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IONOSPHERIC DATA IN JAPAN

FOR NOVEMBER 1950

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PREPARED BY THE CONTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

CRWO—F 23

THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR NOVEMBER 1950

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P R E F A C E

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 observatories 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

December, 1950

SITE OF THE IONOSPHERIC STATIONS

Inospheric 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, Soya-gun, 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, Kago- shima-ken

REMARKS ON SYMBOLS

Except Z_d , $f_{\min} E$ and $f_{\min} F$, other symbols are used in accordance with recommendation of C.C.I.R. Z_d , $f_{\min} E$ and $f_{\min} F$ in the table are defined as follows :

- Z_d Half breadth of the layer, calculated by the method of Booker.
- $f_{\min} E$ Minimum frequency, on which echo reflected from E-layer begins to appear by use of the observation equipment on routine work.
- $f_{\min} F$ Minimum frequency, on which echo reflected from F-layer begins to appear by use of the observation equipment on routine work.

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

IONOSPHERIC DATA

Nov. 1950

f_oF₂

135° E Mean Time

Wakanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	4.0	3.4	3.2	3.3	3.2	2.9	5.1	C	C	C	C	C	C	C	C	C	C	5.5	4.3	4.1	A	3.3	3.3	3.6	
2	3.1	3.0	3.0	3.1	2.9 ^H	3.0	3.9	6.9	7.8	(9.5) ^F	9.9	11.1	10.6	10.6	9.9	9.2 ^T	8.5 ^F	5.0	4.7	4.6	A	4.3	4.3	(2.9) ^F	
3	(4.0) ^F	4.5	4.4	4.0	4.0	3.5	4.7 ^F	5.8	8.1	7.8	9.2	10.5	8.1	7.3	7.7	7.2	7.3	C	C	A	A	A	3.6 ^F	4.9 ^F	
4	3.9 ^F	3.8 ^F	3.8 ^F	3.7 ^F	3.7 ^F	3.5 ^F	4.5	8.0 ^F	8.9 ^F	7.9 ^F	9.6 ^S	10.5	10.0	7.4	7.7 ^H	10.1 ^F	7.9 ^H	6.5	4.6	3.7 ^F	3.5 ^V	3.9	4.0	3.1	
5	3.5	3.4	3.7	3.6	3.2	3.8	4.4	6.8	9.4	11.6	(14.1) ^F	(13.8) ^F	11.6	11.4	8.7	8.2	7.5	6.0	5.2	A	A	3.3 ^F	3.3 ^F	3.5	
6	(3.5) ^F	3.4	3.4	3.4	3.2	3.2	3.6	5.8	7.0	9.7	8.9 ^J	9.6	8.7	9.2	8.3	7.1	7.3	7.2	4.5	3.6	3.7	3.4	4.0	3.0	
7	3.0	3.0	3.6	3.2	3.4	3.6	4.8	6.7	8.7 ^F	7.6	9.2	8.6	8.9 ^J	8.6	8.0	9.0	7.4	4.9	3.3	3.1	3.3	3.3	3.3	3.3	
8	3.7	3.6	3.8	3.6	3.8	3.4	3.7	6.8	C	C	C	C	C	C	C	C	5.3 ^T	3.7	3.6	3.5	3.9 ^H	3.5	3.5	3.5	
9	3.6	3.8	3.8	3.7	3.6	3.8	4.7	7.8	9.2	9.2	(9.7) ^F	10.2	10.3	9.3	9.3	9.3	6.9	6.0	4.5	3.7	3.8	3.5	3.7	3.7	
10	3.6	2.8	2.9	2.2	3.1	3.8 ^H	5.4	7.9	9.1 ^F	(9.1) ^F	(8.6) ^F	8.6 ^F	(8.4) ^F	9.2	9.8	9.9	8.6	6.2	3.8	3.8 ^H	(3.8) ^H	4.2 ^F	(4.0) ^H	(3.7) ^F	
11	3.2	3.3	A	4.1 ^F	3.6 ^H	3.1	3.5	8.5	10.7	B	(12.1) ^F	(11.4) ^F	11.3	11.0 ^F	10.5	(9.1) ^F	7.3	6.5	4.6	4.3	4.3	4.3	4.1	4.4	4.4
12	4.4	4.4	4.2	4.3	4.5	4.2	4.4	7.4	S	10.1	9.6	9.5	9.6	8.2	7.4	7.2	7.7	6.2	5.1	3.9	4.2	3.2	2.9 ^V	3.3	
13	3.3	3.2	3.3	3.4	3.6	3.5	3.4	7.3	8.6	(10.6) ^F	11.2	10.8	10.4	8.4	8.7	8.3	7.1	4.9	5.2	4.2	4.3	3.7	3.3	3.4	
14	3.4	3.2	3.3	3.9	4.0	3.0	2.6	5.7	6.6	9.1	8.8	9.1	9.0	7.7	8.3	7.6	7.1	4.1	3.9	3.1	2.7	3.6	3.5	2.9	
15	3.2	3.2	3.2	3.2	3.0	3.9 ^T	3.0	6.4	7.6	8.1	8.7	(9.0) ^F	9.3	8.2 ^J	7.5	7.8	6.0	5.0	3.1	3.1	3.6	2.8	2.8	3.0	
16	3.0	3.1	3.2	3.1 ^F	3.4	3.4	3.7 ^H	5.9	7.5	7.8	7.9	8.0	7.3	8.0 ^F	7.9	(6.6) ^F	5.8	3.5	3.1	2.9	2.9	3.2 ^F	3.1 ^Z	3.1 ^Z	
17	3.3	3.4	3.2	3.4	3.4	3.3	3.8	5.9	8.0	(8.1) ^F	9.1	8.6	8.2	8.4	8.4	7.3	5.9	6.3	A	4.8 ^F	5.2	5.0	4.2	5.2 ^F	
18	5.2	4.9 ^F	5.0 ^F	5.0 ^F	6.2 ^F	5.4 ^F	5.0 ^F	5.9 ^F	9.5 ^F	8.4 ^H	(9.3) ^F	9.6	8.9 ^T	8.7	8.8 ^F	8.6	6.3	5.2	5.0	4.5	2.9 ^F	3.7	3.6	3.4 ^F	
19	3.8 ^F	4.0	3.9	3.9	4.6	2.7 ^V	3.6	6.3	8.2 ^H	9.0	(9.6) ^F	9.3	8.2	8.9	8.2	8.5	6.6	4.9	3.8	3.3	3.1	C	C	C	
20	C	C	C	C	C	C	3.4	6.4	7.5	C	C	8.0	7.3	7.0	7.3	6.9	5.9	4.5	4.7	3.8 ^J	3.6	3.0	3.3	3.2	
21	3.3	3.5	3.3	3.4	3.4	3.5	2.7	5.4	7.5 ^S	8.0	8.5	(8.6) ^F	8.8	7.7	7.2	7.0	5.6	4.1	3.5	2.8	2.9	2.9	3.2 ^Z	3.3	
22	3.3	3.3	3.4	3.4	3.0	4.3	3.3 ^Z	5.4	C	C	C	C	C	C	C	C	C	4.3	3.5	2.8	2.9	2.5	2.5	2.5	
23	3.1	3.2	3.0	3.0 ^F	3.1	3.2	2.5	(6.4) ^F	7.6	8.7	(10.4) ^F	C	C	C	C	C	(8.4) ^F	6.2	6.3	5.2	4.8	4.6	3.7	3.5	
24	(3.2) ^F	3.5 ^F	4.7 ^H	4.8	4.9 ^B	6.0	(5.5) ^F	5.5 ^F	6.6	7.2 ^J	8.4 ^H	9.4 ^H	8.2	7.7	7.1	7.3 ^H	5.9 ^H	4.2 ^H	3.5	3.4	3.5	3.6 ^Z	3.0 ^V	3.8 ^F	
25	3.7	3.1 ^Z	2.9	2.9	2.7 ^Z	2.7 ^Z	2.7 ^Z	2.7 ^Z	3.0	6.8	9.0	8.6 ^H	11.6	10.5 ^H	7.3	7.0	5.8	5.9	5.8	5.2	5.6 ^F	5.1	4.1	3.6	
26	4.2	3.5 ^H	4.5 ^F	2.6	3.0	2.8	2.8	5.8	7.7	9.0	10.1 ^P	9.7 ^S	8.2	7.6 ^S	8.6 ^J	7.1	6.0	3.7	2.9	2.9	2.9	3.2	3.4	3.1	
27	3.0	2.7	2.8	A	2.7	2.7	2.5	A	7.5	8.9	8.6	7.4	8.2	7.6	7.0	6.3	5.8	4.6	A	2.6	3.1	3.1	3.0 ^F	3.3 ^F	
28	3.5 ^F	3.8 ^H	3.4	3.5 ^H	3.8	C	C	C	C	C	C	C	C	C	C	C	C	4.7	4.4 ^J	3.2	3.5 ^Z	3.5	3.7	4.0	
29	4.2 ^F	3.6 ^F	3.8	3.8 ^F	3.5 ^F	3.6	5.8	5.8	7.1	8.8 ^F	9.0 ^J	9.1 ^J	4.5 ^J	4.6 ^J	7.2	7.1	5.9	5.5	3.8	3.3	3.9	3.9	3.8	3.6 ^H	
30	3.7 ^F	4.0 ^F	3.7 ^F	3.6 ^F	2.7 ^F	2.9 ^F	1.9	5.4	6.7	7.4 ^H	7.9	9.0	7.9	8.9	6.9	7.6	6.3	4.8	3.1	3.0	2.8	2.8	3.1 ^F	3.1 ^F	3.2
31																									
Median Value	3.5	3.4	3.4	3.4	3.4	3.4	3.6	6.3	7.7	8.8	9.1	9.2	8.9	8.6	8.0	7.8	6.6	5.2	4.3	3.6	3.5	3.4	3.5	3.4	3.4
Count	29	29	28	28	29	28	29	27	25	24	25	25	25	25	25	25	26	29	27	28	26	28	29	29	29

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

IONOSPHERIC DATA

Lat. 45° 2 3.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

fpF2

Nov. 1950

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	430	420	420	390	400	360	330	C	C	C	C	C	C	C	C	C	C	250	330	350	A	460	450	430	
2	450	340	360	360	300	330	330	250	300	(310) ^F	310	310	310	290	(300) ^F	290	290	310	330	290	A	410	450	(390) ^F	
3	(310) ^F	310	430	380	340	290	310 ^F	280	290	300	270	290	270	290	300	300	300	C	C	A	A	A	(390) ^F	(410) ^F	
4	(340) ^F	(350) ^F	(330) ^F	(360) ^F	380 ^F	360 ^F	300 ^F	(300) ^F	240 ^F	300 ^F	290 ^F	320 ^F	310	260	(330) ^H	(300) ^F	270 ^H	280	330	340 ^F	390 ^V	450	410	410	
5	340	440	430	450	330	400	350	370	320	320	(340) ^F	(330) ^F	300	300	310	270	260	300	280	A	A	(370) ^H	410 ^F	410	
6	(430) ^F	370	400	400	400	340	330	330	290	310	(300) ^F	290	290	290	280	260	300	300	340	310	260	240	240	260	
7	340	340	300	330	330	340	320	290	(300) ^F	280	300	310	(260) ^F	310	290	310	290 ^S	B	300	360	350	350	380	390	
8	400	360	340	360	330	310	320	280	C	C	C	C	C	C	C	C	C	(310) ^F	300	310	340	410	380	380	
9	400	390	400	370	380	390	330	300	280	280	(300) ^F	310	300	300	300 ^F	280	280	310	330	330	350	360	400	400	
10	360	340	320	370	350	320 ^H	290	300	290 ^F	(280) ^F	(280) ^F	(270) ^H	(280) ^F	300	300	300	240	320	340	400 ^H	(400) ^H	(450) ^H	(430) ^H	(370) ^H	
11	400	430	A	410 ^F	390 ^H	400	360	210	300	B	(310) ^F	(300) ^F	300	330 ^F	300	(250) ^F	300	310	300	400	400	390	370	380	
12	380	400	390	390	330	340	320	260	S	290	300	280	270	280	250	280	270	270	300	290	300	380	350 ^F	400	
13	400	410	450	400	420	280	350	280	280	(290) ^F	280 ^B	310	300	280	290	290	280	360	310	310	340	330	340	380	
14	400	400	380	360	320	300	360	300	220	280	280	280	290	260	290	280 ^F	270	300	300	320	340	360	320	350	
15	350	370	370	370	370	(300) ^F	330	310	310	280	300	(300) ^F	(290) ^F	300	280	290	270	260	350	330	340	300	400	390	
16	390	410	420	410 ^H	340	270	310 ^H	280	(220) ^F	260	290	300	250 ^F	(300) ^F	270	(360) ^F	330	250	310	320	370	370	430 ^F	380 ^F	
17	430	370	350	410	370	350	310	270	300	(270) ^F	300	290	290	300	290	270	250	290	A	320 ^F	340 ^F	320	350	(410) ^F	
18	400	400 ^F	(360) ^F	(400) ^F	350 ^F	300 ^F	310 ^F	310 ^F	270 ^F	(290) ^H	(270) ^F	260	(270) ^F	280	270 ^F	270	230	280	260	270	300 ^H	(400) ^B	340	(400) ^F	
19	(400) ^F	370	340	400	370	410 ^V	350	300	300	280	(290) ^S	290	290	300	260	290	260	250	(290) ^H	300	300	C	C	C	
20	C	C	C	C	C	C	300	270	240	C	C	290	250	260	260	240	260	280	280	(300) ^F	320	390	420	390	
21	360	390	420	380	330	310	250	310	260 ^S	280	290	(290) ^F	290	280	280	280	300	300	290	320	340	340	370 ^F	360	
22	360	390	400	380	320	270 ^H	300 ^F	290	C	C	C	C	C	C	C	C	C	260	220	290	270	300	320	310	
23	330	380	390	420 ^F	380	330	320	(290) ^S	290	310	(310) ^S	C	C	C	C	(280) ^S	240	330	280	310	250	270	340	340	
24	(380) ^F	(390) ^F	340 ^H	410	360	330	(330) ^F	250 ^F	260	(280) ^F	300 ^H	270 ^H	300	230	290	300	290 ^H	260	300	240	280	270	310 ^F	330	320
25	410	280 ^Z	270	290	370 ^Z	400	330 ^A	310	220	280	300 ^H	310 ^H	300	290 ^H	260	270	280	330	320	280	280	350 ^F	360	430	
26	320	340 ^H	(260) ^H	420	410	360	340	290	240	300	290 ^F	370 ^S	280	270 ^S	(280) ^S	280	260	310	290	380	420	420	390	320	
27	300	470	440	A	430	440	400	A	300	290	250	260	280	280	260	250	300	320	A	350	340	410	(390) ^F	(350) ^F	
28	410 ^F	310 ^H	420	410 ^H	340	C	C	C	C	C	C	C	C	C	C	(280) ^S	240	280	(280)	320	350 ^Z	410	440	440	
29	450 ^F	350 ^F	430	370 ^F	340 ^F	360	380	280	260	280 ^F	(290) ^F	(280) ^F	300	290	290	290	290	280	280	300	350	420	390	350 ^H	
30	350 ^F	340 ^F	(370) ^H	(420) ^H	430	400 ^F	350	280	260	280 ^H	270	250	240	240	270	270	230	280	350	300	340	350 ^F	360 ^F	370	
31																									
Median Value	390	370	390	380	360	340	330	290	290	280	290	290	290	290	290	280	280	280	300	300	320	340	370	380	380
Count	29	29	28	28	29	28	29	27	25	24	25	25	25	25	25	26	26	28	27	28	26	28	29	29	

fpF2

Sweep 1.0 Mc to 14.0 Mc in 1.5 min

Manual

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

IONOSPHERIC DATA

Nov. 1950

f_oF₂

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	310	380	320	310	330	300	250	C	C	C	C	C	C	C	C	C	C	210	250	310	A	360	340	350	
2	380	290	300	300	250 ^H	300 ^A	300	240 ^A	280	260	280	270	290	270	290	290	260	300	300	280	A	330	350	350	
3	330	300	330	300	280	250	230	250	270	300	260	280	250	280	300	280	290	C	C	A	A	A	370	380	
4	320	310	300	310	320	310	270	260	270	250	280	240	290	250 ^H	250 ^H	290	210 ^H	280	320	300	340	340	340	310	
5	310	360	350	330	260	300	280	270	250	280	300	280	250	270	250	230	230	270	260	A	A	320 ^A	350	340	
6	370	300	330	310	300	290	300	330	280	220	270	270	270	270	230	230	280	300	300	290	250	240	240	260	
7	260	300	270	280	300	280	270	240	280	C	C	C	C	C	C	260	250	280	270	310	300	280	300	320	
8	320	310	280	280	270	220	290	240	C	C	C	C	C	C	C	C	C	250	270	290	300	310 ^H	310	340	
9	310	320	310	330	320	300	250	230	230	240	240	250	270	270	270	260	220	240	250	280	300	320	310	310	
10	310	300	280	300	300	280 ^H	280	300	280	230	230	230	260	250	260	230	210	240	300	350 ^H	(310 ^H)	370	340	300 ^H	
11	320	340	A	300	330 ^H	320	300	250	260	270	270	270	260	260	250	220	250	240	340 ^A	340 ^A	370	340	370	300 ^H	
12	300	310	310 ^A	310	280	290	280	220	220	250	280	260	240	250	250	250	250	220 ^A	260	270	280	270	310	290	
13	290	310	340	310	310	240	290	240	230	250	230	250	250	250	230	220 ^A	250	250	260	250	280	290	300	320	
14	330	370	330	300 ^A	240	250	300	300	220	230	240	240	250	230	240	220	260	280	300	300	300	310	290	300	
15	300	310	320	320	310	270	280	260	260	250	270	260	260	230	250	250	220 ^A	230	300	300	300	280	380	360	
16	340	340	320	320 ^H	310	220	250	230	210	250	280	290	300	220	300	250	280	290	220	280	270	300	350 ^F	310	
17	360	300	280	300	300	300	280	250	280	210	270	250	220	280	250	220	210	260 ^A	270	280 ^F	270	230	280	300	
18	320	340	320	320	300	250	250	230	230	220	220	210	210	220	250	220	220	270	230	270	300	240 ^F	400 ^F		
19	400 ^F	330	310	340	300	350	280	230	210 ^H	220	260	250	290	270	230	240	210	210	240	270	280	C	C	C	
20	C	C	C	C	C	C	280	230	220	C	280	250	240	260	260	200	220	220	240	270	280	300	340	350	
21	300	310	320	320	280	260	210	260	210	260	250	(2600 ^F)	270	270	270	270	240	240	250	280	290	300	320	300	
22	300	330	320	310	260	220	280	240	C	C	C	C	C	C	C	C	C	240	210	270	260	300	320	300	
23	300	330	350	380	320	280	240	240	270	270	270	C	C	C	C	230	220	250	220	300	270	260	280	280	
24	320	300 ^F	310 ^H	310	280	230	270	230	220	240	270 ^H	230 ^H	240	210	220	260 ^H	220 ^H	220 ^H	260	260	260	250	300	280	280
25	290	220	230	260	330	380	310	280	220	210	250 ^H	250 ^H	260	220 ^H	220	240	230	230	230	220	220	280	300	320	
26	280	260 ^H	210	310	320	300	300	260	230	250	240	300	240	240	210	210	210	230	250	340	340	330	320	300	
27	230	380	380	A	380	340	300	A	250	270	230	230	250	220	220	230	220	260	A	300	290	370	350	310	
28	350	250 ^H	300	310 ^H	300	C	C	C	C	C	C	C	C	C	C	C	C	C	230	220	290	300	330	340	350
29	290	280	340	310	290	300	290	220	230	250	270	260	260	270	260	240	240	230	200	270	260	310	280	260 ^H	
30	250	270	230 ^F	290 ^H	300	230	270	210	220	240 ^H	250	240	230	240	250	260	220	230	320	300	280	290	300	300	300
31																									
Median Value	310	310	320	310	300	280	280	240	230	250	270	250	250	250	250	240	220	240	260	280	280	300	320	310	310
Count	29	29	28	28	29	28	29	27	26	25	25	25	25	25	25	26	26	29	28	28	26	28	29	29	29

Sweep 1.0—Mc to 1.4.0 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Nov. 1950

foF1

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								C	C	C	C	C	C	C	C	C	C								
2								Q	Q	Q	A	A	A	A	A	A	A								
3								Q	Q	L	A	L	A	L	L	A	A								
4								Q	Q	3.9	L	A	L	A	A	A	A								
5								Q	Q	Q	Q	L	4.4	Q	Q	Q	Q								
6								Q	Q	Q	L	Q	L	Q	Q	Q	L								
7								L	L	Q	Q	A	Q	L	Q	Q	Q								
8								Q	Q	C	C	C	C	C	C	C	C								
9								Q	Q	Q	Q	A	L	L	L	L	L								
10								L	Q	Q	Q	Q	L	Q	Q	Q	Q								
11								Q	Q	L	A	A	Q	Q	Q	Q	Q								
12								Q	Q	Q	L	A	L	Q	Q	Q	Q								
13								Q	Q	L	Q	L	L	L	Q	Q	Q								
14								Q	A	Q	L	Q	L	Q	Q	Q	Q								
15								Q	Q	Q	Q	Q	L	Q	Q	Q	Q								
16								Q	Q	L	L	(4.4)	L	Q	L	Q	Q								
17								Q	L	Q	L	Q	Q	4.9	Q	Q	Q								
18								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
19								Q	Q	Q	L	Q	L	Q	Q	Q	Q								
20								Q	Q	C	C	Q	Q	Q	Q	Q	Q								
21								Q	Q	L	Q	C	L	L	L	L	Q								
22								Q	C	C	C	C	C	C	C	C	C								
23								Q	L	Q	Q	C	C	C	C	C	Q								
24								Q	Q	4.0	L	4.0 ^B	L	Q	Q	4.0	Q								
25								Q	Q	Q	Q	Q	4.4	Q	Q	Q	Q								
26								Q	Q	3.1 ^B	L	B	L	Q	Q	Q	Q								
27								A	Q	L	Q	Q	Q	Q	Q	Q	Q								
28								C	C	C	C	C	C	C	C	C	C								
29								Q	A	L	L	L	L	L	L	L	Q								
30								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
31																									
Median Value																									
Count										3		2	2	1	1										

foF1

Sweep 1.0 Mc to 14.0 Mc in 1.5 min

Manual

Lat. 46° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

R'F1

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	
2								Q	Q	Q	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
3								Q	Q	280	A	250	A	220 ^A	270	A	280								
4								Q	Q	220	250	A	250	A	Q	A	A								
5								Q	Q	Q	Q	250	240	Q	Q	Q	Q								
6								230	Q	Q	250	Q	220	Q	Q	Q	Q	260							
7								230	240	Q	Q	A	Q	250	Q	Q	Q								
8								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
9								Q	Q	Q	Q	A	250	230	240	240	Q								
10								260	Q	Q	Q	Q	230	Q	Q	Q	Q								
11								Q	Q	240	A	A	Q	Q	Q	Q	Q								
12								Q	Q	Q	260	A	220 ^A	Q	Q	Q	Q								
13								Q	Q	230	Q	230	230	Q	Q	Q	Q								
14								Q	A	Q	220	Q	230	Q	Q	Q	Q								
15								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
16								Q	Q	230	260	260	250	Q	270	Q	Q								
17								Q	230	Q	210	Q	Q	220	Q	Q	Q								
18								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
19								Q	Q	Q	250	Q	270	Q	Q	Q	Q								
20								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
21								Q	Q	250	Q	Q	240	240	240	230	Q								
22								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
23								Q	240	Q	Q	Q	Q	Q	Q	Q	Q								
24								Q	Q	220 ^A	230	B	230	Q	B	Q	Q								
25								Q	Q	Q	Q	Q	250	Q	Q	Q	Q								
26								Q	Q	250	220	B	220	Q	Q	Q	Q								
27								A	Q	250	Q	Q	Q	Q	Q	Q	Q								
28								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
29								Q	A	230	230	240	240	240	250	240	Q								
30								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q								
31																									
Median Value									240	240	250	240	240	230	250										
Count								3	3	10	10	5	15	17	5	3									2

Sweep 1.0— Mc to 14.0. Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

foE

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								C	C	C	C	C	C	C	C	C	C							
2								A	2.9	3.1	A	A	A	A	A	A	A							
3								2.0	2.4	2.8	A	3.1	A	A	2.5 ^A	A	B							
4								2.1	A	A	B	A	A	A	B	A	B							
5								1.7	2.0 ^B	A	2.8	3.0	A	B	3.1	2.7 ^A	2.1							
6								A	A	2.7	2.7	A	A	2.6	2.7	2.3	B							
7								2.4	2.8	2.8	3.1	A	3.1 ^B	2.9	2.7 ^B	2.4	2.2							
8								1.8 ^B	C	C	C	C	C	C	C	C	C							
9								1.8 ^B	2.5	2.7	2.9	A	A	A	A	2.5	2.2							
10								B	1.8 ^J	A	2.6 ^I	3.4 ^A	2.9	2.9	A	2.4 ^B	A							
11								2.0	2.1	A	A	A	A	B	A	2.2	B							
12								1.8 ^B	2.2	2.5	2.5	A	A	A	2.4	A	B							
13								A	2.3 ^F	A	A	2.9	2.8	A	A	2.4	A							
14								B	A	2.6	2.9	3.0	2.8	2.8	2.5	2.3	B							
15								A	2.4	2.6	2.8	3.0	A	A	2.5	2.1 ^A	A							
16								B	1.9 ^B	B	A	A	A	2.9	2.7	A	A							
17								B	B	2.5	2.8	3.0	B	3.1 ^H	2.9	2.4 ^B	B							
18								C	2.4	2.5	A	3.0 ^A	3.0 ^B	2.9 ^B	B	A	C							
19								1.5 ^J	2.1	2.7	2.9	2.9 ^B	2.9	2.9 ^B	2.5 ^A	2.2	C							
20								(2.0 ^J)	2.4	C	C	2.8	2.8	2.6	2.6	B	C							
21								1.6	2.2	2.5	A	C	2.8	A	2.3	1.7	A							
22								A	C	C	C	C	C	C	C	C	C							
23								A	2.2	2.5 ^B	2.7 ^B	C	C	C	C	2.0 ^J	A							
24								A	A	A	3.0	B	B	2.7	(2.8 ^B)	B	B							
25								A	A	A	B	B	B	B	B	A	B							
26								A	2.1 ^F	B	B	B	B	B	(2.9)	2.0	1.6 ^A							
27								A	2.5	2.7	2.9	2.7	2.7	2.6	2.5	1.7 ^B	1.6 ^B							
28								C	C	C	C	C	C	C	C	C	C							
29								2.2	A	A	A	A	2.9 ^B	A	A	A	1.7							
30								1.8 ^H	2.2	2.7	3.0	3.0	2.9	2.9	2.5	B	B							
31																								
Median Value								1.8	2.2	2.7	2.8	3.0	2.9	2.9	2.6	2.3	1.9							
Count								13	19	15	14	12	11	12	16	15	6							

foE

Sweep 1.0— Mc to 1.4— Mc in 1.5 min

Manual

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

Nov. 1950

f'F

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								C	C	C	C	C	C	C	C	C	C							
2								A	110	110	A	A	A	A	A	A	A							
3								100	110	120	A	120	A	A	120	A	110							
4								110	A	A	140	A	A	A	B	A	B							
5								120	130	A	100	100	A	100	100	100	120							
6								A	A	120	100	A	A	100	120	140 ^P	B							
7								110	110	120	110	A	110	110	110	110	110							
8								150 ^B	C	C	C	C	C	C	C	C	C							
9								B	130	110	110	A	A	A	A	A	170	110						
10								B	120	120	A	A	110	110	A	130	110							
11								110	110	A	A	A	A	110	A	130 ^B	B							
12								110	130	120	110	A	A	A	A	110	A	B						
13								A	110	A	A	110	A	A	A	110	100							
14								B	A	120	120	110	110	100	100	110	100							
15								A	110	110	110	110	A	A	120	120	120							
16								B	120 ^F	120	A	A	100	120	100	A	A							
17								B	B	100	100	110	100	100 ^H	B	B	B							
18								C	140 ^B	120	A	110	120	110	130	A	C							
19								C	110	110	110	110	100	110	110	110	C							
20								C	C	C	C	120	120	110	120	C	C							
21								120 ^P	110	110	110	C	110	A	110	110	A							
22								A	C	C	C	C	C	C	C	C	C							
23								A	110	120	120	C	C	C	C	B	A							
24								A	110	110	110	110	110	110	B	B	B							
25								A	A	A	110	110	110	110	110	100	B							
26								A	110	110	110	B	100	B	110	110	110							
27								A	120	120	110	100	110	100	100	100	100							
28								C	C	C	C	C	C	C	C	C	C							
29								120	A	100	100	110	110	100	100	A	110							
30								110 ^H	100	120	120	120	120	120	110	B	B							
31																								
Median Value								110	110	120	110	110	110	110	110	110	110							
Count								10	14	20	18	14	16	16	17	14	11							

Sweep 1.0—Mc to 14.0 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Nov. 1950

fEs

Wakkanai

Lat. 46°23.6'N
Long. 141°41.1'E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	1.4	G	G	G	G	G	2.0 ^B	C	C	C	C	C	C	C	C	C	C	2.4	G	3.6	4.8	2.6	2.2	G	
2	G	2.4	1.3	G	2.2	2.7	2.6	2.4	3.5	G	6.3	4.6	7.1	7.0 ^B	7.2	6.4	4.8	3.6	B	3.0	5.1 ^B	3.8	3.7	2.8	
3	3.6	2.4	1.9	1.9	2.0	G	G	G	3.8	G	6.3	5.7	6.9	3.6	4.4	G	C	C	C	5.2	5.5	4.6	2.9	5.9	
4	4.8	1.3	G	2.2	1.3	2.1	G	G	3.2	3.2	5.2	5.2	6.1	7.0	B	4.1	4.5	4.8 ^Y	4.2	(2.2)	3.1 ^Y	G	2.2	G	
5	G	G	G	G	1.9	1.6	3.4	3.4 ^Y	3.6 ^Y	3.5	6.8 ^B	5.2	4.2	G	G	G	2.8	4.4	3.3	5.0	5.8	4.7	3.8	3.1	
6	2.3	2.4	2.7 ^B	1.6	G	2.6	3.0	G	3.6 ^B	G	3.6	4.4	5.2	4.4	G	G	B	3.4 ^Y	2.9	2.9	3.8	3.3	3.3	2.7	
7	3.2	1.5	2.0	2.1	G	G	G	G	G	G	G	6.4	G	G	G	G	3.4 ^Y	G	2.9	2.4	2.0	G	G	G	
8	2.0	G	2.2 ^Y	G	G	G	2.4	G	C	C	C	C	C	C	C	C	C	B	G	G	1.2	G	G	G	
9	2.4	1.8	G	G	2.6	G	B	B	3.6 ^Y	3.6 ^Y	5.2	4.6	4.6	3.8	3.9	G	3.6 ^Y	2.8	2.4	G	G	G	G	G	
10	G	G	G	G	G	G	G	G	G	G	3.3	4.5	G	G	5.2	G	2.4	B	G	G	G	G	G	G	
11	G	2.0	5.5	G	G	G	G	2.8	G	4.0	5.5	7.0	4.4	G	3.5	G	2.6	2.6	4.6	4.2	3.3	3.1	1.8	3.1	
12	G	G	2.2	G	G	G	G	G	3.3 ^Y	G	G	8.6	4.6	4.4	4.3	4.9	3.2	3.4	2.8	1.7	2.2	G	2.9	G	
13	G	G	G	G	G	G	2.4	2.6 ^B	3.3	3.8	3.6	G	3.4	3.2	2.9	G	G	2.7	G	G	2.2	3.0	3.0	2.4	
14	2.3	4.0	2.6	4.6	2.5	2.4	G	B	5.2	G	G	G	G	G	G	G	2.8 ^Y	2.6	G	2.0	G	G	G	1.6	
15	G	G	G	G	G	G	2.1	2.4	G	3.3 ^Y	G	G	4.4	3.4	G	G	G	2.9	G	G	2.3	2.1	3.1	2.6	
16	2.0	G	G	2.0	2.9	(2.8 ^Y)	G	2.3 ^B	3.4 ^Y	G	4.4	3.3	G	G	G	2.8	2.6 ^B	B	G	G	G	G	G	G	
17	G	G	2.4 ^Y	G	G	G	G	B	B	G	G	G	G	G	G	G	3.0	6.2	6.9	4.6	5.0	2.8	C	C	
18	C	C	C	C	C	C	C	C	G	3.8	G	G	G	G	G	3.4	C	4.2	3.5	4.4	2.4	3.0	4.4	3.6	
19	4.3	3.5	2.4	C	C	C	C	G	G	G	G	G	G	3.8 ^Y	G	G	2.4	2.2	C	C	C	C	C	C	
20	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	C	G	1.6	G	2.6	3.0	2.3	1.5	
21	1.4	2.4	2.8	2.4	2.4	G	G	G	G	G	G	C	G	3.4	G	G	3.1	3.0	3.1	3.0	2.4	G	G	G	
22	G	2.4	1.4	G	G	G	2.4	2.4	C	C	C	C	C	C	C	C	2.8	G	G	G	2.4	G	G	G	
23	G	G	G	G	G	G	G	2.4	G	G	G	G	C	C	C	3.8	3.5	2.5	2.0	2.4	2.4	G	2.8	1.5	
24	2.4	2.8 ^B	2.0	1.9	G	G	2.0	2.5	G	G	B	B	G	G	B	B	2.2	2.4 ^Y	G	2.4	2.2	1.2	3.6	3.0	
25	2.0	1.3	1.2	G	G	G	G	4.2	3.8	3.0	B	G	G	G	G	G	G	1.8	1.5	G	1.8	1.8	2.2	2.2	
26	1.6	1.3	1.2	1.2	G	2.1	2.1	4.0	G	G	B	G	G	B	G	G	G	G	5.1	4.1	1.5 ^B	1.4	G	G	
27	G	1.8	1.9	3.6	2.7	3.6	3.4	3.6	G	G	G	G	G	G	G	G	G	2.4 ^Y	1.4	2.1 ^Y	1.4	G	G	G	
28	G	1.2	2.4	2.5	1.8	C	C	C	C	C	C	C	C	C	C	C	C	2.4	1.4	2.1 ^Y	1.8	2.6	2.6	G	
29	G	G	G	G	G	G	G	3.3 ^Y	4.4	G	G	G	G	G	3.0	G	G	G	G	G	G	G	G	G	
30	G	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G	B	B	G	3.4	2.7	G	G	G	G	
31																									
Median Value	1.4	1.3	1.4	G	G	G	G	2.4	G	G	G	G	G	G	G	G	2.5	2.6	1.8	2.4	2.2	1.4	2.2	G	
Count	28	28	28	2.7	2.7	2.6	2.5	2.3	2.5	2.5	2.4	2.2	2.5	2.4	2.3	2.4	2.2	2.7	2.6	2.9	2.9	2.9	2.9	2.8	2.8

fEs

Sweep 1.0 Mc to 14.0 Mc in 1.5 min Manual

W 8

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

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

(M3000)F2

Nov. 1950

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

Sweep 1.0 Mc to 14.0 Mc in 15 min Manual

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

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

fminF

Nov. 1950

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	1.2	1.2	1.2	1.2	E	2.2	C	C	C	C	C	C	C	C	C	C	1.8	1.5	A	A	1.8	1.3	1.3	
2	E	E	E	E	E	A	A	A	A	2.1	A	A	A	A	A	A	A	A	2.4	A	A	1.8	A	1.5	
3	A	1.6	E	E	1.4	1.4	1.6	2.0	2.9	3.2	A	3.0	A	A	3.2	A	2.4	C	C	A	A	A	1.7	1.8	
4	1.3	E	E	E	E	1.4	1.7	2.1	2.8	3.2	3.2	A	3.2	A	2.6	A	2.2	A	A	A	A	1.2	1.5	1.5	
5	E	1.2	1.1	1.1	1.4	1.4	1.8	1.8	2.1	A	A	A	3.7	3.7	3.8	2.7	2.8	A	A	A	A	1.5	1.2	1.3	
6	1.4	E	E	E	E	E	1.8	1.5	A	2.7	3.0	3.3	4.0	A	2.7	2.3	2.2	A	A	A	1.8	1.7	A	1.5	
7	1.4	E	1.4	1.3	E	E	1.8	2.9	3.2	2.8	3.2	A	3.1	3.0	2.8	2.4	2.3	4.2	A	A	1.6	1.1	1.1	E	
8	1.4	1.2	1.2	E	E	1.3	2.2	2.0	C	C	C	C	C	C	C	C	C	2.0	1.8	1.7	1.4	1.6	1.2	1.3	
9	1.6	1.4	1.3	1.4	1.5	1.2	1.5	1.8	2.6	2.8	2.9	A	3.8	3.3	3.2	2.5	2.2	1.7	1.6	1.4	1.4	1.3	1.3	1.2	
10	1.2	1.2	1.2	1.2	1.2	1.2	1.3	N	2.2	2.7	3.3	3.4	3.1	3.0	A	2.4	2.0	1.9	1.5	1.5	(1.6) ^B	1.6	1.6	1.5	
11	1.2	1.2	A	E	E	E	E	2.2	2.4	3.3	A	A	3.4	3.0	2.6	2.2	2.0	1.7	1.4	A	A	1.2	1.4	A	
12	E	1.2	1.3	1.5	1.4	1.2	E	1.8	2.5	2.5	3.0	A	A	3.3	2.8	A	3.5	A	1.6	2.0	1.5	E	1.5	E	
13	E	E	1.1	1.1	E	1.1	1.4	2.4	2.3	2.8	3.0	2.9	3.2	3.2	2.5	2.4	A	A	1.8	1.4	A	1.5	1.5	1.3	
14	1.2	1.5	1.8	A	1.3	1.5	1.5	3.0	A	2.8	2.9	3.0	3.1	2.9	2.6	2.4	2.2	A	1.5	1.3	1.3	1.3	1.5	1.3	
15	1.3	E	E	E	E	E	1.8	1.8	2.4	2.7	3.5	3.1	3.5	3.0	2.6	2.2	A	2.4	1.2	1.2	A	1.6	1.6	A	
16	1.3	1.2	E	E	1.4	1.1	1.4	2.2	2.2	2.9	A	A	3.0	2.9	2.7	2.7	2.4	2.4	1.5	1.5	1.5	1.5	1.5	F	
17	E	E	1.3	E	E	1.2	1.3	2.3	N	3.1	3.0	3.0	3.4	3.1	2.9	2.4	2.1	A	A	AF	A	A	1.8	1.2.0	
18	1.1.6	1.2.0	1.1.7	1.2.0	1.2.1	1.2.1	1.2.1	1.2.1	2.7	3.1	3.2	3.0	3.0	2.9	3.0	4.1	1.2.4	1.9	1.2.0	A	1.9	A	1.8	1.2.0	
19	1.2.0	1.2.0	1.2.0	1.2.0	1.2.0	1.2.0	1.2.0	1.2.0	2.1	2.8	3.0	3.1	3.0	2.9	2.7	2.2	1.2.0	1.2.0	1.2.0	1.8	1.8	1.9	C	C	
20	C	C	C	C	C	C	1.2.2	2.7	2.4	C	C	3.3	3.7	3.1	3.4	1.2.4	1.2.5	1.4	1.4	1.1	1.4	1.5	1.6	1.5	
21	1.3	1.8	1.6	1.6	1.4	1.1	1.3	1.6	2.2	2.6	2.7	2.8	2.8	2.7	2.4	2.2	2.0	A	A	1.4	1.5	1.4	1.4	1.3	
22	1.2	1.4	E	1.1	1.2	1.2	2.0	2.1	C	C	C	C	C	C	C	C	C	C	1.5	1.5	1.7	1.6	1.3	1.4	
23	1.3	E	E	E	E	E	1.2	2.2	2.2	3.0	3.0	C	C	C	C	3.0	2.3	A	A	1.4	1.4	1.4	1.3	1.5	
24	1.6	A	A	1.8	1.1	1.1	1.2	N	2.7	A	3.1	4.1	2.8	3.0	4.1	2.0	2.0	2.2	1.5	1.7	1.5	1.5	1.2	1.2	
25	1.4	E	1.1	1.2	1.2	1.4	1.5	1.5	A	A	3.8	3.5	3.0	3.3	3.1	2.4	1.8	1.6	1.3	1.3	1.2	1.3	1.2	1.4	
26	1.1	E	E	E	E	E	E	A	2.1	3.0	3.0	4.0	3.0	3.0	2.9	2.0	1.6	1.9	1.5	1.3	1.4	1.4	1.5	1.5	
27	1.2	1.2	1.1	A	1.2	1.5	1.9	A	2.5	2.7	2.9	2.8	3.5	3.5	2.6	1.9	1.6	1.4	A	1.5	E	1.2	1.3	F	
28	1.2	1.2	E	1.8	1.4	C	C	C	C	C	C	C	C	C	C	C	C	C	1.8	1.5	1.5	1.6	1.5	1.3	
29	E	1.2	1.4	1.5	E	E	1.5	2.4	A	2.3	2.6	2.9	2.9	2.8	2.6	2.4	1.7	1.5	1.2	1.2	E	E	E	E	
30	1.2	E	E	E	E	1.1	E	1.8	2.3	3.1	3.5	3.3	3.1	3.1	2.8	2.4	1.7	1.6	A	A	1.2	1.2	1.2	1.2	
31																									
Median Value	1.2	1.2	1.1	1.1	E	1.1	1.4	2.0	2.4	2.8	3.0	3.1	3.1	3.0	2.8	2.4	2.0	1.8	1.5	1.4	1.4	1.4	1.3	1.3	
Count	28	28	27	27	29	27	28	23	20	22	20	17	22	21	23	22	22	18	20	18	21	26	27	26	

Note: - < represents the case where the lowest coil band was in fault.

Sweep 1.0—Mc to 1.4 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Nov. 1950

fminE

135° E Mean Time

Wakkanai

Lat. 46° 23.0' 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	E	E	E	E	E	1.5 ^B	C	C	C	C	C	C	C	C	C	C	1.7	1.1	E	1.1	1.1	E	B	
2	E	E	E	E	E	E	1.2	1.3	1.3	1.3	1.4	1.4	1.6	1.4	1.3	1.3	1.3	1.5	B	1.9	1.5	1.5	1.5	1.5	
3	1.2	E	E	E	E	E	B	1.3	1.4	1.4	1.6	1.7	1.7	1.8	1.4	1.6	1.5	C	C	E	E	E	E	E	
4	E	E	E	E	E	E	E	1.3	1.7	2.5	2.1	2.6	2.3	1.4	B	2.0	1.7	1.5	1.6	1.2	E	E	1.2	B	
5	1.1	E	E	E	E	1.1	1.1	1.3	1.5	1.4	1.5	1.6	1.7	1.8	1.5	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.3	
6	1.1	E	E	E	E	E	1.6	1.3	1.5	2.2	1.7	1.5	2.1	1.9	2.2	2.1	B	1.6	1.5	1.6	1.5	1.4	1.3	1.4	
7	1.3	E	E	E	E	E	1.2	1.3	1.6	2.1	2.1	2.1	2.0	2.1	2.0	2.0	1.8	1.3	1.2	1.2	1.1	E	E	E	
8	E	E	E	E	E	E	1.5	1.5	C	C	C	C	C	C	C	C	C	C	C	B	1.1	B	E	B	
9	1.1	1.5	B	B	1.5	E	B	B	1.5	1.6	1.7	2.0	2.2	2.3	2.0	2.1	1.4	1.1	1.1	1.1	B	B	B	E	
10	E	E	E	E	E	E	E	B	1.4	1.6	1.5	1.4	1.8	2.0	1.8	1.8	E	1.6	B	B	B	B	B	B	
11	E	1.2	E	E	E	E	E	E	1.2	1.5	2.0	1.9	2.0	1.8	2.2	2.1	2.0	1.4	1.2	1.1	E	E	E	E	
12	1.2	E	1.3	B	B	E	E	1.4	1.8	1.4	1.8	1.4	1.7	1.8	1.8	1.8	1.8	1.7	1.6	1.5	1.8	E	E	E	
13	E	E	E	E	E	E	1.1	1.1	1.2	1.2	1.3	1.4	1.6	1.6	1.3	1.3	1.2	1.3	B	B	1.4	1.4	1.4	1.5	
14	1.4	1.3	1.5	E	E	2.2	1.5	B	1.5	1.7	2.2	1.5	2.0	2.0	1.2	2.0	1.2	1.5	B	1.6	B	B	B	E	
15	B	E	E	E	E	E	E	1.1	1.3	2.1	1.7	2.2	2.1	2.1	2.0	1.4	1.5	1.4	E	E	1.2	1.2	1.2	1.2	
16	1.2	E	E	E	E	E	1.5	B	1.8 ^B	1.3 ^F	2.0	1.8 ^B	1.9	1.9	2.0	2.0	1.4	B	B	B	B	B	B	E	
17	E	E	E	E	E	E	E	B	B	B	1.7	2.0	2.0	2.0	2.5	2.0 ^B	1.8	1.8	2.2	1.4	1.4	1.2	1.2	1.2	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
19	<2.0	<2.0	<2.0	C	C	C	C	C	<2.1	<2.1	<2.2	<2.1	<1.8	<1.9	<2.1	<2.1	C	<1.8	<2.0	<2.0	<2.0	<2.0	1.9	<2.0	
20	C	C	C	C	C	C	C	C	<2.2	C	C	<2.1	<2.4	<2.0	<2.2	C	C	B	1.3	C	1.1	1.2	1.8	E	
21	E	E	E	1.1	E	E	B	1.2	1.4	1.6	2.1	[2.1] ^F	2.1	2.1	2.0	1.4	1.3	1.2	1.2	2.1	1.4	B	B	B	
22	E	1.1	1.1	E	E	E	E	2.2	1.4	C	C	C	C	C	C	C	C	2.0	B	B	1.5	1.3	B	B	
23	B	E	E	E	E	E	E	E	1.2	1.3	2.0	2.1	C	C	C	2.1	1.3	1.3	1.3	1.3	B	B	1.3	1.2	
24	1.2	1.1	1.1	1.1	E	E	E	1.1	1.2	2.1	2.4	2.5	2.1	2.0	2.6	B	1.9	1.2	B	1.2	E	E	E	E	
25	E	E	E	E	E	B	1.2	1.3	1.5	1.5	1.7	1.8	1.7	1.9	1.9	1.9	B	1.3 ^B	1.2	B	1.2	1.2	1.1	1.1	
26	1.1	E	E	E	E	E	E	E	1.4	1.5	2.0	B	2.5	B	2.2	1.5	E	1.5	B	B	E	E	B	B	
27	E	1.1	E	E	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.8	1.8	1.8	1.9	1.3	1.2	1.1	1.1	1.1	E	E	B	E	
28	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	C	C	C	1.2	1.1	1.2	1.3	1.5	1.4	
29	E	E	B	B	E	E	B	1.5	1.5	1.5	1.5	1.6	1.8	1.8	1.7	1.6	1.3	E	E	E	E	E	E	E	
30	E	E	E	E	E	E	E	1.1	1.2	1.4	1.8	2.1	2.2	1.8	2.0	B	B	1.2	1.3	1.3	E	E	E	E	
31																									
Median Value																									
Count	26	28	26	24	26	24	18	22	25	25	25	24	25	24	24	23	21	26	19	22	24	22	20	20	

Note: - < represents the case where the lowest coil band was in fault.

Manual

Sweep 1.0—Mc to 1.4 Mc in 1.5 min

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

IONOSPHERIC DATA

Nov. 1950

f_oF₂

Akita

Lat. 38° 43.5' N
Long. 140° 08.2' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.5	3.6	3.5	3.4	3.5	3.0	4.8	(5.2) ^P	9.5	9.0	8.9	11.0	10.5	9.4	9.0	11.3	10.4	5.1	4.6	3.6	4.1	3.2	3.4	3.4
2	3.4	3.7	3.4	3.1	3.0	2.7	4.2	7.0	9.2	9.6	9.8	(12.4) ^H	11.6	9.5	9.3 ^P	7.7	7.4	6.6	3.8	4.4	4.5	4.0 ^F	3.7 ^F	3.4 ^F
3	3.6 ^F	4.5 ^F	(4.0) ^F	(4.1) ^F	3.8 ^V	3.6	3.7	5.9	7.6	9.2	10.4	10.4	7.8	8.7	8.9	8.0	7.9	5.5	4.4	4.0	3.0	2.9	3.2 ^F	3.2 ^F
4	3.3	3.3	A	3.3	3.3 ^V	3.3	3.0	6.8	8.4 ^B	8.2	8.8	8.6	8.9 ^P	9.2	8.9	9.4	8.7	6.6	5.0	4.2	3.2	3.6	4.0	3.4
5	3.4	3.4	4.0	4.4	3.5 ^V	4.3	6.0	8.7	11.7	12.9 ^P	13.0	14.0	13.8	11.4	9.8	9.8	8.0	5.9	5.2	4.0	3.7	4.0	3.7	3.7
6	4.0	(3.6) ^F	3.1	3.8	3.5	3.5	4.4	6.6	8.1	8.0	8.6	10.9 ^H	9.8	8.4	9.7	8.4	6.7	7.1 ^H	4.8	3.5	3.0	3.2	3.3	3.5
7	3.4	3.5	3.5	3.4	3.4	3.2	3.6	6.8	7.6	8.8 ^T	8.3 ^P	10.3 ^P	9.5	8.8	8.5	8.5	C	C	3.8	3.3	3.5	3.0	3.3	3.3
8	3.4	3.4	3.5	3.5	3.6	3.4	4.1	7.1	8.2	8.7	8.8	9.9	9.1	8.5	9.3	8.9	7.7	5.8	3.6	3.4	3.5	3.5	3.5	3.5
9	3.4	3.6	3.4	3.6	4.5	3.6	4.3	7.0 ^H	9.0	9.0	9.0	10.4	9.9	10.0	9.7	9.4	8.5	4.9	4.3	3.5	3.4	3.5	3.6	3.6
10	3.7	3.6	3.7	3.6	3.5	3.8	4.0	7.8	8.5	(8.7) ^B	10.0	(10.3) ^P	10.0	10.5	10.4	10.4	8.0	6.2	A	A	A	A	4.0	4.7
11	3.6	3.8	3.9	4.4	3.3	2.9	3.6	8.7	10.2	9.8	12.6	14.0	13.2	11.5	9.8	8.9	A	A	A	4.3	4.1 ^A	4.7	3.7	3.6
12	A	A	A	A	4.4 ^F	3.5	4.2	7.9	10.4	11.4 ^B	10.2	11.3 ^V	11.3	10.0	9.0	(9.4) ^P	7.8	7.1	5.5	5.0	4.5	3.8	3.1	3.2
13	3.4	3.2	3.2	3.5	3.4	3.4	4.1	7.0	10.1	(10.2) ^B	10.7 ^B	10.7 ^B	10.0 ^B	8.8 ^B	8.8	8.9	7.8	5.4	4.8	4.5	4.1	4.4	3.3	3.2
14	3.2	3.3	3.3	3.2	3.3	2.7	3.0	6.4	9.7	11.1	10.9	9.9	9.0	8.7	8.4	8.4	6.9 ^S	S	3.9	3.5	3.7	(3.4) ^C	3.2	3.5
15	3.5	3.3	3.4	3.2	3.8	3.5	2.9 ^Z	C	7.4	8.1	8.1	8.1	8.6	8.2	8.4	7.0	7.2	4.7	3.2	3.5	3.5	3.0	2.5	2.7
16	2.7	3.0	2.9	3.1	3.2	3.2	2.9	6.8	7.1	7.8	8.4 ^P	9.4 ^P	(8.7) ^P	8.0	8.3	8.7	8.0	4.5	3.8	3.7	3.5	3.2	3.1	3.2
17	3.1	3.5	3.3	3.3	3.5	3.5	3.0	6.4	8.0	(9.0) ^P	8.5	10.7	8.2	9.0 ^P	(8.5) ^P	8.3	6.3	5.3	5.1	4.4 ^F	4.4 ^H	3.5	3.8	3.5 ^F
18	4.1	(4.1) ^F	4.7	4.5	5.8 ^Z	4.9	3.7 ^F	8.0	8.1	9.9	10.7	10.4	10.1	8.9	9.8	10.3	7.1	5.4	4.4	S	AF	3.5 ^F	A	AF
19	2.9 ^F	A	3.2 ^F	3.3	3.5	3.4 ^F	3.6	6.4 ^F	6.7	8.5	8.8	10.1	9.8	9.3	9.4	7.8	7.0	4.9 ^H	3.7	3.8	2.5	2.9	3.2	3.4
20	3.6	3.6	3.4	3.4	3.3	3.3	3.2	7.2	8.6	7.4	8.1	8.5	8.2	7.4 ^Z	7.3	7.3 ^B	6.2	5.4	3.6	3.8	3.7	2.9	3.0	3.2
21	3.3	3.2	3.3	3.4	2.5	3.4	3.1	6.2	7.0	7.5	8.7	9.4	8.5	7.6	7.8	6.9	6.3	4.4	3.8	3.1	2.7	2.9	3.0	3.0
22	3.2 ^F	3.3	3.1 ^F	3.1	3.6	3.9	3.8	6.0	7.3	8.5	8.8	8.6	7.9	8.4	8.0	(8.0) ^C	8.1	4.2	4.8	3.3	3.4	2.9	3.2	3.6 ^Z
23	3.7 ^Z	3.3 ^Z	3.1	3.1 ^F	3.3 ^F	3.4	2.6	7.4	6.7	7.7	(11.4) ^P	13.4	10.9	9.2	9.0	8.0	8.0	7.4 ^H	6.3 ^H	4.5 ^S	4.4 ^S	3.2	2.9 ^V	3.2 ^F
24	B ^F	(4.2) ^F	(3.8) ^C	3.4 ^F	3.3 ^F	3.4 ^F	4.1 ^Z	AF	7.2	7.4	8.4	9.8	9.0	8.4	6.8	7.3	6.4 ^S	3.9	4.1	3.7 ^Z	4.3 ^Z	2.6 ^V	3.9 ^Z	3.8 ^V
25	3.4	A	3.6 ^F	3.8	3.3 ^F	3.2 ^F	3.9 ^T	(5.9) ^F	7.2	7.9 ^T	8.5	10.2	12.2	11.6	8.1	6.2	6.9 ^H	6.1	6.7	4.5 ^S	3.6	4.0	3.8	3.5
26	4.2	3.3	3.0	2.8 ^H	3.0	2.9	3.0	6.7	8.9	9.6	12.0	12.4	8.8	8.3	7.8	8.2	6.9	4.7	3.6	3.2	3.3	3.5	3.9	3.3
27	2.7	3.5 ^F	(4.5) ^F	(4.3) ^F	(4.3) ^F	4.3 ^F	3.0	6.6	9.0	9.2	(11.1) ^P	(9.9) ^P	8.9 ^P	8.3 ^P	7.4	7.1	6.2	5.3	3.5	3.6	3.5	3.4 ^F	3.6 ^F	A
28	3.7	3.7 ^F	3.1	3.7 ^Z	3.5 ^Z	3.4 ^Z	3.3	6.0	8.3	C	C	10.6	9.7	9.6	7.9	7.1	(5.8) ^C	4.6	4.3	3.2	3.3	3.3	3.5 ^F	3.7
29	3.7 ^F	3.6	3.2	3.3	3.3	3.1	3.4	7.7	7.8	9.8	10.0	10.7 ^B	8.2	9.8	8.7	7.3	6.4	4.3	4.9	3.6	3.6	3.7 ^H	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	8.2	(7.6) ^C	7.1	7.3	4.9	4.2	3.8	3.6	3.3	3.5 ^Z	3.9
31																								
Median Value	3.4	3.5	3.4	3.4	3.5	3.4	3.7	6.8	8.2	8.8	9.0	10.4	9.7	8.8	8.7	8.4	7.2	5.3	4.3	3.7	3.6	3.4	3.4	3.4
Count	27	26	27	28	29	29	29	27	29	28	28	29	29	30	30	30	28	27	28	28	28	29	28	27

f_oF₂

Sweep 1.0—Mc to 117.0. Mc in —15— min Manual

A 1

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

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

135° E Mean Time

f_oF₂

Nov. 1950

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	390	300	370	350	330	350	290	(230) ^F	250	260	290	300	270	290	270	260	250	230	A	350	280	380	390	400
2	440	320	380	360	250	370	290	260	270	270	(300) ^H	280	280	260	270 ^P	230	250	240	280	320	350	380 ^F	360 ^F	340 ^F
3	340 ^F	BF	(370) ^F	(370) ^F	340 ^V	320	250	260	260	280	280	270	270	280	250	270	240	230	270	280	300	330	350 ^F	370 ^F
4	310	310	A	340	350 ^F	320	290	250	(250) ^B	260	270	260	260 ^F	260	260	260	250	270	290	320	A	280	360	320
5	380	390	400	310	310 ^V	390	270	340	300	290 ^F	280	300	290	300	290	280	220	240	280	220	350	350	360	360
6	370	(350) ^C	330	330	280	380	300	260	360	260	250	290 ^H	270	260	270	260	260	260 ^H	260	280	310	360	380	370
7	380	370	330	340	300	330	280	250	270	(260) ^S	260 ^F	270 ^H	260	270	260	280	C	C	280	320	300	350	340	360
8	360	330	320	330	340	360	300	250	280	250	280	270	270	280	280	280	250	240	260	310	350	340	350	350
9	380	370	320	340	300	350	270	280 ^H	250	280	280	280	280	280	280	280	280	260	270	290	360	340	380	360
10	370	340	310	310	320	280	270	250	260	(270) ^B	270	(280) ^F	290	280	290	280	240	280	A	A	A	A	370	310
11	420	400	370	320	350	410	340	250	250	250	280	280	280	270	260	270	A	A	A	A	A	300	310	340
12	A	A	A	A	320 ^P	310	320	260	280	260	270	(280) ^S	270	270	270	(260) ^F	250	270	270	290	300	320	350	360
13	380	390	400	320	320	280	320	260	250	(250) ^B	250 ^B	260 ^B	250 ^B	260 ^B	260	250	240	240	340	320	300	310	300	350
14	350	380	290	320	280	290	310	250	260	250	270	300	260	260	250	260	240 ^S	S	310	260	280	(280) ^C	280	330
15	310	360	370	360	320	260	260 ^Z	C	270	260	230	290	300	280	260	250	250	270	250	300	290 ^A	250	330	330
16	320	390	350	330	330	260	300	250	250	270 ^F	270 ^F	(260) ^F	290	310	260	250	250	250	300	300	320	330	340	360
17	380	410	340	330	300	260	260	230	230	(250) ^F	240	270	230	260 ^F	(260) ^F	250	260	310	260	320 ^F	270 ^H	300	380	370 ^F
18	410	(390) ^F	370	350	320	260	330 ^F	260	260	260	260	260	260	270	270	250	250	240	300	S	AF	AF	A	AF
19	AF	A	330 ^F	330	300	240 ^F	320	240 ^F	220	240	270	280	280	290	270	250	230	310 ^H	270	260	280	350	340	350
20	320	320	320	320	300	270	280	260	230	230	260	250	260	260 ^Z	260	(250) ^B	240	230	260	310	300	320	360	340
21	320	330	360	330	310	360	270	230	250	270	250	260	260	260	260	270	270	270	270	250	280	320	350	340
22	330 ^F	380 ^B	310 ^F	320	300	340	350	260	250	290	260	280	260	250	260	(240) ^C	220	210	320	260	290	320	370	410 ^Z
23	390 ^Z	370 ^Z	370	390 ^Z	380 ^F	310	330	260	240	260	(280) ^F	270	230	260	290	280	260	280 ^H	320 ^H	300 ^S	260 ^S	280	280 ^V	320 ^F
24	BF	(450) ^F	(420) ^C	380 ^F	300 ^F	310 ^F	320 ^F	AF	210	240	280	260	270	260	230	250	250 ^S	220	270	280 ^Z	300 ^Z	240 ^V	320 ^Z	340 ^V
25	300	A	320 ^F	360	350	380 ^F	(330) ^F	(270) ^F	250	(280) ^V	250	300	300	280	230	250	270 ^H	280	260	(230) ^B	360	310	340	340
26	330	320	350	420 ^H	380	340	320	300	270	250	260	260	240	270	260	250	250	270	300	380	390	380	300	360
27	260	(360) ^F	(440) ^F	(460) ^F	350 ^F	350 ^F	320	270	250	280	(260) ^F	(250) ^F	240 ^F	230 ^F	240	250	250	250	280	310	310	350 ^F	330 ^F	A
28	270	420 ^F	380	390 ^Z	350 ^Z	330 ^Z	290	250	260	C	C	270	280	250	240	(260) ^C	(260) ^C	270	310	270	300	390	360 ^F	330
29	290 ^F	320	400	340	380	360	320	230	230	280	260	250 ^B	270	260	260	250	260	330	280	270	320	310 ^H	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	250	(240) ^C	220	210	230	290	320	280	320	380 ^Z	380
31																								
Median Value	360	370	360	340	320	330	300	250	260	270	270	270	270	260	260	260	250	260	280	300	300	320	280	350
Count	26	25	27	28	29	29	29	27	29	28	28	29	29	30	30	30	28	27	27	27	26	28	28	27

Manual

Sweep 1.0 — Mc to 17.0 — Mc in 1.5 min

A 2

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

IONOSPHERIC DATA

Nov. 1950

f'F2

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

136° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	320	260	300	350	290	300	240	210	220	250	260	270	250	220	250	250	220	230	A	300	760	330 ^A	340	A	
2	360	280	290	290	230	310	230	240	230	230	250	260 ^H	250	240	240	220 ^A	220 ^A	220 ^A	220 ^A	240	240	240	280	310	310
3	300	310	300	280	260	250	230	220	250	260	260	260	260	240	240	250	230	210 ^A	230	250	300	310	300	310	
4	290	290	A	310 ^A	260	240	220	220	240	230	250	250	240	240	220	240	220 ^A	250	270	A	A	270 ^A	300	290	
5	340	330	320	270	250	260	250	240	260	270	270	260	270	260	250	220 ^A	210 ^A	200 ^A	220	210	300	300	300	300	300
6	290	(300)	300	280	240	290	260	220	220	240	230	260 ^H	230	240	250	240	210 ^A	230 ^H	220	260	780	300 ^A	310 ^A	320 ^A	
7	320	310	290	270	260	250	230	230	220	240	220	270	260	260	240	C	C	C	210	280	270	280	290	310	
8	290	290	300	290	270	280	250	220	240	230	240	250	250	260	240	250	240	220 ^A	230	250	260	260	280	280	
9	300	300	290	290	270	270	220	220 ^H	220	220	220	250	220 ^A	260	240	240	220	220	250	250	280	300	290	300	
10	290	250	270	290	280	250	240	220	200	220	220	250	270	260	250	230	220	220	(230)	A	A	A	A	760	
11	320	320	300	260	290	310	290	240	210	230	260	250	250	220 ^F	220	220	A	A	A	A	(280)	250	260	760	
12	A	A	A	A	260	250	260	220	230	230	230	240	230	220	240	210	220	240	230	220	250	250	310	310	
13	300	320	340	280	270	230	240	230	240	240	220	250	220	220	230	230	220	230	260	760	760	260	250	300	
14	290	300	260	(310)	240	220	270	230	240	240	210 ^A	240	250	220	230	230	220	220	220	270	260	270	(270)	270	290
15	270	310 ^B	290	300	280	230	210	C	210	220	230	250	290	250	230	220	230	220	210	210	280	A	230	300 ^A	310
16	310 ^A	300	(320)	300 ^A	280	260	260	210	220	220	260	260	260	230 ^A	240	250	210	210	210	270 ^A	260	260	270	280	300
17	280	300	290	310 ^A	270	230	230	210	220	210	220	260	220	240	220	220	220	260	240 ^A	250	230	230	300	A	
18	A	300	290	270	260	220	240	230	240	240	230	210	230	250	230	230	220	210	220	240 ^F	AF	(320)	A	AF	
19	AF	A	320	280	260	210	270	210	210	210	250	260	250	240	240	250	200	700 ^H	730	230	240	290	290	290	
20	280	280	300	290	270	250	230	250	220	210	210	250	250	230	240	230	220	220	250	260	250	260	300	280	
21	280	280	290	280	270	250	210	210	200	240	240	250	250	230	230	240	220 ^A	230	250	210 ^A	230	260	280	300	290
22	290	280	280	250	260	250	260	220 ^A	220 ^A	250	220	250	230	240	260	(240)	210	(210)	230	270	260	280	320	310 ^B	
23	310	310	310	330	310	240	250 ^B	220 ^A	210	230	260	240	220	240	240	250	210	220 ^H	220	220	220	240	270	300	
24	300	350	(330)	310	270	240	240	AF	210	230	220	240	220	230	220	230	210	210	210	230	240	210	250	260	
25	260	A	280	310	310	320	270	240	220 ^A	260	240	260	280	240	210	220	230	230	240	210	230	260	300	280	
26	290	210	260	250 ^H	320	280	260	270	240	230	240	240	230	220	220	240	220	220	250	330	320	320	260	350 ^A	
27	230	340 ^F	360 ^F	380	360	(330)	270 ^F	220 ^A	240	260	220	220	240	220	220	220	210	220	230	270	250	270	270	A	
28	230	300	300	320	290	250	260	220	240	260	220	220	240	220	220	230	210	220	230	270	240	260	340	300 ^F	
29	260	270	320	290	300	300	270	230	220	250	220	230	240	230	240	240	(220)	210	230	240	260	280 ^H	C	C	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	(220)	210	220	220	210 ^A	240	260	240	270	300	290	
31																									
Median Value	290	300	300	290	270	250	250	220	220	230	230	250	240	240	240	230	220	220	230	250	260	270	270	300	300
Count	26	26	27	28	29	29	29	27	29	29	28	29	30	30	30	30	28	28	28	27	25	29	27	25	

f'F2

Sweep 1.0 Mc to 31.0 Mc in 1.5 min Manual

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

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

foF1

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								Q	L	L	L	L	Q	Q	L	L	Q								
2								Q	Q	Q	L	A	L	L	L	L	Q								
3								Q	L	Q	Q	A	A	A	4.5	L	A								
4								Q	L	L	B	B	B	Q	Q	Q	Q								
5								Q	L	L	Q	Q	L	Q	L	Q	A								
6								Q	Q	B	Q	A	Q	Q	L	L	Q								
7								Q	Q	Q	Q	L	Q	L	L	L	C								
8								Q	L	L	L	L	L	L	L	L	Q								
9								Q	Q	Q	Q	L	Q	L	L	L	Q								
10								Q	Q	Q	Q	L	L	L	L	Q	Q								
11								L	Q	Q	4.5	L	L	L	L	Q	Q	A							
12								Q	3.6	L	L	L	L	L	Q	Q	Q	Q							
13								Q	L	(4A)	Q	L	L	Q	Q	Q	Q	Q							
14								Q	L	L	A	L	L	L	L	Q	Q	A							
15								C	Q	Q	L	L	B	L	Q	Q	Q	Q							
16								Q	Q	Q	L	5.8	5.8	Q	Q	Q	Q	Q							
17								Q	Q	L	L	L	Q	Q	4.1	Q	Q	Q							
18								Q	Q	L	L	L	Q	Q	L	L	Q	L							
19								Q	Q	Q	Q	L	L	L	L	4.9	Q	Q							
20								3.2	Q	Q	Q	L	L	L	Q	4.6	3.4	3.2							
21								Q	Q	L	L	4.0	L	L	L	Q	A	A							
22								Q	Q	A	Q	L	Q	Q	Q	L	C	Q							
23								Q	Q	Q	L	L	Q	Q	L	Q	Q	3.0							
24								AF	Q	A	L	4.2	L	L	L	Q	Q	L							
25								Q	A	L	L	Q	L	L	L	Q	Q	Q							
26								A	L	A	Q	L	4.0	Q	L	Q	Q	Q							
27								A	L	4.2	Q	4.0	4.0	4.0	L	L	Q	Q							
28								Q	L	Q	C	L	L	L	Q	Q	C	Q							
29								Q	Q	L	Q	Q	L	L	L	Q	Q	Q							
30								C	C	C	C	C	C	C	C	C	Q	Q							
31																									
Median Value																									
Count																									

Sweep J.P.—Mc to 17.0. Mc in 1.5 min

Manual

A 4

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

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Nov. 1950

135° E Mean Time

Akita

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	Z10	Z00	Z10	Q	Q	Z30	Z30	Q							
2								Q	Q	Q	Z20	A	Z50	Z20	Z20	A	Q							
3								Q	Z30	Q	Q	A	A	A	Z30	Z20	A							
4								Q	Z20	Z20	Z00	B	190	Q	Q	Q	Q							
5								Q	Z50	Z50	Q	Q	Z60	Q	Z20	Q	A							
6								Q	Q	B	Q	A	Q	Q	Z30	Z30	Q							
7								Q	Q	Q	Q	Z40	Q	Q	Z30	Z20	C							
8								Q	Z30	Z10	Z10	Z20	Z20	Z40	Z50	Q	Z20							
9								Q	Q	Q	Q	A	Q	Z20 ^A	Z40	Z40	Q							
10								Q	Q	Q	Q	Z20	Z20 ^A	Z30	Q	Q	Q							
11								Z30	Q	Q	Z30	Z30	Z20	Z30	Q	Q	A							
12								Q	Z00	Z20	Z20	Z20	Q	Q	Q	Q	Q							
13								Q	Z20	Z10	Q	Z20	Q	Q	Q	Q	Q							
14								Q	Z30	Z20	A	Z30	Z30	Z30	Q	Q	A							
15								C	Q	Q	A	Z20	B	Z30	Q	Q	Q							
16								Q	Q	Q	Z00	Z30	Z40	Q	Q	Q	Q							
17								Q	Q	190	190	190	Q	Z10	Q	Q	Q							
18								Q	Q	Z30	Z20	Q	Q	Z30	Z20	Q	Z10							
19								Q	Q	Q	Z20	Z30	Z10	Z30	Q	Q	Q							
20								Z10	Q	Q	Q	Z20	190	Q	Z20	Z30	Z20							
21								Q	Q	Z20	Z20 ^A	Z00	Z10	Z20 ^A	Q	A	A							
22								Q	Q	A	Q	Z30	Q	Q	Z40	C	Q							
23								Q	Q	Z30	Z30	Q	Q	Q	Z40	Q	Z00							
24								AF	Q	A	190	Z50	Z00	Z30	Q	Q	Z10							
25								Q	A	Z30	Z30	Q	Z30	Z30	Q	Q	Q							
26								A	Z20	A	Q	Z20	Z20 ⁰	Q	Q	Q	Q							
27								A	Z20 ^A	Z10	Q	Z10	Z10	Z20	Z20	Z20	Q							
28								Q	Z20	Q	C	Z20	Z30	Q	Q	Q	C							
29								Q	Q	Z20	Q	Q	Z10	Z20	Q	Q	Q							
30								C	C	C	C	C	C	Q	C	Q	Q							
31																								
Median Value								-	Z20	Z20	Z20	Z20	Z20	Z30	Z30	Z30	Z10							
Count								Z	10	13	14	Z0	18	16	13	7	5							

135° E Mean Time

Sweep 1.0 - Mc to 17.0 Mc in 1.5 min

Manual

A 5

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

Lat. 36° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

foE

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								A	2.5A	2.9	3.0	2.9	3.1H	2.9	2.9B	2.4A	B							
2								2.1	2.4	2.6	2.7	A	3.0	3.0	2.8	2.4	A							
3								2.0	A	2.8	2.8	A	A	A	A	A	A							
4								2.0	2.3	A	A	2.9	A	B	2.7	2.6	A							
5								1.8A	2.4	2.6	2.6A	2.9	A	A	A	A	A							
6								2.0	2.6	2.6	3.0A	A	A	3.0	A	A	A							
7								1.8	2.5	2.5J	A	A	A	A	A	A	C							
8								2.1A	2.4J	2.8	2.8	3.0	3.0	3.0	2.7	2.6	A							
9								A	A	2.6J	2.8	A	A	A	2.8	A	1.8A							
10								2.0	2.5	A	A	A	A	A	2.9	2.8	2.5	B						
11								1.7A	A	2.7	A	2.5	A	A	A	A	A							
12								1.8	2.4A	2.8	2.9	3.1	3.0	3.0	A	A	A							
13								1.9	2.3	A	2.9A	3.0	3.0	B	A	A	A							
14								1.8	2.1	A	A	A	A	A	3.0	A	A							
15								C	2.3'	2.6	A	3.0A	A	2.9	2.8A	(2.7)A	(1.8)A							
16								2.0H	2.4H	2.7	2.9	A	A	A	A	A	A							
17								1.7	2.5H	(2.5)A	2.9	3.0	(2.8)B	2.8A	2.3A	A	A							
18								(2.0)B	2.5	2.7A	A	3.0	A	A	A	A	1.8A							
19								1.9A	AF	2.7	2.8	2.9	2.9	2.8	2.6	2.3	B							
20								1.4J	2.4	2.5	2.6	2.9	2.9	2.7H	2.6	2.3	1.9							
21								1.8	B	A	A	3.0	3.0H	A	A	A	A							
22								A	A	A	2.9	2.9H	2.7	2.6	A	C	B							
23								A	2.4A	2.6	A	3.0	3.0	2.8	A	A	B							
24								A	(2.5)A	A	A	A	3.0	3.0A	3.0A	2.4	B							
25								A	(2.4)A	A	A	3.0	3.0A	B	3.0A	2.4	A							
26								A	2.6H	A	3.0J	3.0	3.0	A	A	A	A							
27								A	A	B	2.8J	B	B	B	2.7	2.4	1.9							
28								1.9	A	A	C	A	A	A	(2.7)B	B	C							
29								1.9J	2.5	A	2.9	2.9	3.0	2.9	2.8	B	1.9B							
30								C	C	C	C	C	C	3.1J	(2.8)C	2.4	2.0B							
31																								
Median Value								1.9	2.4	2.6	2.9	3.0	3.0	2.9	2.8	2.4	1.9							
Count								20	20	18	17	18	15	16	16	13	7							

Sweep 1.0—Mc to 17.0—Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

11° E

Nov. 1950

135° E Mean Time

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

11° E

Sweep 1.0 — Mc to 17.0. Mc in 1.5 — min

Manual

A 7

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

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

fEs

Nov. 1950

136° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	3.0	3.0	2.5	3.6	1.8	2.5	G	2.9	3.4 ^Y	G	G	4.1	4.0	G	G	3.4	B	3.6	4.8	3.1	3.2	.5	3.2	4.0	
2	2.8	2.3	1.9 ^Y	2.4	G	3.4	2.7	B	G	7.0	3.6	5.4	7.6	4.0	4.4	7.2	4.2	4.2	3.0	3.4 ^B	2.6	2.5	3.2	2.8	
3	2.8	3.2	3.2	2.5	2.4	2.4	G	4.4	3.8	4.2	3.8	4.2	5.6	5.8	4.2	5.6	6.2	4.4	3.4	G	2.9	2.3	G	2.7	
4	3.0	2.9	4.2	3.2	2.8	G	2.3	2.8	2.9	G	3.2	B	G	G	G	G	3.6	6.4 ^B	4.6	7.2	4.8	3.2	3.0	2.7	
5	3.0	2.7	1.9	G	2.8	2.2 ^B	2.1	3.3 ^Y	3.5 ^Y	6.1	G	G	G	3.7	4.2	5.0	5.8	3.7	2.8	3.0	3.8	2.0	G	3.6	
6	3.0	C	2.6	3.0	3.8	4.1	3.2	3.4	G	G	G	6.2	G	G	5.5	3.4	4.2	4.2	4.7	3.3	2.8	2.7	4.0	3.5	
7	3.0	4.0	3.2	2.1	2.0	2.3	1.8	G	3.2	2.9	G	G	4.0	3.8	3.2	3.0	C	C	1.8	2.4	2.3	G	2.4	2.2	
8	2.3	2.8	2.6	2.8	3.0	2.4	2.0	G	G	G	3.3 ^Y	G	G	G	G	3.0	3.4	3.2	2.2	G	1.8	G	2.3	1.9	
9	2.3	2.3	G	2.8	2.0	1.8	G	2.6	3.0	G	G	4.0	4.2	3.8	3.8	G	G	3.2	3.0	2.5	2.0	2.2	G	G	
10	G	2.0	G	G	G	G	2.1	G	3.5	3.4	3.4	3.4	4.4	3.4 ^Y	3.6	3.4	4.6	3.4	5.6	7.6	6.6	6.4	4.2	2.4	
11	G	2.0	G	G	2.1	G	G	3.0	3.6	4.5	3.4	4.5	5.5	4.8	6.7	7.6	11.6	8.2	7.8	5.4	4.0	3.6	3.5		
12	6.2	6.4	4.8	5.7	3.4	2.5	2.0	G	3.1	G	G	G	G	G	3.7	3.6	3.3	4.0	3.2	3.2	3.6 ^B	2.8 ^B	2.2	2.0	
13	2.2	2.0	2.6	2.6	2.6	2.4	G	G	3.0 ^Y	3.0	3.4	G	3.4	3.5 ^Y	3.4	4.6	3.2	4.0	3.2	2.7	2.3	2.1	2.1	2.0	
14	1.8	2.0	2.9	3.6	2.6	G	G	G	4.0	3.2	4.6	4.8	3.8 ^B	G	4.0	3.8	4.4	5.0 ^S	5	3.4	3.0	C	B	3.6	
15	B	1.9	2.2	2.2	1.4	2.6	2.2	C	G	G	3.6	G	3.6	G	3.3	4.6	3.6	3.4	2.2	3.5	3.2	3.4	2.8	2.8	
16	3.0	2.8	3.4	2.2	2.2	2.6 ^B	2.0	G	G	G	G	4.6	4.1	5.8	5.6	3.7	3.3	3.1	3.8	3.2	2.5	2.0	2.2	2.4	
17	2.2	2.4	2.6	2.6	2.6	1.7	G	G	G	G	G	G	G	G	3.6	3.4	3.2	4.0	4.8	3.3	2.2	2.9	4.1	4.9	
18	4.9	2.5	1.6	2.0	G	G	G	2.8 ^Y	G	G	G	G	4.3	4.0	4.0	3.4	2.4	2.5	2.8	4.1	6.4 ^F	3.6 ^F	6.3	4.9 ^F	
19	3.8 ^F	5.2	3.0	2.4	G	1.7	2.3	3.4	3.2	G	G	G	G	G	G	G	2.6	2.0	1.9	G	2.2	G	2.5	2.2	
20	2.1	3.2	2.7	2.2	G	G	G	G	G	G	G	G	G	G	G	3.6	2.8	3.2	2.2	3.0	2.6	G	G	G	
21	G	G	G	G	G	G	G	G	G	3.6	3.7	G	G	3.6	3.6	5.6	4.4	3.4	3.2	3.2	2.0	G	2.0	2.4	
22	1.8	G	G	G	G	G	2.0	3.0	3.0	4.6	G	G	3.4 ^Y	G	2.9	C	G	3.0	2.8	2.6	2.6	B	3.1	2.8	
23	G	G	G	G	G	G	G	2.4	2.9	3.3	3.4	G	3.6	G	3.2	3.0	2.0	3.0	3.3	3.4	3.2	G	G	G	
24	2.9	1.6	C	2.0	2.5	1.3	G	5.6 ^B	7.0	5.4	3.4	4.4	G	G	G	G	3.7	4.8	3.3	2.0	2.4	G	G	G	
25	2.6	4.6	3.6	2.5	3.0	2.1	2.7	4.9	3.7 ^B	3.5	G	G	3.6	G	G	G	3.7	4.8	3.3	2.0	2.4	2.0	2.0	2.0	
26	2.7	G	1.4	G	G	G	G	4.6	4.2	4.0	G	G	G	G	4.3	3.4	4.2	2.5	2.3	2.1	G	1.7	2.8	3.7	
27	2.3	1.3	2.4	2.8	2.0	3.4	1.9 ^F	4.2	3.6	G	G	G	G	G	G	G	G	3.2	2.8	3.5	3.0	2.4	3.5	4.6	
28	4.2	3.6	2.4	G	G	G	G	3.6 ^Y	3.7	G	C	G	3.4	G	G	G	C	1.8	3.1	G	G	G	2.1	2.4	
29	3.2	2.4	1.2	1.1	1.3	1.2	G	3.4	G	3.6	G	G	G	G	G	B	G	2.2	2.4	2.6	G	G	C	C	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	2.2	3.2	2.5	G	G	G	G	
31																									
Median Value	2.8	2.4	2.4	2.2	2.0	1.7	1.9	2.8	3.0	G	G	G	3.4	G	3.3	3.4	3.3	3.2	3.1	3.0	2.6	2.2	2.4	2.4	
Count	28	28	28	29	29	29	29	27	29	29	28	28	29	29	29	28	27	29	29	29	30	30	28	28	29

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

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

M3000F2

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.7	3.1	2.9	2.9	2.9	2.8	3.1	(3.5) ^B	3.5	3.5	3.2	3.2	3.5	3.1	3.3	3.4	3.5	3.5	3.1	2.9	3.3	2.8	2.7	2.7	
2	2.4	3.0	2.7	2.7	3.6	2.8	3.0	3.5	3.4	3.3	3.2	(3.3) ^H	3.2	3.3	3.4 ^P	3.5	3.4	3.4	3.1	3.1	2.8	2.7 ^F	2.7 ^F	2.9 ^F	
3	3.0 ^F	2.6 ^F	(2.7) ^F	(2.7) ^F	2.9 ^H	3.0	3.4	3.5	3.4	3.3	3.2	3.4	3.3	3.5	3.3	3.3	3.4	3.5	3.1	3.4	3.3	2.9	2.8 ^F	2.7 ^F	
4	3.1	3.1	A	2.9	2.8 ^F	3.0	3.2	3.5	(3.5) ^B	3.5	3.2	3.4	3.3 ^P	3.5	3.4	3.3	3.4	3.3	3.1	3.1	3.3	3.2	2.8	3.0	
5	2.8	2.7	2.6	3.1	3.0 ^V	2.6	3.4	2.8	3.2	3.3 ^P	3.3	3.1	3.3	3.2	3.2	3.3	3.7	3.4	3.3	3.8	2.8	2.7	2.8	2.7	
6	2.7	(2.8) ^C	2.9	3.0	3.2	2.7	3.1	3.3	3.3	3.5	3.4	3.3 ^H	3.3	3.3	3.5	3.4	3.3	3.5 ^H	3.3	3.2	3.1	2.7	2.7	2.7	
7	2.7	2.7	2.9	2.9	3.1	2.9	3.3	3.5	3.3	(3.5) ^J	3.2 ^P	3.3 ^P	3.4	3.4	3.3	3.6	C	C	3.1	3.0	3.1	2.8	2.9	2.8	
8	2.7	2.9	3.0	2.9	2.9	2.9	3.1	3.5	3.2	3.5	3.2	3.3	3.4	3.1	3.3	3.3	3.5	3.6	3.3	3.1	2.8	2.9	2.9	2.9	
9	2.7	2.7	3.0	2.8	3.1	2.8	3.2	3.2 ^H	3.4	3.3	3.2	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	2.7	3.0	2.7	2.8	
10	2.8	2.9	3.0	3.1	3.0	3.3	3.3	(3.4) ^B	3.5	(3.2) ^B	3.4	(3.4) ^B	3.2	3.2	3.2	3.3	3.5	3.2	A	A	A	A	2.8	2.8	
11	2.5	2.6	2.7	3.0	2.8	2.5	2.9	3.3 ^Z	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.3	A	A	A	A	A	A	3.0	2.8	
12	A	A	A	A	3.0 ^P	3.0	3.0	3.3	3.2	3.5	3.1	(3.4) ^S	3.2	3.3	3.4	(3.5) ^P	3.4	3.3	3.2	3.0	3.1	2.9	2.9	2.7	
13	2.7	2.6	2.6	3.0	3.0	3.3	3.0	3.4	3.6	(3.6) ^H	3.5 ^B	3.4 ^B	3.5 ^B	3.4 ^B	3.5	3.4	3.5	3.5	2.9	3.1	3.1	3.1	3.1	2.9	
14	2.8	2.8	3.1	3.1	3.3	3.2	3.1	3.5	3.4	3.5	3.4	3.1	3.3	3.3	3.3	3.3	(3.6) ^S	3.5	3.1	3.4	3.3	(3.3) ^C	3.3	3.0	
15	3.1	2.8	2.7	2.8	3.0	3.4	3.3 ^Z	C	3.2	3.4	3.6	3.4	3.1	3.4	3.4	3.5	3.6	3.4	3.5	3.2	3.3	3.5	2.8	2.9	
16	2.8	2.6	2.8	2.9	2.9	3.4	3.1	3.3	3.2	3.3	3.3 ^P	3.2 ^P	(3.3) ^P	3.2	3.1	3.3	3.6	3.4	3.1	3.1	2.9	2.9	2.8	2.7	
17	2.7	2.5	2.9	3.0	3.1	3.3	3.3	3.6	3.7	(3.4) ^P	3.5	3.4	3.6	3.4 ^P	(3.4) ^P	3.5	3.4	3.0	3.4	2.9 ^F	3.3 ^H	3.1	2.7	2.8 ^F	
18	2.6	(2.7) ^F	2.7	2.8	2.9 ^Z	3.4	2.9 ^F	3.5	3.3	3.4	2.5	3.4	3.5	3.3	3.2	3.4	3.3	3.1	3.0	S	AF	3.2 ^F	A	AF	
19	3.2 ^F	A	3.0 ^F	2.9	3.2	3.5 ^F	3.0	3.6 ^F	3.8	3.5	3.3	3.3	3.2	3.2	3.4	(3.6) ^B	3.5	3.6	3.1 ^H	3.2	3.4	3.3	2.8	3.0	
20	3.0	3.1	3.0	3.1	3.2	3.2	3.2	3.4	3.6	3.7	3.3	3.5	3.5	3.4 ^Z	3.5	(3.6) ^B	3.5	3.6	3.4	3.0	3.0	3.0	2.8	2.9	
21	3.1	2.9	2.7	3.0	3.0	2.7	3.2	3.7	3.4	3.4	3.6	3.4	3.4	3.5	3.4	3.2	3.6	3.3	3.2	3.3	3.2	3.0	2.7	3.0	
22	3.0 ^F	2.7	3.0 ^F	2.9	3.0	2.8	2.8	3.3	3.4	3.1	3.4	3.1	3.3	3.4	3.3	(3.5) ^C	3.7	3.8	3.0	3.4	3.2	3.0	2.7	2.7 ^Z	
23	2.7 ^Z	2.8 ^Z	2.8	2.7 ^F	2.7 ^F	3.0	2.9	3.4	3.5	3.3	(3.1) ^P	3.3	3.7	3.3	3.2	3.2	3.4	3.2 ^H	3.1 ^H	3.0 ^S	3.4 ^S	3.3	3.2 ^V	3.0 ^F	
24	BF	(2.5) ^F	(2.6) ^C	2.6 ^F	3.2 ^F	3.0 ^F	2.9 ^F	AF	4.0	3.7	3.2	3.2	3.4	3.4	3.7	3.5	3.4 ^S	3.6	3.2	3.1 ^Z	3.2 ^Z	3.5 ^V	3.0 ^Z	2.9 ^V	
25	3.1	A	3.0 ^F	2.8	2.9	2.8 ^F	(2.9) ^V	(3.3) ^F	3.5	(3.4) ^V	3.4	3.1	3.1	3.3 ^B	3.7	3.4	3.3 ^H	3.2	3.4	(3.6) ^S	2.8	3.0	2.9	3.0	
26	3.0	2.9	3.0	2.8	2.7	2.8	2.9	3.3	3.3	3.3	3.4	3.5	3.5	3.3	3.3	3.5	3.5	3.4	3.2	2.7	2.7	3.1	2.9	2.9	
27	3.5	(2.8) ^F	(2.5) ^F	(2.5) ^F	(2.4) ^F	2.8 ^F	3.0	3.2	3.3	(3.6) ^P	(3.6) ^P	3.6 ^P	3.7 ^P	3.5	3.4	3.4	3.4	3.4	3.4	3.1	3.0	2.8 ^F	3.0 ^F	A	
28	3.2	2.5 ^F	2.7	2.7 ^Z	2.9 ^Z	2.9 ^Z	3.1	3.4	3.6	C	C	3.3	3.2	3.4	3.6	(3.4) ^C	3.2	3.0	3.4	3.1	2.7	2.7 ^F	2.9	2.9	
29	3.3 ^F	2.9	2.6	2.9	2.7	2.9	3.0	3.8	3.7	3.3	3.5	3.5 ^B	3.3	3.3	3.5	3.5	3.4	2.9	3.2	3.2	2.9	3.1 ^Z	C	C	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	3.5	(3.6) ^C	3.8	3.5	3.4	3.1	2.9	3.1	2.9	2.7 ^Z	2.6	
31																									
Median Value	2.8	2.8	2.8	2.9	3.0	2.9	3.1	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.2	3.1	3.1	3.0	2.8	2.8	
Count	27	26	27	28	29	29	29	27	29	28	28	29	29	30	30	30	28	27	28	28	28	27	29	28	27

M3000F2

Sweep 1.0 — Mc to 17.0. Mc in 1.5 min

Manual

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

IONOSPHERIC DATA

Nov. 1950

fminF

Akita

Lat. 38° 43.5' N
Long. 140° 08.2' E

135° E Mean Time

Day	00	01	02	03	04	05	06'	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	A	E	A	1.9	1.7	1.6	2.5	3.0	3.6	3.1	3.2	3.6	3.3	2.9	3.3	2.6	A	A	A	1.9	A	1.7	A
2	1.4	1.4	1.4	1.4	E	E	1.4	2.1	2.7	3.0	3.1	A	3.6	3.3	3.0	A	A	A	A	1.4	1.8	1.4	1.8	1.6
3	1.7	1.6	1.2	1.2	1.3	1.2	1.4	2.0	A	2.8	3.6	A	A	A	3.5	3.2	A	A	A	1.5	1.9	1.7	1.5	1.7
4	1.7	1.2	A	A	E	E	1.4	2.2	2.6	2.9	2.8	4.4	3.2	3.2	3.1	2.6	A	A	A	A	A	A	A	1.8
5	1.2	1.2	E	E	E	E	1.6	1.8	2.8	3.4	3.9	A	3.8	4.0	N	A	A	A	A	1.5	A	1.6	1.5	A
6	1.8	C	E	A	A	A	2.2	4.1	3.2	4.1	3.2	A	3.0	3.0	2.7	2.6	A	A	A	A	1.9	A	A	A
7	A	1.9	1.7	E	1.3	1.2	1.5	2.4	3.0	3.1	4.0	3.2	A	4.0	3.0	2.5	A	C	1.8	1.8	1.7	1.6	1.6	1.6
8	1.2	1.2	1.2	E	E	E	1.4	2.2	N	3.1	3.1	3.3	3.2	3.6	3.2	2.5	A	C	1.5	1.5	1.5	1.5	1.5	1.5
9	1.2	E	E	1.7	2.8	E	1.5	2.2	3.0	3.2	3.2	A	A	A	2.8	2.2	1.8	A	A	A	1.4	1.5	1.5	1.4
10	1.2	1.2	1.4	1.3	1.2	1.3	1.6	2.0	2.5	2.5	2.7	A	A	A	3.1	3.0	2.5	1.7	1.6	A	A	A	A	1.4
11	1.6	1.1	E	E	1.7	1.7	1.7	2.0	4.0	3.3	3.1	3.3	2.9	3.7	A	A	A	A	A	A	A	A	A	1.4
12	A	A	A	A	A	1.4	1.4	2.1	2.4	3.2	3.2	3.6	3.6	3.6	2.9	A	A	A	A	A	1.8	1.6	1.6	1.7
13	1.1	1.4	1.3	1.2	1.6	1.4	1.3	1.9	2.5	3.0	2.9	3.0	3.2	3.7	3.2	A	2.8	A	A	1.7	1.5	1.5	1.5	1.8
14	1.1	1.3	1.6	A	1.6	E	1.6	2.0	2.1	2.6	A	3.6	3.4	3.0	3.0	2.8	A	A	2.8 ^S	A	A	C	2.0	1.8
15	2.2	1.5	E	E	1.3	E	E	C	2.4	2.8	3.8	3.3	6.2	3.2	2.8	2.7	2.1	1.7	1.5	1.8	A	1.9	1.8	1.6
16	A	1.6	A	A	1.6	A	1.6	2.1	2.7	3.0	2.9	3.4	3.4	A	A	3.2	A	A	A	A	1.8	1.6	1.6	1.6
17	1.4	1.1	1.1	A	1.3	1.1	1.5	1.9	2.8	2.7	2.9	3.2	3.3	3.0	3.0	3.0	2.4	A	A	1.6	1.5	1.5	1.5	A
18	A	1.3	E	1.2	E	1.4	2.1	2.7	3.2	3.2	3.2	3.2	3.2	2.7	N	2.2	2.4	A	1.6	AF	AF	AF	A	AF
19	AF	A	A	1.3	E	E	1.5	1.9	2.4	2.7	3.1	3.1	3.0	2.8	2.6	2.6	2.0	1.6	1.5	1.6	1.5	1.5	1.5	1.5
20	1.3	1.3	1.4	1.5	1.6	1.4	1.4	1.8	2.4	2.8	2.8	2.9	2.9	2.7	2.7	2.4	1.8	A	A	1.6	1.6	1.6	1.6	1.6
21	E	1.2	E	E	E	E	1.4	1.8	3.0	2.8	A	3.0	3.0	A	2.6	A	A	A	1.8	A	1.4	1.5	1.5	1.5
22	1.2	E	1.1	1.1	E	E	1.2	A	A	A	3.3	3.6	3.6	3.0	3.0	(2.4) ^C	1.7	A	1.8	1.6	1.7	1.6	1.7	1.8
23	1.2	1.2	1.1	1.1	1.1	1.1	1.5	A	2.7	3.1	3.0	3.2	3.0	3.3	3.0	2.9	1.8	A	1.8	1.6	1.5	1.5	1.5	1.8
24	1.5	1.8	(1.6) ^C	1.3	1.4	1.1	1.5	A	2.9	A	2.9	3.4	3.0	3.0	3.0	2.4	2.1	1.6	1.8	A	A	1.5	1.2	1.4
25	1.4	A	1.7	E	1.6	E	A	2.2	A	3.0	3.0	3.5	3.0	3.0	3.0	2.4	2.4	A	1.6	1.6	1.6	1.5	1.5	1.5
26	1.4	1.6	1.2	E	E	E	E	A	2.7	A	3.4	3.0	3.0	3.0	2.7	2.8	2.4	1.5	1.7	1.5	1.5	1.5	1.5	A
27	1.2	1.3	E	E	1.2	A	1.2	A	A	2.8	3.4	3.4	3.2	3.0	2.8	2.4	1.9	1.6	1.6	1.6	1.6	1.6	1.8	A
28	1.8	1.8	1.4	E	E	1.1	1.5	1.9	2.4	2.6	C	3.2	3.2	3.2	2.8	2.9	(2.4) ^C	1.8	1.5	1.5	1.5	1.5	1.5	1.5
29	1.4	1.4	1.3	1.1	1.3	1.2	1.6	2.5	2.5	2.8	2.9	3.1	3.1	2.9	2.8	2.6	1.9	1.6	1.6	1.6	1.5	1.4	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	3.7	(3.3) ^C	2.9	2.0	A	1.6	1.6	1.6	1.6	1.6	1.6
31																								
Median Value	1.4	1.3	1.2	1.1	1.3	E	1.5	2.0	2.7	2.8	3.1	3.2	3.2	3.2	3.0	2.6	2.0	1.6	1.6	1.6	1.6	1.5	1.5	1.6
Count	24	24	25	22	26	26	28	22	24	26	26	24	25	26	27	23	20	8	17	18	23	23	25	22

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual

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

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

136° E Mean Time

fminE

Nov. 1950

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

fminE

Sweep 1.0 - Me to 1.7.0. Me in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

135° E Mean Time

foF2

Nov. 1950

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	3.3 ^F	4.2	3.6	3.7	3.9 ^S	3.9 ^S	6.1	6.6	7.5	9.9 ^S	9.8	10.6 ^S	11.1	10.6	10.1	11.2	10.0 ^S	5.8	3.9	4.1	4.5	3.5	3.6	3.6	
2	3.6	4.0	3.4	3.3	3.2	3.9	5.8	7.4	9.7 ^J	10.0 ^J	10.9	12.2	12.6	10.5	10.1	8.6 ^S	7.3 ^S	7.5	4.5	4.4	4.2	4.5	4.8 ^F	4.4 ^F	
3	4.1 ^F	4.2	4.0	4.0	4.0 ^M	2.8	4.0	6.6	8.5 ^J	9.5	(10.1) ^S	10.7	(10.3) ^S	9.1 ^S	8.3 ^S	8.5	7.6	4.8	4.0	3.2	3.2	3.2	3.2	3.4	
4	3.4	3.5	3.3	3.4	3.1	3.4 ^F	5.6	7.1 ^J	8.0	9.7	9.9	10.7	10.7	11.5	10.2	8.8 ^S	8.8 ^S	7.3	5.0 ^S	4.6	4.7	5.9 ^S	4.7 ^F	4.4	
5	3.9	4.1	4.0	4.2	4.0	3.6 ^F	8.6	(10.3) ^S	12.4	15.2 ^J	14.8	(15.1) ^F	15.4	12.2	12.0	11.2	9.5	7.1	5.0	4.1	3.7	4.1	4.1	4.1	
6	4.1	4.3 ^F	4.2 ^F	4.9 ^F	3.5 ^F	3.4	4.6	6.8 ^S	8.8 ^F	9.6	9.6	(10.9) ^F	10.5	8.2	9.3	10.1	7.7	6.3	5.4	3.8	3.7	3.6	4.0	3.9	
7	3.8	3.9	3.7	3.6	3.4	3.1	4.1	7.1	8.2	8.7	8.5	(9.5) ^F	9.0	10.4	8.8	8.6	6.9	6.6	4.4	3.7	3.7	3.8	3.8	3.7	
8	3.6	3.4	3.4	3.5	3.5	3.0 ^M	4.4	7.7	8.6 ^J	8.1	9.2	10.0	9.6	8.8	9.5	9.2 ^S	8.2	6.5	3.5	3.6 ^B	3.7	4.0	3.9	3.9	
9	3.6	3.7	3.6	3.6	3.7	3.5	4.5	7.2	8.2	8.6	(10.2) ^F	10.7	10.1	10.2 ^J	9.9	10.1 ^J	8.0	5.4	4.0	3.6	3.6	3.8	3.6	3.8	
10	4.0	3.9	3.7	3.8	3.8	4.1	4.6	7.3	(8.9) ^F	9.1	10.5 ^J	(10.2) ^F	10.1 ^M	11.4	11.3	B	8.0	6.1	4.4	4.2	4.3	4.2 ^F	4.5	4.5 ^Z	
11	3.8	4.0	4.3	5.0	2.9	2.7	3.6	9.6	9.9	10.2	12.7	13.5 ^S	(14.5) ^S	12.2	9.5	10.0	9.8	7.4	A	5.3 ^J	5.2 ^J	4.9	4.1	3.6	
12	3.7	3.8	3.7	3.8	4.2	3.5	4.1	8.5	10.0	11.8	11.2	11.7	10.9	10.9	(9.4) ^S	9.2	7.9	6.4	4.3	4.8	4.1	4.5	4.1	3.2	
13	3.2	3.1	3.3	4.1	3.9	3.3	3.7	7.7	10.2	11.4	11.1	10.7	9.9	9.6	9.2 ^J	9.1 ^J	8.9	6.4	4.3	4.8	4.1	4.5	4.1	3.2	
14	3.3	3.5	3.7	3.5	3.0	3.0	3.8	7.2	9.6	11.2	9.8	8.8	8.1	(10.2) ^F	9.2	8.9	7.1	5.3 ^F	3.8	4.6	4.0	3.5	3.8 ^S	3.7	
15	3.6 ^M	3.4 ^S	3.3	3.3	3.3	3.3	3.7	5.5	(9.1) ^F	8.9 ^F	9.0 ^F	7.5	(6.7) ^S	8.8	8.9	7.8	7.1	5.9	4.0	3.6	3.4	3.6 ^S	2.8	2.7	
16	2.8	2.9 ^F	3.0 ^F	3.2	3.4	3.1	3.3	6.4	7.1	7.7	7.3	8.7	9.0	8.7	9.1	9.1	7.8	B	3.5	S	3.8	3.5	A	3.0	
17	3.0 ^Z	3.1	3.7	3.4	3.7	3.6	6.0	7.5	7.3	(9.4) ^S	8.8	10.5	9.8	9.2	8.2	7.5	7.4	C	5.0	4.4	4.2	3.2	3.0 ^J	2.5	
18	4.4	3.8	2.9	3.0	3.1	3.6	4.3	C	C	(9.6) ^S	11.4	(10.7) ^S	10.6 ^F	10.2	(9.4) ^P	8.1 ^F	4.8	4.2	3.3	2.8	2.9	3.0 ^F	3.0	3.0	
19	A	3.3	3.3	3.5 ^F	3.5	3.2	3.1	(8.2) ^F	8.3 ^S	7.8	8.0	9.7	11.2	(10.8) ^F	9.4 ^B	(8.2) ^P	7.6	5.7	4.4	A	A	A	(3.5) ^F	3.5	
20	3.6	3.6	3.6	3.4	3.8	3.5 ^F	3.8	7.3 ^S	8.2 ^S	7.6	7.7	8.6	8.1	9.4	7.3	7.4	6.7	5.6 ^F	3.9	3.7	3.5	3.2	2.9	3.0	
21	3.3	3.2	3.3	3.3	3.5	3.5	3.3	6.9	7.6	8.1	8.2	9.2	8.0	9.0	8.6	7.7	6.4	5.7	3.7	4.0	2.6	2.6	3.1	3.1	
22	3.6	3.3	3.2	3.5 ^M	3.7	2.8	3.2	6.4	6.9	8.0	9.6 ^S	(8.9) ^F	8.2	9.0	8.3	7.3	7.2	4.9	(3.5) ^F	3.6	3.0	3.3 ^V	3.7 ^F	3.0	
23	3.3 ^F	3.3 ^F	3.6	3.8	3.5 ^F	3.2	2.8	6.5	6.4	7.5	10.7	(13.7) ^S	(10.8) ^F	8.9	8.2 ^F	7.2	8.2	5.1	5.2	4.7	3.7	3.1 ^J	2.5	3.0	
24	3.1 ^F	3.2	3.2	3.5 ^F	3.4 ^F	2.9	3.3	7.2	7.2	7.5	9.4	10.4	9.4 ^S	9.5 ^S	7.4	7.0	5.8	4.3	3.8	3.6	3.3	(3.3) ^S	3.5	3.6 ^F	
25	SF	SF	SF	SF	3.5 ^F	2.9	S	(5.8) ^P	6.3	8.1	10.8	11.0	11.1	12.4	B	6.6	6.4	7.5	6.1	5.5	(3.1) ^F	3.5	3.8	3.5	
26	4.1 ^F	3.3	2.8	2.8	2.9	2.8	3.0	7.3	9.6	11.0	12.4	(13.4) ^F	10.9	8.2	7.5	8.0	7.2	5.2	4.1 ^S	3.3	3.7	3.7	BS	S	
27	BF	2.4	B	BF	3.5 ^F	BF	3.9	6.9 ^J	(8.5) ^S	9.5	12.1	10.1 ^F	8.8	8.7	7.8	7.0	6.1	5.2	4.2	3.6	3.7	3.2	3.5	3.4	
28	(4.9) ^P	2.7	2.8	2.9	(3.0) ^C	3.2	3.7	6.5	(9.0) ^P	(10.4) ^P	(12.5) ^F	9.3 ^F	8.9	(8.4) ^S	6.9	6.4	6.4	5.5	4.3	3.5	3.2	3.2	3.4	3.3	
29	3.7	3.3	2.9 ^F	3.2	3.0	2.9	3.3	7.3	7.8	8.2	10.6	9.9 ^F	7.9	9.2 ^F	9.4	7.3 ^P	7.2	5.2	4.9	5.0	3.5 ^F	(3.6) ^F	3.8 ^F	3.8 ^F	
30	3.5 ^F	3.0	3.4	3.5	3.2	3.3	3.7	6.5	6.9	(8.9) ^C	10.9	8.4	7.8 ^F	9.0 ^J	8.7 ^F	(7.4) ^F	7.0	5.4	4.1	3.7	3.8 ^F	3.4 ^F	3.6	3.7	
31																									
Median Value	3.6	3.4	3.4	3.5	3.2	3.8	7.2	8.5	9.2	10.2	10.4	10.0	9.4	9.2	8.3	7.5	5.8	4.2	4.0	3.7	3.5	2.9	2.8	2.9	3.5
Count	27	29	28	28	30	29	29	29	30	30	30	30	30	30	29	29	30	28	28	28	28	29	28	28	29

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

IONOSPHERIC DATA

Nov. 1950

h_pF₂

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

h_pF₂

Sweep 1.0 Mc to 1.70 Mc in 1.5 min

K 2

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

Lat. 35° 42.4' N
Long. 139° 29.3E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

f'F2

Nov. 1950

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	290	320 ^A	270	240	280	230	210	220	240	260	250	270	250	250	270	220	200	210	250	240	250	330	350
2	300 ^A	300	300	280	220 ^A	250	240	220	230	210	240	240	240	240	230	220	230	220 ^A	220	260	250	300	310	310
3	290	250	300	280	200 ^H	230	250	220	220	220	230	230	230	240	210	220	220	210	200 ^F	200	220	220	260	290
4	290	280 ^F	260	300 ^A	310 ^F	290	250	230	210	230	230	270	270	210	230	220	210	200	210	300 ^A	A	250	310	300 ^A
5	370	320	(300 ^A)	250	280	300	220	240	280	250	250	260	240	220	240	240	220	200 ^A	230 ^F	230	300 ^A	300 ^A	300 ^A	300 ^A
6	300 ^A	250	260	230	200	300	230	210	220	240	230	240	230	210	250	230	220	200 ^A	240	210	250	280	290	A
7	300	290	260	A	250	250	220	220	220	210	230	220	220	240	230	210	200	220	210	220	260	250	250	260
8	280	260	250	260	260	250 ^H	220	220	220	230	230	230	250	240	250	230	210	210	210	300	270	270	250	270
9	290	300	280	270	260	270	230	210	220	220	210	230	250	230	220	220	210	200	210	240	250	270	280	300
10	270	250	270	250	230	220	210	200	200	230	240	240	250 ^H	270	260	230	230	220	220	300	350 ^A	330 ^A	320	330
11	290	330	310	250	330	330	300	230	220	250	280	250	250	230	220	230	250	210 ^F	A	300 ^A	300 ^A	220	220	240 ^F
12	280	260	270	260	250	230	260	220	210	220	230	240	200	220	220	210	210	220	A	230	A	200	300	280
13	310	310	320	310	270	250	220	220	220	240	230	230	240	220	230	230	230	220 ^F	330	230 ^F	210	210	220	310 ^F
14	260	260	250	250 ^F	210	210	250	210	220	230	230	230	230	230	230	230	250	280	260	260	220	230	250	240
15	230 ^H	270	240	290	250	230	240	220	230	220	240	210	260	230	240	220	210	200	220	280	240	250	280	250
16	340	320	310	280	250 ^F	250	230	220	220	200 ^H	220	240	250	240	220	220	220	A	300 ^A	A	300	260	A	290
17	270	300	270	250	250	210	200	210	210	200	220	250	250	220	220	210	210	240	(240 ^T)	230	220	250	410	410
18	410	400	340	A	270	270	250 ^F	C	C	220 ^H	230	240	250	240	250	230	220	200	210	210	AF	230	280	350 ^A
19	A	290 ^F	330 ^F	270	240	220	240 ^F	230	220	220 ^A	250	280	250	240	220	230	210	220	A	(230 ^F)	A	A	290	270
20	300	260	280	280	250	230	220	210	220	250	240	240	230	240	240	240	210	210 ^A	210	230	240 ^S	240	270	260
21	290	280	270	260	250	240	230	230	230	220	210	230	230	250	220	220	200	210	210	230	200 ^A	280	280	280
22	300 ^F	300 ^A	270	240 ^H	200 ^A	210	220	220	220	220	210	250	270	250	220	220	210	220	260	220	210	230	290	310 ^F
23	310	300	300	310	310 ^F	250	210	220	230	250	240	250	240	220	250	230	230	210 ^F	250 ^F	240 ^F	(220 ^F)	230	250	250
24	250	280	300 ^A	290	230	270	230	310	210	210 ^A	250	250	240	250	230	220	210	200	230	210	220	220	260	240
25	300	260	260	260	210	310	200 ^F	190	220	250	240	280	250	240	220	270	230	210	230	240	260	290	300	270
26	280	280	250	240	320	290	240	230	230	230	250	240	220	250	250	210	220	200	220	240	210 ^A	280	200	270
27	240 ^A	360	360	370	350	250	300 ^F	250	230	220	230	210	210	220	210	210	200	210	230	260	240	250	280	320
28	250	340	330	310	(280 ^C)	250	230	220	240	240	230	230	220	220	220	220	220	210	210	210	290	300	300	260
29	280	240	330 ^F	280	280	290	250	220	220	230	230	210	240	230	220	220	230	250	230	210	210	240 ^F	320 ^F	270 ^F
30	240	270	270	220	220	250	220	200	220	(240 ^C)	250	220	250	240	240	220	210	220	240	200	250	260	300	280
31																								
Median Value	290	280	280	270	250	250	230	220	220	230	230	240	240	240	230	220	220	210	220	230	240	250	290	280
Count	29	30	30	28	30	30	30	29	29	30	30	30	30	30	30	30	30	29	28	29	26	29	29	29

Sweep 1.0-Mc to 17.0-Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 35°42.4'N
Long. 139°29.8E

Kokubunji Tokyo

135° E Mean Time

foF1

Nov. 1950

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	L	L	L	L	L	L	Q								
2								Q	Q	Q	Q	Q	L	L	L	Q	Q	Q							
3								Q	Q	A	Q	L	L	L	L	Q	Q	Q							
4								Q	Q	L	L	L	L	L	L	Q	Q	Q							
5								Q	A	L	L	L	L	L	L	L	Q	Q							
6								Q	Q	L	Q	L	L	L	L	L	Q	Q							
7								Q	Q	L	L	L	L	L	L	L	Q	Q							
8								Q	Q	L	Q	Q	L	L	L	L	Q	Q							
9								Q	Q	Q	Q	Q	L	L	L	A	Q	Q							
10								Q	Q	L	L	L	L	L	L	L	Q	Q							
11								Q	A	A	A	Q	L	L	L	A	Q	A							
12								Q	Q	L	L	L	L	L	L	L	Q	Q							
13								Q	Q	L	L	L	L	L	L	L	L	L							
14								Q	Q	Q	Q	Q	L	L	L	A	Q	Q							
15								L	Q	Q	L	Q	L	L	L	L	Q	Q							
16								Q	Q	Q	4.0	Q	L	L	L	L	Q	Q							
17								Q	Q	Q	Q	L	L	L	L	L	Q	Q							
18								Q	C	Q	L	L	L	L	L	L	L	Q							
19								Q	L	Q	L	L	L	L	L	L	Q	Q							
20								Q	Q	L	L	L	L	L	L	L	Q	Q							
21								Q	Q	Q	Q	4.1	L	L	L	L	Q	Q							
22								Q	Q	L	L	L	L	L	L	L	L	S							
23								Q	Q	L	L	L	L	L	L	L	L	Q							
24								Q	Q	Q	L	L	L	L	L	L	L	Q							
25								Q	Q	Q	L	L	L	L	L	L	L	Q							
26								Q	Q	4.1	L	L	L	L	L	L	L	Q							
27								Q	Q	Q	4.2	Q	L	L	L	L	L	Q							
28								Q	Q	Q	L	L	L	L	L	L	L	Q							
29								Q	Q	L	L	L	L	L	L	L	L	Q							
30								Q	Q	L	L	L	L	L	L	L	L	Q							
31								Q	Q	C	L	L	L	L	L	L	L	Q							
Median Value																									
Count																									

foF1

K 4

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

Lat. 35° 42.4' N
Long. 139° 29.3E

Kokubunji Tokyo

IONOSPHERIC DATA

κ'F1

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Q	Q	230	260	240	240	220	220	210	Q						
2								Q	Q	Q	Q	Q	Q	Q	230	Q	Q	Q						
3								Q	Q	A	Q	220	220	220	Q	Q	Q	Q						
4								Q	Q	Q	210	200	180	230	Q	Q	Q	Q						
5								Q	A	Q	240	220	210	F	220	A	Q	Q						
6								Q	Q	Q	220	210	220	Q	220	Q	Q	Q						
7								Q	Q	Q	210	200	200	210	A	Q	Q	Q						
8								Q	Q	Q	210	Q	Q	210	220	230	Q	Q						
9								Q	Q	Q	Q	Q	220	230	A	Q	Q	Q						
10								Q	Q	Q	200	190	220	190	220	240	Q	Q						
11								Q	Q	A	A	Q	230	A	A	Q	A	Q						
12								Q	Q	Q	200	210	Q	210	Q	Q	Q	Q						
13								Q	Q	Q	220	220	210	A	A	A	A	210	F					
14								Q	Q	Q	Q	Q	A	A	Q	Q	Q	Q						
15								200	Q	Q	220	Q	230	210	A	Q	Q	Q						
16								Q	Q	Q	190	Q	230	220	Q	Q	Q	Q						
17								Q	Q	Q	Q	230	220	Q	Q	Q	210	Q						
18								C	C	Q	220	220	200	230	240	230	Q	Q						
19								Q	210	A	Q	230	250	220	Q	Q	Q	Q						
20								Q	Q	Q	230	Q	Q	Q	Q	Q	Q	Q						
21								Q	Q	Q	Q	200	220	240	Q	Q	Q	Q						
22								Q	Q	Q	210	200	210	230	230	S	S	Q						
23								Q	Q	Q	210	240	220	200	210	220	Q	Q						
24								Q	Q	Q	200	210	Q	Q	200	210	Q	Q						
25								Q	Q	Q	220	220	Q	220	Q	220	Q	Q						
26								Q	Q	Q	210	240	210	210	220	210	Q	Q						
27								Q	Q	Q	210	Q	Q	210	210	200	Q	Q						
28								Q	Q	Q	230	Q	230	Q	A	Q	Q	Q						
29								Q	Q	Q	210	210	Q	Q	Q	220	Q	Q						
30								Q	Q	C	200	Q	200	220	210	Q	Q	Q						
31																								
Median Value											210	220	210	220	220	220	220							
Count								1	1	1	13	20	18	22	19	10	6	2						

Sweep 1.0 Mc to 11.0 Mc in 1.5 min

Manual

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.3E

Kokubunji Tokyo

foE

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								2.3	2.6 ^H	A	3.0 ^H	B	3.1	3.0	2.8	2.4	2.1								
2							A	B	2.8 ^J	3.2 ^A	3.3	A	3.2	A	3.0 ^B	A	A								
3							2.0 ^B	2.7 ^A	3.0	3.0 ^H	2.8 ^H	3.4	A	2.4	A	A	A								
4							2.0	B	A	(3.2) ^A	A	A	(3.2) ^A	3.0 ^J	A	A	A								
5							2.0	A	A	3.2	A	A	A	A	A	A	A								
6							A	2.9	B	3.0	A	3.3	3.1	A	A	A	A								
7							2.2	A	B	B	AF	A	B	A	A	A	A								
8							2.2 ^A	(2.7)	B	A	B	3.2	A	A	A	A	A								
9							2.1	2.6	3.0	3.3 ^A	3.0 ^B	3.0	A	3.0 ^B	A	A	A								
10							2.2 ^F	AF	2.4	2.6	3.0 ^A	A	3.0 ^A	A	A	A	A								
11							1.8	2.4 ^A	A	3.0	A	A	A	A	A	A	A								
12							2.1 ^B	A	A	A	A	3.2 ^A	A	A	A	A	A								
13							1.8 ^A	A	A	A	A	A	A	A	A	A	A								
14							2.1	2.3	A	2.8	3.1 ^J	A	A	A	A	A	2.8 ^A								
15							(2.1) ^B	2.8	B	3.2	B	A	A	A	A	(2.5)	2.1								
16							2.2	2.5 ^A	A	A	B	3.1 ^J	B	3.4 ^H	A	A	A								
17							B	2.2 ^J	3.0	3.2	3.2	3.1 ^A	3.0	2.8	A	A	A								
18							C	C	2.3	A	A	2.8 ^A	A	A	A	2.5 ^A	A								
19							1.6	A	A	2.8 ^A	B	3.1	B	B	2.4	2.0 ^J	A								
20							1.6 ^A	2.7	(2.8) ^C	3.0 ^J	A	3.2 ^B	A	A	A	A	A								
21							B	AF	A	A	A	3.0 ^A	A	3.0 ^A	A	2.5 ^A	2.1								
22							2.0	2.5 ^A	2.7	(3.0) ^A	3.0	3.0 ^B	A	A	A	(2.6)	2.0 ^A								
23							2.2 ^A	A	(2.5)	3.3 ^B	A	AF	A	A	A	2.5	2.0 ^J								
24							A	2.6 ^A	B	B	A	B	A	A	2.8	A	A								
25							A	A	A	2.9 ^J	A	B	2.9 ^J	B	2.4	A	A								
26							2.3 ^A	A	2.3	2.8	3.0 ^A	3.0	3.0	3.0	2.7 ^J	2.4	A								
27							A	A	A	A	A	A	B	B	B	2.0 ^B	A								
28							A	A	A	3.2	A	(3.1) ^A	B	3.0 ^J	2.9	2.0 ^A	A								
29							1.5	A	2.4	A	A	B	B	B	2.8	B	2.0 ^A								
30							2.0 ^A	A	C	2.8 ^B	A	2.4	B	A	A	A	A								
31																									
Median Value							2.1	2.6	2.5	3.0	3.1	3.1	3.1	3.1	2.9	2.5	2.0								
Count							21	13	11	20	9	15	9	10	11	11	11								

foE

Sweep 1.0 Mc to 11.0 Mc in 1.5 min

Manual

K 6

Nov. 1950

4'E

Lat. 35°42.4'N
Long. 139°29.8E

Kokubunji Tokyo

135° E Meant Time

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

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

Lat. 35° 42.4'N
Long. 139° 29.3'E

Nov. 1950

fEs

135° E Mean Time

Kokubunji Tokyo

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 ^F	2.4	2.8 ^E	2.0	2.8	2.6	G	G	3.2	3.2	G	G	4.5 ^Y	G	3.2	3.5	G	2.2	2.2	2.8 ^Y	2.2	2.2	2.4	2.4	B
2	2.7 ^B	2.4	2.6	2.4	2.3	2.2	2.4	2.8	G	G	4.5	4.4	5.4	5.2	6.0 ^Y	4.0	3.5	2.6	3.4	G	2.8	2.8	2.4	2.8	G
3	2.4 ^B	2.4 ^F	3.8	2.2	2.4	2.2	B	G	G	4.6 ^Y	4.0 ^Y	5.4	5.6	4.8	3.6	2.8	(3.0) ^F	2.8	2.8	3.5 ^B	3.5 ^B	2.4	2.5	G	
4	3.7	3.1 ^F	3.2	2.4	2.5	2.4	2.0	G	G	3.8	4.1	3.9	4.3	4.6	4.8	3.2	G	2.4	4.1	5.6	4.6	5.1	4.6	G	
5	4.3	3.7	3.0	2.2	2.0	G	1.7	G	6.4	5.4	4.6	8.6	4.0	4.6	4.2	3.2	2.8	2.4	5.5 ^F	3.7	3.0	2.8	2.7	4.2	
6	3.3	2.3	2.8	3.2	3.2	2.8	2.6	2.8	G	G	G	G	4.4 ^Y	3.8 ^Y	4.4	4.3	4.2	4.2	3.6 ^B	2.8	2.0	3.4 ^B	2.8	3.4 ^Y	
7	3.4	2.8	4.2	3.1	3.3	2.4	G	(3.4) ^Y	G	3.4 ^Y	G	3.8	4.0 ^Y	G	5.7	5.7	4.4	4.4	2.8 ^F	2.6	G	G	2.4	2.4	
8	3.0	2.6	2.8	2.8	2.8	2.4	B	3.0	G	3.8 ^Y	4.0 ^Y	4.1 ^Y	3.6 ^Y	3.7 ^Y	3.8 ^Y	3.4	3.6	4.0	2.2	2.8	G	2.2	2.2	2.0	
9	2.1	2.2 ^F	2.5	2.5	2.5	3.2	2.2	G	G	G	G	G	5.0	6.5 ^Y	5.8	4.3	3.8	3.8	G	2.8	G	G	3.3	2.0	
10	2.8	2.3	2.8	2.2	2.4	2.2	B	G	4.0	3.2	3.8	3.8	3.4	4.0	3.8	3.8	4.2	2.8	2.8	2.9	3.0 ^B	3.2 ^F	3.0 ^B	4.2	
11	2.7	2.0	2.6	G	G	G	G	G	3.8 ^F	9.4	7.1 ^Y	4.2	4.2	4.6	6.4	4.2	7.6 ^B	4.3	7.5	5.0	4.7 ^B	2.8	3.0	3.5 ^F	
12	2.0	2.4	2.6	(2.0)	2.4	1.6	2.0	(2.8)	3.4	3.5	3.5	3.7	G	4.2	4.6	4.2	3.7	5.5 ^Y	6.6	3.4	(4.1) ^Y	4.4	2.9	2.2	
13	2.2	2.5	2.0	2.0	2.4	1.7	2.0	G	4.4	5.3	4.7	4.0	4.2	4.0	3.5	3.5	3.8	4.2	3.7	2.7	1.8	2.2	3.6	2.4	
14	2.0	1.7	2.5	3.1	2.9	3.4	3.0	G	3.5 ^Y	3.3	G	G	7.2	6.4	5.8	4.1	4.0	6.2	5.0	3.6	3.4	2.5	2.2	2.4	
15	3.6	2.8	2.0	2.4	2.6	2.6	2.6	G	G	G	G	G	3.7	4.4	6.2	4.2	G	2.8	3.0	3.8	3.3	2.8	4.2	2.4	
16	2.6 ^F	2.5	2.5	2.2	2.4	(2.0) ^Y	B	3.6	G	4.9	3.6	(4.1) ^Y	G	4.2	5.3	4.2	2.9	4.8	3.4	4.2	3.7	3.4	3.6	2.4	
17	2.0	(3.4)	2.8	2.4	2.4	2.4	2.9	G	G	G	G	G	G	G	G	G	3.4	2.0	B	2.3	G	G	B	G	
18	4.6	4.2	2.8 ^F	2.6	2.8 ^F	2.9 ^F	2.5 ^B	C	C	4.3	3.8	3.8	3.6	3.5	4.6	4.5 ^Y	2.9	G	4.7	2.2	3.3	2.7	3.4	3.4	
19	4.4	3.6	3.3	2.1	(2.1) ^Y	2.5 ^Y	1.4	3.5 ^Y	4.6	4.6	3.6	B	G	B	B	G	G	4.1	3.8	5.8	4.7	4.6	G	G	
20	B	2.8	2.8	2.8	2.7	2.8	2.7	3.1	3.6 ^F	C	G	3.9	G	4.6	4.0	3.6	3.2	3.7	(2.0) ^Y	G	2.2	G	G	G	
21	G	2.1	2.8	2.6 ^F	2.6	2.6	(2.0) ^Y	G	3.7	3.6 ^F	3.9	3.6	4.1	4.2	5.4	3.6	2.4	4.1	5.3	3.5	3.1	2.8	2.4	2.0	
22	2.8	2.9	2.4	2.2	2.2	B	B	G	3.4	G	G	G	3.4	3.8	2.9 ^F	2.9 ^F	2.4	5.2	2.8	2.4	2.0	2.0	G	G	
23	1.6	G	1.6	2.2	2.0	B	G	G	3.4	G	G	3.7	3.5	3.9	3.5 ^Y	G	3.2	2.8	5.0	4.1	4.0	3.2	2.8	2.0	
24	(2.7)	2.3	2.0 ^F	2.5	2.3	2.0	2.8 ^Y	2.8 ^Y	3.9	G	G	5.8	G	4.1	3.2	4.8	4.1	2.7	2.8	2.8	2.4	1.8	2.2	2.2	
25	2.2	2.3	2.4 ^Y	G	3.2	2.0 ^F	G	4.6	4.8	3.6	G	3.6	G	3.6	G	G	2.4	1.8	3.2	2.8	2.5	2.2 ^F	2.4	2.0	
26	2.6 ^F	G	2.6	2.4	2.2	2.2	G	3.0	3.8	4.1	5.6	3.5	G	G	G	G	3.2	3.4 ^Y	2.8	2.6	2.6	2.8	3.0	3.0	
27	1.6	G	2.0	1.9	3.1	3.0	4.0	2.8	7.8	3.8	4.2	4.6	3.8	G	G	G	G	1.6	2.8	3.6	2.2	2.6	1.8	2.0	
28	2.6	2.5	2.0	2.2 ^Y	C	3.2	2.5 ^Y	2.8	3.6	5.0	4.6	7.6	5.6	B	4.6	G	G	G	G	2.2	G	2.0	2.5	2.0	
29	2.0 ^F	1.5	2.0	2.1	2.4	2.5	2.0	2.7	3.6	3.8	3.6	3.8	B	B	G	G	2.9	5.2	2.3 ^Y	(2.2)	2.3	2.4	2.0	2.2	
30	2.5	2.7	2.2	2.4	2.4	2.4	2.4	2.4	2.8	C	G	5.6	G	G	3.0	3.8	2.9	2.8	2.4	2.9 ^Y	2.0	2.8	G	G	
31																									
Median Value	2.6	2.4	2.6	2.3	2.4	2.4	2.0	2.7	3.4	3.6	3.6	3.8	3.6	4.0	3.9	3.6	3.2	3.2	2.8	2.8	2.6	2.6	2.5	2.2	
Count	29	30	30	30	29	28	26	29	29	28	30	29	29	27	28	30	30	30	29	30	30	30	28	29	

fEs

Group ... Mc to ... Mc in ... min

Manual

K 8

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

IONOSPHERIC DATA

Nov. 1950

fminF

135° E Mean Time

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 39.8 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	1.8	A	1.1	A	1.8	2.0	2.3	3.2	3.4	4.1	4.1	4.0	3.2	3.2	2.7	2.2	A	1.6	1.6	1.3	1.3	1.3	1.3	
2	A	1.3	1.3	1.3	1.8 ^A	1.8	A	2.4	2.4 ^F	2.8	3.9	4.0	4.2	4.0	A	3.2	A	A	1.5	1.5	A	1.5	A	1.3	
3	1.3	1.1	1.4	1.4	1.4	1.4	1.4	2.0	2.7	A	3.3	A	3.4	3.4	2.8	2.8	A	1.6 ^F	AF	1.5	1.6	AF	1.3	1.2	
4	1.7	AF	E	A	1.8 ^F	E	1.3	2.4	2.0	A	3.2	3.6	3.7	3.2	3.1	2.8	A	1.5	1.5	A	A	A	A	A	
5	A	A	A	1.6	1.2	1.7	1.7	2.0	A	A	4.0	A	3.6	3.8	A	3.4	2.0	A	A	A	A	A	A	A	
6	A	1.7	1.2	1.3	1.5	1.6	A	2.6	3.1	3.3	3.4	3.4	3.7	3.3	3.2	3.1	A	A	A	A	A	A	A	A	
7	A	A	1.7	A	A	1.4	1.1	2.3	3.2	3.1	3.6	3.4	3.4	A	4.4	3.3 ^F	2.7	A	A	1.3	1.3	1.1	1.3	1.3	
8	1.3	1.2	1.3	1.2	E	E	1.2	2.2	3.4	3.2	3.7	3.4	3.2	3.3	3.2	2.4	A	A	A	1.6	1.6	1.6	1.6	1.5	
9	1.3	E	E	E	E	E	1.2	2.4	3.4	3.2	3.3	3.7	3.6	A	A	A	A	1.2	1.2	A	1.2	1.2	1.2	1.2	
10	1.1	1.1	1.1	1.8	1.8	A	1.3	2.3 ^B	2.7	3.0	3.4	3.8	3.4	3.4	2.8	A	2.0	1.7	A	A	A	1.4	1.3	A	
11	1.3	1.7	1.1	1.1	1.1	1.1	1.1	2.0	2.6	A	A	A	3.7	A	A	A	A	AF	A	A	A	AF	A	A	
12	1.2	1.3	1.1	1.1	1.4	1.4	1.4	2.0	2.6	3.2	3.2	3.2	3.2	3.2	3.1	A	A	A	A	A	A	A	A	1.2	
13	1.2	1.5	1.4	A	1.8	1.4	1.7	1.8	3.5	3.7	A	3.8	3.6	A	A	1.8	AF	A	AF	1.4	1.2	A	A	1.2	
14	1.1	E	1.4	1.6 ^F	1.8	E	E	2.1	3.1	A	A	A	A	A	2.8	A	2.0 ^F	A	A	A	A	1.4 ^S	1.3	E	
15	E	1.4 ^S	1.4	1.4	A	E	A	2.1	2.8	3.2	3.2	3.3	4.0	3.6	A	3.3	3.3	2.0	1.8	A	A	A	A	1.2	
16	1.7	1.3	1.1	1.1	1.1	1.1	1.2	2.3	3.2	3.3	3.2	3.8	4.0	3.4	A	A	2.6	A	A	A	A	A	A	1.4	
17	1.4	1.4	1.1	E	1.3	1.1	1.6	2.0	2.5	3.1	3.2	3.7	3.3	3.1	3.1	2.8	2.9	2.5	2.0	1.2	1.5	1.2	2.1	1.1	
18	A	A	A	A	A	A	A	C	A	A	2.5	3.2	3.2	3.2	2.8	2.6	2.5	1.2	1.2	1.3	AF	1.2	AF	AF	
19	A	AF	1.6	E	E	E	1.6	2.0	A	A	2.8	4.0	3.2	4.1	3.4	2.4	2.0	A	1.6	1.6 ^F	A	A	1.3	1.3	
20	1.2	1.3	1.2	E	E	E	E	1.6	2.7	(3.0) ^C	3.3	3.5	3.3	3.9	A	3.2	2.3	A	1.2	1.2	1.5 ^S	1.2	1.2	1.3	
21	1.2	1.1	1.1	1.1	1.1	1.1	1.1	2.0	A	3.2	2.6	3.6	3.3	3.6	3.6	2.5	2.1	1.3	1.3	1.5 ^F	1.3	1.3	1.3	1.3	
22	A	A	1.1	1.1	E	E	1.3	2.0	3.2	2.8	3.2	3.6	3.6	3.4	3.2	2.7	2.0	A	1.7	1.6	1.4	1.6	1.3	1.3	
23	1.3	1.3	1.3	1.4	1.4 ^F	1.2	1.2	2.4	2.4	2.5	3.4	3.2	3.2	3.2	2.9	2.8	2.1	AF	AF	1.9	1.6	1.3	1.3	1.3	
24	1.3	1.1	2.0 ^F	2.5	E	E	E	2.2	2.6	A	3.2	3.2	3.3	4.1	2.8	2.4	2.2	E	A	1.3	1.1	1.1	1.2	1.1	
25	E	E	E	1.4	1.6 ^A	1.2	1.6	A	A	A	2.0	3.2	3.4	3.2	3.0	2.4	2.0	1.5	A	1.5	A	1.3	1.6	1.4	
26	1.2	1.1	1.1	1.1	1.1	1.1	1.1	2.3	2.0	3.2	3.7	3.2	3.3	3.2	3.2	2.8	1.6	1.3	1.5	1.3	1.6	1.3	1.3	1.3	
27	1.3	1.3	1.3	1.2	E	E	AF	1.7	2.0	3.1	3.6	4.0	3.4	3.0	2.8	2.6	2.2	1.4	A	A	1.6	1.3	1.6	1.4	
28	1.6	1.3	1.4	1.1	(1.2) ^C	1.3	1.3	A	3.2	3.3	3.2	A	3.8	4.2	A	2.9	2.0	1.6	1.4	1.4	1.3	1.3	A	1.6	
29	1.6	1.5	1.1	E	E	E	E	2.0	2.7	3.2	3.4	3.6	4.2	4.0	3.2	2.8	2.0	A	1.2	1.2	1.2	1.2	1.3 ^S	1.3	
30	1.2	E	1.2	1.2	1.4	1.4	1.4	2.0	2.0	(2.6) ^C	3.2	3.2	3.2	3.2	3.4	2.6	3.2	1.6	1.4	1.3	1.6	1.3	1.2	1.4	
31																									
Median Value	1.3	1.3	1.2	1.2	1.2	1.1	1.3	2.1	2.7	3.2	3.3	3.6	3.4	3.4	3.1	2.8	2.1	1.5	1.5	1.4	1.4	1.3	1.3	1.3	
Count	23	24	26	26	26	27	25	27	25	21	27	25	29	25	21	23	22	14	15	16	16	21	19	23	

fminF

Sweep 1.0—Mc to 17.0 Mc in 1.5 min

Manual

K 10

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

IONOSPHERIC DATA

Nov. 1950

fminE

135° E Mean Time

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 28.3E

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	1.2	1.2	1.1	1.4	1.1	1.1	1.4	2.0	1.4	1.4	1.0	1.8	1.4	1.4	1.4	1.4	1.2	1.6	2.0	1.6	2.0	2.0	1.3	2.3	
2	1.3	1.3	1.3	1.3	1.5	1.5	1.3	1.3	1.3	E	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.6	B	1.5	1.5 ^B	1.3 ^B	B	
3	1.1	2.0 ^F	1.4	1.4	1.4	1.4	1.4	1.6	1.6	1.4	1.4	1.4	2.0	2.0	1.6	2.0	1.6	1.4	1.4	1.5	1.6	1.3	1.3	E	
4	E	E	E	E	E	E	1.4	1.4	1.5	1.2	1.2	1.2	1.1	1.2	1.3	1.3	1.2	B	1.3 ^S	1.3	1.2	1.3	1.3	1.1	
5	E	E	E	1.1	E	B	1.5	1.8	1.6	1.6	1.6	1.4	1.6	1.6	2.0	1.6	1.6	1.3	1.3	1.3	1.2	1.3	1.4	1.2	
6	1.3	1.3	1.2	1.3	1.2	1.3	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.6	1.6	1.6	1.6	1.6	1.6	
7	1.4	1.4	1.1	1.1	1.1	1.1	1.1	1.3	1.6	1.4	1.8	1.4	1.6	1.8	1.4	1.2	1.2	1.3	1.3	1.4	B	E	1.3	1.8	
8	1.3	1.3	E	E	E	E	E	E	1.4	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.6	1.6	1.6	1.2	2.0	B	1.6	
9	1.5	E	E	E	E	E	1.4	1.1	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.4	E	1.2	1.4	E	1.2	1.2	
10	1.1	E	1.1	1.2	1.2	1.2	B	2.0	1.4	1.3	1.3	1.6	1.3	1.2	1.3	1.3	1.2	1.3	1.4	1.6	1.5	1.3 ^B	1.3	1.3 ^B	
11	1.3	E	1.1	E	E	E	E	1.3	1.3	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.4	1.5	1.5	1.3	1.3	1.3	1.4	1.3 ^B	
12	1.6	1.3	1.1	1.1	1.1	1.1	E	1.3	1.4	1.2	1.2	1.2	1.2	1.3	1.1	1.1	1.1	1.5	1.5	1.5	1.5	1.5	1.5	1.7	
13	1.2	1.1	E	E	E	E	E	E	E	1.2	1.2	1.3	1.3	1.4	1.5	1.3	1.6	1.3	1.3	1.6	1.3	1.2	1.2	1.1	
14	1.1	E	E	E	E	E	E	E	1.6	1.3	1.7	1.4	1.5	1.6	1.7	1.7	1.5	1.2	1.2	1.2	1.2	1.2	1.2	E	
15	E	E	E	E	E	E	E	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.2	1.2	2.0	
16	1.2	E	1.1	1.1	1.1	1.4	(1.6) ^B	1.1	1.4	1.2	1.2	1.2	1.3	1.3	1.2	1.2	1.2	1.6	2.0	1.6	1.3	1.6	1.6	1.4	
17	1.4	1.4	1.3	1.4	1.1	1.1	1.3	1.3	1.5	1.2	1.2	1.3	1.3	1.2	1.3	1.2	1.2	1.1	B	2.0	B	E	B	E	
18	1.1	1.2	1.1	E	E	E	1.1	1.1	C	1.8	1.7	1.3	1.3	1.4	1.6	1.6	1.3	E	1.2	1.2	1.2	1.2	1.1	1.1	
19	1.1	E	E	E	E	E	1.3	1.3	1.2	1.4	1.4	1.6	1.3	(1.6) ^B	1.6	2.0	1.6	1.6	1.5	1.3	1.3	1.3	B	B	
20	B	1.3	E	E	E	E	1.4	1.2 ^S	1.2	(1.2) ^C	1.2	1.2	1.3	1.4	1.3	1.4	1.4	1.3	1.2	E	2.0	E	E	B	
21	E	2.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.6	1.2	1.3	1.3	1.3	1.3	1.3	2.0	1.4	1.8	
22	1.2	E	1.1	1.1	1.1	E	B	B	1.3	1.3	1.3	1.6	1.4	1.3	1.2	1.4	1.2	1.2	1.3	1.5	1.3	2.0	1.4	1.8	
23	1.3	B	1.4	1.4	1.4	B	E	1.6	1.4	1.4	1.5	1.6	1.5	1.6	1.6	1.4	1.6	1.3	1.3	1.3	1.3	1.3	1.3	1.2	
24	1.9	1.1	E	E	E	E	E	1.5	1.3	1.6	1.5	2.0	1.6	1.4	1.3	1.3	1.3	E	E	1.2	1.1	1.6	2.0	1.9	
25	1.6	1.1	E	B	1.2	1.4	E	1.6	1.6	1.4	1.8	1.6	2.0	1.9	1.6	1.4	1.6	1.5	1.3	1.2	1.3	1.5	1.6 ^F	1.5	
26	2.0	E	1.1	1.1	1.1	2.0 ^F	E	1.1	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.4	1.2	1.3	1.5	1.3	1.3	1.6	1.3	1.3	
27	1.3	B	1.3	1.5	1.3	E	1.3	1.3	1.3	1.3	1.6	2.0	2.0	2.6	1.6	1.4	1.6	1.4	1.4	1.6	1.4	1.4	1.6	1.4	
28	1.4	1.3	1.4	1.1	(1.2) ^C	1.4	1.6	1.3	1.2	1.3	2.0	1.6	1.6	1.6	1.4	1.4	1.6	B	B	1.3	1.3	1.3	1.2	1.2	
29	1.3	1.1	E	E	E	E	1.8	1.3	1.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.2	1.1	1.1	1.2	1.2	1.4	1.3	1.6	
30	1.2	E	E	1.2	1.2	1.2	1.4	1.6	(1.8) ^C	1.9	1.4	1.3	1.3	1.2	1.4	1.2	1.3	1.6	2.0	1.5	1.2	1.6	1.2	1.6	
31																									
Median Value	1.3	1.1	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Count	24	28	30	29	30	27	30	30	29	30	30	30	30	30	30	30	30	28	28	29	27	30	26	24	24

Sweep 1.0 - Mc to 17.0 Mc in 15 min Manual

K 11

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

foF2

Nov. 1950

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	3.5	3.2	3.9 ^H	3.9 ^V	3.3 ^V	3.5	5.7	7.6	9.9	9.9	10.0	11.0	12.3 ^Z	12.9	13.2	10.4	7.9	7.4	4.6	4.7	4.4	3.5	3.1
2	3.3	3.4	3.3	3.7	4.5	2.5	2.8	6.3	8.1	8.9	11.2	12.5	12.2	12.8	12.9	10.8	8.2	8.0	7.8	4.3	4.5	4.2	3.8	3.6
3	3.5	3.6	3.6	3.7	4.8	2.0	2.6	5.7	8.3	8.1	11.1	10.3	9.9	11.6	11.2	11.9	9.9	9.6	7.7	4.6	4.6	4.4 ^J	3.3	3.4
4	3.3	3.6	3.5 ^F	3.5	3.8	3.0	3.2	6.0	7.6	7.4	8.4	9.2	9.9	10.0	10.6 ^H	11.2	10.3	9.7	7.1	5.7	5.9	7.0	5.1 ^P	A
5	A	A	4.2 ^J	5.5	4.0 ^J	4.0	5.2	8.4	12.3	14.0	15.1	14.9	B	15.0	14.8 ^H	15.9	13.6	11.0	6.7	6.0	5.7	4.6	4.4	4.4
6	4.8	4.5	4.3	3.4	3.5	2.5	3.6	5.6	7.7	9.0	10.8	11.0	12.0	11.0	11.5	12.5	10.7	7.9	7.4	5.3	6.2	5.0	4.6	4.3
7	4.1	3.8	3.6	3.3	3.7	2.5	3.1	6.0	C	C	C	C	C	C	C	C	C	C	C	5.4	6.4	6.3 ^P	5.1	4.4
8	4.4	4.1	3.7	3.7	3.8	3.3	3.3	7.2	7.6	8.0	8.9	10.5	10.0	11.2	11.7	11.6	10.8	9.0	7.6	7.2	6.2	5.8	5.6	4.2
9	3.1	3.0	3.8	3.4	3.5 ^Z	3.3	3.6	6.0	8.3	8.4	9.6	11.2	11.1	11.3	11.9	11.9	5	7.8	5.9	4.2	4.4	4.2	4.2	3.6
10	4.3	3.9	3.6	3.6	3.9	3.3	3.4	6.4	7.6	8.6	9.5	10.1	9.6	12.2	13.3	11.6	9.7	8.2	6.3	4.8	5.4	5.1	5.1	4.8
11	4.5	4.4	4.6	4.3	4.1	3.0	3.0	7.0	8.1	8.8	12.2	(15.0) ^S	13.8	12.6	11.7	11.6	10.5	8.4	8.1	7.8	6.3	5.5	4.9	3.7
12	(2.9)	3.5	3.2	4.0	4.2	3.6	2.6	5.9	9.2	11.2	10.7	11.2	10.8	12.4	12.2	9.0	9.6 ^S	9.1	7.8	6.1	6.0	5.6	5.3	5.2
13	3.7	3.5	3.2	3.2	4.0 ^H	2.2	2.4	5.7	8.0	11.5	11.3	9.6	10.0	12.0	11.8	11.5	10.8	9.6	6.1	6.0	6.2	6.4	3.7	3.4
14	3.5	3.5	4.8	3.9	3.2	3.1	2.9	4.1	8.2	8.7	8.7	10.1	10.5	10.9	11.0	10.6	10.7	10.5	A	4.9	5.6	4.2	3.5	3.5
15	3.0	3.1	2.9	3.2	3.5	2.5 ^F	2.5	5.3	8.7	10.1	8.5	8.3	7.9	8.5	10.9	10.8	11.0	8.7	5.3	4.8	4.5	4.6	3.7	3.4
16	2.5	2.4	2.3	2.1 ^F	2.9 ^J	3.0 ^F	3.2 ^H	4.0	6.7	7.2	7.7	8.6	9.9	9.6	10.8	10.6	9.1	9.0 ^J	5.7	4.1	5.0	4.0	3.2	2.8
17	3.1	3.0	3.1	3.2	3.8 ^Z	3.5	2.9	5.5	7.2	8.7	8.2	9.1	9.7	(11.5) ^P	10.1	9.0	8.6	7.0	4.8	5.4	4.5	2.8	2.5	2.7
18	3.1	3.2	3.5 ^F	4.2	4.3	3.3	3.2	4.8	7.3	8.7	10.2	11.1	10.3	11.8	11.6	11.8	9.4	6.9	4.1	A	A	3.5	3.3 ^Z	2.5
19	3.2	3.1	3.3	3.6	3.3	2.7	2.7	6.6	8.9	7.5	7.5	9.5	12.8	12.4	12.3	9.6	8.0	(7.7) ^P	4.7	3.5	4.2	3.7	3.9	3.3
20	3.2	3.1	2.9	2.9	2.4	2.8	3.6	5.3	6.3	7.8	8.2	8.5	8.8	9.4	9.1	8.6	8.5	8.0	6.0	4.3	4.8	4.6	3.1	3.0
21	3.1	3.1	3.4	3.4	3.5	2.9	3.0	4.8	C	C	C	C	C	C	C	C	C	C	C	(4.5) ^S	4.6 ^F	3.2 ^F	3.0	3.1
22	3.2	3.3	3.6	3.8	3.1	3.1	3.0	5.4	7.0	7.3	8.2	8.7	8.9	9.3	9.5	9.7	10.2 ^H	10.3	4.8	3.9	3.6	3.3 ^F	2.8	3.0
23	3.4	3.4	3.5 ^V	3.2	3.3	2.7	F	5.1	6.8	6.5	8.3	13.4	12.2	9.8	9.0	7.1	8.9	8.1	6.1	5.3	3.9	(3.6) ^S	3.2	2.9
24	2.9	3.0	2.4	3.0	3.0	2.4	3.3	5.6	6.8	8.7	9.3	B	10.3 ^B	10.7	10.3 ^J	9.0	9.5	6.4 ^J	4.4	4.3	4.0	4.1 ^Z	2.8	2.5
25	2.5	2.8	2.8	3.0	3.4	4.2	4.9 ^H	6.0 ^S	6.9	8.0	8.7	8.7	(9.2) ^F	9.7	10.4	9.0	10.5	9.4	8.8	5.3	3.7	3.5	3.6	3.7
26	3.5	4.2	2.7 ^F	3.0 ^F	3.1 ^F	3.3 ^F	3.4	5.5	8.5	8.9	10.2	13.0	12.5	10.7	9.0	9.0	8.4	7.3	6.9	5.9	5.8	5.5	4.9	3.4
27	3.2	2.9	2.7	2.8 ^Z	S	A	4.0 ^F	B	C	C	C	C	C	C	C	C	C	C	C	6.6 ^J	4.7	4.1	3.6	3.5
28	4.4	A	2.7	2.7	2.9	2.8	3.0	6.3	7.7	9.5	12.5	12.5	10.2	9.4	9.2	8.4	6.9	6.8	6.7 ^H	3.7 ^F	3.3	4.1	(3.8) ^Z	4.0
29	3.9	3.7 ^F	3.6	3.4	3.6	3.1	3.6	6.4	9.3	8.7	10.4	12.2	9.9	10.2	13.1	10.4	8.0	6.8	5.0	5.7	4.1 ^F	3.8	3.9	3.2 ^V
30	3.5	3.5	3.9	3.8	3.5	3.4	3.4	4.7	8.0	8.8	10.3 ^J	9.4 ^J	9.0	8.1	9.6	9.7	7.0	6.6	4.6	4.5	5.4 ^H	5.4	6.4	5.7
31																								
Median Value	3.3	3.4	3.5	3.4	3.5	3.0	3.2	5.7	7.7	8.7	9.6	10.2	10.1	11.0	11.2	10.6	9.6	8.1	6.3	4.9	4.7	4.3	3.8	3.4
Count	29	28	30	30	29	29	29	29	27	27	27	26	26	27	27	27	26	27	27	29	29	30	30	29

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

IONOSPHERIC DATA

Lat. 35° 12.5' N
Long. 130° 37.7' E

Nov. 1950

f_oF₂

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	310	360	330	330 ^H	260 ^V	330 ^V	330	230	290	250	290	310	320	310 ^Z	320	280	260	250	240	260	330	240	280	230	
2	300	320	320	310	240	430	350	260	230	290	290	290	300	300	300	270	270	260	260	300	320	310	300	350	
3	360	360	300	300	230	230	380	250	240	270	290	270	300	290	300	290	280	270	250	290	A	A	330	330	
4	350	330	310 ^F	360	330	310	340	250	250	260	270	340	310	300	290	290	280	280	270	340	330	300	260 ^P	A	
5	A	A	(230) ^V	310	(390) ^V	390	360	300	320	310	300	320	B	310	300 ^H	300	300	300	300	280	310	340	360	390	
6	330	320	310	300	250	330	300	240	260	280	290	280	320	260	310	300	260	240	290	290	270	280	300	310	
7	340	370	400	410	280	280	330	280	C	C	C	C	C	C	C	C	C	C	C	260	300	280 ^P	290	330	
8	360	310	320	310	300	320	320	250	230	250	290	300	310	300	290	280	270	260	250	290	300	280	310	340	
9	340	300	300	360	360 ^Z	370	330	300	290	270	300	300	310	300	320	300	5	270	260	330	360	360	340	310	
10	350	310	320	280	310	360	300	270	270	280	280	290	290	320	290	290	310	260	280	360	350	390	370	370	
11	400	420	370	340	400	420	380	280	300	290	310	(300) ^S	280	300	300	300	270	280	300	260	290	310	280	310	
12	(340) ^P	330	360	330	300	230	420	320	260	260	280	280	310	300	280	270	(280) ^S	250	240	260	260	270	290	290	
13	300	330	440 ^F	450	280 ^H	360	400	310	260	280	260	270	310	290	280	300	280	240	270	300	270	240	240	380	
14	380	340	300	300	380	410	340	290	260	270	280	280	300	310	280	270	280	250	A	320	300	290	310	300	
15	300	310	350	330	300	250 ^F	370	290	250	270	250	280	260	300	290	280	300	220	200	300	250	270	290	290	
16	330	340	320	(320) ^F	(290) ^F	(330) ^F	310 ^H	240	250	250	260	(250) ^J	310	280	290	270	(260) ^J	240	(260) ^J	240	330	280	300	300	320
17	340	330	400	420	350 ^Z	300	260	260	260	260	290	290	300	(300) ^P	270	290	240	260	260	300	270	300	320	400	
18	400	350	(430) ^F	340	290	310	430	290	290	270	280	300	280	320	280	270	260	260	240	A	A	320	270 ^Z	350	
19	300	340	330	390	340	350	320	290	220	230	310	310	300	300	280	270	260	260	220	310	300	290	350	300	
20	340	320	330	310	310	330	270	260	240	250	270	310	290	280	290	270	260	260	210	290	320	300	320	340	
21	360	350	320	330	300	300	280	270	C	C	C	C	C	C	C	C	C	C	C	(270) ^S	(250) ^F	330 ^F	330 ^F	350	
22	350	320	300	290	330	320	340	280	240	240	280	290	300	300	300	270	290 ^H	270	230	250	300	290 ^F	320	360	
23	340	(370) ^F	390 ^V	350	420	360	F	290	250	270	360	360	280	290	290	280	300	290	250	280	270	(280) ^S	300	320	
24	380	390	320	320	230	240	300	230	230	270	290	B	300 ^S	290	(270) ^J	(260) ^J	260	(270) ^J	270	310	290	310 ^Z	250	330	
25	320	320	320	340	340	420	300	280 ^H	230 ^S	270	250	300	(300) ^F	290	280	290	290	270	270	320	290	330	350	340	
26	360	300	340 ^F	380 ^F	360 ^F	(350) ^F	270	300	240	260	270	270	280	270	270	270	250	260	250	250	270	250	240	260	
27	300	320	390	380 ^Z	S	A	280 ^F	B	C	C	C	C	C	C	C	C	C	C	C	280	270	280	290	370	
28	270	A	400	400	340	330	360	320 ^S	280	270	290	290	260	280	290	270	250	260	(230) ^H	270 ^F	230	350	(330) ^Z	290	
29	380	350 ^Z	360	370	320	390	300	290	240	260	280	280	330	290	280	270	260	250	290	290	290	320	300	320 ^V	
30	370	360	320	270	320	410	310	280	300	280	(260) ^J	(270) ^J	240	290	290	290	220	240	270	300	360 ^H	320	280	280	
31																									
Median Value	340	330	320	330	310	330	330	280	250	270	280	290	300	300	290	280	270	260	250	290	290	300	300	300	330
Count	29	28	30	30	29	29	29	29	27	27	27	26	26	27	27	27	26	27	27	27	29	28	29	30	29

f_oF₂

Sweep 1.0 Mc to 18.5 Mc in 1.5 min

Manual

Y 2

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

Nov. 1950

f'F2

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	290	360	240	290 ^H	210	220	280	210	220	250	270	260	290	290	290	270	230	230	230	230	280	200	220	290
2	280	280	290	250	210	430	300	230	210	260	270	260	240	290	270	230	250	220	200 ^A	260	230 ^A	260	250	290
3	300	300	260	260	210	180	300	230	220	250	260	260	250	270	260	270	250	250	200 ^A	230	340 ^A	A	(300)	300
4	280	290	250	280	300	290	290	230	250	240 ^B	260	320	290	290	270	270	280	270	210	270	270	280	220	A
5	A	A	(200)	280	380	330	300	260	280	280	300	300	300	260	250 ^H	250	260	240 ^A	280	280	270	320	320	350 ^A
6	300	300	270	280	230	300	270	210	240	250	260	250	280	280	290	260	230	210	250	230	250	250	290	300
7	300	330	350	340	250	220	270	220	C	C	C	C	C	C	C	C	C	C	C	C	210	250	220	270
8	290	260	280	260	250	250	260	230	220	240	250	270	280	280	260	270	250	230	250	270	290	250	280	290
9	320	280	250	250	280	280	260	240	240	260	280	280	280	280	280	280	250	240	210 ^A	260	280	280	300	300
10	300	270	270	280	250	240	250	240	240	250	250	260	260	280	270	250	250	220	220	270	290	300	300	300
11	320 ^A	310	(330)	330	260	390	320	240	280	260	280	280	280	240	260	260	230	230	240	220	210 ^A	270	230	270
12	300	300	280	280	260	200	330	250	250	250	250	250	250	250	230	250	250	230	220	240	250	230	270	270
13	260	280	330	330	230	220	300	270	220	250	250	230	240	260	240	250	230	210	200	220	220 ^A	210 ^A	220	320
14	310	310	300	A	340	360	300	250	230	230	250	270	260	390	270	260	250	230	A	200 ^A	250	200	280	250
15	240	270	270	270	260	200	300	250	230	260	240	260	250	260	280	250	260	210	(200)	250	200 ^A	220	230	250
16	250	280	290	270	260	260	260	210	230	220	220	220	220	260	250	270	240	250	260	250	200 ^A	250	220	250
17	280	280	310	340	290	280	220	240	200	240	250	270	260	280	260	240	240	240	230	210	250	260	260	280
18	320	290	280	320	270	280	360	260	250	250	250	280	280	300	280	260	240	230 ^A	210 ^F	A	280	240	290	340
19	220	290	280	350 ^A	260	250	240	260	210	230 ^A	260	260	280	280	270	260	230	240	200 ^A	250	240	220	250	250
20	280	250	280	290	300	290	240	240	240	230 ^A	240	250	260	260	260	250	250	230	260	270	240	230	260	290
21	290	290	280	250	240	240	230	230	C	C	C	C	C	C	C	C	C	C	C	C	220	240	270	300
22	280	270	240	250	300	300	310	230	200	240	250	280	280	280	280	270	210 ^H	250	210	220	250	240	300	310
23	290	290	290	300	370	290	220 ^F	200	230	240	280	300	240	260	280	250	270	250	220	250	220	250	280	A
24	340	330	310	260	210	210	260	220	210	230	260	250	260	260	250	260	250	220	220	250	230	220	220	280
25	280	260	280	300	280	330	250	200	220	260	250	290	(280)	280	240 ^B	240	270	260	250	280	270	290	320	280
26	310	280	280	310	300	300	220	250	220	220	250	260	250	250	230	240	220	220	220	230	230	210	220	240
27	280	290	300	350	A	A	A	220	C	C	C	C	C	C	C	C	C	C	C	C	230	210	220	240
28	240	A	320	280	270	270	260	270	240	260	250	250	250	260	250	240	240	(210)	200 ^A	200 ^A	280	290	250	
29	300	270	280	290	280	270	270	260	230	240	240	240	240	240	260	240	230	210	250	230	270	250	260	
30	300	280	280	250	270	350	300	260	260	250	230	250	230	260	260	210	220	210	250	210 ^H	250	210	210	210
31																								
Median Value	290	280	280	280	260	280	270	240	230	250	250	260	260	260	260	250	250	230	220	240	240	250	260	280
Count	29	28	30	30	29	29	29	30	27	27	27	27	27	27	27	27	27	27	27	29	29	29	30	28

Manual

Sweep 1.0 Mc to 18.5 Mc in 1.5 min

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

f_oF1

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Q	L	L	L	L	L	L	L	L	Q						
2								Q	Q	L	L	L	Q	L	L	L	L	Q						
3								Q	Q	L	L	L	L	L	L	L	L	L						
4								Q	L	3.6	4.0	5.1	5.5	4.9	5.0	5.0	L	A						
5								Q	L	L	L	L	L	Q	Q	Q	L	Q						
6								Q	Q	L	L	L	L	L	L	L	L	Q						
7								Q	C	C	C	C	C	C	C	C	C	C						
8								Q	Q	Q	L	L	L	L	L	L	L	Q						
9								Q	Q	Q	L	L	L	L	L	L	L	Q						
10								Q	Q	Q	Q	L	L	L	L	L	L	Q						
11								Q	L	Q	L	L	L	L	L	L	Q	Q						
12								Q	L	L	L	L	L	L	L	L	L	Q						
13								Q	Q	L	L	L	L	L	L	L	L	Q						
14								Q	Q	Q	4.0	4.1	4.6	4.7	4.7	4.0	L	3.3						
15								Q	Q	L	L	L	L	L	L	L	Q	Q						
16								Q	L	L	L	L	L	L	L	L	L	Q						
17								Q	Q	L	L	L	(4.6) ^L	L	L	L	Q	Q						
18								Q	Q	L	L	L	L	L	L	L	L	Q						
19								Q	Q	A	L	L	L	L	L	L	Q	A						
20								Q	Q	L	L	L	B	Q	L	Q	Q	Q						
21								Q	C	C	C	C	C	C	C	C	C	C						
22								Q	Q	3.4	3.8	4.2	4.4	4.1	L	L	A	L						
23								Q	Q	Q	Q	L	4.3	(4.3) ^L	L	L	A	L						
24								Q	Q	Q	L	L	L	L	L	L	L	Q						
25								Q	3.4	3.4	4.5	4.1 ^B	C	L	(4.3) ^L	4.2	4.1	L						
26								Q	Q	Q	L	L	L	L	L	L	L	Q						
27								Q	C	C	C	C	C	C	C	C	C	C						
28								Q	Q	Q	L	L	L	L	L	L	L	Q						
29								Q	Q	A	L	L	L	L	L	L	L	L						
30								Q	Q	L	L	L	L	L	L	L	L	Q						
31								Q	Q	L	L	L	L	L	L	L	L	Q						
Median Value																								
Count																								

Manual

Sweep 1.0 Mc to 10.5 Mc in 1.5 min

f_oF1

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

Lat. 31° 13.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

11' F1

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								Q	Q	230	250	260	210	240	270	270	230	Q							
2								Q	Q	210	260	Q	Q	230	250	Q	230	Q							
3								Q	Q	220	230	230	200	240	220	230	220	250							
4								Q	230	210	230	250	220	250	220	230	A	A							
5								Q	Q	250	260	250	250	Q	Q	Q	250 ^A	Q							
6								Q	Q	230	210	220	230	Q	230	240	Q	Q							
7								Q	C	C	C	C	C	C	C	C	C	C							
8								Q	Q	Q	Q	250	220	250	220	250	Q	Q							
9								Q	Q	Q	250	260	230	230	260	260	Q	Q							
10								Q	Q	Q	230	210	230	260	Q	230	Q								
11								Q	260	Q	250	240	230	A	Q	Q	Q	Q							
12								Q	230	230	220	220	240	220 ^A	Q	240	230	Q							
13								Q	Q	220	210	210	A	A	220	240 ^A	220	Q							
14								Q	Q	Q	220	250	220	220	250	230 ^A	230	200 ^A							
15								Q	Q	230	230	210	200 ^A	210	210	Q	Q	Q							
16								Q	210	210	Q	Q	230	Q	250	230	Q	Q							
17								Q	Q	Q	220	210	230	250	240	Q	Q	Q							
18								Q	Q	210	230	200	250	250	250	250	Q	A							
19								Q	Q	A	230	250	220	220 ^A	240	Q	Q	A							
20								Q	Q	Q	220	230	220	Q	230 ^A	Q	Q	A							
21								Q	C	C	C	C	C	C	C	C	C	C							
22								Q	Q	210	210	210	210	220	270	240	A	250							
23								Q	Q	Q	Q	240	210	230	250	220	A	230							
24								Q	Q	Q	230	220	220	250	230	240	230 ^A	Q							
25								Q	190	210	240	240	240	230	230 ^A	230 ^A	250 ^A	240							
26								Q	Q	Q	210	230	240	220	Q	220	210 ^A	Q							
27								Q	C	C	C	C	C	C	C	C	C	C							
28								Q	Q	Q	B	200	240	210	250	250	240	Q							
29								Q	Q	A	230	200	210	200	220	220	200	200							
30								Q	Q	240	210	230	230	200	200	A	Q	Q							
31																									
Median Value									230	220	230	230	220	230	240	240	230	240							
Count								5	14	22	25	26	21	23	18	13	6								

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 31° 13.5' N
Long. 130° 37.7' E

Yamagawa

foE

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								1.5	2.4	3.0	3.2	3.4	3.4	3.2	3.2	3.0	2.6	2.0 ^J							
2								1.8	2.5	3.0	3.0	3.3	3.5	A	3.3	3.2 ^J	2.6 ^A	A							
3								1.6 ^B	2.2	3.0	3.2	3.2 ^A	3.3	3.2	3.2 ^A	A	A	A							
4								1.8	2.4	A	3.3 ^A	A	A	3.0 ^A	A	A	A	A							
5								1.8	2.6 ^F	A	A	A	A	A	A	A	A	A							
6								1.4 ^A	A	2.9	3.2 ^F	3.2	3.3	3.5	3.3	3.1 ^A	A	B							
7								1.8	C	C	C	C	C	C	C	C	C	C							
8								1.9	2.5	3.0	3.4	3.2	3.2	3.4	A	A	A	A							
9								1.6 ^J	2.2	2.6 ^A	3.1 ^A	A	A	A	A	A	A	B							
10								2.0	2.5	2.6	3.0	3.5	A	A	A	A	A	A							
11								1.9 ^A	A	A	A	3.1 ^A	3.4	3.2 ^A	A	3.0 ^A	A	A							
12								1.6	2.4	3.1 ^A	3.0	3.2	A	A	3.2	3.0	A	A							
13								1.4	2.4	2.7	3.2 ^A	A	A	A	3.2	A	2.5	1.8							
14								1.3 ^B	A	2.8 ^A	A	3.2 ^A	(3.5) ^A	A	A	A	A	A							
15								1.7 ^H	2.4	2.7	2.9	3.1	A	3.1	3.2 ^A	B	3.1	2.0 ^A							
16								B	A	A	2.9	B	C	C	3.2 ^J	2.8 ^A	2.8	B							
17								1.6	2.2	2.8	3.2	3.2 ^J	2.8	3.2 ^A	A	3.0 ^A	2.6 ^A	A							
18								A	2.2 ^A	2.8	3.0	A	3.5 ^A	3.4	(3.0) ^A	2.8 ^J	A	A							
19								A	A	A	A	A	A	B	A	A	(2.6) ^A	A							
20								A	A	A	A	3.2 ^A	A	3.4	A	A	A	A							
21								1.8	C	C	C	C	C	C	C	C	C	C							
22								1.4 ^J	A	A	3.1 ^A	A	A	A	2.9 ^A	A	A	A							
23								1.6	2.5	2.7 ^B	2.8	3.2	3.0	3.3 ^A	2.9 ^A	A	A	1.8							
24								A	2.1 ^A	2.5 ^A	A	B	B	A	A	A	B	2.2 ^A							
25								B	2.2	2.0	2.9 ^J	A	C	A	A	A	A	A							
26								1.5 ^A	AF	2.8	3.2	3.2	A	3.0	3.0 ^A	2.6 ^A	A	1.9							
27								B	C	C	C	C	C	C	C	C	C	C							
28								B	A	2.8	3.0	B	3.3	3.4	3.4	A	A	1.8 ^A							
29								1.4 ^B	2.1 ^A	AF	3.0 ^A	3.2 ^A	3.3 ^A	A	3.0	2.9	2.4	1.6							
30								1.3 ^J	2.4	2.6	3.0	A	3.2 ^A	3.4 ^A	3.0	A	2.4 ^A	2.1							
31																									
Median Value								1.6	2.4	2.8	3.0	3.2	3.3	3.2	3.2	3.0	2.6	1.9							
Count								22	18	19	21	15	13	14	15	10	9	9							

foE

Sweep 1.0 Mc to 10.5 Mc in 1.5 min

Manual

Y 6

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

Lat. 31° 13.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

f_oE

Nov. 1950

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									110	100	100	110	110	110	110	110	110	A						
2									100	100	100	100	100	110	110	110	A	A						
3									B	110	100	100	100	110	110	120	A	A						
4									110	110	110	A	A	120	110	A	120	A						
5									110	110	A	A	A	A	A	A	A	A						
6									100	A	100	100	100	100	110	A	A	B						
7									120	C	C	C	C	C	C	C	C	C						
8									130	120	110	110	100	100	A	A	A	A						
9									140 ^B	110	130	A	A	A	A	A	A	B						
10									110	110	110	110	A	110	110	110	A	A						
11									100	A	A	110	110	110	A	A	A	A						
12									100	110	A	110	110	A	100	100	A	A						
13									B	110	110	100	A	A	100	A	110	100						
14									B	A	A	A	120	A	A	A	A	A						
15									120 ^H	100	100	100	A	100	100	100	100 ^F	A						
16									B	120	110	110	C	C	110	110	120	B						
17									170	110	100	100	110	110	110	110	A	A						
18									A	A	110	110	A	100	100	100	100	A						
19									A	A	A	100	A	110	A	A	A	A						
20									A	A	A	100	A	110	A	A	A	A						
21									B	C	C	C	C	C	C	C	C	C						
22									110	100	120	120	A	A	120	120	100	A						
23									E	120	110	110	110	110	A	A	A	A						
24									A	AF	A	A	110	110	A	A	110	A						
25									B	110	110	110	100	C	A	A	A	A						
26									A	AF	100	100	100	100	100	A	A	110						
27									B	C	C	C	C	C	C	C	C	C						
28									B	A	A	A	A	A	100	110	110	B						
29									B	B	110	110	A	A	A	A	A	A						
30									B	B	110	110	A	A	A	A	A	A						
31																								
Median Value									110	110	110	100	110	110	110	110	110	110						
Count								15	16	19	19	18	13	15	14	11	9	2						

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

fEs

Nov. 1950

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	G	2.2	2.2	2.2	2.0	1.9 ^Y	2.3	G	G	G	4.6	3.8 ^Y	4.2 ^Y	4.8	4.2	4.0 ^Y	3.8 ^Y	3.2	3.7	2.3	G	1.8	2.2	
2	2.4	2.6	2.4	2.6	2.4	2.2	2.0	G	4.0	G	4.5 ^Y	5.2	6.0	4.5	4.8	4.0	3.6	3.2	3.4	3.6	2.8	2.8	2.2	1.8	
3	G	2.2	G	2.2	2.4	3.8 ^Y	2.2	2.4	3.2	4.8 ^Y	4.2	4.6	5.0	7.6	5.0	4.0	3.2	3.9 ^Y	5.3	5.1	5.1	3.9	3.0		
4	G	2.0	G	G	G	G	G	2.2 ^Y	G	G	G	4.7	4.5	4.4	4.4	5.6	5.8	5.7	4.8	(2.9) ^B	2.6	2.2	9.3	4.2	
5	6.2	1.1	3.2	3.4	3.2	3.0	(3.0) ^Y	(5.0) ^Y	4.0	4.2	3.8	4.4	3.8	5.0	9.0	6.8	6.4	5.4	5.8	4.6	4.0	4.2	3.8	3.8	
6	3.6	3.6	2.8	2.6	1.8	1.8	2.4	G	3.4	4.0	4.4 ^Y	4.2 ^Y	8.2	5.6	4.9	6.6	5.7	6.8	3.8	3.8	3.6	3.8	2.6	G	
7	G	G	G	G	G	1.6	1.2	G	C	C	C	C	C	C	C	C	C	C	C	3.5	3.1 ^F	2.4	2.8	3.9	
8	G	G	(2.4) ^Y	G	2.1 ^Y	1.2	G	2.9	G	G	4.8	G	5.2 ^Y	4.6 ^Y	4.0	4.6	4.4	2.8	2.8	3.2	2.4	1.8	2.0	G	
9	1.7	1.7	G	G	2.2	G	G	2.8 ^B	3.2 ^Y	G	3.6	4.4	3.8	4.4	3.8	3.8	3.6	3.2	2.4	2.2	2.4	2.4	2.4	2.4	
10	2.4	2.4	2.4	1.4	1.4	G	1.2	G	G	G	4.0	4.0	4.4	4.8	4.2	4.0	3.8	3.2	2.6	3.0	3.0	2.5	2.8	2.8	
11	4.0	2.2	2.8	2.8	2.6	2.2	G	G	2.8	4.0	4.8	4.2 ^Y	5.4	6.0	8.2	6.0	5.8	3.8	(5.0) ^Y	2.8	3.1	3.2	3.0	2.5	
12	3.2	G	3.0	1.8	G	2.6	2.4 ^Y	2.6	G	4.0 ^Y	4.1	4.6	5.2	4.8	5.2	4.4 ^Y	4.8	4.4	3.2	3.2	3.6	2.7	2.6	3.2	
13	2.2	1.8	2.0	2.2	2.0	2.2 ^Y	2.2	2.2 ^Y	3.0	4.1 ^Y	4.0	4.8	5.2	6.4	4.2	5.2 ^B	G	3.9 ^Y	2.4	G	2.2	1.6	1.6	2.4	
14	2.2	3.0	3.4	2.8	3.2	2.0	G	G	2.8	3.6	4.1	4.6	4.7	4.5	4.8	5.1	5.0	4.4	10.2 ^B	3.0	3.4 ^B	2.8	G	1.8	
15	2.4	G	2.2	G	G	G	G	3.0 ^Y	G	4.0 ^Y	3.3	G	4.3	G	G	G	G	2.9	(4.2) ^B	3.2	2.4	1.8	G	G	
16	2.0	G	G	G	G	G	G	G	2.7	G	3.6	G	C	C	G	3.8	G	2.4	2.8	2.2	3.4	2.8	2.4	G	
17	G	G	G	2.8	2.6	2.4	2.6	3.2	G	G	4.2	4.0	G	4.0	3.6	3.8	3.6	2.6	2.3	2.4	2.4	2.2 ^Y	2.3	1.9	
18	G	G	G	G	2.8	2.6	G	2.6	3.2	G	G	4.5	4.4	4.2 ^Y	5.2	3.8	G	5.2	3.9 ^F	8.6	4.2	2.0	B	G	
19	2.4	3.2	2.8	4.0	2.8	2.6	1.6	3.0	5.0	5.6	5.2	7.5	4.0	G	3.8	4.0	3.2	8.6	3.9 ^Y	2.1	2.8	2.4	G	2.4 ^B	
20	2.0	G	1.7	G	G	G	2.2	2.1	3.3	3.8	3.8	3.8	3.8	G	3.4	3.8	3.2	2.7	3.8 ^B	2.6	2.4	G	G	1.8	
21	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	4.0	4.8	3.3	2.9 ^Y	2.6	
22	2.4	G	G	G	2.2	G	G	G	G	G	G	3.9	G	4.3	4.5	4.0	4.5	4.1	2.4	3.0	3.0	2.4	2.6	2.6	
23	2.8	2.4	2.1	G	1.6	G	G	G	G	G	G	G	G	4.1	5.4	5.5	7.0	3.5	3.8	2.2	4.0	3.0	2.8	3.2	
24	2.2	2.0 ^Y	2.0	1.6	1.9	1.5	1.8	2.3	2.6	3.0	3.8	G	G	3.8	3.4	3.0	G	3.0	2.0	3.0	G	G	G	G	
25	G	G	1.8	G	G	G	G	G	G	G	G	3.8	C	4.7	5.1	5.2	4.9	5.5	3.8	G	G	G	G	G	
26	G	G	2.2 ^F	2.9	1.3	2.5	2.4	3.0	3.6	4.0	4.0	5.2	5.6	4.4	5.8	5.8	5.4	3.0 ^Y	2.0	3.0	2.4	3.1	3.2	2.8	
27	3.1	2.9	2.8 ^F	4.0	3.4	5.0	3.8	G	C	C	C	C	C	C	C	C	C	C	5.4	3.6	2.8	2.4	2.4	2.4	
28	3.0	2.8	1.4	G	G	G	G	2.3 ^Y	G	G	B	3.8 ^Y	G	G	4.2	3.8	3.8	2.2	3.3	3.2	3.5	3.5	3.0	3.2	
29	4.5	3.1	G	2.2	2.2	G	2.2	2.8	3.2	6.0	6.0	5.2	4.1	5.8	4.2	G	G	2.7	2.3	G	2.4	1.3	2.7	1.4	
30	G	G	G	G	G	G	G	G	G	3.0	G	4.8	4.8	4.6	3.6	3.8	4.4	3.2 ^Y	G	1.3	1.9 ^Y	1.9	2.0	2.2	
31																									
Median Value	2.2	1.8	2.0	1.7	1.8	1.6	1.2	2.2	2.7	3.0	3.8	4.4	4.4	4.4	4.4	4.0	4.0	3.2	3.2	3.0	2.8	2.4	2.4	2.4	
Count	30	30	30	30	30	30	30	30	27	27	26	27	25	26	27	27	27	27	27	28	30	30	29	30	

fEs

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 35° 12.5' N
Long. 139° 37.7' E

Yamagawa

135° E Mean Time

(M3000)F2

Nov. 1950

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	2.8	2.8	2.9 ^H	3.3 ^V	3.0 ^V	2.9	3.5	3.2	3.5	3.2 ^S	3.0 ^S	3.0	3.1 ^Z	3.0	3.3	3.4	3.5	3.6	3.4	3.0	3.6	3.2	3.0	
2	3.2	3.0	3.1	3.1	3.5	2.5	2.8	3.4	3.4	3.4	3.2	3.3	3.2	3.3	3.2	3.4	3.4	3.3	3.4	3.2	3.1	3.1	3.1	2.8	
3	2.8	2.7	3.1	3.0	3.5	3.9	3.4	3.6	3.2	3.2	3.2	3.1	3.3	3.2	3.3	3.2	3.3	3.4	3.2	3.2	3.2	A	2.8	2.9	
4	2.7	3.0	3.0 ^F	2.7	2.9	3.0	2.9	3.5	3.5	3.5	3.3	3.0	3.2	3.2	3.3 ^H	3.4	3.5	3.4	3.4	2.9	3.0	3.1	3.3 ^P	A	
5	A	(3.5) ^J	3.0	(2.7) ^J	2.6	2.8	3.1	3.0	3.3	3.1	3.1	3.1	B	3.2	3.2 ^H	3.3	3.3	3.2	3.3	3.0	2.8	2.8	2.7	2.7	
6	2.9	3.0	3.2	3.3	3.5	2.9	3.1	3.7	3.6	3.4	3.2	3.3	3.1	3.3	3.1	3.2	3.5	3.5	3.2	3.2	3.4	3.2	3.2	3.0	
7	2.8	2.7	2.7	2.6	3.2	3.2	2.9	3.2	C	C	C	C	C	C	C	C	C	C	C	C	3.3	3.1	3.3 ^P	2.9	
8	2.7	3.0	2.9	3.1	3.2	3.0	3.0	3.5	C	C	3.3	3.2	3.1	3.1	3.2	3.3	3.3	3.4	3.6	3.3	3.2	3.3	3.1	3.0	
9	2.9	3.3	3.3	2.8	2.8 ^Z	2.8	2.9	3.0	3.4	3.3	3.3	3.2	3.2	3.2	3.0	3.3	S	3.4	3.3	2.9	2.8	2.8	2.9	3.1	
10	2.9	3.1	3.0	3.1	2.8	3.2	3.2	3.3	3.4	3.3	3.4	3.2	2.9	3.0	3.3	3.2	3.4	3.4	3.3	2.8	2.9	2.7	2.8	2.8	
11	2.6	2.6	2.8	3.1	2.6	2.6	3.4	3.3	3.3	3.3	3.2	(3.3) ^G	3.3	3.3	3.1	3.2	3.3	3.3	3.1	3.4	3.2	3.1	3.3	3.0	
12	(2.8) ^P	2.9	2.8	2.9	3.1	3.6	2.6	3.1	3.4	3.3	3.2	3.2	3.0	3.2	3.2	(3.3) ^S	3.4	3.7	3.6	3.5	3.4	3.2	3.4	3.4	
13	3.2	2.9	2.6 ^F	2.6	3.3 ^H	2.7	2.5	3.2	3.4	3.5	3.5	3.4	3.4	3.3	3.2	3.3	3.4	3.5	3.2	3.1	3.4	3.5	3.5	2.7	
14	2.7	2.9	2.1	3.3	2.8	2.6	2.8	3.1	3.5	3.4	3.3	3.4	3.3	3.2	3.3	3.6	3.5	3.7	A	3.0	3.1	3.1	3.1	3.1	
15	3.1	3.1	2.8	3.0	3.2	3.3 ^F	2.7	3.2	3.4	3.5	3.4	3.3	3.5	3.1	3.2	3.3	3.3	3.6	3.9	3.1	3.4	3.2	3.2	3.2	
16	3.3	2.9	3.0	(3.0) ^F	(3.1) ^F	(3.0) ^F	2.9 ^H	3.5	3.5	3.6	3.4	(3.4) ^J	3.1	3.3	3.4	3.3	(3.3) ^J	(3.4) ^J	3.6	2.9	3.2	3.2	3.2	3.3	3.4
17	2.8	3.0	2.6	2.8 ^Z	3.1	3.3	3.6	3.5	3.4	3.4	3.4	3.1	3.1	(3.2) ^P	3.5	3.1	3.4	3.5	3.3	3.1	3.3	3.1	2.9	2.7	
18	2.6	2.8	(2.5) ^F	3.0	3.2	3.1	2.5	3.3	3.4	3.3	3.2	3.2	3.1	3.2	3.4	3.3	3.5	3.5	3.4	A	A	3.0	3.3	2.9	
19	3.0	3.0	3.0	2.6	2.9	2.9	3.0	3.2	3.5 ^S	3.7	3.1	3.0	3.2	3.2	3.3	3.4	3.5	(3.4) ^F	3.6	3.0	3.1	3.2	2.8	3.3	
20	3.0	3.0	2.8	3.1	3.2	2.9	3.3	3.4	3.8	3.7	3.5	3.3	3.3	3.3	3.2	3.6	3.3	3.3	3.1	3.3	3.0	2.9	2.9	2.9	
21	2.8	2.9	3.0	2.9	3.1	3.1	3.3	3.2	C	C	C	C	C	C	C	C	C	C	C	(3.5) ^S	(3.5) ^F	3.0	3.0	2.9	
22	2.9	3.1	3.0	3.1	2.9	3.1	2.8	3.2	3.6	3.7	3.4	3.4	3.3	3.2	3.3	3.5	3.3 ^H	3.5	3.6	3.4	3.1	3.2 ^F	2.9	2.8	
23	2.8	2.7 ^F	2.6 ^V	2.8	2.5	2.8	F	3.1	3.5	3.3	2.8	3.2	3.4	3.4	3.3	3.2	3.2	3.4	3.4	3.4	3.3	(3.2) ^S	3.1	2.9	
24	2.7	2.7	2.9	3.0	3.6	3.5	3.2	3.9	3.9	3.4	3.2	B	3.2 ^G	3.3	(3.5) ^J	(3.5) ^J	3.4	(3.2) ^J	3.3	3.1	3.2	3.1 ^Z	3.4	3.0	
25	3.0	3.1	3.0	2.9	2.9	2.6	3.1	3.2 ^H	3.5 ^S	3.3	3.6	3.3	(3.4) ^C	3.4	3.3	3.2	3.4	3.4	3.4	3.0	3.2	3.0	2.7	2.9	
26	2.8	3.2	2.8 ^F	2.7 ^F	2.8 ^F	(2.9) ^F	3.3	3.2	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.5	3.4	3.7	3.7	3.3	3.6	3.6	3.5	
27	3.3	3.1	2.7	2.7 ^Z	S	A	2.7 ^F	B	C	C	C	C	C	C	C	C	C	C	3.2	3.2	3.2	3.2	2.8	2.6	
28	3.3	A	2.6	2.6	2.8	2.8	3.0 ^S	3.2	3.2	3.3	3.4	3.3	3.4	3.3	3.2	3.4	3.6	C	(3.8) ^H	3.3 ^F	3.7	2.9	(3.0) ^Z	3.3	
29	2.8	2.9 ^Z	2.9	2.7	2.8	3.1	3.6	3.4	3.3	3.4	3.3	2.9	3.3	2.9	3.3	3.4	3.4	3.3	3.4	3.3	3.3	3.0	3.1	2.9 ^V	
30	2.7	2.7	3.1	3.2	3.0	3.2	3.2	3.2	3.2	3.4	(3.4) ^J	3.6	3.3	3.3	3.3	3.3	3.5	3.5	3.3	3.2	2.8 ^H	3.1	3.2	3.3	
31																									
Median Value	2.8	3.0	2.9	3.0	3.1	2.9	2.9	3.2	3.5	3.4	3.3	3.3	3.2	3.2	3.3	3.3	3.4	3.4	3.4	3.2	3.2	3.1	3.1	2.9	
Count	29	28	30	30	29	29	29	29	27	27	27	26	26	27	27	27	26	27	27	29	29	29	30	29	

Sweep 1.0-Mc to 18.5-Mc in 1.5 min

Manual

Y 9

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

IONOSPHERIC DATA

Nov. 1950

fminF

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E	E	1.1	1.4	1.5	1.2	1.1	2.0	2.8	3.2	3.6	4.0	3.8	3.6	3.4	3.4	3.0	2.6	1.8	1.3	1.1	1.1	E	1.1	
2	1.2	1.2	E	E	1.1	1.4	E	1.8	2.5	3.2	3.4	3.6	3.9	3.9	3.6	3.2	2.6	A	A	A	A	1.8	1.4	1.6	
3	1.5	1.6	E	1.2	1.2	E	1.2	1.8	2.4	3.1	4.0	3.8	3.8	3.4	3.5	3.0	2.4	A	A	A	A	A	A	1.8	
4	1.1	1.5	E	E	1.2	1.2	1.6	2.0	2.6	3.2	3.3	4.2	4.2	A	4.2	A	A	A	A	3.6	A	1.6	1.6	A	
5	A	A	A	A	A	1.5	1.6	1.9	2.6	3.2	3.4	3.6	3.4	3.6	A	3.4	A	A	A	A	A	A	A	A	
6	A	A	A	1.6	1.4	1.3	1.3	1.4	A	3.3	3.3	3.6	3.8	4.1	4.0	3.1	3.7	A	A	1.8	1.8	1.4	1.2	E	
7	E	E	E	E	1.2	1.2	1.2	1.8	C	C	C	C	C	C	C	C	C	C	C	A	A	A	A	1.7	
8	1.3	1.2	1.1	E	E	1.2	1.2	1.9	2.6	3.2	3.4	4.2	3.6	4.0	3.6	3.2	A	2.3	A	1.8	1.4	1.4	1.3	1.4	
9	1.3	1.3	E	E	1.1	E	E	2.0	2.7	3.3	3.2	3.4	3.2	3.6	3.4	3.4	2.6	2.2	A	A	1.8	1.6	1.8	1.6	
10	1.6	1.8	1.4	E	E	1.5	2.0	2.5	2.5	2.8	2.8	3.5	3.6	A	3.6	3.2	2.4	1.7	1.8	A	A	1.6	1.8	1.9	
11	A	1.1	A	1.6	1.4	E	E	1.9	2.2	2.6	3.0	3.6	3.6	A	A	3.0	2.6	A	A	1.6	A	A	A	1.8	
12	1.6	1.1	1.6	E	E	1.1	1.6	1.8	2.8	3.1	3.2	3.8	3.4	A	3.6	3.8	3.2	F	A	1.6	1.4	1.7	1.6	1.8	
13	1.4	1.4	1.1	E	E	E	1.2	1.7	2.4	2.9	3.2	3.3	3.6	A	3.2	A	2.6	2.0	1.1	1.5	A	A	1.1	1.2	
14	E	1.1	A	A	1.2	E	E	1.3	2.5	2.8	3.6	3.7	3.7	4.2	4.0	3.7	3.0	A	A	A	A	1.5	1.5	1.4	
15	1.3	1.1	1.1	E	E	E	1.1	1.7	2.9	3.2	3.3	3.4	C	3.3	3.4	3.5	3.2	2.1	A	1.8	A	1.6	1.6	E	
16	E	E	E	1.2	1.3	1.4	1.3	1.5	2.3	3.0	A	3.3	C	C	3.5	3.0	2.9	2.0	1.8	1.6	A	1.8	1.4	E	
17	E	E	E	1.2	1.2	1.6	1.4	1.6	2.4	3.4	3.4	3.4	3.6	3.8	3.6	3.0	2.6	1.8	1.5	1.4	1.5	1.5	1.6	1.6	
18	E	E	1.2	E	1.8	1.8	1.2	2.3	2.2	3.0	3.1	3.2	3.7	4.0	3.6	3.0	2.8	A	AF	A	A	1.6	1.5	1.2	
19	1.7	1.4	1.6	A	E	E	E	2.4	A	A	3.0	3.6	3.4	A	2.6	2.8	2.6	A	A	1.7	A	A	1.6	1.7	
20	1.5	1.6	1.4	1.5	1.3	1.5	1.3	1.6	2.2	A	3.2	2.2	3.4	3.6	A	3.2	3.0	A	A	A	1.6	1.4	1.4	1.6	
21	1.1	E	E	E	E	E	1.2	1.9	C	C	C	C	C	C	C	C	C	C	C	1.9	A	A	1.7	1.6	
22	1.6	1.5	E	1.6	E	E	E	2.0	1.8	3.0	3.1	3.5	3.4	3.8	3.5	3.5	4.7	A	1.8	A	1.7	1.3	1.7	1.6	
23	1.6	1.4	E	E	E	1.1	1.9	1.9	2.5	2.8	3.4	3.4	3.3	3.3	3.5	2.9	A	1.9	A	1.5	A	A	1.8	A	
24	1.8	1.6	1.7	1.6	1.9	1.4	1.5	2.3	2.2	2.5	3.2	3.6	3.4	4.0	2.8	2.6	A	2.2	A	1.6	E	1.1	1.2	1.1	
25	E	E	E	E	1.1	E	E	2.0	2.3	2.8	3.9	3.6	[3.6]C	3.6	A	A	A	A	A	1.4	1.2	1.2	E	E	
26	E	E	E	1.4	1.1	1.2	1.2	1.5	2.1	2.9	3.4	3.4	A	3.3	3.0	2.6	A	1.9	1.8	1.8	1.3	1.7	1.2	1.2	
27	1.2	1.2	1.2	1.1	A	A	A	1.6	C	C	C	C	C	C	C	C	C	C	C	A	A	1.6	A	1.2	
28	1.8	A	1.1	1.1	1.1	E	1.1	1.5	2.3	3.0	4.2	3.2	4.0	3.6	3.5	3.0	2.4	2.0	1.6	A	A	1.6	1.8	1.5	
29	1.5	E	E	1.2	E	E	1.2	1.6	2.4	A	A	3.2	3.3	A	3.1	2.9	2.4	1.6	1.6	1.5	1.6	1.5	1.5	1.6	
30	E	E	E	E	E	E	E	1.4	2.4	3.0	3.2	A	3.6	3.4	3.0	A	2.4	2.1	1.5	1.5	1.1	1.5	1.4	1.2	
31																									
Median Value	1.3	1.1	E	E	1.1	E	1.2	1.8	2.4	3.0	3.3	3.6	3.6	3.6	3.5	3.1	2.7	2.0	1.7	1.6	1.4	1.6	1.5	1.5	
Count	27	27	26	27	28	29	29	30	25	24	25	26	24	19	23	23	20	15	10	18	13	22	25	27	

fminF

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

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

IONOSPHERIC DATA

Lat. 31° 12.5 N
Long. 130° 37.7 E

Yamagawa

135° E Mean Time

fminE

Nov. 1950

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E	E	E	E	E	E	E	1.1	1.5	1.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.4	1.1	E	E	E	E	
2	E	E	E	E	E	E	1.6	1.1	1.1	1.4	1.5	1.6	1.6	1.9	1.8	1.8	1.6	1.8	E	E	E	E	1.6	1.5	
3	B	E	E	E	1.2	(2.2) ^B	1.8	1.6	1.6	(1.1) ^B	2.0	2.0	3.0	2.0	2.0	2.0	1.8	1.5	1.5	E	1.1	1.1	E	1.2	
4	E	E	E	E	E	E	B	E	E	1.4	2.1	2.1	2.3	2.5	2.3	2.2	1.8	1.7	1.1	1.6	1.4	1.2	1.2	1.5	
5	1.1	1.1	1.2	E	E	E	E	E	E	1.8	2.2	2.2	2.8	2.4	2.8	2.4	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	
6	1.4	E	E	E	E	E	E	E	1.3	1.7	1.7	1.9	1.8	1.8	2.0	2.0	1.8	1.7	1.6	1.6	1.2	1.2	1.2	E	
7	E	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	C	C	1.5	1.5	1.5	1.6	2.9	
8	B	E	1.1	E	E	E	E	1.5	1.1	1.6	1.3	1.6	1.6	1.5	1.4	E	E	1.4	1.2	1.2	1.2	E	1.2	B	
9	1.1	1.1	E	E	E	E	E	1.1	1.6	1.8	2.2	2.2	2.2	2.4	2.4	2.2	2.2	1.8	1.6	1.6 ^B	1.4	E	E	E	
10	E	E	E	E	E	E	E	1.1	1.1	1.5	1.8	1.8	2.2	2.0	1.8	1.8	1.8	1.5	E	E	1.1	E	E	E	
11	E	E	1.2	E	E	E	E	1.6	1.4	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.5	
12	2.0	E	E	E	E	E	E	E	1.5	1.5	1.6	1.5	1.6	1.8	1.6	1.4	1.3	E	E	E	E	E	E	E	
13	E	E	E	E	1.6	1.1	1.2	1.4	1.4	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.3	1.3	1.1	B	E	1.1	1.1	F	
14	E	E	1.2	E	E	E	E	B	1.6	2.1	1.4	2.1	2.2	2.1	2.3	2.1	1.9	1.8	1.2	1.2	1.4	1.2	B	1.4	
15	2.2	E	2.0	E	E	E	E	1.1	1.6	1.5	1.6	1.8	1.6	1.7	1.7	2.0	1.6	1.5	1.1	E	E	1.4	B	E	
16	E	E	E	E	B	B	B	B	1.4	1.8	1.8	2.0	C	C	2.0	2.0	1.8	1.8	E	1.1	E	E	E	E	
17	E	E	E	E	E	E	E	1.2	1.6	1.6	1.6	1.6	1.8	1.8	1.8	1.5	1.6	1.6	1.6	1.6	E	E	E	E	
18	E	E	E	E	E	E	E	1.2	1.6	1.5	1.5	1.5	1.4	1.5	1.6	1.4	1.4	1.7	1.5	1.6	1.3	1.8	B	E	
19	1.2	1.1	E	E	E	E	E	E	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.8	1.6	1.6	1.7	1.6	1.5	B	1.9	
20	1.7	B	1.1	B	B	B	1.1	1.2	1.3	1.6	2.0	2.2	2.2	2.2	2.4	2.6	1.6	1.4	1.4	1.2	1.4	B	B	1.6	
21	E	E	E	E	E	E	E	1.1	C	C	C	C	C	C	C	C	C	C	C	1.6	1.2	1.6	1.7	1.6	
22	1.6	B	E	E	E	E	E	1.4	1.4	1.6	2.3	2.3	2.3	2.2	2.3	2.2	1.8	1.5	E	E	E	E	E		
23	E	E	E	E	E	E	E	E	1.3	1.4	1.6	1.7	1.7	1.6	1.6	1.5	1.5	1.1	1.3	1.6	1.5	E	1.5	1.8	
24	1.8	E	1.4	1.1	1.3	1.1	1.1	1.4	1.4	1.8	1.8	1.8	2.0	2.0	1.8	1.8	1.8	1.6	E	E	E	E	E	E	
25	E	E	E	E	E	E	E	B	1.6	1.6	2.4	2.4	[2.4] _c	2.3	2.3	2.1	2.3	1.8	1.4	B	E	E	E	E	
26	E	E	E	E	E	E	E	E	1.1	1.7	1.7	1.7	1.7	2.0	1.8	1.8	1.6	1.6	1.4	1.2	1.1	1.1	E	E	
27	E	E	1.1	1.1	E	E	E	B	C	C	C	C	C	C	C	C	C	C	1.4	E	E	E	E	1.6	
28	F	E	E	E	E	E	E	1.1	1.5	1.6	2.1	1.6	1.7	1.6	1.6	1.3	1.3	1.1	1.1	1.1	E	E	1.2	1.7	
29	1.2	1.8	E	E	E	E	E	1.4	1.4	1.6	1.5	1.6	1.7	1.7	1.7	1.4	B	E	B	1.4	1.2	E	E	E	
30	E	E	E	E	E	E	E	1.2	1.4	1.6	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	B	E	1.6	E	1.7	1.7	
31																									
Median Value	E	E	E	E	E	E	E	1.1	1.4	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.3	1.2	1.1	1.1	E	E	
Count	28	28	30	29	28	28	28	26	27	27	27	27	26	26	27	27	27	26	27	27	30	29	25	29	

Sweep 1.0—Mc to 18.5 Mc in 1.5 min Manual

IONOSPHERIC DATE IN JAPAN FOR NOVEMBER 1950.

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編集兼
發行 人

菅野 菊雄
東京都北多摩郡小金井町小金井新田一之久保573

發行所

電波監理委員会 中央電波觀測所
東京都北多摩郡小金井町小金井新田一之久保573
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印刷所

統計印刷株式会社
東京都千代田区飯田町1丁目34番地