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IONOSPHERIC DATA IN JAPAN

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CONTENTS

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INTRODUCTION

This Series contains data on ionosphere (I) and solar radio emission (S) obtained at the following stations under the National Institute of Information and Communications Technology, Independent Administrative Institution in Japan.

Station	Geographic		Geomagnetic (IGRF2000)		Technical Method	
	Latitude	Longitude	Latitude	Longitude		
Wakkanai	45°23.6'N	141°41.1'E	36.4°N	208.6°	Vertical Sounding	(I)
Kokubunji	35°42.4'N	139°29.3'E	26.6°N	207.9°	Vertical Sounding	(I)
Yamagawa	31°12.1'N	130°37.1'E	21.4°N	199.8°	Vertical Sounding	(I)
Okinawa	26°40.5'N	128°09.2'E	16.8°N	198.4°	Vertical Sounding	(I)
Hiraiso	36°22.0'N	140°37.5'E	27.4°N	209.2°	Solar Radio Emission	(S)

A. IONOSPHERE

Ionospheric 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. 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*).

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 descriptive letter 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 Hand-book 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 spred ***F*** trace
foF2 ***foF1*** ***foE*** ***foEs***	Ordinary wave critical frequency for the ***F2, F1***, ***E*** and ***Es*** including particle ***E*** layers, respectively
fbEs	Blanketing frequency of the ***Es*** layer, e.g. the lowest ordinary wave frequency visible through ***Es***
fmin	Lowest frequency which shows vertical ionospheric reflections
M(3000)F2 ***M(3000)F1***	Maximum usable frequency factor for a path of 3000 km for transmission by ***F2*** and ***F1*** layers, respectively
h'F2 ***h'F*** ***h'E*** ***h'Es***	Minimum virtual height on the ordinary wave for the ***F2,*** whole ***F, E*** and ***Es*** layers, respectively
Types of ***Es***	See below b. (iii)

b. Symbols

(i) Descriptive Letters

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

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *Es*.

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

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

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced by, 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.

X 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 part *E* layer minimum virtual height.

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

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

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

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

a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.

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

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

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

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

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

Median count (**CNT**) is the number of values from which 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 three parabolic antennas, one with 10-meter diameter for 200 MHz Measurement, one with 6-meter diameter for 500 MHz measurements and one with 2-meter diameter for 2800 MHz measurements, each being equipped with a pair of crossed doublet antennas as a primary radiator, and three appropriate receivers. Each pair of the crossed doublet antennas is used as a polarimeter. 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 for 500 MHz measurements. The intensities are expressed by the flux density in 10^{-22} Wm^{-2} Hz^{-1} unit.

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

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 F10.7 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.

The following symbols are used in the $F_{10.7}$ index:

*	Measurement made not at 3h U.T..
B	Measurement affected by bursts.

HOURLY VALUES OF foF2 AT Wakkanai

FEB. 2008

LAT. 45°23.5'N LON. 141°41.2'E/SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A			25	39	26		39	39	58	54	57	53	58		57	46	47	43	45	42	34	40	41
2	38	38	40	41	40	41	34	44	47	62	54	64	69	54	68	61	55	40	35	40	44	34	52	41
3	41	39	39	39	31	28	28	37	50	46	48	64	62	58	63	60	41	38	34	32	34	34	34	37
4	37	34	34	36	34			40	48	49	49	58	53	56	57	56	54	44	31	29	30	34	34	34
5	32	29	30	34			28	40	51	46	50	54	54	48	58	59	55	36	17	26	26	30	32	34
6	28	34	34	34	36	32	26	45	45	44	54	60	55	56	52	58	44	A	35	42	34	34		40
7	38	45	46	43	42	34	32	40	48	47	57	56	54	57	A	56	58	25	24	30	31		30	32
8	34	34	34	28	32	28	32	29	A	A	60	59	60	56	58	59	48	A	A	A	A	32	34	34
9	34	32	A	36	37	41	36	44	58	50	51	54	54		58	52	59	44	A	A		29	32	32
10	37	37	38	40	41	42	40	45	46	53	45	57	59	56	56	53	51	41	39	41	38	38	41	40
11	42	42	47	36	34	35	35	38	39	29	A	56	58	55	57	58	55	34	A	A	34	38	36	40
12	41	40	41	40	39	36	26	40	60		38	54	57	61	60	56	49	38	34	30	32	32	34	34
13	34	30	31	29	29	34	A	41	52	68	57	52	53	55	54	60	55	45	34		28	29	29	32
14	34	34	34	34	34	28	30	36	47	47	54	44	58	59	56	55	50	46	36	36	A	35	17	37
15	40	35	34	31	30	30		40	58	53	56	54	55	56	52	60	56	40	29	20	32	26	30	28
16		24		29	24			38	45	32	54	60	59	59	57	49	50	49	36	29	A	A	A	34
17	37	37	38	40	37	35	37	49	41	41	51	58	46	58	53	54	58	45	35	18	32	40	38	40
18	42	42	45	45	42	38	34	52	55	46	59	58	58	56	60	59	47	44	38	36	35	32	31	34
19	34	34	34	34	25	26	28	51	58	52	60	70	67	62	62	54	55	46	40	38	32	30	34	31
20	41	45	44	41	40	36	32	44	62	53	66	62	58	66	51	61	60	44	42	36	37	35	36	37
21	36	35	34	32	34	34	32	46	58	63	57	57	58	57	57	57		40	31	32	29	34	34	34
22	34	34	34	32	26	25	29	42	47	62	70	68	60	60	53	50	51	47	36	32	32	A	38	39
23	37	36	36	34	34	32	30	45	54	55	56	58	59	57	57	54	51	48	36	28	29	32	31	23
24	28	26	26	28		28	26	42	51	47	55	58	49	61	54		52	44	29	30	34	34	32	32
25	39	24	30	31	32	32	34	45	50	51	54	56	56	60	55	57	52	42	35	34	34	34	34	32
26	40	34	34	31	34	34	23	40	51	46	60	55	50	50	52	51	46	45	46	A	A	28	26	31
27	32	31	28	34	34	35	36	41	47	55	50	52	60	53	48	55	55	56	40	35	23	34	38	37
28	40	40	32	42	44	39	38	49	55	69	60	64	58	67	71	67	68	63	45	40		28	32	38
29	32	34	36	36	37	37	34	42		62	55	66	80	81	66	66	63	73	64	61	47	47	54	54
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	26	29	27	26	24	29	27	27	28	29	29	28	27	28	28	27	26	24	23	26	27	29
MED	37	34	34	34	34	34	32	42	50	51	54	58	58	57	57	57	53	44	36	33	32	34	34	34
U Q	40	38	39	40	39	36	34	45	55	58	58	61	59	60	60	59	55	47	40	39	35	34	38	39
L Q	34	33	34	31	32	28	28	40	47	46	51	54	54	56	53	54	49	40	34	29	30	30	31	32

HOURLY VALUES OF fEs AT Wakkanai

FEB. 2008

LAT. 45°23.5'N LON. 141°41.2'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	32	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	38	41	33	30	26	G	G	G
2	G	24	G	28	G	G	G	G	34	36	46	G	G	36	G	G	G	28	26	G	G	G	G	G
3	24	27	28	28	G	G	G	G	39	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
4	32	G	G	G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
5	G	45	30	G		G	G	G	28	32	35	36	50	41	45	40	G	G	G	G	G	G	G	G
6	G	G	25	G	24	24	26	G	G	G	42	41	45	52	G	37	G	49	32	44	33	27	37	33
7	32	27	28	36	51	38	G		G	38	46	42	60	64	83	75	38	28	36	33	30	28	G	29
8	25	G	G	G	G	24	33	36	50	74	37	G	G	G	G	38	37	60	70	68	70	46	40	26
9	29	32	47	32	29	28	30	G	G	G	36	G	G	G	G	G	34	32	33	32	30	27	G	26
10	G	G	G	32	27	G	25	27	G	37	40	43	40	40	34	44	48	38	G	G	G	G	32	27
11	G	25	26	G	G	G	G	G	53	43	64	46	46	39	G	53	41	38	50	33	26	23	G	G
12	32	G	27	27	G	G	G	G	29		51	62	59	64	40	34	G	G	G	G	G	G	G	30
13	30	G	G	G	G	G	30	G	29	33	39	40	40	37	G			28	28	34	G	G	G	G
14	G	G	G	30	28	39	G	G	G	G	40	36	G	G	45	44	29	G	26	32	48	32	32	30
15	40	25	G	G	G	G		G	30	G	G	G	G	G	G	G	G	27	30	24	G	G	G	G
16	32	G	29	26	28	25	G	G	G	41	G	G	G	G	G	33	30	36	G	32	44	50	44	33
17	32	30	G	G	G	G	G	G	30	33	G	G	G	39	39	G	G	G	G	G	G	G	G	22
18	G	G	G	24	G	G	G	G	G	G	42	G	G	G	G	G	G	G	G	G	G	G	G	G
19	G	G	29	26	27	G	G	G		33	42	62	49	42	37	37	40	32	29	G	G	G	28	G
20	33	29	G	G	G	G	G	G	G	G	G	40	G	G	G	G	43	G	G	35	G	G	28	29
21	30	G	G	G	G	26	G	G	G	G	G	G	G	G	G	G	G	32	G	G	G	24	G	30
22	G	24	25	G	G	G	G	G	G	G	36	G	62	G	G	G	G	G	30	G	G	46	29	30
23	G	24	27	G	G	G	26	33	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
24	G	G	G	G		G	G	G	G	G		G	40	G	G	44	G	G	G	G	G	G	G	G
25	G	G	G	G	G	G	G	G	G	G	G		40	G	G	G	G	26	G	G	G	G	G	G
26	G	G	G	G	G	G	G	G	G	34	37	G	38	G	G	41	38	34	29	44	36	G	G	G
27	G	G	G	G	G	G	G		G	G	G	G	G	42	39	34	G	G	G	G	22	G	G	G
28	G	G	G	G	G	G	G		32	G	G	G	G	G	53	49	46	28	G	G		G	G	G
29	G	G	G	G	G	G	G	G	G	G	G	40	G	G	G	39	36	29	26	32	34	G	G	G
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	27	28	27	26	28	28	28	28	29	29	29	28	28	29	29	29	28	29	29	29
MED	G	G	G	G	G	G	G	G	G	G	36	G	G	G	G	34	G	28	G	G	G	G	G	G
U Q	32	25	27	26	24	12	G	G	29	33	41	40	42	39	38	40	38	33	30	32	30	25	28	29
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

HOURLY VALUES OF fmin AT Wakkanai

FEB. 2008

LAT. 45°23.5'N LON. 141°41.2'E SWEEP 1.0MHz TO 30.0MHz 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	18	17	16	14	15	18	21	20	14	15	16	15	15	14	22	14	15	15	17	16	17	16	15
2	16	16	15	15	18	15	18	17	20	14	17	14	14	14	26	17	20	16	16	20	18	20	15	15
3	15	16	16	15	15	16	16	18	20	20	28	18	20	18	16	18	22	18	16	14	18	15	15	17
4	15	18	17	18	18			17	22	24	23	22	22	22	27	23	18	16	15	15	17	16	17	17
5	17	17	16	14		15	17	15	18	21	20	24	18	18	18	18	18	17	17	16	17	18	17	15
6	16	17	16	15	15	15	15	18	21	21	15	20	18	15	17	16	17	15	15	15	15	16	15	17
7	15	15	16	14	15	15	15	16	15	15	14	16	17	18	15	15	14	15	15	16	15	15	16	15
8	18	17	16	15	14	15	15	14	14	15	17	18	14	16	16	16	14	15	15	16	15	16	15	15
9	16	15	17	15	14	15	16	17	20	15	18	17	20	20	15	24	17	15	15	15	16	20	18	16
10	15	18	15	17	16	15	15	17	15	16	18	21	20	18	15	15	14	15	18	14	18	15	16	16
11	15	16	16	15	20	15	15	15	18	14	14	14	18	20	23	15	15	14	14	14	15	16	18	16
12	15	16	15	14	14	15	15	18	22		15	15	16	17	14	17	18	16	18	20	18	20	17	15
13	16	17	15	15	14	18	15	17	22	17	16	14	18	14	14	15	16	15	18	15	17	17	18	17
14	16	15	16	14	16	15	14	18	20	15	23	18	14	15	14	14	14	16	16	15	15	15	17	15
15	16	15	15	14	14	15		16	14	15	14	14	17	21	15	15	21	15	14	15	18	18	16	18
16	15	17	15	15	14	17	18	18	21	22	17	17	17	18	14	14	14	15	15	16	15	17	15	15
17	17	15	16	14	15	16	15	17	14	14	14	15	18	15	18	15	14	15	15	18	16	18	18	16
18	18	16	16	15	17	16	15	18	21	15	17	14	18	18	17	20	20	15	15	15	20	17	16	17
19	15	15	15	15	15	17	16	20	22	15	16	18	14	14	14	16	15	15	17	17	17	17	17	20
20	17	17	18	17	17	15	16	20	16	27	21	20	35	34	29	18	20	15	20	14	15	17	15	15
21	17	16	15	15	17	15	15	18	22	24	20	35	39	33	21	18	22	14	15	15	17	18	18	17
22	18	16	16	15	16	18	14	20	15	18	20	20	21	21	20	23	14	17	15	21	17	15	17	16
23	17	15	17	14	15	15	15	15	18	18	15	17	16	20	15	26	14	17	17	20	17	15	15	16
24	16	15	15	14		15	17	18	21	16	20	18	18	18	34	28	23	15	18	15	15	17	16	17
25	16	16	15	14	17	16	15	16	15	14	17	20	20	18	20	17	22	17	15	16	15	20	16	20
26	15	15	15	15	15	16	15	18	14	17	14	18	17	17	15	14	15	14	15	15	15	15	18	16
27	15	15	15	14	15	15	15	20	22	16	17	18	18	18	16	17	22	17	15	15	18	18	16	16
28	15	18	15	14	15	14	15	20	16	16	15	17	20	20	16	17	15	17	15	15		18	16	18
29	15	15	15	15	14	15	15	21	14	15	15	18	18	14	17	15	14	14	15	15	14	17	17	15
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	27	28	27	29	29	28	29	29	29	29	29	29	29	29	29	29	28	29	29	29
MED	16	16	16	15	15	15	15	18	20	16	17	18	18	18	16	17	16	15	15	15	16	17	16	16
U Q	17	17	16	15	17	16	16	19	21	19	20	20	20	20	20	19	20	16	17	16	17	18	17	17
L Q	15	15	15	14	14	15	15	16	15	15	15	15	16	15	15	15	14	15	15	15	15	15	15	15

HOURLY VALUES OF foF2 AT Kokubunji

FEB. 2008

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz 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				28				36	46	47	54	C	77	C	C	54	54	47	42	45	27		26	32
2	34	31	30	47	44	30	32	37	45	45	55	76	70	62	57	54	55	45	28		32	30	37	36
3	30	32	37	37				45	42	54	58	64	81	62	58	66	56	47	34	32	30	32	28	32
4	36	37	36	39	28			44	49	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		27		28		26	26
6	26	27	27	30	25		28	47	55	50	51	56	68	76	59		47	43	34	28	32	27	27	30
7		30		31	25		30	49	54	52	54	58	59	60	58	56	53	46	38	32	32	41		A
8		23	28	27	27	28	A	46	51	52	54	50	65	65	59	A	47	47	A		30	26	27	27
9	27	26	27	26	31			42	59	53	59	49	A	61	58	59	61	42	28	A	A	A	A	A
10	A	27	30	31	30	28	26	44	48	52	65	62	65	56	54	40	52	44	31	35	37	26	25	26
11	27	27	27	30	26			52	59	73	83	77	60	66	57	61	54	46	28		32	30	37	36
12	38	38	37	39	30	31	30	44	52	C	50	65	80	90	70	58	52	59	42	A	A	A	28	
13	A	30	31	38	34	28	26	44	51	58	62	63	72	65	59	61	59	53	34	34	28	A		
14	A	27	27		30	32		47	54	59	58	66	83	75	66	56	59	42	36	34	36	30	27	A
15	27	A		32	31			45	55	51	55	69	55	A	62	57	55	52	38	32		A	A	27
16		27	30	34				44	44	51	51	60	62	61	62	62	54	46	30	32		A		27
17	A	27		28	30	26	A	46	54	52	51	60	64	59	56	54	51	44	34	28	25	31	34	32
18	30	30	31	31	31	30	30	48	54	64	57	59	58	60	C	C	C	A		30	34	32	26	28
19	30	30	30	32	30			46	59	72	78	61	67	69		64	57	51	42	A	A	34	32	28
20	30	32	34	34	34	24	27	47	55	64	77	72	72	64	54	65	59	58	36	30	28	27		32
21	32	32	32	34	32	26	27	48	58	62	62	76	72	61	57	56	53	48	30		32	28	28	30
22	27	30	30	27			27	52	51	54	58	71	77	67	62	59	57	44	32	34	32	30	34	28
23	28	30	32	34	41	25	30	47	55	58	63	65	77	74	64		56	50	32	28	A	27	30	28
24	27	27	27	28	27			47	52	56	61	74	75	72	74	62	51	48	42		26	28	26	
25	27	27	28	30	31		27	47	54	49	55	65	65	67	53	55	57	50	44	32	21	27	27	26
26	30	36	36	37	30		26	45	52	55	55	55	46	55	52	59	54		A	39	A			26
27	27			26				48	53	56	56	48	54	57	58	59	57	52	46	30	28		23	32
28	37	32	32	30	25		27	52	54	58	58	A	A	72	86	97	81	61	48	A	A		26	A
29	30	27	28	30	34	30	26	48	55	57	58	66	78	95	85	67	68	62	71	48	41		A	32
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	25	23	27	23	12	15	28	28	26	27	25	25	25	24	23	26	25	25	18	20	17	20	21
MED	30	30	30	31	30	28	27	46	54	54	58	64	68	65	58	59	55	47	34	32	31	30	27	28
U Q	31	32	32	34	32	30	30	48	55	58	62	70	77	72	63	62	57	52	42	34	32	31	31	32
L Q	27	27	28	28	27	26	26	44	51	52	54	58	61	60	57	56	53	44	30	30	28	27	26	27

HOURLY VALUES OF fEs AT Kokubunji

FEB. 2008

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz 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	29	23	G	G			26	29	36	39	C	G	C	C	G	34	32	34	29	G		G	G
2	G	G	G	G	21	G	24	28	G	37	G	G	G	G	G	G	G	G	G		G	G	G	G
3	G	G	G	G	G		G	28	33	39	40	61	G	43	G	39	G	29	G	G	G	G	G	G
4	23	G	G	34	23	G	27	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	37	G	G	G		G	26
6	G	G	29	27	32	G	29	G	G	34	G	48	53	51	39	37	G	G	G	G	G	37	24	G
7	G	G	G	G	G	23	G	27	33	37	48	42	42	39	G	36	40	33	42	29	28	23	30	29
8	29	24	G	G	G	G	37	27		G	G	43	47	G	47	58	40	33	37	27	26	23	33	G
9	G	G	G	G	G		G	G	G	G	G	G	62	51	44	42	41	G	25	35	39	31	53	49
10	34	29	33	G	G	G	22	31	40	41	46	47	40	47	G	G	31	G	G	G	G	G	G	G
11	G	G	G	31	24	23	G	G	35	40	47	45	38	44	39	35	G	36	33	28	G	G	31	36
12	26	27	G	27	25	G	G	G	G	C	58	50	74	50	43	34	33	26	34	52	51	33	24	27
13	36	G	22	G	G	G	G	G	G	G	G	51	48	89	53	37	35	39	29	G	23	36	28	G
14	43	24	G	25	G	G		G	G	G	G	45	49	G	37	50		29	G	G	G	G	G	52
15	29	52	35	G	G	22	G		36	35	61	40	G	83	52	47	50	36	24	G	33	37	26	G
16	24	G	26	23	G			G	31	G	48	59	65	52	42	39	33	26	24	G	26	70	31	30
17	52	G	26	25	G	23	43	41	58	45	G	46	53	49	45	41	36	G	G	G	30	33	G	G
18	G	G	G	G	G	G	G	G	G	G	43		45	G	C	C	C	49	51	25	33	26	G	27
19	24	G	G	22	G		G	28	G	G	G	50	50	53	47	50	46	40	33	40	49	40	G	24
20	G	G	23	G	G	G	G	28	G	G	G	45	39	44	G	40	31	31	G	23	G	G	26	G
21	29	26	29	G	G	G	G	G	G	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G
22	G	G	25	G			G	30	45	G	G	44	51	G	40	35	31	G	24	G	G	G	G	G
23	G	G	G	G	G	G	G	G	G	43	G	G	45	45	G		G	G	G	G	35	23	G	G
24	G	G	G	G	G	G	G	G	37	39	42	39	46	46	44	45	48	30	29		G	G	G	G
25	G	G	G	G	G	G	G	G	G	42	G	40	46	44	43	40	31	28	G	G	27	G	G	G
26	G	G	G	G	G		G	G	G	43	G	39	47	46	44	43	58	65	64	49	44	G	G	G
27	G	G	G	G	26		G	29	G	G	G	40	47	G	42	49	40	29	11	23	G	G	G	G
28	G	G	G	G	G	G	G	27	34	G	45	69	105	G	G	45	39	56	42	45	48	29	G	29
29	G	25	G	24	36	24	G	G	39	53	58	39	46	44	49	52	43	54	46	49	G	29	34	30
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	27	20	25	27	27	26	27	25	27	26	25	25	25	28	28	26	28	26	28	28
MED	G	G	G	G	G	G	G	G	G	34	G	44	46	44	42	40	35	30	24	12	12	23	G	G
U Q	27	24	24	23	21	11	11	28	35	40	46	49	51	50	44	46	40	36	34	29	33	33	27	28
L Q	G	G	G	G	G	G	G	G	G	G	G	39	39	G	G	35	31	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

FEB. 2008

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz 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	13	13	13	13	13			13	13	13	13	C	13	C	C	13	13	14	13	13	13		14	13
2	13	13	13	13	13	13	14	13	13	13	13	14	14	13	15	13	13	14	14		15	13	14	14
3	13	13	13	13	13		13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	13	13
4	13	13	13	13	13	13	13	18	26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	13	14	14	13		13	13
6	13	13	13	13	13	17	14	14	13	13	13	13	13	13	14	13	13	17	13	13	13	14	13	13
7	14	14	13	13	13	13	13	13	13	13	13	13	14	14	13	13	13	13	14	13	14	13	15	13
8	13	13	14	13	13	13	14	14	13	13	17	17	15	17	13	13	13	13	13	13	14	13	13	13
9	13	14	13	13	13		13	13	13	14	13	13	17	13	13	13	13	20	13	13	13	14	13	13
10	13	14	13	13	13	13	14	13	13	13	13	13	13	13	13	14	13	15	13	13	13	13	13	13
11	14	13	13	13	13	13	14	15	14	13	13	13	13	15	14	13	13	13	13	13	13	13	14	14
12	13	14	13	13	13	13	13	13	13	C	13	15	13	13	13	13	13	13	13	13	14	13	13	14
13	13	13	13	14	18	13	13	14	13	13	13	13	13	13	14	13	13	13	13	13	14	13	13	15
14	13	13	14	13	13	13		17	13	13	13	13	13	13	13	13	13	13	13	14	13	14	13	13
15	13	14	13	13	13	13	15	13	13	13	13	14	13	13	13	13	13	13	13	14	13	13	13	15
16	13	13	14	13	13			20	13	13	13	14	13	13	14	13	13	13	13	13	14	13	14	14
17	14	13	14	13	13	13	14	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14
18	14	14	13	14	13	13	13	13	13	13	13	15	13	13	C	C	C	13	13	14	13	13	13	13
19	13	13	13	13	13		14	13	13	13	13	13	13	13	13	13	13	13	13	14	13	13	13	13
20	13	13	14	14	13	13	14	14	13	13	13	14	13	17	14	13	13	14	13	14	14	13	13	14
21	14	17	13	13	13	14	13	21	14	18	14	20	21	20	14	20	13	17	14	14	13	13	14	14
22	15	14	13	13			14	13	13	14	15	18	20	18	15	13	13	13	14	13	14	13	13	13
23	14	13	13	13	13	14	13	18	18	17	15	13	20	17	17		13	21	13	15	13	13	14	13
24	14	13	14	15	14	13	14	17	13	13	13	14	14	13	13	14	13	13	13		14	14	13	13
25	13	13	13	14	13	13	13	17	13	13	13	13	13	18	13	13	13	14	13	13	14	13	13	14
26	13	13	13	13	13		14	15	13	13	13	13	14	13	13	13	13	13	13	13	13	17	13	13
27	13	13	13	13	13		13	14	13	13	13	13	17	13	13	13	13	13	13	13	13	17	14	13
28	13	13	14	13	13	13	14	13	13	14	15	17	13	14	13	13	13	13	13	13	13	14	14	13
29	13	14	13	13	13	14	14	17	13	13	15	20	15	15	13	14	13	13	13	13	13	13	13	13
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	27	20	25	28	28	26	27	26	27	26	25	25	26	28	28	26	28	26	28	28
MED	13	13	13	13	13	13	14	14	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
U Q	14	14	13	13	13	13	14	17	13	13	13	15	15	15	14	13	13	14	13	14	14	14	14	14
L Q	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

FEB. 2008

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

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

HOURLY VALUES OF fEs AT Yamagawa

FEB. 2008

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

HD \ 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	25	24	34	40	26			G	28	34	48	48	40	38	G	G	G	30	G	G	G	G		G
2	G	G	G	G	G			G	36	G	G	G	G	44	G	40	36	G	G	G		G	G	G
3	G	G	G	G	G			G	33	39	42	G	G	G	43	84	46	39	31	31	35	G	34	70
4	G	G	G	G	20	34	G	G	30	G	G	G	44	42	40	40	46	G	G	28	G		G	G
5	G	G	G	G				G		G	G	G	51	50	50	72	85	123	48	39	28	G		G
6	G	38	28	G	23	28	25	G	G	G	43	G	57	61	49	69	42	35	36	24	28	32	G	G
7	G	26	34	36	G			G	36	46	50	49	55	56	63	44	48	51	49	60	44	34	38	39
8	40	36	28	26	G	G	G	G	33	38	44	47	54	62	49	52	46	43	29	36	G	28	G	41
9	50	32	G	G	G		G	G	G	G	46	52	39	52	48	63	55	66	52	36	33	25	G	G
10	G	33	28	25	G	34	G	G	G	G	46	48	53	52	42	G	34	29	24	25	26	26	G	G
11	G	G		33	G	G	G	G	G	38	50	50	52	56	41	42	60	49	29	G	G	G	G	
12	G	G	24	32	G	G	G	G		37	40	46	46	72	51	52	38	62	32	40	39	43	26	26
13	36		32	G	G	G	G	G	G	G	G	49	52	52	60	51	42	57	36	28	27	G	24	29
14	27	36	26	26	G	G	G	G	G	G	G	38	45	56	52	52	43	33	34	33	G	G	24	27
15	28	G	40	33	29	G	G	G		36	42	43	44	50	48	41	41	44	31	36	G	G	35	24
16	48	G	G	G	G			G	30	39	48	58	53	50	49	44	42	31	G	G	G	G	G	G
17	G	G	G	25	26	25	33	33	35	39	45	51	52	59	53	62	53	47	31	24	30	60	46	26
18	27	G	27	G	G	G	G	G	G	G	42	G	G	49	52	54	44	45	39	29	G	G	G	G
19	G	G	G	G	26			G	G	G	G		48	54	54	42	G	G	G	G	G	G	G	34
20	G	G	G	G	32			G	G	G	44	G	49	39	G	40	G	34	30	26		G	G	G
21	G	G	G	G	G		G	G	31	36	G	39	40	G	G	42	G	G	G	39	42	29	G	G
22	G	G	G	G	G	G	G	G	33	G	44	N	55	51	47	44	35	52	34	G	G	G		G
23	G	G	G	26				G	G	G	G	G	50	49	56	52	42	31	G	G	G	39	39	G
24	G	G	28	G	G				35	G	42	G	N	39	G		37	40	42	40	G	G	G	G
25	G		G	G	G	11		25	34	41	46	47	40	G	40	G		34	38	39	38	G	G	27
26		G	26	G	G		32	28	36	G	38	G	47	45	G	47	44	54	60	50	57	39	32	67
27	50	59	G	32	37		G	G	30	G	G	G	N	G	47	43	57	57	41	28	G		G	G
28	G	G	G	G	28	G	G	G	G	G	44	G	48	G	46	47	53	66	68	60	59	85	40	G
29	G	G	G	24	G	G	G		34	41		49	58	49	54	52	66		52	80	49	40	39	G
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	28	29	27	15	18	27	26	29	28	27	27	29	29	28	28	28	29	29	27	27	26	28
MED	G	G	G	G	G	G	G	G	30	G	42	39	48	50	48	46	42	42	32	29	26	G	G	G
U Q	27	26	28	26	26	25	G	G	34	38	45	49	53	55	52	52	50	53	41	39	38	34	34	27
L Q	G	G	G	G	G	G	G	G	G	G	G	G	40	39	40	41	36	31	12	12	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

FEB. 2008

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

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

HOURLY VALUES OF foF2 AT Okinawa

FEB. 2008

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	42	34						40	42	47	66	76	60	73	57	52	61	62	32	A	A	A	
2	24	30	30	30	34				40	46	56	75	66	65	A	56	71	70	46	A		23	29	30
3	29			32					50	56	60		62	64	84	84	87	88	66	47			29	
4	26	A	30					28	47	50	54	50	59	62	65	65	60	71	58	32	28			
5			23						50	57	68	82	97	84	79	85	100	107	107	87	60	52	48	58
6	52	42	A	52		28	A	28	54	52	51	57	72	76	63	54	54	51	51	36		32		A
7		A		A	A	A	A	A	60	60	A	71	71	77	76	68	A	A	55	67	66	66	44	
8	34	A	47	45	52	A		38	58	71	72	83	96	101	107	102	71	60	54	32				
9			29	28	30				59	52	51	60	96	98	108	100	87	92	72	47	40		32	
10	30	31	30	26	34				47	56	54	56	75	61	82	78	67	54	52	36	66	54	A	32
11	A	42				28			61	73	92	82	77	66	A	77	64	55	42		28	A		N
12	30	30	30		A	A		34	52	58	57	76	101	88	121	131	94	105	104	A	32	A	35	32
13	32	A		29	32	30		29	54	60	70	69	66	70	86	78	82	80	72	50	39	34	A	
14	29		A	A	A	A	29	32	47	52	56	68	85	88	105	105	91	73	53		46	44	42	30
15			34	A		A		31	53	65	59	56	62	78	97	86	75	64	53	44	47	26	A	
16	30	A	32	29	30			30	46	47	60	67	64	70	72	72	77	56	42	34		32	30	
17			30		36				54	52	65	64	64	71	79	75	70	50	43	43	46	46	30	
18	34	34	40	34	32	29		32	54	60	59	65	64	70	72	64	61	A	A	A	A	30	32	28
19	31	34	32	31		A		28	55	75	74	106	96	100	125	105	80	66	65	43	31	34		28
20				32					54	68	67		86	90	89	72	76	61	58	36	29	28		30
21				29	30			31	58	62	65	86	116	132	128	107	88	88	66	54	A	37	37	32
22		34	34	30	30	30	30	34	60	62	54	59	66	92	107	95	81	62	60	38	31			
23				32				30	56	56	74	82	82	90	95	81	57	54	45	30		30		26
24	A			30	34				46	62	75	82	94	107	111	108	70	65	50	32			30	
25				26	30			34	46	58	61	67	90	107	C	80	65	76	54	41	A	A	A	
26			29	32				30	53	55	61	62	82	87	82	64	62	62	65	42			A	
27				A	A	A		38	48	57	60	60	66	73	68	A	A	61	65	A	A	A		A
28			30	25	A			40	59	48	53		80	114	90	107	109	90	76	A	A	34		32
29		31		28	31			35	46	44	66		85	100	103	91	87	82	76	64	54	54	32	30
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	10	16	19	13	5	2	18	29	29	28	25	29	29	26	28	27	27	28	22	15	17	13	12
MED	30	34	30	30	32	29	30	32	53	57	60	67	77	84	88	80	75	65	58	42	40	34	32	30
U Q	33	42	34	32	34	30	30	34	57	62	67	82	92	99	107	101	87	82	66	47	54	49	39	32
L Q	29	31	30	28	30	28	29	30	47	52	55	60	66	70	76	70	64	60	51	34	31	30	30	29

HOURLY VALUES OF fEs AT Okinawa

FEB. 2008

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz TO 30.0MHz 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	94	28	35						G	G	40	50	48	G	42	G	G	G	G	G	36	30	26	
2	G	G	G	G	G			G	32	G	G	G	G	46	64	G	53	42	37	28		26	G	G
3	G	G	G	G				G	32	36	42		60	52	G	G	G	56	G	G	G		G	
4	G	39	G		G			25	G	35	G	G	G	40	55	38	34	39	30	G	G			G
5			G						31	G	G	38	70	70	95	105	124	34	28	29	28	29	28	36
6	36	36	66	44		G	29	G		G	G	46	53	63	61	53	40	51	34	32	35	32		29
7		28	41	37	68	56	47	50	48	37	70	71	59	72	79	67	73	112	38	44	28	G	G	27
8	G	58	36	40	27	42	29	29	36	42	62	73	62	52	60	40	53	39	35	36				
9	G	G	33	G				G	G	G	G	G	G	G	68	64	52	41	40	G	G		G	
10	G	28	24	26	28	24		G	G	40	G	G	61	51	48	G	34	G	G	26	G	34	39	25
11	36	G			G	G				G	50	56	55	48	72	48	51	57	26	G	G	36		G
12	G	G	G		36	32	G	38	G	G	G	G	67	50	85	47	59	47	52	51	G	40	G	G
13	27	36		26	G	G	G	G		G	G	38	59	66	56	44	51	G	29	G	26	27	29	G
14	G	G	35	35	35	39	G	G	G	G	G	G	49	G	G	50	60	50	49		G	31	G	G
15	37		G	32	25	35	25	G		G	G	46	47	G	G	G	40	38	G	G	29	G	31	32
16	G	30	G	G	G			G	29	34	46	54	62	52	51	51	44	35	26	G	G	G	G	G
17	G		G		G			G	G	G	38	50	53	42	52	G	42	35	28	G	G	G	G	G
18	G	G	G	G	G	G	G	G		38	36	G	42	58	54	59	52	74	54	39	60	28	29	G
19	G	G	G	G	29	32		G	G	G	G	G	G	G	G	G	G	G	G	31	G	G	G	G
20	G			G				G	29	G	G		54	52	48	54	G	G	G	G	G	G		G
21	G	G		G	G			G	29	34	G	G	39	G	G	G	38	G	43	42	31	G	28	29
22	G	G	G	G	G	G	G	G	G	G	G	47	58	56	G	48	43	G	G	G	G			
23		G		G				G	G	G	37	49	52	64	52	55	53	48	30	G	29	G	G	G
24	28	G		G	23			G	G	G	37	G	G	G	G	G	G	G	G	G		G	G	
25				G	G			33	G	38	G	G	G	G	C	G	G	G	48	G	33	58	36	
26			G	G	G			G	G	G	G	G	G	G	41	G	G	G	G	G		G	31	
27	34	G	33	46	58	36		30	30	G	G	G	G	G	54	60	53	46	43	48	67	65		36
28		G	G	G	27			24	G	G	G		57	58	G	G	52	68	39	85	46	G		G
29	28	G		G	G		G	G	G	35	39	47	48	49	G	G	83	40	32	51	28	G	G	G
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	23	21	23	22	13	10	26	24	29	29	26	29	29	28	29	29	29	29	28	25	24	21	21
MED	G	G	G	G	G	32	G	G	G	G	G	20	52	49	52	40	44	39	30	G	26	14	G	G
U Q	28	28	34	32	28	37	29	24	29	35	38	49	59	57	60	53	53	49	39	37	32	31	29	28
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	17	G	G	G	G	G	G	G

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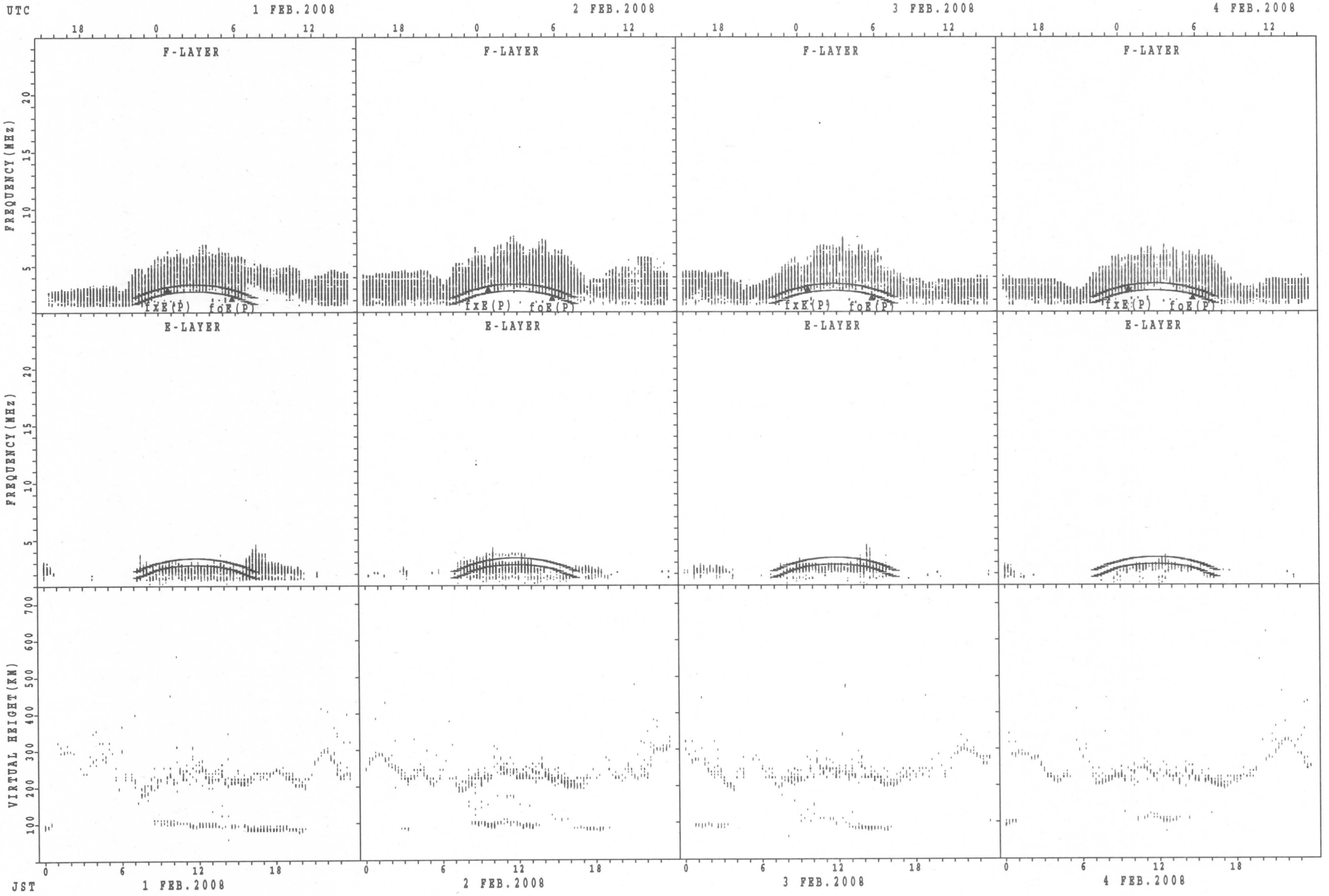
HOURLY VALUES OF fmin AT Okinawa

FEB. 2008

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

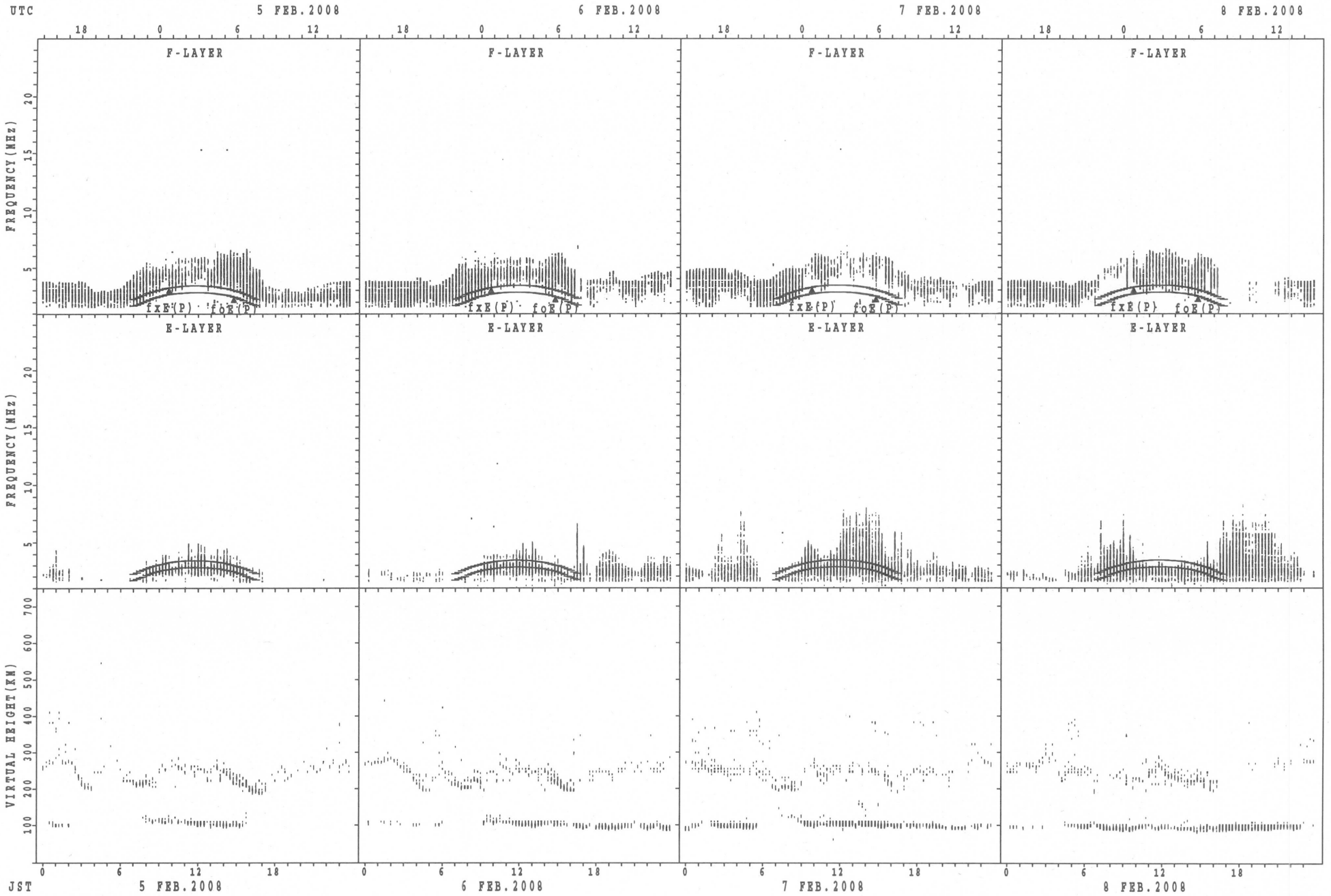
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	15						23	29	14	17	20	28	23	18	14	14	21	15	15	14	15	
2	15	14	15	15	15			22	18	15	15	14	21	15	15	14	14	14	14	14		14	16	15
3	15	17	21	16				15	14	15	17		22	29	23	23	28	14	20	15	23		20	
4	14	14	14		15			15	18	15	17	40	40	32	29	24	20	15	17	16	15			15
5			15						16	18	39	29	29	22	22	21	16	14	14	15	16	15	15	14
6	14	15	14	14	14	14	14	15	17	15	18	21	23	30	15	23	15	14	16	15	16	20		17
7		15	14	15	14	15	15	15	14	14	16	18	24	20	21	20	17	15	14	14	20	15	14	14
8	20	14	15	14	14	14	15	15	14	14	18	23	23	28	23	22	21	14	14	14				
9	17	16	15	21	14			15	15	14	21	22	44	45	24	21	15	14	15	14	15		15	
10	17	14	15	15	14	15		15	20	16	14	40	33	30	17	15	22	26	20	14	14	15	15	15
11	15	15			15	15			18	28	22	20	30	29	27	21	16	14	15	16	21	14		23
12	17	14	15		14	15	15	14	14	14	17	42	22	22	28	26	14	14	14	15	22	15	16	15
13	20	22		15	15	15	15	15	14	27	40	22	21	27	21	18	17	14	15	15	15	14	15	16
14	15	18	14	15	14	15	17	14	21	15	15	40	21	20	18	17	17	14	16		15	15	15	15
15	17		15	15	15	14	17	15	15	15	36	22	29	21	40	27	22	15	22	17	15	16	14	15
16	16	15	15	16	16			15	16	14	18	32	21	21	29	26	20	14	14	15	28	16	20	22
17	24		18		14			20	15	15	14	18	20	21	30	18	17	14	15	15	15	15	15	27
18	24	15	15	14	14	15	15	15	14	14	14	40	44	15	15	14	14	15	14	14	15	14	15	16
19	15	15	14	16	15	15		22	14	14	17	16	44	45	45	20	28	14	23	15	17	15	17	15
20	20			15				15	15	20	14		33	33	29	27	18	14	22	17	15	21		17
21	18	18		15	15			15	14	16	21	42	28	31	30	30	27	29	18	15	17	15	15	18
22	20	15	15	16	15	17	18	16	26	29	39	33	23	34	48	22	18	14	20	21	16			
23		20		15				15	14	15	41	34	43	36	38	28	21	15	17	15	14	15	16	17
24	15	15		16	22			17	24	28	42	44	52	56	45	24	17	14	17	15		21	17	
25				16	15			14	21	15	44	44	52	50	C	43	21	30	14	16	15	15	18	
26			20	15	15			17	27	36	17	20	50	45	52	43	20	15	20	20		21	15	
27	15	15	15	14	14	16		14	14	17	20	44	48	45	34	30	27	20	15	16	15	15		15
28		21	15	18	14			17	28	29	42		32	33	45	45	28	14	14	14	15	21		14
29	16	26		17	20		14	18	28	34	40	35	52	34	47	22	18	14	14	15	15	22	16	16
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	23	21	23	24	13	10	26	29	29	29	26	29	29	28	29	29	29	29	28	25	24	21	21
MED	16	15	15	15	15	15	15	15	16	15	18	30	29	30	28	22	18	14	15	15	15	15	15	15
U Q	20	18	15	16	15	15	17	17	21	27	39	40	44	35	39	27	21	15	20	16	17	18	16	17
L Q	15	15	14	15	14	14	15	15	14	14	15	20	22	21	21	19	16	14	14	14	15	15	15	15

SUMMARY PLOTS AT Wakkanai



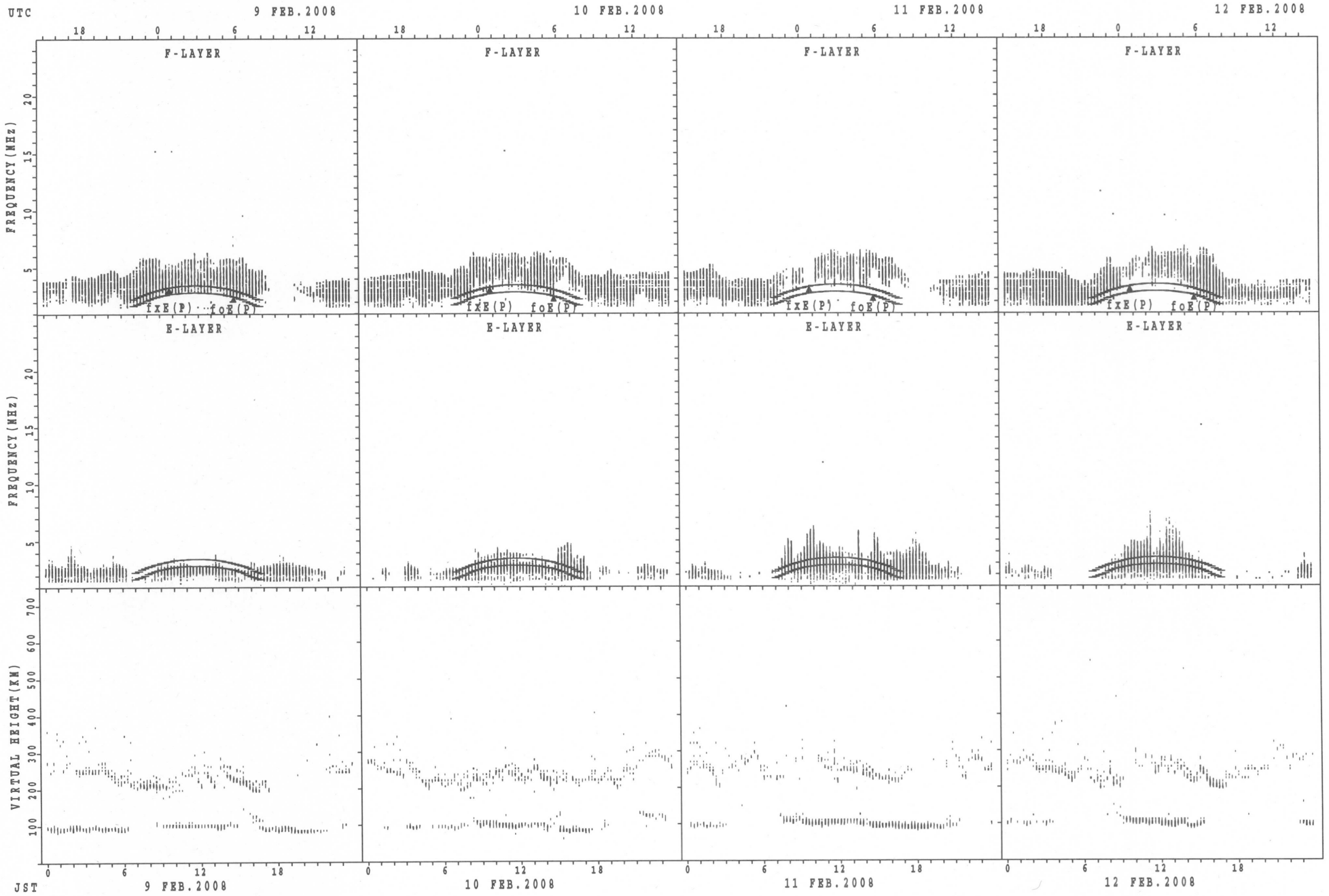
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

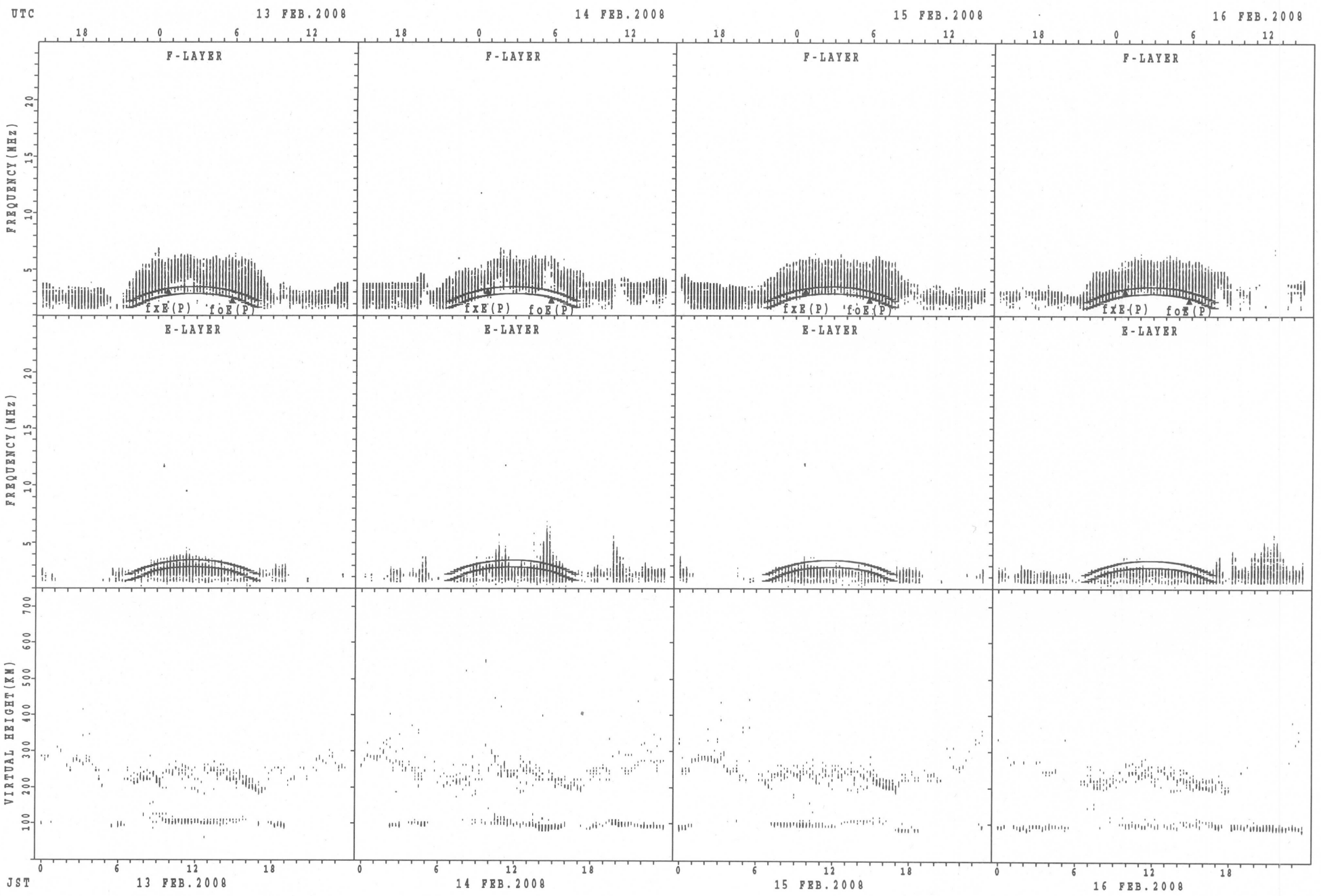


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

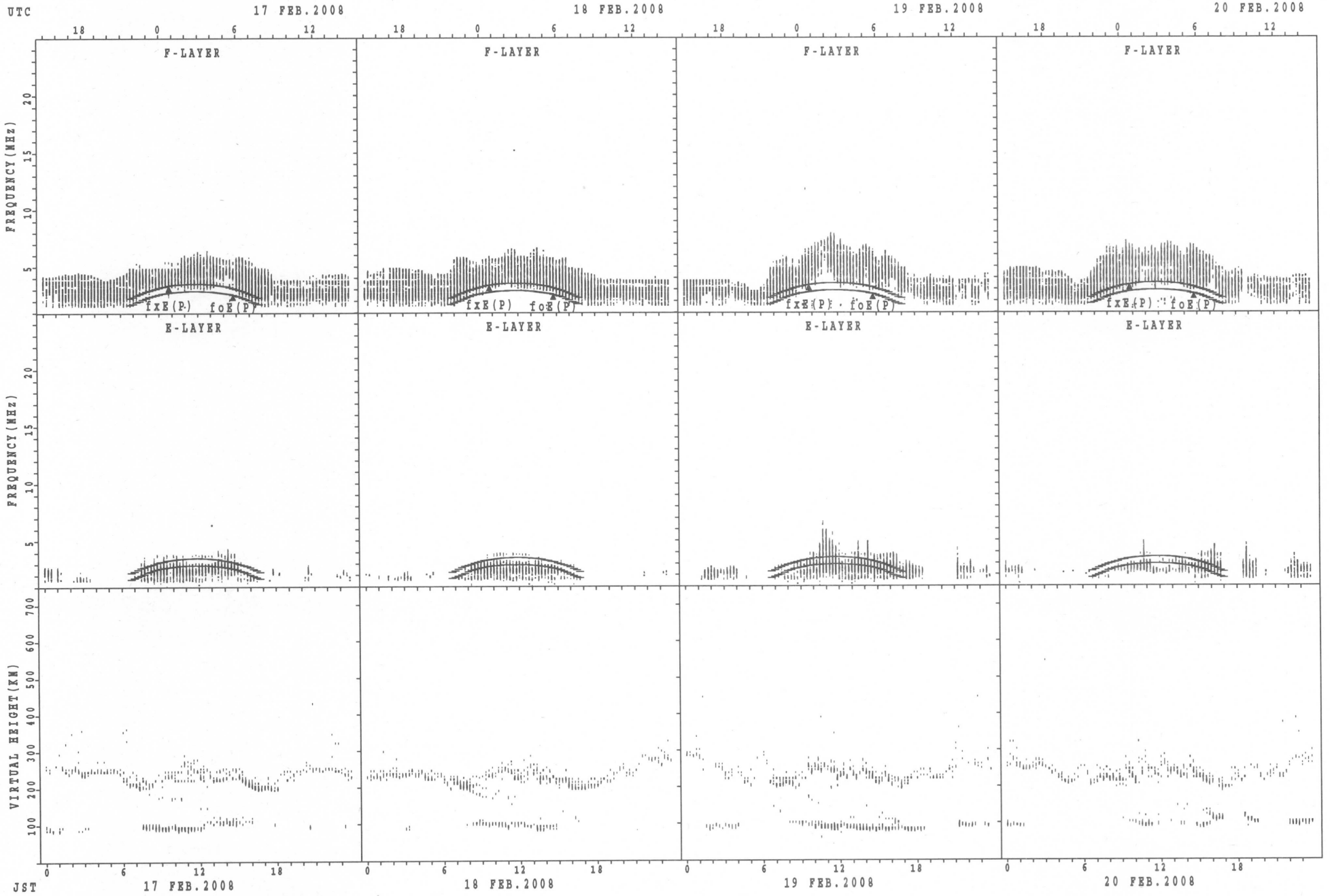


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE



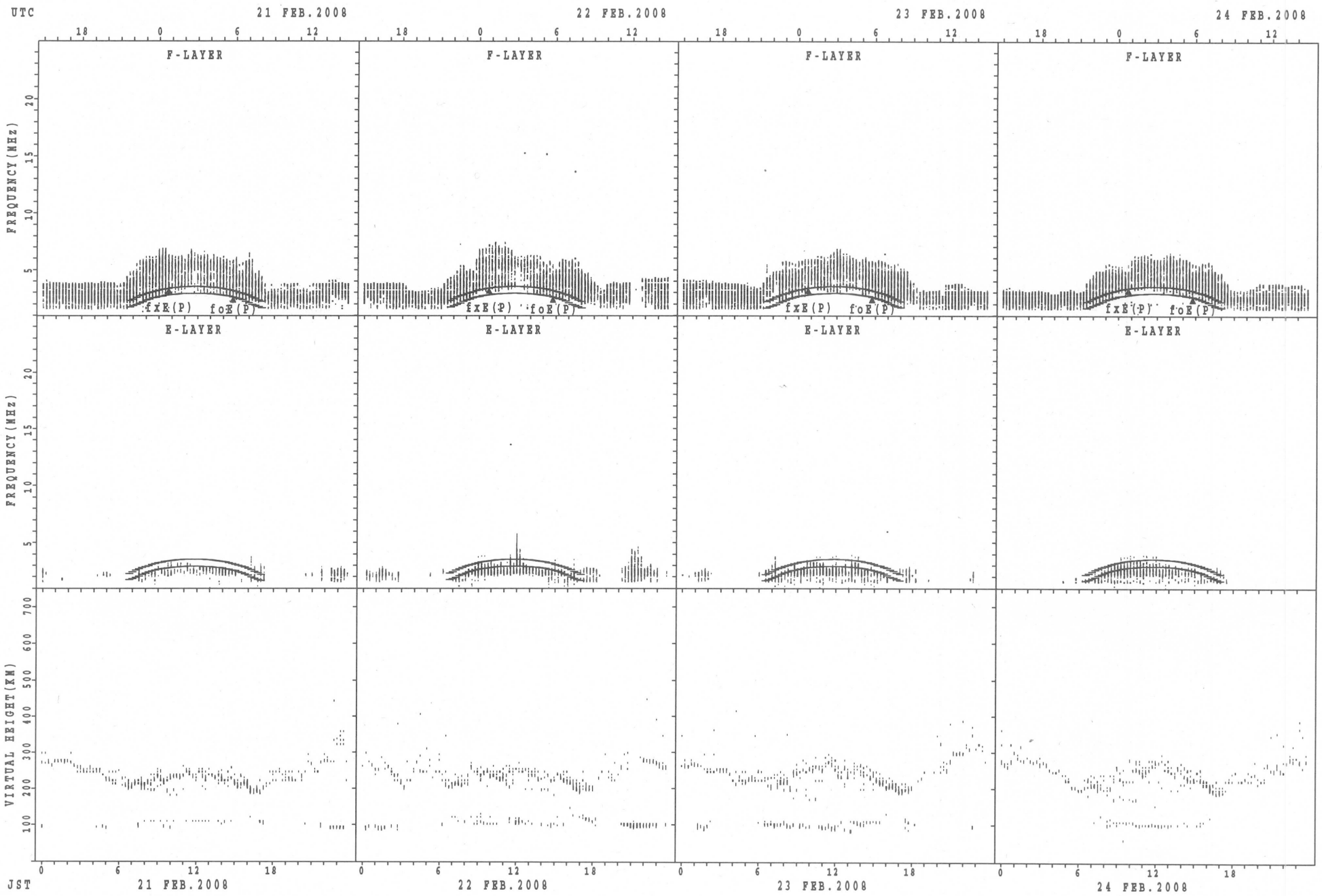
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



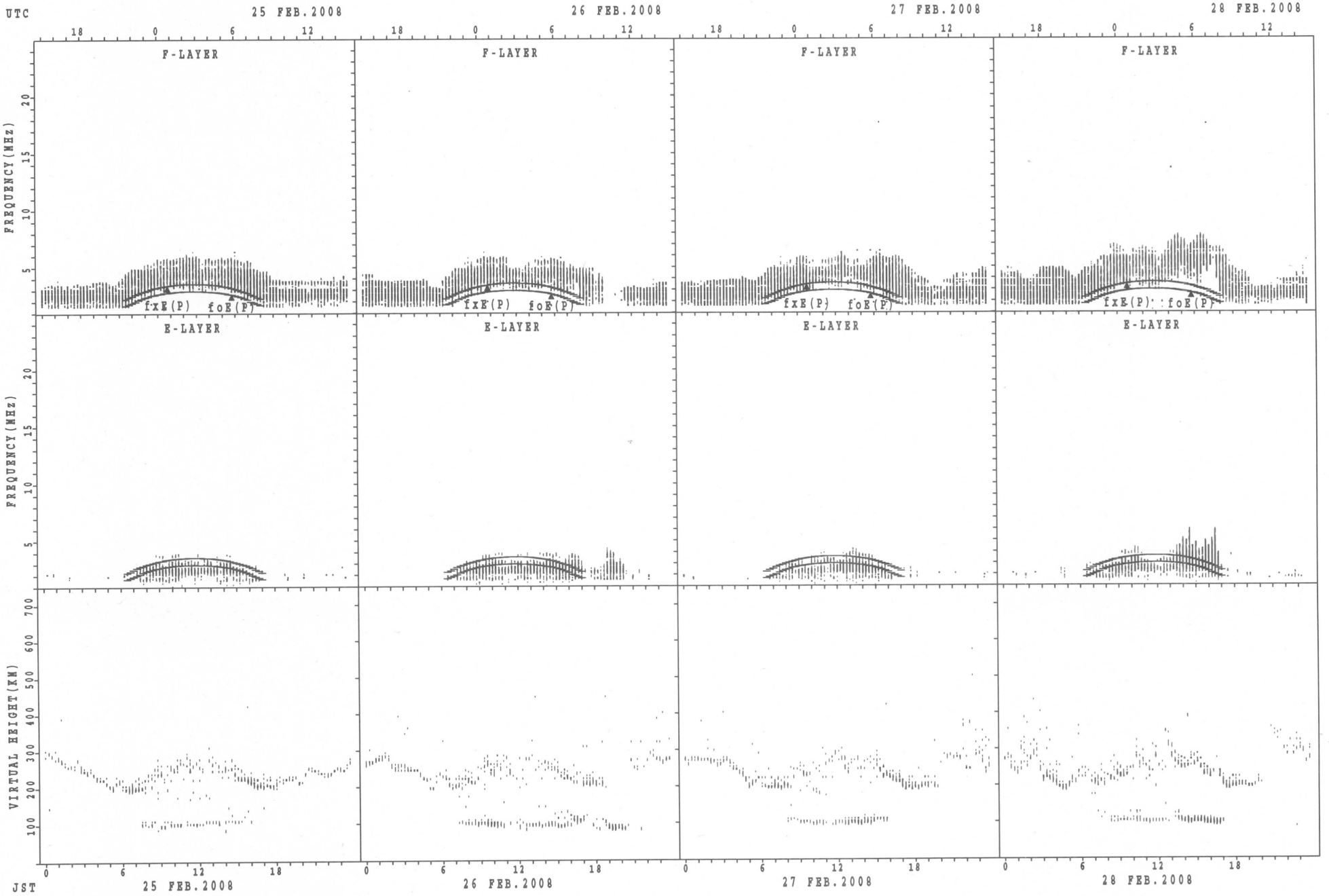
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



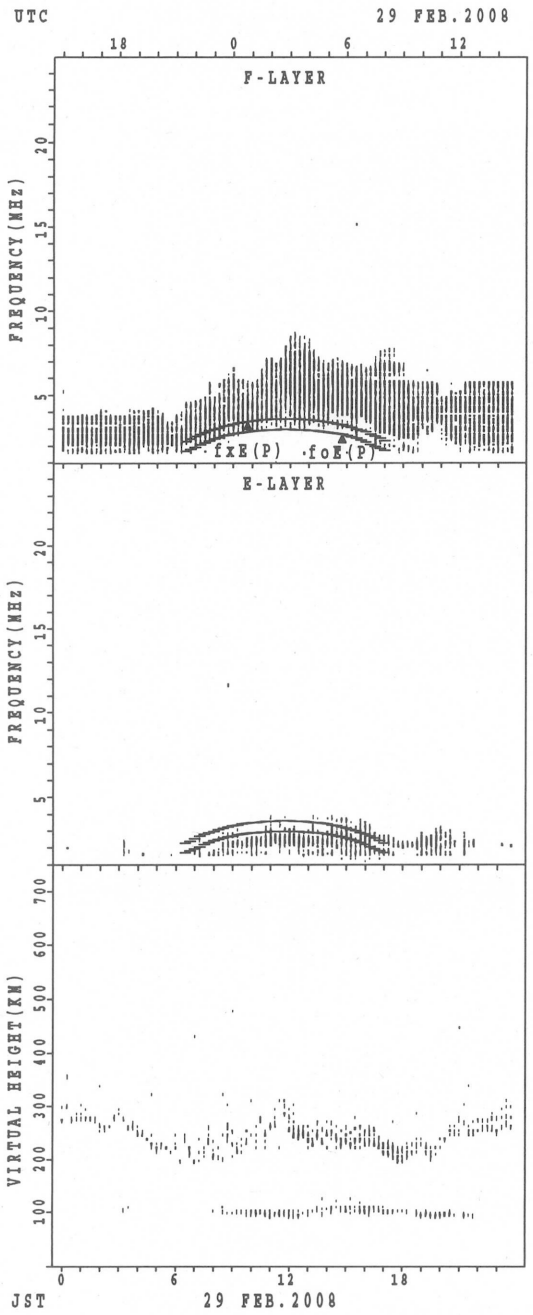
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



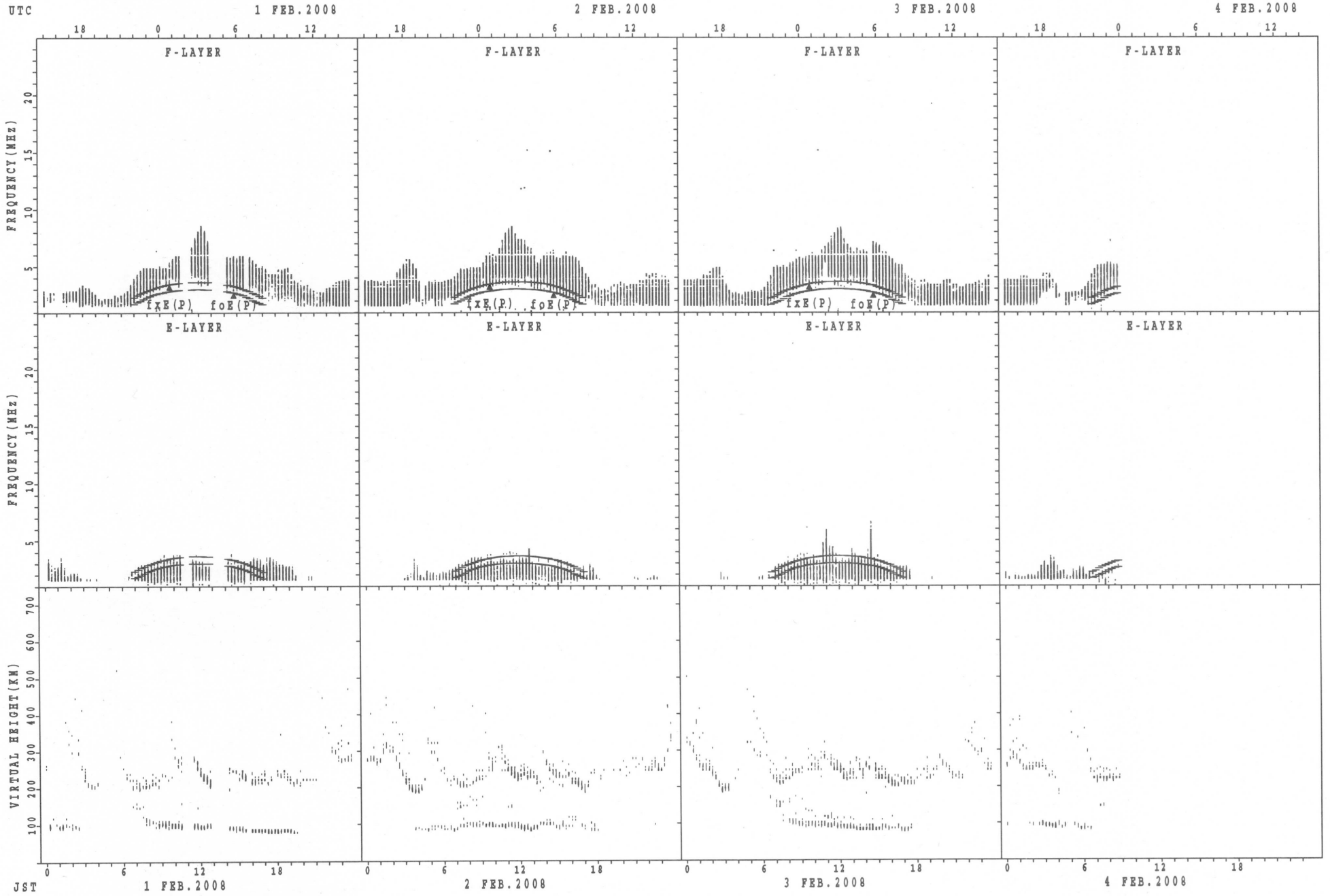
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



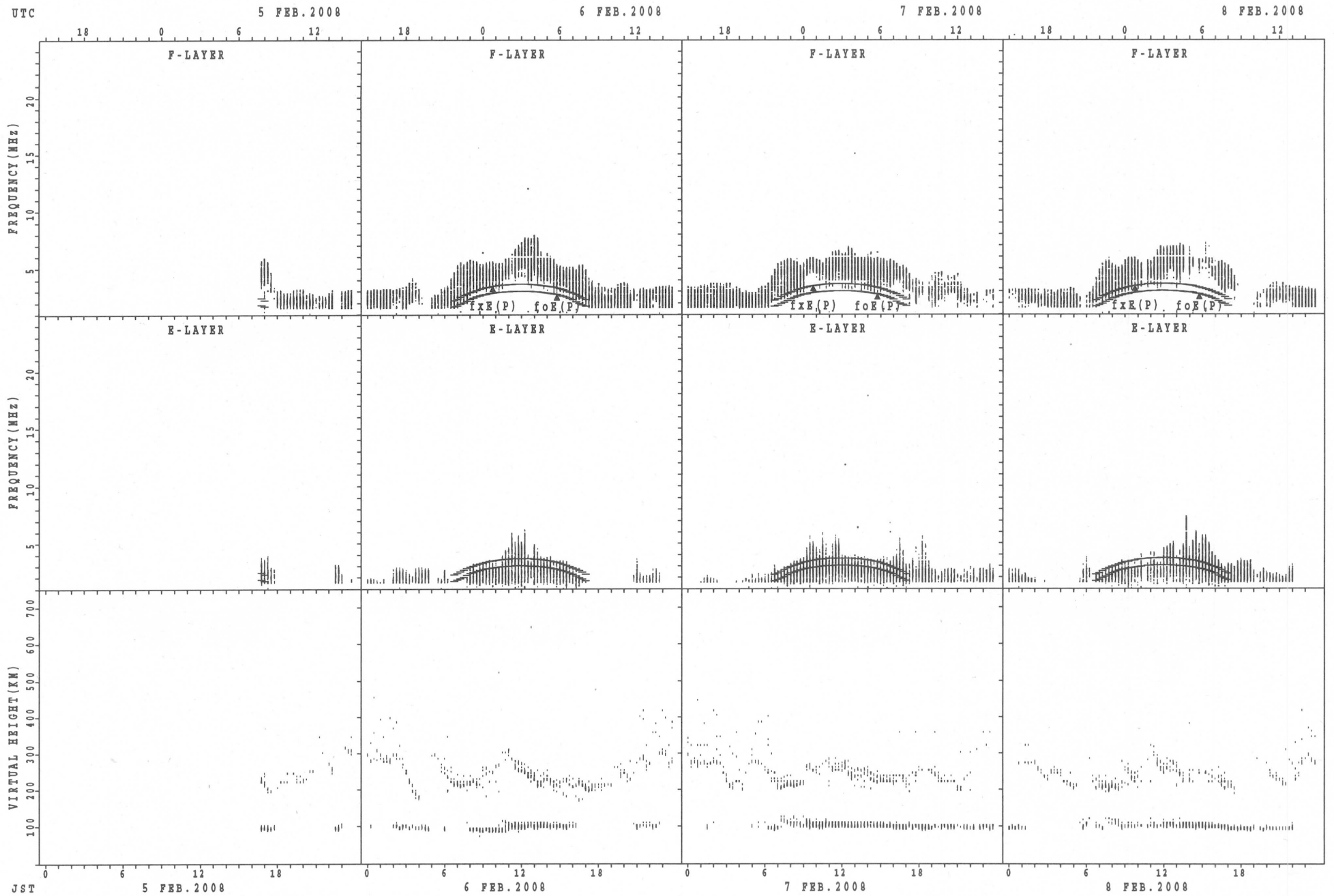
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



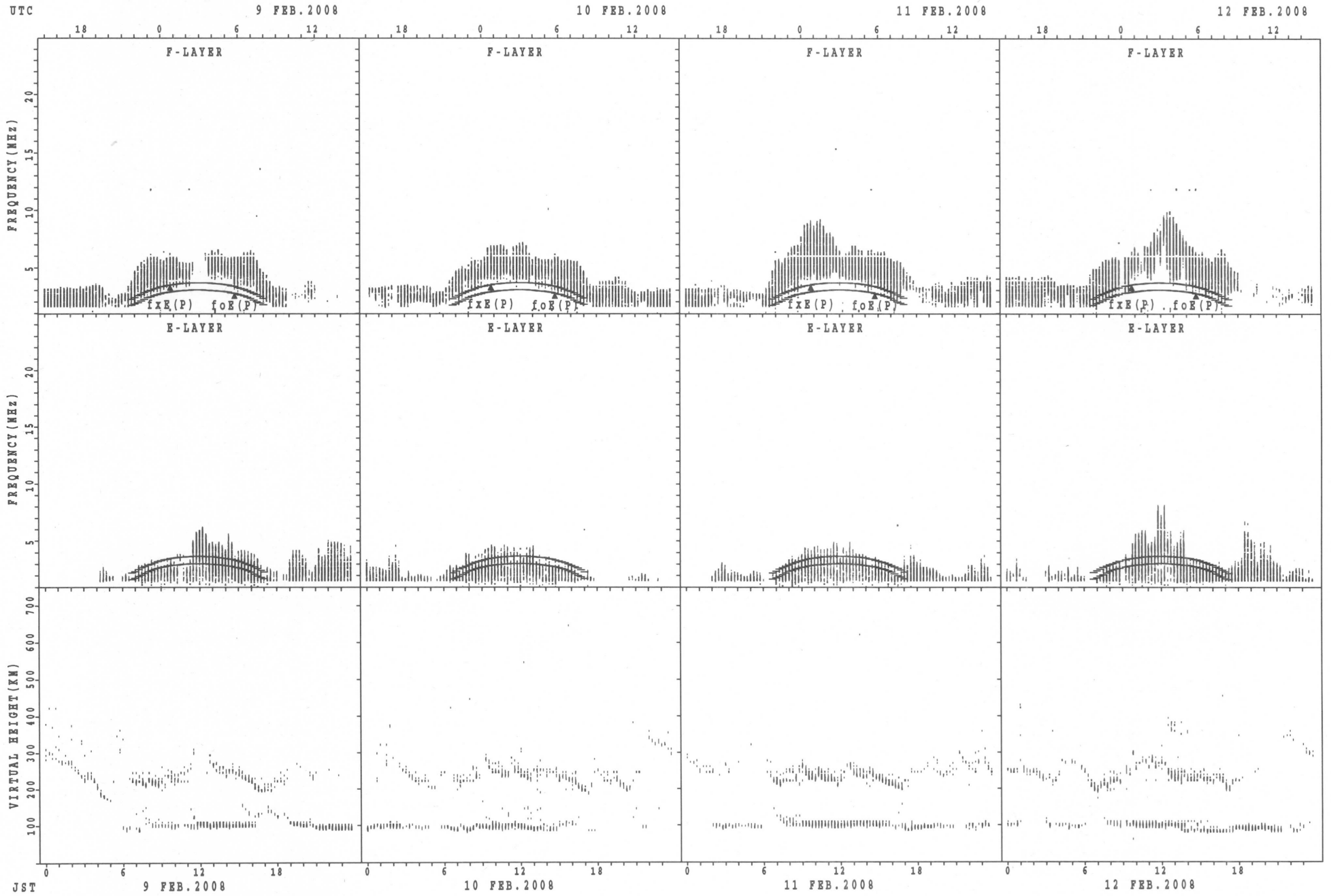
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



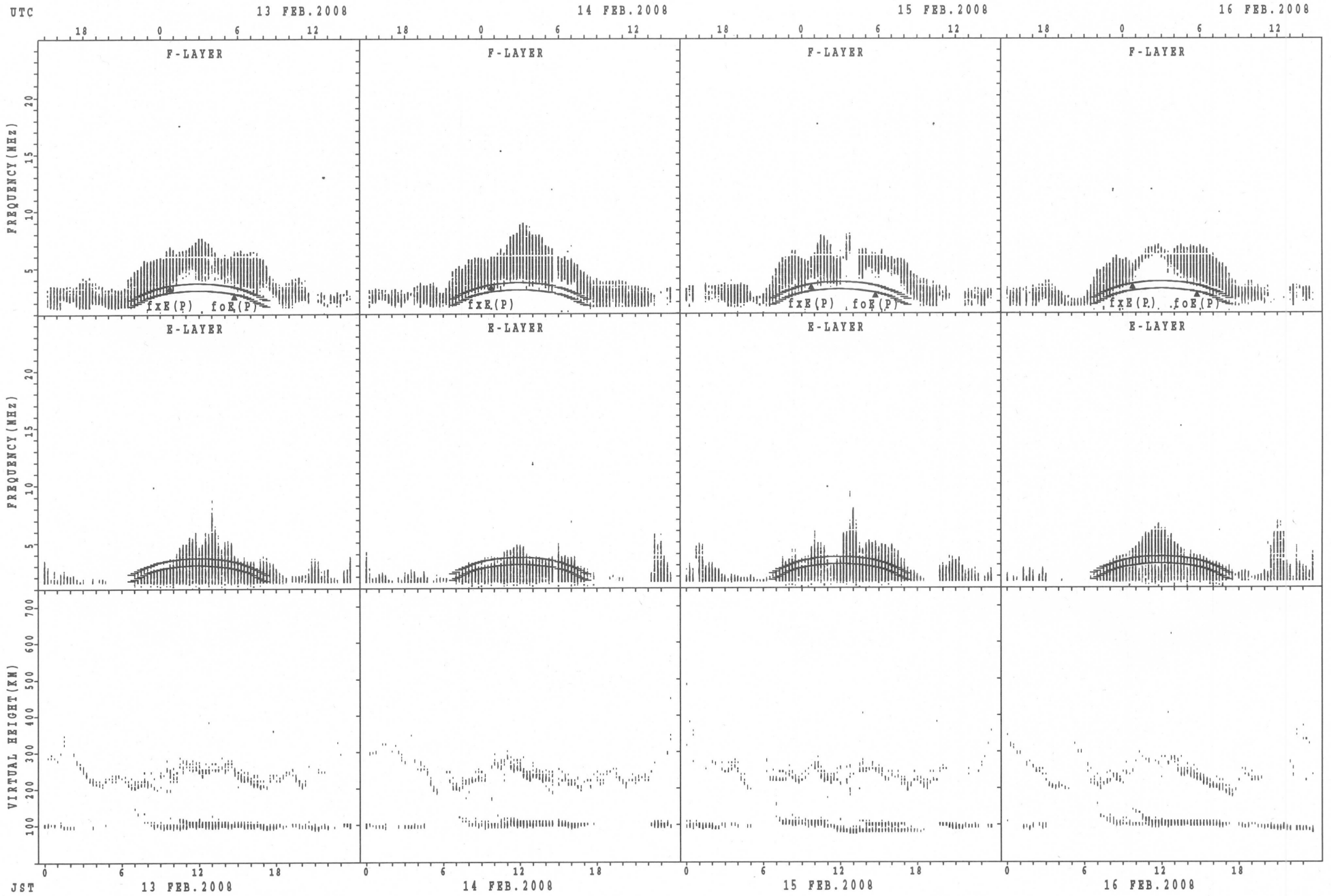
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



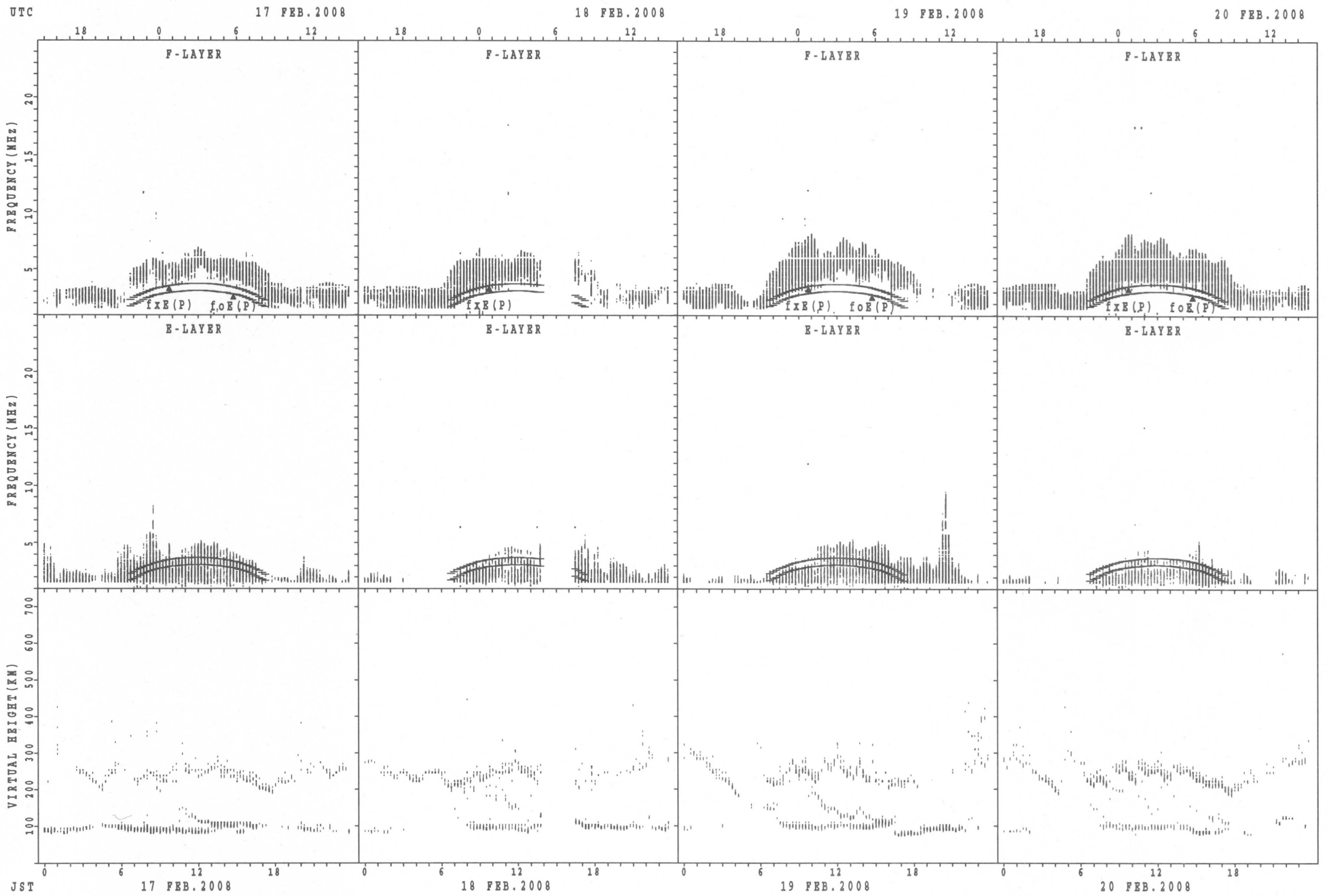
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



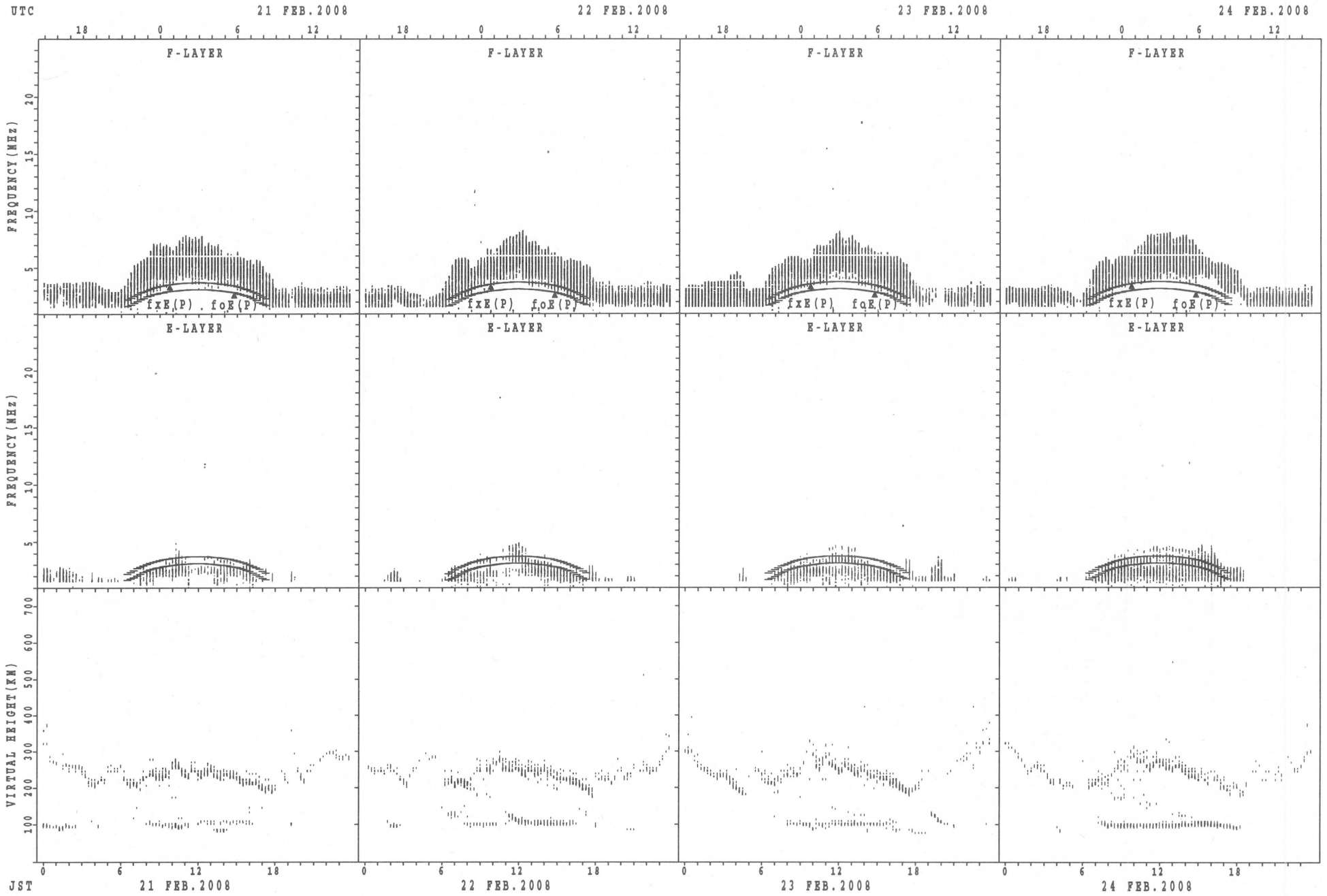
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



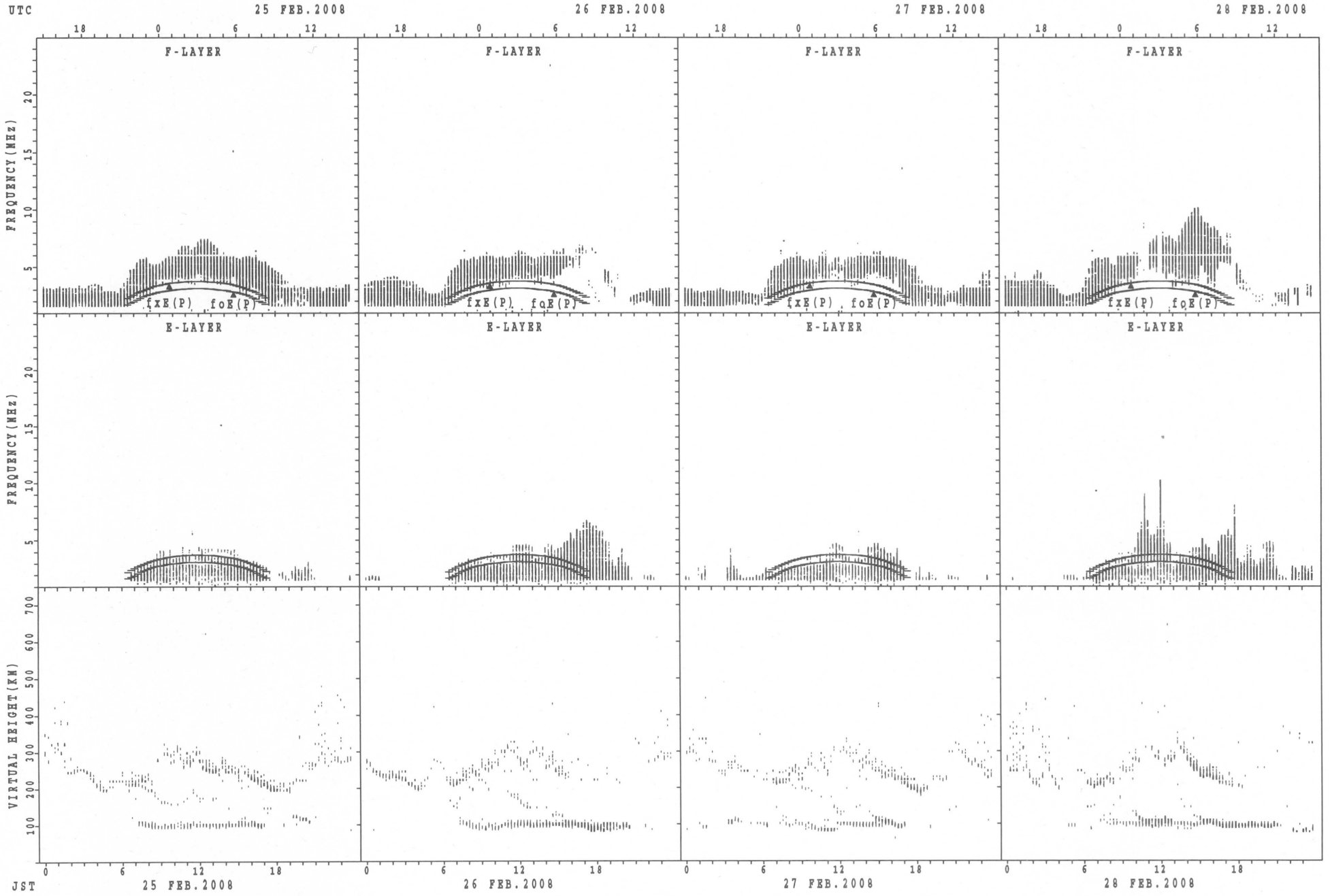
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

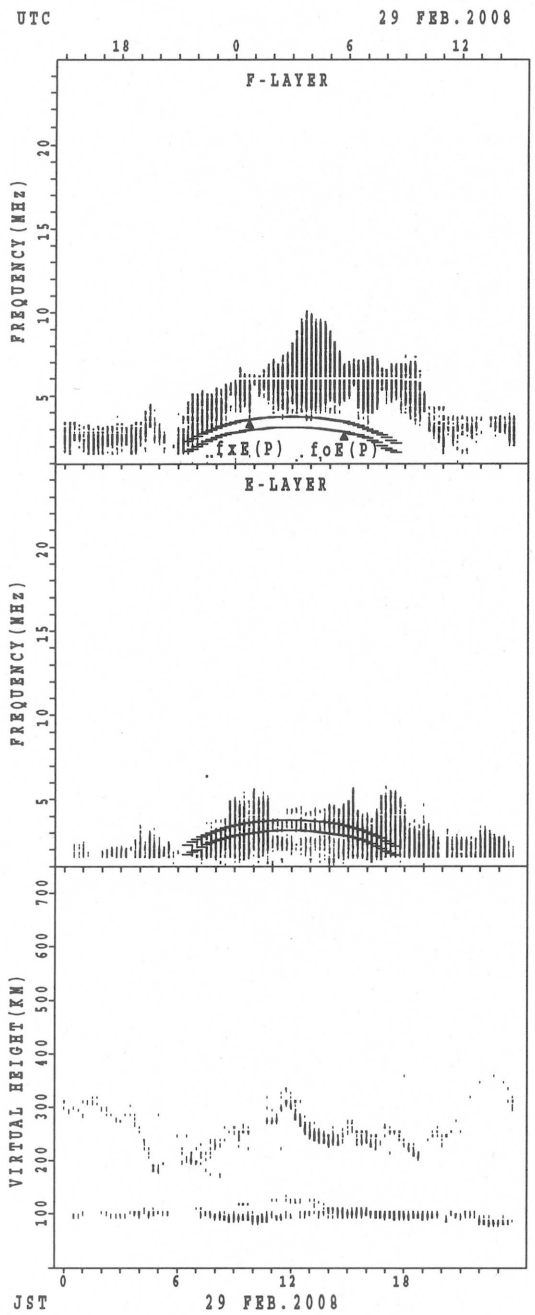


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

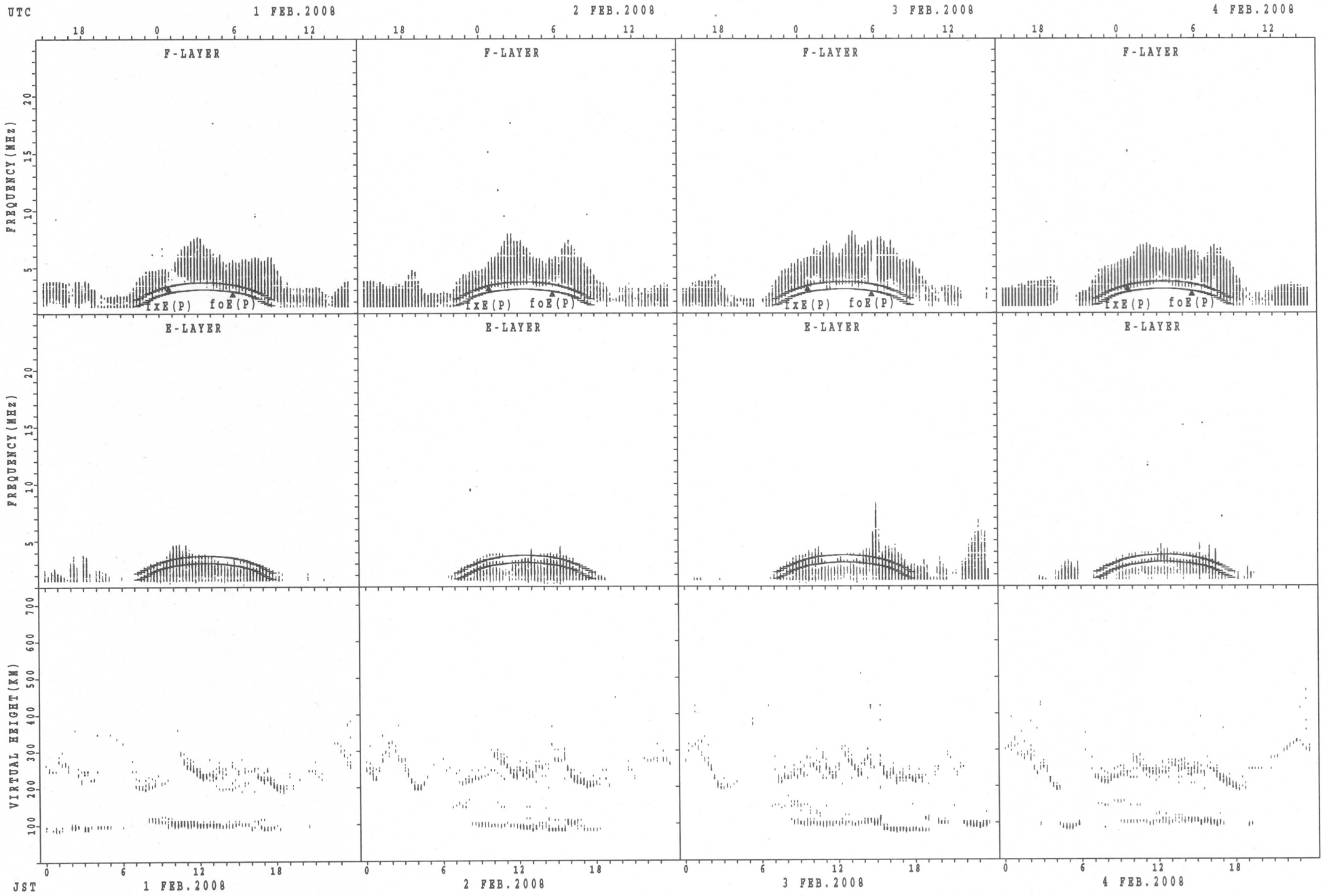
SUMMARY PLOTS AT Kokubunji

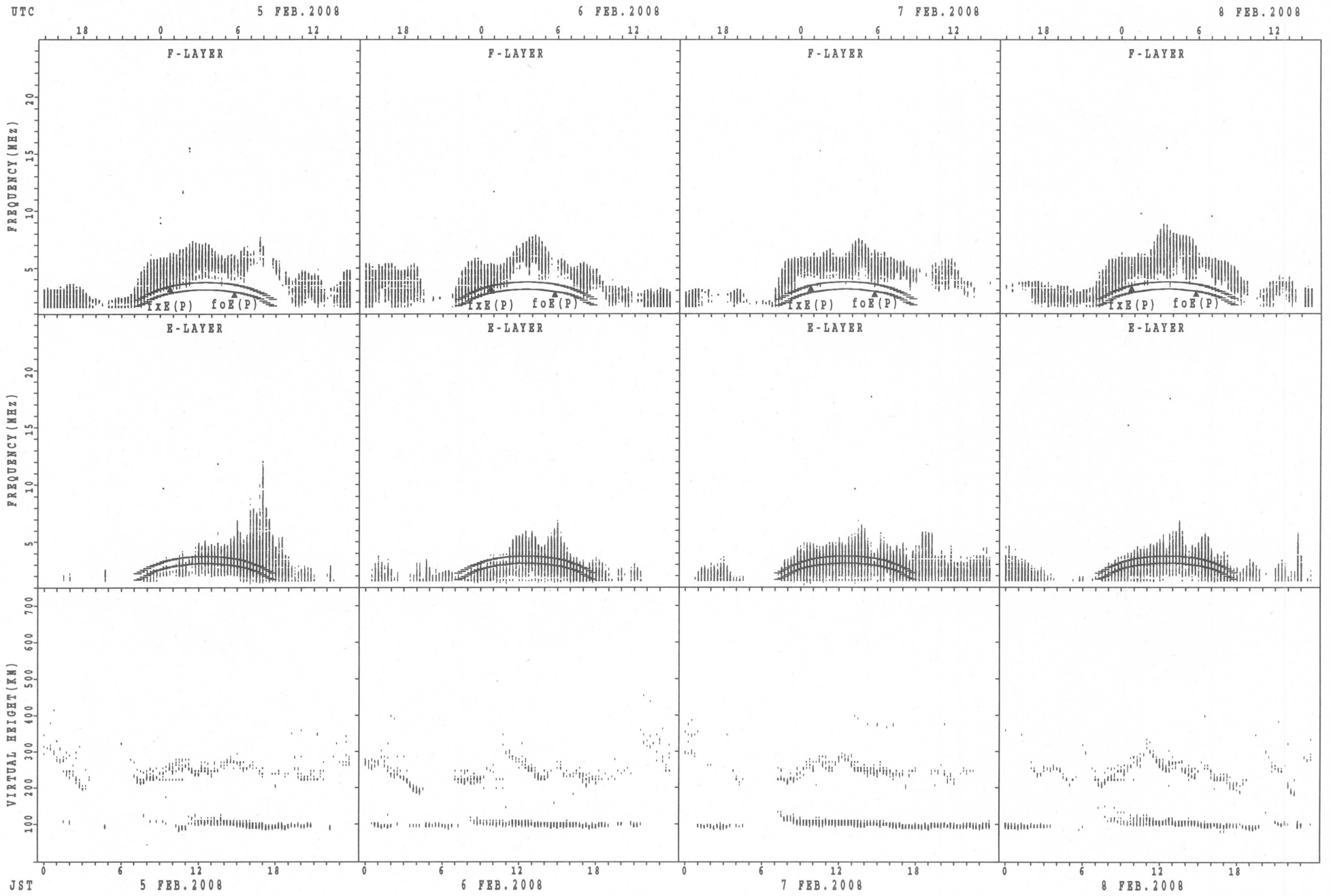


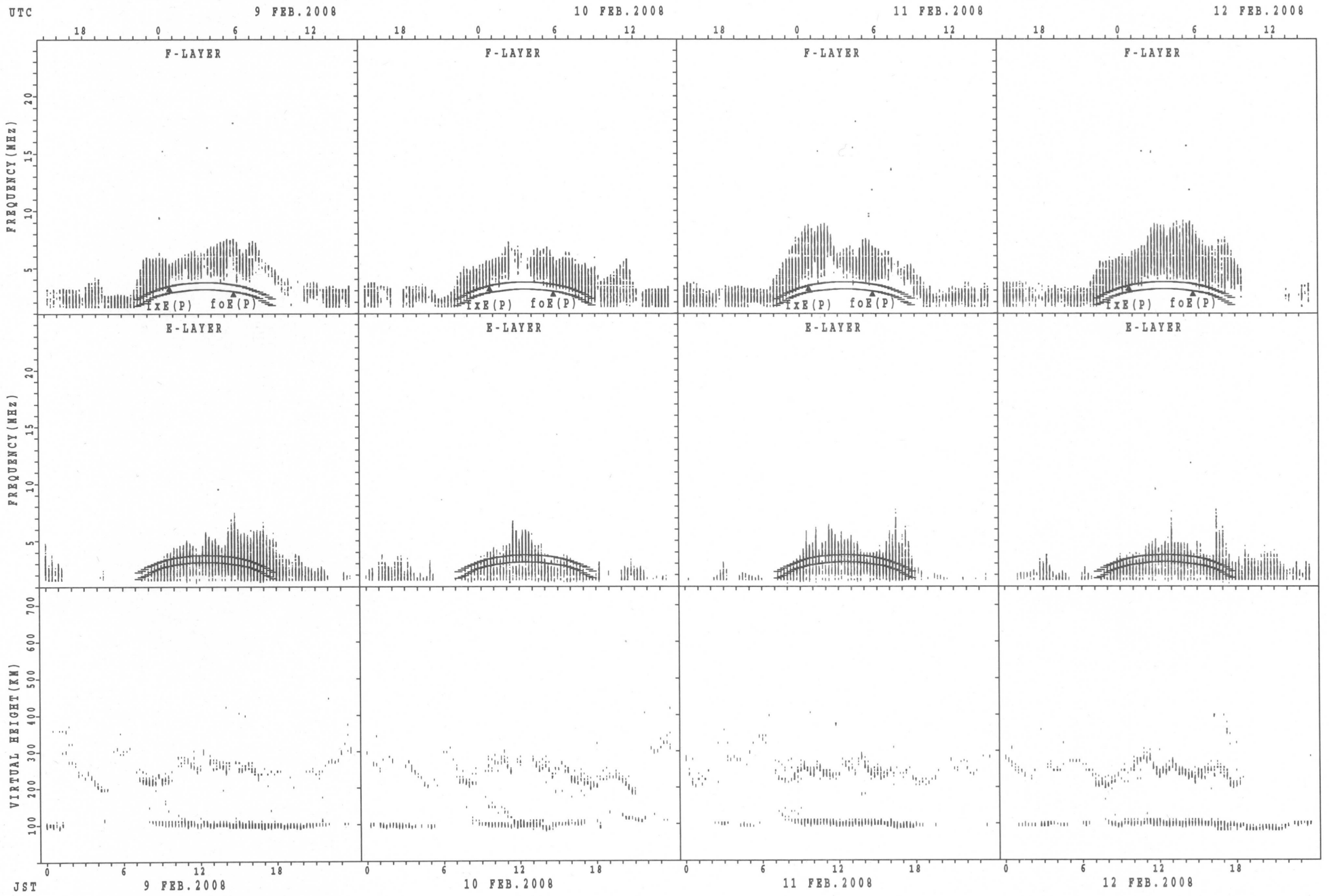
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

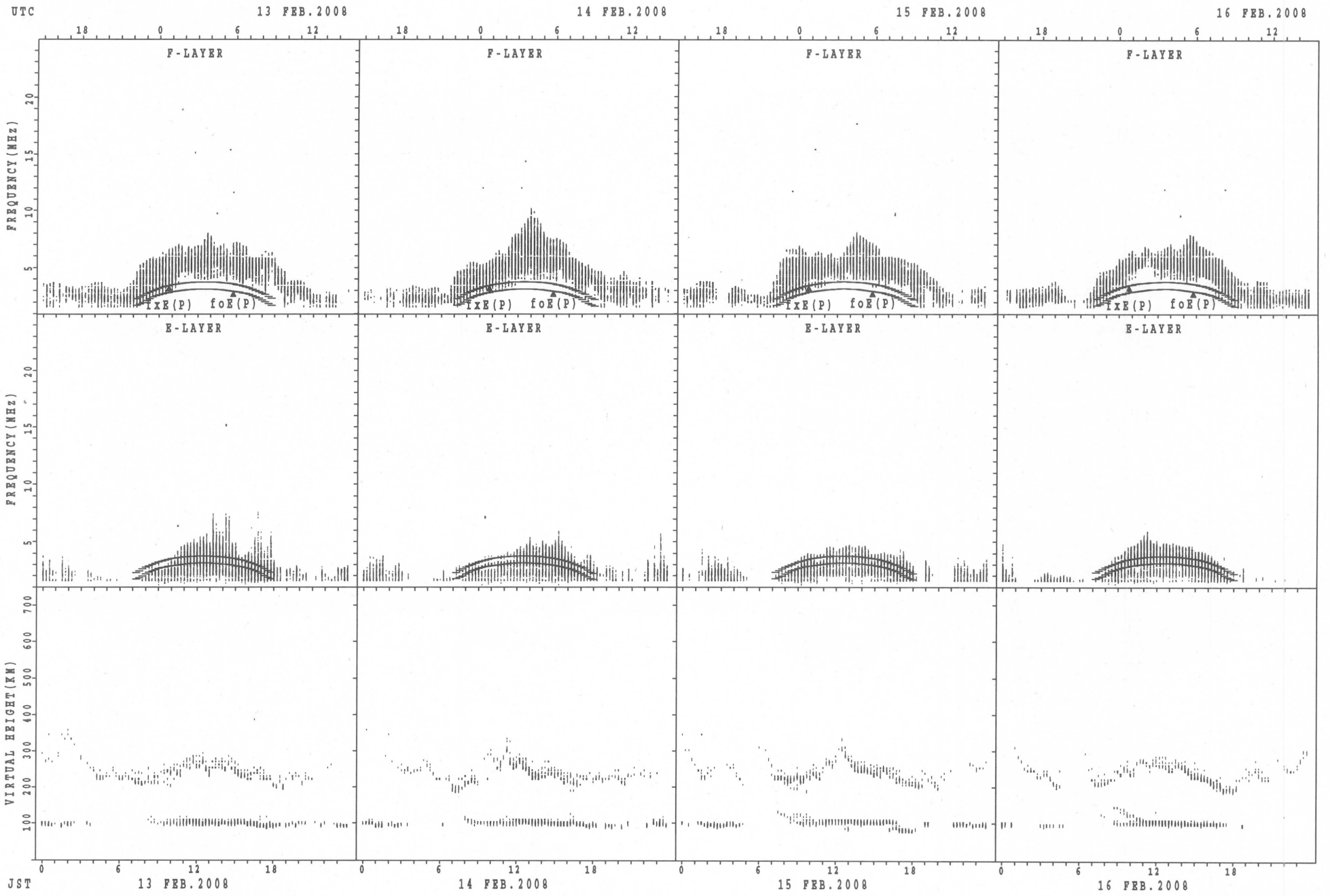


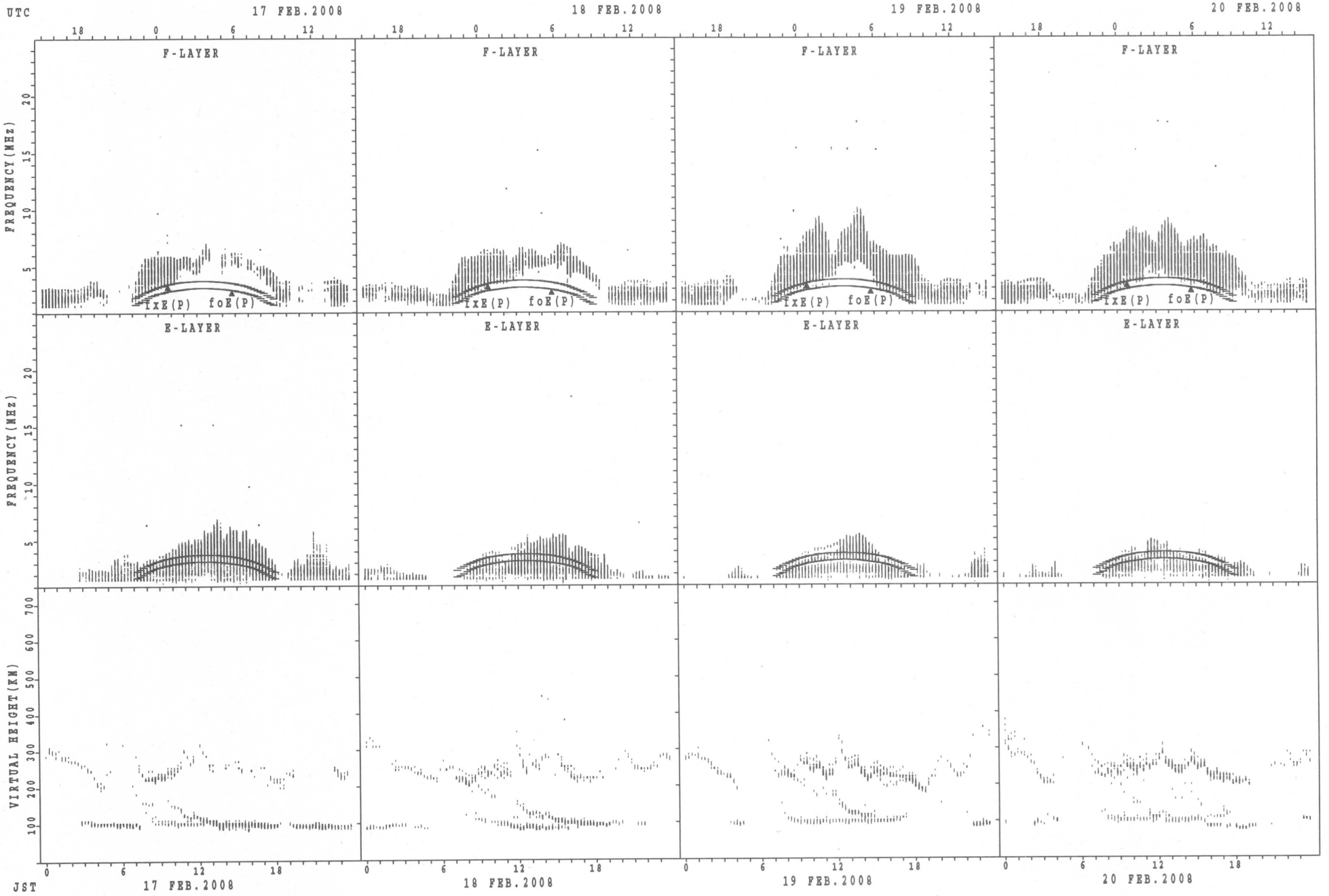
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

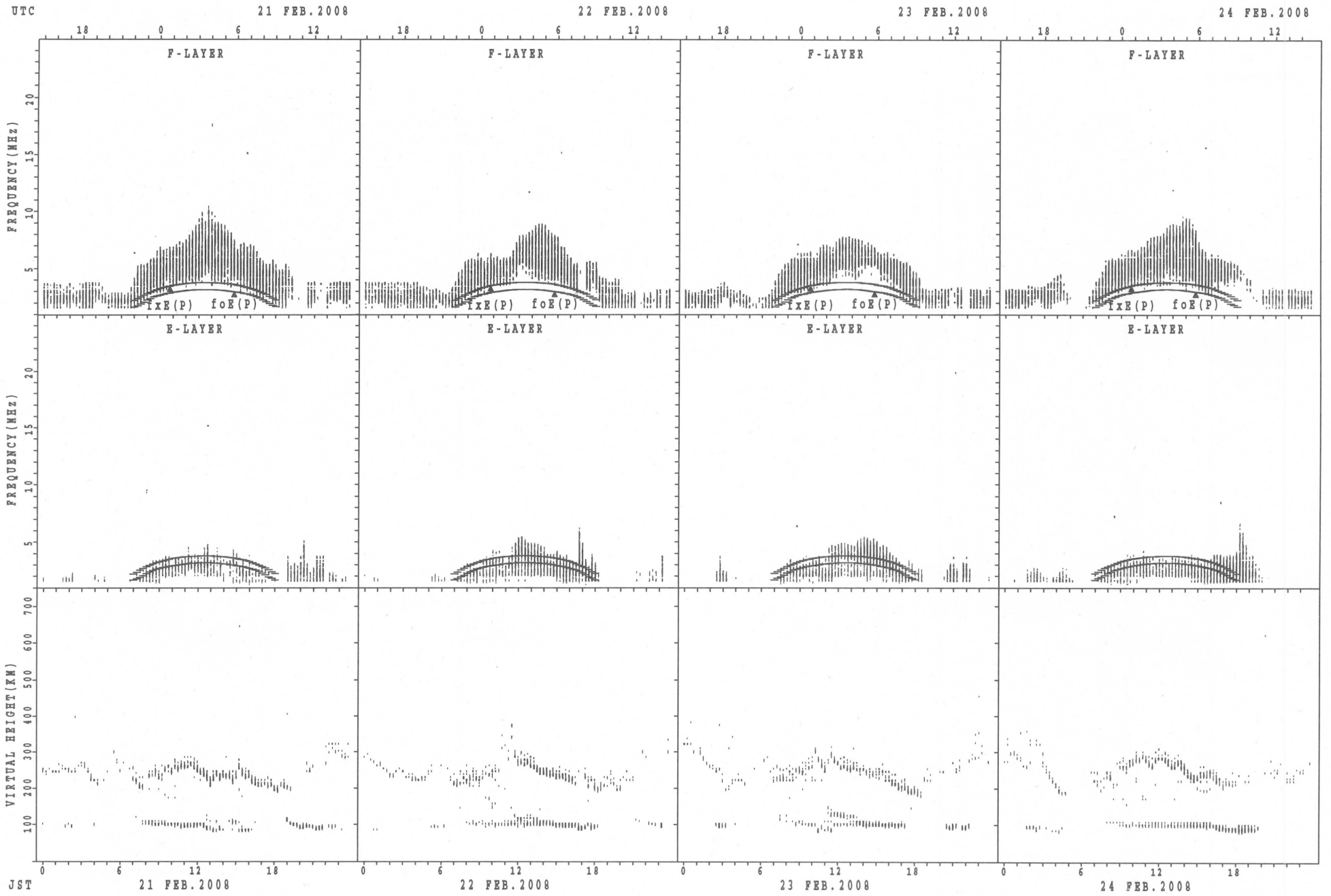

SUMMARY PLOTS AT Yamagawa
UTC
1 FEB.2008
2 FEB.2008
3 FEB.2008
4 FEB.2008
F-LAYER
FREQUENCY(MHz)
fxE(P) foE(P)
E-LAYER
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Yamagawa
UTC
5 FEB.2008
6 FEB.2008
7 FEB.2008
8 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

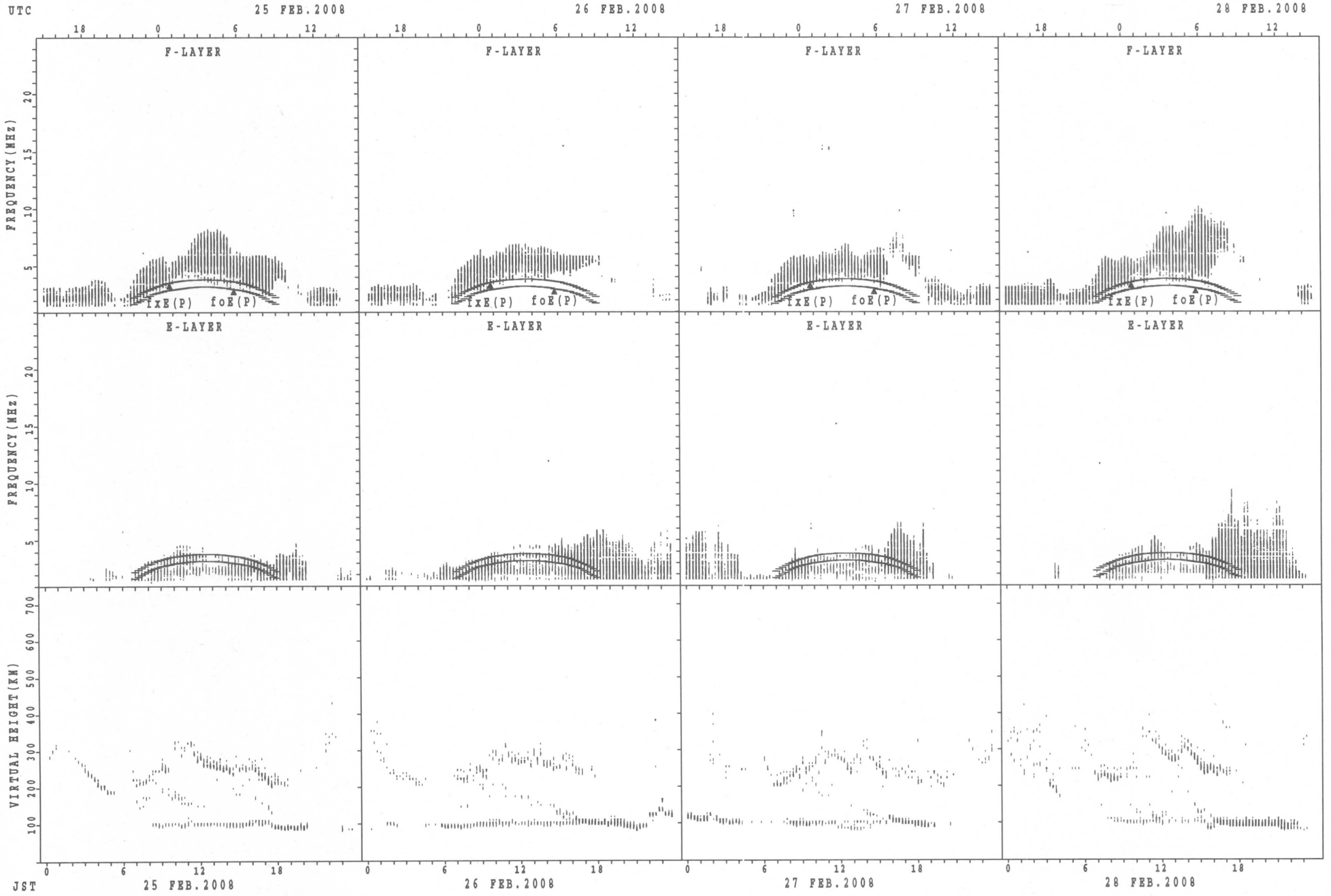

SUMMARY PLOTS AT Yamagawa
UTC
9 FEB.2008
10 FEB.2008
11 FEB.2008
12 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Yamagawa
UTC
13 FEB.2008
14 FEB.2008
15 FEB.2008
16 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Yamagawa
UTC
17 FEB.2008
18 FEB.2008
19 FEB.2008
20 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

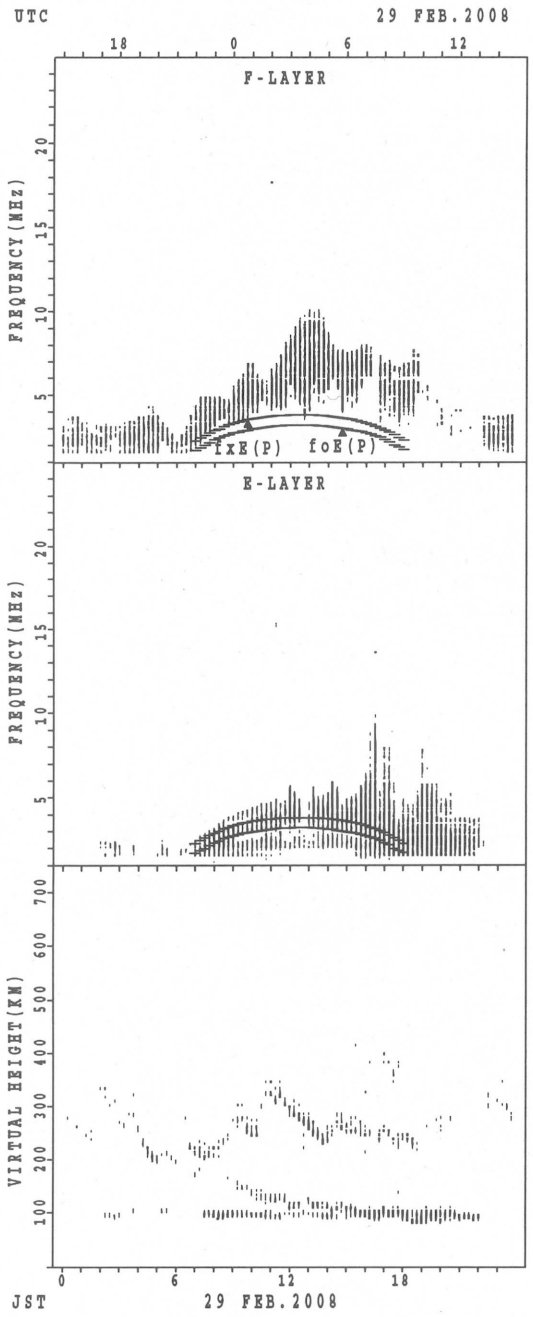

SUMMARY PLOTS AT Yamagawa
UTC
21 FEB.2008
22 FEB.2008
23 FEB.2008
24 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



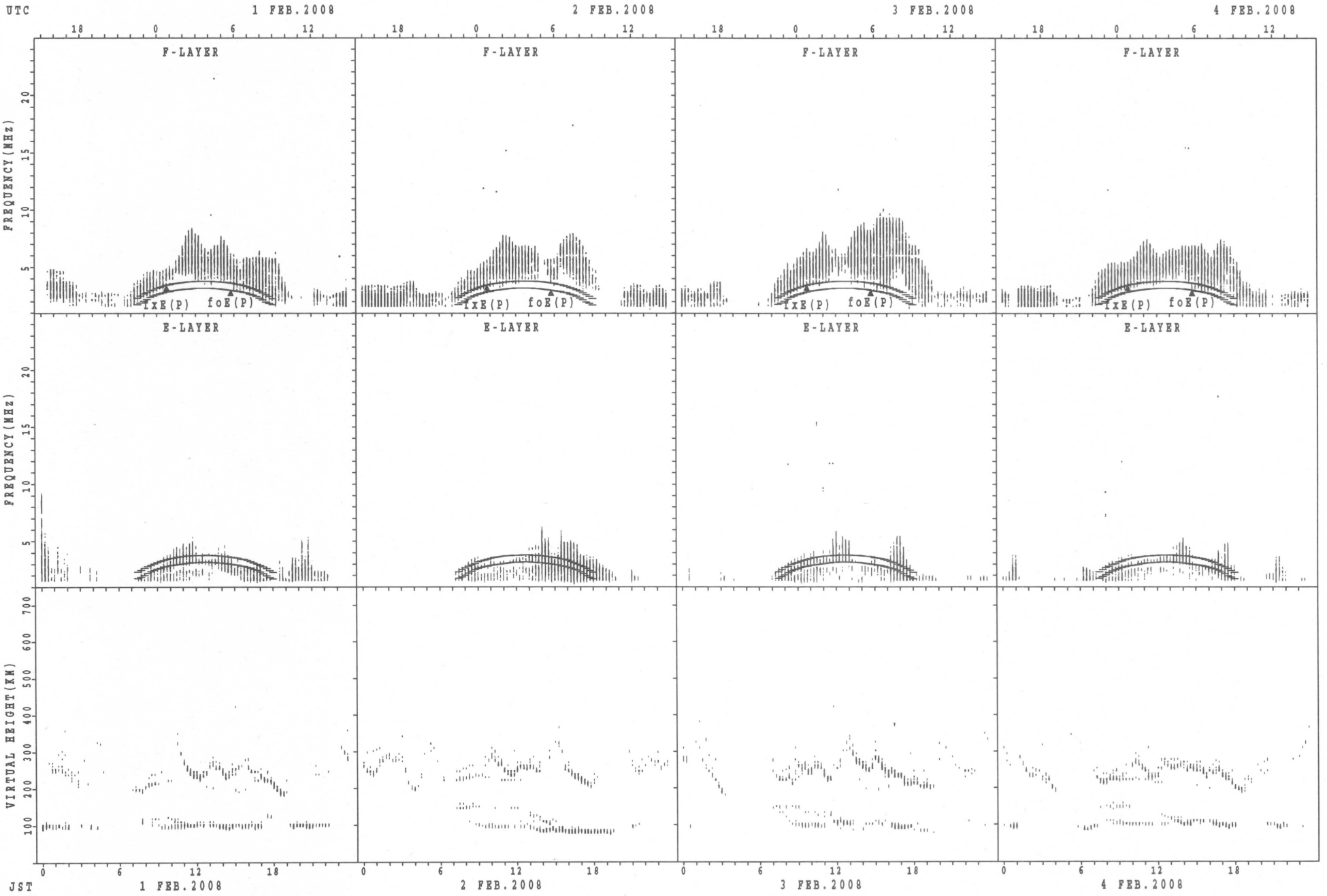
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



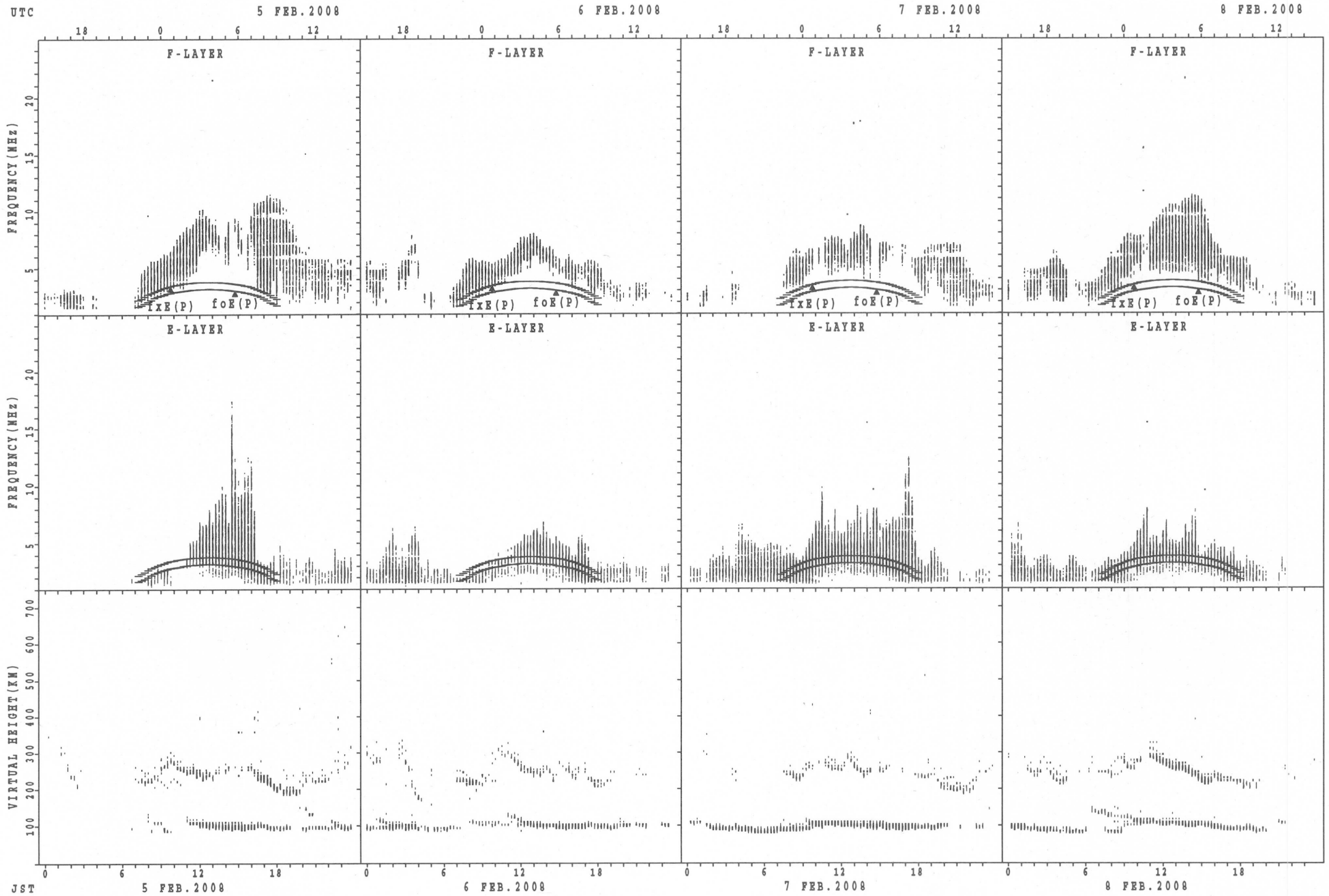
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

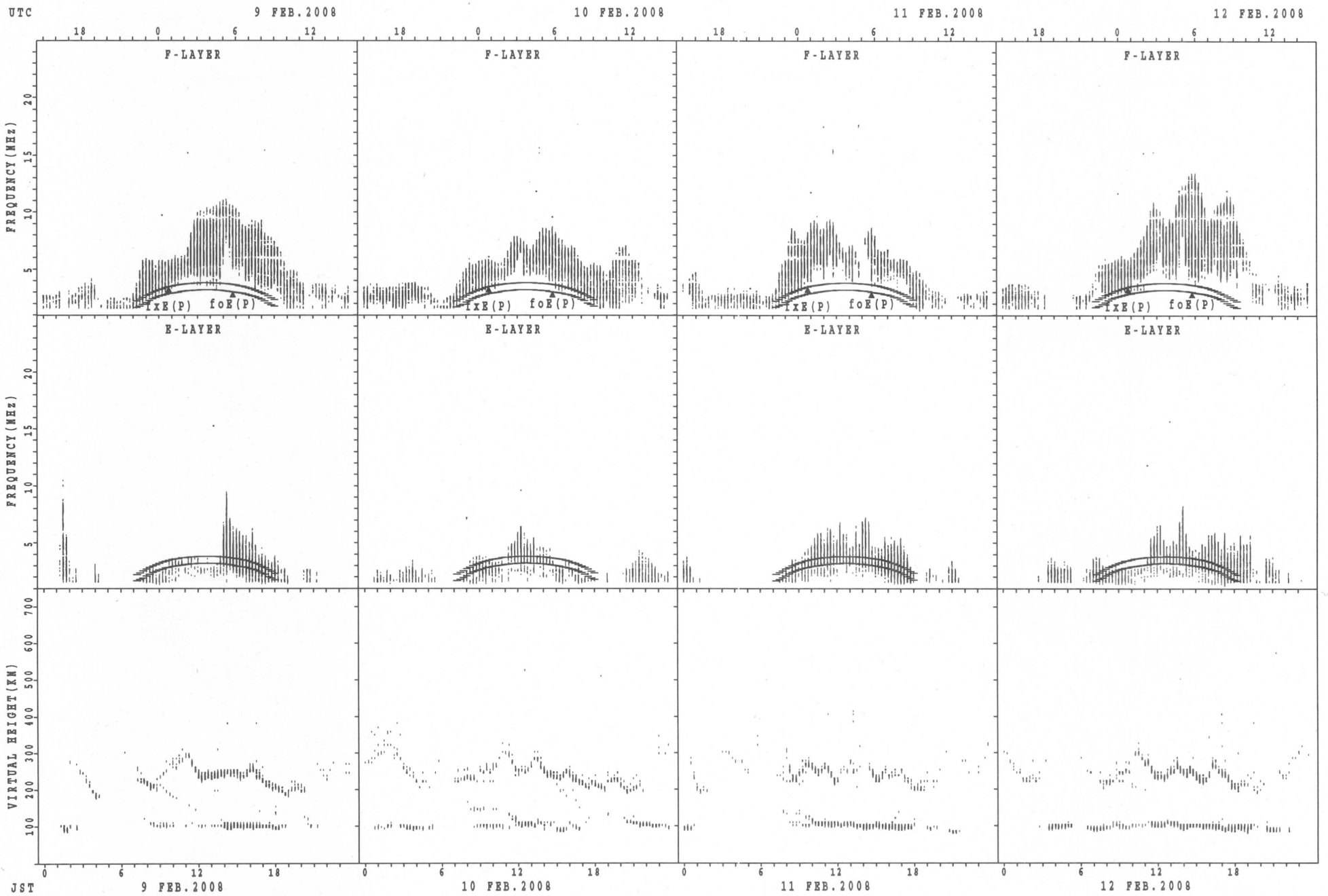


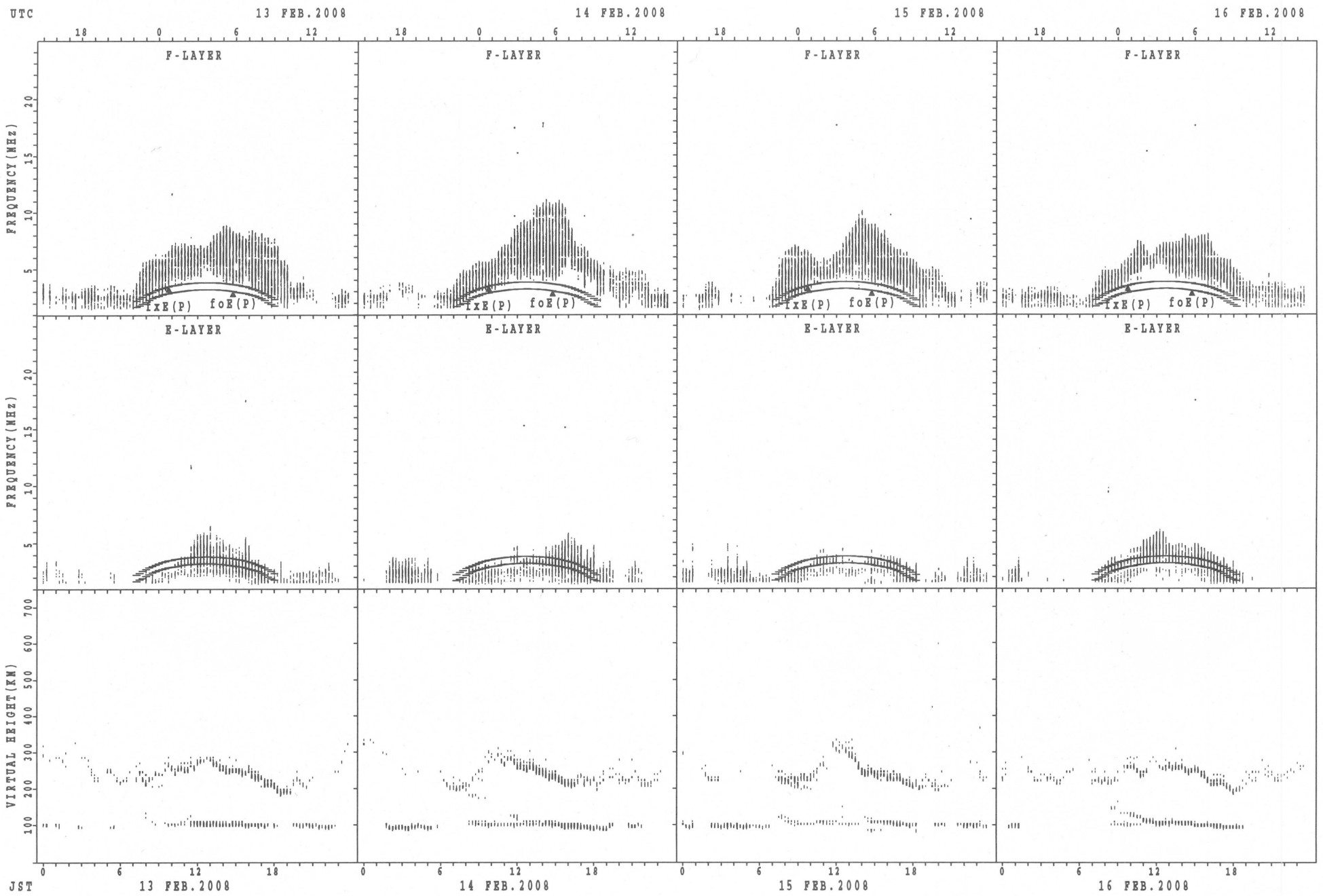
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



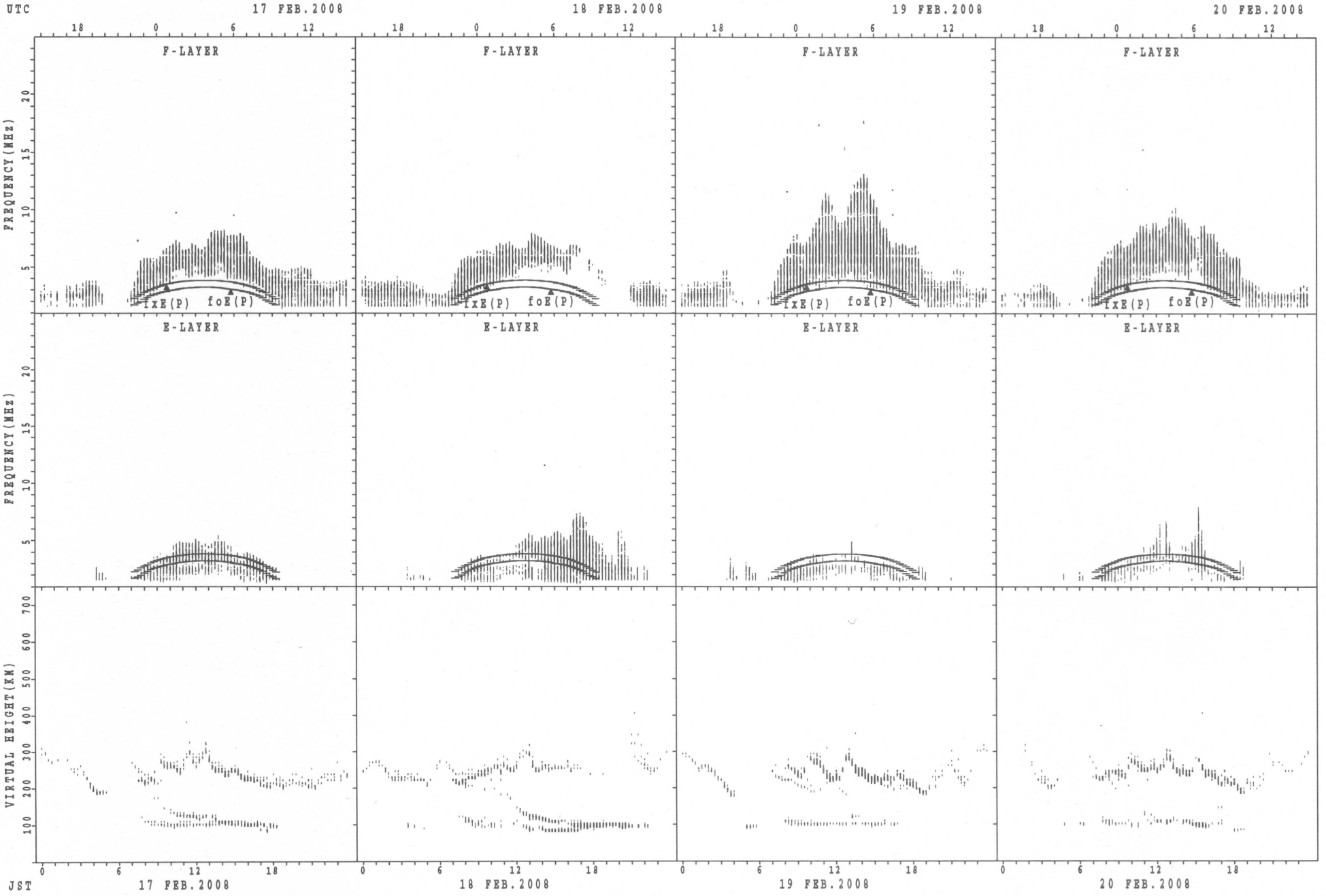
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Okinawa
UTC
9 FEB.2008
10 FEB.2008
11 FEB.2008
12 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

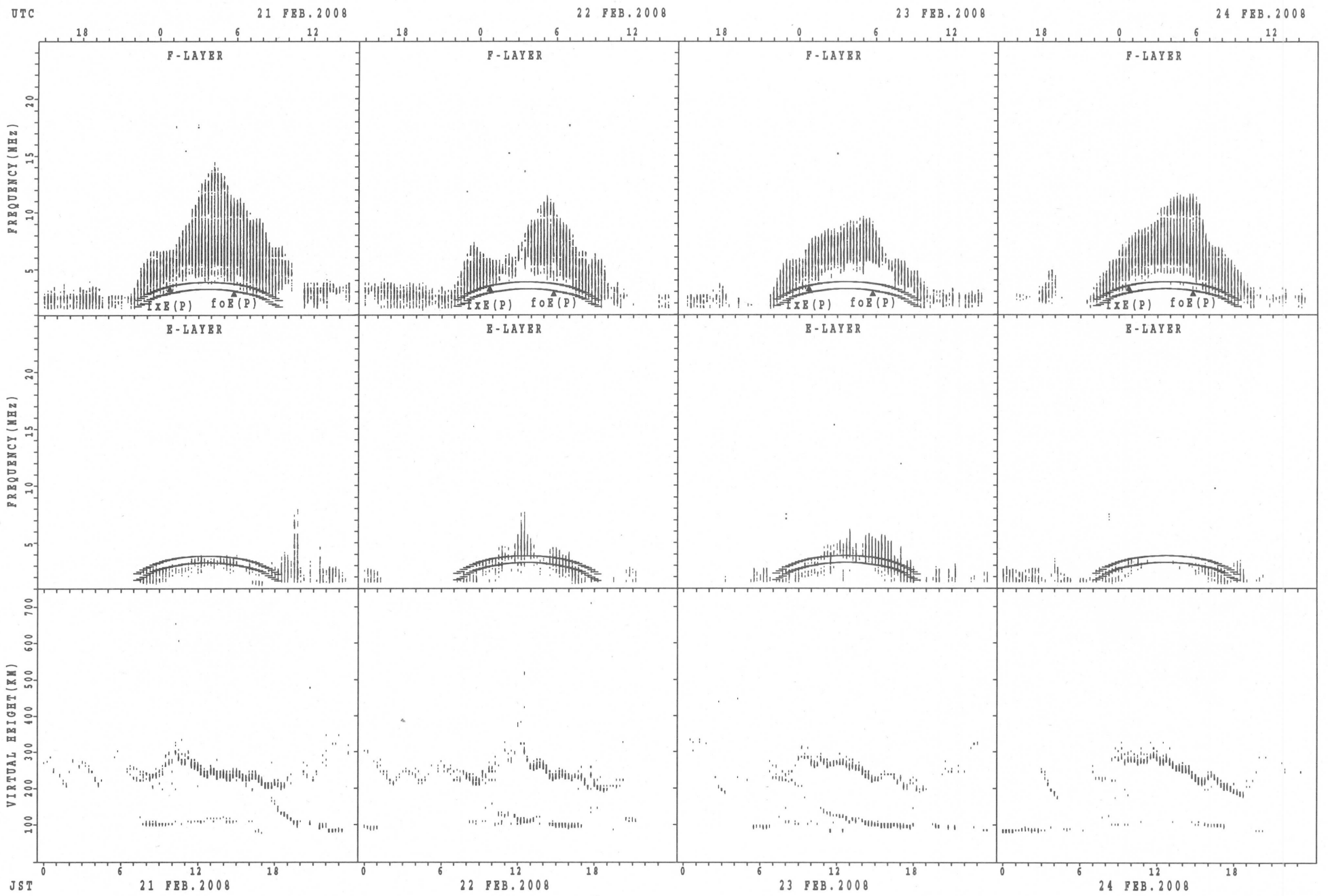


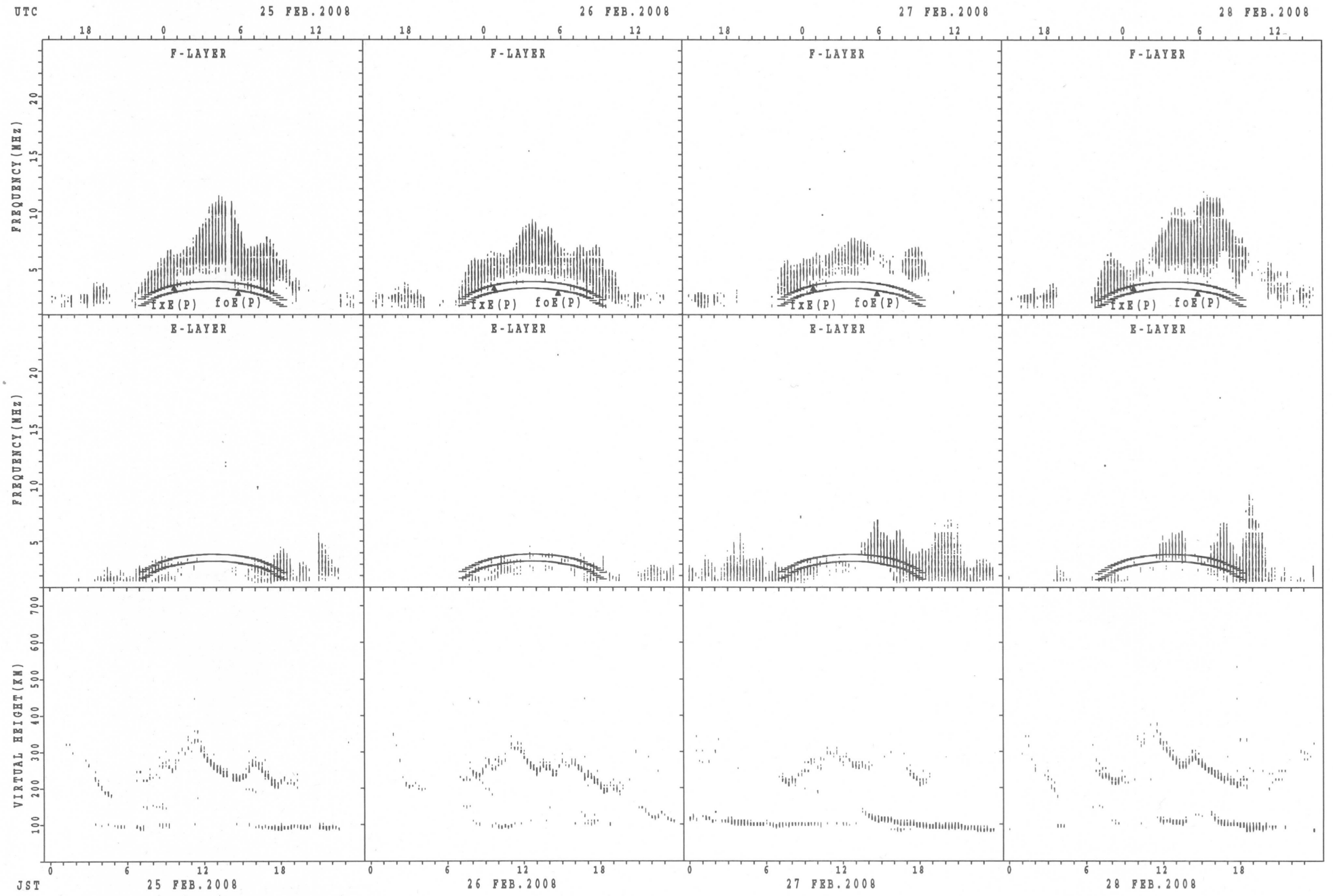
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

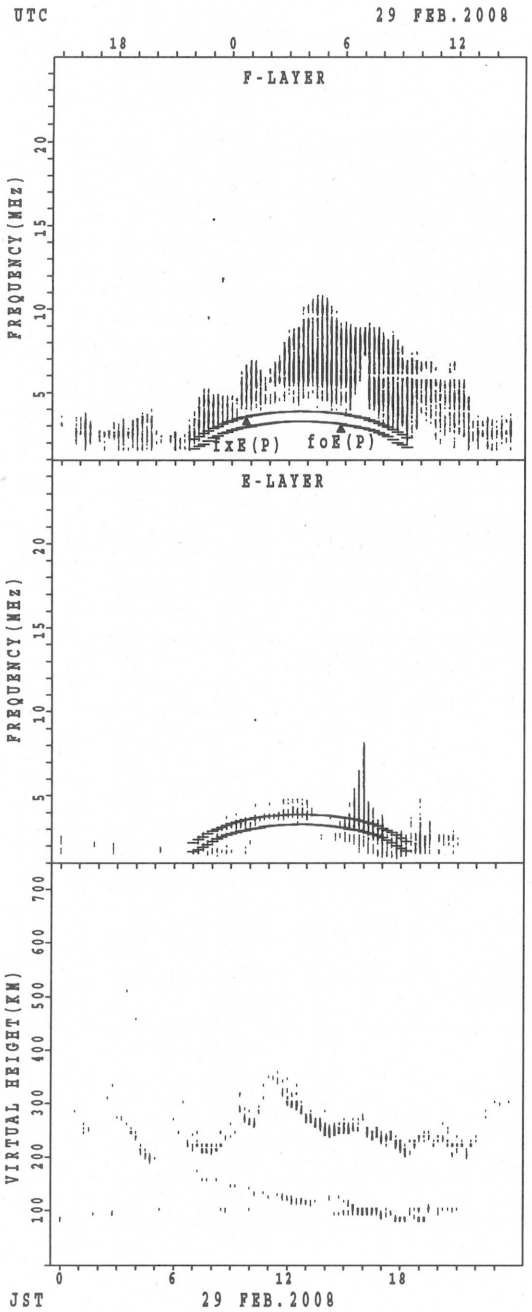


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Okinawa
UTC
21 FEB.2008
22 FEB.2008
23 FEB.2008
24 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Okinawa
UTC
25 FEB.2008
26 FEB.2008
27 FEB.2008
28 FEB.2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
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

FEB.2008 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION Wakkanai LAT. 45°23.5'N LON. 141°41.2'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1	7	1	2	1	3	9	8	2	2	1					
MED									240	248	262	268	242	254	254	242	226	236	240					
U Q									120	258	131	272	121	262	267	256	230	238	120					
L Q									120	230	131	264	121	250	236	238	222	234	120					

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	13	11	11	10	7	7	6	3	10	11	15	11	12	11	9	15	13	17	14	13	11	9	8	12
MED	95	97	97	96	97	97	97	103	118	107	105	103	106	107	101	103	101	99	95	93	95	99	96	101
U Q	100	99	105	99	105	105	109	105	149	137	111	111	136	119	105	111	107	106	101	97	97	102	100	107
L Q	92	89	95	93	95	95	95	93	101	97	97	95	101	103	89	95	96	91	87	91	87	95	93	95

h'F STATION Kokubunji LAT. 35°42.4'N LON. 139°29.3'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										5					1	13	5	2	1					
MED										250					240	244	230	223	266					
U Q										270					120	261	242	232	133					
L Q										245					120	240	227	214	133					

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	8	10	9	7	5	6	12	12	14	12	21	22	18	17	21	20	20	16	13	14	14	11	11
MED	99	97	96	97	101	103	97	141	116	141	118	113	113	109	107	103	103	97	97	99	97	96	97	97
U Q	99	99	97	102	113	105	99	149	152	163	137	156	139	123	125	113	106	100	99	107	103	101	101	103
L Q	93	97	95	96	97	97	91	100	102	105	105	107	107	105	104	103	100	94	93	94	97	95	91	93

h'F STATION Yamagawa LAT. 31°12.1'N LON. 130°37.1'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									2	9	5					6	15	3						
MED									245	246	260					247	240	240						
U Q									246	260	279					252	264	328						
L Q									244	241	245					240	238	230						

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	9	8	12	12	9	4	3	3	15	12	19	15	24	24	23	25	24	24	22	22	14	12	11	11
MED	101	96	97	97	97	95	97	103	145	125	137	111	109	107	105	103	101	99	95	96	98	97	97	95
U Q	104	98	99	101	105	99	103	167	161	149	161	121	118	121	111	109	103	103	97	103	103	104	101	103
L Q	95	94	96	96	97	92	95	95	115	110	113	105	106	105	103	103	98	95	93	95	95	94	95	93

MONTHLY MEDIANS OF h'F AND h'Es

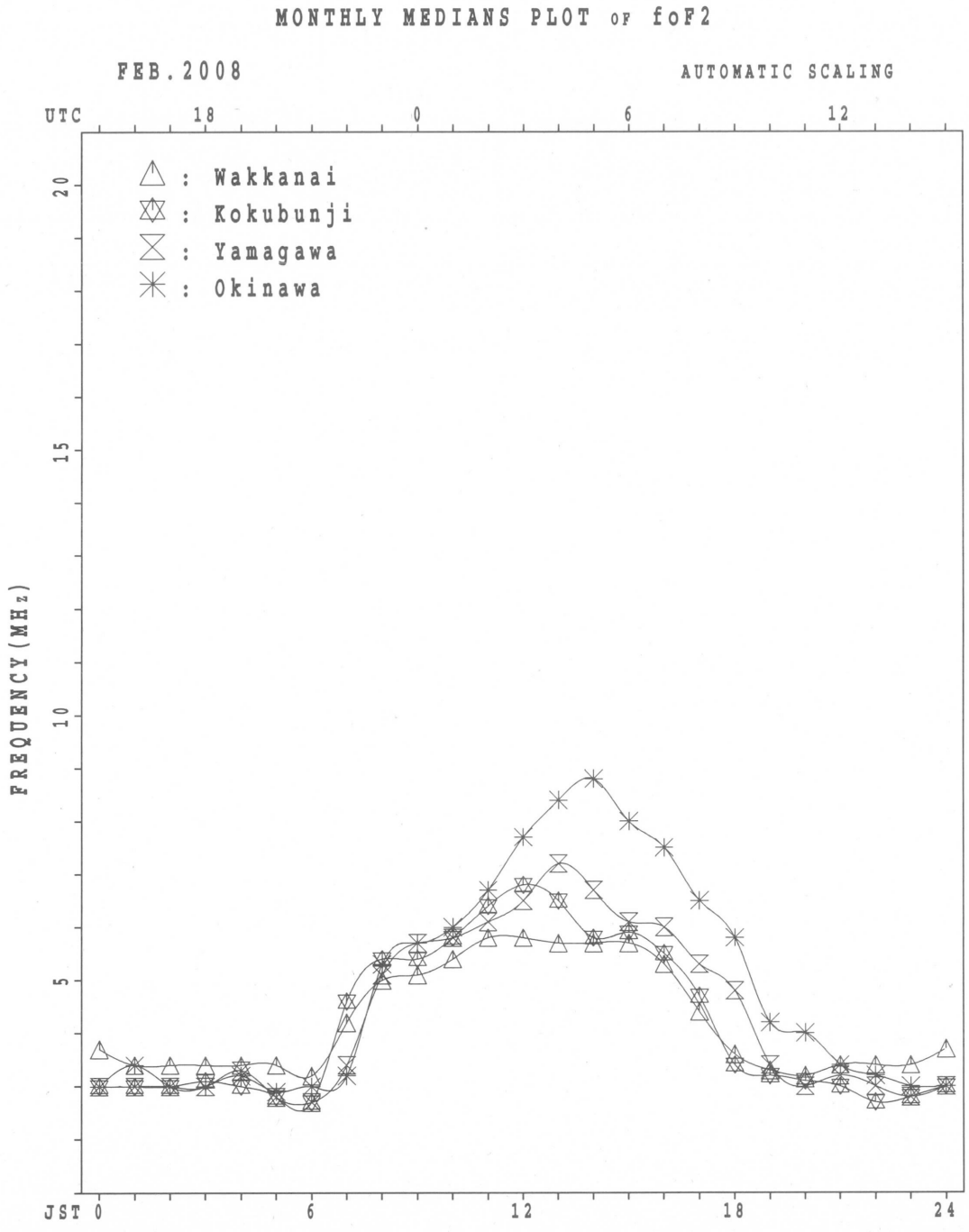
FEB.2008 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION Okinawa LAT. 26°40.5'N LON. 128°09.2'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									4	10	8						23	16	8	1	1			
MED									237	253	274						238	236	219	206	248			
U Q									244	284	279						256	242	229	103	124			
L Q									231	236	257						230	224	210	103	124			

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	8	8	8	8	9	8	4	7	9	10	11	13	21	19	19	16	22	19	20	13	13	12	9	7
MED	96	100	101	95	97	96	94	95	119	141	131	115	111	109	103	103	103	97	99	97	101	98	101	99
U Q	105	108	105	102	103	100	97	137	150	151	183	129	119	113	111	105	107	103	101	113	104	99	105	103
L Q	92	97	95	94	96	93	89	93	104	113	113	110	106	105	99	102	99	95	94	95	97	96	96	89


MONTHLY MEDIANS PLOT OF foF2
FEB. 2008
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Wakkanai
✡ : Kokubunji
⧖ : Yamagawa
✳ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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	34	X 28	X 29	X 33	X 27	X 23	X 26					C		C	C				X 46	X 49	X 38	X 33	X 32	42
2	38	40	45	56	49	38	X 36												X 36	X 34	X 38	X 36	43	X 42
3	46	43	48	45	X 27	29	X 28												X 39	X 37	X 36	X 37	X 34	X 36
4	X 41	X 38	X 41	X 43	X 32	X 27	X 28			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		X 34	X 32	X 34	X 27	X 32	X 31
6	33	X 33	X 33	X 35	X 33	X 25	37												X 38	X 34	X 39	X 33	X 34	38
7	36	38	40	43	36	33	36												X 43	X 45	X 47	X 46	X 31	X 31
8	X 33	X 34	X 34	X 33	X 32	X 33	X 26												A	X 31	X 36	X 40	X 34	35
9	X 32	X 31	X 33	X 34	X 35	X 28	30												X 36	A	X 39	X 39	A	A
10	A	X 34	X 35	X 36	X 35	X 34	X 32												X 39	X 42	X 43	X 31	X 31	X 32
11	X 33	X 34	X 34	X 36	X 33	X 32	X 30												X 39	X 35	X 38	X 37	X 43	X 40
12	X 43	X 43	X 42	X 44	X 35	X 36	X 34			C									X 47	A	A	X 36	X 34	X 36
13	X 36	X 36	X 36	X 42	X 39	X 34	X 31												X 40	X 40	X 42	X 34	X 29	X 30
14	A	X 33	X 33	X 33	X 37	X 37	X 30												X 42	X 40	X 42	X 38	X 34	X 31
15	X 33	A	X 35	X 36	X 35	X 30	X 27												X 44	X 39	X 35	X 32	X 33	X 33
16	X 32	X 34	X 35	X 39	X 32	X 24	X 27												X 37	X 39	X 33	A	X 37	34
17	X 36	X 33	X 33	X 33	X 35	X 32	X 33												X 40	X 35	X 36	X 37	X 40	X 38
18	X 36	X 36	X 36	X 36	X 37	X 34	X 35								C	C	C		A	X 36	X 40	X 39	X 38	X 37
19	X 38	X 36	X 37	X 38	X 36	X 23	X 29												X 50	A	X 37	O X 42	X 38	X 36
20	X 36	X 38	X 38	X 38	X 40	33	X 33												X 42	X 38	X 35	X 36	X 37	X 39
21	X 39	X 38	X 38	X 38	X 38	X 32	X 32												X 36	X 30	X 39	X 34	X 36	X 36
22	X 36	X 35	X 35	X 34	X 28	X 27	X 32												X 40	X 41	X 37	X 37	X 39	X 37
23	X 34	X 36	X 38	X 40	X 46	X 30	X 33												X 39	X 35	A	X 34	X 36	X 34
24	X 32	X 33	X 32	X 33	X 33	X 28	X 28												X 48	X 32	X 35	X 35	X 34	X 36
25	X 34	X 33	X 34	X 34	X 37	X 30	X 32												X 49	X 39	X 33	X 32	34	36
26	40	44	X 42	X 41	X 38	X 28	X 32												A	X 46	X 30	X 26	X 30	32
27	32	X 29	X 30	X 29	X 29	X 28	X 30												X 52	X 37	X 33	X 32	X 35	44
28	46	45	48	45	X 31	X 24	X 34												X 55	X 36	X 35	X 32	X 32	X 34
29	X 36	X 35	X 35	X 35	X 38	X 37													X 76	X 54	X 46	X 40	X 40	X 41
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	28	28	28	28	27												25	25	26	27	27	27
MED	X 36	X 35	X 35	X 36	X 35	X 30	X 32												X 40	X 37	X 37	X 36	X 34	X 36
U Q	X 38	38	39	42	X 38	X 34	X 33												X 48	X 40	X 39	X 38	X 38	X 38
L Q	X 33	X 33	X 34	X 34	X 32	X 28	X 28												X 38	X 34	X 35	X 32	X 32	X 33

FEB. 2008 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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	22	23	27	21	17	20	36	45	46	53	C	77	C	C	53	54	45	40	43	32	27	26	F
2	F	F	F	F	F	F	30	36	44	45	53	75	70	60	57	53	56	44	30	28	32	30	F	36
3	F	F	F	F	21	F	22	44	46	52	56	64	79	61	59	67	54	46	33	31	30	30	28	30
4	35	32	35	37	26	21	22	42	49	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	55	28	26	28	21	26	25
6	F	27	26	29	27	19	F	46	53	49	50	55	68	76	59	49	48	45	32	28	32	27	27	F
7	F	F	F	F	F	F	F	48	53	50	53	58	59	59	58	56	52	45	37	39	41	40	25	25
8	27	28	27	27	26	26	20	44	50	53	52	52	63	64	56	52	46	48	A	25	30	34	28	F
9	26	25	27	28	29	22	F	42	55	52	56	49	A	60	56	56	61	41	30	A	33	32	A	A
10	A	28	29	30	29	28	26	42	46	52	64	61	67	55	53	55	52	43	32	36	37	25	25	26
11	26	28	28	30	27	25	24	52	59	72	84	76	60	66	56	59	53	45	32	29	31	31	37	34
12	37	36	36	38	29	30	28	45	52	C	62	64	78	90	68	57	52	59	41	A	A	29	28	30
13	30	30	30	36	33	28	25	42	51	56	61	61	72	64	57	60	58	52	34	33	36	28	23	23
14	A	27	27	27	31	31	24	45	H 52	54	57	65	82	74	64	55	53	41	36	34	36	32	27	25
15	27	A	28	30	29	24	21	44	54	53	58	70	54	A	61	56	54	52	38	33	29	26	27	27
16	26	28	29	33	26	18	21	42	48	50	51	62	61	61	62	64	53	45	30	33	27	A	31	F
17	30	27	27	27	29	25	27	45	51	52	50	60	64	55	56	52	51	45	34	29	30	31	33	31
18	30	30	30	30	30	28	29	48	54	62	57	55	58	60	C	C	C	42	A	30	34	33	32	31
19	32	30	30	32	29	17	23	44	58	70	78	60	68	69	71	63	56	50	44	A	31	36	32	31
20	30	32	32	32	34	F	27	47	54	64	73	72	72	62	59	64	57	57	36	32	29	30	31	33
21	32	32	32	32	32	26	26	47	57	68	62	74	71	66	58	60	52	48	30	24	33	28	30	30
22	30	29	29	28	22	21	26	52	53	54	58	71	76	68	62	56	53	48	34	35	31	31	33	30
23	28	30	32	34	40	24	27	46	54	53	62	65	77	74	63	58	56	50	33	28	A	28	30	28
24	26	27	26	27	27	22	22	46	51	56	60	72	72	72	73	61	50	48	42	26	29	29	28	30
25	28	26	28	28	31	24	26	45	53	50	55	63	66	67	58	54	54	49	42	33	27	26	F	F
26	F	F	36	35	32	22	25	46	52	56	54	54	60	54	57	59	55	A	A	40	24	20	24	F
27	F	22	24	22	23	22	24	45	52	55	52	56	54	54	55	59	55	52	46	30	27	26	29	F
28	F	F	F	F	24	18	28	50	53	58	58	A	A	72	85	97	80	62	48	30	28	26	26	28
29	30	29	29	29	32	32	28	47	50	58	58	67	78	94	84	66	68	62	70	48	40	34	34	35
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	22	24	24	26	24	25	28	28	26	27	25	25	25	25	26	26	27	25	25	26	27	25	20
MED	30	28	29	30	29	24	25	45	52	54	57	63	68	64	59	58	54	48	34	31	31	29	28	30
U Q	30	30	31	32	31	27	27	47	54	58	62	70	76	72	64	61	56	52	42	34	33	32	32	31
L Q	27	27	27	28	26	21	22	43	50	52	53	57	60	60	56	55	52	45	32	28	29	26	26	26

FEB. 2008 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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											392	C	U L 416	C	C	L								
2											L	U L 412	U L 416	L	U L 380	L								
3										L	L	E A	U L 400	L	U L 404	L								
4										C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5								C	C	C	C	C	C	C	C	C	C							
6									L	L	U L 412	U L 420	E A	E A	U L 404	L	L							
7											L	U L 424	U L 416	L	L	L								
8										L	L	U L 432	E A	L	L	E A								
9										L	L	L	A	U L 408	L	E A	E A							
10										L	E A	E A	U L 416	E A	U L 400	L	L							
11									L	L	E A	E A	L	U L 404	L	L								
12										C	E A	E A	E A	U L 412	L	L								
13										L	L	E A	L	E A	L	L	L							
14										L	L	U L 424	E A	U L 412	L	E A								
15										L	U L 408	E A	U L 416	A	E A	E A								
16									L		E A	E A	E A	E A	L	L								
17											L	E A	E A	E A	L	L								
18								L	L	U L 404	U L 424	U L 404	U L 420	U L 408	C	C	C							
19										L	408	E A	E A	E A	E A	E A								
20										U L 404	U L 408	U L 416	U L 432	E A	L	E A								
21									L	L	U L 412	U L 436	L	E A	E A	L								
22										U L 372	U L 416	U L 432	E A	U L 420	L	L								
23								L	L	L	420	428	E A	416	U L 412	L	L							
24									L	L	416	420	E A	E A	U L 408	E A	E A							
25									L	U L 388	U L 424	U L 428	U L 420	416	U L 408	L								
26									L	L	420	U L 440	E A	420	U L 400	E A	E A	A						
27									L	L	U L 412	E A	U L 436	U L 404	U L 420	E A								
28										L	U L 412	A	A	U L 420	404	E A								
29										E A	E A	E A	L	U L 432	E A	E A								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										4	14	13	10	12	10									
MED										U L 396	U L 412	U L 424	U L 416	U L 414	U L 404									
U Q										U L 404	420	U L 432	U L 420	U L 420	U L 408									
L Q										U L 380	408	U L 418	U L 416	U L 408	U L 400									

FEB. 2008 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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 224		A	A	C	R	C	C	248		A	B					
2								B 224	260	292		A	A	304	R	U R 260		A	B					
3								B 208	256	284		A	A	A	A	272	220		B					
4								B 208		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5								C	C	C	C	C	C	C	C	C	C	B						
6								B 220		A	R	A	A	A	A	A	220	B						
7								B	A	A	A	A	A	A	R	A	A	B						
8								B	U R 248	U R 288	U A 292	A	U A 308	A	A	A	A	B						
9								B 244		A	A	U A 316	A	A	A	288	U A 216	U A 172						
10								B	A	280	A	A	A	A	U A 288	A	A	B						
11								B	A	A	A	A	A	A	A	A	U R 220	B						
12								B 240		C	A	A	A	A	A	A	U R 228	B						
13								172	U R 248	U R 276	U R 300	A	A	A	A	A	A	B						
14								B 232	280	292		A	A	U R 320	A	A	A	B						
15								176	A	A	A	A	A	A	A	A	A	B						
16								B 236	276	296		A	A	A	A	A	A	B						
17								A	A	A	300	316	A	A	A	A	A	B						
18								B 236	U R 276	U R 304	R	308	A	C	C	C	B							
19								164	220	284	R	348	340	U A 308	292	U A 264	A	B						
20								B 244	276	324	340	A	328	296	272	U A 228	B							
21								B	R	R	R	R	R	316	300	280	240	B						
22								B 248		R	R	336	A	A	A	U R 280	U R 228	B						
23								U R 188	248	292	R	332	A	A	A	A	U R 236	B						
24								U R 192	U R 252	R	304	324	356	A	A	A	A	B						
25								176	U R 252	280	U R 304	316	328	308	316	A	244	204						
26								180	248	292	328	328	368	U A 312	A	U A 276	A	A						
27								172	U R 256	R	R	344	A	A	A	A	A	B						
28								172	248	304	316	A	A	A	312	A	A	B						
29							B	184	272		A	A	A	A	A	A	A	A						
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								10	22	14	13	10	6	7	6	9	10	2						
MED								176	244	280	300	330	334	312	298	272	U 228	188						
U Q								U R 184	U R 248	288	310	340	356	320	312	280	236							
L Q								172	224	276	292	316	308	308	292	U 262	220							

FEB. 2008 foE (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	J A 27	J A 20	E B 15	19	E B 15	E B 15	J A 21	26	J A 31	J A 34	C	G 27	C	C	28	J A 29	J A 28	J A 31	J A 32	J A 18	20	E B 15	E B 15
2	E B 16	E B 14	E B 14	20	21	J A 18	23	22	27	30	34	36	34	33	G 20	G 21	24	21	J A 20	E B 15	E B 16	19	20	E B 15
3	E B 15	E B 15	E B 14	18	E B 15	E B 15	E B 13	24	26	33	37	J A 56	36	36	30	31	G	J A 25	20	E B 15	E B 15	E B 15	E B 14	E B 15
4	J A 17	20	J A 17	J A 33	20	19	J A 20	20	26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	J A 31	J A 24	E B 16	E B 15	E B 14	E B 14	J A 23
6	21	20	J A 24	J A 21	20	J A 22	J A 24	E B 15	J A 24	J A 30	J A 31	J A 42	J A 48	J A 45	J A 35	J A 32	G 20	E B 16	E B 15	E B 15	E B 15	J A 34	J A 24	E B 15
7	E B 15	20	20	E B 15	E B 15	J A 18	J A 22	J A 23	J A 28	J A 34	J A 41	J A 37	J A 37	J A 35	G 24	J A 32	J A 36	J A 26	J A 59	J A 27	J A 23	J A 20	J A 25	J A 24
8	J A 24	J A 20	21	E B 16	E B 15	E B 15	J A 42	J A 18	G	G 22	33	36	40	35	J A 43	J A 53	J A 34	J A 27	J A 34	J A 21	J A 21	23	J A 33	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	20	22	28	30	35	37	J A 55	J A 45	J A 38	35	35	23	J A 20	J A 30	J A 35	J A 25	J A 49	J A 46
10	J A 29	J A 23	J A 28	19	22	19	22	J A 24	J A 34	35	J A 41	41	38	J A 41	33	30	24	E B 14	E B 15	E B 15	E B 15	18	20	E B 15
11	E B 15	E B 15	20	J A 31	J A 18	J A 20	21	20	J A 30	34	J A 41	J A 39	37	36	J A 33	J A 30	G 19	J A 32	J A 30	J A 23	21	20	J A 26	J A 32
12	J A 24	J A 29	E B 15	J A 23	J A 20	20	20	E B 15	G	C	J A 52	J A 46	J A 68	J A 46	J A 44	28	J A 29	J A 21	J A 30	J A 47	J A 52	J A 30	J A 19	J A 22
13	J A 36	20	21	21	E B 14	E B 15	E B 14	G	G	G 21	G 23	J A 47	J A 42	J A 83	J A 54	31	J A 29	J A 39	J A 24	21	22	J A 38	J A 23	20
14	J A 39	J A 20	19	J A 20	21	E B 15	20	E B 16	28	32	33	38	J A 43	G 25	J A 32	J A 44	J A 33	J A 23	22	22	20	E B 14	E B 14	J A 64
15	J A 29	J A 51	J A 31	J A 19	22	22	21	G	J A 31	31	J A 55	36	36	J A 77	J A 48	J A 42	J A 44	J A 32	J A 23	E B 15	J A 30	J A 42	J A 23	E B 15
16	J A 19	E B 15	J A 22	J A 19	18	E B 15	E B 15	E B 15	28	34	40	J A 53	J A 60	J A 46	37	J A 33	J A 28	20	J A 19	19	J A 20	J A 76	J A 32	J A 28
17	J A 46	J A 19	J A 22	J A 20	J A 20	22	J A 41	J A 37	J A 54	J A 40	36	40	J A 46	J A 43	J A 38	J A 36	J A 32	20	20	20	J A 34	J A 31	20	E B 16
18	21	J A 20	J A 18	20	E B 15	E B 14	J A 18	21	G	G 23	G 26	G 23	40	36	C	C	C	J A 43	J A 45	23	J A 28	J A 20	19	J A 22
19	J A 18	E B 16	18	21	E B 15	E B 14	20	21	26	32	G 26	43	43	J A 46	40	J A 43	J A 40	J A 35	J A 33	J A 34	J A 46	J A 38	21	J A 19
20	19	20	22	19	E B 15	E B 15	E B 16	22	G 20	32	37	39	39	40	38	34	30	24	20	J A 22	21	E B 15	E B 22	E B 14
21	J A 23	J A 21	J A 23	20	J A 18	19	E B 14	E B 18	G 20	G 26	G 28	G 26	G 28	40	36	32	30	20	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15
22	E B 16	E B 15	J A 18	E B 14	E B 15	E B 15	E B 15	23	28	G 22	G 24	39	J A 46	35	35	G 26	G 21	21	25	19	E B 16	21	E B 16	18
23	E B 16	E B 15	E B 15	E B 15	E B 14	E B 16	E B 15	G	G 20	G 24	G 28	37	41	40	36	32	G	22	21	19	J A 32	22	E B 15	E B 15
24	18	19	E B 15	E B 16	19	18	E B 15	G	G 20	G 25	37	40	40	40	38	J A 39	J A 41	J A 24	J A 24	20	21	E B 16	E B 14	E B 15
25	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	19	22	G	G 23	G 24	40	40	38	37	35	28	24	E B 15	E B 16	J A 22	J A 17	E B 16	E B 16
26	20	21	E B 16	E B 15	E B 15	E B 15	E B 14	22	29	33	38	G 24	41	40	37	37	J A 52	J A 60	J A 60	J A 46	J A 43	20	20	E B 15
27	20	J A 30	E B 15	E B 15	J A 28	20	21	21	G 19	G 22	G 24	40	41	37	36	J A 42	J A 35	J A 23	20	22	E B 15	19	E B 16	E B 15
28	E B 15	E B 15	E B 15	E B 15	E B 15	21	19	21	28	34	38	J A 62	J A 99	36	35	J A 39	J A 34	J A 50	J A 32	J A 44	J A 46	J A 34	18	J A 29
29	J A 19	J A 22	21	J A 18	J A 32	23	E B 15	27	33	J A 47	J A 52	41	41	38	J A 43	J A 46	J A 38	J A 49	J A 44	J A 45	E B 16	J A 30	J A 30	J A 26
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	27	26	27	26	25	26	26	28	28	28	28	28	28	28
MED	19	20	18	19	18	17	20	21	26	31	35	40	41	40	37	34	J A 30	J A 24	J A 24	21	21	20	20	E B 16
U Q	J A 24	J A 21	J A 22	J A 20	20	20	21	22	J A 28	34	J A 40	J A 42	J A 46	J A 45	J A 39	J A 39	J A 35	J A 32	J A 32	J A 28	J A 31	J A 30	J A 24	J A 24
L Q	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G 24	G 28	37	37	36	34	31	G 24	21	20	E B 16	E B 16	E B 18	E B 16	E B 15

FEB. 2008 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	E B 16	E B 14	E B 15	16	E B 15	E B 15	18	24	28	32	C	G 21	C	C	27	23	20	19	20	E B 15	E B 15	E B 15	E B 15
2	E B 16	E B 14	E B 14	E B 15	E B 15	E B 15	E B 15	20	27	29	32	34	33	32	G 19	G 20	23	18	16	E B 15	E B 16	E B 15	E B 15	E B 15
3	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	E B 13	21	24	32	36	52	32	32	28	30	G	18	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15
4	E B 15	E B 15	15	17	E B 15	E B 15	E B 15	19	26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	17	16	E B 16	E B 15	E B 14	E B 14	E B 15
6	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G 18	26	23	37	42	39	30	29	G 20	E B 16	E B 15	E B 15	E B 15	16	E B 16	E B 15
7	E B 15	E B 15	E B 15	E B 15	E B 15	16	E B 15	18	24	30	32	32	33	31	G 24	29	27	20	19	16	16	E B 15	17	18
8	16	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	17	G	G 20	31	34	38	31	33	40	31	24	A A 34	18	16	18	E B 15	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	19	25	29	32	34	A A 55	34	34	34	33	21	16	A A 30	26	19	A A 49	A A 46
10	A A 29	16	E B 15	E B 15	E B 15	16	16	19	30	34	38	38	37	37	32	29	22	E B 14	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15
11	E B 15	E B 15	E B 15	E B 15	16	E B 15	E B 15	18	26	32	37	37	35	33	32	29	G 17	16	17	17	E B 15	E B 16	17	16
12	16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	C	39	40	52	33	31	27	G 20	17	22	A A 47	A A 52	22	E B 16	18
13	E B 15	E B 15	16	15	E B 14	E B 15	E B 14	G	G	G 20	G 22	41	34	40	33	30	23	21	16	E B 15	E B 15	20	16	E B 15
14	A A 39	E B 15	E B 16	E B 15	E B 15	E B 15	16	E B 16	27	30	32	36	38	G 24	29	29	28	18	E B 15	E B 15	E B 16	E B 14	E B 14	E B 16
15	E B 15	A A 51	E B 15	E B 16	E B 15	E B 15	E B 16	G	23	28	33	34	32	A A 77	40	35	37	26	16	E B 15	E B 16	20	16	E B 15
16	E B 15	E B 15	E B 15	16	E B 15	E B 15	E B 15	E B 15	26	30	38	49	54	43	34	30	24	18	E B 16	E B 15	17	A A 76	18	16
17	16	E B 15	E B 15	17	E B 15	E B 15	E B 16	28	29	33	34	40	44	39	34	33	28	19	E B 15	E B 15	E B 15	E B 16	E B 15	E B 16
18	E B 15	16	E B 15	E B 16	E B 15	E B 14	E B 16	18	G	G 22	G 24	G 22	37	34	C	C	C	36	A A 45	E B 15	22	E B 15	E B 15	E B 15
19	16	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	21	25	30	G 25	42	41	43	38	40	34	32	23	A A 34	26	16	E B 15	E B 15
20	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	20	G 20	29	36	38	37	37	35	31	27	22	E B 15	16	E B 15	E B 15	19	E B 14
21	18	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14	E B 18	G 20	G 24	G 25	G 24	G 28	39	34	32	28	19	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15
22	E B 16	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	23	27	G 21	G 21	37	42	34	32	G 26	G 20	19	19	E B 15	E B 16	E B 16	E B 16	E B 16
23	E B 16	E B 15	E B 15	E B 15	E B 14	E B 16	E B 15	G	G 19	G 24	G 23	35	38	37	34	30	G	19	16	18	A A 32	E B 15	E B 15	E B 15
24	E B 15	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15	G	G 19	G 22	36	37	38	39	36	36	36	22	20	E B 15	E B 15	E B 16	E B 14	E B 15
25	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	E B 15	20	G	G 20	G 22	38	38	36	35	32	26	22	E B 15	E B 16	16	E B 15	E B 16	E B 16
26	E B 16	16	E B 16	E B 15	E B 15	E B 15	E B 14	21	27	32	38	G 23	40	38	35	36	48	A A 60	A A 60	20	18	E B 15	E B 16	E B 15
27	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 18	G 22	G 21	39	39	34	34	36	31	19	E B 15	E B 15	E B 15	E B 14	E B 16	E B 15
28	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	26	33	37	A A 62	A A 99	33	34	36	31	36	28	22	20	E B 15	E B 15	20
29	E B 15	E B 15	E B 15	E B 16	18	E B 15	E B 15	26	32	44	44	38	38	36	37	43	32	45	34	36	E B 16	E B 15	18	19
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	27	26	27	26	25	26	26	28	28	28	28	28	28	28
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	24	29	32	37	38	36	34	30	27	20	16	E B 16	E B 16	E B 15	E B 16	E B 15
U Q	16	16	E B 15	E B 16	E B 15	E B 15	E B 15	20	26	32	37	40	42	39	35	36	31	23	21	19	18	16	16	16
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G 22	G 24	34	34	33	32	29	G 22	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

FEB. 2008 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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	16	14	15	15	15	15	15	13	13	12	C	12	C	C	13	13	15	14	14	15	15	15	15
2	16	14	14	15	15	15	15	14	15	14	14	14	14	15	14	15	13	14	16	15	16	15	15	15
3	15	15	14	15	15	15	13	14	14	14	14	13	15	14	14	13	14	14	16	15	15	15	14	15
4	15	15	15	15	15	15	15	16	14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14	15	16	15	14	14	15
6	15	15	15	15	15	15	15	15	13	14	12	13	14	15	14	14	14	16	15	15	15	15	16	15
7	15	15	15	15	15	15	15	15	13	13	15	14	12	16	13	14	14	14	15	15	15	15	15	14
8	16	15	15	16	15	15	15	14	14	13	17	13	16	16	14	14	14	14	15	15	13	15	15	15
9	15	15	15	15	15	14	15	15	14	15	14	13	14	14	13	13	13	12	15	15	15	15	16	16
10	15	15	15	15	15	14	14	14	15	14	15	13	12	14	13	14	13	14	15	15	15	16	15	15
11	15	15	15	15	15	16	15	15	15	14	14	13	12	14	16	13	13	14	15	15	15	16	15	14
12	15	15	15	15	15	15	15	15	14	C	13	15	12	14	13	13	13	14	16	14	14	14	16	15
13	15	15	15	14	14	15	14	15	14	13	13	14	15	15	14	15	14	15	16	15	15	14	15	15
14	15	15	16	15	16	15	15	16	14	14	16	14	12	14	14	14	14	15	15	15	16	14	14	16
15	15	15	15	16	15	15	16	15	16	14	14	14	12	13	14	14	15	14	16	15	16	16	16	15
16	15	15	15	16	15	15	15	15	14	15	13	14	14	14	15	14	15	14	16	16	15	14	15	15
17	15	15	15	14	15	15	16	15	14	14	14	14	14	14	14	15	14	12	15	15	15	16	15	16
18	15	16	15	16	15	14	16	16	13	14	16	13	14	14	C	C	C	14	14	15	14	15	15	15
19	16	16	15	15	15	14	15	13	14	11	14	13	14	13	14	14	14	13	14	16	15	15	15	15
20	15	15	15	15	15	15	16	14	13	13	14	14	14	14	13	12	13	15	15	16	15	15	15	14
21	14	16	15	15	15	15	14	18	14	17	14	17	21	16	13	16	15	15	15	15	15	15	16	15
22	16	15	15	14	15	15	15	15	15	15	13	15	18	15	14	14	15	14	15	15	16	16	16	16
23	16	15	15	15	14	16	15	15	13	17	14	13	15	15	16	13	14	14	16	14	14	15	15	15
24	15	16	15	16	15	15	15	14	13	15	12	14	14	14	14	15	14	12	14	15	15	16	14	15
25	15	14	15	15	14	15	15	14	15	15	14	14	12	18	15	14	14	15	15	16	16	15	16	16
26	16	15	16	15	15	15	14	14	14	14	15	16	16	13	14	13	15	14	14	14	14	15	16	15
27	15	16	15	15	15	15	15	13	14	14	14	14	15	14	13	14	14	14	15	15	15	14	16	15
28	15	15	15	15	15	15	15	13	15	15	14	13	14	14	14	14	14	13	15	15	15	14	15	15
29	15	16	15	16	14	15	15	14	14	14	15	18	16	15	13	14	14	14	14	15	16	15	15	15
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	27	26	27	26	25	26	26	28	28	28	28	28	28	28
MED	15	15	15	15	15	15	15	15	14	14	14	14	14	14	14	14	14	14	15	15	15	15	15	15
U Q	15	16	15	15	15	15	15	15	14	15	15	14	15	15	14	14	14	14	16	15	15	15	16	15
L Q	15	15	15	15	15	15	15	14	14	14	13	13	12	14	13	13	13	14	15	15	15	14	15	15

FEB. 2008 fmin (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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	324	312	361	391	302	352	385	386	363	345	C	370	C	C	352	381	361	345	367	338	321	307	F
2	F	F	F	F	F	F	343	386	388	370	347	354	368	379	352	361	365	382	348	324	336	335	F	313
3	F	F	F	F	348	F	311	368	356	364	356	340	376	377	340	373	377	374	351	334	311	342	301	295
4	313	325	330	358	407	302	323	363	378	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	393	370	318	365	359	318	313
6	F	316	308	333	430	354	F	379	385	362	343	337	361	384	379	397	378	386	351	338	329	339	320	F
7	F	F	F	F	F	F	F	376	391	364	369	348	362	372	371	378	387	386	334	343	346	374	364	308
8	321	328	333	345	343	400	333	374	388	353	370	324	350	355	390	386	371	386	A	327	332	359	320	F
9	313	309	305	351	377	338	F	367	379	378	386	367	A	361	381	376	376	386	332	A	356	372	A	A
10	A	319	320	326	363	392	335	375	352	336	366	375	375	362	380	391	383	406	324	335	374	340	287	285
11	308	330	328	331	319	317	325	374	349	343	359	370	392	365	362	378	378	382	354	331	353	298	317	305
12	326	323	340	361	330	319	347	392	375	C	379	350	333	369	383	366	341	379	365	A	A	357	298	314
13	311	311	300	325	355	338	346	383	377	376	373	362	353	373	369	363	380	384	352	335	375	358	328	333
14	A	311	296	320	337	364	308	402	H 340	370	345	339	358	370	373	383	392	389	347	335	366	351	352	304
15	300	A	342	332	333	403	317	358	357	362	344	391	360	A	367	360	378	374	356	358	339	345	327	323
16	292	309	330	368	385	330	340	382	369	368	345	365	372	354	369	377	389	411	356	359	344	A	320	F
17	311	295	322	357	380	352	326	369	370	386	362	361	371	371	368	390	375	385	356	329	319	328	326	333
18	321	329	342	334	348	337	348	384	370	384	373	359	360	370	C	C	C	383	A	334	333	327	315	314
19	309	313	334	347	392	271	317	376	345	349	361	344	319	367	375	381	396	388	363	A	313	339	322	319
20	309	308	322	352	396	F	331	372	377	353	372	361	350	368	351	376	387	391	357	355	339	339	336	313
21	293	313	329	344	368	334	341	379	362	372	341	375	363	365	365	369	399	382	359	372	348	324	301	307
22	323	340	333	374	327	325	351	392	395	371	338	355	357	362	354	380	371	390	337	355	332	335	330	314
23	278	310	333	337	370	351	353	389	375	363	336	335	347	362	364	371	382	397	367	338	A	327	317	295
24	282	312	327	354	361	399	349	387	388	349	336	339	338	337	360	383	375	381	393	341	337	343	325	314
25	299	307	334	346	374	370	347	379	379	330	338	337	344	361	368	366	373	379	373	394	364	297	F	F
26	F	F	337	344	369	328	348	374	367	347	352	325	366	330	367	369	373	A	A	388	400	327	336	F
27	F	301	315	363	355	362	362	386	376	390	363	387	352	353	354	365	366	383	382	350	383	304	324	F
28	F	F	F	F	366	349	342	385	372	360	349	A	A	315	327	358	358	381	387	349	338	321	281	298
29	312	311	297	315	337	403	332	386	380	351	351	340	310	349	366	352	367	341	354	381	333	307	301	300
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	22	24	24	26	24	25	28	28	26	27	25	25	25	25	26	26	27	25	25	26	27	25	20
MED	310	312	328	346	364	344	341	379	376	363	352	354	360	365	367	374	378	384	356	341	339	339	320	313
U Q	313	324	334	358	380	367	348	386	382	371	369	366	369	370	374	381	383	389	366	358	364	351	328	314
L Q	299	309	314	332	343	326	326	374	364	351	344	339	348	354	357	365	371	381	348	334	333	324	304	302

FEB. 2008 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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											397	C	U L 385	C	C	L								
2											L	U L 378	U L 385	L	U L 394	L								
3										L	L	E A	U L 404	L	U L 401	L								
4										C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5								C	C	C	C	C	C	C	C	C	C							
6									L	L	U L 389	U L 385	E A	E A	U L 395	L	L							
7											L	U L 385	U L 399	L	L	L								
8										L	L	U L 381	E A	L	L	E A								
9										L	L	L	A	U L 386	L	E A	E A							
10										L	E A	E A	U L 389	E A	U L 411	L	L							
11									L	L	E A	E A	L	U L 397	L	L								
12										C	E A	E A	E A	U L 401	L	L								
13										L	L	E A	L	E A	L	L	L							
14										L	L	U L 373	E A	U L 393	L	E A								
15										L	U L 407	E A	U L 407	A	E A	E A								
16									L		E A	E A	E A	E A	L	L								
17											L	E A	E A	E A	L	L								
18								L	L	U L 391	U L 401	U L 432	U L 398	U L 413	C	C	C							
19										L	439	E A	E A	E A	E A	E A								
20										U L 385	U L 389	U L 414	U L 379	E A	L	E A								
21									L	L	U L 420	U L 370	L	E A	E A	L								
22										U L 420	U L 396	U L 389	E A	U L 388	L	L								
23								L	L	L	389	392	E A	395	U L 397	L	L							
24									L	L	393	400	E A	E A	U L 374	E A	E A							
25									L	U L 437	U L 390	U L 389	U L 392	392	U L 387	L								
26									L	L	388	U L 406	E A	404	U L 396	E A	E A	A						
27									L	L	U L 397	E A	U L 396	U L 394	U L 382	E A								
28										L	U L 383	A	A	U L 394	380	E A								
29										E A	E A	E A	L	U L 371	E A	E A								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										4	14	13	10	12	10									
MED										U L 406	U L 394	U L 389	U L 394	U L 394	U L 394									
U Q										U L 428	U L 401	U L 403	U L 399	U L 399	U L 397									
L Q										U L 388	389	U L 380	U L 385	U L 390	U L 382									

FEB. 2008 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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											284	C	238	C	C	240								
2											272	254	236	230	262	238								
3										266	266	E A 274	248	238	262	228								
4										C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5								C	C	C	C	C	C	C	C	C	C							
6									224	254	268	294	254	230	232	224	228							
7											252	268	250	236	248	228								
8										262	248	310	248	254	230	230								
9										230	242	256	A	254	242	242	226							
10										284	246	238	242	234	244	234	222							
11									264	264	230	230	230	250	244	236								
12										C	254	264	264	224	228	238								
13										240	232	260	250	240	252	244	226							
14										256	270	282	252	236	238	218								
15										230	260	232	264	A	244	248								
16									234		272	250	252	264	246	238								
17											256	252	238	246	242	236								
18								226	226	232	240	248	262	238	C	C	C							
19										252	230	276	286	244	238	228								
20										254	230	250	256	228	266	230								
21									236	232	258	234	244	250	240	232								
22										250	274	254	248	250	250	230								
23								216	242	242	294	284	248	248	244	232	224							
24									240	258	284	266	270	254	246	222	214							
25									234	282	276	280	280	252	256	244								
26									240	260	276	312	266	302	262	242	244	A						
27									244	234	262	238	286	278	272	246								
28										252	278	A	A	286	284	240								
29										250	254	268	300	252	236	250								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	10	21	27	25	25	25	25	26	7							
MED								221	238	252	260	258	252	248	244	236	226							
U Q									242	261	274	278	265	254	259	242	228							
L Q									234	237	246	249	246	236	239	230	222							

FEB. 2008 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 252	E B 314	E B 278	218	204	E B 358	242	204	208	210	202	C	E A 220	C	C	188	208	218	220	210	208	212	E B 286	E B 264
2	E B 274	E B 262	E B 298	220	192	E B 264	228	208	212	218	228	234	212	202	196	206	206	186	212	E B 246	232	230	240	234
3	E B 312	E B 254	236	192	204	E B 272	E B 278	220	222	236	238	A	198	208	182	220	H 194	212	216	214	E B 250	220	E B 288	E B 280
4	E B 246	E B 256	236	224	190	E B 308	E B 272	214	220	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	210	200	240	216	228	E B 258	E B 280
6	E B 288	E B 276	E B 276	232	184	E B 280	230	208	196	194	192	E A 236	A	A	194	194	188	200	198	202	220	224	240	E B 300
7	E B 278	E B 268	E B 272	222	204	E A 254	E B 246	210	214	218	212	208	202	208	200	198	206	208	224	224	210	202	220	E A 314
8	E A 272	E B 262	E B 256	226	234	208	E B 254	208	208	216	204	202	A	212	204	A	218	204	A	E A 276	E A 250	218	E B 248	E B 274
9	E B 280	E B 278	E B 262	214	206	174	E B 272	220	214	198	210	206	A	214	218	A	A	202	208	A	246	212	A	A
10	A	E A 274	E B 268	234	206	204	220	210	212	228	A	A	224	A	190	H 188	H 182	190	218	210	202	222	E B 314	E B 310
11	E B 282	E B 246	224	E B 256	E A 268	E B 294	E B 268	222	218	212	A	A	208	198	210	206	212	202	204	224	218	234	E A 248	E A 276
12	242	242	238	222	212	E B 262	238	H 184	H 192	C	A	A	A	214	192	194	200	208	202	A	A	E A 250	E B 308	E A 304
13	E B 280	E B 276	E A 296	E A 252	208	208	214	206	214	194	190	A	214	A	208	208	198	198	200	222	200	E A 242	230	E B 278
14	A	E B 278	E B 292	E B 266	E B 242	212	212	H 178	216	216	198	220	A	212	204	A	212	192	204	224	210	214	216	E B 298
15	E B 292	A	228	232	236	198	198	222	218	182	192	A	198	A	A	A	224	210	210	200	220	E A 260	E A 250	E B 248
16	E B 302	E B 288	E B 246	222	198	196	E B 262	214	198	214	A	A	A	A	222	216	206	198	200	210	E A 250	A	E A 258	E A 304
17	E A 318	E B 280	E B 262	232	206	210	242	214	208	224	214	A	A	A	218	206	218	206	202	202	240	E B 252	E B 246	244
18	E B 260	E A 250	230	234	218	230	226	196	176	H 188	H 180	H 176	208	192	C	C	C	222	A	240	E A 260	238	E B 252	E B 284
19	E A 266	E B 282	E B 256	216	194	180	E B 276	214	214	222	192	A	A	A	A	A	212	210	212	A	E A 322	226	E B 248	E B 286
20	E B 270	E B 274	E B 252	224	196	E B 270	E B 248	214	212	H 186	A	212	216	A	210	A	212	210	190	194	218	238	E A 268	E B 272
21	E A 292	E B 262	238	234	204	E B 244	226	210	192	202	H 180	192	214	A	A	210	212	200	190	204	226	238	E B 276	E B 276
22	E B 264	236	E B 246	206	236	E B 266	224	208	206	182	208	210	A	212	208	194	210	200	214	210	226	224	236	E B 256
23	E B 294	E B 256	226	224	202	192	216	188	H 186	H 180	H 176	210	A	E A 226	204	204	202	198	188	234	A	236	E B 256	E B 280
24	E B 304	E B 282	232	240	208	198	238	H 192	192	H 184	198	226	A	A	224	A	A	206	198	196	222	218	E B 248	E B 256
25	E B 282	E B 292	240	E B 246	212	198	214	212	196	176	208	230	234	228	E A 234	214	208	208	198	190	208	E B 254	E B 258	E B 270
26	E B 256	236	228	218	204	222	226	212	202	200	228	H 184	A	218	212	A	A	A	A	206	206	E B 290	E B 254	E B 268
27	E B 272	E B 274	E B 268	238	232	220	208	204	220	206	192	A	214	196	206	A	224	208	190	190	208	E B 282	E B 258	E B 254
28	E B 282	E B 276	210	E B 264	198	E B 274	212	212	H 190	220	218	A	A	206	222	A	224	212	204	222	E A 254	E B 254	E B 328	E A 336
29	E B 288	E B 272	E B 290	E B 264	E A 248	186	H 186	202	218	A	A	A	A	226	A	A	236	230	226	210	222	E B 258	E A 296	E A 312
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	28	28	28	28	28	28	28	25	21	14	13	16	21	15	23	27	25	25	26	27	27	27
MED	E B 280	E B 274	E B 249	226	205	U 202	221	210	210	206	202	210	213	211	207	206	210	206	204	210	216	226	E B 254	E B 278
U Q	E B 292	E B 278	E B 270	E B 239	225	E B 268	E B 251	214	215	218	213	226	218	216	218	210	218	210	213	224	E A 246	E B 252	E B 276	E A 300
L Q	E B 266	E 256	234	221	200	198	215	204	196	H 187	192	202	205	204	198	194	202	200	198	202	210	220	246	E B 264

FEB. 2008 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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 118	A	A	C	114	C	C	112	A	B						
2								B 118	122	122	116	114	116	114	120	120	B						
3								B 116	116	116	114	110	112	A	108	112	B						
4								B 118	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5								C	C	C	C	C	C	C	C	C	C	B						
6								B 116	A	116	114	A	A	A	A	120	B						
7								B 116	112	A	A	A	A	120	A	A	B						
8								B 116	124	114	114	112	A	A	A	A	B						
9								B 120	122	120	118	A	A	A	A	124	134						
10								B	A 118	A	112	A	A	110	110	A	B						
11								B	A 118	A	A	A	A	A	A	118	B						
12								B 114	C	A	A	A	A	A	A	112	B						
13								120	122	122	118	120	A	A	A	A	A	B						
14								B	122	118	120	120	A	118	A	A	A	B						
15								122	A	A	A	120	A	A	108	A	A	B						
16								B	118	122	122	118	114	A	A	A	A	B						
17								A	A	A	110	112	112	114	A	A	A	B						
18								B	120	124	118	112	112	116	C	C	C	B						
19								120	110	108	118	118	118	118	118	120	A	B						
20								B	122	114	114	112	114	116	116	112	114	B						
21								B	122	120	116	114	124	112	108	112	112	B						
22								B	124	116	116	118	116	116	A	122	120	B						
23								112	114	116	112	118	118	118	118	118	116	B						
24								114	120	120	112	112	116	118	112	112	A	B						
25								114	110	118	116	112	116	120	118	126	120	A 136						
26								116	114	114	114	120	120	120	120	120	A	A						
27								112	116	116	112	112	112	116	116	118	A	B						
28								118	118	118	114	A	A	112	112	118	A	B						
29							B	124	124	A	A	122	116	110	112	A	A	A						
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								10	24	21	20	22	17	16	14	14	11	2						
MED								117	118	118	116	115	114	116	115	118	118	135						
U Q								120	121	122	118	118	117	118	118	120	120							
L Q								114	116	116	114	112	112	113	112	112	112							

FEB. 2008 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC 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	96	96	B	98	B	B	152	154	106	102	C	96	C	C	132	92	90	82	88	94	98	B	B
2	B	B	B	98	96	90	90	146	154	156	156	142	134	148	102	96	136	94	94	B	B	114	116	B
3	B	B	B	96	B	B	B	156	146	152	138	116	118	116	90	156	G	90	90	B	B	B	B	B
4	100	100	100	100	102	100	90	146	152	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	100	104	B	B	B	B	104
6	106	106	108	100	98	106	96	B	98	92	94	112	102	102	102	100	108	B	B	B	B	104	108	B
7	B	106	106	B	B	102	100	100	120	122	106	106	106	108	100	104	100	98	104	100	100	104	98	98
8	100	100	102	B	B	B	108	150	G	106	118	116	114	104	106	104	102	102	100	100	100	96	100	B
9	B	B	B	B	B	B	92	144	146	128	122	122	108	104	106	158	132	138	130	112	108	104	100	96
10	96	100	104	100	96	96	100	100	96	152	108	112	160	96	126	114	108	B	B	B	B	126	102	B
11	B	B	102	98	102	100	100	126	118	114	106	106	106	106	106	106	100	98	96	96	98	96	102	102
12	106	110	B	110	104	104	98	B	G	C	104	104	104	106	106	102	92	86	94	92	96	94	92	94
13	104	100	98	102	B	B	B	G	G	98	96	116	104	104	106	102	106	102	100	102	98	96	96	104
14	100	100	100	98	102	B	102	B	158	170	160	116	108	104	104	104	100	104	104	104	102	B	B	102
15	102	102	98	98	98	98	96	G	108	106	106	112	90	90	110	98	98	102	94	B	106	98	98	B
16	104	B	98	102	98	B	B	B	160	142	134	118	112	106	106	106	104	102	100	100	96	96	96	96
17	92	90	90	92	104	106	100	96	94	96	144	136	120	112	104	102	102	102	102	98	96	94	100	B
18	92	90	88	92	B	B	98	146	G	96	94	96	136	124	C	C	C	106	104	104	100	100	100	94
19	98	B	94	104	B	B	160	146	146	174	100	152	142	126	130	118	108	82	82	94	96	96	94	96
20	92	92	90	90	B	B	B	146	106	148	172	152	136	168	170	128	122	114	94	88	86	B	126	B
21	102	100	96	98	106	100	B	B	108	104	100	98	108	174	152	152	132	142	B	B	B	B	B	B
22	B	B	100	B	B	B	B	122	144	102	104	134	116	116	108	106	102	142	98	96	B	96	B	114
23	B	B	B	B	B	B	B	G	104	104	94	146	120	118	122	126	G	148	90	138	116	104	B	B
24	104	96	B	B	94	94	B	G	104	102	156	148	148	128	120	110	106	102	100	100	94	B	B	B
25	B	B	B	B	B	B	96	164	G	98	102	158	162	156	142	126	168	140	B	B	120	114	B	B
26	92	94	B	B	B	B	B	150	158	150	168	102	152	128	130	122	104	102	94	96	94	98	132	B
27	94	96	B	B	110	106	102	128	96	100	94	160	124	138	132	116	106	100	104	92	B	134	B	B
28	B	B	B	B	B	96	142	140	140	152	126	104	104	120	144	120	104	100	96	96	96	98	130	86
29	92	100	100	100	102	106	B	172	164	96	96	122	122	124	116	106	104	100	100	100	B	96	90	90
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	18	18	17	15	14	17	19	23	26	27	26	27	26	25	26	24	26	24	20	19	22	18	13
MED	100	100	99	98	102	100	100	146	140	106	106	116	116	116	108	108	104	102	99	99	98	98	100	96
U Q	104	100	102	101	104	106	102	150	154	150	138	142	136	128	130	126	108	106	103	101	102	104	108	103
L Q	92	96	96	97	98	96	96	126	104	100	100	106	106	104	105	104	101	98	94	95	96	96	96	94

IONOSPHERIC DATA STATION Kokubunji

FEB. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

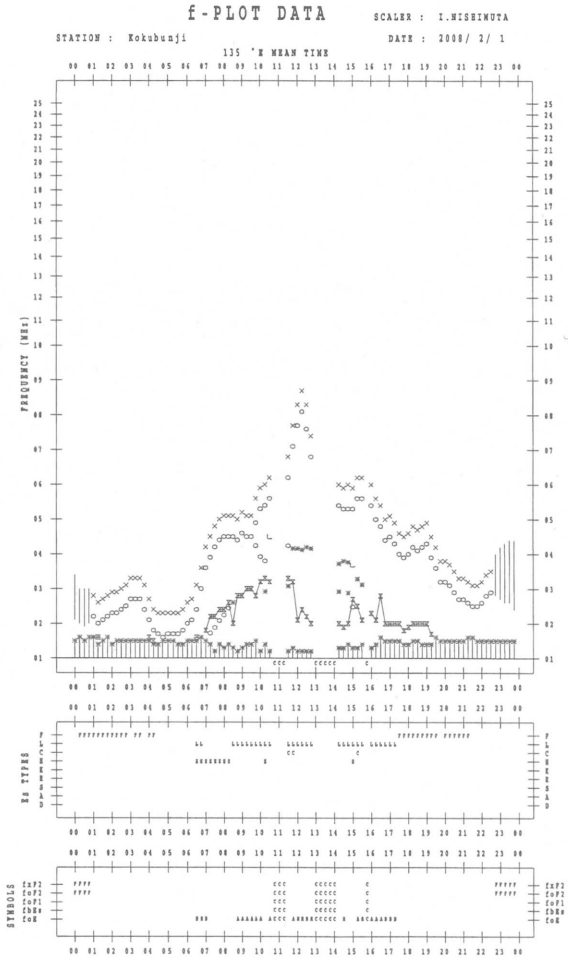
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		F2	F2		F2			H2	H3	L2	L2		L2			HL12	L3	L3	F4	F4	F1	F1		
2				F1	F1	F2	F2	HL22	HL22	HL22	HL22	HL12	CL13	HL13	L2	L2	CL12	L2	F2			F1	F1	
3				F1				H3	H3	HL21	HL21	CL22	CL23	CL12	L3	HL12		L3	F1					
4	F1	F2	F2	F3	F4	F2	F3	HL22	H2															
5																		L3	F2					F2
6	F1	F1	F2	F1	F1	F2	F3		L3	L2	L3	CL22	L3	L2	L2	L3	L2					F3	F1	
7		F1	F2			F2	F2	L2	C2	C2	L2	L1	L2	L2	L2	L3	L3	L3	F3	F2	F2	F2	F4	F4
8	F3	F2	F1				F2	HL11		L2	CL11	CL11	C2	L2	L2	L4	L3	L4	F5	F4	F4	F3	F3	
9							F2	HL22	H2	CL22	CL11	CL11	L3	L2	L2	HL22	CL22	C3	F3	F6	F8	F3	F5	F5
10	F6	F4	F3	F3	F3	F2	F2	L4	L3	HL22	L2	CL22	HL12	L3	CL22	CL12	L2					F2	F2	
11			F5	F3	F4	F2	F2	C2	C3	CL22	L3	L3	L2	L2	L2	L2	L2	L3	F3	F2	F2	F3	F3	F3
12	F3	F2		F1	F1	F2	F2				L3	L2	L4	L2	LL23	LL22	L2	L2	F3	F3	F3	F5	F2	F2
13	F5	F2	F4	F1						L2	L2	CL22	L2	L2	L2	L2	L3	L3	F2	F2	F1	F5	F3	F2
14	F5	F2	F2	F2	F2		F1		HL22	HL12	HL12	CL22	L3	L2	L2	L2	L4	L2	F1	F2	F1			F3
15	F2	F3	F2	F1	F2	F3	F2		L2	L1	L2	CL11	LC21	L4	CL22	L3	L3	LL32	F1		F2	F4	F5	
16	F3		F3	F2	F1				H2	HL12	HL22	CL32	CL32	L3	L2	L2	L3	L3	F1	F2	F3	F5	F5	F4
17	F4	F2	F2	F3	F1	F1	F3	L4	L3	L3	HL22	HL23	CL23	CL22	L3	L3	L2	L3	F1	F1	F3	F4	F2	
18	F2	F2	F2	F2			F1	H2		L2	L2	L2	HL22	CL22				L4	F4	F3	F5	F3	F2	F2
19	F4		F1	F2			F2	H3	H2	H1	L2	HL21	HL21	CL21	HL21	CL21	L3	L4	F4	F4	F5	F3	F3	F2
20	F2	F2	F4	F2				H3	L2	HL22	HL11	HL21	CL21	HL11	HL22	CL22	CL23	CL33	F3	F4	F1		F3	
21	F2	F1	F2	F3	F1	F1			L1	L2	L1	L2	L2	H1	HL12	H1	H2	H2						
22			F2					C4	HL22	L2	L2	HL11	CL21	C1	L2	L2	L2	H2	F2	F1		F2		F2
23									L2	L2	L2	HL11	CL21	CL21	CL11	CL11		HL22	F2	F2	F7	F2		
24	F2	F2			F2	F2			L2	L2	HL11	HL11	HL11	CL22	CL22	CL22	L3	L3	F5	F2	F1			
25							F1	H3		L2	L2	HL12	HL12	HL22	HL12	CL22	HL12	HL22			F3	F1		
26	F2	F2						H3	H2	HL12	HL12	L1	HL11	CL22	CL22	CL22	L3	L5	F5	F4	F5	F1	F1	
27	F1	F1			F2	F1	F2	C2	L2	L1	L2	HL13	CL11	CL11	CL11	CL21	L3	L3	F1	F2		F1		
28						F2	F1	H2	HL21	HL11	CL21	L3	L2	CL11	HL11	CL21	L2	L6	F5	F4	F4	F3	F1	F4
29	F2	F2	F2	F2	F3	F3		HL22	HL22	L4	L3	CL11	CL12	CL11	CL21	L3	L2	L4	F5	F3		F2	F3	F4
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

FEB. 2008 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

KEY OF f-PLOT	
	SPREAD
	foF2, foF1, foE
	fxF2
	DOUBTFUL foF2, foF1, foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN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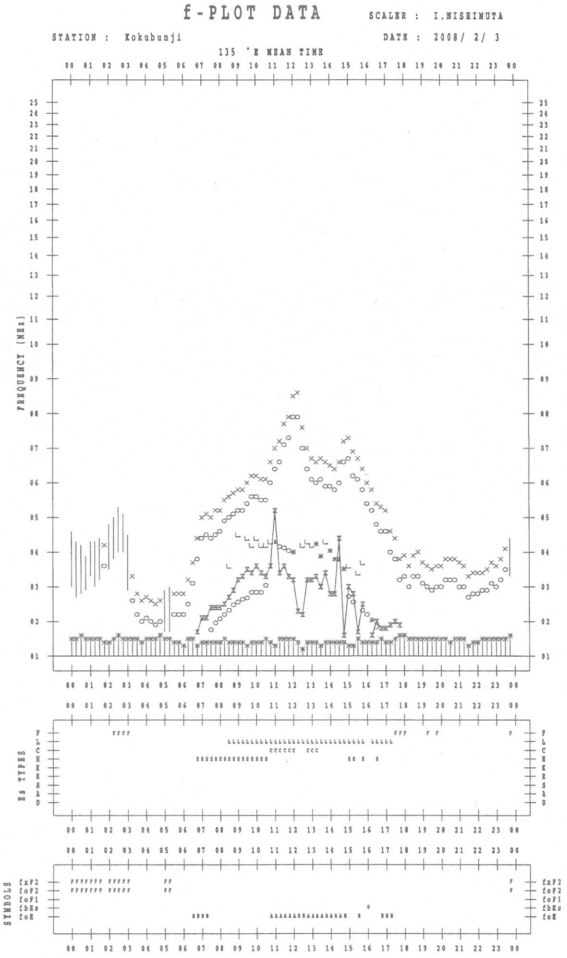
STATION : Kokubunji
DATE : 2008/ 2/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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DATE : 2008/ 2/ 3
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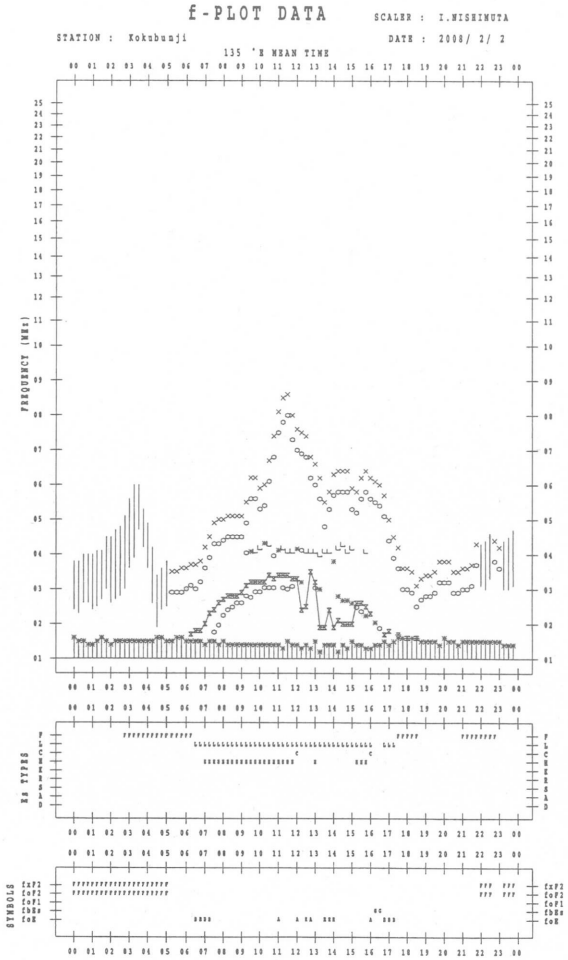
FREQUENCY (MHz)
Es TYPES
SYMBOLS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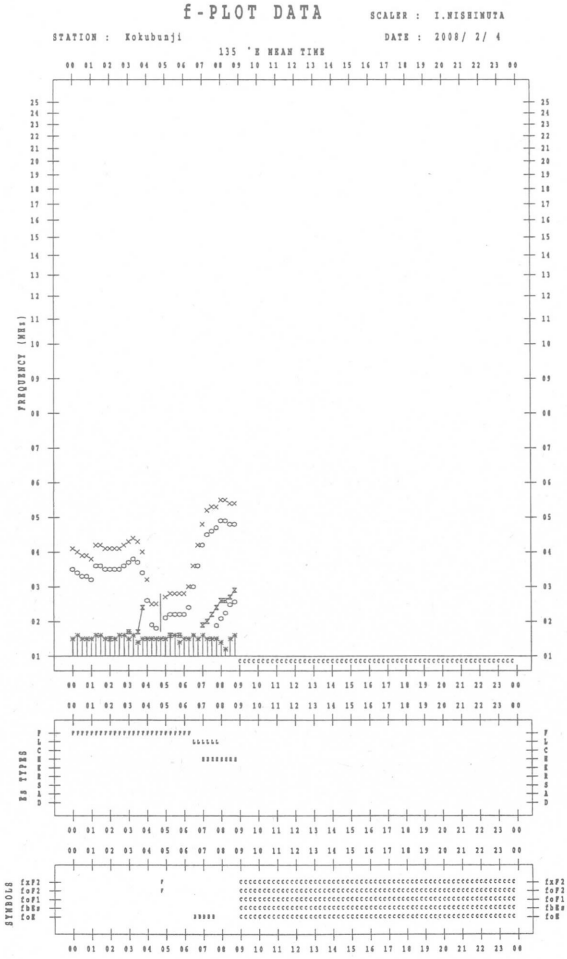
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
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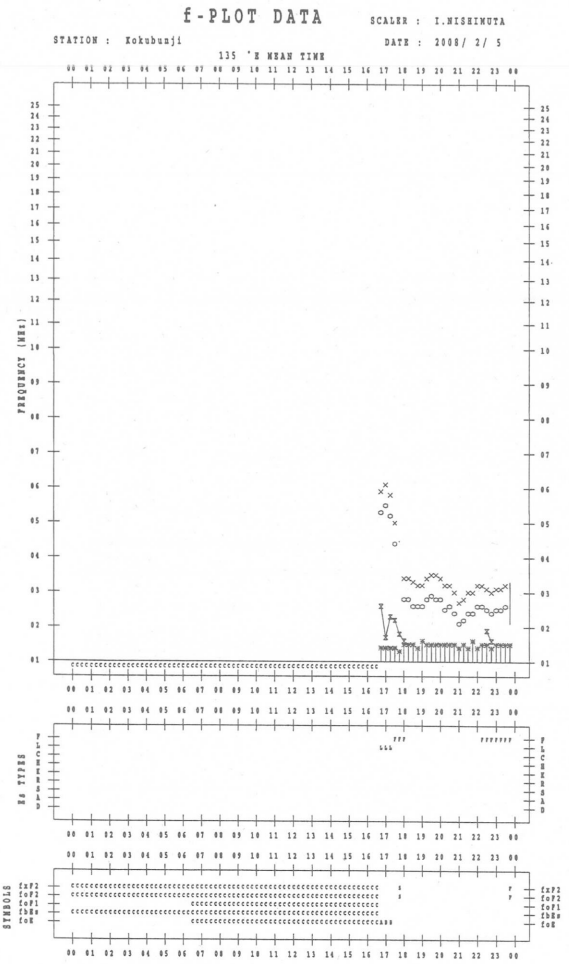
FREQUENCY (MHz)
Es TYPES
SYMBOLS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DATE : 2008/ 2/ 5
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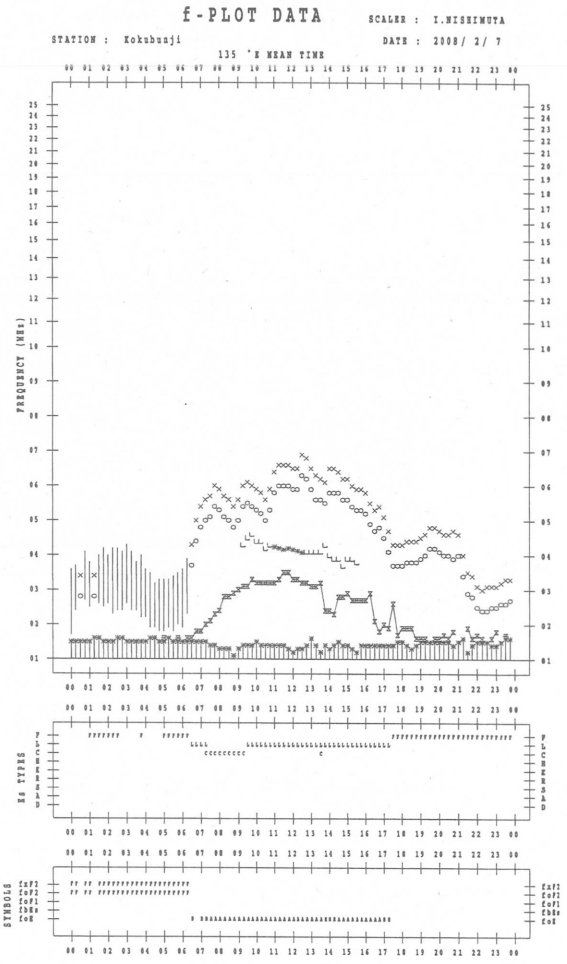
FREQUENCY (MHz)
Es TYPES
SYMBOLS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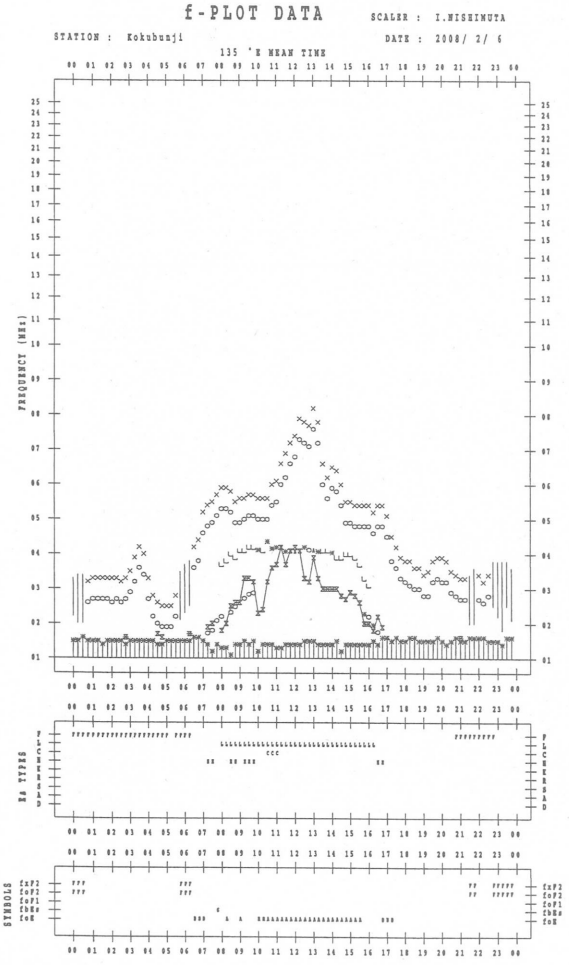
FREQUENCY (MHz)
Es TYPES
SYMBOLS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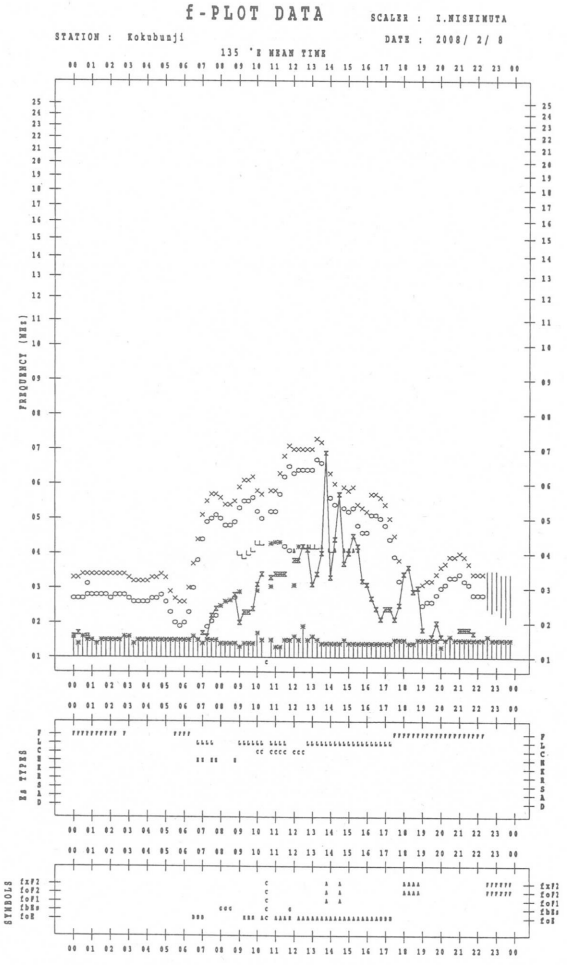
STATION : Kokubunji
DATE : 2008/ 2/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
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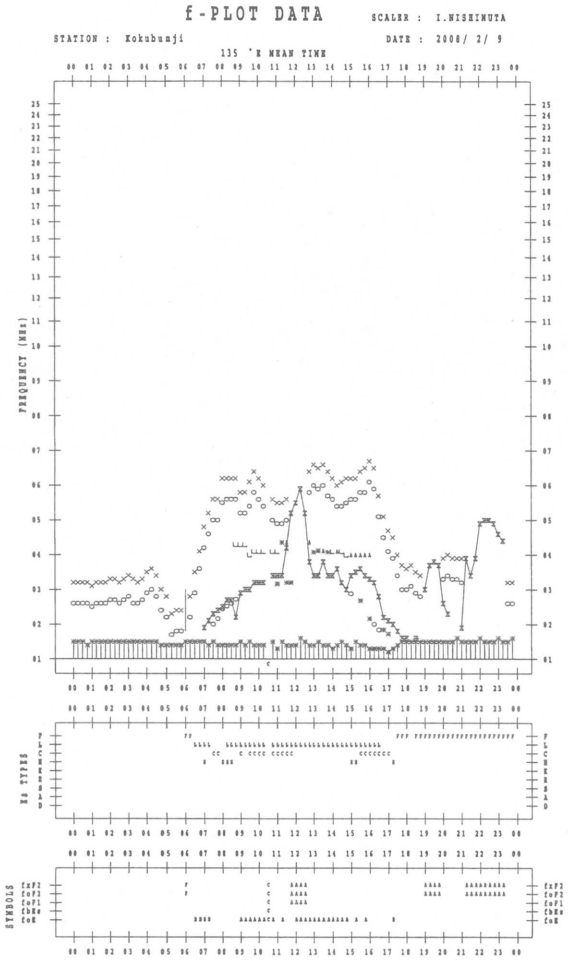
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2008/ 2/ 9
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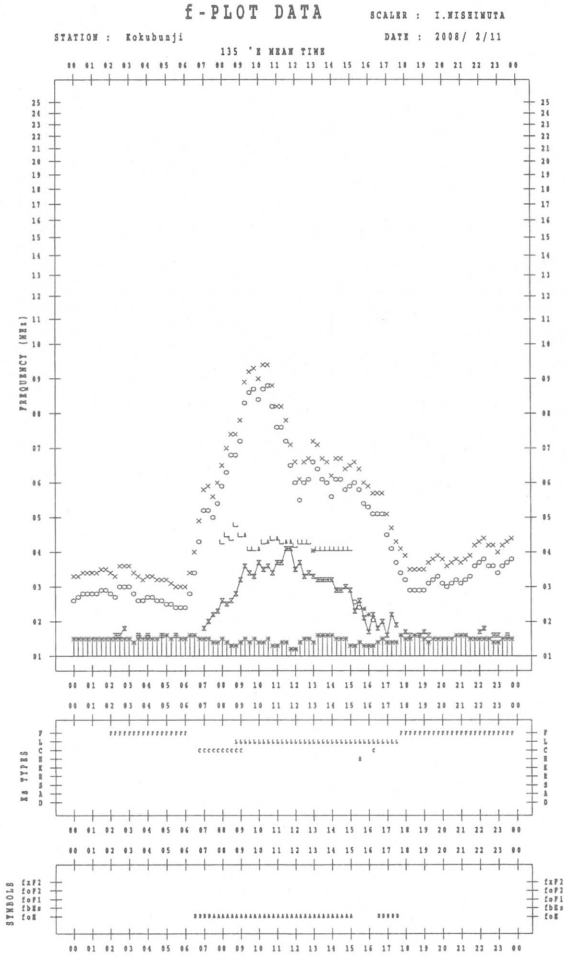
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2008/ 2/11
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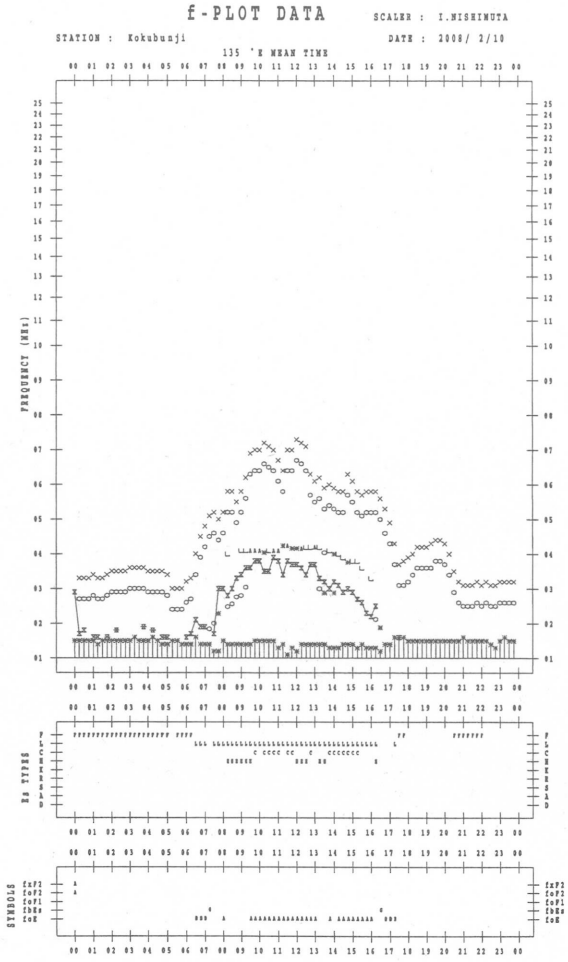
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2008/ 2/10
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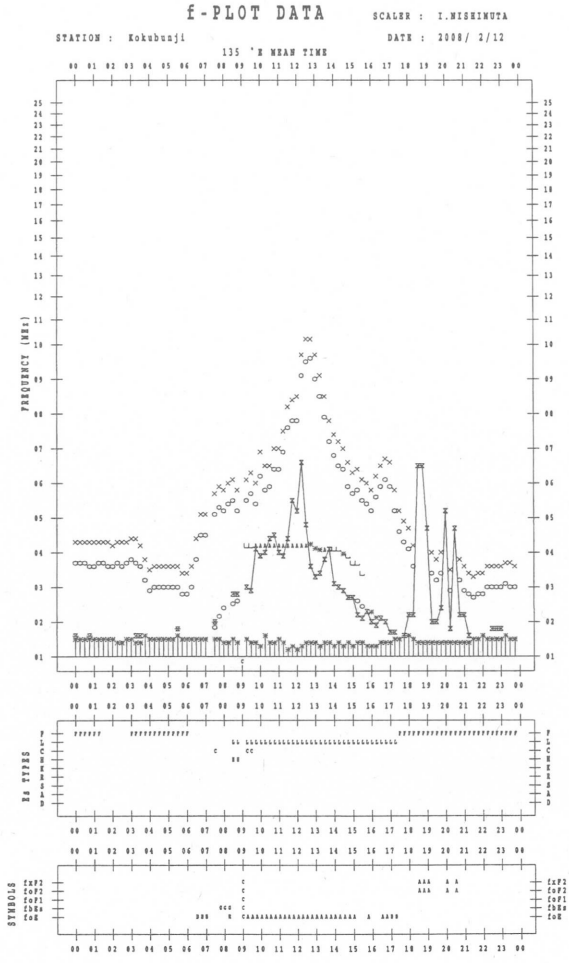
FREQUENCY (MHz)
Es TYPES
SYMBOLS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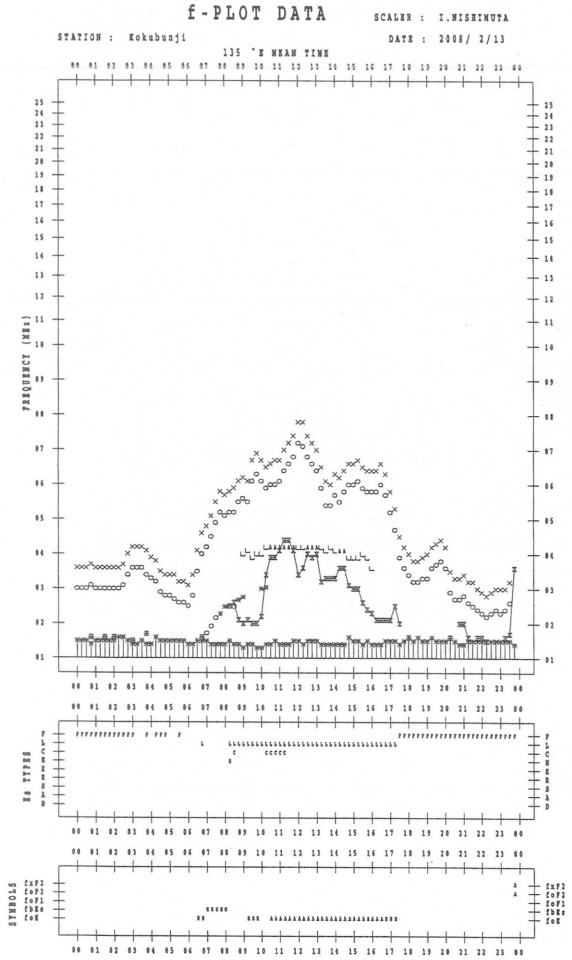
STATION : Kokubunji
DATE : 2008/ 2/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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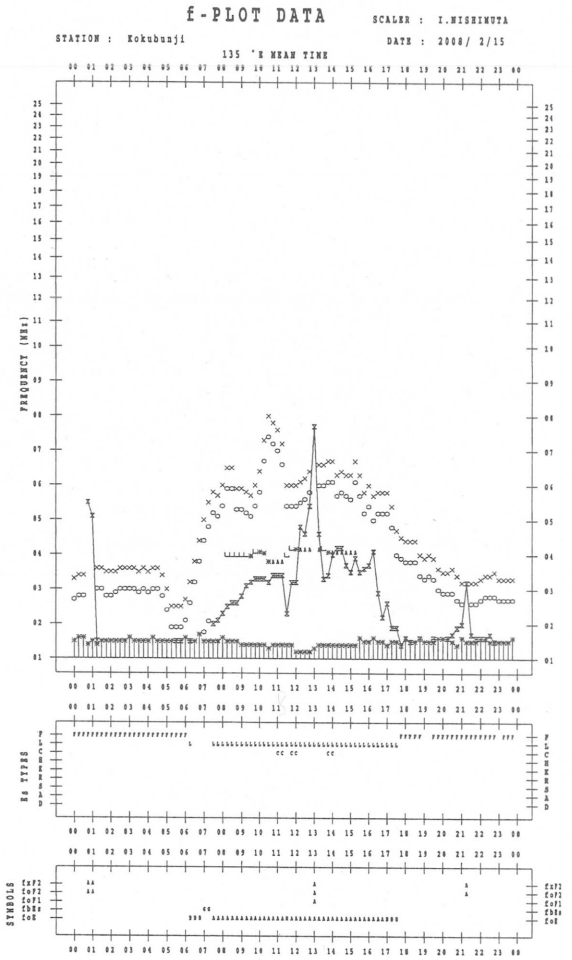
STATION : Kokubunji
DATE : 2008/ 2/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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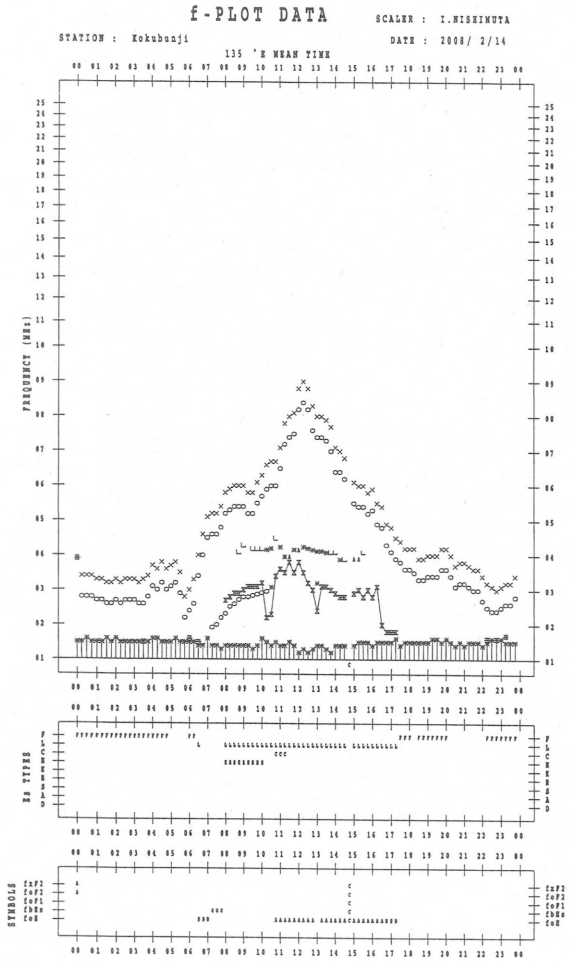
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2008/ 2/14
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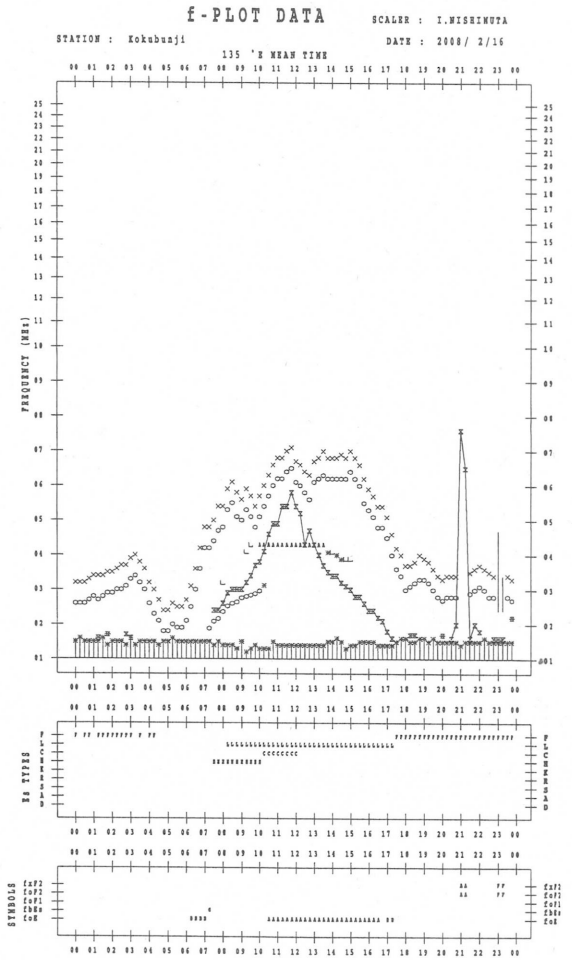
FREQUENCY (MHz)
Es TYPES
SYMBOLS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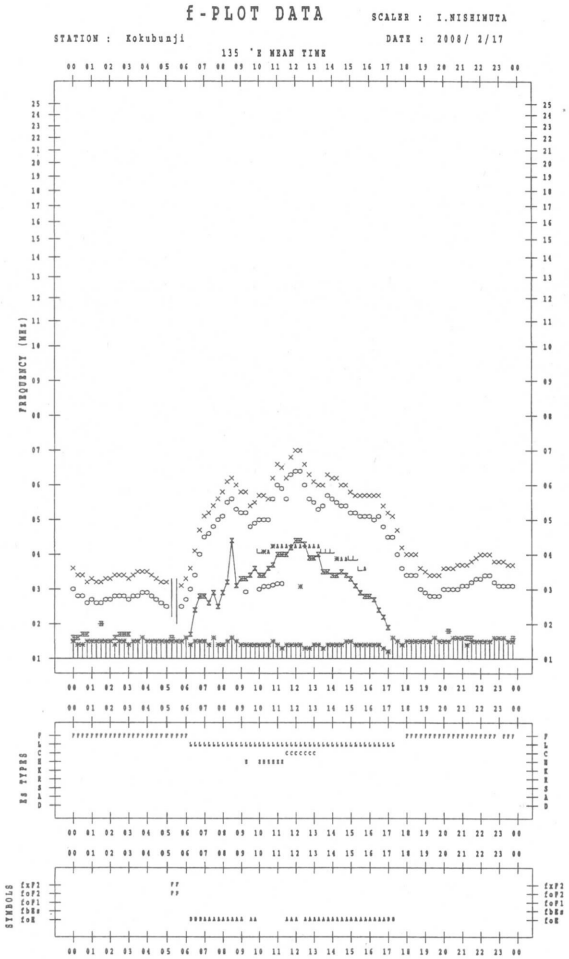
STATION : Kokubunji
DATE : 2008/ 2/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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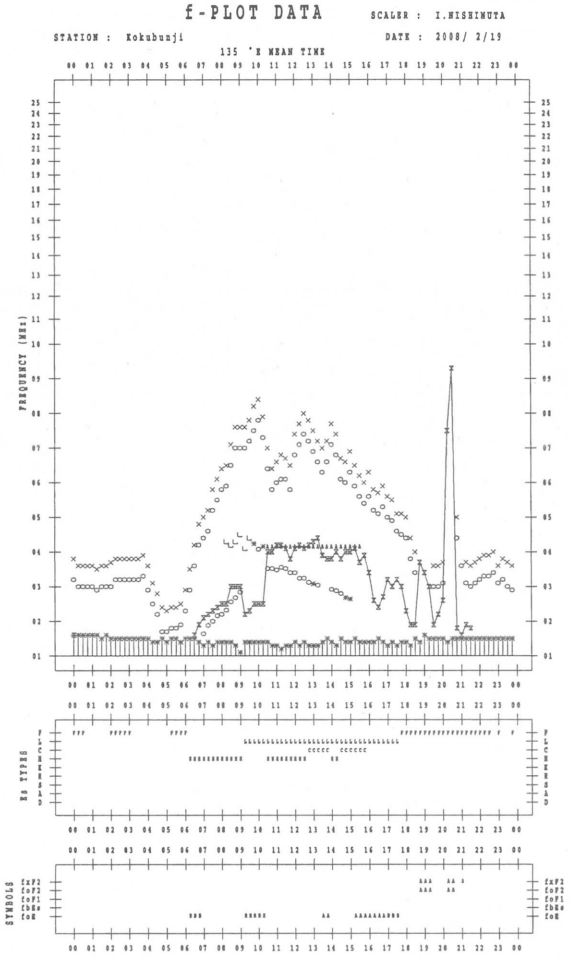
STATION : Kokubunji
DATE : 2008/ 2/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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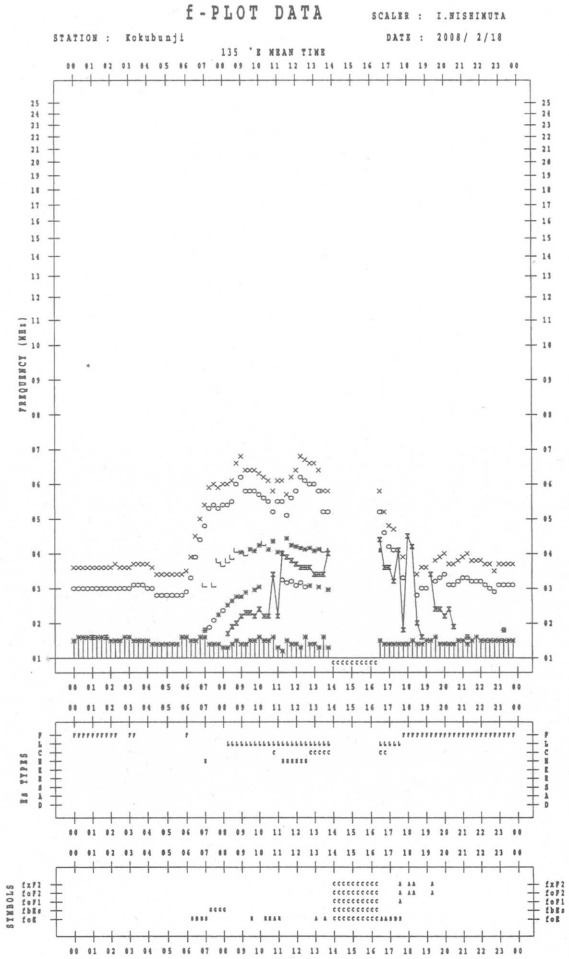
STATION : Kokubunji
DATE : 2008/ 2/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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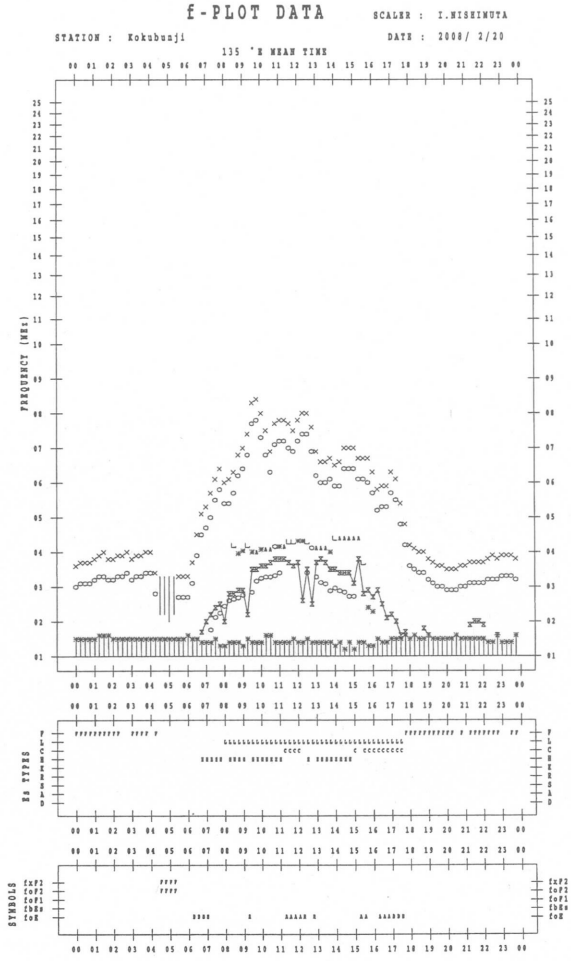
STATION : Kokubunji
DATE : 2008/ 2/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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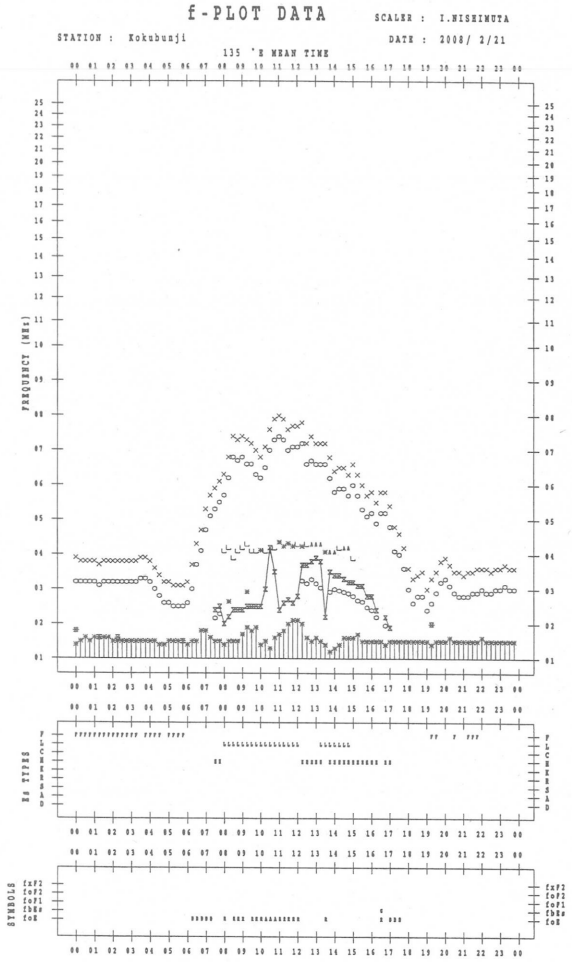
STATION : Kokubunji
DATE : 2008/ 2/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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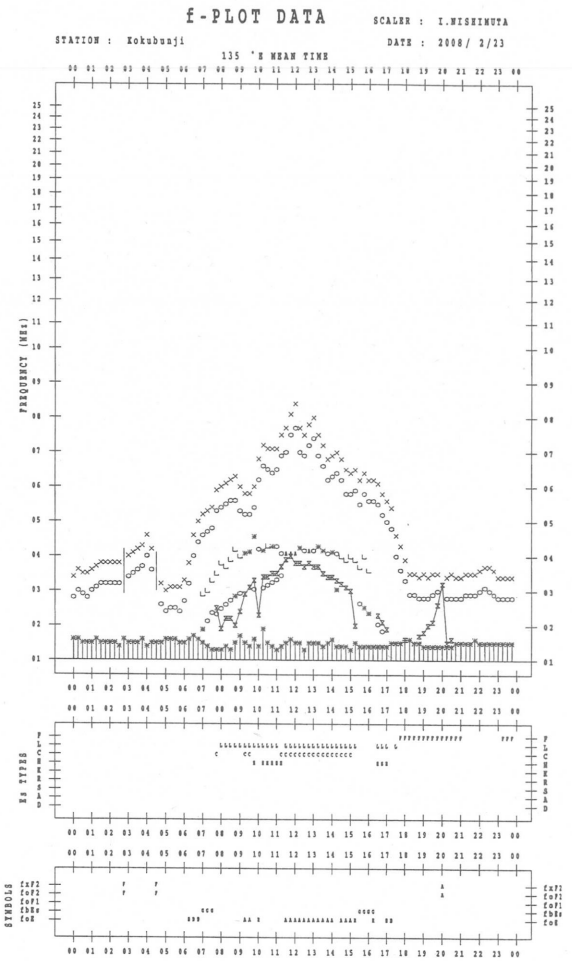
STATION : Kokubunji
DATE : 2008/ 2/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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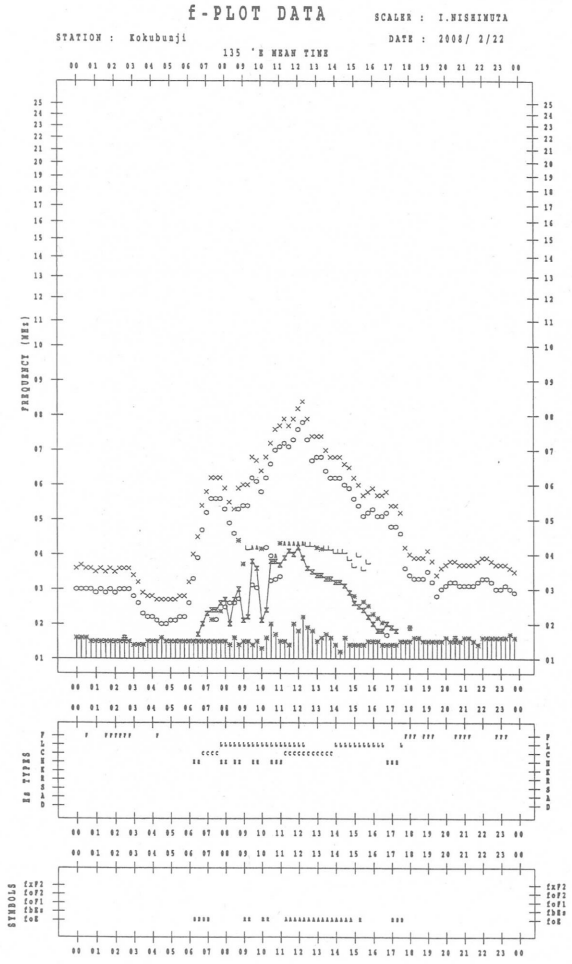
FREQUENCY (MHz)
Es TYPES
SYMBOLS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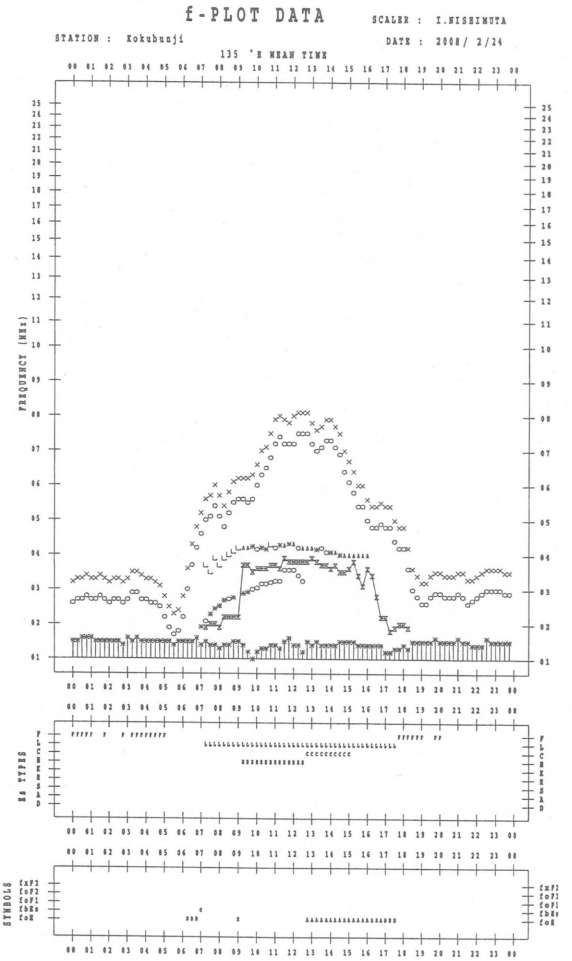
FREQUENCY (MHz)
Es TYPES
SYMBOLS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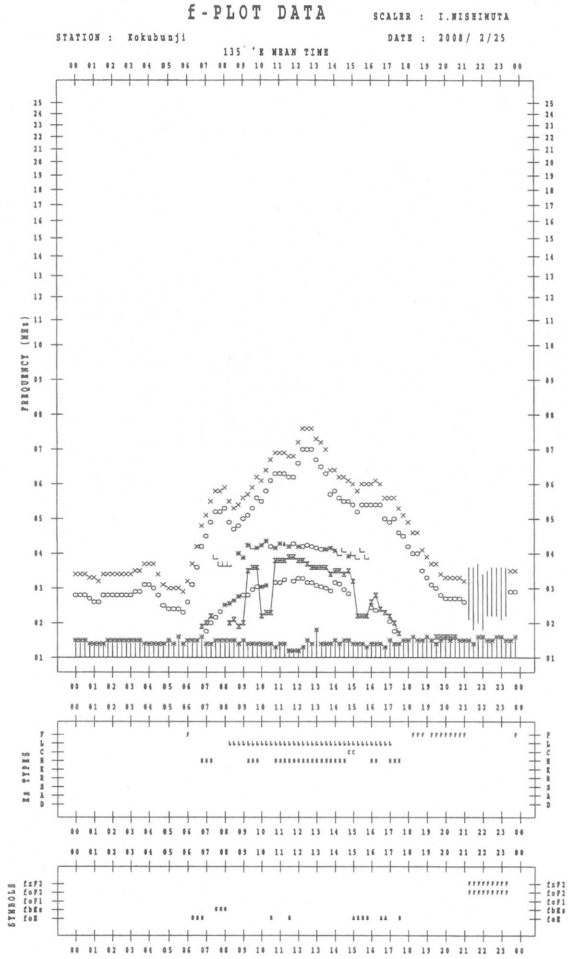
DATE : 2008/ 2/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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DATE : 2008/ 2/25
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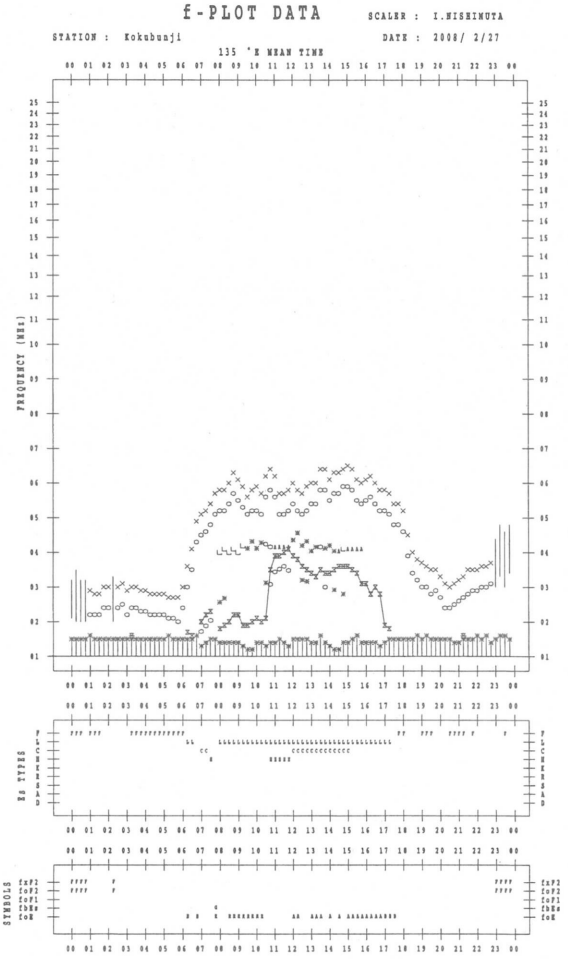
FREQUENCY (MHz)
Es TYPES
SYMBOLS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DATE : 2008/ 2/27
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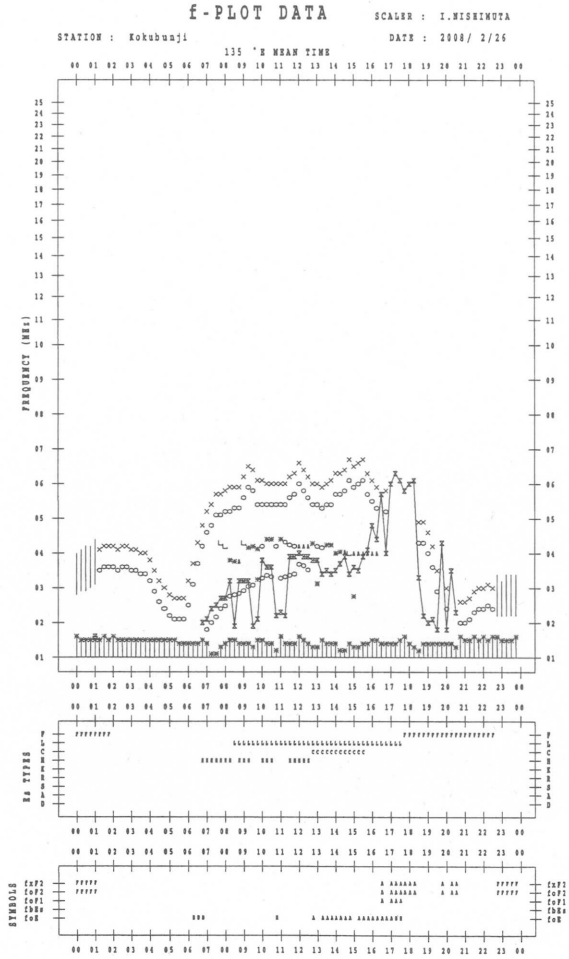
FREQUENCY (MHz)
Es TYPES
SYMBOLS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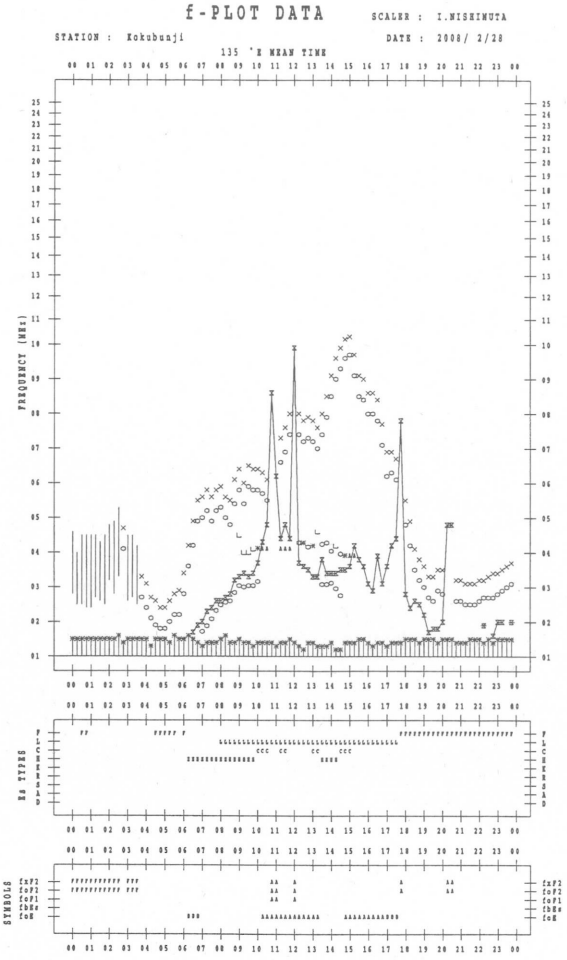
FREQUENCY (MHz)
Es TYPES
SYMBOLS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DATE : 2008/ 2/28
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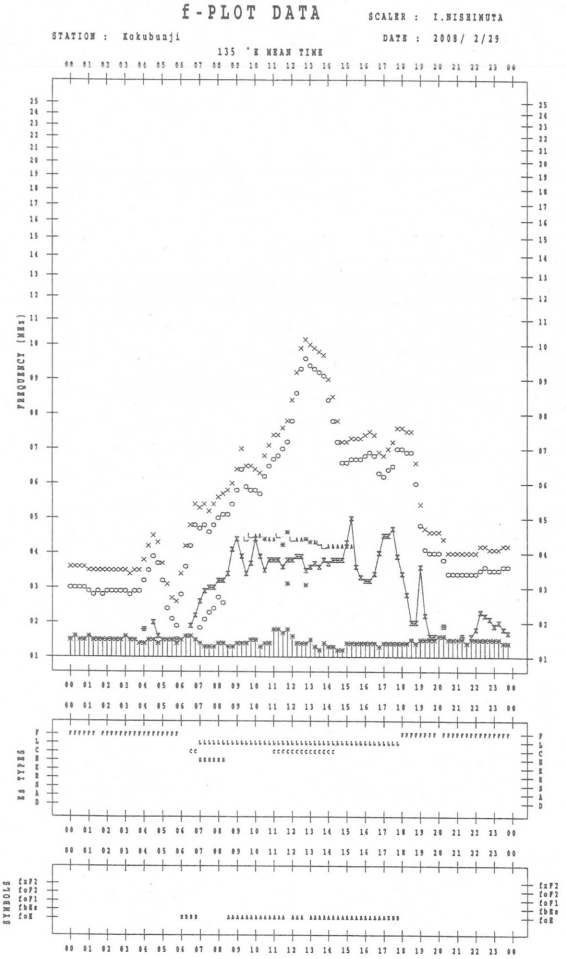
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2008/ 2/29
135 °E MEAN TIME
FREQUENCY (MHz)
ES TYPES
SYMBOLS

B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso February 2008

Single-frequency observations

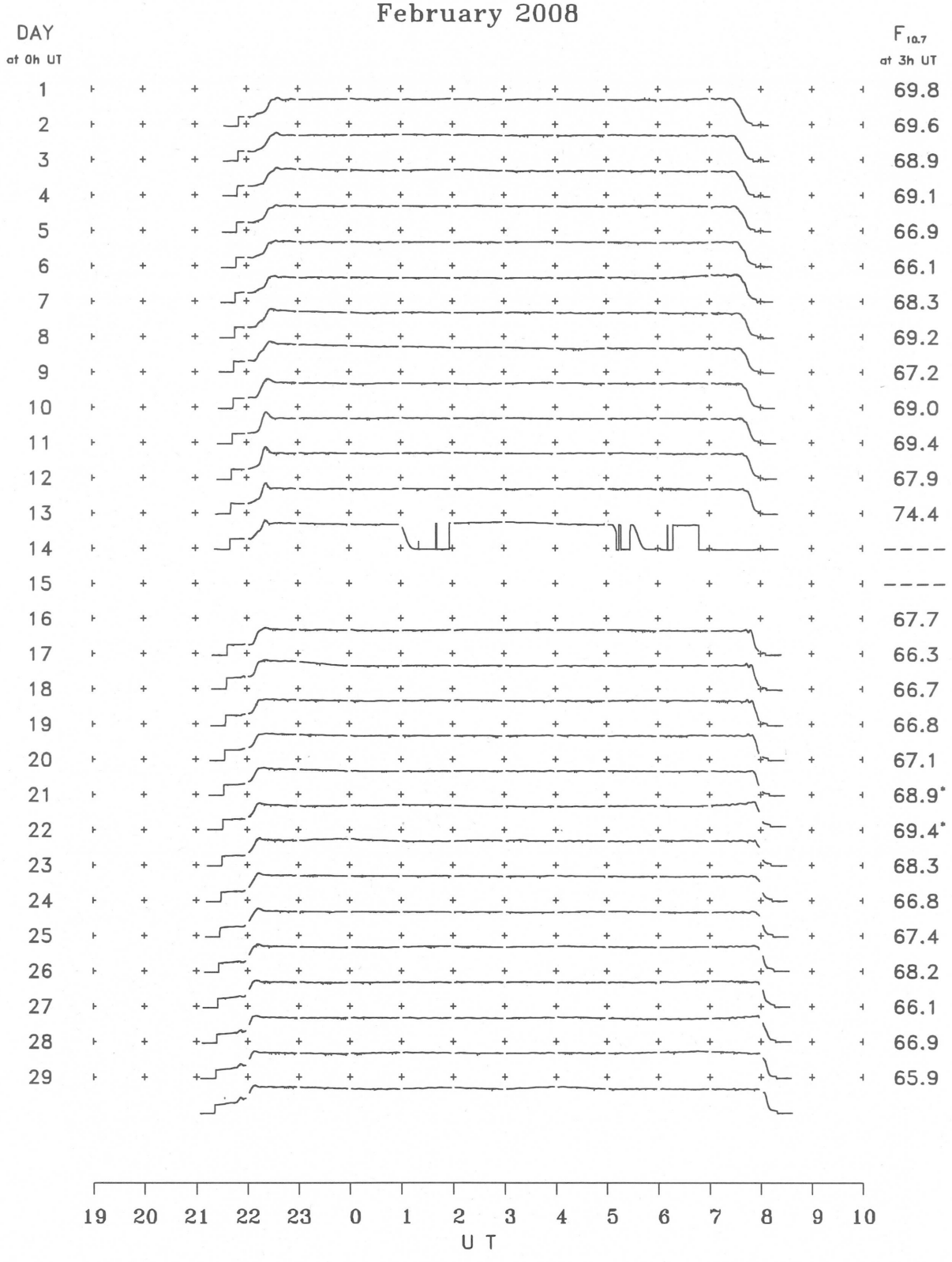
Normal observing period: 2120 - 0820 U.T. (sunrise to sunset)

FEB. 2008	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS

B. Solar Radio Emission

B2. Summary Plots of $F_{10.7}$ at Hiraiso

February 2008



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

IONOSPHERIC DATA IN JAPAN FOR FEBRUARY 2008
F—710 Vol.60 No.2 (Not for Sale)

電離層月報（2008年2月）
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☎(042)(327)7540(直通)

Queries about "Ionospheric Data in Japan" should be forwarded to:
National Institute of Information and Commnications Technology
2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184-8795 JAPAN