F—329

IONOSPHERIC DATA IN JAPAN

FOR MAY 1976

VOL.28 No. 5

CONTENTS

RADIO RESEARCH LABORATORIES
MINISTRY OF POSTS AND TELECOMMUNICATIONS
TOKYO, JAPAN

INTRODUCTION

This Series contains data on ionosphere (I), solar radio emission (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)
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 tables or figures of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition) 1972".

a. Characteristics of Ionosphere

fxI — Top frequency of spread *F* trace

foF2, *foF1*, *foE*, *foEs* — Ordinary wave critical frequency for the *F2*, *F1*, *E* and *Es* including particle *E* layers respectively

fbEs — Blanketing frequency of the *Es* layer, e.g. the lowest ordinary wave frequency visible through *Es*

fmin — Lowest frequency which shows vertical ionospheric reflections

M(3000)F2, *M(3000)F1* — Maximum usable frequency factor for a path of 3000 km for transmission by *F2* and *F1* layers respectively

h'F2, *h'F*, *h'E*, *h'Es* — Minimum virtual height on the ordinary wave for the *F2*, whole *F*, *E* and *Es* layers respectively

Types of *Es* — 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 *Es*.

B — Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.

C — Measurement influenced by, or impossible because of, any non-ionospheric reason.

D — Measurement influenced by, or impossible because of, the upper limit of the normal frequency range 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 particle *E* layer.

L — Measurement influenced 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.

P — Man-made perturebation of parameters-Presence of polar spure traces.

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-electronic 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 *fbEs* is deduced from *foEs* 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-characteristics 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-electronic component.

(iii) Description of Types of *Es*

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

The types are:

f — An *Es* trace which shows no appreciable increase of height with frequency.

l — A flat *Es* trace at or below normal *E* layer minimum virtual height or below the particle *E* layer minimum virtual height.

c — An *Es* trace showing a relatively symmetrical cusp at or below *foE*. (Usually a daytime type.)

h — An *Es* trace showing a discontinuity in height with the normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normal *E* trace. (Usually a daytime type.)

q — An *Es* trace which is diffuse and non-blanketing over a wide frequency range.

r — An *Es* trace showing an increase in virtual height at the high frequency end similar to group retardation.

a — An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and

diffuse traces present above it.

s A diffuse *Es* trace which rises steadily with frequency and usually emerges from another type *Es* trace.

d A weak diffuse trace at heights below 95 km associated with high absorption and large *fmin*.

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

k The designation k is used to show the presence of particle *E*. When *foEs>foE* (particle *E*) the *Es* 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 EMISSION

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^{-2} Hz^{-1} for both components of polarization.

All symbols and terminology in the table of data are used in accordance with the "Descriptive Text of Solar-Geophysical Data, NOAA" and "Instruction Manual Monthly Report for Solar Radio Emission, WDC-C2".

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. Outstanding Occurrences

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.

Type is denoted by numerical code and letter symbol in parallel as follows:

SGD Cord	Letter Symbol	Morphological Classification
1	S	Simple 1
2	S/F	Simple 1F
3	S	Simple 2
4	S/F	Simple 2F
5	S	Simple
6	S	Minor
7	C	Minor+
8	S	Spike
20	GRF	Simple 3
21	GRF	Simple 3A
22	GRF	Simple 3F
23	GRF	Simple 3AF
24	R	Rise
25	R	Rise A
26	FAL	Fall
27	RF	Rise and Fall
28	PRE	Precursor
29	PBI	Post Burst Increase
30	PBI	Post Burst Increase A
31	ABS	Post Burst Decrease
32	ABS	Absorption
40	F	Fluctuations
41	F	Group of Bursts
42	SER	Series of Bursts
43	NS	Onset of Noise Storm
44	NS	Noise Storm in progress
45	C	Complex
46	C	Complex F
47	GB	Great Burst
48	C	Major
49	GB	Major+

Flux density is the increase of flux over the level at which daily flux is calculated, or the increase of flux over the underlying burst when the event is superposed on another burst of long duration.

Polarization is expressed by the polarization degree and sence as follows:

R or L	right- or left-handed polarization,
W, M or S	weak, moderate or strong polarization,
0	almost zero or unable to detect polarization deu to small increase of flux.
00	polarization degree of less than 1 percent.

The following symbols may be attached after numerical values in table, if necessary.

D	greater than, or later than,
E	less than, or earlier than,
U	approximate, or uncertain.

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 sideband 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	λ /2 vertical	λ /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 observed values,
MED	median,
UD	value of the uppermost decile when they are ranked according to magnitude,
LD	value of the lowest decile when they are ranked according to magnitude,
U	uncertain,
E	less than,
C	influenced by, or impossible because of, any artificial accident,
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.

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 1_0, 1+, 2-, 2_0, 2+, 3-, 3_0, 3+, 4-, 4_0, 4+, 5-, 5_0 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 respectively distinguished by marks ', '' and ''' from these of the 15 MHz wave for WWV and WWVH. 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 optical 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 waves received at Inubo. The transmitting stations are listed in the following table.

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.

Transmitting Stations

Name	Location (Geographic Coordinate)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Rugby	52°22'N	001°11'W	GBR	16.0	40	9550
Cutler	44°38'N	067°17'W	NAA	17.8	1000	10640
Jim Creek	48°12'N	121°55'W	NPG	18.6	250	7620
North West Cape	21°48'S	114°09'E	NWC	22.3	1000	6990
Aldra	66°25'N	013°08'E	AL3	13.6	10	7820
Reunion	20°58'S	055°17'E	RE3	13.6	10	10970
North Dakota	46°22'N	098°20'W	ND3	13.6	10	9140
Haiku	21°24'N	157°50'W	HA3	13.6	10	6100

IONOSPHERIC DATA

MAY. 1976 | FXI (0.1 MHZ) | 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	X 50	X 53	X 50	X 54	54															X 68	X 65	X 63	X 63	X 58
2	X 53	X 51	S 51	X 50	X 50															X 67	X 71	X 67	X 65	X 60
3	60	X 57	X 54	X 40	X 36															X 59	X 52	X 50	X 52	X 43
4	S 45	X 44	X 43	X 41	A																X 61	A	A	45
5	45	42	X 41	X 40	X 35																X 57	57	S 53	A
6	S 50	U S 47	X 46	U S 43																	X 67	X 61	X 61	X 58
7	X 55	X 50	X 47	X 42																	X 68	X 63	X 55	X 52
8	X 50	X 50	X 46	X 46																	X 76	X 65	A	A
9	S 52	S 52	X 48	X 47																	X 54	A	A	X 49
10	A	A	46	45	43																X 70	X 65	X 61	X 52
11	X 51	53	50	50	45																X 70	X 60	X 55	S 50
12	X 47	X 40	X 42	43																	X 68	67	X 57	X 53
13	X 52	S 52	49	48	47																X 68	A	S 65	53
14	50	50	S 45	X 47																	X 72	X 63	X 52	X 48
15	X 45	X 45	46	45	46																A	U S 69	65	59
16	A	58	53	51	53																X 73	X 72	X 70	X 64
17	X 58	X 56	X 52	X 51																	X 72	X 70	X 67	X 63
18	X 60	X 57	X 54	X 55																	X 75	X 71	69	70
19	67	63	63	61	58																X 77	X 80	X 67	X 63
20	X 57	X 53	X 53	X 50																	X 65	X 62	X 57	S
21	S 51	X 55	X 52	X 50																	X 69	X 67	66	65
22	64	61	53	48	55																72	68	X 58	X 53
23	X 49	59	60	61	48																X 70	X 65	X 64	X 53
24	X 54	U S 52	U S 50	51																	X 79	X 65	X 52	X 50
25	X 50	X 45	X 45	X 44																	X 79	X 75	X 55	X 40
26	X 39	X 40	X 42	X 40																	S	X 83	X 65	X 46
27	X 43	X 42	X 42	X 42																	X 76	X 70	X 64	64
28	A	A	X 51	X 53																	X 89	X 83	X 75	X 72
29	X 70	X 64	X 60	X 57																	X 81	X 75	X 73	70
30	67	X 52	40	40																	X 75	X 73	X 65	X 59
31	X 55	X 53	X 51	S 51																	X 80	X 74	X 60	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	29	31	31	12															3	29	28	28	28
MED	X 52	X 52	X 50	X 48	48															X 67	X 71	X 67	X 64	X 53
UQ	X 58	X 56	X 52	51	54															X 68	X 76	X 72	X 66	X 63
LQ	X 50	X 47	X 46	X 43	44															X 63	X 68	X 63	X 56	X 50

MAY. 1976 | FXI (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOF2 (0.1 MHZ) | 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	43	46	43	47	F 47	S 47	53	50	55	55	C	56	55	55	60	58	60	61	59	61	58	56	56	51
2	46	44	S 44	43	43	51	45	50	46	49	54	58	59	55	61	65	61	61	56	60	64	60	58	53
3	F 50	50	47	33	30	42	37	53	55	56	W	58	48	65	53	52	60	47	45	52	45	43	45	36
4	S 38	37	36	34	A	45	57	A	57	51	A	50	49	49	49	A	67	71	67	65	54	A	A	F
5	F 38	F 33	34	33	28	34	A	R	A	A	A	A	R	A	A	48	48	A	43	50	50	F 48	S 46	A
6	S 43	U S 40	39	U S 36	S 36	40	48	45	48	53	A	56	A	A	52	58	A	A	A	64	60	54	54	51
7	48	43	40	35	34	40	46	53	47	51	56	A	62	69	68	59	62	56	61	66	62	56	48	45
8	43	43	39	39	40	49	54	52	56	57	49	53	53	59	55	56	63	54	60	67	69	58	A	A
9	S 45	S 45	41	40	46	51	44	46	44	A	A	A	A	46	48	50	55	54	57	55	47	A	A	42
10	A	A	F 36	F	F 33	46	47	A	A	56	51	47	A	51	53	57	62	58	55	62	63	58	54	45
11	44	F 43	F 40	F	F 38	46	47	A	A	A	48	50	R	R	51	54	56	49	53	65	63	53	48	S 43
12	40	33	35	F	A	43	A	A	A	A	47	43	E G 44	46	48	A	A	A	A	60	61	F 58	50	46
13	45	S 45	F 40	F	F 37	43	A	47	44	50	A	47	48	51	48	50	51	52	51	62	61	A	S 58	F 43
14	F	F 43	S 38	40	37	40	A	A	51	48	R	51	50	50	A	46	A	51	60	72	65	56	45	41
15	38	38	F	F 34	F 37	45	53	55	58	52	A	A	A	A	A	A	51	53	57	A	A	U S 62	F	F 52
16	A	F 49	F	F 40	F 43	47	A	A	A	A	58	63	60	56	55	51	54	51	50	61	66	65	63	57
17	51	49	45	44	43	47	61	67	63	54	63	A	63	60	A	55	56	54	A	A	65	63	60	56
18	53	50	47	48	45	50	50	53	59	59	56	54	54	58	61	A	A	A	58	63	68	64	F 60	F 60
19	F	F	F	F	F 44	53	53	57	61	63	51	54	57	54	54	56	58	57	58	65	70	73	60	56
20	50	46	46	43	45	49	56	60	66	62	56	A	52	53	54	55	A	A	A	73	58	55	50	I S 47
21	S 44	48	45	43	40	48	A	A	A	A	A	51	48	56	58	53	50	50	A	57	62	60	F	F
22	F	F 48	F 43	F 41	F 45	44	47	46	A	A	63	60	53	51	52	56	54	50	58	63	F 61	F 58	51	46
23	42	F	F 50	F	F 36	40	50	A	A	A	A	52	50	A	A	A	50	A	A	A	63	58	57	46
24	47	U S 45	U S 43	F 40	39	46	50	52	A	52	50	52	53	R 48	50	49	A	A	51	63	72	58	45	43
25	43	38	38	37	36	44	53	52	61	58	49	A	55	53	50	50	49	52	57	68	72	68	48	33
26	32	33	35	33	36	41	55	50	48	48	53	48	51	49	48	47	50	A	62	73	S 78	76	58	39
27	36	35	35	35	36	46	58	67	70	A	A	A	A	47	R	55	61	66	68	A	69	63	57	F 55
28	A	A	44	46	45	50	48	49	58	A	53	55	50	46	49	50	64	73	76	82	82	76	68	65
29	63	57	53	50	47	56	63	70	65	50	50	49	57	55	55	58	60	62	61	68	74	68	66	F
30	F 58	45	F 31	F 30	33	38	43	A	52	49	A	52	A	A	51	58	53	51	56	65	68	66	58	52
31	48	46	44	S 44	44	45	49	54	49	48	48	A	55	49	52	55	54	57	63	66	73	67	53	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	25	27	28	25	29	31	25	21	22	21	18	22	23	25	25	26	25	23	25	27	30	28	26	26
MED	44	45	40	40	39	46	50	52	56	52	52	52	53	53	52	55	56	54	58	64	64	59	55	46
UQ	48	47	44	43	44	48	54	55	61	56	56	56	56	56	55	57	61	60	61	66	69	66	58	53
LQ	42	39	37	35	36	42	47	50	48	50	49	50	50	49	50	50	51	51	55	61	61	56	48	43

The Radio Research Laboratories, Japan

MAY. 1976 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOF1 (0.01 MHZ) | 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 automatio operation

Day \ Hour	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							330L	400L	400	410	C	440	440	430	430	420	390	350						
2								400	430L	430	430	430	440	A	A	410	390	L						
3								390	400	420	420	430	410	410	400	390	A	350	300					
4								A	A	A	A	430	440	420	A	A	A	A						
5								370	A	A	A	A	410	A	A	390	A	A						
6								A	400	A	A	A	A	A	A	410	A	A						
7							360	380	400	420	A	A	A	A	420	410	A	A						
8								420	A	A	430	440	430	430	430	410	390	A						
9							390L	390	400	A	A	A	A	420	410	A	A	A	L					
10							360	A	A	420	430	450	A	A	430	A	A	A						
11								A	A	A	430	430	430	430	430	410	390	370						
12								A	A	A	A	430	440	420	A	A	A	A						
13						L	A	A	410	420	A	440	430	430	430	420	410	360						
14						320	A	A	A	430	430	430	430	430	A	420	A	A	A					
15							380	A	A	A	A	A	A	A	A	A	410	380						
16								A	A	A	A	450	450	450	430	430	410	A						
17						370	A	A	A	440	A	A	440	A	A	430	400	380						
18							390	410	420	A	430	450	450	A	430	A	A	A						
19							390	420	420	A	440	440	440	440	430	430	410	400	330L					
20						370	400	A	A	A	A	A	A	A	A	A	A	A						
21							A	A	A	A	A	A	440	A	430	410	400	360						
22							A	A	A	A	A	A	440	A	440	420	400	380						
23						330	A	A	A	A	A	A	440	A	A	A	390	A						
24						320	360	A	A	410	420	430	430	430	A	A	A	A						
25						UL 340	370	400	410	410	430	A	430	430	430	420	380	380						
26						340	360	A	A	430	A	A	430	A	430	410	400	A						
27						A	A	A	A	A	A	A	A	430	430	420	A	A						
28						330	400	A	A	430	A	A	A	430	420	A	A	A	A					
29					250	340L	380	A	410	450	430	430	430	430	420	410	A	A						
30						320	360	A	A	420	A	420	A	A	A	A	380	360	A					
31						340	380	A	A	A	430	A	430	430	430	410	A	370						
	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	11	15	10	11	14	12	16	22	17	19	20	15	12	2					
MED					250	340	380	400	410	420	430	430	435	430	430	410	400	370	315					
UQ						340	390	410	415	430	430	440	440	430	430	420	405	380						
LQ						325	360	390	400	420	430	430	430	430	425	410	390	360						

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1976 | FOE (0.01 MHZ) | 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 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						A 225		A	290	300	C	320	A	A	305	A	270	230	A					
2						180	240	265	300	305	320	320	310	295	A	300	275	225	S					
3						180	225	260	290	300	310	320	305	300	300	290	260	220	180					
4						180	220	255	290	300	305	315	320	A	A	A	A	A	185	S				
5						180	230	255	290	300	300	305	310	A	310	290	265	225	175	E				
6					S	180	225	260	280	300	300	300	295	A	A	295	265	225	185	S				
7					E	185	225	260	285	300	300	305	300	290	A	300	260	230	190	S				
8					E	A 220	270	290	300	295	300	325	A	315	300	270	230	165	E					
9					E	160	220	270	295	310	320	325	315	300	310	300	270	230	S	E				
10					E	A 225	270	295	300	310	A	A	A	A	300	275	225	A	S					
11					S	180	230	275	295	300	305	A	A	305	300	295	270	230	180	S				
12					E	190	240	275	295	305	315	320	310	330	315	300	275	220	150	S				
13					S	200	235	270	295	300	305	305	A	A	310	300	270	225	180	S				
14					S	190	220	275	295	305	310	305	A	A	325	A	270	230	185	S				
15					S	200	245	270	300	315	315	305	295	A	320	300	275	230	180	E				
16					E	185	255	275	300	305	305	305	305	A	A	A	290	240	200	S				
17					S	200	250	285	300	315	320	305	A	A	A	A	285	240	195	S				
18					S	190	255	285	305	315	320	320	305	A	320	305	290	250	200	E				
19					S	195	255	290	305	305	320	330	325	310	300	300	285	245	190	E				
20					S	200	240	275	300	305	B	315	305	285	A	A	270	225	185	E				
21					E	200	240	270	295	305	305	315	300	A	A	A	270	240	195	S				
22					A	190	235	275	300	310	320	320	315	310	320	300	275	245	195	S				
23					S	205	235	275	295	305	310	310	325	315	300	300	275	240	195	E				
24					A	190	235	260	290	290	A	A	320	325	320	300	275	240	185	E				
25					A	200	240	270	300	315	315	305	320	320	310	300	275	235	195	E				
26					115	200	240	275	295	300	305	315	300	300	300	300	280	240	195	A				
27					120	195	240	270	295	300	310	325	315	335	325	305	270	230	185	E				
28					S	180	225	270	295	305	310	305	300	295	305	300	280	235	190	A				
29					125	185	235	265	290	295	305	305	320	305	310	305	285	240	195	E				
30					S	180	215	270	300	310	315	315	315	A	315	295	275	240	200	E				
31					E	200	240	275	290	300	310	310	300	300	305	305	275	230	195	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					11	28	31	30	31	31	28	28	25	17	22	24	30	30	27	13				
MED					E	190	235	270	295	305	310	312	310	305	310	300	275	230	190	E				
UQ					E E 115	200	240	275	300	305	315	320	320	315	320	300	275	240	195	E				
LQ					E	180	225	265	290	300	305	305	300	300	305	300	270	225	182	E				

The Radio Research Laboratories, Japan

MAY. 1976 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOES (0.1 MHZ) | 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	E S 13	J A 40	23	23	J A 20	18	G 20	30	G	33	C	38	37	38	G 30	J A 61	31	31	39	J A 28	23	E S 16	E S 15	E S 16
2	E S 15	E S 16	E S 16	E S 15	E S 13	G	G	G	32	34	37	41	39	49	J A 48	G	G	31	27	J A 45	22	E S 16	E S 15	E S 16
3	E S 15	E S 16	22	J A 21	J A 25	28	29	30	33	36	35	G	G	G	G	G	37	30	G	E S 15	E S 15	21	19	E S 16
4	E S 15	E S 15	J A 30	J A 26	J A 63	J A 52	J A 50	J A 67	J A 71	J A 66	J A 61	44	43	39	J A 61	J A 88	J A 64	50	38	J A 41	J A 50	J A 53	52	27
5	J A 26	J A 23	19	E S 15	E S 15	G	50	34	43	J A 54	J A 60	J A 54	37	42	42	39	40	J A 46	21	J A 36	J A 32	J A 34	J A 41	J A 55
6	30	E S 15	E	E	E S 14	23	35	42	39	42	J A 55	J A 46	J A 84	J A 70	J A 54	39	J A 80	J A 65	J A 62	J A 52	J A 50	J A 65	E S 15	E S 15
7	E S 15	E S 15	23	E S 15	E	24	30	33	34	34	48	J A 63	J A 50	J A 46	J A 36	33	40	36	40	J A 30	J A 33	E S 15	E S 15	E S 15
8	E S 14	E S 15	E S 12	26	J A 21	19	29	32	J A 48	J A 55	J A 43	J A 40	37	37	35	32	35	J A 44	J A 54	J A 26	J A 33	J A 29	J A 61	J A 50
9	J A 50	J A 28	J A 53	28	J A 25	25	35	35	33	45	J A 63	J A 55	J A 63	J A 52	G	40	40	J A 51	J A 40	J A 30	J A 30	J A 51	J A 63	J A 53
10	48	42	27	19	44	J A 61	35	J A 54	60	36	38	35	J A 58	J A 44	40	44	43	J A 46	J A 51	J A 38	31	J A 26	E S 15	E S 16
11	E S 15	E	22	E	E S 15	23	J A 40	J A 87	J A 90	J A 61	G	42	36	34	G	G	G	35	30	J A 31	J A 40	J A 39	J A 33	E S 15
12	J A 28	J A 30	J A 31	J A 26	40	36	51	J A 60	J A 53	J A 58	40	40	40	40	J A 53	J A 73	J A 70	J A 121	J A 83	J A 56	28	23	E S 16	23
13	E S 15	E S 12	E	E S 15	E S 15	G 15	52	J A 42	J A 43	37	J A 53	40	34	36	35	43	34	29	20	19	J A 30	J A 74	J A 73	30
14	22	25	J A 25	J A 30	J A 23	J A 40	J A 52	J A 64	J A 55	44	40	37	J A 53	J A 121	J A 65	42	J A 121	J A 53	J A 53	J A 37	E S 15	E S 15	E S 16	E S 15
15	E S 15	J A 30	J A 30	21	19	30	41	41	J A 42	J A 51	J A 66	J A 126	J A 101	J A 65	J A 78	J A 110	J A 88	31	J A 80	J A 95	J A 63	J A 64	J A 64	J A 43
16	J A 74	J A 38	J A 34	J A 30	J A 23	32	J A 60	J A 100	J A 110	J A 85	J A 54	40	40	34	37	36	32	41	J A 40	J A 54	J A 53	28	25	E S 16
17	E S 14	27	26	J A 22	E S 12	24	38	J A 51	44	42	45	J A 56	J A 60	J A 58	J A 90	J A 45	35	31	J A 75	J A 72	J A 53	J A 20	24	E S 15
18	E S 15	22	21	E S 15	E S 13	24	33	34	43	J A 46	G	36	J A 40	J A 58	J A 53	J A 71	J A 76	J A 69	J A 55	J A 55	J A 40	28	J A 23	27
19	J A 26	28	J A 31	E	E S 13	G	31	41	40	J A 71	36	36	G	38	36	G	40	37	J A 33	J A 33	28	E S 15	E S 15	24
20	22	E S 15	E S 15	E	E S 14	27	35	J A 43	43	48	47	J A 63	J A 53	J A 53	J A 53	J A 56	J A 130	D D 200	J A 80	J A 90	E S 15	27	J A 60	35
21	E S 14	E S 15	E S 15	E	E	28	48	J A 48	J A 70	J A 85	63	J A 60	51	J A 67	40	36	37	37	J A 55	J A 45	J A 49	J A 30	J A 35	J A 51
22	J A 30	J A 35	J A 36	J A 33	J A 33	29	J A 54	J A 62	J A 70	J A 65	45	J A 50	G	J A 56	G	G	G	31	J A 70	J A 38	J A 55	J A 28	J A 31	J A 25
23	J A 25	J A 33	J A 25	E S 16	19	28	39	J A 58	J A 65	J A 123	J A 51	J A 54	J A 46	J A 80	J A 61	J A 73	J A 145	J A 103	J A 64	J A 79	24	E	E S 15	E S 15
24	J A 25	E S 15	27	J A 24	J A 25	28	33	41	72	J A 45	36	33	G	36	44	J A 65	J A 60	J A 48	J A 54	J A 33	J A 51	J A 21	25	J A 24
25	J A 30	28	25	24	26	26	30	36	34	G	35	45	G	37	G 29	G 28	31	J A 42	J A 53	J A 53	J A 50	J A 28	J A 28	J A 31
26	J A 23	23	E S 15	23	19	24	35	J A 45	J A 43	40	J A 50	J A 53	J A 70	J A 55	G	38	43	J A 55	J A 61	J A 51	27	27	28	E S 15
27	E S 17	E S 16	E S 15	E S 15	20	J A 34	J A 51	J A 58	J A 62	J A 97	J A 60	J A 100	J A 130	40	40	44	J A 63	J A 114	J A 64	J A 83	J A 24	J A 31	J A 55	J A 58
28	J A 60	J A 51	J A 30	28	21	J A 60	J A 50	J A 46	J A 70	J A 63	J A 55	J A 68	J A 60	33	37	43	J A 51	J A 63	J A 45	J A 48	J A 28	28	E S 16	23
29	E S 15	E S 15	21	E S 16	G	25	36	40	J A 60	J A 53	35	35	34	G 23	G	37	J A 61	J A 53	J A 53	J A 50	J A 50	J A 53	J A 30	J A 52
30	J A 65	37	23	E	E S 14	25	31	52	J A 42	46	J A 53	39	J A 64	J A 60	J A 58	44	32	33	J A 36	J A 33	J A 51	22	E S 16	E S 15
31	E S 13	E S 16	E	E	17	29	34	J A 50	J A 45	J A 60	35	J A 54	40	35	G	38	J A 55	38	J A 46	J A 49	J A 33	23	E S 14	24
	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	30	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	22	23	23	19	19	26	35	J A 43	J A 44	J A 48	46	44	40	42	40	40	40	44	J A 53	J A 45	J A 33	J A 28	25	24
UQ	J A 29	J A 30	J A 28	25	J A 24	30	50	J A 56	J A 64	J A 62	J A 55	J A 54	J A 59	J A 57	J A 53	J A 50	J A 64	J A 54	J A 62	J A 54	J A 50	J A 32	J A 38	J A 33
LQ	E S 15	E S 15	16	E E 15	E S 14	24	32	36	41	41	36	38	36	36	G 30	34	34	34	38	J A 33	28	21	E S 16	E S 16

MAY. 1976 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FBES (0.1 MHZ) | 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 automatio operation

Day \ Hour	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 13	E	E	E	E	17	G 20	30	G	G	C	G	33	36	G 29	32	G	16	38	25	E	E S 16	E S 15	E S 16
2	E S 15	E S 16	E S 16	F S 15	E S 13	G	G	G	G	G	G	G	38	43	48	G	G	G	G	45	E	E S 16	E S 15	E S 16
3	E S 15	E S 16	E	E	19	G	G	G	G	G	G	G	G	G	G	G	37	G	G	E S 15	E S 15	E	E	E S 16
4	E S 15	E S 15	20	F	A A 63	25	45	A A 67	49	48	A A 61	G	42	G	43	A A 88	55	42	G	38	50	A A 53	A A 52	E
5	E	E	E	E S 15	E S 15	G	A A 50	G	A A 43	A A 54	A A 60	A A 54	G	A A 42	A A 42	38	38	A A 46	G	32	30	30	30	A A 55
6	E	E S 15	E	F	E S 14	G	35	36	G	42	A A 55	44	A A 84	A A 70	42	38	A A 80	A A 65	A A 62	47	41	37	E S 15	E S 15
7	E S 15	E S 15	E	E S 15	E	G	G	G	G	G	45	A A 63	50	44	35	G	40	32	33	21	20	E S 15	E S 15	E S 15
8	E S 14	E S 15	E S 12	F	20	G	G	G	44	46	G	G	G	33	G	G	G	43	48	25	30	20	A A 61	A A 50
9	40	19	20	E	G	G	32	34	G	A A 45	A A 63	A A 55	A A 63	G	G	40	38	35	23	28	E	A A 51	A A 63	E
10	A A 48	A A 42	E	F	G	40	G	A A 54	A A 60	G	G	35	A A 58	42	G	44	43	44	50	36	20	E	E S 15	E S 16
11	E S 15	E	E	F	E S 15	G	36	A A 87	A A 90	A A 61	G	35	36	G	G	G	G	35	29	30	40	38	31	E S 15
12	24	24	E	E	A A 40	33	A A 51	A A 60	A A 53	A A 58	40	G	G	40	43	A A 73	A A 70	A A 121	A A 83	51	E	E	E S 16	E
13	E S 15	E S 12	E	E S 15	E S 15	G 15	A A 52	40	38	G	A A 53	G	34	34	G	38	G	G	G	G	28	A A 74	50	E
14	E	E	E	E	G	30	A A 52	A A 64	41	38	G	G	37	G	A A 65	G	A A 121	38	32	37	E S 15	E S 15	E S 16	E S 15
15	E S 15	E	E	E	G	G	G	41	42	49	A A 66	A A 126	A A 101	A A 65	A A 78	A A 110	36	G	41	A A 95	A A 63	47	45	43
16	A A 74	36	32	F	E	29	A A 60	A A 100	A A 110	A A 85	52	G	G	34	34	G	G	40	36	48	49	20	E	E S 16
17	E S 14	E	E	E	E S 12	G	38	50	43	G	45	A A 56	42	47	A A 90	35	G	G	A A 75	A A 72	43	E	E	E S 15
18	E S 15	E	E	E S 15	E S 13	G	G	G	38	44	G	G	G	49	G	A A 71	A A 76	A A 69	54	47	E	E	E	E
19	E	E	E	E	E S 13	G	G	38	G	47	G	G	G	G	G	G	37	G	30	22	E	E S 15	E S 15	E
20	E	E S 15	E S 15	E	E S 14	G	G	42	43	46	47	A A 63	45	48	43	41	A A 130	D A 200	A A 80	42	E S 15	E	45	25
21	E S 14	E S 15	E S 15	E	E	G	A A 48	A A 48	A A 70	A A 85	A A 63	47	41	45	33	G	37	35	A A 55	45	44	24	28	42
22	E	E	E	E	18	G	42	42	A A 70	A A 65	45	50	G	45	G	G	G	G	54	34	50	E	25	E
23	E	E	E	E S 16	G	G	37	A A 58	A A 65	A A 123	A A 51	44	G	A A 80	A A 61	A A 73	G	A A 103	A A 64	A A 79	E	E	E S 15	E S 15
24	E	E S 15	E	E	19	G	G	40	A A 72	G	34	33	G	G	43	48	A A 60	A A 48	47	27	40	E	E	E
25	E	E	E	E	15	15	G	G	G	G	G	A A 45	G	G	G 28	G 26	G	33	43	22	43	21	28	25
26	E	E	E S 15	E	G	G	33	42	43	G	47	43	40	43	G	G	38	A A 55	60	47	25	E	E	E S 15
27	E S 17	E S 16	E S 15	E S 15	G	33	48	53	60	A A 97	A A 60	A A 100	A A 130	40	40	G	50	55	57	A A 83	E	E	22	47
28	A A 60	A A 51	23	E	17	30	35	40	50	A A 63	G	50	47	G	G	43	40	51	33	33	22	24	E S 16	E
29	E S 15	E S 15	E	E S 16	G	G	35	39	G	G	G	G	G	G 23	G	37	49	48	42	40	42	E	27	E
30	E	27	E	E	E S 14	G	G	A A 52	41	40	A A 53	G	A A 64	A A 60	50	43	G	G	36	28	36	E	E S 16	E S 15
31	E S 13	E S 16	E	E	G	28	33	47	40	42	G	A A 54	G	G	G	G	51	32	42	49	33	E	E S 14	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	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E 14	E E 15	E	E	E G 13	G	33	41	43	44	45	35	36	40	33	35	38	38	42	37	28	E E 15	16	E E 15
UQ	E S 15	E S 16	E E 15	E E 15	15	21	44	A A 52	A A 56	A A 56	A A 53	A A 52	46	45	43	43	50	50	54	47	42	24	29	E S 16
LQ	E	E	E	E	G	G	G	32	G	G	G	G	G	G	G	G	G	E G 16	31	28	E E 15	E	E S 15	E

The Radio Research Laboratories, Japan

MAY. 1976 | FBES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | F-MIN (0.1 MHZ) | 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	E S 13	E S 14	E S 14	E S 13	E	E	16	21	20	18	C	20	18	19	17	15	13	10	10	E S 15	E S 17	E S 16	E S 15	E S 16
2	E S 15	E S 16	E S 16	E S 15	E S 13	E S 15	15	18	20	17	18	15	17	19	18	19	13	12	E S 15	E S 15	E S 15	E S 16	E S 15	E S 16
3	E S 15	E S 16	E S 15	E	E	12	15	11	16	16	17	18	17	16	12	16	13	11	12	E S 15	E S 15	E S 15	E S 15	E S 16
4	E S 15	E S 15	E S 14	E	E	14	12	11	11	17	17	17	17	13	16	11	11	11	10	E S 16	E S 12	E S 15	E S 16	E S 16
5	E S 16	E S 16	E S 15	E S 15	E S 15	E S 14	12	11	18	17	17	18	18	18	17	16	17	15	12	E	E S 15	E S 15	E S 15	E S 15
6	E S 13	E S 15	E	E	E S 14	14	11	11	14	18	18	18	17	25	17	15	16	11	13	E S 12	E S 12	E S 15	E S 15	E S 15
7	E S 15	E S 15	E S 16	E S 15	E	13	15	15	17	17	17	20	19	18	16	14	11	13	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15
8	E S 14	E S 15	E S 12	E	E	10	12	16	16	17	16	15	16	16	20	13	14	12	E	E	E	E S 15	E S 15	E
9	E S 13	E	E S 15	E S 15	E	12	16	15	16	18	17	18	17	17	17	16	15	11	E S 17	E	E	E S 13	E	E S 15
10	E S 15	E S 16	E	E	E	E	11	12	17	14	16	17	17	18	12	11	10	10	E	E S 15	E S 15	E S 15	E S 15	E S 16
11	E S 15	E	E S 16	E	E S 15	13	10	11	11	11	17	17	17	20	17	13	12	14	11	E S 15	E S 15	E S 12	E S 14	E S 15
12	E S 15	E S 15	E S 15	E S 15	E	14	10	11	12	16	13	17	20	17	15	15	11	12	10	E S 11	E S 15	E S 18	E S 16	E S 15
13	E S 15	E S 12	E	E S 15	E S 15	10	11	12	17	15	16	18	18	16	13	16	15	12	10	E S 15	E S 13	E S 15	E	E S 15
14	E S 16	E	E S 15	E	E S 12	12	10	11	11	15	15	16	16	16	17	11	16	11	12	E S 15	E S 15	E S 15	E S 16	E S 15
15	E S 15	E S 15	E S 15	E	E S 12	11	11	11	11	17	17	16	18	17	17	17	11	10	10	E	E	E	E S 15	E S 15
16	E S 16	E S 15	E S 15	E S 16	E	10	10	11	16	16	17	17	16	16	19	12	11	12	15	E S 15	E S 15	E S 15	E S 16	E S 16
17	E S 14	E S 12	E S 15	E	E S 12	11	11	16	16	19	26	18	20	20	17	17	17	10	10	E S 14	E	E	E S 16	E S 15
18	E S 15	E S 16	E S 15	E S 15	E S 13	13	11	12	17	16	18	20	16	17	16	15	11	12	11	E	E S 15	E	E S 15	E S 15
19	E S 15	E S 16	E	E	E S 13	E	10	10	11	17	17	13	18	16	17	15	15	15	11	E	E S 15	E S 15	E S 15	E S 16
20	E S 15	E S 15	E S 15	E	E S 14	10	10	11	16	17	32	19	17	16	20	20	15	11	11	E	E S 15	E S 15	E S 16	E S 15
21	E S 14	E S 15	E S 15	E	E	10	10	10	17	11	17	17	17	17	16	10	11	12	12	E S 13	E S 15	E	E S 16	E
22	E	E S 16	E S 16	E S 15	E	12	10	15	16	16	18	20	17	18	12	17	15	11	10	E S 16	E S 11	E S 15	E	E S 15
23	E S 15	E	E S 15	E S 16	E S 11	11	10	10	16	17	17	16	17	17	15	16	18	11	11	E	E S 15	E	E S 15	E S 15
24	E S 14	E S 15	E S 16	E	E	10	11	12	16	16	17	20	17	17	16	16	13	10	11	E	E S 16	E S 16	E S 15	E S 15
25	E S 16	E S 15	E	E	E	E	12	13	12	17	16	17	20	17	16	17	11	11	10	E	E	E S 15	E	E S 15
26	E	E S 16	E S 15	E S 16	E	E	10	11	16	17	17	17	17	18	17	13	16	11	10	E	E	E	E S 15	E S 15
27	E S 17	E S 16	E S 15	E S 15	E	10	12	10	12	16	16	16	16	18	15	16	12	10	10	E	E	E S 12	E S 15	E S 16
28	E S 15	E S 15	E	E S 15	E S 12	10	10	12	16	16	17	15	17	18	16	15	10	10	10	E	E S 16	E S 15	E S 16	E S 15
29	E S 15	E S 15	E S 16	E S 16	E	10	10	16	11	17	18	17	16	15	16	16	17	10	10	E	E S 15	E S 16	E S 16	E S 16
30	E S 16	E S 15	E S 15	E	E S 14	E	10	16	17	17	17	20	17	17	17	17	12	12	10	E	E	E S 16	E S 16	E S 15
31	E S 13	E S 16	E	E	E	10	11	11	15	16	19	16	21	18	15	11	17	12	10	E S 12	E	E S 15	E S 14	E S 16
	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	30	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E S 15	E S 15	E S 15	E	E	10	11	11	16	17	17	17	17	17	16	15	13	11	10	E S 11	E S 15	E S 15	E S 15	E S 15
UQ	E S 15	E S 16	E S 15	E S 15	E S 13	12	12	15	17	17	18	18	18	18	17	16	16	12	12	E S 15	E S 15	E S 15	E S 16	E S 16
LQ	E S 14	E S 15	E S 13	E	E	10	10	11	12	16	17	16	17	16	16	13	11	10	10	E	E	E S 12	E S 15	E S 15

MAY. 1976 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | M(3000)F2 (0.01) | 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 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	280	280	280	310	F 315	S 345	340	345	330	325	C	305	315	300	315	305	315	325	320	310	300	285	305	305
2	305	295	S 290	300	305	335	335	345	280	285	315	310	310	305	285	305	310	325	325	295	295	285	290	270
3	F 280	290	350	320	305	310	350	310	270	265	W	250	210	270	265	270	300	270	255	290	285	260	290	275
4	S 285	270	305	285	A	300	315	A	335	305	A	285	275	270	260	A	300	315	300	325	315	A	A	F
5	F 315	F 295	285	295	285	305	A	R	A	A	A	A	R	A	A	295	300	A	295	295	295	F 290	S 280	A
6	S 280	U S 280	295	U S 305	S 305	325	340	330	340	340	A	315	A	A	275	310	A	A	A	330	295	305	295	315
7	295	300	315	315	310	305	345	350	360	330	320	A	295	300	325	310	330	310	305	300	305	305	310	290
8	295	285	290	285	325	340	335	325	340	350	345	315	315	315	320	310	315	305	295	300	320	335	A	A
9	S 310	S 295	290	300	325	350	300	325	320	A	A	A	A	260	290	290	310	320	335	325	320	A	A	290
10	A	A	F 295	F	F 310	370	315	A	A	340	325	270	A	295	300	305	310	325	305	290	300	300	315	300
11	290	F 290	F 300	F	F 315	325	340	A	A	A	285	300	R	R	285	310	310	295	285	300	315	315	295	S 300
12	305	295	300	F	A	320	A	A	A	A	305	255	G	270	270	A	A	A	A	300	300	F 305	320	310
13	290	S 290	F 290	F	F 295	315	A	320	260	300	A	255	260	295	280	290	295	315	290	305	305	A	S 320	F 300
14	F	F 280	S 295	300	325	315	A	A	345	320	R	295	295	295	A	280	A	300	300	325	325	320	300	315
15	315	290	F	F 290	F 315	315	320	325	325	320	A	A	A	A	A	A	315	305	315	A	A	U S 290	F	F 290
16	A	F 285	F	F 300	F 300	350	A	A	A	A	310	300	305	305	315	315	315	325	290	290	295	295	300	305
17	295	290	310	305	315	295	325	345	335	320	315	A	305	295	A	320	320	320	A	A	290	305	305	300
18	285	290	300	310	300	320	325	325	320	355	325	315	295	300	295	A	A	A	300	290	310	300	F 295	F 295
19	F	F	F	F	F 320	350	340	315	325	345	340	315	310	295	305	305	310	310	300	290	300	300	310	305
20	300	300	305	300	310	285	300	315	330	305	305	A	280	275	295	265	A	A	A	330	300	300	290	I S 285
21	S 295	280	285	280	315	335	A	A	A	A	A	295	250	300	310	315	320	300	A	290	295	290	F	F
22	F	F 290	F 280	F 290	F 315	340	285	230	A	A	310	315	285	290	285	310	310	285	305	295	F 310	F 310	295	295
23	295	F	F 300	F	F 305	295	335	A	A	A	A	305	280	A	A	A	320	A	A	A	300	295	315	295
24	275	U S 300	U S 290	F 280	F 285	290	300	345	A	330	300	290	315	R 265	300	A	A	A	290	295	335	315	300	290
25	295	295	295	305	320	300	305	305	325	345	305	A	310	310	290	300	290	290	295	300	320	325	340	305
26	285	295	285	290	310	305	325	325	295	285	320	290	320	290	290	280	290	A	A	305	S 325	330	330	315
27	305	290	295	315	305	300	310	315	340	A	A	A	A	265	R	290	300	320	315	A	320	295	300	F 300
28	A	A	295	320	310	325	290	295	310	A	320	325	295	285	270	250	280	285	285	290	290	300	285	300
29	285	285	290	290	275	285	295	315	355	295	320	290	305	300	305	295	300	300	305	285	300	285	280	F
30	F 310	320	F 310	F 300	285	305	280	A	320	325	A	305	A	A	A	310	290	295	285	280	295	285	295	290
31	280	310	295	S 285	320	310	300	335	325	335	285	A	300	270	275	290	295	300	285	285	300	315	300	295
	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	25	27	28	25	29	31	25	21	22	21	19	22	23	25	24	25	25	23	24	27	30	28	26	26
MED	295	290	295	300	310	315	320	325	325	325	315	300	295	295	290	305	310	305	300	295	300	300	300	300
UQ	305	295	300	305	315	335	335	335	340	340	320	315	310	300	305	310	315	320	305	305	315	312	310	305
LQ	285	285	290	290	305	302	300	315	320	305	305	290	280	270	278	290	300	298	290	290	295	290	295	290

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MAY. 1976 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1976 | M(3000)F1 (0.01) | 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 automatio operation

Day \ Hour	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 370	L 375	390	360	C	385	380	375	370	355	360	355						
2								370	L 355	370	385	375	385	A	A	355	360	L						
3								360	360	355	380	370	390	360	375	345	A	330	315					
4								A	A	A	A	370	A	360	A	A	A	A						
5								345	A	A	A	A	380	A	A	A	A	A						
6								A	375	A	A	A	A	A	A	A	A	A						
7							360	380	400	395	A	A	A	A	380	370	A	A						
8								355	A	A	395	385	395	385	355	380	340	A						
9							L 325	340	375	A	A	A	A	380	380	A	A	A	L					
10							340	A	A	395	395	380	A	A	340	A	A	A						
11								A	A	A	395	395	390	380	380	365	360	A						
12								A	A	A	A	390	390	A	A	A	A	A						
13						L	A	A	410	390	A	380	400	370	375	A	340	350						
14						A	A	A	A	390	415	405	380	370	A	355	A	A	A					
15							340	A	A	A	A	A	A	A	A	A	A	350						
16								A	A	A	A	395	380	370	385	380	345	A						
17						320	A	A	A	410	A	A	A	A	A	350	355	340						
18							360	365	A	A	415	385	400	A	370	A	A	A						
19							360	A	385	A	405	405	385	385	385	360	A	355	A					
20						335	350	A	A	A	A	A	A	A	A	A	A	A						
21							A	A	A	A	A	A	A	A	370	380	A	A						
22							A	A	A	A	A	A	410	A	365	365	365	340						
23						335	A	A	A	A	A	A	380	A	A	A	350	A						
24						345	350	A	A	415	405	395	390	380	A	A	A	A						
25						U L 350	350	375	390	420	400	A	400	355	370	355	375	330						
26						350	A	A	A	395	A	A	A	A	370	360	A	A						
27						A	A	A	A	A	A	A	A	A	A	335	A	A						
28						A	345	A	A	395	A	A	A	395	380	A	A	A	A					
29					300	365	A	A	365	375	395	395	395	390	370	A	A	A						
30						345	335	A	A	A	A	380	A	A	A	A	370	340	A					
31						350	340	A	A	A	390	A	395	385	350	350	A	340						
	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	9	13	9	10	13	12	16	18	15	18	16	11	10	1					
MED					300	345	350	365	380	395	395	385	390	380	370	358	360	340	315					
UQ						350	360	375	390	395	405	395	395	385	380	368	362	350						
LQ						335	340	355	365	375	392	380	380	370	370	352	348	340						

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MAY. 1976 | M(3000)F1 (0.01)

IONOSPHERIC DATA

MAY. 1976 | H'F2 (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 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	275	300	C	350	325	360	305	320	285	260						
2								265	400	375	325	325	310	345	350	295	280	260						
3								320	325	405	W	405	645	360	395	400	300	370	405					
4								A	280	A	A	390	450	420	470	A	320	270						
5								R	A	A	A	A	R	A	A	370	340	A						
6								270	270	280	A	325	A	A	400	310	A	A						
7							285	250	270	320	315	A	345	315	270	310	265	300						
8								300	270	270	300	345	350	315	315	320	280	305						
9							350	315	350	A	A	A	A	480	400	370	315	280	255					
10							310	A	A	290	325	450	A	365	375	325	300	275						
11								A	A	A	410	370	R	R	400	340	305	340						
12								A	A	A	360	570	G	520	450	A	A	A						
13						265	A	A	500	355	A	500	480	375	435	350	350	300						
14						320	A	A	295	340	R	370	400	375	A	450	A	335	295					
15							300	300	300	A	A	A	A	A	A	A	320	300						
16								A	A	A	340	320	315	345	325	350	305	300						
17						340	260	255	275	310	300	A	320	350	A	305	310	290						
18							315	290	300	270	300	340	400	360	350	A	A	A						
19							280	310	270	280	305	350	330	360	350	335	305	290	275					
20						350	310	300	275	315	320	A	415	A	370	400	A	A						
21							A	A	A	A	A	375	540	350	325	330	320	325						
22							A	585	A	A	300	305	400	385	400	345	300	345						
23						365	280	A	A	A	A	350	430	A	A	A	310	A						
24						335	315	270	A	315	380	375	330	450	370	A	A	A						
25						320	300	330	275	275	350	A	350	350	395	350	365	330						
26						315	275	300	A	425	330	420	335	390	405	415	360	A						
27						315	300	295	A	A	A	A	A	470	R	350	320	300						
28						260	340	330	310	A	320	310	A	430	430	470	350	320	300					
29					300	300	300	280	250	370	325	385	345	345	350	350	305	300						
30						345	410	A	320	310	A	355	A	A	A	310	325	320	310					
31						305	325	A	315	315	385	A	350	450	320	360	A	315						
	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	13	18	19	20	19	19	22	22	24	24	25	24	23	6					
MED					300	320	300	300	288	315	325	362	350	362	372	350	310	300	298					
UQ						340	315	312	318	348	355	390	430	425	400	370	322	322	310					
LQ						305	280	272	272	285	310	340	330	350	338	320	300	290	275					

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MAY. 1976 | H'F2 (KM)

IONOSPHERIC DATA

MAY. 1976 | H'F (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 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	290	285	250	245	220	200	245	225	220	C	210	200	220	210	210	240	230	A	245	250	260	250	245
2	250	250	275	250	250	225	220	230	220	215	215	245	215	A	A	235	220	250	250	A	250	265	265	295
3	300	280	205	200	265	245	240	225	240	230	205	220	200	245	200	250	A	280	250	250	250	305	270	275
4	265	250	285	280	A	275	A	A	A	A	A	240	A	250	A	A	A	A	250	250	A	A	A	300
5	250	285	280	260	300	255	A	250	A	A	A	A	235	A	A	A	A	A	240	A	285	305	315	A
6	260	290	260	250	240	240	260	A	240	A	A	A	A	A	A	A	A	A	A	A	A	295	250	250
7	255	250	250	250	260	240	245	235	205	205	A	A	A	A	210	225	A	265	270	255	245	225	250	250
8	260	255	260	270	250	240	230	215	A	A	230	205	210	200	245	225	265	A	A	250	240	210	A	A
9	A	260	280	275	240	230	260	250	225	A	A	A	A	215	240	A	A	A	250	240	250	A	A	270
10	A	A	290	260	260	A	250	A	A	205	210	200	A	A	270	A	A	A	A	275	250	250	220	250
11	275	285	260	235	235	235	265	A	A	A	200	200	200	215	205	235	250	A	A	260	A	275	300	245
12	275	310	300	250	A	A	A	A	A	A	A	210	205	A	A	A	A	A	A	A	250	250	245	250
13	255	270	275	225	230	225	A	A	210	200	A	225	200	220	230	A	250	250	215	250	245	A	A	250
14	270	280	275	255	250	A	A	A	A	220	200	200	250	245	A	260	A	A	A	245	225	215	250	245
15	260	275	275	275	260	230	230	A	A	A	A	A	A	A	A	A	A	250	A	A	A	A	A	A
16	A	A	300	275	250	240	A	A	A	A	A	200	215	205	205	205	240	A	A	A	A	250	245	245
17	245	260	245	260	250	250	A	A	A	220	A	A	A	A	A	245	250	240	A	A	A	225	235	245
18	250	260	250	240	250	230	230	220	A	A	205	200	205	A	250	A	A	A	A	A	250	230	260	260
19	265	260	255	225	220	230	230	A	225	A	205	200	195	200	200	240	A	250	A	275	260	235	220	245
20	250	265	250	225	250	245	250	A	A	A	A	A	A	A	A	A	A	A	A	A	225	250	A	265
21	260	275	265	280	250	260	A	A	A	A	A	A	A	A	240	225	A	A	A	A	A	265	305	A
22	250	270	300	290	260	250	A	A	A	A	A	A	200	A	215	215	235	250	A	265	A	240	250	265
23	275	300	250	250	250	250	A	A	A	A	A	A	240	A	A	A	250	A	A	A	225	245	240	260
24	270	250	280	280	265	250	250	A	A	200	210	200	200	230	A	A	A	A	A	260	A	215	235	260
25	270	280	270	270	250	250	245	225	210	200	205	A	200	265	225	245	235	250	A	265	A	245	225	300
26	300	290	295	300	250	240	A	A	A	225	A	A	A	A	240	250	A	A	A	A	230	215	205	225
27	265	270	275	255	250	A	A	A	A	A	A	A	A	A	A	280	A	A	A	A	230	235	250	A
28	A	A	265	250	260	A	260	A	A	A	220	A	A	205	240	A	A	A	A	275	250	245	250	250
29	250	260	260	270	260	245	A	A	230	215	200	205	200	200	240	A	A	A	A	A	A	265	280	285
30	250	250	255	250	270	250	270	A	A	A	A	240	A	A	A	A	230	250	A	285	A	250	260	220
31	275	250	260	255	260	250	260	A	A	A	210	A	210	205	240	250	A	265	A	A	260	230	220	250
	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	28	31	31	29	26	18	9	10	12	13	16	18	15	18	16	11	12	7	16	19	27	25	26
MED	260	270	270	255	250	242	248	230	225	215	205	205	202	215	235	238	240	250	250	258	250	245	250	250
UQ	270	282	280	272	260	250	260	245	230	220	210	222	215	238	240	250	250	258	250	270	250	262	260	265
LQ	250	258	258	250	250	230	230	225	210	202	205	200	200	205	210	225	235	250	245	250	235	230	235	245

MAY. 1976 | H'F (KM)

IONOSPHERIC DATA

MAY. 1976 | H'E (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 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						A 115	A		105	105	C	105	A	A	A 125	A	110	120	A					
2						140	110	105	105	105	105	100	100	100	A	105	105	105	S					
3						125	110	105	105	105	100	105	100	100	100	105	105	110	125					
4						125	110	105	105	100	105	105	100	A	A	A	A	A	A	S				
5						125	110	105	105	105	100	100	105	A	A	105	105	115	125	E				
6					S	135	110	115	105	105	105	100	100	A	A	105	110	105	120	S				
7					E	125	110	105	105	105	105	105	105	105	A	120	105	110	S	S				
8					E	A 110	105	105	105	105	100	100	105	A	110	110	105	110	120	E				
9					E	120	110	110	105	105	105	105	100	100	105	105	105	110	S	E				
10					E	A 110	105	105	105	105	A	A	A	A	A	115	110	115	A	S				
11					S	125	105	105	105	100	105	A	A	105	105	105	105	110	115	S				
12					E	125	105	105	100	100	100	100	100	105	100	105	105	105	110	S				
13					S	135	105	105	105	100	100	105	A	A	A	105	105	105	115	S				
14					S	120	105	100	105	100	105	100	A	A	110	A	100	100	110	S				
15					S	120	105	100	100	100	100	100	100	A	105	105	105	105	110	E				
16					E	120	105	100	105	100	100	100	100	A	A	A	105	105	115	S				
17					S	120	105	110	105	105	105	105	A	A	A	A	110	115	A	S				
18					S	120	110	105	105	105	105	105	100	A	115	105	110	110	110	E				
19					S	110	100	100	100	100	105	105	105	100	100	100	105	105	110	E				
20					S	115	105	100	100	100	B	105	100	100	A	A	105	105	110	E				
21					E	115	105	100	100	100	100	105	100	A	A	A	105	110	115	S				
22					A	120	110	105	105	105	105	105	100	100	100	105	105	105	115	S				
23					S	115	105	105	105	100	100	100	100	100	105	105	110	105	115	E				
24					A	110	105	105	105	105	A	A	100	100	105	105	105	105	110	E				
25					A	115	105	105	105	105	100	105	105	105	120	115	100	105	110	E				
26					120	110	110	105	105	100	105	100	100	105	105	100	110	105	110	A				
27					115	110	105	100	100	100	100	100	100	105	105	105	105	105	110	E				
28					S	110	105	105	105	105	100	100	100	105	105	105	105	105	110	A				
29					125	115	110	105	105	100	105	105	105	105	105	105	110	110	115	E				
30					S	110	110	105	105	105	105	105	100	A	115	110	110	110	110	E				
31					E	110	105	105	105	105	105	105	105	105	100	100	105	110	110	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					3	28	31	30	31	31	28	28	25	17	20	24	30	30	24					
MED					120	120	105	105	105	105	105	105	100	105	105	105	105	105	110					
UQ					122	125	110	105	105	105	105	105	105	105	110	105	110	110	115					
LQ					118	112	105	105	105	100	100	100	100	100	102	105	105	105	110					

The Radio Research Laboratories, Japan

MAY. 1976 | H'E (KM)

IONOSPHERIC DATA

MAY. 1976 | H'ES (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	S	105	105	100	100	105	105	105	G	115	C	110	105	100	100	105	140	100	115	110	100	S	S	S
2	S	S	S	S	S	G	G	G	130	120	110	110	105	105	100	G	G	135	125	115	115	S	S	S
3	S	S	105	100	120	130	125	130	130	125	120	G	G	G	G	G	125	125	G	S	S	150	125	S
4	S	S	125	125	115	125	125	120	115	120	120	125	135	150	105	100	100	100	130	125	120	115	110	115
5	100	150	125	S	S	G	125	125	120	115	110	115	125	180	150	150	125	120	125	120	115	110	105	105
6	105	S	E	E	S	140	125	115	115	115	110	105	100	105	100	140	120	120	120	115	115	115	S	S
7	S	S	100	S	E	145	125	120	120	115	110	110	105	105	100	170	125	125	115	110	110	S	S	S
8	S	S	S	115	105	125	125	130	110	110	110	110	115	100	150	160	145	120	115	115	110	110	105	105
9	105	105	100	105	125	125	120	120	130	120	110	110	110	110	G	125	125	120	120	115	110	110	105	105
10	105	100	100	115	120	100	115	110	110	110	110	100	100	100	140	125	120	115	110	110	110	115	S	S
11	S	E	100	E	S	135	120	115	110	110	G	105	105	110	G	G	G	115	120	115	110	105	105	S
12	100	100	100	120	125	125	120	115	115	110	115	120	115	130	125	115	110	110	110	110	110	110	S	100
13	S	S	E	S	S	110	115	110	110	110	110	105	105	100	135	120	115	115	115	125	115	115	110	105
14	135	100	125	115	125	125	115	110	110	110	110	105	105	125	125	130	110	115	115	110	S	S	S	S
15	S	110	105	120	145	125	125	120	115	115	110	105	105	120	115	110	110	115	115	115	115	110	115	100
16	100	100	100	125	100	120	115	110	110	110	105	105	105	100	100	125	135	115	115	110	105	105	105	S
17	S	100	100	100	S	135	120	115	115	110	110	110	105	100	100	100	120	125	115	115	110	105	100	S
18	S	100	100	S	S	135	125	120	110	110	G	110	110	120	120	120	115	115	115	110	110	105	105	105
19	110	100	105	E	S	G	135	125	110	110	115	110	G	115	110	G	120	120	115	115	110	S	S	105
20	105	S	S	E	S	125	120	120	115	110	110	110	110	105	100	125	110	110	110	105	S	110	105	100
21	S	S	S	E	E	135	120	115	110	110	110	110	105	100	100	140	125	135	120	120	110	110	110	100
22	100	100	100	100	100	125	115	115	110	110	115	110	G	110	G	G	G	120	115	110	105	115	100	100
23	100	100	100	S	135	120	115	115	110	110	110	110	110	110	110	120	115	110	115	110	115	E	S	S
24	105	S	100	105	105	125	120	120	110	110	105	105	G	150	125	120	115	115	115	110	110	100	100	100
25	105	100	100	100	100	100	120	115	110	G	110	110	G	165	100	100	145	115	115	110	105	105	105	105
26	100	100	S	105	120	115	120	115	110	105	105	105	105	110	G	150	125	115	110	110	105	105	105	S
27	S	S	S	S	125	120	110	110	110	110	110	110	110	140	145	125	115	110	110	110	115	115	110	105
28	100	100	100	100	115	115	115	115	110	110	110	105	105	110	140	125	120	115	115	110	110	110	S	110
29	S	S	105	S	G	125	115	115	110	110	115	115	110	100	G	140	120	120	115	115	110	110	100	105
30	100	100	110	E	S	115	125	120	115	120	115	115	110	105	125	130	150	125	120	115	110	110	S	S
31	S	S	E	E	140	120	115	115	110	110	120	110	110	115	G	145	120	125	120	115	110	110	S	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	16	17	22	16	18	28	30	30	30	30	28	30	26	30	24	26	28	31	30	30	28	25	19	18
MED	102	100	100	105	120	125	120	115	110	110	110	110	105	110	112	125	120	115	115	112	110	110	105	105
UQ	105	100	105	118	125	128	125	120	115	115	115	110	110	120	130	140	125	120	120	115	115	115	110	105
LQ	100	100	100	100	105	118	115	115	110	110	110	105	105	100	100	120	115	115	115	110	110	105	105	100

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MAY. 1976 | H'ES (KM)

IONOSPHERIC DATA

MAY. 1976 | TYPES OF ES | 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 automatio operation

Day \ Hour	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		F2	F1	F1	F2	L1	L1	L1		C1		C1	L1	L2	L1	LL21	HL11	LC11	CL31	F2	F1			
2									C1	C1	C1	C2	C2	C2	L2			H2	C2	F2	F2			
3			F1	F1	FF21	C1	C2	C1	C1	C1	C1						C2	C2				F1	F1	
4			F3	F2	F4	C2	C3	C2	C2	C2	C3	C1	H1	HL11	L2	L3	L3	L3	CL11	C2	F3	F3	F2	F2
5	F2	F1	F1				C2	C2	C3	C2	C2	C2	C1	HL11	HL1	H1	C2	C3	C1	C3	F3	F3	F3	F4
6	F2					C1	C2	CL31	C1	C2	C3	C2	C3	L2	L2	H2	C3	C3	C4	C3	F3	F2		
7			F1			C2	C1	C1	C1	C1	C3	C3	C2	L2	L2	HL11	C2	C2	C2	C2	F2			
8				F1	L2	CL11	C1	C1	C2	C3	C2	C1	C1	L2	HL11	HL11	H1	C3	C2	C2	F2	F2	F3	F4
9	F5	F2	F3	F2	CL11	C2	C2	C2	C1	C2	C2	C3	C2	C1		C1	C3	C3	C3	C2	F2	F3	F4	F2
10	F5	F4	F2	F2	CL11	L3	C2	C2	C3	C2	C1	L1	L3	L2	HL22	CL21	CL31	CL41	CL21	L3	F2	F1		
11			F1			C1	C3	C4	C3	C2		L2	L1	C1				C3	C2	C2	F2	F3	F4	
12	F3	F3	F2	F2	C3	C3	C3	C2	C2	C3	C2	C1	C1	C1	C2	C3	C3	C3	C3	L3	F1	F1		F1
13						L1	C3	C2	C2	C2	C2	C2	L2	L2	CL11	C2	C2	C2	C1	C1	F3	F4	F3	F2
14	F1	FF22	FF21	F2	C2	C3	C3	C3	C2	C2	C2	C1	L1	CL11	CL21	CL21	C3	C2	C3	C3				
15		F2	F2	F1	C1	C1	C2	C3	C1	C2	C3	C3	C2	CL22	C2	C3	C2	C2	C4	C5	F3	F2	FF23	F3
16	FF11	F3	F2	F2	L1	C2	C3	C2	C2	C3	C2	C1	C1	L1	L1	CL11	C1	C2	C2	C3	F3	F2	F2	
17		F1	F2	F2		C1	C2	C2	C2	C2	C2	C2	L2	L2	L3	L2	CL11	CL21	CL31	C6	F3	F2	F1	
18		F1	F1			C1	C2	C1	C2	C2		C1	C1	CL21	CL21	C3	C2	C4	C5	C6	F2	F1	F2	F2
19	F1	F2	F1				H1	C2	C1	C2	C1	C1		C1	C1		C2	C2	C4	C2	F2			F1
20	F1					C2	C2	C2	C3	C1	C1	C2	C2	C2	L2	CL12	C2	C3	C3	C4		F1	F2	F5
21						C2	C4	C2	C2	C3	C2	C2	C2	L2	L2	HL11	C2	C2	C3	C4	F3	F2	F4	F4
22	F2	F2	F2	F2	L2	C2	C3	C3	C2	C3	C2	C2		C2				C2	CL61	C2	F3	F1	F4	F2
23	F2	F2	F1		C1	C1	C2	C3	C1	C2	C2	C1	C1	C2	C2	C2	C2	C3	C3	C3	F1			
24	F2		F1	F2	L2	C2	C2	C3	C3	C2	L1	L1		H1	C2	C2	C2	C2	C4	C3	F4	F1	F2	F2
25	F2	F2	F1	F1	L1	L1	C1	C2	C1		C1	C1		H1	L1	L1	H1	C3	C3	C3	F3	F3	F4	F4
26	F2	F1		F1	C1	C1	CL11	C2	C2	C1	C2	C2	C2	C2		H1	C2	C2	C6	L3	F2	F1	F1	
27					C2	C3	C4	C3	C2	C3	C2	C3	C2	H1	H1	C2	C3	C3	C4	C3	F1	F1	F2	F4
28	F3	F3	F4	F1	C2	C2	C2	C2	C2	C3	C2	C2	C1	C1	H1	C2	C2	C2	C4	L3	F3	F2		F1
29			F1			C1	C2	C1	C1	C2	C1	C1	C1	L1		H1	C3	C3	C3	C2	F3	F2	F3	F2
30	F3	F4	F1			C2	C2	C2	C1	C1	C1	C1	C1	L1	CL21	H2	H1	C2	C3	C4	F4	F1		
31					C1	C2	C4	C2	C2	C2	C1	C2	C1	C1		H1	C3	C3	C4	C5	F4	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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MAY. 1976 | TYPES OF ES

IONOSPHERIC DATA

MAY. 1976 | FXI (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 automatio operation

Day \ Hour	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	52	51	51	49	52															71	64	58	56	54
2	53	51	50	49	51															70	65	61	58	54
3	55	56	57	37	34															74	64	55	58	52
4	49	54	55	45	43															68	58	44	43	45
5	46	44	42	41	38															55	59	A	52	50
6	52	50	50	47	44															A	67	62	A	55
7	53	51	48	44	43															81	70	57	51	50
8	50	49	46	44	44															80	78	64	A	46
9	A	45	48	46	48															A	A	50	49	R
10	48	45	44	46	43															69	66	63	57	50
11	46	50	47	48	46															84	80	52	48	48
12	50	42	39	41	40															71	73	66	A	53
13	53	52	52	48	52															69	63	57	52	49
14	47	45	46	45	45															C	C	C	55	C
15	C	C	C	C	C															70	66	60	60	60
16	55	53	A	49	49	52														A	75	71	66	57
17	58	54	53	51	48															68	66	A	63	56
18	59	55	59	47	49															73	80	69	A	65
19	A	59	59	55	54															77	76	70	68	62
20	A	57	55	52	47															80	60	A	53	55
21	52	49	50	52	49															65	70	69	A	A
22	A	A	50	55	50															76	77	59	53	56
23	55	54	55	58	52															75	79	64	60	52
24	52	A	A	54	51															A	79	58	48	46
25	47	44	44	44	40															84	82	70	A	41
26	42	40	41	39	39															89	93	82	A	43
27	38	40	49	A	38															80	82	73	64	63
28	55	55	54	54	54															86	89	82	76	73
29	70	75	70	72	62		75													75	82	73	72	72
30	69	55	45	41	42															70	75	62	57	59
31	53	54	51	48	48															A	A	74	74	63
	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	28	28	29	30	1	1													25	28	27	24	28
MED	52	51	50	48	48	52	75													74	74	63	57	54
UQ	55	54	54	52	51															80	80	70	64	60
LQ	48	45	46	44	43															70	66	58	52	50

MAY. 1976 | FXI (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | 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	46	45	45	43	F	54	53	56	57	54	54	57	58	62	67	69	66	68	63	65	58	52	50	48
2	47	45	44	43	45	42	52	52	55	63	60	57	58	59	66	83	76	72	66	64	59	55	52	48
3	F	F	F	F	28	37	50	67	62	57	E G 44	69	62	88	82	66	77	66	57	68	58	49	52	46
4	43	48	49	39	37	46	73	79	69	53	53	51	55	54	A	66	75	74	69	62	52	38	37	F
5	F	F 36	F 34	F	F	38	44	A	A	A	A	A	46	47	48	49	A	A	49	49	53	A	46	F
6	F	F	F	F 40	F 36	41	57	51	51	55	53	53	54	60	59	64	62	60	59	A	61	56	A	F
7	F	45	42	38	37	48	55	55	51	48	60	64	65	82	79	73	65	63	64	75	64	51	45	44
8	F	F 42	F 39	38	38	52	54	54	55	59	57	56	55	63	77	64	66	64	64	74	72	58	A	40
9	A	F	F	F 37	42	42	52	56	50	50	48	E G 45	47	49	59	67	71	67	I R 62	A	A	44	43	I R 43
10	42	39	38	F	37	A	45	60	A	A	A	48	49	48	59	64	A	A	A	63	60	57	51	F
11	40	44	F	F	F	40	59	58	58	A	56	54	53	57	58	64	A	A	63	78	74	46	42	42
12	F 42	36	33	35	F	38	41	47	A	58	A	E G 45	E G 46	51	A	57	A	58	57	65	67	60	A	47
13	47	46	46	42	F	61	51	A	A	50	55	57	C	C	56	58	62	58	57	63	57	51	46	43
14	41	39	F 37	F	39	48	46	A	A	49	A	51	A	55	C	C	C	67	71	C	C	C	F	C
15	C	C	C	C	C	C	C	C	C	61	54	A	56	55	56	62	63	66	59	64	60	54	F	F
16	F	F	A	F 41	F	F	55	A	62	A	A	A	63	64	61	54	A	A	A	A	69	65	60	51
17	52	48	47	45	42	46	59	77	79	A	A	A	A	74	74	68	67	59	A	62	F	A	F	50
18	F	F	53	F 39	F	48	57	60	66	A	54	56	57	58	67	77	70	A	62	67	F	F 61	A	F
19	A	F	F	F	F 44	45	48	57	64	62	A	57	58	61	56	60	64	62	A	71	70	64	62	F
20	A	F	F	F	F	45	59	73	73	63	66	56	61	58	67	67	79	84	A	74	54	A	47	F
21	F	43	44	F	F	46	48	A	A	A	A	A	A	60	65	60	A	A	55	59	64	F	A	A
22	A	A	F	F	F	45	49	A	A	69	70	67	52	A	59	62	63	56	63	70	F	F 52	F	F
23	F	F	F	F	F	42	51	47	53	57	56	55	55	58	55	A	59	67	69	69	F	58	54	46
24	F	A	A	F 46	F	46	56	57	63	54	54	51	59	55	49	56	A	56	59	A	73	52	42	40
25	41	38	38	38	34	43	58	70	65	54	52	I R 50	54	58	59	59	49	A	A	78	76	64	A	35
26	F	F 32	F	33	33	47	58	50	57	54	54	48	52	51	48	50	53	61	A	83	F	F 76	A	37
27	32	34	33	A	32	43	57	70	A	A	A	A	48	I R 48	A	61	68	75	73	74	76	67	58	57
28	F	F 46	48	48	48	48	52	55	65	68	59	A	A	49	48	53	67	A	82	80	83	76	70	67
29	64	F	F	F	F	56	F 64	74	62	54	A	A	55	60	60	68	67	67	64	69	F 74	F	F	F
30	F	F	F 38	F	F	A	A	60	A	56	47	48	E G 44	49	62	63	63	60	59	64	69	56	51	53
31	47	48	45	42	42	46	60	60	A	52	53	A	53	53	59	63	A	A	A	A	A	F	F	F
	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	18	18	17	16	27	29	24	20	23	21	22	26	29	27	29	22	22	23	25	23	24	18	18
MED	43	44	43	40	38	46	54	58	62	55	54	54	55	58	59	63	66	65	63	68	64	56	50	46
UQ	47	46	46	43	42	48	58	68	65	60	57	57	58	60	66	67	70	67	65	74	72	62	54	50
LQ	41	38	38	38	35	42	50	54	55	54	53	50	52	51	56	59	63	60	59	64	58	52	45	42

The Radio Research Laboratories, Japan

MAY. 1976 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | 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 automatio operation

Day \ Hour	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								400	410	430	450	450	440	430	A	410	400	L						
2								L	420	420	430	440	440	430	430	420	390	L						
3							380	A	A	410	440	430	A	A	400	400	380	A	L					
4						L	L	A	A	450	440	A	430	430	A	A	380	350						
5							330	A	A	A	A	A	420 H	420 H	A	400	A	A						
6							L	L	410	A	A	A	430	420	420	410	390	A	A					
7							L	L	410	430	420	430	440	430	420	410	400	A	L					
8							L	L	A	A	460	440	450	A	420	420	390	A	A					
9							L	400	410	420	430	450	430	430	A	A	A	A	A					
10							390 H	A	A	A	A	A	430	430 H	A	A	A	A	A					
11							L	A	420	A	430	A	430	A	A	A	A	A	A					
12							360	A	A	A	A	450	460	430	A	A	A	A	A					
13						L	A	A	A	A	430	430	C	C	420	410	390	A	L					
14						L	A	A	A	A	A	430	A	A	C	C	C	A	300					
15						C	C	C	C	A	A	A	A	A	430	A	410	360	L					
16							A	A	A	A	A	A	A	440	440	450	A	A	A					
17							A	A	A	A	A	A	A	A	A	420	410	370	A					
18							A	A	A	A	A	A	430	450	430	430	A	A	L					
19							A	A	A	A	A	450	430	440	450 H	420	A	A	A					
20							380	A	430	A	440	460	A	450	430	A	A	A	A					
21							A	A	A	A	A	A	A	430	A	430	A	A	A					
22							360	A	A	A	A	450	460	A	430	420	400	A	A					
23							380	400	A	A	A	440	A	A	440	A	A	A	A					
24						L	360	A	A	450	430	A	430	430	430	420	A	A	A					
25						320	370	A	A	430	440	450	440	430	430	420	400	A	A					
26						L	L	390 L	420	420	430	440 L	430	A	A	A	A	A	A					
27						320 L	A	A	A	A	A	A	440	A	A	A	A	350	310					
28							390	A	A	A	A	A	A	430	420	A	A	A	A					
29						L	A	A	410	420	A	A	A	430	420 H	410	A	360	L					
30						A	A	A	A	410	430	420	440	430	410	400	A	A	A					
31						U L 310	370	A	A	420	420	A	430	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						3	11	4	9	12	15	16	20	19	18	18	12	5	2					
MED						320 L	370	400	410	420	430	440	430	430	430	420	395	360	305					
UQ						320	380	400	420	430	440	450	440	430	430	420	400	360						
LQ						315 L	360	395	410	420	430	430	430	430	420	410	390	350						

MAY. 1976 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | 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 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						165	220	280	300	315	325	A	A	A	A	A	A	A	A					
2						165	210	255	290	305	315	325	A	A	310	290	A	A	A					
3						S	215	260	290	305	315	320	A	A	A	285	260	230	165					
4						B	205	250	280	305	315	320	330	320	310	295	265	225	A					
5						A	215	260	285	300	310	320	325	325	310	285	260	225	170					
6						B	220	260	285	305	310	A	A	325	310	295	270	225	170					
7						175	215	260	290	305	315	320	A	A	315	300	265	220	A					
8						B	215	255	285	305	315	320	330	325	315	300	275	235	A					
9						B	225	270	295	310	325	335	A	335	315	300	275	235	170					
10						B	215	265	295	305	315	320	330	A	310	295	275	235	A					
11						175	220	265	295	305	310	A	A	330	320	305	280	235	A					
12						B	210	255	290	A	315	320	330	330	320	305	280	245	A					
13						180	220	260	A	A	A	A	C	C	325	305	275	230	A					
14						B	215	260	290	305	310	320	335	330	C	C	C	240	A					
15						C	C	C	C	305	A	A	335	335	330	310	290	245	A					
16						B	220	265	295	310	A	A	A	A	A	A	295	255	200					
17						A	235	280	300	315	325	A	A	A	A	A	A	A	A					
18						A	235	280	A	315	325	A	340	340	330	A	285	245	A					
19						200	240	275	300	A	A	A	340	335	320	310	290	250	A					
20						190	235	270	300	320	325	330	A	A	320	300	280	A	A					
21						175	230	270	295	300	A	A	A	A	A	A	290	245	A					
22						B	230	270	295	305	315	A	A	A	A	310	285	A	A					
23						A	230	270	A	310	320	330	335	325	315	310	290	250	A					
24						B	225	265	290	305	A	A	A	330	320	305	275	240	180					
25						190	240	275	A	A	A	A	A	A	A	A	290	245	A					
26						A	A	A	A	A	A	A	330	325	315	300	270	230	175					
27						A	230	270	295	315	320	A	340	330	320	305	280	235	190					
28						A	225	265	295	310	A	A	A	A	325	310	280	240	A					
29						185	230	265	A	A	A	A	A	330	315	300	275	240	A					
30						185	230	270	295	310	A	330	A	A	A	300	270	230	185					
31						A	225	260	290	310	320	A	A	A	A	305	285	240	185					
	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						11	29	29	24	25	20	13	12	16	21	24	27	26	10					
MED						180	225	265	295	305	315	320	332	330	315	300	280	238	178					
UQ						188	230	270	295	310	322	330	338	332	320	305	285	245	185					
LQ						175	215	260	290	305	315	320	330	325	315	298	272	230	170					

The Radio Research Laboratories, Japan

MAY. 1976 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | 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	J A 20	M 21	J A 20	J A 19	J A 18	G	29	G	37	38	43	J A 42	J A 39	J A 55	J A 54	J A 38	J A 34	30	J A 26	J A 33	J A 41	J A 50	J A 45	E S 14
2	E S 14	J A 38	E S 14	J A 20	E S 14	G	28	34	42	38	36	35	36	37	40	33	30	J A 26	J A 33	J A 40	J A 23	E S 14	E S 14	J A 28
3	E S 14	J A 18	E S 14	J A 34	J A 33	J A 28	30	J A 54	52	J A 50	J A 66	52	J A 136	J A 78	J A 47	J A 40	36	J A 58	G	E S 14	E S 14	E S 14	E S 14	J A 17
4	E S 14	E S 14	E S 14	J A 28	J A 24	29	J A 38	J A 63	J A 50	J A 71	37	48	42	40	59	44	37	33	25	J A 32	J A 45	J A 18	J A 26	J A 38
5	J A 30	J A 30	J A 19	J A 58	M 20	20	34	J A 46	J A 60	J A 63	J A 68	J A 77	G	G	43	34	J A 55	J A 80	J A 40	J A 48	J A 41	J A 54	J A 26	J A 39
6	J A 40	J A 38	J A 24	J A 23	J A 19	E B 17	31	35	40	J A 74	J A 74	J A 86	J A 45	G	35	37	33	J A 42	J A 54	J A 80	J A 56	J A 63	J A 65	J A 48
7	J A 23	M 20	M 20	E S 14	E S 14	20	25	36	41	38	38	41	J A 44	J A 40	G	G	39	J A 50	J A 30	J A 77	J A 42	J A 44	J A 70	J A 23
8	J A 32	J A 32	J A 28	J A 39	J A 33	J A 20	25	33	J A 52	J A 59	J A 43	38	40	J A 56	39	36	36	J A 43	J A 34	J A 39	J A 23	J A 55	J A 42	J A 45
9	J A 51	J A 67	J A 19	M 21	E S 14	20	32	38	40	G	40	37	38	35	J A 56	J A 75	42	J A 57	J A 56	J A 120	J A 60	J A 42	J A 35	J A 30
10	J A 20	J A 18	J A 18	J A 22	J A 43	J A 56	27	J A 55	J A 78	J A 79	J A 73	J A 54	J A 44	J A 39	45	J A 51	J A 80	J A 84	J A 64	J A 48	J A 88	J A 52	J A 54	J A 80
11	J A 26	J A 19	M 20	M 20	E S 14	22	32	42	49	J A 68	J A 63	J A 85	J A 63	J A 55	J A 48	J A 81	J A 111	J A 104	J A 55	J A 43	J A 34	J A 26	J A 33	J A 45
12	J A 43	J A 37	J A 26	J A 26	J A 32	34	31	J A 46	J A 67	J A 60	J A 73	J A 44	J A 43	J A 75	J A 69	J A 75	J A 83	J A 72	J A 80	J A 67	J A 42	J A 62	J A 51	J A 55
13	J A 34	J A 28	J A 21	J A 23	J A 18	20	J A 48	J A 78	J A 69	J A 56	J A 48	J A 39	C	C	40	38	42	J A 44	25	E S 14	E S 14	M 21	J A 42	J A 29
14	J A 22	J A 32	J A 30	J A 29	J A 27	24	37	J A 64	J A 50	J A 45	J A 87	J A 133	J A 55	J A 66	C	C	C	J A 65	J A 42	C	C	C	J A 72	C
15	C	C	C	C	C	C	C	C	C	J A 49	J A 73	J A 68	J A 87	48	47	J A 65	J A 59	28	24	J A 28	J A 35	J A 29	J A 54	J A 42
16	J A 53	J A 73	J A 67	J A 33	J A 38	24	40	J A 85	J A 71	J A 90	J A 135	J A 164	J A 70	J A 40	J A 44	J A 40	J A 60	J A 77	J A 86	J A 84	J A 55	J A 50	J A 19	J A 25
17	J A 24	E S 14	J A 19	J A 20	E S 14	24	45	J A 60	J A 52	J A 75	J A 79	J A 121	J A 80	J A 84	J A 80	J A 44	J A 51	J A 34	J A 109	J A 46	J A 69	J A 67	J A 54	E S 14
18	J A 30	J A 40	J A 20	J A 26	J A 20	26	40	J A 56	J A 59	J A 69	J A 66	J A 58	44	G	37	J A 40	42	J A 90	J A 37	J A 45	J A 69	J A 53	J A 66	J A 44
19	J A 54	J A 42	J A 39	J A 43	J A 25	29	39	J A 47	J A 51	J A 48	J A 59	J A 42	G	G	G	42	44	J A 44	J A 70	J A 29	J A 36	J A 64	J A 67	J A 56
20	J A 79	J A 34	J A 25	J A 20	E S 14	24	35	J A 53	J A 50	J A 53	39	J A 45	J A 68	J A 43	35	45	J A 51	J A 131	J A 130	J A 130	J A 75	J A 65	J A 42	J A 30
21	J A 50	J A 46	J A 26	J A 33	J A 25	27	J A 46	J A 67	J A 76	J A 74	J A 86	J A 128	J A 91	J A 66	J A 63	J A 48	J A 76	J A 105	J A 96	J A 45	J A 42	J A 55	J A 119	J A 76
22	J A 86	J A 80	J A 64	J A 43	J A 25	24	35	J A 76	J A 70	J A 53	J A 69	39	J A 45	J A 68	J A 44	J G 29	34	J A 48	J A 42	J A 40	J A 75	J A 45	J A 39	J A 33
23	J A 40	J A 30	J A 20	J A 18	E S 14	21	34	39	J A 56	J A 59	J A 65	J A 47	46	47	J A 84	J A 105	J A 52	J A 45	J A 55	J A 120	J A 85	J A 67	J A 42	J A 44
24	J A 106	J A 89	J A 76	J A 46	J A 25	24	32	J A 45	J A 44	36	J A 42	J A 66	J A 65	40	G	49	J A 67	J A 50	J A 50	J A 82	J A 46	J A 27	J A 31	J A 35
25	J A 20	J A 46	J A 18	J A 26	J A 25	J A 30	30	J A 51	J A 57	J A 51	43	J A 42	35	J A 45	J A 43	38	38	J A 60	J A 67	J A 54	J A 45	J A 85	J A 53	J A 44
26	J A 33	J A 27	J A 30	J A 26	J A 27	J A 29	30	J A 45	J A 44	J A 41	38	37	G	46	42	J A 50	J A 51	J A 54	J A 72	J A 71	J A 42	J A 32	J A 49	J A 25
27	J A 37	E S 14	J A 22	J A 41	J A 30	25	J A 52	J A 69	J A 99	J A 68	J A 90	J A 115	J A 46	45	J A 52	J A 60	J A 125	J A 75	J A 45	J A 37	J A 40	J A 23	J A 33	J A 68
28	J A 49	J A 51	J A 24	J A 30	J A 62	J A 42	J A 38	J A 55	J A 60	J A 51	J A 80	J A 82	J A 61	J A 41	38	49	J A 70	J A 134	J A 79	J A 91	J A 45	J A 42	J A 29	J A 21
29	J A 25	J A 44	J A 40	J A 28	J A 33	29	38	J A 58	J A 86	J A 68	J A 65	J A 77	J A 76	J A 44	G	40	45	J A 66	J A 74	J A 78	J A 60	J A 54	J A 54	J A 43
30	J A 45	J A 54	J A 26	M 20	J A 32	J A 42	J A 73	J A 58	J A 52	38	J A 39	37	42	44	34	33	42	J A 56	J A 65	J A 43	J A 26	J A 59	J A 44	E S 14
31	E S 14	E S 14	E S 14	E S 14	E S 14	22	J A 42	J A 53	J A 64	J A 75	J A 45	J A 61	J A 54	J A 86	J A 63	54	J A 66	J A 85	J A 172	J A 180	J A 135	J A 40	J A 65	J A 35
	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	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	31	31	30	30	30	31	30
MED	J A 32	J A 33	J A 22	J A 26	J A 25	24	34	J A 53	J A 52	J A 56	J A 65	J A 52	J A 45	J A 44	44	43	J A 48	J A 57	J A 55	J A 47	J A 44	J A 50	J A 44	J A 36
UQ	J A 49	J A 46	J A 28	J A 33	J A 32	29	40	J A 60	J A 67	J A 68	J A 73	J A 80	J A 65	J A 56	J A 54	J A 51	J A 66	J A 78	J A 73	J A 80	J A 60	J A 59	J A 54	J A 45
LQ	J A 22	J A 20	J A 19	J A 20	E S 14	20	30	42	J A 49	J A 46	42	42	40	40	37	38	38	J A 44	J A 36	J A 39	J A 36	J A 29	J A 33	J A 25

MAY. 1976 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | 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 automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	G	28	G	35	36	39	37	35	40	48	32	31	28	21	30	35	39	40	E S 14
2	E S 14	19	E S 14	E	E S 14	G	26	33	40	36	36	35	35	35	39	31	29	26	29	37	19	E S 14	E S 14	E
3	E S 14	E	E S 14	20	18	20	28	47	47	39	36	42	46	60	36	38	35	44	G	E S 14	E S 14	E S 14	E S 14	E
4	E S 14	E S 14	E S 14	E	E	18	18	47	50	38	35	45	41	39	A A 59	43	35	30	23	28	42	E	E	31
5	24	E	E	E	E	19	30	A A 46	A A 60	A A 63	A A 68	A A 77	G	G	42	34	A A 55	A A 80	35	46	32	A A 54	18	34
6	27	E	E	E	E	E B 17	29	34	33	44	47	48	39	G	35	35	32	39	55	A A 80	45	46	A A 65	39
7	E	E	E	E S 14	E S 14	20	25	34	37	35	35	38	36	37	G	G	36	49	23	63	33	25	32	E
8	18	E	22	32	23	19	25	32	50	50	40	37	39	55	37	35	34	43	33	38	22	39	A A 42	E
9	A A 51	25	E	E	E S 14	19	32	36	39	G	36	37	36	35	55	45	40	U Y 57	44	A A 120	A A 60	29	26	U Y 30
10	E	E	E	17	E	A A 56	26	47	A A 78	A A 79	A A 73	46	36	35	43	47	A A 80	A A 84	A A 64	43	27	E	25	E
11	E	E	E	E	E S 14	21	28	36	39	A A 68	36	45	35	50	48	44	A A 111	A A 104	55	39	26	23	25	33
12	25	24	19	E	E	27	30	43	A A 67	45	A A 73	40	41	41	A A 69	48	A A 83	37	44	45	33	50	A A 51	29
13	E	E	E	E	E	20	44	A A 78	A A 69	46	41	39	C	C	38	35	34	39	21	E S 14	E S 14	E	31	23
14	18	18	19	E	E	22	37	A A 64	A A 50	45	A A 87	38	A A 55	50	C	C	C	56	24	C	C	C	18	C
15	C	C	C	C	C	C	C	C	C	47	47	A A 68	49	48	42	43	37	G	22	23	32	24	42	32
16	18	32	A A 67	19	17	20	38	A A 85	48	A A 90	A A 135	A A 164	50	35	34	33	A A 60	A A 77	A A 86	A A 84	26	20	E	18
17	E	E S 14	E	E	E S 14	21	43	52	47	A A 75	A A 79	A A 121	A A 80	49	57	33	36	28	A A 109	33	E	A A 67	23	E S 14
18	20	24	E	E	E	24	37	43	44	A A 69	48	47	40	G	35	36	42	A A 90	28	33	19	34	A A 66	40
19	A A 54	33	25	19	18	28	36	41	48	46	A A 59	39	G	G	G	38	42	38	A A 70	23	32	38	47	19
20	A A 79	E	E	17	E S 14	23	33	43	42	46	37	37	52	34	34	43	44	39	A A 130	23	36	A A 65	E	19
21	26	24	E	19	E	25	43	A A 67	A A 76	A A 74	A A 86	A A 128	A A 91	35	43	42	A A 76	A A 105	38	41	33	42	A A 119	A A 76
22	A A 86	A A 80	32	26	E	22	33	A A 76	A A 70	44	68	39	44	A A 68	38	G 28	32	37	42	32	44	40	27	20
23	25	20	E	E	E S 14	20	32	34	44	52	48	41	45	46	36	A A 105	46	40	44	23	36	31	30	19
24	E	A A 89	A A 76	E	25	23	30	42	42	35	41	46	37	38	G	39	A A 67	41	41	A A 82	E	25	26	E
25	19	E	E	E	E	G	29	48	45	36	37	36	35	37	42	35	36	A A 60	A A 67	44	E	19	A A 53	20
26	24	20	21	E	19	22	28	31	34	35	36	37	G	46	42	47	43	53	A A 72	69	25	27	A A 49	18
27	26	E S 14	E	A A 41	22	24	48	65	A A 99	A A 68	A A 90	A A 115	40	45	A A 52	50	49	33	28	35	23	E	26	29
28	20	E	E	20	20	32	32	43	51	44	46	A A 82	A A 61	39	35	47	42	A A 134	63	48	20	40	19	18
29	E	21	31	E	19	25	37	54	36	38	A A 65	A A 77	51	35	G	40	43	31	25	30	35	47	53	18
30	30	32	E	E	20	A A 42	A A 73	55	A A 52	35	34	35	38	41	34	32	41	55	42	35	22	19	E	E S 14
31	E S 14	E S 14	E S 14	E S 14	E S 14	20	35	47	A A 64	36	37	A A 61	40	43	45	42	A A 66	A A 85	A A 172	A A 180	A A 135	27	39	27
	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	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	31	31	30	30	30	31	30
MED	18	14	E	E	14	21	32	44	48	45	46	42	40	39	38	38	42	43	42	38	30	28	27	19
UQ	26	24	19	19	18	24	37	54	A A 60	58	A A 68	A A 64	49	46	45	44	A A 55	A A 68	64	48	35	40	44	30
LQ	E	E	E	E	E	19	28	36	40	36	36	38	36	35	35	34	35	37	26	30	20	19	18	14

The Radio Research Laboratories, Japan

MAY. 1976 | FBES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | F-MIN (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

Day \ Hour	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	12	13	19	18	16	18	16	18	17	18	16	15	13	13	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
2	E S 14	E S 14	E S 14	E S 14	E S 14	14	15	19	17	17	15	15	17	15	15	17	14	16	16	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
3	E S 14	E S 14	E S 14	E S 13	E S 13	E S 14	14	14	15	14	16	15	15	15	17	17	16	13	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
4	E S 14	E S 14	E S 14	E S 14	E S 14	16	16	14	14	15	17	18	18	18	17	14	15	13	16	E S 14	E S 14	E S 14	E S 14	E S 13	E S 14
5	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	14	14	15	17	17	17	19	17	16	16	15	14	E S 14	E S 14	E S 14	E S 14	E S 13	E S 14
6	E S 14	E S 13	E S 14	E S 14	E S 14	17	15	14	16	16	18	19	15	16	17	19	16	14	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
7	E S 14	E S 14	E S 14	E S 14	E S 14	15	14	16	16	15	18	15	16	18	16	16	15	20	16	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
8	E S 13	E S 13	E S 14	E S 13	E	14	15	14	16	15	18	18	18	18	16	17	15	15	17	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
9	E S 14	E S 14	E S 14	E S 14	E S 14	16	15	16	15	16	18	18	21	18	19	16	14	15	14	E S 13	E S 13	E S 13	E S 14	E S 14	E S 14
10	E S 14	E S 14	E	E	E S 14	14	15	13	17	17	17	17	17	15	16	15	16	15	17	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
11	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	14	14	15	16	16	18	19	18	14	16	15	13	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
12	E S 14	E S 14	E S 14	E S 14	E S 14	15	14	13	16	16	18	18	18	16	16	16	14	14	14	18	E S 14	E S 14	E S 14	E S 14	E S 14
13	E S 14	E S 14	E S 14	E S 14	E S 14	15	14	15	14	16	16	19	C	C	17	14	14	14	16	E S 14	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	16	15	14	15	15	17	18	18	17	C	C	C	15	14	C	C	C	E S 14	C	
15	C	C	C	C	C	C	C	C	C	16	15	19	16	19	17	16	14	14	14	E S 14	E S 13	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	14	14	14	14	16	15	18	18	16	16	16	14	14	14	E S 14	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	13	13	13	15	17	17	18	18	18	16	17	14	14	13	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	14	14	14	15	17	18	19	18	17	17	17	16	15	14	E S 14	E S 14	E S 14	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	14	15	14	14	18	16	18	18	18	19	16	16	15	17	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	16	14	15	15	18	17	17	16	15	18	15	16	15	13	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
21	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	14	16	16	17	16	17	16	15	14	14	15	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
22	E S 14	E S 14	E S 14	E S 14	E S 14	16	15	16	15	17	18	17	17	18	16	16	15	14	13	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
23	E S 14	E S 14	E S 14	E S 14	E S 14	15	16	14	15	15	15	18	17	19	17	15	15	14	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
24	E S 14	E S 14	E S 14	E S 14	E S 13	17	16	15	16	18	19	16	17	18	16	17	17	14	15	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
25	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	15	17	18	16	18	15	19	15	15	15	14	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
26	E S 14	E S 14	E S 14	E S 14	E S 14	13	14	14	16	16	16	18	18	17	20	15	16	16	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
27	E S 14	E S 14	E S 13	E S 14	E S 14	15	15	15	16	16	16	18	17	18	18	18	16	14	16	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
28	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	15	15	16	16	18	16	15	15	15	15	14	15	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	15	15	15	15	16	17	16	18	15	15	17	15	14	14	E S 14	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	14	15	13	15	16	15	17	18	19	17	16	15	14	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
31	E S 14	E S 14	E S 14	E S 14	E S 14	16	13	14	13	15	15	15	14	15	14	14	17	14	13	E S 14	E S 14	E S 14	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	30	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	31	31	30	30	30	31	30
MED	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	14	15	16	17	18	17	18	17	16	15	14	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
UQ	E S 14	E S 14	E S 14	E S 14	E S 14	16	15	15	16	17	18	18	18	18	17	17	16	15	16	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14
LQ	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	14	15	15	16	16	16	16	16	15	14	14	14	E S 14	E S 14	E S 14	E S 14	E S 14	E S 14

IONOSPHERIC DATA

MAY. 1976 | 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 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	290	290	290	300	F	335	345	340	335	340	300	305	280	300	310	320	315	325	315	325	310	290	300	310
2	305	305	295	300	335	315	335	335	305	325	325	285	305	285	275	300	320	330	335	320	295	285	280	290
3	F	F	F	F	305	310	295	290	320	305	G	250	215	275	305	265	300	305	285	315	285	285	280	305
4	285	295	300	280	275	290	330	335	345	305	295	290	255	290	A	275	300	315	310	325	315	315	270	F
5	F	F 305	F 300	F	F	325	325	A	A	A	A	A	255	270	285	275	A	A	320	320	300	A	300	F
6	F	F	F	F 320	F 310	330	345	350	335	310	305	290	280	300	290	295	310	320	310	A	315	285	A	F
7	F	310	305	315	295	335	340	335	320	305	305	290	280	295	310	310	320	315	300	320	325	310	295	295
8	F	F 290	F 295	290	300	325	340	350	350	305	305	305	280	285	315	305	310	320	300	310	330	330	A	295
9	A	F	F	F 295	330	315	315	330	325	300	280	G	255	265	290	300	310	320	I R 315	A	A	300	300	I R 300
10	295	300	290	F	325	A	295	345	A	A	A	285	270	260	295	290	A	A	A	305	305	300	310	F
11	300	295	F	F	F	315	330	330	340	A	315	290	275	285	280	295	A	A	290	310	335	310	285	290
12	F 295	290	290	300	F	320	255	280	A	340	A	G	G	285	A	300	A	315	315	305	300	305	A	295
13	295	300	305	300	F	335	335	A	A	270	300	285	C	C	300	300	320	305	305	315	315	300	305	300
14	285	295	290	F	F	305	325	300	A	A	280	A	275	A	280	C	C	C	305	315	C	C	C	F	C
15	C	C	C	C	C	C	C	C	C	330	335	A	280	285	290	290	305	320	320	315	325	300	F	F
16	F	F	A	F 295	F	F	320	A	320	A	A	A	285	305	305	270	A	A	A	A	315	305	300	295
17	290	290	290	295	290	325	300	330	350	A	A	A	A	295	295	305	315	325	A	320	F	A	F	295
18	F	F	310	F 310	F	325	335	320	335	A	290	305	285	280	295	305	300	A	310	305	F	F 290	A	F
19	A	F	F	F	F 320	340	320	310	310	325	A	325	310	310	285	290	305	310	A	300	315	330	310	F
20	A	F	F	F	F	295	310	300	305	310	315	280	285	260	275	270	280	290	A	325	290	A	295	F
21	F	295	275	F	F	325	320	A	A	A	A	A	A	285	305	290	A	A	310	300	295	F	A	A
22	A	A	F	F	F	310	290	A	A	300	A	325	275	A	290	305	315	310	295	305	F	F 295	F	F
23	F	F	F	F	F	310	305	280	300	300	290	280	290	305	285	A	290	290	300	300	F	305	295	305
24	F	A	A	F 300	F	310	325	300	335	285	310	280	310	305	280	305	A	290	300	A	320	300	285	280
25	280	290	290	295	310	295	310	340	345	325	295	I R 280	285	295	305	305	280	A	A	295	325	330	A	295
26	F	F 285	F	310	305	325	320	340	290	345	320	265	290	290	275	A	285	300	A	305	F	F 330	A	315
27	290	310	295	A	305	310	310	320	A	A	A	A	260	I R 260	A	300	315	305	305	300	315	315	310	335
28	F	F 295	310	310	350	330	315	320	325	340	335	A	A	290	260	265	275	A	300	300	310	295	300	300
29	300	F	F	F	F	290	F 315	325	325	340	A	A	275	295	290	300	300	315	305	295	F 285	F	F	F
30	F	F	F 315	F	F	A	A	320	A	350	270	250	G	265	290	295	305	310	300	295	305	290	285	300
31	280	305	300	290	310	300	315	320	A	315	300	A	285	280	290	285	A	A	A	A	A	F	F	F
	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	18	18	17	16	27	29	24	20	23	20	22	26	29	27	28	22	22	23	25	23	24	18	18
MED	290	295	295	300	308	320	320	328	325	310	302	285	280	285	290	298	305	312	305	305	315	300	298	298
UQ	295	305	305	310	322	325	330	338	338	335	315	290	285	295	302	305	315	320	315	320	318	312	300	305
LQ	285	290	290	295	302	310	310	315	315	302	292	275	260	280	285	288	300	305	300	300	300	292	285	295

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MAY. 1976 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1976 | 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								375	375	375	375	380	385	A	A	365	355	L						
2								L	A	370	375	385	385	395	370	350	365	L						
3							340	A	A	A	360	A	A	A	A	A	A	A	L						
4						L	L	A	A	360	380	A	A	370	A	A	360	365						
5							A	A	A	A	A	A	H 420	H 405	A	355	A	A						
6							L	L	370	A	A	A	375	395	360	365	360	A	A					
7							L	L	375	370	405	390	365	365	380	365	A	A	L					
8							L	L	A	A	365	370	360	A	380	360	360	A	A					
9							L	365	380	375	375	365	395	370	A	A	A	A	A					
10							H 335	A	A	A	A	A	400	H 395	A	A	A	A	A					
11							L	A	365	A	395	A	375	A	A	A	A	A	A					
12							335	A	A	A	A	370	360	A	A	A	A	A	A					
13						L	A	A	A	A	A	395	C	C	375	345	360	A	L					
14						L	A	A	A	A	A	400	A	A	C	C	C	A	370					
15						C	C	C	C	A	A	A	A	A	A	A	365	375	L					
16							A	A	A	A	A	A	A	390	375	355	A	A	A					
17							A	A	A	A	A	A	A	A	A	360	A	380	A					
18							A	A	A	A	A	A	415	370	400	375	A	A	L					
19							A	A	A	A	A	415	420	400	H 375	375	A	A	A					
20							360	A	A	A	390	370	A	355	380	A	A	A	A					
21							A	A	A	A	A	A	A	395	A	A	A	A	A					
22							365	A	A	A	A	385	A	A	370	375	375	A	A					
23							345	370	A	A	A	385	A	A	375	A	A	A	A					
24						L	370	A	A	380	A	A	415	370	370	A	A	A	A					
25						325	350	A	A	400	395	380	405	420	A	370	355	A	A					
26						L	L	L 405	380	395	400	L 375	410	A	A	A	A	A	A					
27						L 325	A	A	A	A	A	A	405	A	A	A	A	A	A					
28							360	A	A	A	A	A	A	370	375	A	A	A	A					
29						L	A	A	380	380	A	A	A	370	H 405	A	A	360	L					
30						A	A	A	A	385	395	405	370	A	375	365	A	A	A					
31						U L 370	A	A	A	380	395	A	385	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						3	9	4	7	11	13	15	18	16	15	14	9	4	1					
MED						L 325	350	372	375	380	390	385	390	380	375	365	360	370	370					
UQ						348	360	390	380	382	395	392	410	395	380	370	365	378						
LQ						325	340	368	372	372	375	372	375	370	372	355	360	362						

MAY. 1976 | M(3000)F1 (0.01)

IONOSPHERIC DATA

MAY. 1976 | H'F2 (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

Day \ Hour	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								265	280	280	340	330	390	335	305	285	285	270						
2								265	330	290	295	345	340	370	365	295	270	255						
3							335	325	280	305	G	425	545	350	280	375	290	280	300					
4						300	245	270	245	320	385	400	385	380	A	360	290	270						
5							280	A	A	A	A	A	510	450	415	415	A	A						
6							245	250	280	335	350	A	395	340	355	325	295	280	A					
7							245	265	300	355	335	350	370	315	295	285	285	295	280					
8							250	250	A	325	355	335	380	370	285	315	300	275	275					
9							300	285	295	365	430	G	505	470	365	310	280	280	255					
10							370	250	A	A	A	A	450	500	350	340	A	A	A					
11							255	275	270	A	315	370	425	380	355	320	A	A	340					
12							460	A	A	280	A	G	G	400	A	340	A	290	305					
13						255	280	A	A	475	370	385	C	C	350	335	295	295	275					
14						255	300	A	A	A	A	440	A	405	C	C	C	305	270					
15						C	C	C	C	285	295	A	395	365	370	335	320	270	255					
16							270	A	290	A	A	A	375	320	325	380	A	A	A					
17							320	275	255	A	A	A	A	320	315	305	280	280	A					
18							260	280	270	A	A	345	370	400	335	305	295	A	270					
19							285	300	305	285	A	305	340	335	380	350	315	295	A					
20							300	280	290	325	290	395	355	425	365	365	330	300	A					
21							300	A	A	A	A	A	A	370	310	335	A	A	280					
22							315	A	A	325	A	285	450	A	355	315	295	290	300					
23							315	395	335	A	350	400	350	330	380	A	340	320	290					
24						270	280	300	280	395	340	440	330	345	425	345	A	325	290					
25						340	295	255	250	300	375	R	390	355	320	320	335	A	A					
26						260	275	275	330	290	335	460	L 390	395	430	A	A	A 340	A					
27						325	A	A	A	A	A	A	505	A	A	335	290	280	270					
28							285	310	295	255	280	A	A	405	485	A	365	A	300					
29						285	275	270	260	290	A	A	A	340	355	310	310	280	270					
30						A	A	A	A	255	460	500	G	470	345	335	300	A	295					
31						305	290	285	A	320	355	A	385	395	360	335	A	A	A					
Hour	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	26	21	19	21	19	19	25	28	27	27	21	21	18					
MED						285	285	275	280	305	350	395	390	370	355	335	295	280	280					
UQ						305	300	285	298	325	372	440	450	402	368	342	315	295	300					
LQ						260	270	265	270	285	325	345	370	340	322	312	290	280	270					

The Radio Research Laboratories, Japan

MAY. 1976 | H'F2 (KM)

IONOSPHERIC DATA

MAY. 1976 | 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 automatio operation

Day \ Hour	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	265	280	265	255	245	235	230	230	230	225	225	210	215	A	A	235	240	260	245	250	270	A	A	245
2	250	290	270	255	215	230	230	A	A	A	230	210	215	200	A	215	230	245	245	255	255	265	295	305
3	295	265	220	A	250	265	255	A	A	A	220	A	A	A	A	A	A	A	270	230	240	245	285	250
4	290	265	245	250	300	250	A	A	A	A	220	A	A	A	A	A	A	A	250	230	A	215	315	A
5	330	280	295	250	260	250	A	A	A	A	A	A	H 185	H 190	A	245	A	A	270	A	290	A	285	A
6	300	275	295	250	250	H 190	A	A	225	A	A	A	A	200	240	250	235	A	A	A	290	A	A	A
7	245	250	245	255	265	235	235	245	A	220	205	A	230	230	220	215	A	A	260	A	240	250	A	265
8	295	270	300	A	290	245	235	235	A	A	230	205	240	A	220	235	A	A	A	265	225	250	A	280
9	A	A	290	260	215	220	255	A	A	225	210	215	195	235	A	A	A	A	A	A	A	280	305	A
10	260	265	295	285	225	A	H 200	A	A	A	A	A	205	H 190	A	A	A	A	A	285	245	255	260	250
11	255	265	285	230	245	255	240	A	A	A	200	A	A	A	A	A	A	A	A	265	215	245	300	A
12	285	300	310	255	270	255	A 260	A	A	A	A	235	A	A	A	A	A	A	A	290	280	A	A	300
13	265	275	260	260	245	A	A	A	A	A	A	A	C	C	A	A	A	A	250	235	225	245	280	295
14	290	295	290	300	265	245	A	A	A	A	A	205	A	A	C	C	C	A	235	1 C 275	C	C	250	C
15	C	C	C	C	C	C	C	C	C	A	A	A	A	A	A	A	A	230	240	240	235	245	A	A
16	290	A	A	280	255	230	A	A	A	A	A	A	A	205	210	230	A	A	A	A	255	245	240	265
17	275	245	280	255	280	235	A	A	A	A	A	A	A	A	A	230	A	235	A	255	290	A	245	260
18	295	280	245	210	250	240	A	A	A	A	A	A	205	200	200	220	A	A	240	260	245	270	A	A
19	A	A	290	260	230	235	A	A	A	A	A	190	190	190	H 180	235	A	A	A	250	255	245	A	240
20	A	260	255	230	260	250	A	A	A	A	205	225	A	A	220	A	A	A	A	215	280	A	255	265
21	315	300	295	305	270	250	A	A	A	A	A	A	A	200	A	A	A	A	A	290	290	A	A	A
22	A	A	A	290	240	245	A	A	A	A	A	215	A	A	240	230	235	A	A	250	265	A	315	295
23	305	260	265	250	235	235	A	230	A	A	A	A	A	A	230	A	A	A	A	250	245	255	260	255
24	300	A	A	255	270	245	230	A	A	215	A	A	195	A	220	A	A	A	A	A	235	245	275	295
25	285	295	295	275	295	255	240	A	A	200	200	215	195	195	A	230	A	A	A	275	230	205	A	285
26	A	320	295	265	275	235	240	220	220	220	215	205	195	A	A	A	A	A	A	A	250	220	A	250
27	A	270	285	A	300	250	A	A	A	A	A	A	A	A	A	A	A	A	A	245	245	230	255	235
28	255	285	260	255	220	290	A	A	A	A	A	A	A	A	220	A	A	A	A	285	245	280	245	250
29	255	290	305	255	270	240	A	A	220	A	A	A	A	230	H 185	A	A	A	A	275	290	A	A	255
30	285	A	250	290	330	A	A	A	A	215	210	195	230	A	225	230	A	A	A	290	240	250	285	245
31	295	270	245	265	275	230	A	A	A	230	215	A	A	A	A	A	A	A	A	A	A	290	270	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	24	24	27	27	30	27	12	5	4	8	13	12	13	12	13	13	4	4	10	23	27	21	19	22
MED	288	275	285	255	260	245	238	230	222	220	215	210	205	200	220	230	235	240	248	255	245	245	275	258
UQ	295	290	295	270	275	250	248	235	228	225	220	215	215	218	225	235	238	252	260	275	275	255	290	285
LQ	262	265	258	252	245	235	230	230	220	215	205	205	195	192	210	230	232	232	240	248	240	245	255	250

MAY. 1976 | H'F (KM)

IONOSPHERIC DATA

MAY. 1976 | H'E (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						E B 140	110	110	110	110	105	A	A	A	105	A	A	A	A					
2						E B 150	115	115	110	105	105	105	105	105	105	105	105	110	B					
3						S	115	110	105	105	105	105	105	105	105	110	110	115	B					
4						B	A 110	110	110	110	105	105	105	110	105	110	110	B						
5						B	115	110	110	105	105	105	105	110	110	110	110	115	B					
6						B	115	110	110	105	105	105	105	105	105	105	110	115	E B 125					
7						E B 140	115	110	110	110	105	105	105	105	110	110	115	115	B					
8						B	115	110	105	105	105	105	105	110	110	110	110	115	B					
9						B	115	110	105	110	110	110	115	110	110	105	110	115	B					
10						B	115	110	105	110	105	105	105	105	A	105	105	110	B					
11						E B 140	115	110	105	105	105	105	105	110	110	105	110	115	B					
12						B	110	110	105	105	105	105	105	105	105	110	110	110	110					
13						125	110	110	105	105	105	105	C	C	105	105	105	110	B					
14						B	110	110	105	105	105	105	105	105	C	C	C	110	110					
15						C	C	C	C	105	105	105	105	105	110	105	110	110	115					
16						B	110	110	105	105	105	105	105	A	A	A	110	110	115					
17						120	110	105	105	105	105	105	105	105	105	A	A	A	A					
18						A	110	110	105	110	105	105	105	110	105	A	110	110	115					
19						135	110	110	105	105	105	105	105	105	105	105	110	110	B					
20						130	115	110	105	105	105	105	105	A	105	105	105	110	110					
21						125	115	105	105	105	105	105	105	A	105	105	110	115	A					
22						B	110	110	105	105	105	105	105	105	A	A	A	A	A					
23						B	110	110	105	105	105	105	105	105	105	105	110	110	110					
24						B	110	110	105	105	105	105	A	105	105	110	110	110	E B 120					
25						120	110	105	105	105	105	105	105	105	110	110	110	110	115					
26						120	105	105	105	110	110	110	110	105	110	105	110	120	B					
27						115	115	110	110	105	105	105	105	110	110	110	110	110	115					
28						115	110	105	105	105	105	105	105	105	105	105	110	110	115					
29						120	110	110	105	105	105	105	105	110	110	110	110	115	115					
30						115	110	110	105	110	110	110	110	110	110	110	110	110	115					
31						B	110	110	105	105	105	105	105	105	105	105	110	110	115					
	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	29	30	30	31	31	30	28	26	27	25	27	28	15					
MED						122	110	110	105	105	105	105	105	105	105	105	110	110	115					
UQ						132	115	110	105	108	105	105	105	110	110	110	110	115	115					
LQ						120	110	110	105	105	105	105	105	105	105	105	110	110	112					

The Radio Research Laboratories, Japan

MAY. 1976 | H'E (KM)

IONOSPHERIC DATA

MAY. 1976 | H'ES (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

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

MAY. 1976 | H'ES (KM)

IONOSPHERIC DATA

MAY. 1976 | 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

Day \ Hour	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	F1	F1	F1		H1		H1	C1	C1	L1	L1	L2	C2	L2	L3	HL14	L3	FF33	EE32	FF31	E5	
2		F3		F2			H2	H1	H2	H2	H2	H1	C1	C1	C2	C1	C2	C2	C2	F2	FF31			F2
3		F1		FF21	F2	L1	H2	H3	H3	H2	C2	C2	C2	C3	C2	C2	H3	C4						F2
4				F1	F2	H1	LH12	H2	C2	H2	H1	H2	H1	H1	H2	H1	H2	H2	H2	E5	E3	F1	F2	F4
5	E5	FF11	F1	F2	F1	H1	H2	H3	H2	C3	C2	C3			H2	H1	H2	C3	C5	F4	F3	F4	F3	E5
6	F3	F2	F2	F2	F1		H3	H2	H2	C2	C2	C2	C2		H1	H2	H2	H3	C3	F6	F3	F5	F4	F4
7	F2	F1	F1			H1	H1	H2	C2	C1	C1	C2	C2	C1			H2	C3	C2	F4	F2	F3	F3	F2
8	F2	F2	F5	F4	F4	L1	H1	H1	C2	C2	C2	H1	H1	H1	H1	H1	H2	H2	C2	F2	F3	F3	F5	F2
9	F4	F2	F2	F1		H1	C2	C2	C3		C1	C1	H1	H1	C2	C2	H2	C2	C3	F3	F3	F3	F2	F3
10	F2	F2	F2	F2	F1	C2	H1	C3	C4	C2	C3	C2	C2	C1	HL22	H3	H5	C6	C6	FF41	F2	F3	FF31	F3
11	F1	F1	F1	F1		H2	H3	H3	C3	C2	C2	C2	CH11	H2	H2	C3	C3	C5	C6	F4	F3	F3	F2	F4
12	F3	F4	F2	F1	FF11	H3	H2	H2	C4	C2	C2	C2	H2	H2	H2	H3	C3	C3	C4	F3	F4	F3	F5	F4
13	F2	FE22	F2	F2	F1	H1	C2	C5	C3	C2	C2	C2			H1	H2	H2	C2	C3			F1	F4	F5
14	F3	F2	F2	F2	F1	H3	H3	C4	H2	C2	C2	C2	H2	C2				C6	C3				F3	
15										C2	C2	C4	C2	H2	C2	C2	C2	H1	C2	F4	F4	F4	F4	F6
16	F3	F3	F7	F4	F2	H2	H2	C6	C3	C3	C3	C3	C3	L2	L2	L2	C3	C4	C6	F5	F3	F3	F2	F2
17	F2		F2	F1		H2	H3	C4	C3	C2	C3	C3	C3	C2	C3	L2	L2	L3	CL33	F3	F2	F5	F2	
18	F2	F2	F1	F1	F2	HL22	H3	C4	C2	C3	C2	C2	C2		H2	L2	H2	C4	C2	F4	F2	F4	F3	F3
19	F4	F4	F4	F3	F3	H2	H3	C3	C3	C2	C3	C2				H2	H2	C3	C4	F4	F3	F5	F4	F3
20	F4	F2	F2	F3		H2	H3	C3	C2	C2	C1	C1	C2	LH11	H1	H2	C3	C2	C4	F3	F4	F5	F2	F3
21	F4	F4	F2	F2	F2	H2	H3	C5	C3	C3	C2	C3	C3	L2	C2	C2	C4	C3	L2	F5	F3	F6	F3	F4
22	F4	F4	F3	F3	F1	HL11	H2	C4	C3	C2	C2	C2	C2	C3	L2	L1	HL12	CL23	CL22	F4	F4	F6	F3	F4
23	F4	F3	F2	F2		H1	H2	C2	C2	C2	C2	C2	C2	H2	C2	C4	C3	C2	C4	F2	F4	F3	F3	F3
24	F2	F5	F3	F2	F2	H2	C2	C3	C2	C1	C2	C2	L2	H1		H2	C2	H3	C3	F3	F1	F4	F5	F2
25	F2	F2	F1	FE22	F2	L2	H2	C3	C2	C2	C2	C1	C1	C2	C2	HC11	H2	C3	C3	F3	F1	F4	F3	F4
26	F5	F3	F2	F2	F3	C2	C2	C2	C2	C1	C1	C1		H1	H1	H2	H3	H2	C6	FF21	F3	F3	F5	FF11
27	FF41		F2	F3	E2	C2	C2	C3	C4	C3	C3	C3	C1	H1	H3	H3	C3	C2	C3	F4	F4	F1	F4	F3
28	F3	F2	F3	F2	F2	C3	C2	C3	C3	C2	C2	C2	C2	C2	H1	H1	H3	C4	C3	F4	F4	F3	F3	F4
29	F2	F2	F3	F2	F3	H3	C3	C3	C2	C2	C3	C4	C2	C1		H2	H2	C2	C2	F6	E5	F6	F4	F3
30	F3	F4	F2	F1	FE23	H4	H4	C4	C2	C2	C1	H1	C1	C1	C1	H1	H3	H3	C5	F4	F3	F3	F2	
31						H2	C3	C3	C3	C2	C1	C2	C2	C2	C2	H2	H2	H3	C6	F6	F3	F4	F5	FF35
	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

MAY. 1976 | TYPES OF ES

IONOSPHERIC DATA

MAY. 1976 | FXI (0.1 MHZ) | 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	C	X 42	C															S 72	S 63	X 48	S	S
2	X 48	S 46	X 44	S	S 36															X 71	A	O S 56	S	S
3	S	S	O S 52	S	A															X 80	O S 70	S 66	U S 63	O S 66
4	S 63	U S 64	S 63	X 47	X 46															A	S 53	A	X 41	S 41
5	S	U S 43	O S 41	S 40	S 33															X 58	X 55	S 50	A	S
6	S	S	S	S 44	S															S 69	S	S 60	C	S
7	S	S	C	S	S															X 85	X 68	O S 54	S	S
8	X 47	S	O S 44	O S 42	O S 44															X 90	X 80	X 58	A	O S 42
9	C	S	S	O S 43	C															X 64	X 60	A	A	A
10	O S 45	S	S	S 43	S 40															A	A	S	S	C
11	S	S 48	S	S	S 40															S	S	A	S	S
12	O S 40	S	S	38	37															O S 74	S	S 60	S 59	S
13	O S 55	S	S	S	S 46															S 69	S 64	S	O S 52	S 49
14	S 48	S	S 45	O S 44	S 44															O S 85	X 62	X 54	S	S
15	A	O S 46	S	S	S 40															X 70	S 63	X 59	S	A
16	S	S 50	X 44	S	S															A	S	S	S	S
17	S 55	S	S	S	S 45															S	A	A	S	A
18	S	S	S	S	S															S 78	S 74	S 64	S	S
19	S	S	S	S	S															S	S	S	S	A
20	A	S	S	S	S															C	C	C	C	C
21	C	C	C	C	C															A	X 67	S	S	A
22	S	O S 56	S	A	O S 44															S 81	S	A	A	A
23	A	A	S	S 48	S															S 85	S	S	S	S 57
24	S	S	S	S	S															X 82	S 66	O S 54	S 50	S
25	46	X 43	43	44	41															O S 94	A	S 57	O S 39	A
26	A	A	A	S	A															S	S 96	S 61	63	61
27	A	A	S	43	41															X 80	X 79	X 70	68	X 66
28	X 52	S	X 58	54	45															C	C	C	C	C
29	C	C	C	C	C															S 78	S 83	S	A	S
30	S	63	58	54	50															S	S	S	S	S 57
31	S 52	S 51	S 51	S 43	S 43															X 80	S 70	A	S	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	11	10	11	15	17															20	17	15	8	8
MED	S 48	S 49	S 45	S 43	S 43															79	S 67	S 58	S 56	S 57
UQ	S 54	S 56	S 55	46	S 45															X 84	S 74	S 60	63	64
LQ	46	S 46	44	S 42	S 40															S 70	S 63	S 54	S 46	S 46

MAY. 1976 | FXI (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOF2 (0.1 MHZ) | 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 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	I S 44	I S 42	C	J S 36	C	C	C	C	C	53	55	55	60	70	78	83	78	70	64	S 60	57	42	I S 43	I S 44
2	S 42	40	38	I S 39	30	42	46	49	59	62	62	59	60	66	74	J R 89	94	81	S 74	65	A	S 50	S	S
3	S	S	S 46	S	A	A	50	66	C	A	A	A	81	93	R 99	85	94	95	76	74	U S 64	60	57	S 60
4	57	58	57	41	S 40	45	79	67	67	57	R 52	53	54	57	66	70	S 77	78	A	A	S 47	A	35	S 35
5	I S 36	U S 37	S 35	34	S 27	S 41	49	A	A	A	A	A	50	R 52	53	52	57	A	A	52	49	S 44	A	S
6	S	S	S	J S 38	I S 37	S 42	50	53	H 48	52	55	A	58	68	70	72	75	68	S 64	63	I S 57	S 54	C	S
7	S	S	C	I S 38	S	S 46	49	49	55	52	54	64	70	84	R 87	82	A	A	A	79	62	48	I S 45	I S 42
8	S 41	S	S 38	S 36	38	50	53	61	54	A	58	C	C	C	C	R 83	72	76	A	J S 84	J S 74	52	A	S 36
9	C	S	S	37	I C 34	J S 43	S 52	60	55	R 51	J R 53	A	A	58	67	80	80	A	A	58	54	A	A	A
10	S 39	S	S	S 37	J S 34	37	46	63	57	A	A	A	A	A	A	A	A	A	A	A	A	S	S	C
11	S	S 42	S	S	S 34	S 38	60	S 64	58	54	57	55	59	63	A	A	A	A	A	S	S	A	S	S
12	S 34	S	S	F	F	S 33	50	55	A	A	A	R 52	A	54	56	62	67	A	59	S 68	I S 62	S 54	J S 53	I S 50
13	U S 49	I S 45	I S 42	I S 42	S 40	S 53	J R 58	R 52	A	A	A	R 58	61	55	61	A	A	S	70	63	S 58	I S 47	S 46	S 43
14	J S 42	S	J S 39	S 38	J S 38	I S 48	J S 53	S 66	49	55	56	A	A	59	66	78	J R 85	87	J S 77	S 79	J S 56	48	S	S
15	A	40	I S 38	I S 36	S 34	A	J R 51	60	65	64	54	53	59	62	62	67	70	J S 68	S 65	J S 64	57	53	I S 45	A
16	S	44	J S 38	I S 36	I S 36	I S 42	56	A	A	55	A	A	A	74	R	62	59	A	69	A	S	S	S	S
17	U S 49	S	S	S	J S 39	S 44	57	73	69	A	55	R 54	62	R 81	84	85	80	I S 67	S 62	I S 58	A	A	S	A
18	S	S	S	S	S	S 43	55	J S 70	60	55	54	A	56	61	73	80	77	69	S 69	S 72	68	58	S	S
19	S	S	S	S	S	S 47	47	A	A	A	59	A	57	63	65	62	67	A	J S 77	I S 78	I S 75	I S 64	S	A
20	A	S	S	S	S	S 43	60	S 76	69	66	63	62	68	68	83	79	A	A	C	C	C	C	C	C
21	C	C	C	C	C	C	A	A	A	A	A	A	J R 64	A	68	71	77	A	A	A	61	I S 56	S	A
22	S	50	I S 48	A	S 38	44	51	61	58	71	A	A	A	66	69	71	72	60	S 64	S 75	I S 68	A	A	A
23	A	A	S	S 42	I S 40	43	49	53	58	59	61	J R 55	62	A	56	58	66	78	84	79	I S 72	S	S	J S 51
24	I S 47	S	S	S	S	J S 49	49	A	61	64	A	54	59	60	54	56	59	61	67	J S 76	60	S 48	S 44	I S 42
25	F	37	F	F	F	42	S 63	66	A	A	49	51	52	58	I C 64	68	60	A	A	U S 88	A	J S 51	S 33	A
26	A	A	A	S	A	46	A	60	A	59	A	53	48	52	51	A	A	A	A	I S 85	90	S 55	F	F 50
27	A	A	S	F	F 31	41	59	74	69	53	A	47	48	49	53	62	R 69	75	74	J S 74	S 73	J S 64	F	60
28	46	S	J S 52	F	F	46	A	A	66	72	56	A	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	56	64	67	70	70	A	S 71	S 72	J S 77	S	A	S
30	S	F	F	F	F	42	62	A	A	54	50	48	50	54	73	70	73	73	64	I S 70	I S 69	I S 54	I S 49	J S 51
31	46	S 45	45	S 37	S 37	S 47	58	60	A	A	51	47	54	55	61	70	75	76	J R 74	74	S 64	A	S	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	11	12	15	17	26	26	22	18	19	19	17	23	26	26	26	24	16	19	24	23	19	10	12
MED	S 44	42	S 40	S 37	S 37	S 43	52	61	58	55	55	54	59	62	66	70	72	74	69	S 73	S 62	S 53	S 45	S 47
UQ	S 47	45	S 47	S 38	S 38	S 46	58	66	66	63	58	55	62	68	73	80	78	78	74	S 78	S 70	S 56	S 49	S 51
LQ	S 41	40	S 38	S 36	S 34	S 42	49	55	55	54	54	52	54	55	61	62	67	68	64	S 64	57	48	S 43	S 42

MAY. 1976 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOF1 (0.01 MHZ) | 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 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						C	C	C	C	L	450	470	450	440	A	420	400L	L	L					
2									420	A	440	L	460	450	A	R 410	A	A	A					
3							L	A	C	A	A	A	A	A	430	410	400	L	L					
4							A	A	L	L	A	440	460	440	440	410	A	A						
5							L	A	A	A	A	A	430	A	A	A	A	A	A					
6							L	L	A	430	430	A	440	440	420	420	400	L						
7								L	L	440	R 440	A	440	440	A	A	A	A						
8							L	L	A	A	440	C	C	C	C	420	400	A						
9							L	L	A	A	A	A	A	A	A	A	A	A						
10						L	L	A	A	A	A	A	A	A	A	A	A	A						
11							L	L	L	440	450	A	450	A	A	A	A	A						
12							A	A	A	A	A	440	A	A	440	A	A	A						
13								L	A	A	A	450	A	450	A	A	A	A						
14							L	L 400	L	C 440	C 440	A	A	A	A	420	410	L 380						
15							450	410	A	A	A	A	A	450	A	A	A	A	A					
16							A	A	A	A	A	A	A	A	A	420	A	A	A					
17							L	A	A	A	A	460	A	A	440	440	A	A	A					
18							A		A	A	A	A	460	460	440	A	A	A						
19								A	A	A	L 450	A	450	450	L 440	A	A	A						
20							A	A	A	A	L 450	L 460	450	A	A	A	A	A	C					
21							A	A	A	A	A	A	A	A	A	A	A	A	A					
22							A	A	A	A	A	A	A	A	A	430	A	A	L					
23							A	L	A	430	A	450	440	A	440	R 440	A	370	A					
24						L	A	A	A	A	A	A	450	440	440	420	400	L 370	A					
25							L 370	A	A	A	450	450	H 450	A	C	410	A	A	A					
26							A	A	A	A	A	U A 460	A	U A 420	A	A	A	A	A					
27						L	L	A	A	A	A	450	440	A	A	A	A	A	L					
28						L	A	A	A	A	440	A	C	C	C	C	C	C	C					
29						C	C	C	C	C	C	C	440	430	430	420	A	A	A					
30						A	A	A	A	A	A	440	430	440	A	A	A	A	A					
31						L	L	A	A	A	A	440	440	430	420	420	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							2	2	1	5	11	12	17	14	11	15	6	3						
MED							410	405	420	440	440	450	450	440	440	420	400	370L						
UQ										440	450	460	450	450	440	420	400	375						
LQ										430	440	440	440	440	430	415	400	370						

MAY. 1976 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOE (0.01 MHZ) | 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 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						C	C	C	C	325	A	A	A	A	A	305	270	230	S					
2						S	220	270	305	320	330	330	A	A	A	A	A	A	S					
3						B	215	265	I C 295	320	A	A	A	320	A	A	C 270	240	S					
4						S	210	260	290	315	330	340	350	340	320	300	275	240	S					
5						S	220	265	295	310	330	A	330	340	325	305	275	230	S					
6						S	215	260	285	310	320	A	340	A	325	305	280	235	S					
7						S	220	270	290	315	A	A	A	A	320	305	280	245	S					
8						170	H 225	270	295	310	330	C	C	C	C	310	280	240	S					
9						S	230	270	295	320	A	I C 330	330	A	A	A	A	240	165					
10						S	215	270	300	320	330	A	A	345	335	310	280	240	S					
11						S	220	270	A	A	A	A	340	A	330	310	280	235	S					
12						S	220	275	300	A	A	A	330	345	335	320	285	245	S					
13						S	230	280	A	A	A	A	A	A	330	310	280	230	S					
14						S	210	275	300	325	C	350	345	340	320	A	A	250	S					
15						S	A	260	290	A	A	C	360	345	340	A	A	A	S					
16						S	240	280	300	A	A	A	A	A	A	A	290	255	180					
17						170	240	285	310	A	330	A	345	A	A	325	280	250	185					
18						S	235	285	310	A	A	A	A	345	A	325	290	250	160					
19						B	245	285	300	A	A	A	340	340	330	320	290	245	160					
20						180	245	285	A	A	330	A	A	A	335	315	285	240	C					
21						C	230	280	300	A	R	A	A	A	A	A	A	A	S					
22						180	230	270	305	A	A	A	A	A	A	A	A	A	A					
23						170	230	275	300	A	A	A	A	A	340	320	290	250	190					
24						A	225	265	290	A	A	A	A	340	330	310	275	240	170					
25						B	230	A	A	300	A	A	A	A	C	A	A	245	B					
26						B	230	260	A	A	A	A	A	A	330	300	275	240	180					
27						A	225	280	310	325	A	A	345	R 340	325	300	275	230	A					
28						A	220	A	A	A	A	A	C	C	C	C	C	C	C					
29						C	C	C	C	C	C	C	A	A	330	310	280	240	180					
30						170	230	270	300	A	A	A	A	340	A	310	280	230	170					
31						175	230	275	A	A	A	340	340	330	A	300	280	240	170					
	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	28	27	22	13	8	5	12	13	17	21	23	26	11					
MED						170	228	270	300	320	330	340	340	340	330	310	280	240	170					
UQ						178	230	280	300	320	330	340	345	345	335	315	282	245	180					
LQ						170	220	268	295	310	330	330	335	340	325	305	275	235	168					

The Radio Research Laboratories, Japan

MAY. 1976 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOES (0.1 MHZ) | 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	25	23	C	E S 16	C	C	C	C	C	42	J A 44	J A 42	36	J A 41	J A 52	G 23	G	G	20	J A 25	J A 30	J A 28	J A 32	J A 33
2	24	18	J A 30	25	20	19	26	35	42	J A 44	38	39	J A 47	43	J A 52	35	J A 55	J A 39	J A 50	J A 57	60	J A 53	25	E S 16
3	E S 16	E S 16	27	22	J A 74	J A 120	J A 30	J A 50	C	J A 64	J A 85	J A 75	J A 71	J A 66	J A 74	36	31	28	18	E S 16	E S 16	E S 16	E S 16	J A 24
4	J A 30	21	32	20	17	23	J A 54	J A 41	J A 42	J A 75	J A 56	42	43	40	36	36	J A 48	J A 60	J A 89	J A 116	J A 30	J A 56	J A 37	J A 25
5	J A 24	23	24	22	E S 16	18	28	J A 55	J A 68	J A 60	J A 71	J A 61	G	J A 51	50	43	J A 48	J A 70	J A 70	J A 52	J A 50	J A 54	J A 44	J A 41
6	J A 30	E S 16	24	23	E S 16	E S 16	30	37	J A 41	42	43	J A 71	G	36	G	33	36	36	J A 50	J A 44	J A 69	J A 30	C	J A 31
7	J A 38	J A 54	C	E S 16	E S 16	18	30	32	34	36	42	J A 50	38	33	J A 49	J A 53	D D 200	J A 132	J A 157	J A 90	J A 33	J A 26	24	48
8	J A 26	J A 39	J A 24	J A 22	E S 16	21	29	34	J A 50	J A 52	38	C	C	C	C	G	34	J A 52	J A 88	J A 44	J A 30	J A 24	J A 54	J A 24
9	C	J A 27	J A 24	E S 16	C	26	32	35	J A 50	J A 49	J A 50	J A 51	J A 77	J A 74	J A 61	J A 42	J A 42	J A 67	J A 74	80	J A 120	J A 61	J A 53	J A 42
10	J A 37	J A 27	J A 27	23	E B 13	19	26	J A 55	61	J A 133	J A 55	J A 88	J A 75	J A 86	J A 108	J A 118	J A 105	J A 128	J A 120	J A 86	J A 109	J A 54	J A 54	C
11	22	J A 30	J A 24	21	J A 26	23	34	J A 37	J A 48	J A 44	J A 43	J A 54	40	J A 62	J A 84	J A 80	J A 163	J A 110	J A 137	J A 78	J A 106	J A 121	J A 56	J A 30
12	J A 26	J A 27	J A 27	J A 24	J A 27	E S 16	J A 39	J A 48	J A 105	80	J A 129	39	J A 90	J A 54	39	J A 50	J A 61	J A 62	J A 53	J A 54	J A 30	J A 30	J A 30	J A 42
13	J A 40	J A 27	J A 25	J A 25	J A 24	25	33	J A 37	J A 73	J A 107	J A 86	36	J A 48	39	J A 70	J A 73	J A 86	J A 89	J A 54	24	E S 16	20	21	J A 30
14	J A 36	J A 27	20	E S 16	E S 16	23	29	37	38	37	42	J A 60	J A 71	47	44	J A 42	36	35	J A 44	J A 43	J A 43	J A 54	J A 42	J A 37
15	J A 53	J A 37	J A 28	J A 28	25	J A 47	J A 72	J A 42	J A 74	J A 71	J A 61	49	47	48	J A 58	J A 55	53	J A 54	J A 57	J A 26	J A 21	J A 21	J A 30	J A 105
16	J A 30	J A 42	23	23	J A 26	23	J A 40	J A 70	J A 87	J A 72	J A 73	J A 120	J A 110	J A 88	J A 74	33	J A 46	J A 74	J A 71	J A 87	J A 73	J A 59	J A 60	J A 52
17	J A 27	J A 23	24	24	E S 16	24	32	J A 50	J A 55	J A 72	J A 59	J A 44	J A 48	J A 73	J A 43	43	J A 55	J A 74	J A 43	J A 77	J A 106	J A 61	J A 53	J A 62
18	J A 44	J A 60	J A 48	J A 30	J A 27	J A 28	J A 41	J A 55	J A 65	J A 58	J A 60	J A 59	J A 42	39	39	J A 48	J A 45	J A 74	J A 54	J A 74	J A 40	J A 30	J A 54	J A 34
19	J A 54	J A 52	J A 45	J A 44	J A 47	J A 28	J A 43	J A 74	J A 74	J A 78	J A 48	J A 60	J A 42	37	39	J A 55	J A 42	J A 99	J A 38	J A 39	25	J A 29	J A 74	J A 54
20	J A 58	J A 73	J A 46	J A 54	J A 59	J A 33	J A 43	J A 51	J A 61	J A 51	J A 55	J A 41	J A 42	J A 48	J A 71	J A 78	J A 167	J A 114	C	C	C	C	C	C
21	C	C	C	C	C	C	J A 100	J A 93	J A 121	J A 107	84	J A 73	98	J A 66	J A 61	J A 54	J A 63	J A 111	J A 116	J A 61	J A 54	J A 54	J A 42	J A 42
22	J A 30	J A 37	J A 21	J A 54	J A 26	25	J A 39	J A 52	J A 58	J A 74	J A 105	J A 89	J A 91	J A 48	J A 54	J A 43	J A 47	J A 43	J A 33	J A 26	J A 52	J A 54	J A 74	J A 68
23	J A 62	J A 59	J A 27	J A 30	J A 28	20	J A 42	J A 54	J A 59	J A 43	J A 54	J A 42	38	J A 69	J A 73	38	J A 48	J A 73	J A 42	J A 32	J A 56	J A 73	J A 44	J A 51
24	J A 54	J A 37	J A 28	J A 54	J A 27	J A 24	J A 39	J A 74	J A 60	J A 43	J A 76	J A 60	J A 40	40	G	36	31	J A 42	J A 37	J A 40	J A 50	J A 54	J A 30	J A 28
25	J A 25	J A 22	22	24	J A 25	J A 35	32	J A 44	J A 78	J A 91	J A 42	J A 43	J A 41	D D 200	C	J A 42	J A 44	J A 144	J A 84	J A 106	J A 111	J A 84	J A 42	60
26	J A 65	J A 37	35	J A 30	J A 42	J A 30	J A 73	J A 76	J A 166	J A 106	J A 80	J A 54	J A 48	43	44	J A 56	J A 83	J A 181	J A 140	J A 54	J A 89	J A 30	J A 39	J A 36
27	J A 58	J A 60	J A 60	J A 25	24	26	J A 36	J A 47	J A 54	J A 73	J A 118	41	42	43	J A 70	J A 87	J A 71	J A 102	J A 38	J A 52	J A 52	J A 30	J A 33	J A 30
28	68	J A 42	J A 25	J A 26	J A 37	J A 27	J A 76	J A 61	J A 73	J A 74	J A 60	J A 73	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	J A 52	J A 42	36	38	J A 74	J A 89	J A 58	J A 34	J A 60	60	J A 88	J A 54
30	J A 78	J A 42	J A 28	J A 30	J A 30	J A 37	J A 55	J A 58	J A 59	J A 62	J A 53	J A 58	J A 42	J A 53	J A 78	J A 53	J A 58	J A 55	J A 44	J A 50	J A 51	J A 42	J A 42	23
31	22	22	25	22	J A 37	J A 30	J A 36	J A 49	J A 63	J A 73	J A 53	J A 44	J A 44	37	36	36	J A 52	J A 58	J A 70	J A 48	J A 60	J A 62	30	J A 78
	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	27	29	27	28	29	29	28	30	30	29	29	29	28	30	30	30	29	29	29	29	28	28
MED	J A 33	J A 30	J A 27	24	J A 26	24	J A 36	J A 50	J A 60	J A 68	J A 56	J A 54	J A 44	J A 48	J A 52	J A 43	J A 50	J A 72	J A 54	J A 52	J A 52	J A 54	J A 42	J A 39
UQ	J A 54	J A 42	J A 29	J A 30	J A 29	J A 29	J A 43	J A 55	J A 74	J A 75	J A 76	J A 61	J A 71	J A 66	J A 70	J A 55	J A 71	J A 102	J A 84	J A 77	J A 69	J A 59	J A 54	J A 53
LQ	J A 26	J A 23	24	22	16	20	30	J A 37	J A 50	J A 44	J A 44	J A 42	41	40	39	36	J A 42	J A 52	J A 43	J A 39	J A 30	J A 30	J A 30	J A 30

The Radio Research Laboratories, Japan

MAY. 1976 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FBES (0.1 MHZ) | 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	E	E	C	E S 16	C	C	C	C	C	41	41	39	36	40	43	G 22	G	G	17	25	24	26	E S 32	33
2	E	E	E	E	E	17	26	33	41	44	38	39	40	42	44	34	55	38	48	57	A A 60	40	E	E S 16
3	E S 16	E S 16	E	17	A A 74	A A 120	26	48	C	A A 64	A A 85	A A 75	56	65	40	33	30	26	G	E S 16	E S 16	E S 16	E S 16	21
4	21	E	30	E	16	21	54	41	35	34	45	40	41	40	36	34	44	44	A A 89	A A 116	29	A A 56	21	E
5	E	E	E	E	E S 16	18	25	A A 55	A A 68	A A 60	A A 71	A A 61	G	48	47	40	43	A A 70	A A 70	40	23	25	A A 44	28
6	19	E S 16	E	E	E S 16	E S 16	29	36	39	36	41	A A 71	G	34	G	33	33	34	47	41	40	28	C	26
7	26	31	C	E S 16	E S 16	G	29	29	32	35	42	48	37	33	48	52	D A 200	A A 132	A A 157	45	E	E	E	E
8	19	E	18	E	E S 16	21	29	33	46	A A 52	38	C	C	C	C	G	31	50	A A 88	42	27	17	A A 54	E
9	C	17	E	E S 16	C	21	30	33	48	47	46	A A 51	A A 77	50	61	41	41	A A 67	A A 74	43	42	A A 61	A A 53	A A 42
10	27	23	27	E	E B 13	18	26	52	50	A A 133	A A 55	A A 88	A A 75	A A 86	A A 108	A A 118	A A 105	A A 128	A A 120	A A 86	A A 109	30	34	C
11	E	20	E	E	18	23	33	34	40	38	40	45	40	49	A A 84	A A 80	A A 163	A A 110	A A 137	55	46	A A 121	24	26
12	E	19	22	E	E	E S 16	39	44	A A 105	A A 80	A A 129	38	A A 90	52	39	43	41	A A 62	32	26	19	26	27	33
13	26	20	E	18	E	20	32	35	A A 73	A A 107	A A 86	35	45	39	58	A A 73	A A 86	66	44	E	E S 16	E	E	22
14	E	E	E	E S 16	E S 16	20	28	37	36	37	42	A A 60	A A 71	46	44	40	33	32	44	43	38	28	E S 42	E S 37
15	A A 53	28	27	21	18	A A 47	26	40	51	46	49	48	46	41	52	43	43	40	56	23	19	21	E	A A 105
16	27	28	E	E	17	19	38	A A 70	A A 87	46	A A 73	A A 120	A A 110	58	70	32	45	A A 74	67	A A 87	50	50	46	39
17	21	E	E	E	E S 16	23	27	41	55	A A 72	49	42	48	55	41	41	54	62	36	45	A A 106	A A 61	27	A A 62
18	30	22	26	18	22	26	38	52	51	45	47	A A 59	41	38	39	43	44	47	45	26	25	24	E	22
19	38	38	37	30	33	18	38	A A 74	A A 74	A A 78	41	A A 60	41	37	39	49	40	A A 99	37	36	21	21	28	A A 54
20	A A 58	26	30	40	27	29	40	47	55	49	41	39	41	44	70	68	A A 167	A A 114	C	C	C	C	C	C
21	C	C	C	C	C	C	A A 100	A A 93	A A 121	A A 107	A A 84	A A 73	55	A A 66	44	49	47	A A 111	A A 116	A A 61	51	E S 54	E S 42	A A 42
22	28	E	E	A A 54	23	21	38	50	55	62	A A 105	A A 89	A A 91	46	46	40	45	40	28	23	42	A A 54	A A 74	A A 68
23	A A 62	A A 59	23	20	20	20	39	38	42	40	51	40	38	A A 69	40	38	42	32	33	30	42	40	33	40
24	40	20	E	27	19	17	38	A A 74	55	42	A A 76	47	39	40	G	35	29	32	33	32	21	18	21	17
25	16	18	E	E	E	26	29	42	A A 78	A A 91	40	38	37	46	C	40	44	A A 144	A A 84	78	A A 111	40	24	A A 60
26	A A 65	A A 37	A A 35	23	A A 42	29	A A 73	45	A A 166	46	A A 80	46	46	42	44	A A 56	A A 83	A A 181	A A 140	50	45	26	30	30
27	A A 58	A A 60	E	E	E	21	32	40	49	50	A A 118	40	40	43	49	52	42	67	26	45	42	30	26	27
28	18	28	20	17	16	20	A A 76	A A 61	41	64	42	A A 73	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	42	40	36	35	63	A A 89	45	30	27	29	A A 88	E
30	E	34	17	26	17	30	53	A A 58	A A 59	45	42	36	35	41	67	47	50	42	41	40	41	40	35	E
31	E	E	E	E	23	24	31	41	A A 63	A A 73	44	38	40	36	33	33	46	47	41	46	46	A A 62	24	A A 78
	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	27	29	27	28	29	29	28	30	30	29	29	29	28	30	30	30	29	29	29	29	28	28
MED	21	20	E	16	16	21	32	42	53	48	46	47	41	43	44	40	44	62	45	42	40	28	26	28
UQ	34	28	24	20	21	25	39	52	A A 70	A A 72	A A 76	A A 61	55	50	55	49	55	A A 99	A A 84	50	46	U 45	42	A A 42
LQ	E	E	E	E	16	18	29	37	42	42	41	39	39	40	39	34	41	40	36	30	23	24	21	19

The Radio Research Laboratories, Japan

MAY. 1976 | FBES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | F-MIN (0.1 MHZ) | 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	E S 16	E S 16	C	E S 16	C	C	C	C	C	E C 22	E C 22	E C 26	E C 26	17	16	18	17	14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
2	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16	17	17	19	E C 21	E C 26	18	19	16	E C 20	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
3	E S 16	E S 16	E S 16	E S 16	12	13	E S 16	16	C	18	16	E C 21	16	E C 23	16	17	18	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
4	E S 16	E S 16	E S 16	E S 16	13	E S 16	E S 16	E S 16	16	16	17	E C 20	16	E C 22	17	15	16	14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	15	17	18	E C 20	17	E C 20	17	15	15	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16
6	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	15	13	E C 20	E C 22	E C 26	18	18	17	17	16	E S 16	E S 16	E S 16	E S 16	C	E S 16
7	E S 16	E S 16	C	E S 16	E S 16	E S 16	E S 16	16	16	16	19	E C 21	E C 27	E C 26	16	17	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	13	15	17	17	17	C	C	C	C	17	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
9	C	E S 16	E S 16	E S 16	C	E S 16	16	13	17	E C 21	E C 26	E C 26	E C 24	E C 26	18	17	17	16	13	E S 15	E S 15	E S 16	E S 16	E S 16
10	E S 16	E S 16	E S 16	E S 16	13	E S 16	13	13	16	17	17	E C 20	E C 27	E C 22	18	17	16	15	E S 16	E S 16	E S 16	E S 16	E S 16	C
11	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	13	17	E C 27	E C 27	18	E C 23	17	E C 21	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	17	16	17	18	18	16	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	13	16	18	E C 23	E C 28	E C 26	E C 27	18	E C 20	16	16	14	E S 16	E S 16	E S 16	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 16	13	16	18	16	E C 35	18	E C 27	E C 27	E C 22	16	16	16	E S 16	E S 20	E S 16	E S 16	E S 16	E S 16
15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	16	17	E C 41	E C 26	E C 21	18	17	14	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	18	16	17	16	E C 26	E C 22	E C 26	E C 27	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	14	16	15	16	17	17	E C 26	E C 26	E C 26	17	E S 20	17	14	14	E S 16	E S 16	E S 16	E S 16	E S 16
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	13	13	17	17	E C 26	E C 22	18	E C 31	E C 26	17	17	15	13	E S 16	E S 16	E S 16	E S 16	E S 16
19	E S 16	E S 16	E S 16	E S 16	E S 16	13	16	14	16	16	17	E C 21	E C 26	E C 21	16	17	15	16	13	E S 16	E S 16	E S 16	E S 16	E S 16
20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	15	15	16	16	18	E C 20	E C 27	E C 21	E C 27	17	17	16	C	C	C	C	C	C
21	C	C	C	C	C	C	16	15	15	16	19	17	E C 22	E C 26	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	15	17	18	E C 23	17	E C 22	15	15	16	13	E S 16	E S 16	E S 16	E S 16	E S 16
23	E S 16	E S 16	E S 16	E S 16	E S 16	13	13	16	16	17	17	E C 20	16	17	E C 20	17	15	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
24	E S 16	E S 16	E S 16	E S 16	15	14	13	14	16	14	18	16	17	17	16	13	14	13	13	12	12	13	E S 16	12
25	12	E S 16	E S 16	12	12	13	13	13	14	16	14	16	15	19	C	16	13	13	12	E S 16	E S 16	E S 16	E S 16	13
26	E S 16	13	12	12	12	13	13	13	13	16	17	17	16	16	15	16	13	13	12	12	12	12	13	13
27	E S 16	13	12	12	13	12	12	13	13	16	16	16	16	15	15	14	13	13	13	13	12	E S 16	13	13
28	12	13	12	12	E S 15	E S 15	13	13	13	16	13	E C 26	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	18	18	16	14	13	13	12	12	13	E S 16	E S 16	E S 16
30	E S 16	13	12	12	12	13	13	13	13	15	16	16	13	16	16	16	15	13	12	12	E S 15	E S 15	E S 15	E S 16
31	12	E S 15	12	11	12	12	13	13	13	13	14	16	15	15	13	16	15	13	13	E S 16	E S 16	12	E S 16	E S 16
	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	27	29	27	28	29	29	28	30	30	29	29	29	28	30	30	30	29	29	29	29	28	28
MED	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	16	16	16	E C 20	E C 20	U 17	16	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	17	E C 20	E C 26	E C 26	E C 23	E C 20	17	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 16	E S 16	E S 16	E S 16	12	13	13	13	14	16	16	16	16	17	16	16	15	14	13	E S 16	E S 16	E S 16	E S 16	E S 16

MAY. 1976 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | M(3000)F2 (0.01) | 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 automatio operation

Day \ Hour	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	I S 290	I S 290	C	J S 305	C	C	C	C	C	340	325	285	290	300	310	320	325	340	330	335 S	350	315	S	S
2	S 310	275	315	I S 330	315	340	370	330	330	340	340	325	290	275	285	J R 300	325	335	325 S	340	A	280 S	S	S
3	S	S	370 S	S	A	A	300	310	C	A	A	A	240	270	305 R	280	300	315	300	280	U S 300	280	270	290 S
4	290	295	335	300	280 S	295	340	330	345	340	A	290	280	280	290	290	305 S	320	A	A	310 S	A	260	270 S
5	I S 295	U S 295	295 S	310	305 S	320 S	325	A	A	A	A	A	280	A	300	305	315	A	A	315	305	270 S	A	S
6	S	S	S	J S 315	I S 325	355 S	350	365	345 H	325	310	A	295	300	300	295	315	330	320 S	320	I S 315	300 S	C	S
7	S	S	C	I S 305	S	350 S	355	365	330	345	275	295	275	290	310 R	320	A	A	A	340	355	310	I S 295	I S 285
8	305 S	S	290 S	280 S	300	350	360	365	365	A	315	C	C	C	C	320 R	315	325	A	J S 335	J S 345	360	A	290 S
9	C	S	S	295	I C 320	J S 340	325 S	335	360	295 R	J 300 R	A	A	290	285	310	335	A	A	340	320	A	A	A
10	300 S	S	S	310 S	J S 325	325	330	350	365	A	A	A	A	A	A	A	A	A	A	A	A	S	S	C
11	S	290 S	S	S	315 S	315 S	345	370 S	355	335	315	295	290	295	A	A	A	A	A	S	S	A	S	S
12	280 S	S	S	F	F	310 S	325	320	A	A	A	260 R	A	A	310	310	320	A	305	315 S	I S 310	300 S	J S 300	I S 290
13	U S 285	I S 290	I S 285	I S 290	300 S	345 S	J 360 R	330 R	A	A	A	295 R	320	270	A	A	A	S	335	320	325 S	I S 315	295 S	280 S
14	J S 285	S	J S 290	290 S	J S 300	I S 340	J S 340	365 S	355	315	330	A	A	300	290	295	J R 300	320	J S 330	330 S	J S 360	310	S	S
15	A	275	I S 290	I S 310	320 S	A	J R 335	335	355	330	330	290	305	305	305	300	320	J S 325	315 S	J S 330	310	320	I S 320	A
16	S	295	J S 315	I S 320	I S 310	I S 340	320	A	A	320	A	A	A	295	R	315	300	A	A	A	S	S	S	S
17	U S 285	S	S	S	J S 310	330 S	335	340	340	A	325	225 R	275	295 R	305	310	325	I S 335	330 S	I S 310	A	A	S	A
18	S	S	S	S	S	330 S	325	J S 355	360	330	280	A	275	280	290	310	315	315	305 S	310 S	320	300	S	S
19	S	S	S	S	S	360 S	350	A	A	A	340	A	290	300	295	300	300	A	J S 305	I S 310	I S 310	I S 320	S	A
20	A	S	S	S	S	315 S	325	330 S	305	335	305	285	310	280	290	280	A	A	C	C	C	C	C	C
21	C	C	C	C	C	C	A	A	A	A	A	A	J R 330	A	295	310	325	A	A	A	310	I S 300	S	A
22	S	320	I S 310	A	295 S	320	315	330	A	295	A	A	A	310	305	315	320	315	305 S	310 S	I S 345	A	A	A
23	A	A	S	310 S	I S 325	300	310	315	315	310	315	J R 300	315	A	305	295	285	295	310	330	I S 320	S	S	J S 300
24	J S 295	S	S	S	S	J S 305	365	A	320	335	A	280	305	320	310	310	320	325	315	J S 330	350	290 S	290 S	I S 290
25	F	310	F	F	F	310	335 S	350	A	A	280	290	270	300	I C 305	310	300	A	A	U S 320	A	J S 335	355 S	A
26	A	A	A	S	A	345	A	365	A	335	A	300	A	300	290	A	A	A	A	J 300 S	335	310 S	F	F 300
27	A	A	S	F	F 320	315	325	335	315	A	A	280	285	265	285	310	305 R	315	310	J S 320	315 S	J 295 S	F	325
28	315	S	J S 290	F	F	345	A	A	320	345	360	A	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	285	300	300	315	315	A	310 S	285 S	J S 300	S	A	S
30	S	F	F	F	F	310	355	A	A	315	330	240	290	265	300	290	310	325	305	I S 300	I S 320	I S 290	I S 280	J S 300
31	280	295 S	335	300 S	300 S	325 S	335	350	A	A	305	255	275	280	290	300	295	305	J 315 R	315	330 S	A	S	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	11	12	15	17	26	26	22	17	18	18	17	22	24	25	26	24	16	18	24	23	19	9	11
MED	290 S	295	302 S	305 S	310 S	328 S	335	338	345	332	315	290	290	295	300	310	315	322	312	320 S	320 S	300 S	295 S	290 S
UQ	300 S	295	325	310 S	320 S	345 S	350	365	355	340	330	295	305	300	305	310	320	328	325 S	330	340	315	300 S	300 S
LQ	285 S	290 S	290 S	298 S	300 S	315	325	330	320	315	305	280	275	280	290	295	300	315	305	310 S	310 S	292 S	280 S	288 S

The Radio Research Laboratories, Japan

MAY. 1976 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1976 M(3000)F1 (0.01)

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						C	C	C	C	L	360	360	375	370	A	380	L 355	L	L					
2									A	A	390	L	370	A	A	R 360	A	A	A					
3							L	A	C	A	A	A	A	A	A	365	335	L	L					
4							A	A	L	L	A	375	A	375	365	365	A	A						
5							L	A	A	A	A	A	370	A	A	A	A	A	A					
6							L	L	A	395	A	A	395	380	380	360	350	L						
7								L	L	370	A	A	385	365	A	A	A	A						
8							L	L	A	A	390	C	C	C	C	400	355	A						
9							L	L	A	A	A	A	A	A	A	A	A	A						
10						L	L	A	A	A	A	A	A	A	A	A	A	A						
11							L	L	L	385	375	A	355	A	A	A	A	A						
12							A	A	A	A	A	390	A	A	370	A	A	A						
13								L	A	A	A	400	A	375	A	A	A	A						
14							L	A	L	C 410	C	A	A	A	A	A	355	L 365						
15							350	A	A	A	A	A	A	375	A	A	A	A	A					
16							A	A	A	A	A	A	A	A	A	400	A	A	A					
17							L	A	A	A	A	415	A	A	375	385	A	A	A					
18							A		A	A	A	A	390	375	365	A	A	A						
19								A	A	A	L 400	A	410	375	L 365	A	A	A						
20							A	A	A	A	L 375	L 380	A	A	A	A	A	A	C					
21							A	A	A	A	A	A	A	A	A	A	A	A	A					
22							A	A	A	A	A	A	A	A	A	A	A	A	L					
23							A	L	A	395	A	400	415	A	365	R 345	A	355	A					
24						L	A	A	A	A	A	A	380	400	365	380	365	L 350	A					
25							L 360	A	A	A	A	400	H 400	A	C	A	A	A	A					
26							A	A	A	A	A	A	A	A	A	A	A	A	A					
27						L	L	A	A	A	A	400	395	A	A	A	A	A	L					
28						L	A	A	A	A	A	A	C	C	C	C	C	C	C					
29						C	C	C	C	C	C	C	A	A	370	355	A	A	A					
30						A	A	A	A	A	A	400	395	A	A	A	A	A	A					
31						L	L	A	A	A	A	410	385	370	380	335	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							2			5	6	11	14	10	10	12	6	5						
MED							355			395	382	400	388	375	368	365	355	L 355						
UQ										395	390	400	395	375	375	382	355	360						
LQ										385	375	385	375	370	365	358	350	352						

IONOSPHERIC DATA

MAY. 1976 | H'F2 (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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						C	C	C	C	300	320	425	390	335	300	280	270	260	250					
2									300	295	295	320	390	375	350	300	260	255	255					
3							350	305	C	A	A	A	435	380	290	330	300	255	285					
4							260	255	275	275	E A 330	390	415	400	350	340	295	270						
5							270	A	A	A	A	A	430	E A 340	375	350	315	A	A					
6							250	250	250	340	325	A	390	340	315	315	290	265						
7								250	295	290	430	350	370	340	290	285	A	A						
8							250	245	260	A	340	C	C	C	C	280	290	280						
9							280	275	270	400	355	A	A	390	E A 380	300	265	A						
10						270	310	270	270	A	A	A	A	A	A	A	A	A						
11							250	240	260	300	345	380	375	355	A	A	A	A						
12							310	325	A	A	A	440	A	A	355	335	300	A						
13								290	A	A	A	370	335	440	A	A	A	300						
14							240	255	275	350	320	A	A	370	355	320	300	255						
15							330	270	270	300	E A 310	415	360	350	350	330	295	275	A					
16							290	A	A	320	A	A	A	335	A	320	340	A	A					
17							290	260	255	A	310	575	400	340	300	295	280	265	255					
18							265		255	305	375	A	430	400	340	295	290	290						
19								A	A	A	300	A	400	350	335	325	310	A						
20							295	265	310	325	320	380	325	360	E A 350	E A 350	A	A	C					
21							A	A	A	A	A	A	300	A	340	310	280	A	A					
22							325	290	A	E A 350	A	A	A	340	310	300	295	295	300					
23							330	325	320	340	325	355	340	A	375	380	350	305	260					
24						300	245	A	340	290	A	420	350	330	350	345	310	295	275					
25							275	250	A	A	450	400	470	370	I C 345	305	340	A	A					
26							A	255	A	250	A	380	A	380	400	A	A	A	A					
27						290	290	260	250	A	A	445	440	470	410	330	310	E A 330	275					
28						250	A	A	290	280	270	A	C	C	C	C	C	C	C					
29						C	C	C	C	C	C	C	410	345	340	305	E A 340	A	280					
30						325	E A 260	A	A	315	325	560	420	440	E A 350	340	300	270	290					
31						285	275	260	A	A	365	510	420	405	360	315	315	290	265					
	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	22	20	17	18	19	17	22	25	25	26	24	17	11					
MED						288	278	260	270	301	325	400	395	360	345	316	299	272	275					
UQ						300	310	282	295	332	350	440	420	390	355	332	311	292	282					
LQ						270	260	252	260	290	315	380	360	340	322	300	290	265	258					

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MAY. 1976 | H'F2 (KM)

IONOSPHERIC DATA

MAY. 1976 | H'F (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 automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	290	290	C	E S 250	C	C	C	C	C	A	A	240	225	E A 250	A	200	H 220	240	250	240	235	E A 260	A	E A 330
2	260	295	280	260	210	230	220	245	A	A	225	E A 240	235	A	A	235	A	A	A	E A 290	A	A	325	310
3	325	300	210	270	A	A	255	A	C	A	A	A	A	A	A	230	H 230	245	270	245	250	250	310	290
4	280	275	240	250	300	290	A	A	240	225	A	E A 235	A	250	240	240	A	A	A	A	275	A	350	335
5	305	265	260	250	245	255	245	A	A	A	A	A	H 190	A	A	A	A	A	A	290	275	340	A	310
6	295	290	275	250	240	225	240	A	A	200	A	A	200	210	200	235	240	A	E A 290	250	300	300	I C 280	305
7	275	260	I C 270	255	285	240	220	230	225	240	A	A	200	235	A	A	A	A	A	250	210	235	265	290
8	270	320	290	300	260	240	235	240	A	A	210	C	C	C	C	195	240	A	A	260	230	210	A	E S 275
9	C	E A 290	300	270	I C 230	240	250	245	A	A	A	A	A	A	A	A	A	A	A	250	300	A	A	A
10	E A 310	300	E A 330	270	250	240	225	A	A	A	A	A	A	A	A	A	A	A	A	A	A	290	300	I C 260
11	280	285	295	260	260	245	A	E A 240	A	220	220	A	250	A	A	A	A	A	A	250	210	A	300	340
12	300	275	300	295	290	245	A	A	A	A	A	230	A	A	E A 240	A	A	A	270	250	250	275	310	E A 300
13	295	260	225	250	285	240	215	250	A	A	A	220	A	245	A	A	A	A	250	225	225	235	250	300
14	315	295	290	285	285	240	210	A	225	200	I C 220	A	A	A	A	A	250	E A 240	250	250	E A 240	E A 290	A	A
15	A	E A 335	E A 340	250	270	A	235	A	A	A	A	A	A	E A 250	A	A	A	A	A	240	245	250	275	A
16	330	300	250	275	290	240	A	A	A	A	A	A	A	A	A	H 210	A	A	A	A	300	300	285	E A 290
17	295	295	255	280	280	250	235	A	A	A	A	205	A	A	250	230	A	A	A	250	A	A	250	A
18	250	290	275	245	265	240	A	240	A	A	A	A	220	225	250	A	A	A	285	250	240	245	260	300
19	310	E A 300	295	255	275	220	255	A	A	A	215	A	205	215	250	A	A	A	290	250	220	230	240	A
20	A	300	275	A	305	265	A	A	A	A	E A 240	220	A	A	A	A	A	A	C	C	C	C	C	C
21	C	C	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
22	E A 330	245	250	A	300	250	A	A	A	A	A	A	A	A	A	A	A	A	A	240	240	A	A	A
23	A	A	290	255	245	225	A	A	A	245	A	230	210	A	250	250	A	250	A	245	250	250	300	E A 300
24	A	320	290	255	245	255	A	A	A	A	A	A	235	215	H 225	230	H 220	250	A	245	210	265	300	295
25	295	265	270	275	295	270	250	A	A	A	A	200	A	A	C	A	A	A	A	E A 300	A	E A 250	E A 260	A
26	A	A	A	E A 300	A	250	A	A	A	A	A	A	A	A	A	A	A	A	A	260	250	255	270	295
27	A	A	260	270	250	240	E A 250	A	A	A	A	210	240	A	A	A	A	A	250	275	270	250	290	245
28	250	E A 320	280	250	205	240	A	A	A	A	A	A	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	A	A	240	245	A	A	A	285	270	290	A	250
30	260	295	240	290	265	A	A	A	A	A	A	210	195	A	A	A	A	A	A	275	250	E A 300	E A 350	255
31	290	270	220	260	300	265	A	A	A	A	A	200	E A 240	220	H 190	225	A	A	A	260	255	A	290	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	22	26	27	27	26	25	15	7	3	6	6	12	13	10	10	12	6	5	9	25	24	21	21	20
MED	292	290	272	260	268	240	235	240	225	222	219	215	215	224	240	230	235	245	260	250	250	252	288	294
UQ	305	298	290	274	290	250	250	245	232	240	222	228	235	250	250	238	240	250	278	260	270	282	300	305
LQ	275	272	252	250	245	240	222	240	225	200	215	208	200	215	U 212	218	H 220	240	250	245	230	250	265	270

MAY. 1976 | H'F (KM)

IONOSPHERIC DATA

MAY. 1976 | H'E (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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						C	C	C	C	110	110	A	A	110	105	110	115	115	S					
2						S	125	110	110	110	110	110	110	110	105	110	110	A	S					
3						B	A	110	I C 110	110	105	110	105	110	105	110	115	125	S					
4						S	120	110	105	105	105	105	105	E C 110	105	105	105	110	S					
5						S	120	105	105	105	105	105	105	105	105	105	105	115	S					
6						S	115	105	105	105	105	105	E C 115	105	105	105	110	115	S					
7						S	110	105	105	105	105	105	110	110	105	105	110	120	S					
8						S	110	110	110	105	105	C	C	C	C	H 110	110	115	S					
9						S	110	110	110	105	115	110	110	115	110	110	110	115	120					
10						S	115	110	110	105	105	105	E C 110	E C 110	105	105	110	120	S					
11						S	110	105	105	105	E C 115	C	E C 115	A	105	E C 110	110	110	S					
12						S	120	105	105	105	105	105	105	105	105	105	110	115	S					
13						S	110	110	110	I C 105	E C 110	E C 115	E C 115	105	E C 110	105	110	110	S					
14						S	115	105	110	105	C	105	115	110	110	105	110	115	S					
15						S	115	110	105	105	105	I C 115	110	110	110	110	110	115	S					
16						S	120	110	110	105	105	E C 110	E C 110	C	C	105	110	110	125					
17						145	110	105	105	105	105	E C 110	E C 110	E C 110	105	110	110	110	125					
18						S	110	105	105	105	E C 115	105	105	E C 120	E C 115	105	110	115	125					
19						B	115	105	105	105	105	105	E C 110	105	105	105	110	110	125					
20						E S 145	115	110	105	105	105	105	E C 115	E C 110	E C 115	105	105	110	C					
21						C	115	110	105	105	105	100	A	110	105	105	110	110	S					
22						S	115	110	105	105	105	105	105	105	A	A	A	A	A					
23						135	115	105	105	105	105	105	105	105	105	105	105	115	125					
24						A	110	105	105	105	105	105	105	105	105	105	105	110	120					
25						B	105	105	100	105	100	100	100	105	I C 105	105	105	105	B					
26						B	110	105	100	100	105	105	105	105	105	105	105	105	120					
27						A	110	105	105	100	105	105	105	105	105	105	105	105	120					
28						S	110	105	105	100	105	E C 105	C	C	C	C	C	C	C					
29						C	C	C	C	C	C	C	105	105	105	105	105	110	120					
30						140	105	105	100	100	105	105	105	105	105	105	105	110	115					
31						130	110	105	100	100	100	100	100	100	100	105	105	110	120					
	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						5	28	29	29	30	29	27	27	27	27	29	29	28	12					
MED						138	112	105	105	105	105	105	105	105	105	105	110	110	120					
UQ						145	115	110	110	105	105	106	E C 110	110	105	110	110	115	125					
LQ						135	110	105	105	105	105	105	105	105	105	105	105	110	120					

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MAY. 1976 | H'E (KM)

IONOSPHERIC DATA

MAY. 1976 | H'ES (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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	100	C	S	C	C	C	C	C	120	115	110	110	110	105	105	G	G	125	100	120	110	110	110
2	110	100	105	100	100	185	155	130	130	120	130	120	120	110	110	120	110	105	120	115	120	120	120	S
3	S	S	115	115	110	105	145	130	C	120	115	115	115	115	110	125	150	150	150	S	S	S	S	140
4	115	110	120	130	140	130	130	140	140	135	140	145	145	150	150	145	135	125	115	110	110	115	110	100
5	100	100	105	115	S	150	145	130	120	120	115	115	G	145	140	140	140	120	115	120	115	115	110	105
6	105	S	105	125	S	S	140	125	125	125	115	110	G	115	G	150	140	125	120	110	115	115	C	110
7	110	110	C	S	S	155	140	145	125	130	115	110	110	120	130	130	120	120	120	120	115	120	115	110
8	115	110	115	115	S	145	135	130	120	120	140	C	C	C	C	G	150	130	120	115	115	115	110	110
9	C	110	110	S	C	150	140	130	120	115	115	110	110	140	110	125	110	130	120	125	115	125	120	110
10	105	100	100	100	B	145	175	125	115	110	110	105	110	130	135	125	120	120	115	115	115	115	110	C
11	105	100	100	110	115	145	135	125	120	115	110	105	155	125	125	120	115	115	110	110	115	110	110	110
12	100	100	100	100	105	S	135	120	110	110	105	120	125	125	140	125	120	115	115	110	110	115	105	105
13	105	105	105	100	105	145	140	125	110	105	105	115	110	115	125	125	115	115	110	110	S	115	105	105
14	100	105	125	S	S	145	135	125	130	145	140	130	125	125	120	110	115	125	115	110	110	105	110	100
15	100	100	100	100	120	120	115	115	110	110	105	135	130	130	120	120	110	110	110	110	110	105	110	115
16	100	100	100	100	100	130	125	115	115	110	105	105	105	105	105	110	135	120	120	115	115	110	105	105
17	100	100	100	100	S	140	140	120	115	110	110	110	110	105	120	140	140	125	120	110	110	110	110	105
18	105	100	100	100	100	140	120	115	110	110	110	110	110	160	125	125	125	120	115	110	110	105	105	105
19	100	100	100	100	100	100	140	125	115	110	110	110	115	125	165	135	125	120	115	110	110	110	110	110
20	110	105	105	105	105	140	125	120	115	110	110	120	120	110	120	120	115	110	C	C	C	C	C	C
21	C	C	C	C	C	C	125	120	115	110	110	105	105	110	105	110	110	115	115	120	120	115	120	110
22	105	100	100	100	100	160	130	125	115	110	105	105	105	105	100	100	100	100	115	115	105	115	115	115
23	110	105	105	100	105	140	120	115	110	110	110	120	110	120	135	145	130	120	115	110	110	110	115	110
24	110	100	105	110	105	110	130	120	110	110	105	105	110	145	G	150	150	125	115	115	110	110	105	100
25	100	100	100	100	100	100	120	110	105	105	110	110	110	120	C	110	105	115	105	120	115	115	110	110
26	110	105	105	100	105	115	115	110	105	105	105	105	110	115	145	140	125	125	120	115	115	115	110	105
27	105	105	105	120	150	125	120	120	115	110	110	120	130	140	130	130	125	115	120	115	115	105	105	105
28	100	100	100	100	110	130	110	110	110	105	110	105	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	105	110	145	150	125	120	115	110	115	110	105	105
30	105	105	100	100	105	130	125	115	115	110	110	120	125	120	105	140	130	125	115	115	110	105	110	105
31	100	100	100	110	105	125	120	115	110	110	110	115	115	120	130	150	125	125	115	110	110	120	110	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	27	27	27	25	20	26	29	29	28	30	30	29	27	29	26	29	29	29	29	28	27	28	27	27
MED	105	100	105	100	105	140	130	120	115	110	110	110	110	120	125	125	125	120	115	112	115	115	110	110
UQ	110	105	105	110	110	145	140	125	120	120	115	120	122	130	135	140	135	125	120	115	115	115	110	110
LQ	100	100	100	100	100	125	120	115	110	110	110	105	110	110	110	120	115	115	115	110	110	110	108	105

MAY. 1976 | H'ES (KM)

IONOSPHERIC DATA

MAY. 1976 | TYPES OF ES | 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 automatio operation

Day \ Hour	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								C1	C1	L1	L1	C1	C2	L1			C2	F6	FF11	FF31	F3	F4
2	F1	F1	F2	F2	F1	H1	H1	C2	C1	C1	C1	C1	C1	C2	C3	C1	C2	L2	C3	FF21	FF21	F3	F1	
3			F1	F1	F4	L2	HL11	C3		C3	C2	C2	C3	C2	C1	C1	H1	H1	H1					F3
4	F2	F2	F5	F1	F1	C3	C3	C2	H1	C1	C2	C1	C1	C1	C1	C2	C2	C3	C3	F4	F5	F5	F3	F2
5	F1	F1	F2	F1		C2	C2	C3	C4	C3	C3	C2		H2	C2	C2	C2	C4	C3	F5	F6	F3	F5	F6
6	F3		F3	F1			C3	C3	C2	C2	C1	C3		C1		H1	C1	C2	C4	F6	F3	F4		F5
7	F4	F6				C2	C2	C2	C2	C1	C1	C2	C1	C1	C2	C3	C2	C2	C3	F3	F1	F1	F1	F2
8	F2	F2	F6	F2		H2	H2	C2	C2	C3	H1						H1	C4	C3	F4	F2	F1	F4	F2
9		F2	F1			H2	H3	C3	C4	C2	C2	C2	C2	HC11	C2	C2	C2	C3	C4	FF21	F2	FF32	F4	F2
10	F4	F2	F2	F2		H2	H1	C2	C3	C2	C3	C3	C2	C2	C3	C2	C4	C5	C3	F3	F2	F6	F5	
11	F1	F3	F2	F1	F5	H3	C4	C2	C2	C2	C1	C2	H1	CL11	C3	C2	C3	C3	C3	F3	F3	F4	F2	F5
12	F2	F2	F2	F2	F2		C4	C4	C4	C2	C3	C1	C3	C3	C1	C2	C2	C3	C4	F6	F3	F3	F2	F4
13	F3	F4	F1	F2	F2	C2	C4	C3	C4	C3	C3	C1	C2	C1	C2	C3	C4	C3	C4	F1		F1	F2	F3
14	F3	F2	F1			C3	C4	C2	C1	H1	H1	C1	C2	C1	C1	C1	C2	C2	C2	F3	F2	F2	F3	F3
15	F2	F2	F2	F1	FF22	C4	C2	C3	C3	C1	C2	C1	C2	C1	C2	C2	C1	C2	C3	F4	F2	F6	F2	F2
16	F3	F2	F1	F1	F2	C3	C3	C3	C3	C3	C2	C3	C3	L2	C3	C1	C2	C4	C3	F5	F5	F6	F1	F4
17	F2	F2	F1	F1		C4	C1	C3	C3	C3	C2	C2	C2	C2	C1	H1	C3	C4	C5	F5	F4	F4	F4	F4
18	F4	F3	F4	F2	F2	C3	C5	C3	C2	C3	C2	C3	C1	H1	C1	C2	C2	C3	C3	F3	F3	F2	F3	F3
19	F4	F3	F3	F3	F4	L3	C5	C5	C4	C3	C2	C3	C1	C1	H1	C2	C3	C4	C5	F6	F3	F3	F3	F6
20	F4	F3	F4	F5	F5	C3	C3	C3	C3	C2	C2	C2	C1	C2	C2	C3	C3	C1						
21							C3	C3	C3	C2	C2	C2	L2	C2	C2	C2	C3	C4	C3	F4	F4	F3	F4	F2
22	F1	F2	F3	F1	F3	H1	C3	C3	C2	C3	C3	C3	C3	C2	L3	L2	L3	L3	CL33	F3	F4	F3	F4	F6
23	F6	F5	F4	F5	F4	C2	C3	C3	C2	C2	C2	C1	C1	C2	C2	H1	C3	C2	C4	F4	F3	F3	F6	F4
24	F4	F3	F3	F3	F3	LC21	C4	C4	C4	C3	C3	C2	C1	H1		H2	H2	C3	C5	F6	F3	F3	F4	F5
25	F3	F3	F2	F2	F1	L5	C3	C3	C5	C2	C1	C1	C1	CC13		C2	C3	C3	C6	FF25	FF24	F1	F3	F3
26	F5	F4	F7	F5	FF51	C4	C5	C2	C4	C3	C3	C3	C2	C2	H2	H2	C4	C5	C4	F6	F5	F6	F6	F6
27	F6	F5	F3	F2	F2	CL32	C5	C4	C4	C4	C2	C1	C1	H1	C2	C3	C3	C3	C5	F6	F3	F4	F5	F7
28	F4	F5	F5	F2	FF11	C3	C5	C3	C3	C4	C3	C3												
29													C2	C2	H2	H2	C5	C4	C5	F6	F5	F5	F5	F5
30	F4	F6	F3	F3	F3	C5	C5	C5	C4	C4	C3	C1	C1	C2	C4	H3	C4	C4	C5	F6	F5	F5	F6	F2
31	F2	F2	F2	F1	F3	C4	C5	C3	C5	C3	C2	C2	C2	C1	C2	H1	C3	C5	C5	F5	F6	F6	F5	F5
	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

MAY. 1976 | TYPES OF ES

IONOSPHERIC DATA

MAY. 1976 | FXI (0.1 MHZ) | 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 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 43	S 45	46	46	C																X 86	X 49	X 41	42
2	S 42	40	40	46	A																X 56	X 55	X 52	S
3	X 49	S	X 68	S	A	30															X 90	X 83	X 61	X 66
4	X 71	X 64	X 62	X 57	X 47																S 60	X 57	S	S 53
5	S 54	58	S 48	S 49	X 48																O S 65	62	60	A
6	O S 43	S	45	S 44	S 37																X 61	X 58	57	X 50
7	A	A	A	S	X 41	40															84	A	S	A
8	X 41	S 40	S	X 39	S 38																X 87	X 65	A	X 49
9	A	X 36	X 40	X 40	35																X 63	X 48	O S 45	A
10	S 41	A	A	36	36	36															A	A	A	A
11	A	A	S 55	S 41	S 47																O S 92	A	A	A
12	A	A	A	A	A	37															X 72	X 57	X 55	X 56
13	X 56	X 54	S	S 48	41																X 74	X 65	X 52	X 49
14	X 48	X 45	X 44	X 44	X 46																X 66	O S 57	S	A
15	S	S	X 41	40	39	45				56											X 73	X 58	O S 50	S
16	S	S	49	45	40	38															A	A	A	A
17	S	S	S	S	A																X 65	X 54	O S 44	A
18	S	S	S 54	A	S	48					62										X 70	O S 66	X 65	63
19	60	S 55	S	S 51	X 45																A	X 69	S 63	A
20	A	X 47	S 46	A	S 39																A	X 62	O S 65	A
21	A	A	S 47	S	X 47																69	A	S	S
22	S 57	63	58	X 51	X 46																X 81	56	A	40
23	S	A	S	37	A																X 87	O S 64	X 51	A
24	A	S	S	60	S 42	37															X 61	A	A	A
25	X 46	S 45	41	S 40	40	43	56														X 82	X 50	X 41	S 40
26	39	35	S	37	A	34															X 83	A	A	A
27	A	S	S	60	A																X 77	S 75	O S 63	65
28	O S 59	A	S	A	S																X 78	X 77	S	A
29	S	S	A	S	S																X 81	87	S 79	O S 75
30	S	75	S	S 66	S 59																S	61	61	S
31	63	S	X 54	X 37	X 38																X 72	O S 65	X 56	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	16	14	17	22	20	10	1			1	1										26	24	19	12
MED	48	46	47	44	41	38	56			56	62										X 74	X 62	56	52
UQ	58	58	54	51	X 46	43															X 83	66	62	64
LQ	42	40	44	40	38	36															X 65	X 56	X 50	46

MAY. 1976 | FXI (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOF2 (0.1 MHZ) | 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 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 37	S 39	F 40	F	C	C	C	C	C	C	C	57	73	95	102	107	92	69	65	72	J S 80	S 43	35	F
2	S 36	F	F	F	A	A	41	51	61	58	63	62	65	79	83	A	98	91	A	72	S 50	S 49	S 46	I S 43
3	S 43	S	S 62	A	A	F 24	46	66	62	A	A	64	105	86	96	100	97	112	87	80	84	77	J S 55	60
4	J S 65	58	56	50	40	39	65	58	I C 66	69	57	57	59	79	89	77	A	89	A	J S 75	J S 54	U S 51	A	U S 47
5	J S 48	F 46	J S 42	U S 43	S 42	U S 35	54	57	A	A	51	59	68	79	70	67	80	80	I S 67	61	S 59	F	F	A
6	S 37	A	F	S 38	S 31	S 31	S 50	54	53	54	49	53	60	R 80	80	84	94	90	71	A	55	52	J S 51	44
7	A	A	A	I S 40	35	F 34	45	51	57	57	57	64	66	80	89	92	83	87	A	84	F	A	S	A
8	S 35	S 34	I S 34	33	S 32	S 33	54	60	57	47	A	66	74	86	101	102	102	95	96	96	81	S 59	A	S 43
9	A	30	S 34	S 34	F	27	49	58	58	A	56	A	A	70	A	97	97	76	70	65	57	42	39	A
10	S 35	A	A	F	F	F 30	47	65	50	A	55	56	58	A	A	A	87	85	A	81	A	A	A	A
11	A	A	J S 49	S 35	S 41	J S 40	A	65	A	A	A	A	74	80	91	96	92	A	A	A	S 86	A	A	A
12	A	A	A	A	A	F	57	63	A	A	50	A	71	74	76	81	74	A	76	77	66	U S 51	J S 49	50
13	U S 50	J S 48	I S 42	S 42	F	36	52	I R 50	54	54	A	53	68	73	72	R 77	A	A	71	66	68	S 59	46	S 43
14	S 42	39	38	U S 38	S 40	41	61	51	55	55	63	67	73	81	88	92	103	105	81	76	60	S 51	S	A
15	S	I S 38	S 35	F	F	F	47	62	55	F 50	A	55	63	72	76	82	77	A	A	64	S 67	52	S 44	S
16	S	A	F	F	F 34	F 32	50	60	60	A	A	A	82	97	96	87	87	89	J S 94	A	A	A	A	A
17	A	S	I S 44	S	A	A	66	61	54	55	55	R 56	70	87	97	J R 101	96	A	S 72	I S 65	59	U S 48	S 38	A
18	S	S	S 48	A	S	F	51	60	A	A	F 53	A	R 60	71	84	86	88	87	S 80	68	64	60	59	F
19	J S 54	J S 49	I S 46	U S 45	39	40	51	53	58	A	A	A	65	68	70	74	86	96	U S 97	U S 98	A	S 63	S 56	A
20	A	U S 41	U S 40	A	U S 33	33	51	A	59	63	A	70	79	84	98	99	91	105	U S 98	82	A	56	S 59	A
21	A	A	U S 41	I S 38	J S 41	47	56	A	A	A	A	A	A	A	A	86	A	82	64	A	F 63	A	S	S
22	S 51	F	F	45	40	S 40	50	55	A	A	C	C	C	C	79	75	78	74	68	79	S 75	F	A	F
23	S	A	S	F	A	28	43	A	57	A	A	A	72	72	66	61	71	81	A	A	81	S 58	S 45	A
24	A	S	S	F	S 36	F 31	46	50	62	A	56	A	67	71	62	62	66	71	75	S 72	J S 55	A	A	A
25	S 40	S 39	F 35	S 34	F	F 37	F 50	61	52	A	A	A	A	71	68	76	86	A	A	J S 101	S 76	S 44	35	S 34
26	F	F	S	F	A	F 25	40	51	78	A	A	A	A	A	A	61	76	80	84	85	77	A	A	A
27	A	S	S	F	A	A	A	71	A	51	A	A	52	56	54	61	71	72	71	S 67	S 71	S 69	57	F
28	U S 53	A	A	A	S	S 38	43	A	A	A	A	A	A	54	55	61	69	A	85	76	S 72	S 71	S	A
29	S	S	A	S	S	S	60	A	A	A	55	A	60	81	84	A	74	75	75	S	75	F	S 73	S 69
30	S	F	I S 66	S 60	S 53	I S 54	51	50	55	A	A	A	A	66	76	78	83	81	83	J S 77	S	F	F	S
31	F	I S 50	48	31	32	I S 36	51	61	55	A	A	A	A	A	65	72	82	86	75	A	66	S 59	J S 50	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	14	12	18	15	15	23	28	25	21	11	13	14	23	26	27	28	28	24	23	24	25	20	17	9
MED	S 42	S 40	S 42	S 38	S 39	35	50	58	57	55	55	58	68	79	80	82	86	86	75	76	67	S 54	S 49	S 44
UQ	S 51	S 48	S 48	S 44	S 40	40	54	61	60	58	57	64	73	81	90	94	93	90	84	82	S 76	S 60	S 56	50
LQ	S 37	S 38	S 38	S 34	34	31	46	51	55	52	53	56	62	71	70	73	76	78	71	68	59	S 50	S 44	S 43

The Radio Research Laboratories, Japan

MAY. 1976 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOF1 (0.01 MHZ) | 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							C	C	C	C	C	460	450	A	430	A	L 410	L	L					
2									L 400	L 430	L 430	L 460	A	A	440	A	A	L 380	A					
3							L	L 350	L 390	A	A	R 450	440	H 440	450	Y	U L 420	A	A					
4								L	C	A	L 450	450	A	A	A	A	A	A	A					
5								L	A	A	460	450	440	R 440	430	430	410	L 380	A					
6								A	L	A	A	A	A	A	440	430	410	A	A					
7								L	A	A	A	A	A	A	A	A	A	A	A					
8								A	A	A	A	A	450	440	440	430	L 410	L	L					
9									A	A	A	A	A	A	A	A	A	A	A					
10							L	L	A	A	A	A	A	A	A	A	A	A	A					
11								A	A	A	A	A	A	R 450	440	A	A	A	A					
12								A	A	A	L	A	A	A	A	430	420	A	A					
13								430	A	A	A	A	450	450	440	A	A	A	A					
14							L	L	390	H 440	R 440	440	A	A	A	A	A	A	A					
15								A	L	L	A	440	460	A	440	420	A	A	A					
16								A	A	A	A	A	A	A	A	A	A	A	A					
17								A	A	L 460	R 470	A	A	A	A	430	A	A	A					
18							A	A	A	A	440	A	A	A	A	430	420	400	A					
19								L	A	A	A	A	A	450	A	420	420	A	A					
20								A	L 410	A	A	A	A	A	A	430	410	A	A					
21								A	A	A	A	A	A	A	A	A	A	A	L					
22							A	A	A	A	C	C	C	C	A	A	A	A	A					
23							A	A	A	A	A	A	A	A	H 430	420	H 410	400	A					
24								L	A	A	L 450	A	H 450	R 440	440	420	400	L 380	A	L				
25							L	U L 350	A	A	A	A	A	A	H 440	420	410	A	A					
26								L 400	400	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	A	A	R 430	R 440	A	400	A	L					
28								A	A	A	A	A	A	A	A	A	A	A	A					
29								A	A	A	L 430	A	A	A	A	A	A	L 400	A	A				
30								A	A	A	A	A	A	420	A	420	400	L 380	A	A				
31							L	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								4	5	3	8	7	7	9	13	13	14	7						
MED								L 375	400	L 440	445	450	450	440	440	430	410	L 380						
UQ								415	L 400	450	455	455	450	450	440	430	420	400						
LQ								L 350	390	435	435	445	445	R 440	440	420	410	L 380						

MAY. 1976 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOE (0.01 MHZ) | 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 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						C	C	C	C	C	C	320	A	350	330	305	R 290	250	200	S				
2						S	180	250	290	300	315	330	330	320	315	300	A	A	A	B				
3						S	S	A	A	A	A	A	A	R 330	320	305	285	250	A	S				
4						S	145	230	I C 270	300	320	335	340	335	R 330	310	290	260	195	B				
5						S	S	235	270	295	310	A	R 335	U 335	R 320	310	290	265	210	B				
6						S	155	230	290	A	A	A	A	A	A	315	290	260	200	S				
7						S	145	220	290	305	305	320	A	330	I B 330	310	285	250	190	B				
8						S	B	230	265	290	A	A	A	A	330	310	280	260	200	B				
9						S	190	260	270	310	320	330	330	330	315	305	300	260	200	B				
10						S	160	230	A	310	A	310	330	A	340	315	300	260	200	S				
11						S	190	250	270	A	A	A	350	350	340	325	310	275	A	S				
12						E	180	H 240	280	300	320	335	340	340	335	325	305	270	A	B				
13						S	170	250	A	A	A	A	A	A	335	320	295	260	185	B				
14						S	160	A	A	A	A	350	350	345	330	310	280	240	A	S				
15						S	190	230	A	A	A	A	350	350	335	325	300	250	170	B				
16						S	180	230	280	300	A	A	A	A	A	A	A	260	210	B				
17						S	H 180	240	280	305	A	A	A	A	A	R 320	R 300	270	H 215	B				
18						S	150	255	300	A	A	A	A	A	A	A	A	285	215	B				
19						S	170	250	290	305	325	A	A	R 340	335	325	305	270	205	B				
20						S	165	250	285	305	A	A	A	A	A	325	295	260	205	B				
21						S	160	240	A	300	310	330	A	A	A	A	A	260	A	B				
22						S	160	240	275	305	C	C	C	C	A	A	A	A	A	S				
23						S	A	240	270	A	315	A	340	A	330	H 320	290	260	200	B				
24						S	150	230	270	300	A	A	340	330	R 320	310	290	250	190	B				
25						S	A	230	280	A	A	A	A	A	330	315	305	265	190	S				
26						S	150	245	285	A	A	A	A	A	A	A	A	A	A	S				
27						S	A	A	A	310	320	A	A	A	350	A	290	260	220	S				
28						S	165	A	290	A	A	A	A	A	A	A	A	260	200	S				
29						S	140	230	270	A	A	A	A	A	A	A	A	A	H 200	B				
30						S	200	240	280	A	A	A	A	A	330	H 315	290	250	200	B				
31						S	160	240	A	300	A	A	A	A	A	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						1	24	26	22	17	10	9	11	13	20	22	22	26	22					
MED						E	162	240	280	300	318	330	340	335	330	315	290	260	200					
UQ							180	250	290	305	320	335	345	345	335	320	300	265	205					
LQ							152	230	270	300	310	320	332	330	325	310	290	250	195					

The Radio Research Laboratories, Japan

MAY. 1976 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FOES (0.1 MHZ) | 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	40	J A 27	25	E B 14	C	C	C	C	C	C	C	36	37	47	40	45	37	33	30	J A 49	J A 84	J A 50	25	31
2	J A 36	J A 44	50	E B 14	J A 51	40	J A 25	32	39	40	39	41	47	J A 61	45	J A 104	97	J A 73	93	J A 30	25	J A 27	J A 26	E S 15
3	J A 29	J A 25	J A 24	J A 36	27	20	20	27	90	67	J A 53	J A 47	37	G	43	39	J A 45	J A 64	J A 51	16	E S 15	17	E S 15	E S 15
4	E S 15	E S 15	E B 15	J A 24	J A 33	J A 37	J A 27	28	C	J A 47	36	44	J A 53	J A 67	43	J A 74	J A 100	J A 84	J A 122	J A 53	J A 53	J A 52	J A 53	J A 29
5	J A 24	J A 30	J A 51	J A 29	J A 27	20	31	J A 44	123	130	37	37	41	43	G 29	G 30	38	J A 75	J A 80	J A 121	J A 62	J A 52	J A 64	J A 60
6	J A 53	J A 41	J A 31	J A 21	E B 14	E S 14	25	35	J A 42	J A 45	J A 45	J A 49	J A 75	J A 90	38	37	37	J A 57	J A 65	J A 76	J A 40	J A 54	J A 50	J A 28
7	J A 53	J A 65	J A 53	J A 65	J A 59	J A 24	23	32	J A 47	62	58	J A 66	78	J A 58	44	J A 71	J A 58	J A 93	151	90	150	67	J A 23	J A 48
8	E S 15	24	J A 23	27	E B 13	E S 13	28	35	41	46	J A 84	50	J A 84	39	36	G	G 25	28	28	J A 27	J A 49	J A 64	J A 63	J A 51
9	J A 39	49	J A 31	J A 20	E B 13	20	24	36	J A 51	75	64	J A 88	69	J A 61	J A 98	97	J A 65	74	J A 57	J A 41	50	35	J A 41	52
10	31	47	J A 55	42	54	18	26	34	62	J A 55	57	55	44	65	108	124	71	J A 84	109	83	105	J A 84	J A 98	85
11	83	J A 74	89	J A 65	J A 59	J A 36	71	60	66	J A 69	J A 96	J A 109	J A 60	42	41	J A 63	J A 61	J A 86	D D 200	187	J A 86	172	115	J A 54
12	J A 54	J A 79	J A 46	J A 53	J A 37	J A 20	J A 31	J A 82	J A 67	J A 92	39	J A 81	J A 66	J A 80	J A 85	J A 47	37	J A 120	J A 64	J A 29	J A 33	J A 27	J A 38	J A 22
13	J A 27	J A 51	J A 58	J A 21	J A 21	20	23	29	J A 53	J A 84	J A 97	166	J A 56	37	37	J A 79	D D 200	177	112	J A 50	J A 51	J A 64	J A 21	J A 26
14	J A 26	21	J A 27	23	E B 15	E S 14	G	J A 32	J A 34	32	35	37	53	J A 56	J A 65	57	90	85	75	J A 56	45	46	77	60
15	34	J A 34	34	33	J A 74	E S 14	22	56	77	79	130	65	46	J A 65	39	36	J A 65	96	108	110	47	E S 14	J A 57	J A 32
16	J A 33	40	35	29	J A 24	27	31	J A 41	50	J A 84	89	122	155	150	111	83	72	J A 47	166	115	160	92	J A 134	90
17	47	39	31	J A 50	70	J A 51	38	J A 46	J A 44	47	J A 69	85	75	63	48	G 30	J A 83	109	78	76	59	48	70	57
18	36	43	J A 54	60	J A 39	28	J A 41	60	139	150	J A 70	J A 71	J A 90	J A 84	J A 101	J A 48	34	J A 65	J A 84	J A 62	J A 62	J A 63	J A 34	J A 52
19	J A 52	J A 28	J A 27	J A 19	J A 21	J A 27	J A 28	J A 39	J A 71	184	D D 200	J A 110	J A 67	45	44	37	J A 47	J A 61	J A 74	J A 54	J A 104	J A 84	J A 66	J A 96
20	J A 53	J A 24	J A 33	J A 51	J A 37	J A 29	J A 30	J A 84	J A 69	70	J A 82	J A 87	J A 86	J A 88	J A 69	34	J A 39	J A 58	J A 74	J A 80	J A 103	J A 76	J A 63	84
21	J A 83	J A 62	J A 36	J A 51	J A 30	J A 29	J A 50	J A 65	J A 68	J A 130	166	D D 200	D D 200	179	112	J A 86	J A 107	J A 73	J A 44	112	80	116	88	J A 90
22	J A 59	90	33	52	J A 50	35	J A 54	J A 44	J A 87	81	C	C	C	C	92	92	J A 48	J A 47	J A 61	J A 74	J A 74	52	57	37
23	40	J A 84	J A 110	70	47	41	J A 38	J A 61	67	J A 73	95	D D 200	57	J A 84	G	36	33	J A 64	132	81	J A 54	50	34	J A 63
24	55	41	J A 73	J A 51	45	27	23	29	62	83	48	D D 200	39	37	32	G	33	J A 39	49	33	J A 61	57	85	60
25	35	33	42	35	31	27	41	30	J A 54	J A 118	J A 78	J A 144	101	J A 53	35	36	G	J A 98	J A 109	J A 75	J A 38	J A 32	J A 22	23
26	J A 52	J A 62	J A 60	J A 65	J A 51	J A 26	26	34	J A 46	J A 103	J A 93	J A 105	118	82	63	J A 53	J A 47	J A 54	J A 41	J A 44	J A 49	J A 77	J A 63	J A 86
27	47	J A 36	J A 31	J A 28	J A 50	J A 53	183	J A 59	J A 106	J A 84	J A 88	J A 97	51	42	43	43	37	J A 44	33	J A 61	J A 52	J A 52	J A 54	J A 51
28	J A 51	J A 52	J A 37	J A 49	J A 41	J A 51	30	J A 78	J A 135	J A 89	87	136	87	60	63	56	66	J A 123	66	J A 71	110	J A 84	J A 88	100
29	99	90	J A 114	65	40	44	60	145	124	J A 84	90	J A 72	52	J A 72	80	110	91	J A 44	70	J A 98	26	J A 44	40	J A 51
30	J A 53	J A 64	J A 55	J A 54	69	90	J A 41	J A 47	J A 64	J A 84	J A 55	91	94	40	44	37	39	35	36	J A 63	J A 77	62	70	40
31	42	21	E B 15	21	20	21	25	35	50	140	J A 89	J A 103	D D 200	129	62	J A 84	92	90	70	80	38	30	31	90
	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	29	30	29	30	30	30	31	31	31	31	31	31	31	31	31	31
MED	J A 42	J A 41	J A 36	J A 36	J A 38	27	29	40	J A 64	82	78	86	66	61	44	48	48	J A 73	74	J A 71	J A 54	J A 52	J A 57	J A 52
UQ	J A 53	J A 62	J A 54	J A 52	J A 51	J A 37	41	J A 60	J A 77	J A 92	J A 90	J A 110	87	J A 82	74	J A 81	78	J A 88	108	82	J A 82	J A 72	J A 70	74
LQ	34	29	J A 31	24	J A 24	20	25	32	J A 50	62	53	50	51	43	40	36	37	J A 50	54	J A 50	J A 46	45	J A 34	J A 32

MAY. 1976 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | FBES (0.1 MHZ) | 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 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	E	E	14	E B 14	C	C	C	C	C	C	C	36	37	46	40	45	35	32	27	44	64	31	17	18
2	E	19	15	E B 14	A A 51	A A 40	15	30	38	35	38	40	45	60	43	A A 104	47	35	A A 93	22	16	16	15	E S 15
3	E	16	E	A A 36	A A 27	G	20	26	30	A A 67	A A 53	40	35	G	40	U Y 39	40	54	43	G	E S 15	E	E S 15	E S 15
4	E S 15	E S 15	E B 15	E	33	31	26	28	C	45	G	44	48	60	43	65	A A 100	50	A A 122	53	37	16	A A 53	25
5	E	20	28	E	23	18	27	29	A A 123	A A 130	G	37	41	40	G 28	G 30	36	35	51	34	54	22	50	A A 60
6	29	A A 41	E	15	E B 14	E S 14	22	35	38	44	44	44	51	69	37	36	36	49	56	A A 76	38	26	42	23
7	A A 53	A A 65	A A 53	E	25	G	23	31	42	54	50	61	56	53	43	69	54	73	A A 151	53	61	A A 67	15	A A 48
8	E S 15	E	E	15	E B 13	E S 13	28	34	40	44	A A 84	49	41	39	36	G	G 25	G	27	27	46	44	A A 63	15
9	A A 39	20	22	16	E B 13	G	24	32	47	A A 75	54	A A 88	A A 69	59	A A 98	81	60	47	35	41	46	22	34	A A 52
10	22	A A 47	A A 55	21	15	G	25	33	48	A A 55	53	45	44	A A 65	A A 108	A A 124	57	75	A A 109	75	A A 105	A A 84	A A 98	A A 85
11	A A 83	A A 74	17	16	30	19	A A 71	52	A A 66	A A 69	A A 96	A A 109	57	40	40	49	45	A A 86	D A 200	A A 187	77	A A 172	A A 115	A A 54
12	A A 54	A A 79	A A 46	A A 53	A A 37	14	31	58	A A 67	A A 92	36	A A 81	61	66	72	39	35	A A 120	49	22	33	E	30	20
13	20	45	17	17	E	G	G	G	45	48	A A 97	47	41	37	37	71	D A 200	A A 177	34	33	36	53	18	E
14	22	E	16	E	E B 15	E S 14	G	30	30	32	35	37	52	49	54	47	57	42	42	55	43	30	20	A A 60
15	21	27	21	27	25	E S 14	G	40	33	38	A A 130	36	42	46	38	35	65	A A 96	A A 108	20	20	E S 14	35	22
16	28	A A 40	18	E	17	15	30	39	42	A A 84	A A 89	A A 122	60	86	69	69	50	40	74	A A 115	A A 160	A A 92	A A 134	A A 90
17	A A 47	25	16	35	A A 70	A A 51	38	40	42	40	40	50	43	50	46	G 30	79	A A 109	65	45	34	46	28	A A 57
18	31	29	35	A A 60	23	16	39	50	A A 139	A A 150	39	A A 71	52	52	55	38	34	G	65	52	16	54	24	27
19	24	24	23	17	18	G	G	35	52	A A 184	D A 200	A A 110	59	40	44	37	36	54	65	54	A A 104	53	22	A A 96
20	A A 53	16	E	A A 51	23	24	28	A A 84	34	54	A A 82	51	54	55	63	G	35	55	50	53	A A 103	45	50	A A 84
21	A A 83	A A 62	29	E	18	22	48	A A 65	A A 68	A A 130	A A 166	D A 200	D A 200	A A 179	A A 112	70	A A 107	42	30	A A 112	32	A A 116	24	51
22	44	48	29	29	27	17	45	40	A A 87	A A 81	C	C	C	C	55	49	43	43	58	72	E	27	A A 57	24
23	28	A A 84	15	E	A A 47	25	35	A A 61	54	A A 73	A A 95	D A 200	47	61	G	35	G	37	A A 132	A A 81	49	48	25	A A 63
24	A A 55	27	19	22	25	15	23	28	57	A A 83	40	D A 200	38	37	30	G	G	30	40	18	40	A A 57	A A 85	A A 60
25	23	21	25	24	22	16	27	29	45	A A 118	A A 78	A A 144	A A 101	46	G	34	G	A A 98	A A 109	67	29	20	20	E
26	26	20	15	E	A A 51	15	23	33	39	A A 103	A A 93	A A 105	A A 118	A A 82	A A 63	42	45	53	36	38	49	A A 77	A A 63	A A 86
27	A A 47	22	25	15	A A 50	A A 53	A A 183	55	A A 106	44	A A 88	A A 97	50	40	42	43	37	40	30	29	35	47	54	43
28	17	A A 52	A A 37	A A 49	29	22	29	A A 78	A A 135	A A 89	A A 87	A A 136	A A 87	48	50	42	50	A A 123	61	45	25	33	29	A A 100
29	23	45	A A 114	45	20	23	49	A A 145	A A 124	A A 84	41	A A 72	44	44	56	A A 110	59	35	50	51	26	35	34	23
30	28	26	40	27	50	26	30	37	53	A A 84	A A 55	A A 91	A A 94	40	43	37	G	34	36	58	54	45	48	30
31	28	E	E B 15	15	E	G	23	35	40	A A 140	A A 89	A A 103	D A 200	A A 129	50	55	41	73	59	A A 80	30	25	25	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	31	31	31	31	30	30	30	30	29	30	29	30	30	30	31	31	31	31	31	31	31	31	31	31
MED	28	26	19	16	24	16	27	35	47	A A 74	A A 55	A A 72	52	50	43	42	43	49	56	52	38	44	34	43
UQ	A A 46	A A 46	29	28	33	23	35	52	A A 67	A A 92	A A 89	A A 109	61	61	56	67	57	74	84	70	54	54	54	A A 60
LQ	20	20	15	E E 14	17	E G 13	23	30	40	45	40	44	43	40	39	36	35	36	38	34	30	24	23	21

MAY. 1976 | FBES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | F-MIN (0.1 MHZ) | 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

Day \ Hour	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	13	14	C	C	C	C	C	C	C	27	21	21	21	19	19	14	13	E S 13	E S 14	E S 15	E S 15	E S 14
2	E S 15	E S 14	13	14	11	E S 13	E S 13	19	15	21	19	23	23	23	21	17	15	13	14	13	E S 13	E S 15	E S 13	E S 15
3	E S 15	E S 14	E S 13	13	E	E S 13	E S 14	13	14	17	20	20	21	22	18	20	17	14	14	E S 15	E S 15	E S 14	E S 15	E S 15
4	E S 15	E S 15	15	13	E	E S 15	E S 14	13	C	17	21	19	19	21	22	20	16	15	15	13	E S 15	E S 15	E S 15	E S 15
5	E S 15	E S 13	14	15	15	E S 15	E S 15	14	16	18	20	21	21	23	22	19	19	15	13	15	E S 15	E S 15	E S 15	E S 15
6	E S 13	E S 14	14	13	14	E S 14	E S 13	15	14	17	20	21	23	23	20	21	16	15	13	E S 13	E S 14	E S 15	E S 15	E S 15
7	E S 15	E S 15	E S 15	15	E	E S 14	E S 14	14	16	15	21	21	21	22	34	16	20	15	13	13	E S 13	E S 13	E S 13	E S 13
8	E S 15	E S 14	E S 14	12	13	E S 13	14	14	15	17	21	21	21	21	21	20	20	13	14	11	E S 14	E S 14	E S 14	E S 14
9	E S 14	E S 13	13	13	13	E S 15	13	13	15	19	21	22	25	27	23	21	15	15	13	13	E S 13	E S 15	E S 13	E S 14
10	E S 13	E S 14	12	13	13	E S 13	13	13	13	16	21	21	23	21	19	21	16	14	13	E S 15	E S 15	E S 15	E S 15	13
11	E S 15	E S 15	14	13	14	E S 14	E S 15	14	16	16	19	22	20	23	18	19	15	14	13	E S 13	E S 13	E S 14	E S 15	E S 14
12	E S 15	E S 15	13	E S 14	E S 15	E	14	13	15	18	19	22	21	23	21	21	18	13	15	13	E S 15	E S 15	E S 14	E S 13
13	E S 15	E S 15	15	13	E S 15	E S 14	E S 14	14	13	15	22	20	22	23	22	20	17	14	13	12	E S 15	E S 15	E S 15	E S 15
14	E S 15	E S 15	E S 15	15	15	E S 14	E S 15	13	14	14	16	20	28	23	20	17	14	14	14	E S 14	E S 15	E S 14	E S 14	E S 14
15	E S 15	E S 14	E S 13	14	13	E S 14	14	13	14	15	20	21	23	21	22	15	16	13	13	13	E S 13	E S 14	E S 14	E S 15
16	13	E S 13	E S 13	E S 15	13	E S 14	E S 15	14	15	15	17	21	23	28	27	26	20	16	13	13	E S 15	E S 14	E S 15	E S 15
17	E S 14	E S 14	E S 13	E S 13	11	E S 13	13	14	16	21	22	29	28	30	28	22	21	20	15	15	E S 15	E S 15	E S 15	14
18	E S 15	E S 15	E S 15	14	14	E S 15	E S 14	15	16	17	17	22	28	24	24	20	18	17	13	15	12	E S 15	E S 15	E S 15
19	E S 15	E S 14	E S 15	13	E S 15	E S 15	E S 14	15	15	17	19	21	21	28	21	21	17	15	13	13	E S 15	E S 13	E S 15	E S 15
20	E S 15	E S 13	14	15	E S 15	E S 13	E S 13	13	14	20	18	20	24	21	26	21	18	14	14	13	E S 15	E S 15	E S 15	E S 15
21	E S 15	E S 14	E S 15	15	13	E S 14	E S 14	14	15	18	21	21	23	25	21	21	15	18	13	14	E S 15	E S 15	E S 14	E S 14
22	E S 15	E S 15	15	13	13	E S 15	E S 13	13	15	20	C	C	C	C	21	22	19	15	13	E S 13	E S 14	E S 15	E S 13	E S 15
23	E S 13	E S 13	13	14	E	E S 13	13	14	14	15	16	21	28	29	21	18	15	15	13	13	E S 15	E S 13	E S 15	E S 15
24	E S 15	13	13	13	13	E S 13	13	14	14	15	18	23	27	27	27	22	21	15	13	13	E S 15	16	E S 15	E S 15
25	E S 15	E S 15	E S 14	E S 14	E S 15	E S 14	E S 15	14	14	15	19	27	23	22	20	17	15	14	15	E S 15	E S 15	E S 15	E S 15	E S 15
26	E S 15	E S 15	E S 13	15	14	E S 14	E S 14	14	15	15	20	21	28	22	21	19	15	15	13	E S 14	E S 15	E S 15	E S 15	E S 15
27	E S 15	E S 15	E S 15	13	E S 15	E S 15	E S 13	13	14	16	20	21	21	21	20	20	20	14	14	E S 15	E S 15	E S 15	E S 15	E S 15
28	E S 15	E S 15	E S 15	15	13	E S 15	E S 13	14	14	15	21	22	22	20	21	20	20	16	15	E S 13	E S 13	E S 13	E S 14	E S 14
29	E S 14	E S 15	E S 14	E S 13	14	E S 15	E S 13	16	14	15	17	21	20	18	21	23	18	15	13	13	E S 15	E S 13	E S 15	E S 15
30	E S 13	E S 15	13	15	14	E S 14	E S 14	14	14	21	22	21	22	22	20	22	18	15	15	13	E S 15	E S 14	E S 14	E S 15
31	E S 15	15	15	13	13	E S 14	13	15	15	15	15	22	21	21	21	19	16	15	13	E S 15	E S 15	13	E S 14	E S 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	31	31	31	31	30	30	30	30	29	30	29	30	30	30	31	31	31	31	31	31	31	31	31	31
MED	E S 15	E S 14	13	14	13	E S 14	E S 14	14	15	16	20	21	22	22	21	20	17	15	13	13	E S 15	E S 15	E S 15	E S 15
UQ	E S 15	E S 15	15	15	15	E S 15	E S 14	14	15	18	21	22	24	24	22	21	19	15	14	14	E S 15	E S 15	E S 15	E S 15
LQ	E S 14	E S 14	12	13	13	E S 13	E S 13	13	14	15	18	21	21	21	20	19	16	14	13	13	E S 14	E S 14	E S 14	E S 14

MAY. 1976 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976 | M(3000)F2 (0.01) | 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 295	S 260	E 295	F	C	C	C	C	C	C	C	280	275	305	315	325	335	325	310	320	J S 335	S 350	285	F
2	S 305	F	F	F	A	A	340	365	360	330	320	290	270	295	285	A	335	335	A	345	S 310	S 285	S 265	I S 280
3	S 280	S	S 325	A	A	F 270	305	320	370	A	A	230	320	235	280	305	300	325	310	275	285	305	J S 255	275
4	J S 300	295	310	320	280	280	345	325	I C 340	335	350	315	275	295	315	295	A	315	A	J S 335	J S 315	U S 300	A	U S 260
5	S	F 290	J S 285	U S 310	S 305	U S 285	365	365	A	A	360	285	290	305	305	295	310	325	I S 330	320	S 305	F	F	A
6	S 325	A	F	S 330	S 325	S 325	S 355	355	350	345	345	275	275	R 295	300	295	315	335	335	A	310	310	J S 300	305
7	A	A	A	I S 310	380	F 345	360	355	345	A	315	A	275	275	295	325	300	315	A	335	F	A	S	A
8	S 290	S 295	I S 295	305	S 295	S 320	370	365	370	A	A	305	285	290	305	315	310	315	315	330	345	S 305	A	S 280
9	A	280	305	S 345	F	335	365	345	385	A	A	A	A	285	A	320	330	330	330	340	335	285	280	A
10	S 285	A	A	F	F	F 315	345	370	A	A	A	320	300	A	A	A	315	305	A	335	A	A	A	A
11	A	A	J S 285	S 290	S 280	J S 300	A	360	A	A	A	A	275	280	300	305	315	A	A	A	S 325	A	A	A
12	A	A	A	A	A	F	355	365	A	A	250	A	310	305	310	315	305	A	320	325	340	U S 310	S	295
13	U S 285	S	I S 295	S 310	F	345	360	I R 350	325	310	A	295	285	285	290	R 300	A	A	340	320	330	S 330	295	S 295
14	S 285	275	285	U S 295	S 315	340	370	390	350	310	295	285	255	275	290	295	310	335	335	345	335	S 300	S	A
15	S	I S 265	S 270	F	F	F	360	365	365	F 330	A	275	295	280	290	310	325	A	A	320	S 330	315	S 275	S
16	S	A	F	F	F 325	F 325	340	360	335	A	A	A	270	300	315	285	285	310	J S 330	A	A	A	A	A
17	A	S	I S 285	S	A	A	365	360	370	310	325	R 265	260	285	300	J R 305	310	A	A	I S 325	310	A	S 265	A
18	S	S	S 290	A	S	F	335	365	A	A	F 320	A	R 295	280	300	300	305	320	S 305	325	315	300	305	F
19	J S 285	S	S	U S 315	315	325	355	345	350	A	A	A	300	290	285	275	285	305	U S 310	U S 340	A	S 325	S 300	A
20	A	U S 305	U S 300	A	U S 310	345	345	A	335	345	A	275	270	275	295	310	285	310	U S 325	315	A	305	S 295	A
21	A	A	U S 305	I S 295	J S 305	335	365	A	A	A	A	A	A	A	A	305	A	345	330	A	F 285	A	S	S
22	S 295	F	F	290	305	S 300	320	325	A	A	C	C	C	C	315	300	300	305	295	330	S 335	F	A	F
23	S	A	S	F	A	320	325	A	315	A	A	A	300	305	305	280	290	310	A	A	335	S 345	S 290	A
24	A	S	S	F	S 310	F 325	335	320	325	A	305	A	300	315	320	305	325	330	335	S 340	J S 330	A	A	A
25	S 265	S 265	F 300	S 305	F	F 315	F 340	365	345	A	A	A	A	295	290	290	295	A	A	J S 340	S 370	S 320	285	S 305
26	F	F	S	F	A	F 330	315	310	345	A	A	A	A	A	A	300	295	305	310	330	345	A	A	A
27	A	S	S	F	A	A	A	350	A	345	A	A	285	315	295	300	315	325	325	S 300	S 310	S 340	A	F
28	U S 320	A	A	A	S	S 345	315	A	A	A	A	A	A	285	A	285	265	A	320	330	S 290	S 305	S	A
29	S	S	A	S	S	S	325	A	A	A	295	A	275	295	320	A	315	305	315	S	295	F	S 290	S 275
30	S	F	I S 295	S 285	A	S	365	320	A	A	A	A	A	280	310	295	305	315	315	J S 325	S	F	F	S
31	F	I S 305	355	295	315	I S 305	340	365	335	A	A	A	A	A	280	290	305	310	335	A	305	S 320	J S 310	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	13	10	17	15	14	22	28	25	19	9	11	13	23	26	26	28	28	24	22	24	25	19	15	9
MED	S 290	S 285	S 295	S 305	S 310	325	345	360	345	330	320	285	285	290	300	300	308	315	322	330	325	S 310	S 290	S 280
UQ	S 300	S 295	S 305	S 312	315	335	362	365	362	345	335	295	298	300	310	308	315	328	330	338	335	S 322	S 298	S 295
LQ	S 285	S 265	S 285	S 295	S 305	305	335	345	335	310	300	275	275	280	290	295	298	310	310	320	310	S 302	S 278	S 275

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MAY. 1976 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1976 | M(3000)F1 (0.01)

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							C	C	C	C	C	370	375	A	375	A	L 370	L	L					
2									A	L 360	L 385	L 370	A	A	A	A	A	A	A					
3							L	L 370	L 385	A	A	A	380	H 380	355	Y	A	A	A					
4								L	C	A	L 365	A	A	A	A	A	A	A	A					
5								L	A	A	A	380	A	R 375	370	365	340	A	A					
6								A	L	A	A	A	A	A	370	365	355	A	A					
7								L	A	A	A	A	A	A	A	A	A	A	A					
8								A	A	A	A	A	380	385	365	375	L 365	L	L					
9									A	A	A	A	A	A	A	A	A	A	A					
10							L	L	A	A	A	A	A	A	A	A	A	A	A					
11								A	A	A	A	A	A	R 375	365	A	A	A	A					
12								A	A	A	L	A	A	A	A	360	370	A	A					
13								390	A	A	A	A	385	375	365	A	A	A	A					
14							L	L	420	H 390	R 405	400	A	A	A	A	A	A	A					
15								A	L	L	A	410	390	A	410	395	A	A	A					
16								A	A	A	A	A	A	A	A	A	A	A	A					
17								A	A	L 345	R 385	A	A	A	A	370	A	A	A					
18							A	A	A	A	405	A	A	A	A	390	360	350	A					
19								L	A	A	A	A	A	380	A	390	355	A	A					
20								A	L 380	A	A	A	A	A	A	385	375	A	A					
21								A	A	A	A	A	A	A	A	A	A	A	L					
22							A	A	A	A	C	C	C	C	A	A	A	A	A					
23							A	A	A	A	A	A	A	A	H 385	380	H 370	A	A					
24								L	A	A	A	A	H 445	R 385	400	380	385	L 355	A	L				
25							L	U L 380	A	A	A	A	A	A	H 370	380	370	A	A					
26								L 345	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	A	A	R 370	A	A	A	A	L					
28								A	A	A	A	A	A	A	A	A	A	A	A					
29								A	A	A	A	A	A	A	A	A	A	L 350	A	A				
30								A	A	A	A	A	A	A	A	355	360	L 370	A	A				
31							L	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								4	3	3	5	5	6	8	11	13	12	4						
MED								L 375	L 385	L 360	385	380	382	378	370	380	368	L 352						
UQ								385	402	375	405	400	390	382	380	385	370	L 362						
LQ								L 358	L 382	L 352	L 385	370	380	R 375	365	365	358	350						

MAY. 1976 | M(3000)F1 (0.01)

IONOSPHERIC DATA

MAY. 1976 | H'F2 (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 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							C	C	C	C	C	395	365	295	290	265	255	275	275					
2									250	290	290	350	395	320	330	A	265	250	A					
3							280	280	230	A	A	550	275	440	325	290	295	265	260					
4								230	C	260	275	320	420	340	290	E A 350	A	275	A					
5								230	A	A	470	375	350	300	300	325	290	260	E A 265					
6								235	250	275	275	410	410	E A 350	310	320	275	250	E A 270					
7								250	265	E A 300	E A 345	A	A	375	310	280	295	300	A					
8								240	240	A	A	325	340	340	290	275	275	265	260					
9									225	A	A	A	A	350	A	300	255	250	250					
10							255	220	E A 255	A	E A 445	330	350	A	A	A	295	A	A					
11								250	A	A	A	A	350	350	310	295	275	A	A					
12								E A 270	A	A	450	A	350	E A 350	E A 360	285	290	A	275					
13								R	325	E A 330	A	E A 370	370	350	340	E A 360	A	A	250					
14							230	210	275	345	350	345	395	345	335	320	285	250	245					
15								240	240	280	A	425	350	345	340	295	300	A	A					
16								240	285	A	A	A	360	A	295	E A 335	305	285	270					
17								240	240	340	320	410	400	335	305	290	E A 300	A	A					
18							245	230	A	A	300	A	380	355	315	300	300	270	E A 310					
19								250	E A 280	A	A	A	E A 350	345	350	350	340	300	E A 280					
20								A	270	275	A	375	355	370	320	280	320	285	250					
21								A	A	A	A	A	A	A	A	E A 320	A	240	250					
22							E A 305	285	A	A	C	C	C	C	300	300	295	295	A					
23							275	A	A	A	A	A	310	315	320	355	340	290	A					
24								235	E A 315	A	345	A	335	300	305	320	290	275	260	230				
25							250	250	E A 250	A	A	A	A	330	350	300	300	A	A					
26								320	255	A	A	A	A	A	A	370	325	290	275					
27							A	250	A	280	A	A	E A 425	340	370	340	290	275	255					
28								A	A	A	A	A	A	E A 390	A	355	390	A	270					
29								A	A	A	370	A	400	305	280	A	300	295	270	E A 300				
30								310	A	A	A	A	A	350	300	320	290	280	265	E A 255				
31							260	230	255	A	A	A	A	A	E A 380	E A 350	300	E A 300	270					
	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	22	18	10	12	13	22	25	26	28	28	23	21	3				
MED							255	240	250	282	U 328	375	355	342	311	309	295	275	262	E A 255				
UQ							273	250	270	330	U 384	410	395	350	335	332	300	289	270	E A 278				
LQ							248	230	240	275	288	338	350	330	300	291	288	262	252	236				

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MAY. 1976 | H'F2 (KM)

IONOSPHERIC DATA

MAY. 1976 | H'F (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 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	275	290	290	240	C	C	C	C	C	C	C	200	200	A	E A 250	A	230	235	250	255	250	250	300	330
2	300	E A 350	285	210	A	A	225	240	A	240	235	E A 230	A	A	A	A	A	A	A	225	215	290	315	305
3	325	305	210	A	A	E A 305	245	235	210	A	A	A	230	H 220	E A 255	Y	A	A	A	250	250	215	250	305
4	260	250	250	230	E A 370	E A 350	250	225	C	A	H 220	A	A	A	A	A	A	A	A	250	E A 265	250	A	E A 345
5	300	295	320	255	255	255	235	230	A	A	215	220	A	E A 250	230	220	E A 270	A	A	250	E A 350	310	E A 350	A
6	250	A	270	225	240	255	240	A	E A 250	A	A	A	A	A	235	240	E A 260	A	A	A	270	270	E A 350	300
7	A	A	A	250	255	210	225	245	A	A	A	A	A	A	A	A	A	A	A	240	250	A	255	A
8	290	300	290	285	265	255	230	A	A	A	A	A	E A 250	230	230	205	205	235	E A 245	230	230	255	A	290
9	A	E A 300	275	235	265	245	235	245	A	A	A	A	A	A	A	A	A	A	A	E A 250	255	295	A	A
10	325	A	A	290	250	250	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
11	A	A	275	275	A	270	A	A	A	A	A	A	A	240	E A 260	A	A	A	A	A	E A 300	A	A	A
12	A	A	A	A	A	290	250	A	A	A	H 200	A	A	A	A	E A 260	230	A	A	245	230	230	E A 350	290
13	290	E A 350	260	245	250	225	225	205	A	A	A	A	E A 250	225	E A 240	A	A	A	A	250	250	E A 300	250	270
14	300	305	300	270	250	230	225	200	190	H 195	205	200	A	A	A	A	A	A	A	E A 250	E A 245	250	265	A
15	310	E A 300	E A 315	E A 335	E A 300	240	225	A	220	225	A	H 190	240	A	205	250	A	A	A	240	240	220	A	E A 340
16	E A 310	A	300	245	250	245	240	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
17	A	290	290	E A 315	A	A	240	A	A	E A 250	H 210	A	A	A	A	220	A	A	A	E A 250	E A 255	A	E A 320	A
18	A	290	E A 310	A	E A 300	240	A	A	A	A	210	A	A	A	A	235	225	250	A	E A 275	230	E A 350	260	E A 320
19	295	300	270	250	250	250	230	E A 245	A	A	A	A	A	230	A	240	E A 250	A	A	250	A	E A 270	290	A
20	A	270	270	A	E A 300	255	240	A	210	A	A	A	A	A	A	215	220	A	A	250	A	E A 300	E A 350	A
21	A	A	E A 300	270	250	250	E A 250	A	A	A	A	A	A	A	A	A	A	A	E A 240	A	E A 300	A	305	A
22	A	A	290	290	E A 290	275	A	A	A	A	C	C	C	C	A	A	A	A	A	A	220	250	A	E A 350
23	A	A	275	270	A	A	A	A	A	A	A	A	A	A	H 200	230	H 220	A	A	A	E A 250	E A 250	E A 300	A
24	A	E A 340	295	225	E A 250	275	240	225	A	A	A	A	H 175	225	210	230	210	E A 225	A	235	E A 250	A	A	A
25	E A 315	E A 300	E A 300	E A 340	E A 285	250	240	220	A	A	A	A	A	A	H 190	200	230	A	A	E A 250	205	200	300	300
26	E A 360	E A 355	320	300	A	240	245	250	A	A	A	A	A	A	A	A	A	A	A	250	230	A	A	A
27	A	295	300	285	A	A	A	A	A	A	A	A	A	E A 260	A	A	A	A	E A 255	E A 260	265	250	A	E A 320
28	250	A	A	A	E A 300	240	E A 250	A	A	A	A	A	A	A	A	A	A	A	A	E A 250	270	250	300	A
29	245	E A 300	A	A	275	255	E A 290	A	A	A	A	A	A	A	A	A	A	225	A	A	290	260	E A 290	280
30	300	250	E A 300	270	A	250	240	A	A	A	A	A	A	A	A	E A 250	235	E A 250	A	A	250	A	A	300
31	290	255	205	245	255	245	240	A	A	A	A	A	A	A	A	A	A	A	A	A	250	245	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	19	21	26	25	21	26	25	12	5	4	7	5	6	8	11	13	12	6	4	21	27	22	19	16
MED	295	U 278	282	260	252	250	240	230	210	221	210	200	U 212	228	U 215	225	225	232	E A 248	245	240	250	U 275	294
UQ	305	E A 305	295	278	E A 290	255	242	245	215	242	218	210	E A 250	238	E A 245	238	236	250	251	250	258	U 272	309	E A 325
LQ	282	280	270	245	250	240	230	222	210	210	208	200	200	225	208	220	220	225	E A 242	235	232	250	257	290

MAY. 1976 | H'F (KM)

IONOSPHERIC DATA

MAY. 1976 | H'E (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 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						C	C	C	C	C	C	115	A	100	E A 115	E A 110	E A 120	E A 110	E A 120	S				
2						S	E A 140	120	105	105	105	105	105	105	105	105		A	A	A	B			
3						S	S	A	A	A	A	A	A	105	105	105	105	105		A	S			
4						S	E S 135	110	I C 105	105	105	105	100	105	105	105	105	105	115	B				
5						S	S	110	105	105	105	105	105	100	E A 125	A	110	110	115	B				
6						S	E S 140	105	105	105	105	105	105	A	A	105	105	110	115	S				
7						S	E S 140	110	105	105	105	105	A	105	I B 110	105	105	105	110	B				
8						S	B	105	105	105	105	A	A	A	105	105	E A 120	105	115	B				
9						S	135	105	105	105	105	100	105	110	105	105	105	105	110	B				
10						S	125	105	105	105	105	105	105	105	105	105	105	105	110	S				
11						S	130	110	105	105	105	A	A	E A 115	100	105	105	105	105	S				
12						E	E B 140	105	105	105	105	105	105	105	105	105	105	110	A	B				
13						S	115	105	105	105	105	105	A	105	105	105	105	105	105	B				
14						S	E S 130	A	A	A	A	105	110	105	105	105	100	110	110	S				
15						S	125	105	A	A	A	A	105	105	105	105	105	105	110	B				
16						S	130	105	105	105	A	A	A	A	A	A	A	E A 115	110	B				
17						S	120	105	105	105	A	A	A	A	A	E A 120	E A 120	110	115	B				
18						S	120	105	105	A	A	A	A	A	A	A	A	110	115	B				
19						S	120	110	105	100	105	105	105	E B 110	105	105	105	105	110	B				
20						S	120	105	105	105	105	105	105	105	E B 110	105	105	105	115	B				
21						S	120	105	100	105	105	105	A	A	A	A	A	105	A	B				
22						S	115	105	105	105	C	C	C	C	A	A	A	A	A	S				
23						S	A	105	105	A	105	A	105	A	105	105	105	105	110	B				
24						S	130	105	105	105	A	A	105	E A 120	105	105	105	105	110	B				
25						S	A	105	105	100	105	E B 110	105	105	105	105	105	105	115	S				
26						S	125	105	105	105	105	105	A	A	105	A	A	A	A	S				
27						S	A	105	105	105	105	105	105	105	105	105	105	105	115	S				
28						S	115	105	105	A	A	A	A	A	A	A	A	105	110	S				
29						S	120	105	105	A	A	A	A	A	A	A	A	A	100	B				
30						S	130	105	105	A	A	A	A	A	100	105	E A 110	E A 110	115	B				
31						S	115	105	A	100	A	A	A	A	A	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							24	28	26	22	18	17	15	18	22	22	22	26	24					
MED							122	105	105	105	105	105	105	105	105	105	105	105	110					
UQ							128	105	105	105	105	105	105	105	105	105	105	108	115					
LQ							120	105	105	105	105	105	105	105	105	105	105	105	110					

The Radio Research Laboratories, Japan

MAY. 1976 | H'E (KM)

IONOSPHERIC DATA

MAY. 1976 | H'ES (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	105	100	100	B	C	C	C	C	C	C	C	110	105	120	120	115	145	130	120	110	105	120	100	105
2	105	105	100	B	100	100	100	125	120	120	115	110	110	105	115	105	105	110	105	105	110	110	110	S
3	105	105	105	100	100	110	140	130	100	100	105	105	105	G	125	120	115	110	105	115	S	100	S	S
4	S	S	B	120	115	110	120	125	C	125	150	150	135	125	140	120	115	115	110	105	110	105	105	105
5	105	105	100	105	100	100	130	135	110	105	115	105	160	150	105	105	125	115	110	105	105	110	105	105
6	105	105	105	100	B	S	130	120	115	110	105	105	105	100	170	150	130	115	115	110	110	105	105	110
7	105	105	105	105	105	105	130	125	115	110	110	105	100	115	145	125	120	115	110	110	110	105	105	105
8	S	105	100	100	B	S	125	120	110	110	110	120	145	145	150	G	105	155	120	110	105	105	105	105
9	100	105	100	100	B	125	135	130	115	110	110	110	110	110	105	105	120	115	110	105	105	105	120	110
10	105	105	100	105	100	150	125	120	105	105	105	105	110	125	120	120	120	115	110	105	105	105	105	105
11	105	105	105	105	100	130	130	115	105	105	105	100	120	150	150	125	120	115	105	100	105	105	105	100
12	100	100	100	100	100	100	125	115	110	105	125	110	115	115	115	120	130	110	105	105	105	105	105	105
13	105	100	100	105	110	105	145	140	105	105	105	105	105	160	150	120	105	110	105	105	105	100	100	100
14	100	100	100	100	B	S	G	105	105	110	105	145	125	120	110	110	105	105	105	105	100	100	100	100
15	100	100	100	95	105	S	140	105	105	100	100	120	130	120	125	155	120	105	105	100	105	S	105	100
16	100	95	95	95	100	100	125	115	110	105	100	100	100	100	100	100	100	125	110	110	110	105	105	100
17	100	100	100	100	100	100	125	120	115	110	105	105	105	105	140	105	125	120	110	105	105	105	105	105
18	105	100	100	105	110	135	125	110	105	100	105	105	105	100	100	100	145	120	115	105	105	105	105	100
19	100	100	100	100	95	95	110	125	115	105	105	105	105	130	125	150	135	115	110	105	105	105	110	105
20	105	105	100	100	100	100	120	115	110	105	105	105	105	105	105	150	120	110	110	110	105	105	100	100
21	100	100	100	100	100	100	120	110	105	105	105	105	100	100	100	105	105	120	120	105	110	110	115	105
22	100	100	95	100	100	100	125	110	105	105	C	C	C	C	100	100	100	120	105	105	105	100	105	105
23	105	100	100	100	100	100	125	120	110	105	105	100	105	110	G	155	150	120	105	105	105	105	105	105
24	105	105	105	100	100	100	130	130	110	105	105	100	130	170	105	G	155	120	110	110	105	105	105	105
25	100	100	100	95	95	90	100	110	110	105	105	100	100	105	155	140	G	115	105	105	105	100	100	100
26	110	145	125	120	105	105	125	125	115	105	100	100	100	100	105	105	125	120	120	110	105	105	105	105
27	100	125	105	105	120	120	105	105	105	105	105	105	140	150	135	105	125	125	115	105	105	105	105	105
28	100	100	95	95	95	95	125	110	105	100	100	100	100	100	100	100	125	115	115	110	105	105	105	105
29	105	100	100	105	120	115	110	110	105	100	100	100	100	100	100	100	100	120	110	105	110	105	100	100
30	100	100	100	100	100	100	120	120	105	100	105	100	100	105	135	160	140	125	115	110	105	105	105	100
31	100	100	B	100	100	120	115	110	105	125	100	100	100	100	105	100	105	100	100	100	100	100	100	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	29	30	29	29	26	26	29	30	29	30	29	30	30	29	30	29	30	31	31	31	30	30	30	29
MED	105	100	100	100	100	100	125	120	110	105	105	105	105	110	118	115	120	115	110	105	105	105	105	105
UQ	105	105	100	105	105	115	130	125	110	110	105	110	120	125	140	125	130	120	115	110	105	105	105	105
LQ	100	100	100	100	100	100	120	110	105	105	105	100	100	100	105	105	105	112	105	105	105	105	105	100

The Radio Research Laboratories, Japan

MAY. 1976 | H'ES (KM)

IONOSPHERIC DATA

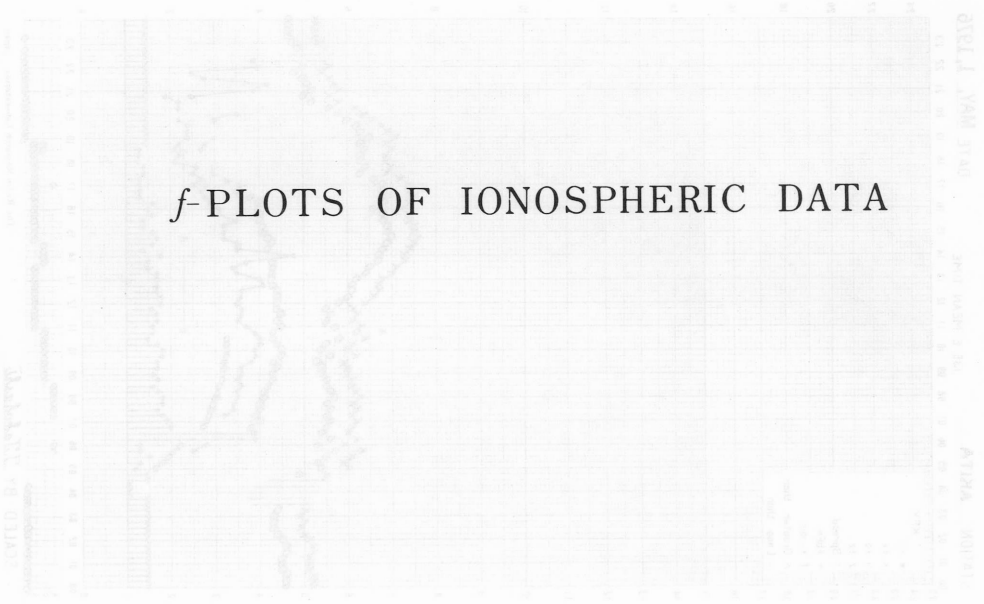
MAY. 1976 | TYPES OF ES | 135 E Mean Time (G. M. T. + 9 h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in 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	F2	F1	F1									C1	C1	C2	C1L1	C1L2	H1L1 2	H1L3 1	C1L2 1	C1L4 5	F F 3 2	F F 1 4	F 1	F 3
2	F F 2 1	F 3	F 2		F 4	L 7	L 2	H 3	C 2	C 1	C 1	C 1	C 1	C 3	C 1	C 6	C 2	C 3	C 5	C 2	F 3	F 7	F 2	
3	F F 2 1	F 2	F 3	F 3	F 5	L H 2 2	H 3	H L 1 2	L 3	L 3	L 2	L 2	L 1		H 1	C 1	C 2	C 3	L 5	L 1		F 1		
4				F 1	F 6	L 6	C 3	H 2		H 2	H 1	H 1	H 2	H 2	H 1	C 3	C 4	C 4	C 6	L 5	F 7	F 3	F 4	F 4
5	F 1	F 3	F 3	F 2	F 1	L 1	H 3	H 1	C 4	C 4	C H 1 1	C 1	H 1	H 1	L 1	L 1	H 2	C 3	C 3	L 3	F 3	F 4	F 3	F 5
6	F 5	F 6	F 3	F 3			H 2	H 3	C 2	C 2	C 2	C 1	C 2	L 3	H L 1 1	H 1	H 1	C 3	C 6	L 6	F 6	F 3	F 5	F 7
7	F 7	F 4	F 5	F 5	F 4	L 1	H 2	H 2	C 2	C 2	C 2	C 4	C 2	C 2	H 1	H 3	C 3	C 5	C 7	C 6	F 5	F 6	F 3	F 6
8		F 2	F 2	F 2			C 3	C 3	C 2	C C 2 2	C C 3 1	C C 2 1	H C 1 1	H C 1 1	H 1		L 1	H 1	C 2	C L 4 1	F 5	F 4	F 7	F 2
9	F 4	F F 2 3	F 4	F 1		C 1	C 3	H 4	C 3	C 5	C 3	C 6	C 2	C 4	C 5	C 4	C 4	C 5	C 5	L 7	F 5	F 2	F 6	F 5
10	F 3	F 7	F 7	F 4	F 2	H 1	H 3	C 3	C 3	C 4	C 2	C 3	C 1	H C 3 1	H 6	H 6	H 4	C 4	C 6	L 4	F 5	F 4	F 4	F 6
11	F 4	F 6	F 6	F 4	F F 3 3	C L 5 3	C 4	C 5	C 6	C 5	C 3	L 4	C L 3 1	H L 1 1	H 1	H 2	C 2	C 4	C 5	L 3	F 6	F 3	F 4	F 6
12	F 4	F 4	F 3	F 3	F 3	L 2	H L 2 1	C 6	C 4	C 3	C 1	C 4	C 2	C 2	C 3	C 2	H 1	C 3	L 4	L 3	F 6	F 3	F 3	F 5
13	F 3	F 4	F 3	F 3	F F 1 1	L 1	H 1	H 1	C 3	C 3	C 5	C 3	L 1	H C 1 1	H 1	C 3	C 3	C 3	C 5	L 4	F 4	F 3	F 2	F 2
14	F 2	F 1	F F 2 2	F 1				L 3	L 2	C 1	C 2	H 1	H 2	C 2	C 3	C 2	C 6	C 3	C 4	C 6	F 6	F 3	F 4	F 4
15	F 3	F 5	F 3	F 3	F F 3 3		H 1	C 4	C 2	C 2	C 2	C L 1 1	H 1	C 2	H 1	H 1	H 2	C 4	C 5	L 3	F 4		F F 3 5	F 3
16	F 4	F 4	F 4	F 2	F 2	L 3	C 4	C 3	C 2	C 4	C 5	C 5	C 2	L 3	L 4	L 4	L 2	H L 3 1	C 6	C 6	F 6	F 5	F 5	F 4
17	F 4	F 6	F 2	F 3	F 6	L 6	H 2	H 3	C 2	C 1	C 1	C 2	C H 1 1	C 2	H C 1 1	C 1	H C 2 1	C 5	C 5	C 3	F 3	F 3	F 4	F 3
18	F 3	F 3	F 4	F F 2 3	F F 2 2	C 2	C 4	C 3	C 7	L 4	L 2	L 3	L 3	L 3	L 3	L 2	H L 1 1	C 1	C 3	L 3	F 3	F 3	F 3	F 3
19	F 3	F 3	F 2	F 2	F 3	L 2	L H 1 1	H 2	C 4	C 3	C 4	C 3	C 2	H 1	H 1	H 1	H 2	C 4	C 6	L 5	F 3	F 6	F 3	F 3
20	F 4	F 4	F 3	F 3	F 3	L 5	C 3	C 5	C 2	C 4	C 3	C 3	C 3	C 3	C 3	H 1	H 2	C 2	C 3	L 4	F 5	F 5	F 3	F 4
21	F 4	F 5	F 3	F 2	F 4	L 4	C 5	C 7	C 4	C 5	C 4	C 3	C 3	C 4	C 4	C 3	C 4	C 3	C L 4 1	L 5	F 4	F 4	F 3	F 3
22	F 3	F 5	F 4	F F 2 4	F F 2 4	L H L 1 1	H 4	C 2	C 4	C 5					L 2	L 3	L 3	C L 2 3	C L 6 2	C L 7 4	F 3	F 3	F 5	F 5
23	F 7	F 4	F 3	F 4	F 7	L 7	C L 3 3	C 4	C 3	C 5	C 3	C 3	C 1	C C 3 2		H 1	H 1	C 2	C 7	C 5	F 4	F 2	F 5	F 3
24	F 4	F 5	F 5	F 3	F 5	L 1	C 4	H 3	C 2	C 5	C H 2 1	C 3	H 1	H L 1 1	L 1		H 1	C 2	C 3	C 3	F 4	F 5	F 4	F 4
25	F 4	F 5	F 5	F 3	F 3	L 3	L 3	C 2	C 3	C 4	C 3	C 3	C 4	C 2	H 1	H 1		C 6	C 3	L 4	F 3	F 2	F 2	F 1
26	F 3	F F 1 2	F 2	F F 2 1	F 5	L 2	H 2	H 2	C 2	C 4	C 4	C 6	L 4	L 3	C 5	L 3	H L 2 1	C L 4 4	C L 4 2	L L 5 2	F 2	F 6	F 5	F 4
27	F 5	F F 1 2	F 4	F 4	F 4	L 6	L 3	C 4	C 6	C 3	C 4	C 5	H C 1 1	H C 1 1	H C 1 1	C 2	H 2	H 2	C 3	L 3	F F 4 3	F F 3 1	F 4	F 3
28	F 4	F 3	F 4	F 4	F 4	L 2	H 3	C 5	C 6	C 5	C 3	C 4	C 3	C 2	C 2	C 2	H L 3 1	C 6	C 4	C 5	F F 3 2	F F 3 1	F F 2 2	F 3
29	F 4	F 4	F 2	F F 3 2	F 3	C 3	C 5	C 6	C 5	C 5	C 2	C 3	C 2	C 3	L 3	L 5	L 5	C L 1 3	C 6	C L 3 1	F E 6 2	F 4	F 7	F 3
30	F 3	F F 3 2	F 3	F F 2 2	F F 5 1	L 4	C 6	C 3	C 5	C 4	C 3	C 4	C 2	C 1	H 2	H 1	H L 1 1	H L 2 1	C 3	C 5	F 5	F 5	F 4	F 4
31	F 4	F 3		F 2	F 1	C 1	C 2	C 6	C 4	H C 1 3	C 4	C 4	C 3	C 3	C 3	C 3	C 2	C 4	C 6	C 5	F 4	F 2	F 2	F 1
	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																								

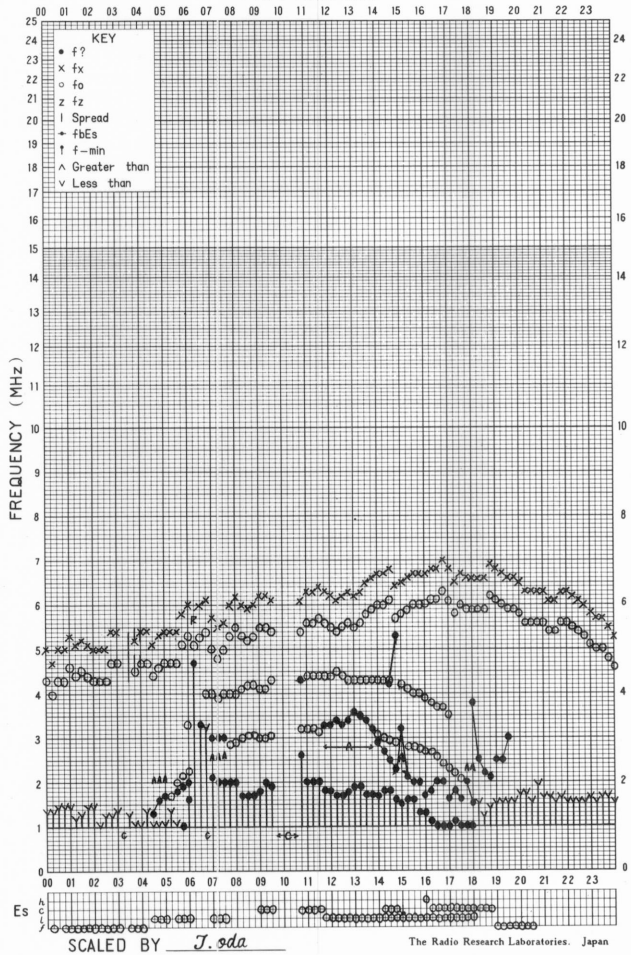
MAY. 1976 | TYPES OF ES

f-PLOTS OF IONOSPHERIC DATA



f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE MAY. 1, 1976



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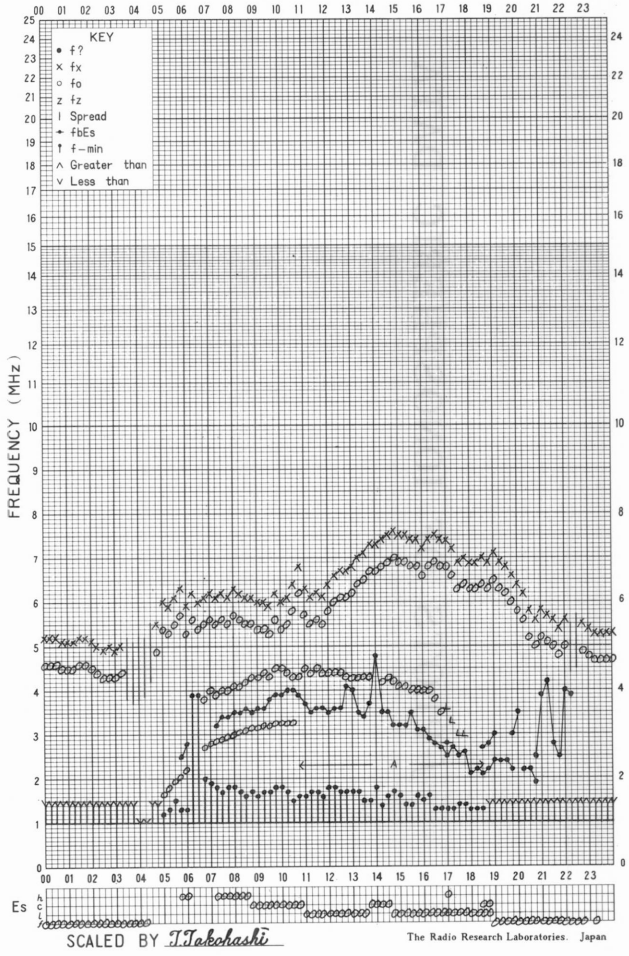
f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE MAY, 1, 1976



SCALED BY T. Takahashi

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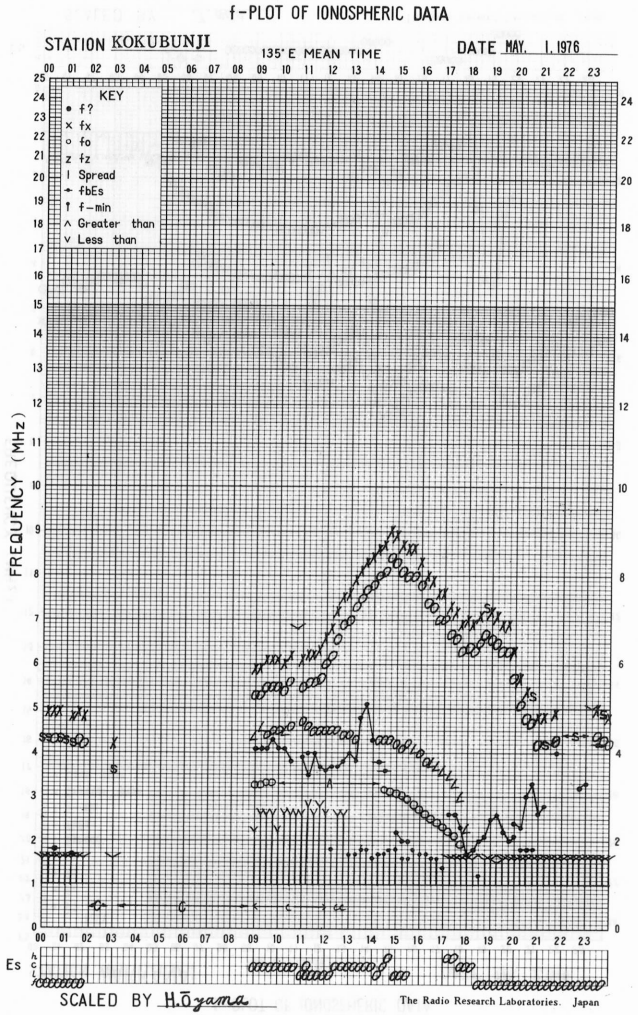
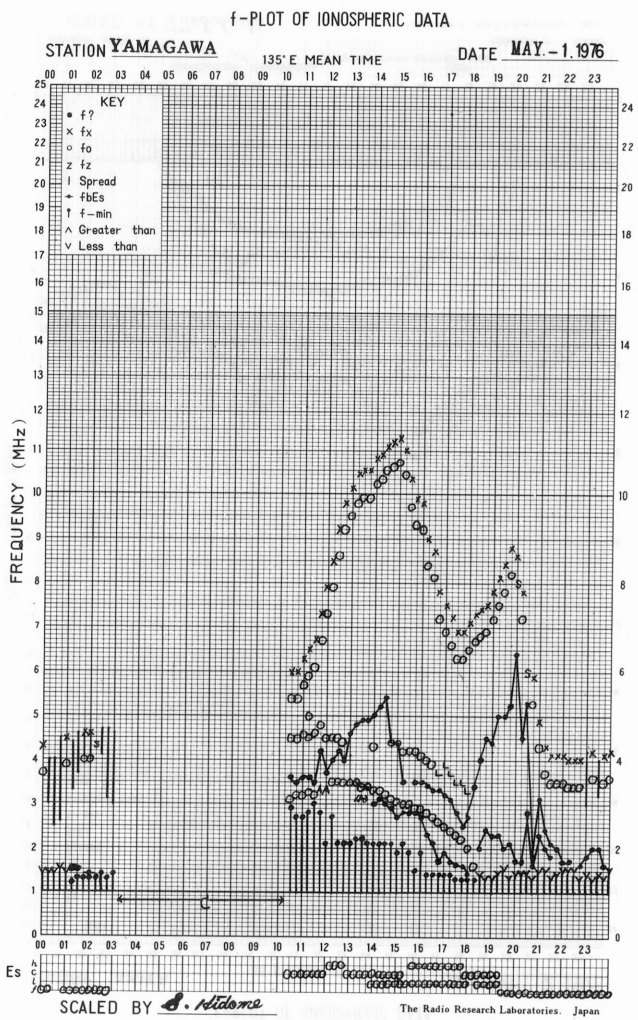
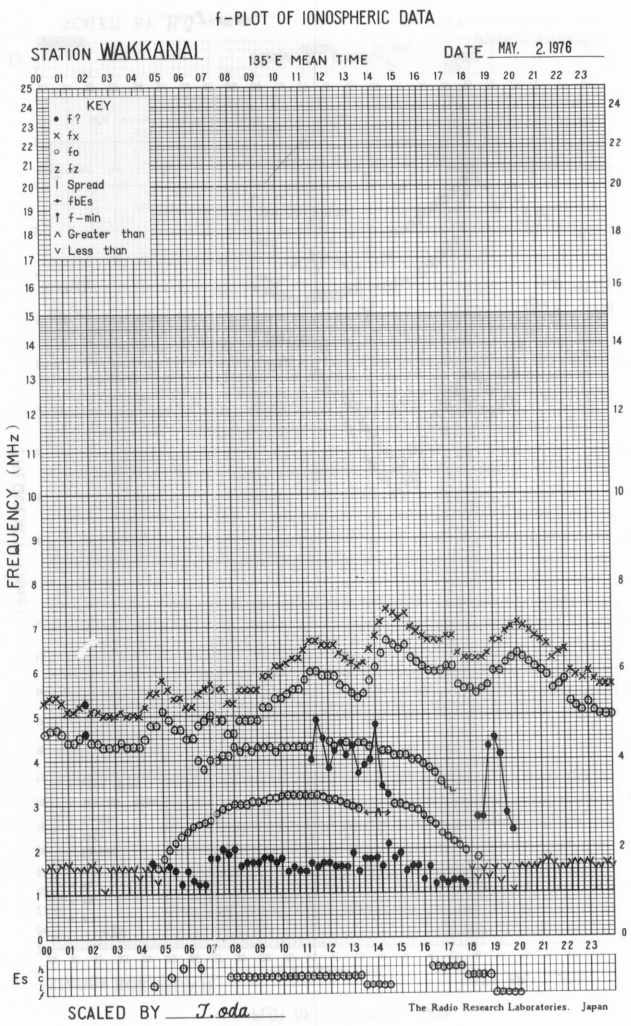
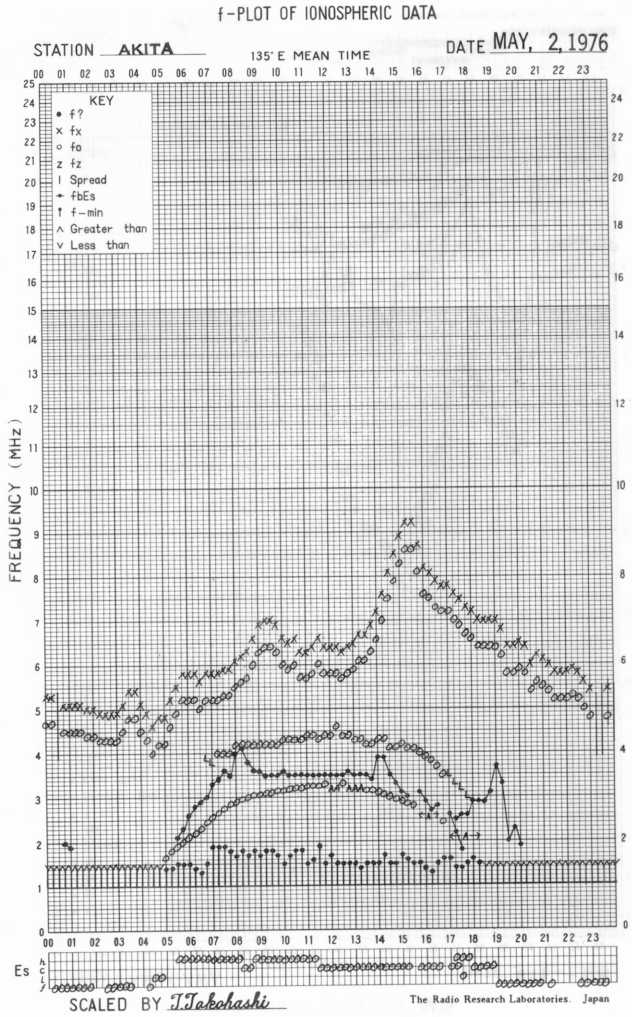
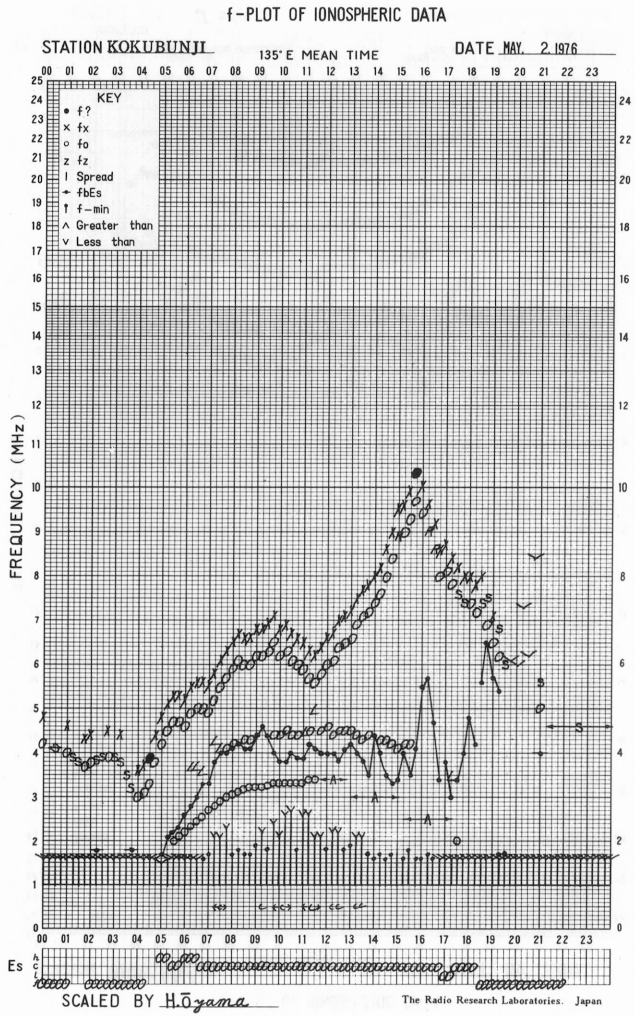
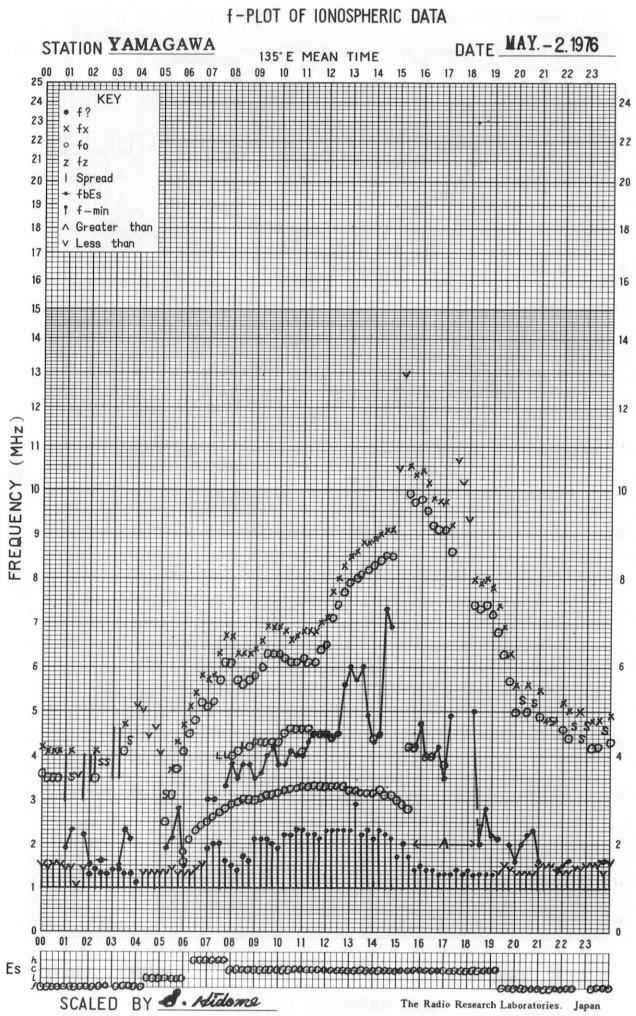

f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE MAY. 1. 1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY H.Ōzama
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE MAY.-1.1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY A. Kidoma
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE MAY. 2. 1976
KEY
• f?
× fx
○ fo
z fz
| Spread
← fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. oda
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE MAY, 2, 1976
KEY
• f?
× fx
○ fo
z fz
| Spread
← fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE MAY. 2. 1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY H. Ōyama
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE MAY.-2.1976
KEY
f?
fx
fo
fz
Spread
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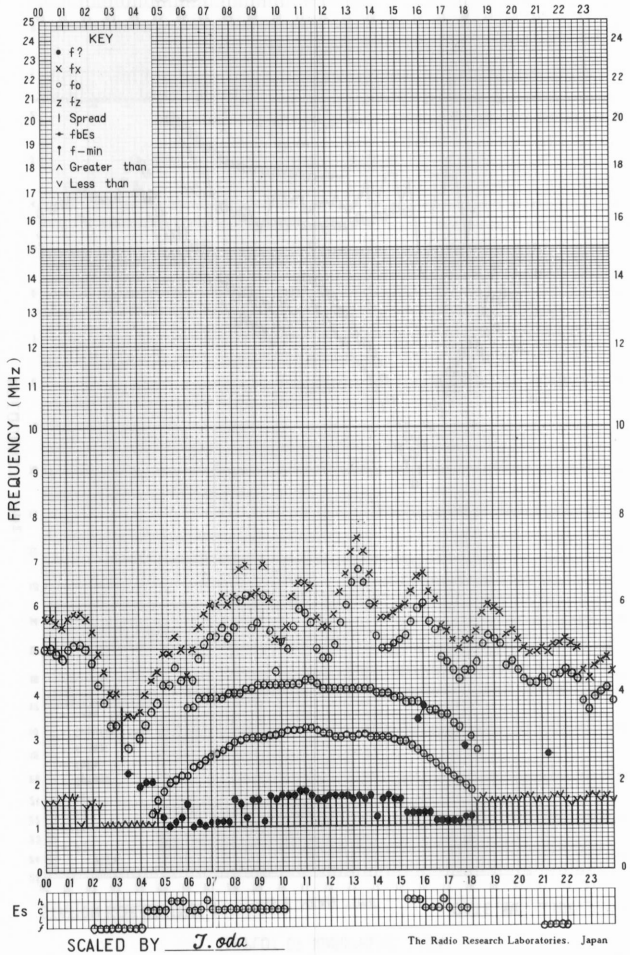
SCALED BY S. Kitaoka
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE MAY. 3.1976

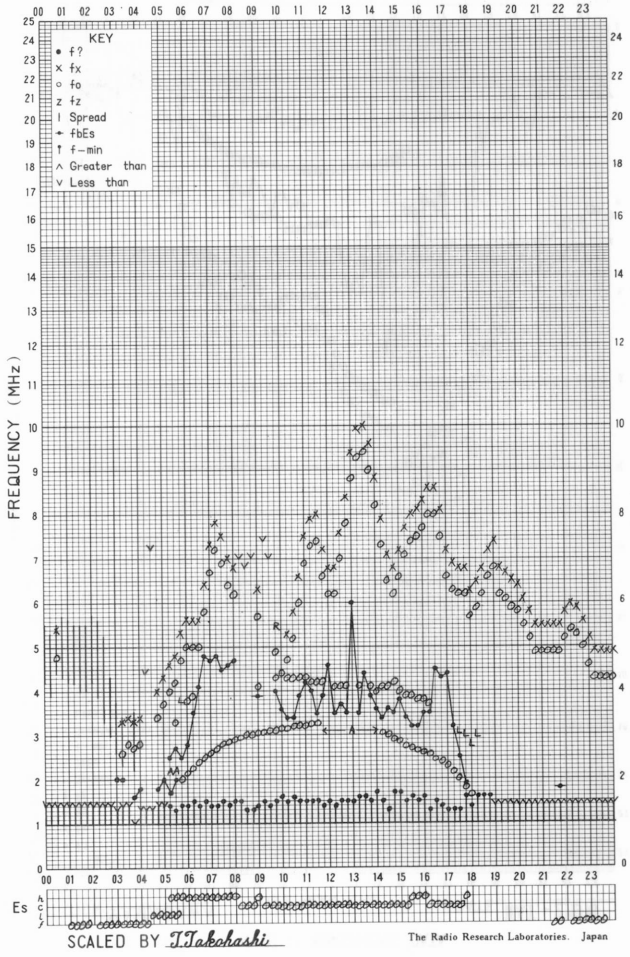


SCALED BY J. oda

The Radio Research Laboratories. Japan

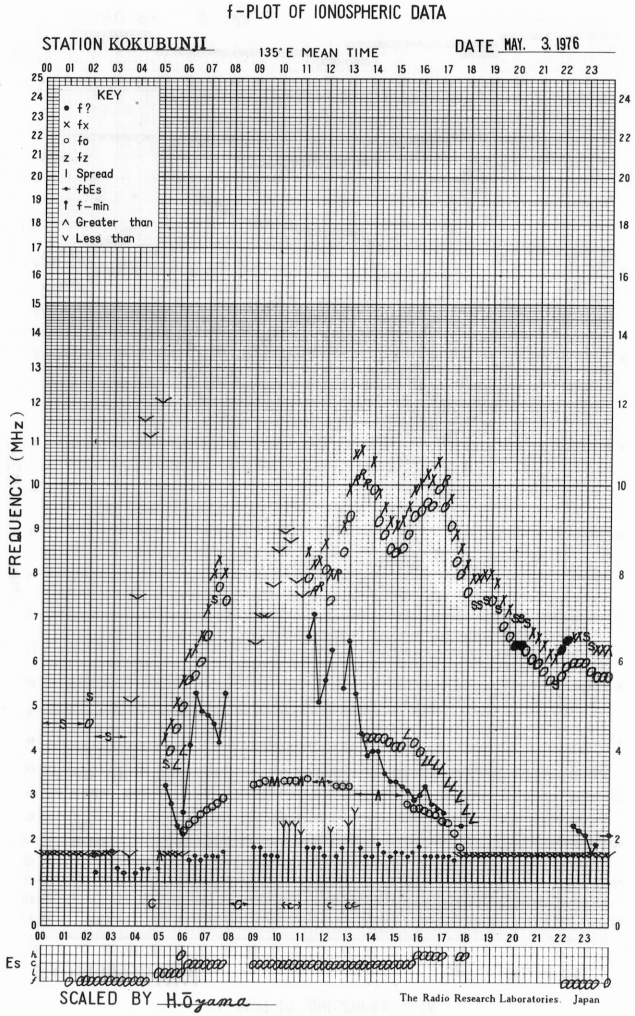
f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE MAY, 3, 1976



SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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135°E MEAN TIME
DATE MAY. 3. 1976
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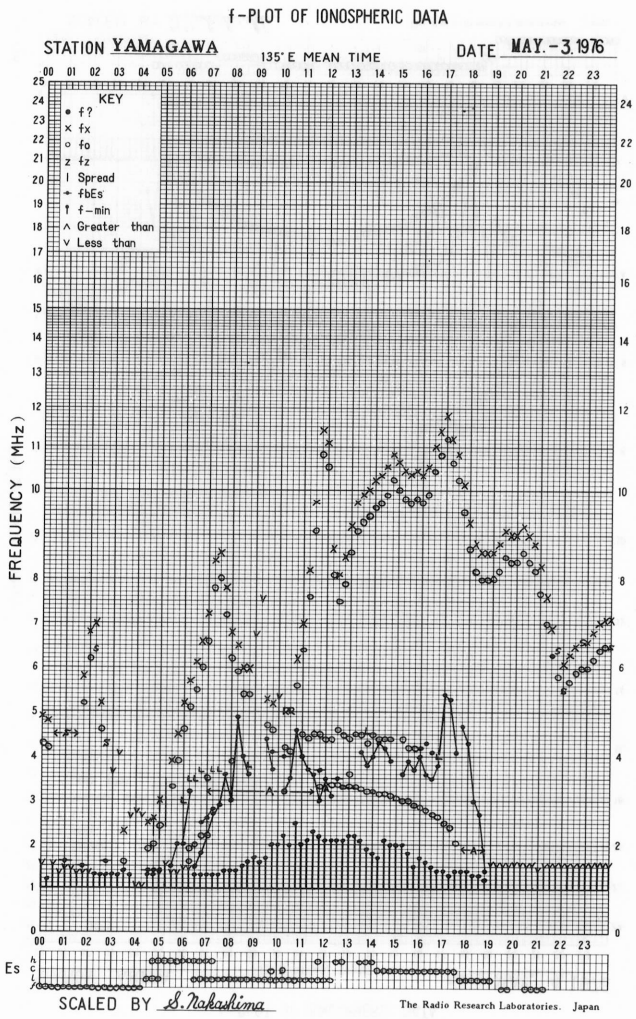
SCALED BY H.Ōzyama
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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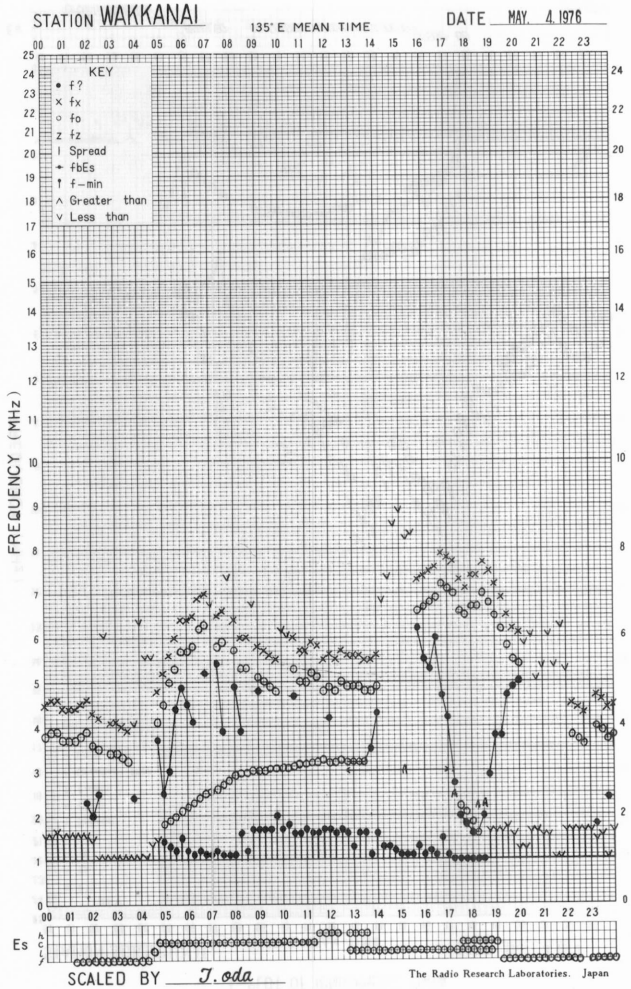

SCALED BY J. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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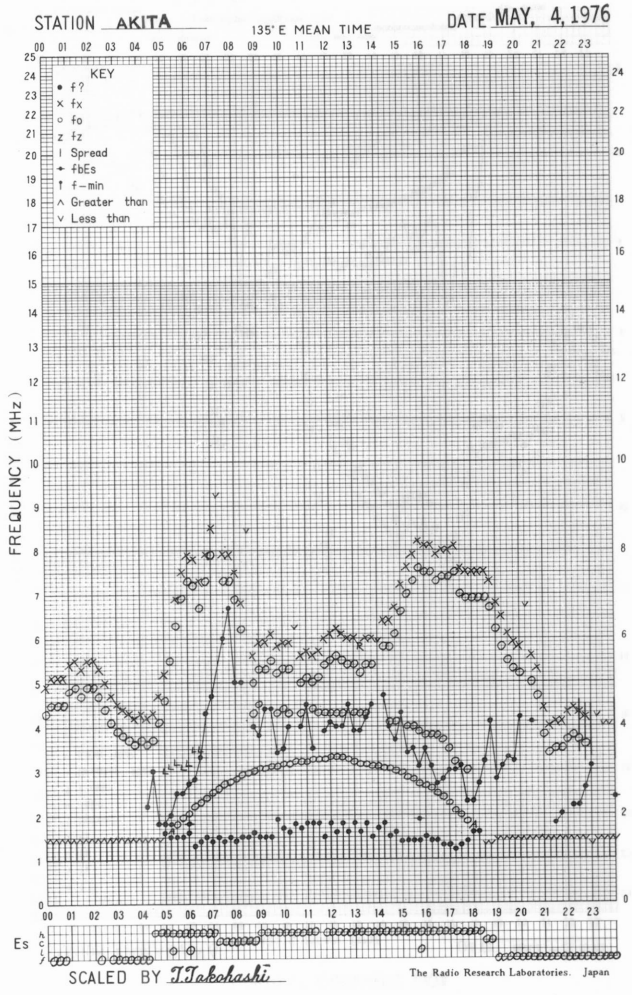
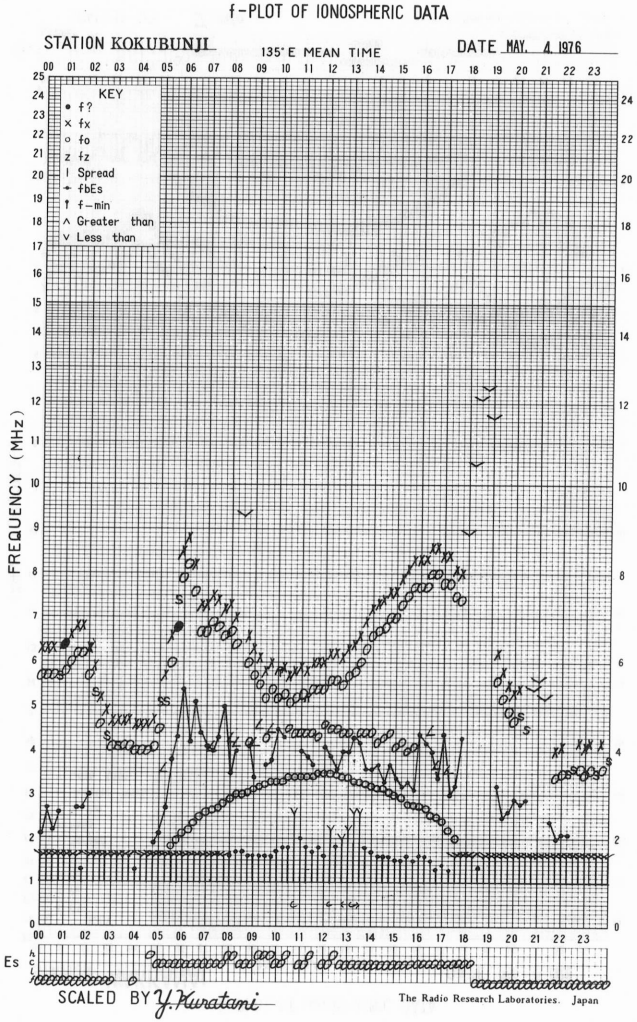


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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DATE MAY. 4 1976
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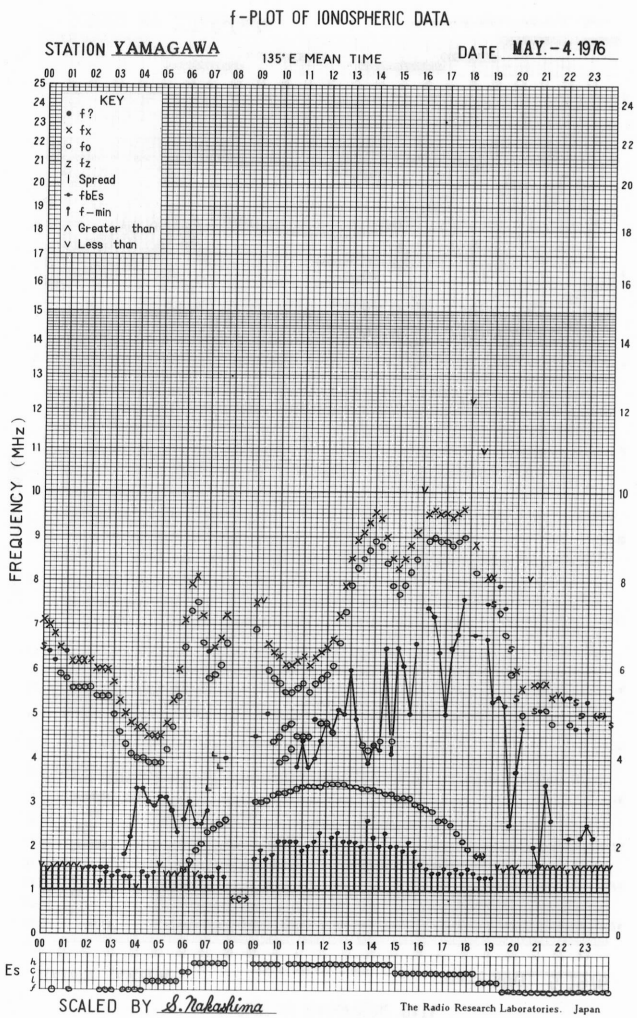
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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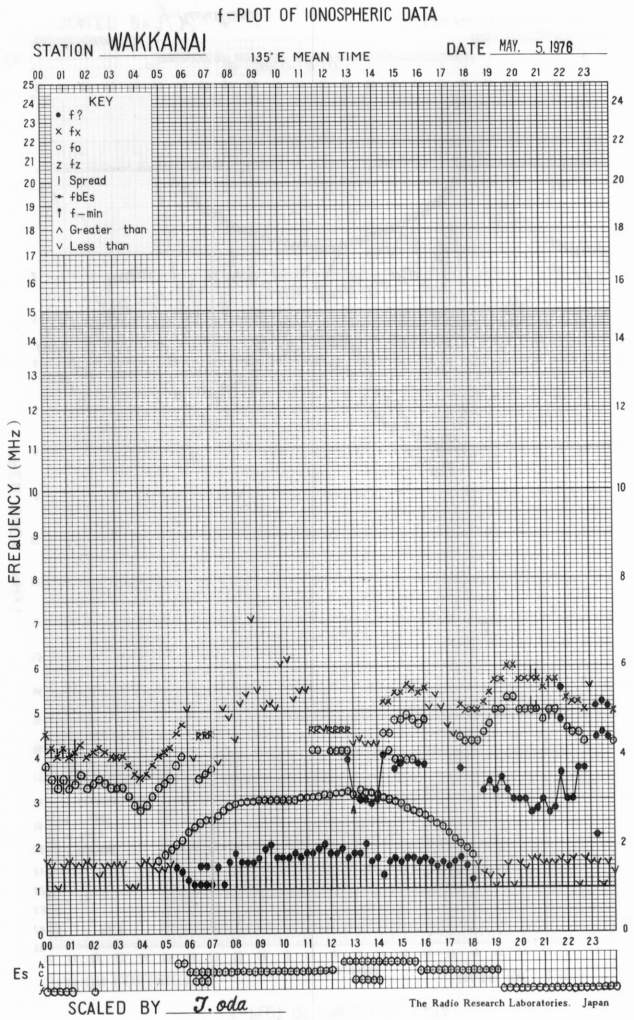
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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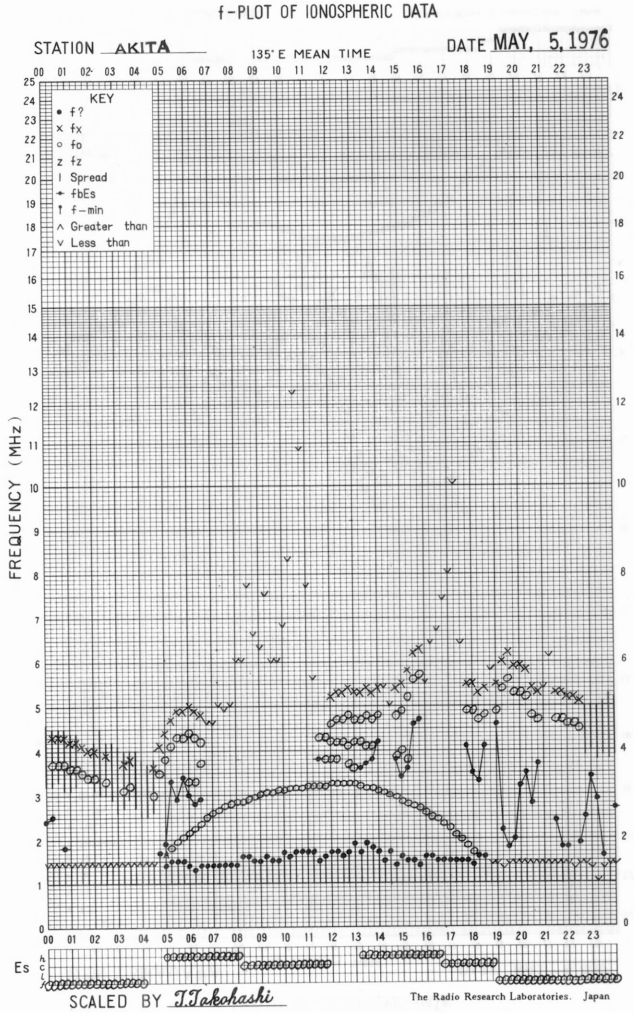
SCALED BY T. oda
The Radio Research Laboratories. Japan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DATE MAY, 5, 1976
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FREQUENCY (MHz)
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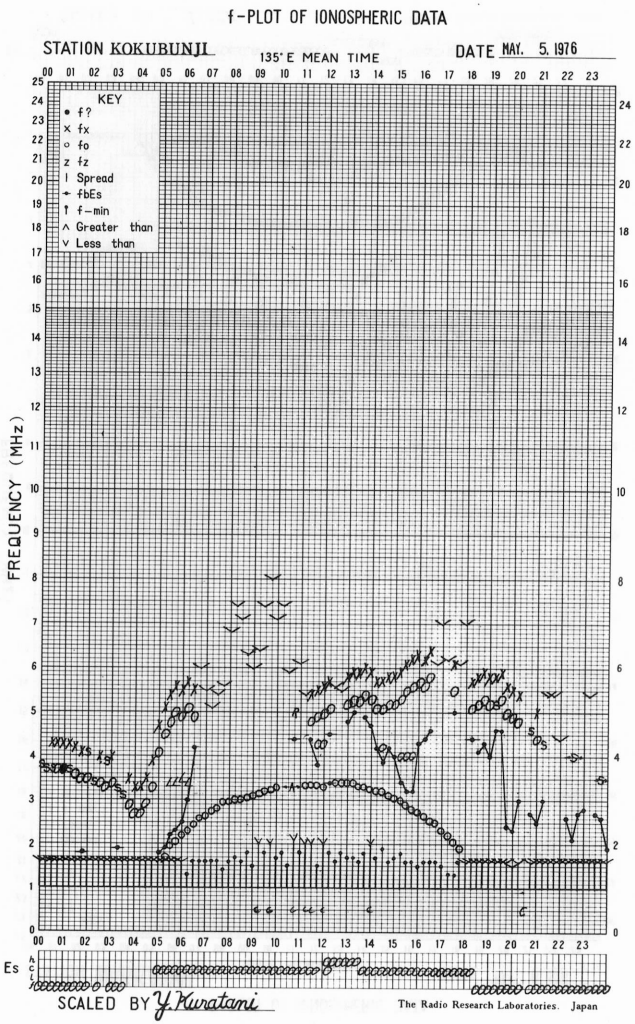
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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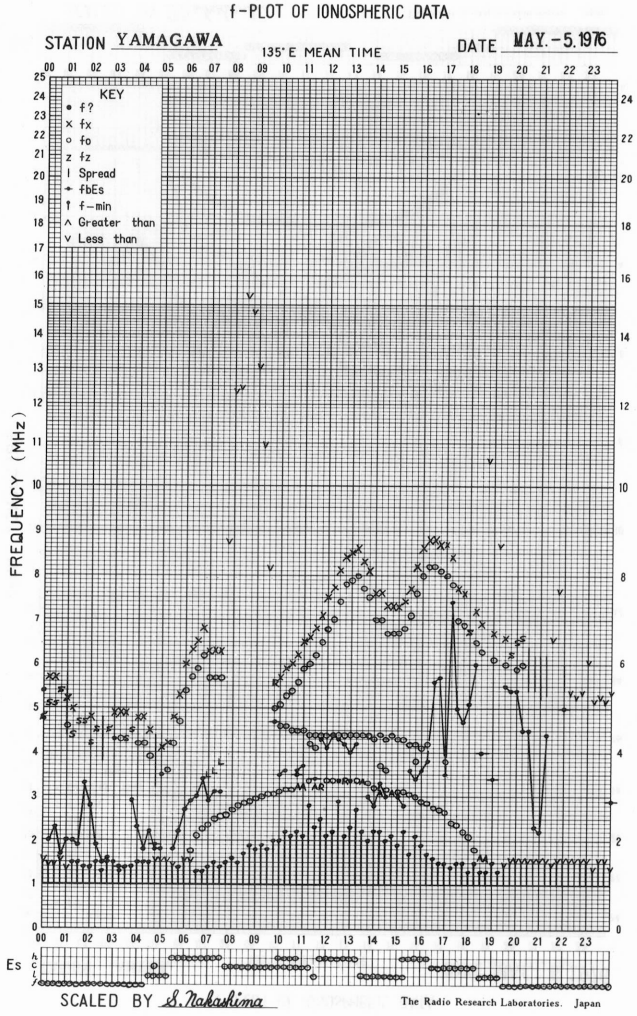
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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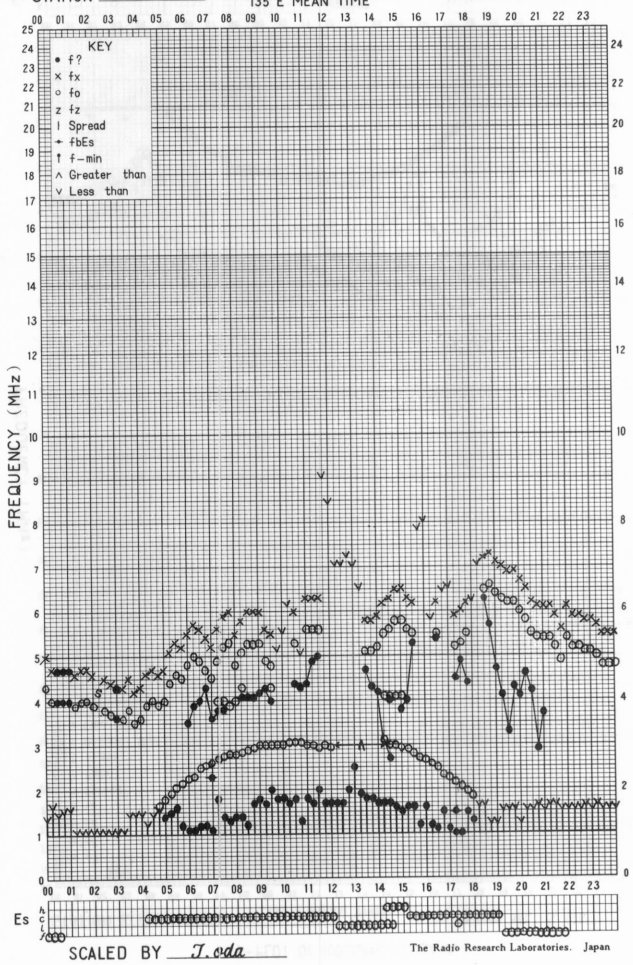
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE MAY. 6. 1976



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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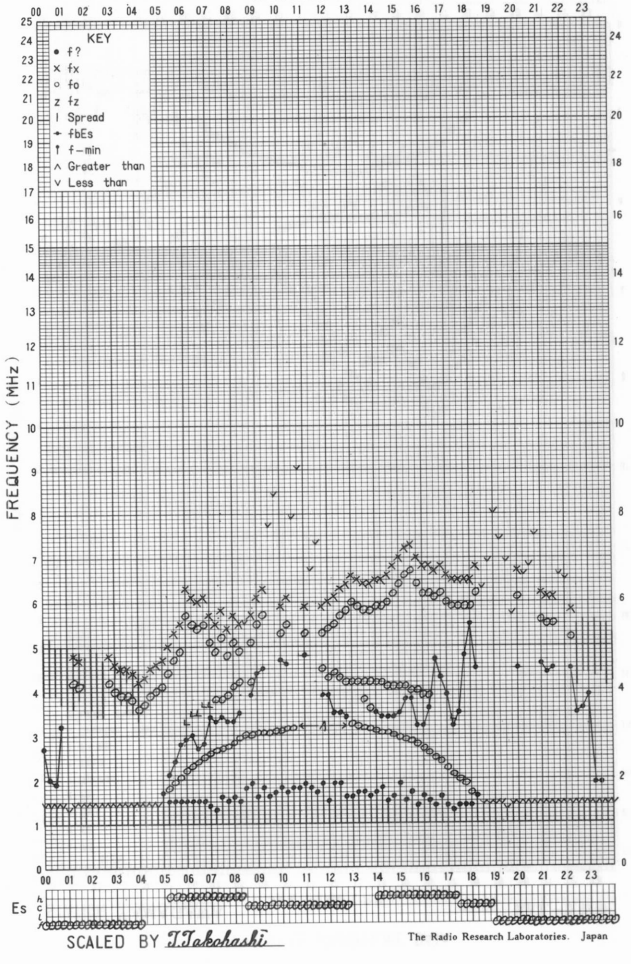
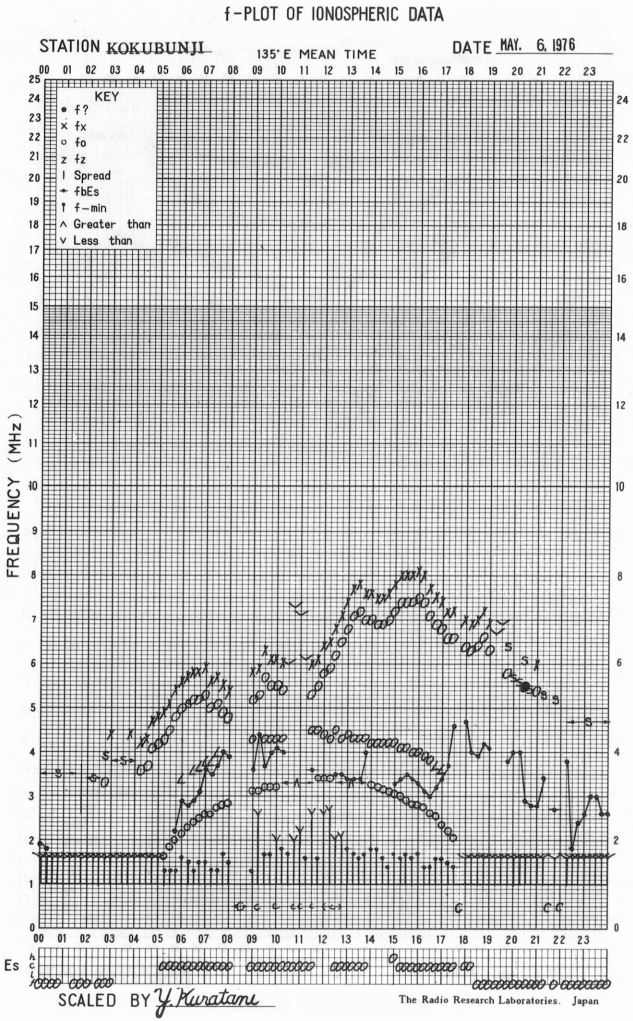


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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135° E MEAN TIME
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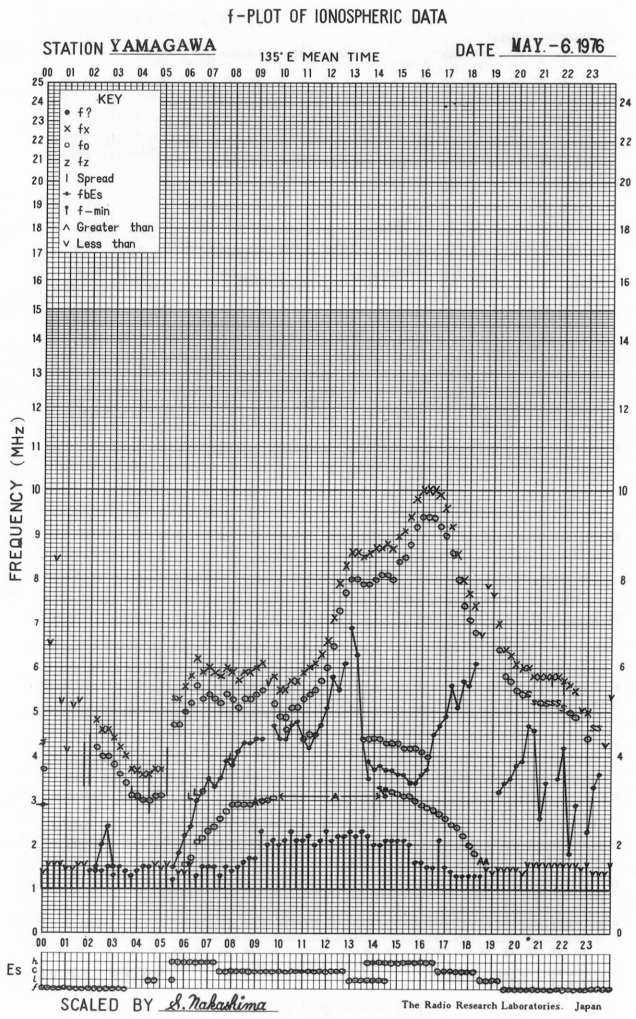
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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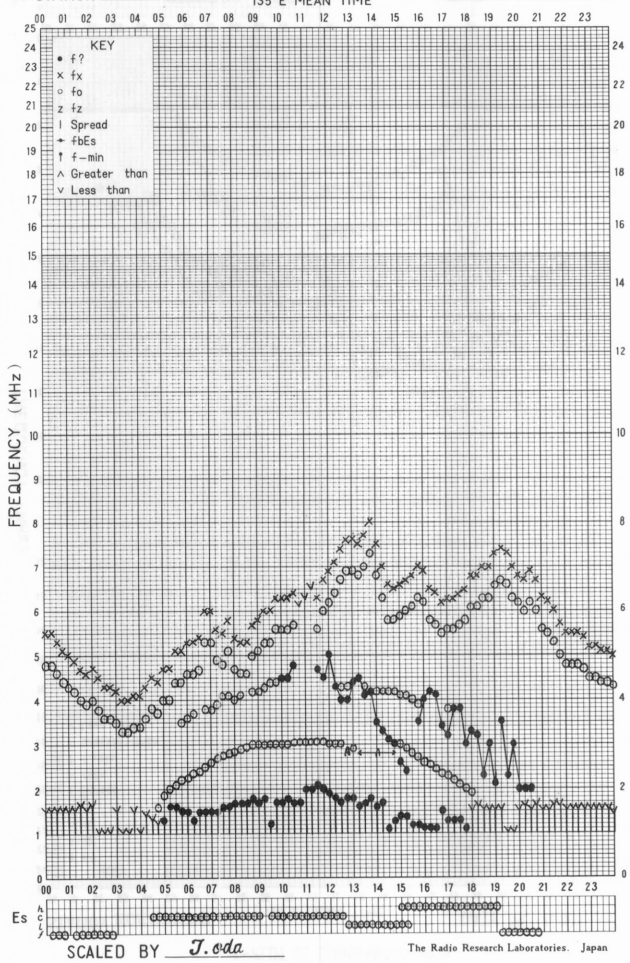
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE MAY. 7. 1976



SCALED BY J. oda

The Radio Research Laboratories. Japan

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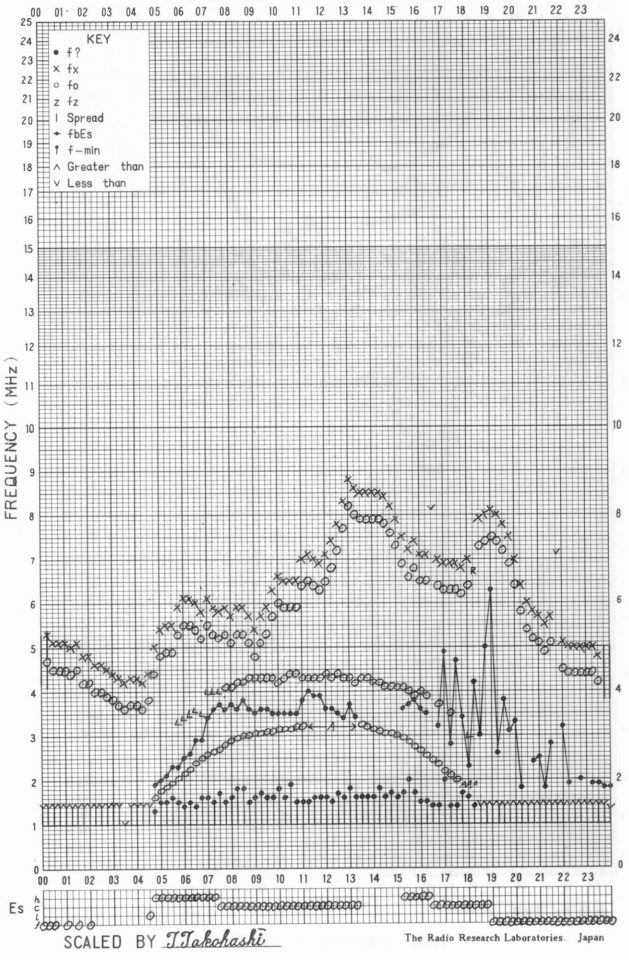
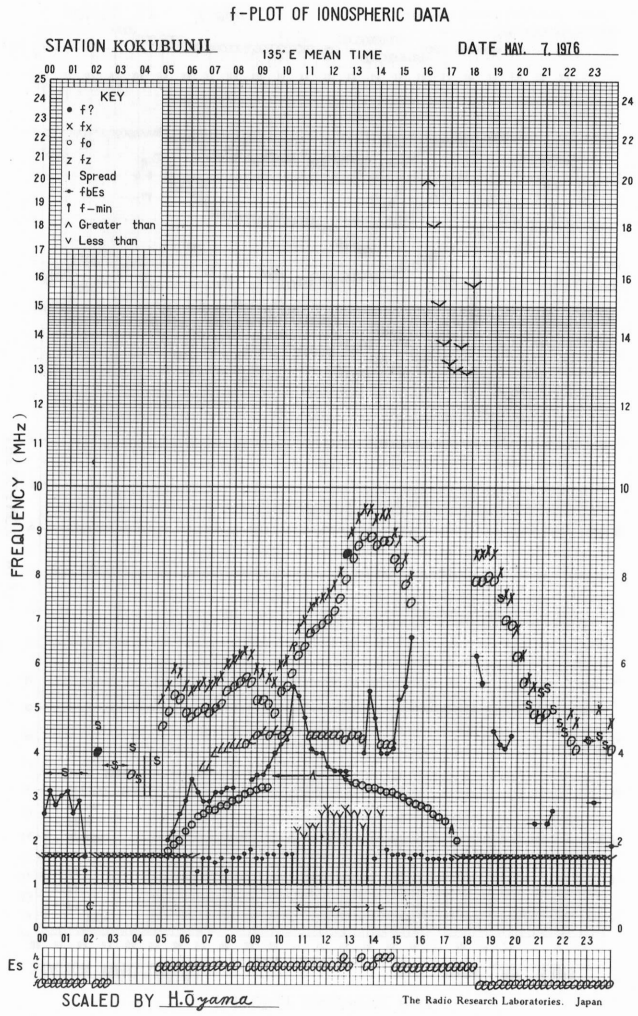


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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DATE MAY. 7. 1976
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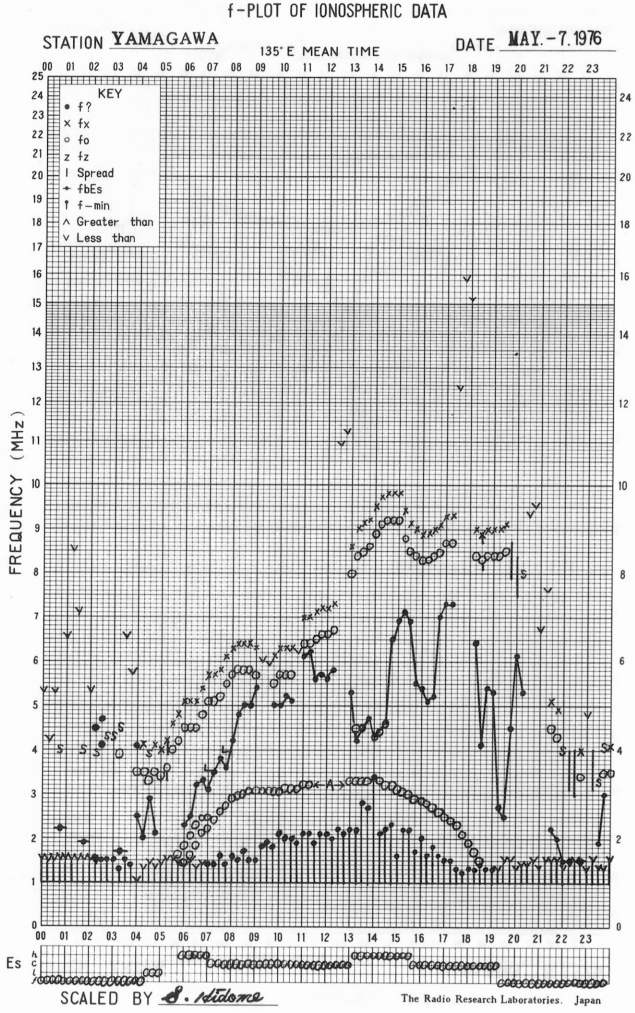
SCALED BY H.Ōyama
The Radio Research Laboratories. Japan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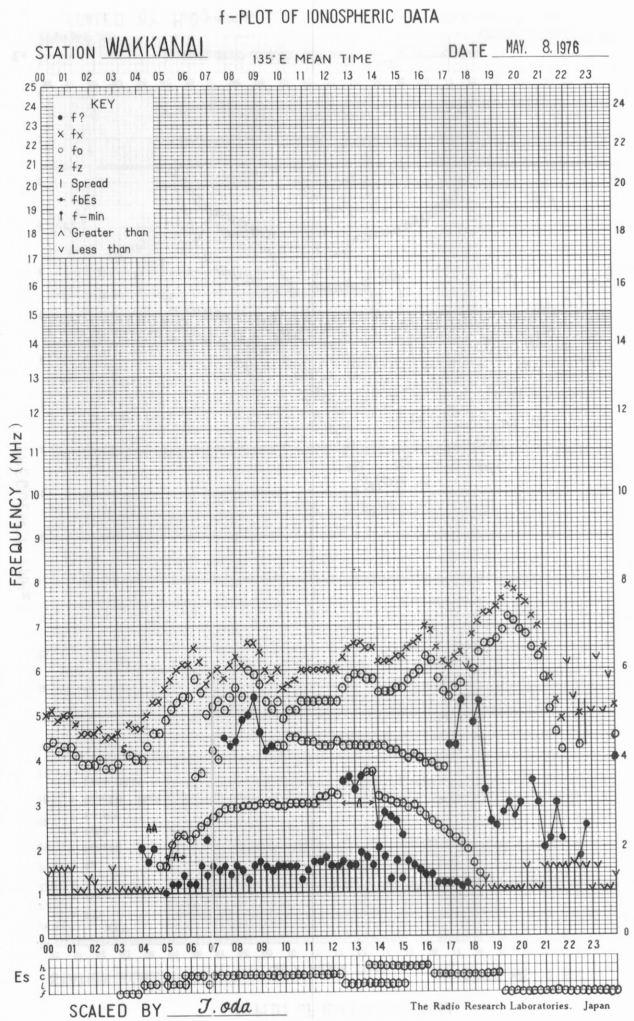
SCALED BY S. Nitsume
The Radio Research Laboratories. Japan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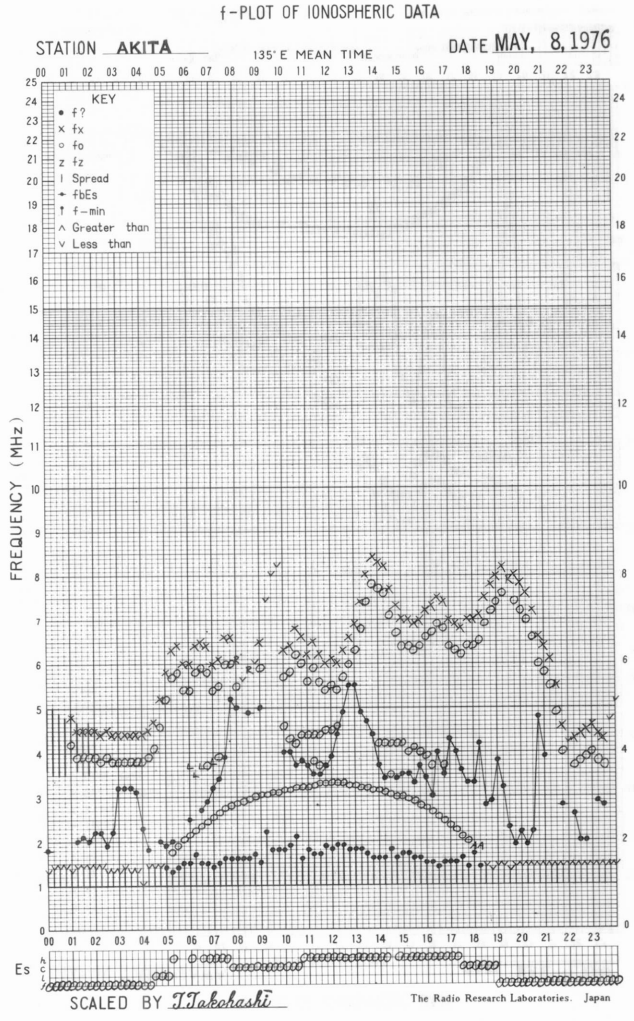
SCALED BY J. oda
The Radio Research Laboratories. Japan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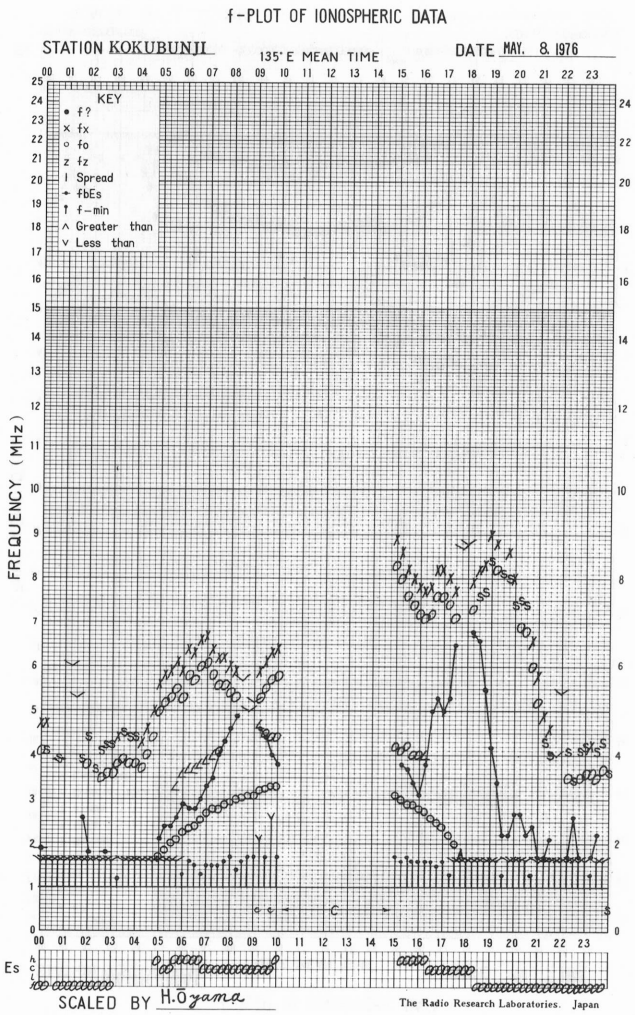
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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DATE MAY. 8. 1976
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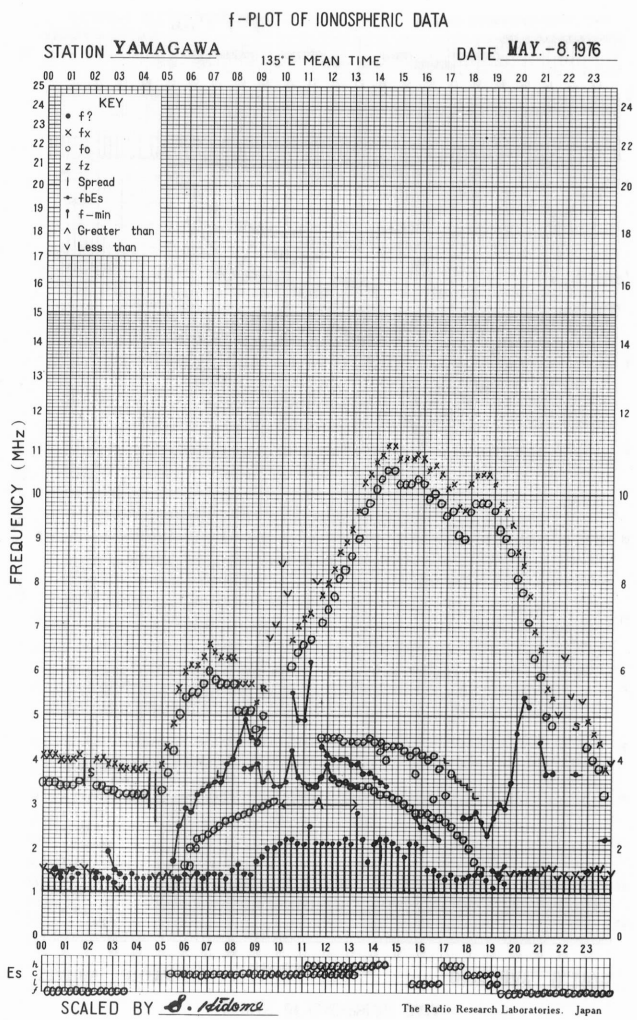
SCALED BY H.Ozama
The Radio Research Laboratories. Japan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SCALED BY S. Ishizome
The Radio Research Laboratories. Japan

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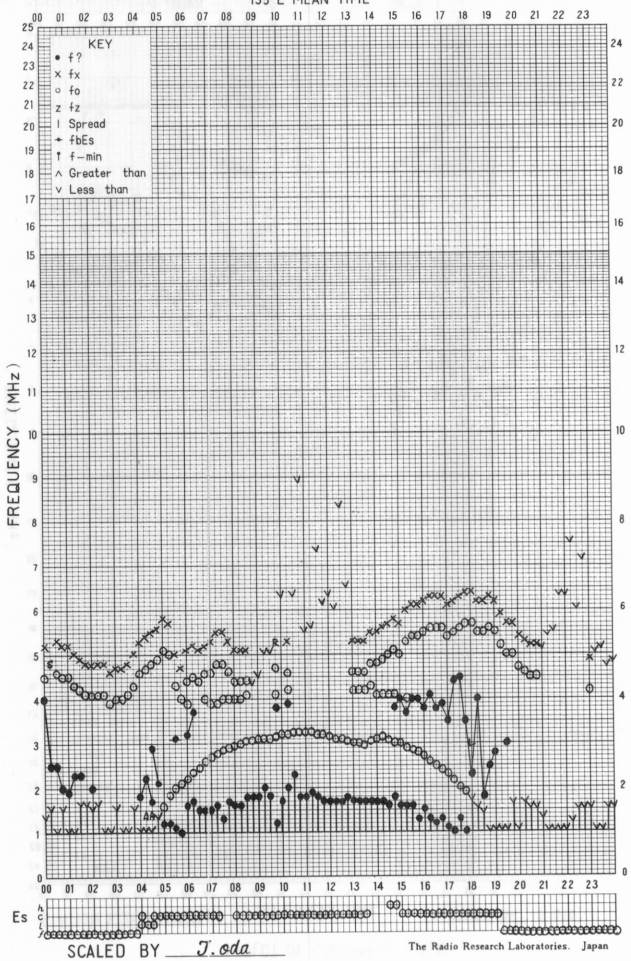

SCALED BY T. oda

The Radio Research Laboratories. Japan

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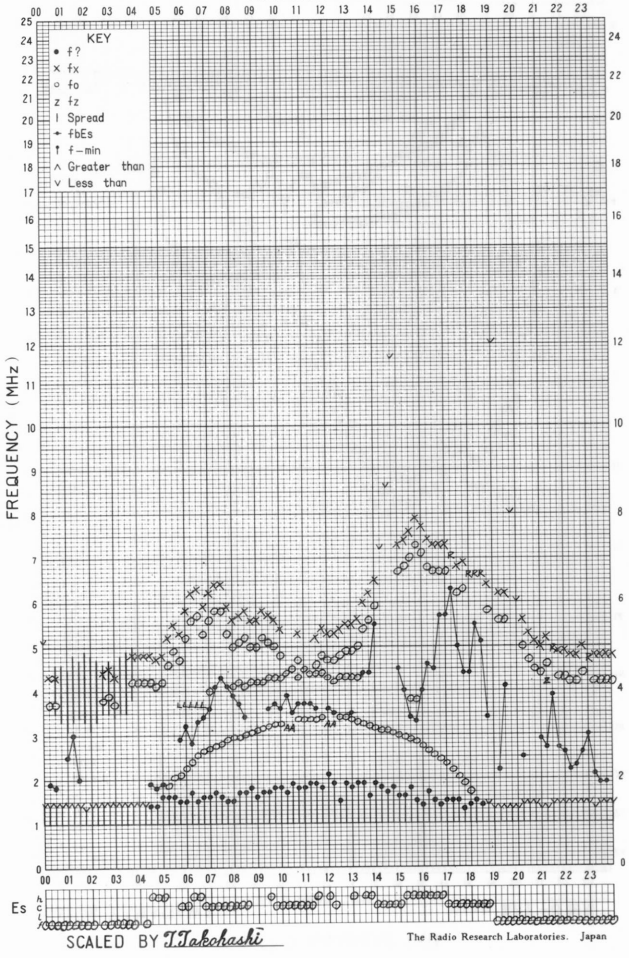
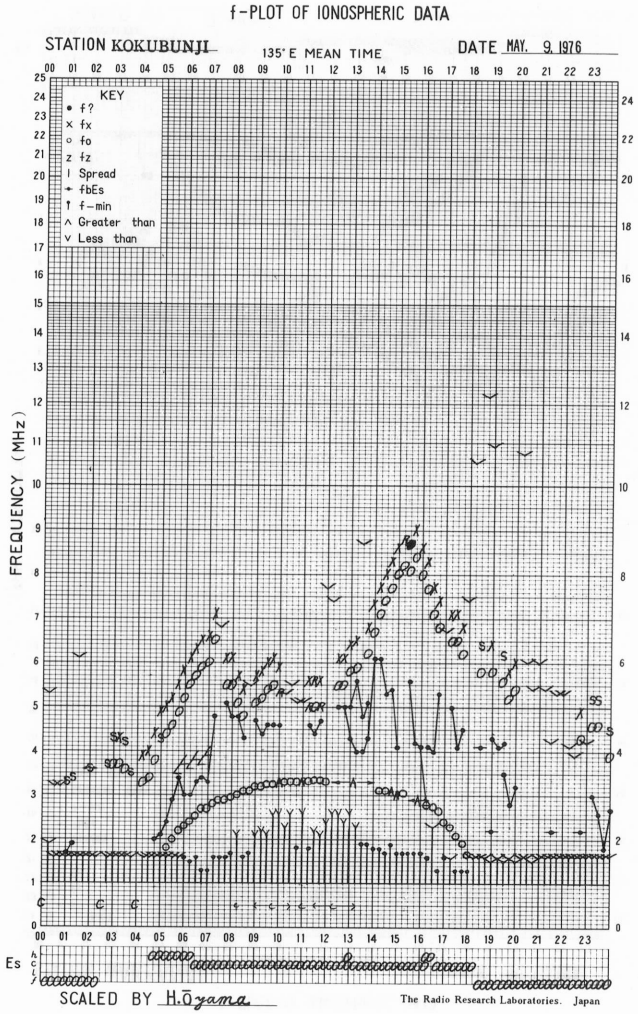


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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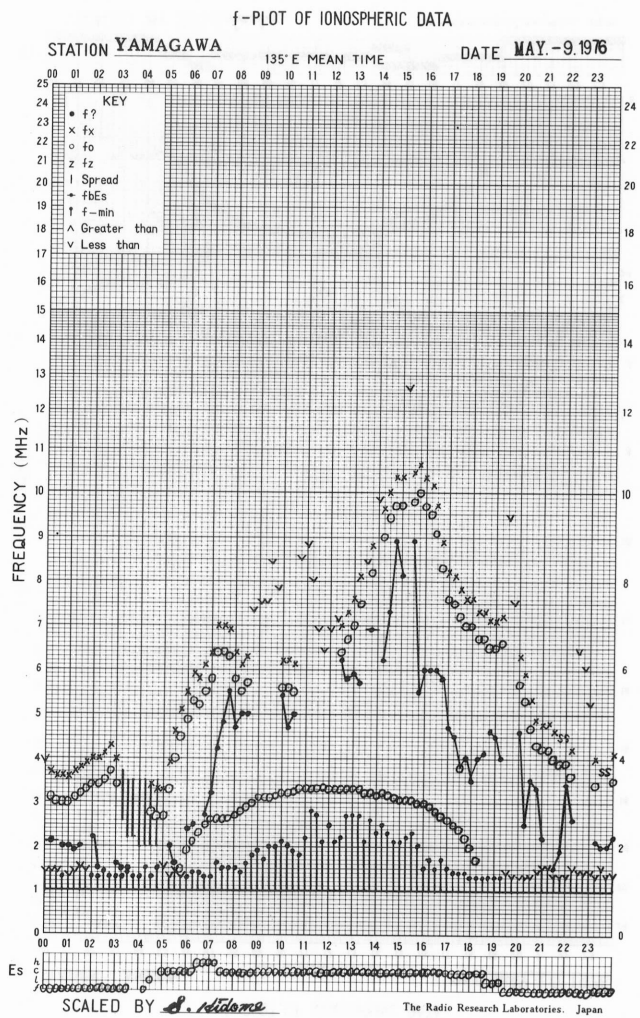
SCALED BY H.Ōyama
The Radio Research Laboratories. Japan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SCALED BY S. Hidoma
The Radio Research Laboratories. Japan

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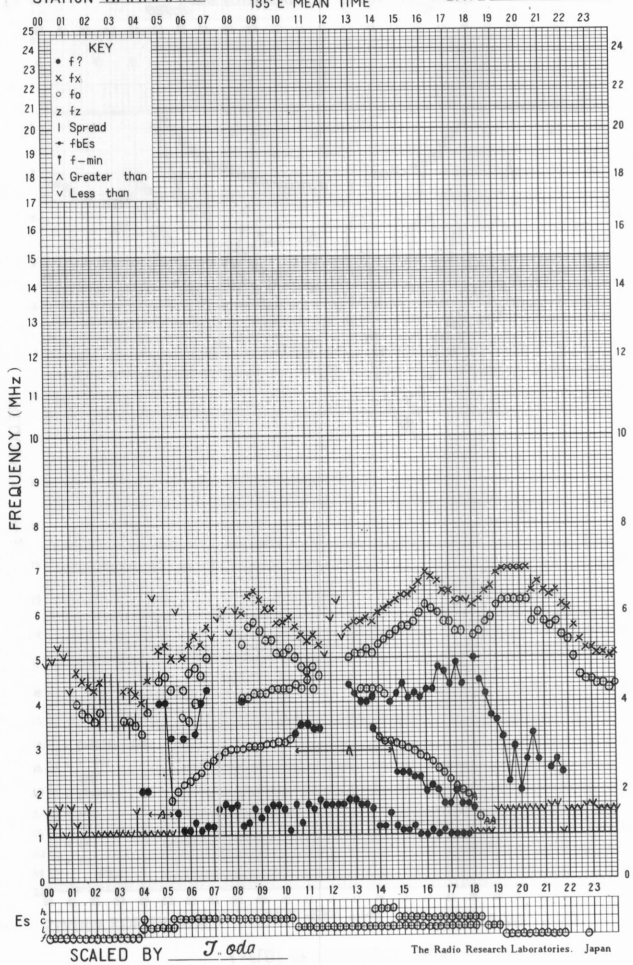

SCALED BY T. oda

The Radio Research Laboratories. Japan

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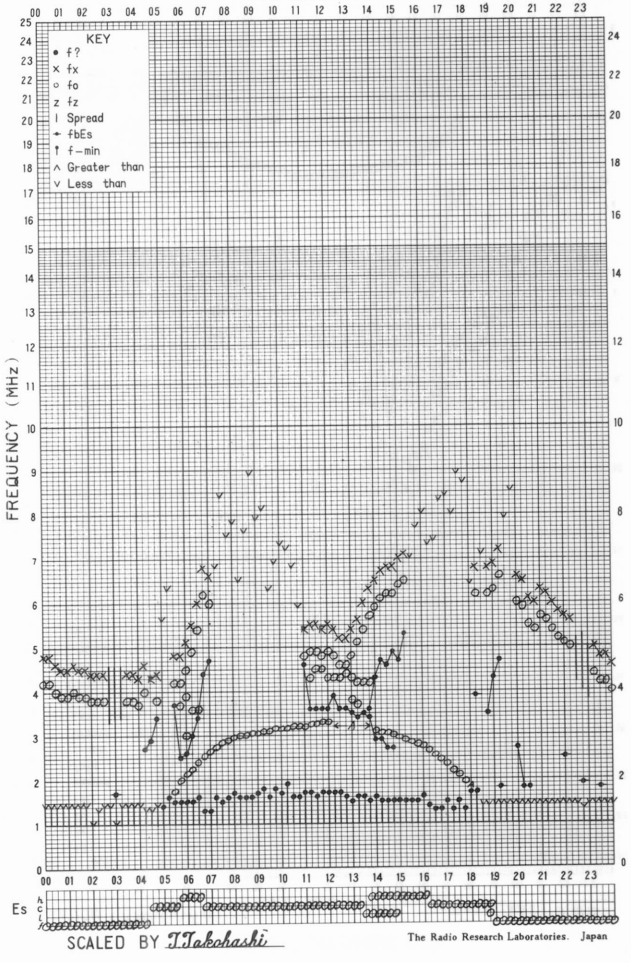
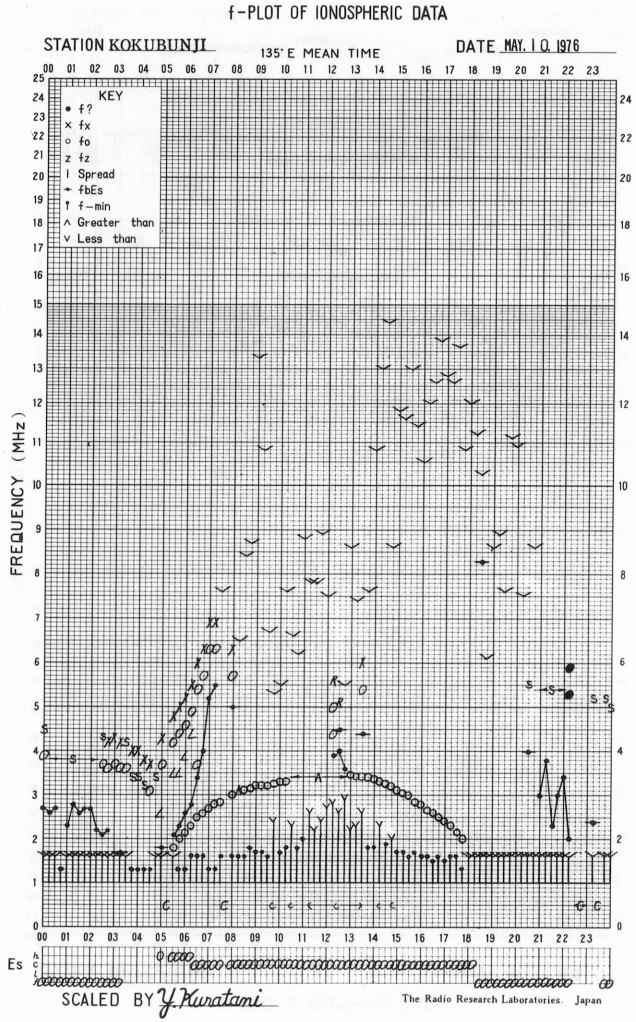


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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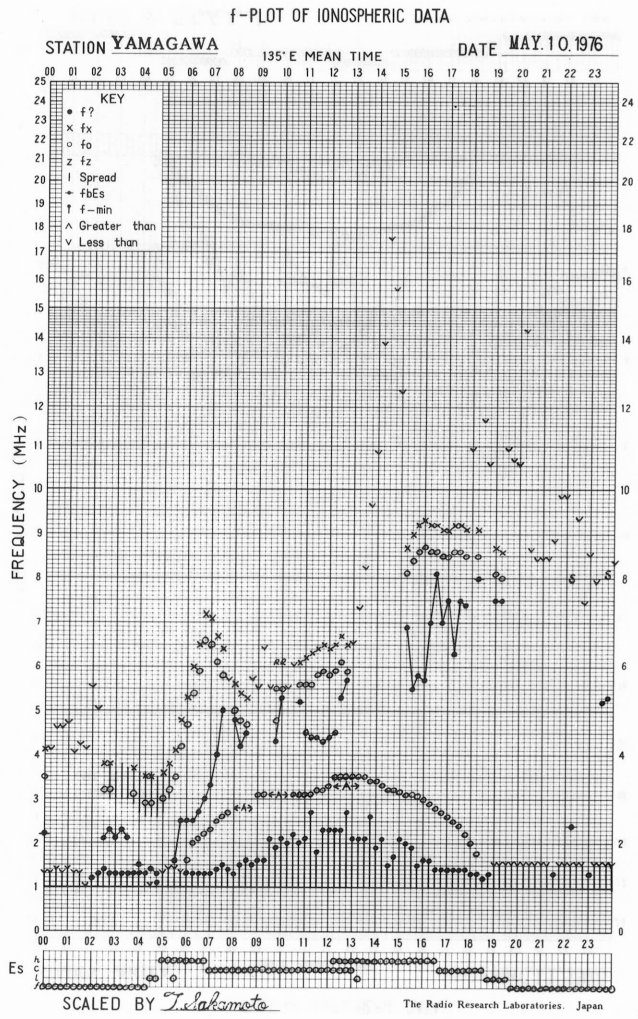
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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SCALED BY T. Sakamoto
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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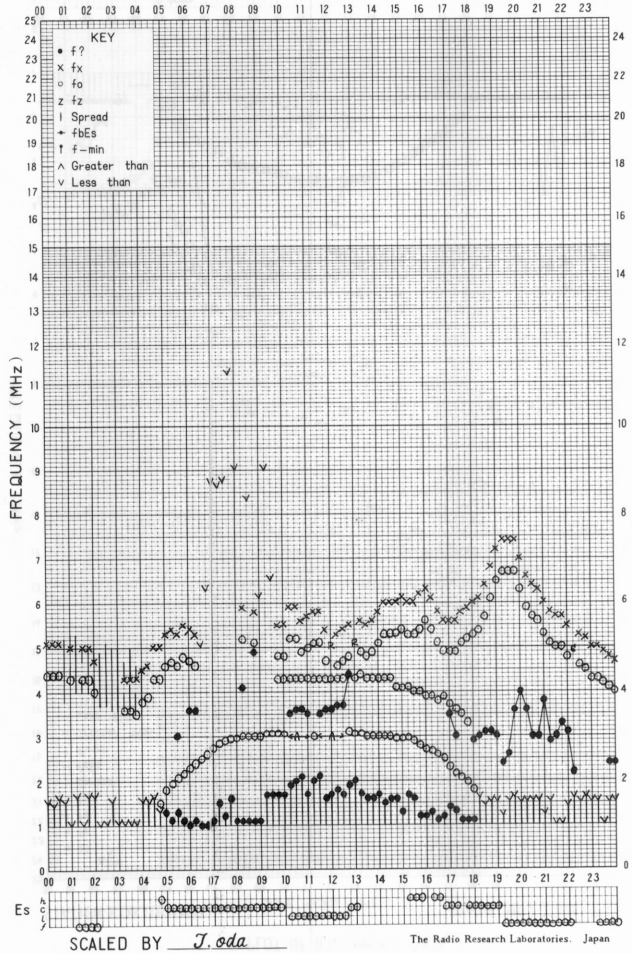

SCALED BY J. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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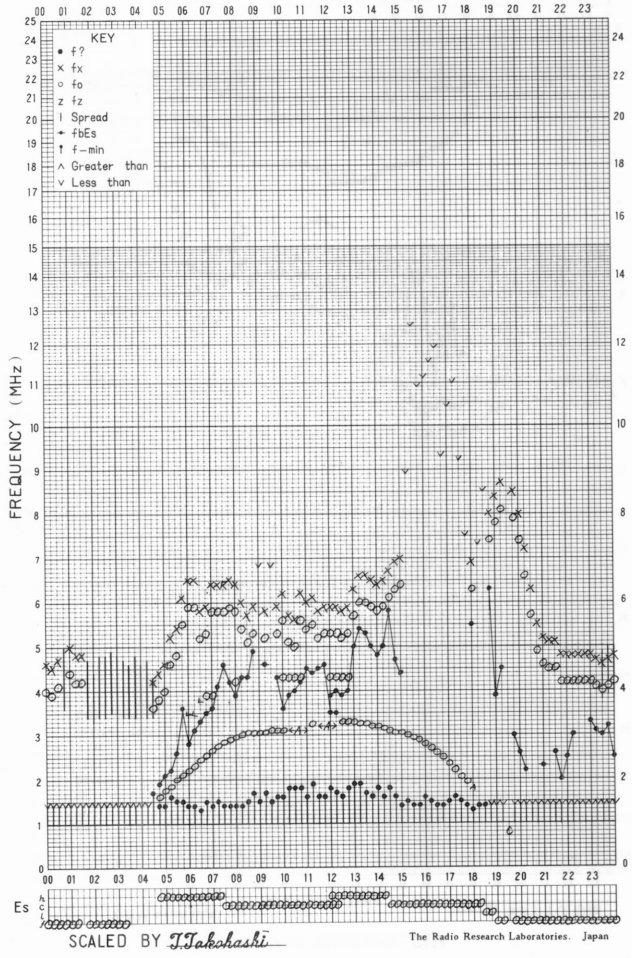

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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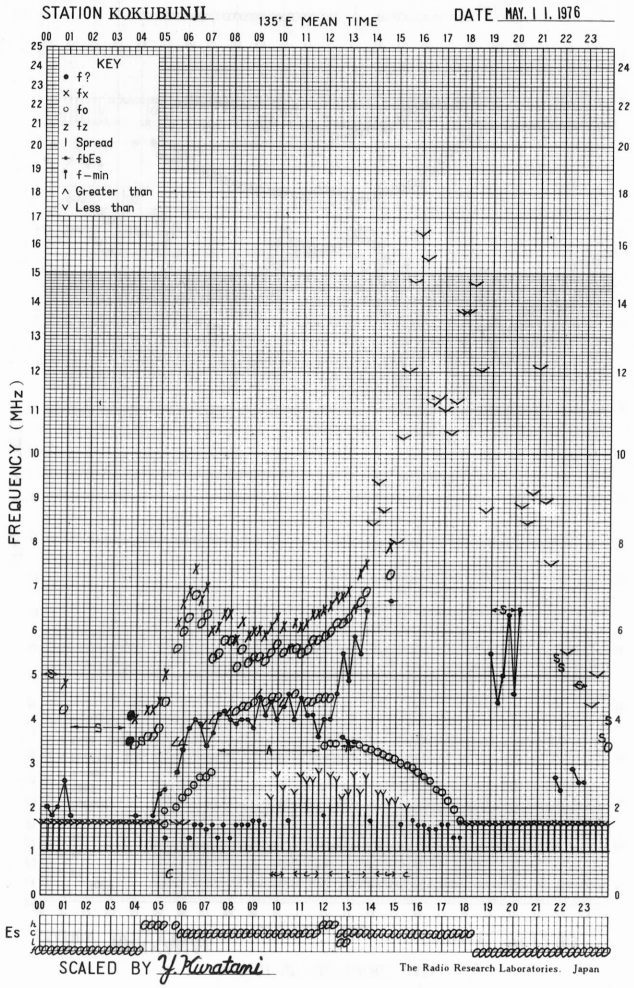

SCALED BY Y. Kuratani

The Radio Research Laboratories. Japan

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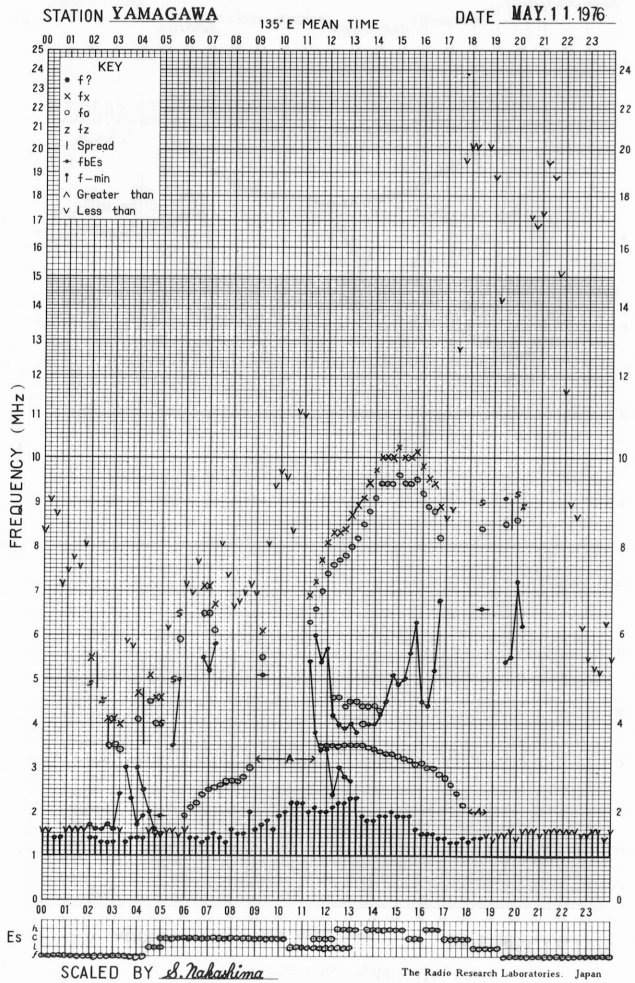
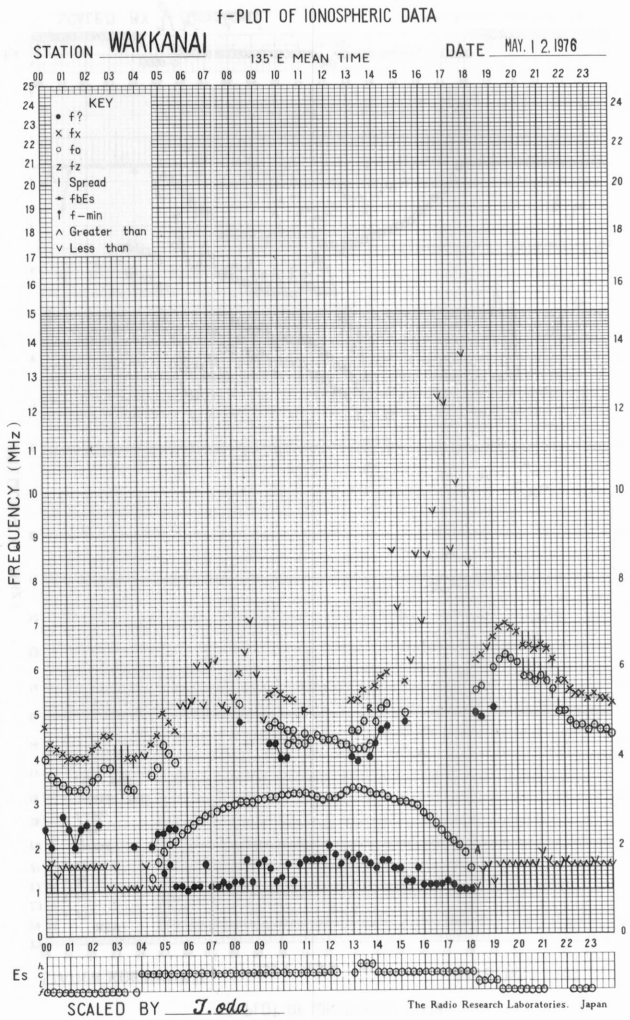


SCALED BY S. Nakashima

The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE MAY. 12. 1976
KEY
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FREQUENCY (MHz)
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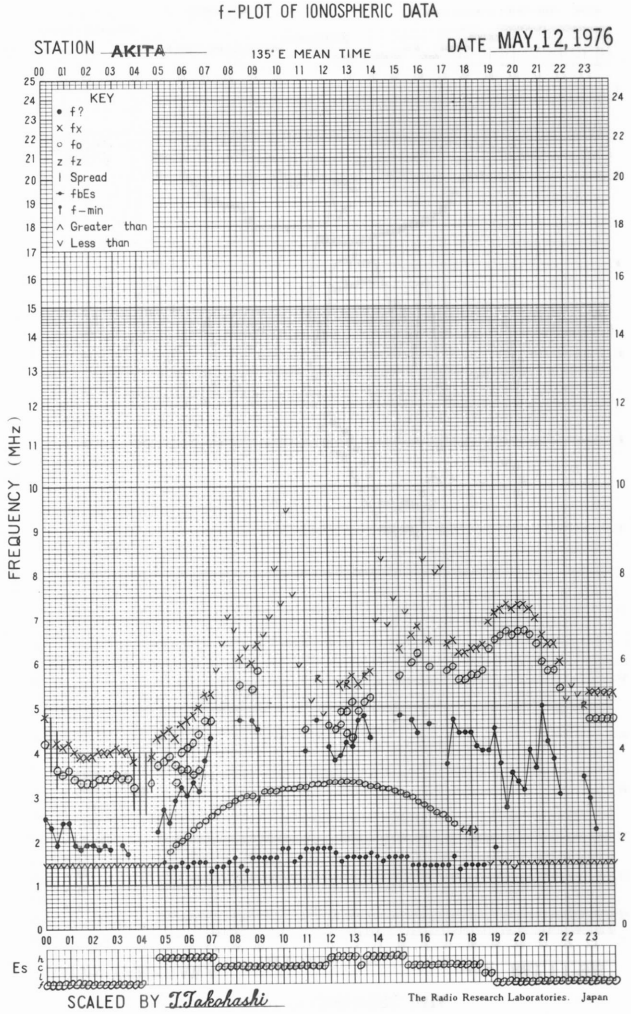
SCALED BY I. oda
The Radio Research Laboratories. Japan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STATION AKITA
135° E MEAN TIME
DATE MAY, 12, 1976
KEY
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FREQUENCY (MHz)
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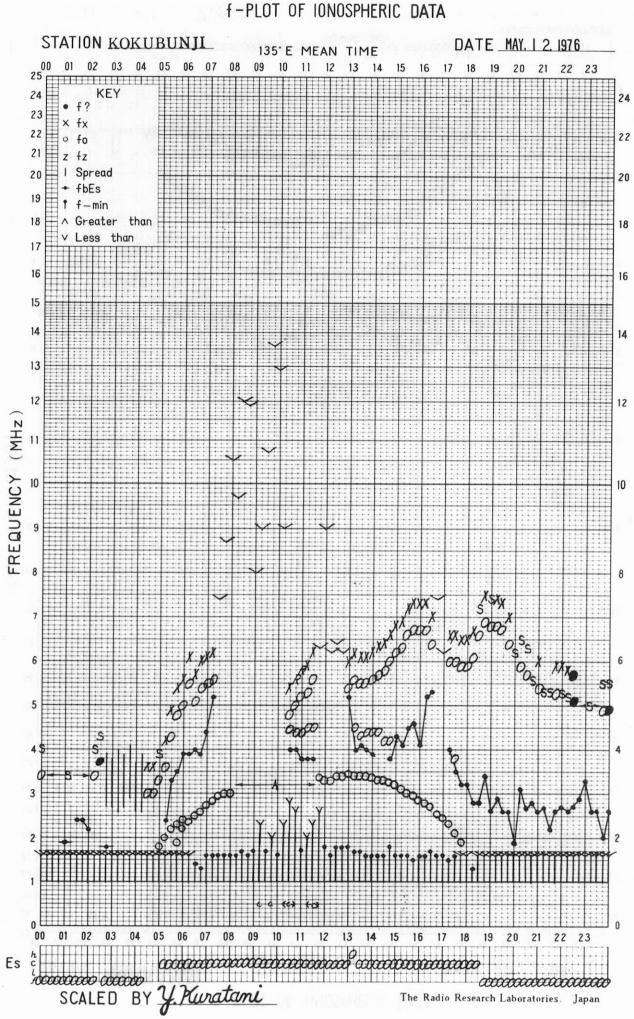
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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DATE MAY. 12. 1976
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FREQUENCY (MHz)
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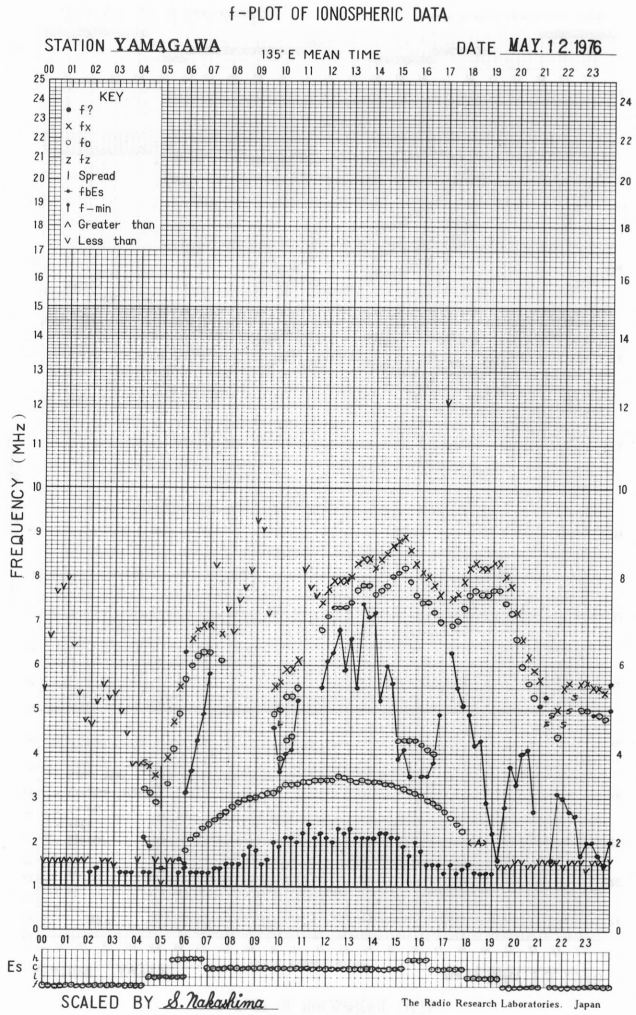
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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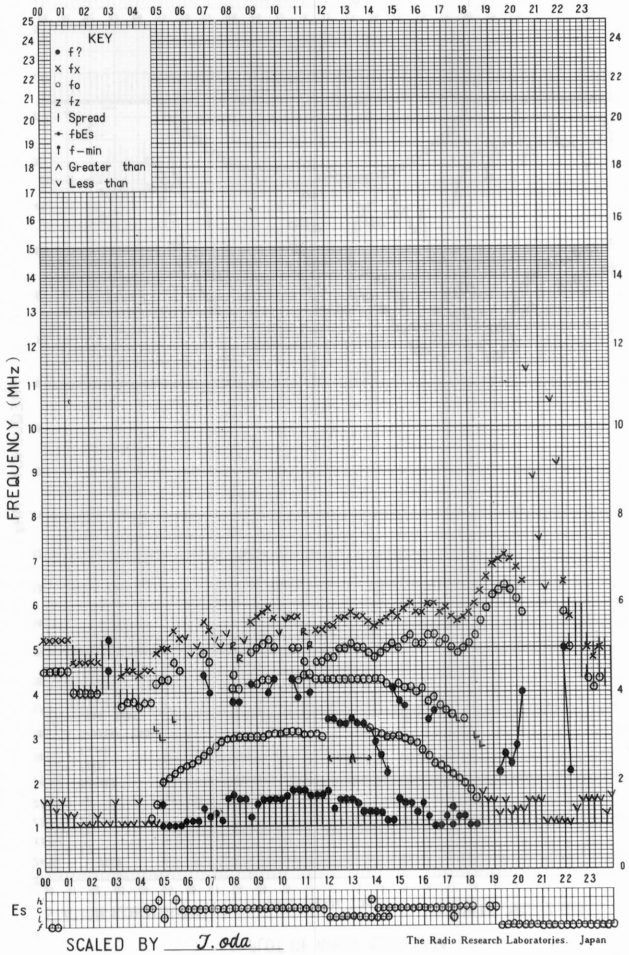
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE MAY. 1 3. 1976

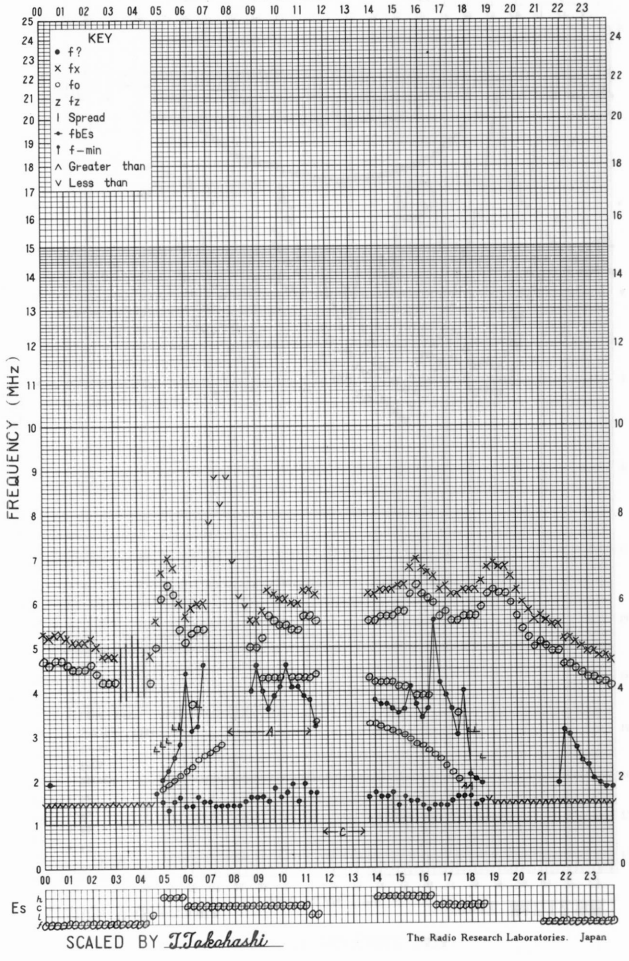


SCALED BY J. oda

The Radio Research Laboratories. Japan

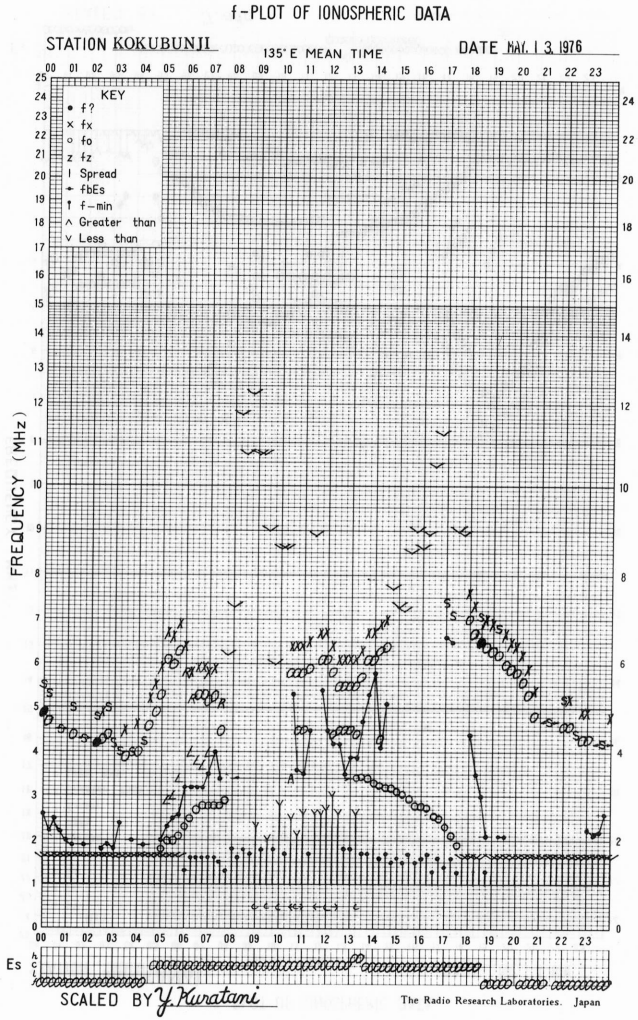
f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE MAY, 13, 1976



SCALED BY T Takahashi

The Radio Research Laboratories. Japan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DATE MAY. 13. 1976
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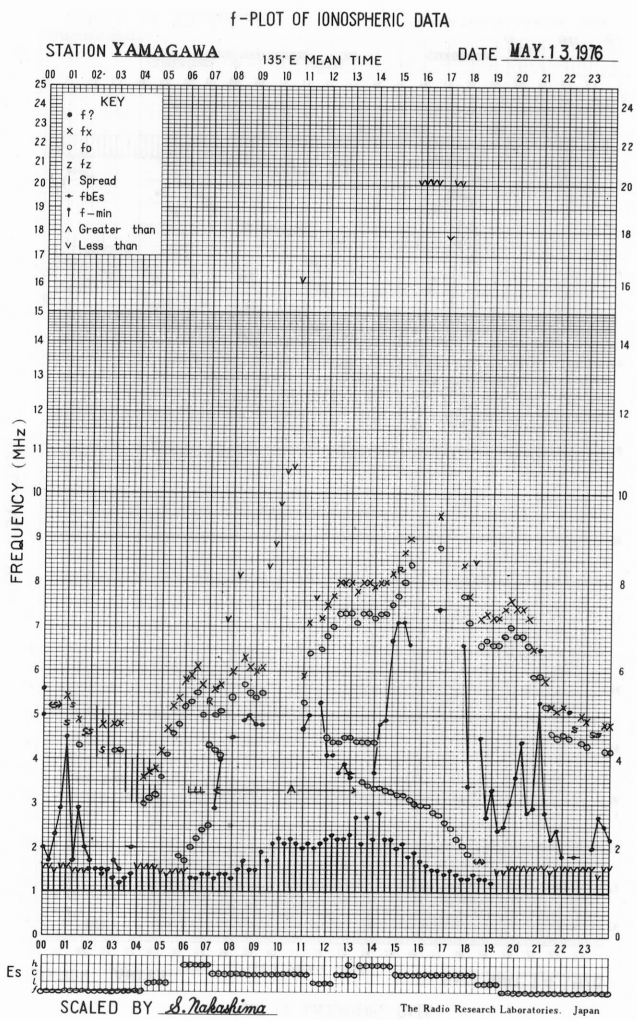
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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DATE MAY. 13. 1976
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FREQUENCY (MHz)
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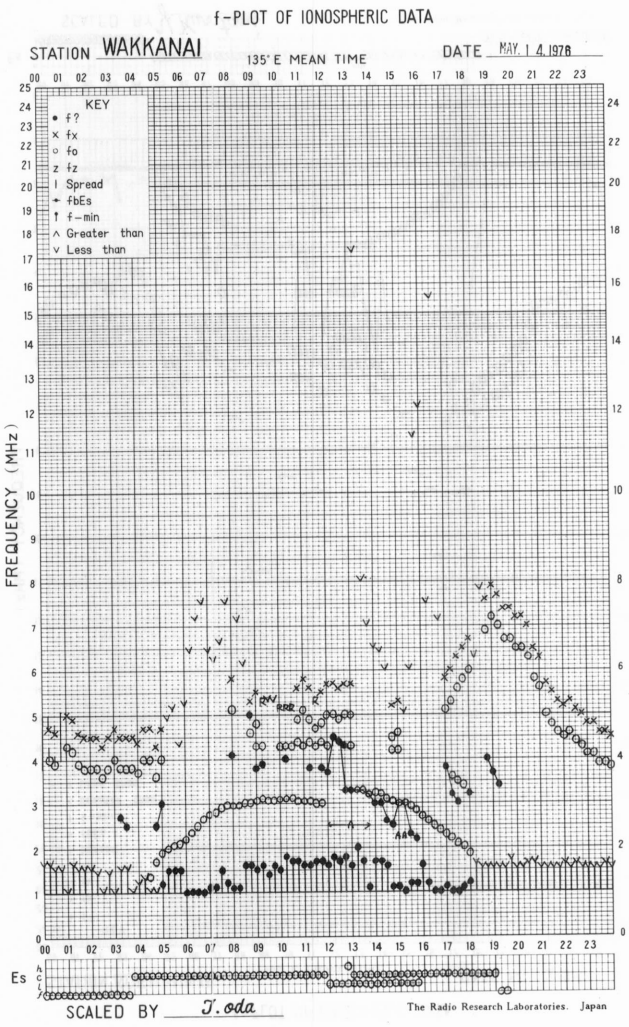
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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DATE MAY. 14, 1976
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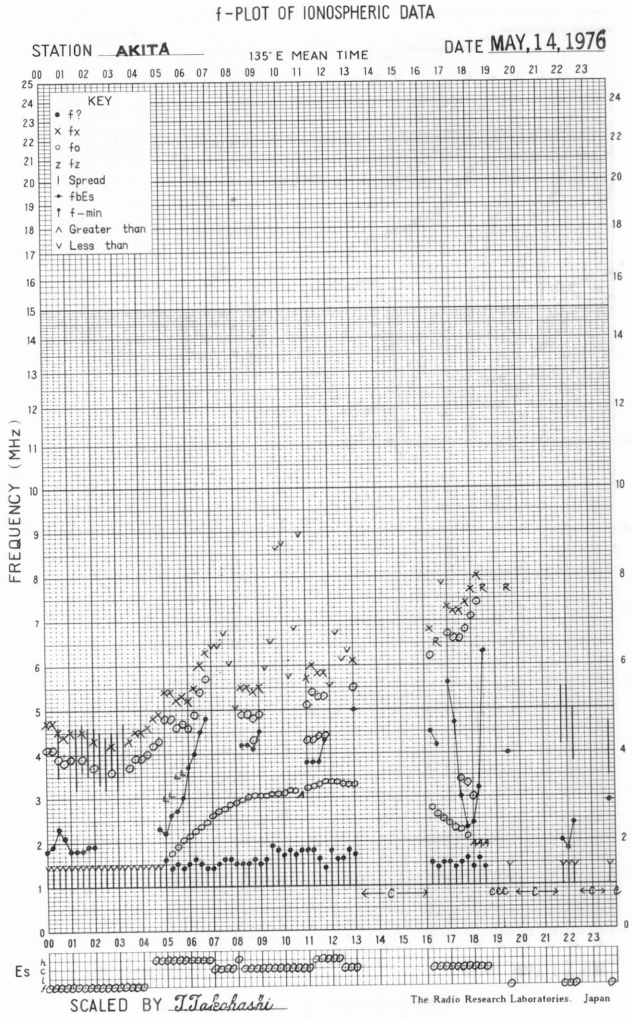
SCALED BY T. oda
The Radio Research Laboratories. Japan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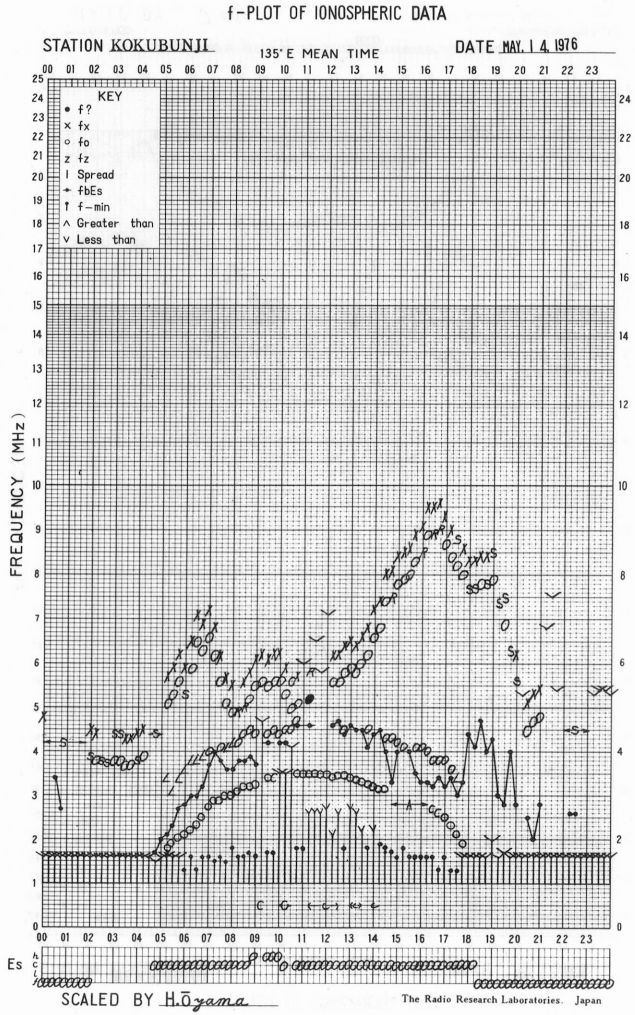
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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DATE MAY. 14. 1976
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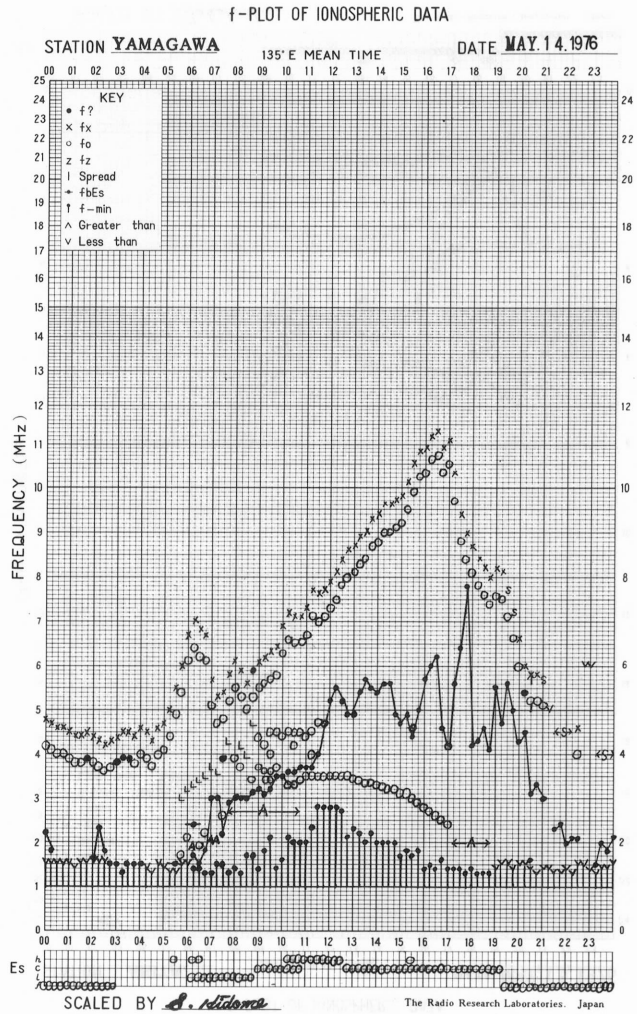
SCALED BY H.Ōzama
The Radio Research Laboratories. Japan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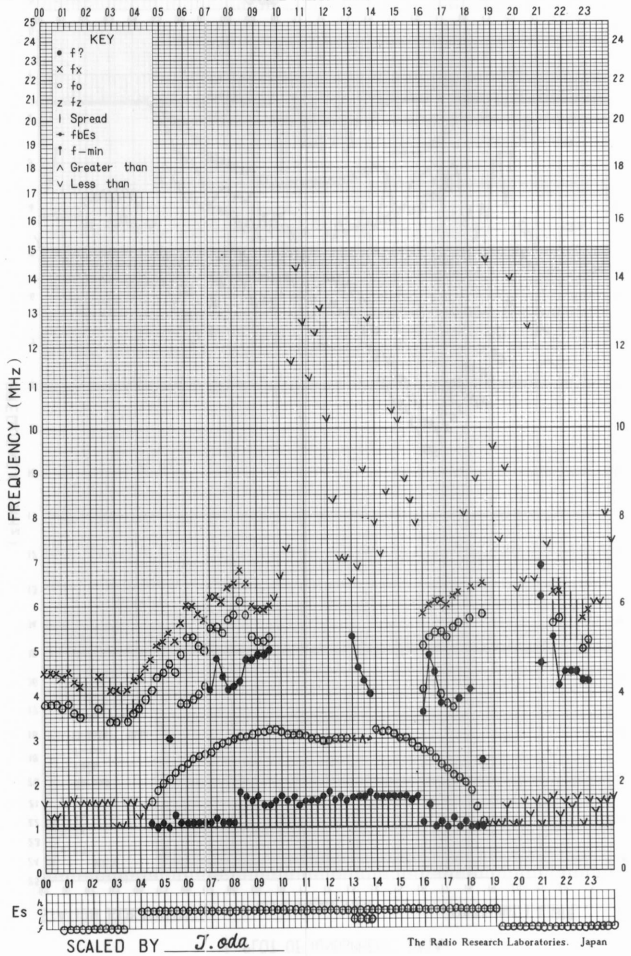
SCALED BY S. Ichijima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE MAY. 15. 1976



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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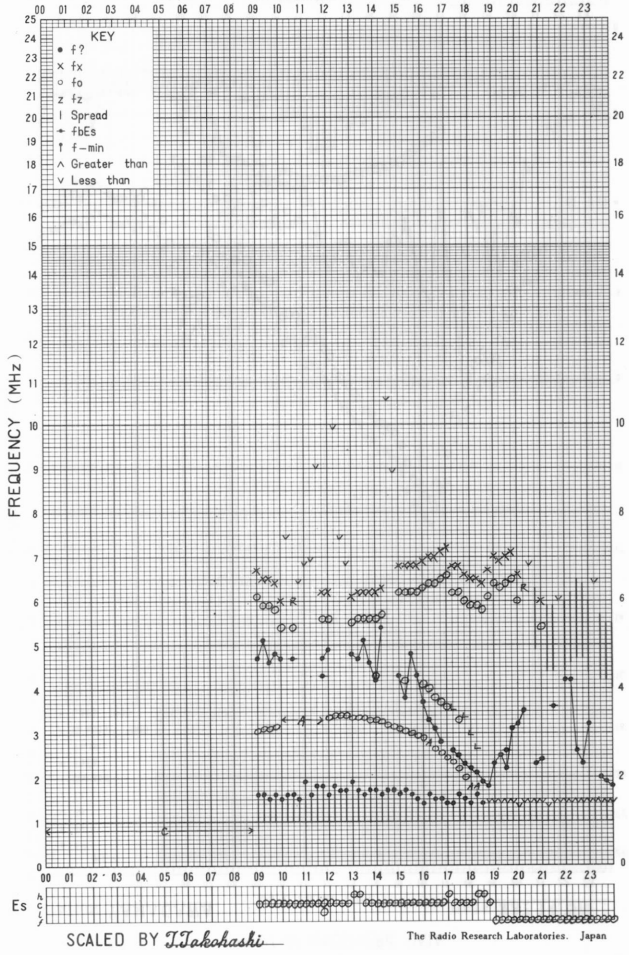
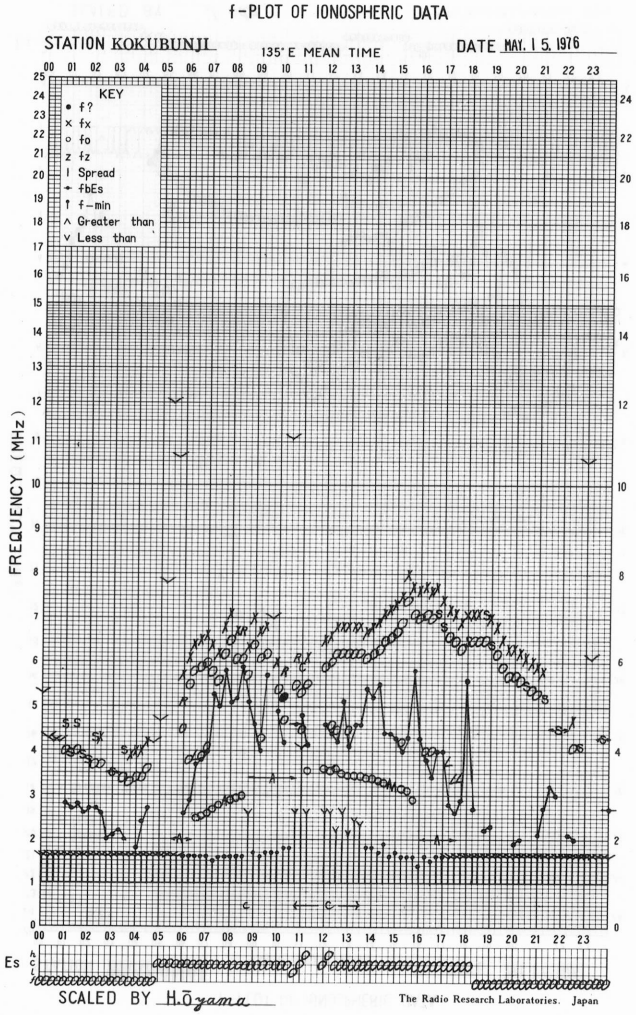


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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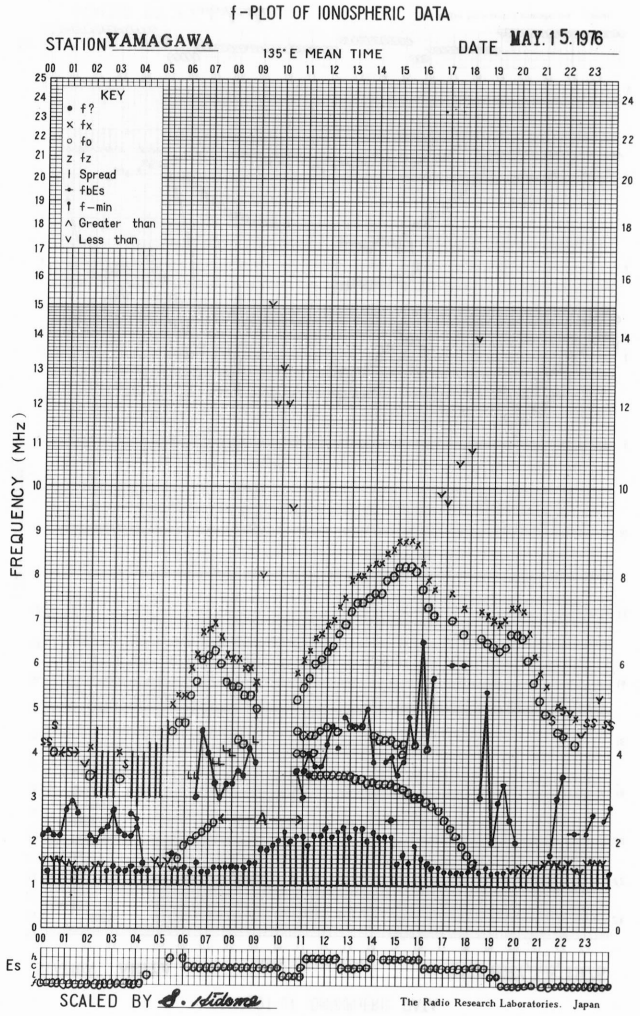
SCALED BY H.Ōyama
The Radio Research Laboratories. Japan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DATE MAY. 15. 1976
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FREQUENCY (MHz)
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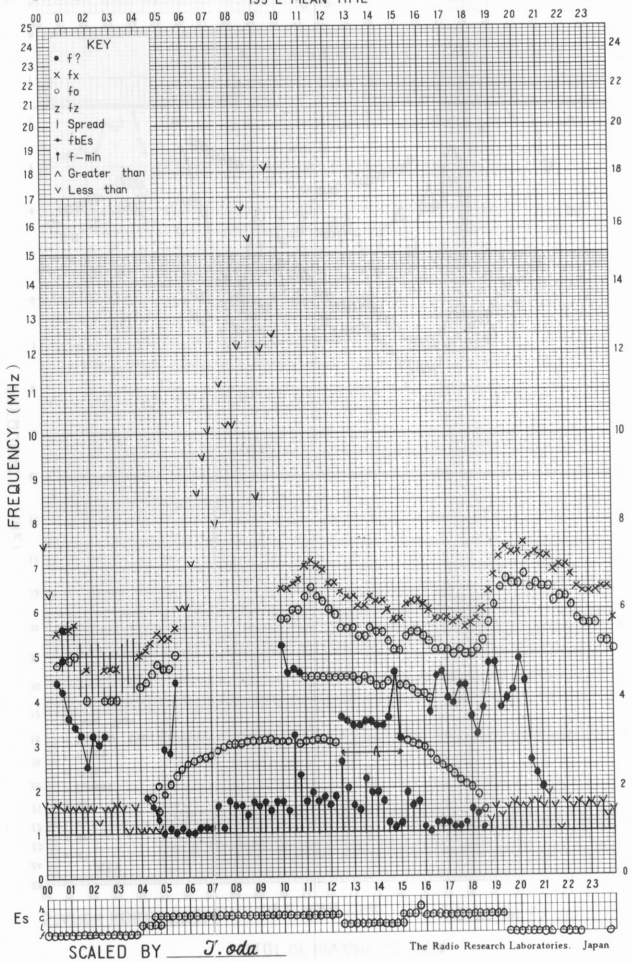
SCALED BY S. Ishidome
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE MAY. 16. 1976



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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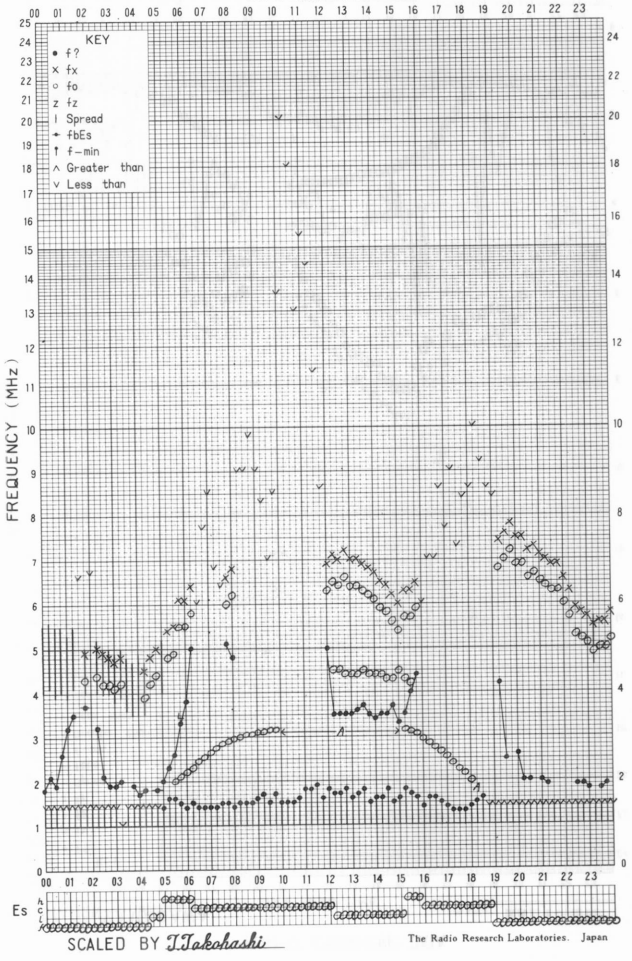
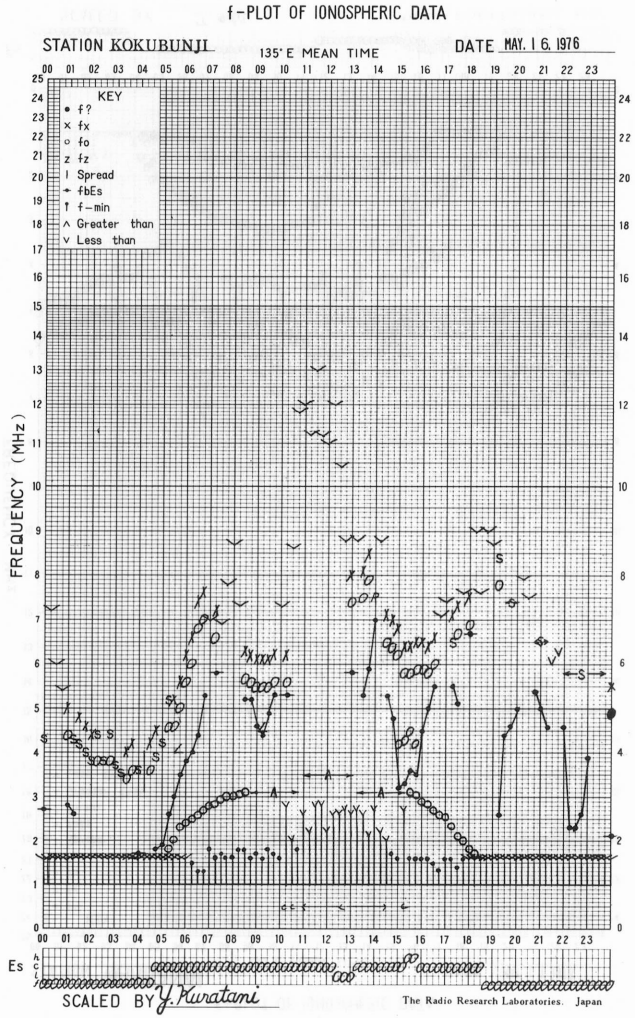


SCALED BY T Takahashi

The Radio Research Laboratories. Japan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DATE MAY. 16. 1976
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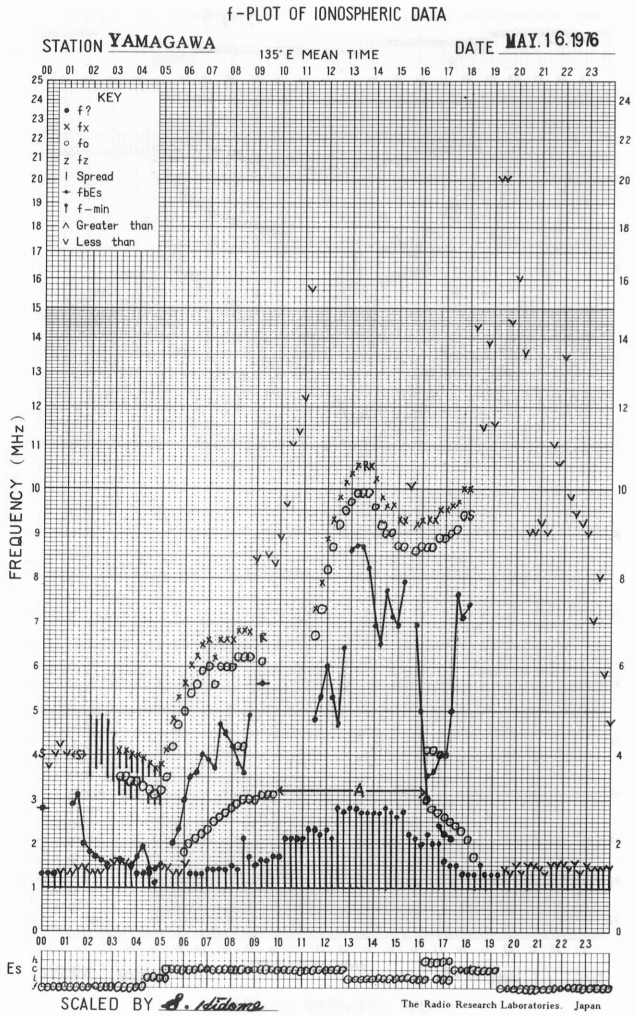
SCALED BY J. Kuratani
The Radio Research Laboratories. Japan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DATE MAY. 16. 1976
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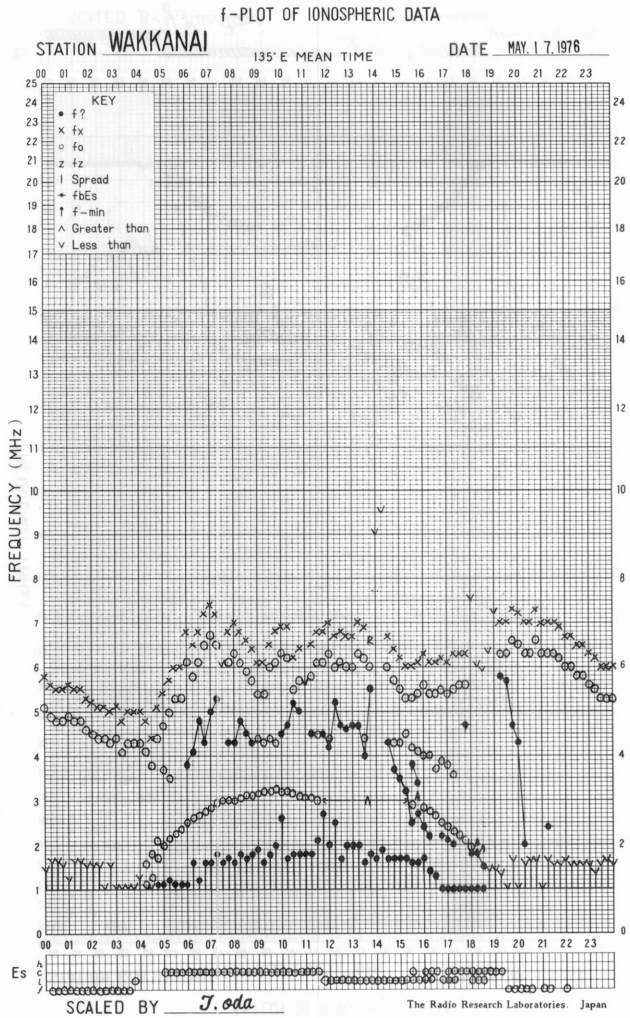
SCALED BY S. Iidoma
The Radio Research Laboratories. Japan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DATE MAY. 17, 1976
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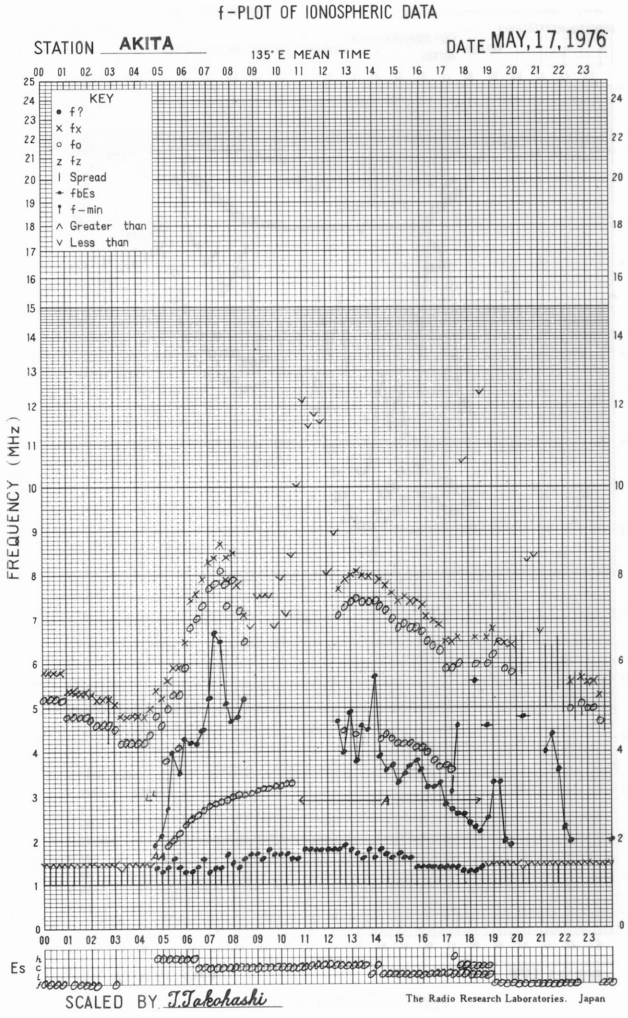
SCALED BY T. oda
The Radio Research Laboratories. Japan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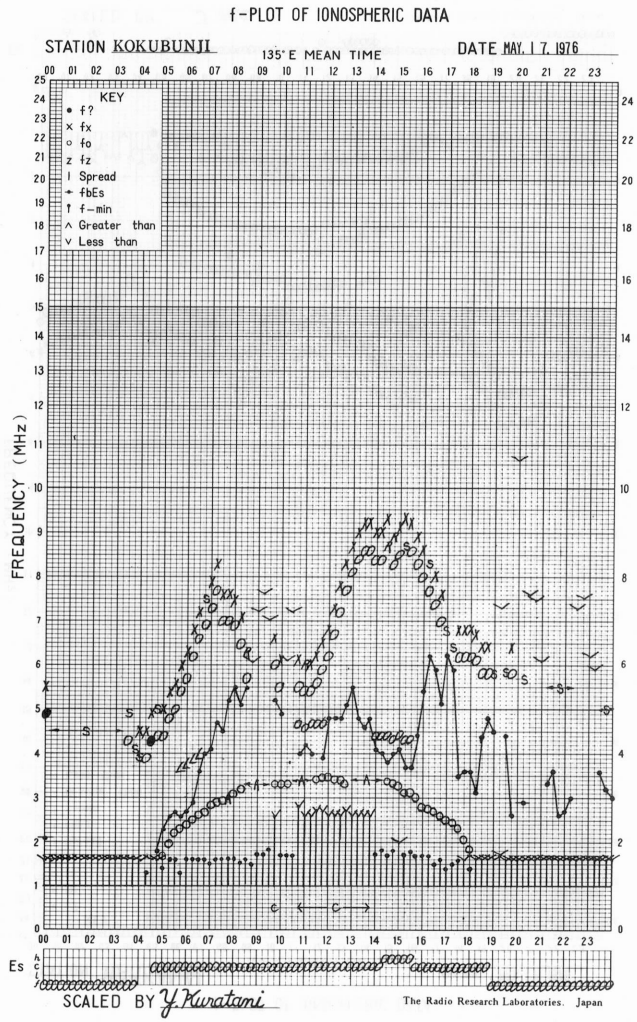
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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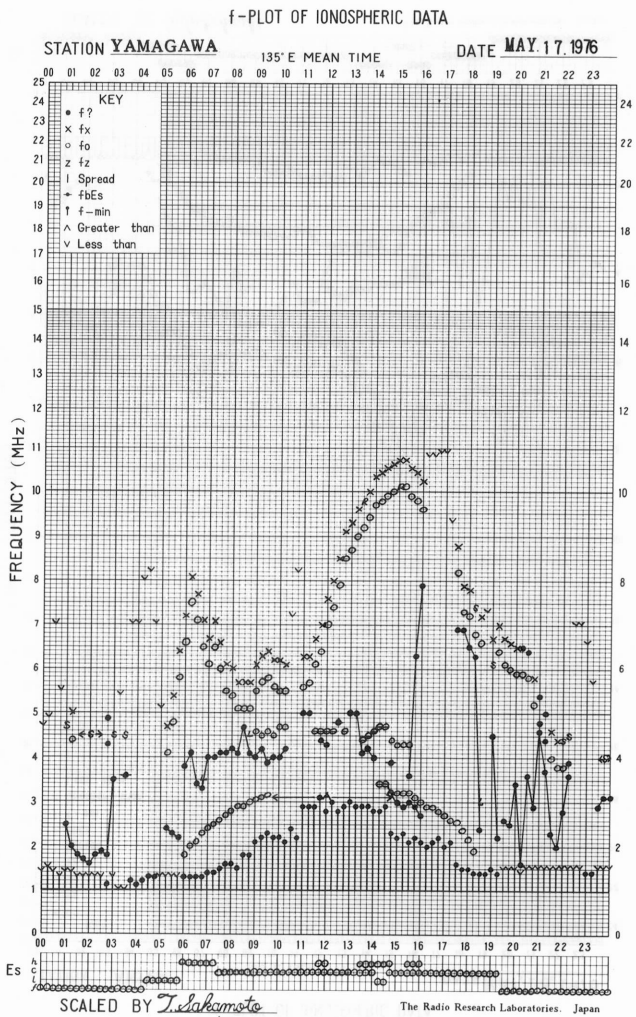
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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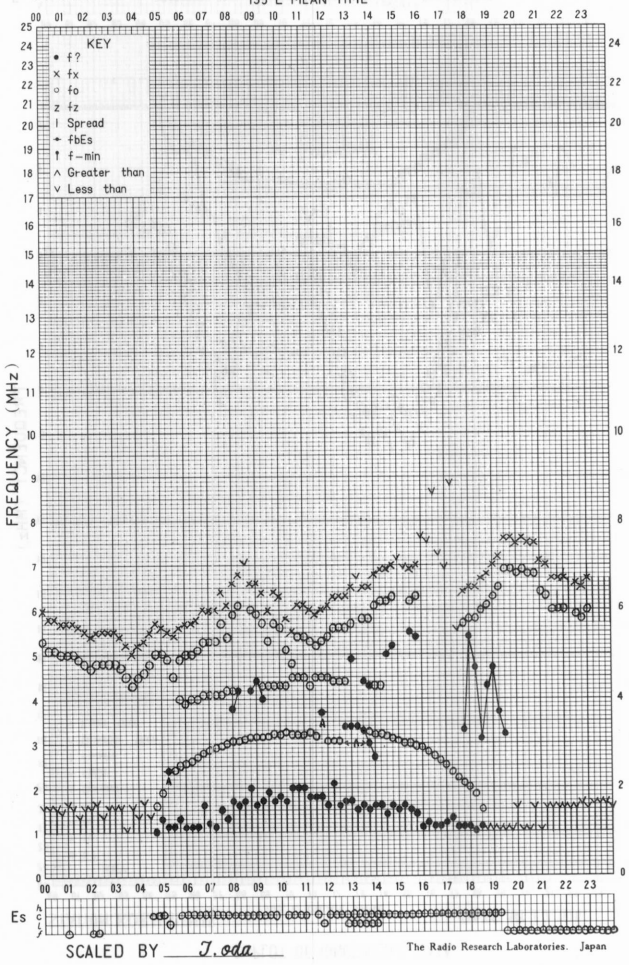
SCALED BY T. Sakamoto
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE MAY. 18. 1976



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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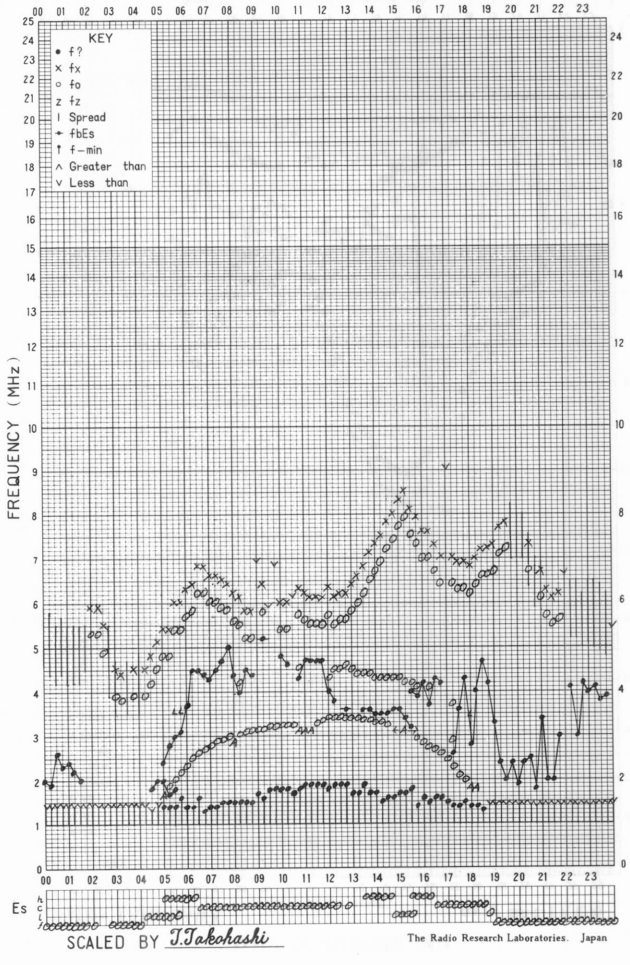

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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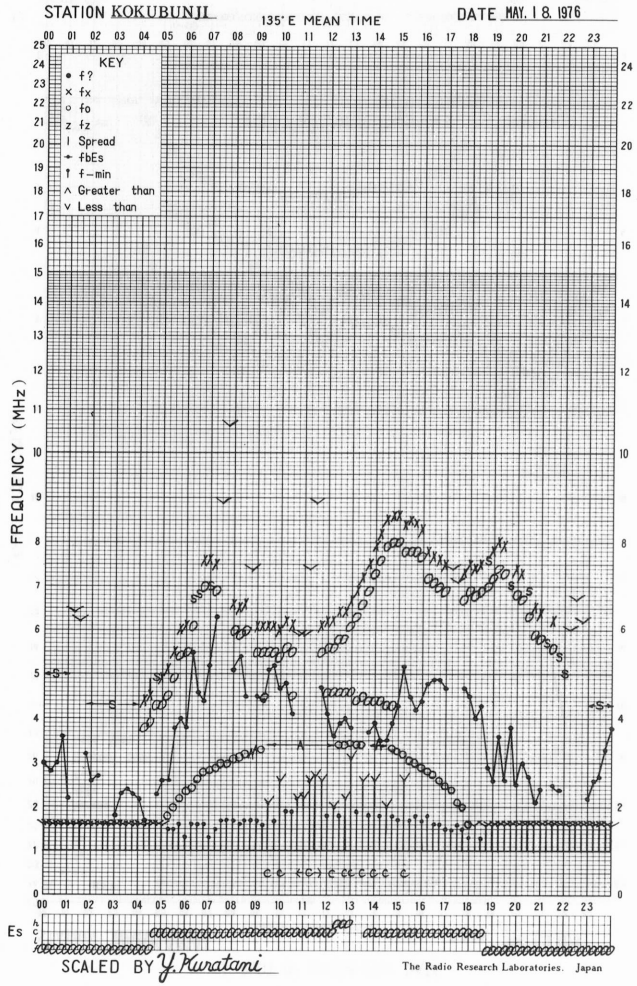

SCALED BY Y. Kuratani

The Radio Research Laboratories. Japan

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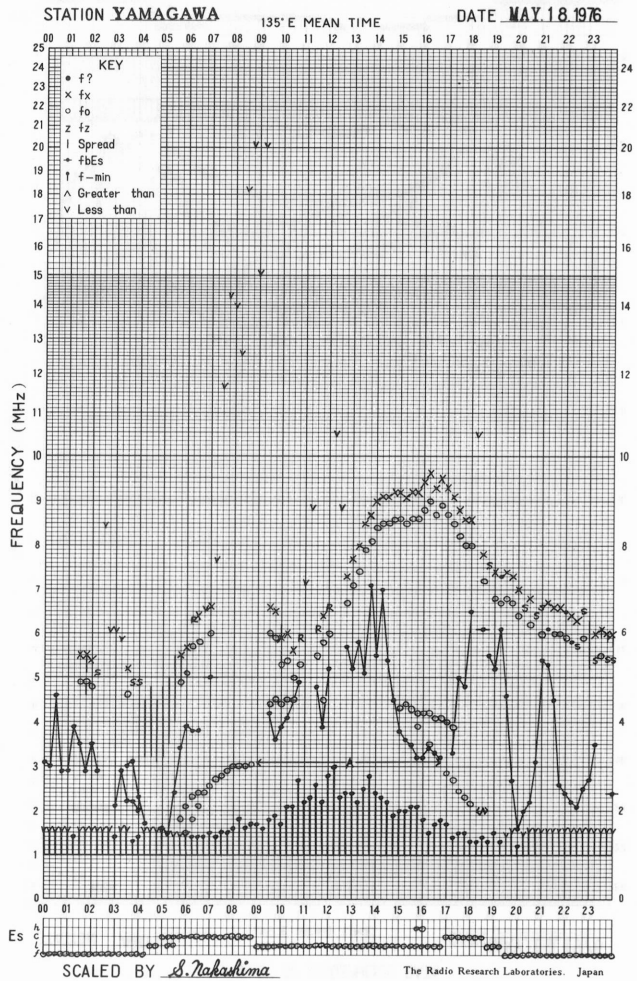
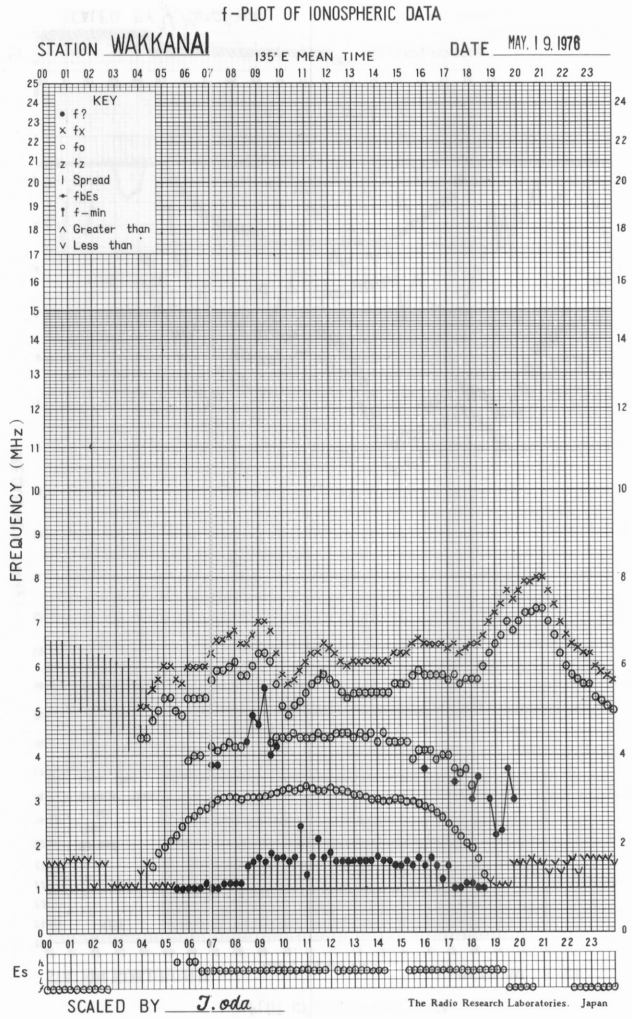


SCALED BY S. Nakashima

The Radio Research Laboratories. Japan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STATION WAKKANAI
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DATE MAY. 19. 1976
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FREQUENCY (MHz)
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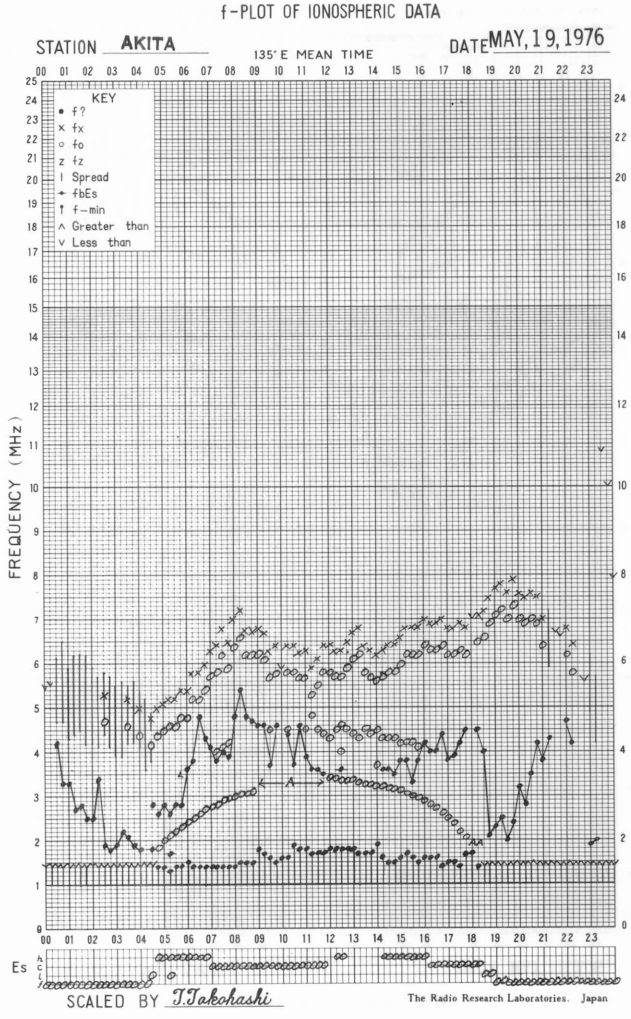
SCALED BY J. oda
The Radio Research Laboratories. Japan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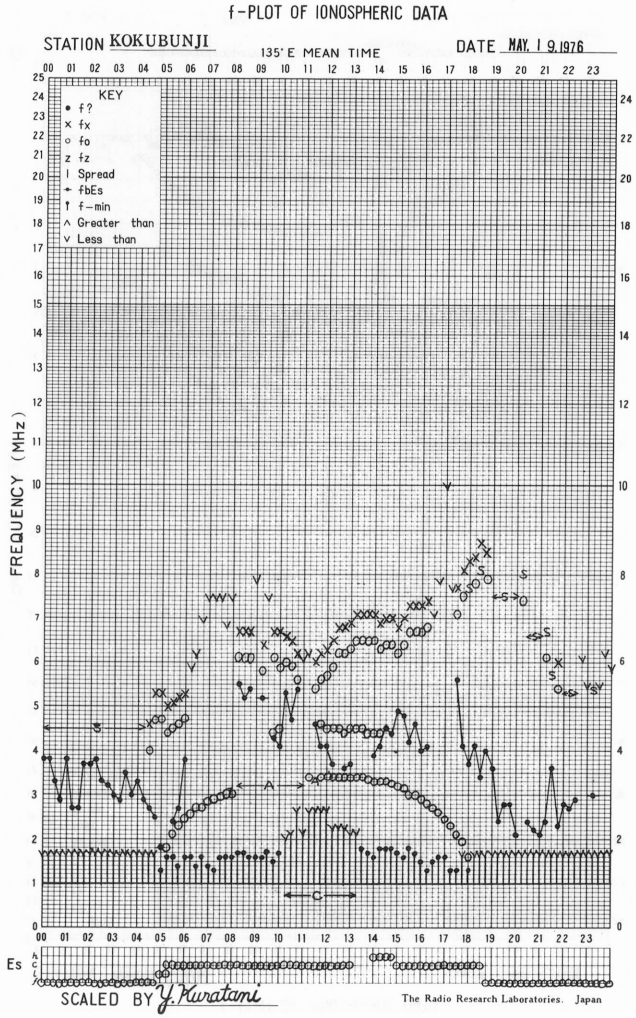
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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DATE MAY. 19.1976
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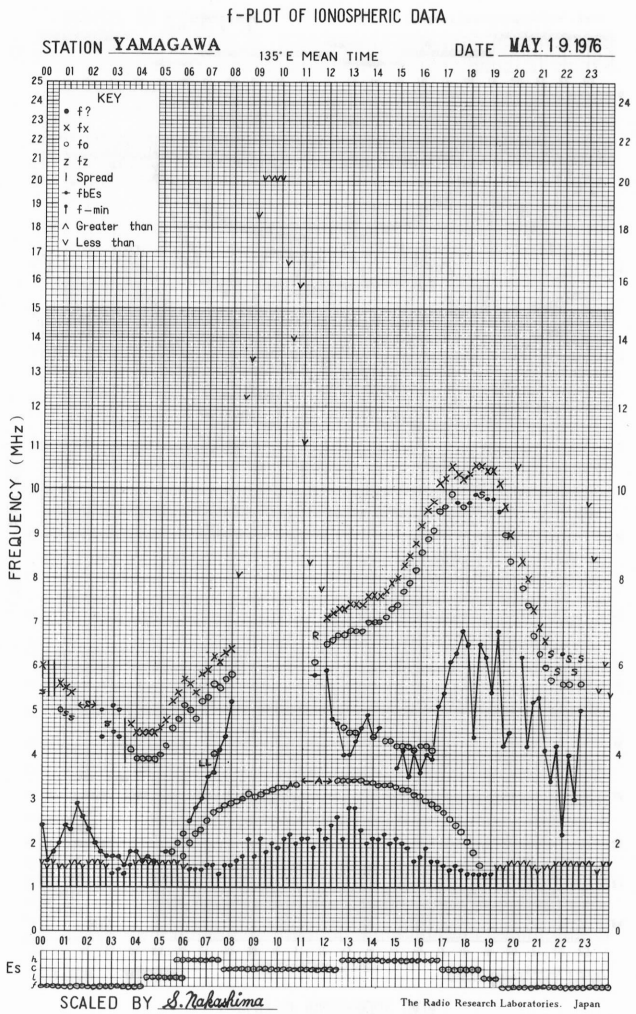
FREQUENCY (MHz)
Es
SCALED BY J. Kuratani
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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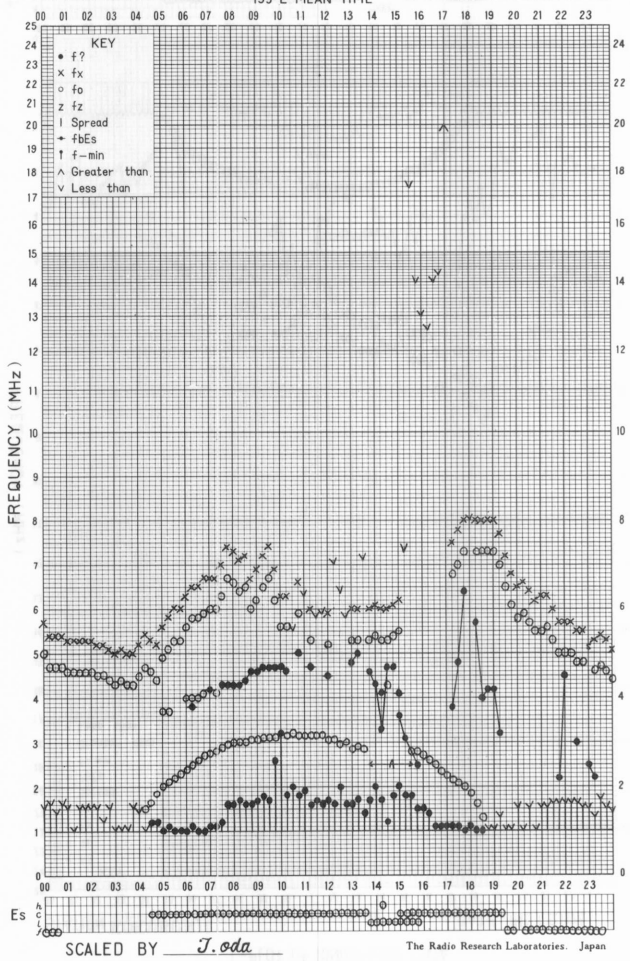
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE MAY. 20. 1976



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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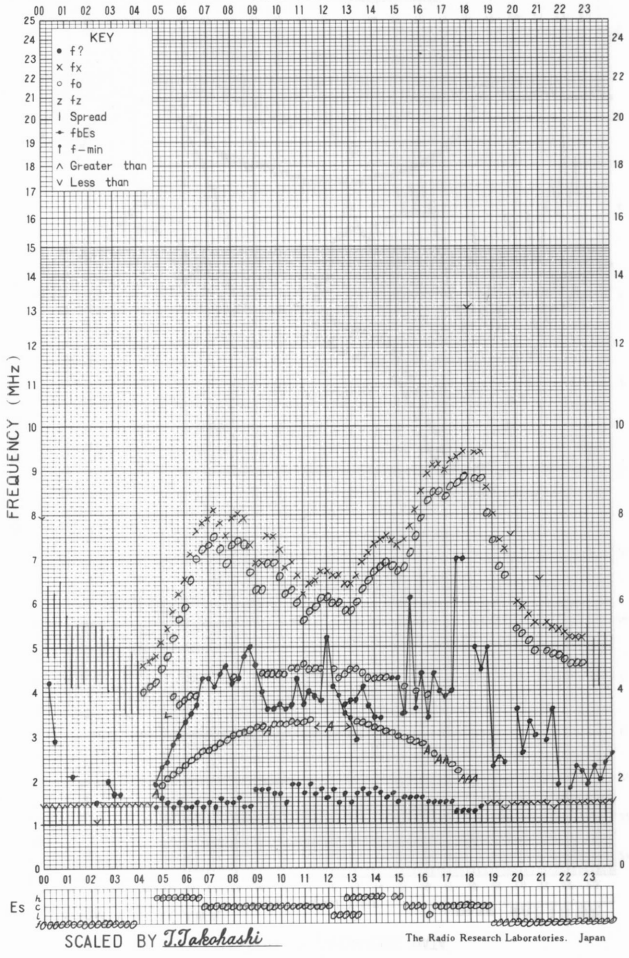
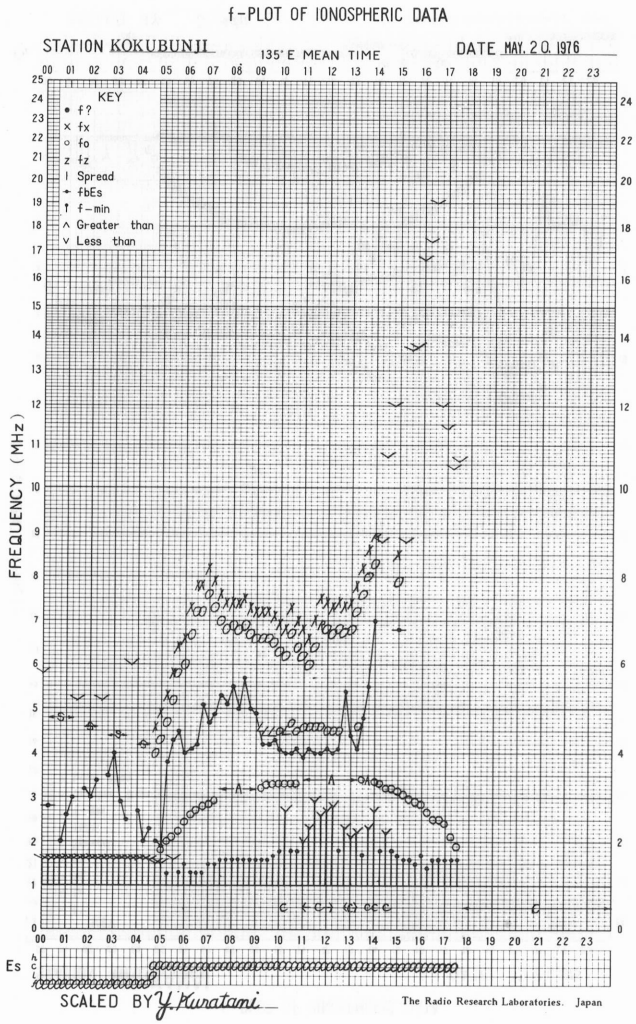


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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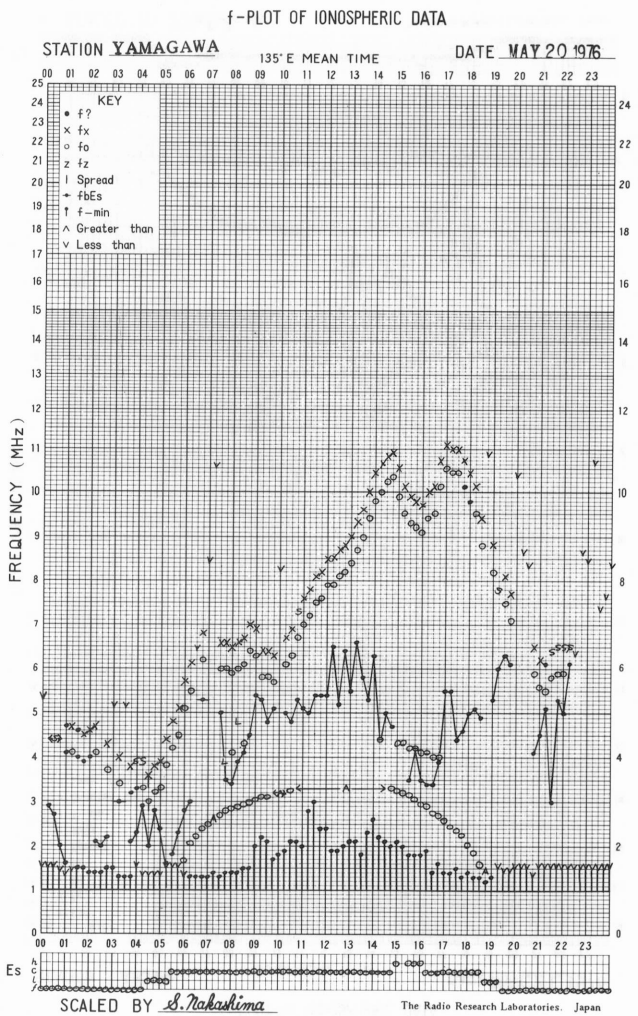
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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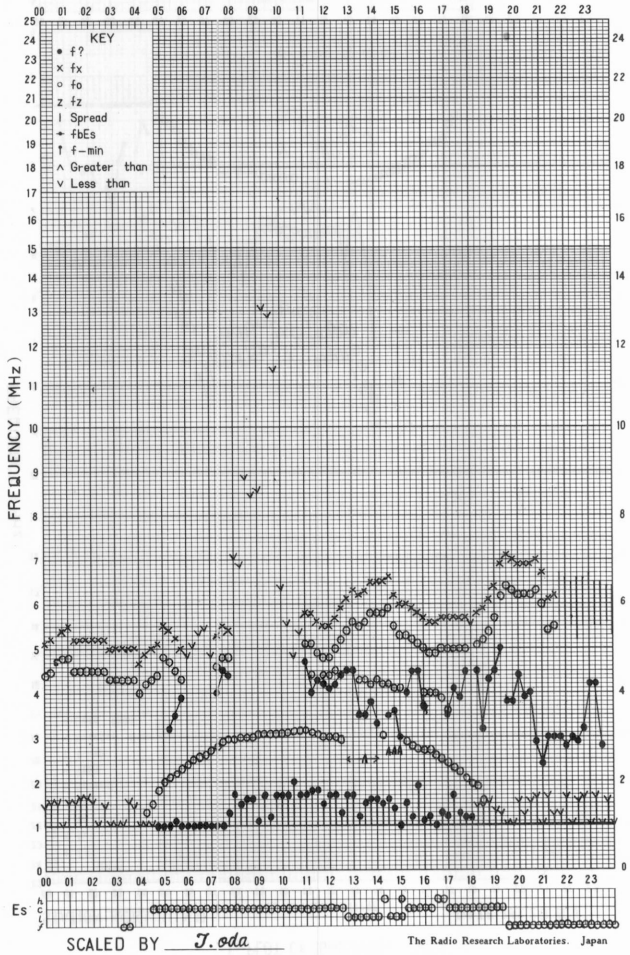
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE MAY. 21. 1976



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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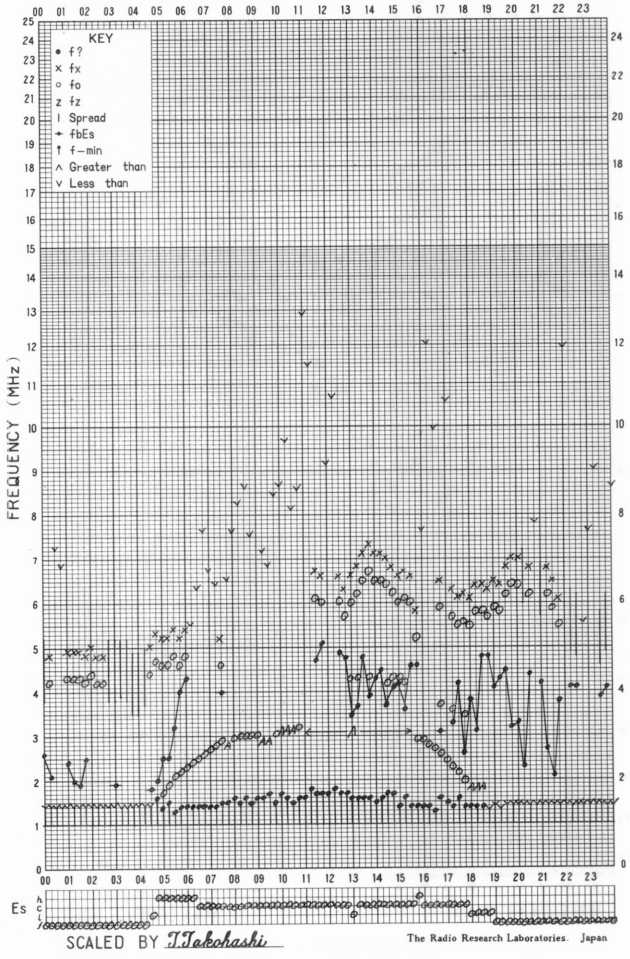

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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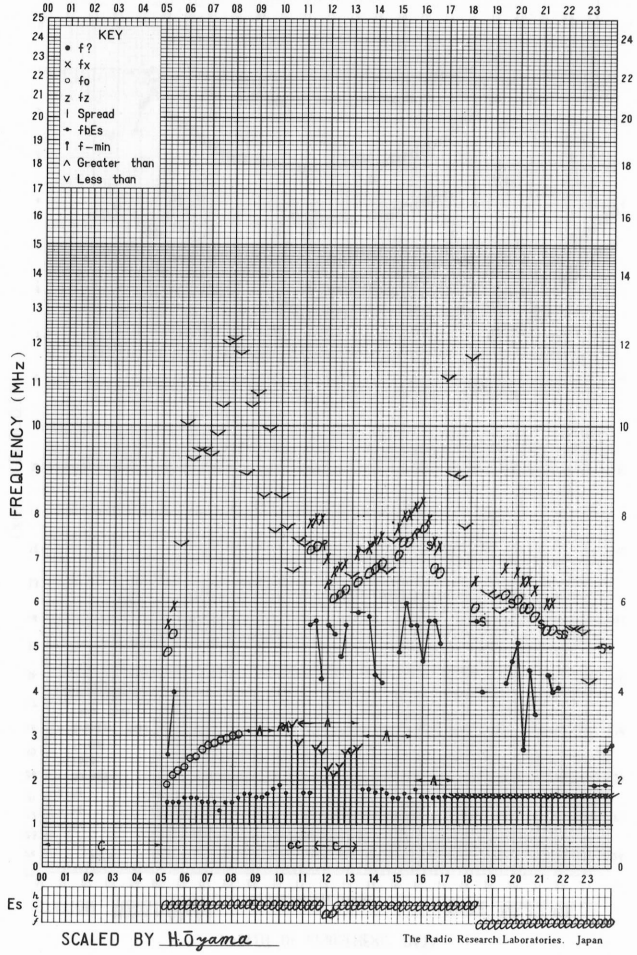
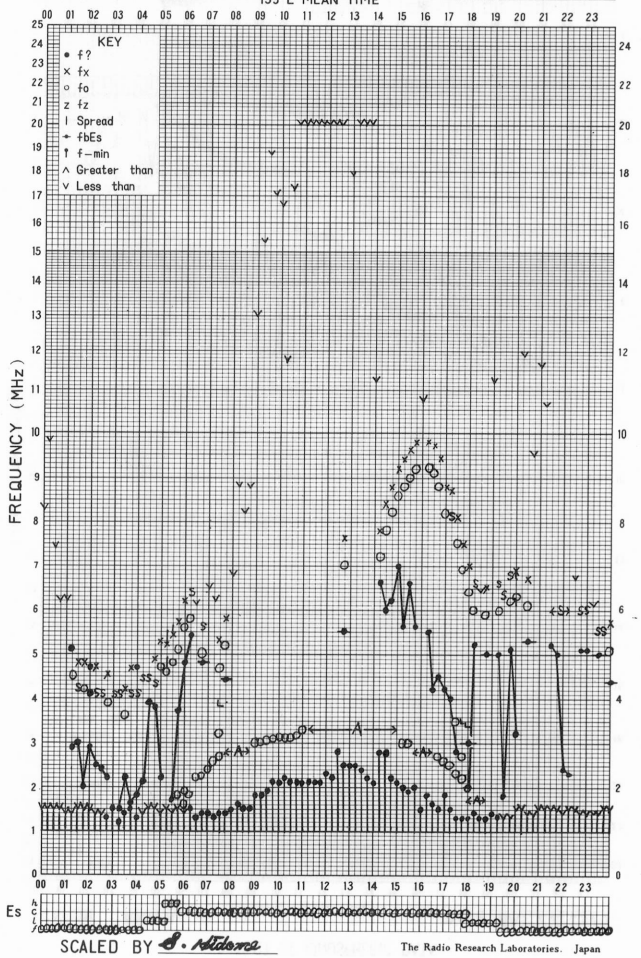


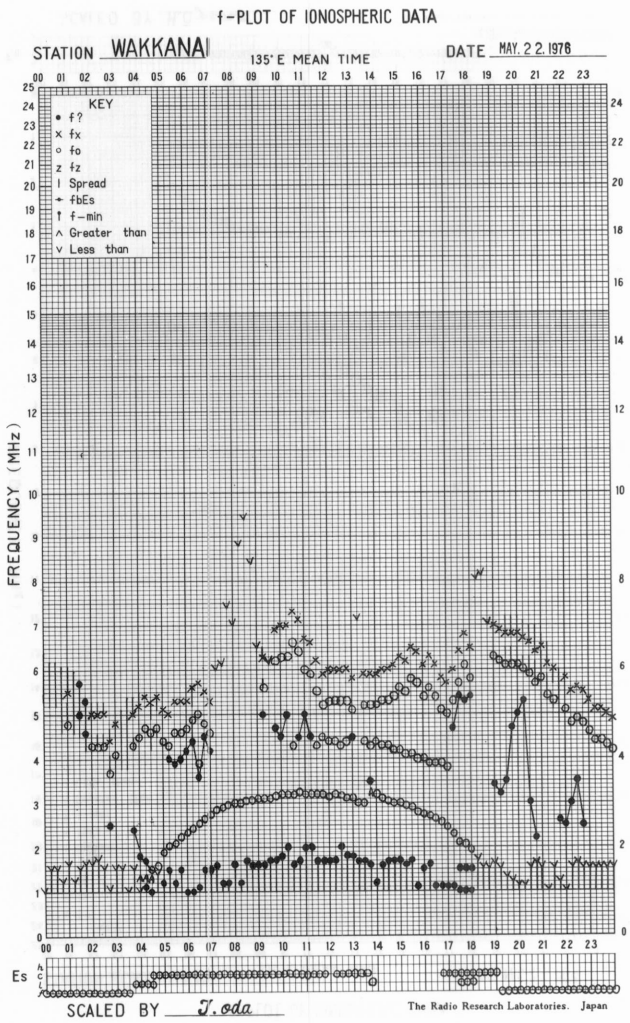
SCALED BY H.Ōzama The Radio Research Laboratories. Japan

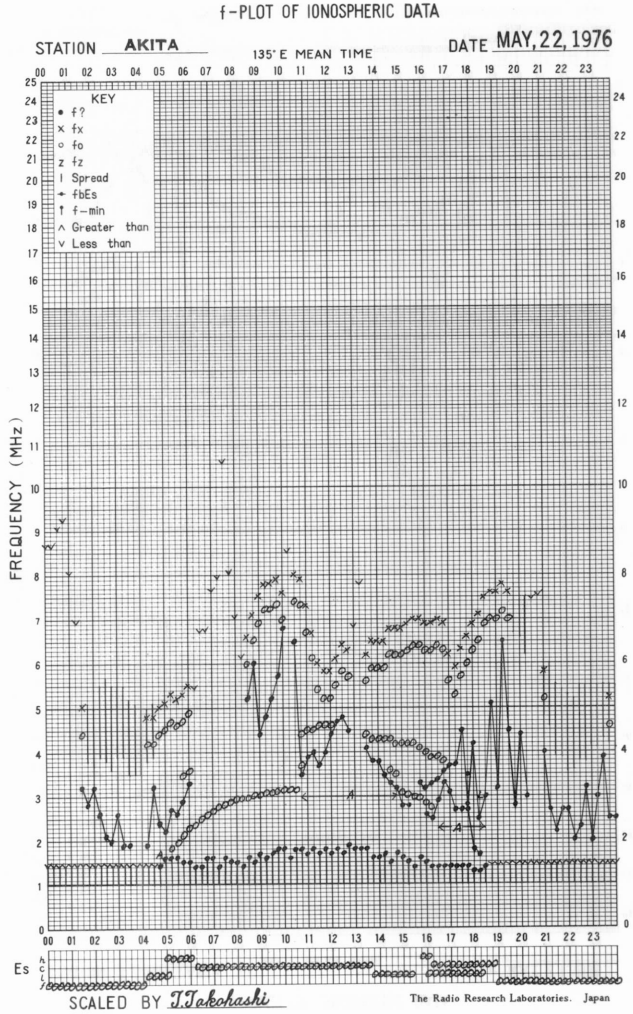
f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE MAY. 21. 1976



SCALED BY S. Ishidawa The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135°E MEAN TIME
DATE MAY. 22. 1976
KEY
• f?
× fx
○ fo
z fz
| Spread
→ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. oda
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135°E MEAN TIME
DATE MAY, 22, 1976
KEY
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| Spread
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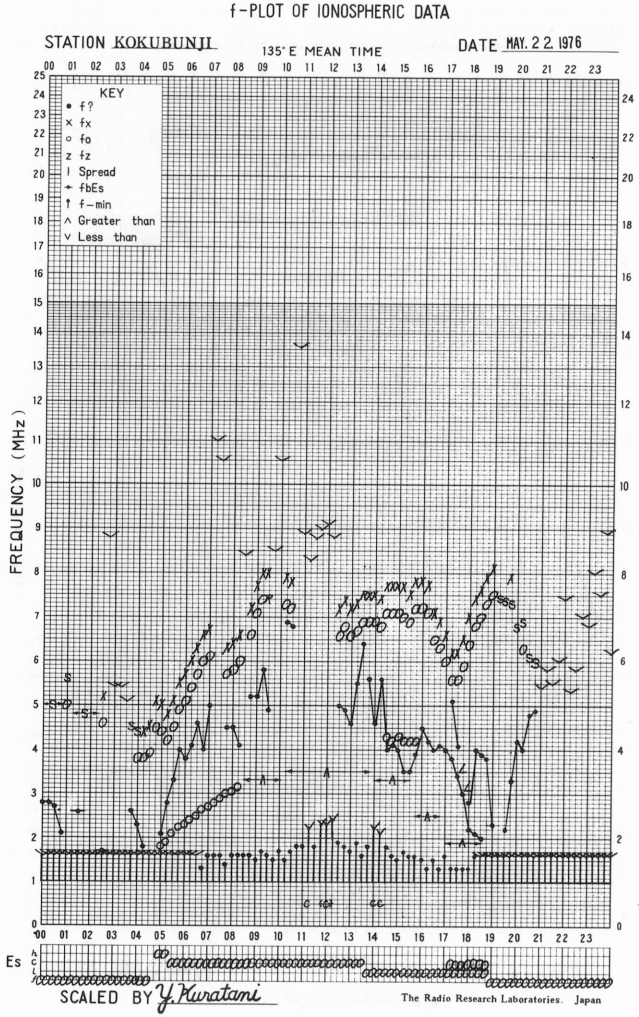
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T Takahashi
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135° E MEAN TIME
DATE MAY. 22. 1976
KEY
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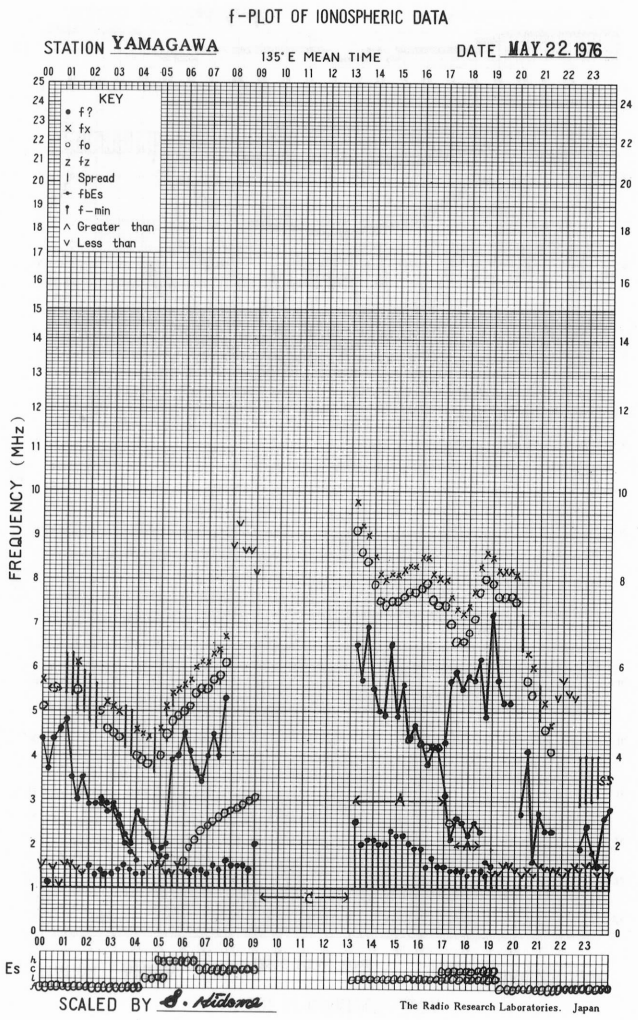
○ fo
z fz
| Spread
⊸ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE MAY. 22. 1976
KEY
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^ Greater than
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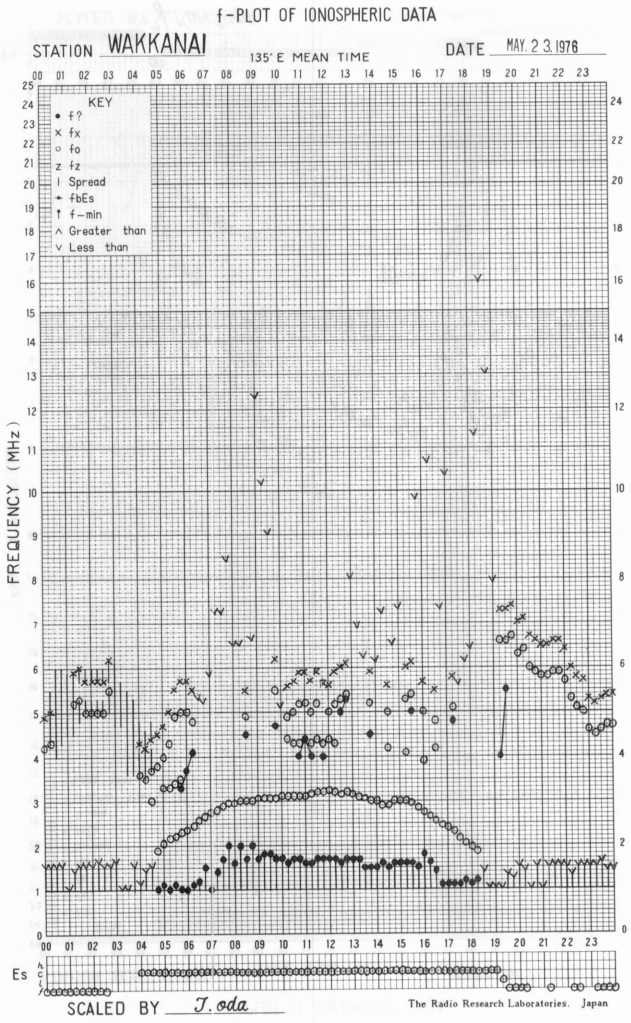
FREQUENCY (MHz)
Es
SCALED BY S. Nidome
The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE MAY. 2 3. 1976
KEY
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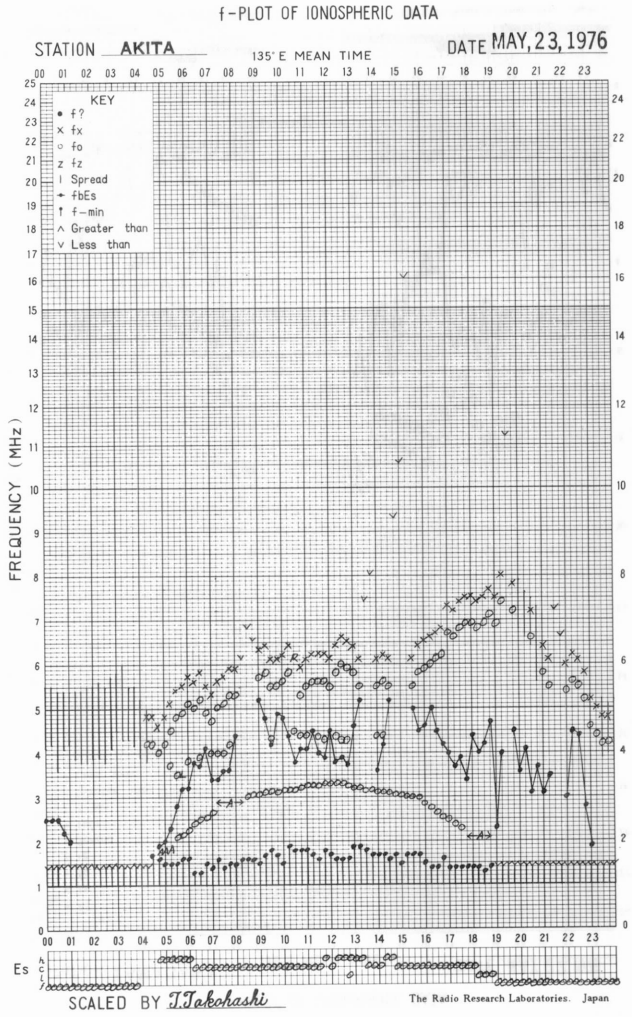
○ fo
z fz
| Spread
← fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY J. oda
The Radio Research Laboratories. Japan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KEY
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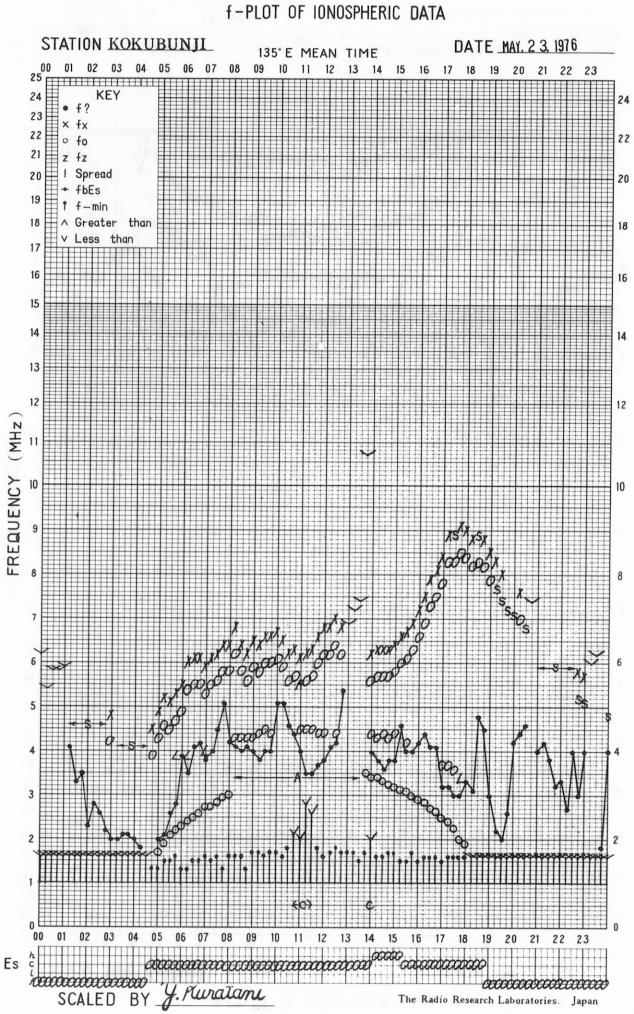
v Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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STATION KOKUBUNJI
135° E MEAN TIME
DATE MAY. 23. 1976
KEY
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⊸ fbEs
↑ f-min
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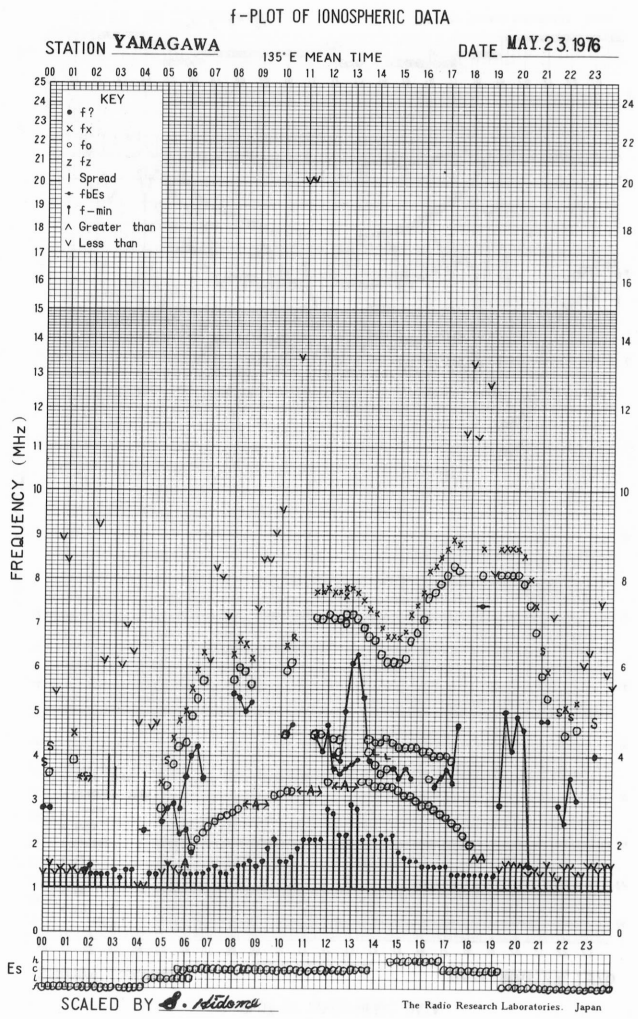
v Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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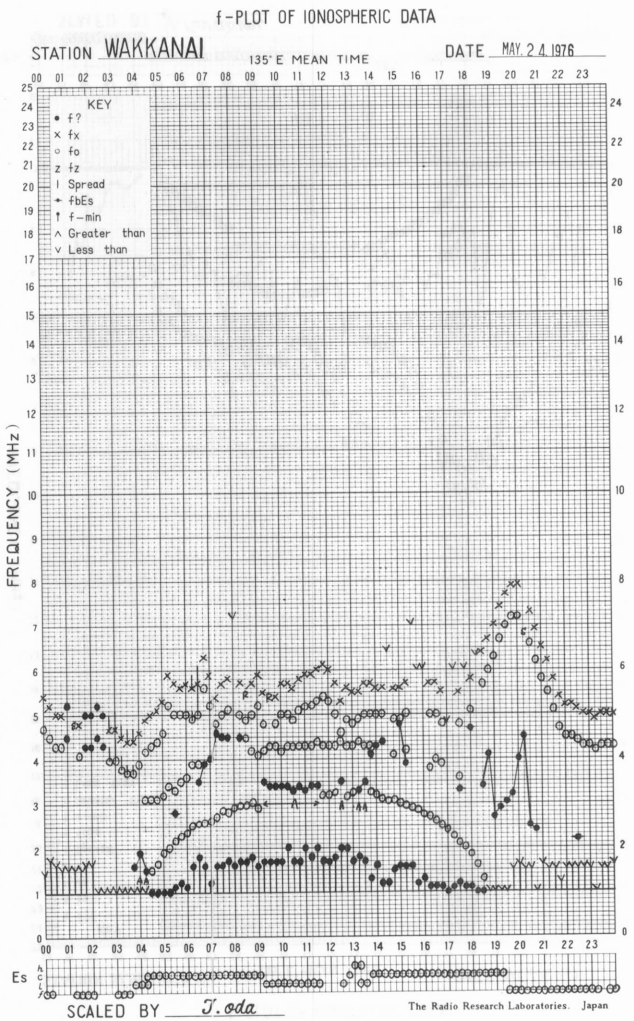
v Less than
FREQUENCY (MHz)
Es
SCALED BY S. Ishidome
The Radio Research Laboratories. Japan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135° E MEAN TIME
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KEY
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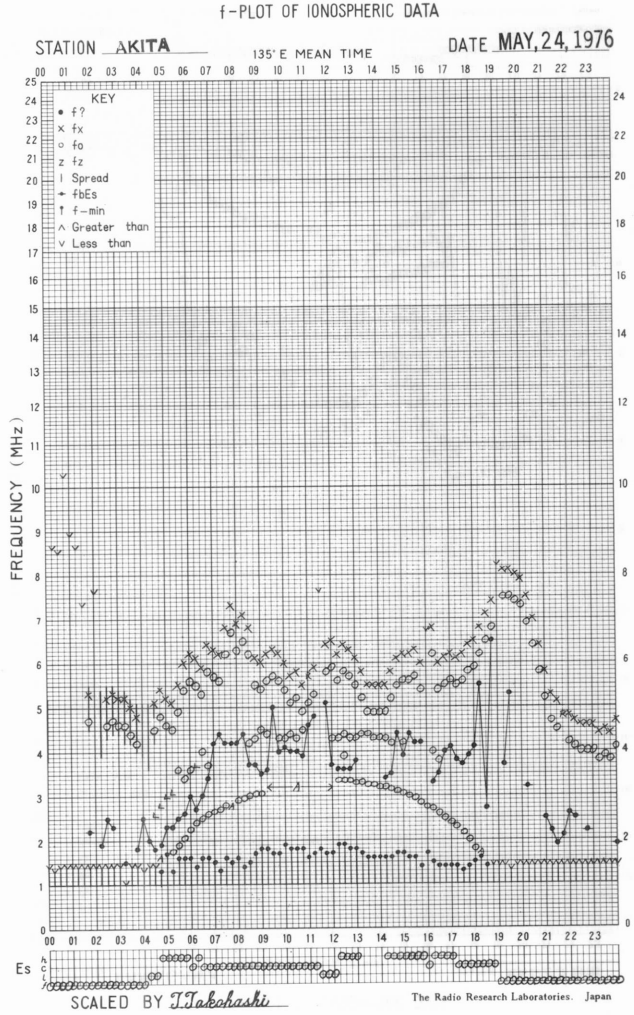
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. oda
The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE MAY, 24, 1976
KEY
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○ fo
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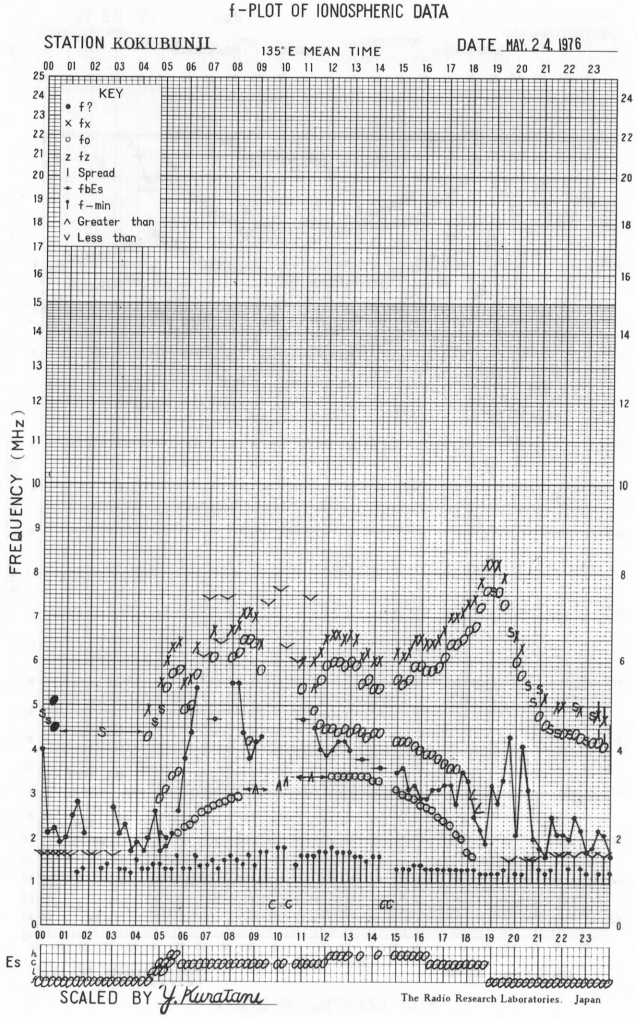
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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STATION KOKUBUNJI
135° E MEAN TIME
DATE MAY. 24. 1976
KEY
• f?
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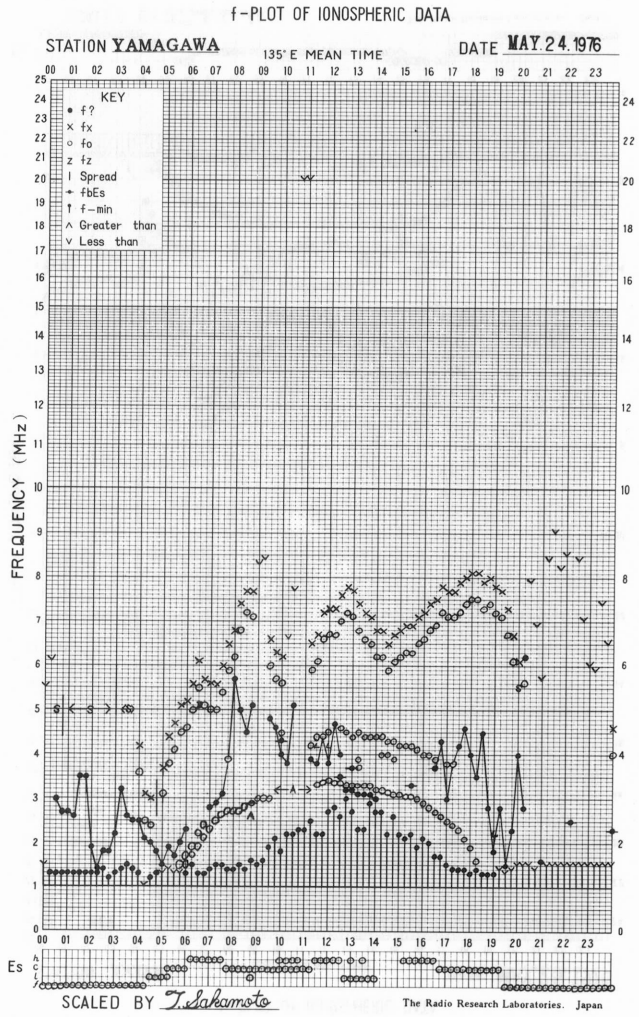
○ fo
z fz
| Spread
+ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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135° E MEAN TIME
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KEY
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○ fo
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FREQUENCY (MHz)
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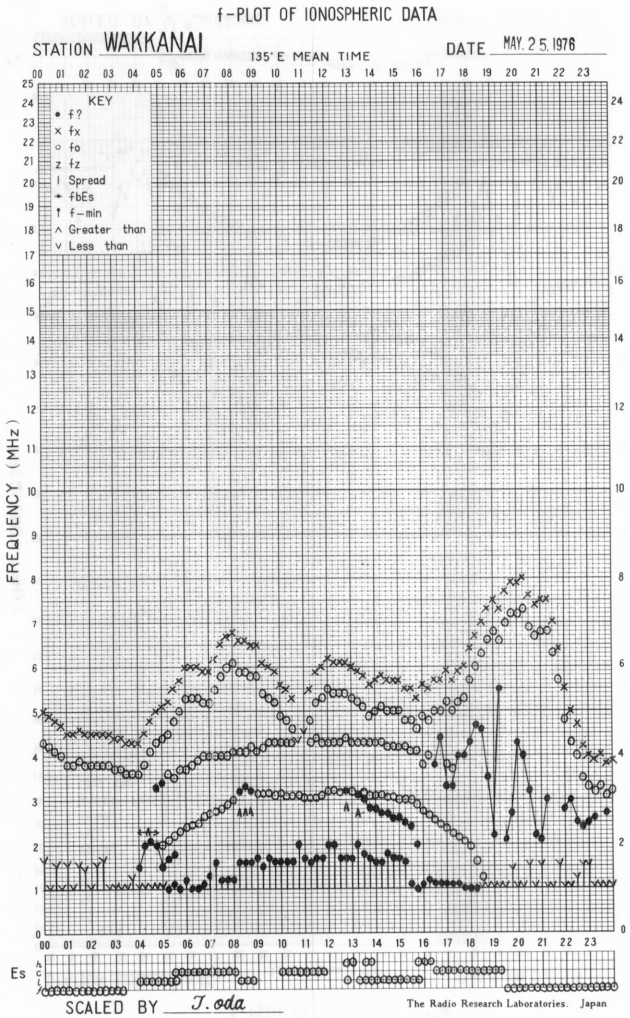
SCALED BY T. Takamoto
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135° E MEAN TIME
DATE MAY. 25. 1976
KEY
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○ fo
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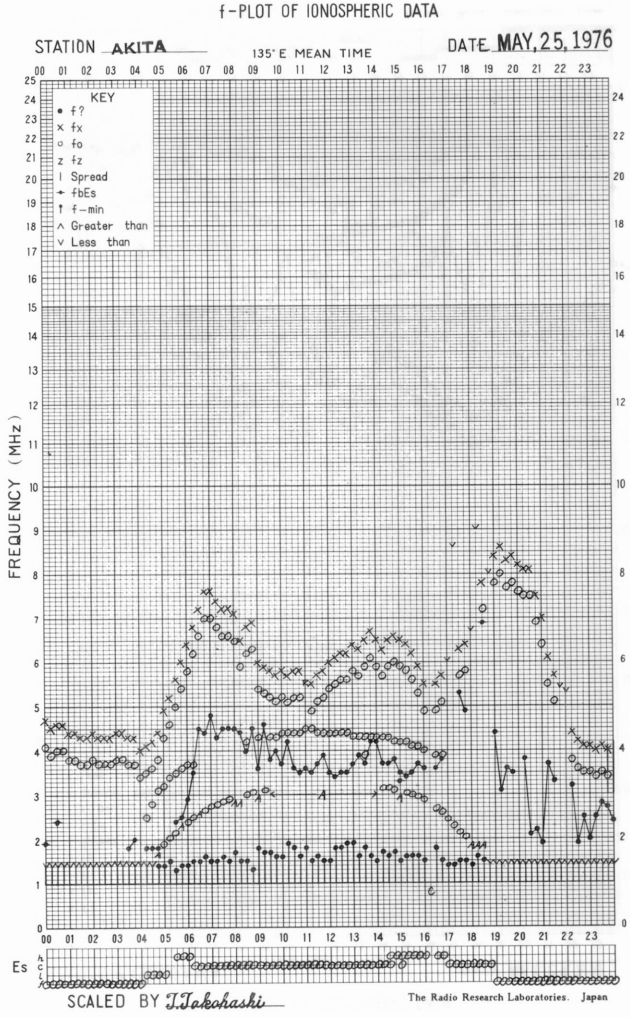
† f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. oda
The Radio Research Laboratories. Japan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KEY
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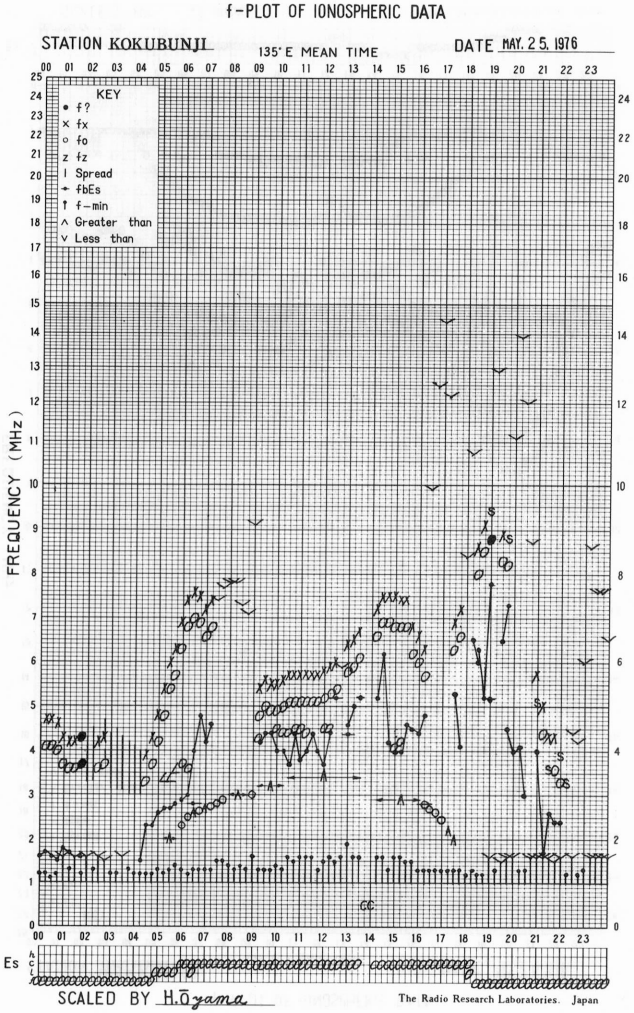
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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KEY
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○ fo
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^ Greater than
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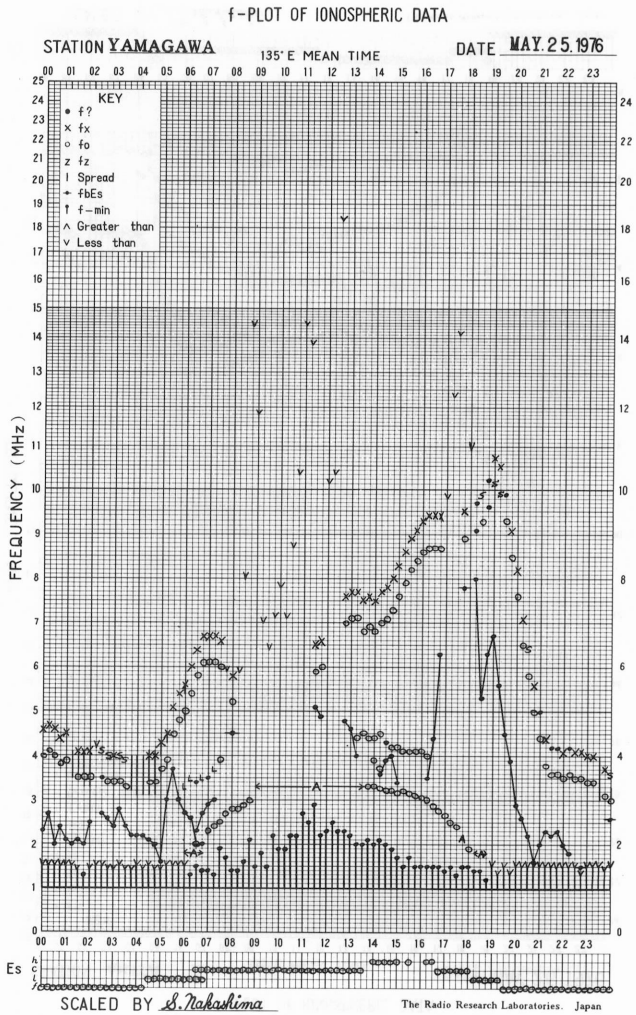
FREQUENCY (MHz)
Es
SCALED BY H.Ōyama
The Radio Research Laboratories. Japan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DATE MAY. 25. 1976
KEY
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○ fo
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| Spread
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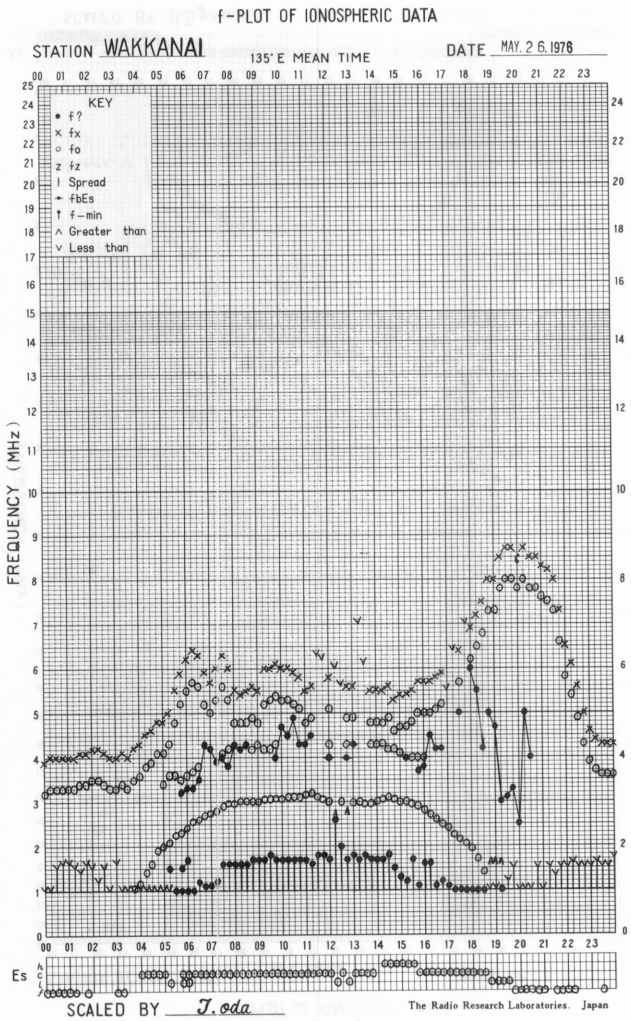
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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STATION WAKKANAI
135° E MEAN TIME
DATE MAY. 26. 1976
KEY
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× fx
○ fo
z fz
| Spread
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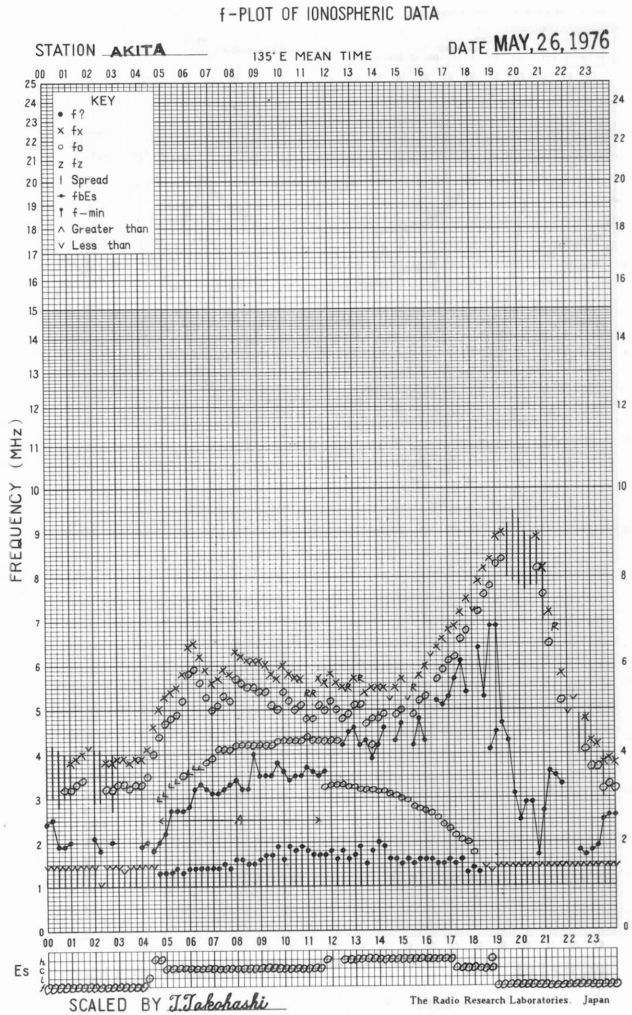
† f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY J. oda
The Radio Research Laboratories. Japan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KEY
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| Spread
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∧ Greater than
∨ Less than
FREQUENCY (MHz)
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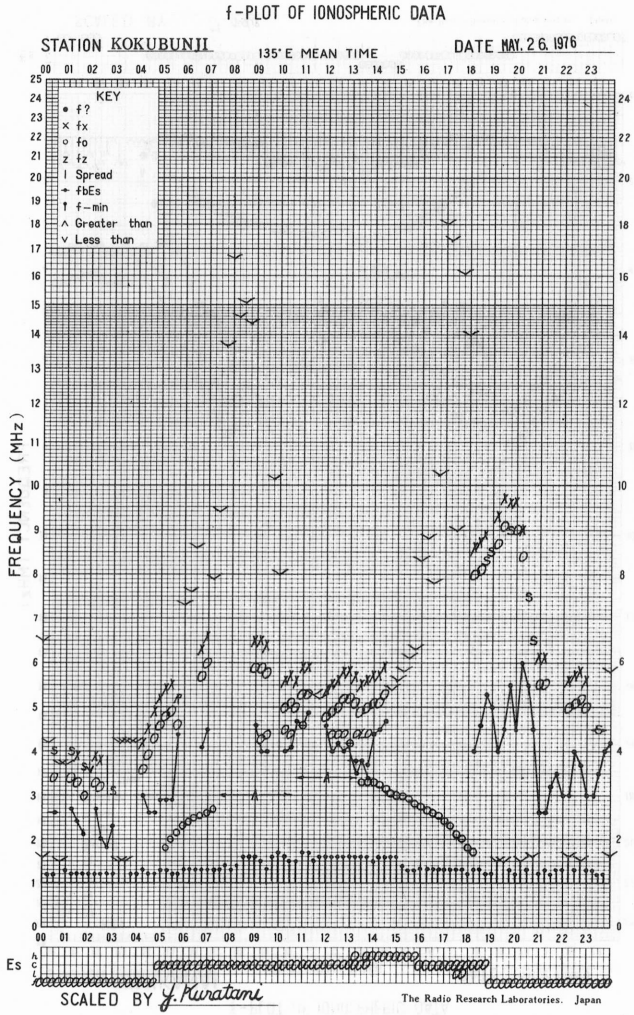
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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DATE MAY. 26. 1976
KEY
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○ fo
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| Spread
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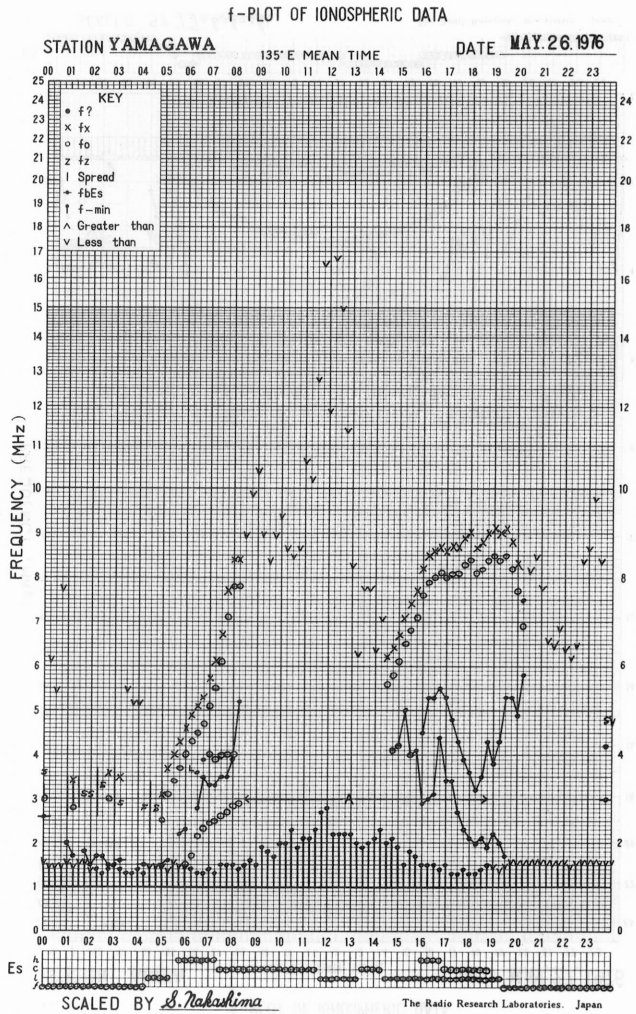
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY J. Kuratani
The Radio Research Laboratories. Japan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KEY
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○ fo
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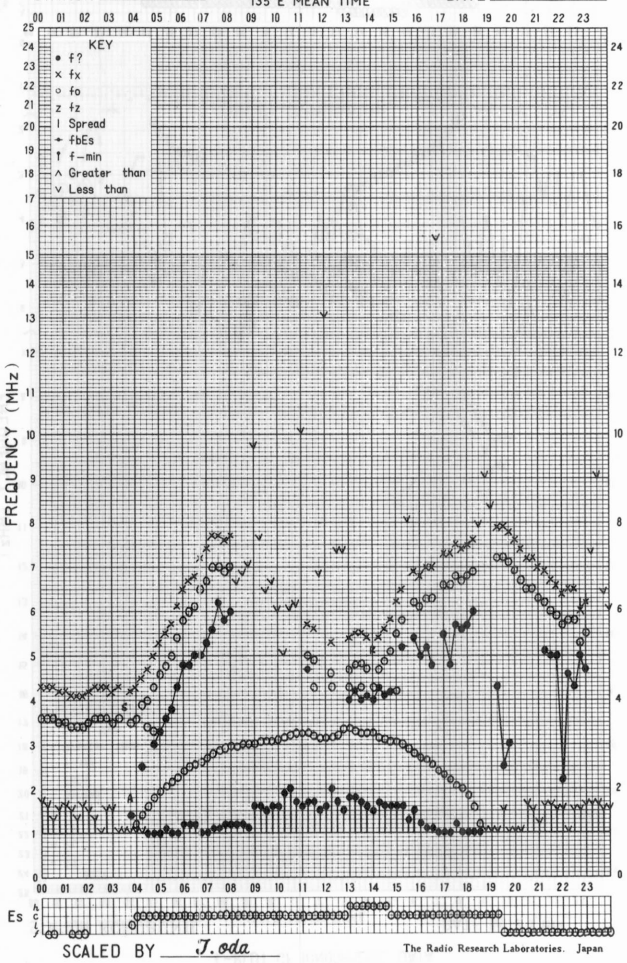
| Spread
→ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE MAY. 27. 1976

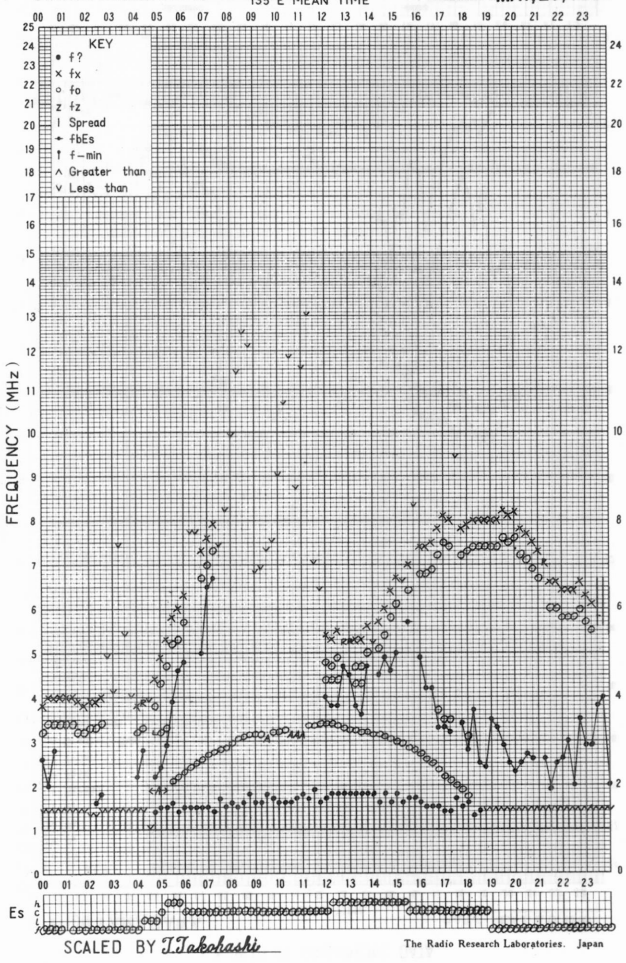


SCALED BY J. oda

The Radio Research Laboratories. Japan

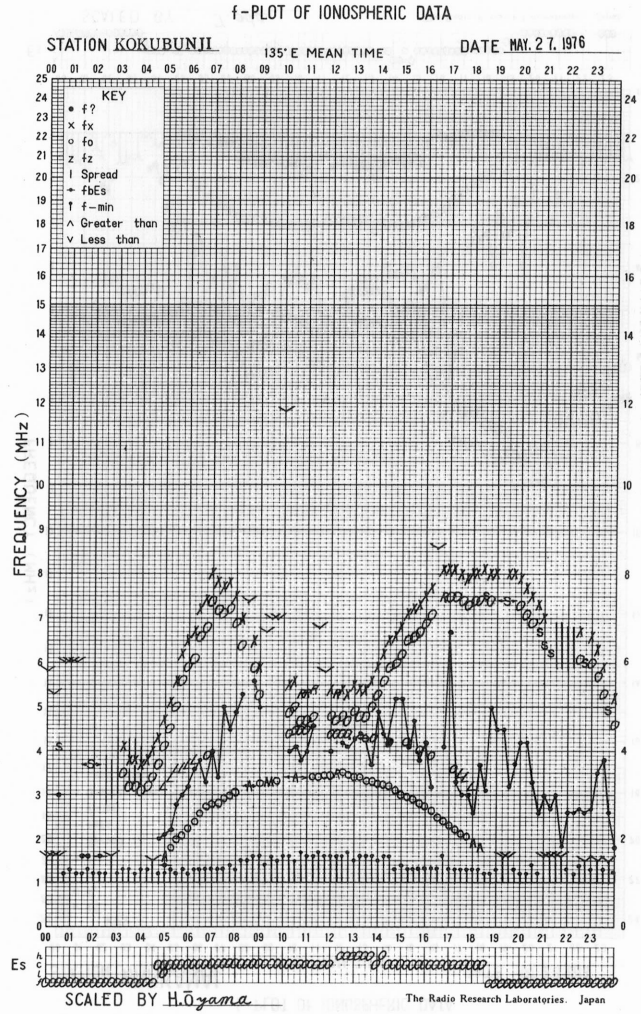
f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE MAY, 27, 1976



SCALED BY T. Takahashi

The Radio Research Laboratories. Japan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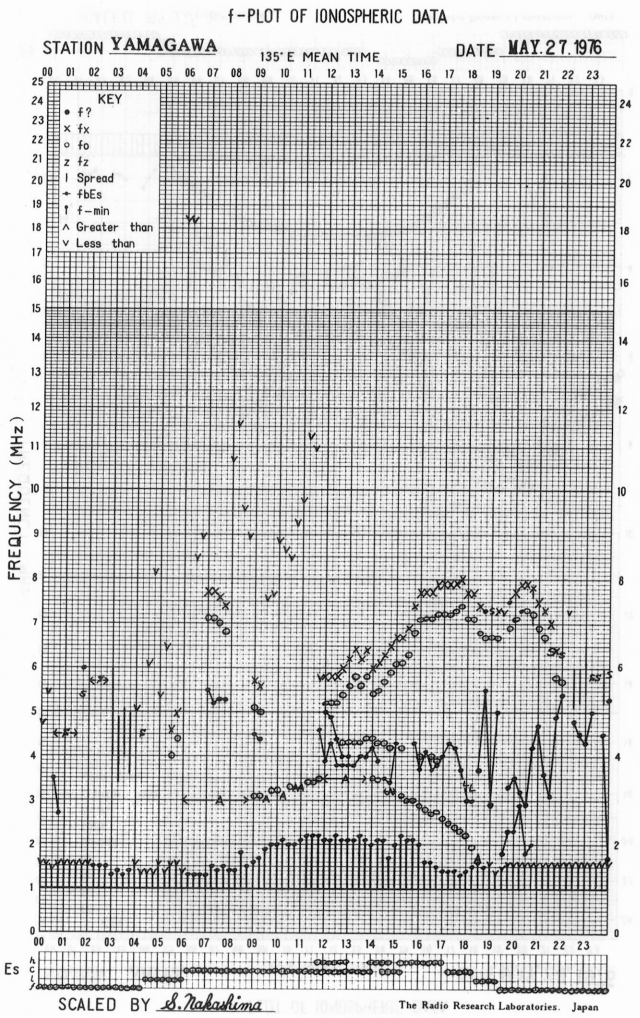
v Less than
FREQUENCY (MHz)
Es
SCALED BY H.Ōzama
The Radio Research Laboratories. Japan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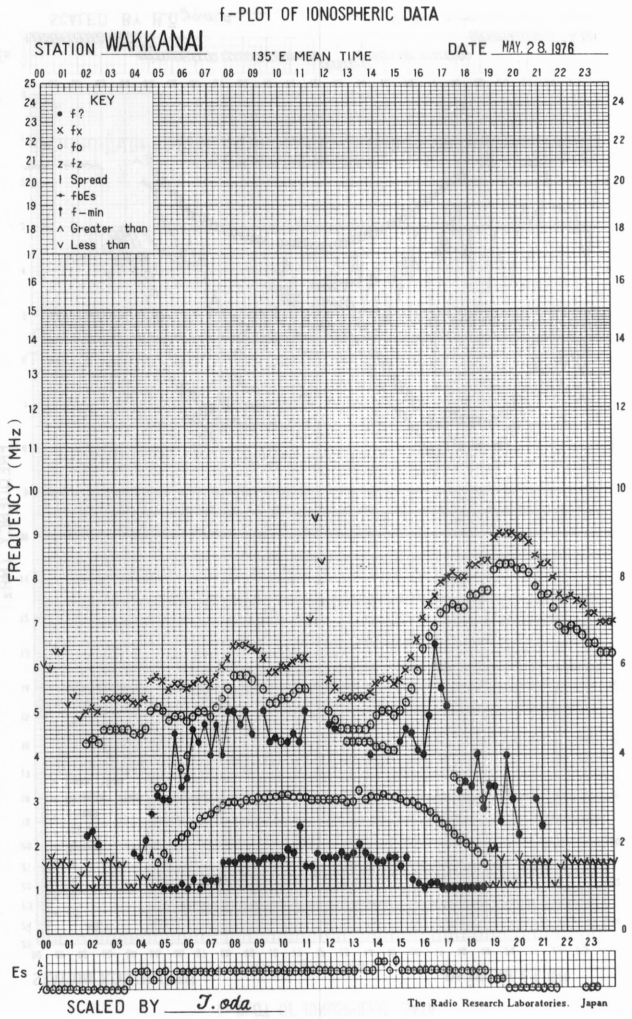
FREQUENCY (MHz)
Es
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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DATE MAY. 28. 1976
KEY
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○ fo
z fz
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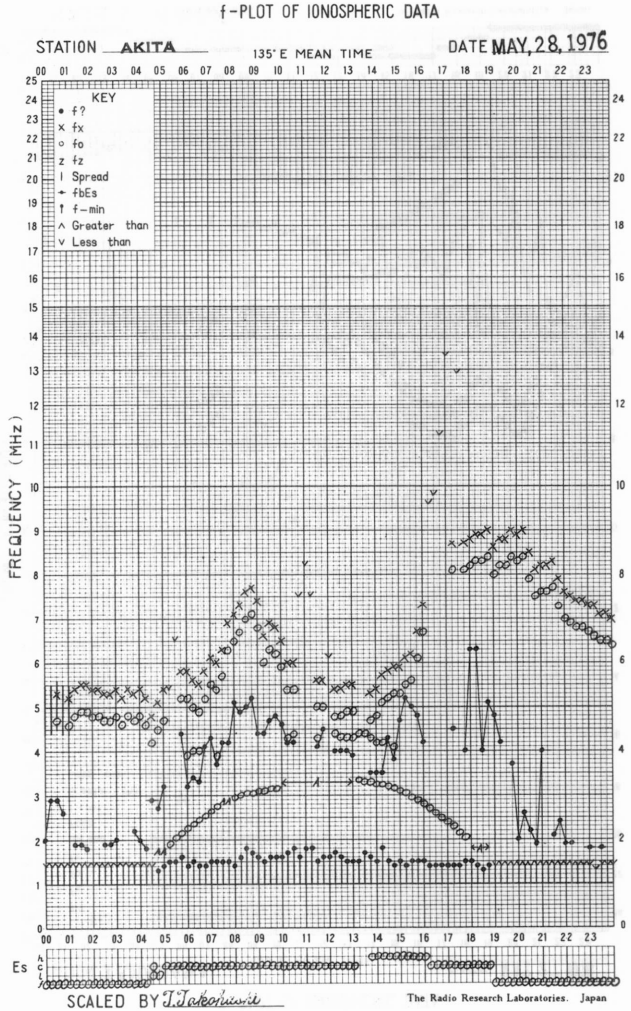
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. oda
The Radio Research Laboratories. Japan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KEY
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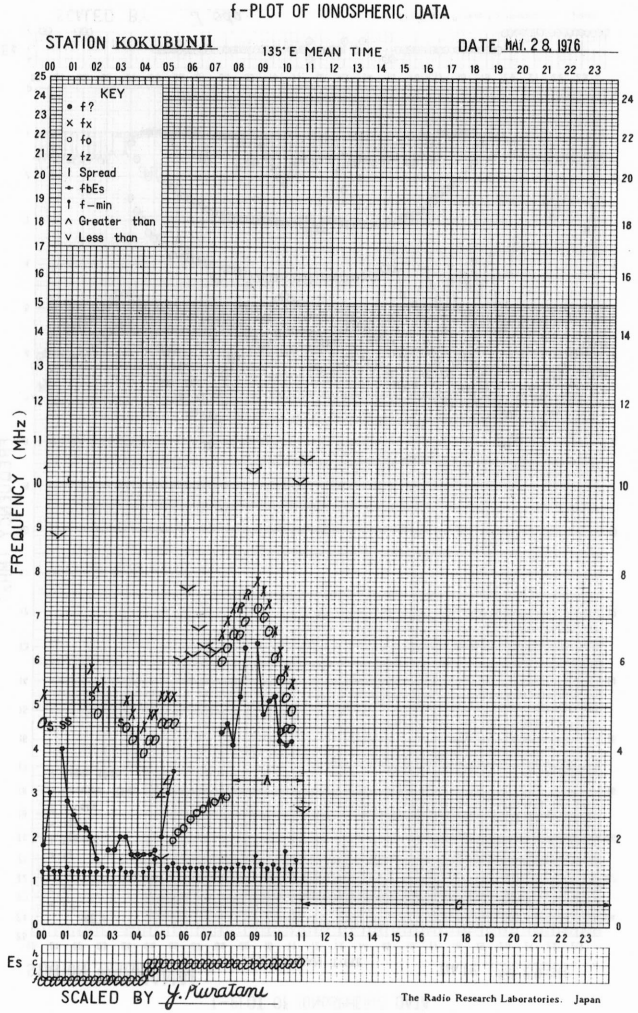
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takeuchi
The Radio Research Laboratories. Japan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KEY
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FREQUENCY (MHz)
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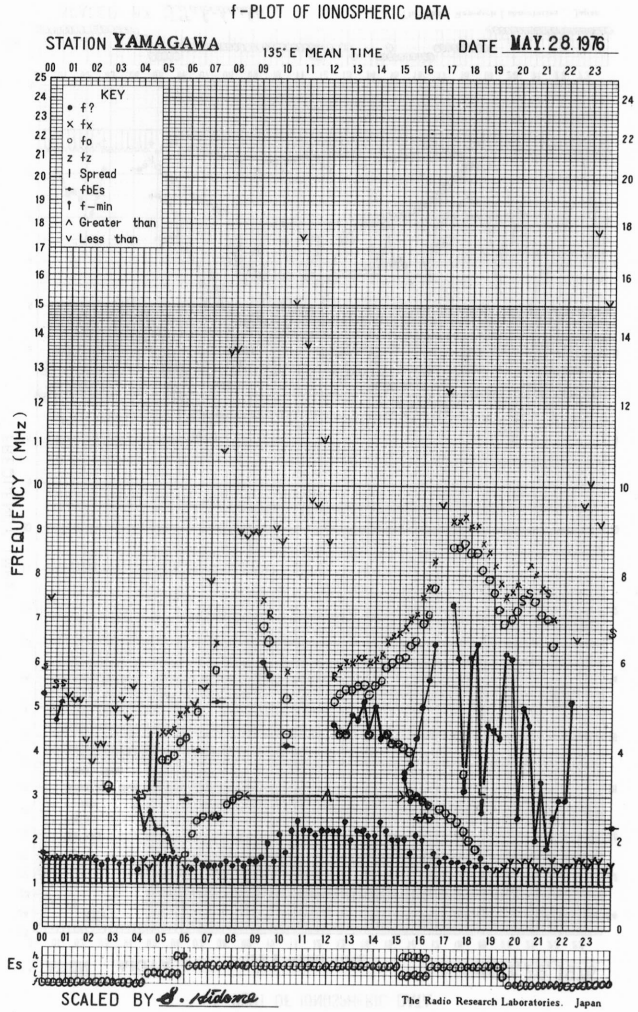
SCALED BY Y. Furatani
The Radio Research Laboratories. Japan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FREQUENCY (MHz)
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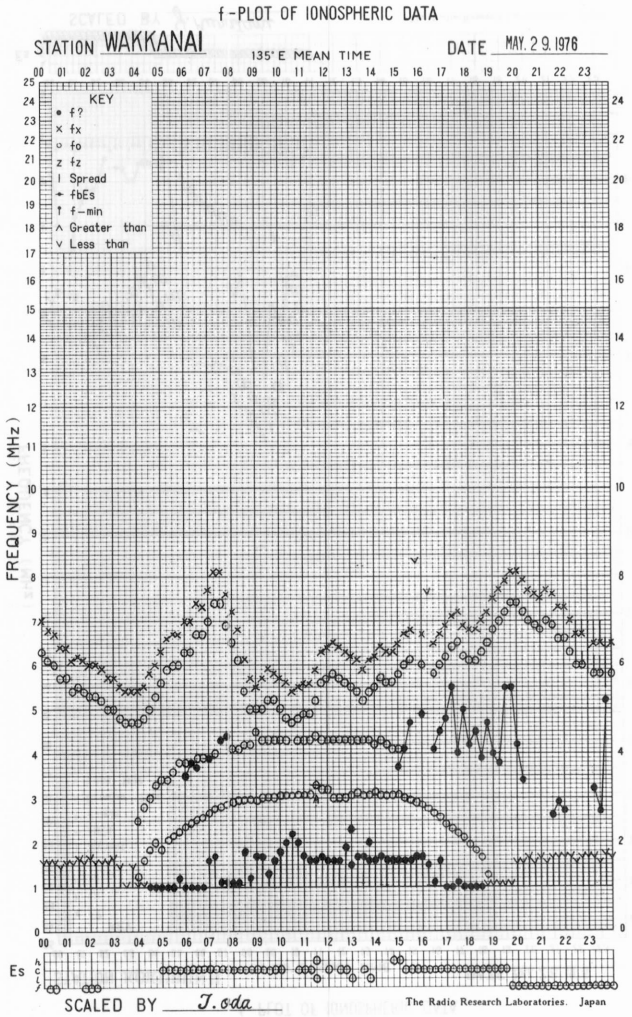
SCALED BY S. Aidama
The Radio Research Laboratories. Japan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STATION WAKKANAI
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DATE MAY. 29. 1976
KEY
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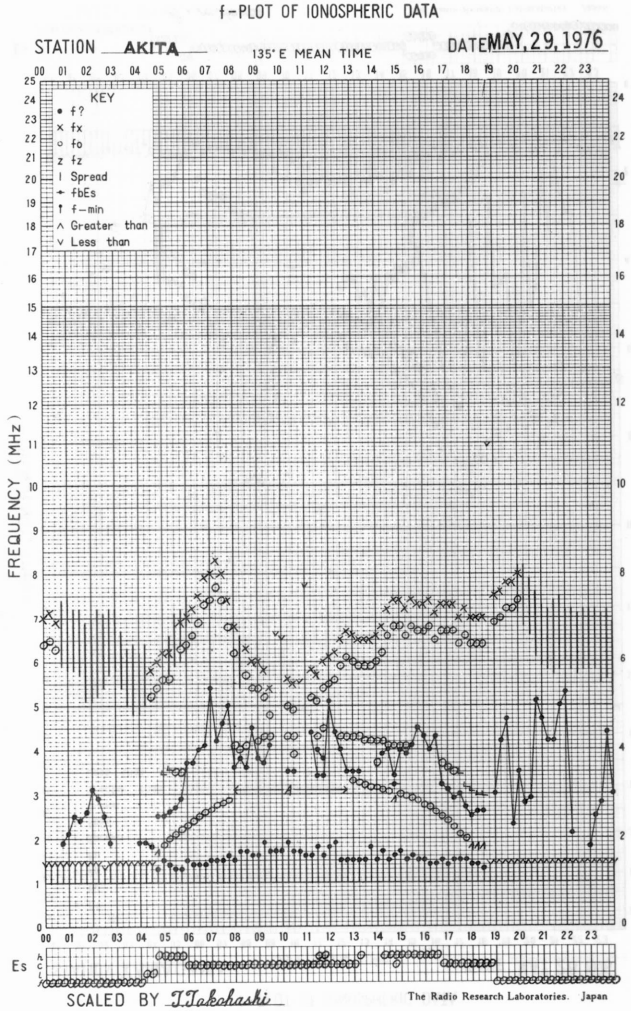
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY T. Oda
The Radio Research Laboratories. Japan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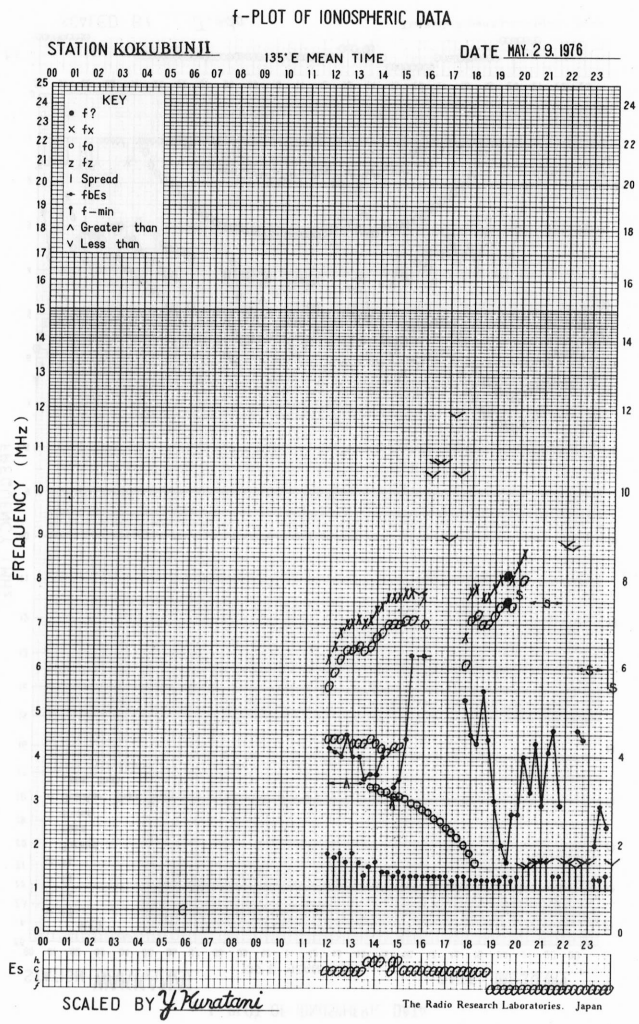
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan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STATION KOKUBUNJI
135° E MEAN TIME
DATE MAY. 29. 1976
KEY
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o fo
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I Spread
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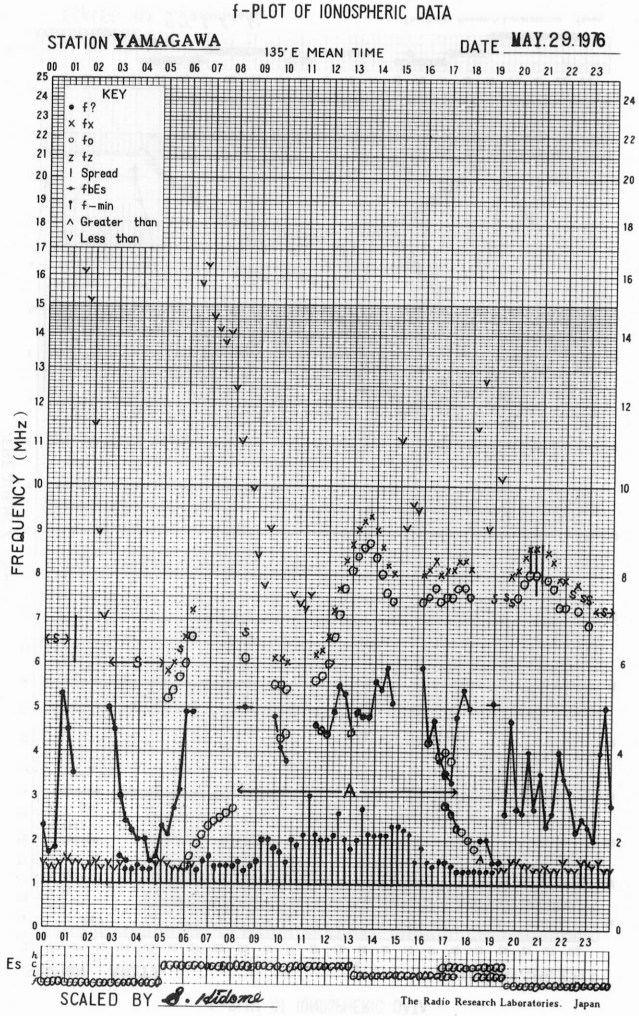
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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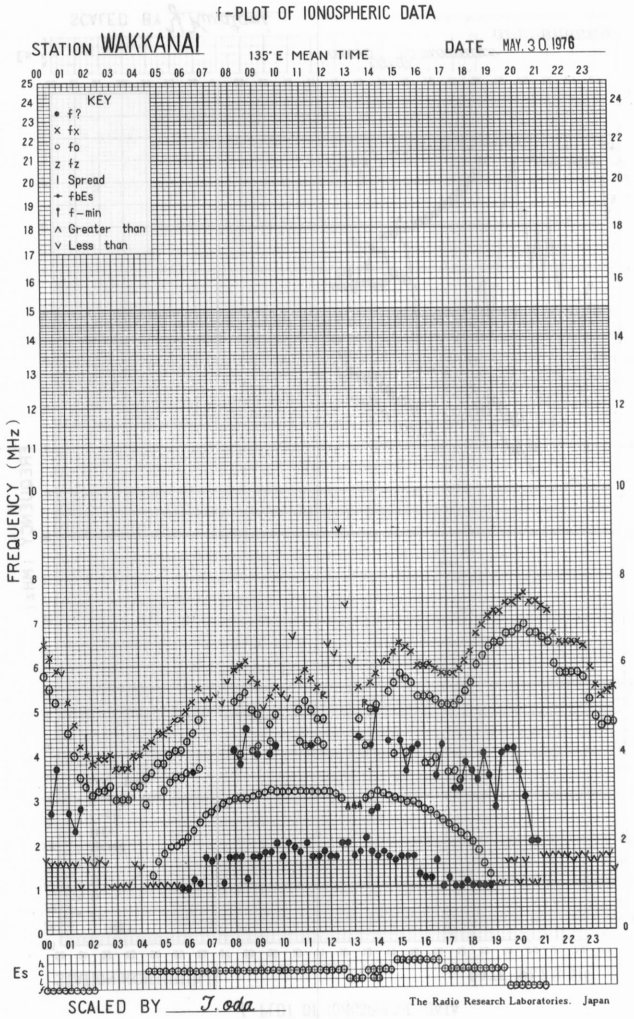
v Less than
FREQUENCY (MHz)
Es
SCALED BY S. Ishidome
The Radio Research Laboratories. Japan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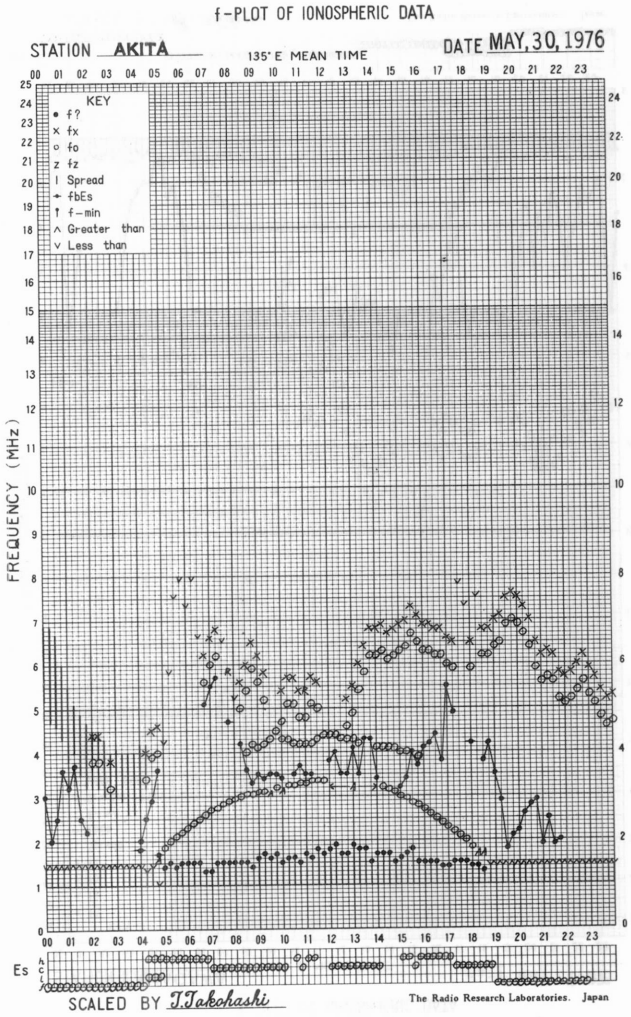
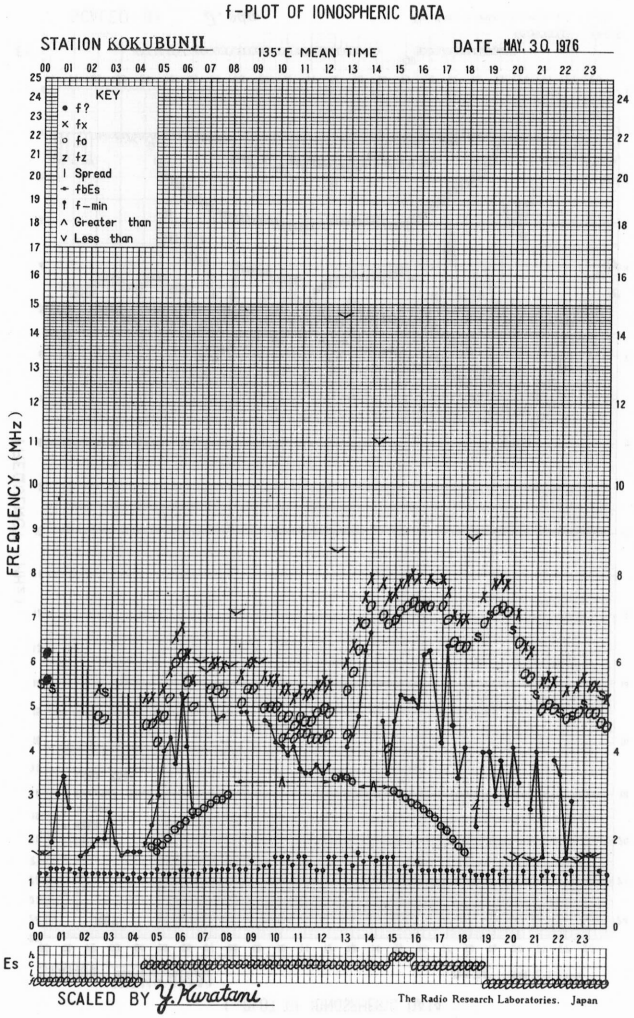
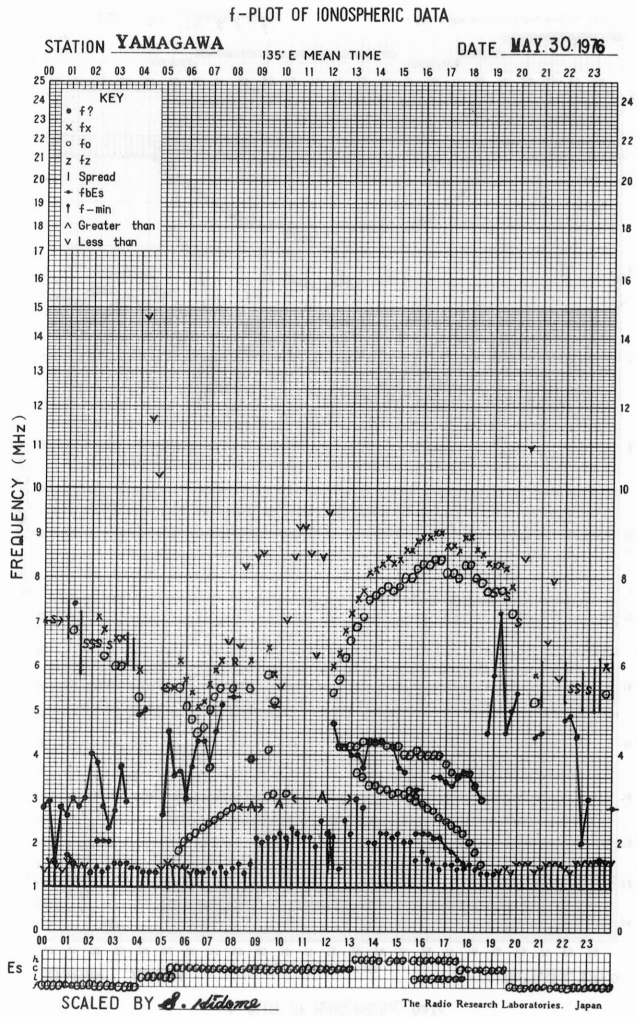
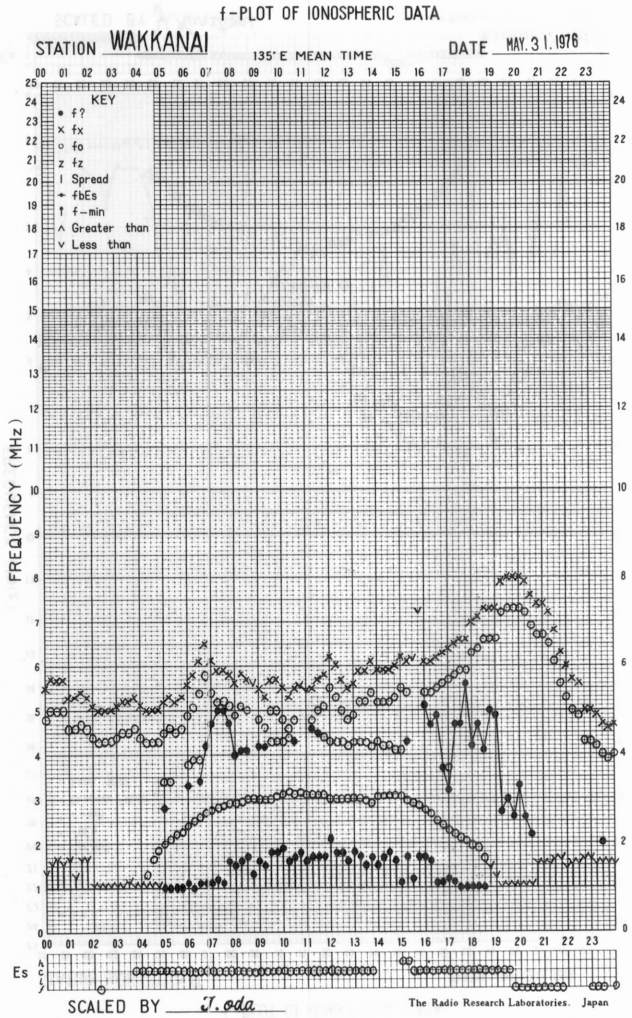
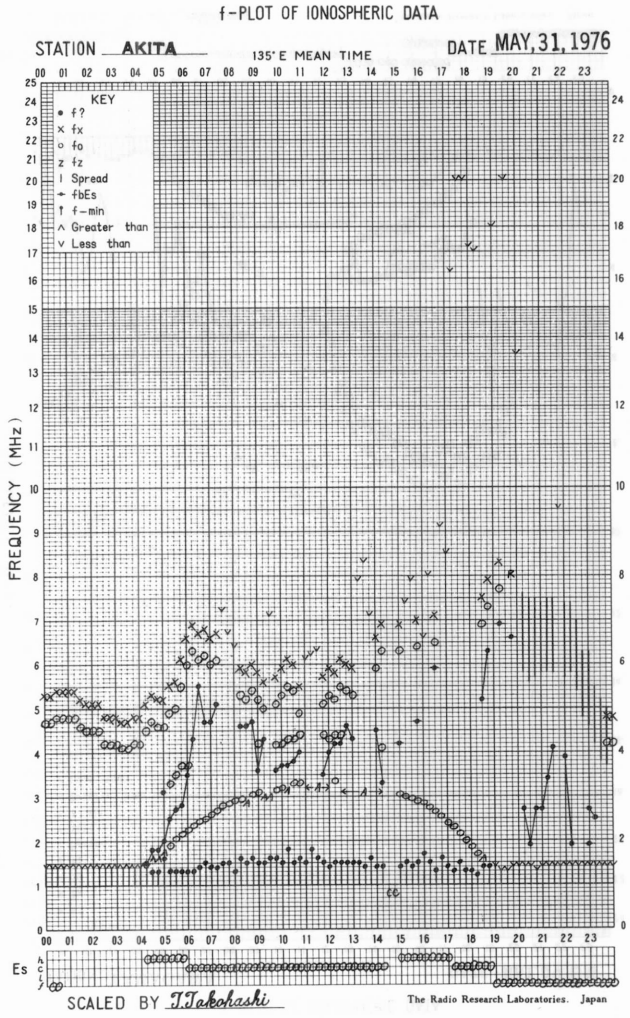
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY J. oda
The Radio Research Laboratories. Japan

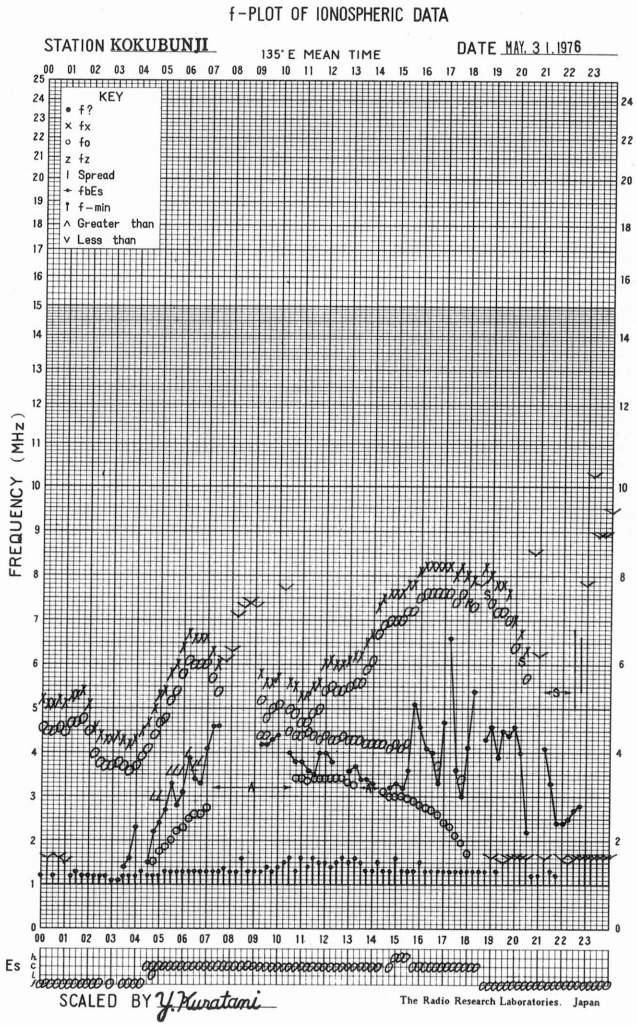

f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135° E MEAN TIME
DATE MAY, 30, 1976
KEY
• f?
× fx
○ fo
z fz
| Spread
+ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY T.Takahashi
The Radio Research Laboratories. Japan

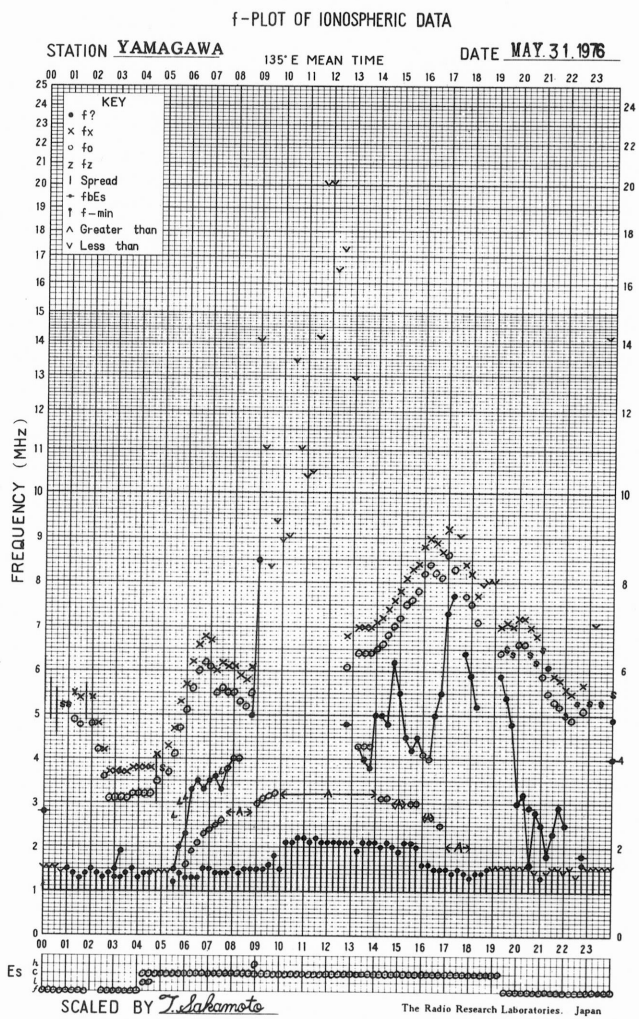

f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135°E MEAN TIME
DATE MAY. 30. 1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135°E MEAN TIME
DATE MAY. 30. 1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY S. Nitadori
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION WAKKANAI
135°E MEAN TIME
DATE MAY. 31. 1976
KEY
● f?
× fx
○ fo
z fz
| Spread
⊸ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY J. oda
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION AKITA
135°E MEAN TIME
DATE MAY, 31, 1976
KEY
● f?
× fx
○ fo
z fz
| Spread
⊸ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY T. Takahashi
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION KOKUBUNJI
135°E MEAN TIME
DATE MAY. 31. 1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135°E MEAN TIME
DATE MAY. 31. 1976
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY T. Sakamoto
The Radio Research Laboratories. Japan

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

May 1976

Single-frequency total flux and polarization observations at 200 MHz

	Flux density: 10^{-22} $Wm^{-2}Hz^{-1}$					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	7	6	6	6	7	1	0	0	1	0
2	6	6	6	6	6	0	0	0	0	0
3	6	6	6	6	6	0	0	0	0	0
4	6	6	6	6	6	0	0	0	0	0
5	6	6	6	6	6	0	0	0	0	0
6	6	6	6	6	6	0	*	*	0	0
7	6	6	6	6	6	0	0	0	0	0
8	6	6	6	6	6	*	*	*	0	*
9	6	6	q	6	6	0	*	*	0	*
10	6	6	6	6	6	0	*	0	0	0
11	6	6	6	7	6	*	0	*	0	0
12	6	6	7	6	6	0	0	0	0	0
13	6	6	6	6	6	0	0	0	0	0
14	6	6	6	6	6	0	0	0	0	0
15	6	6	6	6	6	0	0	*	0	0
16	7	7	6	6	7	0	0	0	0	0
17	6	6	6	6	6	0	0	*	0	0
18	6	6	6	6	6	0	0	0	0	0
19	6	6	6	6	6	0	0	0	0	0
20	6	6	6	6	6	*	0	0	0	0
21	6	6	6	6	6	0	0	0	0	0
22	6	6	6	6	6	0	0	0	0	0
23	6	6	6	6	6	0	0	0	0	0
24	6	6	6	6	6	0	0	0	0	0
25	6	6	6	6	6	0	0	0	0	0
26	6	6	6	6	6	0	0	0	0	0
27	6	6	6	6	6	0	0	0	0	0
28	6	6	6	6	6	0	0	0	0	0
29	6	6	6	6	6	0	0	0	0	0
30	6	6	6	6	6	0	0	0	0	0
31	6	6	6	6	6	0	0	0	0	0

Note No observations during the following periods:

3rd 2245- 2355
12th 0430- 0500

q: likely quiet.
*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

May 1976

Single-frequency total flux observations at 500 MHz

Flux density: 10^{-22} Wm^{-2} Hz^{-1}

UT	00-03	03-06	06-09	21-24	Day
Date					
1	21	20	20	20	20
2	20	20	20	20	20
3	20	20	20	20	20
4	20	20	20	20	20
5	20	20	q	q	20
6	20	20	q	20	20
7	20	20	20	20	20
8	20	20	20	20	20
9	20	20	20	20	20
10	21	21	20	21	20
11	21	21	21	21	21
12	21	21	21	21	21
13	21	21	21	21	21
14	21	21	21	21	21
15	21	21	21	21	21
16	22	22	22	22	22
17	22	21	21	21	21
18	21	21	21	21	21
19	21	21	21	21	21
20	21	21	20	21	21
21	21	21	21	21	21
22	21	21	21	21	21
23	21	21	21	20	21
24	21	20	20	20	20
25	20	20	20	20	20
26	20	20	19	19	20
27	19	19	19	19	19
28	19	(19)	19	19	19
29	19	19	19	19	19
30	19	19	19	19	19
31	19	19	19	19	19

Note No observations during the following periods:

6th 0200- 0230 28th 0300- 0520
10th 0415- 0445 29th 0130- 0245

q: likely quiet.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

May 1976

Outstanding Occurrences

(single-frequency observations)

Normal observing period: 1950 - 0925 (sunrise to sunset)

MAY 1976	FREQ	STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY PEAK	FLUX DENSITY MEAN	POLARIZATION POSITION REMARKS
1	200	HIRA	45 C	0005.0	0009.5	13.0	70	20	SR
	100		45 C	0052.0	0053.2	2.5	20	10	MR
			45 C	0150.0		2.0		50	
					0150.0		180		WL, 1st peak
					0151.0		160		WL, 2nd peak
	200		45 C	0150.0	0150.9	2.0	90	15	WR
	100		45 C	0411.8	0412.0	1.5	700	50	WL
	200		45 C	0411.8	0412.2	1.2	90	40	WR
			45 C	0652.6	0653.0	1.0	30	10	0
			45 C	2154.0		53		50	
					2207.8		480		WR, 1st peak
					2212.2		320		WR, 2nd peak
					2229.5		110		WL, 3rd peak
	500		45 C	2155.5		42		8	
					2212.6		30		1st peak
					2229.8		25		2nd peak
	100		45 C	2158.0		71		40	
					2215.3		350		WL, 1st peak
					2218.0		170		WL, 2nd peak
					2229.8		270		WR, 3rd peak
10	500		45 C	2307.1	2308.0	2.0	240	10	
16	100		45 C	0602U	0603.8	6.5	130	15	0
	500		45 C	0603.0	0605.5	5.0	15	6	
	100		45 C	2216.8		4.5		12	
					2218.6		15		SR, 1st peak
					2220.0		25		ML, 2nd peak

RADIO PROPAGATION

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

MAY 1976 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

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	ES -23	ES -23	ES -23	ES -14	ES -8	ES -11	ES -12	ES -14	ES -12	ES -11	ES -11	ES -11	ES -8	ES -23	ES -23	ES -2	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23
2	ES -23	ES -3	ES -2	ES -4	-2	ES -3	ES -4	ES -4	ES -4	ES -4	ES -4	ES -4	ES -5	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -14	ES -6	ES -4	ES -5	ES -5
3	ES -23	ES -5	ES -3	ES -3	ES -1	ES -3	ES -4	ES -3	ES -2	ES -5	ES -2	ES -5	ES -3	ES -8	ES -23	-8	ES -14	ES -23	ES -23	ES -23	ES -23	ES -4	ES -23	ES -23
4	ES -23	ES -4	ES -23	ES -23	ES -14	ES -11	ES -14	ES -6	ES -11	ES -14	ES -14	ES -14	ES -8	ES -14	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23
5	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -14	ES -14	ES -14	ES -8	ES -14	ES -5	ES -14	ES -23	ES -14	ES -23	ES -23	ES -23	ES -23	ES -23	1	ES -15	-9
6	ES -15	ES -15	ES -24	ES -24	-9	ES -24	1	3	ES -15	ES -12	ES 1	ES -1	ES -3	ES -8	ES -14	ES -11	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23
7	ES -24	ES -24	ES -24	ES -24	ES -9	ES -24	ES -24	ES -15	ES -9	ES -9	ES -7	ES -6	ES -9	ES -9	ES -24	ES -15	ES -12	ES -15	ES -15	ES -15	ES -24	ES -24	ES -24	ES -24
8	ES -24	ES -24	ES -24	ES -15	ES -15	-9	-4	-3	-2	-3	ES -7	ES -5	ES -9	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	ES -24	ES -24	ES -24	ES -24	ES -24
9	ES -15	ES -24	ES -24	ES -12	ES -9	ES -6	ES -2	ES -1	5	ES -4	ES -3	ES -3	ES -6	ES -9	ES -15	ES -15	ES -24	ES -24	ES -24	-3	ES -15	-7	ES -24	ES -24
10	ES -24	ES -24	ES -24	-13	-12	-4	0	0	-1	-6	ES -9	ES -9	ES -15	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24
11	ES -23	ES -23	ES -23	ES -23	ES -14	-5	U 0	1	ES -14	ES -11	ES -8	ES -8	ES -14	ES -14	ES -14	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	-11	ES -23
12	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -14	ES -23	ES -14	ES -14	ES -8	ES -23	ES -5	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23
13	ES -25	ES -25	ES -25	-16	-10	-7	-5	ES -16	ES -16	ES -16	ES -16	ES -10	ES -4	ES -16	ES -16	ES -16	ES -25	ES -25	ES -25	ES -25	0	-1	-7	-13
14	ES -25	ES -25	ES -25	ES -16	ES -16	ES -25	ES -25	ES -10	ES -10	ES -16	ES -10	ES -8	ES -3	ES -6	ES -9	ES -6	ES -9	ES -9	-11	-12	ES -15	2	4	ES -15
15	-13	ES -25	ES -25	-5	-1	-7	-4	ES -16	ES -16	ES -16	ES -10	ES -16	ES -5	ES -12	-7	2	1	-4	ES -25	-4	ES -25	-14	ES -25	ES -16
16	-8	-7	-10	-16	0	5	0	ES -10	ES -16	ES -16	ES -16	ES -10	ES -5	-5	5	ES -16	ES -16	ES -25	ES -25	ES -13	-7	-4	ES -16	-11
17	-11	-16	-12	-7	-16	4	ES 1	ES 9	ES 8	ES -1	ES -16	ES -16	ES -4	5	1	-5	6	-10	-7	0	-8	-8	-10	-10
18	-15	ES -15	ES -24	ES -24	-4	0	4	7	8	2	ES -15	ES -11	ES -3	ES -11	3	-1	6	1	-11	-1	1	-3	-3	-9
19	ES -15	-9	-9	-7	-1	7	6	-1	ES -15	ES -7	ES -9	ES -9	ES 6	-9	-3	-2	6	1	-3	9	0	-3	6	-3
20	-2	-2	-4	-5	-4	ES -24	ES -24	ES -11	ES -6	ES -9	ES -12	ES -15	ES -1	ES -16	ES -25	ES -8	ES -10	ES -16	ES -25	ES -12	ES -25	ES -25	ES -25	ES -25
21	ES -24	ES -24	ES -24	ES -12	-4	-1	0	ES -15	ES -15	ES -10	ES -9	ES -12	ES 1	ES -9	-2	ES 1	ES -7	ES -5	ES -9	ES -24	ES -24	ES -24	ES -15	ES -15
22	ES -24	-6	-10	-6	-3	0	ES -11	-1	-1	-5	ES -9	ES -10	ES -5	ES -15	ES -15	ES -12	ES -11	ES -15	ES -12	ES -15	ES -24	ES -24	ES -24	ES -24
23	ES -24	ES -24	ES -15	ES -15	2	-1	4	-3	ES -9	ES -12	ES -9	-9	ES -2	ES -12	ES -12	ES -2	ES -11	ES -11	ES -15	ES -15	ES -24	ES -24	ES -24	ES -24
24	ES -24	ES -24	ES -24	-10	-9	ES -24	ES -24	ES -10	ES -24	ES -24	ES -9	ES -15	ES -3	ES -9	ES -24	ES -15	ES -24	ES -24	ES -24	ES -24	ES -11	ES -15	-3	-1
25	0	-3	ES -24	ES -11	-5	-4	-7	-7	1	-3	ES -9	ES -9	ES 1	ES -7	ES -11	ES -10	ES -24	ES -24	-5	0	7	-4	-4	ES -15
26	ES -25	-16	-16	-16	-16	-1	0	5	5	5	ES -5	ES -7	ES -1	ES -10	ES -11	-8	-6	ES -25	-1	-10	-5	-11	-8	-11
27	-10	-13	ES -25	ES -25	-2	-8	-2	8	10	7	3	ES -11	ES -1	ES -11	ES -11	ES -5	ES -13	ES -13	-5	3	0	-3	ES -13	ES -13
28	ES -25	ES -25	-11	ES -8	-10	ES -25	ES -25	-8	-1	ES -11	ES -11	ES -11	ES 2	ES -11	-4	ES -16	ES -25	ES -16	ES -16	ES -16	ES -25	ES -25	ES -25	ES -25
29	ES -24	ES -24	ES -24	ES -24	-11	ES -15	ES -24	ES -15	ES -15	ES -15	ES -11	ES -11	ES 2	ES -10	ES -7	ES -2	ES -10	ES -24	ES -15	ES -15	ES -24	ES -15	ES -24	ES -24
30	-5	ES -25	ES -25	ES -16	ES -25	ES -25	ES -16	ES -16	ES -16	ES -16	ES -10	ES -8	ES 0	ES -24	ES -24	ES -10	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	-9	ES -15
31	ES -25	ES -25	ES -25	ES -13	-16	-8	-11	-5	ES -11	ES -11	ES -11	ES -10	ES -13	ES -10	ES -16	ES -16	ES -25	ES -25	ES -16	ES -25	ES -25	ES -25	ES -25	ES -25
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	ES -23	ES -23	ES -24	ES -15	ES -9	ES -7	ES -4	ES -6	ES -10	ES -11	ES -9	ES -10	ES -4	ES -10	ES -15	ES -10	ES -16	ES -23	ES -23	ES -15	ES -23	ES -15	ES -23	ES -23
UD	-5	ES -3	ES -4	ES -5	-1	4	4	ES 7	ES 6	2	ES -2	ES -4	ES 2	ES -6	1	ES -1	6	-4	-5	0	0	-1	-3	ES -5
LD	ES -25	ES -25	ES -25	ES -24	ES -23	ES -25	ES -24	ES -16	ES -16	ES -16	ES -16	ES -15	ES -14	ES -23	ES -24	ES -23	ES -25	ES -25	ES -25	ES -24	ES -25	ES -25	ES -25	ES -25

RADIO PROPAGATION

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

MAY 1976 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

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
1	-2	11	12	21	23	23	24	14	ES -11	ES -11	ES -11	ES -11	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	6	-1	6	ES -23	6
2	9	7	11	17	18	23	24	20	11	4	ES -4	ES -4	ES -5	ES -23	ES -23	ES -23	ES -23	ES -23	0	8	8	14	13	5
3	2	7	17	15	21	21	22	23	-2	ES -2	5	7	7	5	8	7	6	-8	ES -23	4	12	8	-3	-5
4	ES -4	-2	-1	1	9	11	16	15	21	-2	ES -8	ES -14	ES -14	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	0	-5	-6	-5	-3
5	-5	5	1	4	11	7	14	14	-3	8	7	3	4	-4	ES -10	ES -14	ES -23	ES -23	-10	13	11	9	-1	2
6	10	5	11	10	13	17	23	22	18	17	16	10	14	4	2	-8	-14	-8	ES -23	7	7	1	-10	-11
7	-9	7	12	20	16	22	17	14	11	12	6	8	-3	ES -9	ES -24	ES -15	ES -10	ES -12	ES -15	23	10	-4	9	7
8	7	0	7	16	17	20	21	22	20	-3	ES -6	ES -9	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	-11	-2	-3	-6	-4	-9
9	-1	-3	1	3	10	17	17	20	16	5	ES -1	ES -4	ES -3	ES -9	ES -15	ES -24	ES -24	-1	-15	7	2	6	1	2
10	2	1	6	9	11	16	20	22	22	20	7	ES -9	ES -9	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	12	11	8	-3	-4
11	3	4	3	11	16	17	21	23	11	16	16	2	-8	-8	-8	ES -23	ES -23	ES -23	ES -23	-6	-2	8	17	-8
12	-5	0	7	9	12	17	23	23	15	8	-8	1	1	1	-3	ES -1	-14	1	ES -23	16	16	2	-5	-14
13	-8	6	11	10	12	22	16	15	14	16	9	3	0	1	1	1	ES -25	2	2	5	10	-3	-6	-1
14	-1	-2	0	14	17	22	22	22	19	19	15	12	8	6	5	1	6	6	9	17	11	2	1	6
15	4	2	1	15	15	21	22	22	17	10	5	4	12	12	5	5	6	-5	-8	11	7	9	9	2
16	6	7	11	11	17	17	14	16	19	19	11	11	13	6	5	0	4	-8	-8	10	14	3	4	5
17	6	6	8	13	18	21	22	22	19	16	13	3	12	9	5	5	10	9	5	10	7	5	5	5
18	8	3	6	8	22	23	23	27	23	13	20	15	10	6	0	3	14	17	7	16	20	10	6	7
19	10	8	6	8	18	21	23	24	26	22	22	17	16	11	6	6	12	16	4	8	-1	7	6	-4
20	8	6	20	16	18	23	23	25	25	26	18	11	7	8	4	ES -10	-10	6	12	7	5	4	-6	5
21	1	6	12	12	16	20	20	19	17	12	7	4	6	6	8	3	16	10	7	5	6	14	7	7
22	11	12	12	14	16	21	22	21	16	16	21	12	-1	-6	-9	ES -7	ES -11	-5	5	12	7	6	7	5
23	11	1	3	12	16	16	21	26	25	17	17	21	17	6	-3	ES -11	ES -11	1	ES -15	11	10	7	6	-1
24	1	6	0	5	8	18	21	19	16	10	6	ES -9	ES -12	-9	-9	-11	ES -24	2	ES -24	6	8	16	7	6
25	3	0	10	13	12	21	22	23	19	22	18	11	10	7	-3	-4	-3	-4	3	12	5	1	1	1
26	1	5	-3	9	7	9	19	17	15	15	12	10	10	7	5	-2	ES -25	2	10	10	10	11	9	-1
27	-4	-3	-3	3	13	20	25	20	24	19	13	16	-5	-1	ES -11	ES -13	ES -13	-10	2	11	11	11	7	10
28	7	3	5	5	12	18	22	22	24	20	16	19	19	12	7	0	2	13	6	9	4	5	-4	-1
29	2	-5	-5	11	17	17	21	12	5	0	-3	ES -7	ES 3	ES -10	ES -7	ES -3	ES -15	ES -24	ES -24	8	3	3	7	1
30	1	-1	-4	9	11	15	18	19	20	11	13	5	ES -2	ES -24	ES -24	ES -15	ES -24	ES -24	0	17	9	12	1	3
31	1	2	0	11	17	20	18	20	15	13	11	7	-4	-4	ES -7	ES -11	-16	0	-3	5	7	10	-8	-5
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	2	4	6	11	16	20	21	21	17	13	11	5	US 3	1	-3	ES -8	ES -14	-5	-8	9	7	6	1	2
UD	10	8	12	17	21	23	24	25	25	22	20	17	16	11	7	5	12	13	9	17	14	14	9	7
LD	ES -5	-3	-3	3	9	11	16	14	-2	ES -2	ES -8	ES -9	ES -14	ES -23	ES -24	ES -23	ES -24	ES -24	ES -24	0	-2	-4	-8	-9

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

May 1976	Whole Day Figure	W W V 00 06	W W V 06 12	W W V 12 18	W W V 18 24	W W V H 00 06	W W V H 06 12	W W V H 12 18	W W V H 18 24	Condition 00 06	Condition 06 12	Condition 12 18	Condition 18 24	Principal Geomagnetic Storms Start	End	Range
1	3o	S	S	S	S	5	2U	2U	3	U	U	U	U			
2	3+	S	S	S	S	4	3U	3U	4	U	U	U	U	1828	---	152
3	3+	S	S	S	S	4	3U	4	3U	U	U	U	U	---	22.0	
4	3-	S	S	S	S	3U	3U	2U	3U	U	U	U	U			
5	3+	S	S	S	5U	3	3U	3U	4	U	U	U	U			
6	4-	2U	5U	S	S	4	4	4U	3	U	U	U	U			
7	4-	S	S	S	S	4	4	3U	4	U	U	U	U			
8	3+	4U	4U	S	S	4	3U	3U	3U	U	U	U	U			
9	4-	S	S	S	5U	3	3U	3U	4	U	U	U	U			
10	4-	4U	4U	S	S	4	4U	2U	4	N	N	N	N			
11	4-	4U	4U	S	S	4	4	3U	3	N	N	N	N			
12	4o	S	S	S	S	4	4	4	4	N	N	N	N			
13	4+	4U	S	S	5U	4	4	5U	4	N	N	N	N			
14	5-	S	S	S	5U	4	5	5U	4	N	N	N	N			
15	4+	5U	S	5U	4U	4	4	4U	4	N	N	N	N			
16	5-	5U	S	5U	5U	4	4	5	4	N	N	N	N			
17	5-	5U	S	5U	5U	4	4	5U	4	N	N	N	N			
18	5-	5U	5U	5U	5U	4	5	5U	4	N	N	N	N			
19	5-	5U	4U	5U	5U	4	5	5U	4	N	N	N	N			
20	4+	5U	S	S	S	4	5	4U	4	N	N	N	N			
21	4+	4U	S	S	S	4	4	5U	4	N	N	N	N			
22	4+	5U	5U	S	S	4	4	4	4	N	N	N	N			
23	4o	5U	4U	S	S	4	4	4	4	N	N	N	N			
24	4-	4U	S	S	5U	4	3	3U	4	N	N	N	N			
25	4+	4U	4U	S	5U	4	4	5U	4	N	N	N	N			
26	4-	4U	5U	5U	5U	3	4	5U	4	N	N	N	N			
27	4o	5U	5U	S	5U	4	4	4	5	N	N	N	N			
28	4+	4U	4U	S	S	4	5	5U	4	N	N	N	N			
29	3+	S	S	S	S	4	3U	3U	4U	U	U	U	U			
30	3+	S	S	S	S	4	4	2U	4	U	U	U	U			
31	4-	3U	3U	S	S	4	4	4U	4	U	U	U	U			

RADIO PROPAGATION

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO

Time in U.T.

May 1976	S W F					Correspondence		
	Drop-out Intensities (dB) CO HA 1) 2)	Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
16	3 x	0606	12	S	1-		x	

NOTES

CO: Colorado (WWV)
HA: Hawaii (WWVH)
1): Australia
2): Moskva

RADIO PROPAGATION

Sudden Ionospheric Disturbance (SPA)

I N U B O

May	S P A									
1976	Phase Advance (degrees)								Time (U.T.)	
Date	GBR	NAA	NPG	NWC	AL3	ND3	HA3	RE3	Start	End	Maximum
1		—		7					0458	0554	0506
1	24	25	56				72		2141	0112	2222
2			14						0259	0500	0330
2			40						2031	2209	2040
2		17	8						2243	2344	2254
3			—						0047	0250	——
3			38						0340	0513	0357
12			-9	—		-36			0200	0253	0222
16	21	10	7	38	18	16		58	0602	0732	0613
17			7	10			6		0218	0338	0237
21			5			25			0256	0420	0313
29			11						2046	2200	2112

IONOSPHERIC DATA IN JAPAN FOR MAY 1976

F-329 Vol.28 No. 5 (Not for Sale)

電離層月報（1976年5月）

第28巻 第5号（非売品）

1976年8月20日 印刷

1976年8月30日 発行

編集兼 郵政省電波研究所

発行所 〒184 東京都小金井市貫井北町4丁目2－1

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印刷所 株式会社オートプレス

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