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IONOSPHERIC DATA IN JAPAN

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CONTENTS

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INTRODUCTION

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

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

A. IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily *f*-plot.

All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Hand-book of Ionogram Interpretation and Reduction (Second Edition) 1972 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

G Measurement influenced by, or impossible because the ionization density of the layer is too small to enable it to be made accurately.

H Measurement influenced by, or impossible because of, the presence of a stratification.

K Presence of particle *E* layer.

L Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbations of the observed parameter; or spur type spread *F* present.

Q Range spread present.

R Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets, if necessary.

A Less than. Used only when *fbEs* is deduced from *foEs* because total blanketing of higher layer is present.

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristics only.)

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

U Uncertain or doubtful numerical value.

X Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

Median count (**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

NOV. 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	32	34	38	40	38	44	34	48	55	65	64	A	71	69	63	62	57	45		40	34	A	37	A
2	A	38	41	41	47	50	36	53	51	66	72	73	69	61	64	71	61	47	48	52	46	37	42	41
3	44	47	52	52	50	40	43	53	61	77	78	78	78	66	58	62	A	37	34	34	38		44	43
4	42	38	41	40	37		34	58	69	67	72	67	81	61	62	64	61	44	42	43	40	40	44	44
5	43	39	43	41	41	37	36	54	60	58	72	76	78	60	58	64	68	55	37	44	42	37	40	41
6	42	44	44	46	47	29	42	62	70	65	61	71	62	65	56	62	59	42	30	35	34	35	36	36
7	35	40	38	34	36	39	32	54	60	63	74	80	75	62	65	69	49	36	A	41	36	37	39	33
8	37	38	45	40	39	44	40	60	72	52	57	56	71	63	54		50	32		35	37	37	37	38
9	36	38	44	44	45	45	36	51	63	61	61	66	65	62	58	56	41	31		34	38	38	40	36
10	37	34	37	34	32	32	34	53	68	76	82	65	91	72	71	60	63	54	53	50	52	54	54	54
11	55	54		41	45		41	62	76	69	73	83	78	75	68	82	64	50	38	40	38	34	40	38
12	41	41	38	37	37	26	29	54	67	76	72	75	81	67	60	71	61	38	32	32	37	34	32	40
13	34	32	34	36	36	32	30	61	64	70	64	77	71	55	64	62	45		30		28		32	32
14	34	36	31	34	37	31	22	40	55	62	68	71	66	64	61	66	47	28	29	32	34	34	34	34
15	38	40	40	38	37		35	58	59		70	67	66	60	59	55	58	34	31	34	32	31	34	40
16	40	40	40	37	38	37	35	48	54	70	66	74	65	58	65	67	52	32	35	36	40	38	34	38
17	37	40	39	32	38	37	32	50	61	66		70	70	65	62	58	47	46	29		30	34	35	34
18	34	34	34	36	36	28	32	54	63	67	64	75	70	64	61	58	50		32	32	35	37	34	37
19	37	41	38	37	41	40	40	61	66	61	67	64	72	62	60	55	53	32	34	35	34	37	32	40
20	38	40	41		38	37	32	55	52	62	68	69	66	61	54	54	54	29	34	37	41	41		44
21	44	45	40	43	40	40	40	49	52	63	68	61	64	62	57	52	44	32	32	36	43	39	42	45
22	44	44	45	45	43	43	34	46	46	60	58	56	63	57	56	60	38	A	A	34	30	34	32	32
23	34	30	31	32	25	31		40	54	53	56	59	66	59	54	54	40	37		40	44	42	41	40
24	44	44	43	40	39	31	31	45	35	54	67	62	77	70	61	72	60	24	23	28		29		40
25	41	40		34	34	32	28	26	57	55	62	64	70	61	A	A	38	23	30	A	24	31	34	34
26	36	38	34	38	32	30	35	41	58	63	60	66	70	55	51	61	29	34	35	40	44	41	45	44
27	47	48	45	47	40	32	29	45	50	64	65	65	59	64	61	60	40	34		24	34	32	31	32
28	31	36	34	38	37	41	25	47	52	58	49	65		63	65		54	34	34	34	36	40	40	40
29	39	40	38	38	42	40	28	43	48	58	58	75	71	60	58	49	41	37	34	34	34	31	38	40
30	40	42	41	41	40	36	32	47	60	66	69	75	71	69	60	65	52	54	44	43	34	35	36	40
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	28	29	30	27	29	30	30	29	29	29	29	30	29	27	29	27	23	27	29	27	28	29
MED	38	40	40	38	38	37	34	52	60	63	67	69	70	62	60	62	52	36	34	35	36	37	37	40
U Q	42	42	43	41	41	40	36	55	64	67	72	75	76	65	63	66	59	45	37	40	40	39	40	41
L Q	35	38	37	36	37	31	30	46	52	59	61	64	66	60	57	56	42	32	30	34	34	34	34	35

HOURLY VALUES OF fEs AT Wakkanai

NOV. 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	G	30	29	33	33	29	G	48	51	80	59	G	61	32	26	39	32	26	66	61	32	60
2	68	37	33	G	28	29	26	G	G	G	42	72	68	79	53	42	41	35	30	26	G	G	25	33
3	28	39	32	28	28	G	33	G	35	G	G	G	G	G	G	48	65	30	G	G	33	37	G	G
4	G	G	G	G	30		G	G	G	G	41	45	G	G	G		G	G	G	G	G	G	G	G
5	G	G	G	G	G	G	G	G	G	G	38	41	52	G	G	33	26	G	G	G	G	G	G	G
6	25	29	25	28	29	32	G	28	G	48	51	37	58	39	39	39	27	G	G	G	39	26	G	G
7	G	G	G	G	G	G	28	G	G	42	48	53	48	G	32	G	40	58	76	34	32	27	39	32
8	34	30	G	33	29	G	G	G	34	36	48	G	38	G	G	G	27	G	33	29	29	G	G	G
9	G	G	G	G	G	26	26	27	32	39	39	38	G	36	G	43	27	28		G	G	G	G	23
10	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G
11	G	G	38	26	29		G	G	36	G	39	40	G	39	G	G	G	G	G	G	G	G	G	G
12	24	G	G	G	G	G	G	32	35	44	56	48	49	43	39	50	G	G	G	33	G	G	G	G
13	G	G	G	G	G	G	G	31	37	41	40	G	51	50	41	G	33	G	G	33	G	33	G	G
14	G	G	G	G	G	G	G			48	G	G	G	G	G	31	G	G	G	G	G	G	G	G
15	G	G	G	G	G	G	G		35	G	G	G	G	G	32	G	G	33	G	29	25	G	G	G
16	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G		G	G	G	G	G	G	G
17	G	G	G	G	G	G	G	44	35	G		G	G	G	G	G	G	G	G		G	G	G	G
18	G	G	G	G	G	G	G	G	32	33	40	G	G	G	31	28	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	32	43	38	G	G	G	G	29	28	G	G	G	G	G	27	G
20	27	28	29	70	G	G	G	28	34		G	48	G	G	G	G	G	G	G	G	G	G	46	32
21	34	29	G	G	G	33	G	31	G	38	G	43	38	48	G	32	G	G	G	G	G	G	G	32
22	36	G	G	G	G	G	G			40	34	39	44	33	G	G	32	60	40	G	26	29	G	24
23	G	G	G	G	G	G		32	38	51	49	42	41	G	42	33	34	33	33	33	G	38	30	G
24	G	G	G	G	G	G	G	30	40	60	50	61	36	59	48	46	G	26	G	28	31	34	30	G
25	G	26	50	26	25	G	G	30	34	41	44	69	74	58	96	77	36	34	32	77	39	25	28	27
26	G	29	25	G	G	G	G		G	G	52	52	50	G	38	G	29	29	G	27	G	28	G	G
27	G	G	G	G	G	G	G	G	40	G	41	G	49	G	G	G	11	G		G	24	G	G	G
28	25	G	G	G	G	G	G		28	G	G	G		G	G	G	G	40	G	G	32	30	27	G
29	G	28	G	G	27	G	G			38	48	40	41	G	32	G	G	G	G	G	G	G	26	26
30	G	G	G	G	G	G	24	G	42	38	40	G	35		32	29	G	G	G	G	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	28	29	24	27	29	29	30	29	29	29	29	29	30	28	29	30	30	30	30
MED	G	G	G	G	G	G	G	G	32	38	40	38	38	G	G	28	26	G	G	G	G	G	G	G
U Q	25	28	G	G	27	G	G	30	35	42	48	48	49	39	39	36	32	33	15	28	29	28	27	24
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 Wakkanai

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

HOURLY VALUES OF foF2 AT Kokubunji

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

HOURLY VALUES OF fEs AT Kokubunji

NOV. 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	G	34	32	26	G		G	G	G	42	51	51	61	G	50	60	50	43	52	49		27	25	G
2	23	G	G	G	G		G	G	G	39	45	50	42	47	44	53	29	33	30	29	28	G		G
3	G	G	G	G	G	G	G	G	G	40	45	G	G	G	G	33	34	31				G	G	G
4	G	29	G	G	G		G	G	G	G	60	46	G	41	G	G	G	26	G	G	G		G	G
5		G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G		G			
6		G	G		G	G	G	29	G	G	G	38	G	71	G	G	G	G	G			29	31	G
7	G	G		G	G		G	G	G	40	G	43	40	G	37	G	G	11	30	28		G	G	G
8	G	G	G		G	G	G	30		G	46	40	G	G	G	40	50	53	35		31	G		
9	G	G	G	G	G		G	28	G	G	42	G	G	41	40	G	31	11			24	G	G	
10	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
11	G	G	G	G		G	G	28	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	53	G	G	G	G	G	G	G		G	G		G
14	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G						G
15	G	G	G	G	G	G	G	30	G	G	G	G	G	G	43	37	40	G	G	26		27		
16	G	G						G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	
17	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G	G	G	G			G
18	G		G	G	G		G	G	G	G	G	51	84	G	G	G	G	G	G	G	G	G		G
19		G	G	G	G		G	G	G	G	40	G	G	G	G	G	G	G	27	G	G	G	G	G
20	G	G	G	G	G	G	G	G	36	44	48	59	G	G	G	32	G	G		G	G		G	27
21	35	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G
22	G	27		G	G	G	G	G	51	G	G	G	G	G	39	34	G	G			G		G	G
23			G	G	G			G		G	52	53	56	45	40	G	G	G	G		26	G	G	G
24		G	25	G			G	29	33	43	42	49	46	G	41	G	G	G	G			28	33	G
25	G	G	G	G	G			G	G	42	G	G	G	G	G	40	41	G		49	30		42	52
26	32	G	G	G	G		G		47	G	44	G	45	37	G	50	52	50	G			G	G	G
27	G	G	G	G	G			G	31	39	45	G	G	42	G	G	29	G			G	G	G	G
28	G	G	G	G	G		G		G	35	G	38	G	G	G	G	27	27	26		G		G	G
29	G	G	G	G	G		G	26	G	G	40	G	G	G	G	G	G	G		G	G	G	26	G
30	G	25	G		G		G	G	G	G	G	42	G	G	G	30	G	29	33	G	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	26	24	24	25	11	24	26	26	27	27	28	28	28	28	28	28	28	19	15	20	19	20	23
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	28	G	39	45	47	20	19	38	33	30	26	30	28	12	G	13	G
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

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HOURLY VALUES OF fmin AT Kokubunji

NOV. 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	14	13	14	14		15	23	14	15	18	29	18	22	17	17	13	22	13	14		13	15	17
2	14	13	15	13	13		20	13	18	21	22	23	26	20	20	13	13	14	14	15	13	15		18
3	18	22	25	14	14	14	14	13	14	17	21	24	37	15	14	13	13	14				17	14	14
4	15	13	20	14	17		14	13	13	14	21	21	17	14	35	14	22	15	28	14	17		14	14
5		18	15	14	14		14	21	30	31	33	35	25	18	14	17	22	18	14		20			
6		22	14		15	14	21	14	18	14	18	18	38	18	13	26	22	14	15			14	13	13
7	17	14		24	21		13	23	18	20	22	18	23	17	15	13	13	15	15	13		17	13	17
8	14	15	25		13	15	13	23	13	17	17	18	17	13	17	26	18	13	18		14	20		
9	20	14	17	13	14		21	13	18	17	20	24	18	17	17	26	17	14			17	18	18	
10	18	14	21	15	13	13	13	15	29	33	20	21	21	35	36	28	17	18	14	22	15	14	21	17
11	15	17	18	17		20	23	15	14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	26	43	36	34	18	25	17	14		20	21		14
14	15	14		14	14	15	15	24	13	31	17	40	21	37	20	26	22	14						17
15	17	15	14	17	14	17	14	22	14	14	42	40	41	20	17	23	15	14	18	14		14		
16	15	21						23	13	14	22	23	23	18	13	28	22	17		14	21	21	14	
17	14	18	15	17	13	14	18	20	18	15	20	17	20	15	15	17	22	17	18	22	20			14
18	14		26	14	13		20	21	18	15	17	23	17	13	13	13	13	18	20	18	18	18		14
19		15	14	13	18		14	22	14	15	24	33	22	13	29	13	20	13	13	14	14	25	17	14
20	14	18	15	15	15	13	17	17	14	14	14	20	23	17	15	13	23	20		20	15		14	15
21	13	17	14	14	14	14	15	18	18	14	37	24	36	13	29	13	22	13	21	20	14		14	18
22	15	13		14	13	14	14	22	13	15	36	20	40	21	17	14	20	22			18		17	13
23			14	17	17			23	13	14	15	18	18	17	14	13	18	14	14		13	15	17	22
24		14	13	14			14	13	24	17	18	33	18	18	25	25	21	14	14			18	14	21
25	21	14	14	14	14			22	13	13	14	15	34	37	26	23	13	15		13	17		13	14
26	13	17	15	23	17		21	13	23	15	29	24	15	18	13	13	13	13	18			22	15	17
27	23	15	14	17	14			20	13	21	25	23	21	15	28	26	13	18			14	13	13	13
28	14	17	25	18	18		17		13	17	15	18	21	30	17	13	13	14	14		20		15	13
29	14	14	13	15	15		17	13	14	14	31	15	20	17	34	13	18	15		21	17	13	14	15
30	14	15	17		13		18	23	18	18	14	15	15	14	13	13	22	14	14	14	14	22	18	18
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	26	24	24	25	11	24	27	28	27	27	28	28	28	28	28	28	28	19	15	20	19	20	23
MED	15	15	15	14	14	14	15	20	14	15	20	23	21	18	17	16	18	14	14	14	17	17	14	15
U Q	17	17	19	17	16	15	19	23	18	18	25	25	30	20	27	25	22	17	18	20	19	21	17	17
L Q	14	14	14	14	13	14	14	13	13	14	17	18	18	15	14	13	13	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Yamagawa

NOV. 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	28	28	32	41	29			51	57	55	70	80	93	103	88	77	67	64	51	A	A	A		
2		30	31	38	42			51	52	58	74	78	67	75	80	71	57	55	51	A	44	36	34	32
3	34	34	37	38	40	30	29	52	54	72	87	95	88	85	86	78	64	54	47	32	37	41	34	
4	32	34	34	32	34			52	85	78	81	83	64	66	80	91	63	65	50	34	34	28	29	29
5	30			37	42	29		47		57	82	92	70	76	100	80	66	58	47		26	28	34	
6	28	29	30	32	38			51	68	61	81	88	72	100	109	96	67	60	53		34		29	A
7	29	30	32	32	34	29		42	59		76	85	76	84	87	77	72	68	40	30			29	30
8	A	34	32	30	30			47	61	67	71	77	58	62	81	82	61	A	A	A	A	36		29
9	30	30		30	34	29	26	51	60	64	61	76	64	61	64	64	62	51	43	A	28	32	31	32
10	32	30	30	30	32	27		46	52	62	86	88	66	75	81	78	56	61	73	37	40	40	36	37
11	42	32	36	30				51	70	68	76	84	74	88	92	70	66	66	52	37	38	42	30	32
12	32	37	37	23	29			50	69	93	81	84	76	76	76	81	61	55	43	34	34	32	28	26
13	28	28	32	34	34			48	75	78	87	111	85	80	88	81	57	55	40	34	34	32	32	31
14		30	30	34	42			41	51	60	69	81	75	75	76	66	61	45	32	29	28	29	32	30
15	32	32	30	34	37			44	63	62	72	72	64	66	76	61	65	55	40	32	37	37	37	31
16	30	29	32	34	29	26		44	58	70	70	76	71	72	88	72	53	41	37	A		37	36	34
17	32	34	34	34	34	26		45	64	66	71	74	71	72	70	62	67	47	34	34	40	37	34	34
18	32	36	37	40				40	76	78	78	81	63	76	76	62	56	54	36	28	32	34	36	
19	32	34	34	34	32			45	60	68	76	80	88	64	77	72	60	48	38	36	34		28	29
20	29	30		34	36	A		44	51	58	72	82	62	64	78	72	55	50		30	32	36	37	37
21	36	37	37	37	41	36	34	43	54	65	66	66	61	63	58	56	54	43	34	30	30	32		
22		28		30	26	29		38	46	51	55	49	60	61	60	60	51	44					29	32
23	29	30	30	30	34	26		37	54	58	59	55	67	61	62	60		47	41	30	32		28	28
24	31	32	32	32	26			47	53	55	70	74	84	76	72	68	61	46	38	32	32		A	
25	32	34	34	34	A	A	A	40	62	70	66	72	66	62	65	56		57	44	A	26	89	31	30
26	34	30	29	38	41		A	41	52	60		77	75	80	71	58	52	47	35	34	34	34	24	26
27	31	30	30	32	37			41	59	66	74	75	A	70	73	64	64	57	42		32	34	29	29
28		24	30	30	36			36	54	61	68	71	62	66	62	59	61	58	34	A		36	29	29
29	30		32	34	29	26		38	54	58	74	80	62	68	59	63	65	50	32	32	32	30	28	34
30	34	28	30	34	26			38	53	66	67	64	69	72	76	66	76	61	50	48	53		40	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	28	26	30	27	11	3	30	29	29	29	30	29	30	30	30	28	29	27	19	24	22	26	22
MED	32	30	32	34	34	29	29	44	58	64	72	79	69	72	76	69	61	55	41	32	34	35	31	30
U Q	32	34	34	34	38	29	34	50	63	69	79	84	75	76	86	78	65	59	50	34	37	37	34	32
L Q	29	29	30	30	29	26	26	41	53	58	68	74	63	64	70	62	56	47	36	30	32	32	29	29

HOURLY VALUES OF fEs AT Yamagawa

NOV. 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	G	G	20			26	36	41	52	52	64	64	82	57	41	45	41	41	60	34	36	26
2	33	G	G	G	11	G	G	36	38	47	66	40	45	83	73	35	35	31	50	38	46	32	23	G
3	G	G	G	G	G	G	G		35	39	G	54	50	G	42	60	G		G	G	32	G	27	29
4	G	G	G	G	G			G	31	37	40	58	59	45	G	G	33	G	G	G	G	G	G	G
5	G		30	28	G	G		G		G	G	46	43	45	43	40	33	G	G	G	G	G	G	G
6	G	G	G	G	G	G		G	G	G	G	G	G	G	40	36	32	G	11	G	G	28	22	29
7	24	G	G	G	G	G		27	34		52	38	50	40	40	48	39	40	G	25	30	26	G	G
8	32	G	G	G	G	G	G	29	41	G	41	G	46	45	G	59	65	56	59	47	56	G		G
9	G	G	G	G	G	G	G	G	36	35	38	46	42	41	G	42	G	30	34	32	G	G	G	G
10	G	G	G	G	G	G	G	G	G	41	42	44	45	G	G	G	G	G	G	G	G	G	G	G
11	G	G	G	G	G		G	26	34	40	44	45	53	49	42	39	45	44	35	G	32	32	G	G
12	G	G	27	32	G	28	G	27	34	40	46	60	54	48	40	38	34	G	G	G	G	G	G	G
13	G	G	G	G	G		G		40	57	G	G	G	38	G	35	37	G	G	G	G	G	G	G
14	G	G	G	G	G			34	G	G	G	42	G	58	47	42	33	G	G	G	G	G	G	G
15	G	G	G	G	G	G		G	32	51	43	G	38	38	G	39	G	28	25	G	G	50	G	G
16	G	G	G	G	G	G			30	38	43	40	40	44	43	48	49	50	29	34	30	G	G	G
17	G	G	G	G	G	G		G	30	34	G	G	38	G	G	G	G	G	G	G	G	G	G	G
18	G	G	G	G	G			26	34	G	G	43	50	43	G	34	39	29	26	G	G	G	G	
19	G	G	G	G	G	G	G	G		G	42	49	G	G	G	36	30	G	G	G	G	G	G	G
20	G	G	35	34	G	38		49	34	G	G	41	41		42	35	30	26	33	25	G	54	44	G
21	G	G	G	23	G	G	G	G	44	G	G	44	41	43	G	34		G	G	G	G	G	G	G
22		G	G	27	G	G		G	G	42	G	G	G	G	G	46	34	30	27		G		G	G
23	G	G	G	G	G	G			32	G	48	94	60	45	41	39		G	G	G	30	37	32	G
24	G	G	G	24	G	G	G			40	45	52	45	G	50	G	G		G	G	38	30	36	40
25	G	G	G	G	47	30	33	G	35	38	41	51	48	48	44	41		41	60	49	G	G	G	G
26	G	28	G	G	G	28	28	G	44	43		54	54	57	40	G	G	27	32	28	G	G	G	G
27	G	G	G	G	G	G		G	32	40	48	68	93	G	G	40	41	G	25		G	G	G	G
28	G	G	G	G	G	11		G	G	G	43	42	48	48	52	42	47	35	25	32	30	G	G	G
29	G	30	23	G	G	G			G	G	36	46	40	38	G	G		G	G	G	G	G	G	G
30	G	G	25	G	G	G		G	30	G	40	47	42	54	36	44	40	40	40	30	28	30	G	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	24	13	24	27	29	29	30	30	29	30	30	26	28	30	28	30	29	29	28
MED	G	G	G	G	G	G	G	G	34	37	41	44	45	43	40	39	34	26	18	G	G	G	G	G
U Q	G	G	G	G	G	G	G	26	36	40	44	52	50	48	43	42	40	37	33	31	30	30	11	G
L Q	G	G	G	G	G	G	G	G	30	G	G	40	40	G	G	34	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

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

HOURLY VALUES OF foF2 AT Okinawa

NOV. 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	29			29				52	62	60	63	81	87	C	108	111	104	80	51	44	43	36	A	
2	32		34	42				46	59	65	68	94	74	86	88	71	64	51	54		44	44		
3	32		36	30	40			48	62	70	86	104	91	C	102	105	81	61	52	52	50	58		
4	30	40						52	78	78	87	98	70	87	107	121	104	72	66	66	43	42	29	30
5	31		34	32	37			44	60	66	81	97	84	88	128	130	93	81	77	54		52	43	34
6	30	32	30	34	34			47	65	67	76	98	97	122	148	149	125	89	77	64	41	53	41	28
7	29		31	32	40	31		42	54	61	80	96	83	117	118	108	88	76	52	42	42	39		29
8	30	34	31	34				42	62	94	90	98	88	106	118	113	81	65	48	45		34	36	
9	29							44	67	64	68	78	68	68	65	71	64	70	52	A	29	38	34	32
10	34	30			34	32		42	70	66	80	102	65	73	81	98	80	62	88	62	52	51	42	42
11	50		29					52	67	68	83	80	76	85	94	77	72	72	64	44	A	43	30	30
12	31	37	30					48	73	85	97	82	A	104	A	88	86	65	50	43		36	31	
13		28	30	32				47	72	80	107	110	111	124	137	118	114	86	56	46	48	52	43	
14	30	30	31	39	37			42	51	57	67	81	81	95	87	74	68	56	40	30	28		28	
15	30	31	32	40	37			44	61	66	72	90	75	82	75	71	67	62	40	34	43	42	46	28
16	30	30	29	30	34	28		38	58	70	93	80	78	75	81	82	66	52	46	36	31	49	52	51
17	48	40	36	34	37			40	67	71	79	88	86	84	78	69	65	55	50	34	43	40	29	37
18	30	34	48	28				37	67	88	106	97	111	102	91	77	70	58	48	38	30	41	30	34
19				34	26			43	55	66	75	88	108	110	92	90	85	66	52	46	34	36	30	
20	30	30	34	38	36			41	58	61	65	84	86	82	84	80	65	54	45		32	34		
21		30			30	28		41	59	65	75	70	60	60	62	57	57	51	41	30	34	30	34	29
22	30	28		30	36			36	50	48	57	61	67	62	65	C	56	55	34				29	30
23	30	28	28	28	31			34	56	56	58	56	62	82	72	75	66	64	47	A	A	47	47	
24	34	36	34	44	29			51	47	60	72	86	88	83	86	76	68	50	38	44	38	41		A
25			34	34				A	59	72	74	60	85	69	69	74	67	61	58		36		37	37
26	31	44	48	37	52	30		37	54	58	64	87	100	100	87	80	67	57	45	A	A	A		
27	26		30	C	34			37	54	67	71	72	85	91	79	80	69	62	57	44		42	30	
28		26			42			37	52	68	71	67	70	68	65	60	60	54	42	41	43	43	36	
29	29	30	30	35				38	56	67	80	76	66	80	82	74	70	64	48	38	32	30	32	28
30	30	28	30	30				35	62	90	66	69	72	80	74	82	80	72	58	62	66	46	34	35
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	20	22	22	18	5		29	30	30	30	30	29	28	29	29	30	30	30	23	22	26	23	16
MED	30	30	31	34	36	30		42	60	66	75	85	83	84	86	80	70	62	50	44	42	42	34	31
U Q	31	35	34	37	37	31		47	67	71	83	97	88	101	104	106	85	72	57	52	43	47	42	36
L Q	30	29	30	30	34	28		37	55	61	68	76	70	77	74	74	66	55	45	38	32	36	30	29

HOURLY VALUES OF fEs AT Okinawa

NOV. 2006

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

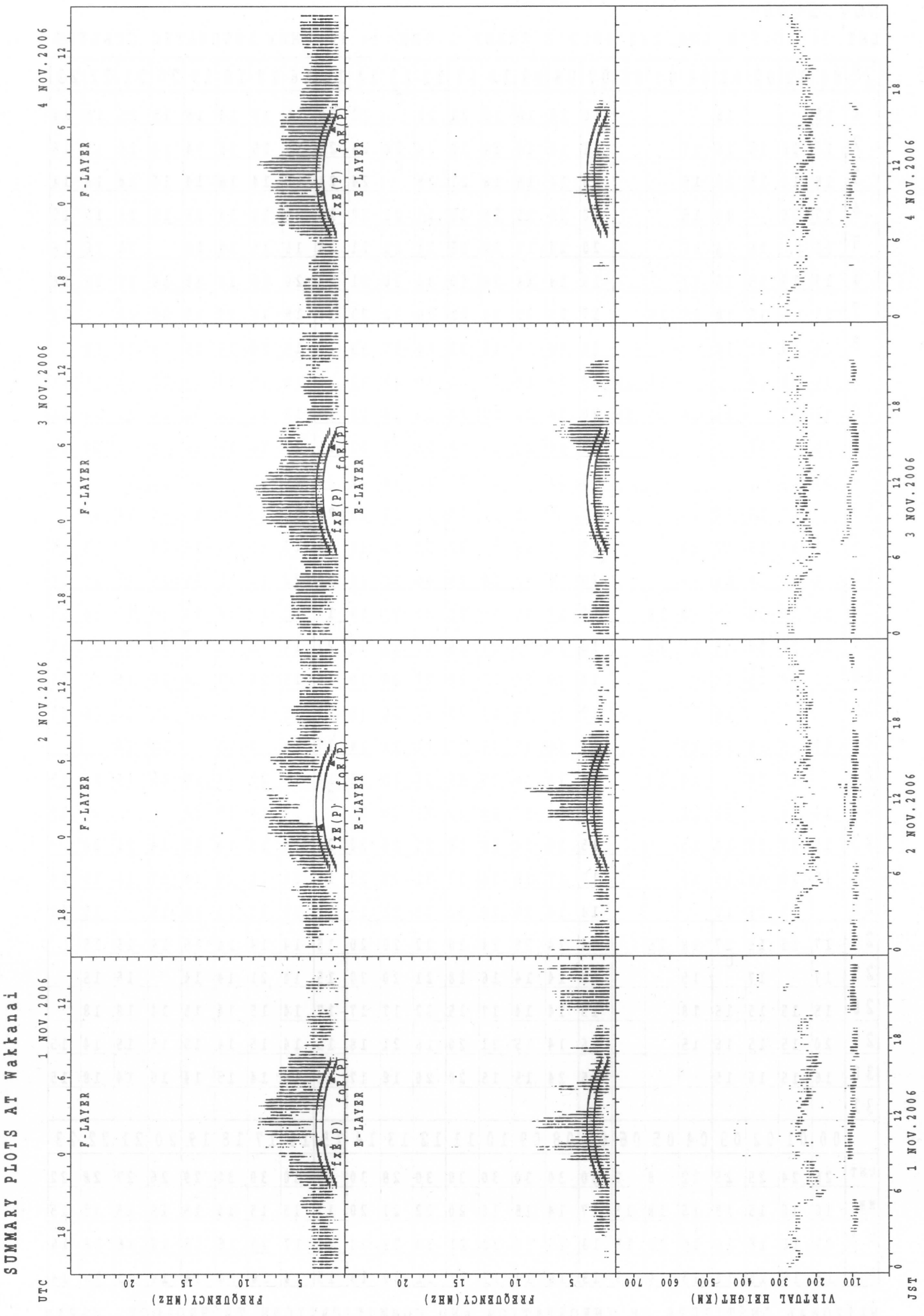
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G			G				G	G	43	54	60	55	C	52	49	56	46	29	11	28	36	40	36
2	G	G	G	G				G	35	46	56	70	70	55	40	G	41	40	34	36	29	34	33	28
3	G	G	G	G	G			G	36	40	49	51	66	C	49	48	41	29	48	28	25	32	28	32
4	G	G		G	G			G	39	36	40	39	48	G	57	44	46	43	33	27	G	G	G	G
5	G		G	G	G			G	G	G	43	51	G	46	G	39	34	48	28	40		G	G	G
6	G	G	G	G	G			G	G	G	G	G	48	56	63	74	42	G	11		26	G	G	G
7	G		G	G	G	G		26	38	43	48	59	95	51	56	44	34	40	24	G	G	G		G
8	G	G	G	G				G	35	G	38	59	G	56	61	53	60	37	G	G	37	36	G	
9	G	G	G			G	G	G	37	45	49	G	46	40	42	42	G	G	28	39	G	G	25	G
10	G	G		26	G	G	G	G	G	G	G	G	46	51	47	G	G	G	G	G	G	G	25	G
11	G		G			G		G	G	45	53	55	56	67	45	44	52	32	G	23	36	G	28	G
12	27	25	G					G	36	43	50	64	94	54	91	39	G	G	G	26		G	G	
13		G	G	G	G			G	37	46	55	55	49	G	G	G	G	G	25	G	G	G	27	
14	G	G	G	G	11			G	G	G	43	G	52	G	G	G	35	G	G	26	G		G	G
15	G	G	G	G	G			G	G	G	44	44	G	G	47	48	46	37	29	G	G	G	G	G
16	G	G	G	G	G	G		G	G	G	46	44	42	47	55	44	38	G	G	34	G	35	G	28
17	G	G	G	G	G	G		G	34	37	40	40	G	G	G	G	G	G	G	39	48	G	G	G
18	G	G	G	G				29	34	G	G	G	39	G	G	G	G	G	G	G	G	G	G	G
19				G	G			G	32	G	G	43	45	G	53	68	37	26	G	G	G	G	G	G
20	G	G	G	G	G				G	G	G	38	55	50	42	39	43	28	33		G	G		
21		G	G		36	G		G	G	G	37	G	G	41	38	37	G	G	G	G	G	G	G	G
22	G	G		G	G			G	G	G	36	G	G	54	G	C	44	27	34	G			G	G
23	G	G	G	G	G			28	37	46	44	46	78	66	50	G	33	39	39	38	58	G	G	
24	G	G	29	25	G				G	39	48	44	48	G	70	53	40	30	G	G	G	G		47
25		34	G	G				39	42	G	G	52	48	45	46	G	G	G	G	35	G		G	G
26	G	G	G	G	G	G		28	G	G	G	46	57	48	G	43	G	31	G	48	78	37	29	
27	G		G	C	G			G	G	G	68	57	68	47	88	G	61	G	27	G		G	G	
28	G	G	G	28	G			G	49	41	44	50	48	47	57	G	G	G	G	29	G	G	G	
29	G	G	G	G	G			G	G	42	44	48	48	G	G	G	36	34	25	G	G	G	G	G
30	G	G	G	G				G	G	G	36	43	45	G	38	46	44	67	43	33	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	24	25	25	21	8	2	28	30	30	30	30	30	28	30	29	30	30	30	28	26	27	27	22
MED	G	G	G	G	G	G	G	G	G	G	44	45	48	46	46	39	36	28	18	24	G	G	G	G
U Q	G	G	G	G	G	G	G	G	36	43	49	55	56	52	56	47	44	37	29	34	28	G	25	G
L Q	G	G	G	G	G	G	G	G	G	G	36	38	42	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Okinawa

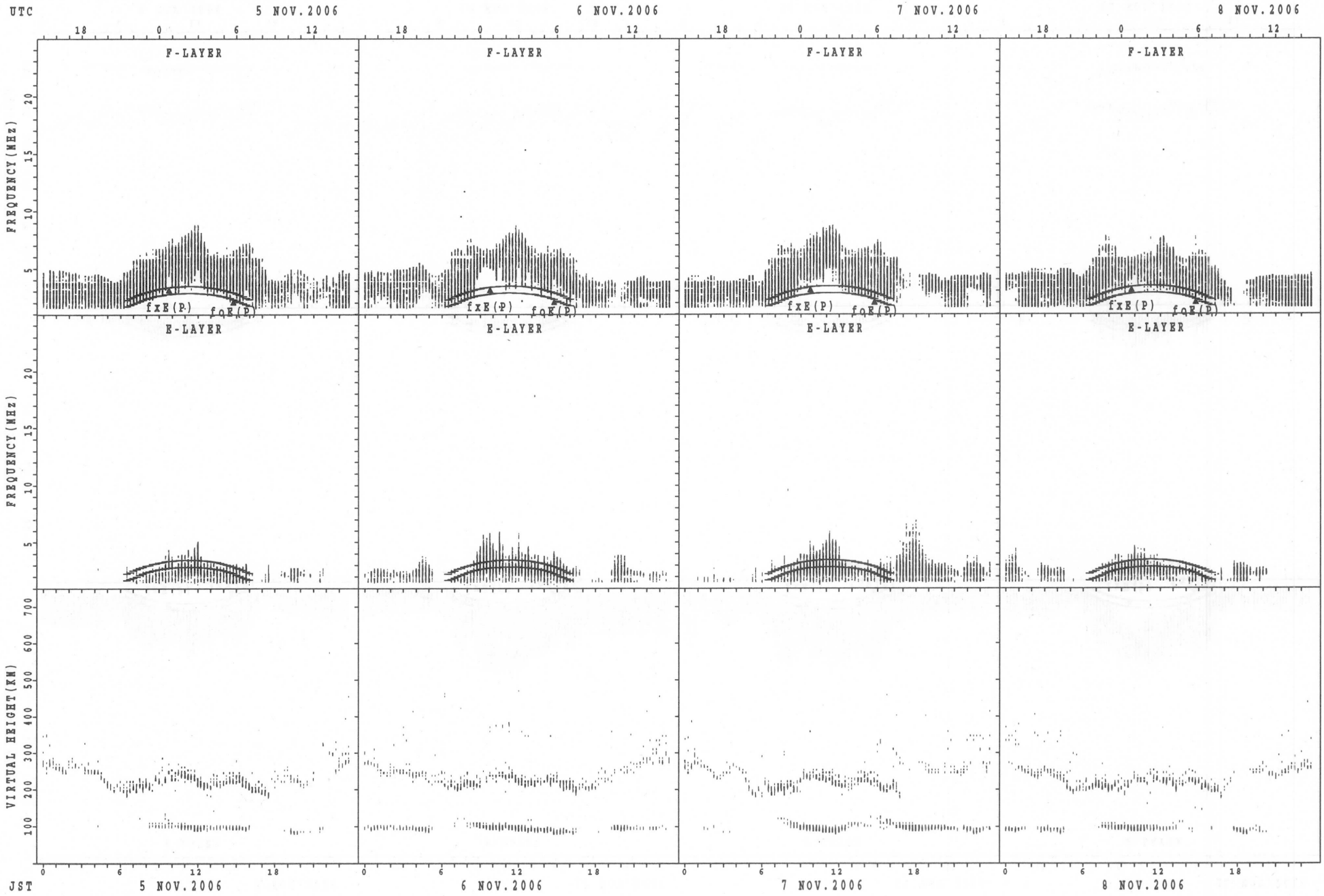
NOV. 2006

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

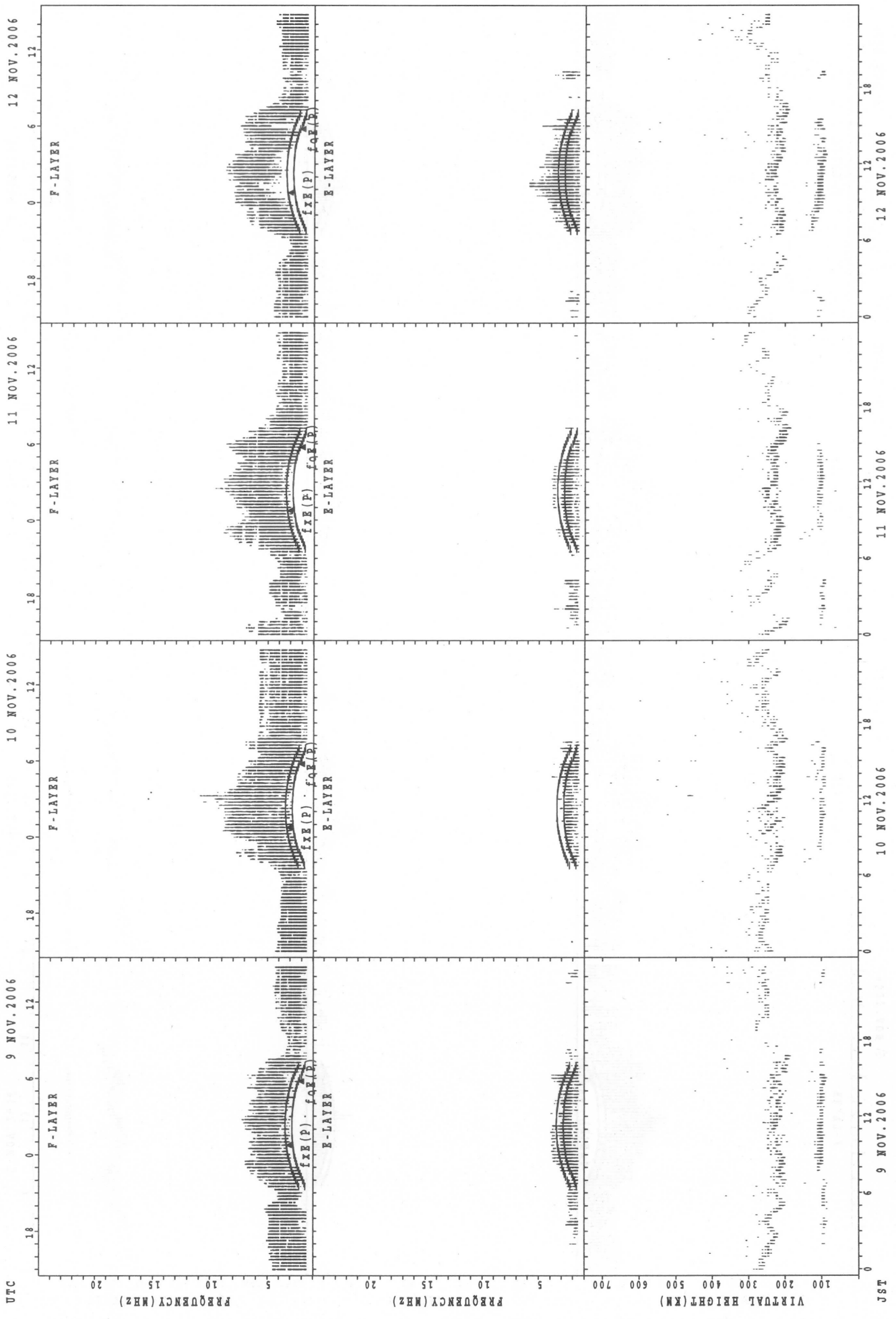
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15			15				16	14	16	18	21	21	C	20	20	16	15	14	16	15	15	15	14
2	16	18	15	16	17			21	14	14	24	18	24	28	24	20	18	16	15	14	14	16	15	16
3	18	18	15	15	15			18	14	15	18	21	29	C	24	21	16	14	16	14	14	14	14	14
4	17	18		20	15			18	14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


SUMMARY PLOTS AT Wakkanai
UTC
JST
1 NOV.2006
2 NOV.2006
3 NOV.2006
4 NOV.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

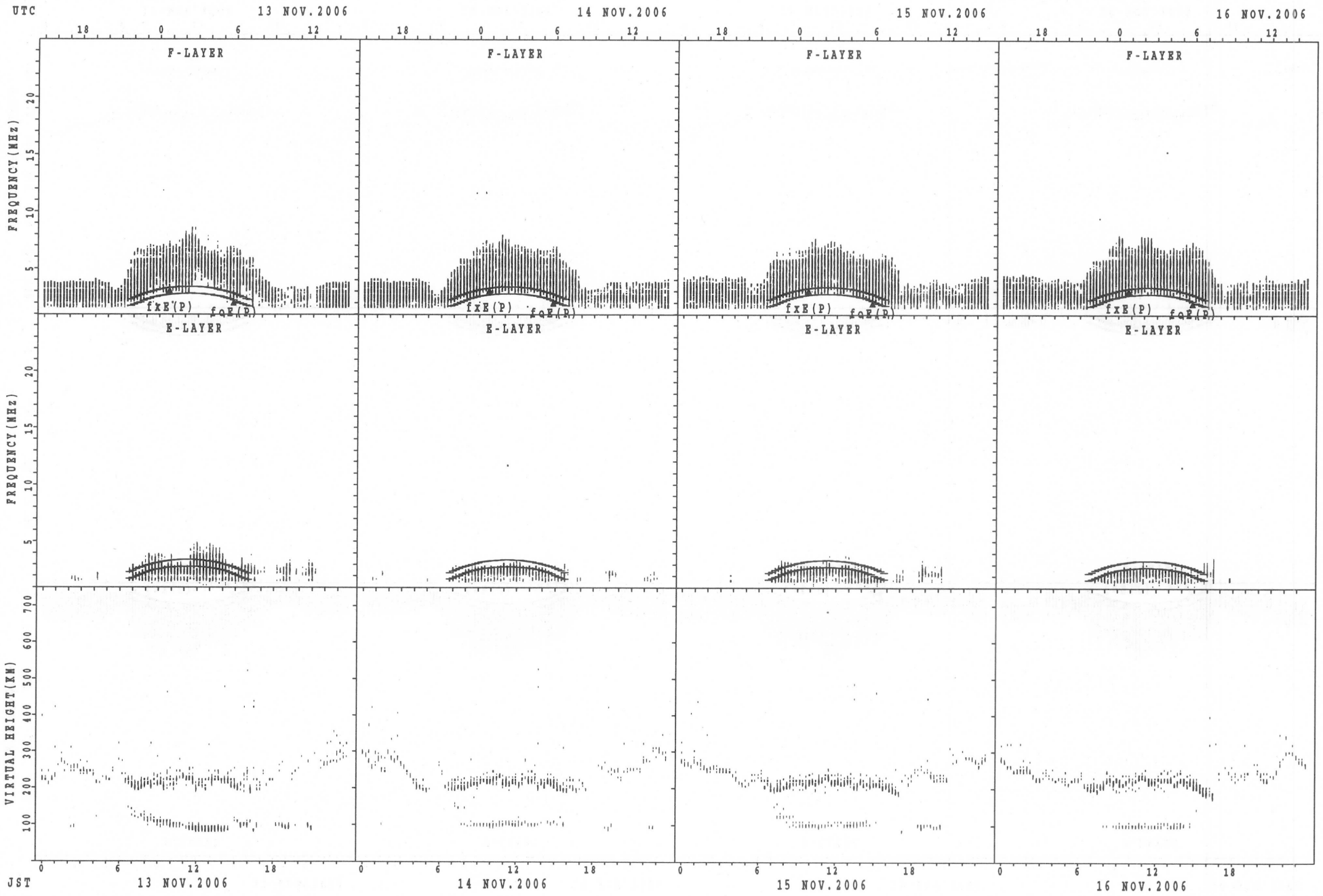
SUMMARY PLOTS AT Wakkanai



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

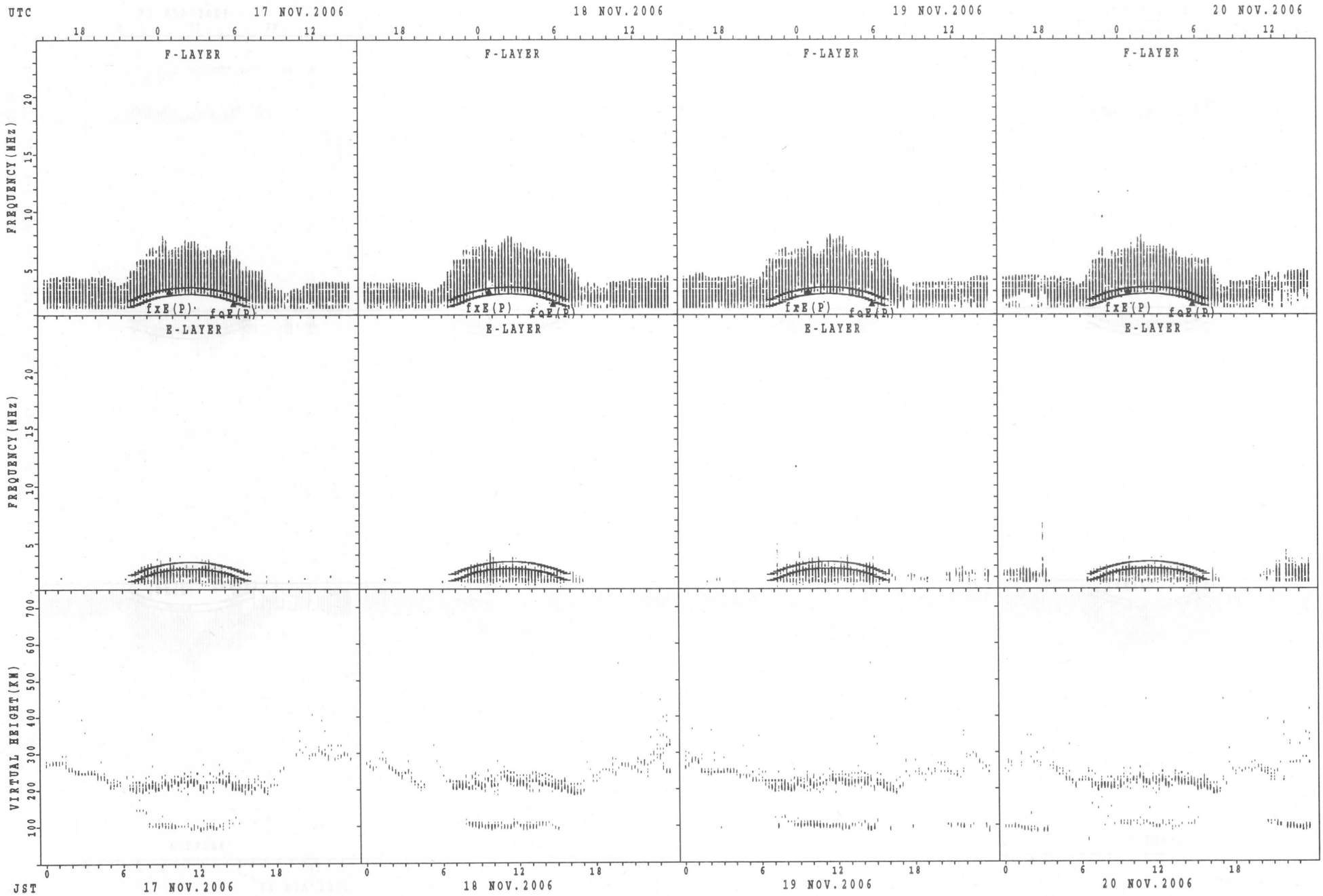

SUMMARY PLOTS AT Wakkanai
UTC
9 NOV.2006
10 NOV.2006
11 NOV.2006
12 NOV.2006
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



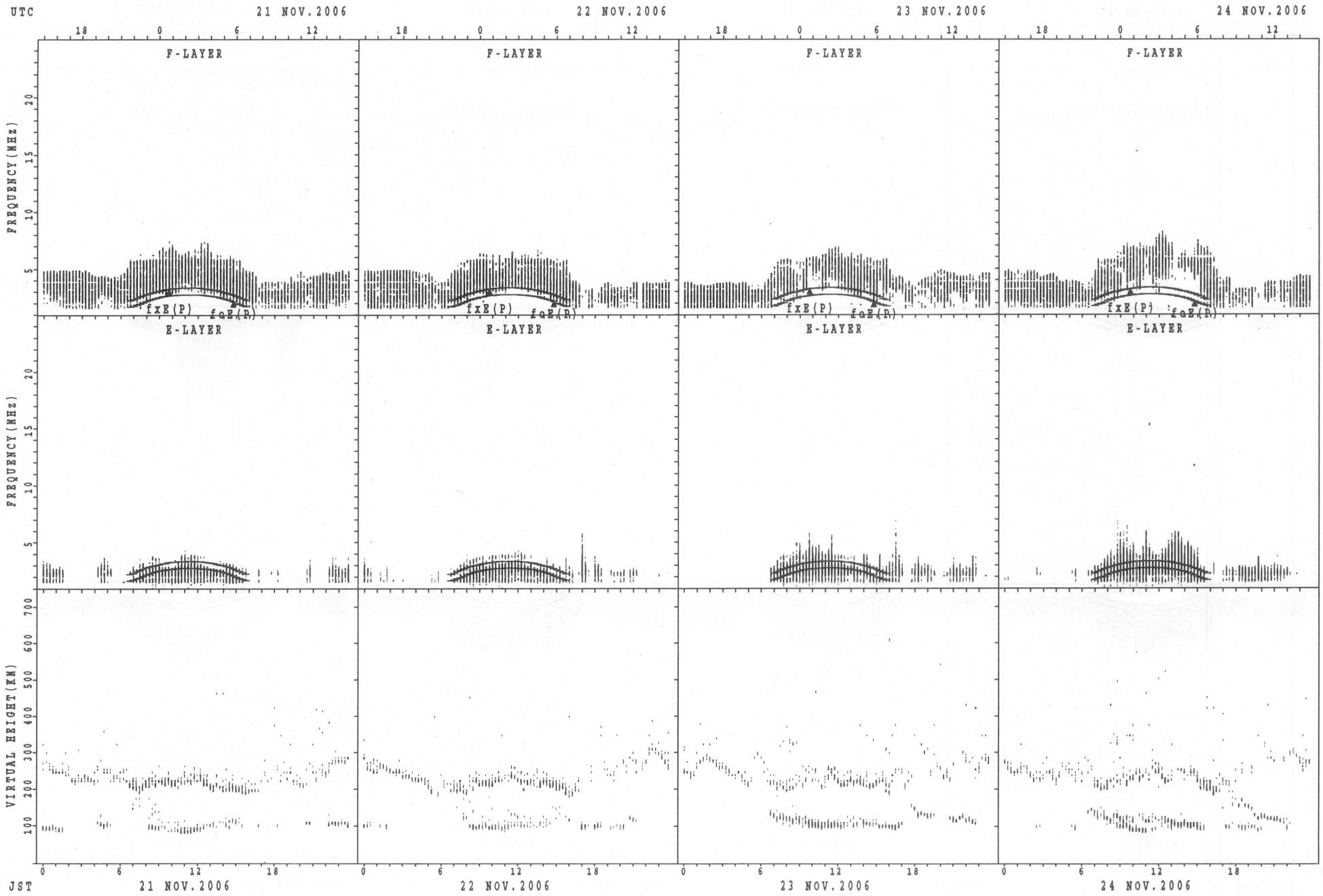
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



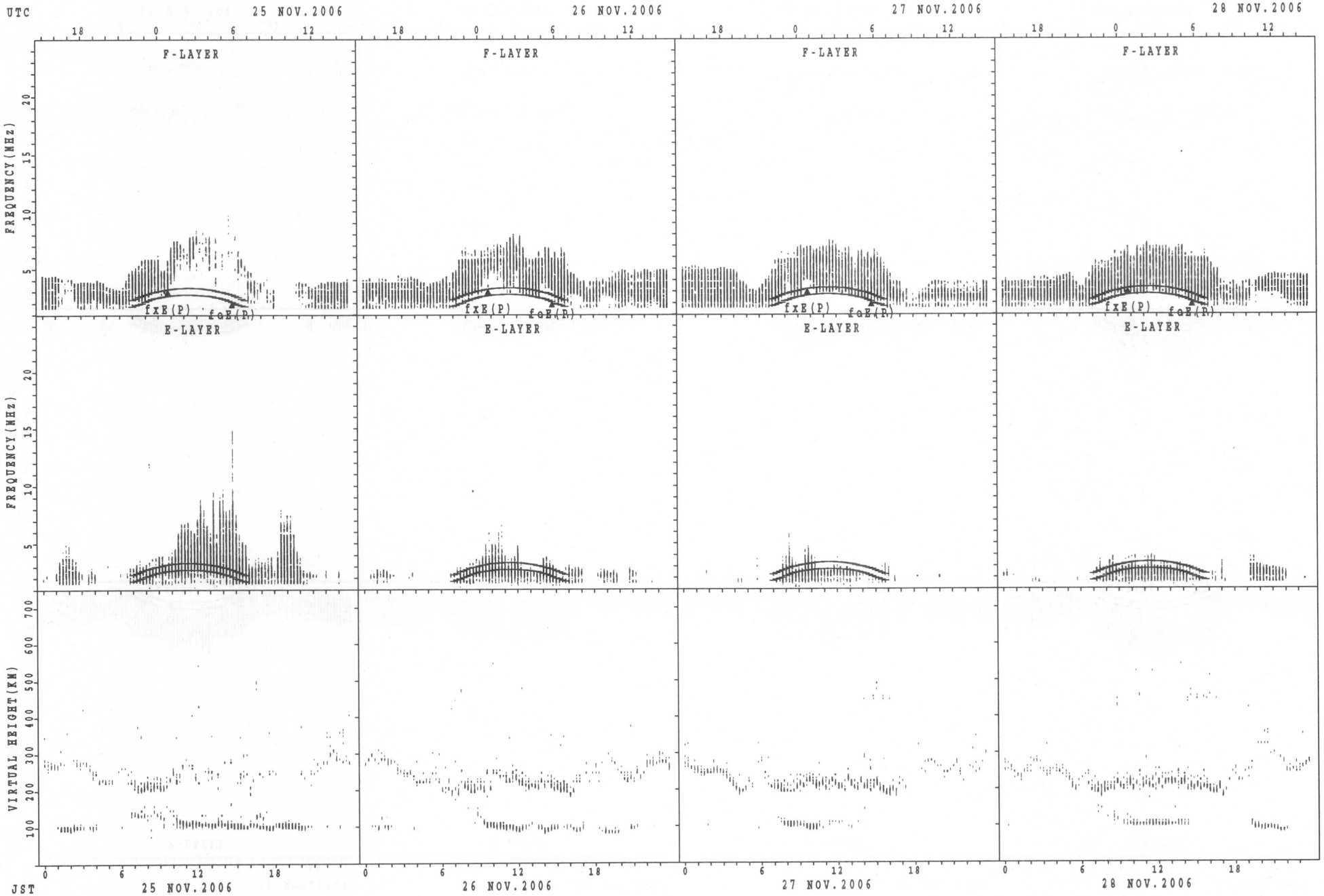
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



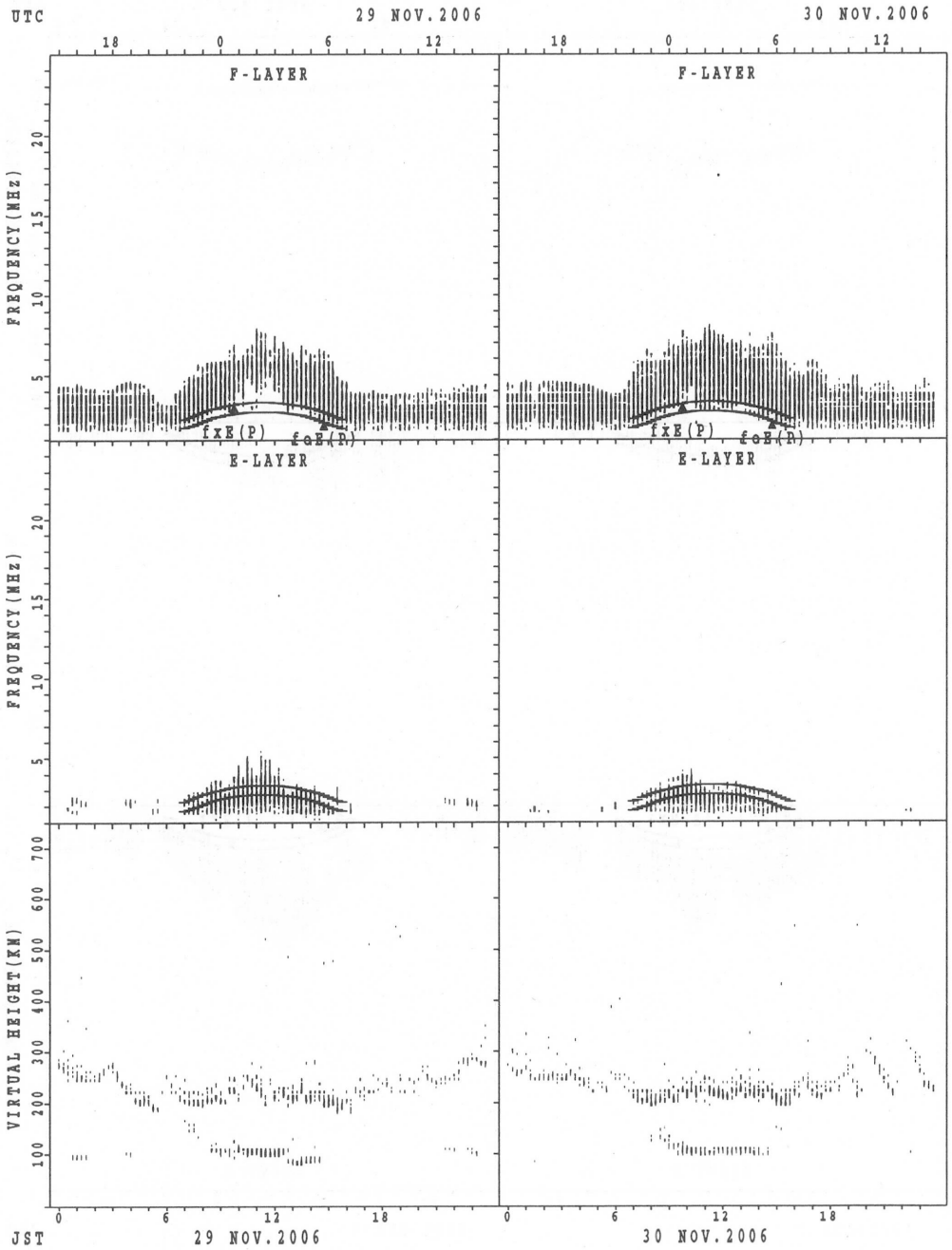
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



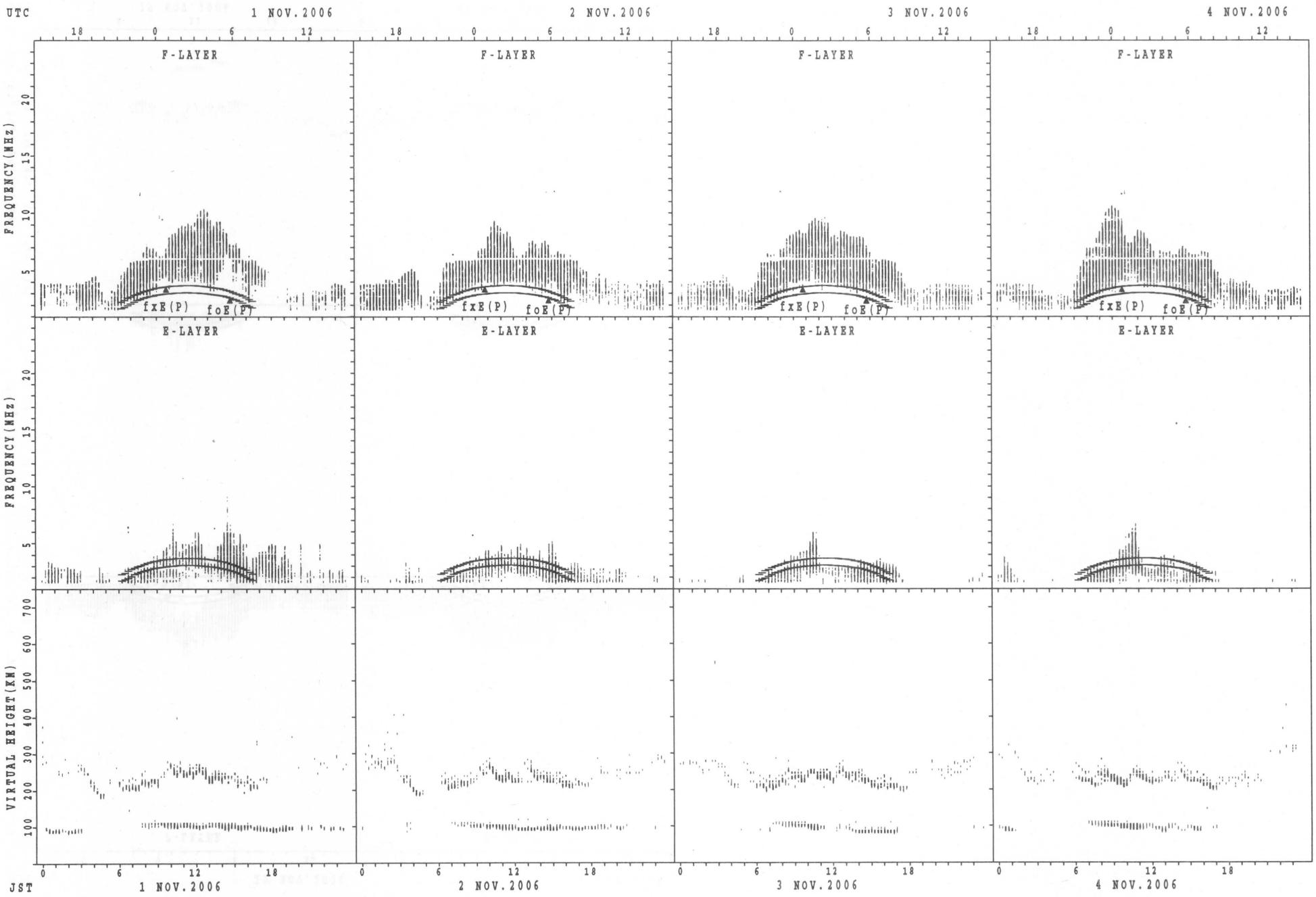
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



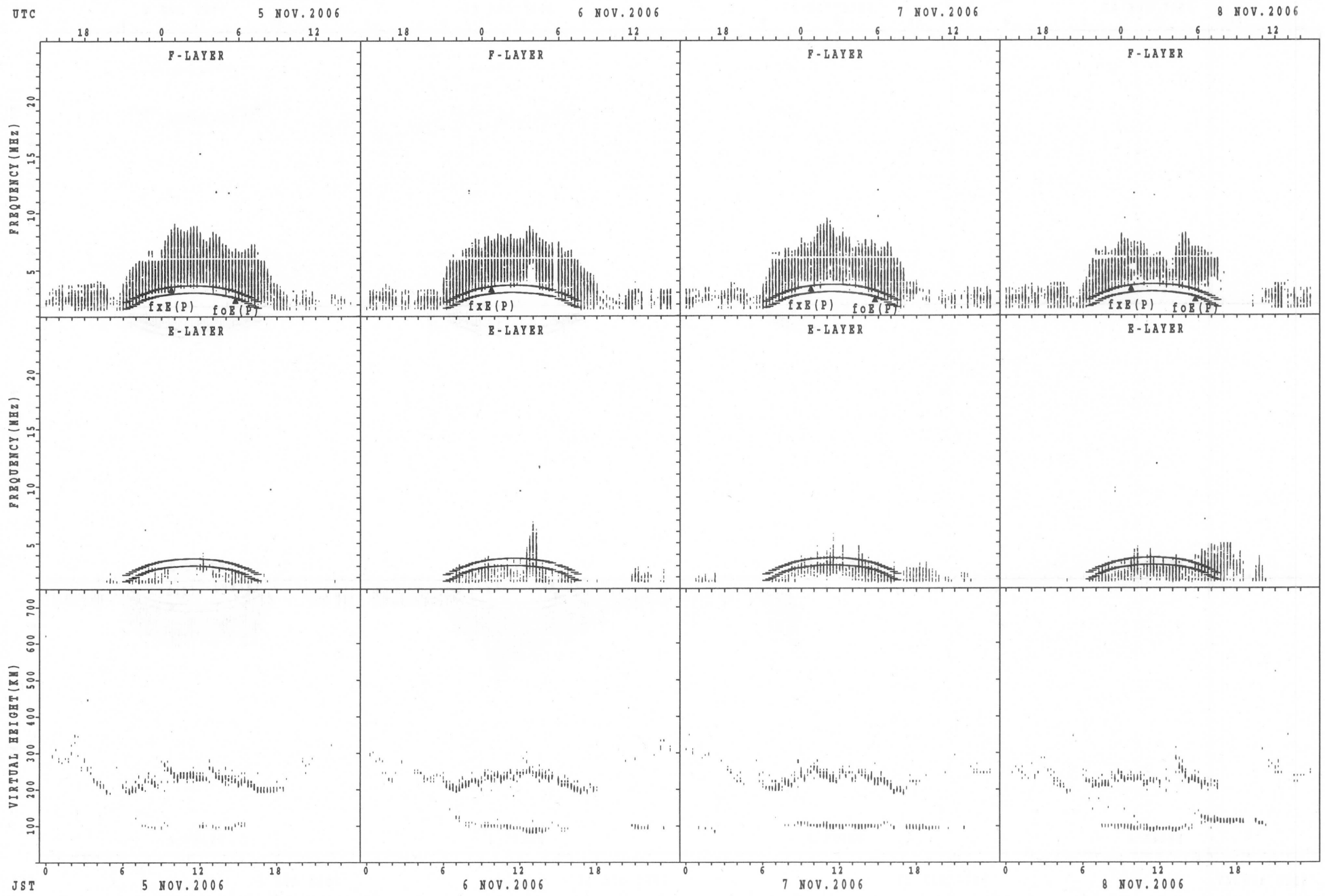
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



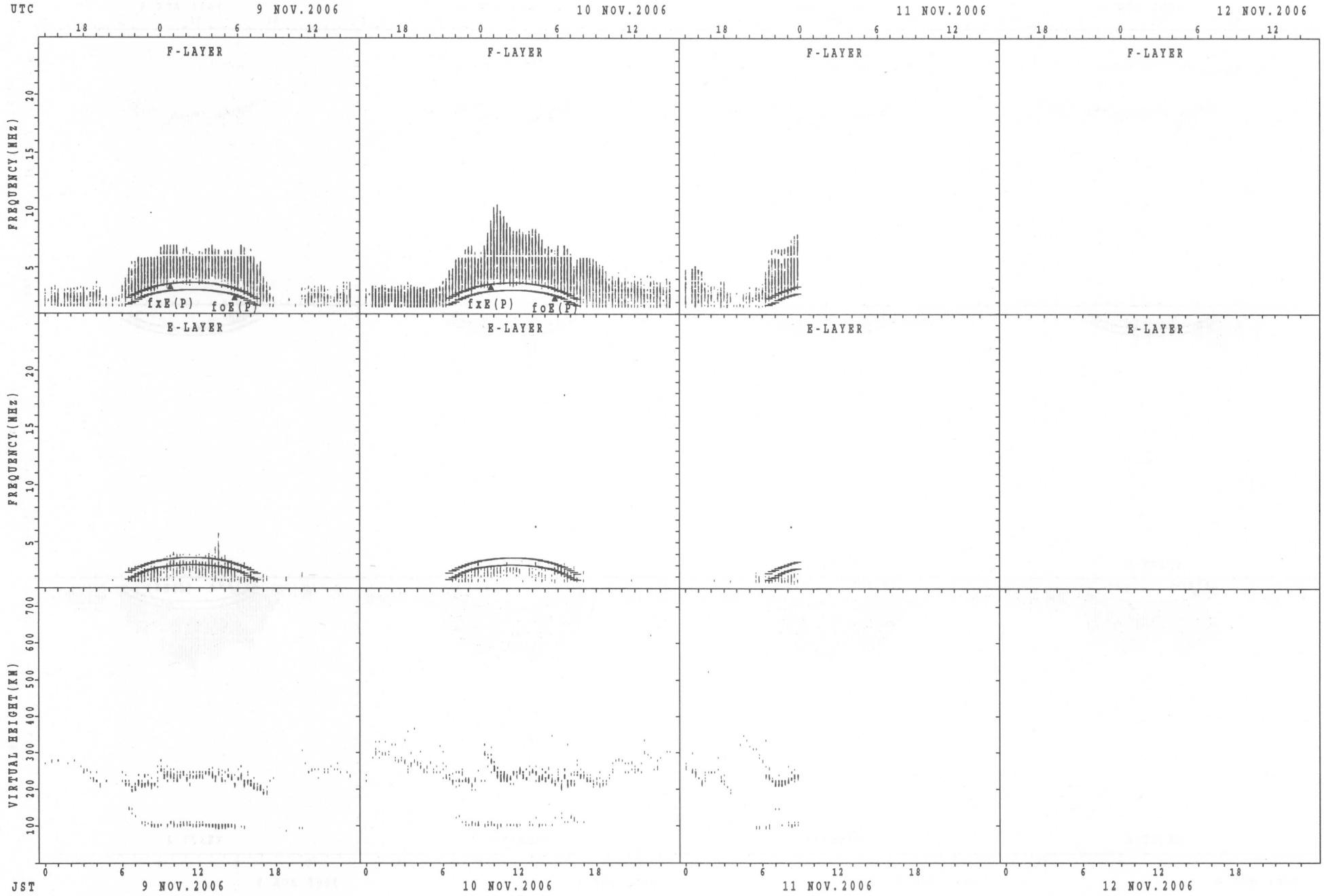
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



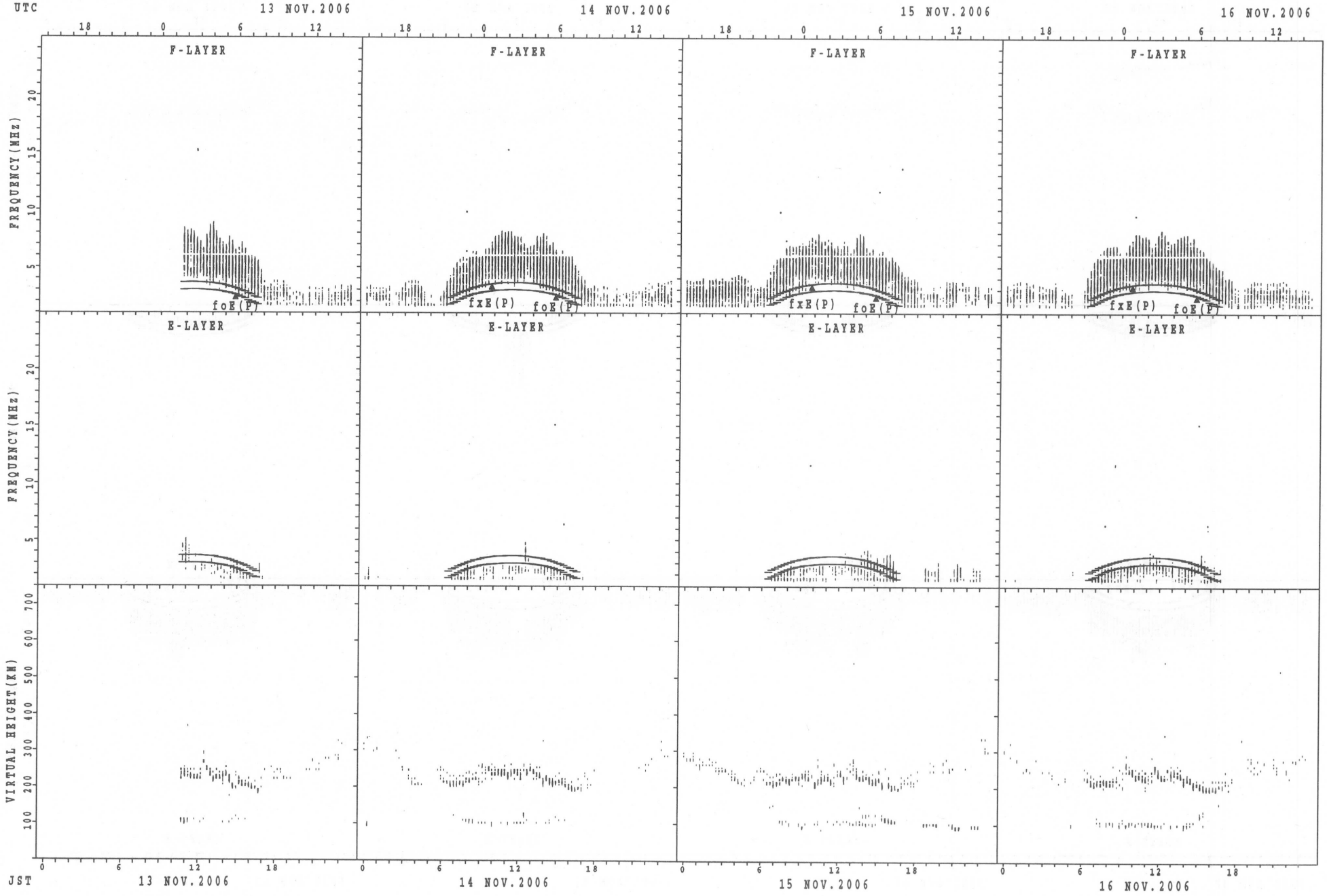
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



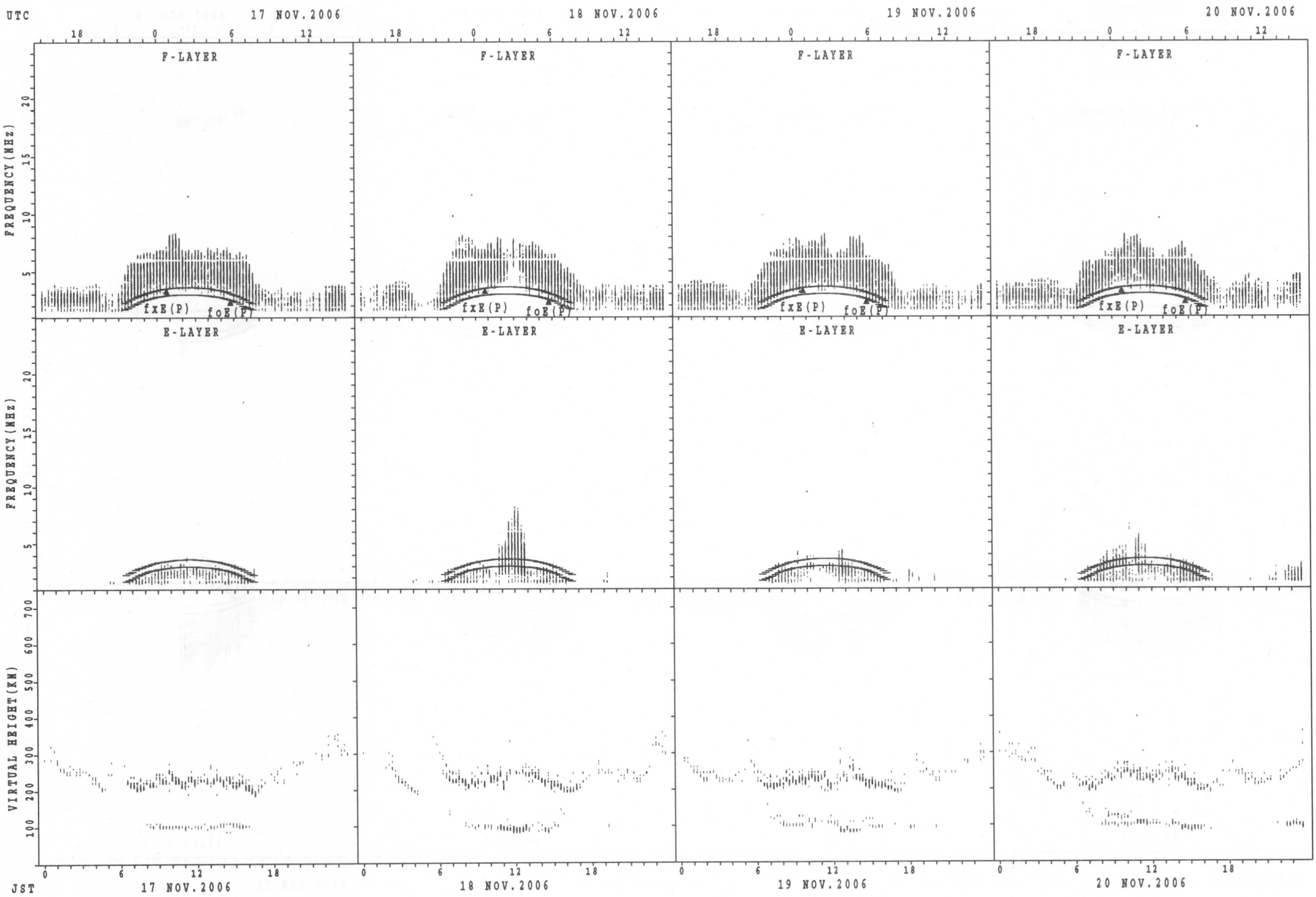
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



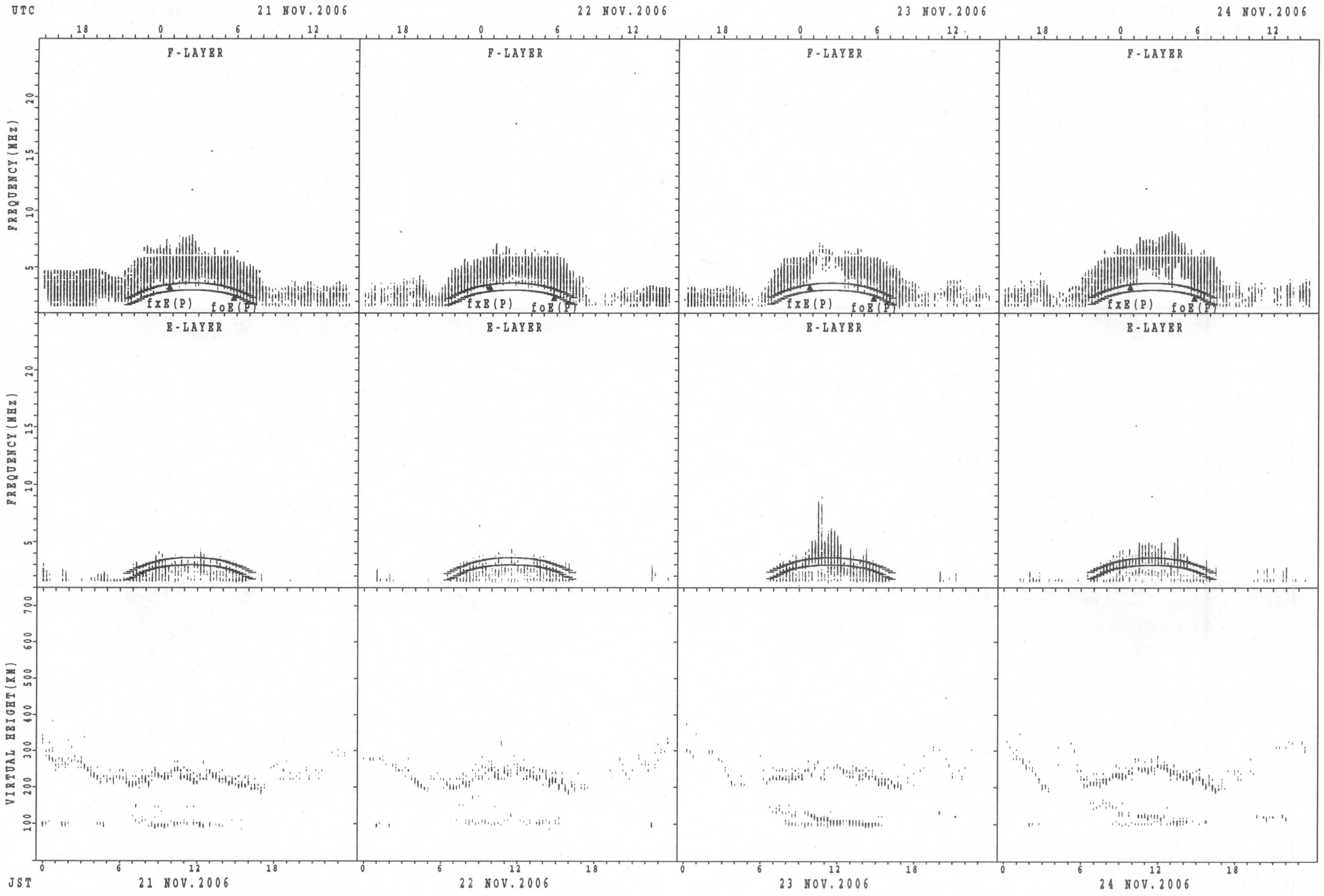
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



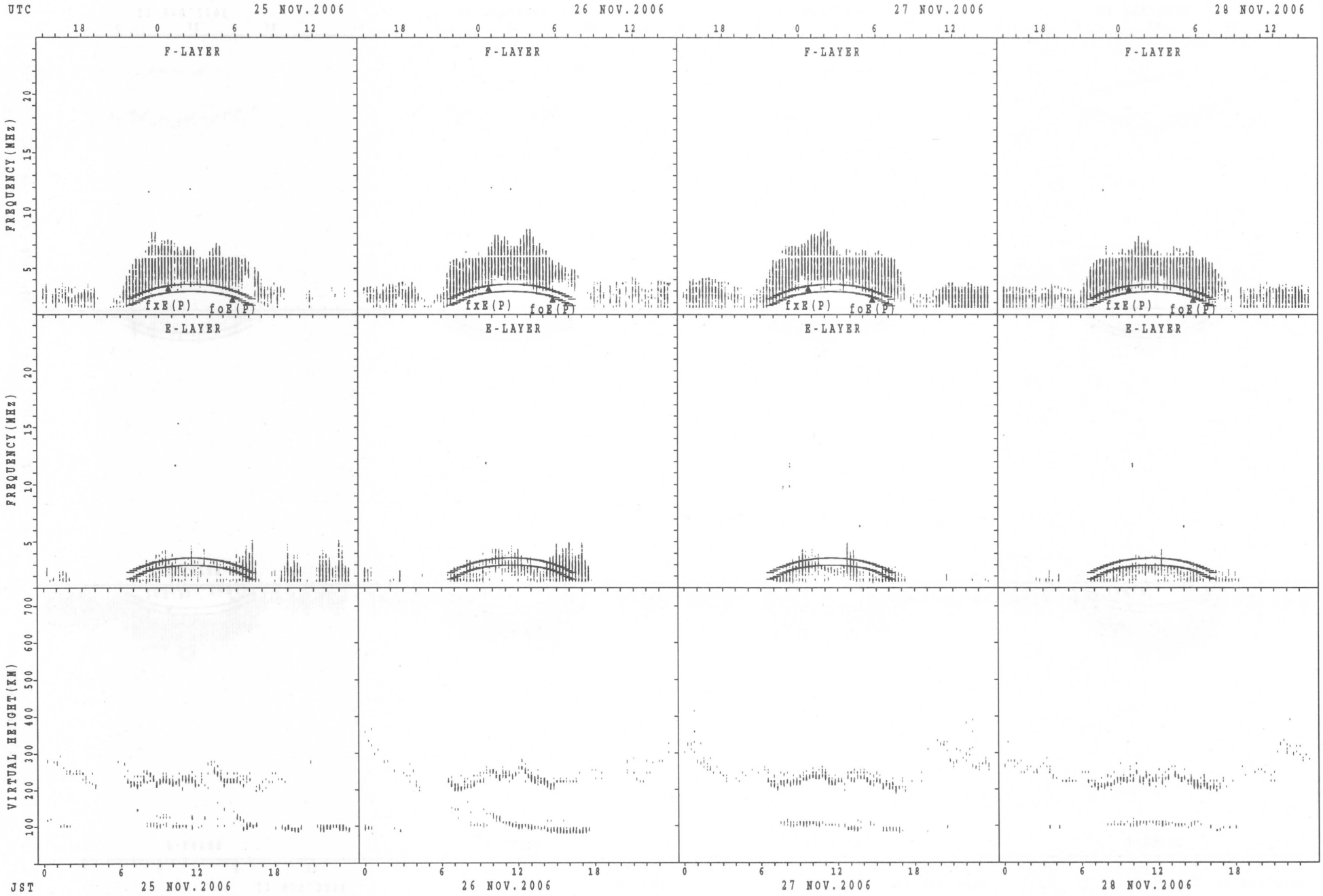
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



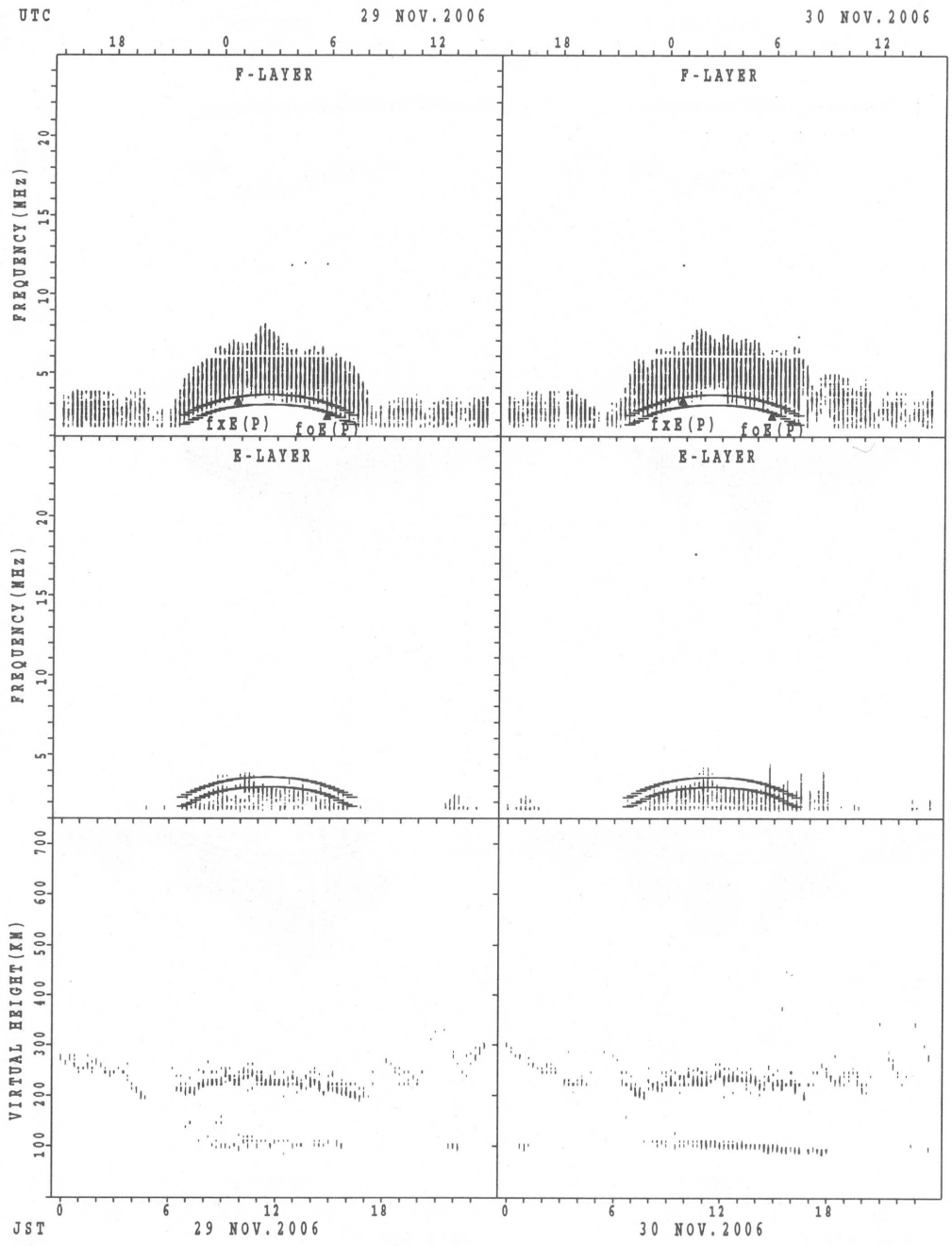
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



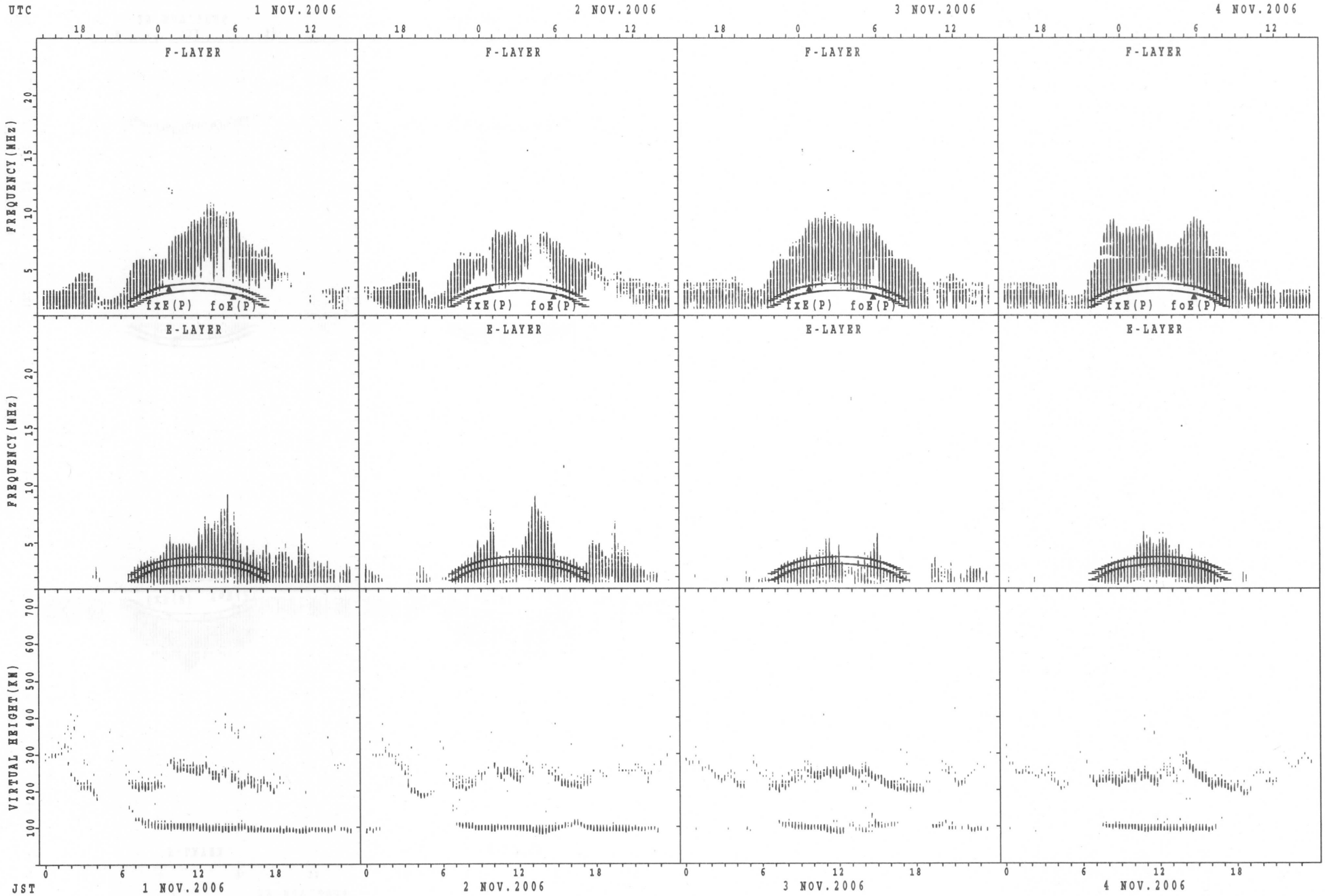
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



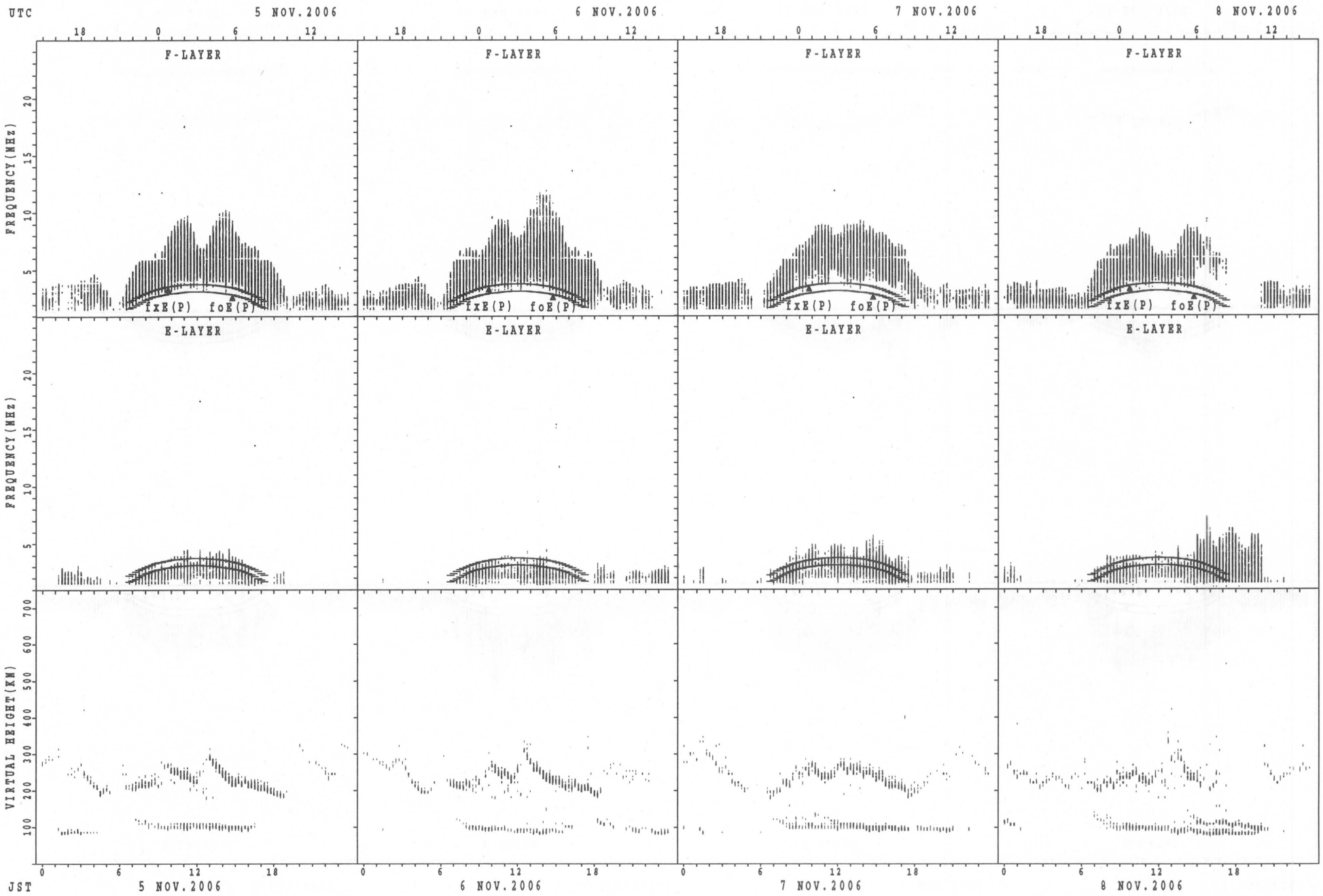
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



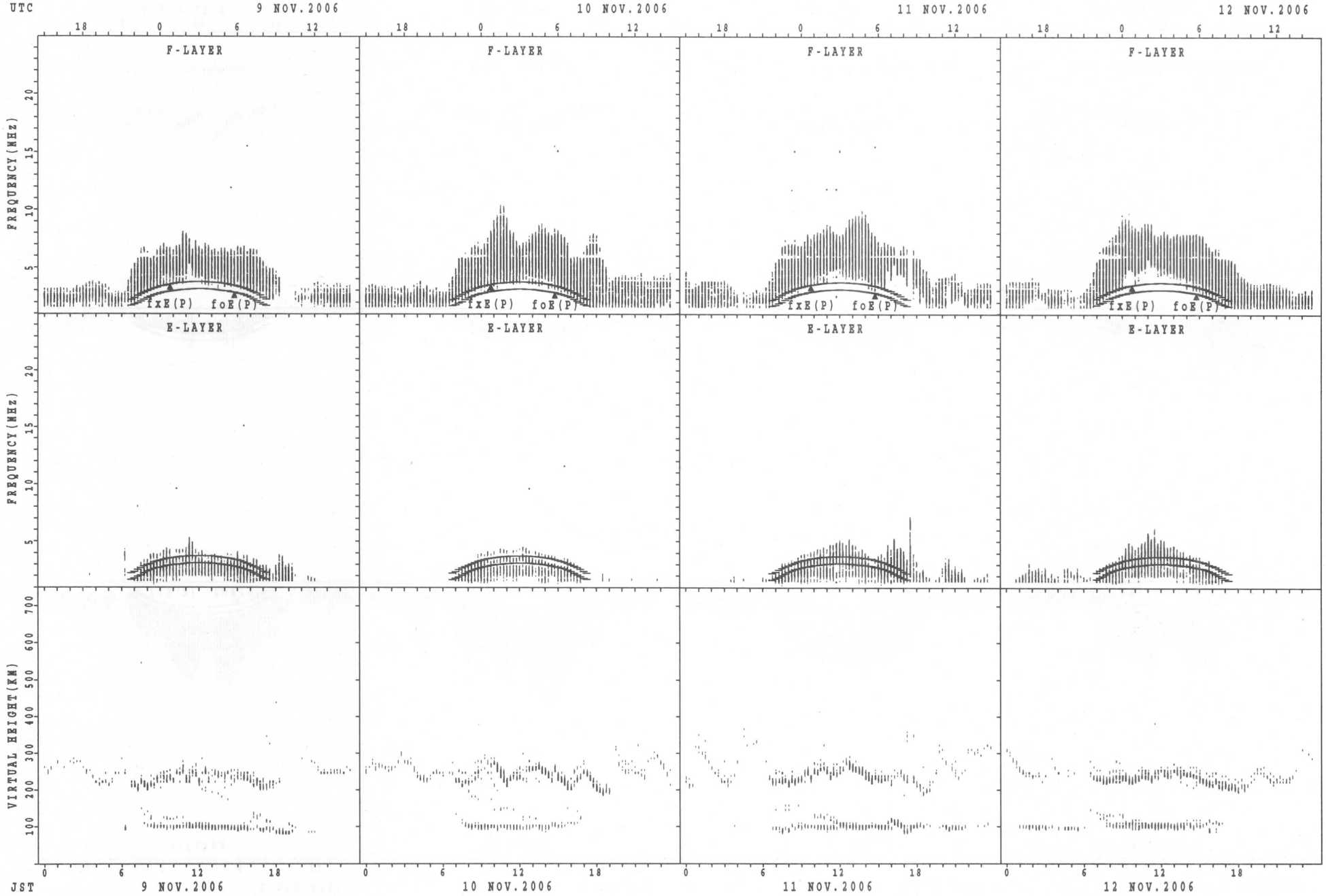
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



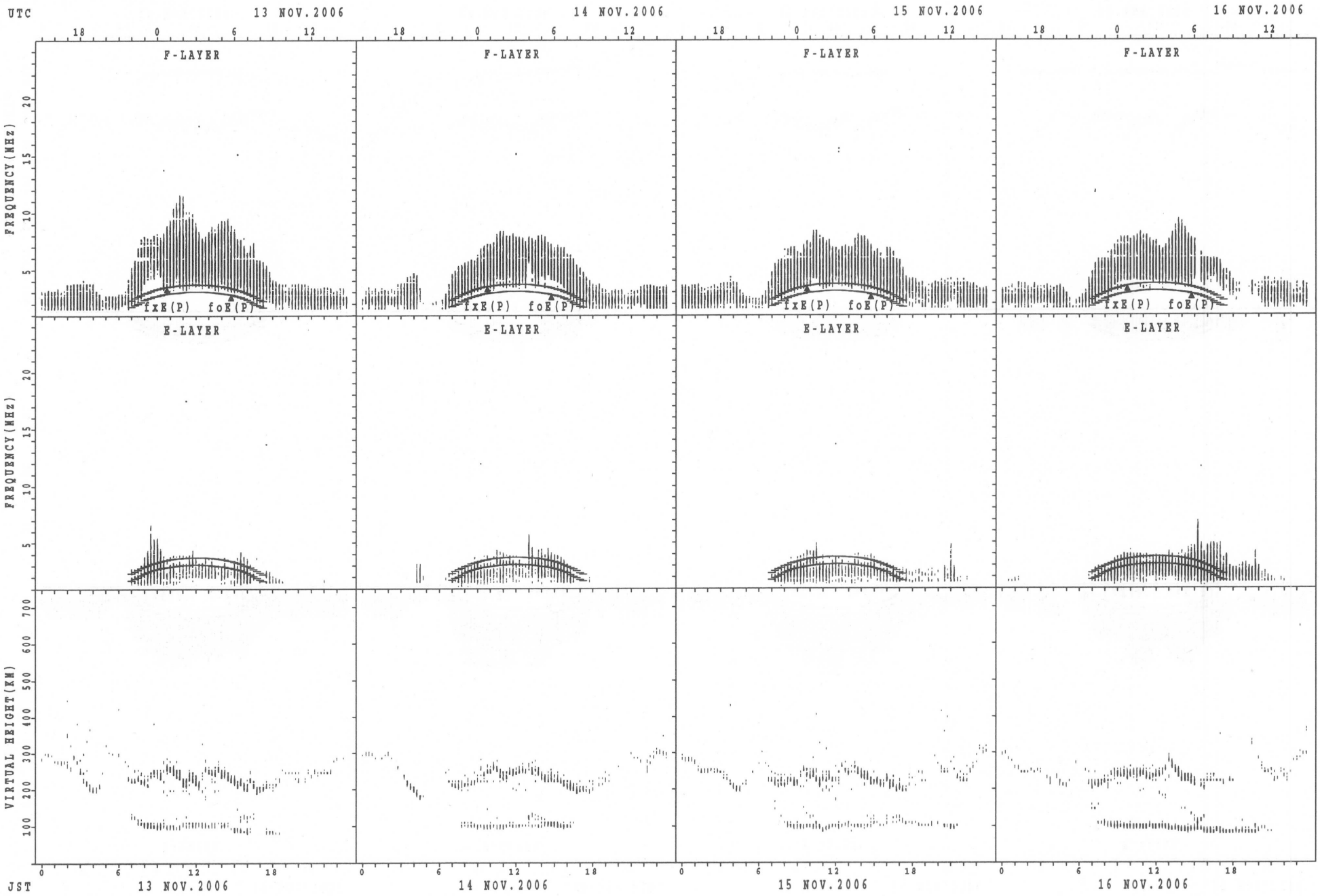
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



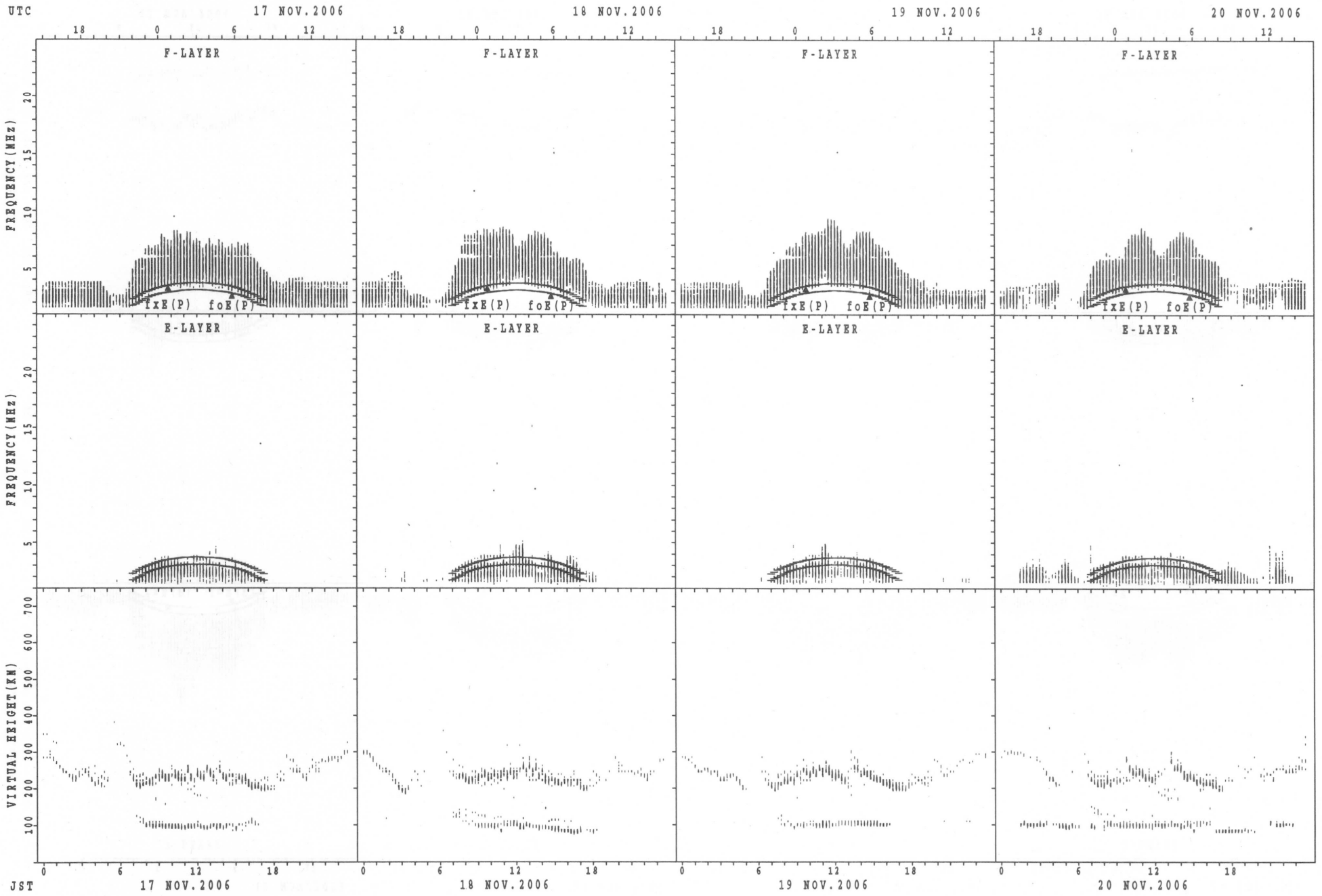
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



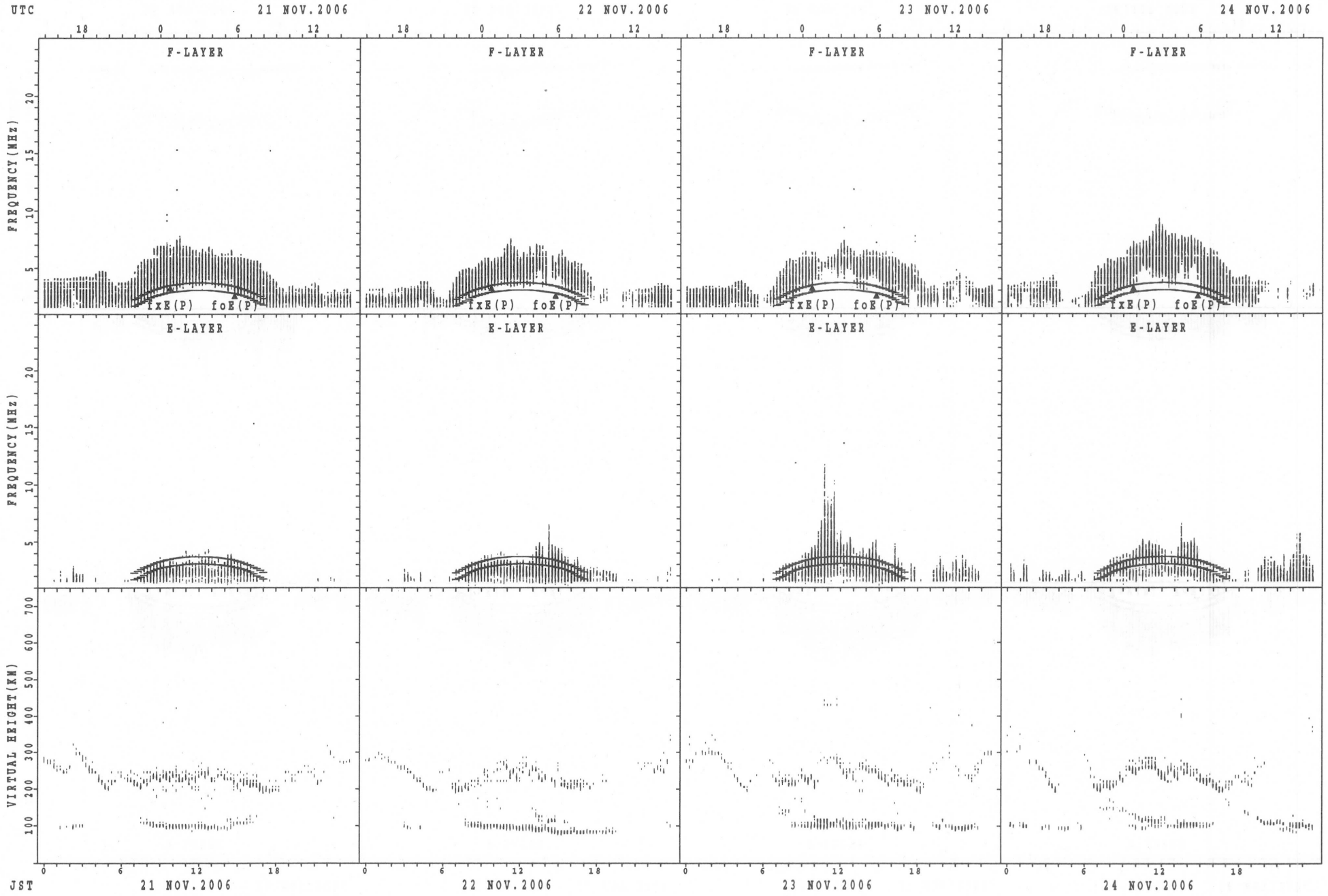
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

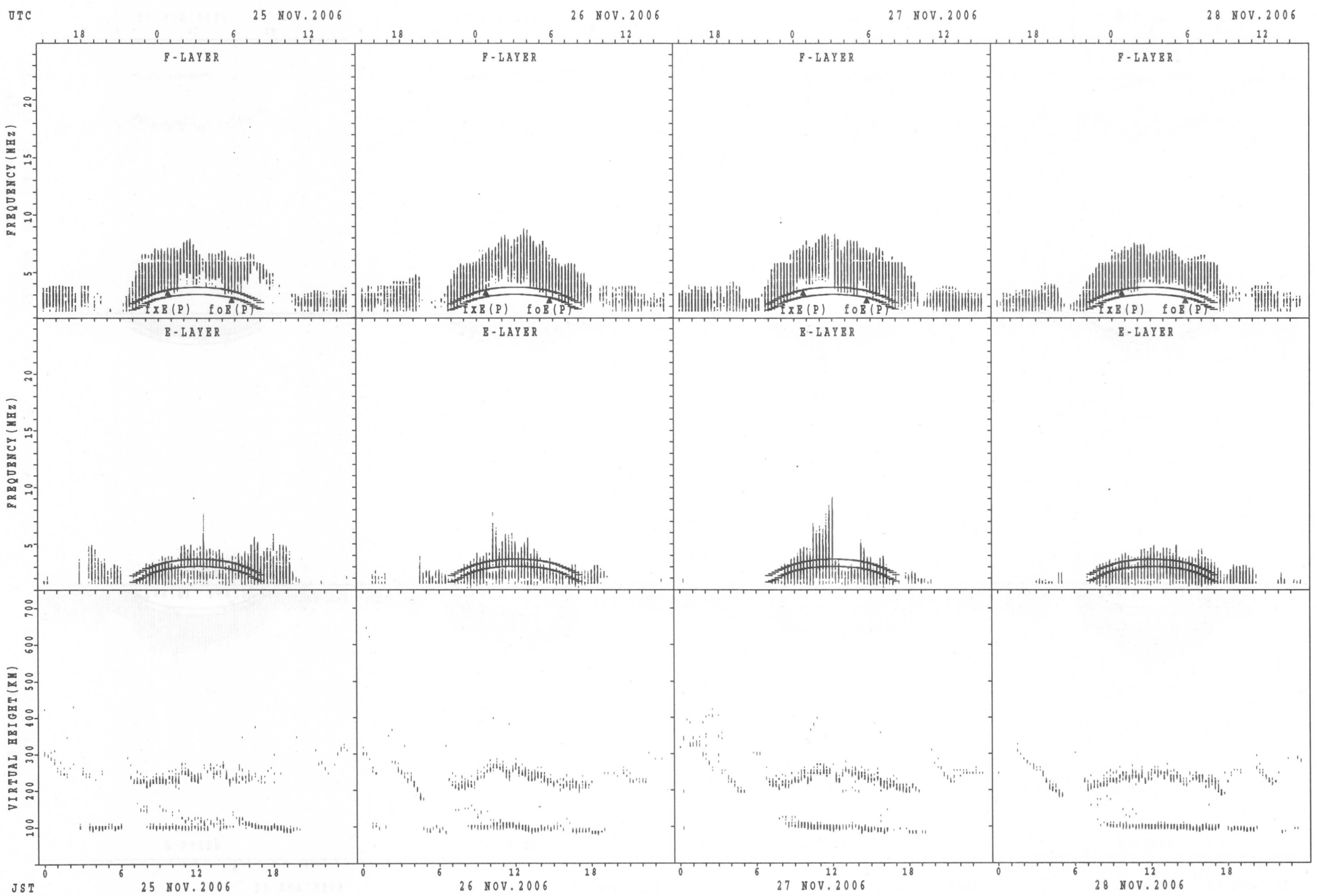


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

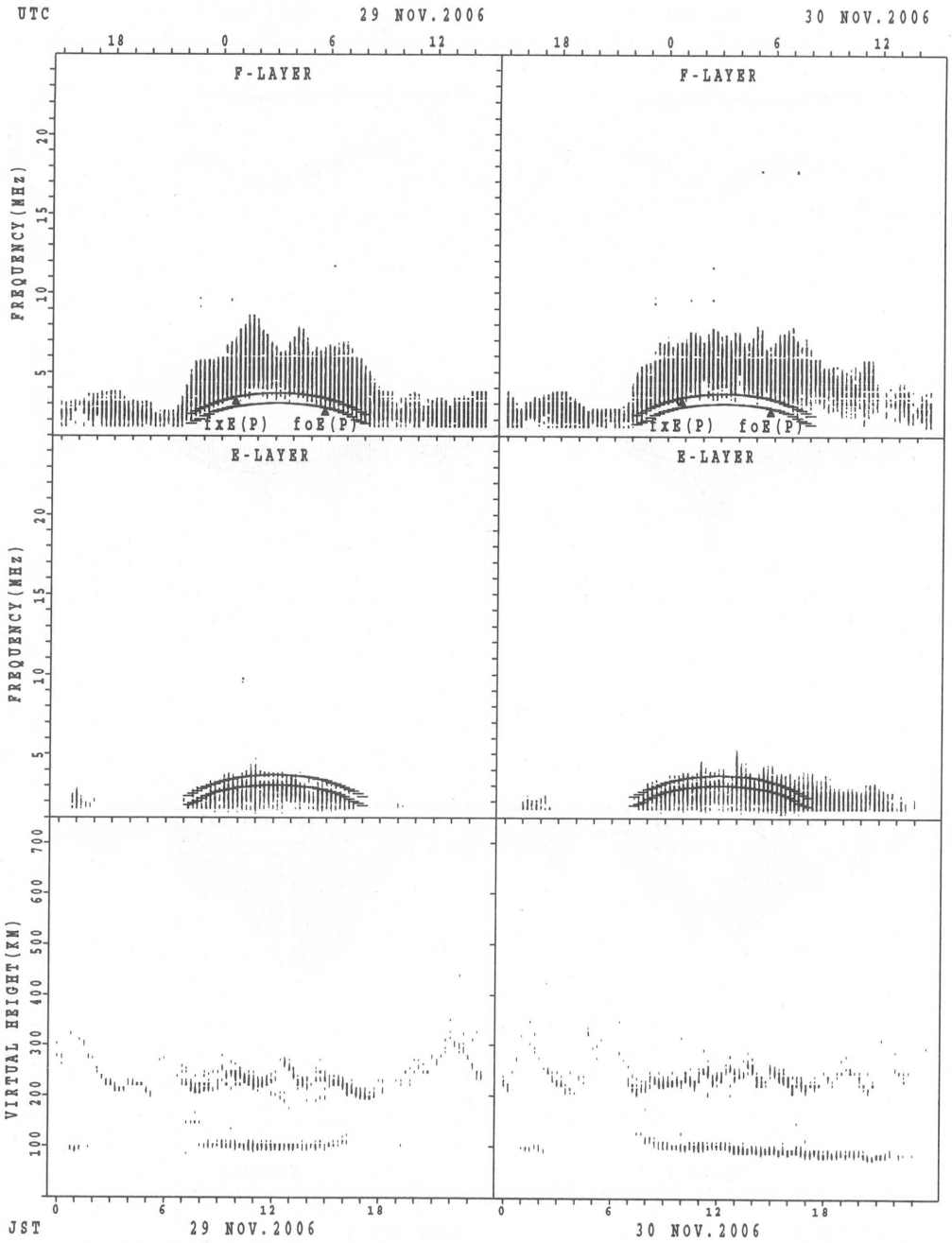
SUMMARY PLOTS AT Yamagawa



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

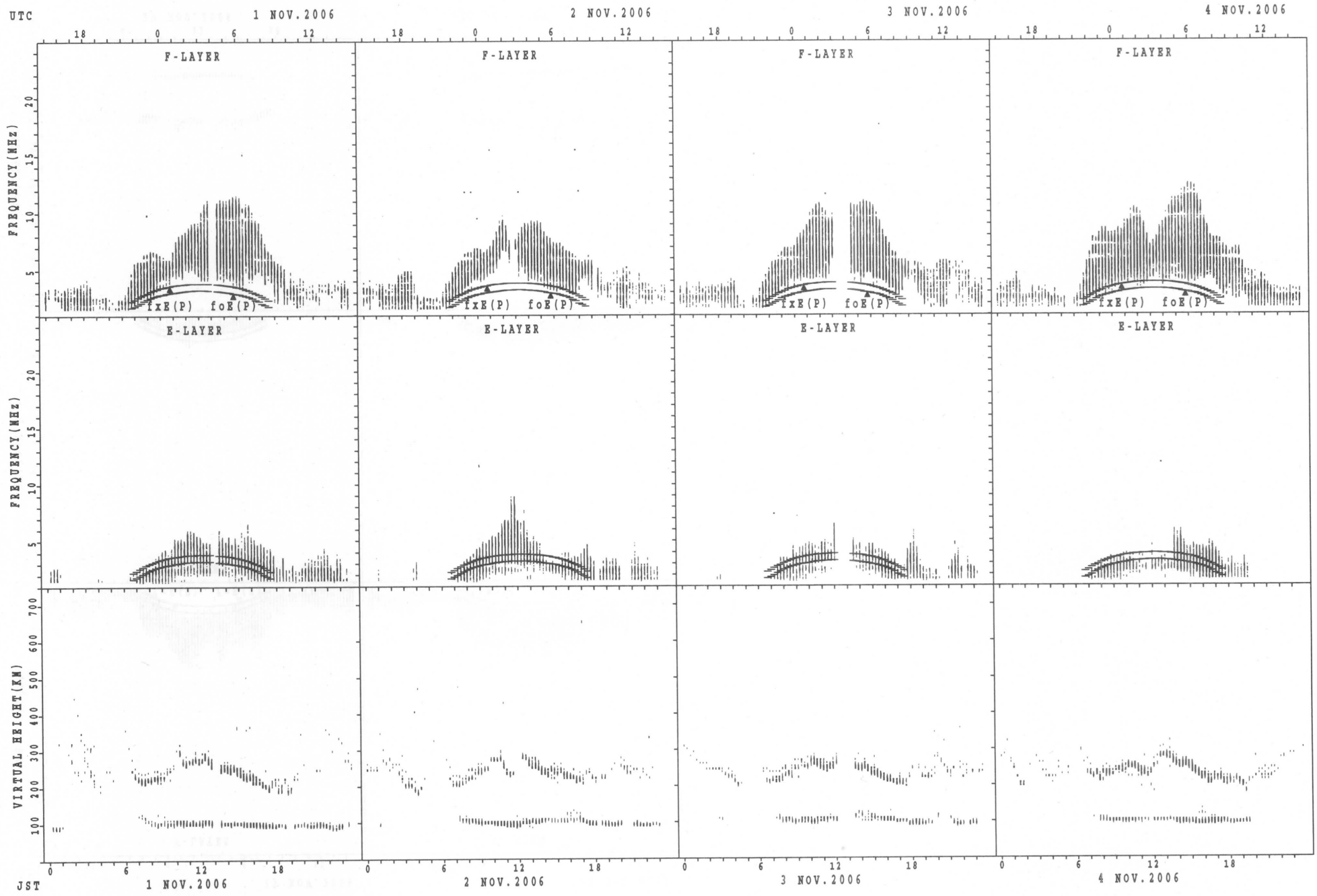

SUMMARY PLOTS AT Yamagawa
UTC
25 NOV.2006
26 NOV.2006
27 NOV.2006
28 NOV.2006
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



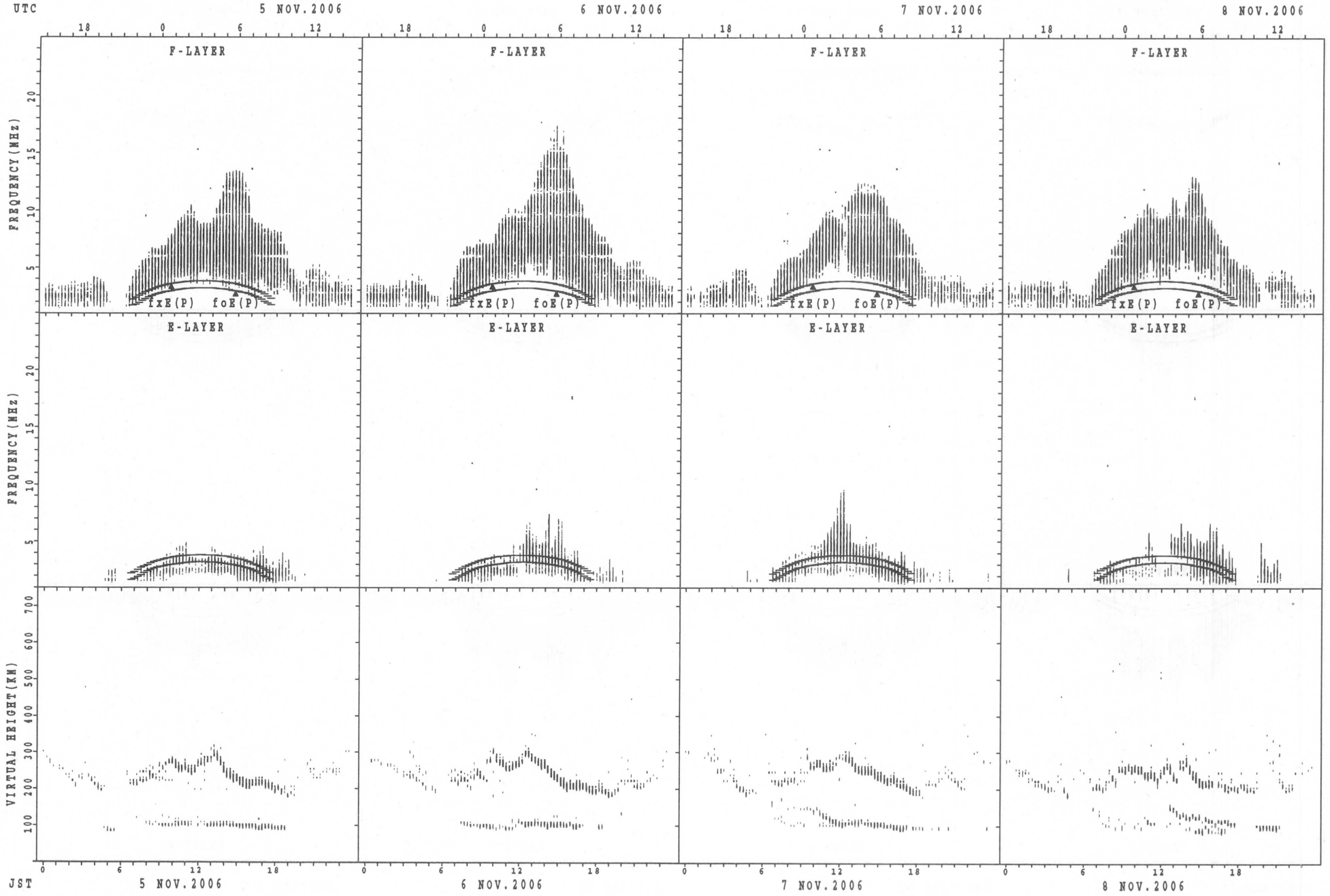
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



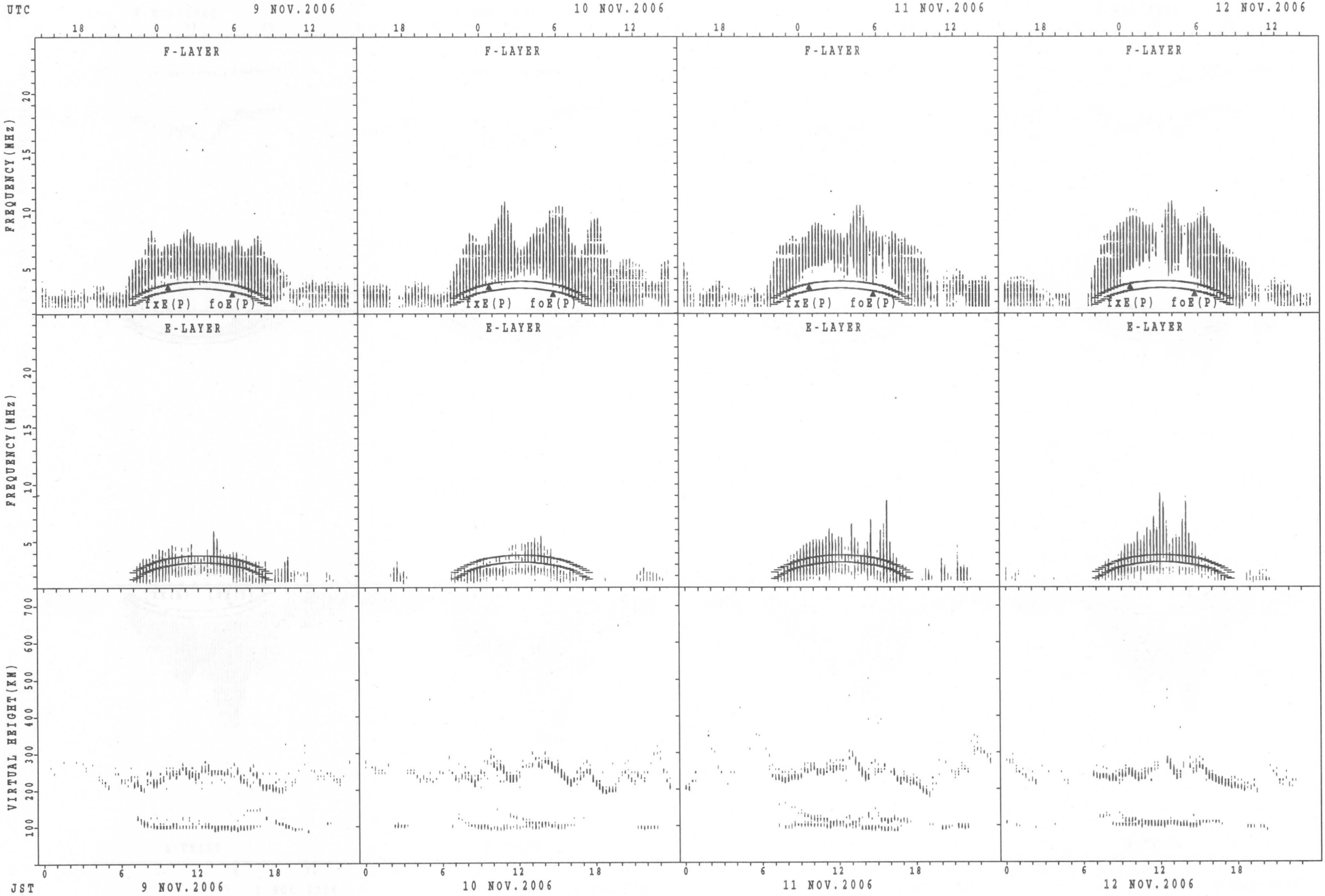
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



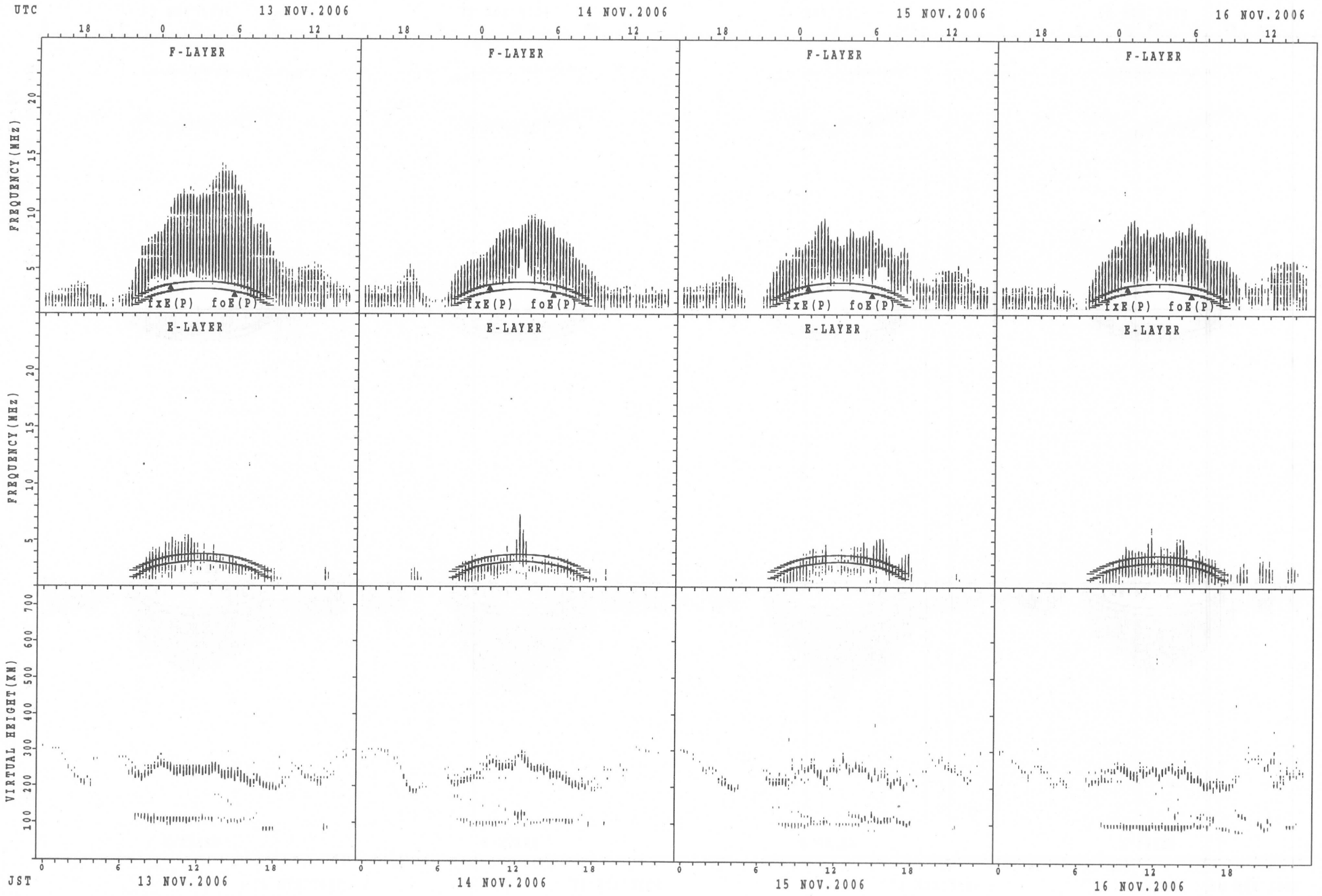
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



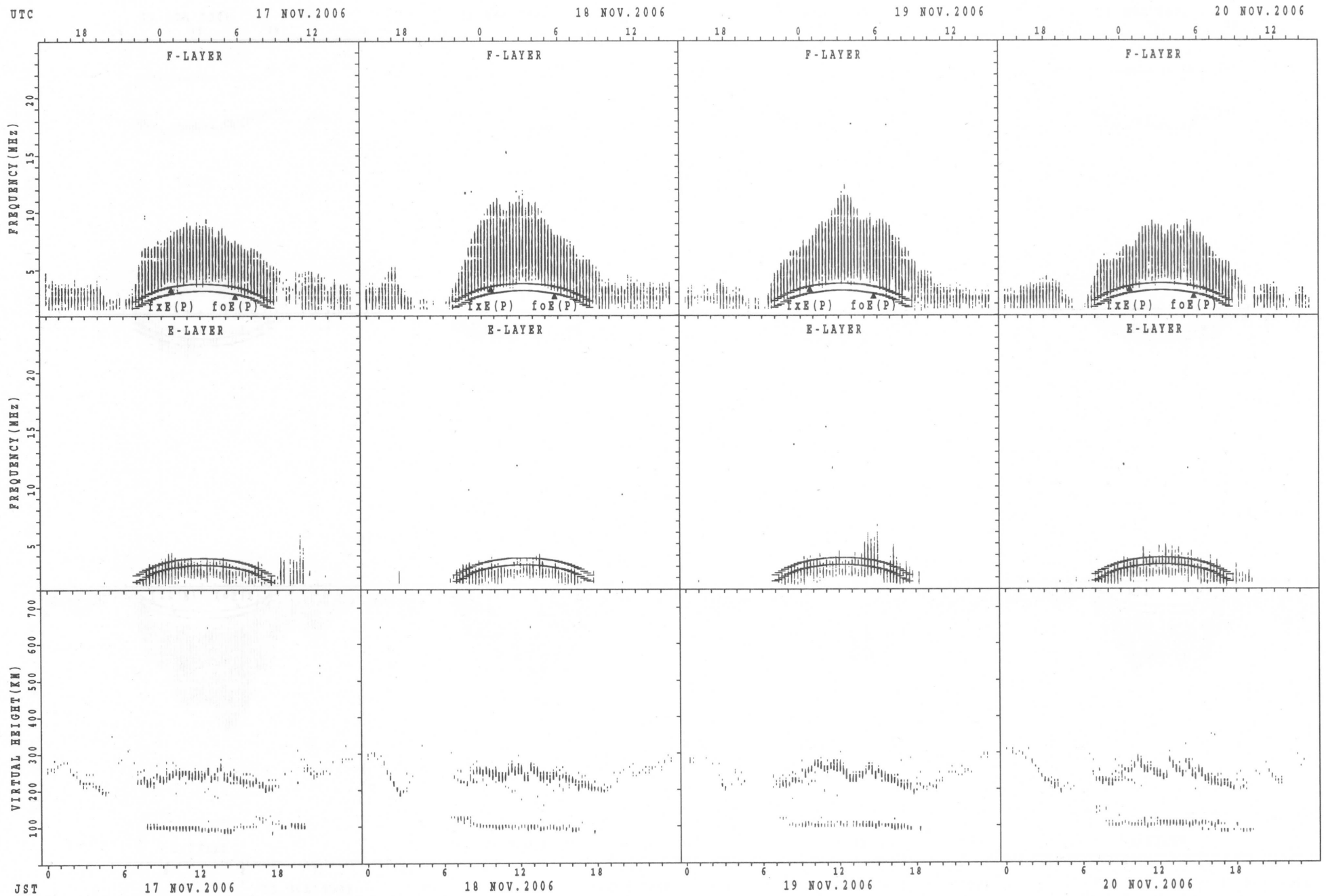
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



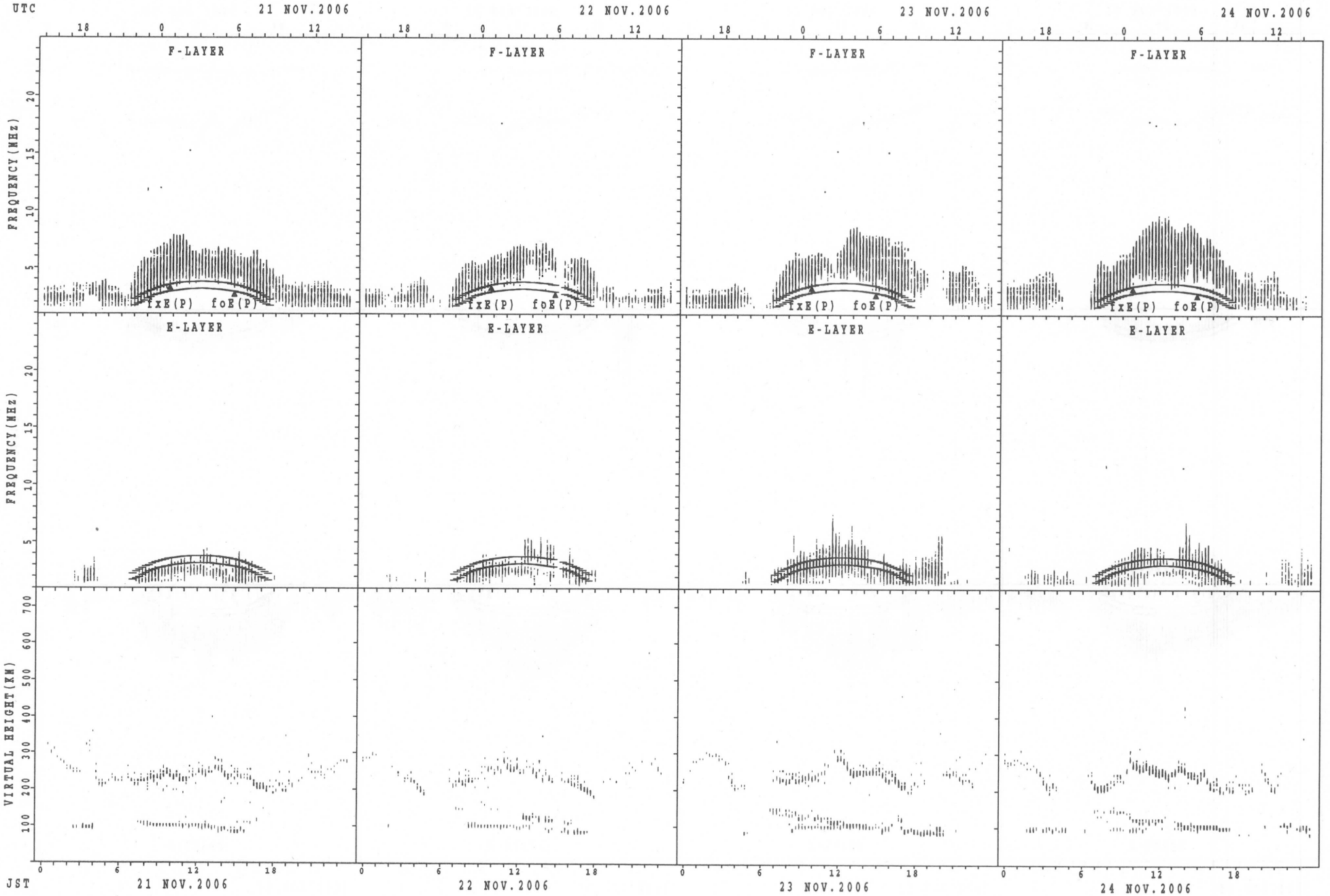
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



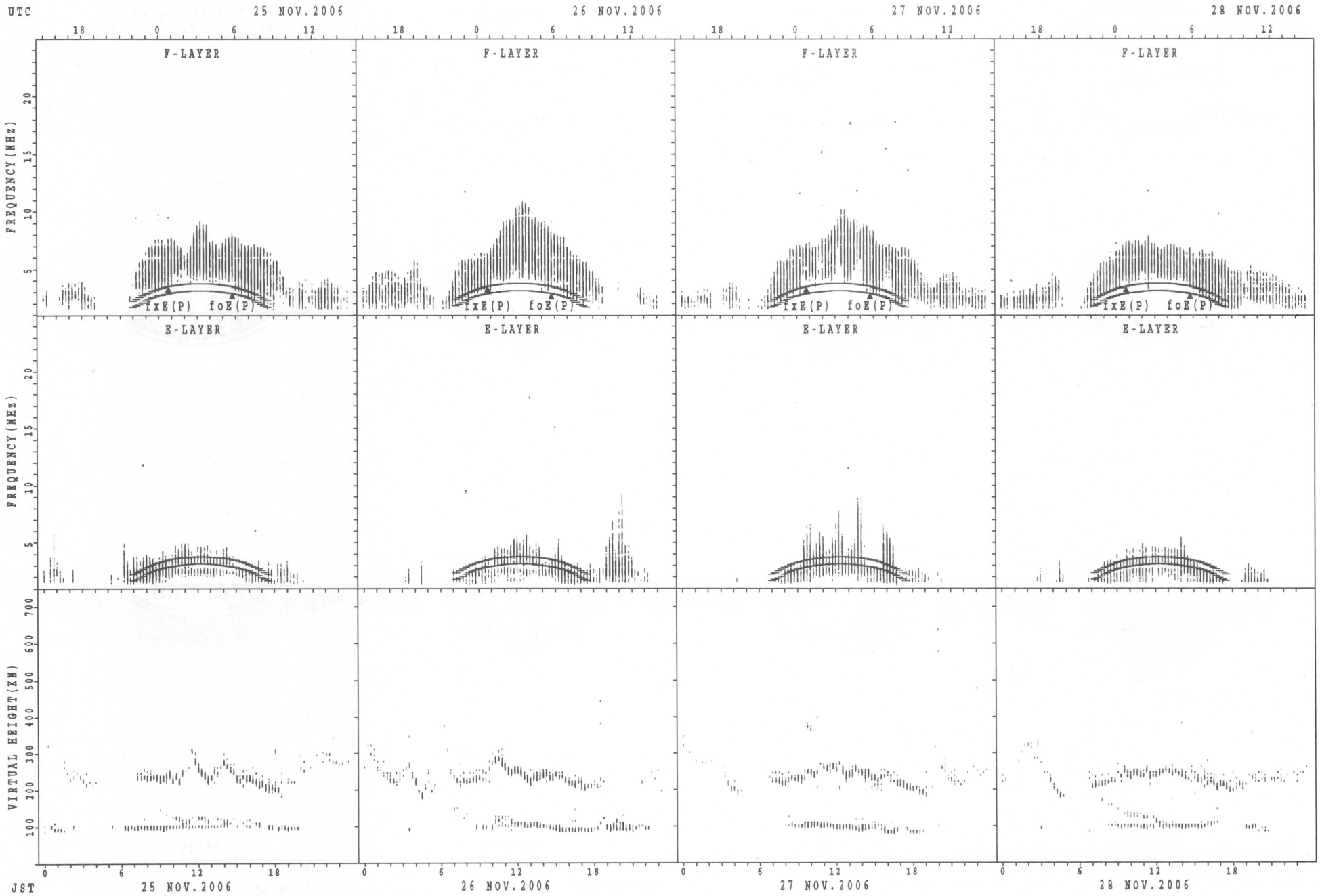
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



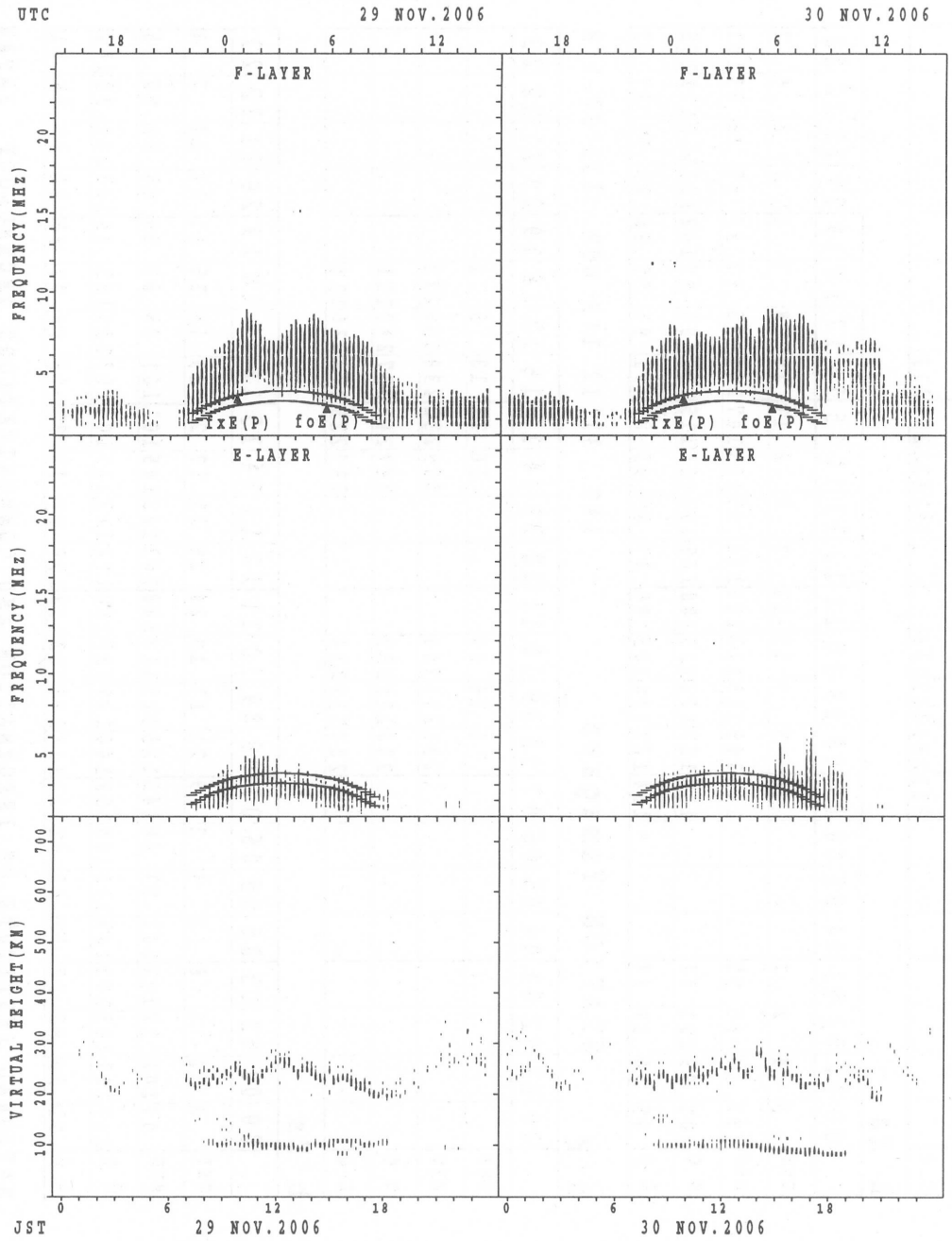
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

NOV. 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								4	17	18	23	19	22	24	11	19	6							
MED								238	232	230	234	240	227	232	246	238	229							
U Q								244	242	240	244	248	234	247	256	244	244							
L Q								228	224	224	230	230	218	228	240	228	228							

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	9	7	7	9	5	6	11	17	17	21	17	17	10	14	15	15	12	7	11	11	11	10	9
MED	99	95	97	95	95	91	95	135	119	109	103	105	103	109	105	107	101	106	103	97	99	97	100	99
U Q	103	99	103	99	101	101	177	147	134	131	111	114	116	125	111	111	103	137	107	103	119	119	107	105
L Q	97	94	95	93	93	90	91	129	109	103	99	97	93	95	91	93	95	103	93	95	95	91	97	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	15	16	11			8	24	12	5							
MED								241	238	236	244			248	240	233	226							
U Q								243	242	241	252			260	252	237	240							
L Q								233	230	232	234			242	232	228	219							

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	3	4	2	1				8	5	9	13	13	7	7	8	11	10	8	7	5	5	4	5	2
MED	97	94	96	95				146	149	113	113	105	101	95	103	107	101	95	97	99	99	98	99	101
U Q	101	99	103	47				152	167	123	123	108	105	103	114	115	113	96	97	102	123	110	111	105
L Q	95	90	89	47				134	122	106	105	96	97	89	99	89	91	91	95	96	97	97	97	97

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									6	16	19				16	21	13	5	1					
MED									231	243	246				239	232	230	236	222					
U Q									238	248	252				247	240	237	242	111					
L Q									224	235	234				237	225	223	230	111					

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	3	2	5	6	2	4	2	9	21	17	19	24	25	21	17	24	19	15	15	11	11	10	7	4
MED	99	101	97	102	101	97	98	143	125	119	113	108	103	103	105	101	101	95	89	95	95	97	97	95
U Q	117	107	102	103	105	102	105	153	140	149	125	118	112	112	113	106	107	103	105	95	107	103	99	102
L Q	91	95	93	97	97	93	91	123	113	102	103	103	100	97	99	97	93	89	87	91	91	95	95	91

MONTHLY MEDIANS OF h'F AND h'Es

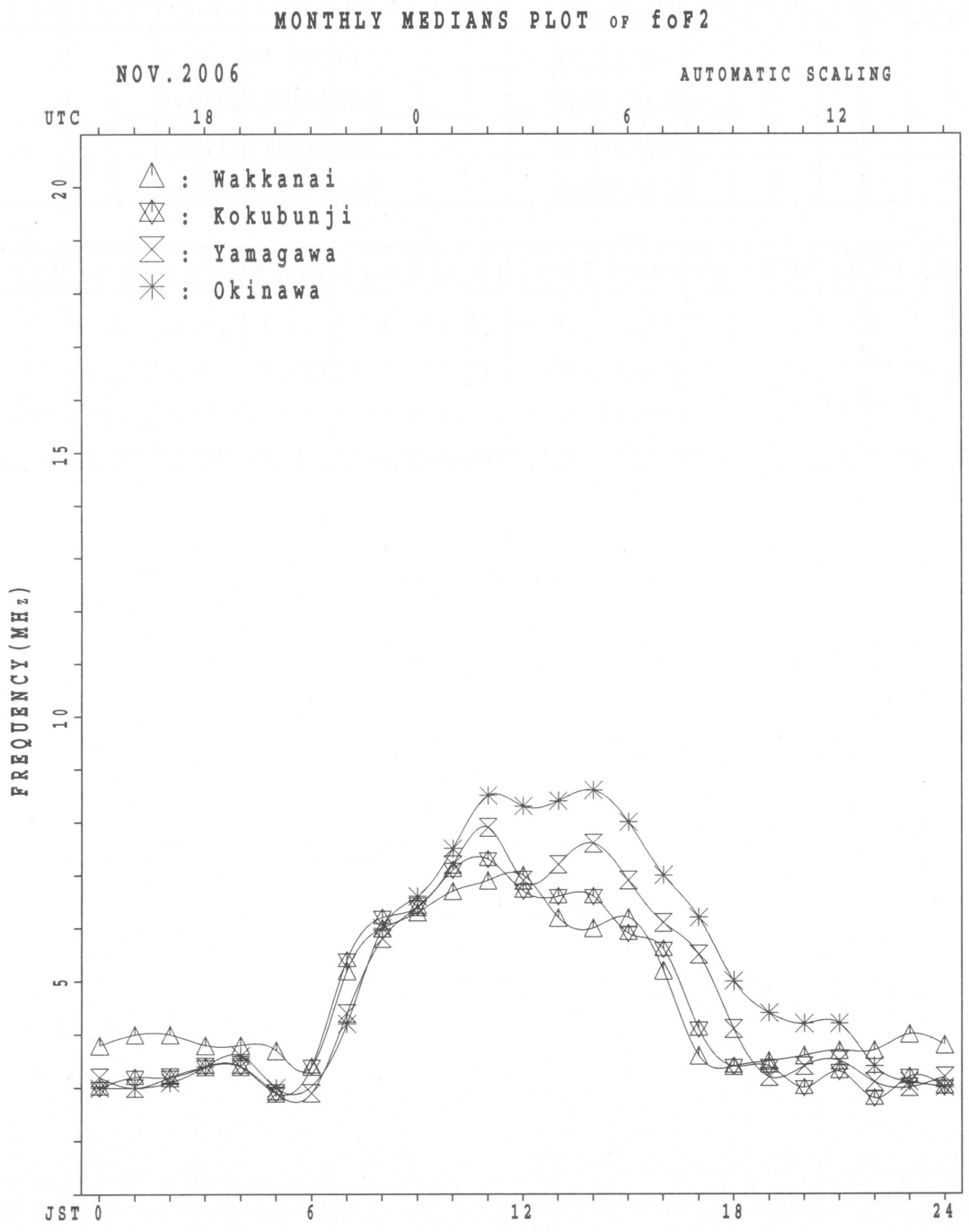
NOV.2006 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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									11	21	17					27	24	14	4	1				
MED									252	246	244					238	225	222	227	220				
U Q									256	254	270					246	242	232	232	110				
L Q									238	239	239					230	218	216	219	110				

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	1	2	1	3	1			5	14	14	23	23	24	18	22	18	20	17	15	15	9	6	8	5
MED	113	98	97	99	97			127	113	112	111	109	111	107	105	104	103	99	97	97	101	96	95	95
U Q	56	101	48	103	48			146	143	137	131	115	117	111	111	113	110	107	107	105	116	111	98	104
L Q	56	95	48	97	48			108	107	105	107	103	105	105	103	97	96	94	91	95	98	95	93	94


MONTHLY MEDIANS PLOT OF foF2
NOV. 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

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

NOV. 2006 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	33	34	32	33	38	21	37	53	62	63	74	85	88	96	87	68	57	50	A	32	28	28	32	34
2	33	34	38	F	46	21	32	54	56	58	75	82	66	63	66	60	61	54	40	42	39	32	34	36
3	36	35	36	36	38	31	38	61	66	78	80	89	75	80	75	63	57	52	32	30	35	36	34	32
4	34	33	36	30	27	26	34	64	81	101	75	82	68	61	60	61	62	49	40	36	32	26	29	31
5	30	34	34	32	36	24	36	52	64	64	87	81	80	79	69	62	70	54	35	27	30	30	27	29
6	29	33	30	30	32	31	40	57	65	65	73	74	74	80	71	70	63	48	34	24	26	28	27	28
7	29	30	32	33	33	25	32	55	64	73	74	91	75	66	69	62	66	48	36	29	28	28	32	32
8	30	33	32	33	36	22	33	63	60	77	71	63	60	55	78	68	60	41	A	27	32	34	33	32
9	29	30	30	30	32	23	31	51	57	64	66	63	60	65	60	58	63	40	24	27	31	32	32	32
10	31	30	F	F	30	27	34	52	64	58	99	86	80	79	62	66	56	60	54	40	41	41	38	38
11	44	46	34	36	25	29	35	62	69	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	79	68	84	66	63	58	34	33	29	26	28	29	31
14	30	30	30	33	33	22	28	50	58	57	72	78	72	66	71	58	56	35	29	23	29	32	31	32
15	34	35	34	36	38	33	32	54	65	67	74	70	66	63	64	59	55	40	36	31	34	35	31	31
16	33	34	33	32	32	25	30	56	66	58	76	72	78	70	74	62	51	40	29	33	33	34	33	30
17	32	33	33	33	36	29	32	57	62	66	79	64	65	68	64	58	62	37	32	30	31	31	32	34
18	34	35	33	36	28	20	28	58	77	69	70	74	79	68	68	62	50	40	30	34	34	34	32	32
19	34	36	F	34	31	29	37	60	65	69	69	71	58	V 63	74	58	54	39	28	32	35	31	31	32
20	34	34	35	37	38	34	33	52	57	61	78	77	64	60	65	59	46	41	32	38	42	35	37	37
21	F	F	40	42	43	39	36	50	67	67	62	74	63	57	60	52	49	36	29	33	33	35	32	33
22	32	32	33	34	38	26	28	44	50	52	61	64	56	60	58	58	43	38	22	24	28	26	29	29
23	29	29	27	28	28	20	24	43	55	56	62	63	57	60	56	55	48	38	32	27	33	36	28	30
24	31	33	35	36	20	28	35	48	57	64	61	70	73	77	66	56	58	38	34	29	32	29	32	32
25	34	32	32	31	30	19	25	50	61	68	70	63	53	58	59	58	52	36	33	27	26	29	30	30
26	30	31	32	33	33	24	26	57	54	60	68	73	65	80	63	49	47	40	35	33	34	41	34	35
27	35	36	36	35	31	27	28	52	67	63	75	80	63	61	60	60	55	42	26	25	29	33	F	32
28	30	31	32	32	32	29	28	50	59	59	63	69	60	60	61	55	51	38	29	29	33	29	32	32
29	33	33	34	32	35	22	26	45	54	61	64	74	68	59	61	59	53	35	28	32	29	28	31	30
30	31	33	33	34	31	26	27	54	57	59	63	73	70	66	66	57	62	42	47	44	42	32	38	30
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	26	26	28	28	28	28	28	27	27	28	28	28	28	28	28	28	26	28	28	28	27	28
MED	32	33	33	33	32	26	32	54	62	64	72	74	67	66	66	59	56	40	32	30	32	32	32	32
U Q	34	34	35	36	37	29	35	57	66	68	75	80	74	78	70	62	62	48	35	33	34	34	33	32
L Q	30	31	32	32	30	22	28	50	57	59	64	70	62	60	60	58	51	38	29	27	29	28	30	30

NOV. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	L	U L 444	L										
2										L	U L 444	E A	L	L	E A	E A								
3										L	A	A	L	L										
4									L	L	L	L	L	L	L									
5									L	L	L	L	L	L	L									
6										L	L	U L 412	L	A	L									
7										L	L	A	U L 452	L	U L 380									
8										L	L	L	L		U L 412									
9										L	L	L	L	U L 436	L									
10									L	L	L	L	L	L	L									
11										C	C	C	C	C	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	L	L	L		L								
14									L		L	L	L	L	L									
15										L	L	L	L	L										
16										L	L	L	U L 424	L										
17										L	L	L	L	L										
18										L		A	A	L										
19										L	L	L	L	L 364										
20										A	L	L	L											
21										A	L	U L 404		L		L								
22										L	L	U L 420	L	L	L									
23										L	A	A	A	A										
24											L	E A	E A	L	E A									
25										E A	L	L		L										
26											L	L	L	L										
27										L	L	U L 428	L	L	L									
28										L	L	L	L		L									
29											L	L	L	L	L									
30										L	L	L	L	L	L									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											1	4	3	2	2									
MED											U L 444	U L 416	U L 444	L 400	U L 39.6									
U Q												U L 424	U L 452											
L Q												U L 408	U L 424											

NOV. 2006 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	212	UA 260	A	A	A	A	A	A	A	A							
2							B	UA 200	A	A	A	A	A	A	A	A	UA 196							
3							B	208	R	A	A	R	UR 320	R	UR 268	A	A							
4							B	200	264	A	A	A	R	A	UR 284	240	R							
5								UR 208	260	UR 292	304	R	A	UR 296	UR 288	UR 256	UR 192							
6								204	UR 256	UR 292	A	A	UR 320	A	UR 284	UR 244	176							
7								UR 204	UR 272	A	A	A	A	R	A	A	UR 200							
8								196	272	304	A	UR 320	UR 324	R	288	256	UA 172							
9								212	268	UR 316	A	A	A	A	A	244	180							
10								UA 184	UR 260	R	312	320	R	A	272	248	A							
11								172	UR 240	C	C	C	C	C	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	A	A	296	R	244	R							
14								180	UR 248	284	A	316	A	R	276	UR 260	184							
15								176	UR 264	280	300	UA 320	312	288	UA 272	240	B							
16								188	260	A	A	A	A	R	UR 280	UA 244	UR 184							
17								176	UR 240	R	UR 296	312	R	A	A	A	A							
18								184	UR 252	R	300	A	A	UR 300	UR 276	224	B							
19								196	A	A	A	R	A	UR 312	UR 280	UA 240	B							
20								184	244	UA 276	A	A	R	UR 304	272	A	A							
21								192	256	276	A	308	A	288	A	240	B							
22								B	240	280	300	308	320	296	UA 264	A	B							
23								B	224	A	UA 304	A	A	A	A	244	B							
24								B	260	280	UA 296	A	A	300	A	R	B							
25								B	244	288	A	312	A	R	268	244	B							
26								B	244	284	A	A	A	A	268	A	A							
27								168	UR 248	A	A	A	UR 316	A	UR 272	R	B							
28								B	R	A	A	A	A	UR 296	UR 264	UR 232	B							
29								B	220	272	A	A	A	UR 300	UR 272	232	B							
30								B	220	276	UA 304	A	A	UR 288	A	A	B							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								20	24	14	9	8	6	12	18	17	8							
MED								194	254	282	300	314	UR 320	UR 296	UR 272	244	U 184							
U Q								204	U 260	UR 292	UA 304	U 320	UR 320	UR 300	UR 280	UR 246	UR 194							
L Q								182	242	276	U 298	310	316	292	U 268	240	178							

NOV. 2006 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	22	J A 29	J A 26	J A 22	E B 15	E B 15	E B 15	25	30	36	J A 47	J A 45	J A 55	J A 38	J A 46	J A 46	J A 45	J A 39	J A 58	J A 44	J A 25	J A 24	J A 19	J A 23
2	J A 18	E B 15	E B 16	18	J A 21	20	E B 14	24	30	33	J A 40	J A 44	J A 38	J A 42	J A 39	J A 55	22	J A 29	J A 28	J A 25	J A 24	E B 15	22	J A 17
3	19	19	20	E B 15	E B 15	J A 18	20	23	G 24	34	44	G 32	G 27	G 25	J A 34	J A 31	J A 32	J A 29	20	E B 15	E B 16	E B 15	E B 15	20
4	J A 17	J A 27	19	18	19	E B 16	E B 16	23	31	32	J A 55	J A 42	G 28	J A 37	G 23	28	G 19	J A 21	E B 15	E B 15	E B 14	20	E B 14	20
5	E B 14	18	19	19	E B 15	E B 15	E B 15	G	G 20	G 21	33	G 25	34	G 26	G 26	G 20	G	J A 20	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
6	18	E B 16	E B 16	E B 15	E B 15	E B 14	E B 15	27	G 20	G 24	34	33	G J A 25	A 67	G 25	G 21	G	E B 14	E B 15	E B 15	E B 15	B J A 27	J A 33	21
7	E B 14	J A 18	20	E B 16	20	E B 15	E B 15	G	G 19	35	J A 47	J A 48	J A 41	G J A 27	31	29	G	J A 21	J A 29	J A 24	J A 17	19	J A 21	E B 15
8	E B 15	E B 15	E B 15	E B 15	19	E B 15	E B 14	24	32	35	41	J A 44	G J A 29	35	G 25	34	J A 47	J A 47	J A 33	J A 20	J A 24	E B 16	E B 15	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15	E B 14	24	30	G 21	36	35	35	J A 41	J A 36	28	24	E B 15	J A 21	J A 20	J A 22	18	E B 15	E B 15
10	E B 15	E B 15	E B 16	E B 14	E B 14	E B 14	E B 15	22	G 20	G 24	34	34	G 27	34	30	30	25	J A 21	E B 15	E B 14	E B 15	20	19	E B 14
11	E B 15	E B 15	E B 14	E B 14	E B 15	E B 15	E B 16	23	G 21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	J A 56	34	G 22	G 21	30	G	E B 14	E B 16	E B 15	E B 16	E B 15	E B 14	E B 15
14	21	20	E B 15	E B 15	E B 15	E B 14	E B 15	22	G 23	33	33	35	34	G 26	30	G	22	18	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15
15	E B 16	E B 15	E B 15	E B 15	E B 16	E B 14	E B 14	24	G 23	32	34	36	35	32	36	30	J A 35	E B 16	E B 15	B J A 21	J A 21	J A 28	E B 15	J A 24
16	18	J A 19	18	E B 15	E B 15	E B 15	E B 15	22	29	32	J A 32	J A 33	34	G 24	G 25	31	G	J A 22	E B 14	E B 15	E B 14	E B 16	E B 15	E B 16
17	E B 14	E B 15	E B 14	E B 15	E B 15	B J A 18	19	21	G 20	G 27	G 28	34	G 24	31	J A 32	J A 28	21	19	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
18	E B 16	E B 15	E B 16	B J A 20	E B 15	E B 15	20	22	G 20	G 23	32	J A 48	J A 80	G 24	G 24	26	22	J A 18	E B 15	B J A 22	E B 15	E B 15	E B 15	E B 16
19	E B 16	E B 13	E B 14	E B 16	E B 15	E B 15	E B 15	23	28	32	34	G 24	36	J A J G 38	22	26	22	J A 17	J A J A 20	20	J A 17	E B 15	E B 15	E B 15
20	20	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	24	32	J A 39	J A 45	J A 54	G 26	G 25	31	J A 31	J A 24	J A 22	E B 15	E B 15	20	E B 15	B J A 24	J A 24
21	J A 30	20	J A 17	19	22	J A 19	20	25	28	36	33	34	34	32	30	G 20	E B 17	E B 14	E B 15	E B 15	E B 16	E B 14	E B 15	E B 15
22	E B 15	27	J A 19	19	E B 14	E B 15	E B 15	20	28	32	36	35	35	32	34	28	20	19	E B 15	E B 15	E B 15	20	19	J A 18
23	E B 15	E B 15	19	E B 15	E B 15	E B 14	E B 15	22	28	31	J A 46	J A 48	J A 51	J A 40	J A 34	26	20	E B 16	E B 14	E B 15	J A 20	J A 24	J A 16	E B 15
24	E B 15	18	J A 22	20	18	E B 15	19	22	31	36	37	42	J A 43	35	36	G	19	E B 15	E B 14	E B 15	J A 32	J A 23	J A 27	22
25	J A 23	19	21	E B 15	E B 15	E B 14	E B 15	21	29	36	34	35	36	G 22	33	34	J A 37	J A 20	28	J A 44	J A 32	22	J A 46	J A 58
26	J A 30	20	19	J A 22	E B 15	18	E B 14	22	30	32	38	36	J A 44	J A 35	J A G 24	J A 44	J A 46	J A 52	E B 15	J A 20	E B 15	E B 14	E B 14	E B 15
27	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14	E B 16	20	G 20	34	J A 39	J A 36	G J A 28	38	G 23	G 20	J A 27	J A 22	18	E B 15	E B 15	E B 16	E B 15	E B 16
28	E B 14	19	19	J A 19	21	E B 15	E B 15	E B 15	G 20	31	33	33	35	G 28	G 23	G 20	J A 24	J A 26	J A 25	E B 15	E B 15	E B 15	E B 15	E B 15
29	E B 15	E B 15	E B 15	E B 15	E B 15	19	20	21	26	32	33	33	35	G 26	G 24	27	22	E B 16	E B 15	E B 15	E B 15	E B 15	B J A 22	J A 21
30	20	J A 23	J A 17	E B 14	E B 16	E B 15	E B 15	20	27	32	35	36	36	G J A 25	J A 30	J A 26	20	J A 25	J A 36	J A 20	19	E B 15	18	21
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	E B 16	17	16	E B 15	E B 15	E B 15	E B 15	22	28	32	35	36	35	32	30	28	22	J A 20	E B 15	E B 15	E B 16	E B 16	E B 15	E B 16
U Q	20	20	19	19	17	16	16	24	30	35	J A 41	J A 44	J A 37	J A 38	J A 34	J A 31	J A 26	J A 24	J A 23	J A 20	J A 20	J A 20	J A 20	J A 21
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	21	G 20	G 31	33	34	G 28	G 26	G 24	G	G	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

NOV. 2006 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 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	E B 15	23	19	E B 15	E B 15	E B 15	E B 15	23	28	33	34	34	37	34	33	33	24	36	A A 58	E B 15	E B 14	18	17	E B 15
2	E B 15	E B 15	E B 16	E B 15	16	E B 15	E B 14	23	28	32	35	39	33	36	35	29	21	20	18	20	20	E B 15	E B 15	E B 16
3	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	23	G 24	32	40	G 32	G 27	G 24	G 24	26	24	19	14	E B 15	E B 16	E B 15	E B 15	E B 16
4	E B 16	18	E B 15	E B 15	E B 15	E B 16	E B 16	23	28	31	35	38	G 27	32	G 19	26	G 18	17	E B 15	E B 15	E B 14	E B 15	E B 14	E B 15
5	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 20	G 21	32	G 25	32	G 26	G 25	G 19	G	16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
6	E B 15	E B 16	E B 16	E B 15	E B 15	E B 14	E B 15	24	G 19	G 24	32	32	G 24	54	G 24	G 21	G	E B 14	E B 15	E B 15	E B 15	E B 15	20	E B 15
7	E B 14	E B 15	16	E B 16	E B 15	E B 15	E B 15	G	G 19	34	32	41	34	U Y 27	30	28	G	E B 14	19	20	16	E B 15	15	E B 15
8	E B 15	E B 15	E B 15	E B 15	15	E B 15	E B 14	23	30	33	35	G 27	G 26	24	G 25	31	40	31	A A 33	15	20	E B 16	E B 15	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15	E B 14	22	28	G 21	34	34	34	34	32	27	23	E B 15	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15
10	E B 15	E B 15	E B 16	E B 14	E B 14	E B 14	E B 15	21	G 20	G 23	32	33	G 26	33	30	28	24	19	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14
11	E B 15	E B 15	E B 14	E B 14	E B 15	E B 15	E B 16	22	G 20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	37	33	G 22	G 21	27	G	E B 14	E B 16	E B 15	E B 16	E B 15	E B 14	E B 15
14	E B 16	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	21	G 21	32	32	34	32	G 26	30	G	21	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15
15	E B 16	E B 15	E B 15	E B 15	E B 16	E B 14	E B 14	22	G 22	31	32	35	34	31	34	28	24	E B 16	E B 15	18	16	16	E B 15	E B 15
16	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	22	27	30	31	31	30	G 23	G 24	26	G	18	E B 14	E B 15	E B 14	E B 16	E B 15	E B 16
17	E B 14	E B 15	E B 14	E B 15	E B 15	E B 15	E B 16	20	G 20	G 27	G 27	34	G 24	30	30	24	20	18	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
18	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	20	G 19	G 23	32	39	54	G 23	G 22	24	20	16	E B 15	18	E B 15	E B 15	E B 15	E B 16
19	E B 16	E B 13	E B 14	E B 16	E B 15	E B 15	E B 15	20	27	31	33	G 24	34	G 25	G 22	25	21	E B 15	17	E B 15	E B 15	E B 15	E B 15	E B 15
20	16	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	23	31	36	36	33	G 26	G 23	30	26	21	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
21	20	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	24	27	35	32	33	34	31	30	G 20	E B 17	E B 14	E B 15	E B 15	E B 16	E B 14	E B 15	E B 15
22	E B 15	26	E B 15	E B 15	E B 14	E B 15	E B 15	19	26	32	34	34	34	32	30	27	20	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	16
23	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	22	26	31	44	41	45	32	29	25	19	E B 16	E B 14	E B 15	17	E B 16	E B 14	E B 15
24	E B 15	E B 15	17	E B 15	14	E B 15	E B 15	20	28	35	32	42	37	33	33	G	18	E B 15	E B 14	E B 15	22	E B 15	17	E B 15
25	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	20	27	34	32	34	33	G 21	31	33	34	16	25	19	17	21	24	24
26	16	E B 16	E B 15	E B 16	E B 15	E B 14	E B 14	21	28	31	34	34	34	30	G 21	28	30	25	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15
27	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14	E B 16	18	G 18	31	32	32	G 26	32	G 22	G 20	20	17	E B 16	E B 15	E B 15	E B 16	E B 15	E B 16
28	E B 14	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G 19	30	31	31	30	G 27	G 22	G 19	19	20	16	E B 15	E B 15	E B 15	E B 15	E B 15
29	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	25	30	31	32	32	G 24	G 24	26	18	E B 16	E B 15	E B 15	E B 15	E B 15	16	E B 15
30	E B 15	17	E B 15	E B 14	E B 16	E B 15	E B 15	17	26	30	31	33	33	G 25	26	24	19	23	21	E B 16	E B 16	E B 15	E B 16	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	21	26	31	32	34	33	28	28	26	20	16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 16	16	E B 16	E B 15	E B 15	E B 15	E B 15	23	28	33	34	36	34	32	30	28	24	19	16	15	16	E B 16	15	E B 16
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	20	G 20	G 30	32	32	G 27	G 24	G 23	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	311	332	336	330	381	392	348	381	362	377	342	360	338	363	365	371	370	357	A	356	352	320	322	306
2	321	306	320	F	385	379	339	385	382	349	341	366	379	336	361	379	366	370	350	332	346	329	318	304
3	324	324	323	320	361	320	366	378	367	362	331	353	366	364	351	386	375	369	323	320	326	339	322	307
4	317	313	344	354	352	328	328	363	352	370	397	367	378	360	344	366	365	369	349	332	360	322	300	299
5	305	310	306	320	370	420	373	355	362	335	358	358	359	354	363	371	369	379	370	340	322	327	323	302
6	317	315	353	326	326	356	355	391	379	359	364	366	350	358	360	374	381	378	400	359	319	326	319	304
7	302	310	317	325	367	333	363	396	378	367	336	359	340	383	364	377	393	382	376	362	313	320	318	334
8	335	334	329	337	365	382	345	383	395	376	384	394	388	316	372	365	358	300	A	316	311	330	329	331
9	329	315	319	334	364	324	354	395	373	364	372	388	375	377	358	354	382	373	353	297	318	331	323	329
10	348	307	F	F	311	329	341	350	366	296	335	353	349	351	366	357	361	335	330	316	314	325	301	294
11	323	347	336	367	286	300	320	369	356	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	350	370	370	362	355	384	375	350	342	320	338	326	318
14	298	306	309	336	386	378	352	373	364	356	365	358	363	346	374	386	390	371	354	357	321	321	331	307
15	308	314	322	323	356	365	334	384	376	380	358	366	356	354	380	379	379	358	369	334	314	335	333	301
16	298	322	321	341	360	347	336	377	390	357	366	353	358	355	377	384	376	362	365	317	322	320	340	310
17	303	324	319	330	356	323	313	370	366	362	372	374	363	346	362	367	381	347	332	330	320	302	292	281
18	301	326	319	366	385	322	322	358	381	360	378	390	361	360	374	367	364	368	337	334	337	329	339	285
19	307	319	F	343	340	309	352	383	377	387	355	347	347	V 326	353	381	363	366	331	330	339	334	320	302
20	302	306	326	323	344	362	338	400	371	347	335	373	371	349	346	390	387	360	318	331	346	355	344	308
21	F	F	305	307	346	350	343	364	385	363	347	365	404	362	376	369	367	383	326	324	324	325	308	302
22	312	331	321	329	372	392	347	395	400	368	370	375	374	376	366	382	376	386	327	323	334	330	337	319
23	307	309	303	330	361	399	331	350	365	379	363	378	372	376	353	374	377	360	365	326	300	360	329	312
24	298	318	324	387	392	304	351	379	386	371	353	358	348	357	378	356	368	364	341	315	343	288	299	296
25	316	314	331	337	379	331	308	361	355	377	386	383	399	336	388	367	373	368	357	358	331	324	305	281
26	293	308	318	332	372	363	344	368	356	385	351	361	340	374	379	383	356	386	356	318	310	354	328	312
27	307	307	326	334	344	331	324	387	373	372	365	375	364	345	375	373	368	371	379	324	297	316	F	314
28	313	335	334	323	334	357	334	380	375	385	371	370	364	349	359	391	363	373	333	319	327	357	300	289
29	324	328	321	322	361	359	332	371	375	356	365	372	385	368	382	380	366	386	325	339	374	309	316	327
30	302	314	325	359	354	325	328	362	361	375	363	369	360	362	373	360	365	350	340	337	356	294	353	290
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	26	26	28	28	28	28	28	27	27	28	28	28	28	28	28	28	26	28	28	28	27	28
MED	308	315	322	331	361	348	340	378	373	367	363	366	364	358	366	374	370	369	350	330	323	326	322	305
U Q	321	326	329	341	372	372	352	384	380	377	371	374	374	366	376	382	380	376	365	340	341	334	331	313
L Q	302	309	319	323	345	324	330	364	363	357	347	358	353	348	360	366	365	360	331	320	316	320	308	298

NOV. 2006 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	L	U L 388	L										
2										L	U L 368	E A	L	L	E A	E A								
3										L	A	A	L	L										
4									L	L	L	L	L	L	L									
5									L	L	L	L	L	L	L									
6										L	L	U L 409	L	A	L									
7										L	L	A	U L 385	L	U L 388									
8										L	L	L	L		U L 375									
9										L	L	L	L	U L 379	L									
10									L	L	L	L	L	L	L									
11										C	C	C	C	C	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	L	L	L		L								
14									L		L	L	L	L	L									
15										L	L	L	L	L										
16										L	L	L	U L 377	L										
17										L	L	L	L	L										
18										L		A	A	L										
19										L	L	L	L	L 432										
20										A	L	L	L											
21										A	L	U L 409		L		L								
22										L	L	U L 386	L	L	L									
23										L	A	A	A	A										
24											L	E A	E A	L	E A									
25										E A	L	L		L										
26											L	L	L	L										
27										L	L	U L 369	L	L	L									
28										L	L	L	L		L									
29											L	L	L	L	L									
30										L	L	L	L	L	L									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											1	4	3	2	2									
MED											U L 368	U L 398	U L 385	L 406	U L 382									
U Q												U L 409	U L 388											
L Q												U L 378	U L 377											

NOV. 2006 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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										236	272	246	248	238										
2										248	266	240	230	276	238	222								
3										242	244	236	230	242										
4									246	236	216	240	222	246	244									
5									242	270	246	242	234	254	238									
6										232	242	236	246	244	244									
7										244	258	236	240	236	240									
8										238	228	220	230		236									
9										250	244	240	240	238	252									
10									230	302	260	232	250	258	234									
11										C	C	C	C	C	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	234	230	236		232								
14									224		236	238	238	250	226									
15										228	238	232	250	244										
16										244	250	232	240	246										
17										246	234	224	238	270										
18										234		216	244	242										
19										228	236	234	224	228										
20										246	250	232	224											
21										234	234	230		240		234								
22										232	254	246	246	238	246									
23										230	242	228	238	238										
24											244	250	262	242	232									
25										222	226	238		264										
26											258	240	266	232										
27										240	238	234	234	244	244									
28										236	248	238	244		236									
29											244	242	228	238	226									
30										244	240	238	246	238	240									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									4	23	26	28	26	25	15	3								
MED									236	238	244	236	239	242	238	232								
U Q									244	246	250	240	246	248	244	234								
L Q									227	232	236	232	230	238	234	222								

NOV. 2006 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	E B 262	E A 262	242	244	212	190	216	206	218	210	202	212	202	216	224	218	204	212	A	216	230	E A 278	E A 250	E B 270
2	E B 250	E B 250	E B 254	228	210	194	194	H 188	H 186	208	204	A	208	216	A	A	214	210	206	242	230	232	234	E B 262
3	E B 262	E B 254	236	E B 254	212	E B 246	208	204	216	208	A	A	206	H 190	212	214	210	202	206	226	242	226	240	E B 268
4	E B 260	E A 280	232	212	222	E B 256	226	220	212	210	200	216	190	182	H 166	224	220	200	202	214	202	E B 264	E B 290	E B 284
5	E B 266	E B 262	E B 278	254	218	184	212	194	H 182	194	206	H 186	H 184	190	216	214	212	198	196	218	E B 248	238	234	E B 298
6	E B 280	E B 260	222	250	238	222	218	202	208	202	198	196	H 184	A	220	220	H 178	194	194	210	E B 262	E B 262	E A 316	E B 290
7	E B 294	E B 274	E A 260	E B 258	212	220	212	202	212	224	208	A	188	206	H 192	216	208	192	202	222	E A 264	E B 258	E A 262	230
8	234	232	226	234	214	194	220	214	210	214	A	194	200	188	H 174	228	210	E A 334	A	E A 286	E A 304	240	228	224
9	E B 238	E B 260	246	240	216	206	222	198	208	202	206	206	204	194	192	218	216	198	212	E B 252	E B 260	232	232	228
10	220	E B 272	E B 264	E B 258	E B 248	E B 238	228	200	H 180	214	222	A	210	194	194	218	216	228	210	210	242	244	E B 258	E B 252
11	E B 250	232	224	216	186	E B 284	E B 250	212	222	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	210	190	H 184	208	198	206	188	E B 216	206	E B 268	232	234	E B 268
14	E B 286	E B 286	E B 280	242	204	200	220	208	H 176	208	H 184	202	H 180	H 184	198	208	202	190	E B 204	212	E B 244	E B 260	236	E B 266
15	E B 276	E B 254	248	232	220	206	220	210	218	210	206	198	202	194	224	216	208	198	208	E A 244	E A 252	240	236	E B 302
16	E B 286	E B 258	230	226	208	212	224	214	216	206	208	200	H 178	H 192	H 206	208	196	200	206	E B 256	E B 236	242	226	E B 256
17	E B 268	E B 266	242	234	224	214	E B 252	218	H 176	188	H 176	202	190	196	220	212	210	204	212	206	244	E B 280	E B 278	E B 304
18	E B 280	242	E B 254	214	192	E B 282	E B 264	226	210	204	218	A	A	210	222	H 194	200	204	212	236	218	218	210	E B 308
19	E B 278	238	218	224	214	214	224	208	208	202	200	202	H 180	H 180	228	214	212	198	234	E B 244	214	228	E B 254	E B 268
20	E A 284	E B 278	E B 268	248	220	206	208	202	216	A	214	196	H 184	208	220	210	200	216	234	226	212	206	220	234
21	E A 268	E B 250	244	E B 250	222	210	208	202	206	A	192	206	208	H 180	212	190	212	190	216	226	216	214	E B 242	E B 280
22	E B 270	E A 292	E B 256	234	214	194	212	202	210	H 176	226	206	214	216	206	214	186	196	E B 256	E B 256	240	E B 240	E B 246	E A 242
23	E B 266	E B 268	E B 280	E B 254	206	202	E B 248	226	222	202	A	A	A	A	210	222	198	196	210	232	E A 292	224	216	E B 274
24	E B 286	E B 270	246	200	214	E B 288	226	206	206	226	220	A	E A 246	216	A	208	H 196	194	214	E B 250	242	E B 296	E B E A 274	E B 300
25	E B 268	248	232	224	204	248	248	214	220	A	202	202	202	H 180	220	224	214	198	232	220	E A 246	E A 272	E A 342	E A 352
26	E A 314	E B 286	E B 256	248	206	224	224	204	202	224	234	212	208	204	214	204	208	220	222	220	E B 248	228	234	240
27	E B 274	E B 264	E B 252	224	212	220	234	212	220	210	212	190	202	208	200	216	206	204	204	E B 268	E B 292	E B 256	E B 276	E B 248
28	E B 252	E B 252	242	E B 252	218	214	218	204	214	210	212	202	202	202	208	212	202	202	206	216	230	222	E B 276	E B 284
29	E B 260	246	E B 252	230	216	192	230	206	218	218	218	210	204	186	198	218	212	198	228	222	210	E B 278	E A 274	E B 246
30	E B 282	E A 270	236	226	220	236	E B 248	218	202	208	208	210	202	196	204	H 182	222	208	242	222	206	E B 306	232	E B 310
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	24	24	21	26	26	26	27	28	28	26	28	28	28	28	28
MED	E B 268	E B 261	U 234	230	214	209	220	206	210	208	207	202	202	194	209	214	208	198	210	220	U 225	230	241	E B 268
U Q	E B 281	E B 271	E B 256	E B 250	220	E B 237	E B 232	214	217	212	216	210	206	208	220	218	212	206	222	E B 244	E 256	E B 263	E 274	E B 294
L Q	E B 260	250	234	225	209	201	214	202	H 204	202	201	197	H 188	H 186	198	208	201	196	206	216	224	228	233	247

NOV. 2006 h'F (KM)

IONOSPHERIC DATA STATION Kokubunji

NOV. 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

H / D	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	124	118	114	A	A	A	A	A	A	A							
2							B	114	112	A	A	A	A	A	A	A	118							
3							B	114	118	A	A	118	114	112	114	A	A							
4							B	112	128	A	A	A	122	A	114	112	112							
5								116	118	118	114	116	A	120	116	114	114							
6								122	122	118	118	A	118	A	116	120	108							
7								118	120	A	A	A	A	122	A	120	114							
8								116	116	120	118	116	118	110	118	118	124							
9								122	120	114	A	A	A	A	A	110	126							
10								122	120	118	122	116	116	116	118	126	124							
11								112	118	C	C	C	C	C	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	A	118	118	116	126	118							
14								118	126	120	120	120	114	124	126	118	124							
15								114	126	120	114	110	114	116	118	122	B							
16								120	124	122	A	A	A	114	114	114	124							
17								120	116	122	120	114	112	114	A	A	A							
18								122	120	114	118	A	A	116	118	114	B							
19								122	122	118	118	118	118	118	106	118	B							
20								124	120	118	120	A	118	118	118	A	A							
21								116	118	118	116	116	120	116	120	122	B							
22								B	118	120	120	120	120	116	114	116	B							
23								B	114	120	114	118	116	A	A	122	B							
24								B	126	122	122	122	122	112	118	118	B							
25								B	122	122	122	120	120	120	120	120	B							
26								B	122	122	122	118	A	A	114	A	A							
27								118	124	A	A	A	120	A	116	114	B							
28								B	122	122	122	A	A	122	120	120	B							
29								B	120	118	118	114	118	118	120	122	B							
30								B	120	122	122	114	A	126	A	A	B							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								20	28	22	19	16	18	20	21	21	11							
MED								118	120	120	120	117	118	117	118	118	118							
U Q								122	122	122	122	119	120	120	119	122	124							
L Q								115	118	118	118	115	116	115	114	114	114							

NOV. 2006 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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	94	94	94	B	B	B	146	122	118	106	106	106	106	108	106	100	100	94	94	94	100	98	96
2	96	B	B	108	104	106	B	128	120	104	104	102	102	98	98	98	120	98	98	96	100	B	98	98
3	98	98	96	B	B	92	92	136	104	102	102	100	102	102	92	88	86	90	90	B	B	B	B	98
4	92	92	90	90	92	B	B	156	158	102	102	100	98	92	94	156	92	92	B	B	B	98	B	94
5	B	94	94	94	B	B	B	G 98	100	154	104	106	102	98	102	G	98	B	B	B	B	B	B	B
6	90	B	B	B	B	B	B	128	100	102	118	100	92	88	92	102	G	B	B	B	B	102	100	100
7	B	96	98	B	92	B	B	G 106	106	102	102	102	102	102	98	114	G	100	98	96	96	96	96	B
8	B	B	B	B	94	B	B	142	150	154	124	98	96	96	104	134	122	118	116	120	110	B	B	B
9	B	B	B	B	B	B	B	140	140	106	106	104	98	100	100	154	134	B	104	94	92	94	B	B
10	B	B	B	B	B	B	B	122	106	106	158	138	104	126	134	142	120	116	B	B	B	126	126	B
11	B	B	B	B	B	B	B	146	102	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	104	118	98	100	140	G	B	B	B	B	B	B	B
14	100	96	B	B	B	B	B	156	106	156	126	150	124	106	142	G	166	86	B	B	B	B	B	B
15	B	B	B	B	B	B	B	144	104	166	142	128	134	134	130	114	116	B	B	104	104	100	B	98
16	98	94	88	B	B	B	B	144	140	116	108	108	104	98	98	122	G	146	B	B	B	B	B	B
17	B	B	B	B	B	108	106	150	104	106	102	150	106	118	106	108	108	92	B	B	B	B	B	B
18	B	B	B	94	B	B	146	146	102	104	154	100	94	94	100	150	134	94	B	98	B	B	B	B
19	B	B	B	B	B	B	B	152	120	124	114	104	122	96	90	126	102	100	98	98	94	B	B	B
20	98	B	B	B	B	B	B	142	140	122	122	106	104	102	158	92	96	94	B	B	108	B	90	102
21	100	106	102	102	100	98	98	140	176	144	116	144	132	132	148	108	B	B	B	B	B	B	B	B
22	B	98	98	100	B	B	B	160	152	162	144	138	158	146	130	114	122	94	B	B	B	104	104	102
23	B	B	98	B	B	B	B	138	132	128	122	122	114	106	104	146	124	B	B	B	134	122	118	B
24	B	108	108	106	106	B	154	142	144	134	122	124	124	136	110	G	104	B	B	B	120	120	120	94
25	126	120	106	B	B	B	B	136	158	134	124	132	124	100	148	128	108	100	100	100	98	98	96	102
26	96	96	98	92	B	92	B	144	154	156	120	112	106	100	96	96	90	90	B	90	B	B	B	B
27	B	B	B	B	B	B	B	146	104	106	106	106	100	98	98	96	94	90	90	B	B	B	B	B
28	B	98	98	98	98	B	B	B 104	114	114	106	106	104	104	104	98	94	98	B	B	B	B	B	B
29	B	B	B	B	B	96	94	138	144	138	122	116	124	104	106	126	130	B	B	B	B	B	102	100
30	100	100	100	B	B	B	B	156	156	146	120	110	106	106	102	100	100	96	96	102	96	B	102	104
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	14	14	10	7	6	6	25	28	27	27	28	28	28	28	26	22	20	11	11	12	11	12	12
MED	98	97	98	96	98	97	102	144	121	118	120	106	106	102	103	114	108	95	98	98	99	100	101	99
U Q	100	100	100	102	104	106	146	148	147	144	124	126	123	106	120	134	122	100	100	102	109	120	111	102
L Q	96	94	94	94	92	92	94	138	104	106	106	103	102	98	98	102	98	92	94	94	95	98	97	97

NOV. 2006 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 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

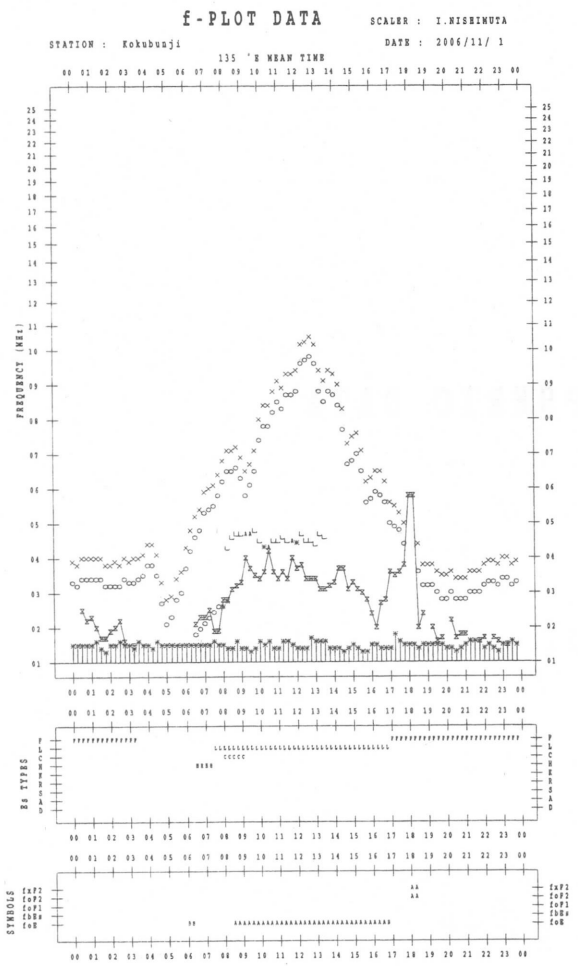
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2	F4	F4	F2				H2	CL21	CL21	L2	L1	L2	L1	L2	L2	L3	F3	F5	F4	F2	F4	F3	F2
2	F2			F1	F3	F1		C2	C2	L2	L2	L2	L2	L2	L2	L2	CL11	F2	F2	F3	F4		F1	F2
3	F2	F2	F2			F3	L1	HL11	L1	L2	L3	L2	L2	L2	L2	L2	L3	F2	F1					F2
4	F3	F3	F2	F2	F2			H1	HL11	L1	L1	L2	L2	L2	L2	HL11	L3	F1				F1		F1
5		F1	F2	F2					L1	L2	HL11	L2	L2	L2	L2	L2		F2						
6	F1							H2	L2	L2	CL21	L2	L2	L3	L2	L2						F3	F2	F2
7		F3	F2		F1				L1	L1	L2	L2	L2	L1	L2	CL11		F2	F2	F3	F3	F2	F2	
8					F1			H2	HL32	HL12	CL12	L2	L2	L2	L1	HL22	CL32	F3	F3	F2	F3			
9								H2	HL11	L1	L1	L2	L2	L2	L2	HL11	HL21		F2	F2	F2	F1		
10								C2	L2	L2	HL12	HL11	L2	CL11	HL22	HL21	C3	F2				F1	F1	
11								H2	L2															
12																								
13												L2	CL11	L1	L2	HL11								
14	F1	F2						H2	L2	HL11	CL11	HL11	CL11	L2	HL11		H2	F1						
15								HL22	L2	HL11	HL12	CL11	HL11	CL11	HL11	CL32	C3			F3	F3	F3		F3
16	F1	F2	F2					H2	H2	C2	L2	L2	L2	L2	L2	CL31		F2						
17						F2	F1	H2	L1	L2	L1	HL11	L1	CL11	L2	L2	L3	F2						
18				F1			F1	H1	L1	L2	HL12	L2	L3	L2	L2	HL12	C2	F1		F3				
19								H3	CL22	CL22	CL22	L2	CL11	L3	L3	CL12	L2	F2	F4	F1	F2			
20	F2							H2	HL22	CL12	CL11	L2	L1	L2	HL11	L2	L2	F2			F1		F2	F2
21	F3	F1	F2	F1	F2	F1	F2	HL21	H2	HL23	CL22	HL11	CL11	HL11	HL21	L2								
22		F3	F2	F1				H2	HL11	HL11	HL21	HL21	HL11	HL11	CL21	CL21	C2	F1				F1	F2	F1
23			F1					H2	CL22	CL22	CL21	CL31	CL31	L2	L2	HL12	C1				F4	F3	F1	
24		F2	F2	F2	F1		F1	H2	H2	HL21	CL11	CL21	CL11	H2	CL21		L2				F2	F2	F2	F1
25	F2	F1	F2					H2	HL11	HL11	CL21	HL11	CL11	L1	HL11	CL22	L3	F2	F2	F2	F2	F2	F3	F4
26	F2	F1	F1	F2		F1		H2	HL22	HL11	CL11	CL11	L3	L3	L2	L2	L2	F3		F2				
27								H2	L2	L2	L1	L2	L2	L2	L2	L2	L2	F1	F1					
28		F1	F1	F2	F1				L2	CL22	CL12	L1	L1	L2	L2	L2	L2	F3	F2					
29						F1	F1	H3	H1	HL11	CL11	CL11	CL11	L1	L2	CL22	C2						F3	F2
30	F2	F2	F2					H2	H1	HL12	CL11	CL11	L2	L2	L2	L3	L3	F3	F3	F2	F1		F1	F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 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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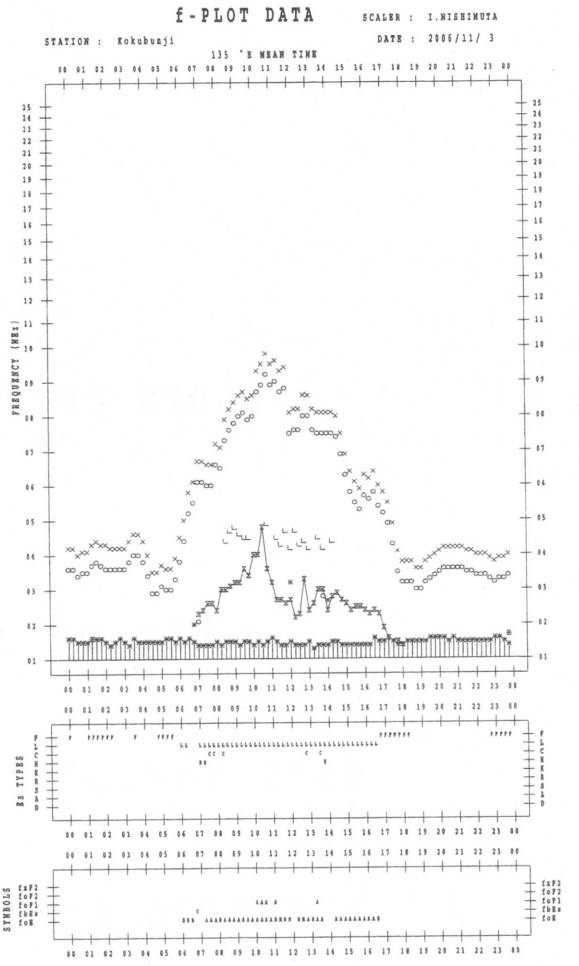
STATION : Kokubunji
DATE : 2006/11/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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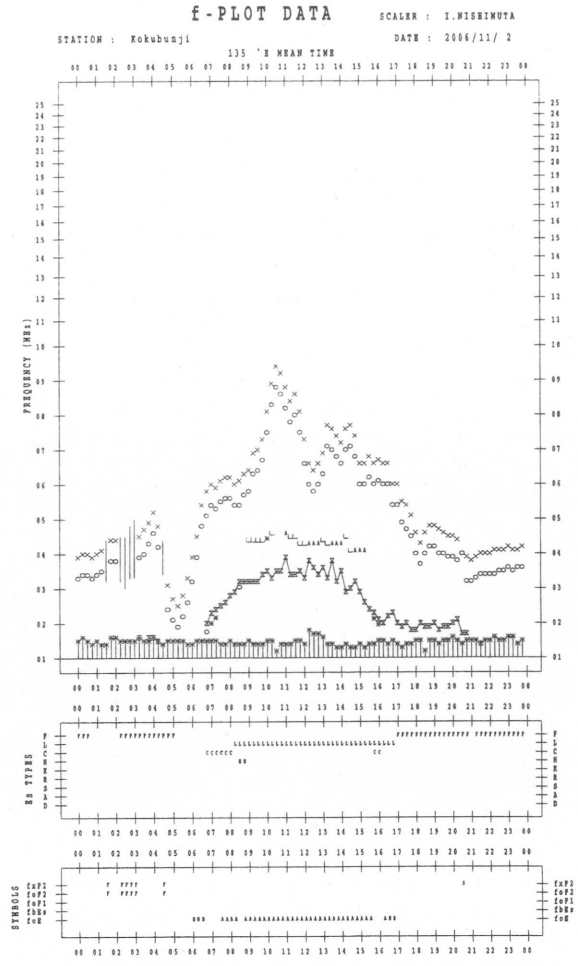
STATION : Kokubunji
DATE : 2006/11/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2006/11/ 2
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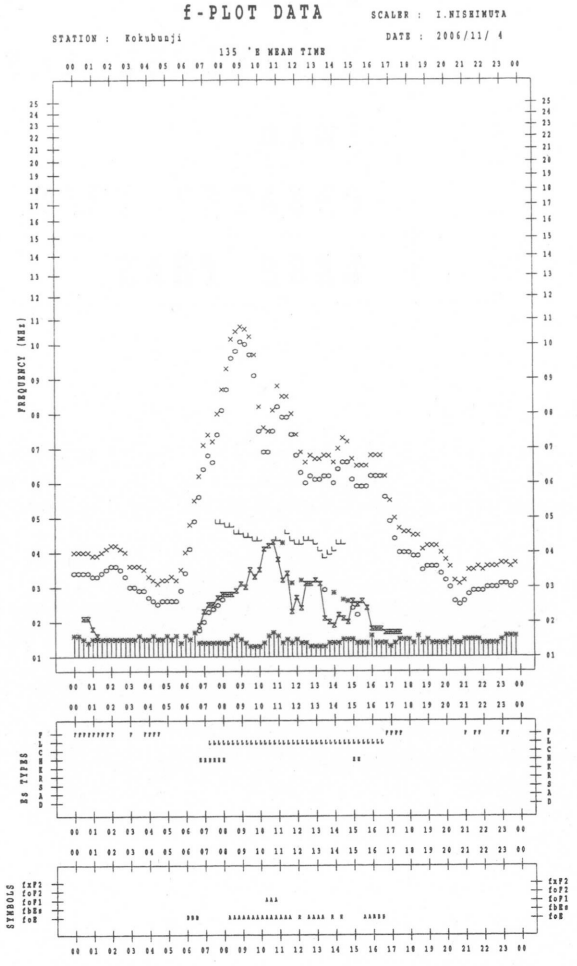
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
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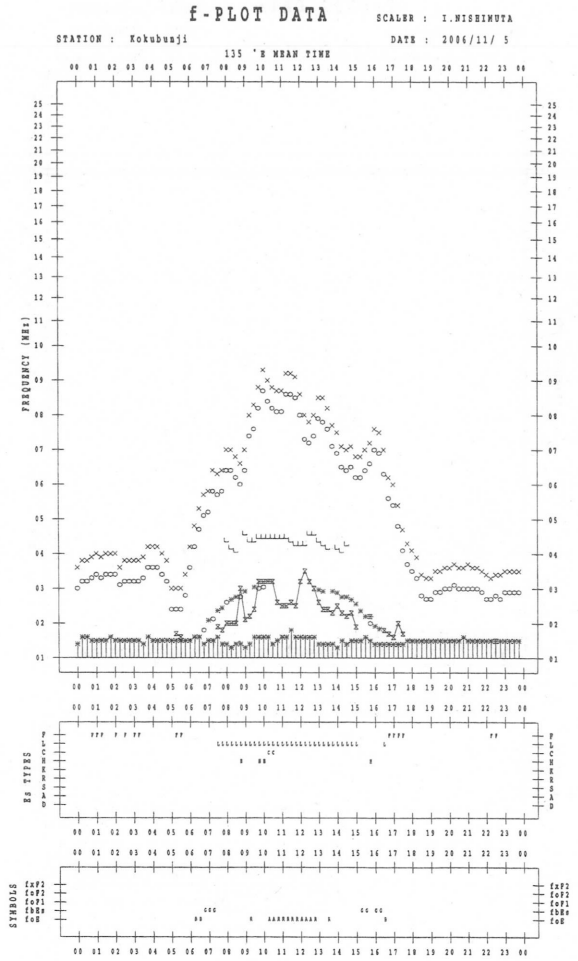
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
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FREQUENCY (MHz)
Es TYPES
SYMBOLS
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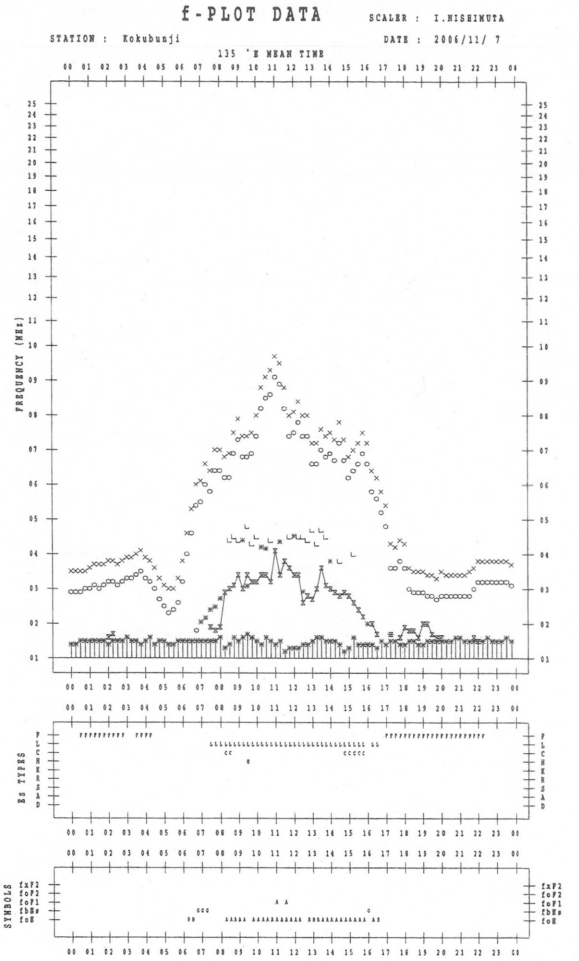
foF2
foF1
fbEs
foE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FREQUENCY (MHz)
Es TYPES
SYMBOLS
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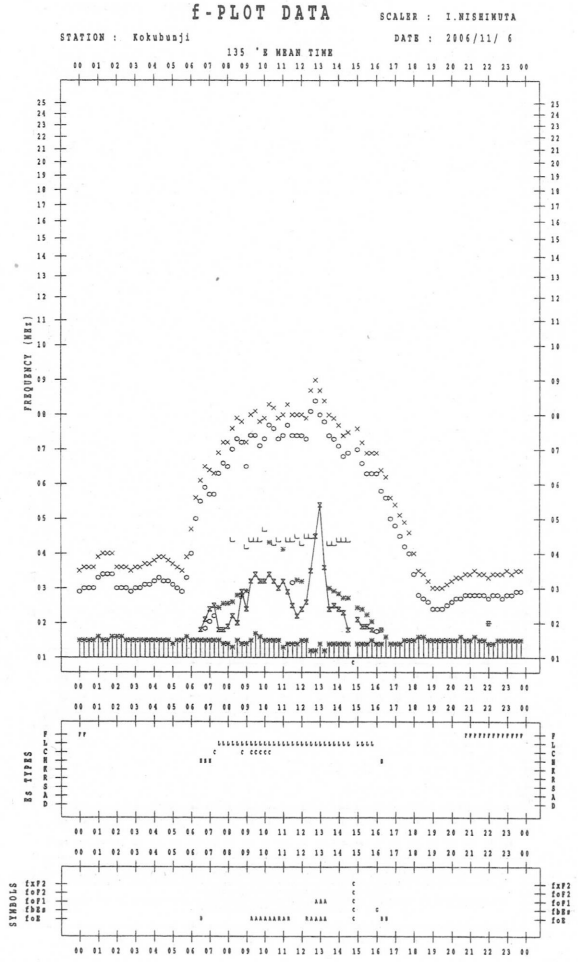
foF2
foF1
fbEs
foE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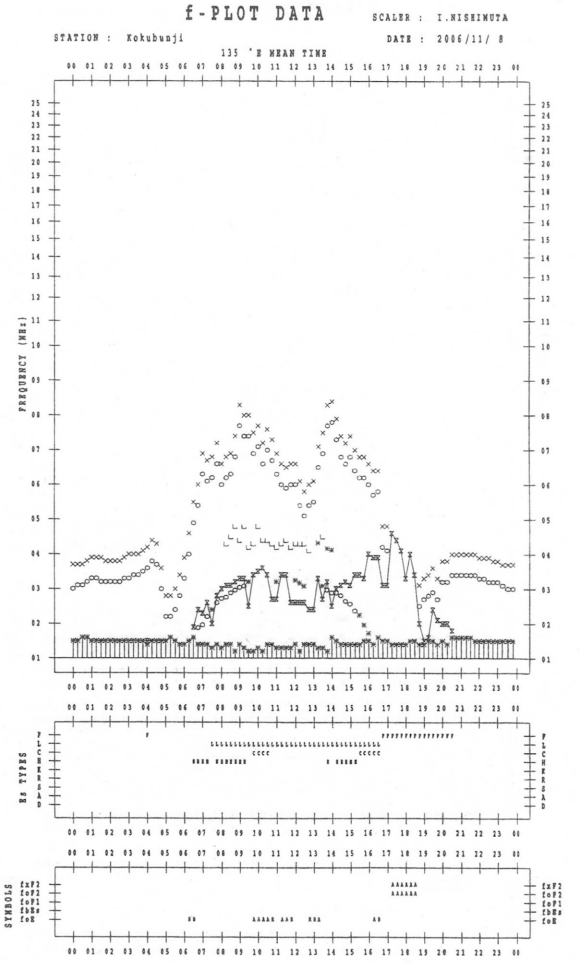
STATION : Kokubunji
DATE : 2006/11/ 6
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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STATION : Kokubunji
DATE : 2006/11/ 8
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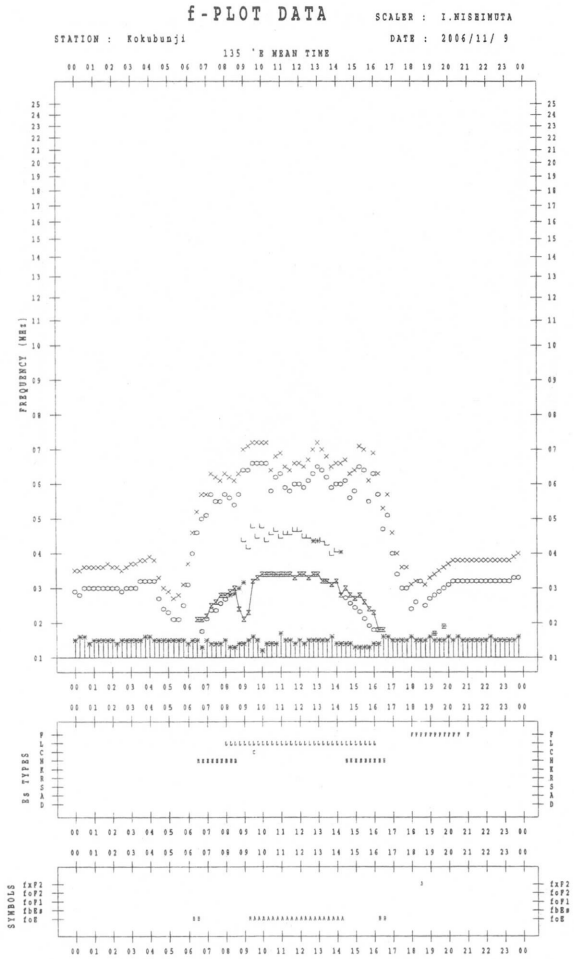
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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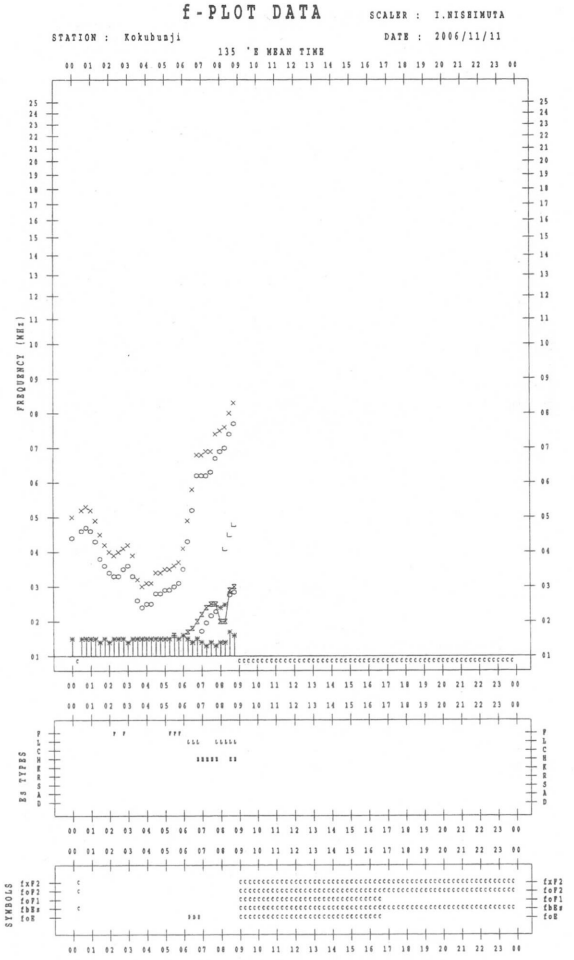
DATE : 2006/11/ 9
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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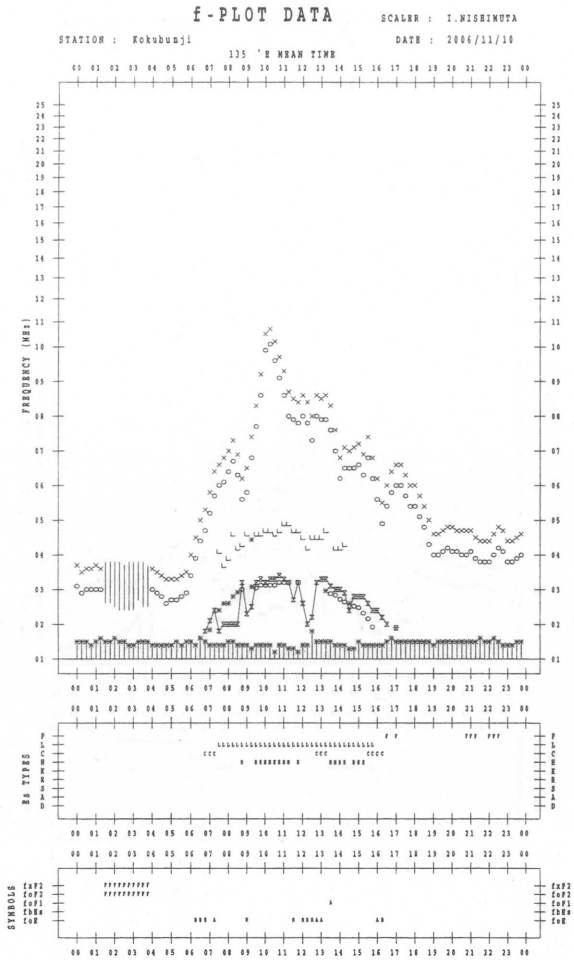
STATION : Kokubunji
DATE : 2006/11/11
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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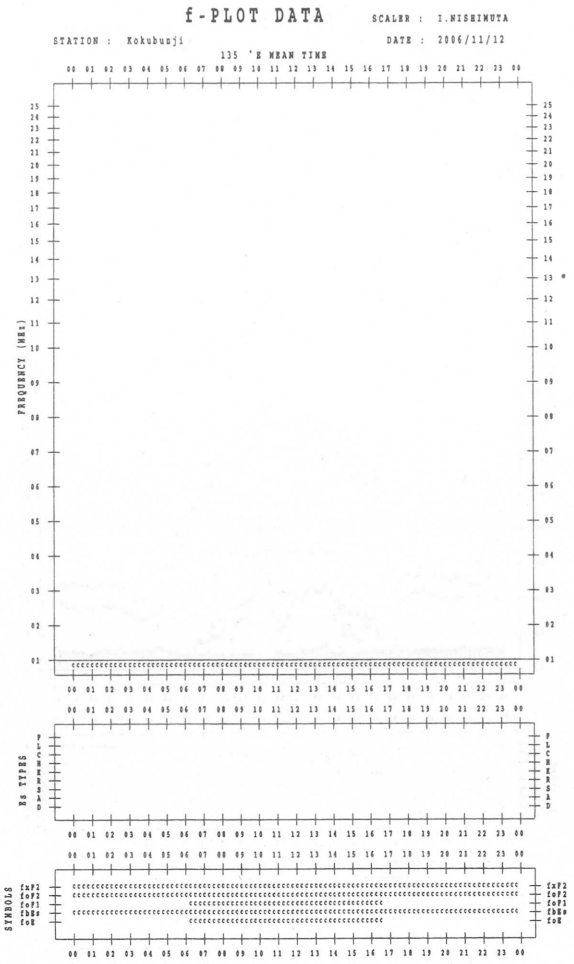
STATION : Kokubunji
DATE : 2006/11/10
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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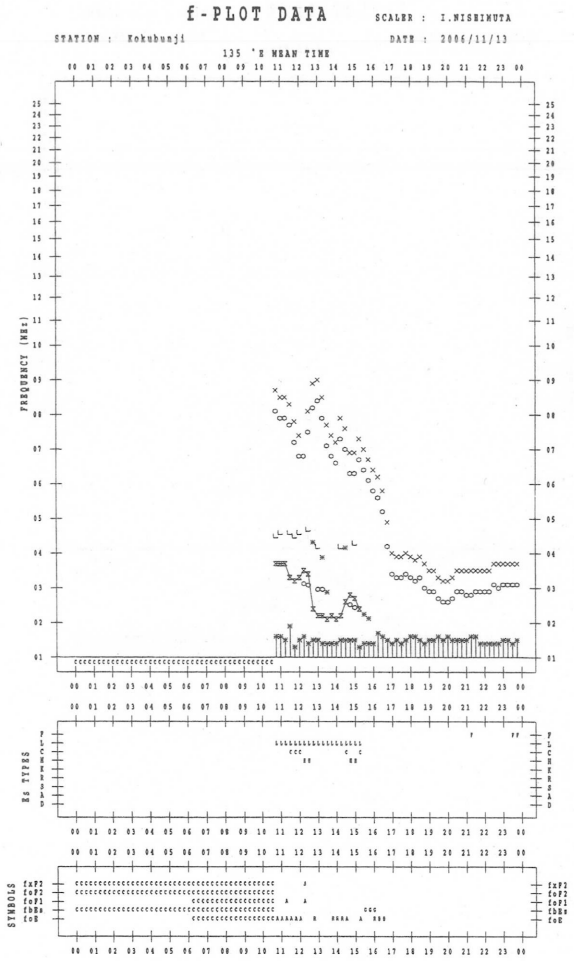
STATION : Kokubunji
DATE : 2006/11/12
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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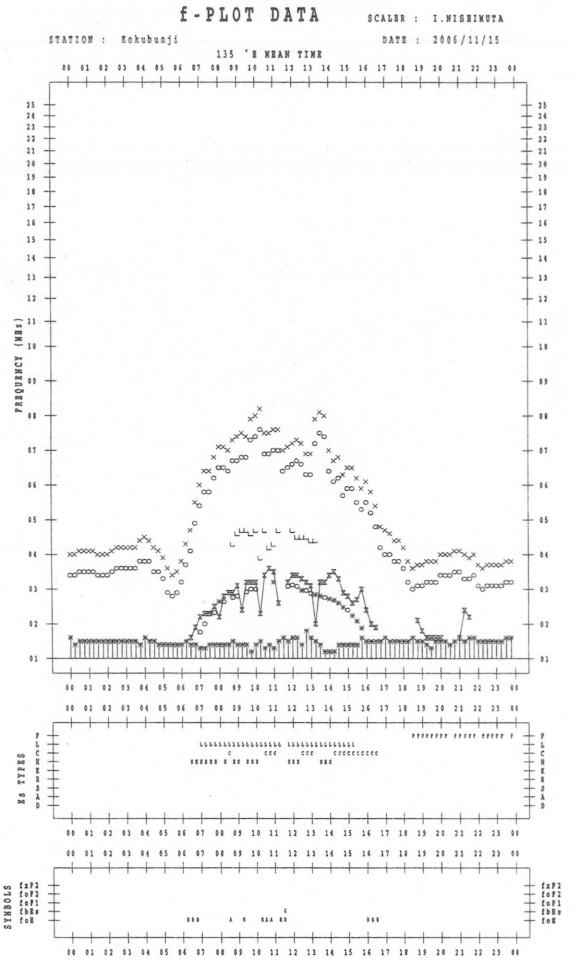
STATION : Kokubunji
DATE : 2006/11/13
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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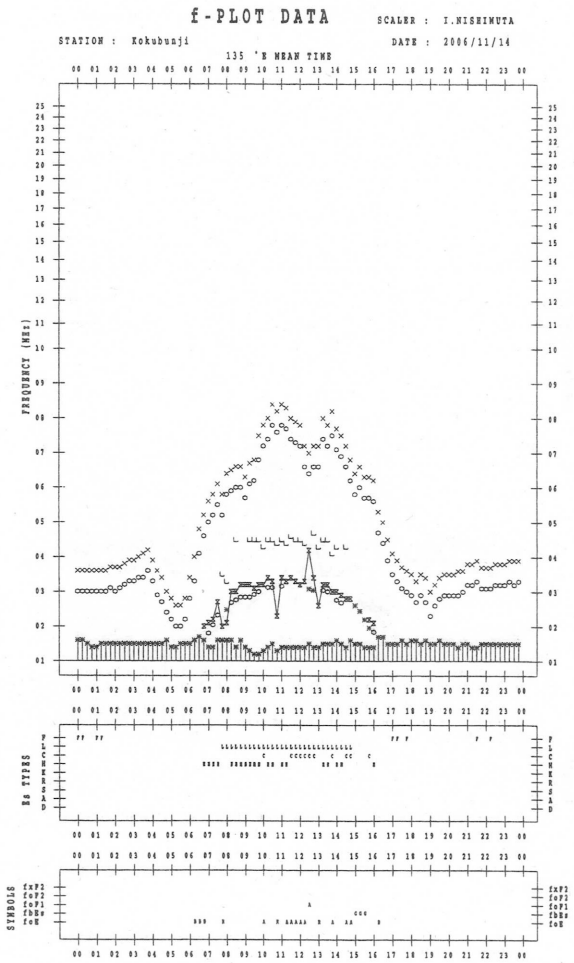
STATION : Kokubunji
DATE : 2006/11/15
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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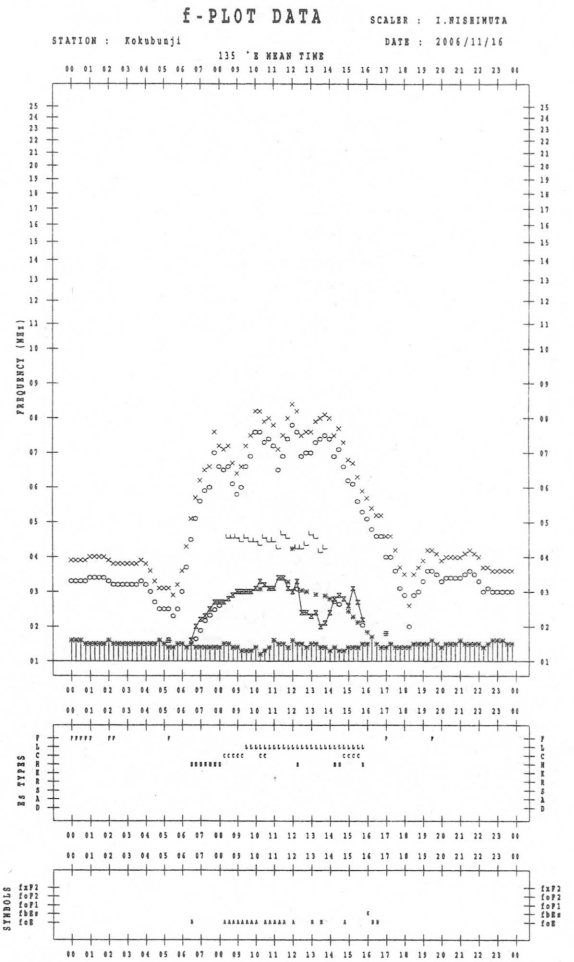
STATION : Kokubunji
DATE : 2006/11/14
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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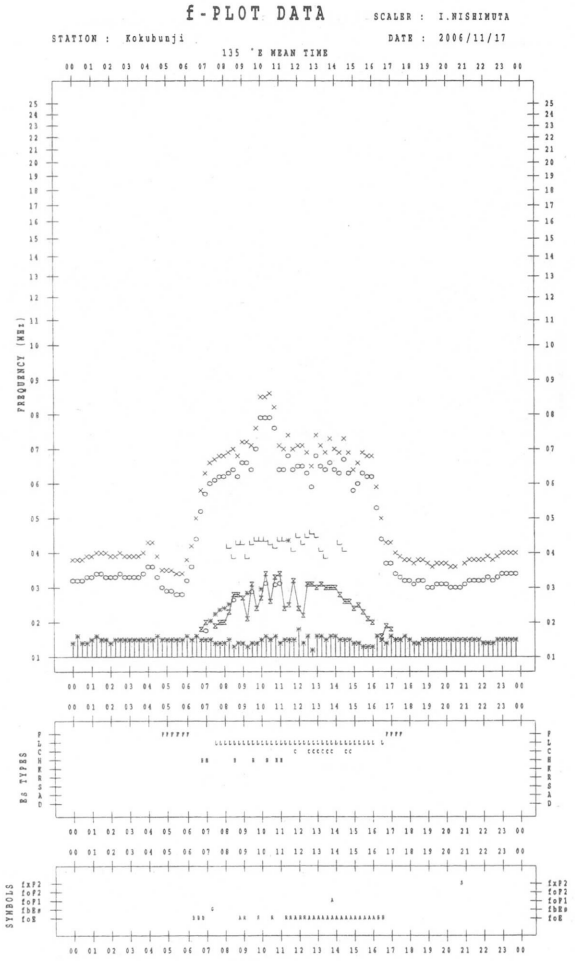
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2006/11/16
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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STATION : Kokubunji
DATE : 2006/11/17
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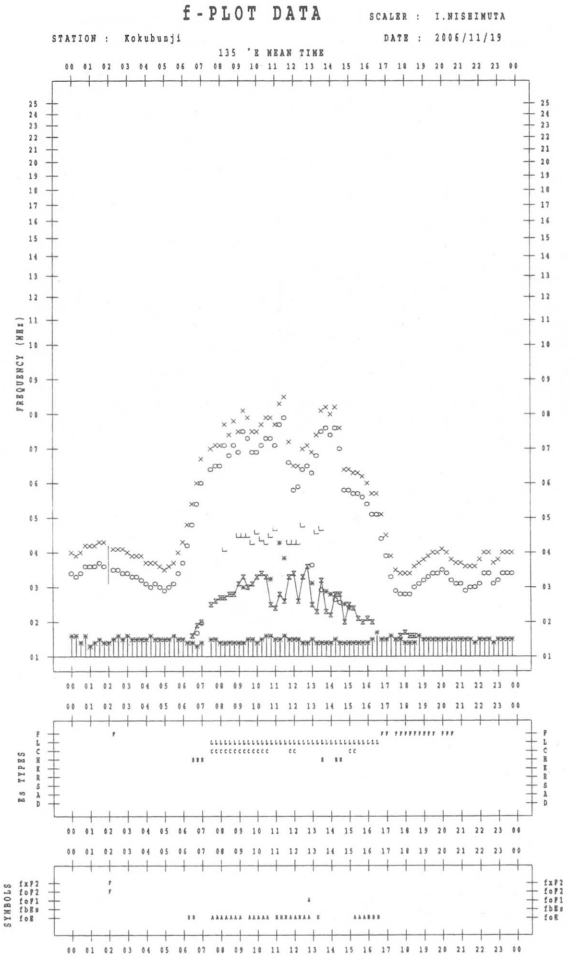
FREQUENCY (MHz)
Es TYPES
SYMBOLS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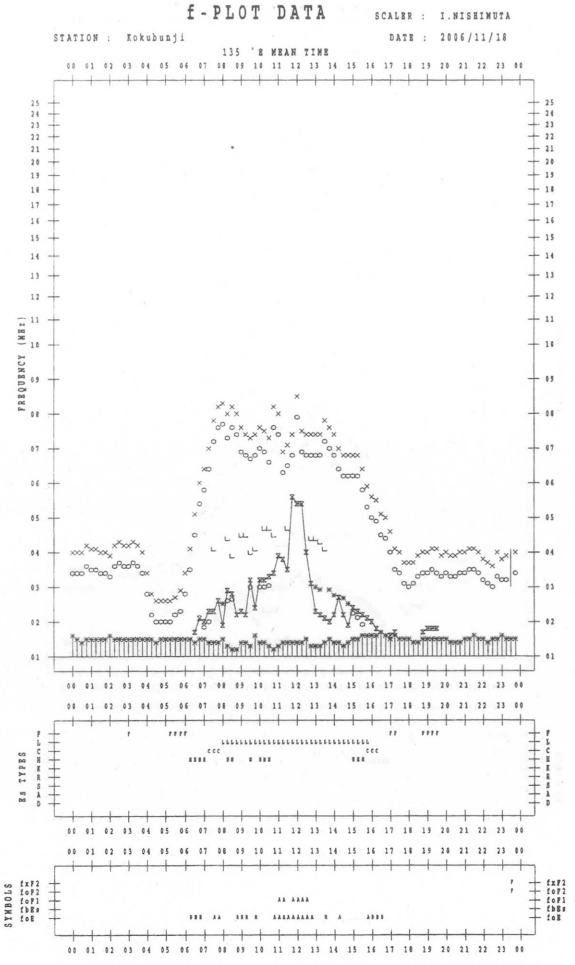
STATION : Kokubunji
DATE : 2006/11/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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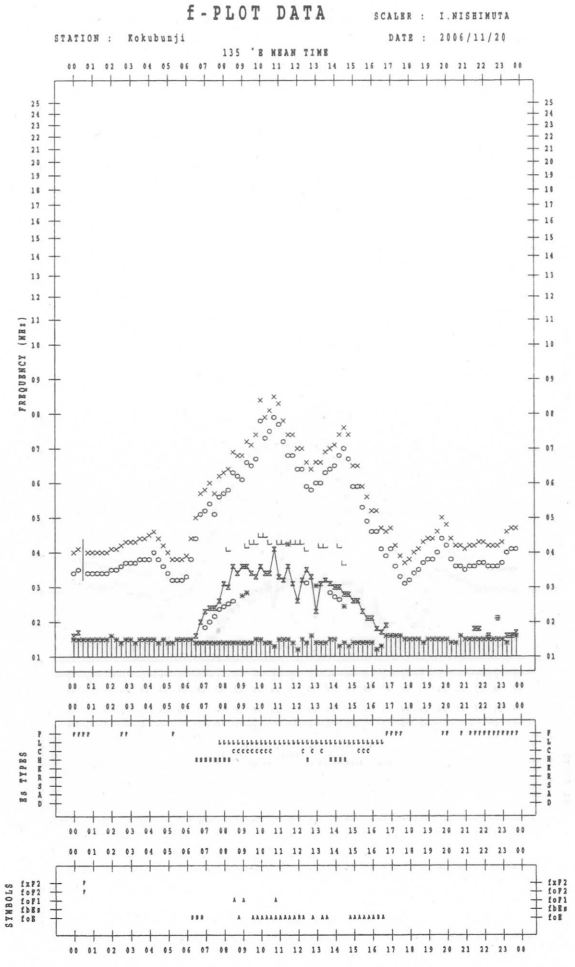
STATION : Kokubunji
DATE : 2006/11/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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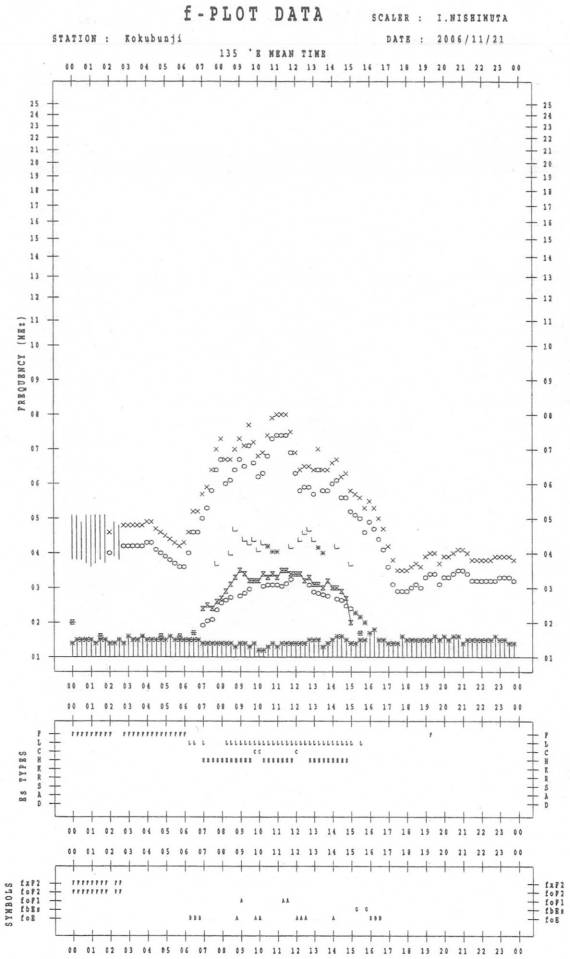
STATION : Kokubunji
DATE : 2006/11/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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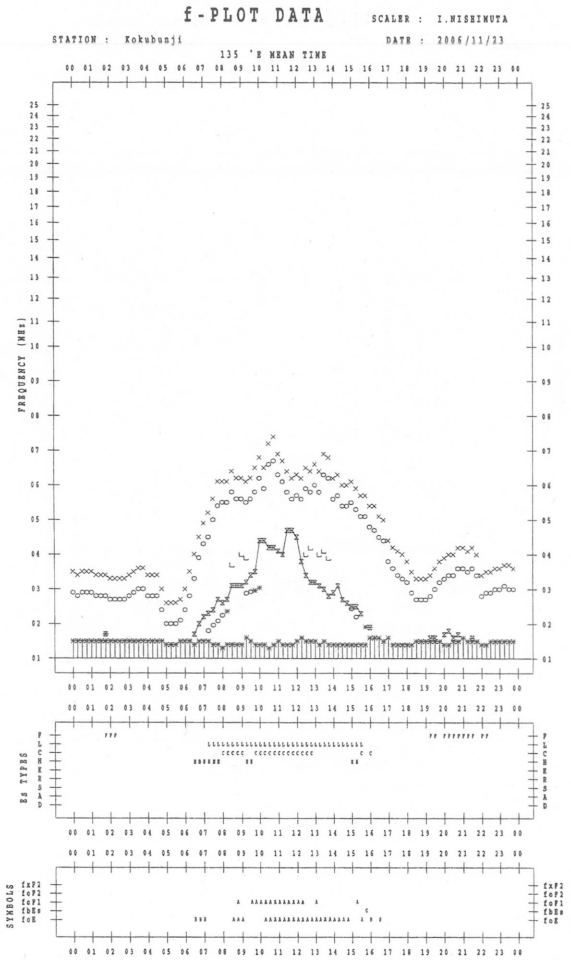
STATION : Kokubunji
DATE : 2006/11/21
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS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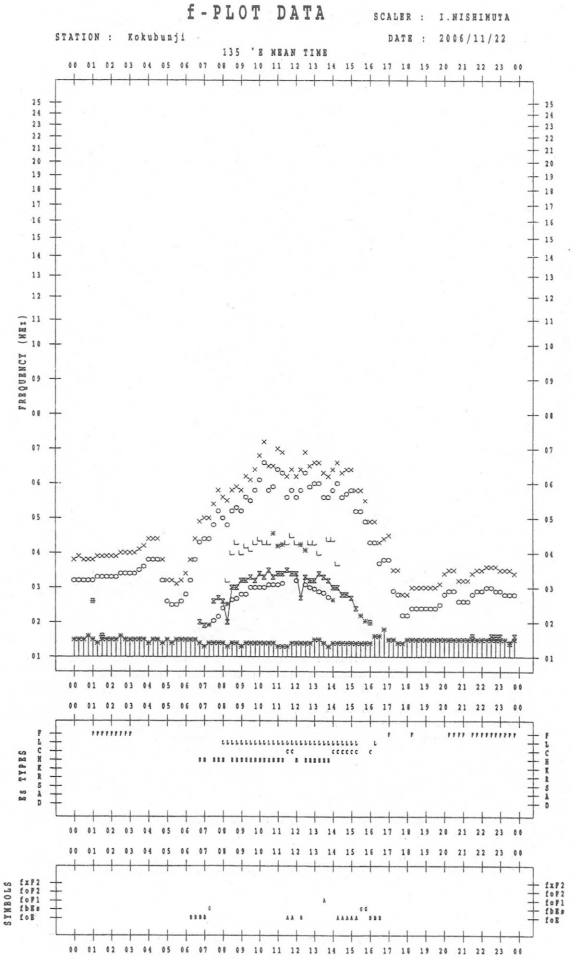
STATION : Kokubunji
DATE : 2006/11/23
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS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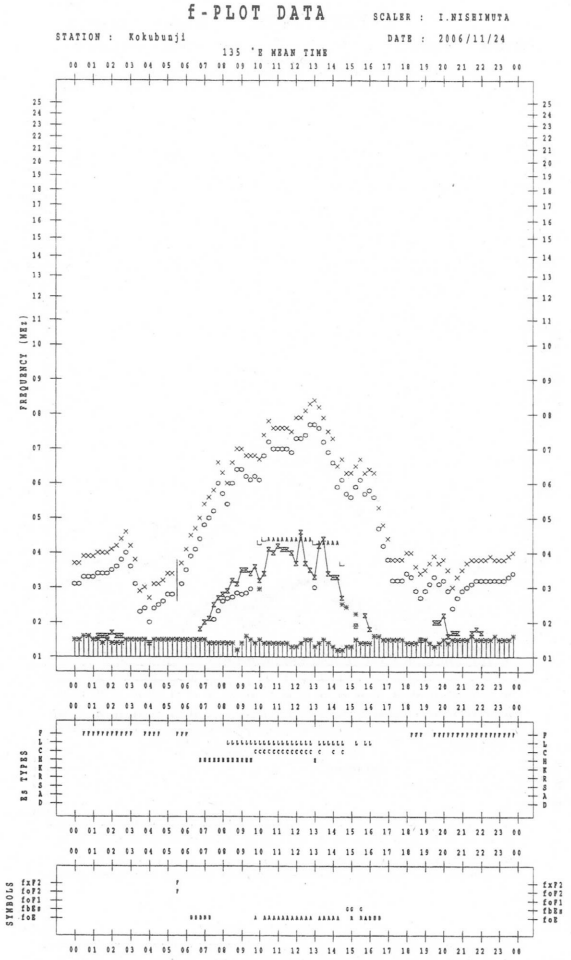
STATION : Kokubunji
DATE : 2006/11/22
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS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STATION : Kokubunji
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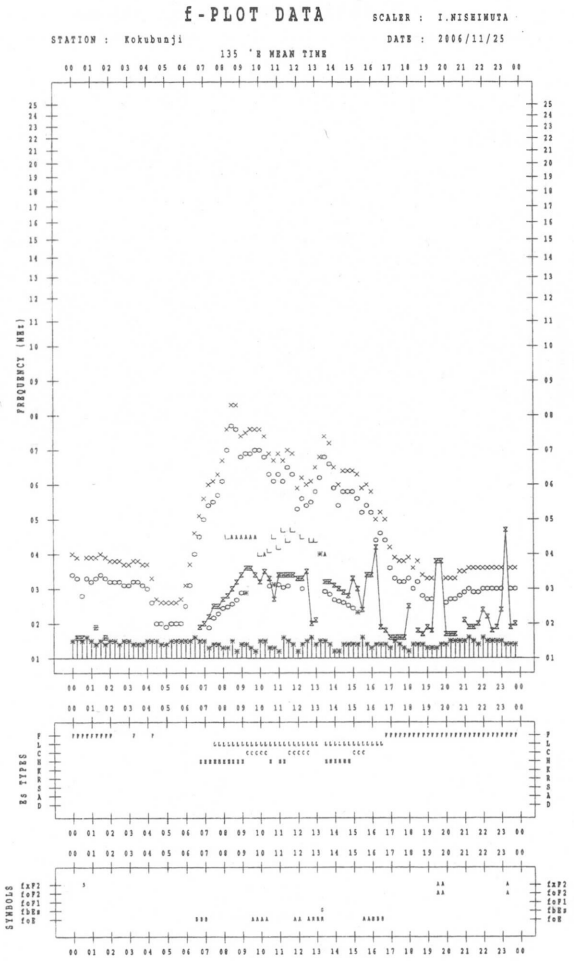
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS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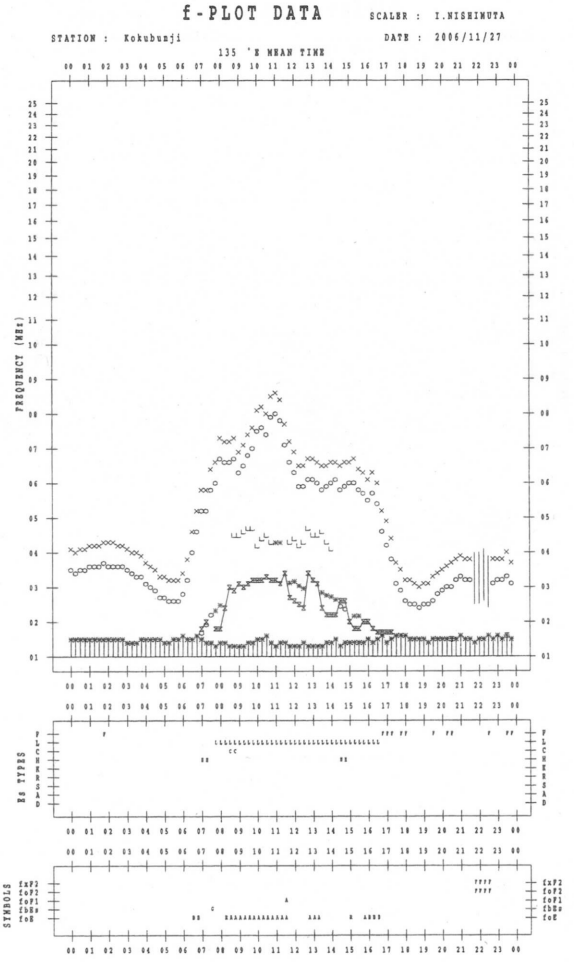
STATION : Kokubunji
DATE : 2006/11/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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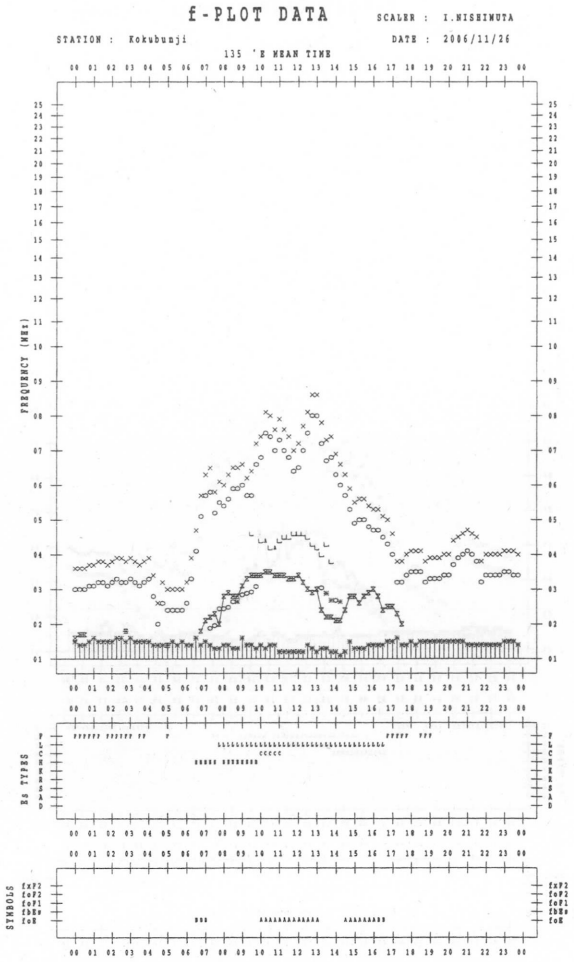
FREQUENCY (MHz)
Es TYPES
SYMBOLS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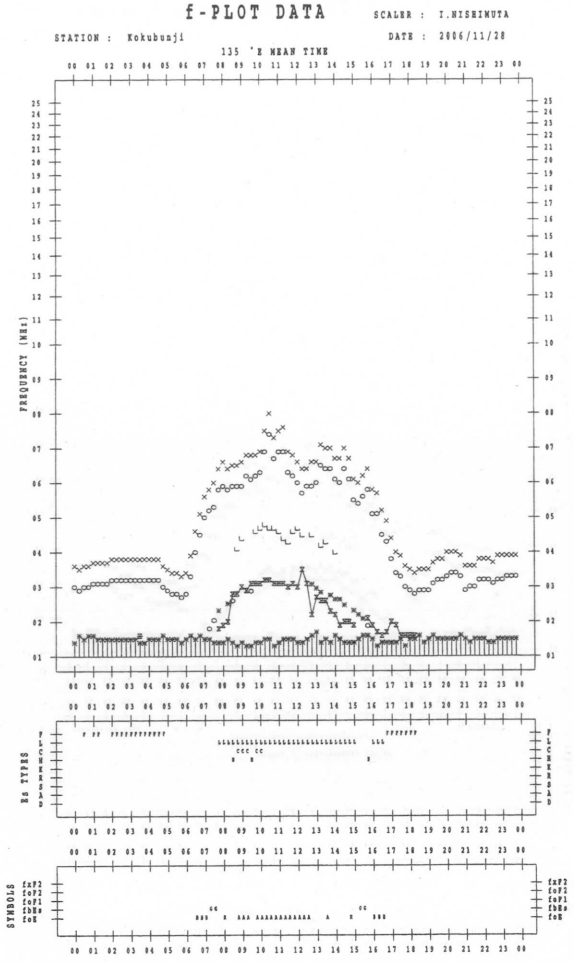
FREQUENCY (MHz)
Es TYPES
SYMBOLS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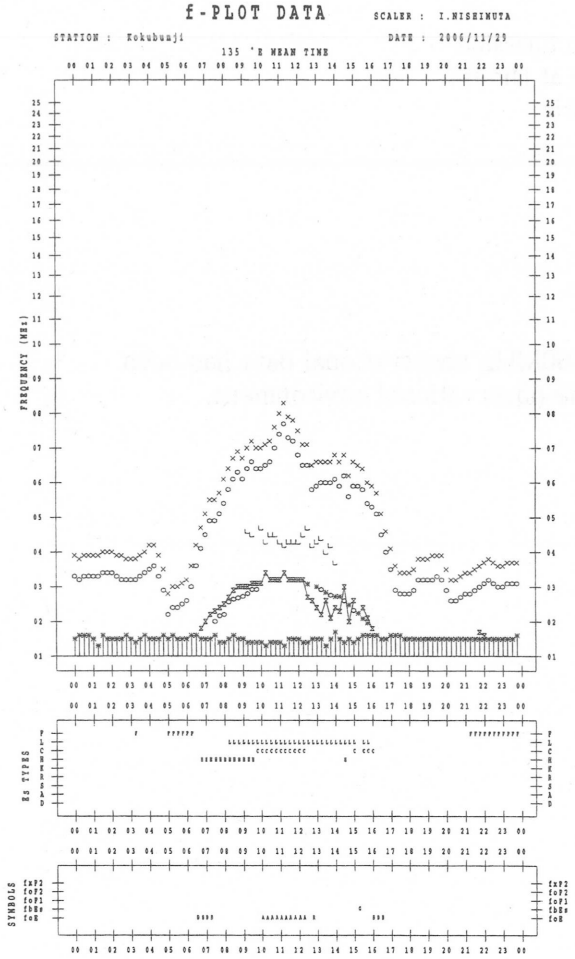
FREQUENCY (MHz)
Es TYPES
SYMBOLS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FREQUENCY (MHz)
Es TYPES
SYMBOLS
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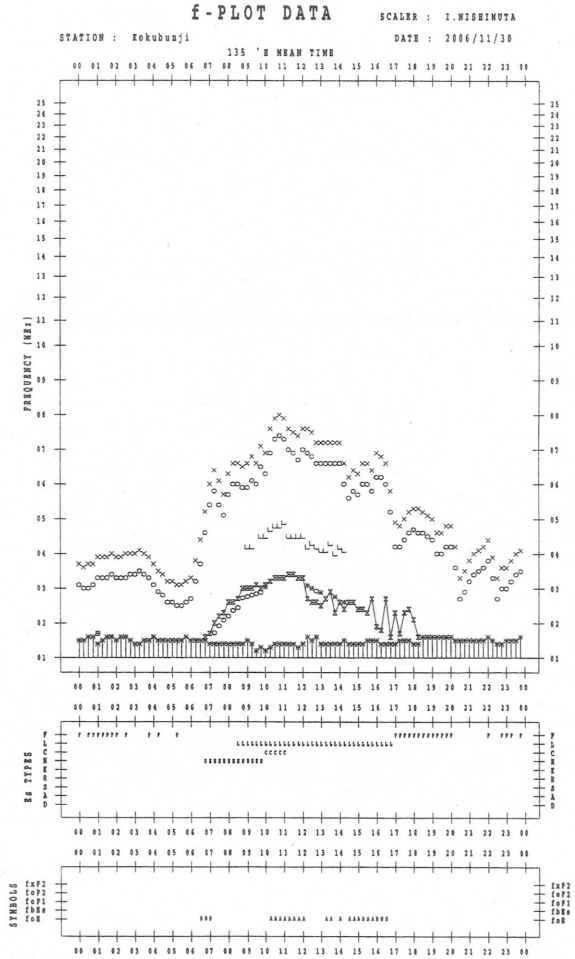
foF2
foF1
fbEs
foE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STATION : Kokubunji
DATE : 2006/11/30
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

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 November 2006

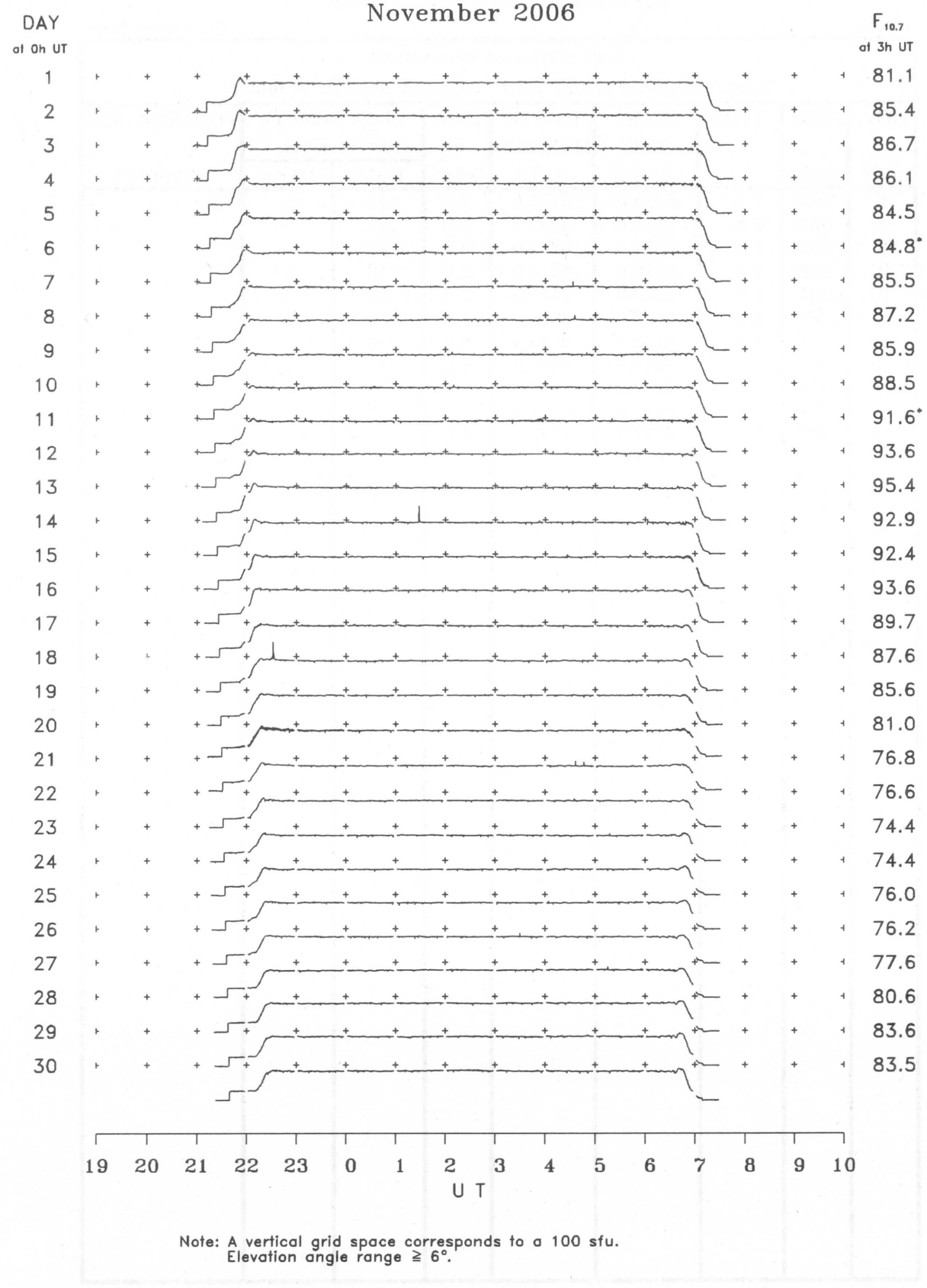
Single-frequency observations

Normal observing period: 2110 - 0735 U.T. (sunrise to sunset)

NOV.	FREQ.	TYPE	START TIME	TIME OF MAXIMUM	DUR.	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1})		POLARIZATION
2006	(MHz)		(U.T.)	(U.T.)	(MIN.)	PEAK	MEAN	REMARKS
6	2800	1 S	0135.0	0136.0	2.0	10	-	
8	2800	8 S	0435.0	0435.0	1.0	15	-	
9	2800	1 S	0207.0	0209.0	2.0	10	-	
10	2800	1 S	0210.0	0210.0	2.0	10	-	
10	2800	1 S	2310.0	2311.0	2.0	10	-	
13	2800	8 S	0603.0	0603.0	1.0	15	-	
14	2800	8 S	0128.0	0129.0	1.0	50	-	
15	2800	8 S	0426.0	0426.0	1.0	10	-	
17	2800	4 S/F	2230.0	2232.0	4.0	50	-	
21	2800	8 S	0437.0	0437.0	1.0	15	-	
21	2800	8 S	0447.0	0447.0	1.0	15	-	

B. Solar Radio Emission

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



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

IONOSPHERIC DATA IN JAPAN FOR NOVEMBER 2006
F－695　Vol.58　No.11（Not for Sale）

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☎（042）（327）7540（直通）

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National Institute of Information and Commnications Technology
2-1 Nukui-Kitamachi　4-chome,　Koganei-shi,　Tokyo 184-8795 JAPAN