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IONOSPHERIC DATA IN JAPAN

FOR JANUARY 1957

Vol. 9 No. 1

Issued in February 1957

Prepared by

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

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THE RADIO RESEARCH LABORATORIES

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SYMBOLS AND TERMINOLOGY

In accordance with the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, September 2, 1956, there has been some revision of the procedures for production, reduction and presentation of ionograms and ionosphere characteristics.

A number of modification in the standard scaling symbols and terminology are being made as given in the following list.

Terminology

f_oF2	}	The ordinary-wave critical frequency for the $F2$, $F1$ and E layers respectively.
f_oF1		
f_oE		
f_oE_s		The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.
f_oE_s		The lowest frequency at which E_s is effectively transparent, this is usually judged from vertical incidence reflections obtained from a layer at greater height than that to which f_oE_s applies.
f -min		That frequency below which no echoes are observed.
$(M\ 3000)F2$		The maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.
$(M\ 3000)F1$		The maximum usable frequency factor for a path of 3000 km for transmission by $F1$ layer.
$h'F2$		The minimum virtual height, $h'F2$, refers to the highest 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_oE_s and the f_oE_s data.
h_pF2		The virtual height of the $F2$ layer measured on the ordinary-wave branch at a frequency equal to $0.834 f_oF2$.
y_pF2		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 h_pF2 and the virtual height at $0.969 f_oF2$)

a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

- | | |
|---|--|
| A | Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example, E_s . |
| B | Measurement influenced by, or impossible because of, absorption in the vicinity of f -min. |
| C | Measurement influenced by, or impossible because of, any non-ionospheric reason. |
| D | Measurement influenced by, or impossible because of, the upper limit of the normal frequency range. Used in a qualifying sense, see below. |
| E | Measurement influenced by, or impossible because of, the lower |

- limit of the normal frequency range. Used in a qualifying sense, see blow.
- F Measurement influenced by, or impossible because of, the presence of spread echoes.
- G Measurement influenced or impossible because the ionization density of the layer is too small to enable it to be made accurately.
- 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.
- 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 preceding 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.

SITES OF THE RADIO WAVE OBSERVATORIES

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

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

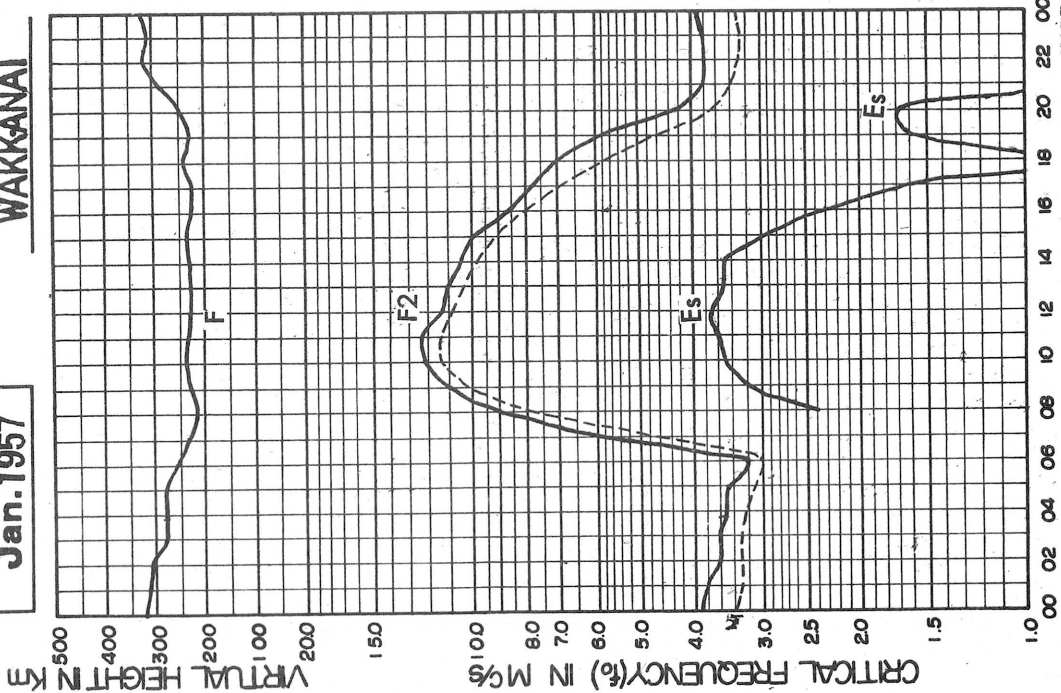
Solar radio emission is observed at Hiraiso Radio Wave Observatory.

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

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

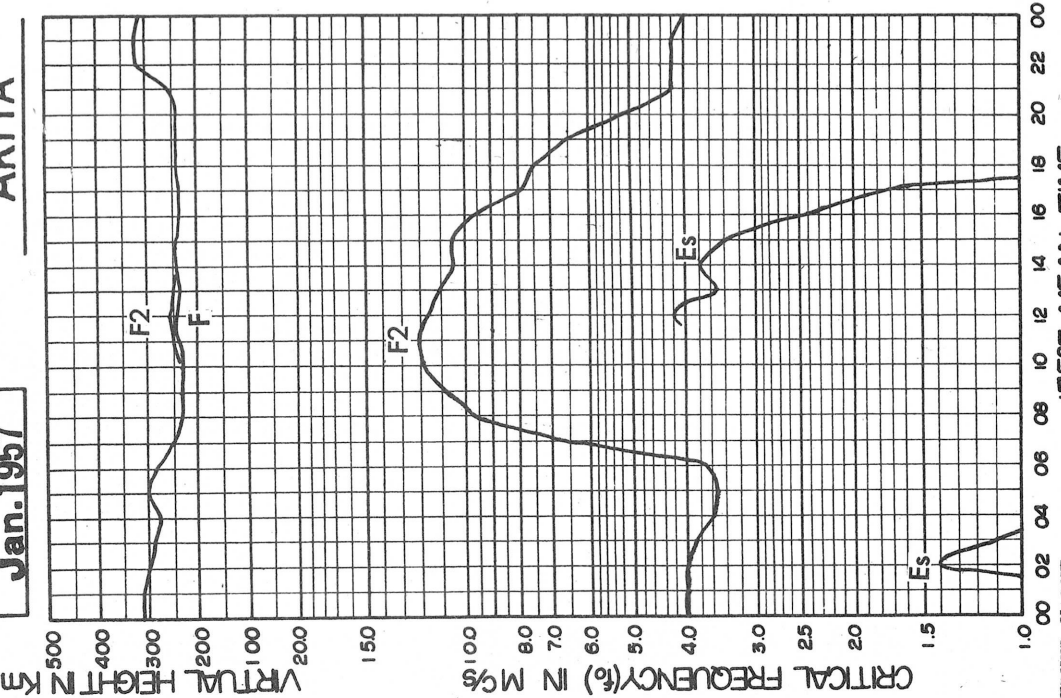
Jan. 1957

WAKKANAI



Jan. 1957

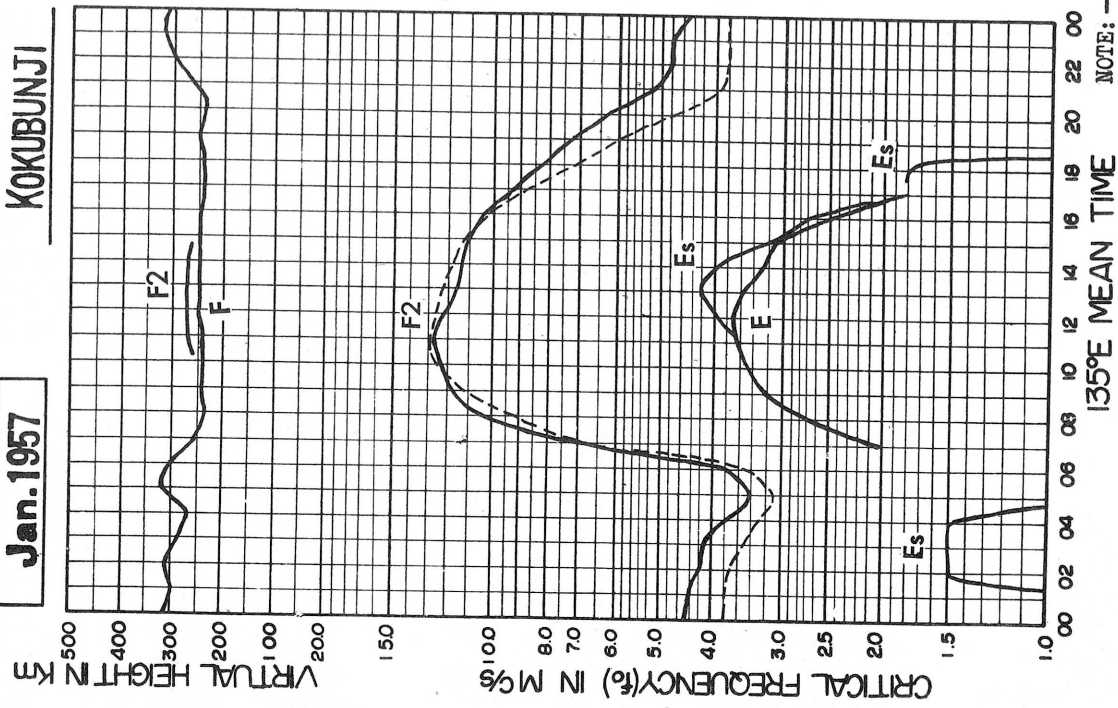
AKITA



IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

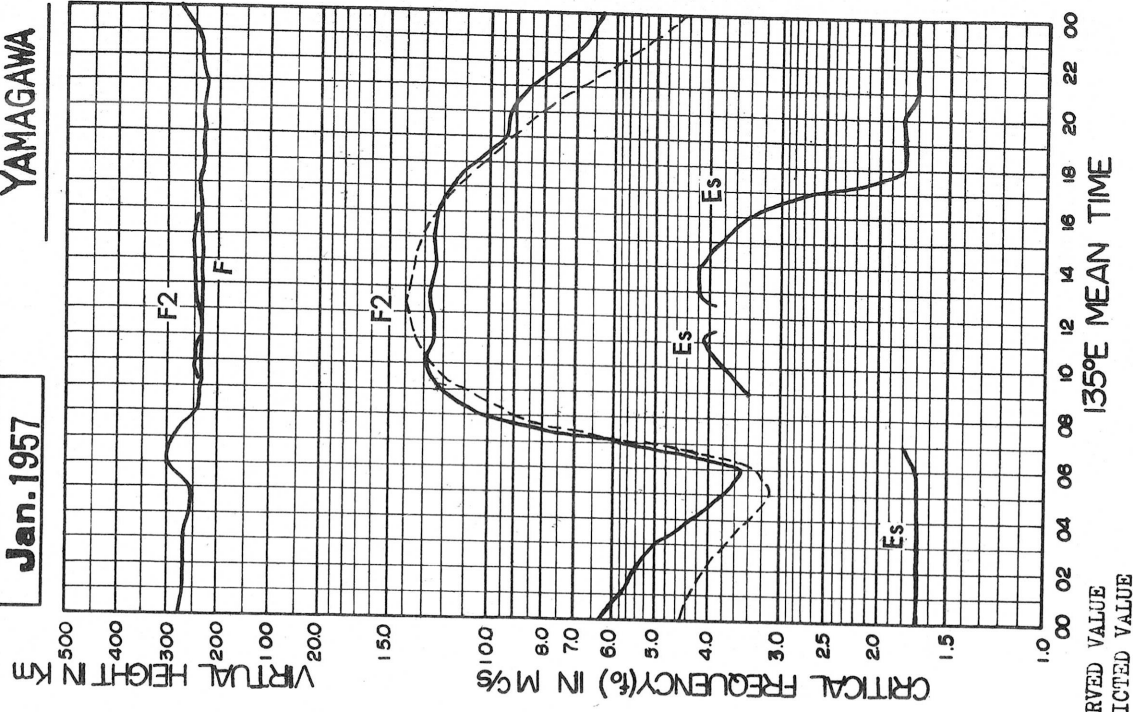
Jan. 1957

KOKUBUNJI



Jan. 1957

YAMAGAWA



NOTE: — OBSERVED VALUE
--- PREDICTED VALUE

Lat. 46° 28.6' N
Long. 141° 41.1' E

Wakanai

IONOSPHERIC DATA

foF2

Jan. 1957

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.5	3.5	3.8	3.7	3.2	2.8	2.8	5.5	8.7	11.4	12.7	12.3	11.3	10.5 ^H	10.0	10.7	7.2	6.5	5.6	4.2	3.4	3.3	3.4	3.5
2	3.5	3.8	3.3	3.0	3.2	3.3	3.3	5.0	8.0	10.2	C	C	C	C	C	C	C	C	C	C	3.3	3.2	3.7	3.9
3	4.0	3.9	F	F	F	U2.5F	2.5	5.2	10.1	10.8	12.7	12.3 ^H	12.0 ^H	11.5 ^H	10.6 ^H	10.0	9.0	8.0	7.3	5.8	5.2 ^J	4.3	4.4	4.4
4	4.5 ^S	4.7	4.4	4.0	3.9	3.9	3.8	5.3 ^H	8.9	10.8	12.6	12.5	10.8 ^H	10.5 ^H	10.4	9.7 ^H	8.7	7.7 ^H	7.0	6.1	4.5	3.9	3.8	3.7
5	3.5	3.7	3.6F	3.5F	3.5F	3.5	3.2	4.8	8.6	10.0	11.2	10.8	10.0 ^H	9.6	9.7	9.3	7.0 ^H	6.7	6.5	5.5	3.6	3.3	3.5	3.7
6	3.5	3.5	3.4	3.4	3.3	3.3F	3.0	5.6	8.0	10.0	12.2	11.7	10.1 ^Z	10.0 ^H	10.0	9.1	7.5 ^H	7.5	6.3	4.0	3.6	3.4	3.6	3.5F
7	3.5F	3.5	3.5F	3.5F	3.2F	U3.2F	3.2	6.3	9.3	10.3	11.0	11.8	11.2	9.6	9.8	9.5	7.8	7.8	7.5	6.8	4.6	4.1	4.0	4.0
8	4.0	4.0	4.0	3.6	3.6	3.5	3.5	5.5	8.0 ^J	10.6	12.5	12.5 ^H	11.2 ^H	10.4 ^H	11.0	9.5	8.7	8.0	7.6	5.3	3.9	3.8	3.8	3.9
9	4.0	4.3	4.0	3.5	3.5	3.4	2.6	5.7	7.5	9.5	12.6	12.3 ^H	11.7	11.7	10.7	9.8	9.0	7.0	6.5	5.8	3.2	3.0	3.2	3.4
10	3.5	3.3	3.3	2.5	2.7	2.6	2.6	6.3	C	C	11.8	12.3	12.3 ^H	11.1	10.5	10.0	9.2	8.0	6.7	6.0	4.1	3.5	3.5	3.5
11	3.2	3.3	3.2	3.3	3.5	3.5	3.1	5.5	9.3	10.0	12.0	12.0	11.1	11.1	10.0	10.5	8.5	7.8	7.2	6.7	5.0	4.2	4.3	4.2
12	4.0	3.8	3.6	3.6	3.5	3.5	3.6	5.8	8.7	12.3	12.0	12.0	11.6	11.7	10.5	9.8	8.5	7.5	6.6	5.0 ^J	4.0	F	4.0 ^F	
13	3.9	3.7	4.0	4.0	3.2	2.9	2.6	5.2	C	C	C	C	C	C	C	C	8.5	6.5	4.8 ^J	4.8	3.5	3.2	3.4	3.4
14	3.4	3.4	3.5	3.5	3.4	3.3	3.2	5.3 ^J	8.4	8.7	9.3	10.5	8.7	9.3	9.1 ^H	9.1	6.8	6.0	6.0	4.8	4.2	3.2	3.3	3.3
15	3.4	3.4	3.5	3.4	3.5	3.6	3.5	6.0	9.0	11.0	12.3	12.5	11.7 ^H	10.7	11.0	9.5	8.7	7.1	6.6	5.3	3.7	3.8 ^S	3.9	3.8
16	3.9	4.0	3.8	4.0	3.9	3.5	3.9	6.0	9.5	11.1	10.7	12.5	11.8 ^H	9.5	9.7	10.0	8.0	6.5	5.6	4.8	3.4	3.2	3.1	3.2
17	3.3	3.3	3.6	3.5	3.3	3.0	3.0	5.6	9.4	11.4	12.3	12.8 ^H	12.0	10.8 ^H	9.3	10.5	8.3	6.5	6.0	4.8	3.6	3.1	F	F
18	3.7	3.5	3.5	3.5	3.5	3.3	3.0	6.0	8.6	10.5	11.1	10.9	10.5	10.8	10.0	10.3	8.5	6.1	6.3	5.8	4.0	3.5	3.2 ^J	3.5
19	3.5	3.5	3.6	3.7	3.0F	2.7F	2.8	5.5	8.5	10.0	10.7	12.3	10.7	10.7	10.6	10.3	7.8	6.0	5.8	5.2	4.0	3.5	3.5F	3.5
20	3.6	3.7	3.5	3.5	3.5F	3.5F	3.2 ^H	5.7	8.0	11.8	12.0	11.0	11.1	12.0	10.7	11.3	9.0	8.0	6.1	5.0 ^J	4.0	3.8	3.8	3.8
21	3.8	3.8 ^A	3.7	4.0	4.1	3.8	3.4	6.1	8.3	10.6	11.5	12.6 ^J	12.5	11.1	10.2	10.4	9.2	8.8	8.3 ^J	5.0 ^S	4.5	4.5	4.7	4.5
22	4.1	3.9	3.4	3.3	3.2	2.8 ^H	2.2	5.9	7.2	12.3	11.5 ^H	12.6 ^H	12.8 ^H	12.4	12.3	12.5	11.5	10.0	7.3	6.5	6.3	6.0	5.8	6.2 ^S
23	6.5	6.5	6.7	6.6	5.8	5.7	5.2	6.7	9.8	12.3	14.0 ^J	12.8	13.2 ^J	11.7	11.5 ^H	11.4	10.2	10.5	8.2	6.7	6.3	5.4	5.5	5.8
24	6.0	5.3	5.3	5.2	5.2	4.8	4.5	7.5	10.3	12.8	13.0	12.3	12.0	11.0	10.3 ^H	11.0	10.3	8.5	7.5	6.5	5.5	5.3	4.5	4.5
25	4.3	4.3	4.1	4.3	4.1	3.0	2.8	6.7	10.0	11.0	12.5	12.6	11.0	11.3	11.0	10.6	10.3	9.3	9.0	7.0	6.5	6.3	5.8	5.5
26	5.0	5.2 ^J	5.1 ^F	5.5	F	F	4.0F	6.8	10.5	11.1	11.2 ^C	11.2	11.3	10.6	11.0	9.2	9.2	8.6	7.8 ^J	6.1	4.8	4.7	4.6	4.9
27	4.6	4.3	4.4	4.5	4.4	4.5	4.3	7.2	C	C	C	C	C	C	C	C	9.5	8.5	7.3	6.5	5.2	4.3	3.3	3.6 ^J
28	4.5	4.5	3.4	3.5	3.5	3.7	3.8	6.8	10.4	11.5	12.3	11.6	10.8	12.0	10.5	9.8	9.2	8.4	7.7	6.5	5.3	4.9	4.3	3.5 ^J
29	4.1	4.3	4.4	4.3	4.0	4.0	4.1 ^S	6.5	9.7	11.0	12.5	11.8	11.5	11.7	11.3	10.4	9.3	9.1	7.7	6.4	5.5	5.1	4.8 ^S	4.5
30	4.1	3.4	3.8	3.7	3.3	3.6	3.4	6.5	11.0	12.2 ^Y	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	R	12.8 ^J	12.5	12.5	12.0 ^H	11.6	10.7	10.0	9.7	8.0 ^J	7.0	6.2	5.2F	5.3	4.6
Mean Value	3.9	4.0	3.9	3.8	3.6	3.5	3.1	6.0	9.0	10.5	11.9	12.0	11.4	10.9	10.5	10.2	8.8	7.8	6.9	5.7	4.5	4.1	4.1	4.1
Median Value	3.9	3.8	3.6	3.6	3.5	3.5	3.2	5.8	8.9	11.0	12.1	12.3	11.3	11.0	10.5	10.0	8.7	7.8	7.0	5.8	4.2	3.8	3.8	3.8
Count	30	30	29	29	28	29	30	30	27	27	26	27	27	27	27	27	29	29	29	29	30	29	28	29

foF2

Sweep 1.0 Mc to 22.0 Mc in _____ min
 Manual Automatic

Lat. 45° 28.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

foEs

Jan. 1957

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	2.8	1.6	E	E	1.8	1.7	E	4	2.4F	4	4.6Y	3.5	3.5H	3.6H	E	2.3	E	2.8Y	2.8	E	E	E	E	E
2	E	1.6J	2.8J	1.6J	1.6J	3.5Y	5.3	4.28.5	4	C	C	C	C	C	C	C	C	C	C	C	2.3Y	E	E	E
3	E	E	E	1.6	E	1.1	E	S	4	3.4	3.5	B	4	4	3.5	2.1	2.9	E	E	E	2.9J	E	E	E
4	E	E	E	1.6	3.3Y	E	E	4	2.8	5.0Y	4.2	4	3.5	4	4	4	4	E	E	E	4.3J	3.8J	2.8J	E
5	E	E	1.6	2.7Y	2.3	E	E	B	2.5	3.2	3.5	3.7	4.7Y	3.5	4.7J	7.0J	5.0J	E	E	E	4.3J	3.8J	3.0J	E
6	2.8J	1.9J	E	1.6J	2.3	2.8F	1.7J	2.2J	3.3Y	3.5	4.2	4.2	8.7F	4.0	4.7J	5.9J	4.6J	3.3J	E	2.5Y	1.7J	E	E	E
7	E	E	1.3	2.7F	1.2F	2.5J	E	4	4	3.5J	4	5.0J	3.7	4.8J	3.7J	2.8	1.6J	E	E	E	2.8Y	4.28.5	4.8.5	E
8	4.38.5	4.18.5	E	E	E	E	E	1.8J	4	3.2	5.8J	4.0	4	5.3J	4	2.7	4	1.7J	E	E	2.8Y	4.28.5	4.8.5	E
9	E	E	E	E	E	E	E	4	2.4	3.2	3.5	5.8Y	3.7	3.5	2.8J	2.4	4	1.6J	E	E	1.7J	E	E	E
10	E	E	E	1.6J	E	E	E	B	C	C	4.8J	5.8J	4.8J	3.8J	4.0J	4.2F	3.5F	2.8F	2.7J	2.2	2.5F	3.3J	E	E
11	E	E	E	E	E	E	E	B	4	3.2	3.5	3.6	3.3	4	4	4	B	2.8J	1.8J	E	E	E	E	E
12	E	E	E	1.5J	E	E	E	B	4	3.2	3.3	3.3	3.6	3.3	3.5J	2.8J	1.7J	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	B	C	C	C	C	C	C	C	C	1.08J	6.3J	4.3F	2.3J	1.7J	E	E	E
14	E	E	1.7J	1.1	1.6J	E	E	B	2.6	3.1	3.3J	4.1	4.0	4.5J	4.0J	2.8J	E	E	E	E	E	E	E	E
15	E	E	E	E	1.1	1.1	2.3J	2.5F	4	4	3.5	3.7	3.7	3.6	3.2	4	B	E	E	E	E	S	2.2J	1.7J
16	E	1.1	E	1.7J	E	1.7J	E	B	4	4	3.3	3.5	4.3J	3.4	3.6	2.8	2.2	E	E	E	E	E	E	E
17	E	E	E	E	1.6J	2.2	E	B	4	4	3.5	3.6	3.6	3.9	3.4	2.7	B	E	1.8J	1.7J	1.7F	4.23.5	2.3J	E
18	E	2.2	3.8J	2.8J	2.8J	2.8J	E	B	4	4	3.9	3.9	3.5	3.3	3.2	3.0	2.8J	1.6J	E	1.6J	E	E	1.6J	E
19	E	E	1.6J	E	1.2	E	E	B	2.3	3.2	4.0	4.3J	3.5	7.1J	3.5	4	3.0J	2.0	2.3J	1.8J	2.5J	4.3J	E	E
20	E	E	E	E	E	E	E	4	4	3.3	4.5J	4.2	5.3J	3.5	3.7	3.3	1.6J	2.8J	6.5J	6.0J	3.3J	2.8J	E	E
21	E	5.3J	2.8J	2.3J	1.5J	E	E	1.8J	4	4	3.3	3.5	3.7	4	4	2.4	2.3	2.3	E	3.3J	2.9J	2.8J	1.7J	E
22	E	E	E	E	E	E	E	2.8J	2.8J	5.2J	3.5	4	4	3.2	B	B	B	E	4.8J	2.0J	2.3J	E	2.3	S
23	E	E	E	2.3	E	E	E	2.4	2.6	3.3	3.5	3.4	4	4.8J	3.5	3.6J	4	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	B	2.4	4	3.5	5.3J	B	4.0	4.0J	3.5J	2.9J	E	2.3J	4.1J	E	E	2.9J	E
25	E	E	E	E	E	E	E	4	2.6	4	3.5	4	4	3.5	3.5	3.5J	4	1.00F	E	E	E	E	E	E
26	E	E	E	E	E	E	E	4	2.7	4	C	3.5	3.9	3.7	3.5	3.5Y	2.3	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	4	C	C	C	C	C	C	C	C	2.4	E	E	E	1.7J	E	E	E
28	E	E	E	E	E	E	E	B	4	3.3	4	B	B	B	4	2.9	2.1	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	B	2.4	3.2	4	4	4.0	3.8	3.3	2.4	2.8J	2.2	E	E	E	E	E	E
30	E	E	E	E	E	E	E	3.3J	4	4	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	B	B	B	B	4	3.3J	2.7J	3.8J	6.3J	2.8J	2.4J	E	E	E
Mean Value	3.1	2.6	2.2	1.9	1.9	2.3	3.1	2.3	2.3	3.5	3.8	4.1	4.2	4.0	3.7	3.4	3.1	3.3	3.5	2.9	2.5	3.1	2.3	2.7
Median Value	E	E	E	E	E	E	E	4	2.4	3.2	3.5	3.6	3.7	3.5	3.5	3.0	2.3	1.6	E	1.6	1.7	E	E	E
Count	30	30	30	30	30	30	30	16	26	26	25	24	24	25	26	26	25	29	29	29	30	29	28	29

foEs

Sweep 1.0 Mc to 2.2.0 Mc in ___ min

Manual

Automatic

Lat. 41°28.6' N
Long. 141°41.1' E

Wakanai

IONOSPHERIC DATA

135° E Mean Time

(M3000)F2

Jan. 1957

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	250	260	295	255	255	255	290	315	305	315	290	300	300 ^M	290	300	325	290	300	290	275	255	245	250
2	260	280	265	245	240	240	305	295	300	310	C	C	C	C	C	C	C	C	C	C	245	225	245	240
3	240	240	F	F	F	4720 ^F	255	265	315	295	280 ^M	280 ^M	275 ^M	275 ^M	265 ^M	275 ^M	275	285	295	285	285	265	255	265
4	260 ^S	245	255	255	260	265	315	280 ^M	310	295	305	300	275 ^M	280 ^M	285	285 ^M	310	270 ^M	275	290	285	255	270	260
5	245	250	265 ^F	265 ^F	280 ^F	295	315	295	320	310	295	285 ^M	285 ^M	280	285	290	315 ^M	285	310	300	285	250	260	275
6	255	265	250	285 ^F	270	265 ^F	290	305	310	300	280	280	275 ^F	280 ^M	290	275	265 ^M	295	305	295	285	245	265	260 ^F
7	255 ^F	265	285 ^F	265 ^F	280 ^F	280 ^F	285	300	320	300	285	305	305	285	285	300	300	285	285	275	265	250	255	265
8	270	270	270	265	245	255	275	295	305 ^J	310	315	305 ^M	275 ^M	285 ^M	290	305	285	305	295	310	290	245	245	235
9	250	280	280	250	235	235	295	295	325	285	305	300 ^M	290	290	295	300	300	290	300	245	255	245	245	245
10	245	265	310	255	270	285	285	305	C	C	265	295	285 ^M	280	290	290	280	300	205	215	210	285	245	240
11	235	235	230	250	270	280	260	290	320	295	300	305	300	310	295	290	300	290	290	290	290	260	255	250
12	250	250	250	260	270	260	285	275	300	C	C	C	C	C	C	C	285	290	300	305 ^J	300	F	F	260 ^F
13	265	270	280	305	250	275	315	320	C	C	C	C	C	C	C	C	215	295	300 ^J	290	290	260	260	265
14	255	265	285	260	270	265	290	300 ^J	325	335	315	330	330	320	305 ^M	320	335	300	315	300	290	270	255	255
15	255	255	255	240	260	285	290	295	320	315	315	320	290 ^M	310	320	310	310	310	310	320	275	265 ^S	260	270
16	255	260	245	275	290	250	270	300	325	305	295	310	320 ^M	325	320	320	315	300	300	305	270	280	260	245
17	245	250	275	305	285	270	265	305	325	315	325	320 ^M	315	300 ^M	310	330	325	300	305	305	305	260	F	F
18	275	260	260	260	270	280	265	310	335	310	315	305	300	320	310	320	325	300	310	325	310	270	265 ^J	245
19	245	255	285	330	275 ^F	280 ^F	295	325	330	310	305	315	320	300	300	310	325	300	305	305	330 ^J	300	280	270
20	280	270	260	265	250 ^F	270 ^F	265 ^F	310	305	320	315	305	295	300	295	300	285	275	305	310 ^J	270	260	255	260 ^S
21	270	265 ^A	260	260	275	280	305	320	335	320	305	305 ^J	305	325	285	305	275	285	305	270	275	250	255	260 ^S
22	250	230	225	235	240	255 ^M	240	310	275	325	295 ^M	300 ^M	300 ^M	300	290	295	285	300	300	285	275	280	250	250
23	260	255	265	270	255	260	270	330	335	320	310 ^J	300	300 ^J	300	290	290	285	300	300	285	275	250	250	250
24	265	245	255	250	250	265	270	310	330	320	320	305	295	280	270	280	280	270	275	280	265	260	270	265
25	255	245	260	265	290	240	235	295	320	305	285	305	300	280	270	270	270	270	275	285	265	260	270	265
26	265	265 ^J	250	280	F	F	280 ^F	290	330	305	290 ^C	285	295	280	290	305	290	270	280	290	255	280	265	265 ^J
27	260	260	255	250	255	245	295	305	C	C	C	C	C	C	C	C	300	285	295	295	300	265	265	255
28	270	285	280	260	265	255	280	320	320	310	300	305	270	280	290	290	295	285	285	290	265	265	255	285
29	255	245	260	270	245	255	270 ^S	315	315	315	300	305	280	280	290	275	285	285	290	300	260	270	265	260
30	240	235	235	245	225	245	270	290	320	285 ^V	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	R	310 ^J	285	280 ^M	280	285	290	290	310 ^J	295	295	285 ^F	280	270
Mean Value	255	255	260	260	260	260	280	300	315	305	300	300	295	295	290	295	295	290	295	295	280	260	260	255
Median Value	255	260	260	260	260	265	280	300	320	310	305	305	300	290	290	300	300	290	300	300	285	260	260	260
Count	30	30	29	29	28	29	30	30	27	27	26	27	27	27	27	27	29	29	29	29	30	29	28	29

(M3000)F2

The Radio Research Laboratories
Koganei-machi, Kifutama-gun, Tokyo, Japan.

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

f_oF

Jan. 1957

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	330	365	335	260	250	345	345	265	270	235	245	230	225	230H	225H	225	215	200H	240	235	260	335	360	350
2	325	280	280	330	345	315	250	240	215	225	C	C	C	C	C	C	C	C	C	C	245	430	465	375
3	345	290	300	340F	370	335	350	330	235	240	240	235H	235H	230H	230H	250	225	230	230	245	250	275	320	290
4	320	315	290	285	285	280	250	215H	230	225	240	240	235H	230H	255	225H	245	205H	245	230	4260 ^s	4300 ^s	4350 ^s	305
5	310	340	315	365	280	260	245	225	230	230	245	235	225H	240	260	4330 ^s	4260 ^s	230	250	250	4280 ^s	335	400	280
6	310	340	350	280	275	275	260	245	220	225	250	235	250	235H	255	230	230H	250	250	220	225	330	335	285F
7	310	305	285	275	260	275	270	240	235	225	230	240	220H	260	235	250	225	250	255	240	250	280	310	305
8	290	280	285	270	335	310	230	235	220	235	240	235H	205H	230H	250	235H	235	235	235	220	260	320	350	360
9	335	270	265	275	340	270	225	300	215	220	225	235H	225	230	230	225	215	205	255	220	270	340	360	340
10	320	270	250	250	300	280	320	250	C	C	235	250	230H	230	240	230	235	210	240	230	235	270	360	340
11	370	405	360	330	310	255	300	250	235	225	235	230	230	230	235	240	210	255	235	235	235	285	335	335
12	335	315	320	320	280	325	285	260	220	235	235	225	210	230	225	230	220	235	220	210	255	300F	300F	315F
13	300	300	285	245	220	255	250	240	C	C	C	C	C	C	C	C	4260 ^s	4260 ^s	225	250	230	310	305	320
14	320	305	305	280	265	260	260	225	225	210	215	220	230	250	220H	220	215	220	245	225	265	275	340	340
15	330	310	310	305	310	300	290	240	210	225	235	235	230	230	230	225	225	230	240	225	285	295 ^s	305	305
16	335	305	315	270	250	315	295	260	225	230	225	245	235H	245	245	240	215	205	250	230	290	275	320	385
17	375	345	280	240	255	275	305	255	230	225	230	235H	245	245	245	240	215	205	250	230	240	275	320	365F
18	295	300	310	280	280	255	280	245	220	225	235	230	225	240	225	235	220	205	240	230	235	260	320	350
19	370	325	290	240	215	280	265	235	220	220	230	245	225	240	225	235	220	220	240	230	265	285	320	305
20	305	310	320	305	310	280	220	230	205	235	250	225	230	250A	230	240	215	220	230	235	265	285	320	305
21	300	310A	320	325	275	230	230	235	215	225	225	225	230	230	235	240	215	220	260	235	250	275	295	300
22	335	330	420	350	320	260	490	260	220	225	225H	245H	230H	245	225	225	230	225	230	230	255	305	325	280
23	295	280	280	240	225	270	250	220	220	225	230	225	240	225	230	240	225	225	235A	270	265	280	295	295
24	280	295	310	290	270	260	270	240	225	230	230	225	240 ^B	235	225H	255	230	205	225	230	245	300	335	320
25	305	320	305	260	240	240	375	255	220	230	240	250	230	230	240	245	240	235	245	240	245	270	275	275
26	275	270	275	250	220	225	260	250	220	225	220 ^s	220H	245	230	240	230	230	220	240	240	215	280	260	280
27	295	295	305	300	270	285	250	240	C	C	C	C	C	C	C	C	240	225	240	240	275	295	295	290
28	300	260	275	310	305	320	290	250	230	240	230	230	230	230	235	235	240	225	235	240	250	275	350	365
29	340	320	300	275	320	320	250	235	225	235	240	235	230	230	235	240	225	245	240	220	270	280	320	320
30	350	440	390	340	395	350	255	240	235	220	C	C	C	C	C	240	225	245	240	230	270	285	305	305
31	C	C	C	C	C	C	C	C	C	C	240	235	225	225H	230	235	235	250	235	240	245	270	250	280
Mean Value	320	315	310	290	285	285	280	245	225	220	235	230	230	240	235	240	230	225	240	235	245	270	250	280
Median Value	320	310	305	280	280	280	260	240	220	225	235	230	230	230	230	235	225	225	240	235	255	295	320	320
Count	30	30	30	30	30	30	30	30	27	27	27	27	27	27	27	27	29	29	29	29	30	30	30	30

Note: No value of h'F2 being obtained in this month, the monthly summary table of this factor is omitted.

f_oF

Sweep sec. Mc to 22.0 Mc in min
 Manual Automatic

W 4

The Radio Research Laboratories
Koganei-machi, Kitakoma-gun, Tokyo, Japan

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

type of **ES**

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	f			f	f			l			h	h	l	h	h	h		f					
2	f	f	f	f	f	f	f2	f		h			h		c	f	f	f			f			
3					f				h	h	h	h	h	h	c	clz	f2	f	f2	f2	f	f2	f2	
4			f	f	lf				h	h	h	h	cl	c	f	f2	f2	f	f	f	f	f	f	
5	f	f	f	f	f	f	f	f	h	c	cl	cl	h	f	h	h	h	f	f	f	f	f	f	f
6	f	f	f	f	f	f	f	f	h	h	cl	h	h	cl	h	c								
7	f	f	f	f	f	f	f	f	h	h	h	h	h	cl	f	l								
8	f	f	f	f	f	f	f	f	h	h	h	h	h	cl	f	l								
9									h	h	h	h	c	c	f	f	f	f	f	f	f	f	f	
10									h	h	h	h	c	c	f	f	f	f	f	f	f	f	f	
11									h	h	h	h	c	c	h	h	h	h	h	h	h	h	h	
12									l				cl	c	c									
13									h	h	h	h	h	h	c	h	h	h	h	h	h	h	h	
14									h	h	h	h	h	cl	c	c	h2							f
15									h	h	h	h	h	h	c	c	h	h	h	h	h	h	h	f
16									h	h	h	h	h	h	c	c								
17									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
18									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
19									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
20									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
21									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
22									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
23									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
24									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
25									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
26									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
27									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
28									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
29									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
30									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
31									h	h	h	h	h	h	c	c	c	c	c	c	c	c	c	f
Mean Value																								
Median Value																								
Count																								

Automatic

Manual

Sweep 1.0 Mc to 22.0 Mc in ___ min

type of **ES**

Akita

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

foF2

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	4.0	4.0	4.3	4.3	3.2	3.0	3.0	7.0	10.7	11.0	12.5	12.0	12.1 ^H	11.0 ^H	10.8 ^H	9.7	8.8	7.5	6.3	4.7	4.0	3.5	3.5	3.6	
2	3.6	3.9	3.8	3.2	3.3	3.4	3.7	7.0	10.0	11.2	12.5	12.0	11.1 ^H	11.2 ^H	10.0 ^H	9.4 ^H	8.5	6.7	6.2	5.8	4.3	4.0	4.3	4.5	
3	4.6	4.5 ^V	4.3	3.8 ^F	3.2 ^F	2.9 ^F	3.2 ^F	5.6	10.3	11.6	13.0 ^H	13.0 ^H	12.5 ^H	11.5 ^H	10.5 ^H	10.1	9.5	8.2	7.6	7.1	5.5	4.4	4.4	4.5	
4	4.5	4.2	4.2	3.8	3.9	3.8	3.8	6.6	9.7	10.9	11.6	11.7	10.8	10.3 ^H	10.5 ^H	10.4	9.5	8.2	7.7	R	5.3	4.3	3.9	4.0	
5	3.6	3.4 ^F	3.4 ^V	3.6	3.6	3.5	3.7	5.9	8.5	10.0	11.0	11.2	10.1	10.5 ^H	10.0 ^H	10.2	8.3	7.1	7.0	6.6	4.5	3.6	3.8	3.9	
6	3.8	3.7	3.9	3.7	3.5 ^F	3.4 ^F	3.5 ^F	6.6	9.3	10.5	10.9	11.9	11.5 ^H	10.8	10.5 ^H	10.1	8.8 ^H	7.2	7.5	6.3	4.5	4.0	3.9	3.7	
7	3.8	3.9	4.1	4.0	4.0 ^F	3.5	3.8	6.6	9.7	9.9	10.9	11.4	10.9	10.4 ^H	9.9 ^H	9.5	9.1	7.6	7.5	7.3	5.7	3.9	4.2	4.5	
8	4.4	3.9	4.0	3.6	3.4	3.2	4.0	6.4	9.4 ^H	10.2	11.8	11.8	11.5	11.0 ^H	10.9 ^H	11.0	9.1	7.8	8.6	7.0	4.9	4.2	4.4	4.2	
9	4.5	4.9	4.2	3.9	3.5	3.5	3.5	5.6	9.2	9.6	11.0	12.4 ^H	11.9	11.5 ^H	10.9	10.1	9.2	9.2	8.2	6.1	4.6	4.0	3.6	3.6	
10	3.5	3.3 ^F	3.4 ^F	3.5 ^F	3.5	3.7	3.7	6.8	9.2	10.8	12.3 ^V	13.2	11.5	11.1	11.0 ^H	10.4 ^H	10.5	7.9 ^H	8.4	6.7	6.6	4.2	4.3	4.5	
11	4.5	4.2	4.0	4.0	4.2	4.0	4.2	6.3	9.9	12.0	13.5	12.8	12.1	10.6 ^H	11.5	10.4	9.0	7.7	6.7	7.7	5.0	4.4	3.8	4.0	
12	4.0	4.2	3.8	3.5 ^F	2.9	3.2 ^F	2.8	6.7	9.6	11.8	11.1	12.0	11.8	12.0	10.5 ^H	10.8 ^H	9.3	7.5	6.8	6.2	4.7	4.2	3.7	4.1 ^F	
13	4.0	4.0 ^V	4.3	4.7	2.8	2.6	2.8	6.5	9.7	9.6	11.8	10.6	11.7	11.1	10.0	9.7	8.1	7.7	6.8	5.2	4.5	3.8	3.4	3.5	
14	3.5	3.4 ^F	3.5	3.6	3.3	3.2	3.5	6.1	8.3	9.0	9.7 ^H	11.2 ^H	10.3 ^H	9.6 ^H	9.7	9.0	7.4	7.2	6.2	5.6	4.3	3.3 ^F	3.2 ^F	3.5 ^F	
15	3.5 ^F	3.6	3.6	3.5	3.6	3.7	3.8	6.2	9.1	10.1	11.5	12.4	11.5	10.4	10.4 ^H	9.7	8.9	7.4	6.5	5.7	4.3	4.0	4.0	3.9	
16	3.9	4.0 ^V	4.1	4.1	4.0	3.6	3.8	6.5	9.6	10.8	12.3	12.5	12.7	10.5	9.9	10.2	9.9	6.6	6.5	5.4	3.6	3.1 ^H	3.3	3.2	
17	3.6	3.6	3.7	3.5	3.2	2.9	3.0	6.3	9.9	11.8	12.5 ^V	11.8	10.7	10.2	10.0 ^H	9.6	8.4	7.1	6.2	5.1	4.1	3.1	3.3 ^F	3.5 ^H	
18	3.5 ^F	3.6	3.5	3.5	3.4	3.2	3.2	6.3	9.7	10.0	10.4	11.8	11.0	10.1	9.8	10.2	9.0	6.8	6.2	6.0	4.5	3.2	3.4 ^F	3.5	
19	3.5 ^F	3.6	4.0	4.2	3.5 ^F	2.7	2.8	5.9	8.5	10.2	11.1	11.7	11.8	10.7	10.0	9.8	9.0	7.4	5.9	5.4	4.5	3.6	3.2	3.5 ^F	
20	3.5	3.7	3.5	3.5	3.6 ^F	3.7 ^F	3.5	6.1	9.0	10.7	11.8	12.4 ^V	11.4 ^H	10.7	11.3	10.9 ^H	10.2	8.2	6.2	5.5	5.0	4.3	4.1	4.0	
21	4.0	3.9	4.0	3.9	4.1	4.0	4.0	6.5	8.8	10.6	13.4	11.7	13.5 ^H	11.8	11.0	10.6	9.6	10.7	9.8	7.0	5.3	4.8	4.6	4.8	
22	4.5	4.3	3.9	4.0	3.6 ^H	3.5	2.3	6.8	9.5	12.4 ^H	12.7	13.1 ^H	12.8	13.5 ^H	13.1	12.5	11.9	10.6	8.1	7.1	7.6	5.8	6.1	6.0	
23	6.3	6.5	6.3	6.6	5.7 ^H	5.0	4.7	7.4	10.7	12.0	12.6	12.6	12.0 ^H	11.8 ^H	10.8	10.8	10.7	10.5	10.0	7.1	6.9	6.2	6.1	6.0	
24	6.1	5.6	5.7	5.7	5.8	5.5	5.7	8.2	10.6	11.5	13.2	12.6	11.6	11.0	10.3 ^H	10.5 ^H	10.8	10.2	8.4	7.2	6.7	5.6	5.2	4.7	
25	4.6	C	C	C	C	3.1	3.0	6.5	10.3	11.5	11.5	12.6 ^H	11.8 ^H	10.6	10.5 ^H	10.6	10.6	9.9	9.2	7.7	6.7	5.9	6.0 ^R	6.0	
26	5.1	5.4	5.2	5.2	4.6	3.9 ^H	3.6	6.7	10.5	11.4	11.6	11.5	11.0 ^H	10.7	11.1	11.2	9.8	9.1	8.2	6.7	5.9	5.5	5.5	5.2	
27	4.8	4.5	4.3	4.1	4.2	4.2	4.5	7.2	9.5	11.5	13.0	11.9	11.5 ^H	10.6 ^H	11.0 ^H	10.0 ^H	9.7	9.7	7.4	6.4	6.0	5.4	4.6	4.8 ^C	
28	5.0	C	C	C	3.7	3.8	4.1	7.2	9.7	12.0	12.9	12.2 ^V	11.7 ^H	11.5 ^H	11.9	10.7 ^H	9.8 ^H	9.5	9.0	6.9	5.9	5.4	5.1	4.5	
29	4.6	4.5	4.4	4.5	C	C	C	C	9.8	10.8	11.9	11.9	11.3	11.2	10.7	10.4	10.0	9.3	8.5	6.3	6.2	5.2	5.2	4.8	
30	4.6	4.0	4.3	4.5	4.2	4.4	5.0	7.7	11.0	11.8 ^H	12.5 ^H	12.8 ^H	12.5 ^H	12.0 ^H	11.9 ^H	11.6	11.5	11.5	9.6 ^R	8.5 ^R	7.2	6.5	7.0	6.6	
31	4.5	5.0	4.6	5.1	4.5	5.0	5.8 ^R	8.5	13.0	14.0	14.4	13.5 ^H	12.8 ^H	11.7 ^H	11.5	10.6	10.0	10.0	9.0	7.1	6.7	6.9	5.7	5.3	
Mean Value																									
Median Value	4.3	4.2	4.1	4.1	3.8	3.6	3.8	6.7	9.8	11.0	12.0	12.1	11.6	11.0	10.7	10.3	9.5	8.5	7.6	6.5	5.3	4.5	4.4	4.4	4.4
Count	4.0	4.0	4.0	3.9	3.6	3.5	3.7	6.6	9.7	10.9	11.9	12.0	11.6	11.0	10.5	10.4	9.5	7.9	7.5	6.5	5.0	4.2	4.2	4.2	4.2
	3.1	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.1	3.1	3.1

foF2

Akita

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

foEs

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	2.4J	3.5J	3.5J	F	E	1.9J	2.0J	2.3J	G	G	G	G	G	G	3.6	G	G	1.7J	E	1.7J	E	E	E	E
2	2.4J	E	E	1.5J	2.0J	2.5J	E	2.4J	G	G	3.4	G	G	G	3.5	G	G	3.4J	2.3J	2.5J	2.3J	E	E	E
3	F	E	2.3J	2.0J	E	E	E	G	G	G	G	B	5.0	4.5	4.2	3.7J	G	E	E	E	E	E	E	E
4	E	E	1.8J	1.8J	E	E	E	2.4J	G	G	G	G	4.2	4.0	3.5	2.9	2.3J	3.3J	3.5J	2.4J	E	E	E	E
5	2.4J	E	E	E	E	E	E	G	G	3.5	G	G	G	G	3.5	3.3	3.5J	2.3J	2.3J	2.4J	2.8J	5.3J	2.4J	2.5J
6	2.0J	1.6J	1.6J	2.8J	2.3J	1.5J	E	2.4J	3.8J	G	G	G	4.3	4.3	5.2J	4.9J	2.6J	5.8J	3.8J	3.3J	2.3J	2.8J	E	2.5J
7	1.8J	1.5J	2.3J	2.8J	3.9J	2.8J	2.3J	2.7J	2.7J	3.4	G	4.3	4.2	G	3.5	2.8J	3.5	E	E	2.3J	E	E	E	E
8	1.8J	E	2.8J	1.5J	E	E	E	G	G	G	G	4.3	4.7J	G	3.5	2.8J	3.5	E	E	2.3J	E	E	E	E
9	E	E	E	1.3J	E	E	E	G	G	3.5	G	3.8	4.0	5.3J	6.8J	8.9J	5.4J	6.3J	6.3J	5.9J	E	E	E	E
10	1.8J	E	E	E	E	1.3J	E	1.9J	G	3.5	3.9	4.2	G	G	G	G	2.3	4.1J	E	E	1.8J	2.0J	E	E
11	E	E	1.3J	1.8J	1.5J	1.5J	2.5J	2.0J	3.5	3.5	G	G	G	3.5	3.8J	3.5J	G	E	2.0J	2.0J	1.9J	1.6J	2.0J	2.6J
12	2.8J	1.5J	2.1J	2.0J	2.2J	2.6J	2.4J	G	G	G	G	G	6.0J	4.3J	3.3J	2.9J	3.7J	2.5J	2.5J	E	E	E	E	E
13	E	E	E	E	1.5J	1.9J	E	G	G	G	G	4.5	4.0	3.9	3.9	G	2.4J	E	2.0J	E	E	E	E	E
14	E	E	1.5J	1.4J	1.5J	1.9J	E	G	3.0	G	3.5	G	3.5	G	3.5	3.5	2.8J	2.3J	2.4J	E	E	E	E	E
15	E	E	1.5J	1.7J	2.0J	1.4J	E	G	G	G	G	G	4.1	4.0	3.5	3.0	G	E	1.5J	E	E	E	1.8J	1.9J
16	E	1.8J	3.3J	2.3J	1.8J	1.9J	E	1.5J	G	G	G	4.2	4.2	4.0	3.9	6.3J	3.7J	E	E	E	E	E	E	1.7J
17	E	E	E	E	E	E	E	G	G	G	G	4.2	4.2	4.0	3.8	3.5	3.7J	E	E	E	E	E	E	3.7J
18	E	E	1.2J	2.8J	2.5J	1.8J	E	G	G	G	G	4.5	4.4	G	3.5	G	G	E	E	E	E	E	E	E
19	3.4J	E	1.8J	E	E	E	E	G	G	G	G	4.1	4.6	3.5	4.3	3.6J	G	E	E	E	E	E	E	E
20	3.5J	3.5J	2.2J	E	E	E	E	G	G	3.5	4.4	4.5	4.5	4.3	4.3	3.5	2.4J	E	6.3J	2.4J	2.8J	5.8J	1.9J	2.4J
21	2.5J	1.4J	1.4J	1.5J	1.2	E	E	G	G	G	3.8	4.1	4.2	3.9	3.5	G	G	E	E	E	E	E	E	1.8J
22	2.4J	2.5J	1.4J	1.5J	1.2	E	1.7J	G	3.2	4.1	6.8J	5.9J	4.0	3.5	4.0	3.1	2.7J	2.8J	5.5J	4.4J	2.8J	2.5J	3.9J	E
23	2.5J	2.6J	1.4J	E	E	E	E	G	G	G	G	B	4.1	4.2	4.2	3.4	1.8J	G	E	1.7J	E	E	E	E
24	E	E	E	E	E	E	E	G	3.2	G	G	G	B	G	3.9	4.4	2.6	3.5J	E	1.7J	E	E	E	1.7J
25	1.7J	C	C	C	C	E	E	G	3.2	G	G	G	4.8	5.6J	5.9J	4.5J	2.5	2.8J	1.7J	E	E	E	E	E
26	E	E	E	E	E	E	E	G	G	G	G	G	4.2	4.5	4.0	3.1	2.3	3.5	E	E	E	E	E	E
27	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	3.5	2.4	3.5	3.5	2.0J	E	E	E	2.3J
28	C	C	C	C	C	E	E	G	C	G	G	G	4.0	G	4.0	G	2.9	G	E	1.7J	2.3J	2.3J	E	E
29	E	E	1.5J	E	C	C	C	C	G	G	G	4.4	4.5	5.1J	4.4J	4.0	G	6.3J	E	E	E	E	E	E
30	E	E	E	E	E	E	E	G	3.0	3.6J	4.0	4.1	G	G	4.4	4.0	3.8J	G	E	E	E	E	E	E
31	E	E	1.5J	1.1	1.2	2.7J	3.8J	2.5J	G	G	G	G	G	G	G	4.0	3.5	G	E	E	E	2.3J	2.3J	3.9J
Mean Value	2.4	2.2	1.9	1.8	1.8	1.9	2.5	2.2	3.2	3.6	4.2	4.4	4.4	4.2	3.9	3.9	3.0	3.5	3.3	2.6	2.4	2.9	2.4	2.2
Minimum Value	E	E	1.4	1.1	E	E	E	G	G	G	G	G	4.2	3.5	3.8	3.4	2.4	1.7	E	E	E	E	E	E
Count	30	29	29	29	28	30	30	30	30	31	31	29	30	31	31	31	31	31	31	31	31	31	31	30

Manual Automatic

Sweep 0.85 Mc to 22.0 Mc in 2 min

foEs

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

(M3000)F2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.45	2.50	2.65	3.00	2.70	2.35	2.60	2.85	3.20	2.70	2.90	2.90	2.80 ^H	2.75 ^M	2.85 ^H	2.90	2.80	2.80	2.80	3.10	2.75	2.65	2.55	2.45
2	2.55	2.50	2.50	2.30	2.30	2.60	2.95	3.15	3.10	3.15	3.05	2.95	2.75 ^H	2.70 ^H	2.80 ^H	2.70 ^H	2.70	2.70	2.75	2.75	2.90	2.25	2.20	2.30
3	2.50	2.45 ^V	2.70 ^F	2.60	2.25 ^F	2.25 ^F	2.50 ^F	3.10	2.80	2.70	2.85 ^H	2.70 ^H	2.70	2.60 ^H	2.60	2.65	2.65	2.75	2.65	2.85	2.80	2.50	2.40	2.50
4	2.65	2.45	2.50	2.40	2.50	2.50	2.90	3.05	3.00	2.95	2.85	2.85	2.80	2.65 ^H	2.65 ^H	2.60	2.70	2.80	2.65	R	2.70	2.45	2.30	2.65
5	2.75	2.35 ^F	2.40 ^V	2.50	2.65	2.70	2.75	3.20	2.95	3.00	2.90	2.85	2.95	2.65 ^H	2.65 ^H	2.85	2.70	2.75	2.70	3.20	3.10	2.50	2.65	2.65
6	2.50	2.55	2.65	2.90	2.55 ^F	2.60 ^F	2.85 ^F	3.20	3.30	2.85	2.80	2.75	2.80 ^H	2.75 ^H	2.70 ^H	2.85	2.85 ^H	2.65	2.75	3.05	2.50	2.30	2.50	2.50
7	2.40	2.55	2.55	2.60	2.60	2.55	2.70	3.05	3.20	3.10	2.90	2.85	2.85	2.70 ^H	2.65 ^H	2.90	3.05	2.70	2.90	2.95	2.85	2.45	2.45	2.40
8	2.70	2.55	2.60	2.65	2.35	2.50	3.00	3.10	3.30 ^H	2.95	3.05	3.00	2.80	2.65 ^H	2.65 ^H	2.90	2.95	2.80	3.05	2.75	2.90	2.65	2.65	2.30
9	2.40	2.70	2.75	2.50	2.35	2.55	2.70	3.05	3.25	2.80	2.80	3.05	2.65	2.80 ^H	2.75	3.00	3.00	2.65	2.80	2.85	2.85	2.40	2.40	2.45
10	2.35	2.35	2.35	2.40 ^F	2.50	2.50	2.80	2.95	3.05	3.05	3.00 ^J	2.90	2.80	2.80	2.80 ^H	2.80 ^H	3.00	2.65	2.85	2.80	2.85	2.40	2.40	2.45
11	3.40	2.50	2.40	2.50	2.50	2.50	2.55	3.00	3.10	3.15	2.80	2.95	3.15	2.70 ^H	2.95	2.90	2.85	3.00	2.95	3.15	3.00	2.70	2.45	2.40
12	2.45	2.60	2.80	2.80	2.75	2.45 ^F	2.80	3.00	3.10	3.15	2.85	3.15	2.90	2.90 ^H	2.75 ^H	2.85	3.20	3.05	2.90	2.85	3.00	2.70	2.45	2.40
13	2.50	2.55	2.85	3.30	2.70	2.50	2.85	3.05	3.20	3.05	3.20	2.95	3.05	3.05	3.05	2.95	2.90	3.10	3.10	2.75	3.00	2.65	2.65	2.60
14	2.60	2.60 ^F	2.65	2.65	2.75	2.60	2.85	3.15	3.30	3.30	2.85	2.95	3.00 ^H	3.00 ^H	2.80	3.10	3.10	3.05	3.00	3.00	3.00	3.05	2.80	2.55
15	2.55 ^F	2.55	2.65	2.55	2.55	2.65	2.65	3.10	3.30	3.10	3.05	3.05	3.05	3.05	2.90 ^H	3.20	3.15	2.95	3.00	2.95	2.80	2.75	2.60	2.55
16	2.55	2.50 ^V	2.50	2.55	2.95	2.55	2.55	3.00	3.20	3.15	3.00	2.95	3.15	2.95	3.00	2.95	3.30	2.85	3.10	3.00	3.00	2.60	2.60	2.50
17	2.50	2.45	2.70	2.80	2.75	2.65	3.00	3.25	3.20	3.10	3.15	3.15	2.90	2.95	3.05 ^H	3.10	3.35	3.10	2.90	2.95	2.90	2.75	2.65	2.70
18	2.50 ^F	2.65	2.75	2.90	2.90	2.70	2.55	3.10	3.35	3.30	3.00	3.15	3.00	3.05	3.05	3.05	3.10	3.10	3.10	3.15	3.35	2.80	2.55	2.55
19	2.60 ^F	2.45	2.55	3.05	3.05 ^F	2.75	2.95	3.05	3.40	3.00	3.15	3.15	3.15	3.15	3.00 ^H	3.10	3.10	3.15	3.00	3.05	3.35	2.85	2.75	2.55
20	2.55	2.60	2.55	2.55	2.50 ^F	2.60 ^F	3.00	3.10	3.20	3.10	3.20	3.05	3.00 ^H	2.80	2.90	2.85 ^H	3.10	2.95	2.85	2.95	2.80	3.25	2.75	2.50
21	2.65	2.55	2.55	2.55	2.55	2.70	2.85	3.20	3.25	3.15	3.30	3.05	2.80 ^H	3.25	2.75	2.75	3.10	2.80	3.00	2.90	2.75	2.40	2.45	2.60
22	2.45	2.35	2.20	2.35	2.55	2.35	3.85	2.70	2.90	2.90	2.85	2.70	2.75	2.75 ^H	2.90	2.70	2.85	2.80	2.75	2.55	2.70	2.40	2.45	2.60
23	2.45	2.60	2.75	2.90	2.30 ^H	2.45	2.85	3.15	3.25	3.30	2.95	2.95	2.65 ^H	3.30 ^H	2.85 ^H	2.80	2.85	2.75	3.00	2.80	2.75	2.60	2.45	2.40
24	2.65	2.40	2.35	2.45	2.60	2.60	2.90	3.05	3.25	3.10	3.00	2.65	2.70	2.75 ^H	2.65 ^H	2.65 ^H	2.85	2.85	2.85	2.80	2.85	2.95	2.70	2.70
25	2.65	C	C	C	C	2.70	2.50	2.80	3.00	3.05	3.05	3.05	3.05	2.65	2.60 ^H	2.75	2.75	2.70	2.80	2.90	2.75	2.55	2.66 ^R	2.65
26	2.75	2.65	2.70	2.90	3.05	2.55 ^H	2.75	3.05	3.15	3.05	3.00	2.95	2.85	2.85 ^H	2.75	2.85	2.80	2.85	2.90	2.70	2.70	2.60	2.70	2.70
27	2.70	2.65	2.55	2.45	2.45	2.50	2.80	3.05	3.35	3.20	3.10	3.10	2.80	2.65 ^H	2.80 ^H	2.70	2.75	3.00	2.45	2.80	2.85	2.75	2.60	2.60
28	2.60	C	C	C	2.45	2.55	2.65	3.05	3.10	3.05	2.95	3.05	2.75 ^H	2.70 ^H	2.70 ^H	2.70	2.75	2.70	2.80	2.75	2.65	2.80	2.60	2.45
29	2.50	2.65	2.55	2.60	C	C	C	C	3.10	3.00	3.00	3.10	2.80	2.70 ^H	2.80	2.80	2.80	2.70	2.95	2.70	2.75	2.55	2.55	2.55
30	2.35	2.15	2.30	2.35	2.25	2.35	2.70	3.00	2.90	2.90 ^{I, RH}	2.95 ^H	2.70 ^H	2.70 ^H	2.70 ^H	2.70 ^H	2.65	2.70	2.70	3.00 ^K	2.70 ^K	2.70	2.30	2.55	2.90
31	2.55	2.40	2.70	2.70	2.45	2.45	2.70 ^K	2.95	3.25	3.10	3.00	2.95	2.70 ^H	2.70 ^H	2.75	2.80	2.90	2.80	2.85	2.75	2.85	2.80	2.65	2.70
Mean Value	2.60	2.60	2.65	2.65	2.60	2.55	2.80	3.05	3.15	3.05	2.95	2.90	2.80	2.85	2.80	2.85	2.90	2.85	2.90	2.90	2.85	2.65	2.60	2.55
Median Value	2.55	2.55	2.60	2.60	2.55	2.50	2.80	3.05	3.20	3.05	3.00	2.95	2.85	2.90	2.80	2.85	2.90	2.85	2.90	2.90	2.85	2.65	2.60	2.55
Count	31	29	29	29	29	30	30	30	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31

Sweep 0.65 Mc to 22.0 Mc in 2 min Manual Automatic

(M3000)F2

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 39° 43.6' N
Long. 140° 08.2' E

A k i t a

IONOSPHERIC DATA

135° E Mean Time

R'F2

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2																								
3																								
4												260												
5																								
6													300											
7																								
8																								
9												270												
10												245												
11												245												
12													260 ^L											
13													250 ^L											
14														245										
15																								
16																								
17																								
18																								
19												250												
20												L												
21																								
22													250											
23																								
24																								
25																								
26																								
27												250												
28												250												
29												250												
30																								
31																								
Mean Value												250	255	260	245									
Median Value											250	255	255	250	240									
Count											6	4	4	6	4									

R'F2

Sweep 0.25 Mc to 22.0 Mc in 2 min

Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kitakoma-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 48.5' N
Long. 140° 08.2' E

A k i t a

135° E Mean Time

Jan. 1957

R'F

Day	Hour																															31
	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	325	350 ^A	300	280	235	300	350 ^B	220	245	220	240	245	240 ^H	280 ^H	240 ^H	250	225	225	250	240	240	215	300	325	350							
2	340 ^A	290	300	305	350	325	250	255	235	230	245	250	245 ^H	240 ^H	230 ^H	235 ^H	235	210 ^A	270	250	250	235	355	400	375							
3	295	280	305	265	300	350	350	250	235	245	250 ^H	245	275	250 ^H	255	235	235	230	245	240	250	235	325	325	320							
4	295	325	300	280	275	300	245	240	245	245	245	250	250	245 ^H	255 ^H	250	245	255	275	260	225	240	345	320								
5	275	325	350	320	275	275	260	240	225	245	245	245	245	230 ^H	250 ^H	255	225	220	250	245	235	300	320	310 ^A								
6	300	320	305	260	260	300	280	255	225	240	240	255	250 ^H	250 ^H	240 ^H	235	250 ^{AH}	220 ^A	250	245	250 ^A	300	330	350								
7	360	325	305	300	280 ^A	305	270	255	250	230	240	250	250 ^H	245 ^H	245 ^H	250	245	225	255	245	245	255	350	320								
8	260	250	300	275	300	350	250	250	230 ^H	245	250	245	245 ^H	240 ^H	245 ^H	260	225 ^A	220	255	230	245	280	340	350								
9	340	295	245	275	345	350	300	250	240	230	250 ^H	250	250	250 ^H	250 ^H	250	225	250	250	255	245	300	300	300								
10	375	400	380	310	300	300	260	255	245	245	240	250	230	245 ^H	245 ^H	245 ^H	250	250 ^H	245	250	245	250	350	350								
11	300	300	325	340	305	300	310	250	250	240	235	235	245	220 ^H	235	240	220	220	240	250	210 ^A	260	345	345								
12	320	260	285	260	275	300	320	255	225	245	235	240	240	225 ^H	235 ^H	240	225	225	235	240	230	240	270	225								
13	320	325	250	225	225	330	310	250	225	225	225	235	235	240	240	230	205	240	240	230	270	295	300	340								
14	315	310	300	290	255	300	270	290	220	225	220 ^H	225	240	235 ^H	240	225	205	240	240	230	230	240	320	330								
15	350	310	300	295	310	305	300	255	215	225	220	240	245	225 ^H	225 ^H	240	225	215	220	240	240	250	305	340								
16	320	315 ^A	320 ^A	310 ^A	255	300	325	240	230	245	240	245	250	245 ^H	245 ^H	280 ^A	250	200	250	245	280	270 ^H	345	360								
17	350	345	295	245	250	250	325	260	240	240	240	245	240	245 ^H	245 ^H	245	235	240	245	235	240	245	325	340								
18	350	305	295	255	250	295	255	255	235	235	250	240	240	245	245	245	225	220	220	230	245	225	325	350								
19	380	350	305	250	210	295	295	240	225	235	240	240	250	245	245	240	245	245	240	245	240	240	295	350								
20	350	340	350	305	305 ^F	300	250	240	235	240	245	245	245	240 ^H	240 ^H	240	245	240	240	250	245	245	290	300								
21	305	300	300	310	285	255	270	245	230	240	240	235	235 ^H	240	240	240	240	255	240	250	250	245	290	300								
22	310	350	405	340	200 ^H	355	200	300	245	210 ^H	240	255	245	230 ^H	255	240	240	240	245	225 ^A	310	275	255	325								
23	335	290	280	250	215 ^H	295	250	240	235	225	240	235	230 ^H	220 ^H	240 ^H	230	240	235	240	245	240	295	325	300								
24	280	280	305	280	295	280	250	240	250	235	245	245	250 ^β	235	245 ^H	260 ^H	255	260	260	240	250	250	285	290								
25	305	C	C	C	C	300	345	255	225	235	240	255 ^H	240 ^H	245	255 ^H	265	250	235	235	230	245	245	285	295								
26	290	290	260	245	220 ^H	260	250	240	240	240	245	245	245 ^H	240 ^H	245 ^H	250	230	250	250	230	230	280	260	260								
27	290	280	295	305	300	295	275	245	235	245	255	245	240 ^H	245 ^H	240 ^H	240 ^H	250	245	240	245	250	280	260	300								
28	300	C	C	C	C	305	305	265	245	245	245	245	245 ^H	250 ^H	245 ^H	240 ^H	240 ^H	250	245	230	245	275	295	300								
29	300	300	300	255	C	C	C	C	240	240	245	250	245	245	245	240	250 ^A	250	245	230	250	285	295	295								
30	300	400	400	350	340	245	245	245	245	245	240 ^H	245 ^H	230	250 ^H	240 ^H	250	250 ^A	250	240	240	235	300	250	250								
31	290	340	300	280	290 ^A	320	250	250	245	245	240	240	240 ^H	240 ^H	240	245	250	250	240	240	225	250	300 ^A	275								
Mean Value	315	315	310	285	275	305	285	250	235	235	245	245	245	245	245	245	235	235	245	240	245	265	315	320								
Median Value	310	310	300	290	280	300	290	250	240	240	245	245	245	245	245	245	240	240	240	245	245	255	320	320								
Count	31	29	29	29	29	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31								

R'F

Speed 685 Mc to 22.0 Mc in 2 min

Manual

Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

type of ES

Jan. 1957

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

type of ES

Sweep 0.85 Mc to 22.0 Mc in 2 min

Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kifutama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

foF2

Jan. 1957

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	4.2 ^J	4.2	4.5	4.4	3.3	3.2	3.5	8.3	12.0	13.0 ^H	12.4 ^H	13.5 ^H	13.1 ^H	12.9	12.1 ^H	11.5	10.1	9.1	6.9	6.2	5.0	4.6	4.3	4.0
2	4.2	3.6	3.3	3.3	3.3	3.4	4.0	8.0	11.6	13.0	12.4 ^H	12.1 ^H	11.8	11.9 ^H	11.6 ^H	11.0	10.2	7.9	6.7	6.9	6.3	5.3	5.2	5.7
3	5.6	5.2	4.8	4.8	3.3 ^H	3.3 ^F	3.8	8.1	9.5	11.1	12.6	13.4	13.0 ^H	12.0 ^H	11.0 ^H	10.5 ^H	9.8	8.9	8.2	7.7	5.1	4.9	4.5	4.8
4	4.9	4.8	4.6	4.0	3.8	3.7	3.8	7.0	10.1	11.5	11.4	11.8 ^H	11.6	11.0 ^H	10.9 ^H	11.3	10.9	9.7	8.7	8.4	7.2	5.4 ^H	4.8	4.8
5	4.5	3.7	3.8	3.7	3.3	3.4	3.3	7.0	9.6	10.7	11.3 ^H	11.8 ^H	12.1 ^H	10.7 ^H	10.7	10.9	9.2	7.8	7.2	6.9	5.6	4.4 ^A	4.0	4.0
6	3.9	4.0	4.1	3.8	3.3	3.0 ^V	3.4	7.1	10.1	10.3	10.9	12.4	12.1	11.1 ^H	11.0	10.7	9.5	8.6	8.0	7.2	6.0	5.1	4.8	4.3
7	4.3	4.5	4.1	4.1 ^F	4.0	3.8	3.8 ^F	7.3	11.0	12.3	11.9	11.5 ^H	11.9	11.7	10.6	9.7	10.5	9.1	7.5	8.1 ^J	6.8	4.6	4.5	4.7
8	5.2 ^R	4.4	3.9	3.7	3.4	3.4	3.7	7.1	10.3	11.0	12.4	13.2	13.0 ^H	11.4	11.2	11.4	10.5	8.7	8.5	8.3	6.1	5.5	5.1	4.8
9	5.3	5.2	4.9	3.7	3.5	3.4	3.3	6.9	9.5	10.4	11.7 ^H	12.8	11.7 ^H	12.0	11.4	11.0 ^H	9.7 ^H	9.1	8.3	6.3	5.1	4.0	3.9	3.9
10	3.7	3.5 ²	3.7 ^F	3.8	3.8	4.0	4.2	7.2	10.0	12.1	13.0 ^H	13.7 ^H	12.6 ^H	2.0 ^H	11.6	11.5 ^H	10.9	9.3	9.1	7.5	7.3	4.6	4.8	5.0
11	5.2	4.7	4.1	4.2	4.2	4.2	4.2	7.1	10.9	13.0	13.6	13.4	12.8 ^V	11.0 ^H	11.7 ^H	10.8	10.0	8.7	8.1	8.1	7.7	5.9	4.2	4.4
12	4.3	4.8	4.4	3.8 ^A	3.1	2.8	3.0	7.1	11.0	12.4	2.0	12.4	13.0	11.5 ^H	11.9	11.4	10.3	8.1	7.4	7.5	6.6	4.4	4.0 ^J	3.7
13	3.8	3.9	3.5 ^F	4.1	2.5	2.3	2.7	7.0	9.3	10.6	12.7	12.2	11.0 ^H	11.5	11.4	11.1	9.3	8.2	8.1	7.4	5.7	4.9	3.9	3.8
14	3.7	3.6	3.5	3.5	3.4	3.2	3.4	6.9	9.2	10.2	10.3	11.2	11.2	10.1	10.2	9.8	9.4	7.1	6.6	6.8	5.9	3.8	3.8	3.7
15	3.7 ^R	3.8	3.7	3.7	3.8	3.7	3.8	6.8	9.8	10.9	11.5	12.5	11.1	10.7	10.3	10.4	9.1	8.3	6.8	6.4	5.9	4.6	4.0	4.1
16	4.2	4.1	4.2	4.1	3.9	3.6	3.8	7.4	10.4	11.7	13.0	13.4	14.5	13.2	11.3	10.9	9.9	8.7	7.2	6.1	4.7	3.9	3.5	3.6
17	3.9	3.9	4.1	4.0	3.4	3.1	3.2	6.8	11.3	11.9	12.3	12.8	11.3	11.2	11.2	10.4	9.0	7.9	6.7	5.8	4.9	4.3	3.8	3.8 ^R
18	3.9	3.8	3.9	4.2	4.0	2.8	3.1	6.8	10.7	10.4	10.9	11.6	11.6	10.9	10.6	10.3	9.9	8.5	6.0	5.8	5.4	3.2	3.4	3.6
19	3.7	3.7	3.9	4.8	4.0	2.8 ^H	3.0	7.2	9.3	10.1	12.4	12.0	11.6 ^H	2.2	11.1	10.3	10.0	8.5	6.4	5.8	5.9	5.0	4.3	4.0
20	3.5	3.6	3.4 ^{VF}	3.6 ^{VF}	3.6 ^{VF}	3.7 ^F	3.7	6.6	9.5	10.9	12.1	12.9 ^H	12.0	11.6	11.8 ^H	11.4	10.6	9.0	7.2	5.9	5.9	5.0	4.3	4.0
21	4.2	4.0	4.0	3.9	3.9	3.7	3.7	7.0	10.9	11.1	13.6	12.7	12.6	14.0	12.3	11.4 ^H	11.0	11.4	10.3	7.9	6.3	5.2	5.1	5.5
22	4.8	4.4	4.0	4.4	3.3	3.4	3.1	6.8 ^H	10.5	14.5	11.8 ^H	12.0	13.2	13.0 ^H	14.2	12.9 ^C	11.6	10.7	8.5	7.2	7.9	6.8	6.5	6.5
23	6.5	6.9	6.6	5.8	4.9	4.5	4.9	8.5	11.3	12.1	13.5	13.3 ^H	11.9 ^H	12.7	12.3	11.9 ^H	11.2	10.9	10.6	8.8	8.3	7.2	6.9	6.6
24	6.2	5.9	5.8	5.8	5.8	5.8	6.5	9.0	11.7	12.9	13.2	13.7	12.8	11.6	11.6 ^H	11.3	11.4	11.7	10.1	9.4	8.5	7.1	6.2	5.7
25	4.9	4.7	4.3	4.4	3.6	3.1	3.2	7.0	11.3	12.2	12.3	13.6	12.9 ^H	11.7	10.0	11.0	10.8	11.0	9.3	8.9	7.2	6.8	6.8	6.7
26	5.8 ^J	5.9	5.5	5.3	4.0	3.3	3.4	7.2	9.5	13.1	12.7	11.9	11.5 ^H	11.8 ^H	12.3 ^H	12.6	11.0	10.0	8.8	8.2	6.8	6.7	6.1	6.1
27	5.4	5.2	4.3	3.9	4.2	4.1	4.3	7.9	10.5	12.3	13.1	13.0	12.0	11.0	11.5 ^H	12.0	10.8	11.4	9.0	6.9	7.1	7.2	6.2	5.8
28	6.1	6.0	4.6	3.8	3.8	4.0	4.3	8.0	11.1	12.5	13.7	13.7	12.5 ^H	12.2 ^H	13.0 ^H	12.2	10.9 ^H	11.3	9.4	8.3	6.9	6.4	5.7	4.9
29	4.7	4.8	4.4	4.2	3.8	3.7	4.1	7.6	9.0	10.9	12.5	12.4	11.8	11.1 ^H	11.3	10.7	10.4	10.4	8.7	7.2	6.5	6.0	5.4	4.9
30	4.5	3.9 ^F	4.3	4.3	4.4	4.6	5.4	8.9	11.3	13.0	13.5	13.5 ^H	13.0 ^H	12.3 ^H	11.8	12.0	11.8	11.9	10.2	8.5	8.0	7.0	7.4	7.1
31	5.0	4.9	4.9	4.8	4.8	4.9	5.3	9.8	12.6	14.4	15.0	14.4	13.6	12.5 ^H	11.7	11.4 ^H	10.9	10.7	9.6	7.9	7.7	7.5	6.2	5.4
Mean Value	4.6	4.5	4.3	4.2	3.8	3.6	3.8	7.5	10.5	11.8	12.4	12.7	12.3	11.8	11.5	11.2	10.3	9.4	8.2	7.3	6.5	5.4	5.0	4.8
Median Value	4.5	4.4	4.2	4.1	3.8	3.4	3.7	7.1	10.5	11.9	12.4	12.8	12.1	11.7	11.4	11.1	10.4	9.1	8.2	7.2	6.3	5.1	4.8	4.8
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

foF2

Sweep L.O. Mc to 1.7.2. Mc in min Manual Automatic

foF2

K 1

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Kokubunji Tokyo
Lat. $35^{\circ}42.4'N$
Long. $139^{\circ}29.3'E$

IONOSPHERIC DATA

foF1

Jan. 1957

135° E Mean Time

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													L											
3																	L							
4																A	A							
5													41											
6										L	52 ^L													
7											66 ^L	54 ^L	60 ^L											
8											53 ^L				A	L								
9											56 ^L													
10														L										
11																								
12										L	A	A												
13																								
14											L	L	L	L										
15											L	L	L	L										
16																								
17																								
18																								
19										L			L	L										
20														L	L									
21														L										
22												L			L	C								
23															L									
24											L	B			A									
25											L	L			51 ^L									
26																								
27																								
28																								
29																								
30																								
31																								
Mean Value											5.4	6.0	5.4	6.0	4.6	3.0								
Median Value										5.4	6.0	5.4	6.0	4.6	3.0									
Count										2	2	1	1	2	1									

foF1

Sweep 1.0 Mc to 7.72 Mc in 2 min

Manual

Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

f_oE

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							2.00	2.75	3.00 ^H	3.45 ^R	3.60 ^R	3.75	3.60 ^A	3.45 ^R	3.00	2.20	1.80							
2							2.10	2.80	3.25	3.55 ^R	3.85	3.80	3.65	3.30	3.05	2.25								
3							2.10	2.60	3.25	R	B	B	3.75	3.25	3.20	2.35								
4							2.10 ^H	2.95 ^H	R	R	4.00	3.90 ^A	3.70 ^A	3.25 ^A	A	A								
5							2.00	2.90	R	B	B	3.80	3.60 ^R	3.45	3.05 ^H	2.10 ^A								
6							2.20	2.80 ^A	3.40	3.55 ^R	R	A	3.25	R	A	A								
7							A	2.80	3.25	R	R	R	3.65	3.40 ^R	2.90 ^A	2.40 ^A								
8							1.90	2.80	3.25	R	B	R	A	3.40 ^R	3.00	A								
9							2.10 ^H	2.75	3.25	R	R	3.65	3.55 ^R	3.30	A	A								
10							1.90	2.50 ^R	3.00	3.30	B	R	3.65	3.30 ^R	3.00 ^H	2.40								
11							1.90	2.60 ^H	2.90 ^H	3.25	3.65	3.65	3.45	3.10	2.80	A								
12							A	A	R	3.55	3.65 ^R	3.75	3.50 ^A	3.05 ^A	2.80 ^A	2.50 ^H								
13							1.90	R	3.15	3.30	3.65	3.70	3.50 ^R	3.25	2.85	2.50	1.80							
14							1.80 ^H	2.35	A	R	3.55 ^R	3.60	3.60 ^H	3.35 ^A	3.10	2.35								
15							B	R	3.15	R	3.50 ^R	3.65	3.50 ^R	3.25	2.75	2.50	B							
16							2.10 ^{PH}	2.65 ^A	3.20	3.40 ^R	3.30 ^R	R	R	3.45	A	A	1.80 ^H							
17							1.80 ^H	2.60	2.95	3.25	3.60 ^R	3.65	3.60	3.30 ^R	A	A								
18							2.00 ^H	2.50	3.10	3.30	3.50	3.60	3.30 ^R	3.25 ^A	3.20	R	1.75 ^H							
19							1.80	2.65 ^H	3.20	3.45	3.65	3.45 ^R	3.25	3.40	3.30	2.60								
20							2.00	2.60 ^H	3.25	3.30 ^R	3.60	3.70	3.50 ^R	3.30	3.10	2.10 ^A								
21							2.00	2.65	3.25	3.65	3.65	3.65 ^R	3.45 ^R	3.25	3.20	2.60								
22							2.05	2.80 ^H	3.25 ^H	3.50	3.60 ^R	3.65	3.40 ^R	R	C	A	A							
23							2.10	2.70 ^A	3.25 ^R	3.65	R	R	3.70	3.70 ^R	3.10 ^H	2.65								
24							B	2.45	3.00	3.25 ^R	3.30	B	3.40 ^R	R	2.95	2.70	R							
25							1.90	2.70	3.25 ^R	R	R	B	3.90	3.65	3.35	2.50	1.70							
26							2.05	2.75	3.25	3.45 ^R	3.65 ^R	R	R	3.60	3.20	2.80	1.95							
27							2.00	2.65 ^A	3.30 ^R	3.70 ^R	R	B	3.90	3.70 ^R	3.30	A								
28							2.05	2.80	3.25 ^C	3.70	3.70 ^R	3.70 ^R	3.70 ^R	3.30	3.00 ^R	2.75								
29							R	2.75	3.25	3.60 ^R	3.65	3.75 ^B	3.85 ^R	3.70	3.25 ^A	2.70	1.95							
30							2.10	2.75	3.20 ^A	3.40 ^R	3.65	3.70 ^R	3.80	3.65	3.35	A	A							
31							2.00	2.70	3.20	3.25 ^R	3.30	R	R	3.70 ^R	R	A	B							
Mean Value							2.00	2.70	3.20	3.45	3.60	3.70	3.60	3.40	3.10	2.45	1.80							
Median Value							2.00	2.70	3.25	3.45	3.65	3.70	3.60	3.30	3.10	2.50	1.80							
Count							26	28	27	20	20	19	26	28	24	19	7							

f_oE

Sweep 1.0 Mc to 17.2 Mc in 2 min

Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kitakama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 28.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

foEs

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.9 ^J	2.6	E	1.6 ^J	1.9 ^J	E	E	G	3.0	G	G	B	G	3.2	3.8	3.3	2.4	G	1.9 ^J	1.7 ^J	2.6 ^J	2.4 ^J	E	E
2	E	E	E	1.1	1.1	1.7 ^J	2.5	G	3.2	G	G	G	4.2	3.9	G	G	2.7	E	E	E	E	E	E	E
3	1.8 ^J	E	E	1.6	2.3 ^J	E	E	G	3.2	G	G	B	B	4.8	5.0 ^J	2.7 ^J	2.6 ^J	3.7 ^J	E	E	E	E	E	E
4	E	E	1.9 ^J	1.7 ^J	1.6 ^J	1.7 ^J	1.8 ^J	G	G	G	G	4.8	5.4 ^J	5.1 ^J	4.4	5.4 ^J	5.7	4.0 ^J	2.5	2.6 ^J	E	2.4	E	1.7 ^J
5	E	E	1.7 ^J	2.6 ^J	2.2 ^J	3.4	E	G	G	G	B	B	G	G	4.0	3.7	3.2	2.9 ^J	2.5	3.3 ^J	1.9 ^J	2.6 ^J	4.3 ^J	3.8 ^J
6	2.4 ^J	2.5	2.2 ^J	1.6 ^J	2.2 ^J	2.6 ^J	2.5 ^J	2.4	6.3 ^J	4.9 ^J	G	G	4.7	4.2	4.3 ^J	3.8	6.1 ^J	3.6	2.6 ^J	2.6 ^J	2.5	2.4	2.3 ^J	E
7	E	E	1.5 ^J	2.5	2.7 ^J	2.3 ^J	3.3 ^J	3.2 ^J	3.2	G	G	G	G	4.4	3.8	3.2	3.0	E	1.9 ^J	1.6 ^J	E	E	E	E
8	E	E	E	5.9 ^J	5.9 ^J	E	E	2.6 ^J	3.2	G	G	B	G	3.6	6.1	3.2	2.6 ^J	2.6 ^J	E	1.7 ^J	E	E	E	E
9	E	E	E	1.5 ^J	1.5 ^J	E	E	G	3.2	G	G	G	4.2	4.4 ^J	6.1 ^J	3.2	2.5	2.3	1.6 ^J	E	E	E	E	E
10	E	E	E	E	1.4 ^J	E	E	G	G	3.3	G	B	G	G	G	G	G	E	E	E	1.5 ^J	E	E	E
11	E	E	E	1.5 ^J	1.8 ^J	1.9 ^J	E	2.7 ^J	G	G	G	G	G	4.2	4.3	4.3 ^J	2.7	E	2.4 ^J	E	1.7 ^J	E	E	2.6 ^J
12	1.9 ^J	E	3.1 ^J	6.5 ^J	2.6 ^J	1.9 ^J	2.4 ^J	2.4 ^J	2.6 ^J	G	G	G	7.5 ^J	8.0 ^J	3.5	3.2	1.8 ^J	E	E	1.7 ^J	1.8 ^J	1.7 ^J	E	E
13	E	E	E	E	1.8 ^J	2.5	2.5	G	G	G	G	4.5	4.2	4.3	4.1 ^J	3.1	G	G	1.4 ^J	E	E	E	1.3 ^J	E
14	E	E	E	E	E	E	E	G	2.5	3.6	G	3.8	3.9	3.9	4.1 ^J	3.3	2.9	1.6 ^J	1.8 ^J	1.8 ^J	E	E	E	E
15	E	E	E	1.6 ^J	E	1.9 ^J	1.7 ^J	G	G	G	G	3.8	4.3	4.3	3.8	3.2	2.7	B	1.9 ^J	2.2 ^J	E	E	E	E
16	E	E	E	1.7 ^J	1.7 ^J	E	E	1.4 ^J	3.2	G	G	G	5.4 ^J	5.9 ^J	4.3 ^J	3.3	3.6 ^J	2.4 ^J	E	E	E	E	E	3.2
17	E	1.9 ^J	E	E	E	E	E	G	G	G	3.9	3.9	4.9 ^J	3.8	3.2	3.3	1.9 ^J	G	E	E	E	E	E	E
18	E	E	E	E	1.5 ^J	2.6 ^J	1.5 ^J	G	G	G	G	3.7	4.9 ^J	3.8	3.2	3.3	3.0	G	E	E	E	E	E	E
19	E	2.4 ^J	1.7 ^J	E	E	E	E	2.1	2.7	G	3.6	3.8	G	G	3.9	G	G	E	1.8 ^J	4.3 ^J	E	E	E	E
20	1.7 ^J	2.4	1.6 ^J	1.6 ^J	E	E	E	G	G	3.6	G	4.2	G	4.7	4.4	3.2	3.6 ^J	2.4 ^J	2.6 ^J	4.3	2.7 ^J	2.6 ^J	E	1.5 ^J
21	2.6 ^J	E	E	E	E	1.7 ^J	E	2.1	G	G	G	4.6	4.4	G	3.9	G	G	E	2.4 ^J	E	E	E	E	E
22	E	E	E	E	E	E	E	G	3.0	3.6	3.9	5.1 ^J	4.7	5.3 ^J	4.2 ^J	C	3.8	4.7	2.8	E	E	E	E	E
23	3.8 ^J	2.6 ^J	3.1 ^J	2.4 ^J	2.4 ^J	E	E	2.4	3.3	G	G	G	B	3.6	6.1 ^J	3.3	G	E	E	2.1 ^J	2.7 ^J	3.2	2.6 ^J	2.4
24	E	E	E	E	1.1	E	E	E	G	G	G	G	B	5.2	4.2	3.6	2.9	G	E	E	E	E	E	E
25	2.3	3.0	2.0	E	E	E	E	G	3.3	G	G	G	G	5.8 ^J	4.2	3.6	2.9	G	E	E	E	E	E	2.5
26	E	E	1.7 ^J	1.8 ^J	E	E	E	G	G	G	G	G	G	G	4.3	2.6 ^J	1.7 ^J	2.1 ^J	2.4	E	E	E	E	E
27	E	E	E	E	E	E	E	G	3.3	G	G	G	B	4.3	4.3	4.6 ^J	3.8	4.6 ^J	2.7 ^J	E	E	1.5 ^J	E	E
28	E	E	E	E	E	E	E	G	G	C	G	G	G	G	G	G	3.2	E	E	E	1.6 ^J	1.9 ^J	E	E
29	E	E	2.3	2.1	E	E	E	G	G	G	4.3	G	4.8	5.0	4.2	3.6	G	G	2.4	2.6 ^J	E	E	E	E
30	E	1.9 ^J	E	E	E	E	E	G	G	3.6	4.2	4.3	4.6	G	G	3.5	2.9	3.2	E	2.4 ^J	E	E	E	1.9 ^J
31	E	E	E	E	1.8 ^J	E	E	3.7 ^J	G	G	G	G	G	G	G	G	3.1	B	5.6 ^J	2.8	E	E	E	E
Mean Value	2.6	2.4	2.1	2.1	2.1	2.2	2.3	2.5	3.3	3.7	4.0	4.3	4.8	4.6	4.3	3.5	3.2	3.0	2.4	2.5	2.1	2.4	2.9	2.4
Median Value	E	E	1.5	1.5	1.5	E	E	G	G	G	G	G	3.9	4.2	4.0	3.2	2.7	G	1.8	E	E	E	E	E
Count	31	31	31	31	31	31	31	31	31	30	30	26	27	31	31	30	31	29	31	31	31	31	31	31

foEs

Sweep 1.0 Mc to 1.72 Mc in 2 min
 Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Kokubunji Tokyo
Lat. 35° 42.4' N
Long. 139° 28.3' E

IONOSPHERIC DATA

135° E Mean Time

fbEs

Jan. 1957

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													4.1				2.6							
2						1.4								4.6										
3	1.7				1.3								5.4	5.1	4.2	5.4	4.0		1.8					
4					1.7	1.9					4.5		5.4	4.0	3.7	3.0	2.9 ^A			2.0	1.8	2.4	2.0	
5													4.5	4.2	4.3	3.6	2.7	2.3		2.0	1.9			
6		1.8	1.5		1.4	1.4							4.3											
7													4.2	4.4	4.1			2.0						
8					1.2								4.2	4.4	4.1			1.9						
9													4.1						2.0					
10					1.2	1.4							7.1	6.0	4.1									
11					1.8	1.8 ^A							4.2	4.1					1.8					
12	1.9												4.2	4.1										
13																								
14																								
15						1.7							4.2	4.1										
16													5.1	4.4	4.1									
17												4.3												
18						1.8																		
19																								
20										3.5														
21																								
22																								
23	1.9	1.9	2.3		1.7	2.0							4.1	5.2	4.2									
24													4.5											
25													4.1											
26																								
27																								
28																								
29																								
30																								
31																								
Mean	1.8	1.8	1.6	1.6	1.5	1.6				3.0	3.5	4.1	4.3	4.8	4.3	4.2	3.1	2.9	2.0	2.7	2.1	2.2	3.1	2.1
Median	1.9	1.8	1.4	1.7	1.4	1.4					3.0	4.1	4.5	4.6	4.2	4.0	3.0	2.8	1.9	2.3	2.0	2.2	3.5	2.1
Count	3	4	8	3	8	7				1	1	2	5	11	14	10	6	9	6	7	6	4	4	3

fbEs

Sweep 1.0 Mc to 1.7.2 Mc in 2 min
 Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kitchama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

f-min

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.70	1.70	1.65	1.80	E	E	1.50	1.60	1.70	1.70	1.70	1.70	1.85	1.70	1.65	1.70	1.70	1.60	1.70	1.70	1.60	1.70	1.70	1.70
2	1.50	1.40	E	E	E	1.00	1.65	1.60	1.70	1.70	1.85	2.25	1.80	1.90	1.65	1.50	1.65	1.60	1.60	1.60	1.60	1.65	1.70	1.60
3	1.60	1.40	E	E	E	1.35	1.60	1.65	1.65	1.65	1.80	5.40	4.20	2.60	1.70	1.80	1.65	1.55	1.50	1.60	1.60	1.60	1.60	1.60
4	1.70	1.35	E	E	E	1.00	1.60	1.70	2.00	2.70	2.75	2.35	2.25	2.00	1.70	1.65	1.60	1.60	1.60	1.60	1.65	1.60	1.70	1.85
5	1.60	1.40	1.40	E	E	1.40	1.70	1.70	1.90	2.00	4.60	4.50	2.30	2.40	1.65	1.80	1.65	1.60	1.60	1.65	1.60	1.55	1.60	1.50
6	1.65	1.40	E	E	E	1.45	1.65	1.50	1.90	1.80	2.00	2.00	2.40	2.50	2.40	1.80	1.55	1.60	1.60	1.60	1.60	1.60	1.55	1.65
7	1.70	1.40	E	E	E	E	1.60	1.65	1.70	1.90	2.00	2.10	2.35	2.55	2.80	2.10	1.75	1.75	1.60	1.55	1.65	1.60	1.60	1.65
8	1.70	1.70	1.25	E	E	1.40	1.65	1.65	1.90	2.00	2.40	4.40	2.35	2.50	2.30	2.05	1.65	1.55	1.60	1.60	1.60	1.65	1.65	1.70
9	1.30	1.40	E	E	E	1.40	1.60	1.85	1.75	2.10	2.50	2.15	2.35	2.10	2.05	2.00	1.65	1.60	1.65	1.65	1.65	1.60	1.60	1.65
10	1.40	1.45	1.00	E	E	1.40	1.60	1.60	1.80	1.65	1.90	4.50	2.35	2.30	2.00	1.80	1.80	1.65	1.65	1.60	1.60	1.60	1.70	1.65
11	1.50	1.60	E	E	E	1.00	1.60	1.65	1.65	1.65	1.80	2.10	2.30	2.10	2.15	1.90	1.65	1.65	1.60	1.60	1.65	1.65	1.70	1.65
12	1.40	1.40	E	E	E	1.40	1.65	1.60	1.85	2.00	2.10	2.40	2.40	2.10	2.00	2.00	1.70	1.85	1.70	1.70	1.70	1.70	1.65	1.70
13	1.70	1.45	E	E	E	1.40	1.70	1.65	1.70	1.85	1.90	2.35	2.70	2.00	2.15	1.85	2.00	1.60	1.70	1.65	1.70	1.65	1.60	1.65
14	1.60	1.40	E	E	E	1.40	1.70	1.65	1.85	1.65	2.10	2.45	2.15	2.00	2.00	1.85	1.70	1.85	1.70	1.70	1.60	1.60	1.70	1.70
15	1.70	1.40	E	E	E	1.35	1.70	1.65	1.85	1.85	2.40	2.40	2.15	1.80	1.90	1.85	1.70	1.70	1.65	1.70	1.85	1.60	1.70	1.70
16	1.40	1.70	E	E	E	1.70	1.70	1.70	1.85	1.85	2.00	2.10	2.00	2.00	2.00	1.60	1.65	1.70	1.75	1.60	1.70	1.70	1.65	1.60
17	1.60	1.40	E	E	E	1.40	1.70	1.70	1.70	1.70	1.90	2.10	2.40	2.25	2.40	1.80	1.85	1.70	1.70	1.70	1.65	1.70	1.70	1.70
18	1.60	1.40	1.20	E	E	1.30	1.40	1.70	1.70	1.70	2.10	1.80	2.20	2.25	2.00	1.70	1.90	1.60	1.65	1.70	1.65	1.65	1.70	1.65
19	1.70	1.40	1.35	1.45	1.40	1.40	1.70	1.65	1.70	1.90	1.90	2.25	2.30	2.30	1.90	2.00	2.00	1.65	1.60	1.60	1.60	1.60	1.65	1.60
20	1.50	1.70	E	E	E	1.40	1.70	1.70	1.80	1.90	2.10	2.35	2.10	2.15	2.10	2.10	1.70	1.60	1.60	1.55	1.60	1.65	1.70	1.65
21	1.60	1.70	1.30	1.40	E	1.40	1.60	1.70	1.80	2.00	2.35	2.10	2.10	2.10	1.90	1.80	1.65	1.85	1.60	1.65	1.60	1.65	1.70	1.65
22	1.70	1.45	1.30	E	E	1.25	1.40	1.60	1.75	1.80	2.00	2.25	2.30	2.20	2.70	2.30	1.85	1.50	1.60	1.65	1.60	1.65	1.65	1.70
23	1.60	1.40	E	1.40	E	1.40	1.60	1.70	1.70	1.85	2.20	2.60	2.50	2.55	2.40	2.00	2.10	2.10	1.65	1.70	1.65	1.60	1.65	1.60
24	1.65	1.40	1.25	1.00	1.00	1.40	1.60	1.90	1.85	2.40	2.15	2.05	6.20	2.40	2.50	2.00	2.10	1.70	1.70	1.65	1.65	1.60	1.65	1.70
25	1.50	1.45	E	1.30	E	1.40	1.45	1.70	1.70	1.65	2.35	2.35	5.00	2.60	2.30	2.00	1.90	1.60	1.65	1.65	1.60	1.60	1.65	1.80
26	1.65	1.40	E	E	E	1.35	1.70	1.65	1.70	1.90	2.25	2.70	2.60	2.50	2.60	2.35	1.85	1.65	1.70	1.60	1.60	1.60	1.65	1.60
27	1.45	1.40	1.00	E	E	1.00	1.70	1.75	1.65	2.30	2.65	2.80	4.20	2.90	2.50	2.00	1.70	1.70	1.70	1.65	1.60	1.60	1.65	1.60
28	1.70	1.40	E	E	E	1.40	1.60	1.70	1.85	2.20	2.60	2.50	2.60	2.40	2.40	2.40	2.40	1.95	1.60	1.65	1.60	1.60	1.65	1.60
29	1.60	1.40	E	E	E	1.40	1.70	1.85	1.70	2.15	2.30	2.70	4.05	2.50	2.30	2.00	1.85	1.70	1.60	1.65	1.60	1.60	1.65	1.60
30	1.65	1.80	1.30	1.30	E	1.40	1.60	1.65	1.80	2.10	2.30	2.40	2.35	2.55	2.30	2.05	1.85	1.60	1.65	1.60	1.60	1.65	1.60	1.70
31	1.40	1.60	1.30	E	E	1.40	1.70	1.70	1.70	2.20	2.35	2.40	2.80	2.65	2.70	2.15	1.90	1.95	1.60	1.60	1.60	1.70	1.70	1.70
Mean Value	1.60	1.50	1.30	1.35	1.35	1.35	1.65	1.70	1.75	1.95	2.25	2.60	2.70	2.30	2.20	1.95	1.80	1.70	1.65	1.65	1.65	1.65	1.65	1.70
Median Value	1.60	1.40	E	E	E	1.40	1.65	1.65	1.75	1.90	2.10	2.35	2.35	2.30	2.15	2.00	1.70	1.65	1.65	1.65	1.60	1.60	1.65	1.65
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

f-min

Group L.O. Mc to 17.2. Mc in 2 min

Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Kokubunji Tokyo

Lat. 36° 42.4' N
Long. 139° 29.8' E

IONOSPHERIC DATA

135° E Mean Time

(M3000)F₂

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.50 ^U	2.55	2.65	2.90	2.45	2.50	2.90	3.15	3.15	3.15 ^H	2.80	2.80 ^H	2.70	2.75 ^H	2.65 ^H	2.85	2.80	2.85	2.70	2.90	2.70	2.80	2.80	2.50
2	2.65	2.60	2.40	2.25	2.45	2.85	3.00	3.15	3.10	3.10 ^H	2.70	2.60 ^H	2.70	2.65 ^H	2.80	2.80	2.90	2.85	2.70	2.90	2.85	2.40	2.25	2.35
3	2.65	2.65	2.45	2.70	2.75	2.35	3.25	2.85	2.70	2.60 ^H	2.55 ^H	2.70 ^H	2.50 ^H	2.65 ^H	2.55 ^H	2.65 ^H	2.75	2.80	2.85	3.00	3.20	2.75	2.55	2.65
4	2.75	2.70	2.75	2.65	2.65	2.60	3.00	3.00	3.10	2.90 ^U	2.90 ^H	2.80 ^H	2.65	2.65	2.80	2.65	3.00	2.75	2.75	2.70	3.05	2.55	2.50	2.65
5	2.80	2.55	2.60	2.65	2.65	2.80	3.05	3.05	3.00	3.00 ^H	2.80 ^H	2.90 ^H	2.90	2.60	2.80	2.80	3.00	2.75	2.80	2.90	2.85	2.50	2.60	2.65
6	2.55	2.50	2.60	2.90	2.70	2.50	2.95	3.05	3.05	2.85	2.70	2.70	2.80	2.70	2.75	2.80	2.85	2.85	2.80	2.85	2.70	2.70	2.50	2.50
7	2.55	2.70	2.45	2.35	2.70	2.60	3.00	3.05	3.15	2.95	2.70	2.70	2.75	2.80	2.75	2.80	2.80	2.85	2.70	3.00	3.15	2.50	2.40	2.65
8	2.85 ^R	2.75	2.80	2.70	2.50	2.45	2.85	3.05	3.10	2.95	2.85	2.85	2.80	2.75	2.70	2.75	2.90	2.85	2.80	3.00	2.65	2.55	2.55	2.45
9	2.55	2.70	3.00	2.70	2.40	2.45	3.05	3.05	3.05	2.85	2.80	2.75	2.75	3.00	2.70	2.90	2.90	2.80	2.95	3.00	2.95	3.05	2.65	2.65
10	2.50	2.15	2.35	2.35	2.35	2.60	2.45	3.00	3.05	3.00	2.85	2.80	2.70	2.75	2.75	2.80	2.95	2.90	2.85	2.80	2.95	2.85	2.35	2.50
11	2.65	2.65	2.40	2.55	2.50	2.55	3.05	3.05	3.05	3.05	2.90	2.80	2.80	2.75	2.85	2.85	3.00	3.00	2.80	2.95	3.10	2.90	2.55	2.50
12	2.50	2.75	2.05	2.90	2.80	2.50	2.65	3.05	3.25	3.10	2.90	2.90	2.90	2.80	2.80	2.90	2.95	2.95	2.85	2.95	3.05	2.95	2.75	2.70
13	2.75	2.65	2.65 ^F	3.10	2.90	2.50	2.65	3.15	3.20	3.30	3.10	3.00	2.85	2.90	2.95	2.90	3.00	2.85	3.05	2.80	2.80	3.10	2.65	2.65
14	2.80	2.55	2.65	2.75	2.70	2.60	2.70	3.20	3.35	3.30	2.90	2.95	3.10	2.80	2.95	2.95	3.05	3.00	2.95	2.90	2.90	2.70	2.75	2.65
15	2.55 ^R	2.60	2.80	2.50	2.70	2.70	2.95	3.20	3.10	3.10	3.05	3.15	3.00	2.85	2.85	3.05	3.00	3.00	2.90	2.90	2.85	2.85	2.75	2.55
16	2.50	2.50	2.55	2.60	3.15	2.50	2.45	3.00	3.10	3.00	2.95	2.85	2.90	2.95	2.85	2.95	2.95	3.05	3.00	3.10	2.95	2.80	2.65	2.50
17	2.50	2.65	2.65	2.95	2.75	2.70	2.65	2.95	3.25	3.10	2.95	3.10	3.00	2.85	2.90	2.95	3.00	3.05	3.00	3.10	3.10	2.95	2.70	2.65
18	2.65	2.65	2.60	2.70	3.40	2.65	2.70	2.95	3.35	3.15	3.10	2.90	2.95	3.00	2.85	3.00	2.95	3.15	3.10	3.00	3.15	2.80	2.60	2.45
19	2.55	2.50	2.55	2.90	3.05	2.55	2.75	3.15	3.15	3.05	3.15	3.10	2.95	3.00	3.00	3.00	3.00	3.20	3.00	2.90	3.05	2.90	2.65	2.55
20	2.65	2.65	2.50 ^F	2.45	2.55 ^F	2.55 ^F	2.90	3.05	3.20	3.10	3.00	3.00	2.90	2.85	2.85	3.05	2.95	3.00	3.15	2.90	2.95	2.85	2.80	2.75
21	2.60	2.75	2.65	2.75	2.65	2.80	2.90	3.20	3.35	3.00	3.10	3.00	2.70	2.85	2.80	2.75	2.75	2.80	3.00	2.95	2.70	2.50	2.60	2.65
22	2.60	2.40	2.25	2.50	3.30	2.40	3.35	2.55	2.95	2.95	2.75	2.75	2.65	2.55	2.75	2.75	2.75	2.80	2.80	2.80	2.85	2.80	2.60	2.50
23	2.50	2.75	2.80	2.80	2.75	2.60	2.80	3.10	3.25	3.15	3.05	2.95	2.70	2.75	2.75	2.70	2.85	2.95	2.90	3.05	2.80	2.70	2.45	2.50
24	2.60	2.55	2.45	2.60	2.50	2.50	2.90	3.10	3.05	3.05	2.80	2.80	2.80	2.65	2.65	2.65	2.70	2.80	2.80	2.85	2.75	2.70	2.60	2.75
25	2.65	2.65	2.60	2.80	2.80	2.50	2.55	2.75	3.00	3.00	2.80	2.55	2.65	2.70	2.55	2.70	2.70	2.85	2.75	2.80	2.75	2.65	2.65	2.65
26	2.70	2.75	2.90	3.05	3.35	2.35	2.55	3.05	3.00	3.15	2.90	2.80	2.80	2.70	2.65	2.80	2.80	2.80	2.80	2.80	2.80	2.65	2.75	2.80
27	2.70	2.75	2.70	2.35	2.40	2.65	2.65	3.05	3.05	2.90	2.90	2.85	2.80	2.65	2.65	2.85	2.80	2.85	2.95	2.75	2.70	2.80	2.65	2.35
28	2.50	2.85	2.90	2.45	2.55	2.60	3.00	3.25	2.80	2.85	2.75	2.70	2.70	2.60	2.60	2.70	2.70	2.80	2.85	2.90	2.75	2.55	2.75	2.70
29	2.60	2.70	2.75	3.00	2.45	2.40	2.75	3.20	2.90	2.95	2.90	2.85	2.80	2.80	2.75	2.70	2.70	2.90	2.85	2.80	2.60	2.70	2.70	2.75
30	2.55	2.20	2.20	2.80	2.25	2.45	2.55	3.00	3.20	2.85	2.90	2.80	2.70	2.65	2.60	2.60	2.60	2.85	2.75	2.75	2.70	2.60	2.60	2.95
31	2.65	2.40	2.45	2.40	2.55	2.60	2.50	2.95	2.95	2.90	2.80	2.80	2.65	2.65	2.65	2.70	2.75	2.75	2.80	2.75	2.70	2.80	2.90	2.60
Mean	2.60	2.60	2.60	2.65	2.70	2.55	2.70	3.05	3.10	3.05	2.90	2.85	2.80	2.75	2.75	2.80	2.85	2.90	2.85	2.90	2.85	2.75	2.60	2.60
Median	2.60	2.65	2.60	2.70	2.65	2.55	2.70	3.05	3.10	3.05	2.90	2.80	2.80	2.75	2.75	2.80	2.85	2.85	2.85	2.90	2.85	2.75	2.60	2.65
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

Sweep 1.0 Mc to 17.2 Mc in 2 min

(M3000)F₂

Manual

Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

(M3000)F1

Jan. 1957

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												L												
3													L				L							
4																A	A							
5															L	3.50								
6										L	3.50 ^L													
7											3.25 ^L	3.45 ^L	3.35 ^L											
8											3.60 ^L				A	L								
9										3.50 ^L														
10													L											
11																								
12											A	A												
13										L														
14											L	L		L										
15											L	L		L										
16											L	L		L										
17																								
18																								
19										L				L										
20														L		L								
21																								
22										L				L		C								
23														L										
24										L	B			L	A									
25										L				L		3.25 ^L								
26										L														
27										L														
28																								
29										L				L										
30														L										
31													L											
Mean Value												3.50	3.45	3.45	3.35	3.40	3.50							
Median Value											3.50	3.40	3.45	3.35	3.40	3.40	3.50							
Count											2	2	1	1	2	1	1							

(M3000)F1

Group 1.0 Mc to 7.2 Mc in 2 min

Manual Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

R'F2

Jan. 1957

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		275								
2											L													
3											275					L	275							
4																A	A							
5																300								
6										260	305				275	245								
7											325	300	345											
8											280 ^H	280 ^H	340 ^A	275										
9											300													
10											250 ^H	275												
11													270 ^A	275 ^A										
12										255														
13											270	265	270	285										
14															270									
15											260	280	275	265				240						
16																								
17																								
18																								
19										260				265	250									
20																270								
21														280										
22											275				295	C								
23															275									
24											260	300			255 ^H									
25											275					330								
26												245 ^H	270 ^H											
27											290													
28															290 ^H									
29											260				295									
30																								
31																								
Mean Value										260	275	275	275	275	280	290	265	240						
Median Value										260	275	275	275	275	275	275	260	240						
Count										3	11	8	9	13	5	2	1							

R'F2

Sweep 1.0 Mc to 1.22 Mc in 2 min

Manual

Automatic

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

f_oF

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	330	310	260	270	310	350	275	250	245 ^H	235 ^H	245 ^H	240 ^H	250 ^H	250 ^H	260	245	255	220	250	275	270	310	335
2	300	250	345	340	370	350	285	275	250	250 ^H	230 ^H	230 ^H	240 ^H	250 ^H	250 ^H	250	260	230	275	270	230	315	395	355
3	285	275	280	275	225	350 ^F	340	265	250	230	250	255	260 ^H	250 ^H	250 ^H	245 ^H	250 ^A	235	275	255	215	250	300	305
4	300	280	280	280	265	300	300	250	250	250	250	250	280 ^A	260 ^H	250 ^A	280 ^A	265	270	265	250	230	230	305	305
5	290	290	325	350	285	320	280	250	240	235	250	250	250	245 ^H	250	250	240	230	265	260	250	290	300	305
6	310	340	330	275	245	330	280	255	230	240	245	240	255	250	245	270	255	260	250	250	230	260	280	325
7	315	300	320	330	300	300	310	250	245	255	250	250	255	250	230	265	275	235	270	260	240	270	350	350
8	295	245	255	300	300	350	275	245	250	250	250	255	250	250	260 ^A	255	250	240	240	230	220	235	325	325
9	305	250	255	275	350	370	230	250	235	230	235	250	240	280	255	245	230	250	245	230	220	260	305	305
10	315	430	355 ^F	345	280	315	280	275	230	250	235	240 ^B	245	245	255	240	250	245	270	240	245	225	310	345
11	300	300	305	300	330	325	300	275	255	250	245	240	255	230	250	245	240	235	230	280	230	250	300	330
12	350	280	270	275	280	300	345	275	235	240	240	240	A	A	260	250	230	220	250	255	235	260	275	315
13	325	325	290	230	220	380	340	250	240	250	250	245	230	245	240	250	235	240	235	210	255	255	285	340
14	320	320	325	290	270	320	325	250	230	250	240	250	230	250	250	250	250	230	230	250	230	250	280	325
15	350	355	300	295	240	335	325	275	235	235	245	250	250	245	240	250	235	240	250	250	230	250	280	325
16	325	340	320	310	235	350	355	275	240	230	235	245	250	255	240	250	240	230	250	250	230	260	285	320
17	375	330	280	250	250	280	330	280	250	250	235	245	255	250	250	250	240	235	230	240	240	260	290	320
18	325	325	325	265	230	360	320	275	245	225	240	250	255	240	255	240	240	245	220	250	230	255	340	365
19	355	375	350	280	240	230 ^F	310	255	235	240	250	245	230	260	230	240	250	230	230	240	245	250	255	320
20	325	330	365	355	280	340	265	245	240	245	240	245	240	250	250	250	250	230	230	230	240	250	250	280
21	320	300	305	325	270	250	275	250	250	235	250	245	245	240	240	230 ^H	255	255	230	230	255	280	295	310
22	315	350	415	345	240	400	250	305	250	250	230	255	250	255	250	245	240	280	250	270	280	275	350	330
23	325	295	280	235	250	270	280	250	230	230	240	235	230	255	245	230	250	250	245	250	250	265	355	285
24	295	295	315	275	280	300	270	245	230	250	250	250	250	245	250	250	255	255	235	255	240	250	290	285
25	280	315	300	275	220	325	360	255	245	230	255	250	250	260	240	250	265	265	240	250	235	280	300	295
26	270	300	275	250	225	275	300	255	230	255	240	245	230	240	250	255	245	245	250	230	270	275	270	265
27	275	275	280	290	330	295	295	255	235	240	250	240	255	250	255	260	260	275	235	240	275	255	275	340
28	305	255	245	305	300	335	325	275	245	250	250	240	250	235	255	255	245	270	230	260	255	295	285	275
29	310	295	280	255	315	390	295	235	235	240	240	250	255	255	245	250	255	255	230	255	270	270	275	285
30	310	455 ^F	405	355	380	320	290	265	245	250	250	240	240	230	250	250	255	255	240	235	270	290	300	250
31	255	325	300	285	300	315	350	265	240	250	245	240	235	230	250	245	250	250	250	240	280	250	245	285
Mean Value	310	315	310	295	275	320	305	260	240	240	245	245	245	250	250	250	250	245	245	250	250	265	300	315
Median Value	310	300	305	285	270	320	300	255	240	245	245	245	250	250	250	250	250	245	245	245	250	260	300	320
Count	31	31	31	31	31	31	31	31	31	31	31	31	29	30	31	31	31	31	31	31	31	31	31	31

f_oF

Sweep 1.0 Mc to 11.2 Mc in 2 min

Manual

Automatic

K 10

The Radio Research Laboratories
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

R'ES

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	125	120	120	125	115				110				105	150	150	180	180		115	140	130	130		
2				130	125	120	115		130			135	135			175								
3	130			130	120				130				130	125	125	125	125	120						
4			105	100	100	120	115					125	125	145	140	125	115	105	105	130		115		105
5			120	110	125	120							130	125	125	120	125	125	120	115	115	105	105	110
6	125	110	105	110	120	130	125	130	120				130	130	125	120	120	105	105	105	100	105	100	
7			130	125	120	120	115		115				130	130	130	125	125	110	110	105				
8					125	110		115	125				125	125	125	130	125	110	110	105				
9				115	115							130	130	125	125	125	125	120	115	105				
10					u 125 ^B				170											u 130 ^B	u 130 ^B	u 130 ^B		
11				u 125 ^B	120	115		110					125	125	125	125	120		115	115	115			110
12	115		120	110	110	120	125	110				125	120	120	115	120	120		110	110	130	105		
13					110	115	110		140	120		130	125	125	125	125	135	110	105				u 130 ^B	
14			115								130	130	160	115	150	135	110	110	110	130				
15			105	120		110	110				140	140	130	130	130	160	160	110	110	110				
16			125	125	110			125	130				150	150	130	130	125	135			105			125
17			125							135		150	130	130	135	140	140	125						
18			115		115	105	110					150	130	135	130			140						
19			120	125				215	150		150	150	130	135	130			105	105	130				110
20	115	120	100	125					150	150		130	140	140	150	125	125	125	105	105	105	120		110
21	110				115			140				130	130	125				110	110					
22				120	110				180	150	145	130	125	125	125	C	115	110	135			110	125	105
23	125	110	110	120	105			130	130				135	130	130	150					135		125	
24					120								135	130	130				115	105	120	120	135	105
25	110	115	120						140			130	130	130	130	125	125							120
26			110	110								140	140	140	115	110	110	110	105					
27									130				140	140	130	140	140	125	110	120		105		
28													145	135	130	130	140	110	110	105		u 140 ^B		
29			105	105						130	130	130	130	130	130	140	120	110	105	105				100
30			105						130	130	130	130	130	130	140	140	120	110	110	105				
31					125			110								125	125	120	115	115				
Mean Value	120	115	115	120	115	115	115	130	130	140	140	120	130	130	130	130	130	115	110	115	120	115	120	110
Median Value	120	120	115	120	120	115	115	125	130	135	150	130	130	130	130	130	125	110	110	110	120	110	120	125
Count	8	8	16	17	19	12	8	10	14	7	4	11	14	22	24	23	24	14	19	15	11	10	7	10

R'ES

Sweep 1.0 Mc to 1.7.2 Mc in 2 min

Manual

Automatic

The Radio Research Laboratories
Koganei-machi, Kifutama-gun, Tokyo, Japan

Lat. $35^{\circ}42.4'N$
Long. $139^{\circ}29.3'E$

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

type of **ES**

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	f	f	f	f	f	f	f		d					f	h,l	h,l			f	f					
2									d				h	h	h		h	f							
3	f			f	f	f	f		c				c	c	c	f2	f2	f	f	f	f				
4				d	d	d	d							c	h	h	c	f	f	f	f			f	
5	f			f	f	f	f		f2	h,h			h,h	c	c	f	f	f	f	f	f			f	
6				f	f	f	f		d					c	c	c	f	f	f	f	f			f	
7				f	f	f	f		d					c	c	c	f	f	f	f	f			f	
8				f	f	f	f		d					c	c	c	f	f	f	f	f			f	
9				f	f	f	f		d					c	c	c	f	f	f	f	f			f	
10				f	f	f	f			h			h	c	c	c	f	f	f	f	f			f	
11				f	f	f	f		f				c	c	c	c	f	f	f	f	f			f	
12	f			f2	f2	f2	f2		f				c	c2	c	c	f2			f	f			f	
13									h				h	h	h	h	h	h	h	h	h				
14									h				h	h	h	h	h	h	h	h	h				
15									h				h	h	h	h	h	h	h	h	h				
16									d				h	h	h	h	h	h	h	h	h			f	
17													h	h	h	h	h	h	h	h	h			f	
18													h	h	h	h	h	h	h	h	h			f	
19									h				h	h	h	h	h	h	h	h	h			f	
20									h				h	h	h	h	h	h	h	h	h			f	
21									h				h	h	h	h	h	h	h	h	h			f	
22									h				h	h	h	h	h	h	h	h	h			f2	
23									d				h	h	h	h	h	h	h	h	h			f2	
24									d				h	h	h	h	h	h	h	h	h			f	
25									h				h	h	h	h	h	h	h	h	h			f	
26									h				h	h	h	h	h	h	h	h	h			f	
27									h				h	h	h	h	h	h	h	h	h			f	
28									h				h	h	h	h	h	h	h	h	h			f	
29									h				h	h	h	h	h	h	h	h	h			f2	
30									h				h	h	h	h	h	h	h	h	h			f2	
31									h				h	h	h	h	h	h	h	h	h			f	
Mean Value																									
Median Value																									
Count																									

type of **ES**

Sweep 1.0 Mc to 17.2 Mc in 2 min

Manual Automatic

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

3pF2

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	490 ^T	425	385	330	425	440	440	335	290	300 ^H	365 ^H	355 ^H	395 ^H	360	400 ^H	355	350	355	380	340	355	355	425	440
2	385	400	455	505	490	460	350	325	300	305	370 ^H	385 ^H	360	395 ^H	400 ^H	365	350	350	380	350	335	480	525	485
3	395	400	450	380	350 ^H	460 ^F	425	280	335	380	400	415	430 ^H	425 ^H	450 ^H	410 ^H	370	370	355	330	260	350	420	405
4	380	375	375	395	400	390	325	325	320	310	340	400 ^M	400	405 ^H	430 ^H	395	385	370	370	370	305	425 ^H	430	370
5	365	420	430	425	365	380	350	305	310	325	360 ^H	365 ^H	350 ^H	405 ^H	360	370	305	360	370	345	350	410	405 ^A	440
6	395	430	400	330	355	440 ^V	345	325	305	310	340	370	355	370 ^H	360	355	350	345	370	350	360	400	430	430
7	410	380	440	430 ^F	400	410	380 ^F	305	320	305	330	395 ^H	365	360	405	355	365	355 ^A	390 ^U	330 ^T	295	430	450	415
8	355 ^K	355	340	380	440	450	350	310	300	330	345	360	360 ^H	380	405	375	330	355	375	310	370	400	425	450
9	430	375	325	375	495	475	300	300	320	350	360 ^H	355	360 ^H	320	360	350 ^H	350 ^H	360	345	310	315	310	400	400
10	425	555 ^S	475 ^F	490	470	410	380	330	300	320	355 ^H	360 ^H	375 ^H	375 ^H	365	375 ^H	345	345	360	365	340	350	475	430
11	395	400	470	450	450	430	410	310	320	310	340	360	345 ^V	380 ^H	375 ^H	335	325	330	350	350	295	330	425	425
12	445	380	315	330 ^A	350	425	400	325	290	340	310	340	340	375 ^H	340	345	340	345	365	325	295	345	375 ^J	400
13	390	415	400 ^F	290	325	460	400	290	290	280	320	325	355 ^H	340	340	330	270	350	315	340	365	300	380	420
14	400	430	420	400	380	410	395	275	265	295	340	345	325	330	340	315	305	325	350	325	315	370	385	425
15	450 ^R	440	390	430	390	410	400	325	280	305	315	315	300	335	355	310	320	320	345	340	330	350	360	420
16	470	460	425	410	285	455	465	325	305	325	340	350	355	330	360	350	325	345	325	295	315	350	405	450
17	465	410	380	330	360	385	405	330	295	300	330	315	325	350	330	325	320	315	305	300	295	330	400	405 ^K
18	405	400	410	375	265	405	390	325	275	300	310	350	325	330	340	330	330	300	295	325	280	330	420	450
19	450	460	445	340	310	470 ^H	370	290	290	305	305	305	330 ^H	325	330	345	325	285	310	330	300	305	400	410
20	405	405	465 ^W	450 ^F	435 ^F	435 ^F	330	300	280	300	325	330 ^H	340	365 ^H	350 ^H	320	330	325	300	345	320	325	350	355
21	405	380	400	380	400	355	330	295	295	320	320	330	395	345	365	390 ^H	360	360	320	325	375	445	410	405
22	425	470	540	430	260	490	265	430 ^H	350	330	390 ^H	365	380	420 ^H	375	370 ^C	365	375	350	410	370	350	450	445
23	430	380	350	345	360	410	350	305	295	300	325	340 ^H	380 ^H	380 ^H	350	385 ^H	350	340	350	310	360	395	445	430
24	410	410	450	400	425	425	335	300	330	315	355	355	370	405 ^H	405 ^H	395	395	365	355	350	365	385	400	370
25	395	400	405	355	335	415	465	350	320	310	355	420	410 ^H	375	400	400	380	350	375	355	365	385	400	390
26	365 ^J	380	350	315	270	470	405	305	300	305	325	355	375	395	400 ^H	360	360	365	365	375	400	375	360	350
27	375	370	380	485	455	390	380	325	310	340	330	350	355	390	415 ^H	355	365	360	330	370	385	365	390	490
28	470	345	335	460	445	425	400	330	290	350	350	365	380 ^H	405 ^H	400 ^H	385	395 ^H	360	330	345	355	405	375	395
29	410	390	375	330	455	495	360	280	280	335	345	345	365	370 ^H	375	385	385	345	355	370	400	380	385	375
30	415	550 ^F	545	520	520	455	410	320	370	345	355	360 ^H	370 ^H	400 ^H	405	405	385	355	375	360	400	405	405	330
31	380	455	430	450	415	420	445	320	325	330	345	355	380	390 ^H	375	390 ^H	380	375	350	355	380	350	340	390
Mean Value	410	415	410	395	390	430	380	315	305	320	340	355	365	370	375	360	350	350	350	345	340	370	410	410
Median Value	405	400	405	395	400	425	380	320	300	310	340	355	360	375	375	360	350	350	350	345	350	365	405	410
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

3pF2

Sweep 1.0 Mc to 17.2 Mc in 2 min

Manual

Automatic

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

YPF2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	U 50 ^J 115	115	115	130	215	135	100	105	90	75	110 ^H	95 ^H	95 ^H	130 ^H	125 ^H	105	125	110	115	100	145	145	145	135
2	115	90	145	185	135	105	110	115	100	75	130 ^H	130 ^H	100 ^H	110 ^H	105 ^H	95	75	100	120	60	115	130	105	155
3	115	100	115	110	135 ^H	140 ^F	115	70	115	120	125	130 ^H	125 ^H	125 ^H	100 ^H	100	95	110	125	70	100	110	90	105
4	120	125	85	105	100	110	75	75	80	105	110	80 ^H	120 ^H	125 ^H	105 ^H	135	100	100	100	110	120	125	120	135
5	140	120	80	65	125	70	100	100	90	75	90 ^H	85 ^H	95 ^H	105 ^H	85	95	95	140	80	80	80	195 ^A	145 ^A	100
6	130	100	100	75	150	135 ^V	60	55	75	90	90	130	125	110 ^H	150	100	105	80	85	105	150	90	130	130
7	100	120	110	170 ^F	100	100	100 ^F	85	75	70	100	85 ^H	85	95	85	95	85	105	90	60	105	125	95	95
8	90 ^R	145	110	115	105	100	90	85	70	80	80	85	90 ^H	90	75	95	85	75	80	90	130	130	105	105
9	110	105	50	115	95	85	100	100	80	105	70 ^H	95	100 ^H	80	185	80 ^H	80 ^H	100	80	85	85	95	100	105
10	115	95 ^J	125 ^F	115	135	100	110	70	55	110	85 ^H	70 ^H	105 ^H	85 ^H	110	80 ^H	65	115	90	95	70	115	150	110
11	115	110	110	145	110	115	140	70	75	95	65	90	110 ^V	80 ^H	55 ^H	115	120	70	125	55	70	100	100	105
12	95	120	65	190 ^A	110	145	95	65	70	85	110	115	110	105 ^H	155	155	95	70	110	110	115	105	125	100
13	85	100	75 ^F	120	135	115	120	85	90	70	60	80	105	110	110	100	75	140	85	160	115	90	130	105
14	90	100	70	70	80	140	95	105	100	55	100	65	55	130	90	125	110	105	100	85	140	100	85	65
15	U 75 ^R	70	65	120	80	80	100	125	80	85	105	95	70	60	95	90	115	85	95	100	145	115	100	120
16	145	80	100	90	115	85	95	85	80	115	80	100	95	130	100	80	125	105	80	105	135	100	110	100
17	115	90	145	95	115	120	150	100	60	105	120	75	100	100	90	115	90	135	105	105	105	120	140	105 ^R
18	125	105	120	125	60	120	150	105	65	110	95	85	105	75	110	75	120	100	110	80	90	175	80	90
19	75	100	95	85	95	130 ^H	120	70	110	70	90	95	80	80	80	80	75	85	95	90	120	100	70	95
20	75	95	65 ^F	75 ^F	100 ^F	105 ^F	110	95	80	75	75	75 ^H	70	65 ^H	75 ^H	85	70	120	70	100	80	125	110	115
21	100	80	105	80	105	105	100	70	55	60	55	80	75 ^H	140	85	110 ^H	120	95	80	90	130	110	140	75
22	105	130	105	120	85	90	60	120 ^H	70	70	70 ^H	165	145	105 ^H	80	195 ^C	110	55	110	95	85	100	130	135
23	120	100	125	110	95	95	115	90	55	95	70	70 ^H	120	75	145	115 ^H	100	80	60	90	95	105	120	140
24	105	140	100	105	155	160	100	100	50	90	105	105	85	120	120	125	130	125	105	105	115	95	150	110
25	160	90	145	125	170	185	155	155	120	95	105	105	90 ^H	100	150	95	105	75	100	115	130	125	100	120
26	95 ^J	95	100	75	75	130	100	85	105	70	125	110	90 ^H	105 ^H	100 ^H	120	90	95	90	105	125	165	140	120
27	165	125	120	135	145	105	155	100	100	100	110	110	115	115	105 ^H	100	125	95	120	130	105	110	145	160
28	155	105	115	125	110	115	120	95	65	115	110	90	100	115 ^H	120 ^H	120	110	90	115	95	100	105	115	125
29	90	110	120	100	150	105	85	70	80	85	100	110	110	80 ^H	100	105	135	115	115	85	155	135	115	115
30	105	120 ^F	130	105	130	115	90	90	110	105	100	90 ^H	130	100 ^H	125	155	120	120	85	145	100	110	105	75
31	135	145	140	150	115	85	105	90	145	80	85	100	95	120	125	100 ^H	120	125	105	125	105	115	115	125

Mean Value	110	110	105	110	120	115	110	90	85	90	95	95	100	100	110	105	105	100	95	100	110	120	115	110
Median Value	110	105	110	110	110	110	100	90	80	85	100	95	100	105	105	100	105	100	100	100	110	115	110	110
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

YPF2

Sweep / 0. Mc to 1.2 Mc in 2 min

Manual Automatic

The Radio Research Laboratories
Yoganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

foF2

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	5.2 ^H	5.4	5.6	5.1 ^H	4.0 ^H	2.6	2.8	5.9	10.2 ^H	12.6 ^H	14.5	13.6 ^H	15.1 ^H	4.5 ^H	14.4 ^H	14.2 ^H	13.7 ^H	13.5 ^H	11.6	9.5 ^H	9.2 ^H	8.4	7.3 ^H	6.2 ^H
2	7.5 ^S	6.4	3.9	3.8	3.7	3.8 ^H	3.7	5.9	10.8	14.3	13.6 ^H	12.5 ^H	12.4	13.0 ^H	13.0 ^H	12.5 ^H	11.6 ^H	10.4 ^H	9.0	7.9 ^H	9.0	8.1 ^H	6.8 ^H	6.8
3	6.4	5.7 ^H	5.3	5.1 ^H	4.7 ^H	4.0 ^H	3.2	6.6 ^H	10.3	11.0 ^H	12.0 ^H	13.4 ^H	13.6 ^H	12.9 ^H	12.2 ^H	11.4 ^H	11.2 ^H	11.0 ^H	10.1 ^H	8.7 ^H	8.3 ^H	8.1 ^H	6.9 ^S	6.4 ^H
4	6.5	6.8 ^J	6.1	5.3	4.8	3.8	3.4	6.3	10.3	11.9 ^H	11.6 ^H	10.8 ^H	10.9 ^H	11.4 ^H	12.3 ^H	12.4 ^H	12.5 ^H	12.7 ^H	11.9	11.8 ^J	11.6 ^J	10.1 ^H	6.5 ^H	6.7
5	6.6 ^J	5.9 ^H	5.9	5.1	4.5 ^J	3.8 ^H	3.0 ^H	5.5	9.6 ^S	11.1 ^H	11.7 ^H	11.3 ^H	12.2 ^H	12.1 ^H	12.2 ^H	12.5 ^H	12.5 ^H	10.7	9.0	8.0 ^H	8.7 ^H	8.3 ^H	7.2 ^H	5.5
6	4.8	5.2	5.2	5.4	5.4	3.0	2.9	5.6	9.9	10.8	11.6	12.1 ^H	12.6 ^H	12.9 ^H	12.8 ^H	12.4 ^H	12.2 ^H	11.6 ^H	11.0	9.4 ^H	10.1	10.3 ^H	9.9 ^H	8.8 ^S
7	6.5 ^H	6.5 ^H	6.0 ^H	5.0	4.7	4.1	3.5 ^H	6.2	10.6	13.4	11.9	11.0 ^H	11.8 ^H	12.3 ^H	12.3 ^H	11.5	12.1 ^H	11.6	9.6	8.1 ^H	8.1	6.8	6.2	6.1
8	6.0	5.7 ^V	5.3	4.2	4.1	4.1	3.5	6.0	10.0	12.9	13.1	12.4 ^H	12.3 ^H	12.3 ^H	12.1	12.1 ^H	12.7 ^H	12.1 ^H	10.1 ^H	9.7	9.9	10.4	8.5 ^S	7.6 ^H
9	7.5 ^H	7.2	5.4	4.7	4.0	4.1	4.7	6.4 ^H	10.4	11.0	11.7	12.3	13.0 ^H	13.0 ^H	12.5 ^H	12.1 ^H	11.6	10.9	9.7	8.6 ^H	8.7	7.2 ^H	7.1 ^H	7.1 ^H
10	6.3	6.5 ^H	5.6 ^H	5.1 ^H	5.1 ^H	4.2 ^H	4.1	6.2	10.2	12.2	13.4	14.0 ^H	4.3 ^S	13.0 ^H	13.0 ^H	12.4 ^H	12.9 ^H	13.0 ^H	11.8	10.2 ^H	9.2 ^H	8.5 ^H	8.0 ^S	7.2 ^H
11	8.0 ^H	6.6	5.2 ^H	5.2	4.8	4.9 ^H	4.4	6.6 ^H	11.0	14.2	13.7 ^H	14.0 ^H	13.2 ^H	11.4 ^H	11.4 ^H	10.9	11.0 ^H	10.7	9.8	8.5	9.8	9.1	7.2 ^H	6.0
12	5.5 ^H	5.9	5.7	4.1	3.2	3.0	3.1 ^H	5.4	11.0	14.5	13.5	12.4 ^H	13.1	12.7 ^H	13.0 ^H	13.0 ^H	12.7 ^H	11.2	9.0 ^H	8.1 ^H	8.9	6.3 ^H	5.6	4.2 ^H
13	4.1	4.2	4.2	4.4 ^H	3.5 ^F	2.7 ^H	2.7 ^H	5.3	9.6	10.8	11.9 ^H	13.0 ^H	12.1 ^H	11.7 ^H	12.4 ^H	13.0 ^H	11.1 ^H	11.0	10.3	8.5	8.7 ^H	8.1 ^H	6.3 ^H	5.3 ^H
14	4.9 ^H	5.0 ^H	4.4	4.0	4.1	3.2 ^H	3.3	4.8	9.8	10.6	11.0	11.2 ^H	11.7 ^H	10.9 ^H	11.9	10.7 ^H	11.5 ^H	10.9	9.1 ^H	8.1 ^H	8.6	7.1	6.7	5.4
15	5.2	4.9	4.1	4.5 ^H	4.7 ^H	3.7 ^H	4.5	4.5	9.9	11.6 ^H	12.5 ^H	12.4 ^H	11.6 ^H	11.5 ^H	11.4 ^H	11.5 ^H	11.6 ^H	9.4 ^H	8.8	7.5 ^H	8.5	7.5 ^H	7.0 ^H	6.0 ^H
16	5.3 ^H	4.5	4.7 ^H	4.0 ^H	4.1	3.9	4.0	5.4	9.4	12.1 ^H	13.7 ^H	14.0 ^H	14.5 ^H	14.7 ^H	13.8 ^H	13.7 ^H	12.2 ^H	11.4 ^H	10.0	7.2 ^H	6.7 ^H	6.6	5.3 ^H	4.9
17	4.9 ^H	5.3	5.8 ^H	4.4	3.9	3.2	3.4	4.9	9.7	11.3	13.5	13.0	11.9	12.4 ^H	12.4 ^H	12.2 ^H	11.5	10.1	9.7	7.4	7.4	7.0	6.4	5.4 ^H
18	4.8 ^H	4.9	4.3	4.6 ^H	5.3	2.9	2.7	4.3	9.5	10.5 ^H	10.9 ^H	11.2 ^H	12.1 ^H	12.3 ^H	12.1 ^H	11.5 ^H	10.7 ^H	10.6	9.8	6.6	6.2 ^H	6.4 ^H	6.0	5.5 ^S
19	4.3	4.4 ^C	4.5	5.3 ^H	5.3	3.5	3.3 ^V	4.6 ^H	8.4	10.9 ^H	12.7	12.1 ^H	12.4 ^H	12.3	12.5 ^H	11.9	12.0 ^H	11.8 ^H	10.6	8.7	7.4	6.8 ^H	6.2 ^H	4.8 ^H
20	4.3	4.0	3.5	3.5	3.5	3.5	3.4	5.5 ^H	9.8	11.5 ^H	12.4 ^H	12.3	12.0 ^H	11.9	12.3 ^H	12.6 ^H	11.8 ^H	10.2	10.5	8.9 ^H	8.2	9.5	7.4	5.8 ^H
21	5.3 ^H	5.3 ^H	5.2 ^H	4.3	4.2	4.4 ^H	3.5 ^V	4.9	9.4	12.7	13.8	12.2	12.5 ^H	14.1 ^H	14.6 ^H	14.4 ^S	14.5 ^S	13.9	13.7	9.9 ^S	9.2	8.8 ^S	7.5 ^H	6.1 ^H
22	6.0 ^H	5.0	4.5 ^H	5.1	4.2	3.5	3.6	4.5	11.9 ^H	12.7	11.0	11.1 ^H	13.8 ^H	13.0 ^H	13.8 ^H	12.4 ^H	12.0 ^H	11.0 ^H	11.0 ^H	9.4 ^H	8.3 ^H	8.1	7.6 ^H	7.0 ^H
23	7.3 ^F	7.3 ^H	7.0	6.1 ^H	5.7	4.1 ^H	4.1	6.8	10.5	12.8	13.8 ^H	12.9 ^H	12.5 ^H	13.4 ^H	13.6 ^H	13.4 ^H	12.7 ^H	12.5 ^H	11.7	11.1	10.7	9.9 ^H	8.3 ^H	8.2 ^H
24	7.3 ^H	7.1 ^H	6.5 ^H	6.8 ^H	6.4	5.2 ^H	5.7 ^H	7.1	12.0	13.1	13.8 ^H	14.0 ^H	13.1 ^H	14.0 ^H	14.7 ^H	14.0 ^H	13.7 ^H	14.5	14.4 ^S	14.2 ^S	13.7	13.6	9.7	9.1
25	8.3 ^S	6.5 ^H	6.2 ^H	5.2 ^H	4.9 ^H	3.0	2.5	5.1	10.5	12.5 ^H	12.2	13.5	13.9 ^H	13.3 ^H	11.9 ^H	11.9 ^H	13.0 ^H	12.6	12.3	11.2	10.0 ^H	9.1 ^H	8.0 ^H	7.8 ^H
26	7.7 ^C	6.3 ^H	6.1 ^H	5.6	3.9	2.6	2.7	5.2	9.3	13.0	13.5	13.5	12.5 ^H	13.6 ^H	13.6 ^H	13.7 ^H	13.7	13.7	13.0	12.3	12.3	10.6	10.2 ^S	9.3
27	7.8 ^C	6.4 ^H	5.4	4.2	4.3 ^H	4.0	3.6	5.6	9.9	12.7	13.8 ^H	14.4 ^H	13.1	12.7 ^H	12.7 ^H	13.0 ^H	12.7 ^H	12.5	12.6	11.0	10.3	11.0 ^S	9.8	8.2 ^H
28	8.2 ^S	7.0 ^H	5.6	4.3	4.3 ^H	3.9 ^H	4.1 ^H	5.3	10.5	12.2	13.7 ^H	5.4 ^H	4.3 ^S	4.3 ^S	4.0 ^H	4.9 ^S	5.4 ^S	5.4 ^S	5.4 ^S	14.5 ^S	13.6	12.2 ^H	11.4 ^H	10.0
29	7.8 ^S	7.0 ^H	6.9 ^H	5.5	4.1	3.6	3.9	6.3	8.9	10.6 ^H	12.9	13.8 ^H	13.6 ^H	12.0 ^H	12.3 ^H	12.5 ^H	12.9 ^H	12.5	12.1 ^H	10.6 ^H	11.0 ^H	10.5	9.0 ^H	7.2 ^H
30	6.3 ^H	4.8	3.9	4.0	4.1 ^H	4.3	5.0 ^H	8.9	12.9	14.5 ^S	14.7 ^S	14.9 ^S	13.1 ^H	12.4 ^H	12.2 ^H	12.5 ^H	12.4 ^H	11.9 ^H	11.9 ^H	10.9 ^H	9.7	10.1 ^S	9.0	8.3 ^H
31	7.0	5.7 ^H	5.6	5.0 ^H	4.9 ^H	4.6 ^H	4.8 ^H	7.3	11.5	12.9	C	C	CH	C	C	13.0 ^H	12.5 ^H	12.2	11.6	10.5 ^H	9.8 ^S	9.1	8.8	6.9
Mean Value	6.2	5.8	5.3	4.8	4.5	3.7	3.6	5.8	10.2	12.2	12.8	12.7	12.8	12.7	12.8	12.6	12.3	11.7	10.9	9.6	9.4	8.8	7.7	6.8
Median Value	6.3	5.7	5.4	5.0	4.3	3.8	3.5	5.6	10.2	12.2	13.0	12.5	12.6	12.7	12.4	12.5	12.3	11.6	10.6	9.4	9.2	8.5	7.3	6.7
Count	31	31	31	31	31	31	31	31	31	31	31	29	30	30	30	31	30	30	30	31	31	31	31	31

Y 1

Manual Automatic

SwEEP 1.0 Mc to 2.2.0 Mc in _____ min

foF2

The Radio Research Laboratories
Y.oganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Jan. 1957

foEs

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.8J	S	1.8J	S	2.1J	1.8J	S	2.0J	G	G	G	4.5	5.3J	G	G	3.7	3.2J	2.7J	1.8J	S	1.8J	1.8J	S	S
2	S	S	S	1.8J	1.8J	S	S	S	G	3.2J	5.3J	4.5	G	4.6	3.8	3.8	3.5	2.7J	2.7J	2.5F	S	S	S	S
3	1.8J	E	S	5.3J	S	1.5J	1.8J	1.7J	2.5J	5.9J	6.0J	B	G	5.9J	5.2J	5.3J	G	12.6J	1.8J	1.8J	S	S	1.8J	1.8J
4	1.8J	1.8J	2.5J	1.8J	1.8J	1.8J	2.1J	1.8J	5.3J	G	G	5.3	G	5.8J	G	3.8	3.4	2.6	1.8J	S	S	2.5J	1.9J	1.7J
5	S	1.7J	S	1.8J	S	S	1.8J	1.8J	3.3	5.3J	B	B	G	G	G	G	3.1	3.0	1.9J	1.7J	2.3	1.7J	S	S
6	E	1.7J	1.5J	S	S	S	1.7J	1.7J	G	3.2J	G	4.1	G	4.5	8.9J	4.4	8.3J	3.0J	2.6J	S	2.0J	1.8J	S	2.6J
7	1.7J	2.9J	1.7J	E	S	E	E	1.7J	1.7J	3.5	4.0	5.3J	4.3	4.2	5.9J	3.8	3.4J	2.5J	2.5J	S	3.2J	1.9J	S	S
8	1.6J	E	E	1.7J	1.5J	1.7J	1.8J	1.8J	3.3J	3.4	G	B	4.8	5.3	9.4J	G	3.1J	G	E	E	E	1.9J	S	S
9	1.4J	1.6J	1.3J	1.5J	1.7J	2.1J	1.7J	S	G	3.2J	B	4.0	G	5.7J	4.1	3.7J	3.4	2.6J	E	E	1.7J	E	1.5J	1.7J
10	1.7J	1.7J	S	1.5J	E	1.7J	1.8J	E	2.8J	3.4J	4.0	4.0	G	G	4.0	3.4	3.2	G	1.7J	1.7J	1.8J	1.5J	1.5J	S
11	E	S	1.8J	2.1J	1.9J	S	S	1.9J	1.8J	G	3.8	3.9	5.3J	6.1J	5.7J	6.2J	6.4J	1.8J	1.8J	S	S	S	S	1.7J
12	1.8J	1.8J	2.0J	S	1.9J	1.8J	1.7J	1.9J	2.9J	3.4	G	5.9J	4.1	G	4.0	8.3J	5.3J	3.5	2.6	1.8J	1.7J	E	S	1.7J
13	1.8J	1.8J	E	1.5J	1.7J	E	S	1.7J	3.1J	5.9J	5.3J	4.4	3.9	G	4.1	4.0	G	G	2.5J	E	E	E	E	1.7J
14	E	1.7J	1.7J	1.7J	E	1.7J	1.5J	1.7J	6.1J	3.5	5.3J	3.9	4.9	5.0J	5.0	5.2J	G	2.3	2.5J	3.4J	1.8J	S	E	S
15	S	S	1.7J	1.7J	2.0J	2.5J	2.6J	1.9J	G	3.1J	G	4.0	G	4.2	4.2	4.2	G	3.5	3.6J	1.7J	E	1.7J	1.7J	1.8J
16	1.7J	1.7J	1.8J	1.7J	1.7J	E	E	1.8J	2.7J	3.4	G	G	4.3	4.0	5.3J	4.3J	3.2J	2.3	2.8J	1.7J	2.6J	1.5J	1.7J	1.7J
17	1.6J	2.5J	1.9J	S	1.6J	1.6J	1.7J	1.8J	2.7J	G	G	5.3J	5.1	6.2J	7.6J	6.1J	6.7J	2.7	E	E	1.5J	1.7J	S	1.7J
18	S	E	E	E	E	1.8J	1.5J	2.6J	G	3.0	5.3J	G	4.2	4.2	4.2	G	G	G	E	S	S	S	S	1.5J
19	E	C	E	E	E	1.5J	S	1.7J	S	3.3	5.3J	G	4.0	4.0	3.8	G	5.3J	G	E	1.7J	S	1.8J	S	1.7J
20	1.7J	1.8J	S	S	1.5J	1.5J	S	2.6J	G	5.9J	5.3J	4.5	G	G	6.0J	5.3J	3.5J	3.0J	2.9J	1.8J	2.6J	2.7J	E	E
21	E	2.6J	2.8J	1.7J	1.5J	1.5J	S	1.7J	2.3	G	3.7	8.0J	4.2	4.7	5.0J	3.9	G	3.4J	5.0J	3.2J	1.7J	S	1.7J	S
22	E	E	E	E	1.6J	1.5J	S	S	G	3.5	3.8	4.6	8.3J	7.2J	5.3	5.2	3.6J	1.7J	1.7J	1.8J	S	S	S	2.6J
23	E	2.5J	2.5J	E	1.7J	1.8J	S	S	2.3	3.5	3.6	4.1	5.9J	G	4.1	5.2	4.7	G	E	2.6J	1.8J	1.7J	1.7J	1.8J
24	1.7J	1.7J	1.9J	1.6J	1.7J	1.7J	1.7J	S	5.2	3.4J	G	G	B	G	3.9	3.9	3.4J	3.6J	2.8J	3.2J	2.7J	1.7J	1.7J	4.1J
25	3.0J	2.6J	1.7J	1.7J	1.7J	1.7J	S	1.7J	G	6.0J	3.9	5.8J	B	5.1	G	G	3.2J	2.9	1.7J	1.7J	1.7J	S	S	S
26	1.8J	1.7J	1.8J	1.7J	1.7J	E	S	S	G	G	G	4.0	G	G	G	G	G	G	2.5J	1.8J	1.5J	S	1.9J	S
27	C	E	1.7J	E	1.7J	E	1.8J	1.8J	G	G	3.9	4.3	G	5.6J	6.2J	3.9	3.4	B	1.7J	S	S	1.8J	2.5J	1.8J
28	1.8J	1.7J	1.7J	2.5J	1.5J	E	1.7J	1.7J	G	3.3	5.3J	G	G	G	G	G	G	2.9J	1.8J	1.7J	S	1.5J	S	S
29	S	S	S	1.8J	1.7J	1.7J	S	1.8J	2.7J	7.9J	3.8	G	G	5.3J	4.2	3.8	3.4J	5.3J	1.7J	2.5J	2.5J	S	1.8J	2.6J
30	2.5J	1.7J	1.9J	1.7J	2.6J	1.8J	1.9J	1.9J	2.3	3.4	3.8	G	G	G	G	4.1	4.3J	G	3.2J	3.5J	2.3J	2.0J	3.2J	1.8J
31	S	1.8J	S	S	1.8J	2.5J	1.8J	1.8J	2.7J	G	C	C	G	C	C	3.8	3.2J	G	2.6J	1.7J	1.7J	1.7J	1.7J	E
Mean Value	1.8	2.0	1.9	1.9	1.7	1.8	1.8	1.9	3.2	4.1	4.5	4.7	5.0	5.1	5.3	4.6	4.1	3.4	2.3	2.2	2.0	1.8	1.9	2.0
Median Value	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	G	3.4	3.8	4.1	G	4.2	4.2	3.8	3.4	2.6	1.8	1.8	1.8	1.7	1.7	1.7
Count	24	25	24	25	27	27	20	24	31	31	28	27	29	30	30	31	31	31	30	31	24	20	18	20

Group 1.0 Mc to 2.2.0 Mc in 1 min

Manual Automatic

foEs

Lat. 31° 12.6' N
Long. 130° 31.7' E

Yamagawa

135° E Mean Time

(M3000)F2

Jan. 1957

The Radio Research Laboratories
Yogane-machi, Kitama-gun, Tokyo, Japan

IONOSPHERIC DATA

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	2.60 ^H	2.65	2.75	2.95 ^H	3.35 ^H	3.05	2.50	2.65	3.05 ^H	2.95 ^H	3.05	2.70 ^H	2.70 ^H	2.80 ^S	2.70 ^H	2.60	2.65 ^H	2.70 ^H	3.00	2.80 ^H	2.60 ^H	2.85	2.70 ^H	2.40 ^H
2	2.60 ^S	3.20	2.65	2.35	2.50	2.50	2.85	2.80	3.05	3.10	3.00	2.90 ^H	2.65 ^H	2.55 ^H	2.70 ^H	2.65 ^H	2.80 ^H	2.60 ^H	2.90	2.65 ^H	2.70	2.40 ^H	2.30 ^H	2.45
3	2.75	2.50	2.40	2.75 ^H	2.70 ^H	2.70 ^H	3.10	2.70 ^H	3.10	2.90 ^H	2.60 ^H	2.65 ^H	2.55 ^H	2.55 ^H	2.55 ^H	2.60 ^H	2.60 ^H	2.65 ^H	2.85 ^H	2.75 ^H	2.90 ^H	2.85 ^H	2.90 ^S	2.65 ^H
4	2.75	2.75	2.80	2.75	2.90	2.90	2.75	2.70	3.25	3.05 ^H	3.00 ^H	2.80 ^H	2.65 ^H	2.55 ^H	2.50 ^H	2.50 ^H	2.55 ^H	2.65 ^H	2.70	2.60 ^H	2.60 ^H	2.80 ^H	2.70 ^H	2.55
5	2.70 ^H	2.75 ^H	2.70 ^H	2.60	2.90 ^H	2.95 ^H	2.45 ^H	2.70	3.05 ^H	3.05 ^H	2.90 ^H	2.75 ^H	2.70 ^H	2.50 ^H	2.50 ^H	2.60 ^H	2.55 ^H	2.85 ^H	2.90	2.60 ^H	2.75 ^H	2.50 ^S	2.80 ^H	3.10
6	2.45	2.50	2.60	2.80	2.80	2.80	2.50	2.70	3.10	2.95	2.95	2.80 ^H	2.60 ^H	2.60 ^H	2.60 ^H	2.60 ^H	2.65 ^H	2.75 ^H	2.90	2.55 ^H	2.90	2.85 ^H	2.70 ^H	2.55 ^H
7	2.50 ^H	2.50 ^H	2.55 ^H	2.60	2.65	3.10	2.50 ^H	2.50	3.15	3.05	3.00	2.85 ^H	2.75 ^H	2.70 ^H	2.65 ^H	2.55	2.70 ^H	2.80	2.90	2.75 ^H	2.75	2.85	2.45	2.70
8	2.75	2.70	2.90	2.85	2.80	2.80	2.55	2.50	3.10	3.10	3.05	2.90 ^H	2.70 ^H	2.80 ^H	2.65	2.65 ^H	2.85 ^H	2.90 ^H	2.70	2.90	2.40	2.80	2.30 ^S	2.50 ^H
9	2.65	2.85	2.85	2.85	2.40	2.40	2.60	2.55	3.00	3.10	2.90	2.80	2.65 ^H	2.70 ^H	2.75 ^H	2.70 ^H	2.75	2.85	2.90	2.85 ^H	3.10	2.55 ^H	2.65 ^H	2.65 ^H
10	2.45	2.00	2.35	2.15	2.40	2.50	2.55	2.75	3.05	2.95	2.75	2.85 ^H	2.85 ^H	2.70 ^H	2.65 ^H	2.70 ^H	2.65 ^H	2.75	2.70	2.75 ^H	2.80	2.55 ^S	2.35 ^S	2.55 ^H
11	2.75	2.70	2.35	2.50	2.60	2.60 ^H	2.75	2.65 ^H	2.90	3.10	2.95 ^H	3.00 ^H	2.90 ^H	2.65 ^H	2.85 ^H	3.15	3.00 ^H	3.00	3.05	2.70	3.00	3.00	3.00	2.85 ^H
12	2.25	2.70	3.25	3.15	2.60	2.60	2.60	2.60	2.80	3.15	3.05	2.95 ^H	2.90 ^H	2.75 ^H	2.75 ^H	2.75 ^H	2.85 ^H	2.85	2.90	2.75 ^H	3.15	3.00 ^H	2.85	2.90 ^H
13	2.95	2.70	3.00	3.00 ^H	3.15	2.60 ^H	2.60 ^H	2.70	3.35	3.25	3.00 ^H	3.05 ^H	2.95 ^H	2.75 ^H	2.85 ^H	2.95 ^H	3.15 ^H	3.00	3.20	2.85	2.75 ^H	3.10	2.75 ^H	2.55 ^H
14	2.60	2.65	2.75	2.85	2.90	2.60	2.60	2.80	3.25	3.40	3.20	3.05 ^H	2.90 ^H	3.00	3.00	2.85	2.95 ^H	3.10	2.85	2.70	3.10	2.75	3.10	2.75 ^H
15	2.55	2.55	2.70	2.65 ^H	2.85	2.55 ^H	2.55 ^H	3.00	3.25	3.20	3.10 ^H	3.05 ^H	2.95 ^H	2.85 ^H	2.75 ^H	2.95 ^H	3.15 ^H	3.05 ^H	2.85	2.65 ^H	3.15	2.90 ^H	2.85 ^H	2.90 ^H
16	2.50 ^H	2.55 ^H	2.65 ^H	2.60 ^H	2.90	2.45	2.55	2.65	3.30 ^S	2.95 ^H	3.05 ^H	3.00 ^H	3.05 ^H	2.80 ^H	2.95 ^H	2.95 ^H	2.80 ^H	2.80 ^H	2.95	2.90 ^H	2.90 ^H	3.20	2.70 ^H	2.55
17	2.30 ^H	2.50	2.95 ^H	2.95	3.10	2.50	2.75	2.80	3.30	3.10	3.20	3.10	2.85	2.90 ^H	2.90 ^H	2.85 ^H	3.05	3.05	3.10	2.85	2.90 ^H	3.00	2.85	2.50 ^H
18	2.50	2.55	2.50	2.75 ^H	3.20	3.05	2.75	2.80	3.45	3.35	3.20	3.05 ^H	3.00 ^H	2.95 ^H	2.90 ^H	2.95 ^H	2.90 ^H	2.90 ^H	3.05	3.05	2.90 ^H	2.70 ^H	2.85	2.15 ^S
19	2.40	2.50	2.55	2.85 ^H	3.25	2.95	2.65 ^V	2.90 ^H	3.25	3.10 ^H	3.20	3.10	2.90	2.85 ^H	2.85 ^H	2.85 ^H	2.85 ^H	2.85 ^H	3.05	3.05	3.15	2.80 ^H	2.80 ^H	2.60 ^H
20	2.65 ^H	2.50	2.35	2.40	2.45	2.40	2.55	2.90 ^H	3.25	3.10 ^H	3.10 ^H	3.05	2.85 ^H	2.85 ^H	2.80 ^H	2.95 ^H	2.90 ^H	2.90 ^H	2.95	3.00	2.95	3.10	3.15	2.65 ^H
21	2.55 ^H	2.55 ^H	2.75 ^H	2.55	2.75	3.10 ^H	2.80 ^V	2.75	3.10	3.15	3.20	3.05	2.75 ^H	2.85 ^H	2.75 ^H	2.75 ^H	2.80 ^S	2.80 ^S	3.00	3.05 ^S	2.85	2.45 ^H	2.95 ^H	2.50 ^H
22	2.40 ^H	2.30	2.25 ^H	2.50	3.45	2.30	3.05	2.55	3.00 ^H	3.05	2.90	2.85 ^H	2.70 ^H	2.55 ^H	2.65 ^H	2.60 ^H	2.65 ^H	2.70 ^H	2.80	2.80 ^H	2.65 ^H	2.70	2.75 ^H	2.65 ^H
23	2.50 ^F	2.80	2.95	2.95 ^H	3.15	2.45 ^H	2.55	2.70	3.35	3.10	3.05 ^H	2.80 ^H	2.70 ^H	2.70 ^H	2.65 ^H	2.70 ^H	2.70 ^H	2.70 ^H	2.85	2.90	2.90	2.55 ^H	2.30 ^H	2.45 ^H
24	2.50 ^H	2.50 ^H	2.55 ^H	2.65 ^H	2.90	2.45 ^H	2.80	2.95	3.10	3.05	2.85 ^H	2.80 ^H	2.60 ^H	2.65 ^H	2.65 ^H	2.70 ^H	2.60 ^H	2.60 ^H	2.80	2.80 ^S	3.00	2.80	2.95	2.65
25	2.60 ^S	2.55 ^H	2.45 ^H	2.45 ^H	3.15	2.80	2.45	2.35	3.10	3.05 ^H	2.80	2.75	2.75 ^H	2.55 ^H	2.55 ^H	2.45 ^H	2.55 ^H	2.55 ^H	2.70	2.70	2.75	2.80 ^H	2.55 ^H	2.70 ^H
26	2.80	2.70 ^H	2.90 ^H	3.20	3.35	2.55	2.65	2.75	3.15	3.05	3.05	2.95 ^H	2.70 ^H	2.65 ^H	2.65 ^H	2.60 ^H	2.80	2.70	2.80	2.80	2.70 ^H	2.75	2.85	2.80
27	2.80 ^H	2.85 ^H	2.80	2.50	2.65 ^H	2.90	2.60	2.70	3.15	3.15	2.95 ^H	2.85 ^H	2.75	2.70 ^H	2.60 ^H	3.05 ^H	2.70 ^H	2.70	2.90	2.65	2.65	2.45 ^S	2.65	2.65 ^H
28	2.40 ^S	2.75 ^H	3.10	2.50	2.80	2.50 ^H	3.00 ^H	2.70	3.05	3.05	2.80 ^H	S	2.65 ^S	2.70 ^S	2.60 ^H	2.60 ^S	S	S	S	2.80 ^H	2.65	2.55 ^H	2.50 ^H	2.80
29	2.55 ^S	2.75 ^H	2.60 ^H	2.90	3.00	2.35	2.70	2.85	3.30	3.10 ^H	2.95	2.90 ^H	2.85 ^H	2.70 ^H	2.60 ^H	2.60 ^H	2.70 ^H	2.80	2.80 ^H	2.80 ^H	2.80 ^H	2.70 ^H	2.70 ^H	2.70 ^H
30	2.60 ^H	2.10	2.10	2.25	2.25 ^H	2.45	2.50 ^H	2.45	2.80 ^H	3.10 ^S	3.00 ^S	2.90 ^S	2.60 ^H	2.60 ^H	2.50 ^H	2.55 ^H	2.60 ^H	2.60 ^H	2.70 ^H	2.70 ^H	2.70	2.70 ^S	2.70	2.75 ^H
31	2.70	2.65 ^H	2.70	2.50 ^H	2.55 ^H	2.50 ^H	2.45 ^H	2.85	3.25	2.90	C	C	C	C	C	2.65 ^H	2.65 ^H	2.70	2.80	2.65 ^H	2.80 ^S	2.75	2.95	2.90
Mean Value	2.60	2.60	2.65	2.70	2.85	2.65	2.65	2.70	3.15	3.10	3.00	2.90	2.75	2.70	2.70	2.70	2.75	2.80	2.90	2.80	2.85	2.75	2.70	2.60
Median Value	2.60	2.65	2.70	2.65	2.85	2.60	2.60	2.70	3.10	3.10	3.00	2.90	2.75	2.70	2.65	2.70	2.70	2.80	2.90	2.80	2.80	2.80	2.75	2.65
Count	31	31	31	31	31	31	31	31	31	31	30	29	30	30	30	31	30	30	30	31	31	31	31	31

Manual

Swamp L.O. Mc to 22.0 Mc in _____ min

Automatic

(M3000)F2

The Radio Research Laboratories
Yoganei-machi, Kitatama-gun, Tokyo, Japan.

Lat. 35° 12.6' N
Long. 139° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

RF2

Jan. 1957

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													24.5 ^H	24.0 ^H										
2												25.0 ^H					27.0 ^H							
3												24.5 ^H	24.0 ^H				26.5 ^H							
4												24.0 ^H												
5											24.0 ^H	25.0 ^H				27.0 ^H								
6												25.0 ^H				25.0 ^H								
7												24.0 ^H	25.0 ^H				25.0							
8										25.0		24.5 ^H	25.0 ^H											
9												25.0 ^H				24.5 ^H								
10												24.0 ^H	25.0 ^H			25.0 ^H								
11											24.0 ^H	24.0 ^H				25.0 ^H								
12											24.0 ^H	24.0 ^H				25.0 ^H								
13												22.5 ^H	24.0 ^H			24.5 ^H								
14											23.0 ^H	24.0 ^H	24.5 ^H			24.5 ^H								
15										24.0 ^H														
16										24.0 ^H	24.5 ^H					23.5 ^H								
17										24.0	24.5	24.5	25.0 ^H	25.0 ^H		25.0 ^H	24.5							
18									24.0 ^H		24.0 ^H	24.5 ^H				25.0 ^H								
19									24.0 ^H		24.0 ^H					25.0 ^H								
20									24.0 ^H	24.5 ^H						25.0 ^H								
21												23.0 ^H				25.0 ^H	26.5 ^H							
22											25.0 ^H	25.0 ^H	25.0 ^H			23.0 ^H	25.0 ^H							
23													24.5 ^H			25.0 ^H								
24													24.5 ^H			24.0 ^H								
25													24.5 ^H			24.0 ^H								
26																								
27													24.5 ^H	27.0 ^H										
28												24.5 ^H	24.0 ^H	24.0 ^H										
29											25.0	25.0 ^H	25.0 ^H	25.0 ^H		25.0 ^H								
30																25.0 ^H								
31																24.5 ^H	24.0 ^H							
Mean Value									24.0	24.0	24.5	24.0	24.5	24.5	24.5	25.0	25.0							
Minimum Value									24.0	24.0	24.5	24.0	24.5	24.0	24.5	25.0	25.0							
Count									2	7	14	12	14	11	16	11	16	11	16	11	16	11	16	11

Y 4

Sheep 1.0 Mc to 2.0 Mc in _____ min
 Manual Automatic

RF2

The Radio Research Laboratories
Yoganei-machi, Kijitama-gun, Tokyo, Japan

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

R'F

Jan. 1957

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 ^H	270	250	250 ^H	245 ^H	250	350	275	240 ^H	240 ^H	250	235 ^H	240	230	250 ^H	245 ^H	240 ^H	240 ^H	220	240 ^H	240 ^H	225	205 ^H	275 ^H
2	290	240	250	350	315	270 ^H	255	290	250	245	245 ^H	230 ^H	220	245 ^H	245 ^H	250 ^H	240 ^H	235 ^H	240	250 ^H	225	270 ^H	310 ^H	300
3	260	270 ^H	295	295 ^H	295 ^H	240 ^H	250	275 ^H	260	225 ^H	245 ^H	B	250 ^H	250 ^H	245 ^H	240 ^H	240	245 ^H	240 ^H	235 ^H	235 ^H	240 ^H	235	250 ^H
4	275	250	250	255	245	220	270	270	250	250 ^H	245 ^H	I 230 ^A	215	250 ^H	250 ^H	250 ^H	250	250 ^H	225	230	240	210 ^H	200 ^H	260
5	265	250 ^H	250	280	260	255 ^H	E 250 ^S	255	235 ^H	240 ^H	B	B	250 ^H	245 ^H	245 ^H	245	250 ^H	240	205	245 ^H	240 ^H	235 ^H	220 ^H	220
6	255	285	290	265	240	230	330	295	240	240	245	240	240 ^H	245	220	I 235 ^A	250 ^H	245 ^H	240	210 ^H	235	245 ^H	220 ^H	240 ^H
7	280 ^H	270 ^H	250 ^H	270	260	245	255 ^H	260	250	240	240	240	235	250 ^H	240 ^H	A	265 ^H	245	235	240 ^H	255	240	265	270
8	255	270	245 ^H	245	290	270	255	260	250	250	245	250 ^H	A	A	A	250 ^H	255 ^H	250 ^H	200 ^H	240	235	230	245	280
9	280 ^H	240	250	255	325	350	265	240 ^H	240	240	245	245	235	235	I 240 ^A	240 ^H	240	240	240	225	225	210 ^H	205 ^H	245 ^H
10	250	310 ^H	300 ^H	300 ^H	275 ^H	280 ^H	295 ^H	300	250	230	235	I 240 ^B	240 ^H	235 ^H	240	240	245	250	235	210 ^H	235 ^H	200	250	290 ^H
11	275 ^H	235	250	280	270	255 ^H	290	290 ^H	255	245	230 ^H	250 ^H	245 ^H	A	A	A	220	230	210	255	250	210	200 ^H	250
12	345 ^H	290	230	245	250	300	300 ^H	300	245	245	240	235	240	240	240	E 245 ^A	240	220	210 ^H	245 ^H	230	205 ^H	240	270
13	310	295	260	245 ^H	220	395 ^H	340 ^H	285	240	245	240 ^H	240 ^H	240 ^H	225	230	250 ^H	235	240	225	200	230	240 ^H	220	290 ^H
14	300 ^H	280 ^H	270	280	270	245 ^H	315	290	245	235	225	220	I 225 ^A	230	255	230	250	245	200	240	220	205	250	240
15	300	295	290	295 ^H	270 ^H	220 ^H	310 ^H	305	240	235 ^H	240	235	235	235	240 ^H	225 ^H	270 ^H	250 ^H	205	205	220	220	220 ^H	250 ^H
16	260 ^H	295 ^H	290 ^H	270 ^H	255	280	325	300	250	230 ^H	225	240	250 ^H	245 ^H	A	250 ^H	235 ^H	235 ^H	205	220 ^H	225 ^H	225	235 ^H	265
17	345 ^H	300	250 ^H	200	240	250	300	295	245	240	205	235	A	A	A	A	A	240	220	200	220	220	220	250
18	298 ^H	290	300	295 ^H	240	210	310	300 ^A	240	230	240 ^H	240 ^H	240	240	230 ^H	230	235 ^H	240	210	195	210 ^H	235 ^H	245	250 ^H
19	325	315	305	260 ^H	220	240	295	245 ^H	230	220	245	220	235 ^H	235 ^H	255	240 ^H	245 ^H	240	220	205	220	240 ^H	225	250 ^H
20	295 ^H	300	345	350	305	350	335	245 ^H	240	235 ^H	225	A	240 ^H	245	A	A	245 ^H	220	225	220	240	240	205	245 ^H
21	295 ^H	295 ^H	270 ^H	300	280	240 ^H	240	290	235	245	245	235	220	245 ^H	250 ^H	240	240	245	250	215	250	210 ^H	245 ^H	280 ^H
22	290 ^H	350	400 ^H	905	200	370	245	370	250 ^H	250	225	A	A	A	A	A	A	225 ^H	255 ^H	240 ^H	250 ^H	265	245 ^H	270 ^H
23	305	270 ^H	250	220 ^H	245	200 ^H	290	270	230	240	245 ^H	240 ^H	230 ^H	225 ^H	240 ^H	A	A	250 ^H	240	250	245	205 ^H	290 ^H	260 ^H
24	270 ^H	270 ^H	305 ^H	265 ^H	250	280 ^H	280 ^H	250	245	240 ^H	240 ^H	E 250 ^B	250 ^H	230	250 ^H	240 ^H	240 ^H	270	240	245	220	235	240	260
25	245 ^H	270 ^H	290 ^H	275 ^H	220 ^H	250	F 400 ^S	340	240	245 ^H	245	250	255 ^H	255 ^H	235 ^H	220	250 ^H	250	250	220	220 ^H	220 ^H	260 ^H	260 ^H
26	245	250 ^H	270 ^H	240	205	260	345	295	240	230 ^H	225	225 ^H	225 ^H	225 ^H	240 ^H	240 ^H	250	245	240	245	230	245	245	220
27	I 235 ^C	250 ^H	270	250	295 ^H	240	300	290	245	240	245 ^H	245 ^H	245	A	A	250 ^H	250 ^H	280	250	205	240	245	245	250
28	255 ^H	255 ^H	240	315	260 ^H	265 ^H	275 ^H	320	250	235	240 ^H	230	220	215	220	250 ^H	240 ^H	245 ^H	250	210 ^H	200	215 ^H	235 ^H	240
29	240 ^H	255 ^H	255 ^H	240	250	320	300	245	230	240 ^H	240	240	220	I 230 ^A	245	240	250 ^H	245	245 ^H	230 ^H	225 ^H	225	245 ^H	250 ^H
30	260 ^H	350	440	350	400 ^H	320	320 ^H	290	245 ^H	245	250	250 ^H	250 ^H	250 ^H	240	240	260 ^H	245 ^H	250 ^H	245 ^H	270	240	275	220 ^H
31	250	275 ^H	255	250 ^H	300 ^H	320 ^H	345 ^H	290	240	240	C	C	245 ^H	C	C	240	220	250	245	240	295	255	240	240
Mean Value	280	280	280	275	260	270	295	285	245	240	240	235	235	240	240	240	245	245	230	225	230	230	235	255
Median Value	275	270	270	270	255	255	300	290	245	240	240	240	240	240	240	240	240	240	245	230	235	230	230	240
Count	31	31	31	31	31	31	31	31	31	31	29	26	27	24	23	25	28	31	31	31	31	31	31	31

Automatic

Manual

SwEEP 1.0 Mc to 22.0 Mc in _____ min

R'F

The Radio Research Laboratories
 2-1-1, Ogane-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.6' N
 Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

type of Es

Jan. 1957

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	f		f		f	f	f	f			c		c			c	c	c	f	f	f				
2	f				f	f	f				c			c			c	c	f	f	f				
3	f		f	f	f	f	f				c			c			c	c	f	f	f				
4	f		f	f	f	f	f										c	c	f	f	f				
5	f		f	f	f	f	f										c	c	f	f	f				
6	f		f														c	c	f	f	f				
7	f		f														c	c	f	f	f				
8	f		f	f	f	f	f										c	c	f	f	f				
9	f		f	f	f	f	f										c	c	f	f	f				
10	f		f	f	f	f	f										c	c	f	f	f				
11	f		f	f	f	f	f										c	c	f	f	f				
12	f		f	f	f	f	f										c	c	f	f	f				
13	f		f	f	f	f	f										c	c	f	f	f				
14	f		f	f	f	f	f										c	c	f	f	f				
15	f		f	f	f	f	f										c	c	f	f	f				
16	f		f	f	f	f	f										c	c	f	f	f				
17	f		f	f	f	f	f										c	c	f	f	f				
18	f		f	f	f	f	f										c	c	f	f	f				
19	f		f	f	f	f	f										c	c	f	f	f				
20	f		f	f	f	f	f										c	c	f	f	f				
21	f		f	f	f	f	f										c	c	f	f	f				
22	f		f	f	f	f	f										c	c	f	f	f				
23	f		f	f	f	f	f										c	c	f	f	f				
24	f		f	f	f	f	f										c	c	f	f	f				
25	f		f	f	f	f	f										c	c	f	f	f				
26	f		f	f	f	f	f										c	c	f	f	f				
27	f		f	f	f	f	f										c	c	f	f	f				
28	f		f	f	f	f	f										c	c	f	f	f				
29	f		f	f	f	f	f										c	c	f	f	f				
30	f		f	f	f	f	f										c	c	f	f	f				
31	f		f	f	f	f	f										c	c	f	f	f				
Mean Value																									
Median Value																									
Count																									

type of Es

Sweep 1.0 Mc to 2.0 Mc in 1 min

Manual

Automatic

SOLAR RADIO EMISSION

JAN. 1957

Observing Station: HIRAISSO

Frequency: 200 Mc/s

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

Time in U.T.

Daily Data

Date	Steady Flux		
	00-03	03-06	Daily Averages
1	11	13	12
2	36	41	39
3	17	15	16 (a)
4	30	21	26
5	42	31	36
6	33	33	33
7	15	15	15
8	20	12	16
9	13	15	14
10	14	13	14
11	14	10	12
12	11	11	11
13	10	11	10
14	11	9	10
15	10	9	9
16	9	12	11
17	11	11	11
18	14	12	13
19	8	16	12
20	30	45	38 (b)
21	46	53	50
22	17	35	26
23	25	21	23
24	65	26	45
25	11	(17)	13 (c)
26	13	21	17
27	14	15	14
28	13	21	17
29	11	26	18
30	12	16	14
31	15	13	14

No observation: (a) 0600 ~ 0700,
 (b) sunrise ~ 0134,
 (c) 0300 ~ 0500.

Outstanding Occurrences

Date	Starting Time	Duration	Type	Peak Flux	Time	Remarks
1	0034	13m	CD	140	0034-30s	
				85	0039	
				105	0042	
	0103	10m	CD	95	0107	
	0424	1m	SD	130	-	
	sunrise to	2400	M	ca 50	-	mean flux
2	0137	1m	CD	200	-	
	0310	ca 75m	M	ca 50	-	mean flux
	2226	1m	CD	540	-	
	2244	40s	CD	680	-	
	2246	1m	CD	1030	-	
	2327	1m	SD	420	-	
	2359-30s	30s	CD	180	-	
3	0003	instant	SD	910	-	
	0032	2m30s	CD	740	0033	1st peak
				240	0034	2nd peak
	0115	30s	SD	> 1200	-	
	0154-30s	1m	SD	580	-	
	0411	instant	SD	470	-	
4	0100	150m	M			
	0400	210m	M	70-100(mean flux)		200-400 bursts per hour
	2323-30s	1m	CD	400	-	
	2354	instant	SD	310	-	
	2355	instant	SD	570	-	
5	0053	6m	CD	> 1200	0054	
	0345	37m	M	50	-	mean flux
	0550-30s	1m30s	CD	370	-	
	2346	1m	CD	450	-	
6	0055-30s	instant	SD	1080	-	
	0134	instant	SD	470	-	
	0140	30s	SD	630	-	
	0113	1m	CD	880	-	
	2215	1m	CD	230	-	
7	0152	instant	SD	360	-	
	0203	instant	SD	180	-	
	0359-30s	30s	SD	560	-	
	0508	30s	SD	420	-	
8	0100	85m	M	ca 20(mean flux)		less than 100 bursts per hour
	0419	2m	CD	670	0419-30s	
	0614	instant	SD	600	-	
	2307	4m	SD	320	2308	peak of main part
		4m		14	2311	gradually decaying part
	2319 *	13m	M+CD	55	-	level increased
				180		bursts
	2340	9m	M+SD	24	2345	level increased
			210		bursts	
11	0541	2m	SD	38	0542	
17	0451	2m *	SD	1100	0451-30s	
	0456	1m40s	SD	720	0456	
18		2m		6		remained flux
	0037	4m30s	M	180		mean flux
	0403	2m	M	65		mean flux

Date	Starting Time	Duration	Type	Peak Flux	Time	Remarks
19	0045	3m	M	110		mean flux
	0520 to 0740	(sunset)		95	0600	rise and fall
20	2235	1m	CD	800	-	
21	0105	3m30s	CD	340	0105	1st peak
				330	0107-30s	2nd peak
23	2220-30s	2m	CD	1000	2220-30s	1st peak
				1040	2222	2nd peak
	2313 *	2m *	CD	>1200	2313 *	
				210	2315 *	
24	ca 0050	4.5m	M	95		mean flux
	0557	2m	CD	>1200	*	
	2317	2m30s	CD	140	-	
25	0546	30s	SD	580	-	
26	0322	30s	SD	>1200	-	
	0400	ca 60m	M	50		mean flux; bursts occurred occasionally
27	0037	30s	SD	900	-	
	0744	2m30s	CD	190	0744	
				>1200	0745	
				210	0746	
28	0413-30s	30s	SD	130	-	
	0550 *	8m	M+SD	19		level increased
				22		bursts
	2226	instant	SD	400	-	
31	0410-30s	30s	SD	260	-	

* . . . inaccurate with the order of ± 1 minute

IONOSPHERIC DATA IN JAPAN FOR JANUARY 1957

電波観測報告 第9巻 第1号

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