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IONOSPHERIC DATA IN JAPAN

FOR JANUARY 1951

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THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

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CONTENTS

PREFACE

The radio administration in Japan has hitherto been carried out by the Radio Regulatory Agency. With the reorganization of part of the government offices effective on June 1, 1950, the Radio Regulatory Commission was established and the work of researches on radio propagation has become to fall under the charge of the radio wave observatories, auxiliary organs of the Radio Regulatory Commission.

The radio wave observatories are composed of the Central Radio Wave Observatory located at Kokubunji, Tokyo, and five local radio wave observateries established at Wakkanai, Akita, Hiraiso, Inubo and Yamagawa respectively.

The Central Radio Wave Observatory has the following four sections:
Ionospheric Propagation Section which shall carry on researches on ionosphere and wave propagation;
Tropospheric Propagation Section which shall carry on researches on troposphere and wave propagation;
Data Coordination Section which shall conduct the collection and arrangement of observational results, supply of operational data relating to radio propagation, preparation of radio propagation forecasts and radio disturbance warnings, and physical basic studies of wave propagation in general; and
Administrative Section which shall conduct the general affairs of the observatory.
The ionospheric sounding is as heretofore being carried out by the four observatories at Wakkanai, Akita, Kokubunji (Tokyo) and Yamagawa.

This report provides the results of ionospheric sounding with symbols determined and in the form established on an international basis in the same way as followed by the Radio Regulatory Agency and it is hoped that it will make any contribution toward the progress in world-wide short wave communications.

This report is intended for distribution on request to the largest possible number of organizations concerned all over the world, and any and every information that the organizations concerned might forward to us in exchange therefor would be highly appreciated.

Uyeda Hiroyuki
Chief, Central Radio Wave Observatory,
Radio Regulatory Commission

February 1951

SITE OF THE IONOSPHERIC STATIONS

Ionospheric observation is carried out at four stations in Japan. The stations are situated as follows:

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

REMARKS ON SYMBOLS

All symbols in the table are used in accordance with "Production and Reduction of Ionospheric Information" of "RESOLUTION OF THE IX GENERAL ASSEMBLY OF URSI SEPTEMBER 1950" except f_{min} E and f_{min} F for E and F regions respectively instead of f_{min}, taken as f_{min} s in the above Resolution, in order to avoid the interruption of preceding form of dada.

RESOLUTION OF THE IX GENERAL ASSEMBLY OF URSI
SEPTEMBER 1950

Production and Reduction of Ionospheric Information

The IX General Assembly of URSI,

considering:

a) that, since the adoption by URSI at its VIIIth Reunion (see Proceedings of the General Assembly, URSI, Vol. VII, p. 189) of Recommendation No. 6 of the Vth Reunion of CCIR which deals under a different title with many of the features of the above subject, it has become evident that some cases of confusion still exist both with regard to the interpretation of h'f traces, and with regard to the use of the terminology, symbols, and conventions contained in the five annexes to CCIR Recommendation No. 6;

b) that there is a growing need for revision and clarification of these annexes in the light of the accumulated experience with their use (the meeting of the CCIR International Study Group 6 has already given some thought to revisions, as well as recognized the ultimate requirement for some new and less subjective way of obtaining pertinent information from ionospheric measurements);

c) that, with our ever increasing knowledge and understanding of the ionosphere, these matters cannot in the foreseeable future be regarded as finally fixed or complete;

d) that improved prediction services depend upon the provisior of highly accurate and dependable information for scientific study and analysis, since improved predictions must ultimately rely upon a clear understanding of the physical processes involved;

recommends:

a) that every effort be made to improve the quality and accuracy of observations as rapidly as the technique can be developed or applied, in order to encourage the scientific analysis that is needed;

b) that at the same time the problems of production and reduction of ionospheric information be periodically re-examined in order to bring them into line with most recent experience and requirements for such information;

c) that until such time as these matters are re-examined, the CCIR Recommendation No. 6 continue to represent the views of URSI, but subject to the following:

1. that the provisions of recommendation 4 of CCIR Recommendation No. 6 be not construed as precluding the interchange of monthly mean values of ionospheric characteristics, and that in fact mean values should be interchanged as well as medians whenever the quality of the observations permits this;

2. that it be emphasized that the provisions of recommendation 5 of CCIR Recommendation No. 6 represent only minimum standards and in particular that recommendation 5 (d) be not construed as suggesting that it is sufficient to record layer heights to the nearest 10 km and frequencies to the nearest 0.1 Mc/s, when it is both desirable and possible to be more accurate.

3. that the five annexes to CCIR Recommendation No. 6 be replaced by the revised versions appended herewith.

ANNEX 1

General Symbols

1.	f	frequency
2.	fo	ordinary-wave critical frequency
3.	fx	extraordinary-wave critical frequency
4.	fz	critical frequency corresponding to the lowest frequency branch of an h'f trace (see 13 below) showing triple splitting
5.	h'	virtual height (frequently prefixed to the designation of a layer to denote the minimum virtual height, i.e., the virtual height of a point on the trace at which the tangent is horizontal)
6.	hp	the height of maximum ionization derived from a parabolic fit to the "nose" of the electron density distribution with height and based on the observed h'f trace for a particular layer, i.e., the virtual height measured on the ordinary-wave branch at a frequency equal to 0.834 fo
7.	yp	the semi-thickness deduced from a parabolic fit to the "nose" of the electron density distribution with height and based on observed h'f trace for a particular layer
8.	MUF	maximum usable frequency
9.	d-MUF	maximum usable frequency for a path of some specified standard length d
10.	FOT	optimum traffic frequency (formerly optimum working frequency)
11.	LUF	lowest useful high frequency
12.	Md	maximum usable frequency factor for a path of some specified standard length d
13.	h'f	an observation displaying the virtual height h' as a function of frequency f
14.	h't	an observation displaying the virtual height h' as a function of time for a specified fixed frequency

It is now very nearly universal practice to specify quantities in the above list representing frequencies in megacycles per second, and to

specify quantities representing height or distance in kilometers. Exceptions should always be clearly indicated, as for example the use of miles in symbols 9 and 12.

In the table above the abbreviations MUF, FOT, and LUF should be left unaltered in sequence of letters when translated into various languages in order to preserve them as pronounceable words.

ANNEX 2

Characteristics Most Commonly Observed or Derived from h'f Observations

1.	foE	ordinary-wave critical frequency for the E, E2 (see Remark 1), F1, and F2 layers respectively
2.	foE2	
3.	foF1	
4.	foF2	
5.	fxE	extraordinary-wave critical frequency for the E, E2, F1, and F2 layers respectively
6.	fxE2	
7.	fxF1	
8.	fxF2	
9.	fzE	critical frequency for the lowest frequency branch in the event of triple splitting for the E, E2, F1, and F2 layers respectively
10.	fzE2	
11.	fzF1	
12.	fzF2	
13.	fEs	highest frequency on which echoes of the sporadic type are observed from the lower part of the E layer
14.	fE2s	highest frequency on which echoes of the sporadic type are observed from the upper part of the E layer; the distinction between the upper and lower parts of the E layer is purely one of apparent virtual height (apparent range of echo) and should be based on station experience; 140 km has been chosen by some stations to represent this distinction
15.	fbEs	the lowest frequency at which echoes from the F layer are observed when sporadic echoes from any height in the E layer are of the intense or blanketing type

Remark 3: In the region of the h'f trace identified with the critical frequency of the F1 layer, it is noted that the tangent to the trace is seldom vertical. It would appear, therefore, that quantities recorded as critical frequencies of the F1 layer must not be regarded in the same way as the critical frequencies of the F2 layer. As a guide for assigning numerical values for foF1, fxF1, and fzF1, it is probably sufficient to require that a horizontal tangent exist to the trace of the higher layer, if present. In cases where there is, nevertheless, no sharp discontinuity or cusp in the h'f trace, guidance should be sought in the multiple traces, if present.

ANNEX 3

Qualifying Symbols

1.	( )	Individual observed values thus enclosed are considered doubtful. The reason for doubt should be specified by an appropriate descriptive symbol (see Annex 4) or by a footnote.
2.	[ ]	Individual numerical values thus enclosed represent interpolations rather than observations. The reason for the interpolation should be specified by an appropriate descriptive symbol (see Annex 4) or by a footnote.
3.	> or D	This symbol when it stands before a number means greater than.
4.	< or E	This symbol when it stands before a number means less than.

In 3 and 4 above the letters D and E have been chosen for use with a typewriter. They can be easily remembered because of their resemblance in meaning to the symbols D and E of Annex 4 (the latter are always written after a numerical value). High grade observing stations will have relatively little use for these four qualifying symbols. The symbols are nevertheless given in order to encourage the maximum possible salvage of results from imperfect observations.

Note Concerning Interpolation:

In the hourly tabulations of ionospheric characteristics it is considered desirable to replace missing values by interpolated values whenever possible. As a general rule no missing value should be replaced by an interpolated value if the interpolation must be performed between observed values separated by more than two hours in time. The matter of interpolation is given further attention in Annex 4.

16. fmin — that frequency below which no echoes are observed

17. h'E
18. h'E2
19. h'F1
20. h'F2 — minimum virtual height on the ordinary-wave branch for the E, E2, F1, and F2 layers respectively

21. h'Es — minimum virtual height of Es echoes (see 13 above)

22. h'E2s — minimum virtual height of E2s echoes (see 14 above)

23. hpF2 — virtual height of the F2 layer measured on the ordinary-wave branch at a frequency equal to 0.834 foF2

24. ypF2 — 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

25. E-d-MUF
26. F1-d-MUF
27. F2-d-MUF — maximum usable frequency for a path of some specified standard length d for transmission by the E, F1, and F2 layers respectively

28. (Md) E
29. (Md) F1
30. (Md) F2 — maximum usable frequency factor for a path of some specified standard length d for transmission by the E, F1, and F2 layers respectively

It is now very nearly universal practice to specify quantities in the above list representing frequencies in megacycles per second, and to specify quantities representing height or distance in kilometers. Exceptions should always be clearly indicated, as for example the use of miles in symbols 25 to 30 inclusively.

It should be remarked that all symbols of the above list are to be typeset as typewritten, on a straight line, i.e., superscripts and subscripts are no longer to be used.

Remark 1: In the event that clear stratification is evident below the F1 layer and above the regular E layer, care has to be taken to distinguish among stratification in the normal E layer, existence of an E2 layer, and stratification at the bottom of the F1 layer. As a rough guide, in order to classify a layer as E2, it is thought that with equipment having high resolution, the E2 trace will be isolated in height from the traces of the layers above and below, or that generally it should be situated between virtual heights of 140 and 190 km. These latter limits are subject to adjustment according to the experience at each station.

Remark 2: Understanding of the processes which give rise to echoes of the sporadic type from the E layer is still largely lacking. There have been cases reported in which sufficient retardation, and also change in echo intensity, has been observed to suggest the possibility of using such symbols as foEs, and fxEs. Cases have also been observed of Es echoes at virtual heights above about 140 km. These have been designated as E2s (see 14 above)

ANNEX 4

Descriptive Symbols

A letter symbol from the following list, when used to qualify a numerical value, always stands after the numerical value.

	Symbol	Definition
1.	A	characteristic not measurable because of blanketing by Es or by E2s
2.	B	characteristic not measurable because of non-deviative absorption either partial or complete
3.	C	characteristic not observed because of equipment or power failure
4.	D	characteristic at a frequency higher than the normal upper frequency limit of equipment
5.	E	characteristic at a frequency lower than the normal lower frequency limit of equipment
6.	F	spread echoes present
7.	G	a) F2-layer critical frequency equal to or less than F1-layer critical frequency b) used on Es tabulation sheets when no Es echoes are observed though regular E or E2 layer echoes are present, also used on E2s tabulation sheets when no E2s echoes are observed though regular E or E2 echoes are present
8.	H	stratification observed within the layer
9.	J	ordinary-wave characteristic deduced from measured extraordinary-wave characteristic
10.	K	ionospheric storm in progress (this is always applied to a series of hourly values, never to an isolated value)
11.	L	a) critical frequency, MUF, or MUF factor for F1 layer omitted or doubtful because no definite or abrupt change in slope of the $h'f$ curve is observed either for the first reflection or any of the multiples (Remark 3 of Annex 2 applies) b) minimum virtual height for F2 layer omitted because the F2-layer trace is continuous with the F1-layer trace, and without a point of zero slope
12.	M	characteristic not observed because of some failure or omission on the part of the operator, rather than owing to any mechanical or electrical vault in the equipment or its power supply

13. N nature of the observation is such that it is not possible for the characteristic to be interpreted

14. P trace extrapolated to critical frequency (it is unnecessary to use this letter for small extrapolations of one or two percent, but no numerical value should be recorded if the extrapolation leads to a critical frequency which exceeds the last observed point on the trace by more than five percent)

15. Q distinct layer not present (this symbol is intended to apply to daytime layers only and should be used in the hour columns at the beginning and end of the daylight period to fill empty spaces in those columns where one or more numerical values exist - it should not be used in hour columns where no numerical values exist because of darkness - these columns may be left blank)

16. S characteristic obscured by interference or by atmospherics

17. T loss or destruction of successful observations

18. V trace forked near critical frequency

19. W characteristic at a height greater than the normal upper height limit of equipment

20. Y used on Es tabulation sheets when Es trace is intermittent in frequency range, also used on E2s tabulation sheets when E2s trace is intermittent in frequency range - for both the Es and E2s records very short pieces of trace at the high frequency end should be ignored since they may be presumed to be due to short-lived echoes

21. Z third component of h'f trace for layer is observed

For nearly all purposes enough symbols have been provided to make it unnecessary to leave any blank spaces in the monthly tabulations of hourly values. In the event that no symbol should be found to be entirely satisfactory a suitable footnote should be given. Blank spaces in the tabulation sheets will therefore be taken to indicate that no observation was scheduled at the given hour (note the exception contained in 15 above).

It should be noted that many occasions will arise when more than one letter symbol is appropriate to describe the circumstances of a particular observation. In these cases the most important symbol should be placed first. The use of more than one symbol should be held to a minimum.

Notes on the Use of the Descriptive Symbols:

1. The following descriptive symbols are used only in place of an observed numerical value:

C, D, E, G, M, N, Q, T, and W

2. The following descriptive symbols may be used either in place of, or to qualify an observed numerical value:

A, B, F, L, P, and S

3. The following descriptive symbols may be used only to qualify an observed numerical value:

H, J, K, V, Y, and Z

4. Certain of the descriptive symbols when used in place of an observed numerical value have the same force as an actual number when medians are taken, and should therefore be included in the median count in the manner made appropriate by their definitions. It should be noted, however, that if half or more of the observations are represented by these symbols, it may be found that the median can only be indicated as greater than or less than the numerical value of the limitation represented. These symbols are:

D, E, G, and when it replaces a height characteristic, W

5. When an observed numerical value has been replaced with certain of the descriptive symbols, it is frequently permissible to enter an interpolated value (See discussion of interpolation practice in Annex 3). Such symbols, when they qualify the interpolated value, are:

A, B, C, F, L, M, N, P, S, and T

6. When an observed numerical value is indicated as doubtful by the use of parentheses, the reason for doubt should always be indicated. The following descriptive symbols are often used to provide the explanation:

A, B, F, H, J, K, L, P, and S

ANNEX 5

Median Values, Median Counts, Conventions for Determination of Median Values of Ionospheric Characteristics

1. Definitions

a) For a set consisting of an odd number of numerical values, the median value is the middle value of the set when its members are arranged in order of size.

b) For a set consisting of an even number of numerical values, the median value is the arithmetic mean of the two middle values of the set when its members are arranged in order of size.

c) For a set of numerical values, the median count is the number of numerical values in the set.

2. Conventions

a) Rounding off. A median value found according to b) above should contain no more significant places than an individual member of the set. Therefore, rounding off, for example, to the nearest even digit in the last place may at times be necessary.

b) Use of Certain Descriptive Letter Symbols as Numerical Values for Purposes of Finding a Median Value. This matter is discussed in Annex 4 under note 4 on the usage of the descriptive symbols. The letter symbols which have the force of numerical values are: D, E, G, and when it replaces a height characteristic, W.

c) Hourly measurements which can be recorded only as greater than or less than some specified limiting value (i.e. involving use of symbols 3 or 4 of Annex 3) may only under the following circumstances be used in the determination of median values:

case 1) when the true value is greater than a specified limiting value (symbol 3 of Annex 3) which is itself greater than the median found from consideration of the remaining values

case 2) when the true value is less than a specified limiting value (symbol 4 of Annex 3) which is itself less than the median found from consideration of the remaining values

d) Doubtfulness of Monthly Median Values. The degree of doubtfulness of a monthly median value is best measured by the number of values on which the median is based. These numbers ought to be published or indicated together with the median values.

* * * *

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF2 | 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	3.2 F	[3.0] C	2.9	3.4	3.3	2.6 J	2.0	3.7 J	7.0 J	7.7 J F	8.1 P	8.1 J F	7.2	6.8	6.3	5.9	5.6	3.1	A	A	3.0	3.3	3.4	3.0 F
2	2.7 F	2.7 F	2.9	3.0	3.0	2.9	3.1	3.2	5.2	8.1 S	8.0	9.8	7.5	7.3	6.8	6.4	5.5	5.7 H	5.2	A	BF	BF	2.7 F	F
3	(3.0) Z F	BF	3.8 H	2.6	2.3 F V	1.8 F	1.9	4.1	6.3 H	8.0 P	8.0 J	8.4 J	7.0	6.6	5.6	5.3	6.5	4.7	4.2	2.9	1.8	2.8 F	3.3 F	3.0 F
4	3.3	B	3.6	3.7	3.4 F	3.2	2.9 F	4.0	6.5	7.7	8.4	8.0 S	6.9	6.8 S	6.1	5.5	4.9	4.5	4.4	2.6	2.7	2.5	2.8	3.1
5	3.0	2.6	2.9	3.0	3.0	2.1 F	2.0	3.7 J	6.4	8.9	8.1 S	7.3	7.0	6.6	6.5	6.0 J	5.0	3.7	3.5	2.9	2.6 F H	3.0 F	3.1 F	3.2 F
6	[3.2] C	3.1 F V	2.6	2.9	2.8	2.9	3.0	4.6	6.9	8.7	B	8.5	7.1	6.6	6.3	6.0	5.3	5.3	4.7	3.5	3.3	3.4 J E	3.5 F	3.2 J F
7	3.5 W F	3.4	3.1 F	3.8	2.7 F	2.9 F	2.7 F	4.5 H	6.6	7.0 J	S	7.7	6.8	7.6	6.5	5.6	5.1	4.2 J H	4.1 J	3.5	(2.7) Z	3.8 F H	3.0	4.1 F
8	3.8 F	3.6 F	3.5 F	3.6	3.5	3.4	2.9	3.7	7.4 P	8.2 J	(9.0) P	8.6 J	6.7	6.4	6.4 J	5.9 J	5.3 J	5.0	(3.6) Z	3.0 F	3.0	3.3	3.2	2.6
9	2.7	2.8	A	2.6	A	A	A	A	6.4	7.1	7.4	7.4	7.7	6.6	6.7	7.0	4.4	4.1	A	A	A	2.7	3.2	2.9
10	3.1	3.4	2.6	2.6	3.1	2.5	3.3	4.8	5.9	C	C	C	C	C	C	C	4.7	4.9	4.5	A	2.3	2.7 J E	2.7 F	2.8 F
11	3.0	2.8	2.9	2.5	2.6 F	2.8 F	2.9 F	A	5.9	(7.6) P S	7.2	8.9	9.6	B	S	C	6.6	4.9	4.7	4.8	4.5	4.4	4.3	4.9
12	4.9	4.9	4.5	4.8	4.6	4.0	2.7	5.6	6.2	7.1	BS	8.7	7.4	7.3	7.4	6.8	6.1	4.4	3.5	2.7	2.7	2.7	2.8 Z	2.9
13	3.6	3.1	3.3 Z	3.5	3.0	3.1	3.4	4.1	6.3	8.8 H	8.2 J S	10.3	[9.2] C	8.2 J S	7.7	6.3	5.1	4.2	3.7 H	2.7	2.3 J	A	2.7	3.0
14	2.8	3.0	2.9	3.0	3.5	3.1	1.9	3.7 J	6.3	7.1	7.4	7.3	7.5 J S	7.5	7.2	6.3	4.9	4.7	4.2 H	3.4	A	A	2.6	3.0
15	3.0	2.9	3.2	3.1	3.2	2.9	2.2	A	6.1	7.0	7.6	8.3	7.2	7.4	7.5	5.9	4.7	4.7	2.7	2.4 J	2.1	2.7	3.0	3.0
16	3.1	2.9	3.0	3.0	2.8 F	2.5	1.8	3.4	5.5	7.2	[7.4] B J	7.6	7.6	7.8 P	(7.0) J F	6.4	5.0	4.3	4.3 J S	4.5	3.9	3.3	4.2 J F	4.5
17	4.5 J H	4.2 F	3.4 V F	3.4 F	(3.8) J F	3.6 F	3.2 F	3.5	6.5	6.9	7.5 J	9.3	6.7 Z	7.1	6.6	6.0	5.7	4.7	3.0	3.0	2.9	2.9 Z	2.6	2.8
18	3.4	3.3 S	3.5 F	3.4 J F	3.9 J F	3.9 J F	4.2 F H	4.1 J F	5.6	6.4	7.1 S	7.1	7.1	7.2	BS	7.2	4.0	[3.7] S	3.4	3.2	2.7 J F	2.8 F	3.5 J F	3.6
19	3.5 F	3.9 F	3.1	3.4 J F	4.4 J F H	3.3	3.3 F	4.2 J F	5.4 J	6.1	6.4 J	6.8	7.2	6.8	6.3	6.4	4.4	2.7	2.9	3.5 J	3.4	3.1	3.2 J F	3.5 F
20	3.6 J F	3.6 B	3.4	3.4	3.2 Z	3.1 J H	2.6 H	3.2	6.4	7.6 P	7.4 J S	7.2	7.1	8.1	6.8	6.0	5.4	4.3	3.8	3.7	3.0	2.9	3.5	3.0
21	2.9 F	3.6 J F	3.6 J F	3.8	5.1 F	2.8 F	1.9	3.4	5.8	6.6	7.1	7.5	7.2	7.2	7.2	6.1	5.4	4.2 H	3.1	3.2	2.7	2.4	(2.6) F A	3.1 Z
22	2.9 Z	3.2	3.2	3.2 F	3.8 J F	4.1 J F	1.9 F	4.3	6.3	7.2	8.2 J	S	8.8 S	7.2	7.2 F	7.3	C	4.3	4.1 H	3.6	(3.2) B F	3.7 H F	(3.2) F	BF
23	BF	3.2 J F	3.2 J F	3.6 F	3.3 F Z	2.6	3.1 Z	4.0	6.9	8.2	9.0 J S	(8.9) P	7.6 H	7.1 P	8.5	SH	6.6	4.7	4.3	4.2	3.3 H	4.3 J H	4.2	4.2 F H
24	3.5 J H	4.2 V	3.0 F Z	3.5 F	4.9 F H	4.5 F	3.0	5.2	7.2	7.0	7.4	7.4	7.5	7.4	7.7	7.8	6.1	5.0	5.5	3.3	3.2	3.8	3.3	3.2
25	3.8	3.3	3.2	3.3	3.8	3.5	3.5	4.3 V	6.2 H	7.7	7.0	7.5	7.1	7.2	7.0	6.3	6.4	5.2 H	4.3	A	3.1	3.5	4.4 F	4.0 J H
26	4.1 J F	3.7 F	3.7 Z	3.1 F	3.4 F	3.2 F	3.5 F	5.0	6.2	7.5 S	8.5	B	7.3	7.5 J	7.8	6.9	6.1	(5.6) P	4.7	3.2	3.3	3.2	3.4	3.0
27	3.8	3.6	3.4	3.6	3.3	3.2	2.5	5.1	6.4	6.9	7.2 H	7.9	8.2	9.0	8.9 H	8.6	6.8	5.9 H	4.6	4.0	4.1	4.4	4.7	4.5
28	4.4	4.3	5.0 H	5.2	4.8	4.7	4.4 V F	6.6	7.8	8.5	B	C	(8.1) J S	7.8	C	7.1	6.7	6.6	5.1	4.2	4.0	4.2	4.4 J F	4.3 J F
29	5.0 J F	3.5 H	3.8 J H	3.5	3.1 H	2.8	2.5	5.2	7.7 H	8.9	8.6	B	8.6	8.9	[8.2] S	7.4	6.7	6.4	4.9	4.1	3.5	3.7	3.5	4.0
30	4.3 F	4.1	4.0	3.5	3.3	3.2	2.6	5.0	7.2	8.0	B	9.0	10.0	8.9	8.1	7.5	6.5	4.4	4.5 H	4.8 H	3.1	3.5 F	3.1	3.2 Z
31	3.6 Z	3.9	3.6	3.7 H	3.7	3.7	3.8	5.8	7.1 F	7.3	9.9 J H	8.6	9.5	[8.8] C	8.2 J	(8.0) P	10.1	8.6 H	6.0 H	3.5	3.7	3.9 H	2.9	3.9 H
Mean Value	3.5	3.4	3.4	3.4	3.5	3.2	2.8	4.4	6.5	7.6	7.9	8.2	7.7	7.4	7.1	6.6	5.8	4.8	4.2	3.5	3.1	3.3	3.3	3.4
Median Value	3.4	3.4	3.2	3.4	3.3	3.1	2.9	4.2	6.4	7.6	7.6	8.0	7.4	7.3	7.0	6.4	5.4	4.7	4.3	3.4	3.0	3.3	3.2	3.2
Count	30	29	30	31	30	30	30	28	31	30	25	26	30	29	27	28	30	31	29	26	28	28	31	29

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | f_0F2 | 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	350	(340)	330	300	340	A	340	(320)	(310)	(280)	250	(240)	260	270	250	290	280	390	A	A	A	320	290	400
2	320	360	310	280	290	260	290	320	260	310	300	280	280	300	300	310	300	280	290	A	BF	BF	310	F
3	(370)	BF	300	230	350	300	380	320	280	290	(300)	(280)	290	260	240	260	290	270	270	280	300	350	350	410
4	380	B	340	290	280	340	340	330	240	280	280	270	280	260	270	260	280	300	280	270	330	330	340	360
5	350	360	380	350	360	330	350	(300)	300	290	280	260	260	270	260	(280)	260	300	280	290	320	300	360	340
6	(340)	340	310	310	290	310	270	290	270	300	B	290	270	250	260	270	290	290	300	300	330	(370)	340	(360)
7	(440)	400	340	310	370	330	360	300	290	(250)	S	240	290	300	290	240	270	(290)	(290)	280	(370)	370	450	390
8	400	340	340	310	340	350	340	300	240	(270)	(260)	(270)	270	270	(290)	(290)	(270)	280	(290)	330	370	320	320	330
9	360	420	A	A	A	A	A	A	260	280	260	260	260	290	270	240	270	AF	A	A	A	(430)	420	290
10	360	320	320	290	400	390	340	270	230	C	C	C	C	C	C	C	250	310	270	A	410	(410)	370	400
11	380	380	380	340	450	400	250	A	270	(270)	300	290	290	B	S	C	250	320	300	320	310	330	330	320
12	380	340	370	380	340	330	330	290	270	270	BS	270	290	280	290	280	290	280	260	280	340	340	320	330
13	310	350	330	290	330	330	300	300	270	300	(270)	300	(300)	(290)	250	250	270	290	270	270	(300)	A	A	330
14	360	370	380	350	320	310	420	(280)	(290)	240	260	270	(260)	300	310	230	240	300	270	A	A	A	400	370
15	400	320	320	320	330	290	260	A	270	280	280	280	300	310	250	260	260	280	280	(300)	280	400	400	380
16	340	290	300	260	270	270	250	280	22	290	B	260	290	280	(270)	310	280	330	(270)	290	310	350	(330)	360
17	(400)	390	360	330	(330)	320	250	270	280	270	(280)	300	240	270	260	310	290	270	300	300	340	400	400	370
18	340	350	320	(330)	(330)	(330)	350	(270)	270	290	270	250	280	290	BS	270	240	[260]	290	300	(330)	370	(340)	370
19	320	340	(360)	(350)	(300)	320	330	(280)	(270)	240	250	280	270	280	290	250	260	250	380	(300)	310	360	(340)	410
20	(350)	330	340	340	280	(300)	310	300	280	300	(260)	270	250	250	260	250	260	300	310	320	330	340	330	320
21	360	(400)	(400)	370	280	250	330	330	260	260	280	270	260	260	250	240	250	300	290	290	260	290	(350)	340
22	350	400	420	380	(370)	(340)	280	300	310	290	(270)	S	290	260	290	250	C	(400)	350	280	(350)	410	(350)	BF
23	BF	(430)	(390)	400	360	340	350	320	310	270	(260)	(260)	280	290	300	SH	230	290	290	300	320	(340)	410	410
24	(340)	360	320	350	300	320	270	260	250	270	290	290	290	300	290	270	290	290	270	A	340	340	390	410
25	400	360	310	310	310	320	340	320	300	270	250	270	250	290	260	260	280	270	250	A	370	350	370	(400)
26	(400)	350	320	340	320	340	300	270	250	280	270	B	280	(290)	290	280	300	(300)	280	(330)	300	360	(380)	(330)
27	350	390	390	360	390	400	300	290	280	280	300	280	300	320	310	300	260	300	300	350	340	410	380	360
28	360	350	390	340	420	440	(330)	290	280	300	B	C	(270)	280	C	250	250	300	270	300	320	320	(400)	(410)
29	(380)	390	(370)	370	380	360	310	310	290	240	260	B	260	270	[260]	260	310	300	290	270	330	350	350	380
30	410	410	380	350	440	390	350	290	280	280	B	290	300	280	270	280	280	270	300	310	290	340	320	350
31	340	380	380	430	420	400	250	300	250	250	(300)	290	310	(300)	(300)	(310)	340	(310)	270	300	320	350	350	340
Mean Value	360	350	350	330	340	340	310	300	270	280	270	270	280	280	280	270	270	300	290	300	330	360	360	350
Median Value	360	360	340	340	340	330	330	300	270	280	270	270	280	280	270	260	270	300	290	300	330	350	350	360
Count	30	29	30	30	30	29	30	28	31	30	24	26	30	29	27	28	30	30	29	24	27	28	30	29

f_0F2

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | 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	300A	[300]S	300	260	290	A	300	300	270	270	250	230	260	230	230	250	230	390F	A	A	A	280	240	330F
2	320F	310	280	260	260	230	270	310	250	270	260	260	260	270	260	250	240	220FH	220F	A	AF	AF	290F	290F
3	320F	320FA	210H	200	280	240	370	280F	240H	250	270	250	260	250	210	240	260	230	210	230	260	300	300	310A
4	300	310	270	230	220	260	300	300	230	270	250	230	240	240	250	220	220	240	250	250	300	320	320	320
5	300	310	320	310	310	280	310	260	260	250	250	250	250	250	240	250	220	230FA	210	230	300H	220F	300	300
6	[310]C	320	280	250	280	280	260	250	250	240	240	250	240	230	250	250	240	240	230	250	260	310F	270	330F
7	330H	350	310	280	350	330A	300	270H	280	240	230	220	230	240	240	230	250	250H	290	250	A	310H	350	300
8	300	310	300A	230	280	300	290	230	230	260	230	250	210	240	260	270	240	230	(230)F	320F	320	290	270	300
9	330	410A	A	390A	A	A	A	A	250	230	250	250	230	290	230	210	230	280FA	A	(280)A	260F	390A	320	270
10	300	280	270	290A	300	330	300	250	220	C	C	C	C	C	C	C	230	240	240	A	350	380F	350	350
11	320	290	300	260	320	320	220	A	230	230	240	260	270	230	220	C	220	250	240	290	270	280	290	280
12	270	280	300	300	280	230	260	260	230	230	270	250	250	250	270	250	220	240	230	250	310	310	310	310
13	290	270	280	270	260	240	260	230	220A	250H	250	250	[250]C	250	240	220	220	220	230H	230	270	A	A	300
14	320	310	320	290	260	240	390	270	260	210	220	220	240	280	280	220	210	240	210H	A	A	A	330	290
15	300	310	300	270	280	250	250	230A	230A	250	250	230	270	250	230	210	220	220	230	240	240	320	310	300
16	300	290	250	220	240	220	250	250	220	220	230	220	270	240	230	240	230	260	240	250	240	280	290	290
17	310F	300F	300	280	280	260	230	210	220	240	270	260	230	250	230	260	230	220	280	300	270	340	330	330
18	300F	280	290	290	290	280	250H	240	210	240	240	250	270	280	230	270	220	[220]C	230	230	280	290	300F	290
19	280	270	300	300F	230FH	220	290F	280F	220	230	250	280	270	250	280	250	220A	220	280	260	270	290	290F	340
20	300F	300	300	270	220	250H	280H	290	260	260	210	210	220	230	230	220	220	260	280	290	290	300	300	310
21	310F	310F	300	270	220	200	310	290	230	240	240	240	260	250	230	230	220	220H	240	240	250	280	310	290
22	310	320	350	320	310	220	B	300	310	280	250	210	270	240A	290	250	C	250	250H	230	300	330H	320F	330F
23	340F	360F	320	300	290	340	300	280	250	250	220	220	260H	270	240	230H	220	220	250	230	240B	290H	290	280H
24	300	290	310F	320	280H	290	260	250	220	250	250	260	270	250	270	220	230	230	230	A	280	290	300	390
25	290	300	290	300	250	240	250	240	250H	240	240	250	240	240	250	220	240	220HA	250	250	290	270	300	350H
26	320	300	300	300	300	280	260	220	220	240	240	230	260	270	280	240	240	230	220	210	270	290	290	280
27	290	290	310	310	330	340	290	220	240	240	250H	270	280	290	260H	280	240	210H	220	290	290	310	300	310
28	310	310A	310H	290	290	290	290	280	260	240	250	250	250	240	260	240	220	230	230	240	260	290	310	340
29	320	280H	260H	270	250H	280	220	280	230H	(220)A	250	270	240	250	240	230	280	230	250	250	290	290	290	310
30	320	300	290	280	310	290	290	270	220	250	250	230	260	250	240	250	240	220	250H	270H	280	300	300	310
31	290	290	300	330H	350	340	220	290	240	250	280H	260	280	280	270	280	280	230H	220H	300	320A	320HA	320A	300H
Mean Value	310	310	290	280	280	270	280	260	240	240	250	240	250	250	250	240	230	240	240	260	280	300	300	310
Median Value	300	300	300	280	280	280	280	270	230	240	250	250	260	250	240	240	230	230	230	250	280	300	300	310
Count	31	31	30	31	30	29	29	29	31	30	30	30	30	30	30	29	30	31	29	26	27	28	30	31

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 3

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF1 | 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								Q	Q	Q	L	L	L	Q	Q	Q	Q							
2								Q	Q	L	Q	Q	Q	Q	Q	Q	Q							
3								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
4								Q	Q	L	Q	Q	Q	Q	Q	Q	Q							
5								Q	Q	L	L	Q	Q	Q	Q	Q	Q							
6								Q	Q	Q	Q	A	Q	Q	Q	Q	Q							
7								Q	L	Q	Q	Q	Q	Q	Q	Q	Q							
8								Q	Q	L	L	L	Q	Q	Q	Q	Q							
9								A	A	A	L	L	Q	4.0[J]	Q	Q	Q							
10								Q	Q	C	C	C	C	C	C	C	Q							
11								A	Q	Q	B	B	B	Q	Q	C	Q							
12								Q	Q	Q	4.5	Q	Q	Q	L	Q	Q							
13								Q	Q	Q	S	Q	C	Q	Q	Q	Q							
14								A	A	Q	Q	Q	Q	L	Q	Q	Q							
15								Q	Q	Q	Q	Q	L	Q	L	Q	Q							
16								Q	Q	Q	Q	Q	L	Q	Q	Q	Q							
17								Q	Q	Q	L	L	Q	L	Q	Q	Q							
18								Q	Q	Q	Q	Q	Q	L	Q	L	Q							
19								3.0	Q	4.4	L	L	5.0	L	L	Q	Q							
20								Q	Q	Q	Q	Q	Q	L	Q	Q	Q							
21								Q	Q	L	Q	Q	L	L	Q	Q	Q							
22								Q	L	Q	Q	B	L	Q	Q	L	C							
23								Q	Q	Q	Q	Q	L	L	Q	Q	Q							
24								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
25								Q	Q	L	Q	Q	Q	Q	Q	Q	Q							
26								Q	Q	Q	Q	Q	Q	L	Q	Q	Q							
27								Q	Q	Q	Q	Q	B	B	L	L	Q							
28								L	L	L	L	Q	4.1[B]	Q	L	Q	Q							
29								2.9	A	A	L	B	Q	Q	Q	Q	L							
30								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
31								L	L	Q	L	Q	L	L	L	L	Q							
Mean Value								3.0		4.4	4.5		4.9	4.0										
Median Value								—		—	—		—	—										
Count								2		1	1		2	1										

foF1

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'F1 | 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								Q	Q	Q	260	220	220	Q	Q	Q	Q							
2								Q	Q	250	Q	Q	Q	Q	Q	Q	Q							
3								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
4								Q	Q	240	Q	Q	Q	Q	Q	Q	Q							
5								Q	Q	220	220	Q	Q	Q	Q	Q	Q							
6								Q	Q	Q	Q	A	Q	Q	Q	Q	Q							
7								Q	230	Q	Q	Q	Q	Q	Q	Q	Q							
8								Q	Q	240	210	230	Q	Q	Q	Q	Q							
9								A	A	A	220[A]	230	Q	240[A]	Q	Q	Q							
10								Q	Q	C	C	C	C	C	C	C	Q							
11								A	Q	Q	B	B	B	Q	Q	C	Q							
12								Q	Q	Q	250	Q	Q	Q	240	Q	Q							
13								Q	Q	Q	5	Q	C	Q	Q	Q	Q							
14								A	A	Q	Q	Q	Q	220	Q	Q	Q							
15								Q	Q	Q	Q	Q	220	Q	200	Q	Q							
16								Q	Q	Q	Q	Q	220	Q	Q	Q	Q							
17								Q	Q	Q	230	230	Q	210	Q	Q	Q							
18								Q	Q	Q	Q	Q	Q	260	Q	250	Q							
19								230	Q	210	220	220	220	230	250	Q	Q							
20								Q	Q	Q	Q	Q	Q	220	Q	Q	Q							
21								Q	Q	220	Q	Q	230	230	Q	Q	Q							
22								Q	290	Q	Q	B	250	Q	Q	200	C							
23								Q	Q	Q	Q	Q	230	220	Q	Q	Q							
24								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
25								Q	Q	220	Q	Q	Q	Q	Q	Q	Q							
26								Q	Q	Q	Q	Q	Q	260[B]	Q	Q	Q							
27								Q	Q	Q	Q	Q	B	B	270	250	Q							
28								220	210	220	220[A]	Q	250	Q	A	Q	Q							
29								230	A	A	210	B	Q	Q	Q	Q	230							
30								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q							
31								250	230[A]	Q	250	Q	260	260	250	240	Q							
Mean Value								230	240	230	230	230	230	240	240	240	230							
Median Value								–	–	220	220	230	230	230	250	–								
Count								4	4	8	10	5	9	10	5	4								

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foE | 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								1.5 H	2.4	2.4	2.7	B	B	(2.8) B	2.6	2.1	1.6							
2								B	(2.2) B	2.3	2.9	B	B	B	B	B	A							
3								B	1.4	2.6	(2.9) A	A	B	(2.8) B	2.5	2.4	B							
4								B	(2.2) A	2.5	2.8	(3.3) A	3.2 B	(2.5) B	2.5	2.0 B	1.8							
5								A	A	2.5	2.6	2.9	B	2.9 H	2.6	(2.5) B	A							
6								B	1.7 J	2.1	A	A	A	A	A	A	1.7							
7								B	1.9 J	(2.7) A	3.1	3.0	2.9 F	2.8 B	2.5	2.1 A	B							
8								A	B	B	2.7	2.7 B	2.8	(2.8) A	(2.8) A	A	A							
9								A	A	A	A	A	A	A	A	A	B							
10								A	B	C	C	C	C	C	C	C	1.7							
11								A	1.8	B	B	B	B	B	B	C	1.7							
12								A	1.9	2.3	2.5	B	B	B	B	B	1.8							
13								B	A	B	S	B	C	B	B	B	B							
14								A	A	F	2.6	2.7 F	2.9 F	2.8 F	2.4 F	2.1	1.5 F							
15								A	A	2.4	A	2.7	2.7	B	B	2.0	1.6							
16								B	A	2.4	B	2.8 B	(2.9) B	(3.1) B	2.4	2.0	1.9 B							
17								B	(1.7) B	A	2.8	(2.8) B	2.8	2.8	2.6	1.9	1.6							
18								1.7	2.4	2.6	2.7	2.7	2.4	2.5	B	2.4 B	B							
19								B	1.8 B	2.6	2.8	A	A	3.2	2.7	2.3 J	A							
20								B	1.9	2.4 A	A	2.8 B	3.0	2.7	2.5	2.1	1.7							
21								1.2	1.9	2.4	2.7	2.9	3.0	3.0	2.8	A	1.7							
22								1.5	2.0	(2.4) A	2.8	A	2.7	A	B	2.6	C							
23								A	1.8	2.4	(2.8) B	B	3.1 B	3.0 B	2.9 B	2.1	1.8 A							
24								B	A	2.4	2.7	S	S	S	S	S	2.1							
25								B	A	B	BS	BS	BS	BS	BS	BS	B							
26								A	2.0	S	B	B	B	B	B	B	2.3							
27								1.6	2.3	B	B	B	B	B	B	B	B							
28								A	2.1 J	2.7	B	B	B	B	A	2.4	2.1							
29								1.6	(2.0) A	(2.6) A	2.9	2.9 B	2.9	2.9	2.9	2.4	1.9							
30								1.3 J A	(2.0) A	2.6 J	3.0	3.0	3.1	3.0	2.8	2.3 J	2.1							
31								1.6 A	A	A	2.7	B	B	B	B	2.3	2.0							
Mean Value								1.5	2.0	2.5	2.8	2.9	2.9	2.9	2.6	2.2	1.8							
Median Value								1.6	2.0	2.4	2.8	2.8	2.9	2.8	2.6	2.2	1.8							
Count								8	20	20	19	13	14	16	15	18	19							

foE

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 6

19

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fʻE | 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								110^{H}	110	110	110	100	110	110	110	110	110							
2								B	B	130	110	110	B	B	B	B	A							
3								B	120^{B}	110	110	110	B	B	100	110	B							
4								B	100	100	100	100	100	100	100	B	100							
5								A	A	110	110	120	100	120^{H}	110	100	A							
6								B	100	100	A	A	A	A	A	A	100							
7								B	120	110	110	110	100	110	110	A	B							
8								A	B	110	110	110	110	100	A	110	A							
9								A	A	A	A	A	A	100	A	A	B							
10								A	B	C	C	C	C	C	C	C	B							
11								A	140	100	B	110	B	110	130	C	100							
12								A	120	100	100	B	B	B	B	B	100							
13								B	A	B	S	B	C	120	B	90	B							
14								A	A	110	110	110	110	110	110	110	110							
15								A	A	110	A	120	110	110	100	110	110							
16								B	120	100	100	100	100	100	100	110	110							
17								B	B	A	110	110	110	110	110	110	110							
18								100	110	120	110	110	110	110	110	130	120							
19								B	B	100	100	130	130	100	110	110	A							
20								B	B	110	110	100	100^{A}	110	110	110	B							
21								B	130	140^{B}	120	120	120	120	120	A	120							
22								B	B	130	100	130	100	A	120	B	C							
23								A	110	110	110	B	B	110	110	110	A							
24								B	110	110	110	S	S	S	S	S	110							
25								B	A	B	BS	BS	BS	BS	BS	BS	B							
26								A	100	S	B	B	B	B	B	B	110							
27								110	110	100	B	B	B	B	B	B	120							
28								A	100	120	100	100	100	100	A	100	120							
29								120^{B}	100	100	110	110	110	110	120	110	110							
30								120	110	110	110	110	110	120	110	120	120							
31								A	A	A	110	110	B	110	100	130	100							
Mean Value								110	110	110	110	110	110	110	110	110	110							
Median Value								110	110	110	110	110	110	110	110	110	110							
Count								5	17	24	22	21	17	21	19	17	18							

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fEs | 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	1.2	C	G	G	G	4.1	2.2	G	G	G	G	G	G	G	G	G	G	5.0	4.0	3.7	3.7	1.2	1.3	1.2
2	G	G	G	2.3	2.2	G	G	B	B	G	G	B	B	B	B	B	2.4	3.2	3.4	4.1	4.4$^{Y}_{F}$	2.6^{F}	G	G
3	1.4^{F}	1.6^{B}	G	G	G	G	2.8$^{B}_{F}$	3.0	4.4	G	G	G	B	B	G	G	B	G	2.6	2.2	2.2	G	2.0	3.2
4	2.2	G	1.6	1.3	G	G	2.0	3.5	G	G	G	G	G	G	G	B	G	G	G	G	2.1	2.4	1.8	3.4
5	1.8	2.1	1.6	1.8	1.8	G	G	2.2	2.8	G	G	G	G	G	G	G	3.0	3.2$^{B}_{Y}$	2.8	2.2	2.1	2.4	2.0	G
6	C	2.9	1.5	G	G	G	G	G	3.8	3.6^{Y}	4.9	8.2	3.4	4.4	3.4	2.9	G	2.6	1.8	1.9	2.4	2.4	2.6	3.4
7	3.2	3.2	2.4	2.2	(3.8)^{B}	3.7	G	2.4	2.9^{F}	G	G	G	G	G	G	2.7	3.3	1.6	4.3	3.1	2.7	3.3	G	G
8	2.8	3.0	3.1	1.4	1.3	1.3	G	2.1^{Y}	G	G	G	G	G	G	3.8	G	2.6	3.4	5.8	4.8	3.0	2.4	2.4	3.0
9	3.8	3.1	3.9	3.5	4.9	5.8	7.0	7.8	7.4	7.2	4.9	4.5	3.7	3.4	3.7	3.5	5.3	4.2	5.2	5.6	4.2	2.5	2.4	1.7
10	3.2	3.2	2.9	3.5	2.0	3.5	3.7	2.5	3.4^{B}	C	C	C	C	C	C	C	G	G	G	4.7	2.0	G	G	G
11	G	2.0	2.0	B	G	G	2.0	6.2	G	B	B	B	B	B	B	C	2.6	G	3.2	3.6	2.1	2.0	2.1	1.6
12	1.6	2.8	1.6	1.4	1.4	G	G	2.8	G	G	G	B	B	B	B	B	G	G	G	2.8	2.8	1.8	2.7	G
13	G	G	G	G	G	G	B	3.0	3.5	6.0	S	B	C	B	B	B	2.4	G	G	G	B	3.4	3.0	2.0
14	2.4	1.8	1.6	G	1.4	G	G	3.6	5.1	G	G	G	G	G	G	G	G	1.2	G	3.0	3.4	4.7	3.0	5.0
15	3.0	2.7	2.2	1.3	G	1.8	2.8	5.3	5.7	G	4.8	G	G	G	G	G	G	2.4	2.0	G	G	2.1	G	G
16	G	2.0	1.6	2.4	G	1.2	G	G	G	G	G	G	G	G	G	G	2.7^{Y}	G	G	1.9	1.9	G	G	2.6
17	2.1	1.4	2.1	G	G	G	2.9	1.9	G	5.2	G	G	G	G	G	G	G	G	2.0	3.5	G	G	G	G
18	1.8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	C	G	G	G	G	G	2.2
19	G	G	G	G	G	G	G	B	B	C	G	G	G	G	G	3.3^{Y}	2.4	1.9	G	G	G	G	G	G
20	G	G	G	G	G	G	G	G	G	G	3.4	3.7^{Y}	3.7	G	G	G	G	2.1	2.2	G	G	G	G	G
21	G	G	G	G	G	G	1.2	G	G	G	G	G	G	G	G	3.4	G	G	G	G	G	G	G	G
22	1.7	G	G	G	G	G	G	G	G	G	G	G	G	4.7	G	G	C	G	G	2.7	G	G	G	G
23	G	G	G	G	G	G	G	2.6	G	G	G	B	B	G	G	G	2.8	1.8	2.4	G	G	G	G·	G
24	G	G	G	G	G	G	G	3.9	G	G	B	S	S	B	S	S	G	3.2	G	4.0	G	G	G	G
25	G	G	G	G	G	G	G	1.5	2.5	BS	BS	BS	BS	BS	BS	BS	4.5	3.0	4.8	5.3	3.0	G	G	G
26	G	G	1.4	3.5	3.3	2.7	G	2.1	G	S	B	B	B	B	B	B	G	2.0^{B}	1.8	G	G	G	G	G
27	G	G	G	G	G	G	2.5	G	3.8^{Y}	B	B	B	B	B	B	B	B	G	2.0	2.8	1.8	4.4	2.9	2.4
28	2.8	3.0	G	G	G	1.4	1.5	2.0	G	3.2^{Y}	3.0^{B}	B	B	B	4.5^{Y}	G	G	2.0	G	G	2.4	2.0	2.4	2.0
29	2.5	1.3	G	G	G	G	G	G	4.3	4.6	G	B	B	B	G	G	3.3	2.4	G	G	G	2.2	1.7	3.2
30	2.0	2.4	G	G	G	G	2.4	2.8	3.2	G	G	G	G	G	G	G	G	G	G·	2.4	G	2.8	2.9	2.7
31	2.3	1.6	1.3	2.4	1.8	1.4	G	3.0^{Y}	4.4	4.0	G	B	B	B	G	G	G	2.1	2.2	3.2	3.7^{B}	2.4	2.0	G
Mean Value	2.3	2.4	2.1	2.3	2.4	2.7	2.8	3.2	4.1	4.5	4.2	5.5	3.6	4.2	3.9	3.2	3.1	2.6	3.1	3.4	2.8	2.6	2.3	2.6
Median Value	1.6	1.5	G	G	G	G	G	2.2	G	G	G	G	G	G	G	G	G	1.8	1.8	2.4	2.0	2.0	1.3	G
Count	30	30	31	30	31	31	30	29	29	27	24	18	17	18	22	21	28	30	31	31	30	31	31	31

fEs

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 8

21

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | (M3000)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	2.8	(2.9)	3.0	3.2	3.0	A	3.0	(3.0)	(3.1)	(3.2)	3.7	(3.5)	3.4	3.3	3.4	3.1	3.2	2.8	A	A	3.0	3.0	3.2	2.6
2	2.8	2.9	3.0	3.3	3.3	3.4	3.2	3.2	3.4	3.1	3.0	3.2	3.3	3.1	3.2	3.0	3.2	3.3	3.2	A	BF	BF	3.1	F
3	(2.9)	BF	3.2	3.7	2.9	3.2	2.9	3.0	3.3	3.2	(3.2)	(3.3)	3.2	3.2	3.4	3.4	3.3	3.3	3.3	3.2	3.1	2.8	2.9	2.7
4	2.7	B	2.9	3.3	3.3	2.9	2.8	3.0	3.5	3.4	3.4	3.3	3.3	3.6	3.4	3.4	3.2	3.1	3.4	3.3	3.0	3.1	3.0	2.8
5	2.8	2.8	2.7	2.8	2.7	3.0	2.9	(3.1)	3.2	3.1	3.2	3.5	3.5	3.3	3.5	(3.2)	3.4	3.3	3.3	3.1	3.0	3.0	2.8	2.9
6	(3.0)	3.0	3.1	3.1	3.3	3.1	3.4	3.2	3.4	3.1	B	3.3	3.3	3.6	3.3	3.2	3.1	3.2	3.1	3.1	3.0	(2.7)	2.9	(2.8)
7	(2.5)	2.7	3.0	3.1	2.9	3.2	2.8	3.1	3.3	(3.5)	S	3.6	3.2	3.2	3.5	3.5	3.3	(3.0)	(3.2)	3.3	(2.9)	2.8	2.5	2.6
8	2.9	2.9	2.9	3.0	2.8	2.8	3.0	3.2	3.7	(3.4)	(3.4)	(3.4)	3.3	3.2	(3.1)	(3.2)	(3.1)	3.4	(3.0)	3.0	2.8	3.1	3.0	3.0
9	2.9	2.5	A	2.8	A	A	A	A	3.2	3.3	3.6	3.5	3.7	3.2	3.4	3.8	3.4	3.2	A	A	A	2.7	2.5	3.2
10	2.8	3.0	3.0	3.4	2.6	2.6	3.0	3.3	3.6	C	C	C	C	C	C	C	3.4	3.1	3.4	A	2.6	(2.4)	2.9	2.7
11	2.7	2.8	2.7	2.9	2.5	2.7	3.4	A	3.3	(3.3)	3.1	3.1	3.3	B	S	C	3.3	3.0	3.1	3.1	3.1	3.0	3.0	3.0
12	2.8	2.9	2.6	2.6	2.8	2.9	2.9	3.2	3.4	3.3	BS	3.4	3.2	3.3	3.2	3.3	3.2	3.1	3.4	3.2	3.0	2.9	3.1	3.1
13	3.2	2.8	3.0	3.2	2.9	2.9	3.3	3.2	3.3	3.3	(3.2)	3.0	[3.2]	(3.3)	3.5	3.5	3.4	3.3	3.4	3.3	(3.1)	A	2.8	3.0
14	2.7	2.8	3.1	2.8	3.1	3.0	2.6	(3.3)	(3.2)	3.5	3.3	3.3	(3.3)	3.3	3.1	3.5	3.5	3.1	3.5	3.1	A	A	2.8	2.7
15	2.5	3.2	3.2	3.1	3.1	3.3	3.5	A	3.5	3.5	3.2	3.2	3.1	3.0	3.4	3.4	3.3	3.1	3.3	(3.2)	3.3	2.7	2.8	2.8
16	2.9	3.4	2.9	3.3	3.2	3.5	3.7	3.2	3.8	3.1	B	3.4	3.2	3.2	(3.2)	3.0	3.2	2.9	(3.3)	3.1	3.0	2.9	(2.9)	2.8
17	(2.6)	2.7	2.8	2.9	(2.8)	3.0	3.4	3.3	3.3	3.3	(3.3)	3.2	3.5	3.3	3.4	3.1	3.2	3.4	3.1	3.2	2.8	3.0	2.7	2.7
18	2.9	2.8	2.9	(3.0)	(2.9)	(2.9)	2.8	(3.3)	3.2	3.3	3.3	3.6	3.4	3.3	BS	3.5	3.5	[3.4]	3.2	3.1	(2.9)	2.7	(2.7)	2.7
19	3.0	3.0	2.9	(2.8)	(3.1)	3.0	3.0	(3.3)	(3.2)	3.6	(3.5)	3.5	3.6	3.4	3.4	3.6	3.5	3.3	2.7	(3.1)	3.0	2.8	(2.9)	2.6
20	(2.8)	2.9	2.9	2.9	3.4	(3.0)	3.0	3.1	3.3	3.2	(3.4)	3.4	3.5	3.4	3.4	3.3	3.3	3.2	3.1	3.1	3.0	3.0	3.0	3.1
21	2.7	(2.5)	(2.5)	2.7	3.2	3.5	3.0	2.9	3.3	3.4	3.3	3.3	3.4	3.5	3.6	3.4	3.3	3.2	3.1	3.3	3.4	3.3	(2.8)	3.1
22	3.0	2.7	2.5	2.8	(2.7)	(2.8)	3.1	3.1	3.2	3.2	(3.4)	S	3.3	3.5	3.3	3.6	C	2.7	2.9	3.2	(2.8)	2.6	(2.9)	BF
23	BF	(2.5)	(2.6)	2.6	2.7	2.8	2.9	3.0	3.2	3.3	(3.4)	(3.3)	3.4	3.2	3.1	SH	3.6	3.1	3.1	3.2	3.0	(2.9)	2.7	2.6
24	(2.9)	2.7	3.1	3.0	3.2	3.1	3.3	3.4	3.6	3.5	3.3	3.2	3.3	3.1	3.2	3.3	3.1	3.2	3.2	A	2.8	2.7	2.7	2.8
25	2.6	2.8	3.1	3.2	3.0	2.9	2.8	3.0	3.2	3.3	3.5	3.3	3.6	3.2	3.5	3.3	3.2	3.4	3.4	A	2.7	2.9	2.7	(2.8)
26	(2.6)	2.9	3.0	2.9	3.0	2.9	3.2	3.3	3.4	3.2	3.4	B	3.3	(3.2)	3.2	3.3	3.1	(3.0)	3.2	2.9	3.2	2.8	2.7	(3.0)
27	2.8	2.6	2.6	2.7	2.6	2.8	3.1	3.1	3.2	3.1	3.3	3.3	3.1	3.0	3.2	3.2	3.3	3.1	3.0	2.8	2.8	2.5	2.7	2.8
28	2.7	2.8	2.7	2.8	2.5	2.5	(2.9)	3.1	3.2	3.2	B	C	(3.3)	3.2	C	3.6	3.5	3.1	3.2	3.1	3.0	3.0	(2.6)	(2.6)
29	(2.7)	2.8	(2.8)	2.8	2.8	2.7	3.1	3.0	3.3	3.4	3.5	B	3.3	3.3	[3.4]	3.4	3.0	3.1	3.2	3.0	3.0	2.8	2.8	2.7
30	2.6	2.6	2.7	2.8	2.4	2.6	2.7	3.1	3.1	3.1	B	3.1	3.1	3.2	3.2	3.3	3.3	3.4	3.3	3.2	3.2	3.0	3.1	3.0
31	2.8	2.6	2.7	2.5	2.6	2.7	3.5	3.1	3.5	3.4	(3.1)	3.1	3.0	[3.1]	(3.2)	(3.1)	2.8	(2.9)	3.3	3.3	3.0	3.0	3.0	2.8
Mean Value	2.8	2.8	2.9	2.9	2.9	3.0	3.1	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.1	3.0	2.9	2.8	2.7
Median Value	2.8	2.8	2.9	2.9	2.9	2.9	3.0	3.1	3.3	3.3	3.3	3.3	3.3	3.2	3.4	3.3	3.3	3.1	3.2	3.1	3.0	2.9	2.8	2.8
Count	30	29	30	31	30	29	30	28	31	30	24	26	30	29	27	28	30	31	29	25	28	28	31	29

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminF | 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	1.4	C	E	1.2	E	A	E	1.6	2.4	2.6	3.0	3.0	3.0	2.8	2.8	2.2	1.7	A	A	A	A	1.6	1.4	1.4^{F}
2	E	1.3	1.5	1.3	1.4	1.3	1.5	1.5	2.2	3.0	2.9	3.6	3.8	3.6	3.6	3.2	1.8	1.6	1.6	A	AF	AF	1.6	1.4^{F}
3	E	AF	E	E	E	E	1.5	1.6	2.4	2.7	2.9	3.2	2.8	2.8	2.9	2.6	2.4	1.4	1.2	1.4	1.2	1.2	1.5	1.6^{A}
4	1.1	1.5	1.2	E	E	E	1.5	A	2.2	3.0	2.8	3.3	3.2	3.0	2.9	2.0	1.8	1.5	1.5	1.6	1.6	1.3	1.6	1.7
5	1.3	1.3	1.2	1.4	1.2	1.1	1.2	1.5	2.2	2.7	2.7	3.8	3.2	3.6	3.5	2.8	A	A	1.3	1.5	1.5	1.2	1.2	E
6	C	E	1.3	E	E	1.3	1.2	1.3	2.5	2.6	A	A	3.4	3.7	3.5	2.6	1.7	1.8	1.3	1.3	1.3	1.4^{F}	1.4	1.4^{F}
7	1.4	1.1	1.1	A	1.1	A	1.4	1.3	2.9^{F}	2.7	3.1	3.0	3.0	2.8	2.5	2.1	A	1.6	A	1.5	A	1.5	1.4	1.4
8	A	1.2	1.3^{A}	E	E	1.2	1.3	1.3	2.5	2.8	2.8	2.7	2.8	2.8	2.8	2.5	A	A	A	A	1.8	1.5	1.6	1.6
9	A	A	A	A	A	A	A	A	A	A	A	3.2	3.5	A	3.1	2.9	A	AF	A	(1.8)^{A}	1.8^{F}	A	1.3	1.5
10	1.2	1.8	1.7	A	E	1.2	1.4	1.5	A	C	C	C	C	C	C	C	1.7	1.5	1.5	A	1.5	1.4	1.4^{F}	1.5
11	1.3	E	E	E	1.2	1.2	1.2	A	2.2	2.9	4.1	4.1	4.2	4.1	4.3	C	2.2	1.3	1.4	A	1.6	1.7	1.3	1.3
12	1.2	1.2	1.1	1.1	1.2	1.1	1.3	1.7	2.1	2.7	2.7	2.3	3.6	3.8	4.1	2.6	1.7	1.5	1.4	1.6	1.3	1.4	1.3	1.4
13	1.2	1.1	1.2	1.4	1.2	1.2	1.4	1.5	A	3.1	4.5^{S}	3.1	[3.6]^{C}	4.2	3.3	2.9	2.1	1.4	1.5	1.4	1.6	A	A	1.5
14	1.6	1.3	1.3	E	1.1	1.2	1.2	A	A	2.5^{F}	2.7	2.8^{F}	2.9^{F}	2.8	2.6^{F}	2.1	1.7^{F}	1.5	1.5	A	A	A	1.2	1.6
15	E	1.3	E	E	E	E	1.1	A	A	2.7	A	2.7	2.8	3.0	2.6	2.3	1.7	1.6	1.2	1.3	1.3	1.5	1.5	1.4
16	1.5	1.6	1.4	1.1	1.2	1.2	1.5	1.5	1.6	2.4	2.9	2.8	2.9	3.1	2.9	2.4	1.9	1.6	1.3	1.3	1.3	E	E	1.3
17	E	E	E	E	E	E	1.5	1.5	2.4	A	2.8	2.8	3.3	2.8	2.6	1.9	1.7	1.2	2.2	A	1.2	1.5	1.4	1.6
18	1.6	1.2	1.2	1.2	1.2	1.3	1.4	2.1	2.5	2.8	3.2	3.3	2.9	3.1	2.9	2.4	1.7	[1.6]^{C}	1.4	1.3	1.3	1.3	1.3	1.3
19	1.3	1.5	1.5	1.5	1.4	1.2	1.3	1.8	1.8	N	2.9	3.0	3.0	N	3.7	3.2	A	1.4	1.2	1.2	1.5	1.5	1.5	1.4
20	1.2^{F}	1.1	E	E	E	E	E	1.4	2.2	2.4	2.6	3.0	3.0	2.8	2.8	2.3	1.9	1.5	1.4	1.3	1.4	1.3	1.2	E
21	1.2^{F}	1.1^{F}	1.1	1.1	1.1	E	1.4	1.4	1.9	2.7	3.1	3.1	3.1	3.1	3.1	2.5	1.8	1.5	1.4	1.5	1.5	1.2	1.2	E
22	1.1	E	E	E	1.1	E	1.5	1.5	2.5	2.4	3.5	4.6	3.2	A	3.1	3.0	C	1.5	1.6	1.5	1.6	1.5	1.5	1.5^{F}
23	1.4^{F}	1.3^{F}	E	E	E	E	E	1.6	2.1	2.5	3.0	3.2	3.1	3.0	3.2	2.8	1.9	1.8	1.5	1.5	1.6	1.4	1.2	1.2
24	E	E	E	1.2	E	E	1.4	1.5	3.2	3.1	3.8	3.7^{S}	3.8^{S}	3.2^{S}	3.4^{S}	3.2^{S}	2.3	1.6	1.3	A	1.3	1.3	1.3	1.3
25	1.1	E	E	1.2	1.1	E	1.5	1.5	2.5	2.8	4.1^{S}	4.2^{S}	3.9^{S}	3.9^{S}	3.2^{S}	2.7^{S}	A	1.5	1.6	A	1.5	1.6	1.3	1.5
26	1.3	E	E	E	1.3	E	E	1.2	2.9	3.8^{S}	3.8	3.7	4.2	3.4	3.7	3.1	2.3	2.7	1.5	1.6	1.6	1.2	E	E
27	E	E	E	E	E	E	1.9	1.6	S	3.8	3.9	4.2	5.7	6.2	3.8	3.3	3.7	1.6	1.4	1.3	1.4	1.4	1.1	1.1
28	1.3	A	1.2	1.3	1.2	1.2	1.6	1.8	2.9	3.0	A	4.5	4.2	4.2	A	2.9	2.3	1.7	1.4	1.4	1.4	1.5	1.4	1.2
29	1.2	1.3	E	E	E	E	1.2	1.6	A	A	2.9	4.5	4.4	4.2	3.1	2.7	2.3	1.7	1.2	1.2	1.3	1.2	1.2	1.2
30	1.3	1.1	E	E	E	1.1	1.3	1.9^{F}	2.0	3.2	3.0	3.2	3.6	3.1	3.0	3.1	2.2	1.6	1.3	1.3	1.3	1.4	1.3	1.4
31	1.3	1.1	1.1	1.2	1.2	1.2	1.5	1.8	A	A	3.0	4.0	3.5	4.0	3.0	2.6	2.0	1.8	1.6	A	A	A	A	1.5
Mean Value	1.3	1.3	1.3	1.3	1.2	1.2	1.4	1.6	2.4	2.8	3.2	3.4	3.5	3.4	3.2	2.7	2.0	1.6	1.4	1.4	1.5	1.4	1.4	1.4
Median Value	1.2	1.1	1.1	E	1.1	1.1	1.4	1.5	2.4	2.7	3.0	3.2	3.2	3.1	3.1	2.6	1.9	1.6	1.4	1.4	1.4	1.4	1.3	1.4
Count	28	27	30	28	30	28	30	26	23	25	26	29	[illegible]	[illegible]	29	29	24	27	27	21	26	26	29	31

fminF

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 10

23

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminE | 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	E	C	E	E	E	E	E	E	1.2	1.4	1.5	1.5	1.8	1.4	1.4	1.4	1.7	E	E	E	E	E	E	E
2	E	B	B	1.3	1.4	B	B	B	B	1.7	2.2	2.2	B	B	B	B	1.3	1.2	1.7	1.8	1.6	1.4	B	B
3	1.1 F	1.1	E	E	E	E	E	1.6	1.2	1.3	1.7	1.8	B	B	1.8	1.5	B	1.1	1.1	1.1	1.3	E	1.1	1.3
4	1.1	B	1.2	E	E	E	E	1.5	1.5	1.4	1.5	1.2	1.5	1.4	1.7	B	1.3	B	B	B	1.7	1.6	1.6	1.5
5	1.4	1.2	E	E	E	E	E	E	1.2	1.2	1.3	2.2	2.2	2.0	1.6	1.4	E	1.4	E	1.2	E	E	E	E
6	C	E	E	E	E	B	E	B	1.3	1.3	1.4	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.3	1.3	1.3	1.6	1.4	1.3
7	1.1	1.1	1.1	1.1	1.1	1.1	B	1.3	1.4	1.5	1.5	1.5	1.4	2.0	1.5	1.4	1.5	1.5	1.5	1.5	1.3	1.4	B	B
8	1.5	E	E	E	E	E	B	E	B	1.7	1.4	1.5	1.7	1.6	1.4	1.5	1.3	2.2	2.2	1.5	1.2	1.5	E	1.2
9	1.1	E	E	E	E	E	E	1.2	E	1.3	1.3	1.2	1.3	1.4	1.4	1.4	1.5	1.2	1.2	1.3	1.5	1.5	1.3	1.5
10	1.2	1.1	1.1	1.1	E	1.3	1.2	1.1	1.4	C	C	C	C	C	C	C	1.5	B	B	1.4	1.5	B	B	B
11	B	E	E	B	E	E	1.2	E	1.5	1.4	B	1.4	B	1.5	1.4	C	1.4	B	1.1	1.1	E	E	E	1.2
12	1.1	1.2	1.1	1.1	1.1	E	B	1.1	1.3	1.7	1.7	B	B	B	B	B	1.3	B	B	1.2	1.3	1.4	1.4	B
13	E	E	E	B	E	E	B	1.5	1.5	2.9	S	B	C	2.0	B	1.3	2.0	B	B	B	B	1.5	1.4	1.5
14	1.4	1.3	E	E	E	E	E	1.1	1.2	1.3	1.4	1.4	1.3	1.3	1.3	E	E	E	B	E	E	E	1.2	E
15	E	1.2	E	E	E	E	E	E	E	E	1.2	1.6	1.3	1.3	1.4	1.3	1.1	1.1	1.1	B	B	1.6	B	B
16	B	1.6	1.4	1.1	E	E	B	B	1.4	1.4	1.5	1.4	1.2	1.2	1.4	1.2	1.5	B	B	1.3	1.3	E	E	E
17	E	E	E	E	E	E	1.5	1.8	1.4 B	1.1	1.7	1.4	1.4	1.4	1.8	1.2	1.1	E	1.6	1.6	E	B	B	B
18	1.2	E	E	E	E	B	B	1.2	1.2	1.3	1.3	1.3	1.5	1.5	1.5	1.4	1.5	C	B	B	B	B	B	1.2
19	B	B	B	B	B	E	B	B	B	1.4	1.4	2.4	2.0	1.6	1.3	1.4	1.5	1.5	E	E	B	B	B	B
20	E	E	E	E	E	E	E	B	1.5	1.4	1.4	1.5	1.3	1.4	1.5	1.2	1.6	1.3	1.2	B	B	B	E	E
21	E	E	E	E	E	E	1.1	1.1	1.3	1.5	1.3	1.5	1.8	1.7	1.6	1.3	1.2	B	B	B	B	E	E	E
22	E	E	E	E	E	E	B	1.4	1.4	1.8	1.4	1.4	1.6	1.8	2.0	2.0	C	B	B	2.5	B	B	B	B
23	B	B	E	E	E	E	E	E	1.2	1.3	1.4	1.8	B	1.4	1.4	1.4	1.3	1.2	1.5	B	B	B	E	E
24	E	E	E	E	E	E	B	1.5	1.5	1.7	2.2	S	S	S	S	S	1.5	1.3	B	1.2	B	B	B	B
25	E	E	E	E	E	E	B	1.4	1.4	(24)S B	BS	BS	BS	BS	BS	BS	1.8	1.5	1.5	1.5	1.5	B	B	B
26	B	E	E	E	E	E	E	E	1.5	S	B	B	B	B	B	B	1.4	E	1.5	B	B	E	E	E
27	E	E	E	E	E	E	E	1.2	1.3	1.4	B	B	B	B	B	B	1.6	B	1.4	1.4	1.2	1.4	1.1	1.1
28	1.3	1.3	E	B	E	1.1	1.2	1.3	1.6	1.8	1.4	1.6	1.6	2.4	1.6	1.6	1.7	1.4	B	B	1.5	1.5	1.4	1.5
29	1.2	E	E	E	E	E	E	1.2	1.2	1.4	1.5	2.0	2.1	2.5	2.2	2.0	1.4	1.4	E	E	B	1.2	1.2	1.2
30	E	1.1	E	E	E	E	1.6	1.3	1.3	1.4	2.2	2.0	2.0	2.2	2.0	2.0	1.3	B	B	E	B	1.3	1.4	1.4
31	1.2	1.1	1.1	1.2	1.2	1.2	B	1.4	1.4	1.4	1.5	2.0	B	2.0	2.0	2.0	1.8	1.3	1.4	1.5	1.5	1.4	1.4	B
Mean Value	1.2	1.2	1.2	1.5	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.6	1.7	1.6	1.4	1.5	1.4	1.4	1.4	1.4	1.5	1.3	1.3
Median Value	1.1	E	E	E	E	E	E	1.2	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.3	1.3	1.4	1.1	1.2
Count	25	26	29	27	30	28	19	26	28	29	25	24	19	23	23	22	29	20	19	22	19	22	21	20

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

W 11

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | f_oF2 | 135° E Mean Time | **Akita** | Lat. 38° 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	C	C	C	C	C	C	C	C	C	C	C	C	C	S	6.6	C	C	C	A	A	A	C	3.2	(3.1)^{C}
2	3.0	3.1	(3.2)^{C}	3.2^{F}	(3.0)$^{JP}_{F}$	F	(2.5)$^{P}_{F}$	4.3	6.4	C	C	C	C	C	C	C	6.1	5.8	5.2	A	A	(3.0)$^{P}_{F}$	A	(3.3)$^{P}_{F}$
3	(3.0)$^{P}_{F}$	3.1$^{J}_{F}$	(3.8)$^{P}_{F}$	(3.8)$^{P}_{F}$	(3.6)$^{P}_{F}$	BF	(4.4)$^{J}_{F}$	4.1	6.2	8.3	10.1^{P}	8.0	7.7	6.4	(6.0)^{C}	5.7	6.2	6.3	3.9	2.6	2.2	2.8	2.8$^{P}_{F}$	2.7^{F}
4	2.7$^{J}_{F}$	3.1	3.4^{F}	3.2F	(2.3)$^{P}_{F}$	(2.5)$^{P}_{F}$	3.2^{F}	4.4^{F}	6.3	7.5	7.8	7.8	6.9	6.6	6.4	C	C	C	C	2.9	2.8^{H}	2.8^{Z}	2.8$^{J}_{F}$	3.2$^{J}_{F}$
5	3.2$^{J}_{F}$	3.0^{F}	(3.0)$^{P}_{F}$	3.3	2.4	2.4^{Z}	2.0	3.8	5.8	8.6	9.5	7.2	7.0	7.0	(6.5)^{P}	6.0	5.6	4.5	3.6	3.4	2.9	2.8	3.2	3.3
6	3.1	3.2^{F}	3.2$^{J}_{F}$	3.5^{F}	2.8^{F}	3.0^{F}	2.9^{F}	5.2$^{J}_{F}$	6.3	8.1	9.3	(10.4)$^{P}_{E}$	7.5	6.4	(6.3)^{C}	6.2	5.2	5.0	5.1	3.4	3.5	3.4	3.6^{F}	3.5
7	(3.5)$^{P}_{F}$	3.5^{F}	3.7	3.8	3.0	A	2.1	4.2	6.5	10.6^{P}	10.8	7.9	6.8	7.0	7.0	6.0	4.9	B	3.9^{J}	3.0	A	A	A	3.0^{F}
8	3.2^{F}	3.3	3.2	3.5	3.0^{Z}	3.3	2.9	4.6	6.9	10.0	11.0	8.9	6.6	6.3	6.3	5.7	5.4	4.4	4.0	A	A	A	A	A
9	A	3.8^{Z}	2.8	2.4	(2.9)$^{J}_{F}$	2.4^{Z}	3.0	4.0	5.8	7.6	8.4	7.8	6.7	6.1	6.5	6.4	5.1	A	A	(2.8)^{A}	A	A	A	3.0^{V}
10	3.7^{Z}	3.2	3.0	3.0$^{J}_{F}$	3.0	3.0^{H}	3.4$^{J}_{F}$	4.1	6.5^{J}	6.7	8.1	B	7.6	6.4	6.3	5.5	5.4	4.0	4.4	(4.3)$^{P}_{B}$	A	2.9^{P}	A	3.0F
11	3.1^{F}	3.0^{F}	2.7	2.4	2.6	2.7^{F}	2.8$^{F}_{H}$	(3.4)$^{P}_{E}$	5.8	7.3	8.8^{Z}	8.5	9.2	9.1	7.7	7.6	6.0	6.0^{H}	5.4^{H}	5.5	4.3^{H}	4.5	4.9	4.8
12	5.0	4.6	4.7	4.6	4.6^{F}	3.5	2.3	4.3	7.7	9.1	9.7	(8.8)^{C}	7.9	7.2	6.7	7.4	6.0	5.4	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	7.6	6.8	5.3	4.2	4.0	3.4	1.9	2.6	2.9	2.9^{F}
14	(3.0)$^{JP}_{F}$	3.2	2.9	B	3.2	2.2	1.8	4.2	7.0	7.3	8.0	7.9	8.4$^{J}_{H}$	7.7	7.3	7.4	5.6	4.1	5.5	3.7^{J}	2.1	2.5	2.7	2.8
15	2.8	3.1	3.1	2.9	3.4	2.4	2.1	3.9	6.9	8.6	7.8	8.3	7.2	6.4	7.6	6.5	4.6	4.4	3.4	2.5	3.1	2.5	2.6	2.6
16	2.9	3.0	3.3	2.7	2.3	2.4	2.4	3.7	5.7	8.0	(9.4)^{P}	7.5^{J}	7.0	7.1	7.3	7.2	5.3	4.5	5.0^{H}	4.7	3.7	2.9	3.4$^{J}_{F}$	3.9$^{J}_{F}$
17	4.1$^{J}_{F}$	(4.7)$^{JP}_{F}$	4.3$^{J}_{F}$	3.8$^{J}_{F}$	3.7$^{F}_{F}$	4.2^{Z}	(4.0)^{C}	3.8	6.1	8.4	(8.6)^{P}	(8.7)^{P}	6.8	7.3	6.3^{F}	8.2	5.4	4.3	3.5	3.1	3.1^{Z}	A	A	3.1F
18	3.5$^{V}_{F}$	3.8$^{F}_{Z}$	4.0$^{F}_{H}$	3.4^{F}	2.6F	3.2$^{J}_{F}$	2.7$^{F}_{Z}$	4.2	5.7	6.0	6.8	7.7	7.7	8.6	7.1	7.0	5.5	3.8	3.6	3.8	4.2	3.0	3.1^{F}	3.5$^{J}_{F}$
19	4.1	4.4$^{J}_{F}$	(4.2)^{C}	4.1	(4.2)^{B}	4.4	(4.1)$^{P}_{F}$	BF	5.8	6.3	7.4	7.5	6.7	6.7	6.0	6.1	6.1$^{J}_{B}$	3.8	3.0	3.6	3.6	2.7	3.1^{F}	3.6F
20	2.9$^{JP}_{F}$	BF	3.8	3.7	3.2	3.0	2.8	4.2^{H}	6.0	6.4^{H}	9.8	(10.0)^{JB}	7.5	6.8	7.1	7.3^{P}	5.9	4.6	3.6	3.3	3.4	2.9	3.2	3.2
21	3.0	BE	3.2^{F}	(4.2)$^{P}_{F}$	(4.4)$^{P}_{F}$	4.5$^{JP}_{F}$	3.7^{F}	(3.8)$^{JP}_{F}$	6.1^{F}	5.6	7.6	7.6	8.2^{P}	BS	7.3	6.3	5.1	4.2	4.2^{H}	4.5	3.1	3.0	3.3	3.4
22	3.3	3.2	3.0$^{J}_{F}$	F	(3.4)$^{JP}_{F}$	3.1^{F}	2.8^{F}	4.2	8.1	9.2	9.4	(10.2)$^{JH}_{B}$	7.6	8.0	(8.2)^{P}	7.6^{P}	5.7	4.6	4.6	5.2	3.2	3.1$^{J}_{F}$	3.2$^{J}_{F}$	3.0
23	3.4	3.4	3.2	3.1	3.1	2.7	2.6	4.8	6.0	C	C	C	C	C	C	C	C	5.0	A	4.2	3.3	3.4	2.9	3.5
24	3.3	3.9	3.4	(4.2)$^{PF}_{H}$	6.4^{H}	4.8	3.7	5.1	7.2	7.7	7.9	8.7^{Z}	7.7	8.1	7.9	8.4	7.0^{H}	5.2	4.7	4.4	(3.0)^{JP}	2.8	3.4	3.1^{Z}
25	3.1	3.5^{J}	3.5^{Z}	3.5F	(4.5)$^{PF}_{Z}$	3.4^{F}	3.4^{F}	4.3	7.4	8.0	8.9	6.6	6.8	7.2	8.0	7.4	5.9	5.7	4.4	3.9	3.5	2.8	3.5	3.2
26	(3.4)$^{JF}_{H}$	(3.5)$^{P}_{F}$	4.1$^{J}_{F}$	3.9$^{J}_{F}$	3.6^{F}	2.9	3.0	4.8	6.3	8.0	(9.9)^{P}	9.0	8.2	7.8	7.9	8.0	7.0	5.6	5.9^{H}	4.4	3.0^{H}	3.0	3.3	3.3
27	3.5	3.6	3.5	3.4	3.2	3.3	3.2	4.2	6.2	7.1^{P}	7.8	9.8	9.0	9.8	9.2	8.3	7.3	6.3	A	3.9	4.3^{F}	4.4	4.1	4.3
28	4.5	4.3^{S}	4.3^{H}	4.3	3.9	4.0	5.1	5.7	7.4	9.0	10.5	11.5	9.1	8.5	8.3	8.6	6.5	5.8	5.3	4.4	3.6^{H}	3.8	4.0	3.6^{H}
29	3.7	3.9	3.8	3.6	3.6	2.9	3.0	5.4	9.0	8.1	8.3	9.2	10.2	9.7^{V}	8.0^{H}	8.5	6.5	6.8	6.3	5.0	3.7	(3.4)^{C}	3.0	3.0
30	3.4^{V}	3.4	3.6	3.4	3.2	3.3	3.0	5.2	7.2	8.0	9.8	10.2	10.0	8.9	8.0	7.9	7.0	6.2	5.4	4.6	(4.1)$^{P}_{F}$	3.9$^{P}_{F}$	(3.9)$^{P}_{F}$	3.4^{F}
31	3.4^{F}	3.4	3.3	3.5	3.4	3.5^{H}	C	4.8	7.6^{H}	7.9	9.3	10.4	7.8	8.1	9.4	9.1	8.6^{H}	9.5	7.3^{P}	4.7	4.8^{H}	AS	4.4^{F}	4.9
Mean Value	3.4	3.5	3.5	3.5	3.4	3.2	3.0	4.4	6.6	7.9	8.9	8.7	7.8	7.5	7.3	7.2	5.9	5.2	4.6	3.9	3.4	3.1	3.4	3.4
Median Value	3.3	3.4	3.4	3.5	3.2	3.0	3.0	4.2	6.3	8.0	8.9	8.6	7.6	7.2	7.3	7.3	5.8	5.0	4.4	3.9	3.4	3.0	3.2	3.2
Count	28	27	29	27	29	26	29	28	29	27	27	26	27	26	29	27	28	27	25	27	24	24	24	29

f_oF2 | Sweep 1.0 Mc to 17.0 Mc in 15 min | Manual

A 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF2 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	S	230	C	C	C	A	A	A	C	270	(320)C
2	370	370	(340)C	310F	(290)JPF	F	(360)PF	280	290	C	C	C	C	C	C	C	250	260	240	A	A	(410)PF	A	(390)PF
3	(370)PF	(280)J F	(280)PF	(270)FF	(280)PF	BF	(280)JF	300	240	280	260P	260	260	250	(250)C	250	280	270	240	240	320	340	330PF	370F
4	(370)JF	280	300F	230F	(320)PF	(310)PF	300F	260F	260	270	250	220	230	240	240	C	C	C	C	230	280H	360Z	(350)JF	(320)JF
5	(320)JF	320F	(330)PF	270	240	300Z	310	270	260	260	260	250	250	260	(270)F	250	260	260	300	250	300	330	350	310
6	260	310F	(250)JF	270F	240F	290F	290F	(250)JF	220	270	270	(270)PF	250	240	(240)C	250	250	300	250	270	280	300	400F	320
7	(350)PF	340F	370	240	260	A	310	270	260	260P	240	240	240	260	240	240	260	B	(220)J	220	A	A	A	380F
8	320F	300	290	290	310Z	270	290	270	280	290	260	230	240	260	260	260	250	260	260	A	A	A	A	A
9	A	400Z	320	A	A	330Z	300	260	260	260	250	250	240	270	260	260	260	A	A	(330)A	A	A	A	380V
10	340Z	290	280	(290)JF	310	300H	(310)JF	260	(230)J	270	280	B	260	240	260	250	260	260	290	(250)PB	A	350P	A	360F
11	340F	320F	310	310	410	350F	350HF	(340)PF	260	260	270Z	270	280	270	240	250	270	300H	290H	230	390H	350	310	330
12	310	320	320	330	360F	300	320	280B	260	230	250	(260)C	260	250	280	250	230	280	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	260	230	250	260	260	220	260	A	A	310F
14	(320)JPF	320	320	B	260	280	320	280	240	240	250	250	(320)JH	250	280	250	240	300	250	(200)J	330	340	360	300
15	310	290	320	310	280	330	270	250	230	230	250	270	250	260	270	250	220	300	210	290	340	380	340	340
16	330	330	250	230	230	340	250	240	230	250	(250)PF	(220)J	240	290	270	250	240	310	270H	250	300	360Z	(330)JF	(370)JF
17	(360)JF	(310)JPF	(300)JF	(350)JF	350PF	330Z	(300)JC	260	260	280	(250)PF	(260)PF	230	260	250F	230	230	240	260	250	280Z	A	A	350F
18	350V	320ZF	290HF	290F	280F	(270)JF	260ZF	260	220	250	250	270	250	240	250	240	230	240	280	280	270	300	280F	(300)JF
19	260	(280)JF	(300)C	320	(290)B	260	(350)PF	BF	240	250	250	240	250	240	230	260	(220)JB	220	290	270	240	290	340F	380F
20	(290)JF	BF	310	260	240	310	300	270H	240	280H	260	(260)JB	240	260	260	260F	230	250	270	270	270	310	320	310
21	350	BF	330F	(300)PF	(240)PF	(220)PF	310F	(290)PF	230F	220	290	280	280P	BS	260	250	210	270	290H	260	240	340	350	360
22	310	350	(380)JF	F	(340)JF	(320)F	310F	300	260	260	250	(280)JH B	260	250	(260)P	240P	230	260	310	270	220	(330)JF	(310)JF	350
23	380	320	340	280	300	330	320	270	260	C	C	C	C	C	C	C	C	260	A	280	280	310	340	340
24	360	350	370	(330)PFH	270H	260	340	280	230	230	250	270Z	260	270	270	250	230H	260	290	210	(220)JP	310	350	280Z
25	340	(310)J	330Z	300F	(350)PF	320F	280F	290	260	250	240	240	270	260	270	250	250	260	300	290	270	320	310	340
26	(380)JFH	(390)PF	(340)JF	(320)JF	280F	290	A	260	230	260	(250)P	270	250	280	280	250	240	280	270H	240	300H	350	320	340
27	340	360	370	370	340	390	210	240	250	270P	280	300	270	290	280	260	240	280	A	300	330F	340	350	380
28	370	340S	310H	320	310	360	270	230	270	270	280	270	260	270	280	280	260	250	280	280	330H	340	360	340H
29	330	350	320F	300	290	330	320	290	230	250	260	280	270	270V	290H	260	240	310	270	280	280	(300)C	330	340
30	410V	330	330	330	370	350	250	230	250	260	270	270	280	270	280	270	230	260	270	290	(340)PF	320PF	(320)PF	350F
31	350F	310	330	440	410	390H	C	260	300H	260	280	280	260	290	300	270	290H	300	290P	360	450H	AS	340F	340
Mean Value	340	300	320	300	300	310	300	280	250	260	260	260	260	260	260	250	240	270	270	260	300	320	330	340
Median Value	340	320	320	300	290	320	300	270	250	260	250	260	260	260	260	250	240	260	270	270	280	340	340	340
Count	28	27	29	26	28	26	27	28	29	27	27	26	27	26	29	27	28	27	25	27	24	23	23	29

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'F2 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	220[A]	230	C	C	C	A	A	A	C	240	[270][C]
2	300	300	(280)[C]	250	270	240	270	230	280	C	C	C	C	C	C	C	220	220	220	A	A	400[F]	A	350[B]
3	300	250	210	220	230	230	230	250	240	260	240	240[F]	240	240	[240][C]	230	250	220	220	220	300	300	290	310
4	360	260	230	210	250	260	260	240	250[A][F]	230	240	220	220	220	230	C	C	C	C	210	200[H]	290	340	310[F]
5	290[A]	300	260	220	210	220	260	240	230	230	250	240	240	220	270	220	230	210[A]	230	230	260	250[F]	300	270
6	230	230	220	220	210	270	240	230	220	250	240	240	220	230	[240][C]	250	220	(210)[A]	(220)[A]	220[A]	220	250	310[F]	280
7	280	280	290	230	200	A	300	240	230	230	230	230	240	250	240	210[A]	220	(210)[A]	210[A]	210[A]	A	A	A	330
8	320	270	260	240	230	220	230	230	220	260	260	220	230	250	250	240	230	(240)[A]	230	A	A	A	A	A
9	A	350	300	A	(260)[F]	270	270	230	240[A]	260	250	200	220	220[A]	250	250	210	A	A	320[A]	A	A	A	320
10	290	250	260	290	260	300[H]	250	260[A]	210[A]	220	270	280	240	220	250	220	220	220	240	220	A	340	A	330
11	290	280	260	260	340	310[F]	300[A][H]	320[F]	230	240	230	250	260	250	240	220	220	260[H]	210[A][H]	220[A]	230[H]	270	280	290
12	290	280	260	270	280	260	260	240	240	220	240	[240][C]	240	240	240	220	220	230	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	250	220	210	220	230	220	260	290[A]	270	300
14	300[F]	300	290	270	220	230	320[B]	230	210	230	240	250	290[H]	250	250	230	210	220	220	200[A]	B	310[B]	310	280
15	270	260	260	260	230	280	260	230	220	230	240	250	250	250	220	230	200	270	200	250	260	310[B]	300	300
16	300	300	230	220	230	270	230	210	220	230	220	210	210	270	270	240	220	220	220[H]	220	200	280	280[F]	280
17	290[F]	270[F]	250	270	260	280	[260][C]	230	210	240	230	240	220	250	240	220	220	230	230	220	240	A	A	280
18	260	240	250[H]	260[F]	240	220	250	220	220	220	240	250	250	230	230	210	210	200	240	240	240	290	280[F]	290
19	240	240	[240][C]	250[F]	220	200	240	220	230	240	240	230	250	230[F]	210	240	220	210	280	240	220	240	310	310[F]
20	280[F]	300[F]	240	220	210	240	260	210[H]	230	210[H]	240	240	230	250	250	230	220	220	220	230	230	260	280	270
21	290	290	290	260	200	200	280[F]	260[F]	220	200	280	260	270	240	260	250	210	210	220[H]	220	220	300	310	300
22	270	290	310	310[F]	290	220	260	280	250	240	230	250[H]	250	250	240	220	210	230	250	240	220	290	290[F]	330
23	320	290	310	240	220	260	260	240	220	C	C	C	C	C	C	C	C	(220)[A]	A	250	250	270	290	300
24	320	310	310	260[H]	230[A][H]	220[A]	290	250	220	220	220	220	230	250	240	240	210[H]	210	210	(210)[A]	200	290	290	220
25	320	260	270	260	240	270	230	240	250	240	220	240	260	260	250	240	220	260	250	260	230	260	280	250
26	300[H]	320	280	240	230	260[A]	A	230	210	210	240	270	250	250	230	240	230	220	220[H]	210	230[H]	290	280	300
27	300	290	290	300	290	310	200	220	220	250	220	270	250	260	250	240	230	230	A	240	260	280	280	290
28	280	260	250[H]	260	280	290	220	200	210	230	240	250	230	220	250	260	230	220	230	220	220[H]	270	290	290[H]
29	270	280	280	270	250	290	280	250	230	200	240	250	250	250	220[H]	220	220	240	220	220	230	[260][C]	290	320
30	300	290	270	260	300	290	220	210[A]	210[A]	220	250	240	240	240	230	240	220	230	210	240	260	270	260	300
31	280	260	270	320[A]	320	310[H]	C	220[A]	220[A][H]	230	280	280	230	280	260	230	220[H]	220	200	220	300[H]	300	280	260
Mean value	290	280	270	260	250	260	260	240	230	230	240	240	240	240	240	230	220	230	230	230	240	290	290	290
Median Value	290	280	260	260	240	260	260	230	220	230	240	240	240	250	240	230	220	220	220	220	230	290	290	300
Count	28	29	29	28	29	28	27	29	29	27	27	27	27	28	29	27	28	28	25	27	23	25	24	29

h'F2

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 3

27

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF1 | 135° E Mean Time | Akita | Lat. 38° 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								C	C	C	C	C	C	Q	Q	C	C							
2								Q	L	C	C	C	C	C	C	C	Q							
3								Q	Q	L	L	L	L	L	C	Q	Q							
4								Q	AF	Q	L	Q	Q	Q	Q	C	C							
5								Q	Q	Q	Q	Q	Q	Q	L	Q	Q							
6								Q	Q	L	L	L	Q	Q	C	L	Q							
7								Q	Q	Q	Q	Q	Q	L	L	A	Q							
8								Q	Q	L	L	Q	L	L	Q	Q	Q							
9								Q	Q	L	L	Q	Q	Q	Q	Q	Q							
10								A	A	Q	A	L	L	Q	4.0	Q	Q							
11								Q	Q	Q	Q	L	L	L	Q	Q	Q							
12								Q	Q	B	Q	C	B	Q	Q	Q	Q							
13								C	C	C	C	C	C	C	L	Q	Q							
14								Q	Q	Q	L	Q	L	L	Q	Q	Q							
15								Q	Q	L	Q	L	Q	Q	Q	Q	Q							
16								Q	Q	Q	Q	Q	Q	L	L	L	Q							
17								Q	Q	L	L	L	L	L	Q	Q	Q							
18								Q	Q	Q	L	L	L	L	L	Q	Q							
19								Q	L	L	L	L	L	L	Q	Q	Q							
20								Q	L	Q	Q	Q	L	L	L	Q	Q							
21								Q	Q	Q	4.0	L	L	L	L	4.0	Q							
22								Q	L	L	L	Q	L	L	Q	Q	Q							
23								Q	Q	C	C	C	C	C	C	C	C							
24								Q	Q	Q	Q	Q	Q	L	Q	Q	Q							
25								Q	Q	L	Q	B	B	B	B	B	Q							
26								A	Q	Q	B	B	4.5	B	Q	Q	Q							
27								Q	Q	L	B	B	B	B	B	Q	Q							
28								Q	Q	L	B	L	B	L	Q	L	Q							
29								Q	Q	Q	L	L	L	Q	Q	Q	Q							
30								Q	Q	Q	L	L	L	L	Q	Q	Q							
31								Q	Q	Q	L	L	Q	L	Q	Q	Q							
Mean Value											4.0		4.5		4.0	4.0								
Median Value											—		—		—	—								
Count											1		1		1	1								

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'F1 | 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								C	C	C	C	C	C	Q	Q	C	C							
2								Q	Z50	C	C	C	C	C	C	C	Q							
3								Q	Q	Z40	Z50	Z20	Z20	Z10	C	Q	Q							
4								Q	AF	Q	Z20	Q	Q	Q	Q	C	C							
5								Q	Q	Q	Q	Q	Q	Q	Z30	Q	Q							
6								Q	Q	Z30	Z20	Z20	Q	Q	C	Z10[A]	Q							
7								Q	Q	Q	Q	Q	Q	Z30	Z20	A	Q							
8								Q	Q	Z50	Z30	Q	Z10	Z10	Q	Q	Q							
9								Q	Q	Z50	Z10	Q	Q	Q	Q	Q	Q							
10								A	A	Q	A	Z70	Z20	Q	Z10	Q	Q							
11								Q	Q	Q	Q	Z40	Z30	Z40	Q	Q	Q							
12								Q	Q	B	Q	C	B	Q	Q	Q	Q							
13								C	C	C	C	C	C	C	Z40	Q	Q							
14								Q	Q	Q	Z30[A]	Q	Z20	Z50	Q	Q	Q							
15								Q	Q	Z40	Q	Z30	Q	Q	Q	Q	Q							
16								Q	Q	Q	Q	Q	Q	Z10	Z30	Z20	Q							
17								Q	Q	Z30	Z30	Z30	Z00	Z10	Q	Q	Q							
18								Q	Q	Q	Z00	Z30	Z30	Z30	Z00	Q	Q							
19								Q	Z10	Z00	Z30	Z20	Z10	Z10	Q	Q	Q							
20								Q	Z10	Q	Q	Q	Z20	Z20	Z20	Q	Q							
21								Q	Q	Q	Z00	Z40	Z50	Z20	Z10	Z20	Q							
22								Q	Z30	Z20	Z20	Q	Z20	Z40	Q	Q	Q							
23								Q	Q	C	C	C	C	C	C	C	C							
24								Q	Q	Q	Q	Q	Q	Z10	Q	Q	Q							
25								Q	Q	Z20	Q	B	B	B	B	B	Q							
26								A	Q	Q	B	B	Z00	B	Q	Q	Q							
27								Q	Q	Z30	B	B	B	B	B	Q	Q							
28								Q	Q	Z10	B	Z20	B	Z20	Q	Z50	Q							
29								Q	Q	Q	Z20	Z20	Z20	Q	Q	Q	Q							
30								Q	Q	Q	Z20	Z10	Z20	Z20	Q	Q	Q							
31								Q	Q	Q	Z20	Z10	Q	Z00	Q	Q	Q							
Mean Value									Z30	Z30	Z20	Z30	Z20	Z20	Z20	Z30								
Median Value									—	Z30	Z20	Z20	Z20	Z20	Z20	—								
Count									4	11	14	13	14	16	8	4								

h'F1 | Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foE | 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								C	C	C	C	C	C	A	B	C	C							
2								A	2.4	C	C	C	C	C	C	C	A							
3								A	A	A	A	3.0[H]	3.1[H]	A	C	2.4	A							
4								B	AF	2.7	3.0	3.0[A]	3.2	3.2	2.8	C	C							
5								B	2.0	2.5	B	B	3.0	3.0	2.8	B	1.6							
6								B	2.4[A]	2.6	2.8	3.0[B]	3.3	3.0	C	A	A							
7								B	A	A	2.9	3.0	3.2	3.2	A	A	A							
8								B	2.4	B	2.9	3.0	3.0	B	2.4[H]	2.4[J]	A							
9								A	A	2.6	3.0	3.0[A]	3.2[A]	A	A	A	A							
10								A	A	(2.8)[J][A]	A	2.9	3.0[B]	B	2.9	B	B							
11								A	2.3	2.8	A	A	A	B	B	B	1.6[B]							
12								1.5[B]	2.3	B	B	C	B	B	B	B	B							
13								C	C	C	C	C	C	C	B	2.3	B							
14								A	A	2.8[A]	A	B	A	2.9[J][A]	B	B	2.0							
15								1.6[J]	A	2.5[J]	A	2.8	A	A	2.8	2.4	1.9							
16								B	2.0	2.6	A	A	B	B	2.7	2.4	A							
17								1.8	2.4[H]	A	A	A	3.0[B]	3.0[B]	2.8	2.5	1.7							
18								B	2.0	2.6	2.8	2.9	2.9	2.8	2.7	2.5	1.6							
19								E	2.3	2.5	2.6	3.0	A	2.8	2.6	2.4[J]	2.0[A]							
20								1.6[J]	B	2.4[A]	2.8	3.2	2.8	2.8	2.8	A	1.9							
21								B	A	2.6	2.8	3.0[B]	2.8[F]	2.8	3.0	2.5	2.0							
22								B	2.4	2.7	2.9	3.0	3.1	3.0	2.7	2.6	A							
23								1.6[B]	2.1[H]	C	C	C	C	C	C	C	C							
24								1.8	2.5[A]	2.7	2.8	3.2	3.4	3.2[B]	2.9	2.8	2.0							
25								1.5[B]	A	B	B	B	B	B	B	B	B							
26								A	A	B	B	B	3.0	B	3.0	B	B							
27								A	2.2	B	B	B	B	B	B	A	1.7[J]							
28								A	2.2	B	B	B	B	B	B	A	1.6[J][B]							
29								1.5	2.4	2.8	3.1	3.0	2.8	2.8[A]	A	2.6	2.4[J]							
30								A	A	2.8[H]	3.0	3.0	3.2	3.1	3.0	B	B							
31								A	A	2.7	2.8	A	A	B	B	A	A							
Mean Value								1.4	2.3	2.7	2.9	3.0	3.1	3.0	2.8	2.5	1.8							
Median Value								1.6	2.3	2.6	2.8	3.0	3.0	3.0	2.8	2.4	1.9							
Count								9	16	18	14	16	17	14	15	12	13							

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | R'E | 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								C	C	C	C	C	C	A	B	C	C							
2								A	130	C	C	C	C	C	C	C	A							
3								A	110	A	A	110^{H}	110^{H}	100	(100)^{C}	110	A							
4								B	AE	120^{F}	110	110	110	110	100	C	C							
5								B	120	110	B	B	110	120	120	120	B							
6								B	120	120	120	110	110	100	C	A	A							
7								B	A	110	110	110	110	110	110	A	A							
8								B	110	120	110	110	110	110	110^{H}	110	A							
9								A	A	110	110	110	A	A	A	A	A							
10								A	A	A	A	120	120	110	B	B	B							
11								A	110	110	A	110	A	B	B	B	B							
12								B	110	B	B	C	B	B	B	B	B							
13								C	C	C	C	C	C	C	B	110	B							
14								A	A	110	A	110	110	110	B	120	120							
15								110	A	110	A	110	A	110	110	120	130							
16								B	130	110	110	110	110	110	110	110	A							
17								B	130^{H}	110	110	A	100	100	110	110	110^{B}							
18								B	120	110	110	110	110	110	110	120	B							
19								E	120	120	110	110	110	110	110	110	B							
20								B	B	120	110	110	110	110	110	120	110^{B}							
21								B	A	120	120	120	110	110	110	110	110							
22								B	120	110	110	110	110	110	110	110	A							
23								B	120^{H}	C	C	C	C	C	C	C	C							
24								B	120	120	120	130	120	B	120	120	120							
25								B	110	B	B	B	B	B	B	B	B							
26								A	A	B	B	B	110	B	120	B	B							
27								A	110	110	B	B	B	B	B	A	B							
28								130	120	B	B	B	B	B	B	110	B							
29								120^{B}	110	110	110	110	110	110	110	120	110							
30								A	A	110^{H}	110	110	100	110	110	B	B							
31								A	A	120	120	A	120	110	110	A	A							
Mean Value								120	120	110	110	110	110	110	110	110	120							
Median Value								—	120	110	110	110	110	110	110	110	110							
Count								4	18	21	16	19	20	19	18	16	7							

R'E

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 7

31

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fEs | 135° E Mean Time | Akita | Lat. 38° 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	C	C	C	C	C	C	C	C	C	C	C	C	C	3.4	B	C	C	C	4.2	6.2	4.3	C	3.0	C
2	G	G	C	G	2.6	2.1	2.2	2.2	G	C	C	C	C	C	C	C	2.6	2.4	2.6	5.8	3.8	3.8	3.6	2.6
3	2.6	G	1.8	1.6	3.0	2.6	2.7	2.9	G	4.0	5.9	G	G	G	C	G	2.6	3.0	2.6	1.4	2.0	G	G	1.6
4	2.2	2.2	2.0^{Y}	1.6	1.9	G	G	3.0	4.7^{BF}	G	G	G	G	G	G	C	C	C	C	G	2.4	G	B	2.4
5	3.0	2.2	G	G	G	G	G	G	G	G	B	B	G	G	G	G	G	3.6	2.0	2.4	G	2.1	G	2.0
6	2.0	2.2	1.9	G	G	1.2	G	2.2	G	G	G	G	G	G	C	4.2	3.2	3.0	3.2	2.9	2.2	G	G	2.5
7	1.8	G	2.6	2.8	2.1	4.7	2.4	2.2	4.3	4.6	G	G	G	G	G	4.0	3.0	3.6	2.2	3.2	5.4	4.8	3.6	2.3
8	3.2	2.2	3.2	3.4	2.8	2.2	2.6	2.8	3.0	G	G	G	G	G	3.6	G	2.5	3.8	4.0	4.3	7.6^{F}	7.2	9.1	7.2
9	4.2	3.1^{F}	2.6	2.8^{F}	3.4	1.6	3.0	3.2	3.2	3.3	G	G	3.8	5.3	4.3	4.8	4.0	8.0	5.4	4.0	4.0	5.0	4.6	2.0
10	2.0	1.8	2.8	2.0	2.4	3.3	3.0	3.8	3.7	3.8	6.6	G	G	G	G	B	B	G	2.6	2.6	5.0	3.6	4.8	2.7
11	2.3	2.3	2.4	G	G	G	3.4	3.5	G	3.4	5.2	G	3.6	B	B	B	2.6	4.2	3.4	3.1^{Y}	3.1^{Y}	3.2	3.8	4.4
12	3.4	3.0	2.3	3.0^{Y}	2.0	G	2.1	2.4	G	B	B	C	B	B	B	B	B	G	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	G	2.2	2.2	2.3	G	G	4.2	2.6	2.6
14	3.2	2.4	2.2^{Y}	3.1	2.4	G	G	3.3	4.2	4.8	4.2	B	G	G	B	G	G	2.1	3.3^{Y}	2.4	G	G	G	G
15	G	G	1.4	1.4	G	G	G	G	4.0^{B}	G	3.4	G	4.0	G	3.4^{Y}	G	G	G	G	G	G	G	G	G
16	1.8	2.1	2.6	2.2	2.2	1.8	1.9	G	G	G	G	G	G	G	G	G	2.2	G	G	1.5	G	G	2.2	G
17	1.7	2.0	1.5	2.1^{Y}	G	G	C	G	G	G	G	3.8	G	G	G	G	G	G	G	G	G	4.1	3.2	2.7
18	G	G	G	G	G	G	2.0^{B}	2.2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
19	G	G	C	G	G	G	G	G	G	3.0^{Y}	G	3.5^{Y}	G	G	3.2	G	G	G	G	G	G	G	G	G
20	G	2.4	G	G	G	G	1.7	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
21	G	G	G	G	G	G	2.4^{B}	G	3.0^{B}	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
22	G	G	G	2.2	G	G	G	2.8	G	G	G	4.0	G	G	G	G	2.2	G	2.0	G	G	G	G	G
23	G	G	G	G	2.3	2.5	2.2	2.1	G	C	C	C	C	C	C	C	C	3.3	7.6	G	2.7	G	G	G
24	G	G	G	G	2.2	2.4	G	G	G	G	G	G	G	B	4.2	G	4.2^{Y}	3.6	3.0	3.8	G	2.8	2.4	G
25	G	G	G	G	2.2	G	2.1	2.2	G	B	B	B	B	B	B	B	2.5	4.0	4.7	3.0	2.6	2.2	2.3	1.8
26	2.0	2.0	G	G	3.9	3.2	3.4	3.2	5.2	B	B	B	G	B	G	3.2	2.6	G	3.0^{B}	2.2	3.0	G	G	G
27	2.2	2.2	1.4	G	1.1	G	G	2.1	G	G	B	G	B	B	B	3.4	4.1	4.8	9.2	3.4	G	3.8	3.3	2.3
28	G	G	G	G	G	G	2.4	G	G	B	B	B	B	3.4	B	G	G	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	2.8	3.4	G	G	G	G	G	G	4.7	3.4	G	2.2	2.1	G	C	G	G
30	2.2^{F}	2.4^{F}	G	2.0	G	G	2.1	2.9	3.6	3.8	G	G	G	G	G	B	B	2.6	2.4	G	2.3	2.4	2.4	G
31	2.4	3.2	3.0	2.4	2.0	2.3	C	3.6	3.4	3.6	G	3.9	3.5	G	B	3.0	2.4	2.6	G	G	4.4	7.3	4.1	3.3
Mean Value	2.5	2.4	2.2	2.3	2.4	2.5	2.4	2.8	3.8	3.8	5.1	3.8	3.7	4.0	3.7	3.9	2.9	3.6	3.6	3.2	3.7	4.0	3.7	2.8
Median Value	1.8	2.0	1.4	G	1.9	G	2.1	2.2	G	G	G	G	G	G	G	G	2.4	2.2	2.4	1.8	2.0	G	2.2	1.6
Count	29	29	27	29	29	29	27	29	28	23	21	21	23	22	18	22	25	29	29	30	30	28	29	29

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 8

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | (M3000)F2 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	S	3.6	C	C	C	A	A	A	C	3.2	(3.0)C
2	2.8	2.8	(3.0)C	3.1F	(3.2)JPF	F	(2.7)PF	3.2	3.2	C	C	C	C	C	C	C	3.3	3.4	3.4	A	A	(2.7)PF	A	(2.7)PF
3	(2.8)PF	(3.2)JF	(3.1)PF	(3.3)PF	(3.2)PF	BF	(3.1)JF	3.1	3.5	3.3	3.5P	3.6	3.5	3.5	(3.4)C	3.4	3.1	3.3	3.5	3.5	3.1	2.9	3.0PF	2.8F
4	(2.8)JF	3.3	3.1F	3.6F	(3.1)PF	(3.2)PF	3.3F	3.4F	3.4	3.4	3.5	3.7	3.4	3.5	3.6	C	C	C	C	3.6	3.3H	2.8Z	(2.8)JF	(3.0)JF
5	(3.1)JF	3.1F	(3.1)PF	3.3	3.5	3.4Z	3.0	3.2	3.4	3.3	3.4	3.5	3.4	3.6	(3.4)P	3.3	3.4	3.3	3.1	3.5	3.1	2.9	2.9	3.1
6	3.3	3.0F	(3.4)JF	3.2F	(3.5)F	3.3F	3.1F	(3.5)JF	3.8	3.2	3.2	(3.2)PB	3.4	3.5	(3.5)C	3.5	3.4	3.0	3.3	3.3	3.1	3.2	2.7F	3.0
7	(2.8)PF	2.8F	2.8	3.2	3.3	A	3.1	3.3	3.4	3.4P	3.6	3.4	3.6	3.3	3.5	3.7	3.5	B	(3.7)J	3.9	A	A	A	2.8F
8	3.0F	3.0	3.2	3.2	3.2Z	3.2	3.1	3.3	3.3	(3.1)B	3.4	3.8	3.5	3.4	3.4	3.6	3.4	3.3	3.4	A	A	A	A	A
9	A	2.6Z	3.0	3.2	(3.5)JF	3.0Z	3.2	3.5	3.3	3.5	3.5	3.6	3.7	3.2	3.3	3.4	3.5	A	A	(2.9)A	A	A	A	2.7V
10	2.9Z	3.1	3.3	(3.3)JF	3.0	3.2H	(3.1)JF	3.4	(3.6)J	(3.3)B	3.4	B	3.4	3.4B	3.3	3.4	3.4	3.3	3.2	(3.4)PB	A	3.0PB	A	2.6F
11	3.0F	3.1F	3.0	3.1	2.6	2.8F	3.2HF	(2.9)PF	3.4	3.4	3.3Z	3.4	3.1	3.4	3.5	3.4	3.2	3.2H	3.2H	3.6	2.6H	2.9	3.1	3.0
12	3.1	3.0	3.1	3.0	2.8F	3.1	3.0	3.2	3.3	3.6	3.4	(3.3)C	3.2	3.3	3.2	3.4	3.5	3.1	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.4	3.6	3.4	3.3	3.4	3.7	3.6	3.3	3.3	3.2F
14	(3.0)JPF	3.1	3.1	B	3.5	3.3	3.1	3.5	3.6	3.5	3.6	3.5	(3.2)JH	3.5	3.3	3.4	3.6	3.1	3.5	(3.8)J	3.0	2.9	2.7	3.2
15	3.1	3.2	2.9	3.0	3.3	2.9	3.3	3.3	3.4	3.7	3.5	3.2	3.5	3.3	3.4	3.7	3.9	3.2	3.7	3.2	2.8	2.7	2.9	2.9
16	3.1	3.0	3.5	3.7	3.7	3.0	3.6	3.6	3.6	3.5	(3.5)P	(3.8)J	3.4	3.1	3.2	3.6	3.4	3.0	3.3H	3.4	3.1	3.0Z	(2.8)JF	(2.7)JF
17	(2.8)JF	(3.2)JPF	(3.0)JF	(3.1)JF	2.8PF	2.9Z	[3.2]C	3.4	3.4	3.2	(3.3)P	(3.3)P	3.6	3.5	3.5F	(3.6)B	3.6	3.5	3.4	3.5	3.3Z	A	A	2.8F
18	2.8V	3.0Z	3.1HF	3.1F	3.2F	(3.3)JF	3.4ZF	3.4	3.7	3.6	3.6	3.3	3.6	3.6	3.5	3.7	3.7	3.6	3.3	3.2	3.4	3.2	3.2F	(3.0)JF
19	3.5	(3.1)JF	[3.0]C	3.0	[3.2]B	3.3	(2.8)PF	BF	3.6	3.4	3.6	3.6	3.5	3.6	3.6	3.4	(3.8)JB	3.7	3.2	3.3	3.5	3.2	2.9F	2.8F
20	(3.3)JPF	BF	3.2	3.3	3.6	3.0	3.1	3.3H	3.6	3.1H	3.3	(3.5)JB	3.4	3.5	3.5	3.3P	3.5	3.4	3.3	3.3	3.4	3.1	3.0	3.1
21	2.9	BF	3.1F	(3.1)PF	(3.6)PF	(3.6)JPF	3.1F	(3.1)JPF	3.7F	3.6	3.4	3.4	3.4P	BS	3.5	3.6	3.8	3.2	3.2H	3.4	3.6	2.9	2.9	2.8
22	3.0	2.8	(2.9)JF	F	(2.9)JPF	(2.9)F	3.1F	3.0	3.5	3.5	3.4	(3.2)JHB	3.6	3.7	(3.3)P	3.5P	3.7	3.3	3.1	3.3	3.6	(2.9)JF	(3.0)JF	2.9
23	2.7	3.0	2.9	3.2	3.1	2.9	3.0	3.3	3.5	C	C	C	C	C	C	C	C	3.3	A	3.2	3.2	3.1	2.9	2.8
24	2.8	2.8	2.7	(3.0)PFH	3.3H	3.4	2.8	3.1	3.6	3.6	3.4	3.3Z	3.4	3.4	3.3	3.5	3.8H	3.4	3.2	3.6	(3.7)JP	3.2	2.9	3.3Z
25	3.0	(3.1)J	3.2Z	3.2F	(2.8)PFZ	3.0F	3.2F	3.2	3.5	3.5	3.4	3.6	3.4	3.5	3.3	3.4	3.4	3.4	3.0	3.2	3.2	3.0	3.0	2.9
26	(2.7)JFH	(2.7)PF	(2.8)JF	(3.0)JF	3.2F	3.2	3.2	3.3	3.6	3.4	(3.3)P	3.2	3.5	3.4	3.3	3.6	3.6B	3.2	3.4H	3.4	3.1H	2.8	3.0	2.8
27	2.8	2.8	2.8	2.7	2.9	2.7	3.7	3.6	3.5	3.3P	3.2	3.2	3.2	3.2	3.3	3.3	3.5	3.1	A	3.1	3.0F	2.9	2.8	2.7
28	2.7	2.8S	3.0H	3.0	3.1	2.8	3.3	3.5	3.2	3.4	3.2	3.3	3.3	3.3	3.2	3.2	3.5	3.4	3.2	3.1	3.0H	2.9	2.8	2.8H
29	2.9	2.9	3.0	3.1	3.2	3.0	3.0	3.1	3.6	3.3	3.4	3.2	3.2	3.4V	3.3H	3.4	3.5	3.0	3.3	3.4	3.3	[3.2]C	3.0	3.1
30	2.6V	3.0	2.9	2.9	2.6	2.8	3.4	3.5	3.5	3.3	3.2	3.3	3.2	3.3	3.2	3.3	3.5	3.3	3.3	3.2	(3.0)PF	3.0PF	(2.9)PF	2.9F
31	2.9F	3.1	2.9	2.5	2.5	2.6H	C	3.3	3.1H	3.6	3.3	3.3B	3.3B	3.2B	3.1	3.4	3.2H	3.1	3.1P	2.7	2.5H	·AS	2.9F	2.9
Mean Value	2.9	3.0	3.0	3.1	3.2	3.1	3.2	3.3	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.3	3.3	3.4	3.2	3.0	2.9	2.9
Median Value	2.9	3.0	3.0	3.1	3.2	3.0	3.1	3.3	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.3	3.3	3.4	3.2	3.0	2.9	2.9
Count	28	27	29	27	29	26	28	28	29	27	27	26	27	26	29	27	28	27	25	27	24	24	24	29

(M3000)F2 Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminF | 135° E Mean Time | **Akita** | Lat. 38° 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	C	C	C	C	C	C	C	C	C	C	C	C	C	A	2.9	C	C	C	A	A	A	C	1.5	[1.4]C
2	1.3	E	C	1.4	1.1	1.2	1.2	1.6	2.4	C	C	C	C	C	C	C	2.4	A	A	A	A	A	A	1.6
3	1.5	E	1.2	1.2	1.2	1.4	1.6	1.8	2.3	3.2	3.6	3.2	3.2	3.2	[2.8]C	2.4	2.4	1.4	1.4	1.3	1.1	1.2	1.2	1.4
4	1.4	E	1.3	E	1.1	1.1	1.4	1.7	AF	2.8	3.2	3.8	3.4	3.4	2.9	C	C	C	C	1.4	1.5	1.5	2.0	1.5F
5	1.6A	A	1.4	E	E	E	E	1.6	2.6	2.5	2.8	3.7	3.8	3.4	3.3	2.4	2.1	A	1.6	1.5	1.5	1.5F	1.5	1.5
6	1.1	1.2	E	E	E	E	1.5	1.5	2.4	2.6	2.9	3.4	3.4	3.2	C	A	A	A	A	A	1.5	1.5	1.5F	1.8
7	1.4	E	E	A	E	A	1.6	1.5	N	2.6	3.4	3.2	3.8	3.4	3.2	A	2.2	A	A	A	A	A	A	1.5
8	A	1.3	1.3	1.3	1.3	E	1.4	1.5	2.5	2.7	3.0	3.2	3.2	3.2	3.1	3.0	2.4	A	1.6	A	A	A	A	A
9	A	AF	1.3	A	A	E	1.4	1.6	A	2.8	3.0	3.2	3.4	A	3.4	2.8	2.0	A	A	A	A	A	A	1.6
10	E	E	A	1.6	1.2	1.6	1.5	A	A	3.5	A	3.2	3.4	3.2	2.9	2.7	2.0	1.6	1.4	1.5	A	A	A	1.7
11	1.3	1.5	E	E	E	E	A	1.7F	2.5	3.0	A	4.0	3.6	3.0	3.6	2.6	2.5	1.6	A	A	1.5	1.8	A	A
12	A	A	1.5	1.6	1.3	E	1.3	1.5	2.6	4.0	3.6	(4.0)C	5.4	4.0	3.0	2.8	2.2	1.6	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.0	2.6	2.1	1.6	1.5	1.4	1.3	A	A	1.8
14	A	1.8	1.6	A	1.5	E	1.5	2.0	2.3	2.8	A	3.4	3.2	3.5	3.0	3.0	2.0	1.6	1.5	1.5	1.5	1.6	1.6	1.5
15	1.4	E	E	E	E	1.2	1.6	2.4	3.2	2.8	N	3.0	3.4	N	3.7	3.0	2.1	1.5	1.5	1.4	1.4	1.4	1.4	1.4
16	1.4	1.4	1.8	1.6	1.6	E	1.5	1.5	2.6	2.8	2.9	3.0	3.0	3.0	3.3	2.5	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
17	E	1.3	E	E	E	E	C	1.8	2.4	2.8	3.0	3.6	3.6	3.4	3.0	3.0	2.2	1.6	1.5	1.5	1.5	A	A	1.5
18	E	E	E	E	E	E	1.5	1.5F	2.4	2.9	3.1	3.0	3.2	3.4	2.9	2.6	2.3	1.5	1.5	1.6	1.6	1.6	1.6F	1.6F
19	1.6	E	C	E	E	E	1.2	1.2	2.3	2.8	3.4	3.3	N	2.9	3.0	3.0	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.6F
20	1.3	1.4	E	E	E	E	1.5	1.6	1.8	2.6	2.9	3.8	3.1	3.0	2.8	2.4	2.1	1.4	1.4	1.5	1.5	1.5	1.5	1.5
21	1.4	E	1.2	1.4	1.4	1.4	1.7	1.8	3.0	3.0	3.2	3.4	3.8	3.6	3.2	3.0	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.4
22	1.5	1.3	E	E	E	E	1.5	1.5	2.4	2.7	3.1	A	3.4	3.4	3.4	3.0	2.0	2.0	1.4	1.4	1.5	1.5	1.5F	1.5
23	1.2	E	E	E	E	E	1.5	1.6	2.2	C	C	C	C	C	C	C	C	A	A	1.4	1.4	1.4	1.4	1.4
24	1.4	1.4	1.2	E	A	A	1.6	1.8	2.5	3.0	3.6	3.4	3.5	3.2	3.7	3.3	2.1	1.5	1.5	A	1.5	1.8	1.5	1.6
25	1.3	1.4	1.1	E	1.2	E	1.8	1.5	2.5	3.6	3.6	5.2	4.4	5.2	4.8	4.0	2.4	A	A	A	1.8	1.2	1.8	1.4
26	1.6	1.4	1.1	E	1.5	A	A	A	3.1	3.0	5.0	5.5	3.6	4.6	3.6	3.2	2.6	1.7	A	1.5	1.7	1.5	1.5	1.5
27	1.5	E	1.4	E	E	E	1.3	1.9	2.9	2.3	4.2	4.6	5.4	5.8	4.8	A	A	1.8	A	1.5	1.5	1.5	1.6	1.6
28	1.4	1.2	E	E	E	E	1.5	2.0	2.4	2.9	5.0	3.7	5.0	3.7	3.6	3.4	2.4	1.6	1.5	1.6	1.6	1.6	1.6	1.6
29	E	E	E	E	E	E	E	1.5	2.4	3.1	3.3	3.7	3.5	3.8	3.4	2.9	2.8	2.4	1.5	1.5	1.5	[1.5]C	1.5	1.1
30	1.1	1.4	1.4	1.4	1.4	1.4	1.6	A	A	2.9	3.2	3.1	3.3	3.3	3.4	3.2	2.6	2.3	1.4	1.4	1.5	1.5	1.5	1.5
31	1.4	1.7	1.6	1.6	1.7	1.4	C	A	A	3.0	3.6	3.0	4.4	3.6	4.0	3.0	2.4	1.6	1.7	1.5	1.7	1.6	A	1.7
Mean Value	1.4	1.4	1.4	1.5	1.3	1.3	1.5	1.7	2.5	2.9	3.4	3.6	3.7	3.6	3.3	2.9	2.3	1.7	1.5	1.5	1.5	1.5	1.5	1.5
Median Value	1.4	1.2	1.2	E	E	E	1.5	1.6	2.4	2.8	3.2	3.4	3.4	3.4	3.2	3.0	2.2	1.6	1.5	1.5	1.5	1.5	1.5	1.5
Count	25	26	26	26	27	26	25	25	22	27	23	26	26	25	28	24	26	21	19	21	24	22	21	28

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

A 10

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminE | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	1.8	B	C	C	C	1.6	1.5	1.5	0.5[C]	1.5	C
2	B	E	C	B	E	1.1	E	1.3	1.6	C	C	C	C	C	C	C	1.6	1.6	1.6	1.6	1.6	1.6	1.6[F]	1.6
3	1.2	E	E	E	E	1.2	1.4	1.4	1.6	1.5	1.7	2.0	2.0	2.0	[1.8][C]	1.6	1.5	1.3	1.1	1.1	1.2	E	E	1.4
4	1.9	1.4	E	1.5	E	E	E	1.8	1.5	1.5[F]	1.5	1.5	1.5	1.5	1.5	C	C	C	C	B	1.5	B	B	1.5
5	1.4	1.2	B	E	E	E	E	B	1.6	1.5	B	B	2.2	1.8	2.0	2.0	1.5	1.5	1.5	1.5	B	1.7	B	1.5
6	1.2	E	E	E	E	E	B	1.7	1.6	1.6	1.6	1.6	1.6	1.6	[1.6][C]	1.6	1.5	1.5	1.5	1.5	1.9	B	B	1.5
7	1.7	E	1.4	E	1.7	E	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
8	1.2	E	E	E	E	1.4	1.4	1.5	1.5	1.6	1.5	1.6	1.6	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.5[F]	1.5[F]	1.5	1.5[F]
9	1.2[F]	E	E	E	E	E	1.3	1.4	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.4
10	E	E	E	E	E	E	1.3	1.6	1.8	1.5	1.6	2.0	1.7	2.0	2.5	B	B	B	1.4	1.5	1.5	1.5	1.5	1.5
11	1.3	1.5	E	E	E	E	1.7	1.5	1.5	1.6	1.6	2.2	2.8	B	B	B	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5
12	1.3	E	E	E	E	E	1.8	1.6	1.4	B	B	C	B	B	B	B	B	B	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	2.0	1.6	1.6	1.6	B	B	1.4	1.5	1.4
14	1.3	1.4	1.2	E	E	E	B	1.5	1.6	1.5	1.7	1.7	2.8	2.4	B	1.7	1.5	1.8	1.9	1.5	B	B	B	B
15	B	E	E	1.2	E	E	B	1.6	1.6	1.6	1.8	1.5	1.5	1.5	1.5	1.6	1.6	B	B	B	B	B	B	B
16	1.2	1.2	E	E	E	1.5	1.5	B	1.5	1.6	1.8	1.5	1.6	1.6	1.6	1.6	1.6	B	B	B	B	B	1.9	B
17	1.6	1.7	E	E	E	E	C	1.5	1.5	1.4	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	B	B	B	1.5	1.5	1.5
18	E	E	E	E	E	E	1.7[B]	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	B	B	B	B	B	B	B
19	B	E	C	E	E	E	E	E	1.4	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.6	2.0	B	B	B	B	B	B
20	B	2.1	E	E	E	E	1.5	1.9	B	1.6	1.6	1.6	1.6	1.6	2.1	1.8	1.4	B	1.6	B	B	B	B	B
21	B	E	E	B	B	B	1.4[B]	B	1.4	1.5	1.5	1.6	1.5	1.5	1.8	1.5	1.5	B	B	B	B	B	B	B
22	B	B	E	1.9	E	E	B	1.5	1.5	1.5	1.5	1.5	1.6	1.7	1.6	1.4	1.4	1.4	1.4	B	B	B	B	B
23	E	E	E	E	E	E	1.5	1.6	1.5	C	C	C	C	C	C	C	C	1.5	1.5	B	1.9	B	B	B
24	B	B	E	E	E	E	B	1.6	1.6	1.6	1.6	2.2	2.2	B	1.9	2.2	1.5	1.5	1.5	1.7	B	1.5	1.5	B
25	B	B	E	E	E	E	1.2	1.5	1.5	B	B	B	B	B	B	B	1.8	1.6	1.6	1.4	1.4	1.2	1.2	1.4
26	1.4	1.4	E	E	E	E	1.5	1.5	1.5	B	B	B	2.4	B	2.2	2.5	2.1	1.5	1.5	1.5	1.5	B	B	B
27	1.9	E	1.2	E	E	E	B	1.5[B]	1.5	1.6	B	B	B	B	B	2.1	2.1	1.5	1.5	1.5	B	1.5	1.5	1.6
28	B	E	E	E	E	E	1.5	1.5	1.5	B	B	B	B	2.3	B	2.0	2.2	B	B	B	B	B	B	B
29	E	E	E	E	E	E	E	1.3	1.4	1.5	1.7	1.8	1.8	1.9	1.8	1.8	1.5	1.5	1.5	1.5	B	C	B	E
30	1.8[F]	1.7[F]	B	1.8	B	B	1.7	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6	B	B	1.7	1.6	B	1.4	1.7	1.5	B
31	1.3	E	1.2	1.2	1.4	1.4	C	1.4	1.4	1.5	1.8	1.8	2.0	1.8	1.6	1.7	1.5	1.5	B	B	1.5	1.5	1.5	1.5
Mean Value	1.4	1.5	1.0	1.5	1.5	1.3	1.5	1.5	1.5	1.5	1.6	1.7	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4
Median Value	1.3	E	E	E	E	E	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Count	20	26	25	27	27	27	21	26	28	23	21	21	23	22	21	22	25	21	21	16	15	16	16	16

fminE

Sweep 1.0 Mc to 17.0 Mc in 15 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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	3.0	3.1	3.1	2.9	1.9^{F}	2.1^{F}	2.5	4.5	6.5	(9.7)^{P}	12.4	10.5^{J}	8.5^{J}	[7.6]^{C}	6.8	5.8	5.6^{J}	6.9	3.5^{J}	(3.5)^{Z}	3.5	4.3$^{J}_{F}$	2.7	2.8
2	2.8	3.0	(3.7)^{P}	2.6	2.6	2.9	2.7	4.5	6.3	(9.7)^{P}	(12.0)$^{P}_{F}$	8.4	7.6	7.2	7.5	6.9	6.5	5.5	5.5^{S}	4.1^{F}	A	2.8^{F}	2.4^{F}	3.2^{F}
3	2.9^{F}	3.5^{J}	F	2.3$^{P}_{F}$	2.5^{F}	AF	AF	4.4^{F}	6.7^{F}	8.4	(9.7)^{P}	9.0$^{J}_{F}$	7.8	7.4	6.3	6.0	5.9	6.6	4.1	2.7	2.3	2.6	3.0	3.0
4	2.8	3.4	3.5	2.3^{F}	AF	2.2	2.3	4.8^{P}	6.6	7.0	8.1	7.5^{F}	7.9	7.0	6.6	5.9^{F}	5.3	4.4	3.5	3.5	3.2	2.4	2.9$^{J}_{F}$	3.1$^{J}_{F}$
5	(3.6)$^{P}_{F}$	4.1^{F}	3.9^{F}	3.5	2.0^{F}	2.0	2.2	4.6	6.1	8.4	10.0$^{P}_{B}$	7.7	7.0	6.7	6.6	6.4	6.0	3.2	3.7	3.7	3.5	2.5$^{P}_{F}$	2.8$^{J}_{F}$	3.3
6	3.4	2.9	2.6$^{J}_{F}$	2.9	2.3$^{P}_{F}$	2.6^{F}	3.4^{Z}	4.8	6.5	8.2^{P}	9.6^{J}	7.8	7.9	7.0	6.5	6.4	5.8	5.0	A	A	B	A	A	4.0
7	3.4	3.3	(3.6)^{P}	3.4	2.9$^{F}_{J}$	2.5	2.2	4.5	7.2	(10.9)^{P}	8.9	8.7	(8.7)^{P}	4.8	7.4	6.3	4.8	4.9	3.8	A	A	2.6	2.9	2.9
8	3.2	3.4	3.4	3.0	2.4	2.6^{F}	(2.9)$^{J}_{F}$	4.7	7.0	8.6	(10.3)^{P}	(11.2)^{P}	8.0^{P}	6.5	6.4	6.2	5.3	5.4	4.0^{J}	3.3	3.1	4.3^{P}	A	2.5
9	2.9	3.1	3.3^{P}	3.6	(4.0)$^{P}_{F}$	AF	5.4	4.7	6.5	7.3	9.8	7.9	7.7	6.2	6.2	6.3	5.4	4.6	4.0	A	2.5	2.7^{F}	2.5	3.0
10	3.2	3.9	3.1	A	(3.1)^{A}	C	C	C	C	C	C	C	C	C	6.2	8.5	5.1	4.0	3.9^{J}	S	2.6	AF	2.9	3.0
11	3.0^{F}	3.0	3.0	2.4	2.4^{F}	2.3$^{J}_{F}$	2.4	3.0$^{H}_{S}$	S	7.9	(11.0)^{P}	8.2	8.5	8.4	8.1	5.8	5.4	5.7	4.9^{P}	5.1	3.4	3.8	4.2^{J}	3.9
12	4.2	3.8	(4.3)$^{P}_{Z}$	(4.3)^{P}	(5.9)^{P}	3.7$^{J}_{F}$	[3.8]^{C}	4.0	6.4	9.5	8.6	9.4	(8.1)^{P}	7.5	7.3	7.0	6.3	5.0^{P}	5.2	4.2^{J}	1.9	2.5	3.0	3.6
13	3.5	3.4	3.2	2.6	2.2	2.6	2.9	3.9	6.6	8.4	(12.8)^{F}	[10.6]^{C}	9.3^{P}	(9.7)$^{J}_{F}$	(10.0)^{P}	7.2	5.6	4.7^{H}	3.7	3.9	2.4	2.4	2.7	2.9
14	3.0	3.1	3.1	3.4	3.0	2.2	2.1	4.8	7.2	5.4	8.5	9.3^{P}	8.9	8.1	5.3	7.5^{P}	6.5^{P}	4.5	4.9	3.8	2.5	2.4	2.7	(3.0)^{J}
15	2.9^{Z}	2.9	3.4	2.3	2.9	2.4	2.4	4.1	5.3	7.8	8.4	8.2	8.5	6.3	6.7	6.8	5.2	3.9^{H}	5.0	2.6	2.4	2.1	2.4	2.6
16	2.6	2.9	3.4	2.5	2.1	2.0	2.5	2.8	5.6	7.0	9.1	9.0	7.6^{P}	6.3^{P}	6.8	6.9	5.3	4.6	4.1	7.2^{P}	(3.4)^{P}	(2.3)^{V}	3.0^{Z}	3.5
17	3.0	B	B	2.8^{F}	(3.2)^{P}	(3.3)^{P}	3.4^{P}	B	5.7	6.9	10.2	9.2	(8.5)^{P}	6.0	7.3	7.6	5.3	4.0	3.9^{P}	3.9	2.7	2.5^{F}	2.5$^{J}_{F}$	2.6$^{J}_{F}$
18	2.8$^{H}_{F}$	3.1^{J}	3.2$^{J}_{H}$	3.6$^{J}_{F}$	2.6^{F}	2.6^{F}	2.5$^{H}_{F}$	5.1^{P}	6.2^{J}	6.2^{P}	6.8	9.0	B	B	6.7^{J}	6.4	6.2	3.8	3.0	3.2	B	(2.6)^{F}	2.8^{F}	B
19	2.8^{F}	2.7^{F}	2.7^{F}	4.4$^{J}_{F}$	3.5^{F}	3.8	3.9	B	6.1	5.6	8.8	6.0^{J}	8.4	7.2	6.0	5.6	6.6	4.3	3.5	B	B	B	2.9^{J}	3.4^{J}
20	3.4^{J}	3.5^{J}	3.3^{J}	B	B	2.6	1.8	4.2$^{J}_{P}$	6.0	7.1	B	C	C	C	C	(7.4)^{P}	6.7	4.3	3.2	3.2	3.2	2.9	3.0	3.1
21	3.1	3.0	3.3^{P}	B	2.6	2.5^{H}	2.9^{H}	(4.5)^{P}	(6.5)^{P}	7.2	6.9	8.1	8.6	7.6	7.4^{J}	10.7^{P}	6.0	4.5	3.9	B	3.2^{J}	2.4	2.7	3.1
22	3.0	3.3$^{J}_{F}$	2.4$^{J}_{F}$	2.8^{J}	2.8$^{J}_{F}$	B F	(3.7)^{P}	(4.1)^{P}	B	10.7	9.5	7.9	8.3	[8.2]^{C}	8.2	7.3	6.6	5.1	(4.2)^{P}	(5.2)^{P}	4.8	2.4^{H}	2.9	2.8
23	3.0	3.1	3.1	3.3^{P}	2.7	2.5	2.6	5.0	8.3	9.8^{P}	8.4^{P}	(8.1)^{P}	7.0	(7.3)^{P}	8.6	8.7	(7.7)^{P}	5.9	(4.2)^{P}	3.9^{H}	4.2	3.0	3.2	3.1
24	3.0	C	C	3.9	(5.1)^{P}	(3.2)$^{P}_{F}$	(2.8)$^{H}_{F}$	5.0	8.1^{J}	7.2^{P}	9.1	8.5	9.4^{J}	7.9	7.8	8.0	7.5	5.8	4.3	4.7	3.1^{H}	2.6	2.2^{J}	2.1^{J}
25	2.4^{J}	3.2^{H}	3.0	3.6	3.3^{P}	3.0	2.5^{F}	4.8	7.6	8.1	8.9	[8.0]^{C}	7.1	8.0	7.9	8.7	6.6	5.6	4.6	3.8	B	2.7	2.7^{H}	2.8
26	2.8	3.0	3.2^{P}	(3.4)^{P}	3.4$^{J}_{F}$	3.2	3.5	5.6^{J}	7.0	8.3	9.0	(8.8)^{P}	9.0	7.7	[7.9]^{C}	8.1	7.1	5.6	5.9	(5.2)$^{P}_{S}$	3.4$^{J}_{S}$	2.9	2.2$^{J}_{S}$	3.3
27	3.3	3.4^{P}	3.1^{S}	3.4	3.3^{P}	3.4	3.6	4.7	5.9	7.4	9.0^{H}	10.3^{P}	9.8	9.5	9.5^{P}	8.6	A	4.5	5.9	4.0	A	A	3.7$^{P}_{F}$	4.0
28	4.0	4.0	3.9	3.7	3.5	3.5	4.3^{P}	6.0^{J}	7.8	8.9	11.6	(11.4)^{P}	(11.6)^{P}	9.1	8.9	8.8	8.5	6.8	4.8	4.3	3.7	(3.3)$^{P}_{H}$	3.5	3.7^{J}
29	2.8	S	3.5$^{J}_{F}$	3.2^{P}	3.2	2.6	2.5	6.3	8.6	7.8	9.2	9.6	9.2	(9.4)^{P}	9.0	8.9	6.7	5.7	6.7	[5.4]^{B}	4.0	2.9	3.0	2.2
30	2.7	3.2	3.0	3.0	2.6	2.6	(3.2)^{P}	6.0	7.2	C	B	11.5	9.6	9.2	8.2	7.9	7.3	6.7	5.5	4.9	4.2^{P}	3.9^{Z}	3.5^{J}	3.3^{F}
31	2.7$^{J}_{H}$	3.4	3.1	2.8	3.0	3.1	3.3^{B}	4.6	5.9	9.3	10.1	B	8.1	8.2	9.0	10.0	(8.3)^{P}	(8.5)^{P}	(7.2)^{P}	5.5	(5.7)^{B}	5.9	5.3^{P}	5.1^{P}
Mean Value	3.1	3.3	3.3	3.1	3.0	2.7	2.9	4.6	6.6	8.1	9.3	8.9	8.5	7.6	7.4	7.4	6.2	5.2	4.5	4.1	3.=	3.0	2.9	3.2
Median Value	3.0	3.2	3.2	3.1	2.9	2.6	2.8	4.7	6.5	8.1	9.2	8.8	8.4	7.6	7.4	7.2	6.0	5.0	4.2	3.9	3.2	2.6	2.9	3.1
Count	31	28	28	28	29	27	29	28	28	29	28	28	28	28	30	31	30	31	30	25	24	27	29	30

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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	320	290	270	240	270F	300F	340	280	280	(330)P	270	(270)J	(280)J	[280]C	280	280	(300)J	230	(280)J	300Z	390	(260)JF	A	340
2	340	330F	(290)P	210	340	290	270	270	290	(310)P	(260)F	240	280	250	270	230	240	300	260S	AF	A	440F	440F	380F
3	350F	(290)JF	F	280	360F	AF	AF	310F	280F	270	(270)P	(260)JF	250	260	250	260	270	260	240	240	270	330	370	320i
4	370	320	250	220	AF	340	320	290P	260	270	260	250F	250P	290F	270	260	260	260	240	270	260	260	(410)JF	(360)JF
5	(360)PF	360F	300F	250	290F	280	290	260	250	280	280B	230	230	280	270	280	270	260	270	280	250	250	(340)JF	320
6	260	260	(300)JF	260	330PF	320F	270Z	250	270	300P	(270)J	240	230	260	270	250	270	250	A	A	B	A	A	350
7	340	320	(300)P	260	(260)JF	290	270	270	260	(260)JP	230	270	(270)P	280	270	250	230	260	A	A	A	A	300F	360
8	330	310	290	250	330F	310F	(270)JF	260	250	280	(260)JF	(250)P	240P	260	270	250	250	250	(260)J	270	330	330P	A	360
9	360	340	320	280	(250)JF	AF	320	260	260	280	250	260	250	240	270	260	250	260	230	A	240	480F	470	370
10	290	270	270	A	(340)A	C	C	C	C	C	C	C	C	C	270	260	250	260	(290)J	S	270	AF	340	350
11	290F	320	290	270	370F	(320)JF	210	250HS	S	300	(250)P	270	280	270	250	240	230	270	250P	240	320	350	(240)J	300
12	320	320	(300)PZ	(330)P	(320)P	(290)JF	C	A	270	260	250	260	(260)P	250	260	250	250	290P	270	(230)J	230	A	360	320
13	310	290	260	250	330	310	250	260	260	290	(250)P	[250]C	250F	(250)JF	(270)P	260	240	260H	280	230	250	300	320	310
14	300	330	310	300	240	260	260	260	250	240	270	260P	260	280	250	250P	240P	280H	270	230	(280)B	270	380	(370)J
15	320Z	300	240	260	310	320	260	250	240	270	260	270	260	250	280	250	220	280H	250	230	260	360	370	350
16	350	330	240	230	220	360	260	240	240	270	260	250	250P	250P	260	260	250	270	270	250P	(270)P	(370)V	350Z	350
17	300	B	B	310P	(330)P	(330)P	250P	B	260	250	250	250	(250)P	240	290	250	220	260	280P	270	230	270F	(210)JF	(250)JF
18	340H	(270)J	(320)JF	(230)JF	240F	350F	330FH	280P	(270)J	250P	260	280	B	B	(230)J	240	230	230	310	250	B	(270)F	270F	B
19	280F	260F	270F	(280)JF	270F	270	270	B	250	260	260	(230)J	250	250	250	230	240	230	320	B	B	B	(350)J	(340)J
20	B	(330)J	(270)J	B	B	300	290	(260)JF	230	260	B	C	C	C	C	(250)P	240	250	270	270	270	310	330	330
21	320	350	290P	B	350H	300H	(280)P	(240)P	240	250	250	250	250	(270)J	250P	230	250	280	B	(270)J	300	340	340	350
22	350	(330)JF	(360)JF	(380)J	(350)JF	BF	(350)P	(280)P	B	260	250	250	270	(260)C	260	250	260	230	(350)P	(300)P	250	300H	360	370
23	410	320	370	260P	320	350	310	260	260	250P	240P	(250)P	260	(250)P	270	250	(250)P	230	(310)P	260H	270	290	350	370
24	340	C	C	330	(250)P	(250)PF	(360)FH	260	(350)J	250P	260	260	(250)P	260	250	250	220	220	210	210	250H	350	320J	(340)J
25	(340)J	380	310	290	260	260	290F	280	260	280	230	[250]C	270	270	280	250	240	240	270	260	B	350	300	310
26	340	370	320P	(300)P	(270)JF	280	270	(250)J	250	270	260	(270)P	270	270	[260]C	250	240	270	280	(250)PS	(250)JS	320	(280)JS	360
27	320	(330)P	330S	390	330	380	220	250	250	300	290H	270P	280	280	(270)P	250	A	260	270	260	A	A	(310)PF	370
28	340	330	310	350	400	380	280P	(250)J	250	260	270	(290)P	(280)P	280	290	270	270	270	300	270	310	(300)PH	330	(310)J
29	300	S	(310)JF	300P	250	380	300	260	230	240	280	290	300	(290)P	290	270	260	280	290	(260)B	240	290	350	340
30	300	320	270	320	330	330	(280)P	250	250	C	B	270	280	280	270	280	250	260	280	290	300P	360Z	(260)J	340F
31	(320)JH	320	260	380	400	390	240B	230	250	260	280	B	280	280	310	280	(290)P	(290)P	(290)P	310	(320)B	320	(290)P	300P
Mean Value	330	320	290	290	310	320	280	260	260	270	260	260	260	260	270	250	250	260	270	260	280	330	330	340
Median Value	320	320	300	280	320	310	280	260	260	270	260	260	260	260	270	250	250	260	270	260	270	330	340	340
Count	30	28	28	28	29	27	28	27	28	29	28	28	28	28	30	31	30	31	28	25	24	25	28	30

foF2

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'F2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35°42.4'N | Long. 139°29.3E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	280	260	250	210	250[B]	270	270	240	250	280	260	250	240	[260][C]	270	260	260	200	220	230[F]	330	230[F]	300	320
2	290	280[F]	230	180	290	250	240	240	240	280	240	220	230	220	250	220	230	220	250	AF	A	380	390	350[F]
3	290	240	230	260	270	AF	AF	260[F]	240[F]	240	250	250	250	250	220	200	210[F]	210	210	210	270	290	300	260
4	320	280	220	200	AF	280	280	240	230	250[F]	250[F]	240	250[F]	270	250	230[F]	240[F]	220	210	220	220	220	350[F]	300[F]
5	300[F]	250[F]	260	220	200[A]	240	270	240	240	250	240	220	220	250	230	250	250	210	230	240	230	210[F]	310	250
6	230	220	250[F]	230	200	280[F]	240	230	220	280	260	210	220	260	230	230	240[A]	220[A]	230	220[A]	A	A	A	260
7	280	290	260	220	220[F]	250	240	250	220	250	230	230	250	230	250	230	220	220	270[A]	A	A	350[A]	290	350[A]
8	280	260	230	220	300[A]	260	240	230	240	250	250	240	240	230	250	230	220	230	220	240	300	290	A	360[A]
9	310	300[A]	300	250	220[A]	AF	280	250	250	260	230	240	250	230	250	240	230	220[A]	220[A]	A	220	A	420	350
10	270	240	240	A	320	C	C	C	C	C	C	C	C	C	270	240	230	220	250	220	230[F]	AF	310	330
11	270[F]	280	260	240	350	310[F]	190	210[H]	S	280	240	250	260	260	250	230	220	240	220[F]	210[A]	310	320	240[A]	250
12	300	310	290	250	250	240	[240][C]	250	220	240	240	240	240	250	240	240	230	230	230	210	210	420[A]	320	290
13	250	250	230	210	230	270	220	240	230	270	210	[220][C]	230	250[B]	240	230	220	220[H,A]	240	210	240	250	270	260
14	260	280	280	250	220[A]	230	250	230	230	240	250	250	250	250	250	240	220	210	250	200[A]	(250)[B]	320	320	300
15	270	260	220	230	230	250	250	220	220	250	250	250	250	230	250	230	210	220[H]	220	210	220	320	330	310
16	300	280	220	200	200	310	240	210	220	250	250	240	240	250	250	250	220	230	240	210	210	260[B]	290	290
17	270	270	220	280	300	300[A]	220	230	220	240	240	250	230	230	260	230	210	200	240	220	210	220[F]	210[F]	230[F]
18	270[H]	200[A]	280[H]	220	200[F]	290	270[H]	240	230	240	250	250	240	250	230	220[B]	230	200	210	220	250	230	240[F]	260[F]
19	270[F]	250[F]	230[F]	230	240[F]	230[F]	230	240	250	200	250	220	250	240	250	230	230	220	270	230	220	220	310	300[F]
20	350	280	250	210	200	240	270	250	220	230	260	C	C	C	C	240	230	210	220	240	210	260	290	280
21	270	300	250	210	180	320[H]	250[H]	230	220	230	230	250	240	250	250	220	220	230	240	220	210	230	310	280
22	300	280	330[F]	350[F]	290[F]	280	270	250	270	250	240	240	270	[260][C]	240	240	220	200	260	240	210	250[H]	330	350
23	390	280	310	230	260	270	270	240	250	240	230	240	220	240	250	240	220[A]	220[H]	230	220[H]	220	240	290[A]	300
24	300[A]	C	C	300	210	210[F]	260[F]	240	340	230	250	250	250	250	230	250	200	210[A]	A	250[A]	200[H]	270	300	310
25	310	270[H]	280	250	220	260	210	240	250	230	230	[240][C]	250	250	270	250	230	(210)[A]	240	230	240	250[A]	260[H]	270
26	270	320	270	240	220	270	250	230	220	250	250	240	250	250	[240][C]	240	230	220	230	210	210[A]	260	280	290
27	280	280	280	300	270	330[F]	210	220	230	250	250[H]	250	260	270	250	240	340[A]	230	230	210	A	A	260[F]	310
28	310	270	250	240	290	340	240	210	230	250	250	250	250	250	280	250	240	240	220	240	240	250[H]	290	270
29	270	270	270[F]	250	220	330	270	230	220	220	250	250	240	250	250	250	220	230	250	230	210	230	280	A
30	280	260	250	250[F]	270	300	230	220	240	C	260	250	260	250	250	250	240	230	210	250	240	280[F]	220	290[F]
31	280[H]	270	250	330	320	320	220	220	230	250	260	240	260	270	280	250	240	240	220	220	260	260	220	300[A]
Mean Value	290	270	260	240	250	280	250	230	240	250	250	240	240	250	250	240	230	220	230	220	240	280	300	300
Median Value	280	270	250	240	240	270	240	240	230	250	250	240	250	250	250	240	230	220	230	220	220	260	290	300
Count	31	30	30	30	30	28	29	30	29	29	30	29	29	29	30	31	31	31	30	28	27	27	29	30

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 3

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF1 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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								Q	L	L	L	L	Q	C	Q	Q	Q							
2								Q	Q	L	L	Q	Q	Q	L	Q	Q							
3								Q	Q	L	Q	L	L	L	Q	Q	Q							
4								Q	Q	L	L	L	L	L	L	Q	Q							
5								Q	Q	B	Q	4.4	L	L	Q	Q	Q							
6								Q	Q	L	L	Q	L	L	Q	Q	Q							
7								Q	Q	L	L	L	L	Q	L	L	Q							
8								Q	Q	L	(4.5)^{L}	L	L	4.0	L	Q	Q							
9								A	L	L	L	A	L	L	A	L	Q							
10								C	C	C	C	C	C	C	3.9	4.1	Q							
11								Q	S	A	B	L	4.0^{B}	L	L	Q	Q							
12								B	Q	L	L	L	B	L	L	L	Q							
13								Q	Q	A	L	C	4.5	B	B	Q	Q							
14								Q	Q	Q	L	L	L	L	Q	Q	Q							
15								Q	Q	L	4.1	B	4.4	(4.1)^{L}	L	Q	Q							
16								Q	Q	L	L	L	B	B	L	L	Q							
17								Q	Q	Q	L	L	L	B	L	Q	Q							
18								Q	Q	Q	L	B	L	L	L	Q	L							
19								Q	L	Q	L	Q	B	L	L	Q	Q							
20								Q	Q	Q	L	C	C	C	C	Q	Q							
21								Q	Q	L	Q	L	L	L	Q	B	Q							
22								Q	L	L	L	Q	L	C	L	L	L							
23								Q	Q	L	L	Q	Q	A	L	L	A							
24								Q	Q	Q	L	L	L	L	L	L	Q							
25								Q	L	Q	4.5	C	L	(4.2)^{B}	L	(3.9)^{A}	L							
26								Q	Q	L	L	Q	L	B	C	L	L							
27								Q	Q	L	L	L	L	L	4	A	A							
28								Q	Q	L	L	A	L	L	L	L	L							
29								Q	Q	Q	L	B	L	Q	L	L	Q							
30								Q	A	C	B	L	L	(4.5)^{L}	L	Q	Q							
31								Q	Q	L	L	L	4.7	4.8	L	L	Q							
Mean Value											4.4	4.4	4.4	4.3	3.9	4.0								
Median Value											—	—	—	(4.2)	—	—								
Count											3	1	4	5	1	2								

foF1 | Sweep 1.0 Mc to 18.5 Mc in 2 min | Automatic | K 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'F1 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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								Q	230	250 A	230	230	Q	C	Q	Q	Q							
2								Q	Q	230	240	Q	Q	Q	220	Q	Q							
3								Q	Q	220	Q	230 F	210	200	Q	Q	Q							
4								Q	Q	230 A	230 F	250	210 F	220	210 F	Q	Q							
5								Q	Q	230	Q	220	200	220	Q	Q	Q							
6								Q	Q	220	250	Q	220	250 A	Q	Q	Q							
7								Q	Q	230	210	(200) A	240	Q	240	230	Q							
8								Q	Q	220	210	230	220	210	220	Q	Q							
9								A	220	220	240	A	220	230	A	220	Q							
10								C	C	C	C	C	C	C	200	200	Q							
11								Q	S	A	(230) B	220	220	240	230	Q	Q							
12								210 A F	Q	250	230	230	B	210	220	230	Q							
13								Q	Q	A	200	C	B	B	B	Q	Q							
14								Q	Q	Q	220	230	220	210	Q	Q	Q							
15								Q	Q	230	210	A	230	200	200	Q	Q							
16								Q	Q	220	250	220	220	200	210	240	Q							
17								Q	Q	Q	250	220	220	220	210	Q	Q							
18								Q	Q	Q	230	230	250 A	240	220	Q	220							
19								Q	240	Q	250	Q	(200) B	200	200	Q	Q							
20								Q	Q	Q	260	C	C	C	C	Q	Q							
21								Q	Q	220	Q	250 A	230	220	Q	220	Q							
22								Q	260	250	230	Q	(220) B	(220) C	230	210	220							
23								Q	Q	240	230	Q	Q	A	230	230	A							
24								Q	Q	Q	250	240	210	250	230	240 A	Q							
25								Q	240	Q	220	(220) C	210	210	240	230	220							
26								Q	Q	200	210	Q	220	B	C	220	230							
27								Q	Q	230	240	B	220	260	A	A	A							
28								Q	Q	230	230	A	210	230	220	230	230							
29								Q	Q	Q	230	A	230	Q	220	250	Q							
30								Q	A	C	220	250	210	220	220	Q	Q							
31								Q	Q	230	230	230	200	200	210	240	Q							
Mean Value								210	240	230	230	230	220	220	220	230	220							
Median Value								—	240	230	230	230	220	220	220	230	220							
Count								1	5	19	27	17	24	22	20	14	5							

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foE | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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								1.6	2.5[A]	A	A	B	B	C	A	2.7	2.2[F]							
2								1.6[A]	2.2[A,F]	2.5[J]	A	B	B	B	B	2.6[A]	2.2							
3								A	2.2[F]	A	A	3.2[B]	3.2[B]	B	B	B	A							
4								A	2.5[F]	A	A	3.0[J,F]	AF	B	AF	A	2.2[F]							
5								1.9	2.2	2.7	2.8	2.8	(3.1)[B]	B	2.6	B	2.0[H]							
6								1.7[B]	2.2	2.7[B]	2.9	(2.5)[N]	A	2.7	A	2.6	A							
7								1.4[B]	2.3[A]	A	A	A	3.0[J]	B	A	A	2.0							
8								B	A	A	A	3.2	3.0	A	A	2.6[A]	1.7[J]							
9								A	A	A	AF	AF	AF	A	A	(2.5)[A]	2.1							
10								C	C	C	C	C	C	C	C	AF	2.1							
11								B	S	A	B	A	B	B	2.8	2.4	2.1							
12								A	2.3	(2.5)[T]	2.7[B]	3.0[A]	B	3.2[B]	(3.0)[B]	2.4	A							
13								1.6	2.4	2.4	2.9[J]	C	A	A	B	2.6	B							
14								1.6	A	2.9[A]	A	B	B	B	B	2.6[A,F]	A							
15								B	2.3[A]	2.4	(2.0)[N]	A	3.0[B]	3.0	2.9	2.5	1.9[B]							
16								E	2.2[A]	A	2.9	3.0[B]	3.0	2.9	2.8	2.6	2.1							
17								1.8	2.2	2.6	3.1	3.1[B]	3.0	2.8	2.7	2.3	2.1[A,F]							
18								1.5[B]	2.4[B]	A	B	2.8	2.9	2.8	2.7	2.5	2.2							
19								1.7	2.1	2.6	B	B	B	3.1[B]	3.0[B]	2.6	1.9[A]							
20								1.5[A]	2.4[A]	3.0	3.2	C	C	C	C	2.6	2.0							
21								1.6[A]	2.4[J]	2.8[F]	3.0	3.2	3.2	3.1	3.0	2.8[F]	2.3[F]							
22								1.8	2.6	2.8[H]	3.0	3.2	3.0	(3.0)[C]	2.9	2.6	2.0							
23								1.7[A]	2.4[H]	2.7	3.1	A	3.4	3.1	2.9	2.5	A							
24								2.0	2.2[F]	2.7	3.0	3.3	3.4	3.4	3.0	2.9	A							
25								A	2.3[F]	2.7	B	C	B	B	A	A	A							
26								A	2.0	A	3.2[B]	3.2[B]	3.1	3.0	(3.0)[C]	3.0	2.3							
27								1.6	2.2	2.9	3.0	3.4	B	B	B	3.0[A]	2.2[A]							
28								1.5	A	2.5[F]	A	B	B	B	3.1	2.6[H]	A							
29								1.8	1.9[F]	A	3.2	3.4[B]	B	3.2	3.2	2.9	B							
30								A	A	C	C	3.2	3.3[H]	3.3[B,H]	3.3	A	2.4							
31								1.4[B]	(2.2)[A]	AF	3.1	3.1	3.1	3.2	3.1	2.9	2.3							
Mean Value								1.6	2.3	2.7	2.9	3.1	3.1	3.1	3.0	2.6	2.1							
Median Value								1.6	2.2	2.7	3.0	3.2	3.1	3.1	3.0	2.6	2.1							
Count								20	24	17	16	17	15	15	17	24	21							

foE

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'E | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	A	A	A	120	120	C	A	150	150							
2								130	120^{F}	110	A	110	110	100	100	100^{F}	100							
3								A	120	100	A	100	100	100	100	120	A							
4								A	110	A	110	110^{F}	AF	110^{F}	A	A	110							
5								150	120	100	100	110	100	120	120	110	130$^{B}_{H}$							
6								90	110	100	110	100	100	100	A	100	A							
7								B	110	A	A	A	110	100	A	A	110							
8								B	A	A	A	100	110	A	A	A	100							
9								A	A	A	A	AF	AF	A	A	A	100							
10								C	C	C	C	C	C	C	C	AF	100^{F}							
11								B	120	A	100	A	100	100	110	110	120							
12								A	110	(110)^{T}	110	100	100	110	110	110	A							
13								B	120	120	100	C	A	A	B	100	100							
14								B	A	100	A	110	100	100	100	A	A							
15								B	120	100	100	A	100	100	100	100	110							
16								E	AF	A	100	100	100	100	100	100	110							
17								B	120	110	110	100	110	110	100	100	110^{F}							
18								B	110	110	110	110	100^{B}	100	100	110	120							
19								B	110	100	100	100	100	110	110	110	120							
20								100	110^{F}	100	100	C	C	C	C	110	110							
21								A	110	100	100	100	100	100	100	110	120^{F}							
22								B	110	110^{H}	110	100	110	110	100	100	110							
23								110	110^{H}	100	100	A	110	100	100	100	A							
24								B	110^{F}	110	110	110	110	100	100	110	A							
25								A	100^{F}	110	120	(120)^{C}	120	100	110	A	A							
26								A	100	A	110	110	110	120	(120)^{C}	120	120							
27								B	120	110	100	120	120^{B}	120	120	110	120							
28								110	110	110	120	120	120	100	110	110^{H}	100							
29								150	100^{F}	100	100	100	110	B	120	110	120							
30								A	A	C	C	100	100^{H}	100^{H}	110	100	100							
31								B	110	100^{F}	110	100	100	100	100	100	100							
Mean Value								120	110	110	110	110	110	100	110	110	110							
Median Value								110	110	100	100	100	100	100	100	110	110							
Count								8	24	21	22	23	26	24	22	24	24							

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fEs | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	1.7	1.7	G	1.9 B	2.3	2.4 Y	G	3.0	4.7	3.8	G	B	C	2.8	G	G	3.1	2.2	G	4.2	3.3	2.7 B	3.0
2	2.3	2.3	2.1	G	G	1.9	G	2.9 Y	3.7	5.1 Y	4.6	G	4.2 Y	G	G	G	G	2.0 Y	3.5	4.5 F	4.4	2.5	3.5	2.5 F
3	G	G	G	2.0 F	2.6 F	4.6	5.0 F	3.8 F	G	G	4.2	G	G	G	G	3.4 Y	3.2	G	1.9	2.5	4.1	2.4	G	2.3
4	1.6	2.7	2.5	2.2	2.5 F B	1.9	2.1	2.6	G	4.8 F	3.6	G	3.6 F	G	3.4 F	3.0 F	G	G	2.5	2.5	3.0	1.7	G	G
5	G	G	G	1.8	2.1 F	2.0	2.3	G	G	G	G	G	G	G	3.6	G	G	1.6	2.6	2.4	2.0	2.2	2.5	2.0
6	1.8	1.9	2.0	1.6	G	G	G	2.4 Y	G	4.2 Y	G	G	G	4.6 B	4.2	4.6	3.6	3.8	6.0	4.8	2.8	4.2	4.4	3.8
7	3.0	2.4	2.5	3.2	2.3	2.4	2.5	4.2 Y	(4.0) Y	4.8	4.8	4.8	G	G	3.7 B	3.7	G	1.4	3.9	7.9	4.0 F	3.0	2.7	3.6
8	1.9	2.9	2.5 F	3.0	2.5	2.6	2.1	3.0	3.9	3.5	4.0	G	G	4.5	5.6	4.6	G	1.8	3.0	2.9	3.0	3.0	7.0	2.9 F
9	2.6	2.9 F	3.5	3.0	3.2	4.8 F	2.7 F	3.4	3.8	5.8	3.8	5.6	4.7 Y	4.8	4.8	3.4	3.1	3.6	3.8 Y	7.5 Y	4.7 Y	3.0	3.1 B F	2.6
10	G	2.7	2.5	4.7	4.8 F	C	C	C	C	C	C	C	C	C	C	3.9	G	2.2 F	2.0 F	3.1 S	3.0	3.2	3.0	3.1 F
11	2.6 F	2.7	2.5	2.5	2.8 F	G	G	G	S	5.9	G	3.8 Y	G	G	G	G	2.7	3.9	4.6 F Y	3.1 Y	2.6 F	3.2	2.8 Y	2.6
12	2.5	2.6	2.5	2.0	3.8 Y	G	C	3.5 Y	G	T	G	3.8	B	G	G	G	2.3	2.4	2.6	1.9	S	2.6	3.9	3.0
13	2.5 Y	2.3	2.4 Y	G	G	G	G	G	G	6.5	G	C	3.9	4.6	B	G	G	1.7	G	2.7 Y	2.5 Y	2.2	2.3	2.5
14	G	1.7	1.7	G	1.9	G	G	G	3.8	G	4.6	G	G	G	G	3.0	2.7	2.4	2.5	2.0	B	2.1	G	G
15	G	G	G	G	G	1.8	1.9 B	B	G	G	3.8	4.0	G	G	G	G	G	G	2.0	2.0	G	G	G	G
16	1.6	2.5	2.1 F	2.0 F	2.5	2.1	2.5	1.8	2.9 F Y	2.9	G	G	G	G	G	G	G	G	G	B	G	G	G	G
17	G	G	G	G	1.5	1.7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	2.6	1.7
18	2.0	2.2	1.9	1.6	G	G	G	1.8	G	G	G	G	5.7 B Y	G	G	G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	2.6 B F	G	G	G	G	1.7 F	G	2.0	G	G	G	C	C	C	C	G	G	G	G	2.0	1.6	1.8	G	G
21	G	G	G	G	G	2.0	1.8	2.6	G	G	G	G	G	G	G	G	G	3.2	G	G	G	G	G	G
22	1.7	G	2.0	G	G	G	G	G	G	G	G	G	B	C	G	G	2.7	2.7	2.2	1.9	1.6	1.6	2.7	2.0
23	3.0	2.6	2.0	2.5	2.0	2.0	1.9	2.6	G	G	G	4.4	G	5.6	4.6	4.8	4.6	3.8	2.7 B	3.0	3.1	2.2	2.7	2.6
24	2.6	C	C	G	1.7	2.0	2.1	G	G	G	G	4.7 Y	G	G	4.6	G	3.4	3.1	4.8	4.8	2.7	2.1 Y	2.0 Y	1.9
25	2.5	2.3	1.9	1.9	2.0	3.2 B	2.7	2.6	G	G	G	C	G	G	G	6.2	3.8 F	3.1	2.7	2.6	2.6	1.9	G	G
26	G	G	1.6	G	1.9	4.8 Y	2.9	4.0	G	3.8	G	B	G	B	C	G	3.0	2.7	2.6	2.7	3.1	G	2.2	1.9
27	G	G	G	1.7	G	G	G	G	G	G	G	G	G	G	4.6	6.0	4.8	1.4	4.6	1.7	7.3 Y	4.2	2.8	3.9 B
28	3.6	2.8	1.8	1.7	1.9	2.8	2.5	2.2	G	G	G	5.5 Y	4.8 Y	G	G	3.7 Y	3.8	3.9 Y	2.6	G	G	G	G	G
29	G	G	G	G	1.7	1.7	1.8	2.7	2.9	3.3 Y	G	4.6	4.6 Y	B	4.8 Y	3.9	3.9 Y	2.9	3.7 B	4.7 Y	2.5	G	2.5	2.7
30	G	G	2.6 F	2.4 Y F	2.6	G	G	2.7	4.6 B	C	3.5	G	G	G	G	G	G	2.5	2.0	3.0	2.1 Y	4.6	2.7	2.6
31	1.9	2.1	2.1	2.1	1.6	2.0	G	2.7	3.9	3.3 F	G	G	G	G	G	G	G	G	G	3.0	1.9	G	3.8	5.8
Mean Value	2.4	2.4	1.3	2.3	2.4	2.5	2.5	2.5	3.7	4.5	4.1	4.6	4.5	4.8	4.2	4.2	3.4	2.7	3.1	3.3	3.1	2.7	3.0	2.8
Median Value	1.7	2.0	2.0	1.7	1.9	1.9	1.8	2.4	G	G	G	G	G	G	G	G	G	2.2	2.5	2.6	2.6	2.1	2.5	2.3
Count	31	30	30	31	31	30	29	29	29	28	30	26	26	25	27	31	31	31	31	30	29	31	31	31

fEs

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 8

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | (M3000)F2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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	3.0	3.2	3.2	3.6	3.1 F	3.2 F	2.9	3.2	3.2	(2.9) P	3.3	(3.2) J	(3.3) J	[3.3] C	3.3	3.4	(3.1) J	3.5	(3.3) J	3.0 Z	2.7	(3.4) J F	3.4	3.0
2	3.0	3.0	(3.1) P	3.8	3.0	3.2	3.4	3.3	3.1	(3.0) P	(3.4) P F	3.6	3.3	3.5	3.5	3.7	3.6	3.2	3.4 S	2.8 F	A	2.5 F	2.6 F	2.8 F
3	2.8 F	(3.1) J F	F	3.2 P F	2.8 F	AF	AF	3.1 F	3.3 F	3.4	(3.4) P	(3.5) J F	3.6	3.4	3.4	3.5	3.4	3.7	3.5	3.4	3.3	3.0	2.9	3.0
4	2.7	3.0	3.6	3.7 F	AF	2.9	3.0	3.2 P	3.4	3.3	3.5	3.6 F	3.4 P	3.4 F	3.4 F	3.4	3.6	3.4	3.5	3.2	3.4	3.4	(2.6) J F	(2.9) J F
5	(2.8) P F	2.8 F	3.1 F	3.4	3.1 F	3.3	3.1	3.4	3.4	3.4	3.4 P B	3.7	3.5	3.3	3.4	3.2	3.3	3.4	3.3	3.3	3.6	2.9 P F	(2.8) J F	3.0
6	3.4	3.4	(3.0) J F	3.4	2.9 P F	3.0 F	3.3 Z	3.5	3.4	3.0 P	(3.7) J	3.7	3.8	3.3	3.4	3.4	3.2	3.5	A	A	B	A	A	3.7
7	3.0	3.0	(3.1) P	3.4	(3.3) J F	3.2	3.1	3.3	3.3	(3.3) J P	3.4	3.2	(3.3) P	3.3	3.5	3.6	3.7	3.5	3.6	A	A	3.0	3.3 F	2.8
8	2.9	3.1	3.3	3.6	3.0 F	3.1 F	(3.3) J F	3.5	3.5	3.3	(3.5) J P	(3.3) P	3.6 P	3.5	3.3	3.6	3.5	3.6	(3.5) J	3.4	3.0	3.0 P	A	2.9
9	2.8	3.0	(3.0) P	3.2	(3.5) J F	AF	3.0	3.4	3.4	3.3	3.6	3.3	3.5	3.7	3.1	3.4	3.5	3.4	3.7	A	3.6	2.3 F	2.4	2.8
10	3.2	3.4	3.3	A	(3.0) A	C	C	C	C	C	C	C	C	C	3.4	3.4	3.6	3.5	(3.4) J	S	3.3	AF	3.0	3.0
11	3.3 F	3.1	3.3	3.4	2.8 F	(3.2) J F	4.0	3.7 S M	S	3.2	(3.4) P	3.4	3.3	3.4	3.5	3.7	3.7	3.3	3.4 P	3.7	3.0 B	2.8	(3.6) J	3.1
12	3.0	3.1	(3.1) P Z	(2.9) P	(2.9) P	(3.2) J F	[3.4] C	3.5	3.3	3.5	3.4	3.5	(3.5) P	3.5	3.4	3.6	3.5	3.2 P	3.4	(3.6) J	3.6	2.6	2.9	3.1
13	3.1	3.2	3.5	3.5	2.9	3.1	3.6	3.3	3.4	3.1	(3.4) P	[3.4] C	3.4 P	(3.4) I P	(3.0) P	3.5	3.5 B	3.6 H	3.2	3.7	3.5	3.0	3.0	3.1
14	3.1 B	2.9	3.0	3.0	3.5	3.3	3.4	3.4	3.6	3.7	3.4	3.3 P	3.6	3.3	3.6	3.5 P	3.4 P	3.1	3.2	3.6	3.4	2.7	2.6	(2.7) J
15	3.1 Z	3.2	3.5	3.4	3.0	3.0	3.6	3.5	3.5	3.5	3.6	3.3	3.6	3.5	3.2	3.6	3.8	3.3 H	3.7	3.7	3.3	2.9	2.8	2.9
16	3.0	3.0	3.5	3.6	3.8	2.8	3.6	3.6	3.7	3.4	3.5	3.8	3.5 P	3.6 P	3.5	3.6	3.6	3.3	3.5	3.6 P	(3.4) P	(2.8) V	2.9 Z	2.8
17	3.3	B	B	3.1 P	(3.0) P	(3.0) P	3.4 P	B	3.6	3.6	3.6	3.5	(3.6) P	3.5	3.1	3.4	3.9	3.5	3.4 P	3.3	3.6	3.4 F	(4.0) J F	(3.6) J F
18	3.1 H F	(3.2) J	(3.2) J F H	(3.6) J F	3.5 F	3.3 F	2.9 F H	3.2 P	(3.3) J	3.4 P	3.4	3.2	B	B	(3.8) J	3.5	3.9	3.5	3.0	3.5	B	(3.4) F	3.3 F	B
19	3.3 F	3.5 F	3.5 F H	(3.2) J F	3.8 F	3.4	3.3	B	3.6	3.5	3.6	(3.7) J	3.5	3.6	3.6	3.7	3.6	3.7	3.2	B	B	B	(3.0) J	(2.8) J
20	(2.9) J	(3.0) J	(3.4) J	B	B	3.1	3.3	(3.3) J P	3.7	3.4	B	C	C	C	C	(3.6) P	3.7	3.6	3.5	3.4	3.4	3.1	3.1	3.0
21	3.1	2.9	3.2 P	B	4.0	3.0 H	3.2 H	(3.2) B F	(3.5) P	3.7	3.6	3.5	3.4	3.5	(3.5) J	3.4 P	3.7	3.5	3.3	B	(3.3) J	3.2 B	2.9	2.9
22	2.9	(3.0) J F	(3.0) J F	(2.8) J	(2.9) J F	BF	(2.8) P	(3.1) P	B	3.4	3.6	3.4	3.5	[3.4] C	3.4	3.7	3.5	3.7	(2.8) P	(3.1) P	3.5	3.0 H	2.8	2.8
23	2.6	3.1	2.8	3.5 P	3.0	2.8	3.0	3.4	3.5	3.6 P	3.6 P	(3.4) P	3.4	(3.5) P	3.4	3.5	(3.4) P	3.7	(3.1) P	3.5 H	3.4	3.2	2.9	2.9
24	3.1	C	C	2.9	(3.5) P B	(3.5) P F	(2.9) H F	3.4	(3.0) J	3.5 P	3.5	3.4	(3.6) J	3.4	3.7	3.6	3.7	3.7	A	3.6	3.6 H	2.9	(3.2) J	(3.0) J
25	(2.9) J	2.9 H	3.2	3.1	3.5 P	3.4	3.1 F	3.3	3.4	3.2	3.7	[3.4] C	3.2	3.4	3.3	3.5	3.5	3.6	3.3	3.5	B	2.8	3.2 H	3.2
26	3.0	2.8	3.1 P	(3.1) P	(3.2) J F	3.3	3.3	(3.5) J	3.5	3.3	3.5	(3.4) P	3.4	3.8	[3.4] C	3.5	3.6	3.3	3.2	(3.5) P S	(3.6) J S	2.9	(3.4) J S	2.7
27	3.0	(3.0) P	3.0 S	2.7	3.0 P	2.6	3.8	3.6	3.6	3.1	3.2 H	3.3 P	3.2	3.3	(3.3) P	3.4	A	3.4	3.3	3.4	A	A	(3.2) P F	2.8
28	3.0	3.0	3.1	2.9	2.6 B	2.8	3.3 P	(3.3) J	3.4	3.4	3.4	(3.1) P	(3.2) P	3.2	3.2	3.3	3.3	3.2	3.1	3.3	3.0	(3.0) P H	2.9	(3.1) J
29	3.2	S	(3.1) J F	3.1 P	3.4	2.7	3.2	3.4	3.7	3.5	3.1	3.1	3.4	(3.2) P	3.1	3.3	3.4	3.2	3.2	(3.4) B	3.6	3.1	2.9	3.0
30	3.2	3.0	3.5	3.0	3.0	3.0	(3.1) P	3.5	3.4	C	B	3.3	3.3	3.2	3.2	3.2	3.5	3.4	3.2	3.2	3.2 P	2.9 Z	(3.4) J	2.9 F
31	(3.1) J H	3.0	3.3	2.7	2.6	2.6	2.6 B	3.6 B	3.3	3.4	3.3	B	3.2	3.3	3.1	3.2	(3.1) P	(3.0) P	(3.1) P	3.0	(3.0) B	3.0	(3.1) P B	3.1 P
Mean Value	3.0	3.1	3.2	3.2	3.2	3.1	3.3	3.4	3.4	3.4	3.5	3.4	3.4	3.4	3.4	3.5	3.5	3.4	3.3	3.4	3.3	3.0	3.0	3.0
Median Value	3.0	3.0	3.2	3.2	3.0	3.1	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.3	3.4	3.4	3.0	3.0	3.0
Count	31	28	28	28	29	27	29	28	28	29	28	28	28	28	30	31	30	31	29	25	24	27	29	30

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 9

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminF | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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	1.4	1.1	E	1.1	1.5	1.2	1.3	1.6	2.5	A	N	3.4	4.1	[3.4]C	2.8	2.8	2.4	1.2	1.4	1.4F	1.9	1.5F	A	1.8
2	1.4	E	1.1	1.1	1.3	E	1.2	1.6	2.2	2.5	2.8	3.2	3.5	3.3	3.2	2.6	2.2	1.5	A	AF	A	1.5	1.4	1.3F
3	1.4	1.2	1.1	1.1	1.1	AF	AF	1.7F	2.2F	3.6	A	4.0	3.6	3.6	3.2	2.4	2.0	1.4	1.4	1.5	1.9	1.5	1.4	1.2
4	1.2	A	1.6	1.1	AF	1.1	1.2	1.4	2.5	A	3.2F	4.0F	3.4F	N	2.8F	2.3F	2.3F	1.4	1.3	1.7	A	1.5	1.4F	1.3F
5	1.3F	1.1F	1.1	1.1	1.1	1.2	1.5	1.9	2.6	2.9	3.2	3.2	3.2	3.4	3.2	3.4	2.2	E	1.4	1.5	1.1	1.1F	1.3	1.2
6	1.2	1.2	1.1	1.4	1.1	1.1F	1.4	1.7	2.4	3.2	3.5	3.6	3.6	A	3.7	N	A	A	1.9	A	A	A	A	1.6
7	1.9	1.3	1.3	A	1.7F	1.2	1.4	1.5	2.3	3.6	3.7	3.6	3.7	N	3.2	2.9	2.0	1.3	A	A	A	A	A	A
8	1.3	1.4	1.3	AF	1.8A	1.4	1.3	1.5	A	2.8	3.2	3.6	3.4	3.4	2.8	2.7	2.0	2.5	1.2	1.7	1.6	A	A	A
9	1.3	1.4	A	AF	A	AF	1.4	A	3.2	3.2	3.5	A	3.5	3.6	A	2.6	2.2	A	A	A	1.6	1.9A	1.6	1.8
10	1.4	1.5	1.3	A	1.5	C	C	C	C	C	C	C	C	C	3.4	4.1	2.2	1.6	1.4	A	1.5	AF	1.6	1.8
11	1.5F	1.7	1.4	1.3	1.6	1.2F	1.2	1.5	S	A	(3.6)B	3.8	N	3.6	3.2	2.9	2.2	A	AF	A	A	A	A	1.9
12	3.3	2.8	3.3	1.2	A	1.2	C	A	2.7	[3.0]T	3.3	3.3	4.0	3.2	3.4	2.6	2.4	1.7	1.3	1.4S	1.3	A	1.3	1.7
13	1.4	1.2	1.2	E	1.1	1.1	1.1	1.8	2.6	A	3.5	[3.9]C	4.2	A	6.2	2.7	2.3	(1.5)B	1.6	1.4	1.7	1.5	1.5	1.5
14	1.4	1.3	1.2	1.2	1.7	1.2	1.4	1.6	A	2.9	3.0	3.6	3.4	3.4	N	3.2	2.2	1.5	1.5	A	2.3	1.5	1.6	1.4
15	1.2	1.1	1.2	1.1	1.1	1.1	1.4	1.7	2.3	2.8	2.3	4.2	3.9	3.2	3.1	3.4	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5
16	1.2	1.1	1.1	1.1	1.1	1.1	1.5	E	2.2	2.7	3.6	3.4	3.4	3.4	2.9	2.6	2.1	1.5	1.5	2.0	1.5	1.5	1.5	1.4
17	1.2	1.4	1.3	1.9	1.7	A	1.5	1.8	2.2	3.2	3.4	3.1	3.2	3.4	3.6	2.9	2.1F	1.6	1.4	1.4	1.3	1.4F	1.4F	1.4F
18	1.4F	A	1.2	1.3	1.2F	1.1	1.5	1.5	2.4	3.2	3.2	3.4	3.6	3.4	3.2	2.9B	2.2	1.6	1.4	1.2	1.4	1.2	1.4F	1.4F
19	1.4F	1.3F	1.1F	1.1	1.1F	1.1	1.5	1.7	2.3	2.9	3.4	3.0	3.6B	3.1	3.0	3.2	2.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5F
20	3.3	1.1	1.1	1.1	E	E	E	1.5	2.7	3.2	3.6	C	C	C	C	3.0	2.3	1.9	1.2	1.3	1.1	1.2	1.4S	1.4S
21	1.1	1.1	1.1	E	E	E	1.3S	1.6	2.4	2.8	4.1	4.2F	3.6	4.0	3.6	2.8	N	A	1.5	1.3	1.4	1.4	1.5	1.5
22	1.3	1.2	1.2F	1.1F	1.2F	1.2F	1.4	1.8	2.8	3.0	3.2	4.2	3.6	(3.4)C	3.2	2.6	2.1	1.6	1.4	1.8	1.8	1.3	1.5	1.4
23	1.9	1.5	1.1	1.3	1.2	1.1	1.2	1.7	2.5	3.0	3.4	3.7	3.5	A	A	2.6	A	A	1.4	A	A	1.6	1.9A	1.5
24	1.5A	C	C	1.2	1.2	1.2F	1.6F	1.5	3.0	3.3	3.6	4.2	3.5	4.0	3.2	A	A	A	A	A	1.4	1.4	1.5	1.4
25	1.3	1.2	1.2	1.1	1.1	A	1.2	1.8	2.8	3.2	3.3	(3.5)C	3.7	3.4	3.8	(3.0)B	A	A	A	1.4	1.4	1.6	1.6	1.6
26	1.2	1.1	1.1	1.1	1.1	A	A	A	2.4	3.0	3.2	4.2	3.7	4.5	[3.9]C	3.3	2.3	1.6	1.4	1.4	A	1.3	1.5	1.4
27	1.3	1.3	1.1	1.3	1.3	1.1F	1.2	1.8	2.5	3.3	3.4	4.2	3.7	4.2	A	A	A	1.3	1.6	1.3	A	A	1.6	1.5
28	A	1.4	1.4	1.2	1.2	1.4	1.4	1.6	3.2	3.2	3.6	A	3.6	3.3	3.3	(2.7)B	3.2	2.5	1.4	1.5	1.4	1.4	1.4	1.5
29	1.2	E	E	1.5	E	1.1	1.5	2.0	2.7	3.2	3.6	5.2	4.2	4.6	3.8	3.5	2.5	2.6	A	A	1.5	1.3	1.3	1.5A
30	1.3	1.2	1.4	1.6	1.3	1.1	1.1	1.8	A	C	3.6	3.5	3.6	3.6	3.3	3.5	3.4	2.8	1.5	A	1.4	1.4	1.4	1.4
31	1.2	1.2	1.2	1.2	1.1	1.2	1.3	1.8	2.2	2.3	3.7	3.5	3.5	3.4	3.5	3.1	2.3	1.9	1.2	1.4	1.2	1.2	1.2	A
Mean Value	1.5	1.4	1.3	1.2	1.3	1.2	1.3	1.7	2.5	3.0	3.4	3.7	3.8	3.6	3.4	2.9	2.3	1.6	1.4	1.5	1.5	1.4	1.5	1.5
Median Value	1.3	1.2	1.2	1.1	1.2	1.1	1.4	1.7	2.5	3.0	3.4	3.6	3.6	3.4	3.2	2.9	2.2	1.5	1.4	1.4	1.5	1.4	1.5	1.5
Count	30	28	29	27	28	25	27	27	26	25	28	27	28	24	26	27	25	24	24	20	23	24	26	28

fminF

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 10

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminE | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	1.3	1.5	E	1.7 B	1.3	1.3 S	S	1.3	1.6	1.5	2.0	1.6	[1.6] C	1.5	1.3	1.3	1.9	1.7	B	1.2	1.3	1.3	1.2
2	1.4	1.3	1.3	E	B	1.6	E	1.3	1.2 F	1.1	1.5	1.9	2.0	2.4	1.6	1.8	1.5	1.5	1.5	1.4	1.4	1.5	1.7	2.0
3	B	E	E	1.1 F	1.4 F	1.1 F	1.4	1.4	1.4	1.2	1.6	1.6	1.6	1.6	1.4	1.4	1.3	B	1.7	1.5	1.5 S	1.4 S	B	1.4
4	1.3	1.2	1.1	E	1.1	1.5	1.5	1.2	1.3	1.2	1.3	1.4 F	1.6 F	1.3 F	1.3 F	1.3 F	1.5	1.2	1.2	1.1	1.3	1.4	B	B
5	B	E	E	1.5	1.1	1.4	1.5	1.2	1.3	1.4	1.4	(1.6) B	2.0	1.4	1.5	1.4	1.3	1.3	1.1	1.1	1.5	1.5	1.2	1.5
6	1.3	1.4	1.3	1.2	E	E	B	1.2	1.3	1.2	1.1	1.5	1.4	1.3	1.6	1.2	1.3	1.3	1.5	1.2	1.1	1.2	1.3	1.3
7	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.4	1.3	1.5	1.5	1.5	1.9	1.6	1.5	1.4	1.4	1.2	1.1	1.3	1.5 F	1.4	1.4	1.3
8	1.5	1.2	1.3	1.1	1.1	1.3	1.8	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.6	1.5	1.3	1.2	1.2	1.3	1.4	1.4	1.4	1.4
9	1.2	1.1	1.1	1.1	1.1	1.1	1.5	1.4	1.4	1.3	1.6	1.5 F	1.5 F	1.5 F	1.5 F	1.4	1.4	1.4	1.4	1.5	1.2 F	1.4	1.4	1.5
10	B	1.3	1.5	1.2	1.3	C	C	C	C	C	C1	C	C	C	C	1.7	1.3 F	1.4 F	1.5 F	1.5	1.5 F	1.5 F	1.5 F	1.5 F
11	1.2 F	1.2	1.2	1.2	1.2 F	E	E	B	1.1	1.7	2.1	1.8	1.8	1.6	1.8	1.5	1.5	1.2	1.4 F	1.4 F	1.4 F	1.5 F	1.5	1.4
12	1.2	1.1	1.1	1.2	1.1	E	C	1.4	1.4	[1.6] T	1.7	2.3	1.4	1.3	1.2	1.2	1.3	1.1	E	1.6	S	1.3	1.3 S	1.2
13	1.1	1.1	1.3	E	E	E	E	1.2	1.4	2.2	2.2	[2.2] C	2.2	2.2	B	2.2	1.3	1.4	B	1.4	1.2	1.8	1.2	1.5
14	B	1.5	1.5	E	1.6	E	B	1.4	1.4	1.5	1.6	1.8	1.8	1.6	1.3	1.4	1.4	1.2	1.5	1.5	B	1.5	B	B
15	E	E	E	E	E	1.6	1.6	B	1.4	1.3	1.3	1.3	1.4	1.3	1.2	1.4	1.4	B	1.5	1.5	B	B	B	B
16	1.3	E	E	1.6 F	1.1	1.3	1.5	E	1.5 F	1.2	1.2	1.4	1.4	1.4	1.2	1.5	1.6	B	B	B	B	B	B	B
17	E	B	B	B	1.4	1.4	B	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.5 F	1.5	B	B	B	B	1.4	1.4
18	1.4	1.3	1.3	1.2	E	E	B	1.5	1.4	1.2	1.4	1.4	1.4	1.3	1.2	1.5	1.4	1.4	B	E	B	E	B	B
19	B	B	E	E	E	E	B	1.5	1.3	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.4	B	B	B	B	B	B	B
20	1.5 B F	E	E	E	E	1.4 F	E	1.5	1.5 F	1.1	1.3	C	C	C	C	1.3	1.1	1.3	E	1.6	1.4	1.4	B	B
21	E	E	E	E	E	1.2	1.3	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.6	1.5	1.5	B	B	B	B	B	B
22	1.3	E	1.6	E	E	E	B	1.4	1.3	1.4	1.4	1.4	1.4	2.0	1.4	1.3	1.2	1.4	1.4	1.2	1.2	1.3	1.2	1.4
23	1.2	1.2	1.4	1.1	1.4	1.1	1.6	1.4	1.2	1.4	1.4	1.4	1.2	1.6	1.3	1.4	1.6	1.4	1.4	1.3	1.4	1.4	1.4	1.5
24	1.3	C	C	E	1.4	1.4	1.6	B	1.4 F	1.4	1.3	1.3	1.4	1.4	1.3	2.1	1.4	1.5	1.5	1.4	1.2	1.5 B	1.5	1.5
25	1.3	1.3	1.4	1.4	1.3	1.1	1.4	1.4	1.4 F	1.8	2.2	2.3	2.2	1.3	1.8	1.4	1.4	1.5	1.4	1.4	1.4	1.6	B	B
26	E	E	1.3	E	1.4	1.1	1.5	1.4	1.2	1.3	1.3	1.4	1.6	1.4	(1.4) C	1.5	1.4	1.3	1.4	1.4	1.4	B	1.6	1.5
27	B	B	E	1.4	B	E	E	1.3	1.3	1.4	1.5	2.3	2.7	2.3	2.0	1.9	1.3	E	1.3	1.5	1.4	1.4	1.3	1.2
28	1.2	1.2	1.5	1.5	1.4	1.1	1.3	1.3	1.4	1.4	2.2	2.5	2.2	1.5	1.4	1.3	1.1	1.5 F	1.8	B	B	B	B	B
29	E	E	E	B	1.4	1.4	1.6	1.4	1.1	1.4	1.4	1.4	1.8	1.7	1.5	1.3	1.3	1.4	1.4	1.4	1.5	B	1.4	1.2
30	B	E	1.1	1.1	1.1	E	E	1.4	1.3	C	C	1.4	1.4	1.3	1.3 F	1.4	1.3	1.4	1.5	1.4	1.4	1.4	1.4	1.5
31	1.5	E	E	E	1.1	1.4	B	1.4	1.2	1.2 F	1.4	1.4	1.4	1.4	1.3	1.2	1.2	1.5 B	E	1.4	1.7	E	E	1.2
Mean Value	1.3	1.2	1.3	1.3	1.3	1.3	1.5	1.4	1.3	1.4	1.5	1.6	1.6	1.6	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Median Value	1.3	1.1	1.2	1.1	1.1	1.1	1.4	1.4	1.3	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Count	23	27	29	29	29	30	22	26	30	29	29	29	29	29	28	31	31	27	25	25	22	23	20	21

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 11

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | ypF2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3E

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	70	70	100	60	170 F	70 F	80	100	110	(80) P	80	(80) J	(70) J	[80] C	90	40	(100) J	80	(50) J	140 Z	70	(50) J F	A	80
2	50	60 F	(70) P	80	70	90	100	70	80	(90) P	(90) P F	40	90	70	40	70	70	70	60	AF	A.	80 F	60 F	60 F
3	100 F	(60) J F	F	70 P F	150 F	AF	AF	70 F	60 F	50	(80) P	(40) J F	40	60	100	50	50	30	70	110	130	90	50	90
4	80	110	40	200 F	AF	110	100	90 P	60	60	50	40 F	80 P	40 F	50	60 F	40	80	70	90	60	140	(50) J F	(20) J F
5	(80) P F	90 F	100 F	80	100 F	100	140	80	80	40	50 P B	40	90	30	60	140	90	60	80	60	40	70 P F	(10) J F	90
6	50	90	(100) J F	70	100 P F	90 F	70 Z	50	60	100 P	(10) J	60	40	80	50	60	90	70	A	A	B	A	A	120
7	50	80	(60) P	60	(90) J F	70	160	60	90	(90) J P	80	110	(100) P	70	40	50	50	50	A	A	A	A	50 F	60
8	80	70	60	60	70 F	60 F	(60) J P F	70	50	70	(40) J P	(110) P	60 P	70	70	60	50	70	(60) J	50	70	90 P	A	50
9	80	50	(110) P	70	(70) J F	AF	40	70	80	60	40	90	70	40	140	80	70	60	60	A	40	80 F	90	110
10	50	50	70	A	(50) A	C	C	C	C	C	C	C	C	C	60	60	50	50	(40) J	S	80	AF	60	50
11	50 F	70	50	50	60 F	(30) J F	40	20 S	S	80	(110) P	60	80	100	50	40	50	90	90 P	40	70	90	(40) J	70
12	100	60	(100) P Z	(120) P	(150) P	(60) J F	C	A	110	40	60	40	(40) P	40	60	50	70	80 P	50	(60) J	70	A	60	60
13	40	60	40	50	110	40	40	70	60	80	(100) P	[100] C	90 P	(90) J P	(80) P	50	60	40 H	70	50	60	170	80	90
14	100	120	100	100	80	100	90	70	40	40	70	110 P	50	60	50	50	70 P	90	80	70	(40) B	120	110	(90) J
15	60 Z	60	90	60	100	100	40	60	70	40	20	70	30	60	80	60	50	60 H	30	70	140	100	80	90
16	60	70	60	70	100	100	40	40	30	50	50	10	50 P	40 P	40	30	50	90	30	50 P	(50) P	(100) V	70 Z	70
17	40	B	B	70 P	(80) P	(60) P	70 P	B	50	40	40	60	(60) P	90	100	90	40	50	60 P	70	80	130 F	(40) J F	(70) J F
18	40 H F	(110) J	(40) J F H	(60) J F	110 F	60 F	100 H F	80 P	(70) J	90 P	60	70	B	B	(30) J	70	20	90	130	70	B	(50) F	60 F	B
19	40 F	40 F	60 F	(70) J F	20 F	70	100	B	50	60	50	(60) J	40	50	50	60	70	60	10	B	B	B	(60) J	(90) J
20	B	(50) J	(50) J	B	B	70	60	(90) J P	60	70	B	C	C	C	C	(30) P	40	40	50	60	50	80	50	70
21	40	60	60	B	30	40 H	70 H	(70) P	(70) P	30	40	70	80	50	(30) J	90 P	60	50	50	B	(100) J	80	80	100
22	70	(70) J F	(30) J F	(50) J	(50) J F	BF	(110) P	(100) P	B	60	40	70	30	[60] C	90	30	50	50	(100) P	(70) P	60	180 H	30	60
23	80	60	80	50 P	80	100	100	110	70	40 P	40 P	(70) P	80	(60) P	60	50	(90) P	60	(60) P	70 H	50	110	80	60
24	30	C	C	60	(50) P	(70) P F	(50) H F	70	(20) J	50 P	80	60	(40) J	50	30	30	60	50	130	100	50 H	50	(30) J	(20) J
25	(60) J	30	50	80	50 P	60	80 F	60	50	100	30	[60] C	80	30	60	50	110	50	60	50	B	70	60	40
26	60	70	30 P	(50) P	(80) J F	60	70	50 J	70	80	40	(60) P	60	70	[60] C	60	50	80	100	(60) P B	(50) J S	130	(50) J S	140
27	70	(70) P	70 S	80	70 P	120	50	50	30	80	70 H	50 P	80	60	(70) P	70	A	70	100	70	A	A	(100) P F	70
28	50	50	60	50	100	60	70 P	(100) J	100	70	60	(110) P	(100) P	80	80	60	130	130	90	90	120	(100) P H	120	(70) J
29	50	S	(50) J F	80 P	90	70	50	50	50	70	80	80	10	(60) P	80	60	70	90	60	[60] B	50	90	90	30
30	50	80	40	110	70	50	(90) P	70	90	C	B	80	50	70	90	70	60	80	80	60	50 P	50 Z	(50) J	80 F
31	(40) J F	40	80	120	110	90	50 B	50	120	60	80	B	70	60	70	90	(90) P	(110) P	(110) P	110	[100] B	90	(90) P	70 P
Mean Value	60	70	70	80	80	70	80	70	70	60	60	70	60	60	70	60	70	70	70	70	70	100	60	70
Median Value	60	60	60	70	80	70	70	70	60	60	60	60	60	60	60	60	60	70	60	70	60	90	60	70
Count	30	28	28	28	29	27	28	27	28	29	28	28	28	28	30	31	30	31	29	24	24	25	28	30

ypF2

Sweep 1.0 Mc to 18.5 Mc in 2 min Automatic

K 12

47

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | 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	3.0	3.4	2.9	2.9	2.6	1.9	2.3	3.2	5.3	8.1	11.7	10.9	11.1	12.2	10.5	8.8	6.9	5.9	5.7	3.7	4.1	3.2	2.9	2.6
2	2.5	3.0	3.5	4.3	2.2 H	2.6	2.9	3.4	5.8	8.8	13.4	11.8	10.5	8.1	8.2	8.0 J H	6.9	5.7	5.6	4.6 H	4.0	2.7	2.5	3.1
3	3.4	3.2	2.4	2.1	1.9	2.7	2.4	C	7.4	(8.1) P	8.9	9.8	[11.6] C	13.3	12.3	10.7	9.3	7.8	5.8	4.6	3.7 J F	3.4	3.0	3.0 F
4	3.0 F	3.3 F	3.6	3.0	1.9	2.1	1.8	3.0	6.9	8.1	9.8	9.0	8.8	9.0	7.8	7.4	6.7	5.9 H	4.6	4.7	4.1	2.9	2.1	2.3
5	1.7	1.7	3.5 F	3.4	3.2 S	1.9	C	3.5	6.2 P	7.1	8.6	8.8	9.5	8.2	7.3	8.3	8.6	6.5	4.2	4.1	4.7	3.2	3.0	3.5 F
6	4.4 J F	3.9	2.3 F	2.6 F	2.6 F	2.6 F	2.7 F	3.5	5.7	7.0	9.4	12.9 H	11.8	9.8	7.1	7.2	7.1	6.2	4.6 J	A	A	3.2	3.0	3.4 J
7	3.1	3.5	3.7	3.8	3.2	3.0	3.0	3.0	7.1	8.4	8.6	11.3	13.4	13.1	11.8	9.6	6.9	5.5	5.3	A	A	A S	2.7	2.8
8	3.1	3.1	3.4	3.2	2.5	2.3	2.3	3.1	C	C	C	C	C	C	C	C	C	C	C	4.7	4.6 Z	5.7 H	5.4	3.2
9	3.0 Z	3.0	2.9	3.0	3.2	2.6 Z	4.4	3.8	6.3	7.9	12.2	9.5	10.8	7.9	6.4	7.4	6.9	5.5	5.1	4.2	3.8	3.2 F	2.7 F	3.0
10	3.2	2.9	2.8	2.8	3.4	2.4	1.9	3.0	6.7	6.2	A	8.5	9.1	8.9	8.3	7.1	5.9	5.4	3.9	5.5	4.1	3.0	2.8	3.1
11	2.9	2.8 H	2.8	2.6	3.2	3.1	F	4.5	5.1	7.5	10.9	8 2 J	7.8	8.4	8.5	6.9	6.3	6.1	5.9 H	7.0	5.0	3.3	2.9	2.8 J
12	2.9	3.6	3.6	3.5	3.5	3.2	3.3	3.6 J	(6.9) J	7.4	8.0	9.7 H	10.7	8.6	9.3	8.5	6.9	6.2	5.3	6.3	3.5	2.3	2.7	3.2
13	3.4	3.0	3.2	3.0	2.4	2.5	2.9	3.4	6.1	6.9	9.3	11.0 H	13.1	10.7	10.3	9.2	7.4	5.6	4.0	4.3	3.6	3.2	2.5	3.2
14	3.4	3.4 F	3.4 F	3.2	3.5 F	2.2	2.2 V	3.3	6.4	8.0	C	C	C	11.5	9.5	9.4	9.1	6.9	4.3	5.3	4.4	3.2 H	3.3 J F	3.0
15	3.2	3.0	3.6	2.3	2.3	2.2	2.4	4.1	6.2	6.7 J	7.7	10.9	11.3	10.6	7.9	7.8	6.9	5.4	4.9	4.2	3.6	3.3	3.4	3.2
16	2.7	2.5	3.3	2.3	2.0	1.6	1.8	3.5	5.9	6.5	7.4	11.4	10.0	7.0	7.0	6.7	7.7	6.3	5.0	4.2	4.4	2.5 J	2.4 Z	2.7 H
17	2.8 H	3.0	3.2	2.8 Z	3.0	3.0	3.1	C	C	C	C	8.8	9.0	8.0 J	7.4	C	C	5.4	3.6	4.0	5.0	2.7	2.5 F	2.7 F
18	(2.9) J F	(3.1) F	3.2 F	3.7	3.1	2.1 F H	2.1 F	3.2 F	(6.3) J	6.7	6.4	8.7	B	8.4 J	7.0	8.5 J	8.2 J	7.4	3.9 H	4.0	3.6	3.4	2.9	3.2 H
19	3.0 F	3.0 F	3.1	3.3	3.7	2.9 Z	2.5 F	3.4	7.0	B	B	8.5	9.9	(9.0) B	6.9	[7.0] C	7.0 J	6.4	6.2	4.5	4.2	4.4	3.5	3.2
20	2.8	2.9	4.5 J F	4.4 J F	3.2	2.6 F	2.9	3.7	5.9	6.7	9.2	11.1	9.1	7.5	9.3	10.0 S	7.5	6.4	4.4 J	3.6	3.4	3.5	2.8	3.0
21	3.3	3.5	5.0 S	4.4 S	2.9 S F	1.9 F	2.0	2.9	5.7	6.2	6.3	7.5	7.6	7.7	8.1	8.3	7.8	8.0	4.3	4.2	4.6	3.6	2.4 F	2.8
22	2.8	2.9	3.0 F	2.8	3.4 H	3.6	(3.8) F	3.9	7.0	10.5	8.8 V	9.5	9.8	9.6	10.0	9.0	7.8	6.1	4.9	6.2	7.3	3.8	2.4 F	3.0 F
23	3.0	3.6	3.3	3.8	2.6	2.4	2.6	3.7	8.2	9.3	7.3 H	8.5	7.9	8.0	8.3 J	7.8	8.9	7.5	5.2	5.1	(5.1) J	3.5	2.8	2.9
24	3.1	3.1	3.2	3.6	4.0	3.1	3.0	3.6	6.2	7.6	8.5	11.2	11.6	10.6	8.9	8.8	9.4	7.9 J	6.3	4.8	6.8 J	4.1 J	[3.6] C	3.0
25	2.8	3.6	3.1	3.0	3.2	3.4	3.6	4.3	6.0	8.4	8.7	9.6	9.0	9.0	9.0	9.5	9.5	C	C	4.9	5.5	4.8	3.2	3.1
26	3.1	3.0	3.1	3.3	3.1	2.7	3.1	3.9	C	C	C	C	C	C	C	C	C	C	C	7.2 H	5.3 H	4.0	3.3	3.5
27	3.9 H	3.6	3.5	3.2	3.3	3.3	4.1	3.5	6.0	6.7	8.7	10.3	10.3	10.3	9.4	10.0	7.9	7.8	6.9	5.2	4.1	4.7 V	4.4	3.6
28	3.8 Z	4.4 F	4.3	3.9	3.3	2.7	3.1	5.2	6.2	8.0	9.9	11.4	11.8	12.1	10.5	11.4	11.3	8.6	7.7 H	6.7	5.0	4.8	5.0	4.2
29	3.5	3.4	3.6	3.2	2.6	2.5	(2.7) P	4.7	7.1	8.5	8.2	9.7	(10.3) S P	11.5	11.3	10.8	9.1 S	8.3	6.3	7.1	6.9	4.0	3.0	3.1
30	3.1 H	3.0	3.1	3.0	2.9	2.9	2.9	3.1	7.7	7.7	8.9	10.6	8.9	9.4	10.2	10.5 H	9.1	8.9	7.6	4.8	5.5	5.5	4.4	2.4
31	2.4	2.8	3.3	[3.2] C	3.1	3.2 F	3.3	4.4	6.0	8.2	10.5	10.4	8.8	8.6	9.2	10.2	10.4	9.3	7.3	7.9	8.8	7.4	6.2 J H	4.7
Mean Value	3.1	3.2	3.3	3.2	2.9	2.6	2.8	3.6	6.4	7.7	9.1	10.0	10.1	9.6	8.9	8.7	8.0	6.7	5.3	4.8	4.7	3.8	3.2	3.1
Median Value	3.0	3.1	3.3	3.2	3.1	2.6	2.9	3.5	6.4	7.7	8.8	9.8	10.0	9.0	8.9	8.6	7.8	6.4	5.1	4.7	4.4	3.4	2.9	3.1
Count	31	31	31	31	31	31	29	29	28	27	25	28	27	29	29	28	28	28	28	29	29	30	3	31

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

Y 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h_pF2 | 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	360	290	220	240	240	290	330	320	260	290	300	280	290	290	290	280	250	250	270	320	300	310	300	370
2	320	330	330	210	410 H	340	290	340	300	330	300	310	310	300	310	260 J H	240	240	270	290 H	250	330	370	400
3	310	230	310	340 B	380	400	370	C	270	(260) P	270	310	(300) C	290	300	300	290	260	250	290 H	(310) J F	330	300	350 F
4	320 F	300 F	260	290 B	340	360	350	310	260	270	260	250	280	290	300	280	270	280 H	260	290	260	240	330	390
5	350	310	370 F	250	210 S	360	C	300	260 P	270	280	300	280	300	310	300	290	250	270	300	280	300	300	400 F
6	(320) J F	210	290 F	300 F	280 F	330 F	290 F	320	270	300	310	280 i	300	270	290	290	280	260	(260) J	A	A	240	340	(360) J
7	320	350	360	320	390	370	330	310	290	250	270	290	300	300	300	280	240	260	A	A	A	AS	370 B	340
8	340	340	320	260	330	350 Z	310	340	C	C	C	C	C	C	C	C	C	C	C	290	310 Z	300 H	330	280
9	400 Z	390	330	330	240	350 Z	300	330	280	290	280	280	270	250	A	350	290	310	250	280	300	300 F	360 F	360
10	300	330	300	300	220	B	360	340	250	230	A	310	260	290	270	260	250	250	250	310	250	330	360	320
11	310	360 H	450	430	430	420	F	360	250	300	270	(230) J	290	300	250	250	270	250	290 H	250	250	360	330	(320) J
12	320	330	310	340	320	310	320	(320) J	(250) J	250	290	300	290	270	300	260	260	280	270	250	220	300	340	320
13	260	300	300	310	380	340	300	290	260	260	310	310 H	260	280	310	280	240	250	280	300	250	260	430	360
14	330	340 F	380 F	350	280 F	290	330 V	300	250	300	C	C	C	300	300	300	280	230	320	290	260	350 H	(370) J F	310
15	340	300	260	280	290	370	300	290	240	(250) J	310	290	260	290	300	280	250	270	280	290	300	300	310	420
16	350	350	260	260	270	330	400	300	250	270	290	290	270	270	290	290	290	250	260	300	260	(270) J	320	400 H
17	350 H	360	290	330 Z	350	330	340	C	C	C	C	270	260	290	270	C	C	240	270	300	260	280	330 F	F
18	(370) J F	(340) F	310 F	240	220	410 F H	350 F	330 F	(250) J	250	260	290	B	(250) J	270	(300) J	(240) J	250	260 H	290	290	270	280	380 H
19	330 F	350 F	330	350	310	350 Z	350 F	300	230	B	B	300	280	(270) B	260	(260) C	(260) J	270	260	260	300	240	250	250
20	310	310	(290) J F	(240) J F	230	340 F	310	300	270	280	300	300	270	280	300	270 S	260	260	(240) J	280	300	310	310	310
21	360	330	260 S	250 S	220 F S	390 F	340	310	250	260	280	300	300	310	280	270	290	280	230	300	270	240	350	350
22	370	400	(430) F	420	370 H	350	(370) F	300	310	290	270 V	300	290	300	280	250	(250) B	270	300	310	270	240	400 F	420 F
23	440	330	340	300	250	380	350	320	260	210	290 H	250	260	300	(300) J	290	290	250	280	300	A	250	340	320
24	320	370	340	310	390	310	380	340	260	300	280	300	280	280	260	260	260	(240) J	260	300	(280) J	(290) J	(320) C	350
25	360	350	330	320	330	320	320	290	280	300	270	290	280	270	280	270	260	C	C	250	250	320	320	350
26	310	380	320	290	260	310	300	290	C	C	C	C	C	C	C	C	C	C	C	290 H	270 H	290	310	400
27	340 H	320	370	300	360	400	320	260	250	280	320	280	310	290	310	300	290	290	280	260	310	330 V	320	390
28	430 Z	360 F	360	340	410	420	360	280	260	280	270	300	310	300	300	320	300	250	270 H	290	260	300	260	310
29	310	340	310	300	240	410	(400) P	270	250	270	280	300	(320) P S	330	300	300	280 S	240	300	300	250	270	340	370
30	310 H	330	320	290	310	360	340	310	260	230	290	290	270	300	300	300 H	290	290	270	310	300	290	240	300
31	370	370	300	(340) C	390	430 F	350	290	240	270	270	250	290	300	320	330	320	290	310	300	290	320	(280) J H	330
Mean Value	340	330	320	300	310	360	340	310	260	270	290	290	280	300	290	280	270	260	270	290	280	290	330	350
Median Value	330	340	320	300	310	350	340	310	260	270	280	290	280	290	300	280	270	260	270	290	270	300	330	350
Count	31	31	31	31	31	30	29	29	28	27	25	28	27	29	28	28	28	28	27	29	28	30	31	30

h_pF2 | Sweep 1.0 Mc to 18.5 Mc in 15 min | Manual

Y 2

Radio Regulatory Agency (Denpacho)

Aoyama-Kita-machi, Minato-Ku, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | 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	300	250	210	210	200	270	290	280	240	280	270	240	270	260	240	260	230	230	230	260	250^{A}	230	240	300
2	250	290	290	200	210^{H}	280	250	290	230	300	300	270	260	270	270	250^{H}	230	230	250	230^{H}	210^{A}	260^{A}	330	350
3	260	210	250	250^{B}	360	370	370	C	250	250	250	300	280	260	260	260	270	250	250	220^{H}	AF	240	260	270
4	250	260	210	240	B	320	260	290	250	270	250	250	250	270	280	230	260	240^{H}	220	230	210	200	300	360
5	330^{B}	290	280	230	200	330	C	300	240	270	280	280	260	230	300	300	240	230	220	240	230	230	230	320
6	270	200	220	230	210	260	230	260	230	250	240	270^{H}	270	250	280	280	250	230	230	A	280	220	320	350
7	300	300	330	300	350	350	300	300	280	240	260	250	260	280	260	250	240	230^{A}	280	A	A	A	320	300
8	290	290	270	220	220^{B}	300	280	270	C	C	C	C	C	C	C	C	C	C	C	240	240	250^{H}	210	240
9	340	330	300	290	240	250	290	280	250	270	270	230	260	250	A	330	280	280	210	210	220	230	270	290
10	240	270	250	270	220	(360)^{B}	310	300^{A}	220^{A}	230	A	280	260	280	260	250	230	230	220	260	210	290	320	290
11	250	320^{H}	390	410	390	400	310^{F}	280	230	300	250	230	260	290	250	250	240	240	220^{AH}	220^{A}	230^{A}	320^{A}	300	310
12	290	290	270	290	260	250	250	270	240	230	240	260	270	250	290	250	260	230	210	230	210^{A}	260	280	290
13	240	250	250	250	210	300	280	250	250	240	300	250^{H}	240	260	280	250	230	240	200	240	200	210	360	290
14	270	270	300	290	250	260	290	270	230	290	C	C	260	270	230	280	280	220	220	230	220	230^{H}	300	260
15	270	260	240	220	240	330	270	250	230	250	240	270	260	270	290	270	250	240	250	260	250	270	280	370
16	320	330	230	230	240	300^{B}	380	250	250	250	250	270	260	270	280	260	280	250	220	240	210	260	260	340^{H}
17	310^{H}	300	230	260	260	280	280	C	C	C	C	250	240	280	250	C	C	220	240	270	220	220	320^{F}	300^{F}
18	300	290	250^{F}	220	200	310^{H}	300	260	230	250	250	290	260	250	220	290	230	200	200^{H}	240	230	230	230	300^{H}
19	290	260	270	260	250	220	300	270	230	240	250	290	270	270	250	(250)^{C}	250	260	220	230	260	220	220	230
20	290^{F}	290^{F}	250	210^{A}	200	250^{B}	300	270	250	230	290	270	260	270	290	260	250	230	200	250	260	260	280	290
21	300	290	230	200	200^{A}	370	330^{B}	270	240	240	270	300	280	300	260	270	270	250	210	230	220	220	310^{B}	300
22	310	330	370	360	300^{H}	290	300	290	270	270	240	270	280	300	270	250	230	270	230	280	230	200	330^{A}	350
23	380	300	290	280	230	A	300	260	250	210	200^{H}	240	210	290	280	280	260	240	230	A	280^{A}	250	300	280
24	260	320	330	300	350	290	340	300	260	260	270	280	260	250	260	260	260	220	220	240	220	270	[310]^{C}	350
25	320	290	300	300	300^{F}	280	290	270	260	280	240^{A}	230	270	250	260	260	240	C	C	230	220	260	250	300
26	270	300^{A}	290	250	210	230	280	260	C	C	C	C	C	C	C	C	C	C	C	230^{H}	200^{H}	220	230	300
27	300^{H}	290	300	220	300	320	280	200	220	250	300	260	290	290	280	280	260	280	230	220	230	250	250	280
28	300	330	340	300	360	400	330	230	260	240	230	270	270	260	290	290	270	220	220^{H}	260	230	280	240	280
29	290	290	280	250	220	370	350	250	230	250	250	270	280	300	280	300	260	220	280^{A}	260	240	220	290	310
30	260^{H}	250	240	230	250	300^{A}	270	260	230	230	280	290	250	290	280	270^{H}	250	230	220	250	220	220	210	210
31	260	300	260	290	300	350	290	210	220	260	250	250	280	280	280	300	280	260	260	250	240	260	220^{H}	230
Mean Value	290	290	270	260	260	310	300	270	240	250	260	260	260	270	270	270	250	240	230	240	230	240	280	300
Median Value	290	290	270	250	240	300	290	270	240	250	250	270	260	270	280	260	250	230	220	240	230	240	280	300
Count	31	31	31	31	30	30	30	29	28	28	26	28	29	29	28	28	28	28	28	28	29	30	31	31

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foF1 | 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								Q	Q	L	4.6	(4.6)^{L}	L	4.1	L	L	A	Q						
2								Q	Q	L	L	L	L	L	L	L	L	Q						
3								C	Q	A	L	L	L	L	L	L	L	L						
4								Q	Q	L	L	L	4.5	L	L	Q	L	Q						
5								Q	Q	L	L	L	L	Q	4.6	L	Q	Q						
6								Q	Q	Q	Q	4.8^{B}	(4.8)^{L}	Q	L	L	Q	Q						
7								Q	L	L	L	L	L	5.5	L	L	L	A						
8								Q	C	C	C	C	C	C	C	C	C	C						
9								Q	Q	L	L	Q	L	L	A	L	L	Q						
10								Q	Q	L	A	L	L	L	A	L	Q	Q						
11								Q	Q	L	L	L	4.6	L	L	L	Q	Q						
12								Q	L	L	Q	L	L	L	L	L	L	Q						
13								Q	Q	L	L	Q	L	L	L	L	L	3.7						
14								Q	Q	L	C	C	L	L	Q	L	L	Q						
15								Q	Q	L	Q	L	L	L	L	L	L	Q						
16								Q	Q	Q	L	L	4.2	L	(4.3)^{L}	L	L	Q						
17								C	C	C	C	4.3	L	L	L	C	C	Q						
18								Q	Q	Q	Q	L	4.8	L	Q	4.5	L	Q						
19								Q	Q	Q	Q	4.8	L	L	Q	C	L	L						
20								Q	Q	Q	L	L	L	L	L	L	L	Q						
21								Q	Q	Q	L	L	L	L	L	L	L	Q						
22								Q	Q	Q	L	L	L	L	L	L	L	L						
23								Q	L	L	Q	L	Q	L	L	L	L	Q						
24								Q	Q	L	L	L	L	L	L	L	L	L						
25								Q	L	L	Q	Q	L	Q	Q	L	Q	C						
26								Q	C	C	C	C	C	C	C	C	C	C						
27	•							Q	Q	Q	L	L	L	L	Q	L	L	L						
28								Q	Q	Q	L	L	L	L	L	L	L	Q						
29								Q	Q	L	Q	L	L	L	L	L	L	Q						
30								Q	Q	L	L	L	Q	L	L	L	Q	Q						
31								Q	Q	L	L	L	L	L	L	L	L	Q						
Mean Value											4.6	4.6	4.6	4.8	4.5	4.5		3.7						
Median Value											—	—	4.6	—	—	—		—						
Count											1	4	5	2	2	1		1						

foF1 | Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

Y 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | h'F1 | 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								Q	Q	250	230	210	200	200	220	220	A	Q						
2								Q	Q	230	240	230	240	230	240	230	220	Q						
3								C	Q	A	230	250	240	220A	220	220	230A	220						
4								Q	Q	240	230	220A	200	200	220	Q	220	Q						
5								Q	Q	250	250	240	250	Q	230	260	Q	Q						
6								Q	Q	Q	Q	B	240	Q	240	250	Q	Q						
7								Q	270	240	220	210	210	200A	220A	220	210A	A						
8								Q	C	C	C	C	C	C	C	C	C	C						
9								Q	Q	240	230	Q	A	A	A	270	260	Q						
10								Q	Q	A	A	260	250	210A	A	220	Q	Q						
11								Q	Q	250	220	200	200	250	230	230	Q	Q						
12								Q	230	210	Q	230	200A	230	240	230	240	Q						
13								Q	Q	230	230	Q	200	210	220	230	210	230						
14								Q	Q	240A	C	C	210	A	Q	220	220A	Q						
15								Q	Q	230	Q	230	240	220	240	240	250	Q						
16								Q	Q	Q	210	210	210	230	210	210	210	Q						
17								C	C	C	C	200	230	200	210	C	C	Q						
18								Q	Q	Q	Q	250	220	230	Q	200	230	Q						
19								Q	Q	Q	Q	200	230	260	Q	C	230	250						
20								Q	Q	Q	250	220	240	220	210	200	210	Q						
21								Q	Q	Q	220	230	220	280	230	260	A	Q						
22								Q	Q	Q	240	240	230	280	210	220	220	220						
23								Q	250	230	Q	220	Q	220	250	250	240	Q						
24								Q	Q	230	240	230	210	230	230	A	240	220						
25								Q	240	260	Q	Q	260	Q	Q	240	Q	C						
26								Q	C	C	C	C	C	C	C	C	C	C						
27								Q	Q	Q	270	230	230	210	Q	230	240	260						
28								Q	Q	Q	200	210	210	210A	210	220	250	Q						
29								Q	Q	230	Q	200	200	230	260	230	230	Q						
30								Q	Q	230	250	250	Q	210A	220	250	Q	Q						
31								Q	Q	260	220	210A	220	220	220	230	260	Q						
Mean Value									220	240	230	220	220	230	230	230	230	230						
Median Value									—	240	230	220	220	220	220	230	230	220						
Count									4	17	18	24	26	24	22	25	20	6						

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

Y 5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | foE | 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								B	2.0 B	A	3.0 A	3.3	A	3.3 A	A	3.0 A	A	A						
2								E	2.0	A	A	A	A	A	A	3.0	2.7 A	1.9 B						
3								C	B	B	3.0 A	A	A	A	A	3.0	A	A						
4								B	2.1 A	A F	A	A	3.4	3.4	A	A	A	A						
5								A	2.1	2.6 A	3.2	A	A	A	A	A	2.6 A	A						
6								F	1.9	2.8	2.9 J	2.8	A	C	A	2.9 A	A	A						
7								E	2.0 A	2.5 A	2.7 A	2.9 A	A	A	3.2	3.1 A	A	A						
8								B	C	C	C	C	C	C	C	C	C	C						
9								A	2.2 A	2.7 A	3.0 B	A	3.1 A	A	A	A	2.6 J	A						
10								A	A	A	A	3.3 J	A	A	A	A	A	A						
11								A	2.3 J	2.7	2.9 A	3.0 A	3.3 A	3.3	A	2.9	2.5	1.9 A						
12								A	A	A	A	A	A	3.2 A	3.1 A	2.9	2.5	2.1 A						
13								B	2.0	2.5 B	3.0 H	3.1	3.2	3.2	3.1	A	2.4 A	2.0 A						
14								E	2.0	A	C	C	A	A	A F	A	A	1.9						
15								E	1.9	2.5 A	A	A	A	3.0 J	A	A	A	2.0 J						
16								E	1.7 A	2.7	A	3.0 A	3.1 A	A	3.0	2.9	2.5	2.0						
17								C	C	C	C	3.1 A	3.2 F	3.2	3.0	C	C	2.0						
18								1.5	2.2	2.4 A	3.2 A	A	3.4	B	3.4	3.0	2.6	(2.0) B						
19								E	1.7	2.3 J A	2.7	A	A	A	A	C	2.5	2.0 A						
20								B	2.0	A	3.1	3.3	A	A	3.0	2.8	2.4	2.0						
21								B	2.2	A	A	A	A	A	3.5	A	A	A						
22								B	1.9	A	2.9 A	A	A	A	3.2 A	2.8	2.4 A	A						
23								E	2.2	2.7	2.9	3.1	3.4	3.3	3.3	3.1	2.7	A						
24								B	2.4 A	2.7	3.0 J	3.3 A	3.5	3.4 J	A	3.0 B	2.6 A	A						
25								A	A	A	A	A	A	A	A	A	A	C						
26								A	C	C	C	C	C	C	C	C	C	C						
27								E	2.0	2.6	3.0	3.3	3.6	3.6 K	3.4	3.2	2.7	2.1						
28								1.8 A	2.2	2.5	3.3 A	3.4	3.4	A	A	3.1 J	A	2.3						
29								B	2.1 A	2.8	3.0 J	3.2	3.4	A	3.6	3.2	2.9 A	A F						
30								E	2.1 A	2.5 A	A	A	A	A	A	A	A	2.3						
31								E	2.1	A	A	A	3.2 J	3.4	3.2	3.2	2.9	2.1						
Mean Value								1.7	2.1	2.6	3.0	3.2	3.3	3.3	3.2	3.0	2.6	2.0						
Median Value								E	2.0	2.6	3.0	3.2	3.4	3.3	3 2	3.0	2.6	2.0						
Count								13	24	16	17	14	13	11	13	17	16	15						

foE

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

Y 6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | f'E | 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								B	110	A	A	100	100	A	A	A	A	A						
2								E	110	A	A	A	A	110	A	100	A	120						
3								C	B	A	120	A	A	A	A	100	A	A						
4								B	110	A	A	A	110	110	A	A	A	A						
5								A	100	A	130	140	A	A	A	A	A	A						
6								E	110	110	110	110	A	C	A	120	A	110						
7								E	150	A	100	100	A	A	100	A	A	A						
8								B	C	C	C	C	C	C	C	C	C	C						
9								A	120	A	100	100	A	A	A	A	A	A						
10								A	A	A	A	A	100	A	A	A	A	A						
11								A	160	120	A	100	A	100	A	100	110	130						
12								A	A	A	A	A	A	A	A	110	120	A						
13								B	120	110	110H	110	120	120	100	A	110	A						
14								E	110	A	C	C	A	A	A	A	A	100						
15								E	120	120	110	110	A	110	A	110	110	110						
16								E	120	120	A	A	A	100	110	100	110	120						
17								C	C	C	C	110	110	100	110	C	C	120						
18								B	120	A	120	A	120	120	120	100	110	B						
19								E	120	A	A	130	A	A	A	C	100	100						
20								B	B	110	110	100	A	A	110	A	100	110						
21								B	110	A	A	A	A	120	120	110	A	A						
22								B	120	A	A	A	A	A	A	100	100	A						
23								E	140A	110	100	100	100	110	100	100	110	A						
24								B	120	100	120	110	110	110	110	B	A	A						
25								A	A	130	A	A	120	A	A	A	A	C						
26								A	C	C	C	C	C	C	C	C	C	C						
27								E	110	110	110	100	130	120H	110	100	A	100						
28								120	120	100	A	100	110	100	A	100	A	100						
29								B	150	110	130	110	100	A	110	100	100	A						
30								E	A	100	A	A	A	A	A	A	A	110						
31								E	120	A	A	A	110	100	110	110	110	110						
Mean Value								120	120	110	110	110	110	110	110	100	110	110						
Median Value								—	120	110	110	100	110	110	110	100	110	110						
Count								12	22	13	13	16	13	14	12	15	12	13						

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

Y 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fEs | 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	G	G	G	G	G	G	G	G	G	4.1	4.1	3.9	4.0	4.1	4.2	3.8 F	5.0	4.4	3.5 B	3.0	1.6	1.9	G	G
2	1.5	2.0	1.5	G	G	1.3	G	G	G	3.7 F	3.4	4.2	3.8	3.8	3.6	4.0	3.3	G	3.6	2.2	2.6	2.6	3.0	2.4
3	2.9 Y	2.4	2.2	G	G	G	G	c	3.0	5.7	4.0	3.6	4.0	3.8	4.2	4.4 Y	3.0	2.2	4.7 B	2.8	3.2	2.8	B	G
4	G	G	G	G	G	G	G	G	G	4.0 F	5.0	4.8	4.6 Y	4.0	4.0	3.6	3.4	2.6	G	G	3.0 Y	1.7	G	G
5	G	G	G	G	G	1.9	C	2.1	3.5	3.1	G	3.8	4.6	4.4	4.2	3.4	3.0	3.0	3.4	2.7	1.6	1.9	2.0	G
6	2.2	G	G	G	G	G	G	3.1	G	G	G	3.8	3.6	C	3.4	3.6	3.4	G	G	7.6	8.6	2.6	5.2	3.7
7	1.7	4.2	3.4	G	G	G	G	G	G	4.1	4.6	6.4	4.8	4.6	4.5	3.5	4.6	3.8	4.6 B	7.6	5.8	4.8	2.8	2.6
8	2.4	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	3.2	3.0	2.6	4.8	3.2
9	2.9	2.0	1.9	2.1	3.9	2.5	2.9	3.2	G	3.4	3.8	G	4.9	6.8	6.9	4.3 F	4.6	3.8	2.0	2.8	1.9 Y	G	G	G
10	1.9 Y	G	G	G	G	1.1 B	G	5.1	3.8	5.1	10.4	4.6	4.5	5.0	7.1	4.7	3.5	3.3	3.7	2.2	G	G	5.7	2.0
11	1.4	1.6	G	G	G	G	G	3.8	G	G	4.2	4.0 Y	4.8	4.8	4.8	4.6	G	3.0	3.2	2.2	5.4	3.8	3.4	2.7
12	3.4	2.2	G	G	G	1.9	G	3.3	4.0	5.0	6.3	5.3	5.0	4.3	4.6	4.0	3.5	3.0	3.0	3.2	2.6	3.0	3.0	3.0
13	2.8	2.2 Y	G	1.6	2.0	2.0	G	G	3.1 Y	3.1 Y	G	G	G	G	5.0 Y	6.0	G	3.3	2.8	1.2	2.0	G	G	G
14	G	G	G	G	G	G	G	1.2	3.0	4.1	C	C	5.0	5.0	4.0	4.0	4.4	3.7	2.6	1.8	2.5 F	2.1	G	G
15	G	G	G	G	G	G	G	G	G	3.2	4.0	G	3.8	G	3.8	G	G	3.2	2.8 B	2.0	G	2.2	2.4	2.2
16	G	G	G	G	G	G	G	G	G	3.2	3.7	3.8	4.1	G	G	G	G	G	3.0	G	G	3.0 B Y	G	G
17	G	G	G	B	G	G	G	C	C	C	C	G	G	G	G	C	C	2.9 Y	G	G	G	G	G	G
18	G	2.2	1.9	1.8	G	G	G	G	G	3.1	G	3.7	G	G	3.7 Y	G	G	G	G	G	2.0	2.7	2.3	2.2
19	2.7	2.8	G	G	G	G	G	2.2	2.9 F	3.6	3.0	3.6	3.8	3.6	3.8	C	G	G	2.0 B	2.6 B	1.9	1.9 B	1.9	2.1
20	2.2	2.3	1.7	2.2	G	G	G	G	G	G	G	3.9	3.9 F	3.8	4.0 Y	3.8 Y	4.0 Y	3.1 Y	2.0	3.6	3.0	2.6	2.2	2.4
21	2.2	G	1.4	G	2.0	2.1	G	G	4.0 Y	3.6	3.9	3.9	3.6	G	4.3	4.7	4.0	5.1	2.4	2.0	G	2.2	G	G
22	2.3	G	G	G	G	G	3.0	2.1	2.5	3.2	4.4	4.2	4.2	3.8	4.8 Y	4.0 F	4.4 Y	4.8	3.2	2.8	2.6	2.4	2.0	2.2
23	1.9	4.2	2.4	3.0	2.5	2.4	2.2	G	2.9	3.2 Y	3.9	3.9 Y	G	4.4	5.9	5.6	4.6	4.0	3.0	4.5	5.2	2.8 B	2.2	G
24	G	G	2.2	G	G	G	G	G	G	3.4	4.3	4.5	4.5	5.0	4.8	5.2	4.1	3.3	2.6	4.0	2.2	3.4	C	2.4
25	2.6	3.0	2.6	2.8	2.4	2.4	2.4	3.6	3.8	3.6	3.2	4.2 B	4.6	4.6 B	4.2	3.2	3.4	C	C	2.9	G	G	2.1 Y	2.4
26	2.3 Y	2.5 Y	G	G	G	1.8	2.5	3.3	C	C	C	C	C	C	C	C	C	C	C	G	3.9	4.6	2.6	G
27	2.8	2.2	2.4	2.0	G	G	G	G	3.8	G	G	5.0	4.8	G	5.4	G	5.1	3.6	3.0	G	G	G	G	G
28	1.4	5.0	G	G	G	G	G	G	2.6	3.9	3.9 F	4.9 Y	4.2	5.0	4.8 Y	4.3	3.6 F	3.0	2.4	G	1.9	3.2	1.8	2.9
29	2.1	2.6	G	G	G	G	G	G	G	G	3.8	G	4.9 Y	4.8 F	G	G	4.2 Y	4.7	5.7	3.8	6.2	2.8	4.4	3.0
30	2.8	1.3	2.4	2.4 F	2.6	2.0	1.8	1.4	2.8	3.9	4.1	6.2	6.9	4.7	4.1	4.7	4.0	2.9 F	1.9	3.3	G	G	G	G
31	G	2.3	2.3	1.8	1.6	2.2	1.8	G	3.1 Y	4.8	4.4	5.0	4.0	G	4.0	G	3.8	3.0	2.0	2.4	2.0	2.0	2.0	2.0
Mean Value	2.3	2.6	2.1	2.2	2.4	2.0	2.4	2.8	3.3	3.8	4.4	4.4	4.4	4.5	4.5	4.3	3.9	3.5	3.0	3.2	3.2	2.7	2.9	2.6
Median Value	1.9	2.0	G	G	G	G	G	G	2.6	3.5	3.9	3.9	4.2	4.0	4.2	4.0	3.6	3.0	2.8	2.6	2.0	2.4	2.0	2.0
Count	31	31	31	30	31	31	30	28	28	28	27	28	29	28	29	27	28	28	28	31	31	31	29	31

fEs

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

Y 8

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | (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	2.7	3.2	3.6	3.4	3.4	3.0	2.9	3.0	3.3	3.3	3.4	3.4	3.3	3.2	3.3	3.3	3.5	3.5	3.5	3.0	3.1	3.1	3.1	2.7
2	3.0	2.9	3.0	3.7	2.5 H	2.8	3.2	2.8	3.1	2.9	3.3	3.2	3.0	3.3	3.0	(3.5) J H	3.6	3.5	3.3	3.2 H	3.3	3.0	2.7	2.7
3	3.1	3.6	3.1	2.9	2.6	2.6	2.9	C	3.4	(3.5) P	3.4	3.2	[3.2]	3.3	3.1	3.3	3.1	3.3	3.4	3.2 H	(2.9) J H	2.8	3.0	2.9 F
4	3.0 F	3.2 F	3.3	3.1	2.8	2.8	2.8	3.0	3.4	3.3	3.3	3.5	3.1	3.2	3.2	3.2	3.4	3.4 H	3.4	3.2	3.5	3.4	3.0	2.6
5	2.8	3.0	2.7 F	3.5	4.0 S	2.7	C	3.1	3.3 P	3.6	3.2	3.1	3.4	3.2	3.1	3.2	3.4	3.6	3.3	3.1	3.3	3.1	3.1	2.6 F
6	(2.9) J F	3.8	3.1 F	3.0 F	3.1 F	2.8 F	3.2 F	2.9	3.4	3.2	3.1	3.4 H	3.2	3.4	3.3	3.2	3.3	3.3	(3.2) J	A	A	3.5	3.0	(2.7) J
7	3.2	2.9	2.7	2.9	2.6	2.7	3.0	3.1	3.4	3.5	3.3	3.4	3.2	3.3	3.3	3.3	3.7	3.4	3.3	A	A Z	A S	2.7	2.8
8	2.9	2.9	3.0	3.4	3.0	2.9	(2.9) B	2.9	C	C	C	C	C	C	C	C	C	C	C	3.2	3.0	3.2 H	3.5	3.3
9	2.8 Z	2.6	3.1	2.9	2.9	2.9 Z	3.1	2.9	3.4	3.2	3.5	3.2	3.3	3.5	3.4	2.9	3.3	3.0	3.5	3.3	3.1	3.2 F	2.8 F	2.7
10	3.2	3.0	3.2	3.2	4.0	2.5	2.8	2.8	3.6	3.8	A	3.1	3.4	3.2	3.6	3.5	3.5	3.5	3.5	3.7	3.4	2.8	2.8	3.0
11	3.0	2.9 H	2.5	2.5	2.6	2.5	F	2.8	3.5	3.2	3.5	(3.6) J	3.4	3.2	3.6	3.4	3.4	3.5	3.4 H	3.5	3.4	2.9	3.1	(2.9) J
12	2.9	3.0	3.0	2.9	3.1	3.1	3.1	(3.0) J	(3.6) J	3.7	3.2	3.2	3.3	3.4	3.3	3.6	3.5	3.3	3.2	3.5	3.7	3.1	2.9	3.1
13	3.4	3.3	3.3	3.1	2.6	2.8	3.1	3.2	3.4	3.4	3.1	3.0 H	3.5	3.2	3.2	3.2	3.6	3.5	3.2	3.2	3.4	3.4	2.5	2.8
14	3.0	2.9 F	3.0 F	2.9 F	3.4 F	3.2	3.0 V	3.1	3.5	3.2	C	C	C	3.1	3.1	3.1	3.3	3.7	3.1	3.2	3.4	2.8 H	(2.7) J H	3.1
15	3.0	3.0	3.4	3.3	3.2	2.8	3.2	3.2	3.6	(3.5) J	3.2	3.4	3.6	3.3	3.3	3.4	3.6	3.3	3.3	3.1	3.0	3.1	3.0	2.7
16	2.9	2.8	3.5	3.3	3.5	3.0	2.6	3.1	3.7	3.3	3.3	3.4	3.3	3.4	3.3	3.2	3.3	3.5	3.5	3.2	3.4	(3.1) J	3.0	2.7 H
17	2.9 H	2.9	3.2	2.8 Z	2.8	3.0	2.9	C	C	C	C	3.0	3.5	3.2	3.3	C	C	3.5	3.3	3.2	3.4	3.1	3.1 Z F	2.9 F
18	(2.7) J F	(2.9) F	3.1 F	3.6	3.8	2.8 F H	2.9 F	2.9 F	(3.5) J	3.6	3.5	3.3	B	(3.4) J	3.5	(3.3) J	(3.6) J	3.7	3.4 H	3.2	3.2	3.2	3.2	2.9 H
19	3.1 F	2.9 F	3.1	3.0	3.1	3.1 Z	3.0 F	3.2	3.7	B	B	3.2	3.4	(3.4) B	3.4	[3.4] C	(3.3) J	3.4	3.5	3.5	3.1	3.6	3.6	3.4
20	3.1	3.0	(3.1) J F	(3.6) J F	3.4 F	2.8 F	3.0	3.2	3.4	3.5	3.2	3.3	3.5	3.5	3.2	3.5 S	3.6	3.4	(3.4) J	3.3	3.1	3.1	3.1	3.2
21	2.7	2.9	3.2 S	3.4 S	3.7 S F	2.7 F	2.8	3.0	3.6	3.5	3.4	3.3	3.4	3.3	3.4	3.4	3.4	3.4	3.5	3.1	3.4	3.6	2.8	2.8
22	2.8	2.6	(2.5) F	2.6	2.8 H	2.9	(2.7) F	3.0	3.1	3.3	3.1 V	3.1	3.2	3.2	3.2	3.4	3.3	3.4	3.0	3.1	3.4	3.5	2.1 F	2.6 F
23	2.5	3.0	2.8	3.1	3.4	2.9	2.8	3.0	3.4	4.0	3.3 H	3.5	3.3	3.2	(3.2) J	3.3	3.3	3.7	3.2	3.1	(3.5) J	3.6	2.8	3.0
24	3.0	3.1	3.0	3.0	2.7	3.0	2.7	2.9	3.5	3.3	3.3	3.1	3.4	3.3	3.3	3.5	3.5	(3.5) J	3.3	3.1	(3.2) J	(3.1) J	[3.0] C	2.9
25	2.8	2.9	3.0	3.0	3.0 F	3.0	3.0	3.3	3.3	3.4	3.3	3.2	3.3	3.4	3.3	3.5	3.4	C	C	3.5	3.4	2.9	2.9	2.8
26	3.1	2.8	2.9	3.3	3.2	3.0	3.0	3.3	C	C	C	C	C	C	C	C	C	C	C	3.3 H	3.3 H	3.2	3.0	2.6
27	2.8 H	3.0	2.8	3.1	2.8	2.6	3.0	3.3	3.5	3.3	3.1	3.3	3.2	3.4	3.1	3.2	3.3	3.2	3.3	3.2	2.9	2.9 V	2.9	2.6
28	2.5 Z	2.8 F	2.8	3.0	2.6	2.6	2.9	3.2	3.5	3.3	3.4	3.2	3.0	3.2	3.0	3.0	3.2	3.4	3.4 H	3.2	3.5	3.2	3.5	3.2
29	3.1	2.8	3.0	3.0	3.7	2.5	(2.6) P	3.5	3.5	3.4	3.4	3.3	(2.9) P S	3.0	3.1	3.2	3.3 S	3.4	3.1	3.2	3.4	3.3	2.8	2.7
30	2.9 H	3.0	3.1	3.2	3.0	2.7	2.9	3.1	3.4	3.8	3.3	3.0	3.3	3.3	3.1	3.1 H	3.3	3.3	3.4	3.1	3.1	3.2	3.5	3.1
31	2.7	2.7	3.0	[2.8] C	2.6	2.5 F	2.9	3.2	3.6	3.3	3.5	3.5	3.2	3.2	2.9	2.9	3.0	3.1	3.1	3.3	3.2	3.0	(3.3) J H	2.9
Mean Value	2.9	3.0	3.0	3.1	3.1	2.8	2.9	3.0	3.5	3.4	3.3	3.3	3.3	3.3	3.2	3.3	3.4	3.4	3.3	3.2	3.3	3.2	3.0	2.8
Median Value	2.9	2.9	3.0	3.1	3.0	2.8	2.9	3.1	3.4	3.4	3.3	3.2	3.3	3.3	3.3	3.3	3.4	3.4	3.3	3.2	3.3	3.1	3.0	2.8
Count	31	31	31	31	31	31	29	29	28	27	25	28	27	29	29	28	28	28	28	29	29	30	31	31

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminE | 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	B	B	B	B	E	B	E	B	1.4	1.3	1.6	1.6	1.7	1.9	1.7	1.8	1.7	1.1	1.1	1.1	1.1	1.1	B	B
2	1.1	1.2	1.1	1.1	E	1.1	1.1	1.1	1.1	1.6	2.0	2.2	2.2	2.6	2.2	1.7	1.5	1.4	1.8	1.7	1.6	1.4	1.6	1.6
3	1.2	2.2	1.3	E	E	E	E	C	2.0	1.3	2.0	1.8	2.4	2.5	1.8	1.8	1.8	1.8	1.6	1.2	1.1	1.6	B	E
4	E	E	E	B	B	E	E	B	1.2	1.6	1.7	1.6	2.0	2.1	2.0	1.8	1.7	1.5	B	B	1.4	1.4	B	B
5	B	B	B	B	B	1.6	C	1.3	1.5	1.8	2.2	2.2	2.2	2.6	2.4	2.2	1.8	1.8	1.1	E	E	1.7	1.8	E
6	E	E	E	E	E	E	E	1.7	E	1.8	1.8	1.8	1.8	[1.9]C	2.0	1.8	2.0	1.6	B	1.9	1.6	1.6	1.6	1.5
7	1.5	1.4	1.2	E	E	E	E	E	1.6	1.3	1.3	1.6	1.7	1.9	2.0	1.9	1.7	1.5	1.6	1.5	1.6	1.6	1.4	1.6
8	1.8	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	E	E	E	1.2	1.2
9	1.1	1.7	E	E	1.5	E	E	E	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.1	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	1.7	1.7	2.0	2.0	2.0	2.1	1.7	1.7	1.8	E	1.2	1.4	E	E	1.1
11	1.2	1.2	E	B	E	E	B	1.4	1.6	1.6	1.9	1.9	1.7	1.7	1.6	1.7	1.7	1.4	E	1.6	1.4	1.6	1.6	1.6
12	1.6	1.5	B	B	B	1.6	B	1.2	1.4	1.2	1.6	1.7	1.7	1.6	1.6	2.0	1.9	1.5	1.1	E	E	E	E	E
13	1.1	E	E	E	E	E	B	B	1.8	1.8	1.8	1.9	2.5	1.9	2.0	1.9	1.7	1.7	E	E	E	E	B	E
14	E	E	E	E	E	E	E	E	E	1.7	C	C	2.0	2.4	2.0	1.4	1.3	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	E	1.5	1.8	1.8	1.6	1.6	2.5	2.0	1.8	1.5	1.2	1.2	B	1.2	1.2	1.2
16	E	E	B	B	B	E	B	E	1.5	E	E	1.3	1.7	1.9	1.9	1.7	1.5	1.5	2.0	B	B	1.8	B	B
17	B	B	E	B	B	E	B	C	C	C	C	1.7	1.9	1.9	1.9	C	C	1.2	B	B	E	E	E	E
18	E	E	E	E	1.3	E	E	E	1.2	E	1.5	1.6	1.7	1.8	1.7	1.9	1.7	2.0	B	B	1.8	2.4	2.0	2.1
19	2.2	E	E	E	E	E	E	2.0	E	1.8	2.0	2.2	2.2	2.4	2.4	[2.0]C	1.5	1.4	1.4	1.2	1.2	1.5B	1.1	1.1
20	E	E	E	E	E	E	B	B	1.5	1.4	1.1	1.2	1.3	1.6	1.4	1.4	1.2	1.1	1.2B	2.0	1.8	1.8	1.4	1.8
21	1.6	B	1.1	E	1.1	1.6	B	B	1.2	1.4	1.6	1.8	1.9	2.1	2.2	2.0	1.5	1.3	E	1.5	E	E	B	E
22	1.5	E	E	E	E	E	E	1.6	E	1.5	1.5	1.3	1.8	1.6	1.5	1.3	1.2	1.3	1.2	E	E	E	E	E
23	E	E	E	E	E	E	E	E	E	1.1	1.1	1.5	1.7	1.6	1.2	1.5	1.6	1.6	1.1	1.1	1.2	1.2	1.8	B
24	B	B	1.2	E	E	B	B	B	1.6	1.5	1.5	1.6	1.7	1.7	1.6	3.0	1.6	1.4	1.8	3.0	1.8	1.6B	[1.6]C	1.6
25	1.6	1.6	1.1	E	1.1F	1.1	1.1	1.2F	1.4	2.0	2.2	2.6	2.2	2.4	2.6	2.4	2.2	C	C	E	B	B	E	E
26	1.1	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	C	C	B	1.8	1.1	1.8	B
27	1.7	E	E	E	E	E	E	E	1.1	1.6	1.7	1.8	2.0	1.8	2.1	1.5	E	E	1.6	E	B	E	E	B
28	1.1	E	B	B	E	E	B	1.4	1.6	1.1	1.7	1.9	1.9	2.0	1.8	1.7	1.6	E	1.7	B	1.3	1.2	1.1	1.1
29	E	E	B	E	E	B	B	B	1.5	1.1	2.4	1.5	1.6	1.8	1.7	1.6	1.6	1.5	1.6	1.5	1.5	1.3	1.4	E
30	E	E	E	E	E	E	E	1.2	1.5	1.5	1.5	1.3	1.7	1.7	1.5	1.5	1.4	1.2	1.2	1.2	B	E	E	E
31	E	1.1	1.1	1.1	E	E	1.6	E	E	1.3	1.5	1.6	1.7	1.8	2.0	1.8	1.7	1.7	1.4	1.6	1.2	1.2	1.6	1.6
Mean Value	1.4	1.5	1.1	1.1	1.2	1.4	1.3	1.4	2.0	1.5	1.7	1.7	1.8	1.9	1.9	1.8	1.6	1.4	1.4	1.5	1.5	1.5	1.5	1.5
Median Value	1.1	E	E	E	E	E	E	E	1.4	1.5	1.7	1.7	1.8	1.9	1.9	1.8	1.6	1.4	1.2	1.2	1.2	1.2	1.2	1.1
Count	27	25	24	22	25	27	19	21	28	28	27	28	29	29	29	28	28	28	24	25	26	30	25	25

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jan. 1951 | fminE | 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	B	B	B	B	E	B	E	B	1.4	1.3	1.6	1.6	1.7	1.9	1.7	1.8	1.7	1.1	1.1	1.1	1.1	1.1	B	B
2	1.1	1.2	1.1	1.1	E	1.1	1.1	1.1	1.1	1.6	2.0	2.2	2.2	2.6	2.2	1.7	1.5	1.4	1.8	1.7	1.6	1.4	1.6	1.6
3	1.2	2.2	1.3	E	E	E	E	C	2.0	1.3	2.0	1.8	2.4	2.5	1.8	1.8	1.8	1.8	1.6	1.2	1.1	1.6	B	E
4	E	E	E	B	B	E	E	B	1.2	1.6	1.7	1.6	2.0	2.1	2.0	1.8	1.7	1.5	B	B	1.4	1.4	B	B
5	B	B	B	B	B	1.6	C	1.3	1.5	1.8	2.2	2.2	2.2	2.6	2.4	2.2	1.8	1.8	1.1	E	E	1.7	1.8	E
6	E	E	E	E	E	E	E	1.7	E	1.8	1.8	1.8	1.8	[1.9]C	2.0	1.8	2.0	1.6	B	1.9	1.6	1.6	1.6	1.5
7	1.5	1.4	1.2	E	E	E	E	E	1.6	1.3	1.3	1.6	1.7	1.9	2.0	1.9	1.7	1.5	1.6	1.5	1.6	1.6	1.4	1.6
8	1.8	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	E	E	E	1.2	1.2
9	1.1	1.7	E	E	1.5	E	E	E	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.1	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	1.7	1.7	2.0	2.0	2.0	2.1	1.7	1.7	1.8	E	1.2	1.4	E	E	1.1
11	1.2	1.2	E	B	E	E	B	1.4	1.6	1.6	1.9	1.9	1.7	1.7	1.6	1.7	1.7	1.4	E	1.6	1.4	1.6	1.6	1.6
12	1.6	1.5	B	B	B	1.6	B	1.2	1.4	1.2	1.6	1.7	1.7	1.6	1.6	2.0	1.9	1.5	1.1	E	E	E	E	E
13	1.1	E	E	E	E	E	B	B	1.8	1.8	1.8	1.9	2.5	1.9	2.0	1.9	1.7	1.7	E	E	E	E	B	E
14	E	E	E	E	E	E	E	E	E	1.7	C	C	2.0	2.4	2.0	1.4	1.3	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	E	1.5	1.8	1.8	1.6	1.6	2.5	2.0	1.8	1.5	1.2	1.2	B	1.2	1.2	1.2
16	E	E	B	B	B	E	B	E	1.5	E	E	1.3	1.7	1.9	1.9	1.7	1.5	1.5	2.0	B	B	1.8	B	B
17	B	B	E	B	B	E	B	C	C	C	C	1.7	1.9	1.9	1.9	C	C	1.2	B	B	E	E	E	E
18	E	E	E	E	1.3	E	E	E	1.2	E	1.5	1.6	1.7	1.8	1.7	1.9	1.7	2.0	B	B	1.8	2.4	2.0	2.1
19	2.2	E	E	E	E	E	E	2.0	E	1.8	2.0	2.2	2.2	2.4	2.4	[2.0]C	1.5	1.4	1.4	1.2	1.2	1.5B	1.1	1.1
20	E	E	E	E	E	E	B	B	1.5	1.4	1.1	1.2	1.3	1.6	1.4	1.4	1.2	1.1	1.2B	2.0	1.8	1.8	1.4	1.8
21	1.6	B	1.1	E	1.1	1.6	B	B	1.2	1.4	1.6	1.8	1.9	2.1	2.2	2.0	1.5	1.3	E	1.5	E	E	B	E
22	1.5	E	E	E	E	E	E	1.6	E	1.5	1.5	1.3	1.8	1.6	1.5	1.3	1.2	1.3	1.2	E	E	E	E	E
23	E	E	E	E	E	E	E	E	E	1.1	1.1	1.5	1.7	1.6	1.7	1.5	1.6	1.6	1.1	1.1	1.2	1.2	1.8	B
24	B	B	1.?	E	E	B	B	B	1.6	1.5	1.5	1.6	1.7	1.7	1.6	3.0	1.6	1.4	1.8	3.0	1.8	1.6B	[1.6]C	1.6
25	1.6	1.6	1.1	E	1.1F	1.1	1.1	1.2F	1.4	2.0	2.2	2.6	2.2	2.4	2.6	2.4	2.2	C	C	E	B	B	E	E
26	1.1	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	C	C	B	1.8	1.1	1.8	B
27	1.7	E	E	E	E	E	E	E	1.1	1.6	1.7	1.8	2.0	1.8	2.1	1.5	E	E	1.6	E	B	E	E	B
28	1.1	E	B	B	E	E	B	1.4	1.6	1.1	1.7	1.9	1.9	2.0	1.8	1.7	1.6	E	1.7	B	1.3	1.2	1.1	1.1
29	E	E	B	E	E	B	B	B	1.5	1.1	2.4	1.5	1.6	1.8	1.7	1.6	1.6	1.5	1.6	1.5	1.5	1.3	1.4	E
30	E	E	E	E	E	E	E	1.2	1.5	1.5	1.5	1.3	1.7	1.7	1.5	1.5	1.4	1.2	1.2	1.2	B	E	E	E
31	E	1.1	1.1	1.1	E	E	1.6	E	E	1.3	1.5	1.6	1.7	1.8	2.0	1.8	1.7	1.7	1.4	1.6	1.2	1.2	1.6	1.6
Mean Value	1.4	1.5	1.1	1.1	1.2	1.4	1.3	1.4	2.0	1.5	1.7	1.7	1.8	1.9	1.9	1.8	1.6	1.4	1.4	1.5	1.5	1.5	1.5	1.5
Median Value	1.1	E	E	E	E	E	E	E	1.4	1.5	1.7	1.7	1.8	1.9	1.9	1.8	1.6	1.4	1.2	1.2	1.2	1.2	1.2	1.1
Count	27	25	24	22	25	27	19	21	28	28	27	28	29	29	29	28	28	28	24	25	26	30	25	25

Sweep 1.0 Mc to 18.5 Mc in 15 min Manual

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IONOSPHERIC DATE IN JAPAN FOR JANUARY 1951

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