

IONOSPHERIC DATA IN JAPAN

FOR MARCH 1974

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RADIO RESEARCH LABORATORIES
 MINISTRY OF POSTS AND TELECOMMUNICATIONS
 TOKYO, JAPAN

INTRODUCTION

This Series contains data on ionosphere (I), solar radio

(S) and radio propagation (P) obtained at the following stations under the Radio Research Laboratories, Ministry of Posts and Telecommunications of Japan.

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45° 23.6'N	141° 41.1'E	35.3°N	206.0	Vertical Sounding (I)
Akita	39° 43.5'N	140° 08.2'E	29.5°N	205.4	" (I)
Kokubunji	35° 42.4'N	139° 29.3'E	25.4°N	205.4	" (I)
Yamagawa	31° 12.1'N	130° 37.1'E	20.3°N	197.8	" (I)
Okinawa	26° 19.0'N	127° 46.8'E	15.3°N	195.6	" (I)
Hiraiso	36° 22.0'N	140° 37.5'E	26.2°N	206.3	Radio Receiving (S, P)
Inubo	35° 42.2'N	140° 51.5'E	26.0°N	206.8	" (P)

A. IONOSPHERE

Ionospheric observations are carried out at five stations in Japan by means of vertical sounding method.

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily *f*-plot.

All symbols and terminology in the table or figure of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition) 1972".

a. Characteristics of Ionosphere

<i>f</i> xI	Top frequency of spread <i>F</i> trace
<i>f</i> o <i>F</i> 2	Ordinary wave critical frequency
<i>f</i> o <i>F</i> 1	for the <i>F</i> 2, <i>F</i> 1, <i>E</i> and <i>E</i> s including night
<i>f</i> o <i>E</i>	<i>E</i> layers respectively
<i>f</i> o <i>E</i> s	
<i>f</i> b <i>E</i> s	Blanketing frequency of the <i>E</i> s layer, e.g. the lowest ordinary wave frequency visible through <i>E</i> s
<i>f</i> min	Lowest frequency which shows vertical ionospheric reflections
M(3000) <i>F</i> 2	Maximum usable frequency factor a
M(3000) <i>F</i> 1	path of 3000 km for transmission by <i>F</i> 2 and <i>F</i> 1 layers respectively
<i>h'</i> <i>F</i> 2	Minimum virtual height on the ordinary wave for the <i>F</i> 2, whole <i>F</i> , <i>E</i> and <i>E</i> s layers respectively
<i>h'</i> <i>F</i>	
<i>h'</i> <i>E</i>	
<i>h'</i> <i>E</i> s	
Types of <i>E</i> s	See below A.b.(iii)

b. Symbols

(i) Descriptive Letters

The following letters are entered after, or used to replace, a numerical value on the monthly tabulation sheets.

A	Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example <i>E</i> s.
B	Measurement influenced by, or impossible because of, absorption in the vicinity of <i>f</i> min.
C	Measurement influenced by, or impossible because of, any nonionospheric reason.
D	Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.
E	Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.
F	Measurement influenced by, or impossible because of, the presence of spread echoes.
G	Measurement influenced or impossible because the ionization density of the layer is too small to enable it to be made accurately.
H	Measurement influenced by, or impossible because of, the presence of a stratification.
K	Presence of a night <i>E</i> layer.
L	Measurement influenced by, or impossible because the trace has no sufficiently definite cusp between layers.
M	Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.
N	Conditions are such that the measurement cannot be interpreted.
O	Measurement refers to the ordinary component.
Q	Range spread present.

R	Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.
S	Measurement influenced by, or impossible because of, interference or atmospherics.
T	Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
V	Forked trace, which may influence the measurement.
W	Measurement influenced or impossible because the echo lies outside the height range recorded.
X	Measurement refers to the extraordinary component.
Y	Lacuna phenomena, severe layer tilt.
Z	Third magneto-ionic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets.

A	Less than. Used only when <i>f</i> b <i>E</i> s is deduced from <i>f</i> o <i>E</i> s because total blanketing of higher layer is present.
D	Greater than.
E	Less than.
I	Missing value has been replaced by an interpolated value.
J	Ordinary component characteristic deduced from the extraordinary component.
M	Mode interpretation uncertain.
O	Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristic only.)
T	Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
U	Uncertain or doubtful numerical value.
Z	Measurement deduced from the third magneto-ionic component.

(iii) Description of Types of *E*s

When more than one type of *E*s trace is present on the ionogram, the type for the trace used to determine *f*o*E*s must be written first. The number of multiple traces is indicated after the type letter.

<i>f</i>	The types are: An <i>E</i> s trace which shows no appreciable increase of height with frequency.
l	A flat <i>E</i> s trace at or below normal <i>E</i> layer minimum virtual height or below the night <i>E</i> layer minimum virtual height.
c	An <i>E</i> s trace showing a relatively symmetrical cusp at or below <i>f</i> o <i>E</i> . (Usually a daytime type.)
h	An <i>E</i> s trace showing a discontinuity in height with normal <i>E</i> layer trace at or above <i>f</i> o <i>E</i> . The cusp is not symmetrical, the low frequency end of the <i>E</i> s trace lying clearly above the high frequency end of the normal <i>E</i> trace. (Usually a daytime type.)
q	An <i>E</i> s trace which is diffuse and non-blanketing over a wide frequency range.
r	An <i>E</i> s trace showing an increase in virtual height at the high frequency end similar to group retardation.
a	An <i>E</i> s trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.
s	A diffuse <i>E</i> s trace which rises steadily with

frequency and usually emerges from another type E_s trace.

d A weak trace at heights below 95 km associated with absorption and large f_{min} .

n The designation 'n' is used to denote an E_s trace which cannot be classified into one of the standard types.

k The designation k is used to show the presence of night E. When $foE_s > foE$ (night E) the E_s type precedes k.

c. Definitions of the CNT, MED, UQ and LQ

Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (MED) of a set of numbers is the middle value when the numbers are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (UQ) is the median value of the upper half of the values when they are ranked according to magnitude; the lower quartile (LQ) is the median value of the lower half.

B. SOLAR RADIO

Solar radio observations are carried out on 100, 200 and 500 MHz at Hiraiso. Observation equipments are: a 5 meter parabolic reflector with a total-power receiver for 500 MHz and a 10 meter parabolic reflector with two polarimeters for 100 and 200 MHz. Observations are feasible almost from sunrise to sunset.

Time is expressed in hours, minutes and tenths of minutes U.T. and the unit of flux density is 10^{-22} Wm^{-1} for both components of polarization.

a. Daily Data

Flux density. The three-hourly and daily mean values are given.

Variability. The three-hourly and daily mean values are given at 200 MHz only. Variability is expressed in the following four grades.

- 0 quiet or no burst,
- 1 a few bursts,
- 2 many bursts,
- 3 very many bursts.

The number of bursts exceeding the mean flux level is counted.

Daily data with parenthesis mean that observation time does not exceed one third of the period.

b. Distinctive Events

The phenomena are picked up on the following criteria:

1. distinct from the prevailing kind of activity,
2. correlated with other known solar phenomena,
3. remarkable change-over from one situation to another.

Starting time and Time of maximum are given to the nearest minute in general, but to nearest a tenth minute for short intense occurrences of clear commencements. Date indicates the day to which starting time of event belongs.

Duration is given in minute and to nearest a tenth minute, if short or clear.

Type, is denoted by the following descriptive symbols.

- S simple rise and fall of intensity,
- C complex variation of intensity,
- C+ prolonged broad-band enhancement of radiation, generally of spectral type IV,
- F group of bursts, multiple peaks probably belonging to the same event, but separated by relatively short period of quietness,
- RF more or less irregular rise and fall of intensity, at metric or decimetric wavelength,
- e sudden beginning of burst with steep rise of intensity,
- E steep rise of intensity of continuum background,
- pi post-burst increase,
- ns noise storm.

Peak intensity is the flux density of each important peak of the occurrence, measured above the pre-burst level.

Mean intensity is the flux density averaged over the duration of burst, measured above the pre-burst level.

Polarization is expressed by polarization degree as follows:

- 0 no apparent polarization,
- r or l right- or left-handed polarization degree less than 0.5,
- R or L right- or left-handed polarization degree equal to or less than 1,
- s oscillatory change of polarization degree less than 0.5,
- S oscillatory change of polarization degree equal to or less than 2.

The following letters may be attached to values in table, if necessary.

- D greater than,
- E less than,
- U uncertain or doubtful, also including a case of partial interruption of observed phenomenon.

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

Field strength observation of 15 MHz standard waves transmitted from WWV and WWVH stations which are located respectively at Fort Collins, Colorado and Kauai, Hawaii, is carried out at Hiraiso. In order to avoid interference among the same frequency waves, the upper side-band of WWV or WWVH with the audio tone 600 Hz is picked up by the use of a narrow band pass filter with 80 Hz band width. Particulars of the transmitters and the receiver are summarized in the following table.

Characteristics	Transmitter		Receiver
Station Call	WWV	WWVH	
Location	Fort Collins, Colorado	Kauai, Hawaii	Hiraiso, Ibaraki
latitude	40° 41' N	22° 00' N	36° 22' N
longitude	105° 02' W	159° 46' W	140° 38' E
Distance	9150 km	5910 km	—
Carrier Power	10 kW	10 kW	—
Modulation	50 %	50 %	—
Antenna	$\lambda/2$ vertical	$\lambda/2$ vertical	4.5 m vertical rod
Bandwidth	—	—	80 Hz for upper side-band
Calibration	—	—	Every an hour

The tabulated field strength in dB above one microvolt per meter is the peak average of the incident upper side-band field intensity in 45 seconds after the universal time indicated on the table. Abbreviated symbols are as follows.

- CNT number of values from which a median has been computed,
- MED median,
- UD upper decile, median of the uppermost fifth of values when they are ranked according to magnitude,

- LD lower decile, median of the lowest fifth of values when they are ranked according to magnitude,
- U uncertain,
- E less than,
- C influenced by, or impossible because of, any non-propagational reasons,
- S influenced by, or impossible because of, interferences or atmospherics.

b. Radio Propagation Quality Figures

The tabulated six-hourly quality figures are calculated for standard waves WWV transmitted from Fort Collins and standard waves WWVH transmitted from Kauai, respectively. Quality figures expressing radio propagation conditions are ranged over five grades as follows.

- 1 very poor (very disturbed),
- 2 poor (disturbed),
- 3 rather poor (unstable),
- 4 normal,
- 5 good.

Whole day quality figure ranged in grades of 1₀, 1⁺, 2⁻, 2₀, 2⁺, 3⁻, 3₀, 3⁺, 4⁻, 4₀, 4⁺, 5⁻, 5₀ stands for an average of six-hourly ones of the two circuits. Abbreviated symbols are as follows.

- C artificial accident,
- S propagational accident,
- U inaccurate.

Radio propagation conditions which can be described with a code in the following

- N normal,
- U unstable,
- W disturbed

are forecast 12 hours in advance and broadcast twice per an hour from JJY Station.

Data on a geomagnetic storm correlated with a radio propagation disturbance are tabulated from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. Time (U.T.) is expressed in unit of hour and minute (or tenth of hour), and range in gamma. When they are uncertain quantitatively, /'s are replaced with them. Continuation of a geomagnetic storm is denoted by . . .

c. Sudden Ionospheric Disturbances

(i) SWF

The table of short wave fade-out (SWF) is prepared from the record of field intensities measured at Hiraiso. Drop-out intensities of the 10 MHz, the 20 MHz and the 25 MHz waves are distinguished by marks, "and" from these of the 15 MHz wave for WWV and WWVH, respectively. Values of start, duration, type and importance are obtained from data of the circuit whose drop-out intensity in dB is underlined as xx. When these quantities are not given correctly, they are accompanied by the following symbols.

- D greater than,
- E less than,
- U uncertain or doubtful.

Types of fade-out are as follows.

- S sudden drop-out and gradual recovery,
- SL slow drop-out taking 5 to 15 minutes and gradual recovery,
- G gradual and irregular in both drop-out and recovery.

Importance of fade-out is scaled according to its amplitude into nine ascending grades as 1⁻, 1, 1⁺, 2⁻, 2, 2⁺, 3⁻, 3, 3⁺.

Correspondence of solar flare, solar radio burst and geomagnetic crochet to SWF is marked by X in accordance with interchange messages of IUWDS and observations at Hiraiso.

(ii) SPA

Data of sudden phase anomaly (SPA) are prepared from the records of phase measurement of VLF radio wave propagation received at Inubo. Characteristics of the VLF radio wave propagation circuits are given on the following table. In the last column, distance of circuit along the great circle is shown.

Name	Transmitter			Radiation Power (kW)	Distance of Circuit (km)
	Location (Geographic Coordinate)	Station Call	Frequency (kHz)		
Rugby	52° 22' N 001° 11' W	GBR	16.0	40	9550
Fort Collins	40° 41' N 105° 03' W	WWVL	20.0	1.8	9190
Cutler	44° 39' N 067° 17' W	NAA	17.8	1000	10640
North West Cape	21° 49' S 114° 10' E	NWC	22.3	1000	6990
Lualualei	21° 26' N 158° 09' W	NPM	23.4	300	6070
Jim Creek	48° 12' N 121° 55' W	NPG	18.6	250	7620
Haiku	21° 24' N 157° 50' W	HA0 HA2 HA3	10.2 12.2 13.6	10	6100
Aldra	66° 25' N 013° 09' E	AL0 AL2 AL3	10.2 12.3 13.6	10	7820
North Dakota	46° 22' N 098° 20' W	ND0 ND2 ND3	10.2 12.85 13.6	10	9150

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by —, and indistinguishable record is spaced out, and multi-peak event is marked by *.

Out of more than two circuits on which the same SPA event is observed, the phase advance on the circuit on which the SPA is the most remarkable or distinct is underlined. As for the underlined phase advance, start, end and maximum

times are obtained.

In table (i) SWF and (ii) SPA, date indicates the day to which start-time of event belongs.

The following letters may be attached to the value, if necessary.

- D greater than,
- E less than,
- U uncertain or doubtful.

IONOSPHERIC DATA

MAR. 1974

FXI (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station **WAKKANAI** Lat. **45 23.6 N.** Long. **141 41.1 E** Sweep **1 MHz to 20 MHz** in **20 sec** in **automatio** operation

Hour 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	X 44	X 44	X 45	X 42	X 42	X 40													X 44	X 38	X 36	X 41	X 40	X 40	
2	X 43	S 45	X 45	48	46	33													X 50	X 50	A	X 44	S 48	47	
3	43	44	40	40	40	39													X 60	X 50	X 50	X 42	X 40	X 40	
4	40	42	44	44	X 37	X 35													X 51	X 49	X 47	X 50	X 49	X 52	
5	X 55	X 55	X 56	57	54	44													X 51	X 50	X 44	X 48	X 47	48	
6	48	49	X 45	X 37	X 37	X 37													X 50	X 44	C	X 47	S 50	S 50	
7	X 50	X 50	X 50	X 57	44	50													X 48	X 39	X 40	X 41	44	S	
8	45	45	44	46	44	X 37													X 70	X 60	X 50	I 48	S 45	X 48	
9	X 49	X 48	X 48	48	46	40													X 75	X 55	X 39	X 45	X 43	X 46	
10	X 43	X 43	X 41	X 43	37	X 33													X 57	X 57	X 56	X 57	X 52	X 53	
11	X 48	S	52	50	47	35													X 59	X 49	X 45	X 46	X 47	X 45	
12	S	X 41	X 40	X 35	39	X 37													X 60	X 54	X 45	X 46	I 47	S 45	
13	I 45	S 44	X 43	X 42	X 40	X 40													X 65	X 47	X 45	X 50	X 48	X 49	
14	X 47	S	X 47	X 45	46	42														X 60	X 50	X 41	X 47	S	
15	S 47	X 47	X 43	48	41	45														X 52	X 47	X 47	X 48	X 48	
16	X 47	X 50	X 47	X 47	C	C														X 69	X 64	X 46	X 48	X 48	
17	X 47	X 48	X 46	40	40	X 38														X 48	X 46	X 43	X 44	X 43	
18	X 43	X 42	X 44	X 43	X 41	X 37														X 62	X 62	X 56	S 53	S 51	
19	X 50	X 50	X 47	X 47	X 47	X 46														X 59	X 54	C	C	X 52	
20	X 52	C	S	U 52	X 52	X 49														X 57	X 54	X 52	X 51	X 50	
21	X 50	X 48	X 48	X 47	X 44	X 41														X 58	U 52	S	S	X 49	
22	S	X 48	X 40	X 40	U 42	X 43														X 68	X 62	X 57	X 57	X 57	
23	X 57	X 55	X 55	X 51	X 50	X 50														X 57	C	C	X 49	U 47	
24	X 47	45	X 40	X 40	44	X 40														X 64	X 55	X 50	U 50	U 55	
25	U 51	S 50	X 48	X 43	X 37	X 38														X 62	X 60	X 58	U 58	X 58	
26	X 54	X 51	X 49	46	X 45	X 41														X 54	X 54	X 52	S	50	
27	X 49	X 49	X 50	X 46	35	X 34														X 58	X 55	X 55	X 51	X 51	
28	X 50	X 50	X 53	X 43	X 38	X 40														X 63	X 50	X 48	X 47	X 47	
29	X 47	X 43	X 48	X 48	X 34	X 36														X 66	X 59	X 55	X 50	U 50	
30	X 48	X 50	X 50	X 51	X 28	X 32														X 67	X 55	X 49	X 49	S	
31	S	U 49	S 47	S 48	X 46	X 42														X 67	X 62	S	U 52	X 50	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	28	30	31	30	30														13	31	28	27	28	28
MED	X 48	X 48	X 47	X 46	42	X 40														X 57	X 57	X 51	X 48	X 48	X 49
UQ	X 50	X 50	X 49	48	46	X 42														X 60	X 62	X 56	X 52	50	51
LQ	X 45	X 44	X 44	X 42	X 38	X 37														X 50	X 50	X 46	X 46	X 47	X 47

MAR. 1974

FXI (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF2 (0.1 MHz)

135 E Mean Time (G. M. T. + 9h)

Station **WAKKANAI** Lat. **45 23.6 N.** Long. **141 41.1 E** Sweep **1 MHz to 20 MHz** in **20 sec** in **automatio** operation

Hour 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	37	37	38	35	35	33	37	50	65	58	70	73	75	88	81	71	65	59	37	31	29	34	33	33
2	36	S ₃₈	38	F	F	F ₂₃	37	47	58	63	66	78	81	93	78	71	I ₆₅ A	53	43	43	A	37	S ₄₁	F ₄₀
3	F	F ₃₅	F ₃₁	F ₃₀	F	F ₃₁	39	47	60	58	68	66	66	68	76	64	65	58	53	43	43	35	33	33
4	F	F	F	F ₃₇	30	28	38	53	67	66	73	80	78	69	70	68	71	63	44	42	40	43	42	45
5	48	48	49	F	F ₄₃	F ₃₅	42	56	57	67	68	78	75	74	69	63	60	56	44	43	38	41	40	F
6	F ₄₁	F ₄₀	38	30	30	30	36	54	63	C	C	C	C	C	C	75	64	52	43	37	C	40	S ₄₃	S ₄₂
7	43	43	43	S ₅₀	F	F ₄₁	43	58	78	84	91	100	96	87	85	67	65	51	41	32	33	34	F	S
8	U ₃₃	F	F ₃₃	F	F	30	39	54	61	66	78	83	78	79	78	71	65	61	63	53	43	I ₄₀ S	38	41
9	42	41	41	F ₄₁	F	F ₃₃	38	50	62	73	75	91	77	68	71	76	71	75	68	48	32	38	S ₃₆	39
10	36	36	34	36	F ₃₀	26	C	I ₆₂ S	61	85	A	80	98	102	85	70	66	58	50	50	50	50	45	46
11	41	S	F ₄₁	F	F	F ₂₈	40	51	61	72	87	89	80	72	73	67	62	61	52	42	38	39	40	38
12	S	34	33	28	F ₃₂	30	43	57	56	83	78	70	94	98	77	70	60	60	54	47	38	40	I ₄₀ S	38
13	I ₃₈ S	37	36	35	33	33	47	63	73	79	73	74	74	78	77	79	73	66	58	40	38	43	41	42
14	30	S	40	38	F	35	50	63	71	71	78	90	81	80	75	69	68	66	58	53	43	34	40	S
15	S ₄₀	40	36	U ₄₁ F	F	F ₃₅	43	54	J ₇₁ S	U ₈₀ S	78	73	81	86	80	76	66	64	56	45	40	40	41	41
16	40	43	40	40	C	C	C	C	C	C	76	85	85	83	79	75	71	69	74	62	57	39	41	41
17	40	41	S ₃₉	U ₃₃ F	F	32	28	36	38	45	E ₄₁ G	49	53	53	58	53	50	49	50	41	39	36	37	36
18	36	S ₃₅	37	36	34	30	46	53	62	70	75	77	74	76	78	76	72	64	57	55	55	50	S ₄₆	S ₄₄
19	43	43	40	40	40	40	50	57	61	69	79	82	76	78	77	64	64	66	63	52	48	C	C	J ₄₅ S
20	45	C	S ₄₅	U ₄₅ F	45	42	53	53	65	78	81	85	83	78	71	69	63	63	66	50	48	45	J ₄₄ S	43
21	43	41	S ₄₁	40	37	34	42	47	55	68	73	83	69	83	82	76	77	67	56	51	U ₄₅ S	S	S	42
22	S	41	33	33	U ₃₅ S	36	53	48	59	55	77	81	83	88	81	78	74	83	83	61	55	50	50	50
23	50	48	48	44	43	43	47	53	60	66	73	86	97	88	74	73	66	66	63	50	C	C	42	U ₄₀ S
24	40	U ₃₅ F	33	33	F ₃₃	33	47	53	61	79	88	79	89	79	84	73	73	73	66	57	48	43	U ₄₃ S	U ₄₈ S
25	U ₄₄ S	S ₄₃	41	36	30	31	53	63	68	66	83	95	103	92	83	75	65	66	58	55	53	51	U ₅₁ S	51
26	47	44	42	F	38	34	49	60	C	64	70	76	73	76	80	84	64	60	54	47	48	45	S	F ₄₃
27	42	42	43	39	F ₂₆	27	45	57	71	76	82	70	78	68	66	63	64	65	63	51	49	48	44	44
28	43	43	46	36	31	33	50	57	68	72	80	74	69	72	75	63	62	72	70	56	43	41	40	40
29	40	36	41	41	27	30	50	58	65	80	75	73	74	88	79	78	76	78	66	59	52	48	43	U ₄₃ S
30	41	43	43	44	21	25	46	54	56	60	70	80	80	83	77	72	63	56	60	60	48	42	42	S
31	S ₄₂	U ₄₂ S	S ₄₀	S ₄₁	39	35	43	45	48	54	74	75	80	82	78	58	58	61	55	60	55	S	U ₄₅ S	43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	26	29	26	21	30	29	30	29	29	29	30	30	30	30	31	31	31	31	31	28	27	27	27
MED	41	41	40	38	33	33	43	54	61	69	75	80	79	80	78	71	65	63	57	50	44	41	41	42
UQ	43	43	41	41	38	35	49	57	67	78	79	85	83	88	80	76	71	66	63	55	50	45	S ₄₄	44
LQ	38	37	36	35	30	30	39	50	59	64	73	74	74	74	74	67	64	58	51	43	38	38	40	40

MAR. 1974

FOF2 (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

FOF1 (0.01 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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											410	420	A	A	L									
2											410	430	430	410										
3											L		400		410									
4									A		410	420	L	420	L									
5													420	420	400									
6										C	C	C	C	C	C	L								
7										L	410	A	430	420										
8										390	L	430	430	420	L	390								
9									U	380	L	420	410	440	420	410	400							
10									A	A	420	430	430	430	420	380								
11									L	440	440	440	430	430	390									
12									440	430	420	450	430	410										
13											430	430	420	400		L								
14									U	400	L	430	440	440	420	370								
15									420	400	430		440		L	L								
16									C	C		U	440		L									
17										380	410	400	410	420	410	400								
18											L	L		U	L									
19											U	430	L	440	440	420		L						
20										420	430	430	430	420	400	400								
21										440	430	440	450	440	430									
22									480	410	420	440	430	420	400									
23									410	410	430	430	U	420	L									
24									430	A	430	L	U	430	L	L								
25									A	440	L	L	440	430	U	420		L						
26									400	L	400	430	430	430	420	400								
27									400	400	420	430	430	420	420									
28									410	U	430	430	420	420	400									
29									410	420	430		L	430	420	400								
30									400	430	A	430	430	430	420	390								
31									A	A	A		430	420	410	400		L						
CNT										6	14	19	22	24	26	20	11							
MED										400	410	420	430	430	420	415	400							
UQ										420	430	430	430	440	430	420	400							
LQ										400	400	410	420	430	420	405	390							

MAR. 1974

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOE (0.01 MHz)

135 E Mean Time (G. M. T. + 9h)

Station **WAKKANAI** Lat. **45 23.6 N.** Long. **141 41.1 E** Sweep **1 MHz** to **20 MHz** in **20 sec** in automatio operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	S	240	270	285	290	280	285	275	250	A	S						
2							S		195	245	275	290	300	300	290	285	255	210	S					
3							S		205	235	280	285	300	295	300	285	260	225	S					
4							S		170	225	A	A	290	300	A	A	A	A	S					
5							S		190	240	270	280	300	300	300	285	270	215	S					
6							S		190	245	C	C	C	C	C	C	265	A	S					
7							S		180	245	285	A	A	A	300	290	265	220	S					
8							S		195	245	285	290	300	300	300	290	270	220	S					
9							S		200	A	A	A	A	A	295	290	270	235	S					
10							C		195	225	A	A	295	R	A	A	A	A	S					
11							S		210	245	270	290	300	305	300	285	A	215	A					
12							S		195	250	A	A	A	A	300	300	270	220	A					
13							S		205	255	285	295	300	305	300	295	280	235	A					
14							S		220	265	290	300	A	300	300	300	280	220	170	S				
15							S		220	255	280	A	300	305	305	300	280	235	180	S				
16							C	C	C	C		305	305	300	300	300	285	235	S	S				
17							S		200	240	270	300	300	300	300	285	260	220	S	S				
18							S		210	260	285	300	310	315	A	A	280	240	175	S				
19							S		215	265	290	295	310	325	310	295	280	230	175	S				
20							S		220	260	290	295	305	305	305	300	280	A	S	S				
21							S		200	260	290	300	300	300	A	295	275	230	S	S				
22							S		210	245	270	A	305	305	300	290	A	A	190	S				
23							S		215	265	280	290	A	A	300	A	270	235	A	S				
24							S		210	255	285	285	A	A	300	295	275	230	190	S				
25							S		220	265	285	295	300	A	A	295	260	240	200	S				
26							S		210	265	290	300	A	300	300	295	280	235	190	S				
27								175	230	255	A	A	295	300	300	290	A	A	A	S				
28								170	230	250	270	295	305	310	300	295	270	245	190	S				
29							S		230	265	285	295	305	305	300	295	275	240	200	S				
30							S		225	265	290	290	A	A	A	300	270	230	A	S				
31							S		230	265	280	290	A	300	295	A	A	A	A	S				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	29	29	24	22	21	22	24	25	25	23	10						
MED							172	210	255	285	295	300	300	300	295	270	230	190						
UQ							220	265	288	300	305	305	300	295	280	235	190							
LQ							195	245	272	290	300	300	300	290	265	220	175							

MAR. 1974

FOE (0.01 MHz)

IONOSPHERIC DATA

MAR. 1974

FOES (0.1 MHz)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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 ₁₅	E ₁₆	E ₁₅	E ₁₆	E ₁₅	E ₁₆	E ₁₅	21	G	G	36	37	44	42	G ₁₈	32	38	25	22	E ₁₆	E ₁₆	E ₁₅	E ₁₅	27	
2	E ₁₅	28	E ₁₄	E ₁₅	21	E ₁₆	E ₁₅	G	G	31	32	32	G	G	G	G	J _A 83	J _A 50	J _A 43	E ₁₇	J _A 102	J _A 73	29	23	
3	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₆	28	28	G	33	32	35	32	G	G	33	26	J _A 31	J _A 35	E ₁₅	27	E ₁₇	E ₁₄	E ₁₅	
4	E ₁₆	E ₁₅	E ₁₃	E ₁₅	E ₁₄	E ₁₄	24	J _A 43	J _A 44	38	31	G	G	J _A 50	J _A 45	J _A 40	J _A 41	25	J _A 43	J _A 55	J _A 45	24	26	J _A 43	
5	28	24	27	28	24	21	E ₁₅	G	G	G	G	G	G	G	G	32	21	32	E ₁₇	E ₁₆	E ₁₅	E ₁₄	J _A 33	E ₁₅	
6	J _A 28	J _A 30	J _A 30	J _A 21	22	E ₁₅	E ₁₅	G	G	C	C	C	C	C	C	G ₁₉	J _A 28	26	J _A 30	E ₁₅	C	E ₁₅	E ₁₅	E ₁₅	
7	E ₁₅	E ₁₅	24	27	E ₁₅	E ₁₅	E ₁₄	G	G	G	J _A 40	J _A 68	J _A 36	G	G ₂₃	G	G	E ₁₆	E ₁₅	E ₁₅	E ₁₆	E ₁₅	E ₁₅	22	
8	E ₁₅	23	22	23	E ₁₅	E ₁₆	E ₁₅	G	29	G	20	28	24	26	G	G	G	E ₁₇	E ₁₅	E ₁₆	E ₁₅	E ₁₅	29	J _A 28	
9	J _A 28	30	J _A 29	J _A 25	26	E ₁₆	E ₁₅	23	30	33	J _A 33	J _A 33	31	23	G	G	G	E ₁₇	22	25	26	25	E ₁₅	E ₁₆	
10	E ₁₆	22	27	E ₁₅	E ₁₅	E ₁₅	C	26	J _A 54	J _A 61	J _A 136	G ₂₆	G	J _A 35	30	J _A 33	24	E ₂₀	E ₁₅	E ₂₀	E ₁₅	E ₁₅	E ₁₆	E ₁₆	
11	J _A 39	J _A 28	28	J _A 23	J _A 28	26	28	26	31	34	G	31	27	G	G ₂₃	31	20	30	20	25	J _A 26	28	20	26	
12	S	27	26	23	19	E ₁₅	E ₁₆	G	G	33	33	36	J _A 50	G ₂₈	G ₂₅	G	G ₂₀	24	E ₁₅	E ₁₅	E ₁₆	E ₁₅	E ₁₅	E ₁₅	
13	E ₁₆	E ₁₃	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₆	G	G	G	G	G	G	G ₂₃	G ₂₆	G ₂₁	G ₂₀	25	28	24	E ₁₅	E ₁₅	E ₁₅	E ₁₆	
14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	26	21	G	G	J _A 40	G	G	G ₁₈	G ₂₁	G	G	E ₁₅	E ₁₇	E ₁₆	E ₁₆	E ₁₅	E ₁₆	
15	E ₁₅	E ₁₃	E ₁₄	E ₁₅	E ₁₅	E ₁₆	E ₁₆	G	G	G	30	28	G	G ₂₁	G	32	30	25	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
16	E ₁₅	E ₁₅	E ₁₄	E ₁₅	C	C	C	C	C	C	G	G	G	G	G	G	G	18	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
17	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	G	G ₂₁	G	G	G	G	G	E ₁₇	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
18	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₇	G	G	G	G	G	G	32	32	G	G	G	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
19	E ₁₅	21	25	23	E ₁₅	E ₁₅	E ₁₆	G	G	G	G	G	G ₂₁	G	G	G	G	G	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
20	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	G	24	G	G	G	G	G	G	G	G	J _A 35	G	E ₁₅	22	21	E ₁₅	20	23	
21	E ₁₄	20	23	E ₁₅	E ₁₅	E ₁₅	E ₁₉	G	G	32	34	34	37	32	G	G	G	E ₁₉	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
22	E ₁₅	E ₁₅	20	E ₁₅	E ₁₅	E ₁₅	E ₁₆	29	49	34	31	G	G	G	G	J _A 53	40	J _A 43	38	22	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
23	E ₁₄	E ₁₅	E ₁₅	22	19	E ₁₆	20	G	G	32	G	31	J _A 35	G ₂₄	J _A 31	G	G	J _A 30	J _A 20	24	C	C	E ₁₅	E ₁₅	
24	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	32	J _A 55	J _A 42	31	28	G ₂₄	G	G	23	20	19	E ₁₆	E ₁₅	E ₁₅	24	
25	E ₁₅	E ₁₅	23	E ₁₁	20	20	G	G	32	43	41	34	33	33	G ₂₅	G ₂₀	G ₁₉	G	E ₁₅	E ₁₅	E ₁₅	E ₁₆	E ₁₆	24	
26	E ₁₇	25	E ₁₄	24	E ₁₄	E ₁₄	G	G	G	J _A 43	36	32	G	32	G	G	G	G	E ₁₅	24	E ₁₆	E ₁₅	E ₁₆	E ₁₅	
27	E ₁₅	18	E ₁₅	E ₁₅	E ₁₅	E ₁₅	20	25	30	30	33	G	27	G ₂₁	G ₂₄	29	28	J _A 24	J _A 23	25	22	E ₁₅	E ₁₅	24	
28	E ₁₅	E ₁₅	22	E ₁₅	E ₁₅	E ₁₅	20	G	G	G	G	G ₂₄	G	G ₂₂	G ₂₀	G	G	G ₁₅	24	24	E ₁₆	E ₁₆	E ₁₅	E ₁₅	
29	E ₁₅	E ₁₅	24	25	E ₁₄	E ₁₅	G	G	G	32	G	G	G	G	G	G	G	G	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E ₁₄	
30	E ₁₅	23	E ₁₅	E ₁₄	E ₁₅	E ₁₅	37	31	32	36	J _A 48	33	33	J _A 41	G ₂₁	G ₂₁	G ₂₃	20	28	26	E ₁₆	E ₁₅	E ₁₅	E ₁₅	
31	24	E ₁₄	22	E ₁₅	20	E ₁₅	24	28	30	42	J _A 47	J _A 44	G	G ₃₀	G ₂₆	J _A 33	32	34	J _A 53	J _A 27	30	24	S	E ₁₅	E ₁₅
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	31	31	31	30	30	29	30	30	29	30	30	30	30	30	31	31	31	31	31	29	29	31	31	
MED	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₆	G	G	32	31	30	E ₂₁	G ₂₂	G ₁₈	G	G ₂₀	20	E ₁₇	E ₁₇	E ₁₆	E ₁₅	E ₁₅	E ₁₅	
UQ	E ₁₆	23	24	23	19	E ₁₆	20	26	30	34	36	34	32	32	G ₂₅	32	28	26	26	24	21	E ₁₆	E ₁₆	23	
LQ	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	G	G	G	G	G	G	G	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	

MAR. 1974

FOES (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

FBES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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 ₁₅	E ₁₆	E ₁₅	E ₁₆	E ₁₅	E ₁₆	E ₁₅	G	G	G	G	G	43	42	18	G	G	25	17	E	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E
2	E ₁₅	E	E ₁₄	E ₁₅	E	E ₁₆	E ₁₅	G	G	G	G	G	G	G	G	G	A A 83	40	34	E ₁₇	A A 102	22	E	E	
3	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₆	G	G	G	G	G	G	G	G	G	G	G	29	30	E ₁₅	E	E ₁₇	E ₁₄	E ₁₅	
4	E ₁₆	E ₁₅	E ₁₃	E ₁₅	E	E ₁₄	24	35	43	28	30	G	G	34	32	28	30	19	32	21	21	E	E	30	
5	E	E	E	E	E	E	E ₁₅	G	G	G	G	G	G	G	G	G	22	G 20	25	E ₁₇	E ₁₆	E ₁₅	E ₁₄	E ₁₅	
6	E	E	E	E	E	E ₁₅	E ₁₅	G	G	C	C	C	C	C	C	C	G 17	25	20	28	E ₁₅	C	E ₁₅	E ₁₅	
7	E ₁₅	E ₁₅	E	E	E ₁₅	E ₁₅	E ₁₄	G	G	G	30	46	31	G	G	G	G	E ₁₆	E ₁₅	E ₁₅	E ₁₆	E ₁₅	E ₁₅	E	
8	E ₁₅	E	E	E	E ₁₃	E ₁₆	E ₁₅	G	G	G	20	27	G	23	24	G	G	G	E ₁₇	E ₁₅	E ₁₆	E ₁₅	E ₁₅	E	
9	27	20	27	17	E	E ₁₆	E ₁₅	G	27	32	30	31	31	22	G	G	G	E ₁₇	19	20	E	19	E ₁₅	E ₁₆	
10	E ₁₆	E	E	E ₁₅	E ₁₅	E ₁₅	C	G	54	58	A A 136	G	25	G	34	30	30	23	E ₂₀	E ₁₅	E ₂₀	E ₁₅	E ₁₅	E ₁₆	
11	21	25	17	20	16	E	20	G	G	G	G	30	G	27	G	23	28	G	26	20	E	19	E	E	
12	S	E	E	E	E	E ₁₅	E ₁₆	G	G	31	30	35	35	27	G	24	G	G	20	E ₁₅	E ₁₅	E ₁₆	E ₁₅	E ₁₅	
13	E ₁₆	E ₁₃	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₆	G	G	G	G	G	G	20	G	25	G	20	21	E	E	E ₁₅	E ₁₅	E ₁₆	
14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	21	G	G	33	G	G	G	18	G	G	E ₁₅	E ₁₇	E ₁₆	E ₁₆	E ₁₅	E ₁₆	
15	E ₁₅	E ₁₃	E ₁₄	E ₁₅	E ₁₅	E ₁₆	E ₁₆	G	G	G	30	27	G	G	G	G	G	24	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
16	E ₁₅	E ₁₅	E ₁₄	E ₁₅	C	C	C	C	C	C	G	G	G	G	G	G	G	G	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
17	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	G	20	G	G	G	G	G	E ₁₇	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
18	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₇	G	G	G	G	G	G	31	30	G	G	G	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
19	E ₁₅	E	E	E	E ₁₅	E ₁₅	E ₁₆	G	G	G	G	G	G	20	G	G	G	G	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
20	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	G	G	G	G	G	G	G	G	G	G	G	28	G	E ₁₅	E	E	E ₁₅	E	
21	E ₁₄	E	E	E ₁₅	E ₁₅	E ₁₅	E ₁₉	G	G	G	G	G	G	31	G	G	G	E ₁₉	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
22	E ₁₅	E ₁₅	E	E ₁₅	E ₁₅	E ₁₅	E ₁₆	G	40	G	30	G	G	G	G	36	35	42	36	E	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
23	E ₁₄	E ₁₅	E ₁₅	E	E	E ₁₆	G	G	G	G	G	31	34	23	30	G	18	25	20	E	C	C	E ₁₅	E ₁₅	
24	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	G	54	36	31	27	G	24	G	G	G	E	E ₁₆	E ₁₅	E ₁₅	E	
25	E ₁₅	E ₁₅	E	E ₁₁	E	E	G	G	G	42	41	G	33	30	G	25	G	18	G	E ₁₅	E ₁₅	E ₁₅	E ₁₆	E ₁₆	
26	E ₁₇	E	E ₁₄	E	E ₁₄	E ₁₄	G	G	G	35	G	32	G	G	G	G	G	14	G	E ₁₅	E	E ₁₆	E ₁₅	E ₁₆	
27	E ₁₅	E	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	29	32	G	G	26	G	23	28	25	21	21	17	E	E ₁₅	E ₁₅	
28	E ₁₅	E ₁₅	E	E ₁₅	E ₁₅	E ₁₅	G	G	G	G	G	G	G	G	G	G	G	G	14	17	E	E ₁₆	E ₁₆	E ₁₅	
29	E ₁₅	E ₁₅	E	E	E ₁₄	E ₁₅	G	G	G	G	G	G	G	G	G	G	G	G	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E ₁₄	
30	E ₁₅	E	E ₁₅	E ₁₄	E ₁₅	E ₁₅	37	G	G	G	45	32	33	38	G	21	G	G	20	21	20	E ₁₆	E ₁₅	E ₁₅	
31	E	E ₁₄	E	E ₁₅	E	E ₁₅	G	G	G	41	45	43	28	G	G	34	29	27	50	27	22	E	S	E ₁₅	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	31	31	31	30	30	29	30	30	29	30	30	30	30	30	31	31	31	31	31	29	29	31	31	
MED	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	G	G	E ₂₀	G	G	G	18	G	18	U 16	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅		
UQ	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₆	G	G	28	30	31	31	G	27	G	21	G	24	22	20	E ₁₆	E ₁₆	E ₁₅	
LQ	E ₁₅	E	E	E	E	E ₁₅	G	G	G	G	G	G	G	G	G	G	G	G	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E	

The Radio Research Laboratories, Japan

MAR. 1974

FBES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

F-MIN (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour/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	E15	E16	E15	E16	E15	E16	E15	E16	14	16	15	16	16	17	11	11	15	E15	E16	E16	E16	E15	E15	E15
2	E15	E16	E14	E15	E15	E16	E15	17	16	15	23	17	21	20	16	15	15	E15	E16	E17	E15	E15	E15	E15
3	E15	E15	E14	E14	E15	E16	E15	16	16	21	25	22	20	20	20	15	16	E15	E15	E15	E16	E17	E14	E15
4	E16	E15	E13	E15	E14	E15	E15	E15	16	16	16	20	16	17	16	11	14	E14	E15	E16	E16	E17	E16	E15
5	E17	E13	E16	E14	E13	E15	E15	15	16	16	20	18	20	20	15	13	14	E15	E17	E16	E15	E14	E15	E15
6	E16	E14	E13	E15	E15	E15	E15	E15	14	C	C	C	C	C	C	11	11	E15	E15	E15	C	E15	E15	E15
7	E15	E15	E15	E15	E15	E15	E14	15	16	15	17	14	14	15	14	17	15	E16	E15	E15	E16	E15	E15	E14
8	E15	E15	E13	E13	E13	E16	E15	15	15	14	15	16	17	17	17	16	14	E17	E15	E16	E15	E15	E15	E15
9	E15	E15	E13	E15	E15	E16	E15	15	15	16	15	16	16	17	16	15	14	E17	E16	E16	E15	E15	E15	E16
10	E16	E15	E15	E15	E15	E15	C	16	16	17	20	20	16	16	17	16	16	E20	E15	E20	E15	E15	E16	E16
11	E15	E15	E15	E	E	E17	E15	15	16	15	17	20	20	20	20	15	15	E15	E15	E15	E15	E15	E15	E15
12	S	E15	E14	E14	E15	E15	E16	16	16	20	20	16	17	17	17	20	16	E15	E15	E15	E16	E15	E	E15
13	E16	E13	E15	E15	E15	E14	E16	15	14	16	16	16	20	15	14	14	11	11	E15	E16	E15	E15	E15	E16
14	E15	E15	E15	E15	E15	E15	E15	15	15	15	15	15	15	17	12	11	15	14	E15	E17	E16	E16	E15	E16
15	E15	E13	E14	E15	E15	E16	E16	15	16	14	14	15	15	14	16	15	13	11	E14	E15	E15	E15	E15	E15
16	E15	E15	E14	E15	C	C	C	C	C	C	C	15	15	15	15	14	14	E16	E15	E15	E15	E15	E15	E15
17	E16	E15	E15	E15	E15	E15	E15	15	13	15	16	15	18	16	16	15	12	E17	E16	E15	E15	E15	E15	E15
18	E16	E16	E15	E15	E15	E15	E17	16	15	15	15	22	16	20	16	15	15	15	E15	E14	E15	E15	E15	E15
19	E15	E15	E15	E15	E15	E15	E16	15	15	16	16	15	15	15	15	15	15	15	E15	E15	E15	E15	E15	E15
20	E15	E15	E15	E15	E14	E15	E15	15	15	15	15	16	15	15	15	14	15	E15	E15	E15	E15	E15	E15	E16
21	E14	E15	E15	E15	E15	E15	E19	15	15	15	14	14	16	15	15	14	15	E19	E15	E15	E15	E15	E15	E15
22	E15	E15	E15	E15	E15	E15	E16	15	11	15	14	15	15	17	15	11	14	E15	E15	E15	E15	E15	E15	E15
23	E14	E15	E15	E15	E15	E16	E15	15	17	15	16	15	15	15	15	17	11	E	E15	E16	C	C	E15	E15
24	E15	E15	E15	E15	E15	E15	E15	15	15	17	15	16	16	21	15	16	16	15	E15	E15	E16	E15	E15	E15
25	E15	E15	E15	E11	E15	E15	E14	15	14	16	16	15	17	16	15	15	11	E16	E15	E15	E15	E16	E16	E16
26	E17	E15	E14	E15	E14	E14	E15	14	15	15	16	17	17	15	19	16	11	15	E15	E15	E16	E15	E16	E15
27	E15	E15	E15	E15	E15	E15	E16	15	15	15	15	16	16	14	11	11	11	11	E15	E15	E16	E15	E15	E15
28	E15	E15	E15	E15	E15	E15	E16	14	14	11	15	16	15	16	15	15	15	11	E15	E15	E16	E16	E15	E15
29	E15	E15	E15	E15	E14	E15	E15	15	16	15	15	17	16	17	15	13	15	15	E15	E14	E15	E15	E14	E14
30	E15	E15	E15	E14	E15	E15	E17	15	15	16	15	15	16	15	15	11	11	11	E15	E15	E16	E15	E15	E15
31	E16	E14	E15	E15	E15	E15	E18	16	15	17	16	20	16	16	16	11	14	15	E15	E15	E16	S	E15	E15
CNT	30	31	31	31	30	30	29	30	30	29	30	30	30	30	30	31	31	31	31	31	29	29	31	31
MED	E15	E15	E15	E15	E15	E15	E15	15	15	15	16	16	16	16	15	15	14	E15	E15	E15	E15	E15	E15	E15
UQ	E16	E15	E15	E15	E15	E16	E16	15	16	16	16	17	17	17	16	15	15	E16	E15	E16	E16	E15	E15	E15
LQ	E15	E15	E14	E15	E15	E15	E15	15	15	15	15	15	15	15	15	12	12	E14	E15	E15	E15	E15	E15	E15

MAR. 1974

F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

M(3000)F2 (0.01)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	285	285	290	315	315	325	325	350	355	335	345	340	330	335	345	355	370	370	350	315	300	305	305	305
2	305	285 ^S	310	F	F	285 ^F	325	355	355	365	355	335	320	355	345	365	I A 360	345	310	335	A	295	295 ^S	295 ^F
3	F	F	290 ^F	285 ^F	F	310 ^F	345	345	355	360	355	350	325	325	345	360	370	345	330	315	325	315	305	280
4	F	F	F	325 ^F	335	305	325	340	360	350	335	340	345	335	355	355	350	365	355	310	315	290	315	290
5	305	305	315	F	325 ^F	335 ^F	330	340	345	340	315	335	335	350	355	365	355	350	335	310	270	300	300	F
6	295 ^F	300 ^F	325	300	300	300	320	335	355	C	C	C	C	C	C	345	375	345	345	315	C	295	295 ^S	290 ^S
7	280	300	300	340 ^S	F	310 ^F	325	310	335	335	330	340	355	335	350	370	370	365	325	315	285	270	F	S
8	U F 290	F	295 ^F	F	F	295	330	350	345	350	335	335	335	340	340	370	355	345	315	340	305	I S 320	295	300
9	295	295	295	295 ^F	F	290 ^F	295	320	345	330	335	355	350	355	350	340	350	335	340	335	280	290	305 ^S	285
10	280	280	280	290	300 ^F	275	C	I S 330	305	325	A	300	310	335	340	355	365	335	325	300	295	300	300	285
11	295	S	295 ^F	F	F	295 ^F	305	255	310	320	315	325	340	330	340	360	345	350	325	295	295	285	290	265
12	S	295	305	320	265 ^F	285	335	345	315	330	335	325	320	345	350	370	355	350	315	305	285	285	I S 290	290
13	I S 310	310	295	315	305	305	340	340	340	365	335	340	335	340	340	340	345	350	330	315	295	290	295	280
14	300	S	300	315	F	290	345	350	350	350	310	340	335	340	335	360	350	350	330	320	305	295	300	S
15	280 ^S	295	280	U F 265	F	285 ^F	325	330	J S 315	U S 340	345	325	320	325	350	350	365	345	340	305	295	295	295	295
16	295	285	300	310	C	C	C	C	C	C	330	330	320	330	335	335	345	340	330	305	325	305	295	295
17	285	270	260 ^S	U F 240	F	250	305	305	330	290	G	260	280	285	320	330	340	325	340	300	310	285	280	290
18	280	315 ^S	310	320	330	305	350	345	340	345	335	340	340	325	335	355	360	345	335	325	320	320	305 ^S	295 ^S
19	295	295	295	300	315	315	350	335	350	335	335	330	330	340	350	345	345	350	335	325	290	C	C	J S 300
20	290	C	S	U S 310	335	295	330	340	350	335	325	320	320	335	340	350	350	345	335	320	300	310	J S 310	300
21	290	285	285 ^S	295	305	295	310	275	310	310	315	325	325	320	320	315	335	345	320	295	U S 275	S	S	265
22	S	315	300	275	U S 285	260	330	315	320	305	320	320	320	320	330	340	330	330	325	305	265	255	265	280
23	280	290	290	290	295	300	320	330	335	345	355	315	330	330	350	340	350	355	315	295	C	C	260	U S 275
24	280	U F 270	275	290	300 ^F	335	340	325	330	335	330	315	325	335	335	335	340	340	340	315	285	290	U S 280	U S 280
25	U S 280	S	295	330	295	285	335	335	345	320	325	320	330	335	335	345	350	355	330	285	280	280	U S 295	315
26	300	285	290	F	290	295	335	350	C	340	345	345	315	320	320	340	355	350	345	300	290	295	S	255 ^F
27	275	285	300	325	310 ^F	300	325	325	330	330	330	330	335	345	335	350	340	340	335	315	285	290	285	285
28	280	305	325	315	290	305	345	335	345	335	340	330	335	335	345	350	340	335	335	330	295	300	285	270
29	290	280	305	345	360	305	350	345	340	340	335	330	320	330	340	335	345	355	345	320	310	295	290	U S 280
30	275	300	300	365	250	300	335	320	320	310	305	315	320	320	340	345	355	340	335	320	315	295	275 ^S	S
31	S	U S 295	S	300 ^S	320	345	350	340	320	290	310	320	300	320	335	335	325	345	310	295	290	S	U S 285	300
CNT	26	26	29	26	21	30	29	30	29	29	29	30	30	30	30	31	31	31	31	31	28	27	27	27
MED	290	295	295	310	305	300	330	335	340	335	335	330	328	335	340	350	350	345	335	315	295	295	295	290
UQ	295	305	300	320	320	305	340	345	350	345	335	340	335	340	350	358	358	350	340	320	308	300	300	295
LQ	280	285	290	290	295	290	325	325	320	325	320	320	320	325	335	340	345	340	325	302	285	290	285	280

MAR. 1974

M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1974

M(3000)F1 (0.01)

135 E Mean Time (G. M. T. + 9h)

Station **WAKKANAI** Lat. **45 23.6 N.** Long. **141 41.1 E** Sweep **1 MHz** to **20 MHz** in **20 sec** in **automatic operation**

Hour 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											395	390	A	A	L										
2											390	370	375	400											
3											L		410		365										
4								A		400	385		L	400	L										
5													385	385	395										
6										C	C	C	C	C	C	L									
7										L	390	A	390	390											
8										385		U 390	U 395	385	L	U 385									
9								U 370		395	U 365	U 370	390	400	390	370									
10									A	A	405	U 370	U 385	390	U 395										
11									L	370	U 380	385	385	U 370	385										
12									385	385	400	U 375	U 380	400											
13											390	395	395	410	L										
14									U 410		380	385	U 390	U 395	400										
15									355	415	415		385		L	L									
16									C	C		U 385		L											
17										340	350	375	395	355	350	365									
18											L	L		U 375	L										
19											U 385	L	385	385	365	L									
20										380	370	380	375	380	U 400	375									
21										365	360	385	365	U 365	U 350										
22										355	360	380	385	390	370	400									
23										365	405	385	385	U 385	L										
24										380	A	395	L	U 395	L	L									
25									A	A	L		385	395	U 385	L									
26										375	L	400	370	375	375	355	375								
27										365	375	400	380	370	380	380									
28										390	U 370	375	395	385	375										
29										365	400	385		L	370	380	375								
30										355	335	A	380	390	I A 360	355	385								
31										A	A	A		355	355	355	370	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT									6	14	18	22	24	26	20	11									
MED									360	378	390	385	385	385	380	375									
UQ									370	385	400	390	390	390	395	385									
LQ									355	365	370	380	375	375	360	372									

MAR. 1974

M(3000)F1 (0.01)

IONOSPHERIC DATA

MAR. 1974

H^oF₂ (KM)

135 E Mean Time (G. M. T. + 9h)

Station **WAKKANAI** Lat. **45 23.6 N.** Long. **141 41.1 E** Sweep **1** MHz to **20** MHz in **20** sec in automatio operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											250	275	270	260	240									
2											245	260	270	245										
3											250		255		260									
4								240			255	245	250	250	245									
5													250	245	245									
6										C	C	C	C	C	C	250								
7										255	260	260	250	250										
8									240		250	250	250	250	240									
9								245		255	240	250	250	255	250									
10									255	A	260	275	250	245	240									
11									265	275	260	260	275	260	250									
12									250	245	265	275	250	245										
13											260	260	250	250	245									
14									245		250	250	260	245	245									
15								275	230	230		275		245	235									
16								C	C		255		250											
17									380	G	450	395	375	300	275									
18										250	255		265	250										
19										255	255	260	250	250	230									
20									250	265	260	250	260	260	250									
21									300	280	250	280	265	265										
22								295	305	285	265	275	270	250										
23									260	250	280	260	250	250										
24									265	260	260	260	250	260	245									
25									270	265	270	250	245	250	245									
26								235	260	260	255	280	265	265	250									
27								250	260	250	265	260	260	265										
28								260	260	260	260	270	250											
29								250	250	260	280	265	260	260										
30								270	300	300	280	275	275	265	250									
31								360	295	285	300	270	260	255	265									
Hour 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
CNT									7	20	24	27	28	28	27	17	1							
MED									250	260	258	260	260	255	250	250	265							
UQ									272	285	270	265	275	265	260	250								
LQ									242	250	250	255	250	250	248	245								

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H^oF₂ (KM)

IONOSPHERIC DATA

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H^oF (KM)

135 E Mean Time (G. M. T. + 9^h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	295	295	275	250	240	245	215	215	230	215	220	205	A	A	220	230	215	210	205	250	260	280	290	280
2	270	290	255	245	225	300	210	215	225	230	210	215	240	200	210	220	A	240	275	225	A	280	275	280
3	275	260	300	280	250	240	220	200	220	215	215	210	205	225	230	230	225	220	245	210	230	250	255	280
4	300	295	275	240	225	270	250	220	A	210	200	215	215	210	225	235	240	205	225	250	245	290	250	325
5	250	250	230	250	220	215	220	210	210	190 ^H	225	200 ^H	210	235	205	215	220	210	210	230	280	265	265	260
6	295	260	225	255	265	270	220	225	215	C	C	C	C	C	C	215	215	215	230	260	C	275	285	275
7	285	240	250	215	210	250	220	225	225	215	210	A	215	215	200	220	225	210	210	240	275	300	300	280
8	275	270	280	250	215	285	220	210	225	225	210	230	215	215	210	210	215	225	235	200	255	240	290	265
9	300 ^A	295	295	260	220	250	250	225	210	205	200	215	230	210	215	210	230	245	215	215	250	265	260	280
10	290	280	295	260	250	335	C	225	A	A	A	210	185	225	225	215	225	220	215	250	250	230	255	265
11	300	300	260	260	240	260	250	220	225	205	215	225	220	215	205	225	235	225	225	240	260	300	285	315
12	S	250	260	220	320	275	245	220	220	225	210	200	215	210	215	225	220	235	205	240	260	290	260	265
13	260	250	250	250	250	270	225	220	205	220	200	195	200	205	210	210	220	215	215	220	275	250	270	290
14	280	290	255	225	220	265	225	230	220	205	205	205	205	200	200	210	220	220	215	220	215	280	260	280
15	300	275	305	310	315	295	250	245	210	215	210	200	225	240	225	205	225	215	210	220	250	275	290	275
16	275	265	255	240	C	C	C	C	C	C	215	210	220	205	225	220	225	215	220	215	220	240	255	250
17	295	310	310	350	360	350	275	225	255	245	250	200	210	215	215	220	220	240	225	245	250	275	300	295
18	300	290	250	240	215	250	220	200	225	225	220	200	195	200	225	225	225	220	210	230	230	230	250	250
19	260	270	275	255	245	215	210	215	205	220	205	225	215	205	205	215	230	225	210	205	240	250	260	260
20	265	255	245	245	220	230	220	215	225	210	210	205	200	220	210	220	240	240	215	205	245	245	270	270
21	270	285	290	255	245	250	215	210	210	230	230	225	215	220	235	225	240	215	210	240	285	305	325	315
22	295	240	250	335	285	325	225	245	250 ^A	230	210	240	210	240	225	250	250	240 ^A	230	235	300	300	300	275
23	270	255	255	260	255	250	240	225	205	210	205	210	240	210	215	225	230	230	225	240	C	C	300	300
24	280	290	300	285	245	210	220	220	215	220	A	210	190	200	205	225	235	220	210	215	250	275	305	280
25	285	230	250	230	300	275	225	220	225	A	A	210	225	205	220	215	220	225	220	245	250	275	260	245
26	250	265	260	265	250	270	250	225	210	240	205	215	205	200	200	200	225	225	215	245	260	250	270	325
27	300	280	250	230	240	260	240	230	215	200	215	205	200	205	215	225	230	235	225	220	260	255	280	290
28	290	250	215	215	255	250	225	225	215	220	215	205	200	215	205	235	235	245	210	205	240	260	300	310
29	295	300	250	215	195	250	220	230	225	220	220	210	200	200	245	230	240	225	220	220	260	245	270	270
30	300	250	250	205	390	300	265 ^A	250	240	250	A	205	210	220 ^I	240	220	225	230	220	225	225	255	300	290
31	300	265	270	245	225	220	240	235	215	A	A	A	195	240	250	225	230	A	250	250	260	S	280	275
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	30	30	29	30	28	26	25	28	29	29	30	31	30	30	31	31	28	29	31	31
MED	288	270	255	250	245	260	225	222	220	220	210	210	210	210	215	220	225	225	215	230	250	265	275	280
UQ	300	290	278	260	255	275	245	225	225	225	215	215	215	220	225	225	235	235	225	242	260	280	295	290
LQ	270	252	250	235	220	250	220	215	210	210	205	205	200	205	205	215	220	215	210	218	242	250	260	268

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H'E (KM)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							S	S	110	110	110	110	105	110	110	115	A	S							
2							S	150	115	110	115	110	110	110	110	110	110	S							
3							S	145	110	110	115	110	110	115	115	115	120	S							
4							S	S	110	A	A	115	110	A	A	A	A	S							
5							S	120	110	110	110	105	110	115	110	115	120	S							
6							S	E S 145	110	C	C	C	C	C	C	110	A	S							
7							S	120	110	110	A	A	A	110	110	110	110	S							
8							S	125	120	110	115	125	115	115	110	110	115	S							
9							S	120	A	A	A	A	A	110	110	110	115	S							
10							C	115	110	A	A	110	105	A	A	A	A	S							
11							S	125	110	110	115	I A 115	125	110	115	A	115	A							
12							S	110	110	A	A	A	A	115	115	110	110	A							
13							S	115	110	105	105	105	115	110	115	115	120	A							
14							S	115	115	110	110	A	110	110	110	110	110	125	S						
15							S	115	110	105	I A 110	120	105	110	105	110	110	110	S						
16							C	C	C	C	105	105	105	105	105	105	110	S	S						
17							S	110	105	105	105	110	105	105	105	105	110	S	S						
18							S	110	110	105	105	110	105	A	A	110	110	125	S						
19							S	115	105	105	105	105	110	105	105	110	110	140	S						
20							S	110	105	105	105	105	105	105	105	105	A	S	S						
21							S	115	110	105	105	105	105	A	105	105	110	S	S						
22							S	115	105	105	A	110	105	105	105	A	A	125	S						
23							S	110	105	105	105	A	A	110	A	110	120	A	S						
24							S	110	105	105	105	A	A	120	110	105	110	125	S						
25							S	110	105	105	105	105	A	A	110	110	110	155	S						
26							S	110	105	105	105	A	110	105	105	110	110	125	S						
27							S	110	110	A	A	105	115	115	115	A	A	A	S						
28							S	110	105	105	105	115	110	110	110	105	110	135	S						
29							S	110	105	105	105	105	105	105	105	110	110	125	S						
30							S	110	105	105	105	A	A	A	110	110	120	A	S						
31							S	110	105	105	105	A	110	110	A	A	A	A	S						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							28	29	24	23	21	23	24	25	25	23	10								
MED							114	110	105	105	110	110	110	110	110	110	125								
UQ							119	110	110	110	110	110	112	110	110	115	135								
LQ							110	105	105	105	105	105	105	105	105	110	125								

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H'E (KM)

IONOSPHERIC DATA

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H^oES (KM)

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	S	S	S	S	145	G	G	120	110	110	110	100	125	100	100	100	S	S	S	S	110
2	S	120	S	S	100	S	S	G	G	140	125	140	G	G	G	G	110	110	110	S	105	105	110	130
3	S	S	S	S	S	S	140	145	G	145	115	125	125	G	G	120	125	115	110	S	105	S	S	S
4	S	S	S	S	E	S	120	110	110	110	110	G	G	105	100	100	100	100	105	105	105	110	105	105
5	100	100	100	100	100	100	S	G	G	G	G	G	G	G	G	100	100	100	S	S	S	S	100	S
6	100	100	100	100	100	S	S	G	G	C	C	C	C	C	C	100	100	100	100	S	C	S	S	S
7	S	S	100	100	S	S	S	G	G	G	105	100	100	G	100	G	G	S	S	S	S	S	S	100
8	S	100	100	100	S	S	S	G	135	G	105	100	100	100	G	G	G	S	S	S	S	S	100	100
9	100	100	100	100	100	S	S	125	110	105	105	100	100	100	G	G	G	S	100	100	100	100	S	S
10	S	100	100	S	S	S	C	115	110	105	100	100	G	100	100	100	100	S	S	S	S	S	S	S
11	100	100	100	100	100	100	100	125	115	115	G	105	105	G	100	100	100	100	100	100	105	105	100	105
12	S	100	100	100	100	S	S	G	G	100	100	100	100	100	100	G	100	100	S	S	S	S	E	S
13	S	S	S	S	S	S	S	G	G	G	G	G	G	100	100	100	100	100	100	100	S	S	S	S
14	S	S	S	S	S	S	G	150	105	G	G	100	G	G	100	100	G	G	S	S	S	S	S	S
15	S	S	S	S	S	S	S	G	G	G	105	100	G	100	G	125	120	115	S	S	S	S	S	S
16	S	S	S	S	C	C	C	C	C	C	G	G	G	G	G	G	150	S	S	S	S	S	S	S
17	S	S	S	S	S	S	S	G	G	G	G	100	G	G	G	G	G	S	S	S	S	S	S	S
18	S	S	S	S	S	S	S	G	G	G	G	G	G	105	105	G	G	G	S	S	S	S	S	S
19	S	100	100	100	S	S	S	G	G	G	G	G	105	G	G	G	G	G	S	S	S	S	S	S
20	S	S	S	S	S	S	G	150	G	G	G	G	G	G	G	G	105	G	S	100	100	S	100	110
21	S	100	100	S	S	S	S	G	G	115	115	110	105	105	G	G	G	S	S	S	S	S	S	S
22	S	S	105	S	S	S	S	115	105	110	105	G	G	G	G	110	125	115	110	100	S	S	S	S
23	S	S	S	100	100	S	150	G	G	110	G	105	100	100	100	G	100	100	100	C	C	S	S	
24	S	S	S	S	S	S	G	G	G	115	105	105	105	100	100	G	G	150	120	115	S	S	S	105
25	S	S	100	S	100	100	G	G	120	110	110	110	105	100	105	100	100	G	S	S	S	S	S	100
26	S	105	S	100	S	S	G	G	G	110	115	105	G	120	G	G	100	G	S	100	S	S	S	S
27	S	110	S	S	S	S	155	150	115	105	105	G	100	100	100	100	100	100	100	100	100	S	S	105
28	S	S	100	S	S	S	150	G	G	G	G	100	G	100	100	G	G	100	100	100	S	S	S	S
29	S	S	100	100	S	S	G	G	G	110	G	G	G	G	G	G	G	G	S	S	S	S	S	S
30	S	105	S	S	S	S	125	125	120	115	105	105	105	100	100	100	100	100	100	100	S	S	S	S
31	105	S	100	S	100	S	145	130	120	110	105	105	100	100	100	100	100	110	100	100	100	S	S	S
CNT	5	13	15	11	9	3	8	12	11	17	18	20	15	18	16	15	19	18	15	13	8	4	6	10
MED	100	100	100	100	100	100	142	128	115	110	105	105	105	100	100	100	100	100	100	100	102	105	100	105
UQ	100	105	100	100	100	100	150	148	120	115	115	108	105	105	100	105	102	115	108	100	105	108	105	110
LQ	100	100	100	100	100	100	122	120	110	110	105	100	100	100	100	100	100	100	100	100	100	102	100	100

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H^oES (KM)

IONOSPHERIC DATA

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TYPES OF ES

135 E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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								H1			C1	CL1	CL2	C2	L1	CL1	L2	L2	F1					F2	
2		F1			F1				H1	C1	H1						CL3	CL2	FF2		F2	F2	F2	F2	
3							C1	C1	H1	C1	C1		C1			C1	C1	C1	F2		F1				
4							C2	C2	C2	L1	L1			L2	L2	L2	L2	L1	F2	FF2	F1	F1	F1	F1	
5	F1	F1	F1	F1	F1	F1									L1	L1	L2							F1	
6	F2	F3	F1	F2	F1										L1	L2	L2	F2							
7			F1	F1							L2	L2	L1		L1									F1	
8		F1	F1	F1					H1		L1	L1	L1	L1									F1	F1	
9	F1	F3	F3	F2	F1			C1	L1	L2	L2	L1	L1	L1				F1	F2	F1	F1				
10		F1	F1					C1	C2	L3	L4	L1		L2	L2	L2	L1								
11	F2	F3	F2	F2	F3	F1	L1	C1	C1	C1		L1	L1	L1	L1	L1	L1	F1	F1	F2	F2	F1	F1		
12		F1	F1	F1	F1					L1	L1	L2	L3	L1	L1		L1	L1							
13														L1	L1	L1	L1	L1	F1	F1					
14								H1	L1			L2			L1	L1									
15											L1	L1		L1		C1	C1	C3							
16																		H1							
17												L1													
18													L1	L1											
19		F1	F1	F1									L1												
20								H1									L2		F1	F1		F1	F1		
21		F1	F1						C1	C1	C1	C1	L1												
22			F1					C2	C2	C1	L1					CL2	CL3	C2	C2	F1					
23			F1	F1			H1		C1	C1	L1	L1	L2	L2	L2		L1	L2	L2	F1					
24									C1	C3	L1	L1	L1	L1			H1	C1	F1					F1	
25			F2		F1	F1			C1	C1	C2	C1	L2	L1	L1	L1	L1							F1	
26		F2		F1					C2	C1	L1		C1				L1		F1						
27		F1					H1	H1	C1	L1	L2		L1	L1	L1	L1	L2	L3	L2	F1	F1			F1	
28			F1				H1					L1		L1	L1			L1	L1	F1					
29			F1	F1					C1										L1	L1	F1				
30		F1							C2	C2	C1	C2	L2	L2	L2	L1	L1	L1	L2	F2					
31	F1		F1		F1		H1	H1	C2	C2	C2	L2	L1	L1	L2	L1	L1	CL3	L1	F1	F1				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

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TYPES OF ES

IONOSPHERIC DATA

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FXI (0.1 MHZ)

135° E Mean Time (G. M. T. + 9h)

Station **AKITA** Lat. **39° 43.5' N.** Long. **140° 08.2' E** Sweep **1 MHz to 20 MHz** in **20 sec** in automatic operation

Hour 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	X 34	X 41	X 40	X 41	X 42	X 37													X 58	X 37	X 40	X 41	X 42	X 41
2	X 39	X 42	X 47	X 45	X 44	X 36													X 58	X 51	X 41	X 39	X 41	X 43
3	45	45	43	45	40	X 36													I A 60	I R 54	X 50	X 46	X 41	X 42
4	42	40	40	X 42	X 40	X 32													X 52	A	A	A	46	52
5	52	52	53	48	49	39													X 54	X 49	X 47	X 48	X 49	X 53
6	X 50	55	X 50	X 42	X 41	X 41													X 51	X 40	X 44	X 44	X 46	X 46
7	X 45	52	X 51	X 46	X 48	X 41													X 48	X 39	X 36	X 36	X 40	X 40
8	X 40	43	48	46	45	42	52												O R 68	X 75	X 47	X 52	51	X 52
9	51	50	X 47	52	45	X 40													X 81	X 65	X 42	X 38	X 42	X 45
10	X 45	X 44	X 43	X 44	X 38	X 35													X 61	X 56	X 56	X 58	X 51	X 48
11	X 48	46	49	46	X 43	X 32													X 50	X 46	X 44	X 47	X 46	
12	46	X 45	X 41	X 40	X 32	X 36													X 52	X 52	X 47	X 48	X 48	
13	X 48	X 50	X 42	X 42	X 40	X 40													X 50	X 42	X 46	X 45	X 45	
14	X 45	X 47	X 45	X 42	X 39	X 38													X 55	X 54	X 47	X 45	X 46	
15	X 48	X 49	46	42	41	41													X 52	X 52	X 50	X 51	X 52	
16	50	52	X 52	X 54	X 45	X 37													X 63	X 58	X 48	X 48	X 48	X 48
17	X 47	X 46	X 48	X 42	X 45	X 37													X 50	X 47	X 47	X 48	X 48	
18	X 49	X 52	X 53	X 53	X 44	X 36													X 62	X 58	X 55	X 52	X 52	
19	X 51	X 50	X 49	X 48	X 49	X 42													X 56	X 51	X 51	X 52	X 52	
20	X 52	X 53	X 51	X 50	X 48	X 42													X 56	X 48	X 48	X 48	X 46	
21	X 47	X 48	X 46	X 47	X 43	43													X 48	X 47	X 48	X 46	X 45	
22	X 46	X 50	X 41	39	X 38	X 36													X 58	X 53	X 52	X 54	X 55	
23	X 52	X 51	X 51	X 49	X 48	48													I A 56	I A 55	I A 52	X 51	X 50	
24	50	48	46	47	48	X 44													X 61	X 59	X 56	X 58	X 58	
25	57	61	X 58	X 47	X 42	X 44													X 55	X 60	X 55	X 58	X 59	
26	X 58	X 53	X 52	X 48	X 49	X 46													X 50	X 48	X 48	X 50	X 49	
27	50	X 49	X 51	X 41	X 30	X 34													X 70	X 46	X 48	X 46	X 46	
28	X 46	X 46	X 52	X 34	X 32	X 36													X 62	X 45	X 43	X 42	X 42	
29	X 42	X 42	X 46	X 47	X 27	X 28													X 68	X 46	X 49	X 48	X 48	
30	X 46	X 48	X 48	X 47	X 27	X 31													O R 62	X 53	X 46	X 47	X 47	
31	48	48	48	48	X 44	38													X 68	X 53	X 56	X 52	X 51	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	1												10	30	30	30	31	31
MED	X 48	X 48	X 48	X 46	X 43	X 38	52												X 58	X 56	X 48	X 48	X 48	X 48
UQ	X 50	X 52	X 51	X 48	X 45	X 42													X 61	X 62	X 53	X 52	X 51	X 52
LQ	X 45	X 46	X 46	X 42	X 40	X 36													X 52	X 50	X 46	X 46	X 46	X 46

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FXI (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF2 (0.1 MHZ)

135° E Mean Time (G. M. T. + 9^h)

Station AKITA Lat. 39° 43' 5" N Long. 140° 08' 2" E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	34	35	34	35	36	31	37	54	69	69	68	79	89	94	96	82	64	60	52	31	34	F	36	35		
2	33	36	F	38	39	38	30	36	51	58	67	69	73	92	96	78	72	66	59	52	45	35	33	35	F	
3	F	F	F	F	F	32	30	39	56	64	72	79	69	69	74	72	80	70	69	I A	I R	44	40	35	F	
4	F	F	F	36	34	26	36	74	72	68	71	82	87	74	72	70	72	67	46	A	A	A	39	F		
5	F	F	F	F	F	F	31	36	54	62	65	72	76	85	82	78	74	65	54	48	43	41	42	43	F	
6	44	F	44	36	38	35	45	58	79	67	75	81	89	89	79	72	71	I R	60	45	34	38	38	40	40	
7	39	F	44	45	40	42	35	45	57	82	96	98	100	102	99	80	75	62	53	42	32	30	30	33	34	
8	33	F	F	F	F	F	F	53	60	75	89	94	97	92	79	80	67	62	62	69	41	46	F	46		
9	F	F	41	F	F	34	42	69	78	75	86	99	93	88	79	79	82	75	75	59	36	32	36	39		
10	39	38	37	38	32	29	40	72	80	89	99	94	96	120	99	91	66	62	55	50	50	52	45	41		
11	42	F	F	F	37	26	37	57	59	72	84	97	97	87	79	80	72	68	57	44	40	38	41	40		
12	F	39	35	34	26	30	44	72	67	81	89	88	76	105	94	77	68	61	57	46	46	41	42	41		
13	42	44	36	36	34	34	46	68	V	78	86	82	83	82	83	80	78	71	55	44	36	40	39	39		
14	39	41	39	36	33	32	48	70	79	86	72	85	92	88	80	79	69	68	61	49	48	41	39	40		
15	42	43	F	F	F	F	49	62	88	101	74	78	84	93	98	79	76	72	62	46	46	44	45	F		
16	F	F	46	48	39	31	48	64	68	82	82	80	92	94	88	85	81	81	65	57	52	42	42	42		
17	41	40	42	36	39	31	H	H	46	59	60	69	70	66	64	63	60	62	57	44	41	41	42	42		
18	43	46	47	47	38	30	48	64	65	72	86	83	84	90	87	82	77	74	64	56	52	49	46	46		
19	45	44	43	42	43	36	50	68	69	71	75	86	89	89	84	70	68	67	62	50	45	45	46	46		
20	46	47	45	44	42	36	52	68	68	79	84	89	89	86	82	82	72	68	66	50	42	42	42	40		
21	41	42	40	41	37	F	48	49	65	79	78	98	91	89	97	86	82	81	60	42	41	42	40	39		
22	40	44	35	F	31	30	I R	I R	79	69	91	109	92	83	90	87	85	87	87	52	47	46	48	49		
23	46	45	45	43	42	F	54	79	68	77	80	91	104	101	88	85	79	78	67	I A	I A	I A	45	F		
24	F	F	F	F	F	38	46	58	74	90	91	86	89	100	83	87	82	74	66	55	53	50	52	52		
25	F	F	52	41	36	38	53	64	75	83	92	I R	108	114	110	92	93	I C	84	76	63	49	54	49	52	53
26	52	47	46	42	43	40	54	60	77	76	78	75	83	95	90	94	80	68	63	44	42	42	44	43		
27	F	43	45	35	24	28	43	60	81	77	96	96	99	97	79	72	67	69	73	63	40	42	40	40		
28	40	40	46	28	26	30	52	64	69	72	80	90	84	77	80	75	71	66	73	56	38	37	36	36		
29	36	36	40	41	21	22	44	64	74	78	78	77	75	90	95	84	81	79	78	62	40	43	42	42		
30	40	42	42	41	H	25	57	71	72	82	88	101	110	96	102	95	76	62	70	I R	47	39	41	F		
31	F	F	F	F	F	F	42	I A	54	64	89	92	102	108	98	84	65	68	64	62	47	F	F	45		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	26	24	25	27	26	28	30	31	31	31	31	31	31	31	31	31	31	31	31	30	30	29	30	26		
MED	40	42	42	40	36	31	46	63	69	76	82	86	89	90	83	80	72	68	62	50	42	42	42	41		
UQ	44	44	45	42	39	34	50	68	78	82	89	95	96	96	93	85	80	74	66	56	47	45	45	45		
LQ	39	39	38	36	32	30	40	56	65	70	75	80	84	86	79	75	67	62	55	44	40	39	39	39		

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FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF1 (0.01 MHz)

135° E Mean Time (G. M. T. + 9^h)

Station	AKITA							Lat. 39° 43' 5" N	Long. 140° 08' 2" E	Sweep 1	MHz to 20	MHz in 20	sec	in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	450	L	430	U L	L	L							
2										410	420	430	450	430	420	380	L							
3									L	L	440	L	430	L	410	L	L							
4								L	A	A	420	420	420	420	L	L	L							
5										H	300	400	430	450	460	450	420	390	L					
6									L	L	L	L	450	460	430	410	380	L	L					
7								L	L	420	420	420	420	430	L	L	L							
8									L	430	450	L	450	450	U L	L	L							
9								L	L	L	400	450	450	H	460	450	L	L	L					
10									L	500	450	460	470	L	I A	L	A							
11									U L	390	430	H	H	460	H	440	410	L	A					
12									L	460	480	L	470	450	420	400	L	L						
13									U L	390	440	H	430	450	H	440	430	L	L					
14								L	L	L	440	500	H	H	470	450	430	400	L					
15									U L	410	L	430	450	L	460	450	L	A						
16								L	L	L	450	520	H	H	480	460	450	450	U L					
17								L	380	450	460	L	460	440	440	410	360	L						
18									L	460	460	480	470	H	450	410	L	L						
19								L	450	L	H	H	470	460	450	430	400	L	L					
20								L	440	450	460	H	450	450	450	420	H	350	L					
21									410	L	L	450	460	A	L	400	L	L						
22									L	L	450	450	A	A	L	U L	L							
23								L	U L	370	L	460	480	A	A	L	L	A						
24								L	L	420	L	440	L	I A	430	L	A	A						
25								L	L	L	460	460	460	450	440	400	C							
26								L	H	I A	400	420	430	440	H	450	420	L	L					
27								L	L	L	430	L	450	L	440	420	400	L	L					
28								L	U L	400	L	420	430	430	430	420	L	L						
29								L	L	430	440	450	440	450	430	L	L	L						
30									A	L	A	L	A	430	440	L	L							
31								A	A	A	L	A	A	A	430	400	L	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										9	16	24	25	23	25	25	16	3						
MED									U L	390	430	450	450	460	450	430	400	360						
UQ									U L	400	445	460	460	460	450	440	410	365						
LQ									U L	380	420	430	440	450	430	420	400	355						

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FOF1 (0.01 MHz)

IONOSPHERIC DATA

MAR. 1974

FOE (0.01 MHZ)

135° E Mean Time (G. M. T. + 9^h)

Station	AKITA				Lat.	39 43' 5" N							Long.	140 08' 2" E							Sweep	1	MHz to	20	MHz in	20	sec	in automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
1							S	180	240	275	290	300	310	305	I A	290	270	A	A													
2							S	205	255	275	285	300	310	300	280	260	A	A														
3							S	B	245	270	285	I B	300	310	R	R	R	280	250	A												
4							B	205	250	270	A	A	R	A	A	265	A	B														
5							S	195	240	I A	270	295	310	315	315	305	290	250	B													
6							B	215	255	275	I A	290	305	315	315	300	285	255	A													
7							S	210	250	I R	270	A	A	310	I A	305	290	275	A	A												
8							S	200	255	275	295	310	I A	315	305	I A	I A	280	245	A												
9							S	205	250	A	A	A	310	A	A	A	A	A	A													
10							S	205	A	A	A	A	A	A	A	A	A	A	A													
11							S	210	255	I A	275	I A	295	305	315	310	A	A	A	A	S											
12							S	205	I A	250	280	I R	295	A	A	315	310	290	265	205	S											
13							S	215	265	280	295	310	I R	315	315	315	300	I A	A	S												
14							B	220	265	290	300	310	325	320	310	295	265	195	S													
15							B	220	260	I A	285	305	315	320	I A	320	310	295	260	A	S											
16							B	230	260	280	295	310	320	330	315	295	A	A	S													
17							S	220	260	290	295	310	325	315	305	290	240	I A	S													
18							B	215	260	285	300	315	325	I A	325	315	300	265	205	S												
19								165	220	265	285	300	320	325	325	320	300	265	215	S												
20							B	220	270	285	305	315	325	330	320	I A	300	265	210	B												
21							B	230	265	285	305	310	320	A	A	A	245	185	S													
22							B	205	245	285	295	310	A	A	315	295	255	195	S													
23							A	225	270	I A	285	I A	300	A	A	A	A	205	S													
24							B	220	265	I A	280	A	A	A	A	A	A	A	A	S												
25							B	230	265	285	295	305	A	A	310	A	C	A	S													
26								170	225	265	285	295	A	A	A	I A	I A	255	205	S												
27							A	235	260	A	A	A	A	A	A	285	I A	I A	S													
28							A	235	260	I A	280	I A	290	310	R	315	315	295	270	250	180	S										
29							S	225	260	280	295	I A	305	320	I A	315	305	295	255	205	S											
30							S	230	270	285	300	A	A	A	A	A	285	245	195	S												
31							B	230	270	295	A	A	A	A	A	A	280	240	A	S												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
CNT							2	30	30	28	24	20	20	19	21	24	20	14														
MED							168	220	260	280	295	310	315	315	305	288	255	205														
UQ							225	265	285	300	310	322	320	315	295	262	205															
LQ							205	250	275	295	305	312	310	300	280	248	195															

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FOE (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9^h)

Station	AKITA																								Lat.	39 43' 5" N		Long.	140 08' 2" E		Sweep	1 MHz to 20 MHz		in 20 sec		in automatic operation	
Hour 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 S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 16	23	27	36	36	35	34	35	30	J G 19	J A 29	28	J A 30	J A 24	E S 14	E S 14	E S 14	E S 14													
2	E S 14	M 19	J A 21	M 22	E S 14	E S 14	E S 15	24	30	33	34	42	J A 43	37	40	J A 45	27	J A 38	E S 14	E B 17	E S 14	E S 14	E S 14	M 21													
3	E S 14	E S 14	E S 14	E S 14	J A 26	E S 14	J A 22	25	33	36	36	38	G	G	33	37	G	31	J A 52	J A 67	J A 45	J A 41	E S 14	E S 14													
4	E S 14	M 20	J A 19	J A 16	E S 14	E S 14	E B 18	G	J A 49	J A 52	J A 41	33	G	J A 37	J A 30	G	J A 31	J A 40	J A 38	J A 44	J A 59	J A 49	J A 36	J A 31													
5	J A 59	J A 39	J A 44	J A 39	J A 27	J A 20	E S 14	G	G	G	G	G	G	G	G	G	G	E B 20	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14													
6	J A 25	J A 27	J A 29	J A 23	E S 14	E S 14	E S 14	G	G	G	J A 36	G	G	J G 28	G	G	G	J A 24	M 24	E B 18	E B 17	E S 14	E S 14	J A 20													
7	M 22	J A 18	J A 19	M 22	E S 14	E S 14	E S 14	G	G	G	J A 36	J A 39	J A 37	J A 42	32	30	J A 33	J A 24	J A 26	J A 20	J A 19	M 20	E S 14	E S 14													
8	E S 14	E S 14	E S 14	J A 17	E S 14	E S 14	E S 14	23	28	32	32	G	36	G	J A 30	29	G	22	J A 22	J A 25	E B 17	E S 14	E S 14	J A 24													
9	J A 54	J A 29	J A 20	J A 17	J A 17	J A 18	E S 15	23	34	J A 38	J A 31	J A 38	G	J A 46	J A 36	J A 33	J A 29	22	J A 38	J A 33	J A 30	J A 25	J A 21	M 21													
10	J A 20	J A 40	J A 48	J A 18	J A 20	M 18	E S 15	33	39	J A 44	J A 48	J A 43	J A 45	J A 34	J A 45	J A 34	J A 43	J A 29	J A 26	J A 46	J A 87	J A 38	E B 18	J A 25													
11	J A 23	M 20	E S 14	E S 14	J A 18	J A 25	E S 16	G	G	J A 90	J A 36	G	G	G	J A 46	J A 33	J A 38	J A 29	J A 28	J A 27	J A 36	J A 28	J A 29	J A 19													
12	J A 27	J A 23	M 22	E S 14	E S 14	E S 14	E S 15	G	27	27	27	J A 43	J A 43	J A 41	J G 26	J G 26	J G 24	G	E S 16	E S 14	E S 14	E S 14	E S 14	E B 18													
13	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 15	26	G	G	G	37	G	G	21	35	35	J A 33	J A 23	E S 14	E S 14	E S 14	E S 14	E S 14													
14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E B 18	G	G	33	G	G	G	G	G	G	28	G	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14													
15	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E B 18	25	33	32	G	G	G	36	35	38	37	J A 34	J A 25	E S 14	E S 14	E S 14	E S 14	E S 14													
16	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E B 18	25	28	32	G	G	G	36	G	36	28	J A 43	E S 15	E S 14	E S 14	E S 14	E S 14	E S 14													
17	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	G	30	36	39	41	42	34	36	32	29	20	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14													
18	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E B 18	27	31	G	35	G	G	J A 42	35	G	G	G	E S 14	E S 14	J A 20	E S 14	E S 14	E S 14													
19	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	G	G	G	32	32	35	37	22	G	G	G	G	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14													
20	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E B 18	25	G	31	G	33	G	G	G	J A 33	G	24	E B 16	E S 14	J A 18	E S 14	M 21	E S 14													
21	E S 14	E S 14	E S 14	M 19	E S 14	E S 14	E B 18	G	32	36	39	36	42	J A 63	J A 61	J A 40	27	G	E S 14	E S 14	J A 19	M 21	M 22	E S 14													
22	E S 14	E S 14	M 20	E S 14	E S 14	E S 14	E B 17	26	38	33	J A 42	45	J A 56	J A 94	G	G	29	29	J A 22	J A 22	E S 14	E S 14	E S 14	E S 14													
23	E S 14	J A 28	M 18	E S 14	E S 14	E S 14	24	25	G	33	J A 38	J A 40	103	J A 45	J A 40	J A 40	J A 39	29	J A 43	J A 84	J A 72	J A 46	J A 28	J A 28													
24	M 21	E S 14	E S 14	M 21	E S 14	E S 14	E B 17	G	G	32	42	J A 40	38	J A 50	J A 37	J A 54	J A 36	J A 37	J A 48	J A 43	J A 42	E B 18	E S 14	J A 19													
25	J A 30	J A 18	J A 17	M 18	J A 20	E S 14	E B 20	G	32	J A 40	37	J A 46	J A 42	J A 35	28	J A 36	C	28	J A 28	J A 26	E S 14	E S 14	E S 14	E S 14													
26	E S 14	M 22	J A 24	E S 14	E S 14	E S 14	G	G	G	J A 47	41	J A 43	33	32	J A 35	J A 30	28	G	J A 18	M 21	M 19	E S 14	E S 14	E S 14													
27	E S 14	E S 14	M 21	J A 17	J A 18	J A 20	21	G	31	J A 40	J A 65	J A 38	33	J A 38	J A 40	J G 23	J A 26	J A 22	21	E S 14	J A 18	E B 21	E B 22	J A 18													
28	J A 20	M 18	E S 14	E S 14	J A 20	J A 18	20	G	27	38	29	27	27	25	21	30	G	21	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14													
29	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	19	27	30	31	34	34	G	J A 40	G	G	31	27	19	E S 14	E S 14	E S 14	E S 14	E S 14													
30	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	29	38	J A 55	J A 43	J A 53	J A 43	J A 54	J A 38	J A 34	G	G	23	J A 24	J A 20	E S 14	E S 14	E S 14	E S 14													
31	E S 14	M 19	J A 40	M 21	M 21	E S 14	J A 35	J A 81	J A 47	J A 54	J A 43	J A 52	J A 84	J A 99	J A 40	33	33	J A 36	J A 32	J A 40	J A 45	E S 14	E S 14	E S 14													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23													
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31													
MED	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 17	23	28	33	36	37	33	J 36	32	30	28	24	J A 22	E 18	E 17	E S 14	E S 14	E S 14													
UQ	20	20	J A 20	18	18	E S 14	E B 18	25	32	J A 39	J A 40	J A 42	J A 42	J A 42	J A 36	J A 34	J A 33	J A 30	J A 28	J A 26	J A 25	20	E 16	19													
LQ	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 15	G	G	32	30	28	G	G	E G 26	E G 20	G	G	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14													

The Radio Research Laboratories, Japan

MAR. 1974

FOES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FBES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9^h)

Station AKITA Lat. 39 43' 5" N Long. 140 08' 2" E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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 ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₆	23	27	35	34	33	34	34	30	G	27	27	27	20	E ₁₄	E ₁₄	E ₁₄	E ₁₄
2	E ₁₄	E ₁₄	E	E	E ₁₄	E ₁₄	E ₁₅	23	29	33	32	39	41	37	32	29	25	35	E ₁₄	E ₁₇	E ₁₄	E ₁₄	E ₁₄	E
3	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₆	E ₁₄	E ₁₉	25	33	36	36	38	G	G	33	35	G	29	A ₅₂	A ₃₈	18	24	E ₁₄	E ₁₄
4	E ₁₄	E ₁₄	E	E	E ₁₄	E ₁₈	E ₁₈	G	49	50	38	33	G	34	U ₃₀	G	30	37	35	A ₄₄	A ₅₉	A ₄₉	30	E
5	18	19	19	20	20	18	E ₁₄	G	G	30	G	G	G	G	G	G	25	G	E ₂₀	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
6	22	17	24	20	E ₁₄	E ₁₄	E ₁₄	G	G	G	32	27	G	G	G	G	G	G	22	24	E ₁₈	E ₁₇	E ₁₄	E ₁₄
7	E	E	E	E	E ₁₄	E ₁₄	E ₁₄	G	G	G	36	33	33	35	23	20	25	20	19	18	17	E ₁₄	E ₁₄	E ₁₄
8	E ₁₄	E ₁₄	E ₁₄	E	E ₁₄	E ₁₄	E ₁₄	23	28	31	32	G	36	G	U ₃₀	29	20	20	20	22	E ₁₇	E ₁₄	E ₁₄	21
9	19	21	E	E	E	E	E ₁₅	23	29	34	31	33	G	43	33	29	28	22	36	29	28	24	18	E
10	E	17	30	E	E	E ₁₈	E ₁₅	30	29	31	43	35	36	U ₃₄	45	34	34	U ₂₉	26	40	38	18	E ₁₈	25
11	18	E	E ₁₄	E ₁₄	E	18	E ₁₆	G	G	40	32	G	G	G	37	31	35	26	19	20	18	20	20	E
12	22	E	E	E ₁₄	E ₁₄	E ₁₄	E ₁₅	G	U ₂₇	G	U ₂₇	37	37	27	G	G	G	G	E ₁₆	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈
13	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₅	26	G	G	G	36	G	G	G	20	32	32	28	20	E ₁₄	E ₁₄	E ₁₄	E ₁₄
14	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈	G	G	33	G	G	G	G	G	G	28	G	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
15	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈	25	32	31	28	26	G	35	35	37	36	34	E	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
16	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈	25	28	32	G	G	G	35	G	33	28	22	E ₁₅	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
17	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	G	30	34	38	38	40	34	36	32	28	20	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
18	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈	27	31	G	33	G	G	33	G	G	G	G	E ₁₄	E ₁₄	E	E ₁₄	E ₁₄	E ₁₄
19	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	G	G	G	32	32	35	35	22	G	G	G	G	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
20	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈	25	G	31	G	33	G	G	G	31	G	24	E ₁₆	E ₁₄	E	E ₁₄	E ₁₄	E ₁₄
21	E ₁₄	E ₁₄	E ₁₄	E	E ₁₄	E ₁₄	E ₁₈	G	30	35	35	35	37	45	39	31	26	G	E ₁₄	E ₁₄	E	E	E ₁₄	E ₁₄
22	E ₁₄	E ₁₄	E	E ₁₄	E ₁₄	E ₁₄	E ₁₈	26	34	33	40	40	55	45	G	G	29	24	20	18	E ₁₄	E ₁₄	E ₁₄	E ₁₄
23	E ₁₄	24	E	E ₁₄	E ₁₄	E ₁₄	20	25	G	33	35	38	84	45	39	39	37	28	40	A ₈₄	A ₇₂	A ₄₆	18	22
24	E	E ₁₄	E ₁₄	E	E ₁₄	E ₁₄	E ₁₇	G	G	32	41	42	37	47	36	53	35	33	47	40	37	E ₁₈	E ₁₄	E
25	E	E	E	E	18	E ₁₄	E ₂₀	G	31	38	36	43	38	33	G	27	30	C	28	19	18	E ₁₄	E ₁₄	E ₁₄
26	E ₁₄	E	E	E ₁₄	E ₁₄	E ₁₄	G	G	G	46	39	38	33	32	32	30	27	G	E	E	E	E ₁₄	E ₁₄	E ₁₄
27	E ₁₄	E ₁₄	E	E	16	18	20	G	31	38	42	35	33	37	38	G	26	22	20	E ₁₄	E	E ₂₁	E ₂₂	E
28	E	E	E ₁₄	E ₁₄	18	E	20	G	U ₂₇	35	U ₂₉	27	27	25	20	30	G	21	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
29	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₉	26	29	31	33	33	G	34	G	G	28	24	E	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄
30	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	27	36	52	41	52	43	51	37	33	G	G	23	23	18	E ₁₄	E ₁₄	E ₁₄
31	E ₁₄	E	E	E	E	E ₁₄	A ₈₁	35	45	45	39	49	82	98	34	33	29	34	28	34	30	E ₁₄	E ₁₄	E ₁₄
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31
MED	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₇	23	28	33	33	35	33	34	30	29	27	23	19	E ₁₇	E ₁₄	E ₁₄	E ₁₄	E ₁₄
UQ	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₈	25	31	36	38	38	37	37	34	32	29	28	25	21	18	E ₁₆	E ₁₄	E ₁₄
LQ	E ₁₄	E	E	E	E ₁₄	E ₁₄	E ₁₅	G	G	31	30	27	G	G	G	G	G	20	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄

The Radio Research Laboratories, Japan

MAR. 1974

FBES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

F-MIN (0.1 MHZ)

135 E Mean Time (G. M. T. + ^h)

Station **AKITA** Lat. **39 43' 5" N** Long. **140 08' 2" E** Sweep **1** MHz to **20** MHz in **20** sec in automatic operation

Hour 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 S	E S	E S	E S	E S	E S	E S	14	16	17	18	19	17	15	15	16	15	14	E S	E S	E S	E S	E S	E S
2	E S	E S	E S	E S	E S	E S	E S	16	17	18	18	19	19	20	18	15	17	15	E S	E S	E S	E S	E S	E S
3	E S	E S	E S	E S	E S	E S	E S	21	18	20	24	33	21	21	18	19	18	17	E S	E S	E S	E S	E S	E S
4	E S	E S	E	E	E S	E S	E S	18	17	15	18	18	19	20	18	18	16	19	17	E S	E S	E S	E S	E S
5	E S	E S	E S	E S	E S	E S	E S	17	16	17	17	20	18	16	18	17	15	20	E S	E S	E S	E S	E S	E S
6	E S	E S	E S	E S	E S	E S	E S	18	15	15	17	17	17	20	18	16	22	15	14	E S	E S	E S	E S	E S
7	E S	E S	E S	E S	E S	E S	E S	18	18	18	18	19	18	17	16	14	14	15	14	E S	E S	E S	E S	E S
8	E S	E S	E S	E S	E S	E S	E S	17	18	18	19	18	22	19	18	15	15	15	E S	E S	E S	E S	E S	E S
9	E S	E S	E S	E S	E S	E S	E S	15	15	16	20	19	18	18	16	16	14	15	E S	E S	E S	E S	E S	E S
10	E S	E S	E S	E S	E S	E S	E S	18	15	16	18	19	19	17	16	15	17	14	E S	E S	E S	E S	E S	E S
11	E S	E S	E S	E S	E S	E S	E S	16	17	18	22	20	20	19	20	18	18	17	16	E S	E S	E S	E S	E S
12	E S	E S	E S	E S	E S	E S	E S	15	16	17	17	17	15	15	15	15	15	15	18	E S	E S	E S	E S	E S
13	E S	E S	E S	E S	E S	E S	E S	18	18	18	19	19	18	15	15	16	15	14	E S	E S	E S	E S	E S	E S
14	E S	E S	E S	E S	E S	E S	E S	18	15	18	18	19	19	18	19	17	16	17	15	E S	E S	E S	E S	E S
15	E S	E S	E S	E S	E S	E S	E S	18	17	16	16	16	17	16	15	16	15	15	E S	E S	E S	E S	E S	E S
16	E S	E S	E S	E S	E S	E S	E S	18	17	16	19	17	19	21	16	17	16	16	14	E S	E S	E S	E S	E S
17	E S	E S	E S	E S	E S	E S	E S	16	14	18	17	18	18	17	15	16	15	17	E S	E S	E S	E S	E S	E S
18	E S	E S	E S	E S	E S	E S	E S	18	15	17	17	18	16	17	16	16	16	15	15	E S	E S	E S	E S	E S
19	E S	E S	E S	E S	E S	E S	E S	14	15	17	17	18	18	17	15	18	17	15	16	E S	E S	E S	E S	E S
20	E S	E S	E S	E S	E S	E S	E S	18	17	17	17	18	17	18	17	15	15	17	15	16	E S	E S	E S	E S
21	E S	E S	E S	E S	E S	E S	E S	18	16	17	16	18	21	19	22	18	18	17	16	E S	E S	E S	E S	E S
22	E S	E S	E S	E S	E S	E S	E S	17	15	16	17	17	18	23	18	18	18	16	16	E S	E S	E S	E S	E S
23	E S	E S	E S	E S	E S	E S	E S	14	15	15	17	18	18	17	18	17	16	15	16	E S	E S	E S	E S	E S
24	E S	E S	E S	E S	E S	E S	E S	17	17	15	18	19	19	18	19	18	16	16	15	E S	E S	E S	E S	E S
25	E S	E S	E S	E S	E S	E S	E S	20	18	17	18	18	19	23	20	18	18	C	E S	E S	E S	E S	E S	E S
26	E S	E S	E S	E S	E S	E S	E S	14	18	17	17	18	18	18	20	18	15	16	17	E S	E S	E S	E S	E S
27	E S	E S	E S	E S	E S	E S	E S	17	15	16	17	18	18	18	18	17	17	15	15	E S	E S	E S	E S	E S
28	E S	E S	E S	E S	E S	E S	E S	16	15	15	17	17	20	17	17	14	15	17	15	E S	E S	E S	E S	E S
29	E S	E S	E S	E S	E S	E S	E S	15	16	17	18	18	19	18	17	16	16	17	17	E S	E S	E S	E S	E S
30	E S	E S	E S	E S	E S	E S	E S	15	17	18	18	18	18	19	17	16	15	18	E S	E S	E S	E S	E S	E S
31	E S	E S	E S	E S	E S	E S	E S	17	16	17	17	17	20	21	20	18	17	17	15	E S	E S	E S	E S	E S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31
MED	E S	E S	E S	E S	E S	E S	E S	16	16	16	17	18	19	18	18	17	16	16	15	E S	E S	E S	E S	E S
UQ	E S	E S	E S	E S	E S	E S	E S	18	17	17	18	18	19	20	19	18	17	17	16	E S	E S	E S	E S	E S
LQ	E S	E S	E S	E S	E S	E S	E S	15	16	17	17	18	18	18	16	16	15	15	15	E S	E S	E S	E S	E S

The Radio Research Laboratories, Japan

MAR. 1974

F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

M(3000)F2 (0.01)

135° E Mean Time (G. M. T. + 9^h)

Station AKITA Lat. 39° 43' 5" N Long. 140° 08' 2" E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	285	285	295	315	305	295	325	350	340	335	315	320	325	325	335	355	345	340	335	330	295	305 ^F	305	285		
2	345	300	315 ^F	310	315	305	325	340	340	335	345	305	325	340	345	345	350	330	325	325	305	350	295	F		
3	285 ^F	F	F	F	310 ^F	325	325	355	340	355	330	345	325	325	320	340	345	350	I A	I R	330	330	305	300	305	F
4	295 ^F	F	F	310	335	290	325	355	355	355	330	335	340	350	345	345	350	350	345		A	A	A		F	
5	300 ^F	F	F	315 ^F	F	325	340	360	355	355	305	325	325	330	310	365	355	345	325	305	295	295	295		F	
6	300	305 ^F	330	325	285	305	315	340	335	325	325	320	325	335	340	335	345	I R	340	295	295	285	285	280	285	
7	280	320 ^F	315	325	320	305	315	325	315	320	330	330 ^R	325	350 ^R	325	355	365	365	335	330	305	285	295	305	S	
8	310	315 ^F	F	F	F	F	F	360	335	325	310	325	325	325	330	340	345	335	315	335	300	305	310 ^F	310		
9	F	F	300	320 ^F	F	330	300	330	335	345	315	325	325	320	340	315	335	320	330	335	325	285	290	305		
10	285	270	285	285	295	285	305	335	335	315	320	310	295	325	320	335	340	330	325	290	300	300	300	295		
11	300	F	F	315 ^F	325	375	305	325	320	320	305	320	325	325	325	330	330	340	325	310	285	290	275	285		
12	280 ^F	310	290	320	255	290	325	335	340	320	315	320	310	325	335	335	330	335	330	310	305	290	295	295		
13	310	305	310	310	300	290	330	340	345 ^V	325	325	335	325	315	310	325	325	335	325	310	280	285	280	280		
14	280	285	295	310	305	285	320	340	340	330	320	320	330	320	335	340	330	330	335	310	325	305	285	285		
15	295	305	270 ^F	F	F	295	325	315	320	345	340	325	305	315	335	330	345	340	335	305	295	305	295	F		
16	F	F	315	320	345	300	335	345	325	340	345	305	315	325	325	320	325	330	325	315	310	295	295	295		
17	290	265	280	285	260	265	255 ^H	280 ^H	265	295	290	265	290	295	295	325	325	325	320	315	280	280	280	285		
18	280	285	300	325	335	300	325	335	340	315	330	315	315	325	325	325	325	340	335	310	305	310	305	305		
19	290	295	295	310	315	305	335	340	340	335	315	315	320	325	340	330	335	365	335	320	300	290	285	305		
20	285	280	310	305	310	305	320	345	335	325	320	315	315	315	315	315	335	325	330	325	285	295	300	295		
21	285	280	280	295	305	F	340	340	305	340	310	320	310	315	320	305	305	320	345	290	260	255	265	260		
22	280	305	305	270 ^F	275	265	I R	I R	330	345	340	335	315	310	325	315	325	310	325	320	335	310	285	285	285	300
23	285	280	300	290	300	F	320	345	340	330	320	300	305	320	320	320	330	345	345	I A	I A	I A	285	265	270 ^F	
24	F	275 ^F	290 ^F	F	F	310	345	325	315	340	330	320	315	330	325	330	340	340	335	295	285	285	290	290		
25	300 ^F	F	315	305	280	300	330	340	325	325	310	I R	320	325	325	320	335	I C	330	335	350	310	295	290	280	290
26	305	285	290	290	305	300	355	320	330	335	335	315	295	315	325	335	340	340	335	305	295	285	280	285		
27	F	300	320	325	285	295	325	320	320	320	325	320	315	320	330	325	335	335	335	350	295	280	275	275		
28	285	295	340	320	285	290	335	355	335	340	320	335	335	325	335	340	345	330	345	325	310	290	285	280		
29	295	285	295	375	320	295	325	345	340	335	320	320	295	315	325	325	330	320	335	325	290	290	295	285		
30	280	285	305	340	260 ^H	265	315	340	320	325	305	305	320	315	320	330	335	325	345	I R	320	325	295	285	290 ^F	
31	F	295 ^F	F	315 ^F	345	355	355	340	315	270	310	310	315	320	335	335	335	335	330	315	290	F	F	285		
CNT	26	24	25	27	26	28	30	31	31	31	31	31	31	31	31	31	31	31	31	30	30	29	30	26		
MED	288	290	300	315	305	300	325	340	335	330	320	320	320	325	325	330	335	335	335	315	295	290	290	288		
UQ	300	305	315	320	320	305	335	345	340	340	330	325	325	325	335	340	345	340	335	325	305	300	295	295		
LQ	285	282	290	305	285	290	320	332	320	322	312	312	312	315	320	325	330	330	325	310	285	285	280	285		

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M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1974

M(3000)F1 (0.01)

135° E Mean Time (G. M. T. + 9^h)

Station	AKITA				Lat.	39 43' 5" N				Long.	140 08' 2" E				Sweep	1	MHz to	20	MHz in	20	sec	in automatio operation			
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1									L	L	L	380	L	375	U L 375	L	L								
2																									
3																									
4									L	A	A	L	L	L	L	L	L	L	L	L	L	L	L		
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
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22																									
23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
Hour 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	
CNT										9	16	24	25	23	25	25	16	3							
MED										U L 375	370	370	370	365	365	365	372	375							
UQ										U L 385	378	375	375	370	370	375	375	380							
LQ										L 370	365	358	360	355	360	355	360	370							

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M(3000)F1 (0.01)

IONOSPHERIC DATA

MAR. 1974

H^oF2 (KM)

135° E Mean Time (G. M. T. + 9^h)

Station	AKITA							Lat.	39 43' 5" N				Long.	140 08' 2" E				Sweep	1	MHz to	20	MHz in	20	sec	in automatio	operation
Hour 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									240	250	245	265	270	265	240	235	220									
2										250	250	295	265	250	240	245	235									
3									240	240	245	240	260	275	260	250	245									
4																										
5								235	230	245	280	270	255	260	260	250	240									
6									235	245	275	275	275	255	255	240	235									
7									250	250	255	270	275	255	250	250	240									
8									230	255	270	275	270	260	250	245	240	230								
9																										
10								250	240	235	275	275	260	250	255	255	250									
11									250	285	275	265	285	260	255	250	230									
12									255	270	290	275	260	255	265	255	245									
13									235	285	300	265	295	265	250	250	245									
14									240	255	255	250	275	280	255	255	250									
15									235	240	245	250	280	270	265	255	250	235								
16									250	245	235	250	295	270	250	245	230									
17								230	260	240	245	305	270	265	260	265	250									
18									260	425	340	355	360	335	340	335	280	260								
19										250	260	270	280	275	255	260	240									
20									250	255	255	275	265	255	250	250	240									
21									250	265	270	275	260	280	285	265	240									
22									285	250	270	280	290	285	280	260	245									
23									250	260	280	270	245	280	260	260	255									
24									230	245	250	265	300	295	255	260	255	245								
25									235	250	250	250	245	270	260	265	260	235								
26									235	250	255	285	280	250	255	260	250	C								
27									235	245	255	255	290	295	280	270	250	230								
28									255	260	250	285	270	270	250	255	255	250								
29									230	250	260	280	260	265	285	265	260	245								
30									250	250	250	275	270	270	280	260	255	250	250							
31									A	A	A	A	A	A	A	A	A									
									A	A	A	A	A	A	A	A	A									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT								13	27	31	31	31	31	31	31	31	30	2								
MED								235	250	250	275	270	270	265	260	250	240	248								
UQ								250	250	265	280	280	282	278	262	258	250									
LQ								230	240	250	255	268	262	255	255	250	235									

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H^oF2 (KM)

IONOSPHERIC DATA

MAR. 1974

H·F (KM)

135° E Mean Time (G. M. T. + 9^h)

Station	AKITA				Lat.	39 43' 5 N				Long.	140 08' 2 E				Sweep	1 MHz to	20 MHz in	20 sec	in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	300	295	290	245	250	245	215	225	235	240	230	195	I A	230	205	230	220	220	235	280	255	285	265	295					
2	300	275	260	235	230	245	235	225	235	225	230	I A	I A	220	220	205	225	230	220	215	240	290	290	295					
3	285	295	285	295	230	260	230	215	235	235	230	235	215	H	240	I A	225	230	I A	260	255	250	260	295					
4	300	330	310	245	210	260	250	235	A	A	220	205	195	220	I A	230	240	I A	225	225	230	A	A	A	310				
5	295	270	255	225	230	260	230	220	180	190	H	230	220	220	230	210	205	225	220	215	240	260	290	275	255				
6	265	270	230	245	250	275	245	225	230	225	240	225	245	210	H	215	225	230	220	225	275	280	300	290	280				
7	285	245	235	210	235	255	230	195	230	210	220	215	215	225	220	225	220	220	230	235	275	295	285	270					
8	275	260	245	225	270	270	225	220	225	230	210	195	H	225	200	H	230	235	230	235	235	220	230	245	250	255			
9	290	330	245	245	220	245	255	240	230	I A	215	205	200	H	I A	200	205	H	H	240	245	230	220	A	A	280	255		
10	265	325	I A	295	250	305	250	230	240	215	I A	200	230	230	215	H	I A	250	I A	230	235	230	A	A	250	250	280		
11	265	330	285	230	240	I A	260	255	235	205	I A	215	200	H	H	230	195	H	I A	230	I A	230	230	215	245	275	290	295	285
12	320	295	275	235	340	305	235	230	215	200	H	225	245	230	215	225	220	220	235	225	235	245	280	275	270				
13	260	250	235	250	255	280	235	230	210	220	195	H	200	205	180	H	215	200	H	235	225	210	230	280	285	275	295		
14	295	275	250	230	240	275	240	230	230	235	190	180	H	190	H	210	205	205	230	235	215	215	235	235	295	290			
15	280	250	345	350	345	295	230	245	215	205	H	220	205	190	H	230	230	A	A	230	215	235	245	260	280	295			
16	300	280	245	235	205	255	230	220	195	H	190	200	185	H	190	230	210	230	225	235	205	225	235	245	275	275			
17	290	310	305	340	300	360	275	235	255	220	280	230	H	255	230	230	255	230	240	225	225	255	280	290	300				
18	295	285	245	225	205	265	230	230	230	225	210	200	195	190	H	230	225	230	235	215	230	245	245	270	250				
19	275	275	270	255	230	250	225	230	230	230	195	215	H	200	225	220	215	230	230	220	210	245	270	285	265				
20	270	255	245	235	230	245	235	235	225	215	200	200	H	205	215	205	205	H	225	235	220	200	250	250	260	270			
21	295	295	295	270	245	275	225	230	220	250	215	225	230	I A	235	I A	230	230	230	235	210	240	280	325	320	335			
22	280	255	255	355	300	335	225	240	245	230	H	I A	I A	A	A	245	235	245	245	225	240	305	295	300	280				
23	255	300	A	250	245	245	235	245	210	235	240	215	A	A	A	I A	240	I A	235	230	230	A	A	A	305	340			
24	290	280	285	285	240	205	215	210	230	210	I A	I A	220	195	H	I A	255	A	A	225	245	A	A	260	285	285			
25	270	250	225	235	300	260	225	225	235	240	230	I A	230	225	200	205	230	I C	235	235	210	250	250	255	295	265			
26	250	255	275	255	250	255	205	215	195	H	I A	I A	I A	195	H	210	190	240	240	235	210	230	245	290	295	300			
27	325	270	240	215	265	A	280	230	180	H	I A	I A	205	180	H	I A	I A	215	200	H	240	225	210	250	290	320	320		
28	285	270	220	230	I A	280	290	235	230	225	I A	230	230	210	220	210	215	235	240	240	225	210	225	280	300	315			
29	300	295	260	210	275	300	235	240	240	230	210	220	225	235	240	235	245	245	225	225	210	270	275	295					
30	305	295	245	200	E S	E S	315	245	240	A	A	A	A	A	A	230	240	235	240	230	235	225	245	290	310				
31	280	280	290	260	235	245	255	A	A	A	A	A	A	A	A	240	235	230	I A	240	235	255	285	300	290	290			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT	31	31	31	31	31	31	31	30	28	28	29	29	27	27	30	29	29	31	31	27	26	28	30	31					
MED	285	280	255	245	245	260	235	230	230	225	220	215	215	215	222	230	230	235	225	230	250	280	285	290					
UQ	298	295	285	262	270	282	242	235	235	230	230	225	228	230	230	235	235	238	230	240	275	290	295	298					
LQ	272	265	245	230	230	252	228	220	215	212	205	200	195	205	210	220	225	230	215	220	240	252	275	270					

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H·F (KM)

IONOSPHERIC DATA

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H^oE (KM)

135 E Mean Time (G. M. T. + g^h)

Station	AKITA				Lat.	39 43' 5 N							Long.	140 08' 2 E							Sweep	1	MHz to	20	MHz in	20	sec	in automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
1							S	115	115	110	110	110	105	105	110	110		A	A													
2							S	140	115	115	110	110	110	110	110	110	120		B													
3							S	B	115	115	115	I B	110	110	I A	110	115		B													
4							B	B	130	110	115	110	110	115	I A	I A	110		A	B												
5							S	E B	140	115	115	115	115	115	110	I A	115		B													
6							B	130	115	110	I A	I A	110	110	I A	110	115	115		A												
7							S	E B	150	115	110	105	I A	110	115	I A	110	115	120		A	A										
8							S	E B	145	120	110	110	110	110	I A	110	A	A	A	A												
9							S	120	115	110	110	110	110	A	A	A	A	A														
10							S	115	110	A	A	A	A	A	A	A	A	A														
11							S	125	125	115	110	110	110	110	A	A	115	A	S													
12							S	115	110	A	A	A	A	A	A	I A	I A	E B	S													
13							S	125	115	115	115	110	110	110	110	110	115	A	S													
14							B	115	115	115	110	110	110	105	110	110	115	E B	S													
15							B	120	110	110	I A	I A	105	I A	I A	I A	115	E B	S													
16							B	E B	125	110	110	110	110	115	110	110	110	A	S													
17							S	120	115	110	110	110	110	I A	110	110	115	B	S													
18							B	115	110	110	105	110	110	110	110	110	110	125	S													
19							E B	155	115	110	110	105	110	105	110	110	110	115	115	S												
20							B	120	115	110	110	110	110	110	I A	110	115	120	B													
21							B	125	115	115	110	110	110	115	110	115	120	120	S													
22							B	120	110	110	110	110	A	A	110	110	115	125	S													
23							A	115	110	110	110	110	A	A	A	A	A	A	S													
24							B	115	110	110	110	110	110	A	A	A	A	A	S													
25							B	120	110	110	110	110	A	A	A	A	C	A	S													
26							E B	150	125	115	110	110	110	A	A	A	110	125	S													
27							B	115	115	110	110	110	110	A	A	A	A	A	S													
28							B	115	110	110	105	I A	I A	120	120	110	115	A	S													
29							S	120	115	110	110	110	110	110	110	110	110	E B	S													
30							S	110	110	110	110	110	110	A	A	110	115	B	S													
31							B	125	115	110	110	110	A	A	A	110	115	E B	S													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
CNT							2	30	31	29	29	29	25	20	19	22	21	11														
MED							E B	152	119	115	110	110	110	110	110	110	110	115	120													
UQ								125	115	115	110	110	110	110	110	110	115	125														
LQ								115	110	110	110	110	110	110	110	110	115	118														

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H^oE (KM)

IONOSPHERIC DATA

MAR. 1974

H^oES (KM)

135 E Mean Time (G. M. T. + 9h)

Station AKITA Lat. 39 43.5 N. Long. 140 08.2 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	S	S	S	S	140	145	130	125	125	120	120	110	100	100	130	120	115	S	S	S	S
2	S	125	115	110	S	S	S	170	160	140	140	130	130	125	120	120	120	115	S	B	S	S	S	120
3	S	S	S	S	110	S	150	160	150	145	145	150	G	G	155	125	G	120	110	110	110	105	S	S
4	S	105	100	105	E	S	B	G	110	115	110	110	G	105	105	110	95	95	95	115	115	110	110	110
5	105	100	100	105	100	100	S	G	G	115	G	G	G	G	G	110	G	B	S	S	S	S	S	S
6	100	100	100	100	S	S	S	G	G	G	110	110	G	105	G	G	G	100	95	B	B	S	S	105
7	100	105	100	100	S	S	S	G	G	G	105	105	115	100	100	100	100	105	105	105	105	100	S	S
8	S	S	S	100	S	S	S	145	145	135	135	G	150	G	100	110	100	110	100	105	B	S	S	100
9	105	100	100	100	100	100	S	135	115	110	110	110	G	100	100	100	100	100	100	100	100	100	100	105
10	100	100	100	100	100	B	S	115	110	105	100	100	100	100	100	100	100	100	100	110	105	105	B	105
11	105	110	S	S	100	100	S	G	G	115	110	G	G	105	105	105	115	110	105	105	105	105	100	100
12	100	100	100	S	S	S	S	G	110	105	105	100	100	100	100	100	100	G	S	S	S	S	S	B
13	S	S	S	S	S	S	S	160	G	G	G	155	G	G	100	135	115	115	100	S	S	S	S	S
14	S	S	S	S	S	S	B	G	G	150	G	G	G	G	G	G	140	G	S	S	S	S	S	S
15	S	S	S	S	S	S	B	130	110	115	105	105	G	125	145	130	125	120	115	S	S	S	S	S
16	S	S	S	S	S	S	B	155	140	130	G	G	G	155	G	115	110	110	S	S	S	S	S	S
17	S	S	S	S	S	S	S	G	170	145	135	135	135	150	130	130	125	120	S	S	S	S	S	S
18	S	S	S	S	S	S	B	160	145	G	125	G	G	115	130	G	G	G	S	S	105	S	S	S
19	S	S	S	S	S	S	G	G	G	130	125	165	135	100	G	G	G	G	S	S	S	S	S	S
20	S	S	S	S	S	S	B	150	G	140	G	125	G	G	G	110	G	150	B	S	100	S	100	S
21	S	S	S	100	S	S	B	G	145	130	130	120	115	115	115	120	125	G	S	S	125	130	120	S
22	S	S	110	S	S	S	B	145	130	130	115	110	105	110	G	G	150	130	115	110	S	S	S	S
23	S	100	105	S	S	S	145	145	G	110	120	110	105	105	105	100	100	145	115	110	115	115	105	110
24	105	S	S	105	S	S	B	G	G	120	110	110	110	105	100	100	100	125	120	120	115	B	S	105
25	105	105	105	100	100	S	B	G	130	115	110	110	105	100	100	100	C	115	130	100	S	S	S	S
26	S	100	105	S	S	S	G	G	G	115	110	110	110	105	100	100	130	G	105	100	100	S	S	S
27	S	S	105	105	105	105	150	G	130	110	110	110	110	105	110	100	100	100	130	S	100	B	B	105
28	105	110	S	S	105	110	150	G	135	115	115	110	100	105	100	130	G	145	S	S	S	S	S	S
29	S	S	S	S	S	S	155	145	140	130	125	110	G	115	G	G	130	130	120	S	S	S	S	S
30	S	S	S	S	S	S	140	125	125	115	110	110	110	110	105	G	G	150	100	95	S	S	S	S
31	S	110	105	105	110	S	145	130	125	110	110	110	105	105	110	155	135	115	115	100	115	S	S	S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	14	14	13	9	5	7	16	20	27	26	25	18	25	23	24	22	24	20	15	14	8	6	10
MED	105	102	102	100	100	100	150	145	132	115	110	110	110	105	105	110	112	115	108	105	105	105	102	105
UQ	105	110	105	105	105	105	150	158	145	130	125	125	120	115	112	122	125	130	118	110	115	112	110	110
LQ	100	100	100	100	100	100	145	132	120	115	110	110	105	105	100	100	100	108	100	100	100	102	100	105

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H^oES (KM)

IONOSPHERIC DATA

MAR. 1974

TYPES OF ES

135° E Mean Time (G. M. T. + 9^h)

Station	AKITA																								
Lat.	39° 43' 5" N																								
Long.	140° 08' 2" E																								
Sweep	1 MHz to 20 MHz in 20 sec in automatic operation																								
Hour 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							H1	H1	H2	H2	H1	H1	H2	C1	L1	L2	HL11	FF21	F2						
2		F1	F2	F1			H1	H1	H1	H1	H1	H2	H1	H1	H1	C1	C2							F1	
3					F1		H1	H1	H1	H1	H1				HL11	H1		C1	F6	F2	F2	F2			
4		F1	F2	F1					C3	C3	C2	C1		L2	L1	L1	L2	L2	F2	F3	F3	F3	F3	F2	
5	F2	F2	F2	F2	F2	F2				C1					L2										
6	F2	F2	F4	F1							L2	L1		L1			L1	F1						F1	
7	F1	F1	F1	F1							C2	L1	CL11	L2	L1	L1	L2	L1	F1	F2	F2	F2			
8				F1			H1	H1	H1	H1			HL11		L1	L1	L1	L1	F1	F2				F3	
9	F1	F3	F1	F2	F1	F1	H1	C2	C2	C1	C1		L2	L2	L2	L2	L3	L2	F3	F3	F2	F4	F2	F1	
10	F2	F2	F2	F1	F1		C2	C2	L2	L2	L1		L2	L2	L2	L2	L2	L1	F1	F2	F2	F3		F2	
11	F2	F1			F1	F2			C2	C1			L1	L2	L1	C2	L2	L2	F2	F1	F2	F1	F1	F1	
12	F1	F1	F1						C1	L1	L1	L2	L2	L1	L1	L2	L1								
13							H2					H1			L1	H1	C1	CL22	L1						
14									H1								H1								
15							H2	C1	C1	L1	L1		HL12	HL11	HL21	HL22	C3	C1							
16							H1	H1	H1				H1		C1	C1	L2	C1							
17								H1	H1	H1	H1	H1	HL11	H1	H1	H2	C1								
18							H1	H1		H1			C1	H1							F1				
19									H1	H1	H1	H1	L1												
20							H1		H1		H1				L1		H1				F1	F1	F1		
21				F1					H1	H1	H1	C1	C2	C2	H1	C1				F1	F1	F1			
22			F1				H1	H1	H2	C2	C2	L2	L2			H1	H1	C1	F1						
23		F3	F1				H2	H1		C2	H1	C2	L3	L2	L3	L2	L2	HL21	C3	F3	F3	F5	F2	F4	
24	F1			F1					H1	C3	C2	C2	C2	L3	L2	L3	L3	HL21	CL21	FF21	FF22			F1	
25	F1	F2	F1	F1	F3			H2	C2	C1	C2	L1	L1	L2	L2		CL22	HL12	F2						
26		F1	F1						C3	C2	C2	C1	L1	L2	L2	H1		L1	F1	F1					
27			F1	F1	F2	F2	H1		H1	C2	C2	C1	C1	L1	L2	L1	L3	L2	H2		F1			F2	
28	F2	F1			F2	F1	H1		H1	C2	C1	L1	L2	L1	L1	H1		HL11							
29							H1	H1	H1	H1	H1	C1		C1			H1	H1	C1						
30							H2	H3	H2	C2	C3	C2	C3	L2	L2			H1	L3	F2					
31		F1	F2	F2	F1		H2	H4	H2	C2	C2	C2	L3	L2	L1	H1	H1	C2	C3	F3	FF12				
Hour 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	
CNT																									
MED																									
UQ																									
LQ																									

The Radio Research Laboratories, Japan

MAR. 1974

TYPES OF ES

IONOSPHERIC DATA

MAR. 1974

FXI (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	X 41	I 40	S 41	X 42	X 37	X 37	X 43												X 62	X 49	S 41	I 42	C 44	C 42
2	S 41	I 44	S 47	X 41	X 40	X 39	X 41												X 64	S 52	S 41	A 41	X 41	O 41
3	X 41	X 43	S 43	S 43	X 38	X 38	X 42												X 55	X 55	A 43	X 43	X 43	40
4	S 40	40	S 40	41	X 36	X 30	O 39	S 39											X 59	S 40	X 41	X 40	O 41	S 40
5	S 41	X 44	X 47	X 42	S 33	33	X 41												X 52	X 49	X 47	R 46	X 49	X 47
6	X 47	52	52	X 41	X 41	43	X 47												X 49	X 44	X 45	X 42	I 43	X 46
7	X 44	X 47	X 49	X 36	X 34	X 36	X 44												X 55	X 46	X 41	X 40	C 40	C 40
8	C 40	C 40	C 40	C 40	C 40	C 40	C 40												X 70	S 72	X 45	X 43	X 48	52
9	S 51	53	53	S 47	X 40	37	X 48												X 86	X 67	X 46	S 36	X 41	I 44
10	X 45	X 43	X 45	X 42	X 42	X 35	X 43												X 68	X 57	X 58	56	S 49	S 43
11	S 47	S 44	X 46	47	X 37	X 34	X 41												X 61	I 52	I 45	X 42	45	43
12	44	48	44	X 41	X 36	X 37	X 49												X 64	X 54	X 54	X 48	X 47	X 47
13	X 49	X 48	X 39	X 40	X 39	X 39	X 51												X 65	X 50	X 41	X 42	X 43	X 43
14	X 42	X 43	X 43	X 40	X 36	X 34													X 67	X 54	X 52	X 48	X 41	X 42
15	X 42	X 45	X 40	40	S 44	X 44													X 61	O 55	X 55	S 51	S 51	S 51
16	X 48	X 47	S 50	X 49	X 35	X 31													X 70	X 56	X 56	S 52	X 47	I 48
17	X 47	I 46	S 47	X 44	O 45	S 40													X 66	X 51	X 49	I 48	X 48	X 49
18	O 50	O 50	S 55	X 49	X 36	X 37													X 71	X 59	X 52	I 50	X 49	X 48
19	X 49	X 49	X 49	X 47	X 42	X 39													X 65	X 57	X 47	X 47	R 48	X 49
20	X 52	X 49	X 49	X 44	X 42	X 39													X 67	X 57	X 44	R 47	I 44	I 46
21	X 47	I 45	R 44	X 42	X 42	X 37													C 47	C 47	C 47	C 47	C 47	C 47
22	C 47	C 47	C 47	C 47	C 47	C 47													C 47	C 47	C 47	C 47	C 47	C 47
23	C 47	C 47	C 47	C 47	C 47	C 47													C 47	C 47	C 47	C 47	C 47	C 47
24	C 47	C 47	C 47	C 47	C 47	C 47													X 64	X 62	I 58	A 58	R 54	X 54
25	R 47	I 57	X 44	44	R 47	R 47													X 65	X 54	I 55	S 55	O 56	X 59
26	X 58	X 55	X 53	X 51	X 48	X 45													X 72	X 52	X 40	X 45	X 46	X 47
27	X 46	X 46	X 51	X 35	X 29	X 31													X 87	R 39	O 39	X 42	X 42	X 41
28	X 42	R 42	R 52	X 26	X 28	X 32													X 78	X 57	X 45	X 42	X 42	R 41
29	X 41	X 42	X 47	X 32	X 28	X 29													X 89	X 68	X 39	S 43	X 43	X 44
30	S 43	X 42	X 45	S 34	X 27	X 30													X 77	X 57	X 52	S 42	X 42	S 42
31	X 43	X 42	X 43	X 43	X 43	X 33													X 81	X 66	X 49	S 42	S 42	S 50
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	26	25	26	25	26	12												28	27	27	24	25	25
MED	X 44	X 46	X 47	X 42	X 37	X 37	X 43												X 66	X 55	X 46	44	X 44	X 46
UQ	X 48	X 49	X 50	X 44	X 42	X 39	X 48												X 72	X 57	X 52	48	X 48	X 48
LQ	X 42	X 43	X 44	X 40	X 35	X 33	X 41												X 62	X 52	X 41	X 42	X 42	X 42

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FXI (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF2 (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	35	I ^S ₃₄	35	36	31	31	37	55	68	77	J ^R ₈₁	94	I ^C ₉₄	97	109	77	66	63	56	43	35	I ^C ₃₆	38	36	
2	35	I ^S ₃₈	J ^S ₄₁	35	S ₃₄	33	35	58	59	73	78	73	92	98	83	66	60	66	58	46	S ₃₅	A	35	35	
3	S ₃₅	S ₃₇	S	S	32	32	J ^S ₃₆	58	63	J ^S ₇₆	83	J ^R ₇₄	J ^R ₇₇	69	80	J ^R ₇₆	64	76	49	49	A	37	37	30	
4	34	F	S	F	30	24	33	63	73	C	C	C	C	C	C	74	69	70	53	34	35	34	S ₃₅	S ₃₄	
5	J ^S ₃₅	J ^S ₃₈	S ₄₁	36	27	23	F	S ₃₅	58	68	66	78	86	93	81	81	61	53	46	43	41	J ^R ₄₀	J ^R ₄₃	41	
6	R ₄₁	F	F	35	35	F	41	58	J ^S ₇₄	68	J ^R ₇₇	83	83	88	81	67	70	68	43	38	39	36	I ^R ₃₇	40	
7	38	41	43	30	28	30	38	55	71	91	S ₉₉	108	109	106	83	70	64	54	49	40	35	34	C	C	
8	C	C	C	C	C	C	C	C	C	C	89	J ^R ₁₀₁	106	J ^R ₁₀₂	83	77	68	S ₆₂	64	S ₆₆	39	S ₃₇	42	F	
9	J ^S ₄₅	F	F	J ^S ₄₁	34	F	J ^S ₄₂	S ₆₈	87	84	84	94	J ^R ₁₀₂	110	88	76	81	S ₇₅	80	61	40	30	35	I ^S ₃₈	
10	J ^S ₃₉	37	39	36	36	29	37	J ^S ₇₄	66	83	95	J ^R ₁₀₄	107	120	112	90	69	65	S ₆₂	S ₅₁	S ₅₂	F	43	37	
11	S ₄₁	S ₃₈	J ^S ₄₀	F	31	28	35	64	J ^R ₆₆	78	83	93	98	J ^R ₁₀₄	87	88	78	71	55	I ^A ₄₆	I ^R ₃₉	36	F	F	
12	F	F	F	35	30	31	43	71	70	71	95	101	101	J ^R ₁₀₄	96	81	75	66	58	48	48	42	41	41	
13	43	42	33	34	33	33	45	68	J ^R ₇₅	R ₇₆	J ^S ₈₆	R ₈₅	78	79	J ^R ₇₇	A	81	J ^S ₇₂	58	44	35	36	S ₃₇	S ₃₇	
14	36	37	37	34	30	28	42	68	S ₈₁	78	84	J ^R ₇₇	89	J ^R ₉₀	84	J ^R ₇₈	J ^R ₇₅	71	61	48	46	42	35	36	
15	36	39	34	F	S	38	S	59	99	81	76	J ^R ₇₇	78	S ₉₆	96	91	78	66	55	49	49	S ₄₅	45	S	
16	S ₄₂	S ₄₁	S ₄₂	S ₄₃	29	25	44	61	68	J ^R ₇₆	88	75	92	108	94	84	89	80	64	S ₅₀	50	46	J ^S ₄₁	I ^S ₄₂	
17	41	I ^S ₄₀	41	S ₃₈	S ₃₉	S ₃₄	36	48	58	61	68	88	I ^S ₉₄	91	R ₈₂	S ₇₄	J ^S ₇₅	65	60	45	S ₄₃	I ^S ₄₂	42	J ^S ₄₃	
18	44	44	49	43	30	28	45	S ₆₃	69	J ^R ₇₅	80	J ^R ₈₈	94	96	91	82	81	J ^R ₇₅	65	53	46	I ^R ₄₄	43	42	
19	43	43	43	41	36	33	47	63	72	J ^R ₇₆	76	J ^R ₈₇	93	96	86	J ^R ₇₇	I ^R ₇₀	68	59	51	41	41	J ^R ₄₂	43	
20	46	43	43	38	36	33	46	62	73	82	83	91	97	89	89	91	80	71	61	51	38	J ^R ₄₁	I ^R ₃₈	I ^R ₄₀	
21	41	I ^R ₃₉	R ₃₈	36	36	31	46	54	66	90	81	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	94	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	74	58	56	I ^R ₅₂	A	R	48	
25	R	I ^R ₅₁	38	F	R	R	51	66	J ^R ₇₅	C	C	112	J ^S ₁₁₆	S ₁₁₆	105	J ^R ₁₀₃	88	S ₇₈	59	48	I ^S ₄₉	49	50	J ^S ₅₃	
26	52	49	47	45	J ^S ₄₂	J ^S ₃₉	J ^S ₅₃	56	S ₇₆	J ^R ₇₃	78	J ^R ₇₇	96	114	J ^R ₁₀₅	J ^R ₁₀₂	86	81	66	46	34	R ₃₉	40	41	
27	J ^R ₃₉	40	45	29	23	25	43	60	76	81	97	J ^R ₁₀₇	109	120	91	78	77	71	81	R	33	36	36	35	
28	36	R	R ₄₆	20	J ^R ₂₂	26	45	I ^R ₆₄	67	80	83	J ^R ₁₀₂	J ^R ₁₀₁	94	87	88	J ^R ₇₅	62	J ^R ₇₂	51	39	36	36	R ₃₅	
29	35	36	41	26	22	23	43	R	81	77	S ₇₃	83	R ₈₆	95	98	R ₈₇	82	81	83	62	33	I ^S ₃₆	J ^S ₃₇	38	
30	J ^S ₃₇	S ₃₆	39	S ₂₈	21	24	S ₅₁	A	I ^S ₇₂	J ^R ₈₇	90	109	116	108	108	106	78	66	71	S ₅₁	46	S ₃₆	36	S	
31	F	S ₃₆	37	J ^S ₃₇	37	27	45	55	A	83	99	113	117	113	115	95	71	J ^S ₇₆	75	60	43	S	S	44	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	24	22	22	23	25	25	26	25	26	25	26	26	27	27	27	26	28	28	28	27	27	24	24	23	
MED	39	39	41	36	31	29	43	61	72	77	83	90	94	98	88	81	75	70	60	49	40	37	38	40	
UQ	42	42	43	38	36	33	45	64	75	82	89	102	104	108	97	90	81	75	66	51	46	42	42	42	
LQ	36	S ₃₇	38	33	29	26	37	56	66	75	78	R ₇₈	89	94	83	76	69	66	56	46	35	36	36	36	

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FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF1 (0.01 MHz)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	C	L	L	L	A							
2										L	L	L ⁴⁷⁰	L	A	L	A	L							
3									L	L	L ⁴⁶⁰	L	L	L	L ⁴⁵⁰	L	L	L						
4									L	C	C	C	C	C	C	L	A							
5										L	L ⁴³⁰	L	L ⁴⁵⁰	L ⁴⁴⁰	L ⁴⁵⁰	L	L							
6									L	L	L	L ⁴³⁰	L ⁴¹⁰	L	L	L								
7									L	L	L	L	L	L ⁴⁵⁰	L ⁴³⁰	L	L							
8									C	C	L	L	L ⁴⁵⁰	L	L	L	L							
9									L	L	L	L	L	A	A	A	A							
10									L	L	L	A	L ⁴⁶⁰	L ⁴⁶⁰	L	A	L							
11									L	L	A	L	L	L	L	L	L							
12									L	L	L	L ⁴⁵⁰	L	L	L	L	L							
13								L	L	L	L	L	L ⁴⁵⁰	L	L	A	A							
14									L	L	L ⁴⁶⁰	L	L ⁴⁶⁰	L ⁴⁶⁰	L	L								
15									L	L	L	L ⁴⁷⁰	L	L	L	L	A							
16									L	L	L	L	L	L	L	L	L							
17										L	L ⁴⁴⁰	L	L ⁴⁷⁰	L ⁴⁷⁰	L ⁴⁴⁰	L	L							
18									L	L	L	L	L ⁴⁵⁰	L	L	L	L							
19									L	L	L	L ⁴⁶⁰	L	L	L	L	L							
20									L	L ⁴⁴⁰	L ⁴³⁰	L ⁴⁶⁰	L ⁴²⁰	L	L ⁴⁶⁰	L ³⁹⁰	L							
21								L	L	L	L	C	C	C	C	C	C							
22								C	C	C	C	C	C	C	C	C	L							
23								C	C	C	C	C	C	C	C	C	C							
24								C	C	C	C	C	L	L	L	C								
25								L	C	C	L ⁴⁵⁰	A	L	L	A	L								
26								L	L ³⁷⁰	L	L	A	L	L ⁴⁵⁰	L ⁴¹⁰	L								
27								L	L ⁴¹⁰	L	L ⁴⁶⁰	L ⁴⁶⁰	L ⁴⁴⁰	L	L	L								
28								L	L	L ⁴²⁰	L ⁴⁶⁰	L ⁴³⁰	L ⁴³⁰	L	L	L								
29								L	L	L	L	L ⁴⁷⁰	L ⁴³⁰	L ⁴⁷⁰	L	L	L							
30								A	A	A	A	A	A	L ⁴⁵⁰	L ⁴⁴⁰	L	L							
31								A	A	A	L ⁴⁵⁰	L	A	L	L	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1	2	6	11	12	10	7	1								
MED									370	425	435	460	450	450	440	390								
UQ											460	465	460	460	450									
LQ											430	450	430	440	435									

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FOF1 (0.01 MHz)

IONOSPHERIC DATA

MAR. 1974

FOE (0.01 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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								180	260 ^R	275	320	320	C	A	310	265	250	A						
2								190	270	280	305	325 ^R	330 ^R	325	300	280	240	S						
3								180	250	290	315	325 ^R	330 ^R	325	315 ^R	280	250	A						
4								190	250	C	C	C	C	C	C	A	A	A						
5								205	250	275		R	A	A	A	A	A							190
6								180	250	290	310	330	I ^R	340	320	315	A	A	A					
7								190	260 ^R	270 ^I	290 ^A	320 ^I	325	325	320	295	250	A						
8								C	C	C	310	325	330	A	A	A	A	A						
9								190	260	A	A	I ^A	320	A	A	A	A	A	A					
10								200	A	A	A	A	A	A	320	A	A	180						
11								210	260 ^R	A	A	A	A	R	A	A	A	A						
12								195	260 ^R	290	300	330	335	R	R	I ^A	290	250	B					
13								R	A	290	310	325 ^R	330 ^R	330	320	290	250	A						
14							S	220	270 ^R	300	320	R	R	I ^R	335	320	300	A	A					
15								B	A	A	I ^A	280	305	325	325	320	A	300 ^R	270	A				
16							S	170	280	300	315	325	340	340	325	300	270	170						
17								B	190	240	R	320	330	330	330	320	285	250	170					
18							S	H	210	265 ^R	300	R	R	I ^R	340	I ^R	340	I ^A	300	260	200			
19								B	210	280	I ^R	300	330	R	R	R	R	300	265	A				
20								B	R	270	290	I ^R	300	I ^R	320	R	A	A	R	270	R			
21								B	245	285	300	315	C	C	C	C	C	C	C	C				
22								C	C	C	C	C	C	C	C	C	C	255	C					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	335	I ^A	330	300	C	C	A				
25								B	R	280	C	C	A	A	A	A	A	A	A					
26								B	205	260	300	310	A	A	A	R	A	A	A					
27								B	R	R	280	A	A	A	R	305	290	A	A					
28								B	230	280	290	I ^A	290	280	R	320	315	305	A	A				
29								B	230	275	300	300	310	A	325	320 ^R	290	260	215					
30								S	150	230	275	300	310	310	A	A	305	280	250	190				
31								B	230	275	295	300	A	A	A	310	280	260	210					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	22	23	21	20	16	12	13	17	17	16	8						
MED							S	150	202	265	290	310	325	330 ^R	325	315	290	252	190					
UQ								220	275	300	315	325	338	330	320	300	262	205						
LQ								190	260	280	300	320	330 ^R	325	310	280	250	175						

MAR. 1974

FOE (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	ES15	ES15	ES15	ES15	20	ES15	ES15	G	30	32	42	35	C	37	35	21	JA61	37	20	26	ES16	C	EB13	EB13	
2	JA24	25	26	29	23	ES17	EB13	G	32	30	37	35	40	49	JA93	JA42	30	24	JA36	EB12	JA27	JA39	30	22	
3	JA27	28	24	ES15	30	24	ES15	27	30	35	40	39	40	28	G	32	31	37	JA29	24	JA22	JA53	JA54	JA40	19
4	ES15	20	25	31	24	26	JA26	G	G	C	C	C	C	C	C	JA42	JA42	JA39	JA30	JA33	JA26	JA42	32	JA34	
5	ES15	24	20	24	28	EB13	EB12	G	G	G	G	35	36	35	35	JA31	31	G	ES15	21	ES15	ES15	ES15	EB12	
6	ES15	ES15	JA24	JA20	JA20	20	20	G	G	33	35	G	G	36	G	36	JA41	JA25	JA36	JA20	ES15	21	JA24	JA21	
7	JA26	JA22	JA20	JA24	JA20	JA22	JA20	JA25	G	35	34	31	31	G	G	20	36	JA30	JA27	JA23	21	24	17	C	C
8	C	C	C	C	C	C	C	C	C	C	36	G	30	JA43	JA51	JA41	JA36	JA31	JA29	JA26	20	18	25	24	
9	ES15	ES15	25	25	20	22	ES15	24	34	39	35	37	JA39	JA51	JA48	JA54	JA45	JA29	18	23	27	23	22	18	
10	33	22	20	24	18	ES15	ES15	G	45	47	67	JA68	JA54	JA44	36	JA54	JA27	G	JA18	JA29	JA27	ES15	ES15	ES15	24
11	JA24	24	24	JA30	24	17	24	18	G	24	JA43	JA54	JA48	45	G	35	JA36	36	47	JA54	JA60	JA39	JA35	JA20	JA24
12	JA26	21	20	22	20	ES15	ES15	G	G	JA25	G	G	G	G	G	34	G	18	23	JA28	JA24	ES15	ES15	ES15	EB13
13	ES15	EB13	ES15	ES15	ES15	ES15	ES15	G	34	37	35	G	38	38	46	JA91	64	28	JA25	21	21	20	ES15	ES15	
14	ES15	EB12	ES15	EB12	EB12	ES15	ES16	27	30	35	39	G	G	G	38	38	JA36	JA54	JA41	JA24	JA26	JA22	M	20	
15	ES15	ES15	ES15	ES15	ES15	ES15	ES15	31	JA32	JA40	JA41	41	37	34	32	34	40	JA42	JA42	JA35	25	JA26	ES15	ES15	
16	ES15	ES15	ES15	EB13	ES15	ES15	ES15	G	31	34	32	G	G	36	36	41	40	25	24	33	25	28	ES15	20	
17	17	18	20	ES15	EB12	EB12	EB12	G	32	37	42	44	42	40	36	32	36	25	20	ES15	ES15	ES15	ES15	ES15	
18	ES15	ES15	EB13	EB12	ES15	ES15	20	29	31	35	G	G	G	G	JA40	32	31	26	ES15	ES15	ES15	ES15	ES15	ES15	
19	ES15	ES15	ES15	ES15	ES15	ES15	EB14	30	32	G	36	G	G	G	G	G	19	JA23	JA30	22	ES15	ES15	ES15	ES15	
20	ES15	ES15	ES15	ES15	ES15	ES15	25	G	31	34	G	G	G	JA36	35	G	G	G	ES15	20	JA20	JA20	JA29	30	
21	ES15	ES15	ES15	JA25	ES15	ES15	G	G	34	39	40	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	30	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	JA61	JA43	G	C	C	JA48	JA41	JA30	JA146	JA84	JA54	JA20
25	JA30	JA29	21	JA28	M	M	G	G	32	C	C	62	70	JA42	JA54	JA94	JA41	JA29	35	33	JA28	23	20	ES15	
26	ES15	EB12	ES15	ES15	ES15	ES15	EB13	G	G	34	JA43	JA46	JA41	41	33	30	36	JA28	JA24	JA24	M	ES15	ES15	ES15	
27	ES15	20	ES15	21	M	20	21	G	G	36	JA45	JA39	45	G	G	21	JA26	32	28	JA26	JA26	JA26	ES15	ES15	ES15
28	ES15	ES15	21	20	19	ES15	23	26	31	33	JA35	JA36	31	G	G	G	25	JA35	JA25	JA24	JA21	JA20	20	ES15	ES15
29	ES15	ES15	EB13	ES15	EB13	ES15	EB15	26	31	32	33	36	35	G	G	G	20	30	28	18	20	20	ES15	ES15	ES15
30	ES15	20	20	20	ES15	ES15	JA41	JA71	JA64	JA60	JA71	JA66	JA61	JA39	34	18	G	G	24	20	25	JA38	ES15	ES15	ES15
31	22	JA36	25	JA30	ES15	ES15	29	39	JA77	63	JA55	JA43	47	JA101	G	G	30	29	22	JA29	47	43	ES15	JA26	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	27	27	27	27	27	27	27	27	25	26	26	26	27	27	27	28	28	28	28	28	27	27	27	
MED	ES15	ES15	20	20	18	ES15	ES15	G	31	35	36	36	38	36	35	34	36	28	JA24	24	22	20	ES15	15	
UQ	23	22	22	24	20	18	20	26	32	39	42	JA43	45	42	37	JA41	40	JA30	JA32	JA28	JA27	JA27	23	22	
LQ	ES15	ES15	ES15	ES15	ES15	ES15	ES14	G	EG24	33	34	G	G	G	EG20	EG26	30	25	20	20	ES16	ES15	ES15	ES15	

The Radio Research Laboratories, Japan

MAR. 1974

FOES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FBES (0.1 MHz)

135 E Mean Time (G. M. T. + 9)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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 ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	28	32	42	34	C	34	33	G ₁₉	43	27	E	E	E ₁₆	C	E ₁₃	E ₁₃	
2	E	E	17	17	E	E ₁₇	E ₁₃	G	32	G	37	35	40	45	35	42	28	24	35	E ₁₂	20	A ₃₉	20	E	
3	16	E	E	E ₁₅	15	E	E ₁₅	27	30	33	40	39	40	G ₂₈	27	G	22	22	16	19	A ₅₃	25	20	E	
4	E ₁₅	E	22	16	14	17	25	G	G	C	C	C	C	C	C	34	40	27	22	27	17	23	22	25	
5	E ₁₅	E ₁₅	E	15	15	E ₁₃	E ₁₂	G	G	G	G	32	33	33	33	30	26	G	E ₁₅	E	E ₁₅	E ₁₅	E ₁₅	E ₁₂	
6	E ₁₅	E ₁₅	E	E	15	E	E	G	G	31	35	G	G	G	G	31	40	25	26	E	E ₁₅	E	20	20	
7	E	E	20	20	E	E	E	G	G	34	33	U ₃₁	Y ₂₈	G ₂₆	G ₂₀	27	22	23	20	E	E	E	C	C	
8	C	C	C	C	C	C	C	C	C	C	33	G	G ₃₀	40	43	37	28	31	29	17	E	E	E	15	
9	E ₁₅	E ₁₅	E	E	E	E ₁₅	E ₁₅	22	30	37	33	34	39	51	44	50	44	27	16	E	17	E	E	E	
10	E	E	E	E	E	E ₁₅	E ₁₅	G	37	32	39	68	40	37	30	41	26	17	23	20	E ₁₅	E ₁₅	E ₁₅	16	
11	16	16	16	15	15	E	17	G ₁₅	20	33	50	45	45	G	35	34	33	40	50	A ₆₀	26	E	E	E	
12	E	E	E	E	E	E ₁₅	E ₁₅	G	G	G ₂₂	G ₂₀	G	G	G	G	27	16	23	25	18	E ₁₅	E ₁₅	E ₁₅	E ₁₃	
13	E ₁₅	E ₁₃	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	G	30	33	35	G	38	38	44	A ₉₁	57	23	17	E	E	E	E ₁₅	E ₁₅	
14	E ₁₅	E ₁₂	E ₁₅	E ₁₂	E ₁₂	E ₁₅	E ₁₆	25	30	35	38	G	G	G	37	36	35	50	35	20	19	19	E	E	
15	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	26	30	39	41	40	37	U ₃₄	Y ₃₂	33	40	39	42	32	18	19	E ₁₅	E ₁₅	
16	E ₁₅	E ₁₅	E ₁₅	E ₁₃	E ₁₅	E ₁₅	E ₁₅	G	30	33	U ₃₂	Y ₃₂	G	G	G	35	40	33	25	20	23	15	E	E ₁₅	E
17	E	E	E	E ₁₅	E ₁₂	E ₁₂	E ₁₂	G	32	37	40	42	42	40	35	32	35	23	E	E ₁₅	E ₁₅	E ₁₆	E ₁₅	E ₁₅	
18	E ₁₅	E ₁₅	E ₁₃	E ₁₂	E ₁₅	E ₁₅	20	27	31	33	G	G	G	G	38	32	31	24	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
19	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	28	31	G	36	G	G	G	G	G ₁₈	G ₂₂	25	E	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
20	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	21	G	30	34	G	G	G	36	34	G	G	G	E ₁₅	E	16	20	23	27	
21	E ₁₅	E ₁₅	E ₁₅	21	E ₁₅	E ₁₅	G	G	34	34	39	C	C	C	C	C	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	30	C	C	C	C	C	C	C	
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	41	40	G	C	C	26	35	28	25	A ₈₄	20	E	
25	26	E	E	20	E	E	G	G	30	C	C	42	U ₇₀	Y ₄₀	40	67	28	26	35	28	26	22	E	E ₁₅	
26	E ₁₅	E ₁₂	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₃	G	G	32	40	45	41	38	G ₃₃	30	31	25	20	24	E	E ₁₅	E ₁₅	E ₁₅	
27	E ₁₅	E	E ₁₅	E	E	E	21	G	G	35	31	35	40	G	U ₂₁	G ₂₄	30	25	20	20	25	E ₁₅	E ₁₅	E ₁₅	
28	E ₁₅	E ₁₅	E	E	E	E ₁₅	20	26	30	32	34	36	U ₃₁	G	G	G ₂₃	28	16	E	E	E	18	E ₁₅	E ₁₅	
29	E ₁₅	E ₁₅	E ₁₃	E ₁₅	E ₁₃	E ₁₅	E ₁₅	22	30	32	U ₃₃	35	35	G	G	G ₂₀	30	23	17	E	E	E ₁₅	E ₁₅	S	
30	E ₁₅	E	E	E	E ₁₅	E ₁₅	40	A ₇₁	U ₆₄	60	71	65	60	37	32	G ₁₈	G	16	G	23	35	E ₁₅	E ₁₅	E ₁₅	
31	E	15	E	20	E ₁₅	E ₁₅	28	39	A ₇₇	52	55	37	41	70	G	G	28	28	22	26	42	E ₄₃	E ₁₅	E	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	27	27	27	27	27	27	27	27	25	26	26	26	27	27	27	28	28	28	28	28	28	27	27	26
MED	E ₁₅	E ₁₅	15	15	15	E ₁₅	E ₁₅	G	30	33	36	34	38	34	33	31	30	25	20	18	16	E ₁₅	E ₁₅	15	
UQ	E ₁₅	E ₁₅	E ₁₅	15	E ₁₅	E ₁₅	18	26	31	35	40	40	41	39	35	36	35	27	28	24	22	20	E ₁₅	E ₁₅	
LQ	E ₁₅	E	E	E ₁₂	E	E ₁₂	E ₁₃	G	E ₂₀	32	33	G	G	G	E ₂₀	G ₂₂	26	23	15	E	15	E ₁₅	E ₁₅	E	

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MAR. 1974

FBES (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

M(3000)F2 (0.01)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	270	I S	290	315	310	305	330	345	295	315	J R	335	I C	325	345	360	355	330	325	310	S	290	I C	295	290	
2	285	I S	J S	310	290	310	320	360	350	325	335	305	315	335	345	340	340	330	345	320	S	305	A	280	300	
3	295	S	S	S	280	310	J S	360	305	J S	335	J R	J R	305	340	J R	340	355	325	310	A	325	305	300		
4	280	F	S	345	355	295	320	355	360	C	C	C	C	C	C	325	345	340	355	290	285	290	285	265		
5	J S	J S	J S	320	295	310	F	325	355	345	310	320	335	315	325	335	345	365	360	330	305	290	J R	J R	315	
6	295	F	F	315	315	F	320	345	J S	330	340	J R	325	325	340	355	335	330	330	335	290	285	315	J R	295	
7	295	300	345	310	300	305	315	330	300	310	310	320	330	335	345	355	355	350	330	325	285	280	C	C		
8	C	C	C	C	C	C	C	C	C	C	315	J R	320	J R	330	330	335	345	315	340	305	310	305	F		
9	J S	F	F	J S	360	250	F	J S	335	345	345	320	305	J R	325	345	340	340	345	330	330	335	350	230	285	I S
10	J S	275	285	280	305	275	295	J S	335	330	315	295	315	300	310	320	345	350	330	335	310	S	310	F	320	310
11	295	265	J S	F	295	320	310	350	J R	335	310	340	310	325	J R	325	330	355	355	340	I A	I R	290	F	F	
12	F	F	F	315	275	290	325	340	335	310	315	315	315	J R	320	320	335	345	335	325	315	295	290	290	295	
13	305	310	340	290	280	280	330	350	J R	330	300	J S	325	320	315	J R	A	340	J S	335	320	295	280	295	280	
14	280	295	310	325	295	290	330	355	335	335	345	315	320	J R	325	340	J R	J R	335	335	330	315	320	330	270	290
15	310	310	265	F	S	265	S	310	335	345	345	J R	340	320	325	335	345	300	350	325	300	305	300	285	S	
16	285	280	320	370	315	300	355	360	370	J R	315	300	320	305	330	300	330	340	350	335	300	S	285	300	J R	I S
17	280	I S	280	260	265	235	230	300	310	315	270	280	I S	295	315	325	J S	335	340	335	310	275	I S	275	I S	
18	280	275	325	370	325	270	325	335	335	J R	320	325	J R	325	315	325	315	335	J R	335	335	320	300	J R	280	280
19	300	300	305	315	325	275	340	345	350	J R	340	305	J R	315	325	335	J R	I R	355	320	315	300	290	J R	300	
20	290	300	310	310	315	305	330	340	330	325	305	310	320	300	315	330	350	350	345	315	290	J R	I R	I R		
21	285	I R	280	285	310	280	325	335	320	340	320	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	325	C	C	C	C	C	C	C	C	
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	C	315	J R	330	335	C	C	355	325	300	I R	A	R	315
25	R	I R	325	F	R	R	335	355	J R	335	C	C	320	J S	325	330	J R	360	360	355	290	I S	285	280	J S	
26	305	295	300	310	J S	J S	J S	320	355	J R	335	320	J R	300	315	J R	J R	335	345	345	320	290	280	275	270	
27	J R	295	310	345	285	285	330	315	315	300	310	J R	315	320	350	340	335	310	325	345	R	305	260	270	260	
28	305	R	R	320	J R	280	275	360	I R	340	340	325	310	J R	J R	320	320	340	J R	350	J R	335	315	280	285	275
29	275	315	335	355	290	295	330	R	345	365	325	315	325	320	335	335	340	345	350	355	365	I S	J S	290		
30	J S	285	335	345	275	270	325	A	I S	J R	315	290	310	320	325	315	345	335	350	350	300	335	315	275	S	
31	F	305	295	J S	380	295	355	365	A	295	305	310	320	325	320	355	340	J S	345	335	A	S	S	300		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	24	22	22	23	25	25	26	25	26	25	26	26	27	27	27	26	28	28	28	27	26	24	24	23		
MED	292	295	310	315	300	290	328	345	335	320	315	315	320	325	335	335	340	345	335	315	300	290	285	290		
UQ	302	305	325	338	315	305	330	355	345	335	325	325	325	330	340	345	350	350	345	320	310	300	295	300		
LQ	282	280	290	310	285	275	320	335	320	310	305	310	315	318	320	330	335	332	328	302	290	280	278	280		

The Radio Research Laboratories, Japan

MAR. 1974

M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1974

M(3000)F1 (0.01)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	C	L	L	L	A							
2										L	L	L	L	A	L	A	L							
3									L	L	L	L	L	L	L	L	L	L						
4									L	C	C	C	C	C	C	L	A							
5										L	L	L	L	L	L	L	L							
6									L	L	L	L	L	L	L	L	L							
7									L	L	L	L	L	L	L	L	L							
8									C	C	L	L	L	L	L	L	L							
9									L	L	L	L	L	A	A	A	A							
10									L	L	L	A	L	L	L	L	L							
11									L	L	A	L	L	L	L	L	L							
12									L	L	L	L	L	L	L	L	L							
13								L	L	L	L	L	L	L	L	L	L							
14									L	L	L	L	L	L	L	L	L							
15									L	L	L	L	L	L	L	L	L							
16										L	L	L	L	L	L	L	L							
17										L	L	L	L	L	L	L	L							
18									L	L	L	L	L	L	L	L	L							
19									L	L	L	L	L	L	L	L	L							
20									L	L	L	L	L	L	L	L	L							
21								L	L	L	L	L	L	L	L	L	L							
22								C	C	C	C	C	C	C	C	C	C							
23								C	C	C	C	C	C	C	C	C	C							
24								C	C	C	C	C	L	L	L	C								
25									L	C	C	L	L	L	L	L	L							
26								L	L	L	L	L	L	L	L	L	L							
27									L	L	L	L	L	L	L	L	L							
28									L	L	L	L	L	L	L	L	L							
29								L	L	L	L	L	L	L	L	L	L							
30									A	A	A	A	A	A	A	A	A							
31									A	A	A	A	A	A	A	A	A							
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								1	2	6	11	12	10	7	1									
MED								405	378	378	370	375	358	365	385									
UQ										385	375	395	370	368										
LQ										370	352	362	350	355										

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF₂ (KM)

135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									250	280	260	250	I C 280	265	245	225	225							
2										280	255	300	290	250	250	245	240							
3									250	250	255	255	260	315	275	250	245	230						
4									235	C	C	C	C	C	C		255	230						
5										290	280	260	290	270	280	250	240							
6									240	250	290	280	290	260	250	250								
7									250	290	280	275	265	245	250	240	240							
8									C	C		290	285	275	250	270	250	235						
9									250	250	280	275	280	260	250	265	250							
10									235	250	300	290	270	285	255	240	230							
11									245	290	250	290	270	270	270	270	245							
12									240	295	280	290	270	260	260	250	250							
13								240	255	270	240	275	270	270	260	A	255							
14									245	250	255	260	290	270	260	250								
15									250	225	250	280	280	280	255	250	230							
16									250	270	270	300	260	255	255	250								
17									270	380	340	305	295	285	280	250								
18									250	260	260	290	280	280	260	250	250							
19									240	250	270	290	290	285	260	260	250							
20									250	260	290	300	290	290	290	250	240							
21							240	280	250	270	C	C	C	C	C	C	C							
22							C	C	C	C	C	C	C	C	C	C	260							
23							C	C	C	C	C	C	C	C	C	C	C							
24							C	C	C	C	C	C	270	260	250	C								
25								250	C	C		280	270	270	255	265	235							
26						230	245	250	270	300	310	280	260	260										
27							280	290	290	290	280	250	250	250	255									
28							250	260	290	280	260	280	260	260	250									
29						260	250	250	280	295	275	290	270	260	255									
30							A	290	E A 340	300	270	270	280	250	240									
31							A	300	305	285	280	275	260	240	250	255								
Hour 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
CNT								4	21	25	26	26	27	27	27	26	25	2						
MED								240	250	260	278	285	280	270	260	250	245	242						
UQ								250	250	290	290	290	290	280	270	260	250							
LQ								235	245	250	260	275	270	260	252	250	240							

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H^oF₂ (KM)

IONOSPHERIC DATA

MAR. 1974

H·F (KM)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	310	290	250	260	260	240	230	235	205	H I A 230 195	I C 210	H 200	205	210	I A 215	235	220	220	E S 260	I C 285	270	285	
2	300	275	255	240	250	240	245	225	230	190	H E A 250 240	A	A	220	I A 220	220	245	225	225	E A 250	A	E A 310	270	
3	290	275	280	290	E A 250	265	210	230	220	225	H 240	E A 230	255	205	200	220	H 220	I A 230	215	240	A	275	275	270
4	300	355	E A 330	250	220	E A 285	E A 290	225	220	C	C	C	C	C	C	225	I A 230	225	205	E A 300	E A 285	E A 300	E A 320	I A 300
5	280	250	245	225	240	290	240	230	225	205	220	200	220	230	240	230	210	230	240	240	290	300	290	240
6	260	240	250	240	250	300	250	240	240	240	250	240	210	200	220	210	250	220	265	290	300	320	305	300
7	260	260	250	250	230	290	250	240	210	240	220	185	H 225	220	200	220	H 225	225	220	230	275	300	C	C
8	C	C	C	C	C	C	C	C	C	C	225	235	200	H E A 250 230	I A 240	235	230	245	230	220	250	255	270	
9	260	300	290	240	200	E S 260	255	240	210	E A 240	205	225	240	A	A	A	A	250	225	200	225	E S 330	290	270
10	255	315	280	280	255	E S 260	275	250	A	210	275	A	260	225	245	A	225	240	230	245	240	250	235	285
11	300	335	290	255	E A 260	245	255	235	205	220	I A 230	260	250	260	220	240	240	250	E A 320	I A 260	280	320	290	305
12	340	250	240	250	280	320	240	340	210	200	H 240	240	260	240	220	240	240	240	250	250	260	290	280	
13	260	240	240	250	300	290	250	230	200	H 190	H 195	220	210	210	A	A	A	230	220	225	255	295	295	295
14	300	275	250	240	260	290	245	235	235	220	220	210	200	210	220	240	250	250	240	250	255	250	300	290
15	300	250	340	350	350	310	240	240	240	A	A	220	200	H 240	230	230	I A 230	235	E A 260	E A 260	260	255	280	S
16	250	300	250	205	E S 230	E S 270	240	220	230	190	H 200	230	200	H 205	240	I A 220	240	230	205	250	250	250	270	250
17	300	300	310	325	275	400	310	H 260	235	250	250	A	280	250	225	215	I A 240	230	220	230	280	260	300	320
18	300	295	245	205	230	E S 250	240	230	235	205	240	220	205	250	240	240	250	230	220	220	250	270	290	300
19	290	290	260	240	210	280	250	240	240	240	230	240	210	205	240	220	220	240	220	220	240	290	300	300
20	270	260	250	250	240	250	240	240	240	220	210	200	210	210	230	210	210	240	220	220	240	280	300	300
21	300	300	305	320	240	300	240	230	240	245	250	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	250	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	250	250	220	C	C	240	250	280	270	A	320	280
25	260	250	230	290	260	290	240	240	230	C	C	E A 255	A	240	I A 205	I A 230	235	230	230	300	300	290	310	275
26	255	260	280	260	255	250	230	210	200	220	I A 240	I A 240	270	250	250	240	240	240	230	240	230	300	330	305
27	310	290	220	210	310	300	240	245	240	235	260	250	240	250	250	240	250	250	230	200	290	330	330	350
28	290	270	215	230	340	300	240	240	240	240	230	220	230	240	240	240	240	240	235	210	240	300	300	330
29	310	290	240	200	290	310	240	250	240	230	225	205	210	190	H 245	240	240	250	225	210	200	300	290	300
30	300	300	235	205	E S 350	E S 340	E A 300	I A 260	A	A	A	A	A	250	220	235	230	235	230	245	E A 250	230	320	335
31	300	300	280	255	210	E S 250	230	240	A	A	A	230	A	A	H 220	H 210	230	245	230	230	A	I A 355	345	290
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	24	22	23	23	23	24	25	24	26	28	28	28	26	26	27	26
MED	300	290	250	250	252	285	240	240	232	220	230	225	220	232	225	229	235	238	228	232	251	286	295	292
UQ	300	300	282	258	273	300	250	240	240	240	242	240	250	250	240	240	240	242	236	249	278	300	306	300
LQ	260	260	242	235	232	251	240	230	215	205	220	212	210	208	220	220	225	230	220	220	240	260	290	275

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H·F (KM)

IONOSPHERIC DATA

MAR. 1974

H^oE (KM)

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	105	100	105	100	C	A	105	115	120	A						
2								115	110	115	105	105	105	105	105	110	115	S						
3								120	105	A	E A 120	A	A	A	A	A	A	A						
4								115	110	C	C	C	C	C	C	A	A	A						
5								110	105	105	110	110	110	110	110	110	110	110						
6								130	110	110	105	105	110	115	105	115	A	A						
7								110	110	110	I A 100	I A 105	E A 115	E A 120	110	I A 115	A	A						
8								C	C	C	100	100	A	A	A	A	A	A						
9								120	105	A	A	A	A	A	A	A	A	A						
10								110	A	A	A	A	A	A	A	A	A	A						
11								120	120	A	A	A	A	110	110	110	110	A						
12								110	110	110	115	110	110	105	110	I A 110	110	B						
13								110	A	E A 120	105	105	105	110	115	110	110	A						
14								S	115	105	110	105	105	110	110	105	110	A						
15								B	110	110	100	100	A	A	A	A	120	105	A					
16								S	110	105	100	100	100	E B 120	105	105	105	110	110					
17								B	120	105	100	100	105	100	100	105	105	105	110					
18								S	110	105	105	110	110	105	110	110	105	110	110					
19								B	110	100	110	110	110	110	110	110	120	A						
20								B	110	110	105	110	110	110	110	110	110	110	110					
21								B	110	110	110	110	C	C	C	C	C	C						
22								C	C	C	C	C	C	C	C	C	110	C						
23								C	C	C	C	C	C	C	C	C	C	C						
24								C	C	C	C	C	C	110	105	105	C	C	110					
25								B	110	105	C	C	100	A	A	A	A	A	A					
26								B	110	105	105	110	110	110	110	A	A	A	A					
27								B	110	110	110	110	110	105	105	125	115	A	A					
28								B	110	105	110	105	105	A	105	110	110	A	A					
29								B	110	105	105	105	100	A	105	100	110	125	A					
30								130	110	105	105	105	105	105	100	E A 120	110	105	125					
31								B	H 105	105	105	105	105	105	A	105	105	105	120					
Hour 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
CNT							1	27	25	21	23	21	17	19	20	20	17	8						
MED							130	110	105	105	105	105	108	108	109	110	110	110						
UQ							115	110	110	110	110	110	110	110	110	112	110	115						
LQ							110	105	105	105	105	105	105	105	105	110	110	110						

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H^oE (KM)

IONOSPHERIC DATA

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H^oES (KM)

135 E Mean Time (G. M. T. + 9^h)

Station KOKUBUNJI TOKYO Lat. 35 42.4 N. Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	S	100	S	S	G	140	140	120	125	C	100	145	100	125	120	100	100	S	C	B	B
2	115	125	110	110	125	S	B	G	150	150	135	155	135	125	125	120	125	115	110	B	105	100	100	100
3	100	110	110	S	105	105	S	160	175	150	150	145	150	100	100	155	100	100	100	110	110	110	110	100
4	S	110	105	100	100	100	100	G	G	C	C	C	C	C	C	100	100	100	100	110	110	105	105	105
5	S	105	100	100	100	B	B	G	G	G	G	110	110	110	110	110	110	G	S	100	S	S	S	S
6	S	S	100	100	100	100	100	G	G	140	150	G	G	120	G	115	110	105	100	105	S	150	130	115
7	100	100	100	100	100	100	100	100	G	110	105	100	100	100	100	100	100	100	100	100	100	100	C	C
8	C	C	C	C	C	C	C	C	C	C	125	G	100	100	100	100	100	100	100	100	100	100	100	100
9	S	S	100	100	100	100	S	125	110	110	105	105	110	100	100	100	100	100	100	105	105	100	100	100
10	100	100	100	100	100	S	S	G	105	105	100	100	100	100	100	100	100	110	110	105	S	S	S	100
11	100	100	100	100	100	100	100	105	100	110	110	105	100	G	120	110	110	100	100	100	100	100	100	100
12	100	100	100	100	100	S	S	G	G	100	100	G	G	G	G	100	100	130	100	100	S	S	S	B
13	S	B	S	S	S	S	S	G	110	160	170	G	145	145	130	120	110	100	100	100	100	100	S	S
14	S	B	S	B	B	S	S	155	160	150	140	G	G	G	120	120	110	105	105	100	100	100	100	100
15	S	S	S	S	S	S	B	110	110	105	110	110	120	120	120	140	120	120	110	110	110	105	S	S
16	S	S	S	B	S	S	S	G	130	125	125	G	G	125	120	115	115	110	105	105	100	100	S	100
17	100	100	135	S	B	B	B	G	155	150	140	135	140	140	135	140	120	110	100	S	S	S	S	S
18	S	S	B	B	S	S	150	150	150	140	G	G	G	G	140	140	150	140	S	S	S	S	S	S
19	S	S	S	S	S	S	B	150	150	G	140	G	G	G	G	100	100	100	100	S	S	S	S	S
20	S	S	S	S	S	S	190	G	130	130	G	G	G	110	115	G	G	G	S	100	100	110	105	110
21	S	S	S	100	S	S	G	G	150	140	130	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	150	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	115	130	G	C	C	120	110	100	110	110	100	100
25	100	100	100	100	100	100	G	G	140	C	C	105	105	100	100	100	100	100	100	125	100	100	100	S
26	S	B	S	S	S	S	B	G	G	140	110	110	110	110	105	110	100	100	100	100	100	S	S	S
27	S	100	S	100	100	100	150	G	G	110	110	110	110	G	100	100	100	100	100	100	100	S	S	S
28	S	S	100	100	100	S	150	130	140	120	110	105	100	G	G	100	100	110	105	100	100	100	S	S
29	S	S	B	S	B	S	B	140	140	140	120	100	100	G	G	100	145	130	125	100	100	S	S	S
30	S	100	100	100	S	S	140	130	120	115	110	110	105	100	130	100	G	100	100	115	110	S	S	S
31	100	100	110	100	S	S	145	130	115	110	105	105	105	100	G	G	130	120	115	110	110	110	S	110
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	13	15	15	14	8	10	12	20	23	23	17	19	19	20	25	26	26	25	24	20	17	11	13
MED	100	100	100	100	100	100	142	130	140	130	120	110	110	110	118	100	110	105	100	100	100	100	100	100
UQ	100	105	108	100	100	100	150	150	150	140	138	110	118	122	128	120	120	120	105	108	110	110	105	105
LQ	100	100	100	100	100	100	100	118	112	110	110	105	100	100	100	100	100	100	100	100	100	100	100	100

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H^oES (KM)

IONOSPHERIC DATA

MAR. 1974

TYPES OF ES

135 E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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					F1				H1	H2	H2	H1		L2	H1	L3	HL34	HL12	F1	F1					
2	F2	F1	F2	F3	F1				H1	H1	H1	H1	H1	H1	H1	H2	C1	C1	F3		F5	F4	F3	F1	
3	F2	F2	F2		F3	F1		H1	H1	HL11	HL11	H1	HL11	L1	L1	HL12	LH21	L2	F1	FF31	F3	F3	F3	F1	
4		F1	F7	F3	F1	F3	F5									L2	L4	L3	F3	FF31	FF31	F5	F4	F4	
5		F1	F1	F1	F1							C1	C1	C1	C1	C1	C1			F1					
6			F2	F2	F3	F1	F1			H1	H1			HL11		CL11	CL21	L2	F2	F2		F1	F2	F2	
7	F2	F2	F3	F1	F2	F2	F2	L1		C2	C2	L2	L1	L1	L1	L1	L2	L3	F4	F2	F2	F1			
8											H1		L1	L2	L3	L3	L3	L3	F2	F3	F2	F2	F2	F2	
9			F2	F2	F1	F2		C1	C2	C2	L1	L1	L2	L2	L2	L4	L4	L3	F2	F1	F3	F2	F2	F1	
10	F2	F2	F2	F2	F2				L2	L2	L2	L2	L2	L2	L2	L2	L2	L1	FF21	FF12				F1	
11	F2	F1	F1	F3	F1	F1	F2	L1	L2	C1	C1	L2	L1		H1	C1	C2	L3	F2	F3	F2	F2	F1	F2	
12	F2	F1	F1	F2	F1					L1	L1					HL11	L1	H1	F3	F1					
13									C1	HL11	H1		H1	HL11	HL21	CL21	CL41	LC33	F1	F1	F1	F1			
14							H2	H1	H1	H1					H1	H2	C2	L4	F4	F3	F4	F3	F2	F1	
15							C1	C2	C2	C2	CL21	CL11	CL11	CL11	HL12	H2	L4	L4	F4	FF41	F2	F5			
16									H2	H1	H1			H1	H1	C2	C2	C2	F3	F3	F3	F3		F1	
17	F1	F2	FF21						H1	H1	H1	H2	H2	H1	HL11	HL11	C2	C3	F2						
18						H4	H3	H2	H1						H1	H1	H1	H1							
19							H1	H1		H1						L1	L1	L3	F1						
20						H1		H1	H1				C1	C1					F1	F2	F4	F3	F3		
21				F4				H1	H1	H1															
22																	H1								
23																									
24													C1	H1				H2	FF23	F3	FF22	FF22	F1	F1	
25	F2	F2	F1	F3	F2	F3			H1			C2	L2	L2	L2	L2	L2	L2	F3	FF33	F2	F1	F1		
26									H1	C1	C1	C1	C1	C1	L1	L1	L2	L2	F2	F3	F1				
27		F1		F2	F2	F1	H1			C1	C1	C1	C1		L1	L1	L1	L2	F2	F2	F2				
28			F1	F1	F1		H1	H1	H1	H1	C1	C2	L1		L1		L1	LH11	FF11	F2	F2	F3			
29							H1	H1	H1	H1	C2	C2	L1		L1		HL22	CL25	FF11	F1	F1			F1	
30		F2	F1	F1			H5	H3	C3	C2	C2	C2	C3	C2	HL11	L1		L1	FF11	FF32	F4				
31	F1	F2	F2	F3			H5	H3	C5	C3	C2	C1	C2	L2			H2	C3	F3	F5	F6	F6		F2	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

MAR. 1974

TYPES OF ES

IONOSPHERIC DATA

MAR. 1974

FXI (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station	YAMAGAWA																							Lat.	31 12.1 N.		Long.	130 37.1 E		Sweep 1 MHz to 20 MHz in 20 sec in automatic operation																						
Hour 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	X	X	X	X	X	X	X	X												X	X	X	S	X																												
2	X	X	X	X	X	X	X	X												X	X	X	X	X																												
3	X		38	39	39	40	X	A											X	X	X	X	0	S																												
4	A		37	38	X	36	29	29											X	40	41	X	X	41																												
5	X	X	X	X	X	X	X	X												X	X	X	X	X																												
6	X	X	X	X	X	39	32	X											X	52	61	S	X	S																												
7	X	X	X	0	S	X	30	32	34										X	X	37	38	40																													
8	42	X	40	40	32	33	34												X	X	X	X	X																													
9	41	X	X	X	X	45	34	34											X	X	36	37	39																													
10	X	0	S	X	X	40	32	X											X	X	X	X	X																													
11	40	X	X	X	X	35	X	29											X	X	X	X	42																													
12	40	S	X	X	X	38	37	X											X	X	X	X	X																													
13	X	X	X	X	X	X	X	X											X	A	37	X	X																													
14	X	X	X	X	X	X	X	X											X	X	X	X	X																													
15	X	X	X	X	X	X	X	X											X	X	X	X	X																													
16	0	S	X	X	X	X	X	X											A	0	S	A	S	X																												
17	A	0	S	A	A	X	X	31											X	0	S	S	S																													
18	X	X	X	X	X	X	X	X											X	X	X	X	X																													
19	X	X	X	X	X	X	X	X											X	X	X	X	S																													
20	X	X	X	X	X	X	X	X											X	X	X	X	X																													
21	S	X	X	X	X	X	X	X											X	X	X	X	S																													
22	S	X	X	X	X	X	X	X											X	X	71	X	X																													
23	X	X	X	X	X	X	S	X											X	X	50	S	46																													
24	S	S	47	45	S	33	S												X	X	X	X	X																													
25	46	46	X	X	X	37	39												X	S	X	S	X																													
26	X	X	X	55	X	X	X												X	X	S	S	X																													
27	X	X	X	X	X	25	28	X											S	X	X	X	X																													
28	X	X	X	X	X	X	X	X											X	X	X	X	X																													
29	X	X	X	X	X	X	X	X											X	X	S	X	38																													
30	X	X	X	X	X	X	X	X											X	X	A	X	X																													
31	X	X	S	55	34	S	37												X	X	X	X	S																													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																												
CNT	26	29	29	30	30	29	29													29	29	25	25	26																												
MED	X	X	X	X	X	X	X												X	X	X	X	X																													
UQ	X	X	X	X	X	X	X												X	X	X	X	X																													
LQ	X	X	X	X	X	X	X												X	X	X	X	X																													

MAR. 1974

FXI (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF2 (0.1 MHz)

135 E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	31	33	33	36	32	33	28	46	53	65	83	75	80	94	98	78	65	58	62	59	40	36	38	33
2	31	33	33	34	34	27	24	46	55	62	65	74	87	103	95	66	64	67	76	50	37	30	31	34
3	32	32	33	33	34	33	I ₂₈ A	46	58	72	75	76	91	87	95	91	87	74	64	50	49	49	36	30
4	A	F	F	35	30	F	F	52	61	68	65	I ₈₂ R	94	102	79	84	76	67	73	46	34	35	36	35
5	35	36	36	39	35	23	23	48	50	57	67	68	U ₈₃ R	J ₈₇ R	92	89	68	59	56	54	39	36	40	41
6	42	33	31	32	F ₃₃	S ₂₆	28	51	58	64	73	82	91	97	80	66	73	72	55	46	J ₅₅ S	I ₄₉ S	J ₄₂ S	S
7	41	J ₃₇ S	40	37	24	F ₂₇	S ₂₈	51	58	73	87	103	124	132	112	87	70	64	58	51	36	31	32	34
8	F	31	34	F	F ₂₆	F ₂₇	F ₂₅	47	60	67	88	J ₁₁₀ S	114	114	S ₁₀₃	84	80	68	68	72	52	37	38	34
9	35	37	38	40	S ₃₉	F ₂₈	F ₂₈	53	J ₇₄ S	77	77	96	116	J ₁₂₄ S	J ₁₁₆ S	96	97	94	96	72	43	30	31	33
10	35	33	34	35	34	26	25	53	64	72	80	99	J ₁₁₉ S	J ₁₂₉ S	J ₁₁₈ S	110	86	71	73	59	51	45	45	30
11	32	32	33	37	29	23	F ₂₃	54	73	74	86	84	104	115	J ₁₀₉ R	99	95	J ₈₄ S	65	56	J ₄₈ S	41	33	36
12	34	I ₃₄ S	34	36	32	31	31	52	66	71	R ₈₆	104	J ₁₁₁ R	U ₁₀₆ R	U ₁₀₁ R	93	R ₈₆	74	65	57	53	43	40	42
13	42	43	36	33	33	33	35	59	66	I ₆₈ C	74	94	83	J ₈₅ R	88	84	S ₈₄	89	68	52	I ₄₃ A	31	34	36
14	U ₃₆	S ₃₆	S ₃₇	37	33	30	31	J ₆₂ S	U ₈₀	84	85	88	91	103	106	101	S ₈₈	84	75	63	63	41	32	34
15	34	36	32	32	32	33	34	63	S ₈₄	64	69	89	90	89	97	96	94	83	71	58	55	52	41	40
16	40	42	43	50	40	25	27	56	66	74	70	88	87	J ₁₀₃ S	J ₁₁₅ S	J ₁₁₃ S	102	96	73	I ₅₅ A	49	A	S	40
17	I ₃₈ A	S ₃₇	A	A	33	33	F ₂₅	Z ₄₇	72	56	70	108	103	119	112	118	104	81	69	55	51	I ₄₅ S	I ₄₆ S	I ₄₈ S
18	S ₄₈	S ₄₅	S ₄₉	55	27	25	30	54	70	74	73	88	99	107	106	J ₁₀₂ R	J ₉₅ S	85	81	65	46	33	33	35
19	S ₃₇	37	37	35	29	26	29	56	69	77	86	95	103	104	107	R ₉₈	77	70	67	58	S ₄₄	36	37	I ₃₉ S
20	J ₄₁ S	39	37	37	33	29	29	54	72	81	77	90	101	I ₁₀₉ R	I ₁₁₈ R	J ₁₁₀ R	99	76	70	51	41	37	J ₃₇ S	38
21	I ₃₈ S	38	S ₃₇	39	32	29	30	57	67	79	79	I ₉₅ C	J ₁₁₈ S	J ₁₁₆ S	126	J ₁₁₅ S	105	90	75	51	47	45	43	I ₄₆ S
22	I ₄₈ S	44	S ₃₅	33	41	26	F	62	J ₇₇ S	74	89	J ₁₁₇ S	105	93	102	J ₁₁₅ S	J ₁₀₆ S	105	89	67	63	65	67	67
23	S ₆₂	S ₅₆	S ₅₈	53	S ₄₅	I ₄₀ S	36	64	81	80	82	102	J ₁₁₅ S	127	J ₁₂₆ S	98	109	100	85	58	46	44	I ₄₆ S	40
24	I ₄₆ S	S	J ₄₁ S	39	I ₄₀ S	27	I ₃₂ S	53	72	96	84	101	S ₉₁	106	106	96	99	92	83	78	57	38	36	37
25	40	40	44	39	32	F	F ₃₃	60	74	80	87	108	126	114	112	J ₁₁₁ R	J ₁₁₇ R	U ₉₇ R	74	52	I ₄₇ S	S ₄₇	S	J ₅₀ S
26	49	48	47	F ₄₉	47	39	40	53	69	72	79	87	J ₁₁₁ R	138	132	J ₁₁₇ R	J ₁₁₁ R	103	89	J ₇₄ S	40	36	38	38
27	39	42	48	23	19	F ₂₂	30	52	69	78	86	J ₁₁₁ R	128	132	133	U ₁₀₉ R	92	94	J ₁₀₇ S	70	33	31	35	33
28	S ₃₇	38	39	25	21	24	30	52	61	83	91	105	110	112	117	119	I ₁₀₀ S	76	J ₇₃ S	60	48	35	37	35
29	34	S ₃₈	S ₄₆	21	17	S ₂₂	30	64	81	63	66	81	92	107	98	94	S ₈₈	S ₈₉	U ₉₈ S	78	43	I ₃₀ A	31	32
30	33	F	39	F ₂₂	20	22	S ₃₃	60	70	70	83	I ₁₀₅ S	J ₁₂₄ S	125	126	J ₁₁₀ S	101	S ₈₇	64	61	49	I ₄₀ A	38	39
31	40	F	S	S ₄₉	28	S	S ₃₁	48	66	86	89	104	S ₁₂₃	124	134	116	102	90	93	72	43	39	42	I ₄₀ A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	27	28	29	31	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	29	30
MED	38	37	37	36	32	27	30	53	69	73	80	95	103	107	107	98	94	84	73	58	47	38	37	36
UQ	41	41	42	39	34	31	31	58	72	78	86	104	116	122	118	110	102	91	82	66	51	45	41	40
LQ	34	34	34	33	28	25	27	51	61	68	73	86	91	102	98	90	82	72	66	52	42	35	34	34

The Radio Research Laboratories, Japan

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

FOF1 (0.01 MHz)

135 E Mean Time (G. M. T. + 9h)

Station **YAMAGAWA** Lat. **31 12.1 N**, Long. **130 37.1 E** Sweep **1 MHz to 20 MHz** in **20 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										L	L	430	450	L	440	420	L	320							
2										L	L	450	450	460	440	L	L	A							
3										L	L	460	460	420	450	L	L	L							
4										L	L	480	470	460	440	U	440	A	A						
5										L	L	470	460	460	450	L	U	380	L						
6										L	L	450	450	440	460	450	L	L	L						
7									290	L	L	420	460	450	470	I	A	L	L	L					
8										L	L	450	450	470	460	460	L	L	L						
9										L	L	L	490	470	450	L	L	L							
10										L	L	440	460	490	U	R	L	L	L						
11									L	L	490	L	470	L	Y	L	L	L							
12									330	L	L	460	U	480	470	480	430	L	370	L					
13										C	L	430	L	450	L	470	A	A	A						
14										L	L	L	430	L	470	Y	A	L	A						
15										L	L	L	470	470	470	L	L	L	L						
16										L	L	420	L	500	470	440	A	A	A						
17											540	L	A	A	A	A	L	L	L	230					
18										L	L	460	U	490	500	L	480	L	460	L	L				
19										L	L	470	480	H	L	460	H	450	L	L					
20										L	L	L	480	470	470	470	L	L	L						
21										L	L	L	C	L	470	L	L	L	A						
22										L	L	L	A	470	470	440	380	L	L						
23										L	L	L	440	L	L	A	A	L	A						
24										L	L	L	L	L	L	L	A	L	L						
25										A	470	A	A	480	L	L	L	L							
26										L	370	470	460	480	I	A	L	A	A						
27										L	L	L	450	470	470	440	L	L	L						
28										L	L	450	450	440	460	450	440	L	L						
29										L	L	450	450	470	L	440	430	410	L						
30										L	L	470	A	A	A	A	430	L	L						
31										A	A	L	450	460	460	440	L	L	L						
Hour 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	
CNT									2	1	14	21	23	22	21	8	4	1	1						
MED									310	370	455	450	470	470	450	440	380	320	230						
UQ											470	470	470	470	460	445	395								
LQ											450	450	455	460	440	430	375								

The Radio Research Laboratories, Japan

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FOF1 (0.01 MHz)

IONOSPHERIC DATA

MAR. 1974

FOE (0.01 MHz)

135 E Mean Time (G. M. T. + 9h)

Station **YAMAGAWA** Lat. **31 12.1 N.** Long. **130 37.1 E** Sweep **1 MHz** to **20 MHz** in **20 sec** in **automatic operation**

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	210	270	290	300	320	310	300	290	270	230		S				
2								S	220	280	300	315 ^H	320	320	310	295	270	200		S				
3								S	A	I A 275	300	320	330	330	320	300	270	230 ^H		S				
4								S	230	275	305	315	315	325	320	305	275	A		S				
5								S	225	265	305	310	A	A	A	A	I A 260	A		S				
6								S	235	275	305	320	315	320	310	A	A	A		B				
7								S	230	270	300	305 ^H	A	A	A	A	280	220		S				
8								S	220	280	295	A	A	A	A	310	280	A		S				
9								S	A	260	A	A	A	A	A	A	A	A		S				
10								S	210	275	290	320	330	330	320 ^H	310	280	250		S				
11								S	220	280	300	A	A	A	315	305	280	A	A					
12								S	135	235	280	300	320	I A 330	330	325	310	285	235		S			
13								S	230	285 ^H	I C 310	320	325 ^R	325 ^R	320	310	285	230		S				
14								S	155	260	290 ^H	310	330	I R 330	330	335 ^H	310	290	240		S			
15								S	250	280	300	310	I A 330	330	325	305	275	230		S				
16								S	190	260	290 ^H	310	320	330	330	330	320	285	220		S			
17								S	150	250 ^H	285	315	330	340	335	330	310	280	220		S			
18								S	170	260 ^H	285 ^H	305	A	A	A	A	305	285	235		A			
19								S	250	285	300	I A 330	A	A	330	310	300	I A 245	A					
20								S	170	255	I A 285	290	320	340	345	320	290	A	A	A				
21								S	185 ^H	250 ^H	285 ^H	300 ^H	I C 310	330	320 ^S	310	300	A	A	S				
22								S	180	260	280	300	320	320 ^H	320 ^R	310	305	290	250	160				
23								S	180 ^H	240 ^H	270	295	I A 300	I A 310	320	330	310	290	250	150				
24								S	190	I A 245	I A 285	I R 310	320	330	325 ^H	315	300	275	240	160				
25								S	190	I A 250	I A 285	300	320 ^R	A	A	I A 325	305	290	250	165				
26								S	165	250	285	300	310	310	A	A	A	A	A	A				
27								S	150	240	285	I A 290	315	320	325	310	300	280	240		A			
28								S	190	250	290	290	300	A	A	A	310	280	240		A			
29								S	170	260	285	305	300	290	A	330	I A 300	270	I A 250		A			
30								S	190 ^H	250	280	300	300	310	I A 300	A	305	280	A	A				
31								S	170	250	280	300	310	315 ^H	I R 310	310	300	275	250	180				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								17	29	31	30	27	22	20	23	26	26	21	5					
MED								170	250	280	300	315	322	325	320	305	280	240	160					
UQ								190	250	285	305	320	330	330	328	310	285	250	165					
LQ								165	230	275	300	310	315	320	310	300	275	230	160					

MAR. 1974

FOE (0.01 MHz)

IONOSPHERIC DATA

MAR. 1974

FOES (0.1 MHz)

135 E Mean Time (G. M. T. + 9h)

Station	YAMAGAWA				Lat. 31 12.1 N. Long. 130 37.1 E		Sweep 1 MHz to 20 MHz in 20 sec in automatic operation																			
Hour 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	16	17	E ₁₄	21	J _{A26}	25	22	21	G	G	G	35	37	39	J _{A46}	37	30	31	J _{A37}	J _{A30}	24	J _{A24}	J _{A29}	J _{A20}		
2	J _{A21}	22	J _{A21}	J _{A41}	J _{A42}	22	E ₁₄	E ₁₃	27	G	37	40	40	39	35	J _{A45}	34	J _{A70}	J _{A34}	J _{A29}	J _{A44}	J _{A34}	27	J _{A21}		
3	23	18	25	J _{A25}	J _{A39}	J _{A55}	44	J _{A36}	J _{A40}	39	J _{A34}	36	37	28	26	32	19	G	J _{A29}	J _{A19}	22	20	J _{A31}	47		
4	J _{A64}	J _{A27}	J _{A26}	22	E	18	19	J _{A20}	G	G	36	34	37	35	34	32	J _{A42}	J _{A61}	J _{A51}	J _{A29}	J _{A29}	J _{A20}	24	23		
5	J _{A25}	J _{A31}	25	J _{A28}	J _{A21}	J _{A22}	21	J _{A21}	G	32	32	40	J _{A36}	38	35	40	J _{A37}	J _{A31}	J _{A29}	J _{A29}	23	23	J _{A21}	E ₁₅		
6	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₅	G	G	G	39	39	41	35	34	36	37	29	E ₁₆	20	22	21	J _{A25}	17	
7	23	E ₁₅	16	E ₁₅	18	J _{A21}	18	E ₁₅	G	G	G	35	34	35	J _{A58}	J _{A36}	25	J _{A23}	J _{A32}	J _{A26}	J _{A19}	17	E ₁₅	24		
8	E ₁₅	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₄	21	28	30	33	37	37	35	33	33	32	29	24	J _{A29}	24	18	20	22		
9	21	22	J _{A25}	J _{A27}	J _{A23}	24	26	17	30	34	J _{A48}	38	50	J _{A51}	J _{A42}	J _{A53}	J _{A43}	J _{A34}	J _{A29}	J _{A35}	J _{A23}	24	22	19		
10	22	J _{A26}	J _{A21}	J _{A27}	J _{A21}	17	J _{A17}	J _{A21}	20	30	30	23	21	35	G	G	30	G	23	19	E ₁₄	E ₁₄	E ₁₅	E ₁₄	J _{A29}	
11	25	33	25	J _{A24}	27	24	23	25	26	31	J _{A46}	J _{A55}	J _{A99}	41	39	38	36	33	J _{A27}	J _{A26}	J _{A32}	24	23	24		
12	23	22	19	19	J _{A20}	18	E ₁₅	18	26	G	G	33	38	34	G	27	37	38	34	31	J _{A44}	J _{A25}	24	22	23	23
13	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E	E ₁₅	E ₁₄	25	G	C	36	41	43	55	41	64	J _{A62}	J _{A51}	J _{A53}	J _{A51}	J _{A68}	J _{A27}	J _{A24}	22		
14	23	E ₁₅	E ₁₅	E ₁₅	E	E ₁₅	E ₁₅	22	27	24	G	35	36	J _{A69}	42	44	47	35	72	J _{A37}	J _{A34}	J _{A34}	J _{A18}	E ₁₄	J _{A26}	
15	J _{A20}	24	17	E ₁₄	E ₁₄	E ₁₅	E ₁₅	23	G	G	32	33	38	36	36	38	37	32	26	J _{A25}	25	J _{A28}	J _{A28}	E ₁₅		
16	17	E ₁₄	E ₁₄	E ₁₅	E	E ₁₅	E ₁₅	G	G	33	35	35	38	37	38	J _{A48}	J _{A59}	J _{A62}	J _{A42}	60	69	M	J _{A62}	J _{A34}	31	
17	47	J _{A25}	J _{A69}	37	J _{A32}	E ₁₅	E ₁₅	G	31	40	45	51	J _{A66}	J _{A57}	J _{A60}	36	19	27	E ₁₅	E ₁₅	19	J _{A24}	E ₁₅	J _{A26}		
18	J _{A27}	24	22	23	22	23	18	23	28	31	33	33	J _{A37}	J _{A40}	33	34	33	31	J _{A31}	J _{A23}	J _{A24}	E ₁₅	E ₁₅	E ₁₅		
19	E ₁₆	E ₁₆	E ₁₅	E	E	E ₁₅	E ₁₅	E ₁₅	30	31	33	36	36	36	G	32	31	29	J _{A19}	25	21	19	E ₁₅	E ₁₅		
20	E ₁₅	E ₁₅	E ₁₅	E	E	E ₁₅	E ₁₄	G	28	30	31	37	38	38	J _{A61}	36	34	31	J _{A28}	J _{A21}	J _{A31}	J _{A21}	J _{A32}	J _{A52}		
21	24	23	E ₁₄	E ₁₄	E ₁₄	20	E ₁₅	23	31	39	39	C	38	38	39	34	J _{A71}	J _{A37}	25	23	E ₁₅	J _{A28}	J _{A33}	J _{A25}		
22	J _{A35}	J _{A21}	E ₁₅	J _{A25}	17	E ₁₅	E ₁₅	G	G	30	44	39	J _{A56}	G	G	G	G	27	J _{A51}	J _{A36}	J _{A37}	J _{A51}	J _{A32}	J _{A41}		
23	J _{A25}	J _{A31}	J _{A19}	20	21	20	20	24	29	34	35	36	35	G	47	44	J _{A49}	J _{A64}	J _{A74}	J _{A51}	J _{A45}	45	J _{A44}	J _{A51}		
24	J _{A65}	J _{A131}	20	73	37	32	J _{A25}	J _{A33}	J _{A32}	J _{A36}	39	40	44	46	40	47	33	27	21	22	23	19	17	J _{A27}		
25	J _{A33}	J _{A53}	J _{A64}	J _{A26}	13	18	24	J _{A33}	30	J _{A45}	37	J _{A52}	65	J _{A60}	42	36	G	G	19	21	25	J _{A41}	J _{A43}	J _{A26}	22	
26	21	23	26	J _{A21}	22	21	17	G	G	G	38	37	J _{A44}	J _{A57}	J _{A40}	J _{A70}	J _{A89}	J _{A64}	J _{A32}	J _{A29}	J _{A31}	J _{A25}	J _{A21}	21		
27	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	J _{A26}	23	G	G	29	32	34	35	G	G	G	G	21	G	23	J _{A23}	23	J _{A27}	E ₁₅	E ₁₅	
28	E ₁₅	22	22	E ₁₅	18	18	23	G	27	G	31	36	36	37	J _{A45}	28	J _{A47}	36	29	26	J _{A32}	23	17	E ₁₄		
29	18	24	17	17	E ₁₄	17	19	24	28	31	32	G	41	34	28	J _{A34}	G	24	33	30	J _{A28}	J _{A20}	J _{A31}	20	J _{A25}	
30	E ₁₄	17	E ₁₅	18	E ₁₃	E ₁₅	J _{A11}	26	30	32	37	J _{A77}	86	J _{A130}	J _{A131}	G	J _{A51}	31	J _{A54}	J _{A39}	J _{A33}	J _{A55}	J _{A33}	23		
31	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E	J _{A21}	17	28	42	48	40	35	G	G	G	G	G	G	G	22	J _{A21}	J _{A21}	19	21	J _{A63}	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	31	31	31	31	31	31	31	31	31	30	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	
MED	21	22	17	19	17	18	17	21	27	31	35	36	38	37	38	36	34	31	J _{A29}	J _{A26}	J _{A24}	J _{A24}	23	23		
UQ	25	24	24	J _{A25}	22	22	22	24	30	34	38	40	44	42	43	42	J _{A42}	J _{A36}	J _{A37}	J _{A30}	J _{A32}	J _{A28}	J _{A28}	J _{A26}		
LQ	E ₁₆	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₄	G	G	G	32	35	36	35	33	32	28	27	24	23	22	20	17	20	

The Radio Research Laboratories, Japan

MAR. 1974

FOES (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

FBES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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 S ₁₄	E	E	E	E	G	G	G	G	34	36	38	36	G	G	26	27	27	E	E	17	16	
2	E	E	19	17	25	E	E S ₁₄	E S ₁₃	G	G	34	39	40	38	G	39	31	52	33	29	28	24	18	17	
3	E	E	E	E	15	20	A	29	27	30	28	G	37	G ₂₈	G ₂₆	G	G ₁₉	G ₁₇	19	E	E	E	29	26	
4	A A ₆₄	E	E	E	E	E	E	G	G	G	35	G	37	U Y ₃₅	34	G	41	47	44	23	18	E	E	16	
5	E	19	E	18	14	15	E	G	G	31	32	38	34	34	35	39	31	29	25	E	E	E	E	E S ₁₅	
6	E S ₁₅	E S ₁₅	E S ₁₅	E S ₁₅	E S ₁₄	E S ₁₄	E S ₁₅	E S ₁₅	G	33	34	36	39	G	G	35	37	29	E B ₁₆	E	E	E	E	E	
7	E	E S ₁₅	E	E S ₁₅	E	E	E	E S ₁₅	G	G	15	U Y ₃₅	34	35	56	34	23	20	19	25	E	E	E S ₁₅	E	
8	E S ₁₅	E S ₁₄	E S ₁₄	E S ₁₄	E S ₁₄	E S ₁₅	E S ₁₄	21	28	G	32	35	34	34	32	32	32	27	22	25	15	E	E	E	
9	E	E	25	24	20	15	E	15	26	33	33	33	37	38	33	36	38	32	27	32	20	E	E	16	
10	E	24	E	15	12	E	E	G	G	U Y ₃₀	G	U Y ₂₃	G	U Y ₃₅	G	G	G	G	23	19	E S ₁₄	E S ₁₄	E S ₁₅	E S ₁₄	21
11	E	E	E	16	14	E	E	G	G	30	41	43	42	39	U Y ₃₉	36	35	31	23	16	21	E	E	E	
12	E	E	E	E	12	E	E S ₁₅	G	26	G	G	36	U Y ₃₄	G	G	34	31	30	28	16	16	E	E	E	
13	E S ₁₅	E S ₁₄	E S ₁₅	E S ₁₄	E	E S ₁₅	E S ₁₄	17	G	C	36	41	43	37	40	57	60	49	53	49	A A ₆₈	24	16	E	
14	E	E S ₁₅	E S ₁₅	E S ₁₅	E	E S ₁₅	E S ₁₅	G	G	G	24	G	36	46	38	U Y ₄₄	47	32	57	26	23	E	E	E S ₁₄	E
15	E	E	E	E S ₁₄	E S ₁₄	E S ₁₅	E S ₁₅	23	17	G	G	G	37	35	35	36	36	31	23	23	E	22	26	E S ₁₅	
16	E	E S ₁₄	E S ₁₄	E S ₁₅	E	E S ₁₅	E S ₁₅	G	G	32	34	G	36	36	35	48	59	56	26	A A ₆₀	29	A A ₆₂	A A ₃₄	21	
17	A A ₄₇	23	A A ₆₉	A A ₃₇	19	E S ₁₅	E S ₁₅	G	G	38	44	50	64	55	50	32	18	G	E S ₁₅	E S ₁₅	18	19	E S ₁₅	25	
18	26	E	E	E	15	E	E	G	G	G	33	33	370	40	33	33	32	30	29	18	17	E S ₁₅	E S ₁₅	E S ₁₅	
19	E B ₁₆	E B ₁₆	E S ₁₅	E	E	E S ₁₅	E S ₁₅	E S ₁₅	G	G	G	34	34	34	G	G	G	26	16	E	E	E	E S ₁₅	E S ₁₅	
20	E S ₁₅	E S ₁₅	E S ₁₅	E	E	E S ₁₅	E S ₁₄	G	G	30	G	G	35	35	35	33	30	28	26	E	26	19	20	E	
21	17	E	E S ₁₄	E S ₁₄	E S ₁₄	E	E S ₁₅	G	30	38	37	C	U Y ₃₈	38	37	G	30	28	G	E	E S ₁₅	E	23	18	
22	17	E	E S ₁₅	E	E	E S ₁₅	E S ₁₅	G	G	G	43	37	55	G	G	G	G	G	48	31	32	16	30	31	
23	23	16	E	E	14	E	E	G	G	G	34	35	34	G	45	41	39	43	72	50	26	E	33	20	
24	17	E	E	16	24	22	16	16	29	32	38	39	U Y ₄₄	46	39	45	G	G	G	E	E	E	E	E	
25	21	E	15	18	E	E	E	18	29	44	35	50	60	36	41	34	G	G	19	16	E	36	35	17	E
26	E	E	17	E	E	E	E	G	G	G	35	33	44	49	35	49	51	49	32	23	28	24	18	E	
27	E S ₁₅	E S ₁₅	E S ₁₅	E S ₁₄	E S ₁₄	E	E	G	G	G	32	34	35	G	G	G	21	G	20	22	21	E	E	E S ₁₅	E S ₁₅
28	E S ₁₅	E	E	E S ₁₅	E	E	E	G	G	G	U Y ₃₁	36	34	35	39	28	G	27	25	26	30	E	E	E S ₁₄	
29	E	E	E	E	E S ₁₄	E	E	G	G	G	G	G	41	U Y ₃₄	27	32	24	27	30	16	16	A A ₃₁	E	19	
30	E S ₁₄	E	E S ₁₅	E	E S ₁₃	E S ₁₅	S	G	G	32	36	77	78	109	117	G	22	25	31	54	36	32	A A ₅₅	28	E
31	E S ₁₅	E S ₁₅	E S ₁₅	E S ₁₄	E	17	E	25	42	48	40	35	G	G	G	G	13	G	G	E	E	16	E	20	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	31	31	31	31	31	31	30	31	31	30	31	30	31	31	31	31	31	31	31	31	31	31	31	31	
MED	E S ₁₅	E	E	E	E S ₁₃	E S ₁₄	E S ₁₄	G	G	G	24	33	35	37	35	33	30	28	25	21	16	E	15	15	
UQ	16	E S ₁₅	E S ₁₅	15	14	E S ₁₅	E S ₁₅	15	24	32	36	38	44	38	39	38	36	32	30	26	27	20	19	18	
LQ	E	E	E	E	E	E	E	G	G	G	22	33	34	34	G	G	G	22	19	E	E	E	E	E	

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MAR. 1974

FBES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

F-MIN (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station	YAMAGAWA																								Lat.	31	12.1	N.	Long.	130	37.1	E	Sweep 1 MHz to 20 MHz in 20 sec in automatic operation																							
Hour 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 ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	13	14	14	17	15	15	14	15	13	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₃																															
2	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₃	14	13	14	14	16	15	15	16	13	E ₁₄	E ₁₅	11	E ₁₄	E ₁₄	E ₁₅	E ₁₄																																
3	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	15	14	15	15	20	20	19	14	15	11	E ₁₃	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₄																																
4	E ₁₅	E ₁₅	E ₁₅	E	E ₁₄	E ₁₅	E ₁₅	E ₁₅	14	14	12	15	15	14	13	12	14	14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
5	E ₁₅	E ₁₅	E ₁₄	E	E ₁₄	E ₁₅	E ₁₅	E ₁₅	13	13	14	16	15	15	16	16	15	15	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅																																
6	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E	11	11	15	14	16	14	14	15	14	16	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅																																
7	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	15	11	12	14	15	20	16	15	14	E ₁₂	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
8	E ₁₅	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₄	12	11	14	14	16	16	21	15	14	E ₁₂	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₄																																
9	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₃	E ₁₄	E ₁₄	E ₁₄	12	13	14	14	17	16	19	16	15	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅																																
10	E ₁₅	E ₁₃	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	13	13	13	16	15	14	22	19	14	E ₁₄	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₅																																
11	E ₁₅	E ₁₅	E ₁₅	E	E ₁₄	E ₁₅	E ₁₅	E ₁₅	15	14	17	18	17	19	20	15	17	15	13	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅																																
12	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	11	14	14	14	15	17	14	16	13	11	14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
13	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₅	E ₁₅	15	C	15	12	18	19	16	17	14	11	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	11	14	15	14	19	15	23	15	15	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₅																																
15	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₄	12	E ₂₀	14	15	17	17	15	14	13	11	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₃	E ₁₅																																
16	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	14	14	15	19	16	15	19	19	14	14	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₄																																
17	E ₁₅	E ₁₅	E ₁₅	E	E ₁₅	E ₁₅	E ₁₅	E ₁₂	12	13	14	14	20	23	15	12	11	E	E ₁₅	E ₁₅	E ₁₃	E ₁₄	E ₁₅	E ₁₅																																
18	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	13	14	14	17	18	16	17	16	12	11	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
19	16	16	E ₁₅	E	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E	12	14	15	14	15	14	15	14	11	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
20	E ₁₅	E ₁₅	E ₁₅	E	E ₁₅	E ₁₄	E ₁₃	E ₁₃	14	12	14	14	15	19	19	15	14	11	E ₁₃	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
21	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₄	13	14	14	C	17	21	15	16	15	14	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
22	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₄	12	12	15	15	15	17	17	14	15	E ₁₅	E ₁₃	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₅																																
23	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₄	14	15	15	15	18	15	17	13	14	13	E ₁₃	E ₁₃	E ₁₄	E ₁₄	E ₁₄	E ₁₄																																
24	E ₁₅	E ₁₅	E ₁₃	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₄	15	15	16	22	20	16	14	14	13	13	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₄																																
25	E ₁₄	E ₁₅	E ₁₄	E	E ₁₅	E ₁₅	E ₁₃	E ₁₃	14	14	15	16	17	18	19	15	15	11	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
26	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₂	E ₁₂	12	14	15	15	18	17	18	15	15	13	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
27	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₄	E ₁₄	14	15	17	18	17	15	16	15	14	11	E ₁₅	E ₁₄	E ₁₅	E ₁₄	E ₁₅	E ₁₅																																
28	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₄	11	14	15	19	23	16	16	16	15	11	11	E ₁₄	E ₁₅	E ₁₃	E ₁₄	E ₁₄																																
29	E ₁₅	E ₁₅	E ₁₄	11	E ₁₄	E ₁₄	E ₁₄	E ₁₃	12	12	14	17	17	17	16	16	13	12	E ₁₄	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₅																																
30	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E ₁₃	E ₁₅	E ₁₅	E ₁₂	12	14	14	15	16	18	14	14	12	E	E ₁₄	E ₁₅	E ₁₄	E ₁₄	E ₁₅	E ₁₅																																
31	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₂	E ₁₂	12	14	15	20	17	20	16	15	12	E ₁₄	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅																																
CNT	31	31	31	31	31	31	31	31	31	30	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31																															
MED	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₄	E ₁₄	13	14	14	15	17	16	16	15	14	12	E ₁₄	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
UQ	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₄	E ₁₅	E ₁₅	E ₁₅	14	14	15	17	18	18	19	16	15	14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅																																
LQ	E ₁₅	E ₁₅	E ₁₄	E ₁₂	E ₁₄	E ₁₅	E ₁₃	E ₁₃	12	13	14	14	15	15	15	14	13	11	E ₁₃	E ₁₄	E ₁₄	E ₁₄	E ₁₄	E ₁₄																																

The Radio Research Laboratories, Japan

MAR. 1974

F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

M(3000)F2 (0.01)

135 E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	275	285	290	305	295	305	320	355	355	340	335 ^S	355	330	330 ^S	345 ^S	360	355	335	340	330	330	305 ^S	320 ^S	305
2	305	305	305	305 ^S	340	335	300	350	355	355	355	330	320	335	355	345	345	330	355 ^S	320	325	300	290	325
3	315	295 ^F	290 ^S	275 ^S	295 ^S	320	310 ^A	345	355	345	335	330	320	320	325	330	355	365	345	300	315	335	320 ^S	320
4	A	F	F	355 ^S	345 ^S	325 ^F	310 ^F	365	360	345	315	320 ^R	315	340	340	340	365	355	365	355	285	295	305	300
5	295	310	320	340	390	285	315	365	380	345	340	325	325 ^U	330 ^R	335	355	355	365	335	325	320	295 ^S	300 ^S	310
6	345 ^S	325	315	325	340 ^F	295 ^S	330	365	360	345	340	320 ^R	330	340	355	345	335	365	345	305 ^S	295 ^S	295 ^S	295 ^S	S
7	325 ^S	315 ^S	335	365	310	285 ^F	305 ^S	355	350	315	300	300	320	330	340	325	350	345	345	335	315	305 ^S	295 ^F	295 ^S
8	F	305	295 ^S	F	305 ^F	300 ^F	285 ^F	340	350	320	310	320 ^J	325 ^S	335 ^S	335	335	345	345	330	325 ^S	350	305 ^S	305 ^S	295 ^S
9	285 ^F	275	290 ^S	305 ^S	335 ^S	285 ^F	315 ^F	340	340 ^J	350	320	305	310 ^S	325 ^J	320 ^S	315	320	325 ^S	335 ^S	345 ^S	335	300	290	305 ^S
10	300	275 ^S	295	315	325	335	280	350	360	325	295	285	320 ^J	325	320 ^S	345 ^S	350	340	340	340	315 ^S	310 ^S	330 ^S	275
11	265 ^F	265	305	325	310	315	280 ^F	355 ^S	355 ^S	335	325	290	315	320 ^R	330 ^R	325	340	365 ^S	350	315	325 ^S	325 ^S	315 ^S	305 ^S
12	290	295 ^S	315	325	335	280	315	350	310 ^S	325	320 ^R	320	320 ^J	315 ^U	320 ^R	325 ^R	330 ^R	350	345	330	325	315	285	295
13	295	320	315	295	305	305	320	370	375	330 ^I	315	345	325	340 ^J	325	335	320 ^S	340	355	370	320 ^A	285	285 ^S	285
14	285 ^U	290 ^S	295 ^S	320	320	295	310	345 ^J	345 ^U	350	345	340	310	320	320	330 ^S	335	335	335 ^S	325 ^S	325 ^S	315	285	280
15	295	305 ^S	285	285	280	290	295	350 ^S	365 ^S	335	320	330	330	325	320	325	340 ^S	335	345	320	310	325 ^S	295 ^S	285 ^S
16	285	285 ^S	305	340 ^S	350 ^S	315	295	340	345	365	315	320	300	300 ^J	315	325 ^S	335	350 ^S	345	325 ^A	300 ^S	A	S	275
17	270 ^I	270 ^S	A	A	285	240	225 ^F	275 ^Z	245	355	265	285 ^S	295 ^S	305 ^S	315 ^S	320 ^S	330 ^S	325	345	325	315 ^S	285 ^S	270 ^S	270 ^S
18	270 ^S	290 ^S	305 ^S	350 ^S	370	285	275	350	350	345	320	310 ^R	315 ^R	320 ^R	325	320 ^J	325 ^J	345	350	345	325	315	285	285 ^S
19	290 ^S	305	320	350	330	290	295	350	340	335	325	315	325	320	330	345 ^R	345	335	345	350	330 ^S	290	270 ^S	290 ^S
20	315 ^J	310	320	330 ^S	345	305	305	345	345	340	315	300	315	R	R	325 ^J	340 ^S	360	370	335 ^S	315	305	295 ^J	285
21	290 ^I	295	300 ^S	305	350	285	285	340	335	330	315	285 ^I	320 ^J	310 ^J	315	315 ^S	325 ^S	335 ^S	335 ^S	335 ^S	295	250 ^S	280 ^S	265 ^S
22	295 ^I	315	315	275	295	335	F	330 ^S	335 ^J	325	280	325 ^J	325	300	305 ^S	325 ^J	320 ^S	335 ^S	350	320	285	275 ^S	285 ^S	300 ^S
23	305 ^S	305 ^S	310	320	315 ^S	310 ^S	335	360	345	335	305	300 ^S	295 ^J	315	330 ^J	315 ^S	325 ^S	350	355 ^S	335	285 ^S	275 ^S	280 ^S	285 ^S
24	270 ^I	S	295 ^J	280 ^S	325 ^I	280 ^S	315 ^S	345	320	355	340	335 ^S	305	325	330	325	330	335 ^S	330	335 ^S	325	295	275	285 ^S
25	290 ^S	285 ^S	340	335	330	F	315 ^F	335	350	330	305 ^R	310	330	315 ^R	325 ^R	335 ^J	325 ^J	360 ^U	355 ^S	325	290 ^S	300 ^S	S	280 ^J
26	300	305	285	305 ^F	335	335	320	365	350	335	320	285	285 ^R	315	325	315 ^J	330 ^J	340 ^R	340	360 ^J	305	275	275 ^S	290
27	275	315	375	375	265	290 ^F	315	340	330	315	295	310 ^J	320	320	330	325 ^U	325	325	365 ^J	390	290	285	290 ^S	285
28	305 ^S	330	355	330	325	295	325	340	325	325	320	315	325	325	325 ^S	340 ^S	345 ^S	355	340 ^J	350	335	285	275	275 ^S
29	280	315 ^S	370 ^S	305	265	265 ^S	300	345	345 ^S	355	320	315	305	325	335	330	340 ^S	320 ^S	345 ^U	345 ^S	350 ^S	290 ^A	285	280 ^S
30	285	F	335	375 ^F	255	275	305 ^S	355	330	305	280 ^S	295 ^I	320 ^J	320	335	325 ^J	325 ^S	355	345	345	340	290 ^A	270	290 ^S
31	300 ^S	F	S	365 ^S	375	S	305 ^S	335	320	315	295	300 ^S	320 ^S	325	335	340 ^S	320 ^S	335	355	345 ^S	325	270 ^S	275 ^S	275 ^S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	27	28	29	31	29	30	31	31	31	31	31	31	30	30	31	31	31	31	31	31	30	29	30
MED	290	305	308	325	325	295	308	350	345	335	320	315	320	322	328	325	335	340	345	335	320	295	285 ^S	285 ^S
UQ	300	312	320	340	340	315	315	355	355	345	325	325	325	330	335	340	345	355	352	345	325	305	295 ^S	300 ^S
LQ	285	288 ^S	295	305	300	285	295	340	335	325	305	300	312	315	320	325	325	335	340	325	302	285	280	280 ^S

MAR. 1974

M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1974

M(3000)F1 (0.01)

135 E Mean Time (G. M. T. + 9h)

Station **YAMAGAWA** Lat. **31 12.1 N.** Long. **130 37.1 E** Sweep **1 MHz** to **20 MHz** in **20 sec** in **automatic** operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	370	385	L	365	380	L	420						
2										L	L	355	355	345	365	L	L	A						
3										L	L	370	345	405	355	L	L	L						
4										L	L	350	375	370	370	U 365	A	A						
5											L	360	355	355	365	L	U 395	L						
6										L	360	365	375	355	380	L	L	L						
7									420	L	380	345	365	365	365	L	L	L						
8									L	355	360	360	370	370	L	L	L							
9									L	L	L	340	365	375	L	L	L							
10									L	L	365	370	360	U 385	L	L	L							
11									L	L	350	L	380	L	Y	L	L	L						
12									420	L	360	U 360	380	375	405	L	415	L						
13									C	405	L	A	L	375	A	A	A							
14									L	L	L	420	L	385	Y	A	L	A						
15									L	L	L	365	375	385	L	L	L	L						
16									L	L	405	L	340	360	385	A	A	A						
17											335	A	A	A	A	L	L	L	395					
18									L	U 365	U 350	350	340	L	360	L	L	L						
19									L	L	385	370	H 375	L	375	365	L	L						
20									L	L	L	365	365	370	345	L	L	L						
21									L	L	L	C	L	350	L	L	L	A						
22										L	L	L	A	360	360	385	395	L						
23									L	L	L	375	L	L	A	A	L	A						
24									L	L	L	L	L	L	L	A	L	L						
25									A	360	A	A	360	L	L	L	L	L						
26									L	425	365	355	A	I 350	360	A	A	A						
27									L	L	L	365	355	330	375	L	L	L						
28									L	L	340	375	375	360	360	365	L	L						
29									L	L	355	355	360	L	365	375	365	L						
30									L	L	345	A	A	A	A	375	L	L						
31									A	A	L	380	360	345	365	L	L	L						
Hour 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
CNT									2	1	14	21	21	22	21	8	4	1	1					
MED									420	425	360	365	365	360	365	370	395	420	395					
UQ											365	370	375	370	375	378	405							
LQ											350	355	355	350	365	365	380							

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M(3000)F1 (0.01)

IONOSPHERIC DATA

MAR. 1974

H^oF₂ (KM)

135 E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										260	255	240	275	260	240	230	230								
2										240	255	285	280	265	235	255	245	275							
3										245	250	275	280	270	275	260	240	230							
4										255	250	295	290	250	265	250	230	240							
5										270	290	270	270	265	265	250	235	225							
6										250	275	280	270	255	235	255	260	230							
7									230	280	285	305	270	245	240	250	240	230							
8										275	290	270	255	255	255	250	245	235							
9										240	280	280	290	250	240	280	260	245							
10										235	280	290	280	275	255	245	235	240							
11									230	255	285	300	285	270	255	260	240	220							
12									225	250	285	275	265	265	270	260	255	245							
13										C	255	250	275	295	270	255	E A 280	250							
14									235	235	245	250	285	270	275	255	250	250							
15									230	265	270	280	270	270	275	255	240	235							
16									225	230	245	285	295	290	280	255	245	240							
17										410	290	300	290	270	255	240	220	220							
18									245	270	290	290	270	255	260	250	245								
19									255	270	280	270	265	260	245	240	225								
20									250	255	270	305	280	280	270	255	240	225							
21									250	270	280	I C 320	280	280	280	245	250	240							
22									270	295	265	255	290	280	260	255	240								
23									235	245	255	285	275	265	250	255	255	230							
24									240	255	255	285	275	255	270	255	235								
25									255	295	300	255	265	270	270	240	225								
26									235	240	280	305	315	285	240	255	250	235							
27									255	265	300	285	270	270	250	245	250	255							
28									250	270	270	280	255	280	260	240	230	235							
29									235	245	290	285	290	260	250	260	255	255							
30									260	255	335	325	290	E A 300	E A 325	240	245	230							
31									275	270	310	295	275	275	260	235	255	255							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT									15	28	31	31	31	31	31	31	31	31	1						
MED									235	255	275	285	280	270	260	255	245	235	220						
UQ									250	265	288	295	288	279	270	260	254	245							
LQ									230	242	255	278	270	265	250	248	240	230							

The Radio Research Laboratories, Japan

MAR. 1974

H^oF₂ (KM)

IONOSPHERIC DATA

MAR. 1974

H·F (KM)

135 E Mean Time (G. M. T. + 9h)

Station **YAMAGAWA** Lat. **31 12.1 N.** Long. **130 37.1 E** Sweep **1 MHz to 20 MHz** in **20 sec** in **automatic operation**

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	330	300	280	255	250	250	250	215	230	225	225	200	200	A	E A 230	215	220	205	230	240	225	260	260	250	
2	300	290	300	275	E A 250	230	280	220	225	225	230	E A 250	E A 250	E A 250	205	I A 220	215	A	230	220	E A 250	E A 300	E A 300	255	
3	250	295	310	320	300	250	A	230	225	190	H 220	H 200	235	200	210	H 195	H 200	H 200	220	225	225	225	E 270	E 290	
4	A	E S 350	300	220	200	245	E S 290	220	210	H 240	230	205	220	205	225	215	A	A	E A 220	220	245	275	280	295	
5	285	295	260	250	200	E A 340	295	220	220	230	H 200	225	205	H 205	220	A	215	225	220	225	215	295	280	255	
6	220	245	245	245	220	275	255	220	225	230	230	220	E A 230	220	210	H 225	E A 255	235	215	250	270	265	285	265	
7	245	255	225	200	250	310	295	230	205	225	235	250	190	H 235	I A 205	H 205	210	200	225	230	205	275	295	280	
8	250	245	265	230	E S 250	E S 280	E S 290	225	225	220	H 200	H 200	195	220	H 200	H 200	220	225	240	230	200	240	245	260	
9	305	300	E A 300	265	220	E A 275	250	235	225	E A 230	210	220	220	E A 240	210	E A 220	A	I A 230	230	205	215	E S 270	E S 295	300	
10	290	E A 350	300	275	235	240	E S 310	225	230	H 200	240	225	H 200	225	200	185	225	225	230	210	230	245	230	E A 300	
11	335	325	290	245	240	E S 275	E S 330	230	200	205	E A 240	I A 200	E A 240	180	H 220	Y 220	E A 235	A	220	235	240	235	260	270	
12	290	300	270	245	235	305	255	220	205	195	H 225	240	215	195	H 185	225	220	E A 240	225	225	235	245	295	285	
13	270	240	230	270	250	270	255	H 220	220	I C 225	205	A	A	220	H 225	A	A	A	E A 240	E A 275	A	E A 355	310	305	
14	305	300	265	245	225	250	275	235	220	220	220	200	I A 230	H 200	A	A	E A 240	I A 210	220	220	235	210	280	310	
15	295	280	275	320	300	300	300	230	H 200	H 205	H 190	H 180	H 210	H 185	H 195	E A 240	E A 225	E A 230	220	230	245	245	E S 255	295	
16	295	275	250	225	190	250	E S 280	225	215	215	200	H 200	200	H 200	220	A	A	A	215	A	250	A	A	330	
17	A	345	A	A	250	E S 400	S	255	230	240	255	A	A	A	A	210	H 215	225	225	215	245	275	285	325	
18	320	280	250	215	180	E S 290	E S 275	225	230	225	205	205	190	A	H 225	215	220	E A 240	225	215	210	255	305	305	
19	300	275	255	220	205	E S 290	280	220	230	220	H 220	H 190	H 185	H 180	H 200	210	220	220	220	220	215	270	290	290	
20	265	250	255	230	220	245	265	230	230	215	H 200	195	200	205	H 200	180	225	235	220	210	260	265	320	290	
21	295	285	285	255	210	290	305	235	235	E A 245	E A 245	I C 225	I A 220	H 225	H 225	230	H 225	I A 220	220	200	250	315	350	E A 350	
22	265	240	240	340	270	225	E S 330	235	H 240	245	I A 240	245	I A 235	195	H 215	215	H 225	I A 215	230	230	300	320	310	240	
23	250	260	250	225	220	230	235	230	220	H 225	225	205	215	H 195	A	A	A	A	E A 255	E A 270	E A 300	300	E A 340	330	
24	E A 355	260	285	295	230	A	275	230	230	230	245	E A 250	A	A	E A 250	A	230	230	230	230	205	215	320	320	
25	300	280	240	225	230	275	250	220	230	A	H 225	A	A	A	210	E A 250	H 200	220	225	200	225	E A 350	E A 320	325	305
26	275	270	285	260	220	210	250	210	220	200	H 220	H 200	A	A	220	A	A	A	225	205	E A 290	E A 350	330	310	
27	305	255	210	205	E S 350	325	255	225	205	H 200	205	200	200	H 200	H 200	H 200	H 215	225	220	200	245	320	310	325	
28	290	250	215	230	E S 350	305	250	220	225	230	H 220	H 220	190	195	I A 200	225	225	225	230	210	250	250	300	330	
29	320	265	205	190	S	E S 345	275	230	230	225	H 200	210	I A 215	I A 215	235	E A 230	220	240	230	205	195	A	325	350	
30	300	300	245	210	E S 300	S	255	230	235	225	230	A	A	A	A	205	H 200	240	E A 270	225	245	A	E A 340	290	
31	280	275	245	215	195	E A 250	250	230	A	A	A	200	H 180	H 200	H 200	H 215	H 205	230	225	205	220	320	300	E A 350	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	31	30	30	30	29	29	31	30	29	30	27	25	25	26	24	25	24	31	30	30	28	30	31	
MED	292	278	256	245	226	U 260	265	225	225	225	221	202	205	202	H 208	212	220	225	222	221	235	261	293	295	
UQ	302	298	285	265	245	288	282	230	230	228	230	222	218	A 218	222	218	222	231	230	230	248	U 292	315	316	
LQ	270	258	245	220	220	245	252	220	220	215	H 205	200	200	H 195	H 200	H 202	215	220	220	210	215	245	280	275	

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H·F (KM)

IONOSPHERIC DATA

MAR. 1974

H^oE (KM)

135 E Mean Time (G. M. T. + 9^h)

Station **YAMAGAWA** Lat. **31 12.1 N.** Long. **130 37.1 E** Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	115	105	105	100	100	100	100	105	105	115		S				
2								S	115	110	105	105	105	105	105	105	105	115		S				
3								S	A	A	A	130	120	125	115	110	105	115		S				
4								S	120	105	E A 115	A	E A 115	A	A	E A 115	105	110		S				
5								S	110	105	105	105	105	105	105	115	115	115		S				
6								S	120	105	105	105	105	105	105	110	110	110		B				
7								S	105	105	105	105	100	100	A	A	115	E A 110		S				
8								S	110	105	100	100	A	A	A	105	105	105		S				
9								S	A	105	105	100	105	100	A	A	105	A		S				
10								S	115	E A 120	105	105	105	105	110	105	110	115		S				
11								S	115	105	105	105	105	110	105	105	115	115		A				
12								120	110	E A 120	A	105	A	E A 110	E A 120	E A 115	115	120		S				
13								S	105	I C 105	105	105	E A 120	E A 125	E A 120	E A 120	105	110		S				
14								140	105	E A 125	E A 125	I A 105	I A 105	105	105	105	105	105		S				
15								S	105	120	105	100	A	E A 110	120	115	110	110		S				
16								125	110	110	110	110	100	100	100	100	100	105		S				
17								140	105	E A 120	100	100	105	110	105	105	105	110		S				
18								140	105	105	105	105	A	A	A	E A 115	115	120		A				
19								S	105	105	105	105	105	105	100	105	115	115		A				
20								130	105	105	105	A	105	105	105	105	105	115		A				
21								125	105	105	105	I C 100	E A 120	E A 120	100	100	100	A		S				
22								130	E A 120	E A 120	A	E A 125	100	100	105	105	105	110	125					
23								125	105	105	100	100	A	100	100	100	105	110	120					
24								E A 140	A	A	A	100	100	100	105	100	100	110	125					
25								A	A	105	105	105	105	105	105	105	110	120	130					
26								120	105	105	105	105	105	105	105	105	A	A	A					
27								120	105	E A 125	A	E A 120	105	105	E A 120	E A 115	110	120		A				
28								120	E A 120	105	105	105	105	100	105	105	110	115		A				
29								115	105	105	105	105	105	A	E A 125	A	E A 125	A	A					
30								110	105	105	105	105	100	105	105	110	E A 125	A	A					
31								110	105	100	100	100	100	110	110	105	105	105	125					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								16	27	29	26	29	26	27	26	28	30	26	5					
MED								124	105	105	105	105	105	105	105	105	105	112	125					
UQ								132	112	108	105	105	105	108	108	108	112	115	125					
LQ								120	105	105	105	100	100	100	105	105	105	110	125					

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H^oE (KM)

IONOSPHERIC DATA

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H^oES (KM)

135 E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	125	S	105	100	105	100	100	G	G	G	155	140	125	110	150	150	130	100	100	145	140	100	95
2	95	100	120	110	110	120	S	S	160	G	140	130	125	120	125	120	115	110	105	105	105	95	95	95
3	95	100	100	105	105	100	100	100	100	100	100	150	155	105	100	145	100	100	95	95	100	150	105	105
4	105	110	105	105	E	135	105	105	105	G	155	130	150	130	125	130	115	105	105	105	105	100	100	100
5	105	100	100	100	105	100	100	100	G	155	150	115	115	115	115	115	110	105	105	105	105	100	105	100
6	S	S	S	S	S	S	S	S	100	140	130	125	115	120	115	125	120	115	B	105	120	130	115	120
7	115	S	120	S	120	110	100	S	G	100	100	115	105	105	100	100	100	100	100	100	100	100	S	110
8	S	S	S	S	S	S	S	140	130	130	125	105	105	105	110	115	110	105	100	95	95	95	105	105
9	105	100	100	95	95	95	100	110	115	110	105	105	105	100	100	100	105	100	100	100	100	100	100	100
10	100	95	100	100	100	100	100	100	105	140	125	100	100	125	G	G	125	115	95	S	S	S	S	95
11	95	100	95	95	95	95	100	100	140	120	115	110	110	115	110	115	115	105	105	105	105	105	100	100
12	100	100	100	100	100	115	S	145	155	105	155	135	105	100	155	125	125	120	115	95	95	95	95	100
13	S	S	S	S	E	S	S	100	G	C	150	145	140	125	130	120	115	110	105	105	105	100	105	100
14	100	S	S	S	E	S	S	150	150	105	150	150	125	125	120	115	120	105	100	100	100	140	S	100
15	100	100	100	S	S	S	S	140	105	100	135	125	100	125	125	115	110	110	105	105	115	105	100	S
16	95	S	S	S	E	S	S	G	G	125	120	125	120	125	115	115	110	105	105	105	105	100	100	105
17	105	100	100	100	105	S	S	G	155	130	130	130	120	115	110	125	95	110	S	S	145	105	S	115
18	110	105	100	100	100	100	100	150	150	140	125	105	100	100	100	130	120	115	110	100	100	S	S	S
19	B	B	S	E	E	S	S	S	165	170	150	120	115	115	G	130	135	115	95	100	100	95	S	S
20	S	S	S	E	E	S	S	G	155	125	120	120	120	120	115	120	115	110	110	110	105	105	120	115
21	105	120	S	S	S	105	S	155	140	125	120	C	120	115	110	115	105	105	115	120	S	115	110	105
22	100	105	S	100	110	S	S	G	105	170	125	125	115	G	G	G	G	165	120	115	110	105	105	105
23	100	100	100	100	100	100	105	125	115	110	105	100	120	G	175	170	140	125	115	110	105	105	105	105
24	105	105	105	105	100	100	100	100	100	100	140	135	130	125	125	115	125	120	135	95	95	125	100	100
25	100	100	100	100	100	100	100	100	160	120	120	115	110	110	120	125	G	100	100	100	110	105	115	100
26	100	100	105	100	105	110	110	G	G	G	120	120	115	105	105	105	105	100	100	100	100	95	95	95
27	S	S	S	S	S	105	105	G	G	150	130	125	140	G	105	105	100	100	125	120	115	110	S	S
28	S	100	105	S	105	105	105	G	125	G	120	105	110	105	105	100	130	125	130	120	110	100	100	S
29	100	95	95	95	S	155	145	150	150	155	150	G	105	100	100	100	100	140	125	100	100	110	150	130
30	S	125	S	125	S	S	S	145	140	135	120	105	105	105	100	100	95	150	125	115	110	110	105	105
31	S	S	S	S	E	105	145	145	130	125	125	125	G	100	100	110	100	G	100	105	115	110	110	105
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	21	18	18	17	20	17	20	24	25	30	29	30	28	28	29	29	30	29	29	29	29	24	25
MED	100	100	100	100	100	105	100	118	135	125	125	125	115	115	110	115	115	110	105	105	105	105	102	105
UQ	105	105	105	105	105	110	105	145	152	140	140	130	125	125	122	125	120	120	115	105	110	110	108	105
LQ	100	100	100	100	100	100	100	100	105	110	120	110	105	105	102	110	105	105	100	100	100	100	100	100

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H^oES (KM)

IONOSPHERIC DATA

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TYPES OF ES

135 E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour 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	F1	F1		F3	F1	F2	F1	L1				H1	H1	H1	C3	HH11	H1	H2	L5	FF43	FF22	FF12	F5	F3	
2	F3	FF43	FF61	FF41	F4	F1			H2		H2	H2	H2	C1	H1	H2	C3	C3	L6	F5	FF43	F4	F5	F7	
3	F2	F1	F2	F2	F4	F4	F5	L5	L3	L3	LH21	HL12	HL11	L1	L1	HL11	L1	L2	L3	F1	F1	F1	F6	F6	
4	F5	F4	F2	F3		F1	F1	L1	L1		HL12	HL12	HHL11	HL12	HL12	HL12	C3	C3	L4	F3	F3	F1	F1	F1	
5	F2	F4	F2	F3	F1	F2	F2	L1		H2	H1	C2	C1	C1	C2	C3	C2	C3	L5	F5	F1	F2	F2		
6									L1	H2	H2	H2	C2	C1	CL11	HL21	C2	C3		F1	F1	F1	F4	F1	
7	F1		F1		F1	F3	F2			L1	L1	CL11	C1	C2	L3	L4	L2	L2	L4	F4	F3	F1		F2	
8								H3	HL31	HL21	H1	C2	L2	C1	C1	C2	C3	C4	CL41	F6	F2	F2	FF11	F5	
9	F2	F2	F6	F6	F6	F2	F2	C1	C2	C3	C2	C2	C2	C2	L2	L2	C4	L6	L6	F6	F8	F2	F2	F1	
10	F2	F4	F3	F2	F2	F1	F1	L1	L2	HL21	HL11	L1	L1	HL11			HL21	CL21	L1					F2	
11	F1	FF21	F2	F3	F2	F2	F1	L1	H2	C1	C2	C2	C2	C2	C2	C2	C2	C3	L4	F3	FF41	F3	F1	F1	
12	F2	F1	F1	F1	F1	F1		H1	H1	L2	HL11	HL21	L1	L1	HL11	HL11	HL23	CL32	CL22	F2	F2	F2	F2	F1	
13								L1			H2	H2	HL21	HL11	HL11	CL41	C4	CL41	L6	F4	F4	F4	F2	F1	
14	F1							H1	H1	L1	HL11	HC11	HC11	H2	C2	C2	H2	C6	L5	F4	F3	FF11		F1	
15	F1	F1	F1					H2	L1	L1	HL11	H1	L2	HL12	HL11	CL21	CL21	CL31	CL31	FF41	F1	F6	F3		
16	F1								H2	HL11	HL11	H1	H1	C1	C2	C6	C5	C2	F7	F3	F5	F4	FF24		
17	FF44	FF73	F3	F7	F7				H3	HL31	H2	H2	H3	CL21	CL31	HL11	L1	CL21			F2	F2		F7	
18	F3	F2	F2	F2	F1	F2	F2	HL41	H3	H1	H1	C2	L2	L2	L3	HL12	CL22	CL33	CL44	F3	F2				
19									H1	H1	H1	C1	C1	C1		H1	HL11	CL21	L3	F2	F2	F2			
20									H1	C1	C1	CL11	C1	C1	C2	C1	C2	C4	L4	F1	F6	F4	F6	F3	
21	F3	FF11			F2			H1	H2	H3	H2		CL11	CL11	C2	C2	C2	L3	C1	FF11		F4	F5	F4	
22	F5	F4		F3	F1				L2	HL11	HL31	HL21	C2					H1	C6	F6	F7	F5	F7	F6	
23	F7	F5	F5	FF33	F2	F3	F2	H3	C3	C1	C2	C3	CL22		H1	H1	H3	H5	C7	F7	F5	F3	F7	F6	
24	F6	F4	F1	F2	F2	F7	F2	L2	L3	L4	HL11	H1	H1	H1	HL11	C2	H1	C2	HL21	F3	F2	FF11	F1	F2	
25	F4	F4	F4	F4	F1	F1	F1	LH33	HHL22	C2	C2	C2	C2	C1	C1	H1		L1	L1	F3	FF71	FF53	FF32	F2	
26	F2	F2	F2	F2	F1	F1	F1				C2	C1	C2	C3	C1	C4	L3	L4	L3	F6	F7	F5	F6	F2	
27					F3	F1				HL12	HL12	HL11	H1		L1	L1	L1	L2	HL22	FF61	F2	F2			
28		F1	F1		F1	F1	F3		HL12		C1	C2	C1	C1	C3	L1	HL12	HL22	HL36	FF33	FF32	F1	F1		
29	F1	F2	F1	F1	F1	F1	H2		H1	H1	H1		C2	L2	L1	L4	L2	HL33	HL52	F3	F1	F7	F1	F6	
30		F2	F1		F1	F1	H2		H2	H1	H2	C5	C3	CL31	CL41	L1	L2	HL34	HL43	FF53	FF51	F7	F7	F2	
31					F3	F1	H4		H3	H2	H1	H1		L1	L1	LL11	L1		L1	FF11	F1	F2	F2	F4	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

MAR. 1974

TYPES OF ES

IONOSPHERIC DATA

MAR. 1974

FXI (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26 19.0 N. Long. 127 46.8 E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour 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	X 36	X 36	X 41	X 39	C	C	C													X 86	X 64	X 51	X 46	X 44
2	X 42	X 37	S 36	X 38	S 39	X 33	X 29													X 87	X 60	X 43	X 36	X 39
3	X 39	X 34	X 33	S 34	X 35	X 38	X 25													X 90	X 96	X 61	X 51	A
4	X 34	X 35	X 36	X 46	X 34	X 26	X 26													X 63	X 49	X 48	X 46	X 42
5	X 40	X 38	X 36	X 41	X 43	I 24	A 24													X 81	X 61	X 43	I 43	R 49
6	S 51	X 38	X 35	X 38	X 34	X 27	X 28													X 67	U 66	R 63	X 63	S
7	X 53	X 48	X 50	X 41	I 29	R 28	X 29													X 79	X 70	X 45	I 39	S 37
8	S 39	S 41	X 38	S 38	X 31	X 39	X 28													X 80	X 66	X 40	X 40	X 38
9	U 39	S 42	X 39	X 44	X 40	X 28	X 27													U 110	R 80	X 61	X 45	X 43
10	X 43	X 45	X 42	X 50	X 39	X 35	X 29													X 78	X 55	X 52	X 50	X 39
11	X 34	X 37	X 36	X 44	X 29	X 27	X 26													X 71	X 76	X 49	X 42	X 40
12	X 38	X 37	X 42	X 44	X 44	X 32	X 36													X 79	X 67	X 58	I 50	X 47
13	X 48	X 48	X 43	X 39	X 39	X 38	X 38													X 76	X 69	X 50	X 44	X 47
14	X 50	S 50	X 51	X 50	X 49	X 33	X 30													124	X 114	X 70	X 48	X 44
15	X 45	S 56	S 54	X 41	X 43	X 39	X 42													X 92	X 76	X 68	X 59	X 60
16	X 61	X 61	S	X 86	X 44	X 28	X 28													X 72	X 62	U 48	I 48	S 44
17	X 42	S 39	S 38	S 47	X 35	I 36	X 27													X 87	X 70	X 56	S 53	I 53
18	U 57	S 61	S 68	U 73	X 40	X 29	X 30													X 118	X 76	X 45	X 41	X 42
19	X 49	X 60	X 71	X 70	X 52	X 34	X 32													X 66	X 58	X 60	U 50	U 54
20	S 54	X 54	S 55	X 52	S 43	X 30	X 31													X 70	X 57	X 49	X 49	X 47
21	U 50	S 46	X 49	X 49	X 34	X 30	X 32													X 90	X 88	X 74	X 75	X 66
22	X 61	X 66	X 46	X 40	X 42	X 29	X 27													C	X 80	X 70	X 70	X 74
23	X 66	X 64	X 60	X 53	X 43	X 42	X 29													X 86	X 64	S 60	X 59	X 54
24	X 54	X 59	X 55	X 52	X 47	X 31	X 27													108	X 85	X 61	X 49	X 44
25	X 51	X 51	X 55	X 43	R 35	X 30	X 33													X 75	X 63	X 56	X 70	X 58
26	X 65	X 66	X 68	X 69	X 54	X 30	X 34													X 129	X 70	X 60	X 66	X 63
27	X 68	X 87	X 91	X 34	A	R 26	X 28													X 94	X 56	I 60	U 60	X 57
28	X 59	X 66	X 57	X 39	X 32	X 33	X 33													X 78	X 61	X 45	X 41	X 40
29	X 39	X 46	X 54	X 23	X 22	X 26	X 29													X 88	X 52	X 38	X 36	X 40
30	X 40	U 40	S 50	X 24	X 22	X 26	X 30													S 73	X 52	O 43	U 45	A
31	I 50	S 51	U 51	S 53	X 23	X 21	X 28													X 115	U 66	R 53	X 49	X 46
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	29	30	30													30	31	31	30	28
MED	X 49	X 48	X 50	X 44	X 39	X 30	X 29													X 84	X 66	X 53	X 48	X 45
UQ	X 54	X 60	X 55	X 51	X 43	X 34	X 32													X 92	X 76	X 60	X 59	X 54
LQ	X 40	X 38	X 38	X 39	X 34	X 27	X 27													X 75	X 60	X 46	X 43	X 41

MAR. 1974

FXI (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOF2 (0.1 MHz)

135°E Mean Time (G. M. T. + 9^h)

Station OKINAWA Lat. 26 19' 0" N Long. 127 46' 8" E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour 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	30	30	35	33	C	C	C	C	C	72	86	80	76	94	104	83	67	62	75	80	58	45	40	38											
2	36	31	30	32	33	27	23	43	57	62	63	71	90	100	104	87	87	82	82	81	54	37	30	33											
3	33	28	27	28	S	29	32	19	42	60	64	78	85	97	107	105	114	117	96	93	92	90	55	45	A										
4	28	F	F	40	28	20	20	40	62	64	70	86	98	107	95	87	90	82	73	57	43	42	40	36											
5	34	32	30	35	37	I	A	18	19	43	57	55	66	74	90	98	U	R	102	100	95	80	80	75	56	37	I	R	37	43					
6	45	S	S	29	32	28	21	22	46	55	65	72	89	96	107	90	77	75	84	70	61	U	R	60	57	57	S								
7	47	42	44	35	23	22	23	44	63	68	86	104	134	160	123	121	115	107	98	73	64	39	33	31											
8	33	S	S	32	32	25	33	22	45	62	73	86	J	R	102	118	122	112	102	98	84	85	74	60	34	34	32								
9	U	S	U	S	33	38	34	22	21	44	70	80	76	98	132	160	156	142	136	140	130	U	R	104	74	55	39	37							
10	37	39	36	44	33	29	23	45	68	71	80	102	136	140	R	136	128	120	98	94	72	49	46	44	33										
11	28	31	30	38	23	21	20	47	70	68	79	95	100	R	122	126	116	116	102	R	78	65	70	43	36	34									
12	32	31	36	38	38	26	30	50	62	74	95	110	121	119	119	127	120	95	79	73	61	52	I	S	44	41									
13	42	42	37	33	33	32	32	53	64	71	85	90	105	100	114	98	100	108	98	70	63	44	38	41											
14	44	44	45	44	43	27	24	52	81	79	95	100	120	130	146	152	140	140	138	118	108	64	42	38											
15	39	S	S	48	35	37	33	36	62	S	74	72	78	89	C	C	98	97	97	104	108	R	86	70	62	53	54								
16	55	J	S	S	S	U	S	80	38	22	22	50	70	80	80	87	109	114	R	134	138	U	R	130	118	92	66	56	U	S	I	S	42	42	38
17	36	S	S	S	32	41	30	32	F	45	73	57	73	108	114	134	134	131	117	100	92	81	64	S	50	S	I	S	48						
18	U	S	U	S	S	U	S	67	34	23	24	52	68	79	82	95	114	132	138	139	130	113	113	112	R	70	R	39	35	36					
19	43	S	S	S	64	46	28	26	50	66	82	98	108	122	124	130	124	106	R	95	84	60	52	S	44	U	S	48							
20	S	48	48	S	49	46	37	24	25	50	64	76	87	96	114	134	147	C	126	C	80	64	51	43	43	41									
21	U	S	40	43	43	28	24	26	56	67	70	80	92	122	132	147	140	128	114	100	R	84	82	68	69	60									
22	55	60	40	34	36	23	21	66	62	82	84	120	106	108	120	128	124	112	98	C	74	C	64	64	68										
23	60	58	54	47	37	36	23	54	80	80	90	112	138	156	155	137	148	132	102	80	58	S	53	48											
24	48	53	49	46	41	25	21	55	80	84	95	100	113	115	129	130	134	140	128	R	102	79	55	43	38										
25	45	45	49	37	R	29	24	27	56	71	80	90	109	134	134	157	164	175	166	124	69	57	50	64	52										
26	59	60	62	63	48	24	28	50	68	83	82	85	U	R	104	141	160	145	145	R	154	U	R	144	123	64	54	60	57						
27	62	S	85	28	A	20	22	51	63	R	87	97	114	146	164	U	R	167	U	R	162	U	R	160	160	157	88	50	I	S	U	R	54	54	51
28	53	60	51	33	26	27	27	51	60	82	95	110	120	134	148	152	150	120	95	72	55	39	35	34											
29	33	S	48	17	I	A	16	20	23	60	65	67	67	78	101	112	115	107	104	111	114	82	46	32	R	30	34								
30	34	U	S	44	18	17	20	S	24	53	61	75	91	C	125	C	C	123	123	113	97	S	67	46	S	37	S	39	A						
31	S	44	S	45	U	R	17	U	S	15	22	50	66	89	90	104	121	I	R	134	144	157	163	U	S	120	R	109	U	R	60	47	43	40	
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23												
CNT	31	31	29	31	29	30	29	30	30	31	31	30	30	29	30	30	31	30	31	30	31	30	31	31	30	28									
MED	43	42	44	38	33	24	23	50	66	74	84	97	114	124	130	128	120	110	97	78	60	47	42	39											
UQ	48	54	49	45	37	28	26	53	70	80	90	108	122	134	147	140	135	120	114	88	70	54	53	48											
LQ	34	32	33	33	28	21	22	45	62	68	78	87	101	108	112	102	102	95	83	69	54	40	37	35											

The Radio Research Laboratories, Japan

MAR. 1974

FOF2 (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

FOF1 (0.1 MHZ)

135° E Mean Time (G. M. T. + 9^h)

Station	OKINAWA				Lat.	26 19' 0" N				Long.	127 46' 8" E				Sweep	1 MHz to	25 MHz in	30 sec	in automatic operation					
Hour 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	L	L	U L 470	L	L	L	L	L	L	L					
2										L	L	A	A	A	A	A	A	L						
3									L	L	L	L	470	460	U L 470	L	L	L	L					
4									L	L	L	L	470	460	460	L	L	L	L					
5									L	L	L	U L 460	460	460	460	L	L	L						
6									L	L	L	L	450	480	L	A	L	A	L					
7									U L 320	L	U L 480	L	L	460	450	460	L	A	L					
8									L	L	L	L	L	470	L	L	L	L						
9										L	L	A	A	A	A	L	L	A	A					
10									L	L	L	L	L	470	L	L	L	L						
11										L	L	L	470	L	L	L	L	A	A					
12									L	L	L	L	L	L	L	A	A	L	A					
13									L	L	L	L	500	L	A	L	A	L	L					
14									L	L	L	L	L	A	490	A	490	L	L					
15									L	L	L	U L 480	C	C	U L 490	U L 450	L	L	L					
16									L	L	L	L	L	A	L	L	A	L						
17										A	A	L	L	U L 490	L	L	410	L						
18										L	L	L	L	L	490	L	L	L						
19									L	L	L	L	L	L	470	L	L	L						
20									L	L	L	L	480	470	470	480	C	L	C	L				
21									L	L	L	L	L	A	L	L	L	L						
22										L	L	L	L	L	L	L	L	L						
23									L	L	L	L	L	L	L	L	L	A						
24									L	L	L	L	L	A	A	A	L	L						
25									L	L	L	L	L	A	A	L	L	L						
26									L	L	L	L	480	480	470	L	L	L	L					
27									L	L	L	L	460	460	U L 470	U L 450	L	L	350					
28										L	L	L	450	L	L	450	L	L	L					
29									L	L	L	L	U L 460	460	450	L	L	L	L					
30										L	L	C	450	C	C	L	L	L						
31									L	L	L	L	450	450	470	460	450	L	L	L				
Hour 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
CNT									1		3	14	15	14	10	1	2	1						
MED									U 320		450	470	460	465	465	U 450	450	350						
UQ											465	480	470	470	480									
LQ											440	460	460	460	450									

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FOF1 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOE (0.01 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station **OKINAWA** Lat. **26 19.0 N.** Long. **127 46.8 E** Sweep **1 MHz to 25 MHz** in **30 sec** in automatic operation

Hour 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	260	300	315	A	320	330	310	295	260	A					
2								S		220	265	300	315	325	A	A	A	A	A	A				
3								S		225	270	300	325	330	A	A	A	A	240	190				
4								S		240	280	300	320	335	335	330	310	A	A	A				
5								S	I A	225	270	300	320	A	A	A	A	A	A	A				
6								S		225	275	305	330	335	A	A	A	A	A	A				
7								A	I R	230	280	I A	I A	A	A	A	A	A	I A	A				
8								S		215	275	300	A	A	A	A	A	A	A	A				
9								S		A	A	A	A	A	A	A	A	A	A	A				
10								S		220	260	310	325	340	335	335	A	A	255	A				
11								S	R	250	290	I A	A	A	A	A	A	A	A	A				
12								S		240	285	A	A	A	350	335	325	300	A	A				
13								S		215	280	320	330	340	355	330	320	A	A	A				
14								S		A	A	A	330	350	355	A	A	A	230	A				
15								S		230	285	320	340	C	C	335	320	A	A	A				
16								R	170	240	290	320	A	A	A	A	A	A	A	A				
17								S		235	280	315	335	340	345	350	330	300	A	190				
18								A		A	280	310	330	340	340	335	320	A	A	A				
19								190		230	290	310	325	330	A	A	A	A	A	A				
20								S		230	290	310	A	A	A	A	C	A	C	A				
21								165		240	280	310	325	330	330	325	A	A	A	200				
22								S		250	285	315	325	335	335	335	320	300	250	185				
23								A		A	280	300	I A	A	340	I A	310	300	255	195				
24								A		260	A	A	A	335	340	325	310	A	A	180				
25								A		A	A	A	A	335	330	330	I A	I A	255	A				
26								S		250	A	A	A	A	U R	I R	315	285	260	185				
27								180		225	275	305	I A	A	I A	I A	320	285	245	A				
28								160		240	280	310	315	A	A	I A	I A	A	A	A				
29								160		235	280	I A	I R	I A	R	R	I A	290	A	180				
30								160		245	285	310	C	U R	C	C	310	285	240	A				
31								S		230	285	I A	R	330	U R	I R	R	295	U R	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								7	25	26	25	21	17	17	18	17	11	12	8					
MED								165	230	280	310	325	335	335	330	320	295	252	188					
UQ								175	240	285	310	330	340	340	335	320	300	258	192					
LQ								160	225	275	300	320	330	330	330	310	288	240	182					

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FOE (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1974

FOES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26 19.0 N. Long. 127 46.8 E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour 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	M 21	M 18	M 21	M 23	C	C	C	C	C	G 20	G 25	35	36	35	36	33	G	J A 27	J A 28	M 20	M 20	J A 25	M 20	J A 20
2	M 19	E S 15	E S 15	M 18	E S 15	J A 20	M 20	E S 15	G	32	36	J A 55	J A 69	J A 93	J A 96	J A 48	J A 55	J A 35	J A 30	J A 29	J A 37	M 22	M 23	M 18
3	M 18	E S 15	E S 16	M 19	J A 24	M 20	M 20	G	19	J G 29	34	35	J A 39	J A 49	37	J A 37	J A 48	J G 22	G	M 21	M 18	E S 16	J A 27	J A 50
4	J A 35	J A 30	J A 25	J A 30	M 21	J A 21	M 21	M 21	30	35	37	37	37	36	39	35	35	J A 28	J A 29	J A 24	M 21	E S 16	E S 16	M 20
5	M 20	E S 16	E S 16	J A 20	M 22	J A 27	J A 20	M 23	G 23	G	35	40	J A 50	J A 40	J A 48	J A 40	J A 39	J A 30	J A 25	J A 28	J A 30	J A 24	J A 18	M 18
6	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15	G	G	32	39	43	J A 45	J A 45	J A 71	J A 42	J A 45	J A 35	J A 34	J A 34	J A 28	J A 20	J A 18	J A 21
7	J A 24	J A 21	J A 20	J A 19	E B 18	J A 18	M 18	20	G 18	32	33	40	35	36	36	34	J A 78	J A 30	J A 25	J A 39	M 20	J A 27	J A 18	E S 16
8	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15	M 18	18	26	30	34	39	J A 47	J A 41	J A 48	J A 41	J A 36	J A 32	J A 27	J A 24	J A 21	J A 20	J A 20	M 21
9	M 18	E S 16	E S 16	M 20	M 21	M 21	M 19	G	27	J A 38	J A 47	J A 53	J A 63	J A 64	J A 88	J A 82	J A 64	J A 79	J A 62	J A 28	M 23	J A 19	M 21	M 18
10	E S 16	E S 16	M 21	M 21	M 21	M 20	M 22	M 22	G	G	33	35	36	36	35	33	J A 32	G 22	20	E S 16	E B 18	E S 16	E S 16	E S 16
11	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16	E S 16	G	G	G	J A 34	41	41	J A 42	44	42	J A 46	J A 49	J A 45	J A 40	J A 21	M 23	M 21	E S 16
12	E S 16	M 19	E S 16	E S 16	E S 16	E S 16	E S 16	G	G 23	34	37	42	43	46	42	47	J A 51	J A 38	J A 55	J A 53	J A 36	J A 24	J A 23	E S 16
13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G 20	34	38	36	44	50	49	46	J A 45	J A 36	23	J A 19	J A 23	E S 16	E S 16	E S 16
14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 14	E S 16	G	28	34	37	36	43	48	J A 54	J A 68	38	J A 27	19	J A 35	J A 23	M 22	M 23	E S 16
15	E S 16	E S 16	E S 16	M 20	M 18	E S 16	M 22	G	G	G	38	39	C	C	39	41	J A 40	34	26	17	J A 29	J A 29	J A 26	M 18
16	E S 16	E S 16	E S 16	E S 16	E S 15	E B 12	E S 15	G	G	32	39	J A 44	41	J A 54	45	37	J A 55	J A 41	J A 42	J A 20	M 23	J A 21	J A 19	J A 30
17	J A 20	M 18	M 21	M 21	M 18	E S 17	E S 15	G	29	40	J A 46	43	J A 45	38	G	G	G	25	24	E S 15	J A 21	J A 21	M 22	J A 35
18	J A 24	M 20	J A 19	M 20	M 22	M 21	M 20	J A 26	29	36	37	40	36	39	40	38	37	J A 45	J A 31	J A 25	J A 19	E B 20	M 18	M 19
19	E S 16	E S 16	E S 15	M 23	M 23	M 20	M 21	G	28	29	29	37	38	J A 40	J A 40	36	35	28	22	22	M 20	J A 26	J A 50	E S 16
20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	20	27	31	33	J A 38	J A 40	40	36	C	J A 41	C	23	E S 16	M 18	M 18	J A 20	J A 24
21	J A 20	J A 27	J A 20	E S 15	E S 15	E B 12	E S 16	G	26	31	38	J A 45	41	J A 48	41	36	J A 40	J A 50	J A 30	J A 21	E B 13	J A 27	J A 21	J A 32
22	J A 26	E S 15	J A 36	J A 29	J A 25	J A 31	J A 21	21	J G 24	J A 36	36	40	39	36	G	G	G	G	G	C	J A 20	40	J A 40	J A 49
23	J A 65	J A 53	J A 21	J A 22	J A 25	J A 24	J A 18	20	32	38	40	J A 36	45	36	J A 39	G	38	J A 49	J A 38	J A 29	J A 33	J A 64	J A 64	J A 36
24	J A 41	J A 37	J A 37	J A 50	J A 24	J A 50	J A 41	J A 33	28	J A 40	38	J A 49	46	J A 50	J A 53	J A 48	J A 48	J A 52	J A 40	J A 20	M 18	E S 15	E S 16	E B 17
25	M 18	M 19	E B 12	E B 12	J A 20	M 22	J A 24	J A 23	J A 41	J A 62	J A 49	J A 46	40	J A 60	J A 65	J A 53	J A 45	29	22	J A 21	E S 16	J A 31	J A 25	J A 25
26	J A 51	J A 36	J A 70	J A 25	J A 25	J A 24	J A 26	J A 26	29	29	38	39	C	38	40	38	32	G	G	J A 51	J A 33	J A 25	J A 33	M 23
27	M 23	M 18	E S 15	J A 19	J A 25	20	M 21	G 16	G 19	31	33	34	33	34	J A 34	30	G 25	J G 24	J A 29	J A 20	30	J A 23	E S 16	J A 20
28	J A 26	M 22	J A 19	E B 12	E B 12	E B 14	E B 14	G	25	26	27	33	38	33	J A 40	J A 40	J A 35	J A 39	J A 30	J A 25	E S 16	E S 14	M 19	E S 16
29	E S 16	E S 16	E S 15	E S 13	16	E S 14	E B 11	G	27	32	34	30	34	28	27	32	J G 29	J A 36	20	20	M 21	M 17	M 22	M 24
30	E S 16	E S 16	E S 15	E S 15	17	E B 14	E S 16	J A 37	28	34	36	C	37	C	C	G	G	G	J A 30	J A 20	E S 15	J A 29	J A 30	J A 41
31	J A 41	E S 16	M 24	E S 16	E B 11	M 18	E S 16	24	29	33	38	34	27	27	G 26	G 24	G 21	J G 25	J A 28	J A 26	M 19	E S 15	J A 19	J A 18
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	30	30	30	30	31	31	30	29	29	30	30	31	30	31	30	31	31	31	31
MED	18	E S 16	E S 16	19	18	18	18	16	26	32	37	39	40	40	40	38	J A 38	J A 31	J A 28	J A 23	21	J A 22	J A 21	20
UQ	J A 24	20	J A 21	21	M 22	J A 21	M 21	22	28	34	38	43	45	J A 48	J A 48	J A 42	J A 46	J A 39	J A 30	J A 29	J A 26	J A 26	J A 24	J A 24
LQ	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16	G	G 19	29	34	36	37	36	36	33	32	J 25	22	20	18	18	18	E E 16

MAR. 1974

FOES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

FBES (0.1 MHZ)

135 E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26 19.0 N. Long. 127 46.8 E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour 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	C	C	C	C	C	G	G	35	35	35	35	33	G	17	G	G	E	20	E	17																	
2	E	E	S	E	S	E	S	16	E	S	G	31	36	55	65	75	U	A	45	46	53	31	25	23	35	E	E	E													
3	E	E	S	E	S	E	E	E	E	G	G	19	G	24	33	35	31	41	35	35	29	G	G	E	E	E	S	16	27	A	50										
4	20	17	20	18	15	E	E	E	G	29	34	36	37	37	36	38	35	31	17	18	20	E	E	S	E	S	16	E	E	E											
5	E	E	S	E	S	E	E	A	A	27	E	G	23	G	34	38	41	35	40	34	35	29	22	U	A	25	25	17	18	E	E										
6	E	S	E	S	E	S	E	S	E	S	E	S	G	G	32	37	41	42	41	69	42	44	31	34	33	23	E	E	E	17	E	E									
7	21	E	U	A	20	E	E	B	18	E	E	19	G	18	31	33	37	34	36	36	33	44	24	22	29	E	23	E	E	S	16										
8	E	S	E	S	E	S	E	S	E	S	E	18	26	30	32	36	41	38	38	34	32	31	25	22	E	E	E	18	E	E	E										
9	E	E	S	E	S	E	E	E	E	E	G	26	36	41	50	53	50	50	43	36	60	60	17	E	18	E	E	E	E	E											
10	E	S	E	S	E	S	E	E	E	E	G	G	G	32	35	35	36	35	33	31	G	22	20	E	S	16	E	B	18	E	S	16	E	S	16						
11	E	S	E	S	E	S	E	S	E	S	E	S	G	G	G	33	36	40	41	41	41	39	45	39	28	17	E	E	E	S	16	E	S	16							
12	E	S	E	S	E	S	E	S	E	S	E	S	G	G	22	34	36	40	38	43	37	45	45	28	52	33	21	E	A	A	23	E	S	16							
13	E	S	E	S	E	S	E	S	E	S	E	S	G	G	20	33	38	36	43	50	38	45	40	34	22	E	17	E	S	16	E	S	16	E	S	16					
14	E	S	E	S	E	S	E	S	E	S	E	14	E	S	16	G	27	33	36	36	42	47	43	65	34	26	19	E	18	E	E	E	S	16							
15	E	S	E	S	E	S	E	E	E	S	E	G	G	G	37	37	C	C	38	40	39	34	25	E	26	25	20	E	E	E	E	E	E								
16	E	S	E	S	E	S	E	S	E	S	E	15	E	12	E	S	15	G	G	32	39	41	37	52	45	37	49	35	U	A	25	E	E	20	17	25					
17	E	E	E	E	E	E	S	17	E	S	15	G	28	39	45	40	44	37	G	G	G	25	21	E	S	15	E	U	A	18	E	E	S	35							
18	U	A	20	E	E	E	E	E	E	19	28	34	36	38	35	38	37	36	35	35	30	24	19	E	B	20	E	E	E	E	E	E	E	E							
19	E	S	E	S	E	S	E	E	E	E	G	27	G	27	G	28	36	38	36	35	34	31	27	21	E	E	E	20	E	E	S	16	E	S	16						
20	E	S	E	S	E	S	E	S	E	S	E	S	20	27	30	32	36	36	35	35	C	34	C	20	E	S	16	E	18	16	17	E	E	E	E						
21	17	21	E	E	S	15	E	S	15	E	B	12	E	S	16	G	25	30	36	40	39	47	39	33	32	26	18	E	E	B	13	22	E	17	E	17					
22	E	E	S	15	21	16	E	E	E	21	G	21	25	34	39	38	35	G	G	G	G	G	G	C	19	40	22	33	E	E	E	E	E	E	E						
23	30	35	18	E	19	22	18	19	31	34	40	33	39	36	33	G	34	43	34	27	30	U	S	45	30	25	E	E	S	15	E	S	16	E	B	17					
24	E	15	E	16	18	16	16	21	28	29	37	35	45	48	52	46	41	26	18	20	E	E	S	15	E	S	16	E	S	16	E	B	17	E	E	E					
25	E	E	E	B	12	E	B	12	15	E	18	20	23	35	31	32	39	54	65	40	36	28	21	18	E	S	16	25	E	E	E	E	E	E	E						
26	U	S	52	25	23	20	20	E	17	16	29	29	38	38	C	37	39	38	31	G	G	40	25	18	31	E	E	E	E	E	E	E	E	E	E						
27	17	E	E	S	15	15	A	A	25	18	E	G	G	19	30	33	34	33	34	34	G	30	G	25	G	21	20	18	19	A	A	33	E	S	16	19	E	19			
28	23	18	E	E	B	12	E	B	12	E	B	14	E	B	14	G	25	25	27	33	37	E	R	33	39	36	33	30	19	18	E	S	16	E	S	14	E	E	S	16	
29	E	S	E	S	E	S	E	S	13	A	A	16	E	S	14	E	B	11	G	27	32	33	30	G	34	28	G	26	32	G	27	32	20	18	18	E	E	E	E		
30	E	S	E	S	E	S	E	S	15	E	E	B	14	E	S	16	37	28	34	35	C	37	C	C	G	G	G	25	18	E	S	15	U	S	26	U	A	24	A	A	41
31	26	E	S	16	22	E	S	16	E	B	11	E	E	S	16	23	29	33	36	34	G	27	G	26	G	24	G	21	G	23	27	25	E	E	S	15	16	E	E	E	
CNT	31	31	31	31	30	30	30	30	30	30	31	31	30	29	29	30	30	31	30	31	30	31	30	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31		
MED	16	E	S	16	E	S	16	E	S	15	E	S	15	E	S	14	E	S	14	G	25	31	36	36	38	37	38	35	34	28	21	18	E	S	16	18	16	E	S	16	
UQ	17	E	S	16	E	S	16	E	S	16	E	S	16	E	S	16	19	28	34	37	39	41	47	41	41	39	32	25	25	19	21	18	17	E	E	E	E	E	E		
LQ	E	E	E	15	E	14	E	E	E	E	E	G	G	19	26	33	35	35	35	35	35	35	35	33	30	22	19	E	E	E	14	E	E	E	E	E	E	E	E		

The Radio Research Laboratories, Japan

MAR. 1974

FBES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1974

F-MIN (0.1 MHz)

135 E Mean Time (G. M. T. + 9^h)

Station	OKINAWA				Lat.	26 19' 0" N				Long.	127 46' 8" E				Sweep	1 MHz to 25 MHz in 30 sec		in automatic operation							
Hour 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 ₁₆	E ₁₆	E ₁₆	E ₁₆	C	C	C	C	C	15	16	17	17	16	17	17	17	14	15	13	E ₁₆	E ₁₆	E ₁₅	E ₁₆	
2	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	13	E ₁₆	E ₁₅	E ₁₅	15	15	17	17	16	17	16	17	18	16	16	13	E ₁₆	E ₁₅	E ₁₆	E ₁₆
3	E ₁₆	E ₁₅	E ₁₆	E ₁₅	E ₁₆	12	E ₁₆	E ₁₅	E ₁₅	16	16	16	17	16	17	17	17	15	15	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	
4	E ₁₆	E ₁₅	E ₁₅	13	12	14	E ₁₅	E ₁₆	E ₁₆	14	15	17	16	17	16	16	17	16	15	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
5	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₆	E ₁₆	E ₁₆	E ₁₆	15	16	15	17	17	17	18	17	16	15	15	E ₁₆	E ₁₆	E ₁₅	E ₁₆	
6	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₆	E ₁₆	17	16	17	17	17	17	17	17	17	16	15	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
7	13	E ₁₆	E ₁₅	E ₁₅	18	E ₁₆	E ₁₆	E ₁₅	E ₁₅	15	15	17	17	18	E ₂₃	18	18	16	15	E ₁₅	E ₁₅	E ₁₆	E ₁₆	E ₁₆	
8	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₅	E ₁₅	15	16	16	19	18	17	18	17	18	15	14	E ₁₆	E ₁₆	E ₁₆	E ₁₇	
9	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₆	E ₁₆	E ₁₆	E ₁₆	16	15	17	16	18	17	17	17	19	15	16	15	E ₁₆	E ₁₆	E ₁₆	
10	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₅	E ₁₆	E ₁₆	E ₁₆	E ₁₆	15	15	16	16	E ₂₁	20	22	17	17	15	E ₁₆	18	E ₁₆	E ₁₆	
11	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₆	E ₁₆	E ₁₆	E ₁₆	17	16	16	18	E ₂₃	20	17	18	17	15	14	15	E ₁₆	E ₁₆	E ₁₆	
12	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	14	15	17	18	18	18	18	18	17	16	14	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
13	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	15	16	17	18	17	21	20	20	17	15	15	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
14	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₄	E ₁₆	E ₁₅	E ₁₅	16	17	18	19	19	18	18	20	18	16	16	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
15	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₆	E ₁₆	16	16	15	16	18	17	C	C	20	20	18	16	15	14	E ₁₆	E ₁₅	E ₁₆	
16	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	12	E ₁₅	14	14	15	15	16	18	19	21	20	19	18	15	E ₁₆	E ₁₆	E ₁₆	E ₁₆		
17	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₇	E ₁₅	E ₁₆	E ₁₆	E ₁₅	15	17	17	21	20	21	20	17	15	16	E ₁₅	E ₁₅	E ₁₆	E ₁₅	
18	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₆	E ₁₅	E ₁₅	E ₁₆	E ₁₆	14	15	17	18	19	22	17	18	18	16	15	12	E ₁₅	20	E ₁₆	
19	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₅	13	E ₁₆	13	13	14	15	19	18	17	21	17	18	18	15	16	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
20	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₆	15	16	16	15	21	17	20	C	16	C	14	E ₁₆	E ₁₅	E ₁₆	14 12	
21	13	E ₁₅	E ₁₅	E ₁₅	E ₁₅	12	E ₁₆	14	14	14	15	17	17	18	18	17	18	16	15	13	E ₁₄	13	E ₁₄	E ₁₆	
22	E ₁₅	E ₁₅	E ₁₆	13	E ₁₅	E ₁₄	E ₁₆	E ₁₅	E ₁₅	14	16	18	18	18	18	20	16	15	15	14	C	12	E ₂₁	E ₁₅	
23	13	E ₁₅	E ₁₅	E ₁₅	11	12	E ₁₄	14	14	14	16	16	18	18	18	18	17	16	16	14	13	E ₁₄	E ₁₅	12 11	
24	E ₁₆	12	E ₁₅	11	E	12	12	14	14	14	17	17	18	18	20	18	18	18	16	13	14	E ₁₅	E ₁₅	E ₁₆	
25	E ₁₆	E ₁₅	12	12	12	E ₁₄	E ₁₅	13	13	14	16	15	18	18	18	19	18	15	16	14	14	E ₁₆	E ₁₅	14 12	
26	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₄	E ₁₆	E ₁₆	14	14	15	17	17	17	E ₂₃	20	21	20	E ₂₃	14	14	11	12	E ₁₆	E ₁₅	
27	E ₁₅	E ₁₆	E ₁₅	11	12	13	E ₁₅	14	14	14	16	18	20	21	18	19	19	15	14	13	12	12	E ₁₅	E ₁₆	
28	E ₁₆	12	13	12	12	14	14	13	15	13	17	18	17	20	18	17	16	14	14	E	E ₁₆	E ₁₄	12	E ₁₆	
29	E ₁₆	E ₁₆	E ₁₅	E ₁₅	11	E ₁₄	11	14	14	14	17	16	19	20	18	18	18	17	16	12	11	E ₁₅	E ₁₆		
30	E ₁₆	E ₁₆	E ₁₅	E ₁₅	14	14	E ₁₆	13	13	14	16	18	C	21	C	C	21	17	15	15	13	E ₁₅	E ₁₆		
31	E ₁₆	E ₁₆	E ₁₅	E ₁₆	11	12	E ₁₆	E ₁₆	14	14	16	19	20	20	20	20	20	15	15	14	E ₁₅	E ₁₅	E ₁₅	E ₁₅	
CNT	31	31	31	31	30	30	30	30	30	30	31	31	30	30	29	30	30	31	30	31	30	31	31	31	
MED	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₅	E ₁₄	E ₁₆	E ₁₅	E ₁₅	14	16	17	18	18	18	18	18	17	15	14	E ₁₅	E ₁₆	E ₁₆	E ₁₆	
UQ	E ₁₆	E ₁₆	E ₁₆	E ₁₆	E ₁₅	E ₁₆	E ₁₆	E ₁₆	E ₁₆	15	16	17	18	20	20	20	20	18	16	16	E ₁₆	E ₁₆	E ₁₆	E ₁₆	
LQ	E ₁₆	E ₁₅	E ₁₅	E ₁₅	12	12	E ₁₅	14	14	14	15	16	17	17	17	17	17	16	15	14	12	E ₁₅	E ₁₅	E ₁₅	

The Radio Research Laboratories, Japan

MAR. 1974

F-MIN (0.1 MHz)

IONOSPHERIC DATA

MAR. 1974

M(3000)F2 (0.01)

135 E Mean Time (G. M. T. + 9^h)

Station OKINAWA Lat. 26 19' 0" N Long. 127 46' 8" E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	300	300	330	330	C	C	C	C	C	320	340	355	330	320	340	340	350	310	320	340	340	340	305	300	320
2	320	325	310	300	340	370	320	350	315	375	335	310	320	330	I R 340	340	320	340	350	350	330	330	290	330	
3	340	300	290	270 ^S	290	360	320	350	370	350	330	320	310	320	320	330	350	340	340	300	330	340 ^R	350	A	
4	290	300 ^F	F	350	330	330	370	340	380	350	320	310	340	330	340	330	340	355	360	315	300	320	310	320	
5	320	310	300	320	400	I A 400	300	360	370	350	310	320	325	335	U R 330	320	340	360	310 ^R	340	330 ^R	330 ^S	I R 285	310	
6	330 ^S	300 ^S	310	340	340	320	280	360	360 ^R	350	380	320	320	320	350	340	330	350	340	300	U R 330	310	310	S	
7	320	340	350	360	400	280	280	360	360 ^R	320	280	290	320	350	330	320	340	340	360	340	340	280	300	300	
8	300 ^S	300 ^S	310	330	390	280	300	340	340	330	300	J R 310	315	315	325	310	330	330	335	330	350	320	310	270	
9	U S 270	U S 280	300	310	360	320	280	330	340	340	305	290	300	305	300	300	310	320	340	U R 350	330	330	290	280	
10	290	285	280	310	350	335	270	330	340	320	270	275	300	310 ^R	310	330	330	350	350	350	310	325	325	300	
11	265	290	280	350	350	300	305	310	360	340	300	310	305	315	315	315	325	340 ^R	340	310	330	330	300	300	
12	300	290	300	325	340	280	285	340	350	320	300	310	310	315	300	320	340	325	350	340	330	315	I S 280	270	
13	275	305	300	315	320	300	320	350	350	320	330	305	320	310	310	305	310	330	350	340	315	310	310	280	
14	285	295 ^S	300	320	360	300	300	340	370	335	325	310	300	310	310	315	320	330	335	320	320	350	275	270	
15	280	300 ^S	300 ^S	280	300	290	310	345 ^S	380	340	330	310	C	C	320	320	320	330	350 ^R	340	350	320	315 ^S	300 ^S	
16	300 ^S	J S 320	S	U S 340	380	310	300	355	350	340	340	300	310	310	320	330	U R 350	350	310	320	300	U S 330	I S 300	290 ^S	
17	300 ^S	300 ^S	300 ^S	370 ^S	240	260 ^S	F	300	370	340	280	300	300	310	320	320	340	340	360	320	340 ^S	300	S	I S 280	
18	U S 270	U S 310	310 ^S	U S 360	370	290	295	330	340	330	310	300	310	305	310	310	340	350	350	360 ^R	350 ^R	330	290	280	
19	290	300 ^S	320 ^S	280	320	300	300	340	340	310	320	310	320	315	320	320	330 ^R	325	355	330	310	300 ^S	U S 280	U S 310	
20	315 ^S	320	335 ^S	350	370 ^S	300	310	350	350	320	310	290	300	310	320	C	340	C	350	330	320	310	280	300	
21	U S 320	310	320	320	320	280	280	340	370	315	305	275	305	305	310	300	335	315	335 ^R	305	290	265	255	265	
22	290	335	315	280	310	370	240	350	360	330	275	320	310	300	300	315	320	335	360	C	290	290 ^C	280	305	
23	300	295	315	340	310	350	330	325	340	330	310	300	300	310	305	310	335	335	330	325	270	300 ^S	290	290	
24	300	300	300	300	300	310	300	330	355	330	340	305	325	310	315	310	305	310	335 ^R	330	300	310	275	300	
25	300	320	340	360	315 ^R	280	310	350	360	325	300	300	310	310	305	310	340	325	350	320	260	295	280	270	
26	290	310	305	310	390	310	280	350	330	350	320	280	U R 300	310	325	310	310 ^R	320	U R 320	350	300	280	260	280	
27	280	310 ^S	390	340	A	310	290	340	320 ^R	310	310	300	310	310	U R 310	U R 300	U R 310	330	360	380	290	I S 300	U R 290	300	
28	290	340	370	400	280	280	310	350	320	310	315	320	310	310	315	320	340	330	335	335	335	295	285	260	
29	275	300 ^S	380	310	I A 260	275	280	330	360	370	330	300	330	330	330	310	320	340	360	380	325	310 ^R	275	285	
30	290	U S 275	330	380	270	295	310 ^S	340	315	300	290	C	300	C	C	330	340	350	380	330 ^S	290	310 ^S	270 ^S	A	
31	300 ^S	330 ^S	U S 360	390	U R 330	U S 300	310	340	330	330	310	315	320	I R 320	320	320	310	U S 330	340 ^R	340 ^R	U S 280	290	280	280	
CNT	31	31	29	31	29	30	29	30	30	31	31	30	30	29	30	30	31	30	31	30	31	31	30	28	
MED	300	300	310	330	330	300	300	340	350	330	310	308	310	310	320	320	330	332	350	332	320	310	290	290	
UQ	300	315	330	350	360	320	310	350	360	340	330	310	320	320	325	330	340	340	352	340	330	328	300	300	
LQ	288	300 ^S	300	310	310	280	280	330	340	320	300	300	300	310	310	310	320	325	335	320	300	300	280	280	

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M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1974

M(3000)F1 (0.01)

135° E Mean Time (G. M. T. + 9^h)

Station	OKINAWA				Lat.	26 19' 0" N				Long.	127 46' 8" E				Sweep	1	MHz to	25	MHz in	30	sec	in automatic operation			
Hour 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	L	L	U L 380	L	380	380	L	L	L	L						
2										L	L	390	A	A	A	A	A	A	L						
3									L	L	L	L	L	360	370	U L 380	L	L	L	L					
4									L	L	L	L	L	365	370	370	L	L	L	L					
5									L	L	L	U L 365	L	360	380	460	L	L	L						
6									L	L	L	370	360	L	A	L	A	L							
7								U L 410	L	L	U L 350	L	380	370	390	L	L	A	L						
8								L	L	L	L	L	L	370	L	L	L	L	L						
9									L	L	A	A	A	A	A	L	L	A	A						
10								L	L	L	L	L	L	370	L	L	L	L	L						
11									L	L	L	370	L	L	L	L	L	A	A						
12								L	L	L	L	L	L	375	L	L	A	A	L	A					
13								L	L	L	L	355	L	A	L	A	L	L							
14								L	L	L	L	L	L	A	370	I A 380	380	L	L						
15								L	L	L	U L 370	L	C	C	U L 360	U L 385	L	L	L						
16								L	L	L	L	L	370	A	L	L	A	L							
17									A	A	370	L	L	U L 360	L	L	390	L							
18									L	L	L	L	L	360	L	L	L	L							
19								L	L	L	L	L	395	L	380	L	L	L							
20								L	L	L	L	370	380	370	360	C	L	C	L						
21								L	L	L	L	L	L	A	L	L	L	L							
22									L	L	L	L	L	L	L	L	L	L							
23								L	L	L	L	L	L	L	L	L	L	A							
24								L	L	L	L	L	L	A	A	A	L	L							
25								L	L	L	L	L	L	A	A	L	L	L							
26								L	L	L	L	360	360	370	L	L	L	L	L						
27								L	L	L	L	360	370	U L 360	U L 365	L	L	400							
28									L	L	L	380	L	L	370	L	L	L							
29								L	L	L	U L 380	390	375	L	L	L	L	L							
30									L	L	C	380	C	C	L	L	L								
31								L	L	L	360	370	370	370	U L 360	L	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT									1		3	14	15	14	10	2	2	1							
MED									U 410		360	370	370	370	370	382	385	400							
UQ											375	370	380	370	380										
LQ											355	365	365	370	360										

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF₂ (KM)

135°E Mean Time (G. M. T. + 9^h)

Station OKINAWA Lat. 26 19' 0" N Long. 127 46' 8" E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour 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	270	250	250	280	275	250	250	240	L	255					
2										240	275	305	300	295	260	255	270	250						
3										240	245	280	280	300	270	285	265	230	235	220				
4										235	250	300	300	275	265	270	275	260	240	220				
5										250	295	295	280	280	270	270	250	230						
6										230	250	290	280	275	270	250	260	270	245					
7										240	275	325	335	300	245	250	250	240	245					
8										255	270	320	280	280	280	260	290	270	240					
9										250	280	320	A	310	280	275	280	280	250	240				
10										230	260	320	L	310	260	280	270	260	250					
11										L	250	L	280	320	300	270	260	260	240	220				
12										240	280	300	280	280	280	270	250	250	240					
13										240	250	270	310	280	280	280	260	280	250					
14										240	250	270	290	290	280	280	275	250	250	230				
15										220	275	270	290	C	C	290	250	250	250	225				
16										240	250	240	305	290	305	290	250	240	235					
17										240	280	310	315	300	270	270	250	250						
18										L	250	280	290	290	290	275	260	245	235					
19										260	280	280	300	280	280	270	260	250	240					
20										250	295	280	310	325	300	265	C	240	C	215				
21										230	275	280	330	300	290	280	270	250	250					
22										270	290	265	270	310	300	275	260	250						
23										L	250	250	275	310	290	270	270	275	250	240				
24										240	250	260	310	270	290	280	275	275	250					
25										240	275	290	300	L	275	290	280	280	250	240				
26										L	250	290	335	335	300	255	255	250	230	225				
27										L	280	290	295	325	300	290	270	260	250	245				
28										290	280	280	280	290	290	275	260	240	240					
29										230	240	285	305	280	285	275	275	270	250	230				
30										305	320	C	305	C	C	250	255	235						
31										260	270	290	305	285	290	280	270	250	245					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									21	31	31	30	30	29	30	30	31	30	10					
MED									240	250	280	302	290	285	275	268	250	245	225					
UQ									250	275	295	310	300	290	280	275	260	250	230					
LQ									235	250	278	280	280	280	270	260	250	240	220					

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H^oF₂ (KM)

IONOSPHERIC DATA

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H'F (KM)

135° E Mean Time (G. M. T. + 9^h)

Station	OKINAWA				Lat.	26 19' 0 N				Long.	127 46' 8 E				Sweep 1 MHz to 25 MHz in 30 sec in automatic operation											
Hour 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	325	310	235	250	C	C	C	C	C	210	200	205	200	200	185	215	205	200	190	210	210	230	255	230		
2	250	250	295	285	240	215	275	240	230	230	220	A	A	A	A	A	250	225	215	240	230	270	250			
3	230	270	325	340	290	210	295	235	230	220	210	215	200	215	210	205	200	210	210	215	210	220	A			
4	340	350	360	230	210	E ₂₅₀ S	230	220	235	230	240	225	215	200	230	230	220	220	215	220	220	250	250	235		
5	250	250	300	255	200	A	E ₃₅₀ S	230	225	220	210	210	250	210	225	210	220	220	230	210	220	265	320	265		
6	220	230	255	230	210	250	330	225	225	220	230	250	E ₂₇₀ H	I ₂₄₀ A	A	A	A	240	220	265	240	250	230	250		
7	260	250	225	205	210	365	350	250	200	220	200	210	H ₁₈₀	H ₁₉₀	195	210	I ₂₄₀ H	200	225	230	205	E ₃₇₀ A	295	300		
8	295	255	255	250	205	300	300	235	240	235	215	220	250	220	220	215	225	240	240	220	205	230	250	290		
9	330	290	300	260	200	260	E ₃₃₀ S	240	240	240	250	A	A	A	A	I ₂₇₀ A	230	A	A	210	200	220	260	300		
10	280	300	310	260	225	220	E ₃₀₀ S	240	225	230	200	210	200	200	200	220	215	230	230	210	220	230	240	240		
11	340	300	320	240	220	300	290	240	235	200	210	225	210	220	250	250	A	A	245	230	215	250	260			
12	270	300	280	240	230	300	300	230	215	230	240	240	220	260	240	I ₂₄₀ A	I ₂₃₅ A	210	A	220	230	220	I ₂₆₀ S	290		
13	300	240	240	275	250	250	250	230	220	220	240	215	260	I ₂₈₀ A	210	I ₂₄₀ A	260	250	230	210	210	220	300	300		
14	290	280	260	240	200	275	290	240	230	220	230	230	240	I ₂₄₀ A	240	I ₂₃₀ A	220	200	230	210	215	200	265	310		
15	290	260	290	320	280	290	260	240	205	195	230	215	C	C	210	220	240	235	225	215	215	230	250	255		
16	275	250	240	200	190	200	E ₃₀₀ S	220	215	220	215	225	190	A	A	250	A	240	220	210	225	240	235	320		
17	315	305	310	230	220	S	380	480	270	225	A	A	230	260	220	210	210	200	200	200	220	215	225	300	A	
18	315	280	240	210	200	300	265	230	230	230	220	215	190	200	240	230	230	240	235	210	205	210	300	320		
19	300	260	230	210	200	220	290	230	230	220	190	210	200	190	190	190	230	220	220	215	230	260	320	270		
20	250	240	240	220	200	270	290	230	225	215	210	200	190	180	175	C	200	C	220	215	220	240	310	290		
21	280	300	250	240	200	250	350	250	230	220	230	235	230	I ₂₂₀ A	220	200	220	235	220	220	220	270	340	310		
22	290	235	250	320	275	210	440	240	240	240	240	230	220	210	200	220	220	240	230	C	250	320	330	270		
23	280	300	260	215	250	240	260	240	240	220	240	200	240	215	210	200	240	I ₂₂₀ A	220	210	260	U ₃₅₀ S	330	310		
24	300	280	275	280	220	260	340	240	235	230	230	230	A	A	A	A	260	230	230	220	210	230	300	330		
25	280	250	230	210	240	300	290	230	235	230	230	200	240	A	A	270	250	230	220	200	240	310	250	220		
26	E ₃₅₀ S	285	270	240	200	250	340	220	230	175	H	235	230	205	H	210	235	225	220	220	220	210	220	270	335	310
27	300	245	200	205	A	E ₃₃₀ A	305	240	225	210	205	200	200	H	200	200	210	165	H	220	225	200	E ₃₀₀ A	I ₃₁₀ S	310	305
28	305	230	205	195	260	275	250	220	225	210	H	210	200	220	190	H	230	245	225	240	225	210	215	220	280	330
29	330	270	200	E ₂₅₀ S	A	230	300	240	230	230	220	210	205	200	195	H	200	225	250	230	195	205	270	340	325	
30	300	340	245	220	395	305	275	240	230	230	230	C	225	C	C	240	220	220	225	220	230	320	355	A		
31	295	250	225	205	200	320	300	245	240	230	225	210	200	195	200	200	225	225	235	210	220	270	305	310		
CNT	31	31	31	31	28	29	30	30	30	30	30	28	27	24	24	27	28	28	28	30	31	31	31	28		
MED	292	270	255	240	215	260	295	240	230	220	222	215	212	210	210	220	225	228	225	210	220	235	295	295		
UQ	306	300	292	258	245	300	318	240	235	230	230	230	238	220	230	240	238	240	230	220	230	270	315	310		
LQ	278	250	238	212	200	235	275	230	225	220	210	210	200	200	200	210	220	220	220	210	212	222	250	258		

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H'F (KM)

IONOSPHERIC DATA

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H'E (KM)

135 E Mean Time (G. M. T. + 9h)

Station **OKINAWA** Lat. **26 19.0 N.** Long. **127 46.8 E** Sweep **1 MHz to 25 MHz** in **30 sec** in automatic operation

Hour 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	115	115	E A 130	A	110	E A 150	120	110	120	A					
2								S	120	110	110	110	105	110	110	110	110	110	A					
3								S	120	120	120	125	130	A	115	A	A	120	E S 140					
4								S	125	120	115	120	115	120	115	115	115	110	A					
5								S	I A 110	110	110	110	105	105	105	105	110	105	A					
6								S	120	110	110	105	105	110	105	105	105	110	A					
7								S	120	E A 140	110	110	110	105	105	110	A	A	A					
8								S	115	110	110	110	110	105	105	105	110	A	A					
9								S	115	110	110	105	110	110	110	A	A	A	A					
10								S	120	110	110	110	105	110	110	120	115	120	A					
11								S	120	110	110	110	110	110	110	110	110	110	A					
12								S	A	110	110	110	110	110	110	110	110	110	A					
13								S	120	140	110	120	100	110	115	110	110	110	A					
14								S	115	110	110	110	110	110	110	110	110	A	A					
15								S	110	105	120	120	C	C	110	105	105	110	A					
16									125	115	115	115	110	105	105	110	110	105	A					
17								S	115	115	115	115	110	110	110	110	110	A	120					
18								A	A	130	140	110	110	110	110	110	110	110	A					
19									120	110	130	130	130	105	A	A	110	110	115	A				
20								S	120	120	120	105	110	105	105	C	105	C	A					
21									125	110	130	120	105	105	110	105	110	110	A	A				
22								S	145	150	140	130	110	110	110	110	115	115	120					
23									130	140	110	110	105	A	130	A	110	120	115	120				
24								A	160	A	A	A	A	110	115	110	110	115	A	A				
25								A	A	A	A	A	A	140	110	130	110	110	120	120				
26								S	110	110	110	110	110	105	110	105	110	110	110	125				
27									135	115	115	115	105	105	105	I A 110	125	120	120	A				
28									120	110	120	120	110	110	110	100	A	A	A	A				
29									120	120	115	I A 125	I A 120	I A 120	120	115	A	E A 135	A	120				
30									120	110	120	A	C	110	C	C	110	115	110	A				
31								S	I A 110	A	I A 120	I A 120	110	115	115	115	120	125	A					
Hour 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
CNT								8	27	28	28	28	28	27	28	26	27	21	7					
MED								122	115	115	115	110	110	110	110	110	110	110	120					
UQ								128	120	120	120	120	110	110	111	110	115	120	121					
LQ								120	110	110	110	110	105	108	108	110	110	110	120					

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H'E (KM)

IONOSPHERIC DATA

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H^oES (KM)135° E Mean Time (G. M. T. + 9^h)

Station	OKINAWA				Lat.	26 19' 0" N				Long.	127 46' 8" E				Sweep	1 MHz to 25 MHz in 30 sec				in automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	125	100	115	110	C	C	C	C	C	105	105	170	170	150	150	160	G	100	100	100	100	100	100	105
2	100	S	S	115	S	110	115	S	G	150	140	120	120	115	115	120	120	115	110	105	105	100	100	100
3	100	S	S	100	110	110	110	G	105	110	180	160	100	100	125	100	100	110	G	100	100	S	110	110
4	110	110	110	105	110	105	110	110	185	170	160	160	180	140	125	125	120	100	100	100	100	S	S	120
5	115	S	S	100	100	100	100	100	120	G	140	120	115	120	115	120	115	110	110	105	105	105	100	100
6	S	S	S	S	S	S	S	G	G	150	140	130	130	125	120	120	120	115	110	110	105	110	105	110
7	110	110	110	115	B	105	110	160	110	160	125	160	110	110	110	110	110	105	100	100	100	100	100	S
8	S	S	S	S	S	S	105	135	160	140	120	115	115	115	110	110	115	115	110	100	100	105	105	105
9	105	S	S	105	115	120	120	G	120	115	110	110	110	110	110	105	105	105	100	105	100	100	100	100
10	S	S	100	100	100	100	100	100	G	G	140	145	145	140	135	130	120	115	120	S	B	S	S	S
11	S	S	S	S	S	S	S	G	G	G	110	120	120	120	120	120	115	115	110	110	100	100	100	S
12	S	100	S	S	S	S	S	G	120	170	150	140	140	140	140	125	120	120	110	110	110	100	100	S
13	S	S	S	S	S	S	S	G	115	170	190	180	150	135	130	130	120	120	115	110	100	S	S	S
14	S	S	S	S	S	S	S	G	120	120	120	130	140	130	120	120	115	115	100	100	100	100	100	S
15	S	S	S	100	100	S	110	G	G	G	170	150	C	C	130	115	115	115	110	110	110	105	105	100
16	S	S	S	S	S	B	S	G	G	130	125	115	120	130	135	125	115	115	110	110	110	110	110	105
17	105	105	110	110	110	S	S	G	150	140	130	130	120	130	G	G	G	110	120	S	130	110	120	110
18	110	105	105	100	100	100	100	100	140	130	130	120	140	130	125	120	115	115	110	110	110	B	100	100
19	S	S	S	100	100	105	105	G	170	110	110	130	130	110	115	120	120	115	140	100	100	115	120	S
20	S	S	S	S	S	S	S	150	150	140	140	115	115	120	115	C	120	C	100	S	100	110	110	110
21	105	105	120	S	S	B	S	G	160	150	130	110	120	120	120	115	120	110	110	110	B	100	100	110
22	100	S	105	100	100	110	110	160	110	110	150	130	130	150	G	G	G	G	G	C	115	115	110	110
23	110	110	110	110	110	110	110	140	130	120	120	115	150	170	115	G	150	125	120	115	110	110	115	110
24	115	110	110	110	110	110	110	110	180	110	145	100	130	130	120	120	115	110	110	110	120	S	S	B
25	110	100	B	B	110	110	110	110	110	105	110	110	125	120	120	120	120	130	120	115	S	110	110	110
26	110	110	110	110	105	105	105	100	180	115	160	165	C	125	120	120	125	G	G	100	100	110	110	110
27	100	100	S	110	105	105	105	110	110	150	145	140	105	105	105	100	100	100	100	100	165	130	S	110
28	100	100	110	B	B	B	B	G	130	110	110	125	180	115	100	100	100	100	100	100	S	S	120	S
29	S	S	S	S	100	S	B	G	180	155	165	110	110	105	105	105	100	100	140	100	100	100	120	135
30	S	S	S	S	105	B	S	130	150	140	180	C	155	C	C	G	G	G	95	95	S	115	115	110
31	115	S	105	S	B	115	S	165	150	145	135	155	105	105	105	105	100	100	100	95	100	S	110	110
CNT	18	13	13	17	17	16	17	15	24	27	31	30	29	29	28	26	27	27	28	27	26	23	26	22
MED	110	105	110	105	105	108	110	110	135	140	140	130	125	120	120	120	115	115	110	105	100	105	108	110
UQ	110	110	110	110	110	110	110	145	160	150	150	150	140	130	125	120	120	115	112	110	110	110	110	110
LQ	100	100	105	100	100	105	105	105	118	112	120	115	115	115	112	110	112	105	100	100	100	100	100	105

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MAR. 1974

H^oES (KM)

IONOSPHERIC DATA

MAR. 1974

TYPES OF ES

135° E Mean Time (G. M. T. + 9^h)

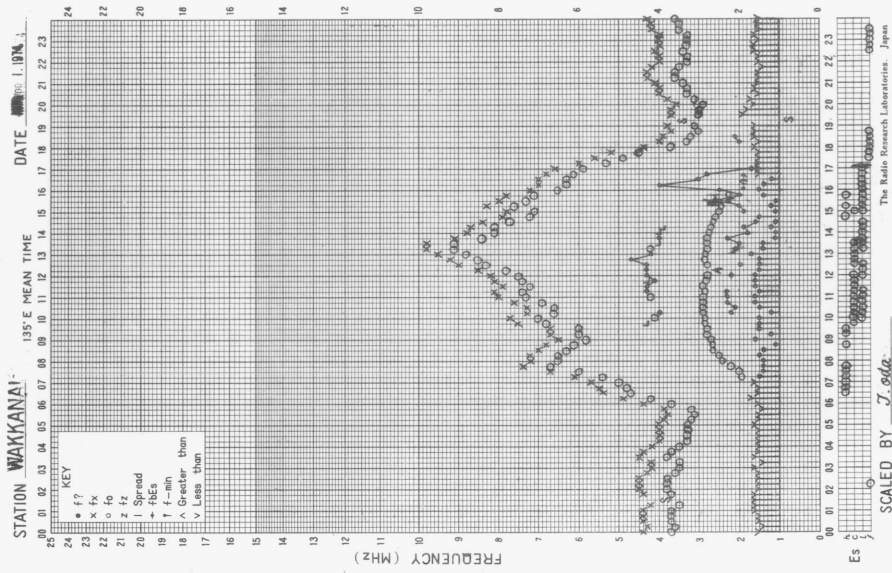
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Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	F3	F2	F2	F3					L2	L2	HL12	HL12	HL11	HL11	HL11		L2	L11	F1	F1	F4	F3	F2		
2	F2			F2	F1	F1			H1	H2	C4	C3	C5	C2	C2	C3	C4	L3	F3	F2	F1	F2	F2		
3	F1			F1	F2	F2	F1		L1	L2	HL12	HL12	HL21	L3	CL11	L2	L2	L1		F2	F2		F2	F5	
4	F4	F2	F3	F3	F1	F4	F1	L1	HL22	HL21	HL11	HL11	HL11	HL12	CL11	CL11	CL21	LC12	L2	F2	F1			F1	
5	F1			F2	F1	F3	F1	L1	L1		H1	C2	C2	C1	C2	C2	C4	C2	L3	F6	F3	F2	F1	F1	
6									H1	H1	H2	H2	C2	C2	C3	C3	CC22	C3	L4	F5	F2	F3	F3	FF21	
7	F5	F4	F3	F2	F1	F1	H2		L1	HL12	C1	HC11	C1	C1	C2	C2	L3	L3	L4	F2	F1	F6	F2		
8					F1	H1			H1	C1	C1	C1	C2	C1	C2	C2	C3	L2	L6	F5	F1	F2	F3	F2	
9	F1			F1	F1	F2			C1	C2	C3	C3	C3	C3	C4	L4	L2	L4	L6	F1	F1	F2	F1	F1	
10			F1	F1	F1	F1	F2	L1			C1	C1	C1	C1	C1	CL11	CL11	L1	L2						
11											C1	C1	C2	C1	C2	C3	C2	C4	L6	F3	F2	F2	F2		
12		F1							L1	H1	HC11	CC11	CC11	C2	C1	C2	C2	C1	L6	F4	F4	F3	F1		
13									L1	HL11	H1	HC11	H1	C1	C2	C2	C3	C5	L2	F1	F2				
14									C1	C1	C1	C1	C1	C2	C2	C2	C2	L2	L2	F1	F2	F1	F1		
15				F1	F1	F1					HL11	HL11			C2	C2	C2	C3	L3	F1	F2	F6	F4	F1	
16											CL11	CL21	C2	C1	CC22	CC21	C2	C2	C5	L2	F1	F1	F4	F4	F5
17	F3	F1	F2	F3	F4				H1	HL21	CL21	CL21	C2	C1				C1	C1		F2	F2	F2	F5	
18	F5	F3	F6	F2	F2	F2	F5		HL22	CL23	CL22	C2	C1	C1	C2	C1	C2	C5	L4	F4	F1		F2	F1	
19				F1	F1	F3	F1		H1	L1	L1	CL11	C1	L1	L1	C1	C1	C2	CLL21	F2	F2	F3	F3		
20							C2		HL22	HL12	HL11	C1	C1	C1	C1		C3		L3		F1	F1	F2	F6	
21	F5	F6	F1						H1	HL12	CL21	C3	C1	C2	C2	C1	C1	L3	L2	F2		F3	F2	F2	
22	F2		F3	F3	F3	F2	F2	H2	L2	L2	HL12	CL11	C1	H1							F1	F1	F2	F3	
23	F4	F4	F2	F1	F4	F3	F2	CL11	CL21	C2	C2	C1	CL11	HL11	L1		HL11	C4	C6	F3	F6	F4	F4	F5	
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26	F3	F6	F4	F3	F6	F3	F3	L1	H1	C1	HC11	HC11		C1	C1	C1	C1			F4	F6	FF41	FF	FF	
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29				F1					HL11	HL12	HL11	L1	C1	L1	L1	L3	L2	L4	HL11	F1	F1	F1	FF11	F2	
30				F1			C3		H1	HL11	HL11		H1						L5	F2		F3	F3	F6	
31	F6		F2		F1		H2		HL21	HL11	HL11	HL11	L1	L1	L1	L1	L1	L3	L5	F3	F1		F2	F2	
CNT																									
MED																									
UQ																									
LQ																									

MAR. 1974

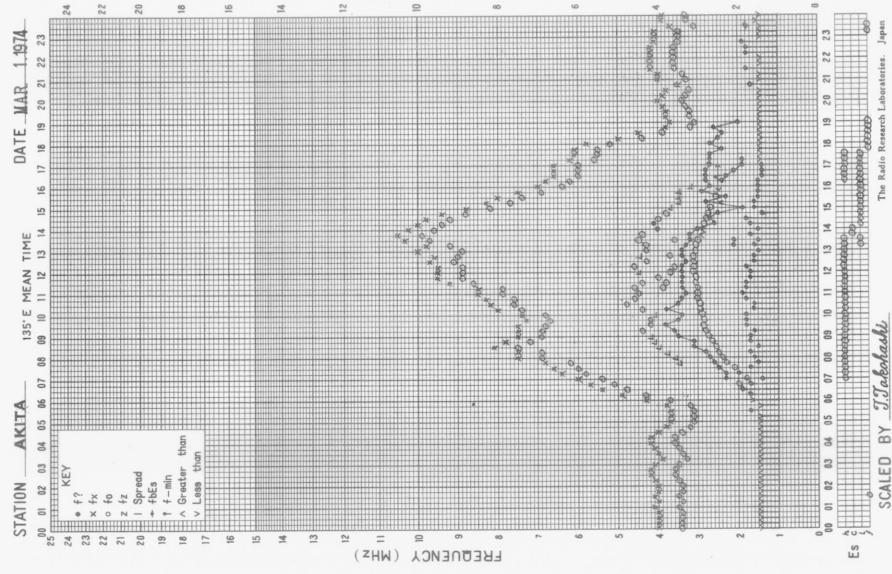
TYPES OF ES

f-PLOTS OF IONOSPHERIC DATA

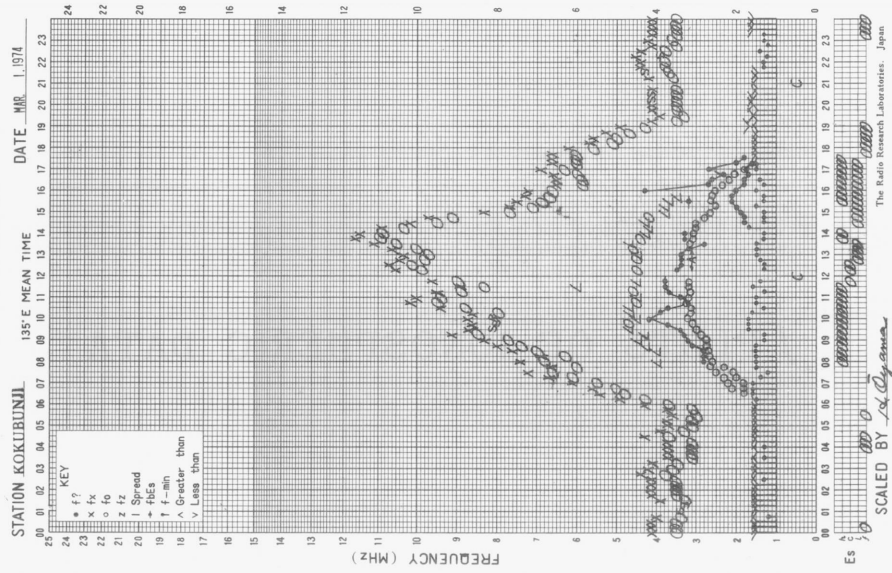
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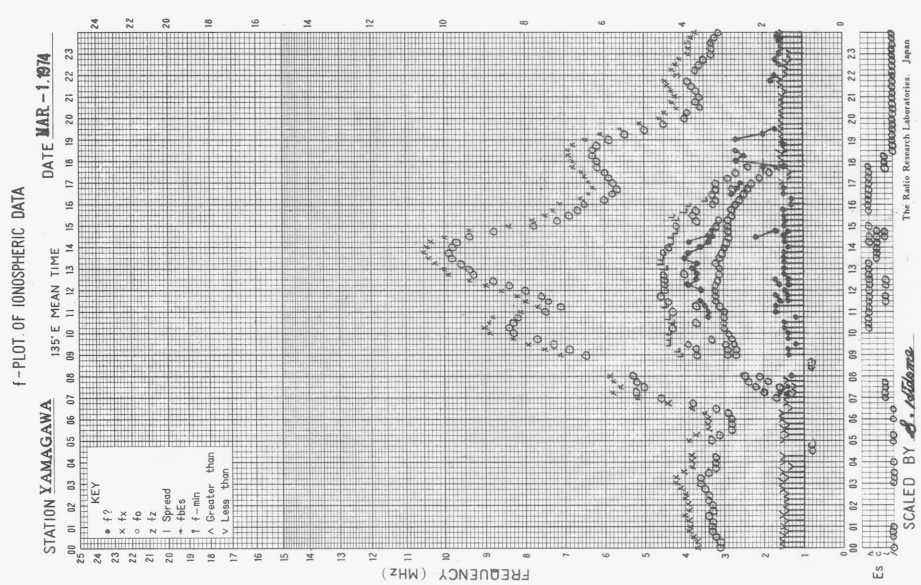
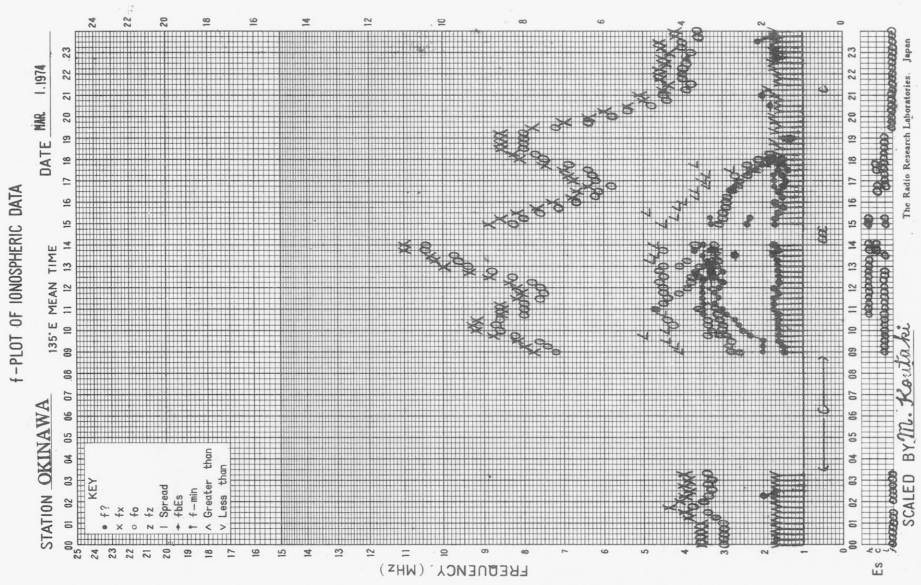


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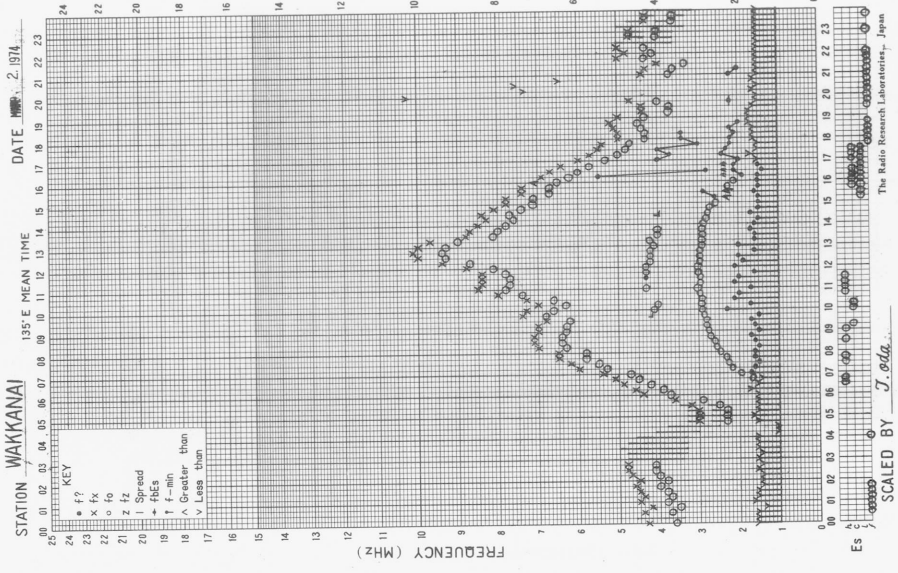


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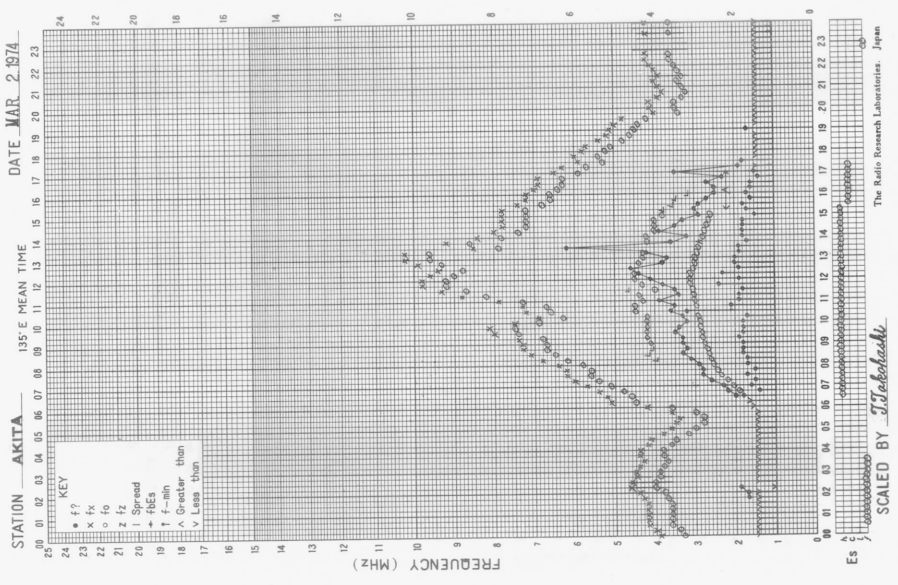




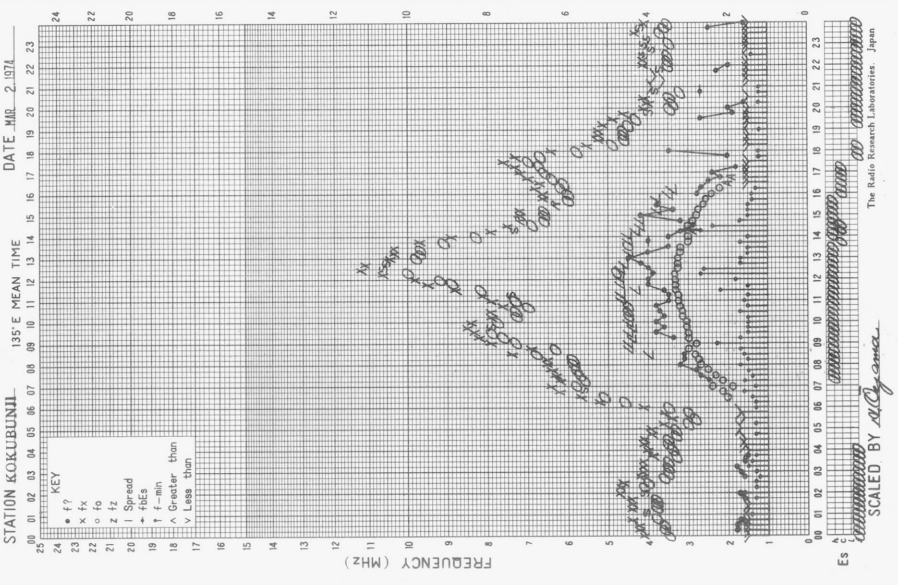
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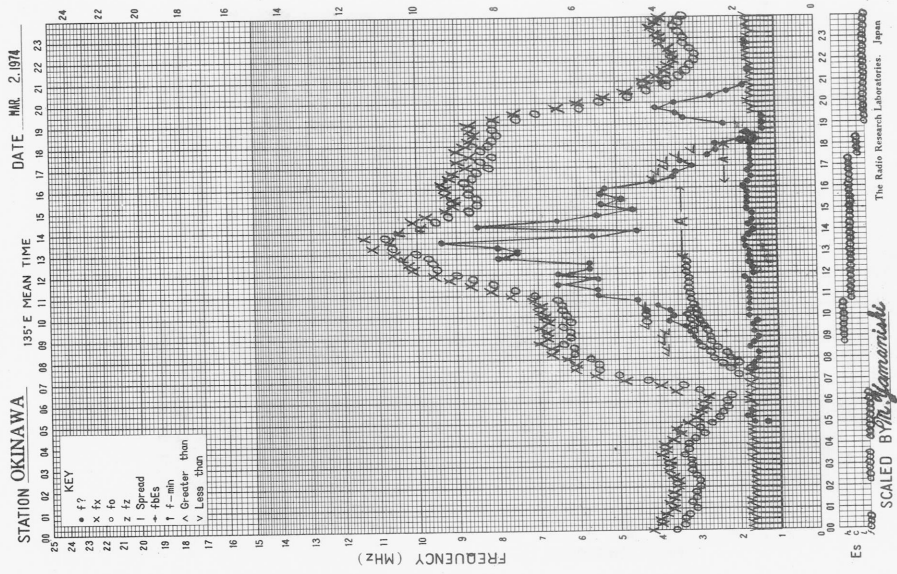
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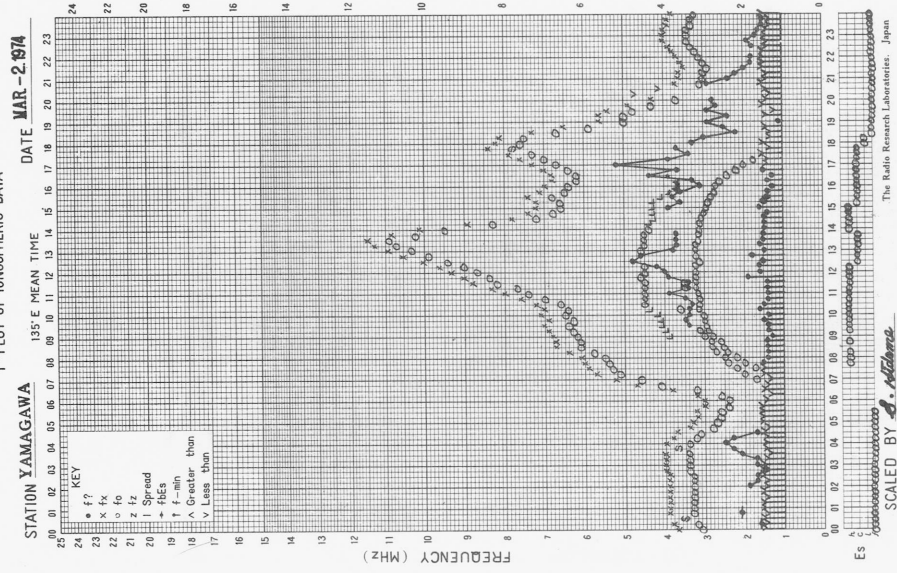
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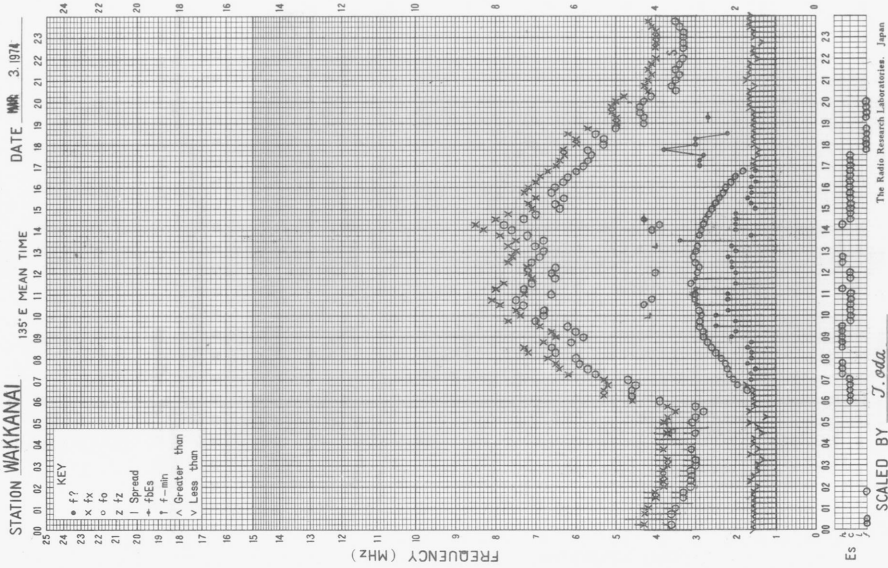
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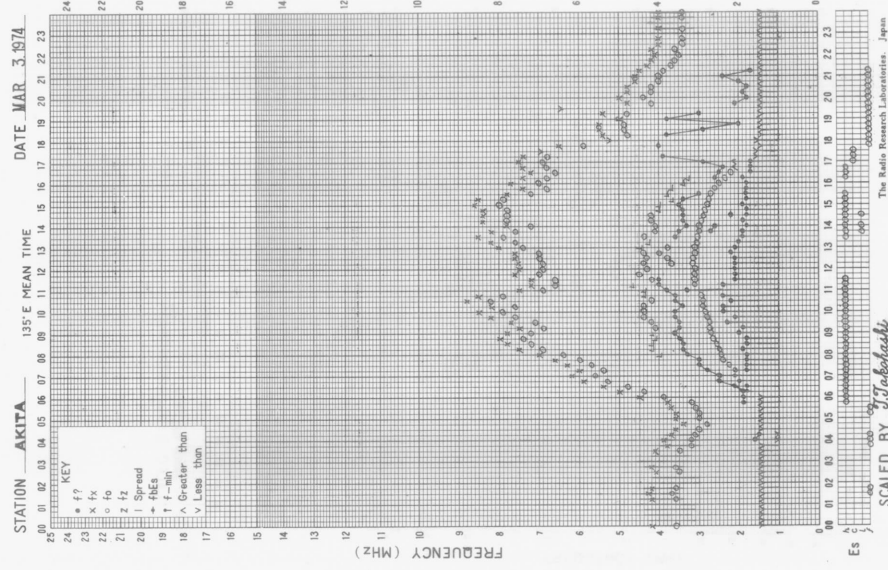
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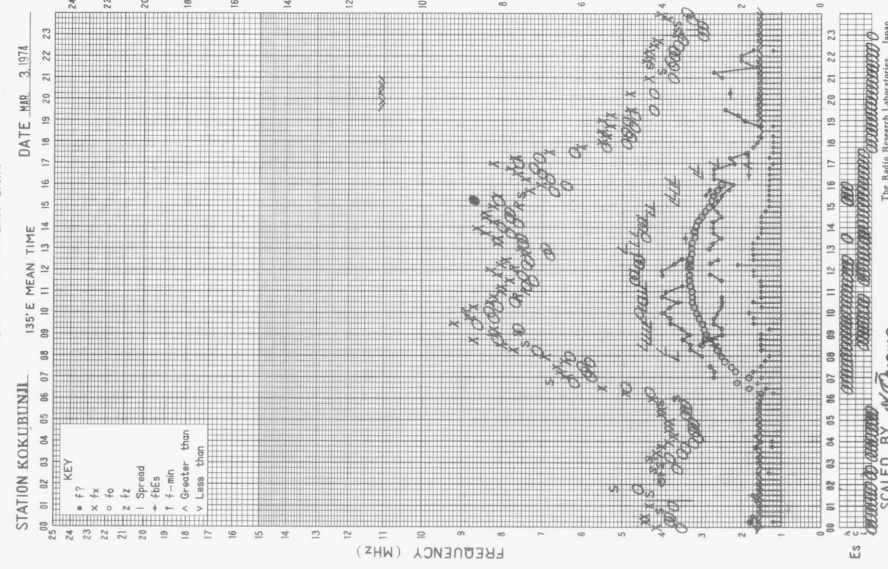
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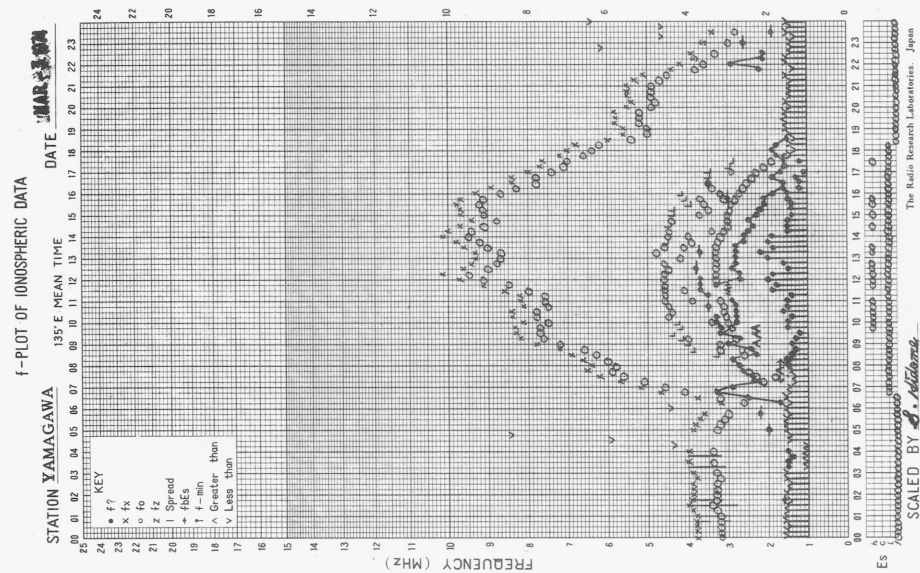
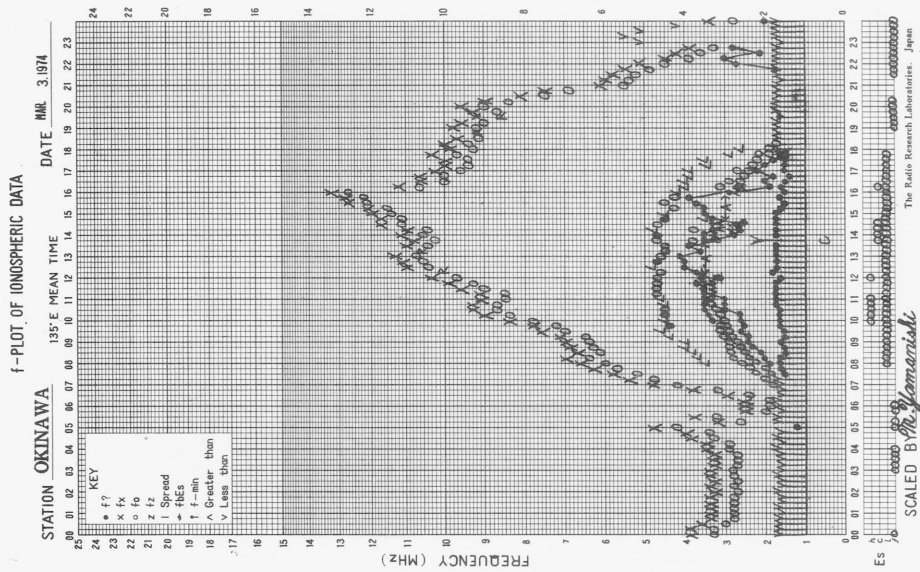


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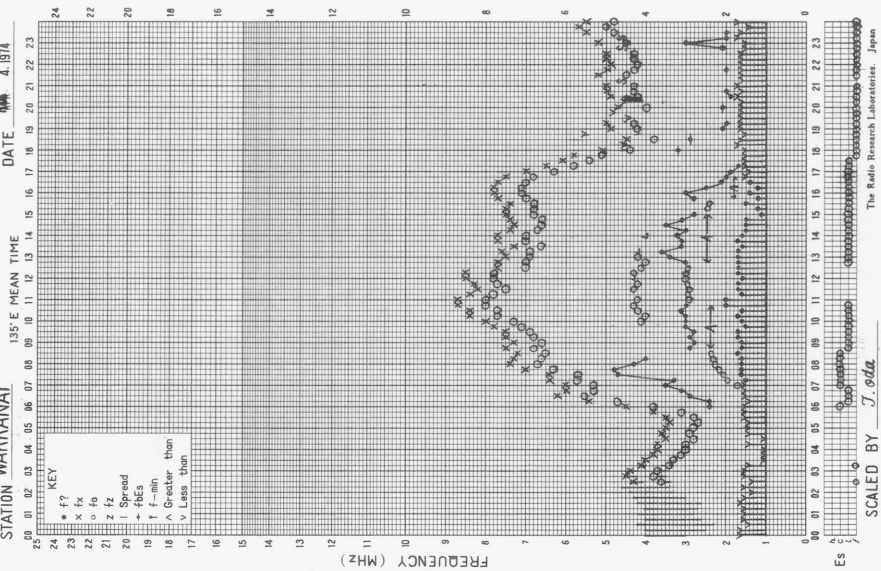
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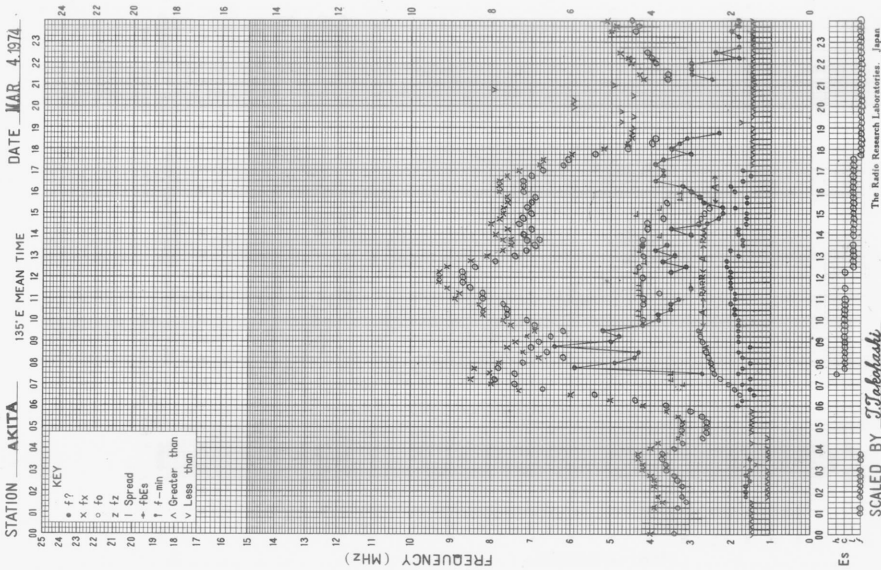
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STATION WAKKANAI DATE MAR 4. 1974



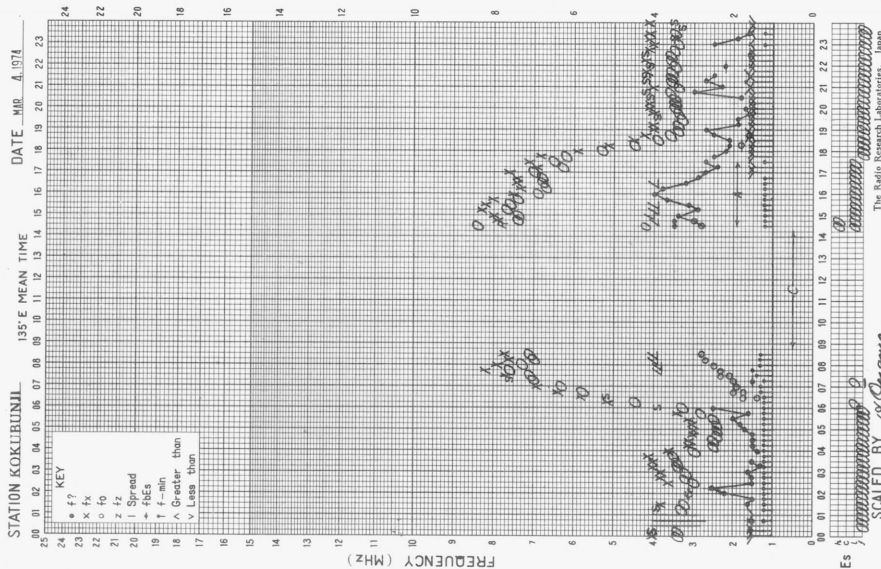
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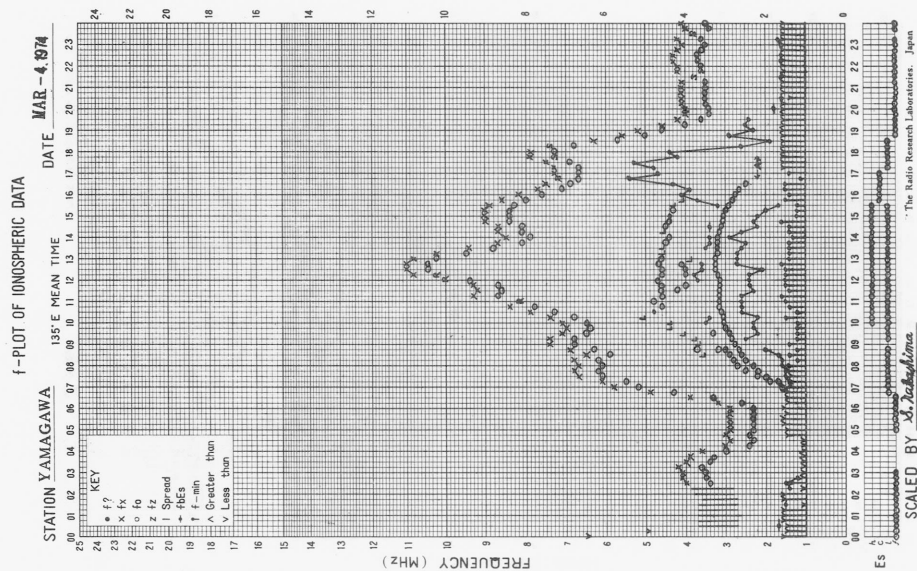
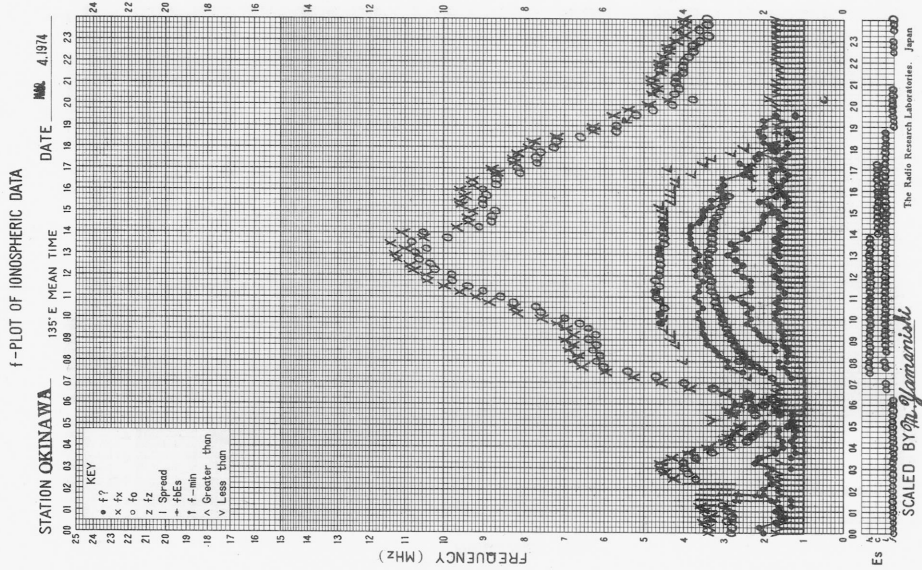
STATION AKITA DATE MAR 4. 1974



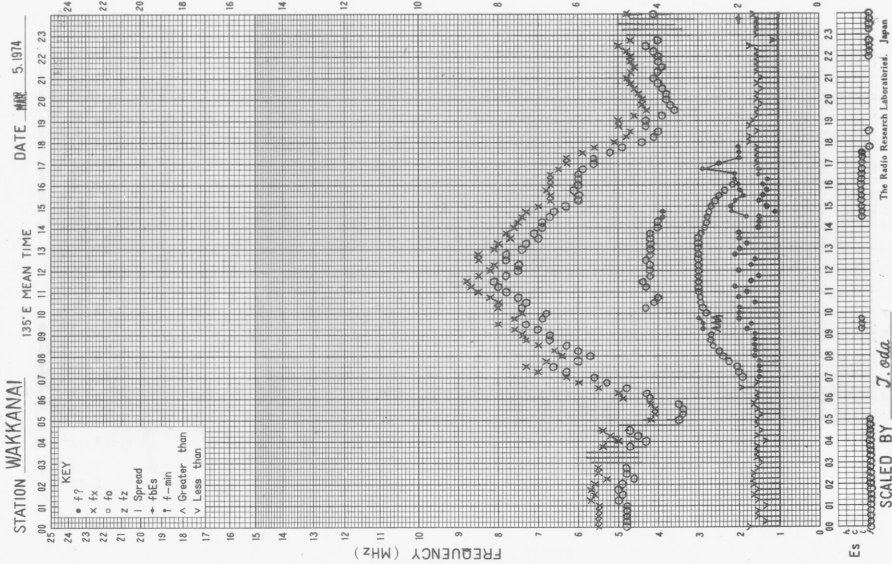
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STATION KOKUBUNJI DATE MAR 4. 1974

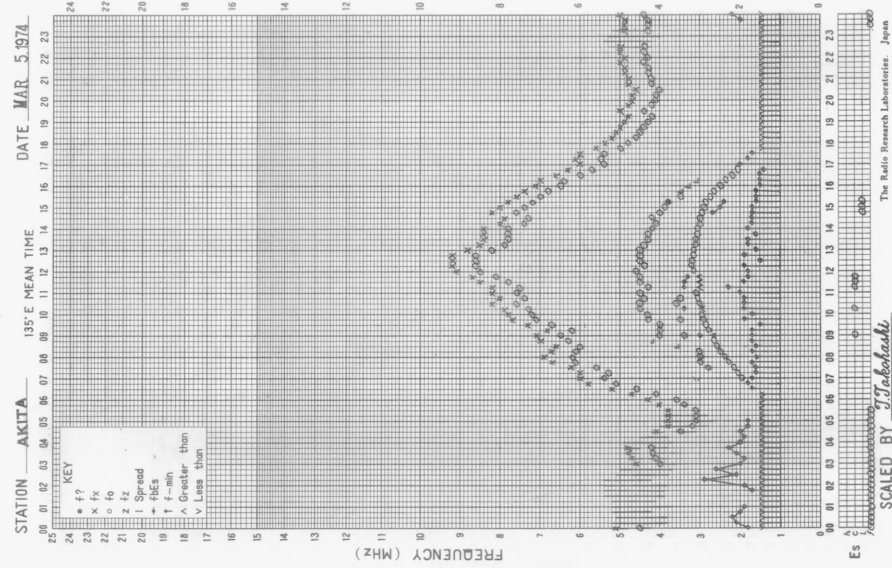




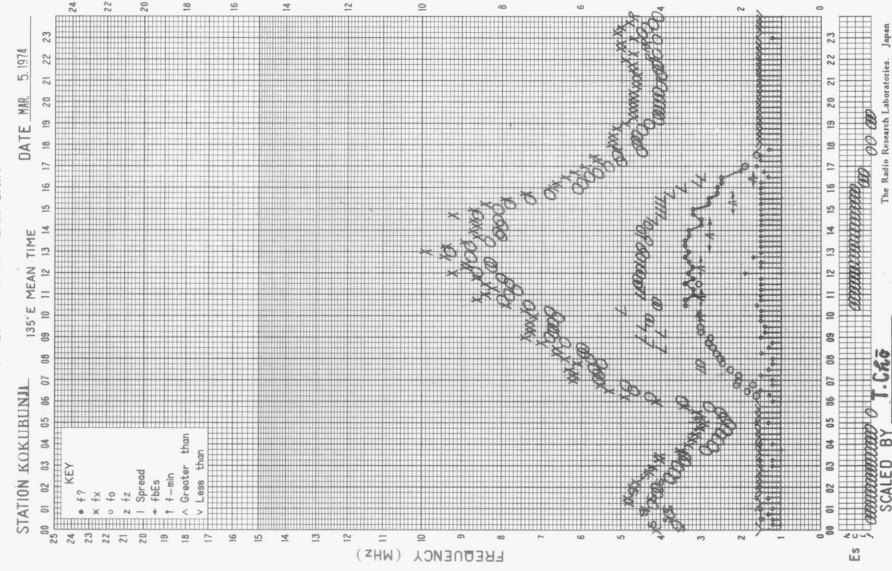
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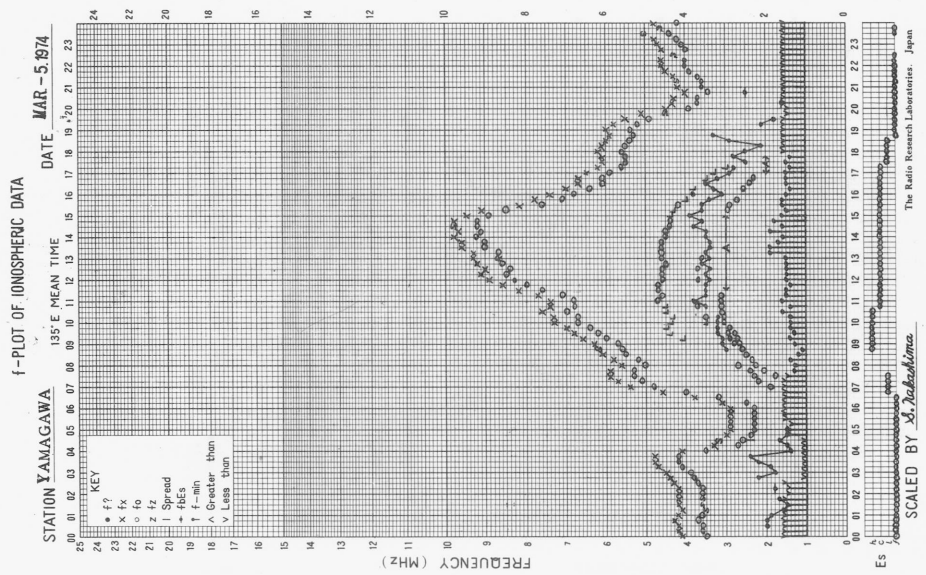
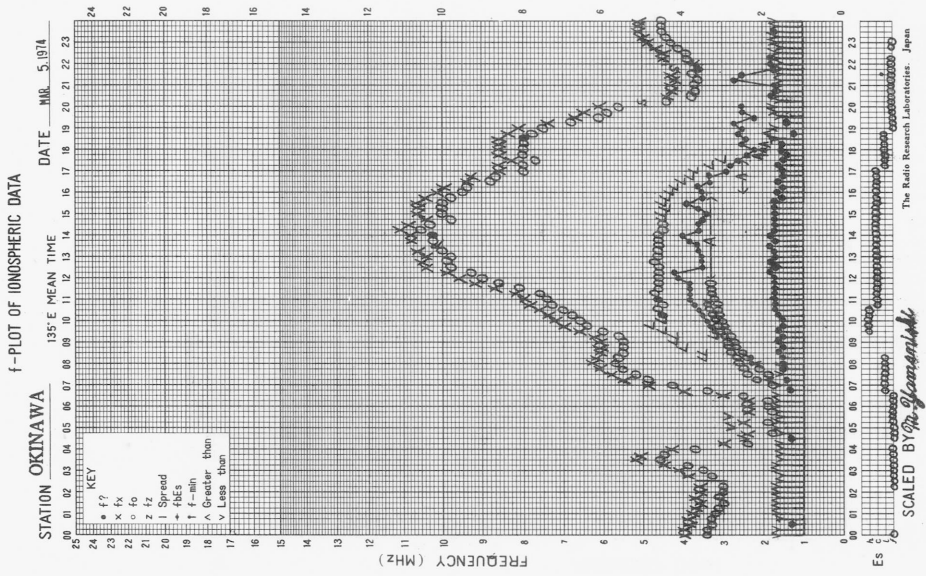


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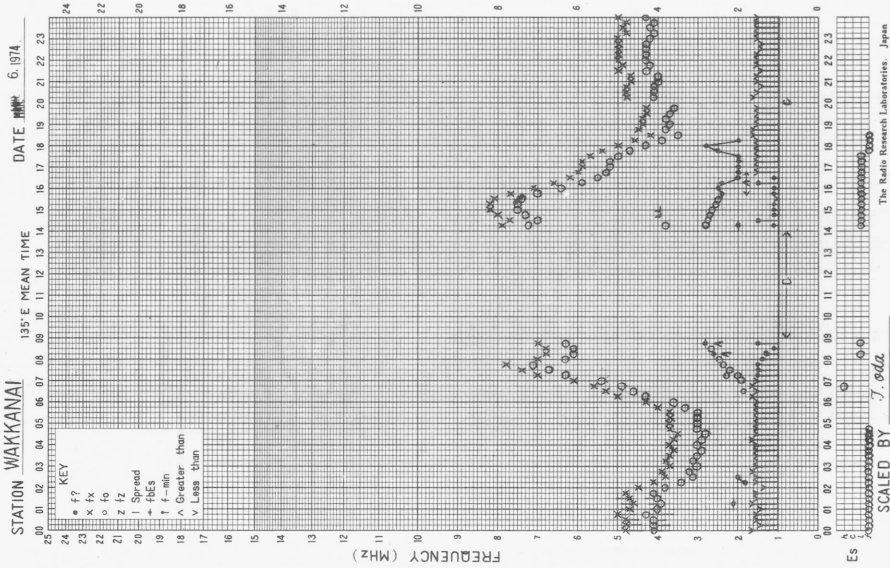


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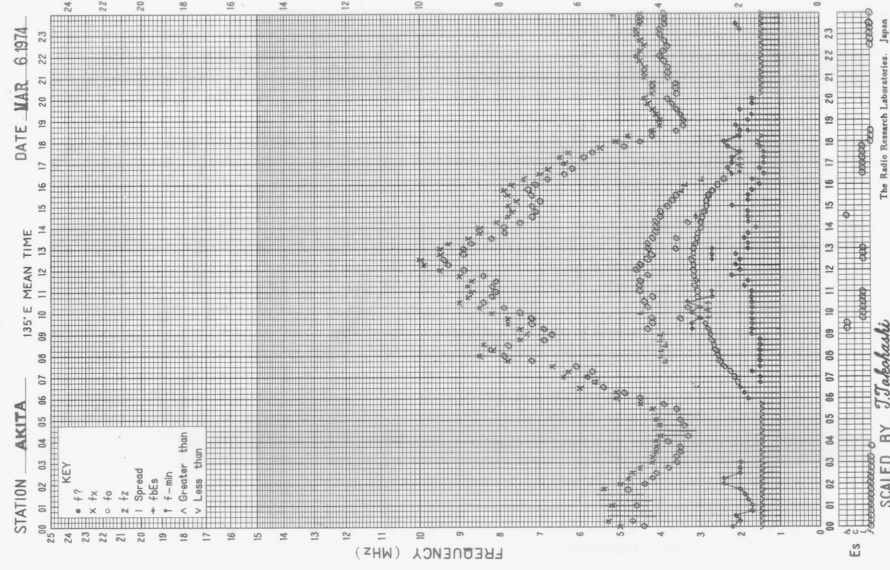




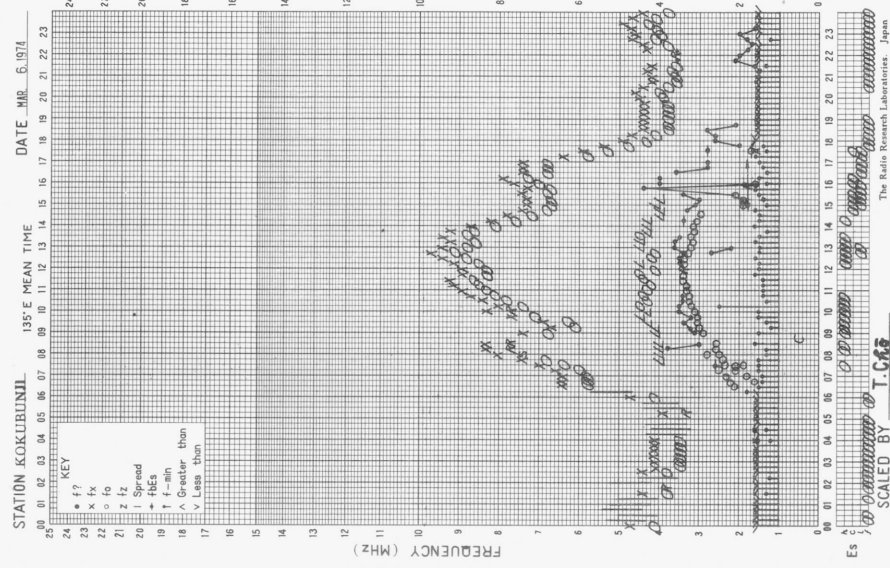
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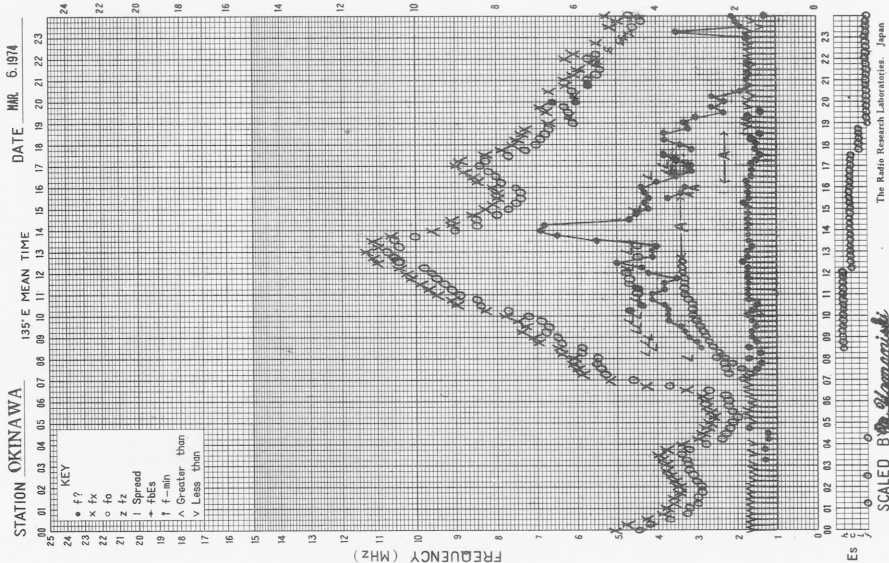
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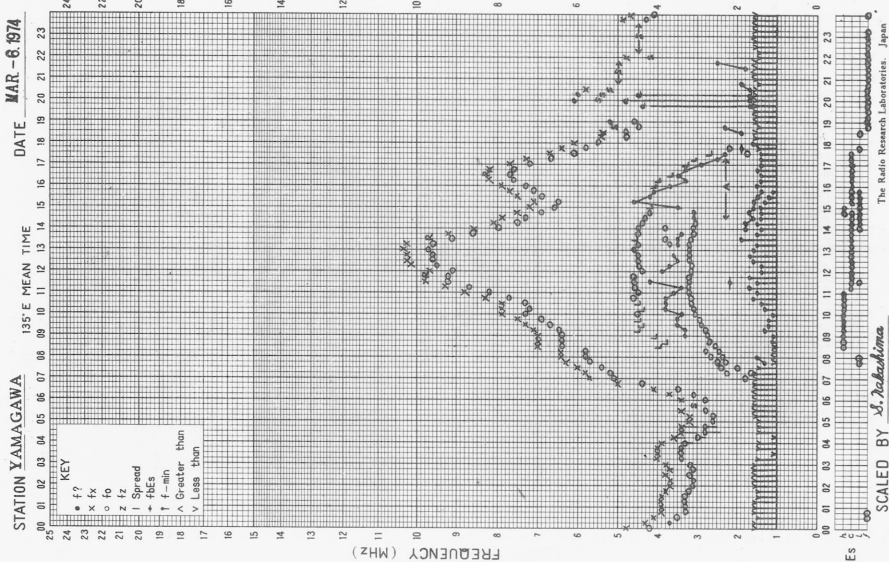
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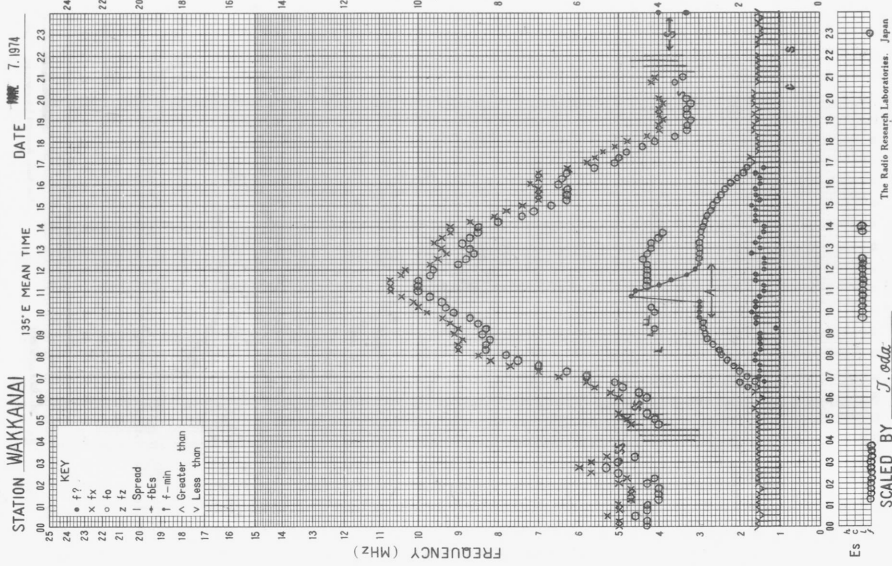
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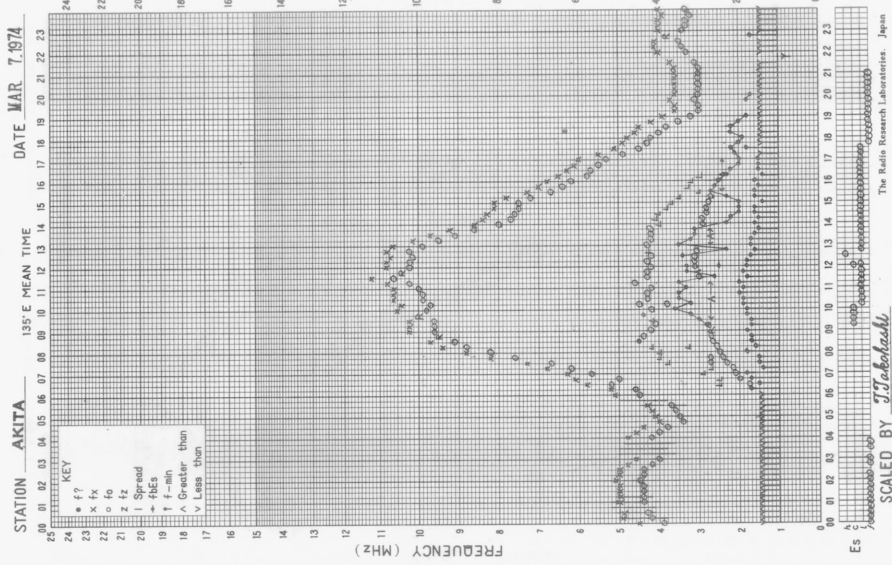
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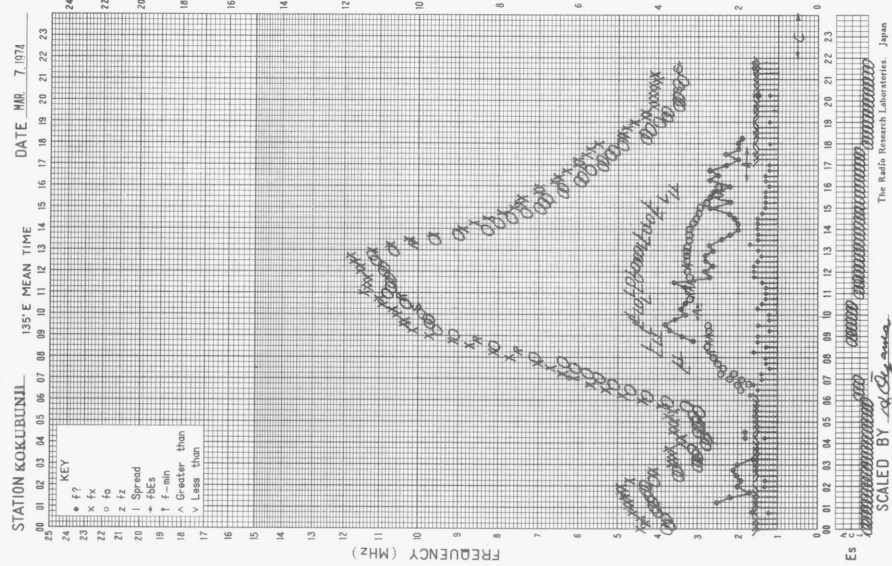
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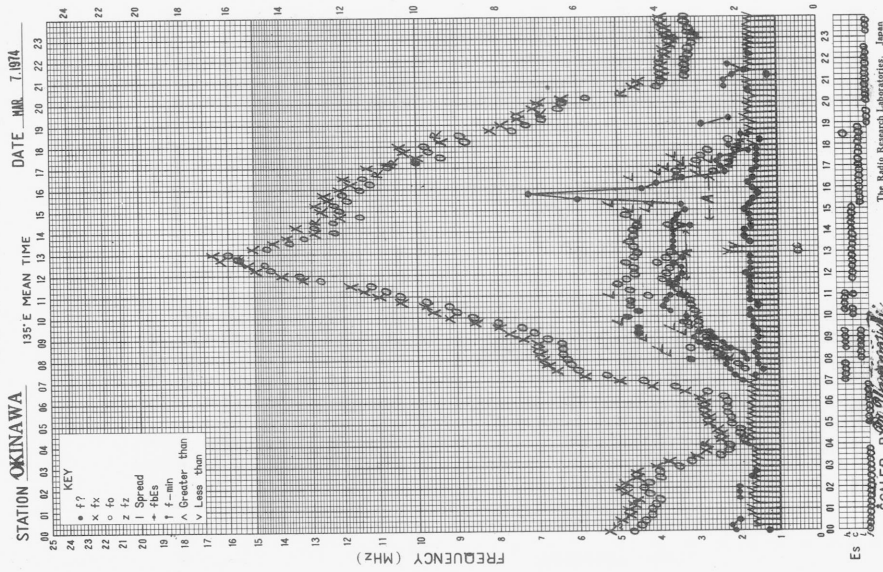
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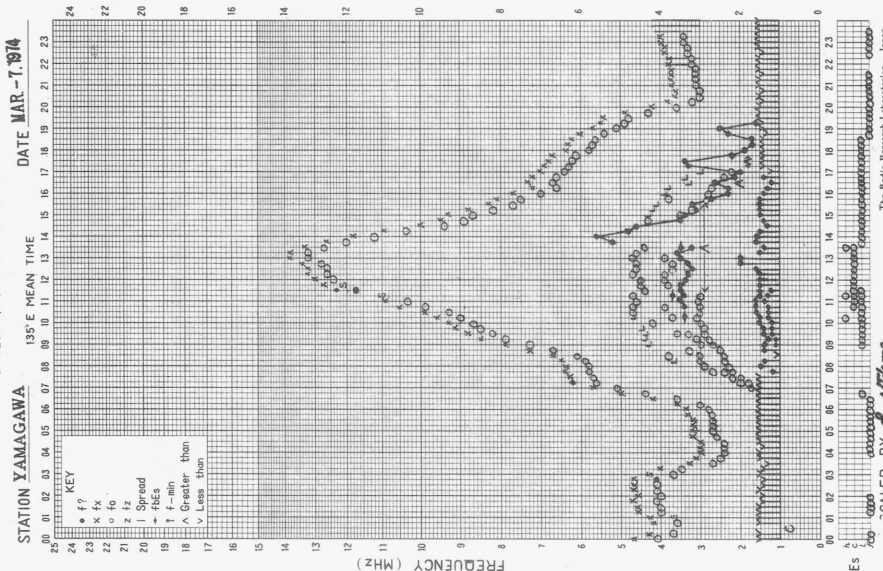
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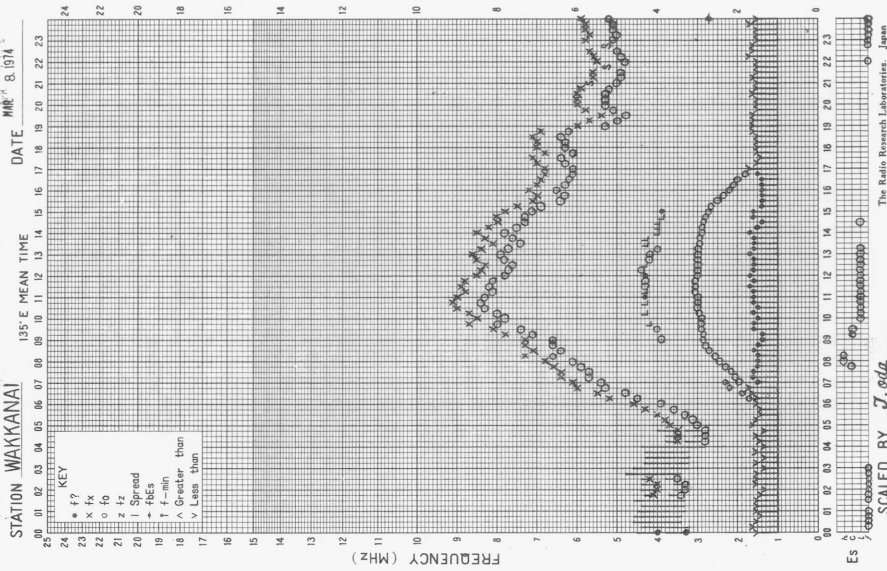
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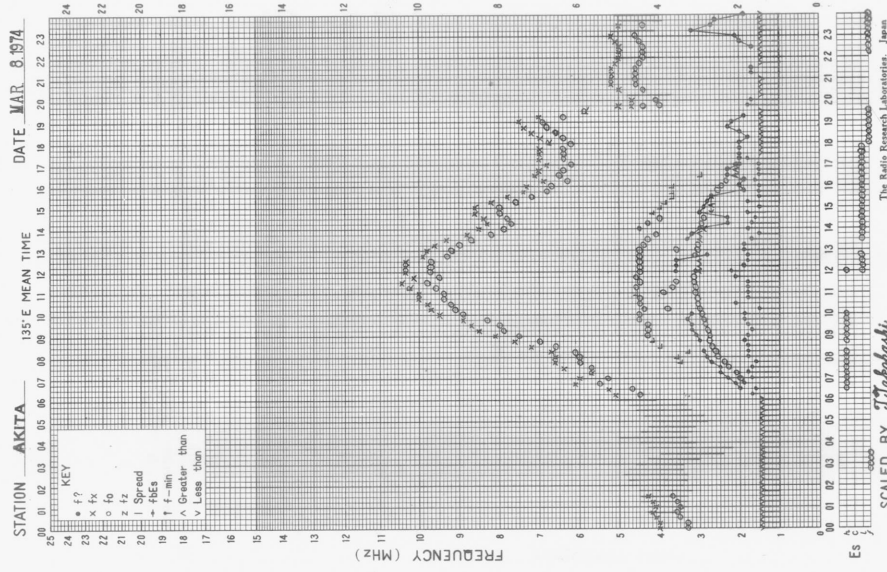
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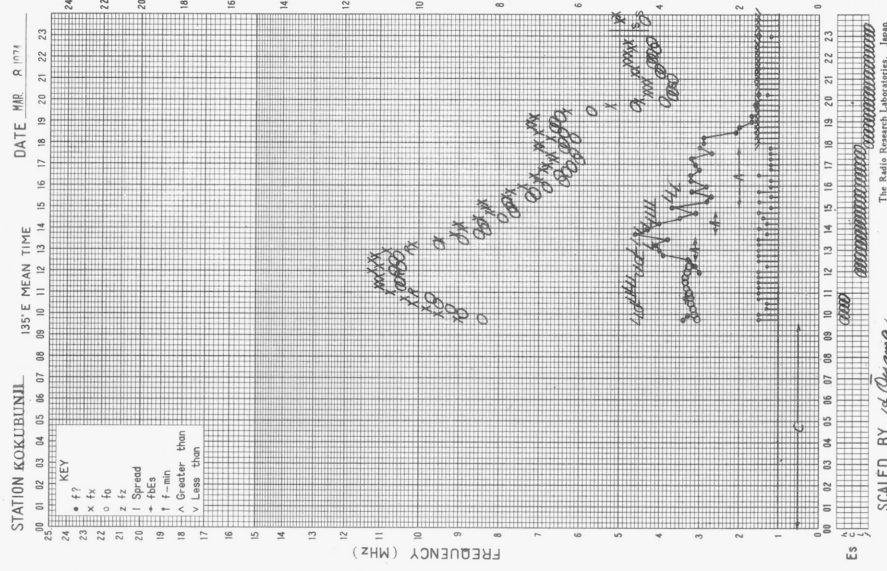
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f--PLOT OF IONOSPHERIC DATA

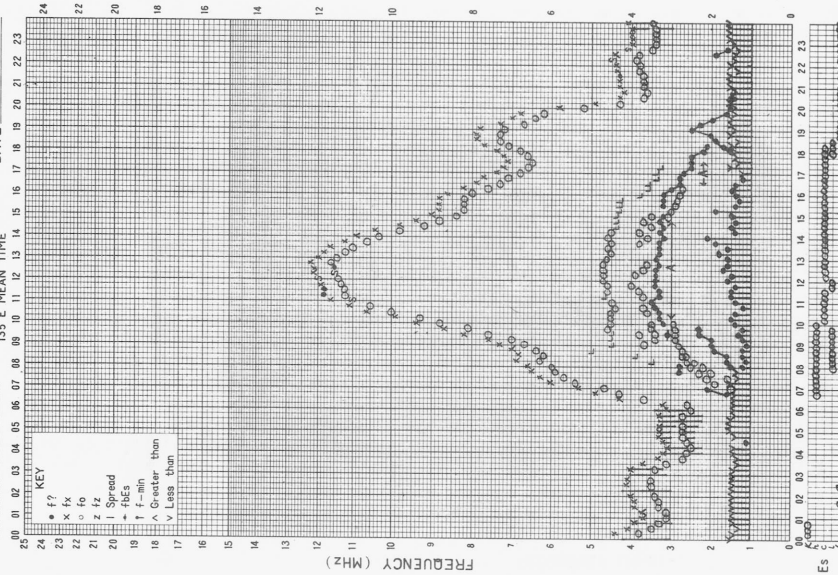


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f-plot of IONOSPHERIC DATA

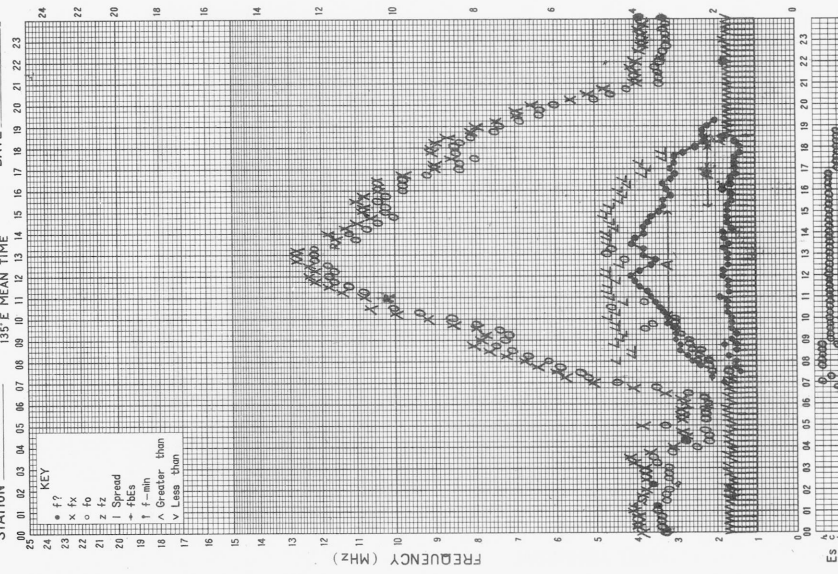
STATION YAMAGAWA DATE MAR-8-1974



SCALED BY S. Nishida The Radio Research Laboratories, Japan

f-plot of IONOSPHERIC DATA

STATION OKINAWA DATE MAR. 8. 1974

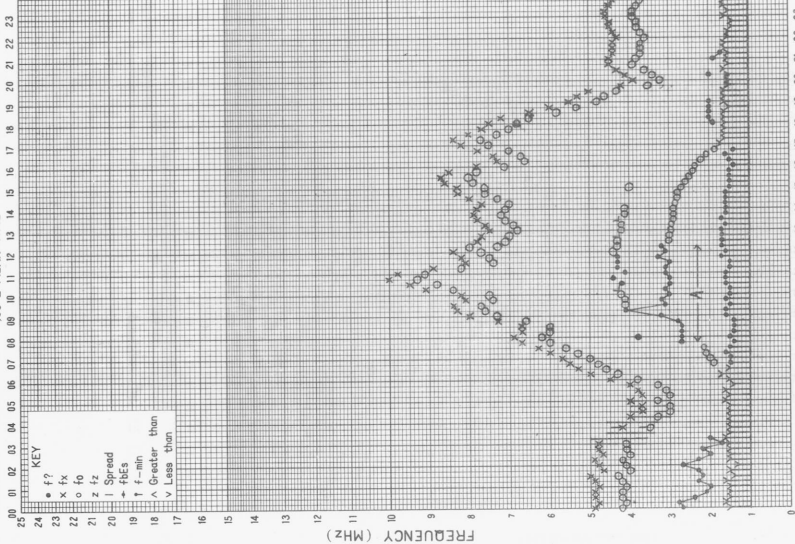


SCALED BY M. Sawada The Radio Research Laboratories, Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI DATE MAR 9 1974

135°E MEAN TIME

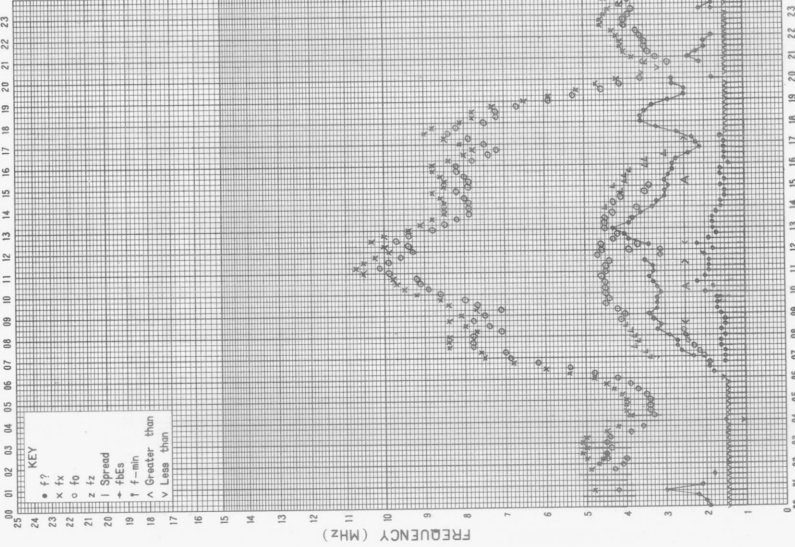


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The Radio Research Laboratories, Japan
SCALED BY J.eda

f-PLOT OF IONOSPHERIC DATA

STATION AKITA DATE MAR 9 1974

135°E MEAN TIME

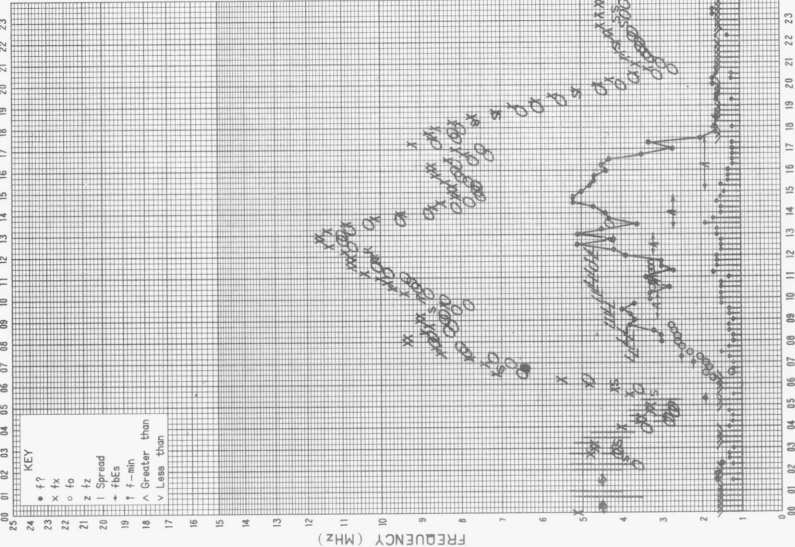


ES
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The Radio Research Laboratories, Japan
SCALED BY J.Takahashi

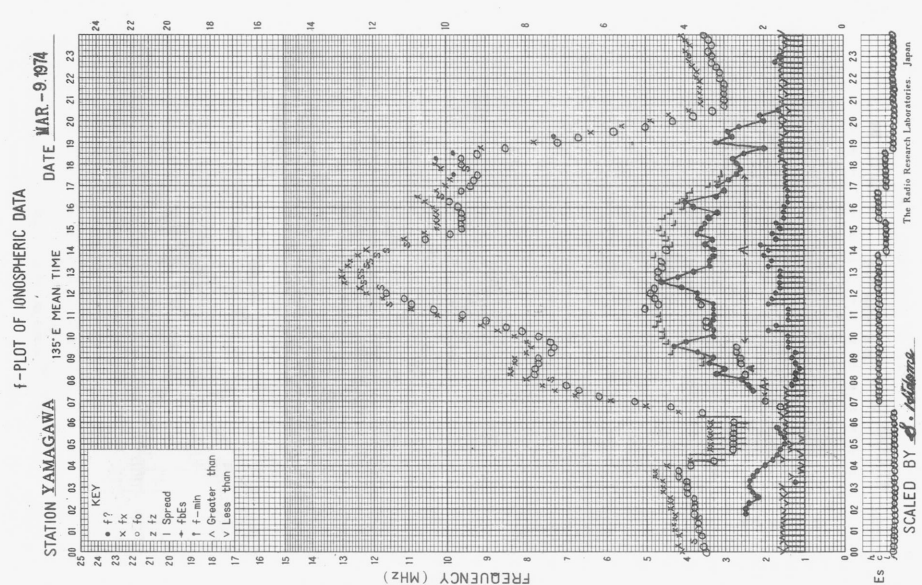
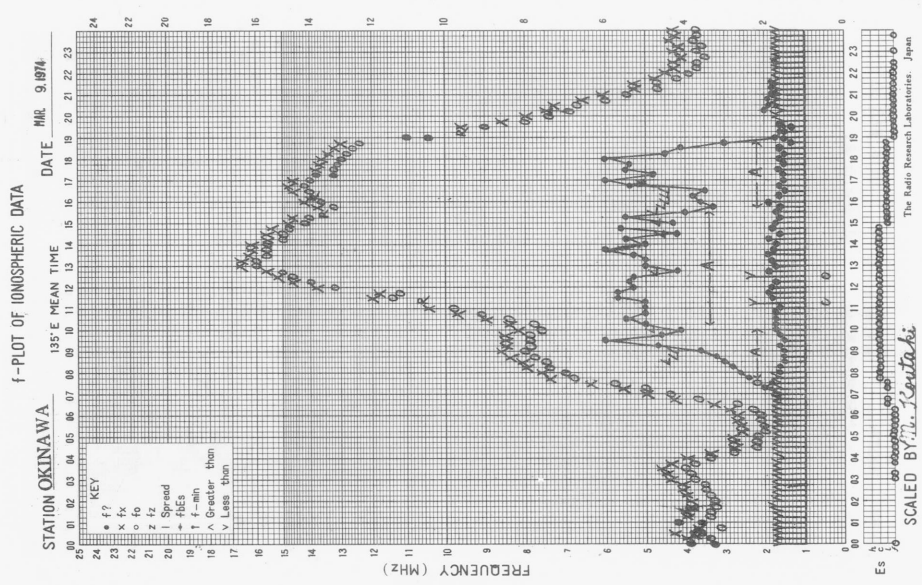
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STATION KOKUBUNJI DATE MAR 9 1974

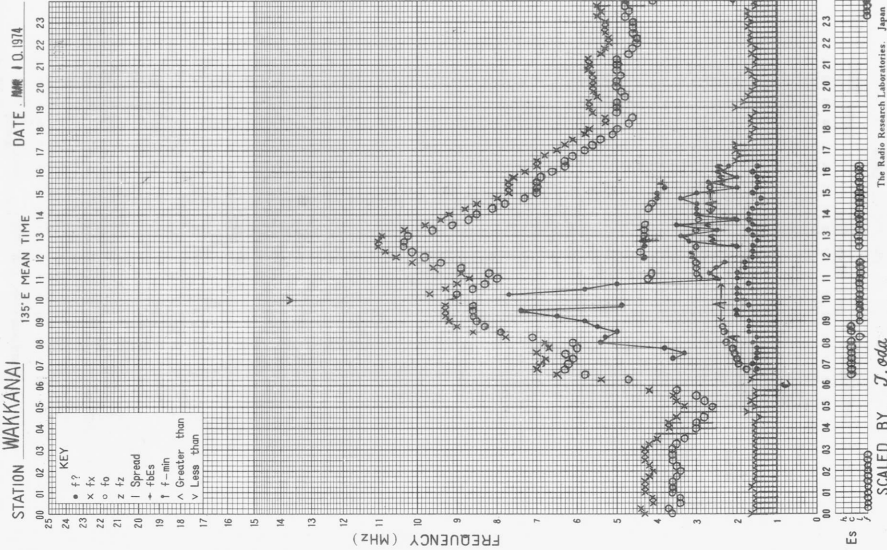
135°E MEAN TIME



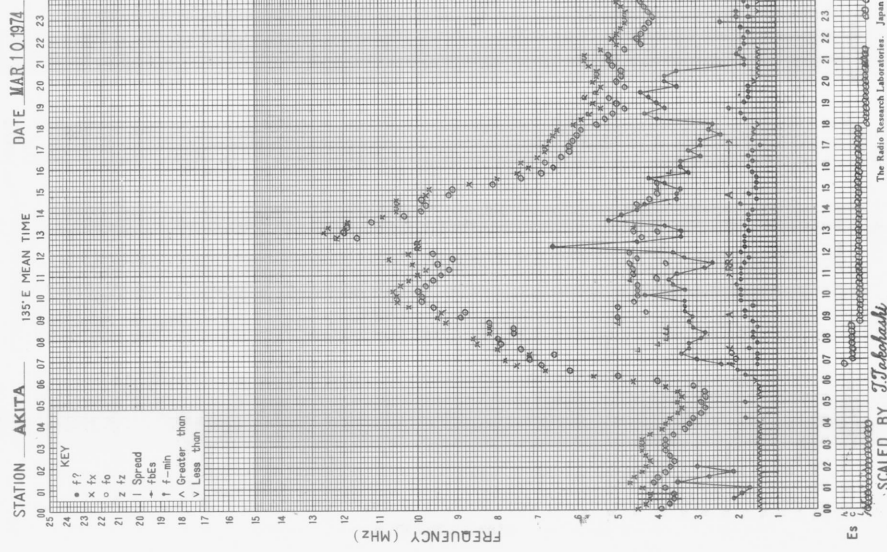
ES
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The Radio Research Laboratories, Japan
SCALED BY S. Oyama



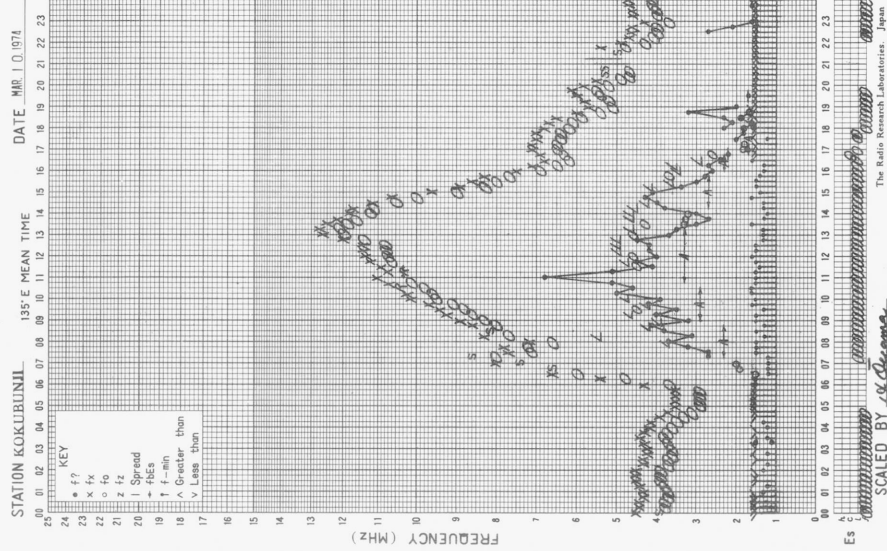
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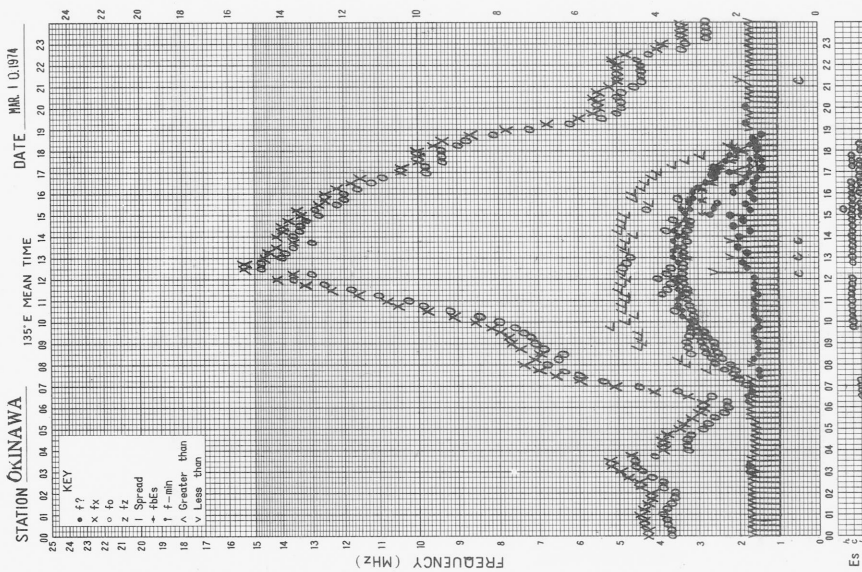
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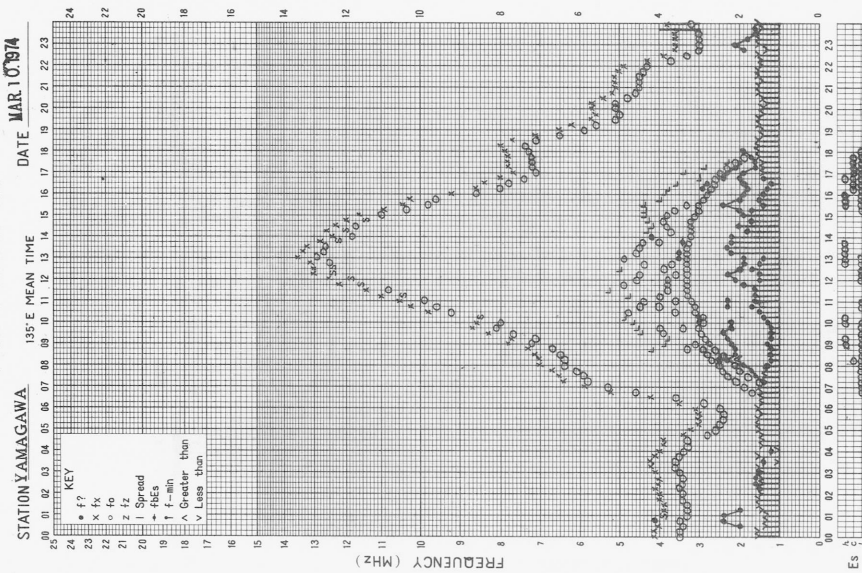
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f-PLOT OF IONOSPHERIC DATA

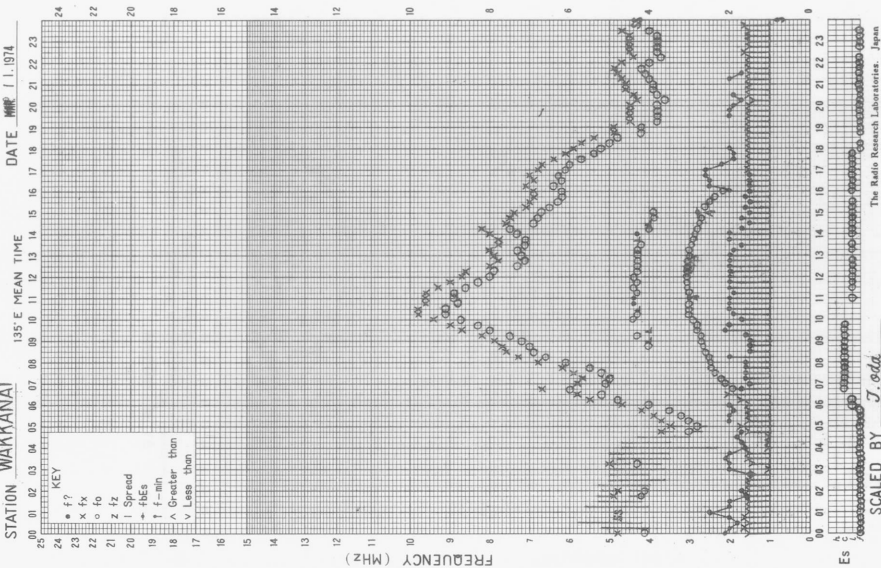


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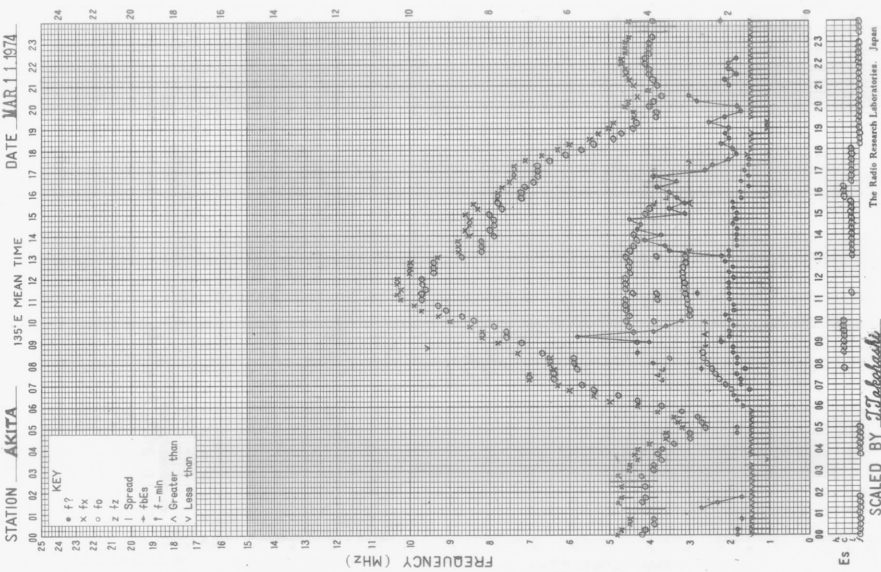
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STATION WAKKANAI DATE MAR 11 1974



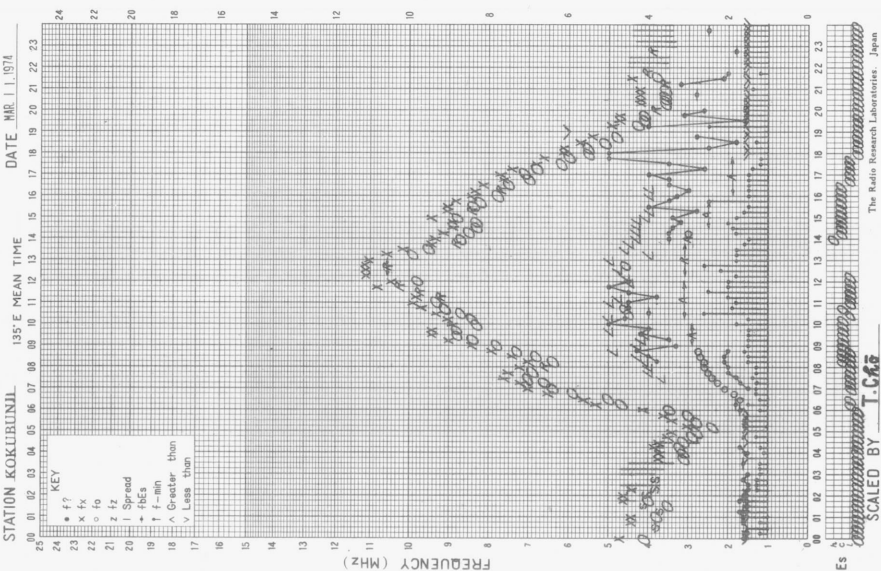
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STATION AKITA DATE MAR 11 1974



f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI DATE MAR 11 1974

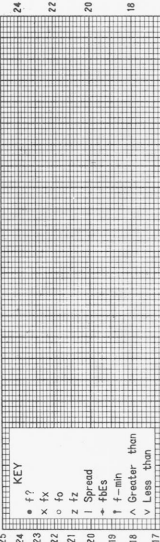


f - PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA DATE MAR 11 1974

135°E MEAN TIME

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FREQUENCY (MHz)

ES

SCALED BY S. Nakashizima

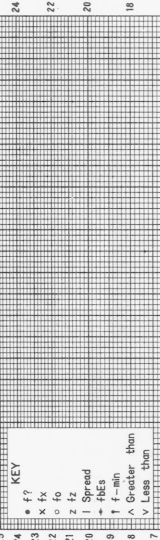
The Radio Research Laboratories, Japan

f - PLOT OF IONOSPHERIC DATA

STATION OKINAWA DATE MAR 11 1974

135°E MEAN TIME

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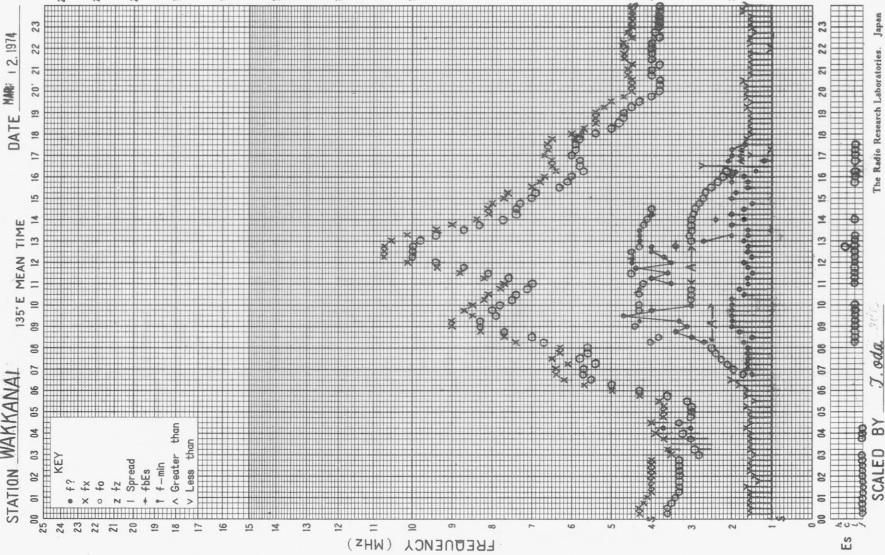
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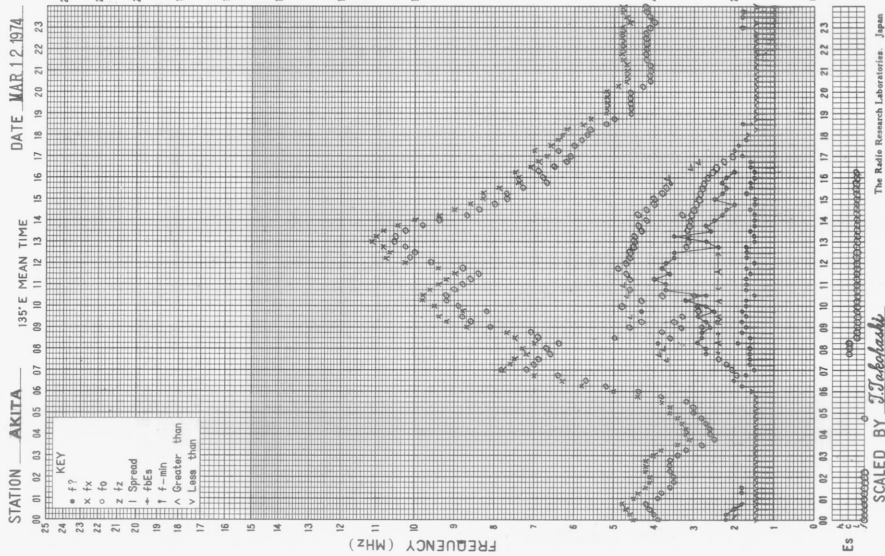
SCALED BY M. Kentaiki

The Radio Research Laboratories, Japan

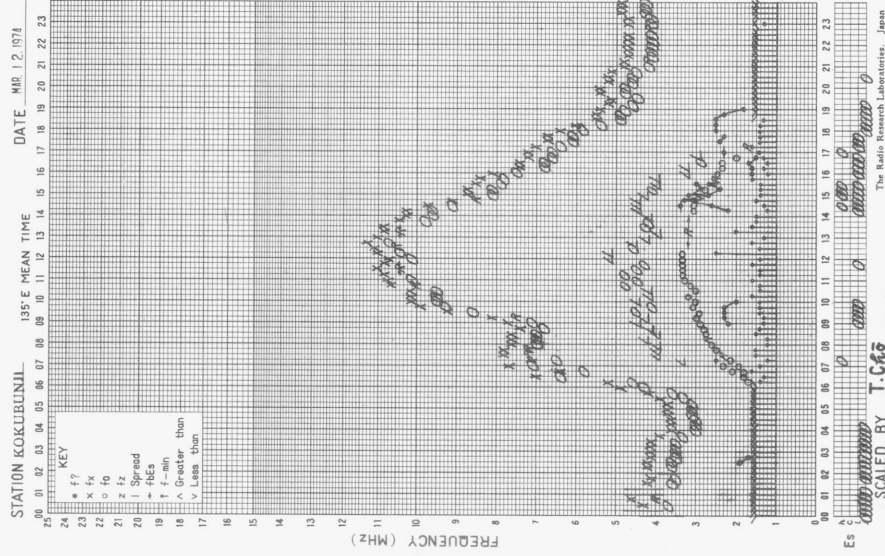
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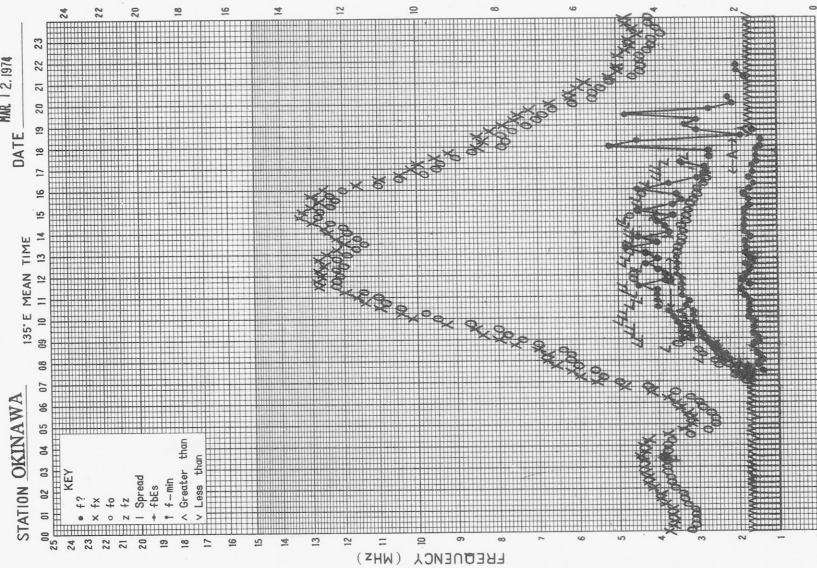
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f- PLOT OF IONOSPHERIC DATA



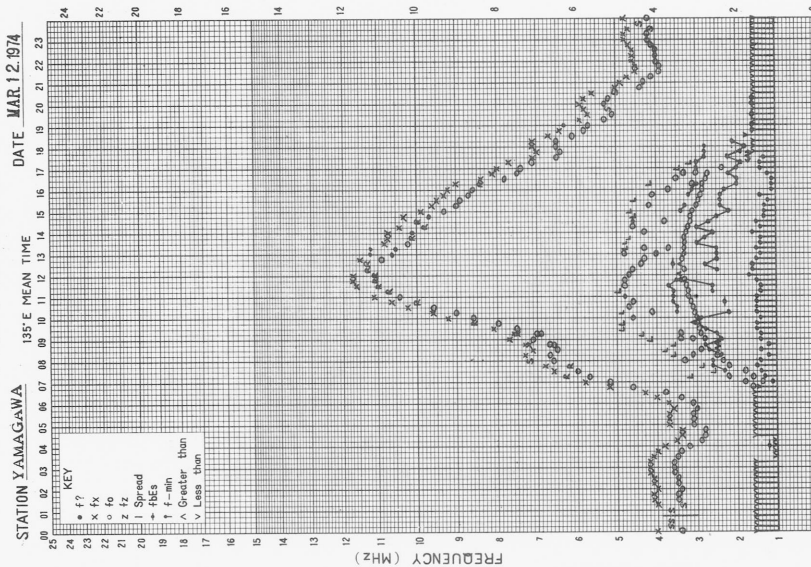
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The Radio Research Laboratories, Japan

SCALED BY Mr. Kuroki

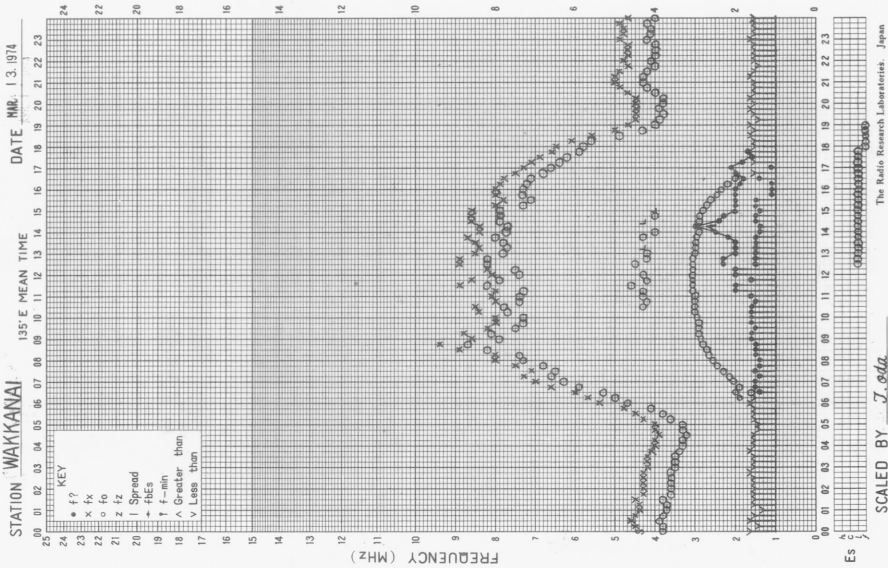
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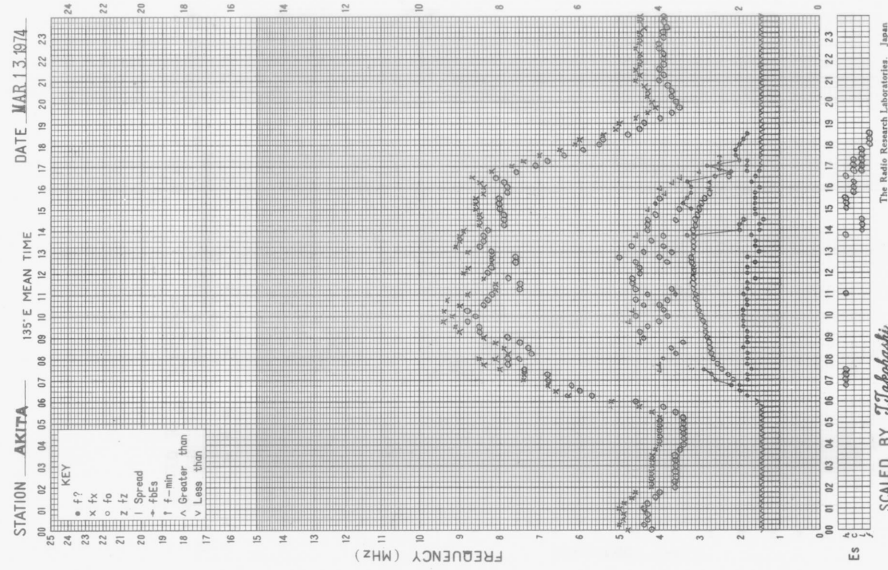
The Radio Research Laboratories, Japan

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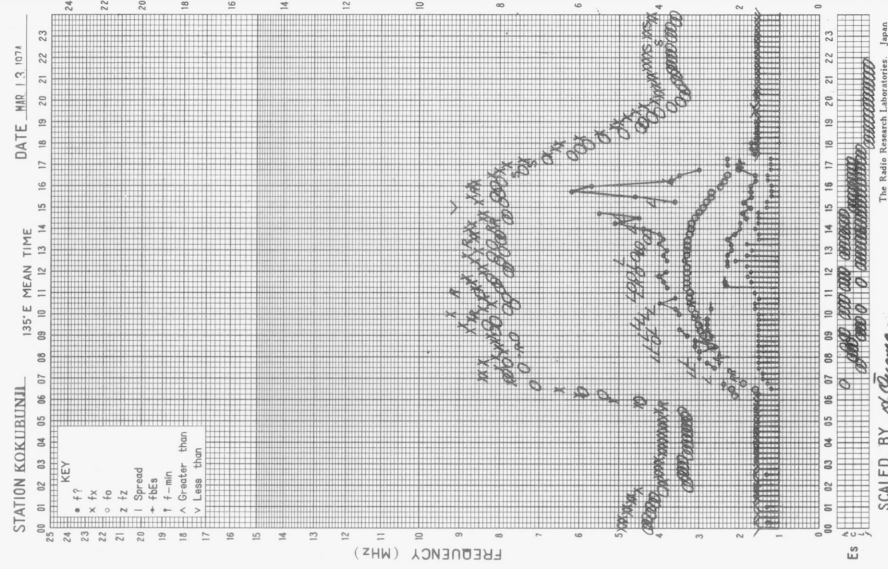
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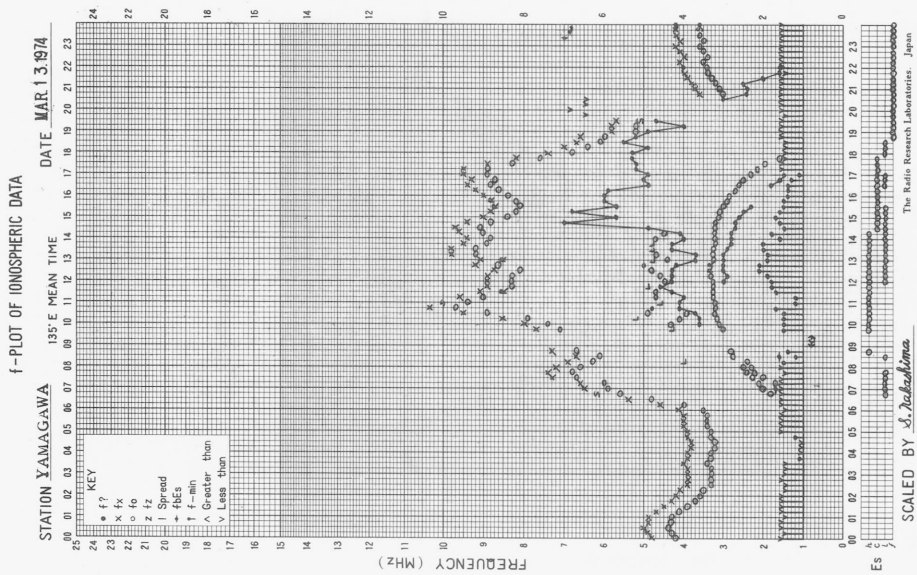
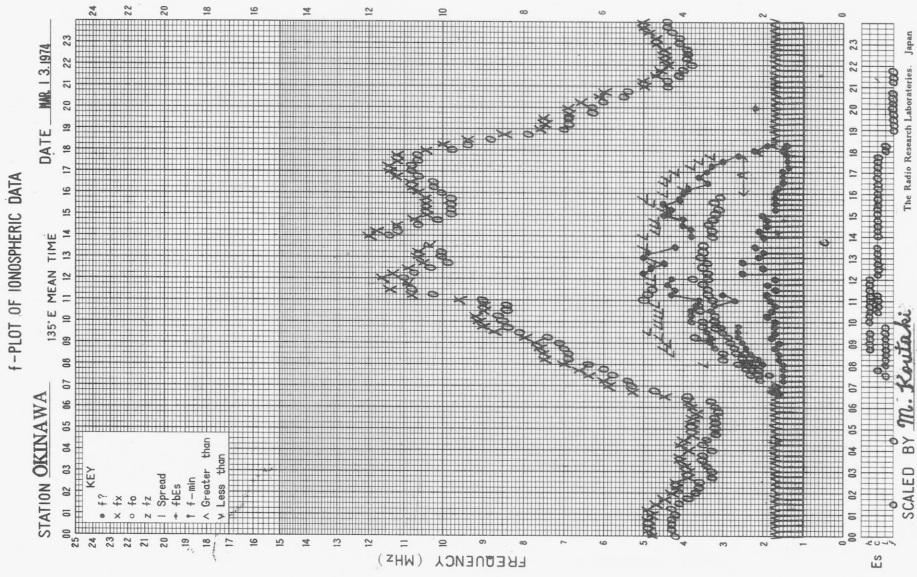


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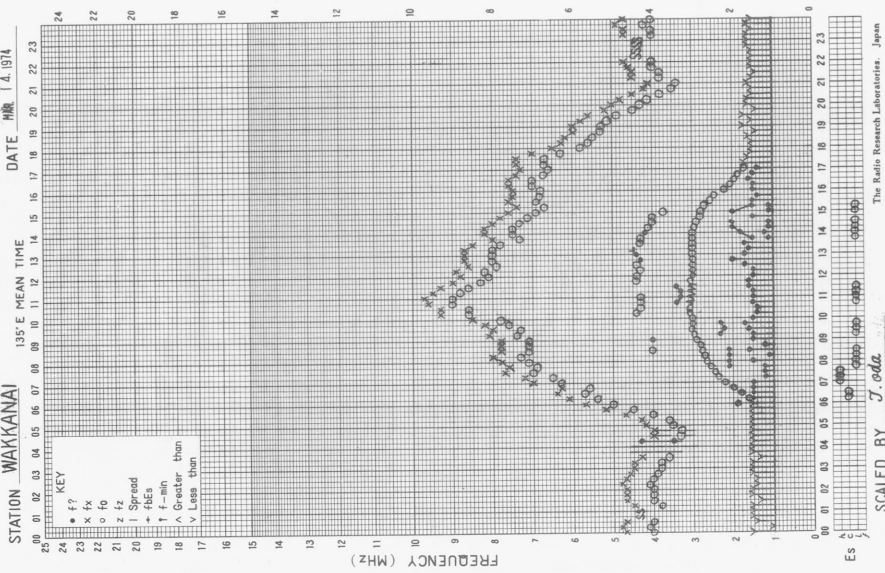


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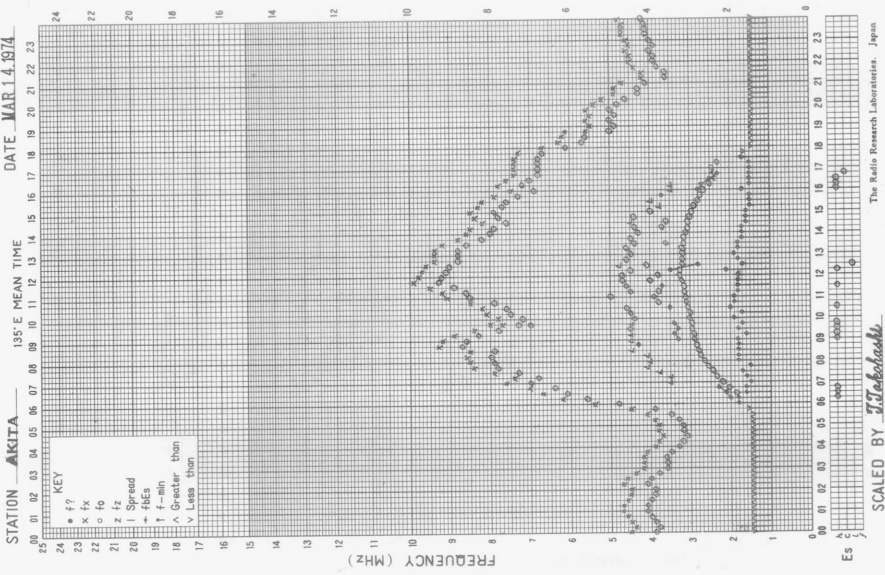




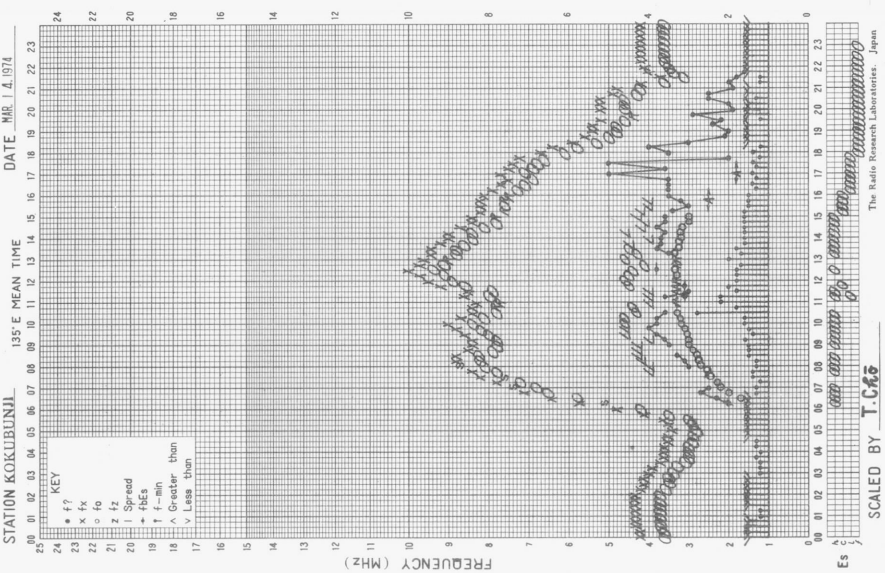
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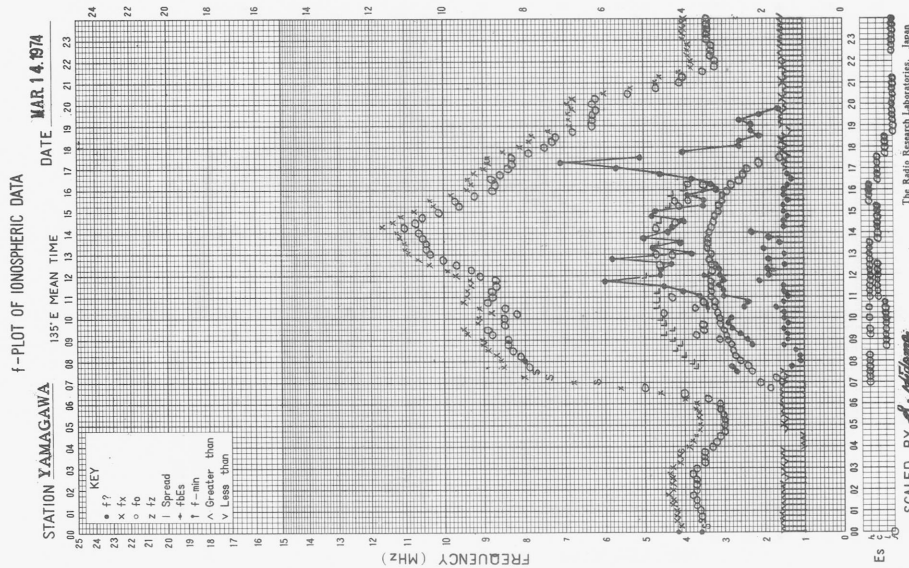
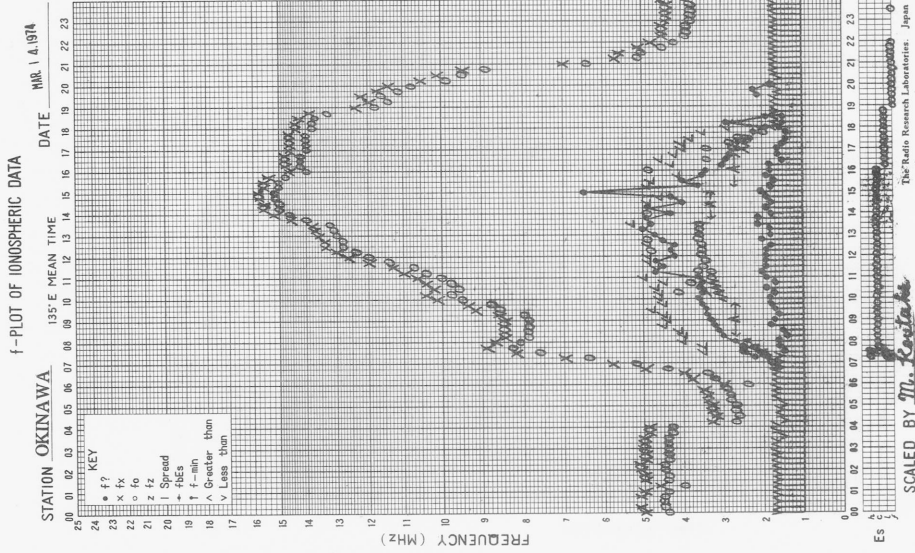


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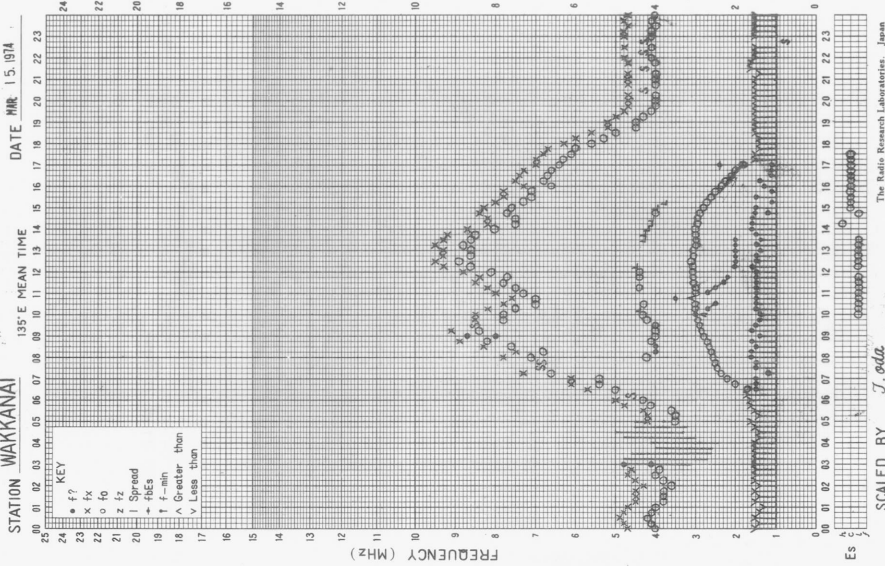


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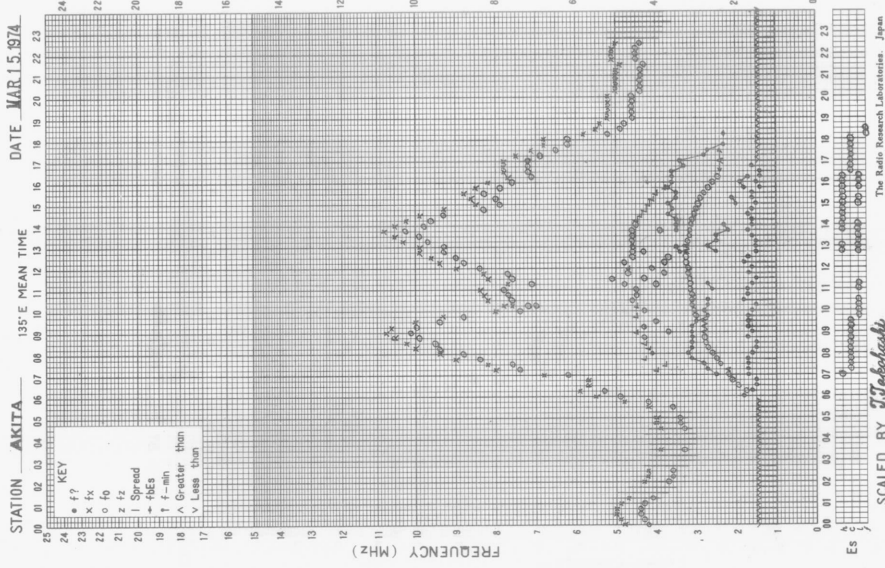




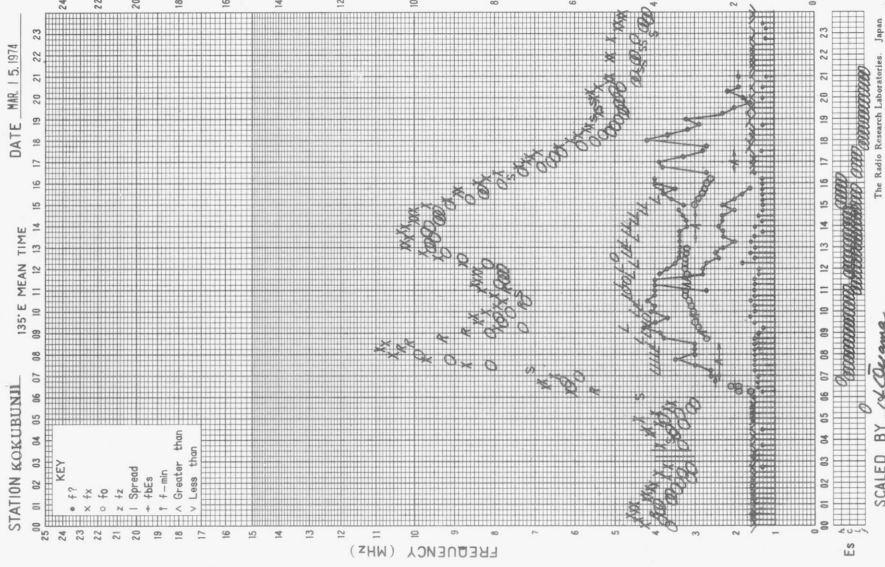
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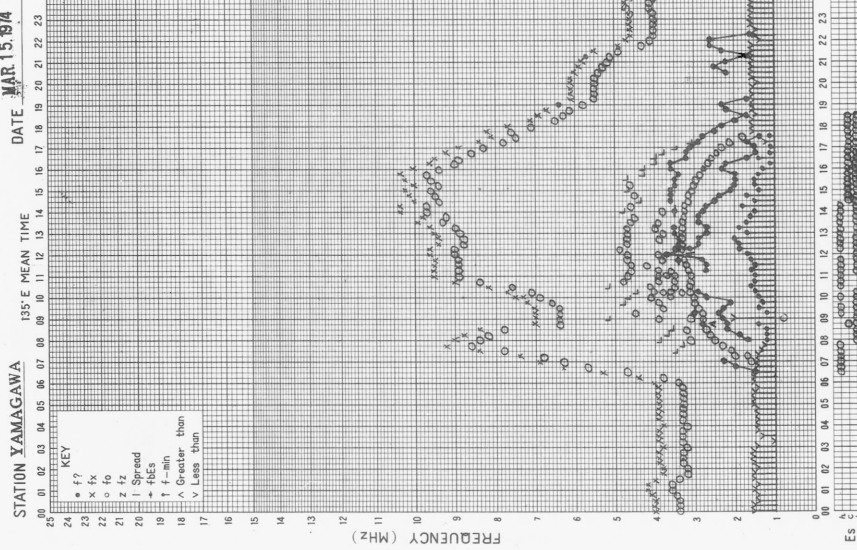
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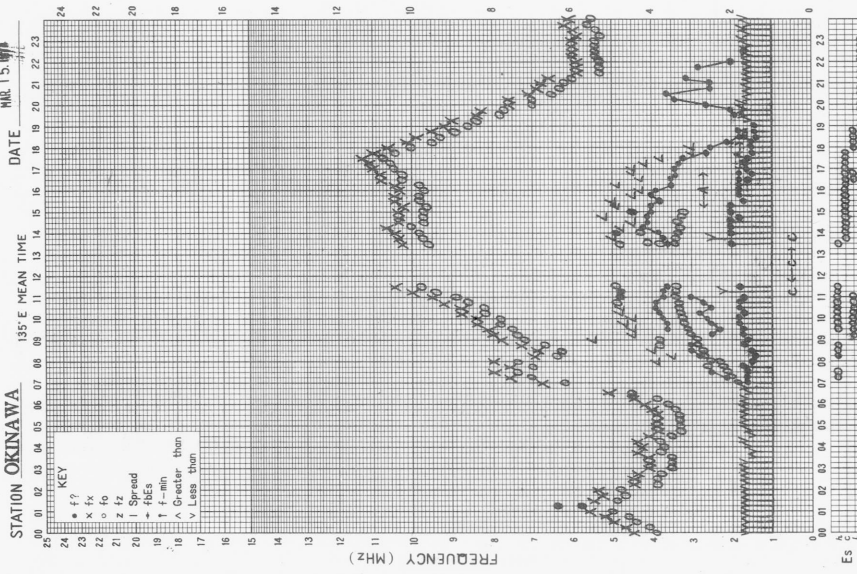
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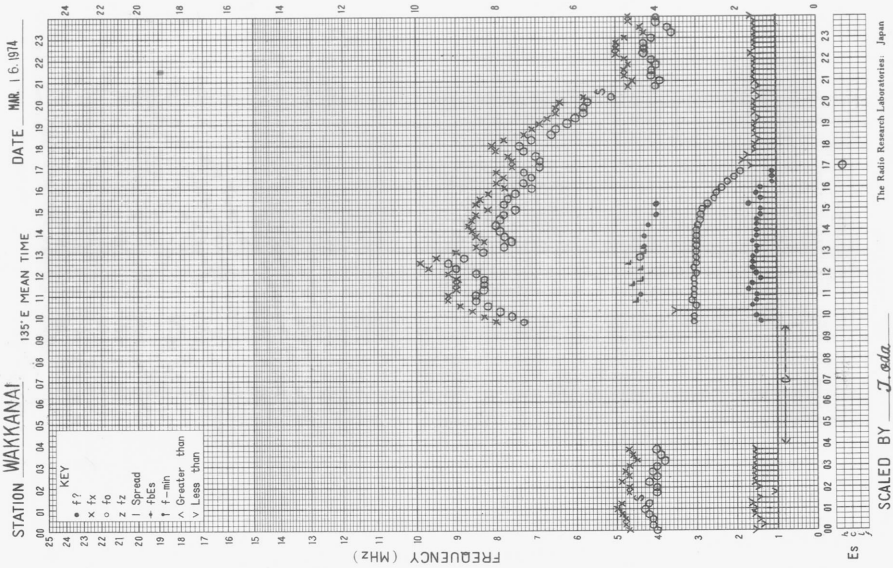
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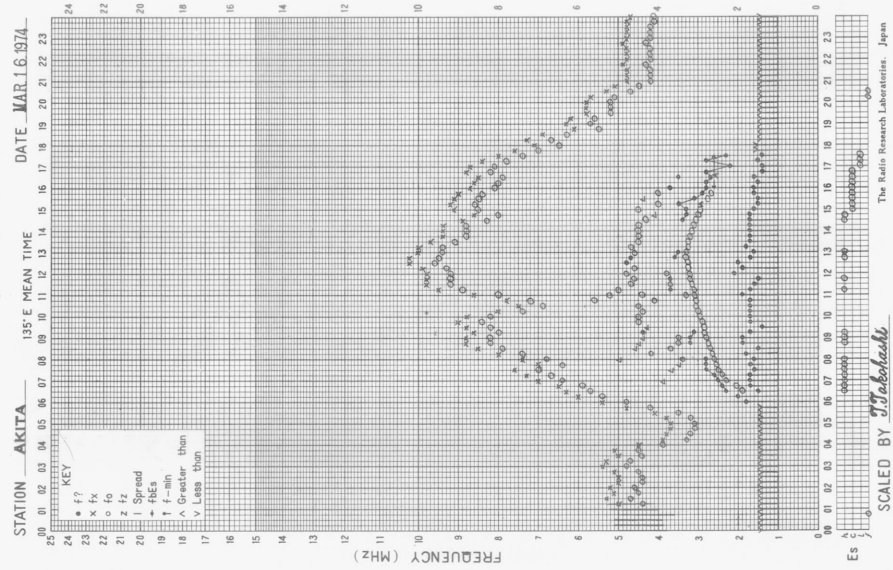
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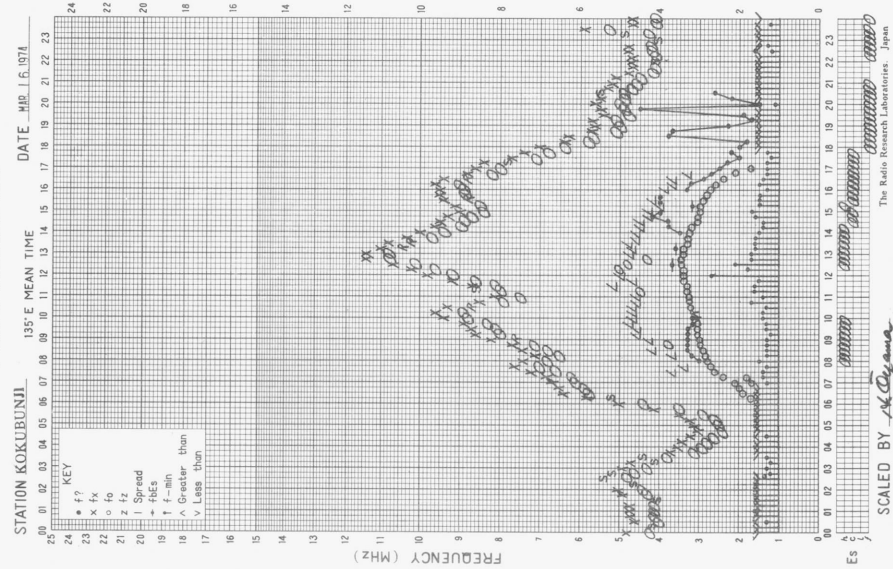
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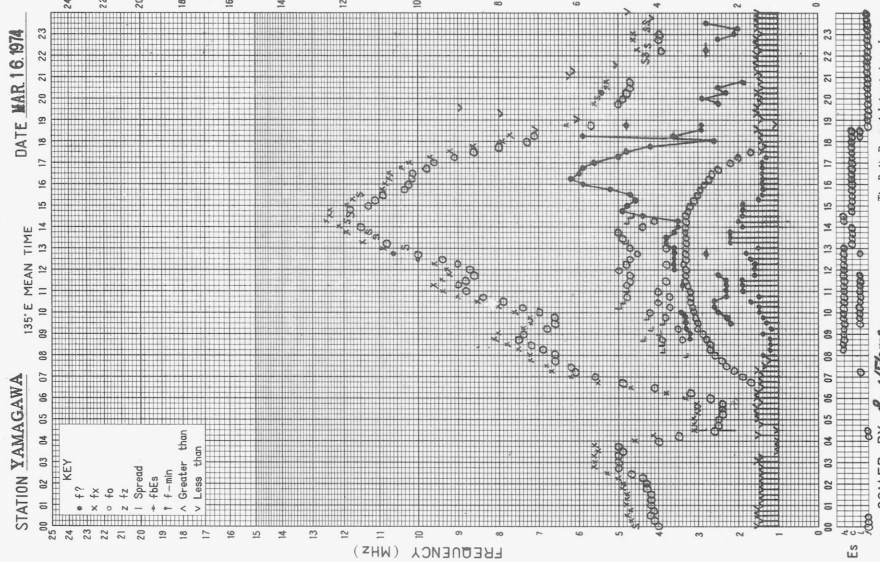
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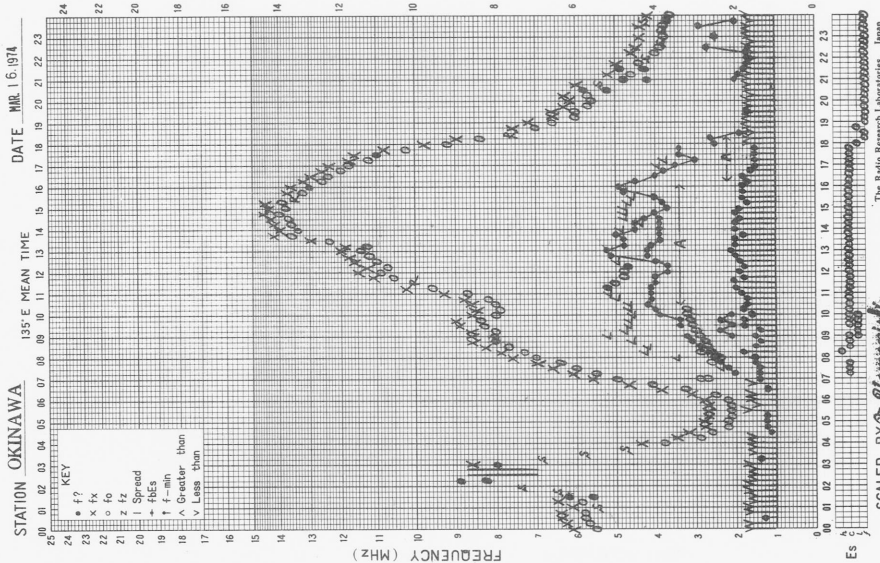
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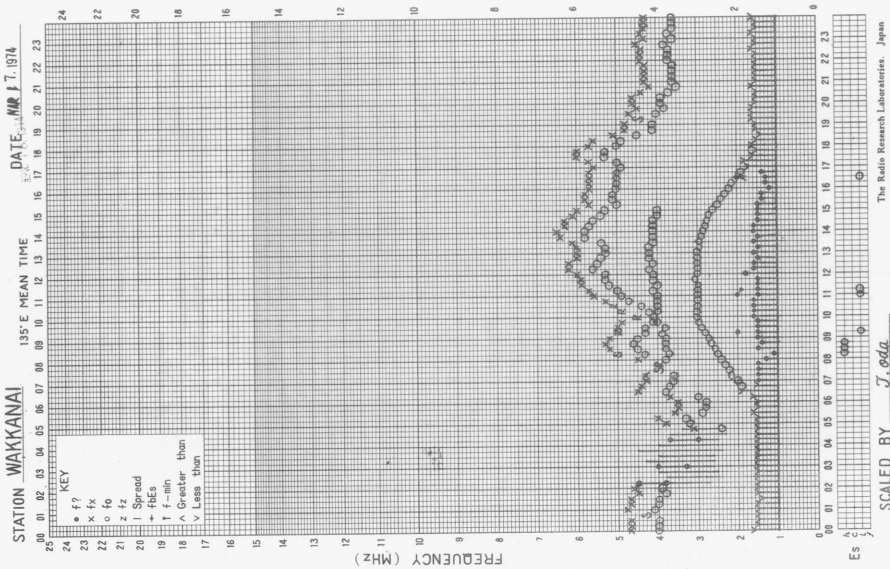
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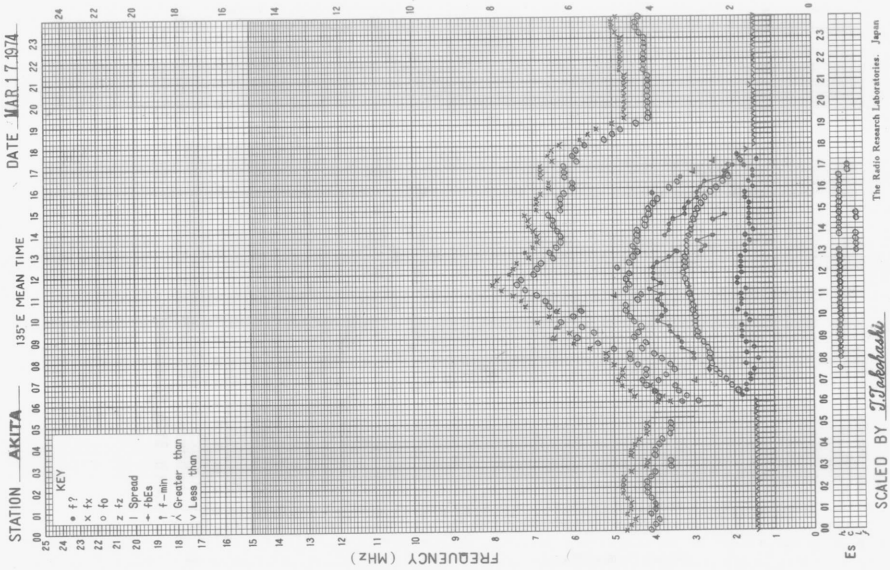
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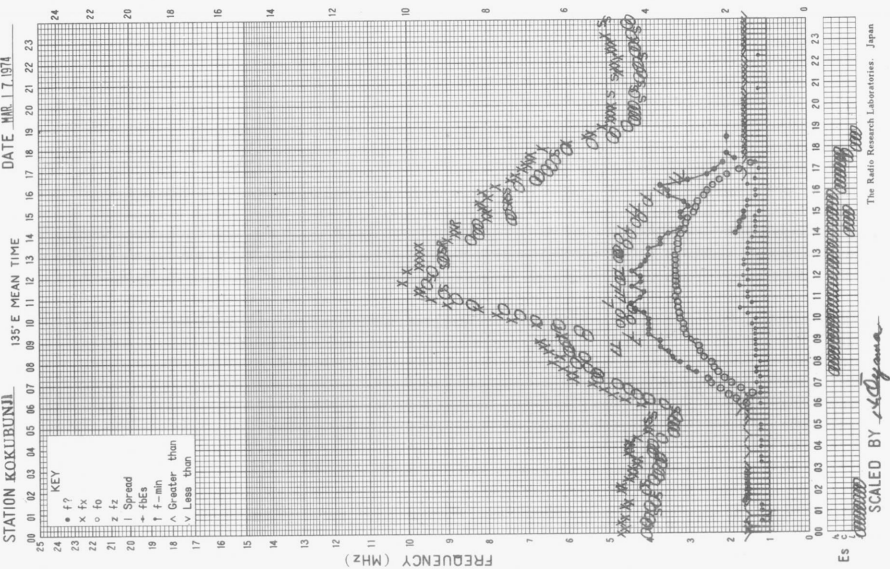
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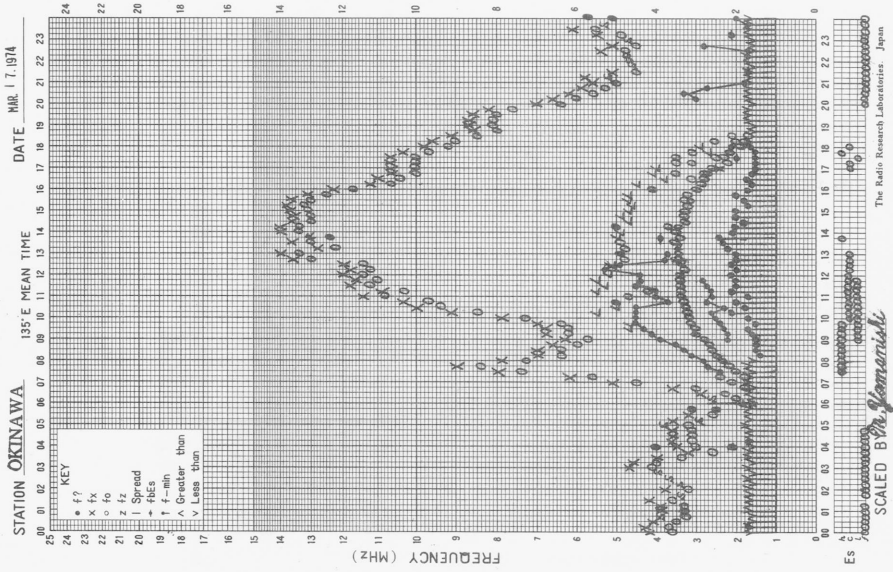
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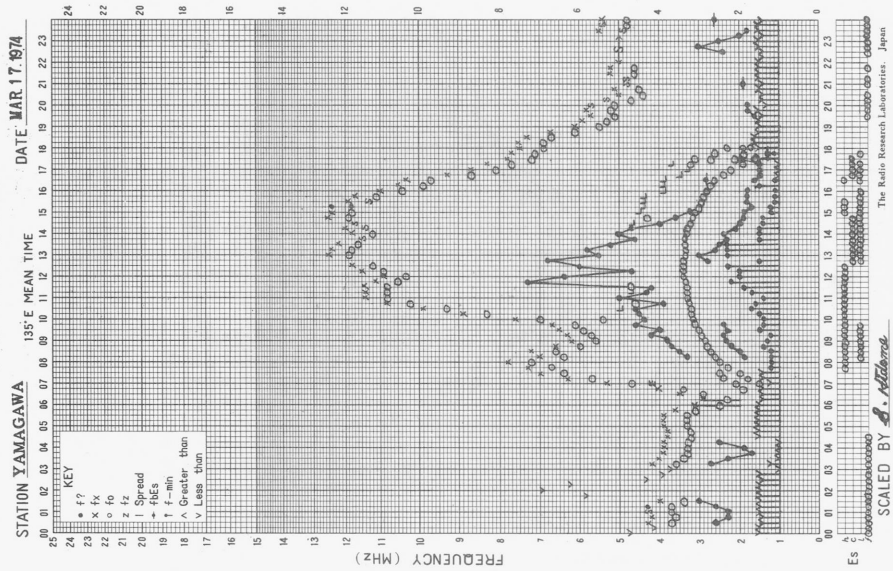
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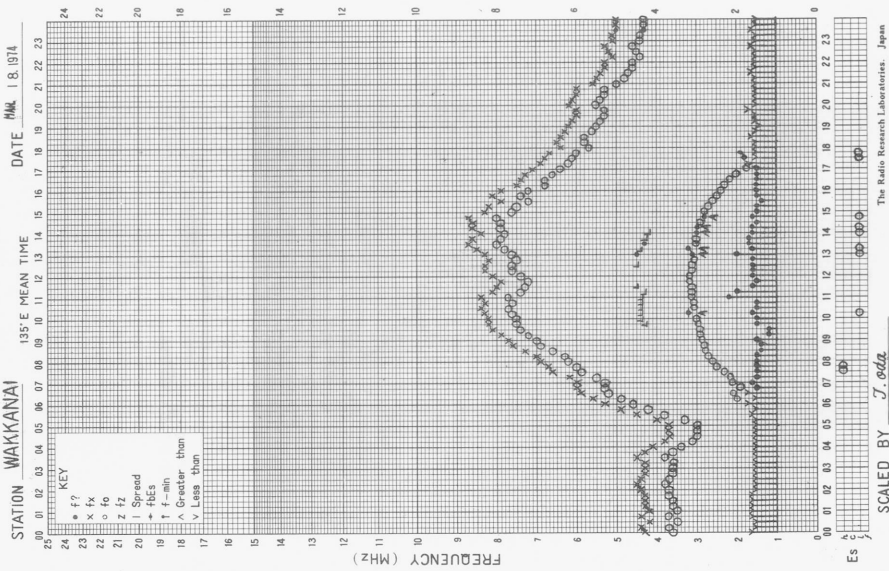
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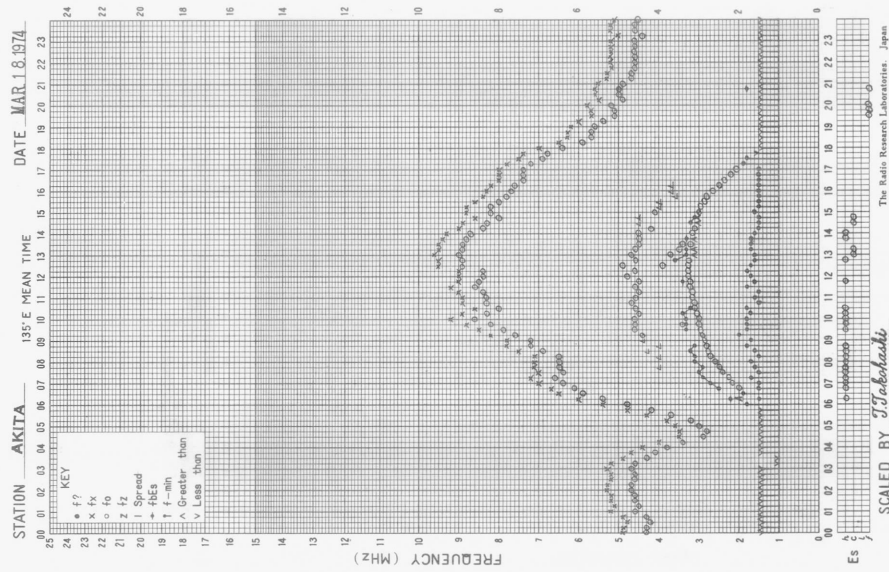
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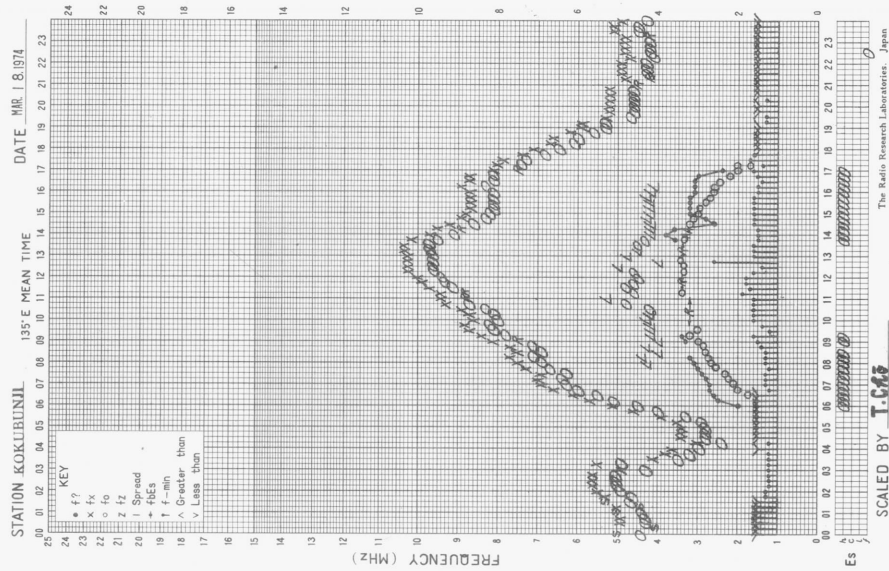
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f--PLOT OF IONOSPHERIC DATA



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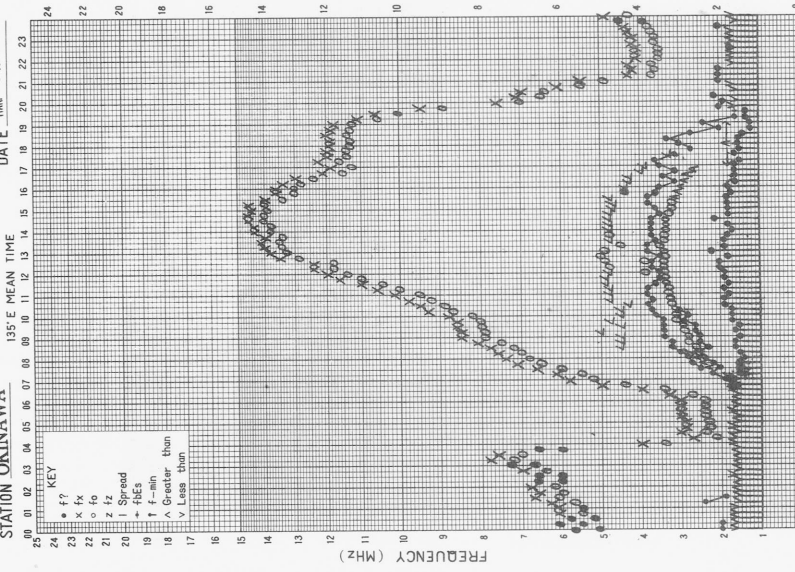


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STATION OKINAWA

DATE MAR. 18. 1974

135° E MEAN TIME



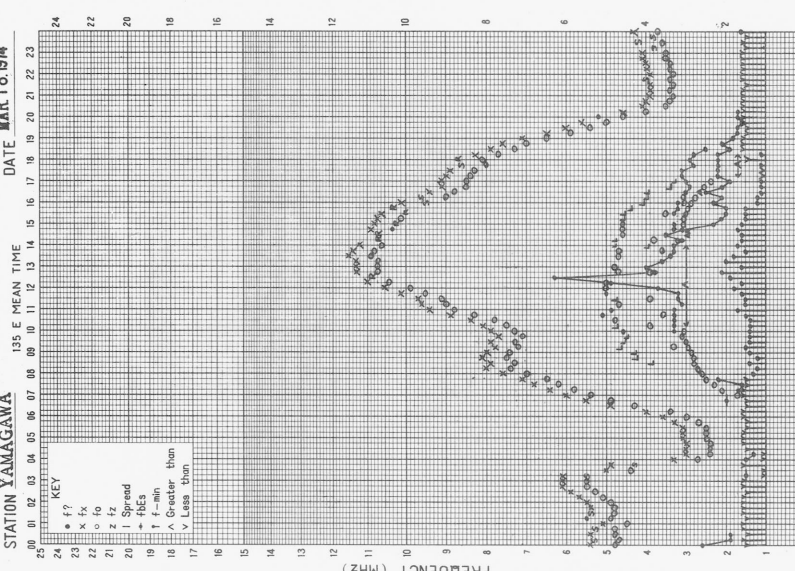
ES
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The Radio Research Laboratories, Japan
SCALED BY *B.M. Yamamoto*

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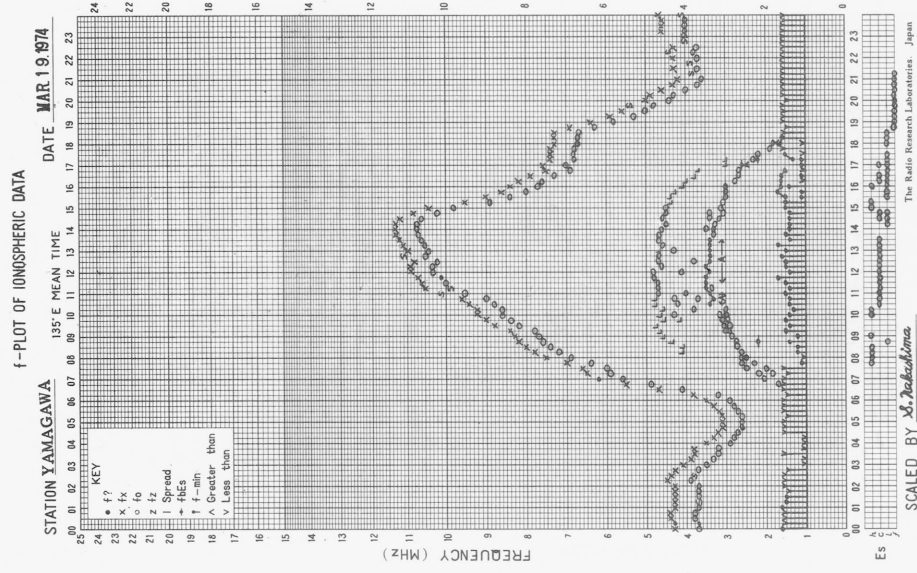
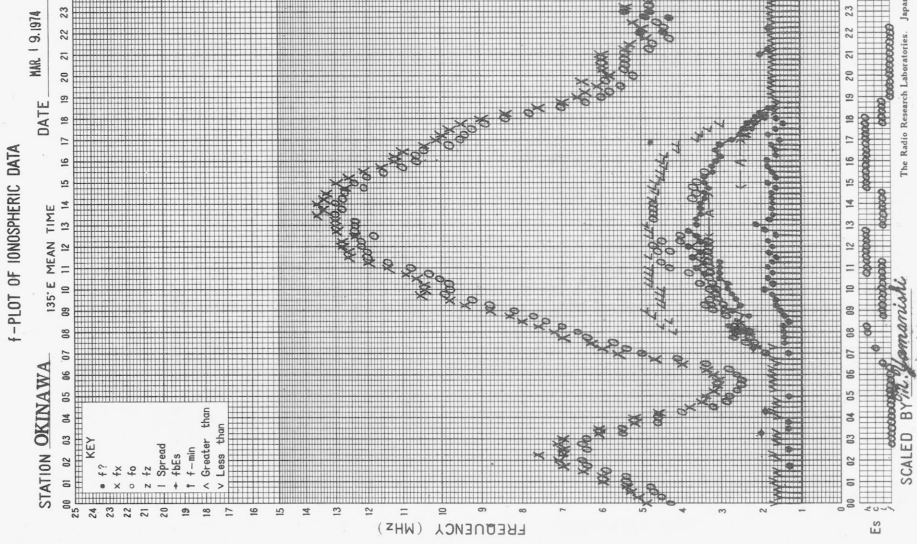
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DATE MAR. 18. 1974

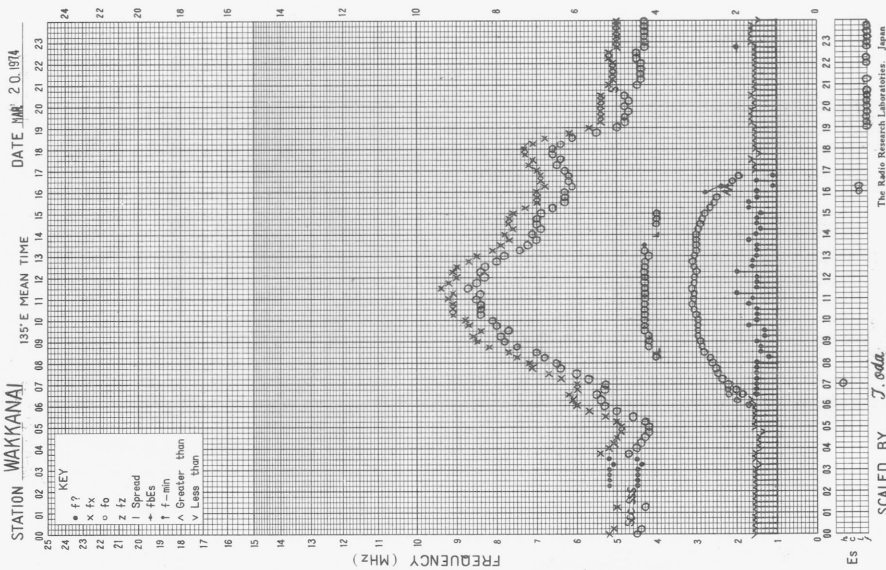
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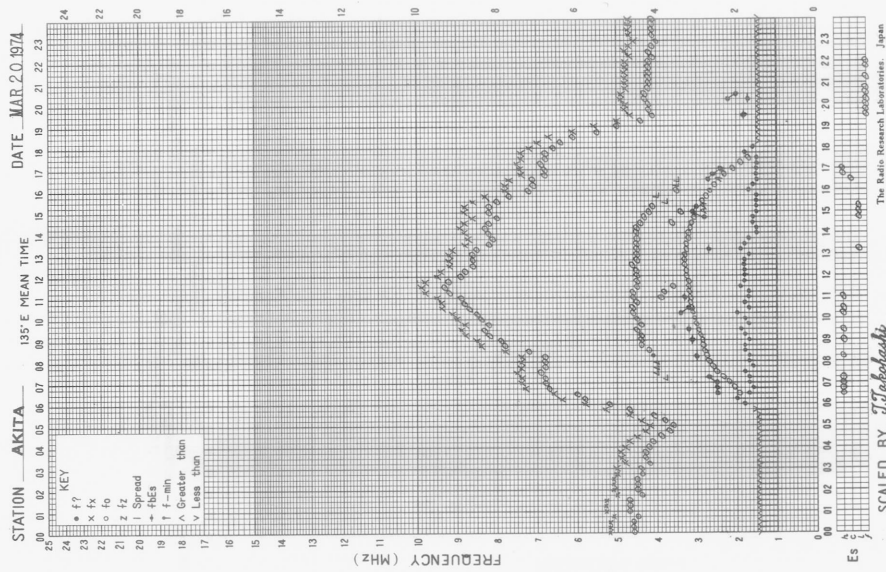
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The Radio Research Laboratories, Japan
SCALED BY *S.B. Takahama*



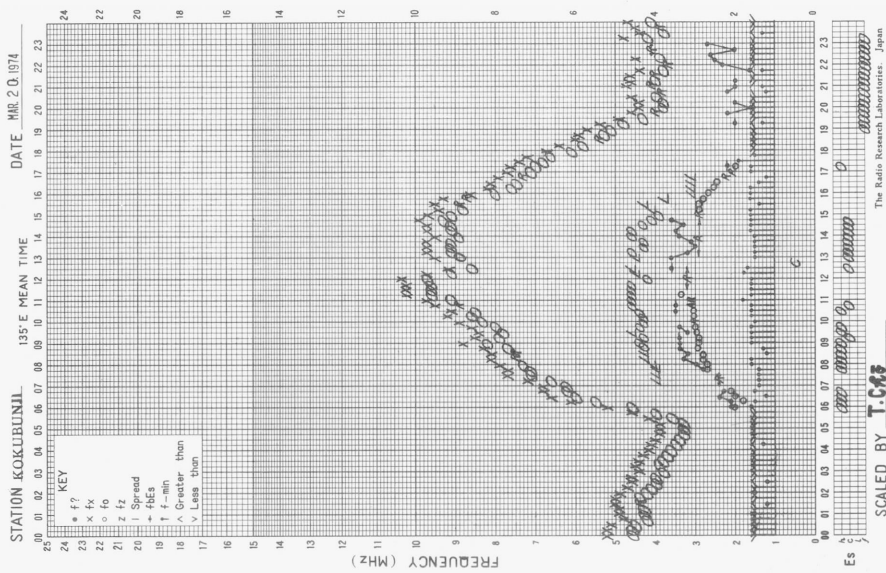
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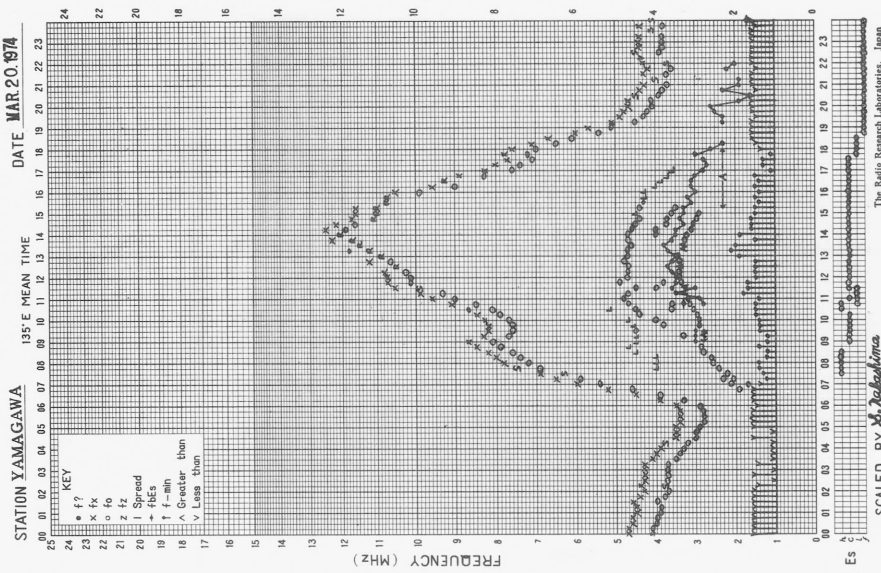
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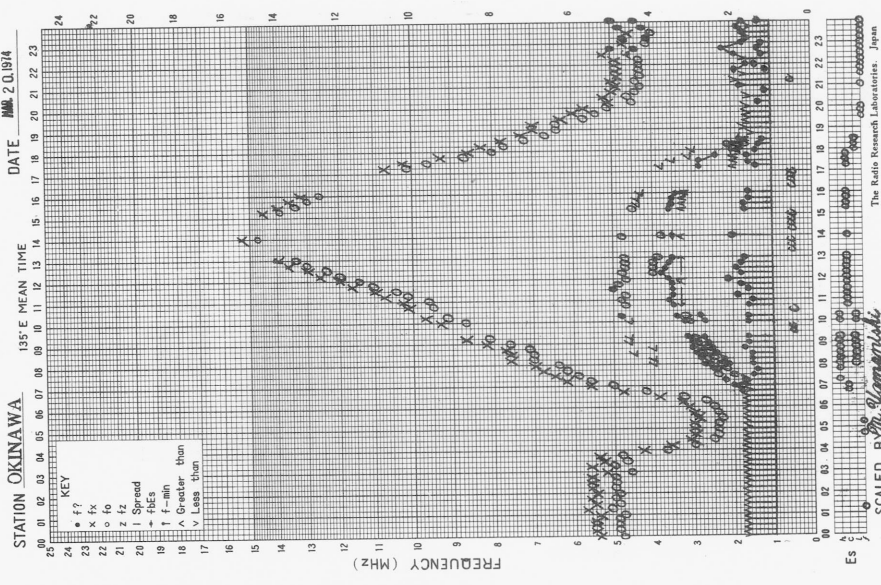
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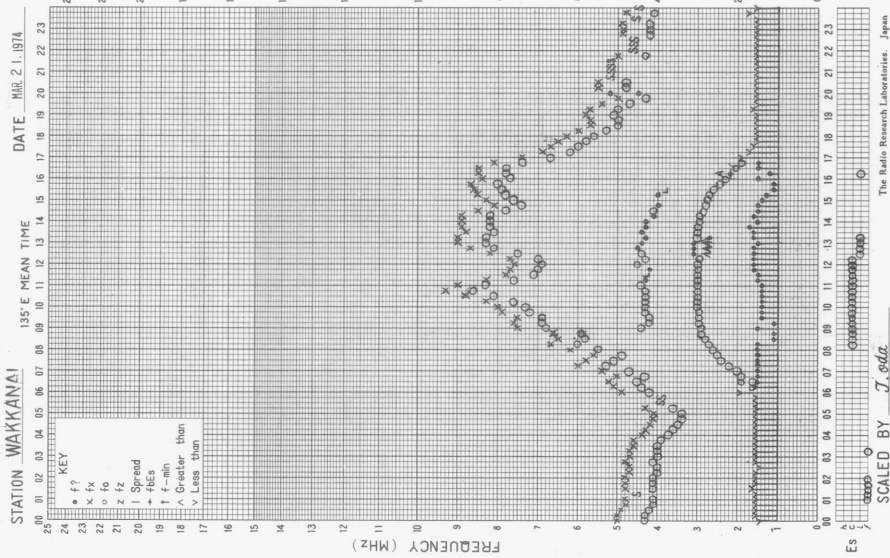
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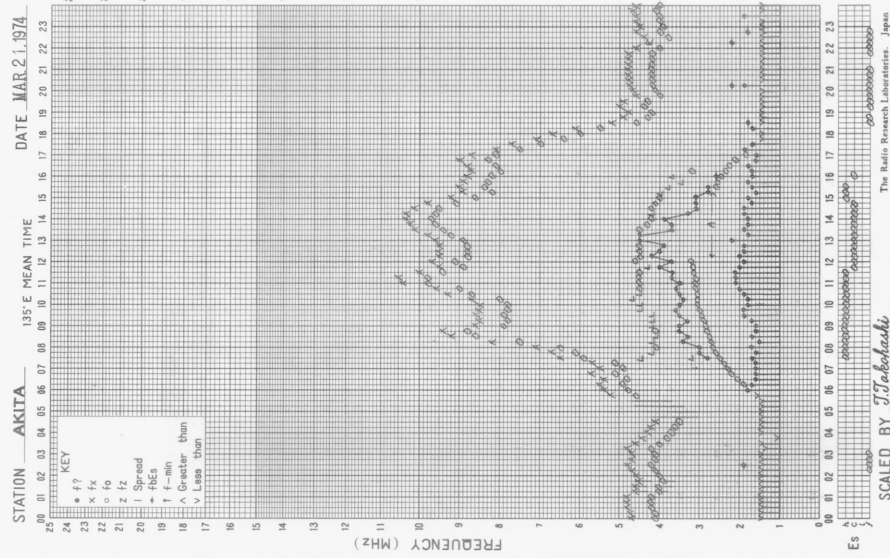
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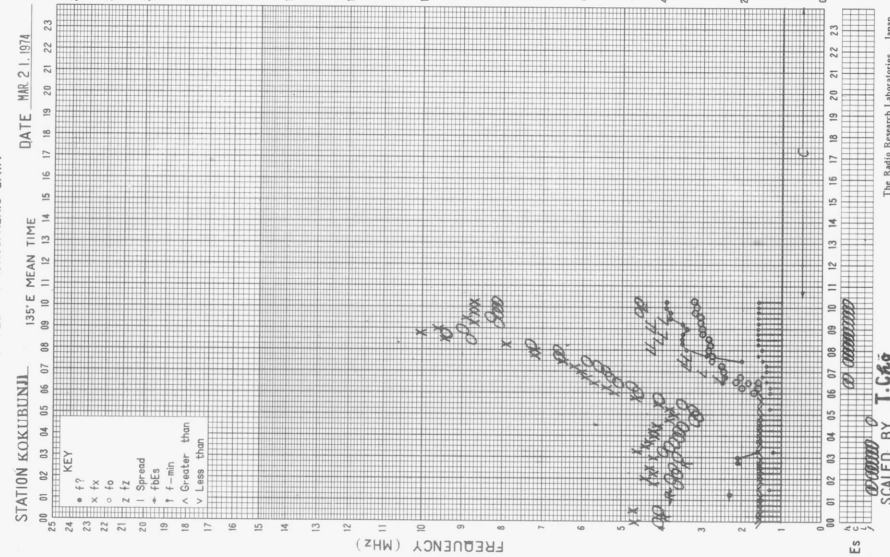
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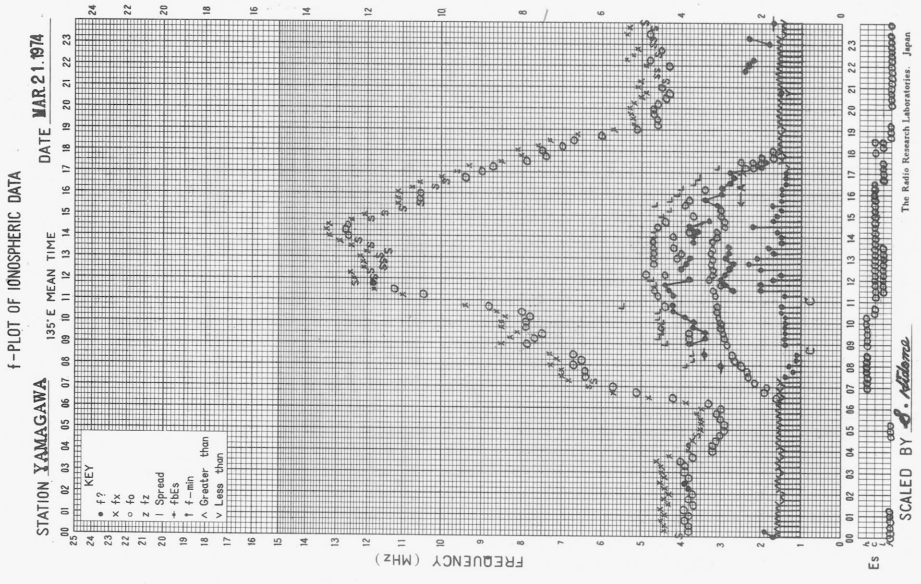
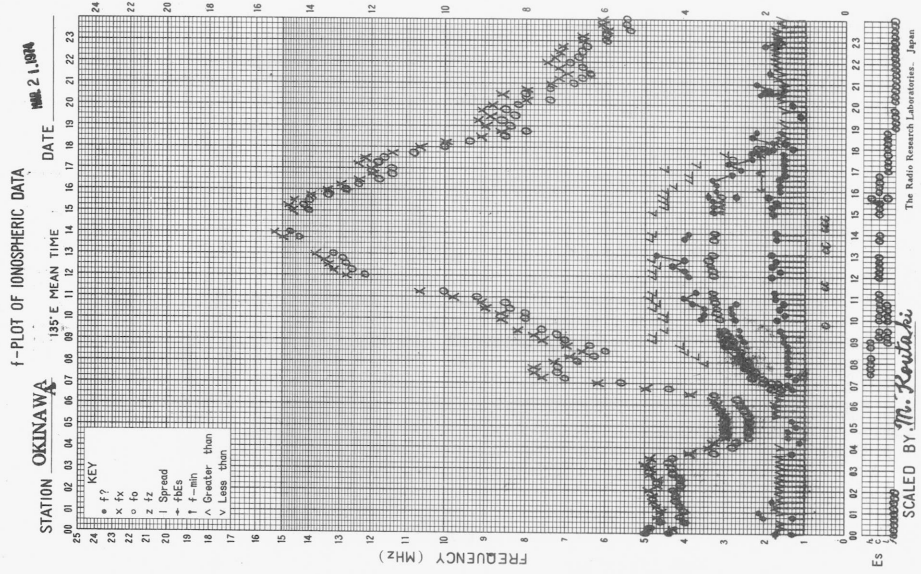


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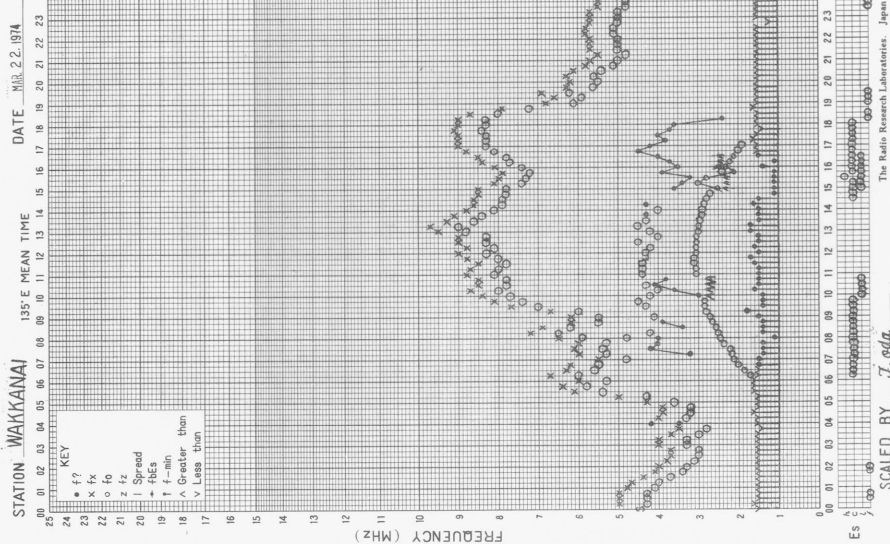


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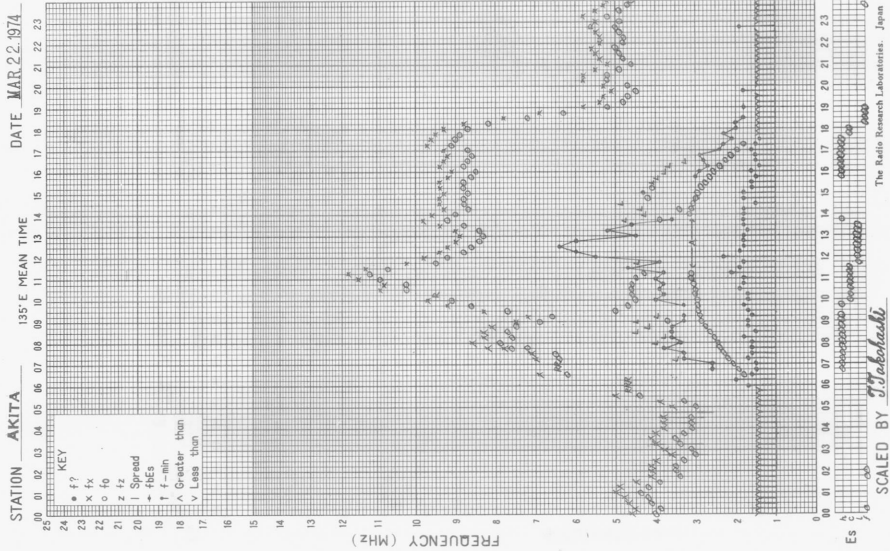




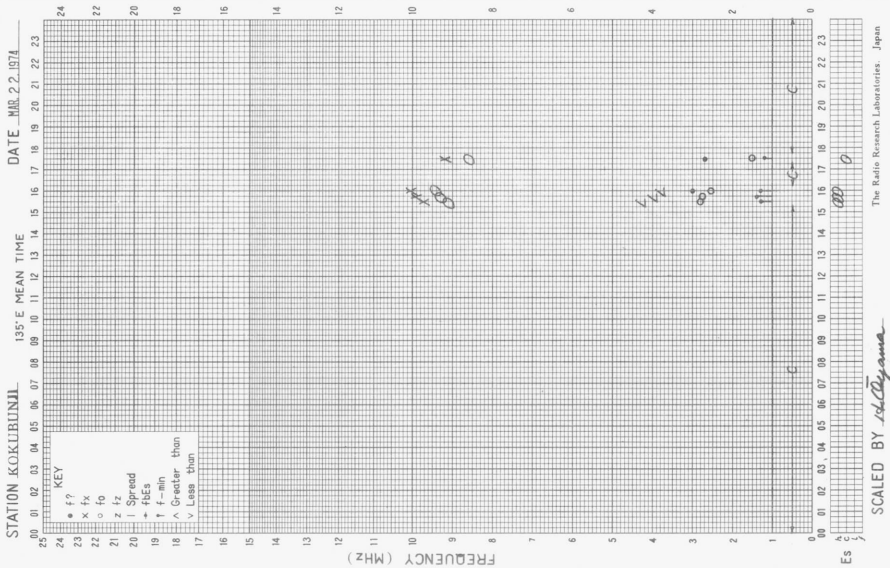
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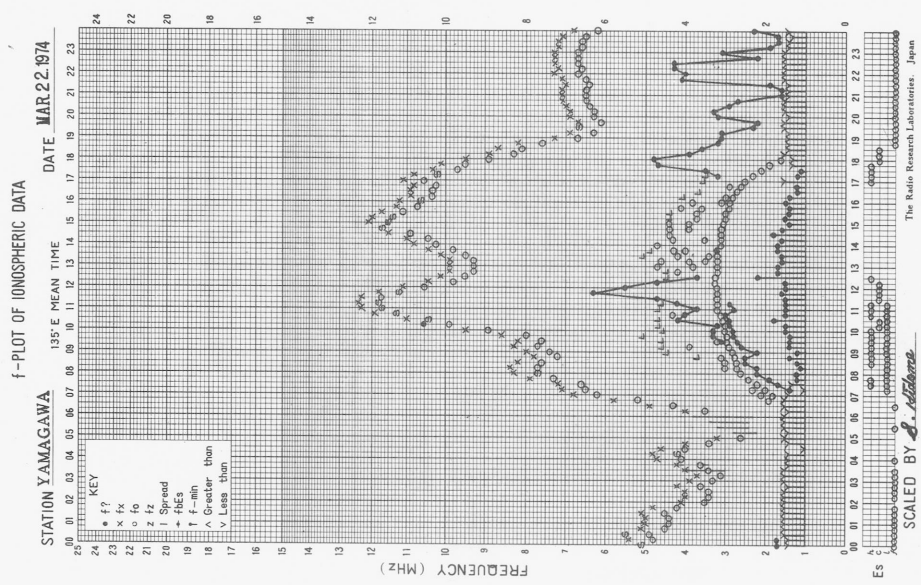
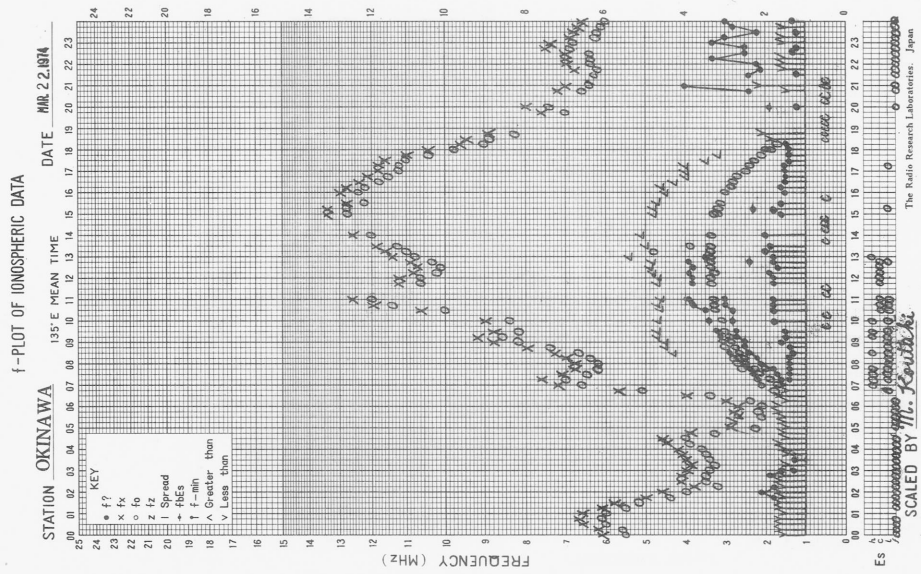


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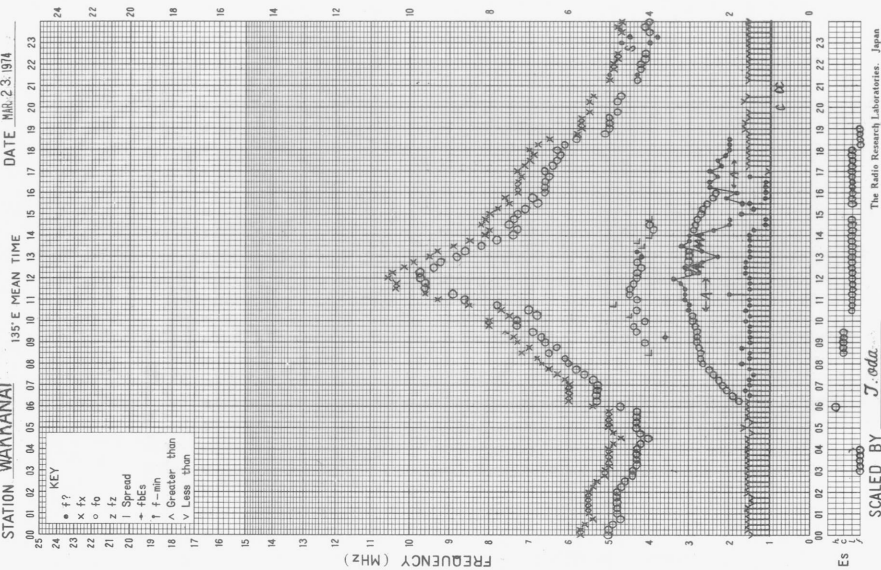
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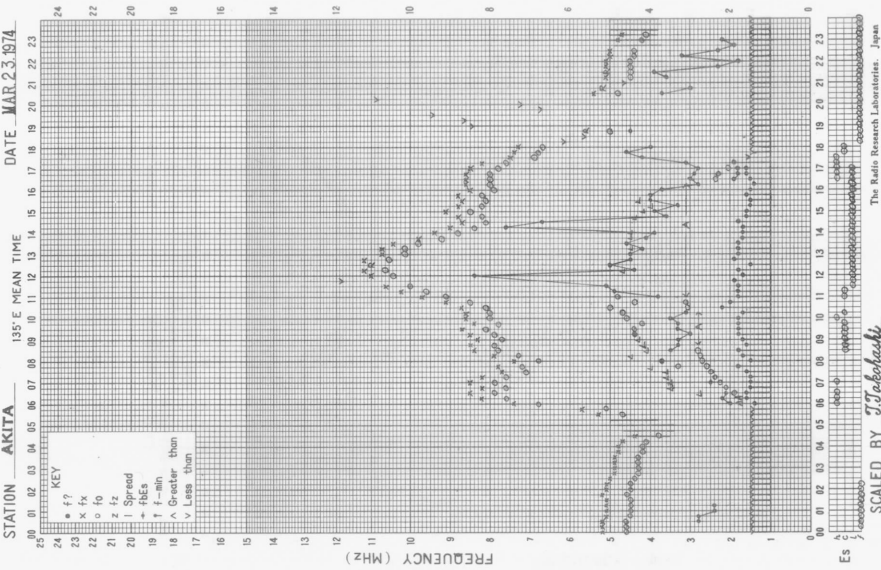
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STATION WAKKANAI DATE MAR. 23. 1974



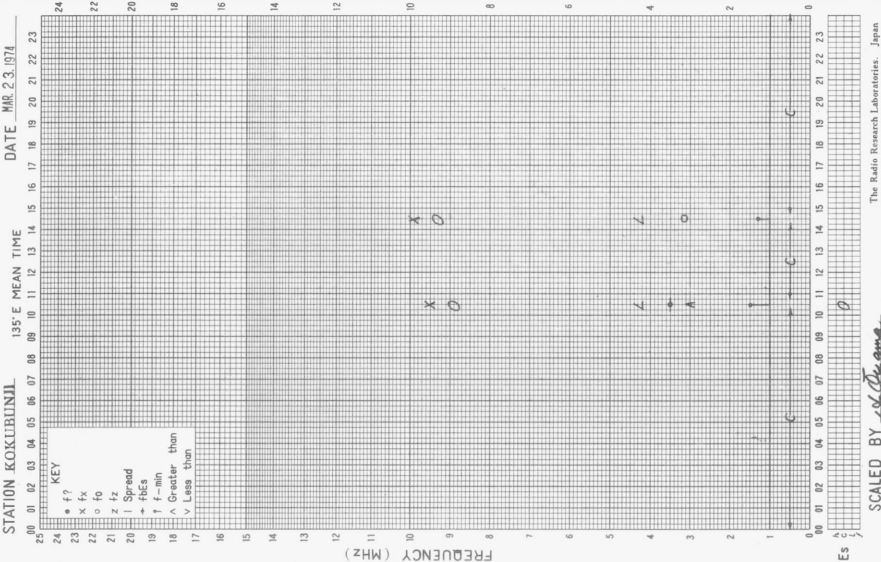
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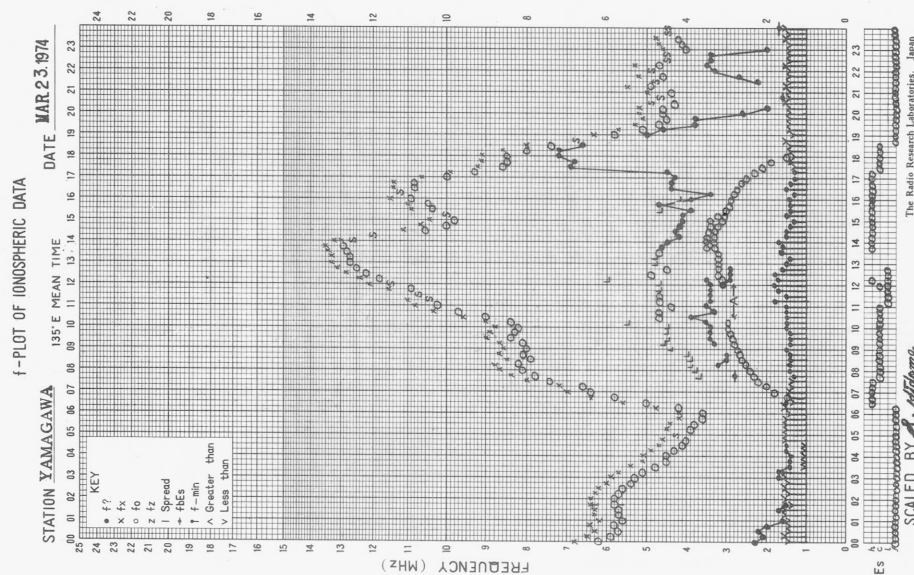
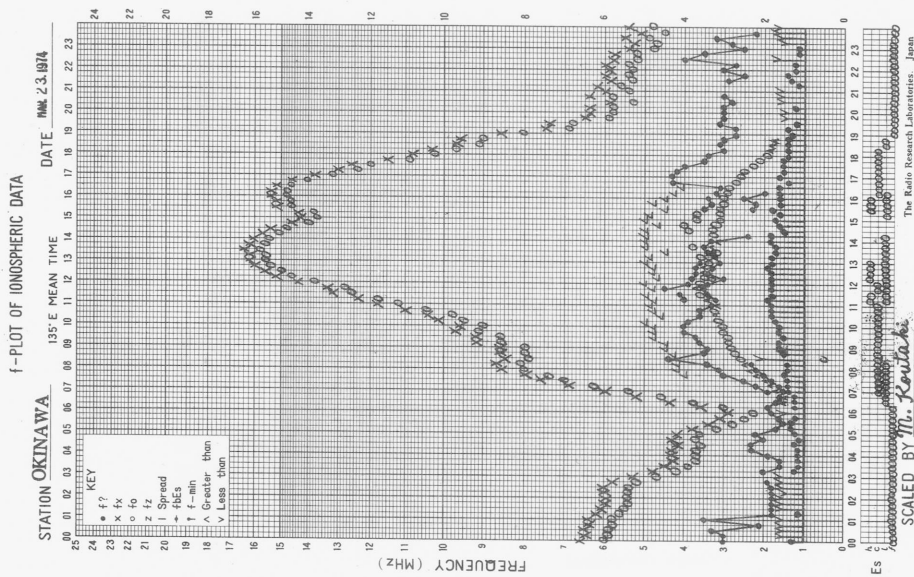
STATION AKITA DATE MAR. 23. 1974



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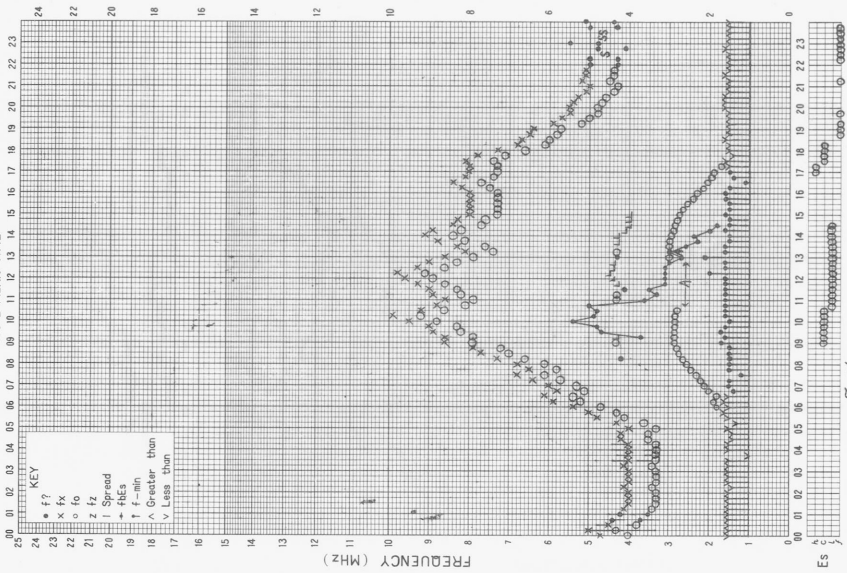




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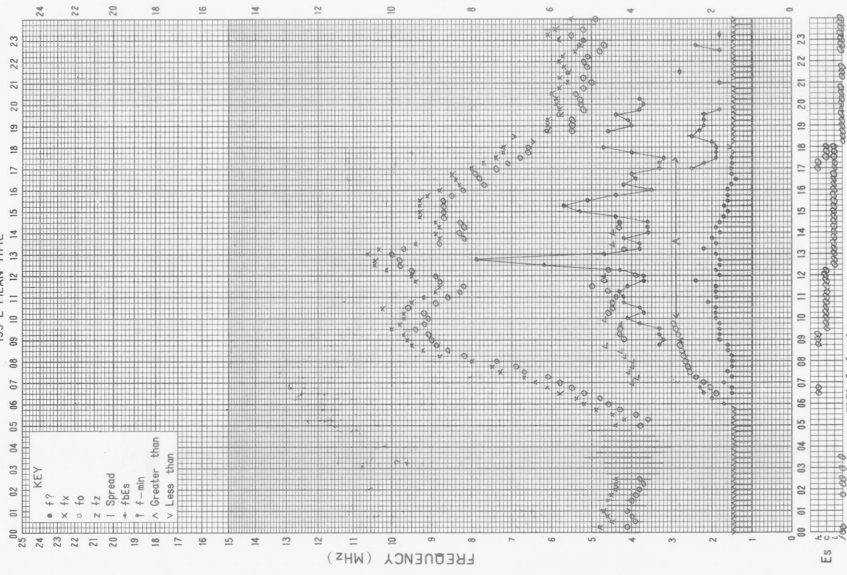
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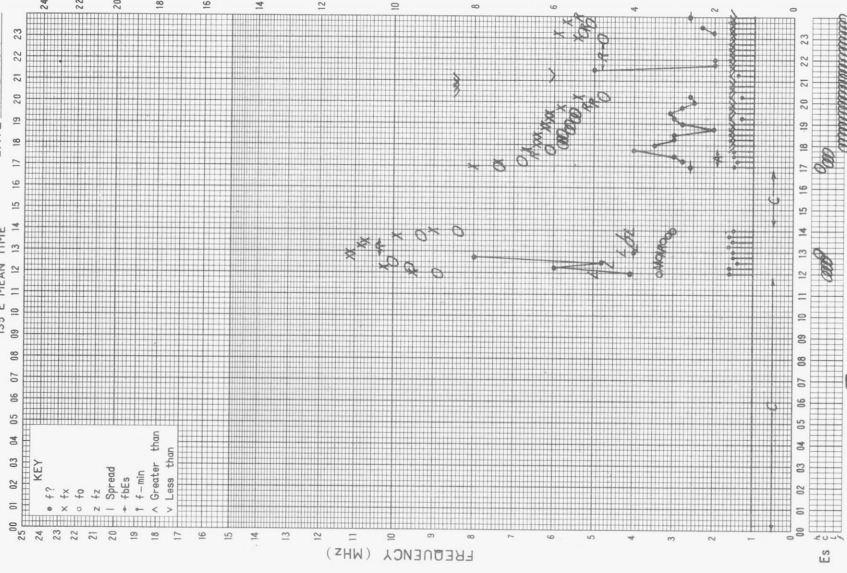
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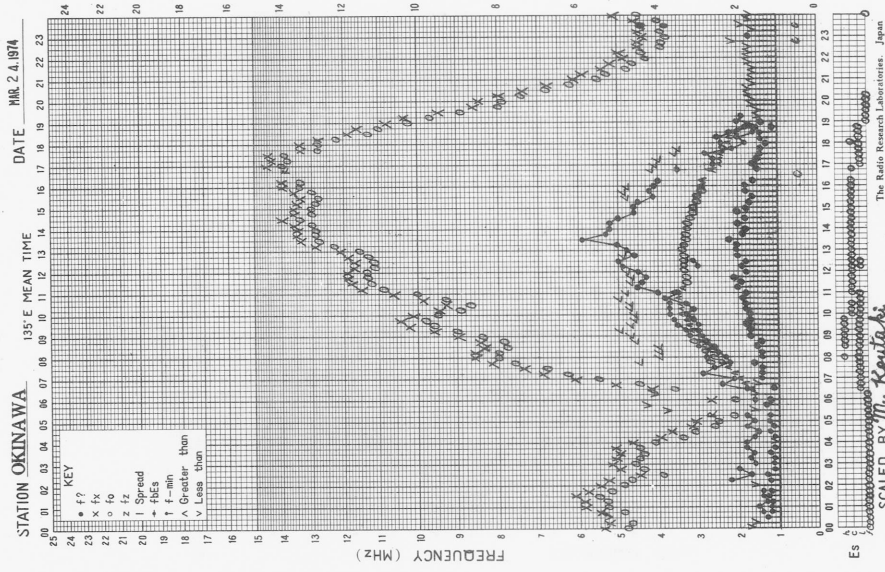
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STATION KOKUBUNJI

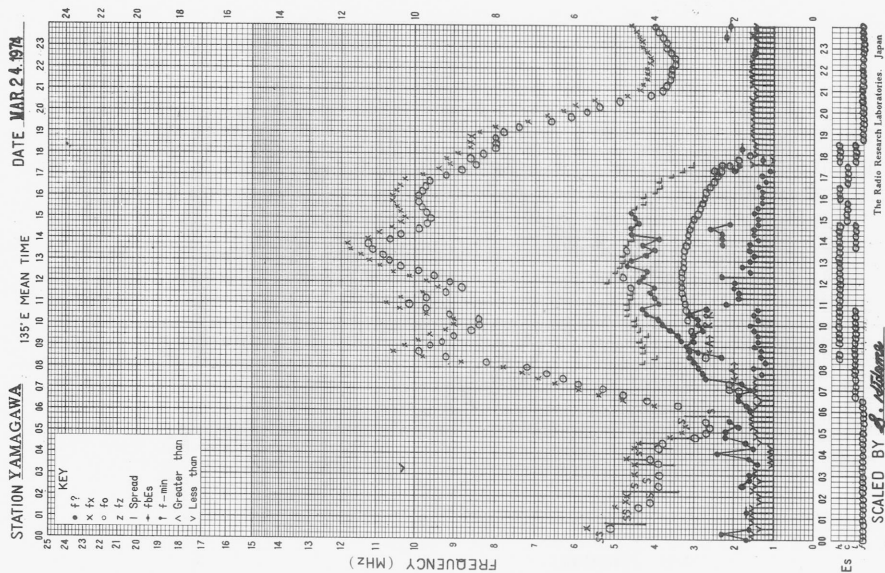
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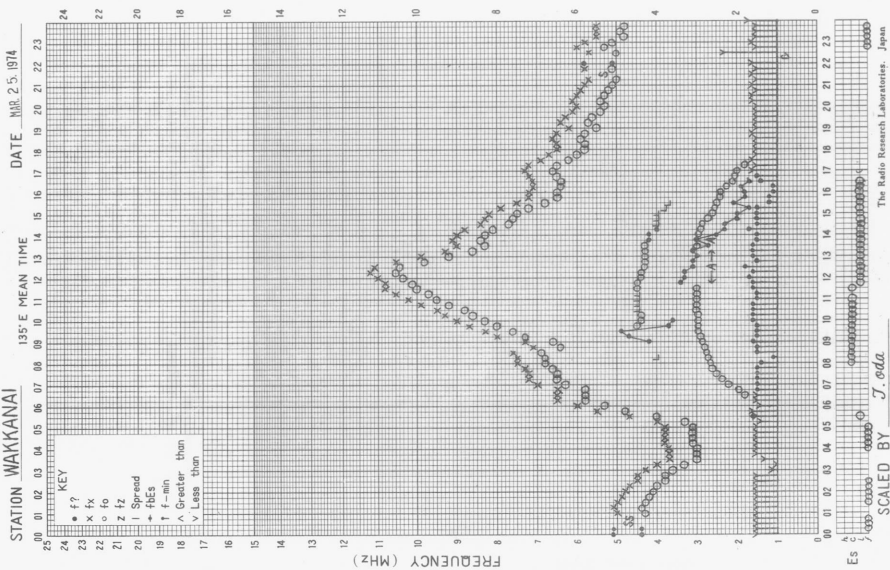
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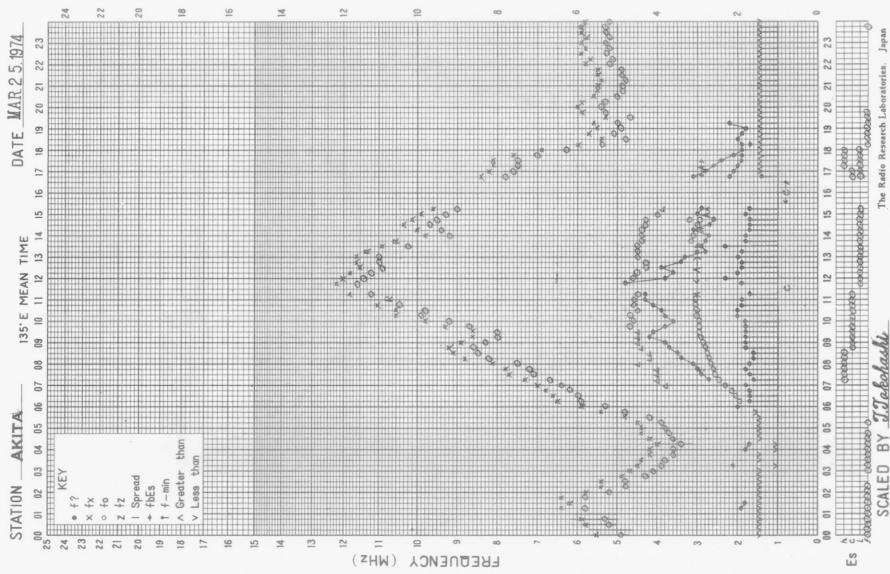
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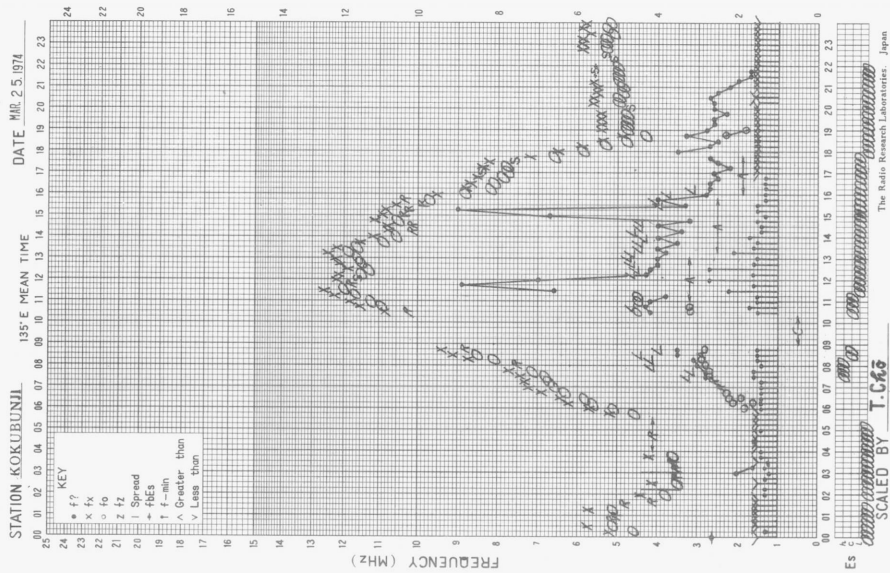
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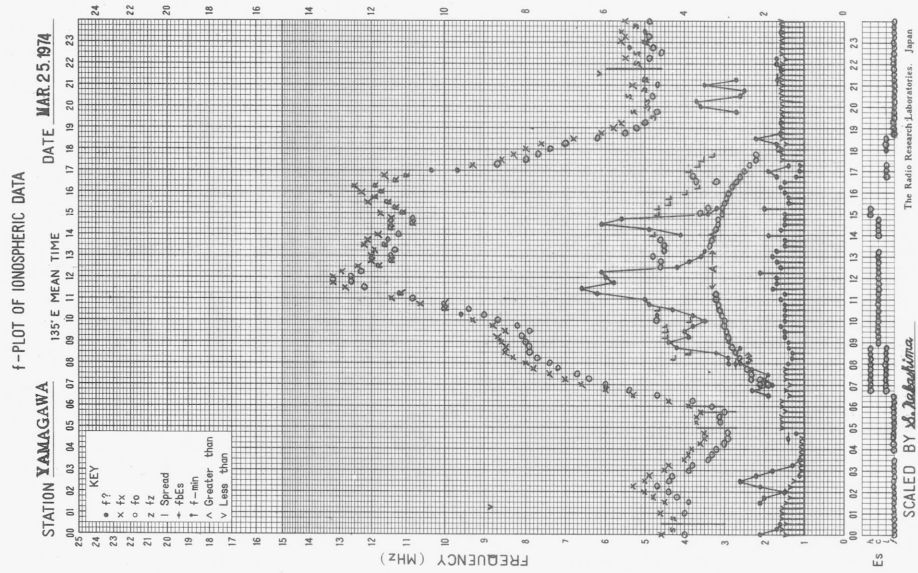
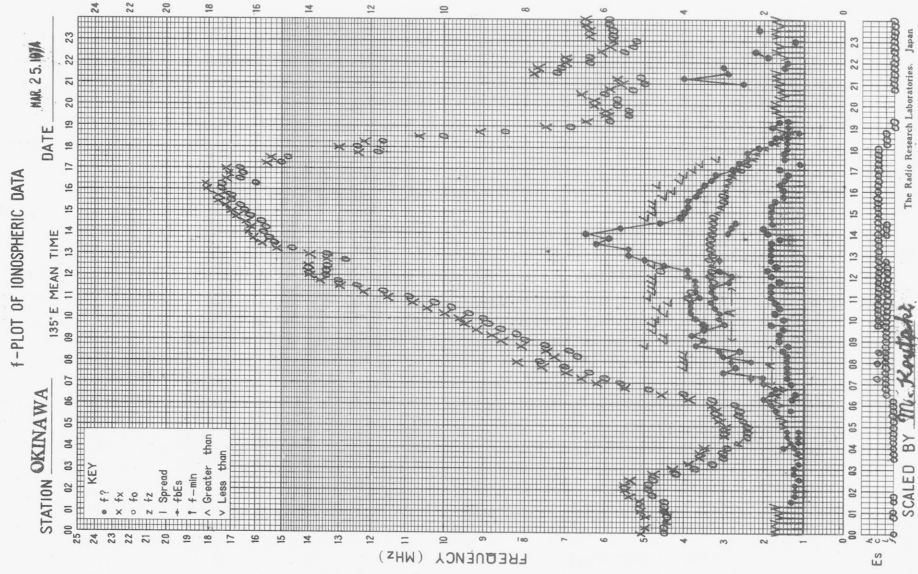


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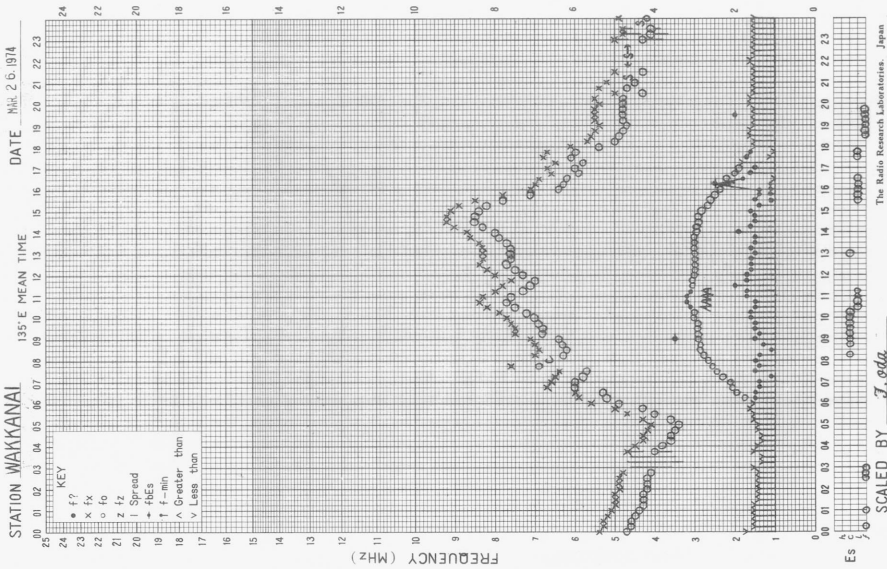


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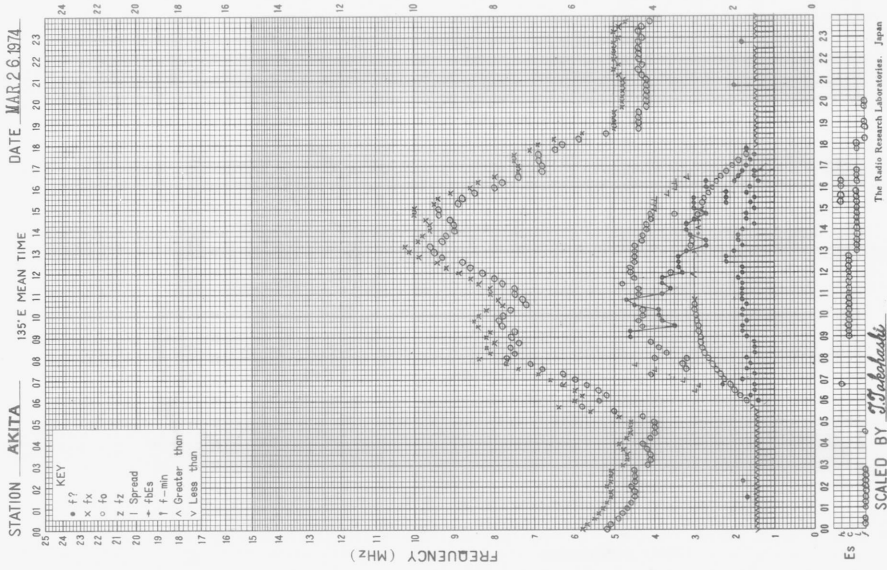




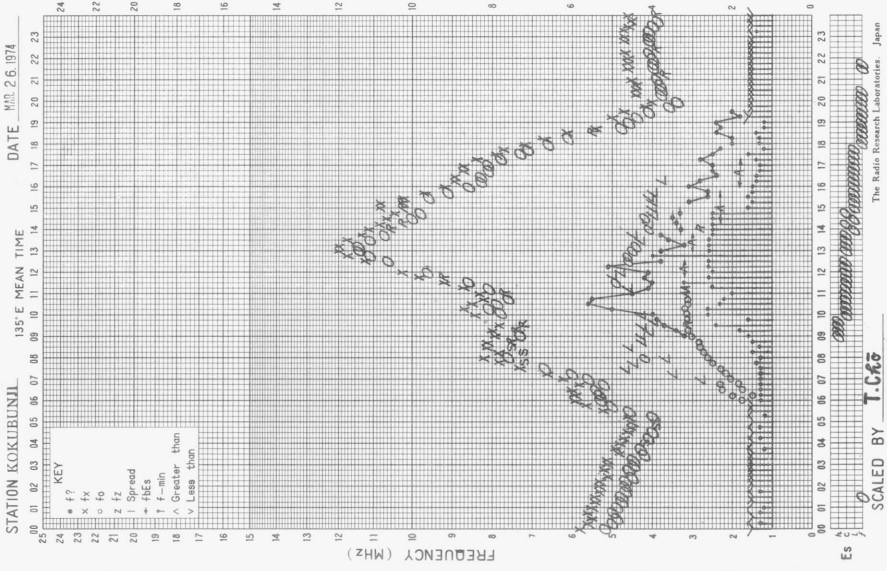
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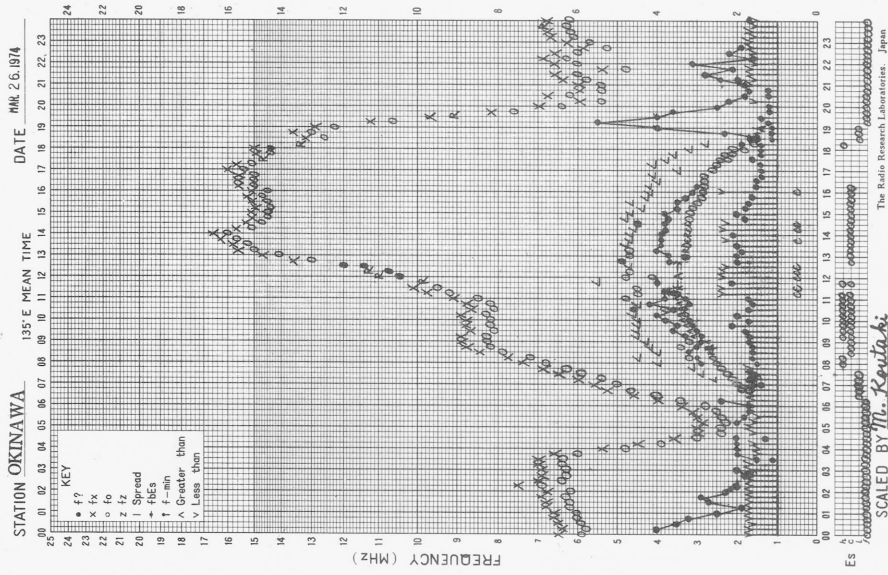
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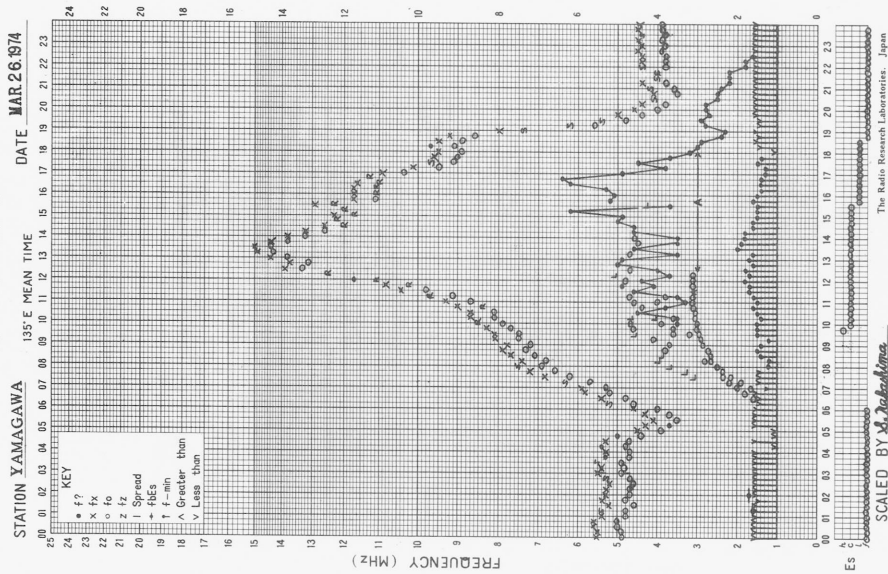
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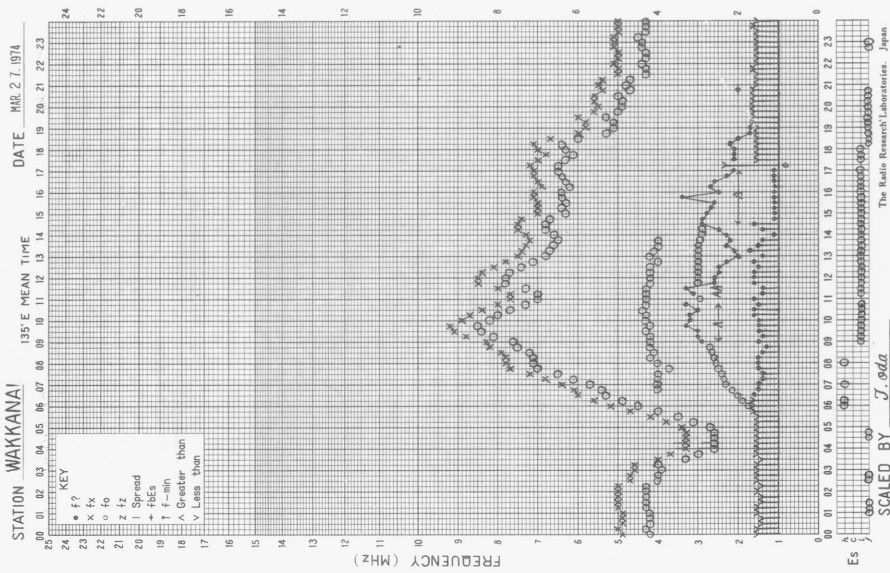
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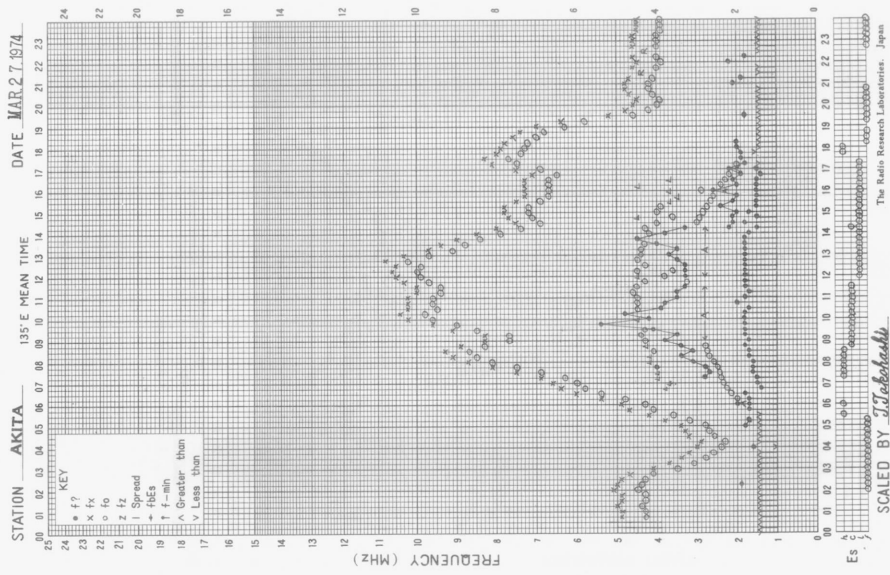
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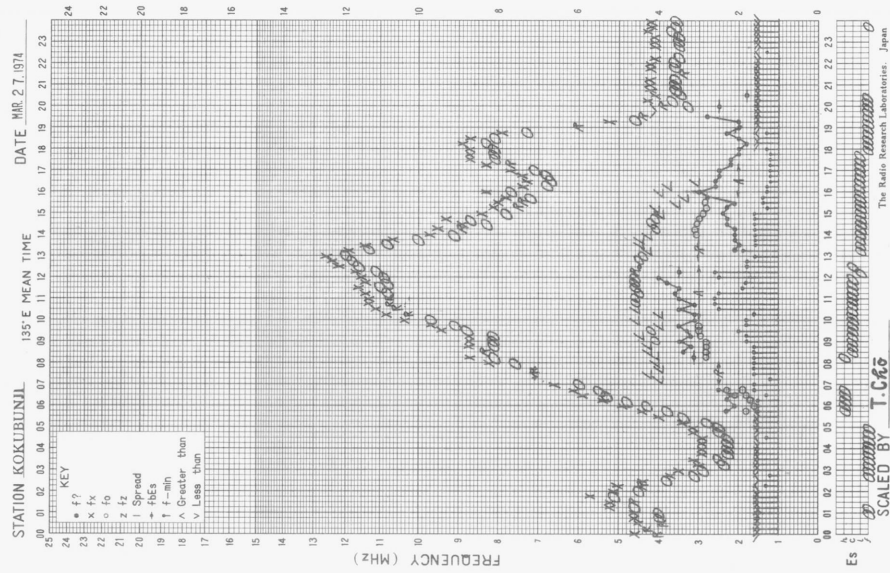
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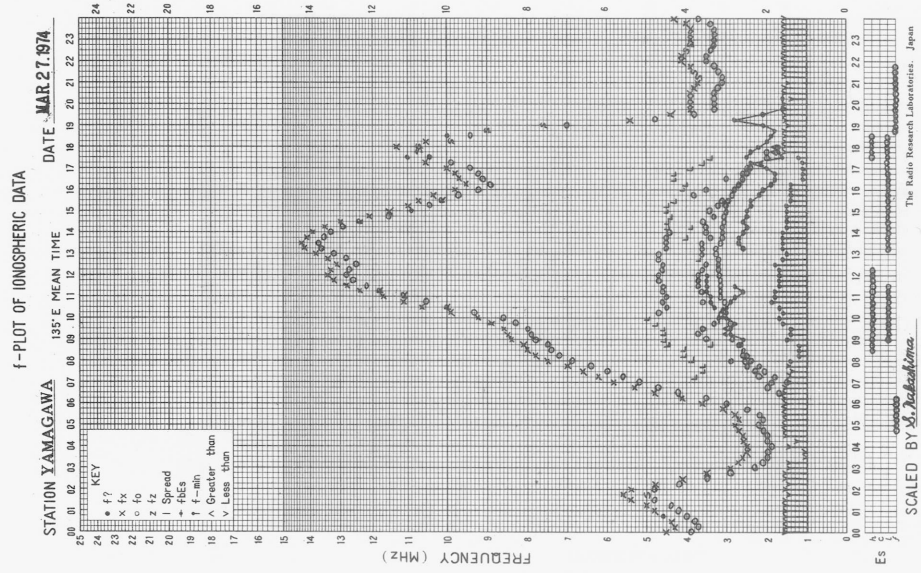
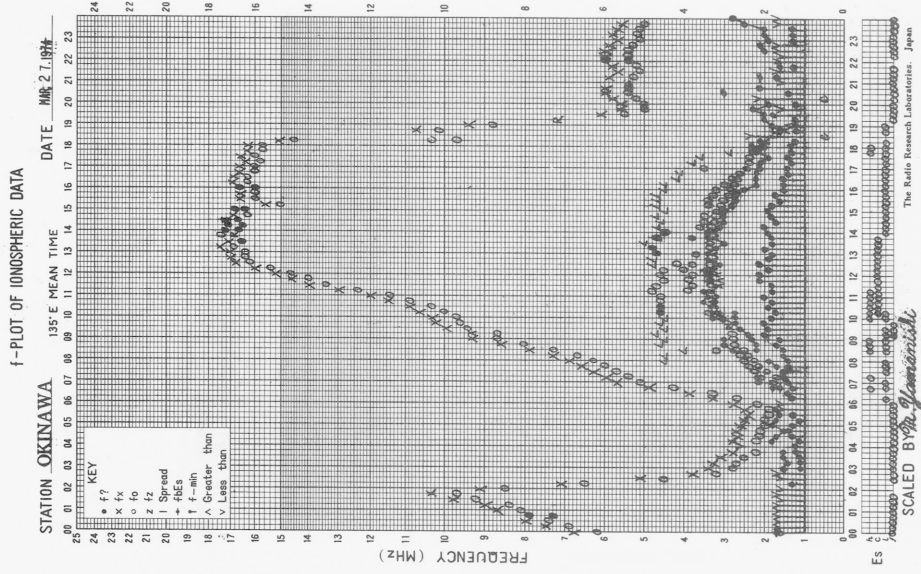


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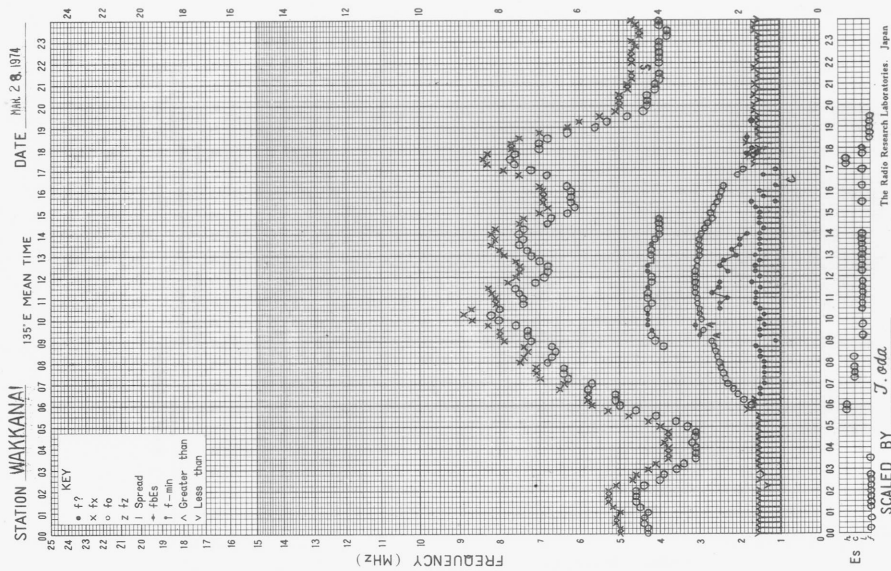


f-PLOT OF IONOSPHERIC DATA

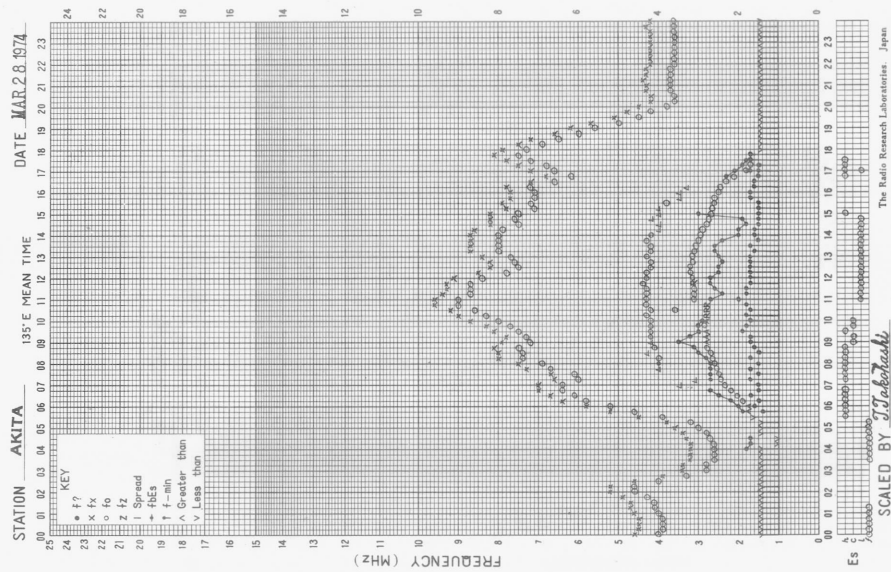




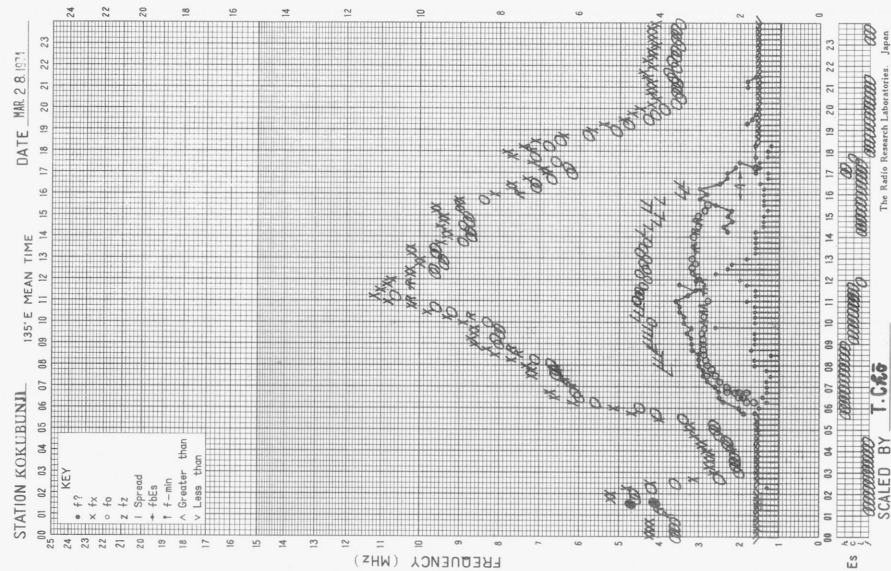
f-PLOT OF IONOSPHERIC DATA

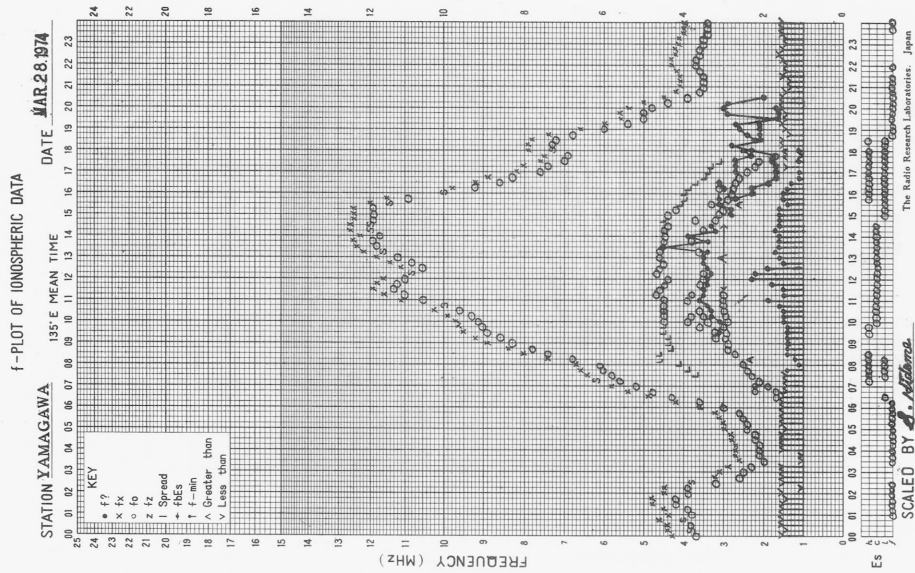
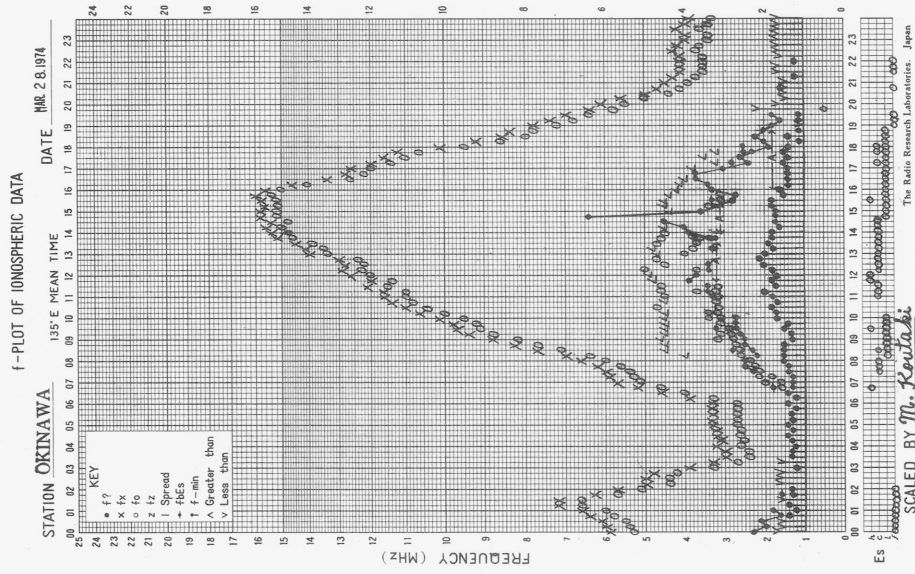


f-PLOT OF IONOSPHERIC DATA

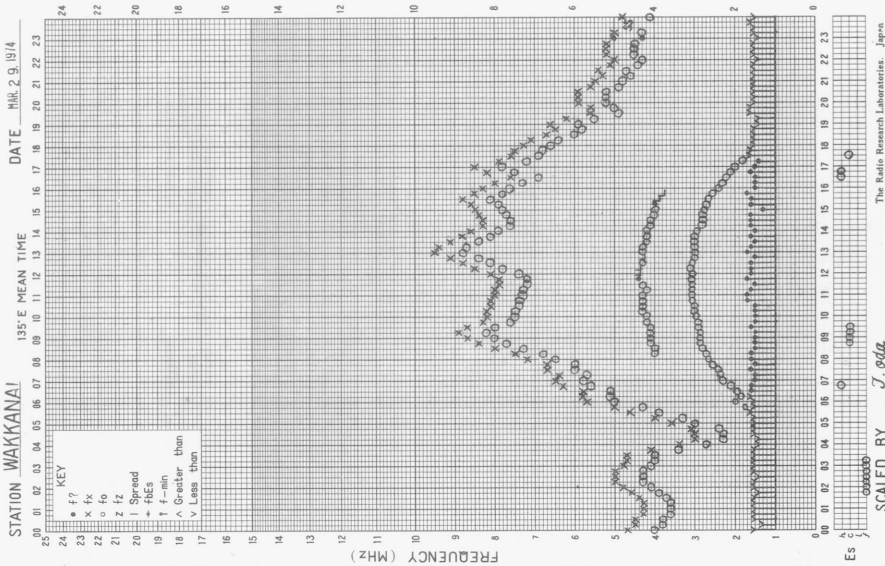


f-PLOT OF IONOSPHERIC DATA

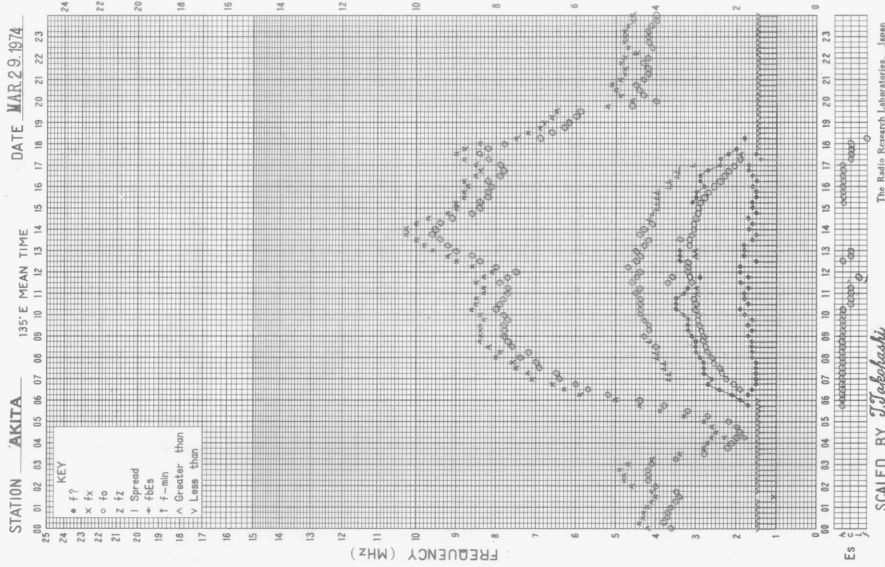




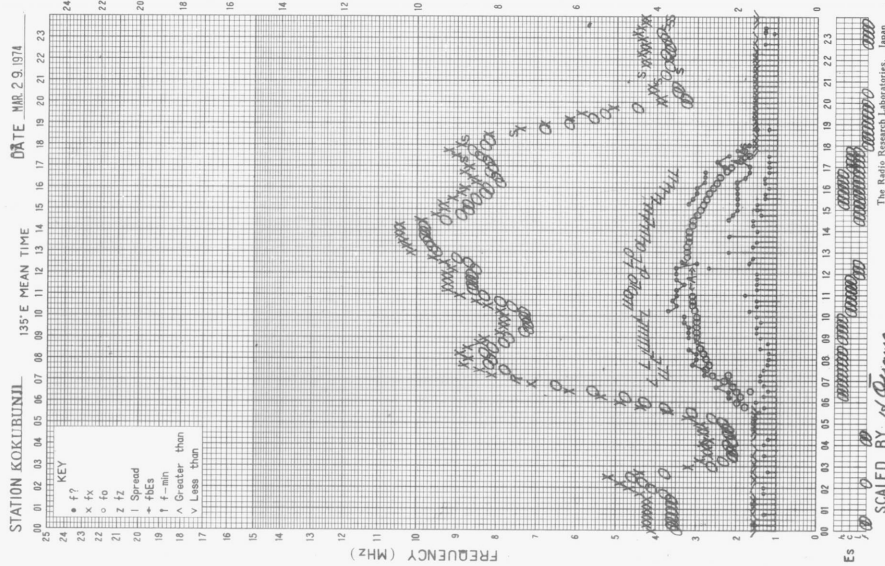
f--PLOT OF IONOSPHERIC DATA



f--PLOT OF IONOSPHERIC DATA



f--PLOT OF IONOSPHERIC DATA



f-plot of IONOSPHERIC DATA

STATION YAMAGAWA DATE MAR 29 1974

135°E MEAN TIME

25 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

24

KEY

• f_oF₂

× f_oF₁

o f_oF₁

z f_z

| Spread

+ fBEs

T f-min

△ Greater than

▽ Less than

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

FREQUENCY (MHz)

Es

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

The Radio Research Laboratories, Japan

SCALED BY A. Nakamura

f-plot of IONOSPHERIC DATA

STATION OKINAWA DATE MAR 29 1974

135°E MEAN TIME

25 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

24

KEY

• f_oF₂

× f_oF₁

o f_oF₁

z f_z

| Spread

+ fBEs

T f-min

△ Greater than

▽ Less than

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

FREQUENCY (MHz)

Es

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

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The Radio Research Laboratories, Japan

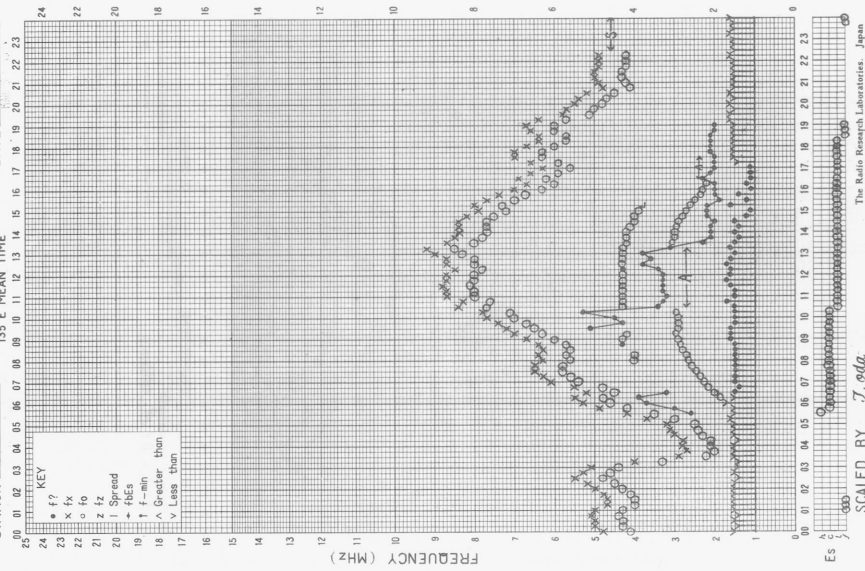
SCALED BY Y. Yamamoto

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI

DATE Mar. 30, 1974

135° E MEAN TIME

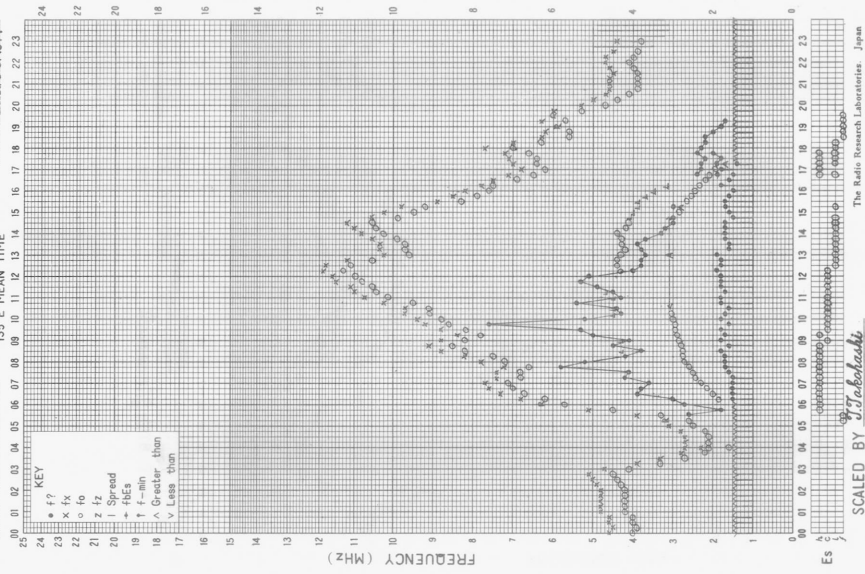


f-PLOT OF IONOSPHERIC DATA

STATION AKITA

DATE Mar. 30, 1974

135° E MEAN TIME

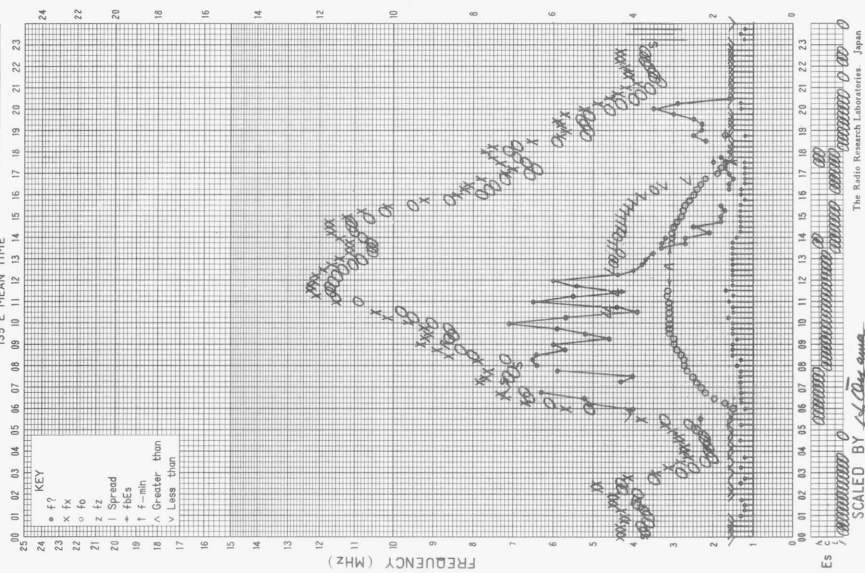


f-PLOT OF IONOSPHERIC DATA

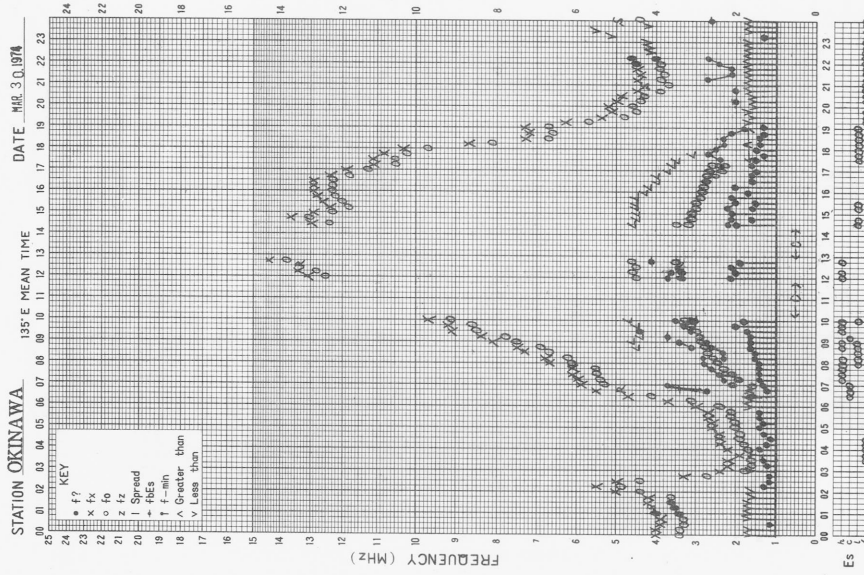
STATION KOKUBUNJI

DATE Mar. 30, 1974

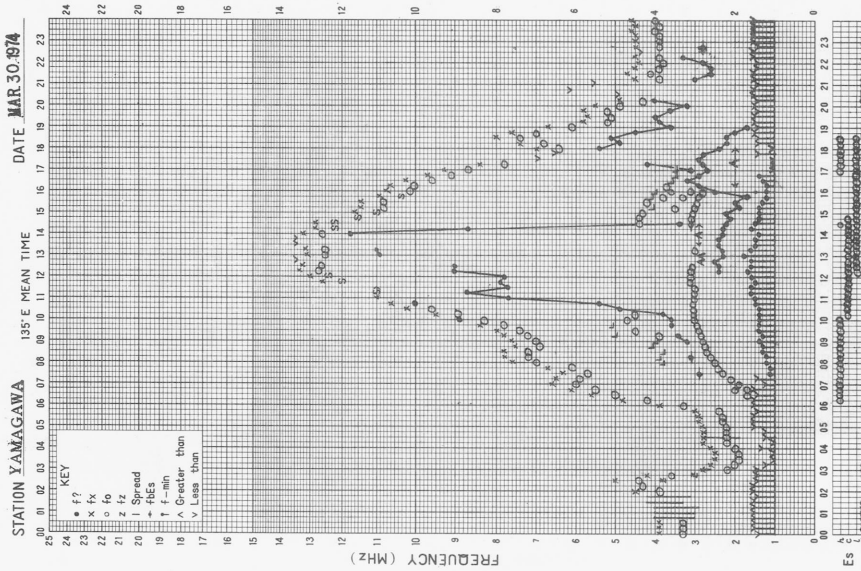
135° E MEAN TIME



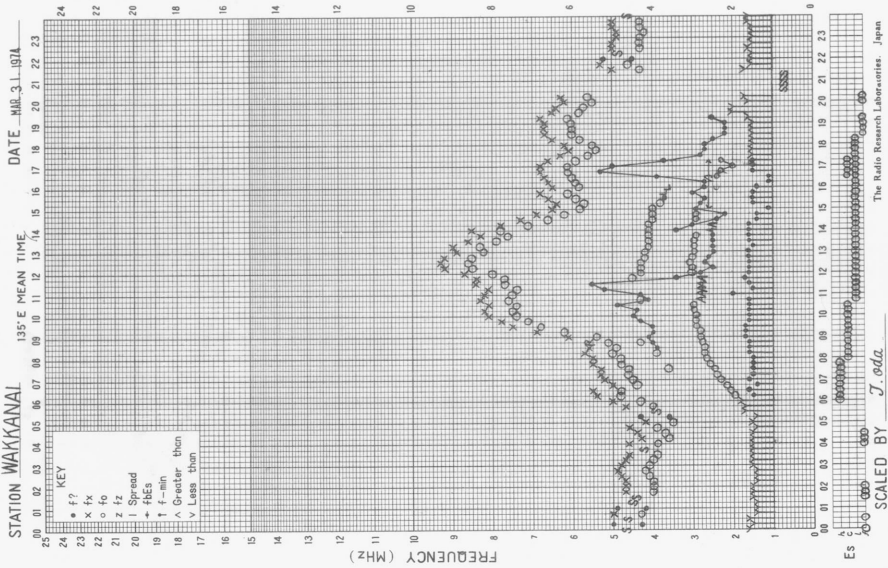
f-plot of IONOSPHERIC DATA



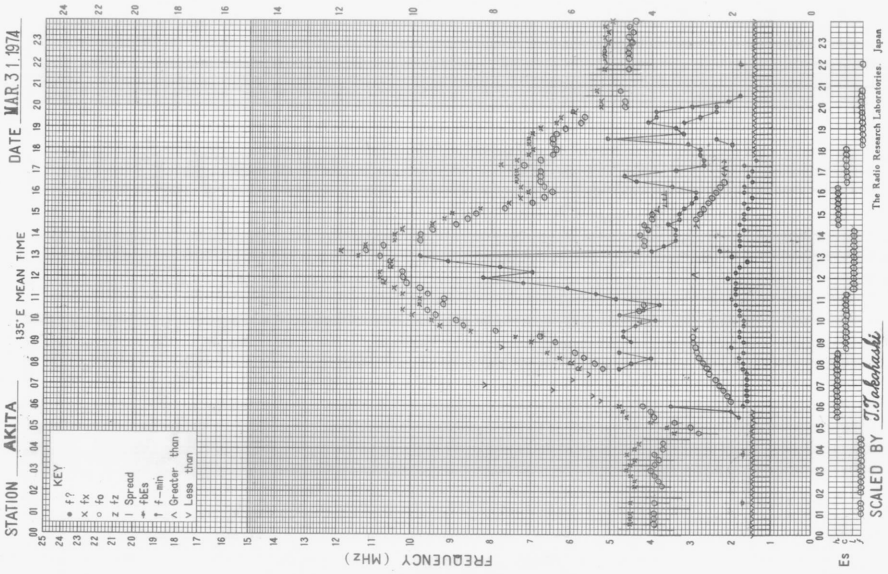
f-plot of IONOSPHERIC DATA



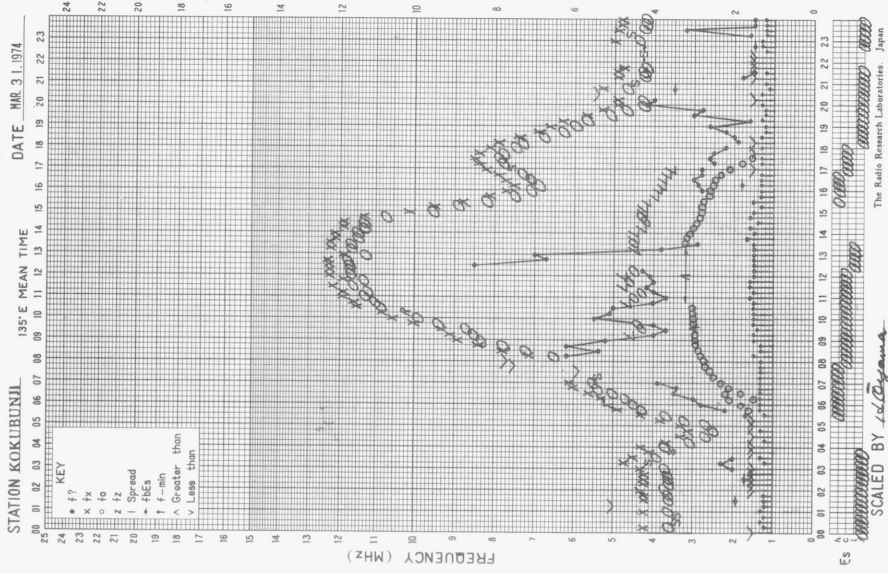
f-PLOT OF IONOSPHERIC DATA



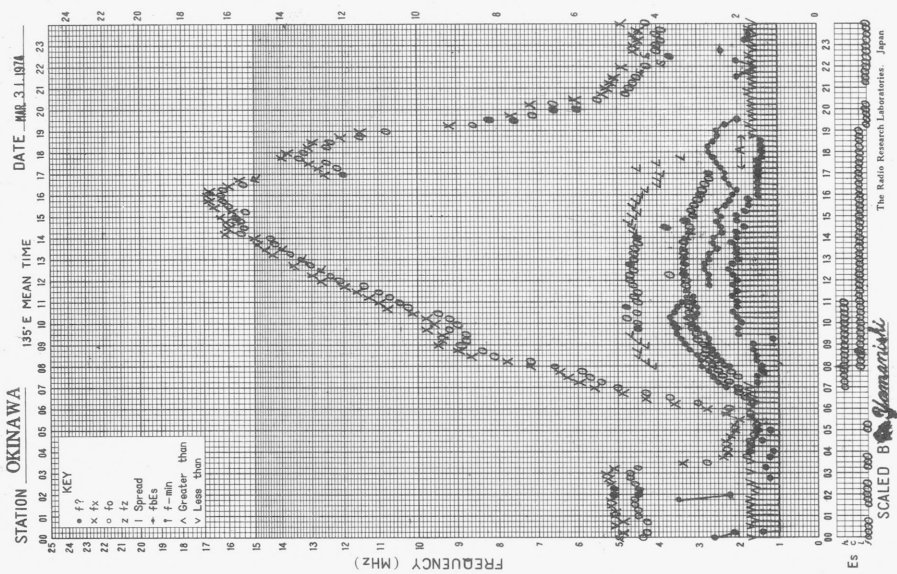
f-PLOT OF IONOSPHERIC DATA



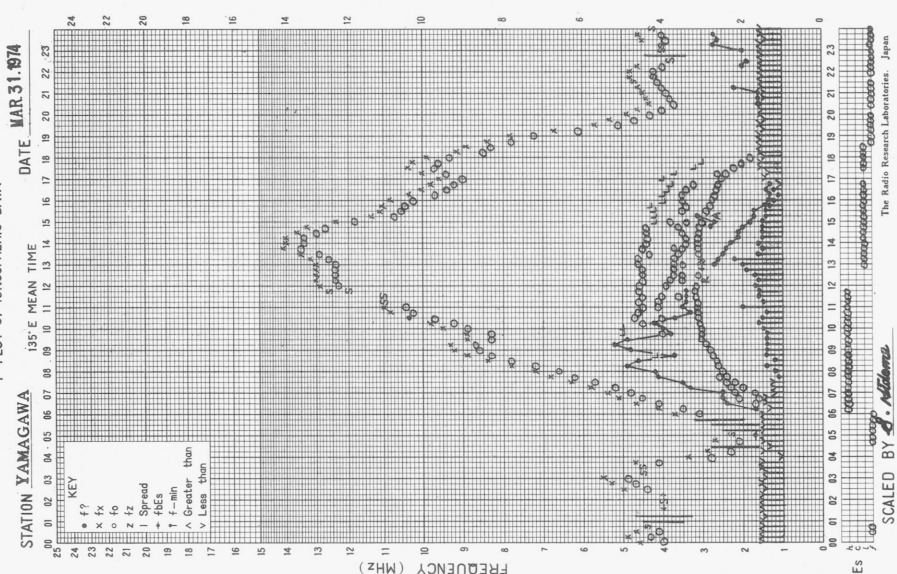
f-PLOT OF IONOSPHERIC DATA



f-PLOT OF IONOSPHERIC DATA



f-PLOT OF IONOSPHERIC DATA



SOLAR RADIO

<u>Flux Density and Variability</u>										
Month: March 1974						Frequency 200 MHz				
Observing station: Hiraiso										
Flux density $10^{-22} \text{Wm}^{-2} \text{Hz}^{-1}$						Variability 0 to 3				
UT	00-03	03-06	06-09	21-24	Day	00-03	03-06	06-09	21-24	Day
Date										
1	8	9	8	8	8	0	0	0	0	0
2	8	8	8	8	8	0	0	0	0	0
3	8	8	8	8	8	0	0	0	0	0
4	8	8	8	8	8	0	0	0	0	0
5	8	8	8	9	8	0	0	0	0	0
6	8	8	8	8	8	0	0	0	0	0
7	8	8	8	9	8	0	0	0	0	0
8	q	8	9	9	8	*	*	*	0	*
9	9	9	9	9	9	*	0	0	0	0
10	10	10	10	11	10	0	1	0	1	0
11	11	11	14	13	12	1	1	2	1	1
12	10	9	10	10	10	0	1	0	1	1
13	9	9	9	10	9	0	0	1	0	0
14	11	11	10	8	10	0	0	0	0	0
15	9	9	9	8	9	0	0	0	0	0
16	9	8	8	9	8	0	0	0	0	0
17	9	9	9	8	9	0	0	0	0	0
18	8	8	9	9	8	0	0	0	0	0
19	9	9	9	9	9	0	0	0	0	0
20	9	9	9	8	9	0	0	0	0	0
21	9	9	9	8	9	0	0	0	0	0
22	9	8	9	q	9	0	0	0	*	0
23	9	9	9	8	9	*	0	0	1	0
24	9	8	8	8	8	1	0	0	0	0
25	9	8	8	8	8	0	0	0	0	0
26	8	8	8	8	8	0	0	0	0	0
27	8	8	8	8	8	0	0	0	0	0
28	q	8	8	8	8	0	0	0	0	0
29	8	11	10	15	9	0	1	1	1	1
30	12	9	10	9	12	1	0	1	1	1
31	8	8	8	9	8	1	0	0	0	0

q: quiet level, when radiometer is unstable.

*: interference.

SOLAR RADIO

<u>Flux Density</u>					
Month: March 1974					
Observing station: Hiraiso			Frequency: 500 MHz		
Flux density $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$					
UT	00-03	03-06	06-09	21-24	Day
Date					
1	25	24	23	-	24
2	25	24	24	24	24
3	24	24	24	21	24
4	23	23	24	22	23
5	23	23	22	23	23
6	23	23	23	22	23
7	23	24	24	23	23
8	24	24	23	25	24
9	25	25	24	25	25
10	25	25	25	24	25
11	24	25	26	26	25
12	26	26	26	24	26
13	25	26	25	23	25
14	25	24	25	23	24
15	24	25	25	-	24
16	25	26	25	26	25
17	25	25	24	22	25
18	22	23	23	21	23
19	23	24	23	23	23
20	24	23	23	22	23
21	23	23	22	21	23
22	22	22	21	22	22
23	22	23	22	22	22
24	24	23	22	23	23
25	23	23	22	25	23
26	23	23	22	21	23
27	24	24	23	23	23
28	24	23	23	23	23
29	23	23	23	23	23
30	22	22	21	22	22
31	22	21	21	22	22

Note No observations during the following periods:

1st	2050-	2nd	0015
15th	2050-		2340
31st	0300-		0400

SOLAR RADIO

Distinctive Events

(single-frequency observations)

Month: March 1974

Observing station: Hiraiso

Normal observing period: 2050 - 0840 (sunrise to sunset)

Date	Freq.	Starting time	Time of maximum	Duration	Type	Flux density $10^{-22} \text{ W m}^{-2} \text{ Hz}^{-1}$		Polarization	Remarks
	MHz	UT	UT	minutes		peak	mean		
15	200	0322.2	0324.8	4.5	C	30	5	l	
	100	0323.2	0323.2	4.8	C	75	20	r	

RADIO PROPAGATION

MEASUREMENT OF H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWV)

MAR 1974	FREQUENCY 15 MHZ																				BANDWIDTH 80 HZ			RECEIVING ANTENNA ROD 4.5 M			MEASURED AT HIRAIKO		
UT DAY	00H 15M	01H 15M	02H 15M	03H 15M	04H 15M	05H 15M	06H 15M	07H 15M	08H 15M	09H 15M	10H 15M	11H 15M	12H 15M	13H 15M	14H 15M	15H 15M	16H 15M	17H 15M	18H 15M	19H 15M	20H 15M	21H 15M	22H 15M	23H 15M					
1	-2	ES -4	ES -12	ES -5	ES -10	ES -6	ES -5	ES -3	ES -5	ES -7	ES -10	ES -4	ES -11	ES -1	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	-1	0	4					
2	-1	-2	-3	ES 1	ES 3	ES -11	ES -6	ES -9	ES -6	ES -8	ES -3	ES -20	ES -14	ES -14	ES -14	ES -25	ES -25	ES -25	ES -25	ES -25	1	6	ES 4						
3	2	-1	-8	ES -1	ES -6	ES 2	ES -5	ES -5	ES -5	ES -2	ES -6	ES -2	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	6	9	4					
4	2	-5	ES -7	ES -5	ES 5	ES -11	ES -4	ES -5	ES -5	ES 1	ES -12	ES -4	ES -9	ES -8	ES -20	ES -16	ES -16	ES -16	ES -9	ES -8	ES -8	9	1	2					
5	2	12	ES -9	ES -13	ES -16	ES -17	ES 0	ES 0	ES -6	ES -9	ES -13	ES -13	ES -11	ES -11	ES -8	ES -8	ES -8	ES -16	C	C	C	C	C	C					
6	4	7	6	ES -7	ES -2	ES 0	ES -6	ES -1	ES -4	ES -7	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -3	ES -6	ES -24	ES -24	ES -24	12	1	-3					
7	3	4	-9	ES -4	ES -5	ES -9	ES -2	ES -6	ES -7	ES -10	ES -24	ES -24	ES -23	ES -2	ES -14	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	9	1	0					
8	2	ES 0	ES -2	2	ES 0	ES -3	ES 0	ES -2	ES -4	ES -5	ES -6	ES -24	ES -9	ES -16	ES -3	ES -24	ES -24	ES -24	ES -7	ES -3	ES -2	-1	12	4					
9	4	-1	-2	ES -10	ES -5	ES -6	ES -5	ES -5	ES 0	ES 1	ES -2	ES -6	ES -4	ES -1	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	-2	-4						
10	5	ES -9	ES -7	ES -6	ES -5	ES -6	ES -3	ES -1	ES -5	ES -6	ES -11	ES -9	ES -3	ES -10	ES -8	ES -25	ES -25	ES -25	ES -16	ES -25	ES -17	-13	-7	-2					
11	1	3	1	ES 0	ES -6	ES -13	ES -4	ES -5	ES -1	ES -3	ES -14	ES -25	ES -7	ES -13	ES -26	ES -11	ES -26	ES -13	ES -17	ES -17	ES -17	-3	1	1					
12	-2	4	ES -4	ES -4	ES -7	ES -7	ES -7	ES 1	ES -9	ES -7	ES -4	ES -21	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	-12	1	8	8					
13	5	5	-6	ES -7	ES -9	ES -7	ES -4	ES -1	ES -2	ES 4	ES -26	ES -26	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	-1	-2	7	12					
14	5	7	4	ES -6	ES -3	ES -6	ES -3	ES 0	ES 1	ES -6	ES -8	ES -12	ES -10	ES -8	ES -11	ES -7	ES -14	ES -25	ES -25	ES -25	ES -25	-10	3	8					
15	3	8	1	ES -2	ES 9	ES -4	ES -6	ES -5	ES -8	ES -8	ES -5	ES -11	ES -15	ES -13	ES -25	ES -25	ES -25	-13	ES -25	ES -25	-2	-5	1	4					
16	0	-1	0	4	ES -10	ES -10	ES -8	ES -1	ES 0	ES -3	ES -6	ES -8	ES -8	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	-16	ES -15	ES -15					
17	ES -11	ES -11	ES -6	ES -4	ES -5	ES -4	ES 0	ES 1	ES 0	ES 0	ES -3	ES -8	ES -10	ES -16	ES -25	ES -3	ES -3	ES -3	ES -25	ES -25	-3	1	5	5					
18	4	9	1	ES -9	ES -6	ES 15	ES -7	ES 0	ES 3	ES 1	ES -6	ES -11	ES -3	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	2	1	1	1					
19	3	7	4	2	ES -1	ES -3	ES -3	ES -4	ES 2	ES -1	ES 2	ES 1	ES -14	ES -14	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	4	5	5	7					
20	3	9	7	3	ES -5	ES 0	ES 0	ES 0	ES 1	ES 2	ES -3	ES -10	ES -22	ES -9	ES 4	ES -22	ES -22	ES -22	ES -13	ES -2	8	14	1	0					
21	8	2	5	5	ES -1	ES -1	ES 1	ES 2	ES 1	ES 2	ES -22	ES -9	ES -1	ES -7	ES 4	ES -5	ES -22	ES -22	ES -22	ES -22	ES -22	1	4	-1					
22	-1	ES -5	ES -9	ES -1	ES 3	ES 2	ES 1	ES 2	ES -3	ES 0	ES -8	ES -3	ES 0	ES -11	ES -1	ES -11	ES -11	ES -23	ES -23	ES -14	7	8	4	7					
23	1	6	ES -5	7	ES -1	ES -2	ES 0	ES 5	ES 4	ES -2	ES -5	ES -4	ES -11	ES -4	ES -4	ES -23	ES -23	ES -23	ES -23	ES -23	-1	1	1	-6					
24	-3	1	ES -7	ES -4	ES 0	ES -12	ES -3	ES -4	ES 0	ES 2	ES -5	ES -1	ES 0	ES 1	ES -2	ES -23	ES -6	ES -23	ES -23	ES -23	3	12	-1	4					
25	ES -2	ES -2	ES -4	ES -9	ES -1	ES -5	ES -5	ES -1	ES 2	ES -6	ES -15	ES -15	ES -9	ES -12	ES -24	ES -4	ES -24	ES -24	ES -24	ES -24	3	6	6	6					
26	-1	-7	5	ES -13	ES -20	ES -12	ES -3	ES -4	ES -3	ES -3	ES -10	ES -6	ES -26	ES -26	ES -13	ES -26	ES -26	-2	ES -26	ES -26	1	4	4	-4					
27	4	5	-7	ES -7	ES -7	ES -9	ES -5	ES 8	ES 11	ES -1	ES -2	ES -18	ES -27	ES -12	ES -27	ES -27	ES -27	-7	ES -27	ES -27	-1	4	7	-2					
28	6	2	2	-2	-4	ES -8	ES -6	ES -2	ES -2	ES 0	ES -5	ES -26	ES -27	ES -27	ES -27	ES -27	ES -27	-15	ES -27	ES -27	ES -27	-4	-1	-1					
29	-6	-2	ES -15	ES -6	ES -6	ES -5	ES -5	ES -1	ES -6	ES -4	ES -5	ES -8	ES -17	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	-6	-2	-11						
30	-2	0	ES -4	ES -7	ES -1	ES -7	ES -6	ES -7	ES -1	ES -7	ES -9	ES -3	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -17	ES -11	-2	0	-2	3					
31	-3	4	-4	ES -8	ES -1	ES -8	ES -10	ES -8	ES -3	ES -4	ES -2	ES -4	ES -11	ES -20	ES -5	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	-3	-1	0					
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30					
MED	2	2	ES -4	ES -4	ES -5	ES -6	ES -4	ES -1	ES -2	ES -3	ES -6	ES -9	ES -11	ES -13	ES -23	ES -24	ES -24	ES -23	ES -24	ES -24	ES -4	1	1	2					
UD	5	9	5	4	ES 3	ES 2	ES 0	ES 2	ES 3	ES 2	ES -2	ES -1	ES -1	ES -1	ES -5	ES -6	ES -6	ES -10	ES -8	ES -8	4	12	8	8					
LD	ES -3	ES -7	ES -9	ES -10	ES -10	ES -12	ES -7	ES -7	ES -7	ES -8	ES -24	ES -25	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	-13	-7	-6					

RADIO PROPAGATION

MEASUREMENT OF H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWVH)

MAR 1974		FREQUENCY 15 MHZ					BANDWIDTH 80 HZ					RECEIVING ANTENNA ROD 4.5 M																	
UT DAY	00H 45M	01H 45M	02H 45M	03H 45M	04H 45M	05H 45M	06H 45M	07H 45M	08H 45M	09H 45M	10H 45M	11H 45M	12H 45M	13H 45M	14H 45M	15H 45M	16H 45M	17H 45M	18H 45M	19H 45M	20H 45M	21H 45M	22H 45M	23H 45M	MEASURED AT HIRAISO				
1	11	11	12	16	15	16	ES -4	ES 0	ES -4	ES -7	ES -4	ES -25	ES 2	ES -2	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	-6	8	11	8	
2	11	9	9	12	20	15	ES -6	ES -6	ES -6	ES -5	ES -16	ES -20	ES -14	ES -14	ES -14	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	12	19	16	12	
3	14	11	9	15	16	18	7	1	ES -2	ES -2	ES -2	ES -2	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	-11	-4	15	11	13	11
4	15	10	10	12	16	12	17	2	ES 0	ES -8	ES -7	ES -2	ES -3	ES -9	ES -12	ES -16	ES -16	ES -11	ES -9	ES -6	ES 9	ES 15	ES 4	ES 9	15	4	9	9	
5	9	9	6	7	16	9	18	ES -4	ES -6	ES -9	ES -13	ES -13	ES -11	ES -11	ES -8	ES -8	ES -8	ES -5	C	C	C	C	C	C	C	C	C	C	
6	16	13	16	17	17	15	6	ES 5	ES -3	ES -24	ES -24	ES -24	ES -24	-9	-7	ES -6	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	8	11	11	6	
7	9	10	12	16	16	13	-2	ES -2	ES -7	ES -7	ES -7	ES -24	ES -24	ES -23	ES -6	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	7	8	9	10	
8	6	9	12	14	16	12	11	3	3	12	7	ES -9	-6	ES -24	ES -1	ES -24	ES -24	ES -7	ES -3	ES -24	ES -24	ES -24	ES -24	ES -24	13	17	17	11	
9	9	10	11	17	18	9	15	ES 1	8	16	ES -6	ES -6	ES -6	ES 0	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	4	19	16	10		
10	7	9	11	15	15	15	ES -1	ES -1	ES 1	ES -6	ES -5	ES -2	11	ES -2	ES -13	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	8	12	10	4		
11	9	7	10	11	16	11	ES -2	0	ES -1	ES -2	ES -8	ES -5	ES -13	ES -13	ES -26	ES -12	ES -9	ES -15	ES -17	ES -17	ES 13	ES 10	ES 10	ES 6	13	10	10	6	
12	6	9	11	16	16	10	ES 0	ES 10	ES -4	ES -9	ES -21	ES -21	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	12	12	8	9		
13	8	4	10	9	14	16	4	ES 6	ES -2	ES -2	ES -26	ES -26	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	14	17	10	10		
14	7	7	8	14	17	16	6	ES 0	ES -2	ES -3	1	-3	ES -10	ES -11	ES -11	ES -11	ES -25	-5	-19	ES -25	ES -25	ES -25	ES -25	6	10	10	9		
15	6	9	11	15	17	18	17	ES -2	ES 4	ES 3	ES -7	ES -10	ES -11	ES -15	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	6	8	5	3		
16	6	6	12	14	15	14	-1	ES 0	ES -2	ES -2	ES -6	3	24	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	6	10	5	5		
17	3	7	11	11	22	17	18	ES 2	ES 3	ES 0	ES -2	ES -16	-6	-10	ES -3	ES -3	ES -3	ES -5	ES -25	ES -25	ES -25	ES -25	15	13	10	10			
18	10	10	15	14	14	12	ES 2	ES 0	ES 1	ES 1	ES -3	ES -5	ES -4	ES -25	ES -5	ES -25	ES -25	ES -10	ES -25	ES 1	ES 11	ES 12	ES 11	ES 6	11	12	11	6	
19	9	9	11	18	17	18	18	13	ES 1	ES 0	ES -9	ES -8	ES -6	ES -23	ES -23	ES -23	ES -23	-6	7	7	19	13	13	11	11	13	13	11	
20	7	9	11	15	19	17	20	ES 3	ES 3	ES 1	ES -6	ES -8	ES -7	ES -22	ES -13	ES -22	ES -22	-9	ES -5	ES 14	ES 8	ES 15	ES 10	ES 12	ES 15	ES 10	ES 12	ES 12	
21	11	9	14	17	21	24	20	19	8	ES 3	ES 1	ES -2	ES -13	ES 2	ES -8	ES -11	ES -5	ES -22	ES -22	ES 8	ES 16	ES 6	ES 14	ES 9	8	16	6	14	9
22	8	10	12	11	18	22	21	13	4	ES 1	ES 3	ES -2	ES -11	ES -11	ES -6	ES -9	ES -11	0	-6	ES 17	ES 11	ES 13	ES 11	ES 10	ES 11	ES 13	ES 11	ES 10	
23	9	11	12	13	19	18	11	ES 11	ES 9	ES -1	ES -1	ES -2	ES 2	ES 3	ES -1	ES -23	ES -23	ES -23	ES -23	ES 12	ES 13	ES 13	ES 12	ES 9	12	13	13	12	9
24	7	10	13	14	20	20	14	14	3	5	ES 3	12	ES 2	ES -14	ES -23	ES -23	ES -12	ES -23	ES -23	ES 14	ES 14	ES 14	ES 13	ES 13	ES 14	ES 14	ES 13	ES 13	
25	12	12	12	16	21	21	23	11	ES 5	ES -2	ES -9	ES -11	ES -6	ES -24	ES -5	ES -24	ES -24	ES -24	ES -24	ES 11	ES 12	ES 8	ES 12	ES 8	11	12	8	12	8
26	7	6	9	11	15	15	16	4	-1	ES -13	ES -7	ES -6	ES -5	ES -26	ES -11	ES -26	ES -26	ES -26	ES -26	ES -7	ES 7	ES 13	ES 9	ES 6	-7	7	13	9	6
27	6	7	10	14	15	14	11	ES -2	ES 14	ES -1	-3	ES -27	ES -18	ES -13	ES -27	ES -27	ES -27	ES -27	ES -27	ES -10	ES 5	ES 9	ES 7	ES 8	5	9	7	8	
28	9	9	10	14	17	19	16	5	ES -4	ES -2	0	ES -26	ES -27	ES -27	ES -14	ES -27	ES -27	ES -27	ES -27	ES -8	ES 4	ES 4	ES 8	ES 9	-8	4	4	8	9
29	5	6	10	12	16	19	15	16	10	ES -1	ES -3	ES -8	ES -11	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES 6	ES 9	ES 11	ES 8	ES 6	6	9	11	8	6
30	10	10	12	15	16	18	12	10	10	1	ES 2	ES -1	ES -26	ES -26	ES -26	ES -26	ES -26	ES 1	ES -26	ES 8	ES 4	ES 5	ES 6	ES 10	8	4	5	6	10
31	8	10	10	12	16	20	15	3	ES -2	5	ES -3	ES -7	ES -1	ES 6	ES -12	ES -26	ES -26	ES -17	ES -6	ES 5	ES 11	ES 9	ES 10	ES 6	5	11	9	10	6
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	30	
MED	9	9	11	14	16	16	12	ES 3	ES 1	ES -2	ES -5	ES -8	ES -10	ES -13	ES -13	ES -24	ES -24	ES -23	ES -24	US -9	10	12	10	9	10	12	10	9	
UD	14	11	14	17	21	21	20	14	ES 10	5	ES 3	ES 2	ES 2	ES 2	ES -3	ES -8	ES -8	-5	ES -5	ES 14	ES 15	ES 17	ES 16	ES 12	14	15	17	16	12
LD	6	6	9	11	15	10	ES -2	ES -2	ES -6	ES -9	ES -24	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES -26	ES 4	ES 6	ES 6	ES 5	4	6	6	5	5

RADIO PROPAGATION
Radio Propagation Quality Figures

HIRAISO

Time in U.T.

Mar. 1974	Whole Day Figure	W W V				W W V H				Conditions				Principal Geomagnetic Storms		
		00	06	12	18	00	06	12	18	00	06	12	18	Start	End	Range
		06	12	18	24	06	12	18	24	06	12	18	24			
1	3+	3U	S	S	4	4	S	S	3	N	N	N	N	---	06.0	
2	4-	4U	S	S	3	4	S	S	4	N	N	N	N			
3	4-	4U	S	S	4	4	3U	S	4	N	N	N	N			
4	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
5	4o	4U	S	S	C	4	S	S	C	N	N	N	N			
6	4-	4U	S	S	3	4	S	4U	4	N	N	N	N			
7	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
8	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
9	4o	4U	S	S	3U	4	5U	S	4	N	N	N	N			
10	4-	4U	S	S	3	4	4U	S	3	N	N	N	N			
11	4-	4U	S	S	4	4	3U	S	4	N	N	N	N			
12	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
13	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
14	4o	4U	S	S	4	4	4U	4U	4	N	N	N	N			
15	4-	4U	S	S	4	4	S	S	3	N	N	N	N			
16	3+	4U	S	S	2U	4	4U	S	3	N	N	N	N	04.3	---	84
17	4-	3U	S	S	4	4	4U	4U	4	U	U	U	U	---	12.0	
18	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
19	4+	4U	S	S	4	4	5U	5U	4	N	N	N	N			
20	5-	5U	S	S	5	4	S	S	4	N	N	N	N	12.8	---	101
21	4+	5U	S	S	4	4	5U	S	4	N	U	U	U	---	---	
22	4o	3U	S	S	4	4	5U	5U	4	U	U	U	U	---	---	
23	4o	4U	S	S	4	4	S	S	4	U	U	U	U	---	---	
24	4+	4U	S	S	4	4	5U	S	4	U	U	U	U	---	---	
25	4+	4U	S	S	4	4	5U	S	4	U	U	U	U	---	---	
26	4o	4U	S	S	4	4	4U	S	4	U	U	U	U	---	---	
27	4o	4U	S	S	4	4	4U	S	4	N	N	N	N	---	19.0	
28	4-	4U	S	S	3	4	4U	S	4	N	N	N	N			
29	4-	3U	S	S	3	4	5U	S	4	N	N	N	N			
30	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
31	4o	4U	S	S	3U	4	4U	5U	4	N	N	N	N			

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SWF)

HIRAISO

No Sudden Ionospheric Disturbance was observed during March, 1974

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SPA)

I N U B O

Mar. 1974	S P A						Time (U.T.)		
	Phase Advance (degrees)						Start	End	Maximum
Date	GBR	NAA	NWC	NPG	ND3	AL3	Start	End	Maximum
1						28	1139	1224	1154
2	36					<u>62</u>	1549	1638	1555
3	24					<u>53</u>	1325	1432	1342
13				31			0504	0736	0521
13				14			0833	0931	0836
14				64			0755	0845	0806
16				27			0723	0818	0733
20				9			2157	2257	2221
21				15*			0428	0602	0518
23	35					<u>81</u>	1437	1531	1451
24						30	1625	1709	1630
25	27					<u>41</u>	0810	0847	0828
27				<u>40</u>	47		0555	0725	0601
28				56			0656	0841	0709
29				25			0617	0727	0629
31				22			0543	0658	0621

IONOSPHERIC DATA IN JAPAN FOR MARCH 1974

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☎ (0423) (21) 1 2 1 1 (代)

印刷所 株式会社 真成社
〒162 東京都新宿区筑土八幡町 8

☎ (03) (260) 5 2 7 9

Queries about "Ionospheric Data in Japan" should be forwarded to:
The Radio Research Laboratories
Ministry of Posts and Telecommunications 2-1 Nukui-Kitamachi 4-chome,
Koganei-shi, Tokyo 184 JAPAN