

IONOSPHERIC DATA IN JAPAN

FOR APRIL 2006

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« Real time Ionograms on the Web	http://wdc.nict.go.jp/index.eng.html »

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 f_xE 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

fxl	Top frequency of spread F trace
$foF2$ $foF1$ foE $foEs$	Ordinary wave critical frequency for the $F2$, $F1$, E and Es including particle E layers, respectively
$fbEs$	Blanketing frequency of the Es layer, e.g. the lowest ordinary wave frequency visible through Es
$fmin$	Lowest frequency which shows vertical ionospheric reflections
$M(3000)F2$ $M(3000)F1$	Maximum usable frequency factor for a path of 3000 km for 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 replace 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 atmospheric.
- 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 $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$ 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

SGD Code	Letter Symbol	Morphological Classification
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

APR. 2006

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

$\begin{matrix} H \\ D \end{matrix}$	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	54	48	47	54	48	44	48	53	56	60	67	70	63	60	63	59	58	54	57	52	55	51	50	39	
2	41	42		40	40	40	45	48	56	62	70	66	61	61	61	61	55	54	60	54	54	53	38	42	
3	40	43	40	40	41	42	44	52	62	64	63	66	62	57	56	61	58	58	49	54	54	42	40	42	
4	44	42		32	41	47	51	56	64	70	60	63	60	64	64	60	56	62	64	64	54	54	53	40	
5	45	44	42	41	43	45	53	49	61	60	71	49	71	70	70	66	65	66	70	66	52	51	44	43	
6	44	40	36	A	A	29	34	42	48		A	A	39	43		45	51	60	52	A	A		A	A	
7		34	36	31	35	28	A	A	50			49	57	60	60	57	65	55	55	56	A	54	37	45	
8	43	40	40	34	40	34	39	47	63	61	64	68	66	61	61	57	56	56	61	63	53	53	51	41	
9	47	44	40	44	40	42	55	50	59	62	62	66	67	67	75	74	57	72	78	82	66	62	45	42	
10	46	44	52	40	38	34	42	36	39				A		39	60	54	52	48	52	53	44	43	41	
11	42	42	32	32	26	35	45	52	54	52	57		59	65	65	61	56	54	53	53	51	54	45	42	
12	43	40	43	42	41	46	50	53	52	61		62	61	69	61	C	C	C	C	C	C	C	C	C	
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		62	57	52	59	53	60	52
14	46	37	43	41	41	41	44	46	55	57	64	63	71	67	66	62	74	73	71	76	79	66	54	43	
15	34	A	A		A	A	38	29		32			A	39		47	45	45	A	40	40	37	36	26	
16			A	A	A	A	A	39		A	A			36	43	51	51	52	A	41	41	40	37	34	
17	34	34	34	32	30	37	43	44	56	46	56	63	62	63	62	62		58	51	51	50	46	42	32	
18	32	34	34	30	25	38	45	50	53	56	58	62	63	72	68	66	63	56	54	53	45	41	42	44	
19	38	36	36	34	28	40	47	50	52	61	70	63	58	63	62	67	68	62	60	52	54	54		40	
20	44	43	43	44	40	36	44	43	45	58	60	56	63		60	64	64	64	60	59	54	42	40	44	
21	39	42	38	40	35	42	47	54	58	58	69	52	54	65	61	61	64	64	63	66	66	63	63	48	
22	47	39	42	45	42	47	54	52	60	60	61	57	58	62	72	74	66	61	55	52	53	54	54	46	
23	44	42	40	38	34	41	47	57	61	62	60	57	59	62	62	65	62	66	66	72	54	54	55	45	
24	51	44	43	47	40	45	47	48		57	57	56	57	59	56	57	55	55	54	52	61	54	53	44	
25	42	44	45	44	44	46	50	56	57	64	65	61	65	62	54	61	A	68	71	65	62	54	52	44	53
26	44	34	45	44	45	45	52	60	54	64	66	62	60	63	66		68	71	65	62	54	52	44	53	
27	45	45	44	44	42	47		52	56	61		58	62	66	67	68	67	66	65	52	53	42	44	52	
28	40	44	45	43	45	50	50		62	63	59	72	66	64	A	71	71	71	73	78	65	61	53	53	
29	51	51	41	47	42	44	26	45		60		59	62	62	63	61	58	58	54	61	52	54	53	54	
30	44	45	36	44	45	51	55	57	61	62	66	70	76	67	65	62	61	58	62	73	66	66	53	45	
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	25	26	26	27	26	27	25	25	21	24	26	27	26	27	27	29	27	28	27	28	27	28	
MED	44	42	41	41	40	42	47	50	56	61	63	62	62	63	62	61	58	60	60	55	54	53	45	44	
U Q	46	44	43	44	42	46	50	53	61	62	66	66	65	66	66	66	65	65	65	66	61	54	53	45	
L Q	40	39	36	34	35	37	44	45	52	57	59	57	59	60	60	59	55	55	54	52	52	43	42	41	

HOURLY VALUES of fEs AT Wakkanai

APR. 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	G	G	G	G	G	G	42	51	42	G	39	G	G	G	39	34	G	34	26	30	G		
2		29	26	37	33	G	25		G	G	44	48	43	G	G	G	G	G	G	G	G	G	G	G	G		
3		G	G	G	G	G	G	32	32	36	G	G	G	G	G	G	G	34	G	G	G		11	38	31	G	
4		29	G	39	G	G	G	G	G	35	40	G		G	G	G	G	G	G	G	G	G	G	G	G		
5		G	G	G	G	G	G	29		39	42	40	G	G	G	38	G		G	G	G	G	G	G	G		
6		G	G	G		45	70	26	30	32	45	45	50	47	52	G	G	G	G		40	60	60	49	43	49	
7		46	26	29	38	26	32	47	51	42	39	46	46	41	39		G	G	43	41	35	32	43	34	39	24	
8		25	G	G	G	G	G		37	G	G	G	G	G	G	G	G	G	G		27	G	G	G	G		34
9		G	24	G	G		27	28	G	G	G	G	G	G	G	G	G	G	G	G	G		25	27	28	G	
10		G	28	33	29	28	26	G	G	G	G	G		42	44	G	G	34	G	G		29	28	G	G	24	
11		G	G	G	G	G	G	G	G	G	G	G		G	43	G	G	G	G	G	G	G	G	G	G	G	
12		G	G	G	G	G	G		33	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	
13		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		34	32	26	26	N	G	24	
14		G	G	G	G	G	G	G	G	42	G	G	G	G	G	G	36	G	G	G	G	G	G	G	G	G	
15		G	28	37	32	40	32	G	G	G	G	G	G	40	G		G	G	34	38	G	G	G	G	G	G	
16		G	24	38	39	54	42	45	G	G	46	42	G	40	40	G	G	G	30	57	29	G	G	G	G	G	
17		G	G	G	G	G	G	G	G	G	G	G	40	G	G	G	G	G	G	G	G	G	G	G	G	G	
18		G	G	G	G	G	G	G	G	G	G	G	G	G	64	G	G	G	G	G	G		31	39	27	G	
19		G	G	G	G	G	G	G	39	G	G	G	G	G	G	G	G	G	G	G	G		29	35	38	27	G
20		G	G	27	G	G	G	34	41	G	G	45	49	45	49	45	G	40	36	33	33	36	35	38	33	G	
21		G	G	G	G	G	G	G	G	G	G	G	G	49	G	G	G	41	35	28	G	29	37	43	G	G	
22		G	G	G	G	G	G	G	G	G	40	G	G	46	40	G	G		36	28	G	G	G	G	G	24	
23		G	G	G	G	25	G	34	39	G	G	G	G	G	G	50	G	G	46	43	G	G		33	40	32	
24		G	28	G	G	G	G	G	G	37	G	G	G	G	39	G	G	G	33	29	30	27	G	G	G	G	
25		G	G	G	G	G	G	G	34	G	45	50	G	47	G	G	G	G	G	29	G	26	29	G	G	26	
26		G	G	G	G	G	G	30	35	G	G	52	51	50	46	41	69	46	49	41	27	G	G	G	G	G	
27		G	G	G	G	G	G		35	G	47	G	40	42	48	39	G	G	30	G	G	G	G	G	G	G	
28		G	G	G	G	G	G	G	G	G	39	42	G	G	G	82	38	46	38	36	G	G		30	G	G	
29		G	G	G	G	G	G	G	G	G	48	52	42	52	40	G	G	G	38	37	28	30	G	31	G	G	
30		G	G	G	G	G	G	G	G	G	45	40	G	G	G	G	G	G	37	30	G	27	G	32	29	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	29	29	29	29	24	27	29	29	28	28	29	29	28	28	26	29	29	29	29	28	29	29	29	
MED		G	G	G	G	G	G	G	G	G	G	20	G	G	G	G	G	G	30	28	G	11	G	G	G		
U Q		G	12	14	13	13	13	30	35	18	44	45	41	43	40	19	G	34	36	35	28	29	33	31	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	G	

HOURLY VALUES OF fmin AT Wakkanai

APR. 2006

LAT. 45°23.5'N LON. 141°41.2'E SWEEP 1.0MHz to 30.0MHz AUTOMATIC 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	16	15	15	14	16	14	21	14	14	16	18	16	18	18	15	14	14	14	14	15	15	15	15	15
2	16	15	15	14	18	16	15	14	17	15	17	18	22	18	18	15	14	14	16	15	15	15	15	15
3	14	15	17	14	14	16	22	15	15	15	16	18	18	18	18	17	14	14	15	15	15	15	14	17
4	15	15	15	16	17	15	15	21	15	18	20	20	20	26	23	14	14	14	15	15	16	15	15	18
5	16	16	17	16	15	14	15	15	15	15	20	18	18	17	20	15	15	14	20	14	16	15	15	15
6	15	18	16	14	14	15	14	15	15	17	20	20	20	18	18	18	15	21	14	14	14	14	15	15
7	14	15	15	14	15	14	16	15	14	17	20	18	20	20	17	18	14	14	14	14	15	14	15	17
8	18	16	14	17	15	18	23	14	15	17	17	20	21	21	16	20	14	14	18	16	17	15	17	15
9	20	15	15	15	17	14	22	14	17	18	20	20	20	15	17	17	15	21	17	15	15	15	16	15
10	18	15	14	14	15	15	16	14	15	17	18	20	21	23	22	17	15	14	17	18	15	15	15	15
11	15	14	15	14	15	15	22	15	15	16	17		20	20	14	15	14	14	18	16	15	15	15	15
12	15	18	16	14	14	17	14	14	16	20		21	20	17	17	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		15	14	15	14	15	15
14	15	17	15	14	14	15	14	14	16	16	15	18	20	17	18	14	17	14	15	14	14	14	15	16
15	20	15	14	14	15	14	15	14	16	14	20	21	20	16		14	14	14	15	20	15	14	15	20
16	15	15	15	14	14	15	14	15	17	15	21	21	21	20	18	17	15	14	14	15	15	20	17	15
17	14	14	14	14	14	20	15	16	17	20	20	20	21	21	20	20	17	14	20	15	17	14	15	14
18	17	15	14	15	15	18	23	15	15	18	18	21	21	20	20	16	14	16	20	16	15	14	15	15
19	17	15	14	14	16	15	22	14	16	16	20	21	18	20	20	18	18	14	18	15	15	15	14	14
20	15	15	15	14	16	15	23	14	15	17	20	18	18	21	17	16	14	14	14	14	14	14	14	14
21	15	15	15	15	18	18	15	15	16	23	20	18	18	18	16	15	15	14	14	14	14	14	16	15
22	14	20	15	16	17	20	22	15	15	18	18	21	23	21	22	17	14	14	14	15	16	16	15	15
23	18	15	14	15	14	18	14	14	18	18	17	21	20	18	18	17	17	15	14	15	15	15	14	14
24	14	14	14	15	14	16	15	14	16	21	16	18	20	18	17	15	14	14	15	14	16	15	15	17
25	15	15	16	15	14	20	14	15	18	15	17	22	21	20	17	16	14	15	15	17	15	14	15	15
26	15	20	14	15	15	20	15	14	17	15	17	17	17	21	18	16	14	14	14	15	15	15	14	16
27	15	16	15	14	14	18		14	17	16	18	21	17	18	16	14	14	14	17	14	17	15	15	15
28	15	15	15	15	15	17	14		15	16	18	17	23	20	20	16	15	14	14	15	15	15	15	15
29	14	15	15	15	15	18	14	16	15	21	18	17	21	20	17	14	18	14	14	15	18	15	15	15
30	16	14	15	14	16	15	15	16	17	20	18	54	24	21	16	20	14	14	15	15	14	14	15	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	28	28	29	29	28	28	29	29	28	28	28	29	29	29	29	29	29	29
MED	15	15	15	14	15	16	15	14	16	17	18	20	20	20	18	16	14	14	15	15	15	15	15	15
U Q	16	16	15	15	16	18	22	15	17	18	20	21	21	21	20	17	15	14	17	15	16	15	15	16
L Q	15	15	14	14	14	15	14	14	15	15	17	18	18	18	17	15	14	14	14	14	15	14	15	15

HOURLY VALUES OF foF2 AT Kokubunji

APR. 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	33	38	46	43		36	45	54	66	63	63	70	72	63	53	66	64	67	69	62	54		39			
2	39		37	34	31	34	47	55		64	71	72	85	71	58	66	66	59	61	65	52	44	45	35		
3	38	38	37	36		32	47	59	63	61	67	66	66	65	62	63	58	59	63	66	58	43	43	42		
4	38	37	36	36	32	34	48	57	67	63	58	67	68	65	66	68	62	58	66	73	53	46	48			
5	44		36	41	42	42	54	73	61	64	67	73	75	81	71	81	82	88	84	71	52	54	50	47		
6	50		49	54	34	28	38	55	58	70	77	81		68	66	66	71	77	80	78	48		A	A		
7	A	A		A	A			48	55	62	65	A	69	70	75	68	72	71	72	78	C	60	51	43	43	
8		44		42	32		48	56	62	69	70	71	81	87	77	71	67	62	71	78	66	46	42			
9	32	42	39	41			52	60	65	65	72	75	74	74	74	92	82	61	84	82	77	35	38	33		
10		41	42	36	30	35	47	48	56		62	68		74	62	67	66	61	58	54	63	34	32	36		
11	36	38	43	28		34	49	54	54	66	68	77	86	74	78	77	67	69	64	61	54	46	30	36		
12	36	41	42	45		32	59	55	56	59	64	74	76	82	87	78	69	68	59		54	45	42	42		
13			41	41		34	55	56				64	71	78	76	70	65	63	71	71	59	54	51	49		
14	47	46			39	42	60	59	60	61	82	91	87	98	91	89	101	104	95	100	87	88	77	75		
15	106	54		A	34	43	55	59	54	54	48		66	68	72	64	59	61	51	53	54	44	42	A		
16	A	A	A		A	37	42	56			A	A	A	A		63	74	60	55	48	47	37		43	44	
17	36	32	34			34	45	52	59	60	71	66		C	C	C	C	C	C	C	C	C	C	C	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			59	51	52	44	45	47
19	44	37	37	36	32	34	52	59	61	64	66	69	81	76	73	72	75	76	61	58	53	51	51	51		
20	44	C	C	C	C	C	C	C	C	C		71	65	63	67	77	86	75	65	62	64	A		55	53	52
21		54	49	44	36	37		58	61	62	69	64	69	62	75	75	64	61	68	74	65	59	52			
22	53	52	44	44	41	45	53	64	62	64	72	77	76	72	73	104	99	62	51	51	53	54	51	53		
23	49	53	30	34			55	69	59	72	74	73	67	62	66	72	81	81	80		62	44	44	44		
24	44			45		36	52	59	62	62	69	67	67	71	65	66	62	57	68	73	61	54	51			
25	47	48	42	44	34	41	55	56	62	62	68	76	75	78	68	62	62	65	71	77	77	54	43	48		
26	47	44	47	45		36	56	66	66	57	A		75	75	78	75	69	A		76	76	61	A	A	52	
27	53	51	48	43	41	43	60	74	73	63	64	68	72	75	80	90	86	81	78	76	66	52		43		
28	44	48	48	43	38	47	59	57	62	68	68		76	78	75	82	85	87	86	87	77	47	47	51		
29	44			48	28	42	56	62	69	76	70	74	78	78	77	72	69	65	58	64	61	66	54	53		
30	47			43	38	45	58	68	69	71	68	69	77	88	84	82	77	76	73	80	66	61	54	53		
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	19	21	24	16	24	27	28	25	25	25	25	25	27	28	28	28	27	29	26	28	25	26	22		
MED	44	44	42	42	34	36	52	58	62	64	68	70	75	74	73	72	69	65	68	71	60	51	45	47		
U Q	47	51	46	44	38	42	56	61	65	67	71	74	77	78	77	81	79	76	78	77	65	54	51	52		
L Q	38	38	37	36	32	34	47	55	59	61	65	67	68	68	66	66	64	61	60	61	53	44	42	42		

HOURLY VALUES OF fEs AT Kokubunji

APR. 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	G	G	G		G	38	N	G	G	G	G	G	G	43	G	G	G	G	27	G	G	G	G	
2	G		G	G	25	G	G	G		G	G	G	G	G	G	G	G	G	26	G	G	G	G	G	
3	32	G	G	G		G	31	G	G	G	G	G	G	G	G	G	G	G	31	32	G	G	G	G	
4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G	27	G	G		
5	G		G	G	G	G	31	38	43	G	G	48	41	G	G	G	40	34	G	G	G	G	G	G	
6	G		G	G	G	G	32	G	G	52	52	46		G	G	G	G	37	33	24	27		60	36	
7	50	35	36	42	37	27	G	G	50	47	67	50	58	G	G	G	G	G	61	C	31	G	30	G	
8		G		G	G	24	G	G	G	43	G	52	68	G	G	49	47	36	34	29	G	G	27	G	
9	G	G	G	G			G	38	G	G	40	G	G	G	G	G	G	34	32	G	11	G	G	G	
10	27	29	G	G	G	G	G	G	G	40	G	G	G	G	G	G	47	G	G	G	G	26	32	G	
11	G	G	G	G	G	G	31	G	G	G	G	G	60	44	50	40	G	G	41	46		G	G	G	
12	G	G	G	G	G	G	G	G	G	G	45	G	G	G	G	G	G	G	G	G	40	27	G	G	
13			G	G		G	G	G			G	G	G	G	G	G	G	G	G		35	30	39	32	
14	G	G			G	G	G	G	G	G	G	48	G	G	40	43	40	45	26	G	G	G	G	G	
15	G	G	33	33	G	G	G	50	43	G	57	79	57	G	G	G	G	G	G	G	G	G	G	40	
16	71	59	50	60	37		35	49	43	52	80	83	60	61		G	G	G	G	31	25	G		G	
17	G	28	G	34	28	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	24	29
19	G			G	G	G	G	G		43	50	53	53	G	50	G	G	G	60	G	29	27	33	55	49
20	30	C	C	C	C	C	C	C	C	C	59	G	49	42	G	G	47	59	44		80	31	30	31	
21	50	28	G	G	G	G	48	50	47	50	G	51	50	G	G	G	42	48	37	37	59	29	40	43	
22	40	25	25	G	29	G	34	41	46	52	55	G	G	G	G	G	G	G	G	G	G	G	G	G	
23	G	G	G	G		46	32	G	G	G	43	G	50	50	G	G	52	31	G	70	34	23	G	G	
24	50	39	33	31	26	24	36	42	43	47	40	50	48	49	46	50	55	40	G	G	23	29	G		
25	G	G	G	G	G	G	35	G	G	G	G	G	G	G	G	G	G	G	31	29		G	G	26	
26	31	29	G	G		G	G	39	G	51	57	50	G	G	G	38	G	85	47	34	60	60	71	26	
27	G	G	G	G	G	G	G	G	45	40	G	G	45	G	G	G	G	G	G	44	29	26	G	G	
28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	43	37	30	G	34	G	G	G	
29	G		G	G	G	G	G	G	G	G	49	G	G	G	G	G	40	G	G	G	40	G	G	G	
30	G	23			G	G	G	G	43	61	G	G	43	G	G	G	G	G	G	29	27	28	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	27	24	25	27	22	27	28	27	26	27	29	29	27	28	28	28	28	28	29	27	29	27	29	27	
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	23	G	G	G	
U Q	31	28	13	G	25	G	32	38	43	50	52	50	50	G	G	G	40	37	31	32	32	27	30	29	
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	

HOURLY VALUES OF f_{min} AT Kokubunji

APR. 2006

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz to 30.0MHz AUTOMATIC SCALING

$\frac{H}{D}$	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	22	26	15	14		17	15	14	17	40	49	23	52	44	20	15	15	23	15	17	14	24	21	21	
2	17		15	15	14	17	22	13		18	42	50	43	43	42	41	21	13	14	15	18	14	15	20	
3	13	14	15	17		13	14	29	17	17	44	44	45	46	40	39	33	13	13	14	14	15	14	13	
4	15	13	14	17	18	15	14	34	36	21	43			25	44	21	15	13	21	21	15	14	18		
5	24		15	14	14	17	13	14	22	18	23	26	24	22	25	40	22	14	14	15	15	15	14	14	
6	14		20	14	13	22	14	14	18	22	33	36		45	39	42	37	13	13	15	14		14	14	
7	14	14	14	13	14	14	22	29	21	34	33	34	34	31	42	28	17	14	14	C		14	14	14	18
8		18		13	14	17	17	15	17	23	43	24	28	25	22	21	17	13	14	14	14	14	14	18	
9	17	14	14	24			14	14	18	41	51	44	46	46	50	40	35	15	13	14	13	25	15	15	
10	15	14	15	13	14	17	17	13	20	24	23				25	26	17	13	21	23	14	18	14	15	
11	13	13	15	15	18	13	17	24	37	23	44	31	30	24	24	20	17	13	13	13	14	21	21	15	
12	17	15	18	20	21	20	23	14	37	39	29	31	28	52	42	40	34	14	22	14	14	14	14	23	
13			18	22		14	24	28			23	45		49	53	40	20	18	13	13	13	14	14	15	
14	15	14			14	21	24	14	39	43	43	33	55	46	23	22	14	23	14	14	14	21	17	24	
15	24	18	15	14	15	17	21	13	18	42	34	35	35		34	43	14	25	18	22	15	17	17	13	
16	14	14	14	14	14	26	20	14	28	30	34	35	33	34	50	43	30	14	13	14	17		14	15	
17	22	13	17	13	14	14	23	14	40	40	50	33	C	C	C	C	C	C	C	C	C	C	C	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C							
19	18	13	13	17	18	17	23	18	20	22	34	34	31	34	51	22	14	13	25	13	14	13	14	13	
20	14	C	C	C	C	C	C	C	C	C															
21	14	13	15	13	21	17	20	14	20	33	35	36	36	52	50	23	17	14	13	14	15	13	14	13	
22	14	13	14	20	13	22	21	15	17	23	24	33	30	42	49	40	13	15	22	15	15	17	18	15	
23	24	14	21	14		14	14	14	23	25	28		21	36	44	41	23	15	20	15	14	14	14	23	
24	13	13	14	13	14	17	21	18	17	34	25	36	39	31	30	24	21	13	21	14	15	14	14		
25	14	15	13	13	13	17	21	17	39	42	53		54	54	49	24	37	18	14	13	14	14	14	14	
26	14	13	13	14		24	20	13	22	21	36	36	54	48	48	44	29	22	13	14	14	14	14	15	
27	25	17	14	13	14	15	13	14	15	42		51	52	53	42	42	18	15	21	15	14	15	30	13	
28	13	14	13	17	13	14	25	17	41	42	44	56	53	52	45	42	18	15	13	15	13	17	13	23	
29	14	13	23	14	13	15	25	17	39	53	44	53	28	53	24	22	17	13	22	18	13	18	15	13	
30	15	17		13	20	17	24	17	24	34	50	54	51	44	46	43	21	29	23	13	13	13	18	14	
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	24	25	27	22	27	28	28	26	27	28	25	24	26	28	28	28	28	29	28	29	27	29	27	
MED	15	14	15	14	14	17	20	14	22	33	36	36	36	44	42	40	19	14	14	14	14	14	14	15	
U Q	18	15	16	17	18	17	23	17	37	41	44	44	51	49	48	42	26	16	21	15	15	17	17	18	
L Q	14	13	14	13	14	14	14	14	18	22	31	33	30	33	27	22	17	13	13	14	13	14	14	13	

HOURLY VALUES OF foF2 AT Yamagawa

APR. 2006

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz to 30.0MHz AUTOMATIC 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	36	36	34	37	34	29	37	49	64	66	67	70	70	76	63	72	80	80	77	72	60	47	36	33
2	37	36	34	A	32	30	37	51	59	66	62	76	91	101	96	97	80	66	66	73	64	44	40	40	
3	39	38	34	A	28	29	34	40	70	66	62	68	76	80	82	78	67	67	61	66	77	45	42	42	
4	44	37	34	32	30	30	36	60	71	64	62	75	80	76	75	78	68	68	72	82	59		41	42	
5	44	42	43	40	36	34	43	60	62	70	64	72	80	88	80	77	86	94	87	81	53	52	53	66	
6	65	54	55	74	34	34	41	66	76	72	75	87	87	69	69	75	76	88	103	85	60	34	28	32	
7	A	36	A	41	A		40	60	65	62	68	69	78	87	91	79	77	86	84	87	78	52	43		
8	39	41	42	50	40		41	52	64	66	71	74	87	94	97	92	83	88	88	88	76	52	38	38	
9	44	41	43	51			40	55	61	68	74	75	80	95	90	101	98	74	87	87	70	44	37	37	
10	40	40	43	43			38	64	76	77	83	96	110	97	94	91	82	85	A	80	77	54	31	A	
11	36	30	39	40	26		43	50	62	67	77	91	90	98	101	94	91	81	74	71	46	45	42	42	
12	40	42	43	46	34		44	68	58	64	70	85	88	96	111	108	97	95	80	73	51	48	47	44	
13	43	43	42	42	41	34	44	52	57	62	61	66	81	88	92	84	67	66	76	78	76	53	44	45	
14	43	42	42	38	38	40	47	62	57	60	75	96	94	106	111	110	109	126	88	104	86	81	73	74	
15	86	87	37	34	40	45	55	59	53	58	66	73	81	86	82	71	72	71	66	62	60	51		46	
16	44	A	A	A	34	A	37	52	57	61	66	70	82	81	90	95	76	57	61	60	54	51	41	A	
17	44	A	43	34	32	A	42	50	56	65	67	65	75	82	89	90	85	78	67	66	44	37	38	37	
18	37	34	26	32	30		46	51	54	56	62	82	96	103	110	101	86	73	65	57	54	52	43	47	
19	42	44	44	42	34	32	43	60	66	57	57	73	86	95	98	88	82	75	71	61	53	50	50	51	
20	52	50	44	42	39		47		56	65	73	63	75	83	82	93	82	60	66	72	54	54	54	54	
21	53	52	54	45	42	39	48	56	69	62	62	67	66	65	80	77	75	70	72	76	78	66	47		
22	47	54	46	46	44	38	48	66	67	62	64	72	77	A	93	114	102	74	67	64	66	C	C	C	
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	C		77	82		A	91	90		63	53	52	54
25	53	52	54	44			42	62	66	68	72	72	82	84	81	77	71	73	75	80	85	64	52	53	
26	53	52	53	54	34	32	50	64	64	50		70	86	92	93	85	79	87	86	85	76	52	A	A	
27	49	49	51	45	42	41	50	67	66	60	64	72	74	78	82	90	94	90	90	86	74	54	53	54	
28	54	52	54	51	42	42	54	59	64	71	66	64	82	94	90	90	95	97	106	96	81		52	54	
29	64	54	51	50	40	36	52	66	78	70	70	86	91	91	88	91	91	76	66	71	78	85	51	45	
30	47	44	41	46	37	35	48	61	84	68	65	72	89	91	92	107	117	96		78		54	54	65	
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	26	26	25	24	17	28	27	28	28	27	28	28	28	29	28	28	29	27	28	28	26	26	23	
MED	44	42	43	43	35	34	43	60	64	65	66	72	82	88	90	90	82	78	75	77	65	52	44	45	
U Q	53	52	51	48	40	39	48	64	68	68	72	79	88	95	95	96	92	89	87	85	77	54	52	54	
L Q	40	38	39	39	33	31	40	52	57	61	62	69	77	80	82	78	76	70	66	68	54	47	40	40	

HOURLY VALUES OF fEs AT Yamagawa

APR. 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	G	G	G	34	36	G	G	G	42	G	42	39	43	52	56	48	26	24	G	G		
2	22	G	G	31	23	28	G	30	G	37	G	G	43	G	46	38	G	G	G	22	G	G	G	27		
3	G	30	G	43	G	G	G	33	G	G	G			42	G		40	38	30	26	24	11	G	G		
4	G	G	G	G	G	G	G	G	G	G	G		44	43	47	44	47	36	27	26	50	31	G	G		
5	G	G	30	32	G	G	G	G		36	42	45	48	46	G	G	G		48	44	38	24	G	G		
6	24	G	G	G	30	G	26	49	42	38	49	52	52	53	58	42	44	157	40	26	21	G	G	G		
7	40	43	50	68	50	24	G	34	40	44	46	48	50	57	50	45	51	47	38	30	32	11	G	30		
8	G	G	29	G	G	25		G	G	G	G	48	47	43	44	43	42	46	27		G	G	G	G		
9	G	28	28	G	G	G	G		G	G	G	47	G	G	G	G	G	G	28	G	11	G	G	G		
10	G	G	24	G	G	G	G	G	G	G	G	46	53	43		43	45	45	82	34	30	11	34	44		
11	G	G	G	G	G		G	40	39	49	62	G	48	54	54	44	G	33	46	33	44	G	G	28		
12	G	G	G	44	34	26		G	40	39	46	50	48	47	49		40	34		G	G	G	G	23		
13	G	G	G	G	G	G	G	G	G	40	47	G	41	48		G	55	55	44	44	45	32	28	G	34	
14	30	30	27	G	G	G	G		36	44		53	51	47	55	G	G	G	G	G	28	G	G	G		
15	34	24	G	G	G	G	G	G		40	47	68	65	63		G	G	G	G	G	41	36	39	57	G	
16	G	54	27		75	56		G	41	45	44	58	55	61	55	45	G		40	38	30	26	26	25	28	44
17	48	50	31	G	26	44	26	48	41	56		47	G	G	G		42	43	40	G	G	G	G	G	G	G
18	G	G	G	G	G	G	G	G	39	G	45	59		47	G	G	G	G	G	G	G	G	G	G	27	
19	G	G	G	G	G	G		33	G	38	G	48	80	62	83	66	G	70	64	37	40	34	G	44	58	
20	44	29	G	24	38	33	28	42	42	47	51	59	63	52	48		G	56		33	43	54	49	G	31	
21	33	26	30	25	23	23		G	32	G	G	G	46	50	56	57	46	G	G		30	27	32	27	28	37
22	60	43	36	50	53	34	29	36	40	48	48	65	58	94	84	49	47	51	40		G	C	C	C	C	
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C		55	58	68	83	99	58	44	32	36	39	45	
25	30	G	G	40	G	G		30	37	35	38		50	G	G	G	G	G	G	31	G	G	G	G	G	
26	G	26	G	G	24	G		31	42	44	G	G		42	48	51	56	44	G	40	G	G	26	55	49	
27	49	48	23	G	23	G		30	39	48	46	52	45	G	52	58	43	G	G		30	35	30	G	28	G
28	G	G	G	G	G	G	G		G	G	G	G	G	G		49	52	50	44	36	31	33	G	32	27	
29	G	G	28	G	G	G	G	G	G	G		40	45	G	50	40	G	37	G	G		30	25	G	44	32
30	G	G	G	G	G	G	G	G	N		G	60	G	51	G	G		45	44	36	30	71	29	58	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	28	28	28	27	28	27	25	26	27	28	28	27	27	28	29	29	29	29	28	29	28	29	27	28	28	
MBD	G	G	G	G	G	G	G	32	36	38	20	48	46	48	45	42	43	38	31	26	26	11	G	27		
U Q	31	29	28	31	25	24	26	37	41	44	48	52	52	54	52	45	47	45	40	34	32	27	33	35		
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	14	G	16	G	G	G	

HOURLY VALUES OF fmin AT Yamagawa

APR. 2006

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz to 30.0MHz AUTOMATIC 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	15	14	15	14	14	15	15	17	14	14	18	18	22	20	18	17	15	14	16	14	15	15	17	14
2	15	15	14	14	15	15	15	14	14	18	17	21	22	18	20	17	16	14	18	14	15	15	17	15
3	20	15	14	15	17	15	15	14	14	17	20	22	23	21	18	17	16	14	14	14	15	14	15	21
4	15	15	17	15	14	16	14	14	15	15	23	22	28	24	23	18	17	14	14	14	15	15	15	16
5	14	16	15	15	14	15	15	18	14	17	18	23	24	21	24	16	14	15	14	14	14	16	17	17
6	14	15	15	14	14	14	16	14	14	18	22	22	23	21	24	24	18	16	14	14	14	18	15	15
7	14	14	14	14	14	15	17	14	14	15	18	20	20	18	20	16	15	14	14	14	14	14	15	15
8	16	15	14	16	14	15	16	26	15	16	24	26	30	28	20	27	18	14	14	15	15	14	15	15
9	15	15	15	15	15	17	15	14	14	17	20	22	26	44	45	21	15	16	14	15	14	15	15	15
10	16	15	15	15	17	15	15	18	15	16	18	22	27	27	21	18	18	14	14	15	15	15	18	14
11	16	16	14	15	14		17	14	15	16	30	26	23	18	18	15	16	14	14	14	15	15	15	15
12	14	17	17	16	15	17	16	14	14	16	21	26	28	23	27	17	14	15	20	15	14	16	16	16
13	16	15	15	20	15	16	15	14	14	18	18	24	26	27	21	20	16	15	14	14	15	15	17	14
14	14	14	14	15	14	14	17	14	16	18	21	21	20	27	21	17	16	14	14	15	15	15	15	16
15	15	15	17	21	14	14	15	17	14	14	18	33	35	26	41	18	16	14	14	14	14	15	14	15
16	15	15	14	14	16	14	17	15	14	18	18	18	34	20	21	17	16	14	14	14	16	14	16	15
17	14	14	15	17	14	14	14	15	14	16	18	32	35	48	47	20	17	14	14	14	15	15	14	14
18	15	15	15	14	15	16	18	14	20	17	21	17	26	22	47	21	17	14	20	14	15	14	15	15
19	14	14	15	14	14	14	14	14	14	18	23	21	22	29	21	23	18	14	14	14	14	15	15	14
20	14	14	15	14	14	14	15	14	14	18	21	23	26	23	20	21	18	14	14	14	14	14	16	14
21	15	15	15	15	14	15	17	14	14	39	22	21	27	34	22	17	16	14	14	16	14	14	14	14
22	14	14	15	14	14	14	16	14	16	17	24	20	22	33	22	20	18	14	14	14	15	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C		33	18	17	20	16	14	15	14	14	14
25	15	15	15	15	15	17	14	14	15	16	21	44	45	27	42	34	16	18	14	15	15	15	14	16
26	14	14	15	15	14	15	15	14	16	20	21	26		26	21	21	22	14	14	15	15	14	14	14
27	14	15	14	14	14	14	14	14	15	17	21	21	28	27	24	20	21	15	14	15	14	14	14	15
28	14	15	15	14	16	14	14	17	14	20	21		50	23	23	21	18	15	14	14	14		14	14
29	17	18	15	17	17	15	15	14	17	21	26	33	46	21	22	22	16	14	14	15	16	15	14	15
30	15	15	15	15	15	14	20	14	15	20	26	35	29	29	26	20	15	15	14	14	14	14	14	14
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	27	28	28	28	28	28	27	27	29	29	29	29	29	29	29	29	27	28	28
MEQ	15	15	15	15	14	15	15	14	14	17	21	22	26	26	22	20	16	14	14	14	15	15	15	15
U Q	15	15	15	15	15	15	16	15	15	18	22	26	30	28	25	21	18	15	14	15	15	15	16	15
L Q	14	14	14	14	14	14	15	14	14	16	18	21	23	21	20	17	16	14	14	14	14	14	14	14

HOURLY VALUES OF fof2 AT Okinawa

APR. 2006

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz to 30.0MHz AUTOMATIC 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	34	34	31	36				52	73	81	51	72	74	92	110	116	128	127	121	106	86	51	34	32		
2	34	28	34	31	28		29	51	58	64	76	82	100	136	151	134	111	110	104	102	87	61	52	53		
3	50	51	42	51	41	36	36	56	63	75	77	76	101	118	131	131	125	121	114	104	102	66	54	52		
4	52	54	52	52	40	41	40	65	62	73	77	81	92	97	98	88	84	81	86	89	78	34	38	35		
5	40	43	43	41			34	54	66	72	65	73	85	90	96	85	96	107	110	90	78		88	86		
6	87	66	54	66	40	34	43	75	75	80	80	84	95	87	90	84	82	97	115	87	50	37	34			
7	A	A		40	50		A		28	64	65	71	72	75	90	105	122	130	123	134	142	132	126	87	65	54
8	66	53	70	86	53	35	41	57	62	66	73	82	93	108	124	127	130	140	128	121	100	73	53	42		
9	46	48	51	42			31	52	68	81	78	80	100	110	117	131	131	110	109	110	74	61	53			
10	42	36	48	46			30	61	68	81	86	101	117	120	118	111	112	113	110	101	87	54	43	36		
11	32			34			34	55	70	71	82	93	110	116	122	128	116	100	87	89	73	A	40	41		
12	37	34	44	44	36		36	56	67	65	77	88	101	118	131	141	130	131	110	101	86	54	71	65		
13	51	42	43	44	42	25	37	52	61	66	64	70	88	101	106	101	88	84	84	88	85	51	38	36		
14	38	38	36	30	32	30	38	52	61	60	65	105	108	120	140	121	128	140	130	121	128	108	84	87		
15	88	102	80	43	61	66	60	61	65	60	A		68	81	101	96	90	80	80	82	72	53	61	60	52	
16	51	54	41	32		30	34	51	65	58	70	75	90	97	111	113	87	76	82	66	53	47	A	40		
17	42	A	A	A	A		36	54	62	70	67	66	84	106	115	119	118	105	88	66	54	A	43	31		
18	A		49	37	32		34	57	58	61	70	86	98	108	122	117	108	88	76	66	61	53	42	41		
19	34	34	40	30			36	58	51	61	60	72	95	108	121	122	92	84	71	66	59	50	48	48		
20	44	50	47	51	30		40	58	66	60	66	75	85	90	93	105	90	73	80	80	66	54	52	52		
21	54	51	50	51	45	35	43	57	67	66	64	64	70	80	82	86	85	84	92	88	86	66	42	32		
22	42	43	42	30	30		44	68	64	64	67	74	86	105	110	124	112	96	86	76	76	63		52		
23		47	48	47	42	38	48	58	62	70	70	68	74	85	97	101	101	95	87	88		53	50	47		
24		51	58	43			38	51	66	81	74	77	80	87	90	92	96	110	98	76	58	54		54		
25		52	76	34			37	61	69	C		77	76	90	93	94	90	92		84	88	86	66	51	52	
26	53	54	60		37	30	45	62	64		61	70		106	C	C	C	C	C	C	C	C	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	21	23	24	24	14	11	25	26	26	24	25	26	25	26	25	25	25	24	25	25	24	22	22	23		
MED	44	49	46	43	40	35	37	57	65	68	70	76	90	105	111	116	108	102	92	88	78	54	50	48		
U Q	52	53	53	50	42	38	42	61	67	74	77	82	100	110	122	127	124	117	112	103	86	66	54	53		
L Q	37	38	40	33	32	30	34	52	62	62	65	72	84	92	96	91	89	84	84	76	60	51	42	36		

HOURLY VALUES OF fEs AT Okinawa

APR. 2006

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

$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	G	G	G	G			G	G	G	G	G	G	G	44	G	G	47	46	40	26	28	28	G	25	
2	G	G	G	G	G		G	31	G	G	39	43	49	45	68	G	G	G	G	G	G	G	G	G	
3	G	G	G	G	G	G	G	31	G	G	G	G	42	G	G	40	G	38	31	G	G	23	28	27	
4	G	G	G	G	G	G	G	35	39	G	G	G	G	G	G	42	46	G	30	26	21	G	G	G	
5	G	G	G	G	G	24	G	32	G	G	G	G	G	42	G	G	G	G	G	25	G		G	G	
6	G	G	G	G	G	G	G	35	45		47	59	50	51	53	51	G	38	31	G	G	G	G	23	
7	40	49	G	G		37	G		G	G	G	G	G	55	59	50	54	45	46	60	36	39	G	G	
8	G	G	G	G		28	G	G	G	G	G	46	G	G	G	G	G	39	28	25	G	27	26	G	
9	G	G	G		G		G	28	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	
10	G	G	G	23			G	G	G	G	G	G	G	G	G	42	G	G	G	31	34	G	G	28	
11	24		33	30	G	G	G	36	44		40		G	44	G	G	G	G	G	G		40	30	31	
12	23	G	G	G	G	G	G	37	40	G	G	62	62	48	G	41	46	35	29	30	G	G	G	25	
13	28	G	G	G	G	G	G	G	44		G	G	55	51	46	63	G	G	34	66	38	G	26	G	
14	G	G	G	G	G	G	G	34	41	45	47		42	47	55	45	37	39	G	G	G	G	G	G	
15	G	23	G	G	G	G	G	G	G	54	108	57	G	G	G	G	G	G	G	G	G	G	46	39	43
16	58	G	G	G	28	22	G	34	38	46	54	42	54	66	42	52	46	50	39	35	28	G	52	29	
17	G	59	40	41	42	27	G	34	47	44	46	49	G	G	G	45	G		40	51	51	33	G	G	
18	41	24	G	G	G	G	27	G	34	G	G	G	G	G	62	67	G	G	G	G	G	G	G	G	
19	G	G	G	G		G	G		35	G	G	G	G	G	G	G	G	41	33	G	G	29	25	26	
20	33	24	48	33	27	25	G	41	42	46	47	52	57	58	G	G	55	46	42	54	30	39	34	33	
21	29	26	33	24	26	24	G	35	G	44	G	49	48	G	56	53	G	35	65	29	29	G	G	G	
22	G	G	39	39	50	41	29	40	59	46	52	49	G	53	96	83	91	46	G	45	48	45	38	51	
23	39	43	26	31	38	26	23	36	43	44	42	G	42	54	G	G	G	39	48	53	38	36	39	32	
24	G	G	G	G	G		G	34	G	46	G	50	58	G	57	G	47	G	32	40	47	93	92	46	
25	G	46	28	24	G			34	G	C	50	42	G	G	G	G	G	G	36	27	G	G	30	28	
26	G	G	G		G	G	G	30	35		G	G		52	C	C	C	C	C	C	C	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
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	25	26	25	21	20	25	24	26	24	26	26	25	26	25	25	25	24	25	25	24	24	25	25	
MED	G	G	G	G	G	G	G	34	35	G	G	G	G	43	G	40	G	35	31	26	11	12	G	25	
U Q	28	24	26	26	26	25	G	35	43	44	47	49	49	51	55	50	46	40	39	42	35	37	32	31	
L Q	G	G	G	G	G	G	G	14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	

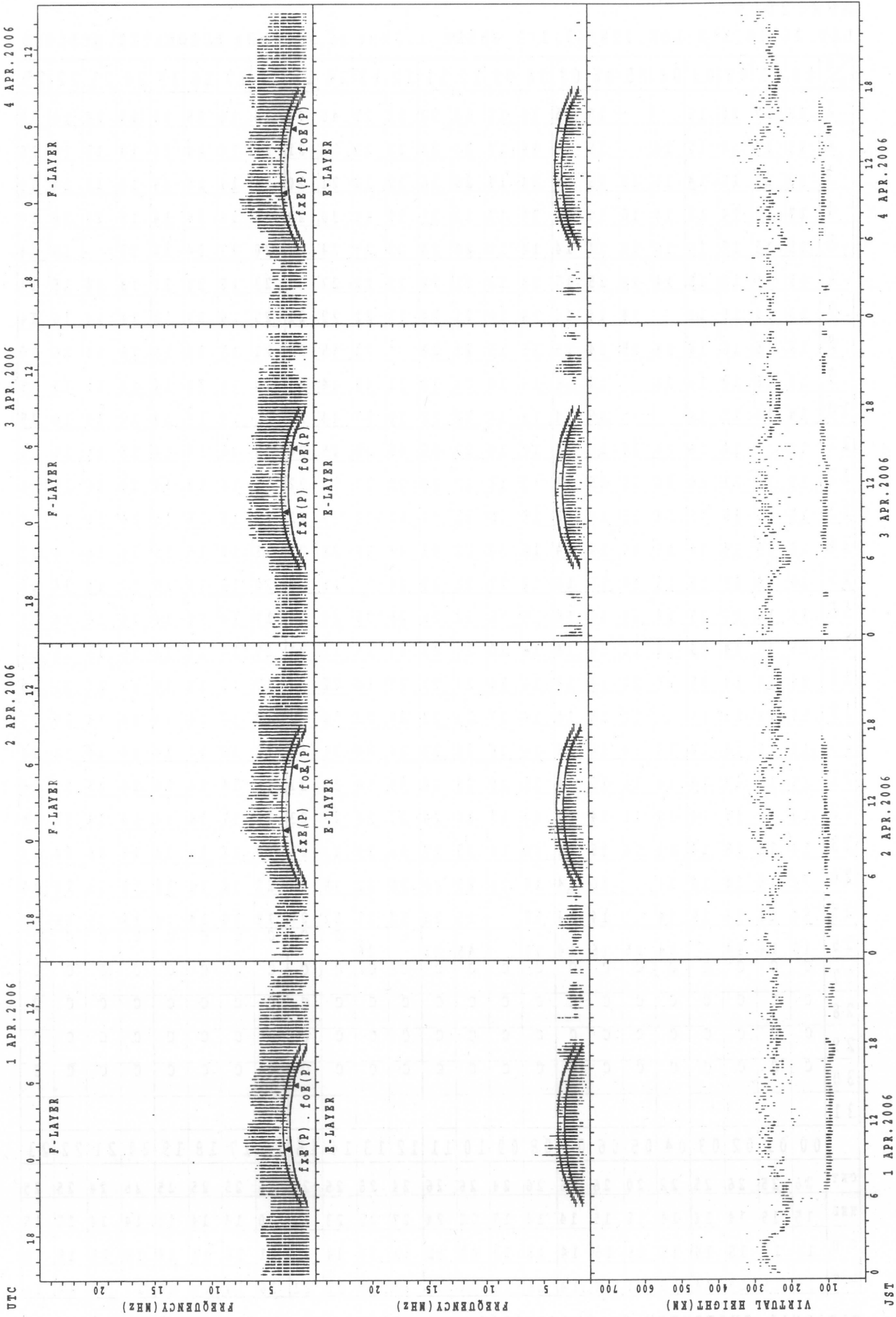
HOURLY VALUES OF fmin AT Okinawa

APR. 2006

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

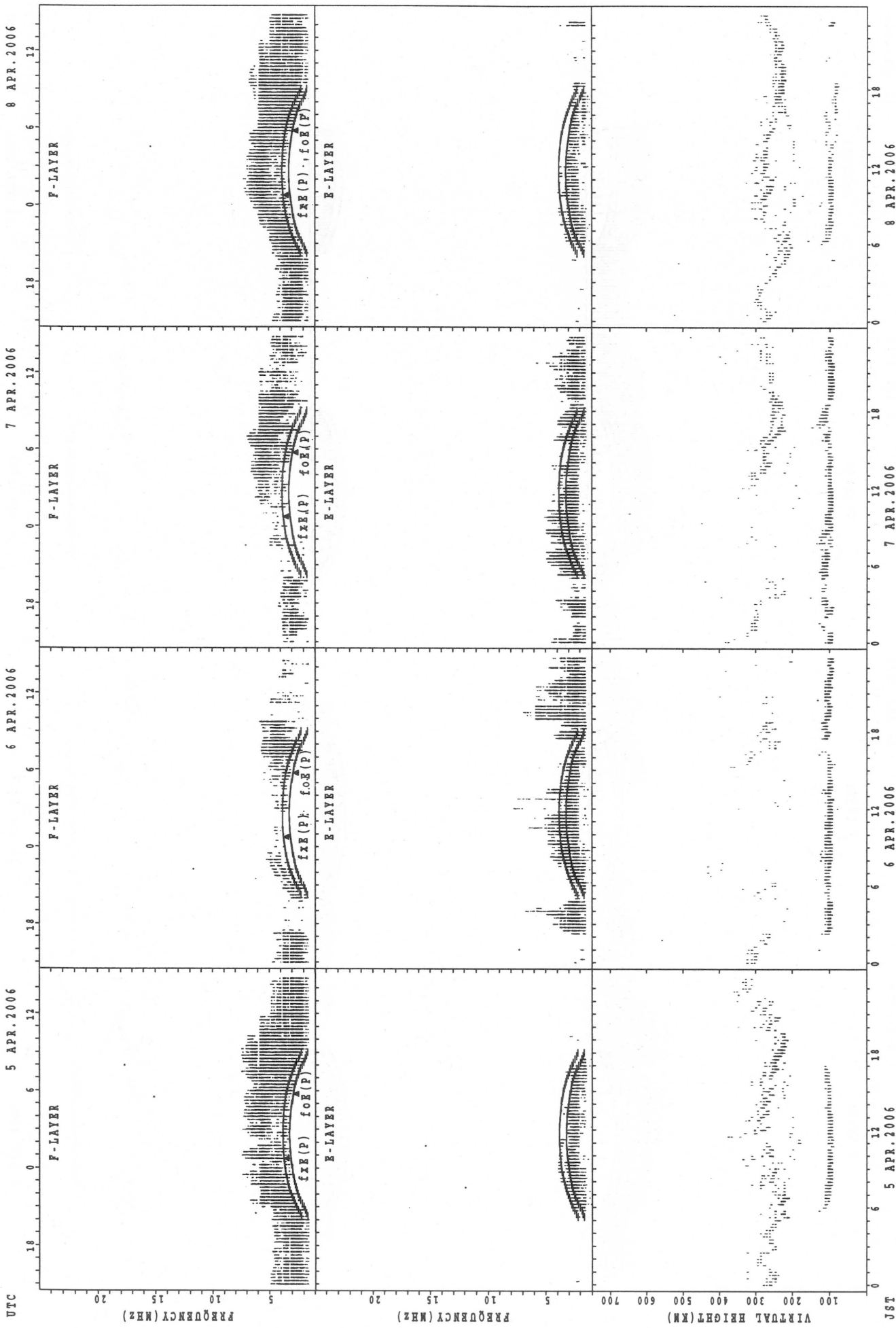
$\frac{H}{D}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	15	17	15	15			15	15	14	15	18	22	21	23	45	44	16	14	15	14	15	14	16	15	
2	15	14	14	17	14		15	14	14	17	20	23	22	23	22	21	16	14	14	14	14	15	15	15	
3	18	15	15	14	15	15	15	14	14	17	20	26	22	22	21	20	15	14	14	14	14	15	14	15	
4	17	18	14	14	14	16	14	14	15	17	22	21	29	45	30	23	15	14	14	14	15	15	20	16	
5	15	15	15	15	16	15	14	14	14	16	20	38	22	27	24	22	20	17	14	14	15		16	14	
6	15	15	16	15	14	18	15	17	14	18	21	22	23	22	22	22	23	15	14	15	18	14	15	14	
7	15	14	15	14		14	14	14	14	20	21	24	23	22	22	21	23	16	14	14	14	14	16	14	
8	16	15	16	14	14	15	14	15	15	15	22	24		23	45	28	21	15	14	15	16	14	16	16	
9	14	16	14	14	16		14	14	15	18	23	38	31	49	44	43	18	16	14	14	14	15	15	15	
10	18	14	15	14			15	14	14	14	22	22	30	27	44	23	20	14	14	14	14	16	14	15	
11	15		14	14	14	15	15	14	18	20	23	46	48	28	45	20	23	36	14	14	15	15	14	14	
12	15	15	21	14	16	15	15	14	15	18	22	24	28	21	23	22	15	14	14	14	14	16	15	15	
13	15	15	15	15	14	15	14	16	15	15	22	47	40	39	28	22	21	16	15	14	14	15	14	15	
14	15	15	14	16	15	15	14	14	16	20	28	32	33	26	21	22	21	14	15	15	14	14	14	17	
15	15	14	15	16	15	14	15	14	14	17	21	33	34	23	21	20	20	14	14	15	17	14	14	15	
16	14	16	14	15	14	15	15	14	15	18	22	26	26	28	24	20	17	14	14	14	14	14	14	15	
17	16	15	14	14	14	14	15	14	14	20	20	23	23	33	22	21	17	16	14	14	15	15	15	15	
18	14	14	14	15	20	20	14	14	14	20	21	23	22	24	22	21	17	14	14	15	15	14	15	15	
19	15	14	15	15		14	15	14	14	17	21	23	27	28	50	22	17	14	14	14	14	14	15	15	
20	14	15	14	14	15	14	16	15	14	16	26	23	24	34	21	43	22	18	14	14	14	14	14	14	
21	15	15	14	14	14	14	15	14	15	20	23	35	35	50	22	21	16	14	14	14	14	15	15	16	
22	14	15	14	14	14	14	14	14	14	17	18	24	27	24	22	23	22	17	14	14	14	14	14	14	
23	14	15	15	14	14	14	15	14	14	14	23	27	26	29	23	23	20	14	14	14	14	14	14	14	
24	24	15	14	14	14		16	14	15	21	23	28	36	32	36	22	22	14	14	14	14	14	14	14	
25	54	14	14	15	14		14	14	17	^c	26	22	50	33	52	27	18	14	14	14	15	15	15	14	
26	15	14	14		14	15	16	14	17		45	23		26	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	
27	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	
28	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	
29	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	
30	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	^c	
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	25	26	25	22	20	26	26	26	24	26	26	24	26	25	25	25	25	25	25	25	24	25	25	
MED	15	15	14	14	14	15	15	14	14	17	22	24	27	27	23	22	20	14	14	14	14	14	15	15	
U Q	16	15	15	15	15	15	15	14	15	20	23	32	33	33	44	23	21	16	14	14	15	15	15	15	
L Q	15	14	14	14	14	14	14	14	14	16	21	23	23	23	22	21	16	14	14	14	14	14	14	14	

SUMMARY PLOTS AT Wakkanai



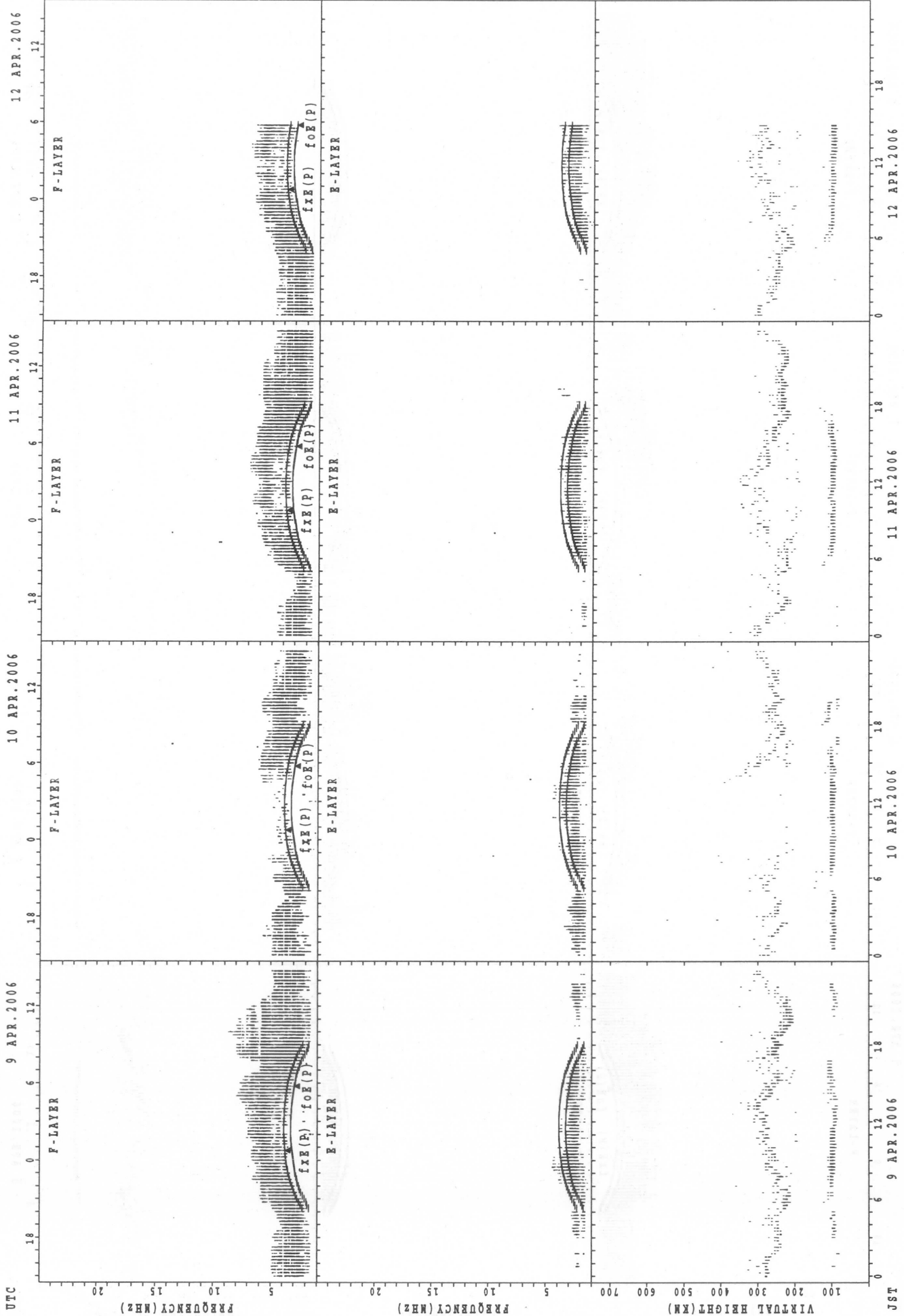
f_{x E(P)}; PREDICTED VALUE FOR f_{x E}
f_{o E(P)}; PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Wakkanai



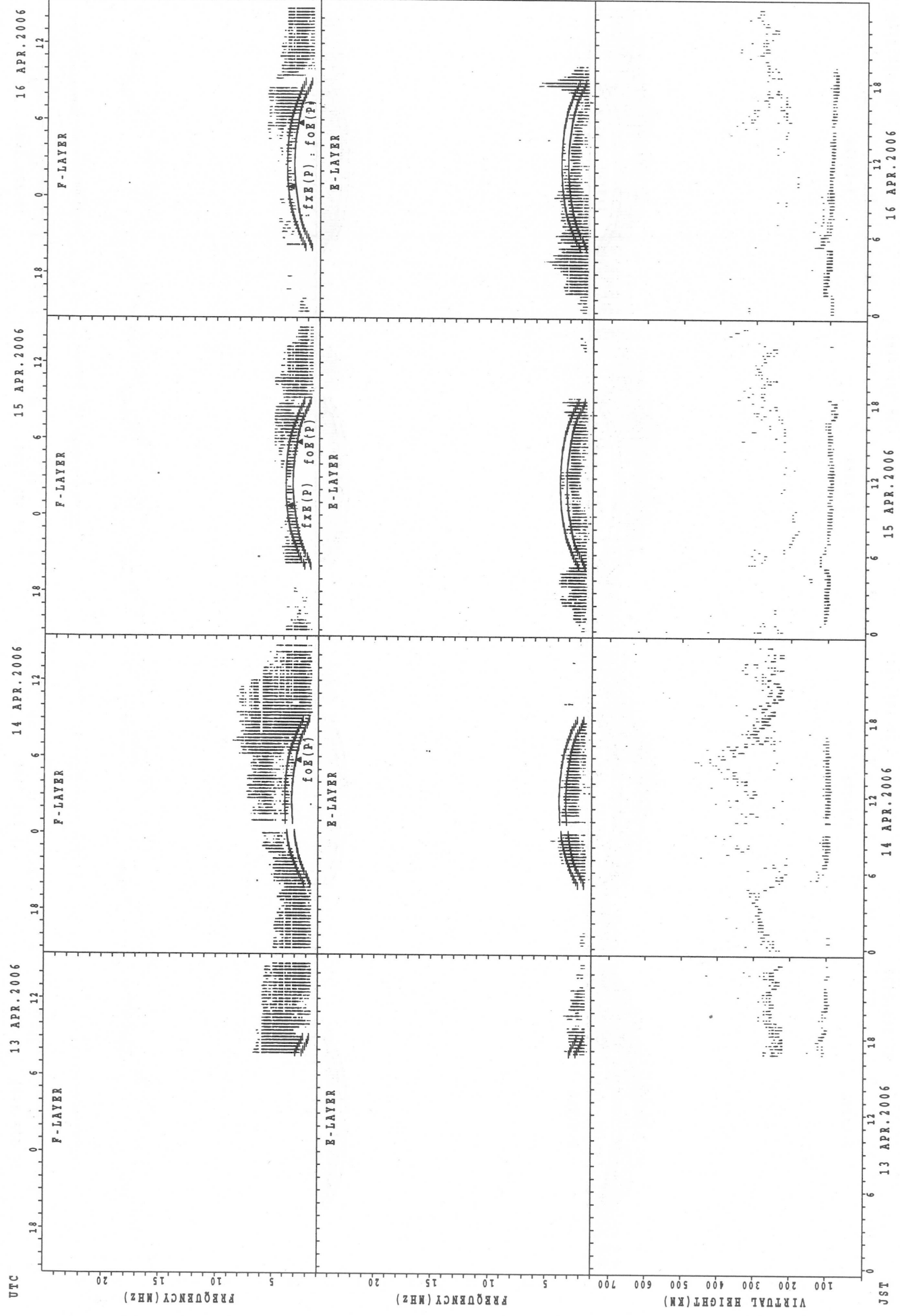
f_oF₂(P); PREDICTED VALUE FOR f_oF₂
 F₂(P); PREDICTED VALUE FOR F₂

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

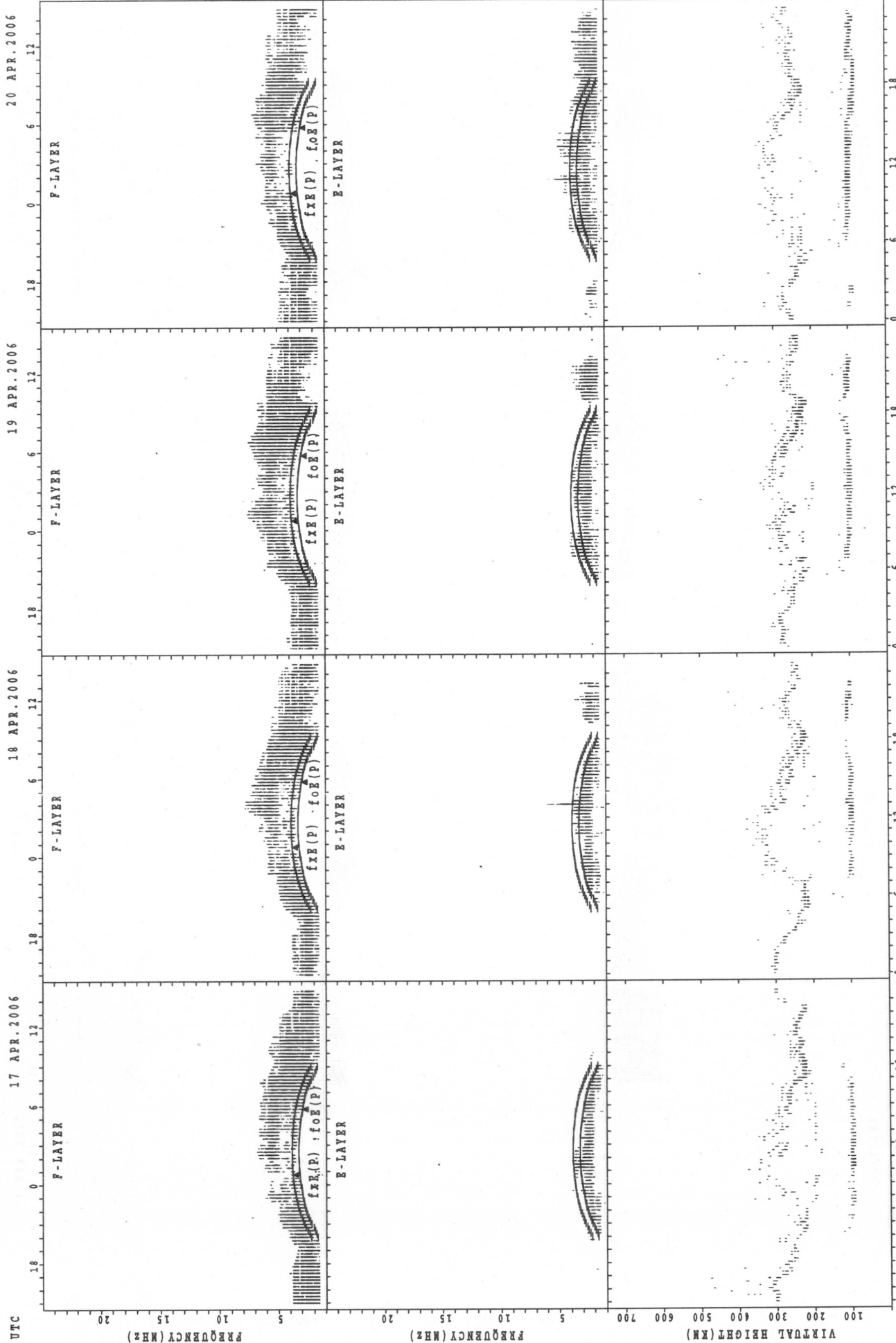
SUMMARY PLOTS AT Wakkanai

UTC 17 APR. 2006

18 APR. 2006

19 APR. 2006

20 APR. 2006



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

JST

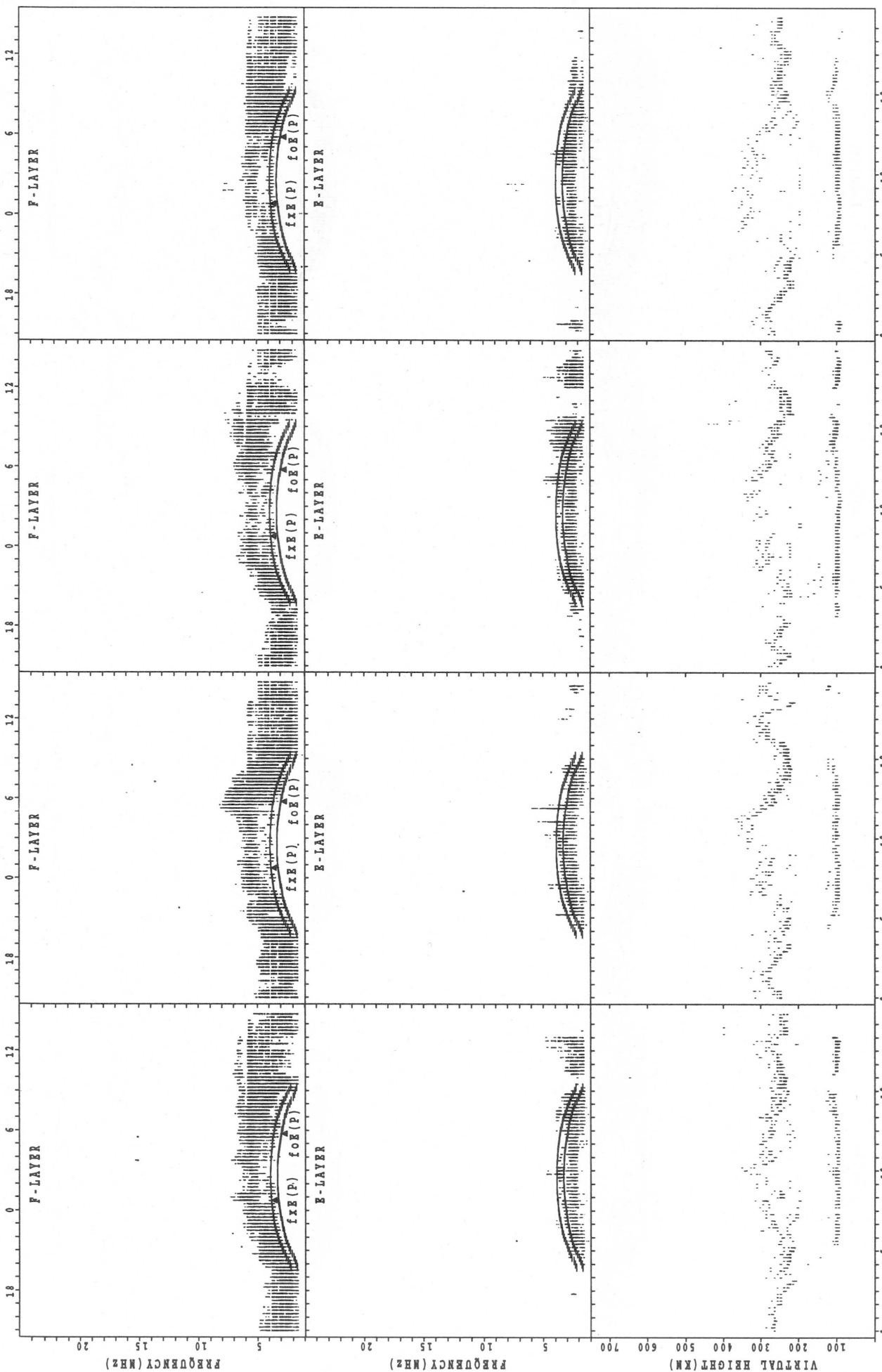
SUMMARY PLOTS AT Wakkanai

UTC 21 APR. 2006

22 APR. 2006

23 APR. 2006

24 APR. 2006



JST 21 APR. 2006

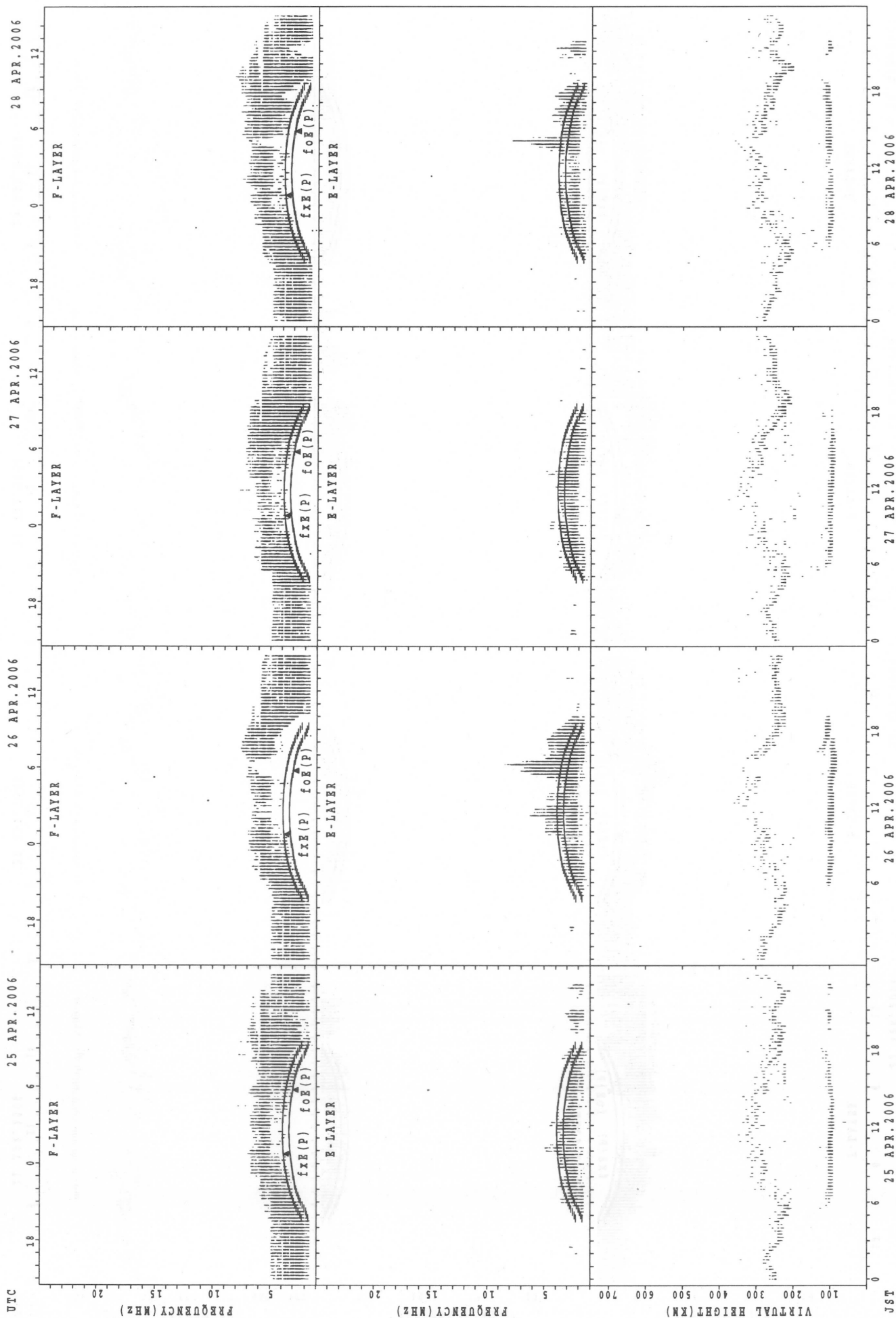
22 APR. 2006

23 APR. 2006

24 APR. 2006

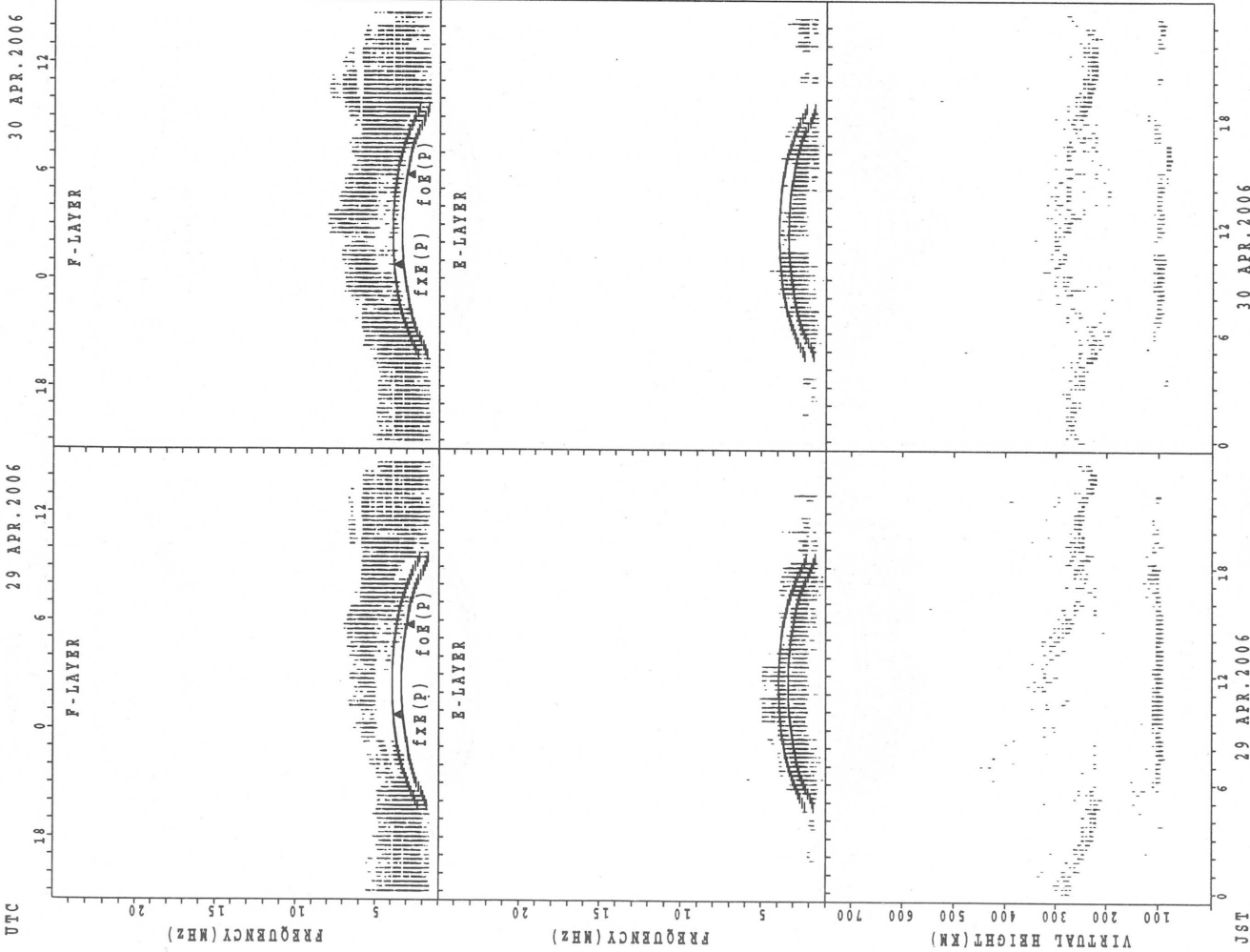
f_xE(P); PREDICTED VALUE FOR f_xE
 f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Wakkanai



f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Wakkanai



$f_{xE}(P)$; PREDICTED VALUE FOR f_{xE}
 $f_{oE}(P)$; PREDICTED VALUE FOR f_{oE}

UTC

29 APR. 2006

30 APR. 2006

UTC

29 APR. 2006

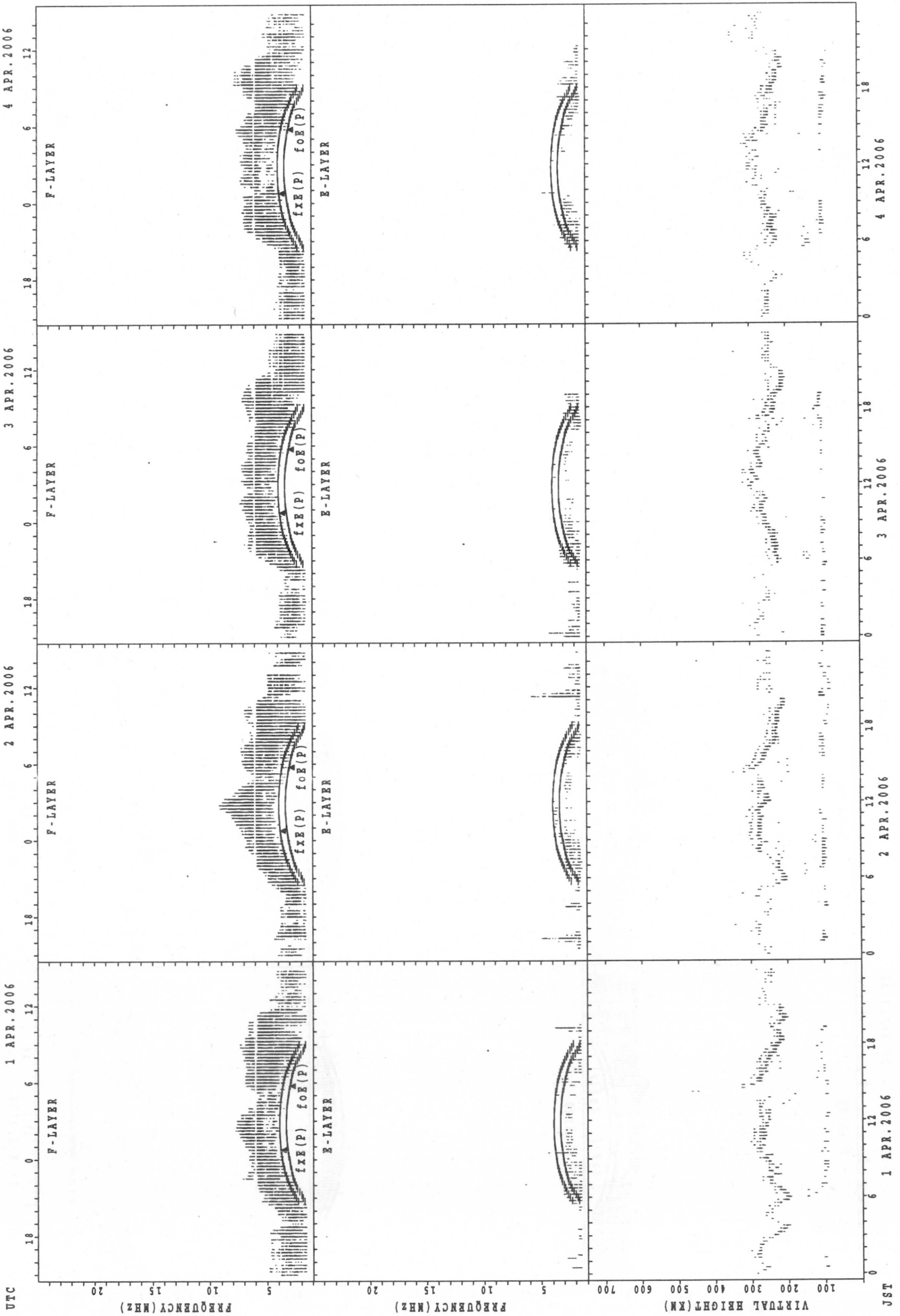
30 APR. 2006

JST

29 APR. 2006

30 APR. 2006

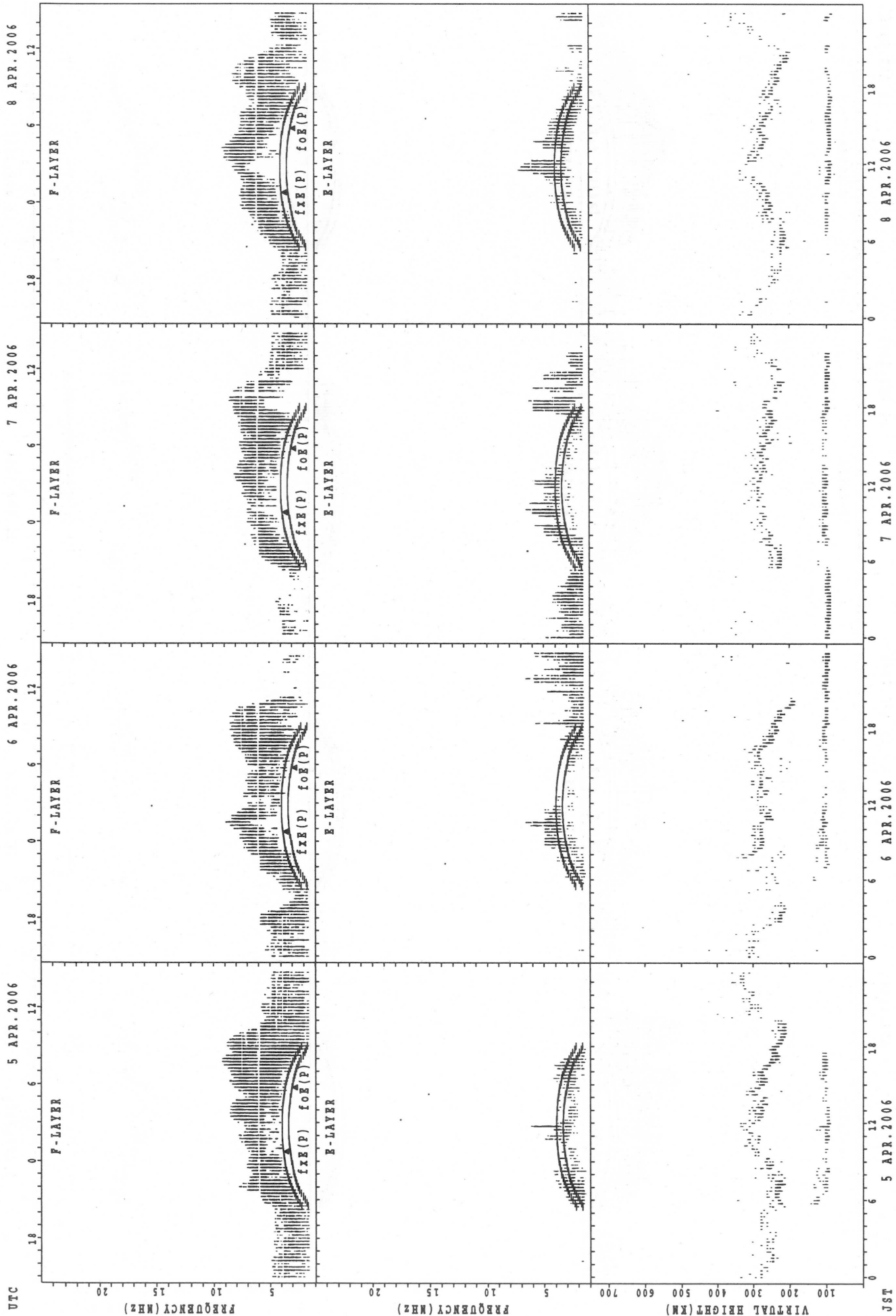
SUMMARY PLOTS AT Kokubunji



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

JST

SUMMARY PLOTS AT Kokubunji



JST 5 APR. 2006
f_xE(p); PREDICTED VALUE FOR f_xE
foE(p); PREDICTED VALUE FOR foE

UTC

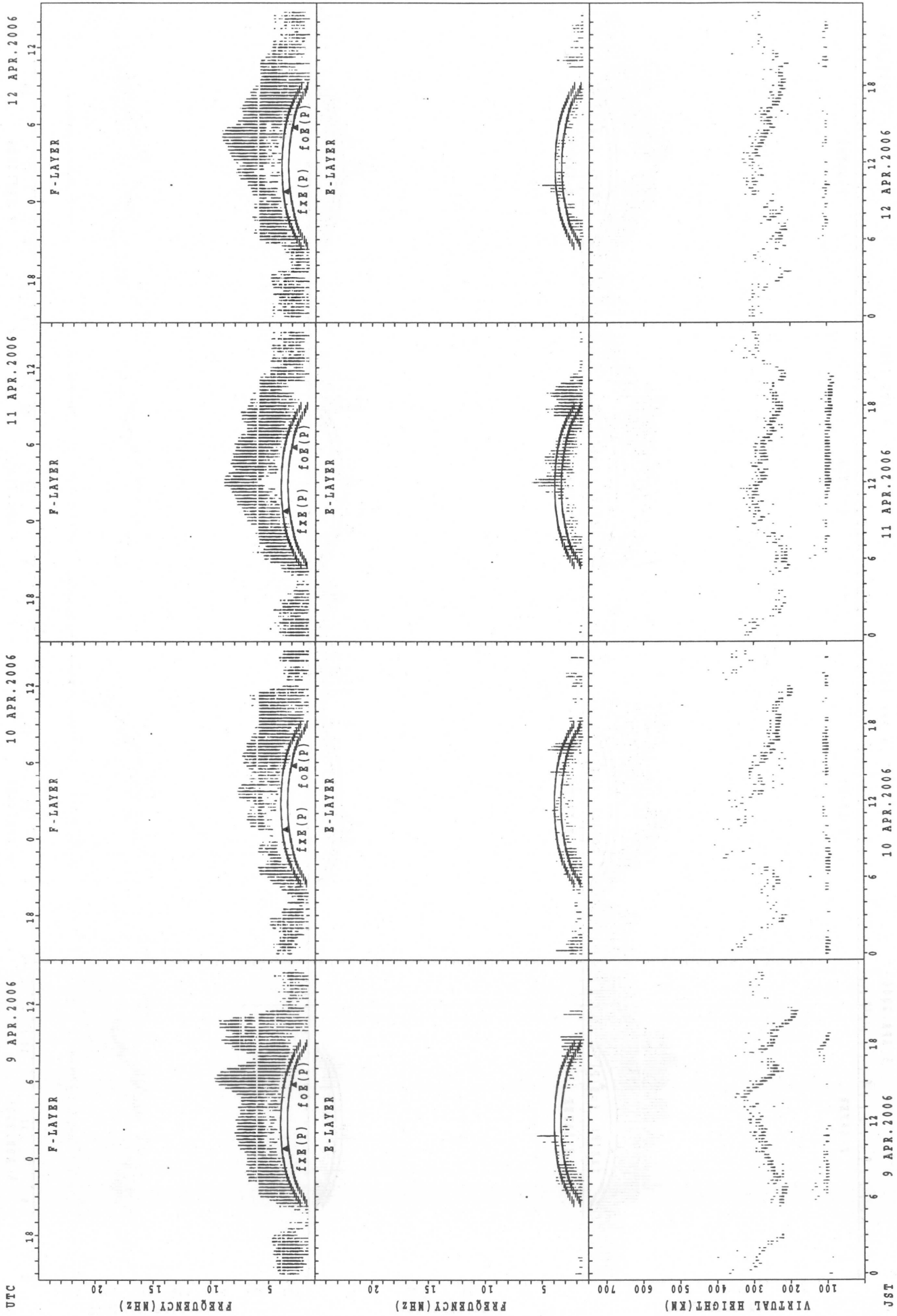
5 APR. 2006

6 APR. 2006

7 APR. 2006

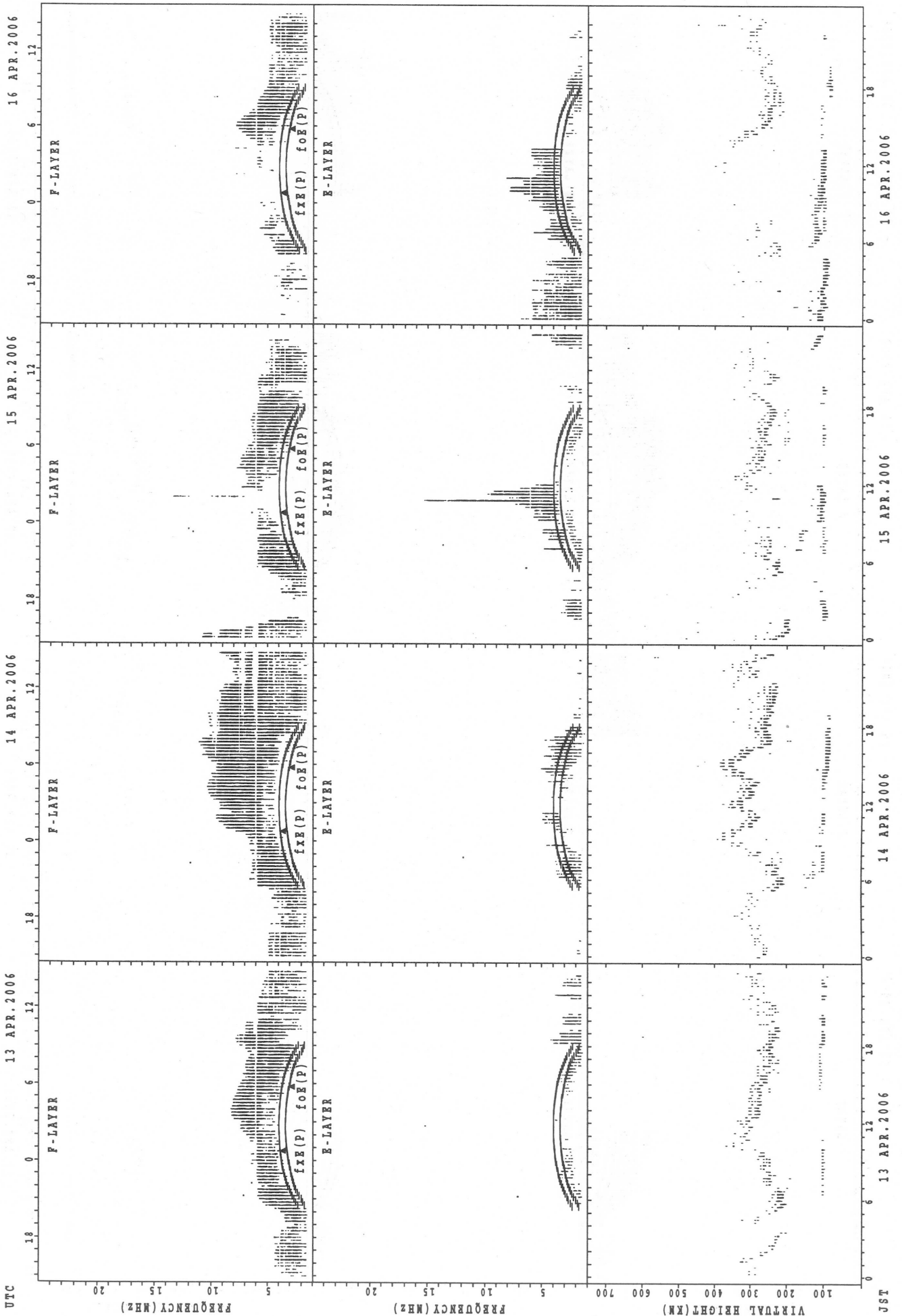
8 APR. 2006

SUMMARY PLOTS AT Kokubunji



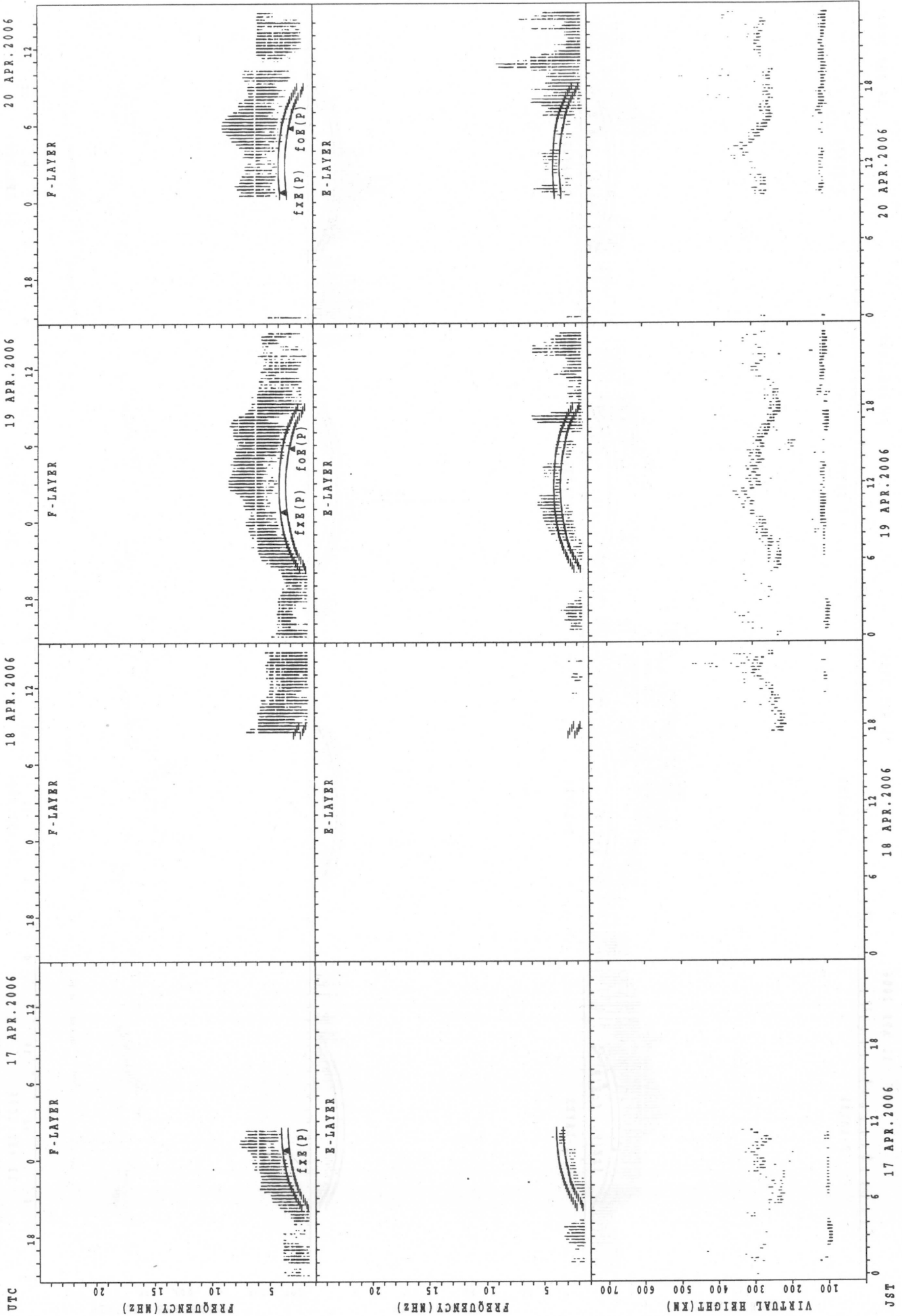
f_{x E}(P); PREDICTED VALUE FOR f_{x E}
f_{o E}(P); PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Kokubunji



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

SUMMARY PLOTS AT Kokubunji



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Kokubunji

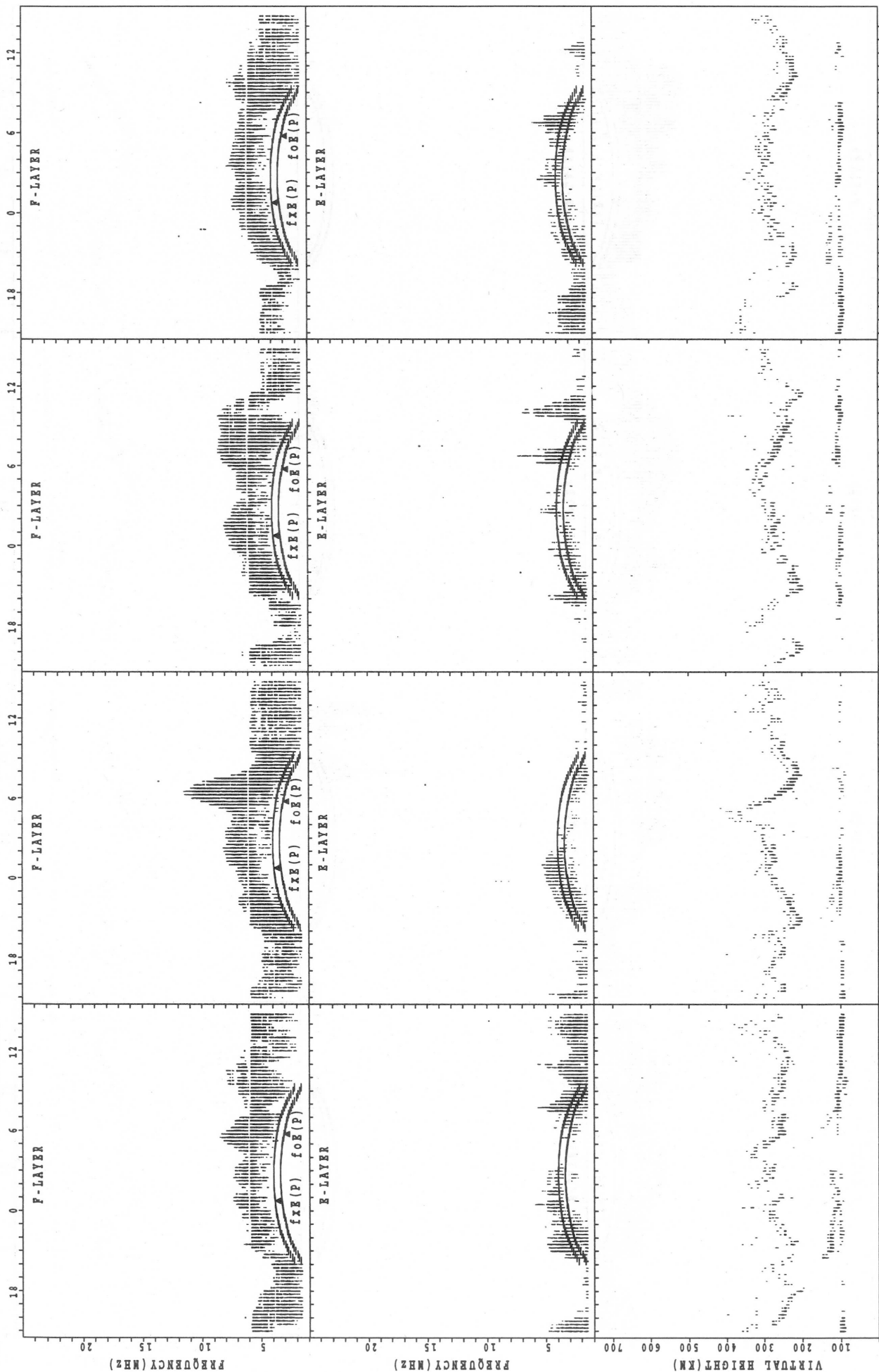
21 APR. 2006

22 APR. 2006

23 APR. 2006

24 APR. 2006

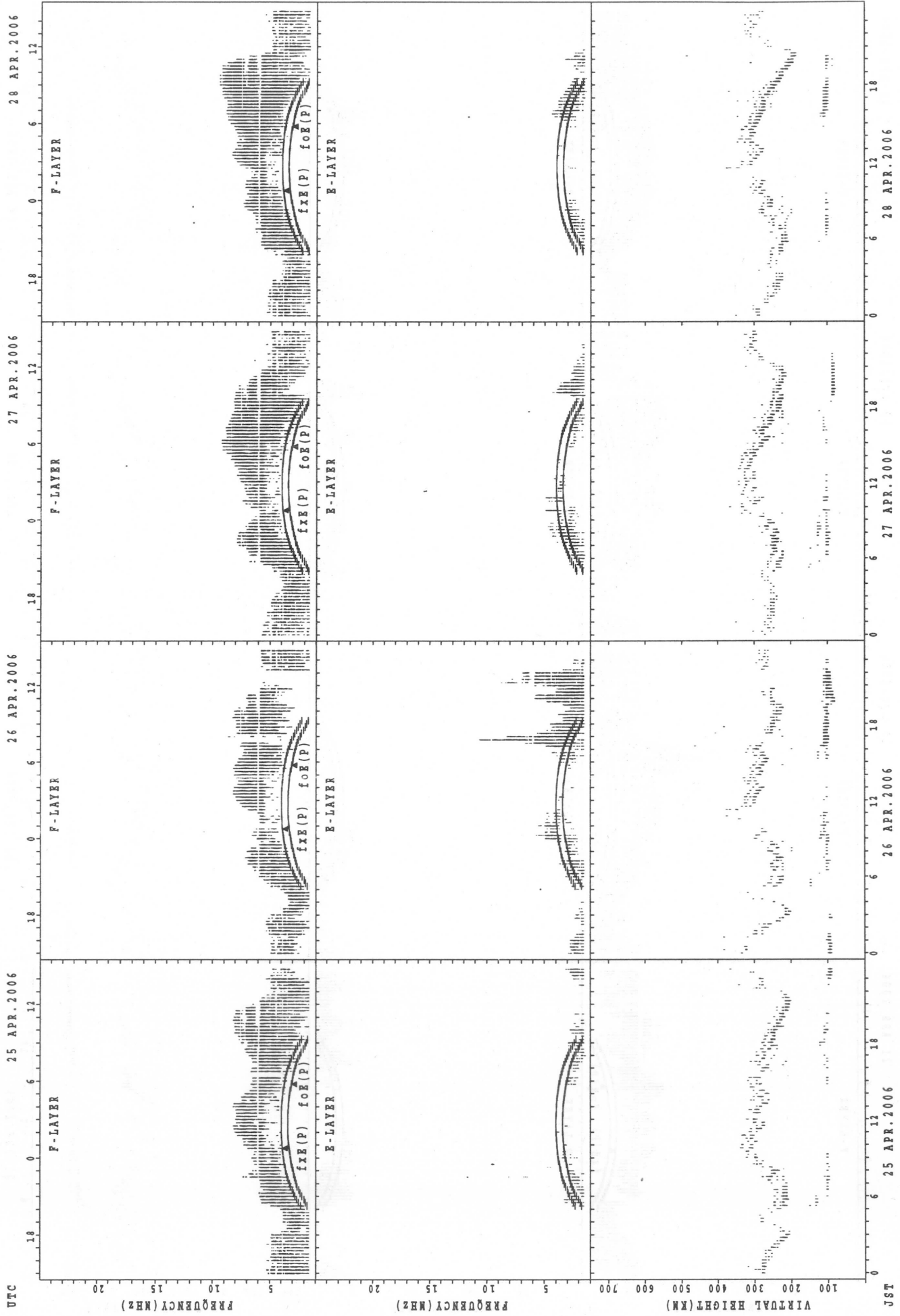
UTC



JST

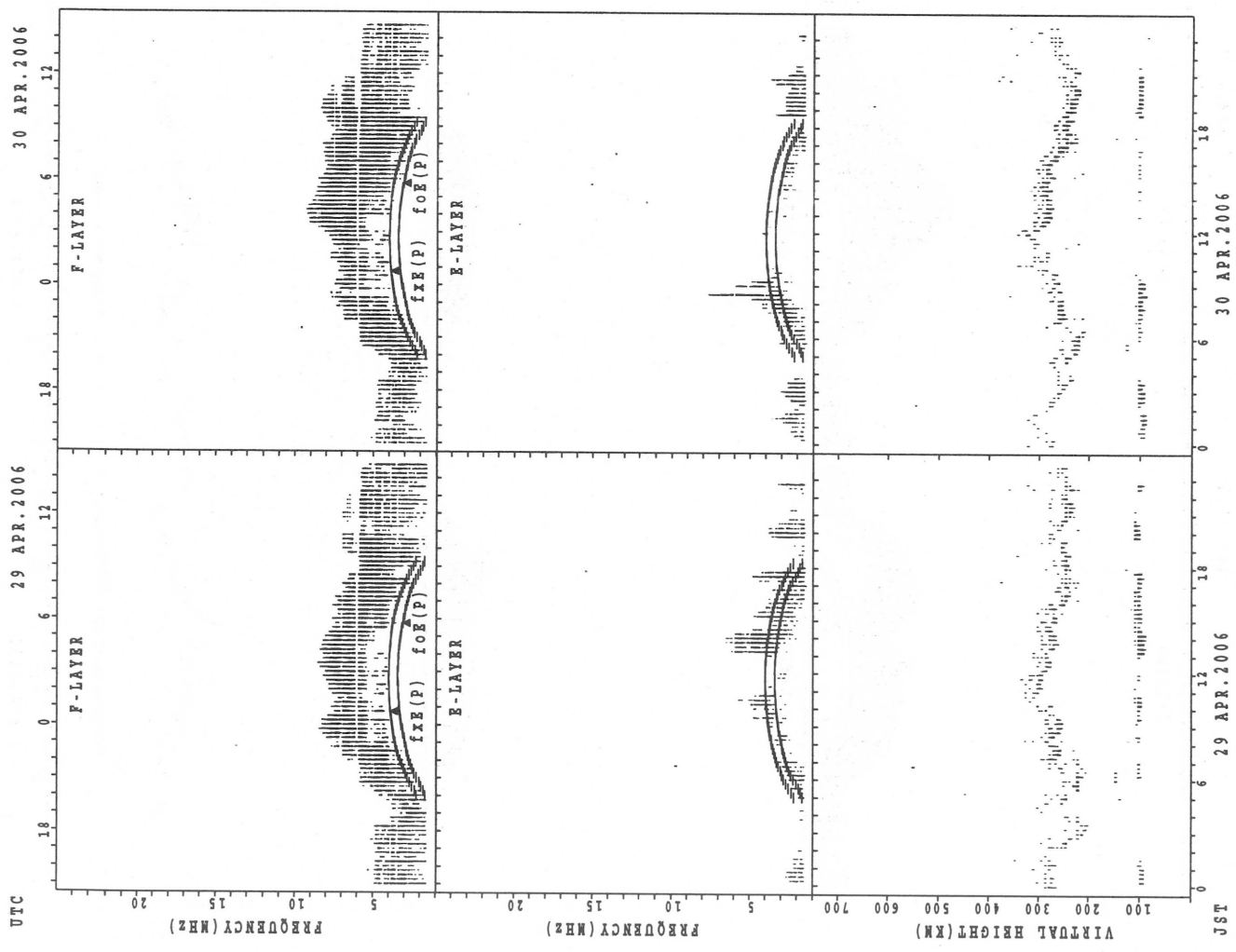
fxe(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



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

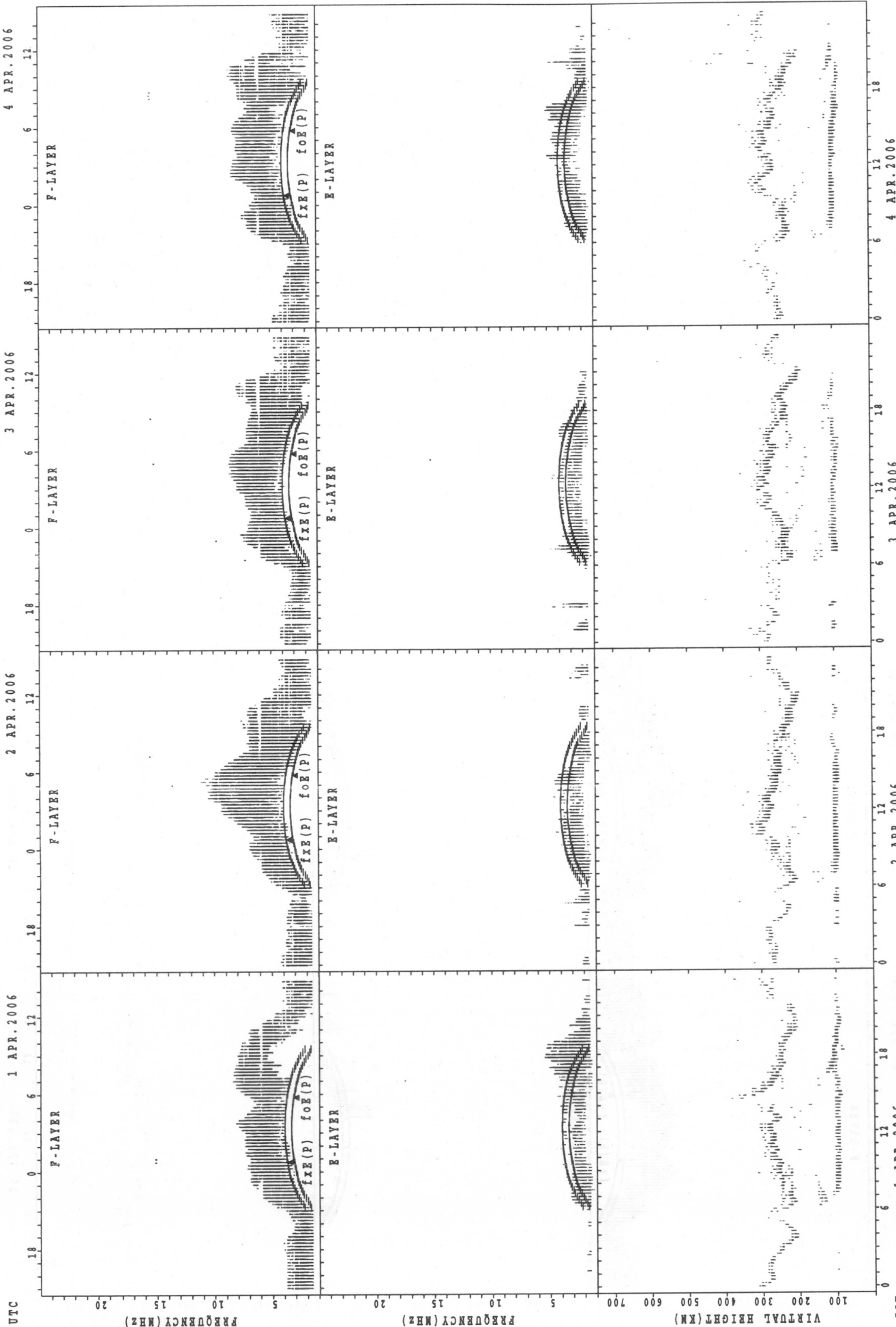
SUMMARY PLOTS AT Kokubunji



f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

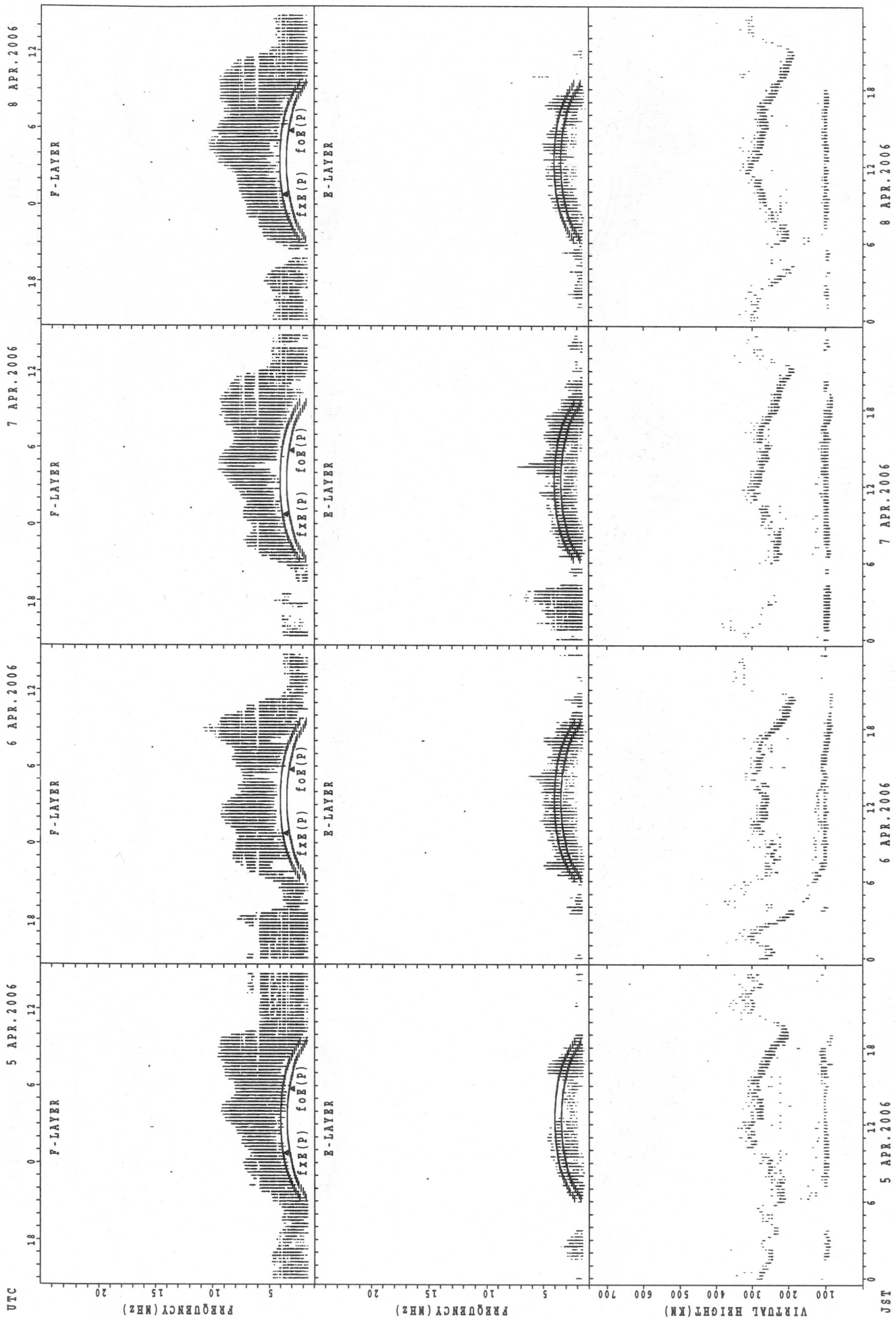
JST

SUMMARY PLOTS AT Yamagawa



$f_{x E}(P)$; PREDICTED VALUE FOR $f_{x E}$
 $f_{o E}(P)$; PREDICTED VALUE FOR $f_{o E}$

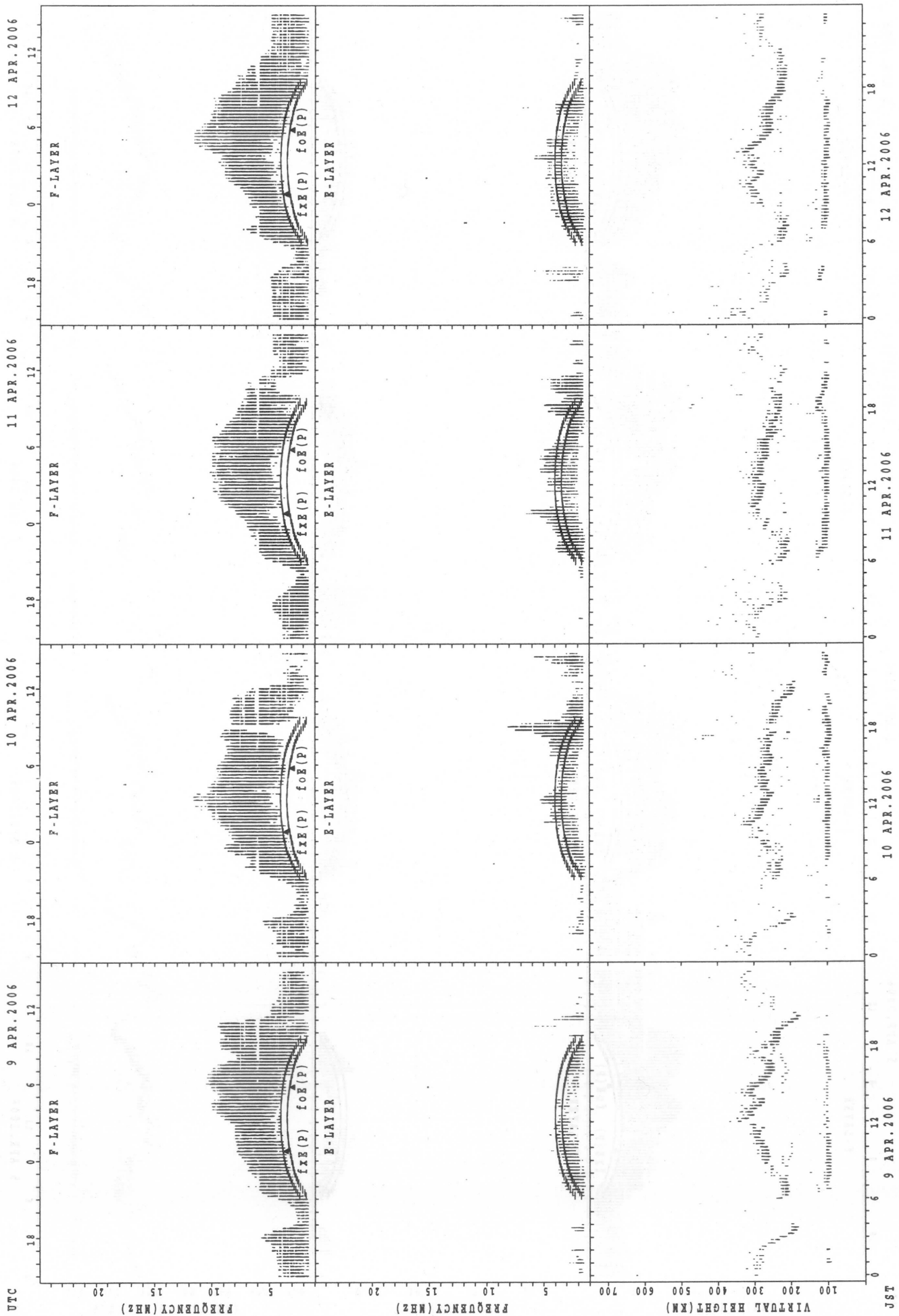
SUMMARY PLOTS AT Yamagawa



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

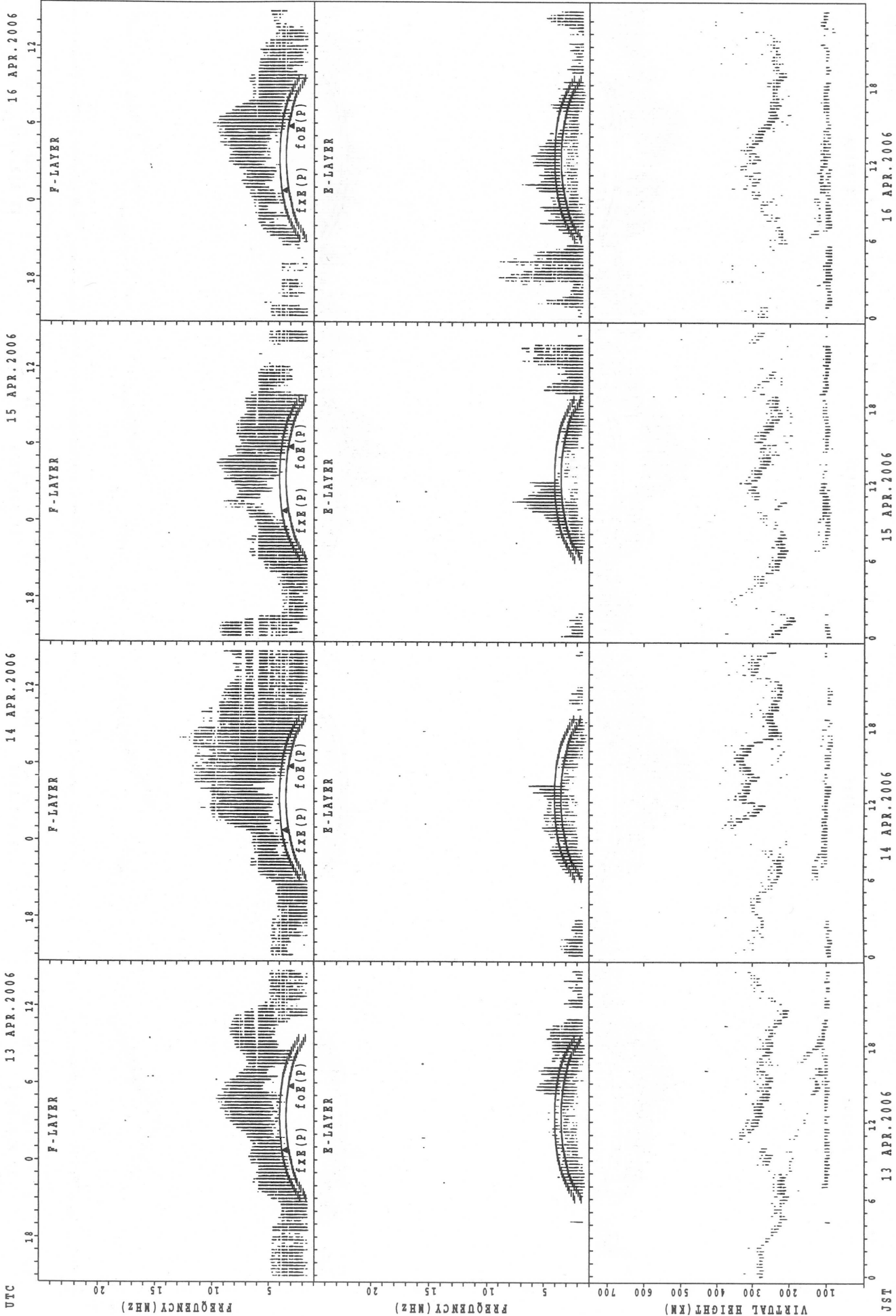
JST

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

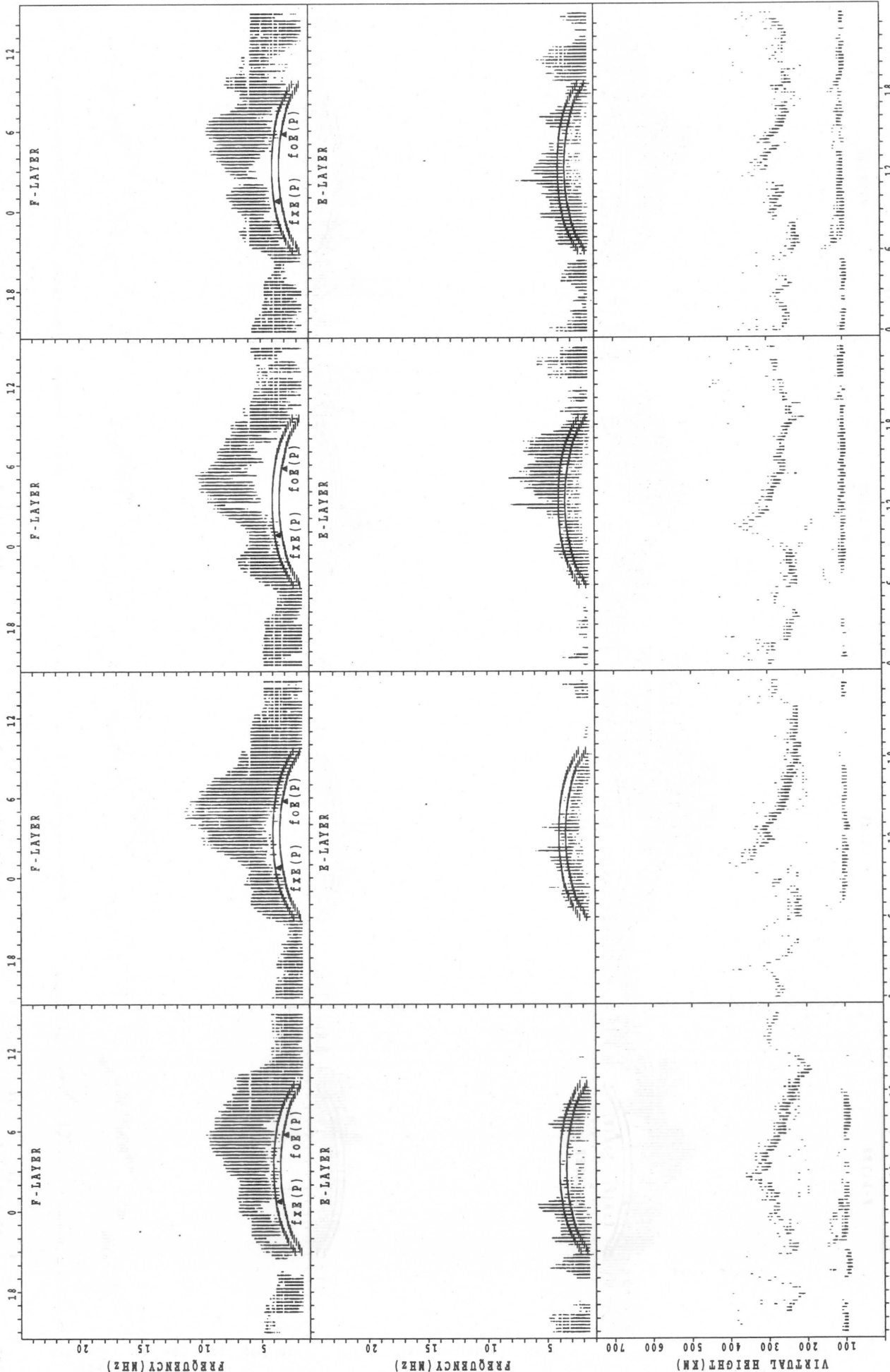
UTC 17 APR. 2006

18 APR. 2006

19 APR. 2006

20 APR. 2006

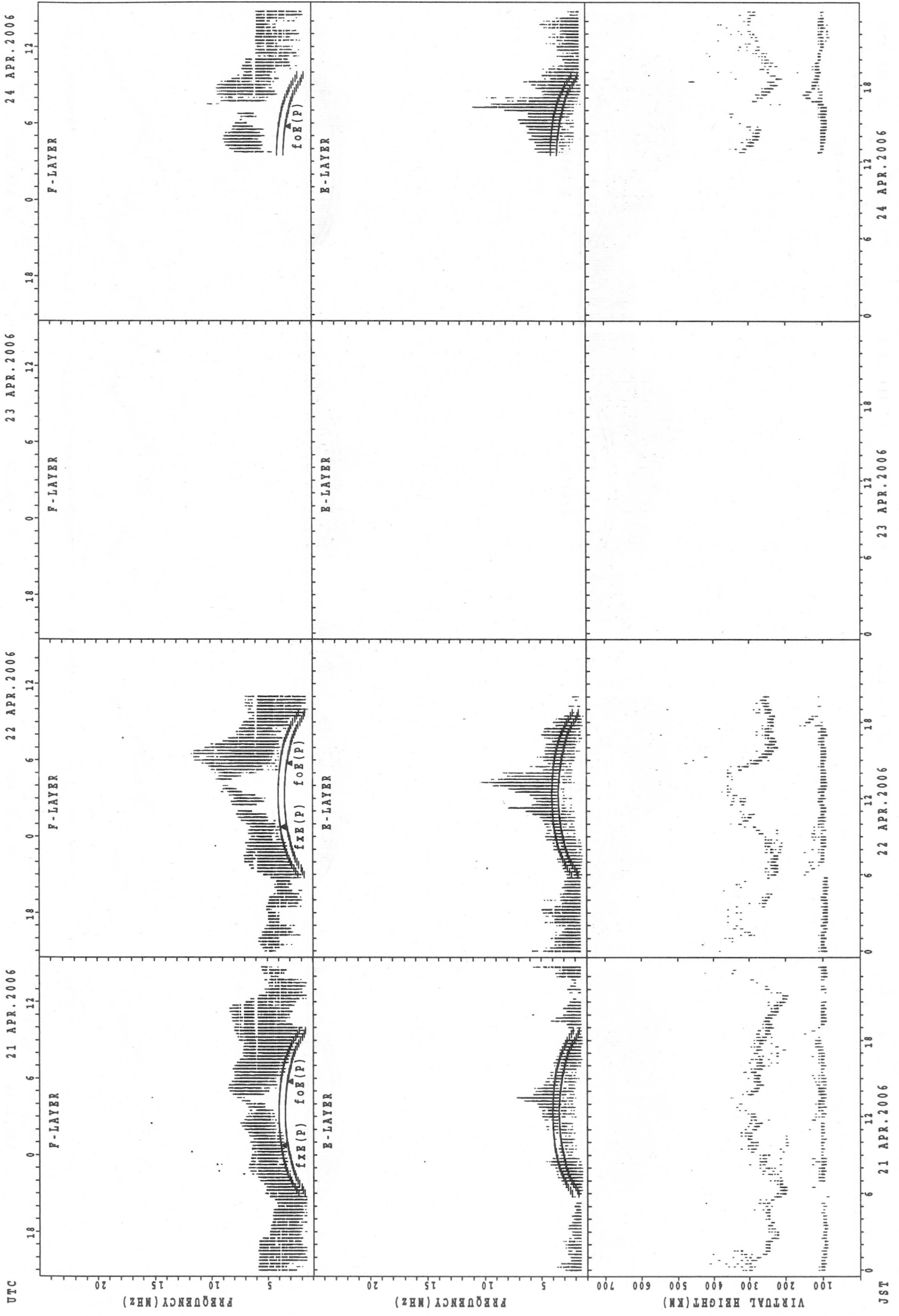
UTC



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

JST

SUMMARY PLOTS AT Yamagawa



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

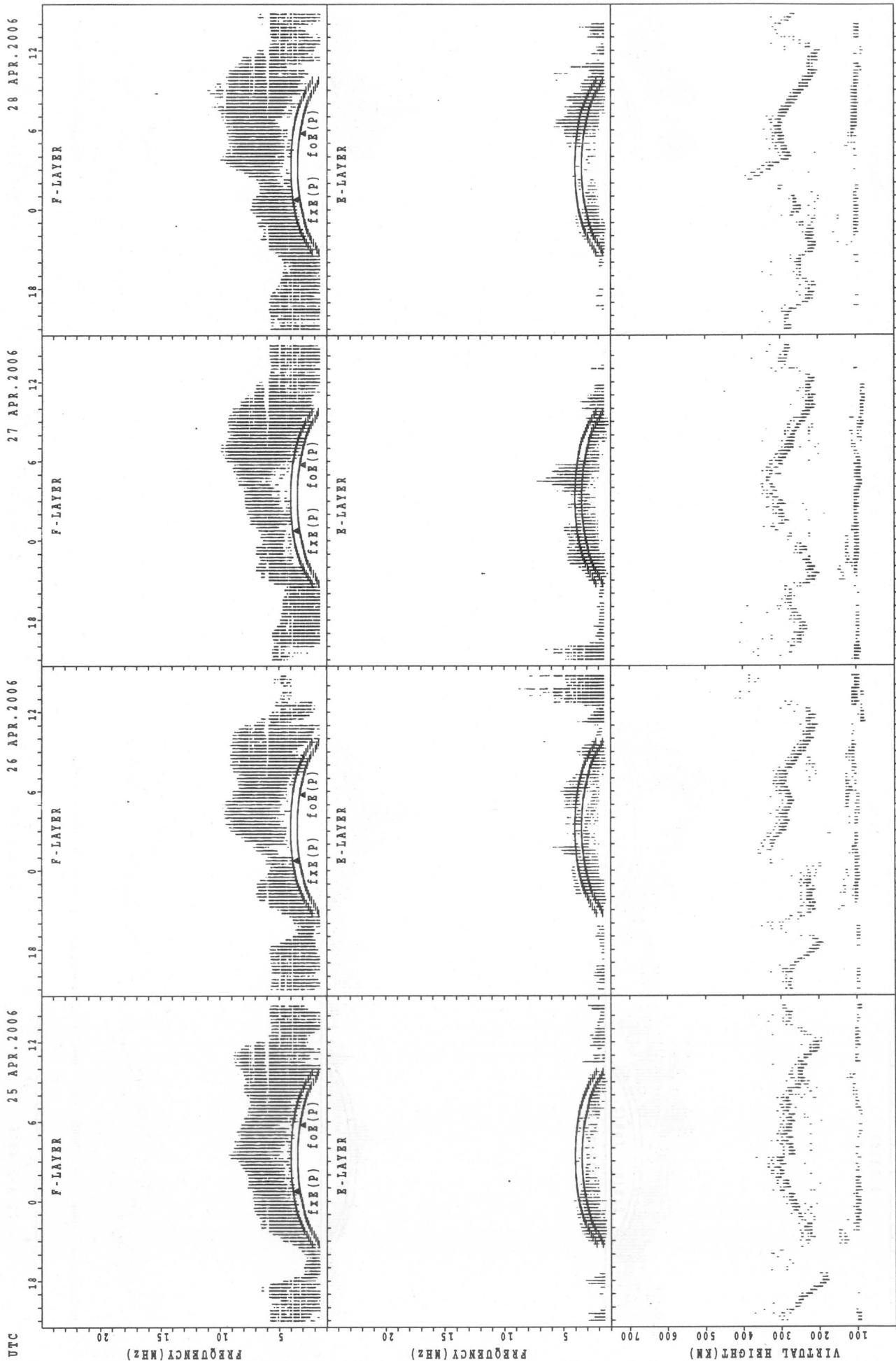
SUMMARY PLOTS AT Yamagawa

UTC 25 APR. 2006

26 APR. 2006

27 APR. 2006

28 APR. 2006



JST 25 APR. 2006

26 APR. 2006

27 APR. 2006

28 APR. 2006

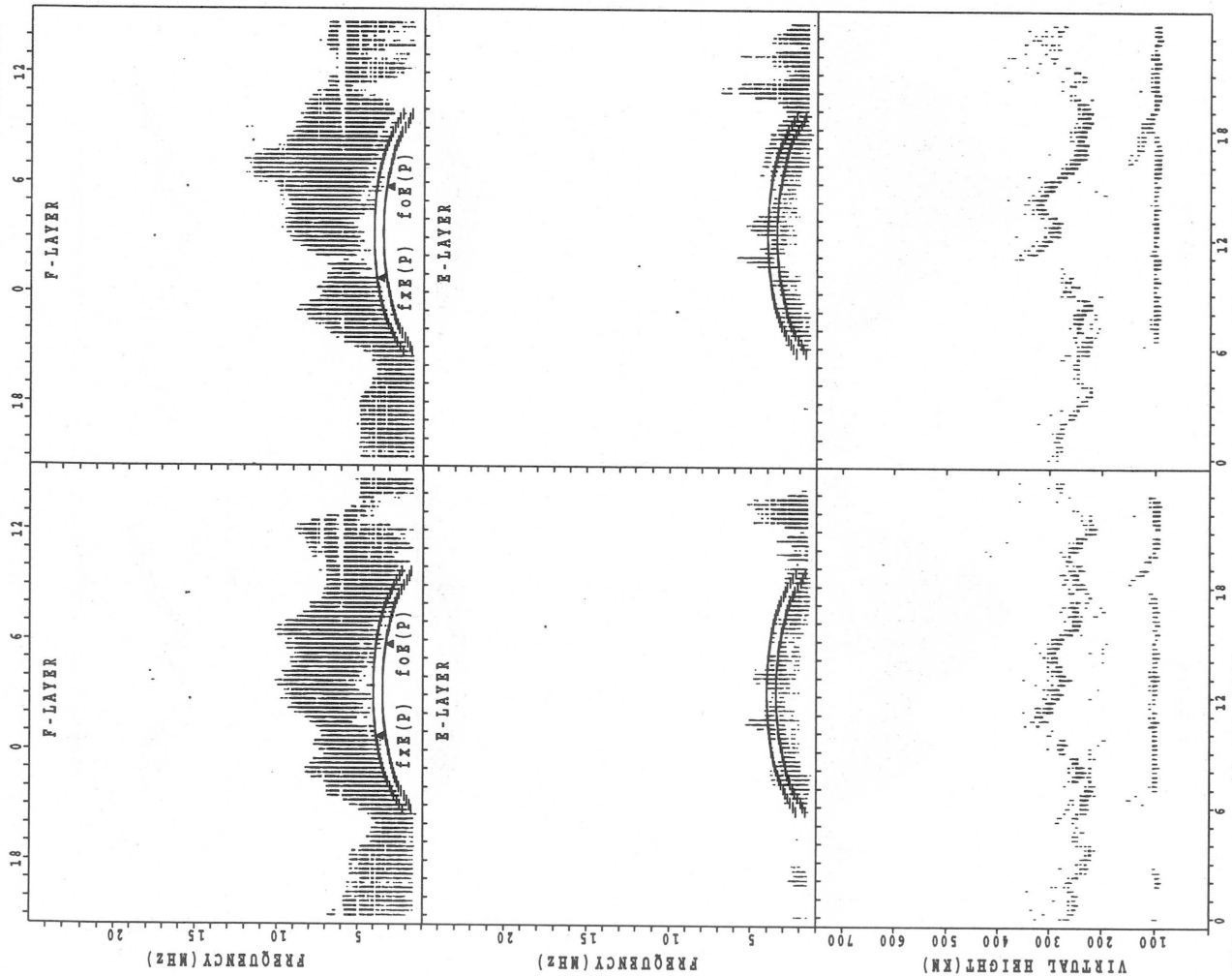
f_{x E}(P); PREDICTED VALUE FOR f_{x E}
 f_{o E}(P); PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Yamagawa

UTC

29 APR. 2006

30 APR. 2006



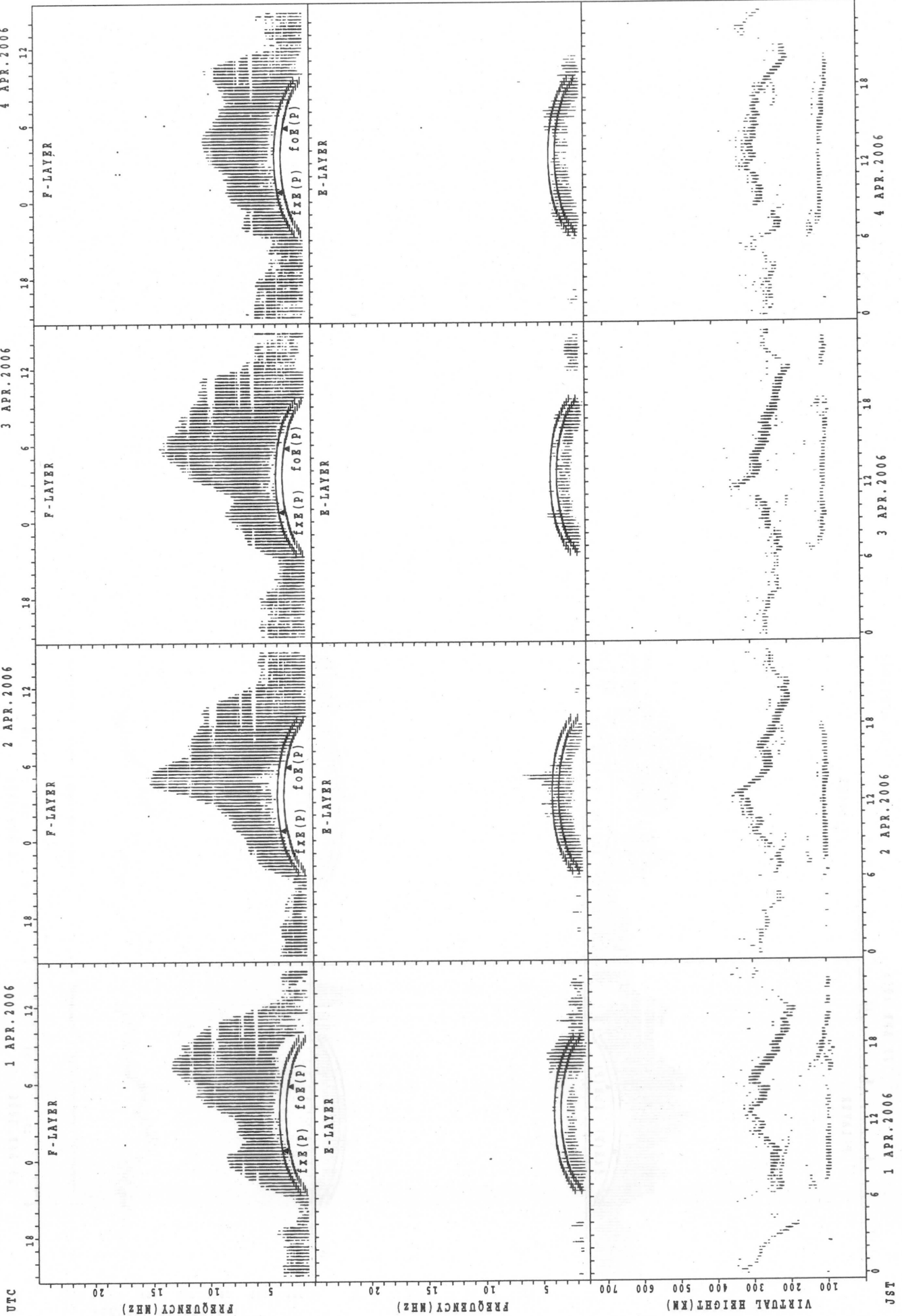
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

JST

29 APR. 2006

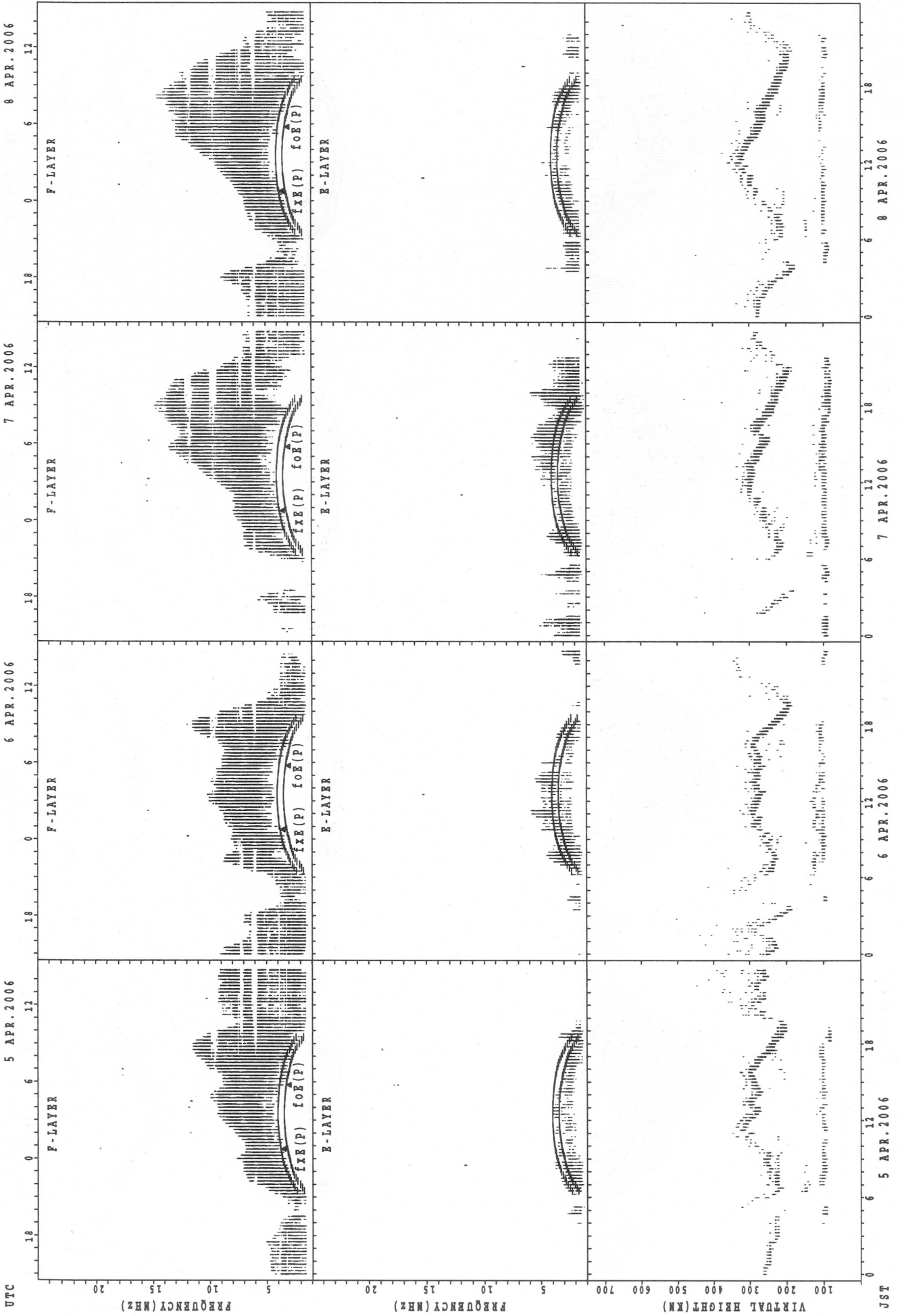
30 APR. 2006

SUMMARY PLOTS AT Okinawa



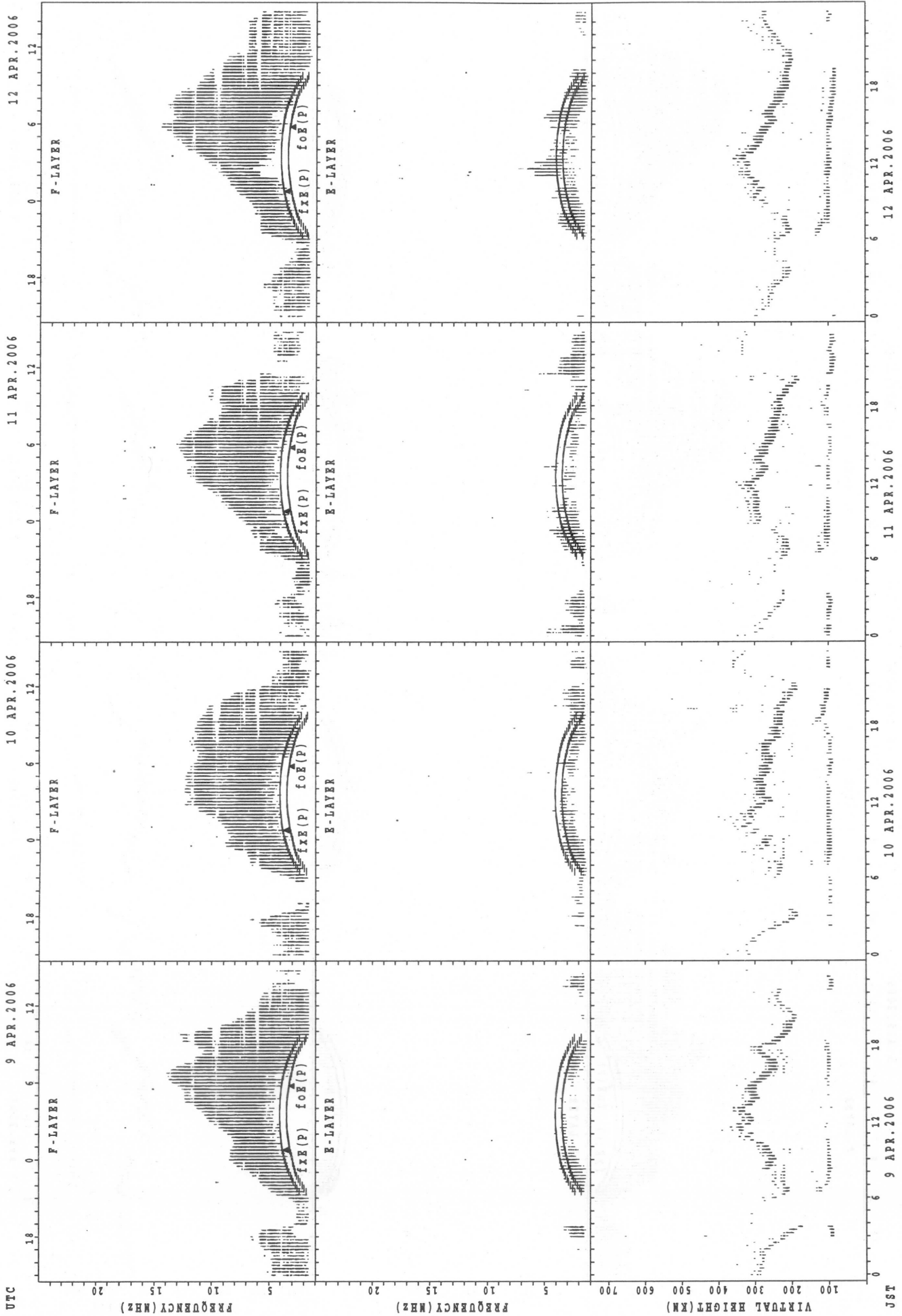
f_{x E}(P); PREDICTED VALUE FOR f_{x E}
f_{o E}(P); PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Okinawa



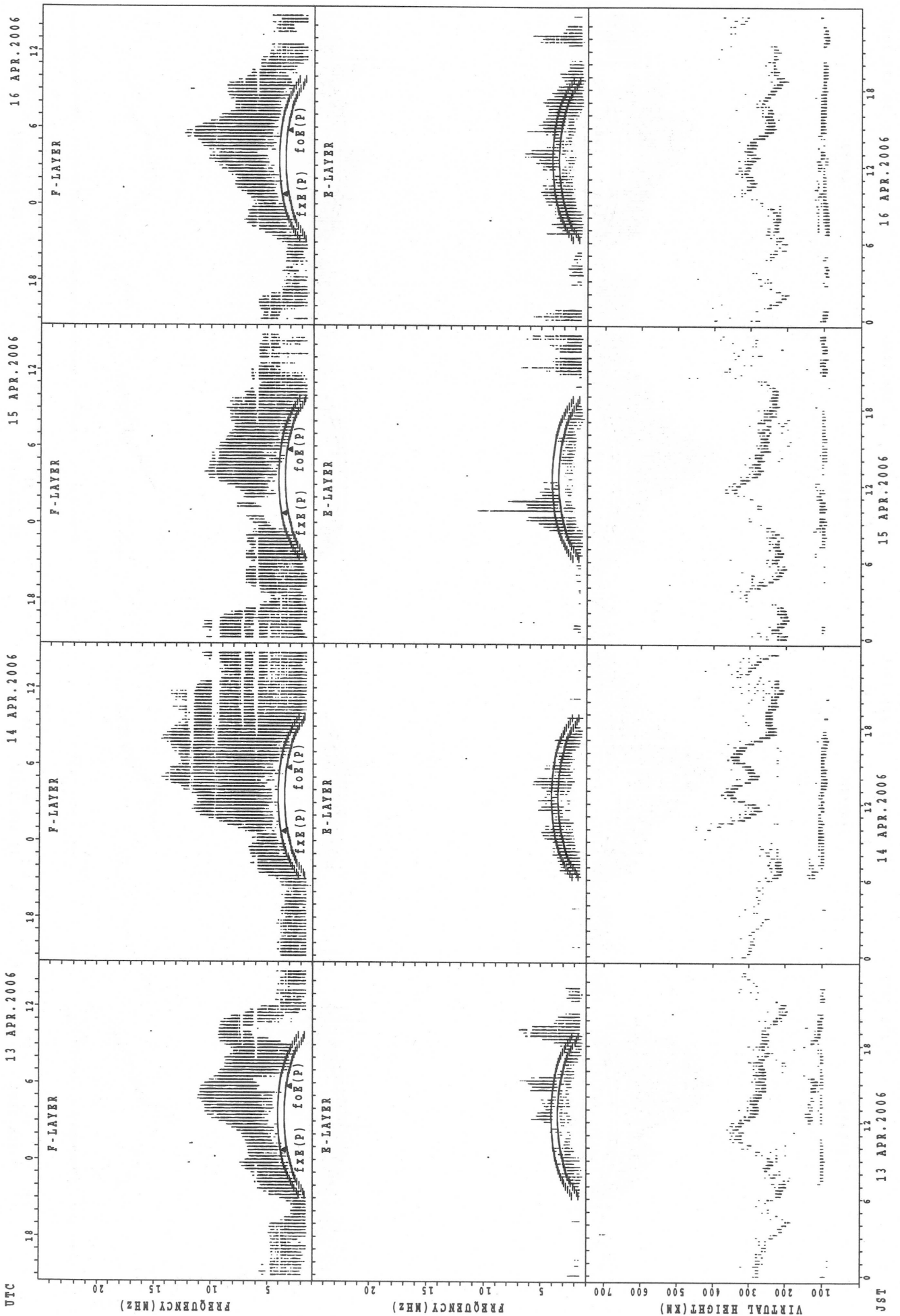
f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

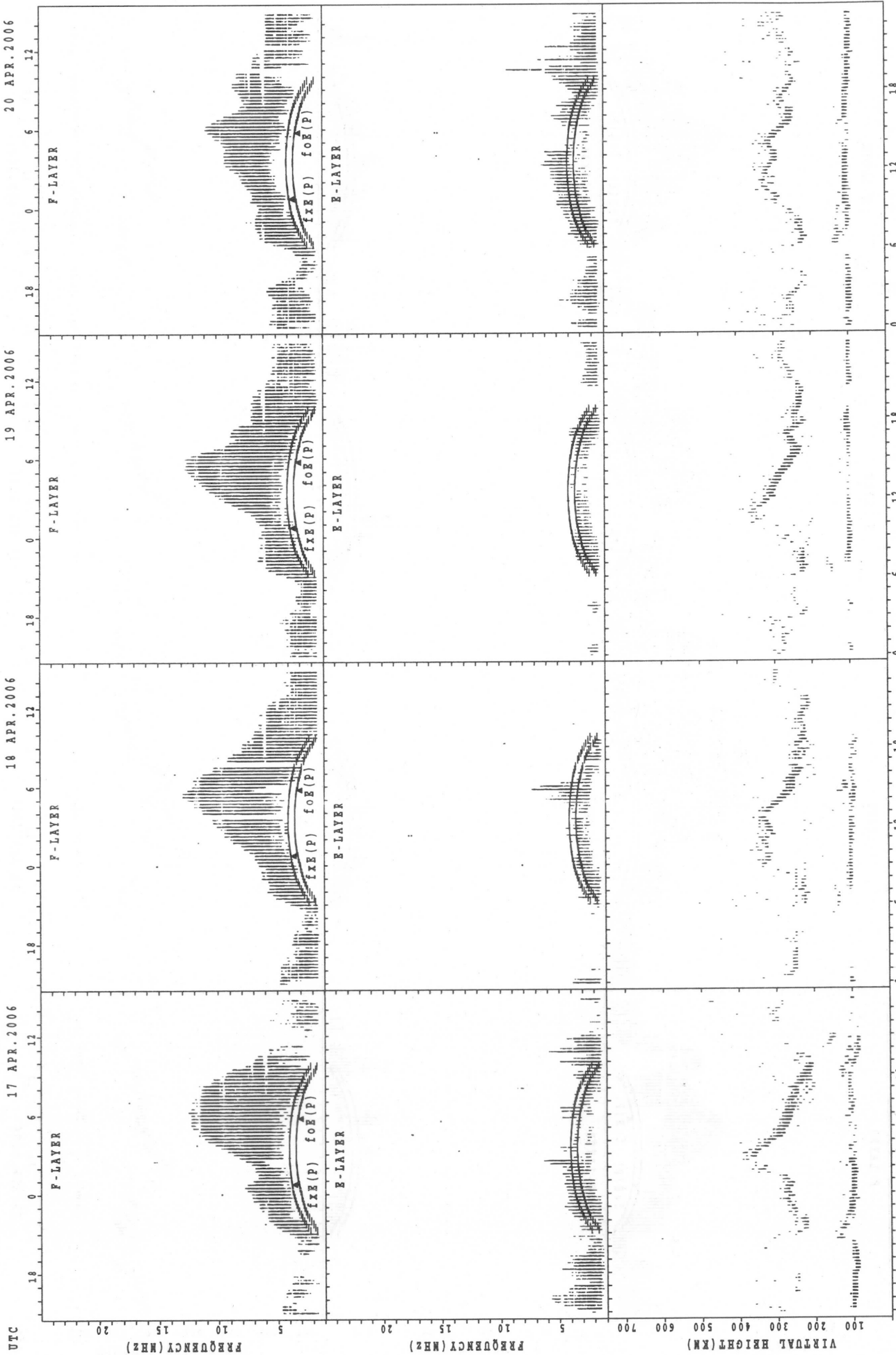
SUMMARY PLOTS AT Okinawa

UTC 17 APR. 2006

18 APR. 2006

19 APR. 2006

20 APR. 2006



f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

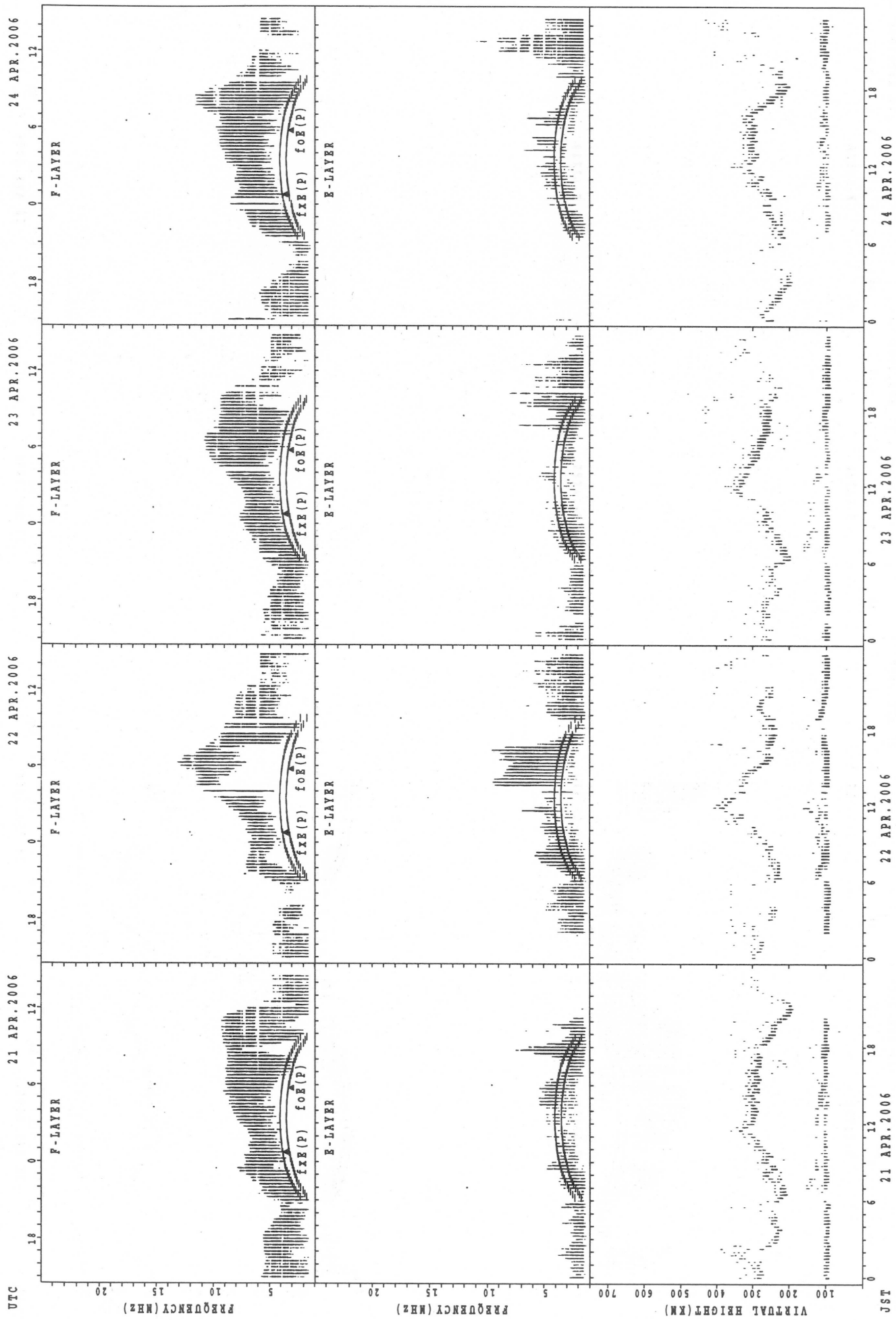
JST 17 APR. 2006

18 APR. 2006

19 APR. 2006

20 APR. 2006

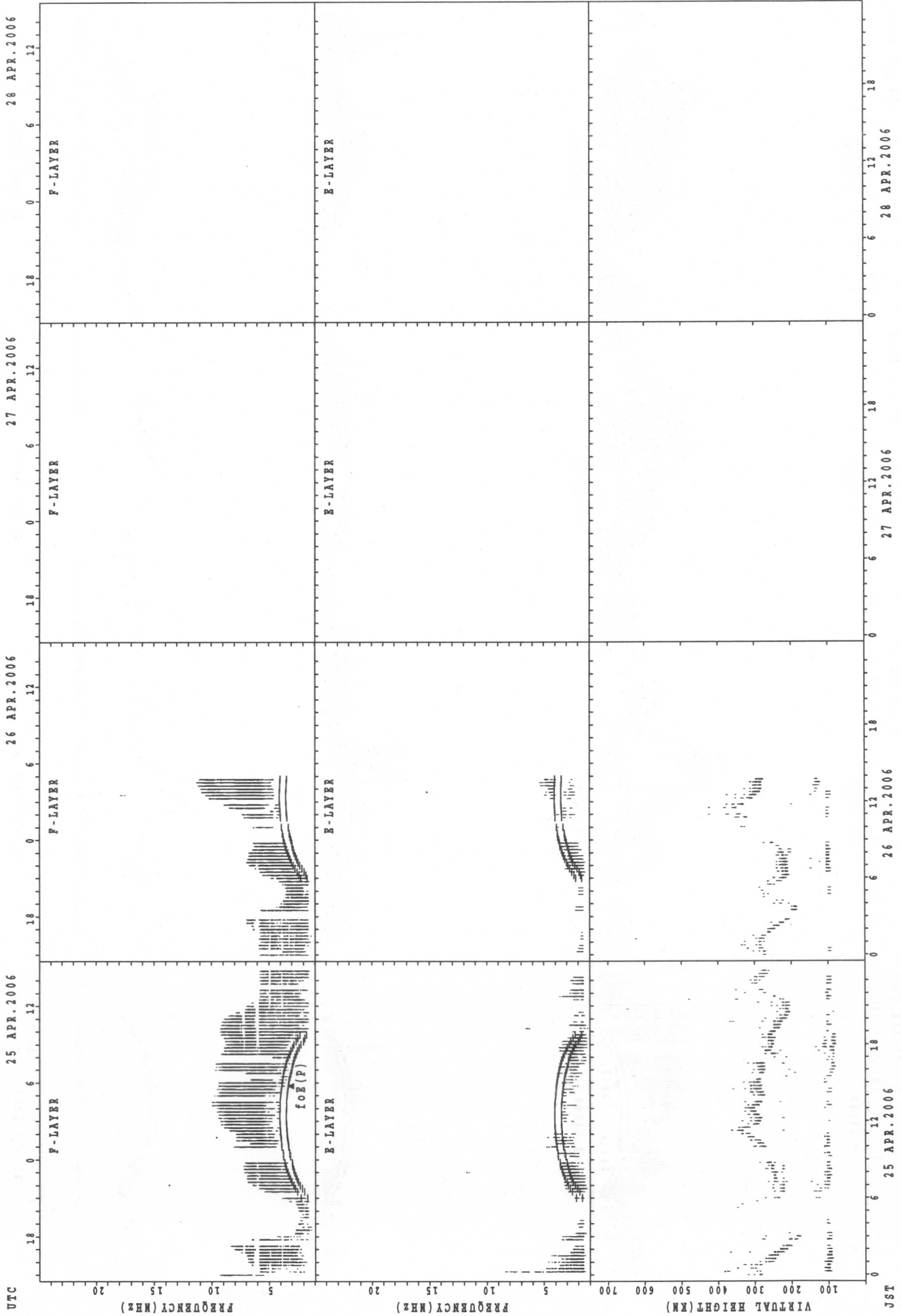
SUMMARY PLOTS AT Okinawa



f_oF₂(P); PREDICTED VALUE FOR f_oF₂
f_oE(P); PREDICTED VALUE FOR f_oE

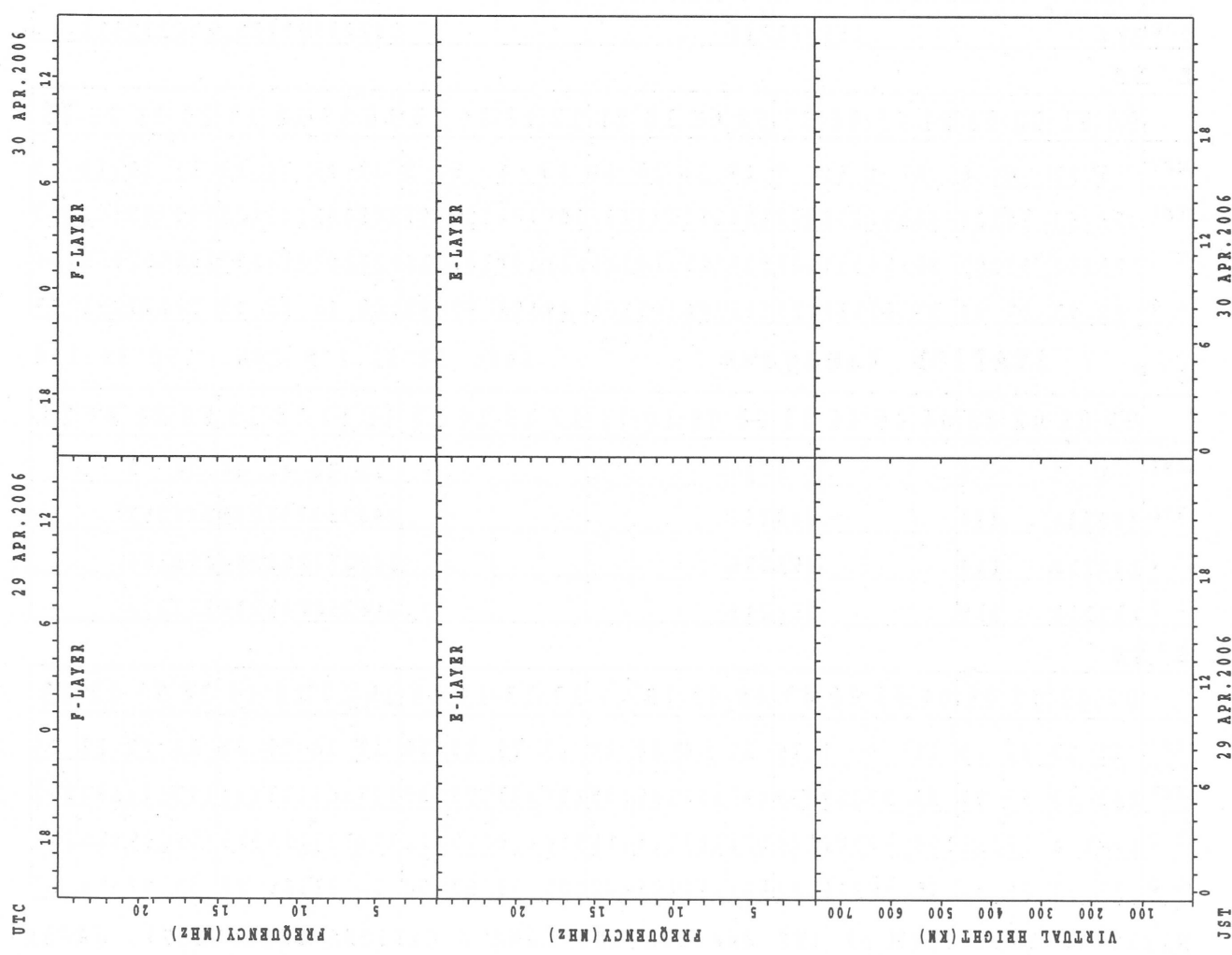
JST

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



f_{xx}(P); PREDICTED VALUE FOR f_{xx}
foE(P); PREDICTED VALUE FOR foE

MONTHLY MEDIANS OF h'F AND h'Es

APR. 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								3	1								12	12	4	6	2	1		
MED								278	280								288	272	282	272	258	292		
U Q								296	140								301	283	292	278	262	146		
L Q								272	140								272	266	272	264	254	146		

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	5	7	7	7	7	7	8	11	7	14	14	10	12	12	7	3	7	15	17	10	15	12	12	10
MED	99	97	97	105	103	103	125	105	113	106	103	100	99	98	99	101	111	113	103	110	105	103	100	97
U Q	103	107	111	109	107	107	144	113	131	113	105	103	105	107	103	103	119	119	114	113	109	105	103	99
L Q	99	95	91	97	97	99	108	101	101	101	99	99	95	95	95	89	103	95	93	101	97	99	96	97

h'F STATION Kokubunji

LAT. 35°42.4'N LON. 139°29.3'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1						1	9	7								25	16	18	14	7	1	1	
MED	246						230	246	254								270	259	264	254	248	264	224	
U Q	123						115	270	272								284	269	270	262	252	132	112	
L Q	123						115	240	248								262	249	254	252	212	132	112	

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	11	6	6	6	4	11	7	10	12	13	11	12	6	6	5	10	13	14	13	15	11	10	9
MED	103	97	98	100	98	101	135	125	116	112	107	107	108	105	100	97	106	105	103	103	103	105	103	103
U Q	105	101	99	103	99	104	143	127	129	115	110	111	117	107	101	118	111	110	107	107	105	107	105	106
L Q	97	97	95	99	97	97	129	119	111	104	105	103	99	103	97	95	103	93	95	93	97	103	101	99

h'F STATION Yamagawa

LAT. 31°12.1'N LON. 130°37.1'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1		1				9	17								11	22	22	20	14	2		
MED	262	220		238				248	258								268	263	250	248	244	251		
U Q	131	110		119				259	266								280	272	264	264	258	264		
L Q	131	110		119				234	243								248	250	240	236	230	238		

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	12	12	9	11	8	7	16	16	18	14	20	19	20	19	17	19	18	22	20	22	11	12	16
MED	101	99	97	99	99	97	135	119	119	112	108	105	107	103	105	103	103	103	111	104	103	103	103	103
U Q	105	102	98	111	103	99	145	140	131	113	113	110	119	109	115	111	119	115	119	112	105	105	106	105
L Q	97	97	96	97	95	95	133	113	113	101	105	102	103	99	97	96	99	97	101	91	95	97	100	97

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	4	2	3	2		1		4	16	5								23	23	23	15	3	2	2
MED	267	265	232	233		314		235	247	252								254	242	238	224	240	348	300
U Q	289	298	300	236		157		247	265	275								264	260	256	246	258	384	312
L Q	248	232	232	230		157		226	242	244								240	230	222	216	238	312	288

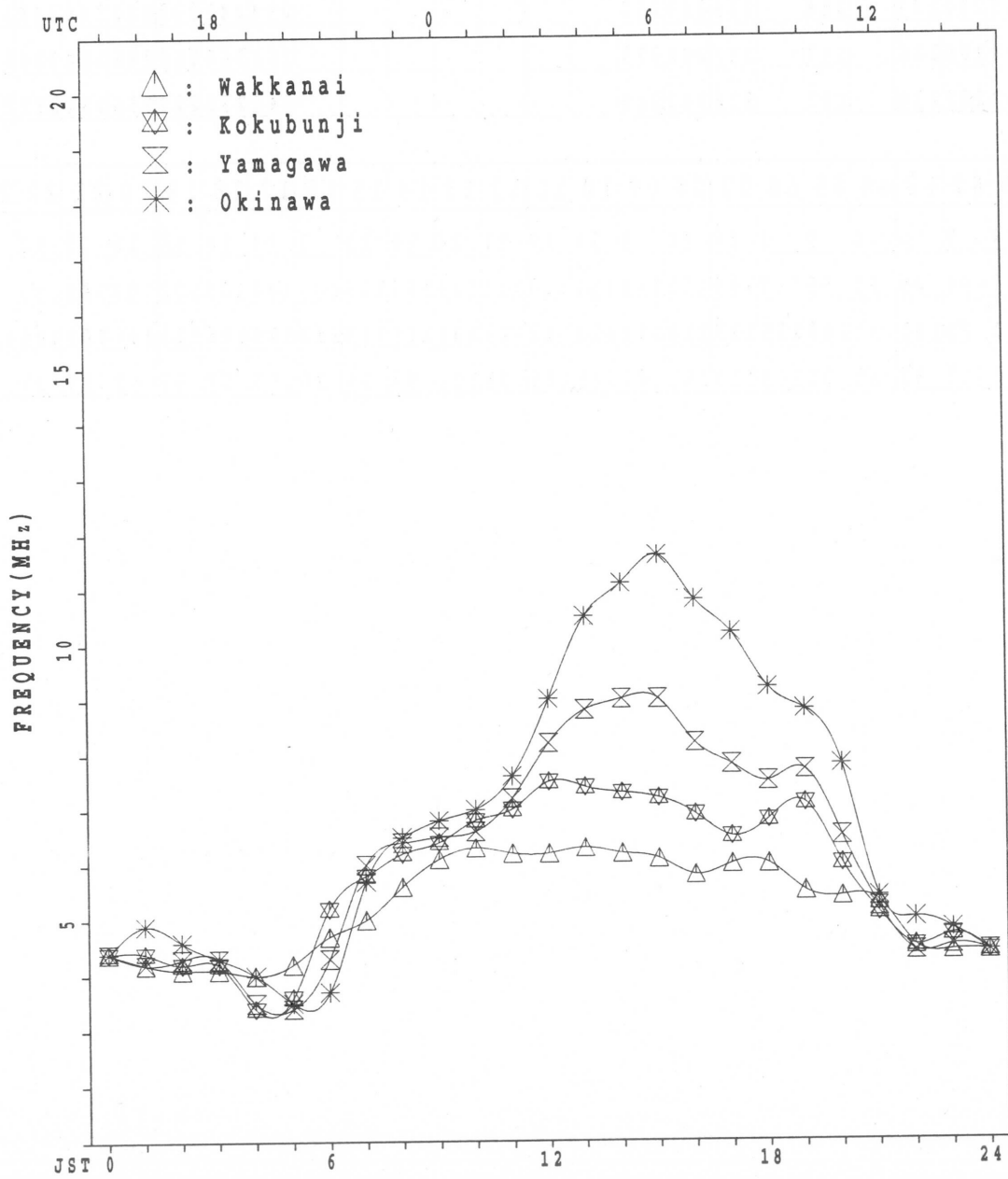
h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	8	7	9	6	9	3	18	16	9	11	12	11	14	10	13	9	14	16	16	12	12	12	15
MED	99	103	99	99	97	99	107	119	107	111	111	109	111	110	104	107	103	107	104	102	100	100	98	99
U Q	103	103	99	101	99	100	135	137	110	112	113	112	129	133	111	112	112	109	106	111	107	103	105	103
L Q	97	100	97	97	95	95	103	113	103	107	105	106	103	105	97	99	96	103	97	97	97	97	97	97

MONTHLY MEDIANS PLOT OF foF2

APR. 2006

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Kokubunji

APR. 2006 f_{XI} (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	50	49	49	50	40	42													X	76	68	66	51	47	47	
2	X	46	48	42	40	37	39															71	59	51	50	47	
3	X	45	44	43	43	38	38															X	X	X	X	X	
4	X	46	46	43	42	38	39															X	X	X	X	X	
5	X	52	54	50	47	47	47														X	80	68	54	55	54	
6	X	56	56	56	64	41	36															X	X	X	A	X	
7	X	40	40	41	44	A	34															C	X	X	X	X	
8	X	49	50	48	48	42	42															X	X	X	X	51	
9	X	47	46	46	47	36	37															X	X	X	X	X	
10	X	46	46	49	44	37	40															X	X	X	X	X	
11	X	43	43	46	38	30	40															X	X	X	X	X	
12	X	50	49	48	52	38	38															X	X	X	X	47	
13	X	47	43	46	46	36	39															X	X	X	X	X	
14	X	56	53	51	48	46	46															X	X	X	X	X	
15	X	112	63	A	37	40	49															X	X	X	X	X	
16	A	50	39	39	40	41																X	X	X	X	X	
17	X	44	38	39	44	35	38							C	C	C	C	C	C	C	C	C	C	C	C	C	
18	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C	C	X	X	X	X	X	
19	X	48	44	42	41	38	40															X	X	X	X	X	
20	X	55	C	C	C	C	C		C	C	C	C										X	X	X	X	X	
21	X	63	59	54	50	42	41															X	X	X	X	66	
22	X	62	58	51	50	47	50															X	X	X	X	X	
23	X	58	69	37	39	41	48															X	X	X	X	X	
24	X	52	51	50	50	35																X	X	X	X	X	
25	X	54	55	54	50	41	47															X	X	X	X	X	
26	X	52	51	52	54	36																X	X	X	X	X	
27	X	60	56	53	49	46																X	X	X	X	S	
28	X	56	56	54	49	44																X	X	X	X	X	
29	X	56	53	53	54	40																X	X	X	X	X	
30	X	54	51	51	50	44																X	X	X	X	X	
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	27	28	27	22														2	28	29	29	28	29	
MED		X	X	X	X	X	X														X	X	X	X	X	X	
U Q		56	56	52	50	42	46															83	78	67	54	54	
L Q		X	X	X	X	X	X																X	X	X	X	X
		46	46	43	42	37	38																67	62	51	50	49

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	44	43	43	44	34	36	50	56	64	62	66	70	72	62	53	65	65	68	70	62	60	45	41	41		
2	40	42	36	34	31	33	46	54	59	65	69	77	86	72	58	66	68	59	60	65	53	44	44	41		
3	38	38	37	37	32	32	48	61	61	61	66	66	65	67	63	63	58	57	62	67	59	43	44	42		
4	40	40	37	36	32	33	49	63	65	63	62	68	67	65	66	68	62	58	70	74	62	48	49	48		
5	46	48	44	41	41	41	52	72	61	68	66	72	75	82	70	80	80	88	84	74	51	54	50	48		
6	50	50	50	58	35	30	40	54	62	69	77	81	65	69	65	66	72	78	80	78	49	30	A	34		
7	34	34	35	39	A	28	48	56	62	65	65	68	70	75	68	72	70	72	78	C	66	50	44	43		
8	42	44	42	42	36	36	47	54	62	69	70	70	80	86	77	70	70	61	71	77	70	48	43	F		
9	41	40	40	41	30	31	52	60	64	64	72	75	74	72	74	94	81	60	84	84	78	42	41	40		
10	40	40	42	38	31	34	48	52	56	S	61	64	66	74	62	68	66	63	59	59	64	34	34	36		
11	37	37	40	32	24	33	49	50	58	66	71	77	86	77	78	76	67	69	63	61	59	47	45	44		
12	44	43	42	46	32	32	54	55	58	56	64	74	75	83	88	77	70	67	59	61	54	45	43	41		
13	41	37	39	39	30	33	53	52	57	60	58	65	71	80	74	70	64	64	70	71	61	57	52	50		
14	50	47	45	42	40	40	60	58	61	61	82	92	89	98	94	93	102	104	97	99	95	90	78	78		
15	106	58	A	31	34	43	54	52	52	57	58	A	A	65	68	71	63	59	59	56	54	57	47	46	43	
16	A	43	33	33	34	35	42	52	45	52	A	A	55	59	61	72	63	55	48	46	45	41	42	42		
17	38	32	33	38	F	32	44	54	57	60	71	65	C	C	C	C	C	C	C	C	C	C	C	C		
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	57	54	52	46	45	46
19	42	38	36	35	32	34	52	59	61	65	66	70	80	77	75	71	76	75	62	58	52	50	50	49		
20	49	C	C	C	C	C	C	C	C	C	71	67	62	67	77	85	74	64	61	68	61	58	59	58		
21	F	53	48	44	36	35	51	53	58	60	69	64	68	62	74	75	64	58	67	76	69	60	58	F		
22	56	53	44	44	41	44	58	64	61	64	72	76	75	72	76	103	102	62	50	58	57	58	58	55		
23	52	63	31	33	35	42	54	61	59	72	74	72	66	62	65	73	80	80	81	80	69	45	46	46		
24	46	F	F	44	28	37	51	56	62	62	69	66	67	70	67	65	62	59	68	72	61	55	52	48		
25	48	49	48	44	35	41	54	55	62	61	68	76	76	78	69	60	62	64	71	77	78	62	48	48		
26	46	45	46	47	30	36	54	65	64	64	A	60	75	77	78	74	69	73	75	77	66	54	50	52		
27	54	50	46	43	40	42	59	73	73	62	64	66	71	74	81	88	85	81	77	76	66	51	50	S		
28	50	50	48	43	38	46	53	57	61	69	68	63	75	78	74	81	84	87	92	93	77	48	48	50		
29	50	47	47	48	34	42	53	62	70	80	73	73	80	78	76	72	71	65	58	64	67	66	63	55		
30	48	45	45	44	38	45	58	63	69	71	68	72	78	87	84	80	76	78	72	80	73	62	56	54		
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	28	26	28	28	28	28	27	27	27	28	28	28	28	28	28	29	28	29	29	28	26		
MED	46	44	42	42	34	36	52	56	61	64	68	70	73	74	74	72	70	64	70	72	61	48	48	47		
U Q	50	50	46	44	36	42	54	62	63	68	71	75	77	78	77	80	78	76	78	77	69	58	52	50		
L Q	40	40	37	36	31	33	48	54	58	61	65	66	66	68	66	67	64	60	60	61	56	45	44	42		

APR. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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								L	L	L	L	L	L	L	L	L	L	L						
2									L	L	L	L	L	L	L	L	L	L						
3									L	L	L	L	L	L	L	L	L	L						
4									L	L	L	L	L	L	L	L	L	L						
5									L	L	L	L	L	L	L	L	L	L						
6								L	A	A	A	A	L	L	L	L	L	L						
7								L	A	L	A	A	A	L	L	L	L	L						
8									L	L	L	L	A	L	A	L	L	L						
9								L	L	L	L	L	L	L	L	L	L	L						
10								L	L	S	L	L	L	L	L	L	L	A						
11								L	L	L	L	L	A	L	L	L	L	L						
12									L	A	L	L	L	L	L	L	L	L						
13									L	L	L	L	L	L	L	L	L	L						
14									L	L	L	L	L	L	L	L	L	L						
15								A	A	L	A	A	A	L	L	L	L	L						
16								A	L	A	A	A	A	A	L	L	L	L						
17									L	L	L	L	C	C	C	C	C	C						
18								C	C	C	C	C	C	C	C	C	C	C						
19								L	L	A	A	A	L	A	L	L	L	L						
20								C	C	C	C	L	L	L	L	L	L	A						
21									L	L	A	A	A	L	L	L	L	L						
22								L	L	A	A	A	L	L	L	L	L	L						
23									L	L	L	L	L	L	L	L	L	L						
24								L	L	L	L	A	L	L	L	L	L	L						
25									L	L	L	L	L	L	L	L	L	L						
26								L	L	L	A	A	L	L	L	L	L	L						
27								L	L	L	L	L	L	L	L	L	L	L						
28									L	L	L	L	L	L	L	L	L	L						
29								L	L	L	L	L	L	L	L	L	L	L						
30								L	L	L	L	L	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								2	8	13	19	19	21	22	23	18	3	1						
MFD								408	417	440	460	460	472	464	452	440	368	344						
U Q									L	L	L	L	L	L	L	L	L	L						
L Q									428	460	464	476	480	472	460	448	432							

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	232	280	R	A	A	R	R	R	304	280	U	R	R				
2							B	256	288	U	A	A	A	R	R	A	R	A	A	B				
3							B	252	300	R	R	U	R			R	U	R	U	R	B			
4							176	268	296	320		R	R			R	A	U	R	A	B			
5							184	A	A	R	A	A	A			A	U	A	A	A				
6							B	U	A	U	A	A	U	A	A	R	R	R	R	A	B			
7							200	264	A	A	A	A	A	A	A	A	A	U	R	U	R	B		
8							184	256	A	A	A	A	A	A	A	A	U	R	A	B				
9							U	R	A	A	A	A	R	A	R	R	288	232	U	A	B			
10							180	U	R	R	A	A	A	A		A	A	A	A	B				
11							196	264	A	R	A	A	A	A	A	A	U	R	U	R	B			
12							192	R			A	A	A	U	R	A	R	R	A	B				
13							192	U	R	R	R	R	R	R	R	332	320	U	A	A	B			
14							200	A	A	A	A	A	A	R	A	A	A	A	A	B				
15							B	264	292	A	A	A	A			R	R	U	R	B				
16							216	A	284	A	A	A	A	A	R	U	R	R	228	B				
17							196	256	R	R	U	A	A	C	C	C	C	C	C	C				
18							C	C	C	C	C	C	C	C	C	C	C	C	C	B				
19							216	260	296	U	A	A	A	A	U	R	U	R	A	B				
20							C	C	C	C	A	A	A	A	A	A	A	A	A	B				
21							248	A	A	A	A	A	A		R	324	280	232	U	A	B			
22							216	268	A	A	A	A	A	A	R	U	R	R	R	B				
23							A	272	A	A	348	360	A	A	A	U	A	A	A	B				
24							B	U	A	U	A	A	A	A	A	A	A	A	A	B				
25							216	A	R	A	R	R	R	R	R	R	R	R	R	B				
26							B	220	284	U	A	A	A	A	R	A	A	U	A	A	B			
27							B	216	296	A	A	A	R	A	R	R	R	U	R	U	R	B		
28							B	224	280	R	R	348	368	A	R	U	R	A	A	B				
29							B	220	A	A	A	A	A	A	A	A	A	A	A	B				
30							B	A	R	A	A	A	B	A	R	R	R	U	R	B				
31																		284	248					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							21	19	9	2	4	2	3	6	2	10	13	9	1					
MED							216	264	292	334	338	354	356	342	340	312	284	232	188					
U Q							218	272	298	U	A	348	368	348		320	290	242						
L Q							192	256	282	U	A	318	356	340		304	276	226						

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	18	20	E B J A	14 16	18 19	J A	24 27	32	24	36	38	30	27	23	36	24	G	G J A J A E B E B E B E B	20 22	15	16	14	15			
2	J A	E B E B E B	J A	19	21	22	30	32	35	37	40	E B	G	G	36	27	G J A	J A	J A	21	20	J A J A J A	22	20		
3	J A	31	20	20	19	19	E B	24	29	33	25	28	26	G	G	G	G	23	28	J A J A E B E B E B E B	26	26	15	15	15	15
4	E B E B E B E B E B E B	15 15	16 15	15 14	15 15	25	30	32	35	24	28	40	32	34	32	25	G	J A J A J A J A E B E B E B E B	21 20	23	20	16	16			
5	E B	15	19	19	E B E B E B E B	15 15	25	32	35	24	38	J A J A	41	41	36	34	J A E B E B E B E B	J A	16	15	15	16	20	15		
6	E B E B E B	15 15	16 19	E B E B	15 15	25	28	32	J A J A J A	46 47	48	42	31	28	28	24	G	J A J A J A J A J A J A	26 28	21	37	63	36			
7	J A J A J A J A J A J A	47 29	35 38	35 20	23	29	J A J A J A	43 42	60	44	53	J A	39	38	36	26	G	G J A	56	C	J A J A J A J A	26	22	28	15	
8	E B E B J A E B E B J A	15 15	17 15	15 19	23	29	32	38	41	48	64	36	45	40	31	31	28	J A	J A	22	18	22	15	34		
9	J A	23	19	19	E B J A E B	G	31	34	39	40	39	33	40	26	25	G	G	J A	J A	28	20	E B E B E B E B	15	15	15	16
10	J A J A	23 24	20 20	J A J A	18 20	23	J A	G	28	36	38	41	42	38	37	35	J A J A	J A J A	28	20	J A J A J A J A	17	19	22	30	15
11	E B E B E B E B	16 15	16 15	15 18	15 26	31	33	30	38	43	56	46	49	42	26	26	G	J A J A J A J A	26 37	43	21	20	E B	15	18	
12	E B E B E B E B E B	19 16	15 16	15 15	23	21	29	39	38	40	39	G	J A	G	39	28	G	E B E B J A J A E B	22	16	15	38	21	15	19	
13	E B E B E B	15 16	15 18	E B E B	25	23	28	30	32	29	28	G	G	37	35	32	J A J A J A J A	24 29	30	16	34	35				
14	20 18	E B E B E B E B	15 15	16 16	24	32	35	J A	42	39	49	38	35	34	46	34	J A J A J A J A	48 31	20	18	14	19	22			
15	E B	14 19	J A J A	20 15	21	43	40	38	52	82	64	41	27	23	22	21	17	19	16	16	15	36				
16	J A J A J A J A J A	74 50	54 61	33 19	29	43	36	J A J A J A J A	48 75	76	53	57	G	G	23	23	26	27	23	19	15	23	15			
17	E B J A J A J A J A E B	15 22	23 28	22 15	24	29	22	27	36	38	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
19	E B J A J A J A E B	15 24	30 18	16 22	25	30	37	J A J A J A	50 49	50	40	54	30	24	33	J A J A J A J A J A J A	51 24	23	21	27	63	55				
20	J A	27	C	C	C	C	C	C	C	J A	54 39	42 42	37	34	42	J A J A J A J A J A J A	55 39	76	85	27	25	24				
21	J A J A	47 24	18 19	20 14	42 45	40	J A	46	47	46	45	38	26	38	37	J A J A J A J A J A J A	42 31	32	52	24	37	38				
22	J A J A J A	36 20	20 21	J A E B	23 15	27	34	38	J A J A	48 49	49	40	40	29	26	G	G	E B J A	22 19	17	19	22	20	18		
23	E B	19 16	20 22	E B J A	15 39	27	31	35	J A	40	39	42	45	43	38	37	J A	J A	25 20	65	35	17	18	20		
24	J A J A J A J A J A J A	52 49	30 34	21 19	28	35	37	41	40	44	40	44	43	45	54	37	18	16	24	24	20	15				
25	E B E B E B E B E B E B	16 16	16 15	15 15	28	32	29	38	31	31	G	G	33	28	26	28	23	20	25	24	16	20	E B J A	15	22	
26	J A J A E B J A	25 28	15 20	E B	20 16	26	32	35	J A J A J A	44 53	56	40	30	34	38	37	J A J A J A J A J A J A	78 42	28	56	57	75	19			
27	E B E B E B E B E B E B	15 15	15 15	14 15	28	33	40	41	J A	43	30	40	33	27	27	26	G	G	J A J A J A	21 23	39	23	21	19	18	
28	E B E B E B E B E B E B	16 16	15 16	15 16	26	32	26	29	40	31	42	41	33	26	39	J A J A J A J A J A E B E B E B	34 24	19	29	15	15	16				
29	J A J A J A	20 20	18 18	22 20	28	33	35	40	43	41	38	43	70	38	J A J A J A J A J A J A	36 30	26	22	33	22	20	14				
30	J A	18 20	21 26	15 15	26	24	G	J A	56	38	42	38	33	30	28	24	28	22	22	22	22	26	20	20		
31																										
CNT	29	28	28	28	28	28	28	28	28	28	29	29	28	28	28	28	28	28	28	29	28	29	29	29	29	
MED	19	20	18	18	18	E B	16	25	31	34	39	40	42	40	38	34	33	30	28	J A J A J A J A	24 22	21	21	20	19	
U Q	J A J A J A J A J A J A	26 24	20 22	20 19	27	32	37	J A J A J A J A J A J A	43 48	48	44	42	38	38	36	32	28	28	30	23	26	24				
L Q	E B E B E B E B E B E B	15 16	15 16	15 15	24	29	32	G	32	38	38	38	33	28	26	G	G	G	G	E B	25 20	19	E B E B E B E B	15	15	

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	E	B	E	B	E	B	E	B	E	B	G		G	G	G		G	E	B		E	B	E	B	E	B									
2	E	B		E	B	E	B	E	B	E	B		E	B	G		G			E	B	E	B	E	B	E	B								
3		E	B	E	B	E	B	E	B	E	B		G	G	G		G			E	B	E	B	E	B	E	B								
4	E	B	E	B	E	B	E	B	E	B	E	B	U	Y	G		G			E	B	E	B	E	B	E	B								
5	E	B	E	B	E	B	E	B	E	B	E	B	G				G		E	B	E	B	E	B	E	B	E	B							
6	E	B	E	B	E	B	E	B	E	B	E	B		G	G	G	G					A	A												
7	18	24	20	32	A	A											G		G			E	B		E	B									
8	E	B	E	B	E	B	E	B	E	B	E	B					G				E	B		E	B	E	B								
9		E	B	E	B	E	B	E	B	E	B		G		G	G				E	B	E	B	E	B	E	B								
10		E	B	E	B	E	B	E	B	E	B		G							E	B		E	B	E	B	E	B							
11	E	B	E	B	E	B	E	B	E	B	E	B					G		G			E	B	E	B	E	B	E	B						
12	E	B	E	B	E	B	E	B	E	B	E	B					G			E	B	E	B	E	B	E	B	E	B						
13	E	B	E	B	E	B	E	B	E	B	E	B					G				E	B		E	B	E	B	E	B						
14	E	B	E	B	E	B	E	B	E	B	E	B			U	Y					E	B	E	B	E	B	E	B	E	B					
15	E	B	E	B	E	B	E	B	E	B	E	B		A	A		G	G	G	G	E	B	E	B	E	B	E	B	E	B					
16	A	A											A	A	A	A		G	G	G		E	B	E	B	E	B	E	B	E	B				
17	E	B	E	B	E	B	E	B	E	B	E	B					C	C	C	C	C	C	C	C	C	C	C	C	C	C					
18																				C	E	B	E	B	E	B	E	B	E	B	E	B			
19	E	B	E	B	E	B	E	B	E	B	E	B					G	G																	
20	E	B																																	
21		E	B		E	B		E	B		E	B					G																		
22	28	15	16	16	20	E	B										G	G	G	G	E	B		E	B	E	B	E	B	E	B				
23	E	B	E	B	E	B	E	B	E	B	E	B																							
24	E	B																																	
25	E	B	E	B	E	B	E	B	E	B	E	B					G	G	G	G	G	G		E	B	E	B	E	B	E	B	E	B		
26		E	B		E	B		E	B		E	B					A	A		U	Y														
27	E	B	E	B	E	B	E	B	E	B	E	B			U	Y			U	Y	G	G		G	E	B		E	B	E	B	E	B		
28	E	B	E	B	E	B	E	B	E	B	E	B					G	G																	
29	E	B	E	B	E	B	E	B	E	B	E	B																							
30	E	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	29	28	28	28	28	28	28	28	28	28	29	29	28	28	28	28	28	28	28	29	28	29	29	29	29										
MED	E	B	E	B	E	B	E	B	E	B	E	B					G																		
UQ	17	16	16	16	16	16	26	30	36	40	43	44	40	38	35	34	32	28	24	20	20	18	16	18											
LQ	E	B	E	B	E	B	E	B	E	B	E	B					G	G	G	G	G	E	B	E	B	E	B	E	B	E	B	E	B		
	15	15	15	15	15	15	22	28	30	32	36	36	36																						

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	15	16	14	15	15	15	15	13	13	16	19	18	16	16	18	16	14	16	15	15	15	16	14	15
2	15	15	15	16	14	15	14	12	14	15	17	24	24	17	19	17	14	14	14	16	15	15	15	16
3	15	16	16	15	16	15	16	14	14	15	18	18	19	19	21	16	16	13	15	15	15	15	15	15
4	15	15	16	15	14	15	14	14	14	15	20	18	18	21	21	16	14	14	14	16	14	15	16	16
5	15	16	16	16	15	15	15	15	14	13	16	18	21	15	15	18	15	14	16	15	15	16	15	15
6	15	15	16	15	15	15	16	16	16	14	18	24	15	16	20	16	14	14	13	15	14	14	15	15
7	16	14	15	14	15	15	15	13	16	20	20	20	22	21	16	16	15	15	13	C	15	16	15	15
8	15	15	15	15	15	14	14	15	14	16	20	19	20	16	21	18	16	13	15	15	16	14	15	16
9	16	16	15	14	14	16	14	13	14	22	26	23	22	24	17	16	15	15	14	15	15	15	15	16
10	15	16	16	15	15	15	14	15	14	17	19	16	19	17	18	16	15	14	14	14	15	15	15	15
11	16	15	16	15	15	15	14	13	15	17	17	17	16	17	22	14	15	14	14	15	15	15	15	15
12	15	16	15	16	15	15	14	15	19	17	17	23	20	25	15	20	14	13	16	15	15	15	15	14
13	15	16	15	14	15	16	16	15	16	16	16	21	18	17	18	16	15	15	14	14	15	16	15	15
14	15	15	15	15	16	16	15	15	14	16	22	26	20	20	16	16	14	15	14	14	16	14	15	15
15	14	16	14	14	16	15	15	15	14	14	16	20	15	17	16	14	15	14	17	16	16	16	15	14
16	16	15	15	15	15	14	15	15	15	16	16	20	16	20	17	17	14	16	16	15	15	15	15	15
17	15	15	15	14	15	15	15	14	13	16	22	18	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	15	15	15	15
19	15	16	15	16	16	15	15	15	14	17	17	20	17	19	24	18	15	14	14	15	15	15	15	16
20	16	C	C	C	C	C	C	C	C	C	C	17	20	16	17	17	17	15	16	16	14	14	14	15
21	15	16	15	15	15	14	14	13	15	14	22	22	20	19	22	16	14	14	14	14	14	15	15	16
22	15	15	13	16	14	15	15	14	15	16	20	24	22	17	17	16	14	14	17	15	16	16	15	16
23	16	16	15	15	15	14	16	13	14	15	14	16	18	22	17	17	16	14	15	14	14	15	15	15
24	16	15	15	15	15	14	15	16	15	22	21	22	21	20	20	15	16	15	18	16	15	15	16	15
25	16	16	16	15	15	15	14	15	17	16	19	18	25	19	19	21	13	14	14	15	16	15	15	15
26	15	15	15	16	15	16	15	14	14	19	21	19	23	22	19	16	13	14	14	16	15	15	16	15
27	15	15	15	15	14	15	15	13	15	21	16	18	20	18	19	18	15	15	16	14	15	15	15	15
28	16	16	15	16	15	16	14	15	14	20	21	24	18	18	18	15	16	14	14	16	15	15	15	16
29	15	16	15	16	15	14	14	14	16	20	18	18	17	20	14	16	12	15	14	15	15	15	15	14
30	16	15	15	15	15	15	15	14	13	22	23	42	16	23	22	18	15	15	13	14	15	14	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	29	28	28	28	28	28	28	28	28	28	29	29	28	28	28	28	28	28	29	28	29	29	29	29
MED	15	16	15	15	15	15	15	14	14	16	19	20	19	19	18	16	15	14	14	15	15	15	15	15
U Q	16	16	16	16	15	15	15	15	15	20	21	23	21	20	20	18	15	15	16	15	15	15	15	16
L Q	15	15	15	15	15	15	14	13	14	15	17	18	16	17	17	16	14	14	14	14	15	15	15	15

APR. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	305	311	298	331	329	317	378	359	366	362	345	349	353	353	334	339	333	339	341	331	349	327	314	317		
2	327	347	306	317	328	314	384	353	340	339	337	332	340	341	309	342	347	344	336	347	352	305	322	320		
3	316	308	313	315	310	315	354	374	381	354	356	354	336	329	341	342	347	331	343	339	353	316	313	323		
4	319	320	330	342	311	305	357	364	376	352	347	352	333	334	327	350	352	338	333	334	359	296	293	301		
5	300	321	319	331	308	309	339	371	366	347	328	332	311	333	332	326	324	342	338	350	314	297	297	268		
6	292	284	296	356	357	305	341	336	326	346	337	346	331	342	360	325	321	331	340	359	389	289	A	285		
7	283	298	316	350	A	333	360	359	362	351	347	337	328	342	340	342	334	330	330	C	347	332	308	299		
8	295	301	310	338	337	327	371	358	349	356	339	321	315	322	336	334	348	329	331	338	351	318	286	F		
9	286	292	301	359	321	324	374	353	365	350	349	337	328	320	306	326	358	297	319	317	368	289	292	312		
10	287	292	317	367	328	320	317	320	317	S	313	330	301	316	326	329	336	335	334	327	353	399	273	283		
11	293	281	340	364	333	351	366	361	359	339	322	320	329	337	328	346	343	349	353	332	345	316	298	296		
12	292	291	317	359	316	320	366	368	367	347	326	336	311	319	325	333	337	356	349	338	337	299	293	309		
13	305	311	318	354	318	323	380	365	362	378	317	318	315	320	330	344	332	334	336	338	322	324	299	296		
14	309	306	294	277	309	309	385	353	343	305	284	311	284	300	289	268	284	315	303	312	309	308	277	272		
15	347	363	A	283	302	339	364	367	359	321	342	A	A	335	340	335	350	342	354	344	301	306	290	289	292	
16	A	298	284	305	281	327	348	344	319	326	A	A	293	318	322	341	351	340	347	309	317	293	289	304		
17	307	299	317	341	F	332	357	350	337	336	335	317	C	C	C	C	C	C	C	C	C	C	C	C		
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	345	312	322	312	282	302
19	342	298	301	321	301	319	352	350	347	352	312	312	316	325	325	333	337	350	345	337	293	293	310	302		
20	307	C	C	C	C	C	C	C	C	C	C	C	334	339	322	310	329	339	344	355	338	332	320	294	301	305
21	F	311	321	340	316	335	350	350	358	338	359	319	339	309	325	348	348	330	318	320	338	318	297	F		
22	311	308	302	326	318	305	375	359	348	343	337	334	315	299	275	321	360	365	338	308	288	299	283	293		
23	296	371	339	290	306	344	376	378	352	354	339	345	341	317	322	319	328	338	336	335	354	312	292	308		
24	286	F	F	330	304	339	367	349	345	330	330	339	322	328	333	338	342	324	336	342	317	313	301	310		
25	292	300	327	345	314	346	373	342	371	340	321	324	323	329	348	326	343	322	309	318	333	353	298	306		
26	292	307	319	371	302	312	350	355	352	313	A	295	314	328	329	335	316	331	327	331	336	326	310	300		
27	307	314	311	318	312	308	347	353	364	341	316	311	308	305	311	317	316	318	324	334	343	315	293	S		
28	290	303	323	330	322	335	371	357	341	351	332	297	318	323	316	311	320	309	329	336	373	287	282	290		
29	307	295	308	353	304	319	355	334	338	339	326	317	310	326	340	336	344	339	328	315	316	318	319	311		
30	302	300	304	317	322	342	357	345	342	344	320	327	300	319	319	319	322	338	325	331	338	330	308	308		
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	28	26	28	28	28	28	27	27	27	28	28	28	28	28	28	29	28	29	29	28	26		
MED	302	303	314	334	315	322	362	354	352	344	334	330	320	324	328	334	340	336	336	332	338	312	297	302		
U Q	309	311	319	354	322	335	374	362	364	352	342	339	332	334	334	342	347	343	342	338	352	321	308	309		
L Q	292	298	302	318	306	313	351	350	342	338	321	317	311	318	320	326	326	330	328	318	317	295	289	293		

APR. 2006 M(3000)F2 (0.01)

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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								L	L	L	L	L	L	L	L	L	L	L							
2									L	398	399	415	408	384	404	368									
3									L	L	L	L	L	L	L	L			L						
4									L	L	L	L	L	L	L	L	L	L							
5									L	L	L	L	L	L	L	L	L	L	L						
6								L	A	A	A	A	L	L	L	L	L	L	L						
7								L	A	L	A	A	A	L	L	L	L	L							
8									L	L	L	L	A	L	A	L	L	L							
9								L	L	L	L	L	L	L	L	L	L	L	L						
10								L	L	L	L	L	L	L	L	L	L	L	L						
11								L	L	L	L	L	A	L	L	L	L	L							
12									L	A	L	L	L	L	L	L	L	L	L						
13									L	L	L	L	L	L	L	L	L	L	L						
14									L	L	L	L	L	L	L	L	L	L	L						
15								A	A	L	A	A	A	L	L	L	L	L	L						
16								A	L	A	A	A	A	A	A	A	L	L	L						
17									L	L	L	L	C	C	C	C	C	C	C						
18							C	C	C	C	C	C	C	C	C	C	C	C	C						
19								L	L	A	A	A	L	A	A	A	L	A							
20							C	C	C	C	L	L	L	L	L	L	L	A							
21									L	L	A	A	A	L	L	A	L	A							
22								L	L	A	A	A	L	L	L	L	L	L							
23									L	L	L	L	L	L	L	L	L	A	L						
24								L	L	L	L	A	L	L	L	A	L								
25									L	L	L	L	L	L	L	L	L	L	L						
26								L	L	L	A	A	A	L	L	L	L	L	L						
27								L	L	L	L	L	L	L	L	L	L	L	L						
28									L	L	L	L	L	L	L	L	L	L	L						
29								L	L	L	L	L	L	L	L	L	L	L	L						
30								L	L	L	L	L	L	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								2	8	13	19	19	21	22	23	18	3	1							
MED								360	383	389	401	390	385	384	386	378	401	426							
U Q									L	L	L	L	L	L	L	L	L	L							
L Q									373	382	385	376	376	374	377	371	358								

APR. 2006 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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								250	240	256	278	266	254	272	268	284	272	266							
2									272	270	278	274	250	268	276	270	262								
3									238	262	270	260	296	294	278	266		272							
4									238	260	266	258	296	278	288	254	256								
5									246	250	288	284	300	276	276	278	280	250							
6								280	308	276	282	258	278	266	260	286	290	252							
7								256	246	278	E A 282	282	296	266	262	268	266								
8									264	252	268	294	290	288	262	272	256								
9								260	248	260	258	276	290	300	318	274	244	300							
10								290	334	S 338	304	342	274	284	284	246									
11								228	252	286	288	292	284	266	268	268	242								
12									238	254	304	278	300	292	268	252	266	248							
13									248	248	280	316	310	280	280	272	266	260							
14									282	324	326	278	330	296	298	350	308								
15								252	254	290	E A 292	A	296	290	268	274	268	250							
16								268	308	344	A	A	370	E A 330	330	270	254								
17									298	282	284	300	C	C	C	C	C	C	C	C					
18								C	C	C	C	C	C	C	C	C	C	C	C						
19								262	262	262	316	314	286	282	284	272	256	238							
20								C	C	C	C	284	270	286	322	282	256	254							
21									262	278	258	310	282	322	292	252	254	280							
22								244	254	264	284	286	306	282	364	274	234								
23									248	256	274	262	274	324	308	296	266	262							
24								280	276	306	284	280	308	288	290	288	278								
25									242	290	312	288	296	286	270	294	268	286							
26								254	250	300	A 366	302	280	288	270	294	274								
27								250	242	262	326	328	320	314	300	280	278	262							
28									282	254	280	280	308	280	310	294	282	282							
29								276	268	268	288	310	294	284	280	270	262	254							
30								264	258	274	280	282	322	284	284	288	282	264							
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								15	28	27	27	27	28	28	28	28	27	17							
MED								260	254	268	283	282	296	284	283	273	266	262							
U Q								276	274	286	292	304	308	295	295	285	278	277							
L Q								250	246	256	278	274	286	277	269	269	254	251							

APR. 2006 h'F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

APR. 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

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	E B	E B	E B	E B	200	232	200	200	196	196	198	180	182	192	190	220	224	224	226	218	212	214	244	238		
2	E A	E B	E B	240	228	250	206	218	210	200	194	220	190	196	200	202	216	222	230	224	204	E B	244	244		
3	E A	E B	E B	242	232	252	216	230	210	208	186	186	224	218	204	210	202	204	228	228	206	216	242	228		
4	E B	242	238	222	236	280	226	226	212	196	192	178	192	180	170	196	196	240	236	224	210	230	E B	E B		
5	E B	246	244	234	E B	E B	224	226	216	188	194	214	194	218	238	232	230	222	234	214	214	E B	E B			
6	E B	E B	E B	220	E B	E B	234	234	212	A	A	A	196	212	206	208	218	224	236	214	188	E A	A E A			
7	E A	E A	E A	E A	A E A	A E A	220	220	A	210	A	A	A	194	204	208	188	E A	E A	C	214	218	E A	E B		
8	E B	E B	E B	230	214	222	216	206	194	208	200	258	A	200	A	232	216	226	242	228	208	206	E B	E B		
9	E A	E B	E B	216	228	248	222	212	214	210	188	198	192	210	208	204	214	226	246	240	190	204	E B	E B		
10	E A	E B	E B	202	226	238	234	222	222	220	200	222	224	E A	236	200	208	A	228	232	228	216	200	E B	E B	
11	E B	220	204	E B	248	224	214	198	204	200	190	198	A	202	202	204	206	224	218	226	220	214	E B	E B		
12	E B	E B	E B	220	216	256	228	216	200	A	202	198	204	E B	172	200	202	222	222	218	208	E A	E B	E B		
13	E B	E B	E B	218	234	240	218	208	180	188	196	184	194	202	230	202	206	214	238	224	230	224	E A	E B		
14	E B	E B	E B	294	280	272	216	218	210	222	212	220	204	206	208	238	236	248	264	240	234	228	E B	E A		
15	224	196	A E A	E A	330	280	230	222	A	A	206	A	A	E A	A	H	230	200	200	198	202	196	E B	E A		
16	E A	E A	E A	E A	E A	E A	216	232	A	228	A	A	A	A	A	H	208	190	216	216	230	242	248	E B	E B	
17	E B	E B	E B	E A	E A	E A	232	202	210	206	190	196	C	C	C	C	C	C	C	C	C	C	C	C		
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
19	E B	E B	E B	E B	240	242	222	222	222	A	A	A	206	A	210	192	224	A	226	224	246	286	E A	E A		
20	E B	C	C	C	C	C	C	C	C	C	C	C	H	218	184	204	210	190	192	A	228	232	234	E A	E A	
21	E A	E B	230	202	232	246	242	228	228	222	A	A	A	202	202	A	230	A	E A	E A	254	244	240	234	E A	E A
22	E A	240	E A	246	E A	248	204	220	216	A	A	A	218	200	198	210	206	212	234	248	E B	E B	E A	E B		
23	E B	212	214	300	E B	E B	204	216	198	208	200	214	228	228	210	208	A	224	234	242	214	210	E B	E B		
24	E B	E A	E A	212	218	230	216	220	212	220	202	A	218	208	212	A	210	220	238	220	214	234	234	258		
25	E B	E B	238	208	248	232	214	214	212	206	188	176	198	200	196	196	206	224	248	242	220	210	210	E A		
26	E A	E A	E B	206	220	250	224	214	204	224	A	A	202	222	214	206	196	A	240	220	236	256	E A	E B		
27	E B	E B	E B	234	244	238	224	204	210	228	212	212	202	198	188	194	212	220	224	230	216	218	E B	E B		
28	E B	E B	230	224	238	222	212	208	192	186	206	186	218	220	212	202	228	230	242	222	200	230	E B	E B		
29	E B	E B	E B	212	218	246	218	212	206	190	186	198	200	202	252	200	210	202	236	244	E A	260	230	230	230	
30	E B	E A	E A	E A	228	238	218	212	200	E A	H	H	180	192	190	190	200	216	206	222	238	234	220	224	242	250
31																										
CNT	28	28	27	28	27	28	28	26	26	22	21	20	22	26	27	26	25	25	29	28	29	29	28	29		
MED	E B	E B	E B	E B	222	226	236	218	216	210	207	196	198	202	202	203	204	210	224	234	226	215	220	E B	E B	
U Q	E	E A	E A	E A	E A	E B	225	222	214	220	202	214	218	218	210	210	221	227	241	241	236	E	E	E		
L Q	E B	252	244	214	220	232	215	208	200	196	189	185	194	198	198	200	204	218	227	221	209	215	246	259		

APR. 2006 h'F (KM)

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IONOSPHERIC DATA STATION Kokubunji

APR. 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	122	118	116	112	112	112	110	112	112	122	116						
2							B	118	110	114	114	112	116	118	116	116	A	A	B					
3							B	118	114	114	116	112	116	120	110	116	120	114						
4								120	118	114	114	116	116	120	120	A	A	118	A	B				
5								120	124	118	114	114	A	A	114	114	116	116	A					
6							B	112	120	114	120	A	114	118	118	116	120	A	B					
7								122	116	116	116	A	A	A	A	116	116	120	118	B				
8								124	118	118	A	A	A	A	A	A	A	114	A	B				
9								124	120	120	114	114	A	116	116	112	114	118	118	B				
10								118	122	116	114	116	112	A	112	A	A	A	A	B				
11								112	120	114	114	A	A	A	A	A	A	116	120	B				
12								116	120	122	116	A	A	A	A	A	116	114	122	B				
13								118	118	118	118	116	116	114	120	118	116	120	126	B				
14								114	116	116	116	A	A	A	118	A	A	A	A	B				
15							B	114	110	114	114	A	118	112	114	112	114	120	B					
16								122	118	114	112	112	A	A	A	112	116	116	110	B				
17								112	122	110	122	116	A	C	C	C	C	C	C	C				
18								C	C	C	C	C	C	C	C	C	C	C	C	B				
19								112	112	116	A	A	A	A	A	122	120	116	A	B				
20								C	C	C	C	A	114	A	A	114	112	120	116	B				
21								116	120	120	118	120	118	118	114	114	114	122	112	B				
22								114	114	112	A	A	A	A	116	118	116	114	114	B				
23								A	116	112	A	118	114	114	114	114	120	A	A	B				
24							B	118	118	114	114	114	114	A	A	A	A	A	A	B				
25								114	112	110	A	116	118	118	112	124	120	118	118	B				
26							B	118	114	116	116	A	A	A	114	116	116	116	A	B				
27								118	118	116	116	116	116	A	122	118	116	120	118	B				
28								120	116	110	112	116	116	114	114	120	116	120	A	B				
29								B	114	114	112	118	A	A	A	A	A	A	A	B				
30							B	112	118	A	A	A	B	A	114	114	114	114	114	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							22	28	27	22	18	13	12	20	20	21	22	15						
MED							118	118	116	114	116	114	116	115	115	116	118	118						
U Q							120	120	118	116	116	116	118	118	118	116	120	120						
L Q							114	115	112	114	114	112	114	114	114	114	116	114						

APR. 2006 h'E (KM)

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APR. 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

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	102	102	B	102	102	102	146	156	148	100	116	114	102	94	98	152	102	G	120	110	B	B	B	B	
2	106	100	B	B	96	96	132	138	136	126	116	114	B	102	120	100	104	106	92	92	92	100	94	106	
3	104	104	102	102	96	B	142	140	134	100	100	102	164	152	G	104	108	136	114	112	B	B	B	B	
4	B	B	B	B	B	B	140	142	138	136	98	106	134	106	104	102	100	98	100	96	96	96	B	B	
5	B	116	110	B	B	B	128	128	122	100	114	100	126	148	126	126	116	102	B	B	B	B	B	B	
6	B	B	B	118	B	B	130	138	132	116	116	108	114	106	104	104	102	106	106	104	102	102	104	100	
7	100	98	96	96	96	96	158	130	112	114	104	104	100	106	114	114	108	G	104	C	102	100	100	B	
8	B	B	94	B	B	96	158	166	122	104	104	98	96	100	98	96	100	94	94	92	90	100	B	108	
9	92	88	88	B	88	B	G	126	122	114	114	104	102	120	96	102	144	122	114	96	B	B	B	B	
10	102	102	100	98	100	102	142	102	96	120	118	112	104	156	104	104	102	104	124	100	104	104	106	B	
11	B	B	B	B	96	B	140	134	130	104	102	102	100	100	100	98	100	100	90	96	92	92	B	86	
12	88	B	B	B	B	B	150	102	108	162	102	104	104	G	102	102	98	122	B	B	106	106	B	106	
13	B	B	B	90	B	B	142	104	102	104	102	100	102	G	158	156	128	134	116	104	104	B	102	102	
14	96	98	B	B	B	B	142	126	122	116	102	106	104	104	102	98	96	92	92	92	92	B	104	106	
15	B	106	98	102	110	B	122	164	158	124	114	106	116	148	100	100	102	106	104	B	B	B	B	124	
16	112	102	108	104	100	114	128	116	126	120	116	102	106	104	G	104	104	142	88	90	90	B	104	B	
17	B	120	106	98	100	B	142	146	100	100	114	102	C	C	C	C	C	C	C	C	C	C	C	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	102	106
19	B	100	94	94	B	94	148	136	120	106	106	106	104	102	104	94	162	94	100	98	112	110	102	102	
20	102	C	C	C	C	C	C	C	C	C	102	116	102	102	118	136	118	110	104	102	100	104	102	100	
21	98	98	96	96	96	B	136	124	118	120	118	114	114	138	102	164	124	114	110	104	104	102	106	100	
22	98	96	96	96	96	B	138	118	120	106	104	104	104	114	104	104	100	94	B	110	104	104	102	102	
23	118	B	92	106	B	104	104	150	132	102	140	140	124	128	128	120	106	108	104	100	104	108	106	106	
24	104	102	98	102	94	100	122	124	118	116	116	112	104	104	104	100	100	100	B	B	108	104	106	B	
25	B	B	B	B	B	B	130	128	102	100	100	102	102	102	100	102	102	108	120	110	B	106	B	100	
26	98	96	B	94	96	B	142	142	136	118	108	102	104	104	120	124	124	104	104	104	88	100	100	96	
27	B	B	B	B	B	B	138	132	122	122	112	106	104	104	102	102	100	104	96	86	86	86	86	92	
28	B	B	B	B	B	B	152	142	106	108	158	104	130	120	108	106	114	102	100	92	100	B	B	B	
29	98	98	98	98	98	138	134	128	114	114	102	102	102	104	102	102	102	104	112	120	108	112	112	B	
30	98	98	96	100	B	B	124	102	102	98	100	B	104	102	102	104	102	150	144	106	106	104	104	86	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	17	18	16	17	15	10	27	28	28	28	29	28	27	26	26	28	28	26	23	24	22	19	19	18	
MED	100	100	97	98	96	101	140	131	122	114	108	104	104	104	104	104	102	105	104	101	102	104	104	102	
U Q	104	102	101	102	100	104	142	142	132	120	116	110	114	120	114	117	115	114	114	105	104	106	106	106	
L Q	98	98	95	96	96	96	130	124	110	103	102	102	102	102	102	101	100	100	96	94	92	100	102	100	

APR. 2006 h'Es (KM)

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APR. 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

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	F1	F2		F2	F1	F2	H3	HL22	HL11	L1	CL11	CL11	L1	L2	L1	HL11	L1		F2	F2				
2	F1	F3			F3	F2	C2	HL22	CL22	CL12	CL11	CL11		L1	CL11	L1	L2	L2	L2	F1	F3	F2	F2	F2
3	F5	F2	F2	F1	F1		HL22	HL11	HL11	L2	L1	L2	HL11	HL11		L1	L1	L21	C5	F2				
4							H3	HL11	HL11	HL11	L1	L2	HL11	L1	L2	L2	L2	L2	L2	F2	F2	F2		
5		F1	F1				H2	CL22	CL11	L1	CL11	L2	CL12	HL12	CL12	CL21	CL21	L3					F1	
6				F2			H2	C2	CL11	CL21	CL21	L1	CL11	L1	L2	L2	L2	L2	L3	F2	F3	F4	F5	F5
7	F3	F5	F3	F4	F3	F4	H1	HL11	CL21	CL11	L2	L2	L2	L1	CL11	CL11	L1		L3		F2	F3	F3	
8			F2			F2	H1	HL11	CL12	L2	L2	L2	L2	L1	L2	L2	L1	L3	L3	F3	F2	F3		F2
9	F2	F2	F1		F1			CL11	CL11	CL11	CL11	L1	L1	CL11	L1	L1	HL11	CL22	C3	F3				
10	F3	F2	F2	F1	F2	F2	HL21	L2	L2	CL11	CL11	CL11	L2	HL11	L1	L2	L2	L2	CL22	F2	F2	F3	F2	
11					F1		H2	HL21	CL11	L1	L2	L2	L2	L2	L2	L2	L2	L2	L2	F3	F3	F3		F2
12	F1						H2	L3	L1	HL11	L1	L1	L1		L1	L1	L2	CL11		F2	F2			F1
13				F1			H1	L2	L2	L2	CL11	L2	L1		HL11	HL11	CL21	CL21	C3	F5	F4		F3	F2
14	F2	F1					H2	CL11	CL11	CL11	L2	L2	L2	L2	L1	L2	L3	L4	L3	F2	F2		F2	F2
15		F2	F3	F3	F2		C1	HL21	HL22	CL12	CL22	CL23	CL22	HL11	L2	L1	L2	L2		F2				F7
16	F4	F3	F3	F3	F4	F2	C2	C3	CL11	CL21	CL31	L3	L2	L2		L1	L2	HL12	L4	F2	F2		F3	
17		F3	F2	F5	F2		H1	HL11	L2	L2	CL11	L2												
18																							F2	F2
19		F2	F3	F2		F1	H2	H2	CL21	L3	L2	L3	L1	L2	L1	L2	HL22	L3	L2	F2	F2	F3	F4	F3
20	F2										L2	CL11	L2	L1	CL11	CL11	CL21	CL32	L3	F3	F3	F3	F4	F3
21	F5	F3	F2	F1	F3		H3	CL21	CL21	CL11	CL21	CL21	HL11	L1	HL11	CL21	C4	C4	F5	F5	F4	F3	F3	
22	F4	F3	F2	F2	F5		H2	C2	C2	L2	L2	L1	L1	CL11	L1	L2	L2		F2	F1	F1	F1	F2	
23	F1		F2	F1		F4	L3	HL11	CL11	L2	HL12	HL11	CL11	CL11	CL11	L2	L2	L3	F5	F4	F2	F1	F1	
24	F2	F3	F4	F2	F2	L2	CL22	CL11	CL11	CL11	CL11	CL11	L2	L2	L1	L2	L3	L3		F1	F4	F1		
25							C2	C1	L1	L1	L2	L1	L1	L1	L1	L1	L1	L1	C2	F2		F1		F3
26	F2	F2		F2	F2		HL21	HL11	CL11	CL21	L2	L2	L1	L1	CL11	CL11	CL11	L4	L5	F2	F3	F3	F5	F2
27							H1	HL11	CL21	CL11	CL11	L2	L1	L1	L1	L1	L1	L1	L1	F3	F3	F2	F1	F1
28							HL11	HL11	L1	L1	HL11	L1	HL11	CL11	L1	L1	CL21	L3	L3	F2	F3			
29	F1	F2	F1	F1	F1	H2	H2	CL11	CL11	CL11	L2	L2	L1	L2	L2	L2	L2	L2	L3	F3	F4	F1	F3	
30	F2	F2	F4	F6			CL11	L2	L1	L2	L1	L1	L2	L1	L1	L1	L2	HL21	H1	F5	F4	F4	F1	F2
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																								

f - PLOTS OF IONOSPHERIC DATA

KEY OF f - PLOT	
	SPREAD
◇	f _o F ₂ , f _o F ₁ , f _o E
×	f _x F ₂
*	DOUBTFUL f _o F ₂ , f _o F ₁ , f _o E
⊗	f _b E _s
└	ESTIMATED f _o F ₁
†, ‡	f _{min}
^	GREATER THAN
∨	LESS THAN

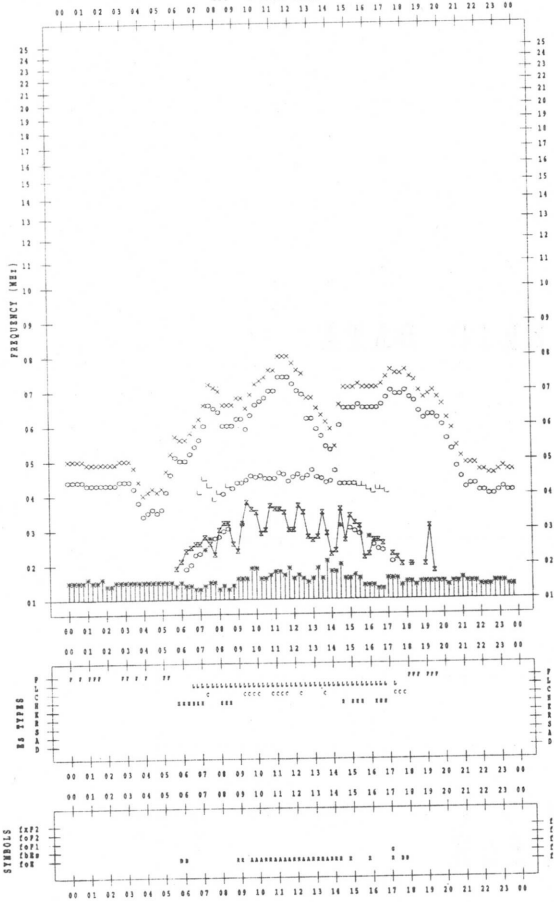
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/ 1

135 °E MEAN TIME



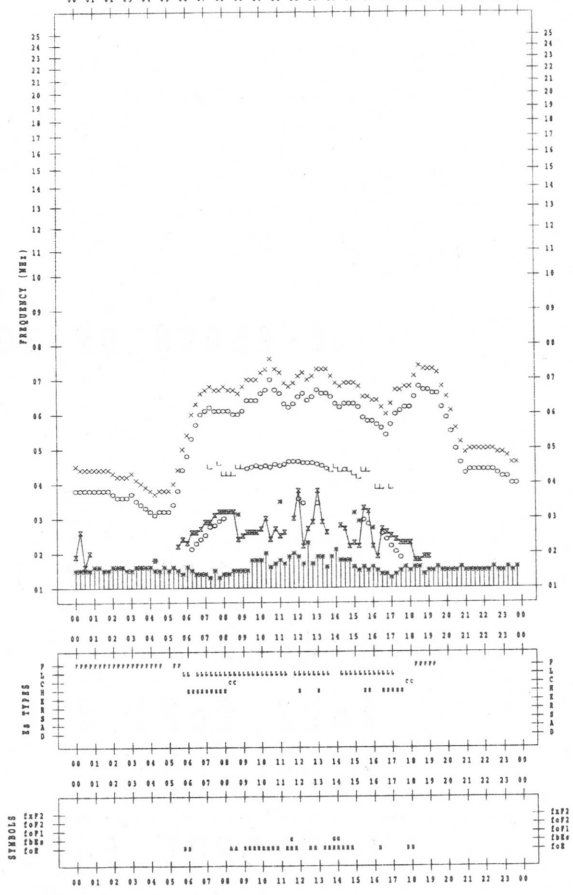
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/ 3

135 °E MEAN TIME



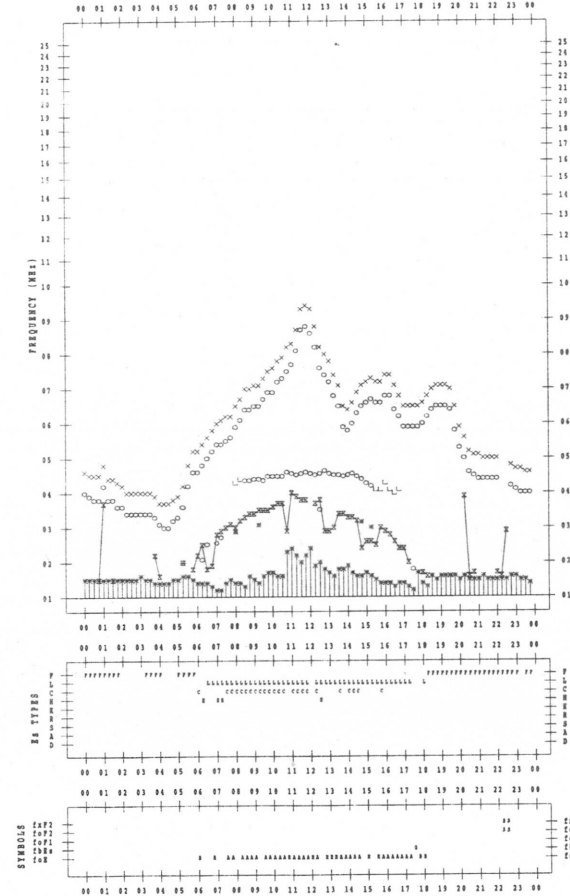
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/ 2

135 °E MEAN TIME



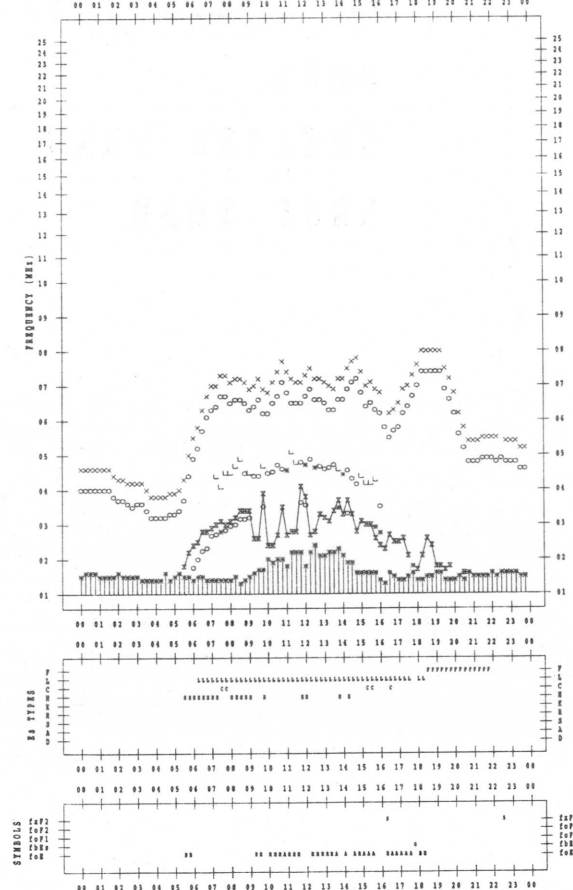
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/ 4

135 °E MEAN TIME



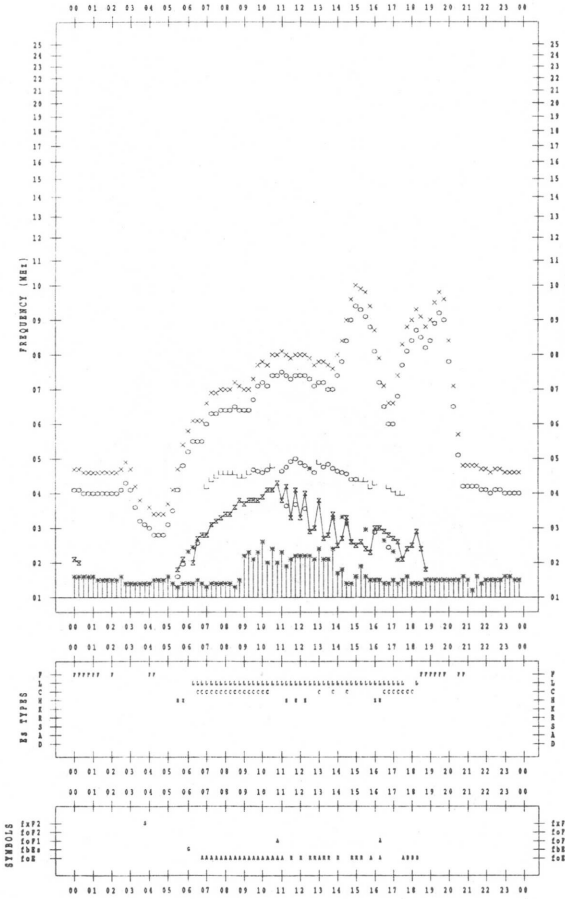
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/4/9

135 °N MEAN TIME



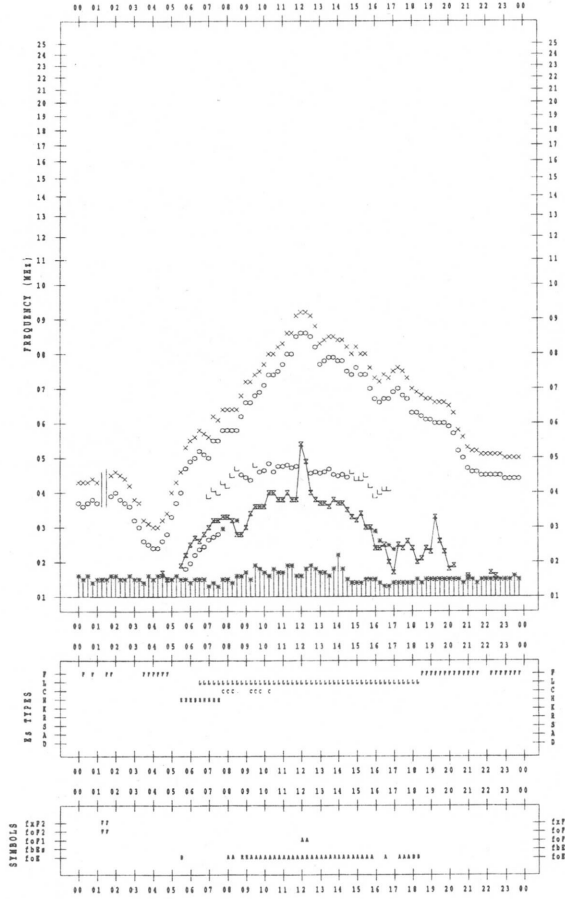
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/4/11

135 °N MEAN TIME



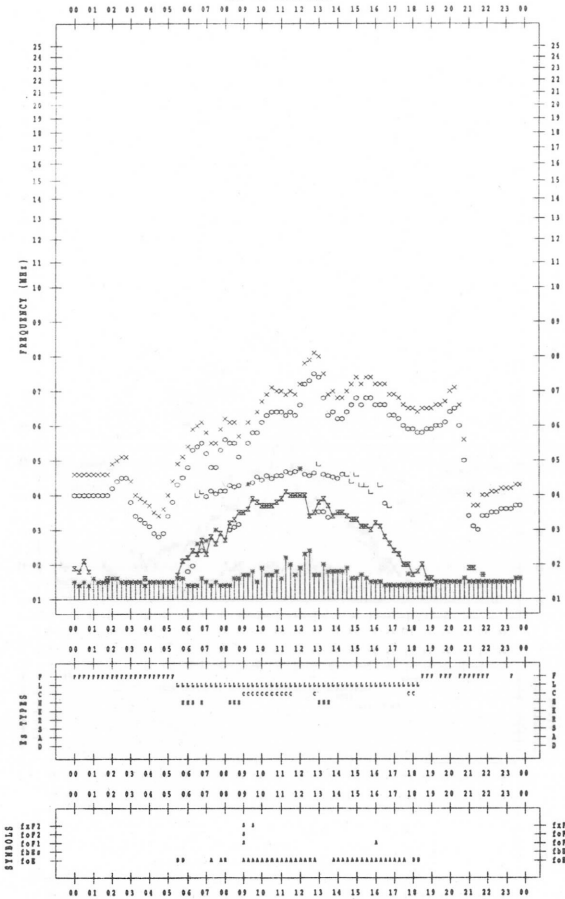
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/4/10

135 °N MEAN TIME



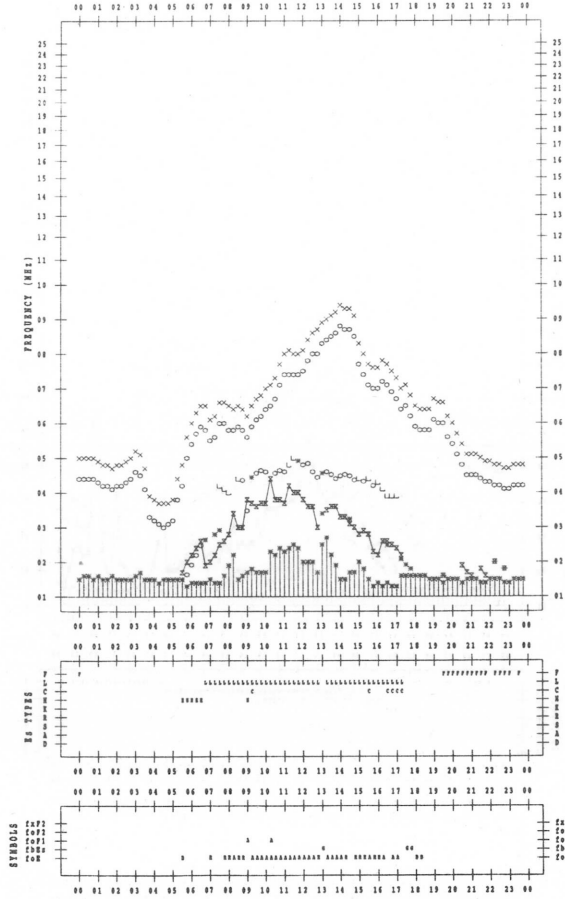
f-PLOT DATA

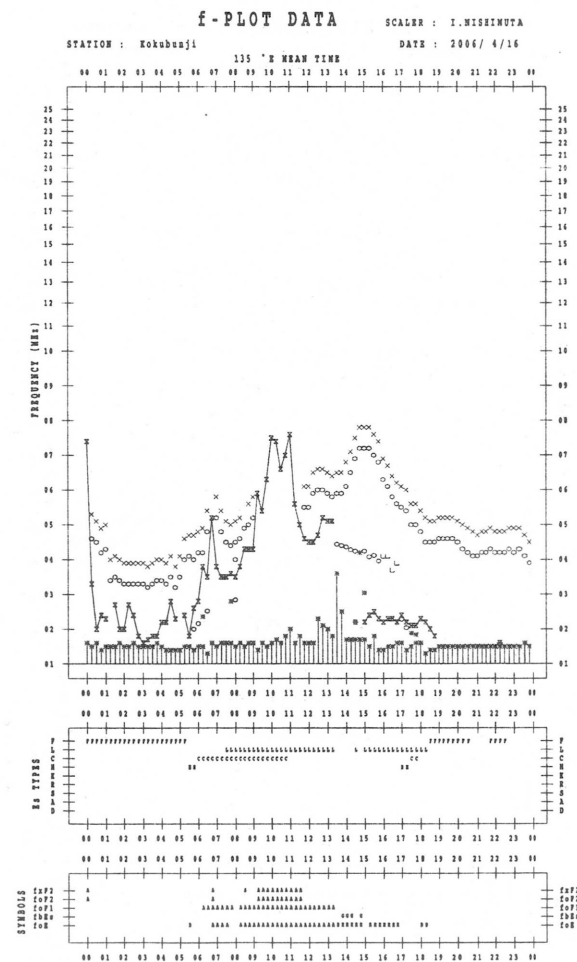
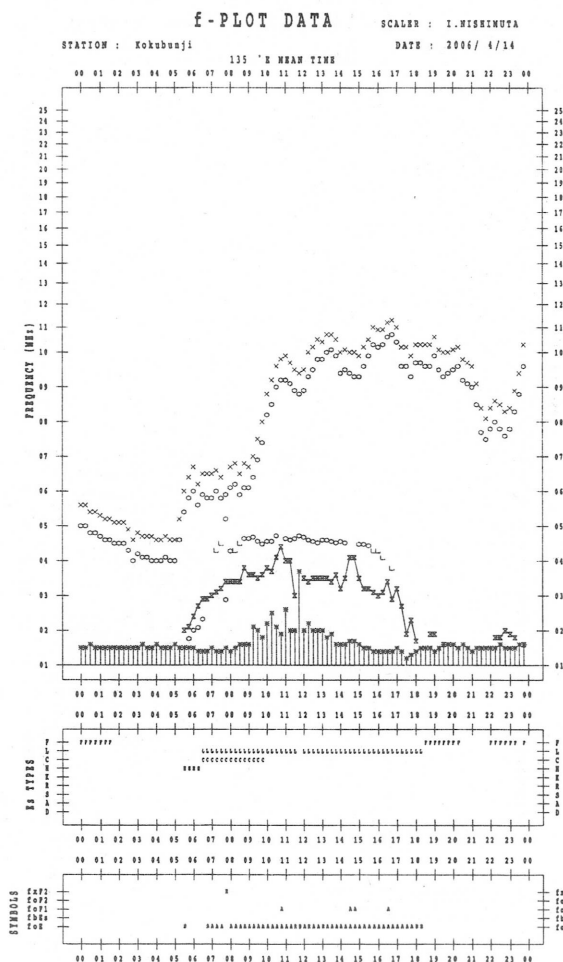
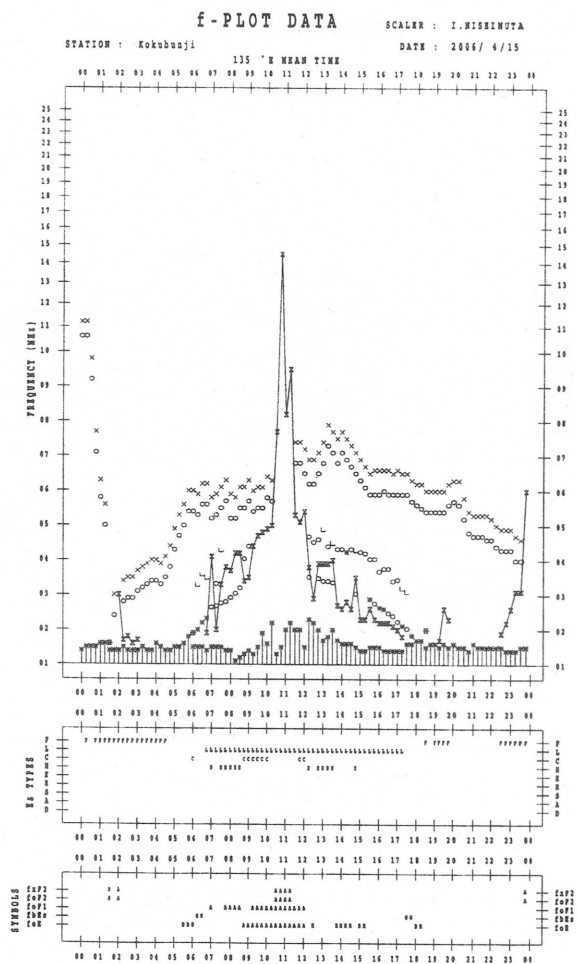
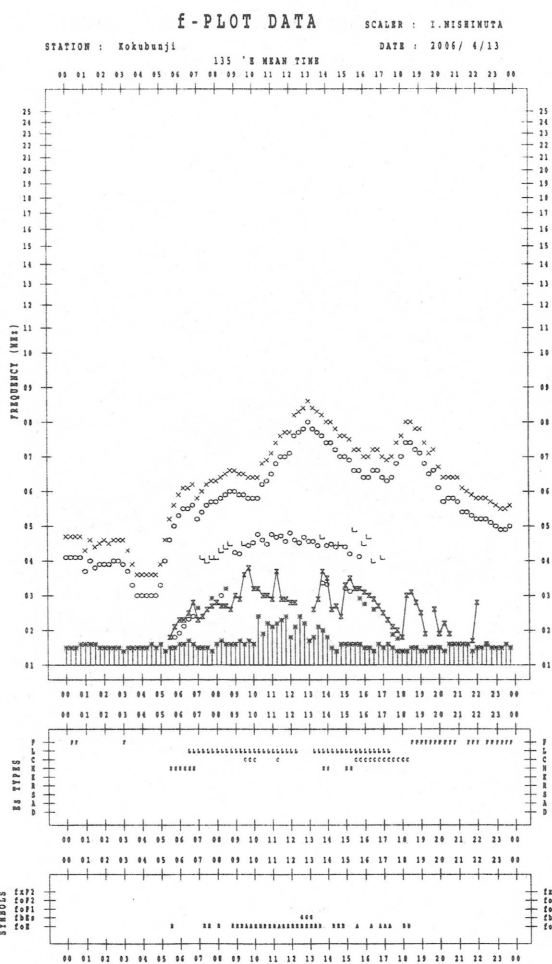
SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/4/12

135 °N MEAN TIME





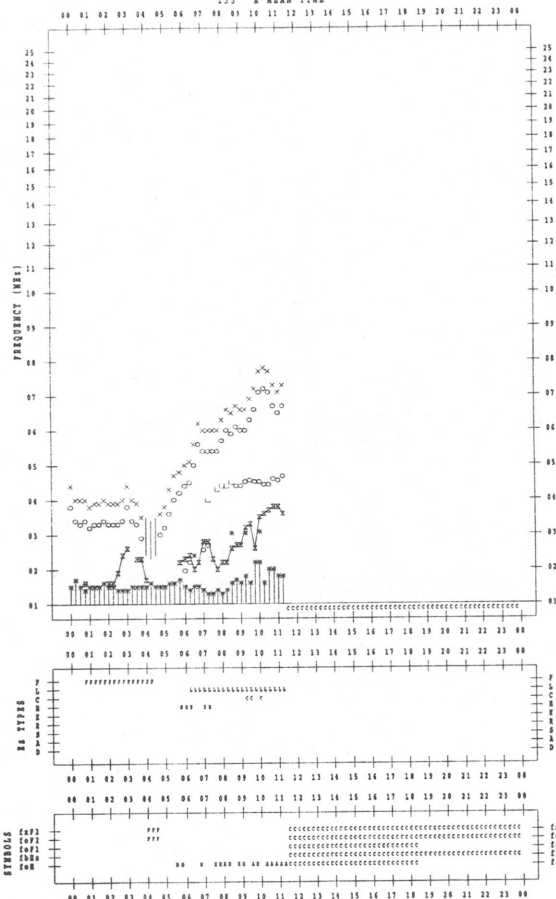
f-PLOT DATA

SCALER : I.WISINMUTA

STATION : Kokubunji

135 °N MEAN TIME

DATE : 2006/ 4/17



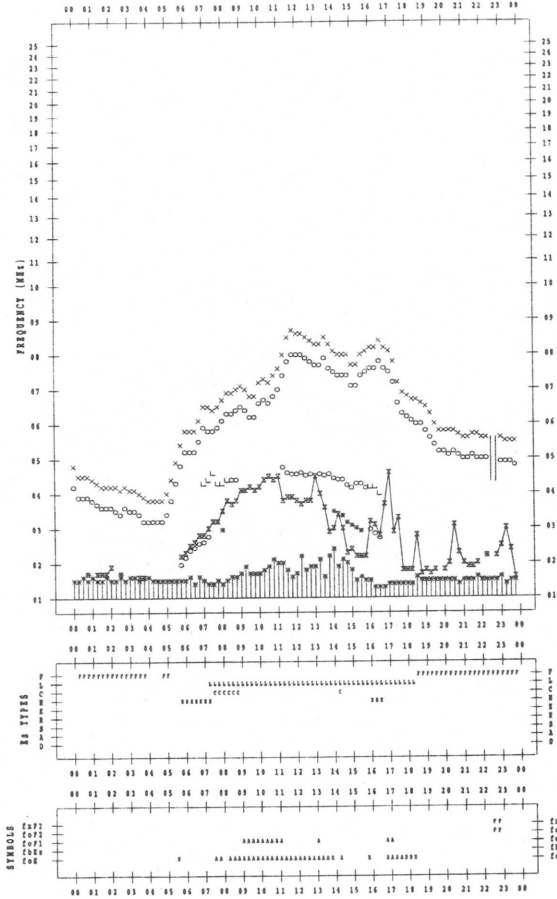
f-PLOT DATA

SCALER : I.WISINMUTA

STATION : Kokubunji

135 °N MEAN TIME

DATE : 2006/ 4/19



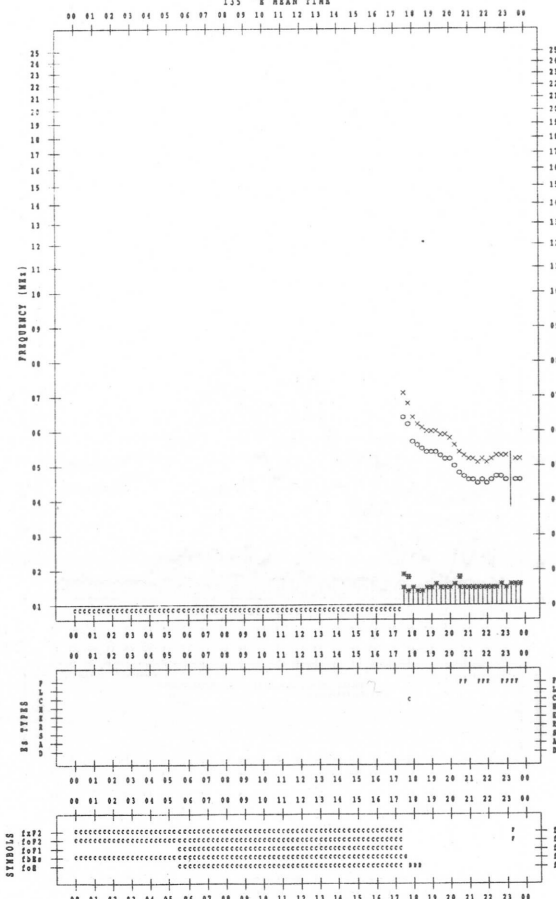
f-PLOT DATA

SCALER : I.WISINMUTA

STATION : Kokubunji

135 °N MEAN TIME

DATE : 2006/ 4/18



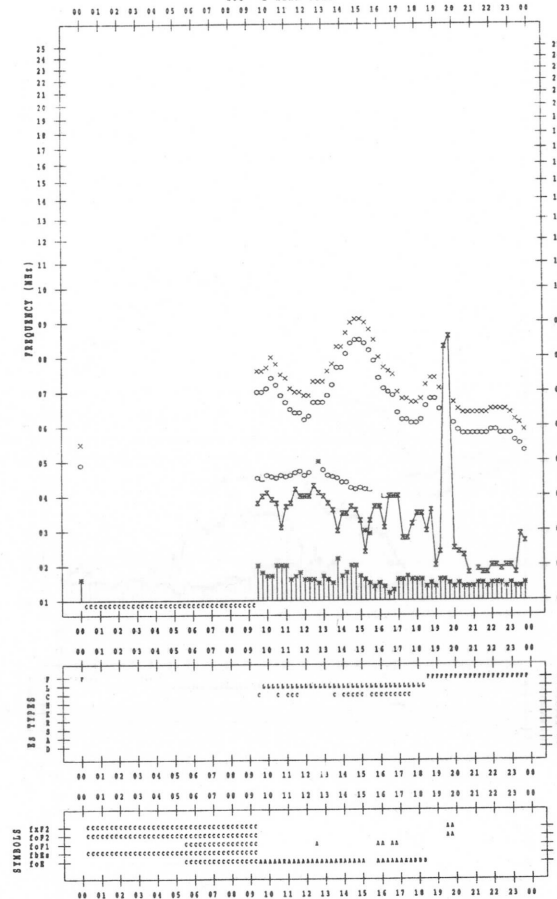
f-PLOT DATA

SCALER : I.WISINMUTA

STATION : Kokubunji

135 °N MEAN TIME

DATE : 2006/ 4/20

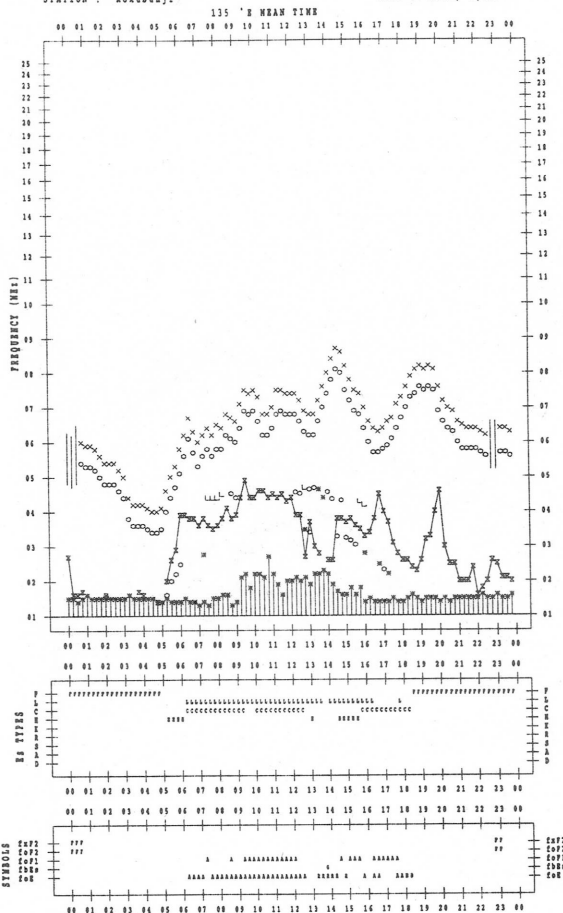


f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/21

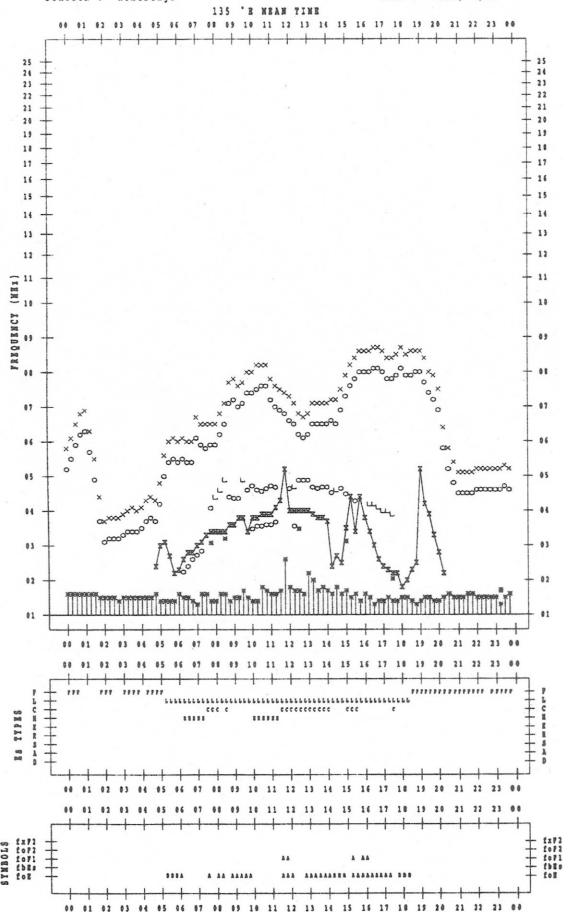


f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/23

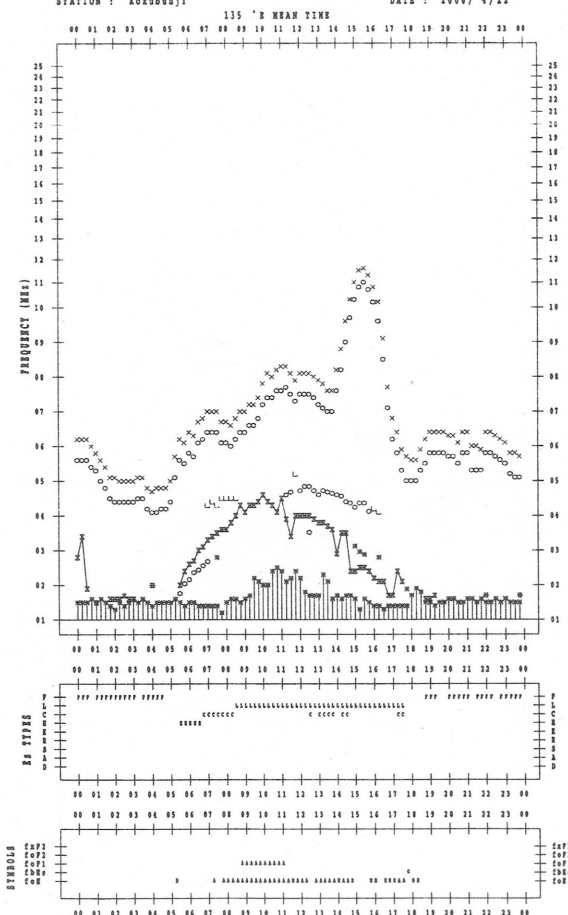


f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/22

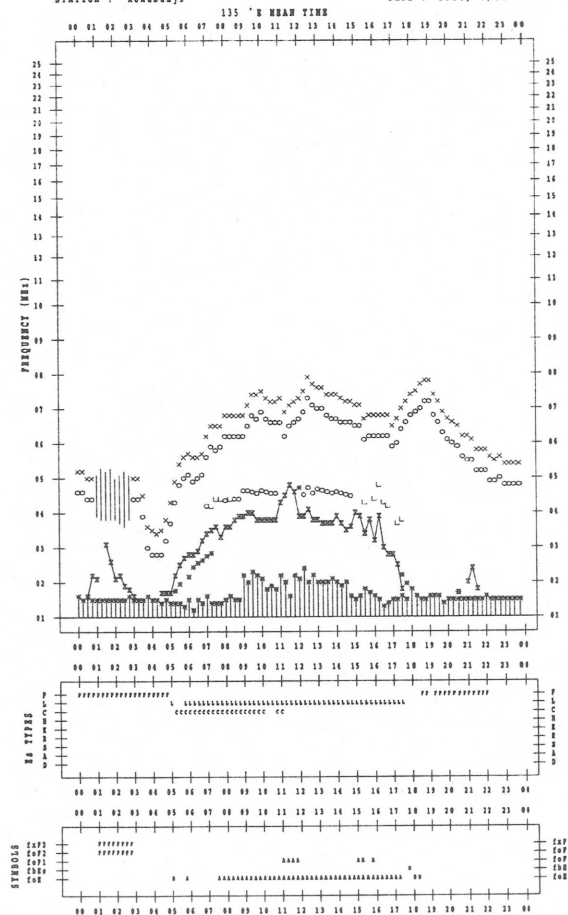


f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/24



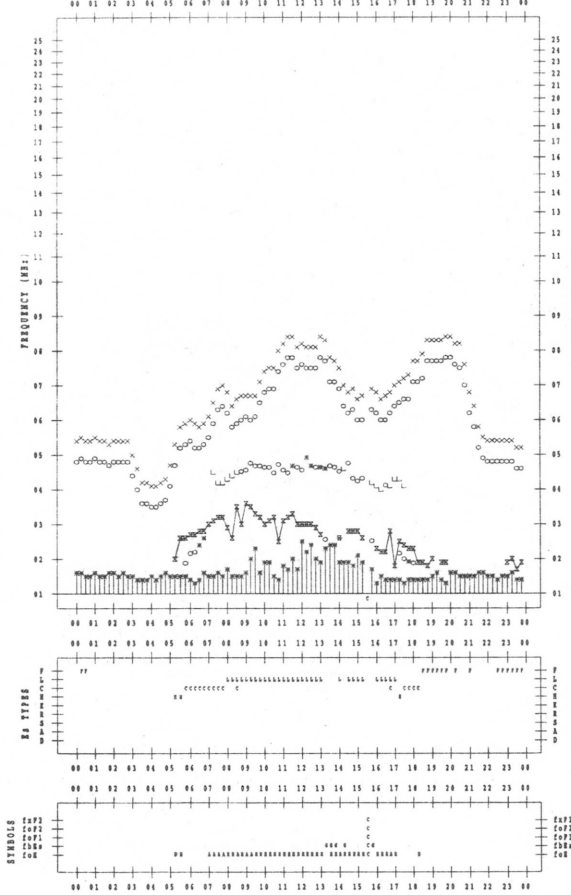
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/25

135 °E MEAN TIME



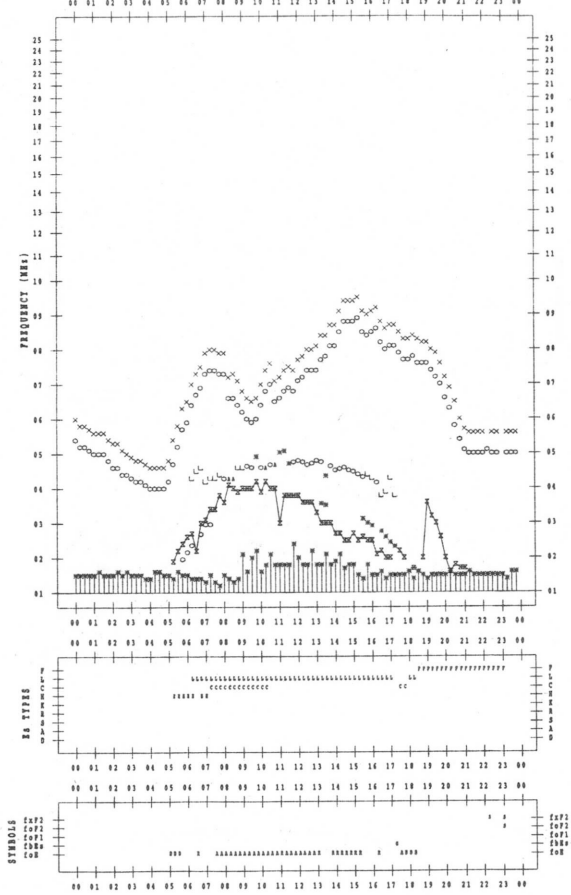
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/27

135 °E MEAN TIME



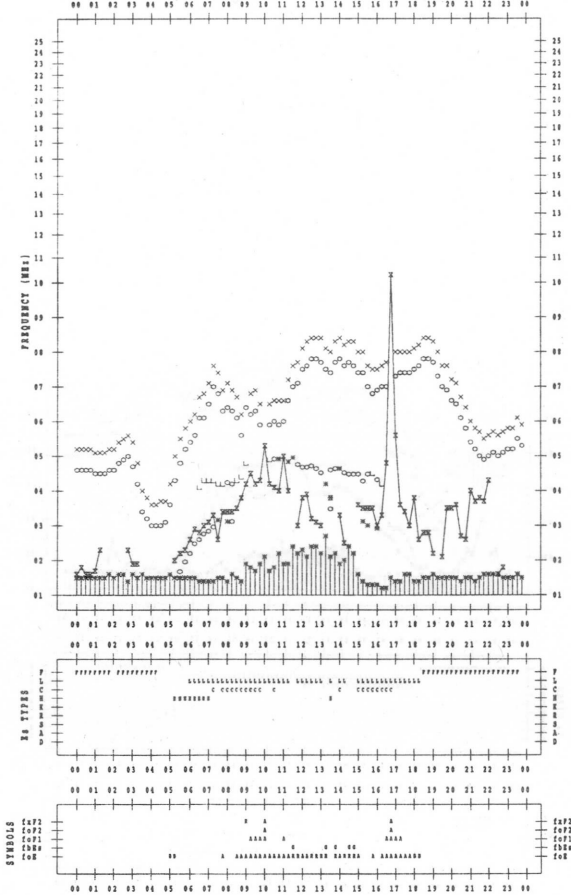
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/26

135 °E MEAN TIME



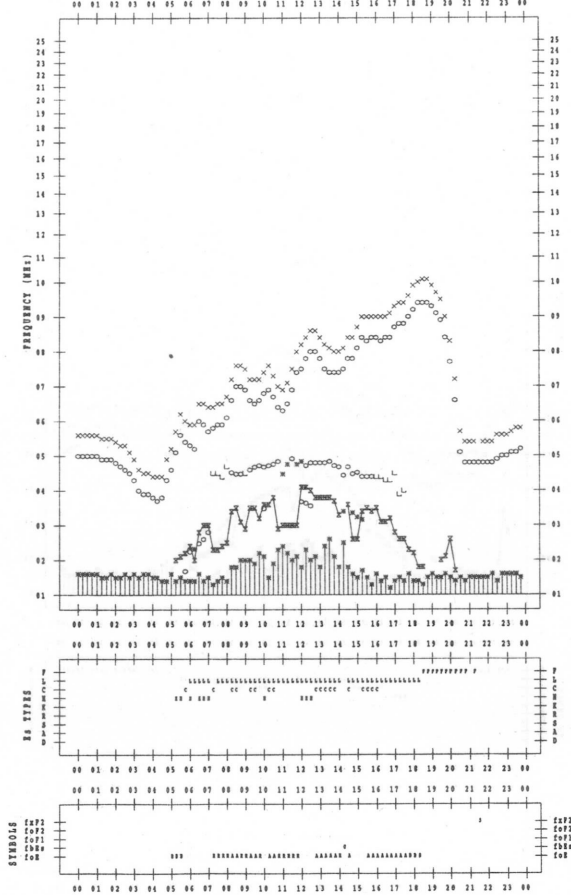
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2006/ 4/28

135 °E MEAN TIME



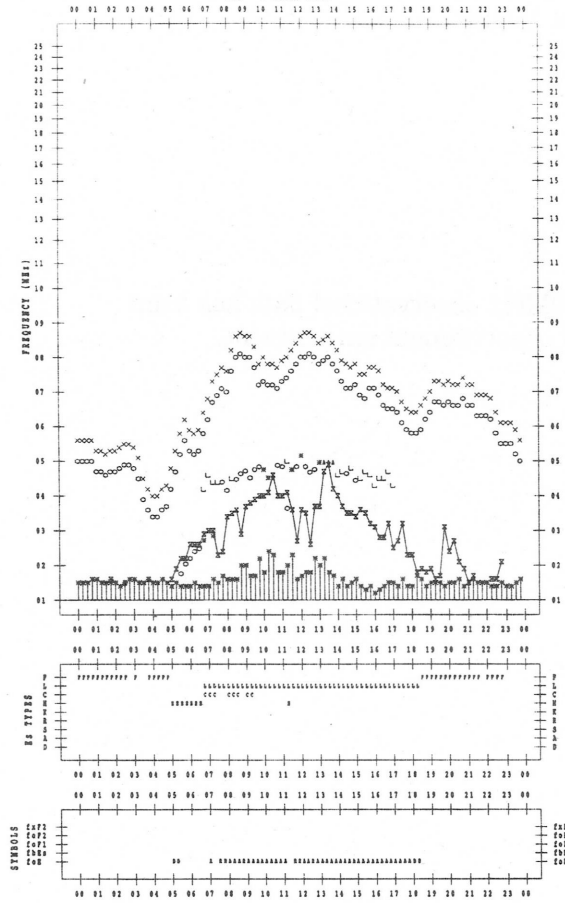
f-PLOT DATA

SCALER : 1.00000000

STATION : Kokubunji

DATE : 2006/ 4/29

135 °E MEAN TIME



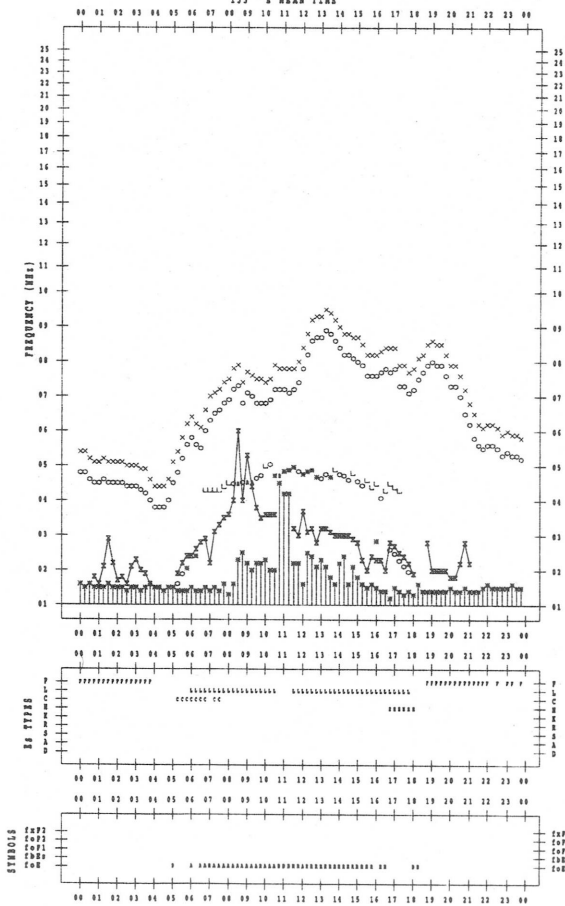
f-PLOT DATA

SCALER : 1.00000000

STATION : Kokubunji

DATE : 2006/ 4/30

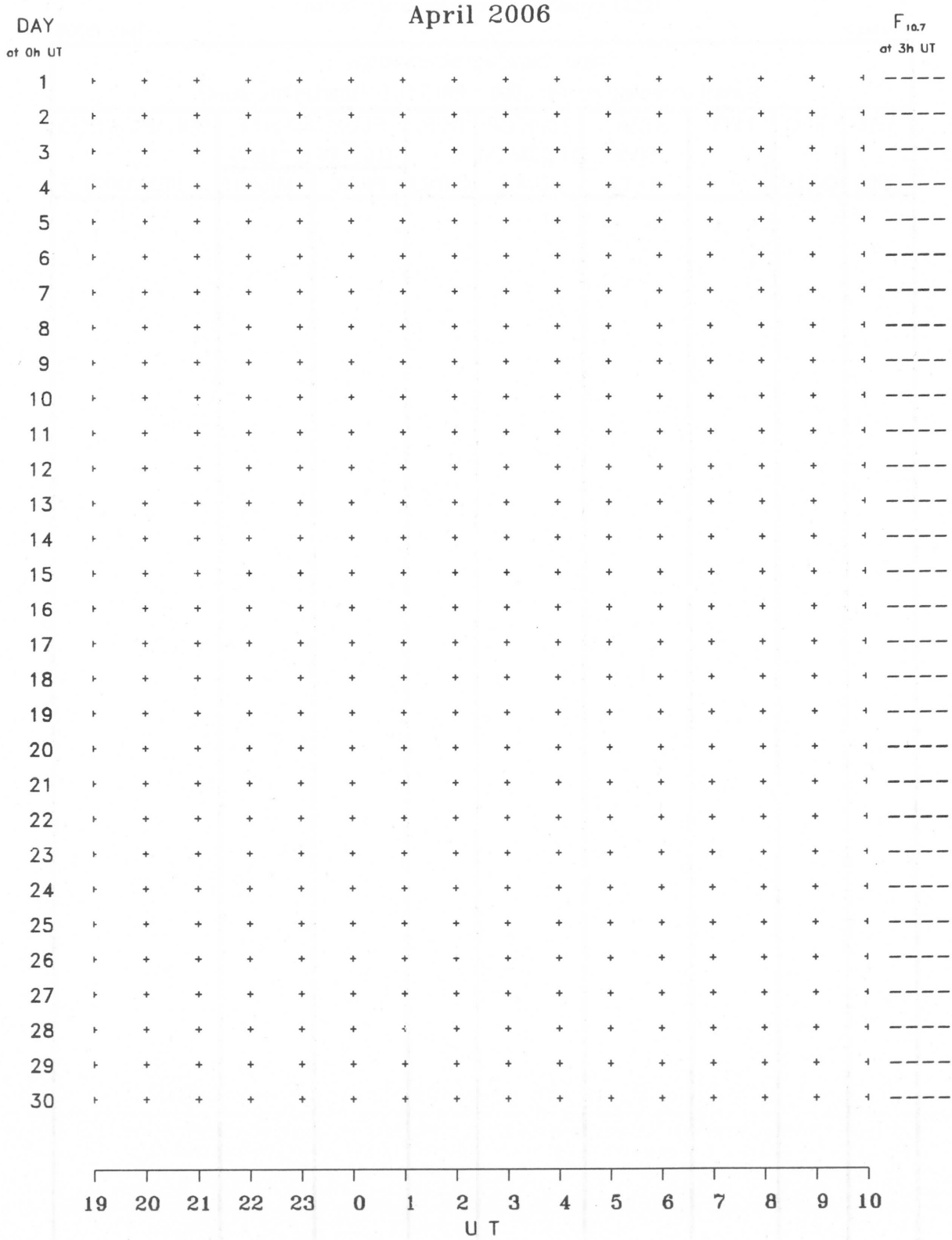
135 °E MEAN TIME



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



Note: A vertical grid space corresponds to a 100 sfu.
 Elevation angle range $\geq 6^\circ$.

IONOSPHERIC DATA IN JAPAN FOR APRIL 2006
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