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IONOSPHERIC DATA IN JAPAN

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CONTENTS

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INTRODUCTION

This Series contains data on ionosphere (I) , solar radio emission (S) and radio propagation (P) obtained at the following stations under the Communications Research Laboratory, Ministry of Posts and Telecommunications of Japan.

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45°23.5′N	141°41.2′E	35.3°N	206.5°	Vertical Sounding (I)
Kokubunji	35°42.4′N	139°29.3′E	25.5°N	205.8°	Vertical Sounding (I)
Yamagawa	31°12.1′N	130°37.1′E	20.4°N	198.3°	Vertical Sounding (I)
Okinawa	26°16.9′N	127°48.4′E	15.3°N	196.0°	Vertical Sounding (I)
Hiraiso	36°22.0′N	140°37.5′E	26.3°N	206.8°	Radio Receiving (S,P)
Inubo	35°42.2′N	140°51.5′E	25.6°N	207.0°	Radio Receiving (P)

A. IONOSPHERE

Ionospheic observations are carried out at the above four stations in Japan by means of vertical sounding using ionosondes.The ionosonde produces ionograms,which are recorded digitally on computer storage medium as well as graphically on 35 mm photographic film. The digitally-recorded ionograms are collected from each station by the central computer and reduced to numerical values and Summary Plots by the automatic processing system. The ionograms obtained at Kokubunji are manually scaled as well by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

Digital ionograms are automatically scaled by the pattern recognition method. The following five factors of ionospheric characteristics are published for the present. The reliability of these factors has been ascertained by comparison of the automatically-scaled parameters with the manually-scaled values of large amounts of test ionograms.

The published data consist of tabulations of hourly values of three factors (*foF2, fEs, fmin*) and monthly medians of two factors (*h′Es, h′F*) , daily Summary Plots and monthly medians plot of *foF2.*

a. Characteristics of Ionosphere

foF2	Ordinary wave critical frequency for the *F2* layer
fEs	Highest frequency of the *Es* layer whether it may be ordinary or extraordinary
fmin	Lowest frequency which shows vertical ionospheric reflections
h′Es *h′F*	Minimum virtual height on the ordinary wave for the *Es* and *F* layers, respectively

b. Descriptive Letters

The following descriptive letters are used in the tables.

A Impossible measurement because of the presence of a lower thin layer,for example *Es* (for *foF2*).

B Impossible measurement because of absorption in the vicinity of *fmin.*

C Impossible measurement because of any failure in observation.

G Impossible automatic scaling because of too small ionization density of the layer (for *fEs*).

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of trouble in the automatic data processing system, but existence of film record.

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

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

Median (MED) is defined as the middle value when the numerical values 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.

If CNT is less than 10, there are blank spaces left.

d. Reliability of Automatic Scaling

The results of the comparison between automatically-scaled values and manually-scaled ones showed that hourly values of *foF2 , fEs* and *fmin* were scaled within a difference of 1 MHz from about 90 , 90 and 99% , respectively of the test ionograms.

e. Summary Plot

Daily Summary Plots which are made from quarter-hourly digital ionograms are published to present general ionosphere conditions. The upper and middle parts of a Summary Plot show the diurnal variation of the frequency range of the echoes reflected from the *F* and *E* regions, respectively. The two solid arcing lines indicate the predicted values of *fxE* and *foE* calculated by the method described in the CCIR report 340. The lower part shows the diurnal variation of the virtual height where the echo traces become horizontal.

A2. Manual Scaling

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 " and its revision of chapters I-4, published in July 1978.

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 transmisson 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 b.(iii)

b. Symbols

(i) Descriptive Letters

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

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 perturbations of the observed parameter; or spur type spread *F* present.

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, if necessary.

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 are present on the ionogram, the type for the trace used to determine *foEs* must be written first. The number of multiple trace 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 the 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 normnal *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 (CND) is the number of values from which the median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (MED) is the middle value when the numerical values 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 at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of two parabolic antennas, one with 10-meter diameter for 200 MHz measurements and one with 2-meter diameter for 500 and 2800 MHz measurements, Observations are continuously carried out almost from sunrise to sunset.

B1. Daily Data at Hiraiso

The three-hourly mean and daily mean values of the solar radio emission intensities are tabulated separately for 200 and 500 MHz measurements. The intensities are expressed by the flux density in 10^{-22} Wm^{-2} Hz^{-1} unit.

The table for 200 MHz measurements also presents the variability indices defined by the number of impulsive radio bursts within the three-hour intervals as follows:

0 quiet or no burst,

1 a few bursts,

2 many bursts,

3 very many bursts.

The daily variability index is defined as the daily mean of three-hourly indices.

The following symbols are used in the tables, when interference or radio bursts prevented measuring the base-level flux densities or determining the variability indices:

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

Daily data within parentheses mean that the observation time does not exceed one third of the period.

B2. Outstanding Occurrences at Hiraiso

The table is a list of outstanding occurrences of solar radio emission bursts observed at 200, 500 and 2800 MHz during a month.

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T. expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} Wm^{-2} Hz^{-1} unit, and the polarization.

The type of event is expressed by a combination of a numerical code and a letter symbol in accordance with the "Descriptive Text of Solar Geophysical Data, NOAA" as defined by H. Tanaka in the "Instruction Manual for Monthly Report of Solar Radio Emission, WDC-C2" in January 1975:

SGD Code	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+

The polarization is expressed by the polarization degree and sense 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 due to small increase of flux,
00	polarization degree of less than 1 percent.

One of the following symbols may be attached after numerical values, if necessary.

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

B3. Summary Plots of $F_{10.7}$ at Hiraiso

The 10.7 cm solar radio flux at Hiraiso is plotted over a one month period. The 10.7 cm flux ($F_{10.7}$) is determined by adjusting the 10.7 cm radio flux measured at Hiraiso to the Pentincton 10.7 cm radio flux. The figure on the right-hand side shows the $F_{10.7}$ index estimated at Hiraiso.

C. RADIO PROPAGATION

C1. H.F. Field Strength at Hiraiso

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 bandwidth.Particulars of the transmitters and the receiver are summarized in the following table.

The tabulated *field strength* expressed in dB above one microvolt per meter is the average of quasi-peak values of the incident upper sideband field intensity for 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	innuenced by, or impossible because of, any artificial accident,
S	influenced by, or impossible because of, interferences or atmospherics.

C2. Radio Propagation Quality Figures at Hiraiso

The tabulated six-hourly quality figures are calculated for standard waves WWV transmitted from Fort Collins and WWVH transmitted from Kauai.

Quality figures expressing radio propagation conditions range 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 1o, 1+, 2-, 2o, 2+, 3-, 3o, 3+, 4-, 4o, 4+, 5-, 5o stands for an average of six-hourly quality figures of the two circuits. Abbreviated symbols are as follows:

C	artificial accident,
S	propagational accident,
U	inaccurate.

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	--
Power in each sideband	625 W	625 W	--
Modulation	50 %	50 %	--
Antenna	λ / 2 vertical	λ / 2 vertical	4.5 m vertical rod
Bandwidth	--	--	80 Hz for upper sideband
Calibration	--	--	Every hour

The column of conditions presents a record of the forecast of *radio propagation conditions* which is applicable to forthcoming 12 hours and broadcast six times par hour from JJY (Japan Standard Wave) staion. The conditions are denoted as follows:

N normal,
U unstable,
W disturbed.

Data on *geomagnetic storms* which are often correlated with radio propagation disturbances are tabulated based on reports from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U.T.) is expressed in hours and minutes (or tenths of an hour) , and *range* in nanotesla. When they are uncertain quantitatively, /'s are used to replace the numerical values. Continuation of a geomagnetic storm is denoted by ---.

C3. Phase Variation in OMEGA Radio Waves at Inubo

The phase values of eight OMEGA radio signals as received at Inubo are depicted for an interval of one month, along with the phase deviation defined as a deviation from a value averaged over the six quietest day within the month. Particulars of the received signals are given in the table below.

In each of the four panels of the figure, the phase (ϕ) is shown in the lower part and the phase deviation ($\Delta\phi$) is shown in the upper part. The phase data are sampled every 30 min, so the curves of the phase and phase deviation are composed of 48 data points per day. The phase delay is measured as a positive value.

The polar cap phase anomaly (PCPA) caused by the solar protons are well detected on the Norway signal. The start, end and maximum times of the PCPA are listed in the table next to the figure, where the times are expressed as day / hour & minute in U.T.. The maximum phase deviation in the list is defined as a phase advance (negative values in the figure) in degrees.

C4. Sudden Ionospheric Disturbances

a. Short Wave Fade-out (SWF) at Hiraiso

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 those 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 could not be determined accurately, they are accompanied by one of 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 and X-ray flares, and solar radio burst to SWF is marked by X, being determined with data from interchange messages of IUWDS and observations at Hiraiso.

In table (a) SWF, *date* indicates the day to which the *start-time* of the event belongs.

b. Sudden Phase Anomaly (SPA) at Inubo

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 -, an indistinguishable record is spaced out, and a multi-peak event is marked by *. The most remarkable or distinct phase advance is underlined and listed in the column of *Time*.

In table (b) SPA, *date* indicates the day to which the *start-time* of the 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 Coordinates)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Norway	66°25'N	013°08'E	Ω / N	13.6	10	7820
Liberia	06°18'N	010°40'W	Ω / L	13.6	10	14480
Hawaii	21°24'N	157°50'W	Ω / H	13.6	10	6100
North Dakota	46°22'N	098°20'W	Ω / ND	13.6	10	9140
La Reunion	20°58'S	055°17'E	Ω / LR	13.6	10	10970
Argentina	43°03'S	065°11'W	Ω / AR	13.6	10	17640
Australia	38°29'S	146°56'E	Ω / AU	13.6	10	8270
Japan	34°37'N	129°27'E	Ω / J	13.6	10	1040
North West Cape	21°49'S	114°10'E	NWC	22.3	1000	6990

HOURLY VALUES OF foF2 AT WAKKANAI

FEB. 1995

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	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	44	51	35		49	35	32	35	72	72	92	68	67	68	66	68	56	36	35	29	30	37		36
2	40	36	35	35	36		35	69	66	70	70	73	73	74	66	55	54	A	29	38	43	55	57	50
3		38	35	31	35	35	N	40	58	54	83	71	A	73	70	60	61	44	24	36	36	41	40	47
4	24	37	40	57	42	32	55	34	77	68	72	70	66	77	80	59	56	55	40	44	36	35	42	A
5	47	35	35	34	34	35	32	34	A	68	76	68	72	73	94	67	54	56	30	35	32	A	A	35
6	59	29	36	30	38	35	29	35	69	61	70	81	71	63	68		58	39	38	29	35	A	A	35
7	35	35	32	32	32	34	36	38	69	69	81		73	80	81	61	61	41	37	35	59	35	32	34
8	29	40	35	35	34	29	59	35	70	60	70	82	80	67	68	76	94	56		57	69	34		A
9	32	A	40	A	38	31	34	58	70	81	82	68	74	A	71	64	68	42	37	46	59	29	A	A
10	A	69	40	31	38	32	38	69	72	60	66	68	66		57	64	55	40	34	24	35		35	A
11	37	41	29	35	35	A	30	A	58	68	73	72	81	71	62		58	43	37	32	A	36		A
12	A	49	37	31	28	N	A	50		74	74	72	77	72	70	71	64	58	37	43	40	A	40	38
13	35	43	32	29	30	31	27	51	57	61	73	66	73	81	68	68	60	54	29	40	35	40	38	N
14	58	38	38	34		37		57	73	68	86	92	96	94	68	59	56	50		69	29	38	A	A
15	35	38	38	36	35		35	A	68	77	80	81	79	73	70	76	71	58	39	A	A	A	38	26
16	41	36	35	40	38	37		56	68	66	87	82		78	78	72	72	57	34			37	69	36
17	31	41	41	43	47	35	34	58	67	76	71	71		77	80	68	56	57	28	58	44	44	38	35
18	37	47	36	40	54	35	59	57	92	64	70	83	76	71	74	71	67	60	48	59	35	35	35	41
19	34	58	37	36	41	35	40	35	67	59	66	80	80	72	71	71	68	68	47	35	29	69	69	69
20	59	69	31	31	35	34	56	62	70	67	74	81	A	62	67	73	62	63	38	A	A	34	38	30
21	40	43	34	34	29	35	36	69	73	60	67	74		67	65	71	63	62	41	40	58	40		58
22	29	37	38	35	38	43	35	67	68	66	69	70	81	66	70	63	71	60	39	41	58	30	69	35
23	40	37	38	38	40	34	30	57	72	67	71	83	94	94	70	71	67	60	51	43	35	36	36	35
24	40	32	38	69	37	35		56	76	67	79	73	N	71	71	68	72	56	29	33	56			30
25	59		31	38	37	32	34	55	69	61	55	88	79	71	65	71	68	66	57	35	59	58	44	44
26	36	69	31	31	38	34	41	70	68	70	67	78	91	83	68	68	70	72	58	58	23	43	52	69
27		38	47	35	38	40	34	57	58	69	82	92	81	88	77	81	72	70	61	59	50	58	38	23
28	A	31	40	38	49			55	58	67	91	68	81	82	90	71	67	56	58	60	38	56	31	37
29																								
30																								
31																								
	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	23	26	28	26	27	23	22	26	26	28	28	27	22	26	28	26	28	27	26	25	24	22	19	21
MED	37	38	36	35	38	35	35	56	69	67	73	73	78	73	70	68	64	56	38	40	37	38	38	36
U Q	44	47	38	38	40	35	40	58	72	69	81	82	81	80	75	71	69	60	47	57	57	44	52	45
L Q	34	36	34	31	35	32	32	38	67	61	70	70	73	71	67	64	57	44	34	35	35	35	36	34

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT WAKKANAI

FEB. 1995

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G		G	G	G	28	33	N	34	32	27	32	29	39	31	41	29	54	26	30		G
2	G	G	G	G	G		G	G	48	24	28	34	29	34	47	40	34	40	28	24	29	41	G	G
3		G	G	G	G	G	G	27	45	39	62	62	64	31	28	34	39	32	34	G	G	G	G	G
4	G	G	G	G	G	G	G	34	34	32	26	28	28	27	26	24	33	28	24	25	30	32	28	33
5	30	G	G	G	G	32	25	G	94	66	44	69	30	45	36	38	38	27	42	30	29	40	33	24
6	26	33	32	24	G	G	40	33	61	32	27	28	28	27	25		G	26	25	36	38	34	35	30
7	24	27	G	G	G	G	G	41	29	25	27		29	28	26	25	G	G	G	26	G	G	31	29
8	24	G	G	G	G	G	G	G	27	26	28	28	30	33	39	57	30	34		G	G	30		33
9	38	32	G	33	29	G	G	G	73	41	34	36	58	66	65	44	26	29	G	G	40	28	40	30
10	26	G	G	G	26	G	G	G	41	29	26	35	34		34	35	37	33	29	30	G	G	31	32
11	29	28	25	26	25	42	35	39	G	26	28	29	28	28	31		23	41	34	11	43	G	G	29
12	29	G	G	29	G	G	33	G		24	33	26	28	27	28	28	30	40	28	23	G	40	G	G
13	G	G	G	G	G	38	32	G	G	32	32	32	29	28	30	30	36	27	G	G	G	G	G	G
14	G	G	G	G		26	G	28	33	32	32	28	28	28	26	32	28	25	G	G	G	G	28	29
15	G	G	G	G	G		28	37	33	23	34	40	59	49	44	41	37	36	59	59	37	25	27	27
16	24	32	G	G	G	G		21	30	40	27	29		30	28	25	33	G	G	G	G	G	G	G
17	G	G	G	G	G	G	G	36	34	30	30	29		29	27	28	24	G	31	36	28	27	G	G
18	G	G	G	G	G	G	G	26	G	26	34	34	G	28	28	26	24	G	G	27	G	G	G	G
19	G	G	G	G	G	G	G	G	26	30	30	35	30	28	28	27	G	G	G	G	G	34	G	G
20	G	G	G	G	G	G	G	G	G	26	28	35	44	G	29	26	G	33	30	29	27	G	G	G
21	G	G	G	G	G	G	G	G	24	26	29	32		30	29	26	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	G	26	28	30	30	30	30	28	27	24	G	G	G	26	G	G	G
23	G	G	G	G	G	G	G	G	27	30	36	32	36	30	29	26	25	24	26	27	G	G	G	G
24	G	G	G	G	G	G		G	28	31	28	36	31	29	29	27	G	G	G	G	G	G	G	G
25	G		G	G	G	G	G	G	27	47	38	36	30	29	29	26	G	G	G	G	G	G	G	G
26	G	G	G	G	G	G	G	G	24	28	34	34	32	31	30	27	G	G	G	G	G	G	G	G
27	G	G	G	G	G	G	G	23	25	26	29	30	32	29	28	26	24	G	G	G	G	G	G	36
28	24	32	25	30	G	G		G	36	28	32	36	30	28	28	25	G	G	G	G	G	G	G	G
29																								
30																								
31																								
	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	28	27	27	26	25	28	27	27	28	27	25	27	28	26	28	28	27	28	28	28	26	28
MED	G	G	G	G	G	G	G	G	29	29	30	32	30	29	29	27	24	26	G	6	G	G	G	G
U Q	24	G	G	G	G	G	13	28	36	32	34	36	33	31	30	35	33	33	29	28	28	30	28	29
L Q	G	G	G	G	G	G	G	G	25	26	28	29	28	28	28	26	G	G	G	G	G	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT WAKKANAI

FEB. 1995

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	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	15	16	17		14	15	14	17	16	15	15	16	16	16	15	14	16	15	15	15	16	14		14
2	15	15	15	14	15		16	17	21	16	17	16	16	17	15	17	15	14	15	15	15	16	15	15
3		15	15	15	15	15	17	16	15	15	15	20	16	14	15	15	16	15	14	15	16	15	18	15
4	16	15	15	15	15	15	15	14	15	15	16	16	16	17	16	16	15	16	15	15	15	15	15	15
5	14	15	15	16	15	15	15	17	14	16	15	16	15	15	15	15	15	16	15	15	15	15	14	15
6	15	15	15	16	14	17	15	15	15	16	15	16	16	17	16		22	15	15	15	15	14	15	15
7	15	14	15	15	15	15	15	17	15	15	15		16	16	15	16	21	15	16	16	15	15	15	15
8	16	15	15	14	15	15	16	16	15	15	15	15	16	16	16	16	15	15		16	15	15		15
9	14	15	15	15	15	15	15	18	17	17	17	16	17	16	15	15	16	15	15	15	15	16	15	15
10	15	16	15	16	16	15	15	18	16	18	18	20	21		17	16	15	15	15	15	15	16	15	15
11	15	15	15	15	15	14	14	15	23	16	18	20	17	17	17		15	15	15	16	15	14	16	15
12	15	15	15	15	16	16	15	18		15	16	16	17	17	15	16	15	15	14	15	16	15	15	15
13	15	15	15	15	15	15	14	17	22	15	14	16	16	16	15	15	15	15	14	16	15	16	15	15
14	15	15	16	16		15	15	18	15	15	15	16	17	16	15	15	16	15	14	15	15	15	16	15
15	15	15	15	15	15		15	16	14	15	16	16	16	16	16	15	15	15	15	15	15	16	15	15
16	15	15	15	14	14	14		15	15	16	15	16		16	16	15	15	17	15	16	15	15	15	15
17	15	15	15	14	15	15	15	15	15	15	16	16		16	16	16	15	16	15	15	16	15	15	16
18	14	16	15	15	15	15	15	18	16	16	18	20	30	20	17	17	22	16	15	17	17	15	15	15
19	15	16	15	15	15	15	15	20	16	16	18	20	21	20	33	18	22	17	15	15	15	16	15	16
20	16	16	15	16	16	15	15	20	27	18	54	20	20	54	49	17	24	15	15	15	15	15	15	15
21	15	15	15	15	15	15	15	17	16	17	18	17			17	17	22	17	15	15	15	15	15	15
22	15	16	15	15	15	15	15	18	15	16	16	17	18	17	16	16	16	17	15	15	15	15	15	16
23	15	16	15	16	16	15	15	20	15	15	16	17	16	17	16	16	17	17	15	15	15	15	15	15
24	15	16	15	16	15	15		22	15	15	16	17	21	17	22	20	23	17	15	15	15	16	15	15
25	15		16	15	15	15	15	22	15	16	17	17	16	17	17	16	16	17	15	15	15	15	15	15
26	17	16	15	15	15	15	15	22	16	29	17	17	17	18	17	16	23	17	15	15	15	15	15	15
27	15	15	15	15	15	15	15	21	15	16	17	17	16	17	16	15	16	20	14	15	15	15	15	15
28	15	14	15	14	15	18		23	15	17	15	17	16	16	16	16	22	17	15	15	15	15	15	15
29																								
30																								
31																								
	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	28	27	27	26	25	28	27	28	28	27	25	26	28	26	28	28	27	28	28	28	26	28
MED	15	15	15	15	15	15	15	18	15	16	16	17	16	17	16	16	16	16	15	15	15	15	15	15
U Q	15	16	15	16	15	15	15	20	16	16	17	17	17	17	17	16	22	17	15	15	15	15	15	15
L Q	15	15	15	15	15	15	15	16	15	15	15	16	16	16	15	15	15	15	15	15	15	15	15	15

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF foF2 AT KOKUBUNJI

FEB. 1995

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	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	32	37	39	34	34	42	56	65	83	115	95	92	64	75	72	50		37	40		26		29
2	69	32	35	34	26		31	48	67	70	92	107	92	63	68	68	38	34	41	36	58	32		35
3		30	30	28	35		28	48	55	61	66	85	90	72	67	59	60	51	38	43	A	69	35	69
4	35	38	41	35	28	35	31	63	94	92	88	88	66	65	82	92	57	45	A	40	30	A	40	37
5	37	36	35	34	29	30	35	31		60	80	77	75	65	72	67	62	47	43	56	34		A	69
6	69	59	30	34	38	A		A	65	58	68	89	83	73	62	64	61	47	40	A	36	A	26	35
7	36	59		N	N	N	31	57	60	67	81	97	88	86	66	71	67	55	47	35	69			59
8	58	36	32	29	32	35	A	49	68	70	70	80	97	71	54	A	70	83	A	47	51	70	37	60
9		34	35	34	35	30	56	75	83	84	101	95	81	83	77	74	71	57	A	A	45	69	A	A
10		A	A	69	A	35	34	55	67	71	68	75	88	66	74	94			A	A	35	37	35	38
11	34	28	A	A	A	31	35	70	70	55	70	72	76	80		66	59	47		44	56	43		
12	N	38	N	38	35	A	35	57	69	68	82	87	87	62	66	95	71	60	A	A	43	48	36	42
13	40	38	35	59	30	35	49	69	69	69	70	76	101	94	81	95	45	50	58	50	57	32	58	46
14	44	42	59	44	36	36	35	54	70	92	116	123	107	99	78	65	64	57	41	A	31	A	34	32
15	38	38	41	34	69		25	53	94	78	117	91	84	94	87	74	74	70	47	A	A	32	A	89
16	37	38	41	41	41	35	31	57	94	81	83	92	94	83	75	80	83	64	40	34	26	59		37
17	35	34	17	32	69	N		68	64	81	100	81	68	78	72	72	71	57	42	43	43			N
18	36	36	37	36		32	59	55	93	81	67	74	88	86	73	72	77	67	41	37	34	69	69	69
19	37	37	69	59	59	35	69		60	73	73	65	88	94	70	71	76	70	51		A	49	59	
20	35	35	35	44	34	35	38	74	68	71	71	74	80	86	73	66	70	60	45	36	89	58	69	69
21	38	44	37	37	59	36	32	58	67	70	67	66	80	82	75	75	75	62	48	36	58	58	59	49
22	31	36	28	69	69	34	36	69	94	76	70	80	87	97	76	70	67	60	48	44	58	59	37	A
23	A	32	36	35	37	59	36	73	67	80	70	74	90	86	78	71	71	66	47	43	43	20		36
24	32		37	69	37	69	34	70		92	78	83	88	86	73	72	71	71	50	46	69	29	32	56
25	32	37	56	36	35		31	69	60	81	74	68	76	88	76	70	72	66	57	37	35		36	44
26	36	69	56	58	34	28	32	74	64	66	78	66	80	88	92	71	71	67	56	57	57	56		34
27		44	46	45	35	69	30	57	80	70	83	81	105	104	78	88	76	68	55	62	46	57	A	A
28			40	43	44		28	69	114	94	75	78	94	90	91	93	68	68	56	56	64	58	37	44
29																								
30																								
31																								
	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	20	25	24	26	24	19	25	26	26	28	28	28	28	28	27	27	27	26	22	21	24	21	16	22
MED	36	37	37	38	35	35	34	58	68	72	76	80	88	84	75	72	70	60	47	43	46	56	37	44
U Q	39	40	41	45	42	36	37	69	83	81	85	90	92	89	78	80	72	67	51	48	58	59	58	60
L Q	35	34	35	34	34	32	31	55	65	68	70	74	80	71	70	68	61	51	41	36	35	32	35	36

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT KOKUBUNJI

FEB. 1995

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	30	G	G	G	24	G	G	G	31	33	32	32	31	30	30	34	34		G	G	G	G		G
2	G	G	G	G	G		G	G	30	34	33	46	42	44	39	34	36	34	29	23	G	G	24	G
3		G	G	G	G		G	40	30	47	50	G	54	30	33	44	34	32	30	40	37	24	G	G
4	G	G	G	G	G	G	G	G	30	28	30	49	34	30	30	32	43	34	34	57	32	31	33	26
5	37	G	G	G	G	G	G	24		33	31	28	53	44	37	34	35	30	27	28	25		38	G
6	G	G	G	32	32	29	G	42	34	38	34	48	34	29	29	28	G	34	24	34	28	58	46	32
7	G	37	G	24	27	G	G	G	34	41	32	30	31	29	33	36	28	29	29	28	G		G	G
8	G	G	G	G	G	G	42	26	31	35	28	32	37	42	35	66	42	55	54	39	G	G	24	24
9	30	G	G	27	G	G	G	G	28	31	36	52	31	39	48	30	41	32	43	97	44	26	28	33
10	25	33	29	G	33	30	26	G	30	34	40	54	55	48	58	50			58	52	37	27	G	G
11	G	30	38	28	27	26	26	49	35	47	36	40	38	32		40	34	G	G	G	G	G	G	
12	G	G	G	G	33	25	G	G	29	32	28	31	29	25	34	53	54	51	47	49	34	26	30	28
13	G	G	23	G	G	G	G	49	41	33	30	31	48	46	37	30	34	35	28	30	27	G	G	G
14	G	25	G	G	23	24	G	30	28	30	30	31	31	31	34	40	40	34	33	34	57	56	G	32
15	30	27	G	47	G	G	G	32	39	41	30	50	50	37	47	49	34	28	27	32	27	24	28	29
16	23	30	36	G	G	G	G	28	30	30	37	38	57	31	34	37	36	32	29	G	G	G	24	G
17	G	G	G	G	G	G		26	28	33	30	31	40	29	30	39	39	29	G	G	G	G	G	G
18	G	G	G	G	G	G	G	40	24	30	29	30	G	29	G	30	25	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G		27	30	G	38	34	33	33	41	48	28	G	G	26	G	G	G
20	G	G	G	G	G	G	G	G	G	24	26	G	39	G	G	29	25	G	G	G	G	G	G	39
21	29	34	G	28	G	G	G	G	24	29	32	34	32	G	32	32	26	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	G	33	35	30	31	32	33	32	29	30	G	G	G	G	G	G	40
23	39	30	26	G	G	G	G	26	31	33	32	30	31	33	31	29	32	G	G	G	G	G	G	G
24	G	G	G	G	G	G	G	G		28	30	29	G	G	54	31	28	G	G	G	32	G	G	G
25	G	G	G	G	G	G	G	G	24	33	24	29	25	37	26	26	26	G	G	G	G	G	G	G
26	G	G	G	G	G	G	G	24	25	30	30	G	30	34	33	34	30	36	G	32	35	G		G
27	G	G	G	G	G	G	G	30	27	29	31	39	37	39	34	31	32	G	G	24	G	32	28	40
28	25	G	G	G	G		G	G	25	31	51	52	34	G	30	29	28	G	G	G	G	G	G	41
29																								
30																								
31																								
	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	28	28	28	25	27	27	26	28	28	28	28	28	27	28	27	26	28	28	28	26	26	27
MED	G	G	G	G	G	G	G	24	30	33	30	32	34	32	33	34	34	29	12	24	G	G	G	G
U Q	25	26	G	G	12	G	G	30	31	34	33	43	41	38	37	40	39	34	29	34	32	26	28	32
L Q	G	G	G	G	G	G	G	G	27	30	30	30	31	29	30	30	28	G	G	G	G	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT KOKUBUNJI

FEB. 1995

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	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	15	15	15	14	14	14	16	18	14	15	17	20	16	15	15	14	15		16	16	22	20		16
2	15	15	15	15	14		16	21	14	16	15	15	14	14	14	15	14	15	15	14	17	16	15	14
3		15	14	15	14		17	21	15	15	15		18	16	15	15	14	15	14	14	15	15	15	14
4	16	18	15	14	18	16	15	18	15	15	15	14	14	14	15	15	14	14	15	15	14	14	15	14
5	15	16	15	14	15	15	17	22		15	14	17	15	14	14	15	15	15	16	15	15		15	15
6	15	15	15	14	15	15	18	14	15	15	16	18	21	22	18	14	15	15	15	15	14	15	14	14
7	15	14	15	14	16	16	14	17	14	15	16	15	15	14	15	14	14	15	15	14	15		22	17
8	14	15	15	15	15	14	14	18	14	15	15	14	15	15	16	14	15	15	14	15	16	15	15	15
9	15	15	15	14	15	15	15	17	16	15	18	16	20	21	17	14	15	14	15	15	15	14	14	14
10	15	15	15	14	15	15	14	16	14	15	16	18	16	15	14	15			14	15	15	14	15	15
11	15	14	15	14	15	16	15	14	15	14	14	14	15	14		15	15	17		14	15	15	15	
12	16	15	14	15	14	15	15	21	15	15	15	15	15	15	14	15	15	15	14	15	15	14	14	14
13	15	15	15	15	17	15	15	15	15	15	15	15	15	15	15	14	14	15	15	15	15	15	15	16
14	15	15	14	16	14	15	15	15	15	15	15	15	16	14	15	14	16	15	15	14	15	14	15	14
15	14	15	14	14	14	15	20	15	15	15	14	16	17	15	16	14	15	15	15	15	14	14	14	15
16	15	14	15	14	14	14	18	15	15	14	15	15	15	15	14	15	15	15	14	16	14	15	15	15
17	15	14	14	15	16	15		16	15	16	16	17	21	16	16	15	15	14	15	15	15	14	15	18
18	15	15	15	15	15	15	15	20	16	16	32	41	43	15	43	17	15	17	15	14	15	17	14	16
19	16	14	14	15	15	15	15		15	15	34	22	18	22	23	17	14	15	14	15	15	15	14	15
20	16	15	14	15	15	15	15	22	16	32	20	45	41	40	33	18	16	14	15	15	14	14	18	14
21	15	14	15	15	15	14	15	18	16	18	18	22	42	40	20	18	15	18	15	14	15	15	14	14
22	15	14	15	15	14	18	15	21	15	15	16	17	23	22	16	15	14	18	14	15	14	14	15	15
23	15	14	15	15	14	15	15	15	15	14	15	15	16	16	17	20	14	20	14	14	15	15	17	15
24	15	15	15	14	15	15	14	15		14	16	18	40	42	16	17	16	20	15	14	15	15	15	14
25	14	15	15	14	15	15	14	22	15	18	36	16	38	17	41	18	14	22	14	15	14	15	15	15
26	15	15	14	15	15	15	15	17	18	14	16	41	17	22	18	17	14	15	15	15	15	15		15
27	15	15	15	15	15	15	15	16	18	15	16	16	18	18	17	15	14	18	14	15	15	14	15	15
28	14	15	15	15	15		15	16	16	17	17	20	18	43	17	15	15	15	14	15	15	15	16	14
29																								
30																								
31																								
	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	28	28	28	25	27	27	26	28	28	27	28	28	27	28	27	26	27	28	28	26	26	27
MED	15	15	15	15	15	15	15	17	15	15	16	16	17	16	16	15	15	15	15	15	15	15	15	15
U Q	15	15	15	15	15	15	16	21	16	15	17	20	21	22	18	17	15	17	15	15	15	15	15	15
L Q	15	14	14	14	14	15	15	15	15	15	15	15	15	15	15	14	14	15	14	14	14	14	14	14

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF foF2 AT YAMAGAWA

FEB. 1995

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

HD	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		49	A	31	N	69	31		59	83	81	113	105	106	113	101	60	62	26	31	59		26	
2	28		34	31	58	N	26	37	69	70	85	118	118	87	80	66	59	62	A	26	32		28	31
3		N	22	59	30			59	62	66	66	76	87	80	67	65	58	61						A
4	A		A	69	A	N	59		55	69	72	88	74	76	87	90	66	A	A	26	34	49	A	30
5	49	59	35	30	31	23	28	49	59	60	75	80	80	84	72	74	66	66	A	A	A	A	A	25
6	26		32		25	A	N	69	66	66	77	92	90	91	84	65	67	67	23	A	30	A	69	49
7	A		28	A	69		69	31	70	76	97	104	93	82	80	64	64	77	61	A	A		69	49
8	26	23	29	49	25	31			61	68	67	78	98	96	72	71	73	82	72		49	49		69
9			30	26	69	49	56	69	69	82	105	113	97	87	80	81	65	68	54		58		A	59
10	59	N	69	23	28		35	A	68	72	80	67	71	80	80	78	70	79	A	A	A	35	22	
11		30	30	29		49	69	69	69	68	67	77	80	85	83	68	66	68	31	48		60	55	49
12	28	31	23	59			25	A	A	A	92	87	90	65	66	72	84	72	62	A	A		A	A
13	25	26		31	30	A	N	A	60	68	85	78	103	110	87	81	70	73						
14							28		68	82	100	122	101	96	86	82	74	60						
15							A	38	65	77	92	101	101	111	114	94	92	75	60	23		A	A	
16	26	30	25	29	31	N	N	29	A	94	81	90	101	107	90	96	86							
17	A	A			69		N	31	56	73	95	100	80	84	85	84	78	71	A	31	60	48		N
18	28		49	32			69	49	70	75	72	72	77	95	82	78	77	74	60	38			49	
19		37	49	49		49	69	35	A	74	67	75	86	102	92	82	80	76	66	A		56		
20		49	59		31			69	70	78	74	84	74	85	80	84	77	73	69	31	60	60		69
21		36	56				31	58	69	70	76	83	70	84	94	86	76	81	66	69	50		56	60
22		49	69	60	49	58	N	58	71	78	78	78	88	90	85	77	72	74	58	60		69	59	
23	59	31	59	69		49	59		73	71	77	71	84	93	90	83	83	67	69	49	34		34	N
24	69	49	32		31	49	32	79	70	78	84	92	90	100	103	86	72	73	62	47	31	69	35	36
25	59	38	49	60	58		49	49	66	70	81	78	72	80		98	81	80	57	58	60	59	69	N
26		49	49	32	28	49	30	60	68	70	81	80	74	87	110	95	70	70	75	60	79		35	
27		69	31			30	28	65	69	77	80	83	91	107	100	91	89	73	71	49		70	69	32
28	31	49		33	56		N	31		68	70	88	98	104	114	103	92	78	69	69		58	49	
29																								
30																								
31																								
	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	17	21	19	17	11	18	20	24	27	28	28	28	28	27	28	28	26	19	16	13	12	15	12
MED	28	38	34	32	31	49	34	54	68	72	80	84	89	88	85	82	72	73	62	48	50	58	49	49
U Q	59	49	52	59	58	49	59	67	69	78	85	96	98	101	94	90	80	76	69	59	60	64	69	59
L Q	26	30	29	30	29	31	28	36	61	68	73	78	78	84	80	73	66	67	57	31	33	49	34	31

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT YAMAGAWA

FEB. 1995

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	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	24	31	32	G	G	G	G	G	100	30	30	35	33	30	29	30	32	32	27	25	28	G	G	G
2	G	G	G	G	G	28	25	26	G	31	28	32	32	33	37	39	36	32	33	25	23	G	G	G
3		G	G	G	G		G	G	39	37	29	G	39	33	32	34	39	32	27	27	28	G	24	34
4	38	33	38	26	30	25	G	G	27	25	31	38	32	29	53	40	38	39	34	29	24	G	29	G
5	G	G	G	G	G	G	G	G	23	31	34	32	31	30	31	29	35	40	35	36	34	32	30	30
6	G	G	24	31	31	33	G	G	30	29	33	35	40	34	34	33	30	29	G	33	32	32	G	G
7	31	29	27	27	26		G	G	31	31	32	33	32	32	32	30	30	32	29	32	27	28	27	G
8	G	28	24	G	G	G	G	23	30	28	30	32	51	33	32	33	33	36	G	G	G	G	G	G
9	G	G	G	32	32	G	25	G	G	26	28	30	30	29	27	32	35	29	G	G	G	G	24	G
10	G	G	33	32	29	39	28	70	27	28	28	29	29	39	49	76	128	88	55	54	33	30	G	G
11	G	G	G	24	G	G	G	G	29	28	29	31	29	32	33	52	52	37	29	G	G	G	G	G
12	G	G	G	G	G	G	G	31	35	36	30	30	30	31	31	29	36	44	39	38	33	32	29	31
13	G	G		G	G	29	33	67	33	33	39	52	32	87	32	32	40	58						
14							G	G	29	34	106	30	30	29	31	30	30	29						
15							32	G	27	28	30	31	59	69	36	34	34	32	29	G	24	34	33	29
16	27	G	32	29	G	23	G	24	31	28	31	31	31	32	38	38	38							
17	32	29	26	24	G		G	24	32	30	29	30	G	G	56	33	30	29	32	G	G	G	G	G
18	G	G	G	G	G	G	G	11	26	27	27	29	30	32	30	29	29	G	G	25	24	G	G	G
19	G	G	G	G	G	G	G	G	25	28	31	31	32	30	30	33	33	34	31	28	28	26	G	G
20	G	G	G	G	G	G	G	G	24	27	28	28	26	G	32	31	31	24	G	G	G	G	G	26
21	G	G	G	G	G	29	24	G	29	28	30	29	28	32	32	32	30	31	G	G	G	G	G	G
22	G	32	G	G	G	G	G	33	30	30	27	28	G	31	32	30	28	32	G	G	G	G	G	G
23	G	G	G	G	G	G	G	G	28	29	30	31	31	31	32	32	28	30	G	G	G	G	G	G
24	24	G	G	G	G	G	G	G	30	29	29	29	30	30	30	30	31	33	G	G	G	G	26	27
25	G	G	G	G	G	G	G	G	23	28	26	28	30	29		38	31	32	G	G	G	G	G	G
26	G	26	G	G	G	G	G	25	29	27	30	32	31	37	30	30	30	37	26	26	24	G	G	
27	G	G	G	G		G	G	28	30	30	32	32	32	38	31	38	34	34	30	24		G	G	G
28	G	G	G	G	G		G	22	G	28	32	32	33	29	31	30	29	29	27	G	G	G	24	G
29																								
30																								
31																								
	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	26	25	26	25	22	28	28	28	28	28	28	28	28	27	28	28	27	25	25	24	25	25	24
MED	G	G	G	G	G	G	G	G	29	28	30	31	31	32	32	32	32	32	27	24	24	G	G	G
U Q	12	26	25	24	G	25	G	24	30	30	31	32	32	33	34	36	36	37	31	28	28	27	25	13
L Q	G	G	G	G	G	G	G	G	25	28	28	29	30	29	31	30	30	29	G	G	G	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT YAMAGAWA

FEB. 1995

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

HD	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	15	15	14	14	15	14	14	14	17	15	17	17	18	17	16	15	14	14	14	14	15	15	14	14
2	14	14	14	14	15	16	14	14	20	15	15	16	16	18	15	16	14	14	14	14	14	14	14	15
3		15	15	14	15		15	14	15	15	16		18	18	17	16	14	14	14	14	14	14	15	14
4	15	14	14	15	15	14	14	15	14	15	15	16	17	18	15	15	14	15	15	15	14	16	14	15
5	14	15	14	14	14	15	15	14	16	15	15	16	15	15	18	21	14	14	14	14	14	15	15	15
6	14	14	15	14	14	14	15	15	15	15	14	17	17	21	18	16	20	15	15	15	14	14	14	
7	15	14	15	15	15		14	14	14	15	15	17	17	17	15	14	14	14	15	15	15	15	15	15
8	14	15	14	15	14	14	14	14	14	15	16	15	18	16	16	14	14	14	15	14	14	14	14	15
9	15	15	15	14	14	15	14	14	18	14	14	15	20	20		16	16	14	16	14	14	14	16	14
10	14	14	14	14	14	15	14	14	14	14	16	20	21	16	16	15	14	14	15	14	14	15	15	14
11	14	14	14	15	15	15	15	14	14	15	16	15	15	23	14	15	15	14	14	17	14	14	15	16
12	16	14	14	15	15	15	15	14	14	15	15	15	16	16	16	15	15	14	14	14	15	14	15	15
13	15	14		15	14	15	14	15	14	14	16	15	16	18	17	16	15	14						
14							14	14	14	14	15	15	17	16	17	15	15	14						
15							15	14	14	15	16	20	20	18	17	17	15	15	15	14	14	14	15	14
16	15	15	14	14	14	15	15	15	14	15	15	15	20	20	20	18	15							
17	14	15	16	15	14		17	15	14	15	17	18	46	49	17	20	14	14	14	14	15	14	14	15
18	14	15	14	15	14	14	14	14	20	15	16	17	48	21		18	17	15	15	14	15	14	15	14
19	15	15	14	14	14	14	14	15	15	15	18	20	18	21	17	20	15	14	15	14	14	14	15	15
20	14	15	14	15	15	15	15	14	14	46	17	21	48	48	22	45	18	15	16	14	14	14	14	15
21	14	14	14	14	14	14	14	14	15	15	16	16	20	18	20	20	16	15	15	14	14	14	15	15
22	15	15	15	15	14	14	14	15	15	15	15	20		17	20	17	16	14	15	14	14	14	15	15
23	14	15	15	15	15	14	15	15	14	14	16	18	17	22	21	23	16	15	17	15	14	14	14	14
24	15	15	15	14	14	14	14	16	15	15	16	20	21	20	18	18	15	15	17	14	14	14	15	15
25	14	14	15	14	14	15	14	16	26	46	16	17	20	22		21	15	15	15	14	14	14	14	14
26	15	15	14	15	14	15	14	17	14	16	17	20	21	21	20	22	16	15	16	15	14	14	15	
27	14	14	14	14		17	14	14	15	15	16	18	20	20	20	16	15	15	14	14		14	15	14
28	14	14	15	14	14		17	16	26	16	20	20	22	18	21	16	15	14	14	14	14	14	14	14
29																								
30																								
31																								
	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	26	25	26	25	22	28	28	28	28	28	27	27	28	25	28	28	27	25	25	24	25	25	23
MED	14	15	14	14	14	15	14	14	14	15	16	17	18	18	17	16	15	14	15	14	14	14	15	15
UQ	15	15	15	15	15	15	15	15	15	15	16	20	21	21	20	20	16	15	15	14	14	14	15	15
LQ	14	14	14	14	14	14	14	14	14	15	15	15	17	17	16	15	14	14	14	14	14	14	14	14

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF foF2 AT OKINAWA

FEB. 1995

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	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	32		44	A	A			59	A	69	86	125	142	106	111	107	88	73	67	44	38	35		
2	38	30	70	41	69			46	64	83						82	92	63	62	56			44	38
3				69	44			69	41	72	68	81	110	100	84	95	81	69	A	37	43		A	59
4	41	43	45	A	A	A	A	34	58	68	75	94	111	123	124	111	70	60	57	38		37		A
5			38	59	32				69	67	75	92	92	113	110	94	77	74	72	A	37	A		
6			38	29	58	A	A	A	57	82	92	95	116	117	126	122	95	82	68	48				59
7				69	N					94	92	111	100	86	92	86	84	93	92	69	A	48	44	A
8	31		38	31	38	37	36	37	50	57	91	83	85	59	80	80	95	78	93	82	69	56	50	
9		48	A	49	A	A	A	A	64	81	94	124	124	125	96	86	74	111	89	74	68	69	48	69
10	A	A	40	40	32	69	A		82	78	93	92	84	92	92	92	85		74	A	68	58	48	
11	35	89	31	56	59	N			50	86	82	93	114	124	112	94	83	93	83	69	62	A	A	A
12	40	A	46		35	28	59		64	60	81	105	94	87	79	65	78	95	93	83	A	47	62	69
13	69	69	69	41	38	N		39	59	81	93	108	106	121	106	86	87	50	61	81	A	46		A
14	69	69	A	30	49	A			56	83	124	122	126	105	113	88	73	66	76	94			49	54
15	44	40	48	69	32	37	A	A	46	63	91	110	118	126	136	123	117	117	82	A	A	A	43	44
16	59		69	45	38			37	69	91	93	124	116	117	151	145	124	103	93	68	94		A	67
17	54	44	58	31	41	69			47	78	93	110	112	119	120	117	114	103	92	74	57		52	58
18		35	35	89	41				70	70	83	96	91	90	104	97	80	78	82	67	65	69	44	
19	69	37	46	59	59	38				66	75	84	92	114		116	94	87	96	96				57
20	52	48	39	40	46	43	43	79	60	70	82	94	85	91	102	112	103	92	90	66	63	69	60	
21		34	41	44	38	49	59	43	84	94	82	92	94	94	120	112	101	124	92	93	68			59
22	46	69	46	44	69				62	70	83		86	92	125	104	115	84	83	92	68		39	
23			69	45	35	58		49	44	84	81	92	90	105	121	126	123	115	85	74	73	69	53	
24		43	38	40			69	69	69	94	81	94	104	106	124	122	109	96	86	68	58	59	48	69
25	44	43	56	44	61	58			50	94	83	92	92	84	121	112	124	94	92	94	94	50		
26	43	48		A	43	49	49	46	68	83	91	96	87	100	127	126	110	92	81	94	94	74		
27	52	57	44	41	N			43	72	90	82	93	94	99	112	104	94	95	72	72	39	A	61	
28		69	44	46				A	94	91	81	105	112	104	117	124	106	115	87	94	69	47		
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	18	23	24	21	11		13	25	28	27	26	27	27	26	28	28	27	27	25	19	15	15	12
MED	44	46	44	44	41	49		46	62	81	83	94	100	105	112	106	94	92	83	74	68	56	48	59
U Q	56	69	56	57	58	58		64	69	88	92	110	114	117	124	119	109	103	92	92	69	69	53	68
L Q	39	40	38	40	36	37		38	50	69	81	92	91	92	102	90	82	74	72	66	57	47	44	55

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT OKINAWA

FEB. 1995

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G		40	42	58		G	39	41	75	33	44	38	30	42	35	38	33	G	28	28	G	G	G
2	G	G	G	G	G			G	G	34						38	36	44	37	31			G	G
3				G	G			37	89	37	43	41	49	60	35	50	43	42	68	32	28	42	50	32
4	40	35	G	46	26	25	25	33	G	30	32	29	46	33	45	51	40	35	G	26	28	G	G	26
5		G	G	G	G	G	G	G	29	40	42	44	40	38	43	35	50	55	60	26	25	42		
6		G	G	41	34	33	33	30	23	32	26	37	53	72	46	40	42	33	40	24	G	G	G	G
7	G	G	G	G	G			G		40	46	48	47	41	42	38	41	32	G	21	27	G	23	26
8	24	G	26	G	26	G	30	G	G	33	34	40	47	50	50	49	48	71	G	32	24	G	G	G
9	G	G	26	28	33	28	34	37	33	32	34	31	33	G	38	44	42	32	G	39	51	28	G	G
10	28	44	64	38	41	30	48	G	33	26	36	29	33	42	44	47	61		93	68	G	G	G	
11	G	G	G	G	G	G	G	G	30	37	35	39	40	39	34	49	46	37	29	25	38	52	38	52
12	G	41	46	G	G	G	G	G	40	26	27	27	32	36	46	49	52	44	37	28	33	25	30	G
13	G	G	G	G	G	G	G	G	44	40	34	47	54	54	86	50	43	56	83	66	40	G		32
14	32	26	32	G	G	33	G	G	29	32	34	32	36	G	46	42	36	30	G	29	G	G	G	26
15	G	G	G	23	G	G	36	68	59	38	36	33	34	40	50	108	57	76	82	70	45	25	G	G
16	G	G	G	25	44			36	29	33	41	39	35	35	42	56	51	43	49	43	29	41	47	37
17	33	G	23	G	G	G	G	G	24	39	46	53	51	54	66	72	117	31	G	47	G	G	G	G
18	44	39	G	G	G	G	G	G	25	50	24	38	33	43	47	45	41	36	30	25	38	G	46	
19	G	G	G	G	G	G	G	G		33	30	39	38	48		40	48	41	32	G		G	47	G
20	G	G	G	24	G	G	G	G	25	25	34	40	40	G	39	42	66	32	G	G	G	G	G	G
21		G	G	G	G	G	G	23	28	40	37	40	40	30	34	36	40	36	G	G	G	G	G	25
22	G	G	G	23	G		G	G	22	31	29		33	34	41	36	98	44	G	G	G	G	G	G
23	G	G	G	G	G	G	G	38	48	30	41	32	34	35	39	32	31	32	G	G	G	G	G	25
24	G	G	G	G		G	G	G	30	34	35	38	40	30	38	40	40	34	G	G	G	G	G	G
25	G	G	G	G	G	G		G	24	28	36	39	40	32	38	44	42	38	G	23	G	G	G	G
26	G	G	G	27	G	G	33	48	26	33	156	N	41	49	49	44	40	37	33	G	G	G	G	G
27	26	G	G	G	G	G	G	39	89	26	34	37	40	40	40	40	40	36	28	36	30	25	G	G
28	G	G	G	G				24	G	26	156	29	34	34	38	25	30	32	G	G	G	G	G	G
29																								
30																								
31																								
	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	26	27	28	26	21	22	28	26	28	27	25	27	27	26	28	28	27	28	28	26	27	26	25
MED	G	G	G	G	G	G	G	G	29	33	35	39	40	38	42	43	42	36	14	26	24	G	G	G
U Q	25	G	23	24	26	13	30	36	40	38	41	40	46	48	46	49	50	44	38	34	30	25	23	26
L Q	G	G	G	G	G	G	G	G	24	30	33	32	34	32	38	38	40	32	G	G	G	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT OKINAWA

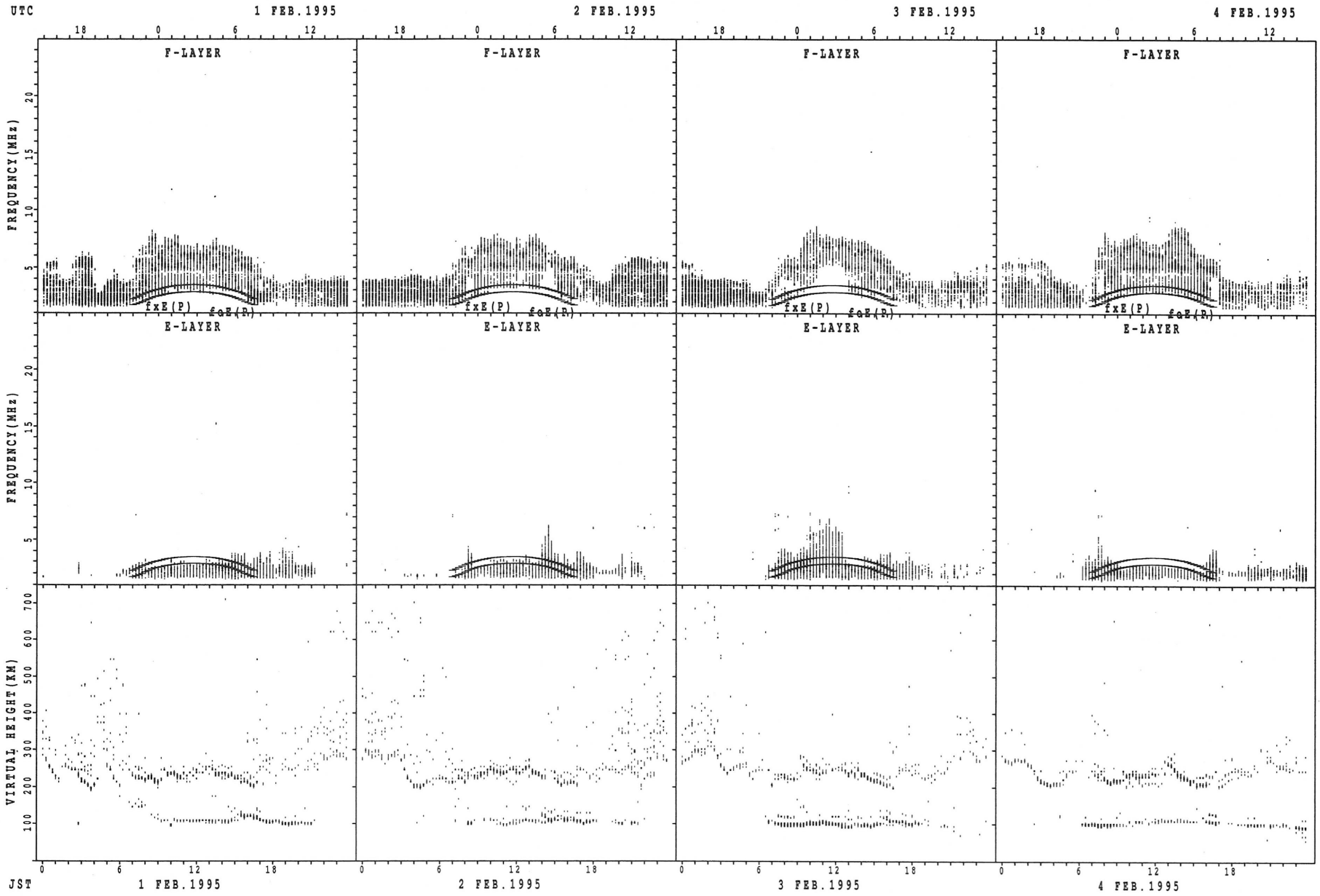
FEB. 1995

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

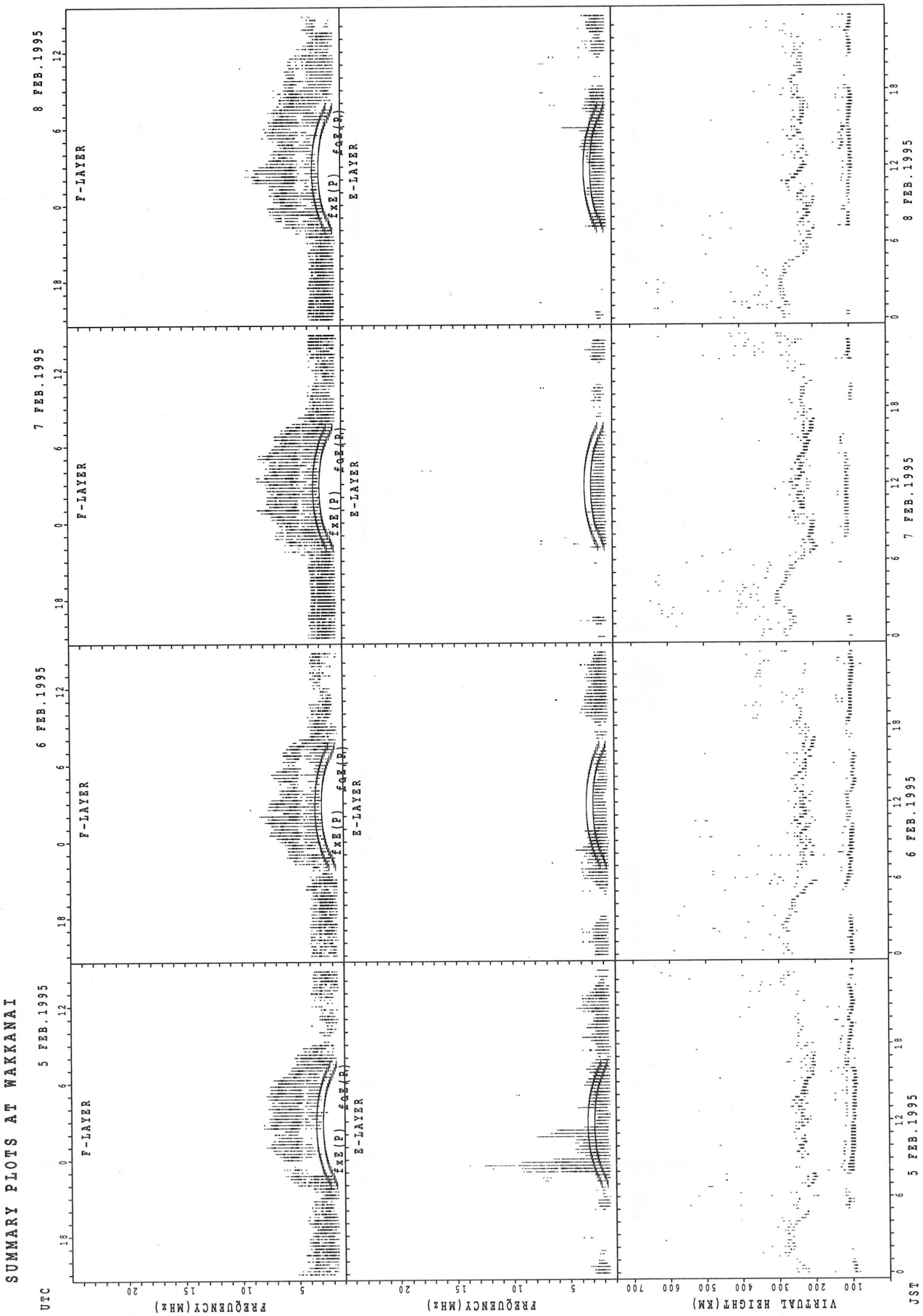
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15		14	14	15			14	16	14	17	14	23	15	16	14	15	15	20	14	14	16		16
2	18	14	14	15	14			18	14	14						16	15	14	14	14			14	14
3				14	15			14	17	15	17	46	32	30	17	17	15	14	14	14	15	14	15	16
4	15	14	14	14	14	14	15	14	21	14	14	17	17	16	18	16	14	14	20	14	14	14	15	15
5		15	14	14	15	15		15	14	15	14	15	17	18	27	16	16	14	14	14	15	15		
6		16	15	14	14	14	14	14	14	14	14	16	30	24	20	16	24	14	16	15	15	16	15	14
7	14	15	14	15	14			15		14	14	17	17	22	17	15	15	14	16	15	14	15	14	14
8	14	14	14	14	15	15	15	14	15	16	17	17	26	17	23	16	16	14	21	14	14	14	15	15
9	14	15	14	15	14	15	14	14	16	15	14	17	18	43	30	17	17	15	18	14	15	15	15	15
10	18	14	14	14	14	14	14	14	14	15	15	34	20	21	17	20	15		14	14	15	15	15	
11	14	15	14	14	15	15	16	14	14	14	16	17	16	20	27	15	14	14	14	15	14	15	15	14
12	16	14	14	18	15	15	15	14	14	15	15	16	20	17	17	16	14	14	14	14	15	14	14	15
13	18	15	16	16	14	15	14	14	14	15	17	17	29	18	17	16	15	14	14	14	14	15		14
14	14	14	14	15	15	15	15	14	14	14	16	18	20	39	17	21	15	14	20	14	16	14	15	14
15	15	15	15	14	14	15	18	14	14	14	14	18	23	28	17	16	14	14	15	14	14	14	14	16
16	14	15	15	14	14			15	14	15	16	17	20	34	18	18	16	14	15	14	14	14	14	14
17	15	15	16	15	14	15	16	14	15	14	14	16	20	18	17	16	15	15	17	14	15	15	15	15
18	15	14	15	15	14	14	15	14	16	14	15	18	21	23	22	20	17	15	15	15	16	17	15	
19	15	14	15	15	14	15		14		15	17	18	21	23		28	16	14	15	15		15	14	15
20	14	14	15	14	14	14	14	14	14	14	15	44	20	46	29	28	17	15	22	15	15	14	15	16
21		15	14	18	14	15	14	14	14	15	16	18	21	36		23	16	14	18	14	14	14	16	15
22	14	14	15	15	15		15	14	14	14	15		20	23	18	17	15	14	23	14	15	14	14	15
23	15		15	14	15	15	14	14	14	14	15	20	35	47	44	14	14	14	17	14	14	14	15	15
24	16	14	14	14		15	15	15	15	16	18	17	20	18	21	17	14	15	22	14	14	14	16	14
25	15	14	15	14	14	14		16	14	14	15	17	20	17	32	29	16	14	14	14	14	14	15	15
26	16	15	15	14	15	15	14	14	14	15	18	18	18	21	33	20	16	16	15	14	14	15	14	15
27	15	15	15	15	15	15	15	16	15	14	15	17	18	18	17	17	15	14	14	14	14	15	15	15
28	14	15	15	14				16	14	16	16	42	26	27	23	33	15	14	20	15	15	14	15	14
29																								
30																								
31																								
	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	25	27	28	26	21	19	28	26	28	27	26	27	27	25	28	28	27	28	28	26	27	25	25
MED	15	15	15	14	14	15	15	14	14	14	15	17	20	22	18	17	15	14	16	14	14	14	15	15
U Q	15	15	15	15	15	15	15	15	15	15	17	18	23	30	27	20	16	15	20	14	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	14	14	17	18	18	17	16	15	14	14	14	14	14	14	14

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

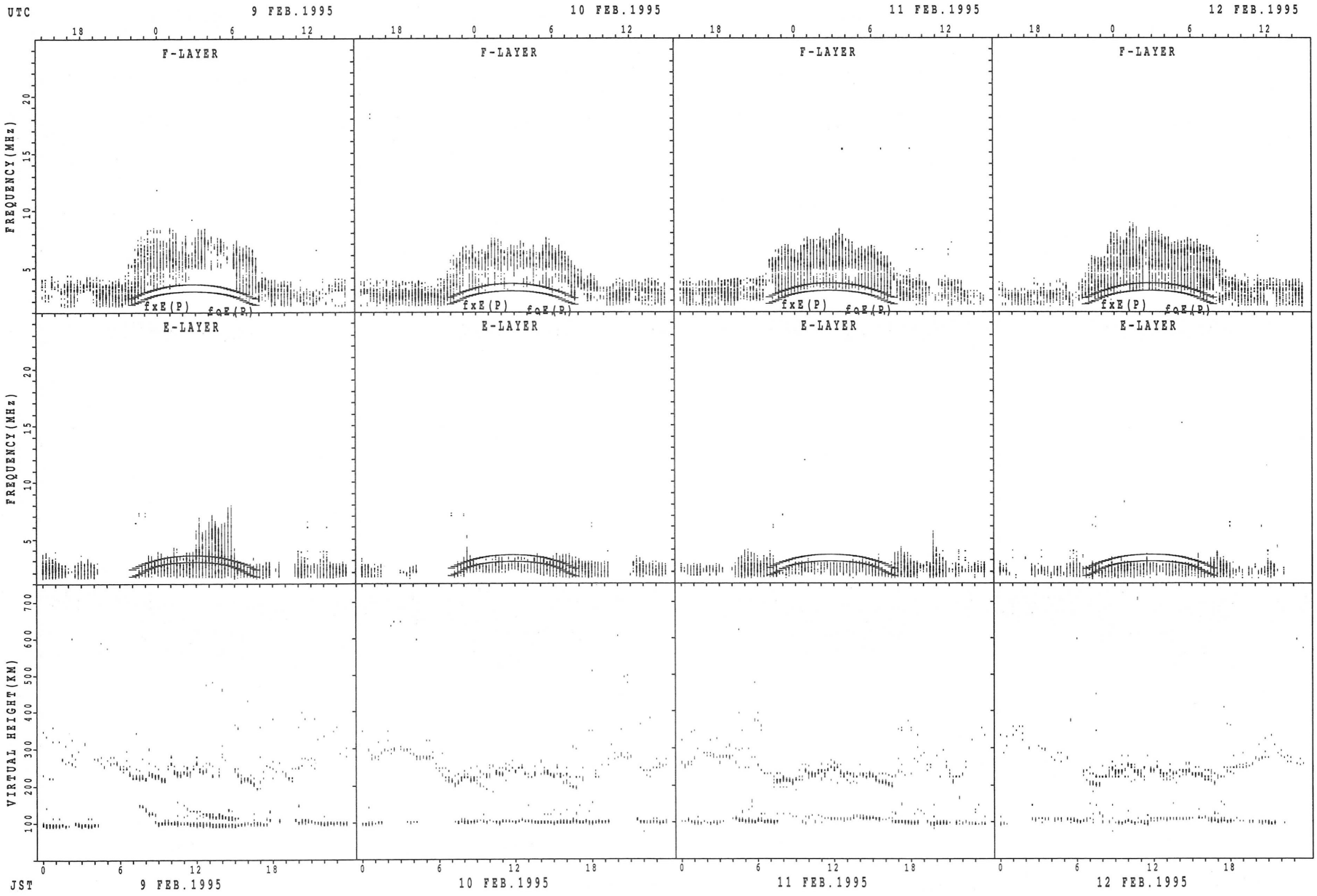
SUMMARY PLOTS AT WAKKANAI



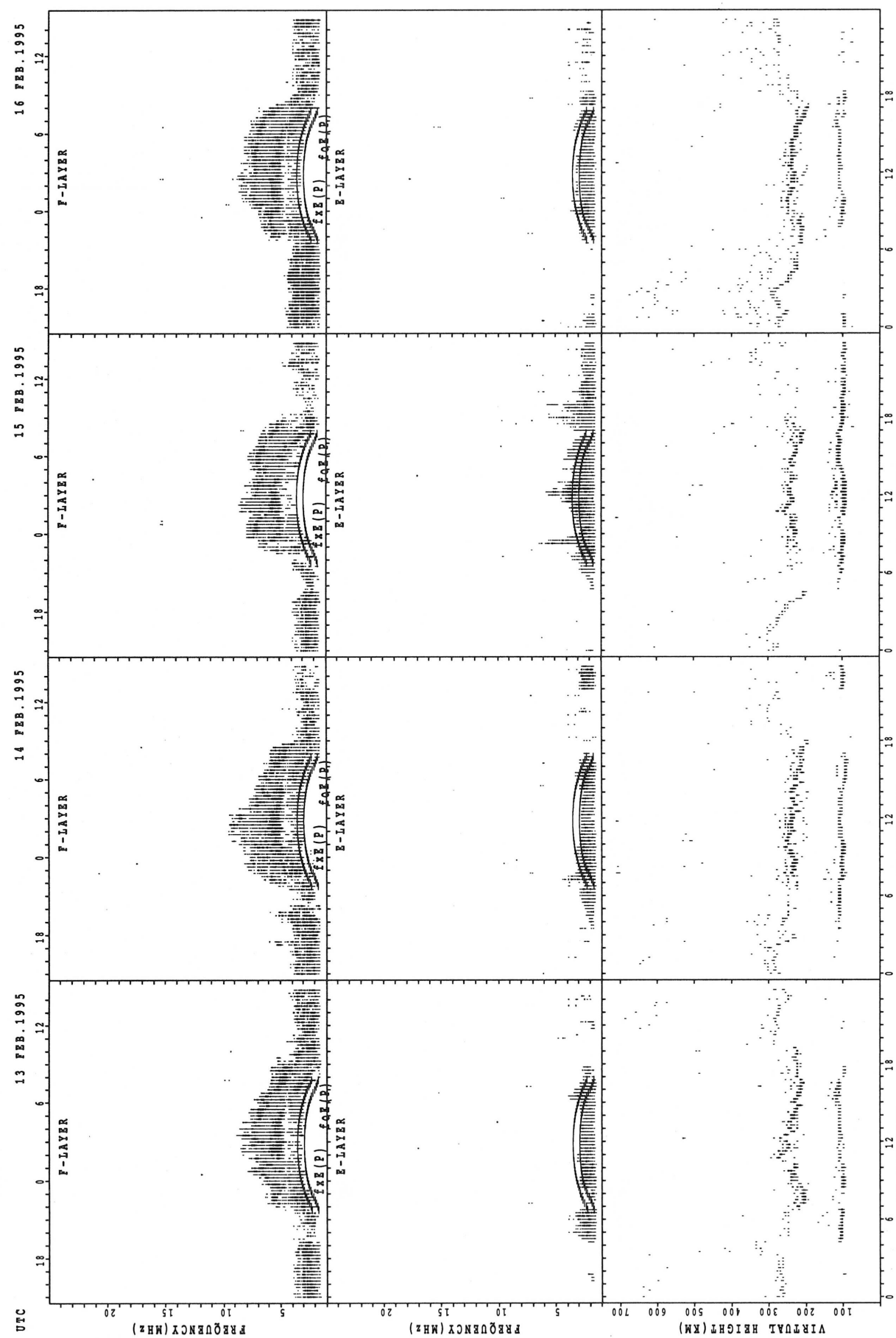
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT WAKKANAI
UTC
JST
5 FEB.1995
6 FEB.1995
7 FEB.1995
8 FEB.1995
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

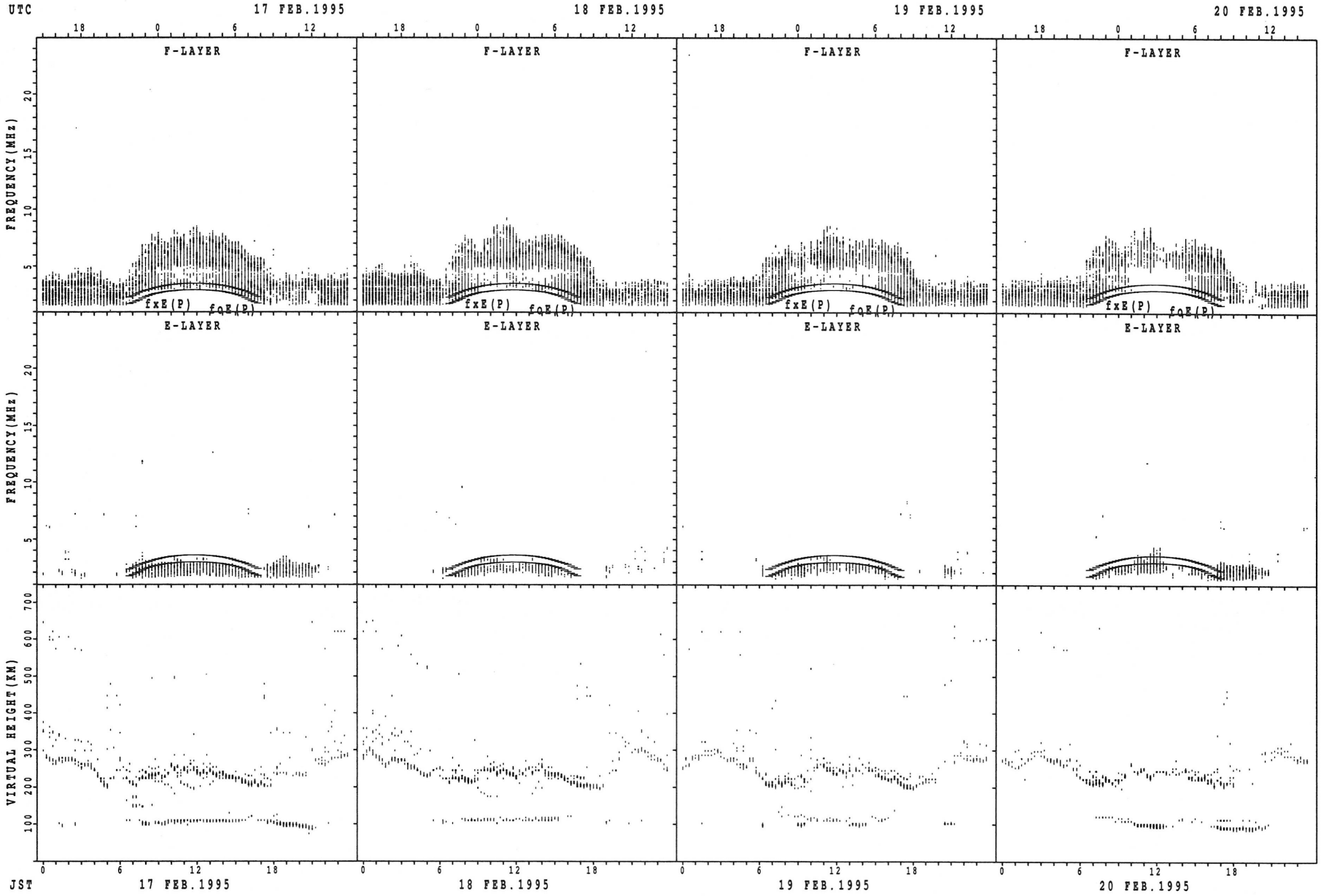
SUMMARY PLOTS AT WAKKANAI



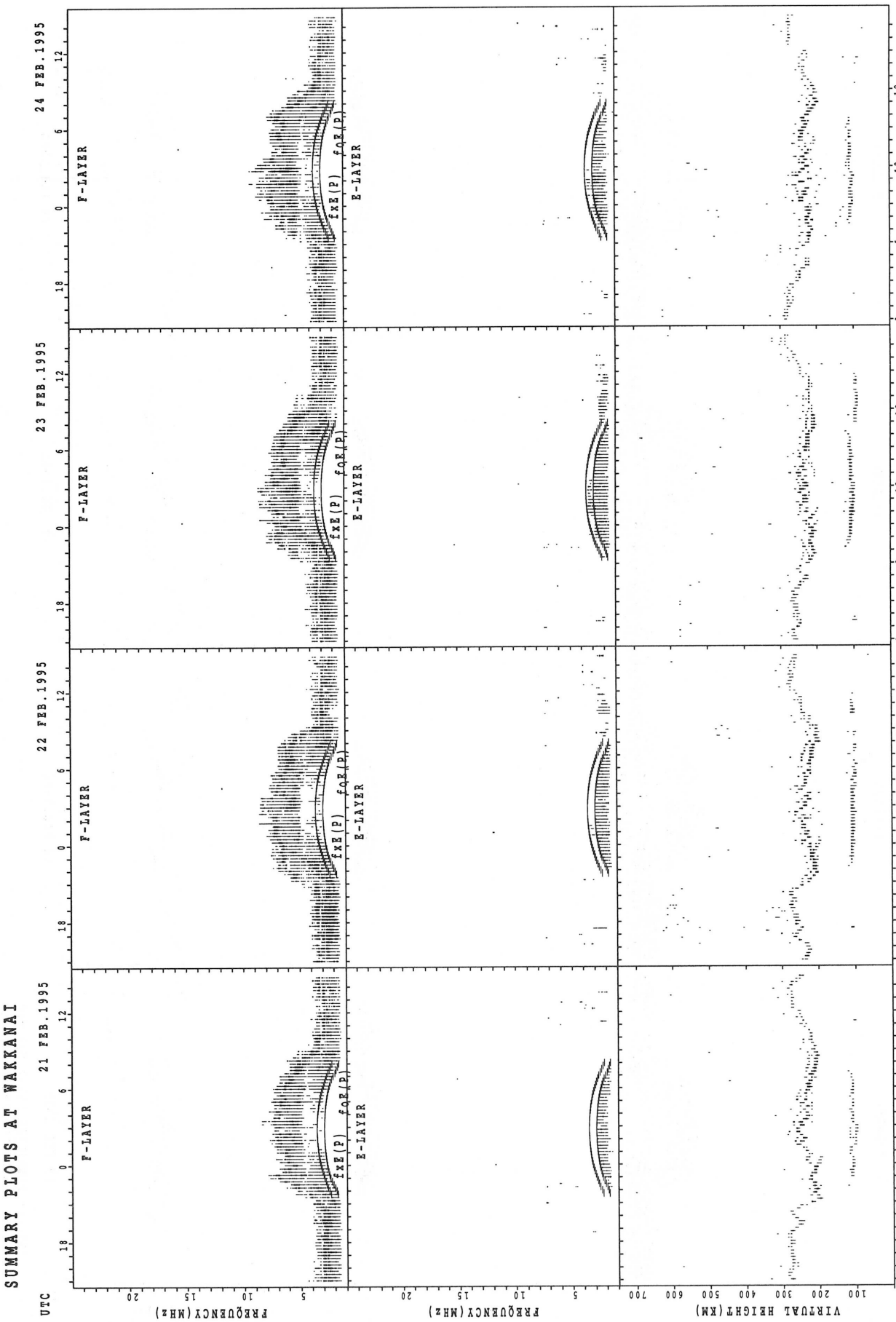
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT WAKKANAI
UTC
JST
13 FEB.1995
14 FEB.1995
15 FEB.1995
16 FEB.1995
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

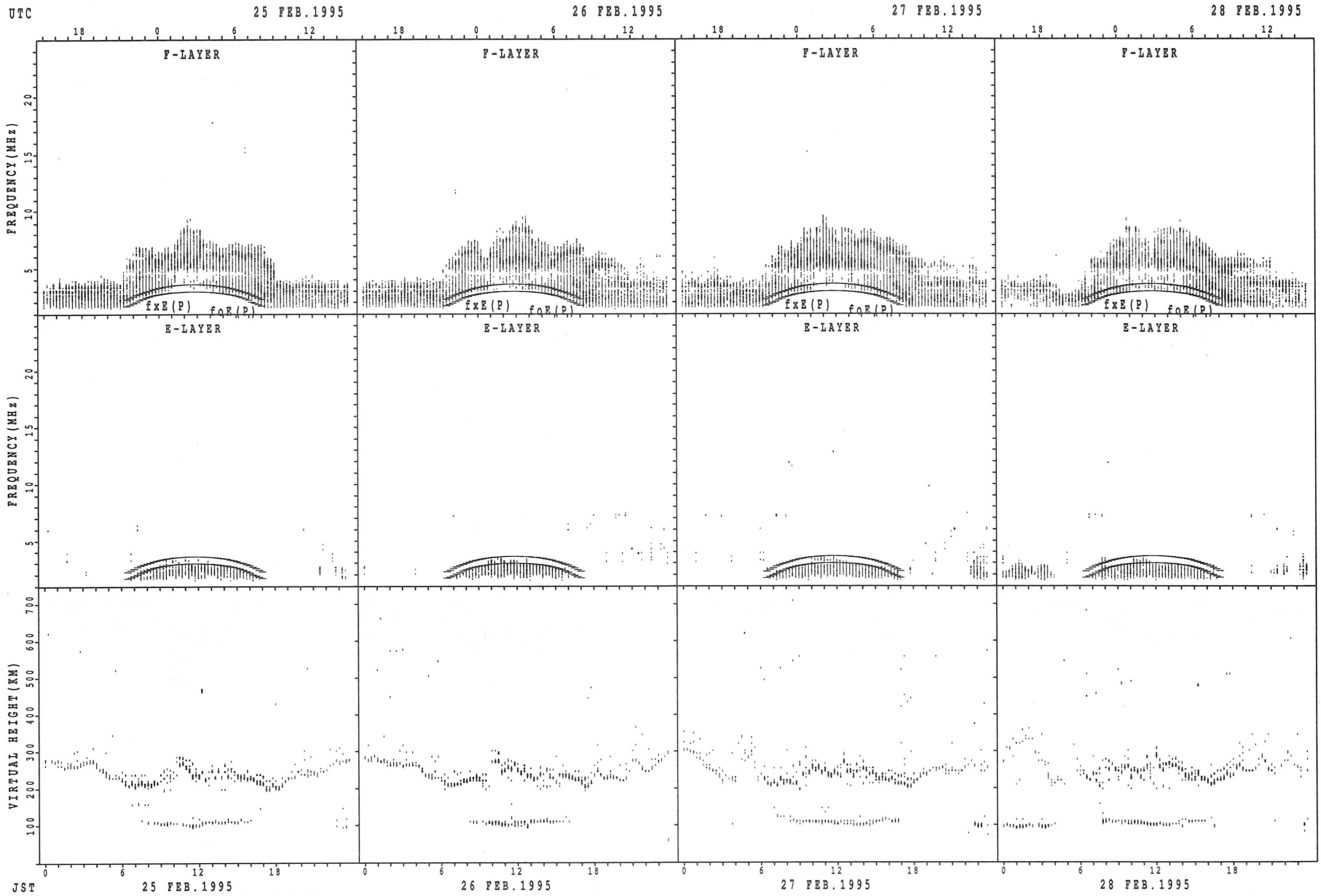
SUMMARY PLOTS AT WAKKANAI



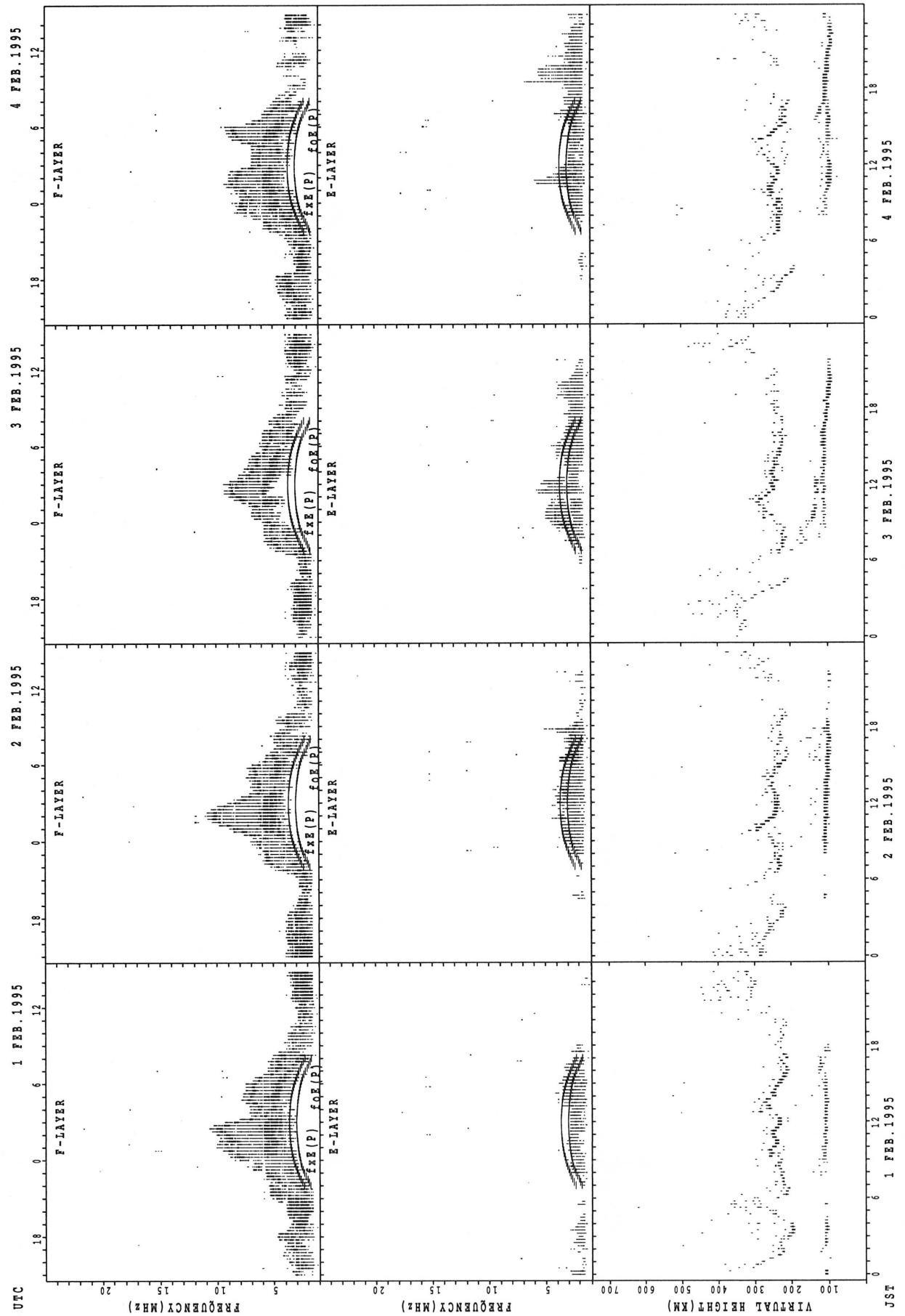
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT WAKKANAI
UTC
JST
21 FEB.1995
22 FEB.1995
23 FEB.1995
24 FEB.1995
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

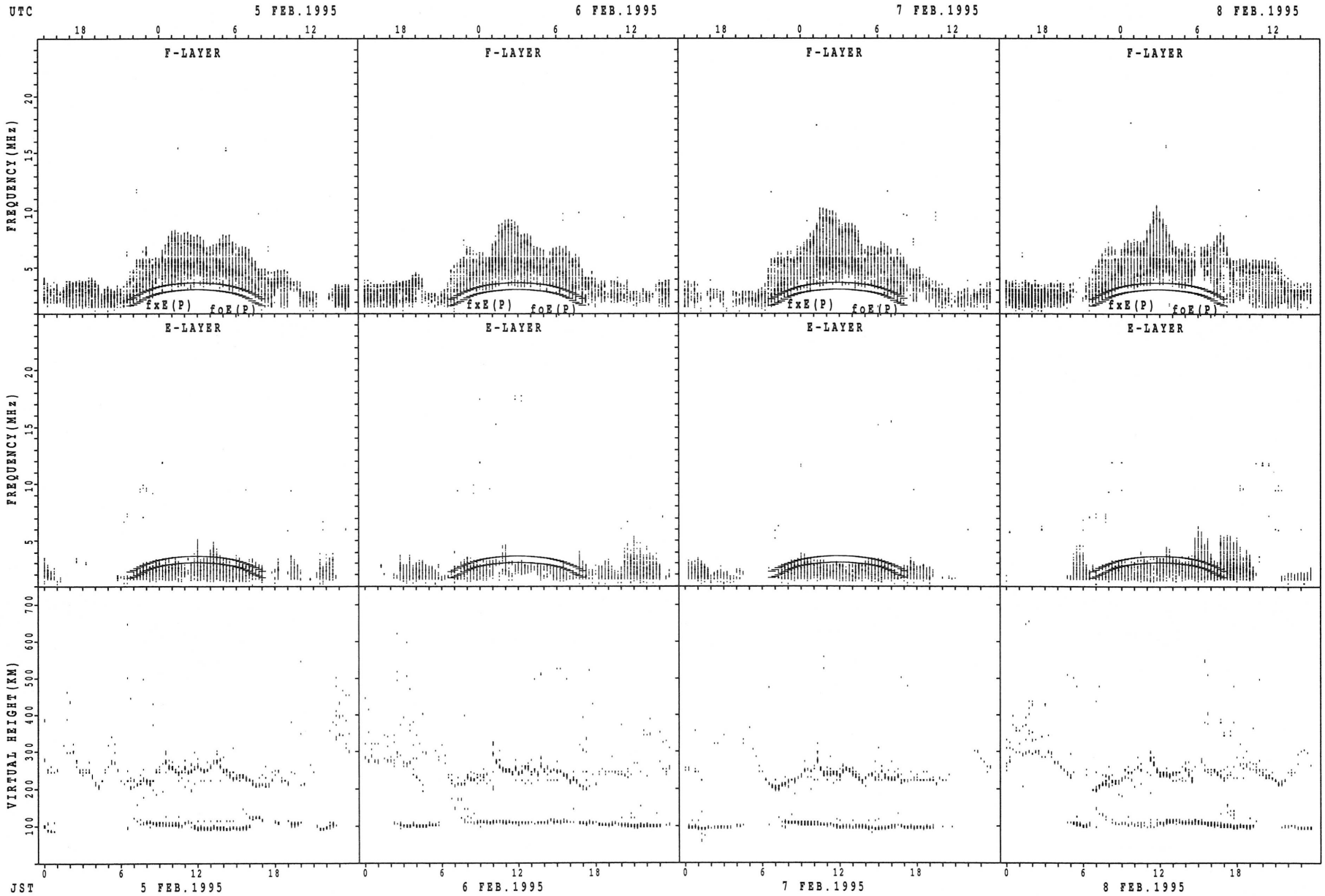
SUMMARY PLOTS AT WAKKANAI



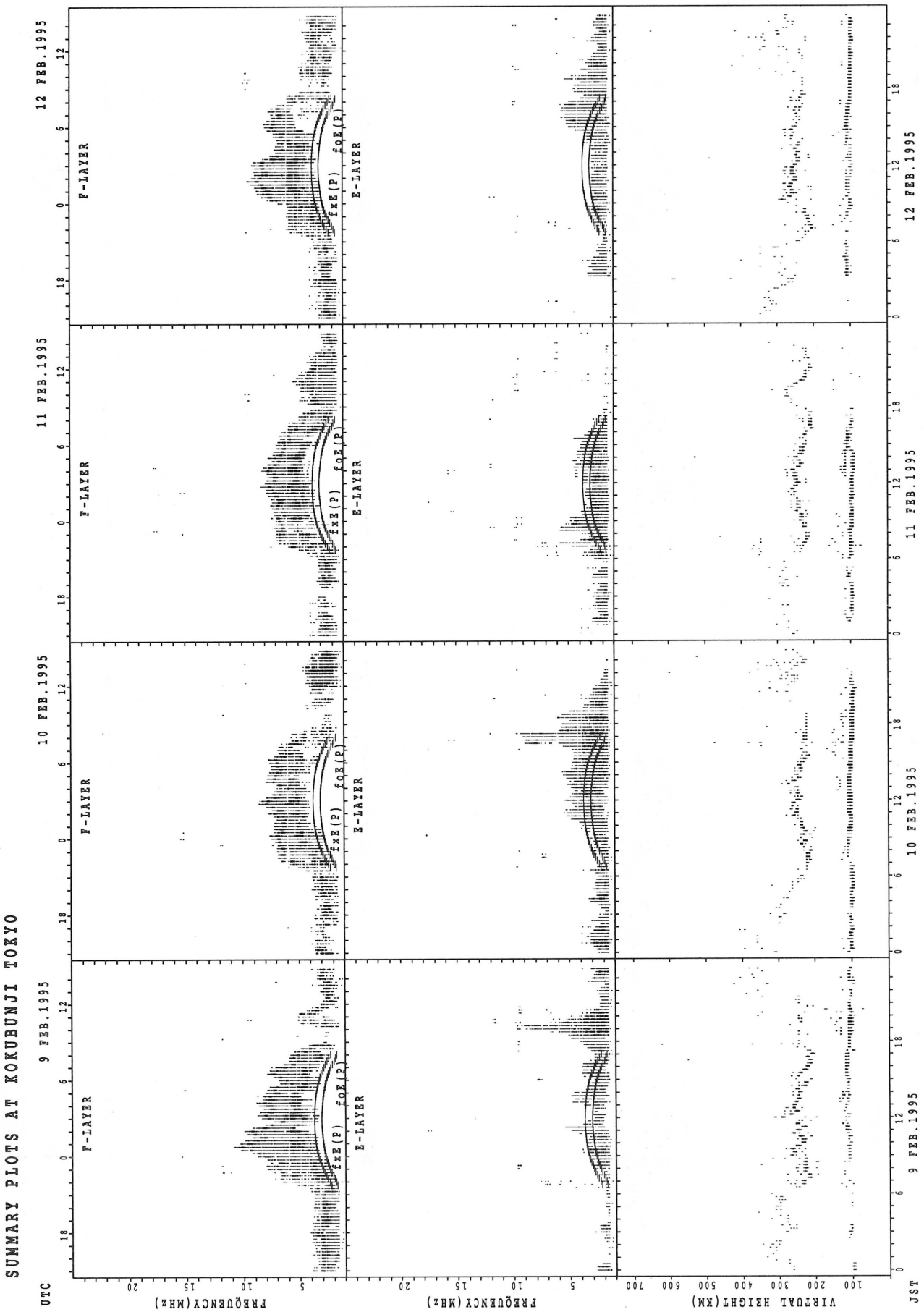
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
JST
1 FEB.1995
2 FEB.1995
3 FEB.1995
4 FEB.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

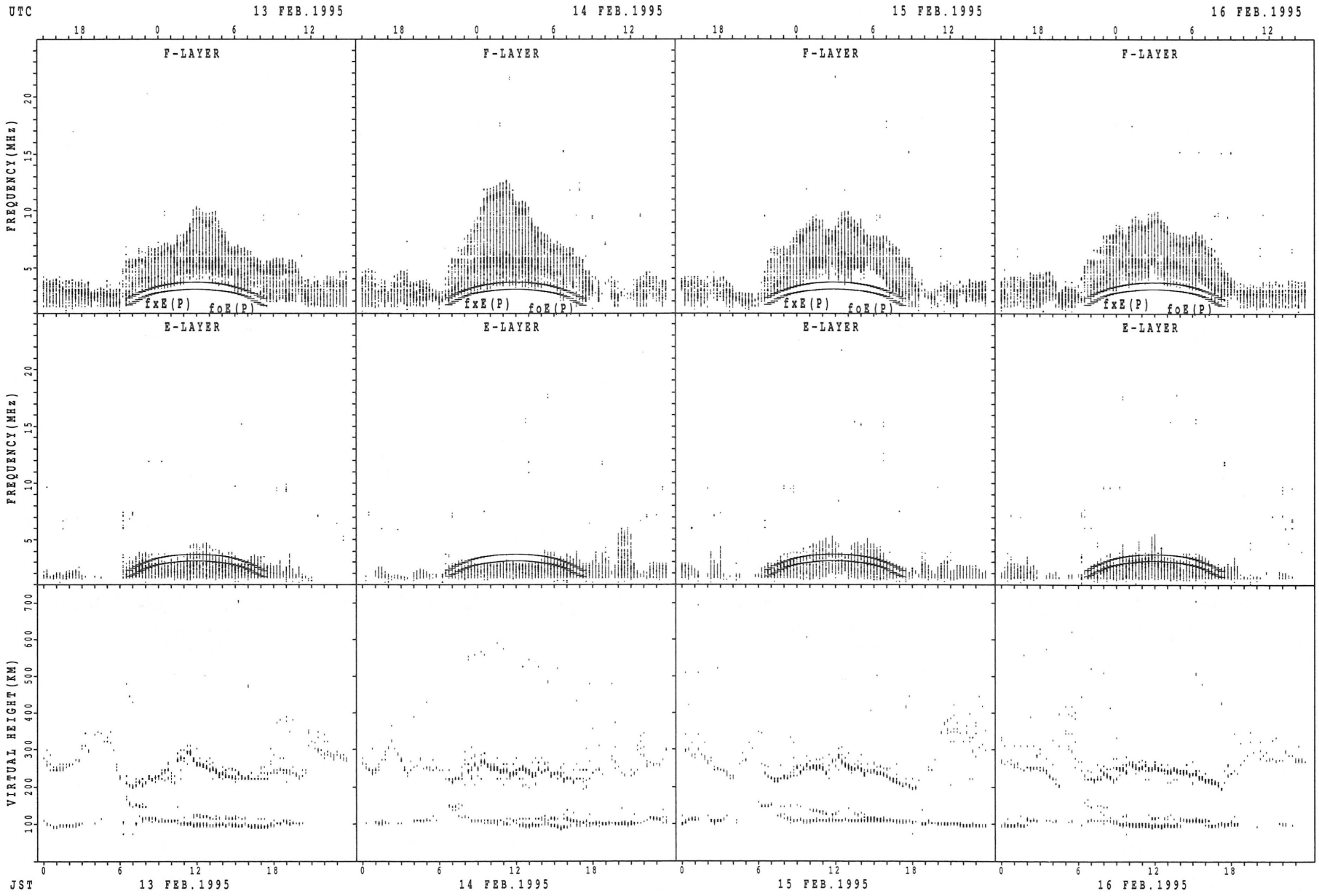
SUMMARY PLOTS AT KOKUBUNJI TOKYO



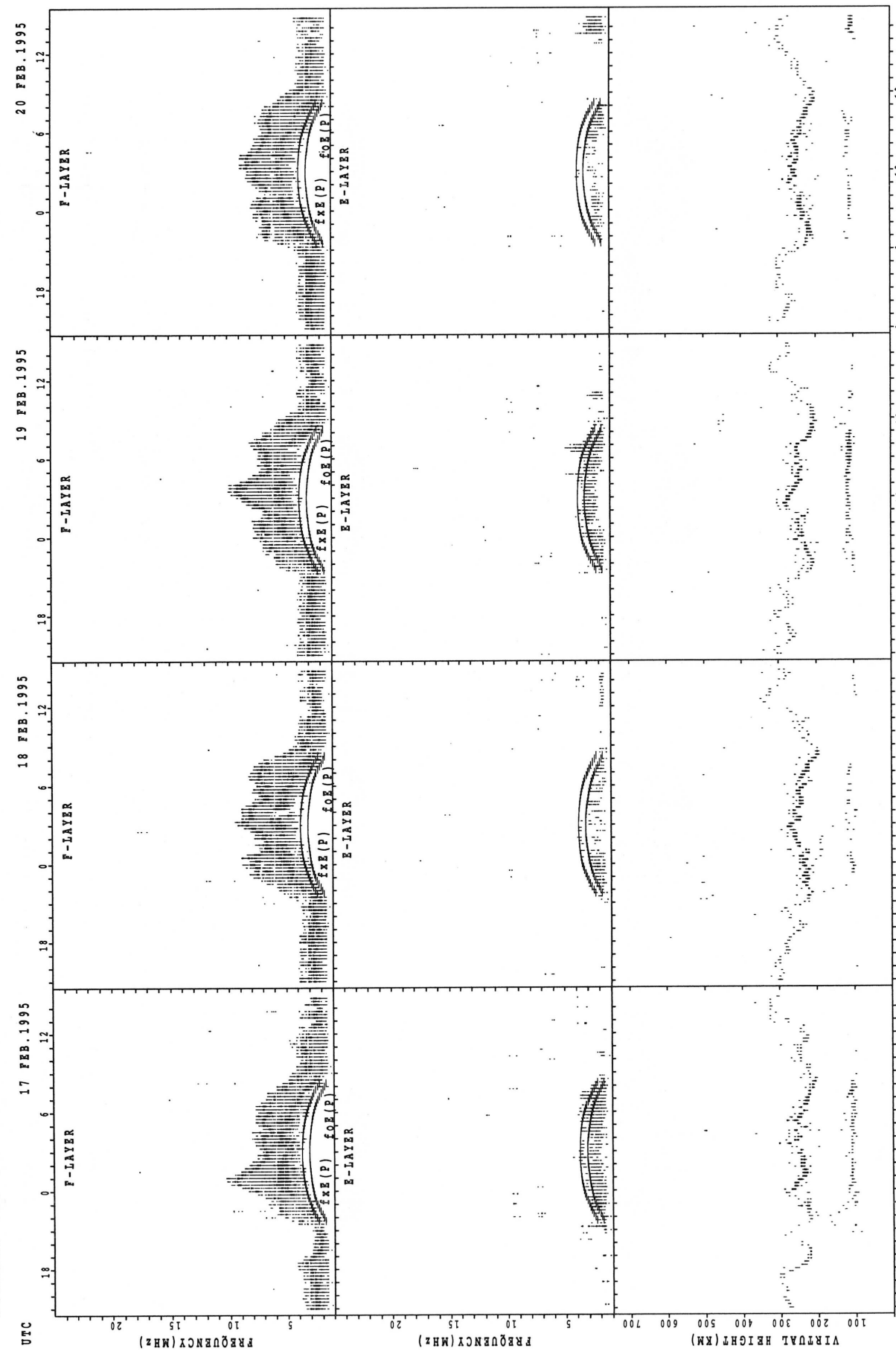
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
JST
9 FEB.1995
10 FEB.1995
11 FEB.1995
12 FEB.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

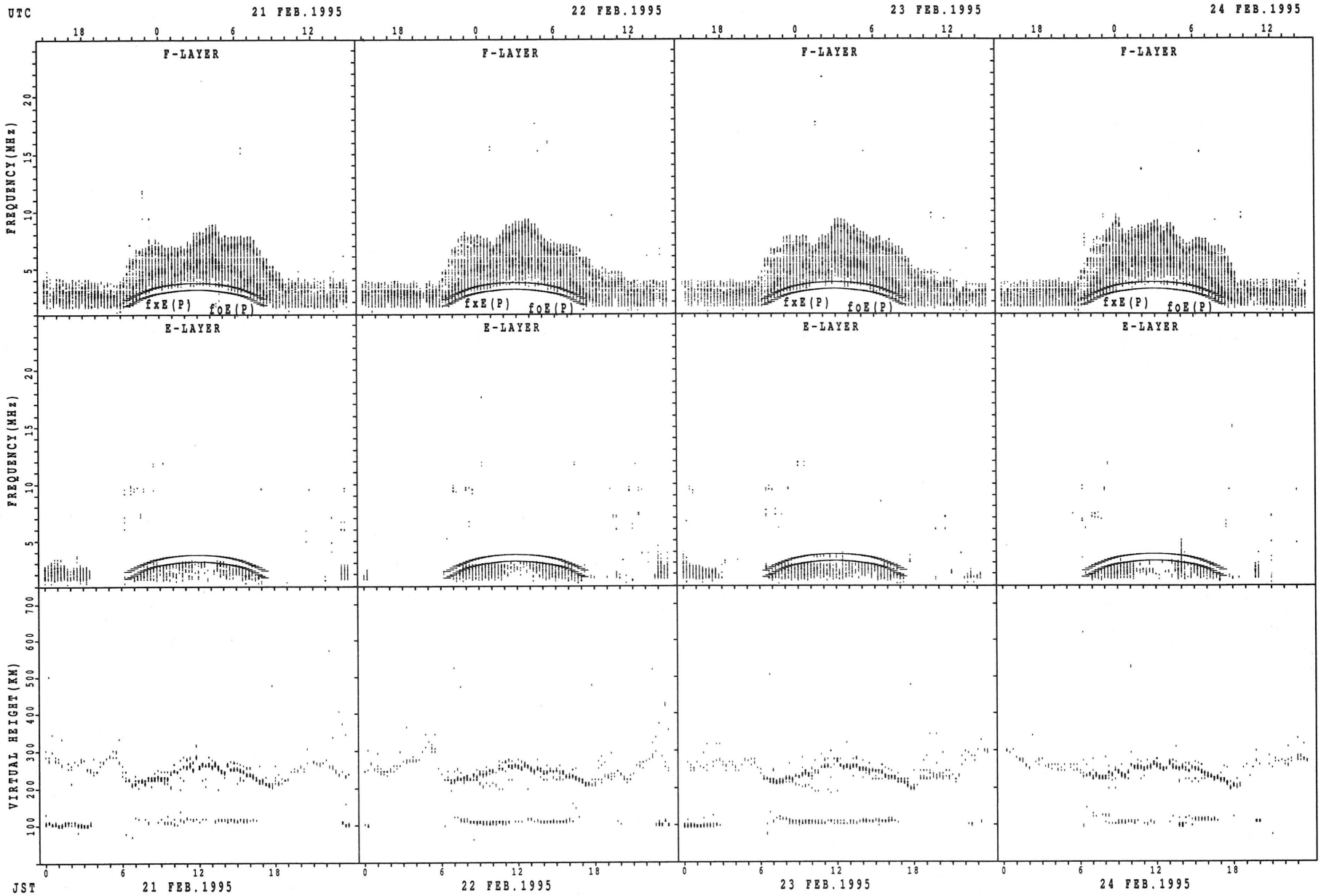
SUMMARY PLOTS AT KOKUBUNJI TOKYO



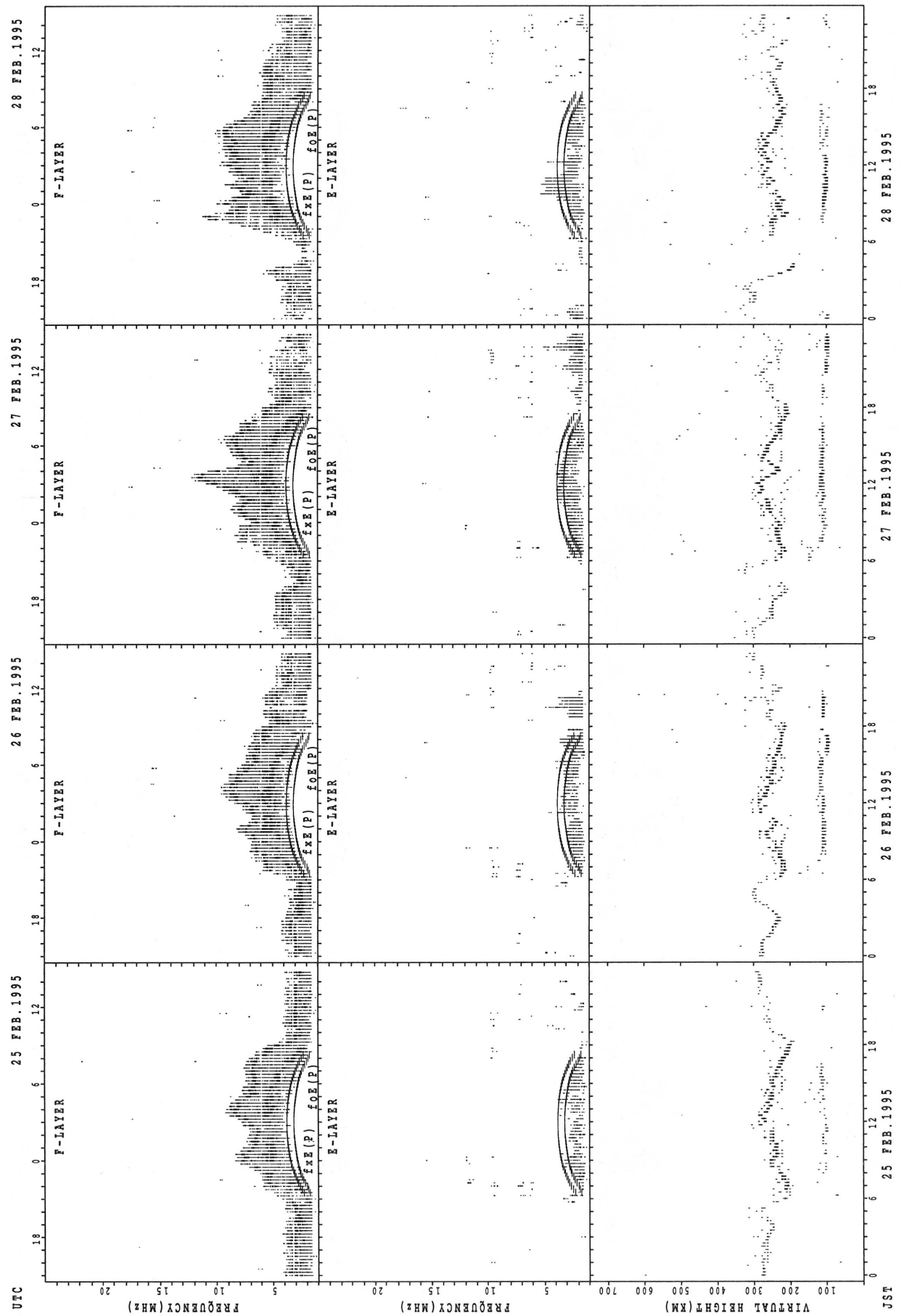
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
JST
17 FEB.1995
18 FEB.1995
19 FEB.1995
20 FEB.1995
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

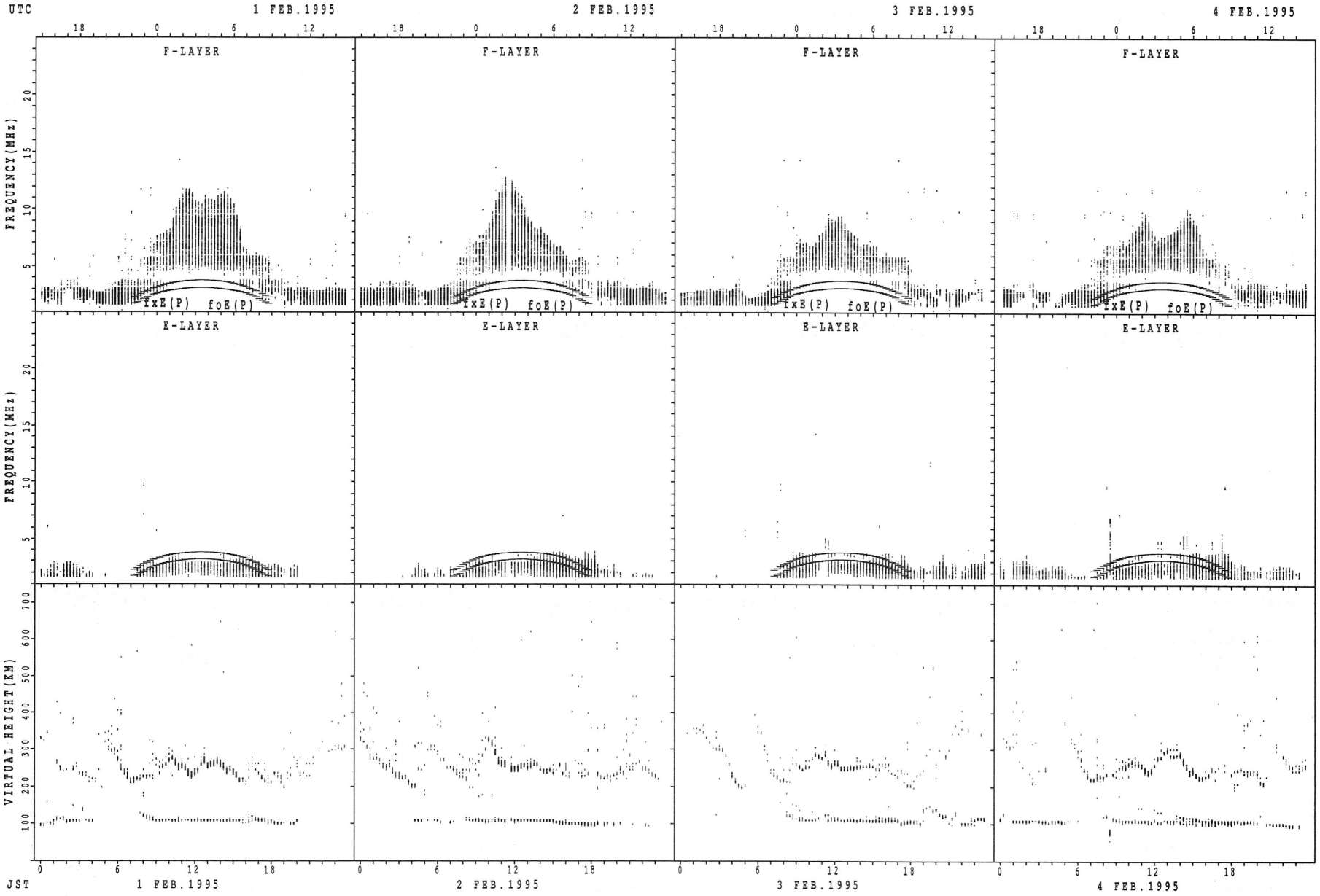
SUMMARY PLOTS AT KOKUBUNJI TOKYO



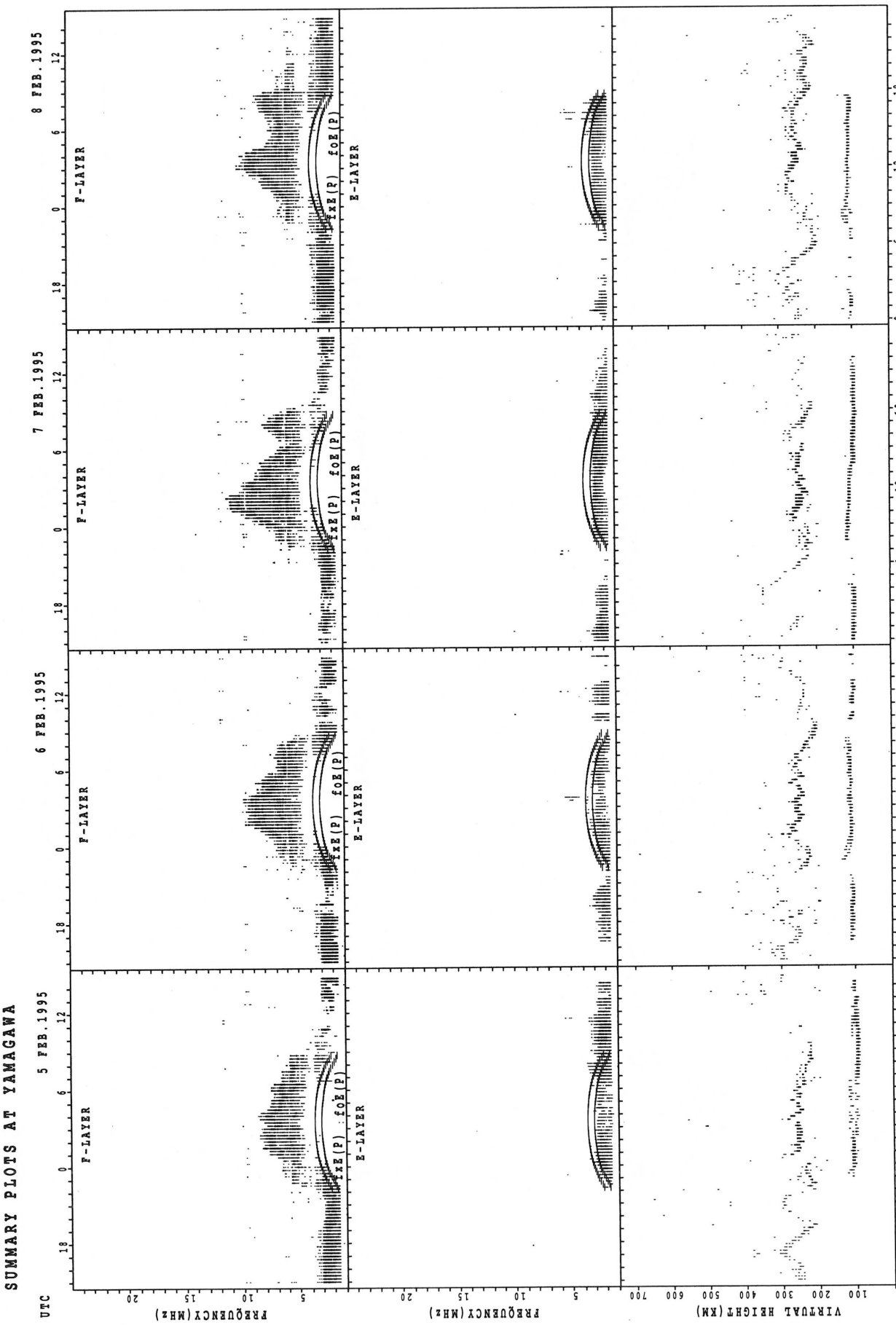
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
JST
25 FEB.1995
26 FEB.1995
27 FEB.1995
28 FEB.1995
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

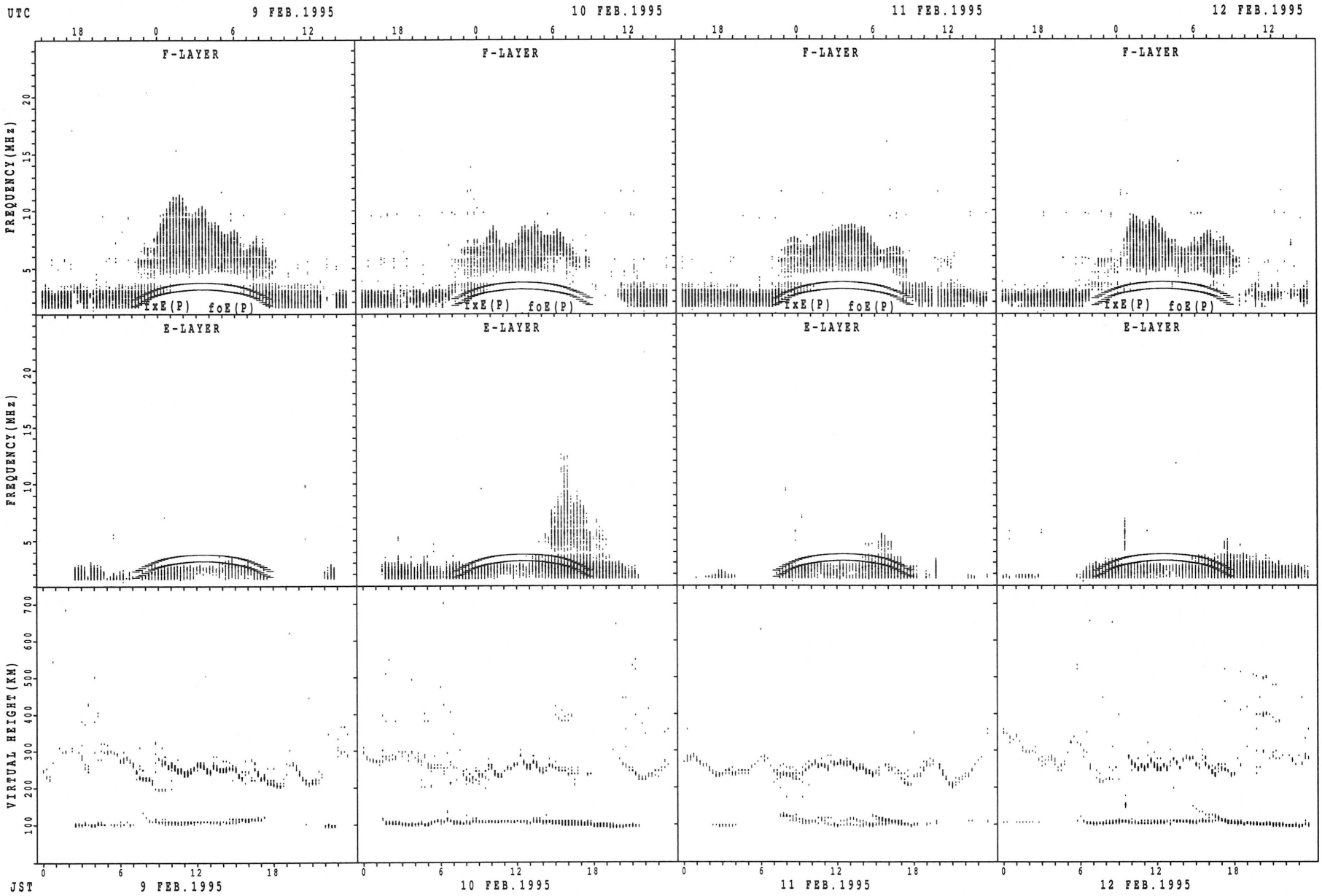
SUMMARY PLOTS AT YAMAGAWA



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

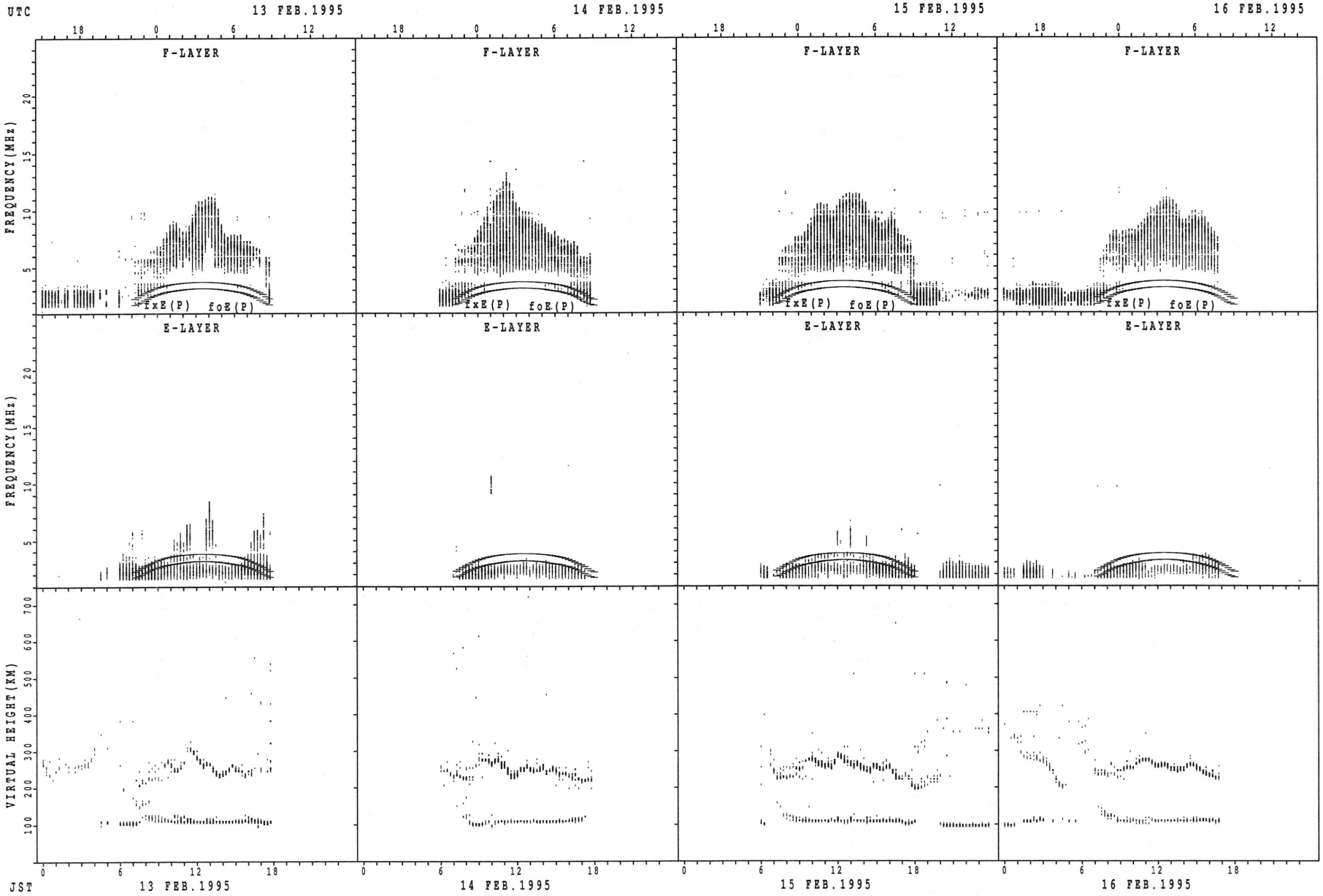

SUMMARY PLOTS AT YAMAGAWA
UTC
JST
5 FEB.1995
6 FEB.1995
7 FEB.1995
8 FEB.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
fxE(P) : PREDICTED VALUE FOR fxE
foE(P) : PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



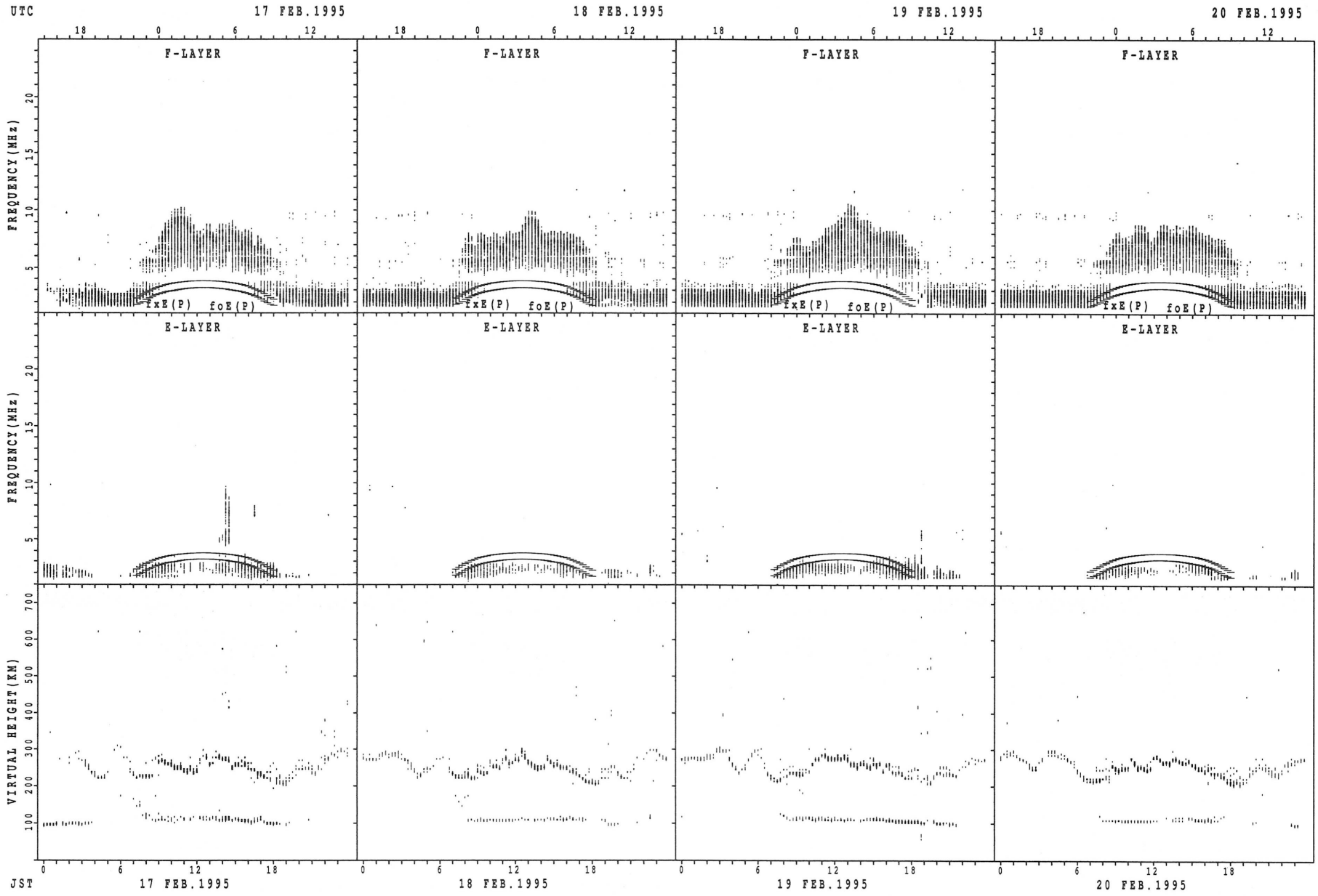
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA

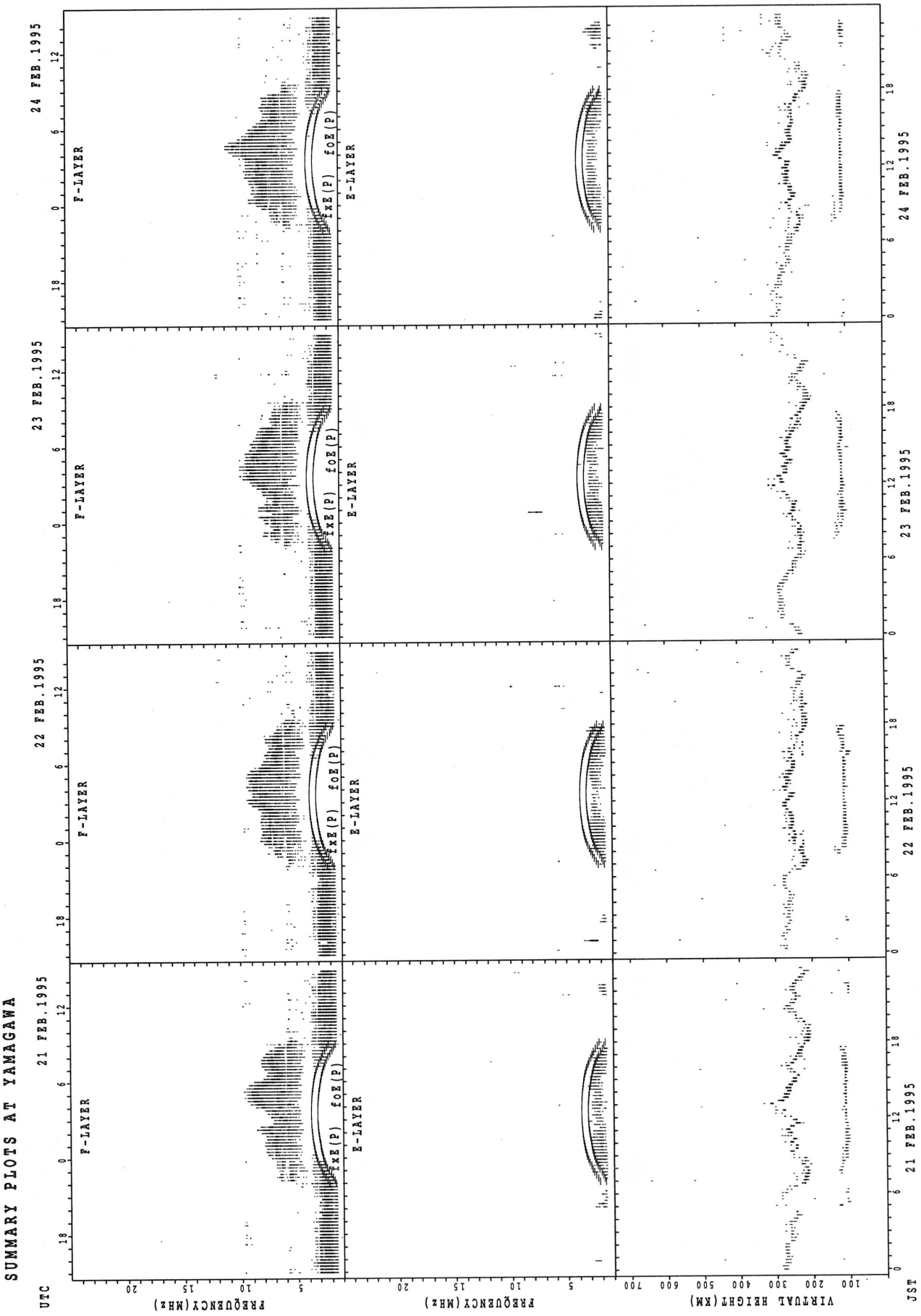


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

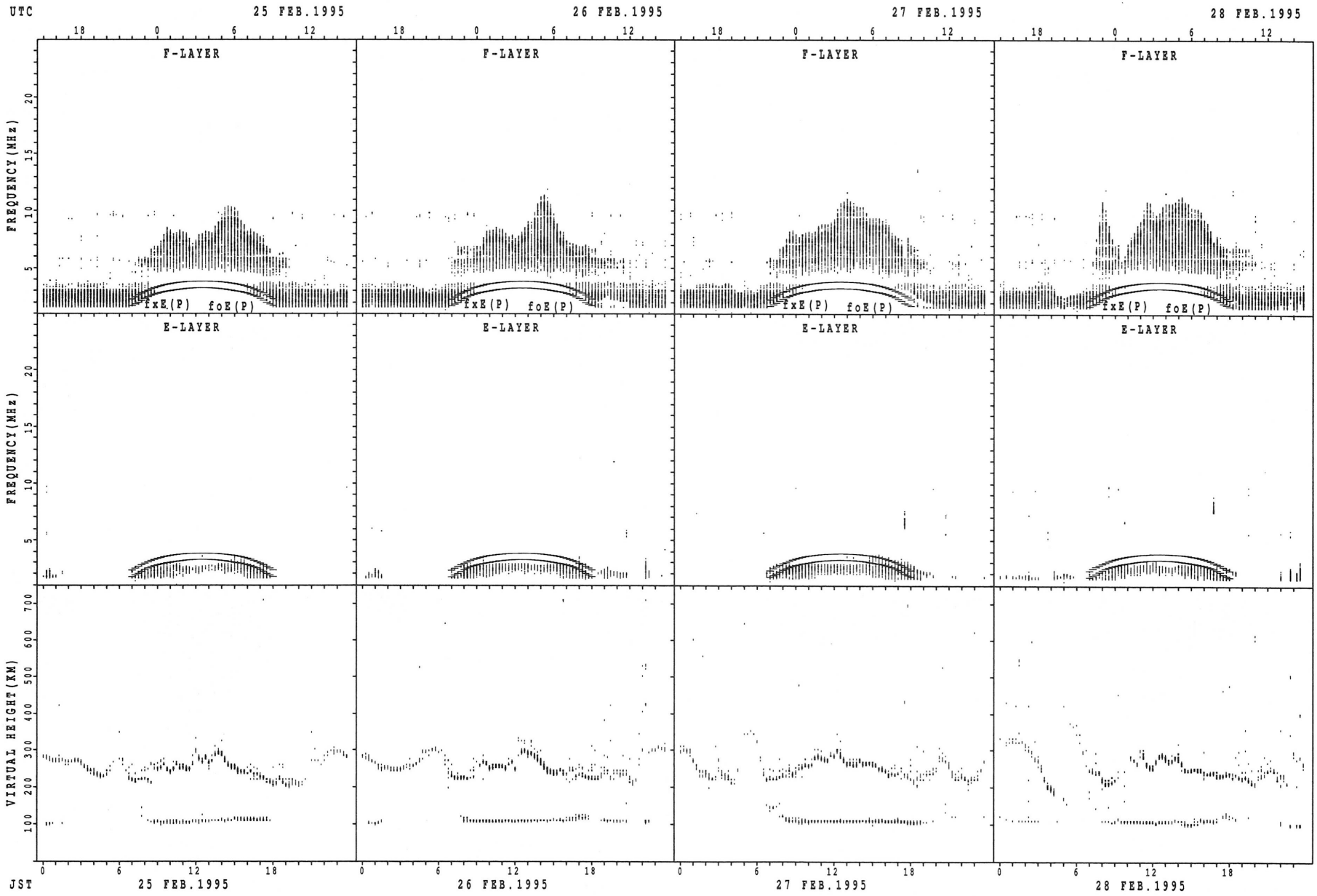
SUMMARY PLOTS AT YAMAGAWA



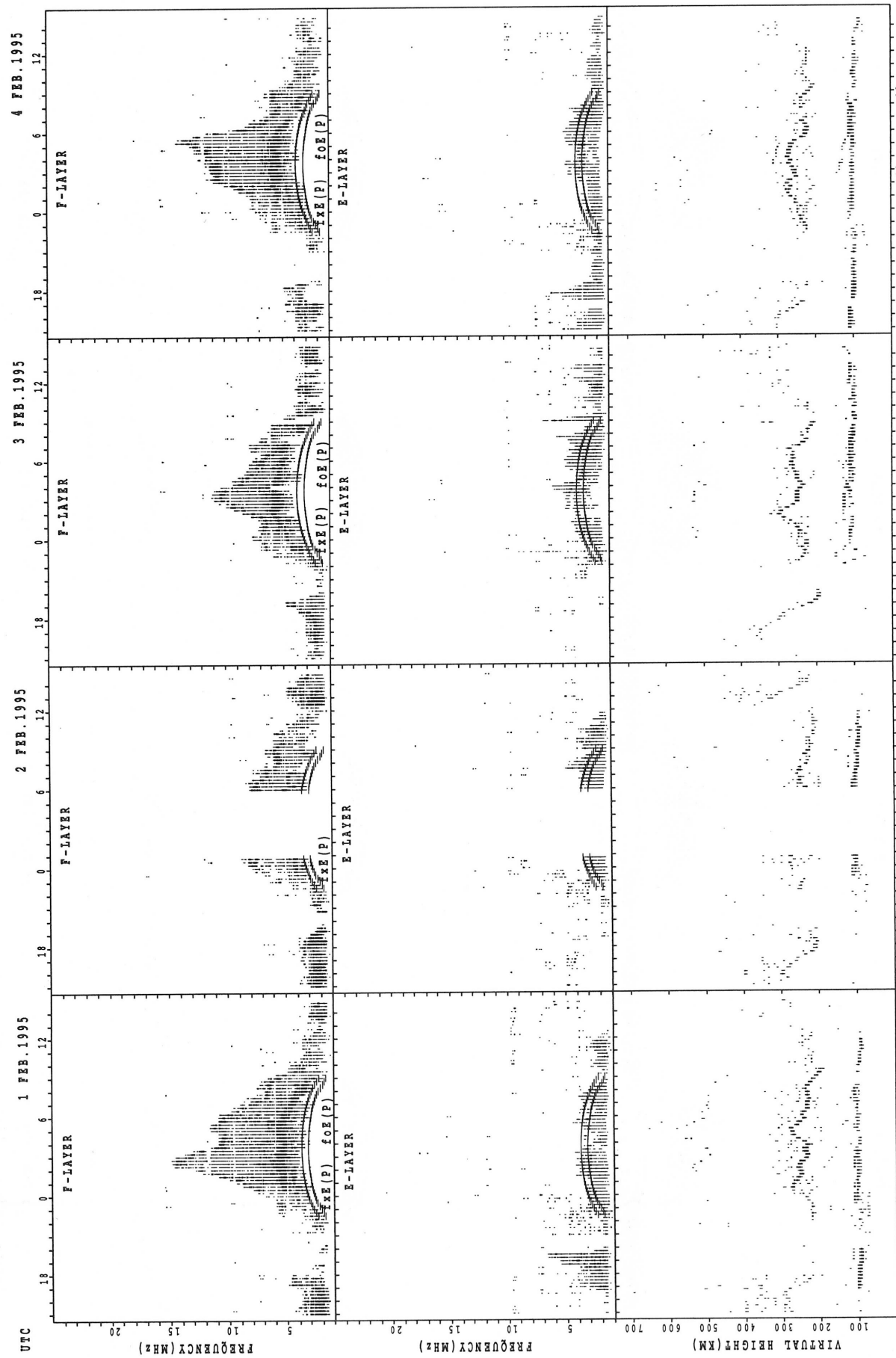
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT YAMAGAWA
UTC
21 FEB.1995
22 FEB.1995
23 FEB.1995
24 FEB.1995
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

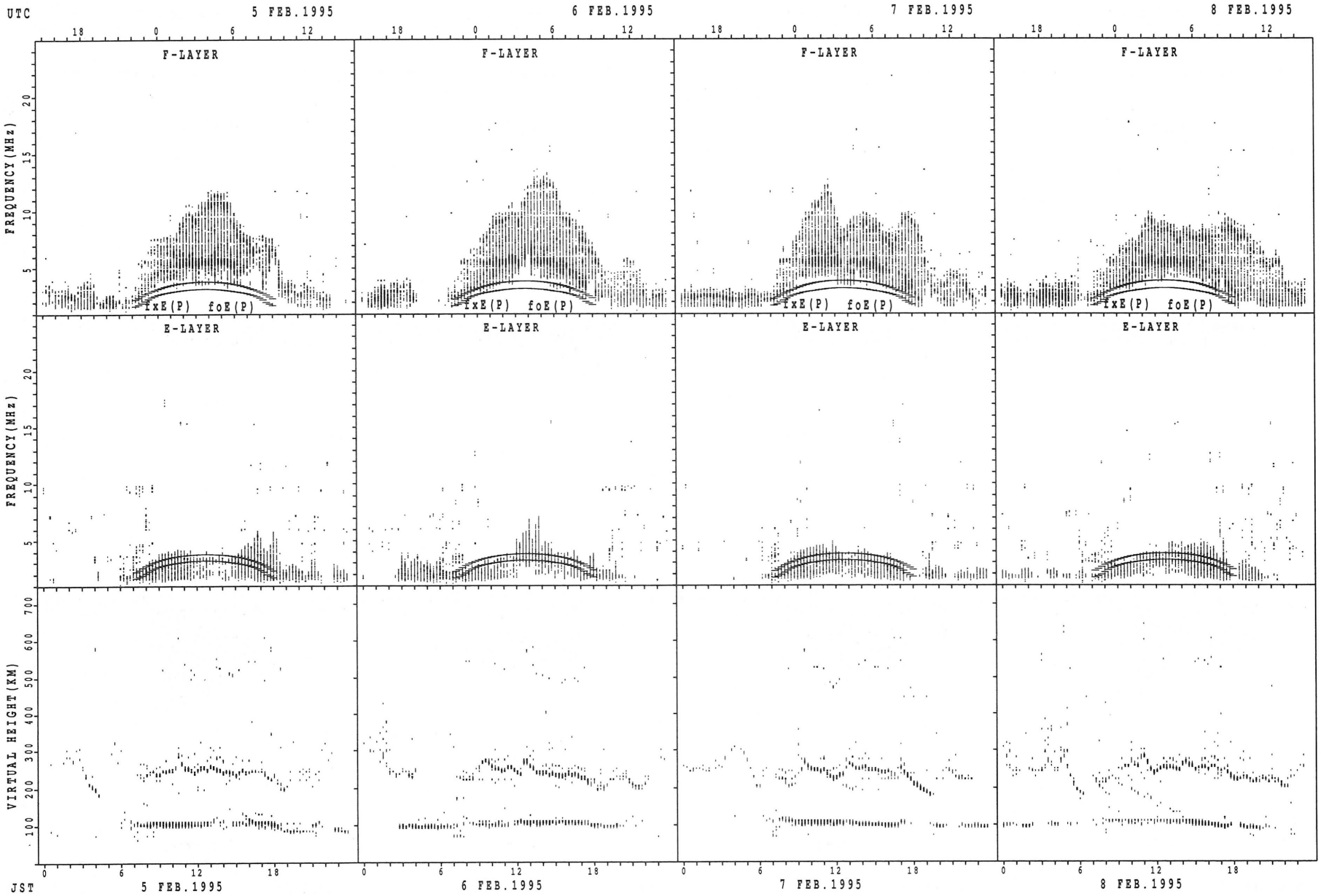
SUMMARY PLOTS AT YAMAGAWA



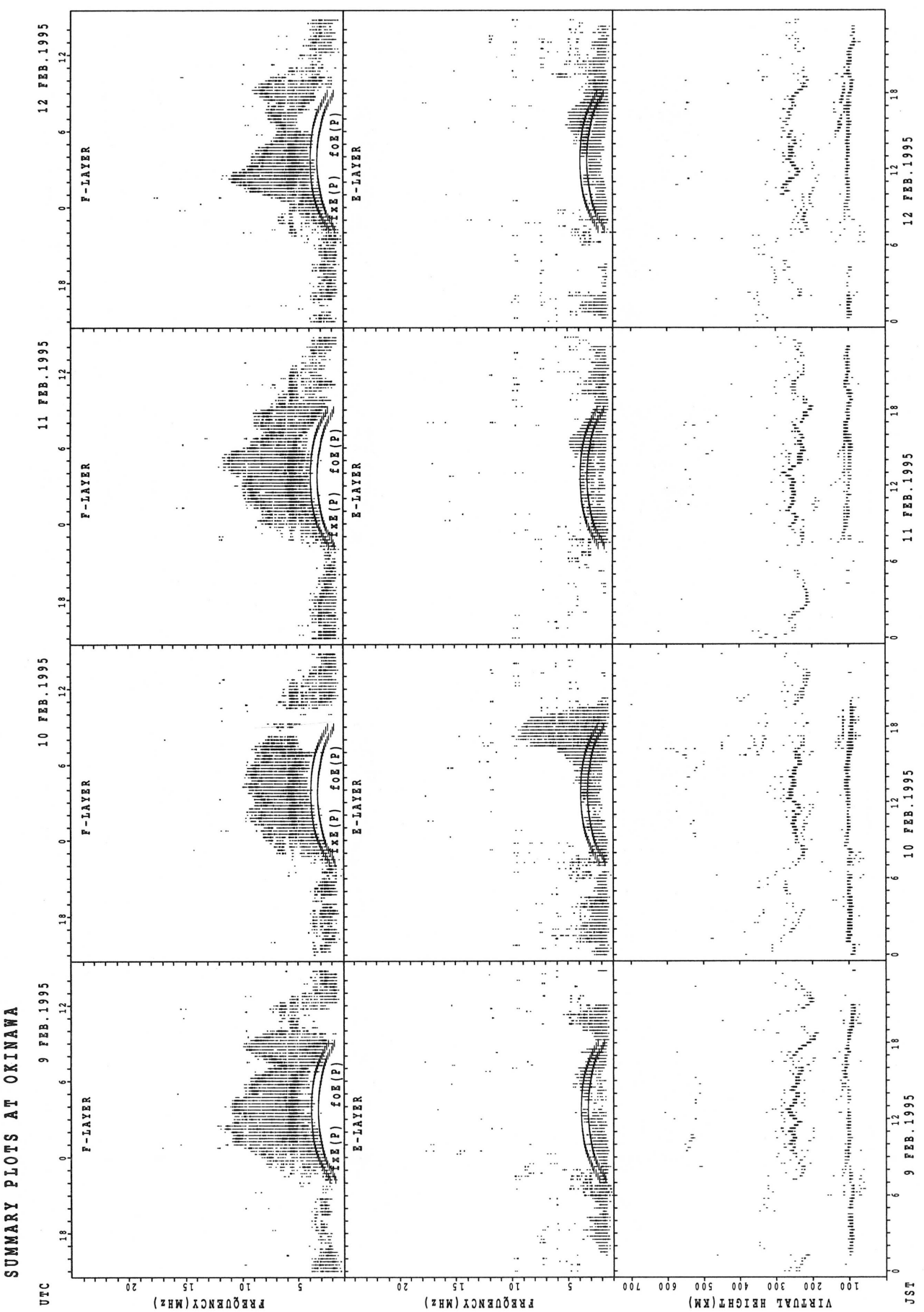
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT OKINAWA
UTC
JST
1 FEB.1995
2 FEB.1995
3 FEB.1995
4 FEB.1995
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

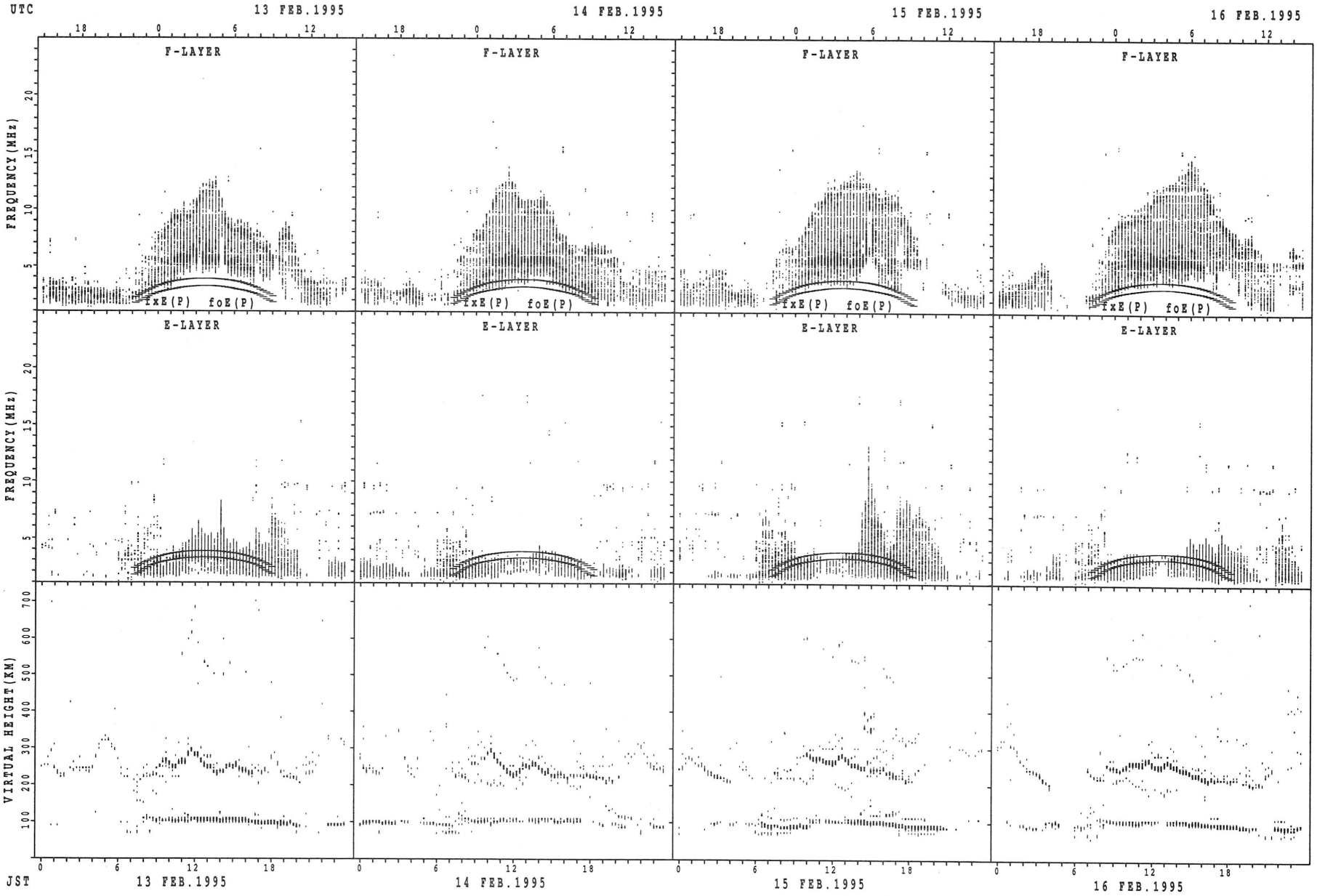
SUMMARY PLOTS AT OKINAWA



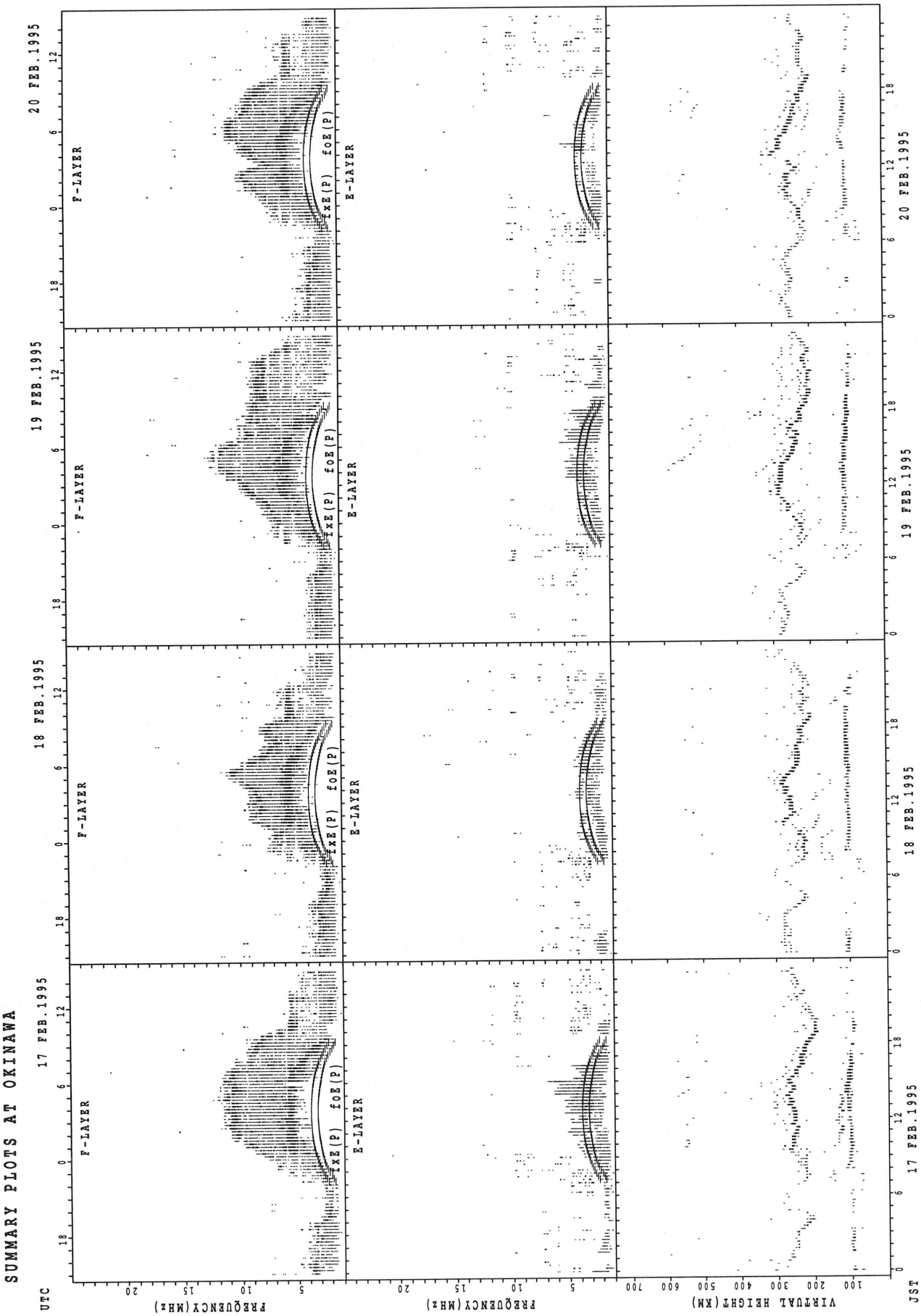
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT OKINAWA
UTC
JST
9 FEB.1995
10 FEB.1995
11 FEB.1995
12 FEB.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

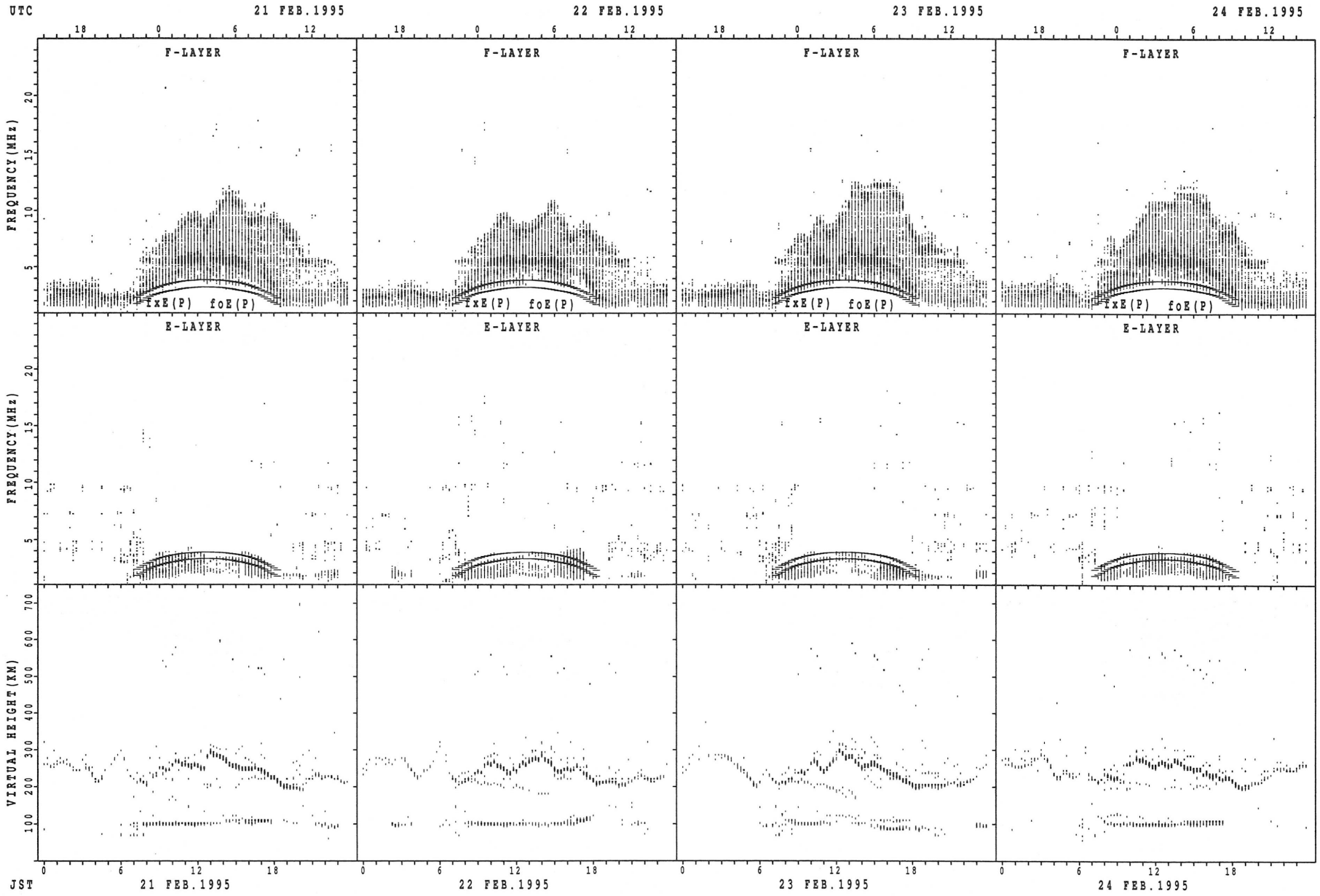
SUMMARY PLOTS AT OKINAWA



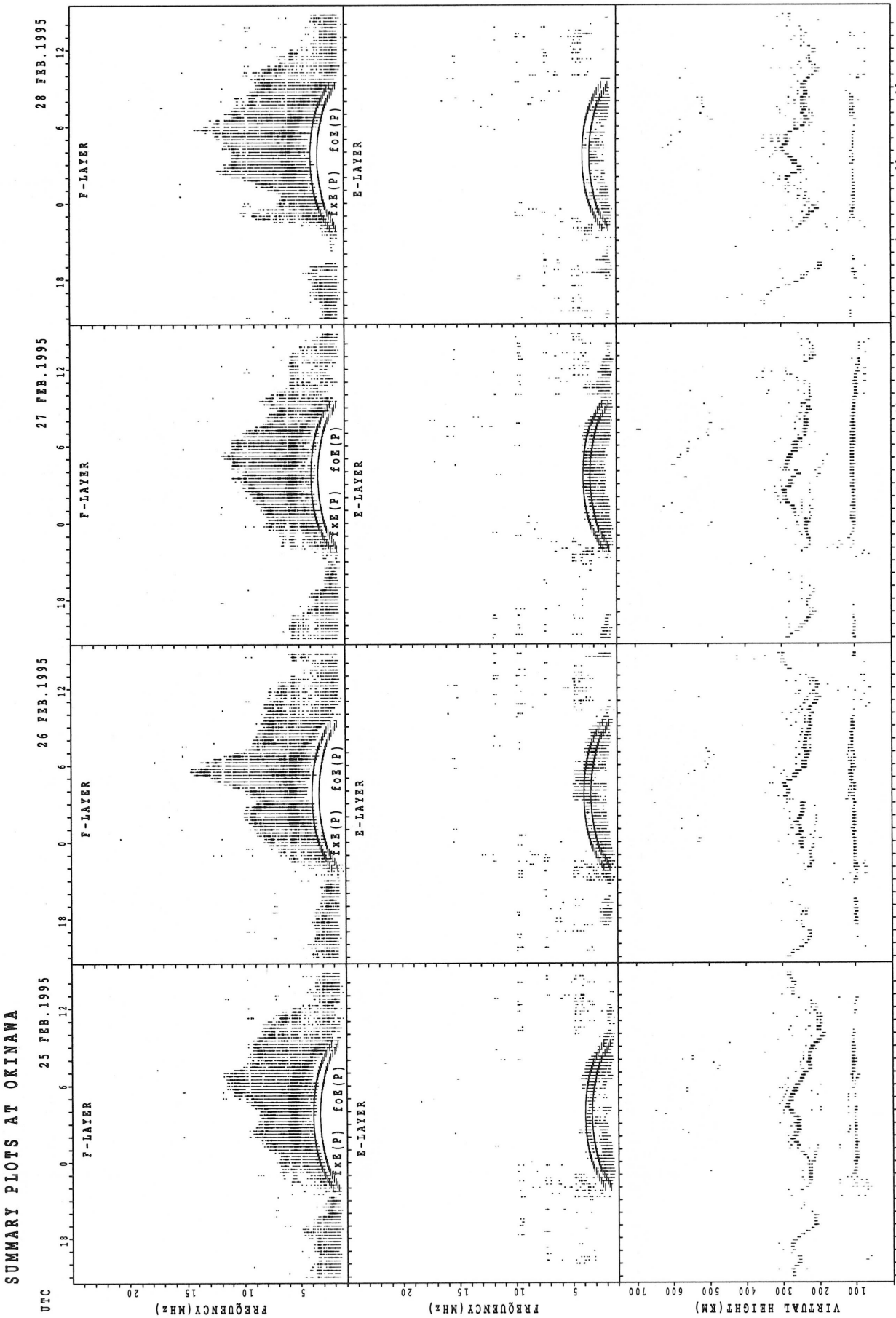
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT OKINAWA
17 FEB.1995
18 FEB.1995
19 FEB.1995
20 FEB.1995
UTC
JST
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT OKINAWA
UTC
JST
25 FEB.1995
26 FEB.1995
27 FEB.1995
28 FEB.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

MONTHLY MEDIANS OF h'F AND h'Es

FEB.1995 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION WAKKANAI LAT. 45.4N LON. 141.7E

	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									20	20	27	26	23	26	26	23	14							
MED									234	241	248	248	246	250	255	248	240							
U Q									243	252	262	254	256	258	264	252	248							
L Q									229	232	242	244	232	242	246	238	234							

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10							11	23	27	28	26	24	26	28	24	19	16	13	14	11	11		11
MED	98							113	111	113	110	110	110	113	113	115	113	103	105	104	103	101		99
U Q	99							149	125	119	119	137	115	117	119	119	121	107	110	107	105	105		103
L Q	97							103	103	105	106	107	105	107	107	113	107	98	98	99	97	99		97

h'F STATION KOKUBUNJI LAT. 35.7N LON. 139.5E

	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	25	25	28	25	23	22	18							
MED									248	248	256	254	259	258	254	256	248							
U Q									258	256	267	276	274	266	260	268	250							
L Q									238	239	250	248	245	247	246	248	242							

h'Es

	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	25	28	27	25	26	24	25	28	26	16	14	15	13		10	11
MED								152	113	111	113	113	113	112	113	114	113	105	105	105	105		100	103
U Q								161	137	131	125	121	117	120	119	117	115	108	107	111	111		103	105
L Q								131	111	107	107	108	107	107	105	107	107	98	97	99	103		97	99

h'F STATION YAMAGAWA LAT. 31.2N LON. 130.6E

	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									12	22	27	28	27	28	27	26	25	21						
MED									249	255	262	260	262	262	260	253	254	248						
U Q									255	270	274	274	272	270	272	262	265	256						
L Q									245	248	256	254	252	253	248	248	246	241						

h'Es

	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	25	28	28	27	26	26	27	28	28	26	15	13	13			
MED								143	123	119	113	111	111	113	113	113	113	113	105	107	105			
U Q								175	169	125	119	113	115	113	115	115	113	115	109	112	111			
L Q								107	119	111	110	109	111	111	111	111	111	107	99	102	101			

MONTHLY MEDIANS OF h'F AND h'Es

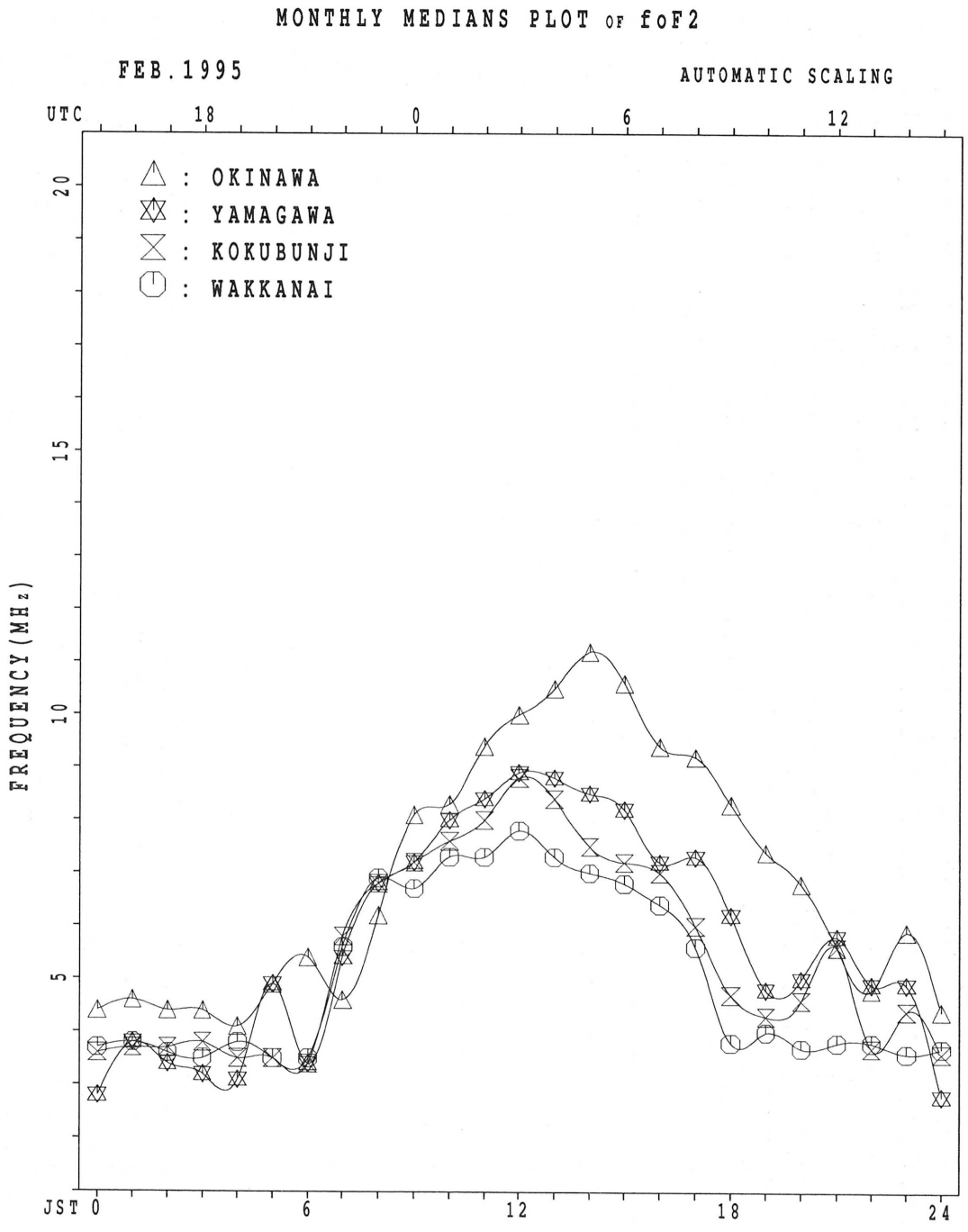
FEB.1995 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION OKINAWA LAT. 26.3N LON. 127.8E

	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	26	26	27	27	26	27	28	22	23	13				
MED										252	263	262	252	270	258	244	243	237	230	248				
U Q										272	266	274	262	278	276	254	248	256	240	264				
L Q										244	258	250	244	258	248	238	238	230	222	236				

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT				10				12	22	28	26	25	27	24	26	28	28	27	14	20	14			
MED				98				97	115	107	107	107	109	111	112	111	107	107	103	97	94			
U Q				99				112	123	150	113	139	125	120	119	113	110	109	105	100	101			
L Q				95				92	105	104	105	105	107	105	107	105	103	105	97	95	91			


MONTHLY MEDIANS PLOT OF foF2
FEB.1995
AUTOMATIC SCALING
UTC
18
0
6
12
△ : OKINAWA
⛛ : YAMAGAWA
⧖ : KOKUBUNJI
○ : WAKKANAI
FREQUENCY(MHz)
5
10
15
20
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	35	X 38	42	49	38	46	55												X 42	X 42	X 33	X 31	38	37
2	38	39	40	X 38	X 31	X 22	X 28												X 46	X 44	X 32	X 36	X 38	37
3	X 35	X 35	35	X 33	X 36	X 27	X 30												X 42	X 46	X 38	X 36	X 40	39
4	X 38	X 39	46	48	31	X 37	X 39												X 41	X 44	X 47	X 37	X 45	X 42
5	42	X 39	40	40	X 46	36	X 36												X 48	X 49	X 39	X 33	X 34	36
6	36	X 36	38	40	46	28	X 28												X 45	X 41	X 44	X 36	36	38
7	X 40	X 40	X 33	X 32	X 30	X 31	X 36												X 53	X 44	X 38	X 30	X 34	X 39
8	X 40	X 38	38	X 36	X 38	X 38	X 31												X 59	X 60	X 62	X 58	X 44	X 39
9	X 42	X 39	X 42	X 43	X 40	X 40	X 42												A	A	X 53	X 33	32	35
10	35	36	X 36	X 37	X 38	X 39	X 39												A	A	X 41	X 43	45	43
11	X 37	X 36	X 36	X 36	X 36	X 36	X 36												X 43	X 49	X 56	X 47	X 39	X 30
12	X 32	X 36	X 34	X 40	X 37	X 34	X 38												X 49	X 49	X 46	X 47	X 45	X 48
13	X 45	X 46	X 41	X 39	X 36	X 37													X 61	X 60	X 53	X 44	X 47	X 46
14	X 50	X 48	X 44	X 49	X 40	X 41													X 44	X 42	X 42	A	X 45	X 43
15	42	X 44	X 45	X 44	X 36	X 28													X 54	X 38	X 36	35	X 40	41
16	40	44	X 44	X 45	X 46	35													X 46	X 38	X 39	X 42	X 39	X 42
17	X 40	X 39	X 38	X 43	X 39	X 31													X 48	X 44	X 47	X 43	X 36	X 38
18	X 40	X 39	X 40	X 40	X 40	X 38													X 46	X 42	X 39	X 36	X 39	X 39
19	X 40	X 42	X 40	X 39	X 39	X 39													X 57	X 40	X 42	X 36	X 37	X 39
20	X 38	X 39	X 40	X 39	X 38	X 39													X 51	X 41	X 42	X 41	X 42	X 43
21	X 44	X 44	X 44	X 43	X 39	X 40													X 54	X 44	X 45	X 44	X 44	X 47
22	X 42	X 42	X 39	X 39	X 40	X 40													X 54	X 50	X 50	X 41	X 42	42
23	X 44	X 43	X 41	X 42	X 42	X 41													X 54	X 48	X 47	X 45	X 37	X 39
24	X 40	X 41	X 42	X 42	X 43	X 41													X 55	X 44	X 40	X 42	X 40	X 41
25	X 42	X 42	X 42	X 43	X 39	X 41													X 58	X 43	X 44	X 43	X 40	X 40
26	X 42	X 43	X 44	X 42	X 37	X 36													X 62	X 60	X 58	X 54	X 50	X 47
27	X 48	X 49	X 50	X 50	X 40	X 38													X 60	X 52	X 52	X 51	X 56	X 45
28	X 43	X 45	X 44	X 48	X 50	O X 26													X 64	X 63	X 62	X 56	X 45	X 47
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	12												26	26	28	27	28	28
MED	40	40	40	41	39	38	36												52	44	44	42	40	40
U Q	42	44	44	44	40	40	39												57	49	51	45	45	43
L Q	38	38	38	39	36	32	30												46	42	39	36	38	38

FEB. 1995 fxI (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 28	32	34	F 41	F 28	F 34	F 39	47	S 58	78	97	96	90	67	73	72	51	46	36	36	27	25	F 28	F 24
2	F 29	F 30	F 32	32	26	18	J R 22	49	58	68	87	105	88	65	70	65	49	47	40	37	27	30	32	27
3	F 29	F 29	F 27	F 26	30	F 20	R 24	48	53	57	65	85	88	71	67	58	56	50	36	40	F 33	30	F 34	F 30
4	32	34	F 38	F 40	F 24	30	33	54	73	81	80	85	65	65	82	88	56	45	35	38	41	31	39	J R 36
5	F 36	33	F 33	F 32	40	28	30	48	67	57	78	77	73	64	74	66	62	46	42	43	34	27	28	F 26
6	F 30	30	F 32	F 33	F 36	F 21	22	49	65	57	68	88	82	74	61	63	59	46	39	35	38	30	F 28	F 32
7	34	34	27	26	24	25	30	60	61	64	78	97	88	86	64	66	63	55	47	38	32	24	29	33
8	34	32	F 32	30	31	32	25	51	65	63	68	79	98	70	68	59	64	74	53	54	56	52	38	33
9	36	33	36	37	34	34	36	S 62	75	83	99	95	81	82	76	66	68	55	A	A	47	27	F 26	F 26
10	F 28	F 30	30	31	31	33	33	56	66	70	67	74	81	64	74	71	65	48	A	A	35	37	F 37	F 36
11	31	30	30	30	30	30	30	58	70	69	70	72	75	80	72	65	60	47	37	43	50	41	33	24
12	26	30	28	34	31	28	32	55	53	62	82	88	86	66	64	76	70	58	43	43	40	41	39	42
13	39	40	35	33	30	32	33	55	59	64	69	75	98	93	80	66	60	52	55	54	47	38	41	41
14	44	42	38	43	34	35	26	J R 52	72	92	116	120	105	99	77	68	64	56	38	36	36	A	39	37
15	F 35	38	39	38	30	23	24	62	J R 64	78	88	88	85	95	88	73	73	63	47	32	30	F 30	34	F 31
16	F 32	36	38	39	40	F 28	28	59	J R 74	81	83	89	96	83	75	76	72	58	40	32	33	36	33	36
17	34	33	32	37	33	25	25	49	R 63	80	98	80	69	76	73	71	66	57	42	38	41	37	J R 30	32
18	34	33	34	34	34	32	34	52	74	84	67	73	87	84	72	71	76	64	40	36	33	30	33	33
19	34	36	34	33	33	33	33	53	64	73	73	71	89	94	68	70	76	64	52	34	36	30	32	33
20	32	33	35	33	32	33	37	68	68	71	69	74	80	86	73	66	68	62	45	35	36	35	36	36
21	38	38	38	37	33	34	38	59	68	70	66	69	78	83	74	74	74	64	48	39	39	38	38	41
22	36	36	33	33	34	34	38	63	78	74	70	80	87	89	76	70	67	63	49	44	44	35	36	F 35
23	38	37	35	36	36	35	39	67	73	73	68	74	90	85	77	72	70	65	48	42	41	39	31	33
24	34	35	36	36	36	35	40	64	74	92	78	82	88	86	72	71	70	65	49	38	34	36	34	35
25	36	36	36	37	33	35	38	56	60	80	73	67	R 76	88	76	69	71	67	52	37	38	37	34	34
26	36	37	38	36	31	32	34	58	R 63	66	77	66	80	92	86	73	68	64	56	54	52	48	44	41
27	42	43	44	44	34	32	45	61	79	68	83	81	106	103	79	86	81	71	54	46	45	48	50	39
28	37	39	38	42	44	20	32	63	110	94	75	78	93	89	90	93	69	64	58	57	56	50	39	41
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	26	28	27	28	28
MED	34	34	34	35	33	32	33	56	66	72	76	80	87	84	74	70	68	58	46	38	38	36	34	34
U Q	36	37	38	38	34	34	38	62	74	80	83	88	90	89	77	73	70	64	52	43	44	39	38	36
L Q	32	32	32	32	30	26	27	52	62	65	68	74	80	70	71	66	61	49	40	36	34	30	32	32

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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	U L 430	U L 430	L 440	L 430	L	L								
2									L	L	L 448	L 436	L 432	U L 432	L 420	L	280							
3											L	U L 440	L	L 440	U L 412	A								
4									L	L	U L 440	L 440	L 432	L	U L 460	L								
5									L	340	U L 428	424	A	L 432	U L 420	L								
6										L	440	L 444	L 440	U L 440	U L 412	L	L							
7									L	L	U L 440	L 444	L 448	L 444	L	L 344								
8									L	L	L	L	U L 452	U L 436	L 424	A	A							
9									288	L	U L 440	A	U L 492	U L 452	L	L								
10										L	L	L	U L 444	U L 440	A	U L 388								
11									L	L	L 436	L	U L 444	U L 448	L	L	L							
12									296	L	U L 436	L 448	L 452	U L 432		A	A	A						
13										L	L	U L 460	U L 460	U L 444	U L 420	L	L							
14									L	L	L	L 460	U L 460	L 412	L	L								
15										L	L	L	L	U L 468	U L 444	A	L	200						
16									L	L	U L 464	L	L	U L 452	U L 432	L	L							
17									L	U L 420	U L 460	L 448	U L 456	U L 444	U L 448	L								
18									L	U L 444	H 564	U L 448	U L 484	L	U L 444	U L 396	U L 356	L						
19									L	L	U L 452	L	L 452	L	U L 428	L	L							
20										L	L	U L 468	L 456	U L 468	U L 444	U L 392								
21									L	L	U L 440	U L 452	U L 472	U L 456	L	U L 428								
22									L	L	L	U L 468	L 460	U L 444	U L 432	L	L							
23									L	U L 424	U L 456	U L 464	L 460	U L 464	U L 448	L	L							
24								224	L	U L 440	U L 472	U L 464	L 444	L 452	U L 444	U L 432	L							
25									L	L	L	U L 424	U L 484	U L 464	U L 432	L	L							
26									L	L	L 440	L	U L 464	L 456	U L 448	U L 420	L							
27									L	L	U L 460	U L 528	U L 492	L	L 456	U L 432	L	L						
28									L	U L 412	L	L	U L 500	U L 476	U L 440	U L 420	L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	2	6	18	19	24	24	20	9	2	1						
MED								224	292	U 422	U 440	U 448	U 456	U 444	U 436	U 420	318	200						
U Q										U 440	U 460	U 464	U 468	U 456	U 446	U 430								
L Q										412	U 440	440	444	438	U 422	U 390								

FEB. 1995 foF1 (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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	240	275	305	305	305	295	280	250	A	B						
2								136	228	A	308	316	320	308	A	A	A	B						
3								184	H 248	H 304	300	320	316	308	292	272	220	B						
4								160	224	272	300	A	320	288	A	272	224	B						
5								H 184	H 244	276	300	316	A	A	A	A	224	B						
6								180	260	280	A	A	R 312	300	I R 300	268	220	B						
7								164	A	A	292	312	316	300	280	A	208	B						
8								A	248	280	308	316	328	320	308	280	A	B						
9								172	232	292	312	316	320	320	300	276	A 228	B						
10								A	240	276	A	312	A	A	A	A	A	B						
11								A	264	A	292	320	324	316	292	264	A	B						
12								176	232	276	304	316	316	300	296	264	U A 216	B						
13							B	200	H 268	280	308	324	324	316	292	272	240	B						
14							B	184	244	288	304	312	316	304	296	260	A	B						
15							B	180	H 244	292	308	328	328	328	316	A	A	B						
16							B	H 208	256	288	308	316	324	316	300	288	A	B						
17							B	184	252	288	308	328	332	320	304	288	244	B						
18							B	H 204	256	280	304	316	344	I R 300	304	288	I R 250	172						
19							B	180	240	288	R 320	340	344	344	324	A 296	A	A						
20							B	188	248	R 284	I R 300	I R 300	352	I R 350	324	292	248	180						
21							B	184	260	296	312	328	332	328	316	304	256	172						
22							B	A	A	296	308	328	328	R 316	312	296	240	184						
23							B	196	260	296	316	324	320	328	320	288	248	184						
24							B	176	H 248	300	316	I R 300	I R 350	324	A	292	A	192						
25							B	196	260	296	R 308	U R 324	I R 300	332	320	296	260	184						
26							B	188	260	300	R 320	U R 332	336	332	A	A 292	256	A						
27							B	192	260	292	312	336	340	332	A	A	A	180						
28							B	I S 200	252	U A 260	A	A	I R 300	I R 300	316	296	248	180						
29																								
30																								
31																								
	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	26	25	25	25	26	26	21	22	17	9						
MED								184	248	288	308	316	324	316	304	288	240	180						
U Q								194	260	296	312	328	332	328	316	292	249	184						
L Q								176	240	278	302	314	316	300	294	272	222	176						

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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	28	18	21	24	22	E B 10	E B 10	G	31	31	G	G 30	G	G	37	33	28	J A 22	25	E B 11	E B 11	E B 12	E B 10	E B 11
2	E B 14	18	E B 12	E B 13	E B 12	J A 18	E B 14	G	G 20	33	36	38	40	38	J A 31	J A 26	J A 27	J A 26	J A 23	23	21	18	22	E S 14
3	E S 15	E B 14	E B 12	B 14	E B 13	E B 14	B 21	23	G 29	39	42	40	47	G	A 34	A 37	A 28	J A 26	A 29	J A 34	J A 30	24	19	E S 14
4	E S 14	E S 15	E S 14	18	20	18	E B 15	G	24	G	33	J A 44	33	G 20	29	31	J A 37	J A 26	J A 29	J A 50	30	J A 24	J A 28	J A 22
5	J A 29	E B 12	E S 16	E B 13	E B 14	E B 16	E B 15	G	G 24	G 27	34	G	J A 47	J A 38	36	J A 32	30	22	19	J A 22	J A 20	E B 12	J A 31	17
6	E B 14	E B 13	18	32	J A 25	J A 23	19	G	31	32	34	J A 42	32	G 27	G 28	G	G	J A 27	J A 20	34	27	J A 52	J A 40	J A 26
7	E B 12	J A 30	20	22	J A 20	E S 14	E B 13	G	J A 27	J A 34	G 26	G	G 30	G 22	G 26	J A 30	22	J A 22	J A 22	J A 22	20	17	E S 15	E B 15
8	E B 14	E B 12	E B 13	E B 14	E B 14	J A 25	J A 37	20	G	30	32	34	37	G 30	G	J A 60	J A 36	J A 49	J A 48	J A 35	J A 15	19	22	23
9	27	E B 13	E B 13	24	18	20	19	G	G	32	36	J A 46	G	38	41	31	34	25	41	J A 86	J A 40	25	J A 22	J A 28
10	J A 20	J A 28	J A 23	25	J A 26	J A 22	J A 21	24	G	G 26	34	J A 50	J A 50	44	J A 52	J A 44	J A 44	J A 87	56	J A 45	J A 33	J A 23	20	E B 13
11	E B 12	J A 23	26	26	J A 20	J A 20	28	J A 44	J A 26	J A 41	34	35	37	38	39	34	28	21	E B 13	E B 13	E B 14	E B 16	E B 15	E B 14
12	E S 15	E B 14	E B 14	E B 13	J A 26	J A 18	20	G	G	30	G	G 20	G 20	G 21	34	52	52	48	J A 40	J A 42	J A 30	24	30	26
13	23	21	J A 17	22	18	E B 13	E B 14	26	34	32	34	37	41	40	35	31	28	J A 28	27	J A 23	J A 21	J A 16	E B 15	E B 15
14	20	J A 21	22	18	22	22	J A 12	22	27	30	G 21	G 20	G	G 24	34	34	32	33	31	J A 30	J A 50	56	22	J A 27
15	29	25	21	J A 41	18	E B 13	J A 15	24	32	35	38	44	43	38	40	J A 42	J A 28	J A 20	24	31	26	24	J A 21	28
16	22	J A 22	J A 30	18	21	E B 14	18	24	30	31	34	37	J A 50	36	34	32	30	26	J A 23	19	18	E S 16	22	E B 15
17	15	E B 14	E B 13	E B 13	E B 14	E B 15	S 19	G	27	G 19	34	37	39	G 23	34	34	32	22	E B 16	E B 13	18	S 16	E B 15	E S 17
18	E S 14	19	E B 13	E B 14	E B 14	E S 14	E B 14	G	G	G 26	G	G	37	G 27	G	G	G 24	G	18	E B 14	E B 15	20	19	21
19	E B 16	E B 14	E B 13	E B 13	E B 14	E B 14	E B 15	G	G 22	33	36	38	G	38	G	34	J A 42	20	E B 15	E S 15	J A 20	E B 14	21	E B 15
20	E B 14	E B 13	E B 13	E B 14	E B 13	E B 15	E B 14	G	G	G	G	G	38	G	G	G	G 18	G	E B 14	E B 14	E B 12	E B 14	19	J A 33
21	J A 23	J A 29	J A 21	J A 23	E B 13	E B 13	E B 13	G	G	G	G 23	G	G	G	34	32	G	G 16	E B 16	E B 14	E B 14	E B 14	E B 15	E B 16
22	20	E B 13	E B 14	E B 13	E B 13	E S 16	E B 15	20	J A 27	30	G 29	G	G	G	G	G	G	G	18	17	19	E B 14	E B 14	J A 40
23	J A 32	28	J A 19	S 18	E B 14	E B 12	16	J A 22	G 24	G 28	G	G 24	G	G 23	G	G	G 24	G	E B 14	E B 15	17	E B 13	18	J A 17
24	E B 14	E B 13	E B 15	E B 16	E B 13	E B 15	E B 16	20	G	G 22	G 26	34	G 25	G 24	J A 48	31	27	G	18	E B 13	J A 25	E B 15	E B 14	E B 15
25	E B 14	E B 15	E B 15	E B 16	E B 14	E B 14	12	G	G	G	G 23	G	G 23	36	G	31	G	G	E B 13	18	E B 13	20	E B 15	E B 15
26	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	12	23	28	32	G	G	G	G	32	33	G 24	J A 30	E B 12	J A 25	J A 32	E B 15	E B 12	E B 16
27	E B 12	E B 15	E B 15	18	E B 14	E B 13	16	G	28	G	G 21	39	37	38	33	30	25	G	J A 14	24	20	J A 25	26	J A 34
28	24	24	E B 13	E B 14	E B 15	B J A 14	15	G	G	30	J A 44	J A 46	G 32	G	G	G 21	27	G	E B 14	E B 15	E B 14	E B 13	E B 12	22
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	15	15	14	17	14	14	15	G	G 30	32	34	32	G	34	32	28	22	20	22	20	16	19	17
U Q	23	22	20	22	20	18	19	22	G 32	34	40	40	38	36	34	32	26	28	32	28	24	22	26
L Q	14	14	13	14	14	14	14	G	27	G	G	G	G	26	G	28	G	G	14	14	15	14	15	15

FEB. 1995 foEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB.1995 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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 10	E B 11	E B 11	14	11	E B 10	E B 10	G	G 16	29	G	G 22	G	G	33	32	23	17	13	E B 11	E B 11	E B 12	E B 10	E B 11
2	E B 14	E B	E B 12	E B 13	E B 12	14	E B 14	G	G 19	31	35	38	40	36	30	26	25	19	E B 13	E B 12	E B 12	E B 13	E S 15	E S 14
3	E S 15	E B 14	E B 12	E B 12	E B 13	E B 14	E B 15	20	G 29	36	42	39	45	G	34	32	23	E B 15	B 22	B 21	B 26	E B 12	E B 12	E S 14
4	E S 14	E S 15	E S 14	E B 14	E B 12	E B 12	E B 15	G	G 18	G	32	35	G 23	G 18	29	30	34	16	20	26	18	18	16	16
5	17	E B 12	E S 16	E B 13	E B 14	E B 16	E B 15	G	G 20	G 21	G	G	43	34	32	30	28	20	17	14	E B 11	E B 12	24	E B 12
6	E B 14	E B 13	16	15	24	16	16	G	28	30	32	39	G 28	G 26	G 26	G	G	E B 25	14	20	22	17	18	16
7	E B 12	17	E B 14	16	E B 12	E S 14	E B 13	G	24	29	G 24	G	G 26	G 18	G 21	28	G 16	18	20	19	E B 14	E B 13	E S 15	E B 15
8	E B 14	E B 12	E B 13	E B 14	E B 14	E B 14	19	18	G	30	32	34	36	G 26	G	56	29	34	27	18	E B 13	E B 14	E B 14	E B 14
9	18	E B 13	E B 13	16	E B 14	15	16	G	G	32	34	42	G	37	38	30	32	22	A AA 41	A 86	24	17	16	E B 13
10	16	18	18	16	15	17	16	E B 16	G	G 24	31	G 25	35	38	43	31	22	44	A AA 56	A 45	18	16	E B 13	E B 13
11	E B 12	16	19	18	18	17	16	17	G 22	34	G 24	35	36	E B 136	34	32	24	19	E B 13	E B 13	E B 14	E B 16	E B 15	E B 14
12	E S 15	E B 14	E B 14	E B 13	16	16	16	G	G	G 21	G	G 18	G 18	G 19	33	44	41	44	37	20	21	17	18	E B 12
13	16	E B 13	15	E B 13	E B 13	E B 13	E B 14	25	32	32	33	36	40	38	34	28	25	27	19	18	17	E B 13	E B 15	E B 15
14	E B 14	E B 14	E B 13	16	E B 14	E B 14	E B 14	22	27	30	G 20	G 19	G	G 19	34	30	31	21	22	26	E B 14	A AE 56	B 14	20
15	17	E B 14	E B 14	23	E B 13	E B 13	E B 14	22	31	33	36	42	42	37	38	39	25	16	16	20	16	16	18	16
16	E B 14	16	16	E B 13	E B 13	E B 14	17	G	28	30	34	35	45	35	34	30	28	18	18	E B 15	E B 14	E B 16	E S 14	E B 15
17	E B 14	E B 14	E B 13	E B 13	E B 14	E S 15	15	G	27	G U 18	Y 33	37	38	G 22	33	32	31	20	E B 16	E B 13	E B 14	15	E B 15	E S 17
18	E S 14	15	E B 13	E B 14	E S 14	E B 14	E B 14	G	G	G 19	G	G	36	U G 27	G	G	U G 24	G	E B 15	E B 14	E B 15	16	16	16
19	E B 16	E B 14	E B 13	E B 13	E B 14	E B 14	E B 15	G	G 21	32	35	37	G	37	G	33	27	19	E B 15	E S 15	E B 14	E B 14	E B 15	E B 15
20	E B 14	E B 13	E B 13	E B 14	E B 13	E B 15	E B 14	G	G	G	G	G	38	G	G	G	G 17	G	E B 14	E B 14	E B 12	E B 14	E B 15	16
21	16	19	E B 13	18	E B 13	E B 13	E B 13	G	G	G	G 20	G	G	G	33	32	G	G 14	E B 16	E B 14	E B 14	E B 14	E B 15	E B 16
22	E B 15	E B 13	E B 14	E B 13	E B 13	E B 16	E B 15	U Y 20	26	G 24	G 28	G	G	G	G	G	G	G	E B 14	12	E B 14	E B 14	E B 14	19
23	25	18	E B 14	16	E B 14	E B 12	16	E B	G 22	G 25	G	G 22	G	G 22	G	G	G 24	G	E B 14	E B 15	16	E B 13	16	E B 14
24	E B 14	E B 13	E B 15	E B 16	E B 13	E B 15	E B 16	20	G	G 21	G U 24	Y U 34	G 23	G 23	37	30	26	G	17	E B 13	E B 15	E B 15	E B 14	E B 15
25	E B 14	E B 15	E B 15	E B 16	E B 14	E B 14	E B 12	G	G	G	G 22	G	G 23	36	G	30	G	G	E B 13	16	E B 13	E B 13	E B 15	E B 15
26	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	E B 12	23	27	31	G	G	G	G	32	32	G 22	27	E B 12	21	20	E B 15	E B 12	E B 16
27	E B 12	E B 15	E B 15	E B 16	E B 14	E B 13	15	G	27	G	G 20	37	36	38	33	30	25	G	E B 14	E B 13	E B 16	23	18	20
28	16	E B 15	E B 13	E B 14	E B 15	E B 13	15	G	G	30	39	43	U G 32	G	G	G 21	26	G	E B 14	E B 15	E B 14	E B 13	E B 12	16
29																								
30																								
31																								
	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	27	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	14	14	14	14	14	14	15	G	28	29	G	34	G	G	32	30	25	18	16	15	14	14	15	15
U Q	16	15	15	16	14	15	16	20	G 31	34	37	38	36	34	32	28	22	20	20	18	16	16	16	
L Q	14	13	13	13	13	13	14	G	23	24	26	G	G	24	G	27	24	G	14	14	14	13	14	14

FEB.1995 fbEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB.1995 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

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

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 310	320	359	F 370	F 333	F 278	F 344	349	S 345	312	352	341	357	345	357	365	384	364	335	373	356	318	F 293	F 332
2	F 321	F 321	F 332	353	350	346	J R 347	361	356	329	319	344	354	347	345	375	373	342	336	361	295	313	329	297
3	F 296	F 297	F 267	F 288	369	F 334	R 312	370	370	338	335	332	354	353	363	366	350	365	354	334	F 313	318	F 292	F 281
4	288	297	F 344	F 372	F 318	311	324	357	345	363	347	358	357	322	330	378	364	344	324	347	324	323	306	J R 293
5	F 319	327	F 307	F 346	359	334	327	340	376	339	352	343	343	339	351	348	368	357	336	350	371	318	310	F 302
6	F 318	321	F 310	F 324	F 367	F 312	324	363	356	359	327	349	364	357	363	353	374	374	354	341	351	333	F 297	F 308
7	321	339	303	291	287	299	336	373	363	334	311	357	344	353	348	331	354	349	344	352	362	324	296	296
8	313	306	F 290	293	318	345	396	367	369	329	337	305	349	356	351	A	335	373	303	306	337	355	333	287
9	315	304	280	312	305	299	297	S 356	348	325	356	361	331	333	343	331	373	366	A	A	354	331	F 289	F 297
10	F 290	F 295	298	301	309	311	356	374	361	359	364	348	358	345	364	370	370	A 381	A	A	349	316	F 306	F 338
11	331	313	315	313	310	310	310	350	371	373	360	348	356	344	366	365	375	362	302	290	339	355	346	294
12	286	295	311	326	315	296	338	377	373	320	334	343	352	357	321	345	348	356	A	311	305	294	296	307
13	310	323	326	293	279	282	339	385	369	362	341	321	345	341	358	345	371	343	314	318	332	304	298	294
14	306	319	280	318	301	326	337	J R 405	338	331	342	341	335	354	352	354	366	359	325	304	306	A	319	326
15	F 300	296	327	339	334	313	309	364	J R 359	336	342	352	305	340	362	355	361	368	371	338	282	F 287	304	F 304
16	F 338	326	339	327	355	F 310	336	358	J R 384	344	324	336	339	358	349	338	367	380	341	313	317	310	316	306
17	306	301	301	325	360	333	310	337	R 351	339	354	354	332	347	331	349	358	368	327	320	335	333	J R 267	295
18	304	308	310	304	328	305	335	360	357	362	334	341	339	346	354	352	360	385	321	329	351	287	291	313
19	298	315	315	296	313	310	345	361	349	359	346	319	328	343	358	345	348	365	344	329	344	316	300	313
20	313	305	320	306	300	303	329	381	361	348	362	331	333	339	348	352	352	362	344	319	312	310	292	300
21	314	318	297	308	319	301	322	362	357	375	365	340	336	323	347	341	347	357	331	307	315	307	310	336
22	310	321	334	322	310	293	319	351	367	363	348	323	334	349	353	348	347	358	337	332	337	321	317	F 313
23	316	305	320	306	316	318	341	369	358	365	367	341	329	343	350	337	352	362	338	330	333	350	304	291
24	288	309	320	313	317	315	324	351	357	357	345	342	341	341	349	350	359	347	363	320	320	315	326	314
25	308	306	314	316	321	304	367	365	340	356	359	351	R 331	339	347	337	349	372	361	311	314	310	311	316
26	317	302	326	336	317	305	328	370	R 361	340	366	301	310	332	338	357	349	347	347	307	304	322	300	293
27	284	294	312	327	354	282	337	353	358	352	345	311	311	357	326	340	363	359	348	296	295	318	337	320
28	301	279	289	309	389	288	306	311	384	363	328	322	330	322	325	348	335	355	319	298	322	304	282	290
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	25	26	28	27	28	28
MED	310	307	313	314	318	310	332	362	358	350	346	341	339	344	350	349	360	362	337	320	328	318	304	303
U Q	316	320	326	327	352	316	340	370	369	362	358	348	353	353	358	357	369	368	348	338	346	324	316	314
L Q	299	299	300	305	310	299	320	352	354	335	334	327	331	339	344	341	349	356	324	307	312	310	294	294

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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	U L 385	U L 385	L 381	L 379	L	L								
2									L	L	L 345	A 359	A	U L 373	L 365	L	426							
3											L	A	A	L 359	U L 374	A								
4									L	L	U L 357	L 369	L 382	L	U L 323	L								
5									L	436	U L 360	383	A	L 373	U L 353	L								
6										L	378	A 375	L 378	U L 370	U L 389	L	L							
7									L	L	U L 367	L 375	L 387	L 358	L	L 410								
8									L	L	L	L	U L 372	U L 381	L 358	A	A							
9									415	L	U L 377	A	U L 346	A 366	L	L								
10										L	L	L	U L 377	U L 390	A	U L 396								
11									L	L	L 375	L	U L 373	U L 370	L	L	L							
12									417	L	U L 371	L 368	L 354	U L 386		A	A	A						
13										L	L	U L 358	A	U L 376	U L 387	L	L							
14									L	L	L	L 360	U L 365	L 402	L	L								
15										L	L	L	L	A	A	A	L	396						
16									L	L	U L 366	L	L	U L 376	U L 376	L	L							
17									L	U L 355	U L 377	L 386	U L 389	H 375	U L 368	L								
18									L	U L 363	H 365	U L 406	U L 348	L	U L 373	U L 396	U L 384	L						
19									L	L	U L 375	L	L 378	L	U L 390	L	L							
20										L	L	U L 378	L 380	U L 363	U L 371	U L 395								
21									L	L	U L 384	U L 382	U L 373	U L 371	L	U L 365								
22									L	L	L	U L 363	L 371	U L 368	U L 372	L	L							
23									L	U L 379	U L 385	U L 368	L 389	U L 362	U L 363	L	L							
24								383	L	U L 348	U L 357	U L 373	L 381	L 374	U L 377	U L 371	L							
25									L	L	L	U L 419	U L 358	U L 353	U L 380	L	L							
26									L	L	L 369	L	U L 372	L 359	U L 368	U L 375	L							
27									L	L	U L 365	U L 326	U L 347	L	L 360	U L 338	L	L						
28									L	U L 379	L	L	U L 341	U L 355	U L 366	U L 367	L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	2	6	18	18	22	23	19	9	2	1						
MED								383	416	U 371	U 370	U 374	U 373	U 371	U 371	U 375	405	396						
U Q										379	U 377	U 383	381	U 376	U 377	U 396								
L Q										U 355	U 365	U 363	U 358	362	U 363	U 366								

FEB. 1995 M(3000)F1 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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	245	250	230	265	250	230								
2									248	256	288	250	242	256	260	232	214							
3											272	274	256	258	246	234								
4									246	238	258	250	254	294	284	230								
5									220	244	264	260	266	264	254	236								
6										242	300	256	244	244	252	250	222							
7									226	226	260	242	238	242	234	240								
8									242	L 298	258	296	244	248	256	A	232							
9									232	262	238	248	292	262	244	246								
10										246	238	254	248	254	242	236								
11									222	242	248	262	248	262	252	230	224							
12									220	U L 292	264	252	252	250		254	236	A 234						
13										236	238	280	270	248	238	230	226							
14									272	256	254	250	242	244	240	240								
15										258	254	250	282	254	244	244	238	218						
16									242	256	272	256	256	246	244	242	224							
17									236	270	244	244	248	252	260	246								
18									240	244	292	264	272	264	248	240	236	208						
19									236	240	252	280	276	254	246	258	246							
20										244	242	272	260	270	258	242								
21									238	232	250	260	260	264	246	258								
22									232	244	248	276	262	254	244	250	232							
23									232	232	240	260	278	258	254	250	234							
24								232	236	244	264	254	264	270	258	254	234							
25									232	256	242	250	272	264	254	256	242							
26									236	242	246	264	290	262	258	244	234							
27									236	236	258	298	288	234	276	262	224	222						
28									218	236	244	258	280	272	272	238	224							
29																								
30																								
31																								
	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	21	27	28	28	28	28	27	27	17	4						
MED								232	236	244	253	257	260	257	252	242	232	220						
U Q									241	256	264	268	274	264	258	250	236	228						
L Q									229	238	244	250	248	249	244	236	224	213						

FEB. 1995 h'F2 (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	275	220	210	195	245	230	220	225	225	215	215	210	200	H 205	A 225	205	205	220	220	210	260	295	290
2	284	288	262	226	222	E A 280	256	234	214	234	242	A	A	228	218	230	212	244	234	216	258	266	258	302
3	314	312	336	300	232	A 306	256	226	232	244	A	A	A	230	234	A	234	218	242	254	A	240	300	340
4	326	302	246	224	212	268	266	238	228	234	218	214	216	214	218	H 214	A 224	214	A 258	A 270	236	A 300	268	254
5	280	236	296	248	212	250	228	208	230	H 194	198	214	A	210	222	230	226	214	230	220	218	244	A	346
6	280	274	274	268	228	342	266	210	236	226	206	A	218	220	238	220	226	208	220	256	236	A 254	A 346	274
7	262	244	270	324	342	306	230	208	212	198	H 186	220	220	214	202	202	228	218	228	226	220	238	270	274
8	258	284	288	276	266	228	A 230	206	216	H 188	204	206	234	220	224	A	A	218	A 274	262	248	222	246	276
9	258	288	306	270	280	296	288	240	200	230	240	A	204	A 248	256	212	224	212	A	A	238	224	318	348
10	310	330	314	284	280	258	228	224	212	210	H 196	234	230	A 242	A	A 232	224	A	A	A	246	266	278	218
11	260	278	286	286	274	270	276	240	212	210	212	206	222	236	242	234	224	216	250	276	232	208	214	298
12	336	304	330	242	272	312	238	208	198	232	H 206	206	220	208	238	A	A	A	A	268	262	272	314	262
13	270	248	258	288	324	318	232	208	216	232	216	234	A	A 234	218	218	234	232	244	240	224	310	292	288
14	266	244	278	274	246	264	234	222	214	H 230	H 196	208	214	204	214	232	226	216	234	A	268	A	274	260
15	298	284	262	A 264	226	260	302	226	228	232	A 240	A	A	A	A	A	232	226	200	A	278	300	304	294
16	270	258	254	246	218	276	250	226	240	224	202	216	A	220	232	216	A	214	222	254	268	272	274	276
17	272	286	282	254	224	240	276	224	224	H 184	240	226	210	H 196	228	234	234	218	216	244	246	240	H 286	326
18	294	304	274	276	244	268	228	226	230	196	H 196	190	232	222	H 180	H 190	228	224	216	224	226	308	324	294
19	298	268	268	298	264	284	230	212	H 206	232	232	222	210	262	228	248	234	216	208	218	230	260	316	266
20	278	278	262	282	290	292	250	220	222	216	216	200	216	230	204	216	230	218	210	238	248	278	292	294
21	274	280	260	280	248	282	242	220	H 192	226	H 202	202	226	212	232	218	240	224	214	230	256	266	270	240
22	244	254	244	256	274	308	242	222	224	216	212	194	190	202	222	H 200	232	220	210	226	240	234	262	292
23	A 284	260	254	260	254	260	242	220	220	206	204	H 192	194	200	228	228	226	222	202	228	230	226	276	282
24	288	282	254	266	256	254	246	234	H 206	H 196	210	230	210	206	A 232	224	238	222	206	238	268	258	266	282
25	274	266	264	262	248	274	218	214	H 190	H 182	228	H 210	H 190	222	224	222	224	220	200	240	250	256	276	278
26	280	274	246	230	264	282	240	222	H 190	222	212	206	202	214	224	228	224	224	216	260	264	230	276	290
27	300	284	252	242	212	310	242	220	236	216	226	224	216	A	220	214	228	244	212	258	268	264	238	252
28	284	312	294	278	198	356	276	246	244	222	A 230	A	216	218	230	228	218	230	242	256	226	260	H 236	272
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	27	22	22	26	26	24	25	26	25	24	27	27	27	28
MED	280	279	266	267	248	276	242	222	218	222	212	212	216	219	224	223	226	218	220	240	246	260	276	282
U Q	298	288	287	281	273	306	261	226	229	231	228	222	220	230	232	230	233	224	238	257	262	272	300	294
L Q	270	263	254	247	223	260	230	213	209	202	202	206	210	208	218	215	224	216	210	226	230	238	266	269

FEB. 1995 h'F (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	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	140	110	110	A 125	105	105	A 125	A 125	A	B						
2								124	A 122	A	A 124	A 128	A 130	A 130	A	A	A	B						
3								162	A 118	116	A 118	B 116	A 116	A 116	116	116	112	B						
4								138	124	114	104	A	124	116	A	124	A 134	B						
5								128	E A 142	A 132	122	118	A	A	A	A	A 124	B						
6								150	122	114	A	112	A 126	A 124	A 134	120	118	B						
7								110	A	A	A 124	112	122	114	120	A	A 118	B						
8								A	120	116	118	110	116	118	118	112	A	B						
9								160	122	112	114	114	116	116	118	118	118	B						
10								A	120	E A 130	110	A 132	A	130	A	A	A	B						
11								A	A 136	A	A 124	A 124	122	122	A 120	112	A	B						
12								122	124	A 126	114	116	116	110	112	116	114	B						
13							B	158	A 136	A 136	114	A 120	A 126	118	A 120	120	122	B						
14							B	140	122	116	116	122	118	118	118	116	A	B						
15							B	148	118	118	112	114	116	118	114	A	A	B						
16							B	138	126	122	A 120	122	116	120	114	114	A	B						
17							B	158	126	120	116	114	114	114	116	112	116	B						
18							B	150	116	120	116	114	116	A	116	116	A	138						
19							B	144	A 138	118	122	118	118	118	118	114	A	A						
20							B	160	118	118	114	114	114	118	B 124	118	120	116						
21							B	122	116	116	120	116	120	120	120	118	118	128						
22							B	A	A	A 132	A 130	114	112	120	112	116	116	134						
23							B	128	A 132	A 128	112	116	114	116	114	116	E A 152	128						
24							B	130	114	122	A 122	120	126	124	A	120	A	164						
25							B	134	116	120	120	114	116	116	116	120	120	120						
26							B	138	118	114	112	116	114	114	A	116	A 126	A						
27							B	122	A	114	118	114	114	A 128	A	116	A	128						
28							B	S 172	114	112	108	A	A	114	114	118	118	120						
29																								
30																								
31																								
	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	25	25	27	26	25	26	21	23	16	9						
MED								139	122	118	116	116	116	118	118	116	118	128						
U Q								158	129	124	122	120	122	120	120	120	123	136						
L Q								128	118	114	112	114	114	116	114	116	117	120						

FEB. 1995 h'E (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 1995 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	110	105	120	110	105	B	B	G	110	E G 185	G	110	G	G	140	130	120	115	105	B	B	B	B	B
2	B	98	B	B	B	116	B	G	116	116	154	138	136	140	108	108	102	104	106	108	104	104	98	S
3	S	B	B	114	B	B	176	190	176	152	138	148	138	G	138	120	116	106	108	106	98	104	104	S
4	S	S	S	116	120	114	B	G	122	G	E G 176	98	102	104	100	170	124	110	112	110	108	102	96	96
5	104	B	S	B	B	B	B	G	118	110	E G 188	G	98	94	94	96	132	124	112	120	112	B	98	110
6	B	B	120	110	106	108	110	G	140	118	118	116	112	116	118	G	G	112	114	108	110	106	108	104
7	B	100	102	100	106	S	B	G	114	108	108	G	102	102	104	96	100	102	98	104	104	104	S	B
8	B	B	B	B	B	126	108	106	G	144	146	132	E G 164	116	G	118	110	102	108	102	108	108	110	100
9	100	B	B	112	110	106	108	G	G	174	160	122	G	144	130	130	118	118	112	112	110	110	110	114
10	112	110	102	112	102	100	104	110	G	114	108	110	108	128	114	108	106	102	100	102	100	102	106	B
11	B	112	100	100	100	116	132	108	106	100	100	E G 192	132	128	120	118	108	102	B	B	B	B	B	B
12	S	B	B	B	110	116	116	G	G	106	G	108	102	102	E G 164	118	112	108	106	106	106	100	104	106
13	114	96	102	104	108	B	B	164	150	162	148	142	126	120	122	118	142	94	110	110	108	108	B	B
14	106	108	106	110	114	116	122	146	132	E G 190	104	106	G	100	130	120	118	108	110	108	104	106	132	120
15	104	118	126	112	120	B	B	158	150	154	146	132	128	152	130	120	116	114	110	104	106	106	100	104
16	102	100	120	124	114	B	122	116	158	156	126	120	120	126	122	116	116	102	108	96	100	S	104	B
17	120	B	B	B	B	S	120	G	E G 188	108	164	142	132	108	134	130	120	108	B	B	102	118	B	S
18	S	98	B	B	S	B	B	G	G	110	G	G	162	98	G	G	120	G	104	B	B	106	100	114
19	B	B	B	B	B	B	B	G	126	E G 188	E G 174	158	G	170	G	118	116	114	B	S	112	B	104	B
20	B	B	B	B	B	B	B	G	G	G	G	G	E G 182	G	G	G	106	G	B	B	B	B	98	114
21	108	106	110	106	B	B	B	G	G	G	108	G	G	G	134	128	G	118	B	B	B	B	B	B
22	108	B	B	B	B	S	B	130	116	110	110	G	G	G	G	G	G	G	100	104	108	B	B	108
23	102	102	102	110	B	B	106	112	116	112	G	106	G	108	G	G	114	G	B	B	112	B	110	110
24	B	B	B	B	B	B	B	144	G	110	110	124	114	112	102	128	120	G	108	B	112	B	B	B
25	B	B	B	B	B	B	B	G	G	G	110	G	108	148	G	146	G	G	B	98	B	114	B	B
26	B	B	B	B	B	B	B	156	178	162	G	G	G	G	124	120	104	98	B	112	110	B	B	B
27	B	B	B	114	B	B	146	G	E G 188	G	108	130	122	170	118	122	116	G	116	114	114	104	104	100
28	102	114	B	B	B	174	164	G	G	114	106	104	108	G	G	106	126	G	B	B	B	B	B	112
29																								
30																								
31																								
	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	13	11	15	12	10	13	12	18	23	22	20	20	21	20	23	24	20	19	18	21	16	17	14
MED	106	105	106	110	109	116	120	137	124	114	116	122	117	116	122	120	116	108	108	107	108	106	104	109
U Q	111	111	120	114	114	116	139	157	158	162	154	140	134	142	132	128	120	114	112	110	111	108	109	114
L Q	102	99	102	106	106	108	108	111	116	110	108	109	108	103	111	116	109	102	105	104	104	104	99	104

IONOSPHERIC DATA STATION Kokubunji

FEB.1995 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

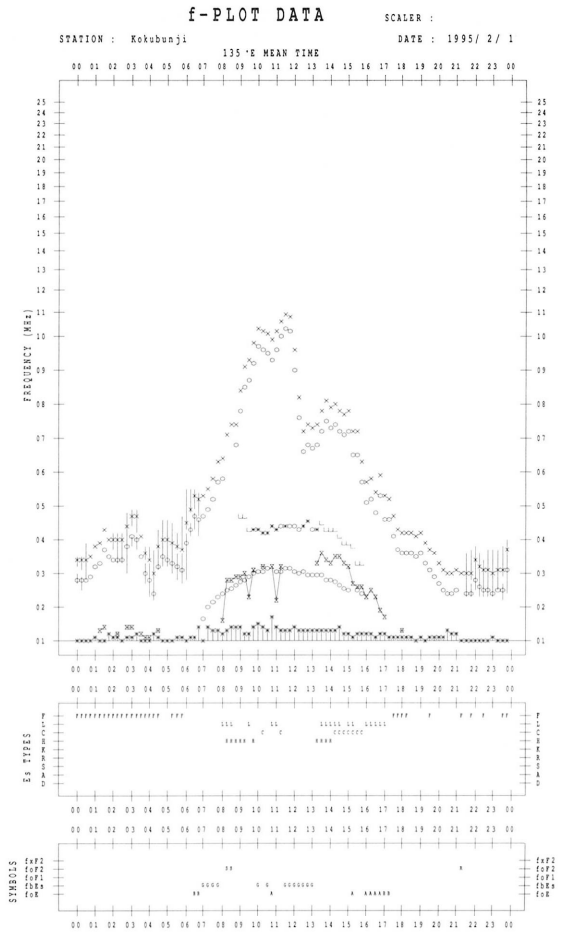
LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

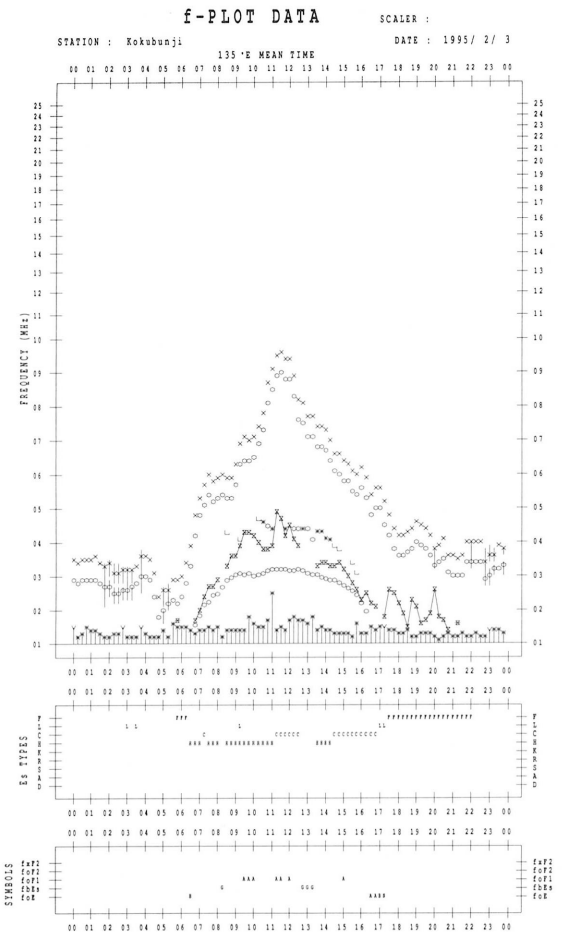
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	FF 22	F 2	F 1	F 1	F 2				L 1	H 1		L 1			HL 11	CL 21	L 1	L 1	F 1					
2		F 1				F 1			L 1	L 1	HL 11	HL 11	HL 11	HL 11	L 2	L 2	L 2	L 3	FF 11	F 1	F 1	F 1	F 1	
3				L 1			F 1	H 1	H 1	H 1	H 2	H 1	C 2		H 1	C 2	C 2	L 3	F 3	F 3	F 3	F 2	F 1	
4				F 1	F 1	FF 11			LL 11		HL 11	LH 11	L 2	L 1	L 1	HL 11	CL 22	L 1	F 3	F 3	F 3	F 2	F 2	F 1
5	F 2								L 2	L 2	HL 12		L 2	L 2	L 2	LL 12	CL 22	L 3	F 1	F 1	F 1		F 2	F 1
6			F 1	F 2	F 3	F 3	F 1		H 1	C 1	C 1	C 2	L 1	L 1	L 1			L 2	F 1	F 3	F 1	F 3	F 2	F 2
7		F 2	F 2	F 2	F 1				L 3	L 3	L 1		L 1	L 1	L 2	L 2	L 2	L 2	F 2	F 2	F 1	F 1		
8						FF 11	F 4	L 1		H 1	HL 11	C 1	HL 11	L 1		C 4	C 2	C 3	F 2	F 1	FF 11	F 2	F 1	F 3
9	F 3			F 2	F 1	F 2	F 2			HC 11	H 1	C 1		H 1	C 1	C 1	C 2	C 2	F 3	F 3	F 2	F 1	F 2	FF 21
10	F 1	F 2	F 1	F 1	F 3	F 2	F 2	L 1		L 1	L 2	LH 11	L 2	CL 12	LC 21	L 2	L 2	L 3	F 3	F 4	F 2	F 1	F 1	
11		F 2	F 2	F 2	F 1	FF 11	FF 11	L 2	L 1	L 3	L 2	HL 11	HL 12	HL 11	CL 22	C 2	C 2	L 1						
12					F 2	F 2	F 1			L 1		L 1	L 1	L 1	H 1	C 3	C 3	C 5	F 3	F 3	F 3	F 2	F 3	F 2
13	FF 11	F 2	F 2	F 1	F 1			H 1	HL 11	HL 11	H 1	HL 11	CL 11	CL 11	CL 11	CL 11	HL 12	L 4	FF 21	F 3	F 1	F 1		
14	F 1	F 1	F 1	F 1	L 2	F 2	L 1	C 1	C 1	H 1	L 1	L 1		L 2	CL 12	CL 12	CL 23	CL 41	FF 32	F 3	F 3	F 4	FF 11	F 4
15	F 2	F 2	F 1	F 4	F 1		C 1	C 1	H 1	H 1	H 1	C 1	C 1	H 1	C 1	C 2	C 2	C 2	F 1	F 3	F 2	F 2	F 2	F 2
16	F 2	F 2	F 2	F 1	F 1		C 1	L 1	HL 11	HL 11	CL 21	CL 12	CL 22	CL 12	CL 12	C 1	CL 21	L 2	F 2	F 1	F 1		F 1	
17	F 1						C 1		HL 11	L 1	H 1	H 1	H 1	L 1	H 1	HL 11	CL 21	C 2			F 1	F 1		
18		F 1								L 1			H 1	L 1			L 1		F 1			F 1	F 1	F 1
19									LL 11	HL 11	H 1	H 1		H 1		C 1	C 2	L 2			F 1		F 1	
20													H 1				L 1						F 1	F 1
21	FF 11	F 2	F 2	F 2							L 1				C 1	C 1		L 1						
22	F 1							C 1	L 1	L 1	L 1								F 1	F 1	F 1			F 2
23	F 3	F 2	F 2	F 1			L 1	L 1	L 1	L 1		L 1		L 1			L 1				F 1		F 1	F 1
24								CL 11		L 1	L 1	L 1	L 1	L 1	L 2	C 1	C 1		F 1		F 2			
25											L 1		L 1	HL 11		HL 11				F 1		F 1		
26								H 1	HL 11	H 1					C 1	C 1	L 2	L 3		F 4	F 3			
27				F 1			C 1		HL 11		L 1	C 1	C 1	HL 11	C 1	C 1	L 2		F 1	F 1	F 1	F 5	FR 11	F 3
28	F 2	F 1				F 1	C 1			C 1	C 2	C 2	L 1			L 1	C 1							F 1
29																								
30																								
31																								
	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																								
U Q																								
L Q																								

FEB.1995 TYPES OF Es COMMUNICATIONS RESEARCH LABORATORY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

KEY OF f-PLOT	
	SPREAD
	foF2, foF1, foE
	fxF2
	DOUBTFUL foF2, foF1, foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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DATE : 1995/ 2/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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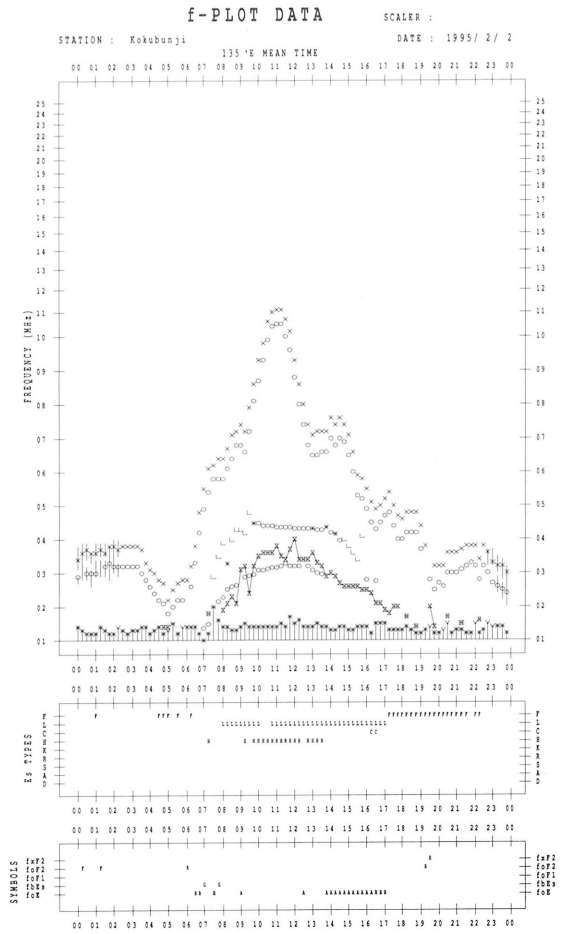
foF2
foF1
fbEs
foE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DATE : 1995/ 2/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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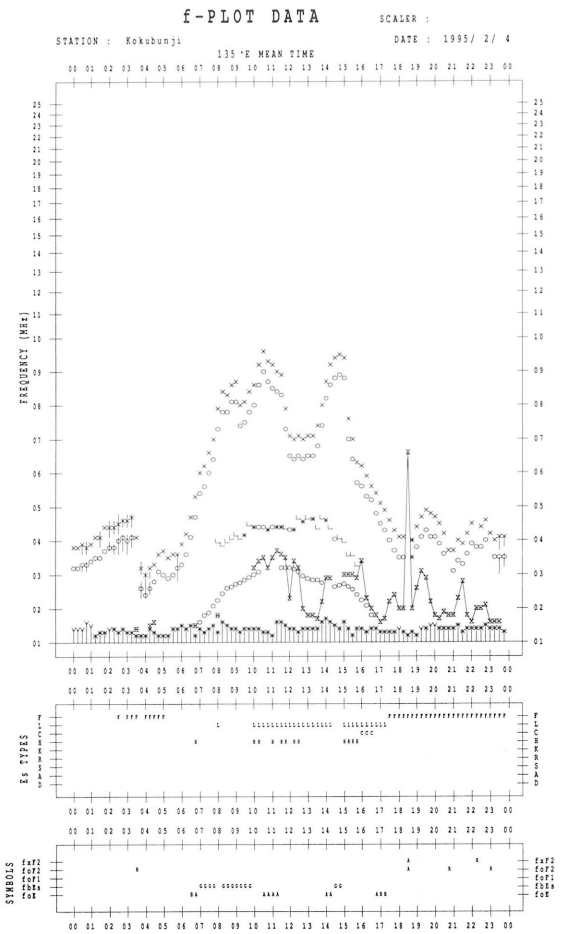
foF2
foF1
fbEs
foE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STATION : Kokubunji
DATE : 1995/ 2/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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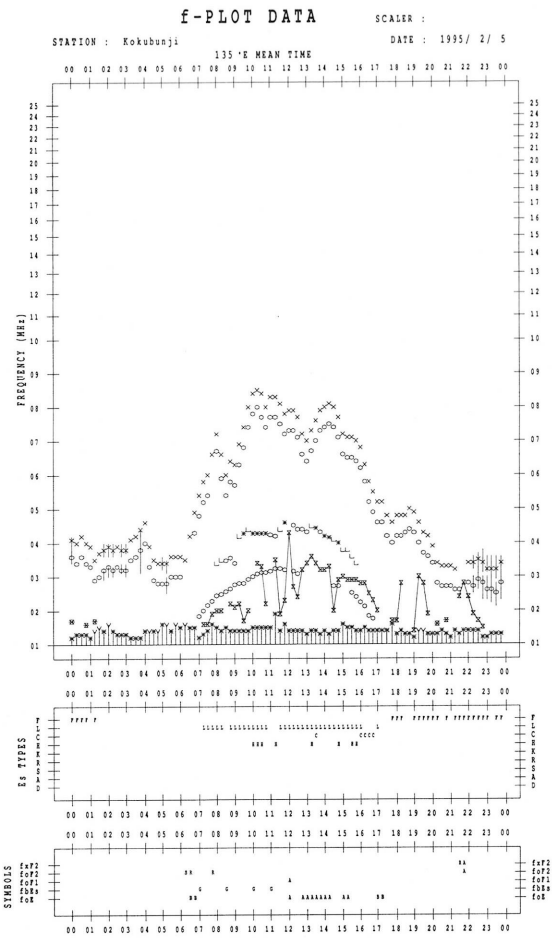
foF2
foF1
fbEs
foE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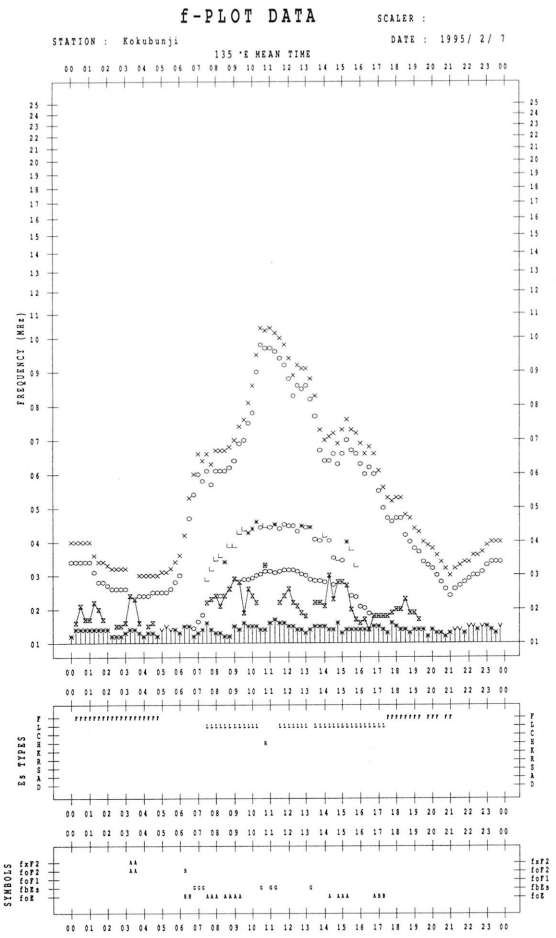
DATE : 1995/ 2/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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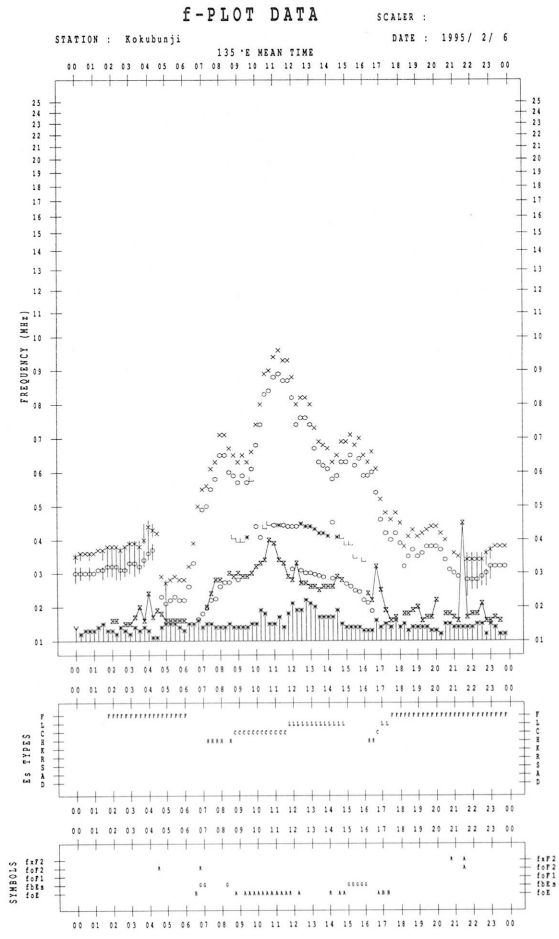
DATE : 1995/ 2/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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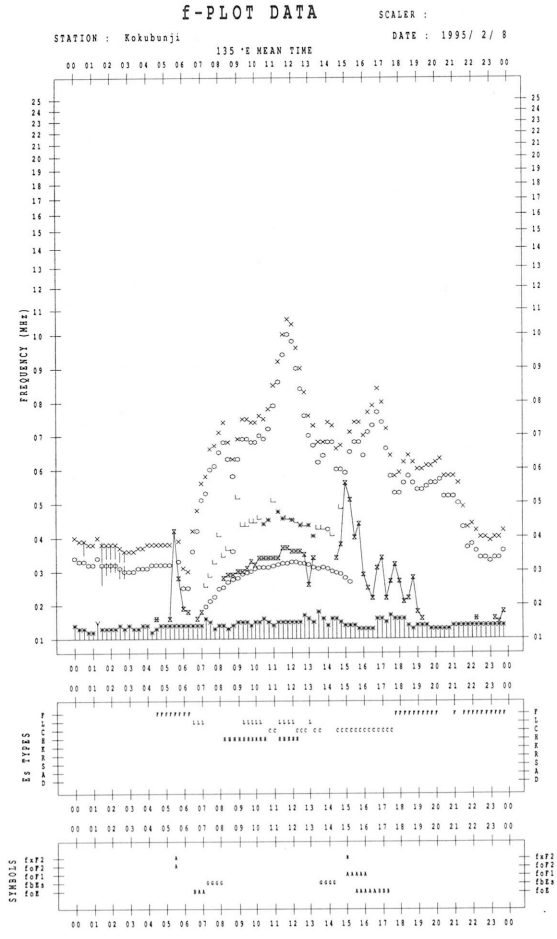
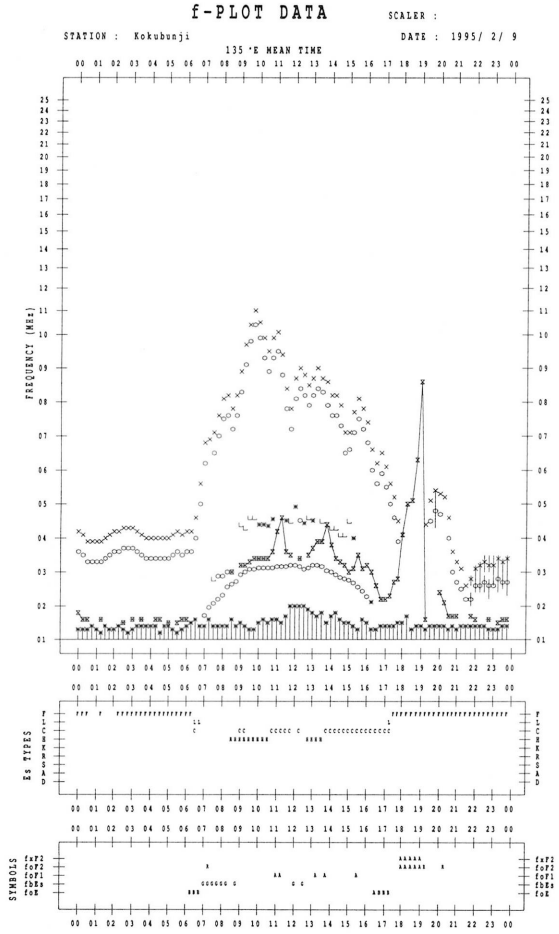
STATION : Kokubunji
DATE : 1995/ 2/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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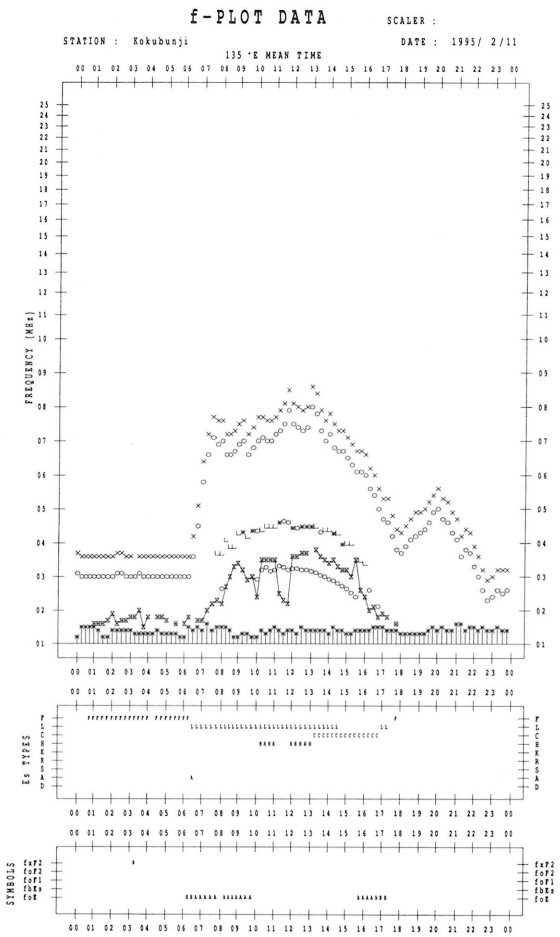
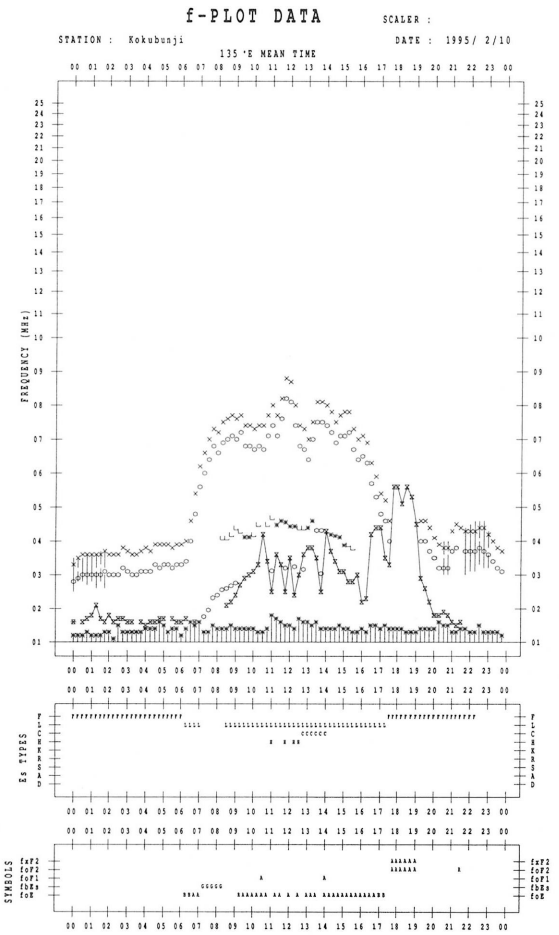
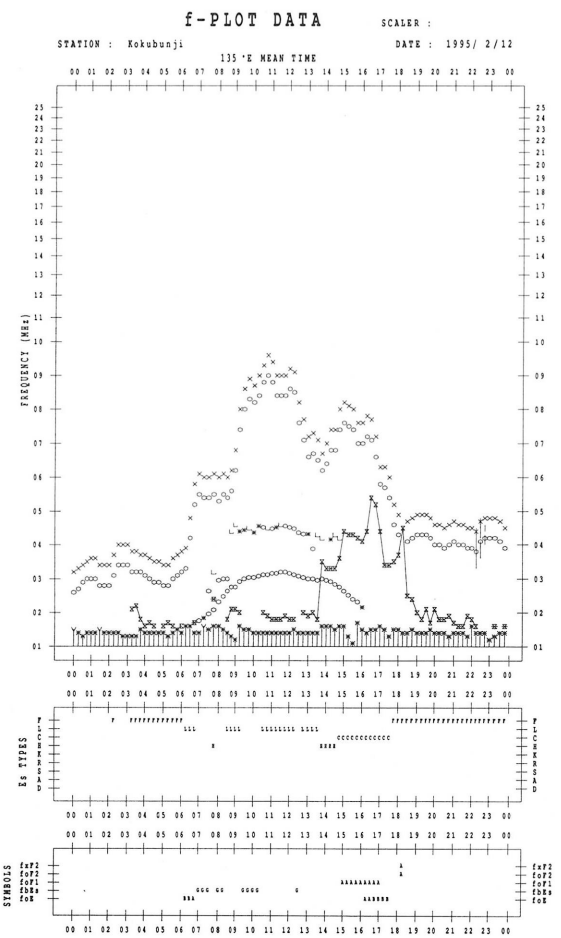
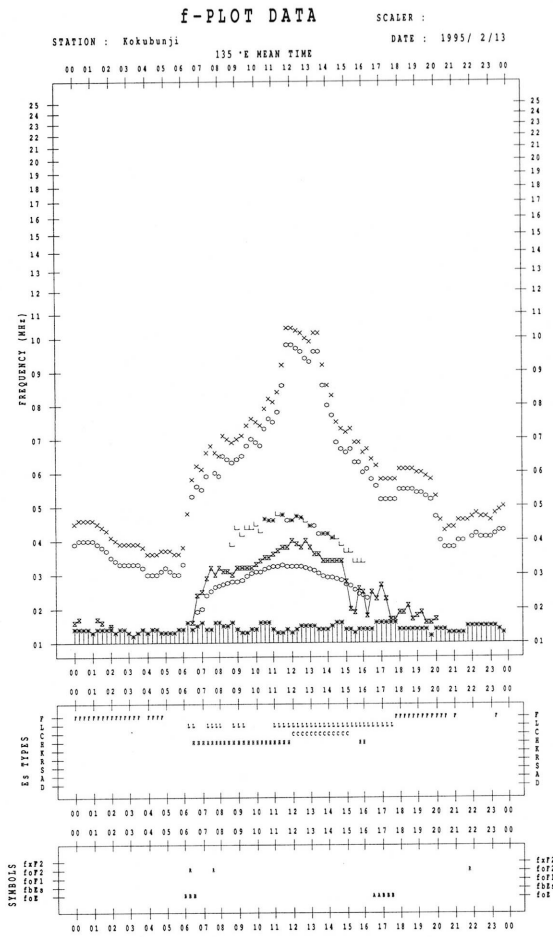
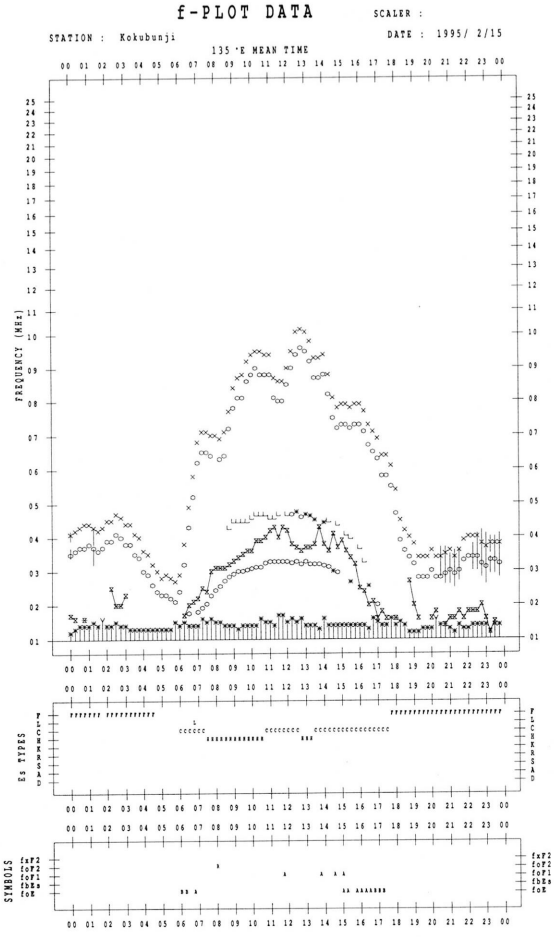
foF2
foF1
fbEs
foE

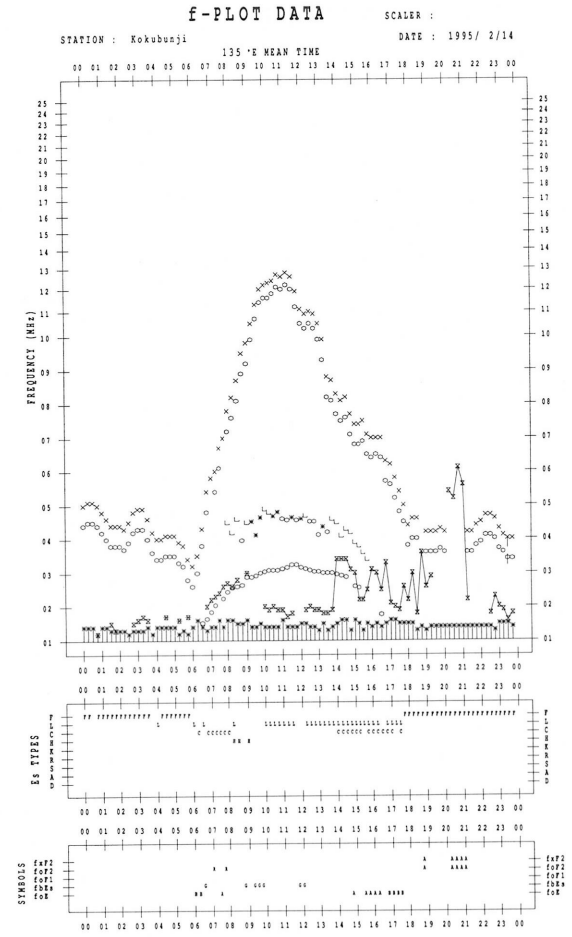

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

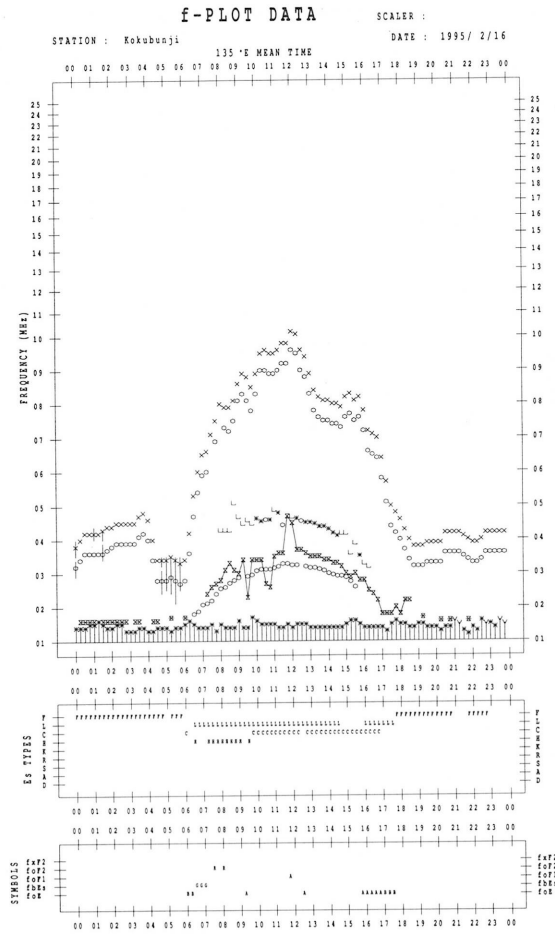

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

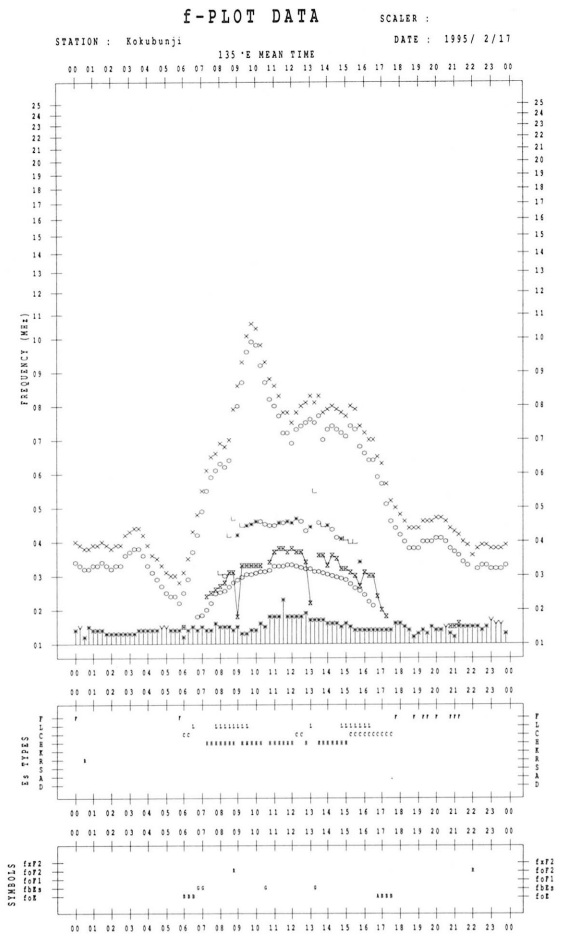

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

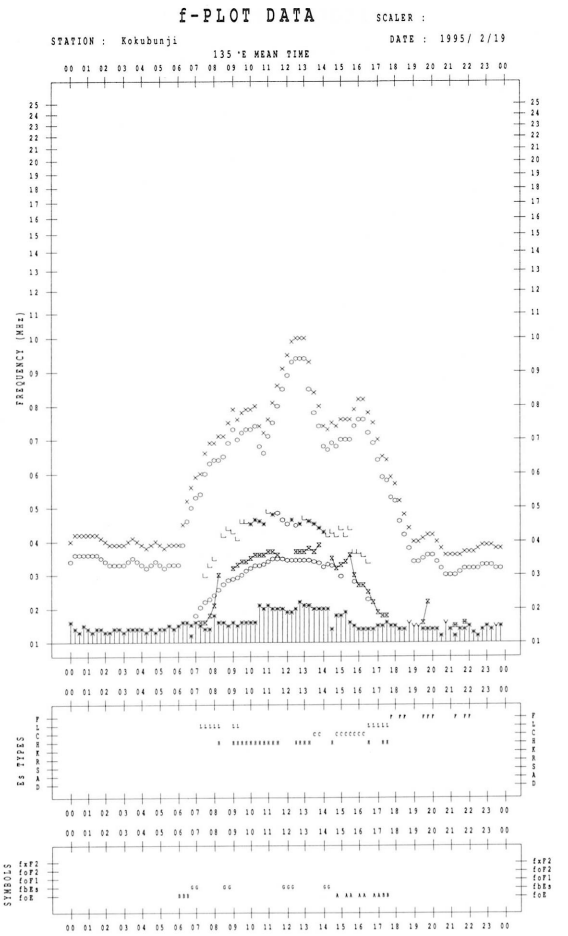

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

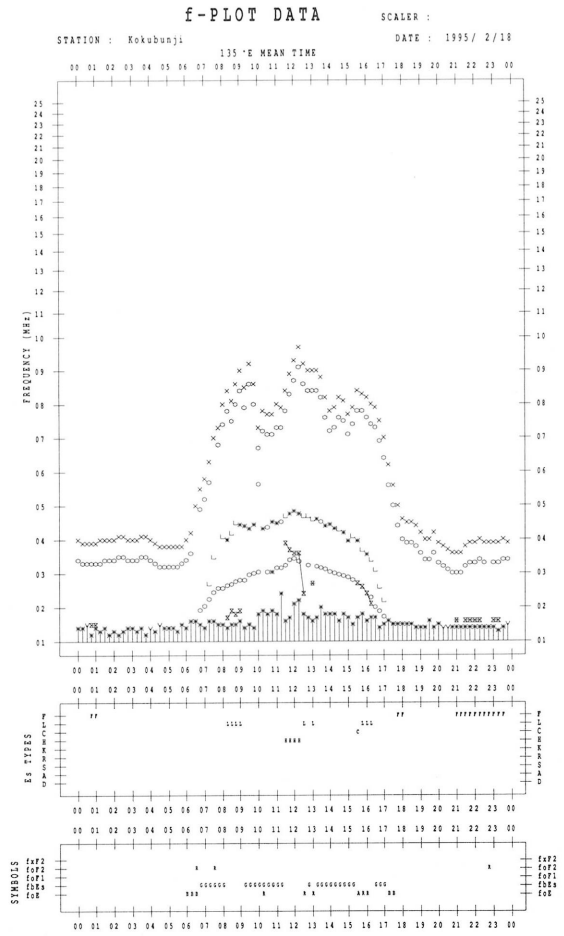

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

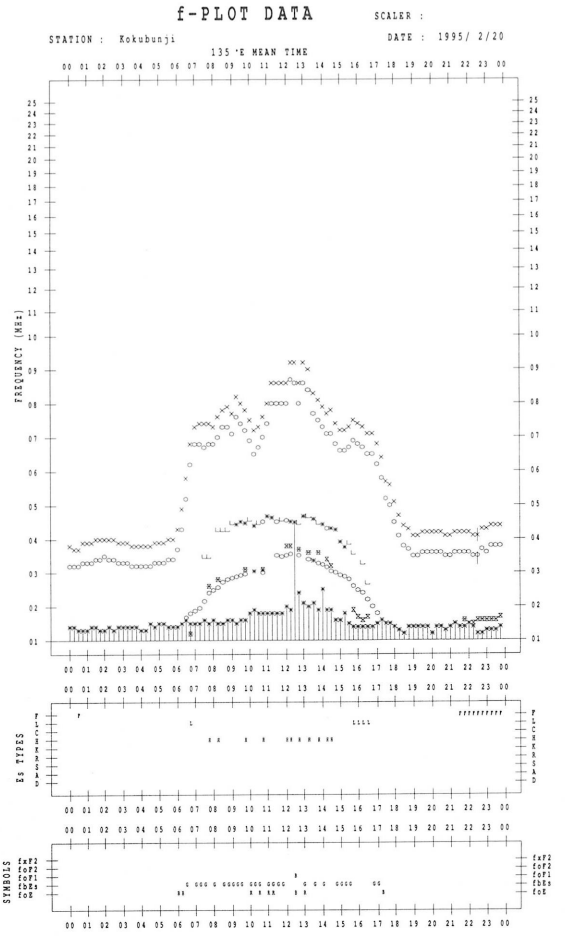

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

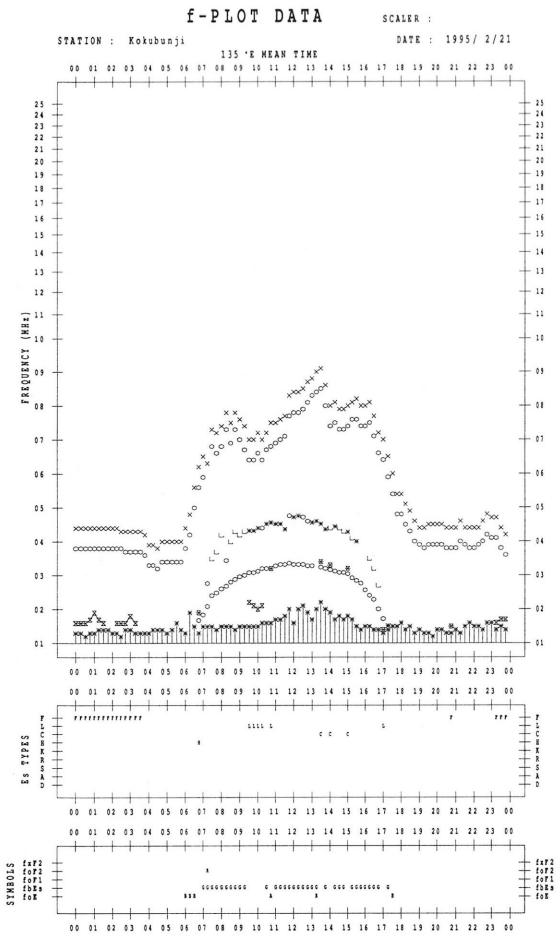

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

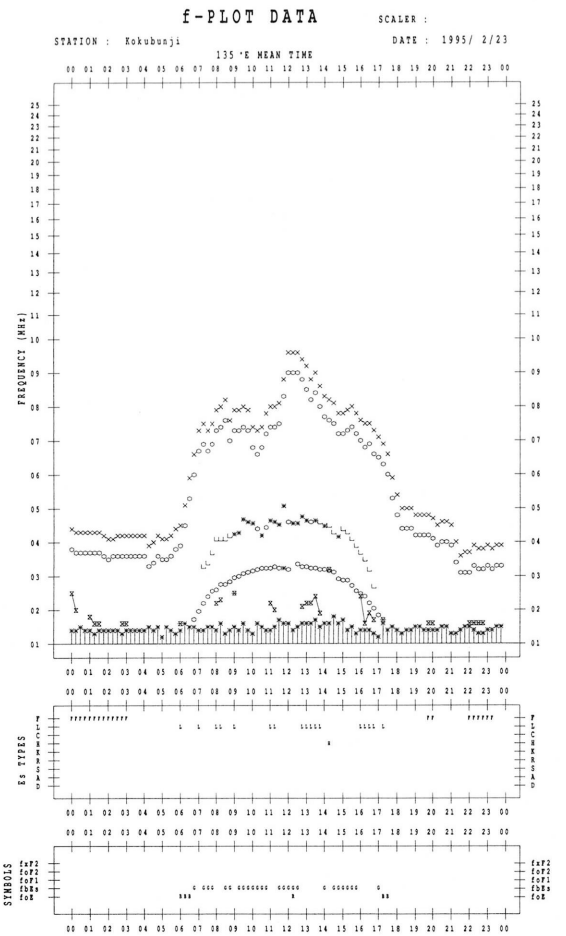

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

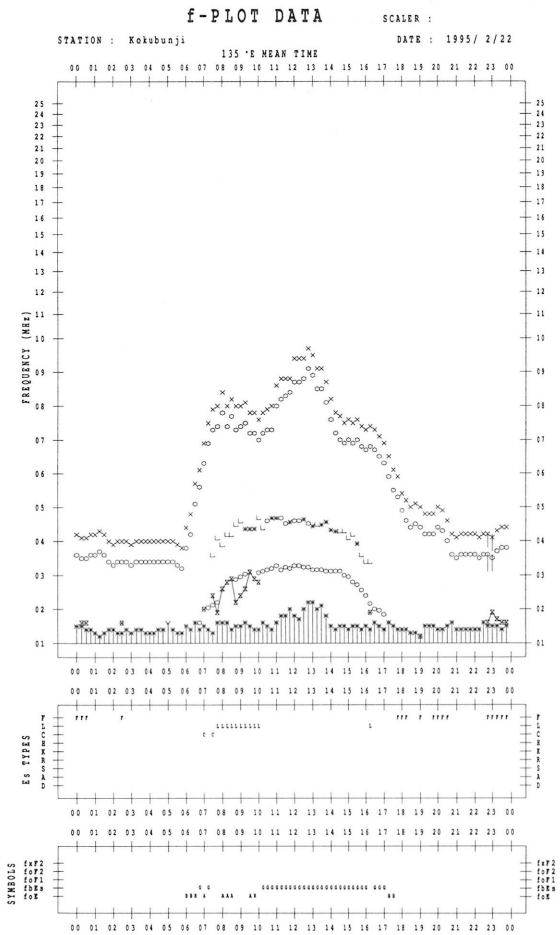

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

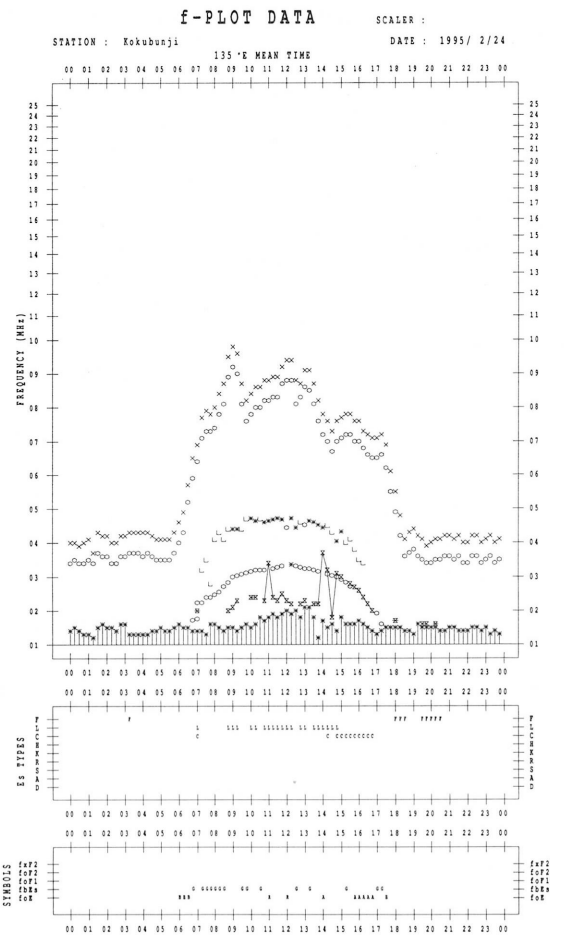

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 2/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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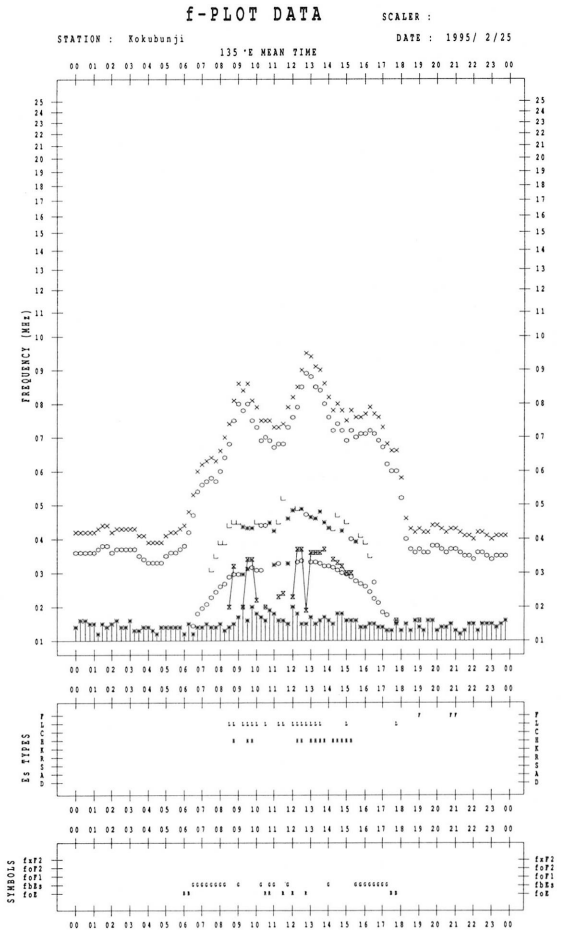
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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SCALER :
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DATE : 1995/ 2/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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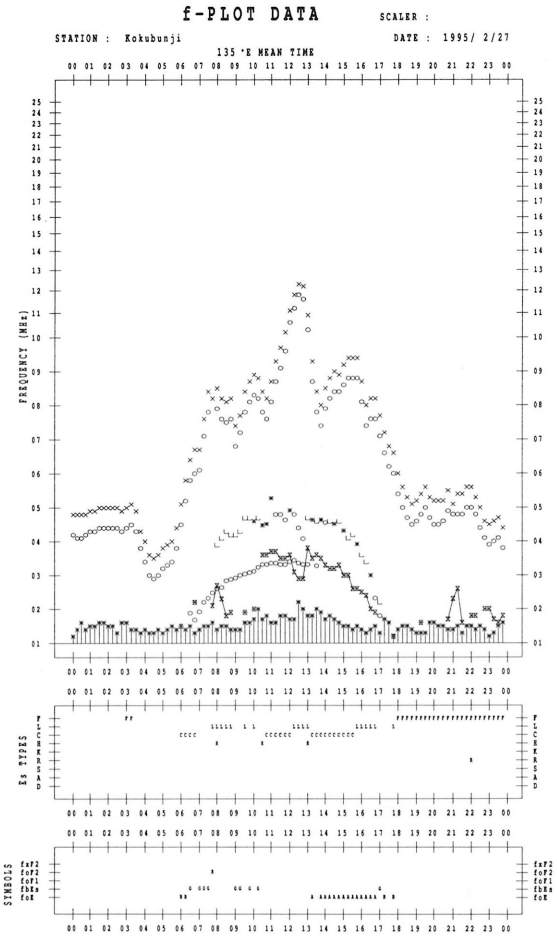
foF2
foF1
fbEs
foE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SCALER :
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DATE : 1995/ 2/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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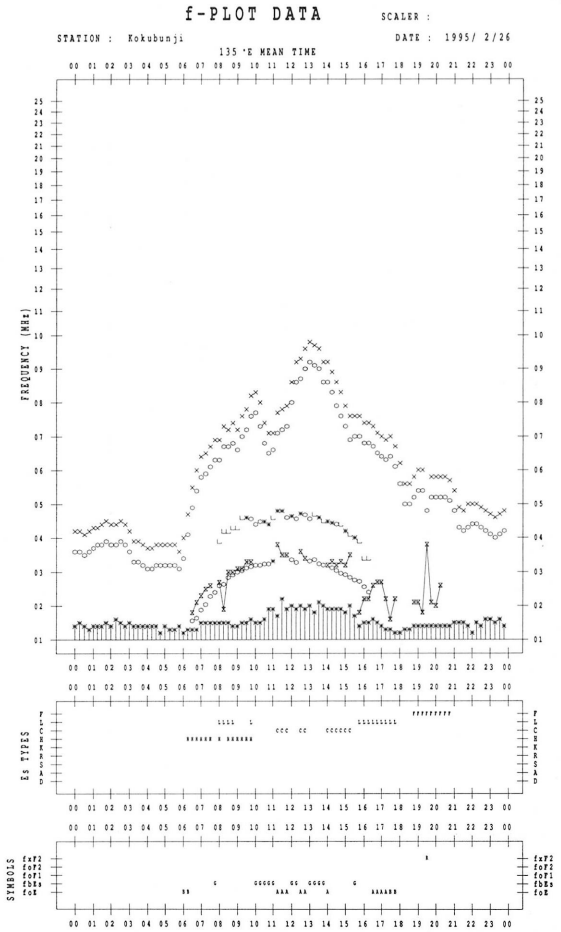
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STATION : Kokubunji
DATE : 1995/ 2/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
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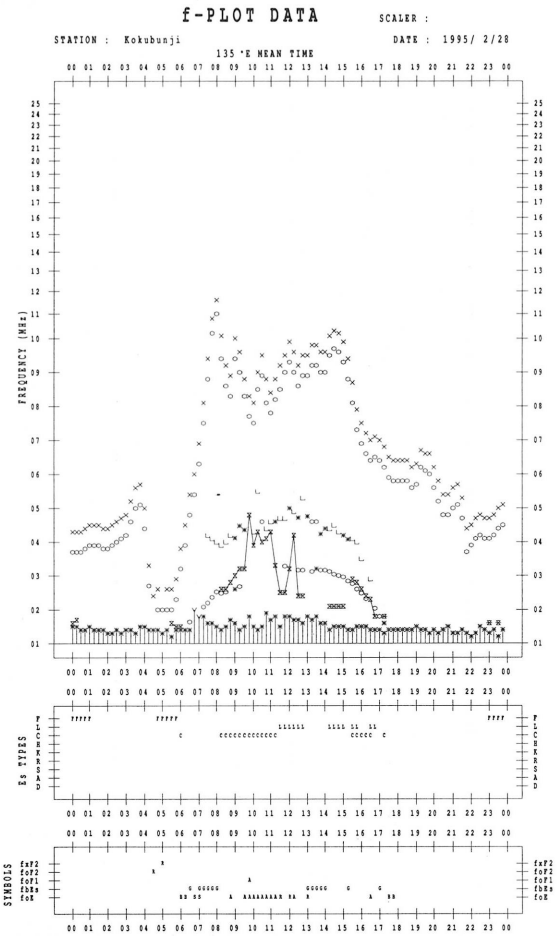
foF2
foF1
fbEs
foE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DATE : 1995/ 2/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

B. Solar Radio Emission

B1. Daily Data at Hiraiso

200 MHz

Not available until system improvement is completed.

B. Solar Radio Emission

B1. Daily Data at Hiraiso

500 MHz

Hiraiso February 1995

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	30	30	30	32	30
2	32	31	30	32	31
3	31	31	31	31	31
4	32	31	31	31	31
5	31	32	31	32	31
6	32	31	31	32	31
7	32	32	31	33	32
8	32	32	32	33	32
9	32	32	32	32	32
10	31	32	31	32	31
11	32	31	31	32	31
12	31	31	31	31	31
13	31	32	(31)	-	31
14	-	-	-	-	-
15	32	32	31	31	32
16	32	31	31	32	31
17	32	32	32	33	32
18	32	32	31	33	32
19	32	32	32	33	32
20	32	32	32	34	32
21	34	33	33	34	34
22	34	34	33	33	34
23	33	32	33	33	33
24	32	32	31	31	32
25	31	32	32	-	31
26	-	-	-	-	-
27	32	31	31	32	31
28	32	31	31	33	31

Note: No observations during the following periods.

13th 0725 - 15th 0006 25th 2200 - 27th 0001

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso February 1995

Single-frequency observations

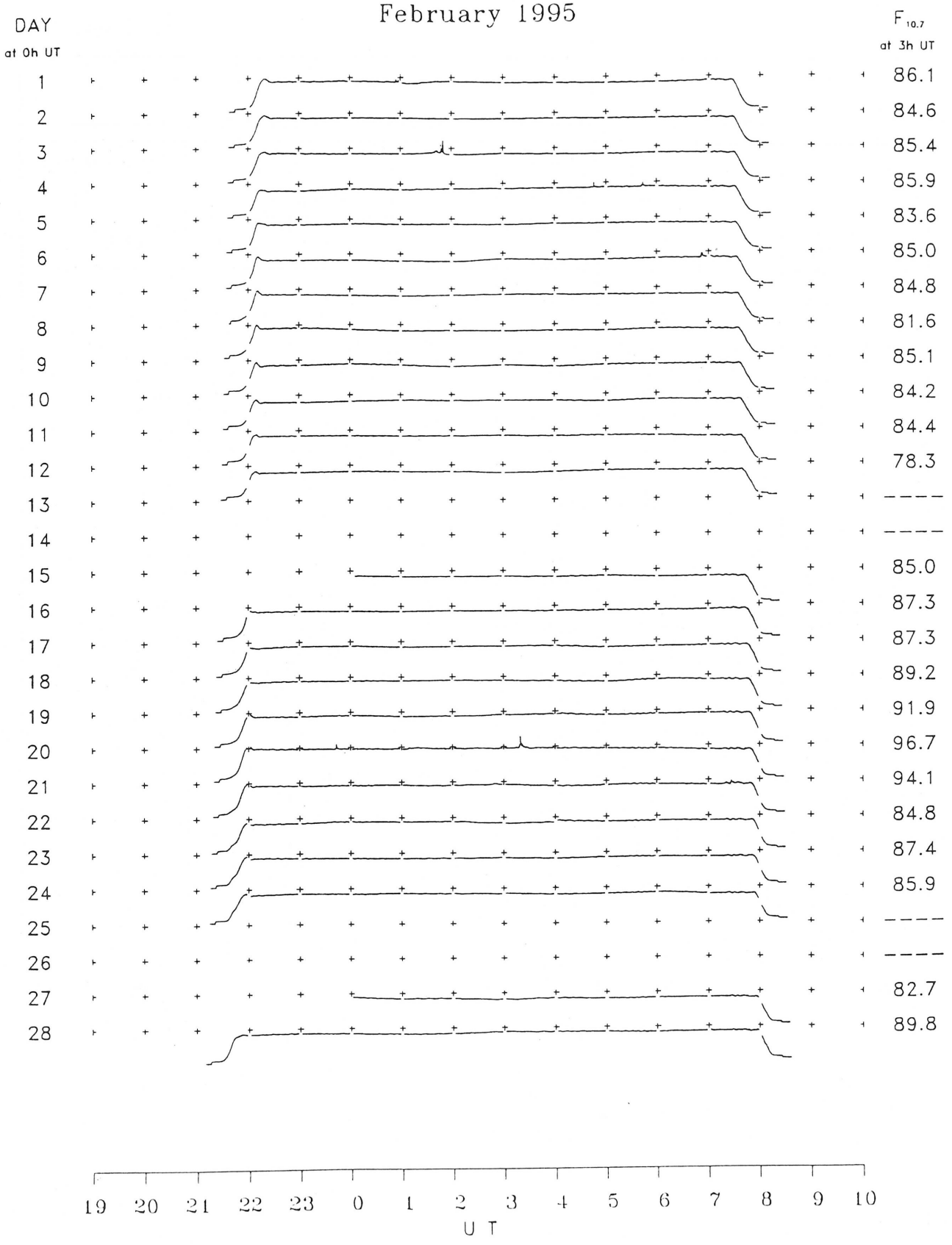
Normal observing period: 2125 - 0820 U.T. (sunrise to sunset)

FEB. 1995	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} Wm^{-2}Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} Wm^{-2}Hz^{-1}) MEAN	POLARIZATION REMARKS
1	2800	1 S	0053.9	0054.7	1.0	10	4	0
	500	42 SER	0054.2	0101.0	8.5	16	-	0
2	500	41 F	2218.1	2218.7	2.0	4	-	0
3	500	46 C	0128.5	0128.8	1.0	7	4	WL
	500	41 F	0137.1	0139.7	8.0	190	-	WL
	2800	4 S/F	0137.1	0141.7	7.5	10	4	0
	500	46 C	0146.6	0147.4	8.0	520	95	WL
	2800	45 C	0146.9	0150.3	4.0	42	20	0
	500	8 S	0403.7	0404.0	0.5	13	-	ML
	500	8 S	2232.1	2232.7	0.6	12	-	WL
4	500	8 S	0208.0	0208.0	0.3	10	-	WL
	500	41 F	0232.7	0233.5	1.5	45	-	0
	2800	8 S	0445.8	0446.1	0.4	15	-	0
	500	8 S	0446.1	0446.1	0.7	20	-	0
	2800	4 S/F	0541.1	0543.7	5.0	14	6	0
	500	41 F	0541.7	0543.1	2.5	127	-	0
5	500	46 C	0017.8	0018.7	1.0	46	30	0
	500	8 S	0042.7	0043.0	0.8	10	-	0
6	2800	46 C	0651.0	0651.5	3.0	15	9	0
	500	46 C	2159.8	2200.9	1.5	95	30	0
19	2800	1 S	2342.9	2343.4	2.0	16	11	0
20	2800	20 GRF	0104.8	0108.8	48	6	2	0
	2800	46 C	0317.3	0318.8	11.5	35	14	0
	500	46 C	0317.9	0319.1	12.0	32	10	WL
21	2800	45 C	0718.7	0720.7	5.0	7	4	0
	2800	21 GRF	0725.0	0726.0	16.5	12	4	0
22	2800	20 GRF	0359.1	0404.6	55	8	3	0

B. Solar Radio Emission

B3. Summary Plots of $F_{10.7}$ at Hiraiso

February 1995



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≥ 6°.

C. RADIO PROPAGATION

C1. H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWV)

FEB 1995 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT DAY	00H 17M	01H 17M	02H 17M	03H 17M	04H 17M	05H 17M	06H 17M	07H 17M	08H 17M	09H 17M	10H 17M	11H 17M	12H 17M	13H 17M	14H 17M	15H 17M	16H 17M	17H 17M	18H 17M	19H 17M	20H 17M	21H 17M	22H 17M	23H 17M
1	-3	-19	ES -29	ES -29	ES -29	-6	ES -29	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-5	-8
2	-6	-5	ES -29	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-5	0	-3
3	0	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-2	0	-1
4	3	-1	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-3	-5	-5
5	-13	ES -13	ES -19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-8	-8
6	-8	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-6	-5	-3
7	-8	-8	-5	ES -29	ES -29	-8	ES -29	ES -29	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-19	-8	-8	-1	-3
8	-14	-5	ES -13	ES -19	ES -29	-19	ES -29	-8	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-5	-8
9	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -13	ES -29	ES -29	ES -19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	ES -13	-8
10	-3	-6	-6	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-8	-8
11	-8	-4	-8	ES -29	ES -29	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-5	-5
12	2	-8	-3	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-2	-5
13	-6	-8	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-2	-5
14	-1	-3	3	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-10	-5
15	-5	0	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-23	ES -29	ES -29	-19	-7	-8
16	-8	C	C	C	C	C	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-5	-3	-5
17	-6	0	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-13	3	3
18	-8	-8	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-3	-7	-8
19	-8	-7	ES -29	ES -29	ES -29	ES -29	ES -29	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-8	-19
20	ES -29	-8	-13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-19	-13	ES -29
21	-5	-8	ES -29	ES -29	ES -29	ES -28	-23	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-8	-9
22	-9	-9	-19	ES -29	ES -29	ES -29	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-23	-3	-8
23	-9	-4	-9	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-7	-6	-5
24	-5	-5	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-7	-5	-8
25	-7	-5	-19	-6	ES -29	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-13	-8	-8
26	ES -29	-10	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-10	-3	ES -29
27	-8	ES -29	-13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-4	-3	-8
28	-32	ES -53	ES -37	-43	ES -37	ES -43	ES -53	ES -53	ES -53	ES -53	ES -53	ES -53	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-8	1
CNT	28	27	27	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	-8	-8	US -19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	-5	-8
UD	0	-1	-5	ES -19	ES -29	-8	ES -29	-8	ES -13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-3	0	-1
LD	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-10	-19

C. RADIO PROPAGATION

C1. H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWVH)

FEB 1995 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT DAY	00H 46M	01H 46M	02H 46M	03H 46M	04H 46M	05H 46M	06H 46M	07H 46M	08H 46M	09H 46M	10H 46M	11H 46M	12H 46M	13H 46M	14H 46M	15H 46M	16H 46M	17H 46M	18H 46M	19H 46M	20H 46M	21H 46M	22H 46M	23H 46M
1	5	7	7	2	10	1	-2	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	3	7	7
2	3	5	7	10	12	7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-7	9	5
3	5	2	9	16	7	-2	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-5	5	12	7
4	7	-2	2	10	12	2	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-19	-5	7	5
5	7	7	6	7	10	3	-3	ES -29	-10	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	2	7	7
6	7	7	7	9	9	7	0	-1	-5	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-2	-6	5	2
7	9	7	9	12	9	4	0	-8	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-4	-3	13	4	2
8	2	7	12	12	-1	-3	ES -29	-5	-2	ES -29	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	8	12	9	7
9	7	8	7	9	7	4	7	5	-1	-3	-3	-3	-8	-8	ES -29	ES -29	ES -29	ES -29	ES -29	-8	0	12	4	-3
10	-2	-2	7	13	8	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-5	8	7	6
11	7	11	4	8	8	8	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	10	-2	5	2
12	2	8	9	9	12	2	ES -29	-19	ES -29	ES -29	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	0	7	7	5
13	7	3	5	15	10	5	ES -29	ES -29	-3	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	8	4	5	3
14	9	12	10	17	8	-3	ES -29	-8	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-5	10	5	0
15	0	7	7	3	2	-3	ES -29	ES -29	ES -29	-19	ES -29	ES -29	-13	-13	ES -29	ES -29	ES -29	-13	-11	-25	-13	7	8	3
16	7	C	C	C	C	1	-13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	7	-1	12	7
17	7	12	12	9	9	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	7	1	9	2
18	-7	3	7	12	-3	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	2	8	14	1
19	7	1	3	6	11	7	-19	-4	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	6	-1	-6
20	-3	-3	7	4	7	7	-8	-13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-7	7	7	5
21	-5	1	0	-1	7	7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-4	1	7	7
22	1	0	4	5	13	15	-9	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-9	4	-1	4
23	-3	4	4	1	-3	0	-13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	0	3	7	0
24	-4	1	-3	12	12	-3	-13	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	6	11	4	2
25	-1	4	0	5	6	0	ES -29	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	3	2	-3
26	-7	1	4	7	1	8	0	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-3	7	7	5
27	5	3	1	12	7	5	6	12	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-1	17	7	2
28	-28	-25	-25	-17	-11	-19	-10	ES -53	ES -53	ES -53	ES -53	ES -53	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	6	1	1	1
CNT	28	27	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	4	4	7	9	8	2	-13	US -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-3	4	7	3
UD	7	11	10	15	12	8	0	-1	-3	-19	-19	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-25	8	12	12	7
LD	-7	-2	0	1	-3	-8	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-19	-5	1	-3

C. Radio Propagation

C2. Radio Propagation Quality Figures at Hiraiso

Hiraiso

Time in U. T.

FEB. 1995	Whole Day Figure	W W V 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Condition 00 06 12 18 / 06 12 18 24	Principal Geomagnetic Storms Start h m	End h	Range nT
1	4o U	4U - - 4	4 4U - 4	N N N N			
2	4- U	4U - - 4	4 3U - 3	N N N N			
3	4+ U	4U - - 5	4 4U - 4	N N N N			
4	4- U	4U - - 4	4 4U - 3	N N N N			
5	4- U	3U - - 4	4 5U - 3	N N N N			
6	4+ U	4U - - 4	4 5U - 4	N N N N			
7	4+ U	4U - - 4	5 5U - 4	N N N N	21. 9	--	119
8	4- U	4U 5U - 3U	3 4U - 4	N N N N	--	18	
9	4o U	2U - - 4U	4 5U 5U 4	N N N N			
10	4- U	4U - - 4	3 3U - 4	N N N N			
11	4o U	4U - - 4	4 4U - 4	N N N N			
12	4+ U	5U - - 4	4 4U - 4	N N N N			
13	4o U	4U - - 4U	4 4U - 4	N N N N			
14	4+ U	5U - - 4U	4 4U - 4	N N N N			
15	4o U	4U - - 4	3 4U 5U 4	N N N N			
16	4o U	C - - 4	4 4U - 4	N N N N			
17	4o U	5U - - 4	4 3U - 4	N N N N			
18	4- U	4U - - 4	3 3U - 4	N N N N			
19	4- U	4U - - 3U	4 4U - 3	N N N N			
20	4- U	4U - - 3U	4 4U - 4	N N N N			
21	4- U	4U - - 4	3 3U - 4	N N N N			
22	4- U	4U - - 3	4 4U - 3	N N N N			
23	4o U	4U - - 4	4 4U - 4	N N N N			
24	4o U	4U - - 4	4 4U - 4	N N N N			
25	3+ U	4U - - 3U	3 3U - 3	N N N N			
26	4- U	3U - - 3U	4 5U - 4	N N N N			
27	4o U	4U - - 3	4 5U - 4	N N N N			
28	3- U	2U - - 4	1 3U - 4	N N N N			

C. Radio Propagation

C4. Sudden Ionospheric Disturbance

(a) Short Wave Fade-out (SWF) at Hiraiso

Hiraiso

Time in U.T.

FEB. 1995	S W F								Correspondence	
	Drop-out Intensities(dB)					Start	Dur.	Type	Imp.	Solar * Flare	Solar Burst
	CO	HA	AUS	MOS	BBC						
3		43	>68	>47		0147	28	SL	3+	x	C
19			7			2340	15	SL	1-	x	C
20		x	22	x		0318	22	S	2-	x	C
20			7			0341	11	SL	1-	x	C

NOTE CO:Colorade(WWV) HA:Hawaii(WWVH) AUS:Australia MOS:Moscow BBC:London

* Optical and X-ray Flares

C. Radio Propagation

C2. Radio Propagation Quality Figures at Hiraiso

Hiraiso

Time in U.T.

JAN. 1995	Whole Day Figure	W W V 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Condition 00 06 12 18 / 06 12 18 24	Principal Geomagnetic Storms Start h m	End h	Range nT
1	-	- - - C	4 - C C	N N N N	None		
2	4+ U	- - - -	4 5U - 4	N N N N			
3	4+ U	- - - -	4 5U - 4	N N N N			
4	4+ U	- - - -	4 5U - 4	N N N N			
5	4+ U	- 5U - -	4 - - 4	N N N N			
6	4o U	- - - -	4 - - 4	N N N N			
7	5- U	- - - -	5 5U - 4	N N N N			
8	4o U	- - - -	4 - - 4	N N N N			
9	4o U	- - - -	4 - - 4U	N N N N			
10	3o U	- - - -	3 - - 3	N N N N			
11	4o U	- - - -	4 - - 4	N N N N			
12	4o U	- - - -	4 - - 4	N N N N			
13	3+ U	- - - -	4 - - 3	N N N N			
14	3o U	- - - -	3 - - 3	N N N N			
15	3+ U	- - - -	4 - - 3	N N N N			
16	4+ U	- - - 5U	4 - - 4	N N N N			
17	4+ U	- - - -	4 - - 5	N N N N			
18	5- U	- - - -	5 5U - 4	N N N N			
19	4o U	- - - -	4 5U - 3	N N N N			
20	4+ U	- - - -	4 5U - 4	N N N N			
21	4o U	- - - -	4 - - 4	N N N N			
22	4o U	- - - -	4 - - 4	N N N N			
23	4o U	- - - -	4 - - 4	N N N N			
24	4+ U	- - - 5U	4 - - 4	N N N N			
25	4+ U	- - - 5U	4 - - 4	N N N N			
26	5- U	- 5U - 5U	4 - - 5	N N N N			
27	4+ U	- - - 5U	4 5U - 4	N N N N			
28	4+ U	- - - 5U	4 - - 4	N N N N			
29	5- U	5U - - 5U	4 5U - 4	N N N N			
30	5- U	5U - - 5U	4 5U - 4	N N N N			
31	4+ U	- - - 5U	4 - - 4U	N N N N			

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