ISSN 0021-0382

F−696

IONOSPHERIC DATA IN JAPAN

FOR DECEMBER 2006

VOL.58 NO.12

CONTENTS

NiCT

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

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

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

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

B. SOLAR RADIO EMISSION

Solar radio observations at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of 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

DEC. 2006

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	31	29	32	20	35	34	A	34	55	73	73	82	65	58	57	67	38		18	31	32	32	30	30
2	31	34	32	32	30		26	41	48	58	74	65	64	57		54	42	32	28				34	35
3	34	34	34	34	34	34	29	46	48	52	52	66	56	52	55	44	44		34	30		30	29	32
4	34	34	34	34	36	32	29	40	52	57	57	60	62	56	56	58		31	29		31	34	32	32
5	34	34	34	34	34	35	34	40	54	56	58	68	56	62	61	53	45		34	32		35	32	35
6	37	32	34	36	35	32	34	34		69		67		71	58	58	46	35		29	35	40	44	46
7	47	52	41	36	38	40	32	35	66	66	84	81	72	81	82	67	53			32	34	34	37	40
8	34	36	37	34	31	34	35	45	67	58	66	72	68	61	62	57	A	A	31		37	A	40	41
9	42	44	44	42	36	32	32	42	60	66	70	64	70	58	62	55	47	A	A	A	A	A	A	34
10	34	34	35	35	34	32	31	34	47	60	56	62	66	57	57	66	24	41	30	29	35	34	34	34
11	34	34	30	32	32	34	26	44	61	70	58	60	61	51	63	56	46	41	34	38	34	34	40	44
12	42	45	45	44	38	41	41	45	58	55	C	C	62	62	57	66	53	46			36	34	34	39
13	34	34	34	26	29	32		42	67	60	63	63		67	61	67	A	A		35	44	34	35	36
14	40	40	41	39	40	37	32	42		52	58	64	56	63	67	59	55	35	32	43	47	36	34	34
15	37	34	34	31	34	40		43	53	65	56	82	95		81		66	57	41	41	52	44	44	25
16	34	A	A	A	A	A	A	49	A	76	89	A	66	56	65	56	44	A	A	A	A	A	A	A
17	26	39	39	26	39	26		A	57	64	68	75	60	67	61	56	34	A	A	A		34	A	A
18		34		34	34	34	26	38	54	54	58	56	57	62	55	46	40	34	36	41	A	36	37	37
19	36	35	36	34	36	34	32	44	42	71	57	70	58	63	57	58	45	31	A	36	40	36	41	41
20	A	41	40	33	38		31	40	52	43	56	59		62	66			A	A	A		32		34
21	A	A	35	36	36		A	34	42	66	54	72	70	54	71	56	56	A	A	A	A	A	36	40
22	39	40	37	32	40	32	34	40	48	56	66	69	58	58	52	50	45	37	41	41	34	40	A	A
23	A	34	32	34	31	34	32	42	55	61	65	58	58	60	62	50	42			24	38	34	34	35
24	34	34	32	32	26	28	26	35	39	50		58	55	63	54	50		34	32	34	35	36	41	36
25	39	35	34	34	34	37		39	A	54	60	59	56	63	64	59	38			31	34	37	38	34
26	36	34	34	28	23	26		34	53	67	66	66	62	61	54	58	32	29	23	A	26	34	37	37
27	39	41	42	38	35	34	32	35	52	62	61	57	55	61	62		38	29		A	A	A	A	
28	30			23	28	30		34	45	54	55	57	57	60	57	52	41		32	26	34	26	32	34
29	34	34	34	32	32	34		34	40	45	55				54		40	34	32			35	37	37
30	37	33	38	37	35	49	34	37	41	50	53	56		54	58	54	42	34	A	A	A	31	34	32
31	31	31	30	22	28	24	23		35	50	50	61	60	56	55	46	35		37	25	A	A	32	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	28	30	30	27	21	29	27	31	28	28	26	29	30	27	26	16	17	18	18	24	25	26
MED	34	34	34	34	34	34	32	40	52	58	58	64	60	61	60	56	43	34	32	32	35	34	35	35
U Q	39	39	38	36	36	35	34	42	57	66	66	69	66	63	63	59	46	39	35	38	38	36	39	39
L Q	34	34	34	32	31	32	27	34	45	54	56	59	57	56	56	52	38	31	29	29	34	34	33	34

HOURLY VALUES OF fEs AT Wakkanai

DEC. 2006

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	G	G	29	27	G	G	43	40	33	33	33	37	40	33	31		26		G	G	G	G	G	27
2	30	30	29	26	26		G	G	30	40	40	41	34	G	36		29	30	G	G	32	28	30	28
3	G	G	27	G	27	G	G	G	28	49	G	G	G	G	33	28	22		G	G	28	G	G	G
4	G	G	G	G	G	G	G		G		43	G	G	G	G	G	28	G	G		G	27	G	G
5	G	G	G	G	G	G	G	G	40	32		G	G	G	G	G	29	29	G	24		G	G	G
6	G	G	G	26	G	G	G	G	G	G	G	G	G	G	G	30	36	26		G	G	G	G	G
7	G	G	G	G	G	G	G	38	G	G	34	36	56	58	G	G	11	28	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G	G	40	G	G	G	36	G	30	62	51	G	G	27	54	53	34
9	41	40	33	28	31	G	G	51	39	G	G	G	G	G	G	43	46	62	60	59	44	44	59	28
10	G	32	27	G	G	G	26	G	40		G	G	G	38	G	G	29	G	G	G	G	G	G	24
11	28	G	G	28	24	G	G	G	30	41	G	G	G	G	G	36	29	G	G	27	26	11	G	G
12	G	G	30	G	G	G	G	G		31	C	C	35	33	G	30	28	33	41	G	28	G	G	G
13	G	G	G	G	24	G	49	31	36	32	G	G		37	38	37	60	46	37	29	24	G	G	G
14	32	G	G	G	G	G	G	G		35	40	40	48	G	34	33	34	29	25	25	G	G	G	G
15	G	G	G	G	G	G	G	G	33		40	G	34	39	34		G	G	G	G	G	G	G	29
16	29	39	43	50	39	72	83	68	69	61		74		60	61	65	50	40	52	86	88	77	72	50
17	28	33	37	G	40	43		38	60	47	43	38	48	G	G	G	34	70	59	60	46	33	50	40
18	39	33		G	G	G	G	G	G	G	49	39	G	G	G	G	G	G	11	G	58	36	32	43
19	36	G	G	G	G	G	G	58	G	G	G	G	G	43	G	28	36	32	41	G	G	32	28	29
20	44	38	33	45	G	33	G	G	G	32	G	34		42	G	39	62	60	34	36	32	G	50	39
21	48	43	39	26	31	42	76	60	36	G	34	G	G	G	G	G	58	50	86	46	41	53	42	31
22	29	G	G	G	G	24	G	G	46	G	G	G	G	G	G	G	30	39	G	G	G	G	59	40
23	55	31	G	G	G	G	G	41	69	53	62	51	G	G	G	G	37	30	32	G	G	G	G	G
24	30	28	28	G	G	G	G	G	G	36	G	G		G	G	G	11	24	G	26	G	39	32	39
25	38	33	26	G	G	G	28	31	70	70	36	G	38	G	G	G	29	29		G	G	G	G	G
26	25	25	G	G	G	G	G	G	28	G	G	G	G	G	G	G	11	G	29	50	24	36	28	24
27	36	27	30	28	24	G	G	G	39	33	38		G	46		G	27	G	35	40	42	60	39	40
28	G	32	28	G	G	G		G	28	G	G	G	G	G	G	G	11		30	G	G	G	28	G
29	G	G	G	G	G	G	G	G		G	G	G		G	G	G	44	G	38			G	32	G
30	45	28	32	39	39	32	41	33	G	30	36	G	38	G	G	G	31	30	55	66	60	28	G	27
31	G	G	25	30	25	30	30	44	71	35	G	G	G	G	G	G	G	39	40	33	59	43	32	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	30	29	30	28	28	28	29	26	31	30	28	31	28	29	29	29	31	31	30
MED	28	G	26	G	G	G	G	G	32	32	G	G	G	G	G	G	29	30	29	G	24	G	28	26
U Q	36	32	30	27	25	G	27	38	40	40	39	36	35	37	G	30	37	39	40	38	41	36	39	34
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	22	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

DEC. 2006

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

HOURLY VALUES OF foF2 AT Kokubunji

DEC. 2006

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	38	27		32			27	59	77	66	74	82	68	55	60	56	56	42			A	31	28	28
2	30		28	34	32			46	68	69	67	71	68	62	56	67	52	36	30	28		27		26
3	27	28		28	30			47	66	49	64	58	69	48	51	56	47			39				
4		34	34	36				49	54	64	64	60	56	70	57	60		40						
5	27	27			34			48	52	62	59	62	66	51	62	36	46	37					A	
6	27			28	28	31		42	52	54	61	75	65	69	71	59	50	37		A	34	36	A	A
7			39			28	27	60	69	68	71	78	86	65	72	71		39	36					30
8	36		34	32			34	50	48	80	A	68	69	63	66	71		42	36					
9	32	A	34			27	27	52	57	54	78	77	77	78	60	66	59	44	34	A	28	28		
10	32			37	37		34	48	62	55	76		62	59	61	53	57				25	34		31
11		28	28			26	30	54	54	52	78	75	64	64	58	62	A	39	39	28		A	28	
12		32	34	37	44	26		52	59	55	61	86	62	61	61		78	44	36	A	A	30	27	32
13		36	39					51	54	48		76		75	72	54	58		A		32	32	28	28
14	A	36	34	25	34	32		47	54		51	67	61	59	60	58		38			25	30	27	
15	27	27	28	30		30	A	46	A	A	76	84	123	112	75	69	76	75	54		52	54	54	53
16		34			A	27		58	88	77	86	75		61	61	59	57	41	36	A	A	A	A	A
17	A	30	32					58	54	64	77	82	75	57	70	57	47			41		34		23
18			37		26			43	56	59	64	63	61	59	56	52	45	36		42	36	A		
19	30		35	34			32	52	54	49	67	62	63	59	65	52	52	44	A		36			32
20	A	34		34	28	34		43	56	71	61	49	56	80	84	62	45	38	33	27				
21							28	41	45	74	88	74	58	65	60	67	51		A	A	37	27		30
22		32	32	32		31	32	44	51	54	59	87	59	57	54	49	49		36	43	38	A		
23			31	30		34	36	43	48	62	72	71	64	55	52	56	49	36		36		36		28
24			30	34				43	48	59	59	76	59	61	60	52	52	36	32	32	28	31		
25		28	28	32			26	48	52	42	72	73	60	52	66	59	46	28		34	A		36	42
26	30		34	31				44	54	56	78	78	64	53	62	59	47	31	28	30			36	
27	A				34	36		48	49	62	71	86	71	52	56	63	46	36		28		A	A	
28	28	A	28	28	30		25	42	47	53	64	72	57	62	55	44	46							
29		26	26	31	28			34	44	46	47	56	58	54	57	58	48	34				28	32	24
30			34			28	28	49	56	59	59	57	53	52	53	61	52			38	25		A	A
31	A				28	26		39	45	47	57	63	50	52	56	52	51			41	36	34	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	15	21	19	13	14	13	31	30	29	29	30	29	31	31	30	26	22	12	14	13	15	9	13
MED	30	30	34	32	30	29	28	48	54	59	67	74	63	59	60	58	50	38	36	35	34	31	28	30
U Q	32	34	34	34	34	32	33	52	57	65	76	78	68	65	66	62	56	42	36	41	36	34	36	32
L Q	27	27	28	30	28	27	27	43	49	52	60	63	58	54	56	53	47	36	32	28	26	28	27	27

HOURLY VALUES OF fEs AT Kokubunji

DEC. 2006

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	32	28		G	G		G	G	G	39	G	104	42	40	34	G	30	G		28	30	G	G	G
2	31	32	24	G	G			G	G	40	G	G	G	G	43	G	G	G	G	G	G	G	G	G
3	G	G		G	G			G	G	34	G	G	43	43	43	30	27	26	26	25				
4		G	30	G				29	34	G	43	39	50	G	36	34	G	G			G	G		
5	G	G	G		G	G		G	G	G	G	G	G	G	G	G	G	G		26		G	40	
6	G	29		G	G	G		G	31	43	G	40	37	G	G	G	30	30	35	44	G	G	41	40
7	29	33	26			G	G	48	G	G	84	41	48	G	G	G	G	G	G		G			G
8	G		G	G			G	G	30	40	105	41	56	G	G	39	G	G	G					G
9	G	33	31	23	25	G	G	G	G	60	42	64	49	60	65	60	29	G	28	40	G	G		
10	G	G	G	G	G	G	G	G	34	35	G	G	G	G	49	G	G		G		G	G	G	G
11	G	G	G	G		G	G	G	G	33	G	G	G	G	G	50	61	G	G	G	G	32	G	G
12	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	65	30	24	26	35	60	G	G	G
13	G	G	G			G	G	G	33	G		52		G	G	G	36	29	40		G	25	23	G
14	51	G	G	G	G	G		G	G	G	G	G	39	G	G	32	G	G	G	G	G	G	G	23
15	G	25	G	G	G	G	28	G	61	81	G	42	G	G	37	45	49	60	G		G	G	G	G
16		G	G	23	24	G	G	G	G	G	62	52	51	60	41	40	43	40	33	52	50	60	49	58
17	59	G	29	34	G	G	G	G	G	48	62	70	79	60	G	G	G			G	G	G		G
18	G	31	26		G			G		G	G	G	G	G	G	G	G	G	G	29	26	33	G	
19	G		G	G		G	G	G	G	G	40	G	G	39	55	G	G	G	42	29	G			G
20	43	G	G	G	G	G	31	G	G	71	52	G	G	G	G	G	G	G	G	G		G	G	G
21	G	G	G	G	G		G	28	50	39	G	G	61	61	G	G	G	20	40	42	35	G		G
22	28	26	G	G	33	29	G	G		33	G	G	41	G	G	G	G	34	G	G	29	26		
23			G	G		G	G	G	30	G	G	82	G	G	40	G	G	G	26	G	G	G	G	G
24			G	G			G	G	31	39	G	53	40	39	G	G	34	G	G	G	G	G	G	G
25		G	G	G			G	G	31	34	40	G	48	G	G	G	G	G		29	37		G	G
26	G	G	27	G				G	G	41	47	39	G	G	43	35	34	G	G	27	26	31	24	39
27	31		G	G	G	G	G	G	31	36	79	50	51	G	G	G	G	30	26	27	G	48	32	32
28	G	49	G	G	G		G	G	33	G	G	G	G	G	G	G	G	G						
29		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G				G	G	G
30	G	27	27		G	G	26	26	G	G	47	G	G	G	G	G	G	29		G	G		47	36
31	34	G	G	G	G	G	G	G	29	34	38	G	G	G	G	G	G			42	65	G	36	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	28	26	21	20	23	31	29	31	30	31	30	31	31	31	31	28	22	23	25	24	21	23
MED	G	G	G	G	G	G	G	G	G	34	G	G	19	G	G	G	G	G	G	27	G	G	G	G
U Q	31	28	25	G	G	G	G	G	31	40	47	50	48	39	40	34	30	27	28	35	29	25	34	23
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

HOURLY VALUES OF fmin AT Kokubunji

DEC. 2006

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	14	15		13	15		18	20	28	21	18	20	14	14	13	24	13	14		14	13	14	14	14
2	13	13	13	13	14			13	14	15	20	17	22	18	14	13	20	13	20	18	17	13	13	17
3	13	13		20	13			21	13	13	35	21	21	14	14	13	13	13	13	17				
4		13	13	17				13	15	14	13	17	21	22	14	14	22	14			14	14		
5	14	23	14		14	14		23	17	15	15	21	39	18	28	26	21	22		15		22	14	
6	17	14		14	14	15		14	13	14	39	42	29	21	17	13	20	14	13	14	14	14	13	14
7	13	15	14			14	21	21	21	29	25	18	22	15	21	13	21	14	18		24			21
8	14		15	18			14	18	14	21	13	23	21	18	14	14	21	14	15					20
9	17	15	13	20	13	15	17	20	25	20	21	18	24	22	21	13	13	14	14	18	13	13		
10	21	17	14	21	13	15	17	24	13	13	14	22	13	18	17	24	23		18		18	18	14	13
11	14	15	17	14		13	14	20	13	14	14	15	15	15	14	14	13	17	14	20	26	13	14	13
12	14	13	13	14	13	14	18	20	25	30	33	20	17	13	13	13	13	15	14	13	13	17	21	14
13	13	13	14			13	18	18	26	20		17		60	31	14	14	14	14		24	17	13	13
14	13	13	14	15	13	14		22	13	13	14	24	18	18	13	20	23	14	14	17	13	13	13	13
15	14	14	13	13	14	15	13	18	28	23	22	15	13	14	14	13	14	14	23		14	14	13	14
16		18	14	14	14	15	17	17	22	18	14	20	13	20	20	13	22	17	13	14	13	14	13	13
17	14	15	13	13	14	18	15	17	26	17	21	22	21	18	30	23	26			20	14	14		17
18	26	14	17		13			18	20	18	14	35	30	28	21	24	24	14	26	14	13	17	14	
19	14		14	13		14	17	14	15	18	20	22	23	21	21	28	22	25	22	13	14			15
20	14	15	15	13	14	14	14	15	26	23	33	36	40	37	37	33	25	15	15	15		14	17	13
21	13	14	13	13	13		17	13	14	20	37	35	21	23	30	28	24	14	24	17	13	15		14
22	14	13	14	18	13	15	14	14	24	18	21	20	26	22	15	17	20	13	15	14	14	15		
23			21	18		22	13	14	13	14	17	20	20	28	18	15	25	18	15	13	21	17	15	14
24			15	13			15	15	13	13	13	13	13	15	34	25	18	14	21	15	13	17	14	13
25		17	17	15			17	17	13	13	14	30	13	13	30	25	22	23		14	14		14	13
26	14	15	14	18				15	14	17	17	21	38	28	20	17	13	13	18	13	17	13	14	13
27	14		21	17	13	14	14	17	13	13	14	21	21	18	13	13	14	13	15	13	13	13	13	17
28	23	13	14	14	14		14	17	13	17	18	39	38	39	34	28	22	14						
29		14	13	13	13	14	17	18	24	34	36	42	40	41	35	25	23	17				14	13	14
30	13	15	17		17	14	14	17	23	29	24	37	38	40	34	28	26	14		17	15		14	13
31	14	13	15	15	13	14	14	15	13	20	20	21	22	36	34	33	23			15	14	13	14	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	28	26	21	20	23	31	31	31	30	31	30	31	31	31	31	28	22	23	25	24	21	23
MED	14	14	14	14	13	14	15	17	15	18	19	21	21	20	20	17	21	14	15	15	14	14	14	14
U Q	14	15	15	18	14	15	17	20	24	21	24	30	29	28	30	25	23	16	20	17	17	17	14	15
L Q	13	13	13	13	13	14	14	15	13	14	14	18	17	15	14	13	14	14	14	14	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

DEC. 2006

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

HOURLY VALUES OF fEs AT Yamagawa

DEC. 2006

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	G	G	28	G	G	G	G	G		39	40	58	46	75	38	51	78	84	58	G	35	33	46	31
2	G	G	G	G	G	G			34	G	G	46	38	42	42	G	G	G	G	G	G		G	
3	G	G	G	G		24	G	28	G	39	48	47	44	41	40	38	34	G	49	32	53	G	G	40
4	G	G	24	G	G	G		23	33	38	36	44	52	45	39	37	G	G	11	G	G	G	G	G
5	G	G	G	G	G	G	G	G	40	G	44	48	47	44	43	50	42	61	33	30	29	G	G	G
6	G	G	G	G	G	G	11	G	G	35	G	G	52	55	48	55	37	33	26	52	35	28	50	38
7	G	G	G	G	G	G	G	G		37	44		48	51	38	39	44	G	G	22	G	23	G	G
8	G	G	G	G	G	G	G	G	32	39	40	38	38	G	G	G	G	G	G	G	G		G	G
9	G	48	40	31	36	25	G	G	G	G	41	54	61	60	43	36	G	G	11	G		G	G	G
10	G	G	G	G	G	G	G	11	30	37	37	38	G	43	36	G	42	G	33	24	G	G	G	
11	G	G	G	G	G	G	G	26		G	42		38	38	39	G	32	32	28	40	40	39	37	G
12	G	G	G	G	G	G	G	G	49	G	40	43	39	43	49	51	48	30	48	34	29	40	32	G
13	G	G	G	G	G	G	G	G	G	G	G	42		G	G	G	32	33	24	G	G	G	G	G
14	G	G	G	G	G	G	30	G	G	33	42	43	85	G	G	N	G	30	29	27	33	41	37	
15	G	G	G	G	G	G	24	G	28	39	42		75	53	59	40	37	35	G	G	23	G	G	G
16	G	G	G	27	G	33	G	G	G	G	42	62		82	50	123	76	52	61	40	35	49	69	59
17	59	44	58	59	33	G	G	G	G	35	43	53	51	44	52	51	46	36	43	40	32	29	25	
18	25	G	G	G			G	G	G	G	40	G	G	G	G	G	G	G	28	G	G	G		G
19	G	G	G	G	G	G	G	G	34	44	G	36		40	G	G	G	G	G	G	G		G	G
20	G	G	G	G	33	G	G	G	39	G	G	G	G	42	G	G	35	30	50	33	G	G	G	24
21	G	G	27	G	G			G	G	39	43	44	39	41	45	38	36	35	G	G	G	G		
22		48	26	G	G	G	G	G	G	G	40	47	52	54	51	59	33	27	G	38	30	G		
23	26	G	G	G	G	G	G	G	28	36	46	42	45	G	36	G	G	G	G	20	G	G	G	G
24	G	G	24	28	G		G	G	27	38	53	42	61	44	48	44	39	28	41	50	G	G	G	
25	G	G	G	G	G	G	G	G	29	34	43	42	G	G	44	36	G	G	G	G	G	G	G	28
26	24	G	G	G	G	G	G	G	G	G	42	49	42	50	G	51	70	30	25	57	35	26	G	G
27	G	40	29	G	61	27	23	G	G		43	62	45	G	50	34	G	53	49	38	38	33	35	40
28	39	33	26	34	27	26		G	30	40	47	40	G	39	G	44	G	G	28		G	G		
29	G	G	G	G	G	G		26		G	G	38	41	44	36	45	G	G	G	G	G		G	G
30	33		G	33	28	G	G	G	G	35	G	52	49	42	36	49	70	42	29		G		39	
31	34	35	32	28	23	G		G	42	43	48	44	53	45	G	G	51	37	27	G	22	29	G	49
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	31	29	28	25	30	27	30	31	28	28	31	31	30	31	31	31	29	30	26	27	22
MED	G	G	G	G	G	G	G	G	27	35	42	44	45	43	39	38	34	30	27	22	G	G	G	G
U Q	G	G	26	G	12	G	G	G	33	39	43	48	52	50	48	50	44	35	41	38	33	29	35	31
L Q	G	G	G	G	G	G	G	G	G	G	36	39	38	38	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

DEC. 2006

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

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

HOURLY VALUES OF foF2 AT Okinawa

DEC. 2006

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	32	36	41		A	A	28	44	88	89	101	88	86	83	C	57	62	55	40			32	31	A
2	26		29	26	30	34		36	52	62	76	63	76	76	72	60	67	53	37		34			
3				32				34	53		64	58	62	71	64	65	71	62	45		34	29		28
4		A	30	29		A	A	37	54	72	61	54	77	77	86	59	66	58	56	51	48	29		30
5		30	26		32			34	56	67	61	A	76	68	68	56	65	54	58	37	34	37	40	
6			31	30		41	34	38	51	62	70	68	71	87	88	76	75	83	60	A	44		45	43
7	41	44	42	32				42	76	68	60	82	107	85	73	100	78	86	76	54	42	31	41	
8			28		29	28		40	58	67	83	82	78	64	75	75	74	70	46	42	36	31	36	34
9		29	29	30	A	A		43	56	60	70	88	100	80	88	86	85	74	51	30	40	29		
10					31	29		36	52	64	64	74	62	75	78	90	83	C	49	42		C	36	
11			26					31	55	72	93	88	77	70	73		90	71	76		40			C
12	30	30	30	30	30			36	55	65	71	93	77	80	91	90	107	107	80	45	30	32	A	32
13	30	29	36	36			30		62	78	66	76			75	70	56	54	72	48		30		
14				26				29	52	61	74	76	62	65	82	68	62	58	51	37	A		31	
15					50		28	34	64	66	76	79		78		88	98	108	78	73		66	79	86
16	86	84	52	63	51	A		54	79	71	74	67	94	72	55	A	75	A	56	A	A	28	A	A
17	A	A	A	A	A				59	81	80	67	71	84	87	75	82	66	50		47	42	42	31
18	29		29	25					52	66	60	64	62	62	60		53	42						
19					29			28	51	48	55	76	75	66	62	56	57	62	36		34	32		26
20	30	40	40	47	36			31	53	54		64	87	104	84	77	52	50	44	34	29			
21				44	29			30	52	54	74	70	86	74	74	66	66	68	A	A		34		
22		26		34	38			34	52	48	55	64	75	72	64	64	56	50	48	36	43	40	26	
23		28		28	32	30			51	67	65	97	116		100	107	99	84	84	58	A	44	43	
24	30	32	38					34	50	53	70	77	111	63	55	72	51	59	43	29	36			A
25			A			A		30	54	55	57	80	81	73	53	53	65	67	45		39			
26		30	28		30			29	64	65	64	67	80	82	84	93	108	90	60			32	A	
27			A		30			31	48	52	56	86	91	88	81		84	67	45					
28	A		A	30	30	29		30	55	50	72	70	67	87	75	67	71	64						
29			30	36				28	45	45	54	59	66	68	68	72	64	55	A	A	A	38	30	
30								28	48	52	56	65	74	86	88	88	75	81	75	43	39	34	28	
31				28				28	46	47	52	58	70	60	60	56	61	58	43	34	44	54	38	
	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	12	17	18	15	6	4	27	31	30	30	30	29	29	29	27	31	29	27	16	18	20	14	8
MED	30	30	30	30	30	30	29	34	53	63	66	72	77	75	75	72	71	64	51	42	39	32	37	32
U Q	36	38	39	36	36	34	32	37	58	67	74	82	86	83	85	88	83	77	72	49	43	39	42	38
L Q	29	29	28	28	30	29	28	30	51	53	60	64	70	68	64	60	62	55	45	35	34	30	31	29

HOURLY VALUES OF fEs AT Okinawa

DEC. 2006

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

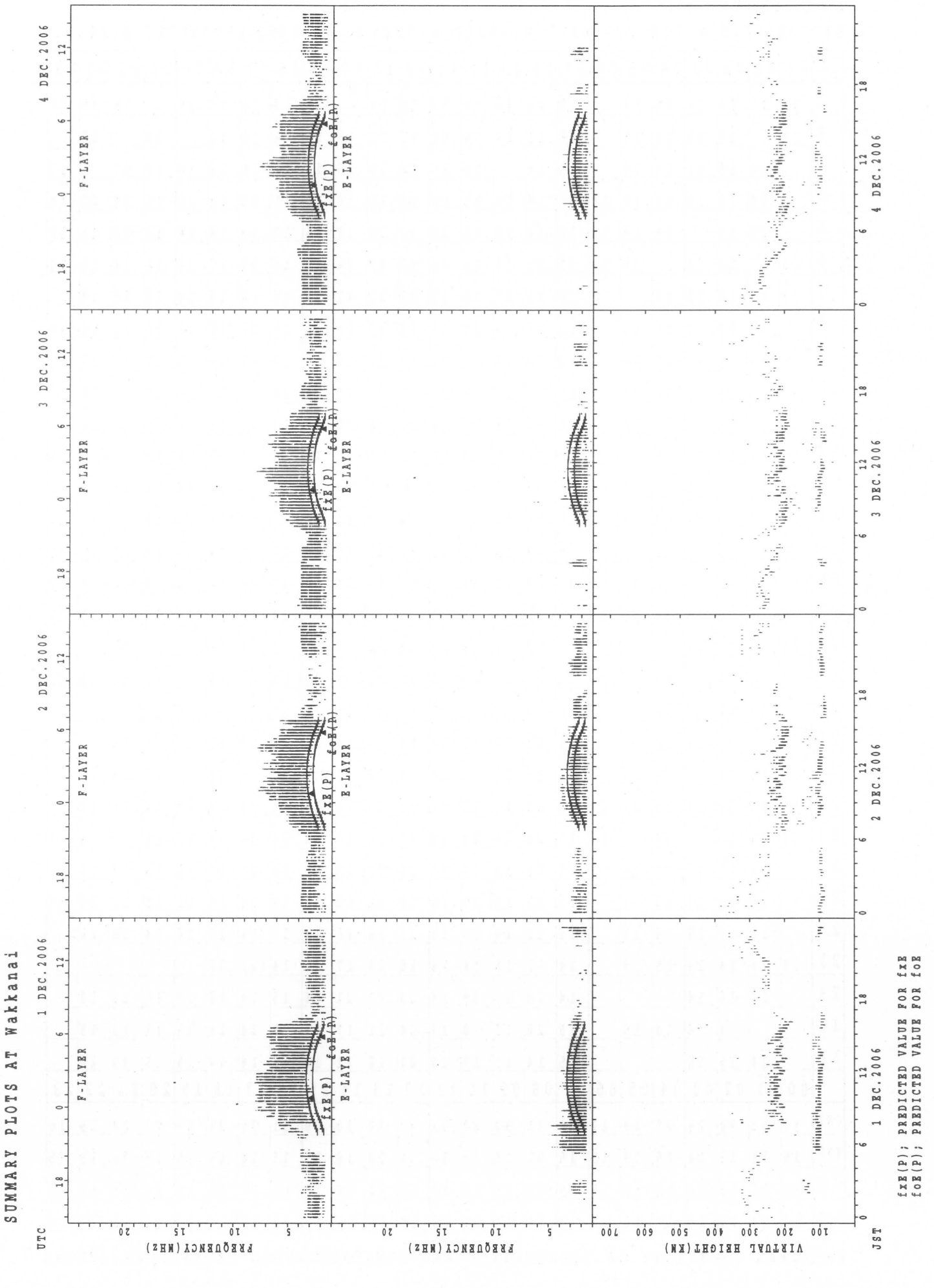
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	28	36	34	G	G	G	G	46	60	58	44	C	59	50	33	28	G		G	G	83
2	G		G	G	G	G		G	G	G	G	G	G	42	38	40	G	45	G		G		G	
3		G	G	G	G	G		G	G		G	G	45	46	45	44	39	28	29	28	G	G		G
4		57	G	G	31	46	29	G	29	G	42	47	48	50	50	36	35	G	G		G	G	G	G
5		G	G		G	G	G	G	44	33	G	68	49	49	44	G	40	35	G	32	30	G	G	G
6	G		G	G		G	11	G	G	G	G	46	43	50	46	40	36	40	26	48	24	37	29	G
7	G	G	G	G	G			G	G	G	G	42	40	G	G	37	G	G	11	26	26	26	G	
8			G	G	G	G		G	G	37	50	G	G	G	43	G	G	G	26	G	G	G	G	G
9		G	G	24	26	28		G	G	G	G	44	39	51	42	36	G	G	11	11	G	G	G	G
10			G		G	G		G	30	44	42	44	43	38	G	G	G	C	29	G	G	C	G	
11	G		G			G		G	G	35	42	51	58	G	G	42	44	48	29	27	G		26	C
12	G	G	G	G	G			G	G	G	G	G	G	G	48	49	50	49	34	G	G	25	46	G
13	G	G	G	G		G	11		G	G	G	G			G	G	32	35	26		G	G		G
14	G	29	G	G	G	G	G	G	G	G	G	69	50	38	42	48	44	26	G	24	38		G	28
15			G	G	G		G	G	28	42	66	62	G	G	69	85	69	57	34	36	25	G	G	G
16	G	G	G	58	47	66	42	G	G	G	G	44	55	108	63	96	78	111	33	88	90	28	72	58
17	69	59	52	53	38	G	27		G		37	43	50	69	54	71	51	52	38	27	32	28	26	G
18	G	G	G	G					G	G	G	G	G	G	G		G	48	G			G		
19			G		G			G	G	G	38	42	G	G	N	G	G	G	G		G	G	G	G
20	G	G	G	G				G	G	G		G	G	G	G	G	G	G	G	G	24			
21				G	G			G	G	G	G	38	50	45	G	G	40	33	83	81		G		
22	G	G	30	G	G			G		G	G	G	79	63	44	G	38	33	G	29	27	G	G	
23	G	G	G	G	G	33	26	G	G	G	40	52	42	G	43	G	36	46	34	33	52	G	G	
24	G	G	G		G		G	G	G	N	42	38	45	G	38	G	38	G	28	24	G		28	29
25		26	46	G	30	26		G	G	36	G	G	42	47	40	G	G	G	35	35	G	G	G	
26		G	G	G	G			G	G	G	40	49	52	G	38	49	68	46	43	27	G	29	29	G
27		G	41	32	24	29		G	G	G	44	50	49	68	47	71	63	43	29	28	29	27	G	
28	39	26	40	28	28	G		G	G	43	47	62	46	G	G	37	34	G	42					
29		G	G	G				G	G	G	G	47	48	38	45	35	70	51	49	39	36	G	G	
30			G	G	27	G		G	G	G	G	39	48	G	G	42	G	28	34	34	23	G	26	
31		28	24	G				G		41	G	43	52	48	G	G	G	G	19	27	G	G	G	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	22	30	26	24	19	11	28	29	28	30	31	30	30	29	30	31	30	31	25	27	24	25	16
MED	G	G	G	G	G	G	11	G	G	G	G	43	46	38	42	36	36	33	28	27	G	G	G	G
U Q	G	26	G	G	27	29	27	G	G	34	42	50	50	49	45	48	50	46	34	34	29	25	26	14
L Q	G	G	G	G	G	G	G	G	G	G	G	G	39	G	G	G	G	G	G	17	G	G	G	G

HOURLY VALUES OF fmin AT Okinawa

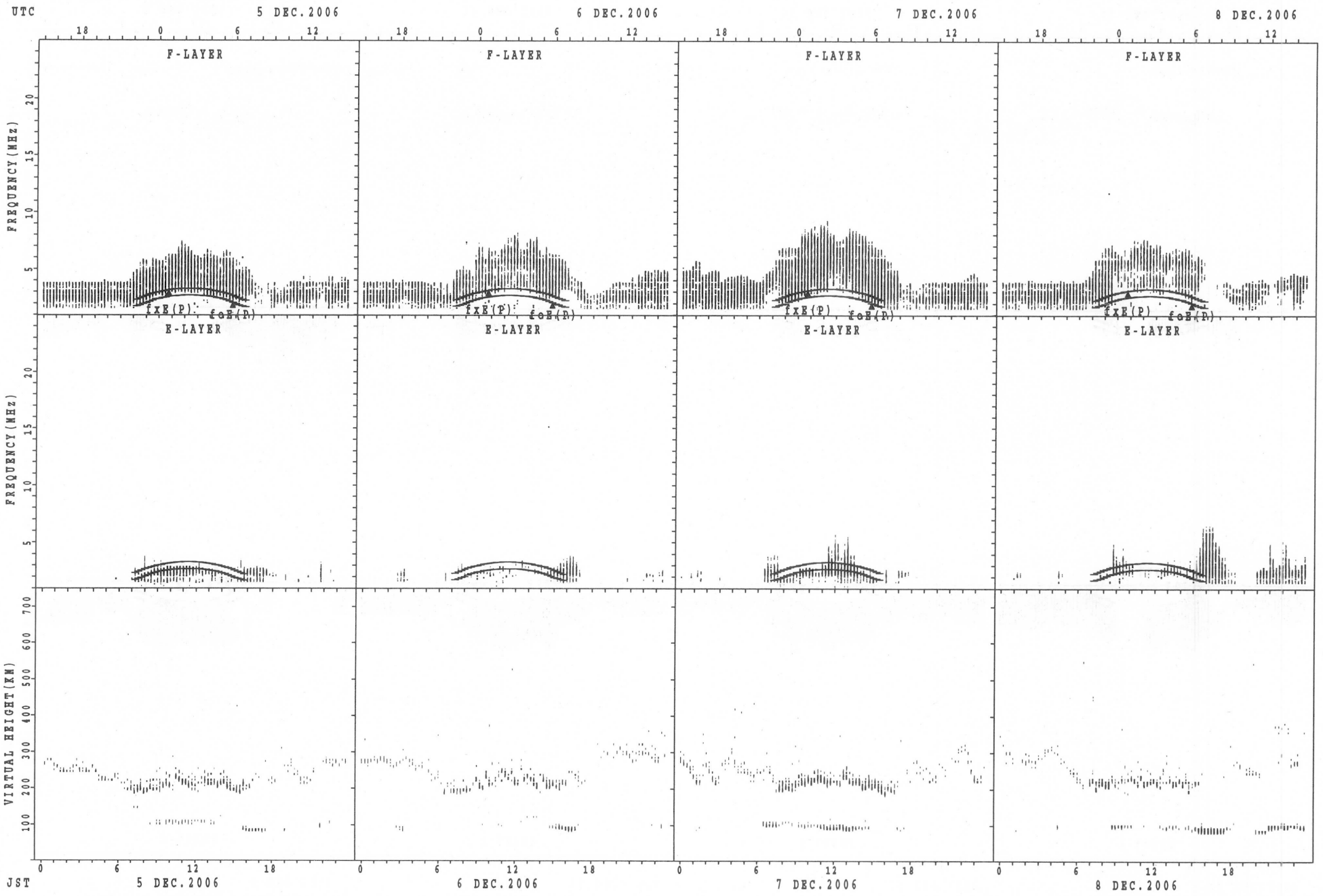
DEC. 2006

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

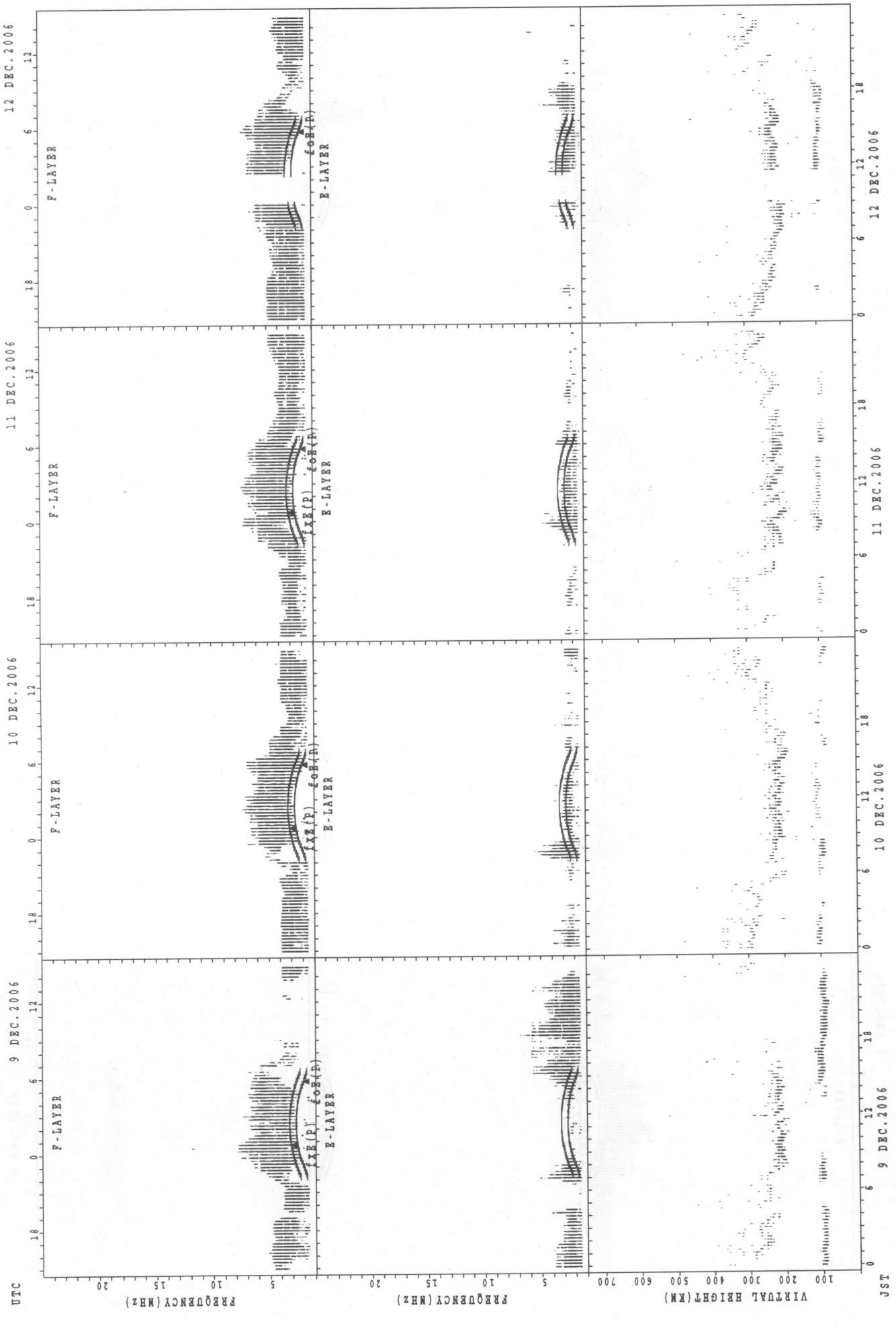
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	16	14	14	14	16	15	14	14	15	17	20	20	C	15	14	14	15	15		15	15	14
2	17		15	14	14	15		16	23	15	18	20	22	22	16	15	14	14	14		15		17	
3		15	16	17	18	14		15	14		14	15	18	15	15	14	15	16	14	16	16	17		15
4		14	14	14	14	14	14	15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


SUMMARY PLOTS AT Wakkanai
UTC
JST
1 DEC.2006
2 DEC.2006
3 DEC.2006
4 DEC.2006
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

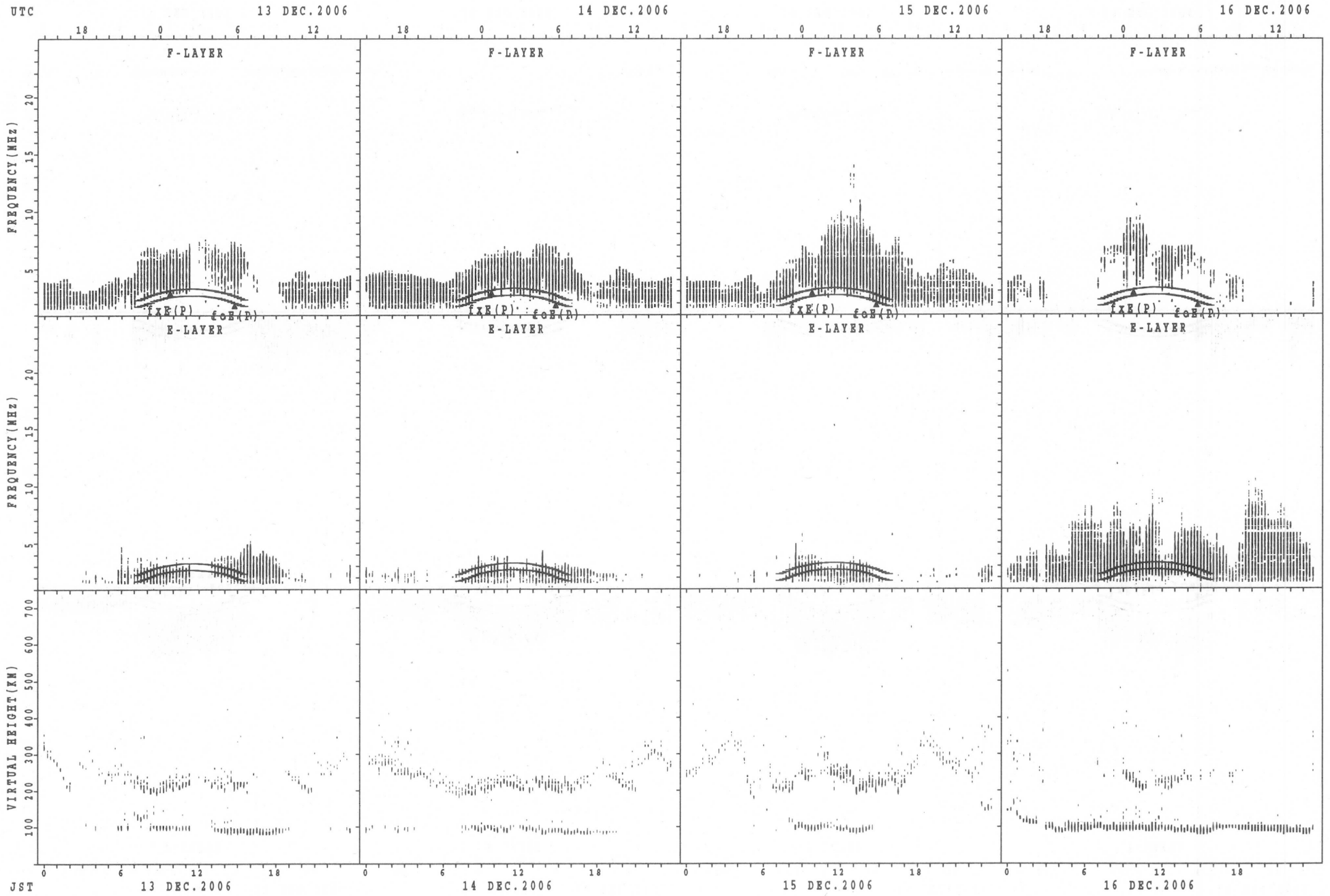
SUMMARY PLOTS AT Wakkanai



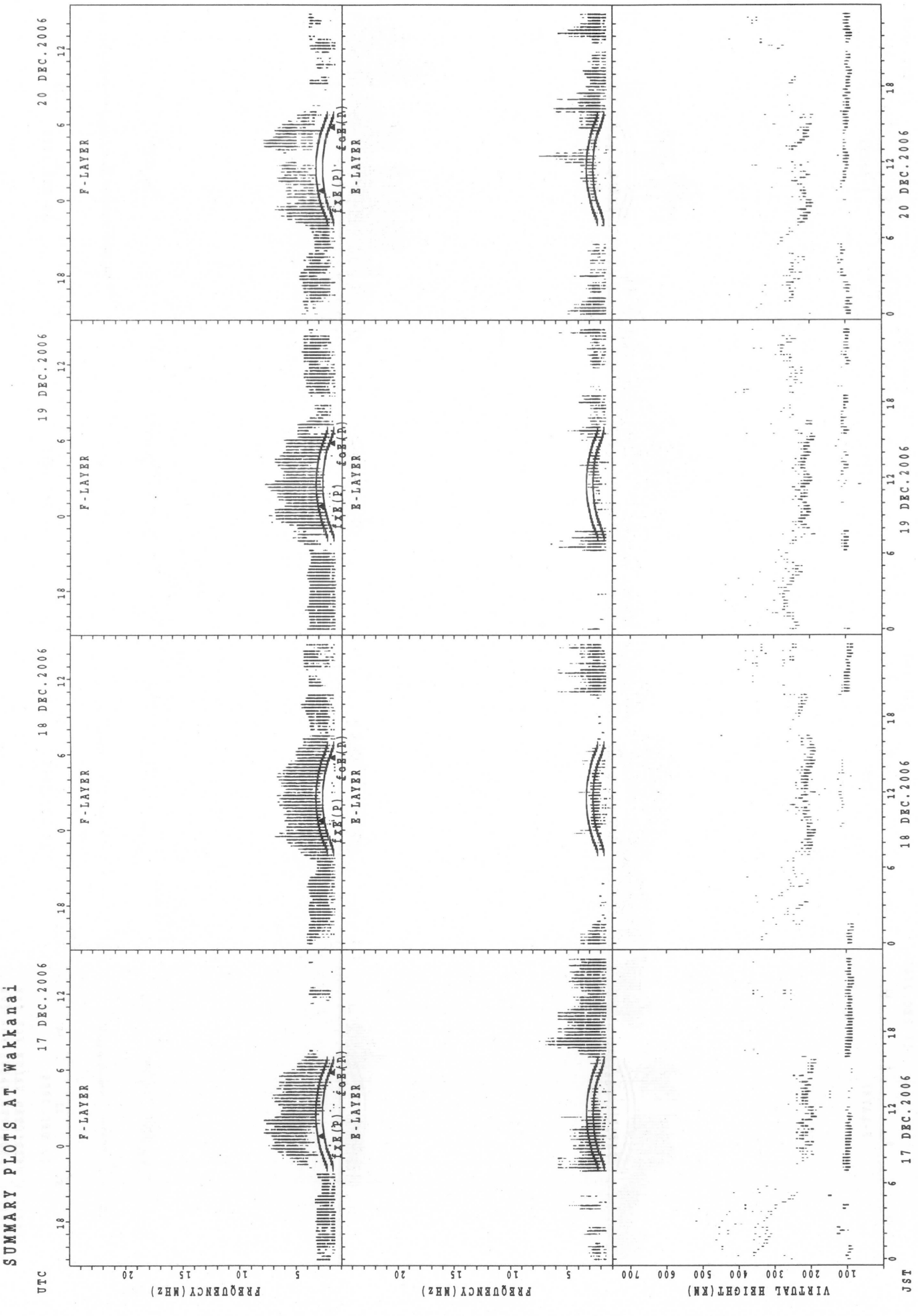
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
9 DEC.2006
10 DEC.2006
11 DEC.2006
12 DEC.2006
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

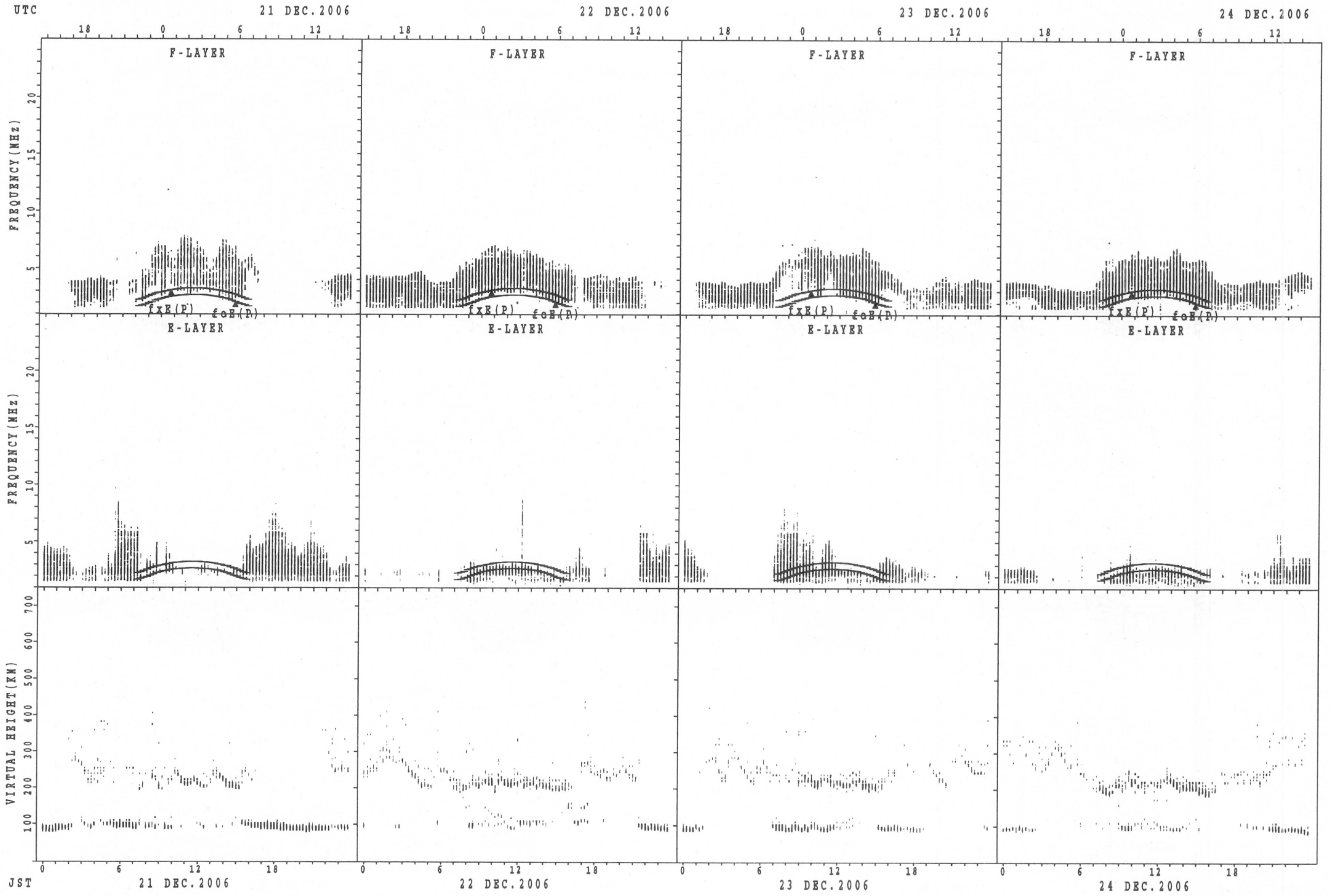
SUMMARY PLOTS AT Wakkanai



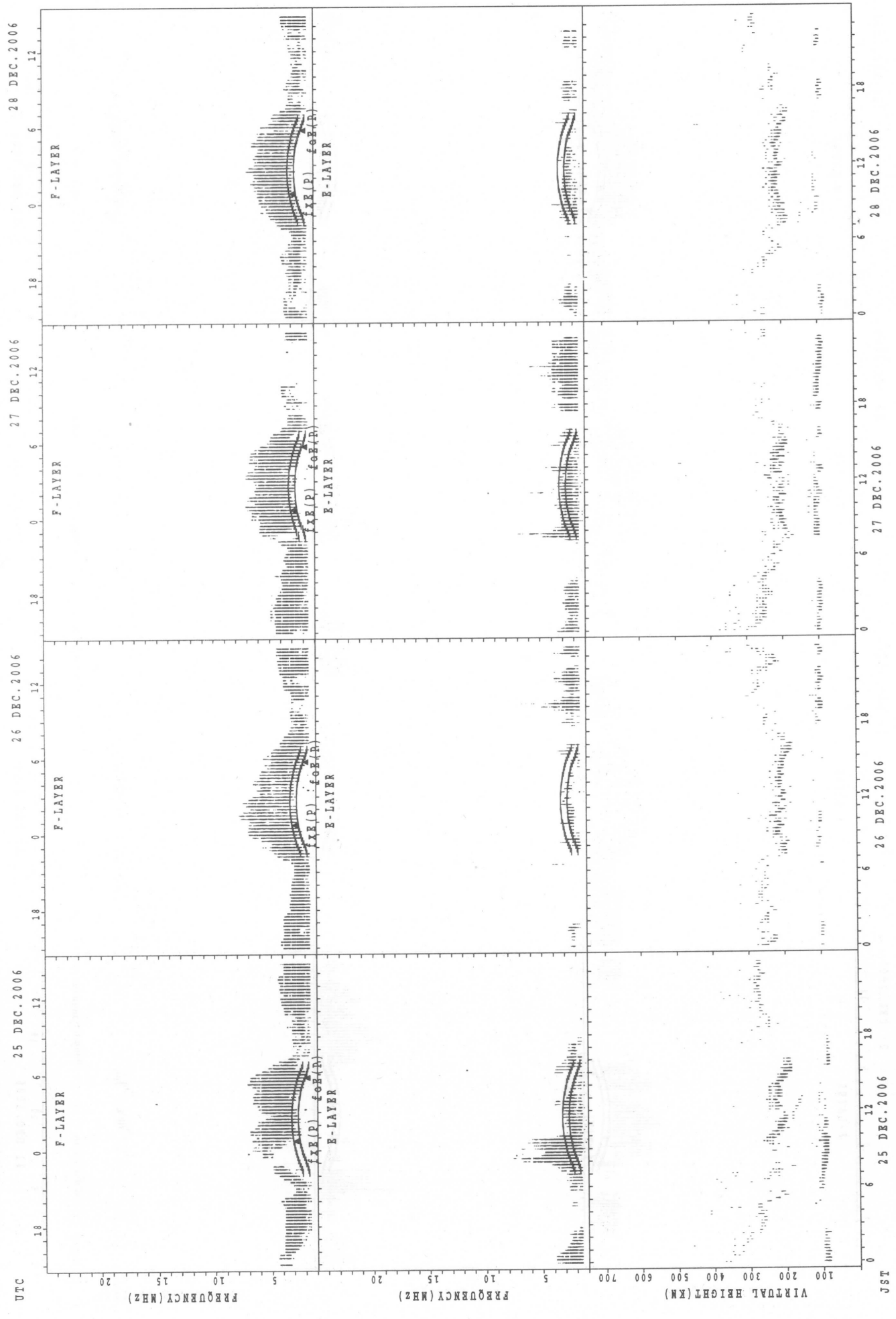
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
17 DEC.2006
18 DEC.2006
19 DEC.2006
20 DEC.2006
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

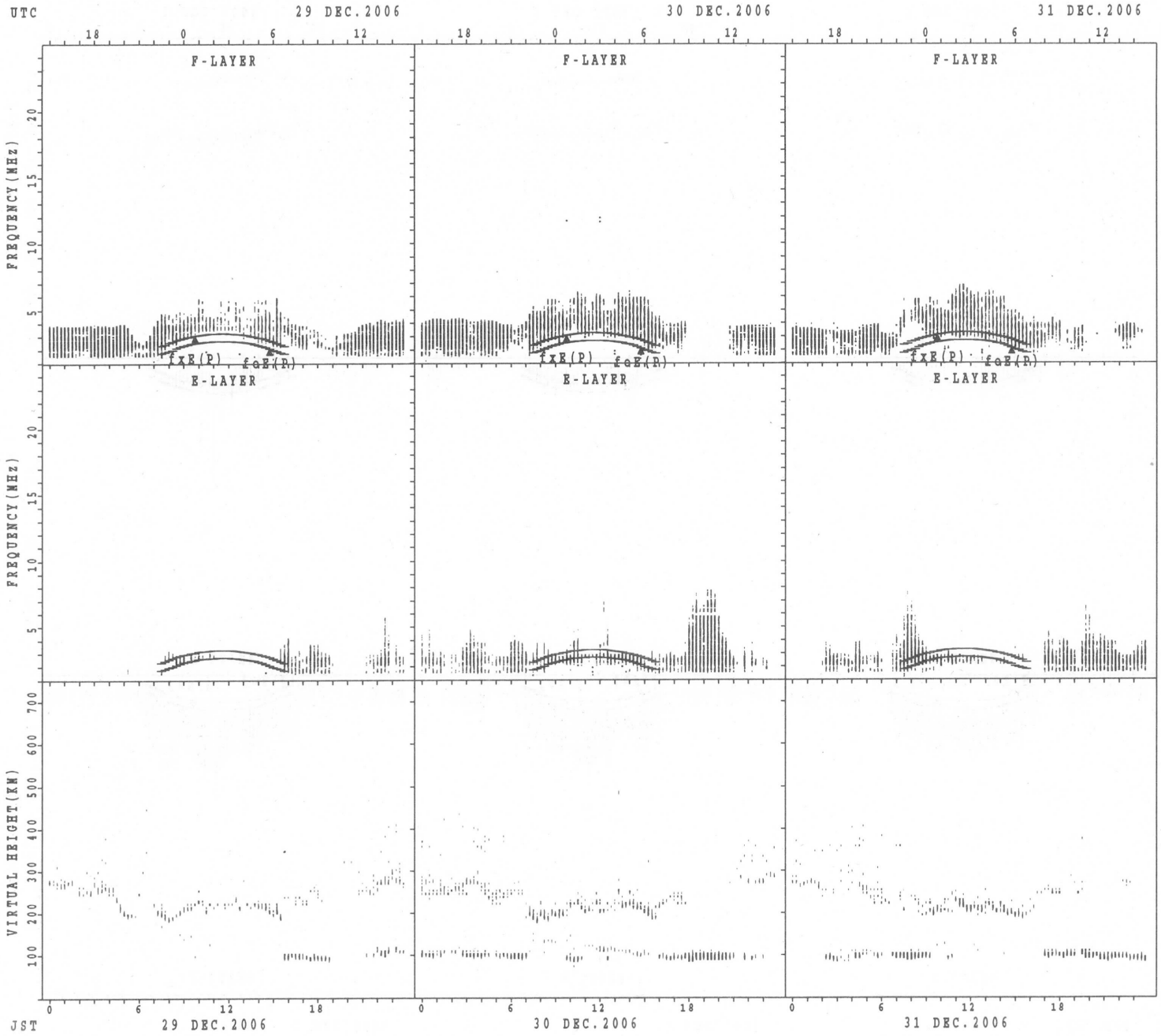
SUMMARY PLOTS AT Wakkanai



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

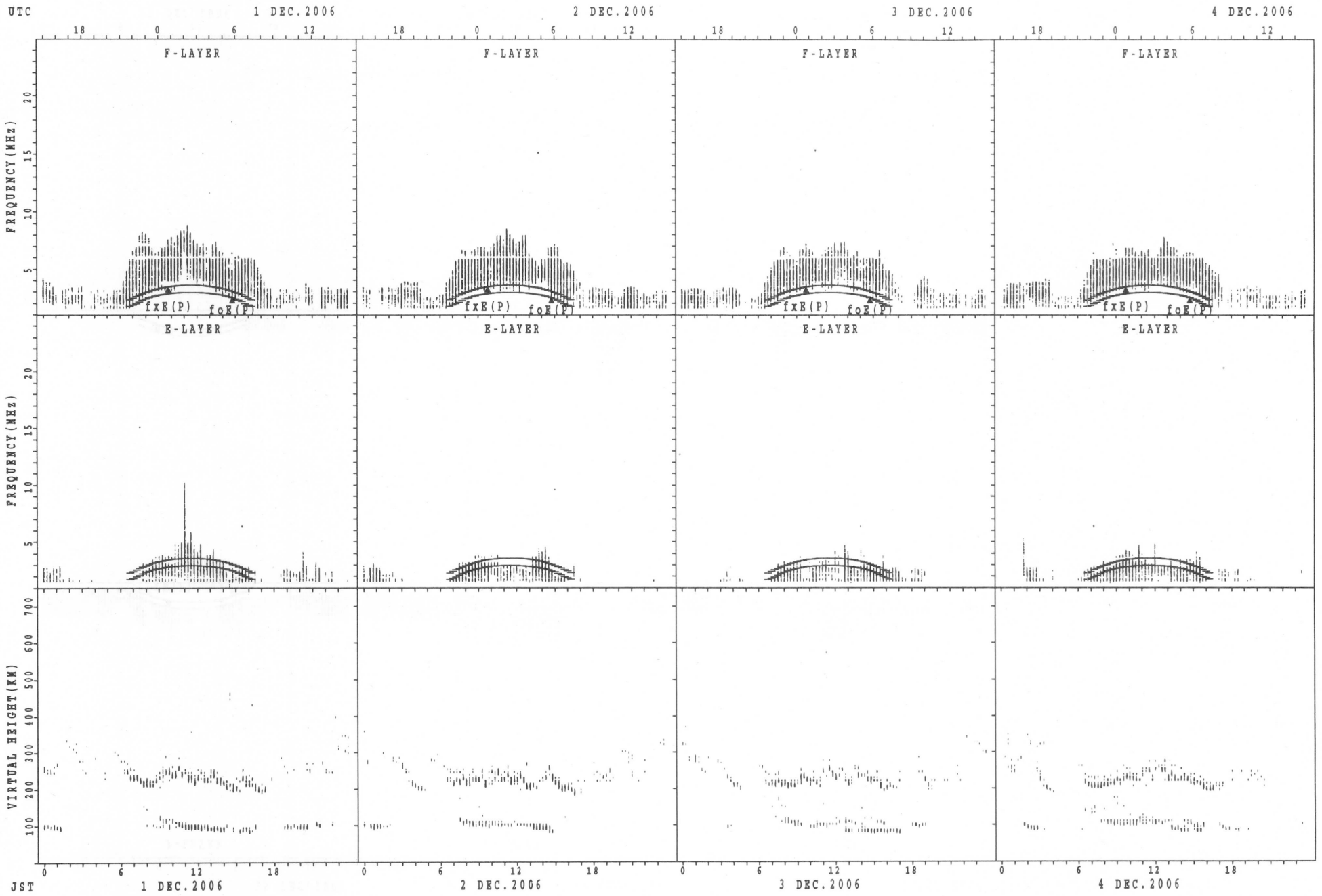

SUMMARY PLOTS AT Wakkanai
UTC
JST
25 DEC.2006
26 DEC.2006
27 DEC.2006
28 DEC.2006
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



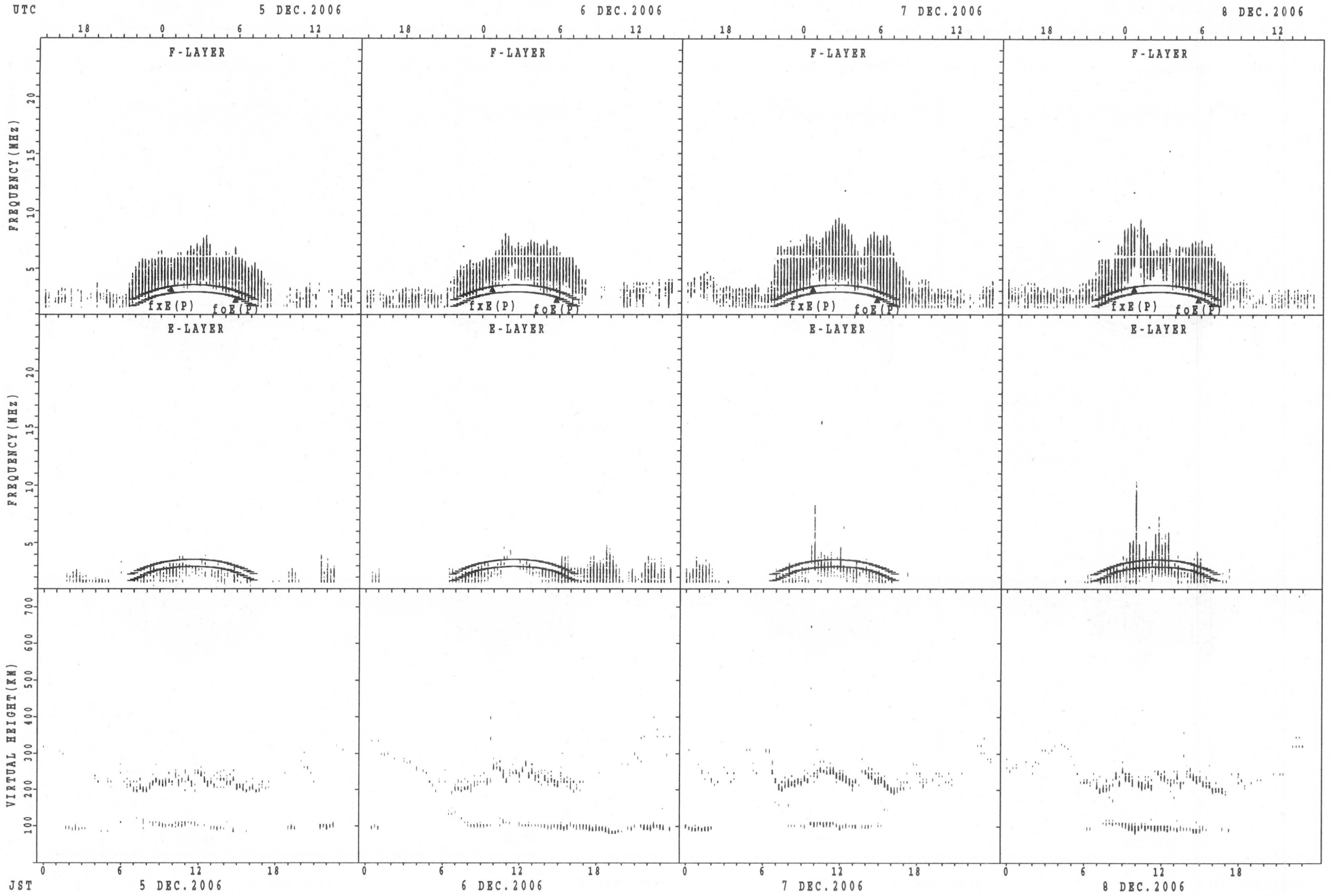
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



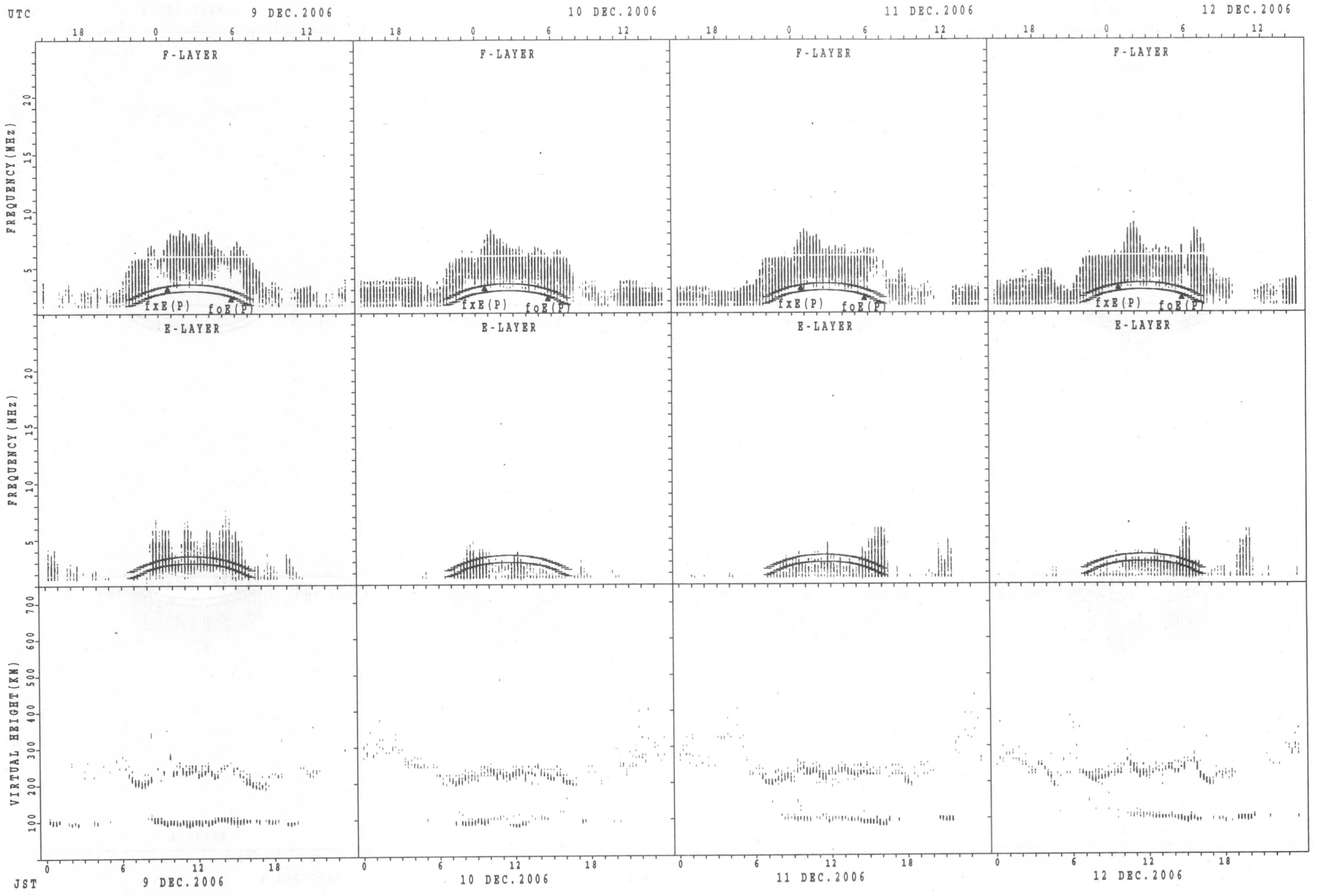
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



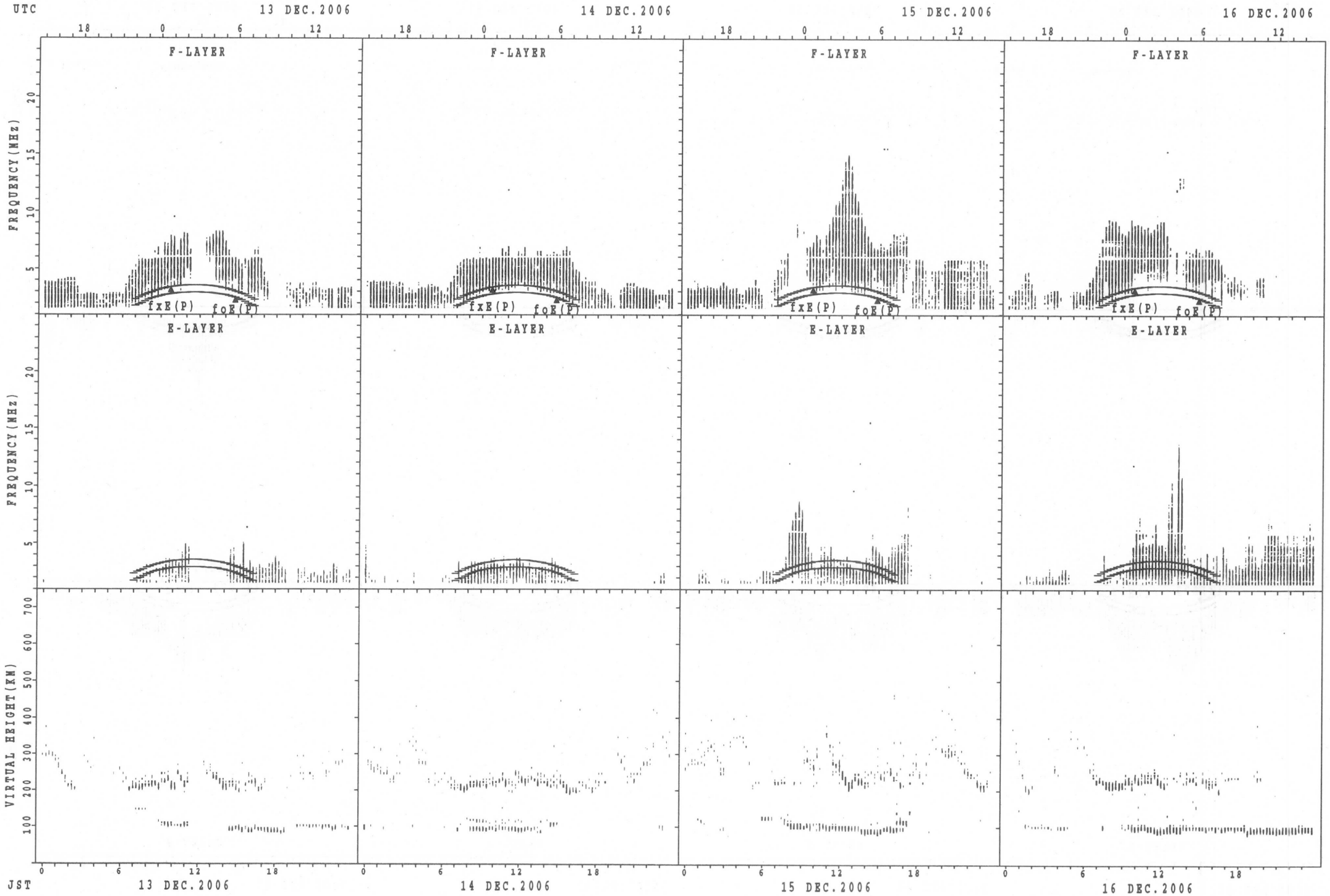
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



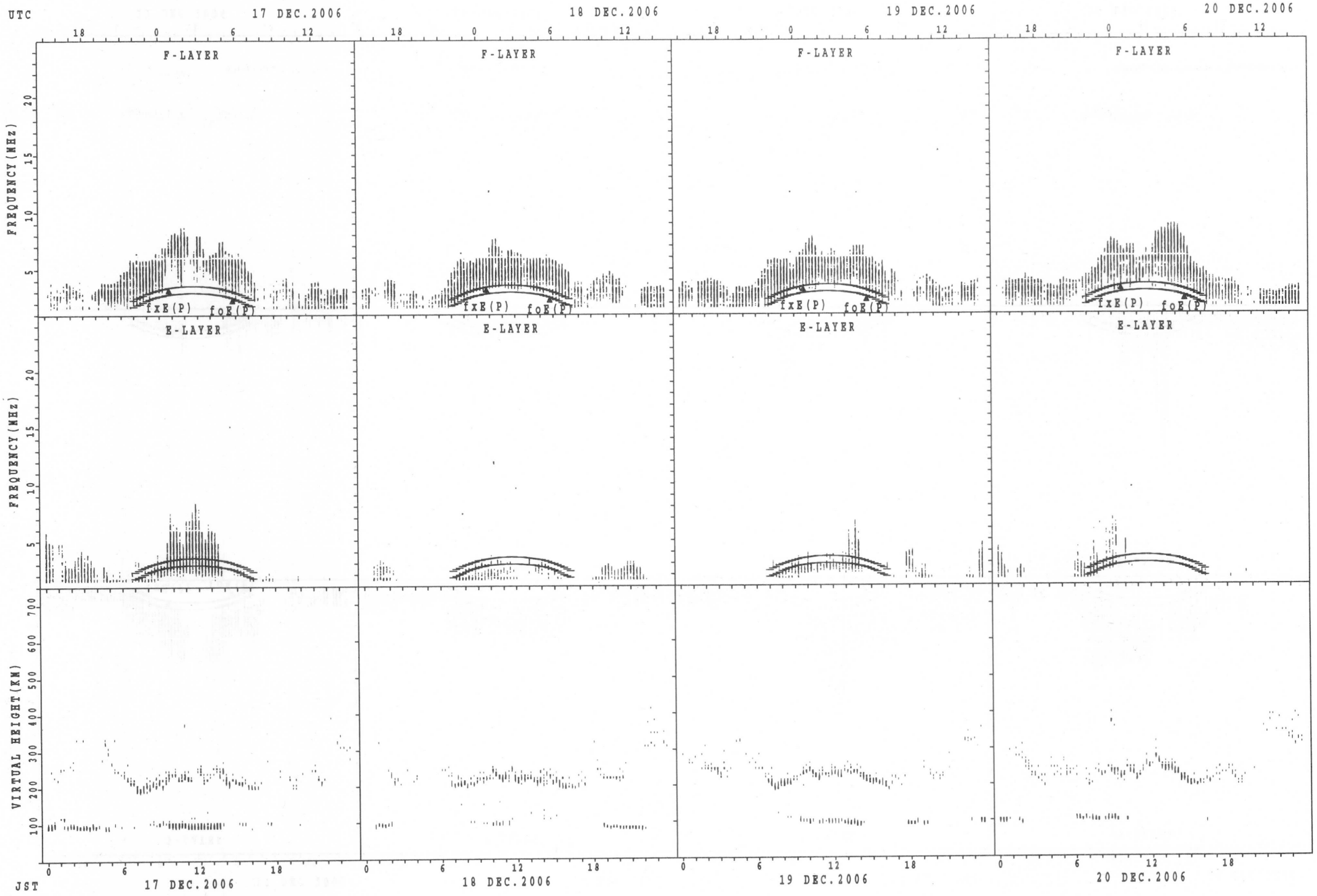
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



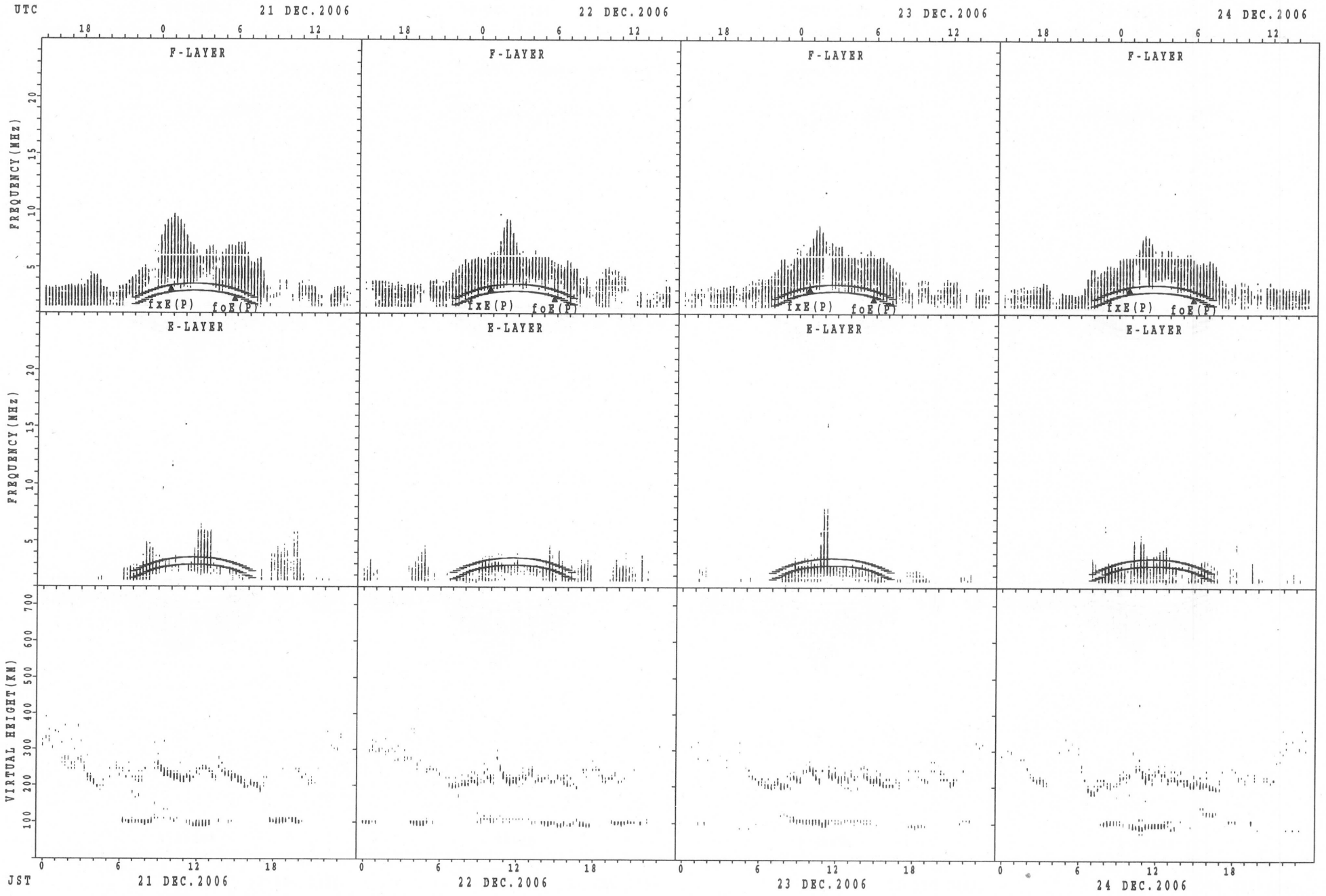
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



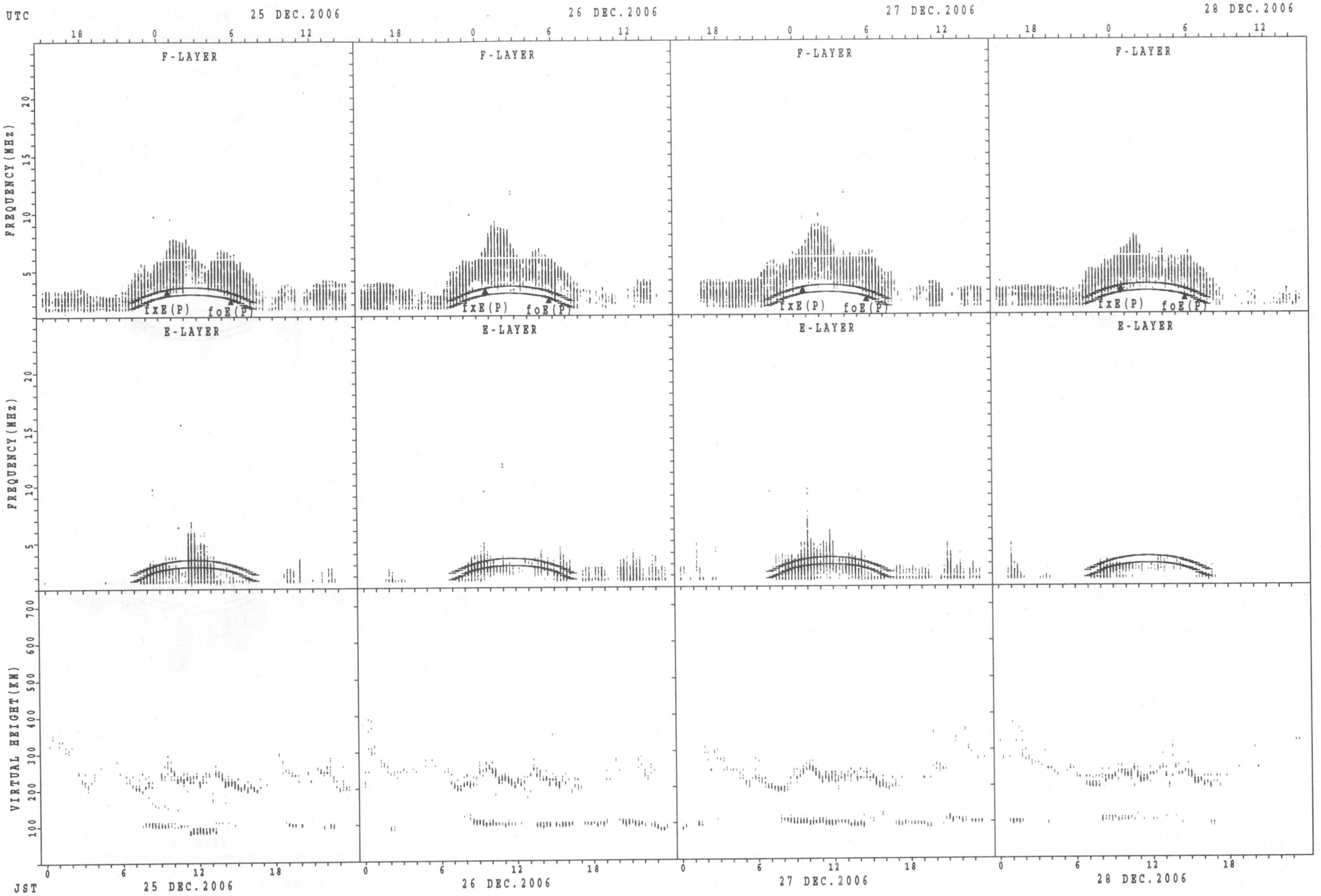
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



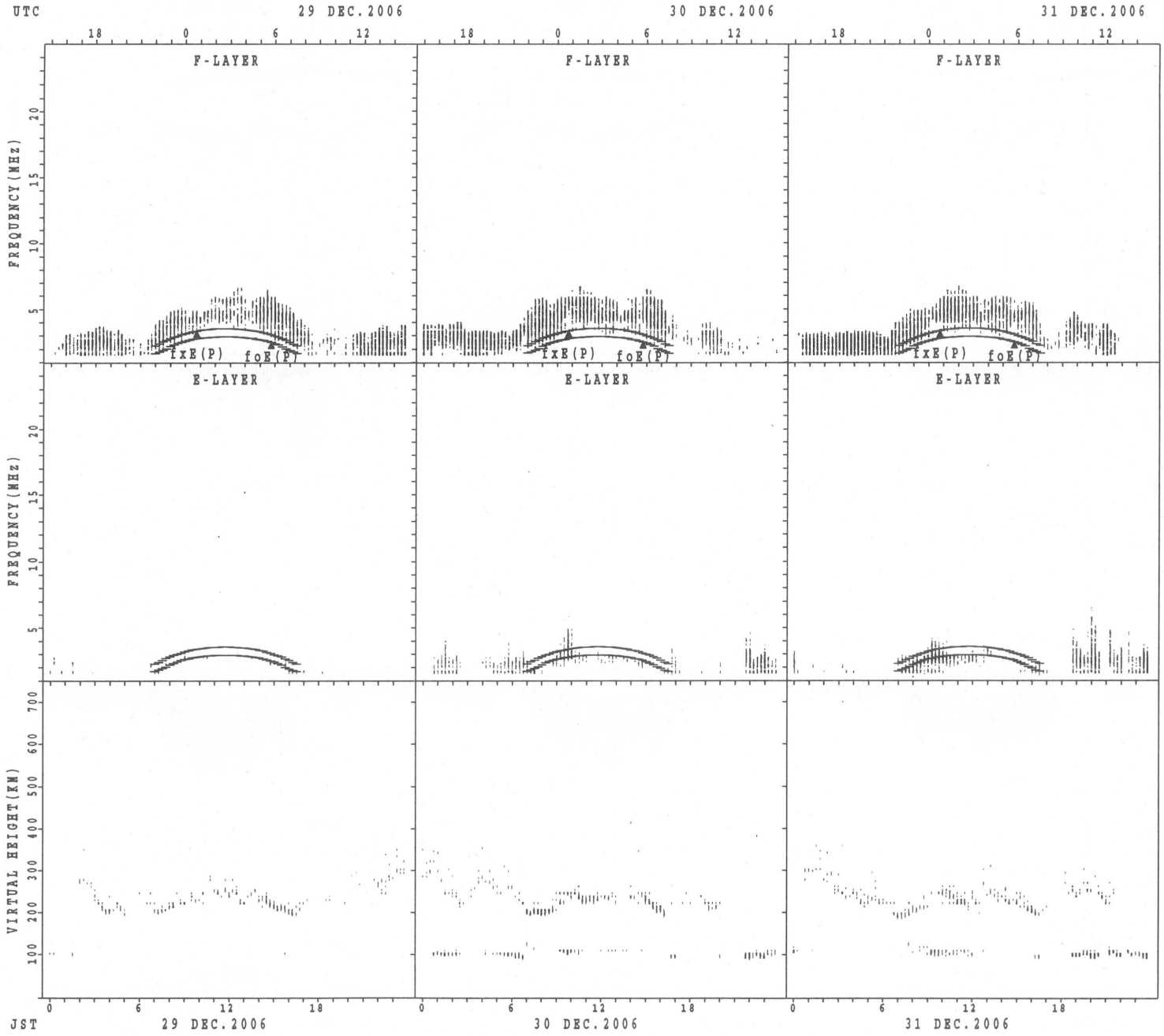
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



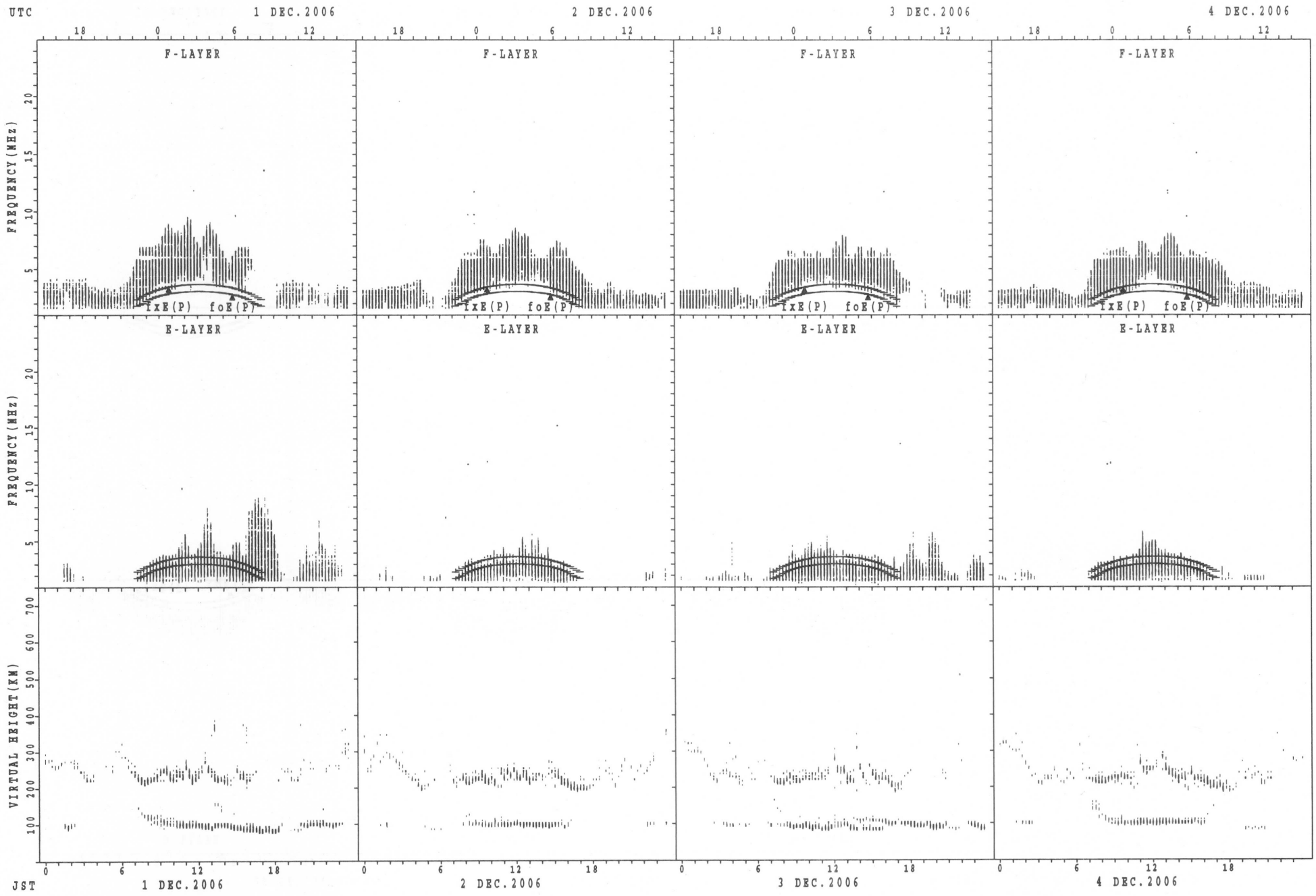
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



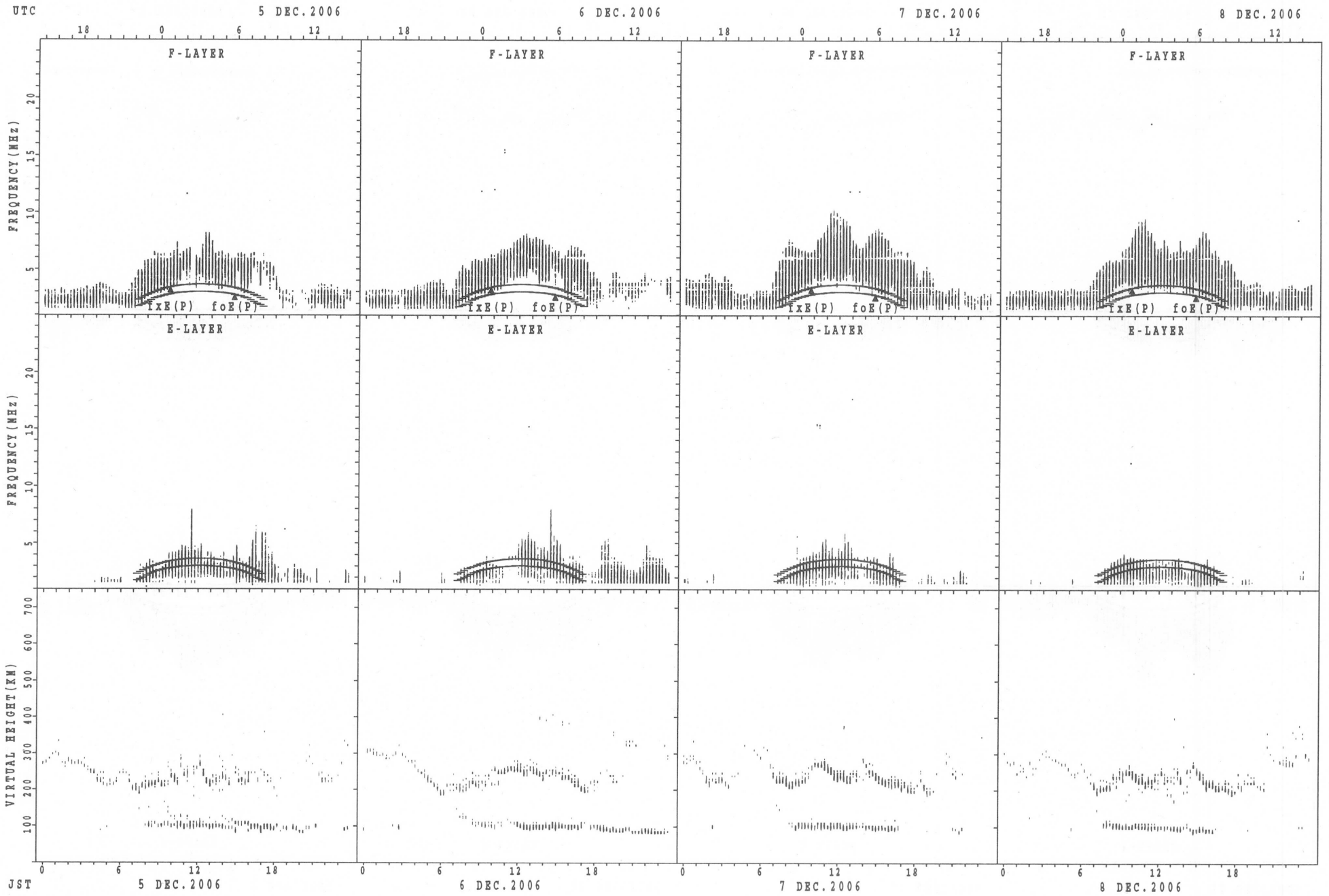
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

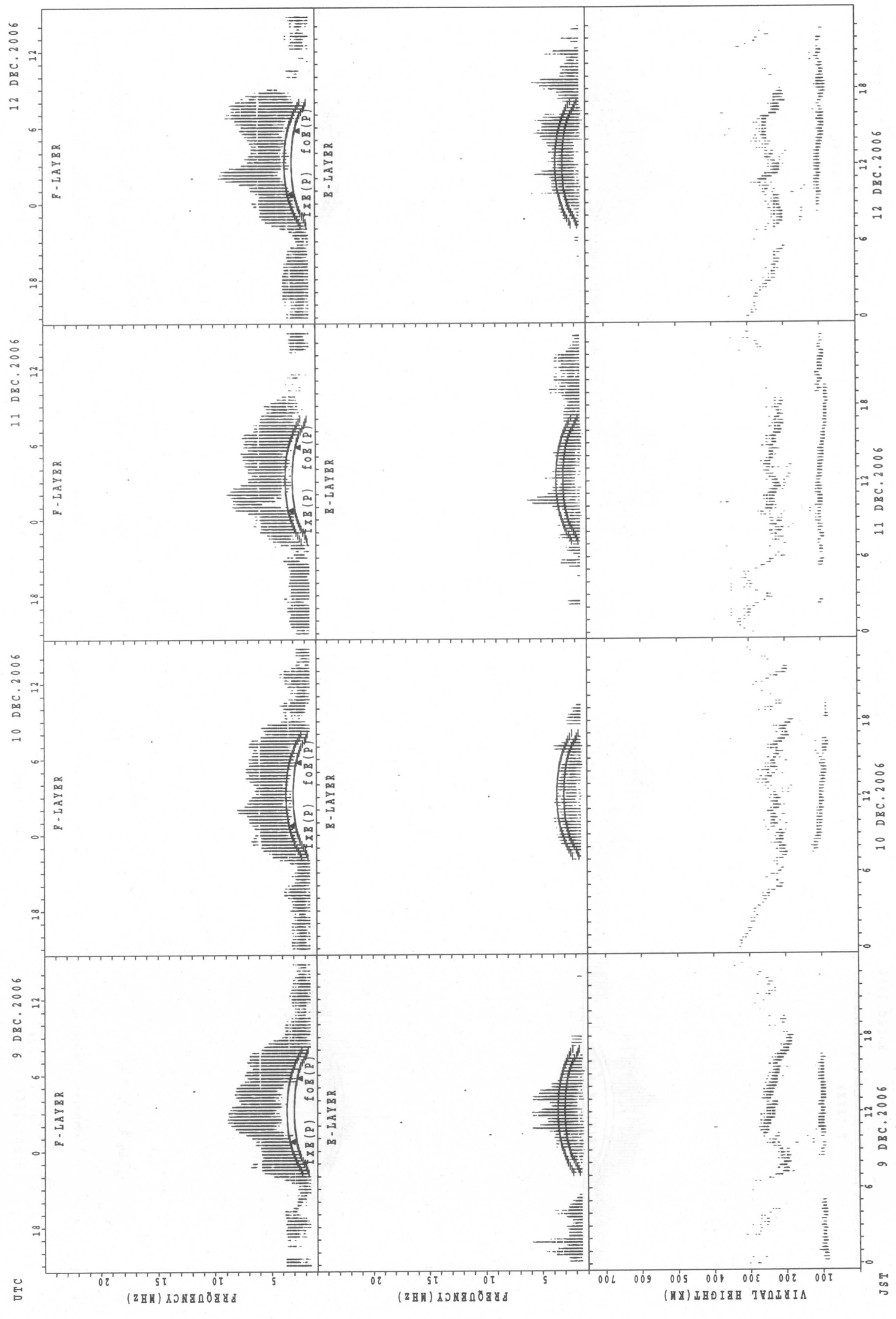


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

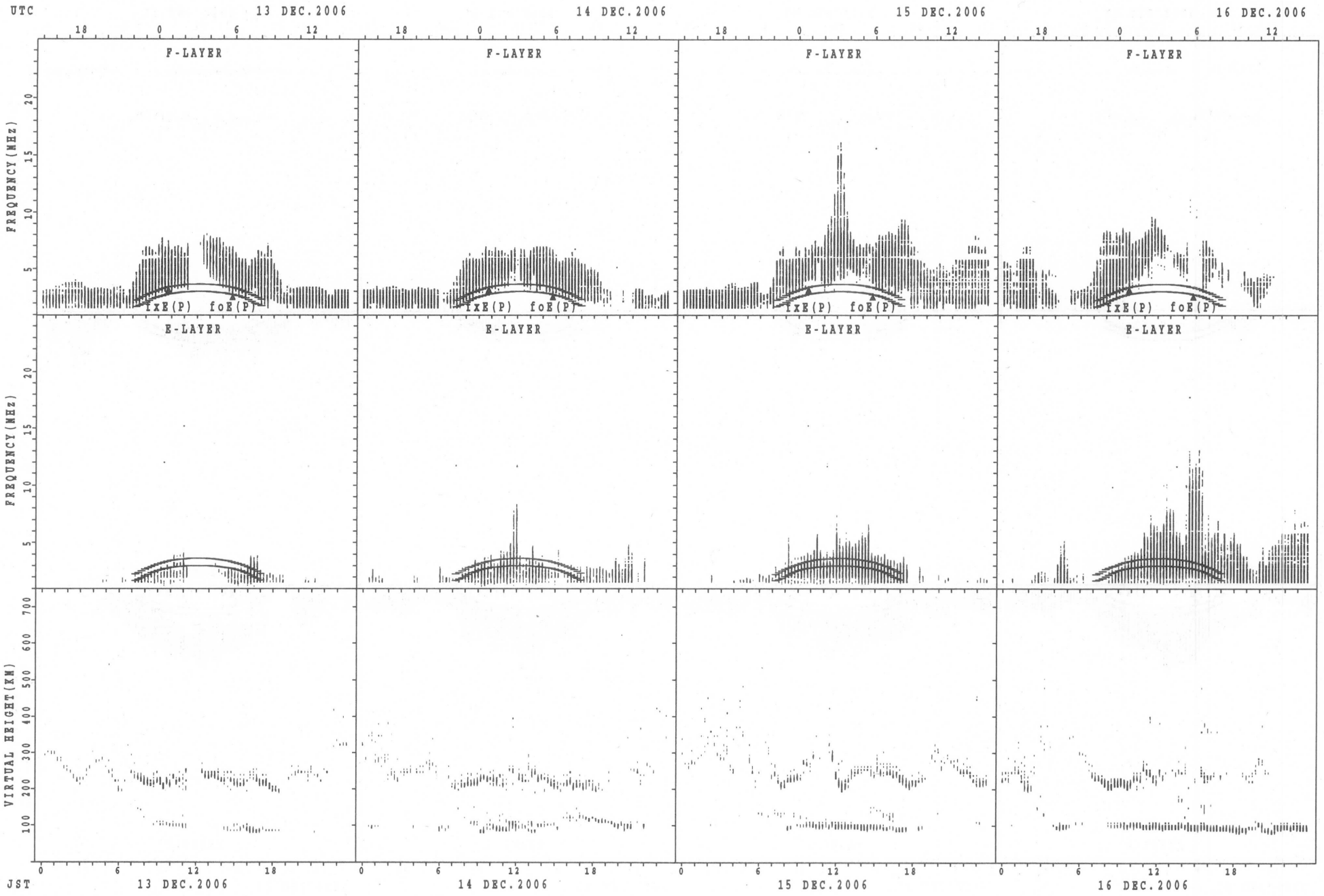
SUMMARY PLOTS AT Yamagawa



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

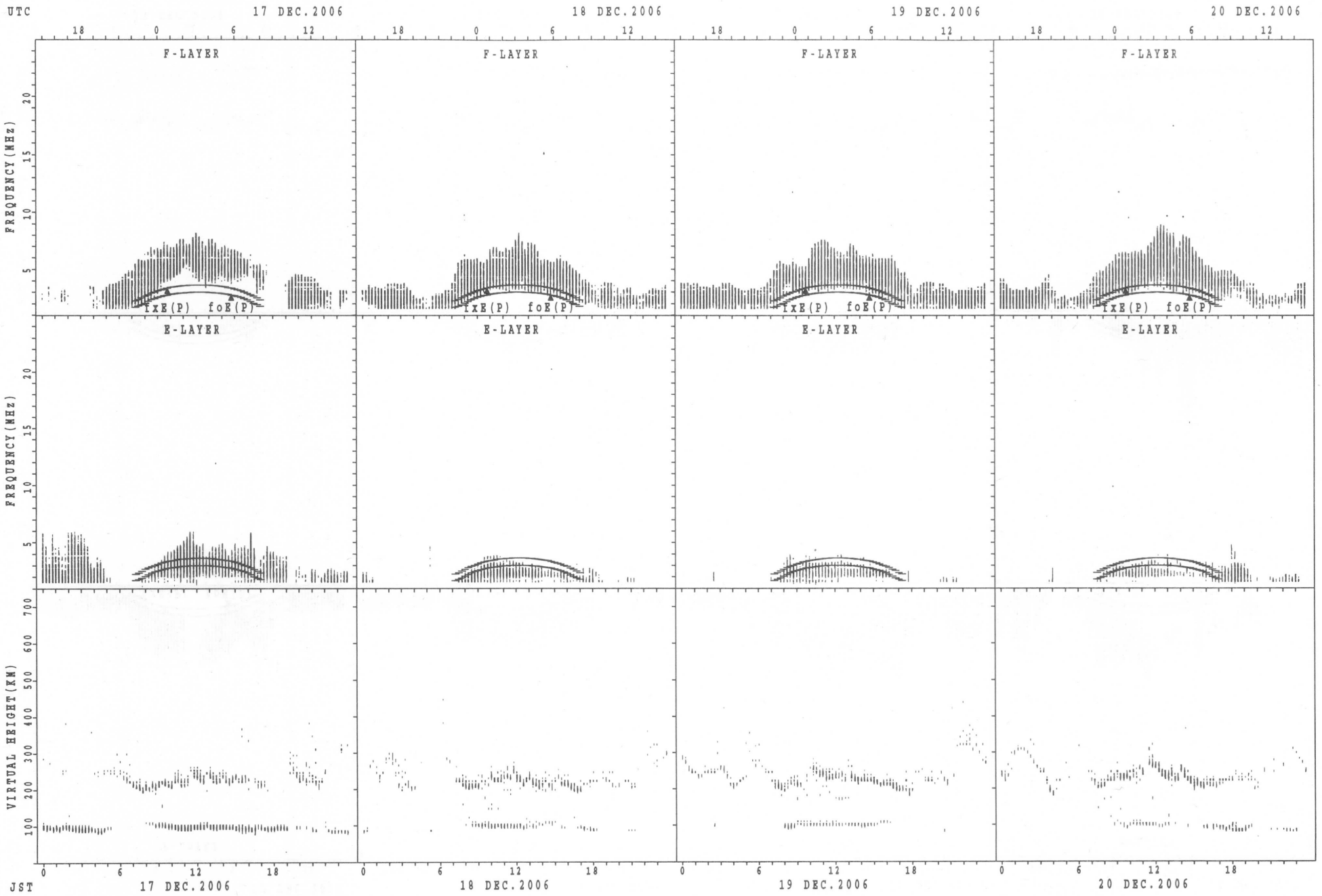

SUMMARY PLOTS AT Yamagawa
UTC
JST
9 DEC.2006
10 DEC.2006
11 DEC.2006
12 DEC.2006
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



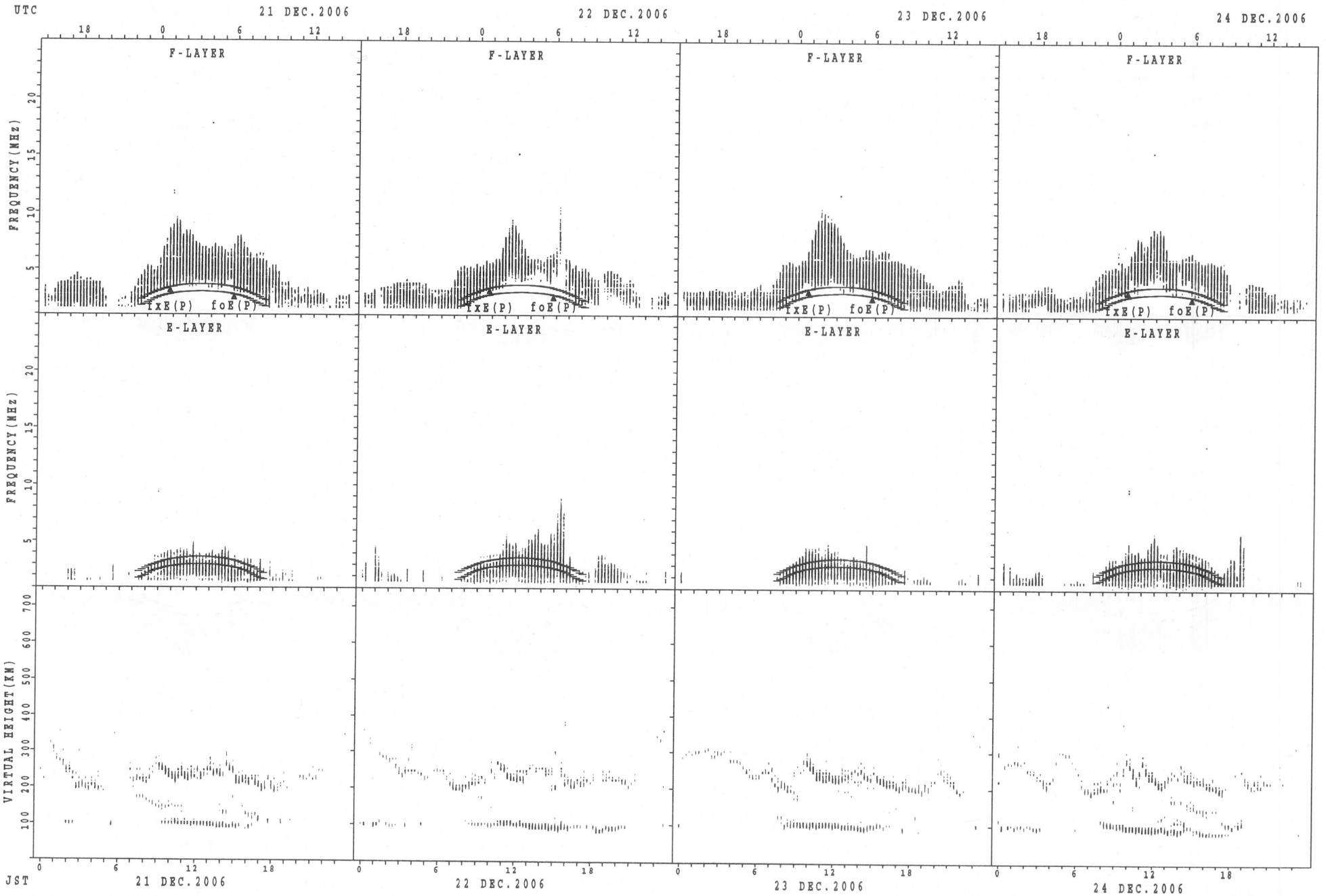
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



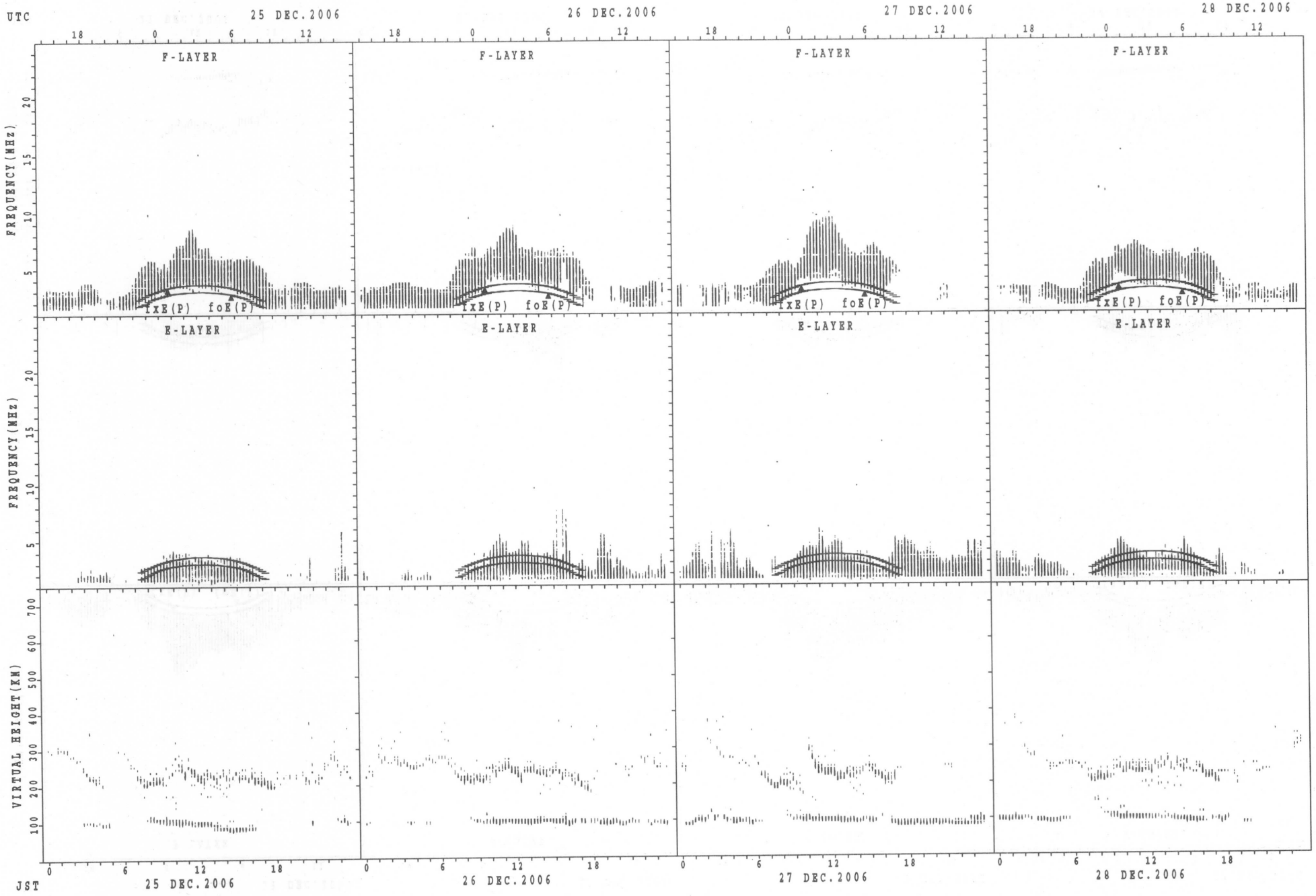
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



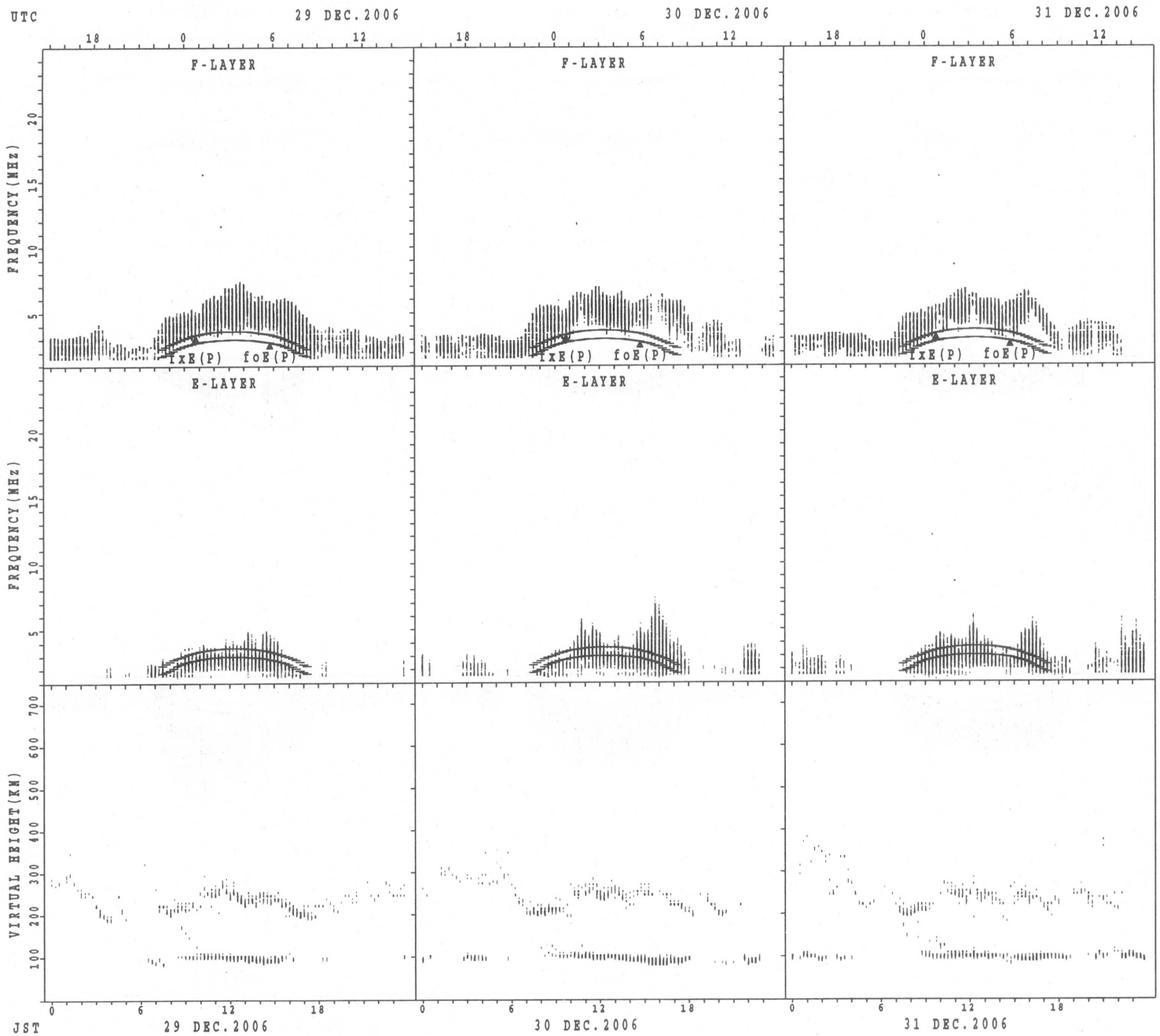
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



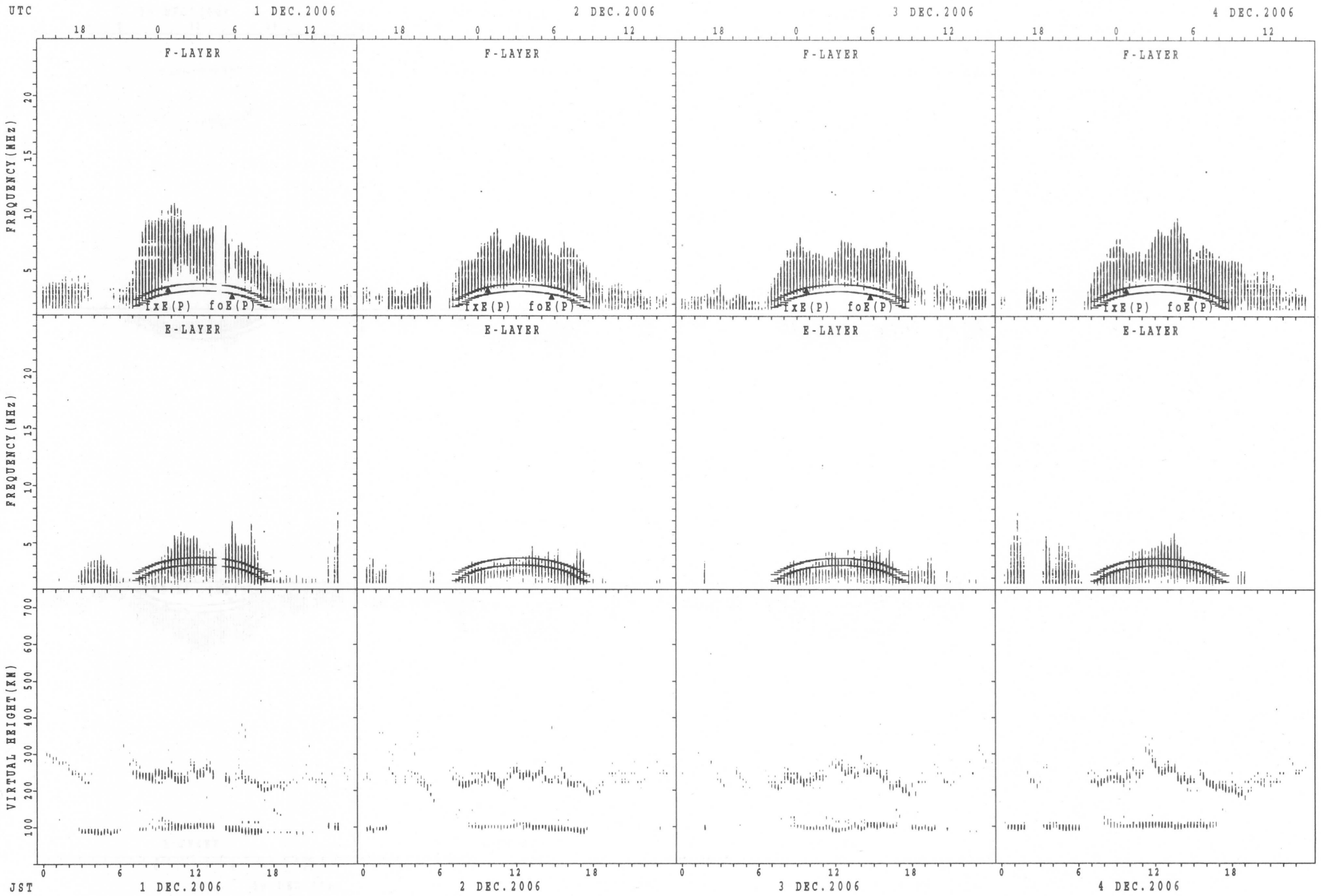
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



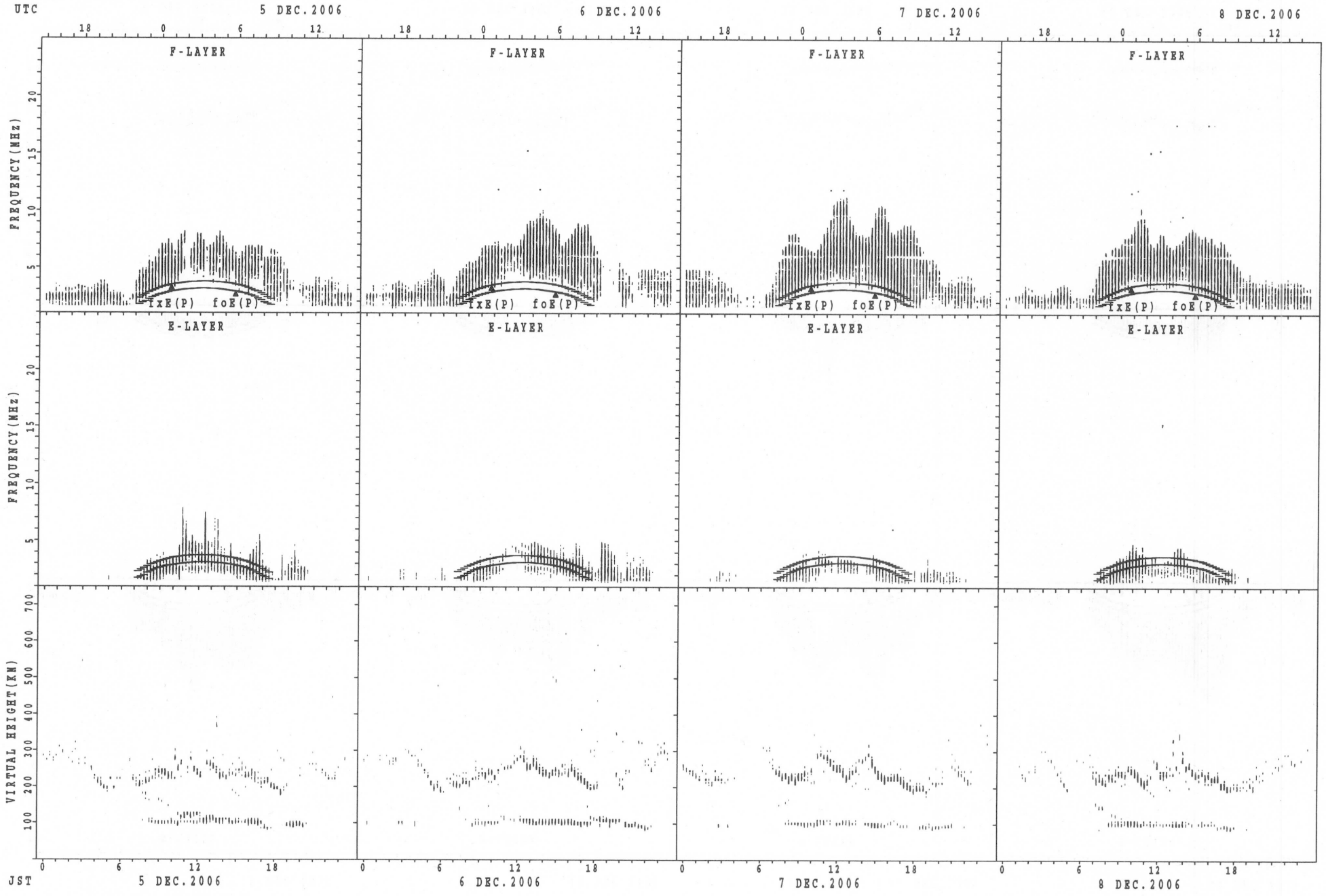
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



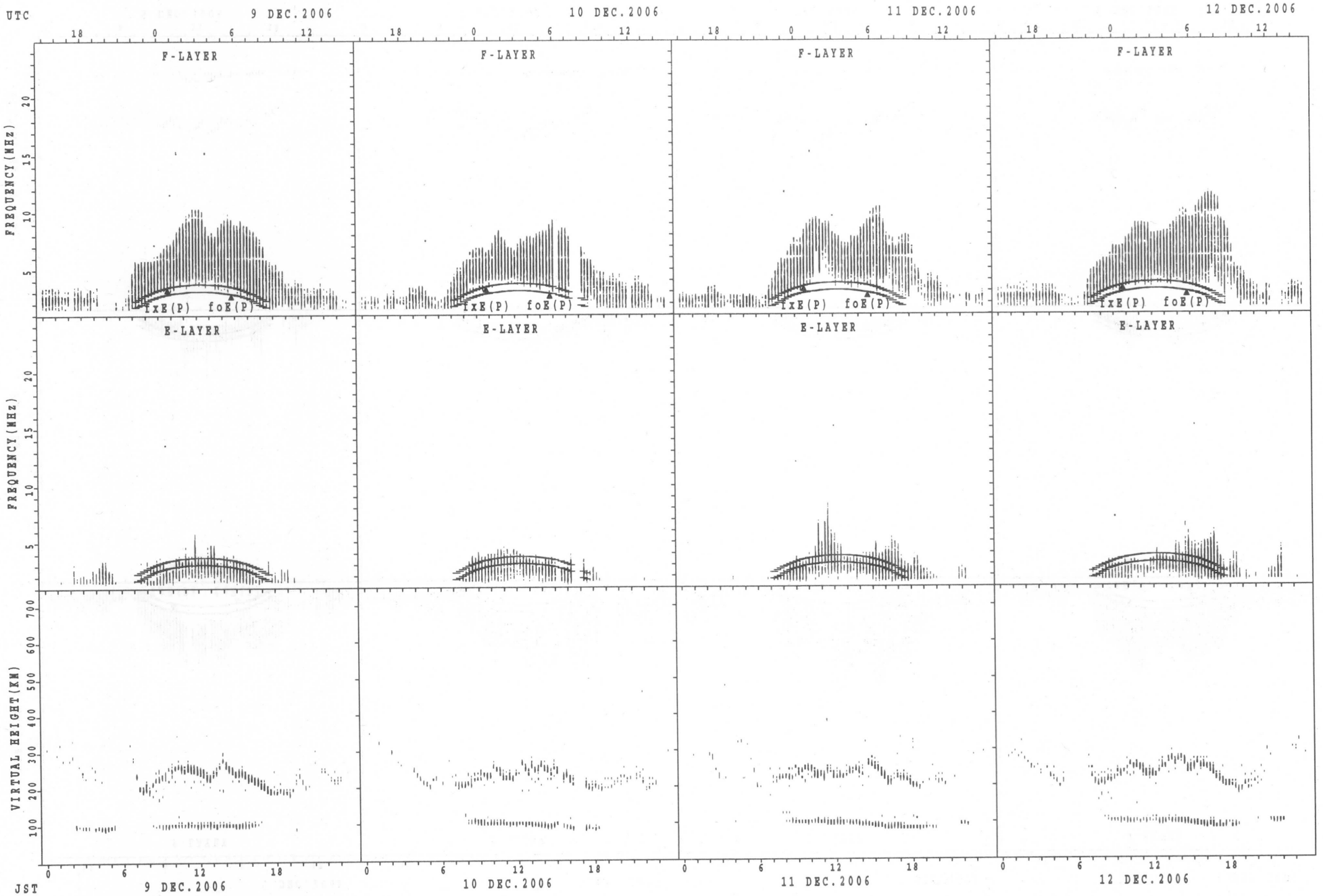
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



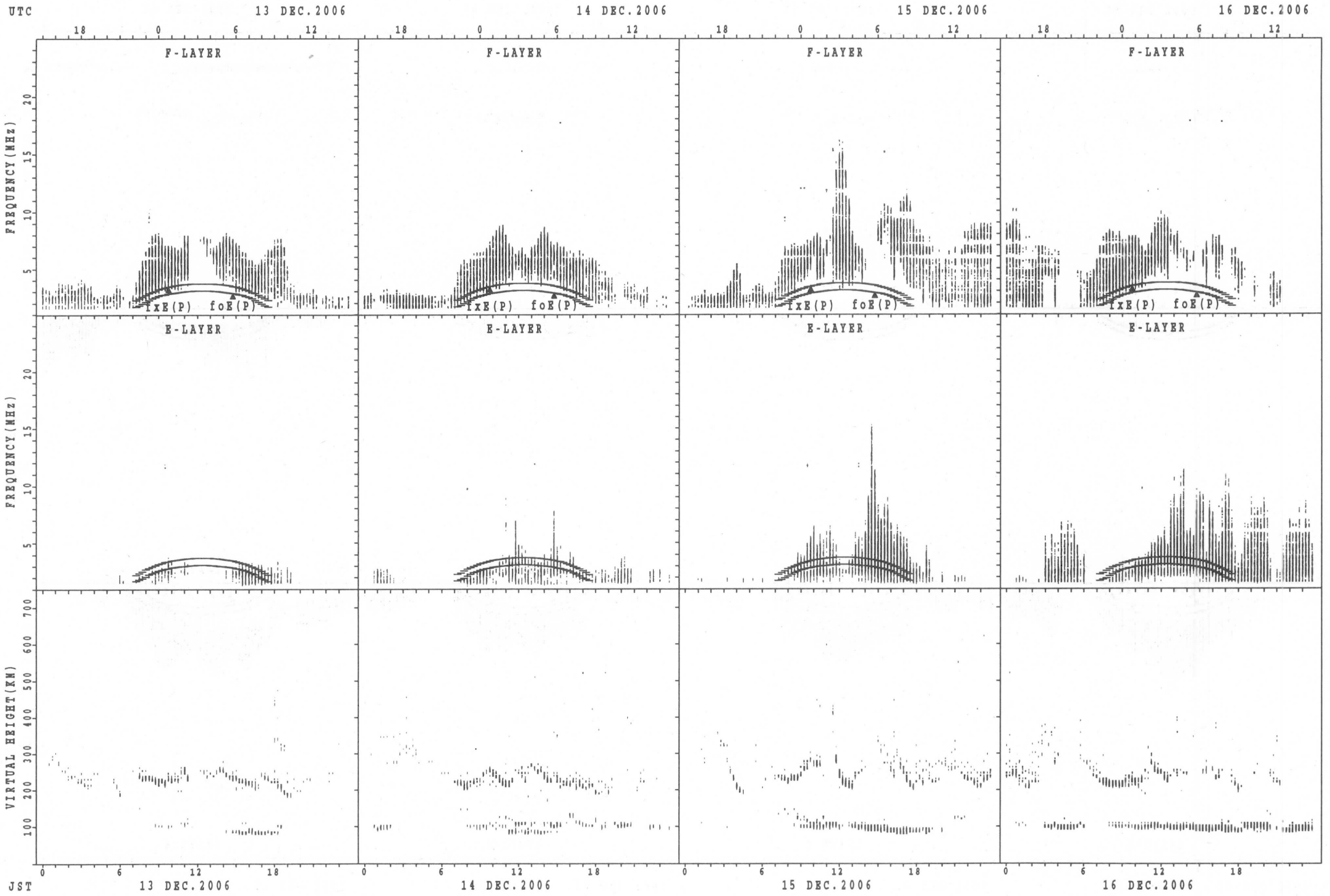
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



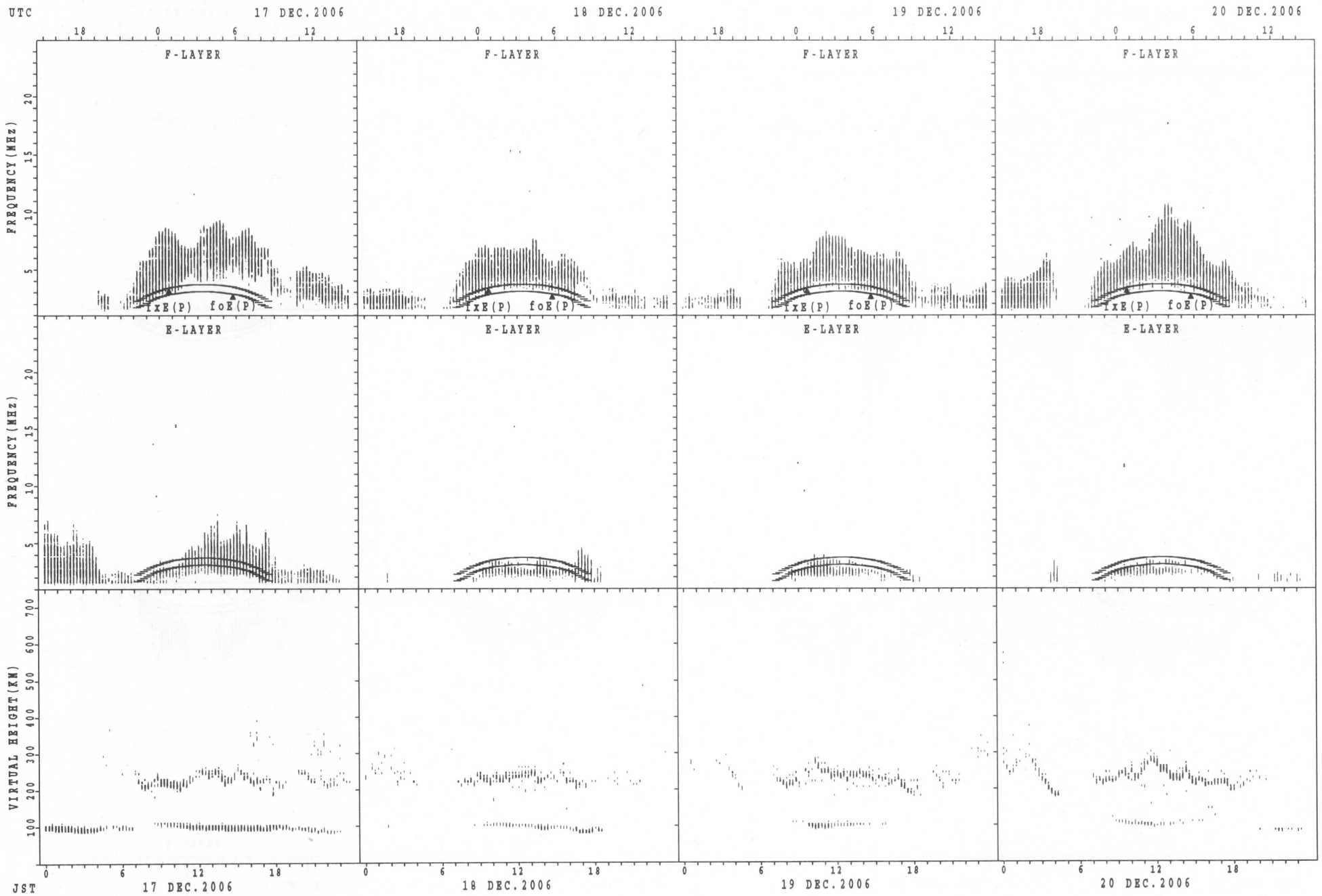
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



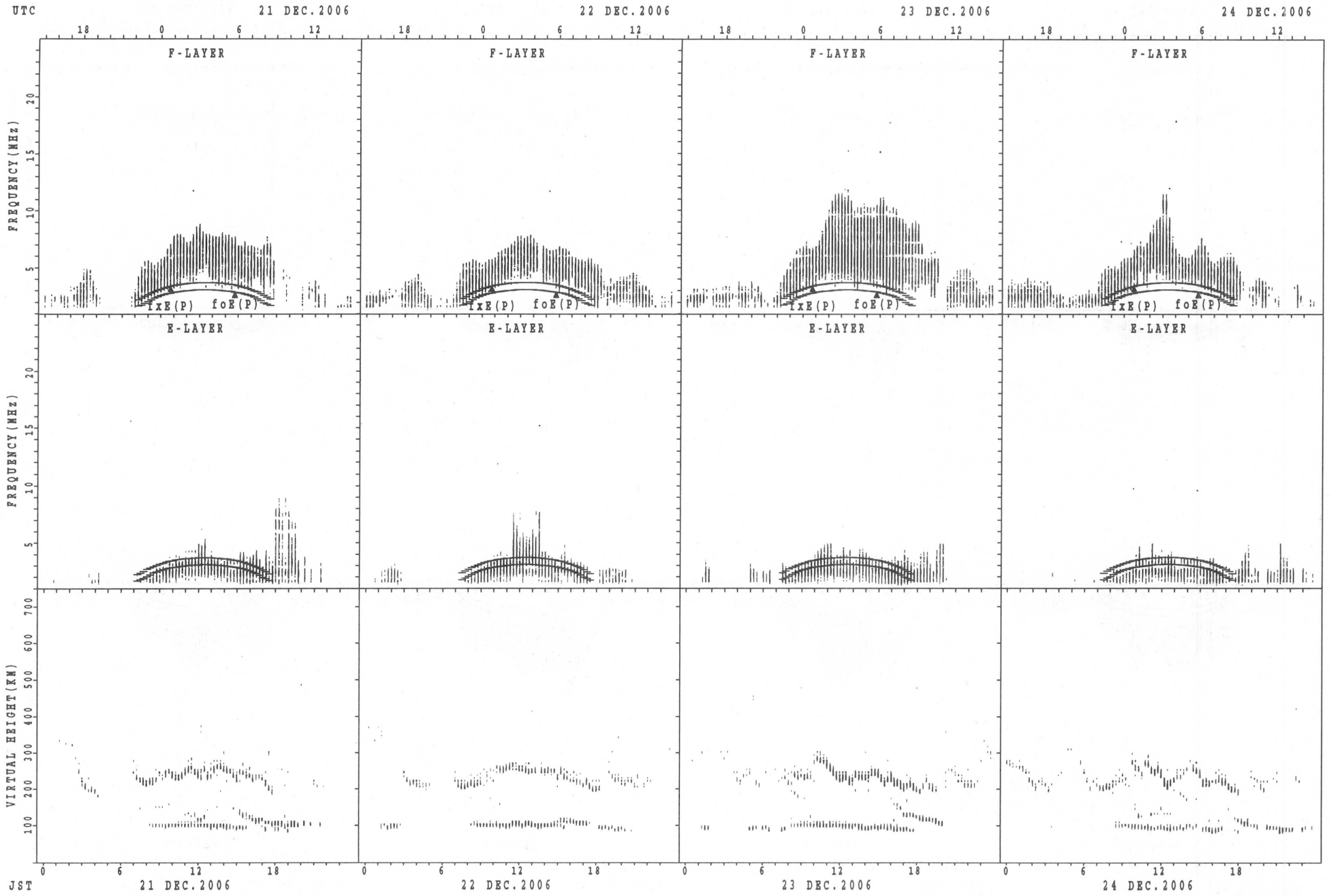
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



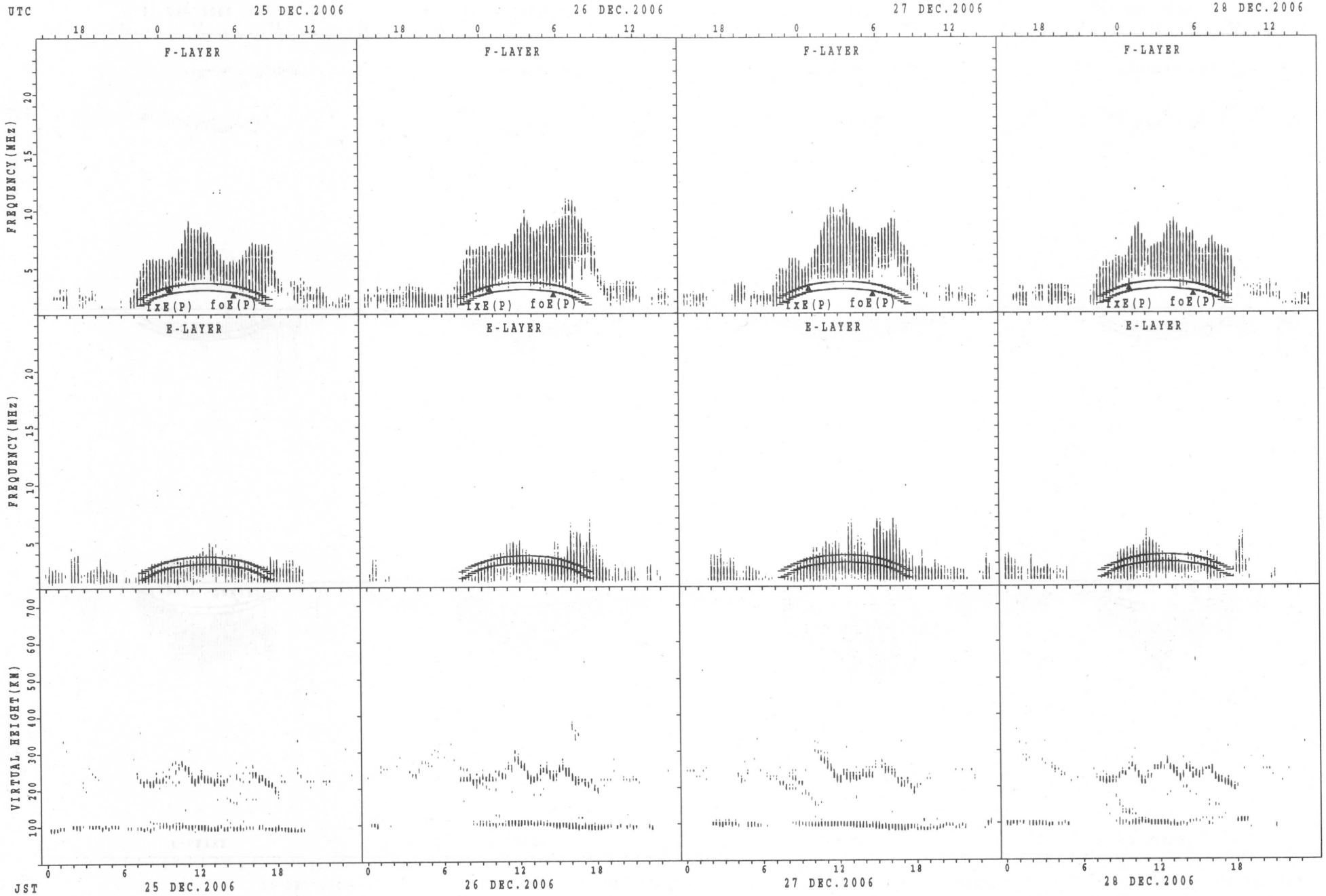
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



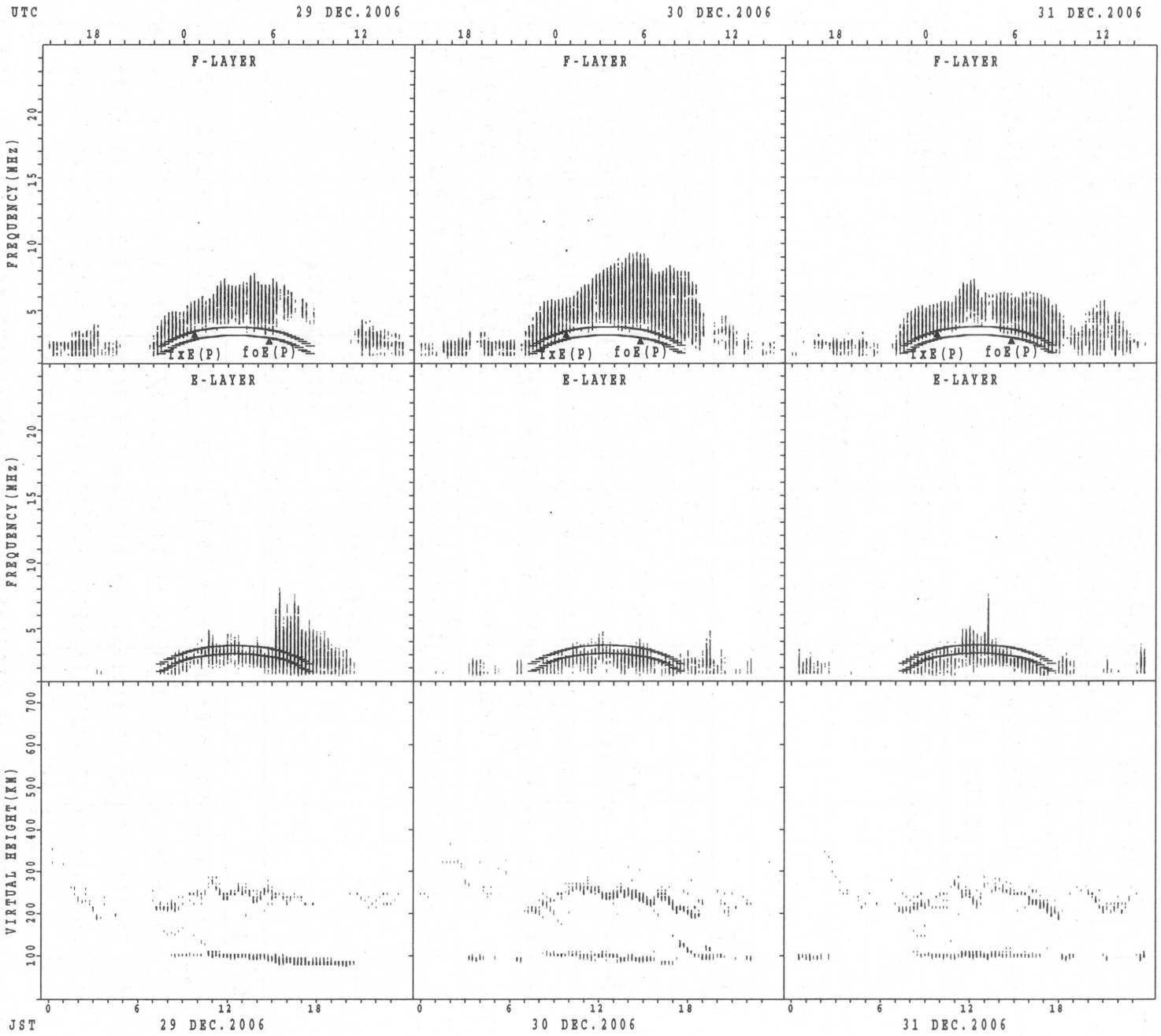
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

DEC. 2006 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									5	14	14	22	19	17	16	7								
MED									232	227	230	239	230	240	234	228								
U Q									243	238	236	248	236	248	245	238								
L Q									228	222	222	230	220	232	226	216								

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	17	15	16	11	11	7	8	12	19	18	13	9	9	11	7	11	24	20	16	14	16	14	16	17
MED	95	95	98	97	97	107	104	103	105	103	101	99	101	97	95	93	94	96	95	98	97	97	97	95
U Q	99	103	110	103	103	115	107	107	113	131	134	111	171	103	119	103	98	103	99	103	104	99	102	101
L Q	91	89	94	95	93	105	103	101	99	99	95	92	96	95	89	91	89	89	91	91	91	95	95	93

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								1	7	13	20	24	20	16	15	14	3							
MED								236	224	246	245	224	239	239	238	238	220							
U Q								118	234	253	252	236	250	253	252	248	266							
L Q								118	220	232	230	217	225	230	226	232	214							

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	10	8	3	3	1	3	4	13	18	13	14	15	8	11	10	11	10	10	14	9	7	8	6
MED	101	100	97	97	101	105	109	132	111	108	103	103	99	97	95	94	97	98	98	98	103	105	98	100
U Q	104	105	101	105	105	52	127	154	119	143	110	107	105	101	109	99	105	101	101	105	104	107	103	105
L Q	98	97	95	95	97	52	105	116	105	105	99	97	97	95	89	91	89	95	95	95	98	95	97	99

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									5	12	15	20			16	18	12	2						1
MED									224	234	238	243			249	250	233	223						246
U Q									230	254	256	254			258	256	244	238						123
L Q									211	223	230	230			240	240	227	208						123

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	7	6	10	7	7	5	3	4	14	18	24	25	23	24	22	20	19	18	19	16	14	11	9	8
MED	97	100	103	97	95	97	93	130	137	110	108	105	103	103	98	96	95	95	95	95	95	97	95	99
U Q	103	101	105	103	97	99	137	163	155	137	125	111	105	107	105	102	103	101	101	97	99	101	102	105
L Q	95	97	97	95	91	96	93	93	115	105	104	99	101	99	95	94	93	89	89	90	89	91	91	88

MONTHLY MEDIANS OF h'F AND h'Es

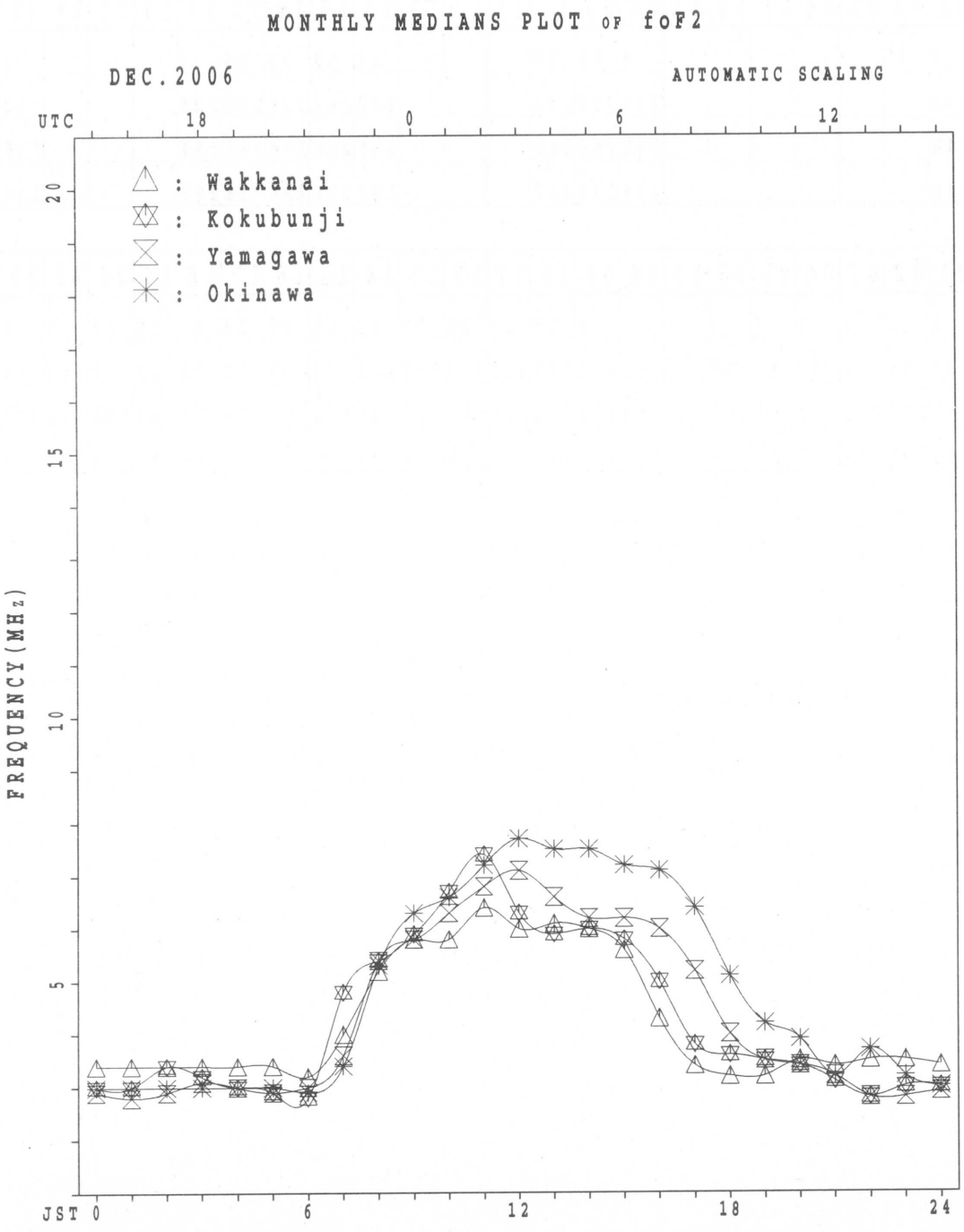
DEC.2006 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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	1	1							4	15	20				17	19	23	13	7				1	1
MED	280	296							236	246	244				250	244	238	230	224				272	266
U Q	140	148							238	254	261				260	256	254	236	254				136	133
L Q	140	148							226	238	237				233	238	226	214	206				136	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	2	6	6	6	9	7	4		4	8	13	22	23	17	19	18	20	20	21	19	13	7	8	4
MED	104	97	99	98	97	97	96		130	134	107	105	105	103	101	96	95	92	95	97	95	97	96	98
U Q	105	99	103	103	102	103	100		155	170	111	111	109	107	103	103	104	105	111	103	105	97	97	102
L Q	103	97	97	95	95	95	95		116	108	105	103	103	100	99	95	91	89	89	93	92	93	90	95


MONTHLY MEDIANS PLOT OF foF2
DEC.2006
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

DEC. 2006 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	X 43	X 35	X 35	X 37	X 36	X 34	X 36											X 48	X 32	X 35	X 38	X 38	X 37	X 35
2	X 35	X 34	X 36	X 37	X 39	X 27	X 28											X 40	X 36	X 35	X 30	37	X 31	X 31
3	X 33	X 35	X 33	X 35	X 37	X 25	X 28											X 38	X 33	X 46	X 34	X 31	X 28	X 33
4	X 36	X 39	X 40	X 40	X 33	X 28	X 29											X 47	X 34	X 35	X 37	X 31	X 31	X 34
5	X 34	X 34	X 35	X 35	X 39	X 32	X 30											X 43	X 32	X 34	X 35	X 38	X 32	X 34
6	X 34	X 34	X 34	X 35	X 36	X 36	X 30											X 43	X 39	A	X 40	X 41	X 40	X 41
7	X 41	X 44	X 45	X 36	X 34	X 37	X 34											X 46	X 41	X 38	X 38	X 35	X 35	X 40
8	X 41	X 40	X 39	X 39	X 38	X 37	X 39											X 49	X 41	X 33	X 32	X 35	X 34	X 38
9	X 38	X 36	X 39	X 36	X 34	X 34	X 33											X 50	X 39		X 34	X 36	X 32	X 34
10	X 39	41	42	X 42	X 42	X 38	X 38											X 41	X 38	X 34	X 36	X 40	40	X 37
11	37	X 35	X 33	X 30	33	39	X 36											X 46	X 46	X 36	X 38	X 35	X 35	39
12	X 38	X 38	X 38	X 38	X 48	X 32	X 30											X 50	X 42	A	A	X 36	X 35	X 39
13	42	X 42	X 43	X 28	X 29	X 30	X 32											X 51	A	X 38	X 40	X 40	X 34	X 36
14	X 39	X 41	X 39	39	40	X 38	X 31											X 44	X 35	X 30	X 37	X 35	X 34	X 32
15	X 34	41	37	X 37	39	X 37	X 28											X 80	X 62	X 50	X 58	X 61	X 65	X 64
16	X 34	X 40	X 29	X 31	X 29	X 33	39											X 46	X 44	X 45	A	A	A	X 36
17	A	X 37	X 39	X 38	38	43	48	X 64										X 36	X 42	X 47	X 31	X 38	X 32	X 35
18	X 36	X 38	X 42	X 32	X 33	X 27	X 30											X 41	X 40	X 46	X 44	X 36	44	41
19	X 37	X 39	X 40	X 39	35	38	X 37											X 49	A	X 42	X 41	X 34	X 36	X 39
20	X 37	X 38	46	X 39	X 35	X 39	X 39											X 46	X 41	X 38	X 30	32	X 33	35
21	39	37	40	40	45	X 30	X 35											X 49	X 39	A	X 42	X 35	X 30	X 36
22	X 40	X 39	X 38	X 38	X 37	X 39	X 37											X 43	X 43	X 54	X 49	X 29	X 32	X 33
23	X 35	X 36	X 37	X 35	X 36	X 38	X 44	X 49										X 43	X 38	X 41	X 38	X 43	X 31	X 34
24	X 35	X 35	X 36	X 37	X 28	X 30	X 30											X 42	X 39	X 38	X 37	X 37	36	39
25	X 36	X 34	X 35	X 38	X 31	X 28	X 32											X 36	X 32	X 39	X 36	X 37	X 43	X 41
26	X 35	42	X 40	X 37	X 34	X 31	X 29											X 40	X 34	X 35	X 30	X 34	X 40	X 41
27	X 38	X 39	46	45	X 39	X 40	44											X 43	X 34	X 38	41	X 32	35	X 36
28	X 35	X 35	X 36	X 34	X 34	X 32	X 32											X 41	X 34	X 34	X 31	X 28	X 32	X 33
29	X 31	X 32	X 34	X 36	X 35	X 31	X 27											X 40	X 35	X 39	X 32	X 34	X 37	40
30	43	43	X 38	35	39	X 34	X 34											X 42	X 38	X 43	X 36	X 30	O X 30	A
31	36	35	36	34	X 32	36	X 30											X 38	X 40	X 47	X 41	X 38	X 34	X 34
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	31	31	2										31	29	27	29	30	30	30
MED	X 36	X 38	X 38	X 37	X 36	X 34	X 32	X 56										X 43	X 39	X 38	X 37	X 36	X 34	X 36
U Q	X 39	40	X 40	X 39	X 39	X 38	X 37											X 48	X 41	X 45	X 40	X 38	X 37	X 39
L Q	X 35	X 35	X 35	X 35	X 33	X 30	X 30											X 41	X 34	X 35	X 33	X 34	X 32	X 34

DEC. 2006 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	37	29	29	31	30	28	30	62	80	62	74	83	68	62	57	52	56	42	26	29	32	32	31	29
2	29	28	30	31	33	20	22	46	60	65	66	71	68	60	55	68	50	34	30	29	24	F	25	25
3	27	29	27	29	31	19	22	47	65	V 55	64	57	69	62	53	60	47	32	27	40	27	25	22	27
4	30	33	33	34	27	22	23	48	57	57	64	61	55	70	56	59	52	41	28	29	31	25	25	28
5	28	28	29	29	33	26	24	47	52	60	54	63	68	56	59	56	48	37	26	28	29	32	26	28
6	28	28	28	29	30	30	24	44	51	53	61	74	66	69	70	58	56	37	33	A	33	35	34	35
7	35	38	38	30	28	31	28	64	69	68	70	78	86	67	72	70	60	40	34	32	32	29	28	34
8	35	34	32	33	32	31	33	57	46	80	86	67	69	63	65	69	58	42	35	26	26	29	28	32
9	32	30	33	30	28	28	27	55	58	58	78	76	V 78	78	62	64	60	44	33	A	28	30	26	28
10	33	F	F	36	36	32	32	50	61	54	77	70	64	59	64	54	57	35	32	28	30	34	F	31
11	F	29	27	24	F	F	30	53	58	58	79	73	64	64	60	62	A	40	40	30	32	28	29	F
12	32	32	32	32	42	25	23	50	58	54	60	85	59	60	62	57	78	44	36	A	A	30	29	33
13	F	36	37	22	22	24	25	49	58	58	74	76	B	75	71	54	58	45	A	32	33	33	28	30
14	33	35	33	F	F	32	25	48	55	56	56	65	60	58	60	58	51	38	29	24	30	29	28	26
15	28	F	F	31	F	31	22	45	A	A	76	86	123	115	74	69	75	74	56	44	52	54	58	58
16	27	34	23	25	23	27	F	57	87	78	85	80	R	60	60	58	58	40	38	38	A	A	A	30
17	A	31	33	32	F	F	F	58	55	63	77	80	75	58	70	58	48	30	36	41	25	32	26	29
18	30	32	36	26	26	21	24	43	52	57	64	63	60	58	54	54	44	35	34	40	38	30	F	F
19	30	32	34	33	F	F	31	49	54	50	66	59	61	59	65	55	53	43	A	36	35	28	30	32
20	31	32	F	33	29	33	33	41	52	70	62	55	58	80	84	63	44	40	35	32	24	F	27	F
21	F	F	F	F	F	23	28	39	45	74	93	74	58	65	62	67	50	42	33	A	36	29	24	31
22	34	33	32	32	31	32	31	44	51	53	58	88	58	57	57	50	50	37	36	48	43	23	26	27
23	29	30	31	29	30	32	37	43	48	62	72	70	64	55	56	55	48	37	32	34	32	37	25	28
24	29	29	30	31	22	24	24	44	48	54	56	75	56	62	58	52	52	36	33	32	31	30	F	F
25	30	28	28	32	25	22	26	40	50	56	73	71	64	51	64	56	47	30	26	33	30	31	37	34
26	29	F	34	30	28	25	23	45	54	57	77	82	65	55	63	56	48	34	28	29	24	28	34	35
27	32	33	F	F	32	34	F	50	50	60	69	86	70	60	56	62	45	37	28	32	F	26	F	30
28	29	28	30	28	28	26	26	42	46	52	63	73	58	62	54	58	46	35	28	28	25	22	26	27
29	25	26	28	30	29	25	21	35	44	48	48	56	58	53	56	57	47	34	29	33	26	28	31	F
30	F	F	32	F	F	28	28	48	56	53	57	58	53	54	54	60	54	36	32	37	30	24	24	A
31	F	F	F	F	26	F	24	39	44	46	56	63	56	52	58	52	50	32	34	41	35	32	28	27
.	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	25	25	26	24	27	28	31	30	30	31	31	29	31	31	31	30	31	29	27	28	28	26	25
MED	30	31	32	30	29	27	26	47	54	57	66	73	64	60	60	58	50	37	33	32	30	30	28	30
U Q	32	33	33	32	32	31	30	50	58	62	77	80	68	65	65	62	57	42	35	38	33	32	30	32
L Q	28	28	28	29	26	24	24	43	50	54	60	63	58	57	56	55	48	35	28	29	26	28	26	28

DEC. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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										L	L	A	L	L										
2											L	L	L											
3										L	L	L	L	A	A									
4											L	L	L											
5												U L 428	L	L	L									
6										U L 380	L	A	L	L	L									
7											A	L	L		L									
8									L	L	A	L	L	L	L									
9											A	A	L	A	A					A				
10										L	L			L	U L 348									
11											L	U L 404	L	L	A		A							
12									L	L	L	L	L	L		A								
13										L	A	A	B	E B										
14										L	U L 404		L	L	L									
15									A	A	L	U L 448	L											
16										L	A				L									
17										L	A	A	A	A										
18									L		L	L		L										
19										U L 344	U L 392	U L 388	L	L	A									
20											A	L	L	E B	E B									
21										L	A	L		A	L									
22														L	L									
23										L	L	A	L		L	L								
24									L		L	A	L	A										
25										L	L	L	L											
26										L	L	L	L	L	L									
27										L	L	L	L	L										
28											L		L		L									
29												L		L	L									
30											L	L	L	L		L								
31											L	L	L	U L 396	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										2	2	4		1	1									
MED										U L 362	U L 398	U L 416		U L 396	U L 348									
U Q												U L 438												
L Q												U L 396												

DEC. 2006 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	220	A	A	A	A	A	256	216	A							
2								B	248	A	A	A	R	288	A	UR 220	B							
3								B	232	272	R	316	A	A	A	UR 272	B							
4								B	232	276	A	A	A	R	A	A	B							
5								B	R	280	300	A	R	UR 288	UR 268	R	UR 196							
6								B	252	R	R	A	A	A	UR 280	A	A							
7								176	244	288	A	A	A	UR 300	A	232	B							
8								B	A	A	A	A	A	UR 288	UR 264	A	B							
9								B	R	A	A	A	A	A	A	A	B			A				
10								B	UR 244	A	292	296	296	R	UR 264	216	B							
11								B	224	272	UA 284	A	A	R	A	A	A							
12								B	216	UR 260	276	A	A	A	264	A	B							
13								B	216	264	A	A	B	B	UR 296	A	A							
14								B	236	A	UA 296	A	A	A	A	A	B							
15								B	A	A	A	A	A	A	A	A	A							
16								B	204	UA 248	A	A	A	A	A	A	B							
17									228	A	A	A	A	A	UA 264	A	B							
18								B	UR 208	260	284	296	300	280	264	A	B							
19								B	UR 232	UR 272	A	R	R	A	A	A	B							
20								B	UR 268	A	A	R	300	B	B	B	B							
21								A	A	UA 276	A	R	A	A	A	UR 232	UA 168							
22								B	184	A	A	312	A	UR 296	A	A	B							
23									A	A	292	A	312	284	UR 264	UR 228	B							
24								B	UA 180	260	UR 280	A	A	A	260	UR 232	B							
25								B	UR 212	284	288	UR 308	A	284	260	216	B							
26								B	208	A	A	A	UR 312	R	A	A	B							
27								B	A	A	A	A	A	UR 292	260	228	B							
28								B	A	264	A	UR 308	R	284	R	R	B							
29								B	UR 224	268	A	308	B	B	R	A	A							
30								B	228	A	A	A	UR 308	UR 296	R	UR 252	B							
31								B	232	UR 292	A	A	A	UR 292	UR 284	A	B							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	23	16	9	7	6	12	14	11	2							
MED								176	228	272	288	308	304	UR 288	U 264	UR 228	U 182							
U Q									236	278	294	312	312	UR 294	UR 268	UR 232								
L Q									212	262	282	296	300	284	260	216								

DEC. 2006 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC.2006 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	J A 26	J A 24	20	19	18	18	E B 15	E B 18	29	33	35	J A 96	J A 38	J A 38	J A 33	26	J A 29	E B 15	E B 14	J A 22	J A 31	22	J A 19	E B 15
2	J A 27	J A 29	J A 22	21	E B 16	E B 14	E B 15	21	28	34	34	33	G 29	32	J A 40	26	20	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	E B 16
3	18	19	E B 15	19	19	19	E B 15	21	29	31	G 23	35	38	J A 41	35	J G 24	J A 23	J A 22	J A 23	J A 20	E B 15	E B 15	E B 14	18
4	18	E B 14	J A 30	J A 22	19	E B 15	20	23	28	32	37	37	J A 43	G 25	J A 32	J A 34	19	J A 22	J A 19	J A 16	20	18	E B 14	E B 16
5	22	20	J A 22	J A 22	J A 20	20	18	21	G 20	31	35	33	G 28	G 25	G 20	G 20	G	E B 16	J A 23	J A 22	E B 15	E B 16	J A 36	E B 15
6	E B 15	J A 26	E B 15	E B 15	E B 14	E B 15	E B 15	22	28	G 24	G 26	41	38	34	G 26	J A 29	J A 30	J A 25	J A 34	J A 42	J A 19	J A 21	J A 41	J A 38
7	J A 35	J A 31	J A 26	19	E B 15	E B 15	E B 14	24	30	G 22	J A 80	J A 42	J A 46	G 28	J A 33	27	20	22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
8	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	19	E B 16	25	34	J A 99	J A 39	J A 52	G 25	G 23	J A 36	E B 17	J A 21	J A 22	E B 15	E B 16	E B 15	E B 15	E B 15
9	J A 48	J A 33	J A 24	J A 18	J A 19	19	E B 16	E B 16	G	J A 54	J A 45	J A 64	J A 48	J A 59	J A 64	J A 55	J A 23	J A 24	J A 26	J A 36	21	18	E B 15	E B 15
10	E B 16	E B 15	E B 15	E B 14	E B 15	21	E B 14	J A 20	J A 30	J A 33	34	34	33	G 24	G 22	26	21	J A 24	J A 19	E B 15	J A 16	E B 15	22	E B 15
11	E B 15	20	20	E B 15	20	E B 15	E B 15	20	26	31	32	33	34	G 23	33	J A 46	J A 56	J A 20	E B 14	E B 15	22	J A 26	E B 15	E B 15
12	E B 15	E B 15	E B 15	E B 15	19	18	E B 15	20	G	G 20	33	34	35	34	30	J A 59	J A 24	J A 24	J A 20	J A 41	55	18	22	18
13	19	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	27	32	J A 40	J A 47	B	E B 57	G 23	J A 42	J A 30	J A 26	J A 39	J A 23	J A 24	J A 20	22	J A 19
14	J A 46	E B 15	E B 14	E B 15	E B 15	E B 15	20	22	28	30	34	34	36	31	30	31	22	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	J A 22
15	19	J A 20	19	21	20	20	J A 24	21	J A 57	J A 76	33	J A 38	J A 33	30	J A 33	J A 43	J A 44	J A 56	21	J A 19	E B 15	E B 15	E B 15	19
16	E B 15	19	J A 21	J A 21	J A 21	E B 15	E B 15	E B 15	23	30	J A 63	J A 46	J A 47	J A 57	J A 39	J A 36	J A 39	J A 37	J A 28	J A 46	J A 48	J A 67	J A 44	J A 54
17	J A 57	22	J A 27	J A 38	21	J A 24	22	19	G	J A 30	J A 60	J A 64	J A 77	J A 61	30	28	26	18	19	E B 15	E B 16	22	20	19
18	20	J A 29	J A 23	J A 22	E B 15	E B 16	19	E B 16	G 18	30	33	33	32	36	32	27	21	20	J A 20	J A 23	J A 20	J A 32	J A 19	E B 15
19	18	E B 15	19	E B 15	E B 15	E B 15	E B 14	E B 14	G	G J 22	J A 36	G J 29	J A 38	J A 40	J A 60	28	E B 18	J A 21	J A 40	J A 26	E B 18	J A 16	E B 14	J A 22
20	J A 42	20	J A 19	J A 18	E B 15	J A 18	J A 36	J A 25	G 24	J A 67	J A 45	G	34	E B 36	E B 35	32	28	E B 16	E B 15	J A 18	J A 20	J A 18	E B 15	E B 14
21	E B 15	J A 20	J A 19	E B 15	E B 15	E B 14	E B 13	J A 26	J A 45	33	33	G 28	J A 59	J A 57	29	28	22	J A 19	J A 35	J A 44	J A 32	19	18	E B 16
22	J A 23	J A 21	E B 15	E B 15	J A 27	J A 38	18	J A 18	22	29	J A 35	J A 34	35	G 23	29	30	22	J A 32	20	E B 14	J A 23	J A 27	E B 16	E B 16
23	19	J A 23	J A 22	E B 16	18	21	20	E B 14	25	J A 32	35	J A 87	G 26	G 23	G 25	G	E B 17	J A 24	J A 24	J A 18	18	E B 14	21	18
24	E B 16	E B 16	E B 15	18	E B 15	E B 15	E B 15	J A 16	J A 27	30	G 24	J A 46	J A 34	34	32	G 20	28	J A 18	J A 27	J A 18	22	20	E B 16	J A 17
25	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	J A 26	32	33	G 26	J A 44	J A 32	32	24	22	20	E B 15	J A 24	J A 34	J A 21	J A 20	19
26	E B 15	21	J A 23	J A 20	18	E B 15	E B 15	E B 15	26	J A 36	J A 43	J A 40	G 28	G J 26	J A 39	J A 28	J A 29	J A 21	J A 24	J G 36	J A 31	J A 34	J A 23	J A 36
27	J A 34	J A 25	19	J A 22	E B 14	E B 15	18	E B 15	J A 26	J A 32	J A 76	J A 45	J A 52	G 26	32	27	23	J A 26	J A 25	J A 20	20	J A 54	J A 34	J A 29
28	J A 21	J A 53	J A 28	21	J A 17	E B 15	E B 15	E B 16	J A 29	31	32	G 26	G 27	34	G 23	G 20	24	J A 24	18	18	E B 15	19	E B 16	19
29	J A 24	J A 31	E B 16	J A 19	19	E B 14	E B 15	E B 14	G	31	34	36	E B 35	E B 34	G 27	28	J A 29	19	E B 14	E B 14	E B 15	E B 15	E B 15	E B 16
30	E B 16	J A 24	J A 26	E B 16	J A 35	J A 22	J A 24	J A 22	G 19	31	J A 47	33	G 27	G 28	G 26	G	22	J A 27	E B 16	J A 21	J A 19	E B 14	J A 45	J A 38
31	J A 29	E B 15	J A 22	E B 14	18	E B 15	E B 15	E B 15	27	G J 22	J A 35	34	35	G	G 26	30	24	J A 20	E B 16	J A 38	J A 71	E B 15	J A 32	J A 38
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31
MED	19	20	19	18	18	E B 15	E B 15	18	26	31	35	35	35	31	31	28	23	J A 21	J A 20	J A 20	20	18	18	18
U Q	J A 27	J A 25	J A 23	J A 21	J A 19	19	19	21	28	J A 33	J A 45	J A 45	J A 44	J A 38	J A 33	J A 34	J A 29	J A 24	J A 25	J A 26	J A 24	J A 22	J A 22	J A 22
L Q	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G	G 30	33	G 33	G 33	G 26	G 26	G 26	21	E B 19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

DEC.2006 foEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	17	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 18	27	31	30	64	33	30	G 22	24	22	E B 15	E B 14	19	21	E B 15	16	E B 15
2	E B 15	16	E B 15	E B 15	E B 16	E B 14	E B 15	19	27	32	34	32	G 27	31	32	25	18	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	E B 16
3	E B 16	E B 15	E B 15	17	E B 14	E B 15	E B 15	20	26	30	G 22	34	33	34	33	G 23	20	19	17	18	E B 15	E B 15	E B 14	E B 15
4	E B 14	E B 14	21	16	16	E B 15	E B 15	21	26	30	35	35	36	G 25	30	28	17	E B 15	E B 16	16	E B 15	E B 14	E B 14	E B 16
5	E B 16	E B 16	E B 16	16	16	E B 15	E B 15	17	G 20	30	32	32	G 28	G 24	G 19	G 18	G	E B 16	16	17	E B 15	E B 16	22	E B 15
6	E B 15	16	E B 15	E B 15	E B 14	E B 15	E B 15	21	27	G 23	G 24	38	36	32	G 23	24	18	17	21	A A 42	E B 15	E B 16	21	17
7	17	22	17	E B 16	E B 15	E B 15	E B 14	22	28	G 21	42	32	33	G 26	29	27	19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
8	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	E B 16	E B 16	23	31	76	32	33	G 25	G 22	27	E B 17	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15
9	E B 15	22	18	E B 14	15	16	E B 16	E B 16	G	35	36	36	32	38	41	37	20	E B 16	16	A A 36	E B 15	E B 15	E B 15	E B 15
10	E B 16	E B 15	E B 15	E B 14	E B 15	E B 15	E B 14	20	G 18	31	33	32	33	G 21	G 22	24	20	21	18	E B 15	E B 15	E B 15	E B 15	E B 15
11	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	19	25	30	30	32	32	G 23	30	29	A A 56	17	E B 14	E B 15	17	25	E B 15	E B 15
12	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	19	G	G 19	31	33	30	32	28	43	23	16	18	A A 41	A A 55	A E 15	E B 15	E B 15
13	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	26	29	35	42	B	E B 57	G 23	26	26	20	A A 39	16	17	19	E B 15	E B 15
14	28	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	26	28	31	32	34	30	28	26	20	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15
15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	18	A A 57	A A 76	30	30	29	29	28	34	34	26	E B 15	E B 16	E B 15	E B 15	E B 15	16
16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	28	34	32	35	35	29	26	36	26	16	24	A A 48	A A 67	A A 44	19
17	A A 57	E B 15	17	16	17	E B 15	E B 15	17	G	26	44	42	37	36	29	26	24	18	E B 15	E B 15	E B 16	E B 16	E B 15	E B 15
18	E B 16	20	16	16	E B 15	E B 16	E B 16	E B 16	G 17	30	32	32	31	33	30	25	19	E B 16	17	18	18	24	E B 15	E B 15
19	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	G	G 22	28	G 29	28	32	34	25	E B 18	20	A A 40	17	E B 14	E B 16	E B 14	E B 16
20	23	E B 15	16	E B 15	E B 15	E B 15	16	17	G 23	32	44	G	33	E B 36	E B 35	E B 26	26	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14
21	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	E B 13	17	29	31	31	G 27	34	34	27	26	20	16	20	A A 44	20	E B 16	E B 15	E B 16
22	20	E B 15	E B 15	E B 15	18	18	16	17	20	27	31	32	34	G 23	28	26	19	20	E B 16	E B 14	17	17	E B 16	E B 16
23	16	E B 14	E B 16	E B 16	E B 16	16	E B 15	E B 14	22	28	33	46	G 24	G 23	G 25	G	E B 17	19	16	E B 15	E B 16	E B 14	E B 15	E B 15
24	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	21	29	G 22	42	30	32	31	G 18	26	16	20	E B 16	E B 15	E B 15	E B 16	E B 16
25	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G 17	30	31	G 25	34	G 24	32	24	21	E B 16	E B 15	20	24	E B 15	E B 15	E B 15
26	E B 15	E B 14	16	E B 15	E B 15	E B 15	E B 15	E B 15	23	30	31	32	G 26	G 26	34	25	27	E B 15	19	E B 15	16	17	E B 15	18
27	20	23	16	E B 15	E B 14	E B 15	E B 15	E B 15	23	27	35	31	34	G 26	31	26	20	20	17	17	E B 16	16	16	17
28	18	E B 14	16	E B 15	E B 15	E B 15	E B 15	E B 16	24	29	31	G 26	G 26	34	G 21	G 18	20	16	16	17	E B 15	E B 15	E B 16	E B 15
29	E A 16	16	E B 16	E B 16	E B 15	E B 14	E B 15	E B 14	G	29	32	34	E B 35	E B 34	G 26	26	22	E B 16	E B 14	E B 14	E B 15	E B 15	E B 15	E B 16
30	E B 16	E B 15	16	E B 16	E B 15	E B 16	E B 14	18	G 19	29	31	32	G 27	G 28	G 25	G	20	26	E B 16	17	16	E B 14	17	A A 38
31	E B 15	E B 15	16	E B 14	E B 15	E B 15	E B 15	E B 15	25	G 22	31	32	34	G	G 25	26	22	18	E B 16	16	16	E B 15	21	16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31
MED	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 17	23	29	31	32	33	E G 30	28	26	20	16	16	16	E B 16	E B 15	E B 15	E B 15
U Q	17	16	16	16	15	E B 15	E B 15	19	26	31	35	35	34	34	31	26	24	20	18	18	17	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	E B 15	G 22	G 27	31	G 32	G 29	G 25	G 25	G 24	19	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

DEC. 2006 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	15	15	15	16	15	15	18	16	16	14	15	14	12	13	15	12	15	14	14	15	15	14	15
2	15	14	15	15	16	14	15	14	15	16	14	14	13	14	16	15	15	15	14	15	15	15	14	16
3	16	15	15	14	14	15	15	15	14	14	13	13	13	13	15	13	14	15	15	15	15	15	14	15
4	14	14	15	14	14	15	15	14	15	14	15	14	15	14	14	15	14	15	16	15	15	14	14	16
5	16	16	16	16	15	15	15	15	13	14	14	15	15	14	13	16	15	16	15	15	15	16	15	15
6	15	15	15	15	14	15	15	15	14	14	14	20	23	16	16	14	14	16	15	15	15	16	14	15
7	15	14	14	16	15	15	14	14	14	13	14	14	14	15	15	14	14	15	15	15	15	15	15	15
8	15	15	14	15	15	16	16	16	15	15	14	15	14	15	13	14	17	15	15	15	16	15	15	15
9	15	15	13	14	14	15	16	16	14	15	14	14	16	16	16	14	14	16	14	13	15	15	15	15
10	16	15	15	14	15	15	14	15	14	14	13	13	14	14	14	15	14	14	15	15	15	15	15	15
11	15	15	15	15	15	15	15	15	14	14	14	15	13	15	15	14	14	15	14	15	15	14	15	15
12	15	15	15	15	15	15	15	15	15	14	14	15	14	14	15	14	15	16	15	15	15	15	16	15
13	15	15	15	15	14	15	15	16	14	14	13	15	BE 57	B	16	13	14	14	14	15	14	15	15	15
14	15	15	14	15	15	15	14	16	14	13	12	14	15	14	13	14	15	15	14	15	15	15	14	15
15	15	15	15	15	15	15	15	14	18	15	15	17	14	14	14	15	15	15	16	16	15	15	15	15
16	15	15	15	15	15	15	15	15	16	15	14	14	14	17	15	14	13	14	15	15	15	15	15	15
17	15	15	14	15	14	15	16	14	15	16	16	14	20	18	16	17	16	15	15	15	16	16	15	15
18	16	15	15	14	15	16	16	16	14	15	14	14	15	16	18	16	12	16	14	14	15	15	15	15
19	16	15	15	15	15	15	14	14	15	15	14	18	17	16	15	15	18	13	15	15	14	16	14	16
20	15	15	15	15	15	15	14	14	16	17	24	20	23	E 36	BE 35	BE 26	B	15	16	15	15	15	14	15	14
21	15	14	15	15	15	14	13	14	14	13	17	15	17	17	18	15	14	13	14	14	14	16	15	16
22	14	15	15	15	15	15	14	14	15	14	14	13	14	17	16	12	14	13	16	14	15	14	16	16
23	15	14	16	16	16	15	15	14	14	15	14	16	16	14	16	15	17	14	15	15	16	14	15	15
24	16	16	15	15	15	15	15	15	14	14	14	14	14	14	13	15	17	16	14	16	15	16	16	16
25	15	15	15	15	15	15	15	16	15	15	15	16	15	14	12	14	16	16	15	16	14	15	15	15
26	15	14	15	15	15	15	15	15	14	14	15	15	16	16	15	14	14	15	14	15	16	14	15	15
27	15	13	15	15	14	15	15	15	14	14	14	12	15	15	14	15	14	13	14	14	16	15	15	14
28	14	14	14	15	15	15	15	16	14	13	14	19	16	18	14	14	13	14	14	14	15	15	16	15
29	15	15	16	16	15	14	15	14	14	15	17	19	35	34	22	18	14	16	14	14	15	15	15	16
30	16	15	15	16	15	16	14	14	15	14	17	16	17	20	18	16	15	15	16	14	14	14	15	14
31	15	15	15	14	15	15	15	15	12	12	15	16	16	18	18	16	16	15	16	15	15	15	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	15	15	14	14	14	15	15	15	15	15	14	15	15	15	15	15	15	15
U Q	15	15	15	15	15	15	15	16	15	15	15	16	17	17	16	15	15	16	15	15	15	15	15	15
L Q	15	14	15	15	15	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	15	14	15

DEC. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	340	318	305	331	324	328	334	355	365	358	356	358	370	358	373	374	373	364	320	343	333	326	298	307
2	307	306	318	324	383	324	327	361	382	380	356	352	372	397	350	389	386	375	347	341	337	F	330	312
3	290	305	317	328	378	339	323	361	375	346 V	363	369	380	400	373	353	379	352	321	364	356	324	348	293
4	317	326	322	349	425	333	356	385	397	379	369	366	361	385	368	388	382	378	332	343	365	339	316	322
5	302	320	327	323	350	370	344	377	382	393	369	343	362	374	373	402	368	387	367	325	313	340	362	305
6	300	300	310	317	329	349	339	384	389	367	359	372	359	360	361	387	374	338	346	A	313	303	291	294
7	299	338	361	323	300	313	304	378	384	369	373	344	362	379	334	356	390	364	331	340	337	305	304	292
8	319	310	322	302	286	305	346	390	392	355	366	390	351	339	344	360	392	374	366	352	306	331	300	294
9	312	338	336	350	319	335	323	381	383	386	361	366	334 V	375	368	363	378	389	351	A	311	337	303	314
10	317	F	F	313	326	317	362	386	380	363	370	386	369	354	366	351	379	346	344	347	310	321	F	301
11	F	316	327	313	F	F	353	388	387	325	381	389	372	361	356	371	A	336	389	344	365	415	307	F
12	327	314	324	338	355	371	313	360	390	366	344	372	376	365	363	351	375	329	361	A	A	304	320	311
13	F	311	358	314	338	316	348	366	379	386	390	399	B	354	387	385	348	367	A	339	329	368	340	313
14	319	311	341	F	F	348	361	382	405	389	377	393	360	359	376	351	391	351	351	389	309	376	310	301
15	335	F	F	332	F	323	376	369	A	A	324	257	308	340	348	328	329	333	313	279	275	286	321	358
16	285	334	403	295	300	279	F	354	380	359	370	356	R	375	357	350	376	349	351	360	A	A	A	327
17	A	345	324	303	F	F	F	399	374	365	380	391	386	365	395	381	382	315	330	369	372	335	324	294
18	319	323	378	338	364	344	345	377	380	362	372	384	395	384	363	384	389	363	311	358	356	323	F	F
19	318	343	347	352	F	F	327	393	395	362	354	363	372	359	374	379	387	363	A	345	346	321	317	297
20	341	318	F	347	345	341	360	380	363	371	345	386	350	357	371	403	371	351	355	388	376	F	327	F
21	F	F	F	F	F	398	363	359	360	339	377	387	370	376	358	377	376	387	335	A	355	392	294	313
22	329	305	304	313	322	353	355	385	380	382	382	385	403	367	370	371	375	349	322	366	375	361	308	301
23	311	313	331	316	305	339	378	376	396	376	357	377	370	369	356	373	383	377	332	358	338	381	336	309
24	322	323	353	357	334	321	327	414	389	351	366	383	370	384	374	370	373	362	346	368	357	362	F	F
25	304	295	319	352	318	316	375	380	370	366	357	372	396	343	384	397	372	362	321	342	359	324	327	367
26	367	F	344	347	330	337	324	382	384	367	354	371	391	369	383	384	367	371	349	383	364	308	342	351
27	317	319	F	F	331	367	F	386	383	372	358	390	385	388	358	380	402	377	324	369	F	336	F	316
28	312	307	303	327	341	348	363	377	384	374	374	398	379	394	376	395	383	376	379	365	357	346	323	313
29	311	311	339	352	382	383	376	382	374	388	378	367	370	394	375	390	400	369	347	375	333	340	320	F
30	F	F	337	F	F	336	346	387	388	369	368	391	354	382	362	372	383	376	369	373	393	348	305	A
31	F	F	F	F	351	F	351	398	402	391	371	377	377	370	348	372	390	340	333	339	355	362	338	328
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	25	25	26	24	27	28	31	30	30	31	31	29	31	31	31	30	31	29	27	28	28	26	25
MED	317	316	327	328	332	337	347	381	383	368	368	377	370	369	368	374	379	363	346	358	350	336	320	311
U Q	324	324	346	347	353	349	362	386	389	380	374	389	380	384	374	387	387	376	353	369	362	362	330	319
L Q	306	308	318	314	320	321	327	369	379	362	357	366	360	359	357	360	373	349	327	342	321	322	305	299

DEC. 2006 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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										L	L	A	L	L										
2											L	L	L											
3										L	L	L	L	A	A									
4											L	L	L											
5												U L 4 1 0	L	L	L									
6										U L 4 0 0	L	A	L	L	L									
7											A	L	L		L									
8									L	L	A	L	L	L	L									
9											A	A	L	A	A					A				
10										L	L			L	U L 4 1 5									
11											L	U L 3 8 3	L	L	A		A							
12									L	L	L	L	L	L		A								
13										L	A	A	B	E	B									
14										L	U L 3 9 3		L	L	L									
15									A	A	L	U L 3 2 4	L											
16										L	A				L									
17										L	A	A	A	A										
18									L		L	L		L										
19										U L 4 3 6	U L 3 8 2	U L 4 3 1	L	L	A									
20											A	L	L	E	B	E	B							
21										L	A	L		A	L									
22														L	L									
23										L	L	A	L		L	L								
24									L		L	A	L	A										
25										L	L	L	L											
26										L	L	L	L	L	L									
27										L	L	L	L	L										
28											L		L		L									
29												L		L	L									
30											L	L	L	L		L								
31											L	L	L	U L 4 1 4	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										2	2	4		1	1									
MED										U L 4 1 8	U L 3 8 8	U L 3 9 6		U L 4 1 4	U L 4 1 5									
U Q												U L 4 2 0												
L Q												U L 3 5 4												

DEC. 2006 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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										244	240	242	238	254										
2											252	234	226											
3										222	220	246	240	216	236									
4											240	246	262											
5												256	248	232	238									
6										228	264	224	248	248	232									
7											226	256	240		262									
8									212	254	E A 258	218	240	234	264									
9											230	234	242	234	230					A				
10										224	246			240	226									
11											226	220	234	242	220			A						
12									218	228	250	234	232	240		E A 248								
13										230	216	220	B	246										
14										220	228		250	240	228									
15									A	A	272	354	278											
16										222	230				238									
17										214	230	226	236	220										
18									210		252	242		238										
19										220	250	228	242	244	228									
20											240	232	248	242	224									
21										266	224	220		234	244									
22														236	224									
23										230	254	232	232		250	228								
24									220		238	232	238	224										
25										258	250	234	226											
26										248	248	228	222	240	224									
27										228	252	226	230	222										
28											228		230		234									
29												252		240	238									
30											242	234	248	234		238								
31											248	236	234	246	242									
	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	16	28	26	24	23	19	3								
MED									215	228	240	234	239	240	234	233								
U Q									219	246	251	242	248	242	242	E A 248								
L Q									211	222	229	226	232	234	226	228								

DEC. 2006 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	242	234	E B 296	E B 250	E B 254	E B 252	E B 260	228	218	206	202	A	216	200	H 176	198	212	192	208	242	E A 260	242	E A 262	258
2	E B 292	E A 288	E B 264	E B 254	210	204	E B 260	214	218	222	210	198	H 188	204	214	216	202	194	228	212	230	228	E B 236	E B 282
3	E B 306	E B 268	E B 256	E A 264	208	210	246	212	218	188	H 190	202	204	A	A	218	204	204	234	226	200	222	230	E B 296
4	E B 264	240	E A 280	230	190	E B 254	224	212	206	212	212	202	204	222	210	218	202	198	218	222	212	226	E B 260	E B 262
5	E B 296	E B 262	E B 264	E A 262	226	208	236	H 178	202	216	212	198	194	198	202	206	196	192	214	E A 250	E B 248	224	E A 252	E B 278
6	E B 296	E A 292	E B 280	E B 272	E B 250	206	208	202	206	H 170	222	A	216	H 192	204	214	206	204	240	A	E B 248	E B 276	E A 320	E A 312
7	E A 280	E A 266	218	244	E B 260	E B 270	E B 268	222	212	H 190	A	216	212	204	204	220	202	200	232	206	214	220	E B 268	E B 296
8	E B 252	238	236	E B 274	E B 302	E B 288	216	206	182	206	A	202	206	H 180	H 186	224	202	188	212	212	E B 258	234	E B 274	E B 304
9	E B 250	E A 288	E A 250	224	210	218	248	202	206	204	A	A	202	A	A	218	206	192	222	A	238	218	E B 274	E B 266
10	E B 262	E B 258	E B 274	E B 266	238	226	210	204	208	200	216	222	210	200	H 182	208	202	206	206	204	E B 258	234	E B 248	E B 278
11	E B 258	E B 248	236	E B 256	E B 290	E B 278	222	202	210	208	194	196	190	188	A	212	A	216	198	216	210	216	E B 262	E B 310
12	246	E B 262	246	218	214	200	218	212	H 192	H 168	202	214	202	194	216	A	212	194	210	A	A	E B 270	222	E B 260
13	E B 282	E B 278	212	E B 254	242	E B 262	224	206	204	196	A	A	B	B	210	204	212	200	A	210	234	220	226	E B 252
14	E A 322	240	224	E B 268	E B 280	220	216	206	202	H 180	H 174	216	194	H 186	H 176	214	198	208	202	208	E B 264	218	E B 258	E B 290
15	236	E B 254	E B 306	242	E B 318	E B 256	230	218	A	A	214	216	210	214	214	E A 254	248	212	E B 252	E B 262	E B 280	E B 282	E B 238	208
16	240	E B 264	194	E B 308	228	E B 336	E B 294	224	216	206	A	214	212	218	H 178	206	216	222	218	224	A	A	A	E A 260
17	A	222	244	E A 254	E A 266	248	222	198	198	H 178	A	A	A	A	216	210	206	212	236	216	202	236	216	E B 296
18	E B 254	E A 278	222	238	216	E B 260	238	202	H 168	212	214	216	212	204	206	206	200	202	E A 252	216	210	E A 314	E B 276	E B 284
19	E B 258	236	234	222	224	E B 266	230	202	H 184	H 174	208	194	H 178	H 196	A	208	202	206	A	232	212	232	236	E B 290
20	E A 250	E B 258	E A 248	208	232	228	208	198	214	226	A	196	208	B	B	200	200	208	210	198	208	E B 286	260	E B 308
21	E B 280	E B 292	242	246	204	196	206	H 184	214	238	A	202	220	A	196	222	198	184	238	A	230	204	E B 296	E B 286
22	E A 278	E B 290	E B 280	E B 246	E A 260	230	226	200	H 172	H 188	210	220	208	190	196	206	206	218	234	212	202	218	E B 260	E B 280
23	E A 280	E B 270	E B 252	E B 264	E B 266	240	206	200	200	H 190	226	A	200	200	184	190	206	196	226	206	238	204	230	E B 294
24	E B 268	E B 266	E B 250	206	216	E B 260	E B 276	188	H 184	208	H 184	A	208	A	H 212	184	208	194	236	210	208	204	E B 262	E B 294
25	E B 278	E B 304	E B 272	214	E B 248	E B 294	208	206	H 182	218	212	194	194	172	216	H 180	208	206	E B 252	236	E A 240	216	232	196
26	204	E B 258	224	228	240	E B 250	238	206	212	206	212	210	198	192	A	202	204	198	236	214	214	E A 276	220	234
27	E A 284	E A 294	E A 258	E B 248	228	206	214	198	190	H 186	E A 226	206	206	H 180	200	218	200	194	236	204	218	224	E A 316	E A 276
28	E A 278	E B 302	E B 262	E A 250	E B 232	220	220	200	198	214	196	212	196	214	H 178	220	202	198	204	216	E B 250	E B 248	E B 284	E B 284
29	E A 312	E A 284	240	220	194	200	204	H 168	H 176	214	220	210	226	212	198	208	204	200	204	214	216	220	240	236
30	E B 274	E B 280	222	204	242	236	226	202	202	204	198	204	190	190	208	208	208	212	212	210	204	224	E A 286	A
31	E B 294	E B 270	E A 266	244	224	206	206	194	202	212	212	212	192	H 174	H 184	220	208	210	240	218	224	208	E A 266	E A 252
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	31	31	31	30	30	23	24	29	24	25	30	30	31	29	27	29	30	30	30
MED	E B 276	E B 266	E 250	E 246	U 221	U 218	220	202	202	206	211	208	204	197	202	208	204	200	222	213	216	221	E 260	E B 281
U Q	E B 284	E 288	E B 266	E B 262	E B 260	E B 260	E B 238	212	212	212	214	215	211	204	211	218	208	208	236	224	E B 248	E B 242	E B 274	E B 294
L Q	252	254	234	224	216	208	210	198	H 190	H 188	198	200	194	H 189	H 184	206	202	194	210	210	210	218	236	260

DEC. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC. 2006 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	122	120	114	A	A	A	114	112	A							
2								B	126	128	122	118	118	122	A	126	B							
3								B	122	114	118	120	122	A	112	112	B							
4								B	118	124	124	122	A	120	A	A	B							
5								B	120	120	120	A	120	110	112	124	118							
6								B	124	122	122	A	A	A	118	A	A							
7								E B 134	124	124	A	A	A	122	A	116	B							
8								B	120	A	A	A	A	118	114	A	B							
9								B	114	A	A	A	A	A	A	A	B			A				
10								B	120	A	122	120	114	116	116	120	B							
11								B	112	114	120	120	A	122	A	A	A							
12								B	116	124	124	120	A	A	122	A	B							
13								B	116	124	A	A	B	B	116	A	A							
14								B	122	122	118	118	118	112	114	A	B							
15								B	116	A	114	A	A	A	A	A	A							
16								B	122	116	A	A	A	A	A	A	B							
17									112	A	A	A	A	A	118	A	B							
18								B	116	120	118	114	116	120	124	118	B							
19								B	120	122	A	120	118	A	A	A	B							
20								B	128	A	A	116	120	B	B	B	B							
21								A	A	122	A	118	A	A	A	128	126							
22								B	120	112	118	124	124	122	A	A	B							
23									116	A	124	A	122	118	122	114	B							
24								B	116	126	116	A	A	A	114	120	B							
25								B	128	126	122	124	A	114	116	116	B							
26								B	116	A	A	A	120	118	A	A	B							
27								B	A	A	A	A	A	120	124	118	B							
28								B	A	122	A	120	118	120	114	120	B							
29								B	114	122	A	122	B	B	122	A	A							
30								B	122	122	A	A	118	122	122	118	B							
31								B	120	122	A	116	A	120	122	A	B							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	28	22	16	16	13	17	19	14	2							
MED								E B 134	120	122	120	120	118	120	116	118	122							
U Q									122	124	122	121	121	122	122	120								
L Q									116	120	118	118	118	117	114	116								

DEC. 2006 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

DEC.2006 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	98	98	100	94	92	92	B	B	136	116	114	102	98	96	94	142	90	B	B	102	98	112	106	B
2	104	100	104	102	B	B	B	156	150	136	124	112	102	142	98	140	144	B	B	B	B	B	B	B
3	108	110	B	98	98	102	B	148	154	156	100	160	114	88	122	84	86	86	98	98	B	B	B	100
4	98	B	100	92	92	B	92	138	142	158	124	124	106	104	92	102	100	98	94	92	90	122	B	B
5	104	98	96	92	92	92	88	90	104	152	142	104	106	96	96	104	G	B	90	100	B	B	102	B
6	B	98	B	B	B	B	B	140	144	106	106	108	108	104	104	102	104	100	98	88	92	100	100	104
7	102	96	96	94	B	B	B	158	156	106	104	106	102	104	102	166	142	98	B	B	B	B	B	B
8	B	B	B	B	B	B	98	B	114	106	102	102	102	98	96	94	B	100	94	B	B	B	B	B
9	110	98	94	100	100	106	B	B	G	102	100	96	98	102	102	96	102	100	100	94	94	96	B	B
10	B	B	B	B	B	96	B	98	94	96	152	152	146	96	102	136	156	100	96	B	96	B	98	B
11	B	104	108	B	100	B	B	134	176	160	136	130	98	104	100	96	92	98	B	B	90	100	B	B
12	B	B	B	B	96	96	B	152	G	102	154	118	106	104	150	96	94	96	96	100	100	86	106	124
13	104	B	B	B	B	B	B	B	144	144	104	106	B	B	100	96	92	94	92	96	102	104	102	102
14	100	B	B	B	B	B	100	102	132	116	116	122	120	126	118	108	140	B	B	B	B	B	B	104
15	100	122	96	96	98	96	124	126	118	104	114	102	104	100	92	90	100	114	96	92	B	B	B	112
16	B	140	106	104	102	B	B	B	134	114	102	102	94	102	106	98	102	102	104	92	98	94	94	96
17	96	100	98	96	98	94	98	98	G	106	102	98	98	102	130	106	104	100	102	B	B	98	98	96
18	96	94	98	94	B	B	112	B	102	156	154	148	148	132	132	116	102	98	98	90	92	88	86	B
19	100	B	90	B	B	B	B	B	G	106	102	102	100	96	96	96	B	104	94	94	94	B	B	102
20	102	102	100	100	B	100	108	104	108	104	104	G	136	B	B	102	98	B	B	92	94	96	B	B
21	B	104	104	B	B	B	B	104	102	142	104	106	96	96	104	136	124	112	106	104	106	96	92	B
22	102	102	B	B	104	102	102	102	116	118	116	116	124	106	106	102	102	102	100	B	102	104	B	B
23	102	102	104	B	92	92	92	B	128	108	156	104	104	100	106	G	B	94	96	92	96	B	106	110
24	B	B	B	102	B	B	B	116	108	168	102	94	102	104	158	98	134	130	112	94	92	92	B	90
25	88	B	B	B	B	B	B	B	108	164	134	104	92	94	160	148	128	92	B	106	104	104	96	96
26	B	94	92	94	98	B	B	B	132	106	104	100	102	100	98	102	102	102	102	106	112	106	98	90
27	90	94	98	102	B	B	102	B	108	102	104	104	100	100	148	142	118	100	98	96	96	114	108	104
28	104	104	102	100	96	B	B	B	106	154	106	106	104	154	100	104	98	94	94	92	B	92	B	92
29	102	108	B	96	94	B	B	B	G	158	108	140	B	B	100	102	100	100	B	B	B	B	B	B
30	B	104	104	B	106	106	106	124	106	120	106	106	108	106	106	G	104	98	B	98	98	B	98	100
31	110	B	106	B	102	B	B	B	164	106	106	116	104	G	108	98	112	94	B	106	102	B	106	108
	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	20	17	17	12	12	17	26	31	31	30	29	27	30	29	27	26	21	22	21	18	16	17
MED	102	102	100	96	98	96	101	124	123	116	106	106	104	102	103	102	102	100	98	95	96	99	99	102
U Q	104	104	104	101	101	102	107	144	144	154	124	118	108	104	118	126	124	102	101	100	102	104	106	106
L Q	98	98	96	94	93	93	95	102	108	106	104	102	99	96	98	96	98	96	94	92	93	94	97	96

DEC.2006 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

DEC.2006 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

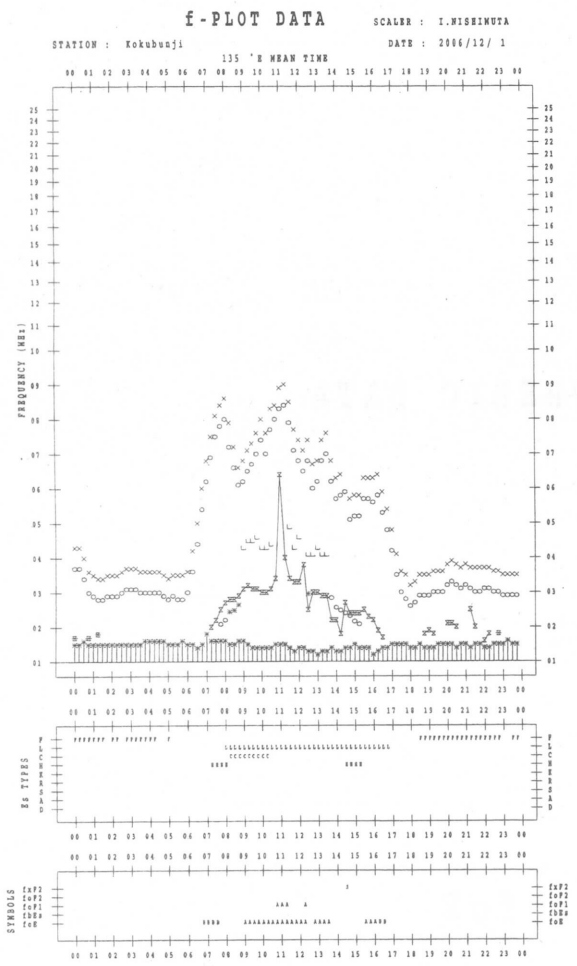
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2	F2	F2	F2	F1	F1			HL32	CL22	CL22	L3	L2	L3	L2	HL23	L3			F4	F3	F2	F2	
2	F2	F2	F2	F2				H2	HL12	CL21	CL21	CL11	L1	HL12	L3	HL11	HL21							
3	F1	F1		F3	F2	F1		H2	H2	H1	L2	HL12	CL11	L3	CL22	L3	L3	F3	F2	F2				F1
4	F1		F2	F2	F1		F1	H2	H2	HL22	CL11	CL11	L2	L2	L3	L2	L2	F2	F2	F2	F2	F1		
5	F1	F1	F2	F2	F2	F2	F1	L1	L2	HL21	HL12	L2	L2	L2	L2	L2			F2	F3			F3	
6		F2						H2	H1	L2	L1	L1	L1	L2	L2	L3	L1	F1	F2	F4	F2	F2	F4	F2
7	F3	F4	F3	F2				H2	HL21	L1	L3	L2	L2	L2	L2	HL22	H2	F2						
8							F1		CL11	L1	L3	L2	L3	L2	L2	L2		F2	F1					
9	F2	F3	F3	F2	F2	F2				L2	L1	L2	L1	L2	L2	L2	L1	F3	F2	F2	F2	F2		
10						F2		L2	L2	L2	HL11	HL21	HL13	L1	L2	HL11	H1	F2	F2		F2		F1	
11		F2	F2		F1			H2	H1	H1	CL11	CL11	L2	L1	L2	L3	L4	F3			F2	F4		
12					F1	F1		H3		L1	HL11	CL11	L1	L2	HL22	L3	L2	F3	F3	F2	F4	F1	F2	F1
13	F2								H2	HL22	L2	L2			L2	L3	L4	F3	F4	F3	F3	F3	F2	F2
14	F5						F1	L1	HL11	CL12	CL12	CL11	CL12	CL12	CL22	L2	H1							F2
15	F1	F2	F1	F2	F1	F1	F3	C2	C2	L4	CL11	L2	L2	L2	L1	L2	L2	FF22	F2	F1				F1
16		F1	F2	F2	F1				H1	CL12	L2	L2	L2	L2	L2	L2	L2	F3	F2	F3	F4	F4	F2	F2
17	F4	F2	F3	F4	F3	F2	F2	L1		L2	L2	L3	L2	L1	CL11	L1	L1	F2	F1			F1	F2	F1
18	F1	F3	F3	F2			F1		L2	HL11	HL21	HL21	HL11	HL21	HL21	CL11	L1	F1	F2	F3	F3	F3	F2	
19	F1		F1							L1	L2	L2	L2	L2	L2	L1		F2	F2	F2	F2			F2
20	F3	F1	F3	F2		F1	F1	L3	L2	L2	L2		HL11			L2	L2			F2	F2	F1		
21		F2	F1					L2	L2	HL12	L2	L2	L2	L2	L2	HL21	C1	F1	F2	F2	F3	F2	F2	
22	F2	F2			F3	F3	F2	L2	CL11	CL21	CL21	CL11	CL11	L1	L2	L1	L3	F2	F2		F2	F2		
23	F1	F1	F3		F1	F2	F2		C1	L1	HL11	L2	L1	L1	L1			F3	F2	F2	F1		F1	F2
24				F1				C2	C2	HL11	L2	L3	L2	L2	HL11	L2	H2	F2	F3	F2	F2	F2		F2
25	F2								L3	HL12	HL22	L2	L2	L2	HL11	HL11	C2	F1		F3	F3	F1	F1	F1
26		F1	F3	F2	F1				H2	L2	L1	L2	L1	L2	L2	L2	L2	F1	F2	F3	F2	F4	F2	F3
27	F2	F2	F2	F1			F1		L2	L2	L2	L1	L2	L2	HL22	HL22	C2	F2	F1	F2	F1	FF22	FF21	F2
28	F1	F3	F3	F1	F2				L1	HL11	L1	L1	L1	HL11	L2	L1	L1	F1	F1	F1		F1		F1
29	F2	F1		F1	F1					HL11	L2	HL11			L1	L1	L2	F1						
30		F2	F2		F1	F2	F2	CL11	L2	CL11	L2	L1	L2	L1	L1		L1	F3		F1	F1		F2	F2
31	F3		F2		F2				H2	L1	L1	CL11	L1		L1	L1	CL11	F2		F3	F2		F3	F2
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

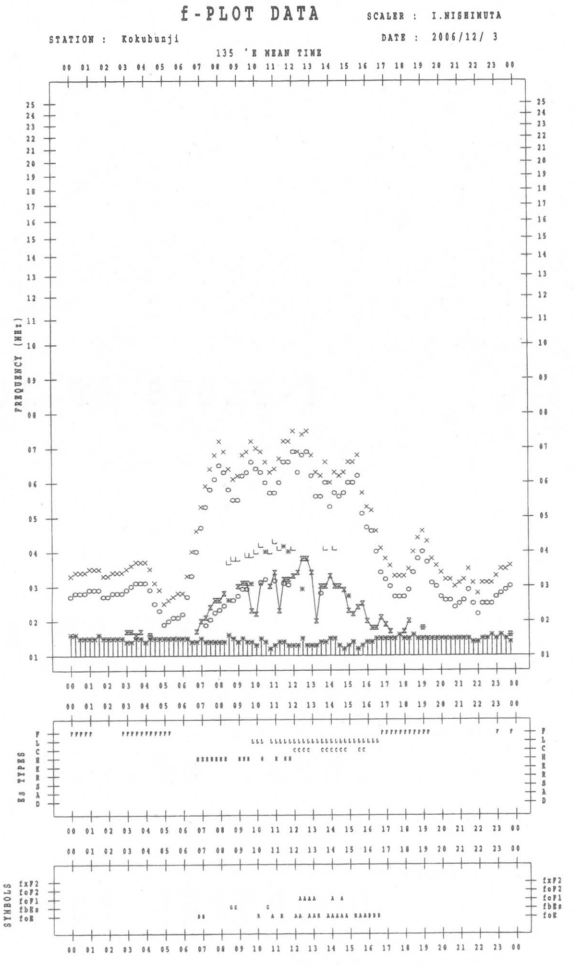
DEC.2006 TYPES OF Es

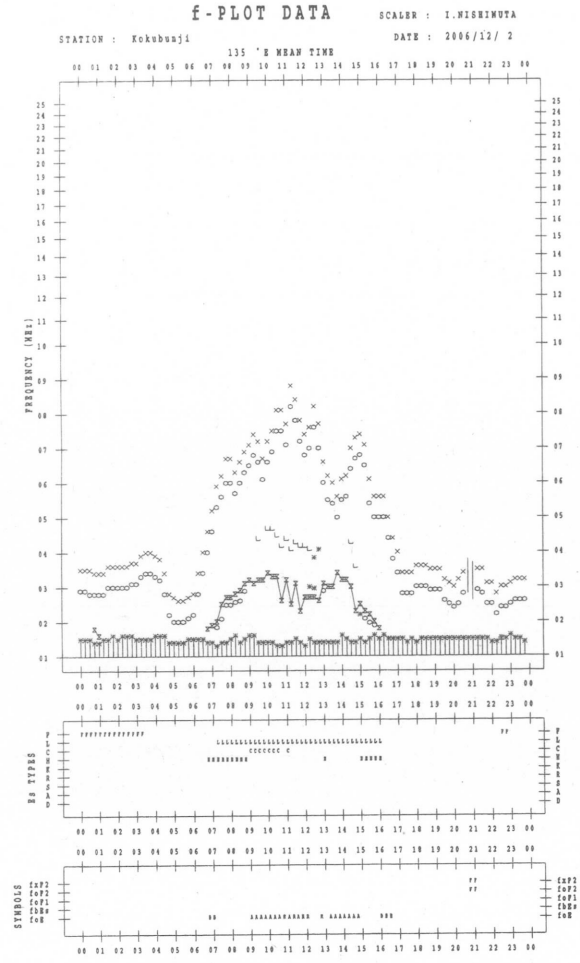
NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

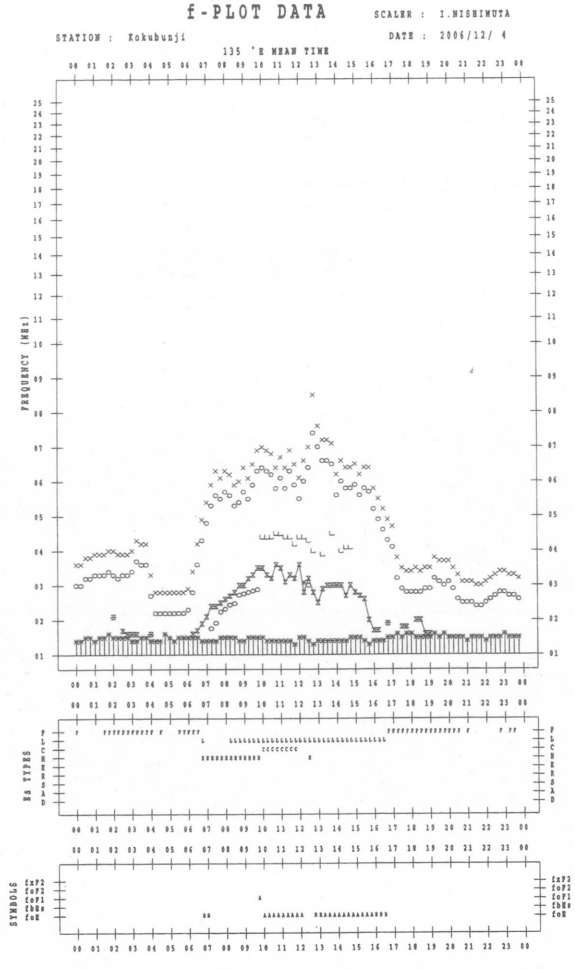
f-PLOTS OF IONOSPHERIC DATA

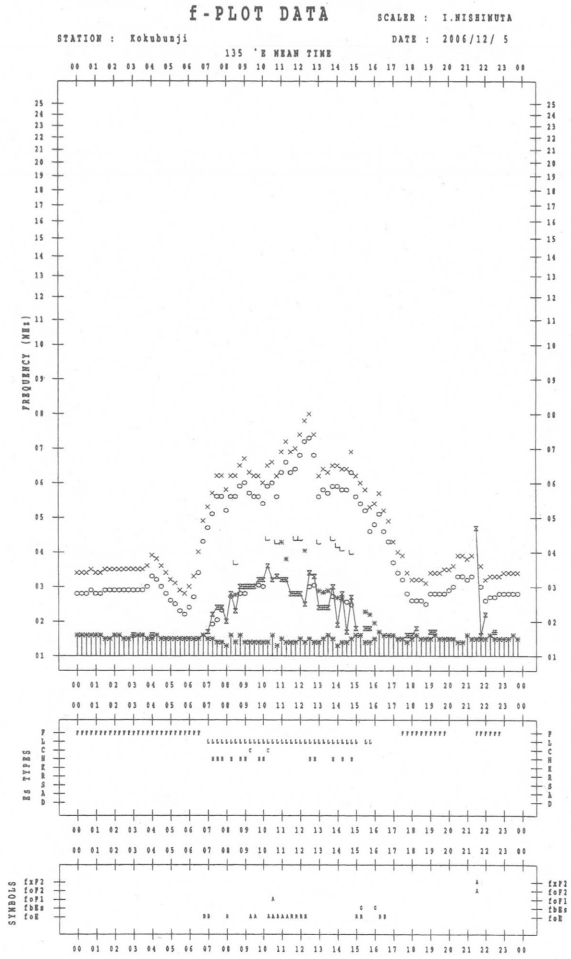
KEY OF f-PLOT	
	SPREAD
	foF2, foF1, foE
	fxF2
	DOUBTFUL foF2, foF1, foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

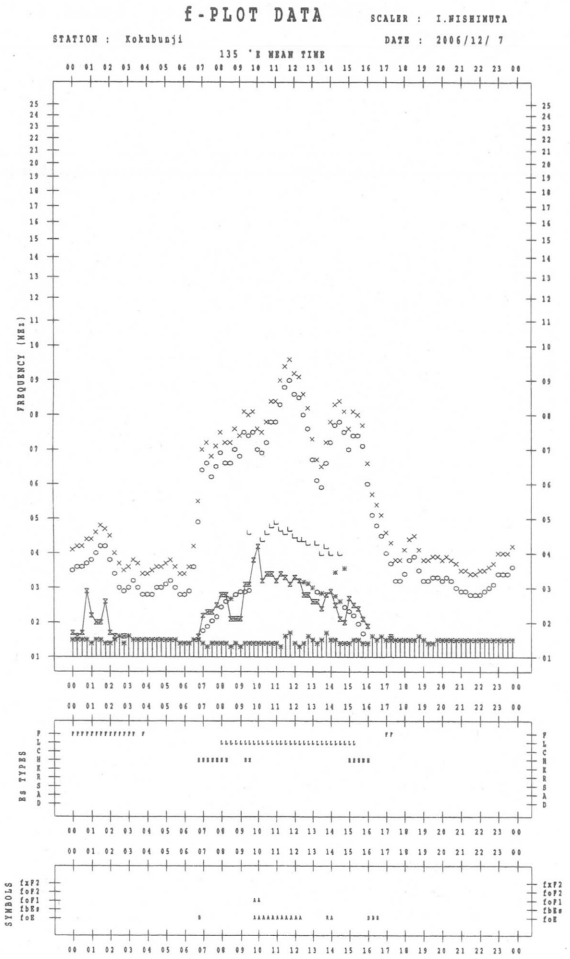

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 1
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

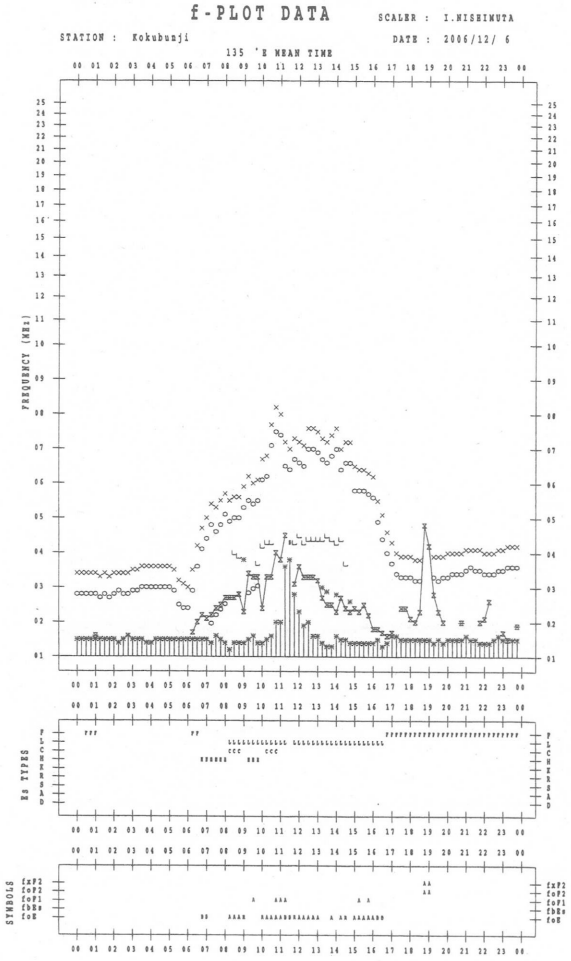

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 3
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

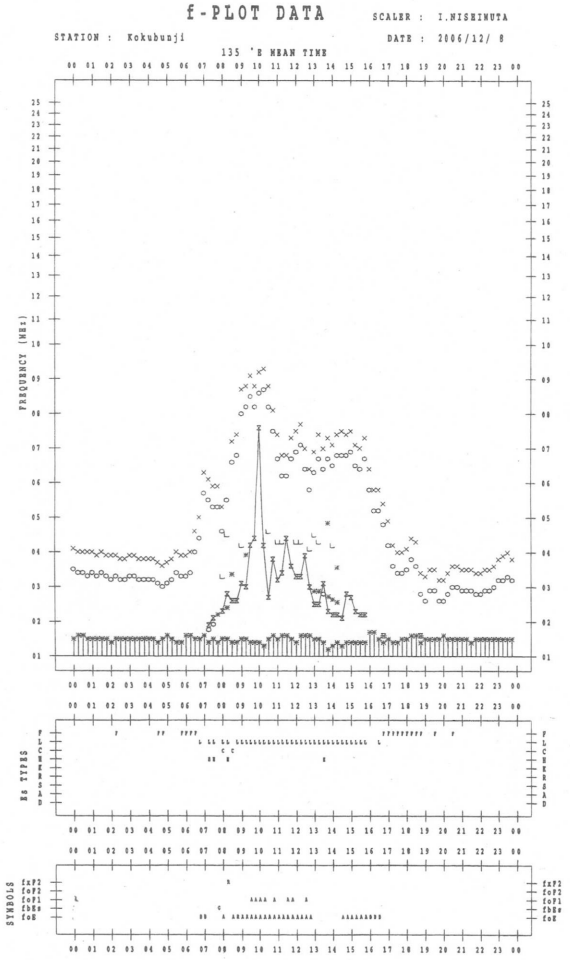

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 2
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

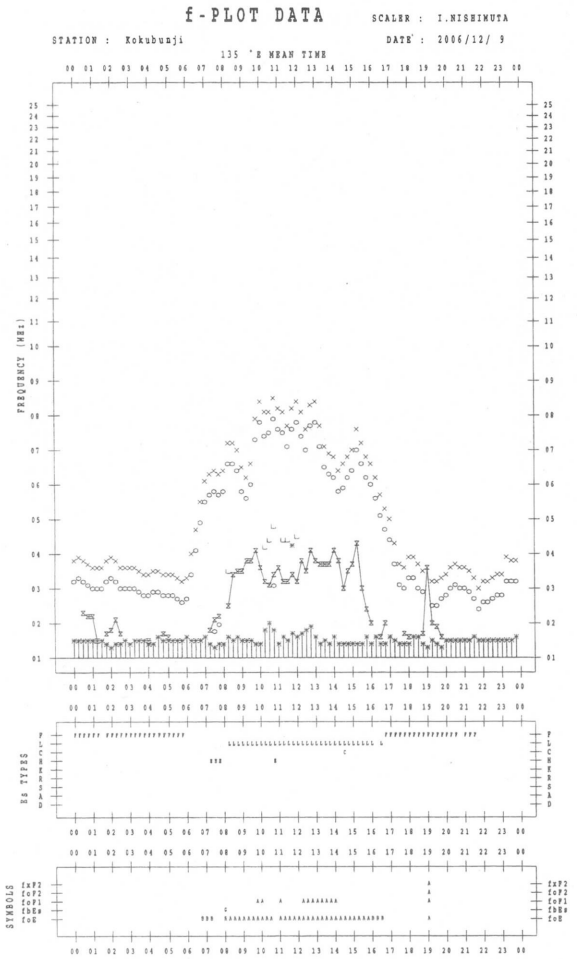

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 4
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

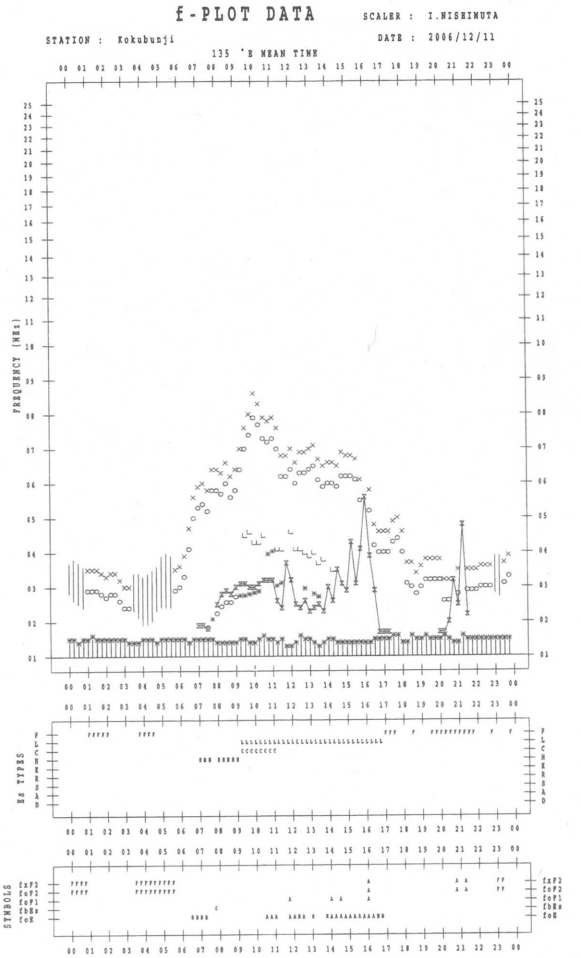

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

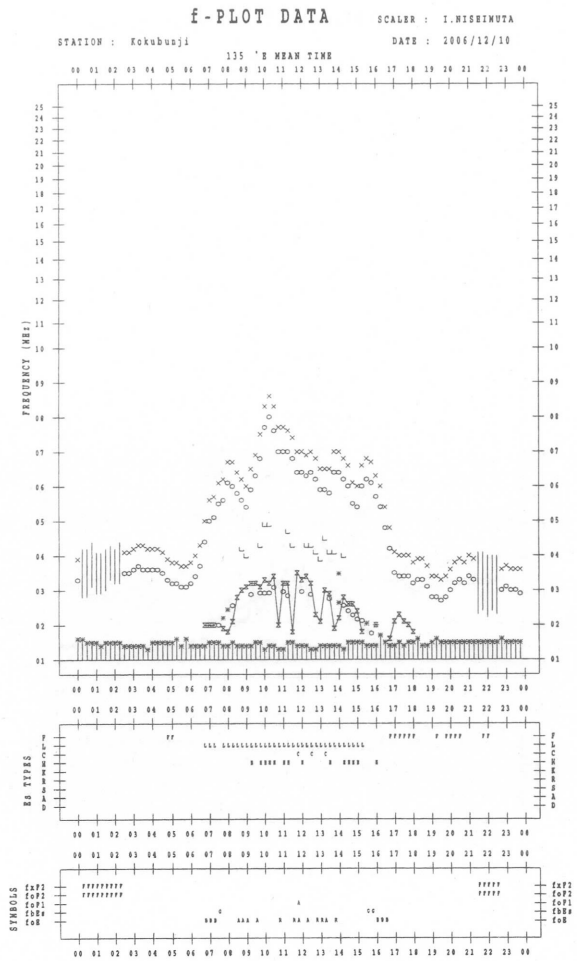

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

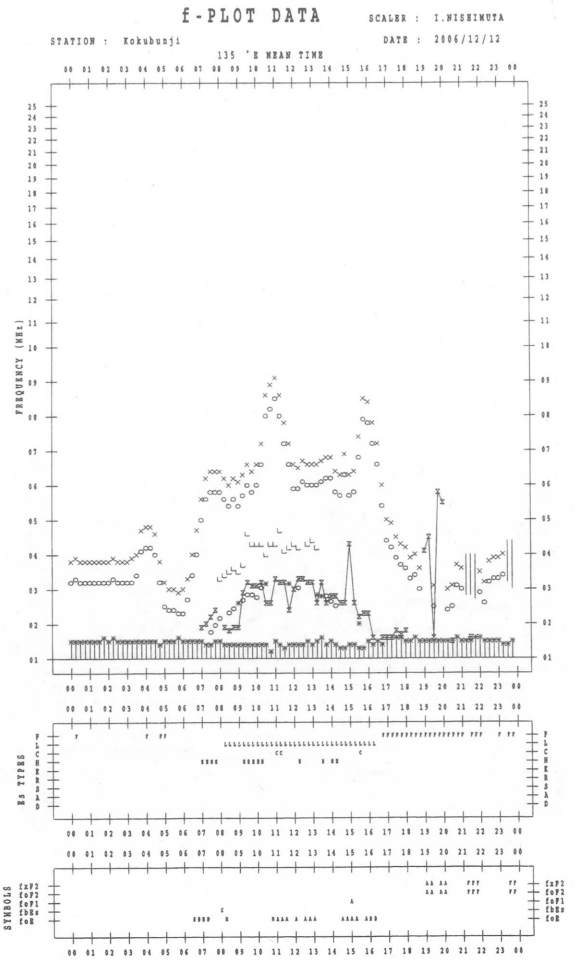

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

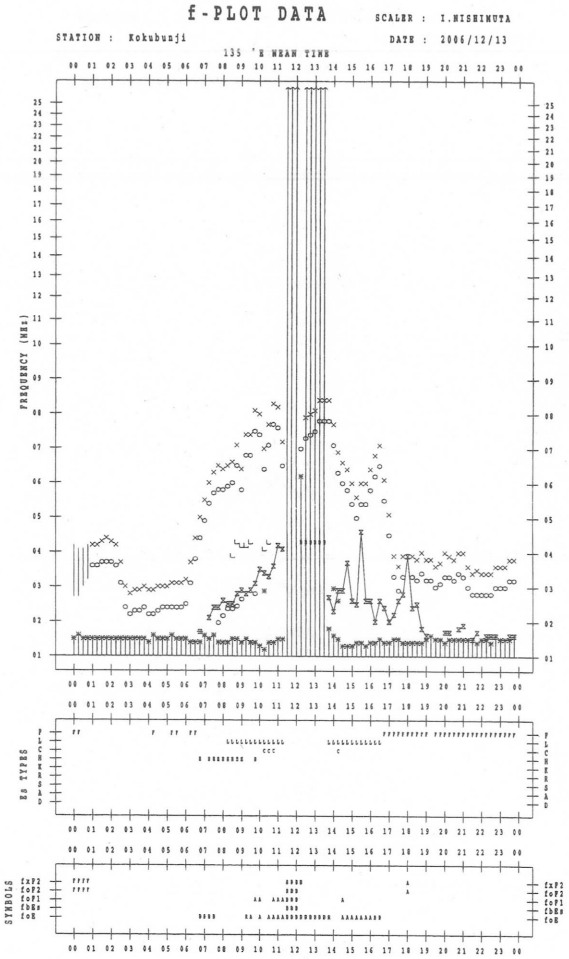

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

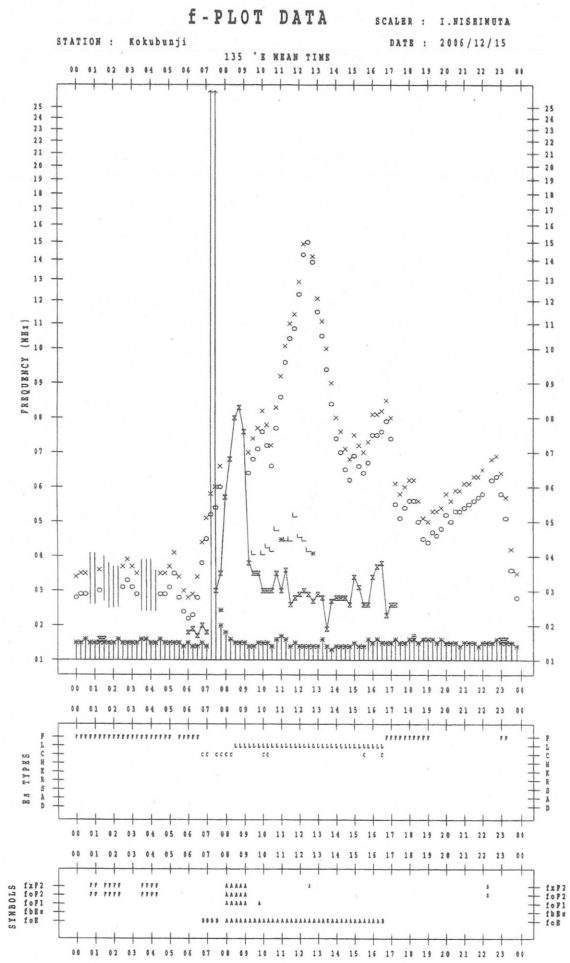

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

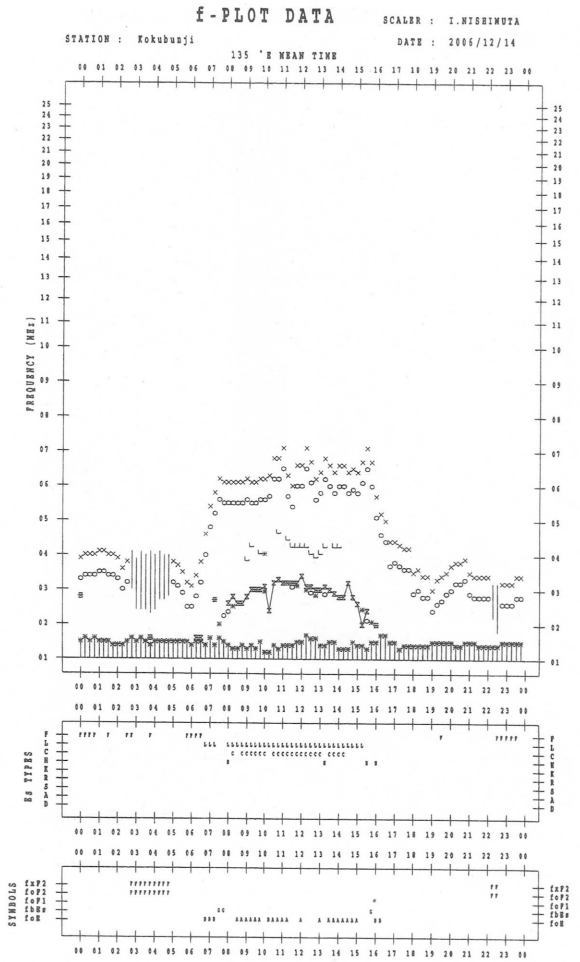

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

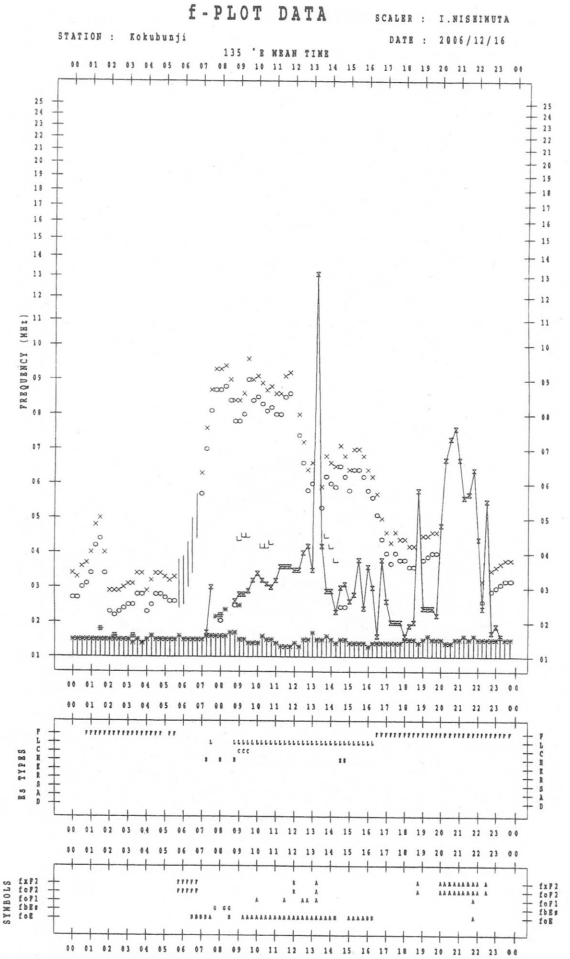

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

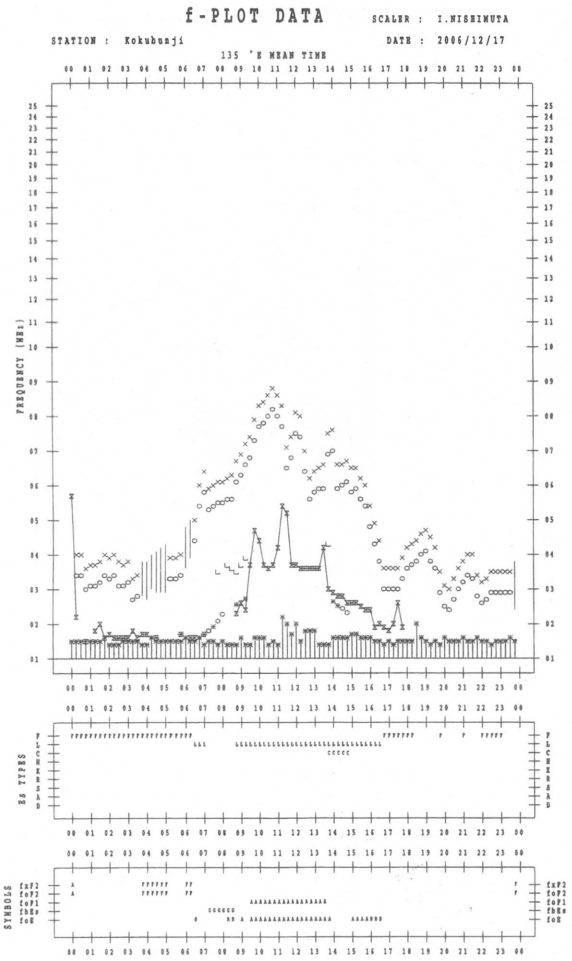

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

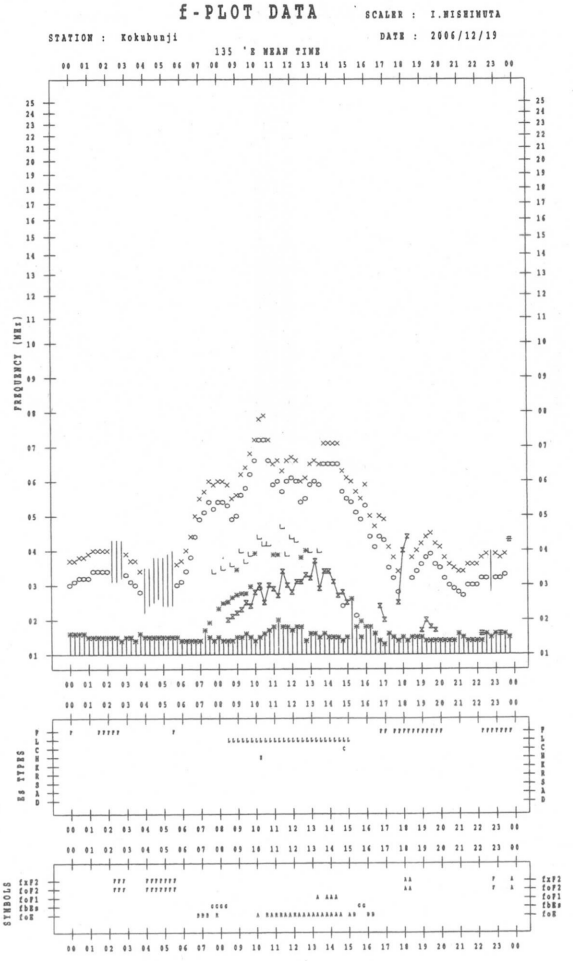

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

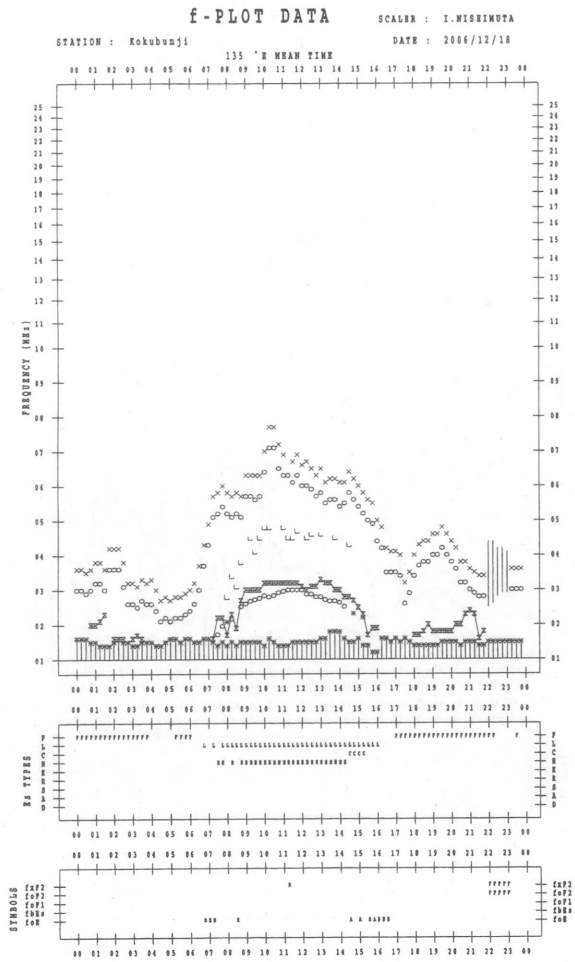

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

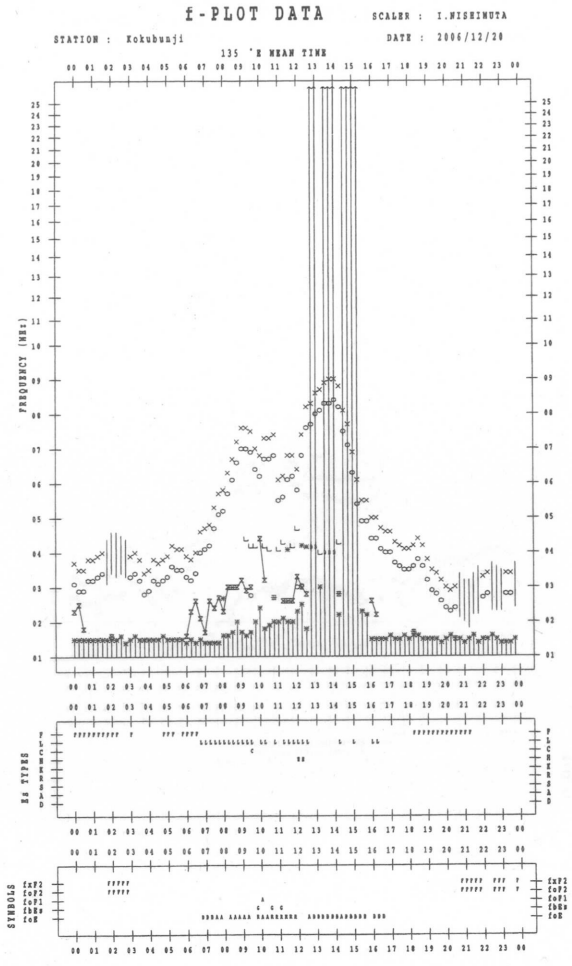

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

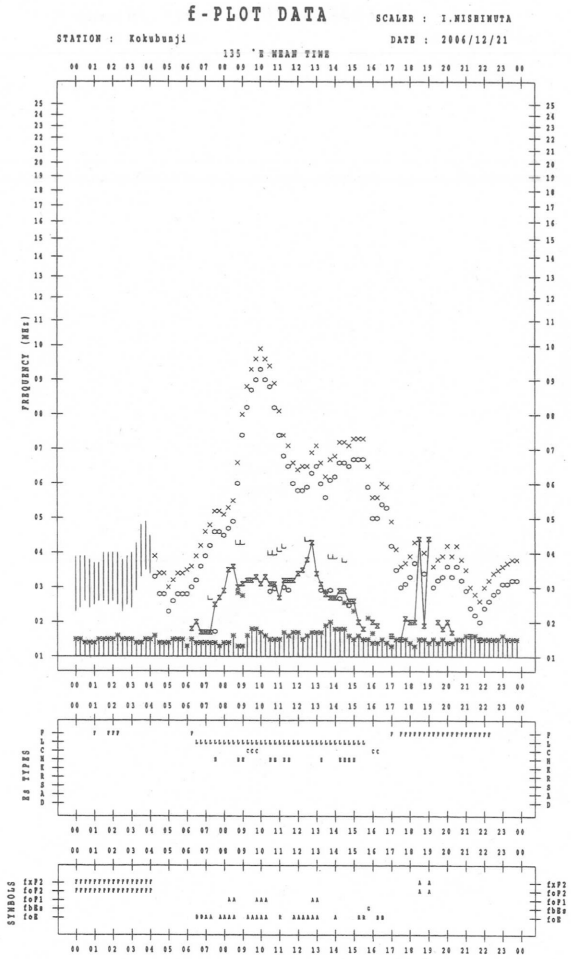

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

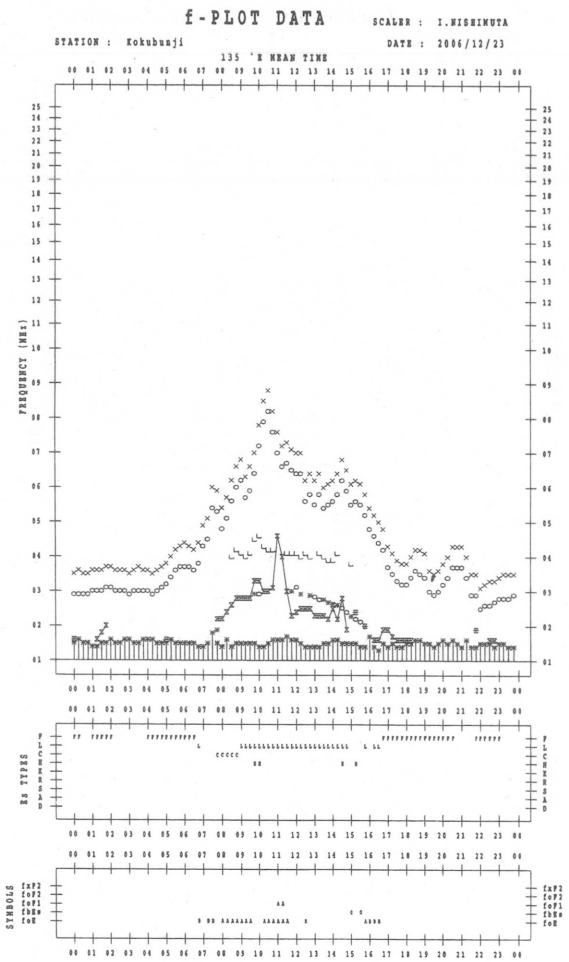

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

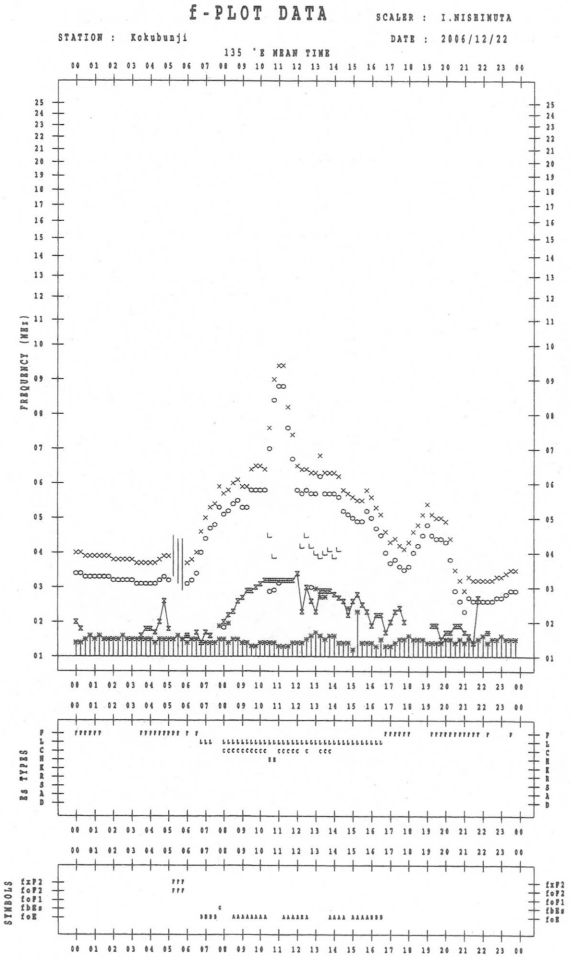

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

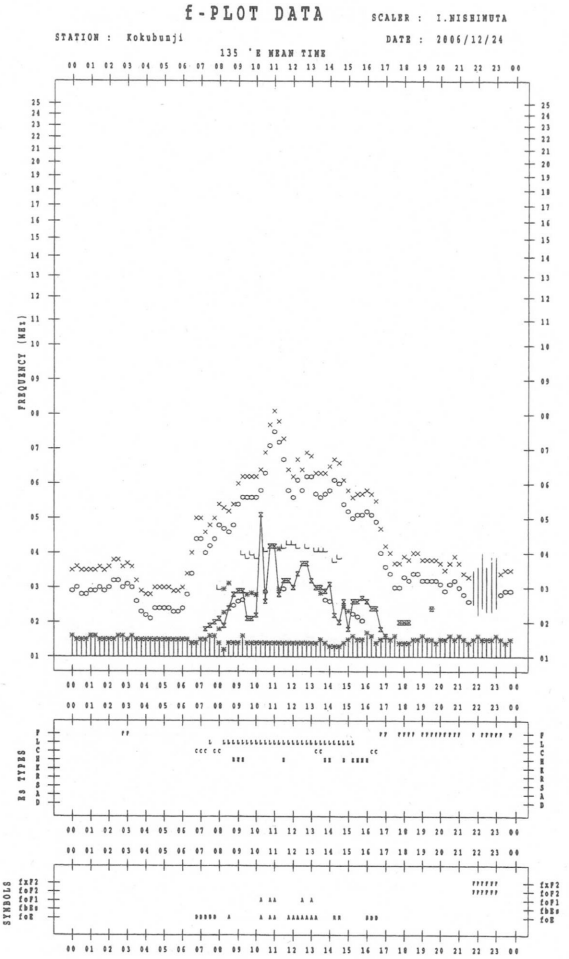

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

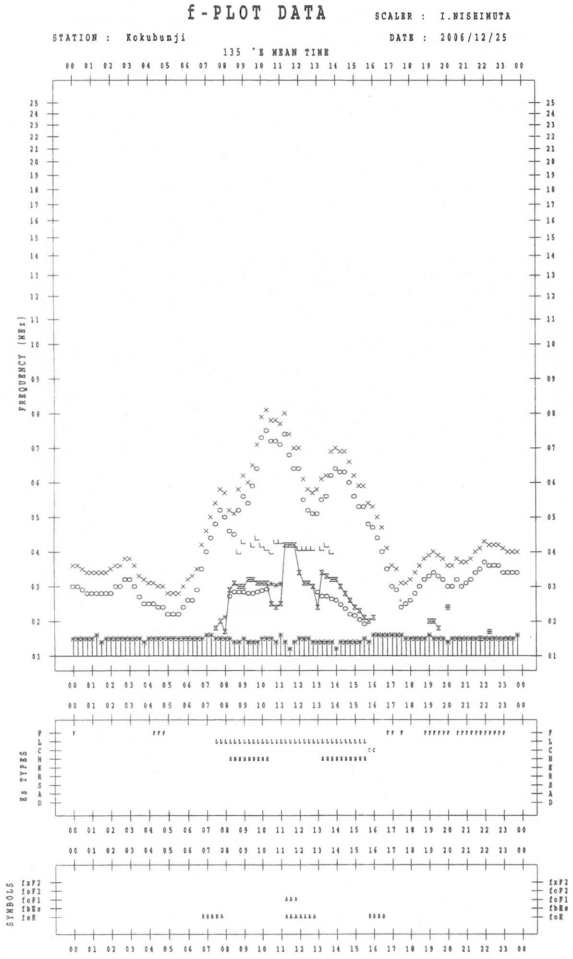

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

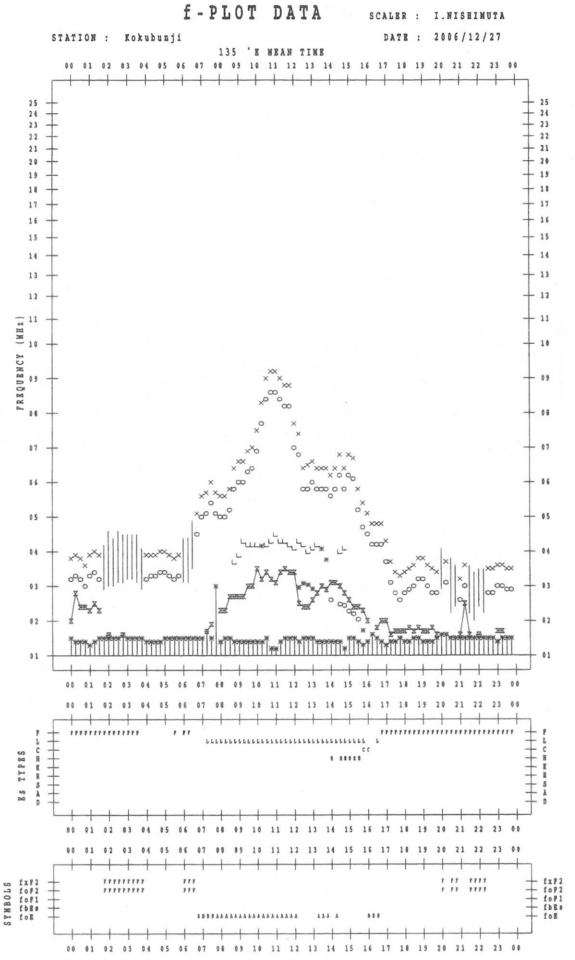

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

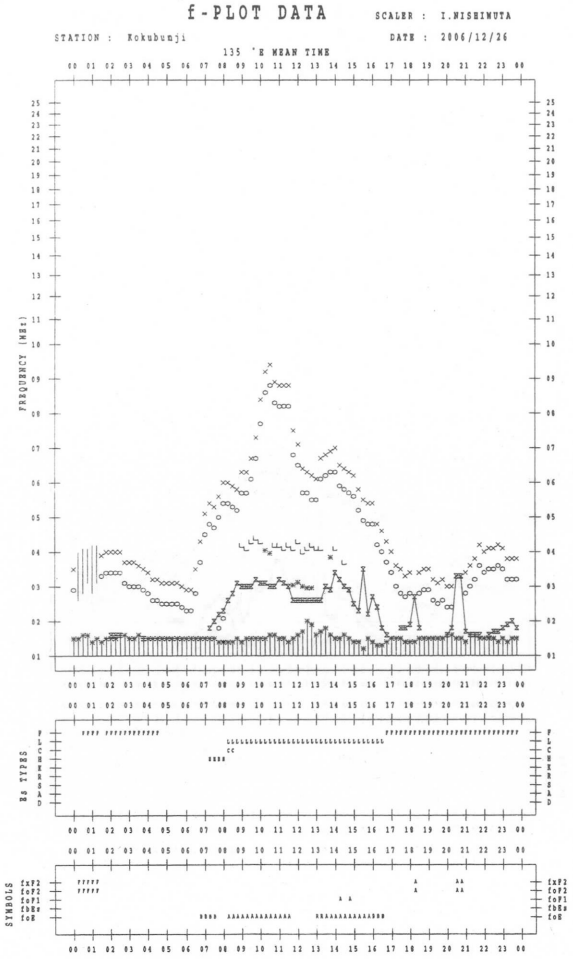

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

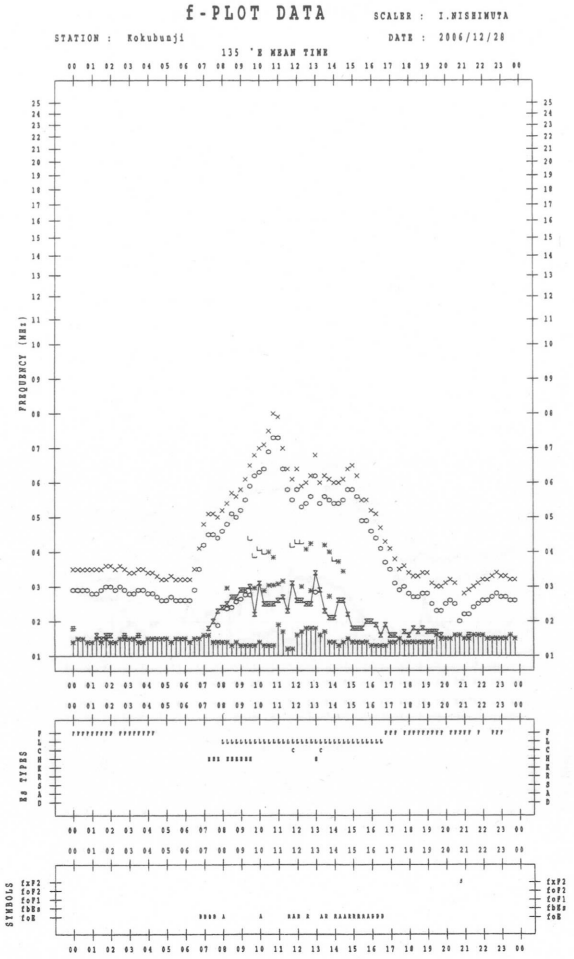

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

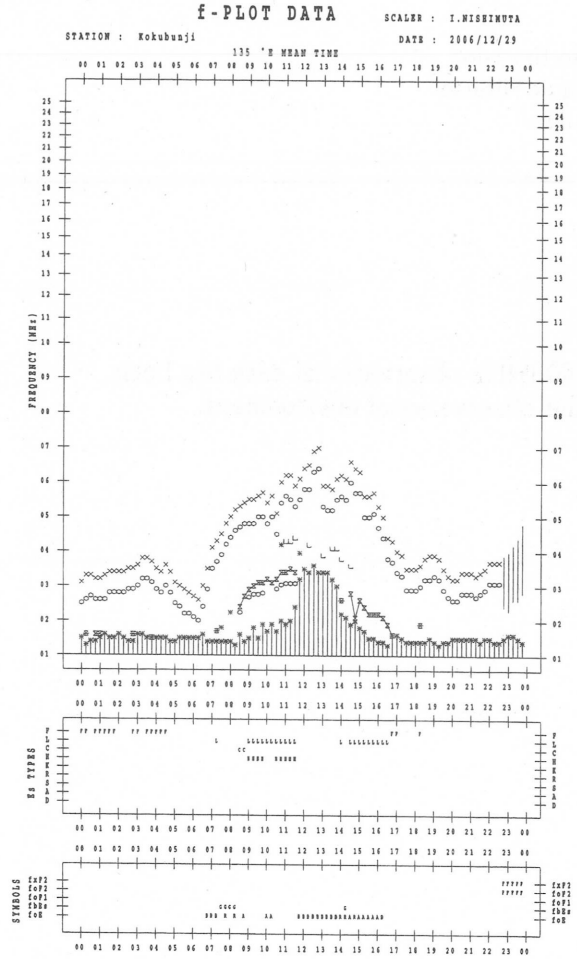

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

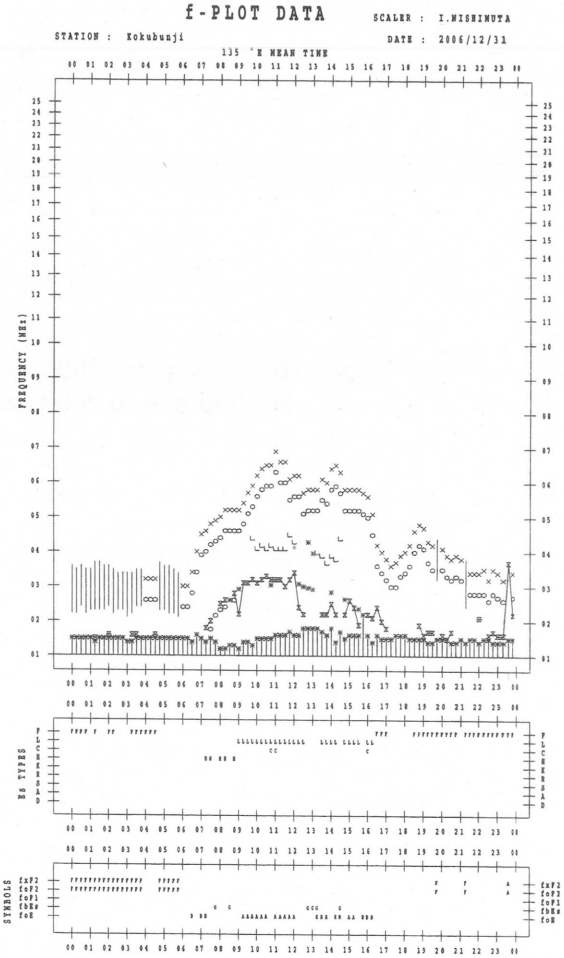

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

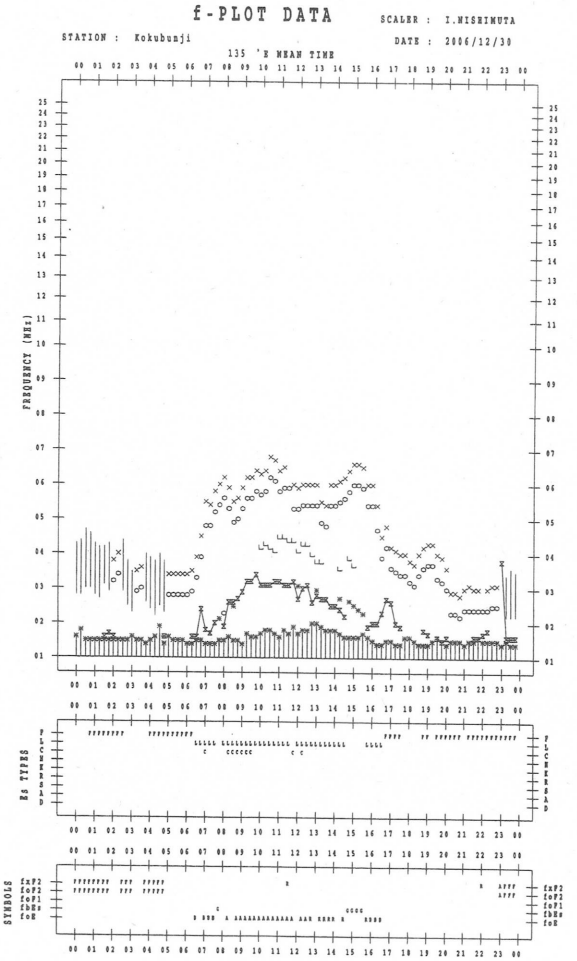

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/31
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/12/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

B. Solar Radio Emission
B1. Daily Data at Hiraiso
500 MHz

Since 10th November 2004, offering of 500MHz observational data has been finished due to deterioration of the observational environment.

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso December 2006

Single-frequency observations

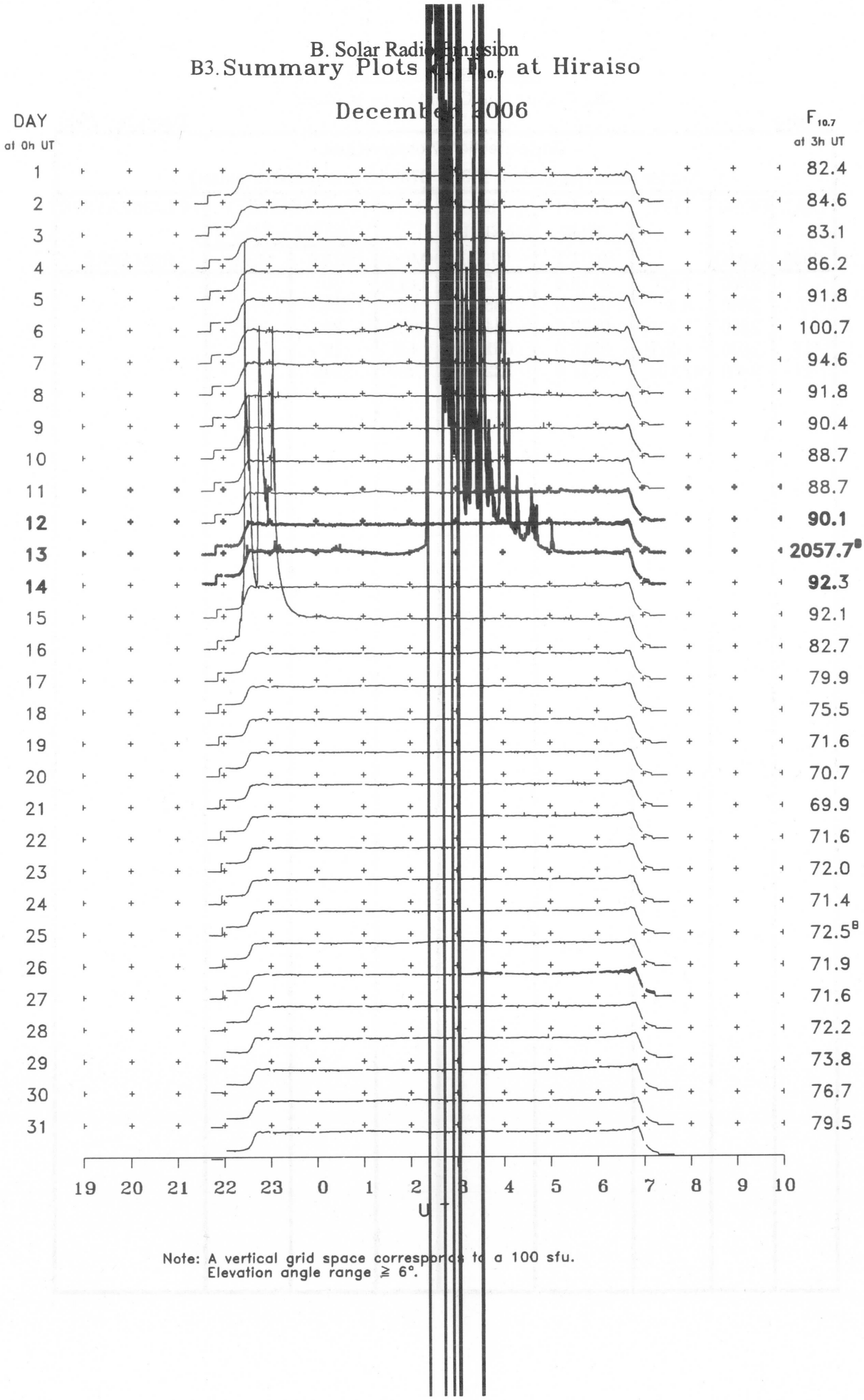
Normal observing period: 2135 - 0730 U.T. (sunrise to sunset)

DEC. 2006	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
6	2800	7 C	0116.0	0155.0	143.0	30	-	
7	2800	8 S	0355.0	0355.0	1.0	15	-	
7	2800	7 C	0429.0	0443.0	58.0	20	-	
11	2800	4 S/F	0513.0	0515.0	4.0	10	-	
14	2800	47 GB	2211.0	2229.0	78.0	1240	-	

B. Solar Radio Emission

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

December 2006



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

IONOSPHERIC DATA IN JAPAN FOR DECEMBER 2006
F－696　Vol.58　No.12（Not for Sale）

電離層月報（2006年12月）
第58巻　第12号（非売品）
2007年　2月7日　印刷
2007年　2月14日　発行

編集兼　独立行政法人情報通信研究機構
発行所　〒184－8795　東京都小金井市貫井北町4丁目2－1
☎（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