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IONOSPHERIC DATA IN JAPAN

FOR APRIL 1962

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THE RADIO RESEARCH LABORATORIES

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KOKUBUNJI, TOKYO, JAPAN

F－160

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THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

CONTENTS

SITES OF THE RADIO WAVE OBSERVATORIES

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

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

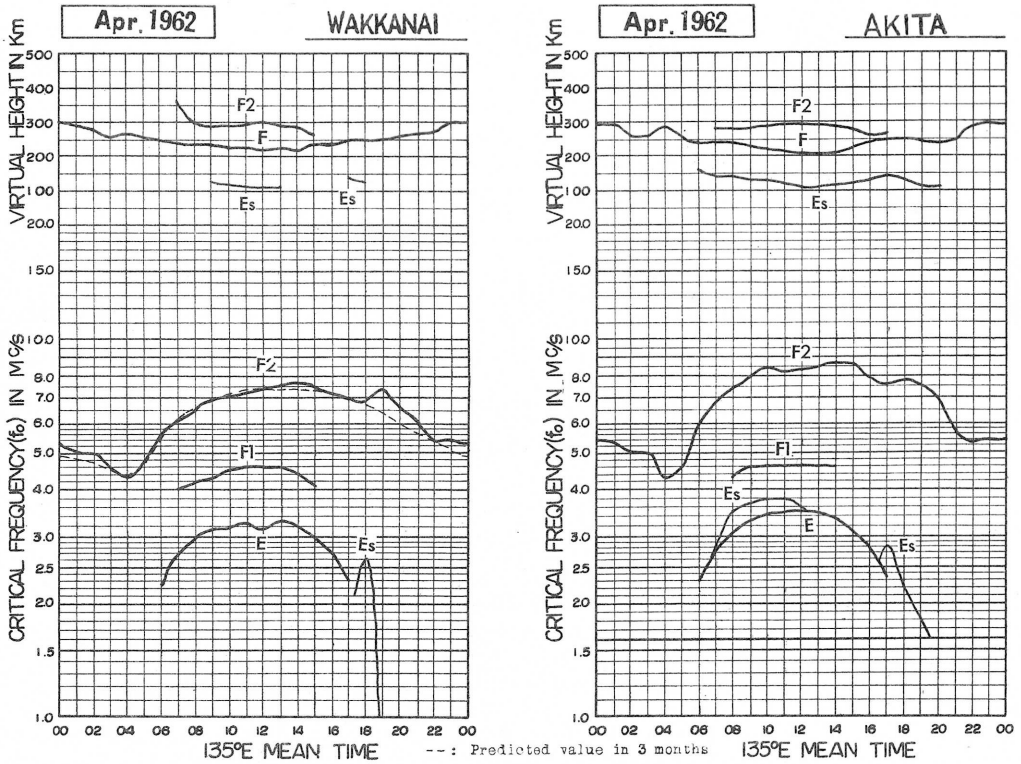
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out;

1—	1	1+
2—	2	2+
3—	3	3+

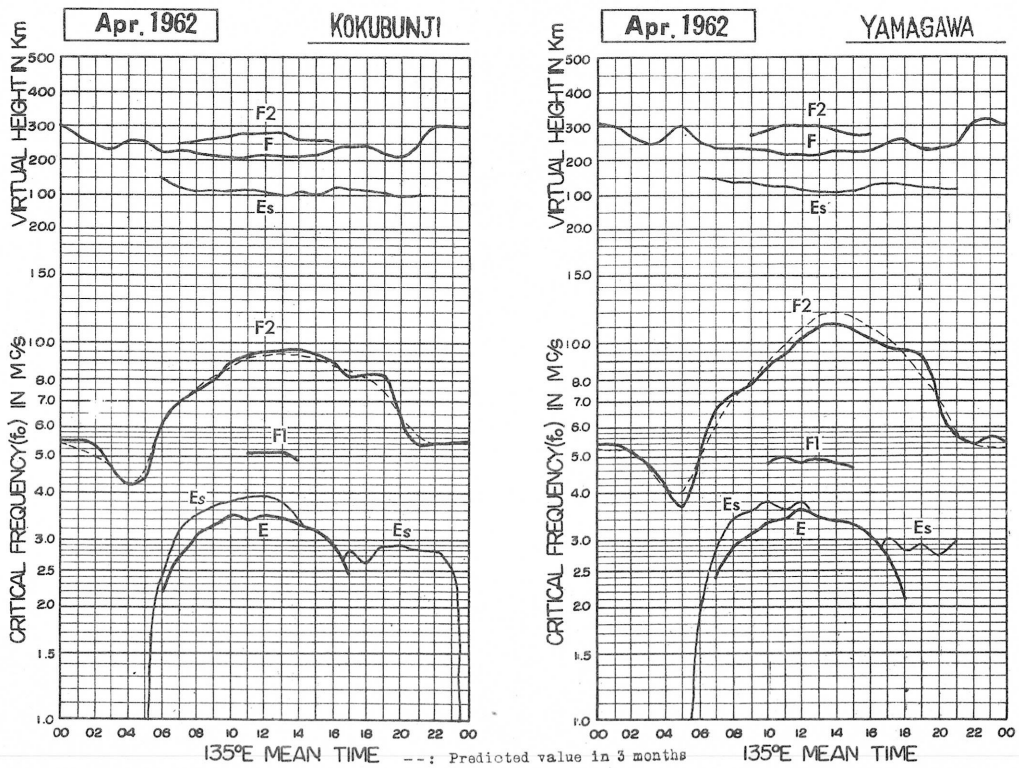
The data of sudden enhancement of atmospheric (SEA) observed on 28 kc are tabulated on each *Start-time, Duration and Importance.*

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



IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



IONOSPHERIC DATA

Apr. 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	5.6	5.9	5.8	6.1	5.0	5.0	6.1	6.8	7.3H	8.8H	9.0	8.9	9.0	8.6	7.9H	8.2H	8.1	7.4H	8.4	U7.8S	6.4	6.1	U6.3S	6.0
2	6.0	5.9	5.8	5.7	3.3	3.6	5.2	5.7H	6.3	7.0	U7.5C	8.0	7.5	8.0	7.3	7.3H	6.7	6.5	6.3	5.5	5.5	5.3	5.3	5.4
3	5.3	5.0	4.8	4.5	4.4	4.5	5.0	6.1	6.4	7.7	8.1	7.5	7.4	6.7	6.5	6.7H	6.8H	6.4	6.5	6.8	6.5	6.1	5.1	5.2
4	5.2	5.2	5.1	5.5	5.0	5.4	5.5	5.7	6.9	I7.4C	7.4	8.4	7.4	8.0	7.9	7.4	6.8H	6.3	5.8	5.6	6.0	5.2	4.6	4.6
5	4.4	4.3	4.3	4.4	4.2	4.4	5.6	6.5	8.1H	8.3	8.3	9.1	8.5	9.4	8.8	8.3	6.8	6.3	5.8	5.3	5.2	5.3	I5.2S	5.1
6	4.6	4.4	4.2	4.3	4.3	4.6	5.9	6.3	6.3H	7.5	7.4	7.5	7.5	8.5	8.4	8.0	6.6H	6.4	6.1	6.4	6.0	5.5	5.6	5.6
7	5.7	5.3	5.0	4.2	3.0F	3.5	4.9	4.7H	6.1	6.2	6.1	6.8	7.8	7.7	7.4	7.7	6.7H	7.0	7.6	6.1	5.8	5.1	5.0	4.3
8	4.3	4.0	I3.8S	3.6	U2.8S	2.8	3.3	W	W	4.7	5.0	5.3	5.6	U5.8R	5.6	5.9	5.8H	5.7	5.5	5.1	5.0	4.5	4.3	4.3
9	4.2	3.9	3.7	3.4	3.2	3.6	5.1	U6.3S	5.8H	6.0	6.6	6.8	7.1	7.5	6.7	6.1	6.2H	5.8	6.1	6.3	6.0	5.5	5.0	4.8
10	4.8	4.5	4.6	4.5	4.5	4.4	4.8	5.6	U6.8S	6.5	7.6	7.0	7.0	6.9	7.9	7.7	7.1H	7.0	7.7	6.1	6.1	5.8	5.3	5.5
11	5.4	4.8	4.4	3.8	3.1	3.3	4.0	4.9	5.5	I5.7A	I5.8C	6.2	6.4	6.6	7.9	7.5H	7.3H	6.4	6.0	5.7	5.0	5.0	5.0	5.0
12	4.8	4.5	4.3	3.6	3.5	4.0	U5.6SH	5.4	5.9	6.5	6.4	7.2	C	C	C	C	6.8	I7.0C	6.8	U7.6S	6.1	5.6	5.4	5.2
13	5.1	5.0	4.7	4.6	4.3	4.8	5.6	5.8	6.4H	7.2	6.6	7.1	7.8	7.6	7.0	7.2H	7.8	7.3	7.6	7.5	6.7	6.1	5.4	5.2
14	5.1	5.0	4.6	4.5	4.3	5.2	6.0	6.7H	7.1H	7.8	7.8	8.1	7.6H	7.7	7.9H	8.2H	7.7H	7.8	8.3	8.1	6.8	5.8	5.4	5.1
15	5.1	5.0	4.7	4.4	4.5	5.3	U7.3S	8.1H	7.4H	8.3H	8.2	8.4	8.6	8.0	8.0	8.0	7.6H	7.4	7.8	7.8	U7.1S	6.7	6.1	5.8
16	5.7	5.6	5.0	5.0	5.0	5.7	U7.8S	8.1H	7.5H	7.7	8.3	8.8H	9.0	9.1	8.8	9.1	8.7H	7.5H	7.5	U7.6S	U7.1S	6.9	6.3	6.3
17	6.1	5.8	5.6	5.5	5.4	6.0	6.8	6.6H	7.6	8.4	8.7	8.5	8.5	8.5	8.8	8.2H	8.1H	7.8	U7.6S	U7.7S	6.8	6.6	5.8	5.5
18	5.6	5.6	5.5	5.0	4.3	5.2	6.5	6.8	7.0H	7.4	7.2	7.7	7.4	7.7	7.3H	7.9H	8.5H	8.3H	8.8	8.0	6.6	5.9	5.6	U6.1S
19	5.7	5.3	5.1	5.0	4.4	4.3	4.6	5.6	6.1	7.0	7.3	7.8	8.2	7.8	8.0H	7.5H	7.6H	7.3	6.8	7.1	7.1	6.2	5.4	5.4
20	5.3	5.3	5.5	4.3	4.2	5.1	6.6	7.8H	8.5H	8.7	9.2	8.8	8.3H	8.5H	8.6	8.0H	7.9	7.6	7.0	7.4	7.1	7.2	6.5	5.8
21	5.4	5.3	5.1	4.8	4.9	6.0	7.4	8.3H	8.4H	8.6H	9.0H	8.5H	8.7	8.6	8.2H	9.1H	8.7H	8.2	7.4	7.6	6.8	6.8	6.5	6.0
22	5.9	5.5	6.0	4.5	4.3	4.5H	4.3H	5.3	6.0V	6.0	5.8H	6.8	7.9	7.5	7.6H	8.0H	7.6H	7.2	7.4	7.1	7.2	7.2	7.2	6.9
23	6.5F	6.3F	6.0	4.8	4.5	5.3H	5.3H	5.1	W	I4.9A	I5.0R	5.0	5.2	5.7	6.0	5.9H	6.0H	6.0	6.1	6.2	6.4	5.8	5.1	5.0
24	5.0	5.0	4.8	4.6	4.2	3.5	3.6	4.5	W	W	5.1	5.2	5.3	5.7	6.2	5.9H	6.0H	5.9H	5.9	6.3	5.8	5.3	5.2	5.1
25	4.8	5.0	5.3	4.3	3.3	4.3	5.4	5.6	6.1	6.1	5.9	6.9	7.4	7.0	7.3	7.0	6.3H	6.6H	7.0	7.2	6.7	6.3	6.3	6.0
26	5.5	5.0	5.0	5.0	5.0	5.6	5.8	6.0H	6.8	7.0	7.0	7.0	7.3	7.6	7.4	7.4H	7.0H	7.4	7.4	7.9	8.0	6.8	6.0	5.5
27	5.3	5.3	5.0	4.9	4.3	4.5	5.3H	5.7	6.1	6.3	6.7	7.4	7.1	6.8	6.8	6.8	7.2	7.0	6.8	7.8	6.8	6.0	5.0	5.0
28	5.0	5.0	5.0	4.8	4.8	4.9	5.6	6.3	6.7H	7.1	7.2	7.2	6.9	7.3	7.8	7.7	7.0H	6.7	6.8	7.5	7.3	6.9	6.4	5.5
29	5.3	5.0	5.1	5.0	5.1	5.9	5.9	6.3H	6.2	7.0	7.6	7.0	7.2	6.9	7.0	7.4H	7.3H	6.7	6.6	7.9	7.8	5.9	5.5	5.4
30	5.3	5.2	5.0	4.9	4.4	5.0	5.8H	6.5H	6.5	6.9	6.4	6.4	7.3	7.5	7.2	7.0H	7.1H	7.8	7.9	8.3	7.6	7.0	5.9	5.7
31																								
No.	30	30	30	30	30	30	30	29	27	29	30	30	29	29	29	29	30	30	30	30	30	30	30	30
Median	5.3	5.0	5.0	4.6	4.3	4.7	5.6	6.1	6.5	7.0	7.2	7.3	7.4	7.6	7.6	7.5	7.1	7.0	6.9	7.3	6.6	6.0	5.4	5.4
U.Q	5.6	5.3	5.3	5.0	4.8	5.3	6.0	6.6	7.3	7.8	8.1	8.4	8.2	8.2	8.0	8.0	7.7	7.4	7.6	7.8	7.1	6.7	6.1	5.8
L.Q	5.0	5.0	4.6	4.3	4.2	4.3	5.0	5.6	6.1	6.2	6.4	6.8	7.1	6.9	7.0	7.0	6.7	6.4	6.1	6.2	6.0	5.5	5.1	5.1
Q.R	0.6	0.3	0.7	0.7	0.6	1.0	1.0	1.0	1.2	1.6	1.7	1.6	1.1	1.3	1.0	1.0	1.0	1.0	1.5	1.6	1.1	1.2	1.0	0.7

foF2

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

The Radio Research Laboratories, Japan.

W 1

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IONOSPHERIC DATA

Apr. 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											4.5	4.6	U 4.5 L	4.4										
2									4.3	4.3	4.4	4.6	4.5	4.5 H	U 4.3 L									
3									4.3	4.3	4.3	4.3	4.4	4.3	4.1									
4									4.1	I 4.2 C	4.5 L	4.5	4.4	4.3 L	4.2 LH									
5										4.3 L	4.5 L	4.4 L	4.5	4.4	4.2 H									
6										4.3	4.4	4.4	4.3	4.3 L	4.3 L	4.0								
7									4.1	4.3	4.4	4.3	4.4	4.3	4.3	4.1								
8								3.6	3.8	3.9	4.1	4.1	4.2	4.2	4.2 H	4.0								
9										4.1	4.3	4.4	4.5 H	4.3	4.2	4.0								
10									4.2 H	4.3	4.4	4.5	4.4	4.6 LH	4.3	4.1								
11								3.8	4.0	I 4.2 A	I 4.3 C	4.5	4.5	4.5	U 4.4 L									
12									4.1	4.3	4.3	4.6	C	C	C	C								
13										4.4	4.5	4.7	4.8	4.5 H	4.5 LH									
14										4.6	4.6	4.7 L		5.0 LH										
15											4.6	5.0 L	4.9 L	4.8	4.7	4.5 L								
16										4.8 L	4.9 L		4.9 L	4.8	4.9	4.6								
17									4.7	4.8	4.8 L	4.9	5.0 L	4.8 L	4.8 L									
18										4.6	4.9	4.9	4.9 L	5.0 L										
19								4.2 H	4.3	4.6	4.8	4.9	4.8	4.8										
20										4.9	5.0	4.8			4.6 L									
21										4.8			U 5.0 L	4.9 L										
22								4.0	4.4	4.8		5.0	4.9	5.0										
23								3.9	U 4.1 R	I 4.3 A	U 4.2 R	U 4.4 R	4.5	4.5	4.4									
24								3.8	4.0	U 4.2 R	4.4	4.5	4.6	4.7	4.4									
25								4.2 L	4.4	4.6	4.7	4.7	4.7	4.7	4.6	4.5								
26									4.5	4.6	I 4.8 A	4.8	5.0	4.8	4.8									
27								4.1	4.3	4.5	4.8	4.8	4.8 H	4.8 L	U 4.6 L									
28										4.3 L	I 4.7 A	4.6	4.8	4.6	4.6	4.3								
29									A	4.2	4.6	4.6	4.8	4.6 H	4.6 H									
30									4.2	4.3	4.5	4.4 L	4.6	4.5 H	4.5 H									
31																								
No.								8	17	28	28	28	27	28	23	9								
Median								4.0	4.2	4.3	4.5	4.6	4.6	4.6	4.4	4.1								

foF1

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	2.60	2.90	3.10	3.15	3.30	3.35	3.30	3.20	2.90	2.65	S	S					
2						S	S	2.40	2.80	3.05	3.05	3.10	3.25	3.00	3.00	2.90	2.50	2.10	S					
3							S	2.50	I 2.80 A	3.00	3.05	3.25	3.15	I 3.00 A	3.00	2.90	2.60	2.05	S					
4						S	S	2.25	2.70	I 2.95 C	3.00	3.05	3.15	3.20	3.00 R	2.80 R	S	S	S					
5							S	2.40	2.70	2.95	3.00	3.00	I 3.00 A	3.20	3.05	2.90	2.45	2.00	S					
6						S	S	2.45	2.80	2.95	3.00	3.05	3.10	3.00	3.00	2.85	2.50	S	S					
7							2.05	2.55	2.80	2.95	3.00	I 3.15 A	3.10	3.05	3.05	2.80	2.40	2.10	S					
8						S	S	2.25	2.70	2.95	3.00	I 3.10 A	3.00	3.15	3.00	2.90	2.40	A	S					
9						S	S	2.40	2.75	2.90	3.10	3.25	3.10	3.25	3.15	2.90	2.50	S	S					
10						S	S	2.50	2.90	3.05	3.10	3.00	3.15	3.05	3.00	2.95	A	A	A					
11						S	2.10	2.55	2.90	3.05	3.00	3.05	3.20	3.25	3.10	2.80	2.45	S	S					
12						S	2.20	2.50	2.90	3.05	3.15	3.15	C	C	C	C	2.70	C	S					
13						S	2.20	2.65	3.00	3.15	3.20	3.20	3.25	3.30	3.20	3.00	2.75	2.25	S					
14						S	2.20	2.70 H	3.00	3.15	3.30	3.40	3.25	3.40	3.25	3.10	2.80	2.30	S					
15						S	S	2.60	3.00	3.15	3.20	3.30	3.35	3.30	3.20	3.10	2.80	2.30	S					
16						S	2.30	2.70	3.00	3.30	3.45	3.50 H	3.10	3.20	3.30	3.00	2.80	2.30	S					
17						S	2.25	2.80	3.00	3.20	3.30	3.55	3.50	3.70	3.35	3.10	2.70	2.25	S					
18						S	S	2.70	3.00	3.40	3.35	3.30	3.00	3.35	3.10	2.95	2.70	2.40	S					
19						S	2.20	2.70	3.00	3.25	3.20	3.00	3.20	3.70	3.30	3.10	2.85	2.35	S					
20						1.85	2.25	2.90	3.15	3.35	3.55	3.50	I 3.20 A	3.00	I 3.25 R	3.20	3.00	2.50	S					
21						S	2.30	2.90	3.10	3.25	3.40	3.50	3.50	3.25	3.20	3.20	2.90	2.40	S					
22						S	2.25	2.90	3.15	3.30	3.30	3.40	3.15	3.35	3.60	3.20	2.80	2.40	S					
23					E	S	2.30	2.80	3.05	3.25	3.35	U 3.50 R	3.00	I 3.30 A	I 3.20 A	3.10	2.75	2.30	S					
24						S	2.30	2.70	3.00	3.25	3.20	A	R	R	3.20	3.00	2.60	2.40	S	S				
25						S	2.30	2.90	3.05	3.30	3.50	3.35	3.00	3.30	3.35	3.10	2.90	2.40	S					
26						1.75	2.40	2.80	3.05	3.25	3.35	3.25	3.10	3.30	3.25	3.05	2.70	2.40	S					
27						S	2.35	2.80	3.05	3.20	3.50	3.50	3.35	3.45	A	A	A	2.30	2.00					
28						S	2.40	2.80	3.05	3.20	3.25	3.20	3.00	3.30	3.20	3.00	2.70	2.30	S					
29						1.95	2.25	2.75	3.00	3.20	3.25	3.55	3.50	I 3.40 A	3.10	2.70	2.75	2.35	S					
30						1.70	2.30	2.70	3.00	3.15	3.25	3.30	3.20	3.40	3.20	3.00	2.80	2.30	S	S				
31																								
No.					1	4	19	30	30	30	30	29	28	28	28	28	27	22	1					
Median					E	1.80	2.25	2.70	3.00	3.15	3.20	3.25	3.15	3.30	3.20	3.00	2.70	2.30	2.00					

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	2.4	G	G	G	G	G	G	G	G	G	G	S	S	E	E	E	E	E
2	E	E	E	E	E	S	S	G	G	3.5	3.8	G	G	G	G	G	G	G	S	E	E	E	E	E
3	E	E	E	E	E	E	S	G	J 3.3	G	G	G	G	3.3	G	G	G	2.3	S	E	E	E	E	E
4	E	E	E	E	E	S	S	G	G	C	3.6	3.6	G	G	2.9G	G	S	S	S	E	E	E	E	E
5	J 3.1	2.2	J 2.4	1.5	J 2.3	E	S	G	G	3.5	3.8	4.0	3.2	3.0G	2.5G	2.6G	G	G	S	E	E	E	S	E
6	E	E	J 2.0	E	E	S	S	G	G	G	3.3	G	G	G	G	G	G	S	S	E	E	E	E	E
7	E	E	E	E	E	E	G	G	G	G	G	J 3.3	G	G	G	G	G	G	S	E	E	E	E	E
8	E	J 2.5	J 2.5	J 3.3	3.2M	S	2.3	G	G	3.8	G	3.3	G	2.4G	G	G	G	2.6	2.2	E	E	E	E	E
9	E	E	E	E	E	S	S	G	G	G	G	G	3.6	2.7G	G	G	G	S	S	E	E	E	E	E
10	E	2.1	E	E	E	S	S	G	G	G	3.5	3.8	J 4.3	G	G	2.7G	3.9	2.6	2.4	E	E	E	E	E
11	E	2.3	E	1.3	E	S	G	G	3.5	J 7.3	D 3.6C	3.5	G	G	G	G	G	S	S	E	E	E	E	E
12	E	E	E	E	E	S	G	G	G	G	4.0	G	C	C	C	C	2.5G	C	S	E	E	E	E	E
13	E	E	E	E	E	S	G	G	G	4.3	G	G	G	2.7G	G	3.8	4.1	3.1	S	E	E	E	E	E
14	E	E	E	E	E	S	G	G	G	G	3.8	4.0	3.7	2.9G	G	G	G	3.5	J 3.6	2.4	E	E	E	E
15	E	E	E	E	E	S	S	3.1	3.6	G	G	G	3.0G	2.7G	2.3G	G	G	G	S	E	E	E	E	E
16	E	E	E	E	E	S	G	G	G	G	G	G	G	G	G	G	G	G	S	E	E	E	E	E
17	E	E	E	E	E	S	G	G	G	G	G	G	G	G	4.7	G	G	G	S	E	E	E	E	E
18	E	E	E	E	E	S	S	G	G	G	G	G	G	G	G	G	G	G	S	E	E	E	E	E
19	E	E	E	E	E	S	G	G	G	G	G	3.7	G	3.0G	G	G	G	G	S	E	E	E	E	E
20	E	E	E	E	E	G	G	G	G	4.1	4.1	G	3.6	G	G	G	G	G	G	E	E	E	E	E
21	E	E	E	E	E	S	G	G	G	G	G	G	G	G	G	G	3.6	3.3	2.3	E	E	E	E	E
22	E	E	E	E	E	S	G	G	G	4.0	3.8	4.0	3.9	G	3.0G	G	G	G	S	E	E	E	E	E
23	E	E	E	E	S	S	G	3.3	3.8	4.3	3.9	4.0	3.8	3.5	4.0M	G	2.4G	3.1	2.5	E	E	E	E	E
24	E	E	E	E	1.5	S	G	G	G	G	4.3	3.4M	G	G	3.2G	G	G	G	S	S	E	E	E	E
25	E	E	E	E	E	S	G	G	G	4.0	G	G	3.4	3.0G	G	G	G	G	S	E	E	E	E	E
26	E	E	E	E	E	G	G	G	3.8	G	J 5.2	G	3.9	G	G	G	G	2.5	2.9	E	E	E	E	E
27	E	E	E	E	E	S	G	G	3.8	3.9	G	G	G	G	J 4.3	J 3.3	J 4.7	4.0M	3.0	2.3	E	E	E	3.0M
28	3.0M	E	E	E	E	S	G	G	3.9	G	4.6	3.8	G	3.0G	G	G	G	G	2.6	E	E	E	E	E
29	E	E	E	E	E	G	G	3.2	4.4	G	G	G	3.1G	3.6	G	G	G	3.0	2.8	2.7	2.4	3.0M	E	E
30	E	J 3.3	J 2.3	E	E	G	G	3.4	G	4.0	4.4	4.0	G	G	G	3.5	3.3	3.6	3.1	2.4	2.5	E	3.0M	E
31																								
No.	30	30	30	30	29	8	21	30	30	29	29	30	29	29	29	29	29	24	11	29	30	30	29	30
Median	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	G	2.6	E	E	E	E	E
U.Q	E	E	E	E	E	G	G	G	3.3	4.0	3.8	3.7	3.5	G	G	G	G	3.0	3.0	E	E	E	E	E
L.Q	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	2.3	E	E	E	E	E
Q.R																			0.7					

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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							G											S	S					
2						S	S			G	G								S					
3							S		3.0					3.3				G	S					
4						S	S			C	G	G			2.7		S	S	S					
5	E	E	E	E	E		S			G	G	G	3.1	2.9	G	G			S				S	
6			E			S	S				G							S	S					
7												3.3							S					
8		E	A	E	2.2	S	G			G		3.2		2.4				2.5	E2.2S					
9						S	S						G	2.7				S	S					
10		E				S	S				G	G	G			2.6	2.7	2.4	2.3					
11		E		E		S			G	A	E3.6C	G						S	S.					
12						S					4.0		C	C	C	C	2.4	C	S					
13						S				4.2				2.7		3.8	4.0	G	S					
14						S					G	G	G	2.7				G	G	E				
15						S	S	G	G				3.0	2.7	2.3				S					
16						S													S					
17						S									2.8				S					
18						S	S												S					
19						S						G		2.9					S					
20										G	G		3.6											
21						S											G	G	G					
22						S				G	G	G	G		3.0				S					
23					S	S		G	G	A	G	4.0	G	3.5	3.3		G	G	G					
24					E	S					G	3.3			3.0				S	S				
25						S				G			G	3.0					S					
26									G		5.0		G					2.3	2.7					
27						S			G	G					3.5	3.2	3.8	2.1	3.0	E				E
28	E					S			3.9		4.5	G		3.0					G					
29								G	4.3				3.1	3.4				G	G	E	E	E		
30		2.5	E					G		G	4.2	G				G	G	3.5	3.0	2.1	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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E2.00S	E1.80S	E	E1.70S	E	E1.60S	E2.00S	1.90	2.20	2.00	2.00	2.00	2.00	2.00	2.00	2.15	2.00	E2.10S	E1.90S	E1.80S	E2.00S	E2.00S	E2.00S	E2.00S
2	E2.00S	E1.70S	E	E	E	E1.80S	E2.00S	1.85	2.00	2.00	2.10	2.00	2.00	2.10	2.15	2.20	2.00	1.90	E1.80S	E2.00S	E1.80S	E2.00S	E2.00S	E2.00S
3	E2.00S	E1.20S	E	E	E1.20S	E1.90S	E2.15S	1.90	2.00	2.00	2.85	2.00	2.00	2.20	2.00	2.00	2.00	1.90	E2.00S	E1.80S	E2.00S	E2.00S	E2.00S	E2.00S
4	E2.00S	E2.00S	E1.50S	E	E	E1.90S	E2.00S	1.95	2.00	I2.00C	2.00	2.15	2.15	2.00	2.00	2.00	E2.50S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
5	E1.85S	E	E	E	E	E1.70S	E2.10S	1.95	2.00	2.00	2.10	2.00	2.20	2.05	2.00	2.00	2.00	1.85	E1.80S	E2.00S	E1.85S	E2.00S	5	E2.00S
6	E1.90S	E1.60S	E1.20S	E	E	E1.80S	E2.10S	1.85	1.80	2.00	2.00	2.00	2.10	2.00	2.05	2.00	2.00	E2.10S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
7	E2.00S	E1.40S	E1.30S	E	E2.00S	E1.90S	1.95	1.90	2.00	2.00	2.15	2.10	2.20	2.40	2.60	2.00	2.00	1.90	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
8	E2.00S	E	E	E	E	E1.80S	E2.00S	1.90	2.00	2.00	2.00	2.10	2.20	2.00	2.40	2.00	2.00	2.00	E1.80S	E2.00S	E1.90S	E1.90S	E2.00S	E2.00S
9	E2.00S	E1.80S	E	E	E	E1.60S	E2.10S	2.00	2.00	2.00	2.15	2.70	2.10	2.10	2.40	2.00	2.00	E2.10S	E1.90S	E2.00S	E1.90S	E2.00S	E1.85S	E2.00S
10	E2.00S	E1.30S	E1.20S	E1.70S	E	E1.50S	E2.20S	2.00	2.00	2.00	2.10	2.10	2.15	2.00	2.00	1.90	2.00	1.80	1.90	E1.90S	E1.90S	E2.00S	E1.70S	E2.00S
11	E1.80S	E1.70S	E1.20S	E	E	E1.60S	E2.00S	1.80	2.00	2.10	2.00	2.10	2.15	2.10	2.00	2.00	2.00	E2.20S	E1.80S	E2.00S	E2.00S	E1.80S	E2.00S	E1.80S
12	E1.80S	E1.20S	E1.20S	E	E	E1.90S	E2.00S	2.00	2.00	2.00	2.20	2.15	C	C	C	C	2.00	C	E2.00S	E2.00S	E2.00S	E2.10S	E2.00S	E2.00S
13	E2.00S	E2.00S	E	E	E	E2.00S	E2.00S	2.00	2.10	2.20	2.40	2.50	2.20	2.00	2.00	2.00	2.00	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
14	E2.00S	E2.00S	E	E1.20S	E	E1.90S	2.00	2.00	2.00	2.15	2.30	2.20	2.10	1.90	2.05	2.00	2.00	2.00	E1.85S	E2.00S	E2.00S	E2.00S	E1.90S	E2.00S
15	E2.00S	E2.00S	E1.60S	E	E1.60S	E2.00S	E2.50S	2.00	2.00	2.00	2.10	2.30	2.15	2.15	2.00	2.10	2.10	2.00	E1.90S	E1.90S	E2.00S	E2.00S	E2.00S	E1.80S
16	E2.00S	E1.90S	E1.80S	E	E	E1.80S	2.00	2.00	2.00	2.20	2.10	2.30	2.00	2.50	2.30	2.00	2.15	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
17	E2.00S	E1.80S	E1.60S	E2.00S	E2.00S	E2.00S	E1.80S	2.00	2.00	2.00	2.05	2.50	2.00	2.40	2.50	2.20	2.00	2.00	E2.00S	E2.10S	E2.10S	E2.00S	E2.10S	E2.00S
18	E2.00S	E1.20S	E	E1.20S	E1.70S	E1.90S	E2.50S	2.00	2.50	3.00	2.20	2.15	2.50	2.10	2.00	2.40	2.00	1.90	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
19	E2.00S	E1.60S	E1.70S	E	E	E1.80S	2.00	2.00	2.00	2.15	2.50	2.70	2.40	2.15	2.20	2.50	2.10	1.80	E2.00S	E2.00S	E1.90S	E2.00S	E2.00S	E2.00S
20	E2.00S	E	E	E	E	1.60	1.85	2.00	2.00	2.10	2.50	2.15	2.10	2.80	2.50	2.00	2.00	1.90	E1.85S	E2.00S	E2.00S	E1.90S	E2.00S	E1.90S
21	E1.90S	E1.80S	E1.60S	E	E	E2.00S	1.85	2.00	2.00	2.10	2.10	2.15	2.10	3.00	2.10	2.20	2.00	1.90	E1.90S	E2.00S	E2.00S	E1.80S	E2.00S	
22	E2.00S	E1.60S	E	E	E	E1.90S	1.90	2.00	2.00	2.00	2.15	2.10	2.10	2.15	2.15	2.00	2.00	2.00	E2.00	E2.10S	E2.00S	E2.00S	E2.00S	E2.00S
23	E1.90S	E1.50S	E	E	E	E1.80S	1.85	1.90	2.00	2.10	2.10	2.10	2.15	2.30	2.15	2.10	2.00	2.00	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E2.10S
24	E2.00S	E	E	E	E	E1.90S	2.00	2.00	2.00	2.40	2.10	2.10	3.00	2.80	2.50	2.10	2.00	2.00	E2.10S	E2.10S	E2.00S	E2.00S	E2.10S	E2.00S
25	E2.00S	E1.40S	E	E	E	E2.00S	1.80	2.00	2.00	2.00	2.50	2.20	2.30	2.20	2.10	2.00	2.20	1.90	E2.00S	E2.00S	E2.00S	E1.80S	E2.00S	E2.00S
26	E2.00S	E	E1.70S	E	E	1.40	2.00	1.90	2.05	2.00	2.15	2.10	2.00	2.10	2.15	2.00	1.90	1.80	E1.80S	E2.10S	E2.00S	E2.00S	E2.00S	E2.00S
27	E1.90S	E1.20S	E	E	E	E2.00S	1.90	2.00	2.00	2.00	2.10	2.00	2.30	2.85	2.10	2.00	2.00	2.00	E1.95S	E2.00S	E2.10S	E2.00S	E2.00S	E2.00S
28	E1.90S	E1.60S	E1.20S	E	E	E2.00S	2.00	2.10	2.15	2.50	2.20	2.20	2.15	2.10	2.15	2.20	2.05	1.95	E2.00S	E2.10S	E2.00S	E2.00S	E1.90S	E2.00S
29	E2.00S	E1.20S	E	E	E	1.60	2.00	2.10	2.00	2.10	2.00	2.80	2.50	2.10	2.20	2.15	2.00	2.00	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S	E2.00S
30	E1.70S	E1.60S	E	E	E	E1.20S	2.00	1.90	2.20	1.90	2.40	2.00	2.10	2.15	2.05	2.00	2.00	1.90	E1.90S	E2.00S	E2.00S	E2.00S	E2.00S	E1.80S
31																								
No.	30	30	17	25	25	30	30	30	30	30	30	30	29	29	29	29	29	24	30	30	30	30	2P	30
Median	E2.00	E1.60	E	E	E	E1.85	E2.00	2.00	2.00	2.00	2.10	2.10	2.15	2.10	2.10	2.00	2.00	1.90	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

Apr. 1962 | M(3000)F2 | 135° E Mean Time (G.M.T. + 9h.) | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

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

M(3000)F2

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

Apr. 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											3.80	3.90	U 3.90L	3.70										
2									3.50	3.65	3.70	3.90	3.80	3.55H	U 3.70L									
3									3.55	3.65	3.70	3.95	3.85	3.60	3.75									
4									3.70	I 3.60C	3.60L	3.60	3.80	3.80L	3.65LH									
5										3.70L	3.60L	3.65L	3.65	3.65	3.75H									
6										3.70	3.80	3.70	3.95	3.85L	3.60L	3.75								
7									3.55	3.55	3.70	3.70	3.80	3.60	3.60	3.65								
8								3.40	3.45	3.80	3.55	3.70	3.80	3.80	3.70H	3.75								
9										3.80	3.70	3.80	3.55H	3.65	3.75	3.80								
10									3.55H	3.70	3.75	3.80	3.80	3.70LH	3.55	3.75								
11								3.40	3.50	I 3.50A	I 3.60C	3.60	3.70	3.80	U 3.55L									
12									3.75	3.70	I 3.70A	3.55	C	C	C	C								
13										A	3.80	3.80	3.60	3.80H	3.80LH									
14										3.70	3.90	3.90L		3.60LH										
15											3.90	3.60L	3.65L	3.70	3.65	3.55L								
16										3.60L	3.65L		3.55L	3.60	3.45	3.50L								
17									3.50	3.55	3.70L	3.70	3.60L	3.70L	3.50L									
18										3.70	3.55	3.65	3.60L	3.50L										
19								3.35H	3.55	3.70	3.65	3.55	3.55	3.60										
20										3.60	3.60	3.75			3.70L									
21										3.60			U 3.60L	3.50L										
22								3.45	3.50	3.55		3.40	3.45	3.40										
23								3.35	U 3.65RI	3.70A	U 3.80R	I 3.85A	3.60	3.80	3.65									
24								3.45	3.70	U 3.80R	3.50	3.55	3.75	3.65	3.65									
25								3.55L	3.45	3.50	3.70	3.70	3.70	3.65	3.55	3.65								
26									3.55	3.55	I 3.60A	3.75	3.50	3.55	3.55									
27								3.50	3.70	3.60	3.55	3.60	3.60H	3.65LU	3.50L									
28										3.70L	I 3.70A	3.75	3.65	3.70	3.55	3.70								
29									A	3.85	3.50	3.75	3.65	3.70H	3.50H									
30									3.80	3.80	I 3.80A	3.75L	3.70	3.90H	3.55H									
31																								
No.								8	17	27	28	28	27	28	23	9								
Median								3.40	3.55	3.70	3.70	3.70	3.65	3.65	3.60	3.70								

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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											270	270	280	280										
2									300	280	290	290	270	265	270									
3									320	285	290	280	265	270	270									
4									290	I275C	300	270	270	295	265									
5										260	290	270	300	285	260									
6										270	275	260	300	285	270	260								
7									290	295	305	315	280	295	275	275								
8								W	W	400	400	360	320	285	290	270								
9										275	320	310	290	290	270	265								
10									290	270	275	290	270	310	285	260								
11								370	350	I305A	I340C	315	295	320	300									
12									275	300	310	290	C	C	C	C								
13										290	260	310	290	280	270									
14										260	270	290		300										
15											280	295	290	285	280	270								
16										290	290		290	280	295	290								
17									290	290	285	270	290	300	285									
18										320	300	320	300	310										
19								350	320	310	305	290	285	295										
20										295	275	280			290									
21										300			305	280										
22								415	300	345		370	310	325										
23								345	W	I450A	I500R	510	475	350	330									
24								475	W	W	420	410	360	370	310									
25								310	340	345	325	315	310	300	310	295								
26									300	300	320	320	320	310	305									
27								335	330	285	320	300	305	300	300									
28										270	280	285	300	310	295	295								
29									285	295	280	290	305	290	300									
30									270	275	275	290	310	300	290									
31																								
No.								8	18	28	28	28	27	28	23	9								
Median								360	300	290	290	290	300	295	290	270								

h'F2 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

Apr. 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	300	290	260	240	205	270	225	240	240H	250H	220	235	210	225	230H	255H	250	240H	240	230	260	295	300	310
2	295	270	250	220	270	300	250	255H	250	240	230	225	210	205H	220	225H	245	240	230	245	275	285	310	290
3	280	270	255	260	260	255	240	245	230	250	260	200	200	225	230	240H	250H	250	240	250	240	235	260	280
4	295	300	290	260	225	260	235	250	240	I235C	225	235	215	210	205	225	230H	245	235	250	260	260	275	260
5	290	295	285	255	250	250	230	240H	245H	240	235	235	225	225	210H	235	245H	235	230	245	275	290	I280S	260
6	260	260	285	255	260	255	235	240	235H	225	215	210	200	205	240	225	240H	245	260	250	270	290	315	310
7	295	260	250	230	330	280	245	240H	260	240	225	210	215	215	225	240	235H	255	240	270	260	270	300	305
8	300	310	I300A	275	350A	290	275	260	250	250	240	230	215	225	210H	230	225H	250	240	250	285	285	305	330
9	325	300	285	260	300	260	260	250	250H	240	220	220	210H	210	240	230	235H	245	250	255	250	260	260	300
10	300	315	280	250	230	240	250	250	230H	235	230	210	220	200H	250	245	235H	245	240	245	290	300	305	285
11	275	275	260	260	240	245	255	250	260	I240A	I250C	230	230	215	255	240H	240H	240	240	245	300	310	310	320
12	310	265	255	275	240	280	275H	240	240	240	I230A	230	C	C	C	C	235	I250C	250	250	235	275	275	300
13	305	300	280	255	260	250	250	245	240H	I255A	225	205	240	225H	200H	260AH	260A	255	245	235	240	250	260	305
14	305	300	300	285	255	250	230	230H	240H	230	220	215	215H	205H	210H	250H	245H	260	245	235	235	250	270	300
15	310	290	275	260	275	260	245	235H	230H	235H	215	205	230	210	220	220	240H	250	250	245	250	260	265	290
16	305	290	320	305	330	250	220	240H	235H	225	225	230H	205	225	230	240	250H	240H	255	260	260	270	265	300
17	295	285	285	300	300	270	240	240H	240	235	230	225	225	230	220	230H	235H	255	250	250	260	260	265	300
18	310	300	260	235	270	260	245	240	260	230	235	225	225	225	215H	260H	245H	250H	250	240	240	265	305	300
19	305	290	275	275	275	280	265	265H	250	240	225	220	225	230	210H	230H	250H	250	255	260	250	250	265	305
20	310	290	255	220	270	255	240	245H	250	250	260	225	205H	225H	220	240H	240H	255	255	255	265	260	250	265
21	295	285	280	280	310	250	250	250H	240H	230	245H	235H	210	210	220H	200H	250H	260	245	260	260	275	260	290
22	305	285	260	280	345	280H	260H	240	245	240	225H	225	230	230	245H	240H	250H	250	260	275	275	275	280	285
23	300	305	275	285	315	295H	265H	260	260	I245A	230	I230A	225	220	220	240H	245H	265	270	290	260	280	290	310
24	315	285	265	280	260	285	265	260	230	240	260	230	220	230	220	225H	230H	240H	265	260	260	270	310	310
25	340	310	260	225	265	275	250	235	230	240	230	230	225	230	215	240	230H	260H	260	255	260	265	295	275
26	260	300	305	250	290	255	250	250H	235	230	I230A	215	230	230	230	220H	240H	260	270	260	250	245	275	295
27	300	270	260	250	265	265	260H	260	240	220	215	225	210H	215	215	210H	I260A	270	260	250	250	250	275	320
28	310	300	290	270	285	240	240	240H	255H	225	I230A	230	220	225	210	230	240H	250H	270	260	260	260	250	285
29	290	310	300	285	285	255	245	230H	I260A	225	230	215	220	205H	205H	260H	240H	250	260	260	240	235	285	300
30	320	330	300	260	260	260	250H	250H	225	235	I230A	230	225	185H	200H	240H	245H	I265A	260A	250	245	245	260	275
31																								
No.	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30
Median	300	290	280	260	270	260	250	245	240	240	230	225	220	225	220	240	240	250	250	250	260	265	275	300

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	160	G	G	G	G	G	G	G	G	G	G	S	S	E	E	E	E	E
2	E	E	E	E	E	S	S	G	G	125	115	G	G	G	G	G	G	G	S	E	E	E	E	E
3	E	E	E	E	E	E	S	G	115	G	G	G	G	115	G	G	G	150	S	E	E	E	E	E
4	E	E	E	E	E	S	S	G	G	C	120	115	G	G	110	G	S	S	S	E	E	E	E	E
5	110	110	110	105	110	E	S	G	G	125	115	110	110	110	105	110	G	G	S	E	E	E	E	E
6	E	E	110	E	E	S	S	G	G	G	120	G	G	G	G	G	G	S	E	E	E	E	E	E
7	E	E	E	E	E	E	G	G	G	G	G	110	G	G	G	G	G	G	S	E	E	E	E	E
8	E	105	105	105	105	S	140	G	G	130	G	115	G	105	G	G	G	105	110	E	E	E	E	E
9	E	E	E	E	E	S	S	G	G	G	G	G	125	110	G	G	G	S	S	E	E	E	E	E
10	E	110	E	E	E	S	S	G	G	G	115	110	105	G	G	105	105	110	110	E	E	E	E	E
11	E	110	E	110	E	S	G	G	145	110	115	110	G	G	G	G	G	S	S	E	E	E	E	E
12	E	E	E	E	E	S	G	G	G	G	125	G	C	C	C	C	105	C	S	E	E	E	E	E
13	E	E	E	E	E	S	G	G	G	120	G	G	G	105	G	190	150	145	S	E	E	E	E	E
14	E	E	E	E	E	S	G	G	G	G	125	125	120	105	G	G	G	140	125	120	E	E	E	E
15	E	E	E	E	E	S	S	140	125	G	G	G	110	105	105	G	G	G	S	E	E	E	E	E
16	E	E	E	E	E	S	G	G	G	G	G	G	9	9	G	G	G	G	S	E	E	E	E	E
17	E	E	E	E	E	S	G	G	G	G	G	G	G	G	105	G	G	G	S	E	E	E	E	E
18	E	E	E	E	E	S	S	G	G	G	G	G	G	G	G	G	G	G	S	E	E	E	E	E
19	E	E	E	E	E	S	G	G	G	G	G	110	9	110	G	G	G	G	S	E	E	E	E	E
20	E	E	E	E	E	G	G	G	G	135	125	G	110	G	G	G	G	G	G	E	E	E	E	E
21	E	E	E	E	E	S	G	G	G	G	G	G	G	G	G	G	105	145	145	E	E	E	E	E
22	E	E	E	E	E	S	G	G	G	120	120	110	110	G	110	G	G	G	S	E	E	E	E	E
23	E	E	E	E	S	S	G	145	140	135	125	140	110	105	105	G	105	145	130	E	E	E	E	E
24	E	E	E	E	105	S	G	G	G	G	115	115	G	G	110	G	G	G	S	E	E	E	E	E
25	E	E	E	E	E	S	G	G	G	125	G	G	115	110	G	G	G	G	S	E	E	E	E	E
26	E	E	E	E	E	G	G	G	140	G	110	G	110	G	G	G	G	105	130	E	E	E	E	E
27	E	E	E	E	E	S	G	G	130	125	G	G	G	G	115	105	105	110	135	125	E	E	E	110
28	110	E	E	E	E	S	G	G	135	G	120	115	G	110	G	G	G	G	135	E	E	E	E	E
29	E	E	E	E	E	G	G	150	125	G	G	G	110	115	G	G	G	150	130	125	120	115	E	E
30	E	110	110	E	E	G	G	140	G	130	125	125	G	G	G	175	150	130	125	120	120	E	110	E
31																								
No.	2	5	4	3	3		2	4	8	11	15	13	11	12	8	5	7	11	10	4	2	1	1	1
Median	110	110	110	105	105		150	140	130	125	120	115	110	110	110	110	105	140	130	120	120	115	110	110

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

The Radio Research Laboratories, Japan.

W 11

IONOSPHERIC DATA

Apr. 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							h																	
2										c	c													
3									e					e				h						
4											c	c			e									
5	f	f	f	f	f					c	c	c	e	e	e	e								
6			f								c													
7												e												
8		f2	f2	f6	f2		c			c		e		e				e	e					
9													c	e										
10		f									c	c	e			e	e	e	e					
11		f		f					h	c4	c	c												
12											c						e							
13										c				e		h	h	h						
14											c	c	c	e				h	c	f				
15								h	c				e	e	e									
16																								
17															e									
18																								
19												c		e										
20										h	c		e											
21																	e.h	h	c					
22										c	c	c	c		e									
23								h	h	c	c	h	c	e	e		e	c	c					
24					f						c	e			e									
25										c			c	e										
26									h		c		c					e	c					
27									c	c					e	e	e2	e.h	c	f				f
28	f								h		c	c		e					c					
29								h	c				e	e				h	c	f	f	f		
30		f3	f					h		c	c	c				h	h	c	c	c	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

Apr. 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	5.6	5.5	5.7	5.6	3.7	3.9	5.7	7.0	7.6	8.5	9.5^{R}	9.5	9.1	9.1	9.3	8.6	$^{U}8.5^{R}$	8.4	9.0	7.5	5.3	5.8	5.8	5.6
2	5.7	5.7	6.0	5.0	3.4	3.8	6.0	6.8	8.3	9.7	9.6	$^{I}10.4^{R}$	9.2	8.3	8.5	7.9	7.3	7.2	7.0	5.9	4.9	5.1	$^{I}5.0^{R_S}$	$^{I}5.1^{R_S}$
3	5.0	4.6	4.6	4.5	4.3	4.0	5.1	6.0	7.2	8.1	9.4^{R}	8.5	$^{I}8.4^{R}$	7.7	6.7	7.1	7.5	7.4	7.3	7.1	6.5	4.2	R^{S}	R^{S}
4	R^{S}	5.1^{R}	$^{I}5.0^{R_S}$	5.1	4.9^{S}	4.6	5.9	5.9	7.5	8.1	8.5	$^{I}8.9^{C}$	8.3	8.1	$^{I}8.4^{R}$	7.8	7.0	7.0	6.9	6.4	6.0	5.4	4.9	$^{J}4.8^{S}$
5	4.7	4.6	4.6	4.6	4.2	4.0	5.5	6.0	7.5	8.7	8.7^{R}	9.7^{R}	$^{I}9.8^{R}$	$^{U}9.5^{R}$	$^{I}8.9^{R}$	$^{U}8.8^{R}$	8.0	6.9	5.7	5.1	5.1	5.0	5.2	5.3
6	$^{I}4.9^{R_S}$	$^{I}4.8^{E_S}$	4.6	$^{I}4.5^{F}$	4.4^{F}	4.6	6.2	6.3	7.0	8.0	7.8	8.1	7.9	8.8^{R}	9.2^{R}	8.3	7.5	6.6	5.9	6.7	5.8	5.2	$^{I}5.2^{R_S}$	5.3
7	5.4^{S}	5.5	C	C	C	C	C	C	C	C	8.9	8.2	$^{I}9.0^{R}$	9.0^{R}	$^{I}9.2^{R}$	8.7	7.7	7.1	7.8	6.6	5.7	5.2	5.3	5.3
8	4.9^{S}	5.0	4.9	3.6	3.4	3.5	4.2	5.2	5.2^{R}	6.4	7.4	7.7	8.3	7.9	6.9	6.6	6.1	6.3	6.5	5.8	4.8^{R}	$^{J}4.8^{R}$	4.9	4.4^{S}
9	$^{I}4.4^{R_S}$	4.4	4.3^{R}	4.1	3.3	3.5	4.9	6.3	6.5	7.2	7.6	7.8	7.6	7.6^{V}	7.8	6.7	6.2	6.1	6.9	7.5	7.3	4.8	4.9	4.6
10	5.0	5.0^{R}	4.6	$^{I}4.6^{R}$	3.5^{H}	3.9	5.3	5.8	7.7	7.8	7.4	8.2	7.5	7.6	8.0	9.2^{R}	7.5	7.2	7.6	6.6	5.9	5.9	5.6^{R}	5.9
11	6.1	5.5	4.9	4.5	3.9	4.2	4.9	4.9^{H}	6.0	7.0	6.7	8.1	8.9^{R}	7.8	8.1	8.9^{R}	8.4	6.9	6.5	6.2	4.8	5.0	4.9	5.0
12	$^{I}4.9^{F}$	5.0	4.4	3.8	3.6	3.9	5.7	6.9	6.9	8.0	8.6	$^{I}9.1^{R}$	8.4	7.7^{H}	8.2	8.6	7.9	7.6	7.9	7.5	6.4	5.4	5.3	5.4
13	5.0^{R}	5.0	5.0	5.2	3.9	4.1	5.7	6.8	6.9	7.7	8.6	8.2	8.5	9.3^{R}	8.4	7.5	8.0	8.5	9.1	8.4	6.9	5.5	5.0	4.9
14	$^{I}5.0^{F}$	5.0	5.0^{R_S}	4.6^{R}	4.3^{F}	4.9	6.5	6.6	7.5	8.1	8.5	8.3	8.8^{R}	9.3	9.2	9.1	8.7^{R}	8.4	8.6	8.8	6.1	5.1	4.9	5.0
15	C	C	C	C	C	C	C	C	C	8.1	8.6	8.7^{R}	9.7^{R}	$^{U}9.8^{R}$	9.2	8.2	8.1	8.1	7.9	8.1	7.6	6.2	6.0	5.9
16	5.8	5.9	5.4	5.0	5.0	5.6	7.5	7.3	7.5	7.8^{H}	8.8^{R}	C	C	C	C	C	C	C	C	C	7.2	6.2	6.4	6.1
17	6.2	6.0	5.7	5.5	5.3	5.7	8.4	8.1	$^{I}9.2^{R}$	$^{I}10.1^{R}$	10.6	$^{I}9.9^{R}$	9.4	9.6^{R}	9.6	9.3	8.5	8.3	$^{I}8.8^{R}$	8.5^{R}	7.0	6.0	5.8	5.6
18	5.6	5.5	5.7	5.2	3.6	4.2	6.7	7.7	8.5	9.1	9.1	8.5	9.3	9.1	9.1	9.2	9.5^{R}	$^{U}9.1^{R}$	9.7^{R}	$^{I}8.7^{R_S}$	7.1	5.8	5.7	6.0
19	6.1	5.8	5.5	5.0	4.6^{S}	4.7	6.1	7.2	8.3	$^{I}8.9^{R}$	8.5	$^{I}8.6^{R}$	$^{I}8.6^{R}$	8.5	8.6	8.7	7.9	7.9	7.8	7.6	7.1	6.4	5.4	5.6
20	5.5	5.4	5.2	4.6	4.2	4.6	6.8	8.0	9.1	9.6	$^{J}10.1^{R}$	9.6^{R}	9.6	$^{I}9.8^{R}$	$^{I}10.0^{R}$	$^{U}9.8^{R}$	$^{I}9.1^{R}$	7.7	8.0	8.5	8.0	7.0	6.3	6.0
21	5.9	5.8^{F}	5.9	5.3	5.2^{R}	6.0	7.6	8.6	9.0^{R}	9.3	9.0	9.7^{R}	9.5	9.8^{R}	$^{I}9.4^{R}$	10.4	$^{U}10.2^{R}$	9.1	9.1	8.1	7.0	6.4	6.6	$^{I}6.4^{R}$
22	6.1	6.3	6.0	5.0	4.6	4.5	5.8	6.1	6.9	7.0	7.3	7.8	$^{I}8.8^{R}$	9.2	9.2^{R}	9.1	8.1	7.8	8.0	7.5	7.1	7.3	7.5	7.1
23	6.8	$^{I}6.8^{F}$	6.9^{F}	6.0^{F}	5.8	5.9	5.5^{H}	5.1	5.2^{R}	5.4	6.3	6.8	7.7	7.4	7.1	7.2	7.1	7.0	7.6	7.3	7.2	5.6	5.5	5.5
24	5.4	5.3	5.3	5.0	4.8^{S}	$^{I}4.6^{F}$	5.1	5.5	5.4	5.5	6.6	6.6	6.6	6.7	7.1	7.0	7.0	6.6^{C}	6.9	7.0	6.4	5.3	5.0	5.2
25	5.1	5.2^{R}	5.5	$^{I}4.6^{R_S}$	3.4	4.1	6.1	7.1	7.1	7.4^{V}	7.4	7.7	7.8	8.0	7.9	7.9	7.5	6.9	7.2	7.5	6.7	6.6	6.0	6.1
26	6.0	5.5	5.0	5.2	5.0	6.0	6.8	7.3	8.6	8.2	7.5	7.6	8.1	8.7	8.8	8.6	8.0	7.9	8.1	$^{U}8.8^{R}$	7.8	6.6	6.1	6.0
27	5.7	5.7	5.7	5.1	4.9	5.3	6.3	7.4	7.8	7.5	7.4	7.8	8.4	7.6	7.9	$^{I}8.8^{R}$	8.1	8.0	8.0	8.2	6.9	5.4	5.1	5.1^{R}
28	5.1	5.2	5.0	4.6	4.4	5.5	6.9	7.2	6.8	6.9	7.5	8.1	8.0	8.3	8.7^{R}	9.3^{R}	7.8	7.1	7.1	8.3	7.6	6.8	6.0	5.4
29	5.4	5.0	5.0	4.8	4.9	5.7	6.6	7.2	7.5	7.3	7.1	8.1	8.4	7.7	7.7	8.2	8.0	7.6	7.9	$^{I}8.8^{R}$	7.3	5.5	5.1	5.1
30	4.9	$^{I}4.8^{F}$	F	F	F	5.1	6.5	7.0	7.0	6.8	6.0	7.1	8.0	9.2	8.6	7.8	7.9	8.1	$^{U}9.0^{R}$	$^{I}9.0^{R}$	7.9	6.1	5.3^{R}	5.6
31																								
No.	28	29	27	27	27	28	28	28	28	29	30	29	29	29	28	29	29	29	29	29	30	30	29	29
Median	5.4	5.3	5.0	5.0	4.3	4.6	6.0	6.8	7.5	8.0	8.5	8.2	8.4	8.5	8.6	8.6	7.9	7.6	7.8	7.5	6.9	5.6	5.3	5.4
U.Q	5.8	5.7	5.7	5.2	4.9	5.4	6.6	7.2	8.0	8.6	8.9	9.0	9.2	9.2	9.2	9.1	8.2	8.1	8.4	8.4	7.2	6.2	6.0	6.0
L.Q	5.0	5.0	4.9	4.6	3.6	4.0	5.5	6.0	6.9	7.1	7.4	7.8	8.0	7.7	7.9	7.8	7.5	7.0	7.0	6.6	5.9	5.2	5.0	5.1
Q.R	0.8	0.7	0.8	0.6	1.3	1.4	1.1	1.2	1.1	1.5	1.5	1.2	1.2	1.5	1.3	1.3	0.7	1.1	1.4	1.8	1.3	1.0	1.0	0.9

foF2

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

The Radio Research Laboratories, Japan.

A 1

21

IONOSPHERIC DATA

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

foF1 | Sweep 1.60 Mc to 2.00 Mc in 20 ~~min~~ sec in automatic operation.

IONOSPHERIC DATA

Apr. 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							B	255	295	320	330	345	350	345	320	300	280	225						
2							B	245	285	320	I330R	I340R	340	335	320	295	255	205						
3							1.75	265H	305	I320R	A	A	A	A	R	295	270	225	B					
4							B	250	295	I310A	I320A	I340C	I340R	R	A	290	A	A						
5							1.95	245	R	A	A	A	A	R	I310R	300	265	205						
6							1.85	255	I290R	A	A	A	A	R	320	295	255	215						
7							C	C	C	C	A	325	330	I330A	320	A	A	205						
8							E	I255A	295	A	A	A	A	325	315	300	260	A						
9							R	255H	290	315	320	I325A	335	330	I320A	300	260	215						
10							B	A	A	315	325	330	I335A	335	320	I300A	280	220						
11							1.95	I255A	295	320	I325A	I330A	335R	340	330	I305R	I270A	235						
12							2.00	260	285	A	A	335	R	R	I330R	I310A	275	235						
13							2.05	270R	A	A	A	I345R	345	345	335	310R	280	240						
14							2.15	270	305	320	335	345	I350A	I345A	I335A	320	295	A						
15							C	C	C	325	350	I355R	350	345	340	R	A	230	B					
16							240H	280H	310H	325	350	C	C	C	C	C	C							
17							225	270	315	330	345	A	A	355	345	I330A	295	245	B					
18							I220R	290	310	330	350	355	I355A	350	335	315	285	A	B					
19						B	230R	280R	310	335	345	I350R	375	365	A	R	A	245	B					
20							R	A	A	340	355	A	A	R	A	A	305	250	B					
21							235	280	R	A	A	R	R	355	350	I325A	305	255	B					
22							230	I280R	I310A	340	A	A	A	A	I350A	I320A	I290A	250	B					
23							235	275	I310A	330	I340R	R	A	355	350	315	290	245	A					
24							225	I285A	315	I330A	I345A	I355R	355	350R	335	320	285	C	B					
25							230	I280R	I315A	345	A	A	A	A	345	330	300	250	B					
26							245	I275R	I310A	335	A	A	A	A	A	I320R	295	255	A					
27							245	290	A	A	A	R	A	A	345R	315	295	240	B					
28							235	I285A	310	335	I345R	A	A	A	A	A	A	235	B					
29						R	230	275	305	320	350	I355A	I355A	345	320	300	280	235	B					
30						R	245	275	305	I330A	I350A	350	355	350	335	305	275	235	B					
31																								
No.							22	26	22	22	18	16	15	18	23	24	24	24						
Median							2.30	2.70	3.05	3.30	3.45	U3.45	3.50	3.45	3.35	3.10	2.80	2.35						

foE

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	2.4	2.8	3.2	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
2	E	E	E	E	E	E	2.2	G	G	G	G	G	G	G	G	G	G	G	E	E	E	E	R^{S}	E
3	J2.9	J2.3	E	E	E	E	2.2	G	G	G	3.6	3.6	3.5	3.7	G	G	G	2.9	2.3	J2.4	J2.1	E	E	E
4	E	E	E	E	E	E	G	G	G	3.5	3.5	C	G	G	3.3	G	J3.0	J3.3	1.9	J1.9	E	E	E	E
5	E	E	J2.3	J2.4	J2.2	E	G	G	G	3.5	4.4	J4.2	3.8	3.1^{G}	G	G	G	G	E	E	E	E	E	E
6	E	E	E	E	J1.9	E	G	G	G	3.5	3.6	3.7	3.6	3.2	G	G	G	G	E	E	E	E	E	E
7	E	E	C	C	C	C	C	C	C	C	3.6	3.1^{G}	G	4.1	3.9	3.6	3.5	J2.4	E	E	E	E	J1.8	J1.9
8	E	E	E	E	E	E	2.2	3.0	3.5	3.6	4.1	4.0	3.5	G	G	G	G	2.2	J1.9	E	E	E	E	E
9	E	E	J1.8	E	E	E	G	G	G	G	3.5	J5.9	G	G	J4.3	G	2.6	G	2.2	E	J3.4	E	E	E
10	E	E	E	E	E	E	2.5	2.9	3.5	G	3.2^{G}	3.8	3.9	G	G	3.8	G	G	E	E	E	J1.9	E	E
11	E	E	E	E	E	E	G	3.5	4.0	4.3	3.8	J7.4	G	G	G	G	3.1	G	2.3	E	J2.3	E	E	E
12	E	E	E	E	E	E	2.4	3.0	3.5	4.1	4.0	3.7	G	G	3.6	3.3	3.5	G	J3.6	J2.3	J2.3	E	E	E
13	E	E	E	E	E	E	G	3.1	3.6	3.9	3.7	G	4.2	G	G	G	G	2.9	2.5	J2.9	E	E	E	E
14	E	E	E	E	E	E	2.5	3.2	3.8	4.0	3.7	3.7	3.7	4.0	4.4	G	G	J4.6	J3.8	J4.2	J5.0^{Y}	E	E	E
15	E	C	C	C	C	C	C	C	C	3.7	G	G	G	G	G	G	3.0	G	G	E	E	E	E	E
16	E	E	E	E	E	E	G	G	G	3.5	G	C	C	C	C	C	C	C	C	C	E	E	E	E
17	E	E	E	E	E	E	G	G	G	3.7	3.7	3.8	3.6	G	G	3.5	G	J2.5	G	E	E	E	E	E
18	E	E	E	E	E	E	G	G	G	G	3.8	3.8	3.7	3.3^{G}	G	G	2.7^{G}	J2.7	2.0	E	E	E	E	E
19	E	E	E	E	E	G	G	3.2	3.5	3.9	G	G	G	G	4.0	G	3.8	G	2.1	E	J1.8	E	E	E
20	E	E	E	E	E	E	2.8	3.7	3.7	4.1	3.9	4.1	3.9	G	3.5	3.4	G	3.1	2.9	J2.0	E	E	E	E
21	E	E	E	E	E	E	G	G	3.6	3.8	3.9	3.9	G	G	4.0	3.7	3.8	3.7	J3.2	J2.4	J3.2	J3.2	E	E
22	E	E	E	E	E	E	G	G	3.8	4.0	4.2	4.1	3.9	4.1	4.0	3.9	3.9	3.3	2.6	J2.4	J3.4	E	E	E
23	E	E	E	E	E	E	G	3.7	J3.8	3.9	4.4	3.8	3.9	4.1	G	G	G	3.8	J2.9	J2.9	J2.9	J2.0	E	E
24	E	E	E	E	E	E	G	3.6	G	3.8	3.9	G	3.3^{G}	G	G	G	2.7^{G}	C	2.1	J1.8	1.8	E	E	E
25	E	E	E	E	E	E	G	G	3.5	3.8	4.2	3.8	3.9	3.9	G	G	G	2.8	2.0	E	E	E	E	E
26	E	E	E	E	E	E	G	G	3.6	3.7	4.1	4.1	J5.9	4.1	4.0	G	3.2	3.5	3.1	J2.8	J2.0	J1.7	E	E
27	E	E	E	E	E	E	G	3.3	J4.3	3.7	4.0	G	3.8	3.6	G	G	G	3.0	J4.0	J5.8	J4.0	J2.5	E	E
28	E	E	E	E	E	E	G	3.5	3.5	3.5	3.8	4.0	3.8	3.9	3.6	3.2	3.1	2.8	2.5	J1.9	J1.8	E	E	E
29	E	E	E	E	E	G	G	3.2	3.7	3.6	G	3.8	4.0	3.7	G	G	3.2	3.0	2.6	J2.1	J2.0	J2.3	E	E
30	E	E	E	E	E	G	2.9	3.2	3.7	3.8	4.0	G	4.2	J5.5	J5.6	J5.2	J5.5	J3.9	J3.6	J2.8	J3.5	J2.0	E	J2.3
31																								
No.	30	29	28	28	28	28	28	28	28	29	30	28	29	29	29	29	29	28	29	29	30	30	29	30
Median	E	E	E	E	E	E	G	2.8	3.5	3.7	3.8	3.8	3.6	G	G	G	G	2.8	2.2	1.8	E	E	E	E
U.Q	E	E	E	E	E	E	2.2	3.2	3.7	3.9	4.0	4.0	3.9	3.9	4.0	3.4	3.2	3.2	2.9	2.4	2.3	E	E	E
L.Q	E	E	E	E	E	E	G	G	G	3.5	3.5	G	G	G	G	G	G	G	G	E	E	E	E	E
Q R										0.4	0.5													

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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							2.3	2.8	3.2														R^S	
2							2.1																	
3	1.8	E					2.1				3.5	3.5	3.5	3.5				2.7	2.0	1.8	2.0			
4										3.4	3.5	C			^{U}3.3^R		2.9	3.3	1.8	1.8				
5			E	2.1	E					3.5	4.4	4.2	3.5	^{E}3.1$^{R\&}$										
6					E					3.3	3.4	3.5	3.5	^{U}3.2^R										
7			C	C	C	C	C	C	C	C	3.6	2.9^R		3.5	G	3.0	2.6	1.9					E	E
8							2.1	2.9	3.2	3.3	3.5	3.4	3.5					2.2	1.8					
9			E								3.5	5.3			3.2		2.0		2.1		3.0			
10							2.4	2.9	3.1		3.2^G	3.8	3.5			3.1						E		
11								3.5	3.8	4.3	3.8	7.0					3.0		1.9		E			
12							2.3	2.9	3.4	3.9	4.0	^{U}3.7^R			3.6	3.2	3.4		3.5	1.8	1.8			
13								3.1	3.6	3.8	3.6		3.9					2.8	2.5	2.4				
14							2.5	3.2	3.8	3.6	3.7	3.6	3.7	3.7	3.6			4.6	3.5	2.8	3.4			
15	C	C	C	C	C	C	C	C	C	3.6							3.0							
16										3.5		C	C	C	C	C	C	C	C	C				
17										3.7	^{U}3.7^R	3.8	^{U}3.6^R			3.3		2.0						
18											3.8	3.8	3.7	3.3^G			2.0^G	2.7	1.8					
19								3.2	3.5	3.9					3.5		3.0		1.9		E			
20							2.8	3.4	3.6	4.0	3.8	3.9	3.9		3.5	3.4		3.0	2.9	2.0				
21									3.5	3.8	3.9	^{U}3.9^R			4.0	3.6	3.8	3.7	3.2	2.1	^{E}3.2^R	2.5		
22									3.6	3.7	3.9	3.8	3.8	3.9	G	3.4	3.4	3.0	2.3	1.7	3.3			
23								3.3	3.8	3.9	4.2	3.8	3.8	3.9				3.8	2.9	2.9	2.9	2.0		
24								3.1		3.6	3.8		3.3^G	3.7			2.0^G	C	2.0	E	E			
25									3.5	3.8	3.9	3.8	3.8	3.7				2.8	1.9					
26									3.4	3.5	4.1	3.8	4.7	3.7	3.5		3.2	3.2	2.5	2.8	E	E		
27								3.1	4.3	3.6	3.7		3.8	^{U}3.6^R				2.8	3.4	5.5	^{E}4.0^R	2.5		
28								3.2	3.3	3.5	3.8	3.9	3.7	3.6	3.5	3.2	2.9	2.7	2.2	1.9	1.7			
29								3.2	3.6	3.5		3.7	3.9	3.6			3.2	3.0	2.5	E	E	1.7		
30							2.5	3.1	3.6	3.7	3.9		4.1	5.4	5.2	5.0	5.5	3.9	2.5	1.7	2.8	E		E
31																								
No.																								
Median																								

foEs

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

The Radio Research Laboratories, Japan.

A 5

25

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	1.70	1.70	1.70	1.70	1.75	2.05	2.00	1.90	1.70	1.80	1.70	1.70	1.75	E	E	E	E	E
2	E	E	E	E	E	E	1.75	1.70	1.75	2.30	1.80	1.95	1.85	1.80	1.75	1.80	1.70	1.85	1.65	E	E	E	R S	E
3	E	E	E	E	E	E	E	1.75	1.75	1.80	2.00	1.80	2.25	2.05	1.85	1.75	1.75	1.70	1.80	E	1.70	E	E	E
4	E	E	E	E	E	E	1.85	1.70	1.70	1.70	2.00	E 4.80 C	2.00	2.00	1.75	E 2.45 C	1.70	1.65	1.70	E	E	E	E	E
5	E	E	E	E	E	E	1.75	1.70	2.00	1.70	1.80	1.95	2.00	2.00	2.00	1.80	1.70	1.70	1.65	E	E	E	E	E
6	E	E	E	E	E	E	1.70	1.75	1.75	1.75	2.00	2.00	2.00	2.05	1.80	1.75	1.70	1.70	E	E	E	E	E	E
7	E	E	C	C	C	C	C	C	C	C	1.70	1.80	1.80	1.75	1.70	1.75	1.70	1.65	1.65	E	E	E	E	E
8	E	E	E	E	E	E	E	1.70	1.75	1.75	2.00	1.95	1.75	1.80	1.80	1.75	1.70	1.70	1.65	E	E	E	E	E
9	E	E	E	E	E	E	1.70	1.75	1.75	1.80	1.70	2.00	2.00	2.00	1.75	1.65	1.70	1.75	E	E	E	E	E	E
10	E	E	E	E	E	E	1.75	1.70	1.70	1.70	1.80	1.80	1.80	1.85	2.00	1.70	1.70	1.70	1.70	E	E	E	E	E
11	E	E	E	E	E	E	1.75	1.70	1.80	1.70	1.85	2.00	1.95	1.95	1.90	1.75	1.65	1.70	1.70	E	E	E	E	E
12	E	E	E	E	E	E	1.70	1.75	1.75	1.75	2.20	2.00	2.20	1.95	2.00	2.30	2.45	1.70	1.65	E	E	E	E	E
13	E	E	E	E	E	E	1.70	1.75	1.75	1.75	1.85	1.75	2.00	1.80	2.00	2.05	1.75	1.70	E	E	E	E	E	E
14	E	E	E	E	E	E	1.75	1.70	1.75	1.70	2.00	2.30	1.80	2.10	1.70	1.75	1.65	1.70	E	1.75	E	E	E	E
15	C	C	C	C	C	C	C	C	C	1.70	1.75	1.70	1.80	2.05	1.80	1.80	1.75	1.70	1.70	E	E	E	E	E
16	E	E	E	E	E	E	1.70	1.65	1.70	2.10	1.70	C	C	C	C	C	C	C	C	C	E	E	E	E
17	E	E	E	E	E	E	1.65	1.65	1.70	1.80	1.80	2.05	2.00	1.95	1.80	1.80	1.70	1.70	1.85	E	E	E	E	E
18	E	E	E	E	E	E	1.75	1.75	1.75	2.00	1.80	1.90	2.15	2.00	1.90	1.75	1.65	1.70	1.75	E	E	E	E	E
19	E	E	E	E	E	1.75	1.75	1.80	1.75	1.75	1.95	2.15	2.35	2.25	2.05	2.05	1.95	1.70	1.70	1.70	E	E	E	E
20	E	E	E	E	E	1.70	1.70	1.70	1.75	2.20	2.05	2.05	2.10	2.55	2.15	2.25	1.75	1.70	1.75	E	E	E	E	E
21	E	E	E	E	E	E	1.75	1.70	1.75	1.90	2.00	2.00	2.05	2.00	2.00	1.75	1.80	1.80	1.75	E	E	E	E	E
22	E	E	E	E	E	E	1.75	1.75	1.75	1.95	2.00	1.95	2.00	2.05	1.95	1.75	1.75	1.75	1.70	E	E	E	E	E
23	E	E	E	E	E	1.70	1.70	1.75	1.70	1.80	2.20	2.20	2.10	2.00	2.05	1.70	1.75	1.70	1.65	E	E	E	E	E
24	E	E	E	E	E	1.70	1.70	1.75	1.75	1.70	2.10	2.00	1.75	1.70	1.75	1.65	I 1.75 C	1.75	E	E	E	E	E	E
25	E	E	E	E	E	E	1.70	1.75	1.75	1.80	2.10	2.20	2.00	1.80	2.00	1.75	2.00	1.70	1.70	E	E	E	E	E
26	E	E	E	E	E	E	1.70	1.70	1.95	1.75	2.30	2.00	1.80	2.00	1.70	1.70	1.70	1.75	E	E	E	E	E	E
27	E	E	E	E	E	E	1.70	1.70	1.70	1.90	2.05	1.80	1.85	2.00	1.75	1.80	1.85	1.70	1.75	E	E	E	E	E
28	E	E	E	E	E	1.65	1.70	1.75	1.80	2.05	2.00	1.80	2.00	2.00	1.70	1.75	1.70	1.70	1.70	1.65	E	E	E	E
29	E	E	E	E	E	E	1.65	1.70	1.70	1.70	2.35	1.75	1.70	2.05	2.00	1.70	1.70	1.70	1.70	E	E	E	E	E
30	E	E	E	E	E	E	1.70	1.75	1.70	1.75	1.70	1.75	1.95	2.00	2.00	1.70	1.80	1.70	1.75	E	E	E	E	E
31																								
No.	29	29	28	28	28	28	28	28	28	29	30	28	29	29	29	28	29	29	29	29	30	30	29	30
Median	E	E	E	E	E	E	1.70	1.70	1.75	1.75	2.00	2.00	2.00	2.00	1.85	1.75	1.70	1.70	1.70	E	E	E	E	E

f-min

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

IONOSPHERIC DATA

Apr. 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	280	290	315	345	290	285	345	345	335	330	320^{R}	320	315	310	325	310	^{U}330^{R}	335	330	335	285	270	270	270
2	275	300	320	345	290	280	335	320	320	315	310	^{I}315^{R}	325	320	340	340	340	345	335	320	290	290	^{I}280$^{R}_{S}$	^{I}290$^{R}_{S}$
3	305	305	305	295	305	280	310	320	325	300	320^{R}	320	^{I}330^{R}	335	340	340	325	330	315	315	325	310	R^{S}	R^{S}
4	R^{S}	290^{R}	^{I}290$^{R}_{S}$	310	310^{S}	300	350	310	330	320	310	^{I}325^{C}	340	310	^{I}335^{R}	335	330	340	335	310	300	310	295	^{J}295^{S}
5	300	290	305	325	310	310	335	335	325	320	305^{R}	310^{R}	^{I}310^{R}	^{U}320^{R}	^{I}320^{R}	^{U}330^{R}	350	355	340	300	295	290	305	295
6	^{I}305$^{R}_{S}$	^{I}300$^{E}_{S}$	300	^{I}300^{F}	300^{F}	310	340	340	340	345	335	330	310	310^{R}	320^{R}	330	340	340	315	325	305	285	^{I}275$^{R}_{S}$	275
7	295^{S}	310	C	C	C	C	C	C	C	C	325	310	^{I}320^{R}	310^{R}	^{I}325^{R}	335	330	340	315	315	305	290	270	280
8	280^{S}	285	300	305	295	320	340	300	270^{R}	300	330	330	340	340	350	345	350	335	340	325	290^{R}	^{J}295^{R}	280	275^{S}
9	^{I}275$^{R}_{S}$	285	280^{R}	310	270	290	330	335	335	340	320	320	320	315^{V}	340	345	345	320	320	310	350	295	280	300
10	280	275^{R}	285	^{I}310^{R}	290^{H}	310	340	330	345	340	330	340	320	330	315	330^{R}	340	335	345	320	280	270	270^{R}	275
11	300	320	290	310	300	310	310	300^{H}	315	330	310	315	330^{R}	330	325	320^{R}	355	345	345	320	300	260	275	270
12	^{I}280^{F}	285	300	295	280	300	335	345	320	350	325	^{I}330^{R}	340	300^{H}	320	325	330	330	330	325	335	280	285	285
13	290^{R}	290	295	325	270	310	345	350	340	330	325	330	315	325^{R}	330	330	315	330	325	340	335	300	280	285
14	^{I}275^{F}	280	295$^{R}_{S}$	290^{R}	305^{F}	290	350	360	340	340	330	320	320^{R}	315	315	330	330^{R}	335	325	345	335	285	280	275
15	C	C	C	C	C	C	C	C	C	320	330	315^{R}	310^{R}	^{U}325^{R}	315	325	320	320	315	315	325	305	290	280
16	270	280	265	265	260	290	350	355	340	300^{H}	290^{R}	C	C	C	C	C	C	C	C	C	320	285	275	280
17	275	280	270	275	265	275	330	310	^{I}320^{R}	^{I}305^{R}	305	^{I}315^{R}	310	305^{R}	315	325	320	315	^{I}325^{R}	330^{R}	330	275	280	270
18	265	275	305	350	285	290	340	325	320	310	325	315	300	300	310	300	320^{R}	^{U}310^{R}	315^{R}	^{I}330$^{R}_{S}$	335	270	275	270
19	285	280	290	290	285^{S}	290	310	310	315	^{I}330^{R}	330	^{I}320^{R}	^{I}320^{R}	320	305	330	320	320	320	320	325	310	280	270
20	275	280	295	295	270	310	340	330	310	315	^{J}320^{R}	315^{R}	290	^{I}300^{R}	^{I}305^{R}	^{U}310^{R}	^{I}320^{R}	320	310	310^{R}	315	305	295	290
21	290	280^{F}	290	285	270^{R}	275	330	320	320^{R}	310	315	310^{R}	305	305^{R}	^{I}300^{R}	295	^{U}315^{R}	310	320	325	315	270	280	^{I}275^{R}
22	285	275	300	285	265	260	305	305	325	320	305	310	^{I}300^{R}	310	320^{R}	315	335	325	315	295	295	275	290	280
23	270	^{I}265^{F}	275^{F}	265^{F}	260	280	305^{H}	275	310^{R}	260	290	310	315	310	305	320	325	315	330	305	320	270	265	270
24	265	280	290	285	300^{S}	^{I}320$^{R}_{S}$	300	270	265	270	310	310	315	315	320	330	330	^{I}325^{C}	325	315	330	275	280	275
25	265	290^{R}	310	^{I}330$^{R}_{S}$	280	285	310	330	325	310^{V}	325	320	310	310	310	310	320	320	320	310	300	300	285	280
26	285	285	270	290	280	310	320	330	330	340	320	310	300	305	320	320	315	315	320	^{U}310^{R}	315	290	285	270
27	270	270	295	290	285	295	305	330	340	330	325	310	320	315	310	^{I}320^{R}	325	340	325	325	325	275	280	280^{R}
28	280	285	290	290	290	315	335	350	340	325	330	325	320	310	320^{R}	320^{R}	335	325	310	310	325	295	300	275
29	280	280	285	285	290	290	350	345	340	325	315	315	330	315	315	325	320	320	310	^{I}320^{R}	335	295	280	280
30	270	^{I}275^{F}	F	F	F	320	335	345	350	330	350	320	325	320	325	320	320	315	^{U}320^{R}	^{I}320^{R}	335	325	275^{R}	270
31																								
No.	28	29	27	27	27	28	28	28	28	29	30	29	29	29	28	29	29	29	29	29	30	30	29	29
Median	280	285	295	295	285	290	335	330	325	320	320	315	320	315	320	325	330	325	320	320	320	290	280	275

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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	375L	400	I390L	I380L	L H	L	L	L							
2									L	L	375L	I390L	380L	370L	360L	L H	L							
3									L	L	I355L	I365L	385L	L	L H	L	L							
4									L	370L	I360L H	I365C	370L	I380L	L	L	L							
5									L	335L	L	L	I350L	340L	360L	L	L							
6									L	365L	370	370	375L H	365L	L	L	L							
7									C	C	L	360L	350	I355L	L	L	L							
8								L	355	350	350	355	355	380L	L	L	L							
9								L	L	L	360L	I365A	380	L	L	L H	L	L						
10									L	L	L	385	380	I375L H	390	L								
11									350L	I360L	L	A	L	I370L	L H	L								
12										L	L	L	385L	375L	L	L								
13									L	L	L	385L	I390L	I375L	370L	L H	L							
14									L	L	385L	410	L	L	L	L	L	A						
15									C	L	L	L	L	L	L	L	L							
16										L	390L	C	C	C	C	C	C	C						
17									L	L	L	L	L	L	L	L	L							
18									L	L	365L	L	L	L	L	L	L							
19								L	L	L	385L	L	R	L	L	L	L	L						
20									L	L	L	L	L	L	L	L	L							
21									L	L	L	L	L	L H	L	L H	L							
22							L	L	355	370L	355L	375L	R	L	L	L	L							
23								L	360L	365	355R	360L	380L	L	L H	L H	L	A						
24							340L	350	370	370	420	365L	370	I370L	370	I360L	L							
25								L	L	370L	400	I375L	370L	375L	360L	L	L	L						
26								L	L	375L	385L	L	L	350L H	L	L	L	L						
27							L	L	L	R	395	I385L	L	L	L	L H	L	L						
28							L	L	L	L	L	L	I365L	360L	355L	L	L	L						
29								L	L	375L	385L	375L H	370L	I370L	370L	L	L	L						
30								L	L	395L	I380L	390L	L	A	A	A	A	A						
31																								
No.							1	1	5	13	19	18	17	15	8	1								
Median							340	350	355	370	380	375	375	370	365	U360								

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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									255	265	290	260	295	285	285	285	255							
2									290	285	285	260	285	270	260	260	255							
3									285	295	280	260	270	260	260	270	280							
4									270	290	285	275	255	295	255	260	250							
5									285	290	300	295	290	260	285	270	250							
6									255	260	260	285	295	300	270	270	250							
7									C	C	255	290	295	295	260	255	250							
8								345	395	345	295	285	285	255	260	255	250							
9								270	285	275	295	290	290	295	265	260	255	255						
10									255	255	270	285	295	295	295	255								
11									315	290	300	300A	285	280	290	280								
12										255	280	285	250	285	290	265								
13									255	275	290	255	295	285	270	255	285L							
14									255	260	255	295	295	295	290	280	260	245						
15									C	270L	260	300	295	275	290	275L	255							
16										260	295	C	C	C	C	C	C	C						
17									255	290	290	280	305	295	295	285	255							
18									290	295	270	295	295	300L	300	295	285							
19								290L	295	265	280	290	290	290	295	280	255	255						
20									285	280	285	285	295	305	290	290	270							
21									275	290	280	295	300	300	295	300	260							
22							300	300	295	305	315	305	320	295	295	285	255							
23								355L	345	500	380	335	310	295	305	300	290	280						
24							345	400	445	445	340	335	345	325	300	295	290							
25								285	270	295	300	305	305	300	300	295	280	275L						
26								270L	270	265	290	300	335	300	290	295	270	285						
27							L	280	260	295	295	320	295	295	310	295	280	260						
28							275L	250	245	280L	295	295	295	305	295	280	270	270						
29								270	280	280	285	300	295	300	295	285	260	275						
30								255	250	255	255	330	300	295	280	290	290	280						
31																								
No.							3	12	26	29	30	29	29	29	29	29	26	10						
Median							300	280	280	280	290	295	295	295	290	280	260	270						

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

The Radio Research Laboratories, Japan.

A 9

29

IONOSPHERIC DATA

Apr. 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	295	290	250	210	245	280	240	245	245	210	210	250	205	200H	210	215	245	250	245	205	230	300	300	305
2	295	255	245	205	290	295	250	245	240	240	215	205	225	205	205	225H	240	245	245	215	250	295	I 300 Bs	295
3	255	255	260	255	245	280	245	245	245	220	200	245	200	200	200H	200H	245	250	245	245	215	220	295	295
4	245	295	280	250	245	270	230	245	245	220	220	I 245 C	215	200	200	220	235	250	245	245	250	245	255	270
5	255	270	290	245	245	245	235	245	240	240	A	A	210	215	205	230	235	245	220	245	255	275	255	255
6	250	295	280	255	255	255	245	245	245	210	205	205	200H	200	200	240	240	250	245	245	245	290	300	300
7	290	245	C	C	C	C	C	C	C	C	220	245	205	205	205	240	240	250	250	245	240	260	295	290
8	300	295	255	235	295	245	245	250	245	235	245	245	245	220	215	230	220	250	245	240	255	260	295	320
9	335	295	295	260	295	295	245	250	245	245	245	I 240 A	200	200	205	200H	205	235	255	245	240	245	295	295
10	295	300	295	240	200	245	245	245	245	245	235	240	205	200H	205	205	245	250	245	235	255	300	300	300
11	265	240	280	250	245	255	245	250H	A	A	230	I 225 A	220	220	205H	250	245	245	245	245	245	345	305	310
12	295	280	250	255	295	290	245	245	245	245 A	225A	240	220	215	235	240	245	250	245	240	230	255	295	295
13	305	295	255	245	230	260	245	245	240	245	240	205	240	200	205	205H	245	250	245	240	210	245	260	300
14	305	295	255	255	255	265	245	245	235	220	205	200	205	215	245	240	245	I 250 A	240	245	240	245	295	295
15	C	C	C	C	C	C	C	C	C	220	200	205	200	205	220	205	245	245	245	245	230	245	260	290
16	300	295	300	310	345	255	220	245	245	245	210	C	C	C	C	C	C	C	C	C	245	250	290	295
17	295	295	295	260	305	295	245	245	245	230	240	230	220	205	220	235	245	250	250	245	235	255	290	300
18	305	300	255	210	295	255	245	245	245	245	245	215	205	210	205	245	245	255	250	235	230	255	300	300
19	280	280	260	250	295	285	250	250	245	235	225	210	I 220 R	220	205	205	240	245	255	245	245	245	265	305
20	300	290	260	240	295	265	245	245	245	240	235	225	205	205	230	230	245	245	255	250	245	245	245	260
21	290	295	255	255	335	260	245	245	245	245	240	210	235 R	200H	210	210	I 255 A	255	250	245	I 250 A	I 275 A	290	290
22	295	295	250	260	350	295	260	250	245	230	230	205	205	240	220	245	250	250	250	250	290 A	285	275	270
23	295	305	290	270	310	305	255H	250	I 250 A	240	I 240 A	225	215	240	205	210	240	I 255 A	250	255	255	250 A	295	295
24	305	295	255	275	245	245	250	245	245	210	200	230	205	200	220	235	240	I 250 C	255	245	240	245	300	295
25	310	290	255	225	290	285	245	245	225	225	200	200	200	200	220	235	235	245	250	245	245	250	260	275
26	260	270	305	255	300	250	245	245	245	220	215	200	I 205 A	205H	205	220	245	265	255	250	235	245	260	295
27	300	295	260	255	280	260	245	245	I 230 A	205	200	200	200	225	205	195H	245	250	250	I 250 A	I 245 A	I 255 A	280	300
28	300	295	280	270	285	255	245	245	235	220	205	205	220	210	210	205	245	245	255	250	245	245	245	290
29	290	305	295	295	270	245	245	240	230	230	205	195H	230	205	200	250	245	255	260	245	230	230	295	305
30	305	305	305	270	280	245	245	245	240	215	220	200	A	A	A	A	A	A	255	240	240	230	275	300
31																								
No.	29	29	28	28	28	28	28	28	27	28	29	28	28	28	28	28	28	28	29	29	30	30	30	30
Median	295	295	260	255	290	260	245	245	245	230	220	210	205	205	205	230	245	250	250	245	245	250	290	295

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	155	155	155	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
2	E	E	E	E	E	E	170	G	G	G	G	G	G	G	G	G	G	G	E	E	E	E	R^S	E
3	105	105	E	E	E	E	150	G	G	G	130	110	105	110	G	G	G	145	145	120	110	E	E	E
4	E	E	E	E	E	E	G	G	G	125	125	C	G	G	110	G	105	105	105	100	E	E	E	E
5	E	E	105	100	105	E	G	G	G	130	110	105	105	105	G	G	G	G	E	E	E	E	E	E
6	E	E	E	E	105	E	G	G	G	110	110	105	105	105	G	G	G	G	E	E	E	E	E	E
7	E	E	C	C	C	C	C	C	C	C	120	105	G	135	145	125	130	100	E	E	E	E	110	105
8	E	E	E	E	E	E	145	145	145	145	125	120	120	G	G	G	G	105	105	E	E	E	E	E
9	E	E	100	E	E	E	G	G	G	G	140	110	G	G	105	G	100	G	145	E	105	E	E	E
10	E	E	E	E	E	E	155	155	105	G	105	135	125	G	G	130	G	G	E	E	E	100	E	E
11	E	E	E	E	E	E	G	145	145	140	120	105	G	G	G	G	130	G	145	E	115	E	E	E
12	E	E	E	E	E	E	155	145	145	130	130	125	G	G	115	115	145	G	130	105	100	E	E	E
13	E	E	E	E	E	E	G	150	145	130	110	G	120	G	G	G	G	145	130	110	E	E	E	E
14	E	E	E	E	E	E	175	145	145	135	120	120	115	115	125	G	G	130	115	110	105	E	E	E
15	C	C	C	C	C	C	C	C	C	130	G	G	G	G	G	G	105	G	G	E	E	E	E	E
16	E	E	E	E	E	E	G	G	G	120	G	C	C	C	C	C	C	C	C	C	E	E	E	E
17	E	E	E	E	E	E	G	G	G	140	130	120	115	G	G	125	G	105	G	E	E	E	E	E
18	E	E	E	E	E	E	G	G	G	G	145	140	105	105	G	G	105	100	150	E	E	E	E	E
19	E	E	E	E	E	G	G	150	145	130	G	G	G	G	120	G	120	G	145	E	135	E	E	E
20	E	E	E	E	E	E	155	145	145	135	140	130	135	G	125	105	G	145	130	120	E	E	E	E
21	E	E	E	E	E	E	G	G	145	140	135	135	G	G	115	130	150	145	135	125	105	110	E	E
22	E	E	E	E	E	E	G	G	130	115	105	105	105	105	100	125	145	145	145	100	115	E	E	E
23	E	E	E	E	E	E	G	145	145	135	130	140	145	145	G	G	G	145	135	110	105	105	E	E
24	E	E	E	E	E	E	G	135	G	110	115	G	105	G	G	G	100	C	145	115	105	E	E	E
25	E	E	E	E	E	E	G	G	140	130	150	110	105	130	G	G	G	140	145	E	E	E	E	E
26	E	E	E	E	E	E	G	G	140	120	110	105	105	105	105	G	155	145	130	120	115	110	E	E
27	E	E	E	E	E	E	G	145	120	135	135	G	105	125	G	G	G	145	135	120	120	115	E	E
28	E	E	E	E	E	E	G	145	145	145	130	130	120	115	110	110	120	150	145	125	110	E	E	E
29	E	E	E	E	E	G	G	145	145	145	G	120	105	110	G	G	155	145	140	120	115	110	E	E
30	E	E	E	E	E	G	145	145	135	135	135	G	160	145	140	140	135	135	130	115	110	105	E	105
31																								
No.	1	1	2	1	2		9	15	18	23	24	20	19	14	12	9	15	18	21	15	15	7	1	2
Median	105	105	100	100	105		155	145	145	130	130	120	105	110	115	125	130	145	135	115	110	110	110	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

Apr. 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							h2	h	h															
2							h																	
3	f2	f					h2				h	c	l	c				h2	h	f	f			
4										h	h				c		l2	l2	f	f				
5			f2	f2	f					h	c2	c2	l	l										
6					f					c	c	l	l	l										
7											h	l2		h	h	h	h	l					f	f
8							h	h2	h2	h	h	h	h					l2	f					
9			f2								h	c2			l		l		h2		f2			
10							h	h2	l		l	h	h			h						f		
11								h2	h3	h2	h2	c2					h		h		f			
12							h2	h2	h2	h2	h2	h			c	c	h2		h2	f	f			
13								h	h2	l2	c		h					h2	h4	f2				
14							h	h2	h	h	h2	h	c	c	h			h3	f3	f2	f3			
15										h							l							
16										h														
17										h	h	h	c			h		l						
18											h	h	l	l			l	l3	h					
19								h	h	h					h		h		h		f			
20							h2	h	h2	h2	h	h	h		h	l		h	h2	f2				
21									h	h	h	h			c2	h2	h2	h2	h2	f2	f3	f3		
22									h2	c	c	c	l	l2	l	h	h	h2	h2	f	f3			
23								h	h2	h	h	h	h	h				h3	h4	f2	f3	f2		
24								h2		c	c		l				l2		h	f	f			
25									h	h	h	c	l	h				h2	h2					
26									h	h	c2	c	l2	l	l		h	h2	h3	f4	f	f2		
27								h2	h2	h2	h		c	h				h2	h4	f3	f4	f3		
28								h2	h2	h	h	h	h	c	c2	c	c	h2	h3	f2	f			
29								h2	h2	h		h	c	c			h	h2	h5	f	f	f4		
30							h2	h2	h2	h	h2		h	h	h2	h2	h2	h2	h4	f	f3	f		f
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.

IONOSPHERIC DATA

Apr. 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	5.6	5.5	6.1	4.7	3.4	3.4	5.5	7.0	8.1	8.5	9.1	10.1	9.2H	10.0	9.9	9.0	9.4	9.6S	9.3	7.1	5.6	5.7	5.8	5.9
2	6.0	6.2	6.5	4.3	3.3 U	3.7S	5.8	7.0	8.1	9.5	11.2	11.1	11.0	9.2	8.8	8.0	6.9	7.4	7.6	6.4	4.4S	5.2S U	5.1S U	5.0S
3	J 5.1S	4.8S J	4.5S	4.7S	3.8 U	3.6S	5.4	6.3	7.6	8.4	9.9	J 10.4R	9.6 J	5.5R U	7.6S	6.9	7.8	7.7	J 8.3S I	7.4S	6.0	3.7S U	4.0S	4.0
4	U 4.2S	4.5 I	4.7S U	4.8S J	4.2S U	4.1S	5.5	5.9	7.5	8.0	9.1	10.6R	D 9.1C	9.0	8.9	8.1	7.2	7.4	J 7.3R	6.7	5.7	5.1R	4.6 U	4.6S
5	J 4.8S U	4.8S	4.5S U	4.4R	3.5	3.8	5.4	5.9	7.1	8.4	8.9	10.2	J 11.0R	10.4	9.6	J 9.8S	9.5	7.6	5.5	5.3R	J 5.4S	J 5.0S U	4.9S J	5.0R
6	U 4.8S I	4.6S U	4.6S	4.4	4.2	4.4	6.1	6.8	7.4	7.8 J	7.9R	8.0	9.2	9.6	9.4	9.3	9.2	7.1	6.8	6.7	6.0	I 4.9S I	5.2S J	5.2S
7	J 5.3S	5.5	4.9	3.1	2.9	U 3.1S	5.9	6.5	7.1	7.6	9.6	9.5	9.6S	9.5	J 10.3R I	9.4R	J 8.2R	7.2	J 7.0R U	7.6S	5.7 I	4.6S J	4.9S I	5.7S
8	J 5.0R	5.0	J 5.3S	3.6	3.3	3.8	J 5.4R	6.5	6.5	8.3	J 9.9S J	9.9R	9.8	9.6	J 8.3S	6.7	6.3	6.5	6.8	6.0	4.9	J 4.9R	4.8 I	4.4S
9	4.4S	4.5	4.4	4.1	3.2	3.2	5.2	6.0	6.6	7.5	9.0	9.4	8.9R I	7.6R	7.9 U	7.4S	6.3	6.3	7.1S J	8.9R	6.9	4.3	4.4	J 4.3S
10	4.4	4.4	4.2 I	4.3R	2.9	3.2	5.1	6.2	J 7.3S J	7.5R U	7.8S J	8.3R	J 8.3R	8.8R	7.6R	9.5	J 8.6R	7.5	7.4S	6.9	5.6	5.9	5.9	5.9
11	6.2	5.5	4.5	4.4	4.3	4.4	5.3	5.4	6.8	7.1	7.5	J 8.4R	10.9	9.5	8.6	9.4	9.5	7.4	7.0	6.4	J 5.1S I	4.5S I	5.0S I	5.0S
12	J 5.1S J	5.0R	4.6	J 3.8S	4.0	4.5	6.5	7.2	8.9	7.8	8.2	10.3S	9.7	8.1	8.3	9.5	9.8	8.9	8.6 I	7.2S	6.3	5.2	5.4	5.5
13	5.5	5.3	5.4	5.2	3.4H	4.0	6.1	7.0	7.5	7.9	9.7	J 10.3R	9.1	10.3	9.7	8.2	7.9	9.4	J 10.3R J	9.4S	6.6	5.0	5.2 U	4.9S
14	4.9	4.9S	4.5S J	4.3S	4.2	4.1	7.2	7.4	7.6S	8.5	8.7	9.1	10.8	10.6	J 10.2R J	10.5R	9.1	9.2	9.2 J	9.0S	6.7S U	4.1 U	5.3R J	5.2R
15	J 5.6R U	5.6R	4.9	4.7	U 4.4S	5.0H	7.6	7.4	7.9	8.5	9.3	9.9	10.8	11.8	11.0	9.5	J 8.9R	8.7	8.2S J	8.5R	U 7.5S	5.9	5.7	5.7
16	5.7	5.8 J	5.4S	4.9S J	4.8S J	5.2R	7.5S	6.9	7.6	7.9	9.2	10.9	9.4	J 10.3R	11.1	10.8S	J 10.5R	9.4	9.0 U	9.4S	6.9	5.9	6.1	6.1
17	5.9	5.8	5.7 J	5.4S	5.2S J	5.3S J	8.4R J	8.5R	9.0R	9.3	10.5R J	10.9R	J 10.8R J	11.1R J	10.7R	10.0	9.1	J 9.0R	9.6	9.3S	7.0	J 5.4R I	5.6S I	5.6S
18	5.5	5.5	5.9	5.0	3.4	U 3.8S	6.7	8.3	8.9	9.1	9.3	9.1	9.5	9.8	10.5	10.8	J 10.2R	10.0	10.4S D	10.4S	7.2	5.5	5.6	5.9
19	6.2	5.9	5.9	4.8	4.8	4.8	7.0	J 8.4R	9.3	9.5	9.0	9.3	9.6	9.2	9.6	9.8	9.0	8.0	8.6 J	8.0R	7.3	5.9	5.6	6.0
20	I 5.4S I	5.4S	5.5	4.9	4.4	U 4.6S J	6.6R I	7.8R	J 8.6R	9.5	10.0	10.0	J 9.6R I	10.4R J	11.3R	11.9	9.4	8.5S U	9.0R	9.6	8.5	6.5	6.1	6.1S
21	6.0	5.8 U	5.6S	5.4	J 5.0S	5.4	J 8.3S	8.7	9.0	9.1	9.7	10.0S	10.1S	10.6S	11.0 S U	10.6S	11.3	10.5S U	10.2S U	9.5S	6.2S	6.1	6.0S	6.2S
22	6.3S	6.0S	5.8	5.3	4.4	4.2S	6.2S	7.8S	6.9S	7.8 J	8.9S	8.6	9.4	11.0	10.7	9.5	8.8	8.7	8.3S	7.3S	6.8	6.3S	6.3S	6.0S
23	6.1S	6.0S	5.9S	5.9	J 5.5S	5.7	5.8	5.2	6.4 L	6.7A	7.0	7.3	7.9R	7.9	7.8	8.4	7.8 J	7.8R	7.9 J	8.5R	6.9 J	5.3R	5.6	5.4
24	J 5.5R	5.5	5.4	4.7S	4.4	U 4.7S	5.5	6.6	7.3 I	8.4R U	8.2R I	7.8R	7.9	8.0	7.7	8.0	7.4	7.3	7.1	6.6S	6.2 J	5.3R J	5.3R I	5.4R
25	J 5.2R	5.4	5.6	4.2	3.2	3.6	6.4	U 7.6R	7.5	8.0	8.0	7.9	J 8.4R	9.0	9.3	8.8	J 8.8R	7.3	7.3	7.2	6.9	6.5	6.0	6.1
26	6.3	5.7	5.2	J 5.3S	J 5.0R	5.6	7.5	8.1	9.5	J 8.3R J	7.3R	7.9R	8.8	10.2	U 9.7R	9.5	8.7	8.4	8.8	J 8.8R	7.1	U 6.2S	6.3S	6.0
27	5.8 J	5.8R	5.8	J 5.0R	5.0	5.2R	7.2	J 8.5R	7.9	U 7.2R	7.9 L	8.0R	9.1R	9.1	9.1 U	10.1S	9.4	J 8.6R J	8.5S U	8.5S	5.8	A	A	C
28	C	C	C	C	C	C	C	C	C	6.8R	7.5 J	8.1R	9.2 U	9.6R J	10.0R J	10.2R	9.2	7.9	7.5R D	9.0R	7.0S	6.1	5.6	5.4
29	J 5.4R	5.3R J	5.0R	4.6	J 4.6S	5.5 L	7.1S	7.2	7.0	L 7.0R	7.3 J	8.4R	9.7	8.4 J	8.4R	8.9	8.8	8.4	9.2	9.5	6.1	4.2 I	4.5S	4.8
30	4.6	J 4.6S	4.8	4.6	4.5	5.3	7.4 U	7.2S	7.4	6.8H	6.5	7.1	L 8.5C J	10.3R U	10.0R	9.4	8.9	J 8.9R J	9.8R U	9.6S	7.5	5.4 J	5.4R	5.3
31																								
No.	29	29	29	29	29	29	29	29	29	30	30	30	29	30	30	30	30	30	30	30	30	29	29	29
Median	5.5	5.5	5.3	4.7	4.2	4.4	6.2	7.0	7.5	8.0	9.0	9.4	9.5	9.6	9.6	9.4	8.9	8.2	8.3	8.2	6.4	5.3	5.4	5.4
U. Q.	6.0	5.8	5.8	5.0	4.7	5.2	7.2	7.8	8.4	8.5	9.6	10.2	10.0	10.3	10.3	10.0	9.4	8.9	9.2	9.3	7.0	5.9	5.8	6.0
L. Q.	5.0	4.8	4.6	4.3	3.4	3.8	5.5	6.4	7.1	7.5	7.8	8.1	9.1	9.0	8.4	8.4	7.9	7.4	7.3	6.9	5.7	4.9	5.0	5.0
Q. R.	1.0	1.0	1.2	0.7	1.3	1.4	1.7	1.4	1.3	1.0	1.8	2.1	0.9	1.3	1.9	1.6	1.5	1.5	1.9	2.4	1.3	1.0	0.8	1.0

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

Apr. 1962 | foF1 | 135° E Mean Time (G.M.T. + 9h.) | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	" 4.7 L	L	4.8 L		L	L	L								
2									L	L	L	" 5.0 L	5.0 L	L	" 4.7 L	L								
3									L	L	L	L	L	L	L	L	L							
4									L	L	4.8 L	L	L	4.6 L	L	L								
5									L	L	L	L	L	L	L	A	L							
6									L	" 4.4 H	L	L	L	4.6	L	L								
7									L	L	L	L	L H	L	L	L								
8									L	4.6 L	L	L	L	L	L	L								
9									L	L	L	L	L	L	L									
10								L	L	L	L	B	L	L	L	L	L							
11								L	L	L	L	L	L	L	L	" 4.6 L								
12									L	L	L	L	L	L	L	L	L	L	A					
13										L	L	" 5.1 L	L	L	A	L	L							
14									L	L	L	L	5.2 L	5.0 L	L	L	A	A	A					
15									L	L	L	" 5.2 L	5.2 L	5.1 L	5.0 L	L	L							
16									L	L	L	5.1 L	L	" 5.1 L	" 5.0 L	L	L							
17									L	L	L	L	L	" 5.2 L	L	L	L							
18								L	L	4.9 L	L	" 5.0 L	L	L	" 5.0 L	L	L							
19								L	L	L	L	5.2 L	" 5.2 L	L	4.9 L	L								
20									L	L	L	" 5.1 L	L	L	B	4.8 L								
21								L	L	L	L	B	B	L	A	B	B							
22									L	L	B	L	L	L	L	L	L	L						
23									A	A	" 5.2 L	" 5.1 R	L	A	L	L	L							
24								L	L	L	4.8 L	" 5.0 L	B	B	L	L	L							
25								L	L	L	L	5.1 L	" 5.1 L	" 5.2 L	4.9 L	" 4.8 L	L	L						
26								L	L	L	L	" 4.9 L	5.1 L	5.2 L	L	L	L							
27							L	L	L	L	L	5.2 L	" 5.1 L	5.0 L	5.0 L	L								
28							C	C	C	L	L	" 5.1 L	" 5.3 L	5.2 L	" 4.9 L	A	L							
29								L		L	5.3 L	" 4.8 L	" 4.9 L	" 5.0 L	4.7 L	L								
30							L		L	L	L	L	C	L	L	4.6 L	L							
31																								
No.										4	4	15	9	11	9	4								
Median										" 4.6	5.0	" 5.1	" 5.1	5.1	4.9	" 4.7								

foF1

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

The Radio Research Laboratories, Japan.

K 2

IONOSPHERIC DATA

Apr. 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							I 1.90 S U 2.50 S		3.00	3.30	3.60	I 3.55 A	U 3.70 R	I 3.50 R	3.30	3.20	2.95	I 2.50 S	S					
2							2.15	2.55	2.95	I 3.20 B	I 3.20 A	U 3.40 R	U 3.45 R	I 3.30 R	3.45	3.10	2.80 S	2.25	1.50					
3							U 2.20 S	2.45	3.00	3.20	3.30	3.20	I 3.40 S	I 3.25 R	3.25	3.10	2.80	2.40	S					
4							S	2.70	I 3.10 A	3.20	3.25	U 3.25 A	A	A	A	3.00	2.75	I 2.30 A	U 1.85 R					
5							I 2.10 B U 2.50 S		2.95	3.20	A	A	A	A	A	A	2.60	A	S					
6							I 1.80 S	2.55	U 2.80 S	3.05	U 3.20 R	A	A	A	3.20	3.05	U 2.55 S	S	S					
7							A	2.60	2.90	3.20	3.30	U 3.30 R	I 3.30 R	3.25 R	3.20	3.20	2.95	A	S					
8							I 2.00 A	2.70	2.90	3.20	3.25	I 3.30 R	A	A	A	3.05	A	A	S					
9							2.25	2.70	2.90	3.10	3.25	I 3.30 R	B	B	B	R	I 2.70 R	A	S					
10							2.05	2.60	2.90	3.20	R	B	B	S	R	3.20	2.70	I 2.30 A	I 1.70 S					
11							2.50	2.70	3.10	3.25	3.40	A	A	A	A	U 3.15 R	I 2.95 A	2.35	S					
12							A	2.70	3.10	3.25	3.35	3.40 R	I 3.40 A	3.40	I 3.30 A	3.20	2.80	2.40	S					
13							2.05	2.75	3.20	3.45	3.50	3.55	A	A	3.50	3.15	3.00	2.45	B					
14						B	2.20	2.80	3.15	3.35	I 3.50 A	I 3.50 R	3.50	U 3.45 A	3.40	3.25	2.95	A	S					
15							2.40	2.65	3.10	I 3.55 R	I 3.50 R	3.55 R	I 3.55 A	U 3.55 R	I 3.30 R	I 3.10 R	I 3.00 R	2.50	S					
16							2.50	I 2.80 S	I 3.30 R	I 3.50 R	I 3.50 R	R	R	R	B	3.30	3.05	2.55	S					
17							U 2.40 R	I 2.70 S	3.20	I 3.30 A	I 3.55 R	I 3.40 S	R	A	R	3.30 R	3.20	2.55	B					
18							U 2.25 S	U 3.05 S	U 3.25 R	U 3.30 R	R	R	A	A	A	I 3.15 A	2.95	I 2.35 A	S					
19							2.35	3.10	3.05	3.40	I 3.55 R	A	R	R	3.40	3.20	I 2.95 R	I 2.30 A	U 1.80 S					
20							I 2.30 S	I 2.80 S	I 3.20 R	3.40	R	B	R	B	B	R	B	2.60	A					
21							2.25	I 2.90 R	3.40	3.35 S	I 3.50 R	B	B	B	B	B	B	B	A					
22							S	I 3.10 A	3.15 S	I 3.30 S	I 3.45 B	S	A	A	A	3.20 S	2.70 S	2.40	A					
23							S	2.45	2.85	3.30	3.50	I 3.55 R	I 3.65 R	A	R	R	2.80	2.50	A					
24							U 2.20 S	2.70	3.05	B	B	A	B	B	A	U 3.20 R	3.00	2.50	S					
25							2.40	I 2.85 R	3.25	3.40	3.60	B	A	R	R	I 3.20 R	3.10	2.55	S					
26							2.25	U 2.80 S	3.20	3.30	R	A	A	A	R	R	3.05	2.60	S					
27							2.30	2.90	I 3.15 R	I 3.25 R	I 3.50 S	3.65	I 3.65 R	I 3.50 R	3.25	3.05	U 3.00 R	2.50	S					
28							C	C	C	R	R	B	A	A	A	I 3.15 A	I 2.95 A	I 2.45 A	A					
29							U 2.10 S	2.75	3.20	3.30 R	R	R	R	A	R	U 3.10 R	I 3.00 S	I 2.60 S	S					
30						S	I 2.05 S	2.90	3.10	3.25	I 3.40 R	3.45	C	R	R	3.30	3.05	U 2.40 R	S					
31																								
No.							24	29	29	28	22	15	9	8	11	24	27	23	4					
Median							2.20	2.70	3.10	3.30	U 3.50	U 3.40	U 3.50	U 3.40	3.30	3.20	2.95	2.45	U 1.75					

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

Apr. 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	E	E	S	G	3.1	3.3	G	3.0^{q}	3.9	2.7^{q}	G	G	G	G	G	S	S	S	S	S	S
2	S	S	E	E	S	S	G	G	G	B	3.4	G	G	G	G	G	G	G	G	S	E	E	S	S
3	E	E	E	E	S	S	G	G	3.3	G	3.8	3.5	S	3.2^{q}	3.4	3.4	3.0	G	S	T 3.5	T 3.1	T 3.7^{Y}	T 3.7	S
4	S	S	E	E	E	S	S	3.1	3.5	3.7	3.7	3.8	3.6	3.4	3.5	2.4	3.4	T 3.5	2.5	S	S	S	S	S
5	S	S	S	E	S	S	2.3	2.8	2.8^{q}	3.6	3.7	4.5	5.5^{q}	4.0	4.4^{M}	6.2^{M}	3.2^{M}	2.5	S	2.4^{s}	E	S	S	E
6	E	E	E	E	E	E	S	3.7^{M}	3.0	3.3	T 3.7	3.6	4.1^{M}	4.1	G	3.3	G	S	S	2.1^{M}	S	S	S	S
7	S	E	E	E	E	S	T 2.4	3.2	3.4	3.7	3.8	3.8	3.2^{q}	G	G	G	G	2.5	3.5^{M}	2.8^{M}	S	S	S	S
8	S	S	E	E	E	E	T 2.4	3.0	3.4	3.7	3.9	4.0	4.1	3.6	3.4	G	3.1	T 2.4	S	S	S	S	S	S
9	S	S	2.1	2.4	2.7	E	3.0	T 3.0^{s}	2.4^{q}	3.4	3.9	3.8	B	B	B	G	G	2.8^{s}	S	S	S	S	S	2.7
10	S	S	E	E	E	S	2.5	3.2	3.4	3.6	G	B	B	S	G	G	3.1	2.5	2.0	S	E	S	S	E
11	E	E	S	E	E	S	3.0	3.5	3.8	3.4	4.1	4.0	3.8	4.0	4.3^{M}	3.0^{q}	3.0	2.9	2.5^{M}	S	S	S	2.4^{M}	S
12	T 3.4^{Y}	S	E	2.4^{M}	E	S	T 3.6	3.8	T 3.7	4.1	4.5	4.4	4.4	3.8	T 3.4^{Y}	G	2.5^{q}	G	T 5.9	T 6.0	T 5.4^{Y}	T 2.7^{s}	S	T 2.4
13	E	E	E	E	E	S	2.9	3.4	3.8	4.1	4.1	4.0	4.0^{M}	4.5	4.7	G	3.4	3.2	T 3.7	T 2.3	2.4	T 3.1	T 2.8	2.7^{M}
14	E	T 3.5^{s}	T 3.6	T 3.7	2.3^{M}	B	2.4	3.7	3.9	4.2	T 4.9^{Y}	4.1	T 5.1^{q}	4.4	4.0	3.5	4.7	T 6.9	5.4^{Y}	T 5.4	T 3.9	T 2.8	T 2.5	2.6^{M}
15	S	S	E	E	E	E	G	3.3	3.7	3.8	3.8	4.0	3.6	3.2^{q}	3.1^{q}	G	G	2.7	1.9^{s}	S	T 2.7	S	E	E
16	S	S	E	E	E	S	G	G	G	G	G	3.8	3.9	G	B	2.8^{q}	3.4	3.3	3.1	2.9^{M}	S	S	S	S
17	S	S	E	E	E	E	G	G	3.5	4.1	G	3.7	3.7^{Y}	3.7	G	3.3^{q}	G	G	T 2.2^{B}	3.0^{M}	2.4^{M}	S	S	S
18	S	S	E	E	E	S	2.8	3.6	G	3.7	4.3	4.0	3.9	4.6	4.3^{M}	3.4	G	3.1^{M}	S	S	S	S	S	S
19	S	E	S	E	E	S	2.8	3.8	G	4.0	3.9	3.9	3.9	G	3.8	G	3.7	T 2.5^{s}	2.8	S	S	S	E	E
20	S	S	E	E	E	S	2.9	S	G	3.9	G	B	G	B	B	G	B	2.9	T 3.2	2.9^{M}	2.8^{M}	S	S	S
21	S	E	E	E	E	S	G	3.3	3.8	3.9	4.0	B	B	B	T 5.0	B	B	B	T 2.6	T 3.5	T 3.3	2.1	S	T 2.6
22	S	S	S	E	S	E	S	4.0	3.6	4.0	B	3.9	4.0	T 3.8	T 3.3	G	G	3.0	T 2.3	T 2.2	2.0	T 2.4	S	S
23	S	E	E	E	E	E	2.4	2.7	4.8	7.0^{M}	4.0	4.6	G	T 5.0^{Y}	G	G	G	3.4	2.5	3.1	3.0^{M}	3.3^{M}	3.1^{M}	S
24	S	S	E	E	E	S	G	3.3	3.5	B	B	3.8	B	B	4.1^{M}	G	3.4	3.0	2.1	S	S	2.4^{M}	S	S
25	S	S	E	E	E	S	G	G	G	4.1	G	3.9	4.0	3.0^{q}	G	G	G	G	S	2.4^{M}	S	S	S	S
26	S	S	S	E	E	S	2.9	3.1	3.7	4.1	3.8	4.0^{M}	3.9^{Y}	3.9	G	G	G	3.5	T 3.4	T 3.5	T 3.2	3.0^{M}	S	S
27	S	S	S	E	E	S	G	3.3	T 4.0	G	S	4.0	G	G	4.1	G	G	3.0	4.0^{M}	4.1^{M}	4.6^{M}	T 6.8^{Y}	4.5^{M}	C
28	C	C	C	C	C	C	C	C	C	3.6	3.8	B	4.0	4.2	T 4.0	5.8^{M}	4.3^{M}	T 3.3	2.4	2.8^{M}	2.9^{M}	2.2	S	S
29	S	S	E	E	E	S	G	3.1	4.0	3.8	4.1	G	G	4.4	G	3.3	S	2.8	2.3	2.5^{M}	S	2.3	2.1^{M}	S
30	2.6	T 3.0	2.8^{M}	E	E	S	2.9	3.7	3.6	3.6	G	4.1	C	4.0	G	G	G	G	T 6.8^{Y}	6.0^{M}	4.1^{M}	T 3.5	3.0^{M}	2.6^{M}
31																								
No.	7	10	22	29	25	7	26	28	29	28	27	26	24	25	27	29	27	28	22	19	19	14	10	10
Median	E	E	E	E	E	E	2.4	3.2	3.5	3.7	3.8	3.9	3.9	3.8	3.4	G	G	2.8	2.6	2.9	2.9	2.8	2.8	2.5
u.Q.	2.6	E	E	E	E	E	E	3.6	3.8	4.0	4.0	4.0	4.0	4.2	4.1	3.3	3.4	3.2	3.5	3.5	3.6	3.3	3.7	2.6
L.Q.	E							2.9	G	3.5	G	3.8	G	G	G	G	G	G	2.3	2.4	2.2	2.3	2.1	E
Q.R.								0.7		0.5		1.2							1.2	1.1	1.4	1.0	1.6	

foEs

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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		3.0	3.3		3.0 F	3.6	E 2.7 S						S	S	S	S	S	S
2	S	S			S	S				B	E 3.4 R									S			S	S
3					S	S			3.3		3.6	3.5	S	E 3.2 R	3.4	3.2	3.0		S	E	2.0	2.0	2.9	S
4	S	S				S	S	E	3.2	3.6	3.6	3.6	3.6	E 3.3 R	3.5	3.4	3.3	3.0	B	S	S	S	S	S
5	S	S	S		S	S	2.2	2.8	2.4 F	3.6	3.6	4.1	4.5	3.6	3.5	5.8	2.1 F	2.5	S	E		S	S	
6							S	2.1 F	2.2 F	3.3	3.6	3.6	3.9	3.6		2.4 F		S	S	E	S	S	S	S
7	S					S	2.4	3.2	3.2	3.5	3.7	3.7	E 3.2 R					2.3	2.5	E	S	S	S	S
8	S	S					2.3	2.8	3.2	3.6	3.8	3.8	3.6	3.5	3.2		3.1	E 2.4 S	S	S	S	S	S	S
9	S	S	E	1.6	1.8		G	2.9	2.4 F	3.4	3.8	U 3.8 S	B	B	B			2.7	S	S	S	S	S	1.9
10	S	S				S	2.5	3.1	3.3	3.5		B	B	S			3.1	2.5	1.9	S		S	S	
11			S			S	G	3.4	3.8	3.4	3.9	4.0	3.8	3.8	3.9	3.0 F	3.0	2.8	S	S	S	S	E	S
12	E	S		E		S	3.6	3.3	3.5	3.8	4.3	4.3	4.4	3.8	3.3		2.3 F		5.8	5.9	4.0	2.0	S	E
13						S	2.8	3.4	3.7	4.1	3.9	3.8	3.5	3.8	4.6		3.3	2.6	2.8	2.1	2.0	2.5	2.1	E
14		2.9	1.9	1.9	E	B	2.4	3.5	3.8	4.2	4.7	4.1	4.6	3.9	3.9	3.5	4.7	6.7	5.1	4.1	2.1	E	2.2	E
15	S	S						3.2	3.6	3.5	3.7	3.9	3.6	3.1 F E	3.1 R			G	E 1.9 S	S	E	S		
16	S	S				S						3.8	E 3.9 R		B	2.8 F	3.4	3.3	2.1	2.1	S	S	S	S
17	S	S							3.5	3.7		3.7	U 3.7 R	3.7		3.1 F			B	1.9	E	S	S	S
18	S	S				S	2.6	3.3		3.6	4.2	4.0	3.9	3.8	3.8	3.4		2.6	S	S	S	S	S	S
19	S		S			S	2.6	3.5		3.9	3.9	3.9	3.7		3.7		3.6	2.5 S	G	S	S	S		
20	S	S				S	2.8	S		3.8		B		B	B		B	2.9	3.0	2.0	E	S	S	S
21	S					S		3.3	3.6	3.8	3.8	B	B	B	5.0	B	B	B	2.5	2.1	2.2	E	S	2.3
22	S	S	S		S		S	3.4	3.6	3.9	B	3.6	3.8	3.5	3.3			3.0	2.2	2.1	1.8	2.2	S	S
23	S						2.3	2.7	4.8	A	4.0	E 4.6 R		4.9				3.2	2.1	2.8	2.3	2.4	2.6	S
24	S	S				S	·	3.3	3.5	B	B	U 3.8 S	B	B	4.0		3.4	3.0	2.0	S	S	E	S	S
25	S	S				S				3.9		3.8	U 4.0 S E	3.0 R					S	E	S	S	S	S
26	S	S	S			S	2.6	3.1	3.5	3.8	3.8	3.8	3.8	3.6				3.1	3.2	2.1	2.2	2.1	S	S
27	S	S	S			S		3.3	3.7		S	3.8			3.7			2.9	2.2	2.1	4.2	A	A	C
28	C	C	C	C	C	C	C	C	C	3.6	3.8	B	3.9	4.0	3.7	5.0	3.3	2.4	2.0	2.1	E	1.9	S	S
29	S	S				S		3.1	3.3	3.6	3.9			3.7		3.3	S	2.5	2.1	1.8	S	E	E	S
30	1.9	1.9	E			S	2.6	3.2	3.5	3.6		4.0	C	U 3.9 S					5.5	5.0	2.5	2.1	2.1	2.0
31																								
No.																								
Median																								

foEs

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

The Radio Research Laboratories, Japan.

K 5

IONOSPHERIC DATA

Apr. 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	E 1.50 SE 1.50 SE 1.50 S 1.20				1.10 E 1.70 SE 1.80 S 1.80				2.00	2.25	2.40	2.00	2.20	2.70	2.20	2.30	2.00	1.85	E 2.00 S E 1.80 S		E 1.80 S E 1.80 S E 1.70 S E 1.50 S			
2	E 1.90 SE 1.60 S	1.00	1.00		E 1.50 SE 1.80 S E 1.85 SE 2.10 S				2.10	3.50	2.30	2.25	2.60	2.20	2.50	2.20	1.90	1.65	1.30	E 1.70 S	1.40	1.40	E 1.95 SE 1.90 S	
3	1.40	1.30	1.40	1.05	E 1.80 SE 1.50 S		1.40	1.90	2.00	1.95	2.10	2.20	E 3.60 S	2.20	2.20	1.90	2.00	1.65	E 1.95 SE 1.50 S		E 1.70 SE 1.50 SE 1.50 SE 1.80 S			
4	E 1.50 SE 1.50 S	1.10	1.00		1.10 E 1.50 SE 2.10 SE 1.90 S				1.90	2.00	2.10	2.20	2.50	2.25	2.10	1.90	1.80	E 1.70 S	1.50	E 1.80 S	E 1.90 SE 1.80 SE 1.70 SE 1.50 S			
5	E 1.80 SE 1.70 SE 1.60 S		1.00		E 1.60 SE 1.80 S		1.80	1.90	2.00	2.30	2.20	2.50	2.10	2.50	1.80	1.80	1.90	1.70	E 1.80 SE 1.70 S		1.40	E 1.80 SE 1.90 S	1.50	
6	1.40	1.20	1.10	1.00	E	1.30	E 2.20 S	1.90	1.60	2.00	2.00	2.00	2.00	2.20	2.25	1.90	1.95	E 2.00 SE 1.60 S	E 1.80 S		E 1.70 SE 1.70 SE 1.70 SE 1.60 S			
7	E 1.50 S	1.10	1.40	1.00	1.00	E 1.50 SE 1.50 SE 1.90 S			1.80	1.90	2.40	2.40	2.00	2.20	2.45	2.50	2.25	E 1.90 SE 1.80 SE	1.80	E 1.80 SE	E 1.50 SE 1.90 SE 1.90 SE 1.90 S			
8	E 1.60 SE 1.70 S	1.40	1.30		1.10	1.20	1.60	1.80	1.70	2.50	2.20	2.40	2.50	2.30	2.30	2.25	2.00	E 1.90 SE 1.90 SE	1.50	E 1.50 SE 1.50 SE 1.60 SE 1.50 S			
9	E 1.60 SE 1.80 S	1.40	E		1.10	1.30	E 1.80 S	1.90	1.95	2.00	2.30	2.50	3.90	3.80	3.60	2.50	2.10	E 1.80 SE 1.50 SE	1.70	E 1.80 SE 1.90 SE 1.80 SE 1.70 S			
10	E 1.50 SE 1.70 S	1.05	1.00		1.30	E 1.80 S	1.50	1.50	1.90	1.90	2.20	5.20	3.50	2.60	2.60	1.80	2.15	E 1.90 SE 1.60 SE	1.70	1.50	E 1.60 SE 1.50 S	1.30		
11	1.30	1.10	E 1.90 S	1.05	1.10	E 1.60 S	2.10	2.00	1.90	2.20	1.90	2.20	2.50	2.40	1.90	2.00	1.80	1.90	E 1.75 SE 1.90 S		E 1.80 SE 1.70 SE 1.80 SE 1.50 S			
12	E 1.60 SE 1.60 S	1.30	1.20		1.20	E 1.50 S	E 1.80 S	1.95	1.80	2.00	2.00	2.20	2.40	2.70	2.00	2.40	1.90	1.70	E 1.50 SE 1.50 S		1.40	E 1.80 SE 1.80 SE 1.60 S		
13	1.40	1.10	1.10	1.05	1.20	E 1.50 S	1.40	1.50	1.95	2.20	2.00	2.50	1.70	2.00	1.90	2.00	2.00	1.80	1.35	E 1.50 S	E 1.50 SE 1.50 S	1.40	1.20	
14	1.10	E 1.50 S	E	E	1.00	1.30	1.40	1.90	2.00	1.70	2.20	2.30	2.50	2.40	2.20	1.60	1.70	1.60	E 1.60 S	1.40	E 1.70 SE 1.80 S	1.40	E 1.60 S	
15	E 1.50 SE 1.60 S	1.40	1.10		1.40	1.40	1.40	1.80	1.90	1.80	2.55	2.60	2.40	2.30	2.20	2.40	1.70	1.60	E 1.40 SE 1.60 S		1.40	E 1.50 S	1.20	1.45
16	E 1.70 SE 1.90 S	1.00	1.05		1.20	E 1.50 S	1.50	1.90	1.80	2.20	2.50	2.60	2.60	2.45	3.60	1.90	1.90	1.70	E 1.80 SE 1.50 S		E 1.70 SE 1.50 SE 1.90 SE 1.50 S			
17	E 1.70 SE 1.80 S	1.20	1.00		1.10	2.20	1.80	2.10	2.10	2.00	2.30	E 3.10 S	2.25	2.40	2.40	2.00	1.80	1.80	1.50	E 1.50 S	E 1.70 SE 1.80 SE 1.90 SE 1.80 S			
18	E 1.50 SE 1.80 S	1.20	1.00		1.10	E 1.50 SE 1.60 S		2.00	2.20	2.20	2.30	2.60	3.50	2.20	2.30	2.10	2.00	1.70	E 1.80 SE 1.90 SE		1.50 SE 1.50 SE 1.80 SE 1.60 S			
19	E 1.50 S	1.10	E 1.60 S	1.00	E	E 1.50 S	1.90	1.80	2.00	2.30	2.60	2.60	2.30	2.40	2.40	2.30	2.40	E 1.80 S	1.40	E 1.80 SE	1.60 SE 1.60 S	1.30	1.20	
20	E 1.80 SE 1.60 S	1.00	1.10		1.10	E 1.90 SE 2.20 SE 2.80 S			2.10	2.40	2.50	3.80	2.60	3.80	5.00	2.10	3.00	1.80	1.50	E 1.50 SE	1.60 SE 1.70 SE 1.50 SE 1.70 S			
21	E 1.70 S	1.20	1.20	E	E	E 1.50 SE 1.90 S		1.70	2.20	2.10	2.30	5.00	5.00	4.15	3.50	4.90	4.95	3.40	1.90	E 1.75 S	E 1.90 SE 1.90 SE 2.15 SE 2.00 S			
22	E 2.00 SE 1.75 SE 1.80 S		E		E 1.50 S	1.35	E 2.40 S	2.00	2.10	E 3.50 S	5.00	2.50	2.85	2.60	2.20	1.70	1.80	1.80	1.95	1.60	1.40	1.50	E 2.10 SE 1.50 S	
23	E 2.20 S	1.50	E	E	1.00	1.60	2.10	1.80	1.95	2.20	1.90	2.50	3.10	2.50	2.60	2.50	2.10	1.30	E 1.60 SE 1.50 SE		1.80 SE 1.80 SE 1.80 S			
24	E 1.60 SE 1.70 S	1.00	1.10		1.10	E 1.50 SE 1.70 S		2.00	2.00	3.70	3.80	3.25	5.05	5.10	1.90	2.20	2.30	1.90	E 1.80 SE 1.80 SE		1.60 SE 1.50 SE 1.50 SE 2.00 S			
25	E 1.80 SE 1.50 S	1.10	E		1.00	E 1.50 S	1.70	2.00	2.10	2.10	2.30	3.50	2.50	2.40	2.40	2.00	2.10	1.70	E 1.90 SE 1.50 S		1.50 SE 1.50 SE 1.50 SE 1.80 S			
26	E 1.70 SE 1.70 SE 1.60 S		1.10		1.20	E 1.50 SE 1.60 SE 2.00 S			2.20	2.00	2.20	2.50	2.30	2.10	2.00	2.00	2.10	1.90	E 1.70 SE 1.60 S		1.50 SE 1.60 SE 1.60 SE 1.50 S			
27	E 1.50 SE 1.80 SE 1.50 S		1.10		1.10	E 1.80 S	1.80	1.90	2.00	2.20	2.40	2.55	2.30	2.60	2.20	2.10	1.90	E 1.80 SE 1.55 SE	1.80	E 1.55 SE 1.50 SE 1.50 S		C		
28	C	C	C	C	C	C	C	C	C	2.40	2.30	4.20	2.60	2.45	2.60	2.20	2.00	E 1.70 SE 1.68 SE	1.80	E 1.50 SE 1.50 SE 1.50 SE 1.80 S				
29	E 1.80 SE 1.80 S	1.40	1.20		1.05	E 1.70 SE 1.70 S		1.85	1.80	2.00	2.40	2.50	2.40	2.10	2.40	2.10	2.00	E 1.70 SE 1.70 SE	1.50	E 1.55 S	1.40	E 1.50 SE 1.50 S		
30	E 1.70 SE 1.60 S	1.20	E		1.10	E 1.80 SE 1.80 S		1.90	2.10	2.40	2.60	2.40	I 2.40 C	3.05	2.30	2.30	2.10	1.80	E 1.80 S	1.40	E 1.80 SE 1.70 SE 1.60 SE 1.70 S			
31																								
No.	29	29	22	29	25	29	29	26	29	29	30	29	29	30	30	30	30	23	30	30	30	30	30	29
Median	E 1.60	E 1.60	1.20	1.00	1.10	E 1.50	E 1.80	1.90	2.00	2.20	2.30	2.50	2.50	2.40	2.30	2.10	2.00	1.70	E 1.65	E 1.65	E 1.55	E 1.60	E 1.65	E 1.60

f-min

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

The Radio Research Laboratories, Japan.

K 6

IONOSPHERIC DATA

Apr. 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	2.75	2.80	3.15	3.60	2.95	2.80	3.25	3.25	3.35	3.20	3.00	3.05	2.95H	3.00	3.15	3.00	3.05	3.25S	3.25	3.25	2.90	2.70	2.75	2.75
2	2.75	2.90	3.30	2.95	2.75U	2.70S	3.20	3.30	3.00	3.05	3.15	3.15	3.25	3.15	3.20	3.25	3.20	3.25	3.40	3.25	2.95S	2.75SU	2.75SU	2.90S
3	T2.95S	2.90ST	2.95S	3.00S	3.15U	2.80S	3.15	3.20	3.15	3.10	3.15	T3.10R	3.25I	T3.25RU	3.30S	3.15	3.10	3.40	T3.25SI	3.30S	3.30	3.00SU	2.65S	2.75
4	U2.75S	2.90I	3.05SU	3.30S	T3.05SU	2.80S	3.25	3.20	3.20	3.05	3.05	3.10R	I3.20C	3.10	3.15	3.35	3.20	3.25	T3.25R	3.10	3.10	3.00R	2.80U	2.95S
5	T2.90SU	2.90S	2.80SU	3.20R	3.05	2.90	3.30	3.40	3.10	3.10	3.05	2.95	T3.15R	3.05	3.15	T3.15S	3.05	3.40	3.25	2.95RT	3.00S	T3.00SU	2.85ST	2.95R
6	U3.00SI	2.90SU	2.80S	2.95	2.95	2.75	3.35	3.40	3.35	3.35	T3.30R	3.00	3.05	3.15	3.05	3.15	3.25	3.25	3.20	3.15	3.15	I2.90S	T2.70S	T2.70S
7	T2.85S	3.25	3.25	2.75	2.75U	2.70S	3.35	3.45	3.10	2.90	3.15	3.05	3.15S	3.15	T3.10RI	3.25R	T3.30R	3.15	T3.00RU	3.30S	3.15	I2.85ST	2.75SI	2.80S
8	T2.80R	2.85	T3.20S	3.20	2.95	2.85	T3.15R	3.10	3.10	2.85	T3.20ST	T3.25R	3.15	3.25	T3.35S	3.15	3.15	3.20	3.20	3.30	2.95	T2.85R	2.80I	2.75S
9	2.70S	2.85	2.95	3.10	2.75	2.65	3.30	3.15	3.30	3.20	3.20	3.30	3.25RI	3.05R	3.30	U3.40S	3.25	3.10	3.25S	T3.25R	3.50	2.75	2.60	T2.80S
10	2.90	2.75	3.00	I3.35R	2.75	2.80	3.30	3.25	T3.25S	T3.20RU	3.10S	T3.10R	T3.00R	3.05R	3.30R	3.25	T3.35R	3.35	3.40S	3.10	2.90	2.75	2.70	2.80
11	2.95	3.25	2.85	2.90	2.80	3.15	3.40	3.15	3.10	3.10	3.05	T2.85R	3.15	3.15	3.15	3.20	3.25	3.25	3.25	3.15	T3.10S	S	S	I2.75S
12	T2.85S	T3.00R	3.15	T2.85S	2.80	2.85	3.35	3.35	3.50	3.30	3.05	3.20S	3.20	3.15	3.15	3.15	3.25	3.35	3.35	I3.20S	3.00	2.75	2.80	2.90
13	2.80	2.80	3.15	3.25	2.95H	2.85	3.45	3.45	3.35	3.05	3.10	T3.30R	3.00	3.00	3.20	3.15	3.15	3.20	T3.30R	T3.40S	3.30	2.70	2.85U	2.80S
14	3.05	2.85S	2.70ST	2.90S	2.95	2.80	3.45	3.35	3.30S	3.30	3.20	2.95	2.95	3.05	T3.05RT	3.05R	3.20	3.40	3.25	T3.35SU	3.15S	2.90	U2.60R	T2.60R
15	T2.70RU	2.80R	2.70	2.95	U2.90S	2.80H	3.40	3.40	3.30	3.15	3.00	3.05	2.90	3.05	3.10	3.05	T3.15R	3.20	3.20S	T3.05RU	3.35S	2.85	2.80	2.80
16	2.75	2.80	T2.80S	2.75S	T2.60S	T2.85R	3.60S	3.45	3.15	3.05	3.00	3.15	2.95T	T2.85R	3.00	3.05S	T3.05R	3.20	3.20U	3.20S	3.05	2.75	2.75	2.70
17	2.80	2.80	2.80T	2.80S	2.70S	T2.60S	T3.30R	T2.95R	3.10R	3.00	2.95RT	T3.00R	T2.95RT	2.95RT	T3.10R	3.00	3.10	T3.00R	3.15	3.35S	3.25	T2.75RI	2.75SI	2.70S
18	2.70	2.75	3.05	3.20	2.65U	2.70S	3.30	3.25	3.25	3.20	3.10	2.95	2.90	2.95	3.05	2.95	T3.05R	2.90	3.10SI	3.30S	3.30	2.70	2.70	2.70
19	2.90	2.90	2.90	2.80	2.65	2.70	3.20	T3.10R	3.00	3.25	3.00	3.00	3.15	2.95	3.00	3.05	3.25	3.10	3.10	T3.15R	3.15	2.85	2.85	2.70
20	S	S	3.00	3.05	2.70U	2.80ST	T3.35RI	3.25R	T3.15R	3.05	3.00	3.00	T3.00RI	3.00RT	2.90R	3.10	3.10	3.20U	3.00R	3.15	3.20	3.00	2.85	2.85
21	2.75	2.85U	2.85S	2.80	T2.70S	2.75	T3.25S	3.20	3.10	3.05	2.80	2.85S	2.95S	2.85S	2.90SU	2.95	3.00	2.95SU	3.05SU	3.15S	3.10S	2.65S	2.65S	2.80S
22	2.70S	2.70S	2.85	3.00	2.45	2.60S	3.05S	3.05S	3.05S	2.85	T2.95S	2.85	2.80	2.90	2.95	3.15	3.10	3.00	3.10S	3.00S	2.80	2.80S	2.80S	2.80S
23	2.70S	2.70S	2.55S	2.75	T2.75S	2.75	2.95	2.90	2.95I	3.00A	3.00	2.85	3.05R	3.05	2.95	3.10	3.05	T2.95R	3.55	T3.05R	3.05	T2.65R	2.70	2.75
24	T2.65R	2.90	2.95	2.95S	2.80U	3.00S	3.10	2.95	3.00I	3.10RU	3.15RI	3.00R	3.15	3.15	3.10	3.25	3.25	3.15	3.10	3.35S	3.15	T2.80RT	2.75RI	2.80R
25	T2.65R	2.75	3.00	3.40	2.70	2.80	3.15U	3.40R	3.20	3.00	3.10	2.90	T3.00R	2.90	2.95	3.05	T3.10R	3.30	3.15	2.95	2.90	2.90	2.80	2.80
26	2.85	2.80	2.75	T2.85S	T2.70R	2.90	3.20	3.20	3.25	T3.15RT	3.15R	2.90R	2.85	3.05U	3.00R	3.05	3.20	3.20	3.10	T3.20R	2.95U	2.90S	2.80S	2.80
27	2.75	T2.75R	2.85	T2.80R	2.80	2.95R	3.05	T3.20R	3.25	U3.20R	3.05	I3.00R	3.10	3.05	3.00	U3.05S	3.10	T3.15R	T3.20SU	3.30S	3.10	A	A	C
28	C	C	C	C	C	C	C	C	C	3.10R	3.05	T3.05R	3.05U	3.10RT	3.00RT	3.05R	3.15	3.05	3.05R	R	S	2.95	2.85	2.75
29	T2.75R	2.65R	T2.80R	2.80	T2.80S	2.95I	3.30S	3.30	3.40	L3.35R	2.90	T2.90R	3.10	3.10	T3.00R	3.05	3.05	3.10	3.25	3.40	3.10	3.00	I2.75S	2.70
30	2.75	T2.55S	2.95	2.80	2.85	3.10	3.40	U3.45S	3.25	2.90H	3.20	2.85	I3.00C	T2.90RU	3.10R	3.10	3.15	T3.05R	T3.25RU	3.25S	3.20	2.80	T2.80R	2.80
31																								
No.	28	28	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	29	29	28	28	29
Median	2.75	2.80	2.95	2.95	2.80	2.80	3.30	3.25	3.20	3.10	3.05	3.00	3.05	3.05	3.10	3.10	3.15	3.20	3.20	3.20	3.10	2.80	2.75	2.80

M(3000)F2

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

The Radio Research Laboratories, Japan.

K 7

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	"3.80 L	L	3.70 L		L	L	L								
2									L	L	L	"3.60 L	3.40 L	L	"3.60 L	L								
3									L	L	L	L	L	L	L	L	L							
4									L	L	3.50 L	L	L	3.70 L	L	L								
5									L	L	L	L	L	L	L	A	L							
6									L	"3.65 L	L	L	L	3.70	L	L								
7									L	L	L	L	LH	L	L	L								
8									L	3.50 L	L	L	L	L	L	L								
9									L	L	L	L	L	L	L									
10								L	L	L	L	B	L	L	L	L	L							
11								L	L	L	L	L	L	L	L	"3.30 L								
12									L	L	L	L	L	L	L	L	L	L	A					
13										L	L	"3.70 L	L	L	A	L	L							
14									L	L	L	L	3.45 L	3.40 L	L	L	A	A	A					
15									L	L	L	"3.65 L	3.45 L	3.40 L	3.40 L	L	L							
16									L	L	L	3.90 L	L	"3.55 L	"3.40 L	L	L							
17									L	L	L	L	L	"3.60 L	L	L	L							
18								L	L	3.65 L	L	"3.80 L	L	L	"3.45 L	L	L							
19								L	L	L	L	3.45 L	"3.45 L	L	3.50 L	L								
20									L	L	L	"3.70 L	L	L	B	3.55 L								
21								L	L	L	L	B	B	L	A	B	B							
22									L	L	B	L	L	L	L	L	L	L						
23									A	A	"3.40 L	R	L	A	L	L	L							
24								L	L	L	3.55 L	"3.40 L	B	B	L	L	L							
25								L	L	L	L	3.70 L	"3.40 L	"3.45 L	3.45 L	"3.40 L	L	L						
26								L	L	L	L	"3.65 L	3.70 L	3.55 L	L	L	L							
27							L	L	L	L	L	3.45 L	"3.70 L	3.55 L	3.60 L	L								
28							C	C	C	L	L	"3.75 L	"3.60 L	3.45 L	"3.45 L	A	L							
29								L		L	3.55 L	"3.95 L	"3.45 L	"3.50 L	3.60 L	L								
30							L		L	L	L	L	C	L	L	3.50 L	L							
31																								
No.										4	4	14	9	11	9	4								
Median										"3.65	3.50	"3.70	"3.45	3.55	3.45	"3.45								

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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									250	260	260	260		280	255	255								
2									285	260	260	280	250	260	255	250								
3									265	255	270	255	255	255	255	250	260							
4									255	275	280	260	255	255	260	250								
5									260	275	280	295	270	260	260	E 250 A	240							
6									255	250	255	300	290	260	270	260								
7									255	280	255	275	275	275	260	250								
8									255	305	260	255	260	250	250	255								
9									255	280	275	255	265	285	260									
10								255	250	250	280	280	275	290	260	255	245							
11								255	255	260	270	300	260	255	270	255								
12									250	250	255	255	245	260	295	260	250	250	E 250 A					
13										275	275	250	275	260	255	255	260							
14									250	255	255	300	285	260	260	260	250 A	E 250 A	245					
15									250	255	290	280	300	285	255	260	255							
16									255	280	300	260	260	305	275	275	250							
17									255	255	280	260	275	280	265	260	255							
18								250	255	260	255	280	295	295	295	260	255							
19								280	260	255	260	300	280	290	300	265								
20									255	260	260	275	290	305	260	255								
21								250	255	260	265	275	300	295	280	280	260							
22									255	300	300	300	310	295	270	255	250	255						
23									340	A	325	350	305	275	310	285	260							
24								300	300	275	295	310	300	300	265	260	255							
25								250	275	275	295	300	300	305	300	285	260	245						
26								260	250	255	260	305	325	300	275	260	255							
27							260	250	250	250	260	300	300	290	300	285								
28							C	C	C	270	290	300	295	280	260	255	250							
29								240		255	330	300	255	275	290	290								
30							250		250	250 H	260	310	C	290	260	260	260							
31																								
No.							2	10	27	29	30	30	28	30	30	29	18	4	2					
Median							255	250	255	260	270	280	280	280	260	260	255	E 250	E 250					

h'F2 | Sweep 10 Mc to 200 Mc in 20 ~~min~~ sec in automatic operation.

The Radio Research Laboratories, Japan.

K 9

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	260	240	200	230	300	210	220	225	210	210	205	245H	205	205	215	245	245	240	200	245	305	300	300
2	300	255	210	200	255	305	230	230	210	220	205	210	210	205	200	200	230	240	210	210	240	300	300	275
3	255	255	260	245	215	300	225	230	225	205	205	205	210	210	205	200	240	240	240	205	200	250	E350A	340
4	300	255	250	205	245	250	215	225	225	205	205	230	210	205	205	240	245	E250A	225	210	240	240	260	260
5	260	260	275	210	255	250	205	210	225	225	225	245	E255A	210	205	I210A	205	225	205	250	250	255	255	255
6	245	250	260	245	240	250	225	230	205	205H	205	205	215	200	205	205	225	240	245	230	210	300	315	300
7	260	215	225	200	275	305	230	225	225	230	200	170	200H	225	205	210	240	230	250A	210	205	300	300	300
8	305	290	245	205	255	250	230	250	210	210	215	215	215	205	205	205	230	245	225	205	240	275	260	305
9	305	300	250	255	325	305	210	240	230	220	210	225	205	205	225	245	235	245	255	210	200	300	315	300
10	300	305	260	200	245	280	210	230	245	230	225	I240B	205	210	210	245	210	245	215	210	245	300	305	300
11	250	205	285	245	250	250	210	215	E245A	205	205	225	230	210	240	210	240	230	220	240	245	325	310	305
12	255	250	240	250	300	255	220	230	245	210	230	E265A	E250A	205	210	205	215	245	I230A	E250A	250A	255	300	300
13	300	255	245	205	210H	265	210	225	230	250	205	205	220	225	I215A	205	245	255	245	205	200	255	300A	260
14	255	305	300A	250	205	260	210	215	240	240	225	200	210	205	225	205	A	A	A	230	205	255	305	300
15	300	295	255	230	250	200H	230	215	210	205	200	190	200	205	205	205	245	245	240	240	210	240	285	260
16	300	300	255	305	310	255	205	215	205	210	E250B	185	245	200	205	225	245	250A	240	240	205	250	300	300
17	300	295	265	255	300	305	215	210	210	205	210	205	210	205	205	205	225	245	250	210	205	255	300	300
18	305	300	250	200	255	290	225	240	225	210	220	205	210	205	205	205	205	245	245	210	200	255	310	305
19	265	255	250	200	260	295	240	245	220	240	205	220	205	200	205	205	245	245	245	225	210	205	255	300
20	300	260	250	205	255	265	225	210	225	230	205	195	195	205	I220B	210	245	245	255	210	205	210	260	255
21	255	255	255	245	305	255	240	230	225	225	210	I220B	I240B	210	I215A	I210B	I235B	250	245	220	215	255	305	300
22	300	270	250	230	355	300	210	250	215	235	I205B	205	200	205	210	225	245	245	245	235	255	300	280	265
23	310	305	260	250	300	295	250	245	I250A	I230A	210	I240A	205	I250A	205	205	200	255A	245	245A	250A	300A	305	300
24	305	290	245	250	250	250	240	215	230	205	205	225	I210B	I200B	225	210	205	250	240	225	210	250	305	300
25	300	300	245	200	275	250	245	245	210	225	215	200	205	200	205	210	225	240	245	245	250	240	255	285
26	255	250	285	255	300	250	240	215	220	210	205	200	185	200	210	225	235	245	250A	240	230A	250	290	295
27	300	300	250	240	255	240	240	245	225	225	230	205	205	205	205	225	245	245	245	230A	E250A	A	A	C
28	C	C	C	C	C	C	C	C	C	205	205	200	200	210	200	I205A	225	245	250	250	210	210	260	300
29	300	300	285	250	255	250	240	210	245	205	200	175	220	205	200	210	245	245	245	205	205	205	300	300
30	310	310	255	255	250	245	245	240	205	200	200	205	I240C	245	210	210	225	240	E250A	E245A	220A	250A	300A	300A
31																								
No.	29	29	29	29	29	29	29	29	28	30	29	29	28	30	30	30	29	28	28	28	29	29	28	29
Median	300	270	250	240	255	255	225	230	225	210	205	205	210	205	205	210	235	245	245	220	210	255	300	300

h'F

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

The Radio Research Laboratories, Japan.

K10

IONOSPHERIC DATA

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

h'Es

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

The Radio Research Laboratories, Japan.

K 11

IONOSPHERIC DATA

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

Types of Es

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

The Radio Research Laboratories, Japan.

K12

IONOSPHERIC DATA

Apr. 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	365	355	290	240	305	350	260	270	275	300	305	300	345H	310	300	305	300	295S	280	255	310	395	390	390
2	370	330	255	295	350	U390S	260	265	310	305	300	300	270	300	295	280	255	265	255	255	305S	355S	U355S	U350S
3	T305S	350S	T305S	300S	280	U350S	255	275	300	295	300	T300R	295	I290R	U280S	300	300	270	T290S	I260S	250	305S	U395S	390
4	U355S	315	I305S	U275S	T305S	U350S	255	290	295	305	305	300R	I295C	295	295	260	285	290	T260R	295	300	300R	360	U310S
5	T320S	U350S	345	U285R	300	300	255	250	300	305	305	320	T300R	305	295	T295S	255	255	255	305R	T315S	T325S	U340S	T310R
6	U305S	I320S	U345S	305	310	320	250	255	275	260	T280R	325	305	300	305	295	290	290	275	295	280	I360S	I380S	T380S
7	T345S	280	265	305	345	U360S	260	250	290	310	300	300	300S	300	T300R	I290R	T290R	295	T305R	U255S	290	I330S	T360S	I355S
8	T380R	350	T295S	250	310	305	T290R	300	295	350	T300S	T290R	300	275	T260S	290	275	290	275	260	305	T345R	350	I385S
9	390S	350	305	300	390	375	250	300	285	300	300	275	290R	I300R	290	U255S	260	300	295S	T275R	245	390	400	T345S
10	350	350	320	I250R	340	325	250	285	T265S	T255R	U305S	T300R	T305R	305R	300R	290	T255R	255	255S	290	325	385	390	375
11	305	260	345	310	350	300	250	285	300	300	305	T345R	300	290	300	295	255	275	265	295	T300S	S	S	I360S
12	T320S	T305R	290	T325S	355	320	255	255	250	275	305	290S	300	295	305	300	285	275	260	I280S	300	355	360	370
13	355	355	300	260	310H	345	250	250	255	310	300	T295R	310	300	300	295	305	300	T270R	T250S	255	390	355	U380S
14	305	350S	390S	T305S	300	350	250	250	255S	285	295	330	320	305	T305R	T305R	295	255	285	T255S	U260S	340	U385R	T380R
15	T290R	U375R	350	305	U340S	345H	250	255	260	300	310	305	340	305	300	300	T305R	290	295S	T300R	U255S	350	380	370
16	380	365	T350S	390S	T410S	T350R	250S	250	300	305	310	300	320	T350R	310	305S	T300R	290	295	U300S	290	380	380	380
17	390	380	355	T350S	390S	T390S	T280R	T305R	295R	305	310R	T310R	T320R	T315R	T305R	305	300	T305R	295	255S	265	T355R	I380S	I390S
18	390	390	305	260	380	U380S	255	285	290	295	300	320	330	340	300	310	T305R	330	300S	I265S	260	395	395	395
19	350	350	350	350	395	380	275	T300R	305	300	305	325	300	320	310	300	290	300	300	T300R	300	345	360	400
20	S	S	310	305	385	U350S	T250R	I270R	T300R	305	305	310	T340R	I340R	T330R	300	300	300	U305R	300	295	300	350	350S
21	355	355	U355S	340	T395S	355	T290S	295	300	305	350	330S	330S	350S	325S	U315S	310	315S	U295S	U305S	275S	375	375S	355S
22	355S	360S	335	305	455	375S	300S	295S	285S	355	T325S	325	355	320	300	295	295	305	295S	300S	345	355S	345S	350S
23	375S	360S	355S	355S	T390S	355	300	300	340	I305A	330	355	310R	300	340	305	305	T305R	295	T300R	305	T360R	395	390
24	T390R	350	300	305S	350	U305S	300	305	310	I300R	U300R	I310R	300	305	300	295	290	295	295	255S	290	T380R	T390R	T380R
25	T390R	380	305	240	355	350	300	U255R	300	305	300	310	T330R	345	320	305	T300R	255	300	305	340	340	355	380
26	345	350	355	T330S	T400R	345	275	300	290	T300R	T300R	330R	350	315	U305R	300	300	300	T300R	310	U330S	355S	375	
27	390	T380R	350	T340R	350	305R	305	T280R	265	U275R	305	I310R	305R	305	310	U305S	290	T300R	T290SU	280S	280	A	A	C
28	C	C	C	C	C	C	C	C	C	300R	305	T305R	305	U305R	T305R	T300R	300	300	300R	R	S	305	360	370
29	T360R	390R	T355R	350	T340S	350	I260S	255	255	I255R	350	T345R	300	305	T305R	300	300	305	300	260	290	300	I360S	390
30	395	T390S	340	350	350	300	250	U250S	275	235H	275	350	I330C	T310R	U300R	300	300	T305R	T290R	U255S	255	350	T360R	370
31																								
No.	28	28	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	29	29	28	28	29
Median	360	350	335	305	350	350	255	275	290	300	305	310	305	305	300	300	300	295	295	280	290	350	360	375

hpF2

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

The Radio Research Laboratories, Japan.

K 13

45

IONOSPHERIC DATA

Apr. 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	90	100	60	50	95	60	70	75	70	60	95	60	55H	85	55	45	80	50S	65	55	135	60	65	105
2	125	65	45	60	95U	105S	90	40	85	75	55	55	75	50	50	65	75	65	50	90	90S	100SU	100SU	100S
3	J100S	95SJ	60S	55S	75	U95S	90	70	55	70	55	J55R	45I	40RU	35S	45	55	30	J55SI	60S	55	85SU	100S	105
4	U110S	85I	80SU	65SJ	45SU	95S	50	60	50	90	85	50RI	50C	65	60	45	55	55	J50R	60	60	95R	85U	85S
5	J95SU	95J	70SU	70S	55	95	50	55	45	90	85	85	J55R	70	55	J55S	50	45	70	90R	J80S	120SU	115SJ	100R
6	U90SI	100SU	60S	60	85	85	50	45	30	45	J60R	70	85	55	85	55	45	55	70	50	75L	100SI	110SJ	115S
7	J100S	60	55	100	100	U135S	60	45	60	90	55	85	50S	55J	50RI	60R	J50R	50	J50RU	65S	60L	100SJ	135SI	100S
8	J65R	95	J60S	95	85	95	J60R	50	60	95	J50S	J55R	55	70	J45S	55	70	15	70	50	95	J55R	95I	70S
9	65S	45	90	45	65	120	55	50	20	45	50	35	25RJ	70R	35U	45S	85	50	20SJ	60R	50	60	100J	60S
10	65	145	70	L60R	110	120	60	60	J55SJ	50RU	50SJ	J65R	J95R	60R	30R	45	J50R	55	50S	65	75	70	100	80
11	90	50	55	95	105	55	50	65	50	50	85	J100R	55	65	55	55	85	40	80	60	J50S	S	S	I90S
12	J75SJ	95R	55	J75S	90	85	55	45	50	70	90	55S	50	50	45	55	60	35	55	I70S	95	140	85	35
13	100	100	50	85	90H	100	50	50	50	85	55	J15R	85	100	45	60	60	50	J40RJ	50S	90	155	90U	115S
14	90	95S	105SJ	95S	105	105	50	55	60S	55	55	75	80	60	J85RJ	50R	50	50	60	J90S	U85S	65U	120RJ	115R
15	J105RU	75R	105	100	U75S	100H	50	55	45	90	90	90	65	85	95	95	J60R	60	50SJ	50RU	55S	100	70	75
16	75	90	J100S	105SJ	90SJ	105R	40S	55	50	95	80	50	100	J95R	85	85SJ	55R	55	55U	50S	100	110	75	115
17	55	75	100	J95S	105SJ	105SJ	J70RJ	J90R	55R	90	85RJ	J85R	J80RJ	80RJ	J50R	90	55	J90R	55	90S	80J	90RL	85SI	90S
18	105	105	85	85	25	U115S	85	60	55	60	55	125	115	55	55	90	J85R	115	85SI	70S	80	105	100	100
19	55	65	70	115	105	110	70J	60R	90	50	100	70	60	80	85	90	55	60	90	J50R	50	100	85	95
20	S	S	90	85	110	U95SJ	J55RI	70R	J55R	90	90	100	J45RI	60RJ	75R	55	90	55U	90R	65	80	95	95	90S
21	140	90U	90S	115	J100S	100	J55S	50	55	95	100	100S	70S	95S	85SU	95S	105	105SU	105SU	95S	100S	95	100S	95S
22	95S	90S	80	95	95	110S	95S	105S	110S	90J	80S	95	100	110	105	105	105	95	95	95	80	100S	110S	95S
23	90S	95S	100S	95	J75S	95	90	100	60I	100R	65	90	80R	55	60	75	50	J90R	55J	55R	85J	130S	100	105
24	J100R	145	95	90S	95U	50S	95	95	80I	80RU	50RI	90R	55	50	50	60	55	55	55	90S	60J	75RJ	75RI	90R
25	J105R	115	90	65	140	100	50U	60R	50	95	95	90	J75R	105	120	80	J55R	65	80	90	65	105	100	75
26	110	105	140	J80SJ	J100R	100	50	45	60J	90RJ	50R	115R	100	80U	90R	75	45	50	55J	50R	85U	85S	100S	80
27	100J	75R	100	J155R	140	95R	50J	65R	130U	80R	90I	90R	50R	90	90U	60	75J	55RJ	65	60	75	A	A	C
28	C	C	C	C	C	C	C	C	C	50R	90J	85R	85U	80RJ	85RJ	60R	50	95	95R	R	S	100	85	120
29	J90R	105RJ	90R	100	J90S	95I	70S	55	45I	70R	95J	70R	90	90	J90R	90	95	85	50	55	100	90L	90S	115
30	60J	100S	65	95	95	95	50U	45S	70	115H	75	90	L75CJ	90RU	95R	90	60J	90RJ	55SU	50S	90	100J	135R	110
31																								
No.	28	28	29	29	29	29	29	29	29	30	30	31	30	30	30	30	30	30	30	29	29	28	28	29
Median	90	95	80	90	95	100	55	55	55	80	80	85	70	70	60	60	60	55	55	60	80	100	100	95

ypF2

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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	6.0	5.9	6.1	5.7	3.7	2.5	3.4	6.0	7.7	7.7	9.0	9.9	10.9	12.1	11.6	10.4	10.2	10.2	9.6	8.2	6	S	S	S
2	5.7	6.1	S	4.3	3.1	3.1	3.8	6.6	7.6	8.9	10.6	11.9	11.3	11.6	10.8	8.6	8.6	8.4	8.2	7.5	5.6	5.6	5.6	5.6
3	5.1	4.8	4.6	4.8	3.8	3.2	3.8	5.9	7.4	8.4	9.3	9.4	10.6	10.6	8.6	7.7	7.7	9.2	10.2	8.7	4.9	3.9	3.8	3.8
4	3.8	4.0	4.6	4.2	3.4	2.9	3.6	5.7	6.6	8.0	8.7	9.3	10.6	9.6	9.4	8.3	7.4	7.7	8.9	8.0	5.9	4.6	3.9	4.3
5	4.1	4.2	4.2	4.2	3.5	3.1	3.6	5.5	6.4	7.6	8.3	9.7	10.6	11.3	11.2	10.7	9.9	7.7	6.6	6.1	6.2	5.6	4.1	4.1
6	4.2	4.3	4.3	4.3	4.0	3.7	4.5	6.4	7.5	7.0	6.8	8.2	10.7	12.0	11.4	10.8	10.0	8.8	7.9	S	S	5.2	S	S
7	4.9	5.1	4.6	3.9	3.1	3.2	3.9	S	6.6	6.2	8.3	9.8	9.9	10.4	11.4	11.0	9.1	7.1	7.6	8.9	6.0	4.4	4.6	4.5
8	4.6	4.7	5.2	4.1	2.7	2.6	4.1	6.6	8.5	9.7	10.6	9.5	10.3	11.5	11.0	8.1	7.0	7.2	8.0	7.6	5.9	5.1	4.5	4.4
9	4.7	5.0	5.5	4.1	3.1	2.7	4.4	6.6	6.8	7.5	8.9	9.2	9.8	9.0	8.8	8.3	7.3	6.9	8.6	9.2	7.2	5.5	4.8	5.1
10	S	S	5.2	5.5	2.7	2.0	3.6	5.8	8.0	8.6	8.9	8.3	9.6	9.7	9.6	9.6	8.5	7.0	7.1	7.6	6.0	5.8	6.1	6.0
11	5.9	5.9	5.3	4.7	4.5	3.6	5.0	6.8	7.6	6.7	7.6	8.2	11.6	13.0	10.4	9.8	9.2	8.2	8.4	8.5	6.7	5.2	5.4	5.6
12	6.0	5.1	4.6	3.8	3.7	3.7	5.0	7.4	8.3	7.0	7.7	9.2	10.7	10.1	9.6	9.8	10.7	10.6	9.8	8.0	6.1	5.6	5.4	5.8
13	6.4	5.6	7.0	6.2	4.1	3.5	5.0	6.6	7.6	7.9	9.3	10.2	9.3	10.1	11.3	11.7	10.1	10.6	11.1	11.1	7.5	4.5	4.6	4.7
14	4.5	4.7	4.8	4.8	4.6	4.2	5.0	6.7	7.2	7.8	8.2	10.6	11.2	11.1	11.8	12.1	10.5	10.4	9.4	9.5	7.9	A	S	S
15	5.5	5.4	5.4	5.5	4.8	4.2	5.0	6.7	7.6	8.4	9.5	11.2	11.9	12.7	13.1	12.0	9.9	9.5	9.9	9.8	8.6	6.6	5.5	5.6
16	5.6	5.6	5.5	4.8	4.8	4.9	6.1	6.7	7.6	8.2	9.4	10.2	10.6	11.1	11.8	11.6	10.9	11.0	10.7	9.7	6.1	5.8	5.7	5.7
17	5.6	5.5	5.4	5.4	5.0	5.0	6.4	7.7	7.7	8.9	10.0	11.1	12.0	12.4	12.4	11.7	11.3	11.1	11.2	11.0	9.0	6.9	5.7	5.9
18	5.7	5.9	6.6	6.1	3.9	3.5	5.6	7.6	8.5	8.9	8.8	9.0	9.7	11.1	12.1	11.7	10.5	10.6	11.4	11.6	9.4	6.4	S	S
19	S	S	S	S	5.6	5.5	7.0	8.6	9.6	9.2	8.9	9.8	10.3	10.7	10.7	11.2	10.9	10.6	9.9	9.2	8.5	7.7	6.1	5.7
20	5.6	5.2	5.4	5.0	4.4	4.2	5.9	7.5	8.2	9.1	9.7	10.2	10.5	11.2	12.2	12.3	11.1	10.6	10.7	10.5	9.1	7.4	6.0	5.9
21	6.0	5.5	5.5	5.3	4.8	5.0	6.9	8.4	7.9	7.9	9.3	11.1	11.1	11.6	12.7	12.7	12.1	11.1	11.1	10.6	8.9	S	S	6.3
22	5.9	6.0	6.2	6.0	4.4	4.4	7.1	7.8	6.7	7.7	10.4	9.6	10.1	12.3	12.2	10.3	10.1	9.4	9.4	8.5	S	S	S	S
23	S	6.0	5.9	6.1	5.3	5.7	7.2	8.2	8.7	7.9	7.8	8.6	9.1	10.8	11.1	11.1	9.8	10.0	10.2	9.2	7.5	6.0	5.7	5.7
24	5.8	5.8	5.8	5.1	4.4	3.6	4.9	6.8	8.4	9.1	8.3	9.6	9.7	10.4	10.3	10.1	8.4	8.0	8.4	9.1	6.8	6.0	S	S
25	S	5.8	6.0	5.6	3.6	3.6	5.0	7.8	6.8	6.8	7.7	8.7	8.9	10.2	11.2	11.3	10.7	9.6	8.5	8.0	S	S	6.1	6.0
26	6.0	6.0	5.2	4.9	4.5	4.6	6.1	8.8	8.5	7.3	7.3	7.9	9.7	10.9	11.7	10.8	10.6	9.2	9.2	9.2	8.2	6.7	5.6	5.5
27	5.2	5.0	4.8	4.4	4.3	4.3	6.6	8.2	7.1	7.6	7.4	8.5	9.7	10.3	11.1	11.8	11.8	11.6	9.9	8.2	6.6	5.6	4.2	4.9
28	4.8	4.8	4.9	4.1	4.2	4.7	6.1	7.1	7.0	7.2	7.1	7.7	9.7	11.0	10.6	10.5	10.8	10.1	9.5	10.1	8.7	6.6	5.1	5.2
29	5.4	5.3	5.2	4.7	4.8	4.9	6.6	6.8	6.8	7.1	7.5	8.3	9.6	9.8	8.9	9.7	10.6	9.9	10.7	10.2	5.8	4.8	4.7	4.7
30	5.0	5.1	4.9	4.7	4.4	4.5	6.9	6.6	6.9	6.7	6.6	7.7	9.2	10.2	11.6	10.6	10.9	10.4	11.1	10.4	S	S	5.7	5.2
31																								
No.	26	28	28	29	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	29	26	24	23	24
Median	5.4	5.4	5.2	4.8	4.2	3.7	5.0	6.8	7.4	7.8	8.8	9.4	10.3	11.0	11.2	10.8	10.2	9.8	9.6	9.2	6.8	5.6	5.4	5.6
U.Q	5.9	5.8	5.6	5.5	4.6	4.5	6.3	7.8	8.2	8.4	9.3	10.2	10.7	11.6	11.8	11.7	10.8	10.6	10.7	10.2	8.5	6.4	5.7	5.8
L.Q	4.8	4.9	4.8	4.2	3.6	3.2	4.1	6.3	6.9	7.2	7.7	8.5	9.7	10.2	10.4	9.8	9.1	8.2	8.4	8.1	6.0	5.2	4.6	4.7
Q.R	1.1	0.9	0.8	1.3	1.0	1.3	2.2	1.5	1.3	1.2	1.6	1.7	1.0	1.4	1.4	1.9	1.7	2.4	2.3	2.1	2.5	1.2	1.1	1.1

foF2

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

Apr. 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	L^H	L	L^H	5.0	4.5	L								
2										L	L	4.7	4.8^L	4.9^L	I4.6^L	4.6								
3										L	4.6^L	L	L	4.8^L	4.7^L	L								
4										L	L	4.6^L	4.7^L	4.7	4.7	4.4^L	L							
5										L	4.7^L	4.6	I4.7^L	4.9^L	4.8^L	4.4	L							
6										L	4.8^LH	L	4.8	4.6^H	L^H	4.5								
7											L	I4.6^L	4.7	I4.7^LH	I4.7^L	4.4	L							
8										L	L	4.7	4.6^L	4.8	4.7	I4.5^L	L							
9										L	4.5	4.7^L	4.7	4.6	I4.7^L	4.4	L							
10										L	L	L	L	4.6^L	4.6	L	A							
11												L	L	4.7	L	L								
12											L	5.2	L	L	L	I4.6^A	4.5^L	A						
13										L	5.0	L	4.9^L	5.0^L	I4.9^L	4.8^LH	L							
14										L	4.8	5.1^LH	5.0	5.0^LH	I4.9^L	5.0^L	A							
15											L	R	L	L	L	4.8^L	L							
16										L	L	L	L	L	L	L	L	L						
17											L	L	L	L	5.2^L	L	L^H							
18											L	5.0^L		5.2	I5.2^L	4.9^L	L							
19											L	L	L		L	L								
20										L	L	L	L	L	L	L	L							
21											L	L	L	L	L	4.8								
22											5.0^L	I5.1^L	5.3	I5.1^L	I4.9^L	L	L							
23										L	A	L	A	A										
24									L	L	4.9^L	5.3^L	5.0	5.1	5.1^L	I4.8^L	L							
25										L	5.0	L	L^H	4.8	4.8	L	L							
26										L	L	5.0^L	5.2	5.2	I5.0^R	I4.8^L	4.6^L							
27											L	L	I5.1^L	5.1	5.0^H	4.8	L							
28											L	L	5.2	5.1	4.8	4.7	4.6							
29										L	4.9^L	5.0	4.9	4.9^H	4.7^LH	4.7^H	4.4^L	L						
30												L	I4.8^L	4.7	4.7	L	L	L						
31																								
No.											10	13	16	22	21	18	4							
Median											4.8	5.0	4.8	4.9	4.8	4.7	4.6							

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	2.20	2.75	3.10	R	R	R	R	3.40R	3.20	3.05	2.60	1.90					
2							S	2.00	2.70H	3.10	3.20	R	R	3.40R	I3.35R	3.20	3.05	2.70	1.90					
3							S	2.20	2.60	3.00	RH	R	R	I3.35R	I3.35R	3.25	3.00	2.60	1.80					
4							S	2.20	2.70H	3.00	I3.20R	I3.30A	3.35	I3.30R	3.30	I3.15A	2.95	2.50	A					
5							S	B	2.65	3.00	3.20	C	R	A	I3.30R	I3.20R	2.90	2.55	S					
6							S	2.00	2.60	3.10	I3.30A	3.40	A	A	A	3.10	2.95	2.70H	A					
7							S	1.85	2.60	3.00	C	R	R	I3.35R	3.35	3.10	2.85	2.50	1.90					
8							S	2.25H	2.70	2.95	3.20	3.25	A	A	3.30	I3.10A	I2.80A	2.60	1.75					
9							S	2.20	2.60	3.00	I3.15R	I3.25C	I3.35R	I3.45R	3.40R	3.30	2.90	2.50	A					
10							S	2.25	2.70	3.10R	I3.20A	I3.35R	I3.45R	I3.50R	I3.45R	I3.30R	3.05	2.60	A					
11							S	2.30	2.75	3.10	I3.30R	3.40	A	A	3.30R	A	A	A	1.90					
12							S	2.25	2.80	3.10H	3.35	R	R	R	I3.30R	3.30R	3.10	2.60	1.90					
13							S	2.50	I2.80A	R	A	R	R	3.60R	R	R	3.10	2.70	2.10					
14							S	2.40H	3.00	3.30	3.50	3.50R	I3.70R	R	R	R	3.10	2.70	2.10					
15							S	2.40	3.00	3.25	3.45	R	A	A	A	A	3.20	2.70	A					
16							S	2.50H	3.00H	3.40	3.45R	R	R	R	R	A	3.20	2.80	2.20					
17							1.70	2.50	2.90	3.35	3.60	3.55	A	A	A	R	3.30	2.80	A					
18							S	2.40	2.95	3.40	3.50R	R	R	R	R	R	2.90	2.70	A					
19							S	2.40	2.90	3.30	R	R	R	R	R	3.40R	3.20	2.70	2.35H					
20							S	2.40	2.90	R	R	R	R	B	R	3.40	3.20	2.85	2.20					
21							S	2.40	3.00	3.30	3.50	R	R	R	R	R	3.25	2.90	I2.10S					
22							S	2.50	2.90	3.25	3.70	3.80	3.80	R	A	R	3.20	2.85	2.20					
23							1.95	2.40	2.90	3.20	R	R	A	A	R	3.30	3.10H	2.70	2.20					
24							S	I2.30R	2.90	3.15	R	A	A	I3.60R	I3.50R	I3.40R	3.10	2.80	2.20					
25							S	2.50	3.05	3.25	R	R	A	R	R	3.35	3.15	2.80	2.20					
26							1.90	2.50	2.90	3.25	R	R	A	R	A	R	3.20	3.00	2.20					
27							S	2.45	3.00	3.35	R	R	R	I3.70R	I3.55R	3.40	3.10RH	2.80	2.10					
28							1.75	2.45H	2.80	3.20R	3.40R	R	R	R	A	A	3.10	2.75	2.20					
29							S	2.40	2.85	3.10	I3.35R	I3.45R	I3.70R	R	R	3.30	3.10	2.70	S					
30							S	2.40	2.90	3.10	R	A	R	R	R	3.20	3.00	2.70	2.10					
31																								
No.							4	29	30	28	18	10	6	9	13	19	29	29	21					
Median							1.80	2.40	2.90	3.10	3.35	3.40	3.60	3.45	3.35	3.30	3.10	2.70	2.10					

foE

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

The Radio Research Laboratories, Japan.

Y 3

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	E	E	E	S	S	G	G	G	3.1^{G}	3.0^{G}	2.9^{G}	3.1^{G}	3.0^{G}	3.0^{G}	G	J2.6^{G}	G	S	S	S	S	S
2	S	S	S	E	E	S	S	G	G	2.7^{G}	2.8^{G}	2.7^{G}	2.7^{G}	G	G	G	G	G	G	S	S	S	S	S
3	S	S	E	E	E	S	S	G	G	3.4	3.5	G	G	4.1	G	3.5	3.2	3.3	2.5	S	S	S	S	S
4	J3.3	2.4	2.2	2.9	2.9	S	S	1.8^{G}	G	2.9^{G}	3.9	3.3	G	3.3^{G}	3.2^{G}	3.4	G	2.2^{G}	2.0	S	E	S	S	S
5	S	S	S	E	E	E	S	2.7	G	3.3	G	C	3.1^{G}	3.4	2.5^{G}	2.4^{G}	2.5^{G}	G	G	S	S	S	S	S
6	S	S	S	E	E	C	S	G	G	3.1	3.5	G	3.9	3.8	3.8	3.0^{G}	G	2.9	J2.1	S	S	S	S	S
7	S	S	S	E	S	S	S	2.7	3.1	3.5	C	3.7	G	G	G	3.3	G	G	G	S	S	S	S	S
8	S	3.3	1.8	J1.8	E	S	J1.9^{S}	2.6	3.1	3.6	4.5	3.7	3.7	3.5	3.2^{G}	3.4	3.3	2.3^{G}	G	S	S	J2.5	S	J2.3
9	S	S	S	E	1.5	S	1.7	3.1	3.4	3.6	3.1^{G}	C	G	3.0^{G}	2.7^{G}	G	G	2.8	J2.5	S	J3.9	2.9	2.4	S
10	S	E	S	E	E	S	1.8	2.8	3.3	3.6	3.3	3.7	G	4.4	4.4	4.3	J5.9	3.8	4.6	3.0	J2.4	J3.3	J2.5	S
11	S	S	S	1.2	1.2	S	2.1	2.9	3.5	4.1	3.9	3.6	4.1	3.5	2.9^{G}	3.2	J5.2	2.9	3.3	S	S	S	S	S
12	S	S	S	E	E	E	S	2.8	3.1	3.6	4.2	4.3	4.2	3.7	4.3	J5.9	G	J4.3	5.3	J3.4	J2.3	S	S	S
13	3.1	J2.5	J2.3	1.3	E	S	2.0	3.4	4.3	4.7	4.7	4.7	4.4	4.0	G	G	G	G	3.1	2.2	S	J1.8^{S}	S	S
14	S	S	S	J2.2	J2.6	J2.2	S	2.8	3.5	4.1	4.1	3.9	3.9	G	4.4	4.4	J6.2	8.4^{M}	J6.3	5.9	5.8^{M}	J8.6	J5.3	3.2
15	J2.1	4.2	S	1.1	S	S	G	3.1	J4.9	4.5	3.9	3.6	3.9	3.7	3.5	3.4	2.8^{G}	2.6^{G}	J2.5	J2.6	J2.3	S	S	S
16	S	S	E	E	E	S	G	2.9	3.4	3.6	G	3.8	3.8	G	3.9	3.3	2.7^{G}	3.0	2.6	J2.7	J2.7	S	S	S
17	2.7	S	S	E	E	S	G	2.7	G	G	G	3.8	4.0	4.2	3.8	3.4^{G}	3.2^{G}	3.3	3.1	J2.6	J2.2	S	S	S
18	S	S	S	1.1	1.2	S	2.4	3.0	3.5	3.7	3.9	4.0	4.2	4.1	4.0	G	3.2	2.6^{G}	2.1	S	S	S	S	S
19	S	S	S	E	E	E	2.2	2.7	3.3	3.7	3.8	G	G	G	G	G	G	3.1	2.7	2.0	S	S	S	S
20	S	S	S	E	E	S	G	3.1	3.4	3.7	3.8	G	4.0	B	G	G	G	3.1	2.5	S	S	S	S	S
21	S	S	S	E	E	S	G	3.0	3.3	3.6	3.8	4.0	4.1	4.1	4.0	G	G	3.2	3.8	S	J2.4	S	S	J2.3
22	S	S	S	E	E	E	2.1	3.2	J5.3	2.9^{G}	3.9	3.2^{G}	3.2^{G}	3.3^{G}	3.8	3.2^{G}	3.7	3.8	J4.7	J3.7	J3.6	J3.0	S	S
23	S	S	E	E	E	S	G	2.7	4.4	4.8	4.7	J5.5	J7.6	8.5	G	G	G	3.2	3.3	J4.9	J8.3	6.8^{M}	J2.2^{S}	J3.8
24	J3.8	J2.6	2.9	J3.6	J2.5	J2.8	G	3.0	3.5	3.5	3.7	3.6	4.0	4.9	4.4	3.8	4.0	3.1	2.9	2.1	J3.6	S	S	S
25	S	S	S	E	S	S	2.1	3.0	3.3	G	J4.2	G	3.8	2.9^{G}	G	G	G	G	2.8	1.9	S	S	S	S
26	S	S	S	E	E	S	G	2.8	3.5	3.9	4.2	4.0	4.2	G	4.0	G	3.6	3.9	3.1	J4.3	J4.2	J2.7	3.0	2.2
27	S	S	J1.9	E	E	S	2.2	2.9	3.2	3.6	G	G	G	G	G	G	3.7	3.7	J5.4	J2.9	J2.0^{S}	3.2	S	S
28	S	S	S	E	E	S	2.0	2.8	3.6	3.6	3.8	G	G	3.0^{G}	3.6	3.3	G	3.0	2.5	J3.6	J2.9	S	J3.6	S
29	S	S	S	1.7	E	E	2.0	2.9	3.8	4.0	4.1	4.3	3.4^{G}	2.9^{G}	3.0^{G}	G	3.4	3.3	J4.3	J3.6	J2.3	S	S	S
30	S	S	E	E	E	S	2.1	J4.0	3.7	4.5	4.4	3.5	G	G	3.4^{G}	G	G	3.4	J4.8	2.7	J5.0	J2.6	S	S
31																								
No.	5	6	10	30	27	7	21	30	30	30	29	28	30	29	30	30	30	30	30	17	17	10	6	5
Median	3.1	2.6	E	E	E	E	1.9	2.8	3.4	3.6	3.8	3.6	3.8	G	G	G	G	3.0	2.8	2.9	2.7	3.0	2.8	2.3
U Q	3.6	3.3	2.2	1.1	E	2.2	2.1	3.0	3.5	3.9	4.2	4.0	4.0	4.0	3.9	3.4	3.4	3.3	3.8	3.6	4.0	3.3	3.6	3.5
L Q	2.4	2.4	E	E	E	E	G	2.7	3.1	3.3	G	G	G	G	G	G	G	G	2.1	2.4	2.3	2.6	2.4	2.2
Q R	1.2	0.9						0.3	0.4	0.6									1.7	1.2	1.7	0.7	1.2	1.3

foEs

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

The Radio Research Laboratories, Japan.

Y 4

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S				S	S				E3.1R	3.0G	2.9G	E3.1R	2.9G	2.7G		2.4G		S	S	S	S	S
2	S	S	S			S	S			2.7G	2.7G	E2.7R	2.7G							S	S	S	S	S
3	S	S				S	S			G	3.5			4.1		3.5	3.1	2.9	2.4	S	S	S	S	S
4	2.8	E	1.8	2.1	2.2	S	S	1.8G		2.8G	3.9	E3.3R		E3.3R	3.2G	E3.4R		2.0G	G	S		S	S	S
5	S	S	S				S	G		G		C	E3.1R	E3.4R	E2.5R	2.4G	2.2G			S	S	S	S	S
6	S	S	S			C	S			2.8	G		3.7	E3.8R	3.6	2.7G		G	1.9	S	S	S	S	S
7	S	S	S		S	S	S	G	G	3.5	C	3.6				G				S	S	S	S	S
8	S	2.2	1.7	1.7		S	S	G	3.0	3.6	4.4	3.6	3.7	E3.5R	3.2G	G	3.0	2.3G		S	S	1.8	S	E
9	S	S	S		1.3	S	1.7	2.9	3.4	3.5	E3.1R	C		2.9G	2.6G			G	2.0	S	3.6	2.6	E	S
10	S		S			S	G	G	3.2	3.6	E3.3R	3.7		4.2	4.2	4.1	5.4	3.5	3.8	2.7	2.4	2.6	2.2	S
11	S	S	S	E	E	S	2.0	2.8	3.4	3.9	3.9	3.6	4.1	E3.5R	2.8G	E3.2R	4.5	2.8	G	S	S	S	S	S
12	S	S	S				S	G	G	3.6	3.9	4.2	E4.2R	E3.7R	4.3	5.9		4.3	5.1	3.1	2.3	S	S	S
13	2.3	E	E	1.3		S	2.0	E3.4R	4.3	4.7	4.5	4.6	4.2	4.0					2.8	2.1	S	S	S	S
14	S	S	S	1.6	1.6	E	S	2.7	3.5	4.0	3.8	E3.9R	G		4.3	4.1	5.9	7.4	5.9	E5.9S	A	A	A	2.2
15	2.1	2.5	S	E	S	S		3.1	4.7	3.9	3.8	E3.6R	E3.9R	E3.7R	E3.5R	E3.4R	2.8G	2.5G	2.4	2.5	1.9	S	S	S
16	S	S				S		G	3.4	3.6		E3.8R	E3.8R		3.9	E3.3R	2.6G	G	2.6	2.7	A	S	S	S
17	2.2	S	S			S		G				E3.8R	4.0	4.1	E3.8R	E3.4R	2.9G	3.2	3.0	2.3	E2.2S	S	S	S
18	S	S	S	E	E	S	2.4	G	3.5	3.7	3.9	3.9	4.2	4.0	4.0		E3.2R	2.5G	G	S	S	S	S	S
19	S	S	S				2.2	G	3.3	3.7	G							G	2.6	2.0	S	S	S	S
20	S	S	S			S		G	G	3.7	G		E4.0R	B				G	G	S	S	S	S	S
21	S	S	S			S		G	3.0	3.6	3.8	E4.0R	E4.1R	E4.1R	4.0			3.2	3.6	S	E2.4S	S	S	2.2
22	S	S	S				2.1	3.0	3.8			3.2G	3.2G	E3.3R	E3.8R	E3.2R	3.7	3.7	3.8	3.7	2.7	2.5	S	S
23	S	S				S		G	3.4	3.7	4.7	4.1	6.7	7.2				3.2	2.8	E4.9S	A	A	S	3.8
24	3.8	2.5	1.9	2.7	2.5	2.6		2.9	3.5	G	E3.7R	E3.6R	4.0	4.8	4.1	3.8	4.0	2.9	2.8	2.1	3.6	S	S	S
25	S	S	S		S	S	G	2.9	3.2		4.0		E3.8R	2.9G					2.7	1.9	S	S	S	S
26	S	S	S			S		G	3.5	3.9	4.1	4.0	4.0		E4.0R		3.6	3.7	3.1	4.2	4.0	2.4	1.9	E2.2S
27	S	S	E			S	2.2	G	3.2	3.5							3.6	3.7	5.3	A	S	2.8	S	S
28	S	S	S			S	G	G	3.5	3.6	3.8			3.0G	E3.6R	E3.3R		G	G	3.6	A	S	2.5	S
29	S	S	S	1.3			G	G	3.7	3.8	3.9	4.0	E3.4R	2.9G	3.0G		3.4	3.3	4.2	3.5	2.1	S	S	S
30	S	S				S	G	3.3	3.6	4.5	4.0	E3.5R			E3.4R			3.4	4.7	2.7	E5.0S	E2.6R	S	S
31																								
No.																								
Median																								

foEs

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

The Radio Research Laboratories, Japan.

Y 5

IONOSPHERIC DATA

Apr. 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	E 1.85	E 2.00	E	E	E	E 1.70	E 1.60	1.80	E 1.60	1.90	2.40	2.20	2.45	2.20	2.30	1.90	1.60	E 1.50	E 1.70	E 1.60	E 1.90	E 1.95	E 2.00	E 1.80
2	E 2.10	E 1.85	E 1.70	E	E	E 1.75	E 1.70	1.80	E 1.60	2.30	2.30	2.30	2.45	2.30	2.50	2.40	2.00	1.90	E 1.70	E 1.70	E 1.90	E 1.80	E 2.00	E 2.50
3	E 1.90	E 1.90	E	E	E	E 1.80	E 1.60	1.80	E 1.70	1.90	2.30	2.00	2.50	2.10	2.10	1.90	1.90	E 1.60	E 1.70	1.95	E 1.70	E 1.80	E 2.00	E 1.90
4	E 1.70	E 1.80	E 1.70	E	E	E 1.60	E 1.60	1.30	E 1.50	1.95	1.85	2.20	2.30	2.25	2.30	2.00	2.00	E 1.65	E 1.60	E 1.75	1.30	E 1.90	E 1.90	E 1.90
5	E 1.90	E 2.30	E 1.80	E	E	1.40	E 1.70	2.00	E 1.60	1.90	2.05	E 4.20	2.25	2.30	2.20	1.90	E 1.55	E 1.60	E 1.80	E 1.65	E 1.70	E 1.85	E 2.05	E 2.00
6	E 1.85	E 1.90	1.90	E	E	C	E 1.60	1.70	1.70	1.60	1.80	2.20	2.00	1.90	1.85	1.85	1.90	E 1.60	E 1.70	E 1.90	E 2.05	E 1.90	E 2.10	E 2.00
7	E 2.00	E 2.15	E 2.60	E	E 1.60	E 2.15	E 2.50	1.35	1.60	1.75	2.00	1.95	2.00	2.45	2.00	2.30	1.85	E 1.50	E 1.55	E 1.70	E 1.70	E 1.80	E 1.85	E 1.90
8	E 1.60	E 1.60	1.15	E	1.45	E 1.80	E 1.80	1.70	E 1.60	1.90	1.85	1.85	2.20	2.10	2.20	1.95	E 1.65	E 1.65	E 1.50	E 1.80	E 1.80	E 1.70	E 2.00	E 1.50
9	E 1.65	E 1.65	E 1.40	E	E	E 1.70	E 1.60	E 1.40	1.80	1.90	2.20	2.35	2.35	2.40	2.00	2.20	1.90	E 1.70	E 1.40	E 1.85	E 1.85	E 1.80	E 1.90	E 1.70
10	E 1.90	2.10	E 1.70	1.20	1.40	E 1.90	E 1.60	E 1.70	E 1.55	2.20	2.25	2.30	1.90	2.20	2.20	2.20	1.90	E 1.60	E 1.60	E 1.85	E 1.60	E 1.70	E 1.90	E 1.90
11	E 1.70	E 1.70	E 1.60	E	E	E 1.70	E 1.60	E 1.50	E 1.75	1.80	1.95	2.30	2.30	2.45	2.00	1.90	E 1.60	E 1.60	E 1.70	E 2.00	E 1.50	E 1.90	E 1.90	E 1.85
12	E 1.70	E 1.85	E 1.40	E	1.60	1.20	E 1.65	1.95	E 1.60	2.00	2.10	2.30	2.45	2.80	2.10	2.30	2.20	E 1.70	E 1.80	E 1.70	E 1.60	E 1.70	E 2.30	E 2.00
13	E 1.70	E 1.90	1.80	E	1.10	E 1.90	E 1.60	E 1.50	E 1.70	2.00	2.30	2.20	2.30	2.80	1.95	2.50	2.00	1.85	E 1.60	E 1.50	E 1.70	E 1.80	E 1.70	E 2.10
14	E 1.90	E 2.00	E 1.60	E	E	E 1.60	E 1.60	E 1.70	1.65	1.80	2.00	2.30	2.30	2.45	2.50	2.20	1.80	E 1.60	E 1.60	E 1.75	E 1.75	E 1.70	E 1.90	E 1.50
15	E 1.70	E 1.55	E 1.60	E	E 1.60	E 1.80	E 1.80	E 1.50	E 1.50	2.30	2.05	2.30	2.30	2.30	2.50	2.50	2.25	E 1.55	1.20	E 1.60	E 1.70	E 1.90	E 2.20	E 1.90
16	E 1.60	E 1.75	E	E	1.60	E 1.90	E 1.50	1.55	1.85	2.30	2.05	2.50	2.50	2.80	2.50	2.30	E 1.80	E 1.60	E 1.50	E 1.60	E 1.60	E 1.80	E 2.20	E 1.90
17	E 1.75	E 1.90	E 1.60	E	E	E 1.80	E 1.60	1.30	E 1.55	1.75	2.30	2.20	2.45	2.30	2.40	2.25	E 1.80	E 1.60	E 1.40	E 1.50	E 1.70	E 2.00	E 1.90	E 1.90
18	E 1.90	E 2.00	E 1.70	E	E	E 1.70	E 1.75	1.60	2.00	1.95	2.30	2.30	2.65	2.55	2.25	2.45	1.90	E 1.80	E 1.60	E 1.90	E 1.70	E 2.05	E 2.20	S
19	E 1.90	E 2.00	E 2.00	E	E	1.00	E 1.70	1.95	1.90	1.90	2.30	2.45	2.50	2.60	2.30	2.30	2.30	E 1.90	E 1.70	E 1.50	E 1.80	E 1.70	E 1.80	E 2.30
20	E 2.15	E 2.20	E 1.80	E	E	E 2.10	E 1.60	1.85	1.85	2.20	2.25	2.70	2.70	4.10	2.60	2.30	2.20	E 1.80	E 1.50	E 1.90	E 1.70	E 1.55	E 2.20	E 1.70
21	E 1.90	E 2.10	E 1.55	E	E	E 1.70	E 1.60	1.60	1.80	1.95	2.30	2.30	2.60	2.60	2.50	2.30	2.20	2.00	E 2.15	E 2.30	E 1.50	E 2.40	E 2.20	E 1.70
22	E 2.00	E 2.00	E 1.60	E	2.10	1.15	E 1.80	E 1.55	1.85	2.40	2.40	2.20	2.25	2.45	2.25	2.25	1.90	E 1.60	E 1.50	E 1.60	E 1.60	E 1.60	E 2.00	E 1.70
23	E 1.60	E 1.90	1.60	1.00	E	E 2.00	E 1.80	1.60	1.85	1.90	2.00	2.20	2.70	2.55	2.90	2.05	1.90	E 1.75	E 1.80	E 1.55	E 1.80	E 1.80	E 2.25	E 1.80
24	1.30	E 1.80	1.20	1.70	1.30	E 1.55	E 1.60	1.50	E 1.80	1.90	2.30	2.30	2.40	2.40	2.45	2.30	2.20	2.10	E 1.60	E 1.60	E 1.90	E 2.00	E 2.20	E 1.70
25	E 1.90	E 1.80	E 1.60	E	E 1.60	E 1.50	E 1.70	E 1.80	2.05	2.30	2.30	2.20	2.50	2.25	2.20	2.30	2.00	1.90	E 1.80	E 1.65	E 1.70	E 2.00	E 2.40	E 1.95
26	E 1.80	E 1.95	E 2.00	E	E	E 1.60	E 1.60	E 1.70	E 1.80	2.30	2.40	2.40	2.45	2.45	2.45	2.40	2.20	E 1.70	E 1.80	E 1.60	E 1.80	E 1.50	E 1.80	E 1.80
27	E 1.70	E 1.70	E 1.65	E	1.00	E 1.60	E 1.70	E 1.70	E 1.85	1.90	2.20	2.50	2.85	2.60	2.20	2.40	2.00	E 1.90	E 1.70	E 1.50	E 1.90	E 1.90	E 2.60	E 1.70
28	E 1.80	E 1.80	E 1.50	E	E	E 1.60	E 1.50	E 1.60	2.00	2.20	2.30	2.20	2.40	2.35	2.20	1.90	E 2.00	E 1.50	E 1.60	E 1.50	E 1.50	E 1.80	E 1.80	E 1.90
29	E 1.60	E 1.70	E 1.70	E	E	1.10	E 1.70	E 1.50	E 1.60	1.90	2.30	2.40	2.30	2.40	2.30	2.30	2.30	1.90	E 1.70	E 1.60	E 1.60	E 1.90	E 2.10	E 1.90
30	E 1.90	E 1.85	2.00	E	1.75	E 1.50	E 2.00	E 1.65	E 1.90	1.90	2.00	2.30	2.30	2.30	2.20	2.20	1.90	E 1.50	E 1.80	E 1.85	E 1.80	E 1.80	E 2.20	E 2.00
31																								
No.	30	30	30	30	27	29	30	24	30	30	30	29	30	30	30	30	29	30	30	30	30	30	30	29
Median	E 1.80	E 1.90	E 1.60	E	E	E 1.70	E 1.60	E 1.60	E 1.70	1.90	2.25	2.30	2.40	2.40	2.25	2.30	1.90	E 1.65	E 1.65	E 1.70	E 1.70	E 1.80	E 2.00	E 1.90

f-min

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

The Radio Research Laboratories, Japan.

Y 6

IONOSPHERIC DATA

Apr. 1962 | M(3000)F2 | 135° E Mean Time (G.M.T. + 9h.) | Yamagawa | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.75	2.85	3.30	3.55	3.85	2.65	3.05	3.50	3.40	3.15	3.00	2.90	2.95	3.05	3.10	3.00	3.10	3.20	3.35	3.25	3.10	S	S	S
2	3.15	3.25	S	3.50	2.75	2.70	2.85	3.25	3.15	3.00	3.10	3.20	3.10	3.30	3.25	3.25	3.15	3.35	3.30	3.30	3.05	2.90	2.95	2.95
3	3.15	3.00	3.00	3.35	3.15	2.95	3.10	3.25	3.15	3.20	3.25	3.05	3.20	3.30	3.30	3.20	3.05	3.15	3.35	3.55	3.30	2.80	2.90	2.75
4	2.85	3.20	3.25	3.25	3.25	2.80	3.05	3.55	3.30	3.35	3.20	3.10	3.20	3.30	3.20	3.20	3.15	3.10	3.35	3.25	3.25	3.10	2.85	2.80
5	2.95	2.90	3.00	3.20	3.45	3.25	3.05	3.35	3.40	3.30	3.15	2.95	3.05	3.10	3.15	3.30	3.35	3.40	3.35	3.30	3.15	3.30	3.05	2.85
6	2.90	2.90	2.80	3.10	3.15	3.00	3.15	3.50	3.55	3.45	3.15	2.80	3.10	3.15	3.05	3.15	3.20	3.25	3.30	S	S	3.00	S	S
7	3.05	3.20	3.30	3.50	2.95	2.65	3.05	S	3.50	3.25	3.00	3.20	3.10	3.10	3.05	3.20	3.30	3.25	3.15	3.40	3.50	2.70	2.70	2.70
8	2.75	2.85	3.15	3.35	2.80	3.00	3.00	3.20	3.15	3.30	3.30	3.25	3.05	3.20	3.35	3.35	3.25	3.20	3.30	3.30	3.20	2.95	2.70	2.75
9	2.90	3.00	3.30	3.30	2.85	3.10	3.35	3.45	3.45	3.25	3.20	3.20	3.20	3.15	3.15	3.35	3.45	3.15	3.15	3.35	3.30	2.95	2.90	2.85
10	S	S	3.20	3.60	2.95	2.70	3.25	3.45	3.30	3.40	3.35	3.00	3.00	3.20	3.20	3.35	3.50	3.30	3.30	3.30	3.20	2.80	2.70	2.85
11	3.00	3.25	3.10	3.00	3.00	3.10	3.30	3.60	3.55	3.45	3.20	2.75	3.10	3.25	3.25	3.25	3.20	3.25	3.30	3.20	3.20	2.75	2.70	2.85
12	3.10	3.20	3.25	2.90	2.80	2.80	3.25	3.40	3.50	3.35	3.10	3.15	3.20	3.10	3.10	3.15	3.25	3.30	3.40	3.30	3.20	3.05	2.80	2.70
13	2.90	2.95	3.15	3.50	3.45	2.90	3.35	3.50	3.50	3.25	3.20	3.25	3.10	2.95	3.10	3.20	3.20	3.15	3.35	3.45	3.55	3.00	2.85	2.80
14	2.80	2.70	2.90	3.20	3.00	2.85	3.35	3.40	3.45	3.40	3.15	3.10	3.10	3.05	3.05	3.05	3.10	3.20	3.30	3.25	3.45	A	S	S
15	2.90	2.85	2.95	3.10	3.15	3.10	3.30	3.35	3.20	3.10	3.00	3.05	3.05	3.05	3.15	3.10	3.10	3.05	3.15	3.25	3.30	3.05	2.75	2.70
16	2.75	2.85	2.95	2.65	2.70	2.85	3.15	3.45	3.30	3.20	3.05	3.05	2.90	2.95	3.00	3.00	3.00	3.15	3.20	3.30	2.95	2.80	2.70	2.70
17	2.75	2.75	2.80	2.85	2.80	2.80	3.05	3.40	3.25	3.00	2.95	2.95	3.00	3.00	3.00	3.00	3.05	3.00	3.15	3.20	3.15	3.00	2.75	2.70
18	2.80	2.85	2.95	3.40	2.90	2.80	3.15	3.55	3.30	3.20	3.05	2.90	2.70	2.90	3.00	3.05	2.95	3.00	3.10	3.20	3.20	2.75	S	S
19	S	S	S	S	2.75	2.75	3.00	3.30	3.20	3.35	3.00	2.95	2.90	2.90	2.95	3.05	3.05	3.10	3.20	3.10	3.15	3.10	3.10	2.85
20	2.65	2.70	2.85	3.10	2.95	2.85	3.20	3.35	3.20	3.20	2.95	2.95	2.80	2.80	2.95	3.05	3.00	3.10	3.00	3.05	3.20	3.10	2.80	2.80
21	2.75	2.80	2.75	2.90	2.70	2.70	3.20	3.40	3.25	3.00	2.90	2.90	2.85	2.85	2.95	3.00	3.05	3.00	3.05	3.25	3.05	S	S	2.70
22	2.80	2.85	3.00	3.20	2.75	2.50	3.20	3.55	3.30	3.05	3.10	2.95	2.75	3.00	3.10	2.95	3.10	3.10	3.20	3.05	S	S	S	S
23	S	2.55	2.65	2.95	2.55	2.65	2.85	3.20	3.30	3.35	3.20	3.05	2.85	2.95	3.00	3.05	3.15	3.10	3.15	3.30	3.15	2.85	2.65	2.55
24	2.75	2.80	2.95	3.20	2.85	2.85	3.10	3.05	3.15	3.20	2.90	3.00	2.90	3.10	3.00	3.10	3.20	3.15	3.20	3.30	3.25	2.65	S	S
25	S	2.75	2.90	3.30	2.90	2.60	3.10	3.60	3.45	3.10	3.00	2.95	2.70	2.85	3.00	3.10	3.20	3.25	3.20	3.20	S	S	2.90	2.80
26	2.85	3.05	2.90	2.90	2.85	2.90	3.15	3.30	3.40	3.30	3.00	2.80	2.80	2.95	3.10	3.05	3.10	3.10	3.25	3.20	3.10	3.00	2.65	2.70
27	2.75	2.80	2.90	2.80	2.80	2.90	3.20	3.55	3.40	3.30	3.10	2.85	2.95	2.95	3.00	3.05	3.15	3.25	3.35	3.20	3.20	3.00	2.75	2.75
28	2.80	2.90	2.95	2.80	3.00	3.00	3.30	3.45	3.40	3.40	3.20	2.90	2.90	3.10	3.00	3.00	3.05	2.90	3.15	3.25	3.35	3.10	2.80	2.80
29	2.85	2.85	2.85	2.80	2.90	2.95	3.25	3.60	3.25	3.40	3.15	2.95	3.00	3.10	2.80	2.95	3.10	3.15	3.20	3.45	3.45	2.75	2.70	2.70
30	2.70	2.80	2.85	3.00	2.95	3.00	3.40	3.55	3.20	3.60	3.05	2.85	3.00	3.05	3.25	3.05	3.20	3.25	3.25	3.40	S	S	2.65	2.80
31																								
No.	26	28	28	29	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	29	26	24	23	24
Median	2.80	2.85	2.95	3.20	2.90	2.85	3.15	3.45	3.30	3.30	3.10	2.95	3.00	3.05	3.10	3.10	3.15	3.15	3.20	3.25	3.20	3.00	2.75	2.80

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

Apr. 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	L^H	L	L^H	3.50	3.80	L								
2										L	L	3.65	3.70^L	3.55^L	I 3.70^L	3.70								
3										L	3.70^L	L	L	3.55^L	3.70^L	L								
4										L	L	3.80^L	3.70^L	3.60	3.60	3.75^L	L							
5										L	3.60^L	3.85	I 3.80^L	3.45^L	3.50^L	3.70	L							
6										L	3.60^LH	L	3.65	3.70^H	L^H	3.75								
7											L	I 3.60^L	3.60	I 3.60^LH	I 3.60^L	3.75	L							
8										L	A	3.65	3.70^L	3.60	3.65	I 3.70^L	L							
9										L	3.75	3.60^L	3.65	3.70	I 3.65^L	3.75	L							
10										L	L	L	L	3.70^L	3.55	L	A							
11												L	L	3.70	L	L								
12											L	3.60	L	L	L	I 3.60^A	3.55^L	A						
13										L	3.65	A	3.85^L	3.70^L	I 3.65^L	3.55^LH	L							
14										L	3.85	3.75^LH	3.70	3.85^LH	I 3.65^L	3.60^L	A							
15											L	R	L	L	L	3.60^L	L							
16										L	L	L	L	L	L	L	L	L						
17											L	L	L	L	3.50^L	L	L^H							
18											L	3.80^L		3.55	I 3.50^L	3.55^L	L							
19											L	L	L		L	L								
20										L	L	L	L	L	L	L	L							
21											L	L	L	L	L	3.55								
22											3.60^L	I 3.70^L	3.60	I 3.60^L	I 3.60^L	L	L							
23										L	A	L	A	A										
24									L	L	3.75^L	3.60^L	3.80	A	3.55^L	I 3.60^L	L							
25										L	3.60	L	L^H	3.90	3.75	L	L							
26										L	L	3.70^L	3.50	3.35^L	I 3.60^R	I 3.55^L	3.55^L							
27											L	L	I 3.60^L	3.55	3.50^H	3.40	L							
28											L	L	3.45	3.35	3.55	3.60	3.55							
29										L	3.55^L	3.60	3.75	3.60^H	3.80^LH	3.50^H	3.50^L	L						
30												L	I 3.65^L	3.80	3.60	L	L	L						
31																								
No.											10	13	16	21	21	18	4							
Median											3.60	3.65	3.70	3.60	3.60	3.60	3.55							

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

Apr. 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										260	290	285	295	290	280	275								
2										290	290	280	285	280	260	255								
3										265	280	290	290	275	260	280								
4										280	285	290	280	275	280	260	290							
5										280	290	320	300	300	290	260	255							
6										250	290	330	305	280	285	260								
7											305	285	300	300	290	260	255							
8										260	260	275	300	280	255	260	255							
9										275	285	290	280	260	285L	265	260							
10										250	260	300	310	270	280	275	250							
11												300	310	275	280	280								
12											285	300	290	275	280	285	280	255						
13										290	290	260	280	300	295	280	270							
14										260	260	300	290	290	300	280	260							
15											285	300	295	300	285	275	270							
16										280	290	285	305	305	300	295	290	275						
17											305	300	305	290	290	290	280							
18											285	295		320	300	280	270H							
19											290	305	295		300	300								
20										280	290	290	300	305	310	280	280							
21											300	300	305	320	305	285								
22											290	285	330	300	290	280	285							
23										275	275	300	345	300										
24									280	275	270	300	300	295	300	270	280							
25										300	300	330	305	320	300	290	270							
26										260	285	320	350	310	290	285	280							
27											300	325	305	310	305	300	275							
28											280	330	335	300	290	295	280							
29										270	300	325	310	285	295	320	280	280						
30												350	310	315	285	290	280	275						
31																								
No.									1	18	28	30	29	29	29	29	22	4						
Median									280	275	290	300	300	300	290	280	280	275						

h'F2

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

The Radio Research Laboratories, Japan.

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IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	305	300	245	205	210	E320S	275	240	230	235	205H	250	230H	210	225	210	230H	250	250	225	250	295	325	310
2	300	260	225	205	220H	320	285	245	245	220	235	215	205	210	240	220	220H	250	245	230	240	290	300	285
3	250	275	270	250	210	275	270	240	250	240	225	210	250	250	225	205	225H	250H	250	220	215	290	340	345
4	355	275	250	250	280	340	275	240	245	220	225	225	220	200	230	225	225	220H	250	230	210	240	310	305
5	300	300	300	250	205	240	250	235	245	240	225	240	245	200	230	240	230	220H	240	240	245	240	255	295
6	290	295	300	255	240	I255C	255	240	240	230	195H	200	225	230H	190H	215	205H	210H	245	240	240	245	340	330
7	290	255	250	225	255	350	300	240	240	240	I225C	210	225	210H	240	225	210	235	255	240	220	305	310	340
8	320	310	260	225	320	315	270	250	250	240	A	230	210	230	230	220	205	205H	255	240	235	250	310	340
9	340	300	240	230	350	370	250	240	240	235	240	205	220	220	200	225	200	245	255	240	235	250	310	305
10	310	305	275	225	195H	I330D	270	250	250	245	220	205	260	250	E270A	A	A	250	255	250	240	310	340	300
11	260	250H	275	250	250	255	255	245	240	250	240H	205	245	220	250	240	I250AH	245	255	245	235	275	340	305
12	260	250	240	255	340	320	250	245	230	230	220	245	250	255	255	I230A	225	I250A	250	245	250	240	320	330
13	305	300	255	230	200	300	245	235	240	A	E250A	I250A	210	240	205	200H	235	250	255	235	205	230	300	305
14	305	320	295	270	250	290	250	240	235	230	205	200H	205	195H	275	255	A	AH	250	270	E310A	A	A	320
15	300	305	280	245	250	250	250	240	250	240H	210	225	210	200	205	245	230	250H	255	245	240	230	300	320
16	310	300	275	305	300	300	230	240	235	240	230	220	205	200	235	240	240	245	255	240	230A	270	305	320
17	305	320	300	270	275	310	250	240	240	240H	220	230	205	200	240	235	230H	240H	255	240	240	220	330	310
18	320	300	270	225	190H	310	255	245	250	240H	230	225	220H	220	220	240	230	250H	255	240	220	240	340	I330S
19	290	285	290	230	285	300	260	250	245	245	230	220	225	230H	215	210	230H	250	250	255	240	240	250	300
20	310	335	290	240	240	300	250	245	240	245	220	210	210	210	200	225	245	255	255	250	240	225	260	290
21	295	300	300	250	290	320	250	240	240	255H	225	210	205	210	230	240	220H	250	260	240	240	250	340	335
22	300	300	270	240	360	360	250	230	250	220H	220	210	220	220	220	245	240	255	250	255	275	275	285	310
23	320	340	310	255	270	320	255	250	240	240	I240A	215	A	A	230H	225H	225H	245H	260	250	I250A	I260A	305	400
24	350	300	275	250	300	340	260	250	250	235	230	205	205	E270A	230	220	250	250	250	240	250	280	340	305
25	300	320	270	205	280H	350	270	240	240	230	225	205	200H	200	205	250	250	245H	240	250	270	250	280	320
26	300	265	290	255	240	290	255	240	240H	240	230	225	220	215	245	250	240	260	255	260	255	250	280	340
27	320	320	290	250	280	300	260	235	235H	220H	220	210	225	215	205H	250	275	255	250	240A	240	265	350	320
28	305	300	275	240	270	275	240	240	240	240H	220	230	220	260	230	220	225	220H	260	255	230A	210	330	300
29	305	300	290	270	270	280	250	230	240	240	215	225	210	200H	200H	200H	250	255	260	240	215	280	320	340
30	315	305	300	250	260	260	240	230	240	240	220H	220	240	225	200	235	245	250	255	240	240	300	310	330
31																								
No.	30	30	30	30	30	29	30	30	30	29	28	30	29	28	29	29	28	29	30	30	29	29	29	30
Median	305	300	275	250	265	300	255	240	240	240	225	220	220	215	230	225	230	250	255	240	240	250	310	320

h'F

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

The Radio Research Laboratories, Japan.

IONOSPHERIC DATA

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	E	E	E	S	S	G	G	G	115	110	110	110	110	110	G	105	G	S	S	S	S	S
2	S	S	S	E	E	S	S	G	G	110	110	110	110	G	G	G	G	G	G	S	S	S	S	S
3	S	S	E	E	E	S	S	G	G	175	150	G	G	130	G	145	145	125	125	S	S	S	S	S
4	120	110	110	105	105	S	S	120	G	115	130	110	G	110	110	110	G	110	105	S	E	S	S	S
5	S	S	S	E	E	E	S	160	G	150	G	C	110	105	105	105	105	G	G	S	S	S	S	S
6	S	S	S	E	E	C	S	G	G	110	110	G	110	110	110	105	G	140	105	S	S	S	S	S
7	S	S	S	E	S	S	S	155	150	145	C	140	G	G	G	155	G	G	G	S	S	S	S	S
8	S	110	105	105	E	S	S	150	145	140	125	130	115	110	110	120	110	105	G	S	S	115	S	130
9	S	S	S	E	110	S	150	145	140	140	110	C	G	110	105	G	G	170	105	S	105	105	110	S
10	S	E	S	E	E	S	160	155	150	145	115	145	G	140	165	150	140	130	125	125	120	120	120	S
11	S	S	S	110	130	S	150	150	140	130	130	140	115	105	105	105	100	100	150	S	S	S	S	S
12	S	S	S	E	E	E	S	155	140	140	130	130	130	130	130	130	G	125	120	115	115	S	S	S
13	115	125	110	105	E	S	160	150	140	140	135	140	140	150	G	G	G	G	140	130	S	S	S	S
14	S	S	S	110	110	110	S	160	140	130	135	135	140	G	170	155	140	130	125	125	120	120	120	120
15	110	105	S	100	S	S	G	145	130	130	120	130	115	110	110	115	110	105	105	105	100	S	S	S
16	S	S	E	E	E	S	G	155	150	145	G	140	125	G	145	105	105	155	130	120	120	S	S	S
17	105	S	S	E	E	S	G	175	G	G	G	140	110	110	110	105	105	155	140	105	105	S	S	S
18	S	S	S	110	110	S	150	155	150	150	140	140	130	125	125	G	125	105	100	S	S	S	S	S
19	S	S	S	E	E	E	150	170	150	145	145	G	G	G	G	G	G	130	145	140	S	S	S	S
20	S	S	S	E	E	S	G	150	150	150	150	G	140	B	G	G	G	155	140	S	S	S	S	S
21	S	S	S	E	E	S	G	155	150	150	130	140	140	140	140	G	G	150	125	S	120	S	S	100
22	S	S	S	E	E	E	150	140	135	145	125	110	110	105	115	110	150	135	125	120	115	110	S	S
23	S	S	E	E	E	S	G	145	135	130	125	115	110	110	G	G	G	170	130	120	120	120	S	105
24	105	105	110	110	110	110	G	140	135	140	130	110	110	130	140	140	130	130	130	100	110	S	S	S
25	S	S	S	E	S	S	150	150	145	G	130	G	110	105	G	G	G	G	140	140	S	S	S	S
26	S	S	S	E	E	S	G	140	135	130	125	125	115	G	110	G	160	140	130	125	120	120	120	120
27	S	S	105	E	E	S	140	130	145	130	G	G	G	G	G	G	155	145	130	125	S	120	S	S
28	S	S	S	E	E	S	140	140	130	140	125	G	G	105	115	110	G	150	155	130	120	S	115	S
29	S	S	S	105	E	E	150	140	125	130	125	120	110	120	110	G	150	135	125	120	120	S	S	S
30	S	S	E	E	E	S	150	135	135	125	140	110	G	G	110	G	G	145	130	130	120	120	S	S
31																								
No.	5	5	5	9	6	2	12	26	23	27	25	21	21	21	21	17	15	25	25	17	15	9	5	5
Median	110	110	110	105	110	110	150	150	140	140	130	130	115	110	110	110	130	135	130	125	120	120	120	120

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

Apr. 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											l	l	l	l	l	l		l2						
2										l	l	l	l											
3										h	h			h		h	h	h3	C2					
4	f3	f	f2	f2	f5			l		l	h	l		l	l2	l2		l2	l					
5								h		h			l	l	l	l	l2							
6										l2	l		l	l	l2	l2		h	l					
7								h2	h2	h		h				h								
8		f2	f	f			h	h	h2	h	h2	h	l	l	l	l	l3	l				f		f
9					f3		h	h3	h2	h	l			l	l			h	l2		f3	f3	f	
10							h	h2	h	h	l	h		h	h	h	h3	h2	C5 l	f2	f	f2	f	
11				f	f		h5	h3	h3	h	h	h	l	l	l	l2	l2	l4	h					
12								h	h	h	h	h	h	h	h	h		C2	C2	f3	f2			
13	f	f2	f	f			h	h4	h2l2	h l	h l	h l	h	h					h2	f4		f		
14				f2	f2	f2		h	h2	h	h	h	h		h	h	h2	h3	C4	f5	f2	f2	f	f2
15	f	f3		f				h2	h	h	h	h	l	l	l	l	l	l3	l3	f3	f2			
16								h3	h	h		h	h		h	l2	l2	h l	h3	f	f2			
17	f2							h				h	l	l	l	l2	l2	h2l2	h3l2	f2	f			
18				f	f		h	h	h	h	h	h	h	h	h		h l	l2	l					
19							h	h	h	h	h							h	h2	f				
20								h2	h	h	h		h					h2	h					
21								h2	h	h	h	h	h	h	h			h	C3		f			f
22							h2	h2	h2	h l	h l	l	l	l	l	l	h	h2	C4	f6	f2	f2		
23								h	h2	h	h	C	l2	l3				h	h3	f6	f2	f2	f	f4
24	f3	f	f2	f3	f3	f5		h2	h2	h	h	l	l	h	h	h	h	h	h2 l	f2	f5			
25							h	h2	h		h		l	l					h3	f				
26								h2	h	h	h	h	l		l		h	h	C3	f5	f2	f2	f2	f
27			f				h2	h2	h	h							h	h2	C5	f6	f	f3		
28							C	h2	h2	h	h			l	l	l		h	h2	f6	f5		f2	
29				f			h	h2	h	h	h	h	l	l	l		h	h2	C3	f2	f			
30							h	h3	h2	h2	h2	l			l			h	C	f2	f2	f2		
31																								
No.																								
Median																								

Types of Es

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

The Radio Research Laboratories, Japan.

Y 12

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SOLAR RADIO EMISSION 200 Mc/s

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

HIRAISO

Time in U.T.

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

Note No observations during the following periods:

1st 0030 - 0450
25th 2000 - 0500 (26th)
26th 2000 - 2350
29th 2000 - 0300 (30th)

Outstanding Occurrences

Apr. 1962	Start-time	Dura-tion	Type	Max. Inst.	Int. Smd.	Max. Time	Remarks
10	2318.3	1.0	CD/4	530	270	-	
	2322.7	0.5	CD/4	470	50	-	
12	0544.5	0.6	CD/4	450	130	-	
	2149.1	8	CD/4	120	30	2150.4	
	2200.5	13	CD/8	460	120	2210.4	
20	0245.0	3.5	CD/4	130	50	0246.9	
	2002.7	3.5	CD/4	170	60	2004.2	
	2006.6	3.0	CD/4	>450	230	2008	off scale
23	0349.6	0.6	CD/4	320	90	-	

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Apr. 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	4+	4 4 3	(5) - - 4	(5) 5 4 4	(4) 5 4 4	N N N N			
2	4-	4 (4) 3	3 - 4 4	4 3 3 4	4 3 4 4	N N N N			
3	4-	3 3 3	4 - - 4	4 4 4 4	4 4 4 4	N N N N			
4	4-	3 3 4	4 - - 4	4 3 4 5	5 5 4 4	N N N N			
5	3+	3 3 3	(3) - 4 4	4 3 4 4	4 3 3 4	N N N N			
6	4-	3 3 (3)	4 - - 3	4 4 4 4	4 4 4 3	N N N N	03xx	---	104γ
7*	3-	3 3 2	2 - - 1	3 3 3 3	4 4 4 3	N N N N	---	---	
8*	2o	1 2 2	1 - - 2	3 2 3 3	4 3 4 3	N N U U	---	---	
9	2+	2 2 2	1 - - 3	3 2 3 3	4 4 4 4	U U U U	---	03xx	
10	3o	2 3 2	4 - - 3	4 3 4 3	4 4 4 4	N N N N	05xx	---	85γ
11	3-	2 3 2	2 - - 3	2 3 3 3	4 4 4 3	N N N N	---	---	
12	3+	3 3 4	3 - - 4	3 3 4 4	3 4 5 4	N N N N	---	04xx	
13	4-	3 3 4	3 - 4 5	4 4 (4) 4	4 4 4 4	N N N N			
14	4+	4 4 4	4 - 4 5	5 4 5 5	4 5 4 3	N N N N			
15	4+	4 (4) 4	5 - 4 4	5 5 4 4	4 5 4 4	N N N N			
16	4o	4 4 4	4 - (C C)	4 4 4 4	4 4 4 4	N N N N			
(17)	4-	4 4 4	(3) - - 4	4 4 3 3	4 4 4 4	N N N N			
(18)	4o	4 4 4	4 - - 3	4 4 4 (4)	4 4 4 4	N N N N			
(19)	4+	5 4 5	4 - - 4	4 4 4 (4)	4 4 4 4	N N N N			
20	4+	4 4 4	5 - 4 5	5 4 4 4	4 4 5 4	N N N N	2355	---	
21	4o	4 4 3	4 - - 3	4 5 5 4	4 5 4 4	N N N N	---	---	107γ
22*	3o	2 3 3	3 - - 2	4 4 4 3	4 5 4 4	U U U U	---	---	
23*	3-	2 (C C)	2 - - 2	3 3 3 3	4 4 4 4	U U U U	---	18xx	
24	4-	4 4 4	2 - - 3	4 4 3 4	4 4 4 4	U N N N			
25	4-	4 3 4	3 - - 3	4 4 4 4	(4) 4 4 3	N N N N			
26	4o	4 4 4	4 - - 4	4 4 4 4	4 5 4 4	N N N N			
27	4o	4 3 3	4 - - 4	4 4 4 5	4 4 4 4	N N N N			
28	4o	3 4 4	4 - - 4	5 5 4 4	4 5 4 4	N N N N			
29	4+	5 (4 4)	4 - - 4	5 4 4 5	4 4 4 4	N N N N			
30	4+	4 4 4	4 - - 5	4 4 4 5	4 4 4 4	N N N N			

* = 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.

Apr. 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										
20	13/12"						19.57	33	Slow	1+				x	x	
21	21	30		15			02.02	17	S	2						

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