F — 101

551. 510. 535. 05(52) (047.3)

IONOSPHERIC DATA IN JAPAN

FOR MAY 1957

Vol. 9 No. 5

Issued in July 1957

Prepared by

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

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THE RADIO RESEARCH LABORATORIES

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CONTENTS

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_0F2, f_0F1, f_0E	The ordinary-wave critical frequency for the $F2$, $F1$ and E layers respectively.
f_0E_s	The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.
f_bE_s	The 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 do which f_0E_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_0E_s and the f_bE_s data.
$hpF2$	The virtual height of the $F2$ layer measured on the ordinary-wave branch at a frequency equal to 0.834 f_0F2.
$ypF2$	The semi-thickness of the $F2$ layer deduced from a parabolic fit to the " nose " of the electron density distribution with height and based on the observed $h'f$ trace. (The difference between $hpF2$ and the virtual height at 0.969 f_0F2)

a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

A	Measurement in fluenced 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 extraodinary component.

Y — Intermittent trace.

Z — Third magneto-ionic component present.

b. Qualifying Symbols

Used as a preceeding symbol on monthly tabulation sheets.

D — *greater than*.....

E — *less than*.....

I — Missing value has been replaced by an interpolated value.

J — Ordinary component characteristic deduced from the extraordinary component.

T — Value 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

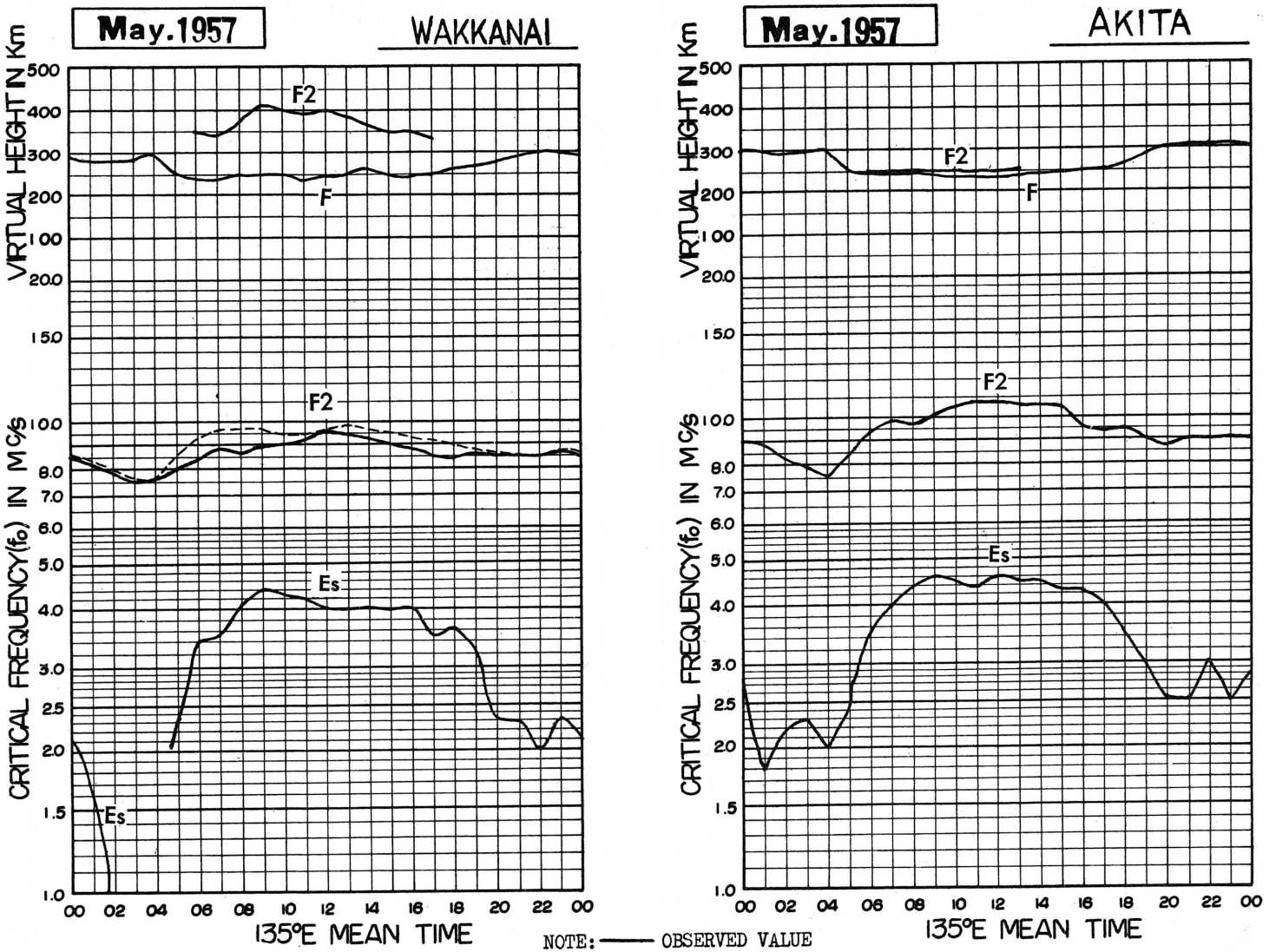
Ionospheric observation is carried out at the following four observatories in Japan.

	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.

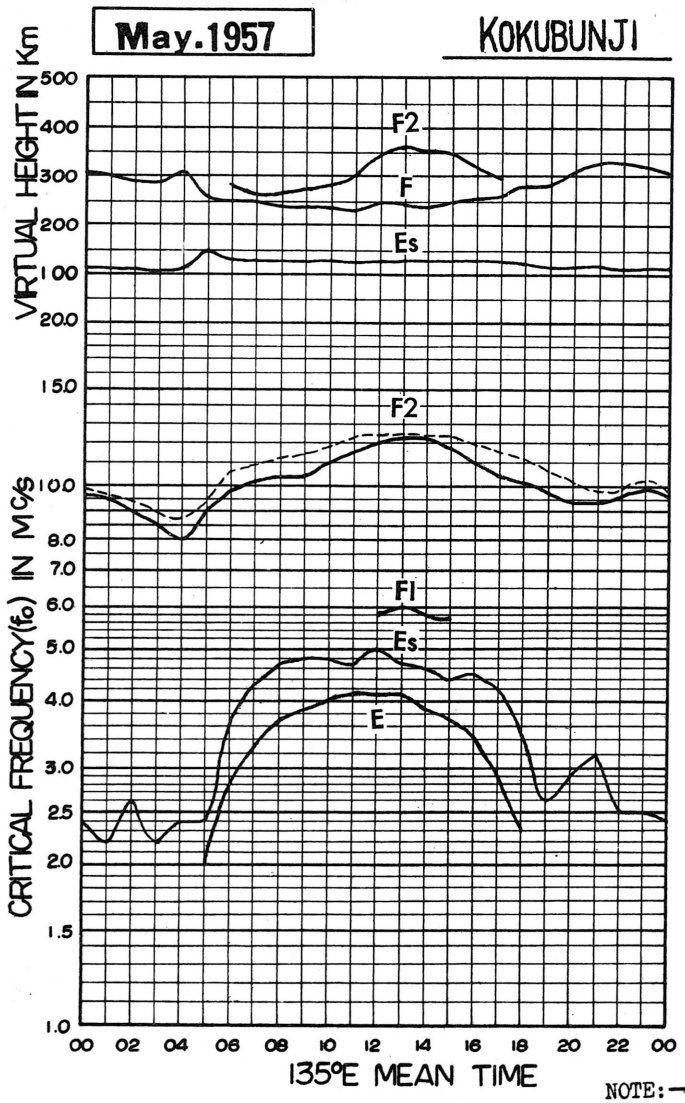
	Latitude	Longitude	Site
Hiraiso	36°22.0′N.	140°37.5′E.	Hiraiso-machi, Nakaminato-shi, Ibaragi-ken

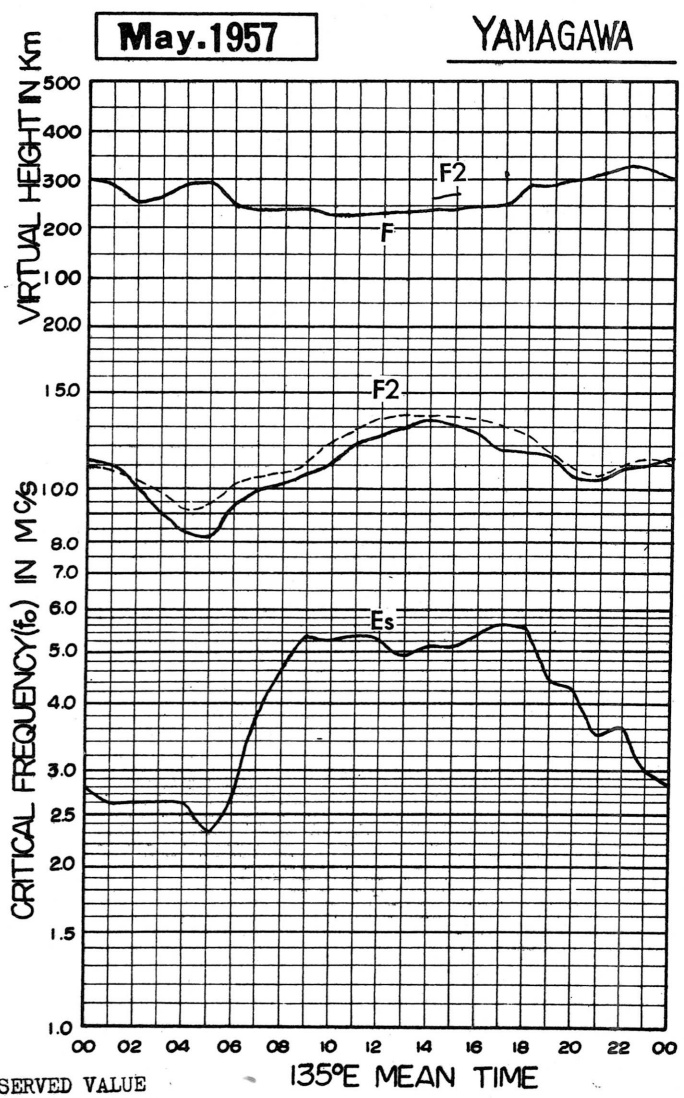
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



NOTE: —— OBSERVED VALUE
--- PREDICTED VALUE

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





NOTE: —— OBSERVED VALUE
– – – PREDICTED VALUE

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

May.1957

foF2

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	8.2	8.1	7.8	7.7	7.7	9.1	10.5	10.7	11.3	11.2	11.5	11.9	11.5	12.0	11.5	11.3	10.9	10.8	10.8	10.6	9.3	S	S	S
2	8.7	J8.3	8.2	8.3	7.8	8.3	8.7	8.7	8.5	9.0	9.3	9.5	10.2	9.7	9.7	9.5	9.3 H	9.5 H	9.8	9.8	9.1	8.3	S	S
3	8.0	8.0	7.3	6.9	7.1 H	8.3	10.0	10.8	11.3	11.5 H	11.7	11.3	11.5	11.5	11.2	10.6	10.2	9.5	9.5	J10.3	9.3	9.4	J8.3	8.5
4	I8.3 S	8.1	7.8	6.8	7.0	7.3	7.9	8.8	9.5	9.3	9.9 H	10.5	10.5	10.5	9.7	9.7	9.5 H	9.5	9.9	10.1	8.8	J8.3	S	S
5	8.7	7.8	7.3	7.2	6.7	6.8	6.5	6.2	6.3	6.8	6.8	J6.8	7.8	8.3	8.4	8.1	8.3	8.1	8.0	7.8	7.1	6.7	FS	FS
6	7.0 SF	F	F	U6.4 F	6.5 F	7.3	8.1	8.8	9.1	9.0	9.5	9.5	10.0	9.8	9.9	9.8	9.3	8.3	8.3	8.3	8.2	S	S	S
7	U8.3 S	8.2	7.3	7.3	7.6	8.7	10.3 H	11.3	11.0	11.5	11.8	12.0	11.5	11.6	11.3	10.5	10.7	10.9	9.9	9.5	8.5	J8.3	8.5	J8.5
8	8.2	8.0	7.8	7.2	J7.2 F	9.0	10.7	11.3	10.1 H	9.8	9.8	10.5	10.1	9.5	9.3	9.5	10.1	10.2	9.5	9.5	8.8	S	S	S
9	8.7	8.1	7.7	7.5	7.8	8.5	8.8	9.5	9.0	9.2	9.7	10.0	10.7	10.0	9.8	10.0	10.0	9.8	9.3	8.5	8.3	8.3	8.3	8.3
10	8.3	8.0	7.6	7.4	7.3	8.5	9.8	10.0	10.5	10.8	11.1	10.9	11.0	10.6	10.0	10.5	10.3	10.3	9.7	9.0	8.5	8.7	J8.3	S
11	S	8.1	8.1	7.5	7.3	8.0	7.7	8.0	7.7	7.5	J7.3	7.9	8.5	8.5	8.3	8.5	8.2	8.0	8.0	8.3	8.5	8.3	J8.3	I8.2 S
12	8.2	8.1	8.0	7.2	7.3	8.0	8.7	9.2	8.6	8.6	9.0	9.2	9.7	9.7	9.3	8.9	9.0	8.8	9.0	8.9	8.3	8.5	8.2	S
13	S	8.2	U8.0 S	8.0	8.0	8.6	9.3	10.3	9.8	9.7	10.2	10.5	10.1	11.0	10.5	10.3	9.8	9.5	8.8	8.8	I9.2 S	9.5	9.8	9.3
14	9.2	9.0	8.2	8.0	8.2	8.6	9.5	9.5	10.0	9.9	11.0	10.3	10.3	10.5	10.0	10.1	9.8	9.7	9.8	9.4	9.0	9.0	9.2	9.2
15	9.3	8.5	8.1	7.7	8.3 Z	9.5	10.7	10.3	10.8	11.0	11.0	10.8	11.0	11.0	10.3	9.7	9.0	9.2	9.0	9.0	U9.0 S	U9.0 S	S	S
16	SF	SF	FS	F	S	8.1	8.6	8.9	8.7	9.0	9.5	9.8	10.1	9.6	9.3	9.3	8.6	8.4	8.8	8.7	J8.3	S	S	S
17	8.1	8.0	7.8	7.4	7.8	8.0	8.3	8.5 H	8.5	8.3	7.9	8.1	8.8	8.7	8.7	8.2	8.3	8.2	8.3	U8.4 S	8.3	8.3	S	S
18	S	S	8.2	7.4	8.3	9.5	9.5	9.5	9.0	8.8	9.0	9.2	9.5	9.7	9.3	9.0	8.8	8.3	8.5	8.8	I8.8 S	8.8	S	S
19	9.0	8.6	8.0	7.8	8.2	8.8	8.3	8.3	8.1 H	7.9	8.3	7.8	8.6	8.6	8.4	8.3	8.0	8.0	8.1	8.0	8.5	I8.5 S	8.5	8.4
20	8.5	8.6	7.8	7.7	7.8	7.7	7.5	7.6	7.8	8.3	8.3	9.0	8.5	8.3	8.9	8.6	8.7	8.5	8.3	8.0	7.8	8.3	8.7	8.5
21	8.5	8.2	8.3	8.0	7.4	7.6	8.0	7.7	7.5	8.0	8.3	8.3	8.3	8.3	8.3	I8.2 A	8.1	8.5	8.7	8.7	8.7	8.6	9.0	9.0
22	8.9	8.5	7.8	7.5 F	7.6	7.3	7.0	7.0	7.1	7.8	8.1	8.0	8.0	8.3	8.3	8.2	8.3	8.3	8.1	8.0	8.1	8.5	8.4	8.3
23	8.5	8.5	8.2	8.0	8.3	9.0	9.5	9.5	9.6	9.7	10.0	10.0	9.7	9.3	9.5	9.5	9.5	9.2	A	A	8.3	8.5	8.8	8.7
24	8.3	C	C	C	C	C	C	9.5	9.3	9.2	9.0	8.6	8.3	I8.4 A	8.4	A	A	8.5	8.3	I8.4 A	8.5	9.0	9.3	9.6
25	9.5	8.8	8.1	7.7	7.6	7.8	8.0	7.5	7.6	8.1	8.3	8.0	8.6	8.1	8.0	8.2	8.0	7.9	7.8	8.0	8.6	8.6	8.6	9.0
26	9.0	8.3	8.2	7.7	7.1	7.1	7.6	8.3	C	C	C	C	C	C	C	C	C	8.3	8.3	9.3	9.8	9.4	9.5	9.5
27	9.1	8.0	7.2	6.6	7.6	8.0	7.0	6.3	6.5	6.4	6.8	6.5	6.5	6.5	6.6	6.5	7.0	7.3	7.3 H	7.3	7.5	8.0	8.0	7.8
28	7.6	7.5	7.1	7.1	7.2	7.9	8.0	8.3	7.8	8.0	8.0	8.0	8.1	8.8	8.8	8.6	8.6	8.3	8.2	I8.4 A	8.6	8.7	9.0	9.0
29	8.3	8.0	7.6	7.5	7.2	7.5	8.3	7.5	7.6	7.5	7.6	8.0	8.1	8.7	8.9	8.6	8.6	8.3	8.0	8.0	8.2	8.5	8.5	8.7
30	8.5	8.2	8.0	7.7	7.7	7.9	8.3	8.6	8.6	8.8	8.8	8.4	8.7	9.0	8.9	8.4	8.4	8.3	8.3	8.4	9.2	9.7	10.3	10.2
31	9.3	9.0 H	7.2	6.5	6.0	6.6	7.1	6.6	I6.7 B	6.8	7.1	6.7	7.5	7.6	7.3	7.4	7.7	7.5	7.3	7.6	7.8	8.3	8.2	8.3 F
Mean Value	8.5	8.2	7.8	7.4	7.5	8.1	8.6	8.8	8.8	8.9	9.2	9.2	9.4	9.4	9.2	9.1	9.0	8.8	8.7	8.7	8.6	8.6	8.8	8.8
Median Value	8.5	8.2	7.8	7.5	7.6	8.0	8.3	8.8	8.6	8.9	9.0	9.2	9.6	9.4	9.3	9.0	8.8	8.5	8.4	8.6	8.5	8.5	8.5	8.7
Count	27	27	28	29	29	30	30	31	30	30	30	30	30	30	30	29	29	31	30	30	31	27	21	19

foF2

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W1

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

May. 1957

foEs

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	2.2	J1.8	2.3F	1.1	E	G	3.1	3.5	G	3.7	G	G	G	G	G	4.4	4.2	3.2	J3.3	J4.8	E	E	E	E
2	E	E	E	1.2	1.1	2.3	3.2	3.4	4.1	4.0	J4.6	4.0	J5.5	4.0	3.5	J3.5	3.7	G	3.0	2.3	3.1	2.5	E	E
3	E	E	E	S	E	G	3.5	3.2	3.6	3.6	G	G	G	G	G	G	J4.7	3.6	2.4	2.5	2.2	2.1	E	E
4	E	E	E	E	J5.5Y	G	G	3.4	4.2	4.8	J5.5	J5.2	4.4	4.2	4.2	4.0	3.5	3.5	J3.6	J3.2	2.1	E	E	J2.8
5	E	2.1Y	2.2Y	J2.6	E	2.3	2.9	3.5	4.3	4.2	4.6	B	G	G	G	G	3.3	3.5	J4.3	J3.5	J4.5	J2.9	E	E
6	E	E	E	E	G	G	3.3	3.4	3.5	J6.8Y	G	4.2	4.1	4.1	3.5	J3.5	3.3	3.1	J4.9	4.2	2.7	J3.8	2.3	1.9
7	J3.2	2.3	2.2	2.3	J3.3Y	2.3	3.1	J4.8	J5.3	4.3	4.3	4.3	4.2	J5.5	2.5	J5.2	4.0	J4.0	J4.5	2.2	E	E	2.1	E
8	E	E	E	E	G	G	G	3.5	3.9	4.2	G	G	G	G	4.3	4.2	4.0	J4.3	J3.3	J2.8	J3.3	E	E	2.2
9	2.1	E	2.3	2.1	G	G	J4.4	3.4	J5.6	4.4	J5.3	G	G	J5.3	J4.6	J4.3	J6.3	J5.0	J5.3	J4.6	2.0	2.3	2.6	E
10	J2.8	2.1Y	2.3	2.3F	E	2.5	3.4	3.5	4.0	4.2	4.2	4.1	G	G	G	G	J4.8	3.5	J4.6	J3.8	S	E	E	E
11	E	E	S	S	2.3	2.6	3.3	3.8	J5.5	4.4	4.3	J5.3	G	G	4.1	J4.8	J4.2	J5.3	J5.3	J3.5	E	E	J6.8	S
12	E	E	E	E	1.1	2.3	3.5	4.0	4.1	4.1	4.0	4.3	J5.3	4.0	4.3	4.0	J5.8	J4.9	J3.8	J3.5	J3.3	J5.8	J4.3	J3.8
13	J2.6	J1.6	J2.8	J1.6	G	G	3.5	3.8	G	4.2	4.0	4.0	4.0	G	G	3.0	4.0	3.2	2.5	1.9	2.3	2.2	E	E
14	E	J1.6	E	J1.5	G	G	3.4	3.5	4.7	J7.0	4.8	4.2	4.0	4.0	4.0	4.0	3.5	3.5	3.3	J3.3	2.2	2.3	E	J2.5
15	J3.3	J1.9	E	E	1.7	2.7	3.5	3.6	4.0	4.4	4.3	4.3	G	G	4.0	G	3.5	3.1	2.6	E	2.3	2.1	E	2.3
16	2.3	2.1	E	1.1	J2.8Y	2.8	3.5	3.6	4.0	4.9	4.2	G	G	G	G	G	G	3.5	3.1	2.2	E	E	J2.2	J2.8
17	E	2.2Y	E	E	2.2	2.5	3.2	J5.8	4.5	4.3	G	G	G	G	4.1	4.0	J5.7	J5.0	J4.3	J5.8	E	E	J2.0	J2.5
18	J2.5	J1.8	E	E	J3.6Y	G	3.3	3.6	J5.3	4.7	J5.6	G	4.1	G	G	J5.0	3.9	G	3.3	J3.1	2.3	E	J6.2	J4.3
19	2.2	J2.0	J1.7	1.1	G	2.7	3.5	4.2	J5.0	J6.3	J4.8	4.2	G	J5.3	4.1	3.8	G	3.5	2.8	J3.5	J3.3	J3.5	2.3	E
20	E	E	E	E	G	G	3.5	G	G	G	G	J7.0Y	J8.8Y	B	J6.6Y	J5.3Y	G	G	2.4	J2.8	J2.8	J9.3	2.3	2.3
21	J2.8	2.3	J2.5	G	2.3	G	J4.8	4.1	J7.1F	B	J6.8Y	B	J6.8	B	B	J9.6Y	J5.3Y	J7.8Y	J4.6	J3.5	J10.8	J10.5	J8.8	J10.8
22	J6.3F	J2.9	J2.8	J2.8Y	J2.4	2.7	3.5	J5.3	J6.0	J6.5	J6.8	J10.3	B	B	G	G	J4.9	J4.4Y	J3.2	J2.5	J7.3S	J2.8	2.3	E
23	2.3	2.2	1.1	E	1.7	2.4	3.4	4.2	J5.0	B	5.3	B	B	J6.8	G	J5.3	J6.9	J9.3	J12.0	J10.3	J2.6	2.3	E	J4.6
24	J2.8	C	C	C	C	C	C	J6.8	G	J5.9	G	J5.8Y	J6.3	J9.5	J8.8	J11.8	J13.8	J7.3	J7.5	J9.0	J2.9	J3.6	J3.1	2.3
25	2.1	J2.8	J2.5	2.3	2.3	J2.8	G	4.1	G	G	J6.1	J6.3	J5.3	J6.3	J4.8Y	J5.5	J4.7	J6.3	J5.0	E	2.3	2.3	2.3	J2.5
26	J2.4	E	E	E	G	J2.8	J5.9	J5.5	C	C	C	C	C	C	C	C	C	J2.8	J7.3Y	E	E	2.2	2.2	2.3
27	E	E	J1.6	E	G	G	3.5	3.5	G	B	B	B	B	J5.8Y	J5.6Y	J6.0Y	3.5	J2.8	J3.0	J4.1	J3.5	J3.3	E	E
28	E	E	E	E	G	2.3	G	3.5	J5.3	J6.0	J6.8	J7.0	J5.0	B	4.6	J5.0Y	J5.4	J4.7	J3.9	J11.8	J3.3	J6.1	C	J2.9
29	J3.0	2.3	2.3	E	J2.8	G	G	3.5	4.2	G	G	G	B	B	G	G	G	J2.8Y	2.3	E	E	E	E	2.3
30	J2.8Y	E	E	2.1Y	E	2.3	G	3.5	G	J5.0Y	G	B	B	J6.3	B	G	G	G	G	E	E	E	E	E
31	E	E	E	1.1	G	G	3.2	G	G	B	B	5.3	J6.3	B	B	G	J4.8	3.5	J6.3	J3.3	J4.3	J4.8	J2.3	J4.8
Mean Value	2.8	2.1	2.2	1.8	2.5	2.5	3.5	4.0	4.7	4.9	5.1	5.3	5.3	5.5	4.6	4.9	4.8	4.4	4.3	4.1	3.3	3.8	3.4	3.3
Median Value	2.1	1.6	E	E	G	2.3	3.4	3.5	4.1	4.4	4.3	4.2	4.0	4.0	4.0	4.0	4.0	3.5	3.6	3.2	2.3	2.3	2.0	2.3
Count	31	30	29	28	30	30	30	31	30	26	28	25	25	24	27	30	30	31	31	31	30	31	30	30

foEs

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W2

7

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

May. 1957

(M3000)F2

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	2.55	2.60	2.55	2.55	2.50	2.70	2.80	2.80	2.70	2.65	2.65	2.60	2.60	2.65	2.60	2.65	2.65	2.65	2.70	2.70	2.65	S	S	S
2	2.60	J 2.50	2.50	2.65	2.65	2.65	2.85	2.80	2.65	2.80	2.65	2.70	2.70	2.65	2.70	2.70	2.80 H	2.80 H	2.70	2.75	2.75	2.75	S	S
3	2.50	2.75	2.60	2.50	2.50 H	2.80	2.85	2.95	2.80	2.75 H	2.75	2.60	2.60	2.60	2.65	2.65	2.75	2.70	2.70	J 2.70	2.75	2.70	J 2.75	2.70
4	I 2.60 S	2.50	2.50	2.45	2.45	2.40	2.55	2.75	2.80	2.70	2.55 H	2.65	2.75	2.55	2.70	2.65	2.70 H	2.80	2.70	2.85	2.75	J 2.65	S	S
5	2.55	2.55	2.55	2.50	2.40	2.85	2.50	2.45	2.40	2.50	2.50	J 2.55	2.55	2.70	2.75	2.75	2.75	2.70	2.85	2.65	2.50	2.50	FS	FS
6	2.48 SF	F	F	U 2.45 F	2.60 F	2.80	2.75	2.80	2.85	2.75	2.70	2.60	2.70	2.65	2.70	2.75	2.80	2.95	2.90	2.75	2.60	S	S	S
7	U 2.85 S	2.65	2.60	2.60	2.60	2.85	2.70 H	2.80	2.65	2.65	2.65	2.75	2.65	2.70	2.65	2.60	2.70	2.75	2.80	2.75	2.80	J 2.75	2.65	J 2.60
8	2.65	2.50	2.60	2.55	J 2.50 F	2.65	2.95	2.70	2.65 H	2.50	2.50	2.60	2.50	2.55	2.50	2.60	2.75	2.80	2.85	2.75	2.70	S	S	S
9	2.70	2.65	2.55	2.50	2.65	2.80	2.60	2.80	2.75	2.65	2.60	2.70	2.60	2.60	2.65	2.60	2.70	2.70	2.85	2.70	2.70	2.60	2.50	2.60
10	2.65	2.55	2.60	2.55	2.60	2.80	2.75	2.80	2.75	2.70	2.65	2.65	2.65	2.75	2.65	2.70	2.75	2.85	2.85	2.80	2.60	2.55	J 2.70	S
11	S	2.70	2.70	2.65	2.55	2.85	2.65	2.85	2.75	2.60	J 2.50	2.55	2.75	2.80	2.70	2.80	2.85	2.85	2.85	2.75	2.65	2.70	J 2.70	I 2.70 S
12	2.65	2.60	2.70	2.60	2.65	2.75	2.80	2.80	2.75	2.70	2.75	2.60	2.60	2.65	2.65	2.70	2.75	2.80	2.75	2.75	2.75	2.70	2.80	S
13	S	2.60	U 2.70 S	2.75	2.80	2.90	2.85	2.85	2.80	2.60	2.65	2.55	2.60	2.60	2.75	2.70	2.75	2.80	2.75	2.65	I 2.60 S	2.55	2.65	2.55
14	2.60	2.65	2.65	2.50	2.65	2.60	2.80	2.90	2.80	2.70	2.70	2.65	2.65	2.65	2.55	2.75	2.75	2.65	2.85	2.75	2.65	2.65	2.60	2.60
15	2.70	2.70	2.75	2.55	2.70 Z	2.75	2.85	2.80	2.70	2.60	2.65	2.60	2.60	2.65	2.60	2.70	2.65	2.75	2.75	2.70	U 2.65 S	U 2.65 S	S	S
16	SF	SF	FS	F	S	2.90	2.70	2.70	2.70	2.60	2.55	2.55	2.65	2.60	2.60	2.65	2.75	2.75	2.75	2.75	J 2.65	S	S	S
17	2.60	2.65	2.60	2.65	2.65	2.60	2.70	2.80 H	2.70	2.65	2.40	2.50	2.55	2.60	2.60	2.60	2.65	2.75	2.70	U 2.75 S	2.55	2.60	S	S
18	S	S	2.55	2.50	2.65	2.90	2.65	2.60	2.60	2.50	2.65	2.60	2.45	2.55	2.55	2.65	2.70	2.75	2.75	2.70	I 2.65 S	2.60	S	S
19	2.60	2.75	2.50	2.50	2.50	2.70	2.80	2.80	2.70 H	2.55	2.60	2.50	2.65	2.65	2.65	2.65	2.65	2.65	2.75	2.60	2.60	I 2.55 S	2.50	2.50
20	2.55	2.60	2.50	2.50	2.50	2.60	2.35	2.55	2.60	2.65	2.60	2.65	2.55	2.50	2.60	2.55	2.60	2.75	2.80	2.75	2.35	2.40	2.50	2.55
21	2.45	2.55	2.65	2.75	2.55	2.65	2.55	2.55	2.50	2.45	2.50	2.55	2.50	2.60	2.60	2.60 A	2.65	2.70	2.70	2.65	2.60	2.50	2.40	2.60
22	2.55	2.65	2.45	2.55 F	2.70	2.45	2.40	2.40	2.45	2.50	2.60	2.55	2.50	2.60	2.55	2.60	2.75	2.80	2.80	2.75	2.50	2.55	2.50	2.50
23	2.45	2.55	2.70	2.70	2.75	2.80	2.60	2.65	2.55	2.55	2.55	2.50	2.55	2.60	2.50	2.60	2.60	2.65	A	A	2.60	2.55	2.55	2.60
24	2.60	C	C	C	C	C	C	2.60	2.45	2.50	2.60	2.55	2.65	I 2.70 A	2.70	A	A	2.85	2.85	I 2.70 A	2.60	2.40	2.45	2.60
25	2.60	2.60	2.70	2.60	2.55	2.70	2.55	2.50	2.40	2.45	2.65	2.50	2.50	2.50	2.50	2.60	2.70	2.65	2.70	2.55	2.55	2.50	2.55	2.55
26	2.55	2.60	2.55	2.65	2.50	2.40	2.50	2.65	C	C	C	C	C	C	C	C	C	2.65	2.60	2.55	2.70	2.50	2.45	2.50
27	2.60	2.60	2.35	2.30	2.50	2.75	2.40	2.35	2.40	2.30	2.45	2.45	2.45	2.35	2.50	2.50	2.55	2.65	2.75 H	2.75	2.55	2.50	2.55	2.55
28	2.60	2.60	2.60	2.50	2.60	2.75	2.50	2.70	2.70	2.70	2.50	2.75	2.70	2.70	2.75	2.65	2.75	2.85	2.80	I 2.70 A	2.55	2.55	2.55	2.65
29	2.65	2.60	2.55	2.55	2.65	2.70	2.35	2.70	2.80	2.55	2.60	2.50	2.60	2.70	2.70	2.75	2.80	2.95	2.70	2.60	2.55	2.55	2.60	2.55
30	2.45	2.65	2.70	2.70	2.75	2.70	2.65	2.90	2.80	2.75	2.60	2.65	2.55	2.65	2.65	2.75	2.75	2.85	2.85	2.60	2.45	2.50	2.55	2.70
31	2.60	2.85 H	2.50	2.35	2.35	2.50	2.55	2.60	I 2.55 B	2.50	2.55	2.70	2.55	2.60	2.60	2.55	2.75	2.65	2.70	2.60	2.55	2.55	2.65	2.60 F
Mean Value	2.60	2.60	2.60	2.55	2.60	2.70	2.65	2.70	2.65	2.60	2.60	2.60	2.60	2.60	2.60	2.65	2.70	2.75	2.75	2.70	2.60	2.60	2.60	2.60
Median Value	2.60	2.60	2.60	2.55	2.60	2.70	2.65	2.70	2.70	2.60	2.60	2.60	2.60	2.60	2.65	2.65	2.75	2.75	2.75	2.70	2.60	2.55	2.55	2.60
Count	27	27	28	29	29	30	30	31	30	30	30	30	30	30	30	29	29	31	30	30	31	27	21	19

(M3000)F2

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W3

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

IONOSPHERIC DATA

May. 1957 | **h'F2** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	350	L	L	L								
2									L	330	L	L	300	L	340									
3									L		L	L	L	L	320	330								
4							L	L	325	L		305	L	355	L	L								
5						310	L	460	490	470	480	450	430	385	360	L	L							
6								250	290	L	350	360	360	360	355	L	U 285 L							
7										U 320 L	U 330 L	280	325	300	L	L								
8											350	370	380	370	U 370 L	340								
9								310	325	370	365	360	340	400	330	350	U 320 A							
10									L	L	L	260 H	L	310	290	L								
11							U 350 L	L	375	420	460	420	380	365	325	345	L							
12										360	360	L	L	320	L	310								
13										330	350	355	370	370	320	330	300							
14							L	L	L	235	L	L	350	340	L	335	280							
15									310	L	L	360	360	325	L	U 320 L	L							
16							L	L	L	370	L	340	355	350	U 370 L	350	L	L						
17							285	260 H	365	410	U 450 L	U 445 L	420	410	L	420	370	L						
18								340	U 360 L	420	U 390 L	390	425	380	380	350	360	L						
19							L	320		425	410	480	400	410	395	L	L	260						
20							L	390	375	400	415	395	450	450	400	390	360							
21								400	425	455	425	430	450	430	410	A	395	U 380 A						
22						L		485	455	470	410	430	440	420	425	410	L	L						
23								L	380	L	L	370	395	400	410	365	350							
24								355	400	390	380	410	410	A	A	A	A	A	A					
25							L	420	500	440	390	450	430	425	445	400	370	350	325					
26							375	C	C	C	C	C	C	C	C	C	C	L						
27					350		L	L	490	550	480	500	490	520	470	A	415	370						
28								330	360	430	400	370	420	380	345	320	345	310						
29							315	305	360	430	410	415	410	380	360	375	330	310						
30							L	330	345	345	400	350	L	370	360	345	U 300 B	320						
31						405	400	370	I 420 B	470	440	430	440	400	440	430	360	350						
Mean Value					350	355	345	355	385	400	400	390	395	380	370	360	340	330	325					
Median Value					350	355	350	340	375	415	400	390	400	380	365	350	350	335	325		-			
Count					1	2	5	15	19	22	21	25	25	26	22	19	15	8	1					

h'F2 | Sweep 1.0 Mc to 22.0 Mc in 1 min | ☐ Manual ☒ Automatic | **W4**

6

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

IONOSPHERIC DATA

May.1957 | **h'F** | **Wakkanai** | Lat. 45° 23.6' N | Long. 141° 41.1' E

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	295	290	295	290	320	260	235	225	220	220	230	225	210 H	265	240	250	255 H	240 H	250	270	230	270	270	310
2	300	280	300	280	270	270	235	230	250	250	250	235	250	240	230	240	220 H	220 H	260	255	255	255	270	290
3	305	265	260	270	270 H	260	235	225	220	220	230 H	260	230	250	230 H	250	240 H	255	270	270	250	260	265	280
4	280	280	290	290	340	265	230	240	240	240	265 H	255	230	235	u 270 A	235	240	250	275	260	250	265	300	300
5	285	270	265	280	320	280	240	240	250	250	250	I 250 B	250	250	265	240	240	270	275	275	310	325	320	310
6	310	290 F	295 F	290 F	295	260	240	220	225	245	250	255	250	245	220 H	255	240	255	260	265	280	310	300	290
7	310	260	260	290	290	245	235 H	250	245 H	230	250	225	230	240	240	225 H	250	250	250	245	255	270	280	285
8	275	280	280	270	320	245	235	230	240 H	260	270	275	275	275	250	240	250 A	250	250	250	250	270	290	290
9	290	275	270	275	300	260	240	230	265	240	270	250	265	270	260	275	I 270 A	270	250	260	270	290	310	305
10	290	285	285	260	280	260	240	240	240	225	235	I 230 A	225	220	250	240	290	250	250	255	255	270	300	290
11	285	280	275	255	275	265	250	250	I 250 A	258	230	250	230	250	280	265	250	270	300	270	270	280	305	290
12	285	285	275	270	295	245	250	245	230	230	210	235	u 265 A	250	260	230	280	300	275	270	270	305	270	300
13	290	300	300	275	265	240	240	240	250	220	230 H	225	250	250	230	260	250	290	255	270	295	290	275	275
14	290	275	270	290	300	255	230	230	245	I 250 A	250	240	225	230	255	230	230	260	260	260	270	270	290	305
15	270	270	260	270	280	240	245	230	220	220	240	225	240	225	220	220	235	250	260	280	280	280	290	290
16	290	280 F	255 F	280 F	300	250	235	235	220	250	210	220	240	250	260	255	240	250	270	275	275	300	300	305
17	300	280	270	275	280	240	240	225	250	255	250	210	220	230	260	230	I 240 A	245	A	A	270	295	300	305
18	300	285	295	310	295	245	230	220	270	250	I 235 A	220	245	230	260	250	240	240	270	275	270	290	u 335 A	305
19	295	270	270	310	310	260	250	240	265 H	I 240 A	220	255	260	250	250	250	240	250	265	295	310	I 320 A	320	320
20	300	290	285	310	310	275	270	290	280	280	240	I 245 A	250	250	300	270	275	300	255	290	305	I 310 A	320	310
21	315	300	275	275	295	270	u 360 A	300	260	270	I 310 A	u 350 B	u 290 A	250	260	I 290 A	320	I 310 A	300 A	230	A	A	A	A
22	290	300	320	310	285	260	u 280 B	310	350 A	A	A	250	230	275	260	260	290	270	260	275	300	310	300	310
23	315	300	280	270	270	240	250	260	250	250	255	240	265	I 270 A	280	A	A	A	A	A	275	300	300	345
24	290	C	C	C	C	C	C	A	260	250	250	A	A	A	A	A	A	A	A	A	290	340	335	290
25	275	280	260	280	305	250	240	B	290	275	A	240	250	240	255	A	A	A	A	290	285	315	320	300
26	300	300	295	280	260	250	I 270 A	290 A	C	C	C	C	C	C	C	C	C	235	260	300	275	270	310	280
27	275	235	320	390	300	240	270	u 270 B	B	B	280	270	250	300	310	A	B	B	265 H	280	u 350 A	330	295	290
28	300	290	280	280	290	255 H	u 320 B	B	A	A	A	B	250	265	260	270	A	A	280	I 295 A	310	360 A	360	290
29	275	285	280	300	295	240	245	B	B	260	B	230	B	B	B	265	B	B	250	275	270	290	300	300
30	310	290	275	255	270	250	215	B	275	A	275	B	260	B	275	275	B	B	255	270	325	305	300	270
31	270	225	255	320	320 H	270	B	B	B	B	B	B	A	B	B	B	B	B	A	305 A	300 A	350 A	300	335
Mean Value	290	280	280	285	295	255	250	245	250	245	245	245	245	250	255	250	255	260	265	270	280	295	300	300
Median Value	290	280	280	280	295	255	240	240	250	250	250	240	250	250	260	250	245	250	260	270	275	290	300	300
Count	31	30	30	30	30	30	29	25	26	25	25	26	27	26	27	25	22	23	26	28	30	30	30	30

h'F

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 5

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

IONOSPHERIC DATA

May. 1957

types of Es

135° E Mean Time

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	f	f	f			h	C		C						h	h	h.l	C	f				
2				f	f	h	h	h	C	C	C	C	C	C	C	f	l		h	f	f	f		
3							C	h	C	C							h.l	f	h.l	f	f	f		
4					l			h	C	C	C	C	C	C	C	C	c.l	c.l	h.l	f2	f			f
5		f	f	f		h.l	h	h	h	h	C						h	h	C	f	f	f2		
6							l	C	C	C		C	C	C	C	f	C	C	l.f	f	f	f	f	f
7	l f	f	f	f	h	h	h	C	C	C	C	C	C	C	l	h	h	C	f	f			f	
8								C	h	h					h	h	h	C	f	f	f			f
9	f		f	f			l	h	C	C	C			C	f	f	C	C	C	f2	f	f	f	
10	f	f	f	f		h	h	h	h	h	C	C					h	c.l	c.l	f				
11					f	h.l	C	C	C	C	C	f			l	f	l	l.f	l.f2	f			f	
12					f	f	h	h	C	C	C	C	f	C	C	h	C	C	f	f	f	f	f	f
13	f	f	f	f			C	C		C	C	C	C			l	h	h	C	f	f	f		
14		f		f			h	h	C	C2	C	C	C	f	C	C	h	h	h	f2	f	f		f
15	f	f			h	h	h	h	h	h	h	C			h		l	h	h		f	f		f
16	f	f		f	l	h	h l	h	h	C	h							h	C	f			f	f
17		f			f	h	h	h	h	h					C	C	C	C	C	f2			f	f
18	f	f			l h		h	h	C	h	C		C			C	C		C	f	f		f2	f
19	f	f	f	f		h	h	h	C	C	h	C		C	h	h		h	h	f	f2	f	f	
20							h					f	f		f	f			h	f	f	f2	f	f
21	f	f	f		h		h	C	C		f		f			f	f	f	f	f	f2	f	f2	f2
22	f	f2	f	f	f	h	h	h	h	h	h	f					C	C	C	f	f	f	f	
23	f	f	f		C	C	C	C	C		l			C		h	C	C	f	f	f	f		f
24	f							C		h		f	f	l f	C2	C2	C2	C2	C	f2	f	f	f	f
25	f	f2	f2	f	C	l		h			f	h	f	C	f	f	f	f	f		f	f	f	f
26	f					C	C	C										C	C			f	f	f
27			f				h	h						h	h	f	C	f	f	f	f	f		
28						C		h	C	C	l	h	l		C	C	C	C	C	f	f	· f		f
29	f	f	f		f			C	h									f	f					f
30	f			f		h		h		l				h										
31				f			h					l	l				C	h	C2	f	f	f	f	f
Mean Value																								
Median Value																								
Count																								

types of Es

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W6

11

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

May.1957 | **foF2** | 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	8.6	8.3	8.0	7.6	7.6	8.8	11.0	11.1	11.6	11.6	11.7H	12.1H	12.6H	12.6H	12.5H	12.0H	11.7	11.5	11.5	10.7	9.6	8.6	9.0	8.7
2	9.4	9.0	8.5	8.5	8.1	9.5	10.2	10.0	10.5	11.2H	11.6H	11.7H	11.9	11.9H	11.1H	11.0H	10.5H	10.1	10.4	10.4	9.5	8.5	8.4	8.5
3	8.5	9.0	8.4	7.4	7.6	8.3	10.9	11.2	10.7	11.6H	11.7H	12.0H	12.2H	12.6H	12.0H	11.6H	11.1	10.6	10.7	11.0	10.0	9.6	9.4	9.7
4	9.6	9.2	8.3	7.8	7.6	8.0	8.1	10.3	10.6	11.2H	11.4H	12.0H	12.3H	11.5H	11.5	11.1	11.1	10.6	10.8	10.2	8.7	8.5	9.0	9.0
5	9.0	8.6	8.7	7.7	7.6	7.6	7.2	7.0H	7.1H	8.7H	9.2H	10.0H	10.0H	9.9H	10.5H	10.2H	9.6	9.3	9.5	8.6	7.6	7.6	7.6	7.6
6	7.3	7.5	7.0	6.6	6.9	7.6	8.5	9.5	9.7	10.1H	10.2H	10.8H	11.4H	11.0H	11.1H	11.5H	10.3H	8.7	8.7	8.5	8.3	8.3	8.5	8.8
7	8.6	8.5	8.2	7.6	7.6	8.5	9.6	10.2	10.5H	11.5H	11.6H	11.5H	11.7H	11.8H	11.9H	11.4	11.1H	11.1	9.3	10.2	8.7	9.0	9.0	8.8
8	8.6	8.3	8.2	8.0	7.4	8.8	11.0	11.3	11.1H	11.5H	11.7H	11.9H	11.6H	11.2H	11.3H	11.1H	10.7	10.6	9.8	9.4	9.3	9.5	9.7	9.9
9	9.6	9.0	8.6	8.0	8.0	9.0	9.5H	10.0	10.3H	10.4H	11.1H	11.3H	11.8H	11.4H	11.2H	11.5H	10.8H	10.5	10.0	9.5	8.5	8.7	8.6	8.7
10	8.9	8.5	8.1	7.9	7.5	8.3	10.1	10.8	11.2H	11.5H	11.9H	12.0H	12.1H	12.1H	11.5H	11.6H	11.5H	11.0	10.3	9.4	8.9	9.0	9.2	9.6
11	9.2	9.1	8.6	8.1	8.6	8.6	8.8	9.0	8.7H	8.4H	9.0H	9.5H	10.5H	10.5H	10.5H	10.2H	9.6	9.0	8.6	9.0	8.5	9.2	9.2	8.9
12	8.7	I 8.4R	8.2	7.8	7.7	8.2	9.6H	10.6H	10.0	9.0H	9.7H	10.5H	10.8H	11.1H	10.7H	10.5H	10.2	9.6	9.5	I 9.0A	8.6	9.5	9.6	9.6
13	9.5	8.7	9.2	8.5	8.2	8.5	9.6	10.2	10.0H	10.0H	10.5H	11.5H	11.5H	11.6H	11.7	11.5H	I 10.8R	10.0	9.6	9.0	9.3	9.7	10.0	9.7
14	9.8	9.7	8.5	8.6	8.5	9.8	11.1	10.7	11.2	11.6H	11.7H	11.7H	11.6H	11.7H	11.7H	11.6H	11.3	11.1	10.6	9.6	9.1	9.1	9.7	10.1
15	9.7	9.2	9.2	8.2	8.1	9.6	10.2	10.4	10.7	11.0H	11.5H	11.7H	11.8H	12.5H	11.6H	11.2H	10.3	10.0H	9.7	9.6	9.1	9.5	9.2	9.5
16	9.6	8.7	8.3	8.2	8.2	9.6	9.6	10.3H	10.5H	10.4H	I 11.0RH	11.6H	11.8H	11.4H	11.1H	10.8H	9.7H	9.4	9.5	9.3	8.8	8.8	9.0	9.0
17	8.8	8.6	8.1	8.1F	7.6F	8.4	9.4	9.4N	9.4	9.0H	9.1H	9.5H	10.3H	10.4H	10.3H	9.8H	9.4H	9.4H	9.1	8.9	8.4	8.6	8.6	8.6
18	8.5	8.4	8.1	8.0	8.1	9.5	10.1	10.0H	10.3H	10.4H	10.5H	11.1H	11.5H	11.3H	10.9H	10.5H	9.6H	9.4	9.5	9.4	9.1	9.4	U 9.2C	9.6
19	9.5	9.4	8.6	8.4	8.3	9.3	9.6	9.8	9.6H	9.1H	9.4H	9.7H	10.2H	10.4H	10.1H	9.5H	9.0H	9.0H	8.6	8.3	8.8	9.0	8.9	8.7
20	9.0	9.1	8.2	7.9	8.3	8.3	8.0H	8.7H	8.4H	8.2H	8.7H	9.5H	10.0H	9.5H	9.7H	9.9H	9.6H	9.6H	8.9	7.7	7.8	8.3	8.3	8.5
21	8.3	8.8	8.7	7.9	7.3	7.2	8.0	8.1	8.1	8.2H	8.6H	9.0H	9.4H	9.0H	9.2	9.4H	9.2H	9.5H	9.5	9.5	8.4	8.5	8.6	9.2
22	9.0	9.2	8.5	8.1	8.1	8.0	7.2H	7.5H	8.0H	I 8.5A	9.0	9.5H	9.5H	9.6H	9.9H	9.5	9.5	9.2	8.6	8.5	8.5	8.6	8.4	9.0
23	8.6	8.9	9.0	8.5	8.1	8.5	8.6	9.5H	9.6H	10.4H	10.6H	11.2H	11.0H	10.6H	10.6H	10.6H	10.5	10.3	9.5	9.0	8.6	8.6	I 9.0R	9.4
24	I 9.1A	8.8	8.1	8.1	8.0	9.1	9.6	10.4N	10.4H	11.1H	10.5H	10.0H	10.1H	10.5H	9.6H	9.6H	9.4H	9.3	8.4	8.2	I 8.6R	9.0	9.2	10.0
25	9.6	9.3V	8.3	7.9	7.5	8.0	8.3	8.1	8.7	8.8H	9.3H	9.0H	9.1H	9.0H	9.4H	9.5H	9.5H	9.0	8.2	8.2	8.8	9.0	9.5	9.7
26	9.5	9.0	8.2	8.1	7.4	7.5	8.2	9.5	9.6	10.4H	10.7H	11.0H	10.7H	10.5H	10.3H	I 9.8A	9.4	9.3H	9.1	10.0	10.1	10.0	9.7	10.1
27	9.7	9.1	8.1	7.2	7.5H	8.2	8.1H	7.4N	6.7H	7.1H	7.6H	7.7H	7.3H	7.5H	7.6H	7.9H	8.1H	8.1H	8.1H	8.3	8.1	7.9	8.2	8.3
28	8.2	8.2	7.7	7.4	7.5	8.2	8.1	7.9H	8.6H	8.6H	8.9H	9.5H	9.5H	9.8H	10.0	9.6	9.4	8.9H	8.9H	9.0	9.0	9.1	8.7	9.0F
29	9.0	8.3	8.1	7.9	8.0	9.0	7.9	7.7	7.8	8.1H	8.1H	8.9H	9.6H	10.4H	10.3H	10.0H	9.4H	8.8	8.0	8.1	8.4	9.1	9.1	9.2
30	9.1	8.6	8.2	7.9	7.6	8.3	8.1	9.2H	9.1H	9.3H	9.0H	9.7H	9.8H	9.8H	10.1H	10.0	9.6H	9.4H	8.6H	9.0	9.2	10.3	10.4	10.4
31	9.1	9.5	7.7	7.0	6.8H	7.0H	7.4H	7.4H	6.6H	6.9H	7.5H	8.0H	7.8H	8.2H	8.3H	7.9H	8.1H	7.8H	7.7H	7.7	8.0	8.2	8.3	8.3
Mean Value	9.0	8.8	8.1	7.9	7.8	8.5	9.1	9.5	9.5	9.8	10.1	10.5	10.7	10.7	10.6	10.4	9.8	9.7	9.3	9.2	8.8	8.8	9.0	9.2
Median Value	9.0	8.8	8.2	7.9	7.6	8.4	9.4	9.8	9.7	10.1	10.5	10.8	10.8	10.6	10.6	10.5	9.6	9.4	9.5	9.0	8.7	9.0	9.0	9.0
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 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A1

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

IONOSPHERIC DATA

May.1957 | **foEs** | 135° E Mean Time | **Akita** | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J3.3	J3.0	J2.1	J2.8	J1.5F	J2.5F	J2.8Y	3.5	4.1	J3.7	J4.8Y	G	G	G	G	4.2	4.1	J3.6	J4.0	J2.5	J2.5F	J3.3	J2.5Y	E
2	E	E	1.1F	1.2	1.1	2.2	G	J3.5	J5.3	G	4.2	4.4	J5.4	J4.5	G	G	G	G	G	J2.8	J2.0	J1.3	J1.5	E
3	J1.4F	J1.5F	J1.4F	J1.5Y	J1.3Y	2.5F	3.0	3.5	4.3	J4.3	4.2	4.0	4.2	4.3	J5.0	J5.4	J5.0	J7.3	J3.0	J2.3	J8.6	E	E	E
4	J2.8Y	J1.8YF	J1.8	J1.8YF	J1.3YF	J2.8	3.5	3.7	J4.0	5.0	4.4	4.5	4.3	5.0	J12.3	J8.8	J5.7	J3.8	J3.8	J3.0F	J3.1	J2.5	J3.5	E
5	E	J1.4Y	J1.8Y	J1.5YF	J1.8YF	J2.8	3.5	3.8	4.4	4.4	3.9	B	J4.8	4.5	J4.3	4.2	J5.9	3.7	3.8	J4.8	J7.2F	J3.8F	J1.8Y	E
6	J1.4YF	J1.5YF	J1.8YF	J2.8YF	J2.1YF	2.2	3.5	3.9	G	G	G	G	4.5	J5.3	J6.3	4.2	G	3.5	J2.8	J2.4	J2.4Y	J3.2	J2.4	J7.2
7	J6.3	J3.8	J2.8F	J2.5	J2.7	J4.0	J3.3	G	G	G	4.4	J4.4	J5.9	J7.2	J5.8	J7.8	J5.7	J6.5	J10.8	J3.9	J1.8	J2.3	E	J1.1
8	J1.4Y	J1.8Y	E	J1.8Y	J1.3Y	J2.5F	J2.8	G	G	G	4.4	4.4	4.4	G	5.0	J4.4	J5.3	J4.8	J6.4	J7.2	J4.5	J3.8	J5.0	J2.0Y
9	J4.2	J1.7Y	J2.2	J2.5	J3.3	J2.1	J2.8	J2.8Y	3.9	J5.3	4.9	4.5	G	G	5.0	4.2	4.1	J8.4	2.7	J2.4	J1.9	J5.8	J3.5	J3.8
10	J2.5	J2.0Y	J1.8Y	J1.8	J2.4Y	2.5	3.5	4.0	4.0	4.3	J5.3	J5.6	4.3	5.0	4.5	4.1	4.2	J5.3	J4.1	J4.7	J2.3	J2.5	J1.8Y	E
11	J1.4Y	E	J1.3Y	J2.8	J2.8	3.0	4.1	J5.1	4.4	J4.7	J5.8Y	J4.7	4.5	J4.5	J6.0	4.5	J3.7	J3.5	J2.6	J1.7Y	J6.3	J4.3F	J3.0	E
12	J1.5	J1.8	J2.5F	J2.3Y	J2.8	J2.8F	3.4	4.4	J5.8	J5.7	4.5	J5.0	J4.6	J5.6	G	5.0	5.5	J6.0	J5.8	J9.6	J4.8	J2.8	J3.8	E
13	J3.5F	J2.6	J2.6F	J1.8	J1.5F	2.3	3.5F	4.0	4.5	J4.9	J4.5	J5.5	J7.0	G	G	4.0	J6.4	J4.0	J4.8	J2.5	J2.8	J2.8	E	J2.5Y
14	J1.8F	J2.1Y	J2.4Y	J2.0Y	J2.3	J2.8	3.5	4.0	4.4	4.6	4.6	4.5	4.2	G	G	4.1	4.1	J5.3	J7.1	J4.3	J4.8	J3.8	J3.8	J5.9
15	J2.6	J1.8	J1.6	J2.6	J1.8	2.5	3.5	4.3	4.2	4.2	4.3	4.5	4.0	G	4.5	G	G	G	G	J2.8	E	E	J1.6	J1.8
16	J2.8	J1.6	J1.8	J2.4	J1.8F	2.8	3.5	4.0	4.4	J5.3	4.5	J5.3	J7.0	J6.8	J6.1	G	G	3.5	3.2	J3.1	J3.0	J1.7	J3.4	J5.8
17	J4.4	J3.3	J3.5	J2.5	J2.8	J2.5	G	4.0	4.6	4.5	4.7	4.4	J5.5	4.6	4.4	G	G	J4.0	J4.0	J3.8	J8.8	E	E	J5.0
18	J3.1	J2.8	J3.5	J2.6	J2.4	J2.8	G	4.4	4.4	4.7	4.7	G	J7.2	J6.9	4.1	G	4.3	J6.1	J6.8	J4.3	J2.4	J1.8	J2.2	J3.3
19	J3.8	J2.3Y	J3.5F	J2.0	J1.8	J2.8	3.8	J4.4	4.1	4.2	4.5	G	G	G	4.2	4.2	J3.7	J3.0	2.9	J3.5	E	J2.3	J5.0	J2.2
20	J2.4Y	J1.7	J2.3	J1.7	J2.3	3.1	3.5	4.2	4.5	4.6	J6.1	J3.7	G	G	G	5.1	4.5	J3.9	J5.1	J3.1	J2.4	J3.5	J3.5	J3.1
21	J2.3F	J1.8	J2.5	J2.3Y	J1.8Y	3.5	3.5	J7.3	J6.5	J6.5	J10.2	J7.3	J8.5	J7.2	J9.0	4.7	G	G	J2.7	J2.5	J2.5	J2.6	J7.0	J3.0
22	J3.9	J6.3	J6.3	J4.7	J3.8	2.5	4.2	4.5	5.0	J9.8	J8.8	5.2	4.8	4.9	4.5	J7.7	J6.8	J4.7	J2.8	J2.5Y	E	J1.5	J7.3	J5.8
23	J3.3	J5.0	J3.5	J3.8	J3.3F	J2.8	J3.2	G	4.5	4.5	4.2	G	4.5	J6.1	J5.8	J5.0	J6.6	J9.7	J3.5	J6.1	J3.0	J3.0	J3.8	J7.0
24	J13.5	J6.8	J4.3	J3.5Y	J2.0Y	J2.5	2.9	4.1	4.5	4.2	4.3	4.4	4.6	G	4.6	4.5	3.7	J3.0	J3.0	J2.4	J3.3	J7.3	J4.7	J6.0
25	J6.0	J6.5	J2.5	J1.7F	J2.3	2.4	J5.8	J4.4	3.8	J6.0	5.0	J5.3	4.7	J6.2	J6.3	J4.5	4.5	J5.0	J6.8	J3.0	J1.6Y	J2.0	E	J2.8
26	J3.9	J1.8	J1.8	1.4	J1.7	3.2	3.5	3.9	J4.5	J6.7	J7.3	G	J6.2	J5.0	J7.8	J10.8	J9.5	J6.2	J2.4	J3.8	J3.8Y	J3.8	J5.8	J6.8
27	J3.2	J1.8	J1.4	J1.7Y	J1.4Y	J2.8	3.4	4.1	4.6	J5.6	4.4	G	G	G	4.1	4.4	J3.5	J3.1	J2.8	J2.5	J2.4	J2.3	J6.5	J3.2
28	J5.9	J1.5	1.4	1.4	J1.8	G	J2.8	G	3.4	4.2	4.3	5.1	5.1	J5.4	J8.5	J8.8	J7.3	J3.8	J2.5	J2.3	J2.5	J2.2	J3.1	J6.0
29	J3.9	J4.2	J2.3	J2.6	J2.8	J2.3	3.5	J5.0	J5.3	4.9	4.5	J5.5	4.6	J4.5	4.0	3.8	J8.2	J7.3	J3.9	J3.8	J3.6	J1.6Y	J1.7	J2.3
30	J2.3	J2.3	J3.5	J3.5F	J2.3	J5.0	J4.0	J4.3	J3.8	J3.9	4.5	4.4	4.4	4.2	G	4.0	4.1	3.6	2.9	J2.6	E	E	J2.8	E
31	J1.5	J1.5	J1.1Y	E	1.1	G	3.5	J3.8	J5.0	J6.3	J5.8	4.5	J5.8	J5.5	4.6	J4.3	J6.7	J4.4	J6.1	J6.0	J5.1	J2.5	E	J2.3
Mean Value	3.3	2.7	2.4	2.2	2.1	2.8	3.3	4.2	4.5	5.0	5.1	4.8	5.2	5.7	5.7	5.3	5.3	4.9	4.2	3.6	3.7	3.0	3.6	4.0
Median Value	2.8	1.8	2.2	2.3	2.0	2.5	3.5	4.0	4.4	4.6	4.5	4.4	4.6	4.5	4.5	4.3	4.3	4.0	3.5	3.0	2.5	2.5	3.0	2.5
Count	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31

foEs | Sweep 0.85 Mc to 22.0 Mc in 2 min | ☐ Manual ☒ Automatic | **A2**

13

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

May.1957

(M3000)F2

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	2.65	2.55	2.55	2.55	2.50	2.80	2.95	3.05	2.75	2.85	2.65H	2.65H	2.65H	2.65H	2.65H	2.65H	2.75	2.65	2.75	2.70	2.80	2.45	2.55	2.45
2	2.55	2.65	2.60	2.65	2.65	2.75	2.95	2.90	2.85	2.70H	2.85H	2.85H	2.75	2.70H	2.70H	2.75H	2.75H	2.75	2.80	2.90	2.70	2.70	2.75	2.65
3	2.55	2.70	2.75	2.45	2.50	2.90	3.05	2.75	2.80	2.85H	2.70H	2.70H	2.65H	2.70H	2.70H	2.60H	2.70H	2.75	2.75	2.80	2.80	2.60	2.60	2.65
4	2.60	2.65	2.65	2.60	2.50	2.55	2.95	2.75	2.95	2.75H	2.65H	2.65H	2.70H	2.65H	2.60	2.70	2.70	2.75	2.80	2.85	2.65	2.45	2.40	2.55
5	2.60	2.65	2.65	2.60	2.60	2.70	2.70	2.60H	2.45H	2.45H	2.50H	2.70H	2.75H	2.60H	2.70H	2.75H	2.80	2.80	2.75	2.80	2.55	2.55	2.45	2.55
6	2.40	2.45	2.55	2.60	2.50	2.75	2.90	2.95	2.90	2.65H	2.65H	2.60H	2.60H	2.65H	2.60H	2.70H	2.80H	2.75	2.70	2.75	2.55	2.45	2.45	2.50
7	2.70	2.75	2.55	2.50	2.65	2.80	3.05	2.95	2.80H	2.70H	2.65H	2.75H	2.65H	2.70H	2.70H	2.75	2.70H	2.75	3.05	2.75	2.65	2.55	2.60	2.65
8	2.75	2.55	2.60	2.60	2.45	2.60	3.00	2.80	2.70H	2.60H	2.65H	2.65H	2.60H	2.55H	2.70H	2.75H	2.80	2.85	2.95	2.70	2.60	2.60	2.60	2.70
9	2.75	2.65	2.70	2.50	2.60	2.75	2.70H	2.95	2.70H	2.60H	2.65H	2.60H	2.60H	2.55H	2.60H	2.60H	2.70H	2.75	2.85	2.65	2.70	2.45	2.45	2.55
10	2.60	2.70	2.60	2.55	2.60	2.80	2.65	2.70	2.75H	2.70H	2.70H	2.60H	2.65H	2.70H	2.70H	2.75H	2.80H	2.85	2.90	2.75	2.60	2.60	2.50	2.60
11	2.65	2.65	2.75	2.75	2.60	2.80	2.80	2.75	2.80H	2.40H	2.55H	2.50H	2.70H	2.65H	2.65H	2.75H	2.85	2.70	2.85	2.70	2.45	2.60	2.65	2.70
12	2.65	I 2.70R	2.80	2.60	2.55	2.75	2.85H	2.85H	3.00	2.70H	2.50H	2.50H	2.60H	2.70H	2.70H	2.70H	2.75	2.85	2.85	I 2.80A	2.70	2.55	2.55	2.60
13	2.55	2.75	2.65	2.70	2.80	2.95	2.85	2.95	2.70H	2.60H	2.60H	2.60H	2.50H	2.60H	2.60H	2.65H	I 2.70R	2.70	2.70	2.60	2.45	2.60	2.60	2.65
14	2.75	2.80	2.50	2.50	2.50	2.95	2.95	2.90	2.70	2.65H	2.75H	2.75H	2.65H	2.65H	2.65H	2.65H	2.70	2.80	2.90	2.70	2.65	2.55	2.60	2.50
15	2.80	2.65	2.70	2.70	2.60	2.80	2.85	2.85	2.80	2.70H	2.55H	2.65H	2.65H	2.65H	2.65H	2.70H	2.70	2.70H	2.80	2.85	2.65	2.55	2.60	2.55
16	2.60	2.75	2.60	2.60	2.45	2.85	3.00	2.75H	2.85H	2.60H	I 2.60RH	2.65H	2.65H	2.60H	2.55H	2.60H	2.80H	2.65	2.70	2.70	2.70	2.50	2.55	2.55
17	2.60	2.65	2.60	2.60I	2.40F	2.75	2.75	2.75H	2.65	2.70H	2.50H	2.55H	2.45H	2.60H	2.50H	2.55H	2.60H	2.70H	2.65	2.75	2.50	2.45	2.55	2.55
18	2.60	2.60	2.50	2.50	2.40	2.85	2.90	2.75H	2.65H	2.60H	2.50H	2.50H	2.55H	2.50H	2.60H	2.40H	2.65H	2.65	2.55	2.65	2.55	2.50	U 2.50C	2.50
19	2.60	2.55	2.70	2.40	2.45	2.70	2.80	2.75	2.70	2.55H	2.60H	2.55H	2.50H	2.60H	2.55H	2.60H	2.60H	2.70H	2.75	2.70	2.55	2.55	2.60	2.45
20	2.50	2.65	2.55	2.50	2.40	2.85	2.60H	2.70H	2.45H	2.50H	2.50H	2.55H	2.55H	2.55H	2.55H	2.60H	2.65H	2.70H	2.85	2.70	2.40	2.45	2.50	2.45
21	2.65	2.60	2.75	2.90	2.65	2.70	2.50	2.40	2.65	2.35H	2.55H	2.55H	2.45H	2.55H	2.55	2.60H	2.60H	2.65H	2.65	2.65	2.60	2.50	2.45	2.65
22	2.55	2.65	2.50	2.50	2.60	2.65	2.65H	2.55H	2.50H	I 2.50A	2.45	2.55H	2.55H	2.50H	2.55H	2.60	2.65	2.70	2.80	2.80	2.45	2.45	2.50	2.45
23	2.65	2.60	2.65	2.70	2.85	2.90	2.95	2.60H	2.50H	2.50H	2.55H	2.55H	2.60H	2.55H	2.55H	2.65H	2.75	2.60	2.75	2.65	2.55	2.55	I 2.50R	2.45
24	I 2.55A	2.65	2.45	2.35	2.40	2.75	2.70	2.50H	2.45H	2.60H	2.60H	2.50H	2.50H	2.60H	2.60H	2.60H	2.65H	2.70	2.90	2.60	I 2.50R	2.40	2.40	2.55
25	2.60	2.70V	2.85	2.65	2.45	2.40	2.90	2.85	2.65	2.65H	2.60H	2.55H	2.60H	2.55H	2.55H	2.55H	2.65H	2.75	2.80	2.55	2.55	2.35	2.40	2.55
26	2.60	2.65	2.55	2.75	2.45	2.40	2.60	2.70	2.60	2.45H	2.55H	2.55H	2.60H	2.50H	2.60H	I 2.65A	2.70	2.60H	2.60	2.50	2.65	2.50	2.50	2.55
27	2.65	2.75	2.45	2.20	2.30H	2.95	2.60H	2.70H	2.35H	2.45H	2.50H	2.55H	2.50H	2.55H	2.55H	2.60H	2.65H	2.70H	2.85H	2.65	2.60	2.55	2.50	2.40
28	2.55	2.55	2.60	2.55	2.60	2.60	2.80	2.90H	2.70H	2.60H	2.65H	2.65H	2.65H	2.75H	2.70	2.70	2.75	2.70H	2.70H	2.65	2.60	2.60	2.65	2.55F
29	2.70	2.60	2.60	2.65	2.70	3.00	3.00	2.85	2.70	2.80H	2.45H	2.65H	2.60H	2.70H	2.70H	2.80H	2.75H	2.85	2.85	2.60	2.50	2.55	2.60	2.60
30	2.65	2.65	2.65	2.65	2.55	2.90	2.90	2.80H	2.75H	2.70H	2.70H	2.60H	2.60H	2.55H	2.65H	2.70	2.70H	2.65H	2.80H	2.70	2.40	2.45	2.40	2.70
31	2.70	2.70	2.60	2.45	2.30H	2.45H	2.65H	2.70H	2.40H	2.45H	2.55H	2.60H	2.45H	2.55H	2.65H	2.55H	2.70H	2.90H	2.60H	2.60	2.50	2.50	2.55	2.55
Mean Value	2.70	2.70	2.60	2.65	2.55	2.75	2.80	2.75	2.70	2.60	2.60	2.60	2.60	2.60	2.60	2.65	2.70	2.70	2.80	2.70	2.60	2.50	2.50	2.55
Median Value	2.60	2.65	2.60	2.60	2.50	2.75	2.85	2.75	2.70	2.60	2.60	2.60	2.60	2.60	2.60	2.65	2.70	2.70	2.80	2.70	2.60	2.55	2.55	2.55
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

(M3000)F2

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A3

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

May. 1957 | h'F2 | 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								245^{L}	245		250^{H}	250^{H}					265							
2								245	I250^{L}	250^{H}	250^{H}					270^{H}		250						
3									260			250^{H}	250^{H}											
4												245^{H}	250^{H}				260							
5														260^{H}	250^{H}									
6									250^{H}	245^{H}	250^{H}	275^{H}	280^{H}											
7									L^{H}	255^{H}	255^{H}	250^{H}												
8										250^{LH}	250^{H}	255^{H}	255^{H}		L^{H}									
9								L	250^{H}			290^{H}												
10								250	250^{LH}	250^{H}														
11														295^{H}			255							
12											270^{H}	250^{H}			250^{H}									
13							250		250^{H}	255^{H}	250^{H}					250^{H}								
14										250^{H}	250^{H}	250^{H}	250^{H}	250^{H}	280^{H}									
15										245^{H}						245^{H}								
16																								
17												250^{LH}												
18														L^{H}										
19										250^{H}				255^{H}			250^{LH}							
20										255^{H}		255^{H}	275^{LH}											
21							295^{L}			290^{H}														
22												260^{H}												
23							250	260^{H}	280^{H}	260^{H}		250^{H}												
24						290	290	250^{H}	260^{H}															
25											250^{H}	300^{H}												
26																								
27																								
28							250	245^{H}																
29						285	245					250^{H}	250^{H}	250^{H}	260^{H}									
30									245^{H}	250^{H}							255^{H}	I255^{L}	255^{H}					
31																								
Mean Value						285	265	250	255	255	250	260	260	260	260	255	255	250	255					
Median Value						290	250	250	250	250	250	250	250	255	255	250	255	250	255					
Count						2	6	6	10	13	9	15	7	5	4	3	5	2	1					

h'F2

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A4

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

May.1957

h'F

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	340A	320A	295	340	300	270	245	240	240	225	215	220	225H	235H	245H	245H	250	255	270	260	250	300	305	330
2	315	290	295	290	255	270	245	240	225	220	230	230H	I240A	250H	245H	220	240H	245	270	270	255	255	290	305
3	305	275	245	250	320	285	250	245	240	220H	220H	210	210	245H	265H	250H	265H	255	285	280	I280A	275	280	300
4	290	280	295	295	330	250	250	245	255	245H	250H	200	200	260H	A	A	240	270	290	270	290	305	340	325
5	300	295	290	270	300	280	250	245H	245H	230H	240H	250H	250H	230	240	240H	270	250	275	I290A	305	340	340	300
6	310	305	295	270	305	250	250	240H	240	220	220	200	245	250H	I245AH	240H	250H	250	255	275	295	345	340	A
7	335A	295	285	300A	300	270	245	240H	235	245	240	245	250H	225H	240H	I265A	290H	280	A	285	255	300	300	300
8	290	295	295	290	335	270	245	240	240H	240	240	210	225	245H	250	250H	280A	260A	280A	290A	310A	320	305	300
9	300	290	290	275	300	260	245H	250	245	250H	240H	275	235H	210H	285AH	250H	260H	I255A	250	255	270	A	350	345
10	305	290	290	260	275	275	245	245	245	240	I245AH	250H	240H	255H	240H	245H	255H	280A	260	260	290	300	305	300
11	295	295	260	275	290	255	250	A	250H	250AH	230H	250H	225H	230	I235AH	240H	240	250	265	270	A	300	295	290
12	295	280	260	255	300	250	245H	250H	A	AH	210	240	230H	AH	230	260H	A	A	A	A	300	300	295	300
13	300	300	295	270	255	250	240	245	240	245	210	250H	245H	235H	250H	225	250	250	260A	280	330	310	295	295
14	295	270	250	290	340	255	240	240	240H	240	230	205	210	240	250	250H	250	A	A	A	310A	310A	340	330
15	260	280	280	270	300	250	240	240	240	230	210H	210H	210H	205H	240H	220	245	250H	255	280	290	300	300	320
16	300	270	280	295	340	255	250	240H	245H	260H	225H	215H	AH	225H	250H	245H	250H	250	275	290	300	305	330	350A
17	310	300	290	300F	300F	250	250	245H	255	240H	245H	220	I230AH	245H	250H	245H	245H	I270AH	290A	290	320A	320	310	340A
18	300	310	310	330	350	245	245	245H	235H	235H	230H	210H	230H	210	240H	250H	250H	A	A	300A	300	305	320	315
19	300	285	290	315	335	255	250	250	245H	230	220H	210H	205H	225	245H	235H	245	275H	260	300	300	325	350A	340
20	340	295	285	295	345	275	250H	250H	245H	240	240H	210	200	245H	240H	AH	260H	I275AH	290A	270	355	355	350A	340
21	340	300	280	240	295	250	250	250H	245H	255	AH	AH	AH	AH	A	250H	240H	240H	280	260	290	345	A	300
22	A	A	A	350AF	305	250	260H	260H	260H	A	A	240	240H	250H	245H	A	A	295A	255	290	295	300	A	355
23	345	350A	300A	280	275	250	230	225	230	200	240H	240	250H	AH	AH	260H	I280A	295A	270	260	290	330	345A	A
24	A	310	330	320	350	250	240	245	250	220H	245H	230H	230H	230H	240H	240H	240H	250	255	280	305	380	380	330A
25	310	305	275	255	305	250	305A	270A	225H	I230AH	230	230	245H	AH	210H	230H	250H	315	I290A	260	310	330	350	305
26	295	300	290	270	250	250	250	250	255A	230H	I230AH	230H	AH	AH	AH	A	A	270AH	290	305	295	340A	380A	340A
27	295	250	300	375	355H	260	250H	250H	250H	A	B	210H	245H	220H	220H	240H	240H	250H	255H	290	300	300	350A	305
28	350	300	290	285	295	250	240	210	220H	255H	235H	AH	AH	AH	A	A	A	260H	275H	290	295	300	310	340A
29	285	300	300	290	290	260	245	260A	A	280H	245H	235	225	220	225	230H	250H	I260A	280	290	300	300	300	305
30	305	295	300	285	280	270	245	240H	210	200	240H	240H	210H	210H	235H	245	230	250H	245	290	345	330	345	290
31	255	250	235	305	355H	300H	250H	250H	275H	AH	AH	250H	290AH	AH	250H	270H	250H	290AH	AH	A	340	340	300	310
Mean Value	305	290	285	290	305	260	245	245	245	235	230	230	230	235	240	245	250	265	270	280	300	315	325	315
Median Value	300	295	290	290	300	255	245	245	245	240	230	230	230	230	240	245	250	255	270	280	300	310	320	310
Count	29	30	30	31	31	31	31	30	29	27	27	29	27	24	26	26	27	28	26	28	30	30	29	29

h'F

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A5

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

IONOSPHERIC DATA

May. 1957

typesof Es

135° E Mean Time

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	f	f	f	f	f	f	h	h	f	l					h	h	h	C	f	f	f	f	
2			f	f	f	l		h	C		h	h	C	C						f	f	f	f	
3	f	f	f	f	f	l	hl	h	C	C	C	C	h	l	h	h	Cl	f	f	f	f2			
4	f	f	f	f	f	f	l	h	h	C	h	C	C	C	f	C	l	f	Cl	f	f	f	f	
5		f	f	f	f	l	lh	h	h	h	h		C	C	f	l	C	h	f	f	f	f	f	
6	f	f	f	f	f	l	lh	Cl					h	h	h	h		C	f	f	f	f	f	f
7	f	f	f	f	f	f	f				h	C	Ch	Ch	hf	h	h	C	f2	f	f	f		f
8	f	f		f	f	f	f				h	C	C		h	h	h	hf	C	f	f	f	f	f
9	f	f	f2	f	f	f	f	f	h	C	C	C			h	h	h	C	C	f	f	f	f	f
10	f	f	f	f	f	Cf	h	Ch	C	C	C	C	C	C	C	h	C	C	C	f	f	f	f	
11	f		f	f	f	hf	h	C	C	C	C	C	C	f	C	C	l	f	f	f	f	f	f	
12	f	f	f	f	f	fh	hl	hl	C	C	C	f	f	C		hl	C	C	C	f	f	f	f	
13	f	f	f	f	f	Cl	l	hl	h	C	f	C	f			h	C	C	f	f	f	f		f
14	f	f	f	f	f	fC	hl	h	h	C	C	C	C			h	h	C	C	f	f	f	f	f
15	f	f	f	f	f	hl	hl	C	h	h	C	C	C		C					f			f	f
16	f	f	f	f	f	hl	l	C	h	C	h	C	C	C	C			h	h	f	f	f	f	f
17	f	f	f	f	f	fh		h	h	h	h	h	C	h	h			C	C	f	f			f
18	f	f	f	f	f	fh		h	h	h	h		C	C	C		h	C	C2	f	f	f	f	f
19	f	f	f	f	f	fh	hf	h	h	h	h				h	C	C	C	h	f		f	f	f
20	f	f	f	f	f	C	h	h	C	C	C	C				C	h	C	C	f	f	f	f	f
21	f	f	f	f	f	fh	fh	C	Cf	C	C	C	C	C	C	h			C	f	f	f	f2	f
22	f2	f2	f2	f	f2	hl	h	h	h	C	C	h	h	C	C	C	C	C	f	f		f	f	f
23	f	f2	f2	f	f	lh	f		C	C	C		C	C	C	h	C	f	f	f	f	f	f2	f
24	f	f2	f2	f	f	lh	hl	h	h	h	h	h	h		h	h	C	f	C	f	f	f	f	f
25	f	f2	f	f	f	hl	C	C	hl	C	C	C	h	C	C	C	h	C	C	f	f	f		f
26	f	f	f	f	f	Cl	h	C	C	C	C		C	C	C	C	C	C	f	f	f	f	f	f
27	f	f	f	f	f	f	h	h	h	C	h				C	C	C	C	h	f	f	f	f	f
28	f	f	f	f	f		C		C	h	C	C	C	C	C	C	C	C	f	f	f	f	f	f
29	f	f	f	f	f	lh	l	C	C	C	C	C	C	lh	C	C	C	C	f	f	f	f	f	f
30	f	f	f	f	f	f	f	lh	Ch	Ch	h	h	C	h		C	h	C	C	f			f	
31	f	f	f		f		C	C	C	C	C	C	C	C	C	C	C	C	C	f	f	f		f
Mean Value																								
Median Value																								
Count																								

typesof Es

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A6

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May.1957

foF2

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	9.2	9.1	8.7	7.9	7.7	8.9	11.1	11.1	11.8	12.3H	12.5H	13.1H	13.7H	13.6H	13.7H	13.1H	13.0	12.0	12.1	11.6	10.1	9.0	9.6	9.2
2	9.7	10.1R	9.0	8.6	8.6	9.4	10.8	10.8H	11.9	12.2	13.0	13.3	13.0	13.0H	12.4	12.1H	11.5	11.0	11.4	11.0	9.7	9.1	9.2	9.5
3	9.4	10.0R	9.2	7.7	C	C	11.0	11.2	I 11.8C	12.3H	12.3	13.3H	13.6H	13.9H	13.5H	13.0H	12.1H	12.1	12.2	12.1	10.9	R	R	10.5
4	I 10.5C	10.5	9.3	8.6	8.0	8.6	9.6	10.9	11.5	12.4	12.6H	13.6H	13.2	13.0	12.5H	12.9H	12.2H	12.0	11.5	10.2	9.5	9.2	9.6	9.7
5	9.5	9.5	9.0	8.6	7.7	8.4	8.5	8.1	8.5H	10.0H	11.6H	12.2H	12.0	11.9H	12.5H	12.1	11.1	10.7	10.9	9.9	8.4	8.5	8.5	8.5
6	8.0	7.9	7.7	7.1	6.9	7.9	8.8	9.6H	10.0	10.3	11.4	11.5H	12.5H	12.2H	12.2	11.8H	10.8	9.5	9.5	9.3	9.0	8.9	9.1	9.2
7	9.1	8.9	8.2	7.8	7.9	9.0	10.2	10.0	10.7	11.8H	12.1H	12.4H	12.7H	12.9H	13.0H	12.7H	12.0	11.5	11.0	10.7	9.3	9.5	10.3	9.6
8	9.3	8.8	8.5	8.1	7.7	8.9	11.0	10.8	11.3	12.0H	13.0H	12.9H	12.7H	12.6H	13.1H	13.0	12.1	11.7	10.9	9.8	9.9	10.9	11.1	11.3
9	11.0	10.6	9.4	9.0	8.7	9.5	10.3	10.3	11.2	11.4H	11.5	12.6H	12.5H	12.2H	12.5H	12.5H	11.5	11.0	10.9	10.3	9.0	9.1	9.2	9.1
10	9.3	9.1	8.5	8.5	7.8	8.5	9.8	11.1	I 11.6C	12.0	12.6H	13.5H	13.5H	13.5H	13.4H	13.0H	12.5	11.9	11.0	10.0	9.7R	10.3	C	C
11	C	C	C	C	C	C	C	C	C	10.1H	10.8H	11.6H	12.5H	12.6	12.4H	12.0H	11.0	10.2	10.1	9.8	9.9	U 10.0R	10.2	10.3
12	10.1	10.1	9.3	8.5	8.0	9.2	10.9	11.3	10.4	9.2H	10.4H	11.5H	12.0H	12.8H	12.2H	11.8H	11.0	10.8	10.1	9.8	J 9.1F	9.8	V 10.5R	10.4
13	10.0R	10.3	10.0	9.2	8.7	9.5	10.0	10.3	9.6	10.3H	11.4H	12.4H	12.5H	12.6H	12.7H	12.5	11.7	10.9	A	A	A	10.4	10.9	11.1
14	10.8	10.5	9.3F	9.1	9.0	10.2	11.0	10.6	11.0	11.9H	12.2H	13.0H	13.0H	13.0	13.1H	12.6H	12.9	12.2	11.5	10.1	9.4	9.7	U 10.0R	10.0
15	10.3	9.9	9.9	8.7	8.4	9.3	10.0	10.6	10.9	11.4H	11.8H	12.5H	13.0H	13.0H	13.0H	12.3H	11.4H	10.7	11.1	10.5	9.7	9.7	9.6	10.0
16	10.2	9.3	8.5	8.5	8.6	10.0	10.4	10.5	10.7	10.9H	11.8H	12.4H	12.5H	12.3H	12.4H	11.8H	11.0H	10.6H	10.1	10.1	9.4	9.4	9.5	9.5
17	9.3	9.1	8.2F	7.9F	7.7F	9.0F	10.3	10.5	10.4	9.9H	10.1H	11.0H	11.3H	11.6H	11.5H	11.2H	10.6H	10.3	10.0	9.2	8.7	9.0	9.4	9.5
18	9.6	9.4	8.6	8.5	8.2	10.1	10.1	10.0	10.6	10.8H	11.0H	11.8H	12.1H	12.2H	12.0H	11.4	10.8	10.4	10.2	9.6	9.7	9.8	9.9	10.4
19	10.3	10.4	9.1	8.5	8.5	9.3	10.4	10.7	10.5	10.1H	10.5H	11.2H	11.5H	11.5H	11.5	10.7H	10.2H	10.0H	9.8	9.0	9.2	9.7	9.7	9.3
20	9.4	9.5	8.8	8.4	8.4	8.8	8.5	9.6	8.9	8.9H	10.0H	10.6H	11.2H	10.9H	11.0H	11.5H	11.2H	10.3H	9.2	8.0	8.2	8.9	9.1	9.2
21	9.3	9.6	9.8	8.3	7.2	7.4	8.2	8.7H	I 8.8R	9.0	9.4H	9.9	10.4H	10.2H	10.4	10.7	10.5H	10.3	10.4	9.7	9.6	9.3	9.5	10.2
22	9.5	10.0	9.2	8.5	8.5V	8.4	8.2	8.5H	8.8H	9.0H	10.0H	10.9H	11.0H	11.1	11.5	10.9	10.3	I 10.0A	9.7	9.1	9.1	9.1	9.3	9.5
23	9.6	9.7	9.1	8.5	8.0	8.4	8.5H	9.2	9.7H	10.7	11.3H	11.6H	11.6H	11.5H	11.5	11.5	11.4H	10.9	10.0	9.2	I 9.4A	9.5	9.9	10.3
24	10.5	I 9.8R	9.1	8.5	8.4	9.1	9.7	10.4	10.9H	11.5H	11.0H	10.9H	11.1	11.4	11.0H	10.5H	10.0H	9.6	9.1	8.5	9.0	9.1	9.5	10.3R
25	10.3R	9.1R	9.0	8.3	7.8	8.0	9.1	9.4	9.5	9.6H	9.8	10.0	10.1	10.1	10.4	10.5	10.5	9.9	9.1	8.6	9.1	9.4	9.3	10.0
26	10.0	9.2	8.7	8.1	7.5	I 8.2C	8.9	10.0	10.3	10.4	11.0	11.6H	11.4H	11.0H	11.0H	10.6H	10.2H	9.9	10.0H	10.2	10.3	10.4	10.7R	U 10.8R
27	10.9R	U 9.9R	8.5	7.7F	7.7	9.2	8.5	8.6	7.5	8.0	8.0	8.6	8.7	8.9	9.0	9.3	9.5	9.3	9.2	9.5	9.0	8.8	9.0	9.0
28	9.0	9.1	8.5	8.0	7.6F	8.0	8.5V	8.5H	9.3H	9.7	10.0	10.3	10.2	10.3	10.2	10.1	9.9	9.4	9.5	9.6	9.9R	9.5	9.5	9.2
29	9.0	9.0	8.6	8.5	9.0	9.7	8.0	8.1	8.4H	8.3	8.7	9.5H	10.5	11.0H	11.1	10.5	9.7	9.0	8.6	9.0	J 9.1	9.8	10.0	10.1
30	9.6	9.4	8.5	8.0	8.0	9.2	9.2	9.5	10.0H	10.1H	10.0H	10.1	10.7	10.7	10.9	10.9	10.8H	10.0	9.3	9.5	9.5	10.3R	10.0	10.7
31	9.2	9.4	8.5	7.5	7.0H	7.8H	8.3H	7.6H	7.2	7.2	8.5	8.4	8.1	8.6	9.3	8.5	8.5	8.2	I 8.2A	8.1	8.4	8.7	9.0	8.8
Mean Value	9.7	9.6	8.9	8.3	8.0	8.9	9.6	9.9	10.1	10.4	11.0	11.6	11.8	11.8	11.8	11.5	11.0	10.5	10.2	9.7	9.4	9.5	9.7	9.8
Median Value	9.6	9.5	8.9	8.5	8.0	9.0	9.8	10.2	10.4	10.3	11.0	11.6	12.0	12.2	12.2	11.8	11.0	10.4	10.1	9.8	9.4	9.4	9.6	9.8
Count	30	30	30	30	29	29	30	30	30	31	31	31	31	31	31	31	31	31	30	30	30	30	29	30

foF2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K1

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May.1957

foF1

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										⌊	⌊	⌊	5.4⌊		⌊									
3							A		C		⌊		A		⌊		A	A						
4										A	A	⌊	A	A	A									
5							3.5	A	A	A	A	B	A	A	⌊		A	A						
6									⌊	A	A	⌊			A			A						
7							A				5.1⌊					A	A	A						
8									⌊		⌊	⌊				A	A	A						
9									A	A	A						A	A						
10								⌊	C	⌊														
11									A			A		A	A		A	A						
12															A	A	A	A						
13										⌊		5.1	5.8	5.7	A	A	A	A	A					
14									A	⌊	⌊		B	A			A	A						
15										⌊														
16											A			⌊					A					
17								⌊	A		⌊		⌊											
18								⌊				5.2	B			A	A							
19							A		A	⌊	⌊				A									
20									⌊															
21								A	A	A	A	A	A		6.1	5.9⌊	⌊	A						
22							A	A	A					A	A	A	A	A						
23								⌊		⌊	A	⌊		A	A	A		⌊						
24								⌊					6.4	6.0⌊										
25							A	A	A	A	6.0	A	A	6.0	A	5.7⌊	5.5⌊	⌊	⌊					
26											A							A						
27								A	5.9	5.8	6.0	6.2	A	6.1	5.6	5.7	5.4⌊	⌊						
28								⌊		5.8⌊		6.1	A	6.0	5.8	5.5	⌊	A						
29								A		5.0	6.0	A	6.1		5.7	A	A	A						
30									⌊			B	5.8⌊	6.1	6.0H	5.7		⌊						
31									5.4	5.6	A	A	5.9	A	5.8⌊	A	A	A	A					
Mean Value							3.5		5.7	5.6	5.8	5.7	5.9	6.0	5.8	5.7	5.5							
Median Value							3.5		5.6	5.7	6.0	5.6	5.8	6.0	5.8	5.7	5.4							
Count							1		2	4	4	4	6	6	6	5	2							

foF1

Sweep 1.0 Mc to 12.2 Mc in 2 min ☐ Manual ☒ Automatic

K 2

19

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

IONOSPHERIC DATA

May.1957 | foE | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						R	2.55	U 3.05 A	3.25	A	R	R	R	R	3.80 R	3.70	3.40	2.80						
2						B	2.45	3.20	I 3.50 R	3.80	R	R	R	4.00 R	3.85 R	I 3.50 R	3.10	2.80	B					
3						C	2.60	R	C	3.70	3.75 R	A	4.35 R	R	U 3.90 R	R	3.40	2.75						
4						1.90	2.60	3.30	3.75	3.85 R	4.00 R	4.00 R	4.10 R	I 4.05 R	4.00	3.85	3.40	2.85	2.35					
5						1.90	2.75	3.25 R	3.50	3.85	3.90	B	B	B	3.90 R	3.65	3.40 R	2.80						
6						B	2.75	3.30 R	3.70	3.90	4.00	4.00 R	4.20 R	4.20 R	4.00 R	3.75	3.40 R	A	A					
7						A	A	A	A	B	4.10 R	4.10 R	4.15 R	4.00	3.95 R	3.70 R	3.45	A						
8						1.95	2.70	3.20	R	3.60	4.15 R	R	B	R	3.80 R	3.65 R	3.30 R	2.85	A					
9						B	2.80	3.20 R	3.50	3.80	B	R	B	4.25	B	3.70	3.50 R	2.90						
10						A	2.70	3.30 R	C	R	R	4.10 R	4.00 R	B	3.85	R	3.50 R	2.90	A					
11						1.90	2.60	3.20	3.50 R	R	R	3.80	A	A	R	3.85	3.40 R	U 3.00 A	A					
12						B	2.85	I 3.20 R	3.60	R	R	3.85	R	R	A	3.70	3.50	2.95						
13						2.05	2.50	3.25	3.70	A	A	B	A	A	A	3.70	3.50	2.90	A					
14						1.95	2.85	3.40	3.75 R	R	B	R	B	4.15	4.15 A	I 3.80 R	3.50 R	3.10						
15						2.00	2.90	3.40	3.75	R	R	R	R	R	R	A	3.65	3.05	A					
16						A	2.80	3.30	3.85	4.00	4.15 B	B	A	4.10 B	R	R	3.70	3.25	A					
17						1.85	2.95	3.50	3.70	3.90 R	I 4.00 B	4.10 R	U 4.10 R	4.10	R	3.75 R	3.45	3.00	A					
18						U 2.00 A	2.85	3.40	3.70	3.85 R	R	R	B	B	4.15 R	B	3.60	3.10	2.10 A					
19						2.30 H	2.90 H	3.40	3.70	3.85 R	4.10 R	B	R	R	4.10	3.80	3.45	I 2.90 A	2.35					
20						2.00	2.80	3.50 R	I 3.70 R	3.85 R	R	A	R	R	R	3.75 R	I 3.30 R	2.85	A					
21						2.05	2.85	3.50	3.85 R	B	R	B	B	B	B	R	3.50	U 2.90 A	A					
22						2.20	2.90	3.25 R	R	R	R	B	B	4.25 R	4.10	3.90 R	3.45	A	A					
23						2.25 H	3.00 H	R	A	A	3.90 R	I 4.10 R	4.35 R	4.20	4.15	4.00	U 3.40	2.95	A					
24						2.10	2.85 H	R	R	3.80 R	3.90 R	R	R	R	3.90 R	3.85	I 3.45 R	3.05	R					
25						2.45	2.75	3.20 R	3.60	R	R	4.20 R	R	4.15 R	3.80	R	3.30 R	3.00	U 2.30 A					
26						2.30 H	2.90	3.35 R	3.65	R	4.10 B	4.10 B	R	R	R	3.60	A	A	A					
27						A	U 2.65 F	3.30	3.60	3.75	3.90 R	4.00 R	4.00 R	R	R	3.70	3.25 R	2.70 A	2.30					
28						A	A	A	R	R	4.10 A	R	4.10 R	R	R	3.50	3.25 R	A	A					
29						A	A	A	A	A	A	4.00 R	4.15	R	R	3.50	3.70	2.90 A	A					
30						A	2.85	A	A	R	U 4.00 R	R	4.10 R	R	R	3.60	R	A	A					
31						U 1.80 F	3.00 F	3.40 RH	R	3.90 R	4.15	4.20 B	B	4.10 B	B	3.90 R	3.50	3.05	2.25					
Mean Value						2.05	2.75	3.30	3.65	3.85	4.00	4.05	4.15	4.15	3.95	3.75	3.45	2.95	2.30					
Median Value						2.00	2.80	3.30	3.70	3.85	4.00	4.10	4.10	4.10	3.90	3.70	3.45	2.90	2.30					
Count						18	28	24	20	15	16	13	11	12	16	24	29	25	6					

foE

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 3

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

IONOSPHERIC DATA

May.1957 | foEs | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J 2.2	J 1.9	J 2.6	J 2.6	J 2.2 Y	G	3.0	3.8	4.2	J 6.1	G	G	G	G	G	4.0	3.9	J 3.9	J 3.0	2.2	J 1.8	J 2.4	2.3	2.2
2	E	E	E	E	J 1.6 Y	B	3.0	J 6.2	G	G	G	G	G	4.3	G	G	3.2	3.5	3.2	J 2.6	J 2.9	3.7	E	E
3	E	E	E	E	S	C	J 4.9	3.7	C	4.2	4.2	4.2	J 5.5	G	G	4.6	4.9	J 4.2	J 2.6	E	3.2	7.2	J 6.1	E
4	E	E	E	E	E	G	G	3.8	4.7	J 5.9	J 6.0	4.7	J 7.8	J 6.4	J 6.6	J 5.9	J 4.2	3.6	2.5	J 2.6	J 2.6	E	J 1.5	J 2.6
5	J 6.1	J 2.1	J 2.6 Y	2.5	J 2.6	2.4	3.8	J 6.0	6.0	J 8.3	7.0	B	J 7.7	J 6.4	4.7	4.5	J 5.7	J 5.2	J 3.8	J 2.6	J 5.1	J 6.2	3.8	E
6	E	E	E	E	J 1.7	B	G	G	G	J 6.6	J 7.2	4.8	4.6	J 6.6	J 9.9	9.5	G	7.2	J 3.0	J 4.1	J 1.7	J 4.0	J 2.1	J 3.3
7	J 1.8	J 4.2	J 3.5	J 2.1 Y	J 3.8	J 2.4	J 8.3	J 6.6	J 4.7	B	4.5	4.8	4.5	5.0	4.8	J 5.7	J 5.4	4.7	J 5.1	J 3.8	J 4.3	J 2.1	E	E
8	E	E	E	E	E	G	3.8	G	G	G	4.8	G	B	G	4.7	J 6.1	J 7.8	J 7.9	J 6.4	J 1.8	E	J 1.8	J 1.8	4.9
9	J 3.6	J 1.7	J 2.7	J 2.3	3.2	2.3	3.0	J 4.1	J 5.0	J 5.9	J 8.8	G	B	4.7	B	G	4.5	4.8	J 4.8	J 4.5	J 6.2	E	J 2.2	J 6.2
10	J 4.1	2.4	E	J 1.7	2.4	2.2	3.2	J 4.9	C	4.7	G	4.8	4.8	J 6.5	G	G	4.8	J 4.4	2.4	J 1.7	J 1.8	J 5.4	J 3.8	J 2.6
11	E	J 1.5	J 2.6	J 1.8	E	2.5	J 4.1	J 4.1	J 5.8	G	4.5	4.8	4.5	J 7.8	4.4	4.8	J 5.1	J 4.2	J 4.1	4.2	J 6.1	3.8	4.2	J 3.9
12	J 2.4	J 2.6	J 2.4	2.1 Y	J 1.5	2.3	3.2	4.3	J 4.4	4.8	4.5	J 5.1	4.6	4.5	J 5.4	4.8	J 5.3	J 4.2	J 4.4	J 5.4	J 6.1	J 5.1	J 4.4	3.8
13	E	E	2.0 Y	J 2.4	2.4	G	3.8	4.2	G	4.8	J 5.1	B	J 4.2 Y	J 4.2	J 4.6	10.5	9.1	8.9	J 14.0	9.4	9.5	6.9	J 13.0	J 24
14	E	E	2.3	E	E	2.5	3.4	4.3	J 5.8	4.8	4.5	4.3	B	J 6.6	4.5	4.4	J 8.6	J 6.6	3.6	J 5.3	J 6.1	3.0	2.5	J 10.9 Y
15	4.8	4.7	J 5.9	J 3.6 Y	J 2.1	2.5	3.9	4.3	4.8	4.8	G	4.4	G	G	4.3	J 4.2	G	3.2	2.9	J 2.6	J 2.2	4.8	J 2.6	2.5
16	E	E	2.4	2.5	J 1.8	2.5	3.8	4.2	J 5.4	4.7	6.5	J 5.9	5.0 Y	4.8	G	G	G	G	J 4.2	7.2	3.2	5.7 Y	J 2.4	2.5
17	J 2.6	4.2	J 2.6	2.4 Y	1.1	3.0	3.2	4.9	J 5.4	4.5	B	4.5	4.3	4.4	G	G	4.5	J 4.2	2.5	E	E	E	5.0	J 2.4
18	E	E	E	E	E	2.5	3.0	3.7	4.2	4.6	J 5.3	J 4.7	B	4.8	4.7	7.1	J 8.9	3.9	2.8	4.4	3.8	3.2	J 3.1	J 2.2
19	J 3.1	J 3.2	J 2.6	J 1.9	1.1	2.5	J 4.6	4.3	J 6.6	4.6	4.5	4.9	4.9	G	J 6.2	4.4	J 4.4	J 3.8	2.4	E	E	E	J 3.3	3.8
20	J 6.1	4.7	J 3.6	J 2.6	J 2.4	2.4	4.3	4.2	J 5.9	J 5.4	G	5.0	J 5.2	G	G	G	G	3.2	2.7	J 2.6	J 2.1	E	J 2.6	J 4.1
21	J 5.4	J 4.1	J 2.6 Y	J 2.6 Y	2.5	2.5	4.1	5.0	6.7	6.8	J 9.9	J 11.9	J 5.4	B	J 5.7	4.4	3.8	J 4.2	J 3.5 Y	3.2	J 2.3	J 2.4	E	J 4.2
22	J 3.0	3.2	3.2	3.2	J 5.8	2.4	J 4.9	J 4.9	4.9	4.3	G	B	5.4	J 8.9	J 7.0	J 8.4	10.5	14.0	3.9	E	E	E	2.5	J 4.1
23	4.7	2.2	J 1.6	J 1.6	3.2	G	G	3.7	4.5	4.7	J 5.8	G	5.4 Y	J 6.3	J 6.6	J 6.6	J 4.2	J 3.7 Y	J 3.3	J 5.0	J 8.9	4.4	J 2.6	J 4.2
24	J 4.2	J 2.6	J 2.7	J 2.4	J 2.9	G	G	3.8	4.3	4.7	4.8	5.1	5.5	G	4.2	G	3.6	G	G	E	E	E	E	2.2
25	5.8	5.7	6.8	J 4.3	3.0	3.0	5.7	J 7.3	J 6.9	J 5.3	J 5.3	J 7.3	J 7.3	4.7	10.5 Y	4.4	3.9	3.4	3.6 Y	J 2.4	J 3.2	6.8	3.2	E
26	2.4	J 8.4	J 3.7	3.4	J 3.6	G	3.2	4.2	4.5	4.9	J 7.5	4.5	4.7	4.7	G	4.3	4.3	J 7.9	J 2.6	J 1.9	2.4	J 1.9	E	J 2.4
27	3.0	9.5	J 4.2	J 1.8 Y	J 6.0	J 3.7	3.2	J 5.9	4.7	J 5.4	J 5.8	4.8	J 7.3	4.2	4.8	G	J 6.1	3.7	G	E	J 4.3	3.2	J 2.4	2.1
28	J 4.1	J 2.6	3.7	J 2.6	J 2.4	J 2.6	J 3.3	3.9	G	3.3	4.5	4.5	J 7.7	4.4	G	4.4	J 10.0	7.1	J 4.9 Y	3.0	E	E	E	E
29	E	J 3.6	J 5.8	4.8	2.7	J 2.7	J 3.7	J 7.9	J 3.8	4.5	J 5.4	4.3	7.5	4.7	G	6.8	4.8	J 10.9	J 6.1	J 8.4	5.9	3.2	J 2.1	E
30	E	E	2.3 Y	2.2 Y	4.3	J 3.3	4.6	4.8	5.0	4.4	4.5	4.6	4.6	4.5	J 4.2	4.2	3.9	3.4	J 3.6	J 5.1	J 2.1	J 2.1	J 1.9	J 2.1
31	J 2.1	1.5	J 1.6	J 1.7	E	2.7	3.7	4.3	4.5	5.0	7.2	7.2	J 5.8	J 5.9	J 5.4	J 6.7	J 7.2	J 7.8	J 7.9	6.0	J 4.5	7.0	3.2	J 3.0
Mean Value	3.8	3.6	3.2	2.5	2.8	2.6	4.0	4.7	5.1	5.1	5.8	5.3	5.6	5.4	5.7	5.7	5.7	5.1	4.1	4.1	4.1	4.2	3.4	3.5
Median Value	2.4	2.2	2.6	2.2	2.4	2.4	3.7	4.3	4.7	4.8	4.8	4.7	5.0	4.7	4.6	4.4	4.5	4.2	3.5	2.6	2.9	3.2	2.5	2.5
Count	31	31	31	31	30	28	31	31	29	30	30	28	27	30	30	31	31	31	31	31	31	31	31	31

foEs

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K4

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May. 1957

fbEs

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	1.8	1.7	2.4	2.1	1.8		2.9	3.8	4.1	4.1						U4.1B	U4.1B	U4.1B	2.8			2.2		
2								4.1										3.5	3.1	2.6	2.8	2.6		
3					S	C	4.6	3.5	C	4.2	U4.3B	U4.6B	5.4			4.6	4.7	4.1	2.3			6.6	A	
4								3.7	4.4	5.7	5.8	4.6	7.5	6.4	5.7	4.6	4.1	3.5	U2.6B	2.6	2.4			2.1
5	4.1			1.9	1.7		3.4	5.2	5.1	5.6	5.6		6.5	5.3			5.5	5.1	3.7	2.1	2.9	2.6	2.9	
6					1.4					5.1	6.5	U5.1B		5.1	8.1	4.6		5.7		4.1		3.8	1.9	2.5
7	1.8	3.5	2.6	1.6	2.0	2.1	E8.3A	4.2	4.1		4.5	4.6		4.8	4.7	5.3	4.5	4.1	4.1	U4.1B	4.1	2.1		
8																6.0	7.5	5.5	5.1					2.4
9	2.6		U2.8B	1.6	1.9			4.0	4.6	5.0	8.4						4.4	4.1	4.4	4.1	6.0		1.8	4.1
10	2.1			1.4	1.4			4.6	C	4.4		U4.9B	U5.1B	5.5			4.5	4.1				5.2	E3.8A	E2.6A
11			U2.8B	1.8		U2.6B	4.1	4.1	5.5		4.5	U5.5B	4.4	5.8	U5.0B	4.6	4.7	4.2	2.9	4.1	2.8	2.2	3.4	3.4
12	2.1	2.1	1.7	1.7	1.4	2.2	3.2	4.1	4.4	4.8	4.5	5.0	4.5	4.4	5.4	4.6	5.0	4.1	4.4	5.0	4.5	2.6	2.6	1.8
13			1.4	1.7	1.7		U4.0B	4.1		4.6	4.6		U4.6B	U4.5B	U5.1B	5.6	7.8	7.2	A	A	A	4.2	4.7	2.1
14							U3.5B	4.2	5.2	4.8		U4.4B		U6.8B	4.4	4.4	6.2	5.8	3.4	2.7	5.6	2.0	1.8	2.6
15	3.4	3.7	2.8	1.8	1.8	U2.6B	U4.0B	4.3	4.6	4.4		U4.6B			4.3	4.2			2.9	U2.7B		4.1		1.8
16			1.7	1.8	1.8	U2.6B	3.7	4.1	4.4		5.5	5.3	U5.1B	4.7					4.1	7.0		1.8	1.9	
17	2.4	E4.2A	1.7	1.4				4.4	5.2	U4.6B		U4.6B	U4.4B	4.4			4.1	4.2	U2.6B				2.7	
18						2.4		3.7	4.2	4.5	5.3	4.7		U5.1B	4.6	U5.8B	6.3	3.6	2.8	3.7	3.7	2.6		
19		2.6	1.8	1.8		U2.6B	4.6	4.2	6.3	4.6	U4.7B	U5.1B	U5.1B		6.1	4.4	4.3	3.5	U2.6B					2.9
20	2.0	1.8	2.7	2.6	1.9	U2.6B	4.3	4.2	5.3	5.3		4.7	U5.3B					U3.4B	2.7	U2.9B	2.1		1.9	3.6
21	3.8		1.8	2.1	1.8		4.1	5.0	5.2	5.5	5.5	8.5	5.4		5.5	U4.5B	U4.1B	4.1	2.9	2.4	2.1	2.1		4.1
22	2.0	2.3	2.5	1.8	5.2		4.8	4.8	U5.0B	4.2			5.2	8.5	7.0	8.2	7.7	A	3.6				2.0	4.1
23	2.1		1.4	1.4	1.4			3.7	4.4	4.6	5.6		5.2	5.9	U7.0B	6.3	4.1	3.7	2.8	4.7	A	3.6	2.4	4.1
24	2.8		1.9	2.0	2.6				4.2	4.7	U5.2B	5.1	5.4		4.2		U3.7B							
25	2.9	2.4	6.0	2.8	1.9		5.5	U7.5B	6.2	5.3	5.3	7.2	7.1	U5.1B	7.5	4.4	U4.1B	U3.8B			2.6	3.7	2.2	
26		5.5	2.6	2.3	2.8			4.2	4.1	4.8	U8.0B	4.5	4.7	4.6		4.1	4.2	5.8	2.5					2.4
27	2.2	U8.5A	1.8	1.4	2.2	2.4	U3.5B	5.7	4.6	5.2	5.3	U5.5B	6.1	U4.4B	4.5		4.1	U3.9B			4.2	1.8	2.1	
28	2.6	2.0	2.6	1.8	1.5		U4.0B	3.5				4.4	7.7	U5.3B		U4.5B	5.1	6.2	2.3	2.1				
29		2.6	4.1	3.6	1.8	2.6	3.5	5.4	U4.1B	4.4	U5.5B	U5.5B	5.7	4.6		5.4	U5.1B	7.0	3.5	6.3	5.5	3.2		
30			1.7	1.7	2.0	2.9	3.5	4.1	4.1	4.3	4.5		4.6	U5.3B	4.2	U4.6B	U4.1B	U3.5B	3.6	4.4	1.9	1.9		2.1
31	2.1			1.7		2.6	3.5	4.1	4.4	U5.2B	U7.5B	6.5	5.5	U6.0B	U5.5B	6.5	6.0	6.9	A	5.5		3.6	2.6	2.9
Mean Value	2.5	3.2	2.4	1.9	2.0	2.5	3.9	4.4	4.7	4.8	5.6	5.2	5.5	5.4	5.5	5.2	5.0	4.6	3.2	3.8	3.5	3.1	2.5	2.9
Median Value	2.2	2.5	2.4	1.8	1.8	2.6	4.0	4.2	4.5	4.7	5.3	5.0	5.2	5.1	5.2	4.6	4.5	4.1	3.0	4.1	3.7	2.6	2.3	2.6
Count	17	12	21	24	21	12	19	28	24	25	21	22	22	21	18	22	26	28	26	20	17	21	16	18

fbEs

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 5

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May. 1957

f-min

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	1.60	1.35	E	E	E	1.35	1.70	1.85	1.80	2.15	2.10	2.60	2.65	2.40	2.10	2.10	2.10	1.70	1.70	1.65	1.70	1.60	1.70	1.65
2	1.70	1.40	E	1.35	E	1.75	1.70	1.85	1.80	2.15	2.35	2.60	2.65	2.20	2.50	2.10	1.65	1.80	1.80	1.60	1.65	1.65	1.80	1.70
3	1.60^{S}	1.40	1.15	1.00	1.80^{S}	1.70^{C}	1.65	2.10	1.95^{C}	1.80	2.10	3.70	2.60	2.40	2.50	2.10	2.10	1.70	1.70	1.65	1.70	1.70	1.70	1.60
4	2.00	1.40	1.40	E	E	1.65	1.80	1.85	2.10	2.10	2.80	2.70	2.80	2.60	2.15	1.80	2.10	1.70	1.70	1.60	1.60	1.70	1.60	1.70
5	1.60	1.70	E	E	E	1.70	1.70	1.85	1.70	2.20	2.30	5.10	4.10	4.10	2.10	2.15	1.85	1.70	1.60	1.65	1.60	1.70	1.65	1.70
6	1.85	1.40	1.40	1.00	E	2.40	1.90	2.10	2.15	2.80	3.05	2.70	2.70	3.10	2.60	2.10	2.15	2.10	1.65	1.70	1.70	1.60	1.60	1.85
7	1.70	1.35	1.40	E	E	1.35	1.65	1.85	2.50	4.50	2.85	2.65	2.50	2.35	2.35	2.10	1.80	1.70	1.40	1.65	1.85	1.65	1.70	1.70
8	1.90	1.40	1.40	E	1.35	1.75	1.80	1.70	2.10	2.30	4.20	2.70	4.70	2.70	2.40	2.10	2.20	2.10	1.80	1.60	1.60	1.65	1.50	1.70
9	1.70	1.35	E	E	E	1.75	1.90	2.05	2.10	2.60	4.00	2.50	4.60	2.60	4.70	2.10	2.15	2.10	1.85	1.65	2.10	1.70	1.65	1.70
10	1.40	1.35	E	E	E	1.70	1.85	2.10	2.35^{C}	2.60	2.70	3.05	2.60	4.05	2.80	2.60	2.10	1.85	1.85	1.70	1.70	1.70	1.60	1.60
11	1.60	1.35	E	E	1.35	1.80	2.10	2.15	2.60	2.50	2.90	2.60	2.80	2.60	2.70	1.80	2.10	2.10	1.80	1.80	1.70	1.60	1.65	1.65
12	1.60	1.80	1.45	E	E	1.70	1.80	2.55	2.60	2.80	2.60	2.60	2.60	2.75	2.75	2.40	2.30	1.80	1.80	1.80	1.60	1.60	1.50	1.70
13	1.65	1.40	E	E	E	1.75	2.00	2.10	2.90	2.55	3.05	4.60	2.60	2.90	2.60	2.10	2.10	2.10	1.70	1.60	1.70	1.65	1.65	1.80
14	1.70	1.35	1.60	1.40	1.45	1.75	1.70	2.10	2.10	2.60	4.10	3.10	5.40	2.70	2.55	2.15	2.10	2.15	2.00	1.60	1.60	1.60	1.60	1.60
15	1.70	1.30	E	1.05	E	1.35	1.70	1.70	2.20	1.90	2.10	2.90	2.70	3.70	2.75	2.35	2.60	1.80	1.80	1.60	1.60	1.65	1.70	1.70
16	1.70	1.40	E	E	1.05	1.75	1.85	1.80	1.85	2.50	4.15	4.20	2.75	4.10	2.35	2.60	2.10	1.85	1.80	1.55	1.70	1.60	1.60	1.60
17	1.40	1.35	E	E	E	1.70	1.70	2.10	2.10	2.20	5.10	2.55	2.50	2.50	2.70	1.80	1.70	1.70	1.65	1.65	1.70	1.70	1.70	1.65
18	1.60	1.40	1.75	E	1.40	1.70	1.80	2.10	2.40	2.10	2.60	2.60	5.40	4.10	2.75	4.10	2.70	2.15	1.85	1.60	1.60	1.70	1.60	1.60
19	1.70	1.35	E	E	E	1.40	1.70	2.10	2.20	2.30	2.80	4.20	2.90	2.60	2.50	2.35	2.10	1.85	1.90	2.20	1.65	1.70	1.65	1.60
20	1.70	1.35	E	E	E	1.75	1.70	1.90	2.60	2.50	2.50	3.05	3.50	3.05	2.50	2.10	2.15	2.10	1.70	1.60	1.60	1.60	1.70	1.60
21	1.60	1.35	E	E	1.00	1.80	1.70	2.10	2.10	4.50	2.60	4.30	4.50	4.60	4.20	2.10	2.20	1.85	1.70	1.65	1.70	1.70	1.70	1.65
22	1.70	1.40	E	E	E	1.40	1.85	2.10	2.10	2.10	3.10	4.60	5.10	3.10	2.50	2.35	2.10	2.00	1.70	1.85	1.60	1.70	1.70	1.60
23	1.60	1.40	E	E	E	1.80	2.15	2.20	2.10	2.50	2.50	2.70	2.60	2.80	2.50	2.20	2.10	2.10	1.65	1.90	1.65	1.70	1.65	1.60
24	1.40	1.40	E	E	1.35	1.80	1.65	2.10	2.10	2.10	2.50	3.10	2.90	2.50	2.30	2.10	2.30	2.10	1.40	1.85	1.60	1.70	1.70	1.70
25	1.70	1.40	E	E	E	1.80	1.70	1.85	2.10	2.15	2.35	2.10	2.90	2.35	2.30	2.10	1.70	1.80	1.80	1.65	1.65	1.70	1.65	1.70
26	1.65	1.35	1.00	E	E	1.70	1.90	2.10	2.10	2.10	4.10	4.15	2.70	2.90	2.90	2.30	2.10	2.10	1.65	1.50	1.70	1.65	1.70	1.60
27	1.60	1.35	E	E	E	1.65	1.70	1.80	2.60	2.10	2.65	2.50	2.55	2.75	2.10	2.35	2.10	1.85	1.80	1.80	1.65	1.55	1.60	1.70
28	1.35	1.35	E	E	E	1.40	1.70	1.40	2.10	2.10	2.10	3.10	2.60	2.70	2.20	1.65	1.55	1.70	1.65	1.60	1.85	1.80	1.70	1.80
29	1.60	1.40	1.35	E	1.35	1.75	1.65	2.10	2.30	2.10	2.40	2.40	2.60	2.50	2.15	1.80	2.10	1.90	1.65	1.65	1.65	1.60	1.60	1.70
30	2.60	2.00	E	E	1.35	1.60	1.80	1.60	1.80	2.10	2.10	2.45	2.80	2.20	2.10	2.10	2.55	1.80	1.65	1.60	1.60	1.60	1.60	1.60
31	1.40	1.40	E	E	E	1.35	1.70	2.60	2.40	2.40	3.10	4.20	4.30	4.10	4.25	2.50	2.60	1.70	1.65	1.60	1.70	1.70	1.70	1.60
Mean Value	1.65	1.40	1.40	1.15	1.35	1.65	1.80	2.00	2.20	2.45	2.90	3.15	3.25	2.95	2.65	2.20	2.10	1.90	1.70	1.70	1.70	1.65	1.65	1.65
Median Value	1.65	1.40	E	E	E	1.70	1.70	2.10	2.10	2.20	2.65	2.70	2.75	2.70	2.50	2.10	2.10	1.85	1.70	1.65	1.65	1.65	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

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K6

23

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

IONOSPHERIC DATA

May. 1957 | **(M3000)F2** | **135° E Mean Time** | **Kokubunji Tokyo** | Lat. 35° 42.4' N, Long. 139° 29.3' E

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

(M3000)F2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 7

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May. 1957

(M3000)F1

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											L													
2										L	L	L	3.70		L									
3							A		C		L		A		L		A	A						
4										A	A	L	A	A	A									
5							3.85	A	A	A	A	B	A	A	L		A	A						
6									L	A	A	L			A			A						
7							A				3.90L					A	A	A						
8									L		L	L				A	A	A						
9									A	A	A						A	A						
10								L	C	L														
11									A			A		A	A		A	A						
12															A	A	A	A						
13										L		3.90	3.55	3.65	A	A	A	A	A					
14									A	L	L		B	A			A	A						
15										L														
16											A			L					A					
17								L	A		L		L											
18								L				4.05	B			A	A							
19							A		A	L	L				A									
20									L															
21								A	A	A	A	A	A		3.30	3.25L	L	A						
22							A	A	A					A	A	A	A	A						
23								L		L	A	L		A	A	A		L						
24								L					3.25	3.35L										
25							A	A	A	A	3.35	A	A	3.35	A	3.15L	3.20L	L	L					
26											A							A						
27								A	3.20	3.35	3.10	A	A	3.25	3.40	3.25	3.15L	L						
28								L		3.40L		3.25	A	3.15	3.30	3.40	L	A						
29								A		3.80	3.35	A	3.20		3.40	A	A	A						
30									L			B	3.45L	3.25	3.15H	3.35		L						
31									3.30	3.20	A	A	A	A	A	A	A	A	A					
Mean Value							3.85		3.25	3.45	3.45	3.75	3.45	3.35	3.30	3.30	3.20							
Median Value							3.85		3.25	3.40	3.35	3.90	3.45	3.30	3.30	3.25	3.20							
Count							1		2	4	4	3	5	6	5	5	2							

(M3000)F1

Sweep 4.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 8

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May.1957

h'F2

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											250H													
2										260	280	280	280		280L									
3							250		C		270		290AH		280H		275H	270						
4										275A	275AH	260H	A	310A	300AH									
5							255	290A	270H	310AH	310AH		325A	280AH	260H		280A	290A						
6									265	260	355A	300H			360A			320A						
7							330A				255H					255H	280A	270A						
8									255		270H	270H				320A	325A	280A						
9									255	255H	A						270	290						
10								250	I 255C	260														
11									270A			AH		320A	275H		275A	275A						
12															295AH	260H	280A	280						
13										270H		270H	350H	320H	270AH	325A	330A	A	A					
14									250	280H	280H		285H	370A			340A	300A						
15										250H														
16											280H			280LH					295					
17								270	255		290H		280H											
18								250				280LH	280H			A	A							
19							275A		300A	270H	275H				A									
20									300															
21								A H	290A	300A	280H	A	285AH		430	400	285H	280A						
22							280A	275H	270H					425A	400A	400A	380A	A						
23								250		275	310AH	295H		330AH	A	370A		280						
24								260					430	395										
25							290A	A	350A	305AH	420	430A	410	420	430A	380	350	310	300					
26											A							345A						
27								345	450	450	470	455	425	430	400	390	355	300						
28								250H		350		380	420A	360	380	350	345	340A						
29								300		290	360	345BH	390		350	330	310A	A						
30									250H			300B	380	395	380	350		300						
31									430	500	A	425A	435	440	390	400A	380	A	A					
Mean Value							280	275	295	305	310	330	350	365	345	350	315	295	300					
Median Value							280	265	270	275	280	300	350	365	355	350	320	290	300					
Count							6	10	16	17	17	13	15	14	16	13	16	16	2					

h'F2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 9

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

IONOSPHERIC DATA

May. 1957 | **h'F** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	300	295	320	305	275	250	245	230	225^{H}	230	225^{H}	230^{H}	230^{H}	245^{H}	240^{H}	255	275^{A}	275	275	250	295	330	350
2	325	300	280	280	280	270	240	230^{H}	240	240	250	230	225	240^{H}	230	245^{H}	255	255	280	275	275	285	300	310
3	305	290	250	250	230^{S}	C	A	250	I240^{C}	230^{H}	235	230^{H}	I230^{A}	230^{H}	250	250^{H}	A	A	295	280	265	A	A	305
4	300	280	300	280	320	255	240	250	250	A	A	230	A	A	A	270$^{A}_{H}$	255^{H}	275	275	260	285	310	335	330
5	340^{A}	300	290	290	260	285	255^{A}	A	A	A	A	270^{H}	A	A	235	250	A	A	285	260	325	330	360	305
6	320	320	300	260	300	275	240	240^{H}	240	A	A	280^{A}	250^{H}	275^{H}	I270^{A}	270^{H}	250	I270^{A}	290	300^{A}	300	360^{A}	340	325^{A}
7	305	300^{A}	295	300	325^{A}	275	I260^{A}	250	225	235^{H}	230	250^{H}	255^{H}	255^{H}	250^{H}	A	A	A	270^{A}	280^{A}	300^{A}	305	310	300
8	295	295	300	280	325	280	245	240	235	240^{H}	240	230	245^{H}	245^{H}	AH	A	A	A	275^{A}	260	285	305	305	305
9	300^{A}	280	295^{A}	290	295^{A}	275	250	250	I240^{A}	A	A	240^{H}	250^{H}	300^{H}	255^{H}	275^{H}	A	A	270^{A}	275^{A}	360^{A}	320	330	355^{A}
10	305	280	290	270	255	270	255	245	I240^{C}	240	240^{H}	250^{H}	270$^{A}_{H}$	300$^{A}_{H}$	250^{H}	250^{H}	290	270^{A}	260	255	300	355^{A}	320^{A}	320^{A}
11	300	290	270^{A}	275	280	260	250	255	I250^{A}	230^{H}	240^{H}	I230^{A}	225^{H}	A	A	250^{H}	A	A	275^{A}	300^{A}	300	300	305	310^{A}
12	305	285	260	260	300	275	250	250	245	250^{H}	220^{H}	250$^{A}_{H}$	230^{H}	240^{H}	A	A	A	A	280^{A}	300^{A}	350^{A}	330	310	300
13	300	300	275	270	260	260	250	250	240	250	220^{H}	215	250	245	A	A	A	A	A	A	A	370^{A}	350^{A}	305
14	295	275	280	300	310	255	230	245	A	250^{A}	225	220^{H}	B	A	240^{H}	230^{H}	A	A	280	270	350^{A}	325	310	310^{A}
15	320^{A}	300^{A}	285^{A}	260	305	250	250	250	250	230	230^{H}	225^{H}	255^{H}	225^{H}	230^{H}	250^{H}	250^{H}	250	280	280	295	350^{A}	325	330
16	300	280	280	305	330	260	250	245	245	230^{H}	I240^{A}	250$^{A}_{H}$	250$^{A}_{H}$	220	220^{H}	250^{H}	255^{H}	250^{H}	A	A	300	330	340	325
17	315	315	280	300	325	270	250	260	A	250^{H}	250^{B}	225^{H}	230	235^{H}	250^{H}	250^{H}	250^{H}	280^{A}	280	285	300	330	350^{A}	325
18	305	290	290	300	355	255	245	230	240	240^{H}	255^{H}	205	B	280^{H}	250^{H}	A	A	260	280	300^{A}	345^{A}	335^{A}	330	320
19	300	300	265	320	325	260	A	250^{H}	I250^{A}	250	240	250^{H}	255^{H}	250^{H}	I250^{A}	250^{H}	255^{H}	255^{H}	285	290	330	330	325	350^{A}
20	350	300	300	325^{A}	330^{A}	255	255	255	250^{A}	260^{H}	225^{H}	240^{H}	275^{H}	250^{H}	245^{H}	245^{H}	265^{H}	250^{H}	275	295^{A}	350	360	350	370^{A}
21	375^{A}	310	280	250	275	250	255	A	A	A	A	A	A	230^{H}	A	250	250	A	280^{A}	260	310	350^{A}	360	340^{A}
22	320	310	300	335	355^{A}	250	A	A	A	225^{H}	220^{H}	225^{H}	270^{H}	A	A	A	A	A	295^{A}	280	305	320	340	365^{A}
23	335	300	290	260	255	250	240^{H}	230	250^{H}	230	A	220	255^{H}	A	A	A	255^{H}	255^{A}	260	320^{A}	I335^{A}	350^{A}	340^{A}	350^{A}
24	320	290	300	315	350^{A}	255	250	250	235^{H}	260^{H}	260^{H}	270^{H}	270	230	240^{H}	235^{H}	245^{H}	250	260	280	330	350	355	310
25	300	275	350^{A}	280^{A}	300	280	A	A	A	A	280^{A}	A	A	265	I260^{A}	255	255	275	255	300	345	380^{A}	370^{A}	310
26	300	350^{A}	320	270	305^{A}	260	255	250	250^{H}	255	I250^{A}	240^{H}	245^{H}	245^{H}	235^{H}	230^{H}	250^{H}	A	275	300	300	330	330	320
27	285	I280^{A}	275	390	410	255	255	A	270	A	A	A	A	245	235	245	255	275^{A}	280	295	305	305	335	325
28	340	300	305	300	300	260	250	220	235^{H}	235	300	210	A	A	230	250	A	A	275	300	300	300	305	300
29	300	315	350^{A}	350^{A}	300	250	240	I240^{A}	240^{H}	235	A	A	A	230^{H}	245	A	A	A	280^{A}	A	380^{A}	330^{A}	305	310
30	310	300	275	280	300	260	255	250	210	250^{H}	235^{H}	B	225	300^{B}	220^{H}	250	270^{H}	250	300^{A}	320^{A}	350	350	335	305
31	250	275	260	310	320^{H}	295^{H}	270^{H}	255^{H}	255	A	A	A	A	A	A	A	A	A	A	350^{A}	325	370^{A}	345	350^{A}
Mean Value	310	295	290	295	305	265	250	245	240	240	240	235	245	250	245	250	255	260	280	285	315	330	330	325
Median Value	305	300	290	290	305	260	250	250	240	240	240	230	250	245	245	250	255	260	280	280	305	330	330	320
Count	31	31	31	31	31	30	27	26	25	23	22	25	21	23	22	22	17	16	28	28	30	30	30	31

h'F

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 10

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

IONOSPHERIC DATA

May.1957 | h'Es | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	105	105	105	105		125	120	120	115						150	140	135	125	125	U125 B	120	105	105
2					U135 B		130	130						150			140	140	130	125	120	120		
3					S	C	135	130	C	130	125	125	130			150	130	130	125		125	120	125	
4								150	135	125	125	125	125	125	120	120	130	130	165	120	115		U120 B	115
5	115	110	110	105	110	150	150	135	130	135	120	B	120	115	120	140	125	125	120	110	110	110	105	
6					105	B				125	125	125	160	155	130	130		115	125	115	U125 B	120	110	110
7	120	115	110	120	125	125	110	120	115	B	140	160	160	150	150	140	135	105	125	120	120	110		
8							105				150		B		150	140	130	130	130	130		130	125	110
9	110	115	110	115	110	150	150	135	130	120	120		B	180	B		140	130	125	120	115		110	110
10	110	120		110	110	140	135	130	C	120		120	120	120			130	130	135	U130 B	130	115	110	110
11		U110 B	105	105		145	135	130	120		125	110	110	110	125	135	130	125	125	115	115	105	105	105
12	105	105	105	105	U105 B	150	145	130	125	110	120	115	115	115	140	135	125	130	120	115	115	120	110	110
13			110	105	110		120	125		120	110	B	110	105	105	130	125	125	115	120	120	130	125	105
14			110			150	150	140	130	130	130	120	B	130	175	150	135	125	130	125	110	105	105	120
15	105	105	105	105	105	150	140	135	130	115		130			115	115		G	135	125	115	105	105	105
16			105	105	110	150	140	140	135	130	125	130	120	130					125	115	110	120	110	105
17	105	105	110	110	110	125	180	140	130	130	B	130	150	150			140	130	125				105	105
18						150	G	150	150	135	130	125	B	120	150	130	125	130	125	110	115	110	120	105
19	130	105	110	110	120	150	130	135	125	130	135	125	130		125	130	130	130	G				105	105
20	125	110	105	105	105	155	130	140	125	125		125	125					130	120	115	110		110	110
21	115	130	115	105	120	160	150	140	135	125	130	125	135	B	130	140	140	120	120	110	110	110		110
22	110	120	110	110	110	170	140	140	130	130		B	140	130	130	120	120	110	110				110	105
23	110	105	105	105	105			155	140	105	120		140	130	130	125	130	125	110	110	110	110	110	105
24	105	110	105	105	120			160	150	150	150	150	140		145		125							120
25	125	120	110	120	110	165	125	125	120	120	125	125	125	130	115	130	135	140	130	125	125	125	110	
26	110	115	110	110	110		150	135	130	130	125	130	130	125		125	115	115	125	125	120	120		120
27	115	110	110	120	110	115	150	130	130	130	130	130	125	130	130		125	125			115	120	120	115
28	115	110	105	110	130	105	110	115		110	140	135	125	130		135	120	115	125	110				
29		110	110	110	120	130	120	115	115	140	135	150	135	130		115	130	125	125	110	105	105	105	
30			105	100	110	115	135	110	105	140	135	130	130	125	125	125	130	125	115	110	110	105	105	105
31	110	105	105	105		140	145	130	135	130	130	125	125	125	145	130	130	130	125	110	120	120	120	110
Mean Value	115	110	110	110	115	140	135	135	130	125	130	130	130	130	135	130	130	125	125	120	115	115	110	110
Median Value	110	110	110	105	110	150	135	135	130	130	130	125	130	130	130	130	130	130	125	115	115	120	110	110
Count	19	21	24	24	24	21	27	29	24	27	24	23	24	23	20	23	27	29	29	25	25	23	25	24

h'Es

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 11

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May. 1957

types of Es

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	f	f	f2	f2	f		C	C	C	f						h	h	C	f2	f	f	f2	f	f
2					f		h	h						h			h	h	C	f	f2	f2		
3							C	C		h	C	f	h			h	h	C	f		f l	f2	f2	
4								h	h	h	h	h	C 2	C	h	C	h	h	h l	f2	f2		f	f2
5	f2	f	f2	f2	f2	h	h f	h	h	h	C		C 2	f	C	h	C l	C l	f2	f2	f2	f2	f2	
6					f2					C	C	h	h	h	h	h		f2	f2	f2	f	f2	f2	f2
7	f	f2	f2	f2	f2	f	f2	f	f		h	h	h	h	h	h	h	f2	f2	f2	f2	f2		
8							l				h				h	h 2	h 2	C 2	f	f		f	f	f2
9	f2	f2	f2	f2	f2	h	h	h	h	C	C 2			h			h	C	f2	f2	f2		f2	f2
10	f2	f		f	f	f	h	h		C		C	C	C			h	C	f	f	f	f2	f2	f2
11		f	f2	f		h	h	h	C		C	C	f	f	C	h l	h	C	f2	f2	f2	f2	f2	f2
12	f	f2	f	f	f	h	h	h	C	C	C	C	C	C	h l	h	C	C	f2	f2	f2	f2	f2	f2
13			f	f2	f		C	C		f	f		f	f	f 2	h 2	h 2	C 2	f2	f2	f2	f2	f2	f
14			f			C	h	C	h	h	h	C		h	h	h	h 2	C 2	f	f2	f2	f2	f	f2
15	f2	f2	f2	f	f	h l	h	h	h	C		h			C	f		h	f	f2	f	f2	f	f
16			f2	f	f	f	h	h	h	h	h	f	f	h					f2	f2	f2	f2	f	f2
17	f2	f2	f2	f	f	l	h	h	h	h		h	h	h			h	C	f2				f2	f
18						C	h	h	h	h	h	C		C	h	C	C 2	C	C	f2	f2	f2	f2	f
19	f	f2	f2	f2	f	C	h 2	h	C	h	h	C	h		C	h	C	f	h f				f2	f2
20	f2	f2	f2	f2	f2	C	C	h	C	C		f	C					h	f2	f2	f2		f	f2
21	f2	f2	f2	f2	f2	h	h	h	h	C	h	C 2	h		h	h	h	C	f2	f2	f2	f2		f2
22	f2	f2	f2	f2	f2	C l	h	h	h	h			h	C 2	C	C 2	C 2	f2	f2				f	f2
23	f2	f	f	f	f			h	h l	l C	C		h	h	h	C 2	h	C	f2	f2	f2	f2	f2	f2
24	f2	f	f2	f	f2			h	h	h	h	h	h		h		C							f
25	f2	f2	f2	f2	f2	h	C	C 2	C 2	h	h	h	h	h	C 2	h	h	h	C	f	f2	f2	f2	
26	f	f2	f2	f2	f2		h	h	h	h	h	h	h	h		C	f	f2	f	f	f	f		f2
27	f2	f2	f2	f	f2	f2	h	h	h	h	h	h	h	h	h		C 2	C			f2	f2	f2	f
28	f2	f2	f2	f2	f	f	f2	f l		f	h l	h	C	h		h	h 2	f2	f	f				
29		f2	f2	f2	f	f	f2	f2	f	h l	h l	h	h	h		C 2	h	C l	f2	f2	f2	f2	f2	
30			f	l	f2	f2	h	f2	f	h l	h l	h	h	h	h l	h	h	C	f2	f2	f	f	f	f
31	f2	f	f2	f		C	h	h	h	h	h	h	h	h	h	h 2	h 2	h 2	C 2	f2	f2	f2	f2	f2
Mean Value																								
Median Value																								
Count																								

types of Es

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 12

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May.1957

foF2

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	405	400	380	440	425	390	330	335	370	385H	410H	420H	415H	415H	405H	405H	400	400	380	370	375	455	455	455
2	430	390R	405	410	380	355	340	400H	355	380	410	400	405	400H	400H	395H	360	380	380	350	360	415	410	425
3	410	380R	335	450	C	C	310	305	I350C	395H	405H	410H	405H	410H	400H	400H	405H	400	380	360	370	R	R	420
4	I400C	385	400	410	450	400	370	380	375	400	400H	385H	400	400	410H	400H	390H	375	365	370	420	450	460	450
5	410	400	400	405	425	390	365	375	410H	425H	365H	400H	400	400H	400H	375	395	395	355	375	425	450	460	425
6	440	450	410	425	425	360	325	350H	370	390	400	425H	415H	410H	400	375H	395	390	390	390	435	470	455	410
7	405	390	400	445	425	380	340	355	400	390H	400H	415H	400H	405H	400H	390H	375	380	395	375	410	440	435	405
8	400	405	405	400	450	450	300	350	395	395H	395H	400H	400H	425H	405H	375	370	350	355	400	405	430	410	400
9	400	395	395	410	415	370	350	365	395	400H	425	415H	415H	430H	425H	400H	400	400	390	390	420	465	455	450
10	415	400	405	390	400	400	350	380	I400C	420	420H	420H	405H	410H	400H	400H	380	360	360.	390	420R	440	C	C
11	C	C	C	C	C	C	C	C	C	470H	445H	410H	405H	400	400H	370H	375	355	355	390	405	U405R	400	410
12	400	365	370	400	425	400	350	345	345	390H	430H	420H	420H	400H	400H	395H	375	360	365	360	J425F	430	U405R	400
13	400R	400	375	355	370	340	325	340	370	430H	450H	440H	425H	430H	420H	390	370	380	A	A	A	450	440	400
14	390	370	400F	425	445	350	350	330	400	440H	425H	410H	410H	415	405H	405H	395	375	355	390	405	450	U405R	400
15	410	395	360	385	410	335	340	370	405	430H	430H	430H	415H	440H	405H	400H	400H	395	375	365	405	440	445	440
16	400	380	410	415	440	350	350	350	380	405H	430H	430H	425H	430H	420H	400H	400H	395H	375	390	425	460	450	425
17	415	400	420F	425F	445F	400F	355	340	410	400H	455H	425H	450H	445H	445H	410H	420H	400	380	400	440	460	455	430
18	425	390	410	405	460	330	320	375	405	450H	460H	460H	450H	440H	440H	425	425	410	400	405	450	450	450	435
19	415	400	380	450	450	400	380	425	420	430H	455H	445H	455H	450H	420	430H	430H	405H	405	435	455	455	450	450
20	455	410	400	455	450	390	410	410	340	410H	465H	440H	435H	450H	455H	420H	400H	365H	350	435	490	500	460	460
21	460	410	390	340	440	370	390	415H	I450R	480	460H	I455A	450H	490H	465	430	430H	405	400	390	430	480	470	410
22	440	405	400	455	425V	325	440	405H	425H	460H	450H	455H	440H	450	425	420	405	I385A	365	400	450	455	455	455
23	425	410	395	365	390	370	330H	400	410H	450	420H	425H	440H	440H	440	415	400H	395	375	420	I435A	450	450	430
24	410	I410R	410	440	465	405	380	410	430H	410H	420H	470H	460	440	440H	400H	400H	390	390	420	500	490	495	425R
25	395R	350R	390	420	450	425	375	410	400	445H	440	485	445	450	450	430	400	390	395	430	465	480	475	430
26	400	405	400	400	450	I420C	395	385	400	455	430	410H	430H	455H	430H	430H	410H	410	405H	425	420	480	460R	U410R
27	375R	A	405	545F	540	400	400	355	450	455	470	455	425	440	425	410	395	380	360	390	400	450	450	440
28	430	390	395	400	380F	360	350V	380H	410H	400	430	400	435	400	405	390	400	400	400	400	410R	400	425	400
29	405	415	405	410	360	280	315	330	355H	380	430	445H	425	410H	390	375	360	395	395	450	J430	420	420	415
30	400	395	380	400	400	345	325	345	370H	395H	420H	425	430	410	415	390	360H	350	375	405	490	450R	450	400
31	375	385	330	450	505H	480H	425H	430H	430	500	A	430	445	450	400	400	400	A	A	405	450	460	445	450
Mean Value	410	395	390	420	430	380	355	370	395	420	430	430	425	425	415	400	395	385	380	395	425	450	445	425
Median Value	410	400	400	410	425	380	350	370	400	410	430	425	425	430	410	400	400	390	380	390	425	450	450	425
Count	30	29	30	30	29	29	30	30	30	31	30	31	31	31	31	31	31	30	29	30	30	30	29	30

foF2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K13

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

May.1957

ypF2

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	85	105	75	115	90	160	85	115	100	95H	115H	105H	105H	95H	95H	105H	145	110	100	85	85	85	105	90
2	85	85R	135	90	80	120	100	90H	125	120	100	95	95	135H	120	105H	90	120	75	90	90	130	90	95
3	90	75R	75	95	C	C	130	95	I 90C	85H	100	85H	95H	90H	105H	130H	95H	110	95	85	110	R	R	80
4	I 80C	85	120	115	80	120	120	100	95	110	100H	75H	110	130	100H	105H	90H	100	105	105	130	130	115	90
5	105	110	110	125	155	160	165	175	130H	145H	105H	110H	120	150H	120H	125	105	145	110	125	185	150	120	135
6	130	120	115	135	100	150	165	110H	145	110	110	125H	100H	110H	120	100H	115	115	135	120	140	130	110	115
7	120	120	100	110	105	135	80	130	130	110H	120H	135H	100H	115H	105H	110H	130	120	125	100	140	110	75	95
8	125	135	145	115	90	160	170	150	125	115H	115H	150H	130H	135H	105H	145	105	105	85	90	95	120	100	105
9	100	105	125	140	115	110	90	135	115	150H	135	105H	115H	120H	105H	115H	120	100	110	90	135	135	105	130
10	140	130	105	145	130	170	140	100	I 115C	130	100H	130H	105H	100H	100H	120H	120	140	140	115	100R	100	C	C
11	C	C	C	C	C	C	C	C	C	155H	105H	110H	115H	105	100H	105H	120	95	105	100	100	U 110R	90	105
12	100	90	105	125	115	105	105	85	110	165H	125H	95H	90H	95H	80H	85H	120	100	110	95	J 85F	105	U 95R	90
13	80R	75	95	95	100	110	125	90	135	125H	130H	115H	100H	115H	85H	110	85	120	A	A	A	100	105	100
14	65	80	100F	130	125	120	90	125	125	80H	125H	140H	140H	135	115H	115H	105	125	115	115	155	80	U 95R	100
15	90	105	100	115	120	115	130	110	145	115H	110H	120H	145H	100H	120H	95H	100H	95	125	95	95	100	80	90
16	95	120	140	110	100	130	105	100	120	180H	115H	160H	135H	120H	100H	110H	100H	105H	85	110	125	100	90	90
17	125	150	135F	125F	105F	110F	95	120	140	200H	130H	125H	110H	110H	115H	90H	105H	120	120	100	105	130	120	110
18	85	110	90	120	95	120	110	175	145	150H	140H	130H	110H	135H	130H	150	145	130	120	120	100	100	100	95
19	115	100	140	125	125	150	130	105	135	155H	120H	125H	145H	100H	130	130H	120H	125H	135	135	105	120	100	100
20	125	110	125	145	100	200	250	140	160	190H	145H	120H	115H	150H	110H	100H	130H	90H	125	125	110	150	130	120
21	115	90	90	130	150	180	190	125H	I 150R	170	115H	I 110A	110H	110H	135	120	120H	95	110	100	100	120	130	90
22	90	110	125	105	125V	225	190	145H	165H	170H	150H	145H	110H	100	125	140	95	I 100A	110	130	140	115	105	115
23	80	115	85	135	160	200	130H	175	160H	140	120H	105H	90H	85H	110	115	130H	105	145	130	I 120A	110	100	100
24	90	I 115R	140	135	155	175	160	160	140H	110H	130H	180H	120	110	160H	100H	120H	115	120	160	170	80	115	75R
25	85R	70R	110	150	150	175	225	150	130	125H	115	175	135	150	130	130	100	110	130	110	135	120	85	120
26	105	110	100	140	150	I 150C	155	160	140	190	100	105H	120H	105H	120H	120H	105H	190	145H	85	100	100	90R	U 80R
27	85R	A	105	105F	110	145	175	90	100	140	80	120	115	120	125	100	105	140	135	95	150	130	100	115
28	95	75	85	100	120F	140	110V	130H	150H	140	160	110	110	100	95	95	140	140	110	90	100R	80	115	90
29	95	135	90	95	100	70	95	120	105H	125	130	105H	100	100H	110	85	90	155	110	125	J 110	80	105	90
30	60	105	90	90	110	105	125	125	100H	105H	140H	140	120	115	115	110	100H	125	110	135	105	120R	100	65
31	120	95	75	140	110H	135H	135H	110H	65	55	A	80	95	75	105	100	120	A	A	125	105	95	110	105
Mean Value	100	105	110	120	115	145	135	125	130	135	120	120	115	115	115	110	110	120	115	110	120	110	105	100
Median Value	95	105	105	120	110	140	130	120	130	130	120	120	110	110	110	110	105	115	110	110	110	110	100	100
Count	30	29	30	30	29	29	30	30	29	31	30	31	31	31	31	31	31	30	29	30	30	30	29	30

ypF2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K14

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

IONOSPHERIC DATA

May.1957 | **foF2** | **135° E Mean Time** | **Yamagawa** | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13.8	13.9	J13.1	10.1	9.9	9.0	10.0	10.0	11.0	12.1	12.4 H	13.5	14.5 H	14.4 H	J14.1 H	13.9 H	13.6	13.1 H	13.2	13.0	11.1	10.1 H	10.6	10.9
2	11.5	11.7	9.7	9.2	9.3	8.2	9.1	10.8	10.8	C	C	13.8 H	14.2 H	14.1 H	14.2 H	14.0 H	13.3 H	13.1 H	13.0	13.0	12.4	11.5 H	11.8	11.7
3	11.5	11.5	10.6 H	8.5 H	8.4	8.4	10.2	11.3	12.3 H	11.1 H	12.8 H	13.5	14.1 H	14.6 H	14.6 H	14.0 H	13.9 H	13.7	14.2	13.6	12.9	11.6	11.6	11.0
4	11.5	11.5	10.6	9.0	8.4	8.2	9.2	10.5	11.0	12.4 H	13.3	13.9 H	14.1 H	13.9 H	14.1 H	14.2	13.8	13.1	12.4	11.8	11.5	10.7	10.9	10.5 H
5	10.6	10.5	9.9	8.9	8.0	7.6	8.2	9.0	10.5 H	11.7 H	13.0 H	13.7	13.9	13.9 H	13.8	13.5 H	12.6 H	12.3	12.5	12.0	10.3	9.3	9.6	9.9
6	9.5	9.3	9.3	8.2 H	7.9 H	7.9	8.8	9.3	I10.2 C	11.0	11.5 H	12.1 H	13.1 H	14.0 H	13.7 H	12.4 H	11.5	11.1 H	11.6	11.1	J10.9	11.3	11.2	11.5
7	11.3	11.2	10.5	8.4 H	8.3 H	8.5	9.3	9.5	9.7 H	11.0 H	11.7	12.2 H	13.0 H	13.8 H	J14.1 H	13.8 H	13.0 H	12.7 H	12.9	12.3	11.0 H	10.1	10.8	10.5
8	J9.9	9.9	9.2	8.7	8.3	7.9	9.3	10.0	10.2 H	11.9 H	13.1 H	12.9	13.0 H	13.9 H	14.7 H	14.8 H	J14.0 H	13.1	12.7	12.4	12.4	12.6	13.0	12.7
9	12.3	11.5	11.0	10.0	9.1	9.0	9.3	10.5	11.2 H	11.4	11.9 H	13.0 H	13.0 H	13.1 H	13.8 H	13.6 H	12.8 H	12.1	12.4	11.5	10.1	9.8	10.6	10.7
10	10.5	10.5	9.7	9.5	8.5	8.0	9.0	10.0	11.1 H	11.5	12.3 H	12.3 H	13.5 H	13.8 H	14.1 H	13.9 H	13.8 H	13.5	12.5	12.0	I11.8 A	11.5	12.2	11.8
11	12.0	11.8	10.9	9.2	9.0	8.6	9.8	10.7	10.5	J11.3 H	12.6 H	13.5 H	14.0 H	14.5	14.4 H	13.6 H	13.0 H	12.5 H	12.6	12.9	11.8	11.0	11.9	12.9
12	13.2	13.1	12.5	9.5	8.7 H	8.9 H	11.3	12.0	10.6	10.0 H	10.9 H	12.5 H	13.5 H	13.9 H	14.0 H	13.5 H	12.9 H	11.3	11.5	10.9	10.5	10.7	11.5	J11.7
13	11.8	11.9	11.7	9.6	8.6 H	8.4	9.4	9.7	9.7	9.9 H	11.0 H	13.0 H	13.6 H	14.2 H	14.4 H	14.0	13.2 H	11.7	10.8	I10.5 A	10.2	11.0	11.5	12.0
14	11.5	11.5	10.0	9.0	8.5	8.5	9.9	10.0	10.6	11.3 H	12.0 H	13.0 H	13.9 H	14.3 H	14.5 H	14.5 H	14.0 H	13.2 H	11.8	11.3	10.3	11.0	11.5	11.8
15	12.4	13.0	11.5	9.5	8.5	8.1	9.1	9.8	10.7	11.1 H	11.4 H	12.3 H	12.7 H	13.5 H	13.8 H	13.0 H	12.5 H	12.0 H	12.4	11.6	10.0	9.6	10.0	10.1
16	10.6	11.0	9.3	8.4	8.2	8.5	10.5	10.8	10.2	10.1 H	11.5 H	12.0 H	12.3 H	13.0 H	13.5 H	13.3	13.1	12.3 H	11.7	11.5	10.1	9.8	10.3	10.1
17	9.8	9.8	9.0	8.2 H	7.9	8.0	9.4	9.7	9.4 H	9.9 H	10.8 H	11.7 H	11.7 H	11.9 H	12.1 H	12.4 H	12.0 H	11.5 H	10.9 H	10.0	9.3	9.6	10.2	10.6
18	10.6	10.9	10.1	9.0	8.4	8.6	9.5	9.5 H	9.7	10.0 H	10.6 H	11.3 H	12.1	12.8 H	12.8 H	12.4 H	12.2 H	11.8 H	11.1	11.0	10.7	11.1	11.5	J13.0
19	12.8	13.0	11.0	10.1	9.6	9.6	9.9	10.4	10.5	10.9	10.9 H	12.1 H	12.4 H	12.9 H	12.9 H	12.7 H	12.0 H	11.5 H	11.1	11.0	10.5	10.9	10.9	11.1
20	10.6	10.9	9.3	9.5	9.0 H	8.5	9.5	10.0 H	10.0	9.5 H	10.8 H	11.4 H	12.1 H	12.0 H	12.3 H	13.0 H	12.2 H	10.9	10.1	10.0	10.0	9.6	9.8	9.9
21	J10.1	J10.4	8.8	7.9	7.1	7.0	8.6	9.3	10.6 H	11.0 H	10.8 H	11.6 H	12.5 H	13.0 H	12.8 H	12.7 H	12.4 H	12.1 H	12.0 H	11.5	11.2	10.8	10.8	11.5
22	11.2	10.9	10.4	8.4	8.5	8.2	8.5	9.8	9.8	10.0 H	11.0 H	12.0 H	12.7 H	13.0 H	13.0 H	12.5 H	12.0 H	11.6 H	11.3	10.8 H	10.1	10.5	11.0	11.0 H
23	11.5	11.2	10.3	9.2	7.6 H	7.1 H	7.9	9.0	9.2	10.4	11.0 H	11.8 H	11.9 H	12.5 H	12.3 H	12.3 H	12.3 H	11.7 H	10.7	10.4	10.6	10.9	11.7	12.6
24	12.0	12.5 V	J11.1 V	9.2	8.3	8.6	9.0	10.3	10.3	11.0 H	11.0	11.6 H	12.0	12.2 H	12.0 H	11.4	10.9 H	10.6	10.5	9.6	9.9	10.5	11.0	12.0
25	13.1	12.8	11.2	9.2	8.0	7.9	8.7	10.0	10.4	10.3 H	10.5 H	10.9 H	10.9 H	11.0 H	10.8 H	11.4 H	11.2 H	11.0 H	10.3 H	9.9	9.5	9.6	9.7	10.3
26	10.8	10.4	8.4	7.8	7.0 H	7.1	8.0	9.2	9.6 H	9.7 H	10.8 H	11.7	11.2	11.4 H	12.0	11.6 H	10.9	10.5	10.6	10.5 H	D8.9 S	9.2 S	10.5	10.6
27	12.0	11.0	9.1	7.7	7.7 H	9.1	9.7	10.0	9.5	9.6 H	9.6	10.5 H	11.1 H	11.5 H	12.3 H	13.0 H	13.6 H	12.8 H	12.7 H	12.3	10.4	10.5	10.8	10.8
28	10.9	11.0	J10.1	9.1	8.0	J7.9	7.8	8.4	9.2 H	10.3 H	10.7 H	10.4 H	11.1 H	12.1 H	12.0 H	11.6 H	11.7 H	11.8 H	11.7 H	11.8	11.1	10.5	10.4	10.1
29	10.1	10.1 H	9.3	9.5	8.5	7.6	7.2	7.8	8.3	8.5	9.2 H	10.5 H	11.0 H	12.4 H	12.0 H	11.2 H	10.8 H	10.5 H	10.0	10.0	10.5	10.7	11.3	11.1
30	11.0 H	10.4	9.6	8.7	8.3	8.5	8.6	9.2	10.0 H	9.2	9.7 H	10.9 H	11.8 H	12.2	12.5 H	13.2 H	12.6 H	11.0	10.4	10.3	10.0	10.0	10.1	10.5
31	10.5 H	9.9	9.7	7.7 H	7.2 H	7.1 H	9.4 H	J8.0	7.5 H	7.2 H	8.7 H	8.7 H	9.0 H	9.8 H	10.0 H	9.4	9.2 H	9.4 H	9.4	9.2	8.4	8.5	8.8	8.9 VH
Mean Value	11.3	11.3	10.2	8.9	8.3	8.2	9.2	9.8	10.1	10.5	11.3	12.1	12.6	13.0	13.1	12.9	12.5	11.9	11.6	11.3	10.7	10.5	10.9	11.1
Median Value	11.3	11.0	10.1	9.0	8.4	8.2	9.3	10.0	10.2	10.6	11.0	12.1	12.7	13.0	13.5	13.0	12.6	11.8	11.7	11.3	10.5	10.5	10.9	11.0
Count	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	30	31	31	31

foF2

Sweep 1.0 Mc to 20.0 Mc in 1 min ☐ Manual ☒ Automatic

Y1

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

IONOSPHERIC DATA

May.1957 | **foEs** | **Yamagawa** | Lat. 31° 12.5' N | Long. 130° 37.7' E

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	3.7	4.1	2.6	2.2	3.2	2.5	1.5	5.3	4.1	6.0	4.9	6.9	5.3	4.9	5.3	5.3	6.5	5.6	5.2	4.8	2.4	2.2	1.8	1.8
2	S	S	E	E	1.7	2.3	2.3	G	3.7	C	C	4.8	5.1	4.1	4.2	5.3	5.3	5.9	4.8	1.9	1.7	S	2.6	3.3
3	2.3	3.1	1.7	E	E	E	2.3	3.4	5.3	3.8	G	5.1	4.6	4.7	5.4	G	5.3	8.0	8.7	8.6	3.5	5.2	1.7	S
4	S	S	1.4	S	S	S	G	3.0	6.1	4.1	4.4	4.8	5.0	5.5	5.2	7.2	7.4	9.3	11.4	8.3	4.9	2.1	S	S
5	S	1.5	1.8	2.7	2.0	S	G	3.2	4.2	4.6	5.9	11.9	8.0	4.5	8.3	G	4.0	5.3	7.0	6.6	3.2	5.1	4.4	3.7
6	3.7	4.3	2.6	2.1	S	S	1.8	4.3	C	4.2	5.3	4.7	G	G	G	6.1	6.5	5.2	5.5	3.4	11.4	6.0	3.5	3.0
7	S	2.2	2.8	1.7	3.7	2.6	G	3.0	3.6	4.0	9.5	5.3	5.0	4.6	5.2	5.3	4.0	3.5	3.4	S	1.6	2.1	2.9	3.7
8	3.1	2.4	E	S	E	S	2.7	3.8	4.2	5.3	4.4	5.1	G	G	5.7	5.1	5.3	5.9	6.1	5.4	5.2	2.9	5.1	2.4
9	3.6	2.9	2.5	2.1	3.4	1.7	2.3	4.0	5.9	5.8	G	5.2	5.3	G	5.2	5.2	5.3	6.0	5.2	2.7	5.5	8.7	3.1	2.2
10	1.6	1.8	1.7	2.6	S	1.9	2.6	3.9	4.2	5.3	5.1	5.3	4.7	5.6	G	5.3	5.5	6.5	10.1	7.0	14.4	5.9	2.6	5.1
11	3.8	2.0	S	S	3.4	4.0	3.0	4.0	5.1	5.2	4.7	5.1	7.3	8.3	5.1	5.1	5.2	5.2	6.0	4.6	5.2	8.8	3.6	2.4
12	1.9	2.2	2.9	2.4	S	S	3.0	3.7	4.2	5.9	5.2	5.4	5.3	6.0	G	4.7	5.2	5.3	5.0	5.1	5.9	3.3	5.0	5.1
13	8.3	5.9	2.5	E	E	E	3.2	4.6	5.3	5.1	6.0	4.6	5.1	5.4	7.7	6.8	5.3	5.6	13.0	14.0	13.0	3.5	6.5	S
14	S	1.7	1.5	S	S	S	2.5	5.3	5.3	5.6	4.0	5.4	4.7	G	G	5.3	5.3	8.5	12.9	8.3	6.0	3.9	2.1	S
15	S	S	S	S	S	S	2.6	4.2	5.3	5.0	4.8	5.3	5.5	5.8	6.1	5.4	5.6	6.2	5.5	4.7	9.4	5.3	6.1	3.1
16	2.0	S	S	3.0	2.1	S	3.0	4.1	4.9	C	5.9	5.6	5.7	6.4	4.9	6.4	7.5	3.8	3.8	1.7	S	S	S	3.8
17	3.8	2.6	S	S	1.1	S	3.1	3.8	4.1	6.3	G	4.9	5.1	G	5.0	G	4.8	4.3	3.0	1.6	2.6	4.4	S	7.0
18	1.8	2.1	S	S	S	S	2.6	3.4	4.7	5.0	5.1	8.3	12.2	4.8	G	G	6.3	4.1	8.0	6.0	11.0	4.9	4.9	3.9
19	3.3	2.7	2.9	2.6	3.0	3.0	2.6	3.6	4.9	5.0	4.6	4.6	4.6	4.8	5.6	G	G	G	3.0	2.0	1.6	S	3.6	3.5
20	2.4	3.0	3.0	2.4	2.5	1.5	2.5	4.9	4.2	4.5	5.5	7.2	4.9	G	4.7	4.6	4.3	6.3	9.0	5.0	3.6	1.5	3.4	2.0
21	2.3	2.4	6.4	8.3	5.7	3.2	3.0	4.3	5.0	5.9	4.4	5.4	G	4.5	G	4.4	4.1	3.9	3.1	3.0	S	1.9	1.4	3.5
22	2.6	2.4	2.1	2.6	3.9	2.2	2.5	3.5	4.8	6.0	5.4	10.3	6.2	6.1	4.7	G	5.7	5.9	4.2	3.0	12.9	8.1	6.4	5.6
23	3.0	2.5	3.0	3.0	2.6	2.3	3.1	3.5	4.8	5.4	5.4	6.6	5.6	4.8	G	4.9	4.9	5.3	5.3	4.1	5.3	S	S	S
24	S	S	1.4	5.2	3.5	2.2	2.5	3.6	4.3	5.6	7.8	5.6	11.5	5.7	8.0	9.1	6.7	9.6	2.9	2.6	1.9	1.5	3.0	2.6
25	1.9	5.2	2.0	S	3.1	2.0	2.5	G	4.1	6.1	5.5	6.6	5.1	G	G	4.1	5.0	G	3.0	G	S	S	S	2.2
26	3.0	3.6	2.8	2.6	2.6	2.4	3.1	3.7	5.5	5.3	5.5	6.5	7.4	8.2	8.2	6.4	7.1	7.2	8.1	5.8	3.6	6.4	5.3	2.0
27	S	2.3	2.5	2.5	2.3	3.7	3.0	3.7	4.8	5.5	5.9	5.3	5.2	5.9	5.1	4.3	4.1	3.6	3.2	1.9	2.6	S	S	S
28	S	1.9	3.6	3.1	2.6	2.6	4.7	4.8	3.6	10.9	8.3	4.8	4.9	4.9	4.7	4.2	4.5	5.3	3.1	2.5	S	2.5	4.3	2.9
29	3.9	2.6 F	3.0	2.1	2.5	2.2	3.0	3.0	3.6	4.3	5.7	13.5	5.8	5.0	5.5	5.2	6.3	5.6	8.3	5.3	3.0	2.3	8.9	2.9
30	2.6	2.9	3.0	2.9	1.4	1.5	4.0	7.6	4.1	4.3	4.7	5.3	8.7	6.9	6.7	4.3	4.1	9.9	6.1	2.5	S	2.1	1.6	2.2
31	2.5	3.7	2.6	2.9	2.4	2.6	3.0	4.0	4.4	5.3	S	6.0	5.3	5.3	5.6	7.1	6.8	6.3	6.6 F	4.2	3.0	2.9	3.0	2.6
Mean Value	3.1	2.8	2.6	3.0	2.8	2.4	2.8	4.0	4.6	5.4	5.5	6.2	6.0	5.5	5.7	5.5	5.5	6.0	6.1	4.7	5.6	4.1	4.2	3.3
Median Value	2.8	2.6	2.6	2.6	2.6	2.3	2.6	3.8	4.6	5.3	5.2	5.3	5.2	4.9	5.1	5.1	5.3	5.6	5.5	4.4	4.2	3.5	3.6	3.0
Count	22	26	26	23	24	21	31	31	30	29	29	31	31	31	31	31	31	31	31	30	26	25	25	25

foEs

Sweep 1.0 Mc to 20.0 Mc in 1 min ☐ Manual ☒ Automatic

Y2

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

IONOSPHERIC DATA

May.1957 | (M3000)F2 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.70	2.95	J2.95	2.65	2.70	2.75	3.05	2.95	2.70	2.75	2.55H	2.60	2.70H	2.55H	J2.65H	2.65H	2.65	2.65H	2.65	2.85	2.70	2.50H	2.45	2.45
2	2.60	2.90	2.90	2.60	2.80	2.85	2.90	2.90	2.75	C	C	2.70H	2.70H	2.70H	2.70H	2.70H	2.65H	2.65H	2.70	2.70	2.75	2.70H	2.65	2.60
3	2.70	2.80	2.70H	2.55H	2.60	2.65	3.00	2.95	3.00H	2.90H	2.60H	2.60	2.65H	2.65H	2.65H	2.65H	2.60H	2.70	2.80	2.80	2.70	2.65	2.60	2.60
4	2.70	2.80	2.75	2.75	2.45	2.55	2.75	2.75	2.65	2.60H	2.65	2.75H	2.70H	2.60H	2.65H	2.65	2.70	2.70	2.80	2.75	2.60	2.50	2.50	2.60H
5	2.65	2.75	2.80	2.80	2.75	2.40	2.90	2.70	2.60H	2.60H	2.70H	2.70	2.65	2.65H	2.70	2.65H	2.70H	2.65	2.70	2.85	2.65	2.50	2.40	2.50
6	2.60	2.60	2.70	2.60H	2.45H	2.45	2.85	2.80	I2.75C	2.70	2.75H	2.55H	2.55H	2.70H	2.75H	2.60H	2.60	2.55H	2.60	2.65	J2.60	2.55	2.50	2.65
7	2.75	2.80	2.80	2.65H	2.60H	2.80	3.20	2.90	3.05H	2.65H	2.65	2.55H	2.60H	2.70H	J2.65H	2.70H	2.65H	2.55H	2.65	2.75	2.70H	2.55	2.50	2.65
8	J2.75	2.80	2.70	2.80	2.60	2.45	2.95	2.90	2.65H	2.60H	2.75H	2.60	2.55H	2.60H	2.70H	2.70H	J2.80H	2.70	2.65	2.65	2.60	2.55	2.60	2.70
9	2.75	2.80	2.85	2.80	2.75	2.85	2.75	2.80	2.75H	2.65	2.45H	2.55H	2.50H	2.55H	2.55H	2.65H	2.60H	2.60	2.65	2.70	2.55	2.40	2.50	2.65
10	2.60	2.70	2.70	2.75	2.75	2.60	2.80	2.90	2.80H	2.55	2.50H	2.70H	2.60H	2.65H	2.65H	2.70H	2.65H	2.75	2.80	2.70	I2.60A	2.50	2.50	2.60
11	2.75	2.90	3.10	2.80	2.70	2.75	2.90	3.10	2.85	J2.35H	2.55H	2.60H	2.60H	2.70	2.70H	2.70H	2.70H	2.65H	2.70	2.75	2.80	2.60	2.55	2.65
12	2.80	2.80	2.80	2.75	2.65H	2.60H	3.00	3.25	2.95	2.70H	2.45H	2.50H	2.65H	2.70H	2.65H	2.70H	2.75H	2.85	2.75	2.80	2.65	2.55	2.65	J2.75
13	2.65	2.70	2.75	2.80	2.80H	2.80	3.00	3.10	2.95	2.45H	2.65H	2.65H	2.60H	2.50H	2.65H	2.75	2.70H	2.75	2.65	I2.60A	2.50	2.50	2.55	2.75
14	2.75	2.80	2.95	2.70	2.60	2.55	2.95	2.85	2.75	2.60H	2.55H	2.55H	2.55H	2.65H	2.65H	2.65H	2.65H	2.75H	2.70	2.65	2.65	2.55	2.60	2.55
15	2.65	2.85	2.85	3.05	2.75	2.65	3.00	2.95	2.60	2.90H	2.45H	2.50H	2.55H	2.60H	2.55H	2.65H	2.60H	2.60H	2.75	2.75	2.70	2.50	2.50	2.60
16	2.75	2.95	2.80	2.60	2.65	2.55	3.00	3.05	2.95	2.55H	2.60H	2.55H	2.50H	2.55H	2.60H	2.55	2.60	2.65H	2.65	2.75	2.70	2.50	2.45	2.55
17	2.65	2.65	2.65	2.50H	2.50	2.45	3.10	3.10	2.70H	2.45H	2.45H	2.45H	2.50H	2.45H	2.45H	2.50H	2.60H	2.60H	2.65H	2.65	2.50	2.45	2.45	2.60
18	2.65	2.80	2.80	2.70	2.55	2.60	2.95	2.65H	2.70	2.55H	2.45H	2.40H	2.50	2.50H	2.45H	2.55H	2.50H	2.55H	2.60	2.60	2.50	2.50	2.50	J2.45
19	2.65	2.85	2.90	2.65	2.60	2.65	2.85	2.80	2.75	2.60	2.40H	2.50H	2.50H	2.50H	2.50H	2.50H	2.50H	2.55H	2.55	2.60	2.60	2.50	2.55	2.55
20	2.55	2.75	2.75	2.65	2.50H	2.50	2.80	2.85H	2.90	2.45H	2.50H	2.55H	2.55H	2.50H	2.45H	2.55H	2.65H	2.60	2.60	2.40	2.45	2.35	2.50	2.50
21	J2.50	J2.80	2.90	2.55	2.30	2.45	2.55	2.80	2.70H	2.70H	2.45H	2.35H	2.40H	2.50H	2.50H	2.50H	2.50H	2.55H	2.60H	2.60	2.55	2.35	2.40	2.65
22	2.65	2.70	2.80	2.50	2.65	2.65	2.70	2.80	2.55	2.40H	2.45H	2.45H	2.45H	2.50H	2.55H	2.55H	2.60H	2.65H	2.65	2.70H	2.45	2.40	2.40	2.50H
23	2.55	2.70	2.85	2.85	2.70H	2.60H	2.80	2.85	2.70	2.50	2.55H	2.55H	2.50H	2.50H	2.50H	2.50H	2.55H	2.65H	2.55	2.45	2.45	2.45	2.50	2.55
24	2.75	2.70V	J2.75V	2.60	2.45	2.45	2.70	2.70	2.50	2.65H	2.50	2.50H	2.50	2.50H	2.60H	2.60	2.60H	2.60	2.65	2.50	2.40	2.40	2.45	2.60
25	2.85	2.90	2.95	2.80	2.55	2.45	2.50	2.75	2.70	2.60H	2.45H	2.45H	2.50H	2.50H	2.45H	2.55H	2.60H	2.65H	2.60H	2.50	2.35	2.40	2.40	2.50
26	2.75	2.90	2.75	2.50	2.40H	2.40	2.65	2.90	2.80H	2.55H	2.50H	2.60	2.55	2.40H	2.50	2.60H	2.60	2.55	2.55	2.60H	S	2.55S	2.45	2.55
27	2.75	2.55	2.90	2.25	2.20H	2.65	3.00	2.90	2.90	2.65H	2.55	2.45H	2.55H	2.55H	2.55H	2.60H	2.60H	2.55H	2.65H	2.80	2.70	2.40	2.50	2.60
28	2.60	2.85	J2.80	2.80	2.70	J2.70	3.05	2.70	2.55H	2.65H	2.65H	2.55H	2.55H	2.65H	2.65H	2.60H	2.60H	2.55H	2.65H	2.70	2.70	2.60	2.60	2.60
29	2.70	2.75H	2.70	2.90	2.95	3.00	3.05	2.95	2.85	2.70	2.45H	2.45H	2.70H	2.70H	2.65H	2.70H	2.60H	2.65H	2.55	2.55	2.60	2.55	2.60	2.65
30	2.70H	2.75	2.70	2.70	2.70	2.80	3.00	2.85	2.90H	2.85	2.50H	2.40H	2.60H	2.55	2.55H	2.65H	2.80H	2.75	2.60	2.55	2.45	2.45	2.40	2.60
31	2.85H	2.75	3.00	2.60H	2.25H	2.40H	2.65H	J3.00	2.95H	2.45H	2.75H	2.60H	2.55H	2.65H	2.60H	2.60	2.55H	2.75H	2.85	2.70	2.45	2.35	2.45	2.50VH
Mean Value	2.70	2.80	2.80	2.70	2.60	2.60	2.90	2.90	2.75	2.60	2.55	2.55	2.55	2.60	2.60	2.60	2.60	2.65	2.65	2.65	2.60	2.50	2.50	2.60
Median Value	2.70	2.80	2.80	2.70	2.60	2.60	2.90	2.90	2.75	2.60	2.50	2.55	2.55	2.55	2.60	2.65	2.60	2.65	2.65	2.70	2.60	2.50	2.50	2.60
Count	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	30	31	31	31

(M3000)F2

Sweep 1.0 Mc to 20.0 Mc in 1 min ☐ Manual ☒ Automatic

Y3

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

IONOSPHERIC DATA

May. 1957 | h'F2 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											255H	300												
2										C	C	250H	250H											
3										240H														
4														280H	290H	E320A								
5												E315A	E340A		E350A	260H								
6									C				250H											
7																								
8																								
9											250H													
10																								
11																280H								
12											255H	250H				275H	E300AH							
13														250H	280H	340	255H							
14													250H	250H	260H	250H								
15											250H													
16										C			260H											
17									250H	250H	245H	245H	E245AH											
18																								
19															E300AH	260H								
20																LH								
21														255H	250H									
22															260H									
23																305H	275H							
24																								
25																LH								
26										250H														
27															270H		285H							
28									250H			LH												
29										250						LH	300H							
30											250H													
31																								
Mean Value									250	245	250	260	250	260	270	280	280							
Median Value									250	250	250	250	250	250	265	275	280							
Count									2	4	6	4	5	4	6	7	4							

h'F2

Sweep 1.0 Mc to 20.0 Mc in 1 min ☐ Manual ☒ Automatic

Y4

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

IONOSPHERIC DATA

May.1957 | h'F | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	295	255	270	295	280	245	240	240	260	230	I 235 A	240 H	250 H	245 H	265 H	E 330 A	E 280 AH	300	285	255	290 H	330	340
2	320	270	250	290	290	245	255	240	240	C	C	230	220	240 H	250 H	240 H	245 H	E 295 AH	290	285	270	255 H	295	300
3	300	290	225 H	230 H	300	300	260	245	230 H	230	230 H	250	235 H	255 H	E 270 A H	245 H	260 A	340 A	320 A	295	270	290	290	300
4	295	270	275	255	300	300	250	245	E 250 A	240 H	235	240 H	E 240 AH	A	260	A	340 A	340 A	E 300 A	300 A	290	295	320	320 H
5	300	290	275	270	255	300	240	235	235 H	250 H	E 250 AH	A	A	240 H	I 240 A	245	250 H	E 275 A	310 A	300	280	320 A	350	340
6	315	335	300 A	255 H	280 H	295	250	245	I 240 C	240	225 H	230 H	220	220 H	250 H	E 295 AH	E 290 A	250 H	305 A	275	E 365 A	310	330 A	300
7	280	270	255	260 H	300 H	280	245	240	235 H	240 H	E 355 A	235 H	230 H	245 H	235 H	325 H	250 H	250 H	260	275	260 H	290	325	325 A
8	295	295	290	270	295	340	250	220	240 H	235 H	240 H	E 250 A	250 H	240 H	230 H	250 H	260 H	E 275 A	E 270 A	290 A	320	300	300	300
9	300	290	290	260	275	260	245	250	250 AH	245 A	235	235 H	240 H	230 H	270 H	E 295 AH	270 H	E 300 A	290 A	260	E 340 S	E 370 S	350	305
10	295	290	295	270	240	290	255	240	245 H	250	250 H	255 H	240 H	E 315 AH	250 H	280 H	E 280 AH	305 A	E 350 A	315 A	I 320 A	325	325	330
11	305	280	250	250	285	300	255	250	250	250 H	225 H	250 H	E 270 AH	350	270 H	E 270 A	260 H	270 H	300	300	290	290	325	300
12	275	275	250	235	285 H	315 H	270	245	240	230 AH	200	I 225 A	250 H	E 250 AH	250 H	245	A	E 275 A	E 270 A	285	310	305	315	305
13	310 A	300 A	270	290	250 H	260	250	245	250	240 H	250 H	E 245 SH	245 H	240	250	I 235 A	220	270	E 420 A	A	E 350 A	325	E 340 A	295
14	285	270	240	280	270	300	245	245	240	240 AH	E 235 BH	220 H	220	200	210	I 230 A	250 H	E 270 AH	270	300	310	310 A	305	300
15	300	270	250	240	260	290	250	245	245	245 H	230	235 H	E 250 AH	215 H	250 H	270 H	250 H	E 310 AH	290	300	E 345 A	335	375	350
16	300	270	265	285	295	295	250	250	250	I 250 CH	255 H	270 H	225 A	E 325 AH	245 H	360	355	250 H	290	295	285	305	340	340
17	325	295	265	260 H	300	340	250	250	240	I 240 A	240	215	I 230 A	245 H	250 H	240 H	240 H	250 H	260 H	275	295	360	340	350
18	305	275	260	265	300	295	235	230 H	250	250 H	E 225 AH	225 AH	E 450 A	240 H	250 H	240 H	320 H	250 H	305	315	E 370 A	310 A	340	330
19	300	270	245	250	290	295	250	245	250	255	250 H	220 H	230 H	235 H	I 220 A	210	250 H	250 H	255	290	300	310	305 A	345
20	325	300	250	295	275 H	310	250	250 H	245	230 H	230 H	E 250 AH	240 H	240 H	245 H	250	260 H	E 290 A	E 470 A	310	320 A	350	350	335
21	330	295	255	E 360 A	E 360 A	350	250	250	250 H	250 H	230 H	230 H	210 H	200	240	245 H	235 H	255 H	260 H	270	290	320	340	305
22	300	295	255	285	295	275	245	250	245	E 270 AH	250 H	240 AH	E 290 AH	230 H	E 225 A	245 H	E 300 AH	E 305 AH	E 270 A	275 H	300	350	390	350 H
23	330	290	285	250	240 H	290 H	250	245	250	E 260 A	E 240 AH	E 250 AH	E 270 AH	220 H	230 H	215	220	E 280 AH	285	290	305 A	315	320	300
24	290	275	255	325	340	305	245	255	245	240 H	E 390 A	250 AH	405	E 270 AH	E 370 AH	390	320 H	E 390 A	250	280	315	345	350	330
25	280	260	245	225	250	300	250	245	250	E 320 AH	250 H	E 250 AH	245 H	220 H	220 H	220	240 H	250 H	250 H	290	310	350	355	325
26	290	290	270	250	305 AH	345	260	250	245 AH	E 245 A	E 275 AH	370	395	250 H	390	E 325 AH	350	E 360 A	360	325 AH	300	330 A	370	320
27	290	250	245	350	395 H	300 A	245	245	250 A	E 270 AH	295	250 AH	250 AH	E 290 AH	E 240 A	230 H	200	245 H	230 H	280	260	295	335	305
28	300	275	395 A	290	260	280	245	235	240	245 H	245 H	210	210 H	250 H	250 H	245 H	250 H	250 H	245 H	285	280	290	300 A	300 A
29	310	295 H	270	275	250	225	220	240	235	225	E 295 AH	275 H	E 250 A H	220 H	E 310 AH	230	E 280 A	300 H	E 360 A	300 A	300 A	305	325 A	300
30	295 AH	300	255	250	260	270	245	E 330 A	245 H	250	225	215 H	290 H	395	E 320 AH	250 H	245 H	E 305 A	E 295 A	285	305	340	345	300
31	270 H	300 A	250	285 H	375 H	E 280 AH	250 H	275	270 H	245 H	240 H	E 310 AH	260 H	235 H	E 250 AH	400	E 365 AH	E 350 AH	300	290	290	355	340	330 H
Mean Value	300	285	265	270	285	295	250	245	245	245	240	240	250	245	250	260	265	270	280	290	295	315	330	320
Median Value	300	290	255	270	290	295	250	245	245	245	235	235	240	240	245	245	250	250	285	290	300	310	330	320
Count	31	31	31	30	30	31	31	30	30	26	24	24	24	25	27	26	24	16	25	30	26	30	30	31

h'F

Sweep 1.0 Mc to 20.0 Mc in 1 min ☐ Manual ☒ Automatic

Y5

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

IONOSPHERIC DATA

May.1957

types of Es

135° E Mean Time

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	f	f2	f	f	f2	f	f	lc	c	c	c	c	c	c	l	h	c2	c2	c2	f	f	f	f	f
2					f	f	c		c			c	c	c	c	lh	lc	c	c	f	f		f	f2
3	f	f	f				c	qs	lc	c		c	h	h	h		c	c2	c2	f2	f	f2	f	
4			f					h	c2l	h	c	c	c	c	c	c2	c2	c2	c2	f2	f	f		
5		f	f	f2	f			h	h	h	c	c	c2	h	c2		h	c	c2	f2	f2	f2	f2	f2
6	f2	f	f	f			f	c		c	c	lc				c	c2	c	l	f2	f2	f2	f2	f
7		f	f	f	f	f		c	c	c	l2	l	c	h	c	c	c	c	c		f	f	f	f2
8	f	f					c	c	c	c	c	c			h	h	c	c	c	f2	f2	f	f	f
9	f	f	f	f	f	f	c	c	c	c		c	l		h	h	c	c	c	f	f2	f2	f	f
10	f	f	f	f		f	c	h	c	c l	c	c	c	h		h	c	c2	c2	f2	f2	f2	f	f
11	f2	f			f2	f2	c	c	c	c	c	c	c	c2	l	l	h l	h²	c2	f2	f2	f2	f	f
12	f	f	f	f			c	c	c	c	c	l	l	l		h	h	c	c	f2	f2	f	f2	f2
13	f2	f2	f				c	c	c	c	c	c	h	lh	h	c2	h	c	c2	f2	f2	f	f	
14		f	f				h	c	h	c	c	c	h			h	c	c2	c2	f2	f2	f	f	
15							h	c	c	c	c	c	c	c	l	l	l	h	c2	f2	f2	f	f	f2
16	f			f	f		c	c	c		c	c	c	h	h	c2	c2	c	c	f				f2
17	f	f			f		h	h	h	c		c	c		h		l	l	c	f	f	f2		f2
18	f	f					h	c	c	c	c	c	c2	c			c2	c	c2	f2	f2	f2	f2	f2
19	l2	f	f	f	f2	f2	h	lc	c	c	c	h	h	c	c				h	l	f		f2	f2
20	f	f	f	f	f	f	h	c	c	c	c	c	c		h	h	h	c2	c2	f2	f2	f	f2	f
21	f	f2	f2	f2	f2	f2	lh	h l	c	c	c	c		h		c	c	c	c	f		f	f	f2
22	f2	f	f	f	f2	f	l	c	c	c2	c	c	c	c	c		c2	c2	l2	f2	f2	f2	f2	f2
23	f2	f	f2	f2	f	f	l	h	c	c	c	c	c	h		h	h	c2	c2	f2	f2			
24			f	f2	f2	f	lh	c	c	h	c l	c	c	c	c	c2	c2	l2	l	f	f	f	f2	f2
25	f	f2	f		f	f	h		c	c2	c2	c	c			h	c		lc					f
26	f	f	f2	f2	f2	f	lc	c	c	lc	c2	c	c	c	c2	c2	c2	c2	l2	f2	f2	f2	f2	f
27		f	f2	f2	f	f2	l	c	c	c2	c2	c	c	c	c	h	c	c	c	c	f			
28		f	f2	l	f	f	lh	lc	c	lc	c2	c	l	h	h	h	c	lc	l	f		f	f2	f2
29	f2	f	f	f	f	f	lh	l	c	c	c2	c l	c l	l	c	c	c	c2	l2	f2	f2	f	f2	f2
30	f2	f2	f	f	f	f	c	c2	c	h	h	lh	c2	c2	c2	c	c	c2	c2	f		f	f2	f2
31	f	f2	f2	f2	f	f	lc	c	c	lc		c	c	lc	lc	c2	l2	l2	l2	f2	f2	f2	f2	f2
Mean Value																								
Median Value																								
Count																								

types of Es

Sweep 1.0 Mc to 20.0 Mc in 1 min ☐ Manual ☒ Automatic

Y6

SOLAR RADIO EMISSION

MAY 1957

Observing Station: HIRAISO

Frequency: 200 Mc/s.

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

Time in U.T.

Daily Data

Date	Steady Flux		
	00-03	03-06	Daily Averages
1	12	12	12
2	10	11	10
3	11	10	11
4	11	13	12
5	14	12	13
6	11	16	13
7	32	29	30
8	25	27	26
9	16	26	20
10	29	34	32
11	15	18	17
12	21	17	19
13	16	13	15
14	17	21	19
15	21	25	23
16	19	22	20
17	17	20	18
18	13	15	14
19	13	13	13
20	13	13	13
21	13	13	13
22	13	13	13
23	10	10	10
24	10	10	10
25	-	9	(9)
26	-	-	-
27	14	13	13
28	20	37	28
29	17	18	17
30	-	-	-
31	23	20	21

Outstanding Occurrences

Date	Starting Time	Duration	Type	Peak Flux	Time	Remarks
7	0232-30s	4m+3m	CD/8	580		1st part
				300		2nd part
10	0040	5m	SA+M/3+1	50		base level
				220		
	0121	2m	SA+M/3+1	30		base level
				380		
	0241	2m	SA/3	310		
	0700	4m	SA/8	540	0701-30s	
11	0500	1m	SD/3	180		
18	0106-30s	1m	SD/3	210		
	0117-30s	1m30s	SD/3	380		
	0348	2m	SD/3	730		
	0814	3m	M/2	500		
19	0008	6m	CD/9	160	0008	1st peak
				380	0011	2nd peak(main)
				240	0013	3rd peak
	0017	7m	CD/5	40	0018	main part
				30	0021	2nd part
22	2128	5m	M+SD/2+3	40	2130	base
				150		
29	0229	ca3m	SD/3	310		
	0657-30s	1m30s	SD/3	390		

Noise storm: 15th, afternoon
31st, all day

Type is classified after URSI D-code and interchange code.

IONOSPHERIC DATA IN JAPAN FOR MAY 1957
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