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IONOSPHERIC DATA IN JAPAN

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CONTENTS

COMMUNICATIONS RESEARCH LABORATORY
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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 l etters 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

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

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT WAKKANAI

MAR.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	31	27	29	G	26		G	37	30	29	28	29	29	28	26	G	G	G	G	G	G	G	G
2	G	35	28	G	G	G	G	G	G	33	29	36	29	29	27	26	30	30	G	G	G	G	26	G
3	G	G	G	26	G	G	G	23	27	26	27	30	30	30	29	27	21	G	G	G	G	G	G	G
4	G	26	G	G	G	G	G	G	24	34	28	30	31	30	30	28	G	G	G	G	G	G	G	G
5	G	G	G	29	G	G	G	G	29	27	33		31	30	34	28	25	29	G	G	G	G	G	29
6	G	G	G		G	G	G	G	27	29	28	36	29	28		26	24	G	24	G	G	G	G	G
7	G	G	G	G	G	G	G	G	24	26	35	30	32	32	30	27	23	G	G	G	G	G	G	G
8		G	G	G	G	G	G	20	29	34	30	N	32	30	30	28	24	G	G	G	G	G	G	G
9	G	G	G	G	G		G	25	30	37	29	31	30	29	29	28	24	G	G	G	G	G	G	G
10	G	G	G	G	G	G	G	24	30	29	33	31	29	30	28	26	G	G	G	G	G	G	G	G
11	G	G	G	G	G	G	24	G	31	31	34	35	30	35	N	26	30	G	G	G	G	G	G	G
12	G	G	G	G	G	G	30	28	32	40	31	32	42	30	28	32	31	32	G	G	G	G	G	G
13	G	G	G	G	G	G	G	30	31	33	28	32	30	35	28	33	24	26	G	G	G	G	G	G
14	G	G	G	G	G	G	G	25	38	38	36	39	31	31	29	28	31	28	G	G	G	G	G	G
15	G	G	G		G	G		27	30	36	37	35	36	N	29	28	24	27	G	G	G	G	G	G
16	G	G	G	G	G	G	G	25	26	28	36	36	36	31	33	23	31	G	G	G	G	G	G	G
17	G	G	G	G	G	G	G	25	34	32	39	38	N	30	34	36	30	G	G	G	G	G	G	G
18	G		G	G	G	G			28	30	31	31	32	30	31	27	24	G	G	G	G	25	33	
19	G	G	G	G	G	G	G	21	32	33	30	31	32	32	32	30	27	G	G	G	G	G	G	30
20	G	G	G	G	G	G	27	26	29	29	31		30	31	29	28	48	G	G	G	G	G	G	G
21	G	G	G	G	G	G	28	27	30	34	36	36	33	31	32	34	32	27	G	G	G	G	G	G
22	G	G	G	G	G	G	G	28	34	32	34	32	32	32	31	36	30	26	G	G		G	G	G
23	G	G	G	G	G	G	G	29	32	34	30	34	35	33	31	29	32	28	G	G	G	G	G	G
24	G	G	G	G	G	G	28	28	34	30	32	34	31	31	36	29	33	31	28	G	G	G	G	G
25	G	G	G	G	G	G	29	30	36	37	38	38	32	32	32	33	32	30	27	G	G	G	25	G
26	G	G	G	G	G	G	26	28	34	30	31	40	31	33	32	32	34	28	G	G	G	G	G	G
27	G	G	G	35	G	G	G	28	31	27	29	33	32	31	29	28	30	28	25	G	G	G	G	G
28	G	G	G	G	G	23	G	29	33	31	29	30	30	31	30	29	26	27	G	G	G	G	G	G
29	G	G	G	G	G	G	G	27	33	28	31	32	33	35	38	28	25	G	G	24	G	G	G	G
30	G	G	39	G	54	38		30		31	36	30	31	31	31	36	29	G	26	25	29	G	G	G
31	G	G	G	G	G	G	G	24	30	35	37	39	36	31	30	30	33	22	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	29	31	30	27	30	30	31	31	28	30	30	29	31	31	31	31	31	30	31	31	30
MED	G	G	G	G	G	G	G	25	30	31	31	32	31	31	30	28	29	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	24	28	33	34	36	36	32	32	32	32	31	28	G	G	G	G	G	G
L Q	G	G	G	G	G	G	G	20	29	29	29	31	30	30	29	27	24	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT WAKKANAI

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

HOURLY VALUES OF foF2 AT KOKUBUNJI

MAR.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	46	40	42	69	35	N	40		69	66	81	107	114	96	98	74								
2											92	106	105	78	80	96		71	62		35	35	37	35
3	46	36	42	38	35	59		68	67	75	86	100	107	91	76	64	67	68	50	44	58	41	46	30
4	41	56	36	35	34		40	56	66	78	78	96	103	98	76	70	67	67	56	44		35		59
5	69	40	36	40		30	45	69	67	88	84	96	98	74	66	74	76	82	66	34		34	35	A
6	A	31	69	37	69	26	37	54	64	91	80	54	81	92	93	66	64	40	55	36	31	38	35	35
7	49	69	37	41	35		36	68	70	66	75	77	86	76	72	63	62	58	60	35	34	35		32
8		69	59	35	32	N	34	54	57	71	75	90	88	88	71	60	64	68	55		N	36	36	
9		59	34	25	69	N	58	57	67	68	76	83	84	73	72	65	68	67	62	55	58	44	25	41
10	56	37	45	47				69	71	70	68	82	102	77	81	68	94	67	67	46	35	46	58	44
11	40	38	56	45	N	24	69	72	70	92	70	77	91	72	77	71	66	72	64	60	38	38	47	36
12	41	56	40	47	35	N	56	74	67	71	81	70	97	100	97	82	71	93	82	56	44	48	44	44
13	46	42	43	46	36	34		50	92	68	84	95	108	93	80	72	69	71	69	44	47	28	46	44
14	44	37	31	57	26	26	47	60	61	71	80	104	107	105	72	71	73	61	58	44	56	44	46	44
15	59	48	43	48	34	59	44	74	70	62	78	86	81	91	101	74	73	60	84	50	56	46	32	46
16	46	28	56	47	69	28	A	56	64	70	70	88	92		81	61	73	92	69	42	35	59	38	
17	37		56	42	59	32	56	68	59	88	81	92	100	90	75	63	70	92	57	40	34	58		59
18	59		64	40	N	29	47	80	66											59	49	46	37	58
19	46	39	37	62	38	69	47	59	94	68	73	98	107	95	72	64		57	58	48		59	32	69
20	52	58	35	35	69	59	46	57	52	78	72	70	91	76	71	61	61	92		51	59	69	32	
21	37			58			37	58	67	73	82	86	93	84	92	67	67	66	72	58	47	46		46
22	35	34		33	35	35	59	68	67	62	60	67	93	80	84	64	60	68	73	68	59	46		
23	64	56	44	44	59	69	A	71	58	63	62	74	84	71	67	60	66	68	68	69		44	38	36
24	46	36	35	69	41	59	56	74	55	73	60	80	70	83	86	72	64	91	82	58	57			
25	49	48	70	47	37	38	58	69	61	66	73	75	75	74	74	71	67	61	66	64	47	47	47	48
26	47		59	59	36	32		74	94	67	76	80	66	72	72	70	68	68	74		60	51	56	57
27		44		57	37	41	69	68		68	82	71	81	90	81	71	66	66	69	56	68	57	51	48
28		48	48	45	36	69	50	66	79	86	80	106	116	101	92	75	94	72	72	60		44	48	48
29	69	48		43	37	37	58	73	61	68	71	81	91	90	82	81	80	61	61	48	70	48	45	48
30	56	46	48	41	A	A		70	68	78	78	87	96	72	75	63	66	71	83	68	68	69	59	47
31	48	46	47	38	38	42	57	67	70	72	81	86	80	74	77	70	61	81	82	64	58	35	69	46
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	26	30	24	21	23	29	29	29	30	30	30	29	30	30	27	29	28	27	24	29	24	24
MED	46	45	44	44	36	37	47	68	67	71	78	86	92	84	77	70	67	68	66	51	52	46	44	46
U Q	56	56	56	48	50	59	58	71	70	78	81	96	103	92	84	72	73	76	72	60	58	49	47	48
L Q	42	37	37	38	35	29	40	57	61	67	72	77	84	74	72	64	64	63	59	44	36	37	35	38

HOURLY VALUES OF fEs AT KOKUBUNJI

MAR.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	19	G	G	26	G	G	G		31	31	34	34	40	43	37	40	35							
2											28	26	37	32	35	39		G	G	G	G	G	G	G
3	G	G	G	G	28	G	G	26	28	31	34	34	32	30	30	28	31	27	G	25	26	25	24	G
4	29	G	G	G	G		G	25	30	32	28	G	G	G	32	29	26	26	G	G	G	G	G	G
5	G	G	G	G	G	G	G	31	28	33	32	47	32	31	32	30	31	G	G	G	G	G	G	41
6	27	G	G	G	G	G	G	25	30	27	28	28	32	31	30	28	24	G	G	G	G	G	G	G
7	G	G	G	G	G		G	20	30	25	26	33	32	33	32	30	31	G	G	G	G	28	G	G
8	G	G	G	G	G	G	G	34	31	33	33	31	31	35	G	29	29	26	34	29	G	G	G	G
9		G	G	G	G	G	11	26	32	27	29	26	G	G	31	34	31	26	G	G	G	G	G	G
10	G	G	G	G	G	G	G	G	28	29	30	34	35	34	32	30	32	G	G	G	G	G	G	G
11	G	G	G	G	G	G	24	30	30	31	38	31	38	30	154	29	29	G	G	G	G	G	G	G
12	G	G	G	G	G	G	G	25	30	30	30	30	30	25	28	27	27	26	G	G	G	G	G	G
13	G	G	G	G	G	G		25	32	32	33	30	34	48	26	30	30	G	G	G	G	G	G	G
14	G	G	G	G	G	G	G	26	30	34	37	49	49	30	29	30	32	27	G	G	26	G	G	G
15	G	G	G	G	G	G	34	43	32	27	45	38	44	43	30	34	30	34	24	G	G	G	G	G
16	G	G	G	G	G	G	30	32	34	36	38	35	32		38	52	34	29	27	G	G	G	G	G
17	G	G	G	G	G	G	G	27	30	27	30	31	26	35	32	58	35	G	G	25	G	G	G	G
18	G	G	G	G	G	G	26	33	31											G	G	G	G	23
19	G	G	G	G	G	G	25	29	34	31	31	32	31	30	G	28		30	G	G	G	G	G	G
20	G	G	G	G	G	G	26	28	32	32	28	32	40	31	32	29	27	G		G	G	G	G	G
21	G	G	G	G		G	28	35	34	31	32	30	34	33	33	27	28	G	G	24	26	G	G	G
22	G	G	G	G	G	G	39	30	35	31	33	32	34	31	32	29	31	27	G	G	G	G	G	G
23	G	G	G	G	G	G	28	28	34	31	33	31	31	32	38	33	34	41	62	28	G	G	G	G
24	G	G	G	G	G	G	31	30	30	36	30	39	30	31	40	31	50	40	38	108	36			
25	G	G	G	G	G	G	24	29	33	32	31	30	30	31	28	32	31	30	26	G	G	G	G	G
26	G	28	G	G	G	G		30	35	38	33	34	35	40	40	49	48	32	30	G	G	G	G	25
27		G		G	G	G	28	35		36	31	39	32	30	29	29	27	20	24	G	G	27	G	G
28		G	G	G	G	G	G	30	36	31	32	40	41	33	32	33	32	32	34	24		G	G	G
29	G	G	G	G	G	G	26	29	33	35	31	38	34	G	32	31	26	30	G	G	G	G	G	G
30	G	G	G	G	30	34		30	32	36	32	33	33	51	48	32	26	29	G	G	G	G	G	G
31	G	G	G	G	G	G	25	30	29	30	32	46	26	33	31	39	28	30	G	G	G	G	G	G
	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	30	29	30	29	28	27	29	29	29	30	30	30	29	30	30	28	29	28	30	29	29	29	29
MED	G	G	G	G	G	G	24	29	31	31	32	32	32	31	32	30	31	26	G	G	G	G	G	G
U Q	G	G	G	G	G	G	28	30	33	33	33	38	35	34	35	34	32	30	25	G	G	G	G	G
L Q	G	G	G	G	G	G	G	26	30	30	30	30	31	30	30	29	27	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT KOKUBUNJI

MAR.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	16	15	15	18	15		15	16	16	16	17	15	15	16	15							
2											16	42	29	14	17	16		20	15	14	16	15	15	14
3	15	15	15	15	14	16	15	15	27	14	15	15	17	17	16	14	16	16	14	15	15	14	14	14
4	14	16	15	15	15		15	18	16	16	18	42	42	42	18	15	16	18	15	14	15	15	15	15
5	15	15	15	15	15	16	16	17	14	15	16	16	18	17	16	15	14	16	15	14	17	17	15	14
6	15	15	15	15	15	17	15	16	16	15	16	18	21	22	17	16	15	16	15	15	15	16	15	16
7	15	15	15	14	14		15	24	14	15	15	16	18	20	16	16	14	20	16	15	16	14	16	14
8	14	15	15	15	15	15	16	16	14	14	15	18	15	17	39	14	16	17	15	15	15	15	15	15
9		15	15	15	15	14	16	18	14	15	18	17	35	41	17	17	15	15	14	15	15	14	15	15
10	14	15	15	14	15	16	15	23	18	15	17	16	21	22	18	17	15	20	15	14	15	15	15	15
11	15	15	14	14		17	16	14	15	15	17	16	15	17	17	16	15	17	14	15	14	15	15	15
12	16	15	14	15	15	16	16	18	15	15	15	16	17	15	15	16	15	15	14	14	14	15	15	15
13	15	15	14	14	14	15		16	15	15	16	17	16	17	16	16	15	14	15	14	15	15	15	14
14	15	15	15	14	15	15	18	18	15	15	17	17	20	16	15	18	15	17	14	15	15	14	16	15
15	15	15	15	15	15	15	17	15	15	15	17	18	20	18	17	15	15	15	15	15	14	15	15	15
16	15	15	15	15	15	15	14	15	14	16	16	21	18		17	15	15	15	15	15	15	16	16	15
17	14	14	15	14	14	15	16	17	14	15	17	17	18	22	15	17	15	22	15	15	20	14	15	15
18	15	14	15	15	15	15	17	17	15											15	14	15	14	14
19	15	15	15	14	15	15	17	17	16	15	15	17	17	16	42	14		16	15	15	15	15	15	14
20	15	15	15	15	15	15	17	14	14	15	16	20	16	17	18	15	14	18		14	14	15	15	15
21	15	15	14	15		16	15	15	15	15	17	20	42	17	17	16	14	22	15	15	15	14	14	15
22	15	16	14	14	14	14	16	14	15	15	15	17	20	20	16	14	15	14	14	14	14	15	15	14
23	15	14	15	15	14	15	17	18	15	15	17	22	17	21	18	18	15	14	15	15	15	16	15	15
24	15	15	15	15	14	15	20	14	15	14	15	16	18	16	14	15	15	15	15	15	14			
25	14	15	14	14	15	15	15	15	15	16	16	17	44	17	20	15	14	15	15	14	15	15	14	14
26	14	14	14	15	14	16		16	15	14	16	16	17	17	17	14	15	15	15	15	14	14	15	14
27		14		14	15	14	18	16		14	16	22	17	20	17	17	15	21	16	14	15	14	15	14
28		16	15	14	15	14	17	15	14	14	23	21	20	18	17	14	14	15	15	15		15	14	15
29	15	14	15	15	15	15	18	15	14	16	15	17	26	44	16	15	15	14	16	15	15	14	15	15
30	16	15	15	14	14	14		15	14	15	17	22	22	15	15	14	18	14	16	14	14	14	15	14
31	14	14	15	14	15	20	16	15	15	14	15	18	42	18	15	17	15	15	15	14	15	14	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	30	29	30	28	28	27	29	29	29	30	30	30	29	30	30	28	29	28	30	29	29	29	29
MED	15	15	15	15	15	15	16	16	15	15	16	17	18	17	17	16	15	16	15	15	15	15	15	15
U Q	15	15	15	15	15	16	17	17	15	15	17	20	22	20	17	16	15	18	15	15	15	15	15	15
L Q	14	15	14	14	14	15	15	15	14	14	15	16	17	16	16	15	15	15	15	14	14	14	15	14

HOURLY VALUES OF foF2 AT YAMAGAWA

MAR.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	49			59		59	59	59	68	78	88	115	117	118	125	106	102	90	68	32	59	59		
2	69		25	56	58	31	23	31	69	70	102	101	100	94	93	87	84	75	74	60		60	31	69
3	49	32	59	59	24	69	30	56	67	84	92	111	118	120	115	105	88	73	67	50	59	58	32	A
4			49		55	N	N	59	66	67	84	95	103	113	100	94	70	67	66		32			
5	48		49		30	30	59	26	69	82		87	110	94	78	78	86	92	83	60	49		A	A
6	A	37	69	32		N		30	62	66	84	77	75	101	105	90	71	68	67	62	31			59
7		N	26	60	48	N	69		68	64	81	78	89	100	91	83	71	67	66	65	32		59	69
8				60	69	30	30	35	57	70	81	88	107	120	115	97	73	78	70	A		49		
9			59	60	31	69			62	66	86	91	92	76	67	73	72	67	72	69	48		59	51
10	60		59	49	59		N	25	70	66	61	78	102	95	87	78	75	76	82	60	56	69	60	49
11	56	60		33	N	49	N	18	68	68	74	77	83	101	76	76	A	70	68	70	49		49	
12					59	69	69		59	70	91	78	98	98	102	91	82	84	68	60	60	49	32	60
13		69	49	56	34	29	59	35	67	70	85	90	100	111	105	90	80	72	68	60	59		49	69
14				60	49	49	30	32	71	70	86	102	111	101	90	72	76	70	66	60		69		69
15	59	28	49	59	31	49	N	58	61	76	82	81	80	95	114	96	71	66	66			59	69	
16	48	49	59		60	49	49	58	68	68	70	78	92	112	113	90	81	84	66	48			69	
17	50	59	A		28	49	69		67	76	76	82	107	111	104	98	74	71	67	59		28		
18	69	48		59		26	49	30	61	72	80	85	102	100	91	72	61	66	60	59	58			
19	56	58	59	59	31	28	59	49	69	73	78	81	101	105	100	67	58	58	67	62	57			54
20		58				29	49	58	49	93	83	84	91	90	84	71	66	76	68		69	58	32	49
21	69	69	69			N	30	26	61	70	91	92	93	103	108	87	67	66	67				58	
22			69	30	58	69	58	56	68	69	72	A	90	102	87	75	68	60	67	66	60	49	58	33
23	60		59	58		30	30		74	63	71	67	86	78	77	77	70	67	73	72	72	A	49	31
24	31			28	N	69		49	61	66	70	70	A	83	98	77	66	66	68	66	59	35	A	53
25		56	59		30	30	32	59	68	67	A	75	84	82	82	73	72	66	71	66	A	26	49	
26	32		59	35			26	58	57	75	71	70	75	77	77	70	60	72	76	81	A	79	78	69
27	34		60	67	59	37	48	57	59	67	93	87	80	98	94	78	77	67	77	69	A		57	
28		54			60	23	58	58	67	74	84	105	114	97	105	86	73	A	67	68	59		69	
29						59	31	A	A	A	73	85	111	107	87	70	74	72	62		46		69	60
30			59		26	59	59	54	70	77	78	90	104	104	94	77	70	71	70	69			79	
31	47		59			N	30	59	62	75	81	76	82	85	77	65	64	72	78	66	59		60	49
	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	13	20	19	20	24	24	25	30	30	29	30	30	31	31	31	30	30	31	25	20	14	21	16
MED	50	56	59	59	48	49	49	54	67	70	81	84	99	100	94	78	72	70	68	62	58	58	58	56
U Q	60	59	59	60	59	59	59	58	68	75	86	91	107	107	105	90	77	75	72	68	59	60	69	69
L Q	47	42	49	35	30	30	30	30	61	67	73	78	86	94	84	73	68	67	67	60	48	49	49	49

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT YAMAGAWA

MAR.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	G	G	G	G	G	G	G	27	31	27	30	31	28	30	36	38	34	33	26	G	G	G	28	31
2	24	G	27	G	G	G	G	33	24	28	28	30	32	32	33	32	31	32	G	25	28	G	32	G
3	30	30	G	31	27	25	G	27	26	32	31	31	31	30	32	31	30	32	G	G	G	26	27	29
4	30	25	27	G	G	G	G	27	30	29	33	32	G	G	32	30	29	31	G	G	G	G	G	G
5	G	G	24	G	G	G	G	28	28	31	29	28	G	35	33	34	31	33	G	24	24	27	33	34
6	29	24	G	G	G	G	G	28	28	27	29	30	29	31	30	30	28	29	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	30	27	28	31	31	31	31	32	32	31	G	G	G	G	G	G
8	24	G	26	G	G	G	G	36	29	32	29	30	31	32	30	32	32	33	30	30	23	G	G	G
9	G	G	G	G	G	G		33	29	28	29	29	29	29	30	31	29	30	26	G	G	G	G	G
10	G	G	G	G	G	G	G	G	29	28	30	28	29	G	G	32	29	32	G	G	G	G	23	G
11	G	G	G	G	G	G	G	28	29	29	27	30	27	30	30	28	31	24	29	G	G	G	G	G
12	G	G	G	G	G	G	G		30	32	29	31	30	29	28	28	29	30	G	G	G	G	G	G
13	G	G	G	G	G	G	G	G	29	N	32	31	32	33	30	25	29	27	G	G	G	G	G	G
14	G	G	G	G	G	G	G	37	29	32	30	30	29	30	G	31	30	33	29	24	G	G		31
15	G	G	G	G	G	G	G	30	30	N	30	32	36	30	33	30	29	24	G	G	G	G	G	G
16	G	G	G	G	G	G	G	30	32	30	31	31	32	31	30	36	31	27	27	G		G	G	
17	G	G	34	G	G	G	G	30	31	29	31	32	31	30	30	28	29	24	G	G	24	G	G	G
18	G	G	G	G		G	G	32	31	28	28	27	G	G	29	31	31	30	G	G	G	G	G	G
19	G	G	G	G	29	G	G	33	32	30	32	32	29	G	G	28	29	26	G	G	G	G	G	G
20	G	G	G	G	G	G	G	25	30	29	30	28	28	28	32	31	31	29	G		G	G	G	G
21	G	G	G	G	G	G	G	33	30	29	30	32	30	29	27	31	28	32	G	G	G	G	G	G
22	G	G	G	G	G	G	G	38	32	29	31	33	30	27	29	32	30	30	26	G	G	G	G	G
23	G	G	G	G	G	G	G		33	36	30	30	29	30	30	32	30	32	33	G	G	33	30	G
24	G	G	G	G	G	G	G	34	29	29	29	32	30	32	G	G	38	46	58	G	G	26	38	28
25	34	G	G	G	G	G	G	32	30	32	58	32	G	28	29	58	30	66	51	55	36	34	29	G
26	37	33	G	G	G		G	26	32	32	31	31	30	G	31	31	28	37	51	34	58	25	29	23
27	G	G	G	G	G	G	G	36	30	31	32	30	29	30	29	30	28	25	47	34	33	34	22	G
28	24	34	G		G	G	G	27	30	29	31	30	G	53	32	28	29	32	G	G	G	G	G	
29	G	G	G	G	G	G	G	30	31	31	32	32	30	32	30	29	34	32	28	25	G	G	G	G
30	30	G	G	G	G	G	G	31	28	30	32	31	30	G	29	34	28	31	26	25	G	G	G	G
31	G	G	G	G	G	G	G	23	30	29	31	32	30	30	29	29	29	28	G	G	26	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	30	30	30	29	31	29	31	31	31	31	31	31	31	31	31	30	30	31	31	29
MED	G	G	G	G	G	G	G	30	30	29	30	31	30	30	30	31	30	31	G	G	G	G	G	G
U Q	24	G	G	G	G	G	G	33	31	31	31	32	31	31	32	32	31	32	29	24	23	G	27	G
L Q	G	G	G	G	G	G	G	27	29	28	29	30	28	28	29	29	29	28	G	G	G	G	G	G

HOURLY VALUES OF fmin AT YAMAGAWA

MAR.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	14	14	14	14	14	14	14	14	18	15	17	16	18	18	22	15	15	14	15	14	15	14	14	14
2	15	15	14	14	15	14	17	15	18	15	17	18	21	20	20	21	17	15	18	14	15	14	14	15
3	15	14	14	15	14	14	16	14	14	16	15		22	20	17	18	15	14	17	14	14	14	14	15
4	15	15	14	15	15	16	15	17	15	15	17	23	46	48	22	17	16	15	17	14	14	14	15	15
5	14	15	15	14	14	15	14	14	21	15	17	17	46	21	18	17	15	15	16	14	14	14	14	15
6	14	15	14	14	14	15		15	14	17	18		20	22	22	48	15	15	16	14	14	14	14	14
7	15	15	15	15	15	15	15	18	15	14	18	22	21	21	21	21	16	14	17	14	14	15	14	14
8	15	15	14	15	14	14	15	14	15	15	15	21	21	21	47	20	16	14	14	14	15	15	15	15
9	15	15	15	14	14	14		14	15	16	15	18	21	23	23	20	15	14	17	14	14	14	14	15
10	14	14	14	15	15		15	20	14	14	15					21	15	15	17	14	14	14	14	14
11	15	14	14	14	14	16	15	15	14	15	15	15	18	16	46	15	17	15	14	15	14	14	15	15
12	14	14	14	14	15	14	14		15	15	17	21	17	20	16	16	15	14	18	14	14	15	14	14
13	14	15	14	14	14	15	14	20	15	16	16	17	17	21	18	16	14	16	16	14	14	22	15	14
14	17	14	14	14	15	14	14	16	14	15	17	18	21	18	49	20	15	15	14	14	14	16	15	14
15	15	14	14	14	14	15	15	15	15	15	16	18	20	52	26	18	16	15	20	14	14	14	14	15
16	15	14	14	14	14	15	15	15	15	16	16	18	16	21	20	18	16	14	14	14		14	14	
17	15	14	15	14	15	15	15	15	15	17	18	20	21	22	23	48	18	15	17	14	15	14	15	15
18	15	14	14	14		15	15	16	15	15	16	17		49	21	18	16	16	16	14	14	14	15	15
19	14	14	15	14	15	14	14	15	15	17	20	22	51	50	49	17	17	15	20	14	14	14	15	14
20	15	15	14	14	14	14	14	16	15	16	15	17			16		16	15	17		14	14	14	14
21	14	14	14	14	14	15	14	15	15	17	17	20	22	17	18	17	17	14	17	14	14	14	14	14
22	14	14	14	14	14	14	14	14	15	15	17	21	21	20		20	18	15	16	14	14	14	15	15
23	14	14	14	14	14	15	15		14	16	20	22	21	23		21	16	15	14	15	14	15	15	14
24	15	14	14	14	15	15	14	15	18	15	18	17	21	22			18	15	15	14	14	14	14	14
25	14	14	14	15	14	15	15	15	14	16	18	22	52	56	52	17	16	14	14	14	14	14	14	14
26	14	14	14	14	14		14	17	14	16	20	21			21	21	16	14	14	14	14	14	14	14
27	14	14	14	14	14	14	15	16	14	17	20	23	47	21		20	16	15	14	14	14	14	15	15
28	14	14	15		14	14	14	15	15	16	18	21		24	23	18	15	14	18	14	14	14	14	
29	15	15	14	14	14	14	14	16	15	20	21	21		21	22	20	17	14	18	14	14	14	14	14
30	15	14	15	14	17	15	15	17	15	20	20	22				23	16	14	14	14	14	14	14	14
31	14	14	14	14	15	15	15	23	15	16	17	21		22	22	18	18	15	14	14	14	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	30	29	29	29	31	31	31	28	23	27	25	29	31	31	31	30	30	31	31	29
MED	15	14	14	14	14	15	15	15	15	16	17	20	21	21	22	18	16	15	16	14	14	14	14	14
U Q	15	15	14	14	15	15	15	16	15	16	18	21	22	23	24	21	17	15	17	14	14	14	15	15
L Q	14	14	14	14	14	14	14	15	14	15	16	17	20	20	19	17	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT OKINAWA

MAR.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	43	43		40	36			32	69	82	93	127	124	139	173	168	162	145	133	92	59	46	52	45
2	69	69	58	A	59	38		33	61	83	102	106	92		113	124	124	94	94	44			48	
3	59	46	43	40	46	A	A	46	70	76	94	124	122	146	157	151	150	142	124	93	94		48	38
4		80	71	41	A				64	69	83	105	111	120	136	133	124	91	87	75	43	44		43
5		69	69	45	59	31	A	35	62	94		80	106	113	102	111	117	113	110	83				
6		69	A	35	48			79	69	80	87	88	95	122	142	149	150		80	94	59		42	A
7		69	59	46	48	69			68	95		94	102	102	116	142	108	81	83	94	50	46	49	
8		59	69	46	69	69			60	67	91	91	112	128	162	152	123	111	122	77	56	48	A	56
9	48	70	52	70	44	59		59	51	68	91	125	125	124	82	78	81	83	95	36	50			
10	44			47		69			68	68	63	92	105	105	106	96	92	93	96	83	43	A	69	48
11	42	43	58	45			A		59	75	78	96	86	95	94	95	70	83	88	78	50		59	44
12	44	69	47	46	59			79	84	68	92	109	92	104	104	95	95	98	82	69		48		37
13	38	59	37	43	35	N			44	80	85	95	95	142	123	123		83	73	81	A		59	69
14	42	37	59	53		36	49	A	53	80	91	128	117	120	112	92	115	81	68	60		69	69	48
15		48	44	45	38			44	54	83	83	98	95	94	118	124	122	114	84	83	50	48	44	
16				49	28		A	A	79	71	74	87	95	126	149	122	123	124	75	56	48		A	44
17	A		49	32				46	84	94	92	100	121	166	173	142	123	122	66	45		48		69
18	69		50	59				46	58	67	91	92	123	123	122	92	93	79	60	58	46			
19	37	47	47	47	59			55	59	81	93	124	105	121	105	94	81	72	76	62		69		
20	44		48	43	38	31		46	58	64	91	96	102	112	110	116	113	122	92	76	68	68	61	69
21	58	60	60	59	69	69			56	67	93	105	105	114	133	N		115	90	68	69			
22	33	56		48	41	43	46	44	62	92	73	86	110	106	107	95	78	95	83	82	68	57	42	
23	69	69	47	60	69			42	82	68	78	85	92	112	112	104	87	93	81	79	A	A		
24	A	47	47	47		69	37	66	70	92	75	76	80	92	129	95	83	75	59	70	52	53	A	A
25	64					59		A		67	71	73	91	92	93	91	93	86	84	72	37	54	A	A
26	53	53	48	59	N			54	68	81	87	83	90	92	92	67	72	78	94	81	70	82	84	
27		67	69	60	48	47		62		65	100	115	86	95	95	92	82	96	102	69	61	61	A	A
28	53	A		57	A		41	A	81	90	86	105	126	106	116	114	93	73	78	71	60	44	47	
29	36	71	47	48		31		53	57	71	76	92	112	133	100	78	81	81	67	68	69	A	45	A
30	38					N	44	57	86	63	87	94	112	117	132	114	104	124	94	94	80	69		56
31		55		47			A	A	68	82	114	82	88	122	105	91	88	73	94	71	62	79	44	69
	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	23	22	28	18	14		19	29	31	29	31	31	30	31	30	29	30	31	31	23	18	16	14
MED	44	59	50	47	48	53		46	64	76	87	95	105	116	113	108	95	93	84	75	59	54	48	48
U Q	58	69	59	55	59	69		59	70	83	92	106	112	124	133	124	123	114	94	83	68	69	60	69
L Q	40	47	47	44	38	36		44	58	68	78	87	92	104	104	92	82	81	76	68	50	48	44	44

HOURLY VALUES OF fEs AT OKINAWA

MAR. 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	G	G	G	G	G	G	38	31	32	35	37	32	38	34	41	40	40	26	48	30	G	48	38
2	G	G	25	28	27	G	G	41	32	26	32	32	40		39	36	32	33	28	28	G	25	45	G
3	G	G	28	32	24	35	34	38	28	56	41	37	33	G	G	36	36	33	G	G	42		G	G
4		G	G	27	23		G	29	25	38	36	38	37	36	G	33	35	33	G	G	G	G	G	G
5	G	G	G	G	G	G	48	32	32	26		31	37	37	36	36	37	32	G	11	G	G	G	G
6	G	G	38	40	G			35	34	32	34	G	G	G	G	32	34		G	G	11	G	G	28
7	G	G	G	G	G	G	G	G	29	28		G	35	36	37	35	39	30	G	G	24	G	G	G
8	G	G	G	G	G	G	G	33	34	34	38	39	50	46	38	37	40	38	29	11	48	G	33	36
9	G	G	G	G	11	G	G	G	48	30	38	30	G	39	30	32	36	30	32	40	G	G	G	G
10	100	G	G	50	27	G	G	G	28	34	38	48	40	24	31	31	31	32	G	G	48	30	24	20
11	G	22	G	G	G	G	40	35	48	32	33	34	37	G	26	30	28	32	G	G	G	G	G	G
12	G	G	G	G	G		G	27	27	32	30	G	32	32	24	G	22	25	G	G	G	G	G	G
13	G	G	G	G	G	G			32	34	36	33	38	33	38	35		35	30	33	48		40	45
14	G	G	G	G	G	G	G	33	G	40	36	33	33	33	38	G	31	32	G	G	G	G	G	43
15	G	54	G	G	G		G	34	26	34	36	38	38	47	43	35	24	26	G	G	G	44	G	G
16	G	119	G	G	24		43	48	31	32	35	40	39	42	40	37	41	37	G	G	G	G	34	G
17	23	G	G	G			G	36	46	35	32	G	G	39	38	G	31	26	G	G	G	G	49	G
18	G	G	G	30				46	26	35	36	24	42	G	39	32	32	26	G	G	25	G	G	G
19	G	G	G	G	G	G	G	29	29	35	32	34	39	46	G	26	28	26	25	G	G	46	G	G
20	G	G	G	G	G	G	G	G	29	34	36	39	40	G	40	33	30	26	G	G	G	G	G	G
21	G	G	G	G	G	G	G	30	38	41	31	39	42	G	38	36		34	G	N	G			45
22	G	G	G	G	G	G	G	45	32	36	33	32	42	G	G	G	28	26	25	G	28	26	G	G
23	G	G	G	G	G			39	32	34	34	G	G	G	G	32	36	44	43	32	47	49	G	41
24	34	G	G	G	G	G	G	48	31	34	31	40	55	52	50	40	50	48	33	G	G	G	48	36
25	26			G	G	G	G	48		46	52	59	57	53	G	41	25	48	37	43	34	48	48	41
26	44	30	G	31	G		G	48	32	36	40	35	41	41	42	32	26	44	33	25	27	47	47	
27	39	40	28	G	G	G	G	120		38	50	51	52	46	40	38	26	51	37	26	48	28	44	38
28	39	48	32	74	32		G	30	32	34	32	39	G	G	G	33	33	34	G	G	G	G	G	G
29	G	G	G	G		G	G	34	32	36	39	39	G	40	34	30	34	30	G	G	G	50	42	34
30	26	G	G	G		G	G	42	31	36	39	38	35	34	40	32	35	32	G	G	G	G	G	45
31		G		23	G	G	33	21	32	35	35	34	G	G	G	30	24	29	23	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	29	31	27	21	27	30	29	31	29	31	31	30	31	31	29	30	31	30	31	28	30	30
MED	G	G	G	G	G	G	G	34	32	34	36	35	37	35	36	33	32	32	G	G	G	G	G	G
U Q	24	G	G	27	11	G	G	42	32	36	38	39	41	41	39	36	36	37	29	25	30	29	42	38
L Q	G	G	G	G	G	G	G	29	28	32	32	31	32	G	G	30	28	29	G	G	G	G	G	G

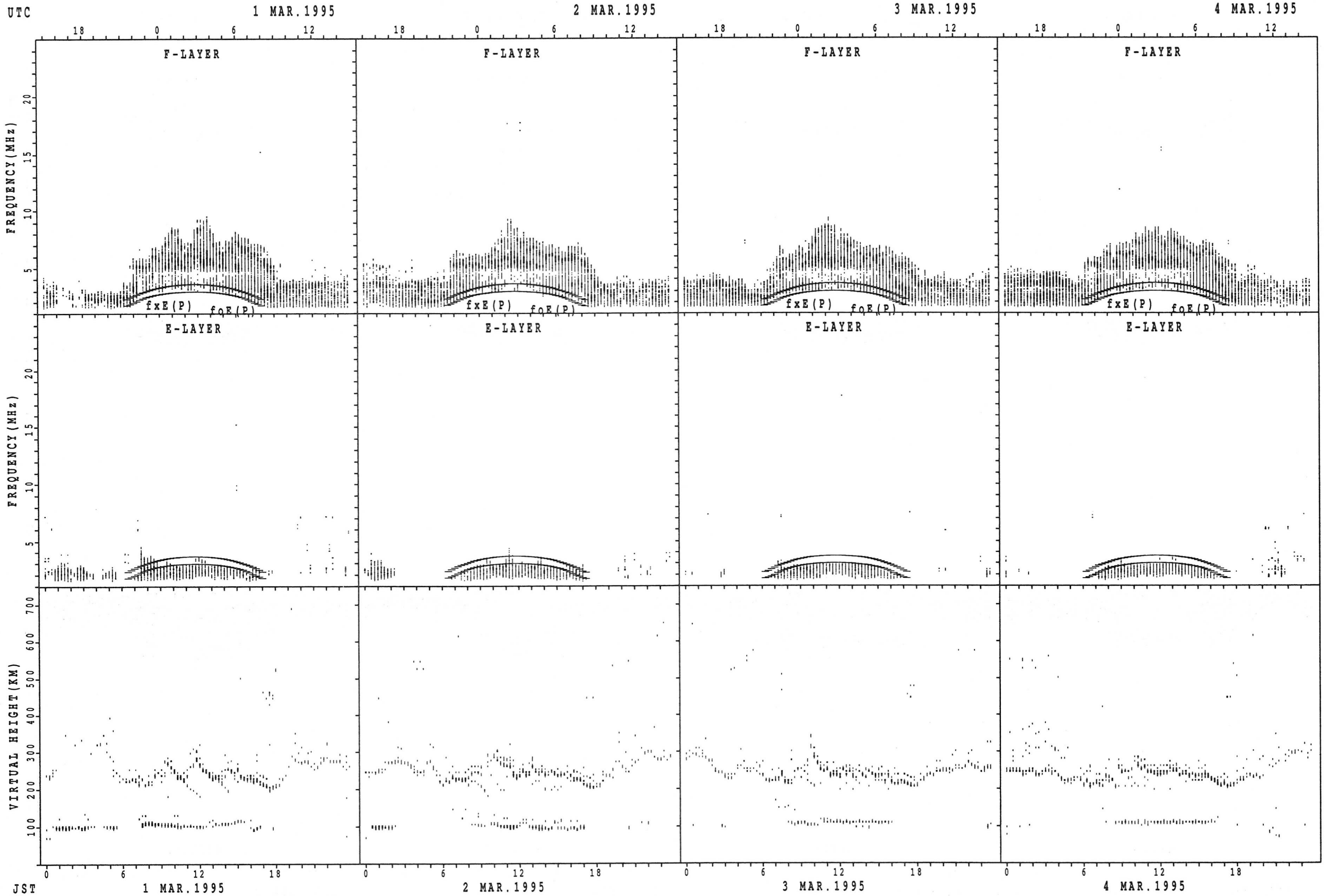
HOURLY VALUES OF fmin AT OKINAWA

MAR. 1995

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

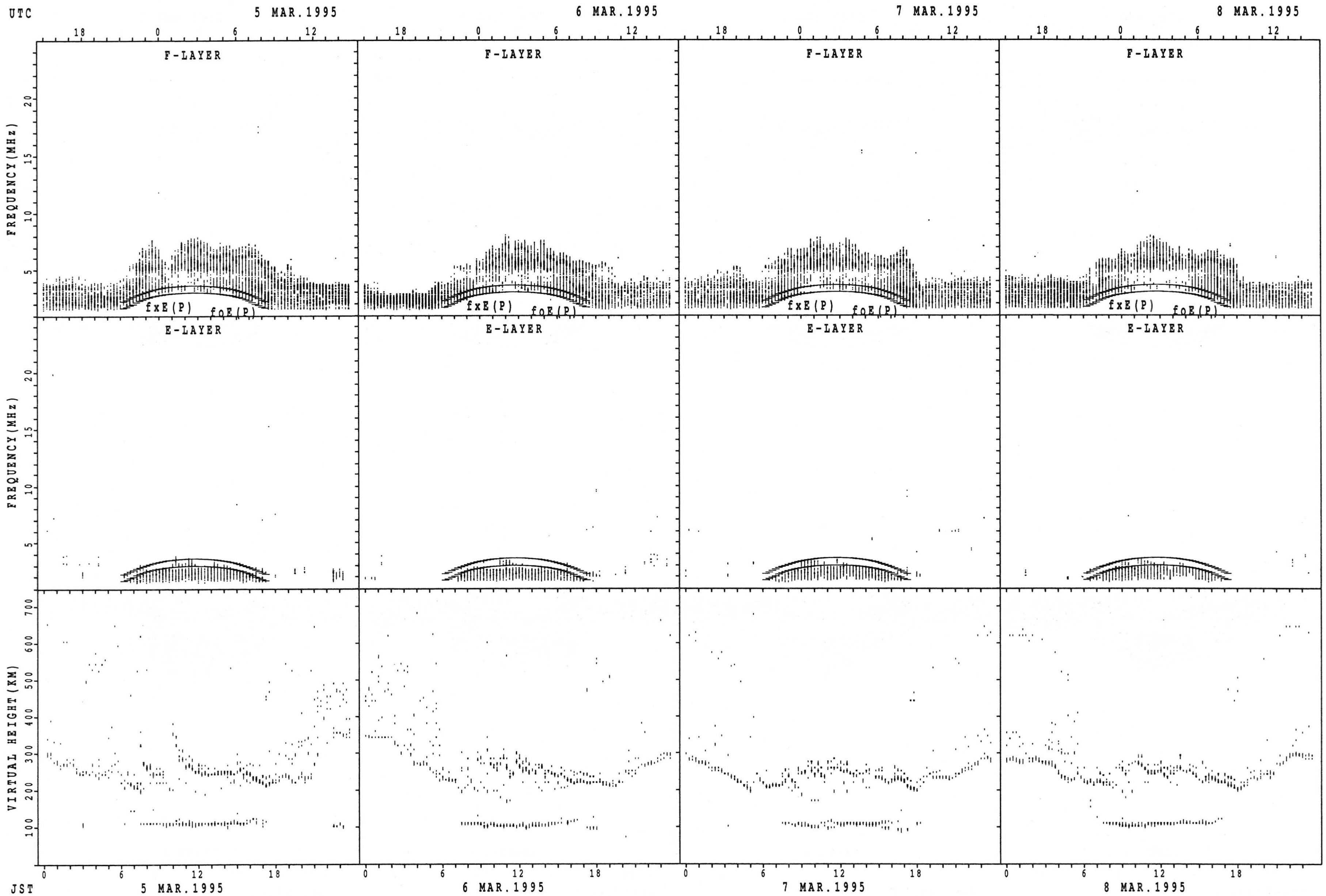
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	16	14	15		16	14	18	15	16	21	18	16	18	17	16	14	14	15	14	15	14	14
2	16	16	15	14	14	14		15	14	14	16	20	17		23	26	17	15	14	14	15	14	15	17
3	15	14	14	14	15	14	14	15	14	16	16	16	44	45	44	18	17	15	22	14	14		15	15
4		14	14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

SUMMARY PLOTS AT WAKKANAI



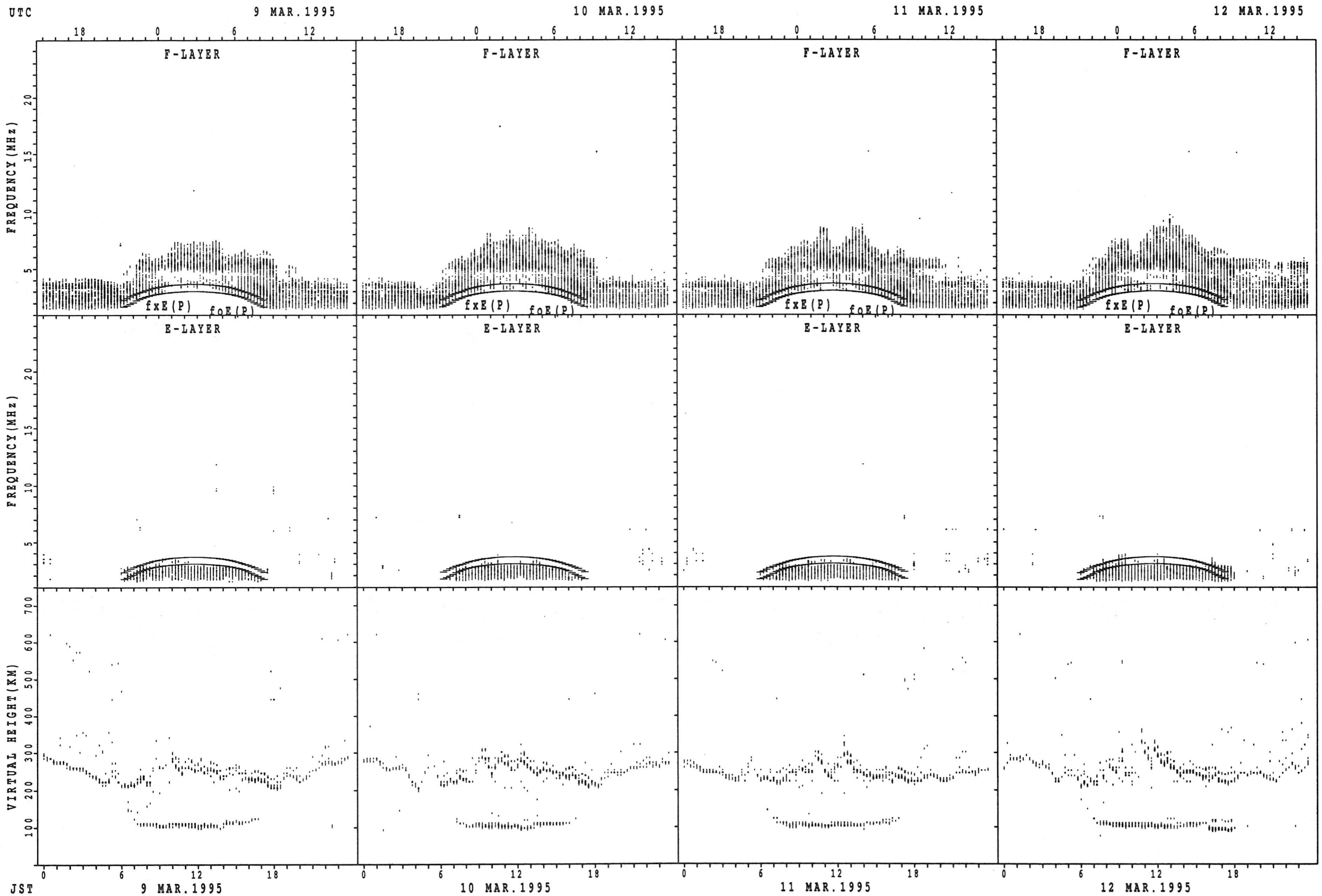
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



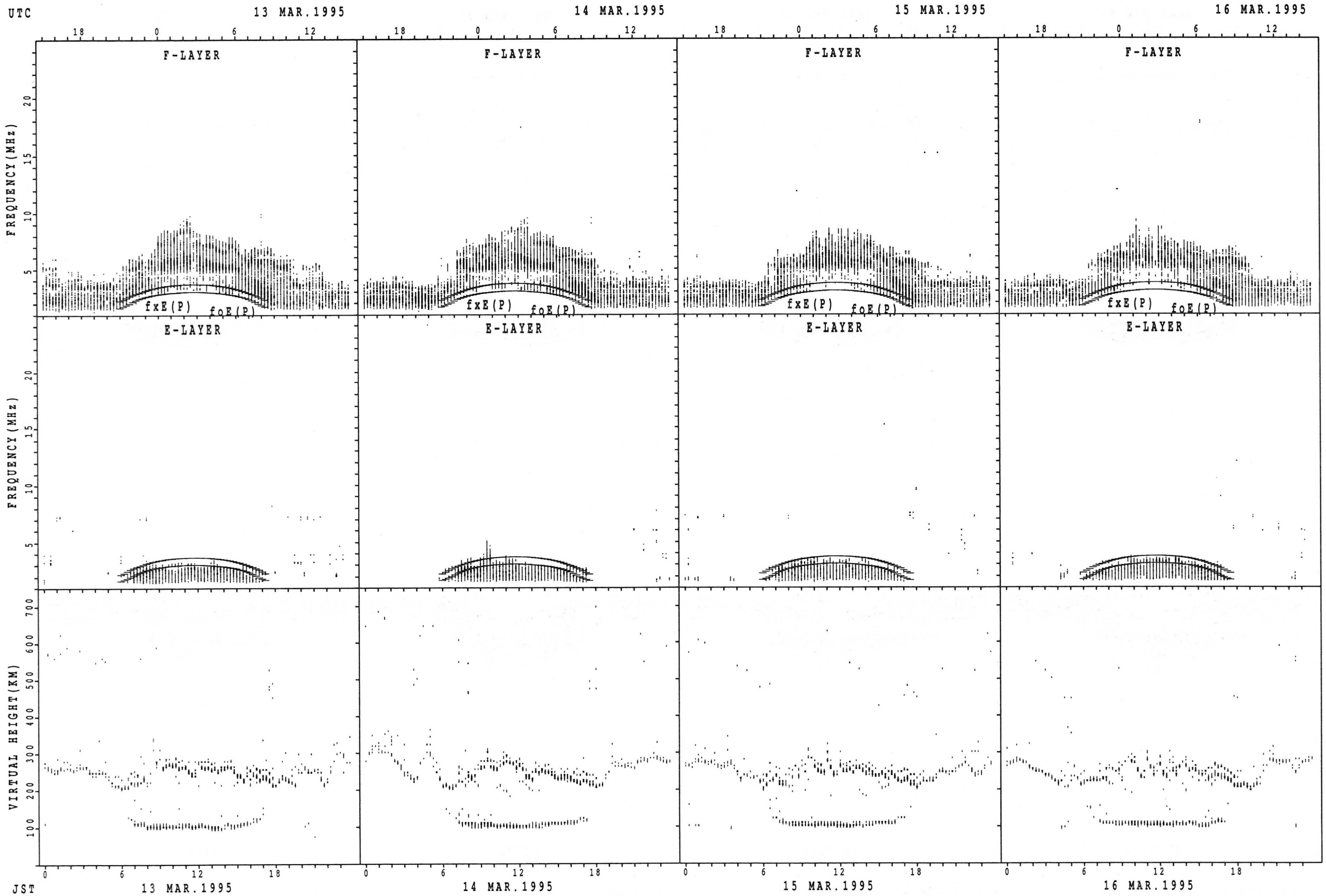
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



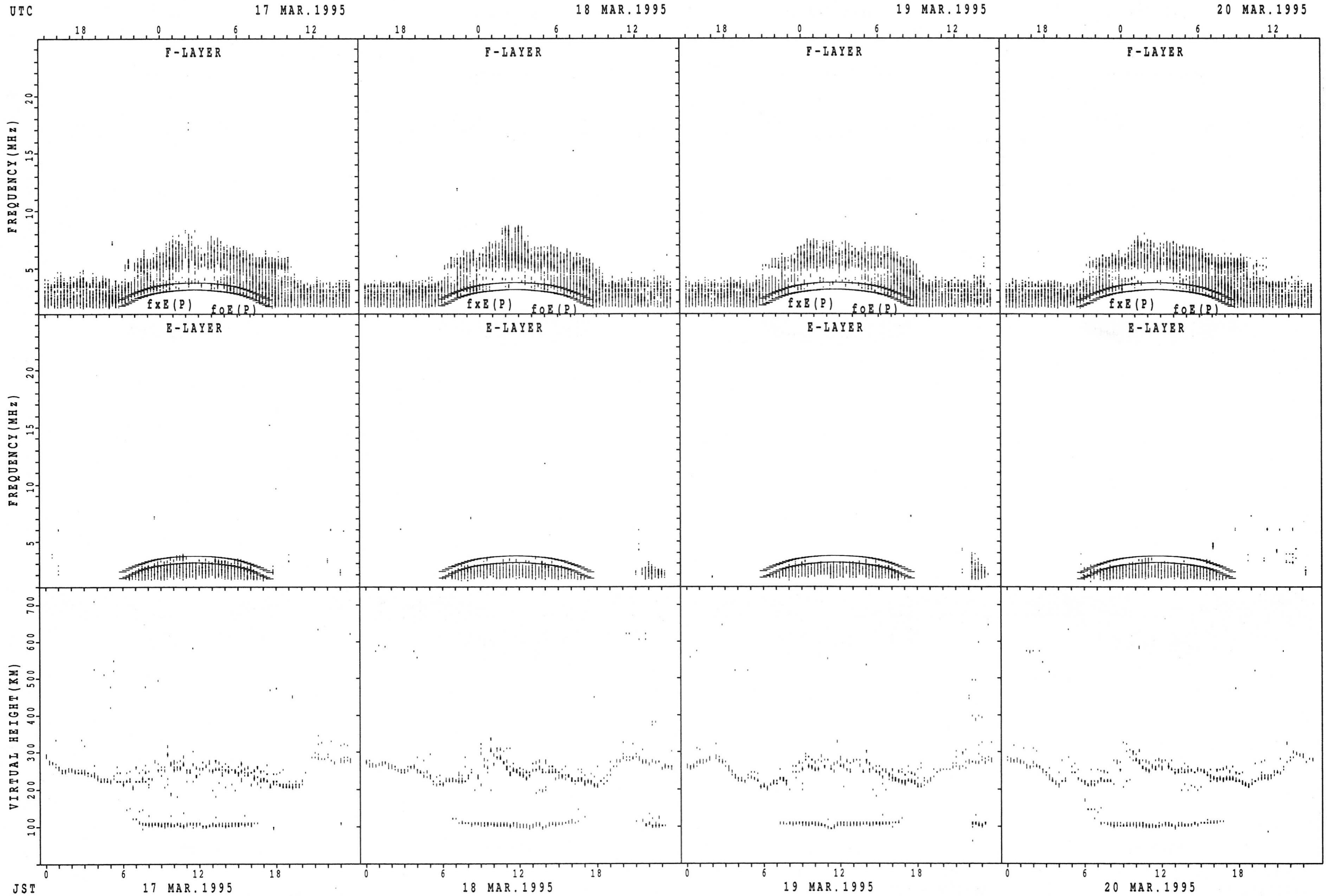
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



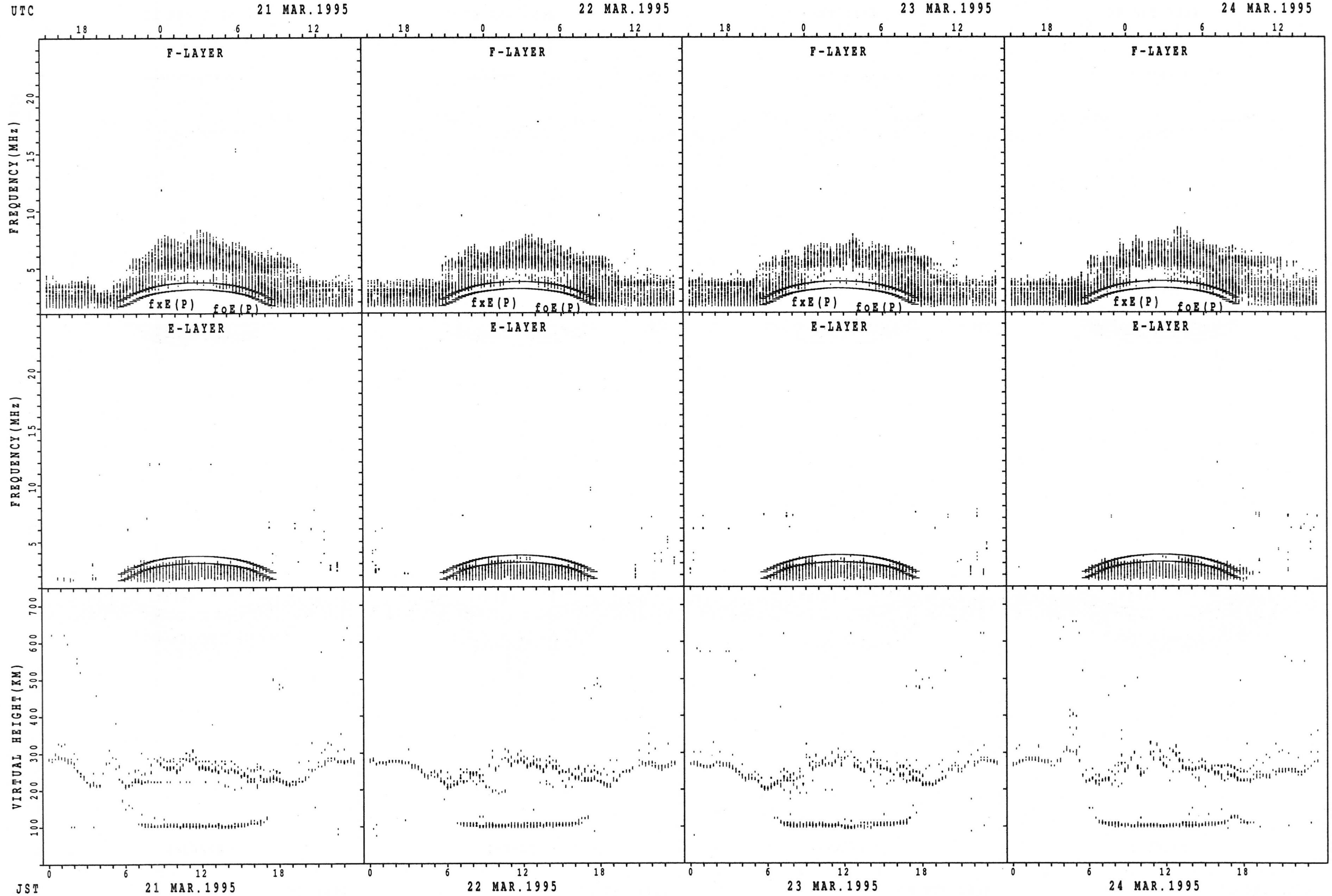
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



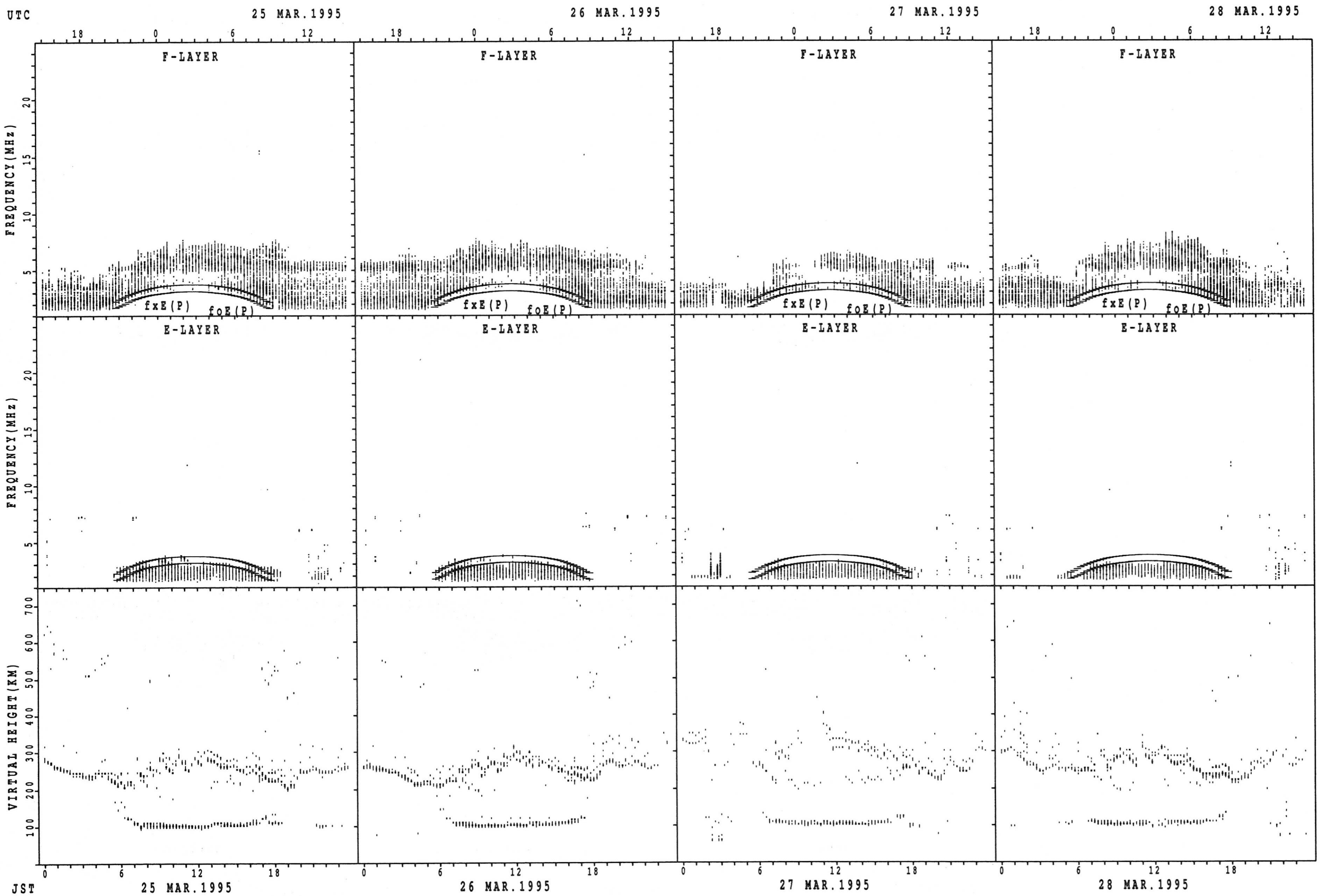
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



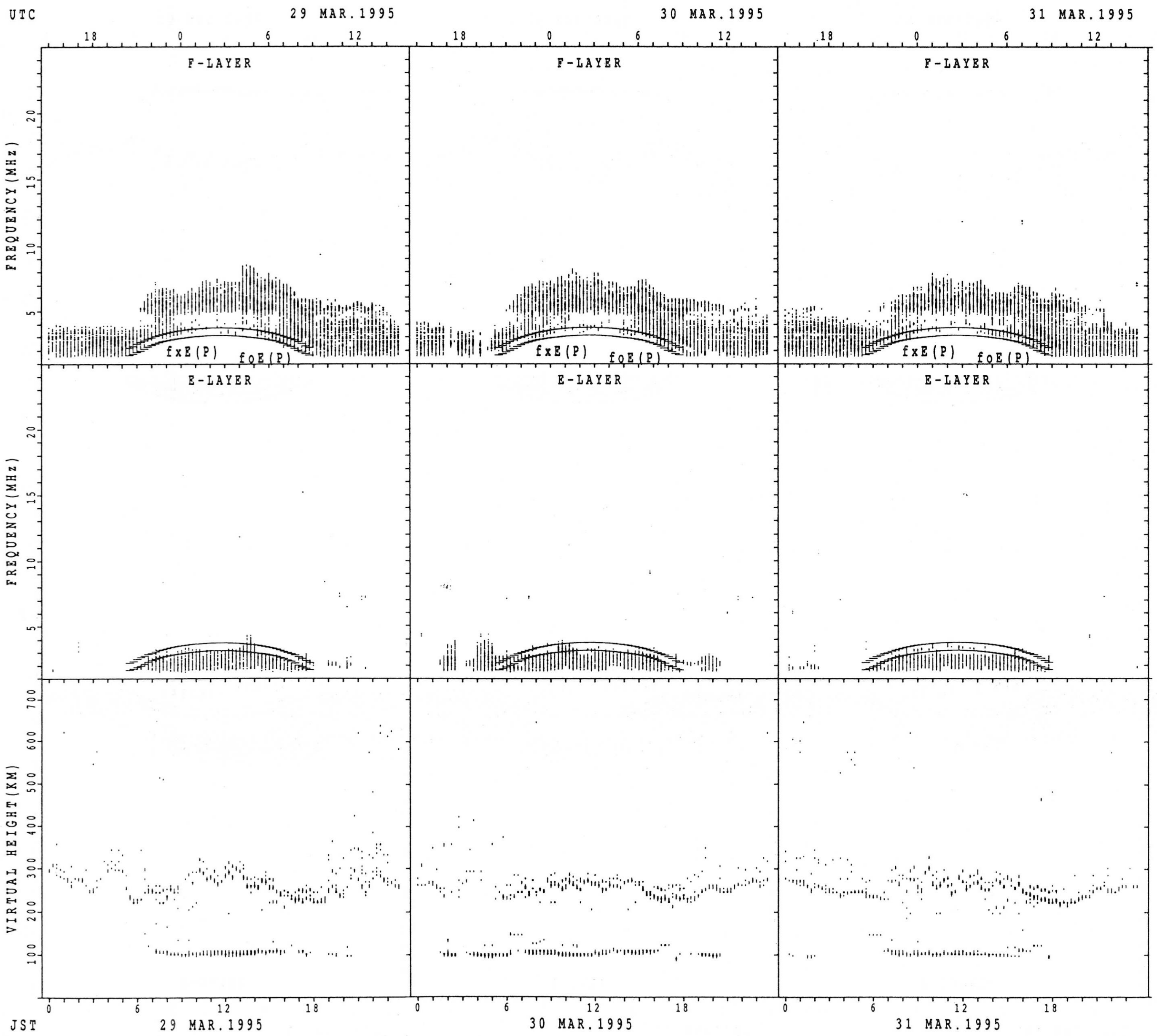
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



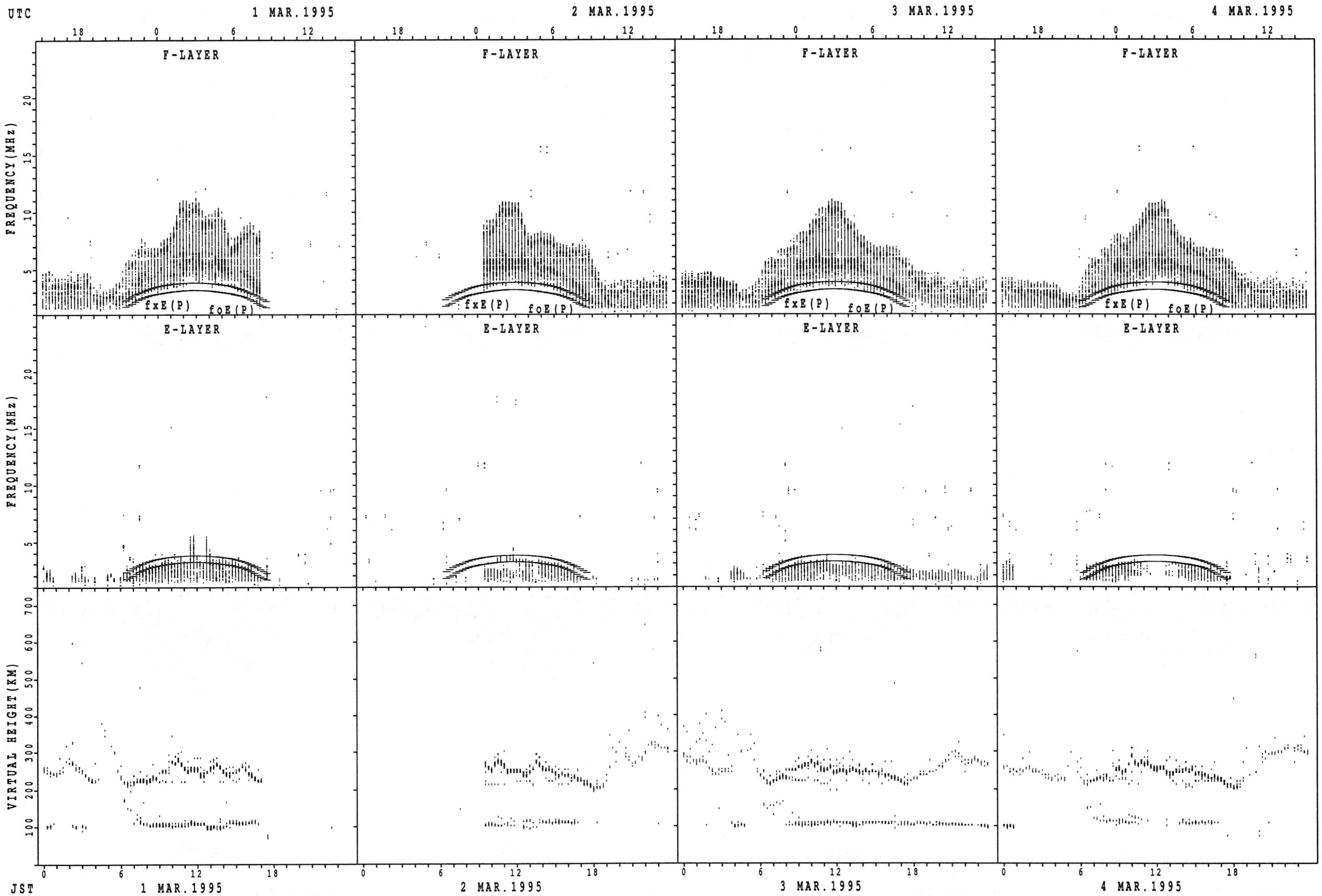
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



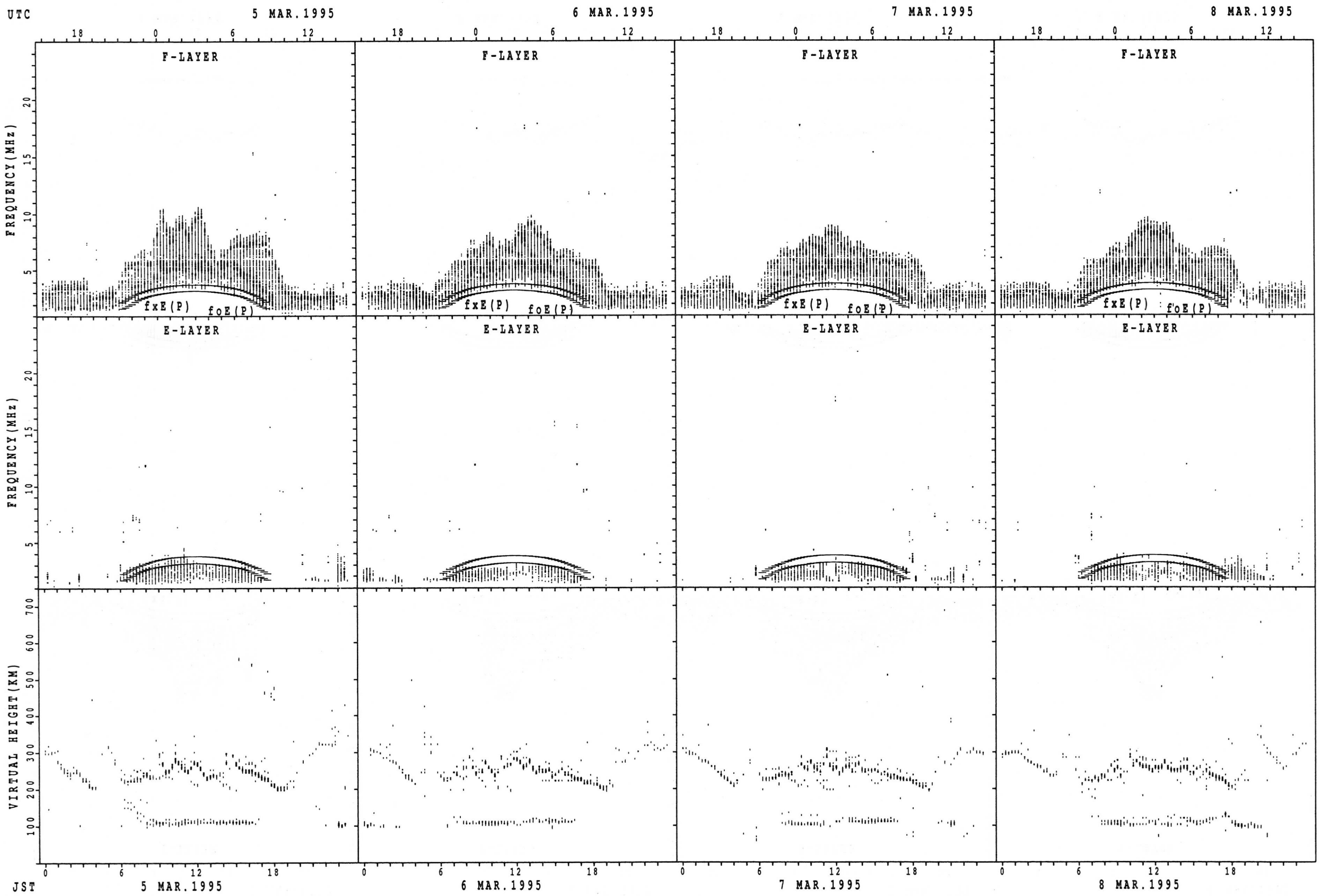
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



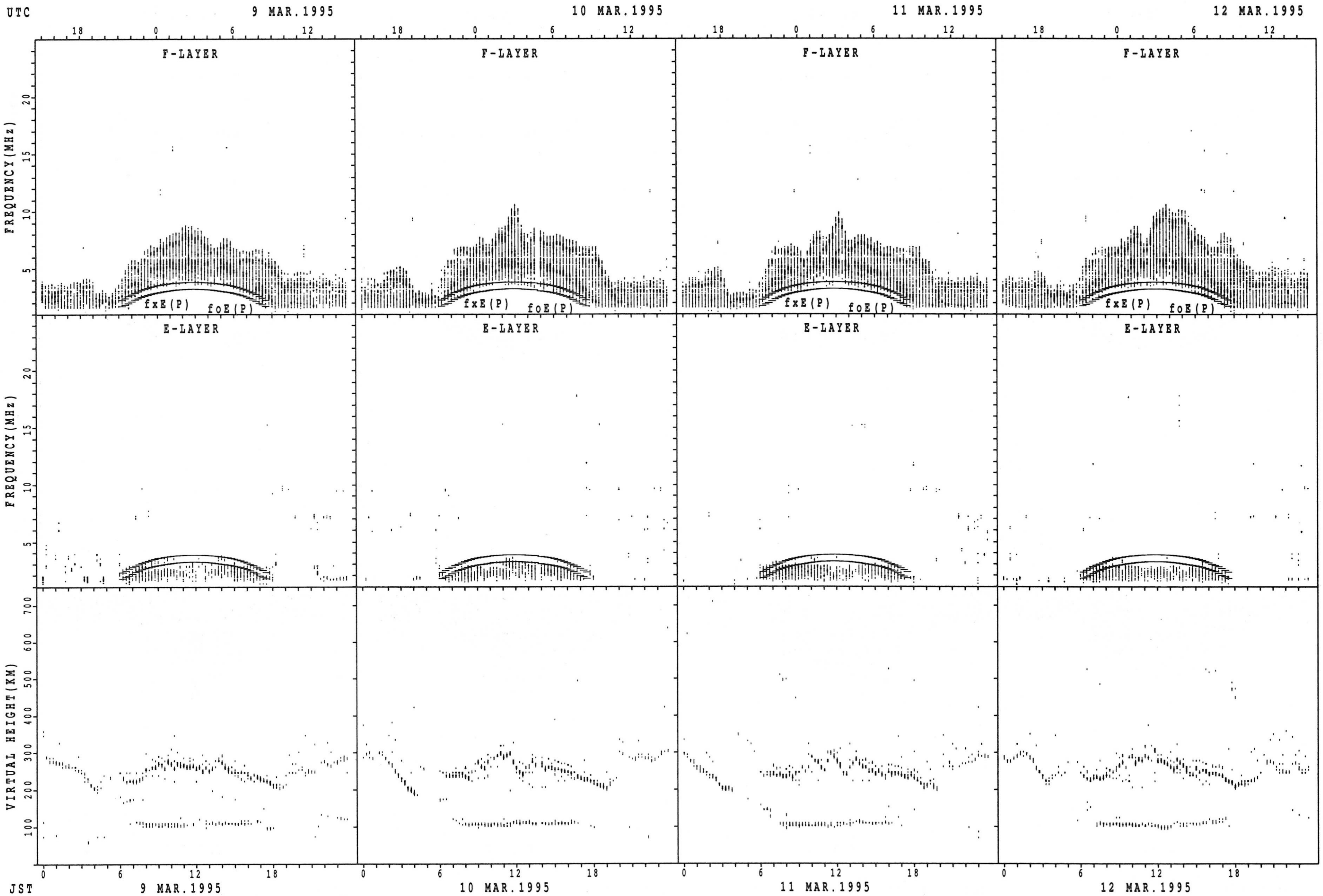
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



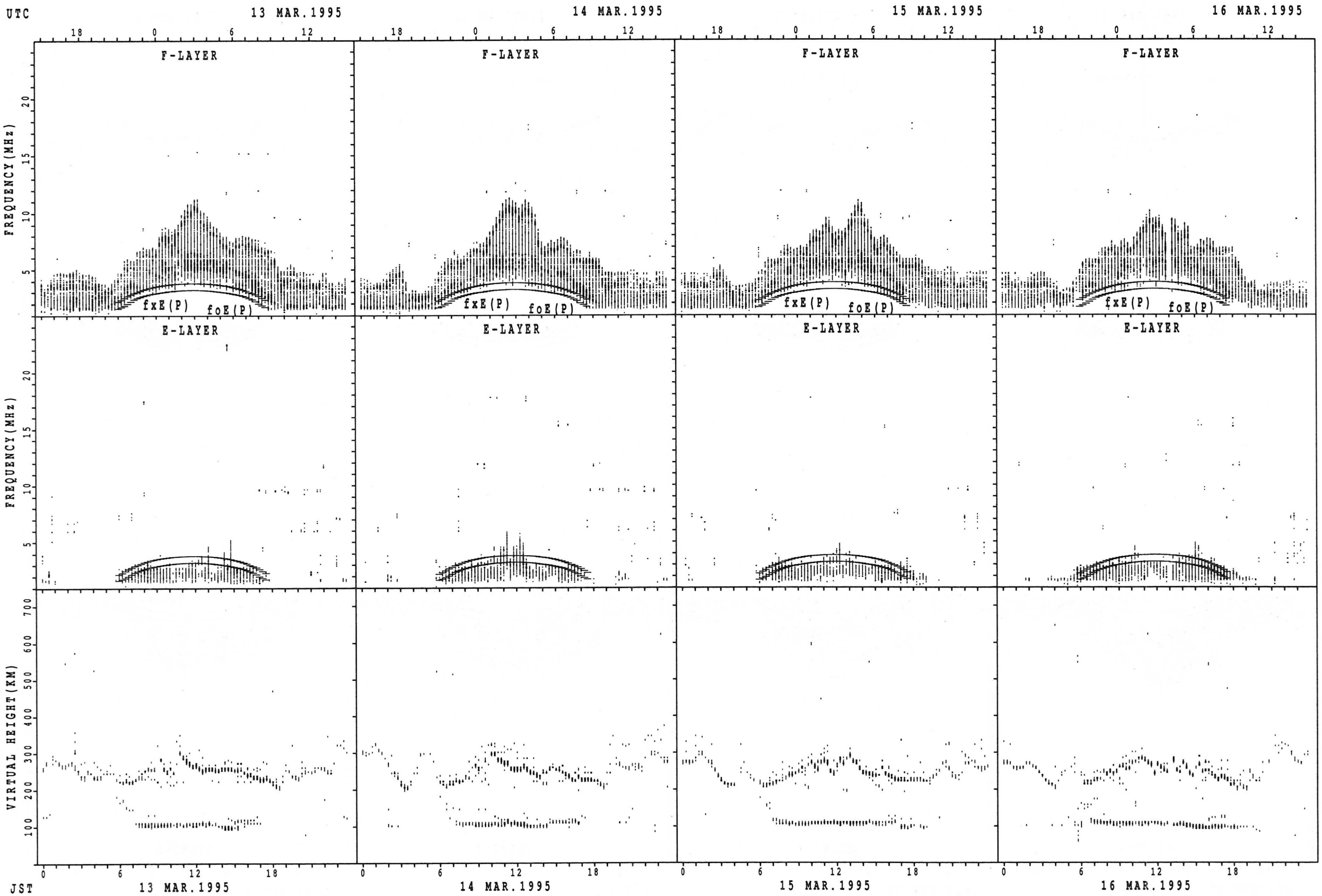
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



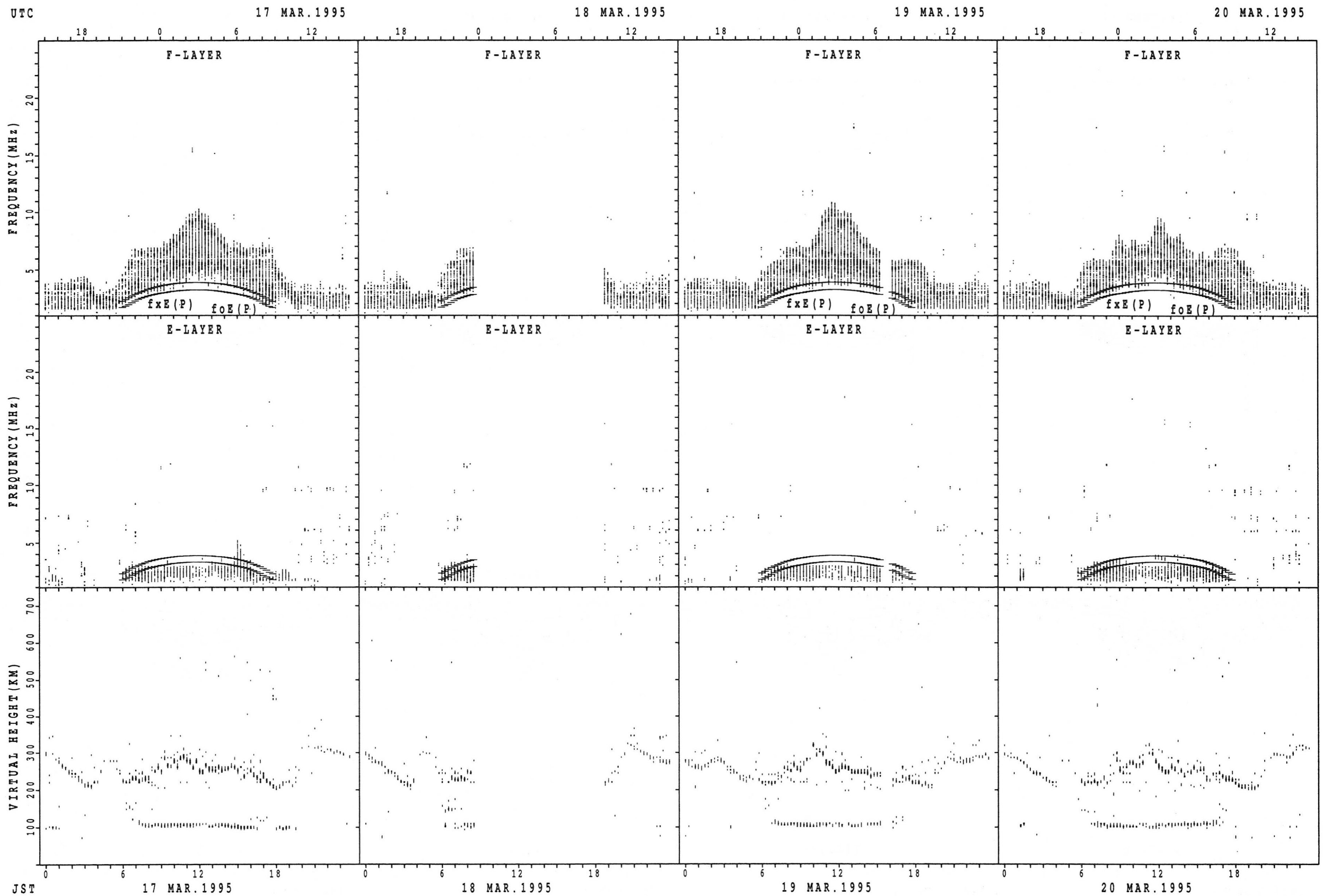
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



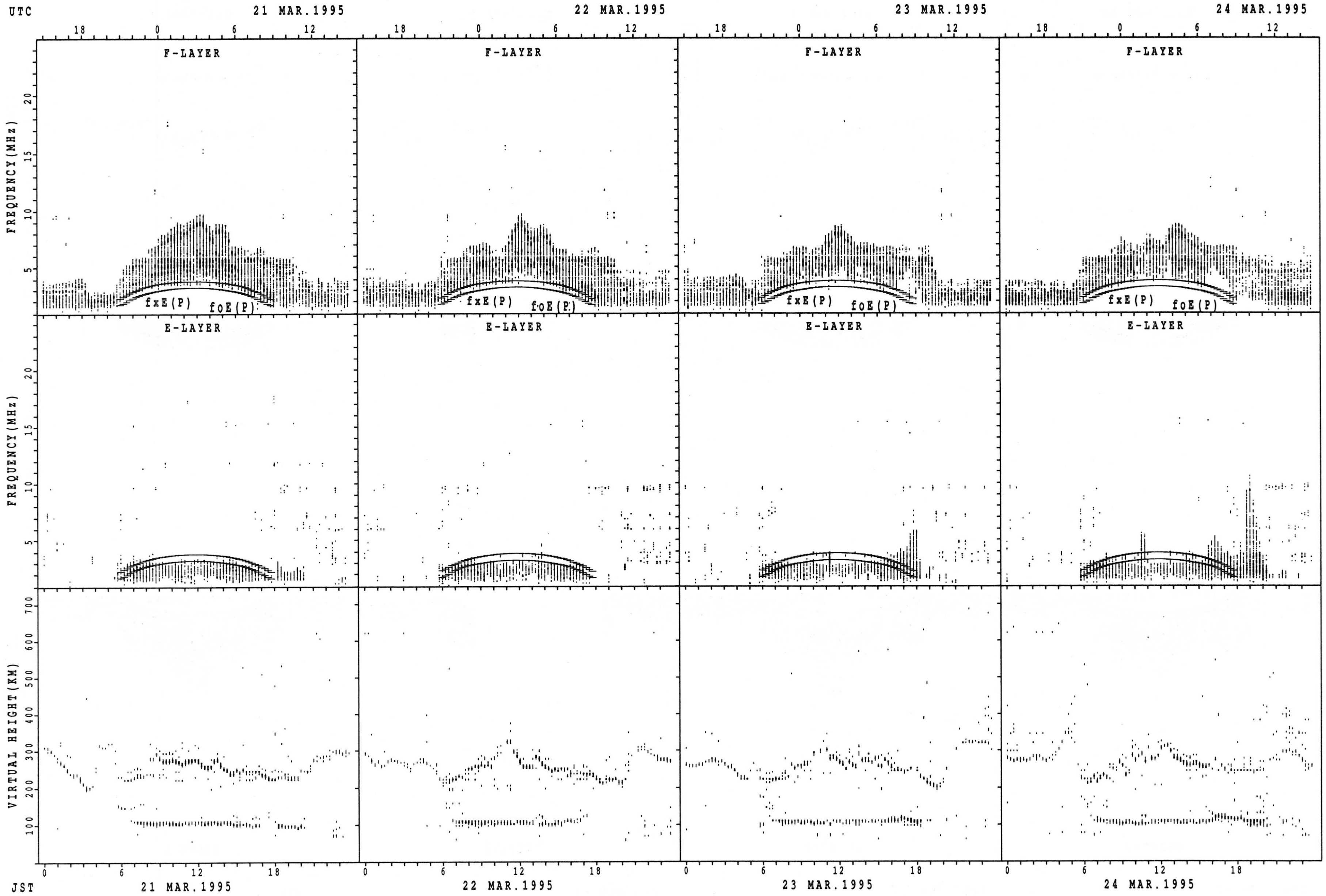
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



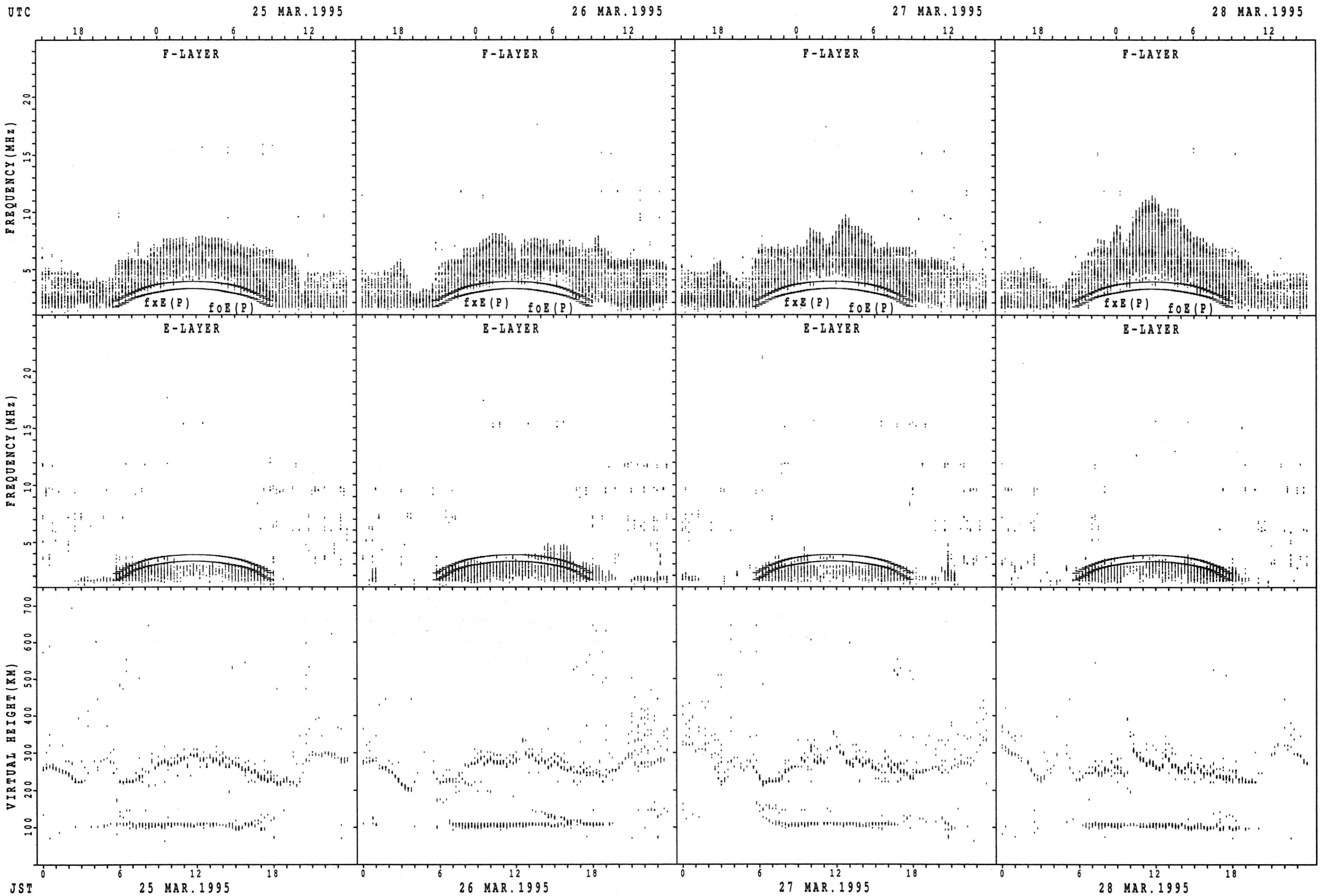
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



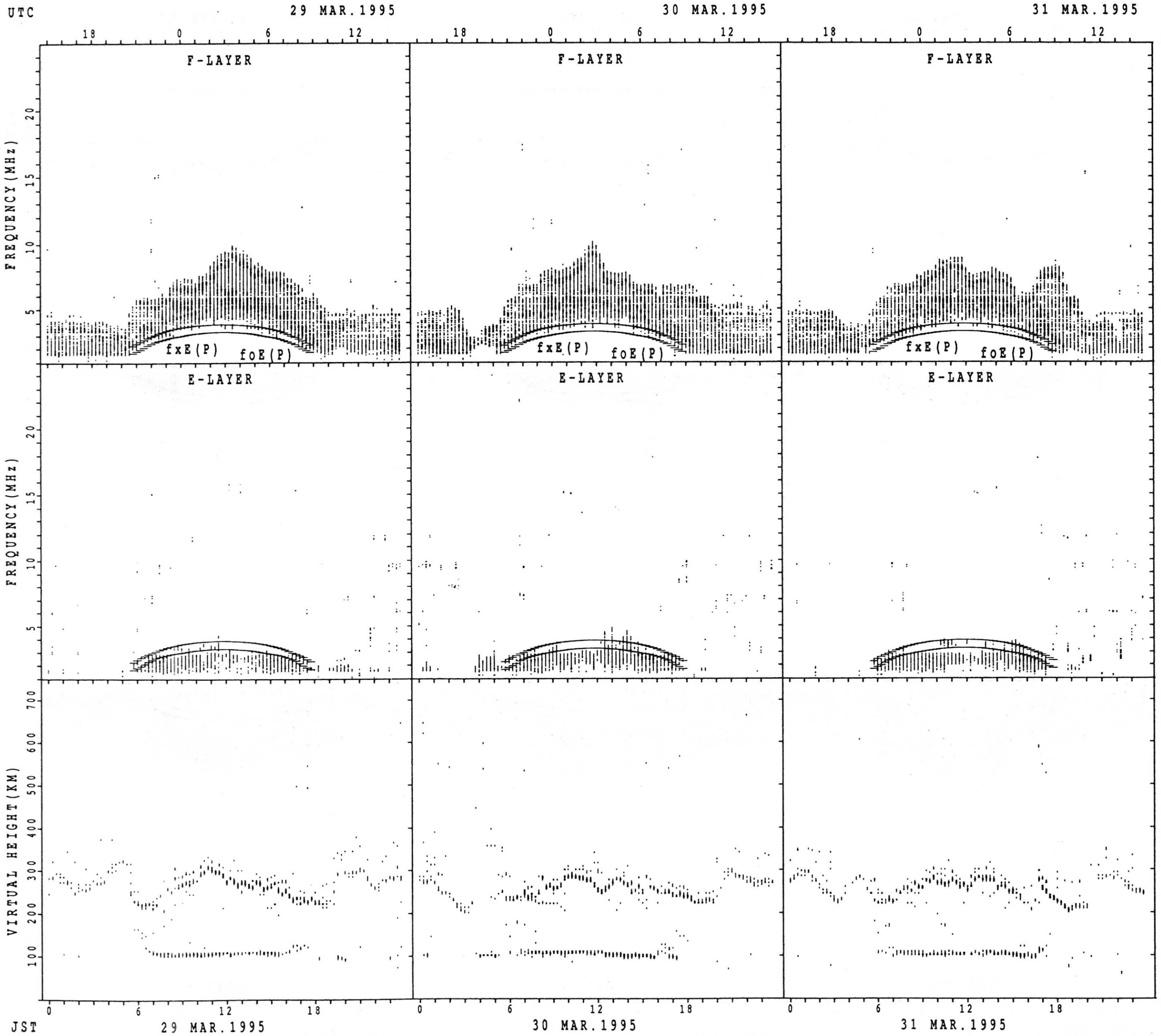
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



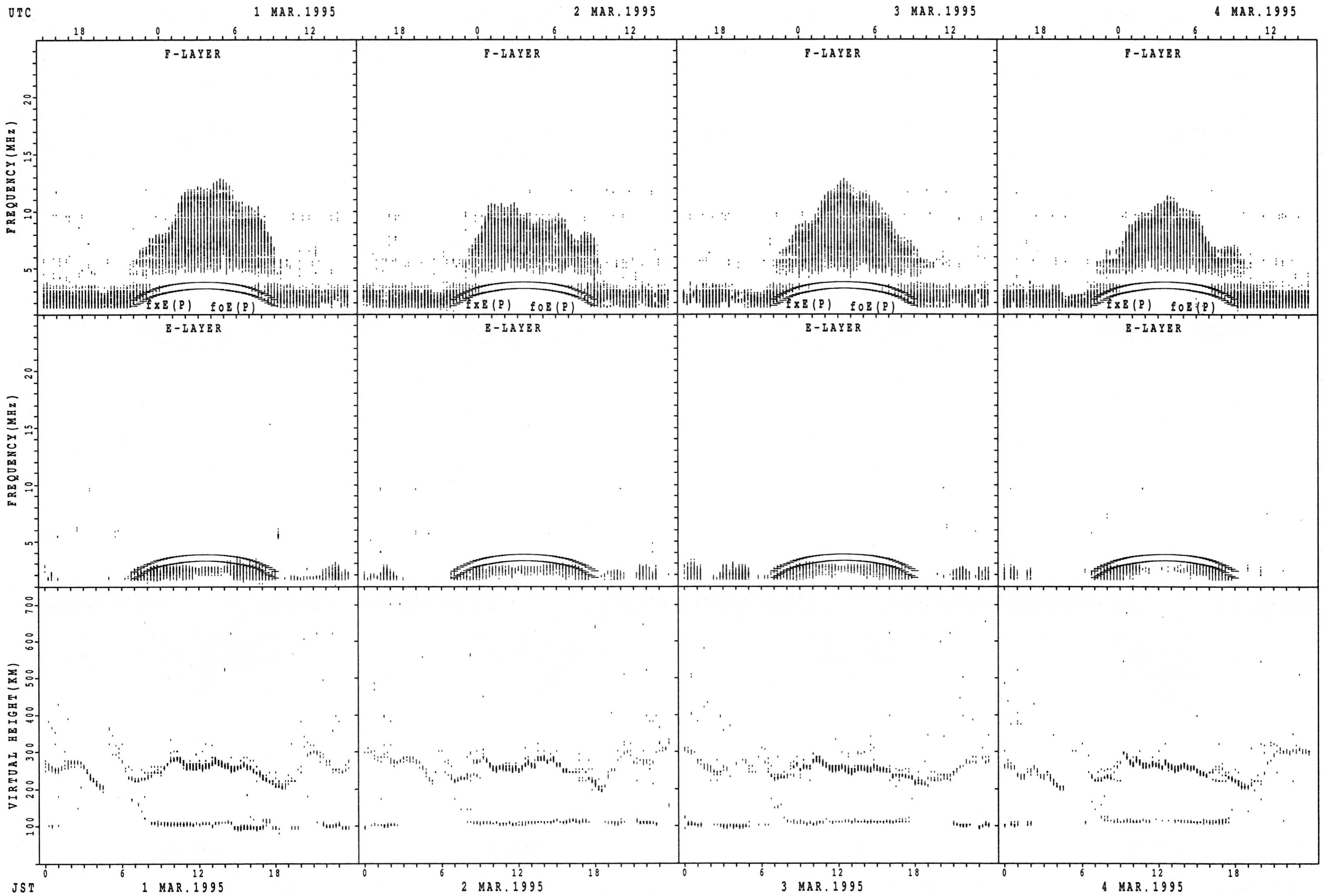
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



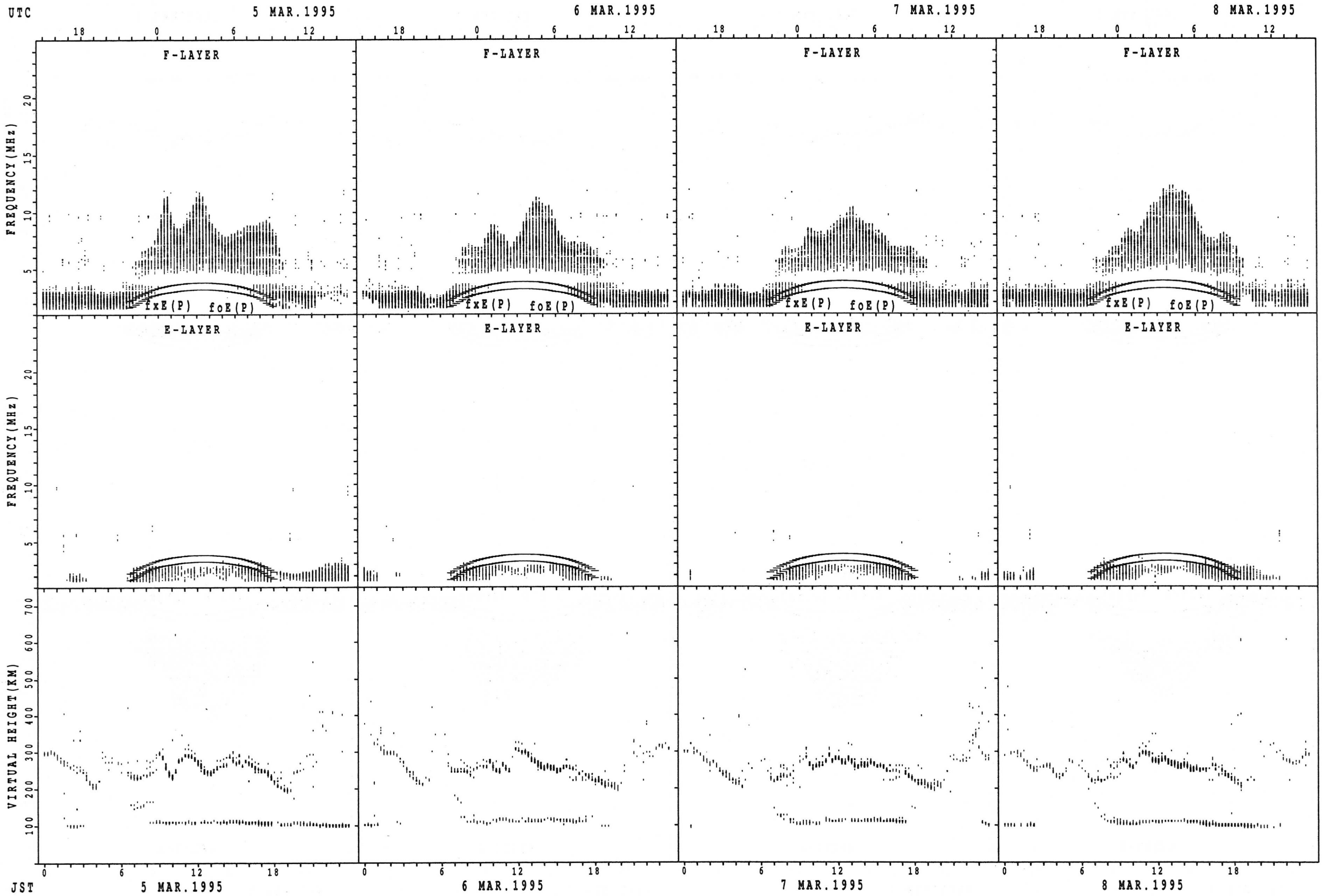
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



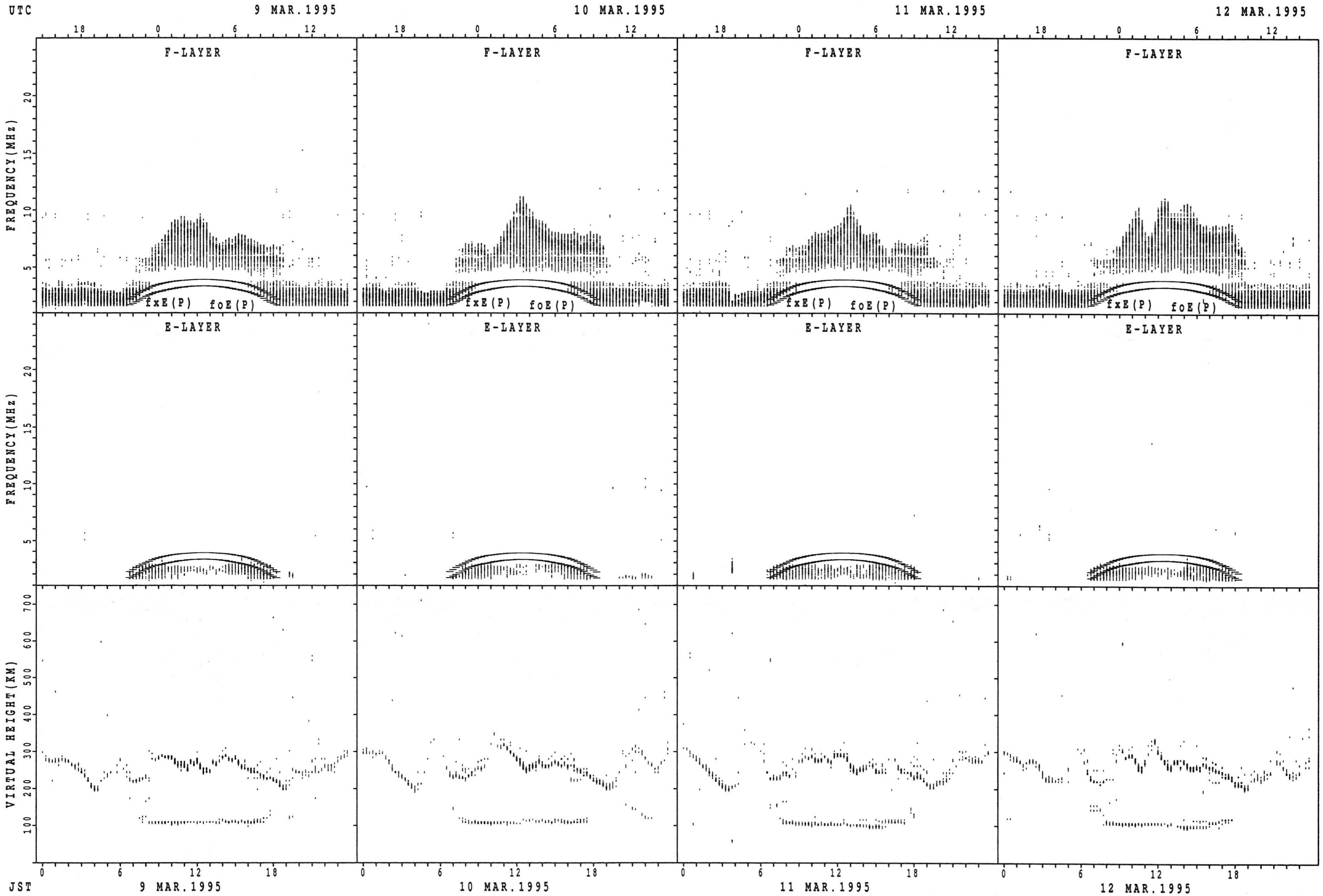
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



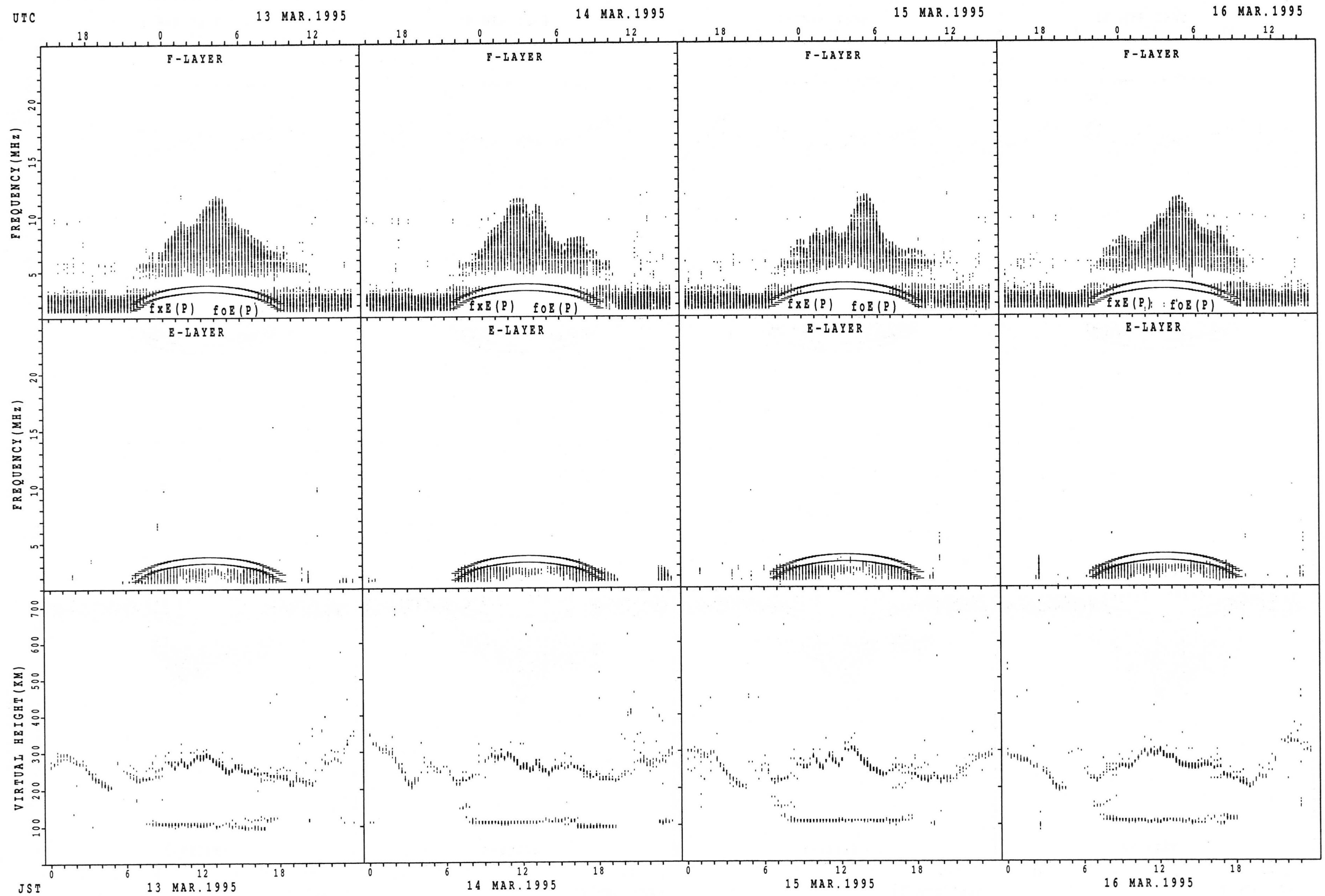
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



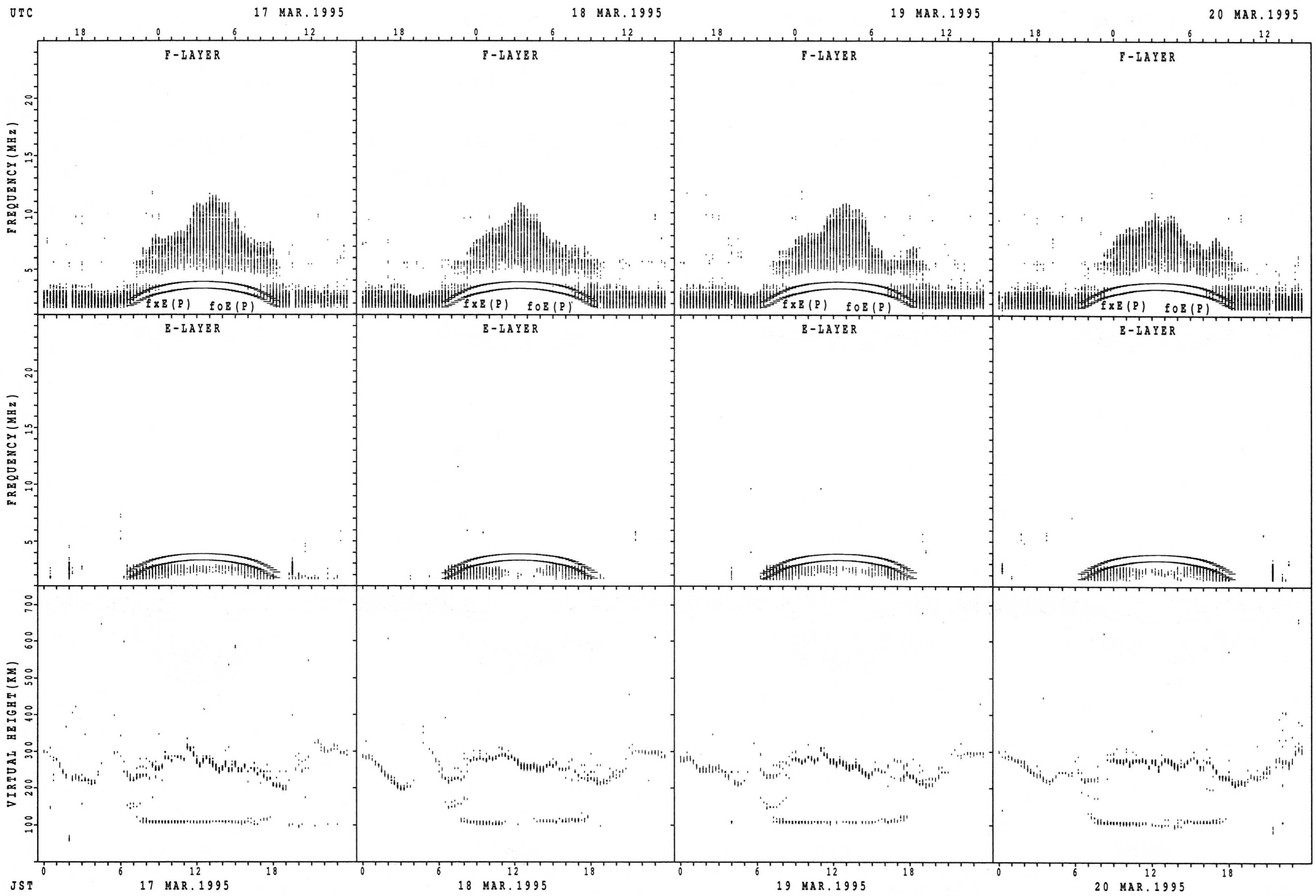
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



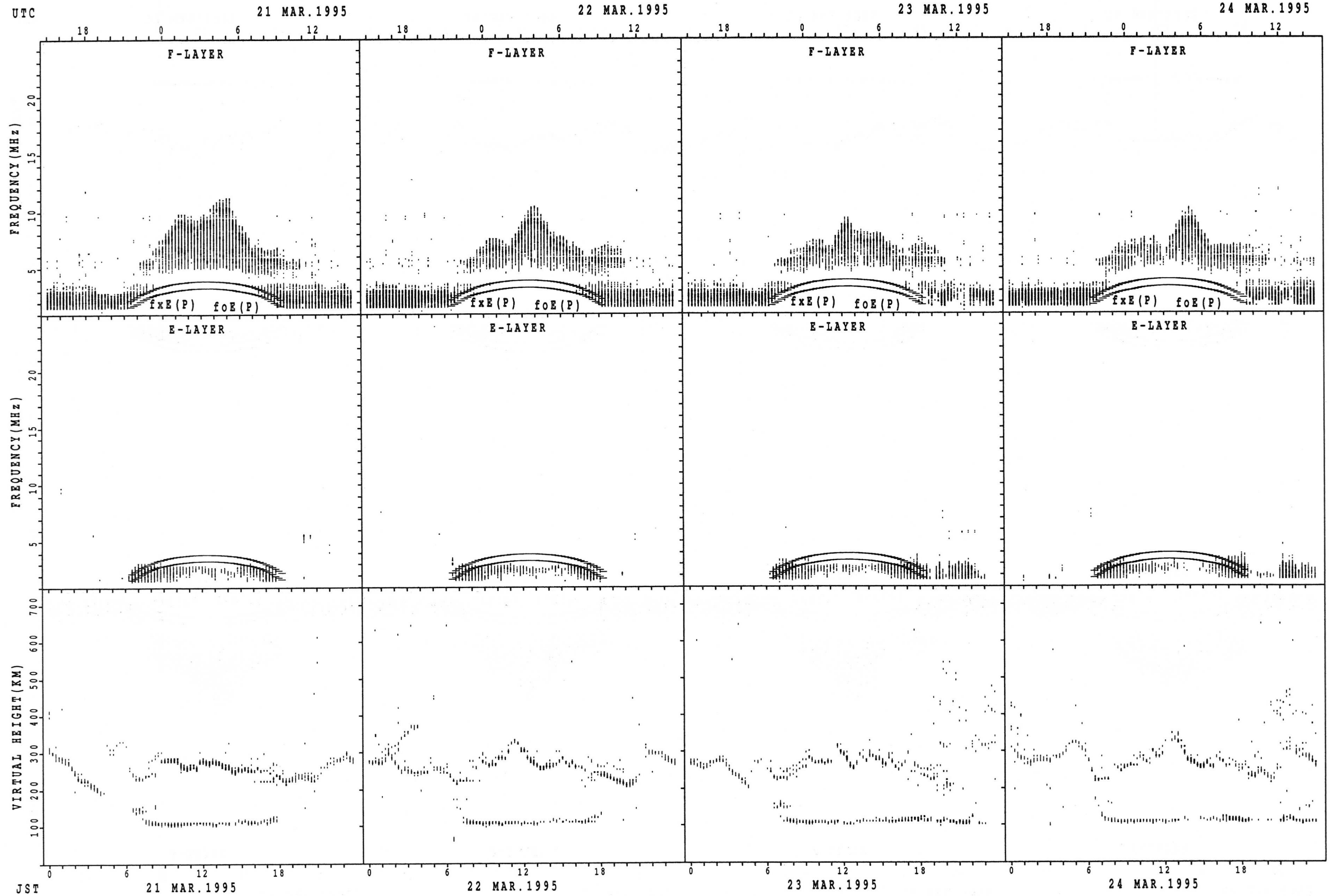
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



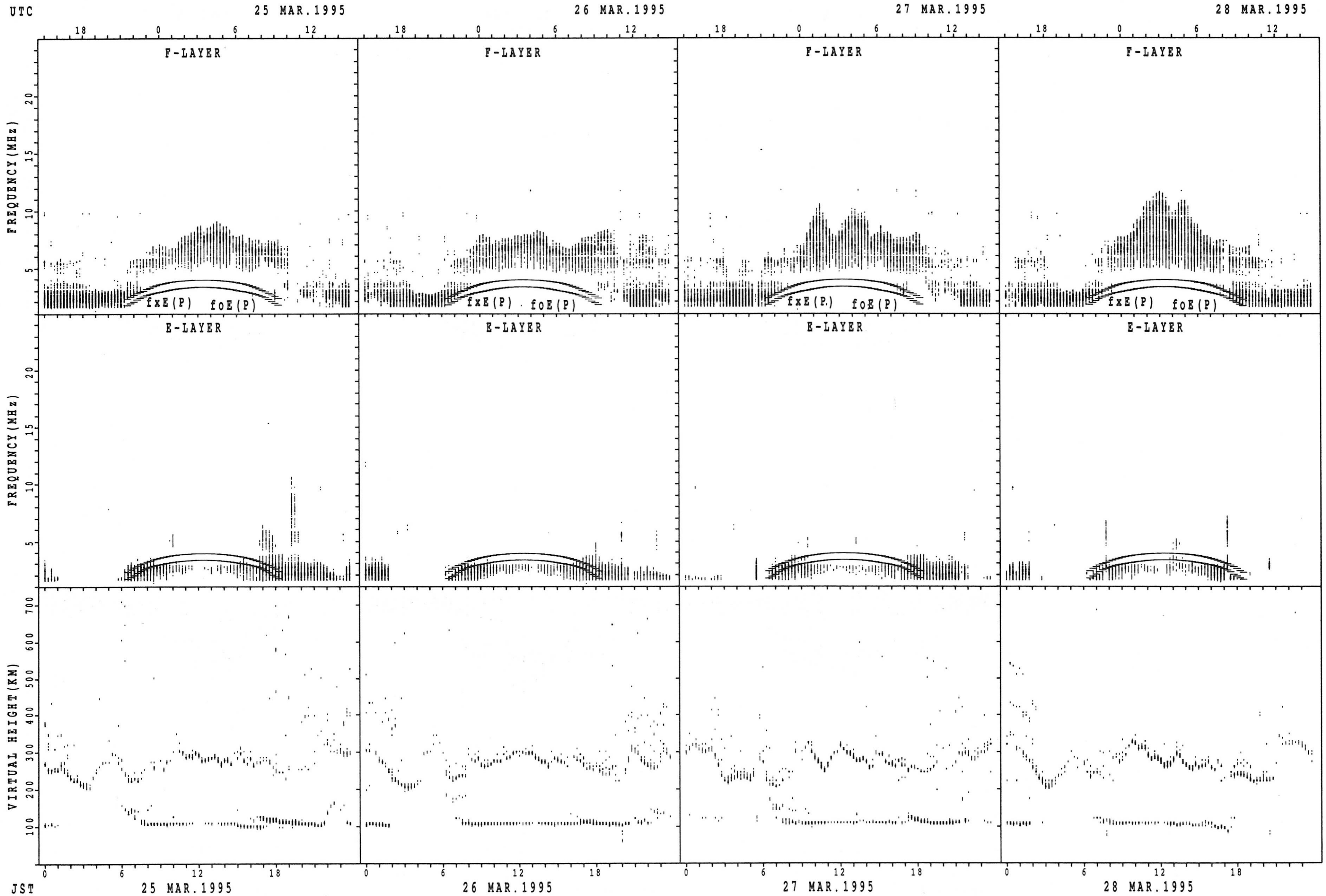
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



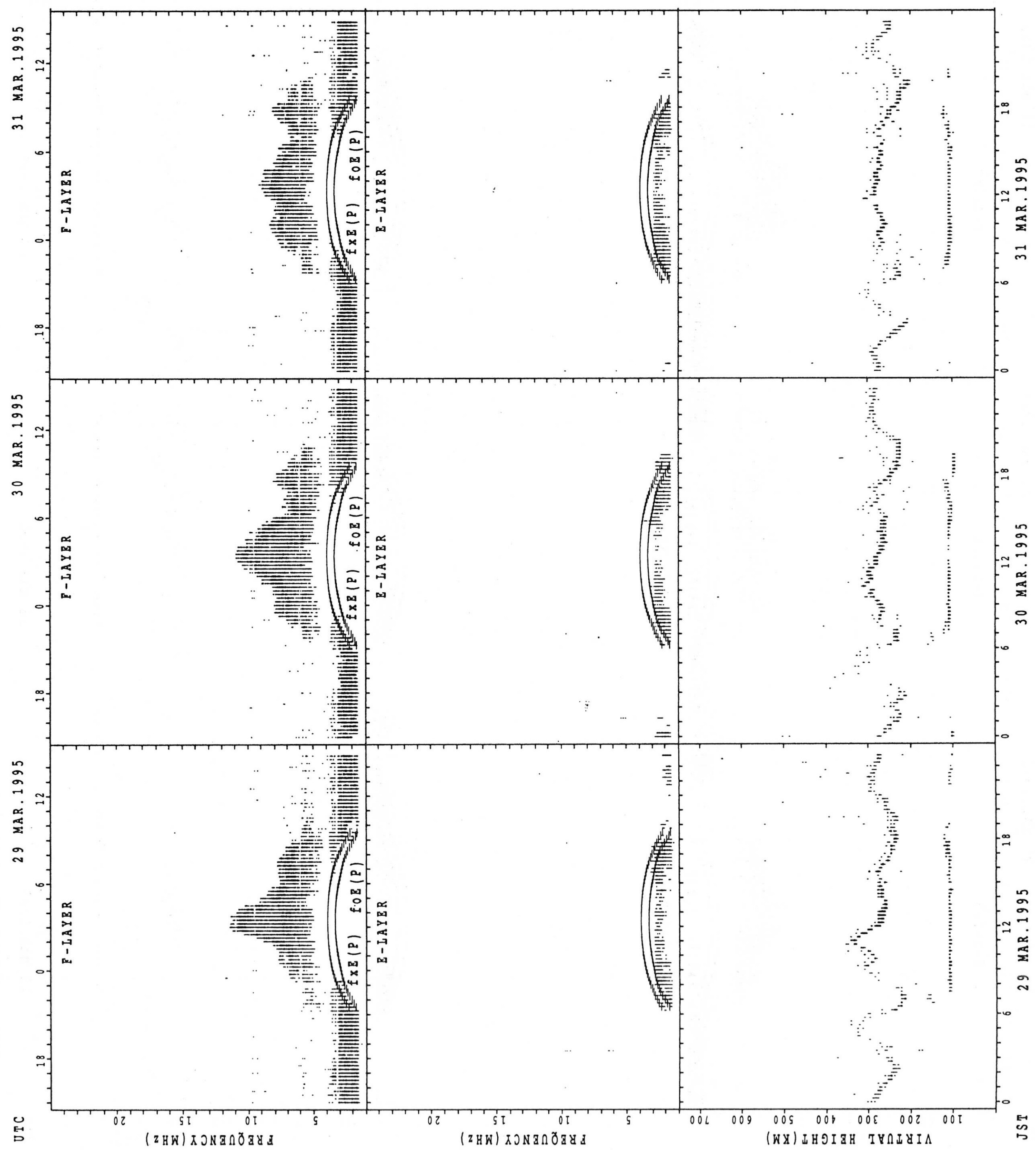
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



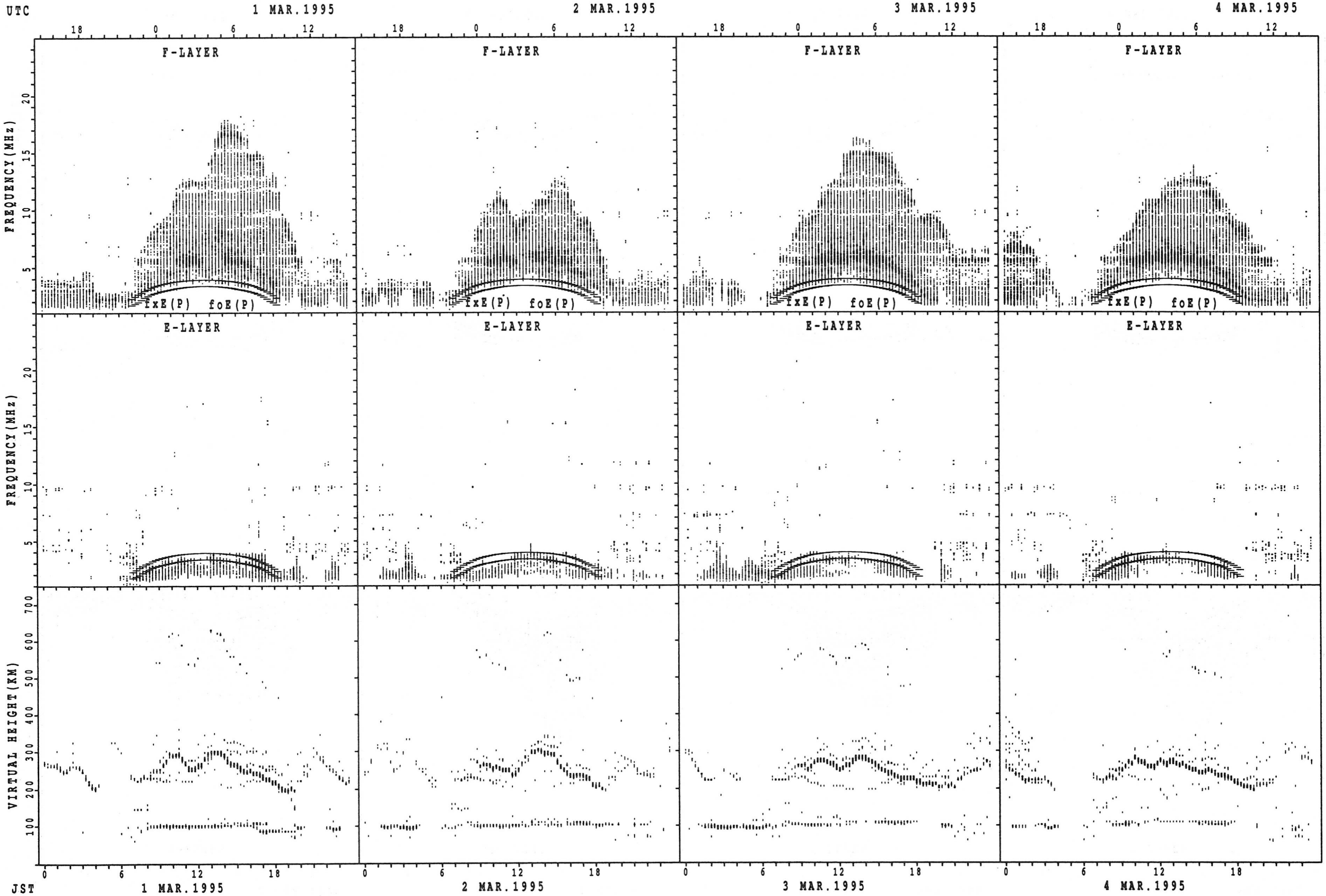
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



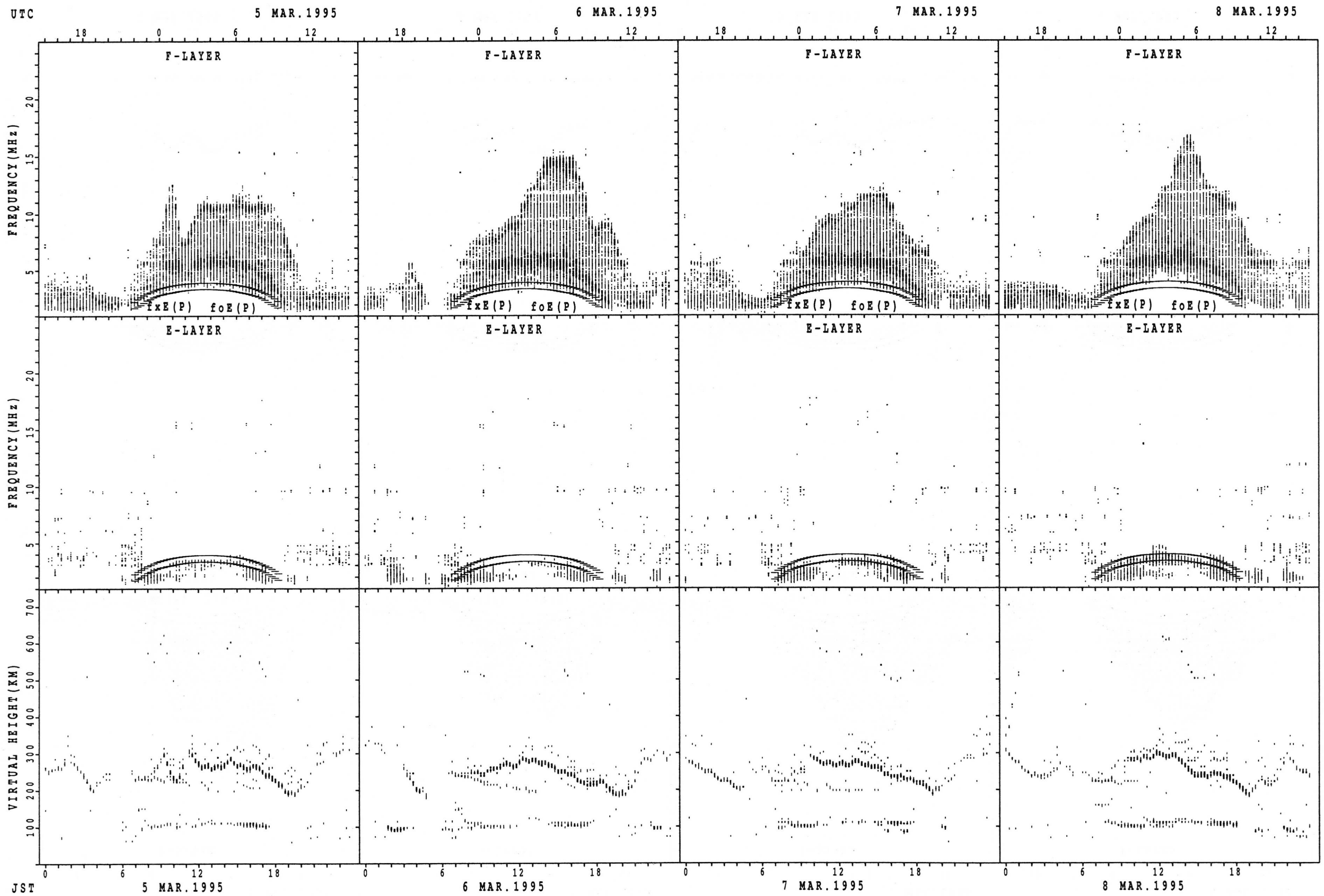
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



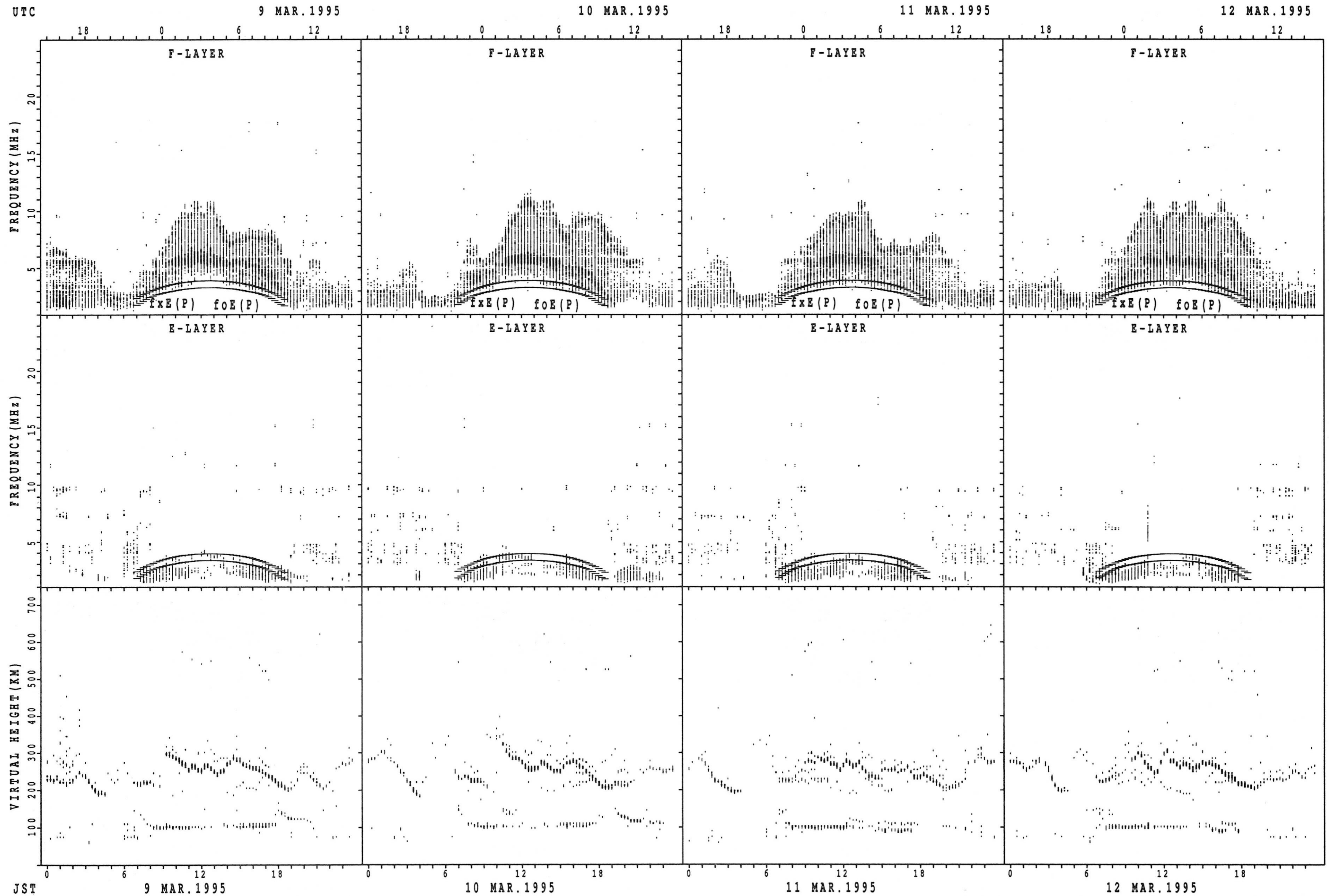
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



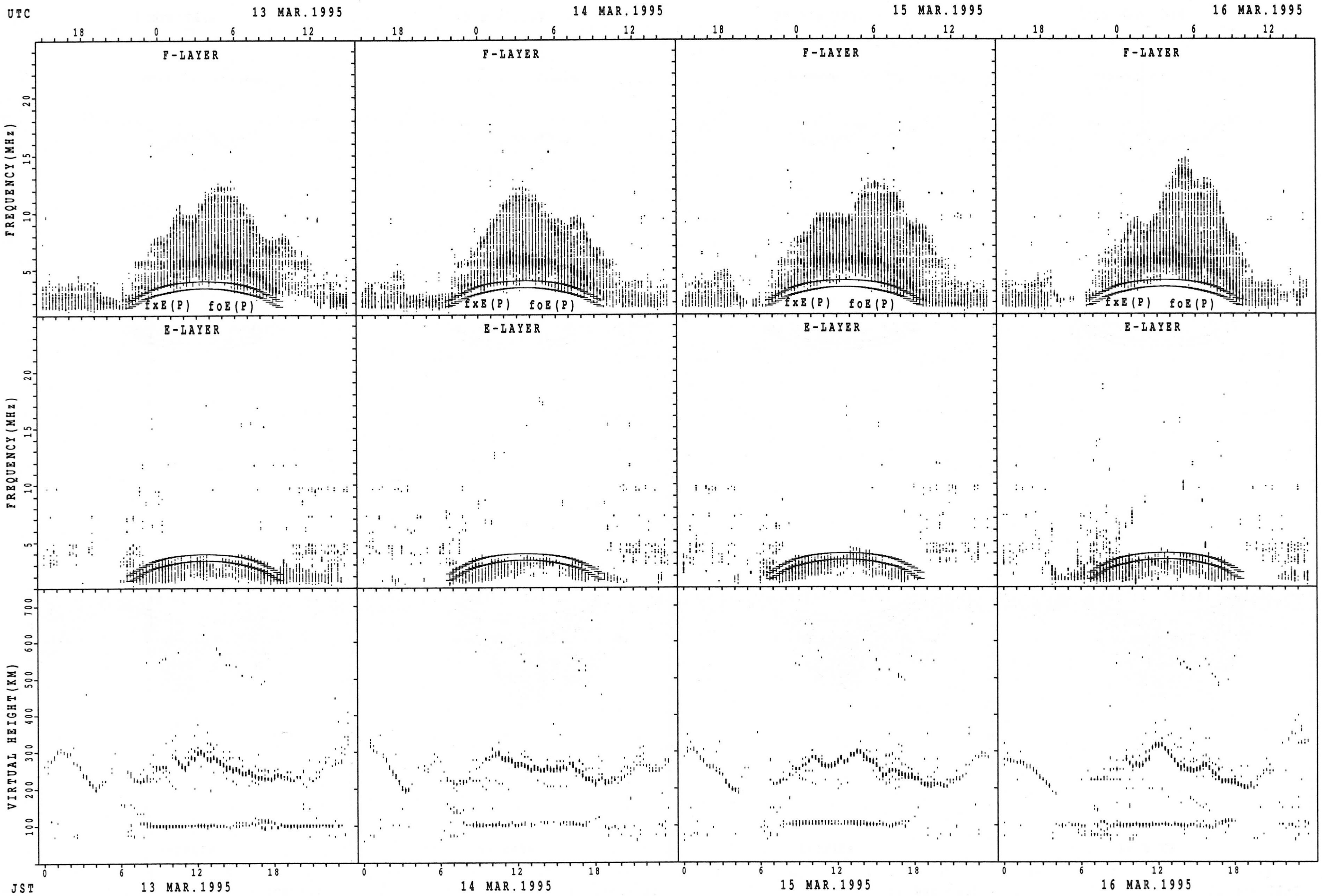
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



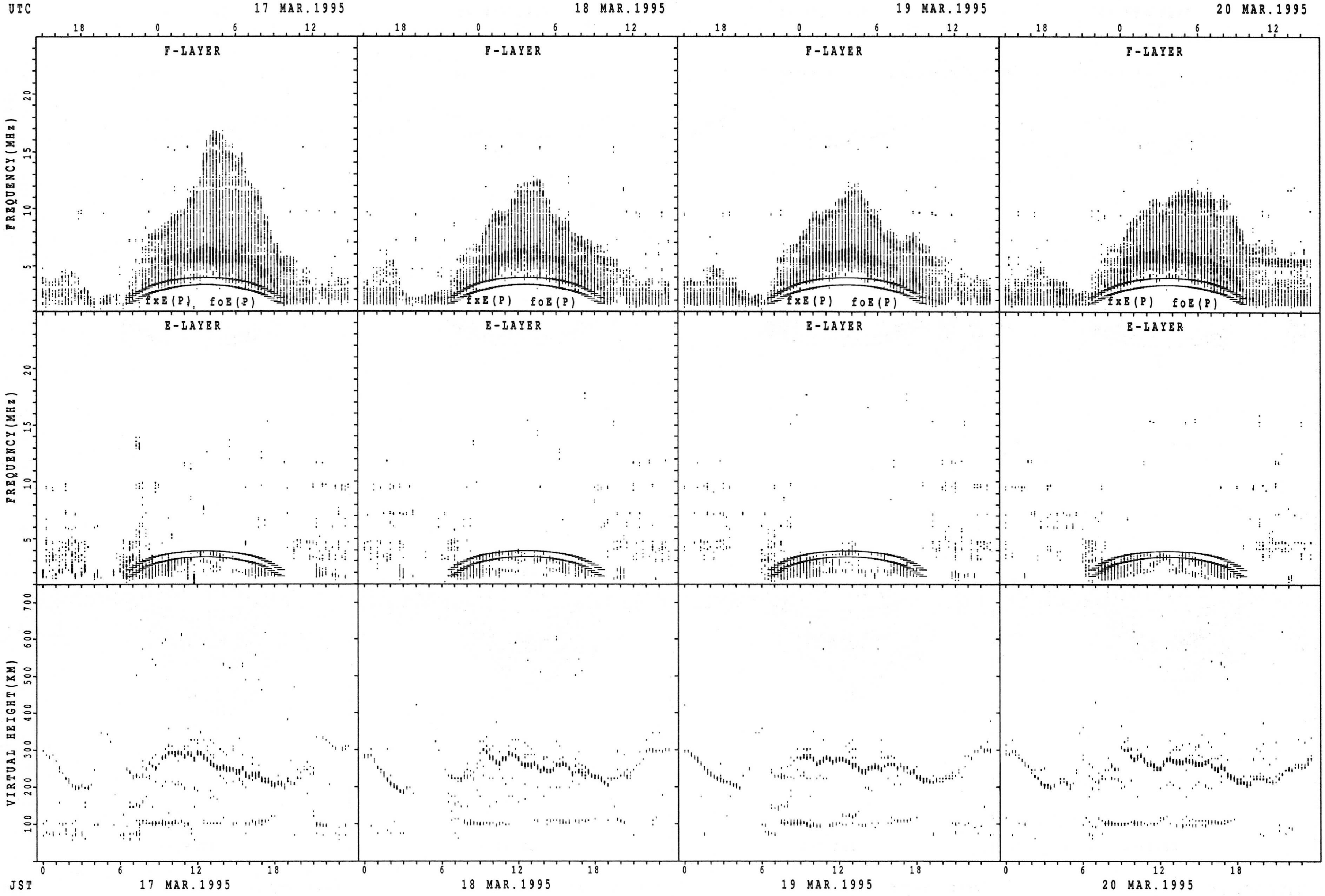
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



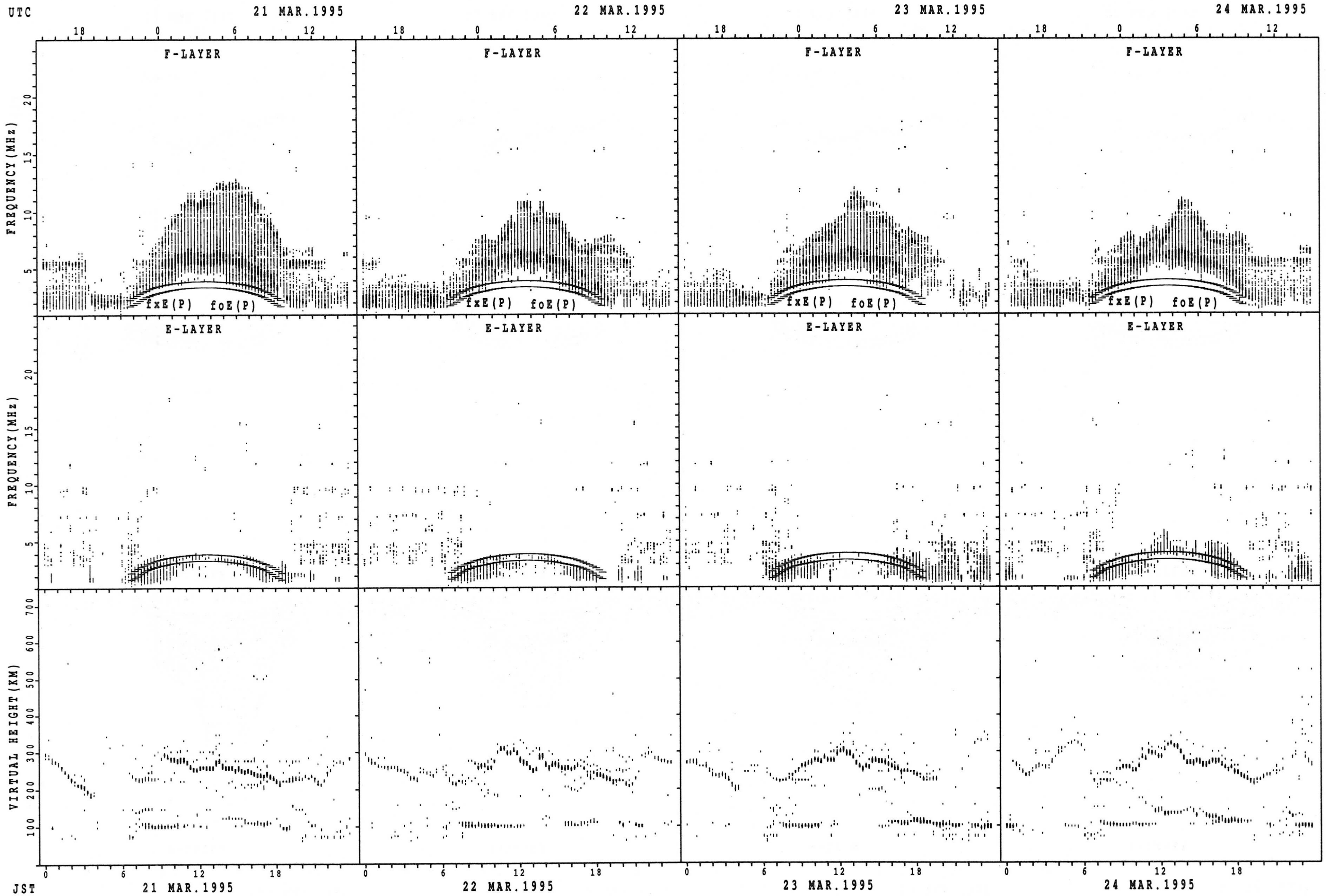
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



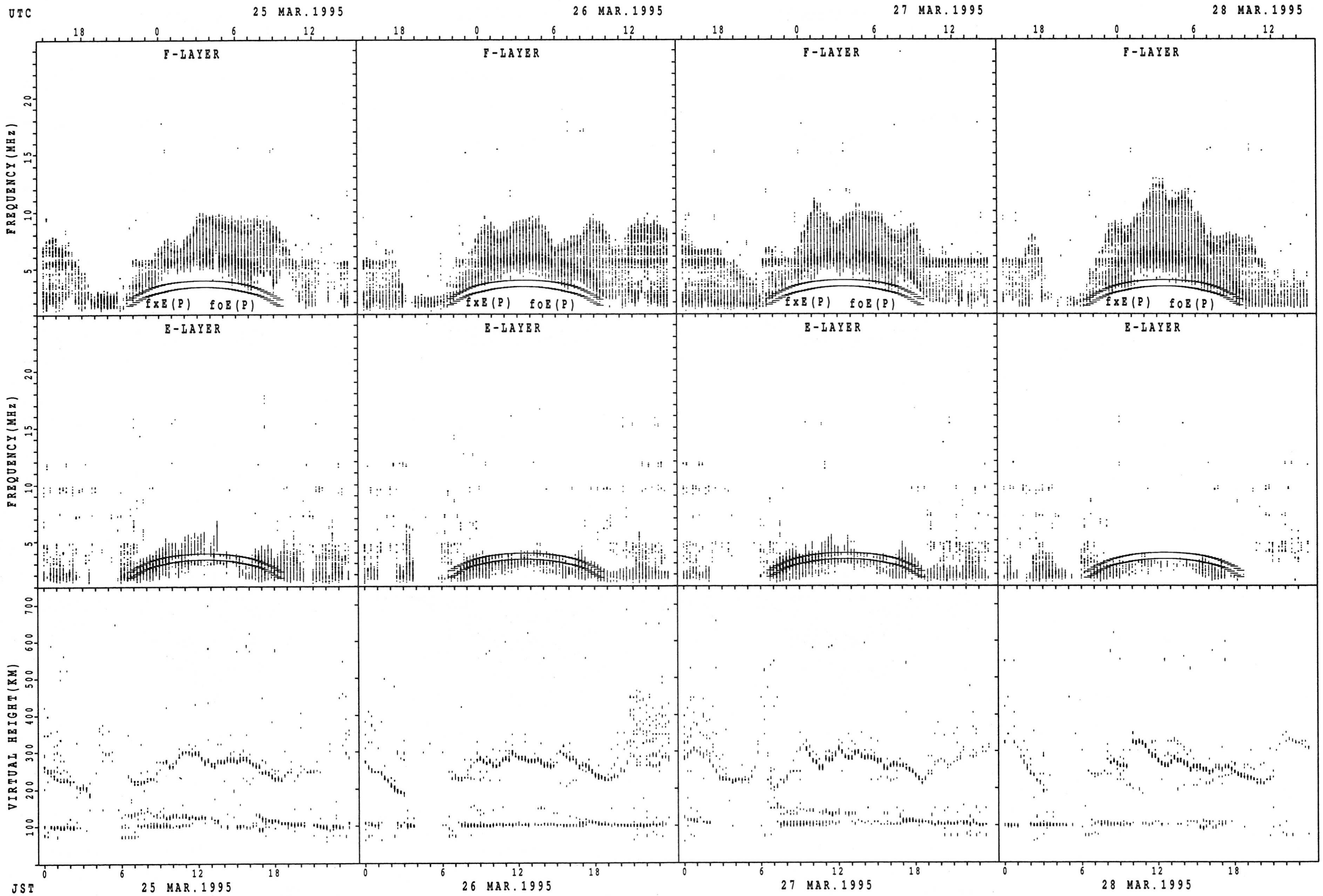
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



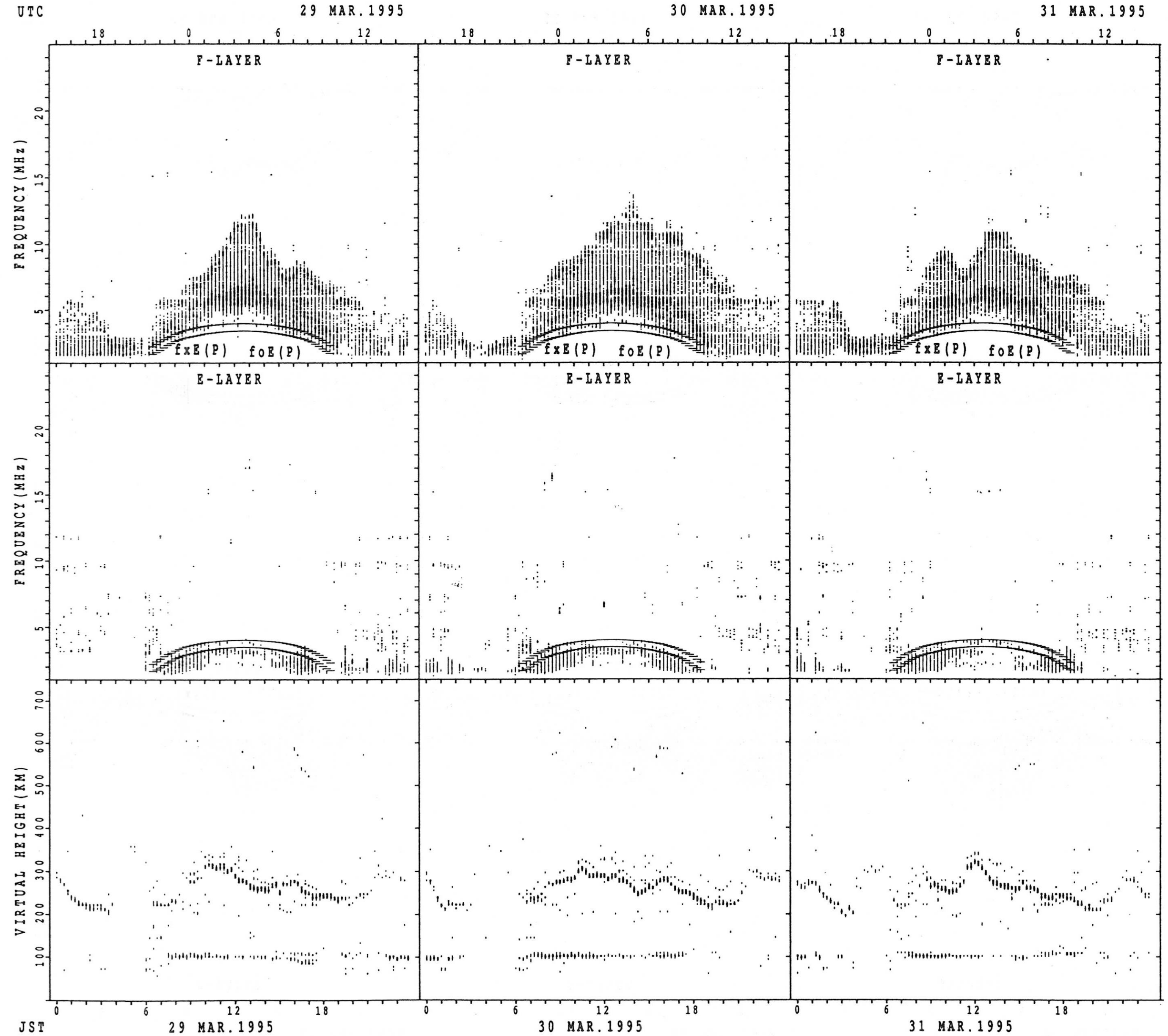
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



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

SUMMARY PLOTS AT OKINAWA



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

MONTHLY MEDIANS OF h'F AND h'Es

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

STATION WAKKANAI LAT. 45.4N LON. 141.7E

h'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									10	21	26	27	29	30	25	22	16							
MED									256	276	270	270	266	262	268	260	255							
U Q									272	287	288	284	282	280	279	266	264							
L Q									248	264	254	256	258	252	262	256	247							

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								23	29	30	31	27	29	30	29	31	28	15						
MED								125	111	107	109	107	107	108	111	111	113	123						
U Q								153	119	113	119	119	113	113	114	119	116	125						
L Q								113	107	105	107	105	105	107	107	107	109	119						

STATION KOKUBUNJI LAT. 35.7N LON. 139.5E

h'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									18	23	24	29	30	28	28	26	22	18						
MED									262	272	277	278	264	262	258	270	261	258						
U Q									272	288	294	286	274	278	271	280	272	264						
L Q									256	262	270	267	254	256	252	264	256	248						

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							15	28	27	28	30	29	28	26	27	30	28	19						
MED							155	150	107	107	107	109	111	108	109	112	113	117						
U Q							165	157	113	116	113	113	113	113	113	113	113	119						
L Q							111	113	107	106	107	107	107	105	107	107	110	109						

STATION YAMAGAWA LAT. 31.2N LON. 130.6E

h'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									14	24	29	29	30	31	31	31	26	25	19					
MED									267	281	278	286	278	270	262	262	266	262	256					
U Q									278	289	285	293	292	280	272	272	282	271	272					
L Q									254	270	269	263	270	258	254	254	258	254	244					

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								26	31	27	31	31	26	25	27	29	31	31	14				10	
MED								155	119	113	111	111	111	111	113	113	113	113	118				114	
U Q								167	167	125	113	113	113	114	115	115	115	115	123				123	
L Q								153	113	111	109	109	109	109	111	110	113	111	101				105	

MONTHLY MEDIANS OF h'F AND h'Es

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

STATION OKINAWA　LAT. 26.3N LON. 127.8E

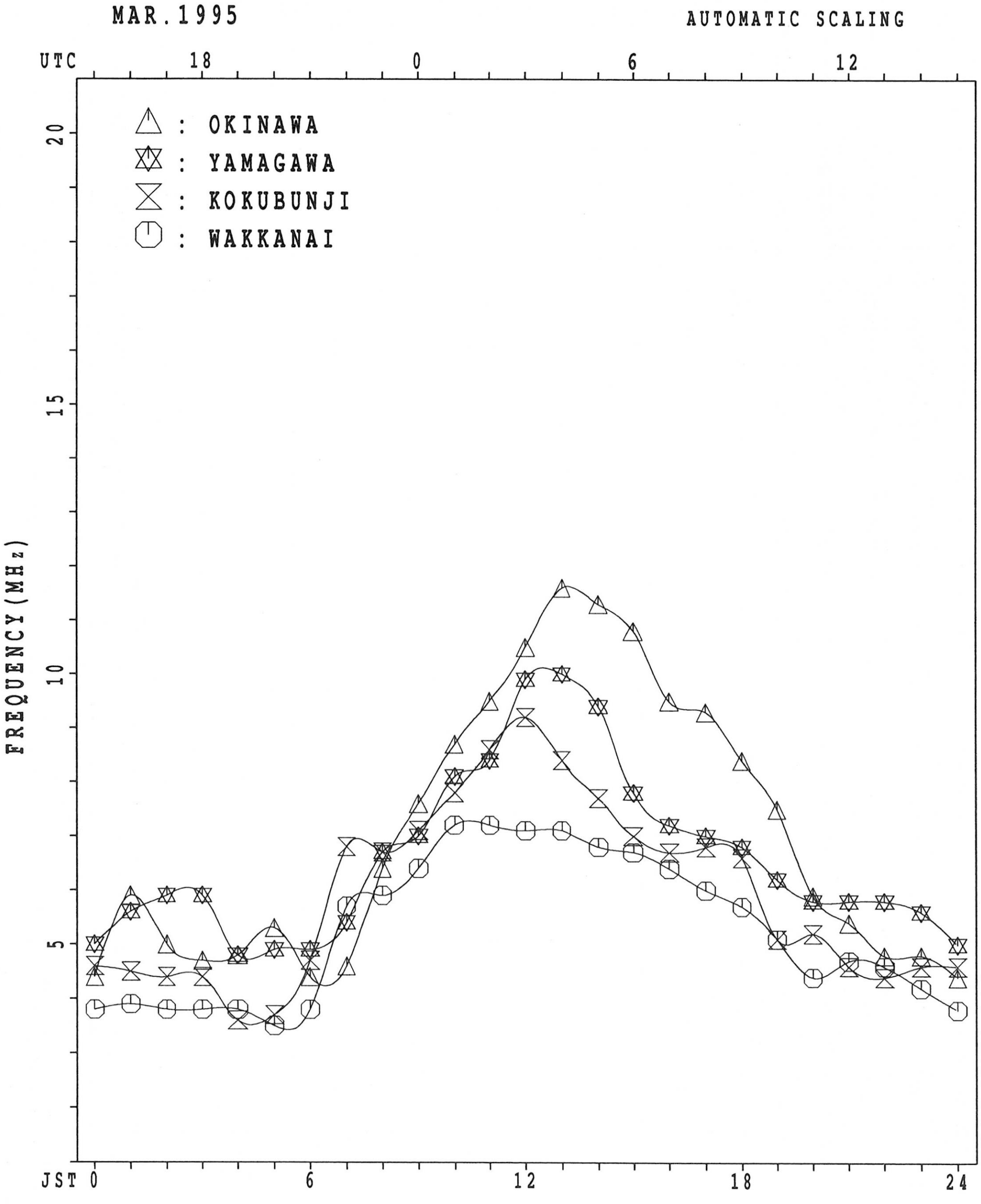
h'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									11	21	28	30	31	30	31	30	29	29	29	21				
MED									266	264	279	274	274	270	264	260	256	248	234	250				
U Q									274	281	289	286	294	280	270	270	271	258	250	259				
L Q									260	259	267	266	264	256	256	252	243	234	224	237				

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								26	28	31	29	25	24	20	21	27	29	30	13	10	13	10	12	13
MED								143	113	107	107	107	113	113	115	109	107	107	113	111	103	106	105	99
U Q								151	154	137	146	135	138	131	170	113	107	111	119	119	106	113	120	104
L Q								131	105	103	103	104	105	107	106	105	105	105	106	107	91	91	92	92

MONTHLY MEDIANS PLOT OF foF2



IONOSPHERIC DATA STATION Kokubunji

MAR.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	X 51	X 47	X 46	X 48	X 38	X 37														C	C	C	C	C
2	C	C	C	C	C	C													X 63	X 38	X 40	X 43	43	45
3	44	46	50	45	38	X 36													X 56	X 49	X 48	X 44	X 47	X 46
4	X 45	X 44	X 42	X 41	X 38	X 32													X 59	X 48	X 44	X 44	X 44	X 44
5	X 42	X 44	X 44	X 46	X 34	X 37													X 72	X 44	X 37	X 36	X 38	X 38
6	X 38	X 39	X 41	X 44	X 37	33													X 62	X 40	X 37	X 38	X 39	X 40
7	X 39	X 40	X 43	X 45	X 41	X 31													X 67	X 52	X 38	X 40	X 38	X 38
8	X 41	X 40	X 42	X 42	X 38	X 35													X 65	X 39	X 37	X 40	X 40	X 40
9	X 39	X 39	X 39	X 42	X 41	X 31													X 63	X 48	X 49	X 48	X 48	X 46
10	X 45	X 44	X 48	X 52	X 39	X 33													X 74	X 50	X 42	X 44	X 44	X 44
11	X 44	X 46	X 48	X 50	O X 26	X 32														X 60	X 45	X 48	X 46	X 48
12	X 47	X 47	X 46	X 50	X 39	X 36														X 56	X 49	X 52	X 49	X 50
13	X 48	X 48	X 48	X 51	X 48	X 40														X 53	X 52	X 50	X 49	X 42
14	X 45	X 43	X 48	X 56	X 36	X 36														X 50	X 50	X 52	X 49	X 50
15	X 50	X 49	X 47	X 54	X 38	X 38														X 56	X 50	X 54	X 48	X 50
16	X 49	X 48	X 48	X 50	X 40	X 37								C						X 48	X 40	X 39	X 42	X 44
17	X 43	X 43	X 44	X 47	X 36	X 36														X 43	X 37	X 40	X 42	X 42
18	X 42	X 42	X 44	X 45	X 35	X 36				C	C	C	C	C	C	C	C	C	C	X 49	X 42	X 44	X 46	X 47
19	X 47	X 47	X 43	X 42	X 43	X 39											C			X 52	X 41	X 43	X 44	X 44
20	X 42	X 40	X 43	X 40	X 35	X 33														X 59	X 42	X 41	X 43	X 40
21	X 41	X 41	X 41	X 43	X 28	X 29														X 61	X 49	X 45	X 45	X 46
22	X 45	X 44	X 43	X 42	X 39	X 39														X 60	X 50	X 47	X 49	X 49
23	X 48	X 47	X 45	X 43	X 45	X 38														X 65	X 42	O X 40	X 39	X 39
24	X 40	X 40	X 40	X 38	X 38	36														X 66	X 58	X 54	X 55	X 56
25	X 55	X 52	X 53	X 45	X 40	X 41														X 64	X 50	X 52	X 51	X 51
26	X 51	X 52	X 52	X 57	X 36	X 34														X 72	X 66	X 67	X 64	64
27	X 54	X 52	X 49	X 61	X 43	X 46														X 65	X 65	X 56	X 56	X 52
28	X 52	X 54	X 53	X 50	X 38	39														X 62	X 49	X 49	X 48	X 50
29	X 49	X 48	X 48	X 45	X 44	X 41														X 53	X 54	X 53	X 55	X 52
30	X 53	X 50	X 53	X 44	X 33	39														X 66	X 56	X 56	X 56	X 54
31	X 53	X 49	X 50	X 50	X 43	X 43														X 66	X 48	X 48	X 48	X 50
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30													9	30	30	30	30	30
MED	45	46	46	45	38	36													63	53	48	46	46	46
U Q	50	48	48	50	41	39													70	62	50	52	49	50
L Q	42	42	43	43	36	33													60	48	41	41	43	42

IONOSPHERIC DATA STATION Kokubunji

MAR.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	45	41	40	R 42	32	31	39	59	70	68	80	107	108	95	98	73	85	80	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	89	106	105	78	79	74	66	68	57	32	34	37	F 36	F 36
3	F 38	F 38	F 43	F 37	F 32	30	38	55	64	74	86	99	106	92	75	66	66	63	50	43	42	38	41	40
4	39	38	36	35	32	26	36	54	64	78	77	95	102	97	75	70	63	R 64	53	42	38	38	38	38
5	36	38	38	40	H 28	31	38	59	64	87	84	95	98	78	H 66	76	75	77	66	38	32	30	32	32
6	32	34	35	38	32	F 24	38	52	61	68	79	73	81	93	85	65	64	60	56	34	32	32	33	34
7	33	35	37	39	35	24	33	54	65	66	76	74	85	75	71	62	60	58	61	46	32	34	32	32
8	35	34	35	36	32	29	38	S 57	58	70	75	88	87	87	70	59	64	67	59	33	32	34	34	33
9	33	33	33	36	35	25	34	54	62	71	75	82	80	72	71	65	61	63	57	42	43	42	42	40
10	39	38	42	46	34	28	35	60	70	70	70	82	101	76	80	74	72	66	67	44	36	38	38	38
11	38	40	42	R 44	20	26	J R 35	62	68	63	70	R 76	92	71	77	68	65	65	66	54	39	42	40	42
12	41	41	40	44	33	31	42	60	64	71	80	71	97	99	97	81	69	76	R 66	50	43	46	43	44
13	42	42	42	45	42	34	44	55	65	68	83	94	108	92	79	72	75	72	68	47	46	44	43	36
14	39	37	42	50	30	30	46	60	59	70	80	104	106	105	72	71	72	62	60	44	44	R 46	43	44
15	R 44	43	41	48	32	32	45	54	66	64	77	86	80	91	104	73	72	56	56	50	44	48	42	44
16	43	42	42	44	34	31	R 46	55	66	68	69	90	92	I C 85	J R 83	65	73	67	66	42	34	33	36	38
17	37	37	39	41	30	30	45	63	68	67	79	90	100	88	74	70	67	68	56	37	31	34	36	36
18	36	36	38	39	29	30	42	61	66	C	C	C	C	C	C	C	C	C	C	43	36	38	40	41
19	41	41	37	36	37	33	44	52	65	67	72	97	98	94	74	63	I C 60	57	58	46	35	37	38	38
20	36	34	37	34	29	27	46	58	57	76	72	69	90	74	70	60	59	66	66	53	36	35	37	34
21	35	35	35	37	22	23	39	53	59	72	81	85	92	84	87	66	62	63	56	55	43	39	39	39
22	39	38	37	36	33	33	49	56	62	68	60	65	92	79	82	63	59	59	63	54	44	41	S 43	42
23	40	41	39	37	39	32	S 48	57	59	62	61	74	83	73	68	64	66	63	62	59	36	U S 34	33	33
24	U S 34	34	33	32	32	F 29	54	60	58	72	66	73	69	82	80	71	65	66	65	60	52	48	48	50
25	49	45	47	39	34	35	53	60	60	66	72	76	74	73	73	68	66	66	63	58	44	46	45	45
26	45	45	46	51	30	28	48	57	64	67	76	78	66	71	71	69	68	64	69	66	59	61	58	F 58
27	48	46	43	F 53	36	39	70	67	67	67	81	R 75	80	91	79	71	70	69	64	58	59	50	50	46
28	46	48	47	44	32	F 34	49	65	72	87	79	105	109	99	91	76	70	66	62	56	44	43	42	44
29	43	42	42	39	38	35	57	56	60	68	69	80	90	90	80	76	74	65	59	48	48	47	49	46
30	R 47	44	47	39	27	F 31	52	72	67	78	78	86	94	74	75	63	66	65	66	60	50	50	51	49
31	47	43	44	44	37	37	52	62	67	71	81	86	78	74	76	69	59	75	80	60	42	42	42	44
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	29	30	30	30	30	30
MED	39	39	40	39	32	30	44	58	64	68	77	86	92	84	76	69	66	66	62	48	42	40	40	40
U Q	44	42	42	44	35	33	49	60	67	72	80	95	101	92	82	73	72	68	66	56	44	46	43	44
L Q	36	36	37	37	30	28	38	55	60	67	72	75	81	74	72	65	63	63	57	42	35	35	36	36

IONOSPHERIC DATA STATION Kokubunji

MAR.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	L	U472L	440	U468L	L	U460L	L	L		C					
2							C	C	C	C	440L	448	460L	U448L	452L	U424L	L							
3										U440L	448L	452L	464L	U456L	U432L	U396L	L							
4									L	U448L	460L	448	U460L	U460L	436L	U420L	L							
5									L	L	U448L	U456L	U472L	U444L	L	U412L	L	L						
6								L	L	L	U436L	452L	464L	U452L	440L	U416L	L							
7									L	U444L	460L	444L	440	440L	432L	U408L	L							
8								268	L	U444L	436	448	452L	456L	456L	L	L							
9									L	U440L	452L	452	472	444	432L	L	L							
10									L	U444L	L	U464L	452L	448L	444L	U400L	L							
11									L	L	U452L	U452L	444	440	412L	L	L							
12									L	U428L	452L	428	448	436R	U460L	L	U344L							
13									L	L	U444L	424	464L	U460L	U440L	U428L	L							
14									L	U444L	460L	460L	460L	456L	448L	U440L	L							
15									344L	U420L	440	452	464L	440	U452L	420L	L							
16									L	U440L	460	U460R	460L	I450C	U452L	L	L	L						
17									L	L	460	460	472L	460L	432	416L	U392L	L							
18									L	C	C	C	C	C	C	C	C	C	C					
19									L	U432L	480L	476H	460	444	420	416L	C	252L						
20									L	U444L	452L	L	460H	448	440	U424L	L	L						
21									L	U460L	460	468	460	460	440	436L	L							
22									L	452L	472L	472	460	464L	444	U440L	L	L						
23									L	U440L	464L	472	472	440	456L	U436L	U424L							
24								304	L	444	460	U528L	U480L	468	452L	U444L	A	A						
25									L	428L	468L	480L	U444Y	480L	460	440L	U404L	L						
26									U452L	452	468L	472	472	468	456L	L	L	L	L					
27									U412L	L	480L	U480L	480	460	448L	U440L	400L	L						
28								L	L	460L	480	452	472L	480	460L	U428L	U392L	L						
29								L	420L	440L	U460L	476L	460	472L	460L	432L	L	L						
30								L	L	452L	460	468	U468L	468L	U440A	432L	U384L							
31									U432L	U440L	460	472L	456	460L	452L	U424L	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	5	22	29	29	30	29	29	23	7	1						
MED								286	U420	U444	460	460	460	456	448	U424	U392	252						
U Q									U442	448	466	472	472	462	456	U436	U404							
L Q									378	U440	450	450	460	444	438	U416	U384							

IONOSPHERIC DATA STATION Kokubunji

MAR. 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							B	H 224	268	A	A	A	A	A	312	A	A	A	C					
2							C	C	C	C	308	328	324	320	304	288	A	172						
3							B	188	260	284	A	A	332	320	308	284	252	176						
4							B	212	276	304	324	R 332	U R 332	R 340	320	300	260	184						
5							B	184	256	296	324	332	332	324	316	292	252	192						
6							B	200	248	280	R 308	320	332	316	300	288	248	180						
7							B	212	H 268	292	328	R 328	332	324	316	296	264	196						
8							B	200	272	312	I R 300	336	340	340	328	296	256	208						
9							136	204	264	U R 288	R 324	I R 350	340	U R 348	328	296	260	192						
10							160	208	264	296	312	A 316	A	R 324	320	296	260	192						
11							B	208	268	A	316	336	348	R 328	316	288	260	200	B					
12							B	228	H 288	308	I R 300	R 332	I R 350	R 324	308	284	248	196	B					
13							148	216	272	300	312	I R 300	A 336	A	308	296	264	188	B					
14							B	208	260	300	324	A 312	A	332	316	300	260	192	B					
15							152	208	276	300	R 336	A	A	A	320	296	U A 260	188	B					
16							172	212	276	I R 300	328	340	I R 350	C	R	A	260	A	B					
17							180	220	272	292	R 316	I R 300	I R 350	A	316	296	256	204	B					
18							B	212	284	C	C	C	C	C	C	C	C	C	C					
19							172	224	288	R 316	320	U R 336	U R 340	316	I R 300	292	I C 250	212	B					
20							156	236	284	308	R 328	R 340	U R 344	340	328	304	268	200	B					
21							196	228	A 272	304	328	336	348	332	328	308	272	A	B					
22							168	240	292	316	328	344	R 348	336	320	300	260	204	B					
23							176	236	292	320	344	U R 344	I R 350	352	328	320	284	212	B					
24							180	232	292	312	336	352	R 360	348	340	320	288	A	B					
25							A	240	292	324	332	360	U R 364	I R 350	U R 328	316	284	220	B					
26							H 192	H 252	H 308	A	328	I R 350	352	344	332	308	276	U A 200	B					
27							A	228	284	320	340	348	R 340	I R 350	I R 300	312	268	208	B					
28							180	A	A	I R 300	U R 328	I R 350	A	336	332	R 316	256	220	B					
29							176	224	280	308	R 340	A	U R 348	I R 350	U R 336	R 300	256	A	B					
30							188	236	A 280	312	R 332	I R 350	I R 350	A	A	296	260	216	B					
31							H 196	232	284	316	332	348	348	R 340	324	A	264	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							17	29	29	26	28	26	25	24	28	27	28	24						
MED							176	220	276	304	328	336	348	336	320	296	260	198						
U Q							184	232	286	312	332	U 348	U 350	U 346	328	308	266	208						
L Q							158	208	268	296	316	328	334	324	310	292	256	190						

IONOSPHERIC DATA STATION Kokubunji

MAR. 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	18	E B 14	E B 14	J A 19	E B 13	E S 17	E B 16	G	29	30	33	34	J A 42	J A 35	36	34	J A 28	20	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	G 27	G 25	37	34	35	33	28	G 17	E B 14	E B 14	E B 14	E B 15	18	18
3	E B 13	E B 14	E B 12	E B 12	26	19	E B 16	25	28	32	32	34	G 30	G 29	G	G	G 23	20	25	J A 19	24	24	23	20
4	24	E B 15	E B 14	E B 12	E B 14	E B 15	E B 14	24	G	31	34	G	G	G	G	G	G	20	E B 14	E B 14	E B 15	E B 12	E B 13	E B 14
5	E S 15	E B 16	E B 13	E B 14	E B 12	E B 14	E B 13	25	29	33	36	J A 41	34	G	G	G	G 23	G	E B 13	E B 15	E B 14	J A 14	E B 14	J A 36
6	J A 23	E B 14	E B 14	18	E B 14	E B 13	J A 15	23	G	G	G	G 25	G 24	G	G	G	G	G	20	E B 16	E B 14	E B 14	E B 14	E S 16
7	18	E B 14	E B 14	E B 13	E B 13	E B 15	J A 15	G	G	G 22	G 26	G	G	G	33	G	G	G 18	E B 13	E B 14	18	J A 22	22	E B 14
8	E B 14	E S 16	E B 14	E B 16	E B 14	E B 14	E B 16	25	G	34	32	G 30	G	37	G 23	G	G 22	G 18	J A 30	J A 22	22	18	E B 12	E B 13
9	E B 14	E B 15	E B 14	E B 15	E B 14	E B 15	G	G	32	33	36	G	G	G	G	32	G	G	J A 19	E B 15	E S 16	E B 15	E B 14	18
10	18	E B 15	E B 14	E B 14	E S 16	E B 13	G	G	27	G 26	33	34	34	G 32	G	G	G	G	J A 15	E B 12	E B 13	E B 15	17	E B 13
11	16	E B 13	E B 13	E B 14	E B 12	E B 14	J A 24	25	29	30	37	37	G	G	G	32	28	G	E B 13	E B 14	E B 14	E B 15	E B 14	E B 16
12	18	18	E B 14	E B 13	E B 14	E B 14	E B 15	G 18	31	33	33	G 25	G 27	G 24	G	G	G	G	E B 14	E B 15	E B 16	E B 16	E B 15	19
13	19	18	E B 15	E B 14	E B 14	E B 14	G	G	29	G 28	33	G 25	35	41	G 25	G 20	G	G	E B 15	E B 14	E B 15	18	E B 15	E B 15
14	E B 15	E B 14	J A 17	E B 14	E B 13	E B 14	21	25	28	33	36	J A 44	J A 45	G 27	G 23	G	G	G	E B 15	E B 15	25	17	E B 15	17
15	E B 14	E B 14	E B 16	E B 15	E B 14	E B 14	G	26	31	34	G	37	38	36	34	G 27	29	J A 27	J A 19	20	18	E B 15	E B 15	E B 15
16	E S 15	E B 14	18	E B 14	E B 14	18	25	25	J G 26	G 28	G	36	G 30	C	G 30	J A 46	33	30	24	19	18	E B 14	E S 16	E S 16
17	19	18	E B 15	E B 14	E B 14	E B 14	G	G 18	G	G	G	G 29	G 24	35	G 30	J A 52	J A 30	G	22	25	J A 21	E B 14	E S 15	E S 16
18	E B 14	E B 14	E B 15	E B 12	E B 13	E B 14	19	28	G 22	C	C	C	C	C	C	C	C	C	C	E B 14	E B 15	E B 12	E B 14	22
19	E B 16	E B 15	E B 15	E B 14	E B 14	E B 15	G	G	32	G	33	G	G	G	G	G	C	G	E B 12	E B 15	E B 14	E B 15	E B 14	E B 14
20	E B 12	E B 14	E B 12	E B 14	E B 14	E B 14	20	27	G 25	34	G 27	G 25	G	G	G	G	G	G	E B 14	16	E S 15	E B 14	E B 14	E B 14
21	E B 15	E B 15	E B 14	E B 12	E B 14	E B 14	G	27	32	33	35	36	G	G 32	G 29	33	30	22	E B 14	22	26	E B 15	E B 15	E B 14
22	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	G	G	G 27	G	G	G	G	G 28	G 26	G	G	25	E B 13	E B 15	E B 15	E B 14	18	E B 15
23	E B 14	E B 14	E B 14	E B 15	E B 13	20	G	G 21	G 27	G 29	G 31	G	G	38	38	G	32	34	J A 60	27	E B 15	E B 14	E B 15	E B 14
24	E B 14	E S 15	E B 13	E B 14	E B 14	E B 15	G	G 22	32	35	36	39	40	G	40	G 24	J A 43	J A 32	J A 30	J A 107	36	18	E B 14	E B 14
25	E B 15	E B 14	E B 15	19	18	20	23	G 21	33	37	36	G 29	G 31	G 29	G	G 26	G	J G 22	J A 19	E B 14	E B 12	E B 14	E B 15	E B 16
26	E B 15	28	E B 14	E B 15	E B 13	E B 16	20	G	G	32	34	G 33	G	40	40	42	J A 41	24	J A 22	22	17	E B 14	21	J A 18
27	22	20	E B 14	E B 13	E B 14	E B 16	19	28	33	36	G	38	G	G	G	G 28	29	G	J A 18	22	19	26	E B 14	E B 13
28	E B 15	E B 13	E B 13	18	E B 13	E B 14	G	26	31	G 29	G 30	G 31	35	G 31	38	G 26	G 24	25	J A 21	J A 17	E B 14	E B 14	E B 13	E B 14
29	E B 14	E B 14	E B 14	E B 14	E B 14	17	G	26	G 23	34	G 30	38	G 30	G	G	G	G	J A 23	E B 16	19	20	E B 15	20	18
30	E B 15	E B 14	E B 14	E B 14	J A 24	33	J A 22	27	31	35	G	G 30	G 31	J A 44	47	31	G	29	E B 15	18	E B 12	E B 13	E B 16	E B 13
31	E B 14	E B 14	E B 15	E B 12	16	E B 19	J A 20	G 18	G	G 24	G	39	37	G 26	35	J A 32	G 21	29	E B 15	20	E B 16	E B 14	E B 14	E B 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	30	30	30	29	30	30	29	30	29	30	30	30	30	30
MED	15	14	14	14	14	14	G	24	28	32	32	G	G	G	G	G	G	G	15	16	16	14	14	14
U Q	18	16	15	15	14	17	20	26	31	34	34	37	35	35	35	32	29	25	22	20	19	16	16	18
L Q	14	14	14	13	13	14	G	G	G	G	G	30	31	32	G	G	G	G	14	14	14	14	14	14

IONOSPHERIC DATA STATION Kokubunji

MAR.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	15	E B 14	E B 14	E B 14	E B 13	E S 17	E B 16	G	G 18	29	33	34	36	34	34	33	27	17	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	G 27	G 24	37	34	34	32	26	G 15	E B 14	E B 14	E B 14	E B 15	15	E B 12
3	E B 13	E B 14	E B 12	E B 12	16	16	E B 16	23	28	31	32	34	G 30	G 26	G	G	G 21	G 16	E B 15	16	16	E B 12	13	E B 14
4	E B 14	E B 15	E B 14	E B 12	E B 14	E B 15	E B 14	24	G	31	33	G	G	G	G	G	G	20	E B 14	E B 14	E B 15	E B 12	E B 13	E B 14
5	E S 15	E B 16	E B 13	E B 14	E B 12	E B 14	E B 13	24	28	32	35	36	34	G	G	G	G 22	G	E B 13	E B 15	E B 14	E B 14	E B 14	15
6	15	E B 14	E B 14	E B 14	E B 14	E B 13	E B 14	23	G	G	G	G 24	G 23	G	G	G	G	G	E B 15	E B 16	E B 14	E B 14	E B 14	E S 16
7	16	E B 14	E B 14	E B 13	E B 13	E B 15	E B 16	G	G	G 22	G 25	G	G	G	33	G	G	G 16	E B 13	E B 14	E B 16	E B 14	17	E B 14
8	E B 14	E S 16	E B 14	E B 16	E B 14	E B 14	E B 16	25	G	G 25	U Y 32	G 28	G	36	G 22	G	G 20	G 17	16	E B 13	E B 14	16	E B 12	E B 13
9	E B 14	E B 15	E B 14	E B 15	E B 14	E B 15	G	G	30	32	U Y 36	G	G	G	G	31	G	G	E B 13	E B 15	E S 16	E B 15	E B 14	E B 16
10	E B 15	E B 15	E B 14	E B 14	E S 16	E B 13	G	G	27	G 24	32	33	U Y 34	G 26	G	G	G	G	E B 14	E B 12	E B 13	E B 15	E B 14	E B 13
11	15	E B 13	E B 13	E B 14	E B 12	E B 14	E B 15	24	28	30	37	U Y 36	G	G	G	31	28	G	E B 13	E B 14	E B 14	E B 15	E B 14	E B 16
12	17	E B 14	E B 14	E B 13	E B 14	E B 14	E B 15	G 17	30	32	33	G 25	G 26	G 24	G	G	G	G	E B 14	E B 15	E B 16	E B 16	E B 15	E B 13
13	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14	G	G	28	G 24	33	G 24	35	40	G 24	G 18	G	G	E B 15	E B 14	E B 15	E B 16	E B 15	E B 15
14	E B 15	E B 14	E B 13	E B 14	E B 13	E B 14	E B 17	24	28	32	35	38	40	G 27	G 22	G	G	G	E B 15	E B 15	E B 14	16	E B 15	16
15	E B 14	E B 14	E B 16	E B 15	E B 14	E B 14	G	25	29	34	G	36	38	34	U Y 34	G 27	G	G	E B 16	E B 14	E B 13	E B 15	E B 15	E B 15
16	E S 15	E B 14	E B 13	E B 14	E B 14	E B 15	G 12	25	G 25	U G 28	G	36	U G 30	C	U G 30	38	G 17	22	E B 14	E B 12	16	E B 14	E S 16	E S 16
17	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	G	G 18	G	G	G	U G 29	U G 24	34	G 28	G 26	G 20	G	17	16	E B 14	E B 14	E S 15	E S 16
18	E B 14	E B 14	E B 15	E B 12	E B 13	E B 14	18	26	G 20	C	C	C	C	C	C	C	C	C	C	E B 14	E B 15	E B 12	E B 14	16
19	E B 16	E B 15	E B 15	E B 14	E B 14	E B 15	G	G	32	G	33	G	G	G	G	G	C	G	E B 12	E B 15	E B 14	E B 15	E B 14	E B 14
20	E B 12	E B 14	E B 12	E B 14	E B 14	E B 14	19	26	G 24	33	G 26	G 23	G	G	G	G	G	G	E B 14	15	E S 15	E B 14	E B 14	E B 14
21	E B 15	E B 15	E B 14	E B 12	E B 14	E B 14	G	27	30	33	34	36	G	G 32	G 28	33	G 27	22	E B 14	16	E B 14	E B 15	E B 15	E B 14
22	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	G	G	G 26	G	G	G	G	G 27	G 24	G	G	24	E B 13	E B 15	E B 15	E B 14	16	E B 15
23	E B 14	E B 14	E B 14	E B 15	E B 13	E B 15	G	G 19	G 26	G 29	G 30	G	G	38	38	G	32	32	56	E B 14	E B 15	E B 14	E B 15	E B 14
24	E B 14	E S 15	E B 13	E B 14	E B 14	E B 15	G	G 20	32	34	36	38	40	G	37	G 21	38	31	20	24	19	16	E B 14	E B 14
25	E B 15	E B 14	E B 15	E B 12	15	E B 14	19	G 20	32	36	U Y 36	G 28	G 30	U G 29	G	G 26	G	G 18	E B 15	E B 14	E B 12	E B 14	E B 15	E B 16
26	E B 15	E B 14	E B 14	E B 15	E B 13	E B 16	G	G	G	32	34	U G 33	G	39	37	41	35	24	22	17	E B 14	E B 14	E B 15	E B 14
27	E B 14	E B 13	E B 14	E B 13	E B 14	E B 16	19	27	32	35	G	37	G	G	G	G 28	28	G	E B 15	E B 15	16	16	E B 14	E B 13
28	E B 15	E B 13	E B 13	E B 15	E B 13	E B 14	G	26	30	U G 29	G 30	U G 31	34	G 29	37	G 25	G 22	G 18	17	16	E B 14	E B 14	E B 13	E B 14
29	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	25	G 22	32	G 29	36	G 30	G	G	G	G	22	E B 16	E B 14	E B 15	E B 15	E B 14	15
30	E B 15	E B 14	E B 14	E B 14	18	23	G 12	27	31	34	G	U G 30	G 31	38	44	G 22	G	G 18	E B 15	16	E B 12	E B 13	E B 16	E B 13
31	E B 14	E B 14	E B 15	E B 12	E B 14	E B 19	G 14	G 18	G	G 22	G	39	36	G 24	35	31	G 19	23	E B 15	17	E B 16	E B 14	E B 14	E B 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	30	30	30	29	30	30	29	30	29	30	30	30	30	30
MED	15	14	14	14	14	14	G	23	28	31	32	G	G	G	G	G	G	G	14	15	14	14	14	14
U Q	15	15	15	14	14	15	16	25	30	32	34	36	34	34	34	31	G	22	16	16	16	15	15	16
L Q	14	14	13	13	13	14	G	G	G	29	G	29	31	29	G	28	24	18	14	14	14	14	14	14

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

MAR.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	316	326	304	323R	347	292	341	363	374	341	320	343	339	332	350	325	342	360	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	328	333	337	341	345	356	350	356	346	317	277	308	300F	305F
3	314F	314F	307F	324F	311F	301	341	353	352	340	324	335	335	343	352	348	354	362	344	325	317	303	295	298
4	317	325	316	328	333	301	343	355	358	352	315	329	336	352	347	351	349	349R	347	314	306	303	278	288
5	290	319	315	339	273H	304	346	347	358	310	325	332	328	357	304H	338	339	344	364	338	302	300	297	286
6	294	297	306	323	339	340F	353	336	328	324	350	344	305	334	355	357	353	363	361	356	298	295	288	296
7	290	294	307	337	369	317	353	361	367	321	328	319	346	345	357	344	355	351	353	375	312	305	298	308
8	300	302	305	319	323	313	351	370S	357	349	324	330	334	345	350	355	354	353	364	345	282	297	314	310
9	295	332	329	323	368	354	341	359	344	331	334	335	339	353	340	347	359	370	342	315	300	315	309	308
10	299	297	303	346	377	280	325	338	359	330	305	314	339	315	335	336	344	350	352	346	283	297	296	297
11	298	317	325	385R	421	299	J383R	348	349	355	314	318R	333	326	329	348	345	340	339	334	283	317	304	293
12	304	292	308	330	326	295	333	354	358	323	314	315	315	324	326	340	345	343	344R	324	291	297	316	320
13	310	299	304	330	321	314	345	357	344	314	319	315	333	338	340	333	345	359	346	308	324	320	319	283
14	291	294	304	361	323	300	353	347	343	342	306	326	338	338	344	337	358	357	351	307	302	314R	294	292
15	307R	298	308	353	316	324	353	370	344	338	337	327	315	324	351	344	355	361	337	320	302	316	295	310
16	304	319	307	327	348	332	355R	363	352	330	324	322	314	I300C	J321R	331	343	352	368	329	326	301	294	308
17	300	307	326	357	335	314	346	354	358	330	330	314	347	335	334	347	357	362	371	346	289	292	295	298
18	302	303	329	358	299	305	336	352	352	C	C	C	C	C	C	C	C	C	C	335	299	280	298	299
19	300	317	308	305	318	338	356	363	339	354	313	333	328	351	356	356	I350C	345	346	334	312	308	297	297
20	297	310	316	335	330	318	347	371	348	360	342	324	343	347	364	340	336	345	354	331	320	298	312	301
21	296	308	342	374	305	305	364	352	330	331	332	325	331	335	348	347	348	353	346	327	317	304	305	304
22	299	315	303	306	316	333	374	362	359	348	329	300	333	327	344	359	352	340	344	332	339	294	286S	312
23	339	315	321	320	338	323	364S	375	352	347	328	319	330	348	331	336	349	345	356A	345	324	U321S	296	303
24	U333S	323	309	319	301	282F	366	364	351	357	340	320	317	321	335	345	348	345	328	315	311	291	295	304
25	313	321	324	348	313	316	357	337	343	339	341	326	322	328	335	336	349	349	343	329	310	287	294	305
26	297	307	321	366	315	301	355	351	331	332	327	338	337	331	329	334	346	334	336	324	301	290	295	313F
27	274	280	286	324F	318	308	347	352	349	328	324	318R	304	337	337	346	336	330	322	296	306	298	290	291
28	273	285	298	328	308	318F	331	336	334	335	291	319	330	321	341	322	343	350	329	338	310	279	282	287
29	294	294	304	294	285	289	362	373	338	344	312	311	325	324	330	330	344	345	348	299	281	283	306	291
30	286R	300	316	368	288	327F	336	354	330	338	321	323	351	332	340	341	339	336	335	316	295	291	294	299
31	300	290	312	330	306	307	346	348	335	328	327	321	341	325	346	358	332	339	347	340	323	296	292	320
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	29	30	30	30	30	30
MED	300	307	308	330	320	310	349	354	349	338	324	324	333	334	340	344	348	350	346	329	304	298	296	300
U Q	307	317	321	353	338	323	356	363	358	348	330	332	339	345	350	348	353	357	354	338	317	308	304	308
L Q	294	297	304	323	308	301	341	348	339	329	315	318	325	325	334	336	343	344	340	316	295	292	294	293

IONOSPHERIC DATA STATION Kokubunji

MAR. 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	L	U L 352	395	U L 363	L	U L 348	L	L		C					
2							C	C	C	C	L 374	373	L 370	U L 383	L 345	U L 368	L							
3										U L 357	L 354	L 371	L 365	U L 372	U L 377	U L 372	L							
4									L	U L 357	L 361	387	U L 373	U L 367	L 378	U L 381	L							
5									L	L	U L 359	U L 369	U L 355	U L 368	L	U L 355	L	L						
6								L	L	L	U L 372	L 367	L 370	Y	L 366	U L 384	L							
7									L	U L 372	L 357	L 389	391	L 379	L 365	U L 391	L							
8								417	L	U L 368	393	H 403	L 374	L 366	L 357	L	L							
9									L	H 358	L 356	373	373	H 388	L 388	L	L							
10									L	U L 366	L	U L 348	L 362	L 375	L 368	H 380	L							
11									L	L	U L 373	Y 383	H 397	378	L 386	L	L							
12									L	U L 363	L 365	394	378	R 382	U L 355	L	U L 370							
13									L	L	U L 377	416	L 335	A 366	U L 361	U L 368	L							
14									L	U L 349	L 354	L 370	A	L 366	L 383	U L 349	L							
15									L 413	U L 376	H 403	389	L 383	387	U L 361	L 381	L							
16									L	U L 380	381	I R 350	L 370	I C 350	U L 382	L	L	L						
17									L	L	363	370	H 347	H 373	392	L 364	U L 350	L						
18									L	C	C	C	C	C	C	C	C	C	C					
19									L	U L 373	L 350	H 369	380	379	408	L 394	I C 400	L 422						
20									L	U L 357	L 383	L	H 403	390	376	U L 382	L	L						
21									L	U L 351	362	370	387	379	370	L 366	L							
22									L	L 366	L 375	383	384	L 378	383	U L 369	L	L						
23									L	U L 380	L 407	384	373	411	L 369	U L 359	U L 361							
24								413	L	363	379	U L 354	U L 400	387	L 370	U L 355	A	A						
25									L	L 397	Y 367	L 368	Y	L 369	388	L 362	U L 369	L						
26									U L 363	369	L 376	386	375	366	L 363	L	L	L	L					
27									U L 385	L	L 356	U L 351	358	367	L 349	U L 363	L 349	L						
28								L	L	L 368	375	H 407	H 365	357	L 363	U L 372	U L 377	L						
29								L	L 386	L 371	U L 373	L 367	384	L 350	L 373	L 361	L	L						
30								L	L	L 363	374	362	Y	L 374	A	L 371	U L 368							
31									U L 365	U L 373	381	L 357	397	H 377	L 363	U L 380	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	5	22	29	29	27	28	28	23	8	1						
MED								415	U 385	U 367	373	371	373	374	370	U 369	U 368	422						
U Q									400	U 373	378	388	384	380	382	U 381	U 374							
L Q									U 364	U 358	358	367	365	366	362	U 362	U 356							

IONOSPHERIC DATA STATION Kokubunji

MAR.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									224	248	280	258	256	266	252	254	248		C					
2							C	C	C	C	256	266	254	246	262	246	242							
3										264	278	256	248	252	244	250	240							
4									242	258	294	272	258	242	252	246	238							
5									248	296	266	258	272	238	H 246	270	256	236						
6								246	266	258	250	266	286	276	250	242	244							
7									244	270	276	274	262	266	254	260	242							
8								228	246	262	292	262	262	260	258	248	252							
9									262	274	272	270	262	254	278	254	244							
10									240	278	292	288	262	264	268	258	250							
11									240	252	292	256	280	262	266	246	250							
12									244	268	290	294	280	266	268	258	246							
13									260	286	264	292	268	262	258	262	244							
14									246	260	300	274	258	250	250	260	240							
15									238	254	278	282	268	298	248	240	238							
16									246	268	280	284	272	I C 266	280	270	258	238						
17									238	256	278	284	254	258	258	258	256	244						
18									256	C	C	C	C	C	C	C	C	C	C					
19									260	258	322	274	258	250	250	246	I C 240	238						
20									250	262	276	286	268	264	242	260	262	242						
21									264	286	278	274	276	262	258	252	250							
22									258	266	288	330	272	262	262	252	246	244						
23									232	264	296	306	270	266	278	264	264							
24								224	250	266	278	306	310	288	268	262	256	254						
25									248	274	270	288	296	292	282	272	260	238						
26									274	278	288	280	284	292	286	280	256	248	244					
27									252	266	H 312	276	320	274	268	262	270	256						
28								268	260	266	350	284	264	286	252	250	250	240						
29								220	264	274	282	306	278	276	278	268	256	244						
30								254	252	264	288	284	258	274	268	254	256							
31									264	264	276	284	260	282	264	256	264	262						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								6	29	29	30	30	30	30	30	30	30	13	1					
MED								237	250	266	280	281	268	265	260	257	250	244	244					
U Q								254	260	274	292	288	278	276	268	262	256	251						
L Q								224	243	259	276	270	258	258	252	250	244	238						

IONOSPHERIC DATA STATION Kokubunji

MAR.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	256	240	274	252	222	338	240	222	H224	224	220	220	230	H198	214	222	232	226	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	218	218	222	226	216	230	218	226	202	218	304	266	294	308
3	278	270	246	246	260	286	240	222	230	224	230	216	202	222	H214	200	222	224	224	234	260	288	272	278
4	252	236	252	238	230	262	234	226	230	230	218	216	H198	234	222	222	224	230	208	238	264	290	308	310
5	306	272	240	226	198	286	232	226	240	236	232	232	216	214	216	206	242	234	212	206	250	268	306	330
6	326	292	282	244	214	258	240	254	H204	H210	232	208	200	Y	226	224	226	228	216	200	272	284	300	312
7	310	290	268	242	210	236	246	234	H184	H210	204	208	192	212	198	218	218	232	220	208	268	262	310	300
8	290	304	278	260	230	268	230	194	H188	230	212	H188	H202	222	218	216	H222	232	212	H206	314	294	256	292
9	300	274	266	250	206	232	246	226	236	H200	Y248	H192	224	H202	H190	H192	236	230	212	214	260	248	266	270
10	286	288	274	228	190	256	258	242	H188	H216	H220	220	246	218	212	H210	H230	234	220	200	H274	282	280	278
11	294	262	236	208	190	296	250	244	236	214	224	Y	H172	214	222	240	230	246	238	210	H220	254	270	278
12	286	286	288	234	228	256	248	236	242	242	208	204	208	206	234	240	218	242	214	220	242	270	250	260
13	252	282	266	236	236	242	224	224	232	220	H208	194	212	A	214	212	234	228	222	254	234	250	258	306
14	302	316	270	218	240	288	224	222	H220	232	210	228	A	210	220	208	238	230	226	214	270	262	278	292
15	274	282	280	228	212	250	222	218	206	216	H188	H194	220	H186	Y	216	218	224	226	222	250	244	274	264
16	272	260	268	234	206	250	232	228	H190	216	H180	208	208	IC191	202	A	216	A236	218	204	222	300	314	278
17	294	276	244	220	218	266	232	238	222	208	200	220	206	H176	206	A216	210	218	206	208	272	300	312	302
18	292	274	248	220	258	294	232	236	228	C	C	C	C	C	C	C	C	C	C	216	266	304	288	278
19	280	262	278	268	242	234	224	224	236	220	H202	H216	212	H192	206	212	IC211	222	H222	210	260	278	278	286
20	290	284	246	240	220	260	230	230	H194	196	222	H200	H186	212	210	210	H214	248	226	210	248	294	286	308
21	308	282	242	216	246	300	236	232	232	H228	230	214	200	194	200	208	222	236	230	232	230	268	282	300
22	294	272	272	268	264	262	216	230	222	210	208	206	204	204	198	222	234	228	228	218	216	286	294	276
23	268	258	272	262	236	236	222	224	226	218	194	190	H190	206	238	208	240	242	A	214	220	290	326	322
24	280	278	278	H256	304	346	226	H180	H216	210	H198	232	H190	H184	232	226	A	A	236	250	250	272	300	274
25	260	262	244	218	262	268	228	226	218	204	Y250	218	Y	240	210	200	228	232	230	228	222	286	292	286
26	276	272	256	218	214	286	222	226	222	200	194	200	188	232	232	A	A244	222	224	234	262	290	268	274
27	304	306	316	222	268	264	236	224	230	232	224	258	236	214	Y236	238	228	234	236	248	256	258	272	302
28	318	300	272	232	252	278	232	248	214	228	196	H178	H202	242	232	206	212	232	228	224	224	294	318	296
29	278	276	256	264	286	312	230	230	194	H180	232	216	204	218	228	218	H212	226	228	228	286	300	260	282
30	274	276	244	212	A342	A324	236	246	224	224	208	210	Y	A222	A	218	224	244	242	224	232	288	274	270
31	274	290	268	232	254	278	230	232	H210	200	194	234	180	H180	236	232	216	H216	230	210	214	284	284	256
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	30	29	27	28	28	28	29	29	28	30	30	30	30	30
MED	286	276	268	234	233	267	232	227	222	216	211	214	204	212	216	216	224	230	224	217	253	284	283	286
U Q	300	288	274	250	258	288	240	236	230	228	224	220	216	222	230	223	233	235	229	228	268	290	300	302
L Q	274	270	246	220	214	256	226	224	206	209	200	200	192	196	208	208	217	226	215	210	230	266	272	276

IONOSPHERIC DATA STATION Kokubunji

MAR.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							B	126	118	A	A	110		A	118	112	A	A	C					
2							C	C	C	C	E A 138	122	112	118	114	118	A	138						
3							B	128	114	A 120	114	A	A 128	124	116	114	A 124	A						
4							B	124	124	A 130	118	126	120	118	116	116	116	120						
5							B	134	124	124	116	120	116	116	116	114	A 128	122						
6							B	118	114	114	112	122	124	112	116	116	116	134						
7							B	136	114	A 124	A 124	116	116	120	118	116	118	E A 178						
8							B	120	112	A 130	116	130	114	A 126	118	114	122	A 132						
9							168	120	116	128	112	112	114	120	114	118	116	124						
10							E B 170	126	112	A 118	112	110	A	A 124	116	114	114	120						
11							B	132	112	110	112	110	108	110	114	112	E A 146	122	B					
12							B	128	114	134	124	118	118	A 118	112	114	118	120	B					
13							154	126	126	A 136	A 134	122	A	110	A 126	114	114	124	B					
14							B	126	114	112	112	108	A	120	118	118	116	120	B					
15							162	A 144	118	112	110	A	A	A	A 128	A 126	116	A 122	B					
16							B 156	140	A	A	114	A 122	A	I C 119	A	A	A	A	B					
17							B 172	130	114	110	110	A	A	A	A 126	134	A 126	120	B					
18							B	116	116	C	C	C	C	C	C	C	C	C	C					
19							144	114	114	108	110	108	112	110	112	114	I C 116	126	B					
20							138	126	122	A 128	122	112	108	114	114	116	118	120	B					
21							148	142	A	A	112	110	116	A 128	A 128	126	122	A	B					
22							156	114	130	110	110	110	114	120	118	112	116	118	B					
23							156	132	A 142	A 132	A 120	112	114	110	110	114	120	116	B					
24							148	128	122	114	108	118	122	114	130	114	118	A	B					
25							A	124	A	116	112	118	124	A	112	A 120	114	A 126	B					
26							160	112	120	A	A 122	A	112	112	A 124	A 122	124	120	B					
27							A	130	110	110	112	118	114	114	112	A 128	126	122	B					
28							172	A	A	A	E A 136	A	A	120	120	112	A 120	128	B					
29							152	120	122	A 120	A 130	A	122	114	114	114	116	A	B					
30							B 148	134	A	A 128	112	A	A	A	A	A 126	110	124	B					
31							A 152	116	114	A 116	112	110	110	118	A 134	A	116	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							17	29	25	24	29	23	21	25	28	28	27	23						
MED							155	126	116	119	112	116	114	118	116	115	117	122						
U Q							165	132	122	128	122	122	121	120	122	119	122	126						
L Q							148	120	114	112	112	110	112	113	114	114	116	120						

IONOSPHERIC DATA STATION Kokubunji

MAR. 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	B	B	108	B	S	B	G	116	134	120	120	114	100	120	116	116	116	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	110	112	118	126	124	120	118	110	B	B	B	B	122	110
3	B	B	B	B	104	108	B	160	164	126	118	120	112	110	G	G	110	110	110	110	110	110	110	110
4	104	B	B	B	B	B	B	154	G	156	126	G	G	G	G	G	G	160	B	B	B	B	B	B
5	S	B	B	B	B	B	B	156	164	160	142	128	132	G	G	G	114	G	B	B	B	156	B	108
6	116	B	B	104	B	B	B	186	G	G	G	112	108	G	G	G	G	G	116	B	B	B	B	S
7	134	B	B	B	B	B	B	G	G	110	108	G	G	G	134	G	G	118	B	B	116	110	122	B
8	B	S	B	B	B	B	B	182	G	122	120	112	G	E G 188	104	G	114	116	114	102	100	104	B	B
9	B	B	B	B	B	B	G	G	170	184	166	G	G	G	G	178	G	G	102	B	S	B	B	130
10	128	B	B	B	S	B	G	G	164	112	130	122	118	118	G	G	G	G	100	B	B	B	138	B
11	104	B	B	B	B	B	104	162	162	116	186	E G 190	G	G	G	180	160	G	B	B	B	B	B	B
12	136	132	B	B	B	B	B	112	E G 194	176	E G 176	108	104	102	G	G	G	G	B	B	B	B	B	140
13	132	130	B	B	B	B	G	G	E G 192	108	146	110	144	112	104	102	G	G	B	B	B	124	B	B
14	B	B	106	B	B	B	112	154	166	148	136	116	112	104	106	G	G	G	B	B	118	126	B	122
15	B	B	B	B	B	B	G	160	156	164	G	120	112	110	180	110	126	102	110	102	122	B	B	B
16	S	B	112	B	B	120	110	158	110	110	G	164	110	C	110	102	102	126	100	102	104	B	S	S
17	116	112	B	B	B	B	G	118	G	G	G	110	110	110	108	104	102	G	100	104	128	B	S	S
18	B	B	B	B	B	B	154	158	106	C	C	C	C	C	C	C	C	C	C	B	B	B	B	108
19	B	B	B	B	B	B	G	G	174	G	140	G	G	G	G	G	C	G	B	B	B	B	B	B
20	B	B	B	B	B	B	152	166	110	148	108	108	G	G	G	G	G	G	B	126	S	B	B	B
21	B	B	B	B	B	B	G	156	156	146	130	126	G	112	112	134	126	118	B	102	100	B	B	B
22	B	B	B	B	B	B	G	G	110	G	G	G	G	110	110	G	G	144	B	B	B	B	166	B
23	B	B	B	B	B	124	G	114	108	108	108	G	G	162	182	G	172	120	110	116	B	B	B	B
24	B	S	B	B	B	B	G	116	154	146	152	166	154	G	146	106	130	122	116	110	112	112	B	B
25	B	B	B	110	112	112	142	108	150	144	134	112	112	110	G	102	G	100	128	B	B	B	B	B
26	B	110	B	B	B	B	108	G	G	108	146	108	G	150	148	128	118	118	110	116	124	B	160	132
27	146	134	B	B	B	B	146	158	144	148	G	156	G	G	G	110	146	G	126	120	120	104	B	B
28	B	B	B	114	B	B	G	110	110	110	112	108	108	112	E G 198	104	102	100	98	98	B	B	B	B
29	B	B	B	B	B	110	G	164	110	158	110	118	114	G	G	G	G	120	B	104	98	B	100	114
30	B	B	B	B	108	106	110	172	152	122	G	114	108	104	102	104	G	100	B	100	B	B	B	B
31	B	B	B	B	144	B	112	108	G	108	G	152	134	106	E G 174	106	106	124	B	100	B	B	B	B
	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	5	2	4	4	6	10	22	23	25	22	24	18	18	17	16	16	18	14	15	12	8	7	9
MED	122	130	109	109	110	111	112	157	152	134	129	116	112	110	115	108	117	118	110	104	114	111	122	114
U Q	134	133		112	128	120	146	162	164	152	146	127	118	118	161	124	128	122	116	116	121	125	160	131
L Q	110	111		106	106	108	110	116	110	110	112	111	110	106	107	104	108	110	100	102	102	107	110	109

IONOSPHERIC DATA STATION Kokubunji

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

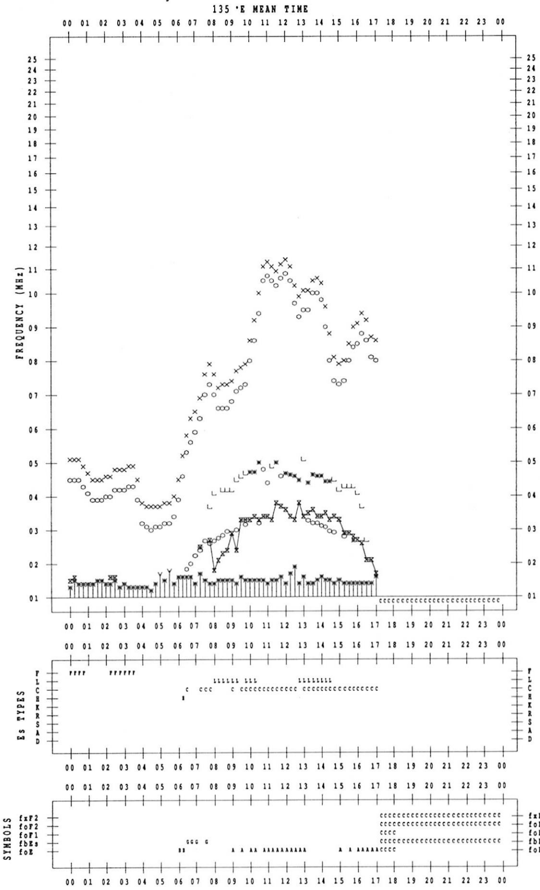
f-PLOTS OF IONOSPHERIC DATA

KEY OF f-PLOT	
|	SPREAD
⬡	foF2, foF1, foE
×	fxF2
✳	DOUBTFUL foF2, foF1, foE
⧖	fbEs
└	ESTIMATED foF1
↑, Y	fmin
∧	GREATER THAN
∨	LESS THAN

f-PLOT DATA

SCALER :

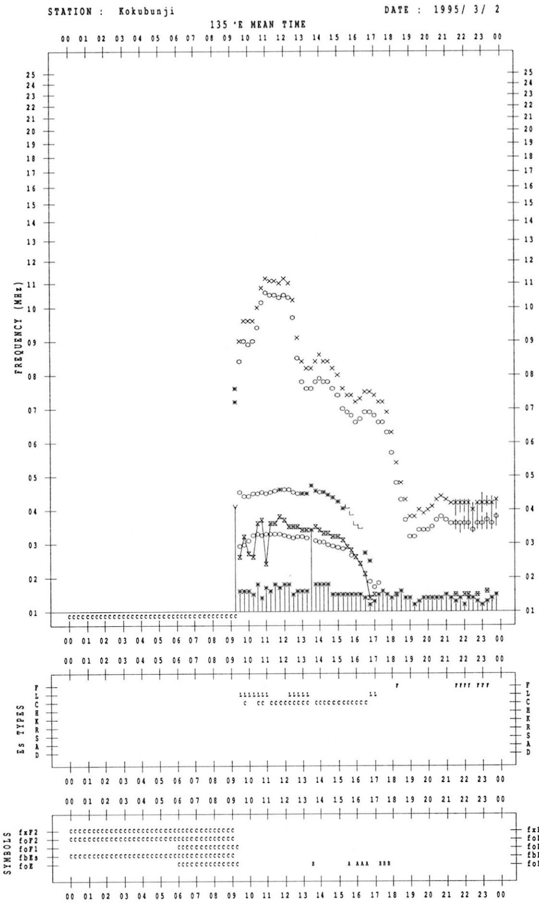
STATION : Kokubunji DATE : 1995/ 3/ 1



f-PLOT DATA

SCALER :

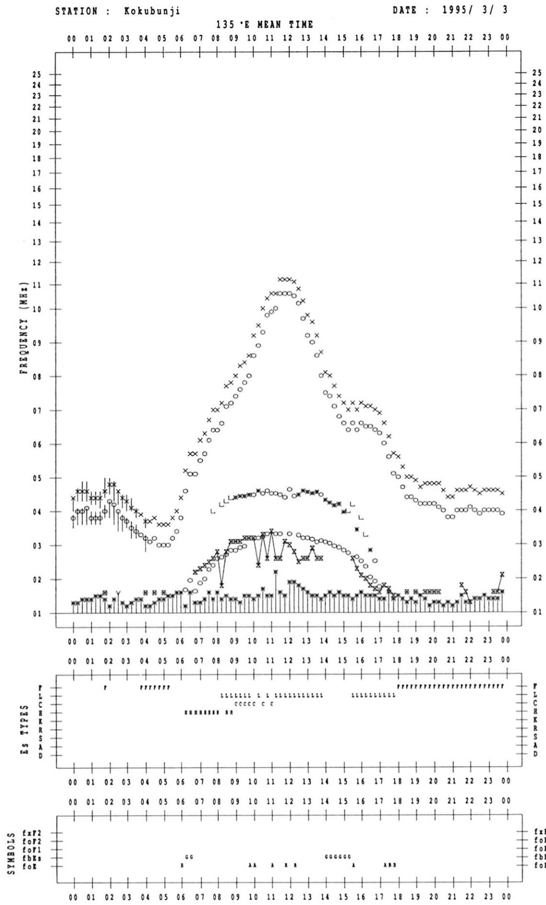
STATION : Kokubunji DATE : 1995/ 3/ 2



f-PLOT DATA

SCALER :

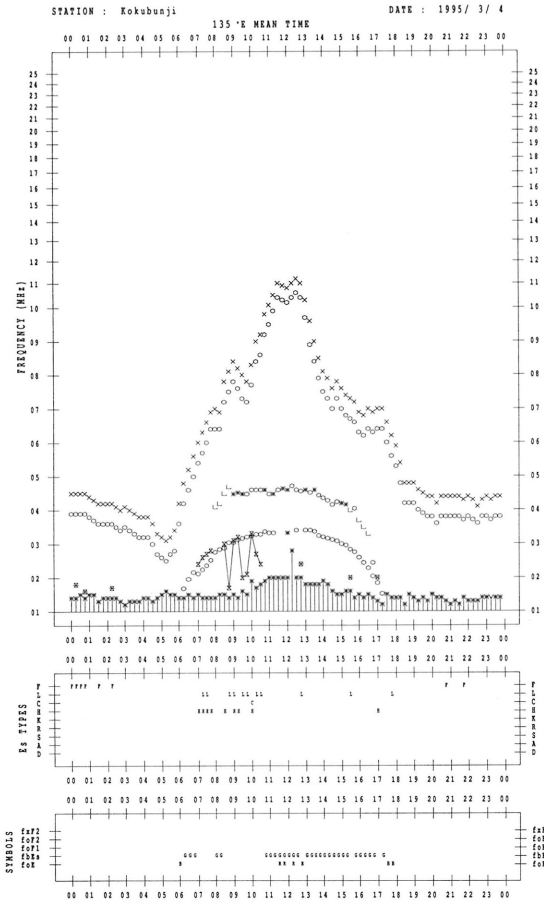
STATION : Kokubunji DATE : 1995/ 3/ 3



f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/ 4

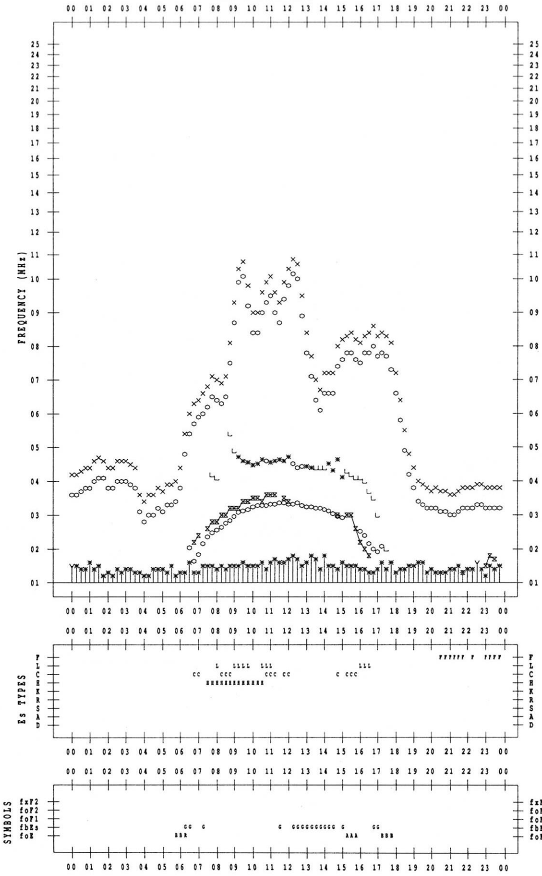


f-PLOT DATA

SCALER :

STATION : Kokubunji — DATE : 1995/ 3/ 5

135 °E MEAN TIME

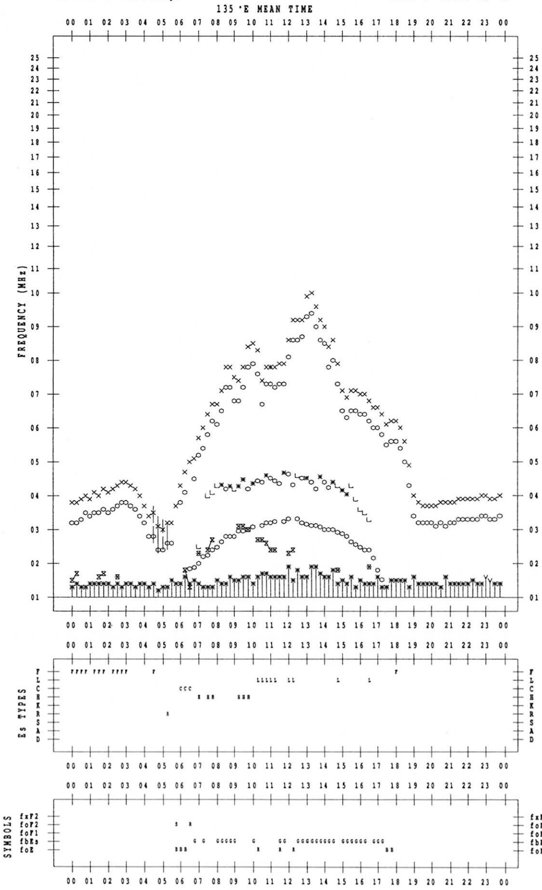


f-PLOT DATA

SCALER :

STATION : Kokubunji — DATE : 1995/ 3/ 6

135 °E MEAN TIME

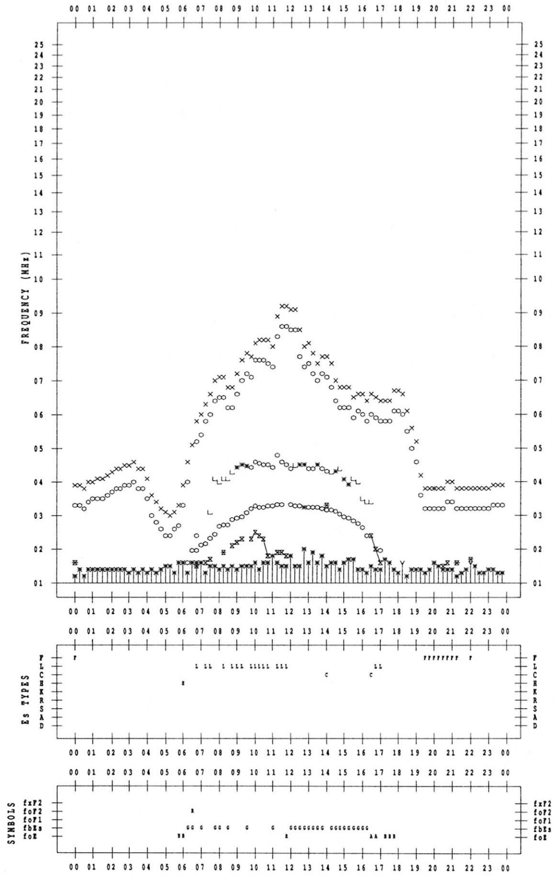


f-PLOT DATA

SCALER :

STATION : Kokubunji — DATE : 1995/ 3/ 7

135 °E MEAN TIME

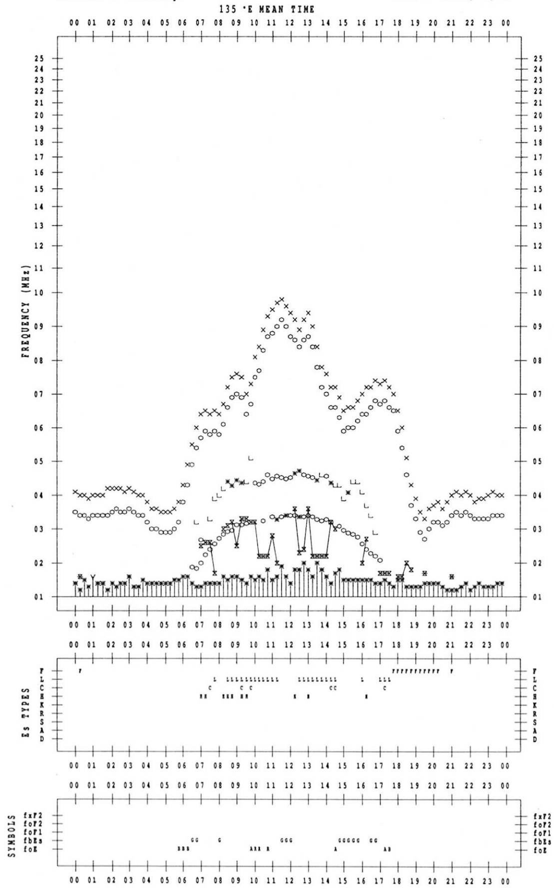


f-PLOT DATA

SCALER :

STATION : Kokubunji — DATE : 1995/ 3/ 8

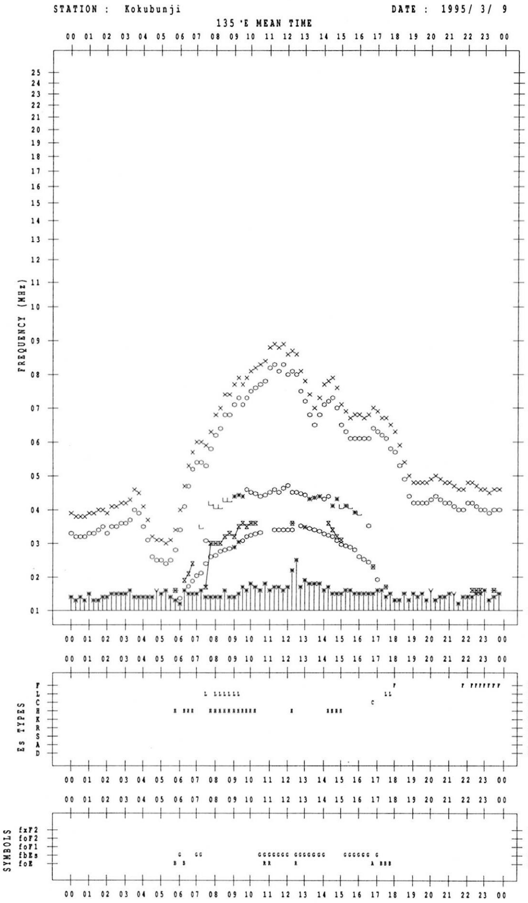
135 °E MEAN TIME



f-PLOT DATA

SCALER :

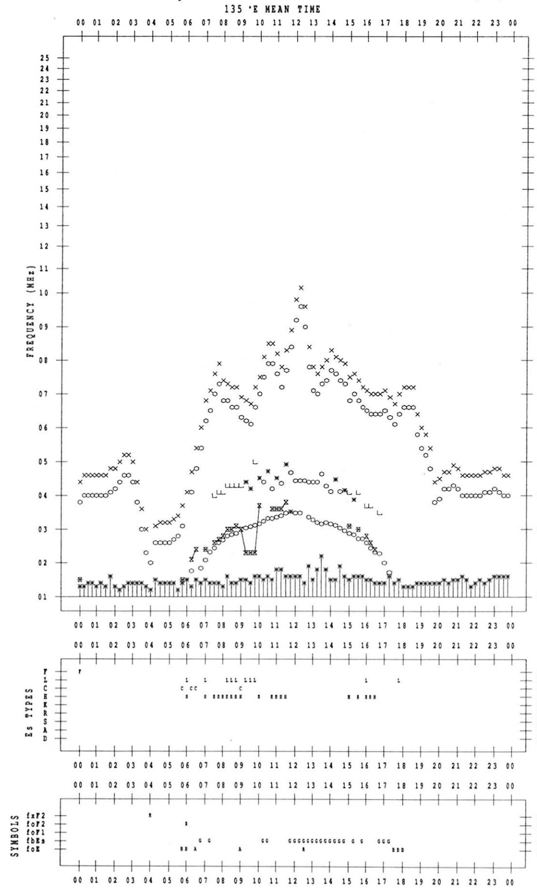
STATION : Kokubunji DATE : 1995/ 3/ 9



f-PLOT DATA

SCALER :

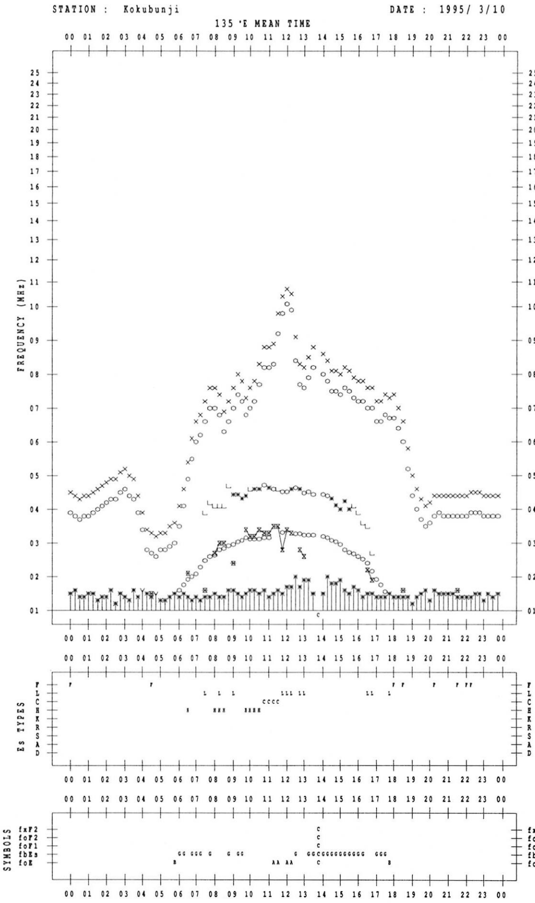
STATION : Kokubunji DATE : 1995/ 3/11



f-PLOT DATA

SCALER :

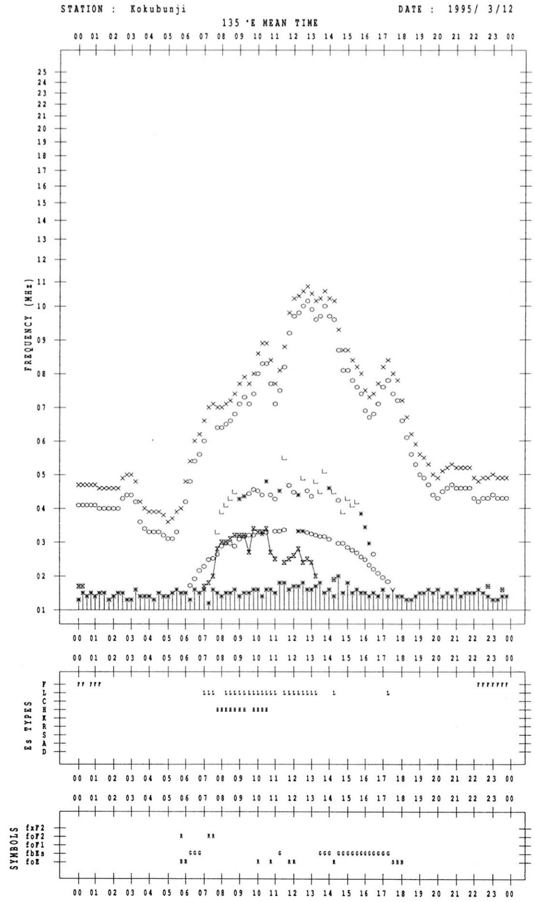
STATION : Kokubunji DATE : 1995/ 3/10



f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/12

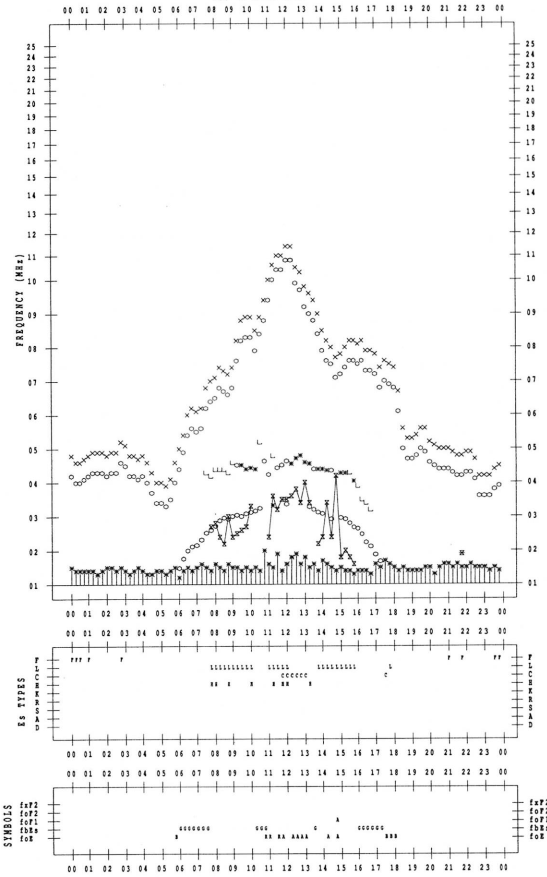


f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/13

135 °E MEAN TIME

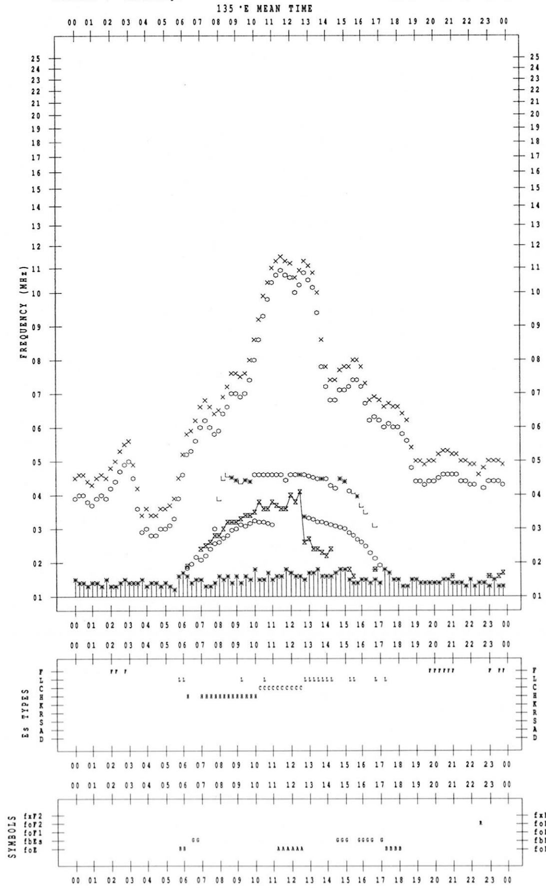


f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/14

135 °E MEAN TIME

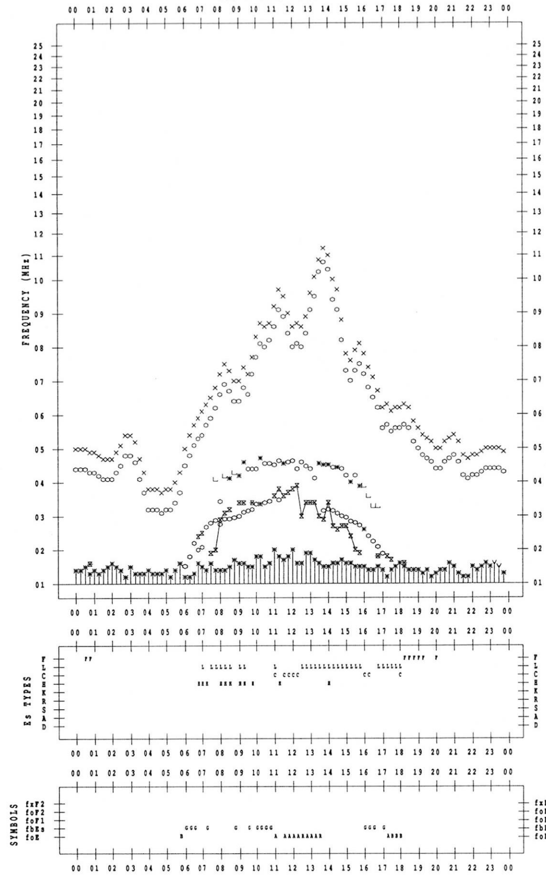


f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/15

135 °E MEAN TIME

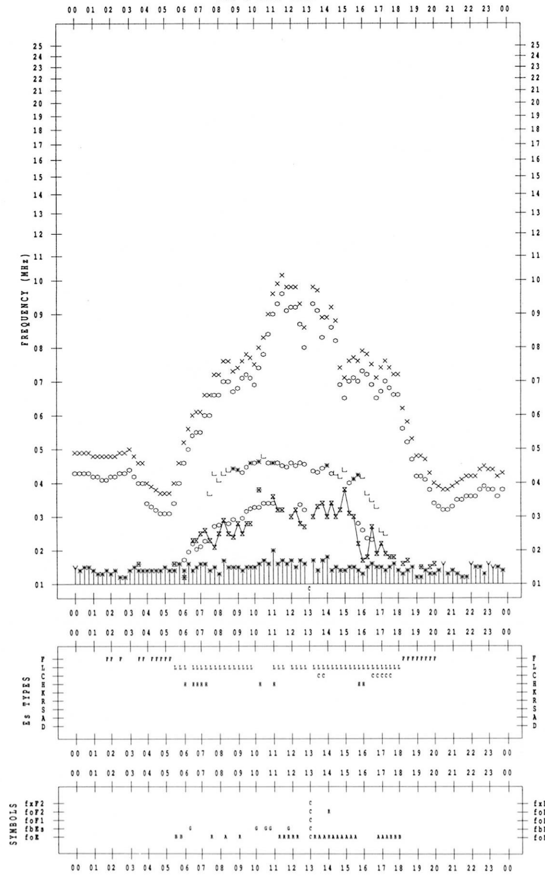


f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/16

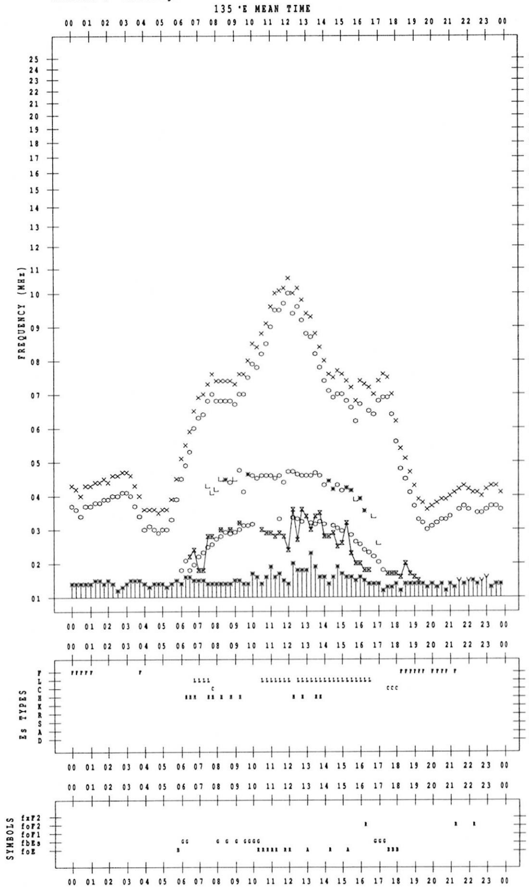
135 °E MEAN TIME



f-PLOT DATA

SCALER :

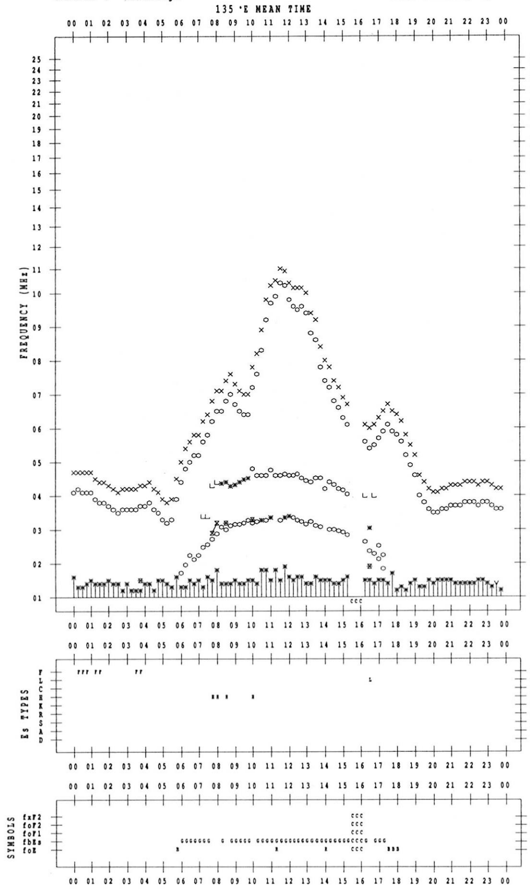
STATION : Kokubunji DATE : 1995/ 3/17



f-PLOT DATA

SCALER :

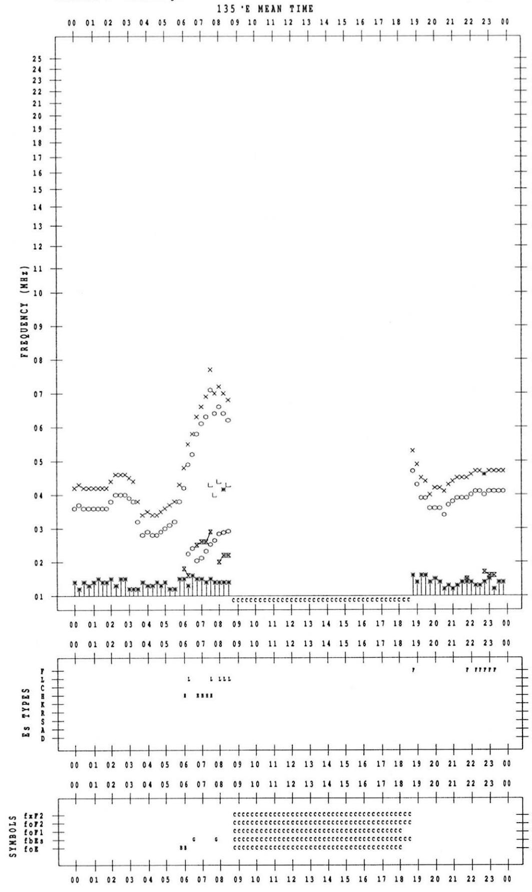
STATION : Kokubunji DATE : 1995/ 3/19



f-PLOT DATA

SCALER :

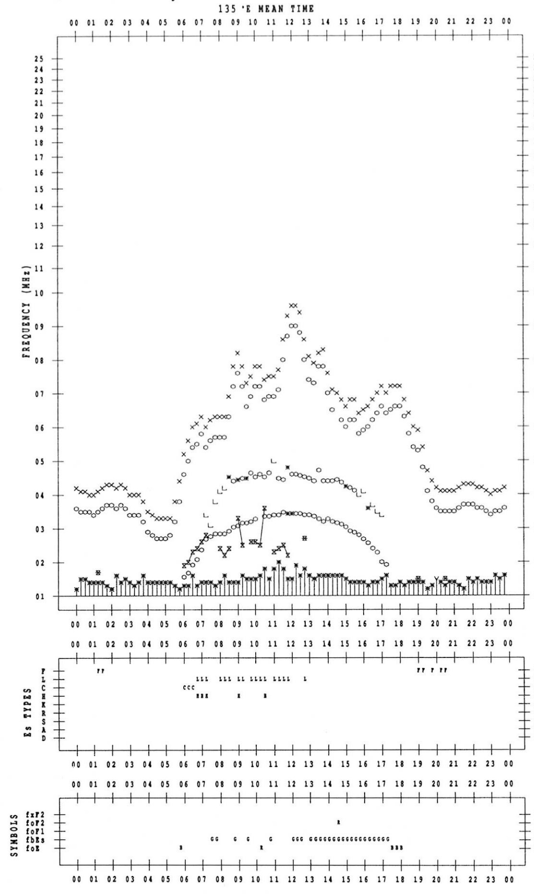
STATION : Kokubunji DATE : 1995/ 3/18

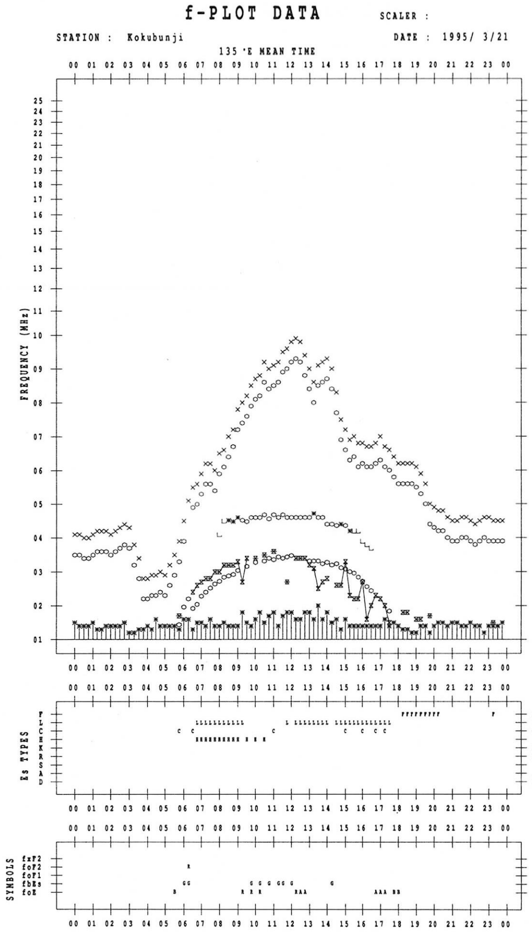


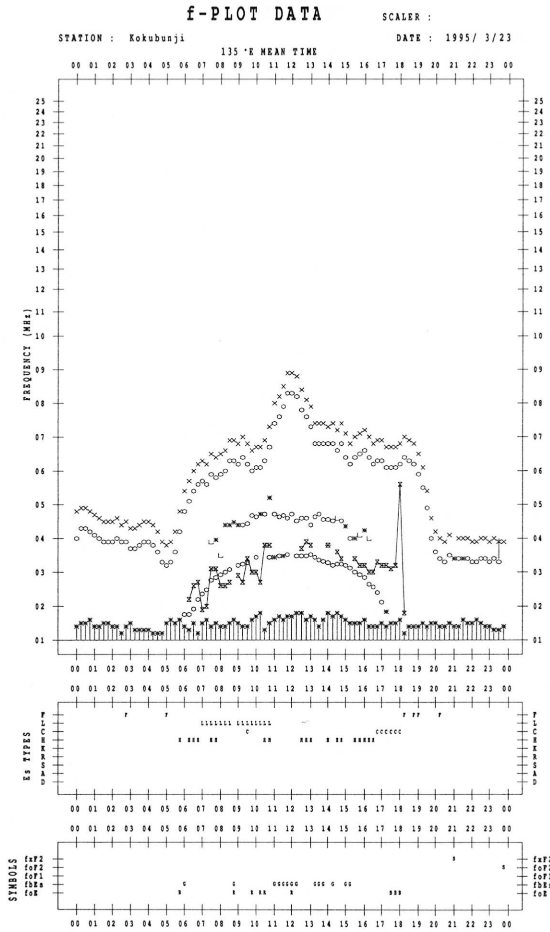
f-PLOT DATA

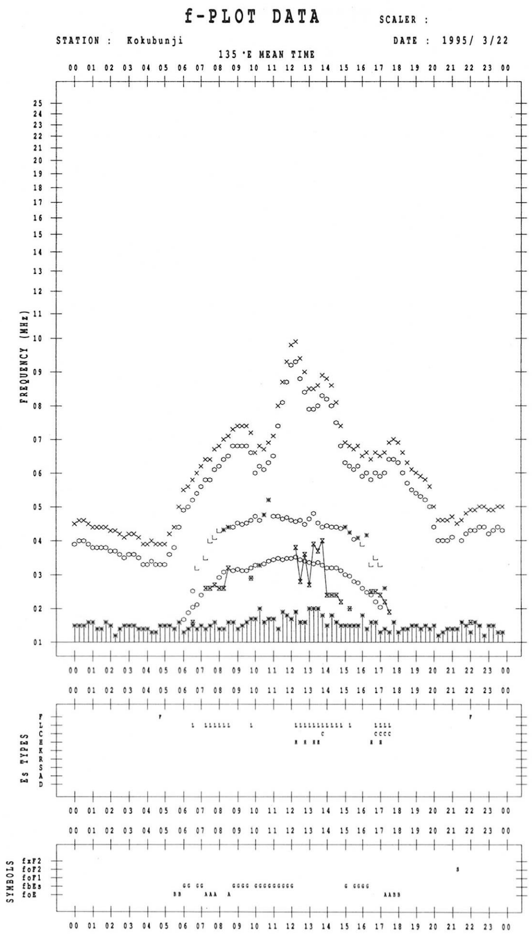
SCALER :

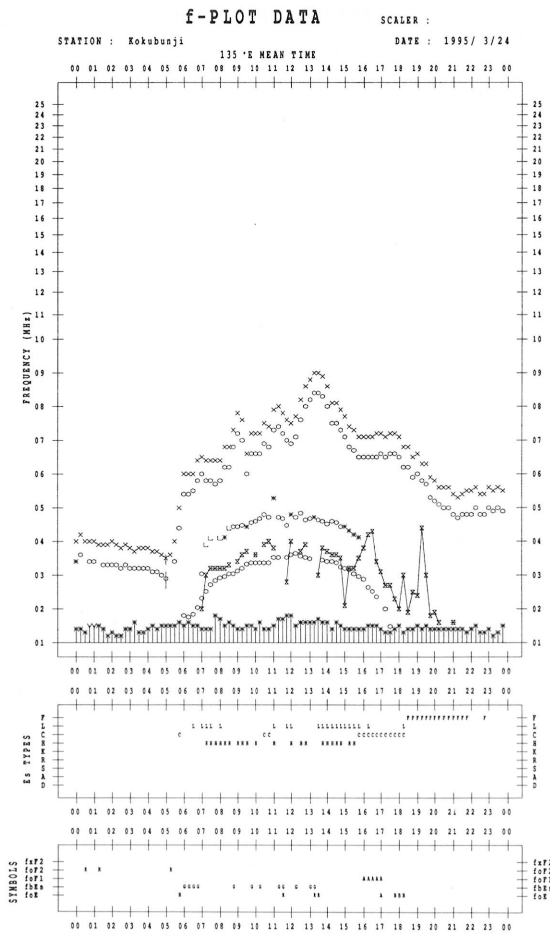
STATION : Kokubunji DATE : 1995/ 3/20




f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 3/21
135°E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 3/23
135°E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

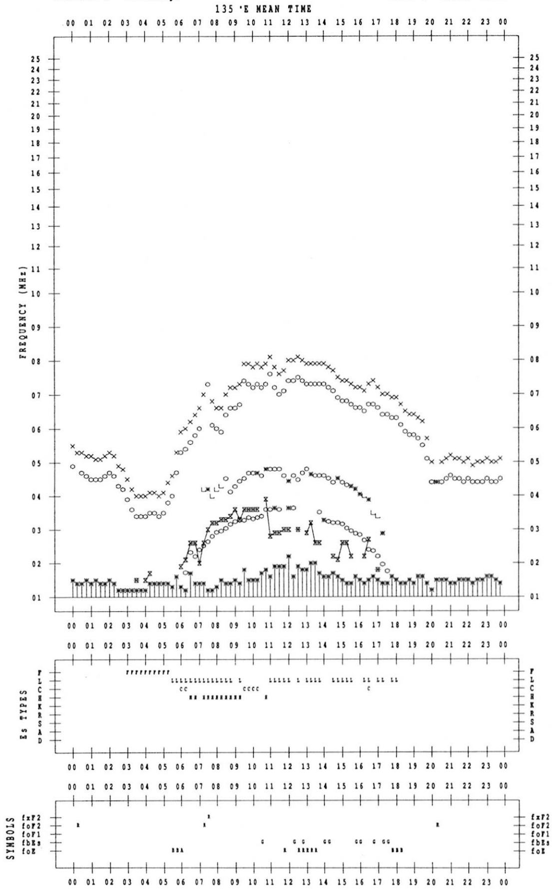

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 3/22
135°E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 3/24
135°E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

f-PLOT DATA

SCALER :

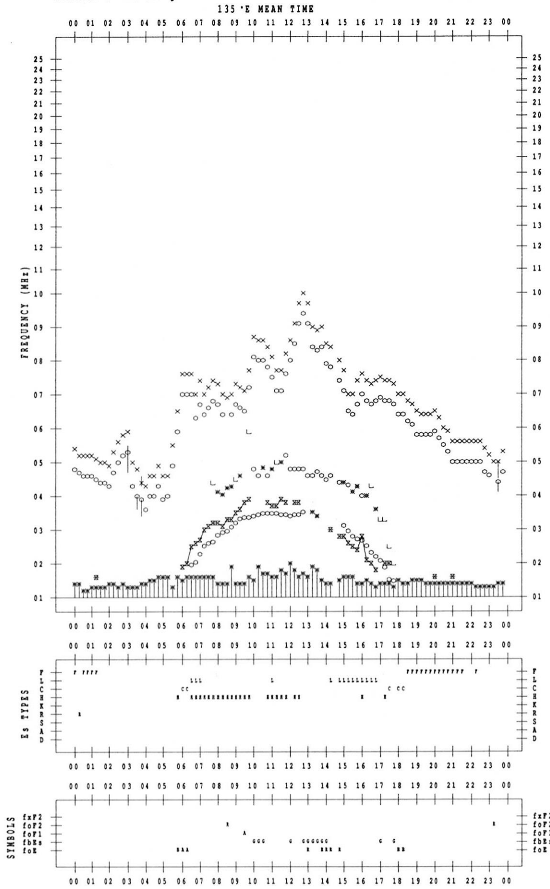
STATION : Kokubunji DATE : 1995/ 3/25



f-PLOT DATA

SCALER :

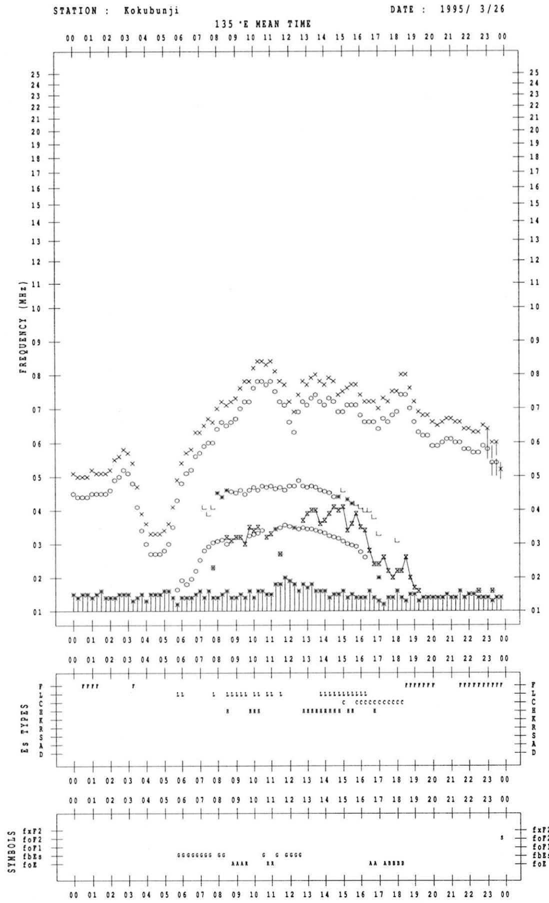
STATION : Kokubunji DATE : 1995/ 3/27



f-PLOT DATA

SCALER :

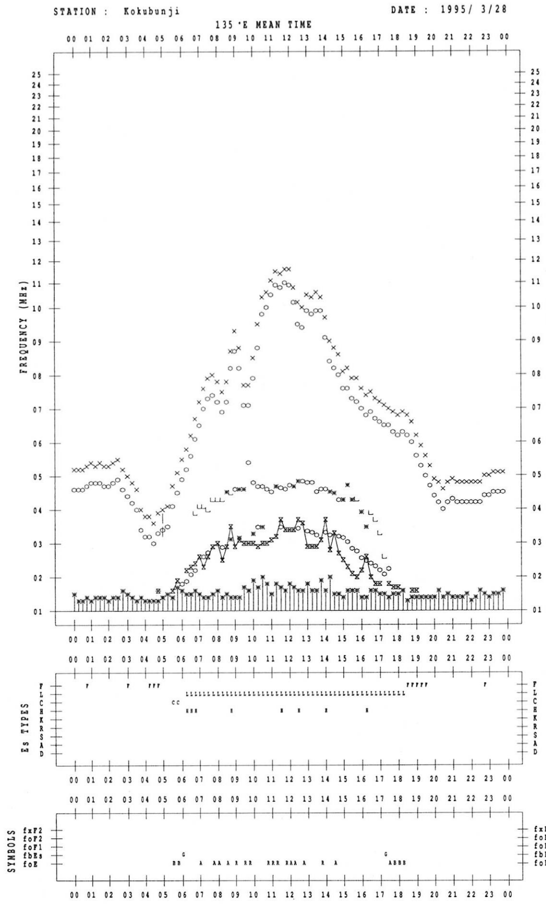
STATION : Kokubunji DATE : 1995/ 3/26



f-PLOT DATA

SCALER :

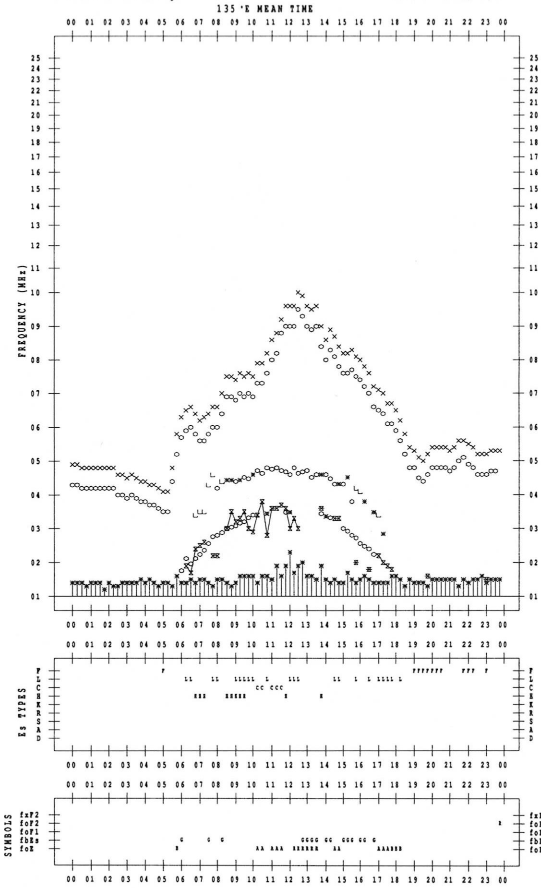
STATION : Kokubunji DATE : 1995/ 3/28



f-PLOT DATA

SCALER :

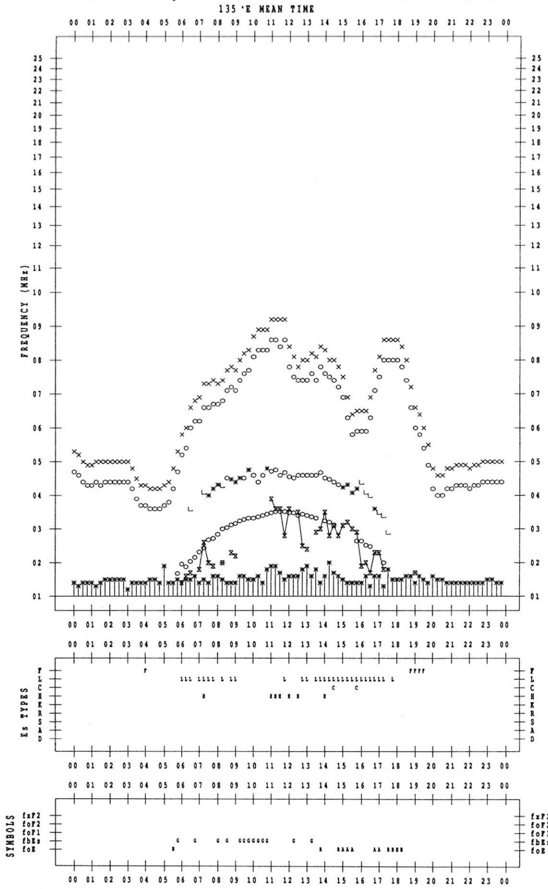
STATION : Kokubunji DATE : 1995/ 3/29



f-PLOT DATA

SCALER :

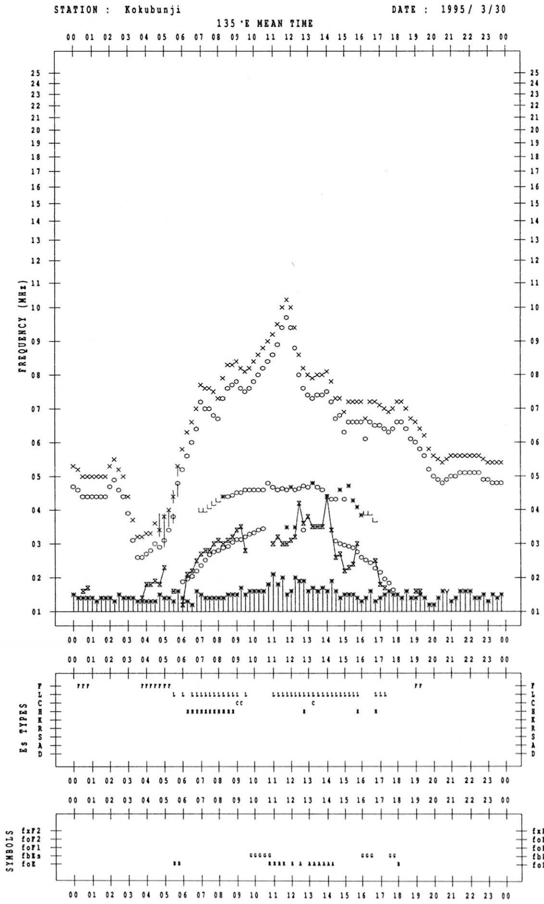
STATION : Kokubunji DATE : 1995/ 3/31



f-PLOT DATA

SCALER :

STATION : Kokubunji DATE : 1995/ 3/30



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 March 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	33	33	32	33	33
2	33	33	34	34	33
3	34	35	36	38	35
4	34	34	34	32	35
5	31	31	30	31	31
6	29	30	30	31	30
7	29	29	28	29	29
8	29	28	28	-	29
9	-	-	-	30	-
10	29	28	29	30	29
11	30	30	30	30	30
12	30	30	29	30	30
13	30	30	30	30	30
14	30	29	29	30	30
15	30	30	30	30	30
16	30	30	30	28	30
17	28	27	27	28	28
18	29	30	30	34	29
19	31	30	29	30	31
20	29	29	29	32	29
21	30	29	29	31	30
22	29	29	29	29	30
23	30	29	29	28	30
24	28	28	29	28	28
25	28	29	29	30	29
26	30	30	30	32	30
27	33	32	31	30	32
28	29	29	29	31	29
29	29	28	28	28	29
30	28	29	29	29	28
31	28	27	27	28	27

Note: No observations during the following periods.
8th 2130 - 9th 0830

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso March 1995

Single-frequency observations

Normal observing period: 2120 - 0830 U.T. (sunrise to sunset)

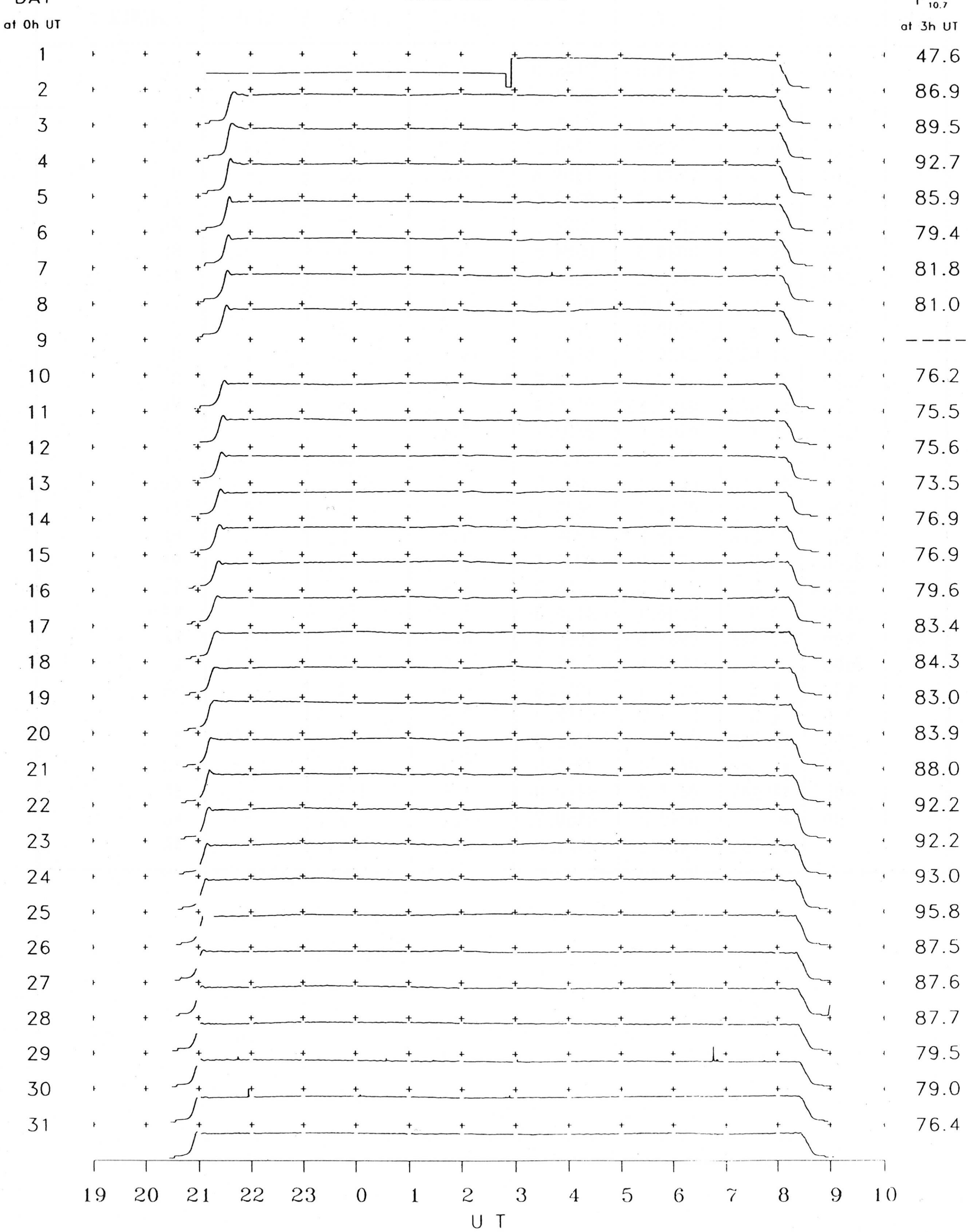
MAR. 1995	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY ($10^{-22}Wm^{-2}Hz^{-1}$) PEAK	MEAN	POLARIZATION REMARKS
1	500	27 RF	0321.6	0415.8	75	4	1	0
3	500	24 R	0556.3	0619.7	135D	24	3	WL
	500	27 RF	2140E	2221.8	125D	10	2	WL
4	500	8 S	0214.1	0214.4	0.5	6	-	0
	500	8 S	0234.5	0234.8	0.5	12	-	WL
	2800	1 S	0234.5	0234.8	1.0	5	3	0
7	500	42 SER	0047.7	0047.8	1.0	2	-	0
	2800	1 S	0340.8	0341.4	1.0	14	9	0
	500	8 S	0341.0	0341.3	0.6	27	-	0
	500	41 F	2233.3	2233.9	4.2	2	-	0
	500	41 F	2256.8	2257.8	2.0	2	-	0
8	500	8 S	0137.4	0137.4	0.1	30	-	0
	500	6 S	0145.0	0145.7	2.0	17	7	0
	2800	8 S	0145.5	0145.7	0.5	8	-	0
	500	46 C	0350.6	0352.9	4.0	12	7	WL
	500	46 C	0401.7	0425.5	35	154	19	0
	2800	1 S	0412.9	0414.3	3.0	3	1	0
	500	8 S	0452.7	0453.0	0.5	16	-	0
	2800	8 S	0452.7	0453.0	0.5	11	-	0
	500	8 S	0525.5	0525.5	0.1	15	-	0
	500	8 S	0547.5	0547.6	0.5	2	-	0
22	500	8 S	2341.0	2341.3	0.6	6	-	0
23	500	8 S	0012.6	0012.8	0.3	12	-	0
	500	8 S	0041.4	0041.4	0.1	13	-	WR
	500	42 SER	2233.3	2235.1	3.0	36	-	0
26	500	8 S	0037.9	0038.0	0.2	9	-	0
	500	8 S	2219.3	2219.8	0.8	7	-	0
	500	42 SER	2253.6	2255.6	2.5	19	-	WL
	500	42 SER	2326.8	2327.4	2.0	150	-	WL
	2800	1 S	2326.8	2327.4	1.0	3	2	0
27	500	42 SER	2131.4	2132.0	2.0	35	-	0
	500	42 SER	2255.6	2255.9	2.5	29	-	WL
	500	8 S	2308.2	2308.8	0.5	15	-	WL
28	500	42 SER	2132.3	2132.7	1.7	167	-	ML
	2800	8 S	2132.4	2132.8	0.5	4	-	0

MAR. 1995	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY ($10^{-22}Wm^{-2}Hz^{-1}$) PEAK	MEAN	POLARIZATION REMARKS
	500	42 SER	2143.5	2145.0	3.0	1150	-	ML
	2800	1 S	2144.0	2144.3	1.5	10	5	0
	500	46 C	2232.4	2235.1	4.0	6	4	WL
	500	46 C	2237.9	2238.3	1.2	542	218	ML
	500	8 S	2303.2	2303.3	0.6	382	-	ML
	500	8 S	2359.6	2359.6	0.1	37	-	WL
29	500	8 S	0032.7	0032.9	0.4	22	-	WL
	2800	8 S	0034.3	0034.5	0.4	8	-	SR
	500	8 S	0056.2	0056.3	0.1	68	-	WL
	500	46 C	0100.0	0100.8	1.4	208	114	WL
	2800	1 S	0100.0	0101.5	2.0	2	-	0
	500	21 GRF	0125.7	0127.4	18	2	1	0
	2800	45 C	0127.0	0128.6	2.0	4	3	0
	500	42 SER	0301.8	0305.1	4.1	595	-	ML
	2800	8 S	0301.9	0302.2	0.6	8	-	WR
	500	8 S	0526.0	0526.3	0.7	526	-	ML
	500	42 SER	0644.4	0645.5	8.0	1522	-	ML
	2800	4 S/F	0644.9	0646.1	2.0	43	27	WR
	2800	42 SER	0649.2	0649.8	3.0	9	-	SL
	2800	8 S	0744.3	0744.5	0.4	6	-	MR
	500	6 S	2155.8	2156.0	2.5	16	9	WL
	2800	3 S	2156.1	2156.3	1.0	24	18	WR
30	500	42 SER	0004.8	0009.0	6.0	5	-	WL
	2800	8 S	0005.0	0005.5	0.7	6	-	0
	2800	8 S	0034.5	0034.8	0.6	4	-	SR
	500	8 S	0117.9	0118.2	0.4	4	-	0
	500	42 SER	0141.0	0141.5	1.6	4	-	0
	500	42 SER	0249.3	0253.5	5.0	16	-	WL
	500	42 SER	0412.0	0412.0	1.5	113	-	WL
	500	46 C	0449.5	0450.7	1.5	19	-	WL
	500	42 SER	0726.5	0729.0	3.0	129	-	WL

B. Solar Radio Emission

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

March 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)

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

MEASURED AT HIRAISO

UT	00H	01H	02H	03H	04H	05H	06H	07H	08H	09H	10H	11H	12H	13H	14H	15H	16H	17H	18H	19H	20H	21H	22H	23H
DAY	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M
		ES	ES	ES	ES	ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
1	-18	-28	-28	-28	-28	-28	-28	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-18	-14
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
2	-14	-14	-14	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-15	-12	-14
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			ES
3	-14	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-14	-28
				ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
4	-14	-14	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-7	-12
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
5	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-12	-14
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
6	-12	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-15	-12	-14
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
7	-12	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-10	-14	-12
				ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
8	-15	-12	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-12	-12
	C	C	C	C	C	C	C	C	C	C	C	C	ES	ES	ES	ES	ES	ES	ES	ES	ES			
9													-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-12	-12
			ES		ES		ES	ES	ES	S	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
10	-12	-15	-15	-8	-28	-12	-28	-28	-7		-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-15	-12	-10
			ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
11	-10	-14	-14	-10	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-8	-8	-13
				ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
12	-3	-9	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-18	-18
		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
13	-7	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-18	-18
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			ES
14	-18	-14	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-14	-28
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		
15	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-10	-20
			ES	ES	ES	ES	ES	ES	ES	S	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
16	-5	-18	-28	-28	-28	-28	-28	-28	-7		-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-18	-15
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
17	-8	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-20	-14	-18
			ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
18	-12	-14	-28	-28	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-13	-18
		C	C	C	C	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
19	-14					-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-12	-10
				ES	ES	ES	ES	ES	ES	ES	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	-14	-18	-24	-28	-28	-28	-28	-28	-28	-28														
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21																								
				ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
22	-18	-18	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-11	-15	-18	-18
					ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
23	-10	-7	-5	-18	-28	-28	-28	-28	-28	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-12	-3	0	-2
						ES	ES	ES	ES	ES			ES	ES	ES					ES				
24	-3	3	-18	-7	-2	-28	-28	-28	-28	-28	-12	2	-28	-28	-28	-7	-18	4	1	-28	-4	-7	-4	-8
					ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES							
25	0	-4	0	-18	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	3	-12	-7	-6	-7	-12	-12
				ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		ES	ES
26	-7	2	-7	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-28	-28
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		ES				
27	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-8	-28	-18	-8	-12	-5
	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		
28	-28	-10	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-18
		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
29	-7	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-12	-3	-2
		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		ES	ES				
30	-12	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-28	-28	-2	-1	7	-3
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
31	-2	-4	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-10	-4	-7	-7
CNT	29	28	28	28	28	29	29	29	29	27	28	28	29	29	29	29	29	29	29	29	29	29	29	29
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
MED	-12	-14	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-14	-12	-14
					ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			ES				
UD	-3	-4	-7	-10	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-18	-12	-28	-6	-4	-3	-3
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			ES
LD	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-28	-20	-18	-28

C. RADIO PROPAGATION

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

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

C. Radio Propagation

C2. Radio Propagation Quality Figures at Hiraiso

Hiraiso | Time in U.T.

MAR. 1995	Whole Day Figure	W W V 00-06	W W V 06-12	W W V 12-18	W W V 18-24	W W V H 00-06	W W V H 06-12	W W V H 12-18	W W V H 18-24	Condition 00-06	Condition 06-12	Condition 12-18	Condition 18-24	Principal Geomagnetic Start h m	Principal Geomagnetic End h	Storms Range nT
1	4- U	3U	-	-	4	4	4U	-	4	N	N	N	N			
2	4- U	4U	-	-	4	4	3U	-	4	N	N	N	N			
3	4- U	4U	-	-	4U	4	3U	-	3	N	U	U	U			
4	4- U	4U	-	-	3U	4	3U	-	4	U	N	N	N			
5	4- U	2U	-	-	4	4	5U	-	4	N	N	N	N			
6	4- U	4U	-	-	4	4	3U	-	4	N	N	N	N			
7	4- U	4U	-	-	4	4	2U	-	4	N	N	N	N			
8	4- U	4U	-	-	4U	4	2U	-	4	N	N	N	N			
9	C	C	C	-	4	C	C	-	3	N	N	N	N			
10	4o U	4U	-	-	4	4	4	-	4	N	N	N	N			
11	4o U	4U	-	-	5	4	3	-	4	N	N	N	N			
12	4+ U	5U	-	-	4	4	5U	-	4	N	N	N	N			
13	4- U	3U	-	-	3	4	4U	-	4	N	N	N	N			
14	4- U	3U	-	-	3U	4	4U	-	4	N	N	N	N			
15	4- U	2U	-	-	4U	4	4U	-	4	N	N	N	N			
16	4o U	4U	-	-	4	4	4U	-	4	N	U	U	U			
17	4o U	4U	-	-	4	4	4U	-	4	U	N	N	N			
18	4- U	4U	-	-	4	4	3U	-	3	N	N	N	N			
19	3+ U	C	-	-	4	3	3U	-	3	N	N	N	N			
20	C	4U	-	C	C	4	4U	C	C	N	N	N	N			
21	C	C	C	C	C	C	C	C	C	N	N	N	N			
22	4+ U	4U	-	-	4	4	5U	-	4	N	N	N	N			
23	5- U	5U	-	-	5	5	4U	-	4	N	N	N	N			
24	5o U	5U	5U	5U	5	5	5U	5U	4	N	N	N	N			
25	5o U	5U	-	5U	5	5	5U	-	5	N	N	N	N			
26	4+ U	5U	-	-	3U	5	5U	-	4	N	N	N	N	04.7	--	169
27	4- U	2U	-	-	4U	4	4U	-	4	N	N	N	N	--	24	
28	4- U	3U	-	-	3U	5	4U	-	4	N	N	N	N			
29	5- U	3U	-	-	5	5	5U	-	5	N	N	N	N			
30	4- U	3U	-	-	5	4	3U	-	4	N	N	N	N			
31	5o U	5U	-	-	5U	5	5U	-	5	N	N	N	N			

C. Radio Propagation

C4. Sudden Ionospheric Disturbance

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

Hiraiso Time in U.T.

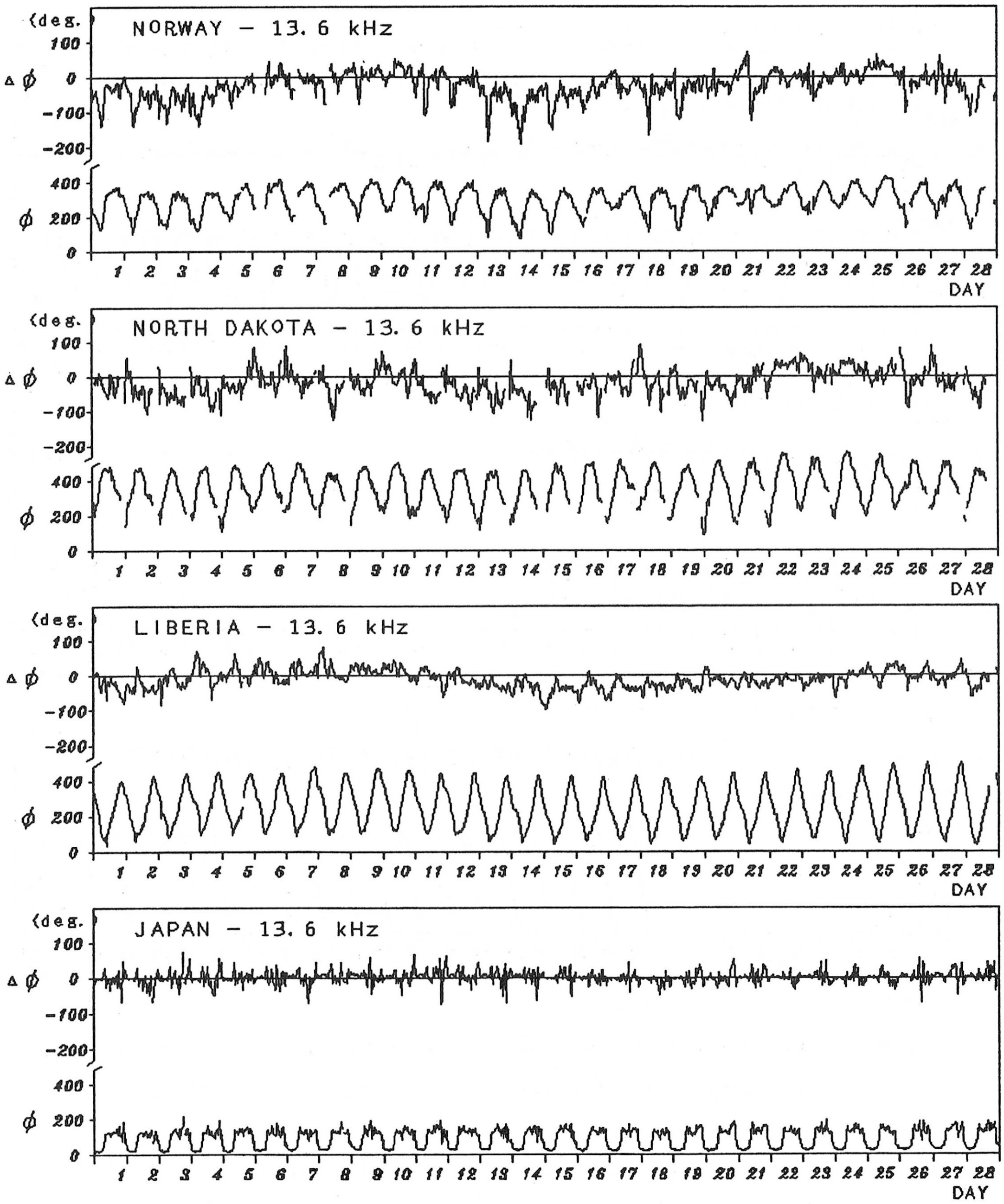
MAR. 1995	S W F									Correspondence	
	Drop-out Intensities(dB)					Start	Dur.	Type	Imp.	Solar * Flare	Solar Burst
	CO	HA	AUS	MOS	BBC						
None											

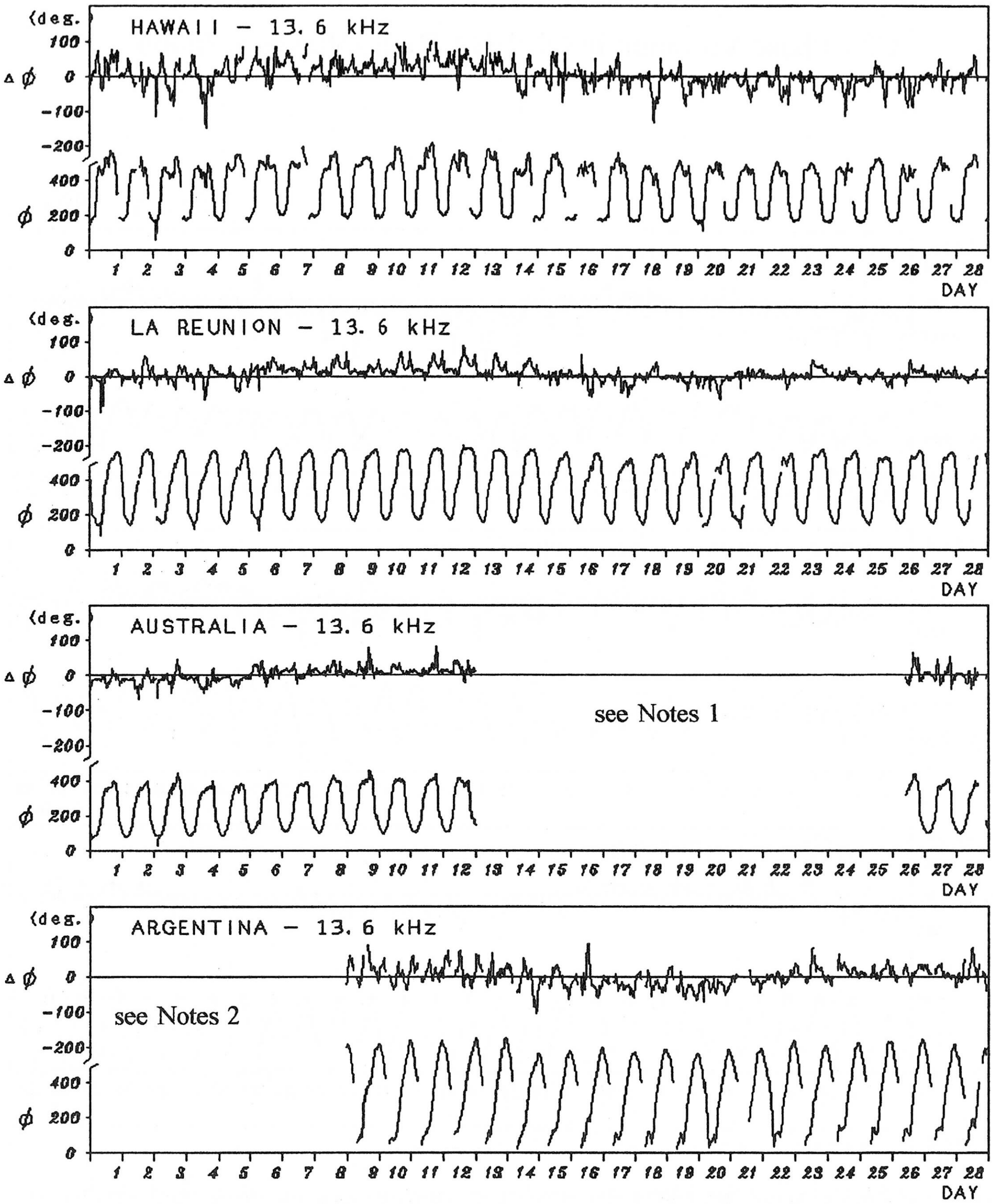
NOTE CO:Colorade(WWV) HA:Hawaii(WWVH) AUS:Australia MOS:Moscow BBC:London
* Optical and X-ray Flares

C. Radio Propagation

C3. Phase Variation in OMEGA Radio Waves at Inubo

February 1995





Notes 1 : As for AUSTRALIA-13.6kHz, no record during 13 February 0000 UT - 26 February 0945 UT, due to the maintenance of transmitter.

Notes 2 : As for ARGENTINA-13.6kHz, no record during 30 January 1200 UT - 8 February 2300 UT, due to the maintenance of transmitter.

Polar Cap Phase Anomaly (PCPA) on Norway-Inubo Circuit

NONE

(b) Sudden Phase Anomaly (SPA) at Inubo

Inubo

Feb.	SPA								
1995	Phase Advance (degrees)						Time (U.T.)		
Date	Ω/N	Ω/L	Ω/LR	Ω/AU	Ω/H	Ω/ND	Start	End	Maximum
1				5	7	–	0005	0034	0018
1		15	66	43	36		0058	0125	0104
1			22	7			0602	0638	0610
1		29	126	14			0822	0854	0831
1		54	72				0858	0928D	0910
1		83	101				0928E	1030	0935
2		80	14				1256	1358	1311
3	61	59	176	162	122	93	0136	0252	0155
4			47	18			0543	0641	0549
4		78					1541	1708	1552
6			79	31			0652	0752	0700
8					7		0232	0241	0236
18	14	30		–			1219	1311	1225
19				–	3		0023	0042	0027
19		17		–			1114	1140	1120
19				–	11	–	2133	2206	2145
19				–	33		2342	0037	2348
20				–	14		0110	0135	0116
20				–	14		0154	0234	0200
20	54	39	151	–	61	44	0316	0430	0325
21				–	6		0246	0312	0256
21			59	–			0720	0816	0732

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