
10	2.0M	E	S	E	E	S	B	3.0	3.6	4.4	4.5	J 5.6	6.0	J 6.6	7.7	J 6.2	J 6.3	J 5.2	J 2.5	J 2.8	S	J 2.7	J 2.6	J 3.7
11	2.7	S	E	2.7	J 2.0	J 3.1	3.4	5.6	4.8	J 4.8	3.3S	3.3S	G	B	G	S	J 3.8	3.9M	4.4	J 6.5	J 4.9	6.7M	4.0M	S
12	S	S	S	E	E	S	S	6.0M	5.9	4.5M	G	B	B	B	3.7Y	G	G	4.8M	4.3M	3.4M	3.9M	2.3M	3.4M	4.1M
13	S	S	E	E	E	2.5	2.8	S	S	B	B	4.0	G	B	B	S	3.7	2.8	3.8M	4.0M	8.4M	5.8M	3.5M	4.0M
14	S	S	S	E	3.3	3.8	G	3.7	3.6	S	S	S	S	S	S	S	3.3	J 2.2	S	3.4	3.4	J 2.6	3.3	2.6
15	J 2.7	S	2.0	E	S	E	S	3.3	5.5	J 6.0	B	B	B	4.0	B	B	4.3Y	4.4	3.8	J 5.3	4.2	3.9M	3.8	S
16	3.3M	3.3M	2.4	2.4	2.7	S	G	3.8	3.3	4.3	S	3.8	5.3	B	3.0Y	4.9	S	4.9M	J 8.4	S	4.8M	S	S	S
17	S	2.8	E	E	E	S	S	G	S	S	S	S	S	S	S	S	S	S	B	E	S	S	S	2.2
18	S	S	S	E	S	S	2.3	S	4.8	3.9	S	J 5.2	4.1	S	6.7	S	B	S	B	S	S	3.4	S	S
19	S	S	S	2.4	S	2.6	S	2.3	J 4.3	C	3.7	S	S	S	S	S	S	S	B	J 3.7	J 3.6	J 3.1	J 2.6	S
20	S	S	E	S	S	S	S	2.3	S	3.7	S	4.0	4.2	S	S	S	S	2.3	3.3M	4.0M	S	3.9M	S	S
21	S	S	S	S	S	S	S	2.7	G	S	D 4.5S	S	S	S	3.4Y	4.4	S	B	3.7	S	S	S	S	S
22	S	S	E	S	S	S	S	S	S	B	B	S	S	S	S	S	S	S	S	S	S	S	S	S
23	S	S	S	S	E	S	B	G	S	S	S	S	S	S	B	S	S	J 3.0	5.6M	6.5M	3.9M	S	S	S
24	S	S	2.3	S	S	S	S	G	S	5.5M	B	4.9	S	4.8Y	S	B	S	4.8	5.2	3.4Y	S	S	S	S
25	C	S	S	E	E	S	S	S	S	S	S	J 4.3	J 4.1	S	S	S	S	J 3.7	3.6	E	S	S	S	S
26	S	S	S	S	S	S	S	S	S	S	4.0	S	S	S	S	3.4	S	S	J 2.6	J 3.3	3.4	S	S	S
27	S	S	S	S	S	S	S	3.7	J 5.2	J 5.7	6.0M	S	4.6Y	5.3	S	S	S	4.8	3.8	3.5M	5.0M	4.6Y	S	3.8M
28	3.3M	S	S	2.4	S	S	S	B	3.7	S	S	S	S	S	S	S	S	3.3Y	3.4M	S	3.2	3.4	3.1	4.4M
29	2.7M	3.1M	3.4M	3.2M	3.3M	S	S	3.7M	3.3Y	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
30	S	S	S	S	S	S	S	J 3.1	S	3.4	S	S	4.7	3.5	S	S	S	S	S	J 4.2Y	J 4.8	5.8	J 3.5	S
31																								
No.	9	11	15	20	16	9	9	22	20	19	16	15	16	13	12	10	15	21	22	22	19	18	14	11
Median	3.3M	3.1	2.3	E	E	2.7	2.8	3.4	4.4	4.4	D 4.5	4.4	4.2	4.8	3.8	3.6	3.7	4.4	4.2	3.6	4.2	3.9	3.5	3.8M
U.Q.	3.4	5.1	3.4	2.4	2.6	3.5	4.4	3.8	5.0	4.9	5.6	5.5	4.8	6.2	6.2	4.9	4.4	4.8	5.6	5.3	5.0	5.0	4.0	4.4
L.Q.	2.7	2.4	E	E	E	2.4	G	2.7	3.4	3.9	3.8	4.0	4.1	3.8	G	3.4	3.2	3.2	3.6	3.3	3.4	3.1	3.1	2.6
Gr.R.	0.7	2.7				1.1		1.1	1.6	1.0	1.8	1.5	0.7	2.4	G	1.5	1.2	1.6	2.0	2.0	1.6	1.9	0.9	1.8

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	S	S	S	S	S	S	4.7	4.4	S	S	S	S	S	E 3.4 S	3.9	5.2	5.9	3.3	2.7	S	S
2	2.0	A	S			S	A	3.5	4.3	4.5	5.0	4.5	E 4.3 S	S	S	S	3.2	3.5	4.6	A	4.5	3.5	A	2.7
3	S		1.8	1.7	1.4	2.5	A	A	A	S	A	A	S	S	S	S	E 4.4 S	3.1	5.2	3.4	S	A	2.7	S
4	E	E	A	1.9	2.3	2.5	S	S	S	S	E 4.3 S	S	E 4.6 S	6.3	E 3.8 S	4.5	A	5.9	5.0	2.8	S	S	S	S
5	S	2.0	2.2	S	S	S	S	S	E 3.4 S	3.5	3.6	A	5.1	4.6	5.0	2.6 S	E 2.6 S	E 2.1 S	S	S	3.5	2.5	A	3.3
6	2.2	1.9	E	E	E	B	2.9	4.0	4.2	4.1	5.2	3.2	E 3.6 S	E 3.1 S		3.3	3.1	2.6	3.3	2.5	1.9	E	2.9	S
7	S	E	E	1.9	S	B	S	S	4.1	4.3	A	4.5	4.5	E 3.4 SE	3.8 S	S	2.8	S	G	3.8	A	3.2	A	2.0
8	S	A	2.0	E	1.9	E	S	2.7	3.0			S	S	4.0	3.5	3.8	3.1	3.1	4.0	S	2.5	S	S	S
9	S	S	S			S		2.7	3.0	4.0	5.1	4.0	4.1	5.0	4.2 S	E 3.2 S	4.1	3.5	3.3	2.8	2.5	S	S	3.0
10	E		S			S	B	2.9	3.5	3.8	4.5	5.0	5.3	4.6	3.6	4.3	4.0	4.2	2.5	E	S	1.9	2.0	2.4
11	2.0	S		E	1.8	1.9	2.5	3.6	3.2	3.6	E 3.3 R	E 3.3 R		B		S	3.4	3.0	3.6	1.9	2.0	4.5	2.4	S
12	S	S	S			S	S	3.2	3.6	4.1		B	B	B	3.6			4.0	4.0	2.5	3.1	E	3.0	3.1
13	S	S				S	2.6	S	S	B	B	3.8		B	B	S	3.5	2.8	3.4	E	2.2	A	E	2.5
14	S	S	S		E	E		3.5	3.5	S	S	S	S	S	S	S	3.3	E 2.2 S	S	2.8	3.3	2.5	2.6	E 2.6 S
15	E	S	2.0		S		S	3.1	5.0	5.0	B	B	B	U 4.0 R	B	B	4.0	3.9	3.4	3.0	A	3.5	2.0	S
16	2.1	2.2	E	E	E	S		3.4	2.9	4.2	S	3.7	5.2	B	E 3.0 R	3.5	S	4.5	A	S	2.2	S	S	S
17	S	2.6				S	S		S	S	S	S	S	S	S	S	S	S	B		S	S	S	2.1
18	S	S	S		S	S	E 2.3 S	S	4.2	E 3.9 S	S	4.9	E 4.1 S	S	S	S	B	S	B	S	S	S	S	S
19	S	S	S	E	S	2.0	S	E 2.3 S	4.3	C	E 3.7 S	S	S	S	S	S	S	S	B	2.8	E 3.6 A	3.0	2.5	S
20	S	S		S	S	S	S	E 2.3 S	S	3.7	S	4.0	E 4.2 S	S	S	S	S	2.3	2.6	3.5	S	3.0	S	S
21	S	S	S	S	S	S	S	2.7		S	D 4.5 S	S	S	S	E 3.4 R	3.3	S	B	3.1	S	S	S	S	S
22	S	S		S	S	S	S	S	S	B	B	S	S	S	S	S	S	S	S	S	S	S	S	S
23	S	S	S	S		S	B		S	S	S	S	S	S	B	S	S	3.0	2.8	5.1	3.5	S	S	S
24	S	S	E	S	S	S	S		S	5.5	B	S	S	4.0	S	B	S	3.0	5.0	3.2	S	S	S	S
25	C	S	S			S	S	S	S	S	S	S	E 4.1 S	S	S	S	S	3.5	2.5		S	S	S	S
26	S	S	S	S	S	S	S	S	S	S	E 4.0 S	S	S	S	S	E 3.4 S	S	S	2.6	3.3	E	S	S	S
27	S	S	S	S	S	S	S	3.6	3.6	5.0	5.7	S	3.8	5.1	S	S	S	4.1	2.9	2.8	E	U 4.2 S	S	2.9
28	3.0	S	S	2.1	S	S	S	B	E 3.7 S	S	S	S	S	S	S	S	S	2.8	2.7	S	2.9	3.4	2.8	A
29	2.0	S	2.5	2.3	1.9	S	S	3.0	3.1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
30	S	S	S	S	S	S	S	3.0	S	3.1	S	S	4.3	E 3.5 S	S	S	S	S	S	E 3.8 A	A	A	S	S
31																								
No.																								
Median																								

foEs

Sweep 1.0 Mc to 2.00 Mc in 2.0 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 5

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	E2.55 S E2.25 S	E2.30 S	S	S	S	S	S	E3.00 S	2.70	E2.70 S	E4.80 S	E3.50 S	S	S	E3.00 S	2.40	1.80	E1.70 S	E1.70 S	E1.80 S	E2.00 S	E2.40 S
2	E1.70 S	E1.80 S	E1.85 S	1.60	1.30	E1.90 S	E1.80 S	E1.90 S	E3.50 S	2.20	3.10	E2.70 S	E3.10 S	E3.50 S	E4.50 S	E3.50 S	1.85	1.80	1.70	E1.90 S	E1.80 S	E1.80 S	E1.80 S	E1.80 S
3	E1.85 S	1.40	E1.50 S	1.40	1.30	E1.70 S	E1.70 S	E2.20 S	E2.40 S	E3.60 S	3.05	E3.60 S	3.10	E4.90 S	E4.50 S	E5.25 S	3.00	2.20	E2.90 S	E2.60 S	E2.90 S	E2.20 S	E2.40 S	E2.70 S
4	E2.40 S	E2.60 S	1.50	1.65	1.35	1.80	E3.50 S	E2.80 S	E2.95 S	E3.80 S	E3.70 S	E5.10 S	E4.20 S	E3.50 S	E3.40 S	3.10	2.50	E3.40 S	E2.30 S	1.90	E2.80 S	E2.60 S	E2.60 S	E2.70 S
5	E3.50 S	1.85	1.85	E1.75 S	E1.80 S	E1.90 S	E2.70 S	E3.00 S	3.05	2.60	2.50	2.10	2.40	2.00	2.10	1.90	1.90	E1.80 S	E2.00 S	E1.80 S	E1.80 S	E1.90 S	1.50	1.70
6	E1.50 S	E1.60 S	E1.70 S	1.40	E1.80 S	1.20	1.60	1.80	1.90	2.30	2.55	2.70	2.80	2.70	2.55	2.10	2.70	2.00	1.95	1.90	1.80	1.80	E1.90 S	E1.85 S
7	E1.80 S	E1.80 S	E1.70 S	1.70	E1.80 S	1.55	E2.50 S	1.80	2.10	2.40	2.80	3.00	2.80	2.60	2.70	E3.30 S	2.05	E2.70 S	1.80	1.90	1.80	1.80	E1.85 S	E1.80 S
8	E1.90 S	E1.85 S	E1.80 S	1.50	1.50	1.50	E2.10 S	1.90	2.10	2.70	2.80	E3.50 S	E3.50 S	3.50	2.60	2.20	1.90	E1.80 S	E1.80 S	E1.90 S	E1.80 S	E1.90 S	E1.80 S	E2.00 S
9	E1.90 S	E1.90 S	E1.70 S	1.50	1.50	E1.80 S	1.80	E1.90 S	2.40	2.65	2.60	E3.10 S	2.50	2.65	E2.50 S	2.60	1.90	E1.90 S	E2.00 S	E1.80 S	E1.90 S	E1.90 S	E2.00 S	E1.80 S
10	E1.70 S	E1.60 S	E1.70 S	1.40	1.40	E1.70 S	2.10	2.20	2.00	2.60	2.60	2.70	E4.00 S	2.70	1.65	2.10	1.85	1.70	1.95	E1.80 S	E1.90 S	E1.80 S	E1.85 S	E1.90 S
11	E1.85 S	E1.95 S	1.50	1.45	1.55	E1.80 S	1.90	2.55	2.00	2.60	2.50	2.70	2.50	3.50	2.80	E3.00 S	2.25	E2.00 S	E1.80 S	E1.85 S	E1.85 S	E1.80 S	E1.80 S	E1.70 S
12	E1.80 S	E1.80 S	E1.50 S	1.40	1.40	E1.90 S	E2.00 S	E1.70 S	2.10	2.65	2.60	4.90	3.70	3.50	2.50	2.20	2.10	E2.80 S	E1.85 S	E1.80 S	E2.20 S	1.30	E1.80 S	E1.90 S
13	E1.80 S	E1.90 S	1.40	1.45	1.60	E1.90 S	1.80	E2.80 S	E3.00 S	3.80	4.10	3.60	3.10	4.30	3.50	E3.90 S	3.30	1.80	E1.85 S	E1.90 S	E1.80 S	E1.80 S	E1.80 S	E1.80 S
14	E1.60 S	E1.80 S	E1.70 S	1.60	1.50	E1.70 S	1.80	2.30	2.10	E4.40 S	S	E5.00 S	E5.10 S	E5.05 S	E5.10 S	E4.45 S	1.95	1.90	E3.80 S	E1.90 S	E1.95 S	E1.90 S	E1.85 S	E2.10
15	E1.80 S	E1.90 S	1.50	1.55	E2.75 S	1.50	E1.90 S	1.85	2.70	2.75	3.80	4.80	4.40	3.80	5.30	3.40	2.30	1.95	1.80	E1.80 S	E1.80 S	E1.80 S	E1.80 S	E1.80 S
16	E1.80 S	E1.90 S	1.60	1.40	1.70	E1.80 S	1.90	E2.40 S	2.40	3.30	E4.60 S	3.10	2.90	4.60	2.80	2.70	E3.20 S	2.10	2.10	E1.90 S	E1.90 S	E1.80 S	E2.00 S	E1.80 S
17	E2.00 S	E1.80 S	1.60	1.70	1.70	E1.80 S	E2.85 S	1.80	E3.50 S	E4.40 S	E4.30 S	E4.60 S	E4.85 S	E4.50 S	E4.40 S	E4.55 S	E3.50 S	E3.05 S	1.90	1.85	E1.90 S	E2.20 S	E2.55 S	E1.90 S
18	E2.00 S	E2.00 S	E2.05 S	1.55	E1.85 S	S	1.80	E3.10 S	E3.10 S	3.15	E4.30 S	3.50	3.25	E4.85 S	3.20	E4.00 S	2.70	E2.70 S	1.85	E2.10 S	E1.90 S	E2.70 S	S	E1.95 S
19	E1.90 S	E2.00 S	E1.85 S	1.50	E1.85 S	E1.80 S	E2.65 S	1.85	E3.20 S	C	E3.50 S	S	E5.00 S	E4.45 S	E4.95 S	E4.50 S	E3.10 S	E2.75 S	1.95	E1.90 S	1.80	E2.00 S	1.80	E3.00 S
20	E2.00 S	E2.60 S	1.55	E1.95 S	E1.90 S	E2.10 S	E2.70 S	1.90	E4.20 S	2.80	S	3.25	3.50	E4.50 S	E4.40 S	E3.60 S	E2.80 S	E1.95 S	E1.80 S	E1.80 S	E2.00 S	E2.20 S	E1.70 S	E2.00 S
21	E2.00 S	E1.90 S	E1.80 S	E1.80 S	E1.80 S	E1.80 S	E2.00 S	E1.95 S	2.20	E3.80 S	E3.30 S	E4.20 S	E4.50 S	E4.00 S	3.10	E3.00 S	E2.80 S	2.10	2.40	E2.00 S	E1.80 S	E1.90 S	E2.00 S	E1.80 S
22	E1.80 S	E1.90 S	1.50	E1.80 S	E1.90 S	E1.90 S	E2.20 S	E3.00 S	E3.50 S	4.50	3.60	E4.40 S	5.20	E4.50 S	E4.00 S	E3.50 S	E3.20 S	E3.10 S	E1.85 S	E1.90 S	E1.80 S	E1.90 S	E1.80 S	E1.90 S
23	E1.80 S	E1.90 S	E1.70 S	E1.80 S	1.50	E1.90 S	2.05	2.00	E3.10 S	E4.30 S	E4.80 S	S	E5.20 S	E4.80 S	3.40	E3.50 S	E2.95 S	2.00	2.00	E1.80 S	E2.00 S	E1.80 S	E2.00 S	E1.90 S
24	E2.00 S	E1.80 S	E1.80 S	E1.70 S	E1.50 S	E1.80 S	E2.00 S	E1.90 S	E2.90 S	E3.20 S	3.50	3.30	S	E3.50 S	E4.50 S	3.50	E2.80 S	1.90	1.90	E1.90 S	E1.70 S	E1.80 S	E1.90 S	E1.40 S
25	C	E1.50 S	E1.50 S	1.00	E	E1.50 S	E2.50 S	E2.60 S	E3.40 S	E3.55 S	E4.20 S	2.70	E3.50 S	E4.50 S	E4.60 S	E4.60 S	E4.50 S	1.85	E2.00 S	1.80	E1.90 S	E2.40 S	E2.15 S	E2.80 S
26	E2.10 S	E2.10 S	E1.90 S	E1.70 S	E1.95 S	E2.10 S	E2.80 S	E4.10 S	E3.80 S	E4.95 S	E3.55 S	E5.15 S	E4.55 S	E5.30 S	E4.75 S	2.80	E3.50 S	E3.50 S	1.85	E1.90 S	E1.90 S	E2.90 S	E2.40 S	E1.90 S
27	E1.90 S	E2.00 S	E1.65 S	E1.70 S	E2.55 S	E1.90 S	E2.00 S	E3.20 S	E3.20 S	3.10	3.50	E4.80 S	3.20	3.70	E3.30 S	E3.60 S	E3.50 S	E1.80 S	E1.80 S	E1.80 S	E1.80 S	E2.00 S	E2.40 S	E2.80 S
28	E2.20 S	E1.80 S	E1.80 S	E1.90 S	E1.70 S	E1.80 S	E2.00 S	1.80	E2.80 S	S	E5.00 S	E5.00 S	E4.50 S	E4.50 S	E4.40 S	E3.60 S	E3.50 S	E1.95 S	E2.00 S	E1.80 S	E1.90 S	E2.00 S	E1.80 S	E2.80 S
29	E1.90 S	E1.90 S	E1.80 S	E1.90 S	1.50	E1.90 S	E1.80 S	E2.50 S	E2.60 S	E3.70 S	E5.00 S	S	S	E5.00 S	E4.70 S	E3.70 S	E3.60 S	E2.90 S	E2.10 S	E1.90 S	E2.75 S	E2.00 S	E2.05 S	E2.10 S
30	E2.35 S	E1.90 S	E1.55 S	E1.90 S	E2.05 S	E2.70 S	E2.90 S	E2.50 S	E3.50 S	E3.00 S	E4.80 S	E3.60 S	2.90	2.30	E3.40 S	E4.40 S	E2.70 S	E2.80 S	E2.80 S	E2.10 S	E2.95 S	E3.00 S	E1.90 S	E2.50 S
31																								
No.	28	29	30	17	30	28	29	29	29	16	16	27	16	30	29	29	30	30	30	30	30	30	29	30
Median	E1.90	E1.90	E1.70	1.50	E1.70	E1.80	E2.00	E2.20	E2.90	2.70	2.80	E3.50	E3.10	E3.90	E3.40	E3.50	E2.80	E2.00	E1.90	E1.90	E1.90	E1.90	E1.90	E1.90

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

The Radio Research Laboratories, Japan.

K 6

IONOSPHERIC DATA

Sep. 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	I2.80S	I2.70S	2.85	2.90	3.05	I3.10S	I3.10S	I3.10S	I3.10S	I3.30S	U3.15R	I2.80S	U2.75R	S	S	S	2.90	3.10	3.20	J3.50S	3.40	2.90	2.95	U3.25S
2	2.95	I2.75A	2.75	2.70	2.85	2.95	I3.30A	3.30	3.20R	3.00	2.90	I3.00R	2.90RI	3.00S	3.00	3.20	3.25	3.40	3.00	I3.05A	3.15	J2.70R	I2.80A	2.85
3	2.90S	2.75	2.85	2.90	2.75	J2.85SI	3.10A	A	A	S	A	I2.80A	I2.85S	2.90	2.95	I3.05S	3.10	3.35	J3.45SI	3.20A	I2.85SI	2.80A	2.85S	2.95
4	3.00S	2.85SI	2.70A	2.80	2.75	3.05S	3.25	S	S	S	3.00S	2.90S	3.05	3.30S	3.30	3.15	I3.25A	3.35	3.30	3.35	3.00	2.60	2.90	2.65
5	I2.95S	2.95	3.00	2.85	3.00	2.90	3.35S	3.15	3.15	3.35	3.30	I3.00A	3.15	3.05	3.15	3.05	3.25	3.45	3.50	2.95	2.75	J3.05RI	2.80AI	2.80S
6	2.80	2.75	2.70	2.90	2.75	2.75	3.30	3.45	3.35	3.05	2.90	3.05	3.15	3.05	3.15	3.35	3.10	3.30	3.15	3.30	2.85	2.50	2.60F	2.75F
7	2.75F	2.85F	2.95F	2.95	2.70	2.80	3.30	I2.80S	2.80	3.00	I3.10A	2.90	3.00S	3.00	3.05	3.30	3.25	3.50	3.45	3.10SI	2.80A	2.95	I3.10A	3.10
8	2.90	I2.80A	2.80	3.10	3.15	2.80	3.40	3.40	3.35	3.30	3.15	3.20	3.10	3.25	2.90	U3.30R	3.40	J3.40R	J3.55R	3.05	2.70	2.95	3.00	2.95
9	U2.65S	2.70	2.75	J2.80S	2.90	U2.85S	3.40	3.55	3.75	3.20	3.20	3.20	3.10	3.20	3.15	3.20	3.30	3.35	3.45	3.15	3.10	2.95	2.80	I2.80S
10	2.75	2.75	2.80	2.90	U2.85S	2.95	3.30	3.45	3.35	3.20	2.95	3.05	3.05	3.10S	3.20	3.10	3.30	3.30	3.40	3.15	2.85S	2.70S	2.85	2.90S
11	2.95	3.00	3.20	3.75	3.05	3.10	3.30	3.45	3.55	3.50	3.05	3.15	3.15	3.20R	3.25	3.35	3.45	J3.45S	3.45	2.85	3.25S	3.10	3.00	3.05
12	3.05	3.00	2.85	2.95	2.90	J2.90R	3.55	3.60	3.45	3.50R	3.25	3.25	3.25	3.15	3.25	3.25	3.40	3.30	2.90	2.75	I3.10R	3.50	2.95	2.90
13	2.90	2.85	2.60	2.70	J2.70S	2.80	3.40	I3.50R	3.55	3.30	2.90RJ	3.20	J3.05RI	3.40R	3.35	3.20	3.30	3.45	3.20S	3.35	2.90SI	3.00A	3.10	2.90
14	2.85	2.80	2.95	2.90	3.15	J3.25R	J3.20S	3.50	3.35R	I3.40S	I3.35S	I3.30S	3.30	3.25S	3.30S	3.30	3.45S	3.30SI	3.30SI	3.40S	3.10	3.10	I2.90SI	2.90S
15	2.95	2.90	3.00	3.25	2.60	2.90	3.30	3.60S	3.55S	3.35	U3.35R	3.30R	3.25RI	3.20R	J3.15RI	3.25R	I3.35R	J3.40S	3.40	3.25	I3.00A	U3.05S	3.00S	3.10
16	3.20	2.85	2.85	J2.90R	J3.10R	3.05	3.50	I3.75R	3.65	3.60RU	3.40R	3.20	U3.35RI	3.40R	3.50R	3.25	3.40	J3.30RI	3.40A	3.40	3.05	2.90	U2.85R	2.85R
17	2.85	J3.05R	2.90	3.10	3.05	3.05	3.45	J3.50R	3.50	3.50S	3.30SI	3.40S	3.35S	3.00	J3.15SI	3.35SI	3.30S	3.30	3.30S	3.20	3.05	2.95	2.85S	2.80
18	2.95	2.95	3.05	3.30	3.35	I2.80S	3.35	3.50	3.50S	3.40S	3.35S-I	3.30S	U3.30SU	3.35SI	3.40SU	3.40S	3.35	3.25	3.25	3.00	3.10SI	3.10S	I3.00S	2.65S
19	3.00	3.10	3.25	2.70	2.95	3.00	3.45	3.50S	3.30SI	3.25SI	3.10S	S	S	S	I3.30S	3.30S	3.15S	3.05SI	3.35S	3.35S	3.15	3.25	2.75	2.70
20	2.85	2.95S	3.10	2.80	3.15	3.30	I2.80SI	2.90S	3.40SU	3.20RI	3.20SU	3.25R	I3.10RU	3.25RJ	3.30R	3.60	U3.30RU	3.50R	3.35	3.00	2.80	2.80	U3.10R	2.90
21	2.90	2.85	2.90	3.20	3.30	J3.25R	3.60	3.80	3.45	J3.40RI	3.30R	3.20	R	R	R	3.30	3.35	I3.30RI	3.40RI	3.30R	3.00	U3.20R	2.85	J2.70S
22	U3.00SJ	2.95S	2.95	J2.90R	3.00	2.90	3.45	J3.45R	R	U3.45RI	3.45R	R	R	R	R	3.10	R	R	3.50	J3.25SJ	2.95SI	2.85RJ	2.70S	3.15
23	3.05RJ	3.05S	2.95	3.20	J2.80S	2.90	3.40	I3.60S	3.35	I3.35R	3.40RL	3.30	SU3.20R	R	R	I3.40R	I3.35RU	3.45R	3.35	3.40	2.90	J2.95S	2.85SU	2.95S
24	I2.95S	3.10	3.15	J2.95R	3.00R	3.10	3.65	I3.60RU	3.75RI	3.50RI	3.40R	S	S	J3.50RI	3.25RI	3.35RI	I3.45RI	3.50RI	3.40R	3.30	3.10	2.90	J3.00R	3.05
25	I3.00C	3.00S	2.95	3.00	3.05	3.10	3.50	3.55S	3.55	3.60S	3.50	I3.10S	I3.35S	3.35SI	3.30S	3.45SI	3.40SI	3.40S	3.50S	3.30	3.30	3.10	I3.00S	2.85
26	2.90	2.70	3.15	2.95	3.00S	2.95	3.60	I3.40S	S	S	3.40	S	S	S	S	3.35S	I3.40S	3.50SI	3.50S	3.20	I3.00S	3.00S	2.85	2.75S
27	3.00S	3.05	3.00	2.65	2.95	2.75	3.25	3.60S	I3.50S	J3.55R	R	R	U3.20RI	3.20RU	3.25RU	3.25R	R	R	U3.55R	3.40	I2.75RI	2.80S	2.75	J2.90S
28	3.10	3.00	3.20	3.05	3.25	J3.20R	3.60	R	R	S	R	R	R	R	U3.25RI	3.30R	I3.35RJ	3.35RI	3.40RI	3.45R	3.20	3.20	U2.80RI	2.80A
29	2.95	I2.80S	2.80	3.00	2.80	J2.75R	3.30	I3.55R	R	R	R	S	S	R	R	R	R	R	R	R	3.10	3.25R	I2.80RI	3.00S
30	2.90S	2.95	J3.00RJ	2.95RJ	3.05R	2.85R	3.30R	R	R	R	R	R	3.20	3.20	3.25R	3.20	J3.45RI	3.50R	3.35	3.25	A	A	S	3.15
31																								
No.	30	30	30	30	30	30	30	26	23	24	25	22	23	22	24	28	27	27	29	29	29	29	29	30
Median	2.95	2.90	2.95	2.90	3.00	2.90	3.35	3.50	3.45	3.35	3.25	3.20	3.15	3.20	3.25	3.30	3.35	3.35	3.40	3.25	3.00	2.95	2.85	2.90

M(3000)F2

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

The Radio Research Laboratories, Japan.

K 7

IONOSPHERIC DATA

Sep. 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						S	S	S	S	A	L	S	S	S	S	S	S	A	A					
2							A	A	A	A	A	A	S	S	S	L								
3							A	A	A	S	A	A	S	S	S	S	S		A					
4								S	S	S	S	S	S	A	S	A	A	A						
5									S	3.70	3.70H	A	A	A	A	3.45	L							
6							L	A	L	L	S	L	L	S	L	L	L							
7								S	A	A	A	A	A	S	S	L	L	L						
8							L	L	L	3.85L	L	"3.60L	3.75	L	"3.40L	L	L	L						
9							L	"3.60L	L	"3.85L	A	3.40L	"3.65L	A	3.55L	L	A	A						
10							L	L	"3.80L	L	A	A	A	A	L	A	A							
11									S	L	L	3.65	"3.55L	L	3.55L	"3.50L	L							
12								L	L	"3.75L	L	B	3.80L	3.60L	3.55L	3.60L	L		A					
13							L	L	L	"3.90L	L	"3.55L	3.40L	L	L	L	L							
14										S	S	S	S	S	S	S	S							
15										A	L	B	L	L	B	L	A							
16									L	L	S	L	A	B	L	L	L	A	A					
17									S	S	S	S	S	S	S	S	S							
18										S	L	S	S	S	S	S	L							
19										C	S	S	S	S	S	S	L	L						
20										L	S	L	L	S	L	L								
21											S	L	L	L	L	L	L							
22									L	B	L	L	S	S	S	L	L							
23							L		L	L	S	S	S	L	L	L	L							
24									L	A	L	S	S	L	S	L	L							
25									L		S	S	S	S	S	S	S							
26									S		S	S	S	S	S	S								
27									L	A	A	S	L	A	S	L	S							
28										S	S	S	S	S	S	L	S							
29									L	L	S	S	S	S	S	S								
30									L	S	S	S	S	L	S	S								
31																								
No.								1	1	5	1	4	5	1	4	3								
Median								"3.60	"3.80	"3.85	3.70	"3.60	3.65	3.60	3.55	3.50								

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

IONOSPHERIC DATA

Sep. 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						S	S	S	S	z60	315	S	E400S	S	S	S	E355S	305	E300A					
2							A	z65	z95	310	E360A	310	E355S	S	315	300								
3							A	A	A	S	A	A	S	395	360	300	310		300					
4								S	S	S	350	E390S	355	305	z95	300	A	z95						
5									300	z90	z80	A	325	345	300A	305	z80							
6							z60	z60	z55	z50	300	310	z95	z75	z70	z60	z60							
7								S	405	355	A	350	330	340	315	z70	z80	z55						
8							z55	z50	z55	z60	z75	300	305	z85	330	z75	z55	z50						
9							z55	z50	z40	z80	300A	300	310	310	300	z75	z60	z50A						
10							z65	z50	z60	305	305	330	305	305	300	305	z70							
11									z50	z55	z60	310	z90	300	z95	z75	z55							
12								z50	z50	z55	z85	z65	300	310	300	z85	z55		E300A					
13							z50	z15	z50	z55	360	310	310	z50	z75	z75	z65							
14										z65	S	z80	z90	z95	z70	z55	z50							
15										z55	z70	z85	z80	300	z95	•z90	z55							
16									z30	z40	z55	300	z80	z60	z75	z85	z60	z50A	A					
17									z45	z60	z80	z75	z75	340	310	z75	z55							
18										z65	z55	z95	z85	z75	S	z60	z50							
19										C	z60	S	z55	z85	z65	z80	z75	z75						
20										z75	S	300	300	z80	z60	z45								
21											E255S	z80	z80	z60	z60	z80	z50							
22									z60	z50	z60	z75	z80	z55	z45	z85	z50							
23							z50		z45	z45	z45	S	E290S	285	z80	z65	z50							
24									z45	z50A	z60	S	S	z55	z60	z60	z55							
25									z50		z50	S	z60	z75	z60	z55	z55							
26									z65		z50	z75	z80	z75	z90	z55								
27									z50	z45	E240A	z50S	z60	z65	E255S	z45	z50							
28										S	z55	z55	z55	z50	z55	z60	z50							
29									z15	z35	z50	S	S	z70	z55	z50								
30									z50	z45	z80	z80	z60	z70	z65	z80								
31																								
No.							6	7	20	23	25	21	25	28	28	29	23	7	3					
Median							z55	z50	z50	z55	z60	z95	E290	z80	z80	z75	z55	z55	E300					

h'F2

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

The Radio Research Laboratories, Japan.

K 9

IONOSPHERIC DATA

Sep. 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	I Z70S	I340S	360	305	Z50	S	S	S	S	A	Z60A	S	S	S	S	S	S	A	A	E Z50A	Z20A	E300A	E310S	E Z95S
2	310	I310A	345	310	310	310	A	A	A	A	A	A	S	S	S	Z50	Z60	E Z50A	E340A	A	E Z80A	E310A	I310A	310A
3	305	305	Z95	Z45	305	310	A	A	A	S	A	A	S	S	S	S	S	Z55	I Z55A	305	360	I350A	355	300
4	305	350	I370A	330	315	Z75	Z75	S	S	S	S	S	S	A	S	A	A	A	Z55	Z30	300	340	Z95	300
5	305	Z65	Z75	310	300	300	Z50	Z50	I Z60S	Z15	Z10H	A	A	A	I Z20A	Z25	Z15	Z45	Z15	Z55	E360A	Z90	I Z50A	E360A
6	305	310	345	305	300	310	E Z50A	A	E Z90A	Z30	I Z25S	Z50	Z10	I Z30S	Z10	Z10	Z35	Z50	Z50	Z45	Z45	350	Z70	Z65
7	Z80	Z75	Z45	315	340	325	Z50	I Z90S	A	A	A	A	A	S	I Z30S	Z25	Z15	Z50	Z30	305	I310A	305	I305A	Z60
8	Z80	I340A	300	Z50	300	Z95	Z40	Z30	Z15	Z00	E Z45S	Z15	Z00	E Z60A	Z25	E Z90A	Z40	E Z50A	Z20A	Z45	300A	Z60	Z45	Z55
9	305	325	310	Z70	Z85	Z55	Z45	Z25	Z25	Z45	I Z35A	E Z60A	E Z95A	I Z30A	E Z70S	E Z55A	I Z45A	I Z40A	Z40A	Z50A	Z50A	Z55	Z55	E340A
10	310	310	300	Z75	300	Z60	Z45	Z15	Z30A	Z10	A	A	A	A	Z15	A	A	Z55	Z30	Z05	Z90	305	305	310
11	Z70	Z70	Z30	Z05	300	Z95	Z50	Z35	I Z25S	Z25	Z15	Z05	Z05	Z25	Z25	Z10	Z45	Z45	E Z20A	Z50A	Z45	E310A	300A	Z50
12	Z50	Z65	Z85	Z55	Z55	Z65	Z25	Z45	Z45	E Z50A	E Z55S	I Z05B	Z10	Z10	Z45	Z25	Z25	E Z55A	I Z75A	305	Z50A	Z05	E300A	E310A
13	Z60	310	340	325	300	300S	Z45	Z35	Z10	Z15	E Z80B	Z45	Z10	E Z55B	Z05	E Z55S	E Z55B	Z40A	E Z50A	Z45	Z50A	I Z50A	Z50	E Z80A
14	Z65	305	Z85	Z85	Z55	Z55	Z55	Z45	Z50A	I Z10S	I Z20S	I Z50S	S	S	I Z40S	I Z25S	I Z30S	Z65	Z50	Z25	Z50	Z50	305	350
15	Z90	Z75	Z35	Z40	Z55	Z60	Z30	Z25	Z45	I Z40A	Z10	I Z00B	E Z45B	Z45	I Z50B	Z25	I Z20A	Z40A	Z45	Z45	I300A	E310A	Z80	Z55
16	Z55	310	Z55	Z55	Z60	Z60	Z45	Z25	Z10	Z30A	I Z00S	Z45	I Z40A	I Z20B	Z00	Z05	E Z45S	I Z50A	I Z40A	Z05	Z60A	Z60	Z85	300
17	300	Z95	Z55	Z55	Z50	Z50	Z50	Z40	I Z15S	S	S	S	S	S	S	S	S	Z30	Z35	Z30	Z35	Z55	300	315
18	Z70	Z75	Z50	Z40	Z40	I Z60S	Z30	Z30	Z35	I Z40S	Z75	S	S	S	S	S	Z20	Z35	Z30	Z55	Z35	I Z55S	I Z75S	335
19	300	Z50	Z10	Z65	Z80	Z60	Z20	Z30	Z50	C	S	S	S	S	S	I Z30S	Z50	Z50	Z45	Z15	Z75A	Z60	305	340
20	Z95	300	Z45	Z60	Z55	Z55	Z60	Z30	Z65	Z45	I Z20S	Z45	E Z60S	I Z35S	E Z55S	Z45	Z55	Z25	Z20	E310A	300	E380A	Z55	300
21	Z55	300	Z60	Z50	Z45	Z55	Z25	Z20	E Z45S	Z30	S	E Z55S	E Z95S	E Z55S	E Z45S	Z10	Z40	Z25	Z45	Z10	Z50	Z45	300	300
22	Z55	Z75	Z90	Z80	Z65	E350S	Z05	Z45	Z45	I Z30B	Z25	Z45	I Z10S	I Z05S	I Z15S	E Z45S	E Z45S	Z45	Z05	Z25	Z70	Z95	310	Z60
23	Z55	Z60	Z55	Z45	300	Z95	Z20	Z25	Z05	E Z45S	I Z45S	I Z25S	I Z45S	E Z55S	Z25	Z45	E Z45S	Z30	Z25	E300A	E320A	Z55	300	300
24	Z55	Z50	Z50	Z55	Z60	Z50	Z05	Z10	Z00	I Z45A	Z35	S	S	Z50A	I Z30S	Z20	Z25	Z30	E Z40A	Z10	Z45	Z55	300	Z55
25	I Z60X	Z60	Z60	Z50	Z30	Z55	Z10	Z25	Z20	Z10	S	S	S	S	S	S	S	Z30	Z30	Z10	Z25	Z55	Z90	305
26	Z95	310	Z50	Z70	Z60	Z95	Z25	Z30	I Z20S	Z30	S	S	S	S	S	I Z30S	Z40	Z25	Z20	Z55	Z55	310	300	Z80
27	Z70	Z55	Z55	335	305	305	Z30	Z30	Z30	A	A	S	Z10	I Z40A	I Z35S	Z05	I Z45S	Z40A	Z10	Z10	350A	E355S	310	E300S
28	Z60A	Z75	Z50	Z50	Z20	Z55	Z10	Z15	Z45	I Z45S	I Z40S	I Z25S	I Z40S	S	S	Z45	I Z40S	Z45	Z05	Z10	Z40	Z50A	E355A	A
29	300A	E300SE	310A	300A	E350A	300	Z15	Z25	Z05	Z20	S	S	S	S	S	S	Z50	Z50	Z25	Z10	Z50	Z25	300	Z70
30	305	Z70	Z55	Z95	Z90	355	Z55	Z30	Z05	Z25	I Z35S	Z75	I Z60S	Z10	S	S	Z30	Z30	Z30	Z55A	A	A	S	Z55
31																								
No.	30	30	29	30	29	28	26	25	23	20	15	13	11	11	15	17	20	25	26	26	26	23	27	26
Median	Z80	300	Z60	Z70	Z80	Z70	Z35	Z30	Z25	Z30	U Z25	Z45	Z10	U Z30	Z25	Z25	Z40	Z40	Z30	Z40	Z50	Z55	300	E300

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

IONOSPHERIC DATA

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

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

h'Es

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

The Radio Research Laboratories, Japan.

K 11

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										l_z	l	l		l			h	l	l_z	f_3	f_z	f_3		
2	f_z	f_z					l_z	C	l	C_3	l	l	l	l			C	C	l_3	f_3	f_3	f_3	f_3	f_3
3			f_z	f	f	l	l_z	l_z	l	l	l_z	l	l				l	l	l	f_z		f_z	f	
4	f	f_z	f_z	f	f	l		l	l	l	l		l	l	l	l	l_3	l_z	l_z	f				
5		f	f						l	l	l	l l_z	l_z	l_z	l_z	l	l	l			f_3	f_z	f_3	f_3
6	f_z	f	f	f	f	l	C_z	l_z	C_z	l	l_z	C	l	l		C	l	l_z	l_z	f	f	f	f_3	
7		f_z	f_z	f				l	l	l	l_z	l	l	l	l		h		l	f_z	f_z	f_z	f_3	f_z
8		f_3	f_z	f_z	f_z	f		l	l					h	h	C	C	l_z	l_z		f_z			
9								C	l	C_z	l_z	l	C	l_z	l_z	C	l_z	l_z	l_3	f_4	f_z			f_3
10	f_z							l	C_z	l	C	C	l	C_z	l	l	l	l_z	l	f		f	f_z	f_z
11	f_z			f	f	f	l	l_z	l	l_z	l	l					h	l_z	l_3	f_z	f	f_3	f_z	
12								l_z	l_z	l					l			l_z	l_3	f_3	f_z	f_z	f_z	f_z
13						f	h					l					h	l	l_z	f	f_z	f	f	f_z
14					f_z	f_z		l_z	l_z								l	l		f	f	f	f	f
15	f		f					l	l_z	l				h			l	l_z	l_z	f_z	f_z	f_3	f_z	
16	f_z	f_z	f	f	f_z			l	l	l_z		h	l_z		l	l		l_z	l_3		f_z			
17		f																						f
18						l		l	l	l		l_z	l		l							f		
19				f		f		l	l		l									f	f	f_z	f	
20								l		h		l	l					l	l_z	f_3		f_3		
21								C			l				l	l			l					
22																								
23																		l	l	f_4	f_z			
24			f							h_z		l		l				l	l_3	f_z				
25												l	l					l	l					
26											l					l			l	f	f			
27								l	l	l	l		l	l				l_z	l_z	f	f	f		f
28	f			f					l									l	l		f_z	f_z	f_z	f_z
29	f	f_z	f	f_z	f			l	l											f_z	f	f_z	f	
30								l		l			l	l										
31																								
No.																								
Median																								

Types of Es | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

K 12

IONOSPHERIC DATA

Sep. 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	I345S	I370S	360	325	Z95	I300S	I300S	I310S	I305S	S	U320R	S	S	S	S	S	S	320	305	A	Z55	350	335S	UZ95S
2	345	I380A	390	380	355	345	IZ90A	Z95	300R	340	A	I330R	360R	S	315	300	300	Z80	A	I330A	300	J350R	I350A	355
3	350S	380	350	310	380	J345S	A	A	A	S	A	A	S	S	375	I330S	325	Z75	A	I315A	I375S	I385A	380S	330
4	355S	360S	I390A	365	360	300S	Z95	S	S	S	S	S	S	A	300	305	I300A	A	Z85	Z65	335	395	355	395
5	I340S	325	315	350	345	340	Z55S	Z95	305	Z95	Z85	A	325	350	305	315	300	Z60	Z50	325	390	J310R	I360A	I360S
6	355	355	395	350	355	380	Z95	Z75	Z90	305	325	325	320	310	300	Z80	305	Z75	Z75	Z80	315	425	410E	360E
7	360E	350E	315E	350	380	375	Z60E	I415S	405	360	A	350	330S	345	320	Z75	300	Z65	Z50	305S	I355A	345	I350A	330
8	345	I365A	355	Z95	320	350	Z75	Z55	Z65	Z85	300	305	305	300	350	U300R	Z85	JZ75R	JZ55R	300	370	345	305	310
9	U380S	395	380	J355S	345	U330S	Z85	Z55	Z40	300	300	300	310	310	300	300	Z95	Z80	Z55	300	300	320	360	I365S
10	385	380	355	350	U355S	320	Z95	Z55	Z75	305	345	335	305	315S	305	310	Z95	Z70	Z75	300	350S	375S	360	340S
11	345	335	Z70	Z30	325	315	Z80	Z60	Z55	Z55	300	310	300	300R	300	300	Z70	JZ55S	Z55	350	Z95S	A	330	305
12	300	325	345	330	330	J320R	Z50	Z50	Z55	Z55R	300	Z95	300	310	300	300	Z85	Z95	340	390	I305R	Z55	310	330
13	310	335	405	405	J365S	345	Z55	I260R	Z55	Z55	360R	J310R	J315R	IZ65R	Z80	300	Z95	Z70	Z95S	Z80	320S	I310A	300	340
14	350	380	340	345	305	J300R	JZ95S	Z50	Z60R	IZ65R	IZ90S	IZ80S	300	300S	Z95S	Z75	Z70S	Z90S	IZ85S	IZ75S	305	300	I340S	I350S
15	340	335	310	Z95	310	330	Z80	Z50S	Z55S	Z75	UZ80R	Z85R	300R	I305S	J300R	IZ95R	IZ85R	JZ55S	Z70	Z55	I325A	U310S	315S	300
16	300	345	315	J305R	J305R	305	Z50	IZ45R	Z50	Z50RU	Z60R	300	UZ95R	IZ90R	Z85R	300	Z85	JZ75R	IZ70A	Z55	310	340	U345R	350R
17	350	J305R	335	300	305	300	Z55	JZ55R	Z55	Z60S	Z90SI	Z80S	Z85S	355	J310S	IZ90S	IZ70S	Z65	Z90S	Z95	315	320	345	360
18	350	335	305	Z90	Z60	I350S	Z60	Z50	Z50S	Z80S	Z70SI	Z95S	UZ95S	UZ95S	IZ85S	UZ75S	Z75S	Z75	Z75	320	Z95SI	I315S	I325S	355S
19	345	305	Z70	355	325	305	Z55	Z55S	Z65S	IZ80S	I300S	S	S	S	IZ90S	Z95S	305S	325S	IZ80S	Z55S	310	Z95	370	370
20	355	345S	310	345	305	305S	IZ90SI	Z90S	Z70SU	300RI	300SU	305R	I310RU	300RJ	Z85R	Z50	UZ95RU	Z50R	Z55S	310	350	380U	300R	350
21	340	350	330	Z95	Z80	JZ85R	Z50	Z30	Z55J	Z60RI	Z80R	300	R	R	R	Z95	Z85	IZ80R	IZ70R	IZ70R	305U	Z85R	350	J355S
22	U305S	J320S	335	J355R	340	355	Z50	JZ50R	R	UZ65R	R	R	R	R	R	305	R	R	Z50	JZ80S	J320S	I345R	J380S	300
23	305RJ	305S	305	Z95	J350S	340	Z75	IZ50S	Z60	IZ55R	Z50R	I305SU	305R	R	R	IZ85R	IZ85RU	Z55R	Z55	A	345	J310	350SU	340S
24	I310S	300	300	J310R	315R	300	Z50	JZ50R	UZ50R	IZ55R	IZ75R	S	S	JZ70R	IZ90R	IZ95R	IZ70R	IZ50R	IZ50R	Z55	300	305	J350R	315
25	I320C	320S	340	315	310	300	Z50	Z55S	Z60	Z40S	Z50	IZ90S	IZ85S	Z95S	IZ90S	Z65U	IZ65SI	Z70S	Z50S	Z70	Z95	305	I315S	350
26	355	370	300	330	305S	335	Z55	IZ60S	S	S	Z55	S	S	S	S	Z80S	IZ65S	Z55SI	Z60S	Z95	I345S	335S	355	340S
27	335S	305	330	400	335	380	Z90	Z50S	IZ60S	JZ55R	R	R	UZ85RI	Z85RU	Z85RU	Z60R	R	R	U250R	Z55	I380R	I380S	365	J335S
28	300	335	Z95	305	Z55	J300R	Z50	R	R	S	R	R	R	R	UZ90R	IZ90R	IZ85R	JZ80R	IZ70R	IZ55R	Z90	Z60	U385R	A
29	345	I355S	350	305	385S	J350R	Z60	IZ50R	R	R	R	S	S	R	R	R	R	R	R	R	300	Z80R	I350R	I325S
30	330S	335	JZ95RR	J330R	J310R	365ER	Z85R	R	R	R	R	R	Z90	300	300R	300	JZ60R	IZ50R	Z80	Z75	A	A	S	Z95
31																								
No.	30	30	30	30	30	30	29	26	23	23	21	18	20	19	24	28	26	26	27	27	29	28	29	29
Median	345	340	330	330	325	330	Z60	Z55	Z60	Z65	Z90	300	300	300	300	Z95	Z85	Z70	Z70	Z80	315	320	350	340

hpF2 | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

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

ypF2

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

The Radio Research Laboratories, Japan.

K 14

IONOSPHERIC DATA

Sep. 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	4.1	3.8	3.8	3.4	2.5	3.7	6.7	8.6	6.9	6.0	6.0	5.9	6.0	6.2	6.1	7.1	7.7	7.0	S	S	A	3.8	3.7
2	3.5	3.2	3.2	3.3	3.2	3.3	3.9	5.9	5.8	6.5	7.8	6.6	5.9	6.5	7.0	7.4	6.7	6.6	6.4	6.6	6.3	5.5	S	S
3	3.8	3.9	4.3	3.6	3.2	3.4	4.6	6.0	5.3	5.7	6.1	6.9	7.0	8.2	8.9	8.4	7.0	7.2	6.5	5.4	5.1	S	S	A
4	A	3.6	3.5	3.4	3.3	3.0	4.0	5.6	A	A	A	6.3	7.4	8.8	7.4	6.7	7.2	7.9	7.2	6.2	5.0	S	S	S
5	S	4.0	4.2	2.9	2.9	2.8	3.9	5.8	6.2	6.4	6.2	5.9	6.7	8.0	8.3	7.3	7.8	6.8	6.0	6.0	5.6	4.7	S	A
6	S	3.6	3.2	3.2	3.3	3.2	3.8	5.4	6.7	7.5	8.0	8.8	8.5	9.9	11.0	9.0	6.8	6.5	7.3	6.3	5.7	S	S	4.5
7	4.8	4.9	3.8	3.1	3.0	2.8	3.4	5.4	5.9	5.8	5.7	6.5	6.2	7.1	6.8	7.1	7.7	7.5	7.1	5.6	5.6	6.0	5.5	5.0
8	5.0	4.5	4.5	4.4	3.5	2.9	4.3	6.1	6.6	6.1	5.6	6.9	7.2	7.5	7.4	7.7	8.6	8.6	7.4	5.1	5.3	5.4	5.3	4.8
9	4.6	4.0	3.9	3.8	3.9	3.9	4.0	6.2	6.4	6.8	7.3	6.8	7.6	7.7	8.1	8.6	8.9	8.3	7.2	6.6	6.0	5.2	4.9	4.9
10	4.8	4.6	4.6	4.2	4.1	4.0	4.6	6.6	6.5	6.4	6.4	6.5	7.2	8.8	8.7	8.6	9.7	9.0	6.6	6.3	5.5	5.2	S	S
11	S	4.8	4.2	2.8	2.7	2.8	4.0	6.5	6.5	6.5	6.7	7.8	8.6	8.6	8.8	9.0	7.8	7.2	6.6	6.4	6.7	S	S	S
12	4.6	3.9	3.5	3.5	3.5	3.6	5.0	7.2	7.0	6.6	8.1	9.0	7.8	7.2	8.5	8.1	8.5	8.0	S	S	8.8	5.5	4.1	3.6
13	3.7	3.3	3.3	3.5	3.8	3.6	5.4	5.7	6.1	5.7	5.3	8.3	9.1	10.5	7.7	6.5	7.1	8.2	S	S	5.3	5.3	S	S
14	S	4.6	4.4	4.5	3.5	S	S	SH	6.5	6.1	7.3	8.9	8.9	9.1	9.2	8.3	7.1	7.4	8.3	7.3	5.7	4.9	4.0	4.2
15	4.8	4.6	4.4	4.4	3.2	3.1	4.2	7.3	8.5	8.0	8.0	8.8	10.2	11.1	10.7	9.6	9.0	8.4	6.7	5.8	S	S	S	S
16	S	4.7	3.9	3.5	3.8	3.6	5.2	5.9	6.5	6.7	6.8	7.4	9.1	9.5	8.0	7.8	8.6	9.3	8.2	6.8	S	S	S	S
17	S	4.8	5.0	4.5	4.7	3.8	4.9	7.0	6.9	6.7	7.1	8.6	8.5	8.2	8.7	7.3	9.6	8.2	S	S	5.8	5.6	5.3	4.9
18	S	S	4.7	3.7	3.7	3.1	4.0	6.2	7.0	7.3	7.3	8.3	9.2	10.3	10.4	10.5	9.9	9.3	8.4	6.3	5.0	5.0	4.8	S
19	S	S	S	3.1	3.1	2.8	4.1	5.8	6.8	7.3	7.3	7.8	8.6	8.7	8.7	9.1	9.2	S	S	8.6	6.0	A	S	S
20	S	S	S	3.7	3.6	3.3	3.5	6.4	9.2	6.2	7.7	9.3	10.1	11.1	10.8	9.4	9.0	8.3	6.7	5.4	4.8	S	S	S
21	S	4.2	4.4	4.4	4.2	3.4	4.3	6.0	5.9	6.7	7.2	8.6	10.2	11.1	10.4	8.7	9.3	9.6	S	S	S	4.4	4.4	4.5
22	S	S	S	3.6	3.4	3.4	3.6	5.8	7.3	8.9	8.2	9.1	11.1	10.1	8.7	8.4	10.7	9.9	8.2	5.8	5.0	S	S	S
23	4.5	4.3	4.2	4.0	3.5	3.5	4.4	6.6	8.2	7.8	8.0	8.9	9.5	9.9	9.8	9.7	10.4	9.6	8.6	7.0	C	S	A	S
24	S	S	3.9	3.7	3.7	3.8	5.0	6.5	6.8	6.8	7.3	8.9	10.7	7.6	8.4	8.6	9.1	8.9	6.7	6.4	5.6	4.5	4.1	S
25	S	5.0	4.0	3.8	3.6	3.9	4.8	6.6	7.8	7.1	7.1	8.2	9.5	9.4	11.0	9.9	8.6	S	S	S	S	S	S	S
26	S	S	4.4	4.0	3.6	3.6	4.5	7.8	8.6	9.2	7.8	9.6	12.7	12.2	11.8	11.7	9.9	9.4	8.6	S	S	4.6	5.1	5.2
27	5.2	5.0	5.1	4.5	4.0	4.1	4.8	7.1	10.3	10.5	10.6	9.2	12.0	12.2	11.0	10.7	9.9	9.6	9.1	7.1	5.5	5.6	5.2	5.6
28	5.4	5.4	5.2	5.6	3.5	2.8	3.6	7.0	7.9	11.4	8.6	8.6	11.3	11.0	9.8	9.1	8.4	8.8	9.0	8.5	5.6	4.0	3.7	3.6
29	3.8	3.8	3.6	3.4	3.2	3.4	4.5	8.5	7.9	6.9	6.5	8.7	10.6	10.7	9.2	9.0	9.1	9.6	9.5	7.3	4.9	4.4	3.6	3.8
30	3.7	3.8	3.6	2.9	3.1	3.0	S	S	7.7	8.1	7.8	9.9	10.8	8.3	8.2	10.0	10.4	9.3	7.8	5.9	4.8	4.6	4.4	4.0
31																								
No.	14	24	27	30	30	29	28	28	29	29	29	30	30	30	30	30	30	28	24	23	23	18	15	14
Median	4.6	4.2	4.2	3.7	3.5	3.4	4.2	6.3	6.8	6.8	7.3	8.4	9.0	9.2	8.7	8.8	8.8	8.4	7.2	6.3	5.5	5.1	4.4	4.5
U.Q	4.8	4.8	4.4	4.2	3.7	3.6	4.7	6.8	7.9	7.6	7.9	8.9	10.2	10.5	10.4	9.6	9.6	9.3	8.4	7.0	5.8	5.5	5.2	4.9
L.Q	3.8	3.8	3.6	3.4	3.2	3.0	3.9	5.9	6.4	6.4	6.4	6.9	7.4	8.2	8.1	7.8	7.7	7.6	6.7	5.8	5.0	4.6	4.0	3.8
Q.R	1.0	1.0	0.8	0.8	0.5	0.6	0.8	0.9	1.5	1.2	1.5	2.0	2.8	2.3	2.3	1.8	1.9	1.7	1.7	1.2	0.8	0.9	1.2	1.1

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

Sep. 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								L	4.1	I 4.3 A	A	A	A	4.6	A	4.5	4.2	A	A					
2										4.6	4.6	4.6	C	4.6 C	4.6	4.5	4.4	L	L					
3										I 4.4 A	4.7	I 4.7 A	I 4.7 S	4.7 C	4.6	4.5	4.3	L						
4									A	A	A	A	C	4.8	4.7	4.7	L	S						
5									4.2	4.4	4.6	4.8	I 4.8 C	4.7 H	4.6	I 4.6 C	4.3	L						
6									L	4.4	I 4.5 A	I 4.7 C	I 4.7 C	4.6 C	4.8	4.5	L							
7									4.2	4.5	4.6	4.9	4.7	4.8 H	I 4.7 A	4.6	4.3	L	A					
8									I 4.0 A	4.3	I 5.0 L	4.8	4.9	4.7	4.7	A	I 4.4 A	3.9						
9									L	A	4.7	L	I 5.0 A	I 4.9 A	4.9	4.6	I 4.4 A	A						
10									L	4.4	4.8 L	5.1	4.9	4.8	4.7	4.8	A	L						
11									A	A	L	4.6	4.8	4.5	A	4.5	L	A						
12									L	L	4.7	4.8	4.8	I 4.9 L	4.8	4.6 L	4.5 H	L	A					
13									L	4.0	L	4.9	4.9	4.9	4.7	4.5	L	L						
14											I 4.9 L	4.9	I 4.9 C	I 5.0 C	4.8	4.7	L	L						
15									L	A	4.8	I 5.0 A	5.1	I 4.9 C	I 4.8 C	4.6	4.3	L						
16									I 4.0 L	4.3	I 4.7 L	I 4.8 C	4.9	4.8	4.7 L	4.6 L	4.4	A						
17									L	L	L	4.6	4.9	4.8	4.9 L	4.6	4.2							
18										L	L	4.9	4.8	4.8	I 4.8 L	4.6 H	4.3	L						
19										L	4.6	I 4.8 C	I 4.8 C	5.3	I 4.6 C	4.7 H	4.3 H	L H						
20											4.6	4.5	4.6	4.6 H	4.6	I 4.4 C	C							
21										L	4.5	4.9	I 4.8 C	4.8	I 4.6 A	I 4.4 S	C	L						
22										4.4	I 4.7 LH	I 4.9 C	4.9	4.8	4.8	4.9	4.2							
23										L	4.3	C	C	4.7	4.7	4.5	L							
24										L	4.6	I 4.9 LH	4.9	I 4.9 L	4.5	L	I 4.2 L							
25										L	4.4	L	I 4.6 LH	L H	4.6 L	4.4								
26										L	4.6	4.9	I 5.0 C	4.8	4.7 H	4.5 L	I 4.1 L							
27										A	4.6	I 4.8 A	5.0	I 4.8 L	L	L	3.9							
28										A	L	L	4.9	L	I 4.9 L	C	L H	L						
29										A	I 4.5 L	L	4.7	L	I 4.6 A	4.6 L	L							
30										L	L	L H	4.7 LH	4.6 L	L	L	L							
31																								
No.									5	11	22	22	26	27	26	25	17	1						
Median									4.1	4.4	4.6	4.8	4.8	4.8	4.7	4.6	4.3	3.9						

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	A	2.50	A	A	A	A	A	A	A	3.10	2.65	1.90					
2							S	2.10	2.55	3.10^{H}	C	C	C	C	C	C	3.00	2.60	1.95					
3							S	2.10	2.65	3.00	3.10	A	A	A	^{I}3.40^{C}	3.30	3.00	2.50	2.05^{H}					
4							S	2.30	2.70	B	C	C	B	B	C	3.20	2.80	2.35	S					
5							S	2.30^{H}	2.65	A	A	A	A	C	C	3.30	3.00	2.50	S					
6							S	2.15	2.80	A	A	C	A	C	C	C	A	2.50	S					
7							S	2.30^{H}	2.60	3.00	C	A	A	A	A	A	A	2.60	1.95					
8							S	2.00	A	A	C	C	C	A	C	^{I}3.30^{C}	3.00	2.50	1.75					
9							S	^{I}2.10^{A}	2.60	3.10	3.25	^{I}3.40^{C}	^{I}3.50^{C}	3.50^{C}	3.40	3.20	3.00	A	S					
10							S	2.05	2.60	3.00	3.20	3.35	3.40	3.45	3.30	3.10	A	A	A					
11							S	2.00	2.60	3.00	3.20	^{I}3.30^{A}	^{I}3.40^{A}	A	A	A	3.00	2.50	S					
12							S	2.15	2.60	2.90	3.05	^{I}3.15^{A}	3.30	C	C	3.30	3.00	2.40	S					
13							S	2.20	2.65	2.90	C	C	C	C	C	3.25	2.85	2.40	S					
14							S	S	2.40	A	C	C	C	C	C	C	2.85	A	S					
15							S	2.15	2.60	2.70	A	S	A	C	C	3.30	2.90	2.50	S					
16							S	2.00	2.50	2.95	3.10	C	C	C	^{I}3.20^{C}	3.15	2.80	2.30	A					
17							S	2.10	2.60	3.10	C	C	C	A	A	A	2.75	2.40	S					
18							S	2.30	2.65	3.10	3.30	3.40	C	A	A	C	A	A	A					
19							S	2.35	2.70	3.10	C	C	C	C	C	3.05	2.80	2.30	S					
20							S	2.20	2.70	3.00	3.30	3.40	C	C	C	3.20	^{I}2.85^{C}	2.45	S					
21							S	A	A	2.90	^{I}3.15^{S}	3.30	3.30	A	A	A	C	A	A					
22							S	2.10	2.80	3.10	3.20^{C}	C	C	C	C	3.00	2.70	2.30	S					
23							S	2.10	2.80	3.10	C	A	C	C	3.25	3.05	2.60	A	S					
24							S	2.00	2.70	3.00	3.20	3.30^{C}	C	C	C	3.10	2.75	2.35	S					
25							S	A	A	2.90	A	^{I}3.20^{C}	C	C	3.20	3.10	3.00	2.35	S					
26							S	2.10	2.70	3.05	3.10	C	C	C	C	3.10	^{I}2.75^{A}	2.20	A					
27							S	2.25	2.70	3.00	3.15	^{I}3.25^{C}	A	A	A	3.00	^{I}2.80^{A}	2.40	S					
28							S	2.20^{H}	2.65	3.00	3.10	A	A	C	3.30^{C}	^{I}3.05^{C}	2.80	A	S					
29							S	2.10	2.60	2.90	A	C	A	A	A	A	2.80	A	A					
30							S	2.00	2.55	2.95	3.00	C	A	C	C	3.10	2.70	2.15	S					
31																								
No.								26	27	24	15	10	5	2	7	20	25	22	5					
Median								2.10	2.65	3.00	3.15	3.30	3.40	3.50	3.30	3.10	2.85	2.40	1.95					

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

Sep. 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	4.5	2.6	↓4.1	↓2.6	4.3M	2.7	↓3.3	↓2.6	3.4	↓5.4	6.1	6.3	↓5.2	↓5.6	4.7	5.3	3.8	4.3	↓5.4	↓5.3	↓5.2	↓5.1	3.0	↓3.2
2	S	E	S	S	S	S	S	2.9	2.8	G	2.8G	G	C	C	C	3.6	↓4.7	4.7	3.3	↓2.4	↓4.0	3.1	↓3.4	↓2.7
3	S	S	2.2	↓1.5	↓1.5	↓2.2	↓2.6	2.7	3.8	↓6.4	↓4.8	↓5.3	6.1	3.8	G	4.0	3.3	2.1G	G	↓3.0	↓2.0	6.7M	3.8	↓5.1
4	4.3	↓2.6	↓2.4	↓1.9	2.2	↓2.1	1.9	3.3	↓6.5	↓6.8	5.5	↓6.0	4.6	4.1	4.0	4.5	3.8	4.1	2.4	2.0	S	2.6	S	↓2.5
5	S	2.2	↓2.1	↓2.1	2.7	S	S	G	3.8	4.0	3.7	3.8	3.4	2.6G	C	G	G	G	S	S	S	S	2.4	↓5.1
6	↓3.1	S	2.3	↓2.3	2.7	S	S	3.0	3.2	3.1	↓7.1	3.2G	3.7	↓3.3G	2.7G	3.1	↓3.5	↓2.4G	G	2.3	S	S	S	↓2.1
7	↓2.9	2.6	↓3.1	↓1.9	S	S	2.3	3.0	4.0	4.3	5.1	↓5.5	↓5.4	↓4.0	↓5.0	4.9	↓4.7	3.8	↓4.8	↓5.3	↓5.2	↓5.1	3.6	3.2
8	↓3.8	↓2.2	↓2.5	↓2.3	S	S	S	2.2	↓5.1	↓3.5	3.1G	2.8G	3.3G	4.7	4.6	5.0	↓5.3	3.8	↓3.7	3.0	↓3.0	↓3.6	↓5.0	↓2.5
9	S	S	S	S	E	2.4	S	↓2.6	3.0	4.4	3.5	4.6	↓5.6	↓6.2	↓5.6	3.5	↓5.0	↓5.4	↓3.0	↓2.7	↓1.8D	S	S	S
10	↓2.6	S	S	S	S	2.1	S	2.4	2.8	3.5h	4.0	3.7	5.0	↓5.5	6.0	4.2	↓4.9	↓3.8	2.3	↓2.4	S	4.7	S	S
11	S	S	S	S	S	S	S	4.4	↓4.3	4.4	4.1	3.5	4.5	3.6	4.4	3.9	3.8	↓5.2	↓4.7	6.0	↓5.1	↓3.7	3.4M	↓2.4
12	↓3.7	↓2.4	↓2.6	↓2.6	↓2.0	S	S	2.7	3.1	4.1	↓4.8	↓4.0	4.0	3.4G	3.2G	G	G	3.3	5.8	↓3.8	↓3.2	↓2.4	4.4	↓4.1
13	S	S	S	S	E	2.4	S	2.5	G	3.2	C	C	C	C	G	G	G	2.8	3.0	↓3.3	3.1	↓2.4	↓2.2	↓2.1
14	S	S	S	S	E	S	2.6	↓3.3	3.4	4.9	C	C	C	C	G	G	3.0	3.5	S	S	2.8	2.9	3.1	3.7
15	S	↓3.3	S	S	S	S	S	2.8	4.8	↓4.3	3.7	↓5.4	↓5.3	4.3	G	3.6	3.7	7.0M	4.4	↓3.7	↓5.0	↓5.2	S	↓3.4
16	3.1	↓2.3	↓2.1	↓1.8	S	S	S	3.1	3.8	↓4.8	3.5	4.0	4.4	C	3.8	3.9	3.7	↓4.0	↓3.7	↓3.0	2.9	3.0	2.7	2.7
17	2.4	2.3	2.1	S	1.3	S	S	G	3.2	3.3	C	C	3.6	3.5	3.4	3.2	2.9	G	2.4	2.1	2.7	2.8	2.4	S
18	2.3	2.1	2.4	S	↓1.6	S	S	2.7	3.2	3.5	3.7	C	C	3.9	4.6	3.0G	↓3.3	↓3.2	3.2	↓3.7	3.1	S	S	S
19	S	S	S	S	S	S	S	G	3.1	3.3	3.8	4.3	4.4	4.9	4.1	G	G	G	G	S	2.8	5.4	3.1	2.7
20	↓2.3	2.8	2.1	S	S	↓2.0	S	G	3.4	3.7	G	G	3.6	C	C	G	C	2.9	2.8	4.9M	3.0	2.9	2.8	↓2.2
21	↓2.1	↓2.2	S	S	S	S	S	↓2.4	3.1	↓4.6	S	3.8	4.6	4.2	6.1	4.3	C	3.9	↓2.2	↓2.3	↓3.3	↓2.2	↓2.3	S
22	2.4	↓2.0	S	S	S	S	S	2.8	G	G	G	C	C	C	C	G	G	G	S	S	S	S	S	↓2.2
23	S	S	S	S	S	S	S	2.3	2.9	G	C	3.6	C	C	3.6	3.8	3.7	5.7	2.8	2.4	C	2.3	↓5.2	S
24	2.1	S	S	S	E	↓1.7D	S	2.4	3.0	3.6	3.9	3.9	C	C	C	G	3.6	3.3	4.3	3.1	6.0	2.9	↓2.2	S
25	S	S	S	S	E	S	S	2.2	2.9	3.1	3.1	3.1G	C	3.0G	2.8G	2.6G	G	2.9	2.1	3.2	2.8	S	S	S
26	S	S	2.4	S	S	S	S	2.7	3.1	3.4	3.3	2.8G	C	2.6G	2.5G	G	3.8	2.7	↓2.2	S	S	S	↓2.3	↓2.4
27	2.5	2.8	S	2.9	3.2	↓2.5	S	2.5	4.5	↓5.4	4.1	↓5.2	3.9M	5.5	3.4	4.3	↓3.4	2.8	↓2.5	↓5.1	↓3.3	3.9	↓5.3	2.7
28	↓3.3	↓2.3	↓2.9	↓1.8D	S	S	S	2.4	3.0	↓5.0	4.3	3.7	3.9	2.9G	2.8G	2.8G	2.4G	3.0	↓2.6	↓2.3	↓2.2	↓2.5	2.8	3.7M
29	↓3.0	↓2.6	S	S	S	S	S	2.3	3.1	5.6	3.3	2.9G	3.3	↓3.5	↓5.3	↓3.8	3.2	3.0	↓2.9	2.1	2.4	2.1	S	S
30	S	S	2.1	↓2.3	↓1.7D	S	↓1.7D	3.1	3.6	3.3	↓5.4	3.1G	3.8	3.1G	3.7	3.3	3.1	3.1	S	S	3.0	↓2.6	3.7	↓2.4
31																								
No.	17	17	15	12	15	9	6	30	30	30	25	25	21	12	25	30	28	30	26	24	23	23	21	21
Median	2.9	2.3	2.4	2.2	1.6	2.2	2.4	2.6	3.2	3.8	3.8	3.8	4.4	3.8	3.7	3.4	3.4	3.2	2.8	3.0	3.0	2.9	3.1	2.7
U.Q	3.5	2.6	2.6	2.4	2.7	2.4	2.6	2.9	3.8	4.8	4.8	4.9	5.1	4.7	4.6	4.0	3.8	4.0	3.7	3.8	4.0	4.7	3.8	3.6
L.Q	2.4	2.2	2.1	1.8	E	2.0	1.9	2.3	3.0	3.3	3.3	G	3.6	G	G	G	G	2.8	2.3	2.4	1.8	2.5	2.4	2.4
Q.R	1.1	0.4	0.5	0.6		0.4	0.7	0.6	0.8	1.5	1.5		1.5					1.2	1.4	1.4	1.2	1.2	1.4	1.2

foEs

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

The Radio Research Laboratories, Japan.

Y 4

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	A	1.8	A	2.0	G	2.5	3.4	4.8	A	5.1	5.0	4.5	4.7	4.0	3.6	4.3	5.3	5.2	A	A	2.2	2.3
2	S		S	S	S	S	S	2.8	G		2.5^G		C	C	C	$E_{3.6}{}^C$	G	3.2	2.3	1.9	4.0	2.2	2.5	2.1
3	S	S	2.0	$E_{1.5}{}^S$	1.5	1.9	2.4	2.4	3.8	A	4.0	5.0	4.0	$E_{3.8}{}^C$		4.0	3.3	2.1^G		2.8	1.9	2.1	A	A
4	A	2.3	2.1	1.9	E	E	1.9	3.0	A	A	A	5.5	$E_{4.6}{}^R$	4.1	4.0	4.2	3.6	$E_{4.1}{}^S$	2.4	1.9	S	2.0	S	2.4
5	S	2.2	2.0	2.1	1.9	S	S		3.7	3.8	$E_{3.7}{}^C$	$E_{3.8}{}^C$	$E_{3.4}{}^C$	2.6^G	C				S	S	S	S	2.4	A
6	2.0	S	E	2.1	E	S	S	2.9	3.2	$E_{3.1}{}^C$	5.1	$E_{3.2}{}^C$	$E_{3.7}{}^C$	$E_{3.3}{}^C$	$E_{2.7}{}^C$	$E_{3.1}{}^C$	3.5	2.1^G		E	S	S	S	2.1
7	2.4	E	A	1.9	S	S	G	2.8	4.0	4.3	4.1	4.7	4.1	3.9	4.9	3.9	3.6	3.2	4.6	A	2.9	2.9	2.5	2.2
8	A	2.0	2.5	1.7	S	S	S	2.2	4.7	3.3	$E_{3.1}{}^C$	2.8^G	$E_{3.3}{}^C$	4.6	4.6	4.8	5.3	3.8	3.6	2.7	2.9	3.5	4.7	2.2
9	S	S	S	S		E	S	2.5	3.0	4.4	G	4.6	5.5	5.8	4.4	3.4	4.7	4.6	2.7	2.5	S	S	S	S
10	2.5	S	S	S	S	2.0	S	G	G	3.5	3.9	$E_{3.7}{}^C$	4.3	4.2	4.2	4.0	4.1	3.5	2.2	2.1	S	A	S	S
11	S	S	S	S	S	S	S	3.5	4.0	4.3	4.1	$E_{3.5}{}^C$	4.0	$E_{3.6}{}^C$	4.4	3.9	3.6	4.1	4.3	A	A	A	2.0	2.3
12	2.5	2.4	2.3	2.5	2.0	S	S	G	3.0	3.9	3.6	4.0	$E_{4.0}{}^C$	$E_{3.4}{}^C$	$E_{3.2}{}^C$			3.2	4.8	$E_{3.8}{}^S$	$E_{3.2}{}^S$	A	A	2.4
13	S	S	S	S		2.0	S	G		G	C	C	C	C				G	2.8	A	2.3	2.2	2.0	2.0
14	S	S	S	S		S	1.9	2.7	$E_{3.4}{}^C$	3.8	C	C	C	C			G	3.1	S	S	2.5	2.7	A	1.9
15	S	A	S	S	S	S	S	G	3.8	4.2	3.5	5.1	4.8	$E_{4.3}{}^C$		3.6	3.5	2.7	4.0	3.6	A	A	S	A
16	2.0	1.9	E	1.8	S	S	S	2.8	3.4	4.0	$E_{3.5}{}^C$	$E_{4.0}{}^C$	4.4	C	3.8	3.9	3.5	4.0	2.7	2.6	A	A	A	E
17	E	1.9	E	S	$E_{1.3}{}^S$	S	S		3.2	$E_{3.3}{}^C$	C	C	$E_{3.6}{}^C$	$E_{3.5}{}^C$	$E_{3.4}{}^C$	$E_{3.2}{}^C$	G		G	E	1.9	2.2	2.0	S
18	1.9	E	E	S	$E_{1.6}{}^S$	S	S	G	3.1	3.5	3.7	C	C	3.9	4.5	$E_{3.0}{}^C$	3.2	2.9	2.3	3.6	2.3	S	S	S
19	S	S	S	S	S	S	S		3.0	G	$E_{3.8}{}^C$	$E_{4.3}{}^C$	$E_{4.4}{}^C$	$E_{4.9}{}^C$	$E_{4.1}{}^C$					S	2.6	A	A	A
20	$E_{2.3}{}^S$	2.0	E	S	S	1.9	S		3.4	3.4			$E_{3.6}{}^C$	C	C		C	2.8	2.4	A	2.0	2.0	1.9	1.9
21	1.8	2.2	S	S	S	S	S	2.3	2.9	3.8	S	$E_{3.8}{}^C$	4.0	4.2	5.0	4.1	C	2.5	2.0	2.1	2.3	E	A	S
22	2.0	1.8	S	S	S	S	S	2.3				C	C	C	C				S	S	S	S	S	E
23	S	S	S	S	S	S	S	G	2.9		C	$E_{3.6}{}^C$	C	C	$E_{3.6}{}^R$	3.7	3.6	5.2	2.8	2.0	C	E	A	S
24	E	S	S	S		S	S	G	3.0	3.5	3.9	3.9	C	C	C		3.5	2.9	A	3.1	4.5	A	1.9	S
25	S	S	S	S		S	S	G	G	$E_{3.1}{}^C$	$E_{3.1}{}^C$	$E_{3.1}{}^C$	C	$E_{3.0}{}^C$	2.7^G	2.6^G		G	$E_{2.1}{}^S$	2.8	A	S	S	S
26	S	S	E	S	S	S	S	2.6	3.1	3.3	$E_{3.3}{}^C$	2.8^G	C	2.6^G	2.5^G		3.5	2.7	2.1	S	S	S	2.1	2.3
27	E	2.1	S	2.3	2.9	2.2	S	2.4	4.0	5.2	4.0	5.0	3.9	4.2	$E_{3.4}{}^C$	$E_{4.3}{}^R$	3.2	2.7	2.2	4.6	2.5	$E_{3.9}{}^S$	A	2.2
28	A	2.2	2.4	$E_{1.8}{}^S$	S	S	S	G	G	4.4	4.1	3.7	$E_{3.9}{}^C$	2.9^G	2.8^G	2.8^G	2.4^G	G	2.3	1.8	E	2.4	2.3	E
29	2.1	2.2	S	S	S	S	S	G	3.0	4.1	$E_{3.3}{}^C$	$E_{2.9}{}^C$	$E_{3.3}{}^C$	$E_{3.5}{}^R$	5.0	3.8	3.2	2.9	2.5	2.1	E	E	S	S
30	S	S	2.0	2.0	S	S	S	2.7	3.5	G	4.8	$E_{3.1}{}^C$	3.6	$E_{3.1}{}^C$	3.6	G	2.9	2.8	S	S	2.2	2.2	2.4	2.3
31																								
No.																								
Median																								

f_bEs | Sweep 1.0 Mc to 20.0 Mc in 3.0 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 5

IONOSPHERIC DATA

Sep. 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	E1.70	E1.80	E1.80	E	E	E1.70	E1.60	E1.70	1.90	1.90	2.30	2.20	2.20	2.20	2.25	1.90	1.80	1.90	E1.70	E1.70	E1.80	E1.90	E1.70	E1.80
2	E2.00	1.40	E1.90	E1.85	E1.80	E2.00	E1.80	1.80	1.90	1.95	2.20	2.30	2.30	2.40	2.30	2.25	2.15	E1.70	E1.70	E1.70	E1.90	E1.80	E1.90	E1.60
3	E2.00	E1.80	E1.80	E	E	E1.70	E1.70	E1.80	1.70	2.00	2.40	2.40	2.50	2.80	2.30	1.95	1.85	1.80	E1.60	E1.80	E1.80	E1.80	E1.90	E1.60
4	E1.70	E1.70	1.30	E	E1.50	E1.50	E1.70	E1.70	2.00	3.60	2.30	2.35	3.60	3.65	2.20	2.40	2.20	E1.90	E1.90	E1.75	E1.80	E1.90	E1.70	E1.80
5	E1.90	E1.80	E1.80	E1.70	1.30	E1.80	E1.70	E1.80	2.00	1.90	2.30	2.30	2.20	2.30	2.70	2.30	2.20	2.00	2.10	E1.70	E2.00	E2.00	E1.80	E2.00
6	E1.70	E1.80	E1.80	E1.70	E1.80	E1.90	E2.00	1.90	1.85	2.20	2.20	2.40	2.40	2.20	2.20	2.20	1.75	E1.50	E2.00	E1.80	E2.00	E1.80	E1.80	E1.80
7	E1.80	E1.90	E1.50	E	E1.80	E1.90	E1.80	1.70	1.90	1.90	2.20	2.20	2.20	2.40	2.25	1.90	1.80	E1.60	E1.70	E1.70	E1.80	E1.70	E1.80	E1.70
8	E1.90	E1.70	1.30	E	E1.90	E1.70	E1.70	E1.80	E1.70	2.00	2.20	2.25	2.00	2.00	2.00	1.90	E1.70	1.80	E1.70	E1.80	E1.70	E1.80	E1.60	E1.60
9	E1.90	E1.90	E1.70	E1.80	1.10	E1.90	E1.80	E1.60	1.90	1.80	2.00	2.30	2.40	2.40	1.95	2.00	1.90	1.80	E1.60	E1.70	E1.90	E1.90	E1.80	E1.80
10	E1.70	E2.00	E2.00	E1.50	E1.60	E1.80	E1.80	E1.60	1.80	1.90	2.00	2.55	2.40	2.20	2.25	1.90	1.80	1.80	E1.80	E1.40	E1.80	E1.95	E2.00	E2.00
11	E2.00	E1.90	E1.80	E1.80	E1.40	E1.80	E1.80	1.80	1.90	2.00	2.25	2.40	2.80	2.40	2.25	2.30	1.95	1.90	E1.60	E1.80	E1.90	E1.70	E1.60	E1.90
12	E1.70	E1.60	E1.70	1.40	E	E1.80	E1.80	1.80	1.80	2.20	E2.70	2.70	2.50	2.60	2.40	2.00	1.85	1.70	E1.60	E1.85	E1.90	E1.60	E1.90	E1.50
13	E1.80	E1.70	E2.00	E1.90	1.20	E1.70	E1.70	1.80	1.80	1.90	2.25	2.05	E4.00C	E3.90C	2.45	2.05	1.90	E1.60	E1.75	E1.80	E1.90	E1.70	E1.80	E1.90
14	E1.90	E2.50	E2.00	E2.00	1.40	S	E1.80	E1.90	2.00	2.00	2.30	2.40	2.20	E4.80C	2.50	2.20	1.90	E1.70	E2.00	E2.50	E1.80	E1.70	E1.80	E1.70
15	E1.90	E1.70	E1.80	E1.60	E1.90	E1.80	E1.80	1.80	1.85	1.90	2.40	E3.10C	E3.20C	E2.60C	2.40	2.30	2.00	E1.70	E1.70	E1.80	E1.70	E1.90	E1.80	E1.80
16	E1.60	E1.80	E1.60	E	E1.60	E1.90	E1.80	E1.60	1.80	2.30	2.40	E3.50C	E3.45C	E4.70C	E2.40C	2.40	1.80	E1.70	E1.70	E1.70	E1.60	E1.80	E1.80	E1.80
17	E1.70	E1.80	E1.70	E1.70	E	E1.70	E1.70	E1.70	2.00	2.40	2.50	E4.00C	E2.40C	E2.70C	2.20	2.40	1.80	E1.80	E1.80	E1.80	E1.70	E1.70	E1.80	E1.80
18	E1.70	E1.80	E1.80	E1.90	E	E1.90	E1.60	E1.70	1.90	2.30	2.30	2.20	2.40	2.50	2.40	2.20	1.75	E1.70	E1.70	E1.70	E1.80	E1.70	E1.90	E1.80
19	E1.70	E1.80	E1.70	E1.80	E1.80	E2.00	E1.75	E1.75	1.60	1.70	1.80	2.00	2.50	2.50	2.00	1.80	2.00	E1.90	E1.80	E1.70	E1.80	E1.80	E1.80	E1.80
20	E1.70	E1.80	E1.80	E1.90	E1.90	E1.70	E1.80	E1.70	1.80	1.90	2.20	2.40	2.40	E3.70C	2.50	2.30	C	E1.70	E1.70	E1.75	E1.90	E1.70	E1.70	E1.70
21	E1.70	E1.60	E1.80	E1.80	E1.80	E1.80	E1.80	E1.70	1.70	1.75	2.00	2.20	2.50	2.50	2.50	2.50	I1.90C	E1.70	E1.80	E1.80	E1.70	E1.90	E1.75	E1.70
22	E1.80	E1.70	E1.80	E1.70	E1.70	E1.70	E1.70	E1.70	1.80	1.75	2.25	1.50	2.50	2.40	2.50	1.95	2.00	1.70	E1.70	E1.80	E2.40	E1.90	E1.80	E1.80
23	E1.90	E2.50	E1.80	E1.70	E1.70	E1.45	E1.80	1.70	1.70	2.05	2.40	2.40	2.30	2.25	2.20	2.00	1.80	E1.70	E1.70	E1.60	C	E1.80	E1.80	E2.00
24	E1.70	E1.50	E1.70	E1.70	1.00	E1.50	E1.60	E1.60	E1.70	1.90	2.00	1.90	2.30	2.40	2.30	2.00	1.80	E1.80	E1.60	E1.80	E1.70	E1.70	E1.60	E2.00
25	E2.00	E2.20	E1.80	E1.80	1.30	E1.70	E1.90	E1.60	1.70	2.25	2.30	2.30	E3.60C	2.20	2.25	2.00	1.90	E1.60	E1.80	E1.80	E1.55	E1.90	E1.80	E1.90
26	E1.70	E1.80	E1.70	E1.60	E1.90	E1.70	E1.80	1.80	1.70	1.90	2.05	2.20	2.50	2.20	2.20	2.10	E1.70	E1.65	E1.80	E1.70	E1.60	E2.00	E1.75	E1.70
27	E1.80	E2.00	E1.70	E1.50	E1.75	E1.75	E1.75	1.80	1.90	2.00	2.40	E3.25C	2.40	2.50	2.40	2.00	1.80	1.70	E1.60	E1.65	E1.75	E1.75	E1.80	E1.70
28	E1.80	E1.70	E1.60	E	E1.50	E2.00	E1.80	E1.70	1.70	2.00	2.10	2.20	2.20	2.00	2.20	2.00	1.80	E1.60	E1.70	E1.70	E1.80	E1.60	E1.90	E1.80
29	E1.80	E1.70	E1.70	E1.80	E1.70	E1.70	E1.70	E1.70	1.95	2.00	2.00	2.40	2.20	2.00	1.90	1.80	E1.60	E1.70	E1.60	E1.60	E1.80	E1.80	E1.90	E1.80
30	E1.90	E1.80	E1.70	E1.70	E1.80	E1.90	E1.60	E1.70	1.70	1.80	1.90	2.20	2.30	2.00	2.20	1.90	1.90	E1.70	E1.90	E1.80	E1.80	E1.70	E1.70	E1.80
31																								
No.	30	30	30	30	30	29	30	30	30	30	29	26	26	24	29	30	29	30	30	30	29	30	30	30
Median	E1.80	E1.80	E1.80	E1.70	E1.60	E1.80	E1.80	E1.70	1.80	2.00	2.25	2.30	2.40	2.40	2.25	2.00	1.85	E1.70	E1.70	E1.75	E1.80	E1.80	E1.80	E1.80

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

Sep. 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	3.15	2.90	3.15	3.25	2.95	2.95	3.35	3.35	3.50	3.30	3.10	3.30	3.00	3.05	3.00	3.15	3.15	3.30	S	S	A	2.90	2.80
2	3.15	2.80	2.70	2.75	2.75	2.75	3.20	3.35	3.20	2.85	3.20	3.35	2.90	2.90	2.90	3.05	3.15	3.20	3.15	3.20	3.10	3.15	S	S
3	2.85	2.80	2.80	2.85	2.85	3.05	3.30	3.60	3.20	3.10	2.95	3.25	2.85	3.05	3.05	3.00	3.10	3.20	3.45	3.30	3.15	S	S	A
4	A	3.20	2.75	2.70	3.05	2.65	3.05	3.30	A	A	A	3.00	3.05	3.20	3.25	3.05	2.95	3.20	3.15	3.25	3.25	S	S	S
5	S	3.00	2.95	2.90	2.95	3.05	3.35	3.35	3.40	3.45	3.35	3.05	3.00	3.15	3.00	3.15	3.30	3.30	3.35	3.25	3.20	3.00	S	A
6	S	2.95	2.80	2.90	3.05	3.15	2.90	3.35	3.10	3.10	2.90	3.15	2.80	3.00	3.20	3.35	3.25	3.15	3.15	3.35	3.10	S	S	2.75
7	3.00	3.25	2.85	2.90	2.85	2.75	2.95	3.30	3.20	3.20	2.90	2.95	3.15	3.20	3.10	3.10	3.25	3.45	3.30	3.10	2.95	2.90	3.00	2.85
8	3.00	2.80	2.80	3.00	3.15	2.95	3.25	3.55	3.50	3.30	3.05	3.10	3.05	3.15	3.10	3.00	3.15	3.40	3.40	3.20	2.85	2.80	2.85	2.90
9	2.95	2.90	2.80	2.75	3.10	3.55	3.20	3.40	3.40	3.35	3.30	2.95	3.05	3.05	3.10	3.15	3.25	3.35	3.30	3.20	3.15	2.95	2.80	2.75
10	2.75	2.80	2.90	3.00	2.75	2.90	2.85	3.40	3.55	3.55	3.30	3.00	2.95	3.05	3.10	3.05	3.30	3.35	3.50	3.25	3.10	2.90	S	S
11	S	3.00	3.45	3.10	2.75	2.95	3.25	3.50	3.60	3.40	3.30	3.05	3.05	3.15	3.15	3.35	3.20	3.30	3.35	3.30	3.25	S	S	S
12	3.00	2.95	3.10	3.00	2.75	3.05	3.30	3.65	3.55	3.05	3.10	3.20	3.20	2.95	3.00	3.10	3.05	3.20	S	S	3.30	3.25	3.05	2.85
13	2.95	2.80	2.60	2.85	3.15	3.10	3.40	3.55	3.60	3.50	3.25	2.90	3.00	3.25	3.40	3.10	3.20	3.30	S	S	3.25	2.80	S	S
14	S	3.00	3.00	3.05	3.05	S	S	S	3.85	2.90	3.05	3.25	3.10	3.10	3.20	3.30	3.20	3.20	3.30	3.25	3.15	3.25	2.85	2.90
15	2.80	2.90	3.00	3.00	3.15	3.00	3.05	3.45	3.50	3.40	3.20	2.95	2.95	2.95	3.15	3.10	3.30	3.30	3.30	3.60	S	S	S	S
16	S	3.00	3.20	3.15	3.00	3.10	3.00	3.40	3.60	3.60	3.30	3.10	3.05	3.15	3.10	3.10	3.15	3.35	3.30	3.25	S	S	S	S
17	S	2.90	3.20	3.10	3.10	3.20	3.30	3.45	3.50	3.30	3.15	3.25	3.05	2.85	2.85	3.10	3.25	3.35	S	S	3.10	3.20	3.15	3.05
18	S	S	3.00	3.25	3.15	2.95	3.25	3.55	3.45	3.55	3.25	3.00	3.05	3.05	3.00	3.15	3.10	3.20	3.30	3.15	3.10	2.95	S	S
19	S	S	S	2.95	3.05	3.05	3.30	3.60	3.50	3.40	3.30	3.20	3.25	3.15	3.00	3.10	3.15	S	S	3.50	3.15	A	S	S
20	S	S	S	3.25	3.20	3.20	3.05	3.25	3.60	3.10	3.00	2.90	3.15	3.05	3.25	3.20	3.20	3.35	3.40	3.15	3.05	S	S	S
21	S	2.85	2.95	3.00	3.30	3.15	3.50	3.45	3.60	3.30	3.40	2.95	3.10	3.25	3.20	3.00	3.25	3.30	S	S	S	3.00	2.85	2.75
22	S	S	S	3.05	2.90	3.25	3.20	3.45	3.10	3.40	3.05	3.00	3.05	3.20	3.15	2.95	3.25	3.40	3.40	3.40	3.05	S	S	S
23	3.00	2.85	2.90	3.00	3.05	3.15	2.80	3.50	3.30	3.50	3.15	3.20	3.10	3.05	3.05	3.10	3.25	3.40	3.35	3.40	C	S	A	S
24	S	S	3.10	3.10	2.95	3.10	3.55	3.65	3.70	3.25	3.15	2.95	3.25	3.20	3.10	3.00	3.25	3.50	3.45	3.35	3.40	2.90	2.95	S
25	S	3.05	3.20	3.20	3.10	3.20	3.40	3.45	3.45	3.55	3.25	3.00	3.10	2.90	3.20	3.10	3.15	S	S	S	S	S	S	S
26	S	S	3.10	3.10	3.10	2.95	3.35	3.65	3.60	3.65	3.10	2.80	3.05	3.15	3.05	3.20	3.20	3.25	3.00	S	S	2.90	2.80	2.90
27	2.85	3.20	3.10	2.95	2.85	3.00	3.15	3.35	3.40	3.40	3.40	3.10	3.05	3.05	3.05	3.00	3.20	3.30	3.30	3.30	3.00	3.10	2.80	2.80
28	2.95	3.00	3.15	3.30	3.20	2.90	3.20	3.40	3.25	3.40	3.60	2.95	3.20	3.15	3.05	3.05	3.20	3.20	3.35	3.50	3.50	3.00	2.90	2.80
29	2.90	2.90	2.95	3.00	2.85	2.90	3.25	3.65	3.75	3.45	3.15	2.90	3.10	3.10	3.15	3.10	3.20	3.30	3.45	3.40	3.30	2.85	2.85	2.90
30	2.95	3.10	3.10	2.80	2.85	2.75	S	S	3.50	3.35	3.05	3.15	3.25	3.20	2.90	3.10	3.35	3.35	3.45	3.30	3.15	2.85	3.05	3.00
31																								
No.	14	14	27	30	30	29	28	28	29	29	29	30	30	30	30	30	30	28	24	23	23	18	15	14
Median	2.95	2.95	2.95	3.00	3.05	3.05	3.20	3.45	3.50	3.40	3.20	3.00	3.05	3.10	3.10	3.10	3.20	3.30	3.35	3.30	3.15	2.95	2.90	2.90

M(3000)F2

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

Sep. 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								L	3.65	A	A	A	A	A	A	3.55	3.55	A	A					
2										3.45	3.70	3.70	C	3.75C	3.70	3.55	3.60	L	L					
3										A	3.60	I3.55A	I3.55S	3.60C	3.65	3.60	3.55	L						
4									A	A	A	A	C	3.45	3.45	3.35	L	S						
5									3.60	3.65	C	3.75	I3.60C	3.60H	3.70	I3.55C	3.50	L						
6									L	3.75	I3.85A	I3.75C	I3.75C	3.65C	3.55	3.55	L							
7									A	A	3.70	A	3.55	3.70H	I3.55A	3.50	3.50	L	A					
8									I3.75A	3.95	I3.60L	3.70	3.65	A	A	A	A	A						
9									L	A	3.70	L	A	A	3.30	3.50	A	A						
10									L	3.85	3.65L	3.55	3.55	3.50	3.60	3.35	A	L						
11									A	A	L	3.90	3.65	4.00	A	3.60	L	A						
12									L	L	3.65	3.55	3.55	I3.55L	3.55	3.50L	3.55H	L	A					
13									L	4.10	L	3.45	3.35	3.60	3.60	3.60	L	L						
14											I3.50L	3.65	I3.60C	I3.50C	3.55	3.55	L	L						
15									L	A	3.75	I3.65A	A	I3.60C	I3.60C	3.50	3.55	L						
16									I4.05L	3.95	I3.75L	I3.70C	3.35	C	3.60L	3.50L	3.55	A						
17									L	L	L	3.85	3.55	C	3.45L	3.45	3.60							
18										L	L	3.50	3.75	3.60	A	3.55H	3.65	L						
19										L	3.70	I3.65C	C	A	I3.60C	3.60H	3.70H	LH						
20											3.60	3.65	3.60	3.70H	C	C	C							
21										L	3.65	3.50	C	3.55	I3.65A	I3.70S	C	L						
22										3.70	I3.70LH	I3.60C	3.70	3.65	3.55	3.40	3.45							
23										L	3.95	C	C	3.65	3.60	3.55	L							
24										L	3.80	I3.50H	3.50	I3.55L	3.75	L	I3.60L							
25										L	4.10	L	I3.70LH	LH	3.50L	3.45								
26										L	3.90	3.80	I3.45C	3.50	3.55H	3.55L	I3.60L							
27										A	3.70	I3.60A	3.45	I3.50L	L	L	3.65							
28										A	L	L	3.50	L	I3.45L	C	LH	L						
29										A	I3.70L	L	3.65	L	I3.65A	3.50L	L							
30										L	L	LH	3.60LH	3.65L	L	L	L							
31																								
No.									4	8	21	21	22	21	23	24	15							
Median									U3.70	3.80	3.70	3.65	3.60	3.60	3.60	3.55	3.55							

M(3000)F1 Sweep 10 Mc to 20.0 Mc in 30 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Sep. 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								305	255	255	I300A	340	305	350	340	355	300	285	295					
2										380	295	290	385	370	350	310	290	290	285					
3										I360A	380	300	355	320	300	295	300	270						
4									A	A	A	390	340	295	295	325	335	280						
5									290	285	280	360	350	305	300	305	285	275						
6									290	285	340	290	350	330	290	270	275							
7									310	330	330	360	300	320	345	310	290	255	255					
8									260	260	350	330	330	300	340	320	285	255						
9									270	275	295	340	320	320	310	300	280	255						
10									255	255	295	350	340	300	295	305	280	250						
11									240	255	290	320	305	300	300	270	290	255						
12									245	275	295	290	290	330	320	295	290	280	300					
13									240	255	305	345	320	290	275	295	310	280						
14											320	290	305	300	290	280	290	260						
15									255	245	300	300	305	300	285	285	270	245						
16									240	245	290	330	305	285	300	300	295	255						
17									240	255	285	290	290	310	340	295	260							
18										250	295	305	300	300	290	290	275	255						
19										255	280	290	290	300	305	300	290	290						
20											300	305	290	295	265	280	I270C							
21										260	275	325	295	280	260	290	I270C	270						
22										255	270	300	290	275	295	325	280							
23										250	260	280	295	300	280	285	260							
24										245	285	300	280	280	290	300	260							
25										240	250	280	290	325	280	280								
26										240	255	325	300	280	290	275	275							
27										250	255	260	300	280	285	290	280							
28										255	240	300	285	275	290	285	285	270						
29										240	260	305	280	275	280	295	280							
30										255	300	295	260	270	325	290	255							
31																								
No.								1	13	27	29	30	30	30	30	30	29	19	4					
Median								305	255	255	295	300	300	300	295	295	280	270	290					

h'F2

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

Sep. 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	260	280	I325A	295	I260A	E350A	290	240	250	I250A	A	A	A	I250A	I250A	255	270	A	A	250	A	A	↑320	↑310
2	290	↑310	↑340	↑305	↑325	↑330	250	250H	225H	225	205	205	250	210	225	245	240	250	260	250	270	255	↑305	↑310
3	↑350	↑300	↑315	250	↑300	260	250	245	260	A	270	I260A	250	250	240	250	245	240	250	255	270	275	I300A	I295A
4	I270A	↑320	↑355	↑340	↑335	↑325	275	255	A	A	A	A	A	260	250	E295A	250	I250A	255	235	240	↑315	↑340	↑345
5	↑305	↑300	255	↑350	↑300	290	250	250	270	250	I235C	230	225	250H	250	230	230	250	245	245	250	260	↑330	I350A
6	↑305	↑305	↑350	↑350	↑300	↑300	290	245	230	225	I210A	200	200	270	230	240	250	230H	260	235	250	↑300	↑340	↑350
7	↑320	255	I300A	↑305	↑305	↑350	290	250	I270A	I250A	245	I240A	255	210H	I250A	250	255	255	I250A	I280A	↑305	↑330	290	↑300
8	A	↑305	↑325	245	270	270	265	240	I245A	230	205	205	220	A	A	A	A	A	240	255	↑305	↑330	E390A	290
9	↑300	↑340	↑305	↑305	270	240	255	240	245	I230A	220	285	A	A	E300A	230	I250A	I255A	245	240	245	250	↑300	↑310
10	↑320	↑315	↑300	275	↑305	↑300	275	240	230	240	220	210	250	255	250	285	I245A	A	250	245	245	I275A	↑300	↑305
11	↑300	265	225	260	↑305	↑300	255	240	I240A	I230A	250	205	240	200	I245A	250	250	I250A	250	I255A	I240A	I270A	↑310	255
12	275	↑300	↑320	↑305	↑300	280	245	245	240	240	200	240	250	230	225	245	215H	250	I280A	↑300	250	225A	I280A	↑330
13	270	↑300	↑355	↑310	275	245	245	235	220	205	200	270	260	230	240	225	240	245	255	I250A	250	290	↑325	255
14	275	280	↑305	280	270	I280S	275	240H	230	220H	220	250	I250C	I250C	220	255	235	250	250	235	240	250	I300A	↑330
15	295	I295A	265	240	255	260	255	240	250	I220A	200	A	A	I240A	250	245	250	240	250	250	I280A	I295A	290	I305A
16	↑300	290	250	275	260	270	255	220	230	240	200	I205A	E290A	I250C	220	250	250	I245A	240	240	I245A	I275A	I315A	↑330
17	↑300	↑300	260	250	250	250	255	240	240	225	E250C	225	250	I210C	220	I240C	240	245	240	250	240	270	265	260
18	270	275	250	240	260	295	255	235	240	230	220	225	210	240	I260A	205H	240	245	240	250	260	285	255	295
19	290	245	210	↑300	270	290	245	230	245	250	240	I240C	I245C	I230A	I240C	225H	225H	205H	255	220	240	I255A	A	A
20	↑325	290	285	240	280	255	290	250	250	240	240	255	E260C	220H	I230C	220	I220C	250	230	I250A	285	↑355	↑310	↑330
21	290	↑325	290	250	245	250	240	230	220	225	230	225	240	250	I250A	E280A	I210C	240	235	240	230	255	I300A	↑305
22	255	255	280	250	290	235	240	240	245	240	200H	230	240	240	220	250	200	240	240	240	260	295	290	↑305
23	255	↑300	270	240	280	270	240	240	240	240	205	I220C	220	240	255	250	260	250	235	225	I250C	275	I285A	↑300
24	↑305	270	255	270	260	275	240	230	230	225	225	210H	220	E250C	220	225	260	245	230A	255	275	I285A	↑300	270
25	265	255	250	255	255	255	240	230	220H	225	205	200	190H	240H	240	240	255	250	240	225	I230A	250	285	↑305
26	↑300	↑310	270	260	285	265	250	250	240	230	220	195	I230C	245	200H	250	250	250	240	230	225	280	↑300	↑300
27	285	260	250	↑350	↑350	↑305	255	245	260	I250A	250	I230A	220	E260A	240	I250A	250	250	240	255	↑305	↑305	I335A	↑305
28	A	280	255	240	225	E300S	250	245	235	I240A	240	205	245	225	240	240	225H	245	250	225	220	290	↑325	↑325
29	↑325	↑300	↑300	280	↑300	↑305	275	230	230	I230A	210	205	225	240	I230A	260	255	255	240	220	240	250	295	295
30	290	290	240	↑330	↑310	↑350	285	240	250	240	E275A	205H	200H	240	225	240	250	245	230	240	245	↑325	275	270
31																								
No.	28	↑30	↑30	↑30	↑30	28	↑30	↑30	29	28	26	27	24	26	28	27	29	27	29	↑30	29	29	28	29
Median	290	↑300	280	275	280	280	255	240	240	230	220	225	240	240	240	245	250	250	245	245	250	275	↑300	↑305

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

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

h'Es

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

The Radio Research Laboratories, Japan.

Y 11

IONOSPHERIC DATA

Sep. 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	fz	f	f4f3	fzf	f4f	f	lz	l	Cz	lz	lz	lz	l	lz	l	lz	h	hz	h3	fz	f3	fz	fz	fz
2								C3	h		l					h	h	h	C	fz	fz	fz	fz	fz
3			f	f	f	f	C	C	h	Cz	C	l3	l	l		h	h	l		f4	f	fz	fz	fz
4	f3	f3	f4	f	fz	f	C	Cz	Cz	C	Cl	Cl	C	C	C	C	C	Cz	Cz	fz		f		f
5		f3	f	f	f				hz	l	l	lz	lz	l									f3	fz
6	fz		fz	fz	f			C	hz	l	lz	l	l	l	l	l	l3	l		f				f
7	fz	f	f3	f			l	Cz	h3	h	h	hl	l	l	lz	lz	l3	hlz	hzl	fz	fz	fz	fz	f3
8	f3	f	f4	fz				C	lz	l	l	l	lz	hlz	h	hl	hzl	h	C5	f3	f4	f5	fz	f3
9						f		lz	h	h	h	h	Cz	Cz	C	h	Cz	lz	lz	fz	f			
10	fz					f		C	h	h	h	h	h	Cz	C	C	lz	l3	lz	fz		f3		
11								C4	C	C	h	l	l	l	l	l	h	Cz	Cz	f4	f3	fz	fz	fz
12	fz	fz	fz	f3	f			l	Cz	C	h	l	C	l	l			hz	h4	f4	f	f3	f3	fz
13						f		h		h								h	C5	fz	f	f	f	fz
14							l	Cz	C	l							h	lh			fz	fz	f	fz
15		fz						Cz	C	Cz	l	lz	lz	C		h	hz	hz	C4	fz	fz	fz		fz
16	fz	fz	f	f				C3	C	C	C	C	C		C	C	C	Cz	lz	fz	f	fz	f3	f
17	f	f	f		f				C	h			h	l	l	l	hl		l	f	f	f	fz	
18	fz	f	fz		f			hz	h	h	h			l	l	l	l3	l4	lz	f3	f			
19									hl	hl	h	hl	h	h	hl						fz	fz	fz	fz
20	f3	f3	f			fz			h	C			h					hz	Cz	fz	fz	fz	f	f
21	fz	fz						l	lz	C		h	C	l	lz	l		l	l	fz	fz	f	fz	
22	f	f						h																f
23								hz	h			l			h	hz	Cz	l3	hz	f3		fz	fz	
24	f					f		hz	hz	h	h	h					hz	h3	C5	fz	f3	fz	f	
25								l	l	h	l	l		l	l	l		hzlz	h	fz	f			
26			fz					hz	hz	h	hl	l		l	l		lz	h	l				f	fz
27	f	fz		f3	f3	f3		h	C	C	C	C	l	lz	l	Cz	lz	hz	h	f3	fz	fz	fz	f
28	fz	f	fz	f				h	h	hz	hz	ll	lz	l	l	lz	l	lz	lz	fz	f	fz	fz	fz
29	fz	fz						h	h	hz	l	l	l	lz	lz	l3	hlz	hlz	l3	ff	f	f		
30			fz	f3	f		C	C3	h	h	Czl	l	l	l	h	h	h	hz			fz	fz	fz	fz
31																								
No.																								
Median																								

Types of Es | Sweep 10 Mc to 200 Mc in 30 sec in automatic operation.

The Radio Research Laboratories, Japan.

Y 12

SOLAR RADIO EMISSION 200 Mc/s

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

HIRAISO

Time in U.T.

Sept. 1962	Steady Flux					Variability				
	00-03	03-06	06-09	21-24	mean	00-03	03-06	06-09	21-24	mean
1	6	6	6	(7)	6	0	0	0	(0)	0
2	7	7	7	-	7	0	0	0	-	0
3	7	8	7	10	7	1	1	1	1	1
4	8	10	9	9	9	1	1	1	1	1
5	10	8	8	7	9	1	1	1	0	1
6	7	8	8	(7)	7	0	0	0	(1)	0
7	47	33	19	6	32	2	2	1	0	2
8	6	6	6	6	6	0	0	0	0	0
9	6	6	6	(6)	6	0	0	0	(0)	0
10	6	7	7	6	6	0	0	0	0	0
11	5	7	7	5	7	0	0	0	0	0
12	5	6	6	6	5	0	0	0	0	0
13	6	6	6	(6)	6	0	0	0	(0)	0
14	6	6	6	-	6	0	0	0	-	0
15	6	6	6	7	6	0	0	0	0	0
16	7	14	8	12	9	0	1	(1)	1	1
17	21	29	20	-	23	1	1	1	-	1
18	6	-	-	(6)	(6)	0	-	-	(0)	(0)
19	6	6	6	(6)	6	0	0	0	(0)	0
20	6	7	7	(6)	6	0	0	0	(0)	0
21	6	5	5	-	5	0	0	0	-	0
22	6	6	6	(6)	6	0	0	0	(0)	0
23	6	7	7	(6)	7	0	0	0	(0)	0
24	6	6	6	(6)	6	0	0	0	(0)	0
25	6	6	6	(5)	6	0	0	0	(0)	0
26	5	6	6	(6)	6	0	0	0	(0)	0
27	6	6	6	(6)	6	0	0	0	(0)	0
28	6	5	5	6	5	0	0	0	0	0
29	6	6	6	6	6	0	0	0	0	0
30	6	6	6	-	6	0	0	0	-	0

Note No observations during the following periods:

2nd 2010 - 3rd 0040
21st 2030 - 22nd 0040
29th 2030 - 30th 0030

No outstanding occurrence.

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Sept. 1962	Whole Day Index	L. N. 06 12 18 / 12 18 24	W W V 00 06 12 18 / 06 12 18 24	S. F. 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Warning 00 06 12 18 / 06 12 18 24	Principal magnetic storms Start	End	ΔH
1	3o	4 2 3	2 - - 3	4 3 2 3	3 4 3 4	N N N N			
2	3o	4 3 2	3 - - 2	4 3 3 3	4 4 3 3	N N N N			
3	2+	2 3 2	1 - - 2	3 3 2 2	3 2 2 2	N N U U			
4	2+	3 2 3	1 - - 2	3 3 (2) 3	3 3 3 3	U W W W			
5	3o	3 3 3	2 - - 2	4 3 3 3	4 5 4 4	U U N N			
6	2+	4 3 2	2 - - 2	3 2 2 2	4 4 4 3	N N N N			
7	3-	3 3 4	2 - - 3	3 2 2 3	4 3 3 4	N N N N			
8	3+	3 3 4	3 - - 4	3 3 3 3	4 4 4 4	N N N N			
9	3+	4 3 3	3 - - 4	3 3 3 4	4 4 4 5	N N N N			
10	4o	4 3 4	4 - - 4	(4) 3 4 4	5 5 4 5	N N N N			
11	4+	5 5 4	4 - - 5	(4) 4 4 4	4 4 5 4	N N N N	0930	---	131γ
12*	3o	4 2 2	5 - - 3	4 2 2 3	4 5 3 4	N W W W	---	---	
13*	3+	4 3 3	3 - - 4	(4) 2 3 4	4 3 4 4	U U U U	---	21xx	
14	4-	4 4 4	4 - - 4	4 3 3 4	(4) 4 4 4	U N N N			
15	3+	3 (3) 3	4 - (4) 4	3 3 3 4	4 4 4 4	N N N N			
16	4-	4 5 3	4 - (4) 4	3 3 3 4	4 4 4 4	N N N N			
17	4o	4 5 4	(3) - - 4	4 4 4 3	4 4 4 4	N N N N			
(18)	5-	5 5 4	4 - (5) 5	4 5 4 4	4 4 4 5	N N N N			
(19)	4o	5 3 3	5 - - 3	4 4 (4) 4	5 5 4 4	N U U U	0031	---	93γ
(20)	4o	4 4 5	3 - - 4	4 4 4 4	4 3 4 4	U U N N	---	16xx	
21	4o	4 4 4	4 - - 4	4 4 4 5	4 4 4 4	N N N N			
22	4-	3 3 3	4 - - 4	4 4 4 4	4 4 3 4	N N N N			
23	4-	3 3 4	4 - (4) 4	(4) 4 4 4	4 4 4 4	N N N N			
24	4-	3 4 4	4 - - 4	3 4 4 4	4 4 4 4	N N N N			
25	4o	5 4 4	5 - (4) 4	4 4 3 4	5 5 4 4	N N N N			
26	4-	3 3 3	4 - - 4	4 4 4 3	4 3 3 4	N N N N			
27	3+	3 4 4	4 - - 4	2 2 3 3	4 4 4 4	N N N N			
28	3+	4 5 5	4 - - 4	2 2 3 2	4 4 3 4	N N N N			
29	3+	4 3 3	4 - - 4	2 3 3 3	4 4 2 4	N N N N			
30	2+	3 3 2	2 - - 1	2 3 3 (3)	4 4 3 3	U U U U			

* = day of Special World Interval

( ) = Regular World Day

- = impossible to evaluate

( ) = inaccurate

C = artificial accident

--- = continuing magnetic storm

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Sept. 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	SH										
	None															

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