ISSN 0021－0382

F－664

IONOSPHERIC DATA IN JAPAN

FOR APRIL 2004

VOL.56 NO.4

CONTENTS

NiCT NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

This Series contains data on ionosphere (I) and solar radio emission (S) obtained at the following stations under the Communications Research Laboratory, 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 iono-spheric reflections
h'Es ***h'F***	Minimum virtual height on the ordinary wave for the ***Es*** and ***F*** layers, respectively

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

X Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. SOLAR RADIO EMISSION

Solar radio observations at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of three parabolic antennas, one with 10-meter diameter for 200 MHz Measurement, one with 6-meter diameter for 500 MHz measurements and one with 2-meter diameter for 2800 MHz measurements, each being equipped with a pair of crossed doublet antennas as a primary radiator, and three appropriate receivers. Each pair of the crossed doublet antennas is used as a polarimeter. Observations are continuously carried out almost from sunrise to sunset.

B1. Daily Data at Hiraiso

The three-hourly mean and daily mean values of the solar radio emission intensities are tabulated for 500 MHz measurements. The intensities are expressed by the flux density in 10^{-22} Wm^{-2} Hz^{-1} unit.

The following symbols are used in the tables, when interference or radio bursts prevented measuring the base-level flux densities or determining the variability indices:

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

Daily data within parentheses mean that the observation time does not exceed one third of the period.

B2. Outstanding Occurrences at Hiraiso

The table is a list of outstanding occurrences of solar radio emission bursts observed at 200, 500 and 2800 MHz during a month.

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T.

expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} Wm^{-2} Hz^{-1} unit, and the polarization.

The type of event is expressed by a combination of a numerical code and a letter symbol in accordance with the "Descriptive Text of Solar Geophysical Data, NOAA" as defined by H. Tanaka in the "Instruction Manual for Monthly Report of Solar Radio Emission, WDC-C2" in January 1975:

SGD Code	Letter Symbol	Morphological Classification
1	S	Simple 1
2	S/F	Simple 1F
3	S	Simple 2
4	S/F	Simple 2F
5	S	Simple
6	S	Minor
7	C	Minor+
8	S	Spike
20	GRF	Simple 3
21	GRF	Simple 3A
22	GRF	Simple 3F
23	GRF	Simple 3AF
24	R	Rise
25	R	Rise A
26	FAL	Fall
27	RF	Rise and Fall
28	PRE	Precursor
29	PBI	Post Burst Increase
30	PBI	Post Burst Increase A
31	ABS	Post Burst Decrease
32	ABS	Absorption
40	F	Fluctuations
41	F	Group of Bursts
42	SER	Series of Bursts
43	NS	Onset of Noise Storm
44	NS	Noise Storm in progress
SGD Code	Letter Symbol	Morphological Classification
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. 2004

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	52	51	45	46	44	46	62	63	77	82	82	82	82	90	91	81	73	74	66	61	54	52	48	53
2	55	54	52	53	45	42	58	66	76	84	69	80	84	84	79	77	72	71	72	62	55	54	54	53
3	51	48	43	44	44	46	46	72	73	69	78	82	92	84	84	77	82	81	78	76	55	54	54	53
4	51	42	43	42	32	38	44	46	A	A			60		56		56	55	54	54	54	48	45	44
5	39	36	34	36	36	38	46	58	57		67	66	74	68	76	71	68	67	66	64	66	60	44	54
6	51	43	42	41	35	38	54		84	77	74	83	92	84	83	75	71	72	71	74	73	66	54	66
7	63	66	54	57	53	50	54	63	76	77	80	76	65	80	82	75	72	65	65	63	54	54	54	50
8	53	48	52	47	46	51	60	72	67	78	88	83	84	84	83	82	76	75	71	71	54	54	53	44
9	44	45	45	45	42	46	54	56	54	53	66	70	71	83	75	78	74	72	64	55	53	36	54	53
10	53	43	47	48	41	47	55	57	76	77	77	76	71	82	85	85	83	79	58	61	62	54	58	A
11	52	53	45	52	59	52	60	57	66	82	78	73	74	80	77	77	76	66	64	66	63	54	64	66
12	54	54	52	52	47	54	57	62	71	70	84	73	70	78	81	77	71	65	74	78	73	62	66	64
13	64	52	54	58	46	43	45	66	64	74	78	73	73	74	77	72	71	72	68	70	54	54	53	53
14	53	53	48	54	43	46	60	64	66	71	76	78	81	72	77	79	82	74	73	71	64	54	53	48
15	53	43	47	53	52	53	60	66	61	71	77	82	81	61	85	83	78	72	67	73	54	54	54	52
16	50	53	53	53	46	54	54	61	68	81	84	80	75	80	80	77	77	83	81	74	64	66	51	49
17	47	53	55	50	50	48	51		A	66	82	72	78	72	77	78	81	74	73	62	54	54	53	52
18	53	44	53	52	40	48	48	39	A	56	63	67	67	66	68	70	67	68	62	64	54	61	52	52
19	52	57	52	54	45	55	66	58	67	67	70	77	84	83	82	81	71	72	73	72	54	62	53	52
20	52	53	53	54	52	58	66	76	80	71	75	62	76	76	82	80	75	75	73	65	65	66	62	54
21	51	48	50	53	53	54	73	72	81	77	91	83	83	82	83	81	82	79	78	66	55	51	52	51
22	60	54	52	56	54	57	73	66	67	70	67	73	70	77	82	71	74	73	70	68	66	66	54	52
23	52	52	51	50	53	53	64	65	63	67	76	74		76	81		76	77	74	74	64	62	54	51
24	42	52	41	44	42	47	50	54	68	64	67	73	71	67	70	71	71	71	67	73	66	54	58	52
25	50	53	53	54	44	44	51	57	A	A			60	62	60	61	66	72	72	64	62	66	54	52
26	52	45	48	42	34	38	44	45		A	A			56	63	63	58	61	53	61	54	54	52	50
27	53	53	39	54	46	22	58	62	66	70	67	63	70	73	77	71	68	69	65	66	66	64	66	64
28	54	52	61	60	52	54	67	63	66	59	64	67	74	60	76	66	70	71	63	67	63	52	53	54
29	54	54	53	53	50	56	59	62	70	66	72	67	68	72	71	76	72	74	72	66	N	28	52	39
30	53	53	52	53	48	57	57	55	52	66	65	68	71	66	64	68	76	81	70	64	60	32	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	30	30	30	30	30	30	30	28	25	26	27	27	28	29	30	28	30	30	30	30	29	30	30	29
MED	52	52	52	52	46	48	57	62	67	70	76	73	74	76	78	77	72	72	70	66	60	54	54	52
U Q	53	53	53	54	52	54	60	66	76	77	80	80	81	82	82	79	76	75	73	72	64	62	54	53
L Q	51	45	45	46	42	44	51	57	65	66	67	68	70	67	75	71	71	69	65	63	54	54	52	50

HOURLY VALUES OF fEs AT Wakkanai

APR. 2004

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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	32	34	39	39	G	41	44	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	32	34	G	G	G	G	58	G	G	G	G	G	28	35	G	38	71	G
3	G	G	G	G	G	G	G	G	G	G	G	G	G	40	49	G	G	G	32	G	26	G	G	27
4	G	26	G	G	G	G	G	G	44	46	G	G	G	G	G		41	G	G	G	G	G	G	G
5	G	G	28	G	28	28	G	G	G		G	G	G	G	G	G	G	G	G	G	25	24	29	G
6	25	25	G	G	G	G	30		46	58	46	44	G	G	G	G	35	G	26	G	G	G	G	G
7	G	25	26	G	G	26	G	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	38	G	G	40	52	G	G	G	G	G	G	G	G	G	G	G	G	G
9	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	54	G	G	G	27	G	G	G	34
10	37	30	G	G	G	G	36	G	G	G	G	G	G	50	G	G	G	30	G	26	26	29	G	40
11	G	38	G	G	24	24	G	G	G	50	41	G	44	48	56	40	G	34	26	32	33	29	27	G
12	39	26	29	24	G	G	G	G	46	48	47	G	G	46	41	G	G	32	43	G	G	G	G	G
13	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	30	41	30	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G	G	G
15	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	G	32	G	28	24	G	G
16	G	G	G	G	G	G	36	G	G	G	G	46	G	G	G	39	G	G	G	G	G	G	G	G
17	G	G	G	G	G	G	36		54	60	49	50	46	G	G	G	36	44	38	34	28	G	32	G
18	G	G	G	G	G	27	40	42	44	47	52	56	G	52	G	43	40	33	G	G	G	32	30	G
19	G	G	G	33	G	38	G	G	G	G	G	G	46	45	G	G	G	32	34	27	G	G	G	24
20	G	G	G	G	G	G	32	G	G	G	50	G	G	G	46	39	37	G	G	G	G	G	G	G
21	G	G	G	G	G	G	31	G	G	G	G	G	G	42	G	G	G	G	30	30	30	26	G	G
22	G	G	G	G	G	G	G	G	G	G	G	G	42	41	G	38	G	G	31	G	G	G	G	G
23	G	G	G	G	G	G	G	G	G	G	G	55		G	G		G	G	G	G	30	25	G	G
24	G	G	G	G	G	26	G	G	G	50	46	43	G	G	G	G	G	G	35	26	27	25	26	G
25	G	G	G	26	26	G	32	38	59	50	G	G	G	G	G	G	G	G	G	G	G	G	G	G
26	G	G	G	G	G	G	33	G	G	46	49	G	G	G	G	G	G	G	G	G	G	G	33	28
27	25	G	G	G	G	G	G	G	G	G	G	55	47	G	44	G	G	G	33	28	G	G	G	G
28	G	G	G	G	G	28	33	41	40	42	G	G	58	G	40	G	46	40	42	38	G	G	37	G
29	G	26	G	G	G	26	32	G	G	48	G	G	G	G	41	46	G	40	34	32	G	32	30	29
30	32	28	28	25	G	32	40	G	45	60	60	G	G	43	G	G	G	41	35	55	30	31	G	35
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	28	30	29	30	30	29	30	30	28	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	30	G	G	G	G	G	G	G	G	G	G	G	26	G	G	G	G	G
U Q	G	25	G	G	G	26	33	17	40	48	46	41	43	41	G	19	G	32	33	30	27	25	27	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

APR. 2004

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

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

HOURLY VALUES OF foF2 AT Kokubunji

APR. 2004

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	54	54	54	52	44	44	66	82	79	88	100	102	107	100	108	97	78	71	75	73	55	53	54	53
2	54	53	53	48	37	36	51	73	84	86	92	106	108	101	106	101	82	73	80	76		54	48	61
3	53	47	36	44	41	35	64	68	84	80	88	105	111	107	104	98	92	87	90	78	66	51	53	
4	52	47	53	42	39	39	50	55	56	A			85	71	69	74	72	69	67	66	55	A		54
5	53	53	52	53	45	41	49	51	63	75	81	96	104	90	88	92	91	82	81	73	54	54	54	52
6	53	42	53	45	36	34	50	66	71	66	93	119	100	106	106	85	75	82	83	81	67	54	55	54
7	54	54	66	53	41	45	69	71	80	83	96	98	100		91	81	80	74	71	64	54	47	53	52
8	52	52	53	47	43	45	67	73	73	76	85	90	102	101	100	97	88	88	90	86	54	53	47	54
9	52	44	45	43	46	47	63	69	72	83	101	109	102	90	90	96	97	88	75	72	53	54		46
10				42	36	41	56	66	67	90	95	101	100	107	104	107	101	87	81	66	62	50	48	48
11	46	42	45	48	39	38	55	67	63	80	95	100	92	91	102	100	77	72	68	66	64	54	54	54
12	53	52		48	44	48	63	61	75	80		96	93	91	97	92	77	73	78	86	64	67	54	54
13	54	52	53		44	49	67	71	81	82	85	83	97	91	85	80	76	81	91	81	66	51	53	47
14	53	44	54	46		34	55	66	71	69	82	85	94	100	87	86	88	96	91	83	54	49	43	53
15	42	52	53	51		36	59	67	69	73	85	96	100	102	112	104	98	90	78	66	66	53	53	53
16	42	54	53	45	43	43	64	75	82	96	93	91	102	98	101	100	97	90	86	83	54	51	53	53
17	54	54	46	45	47	54	67	73	76	78	94	96	102	97	101	94	94	90	76	78	63	54	52	53
18	54	48	51	51	45	48	54	54	63	72	75	87	81	90	88	87	84	78	82	77	62	54	53	54
19	54	52	54	A	A	42	77	86	84	94	93	105	107	110	102	97	82	76	78	72		54	54	53
20	52	51	53	47	44	49	62	78	77	75	87	77	81	93	91	98	88	77	73	78	79	70	54	53
21	52	51	53	53	44	48	67	71	78	90	90	92	97	101	104	105	98	85	78	80	70	54	54	52
22	52	53	53	54	48	52	66	78	85	83	97	100	101	100	95	93	86	81	87	87	77	54	53	54
23	52		62	45	47	44	67	68	80	90	91	83	85	97	97	101	104	90	82	72	66	54	54	54
24	55	43	52	56	37	42		68	70	88	80	96	92	90	89	92	92	83	82	84	76			54
25		53	53	54	43	44	58	67	73	79	78	84	87	85	82	78	80	82	85	76	63	64	66	66
26	53	54	64	52	53	51	57	57	59	54	69	77	82	77	77	80	74	71	74	62	70	54	54	54
27		54	55	53	39	44	55	59	69	73	68	72	75	88	88	92	82	84	74	73	54	52	54	54
28	62	54	61	52	43	46	68	76		66	72	71	82	93	91	94	A	A	A	72	54	54	54	54
29	54	55	54	55	52	54	62	66	68	77	81	82	83	97	96	94	94	86	92	81	52	42	46	44
30	49	47		43	34	45	66	68	66	61	77	80	93	98	92	87	91	86	92	71	A	A	42	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	27	28	27	30	29	30	29	29	28	29	30	29	30	30	29	29	29	30	27	27	27	28
MED	53	52	53	48	43	44	63	68	73	80	88	96	97	97	96	94	88	82	81	76	63	54	53	54
U Q	54	54	54	53	45	48	67	73	80	87	93	100	102	101	102	98	94	87	86	81	66	54	54	54
L Q	52	47	52	45	39	41	55	66	67	73	80	83	85	90	88	87	79	75	75	72	54	51	52	52

HOURLY VALUES OF fEs AT Kokubunji

APR. 2004

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	G	G	33	G	40	G	G	G	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	29	G	G	G	G	G	G	G	G	G	G	G	G	26	G	G	G	G
3	G	G	G	G	G	G	G	G	G	G	G	54	G	G	G	G	G	G	G	26	32	27	25	G
4	G	G	G	G	G	G	G	G	46	51		51	G	G	G	G	G	G	G	G	G	59	58	G
5	26	G	G	G	G	31	G	35	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	26	G	G	G	32	G	G	41	51	50	G	47	43	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G	G	G	G
8	G	G	G	G	G	G	32	40	G	G	G	G	G	G	G	G	G	G	G	38	G	G	G	G
9	G	G	G	30	24	24	31	40	45	47	G	G	G	46	45	G	G	G	G	27	G	G		G
10	G	G		G	G	G	34	G	G	48	60	G	G	G	G	G	G	G	G	G	G	G	34	28
11	G	24	32	24	G	G	G	G	G	47	74	61	G	G	G	G	G	G	G	G	G	G	G	G
12	G	G		25	G	29	G	G	G	45		G	G	G	G	G	G	72	67	33	G	29	G	G
13	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	50	G	G	37	37	G	G	G	G	G
15	G	G	G	G		G	34	G	G	49	G	G	G	G	G	G	G	G	G	33	43	40	G	G
16	G	G	G	G	G	G	32	G	45	G	48	G	G	G	G	G	G	G	G	24	25	G	G	22
17	G	G	G	G	G	G	31	43	47	51	59	98	G	51	G	G	G	G	G	G	G		26	26
18	33	29	G	G	G	G	G	40	G	49	50	G	G	G	54	62	50	41	40	44	G	29	33	30
19	28	27	40	80	66	25	38	43	G	G	G	G	G	G	G	G	G	G	27	36	36	46	G	G
20	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	39	33	G
21	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	36	25	G	G	G	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	43	G	24	27	30
24	33	G	G	G	G	11		G	G	47	G	G	G	G	G	49	60	60	45	27	31	44		31
25	31	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	48	68	52	30	36	43	G	39
26	G	G	G	G	G	G	G	G	G	46	G	G	G	G	45	G	G	G	G	39	49	39	33	G
27		G	G	G	G	G	G	G	G	47	50	G	G	G	G	47	G	G	44	36	31	33	29	G
28	G	G	G	G	G	G	G	G	45	G	48	G	G	G		82	117	137	106	59	48	46	G	G
29	G	G	G	G	26	G	37	40	42	48	47	47	G	G	G	G	51	46	29	30	31	30	G	G
30	G	28	29	G	G	G	40	53	G	50	G	G	G	49	52	G	49	56	87	44	94	48	29	29
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	28	30	29	30	29	30	30	30	28	30	30	30	30	30	30	30	30	30	30	29	28	30
MED	G	G	G	G	G	G	G	G	G	20	G	G	G	G	G	G	G	G	G	26	G	24	G	G
U Q	G	G	G	G	G	G	32	35	G	47	48	G	G	G	G	G	G	37	37	36	31	39	28	22
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

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HOURLY VALUES OF fmin AT Kokubunji

APR. 2004

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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	13	14	13	13	15	14	22	17	43	43	47	48	36	18	15	14	18	14	15	21	15	20
2	20	15	14	14	15	15	15	15	20	40	53	44	44	39	43	20	18	13	18	15	14	14	18	13
3	17	17	17	15	15	14	22	13	21	33	50	37	39	45	40	38	20	15	28	15	14	14	13	13
4	13	18	15	17	18	20	22	13	18	29		21	52	49	45	21	35	15	20	14	18	17	15	15
5	15	17	15	15	18	14	22	15	20	36	43	46	43	43	45	45	20	14	18	17	14	18	17	17
6	17	15	14	14	18	21	17	14	22	30	33	34	45	30	26	21	15	15	18	15	14	15	22	14
7	15	17	18	17	18	14	26	13	18	20	43	46	39	45	36	33	18	26	13	13	15	14	18	17
8	15	14	20	18	17	14	17	17	18	42	43	47	45	44	20	22	18	22	20	13	14	13	14	13
9	15	14	13	13	15	14	15	14	20	37	48	44	44	30	23	18	15	15	18	17	14	15		17
10	13	17		15	20	20	17	14	21	34	34	45	45	45	44	40	18	25	20	14	17	17	13	13
11	17	14	13	15	14	13	24	20	18	41	33	33	47	44	46	21	20	26	18	14	15	15	15	15
12	15	17		14	20	13	13	15	20	33		44	46	43	24	22	18	15	13	14	20	14	17	15
13	14	14	14	18	14	17	29	17	20	41	40	48	49	43	47	35	18	17	14	14	20	15	17	18
14	15	14	14	14	17	15	18	17	17	20	42	54	44	45	34	41	18	15	15	18	15	15	13	17
15	15	14	14	13		14	18	13	17	18	44	24	46	53	45	40	31	23	20	14	14	14	20	18
16	13	17	18	14	17	14	18	15	18	43	50	44	51	45	44	39	34	29	18	14	15	15	14	14
17	17	13	33	13	14	14	17	15	21	33	35	34	46	34	44	20	17	15	20	14	28	14	14	17
18	14	15	14	14	15	14	25	17	20	35	37	50	49	34	33	31	26	17	14	13	14	17	21	13
19	13	15	15	13	14	20	15	21	37	44	50	50	46	51	44	42	20	17	13	14	14	15	15	20
20	17	17	14	14	13	15	25	15	18	20	36	51	53	47	47	20	18	14	17	14	13	13	14	14
21	15	17	18	14	15	15	14	17	40	42	46	49	62	52	46	39	20	29	18	17	14	17	15	17
22	14	14	14	15	14	14	26	17	20	43	47	48	52	47	47	45	35	17	14	14	15	15	20	15
23	18	18	18	15	15	20	28	20	34	43	44	49	40	52	55	43	20	28	13	14	15	18	13	13
24	14	14	14	14	15	17		20	45	33	45	53	53	48	40	36	29	17	13	14	13	14		13
25	13	15	18	13	15	15	22	17	17	53	47	53	54	52	45	42	18	20	17	13	14	14	14	13
26	17	20	14	15	15	18	26	15	20	47	52	52	53	45	37	46	20	17	20	13	14	14	14	15
27		14	14	13	13	20	21	14	21	34	34	53	49	52	45	21	39	35	17	15	14	14	15	20
28	18	14	14	17	18	17	15	17	22	50	34	46	52	47	34	33	20	18	14	14	15	13	15	18
29	18	17	18	17	15	17	14	14	20	33	34	33	45	51	50	34	20	17	18	14	13	14	21	18
30	14	17	15	17	20	28	21	17	34	35	49	50	52	40	34	45	30	14	13	13	13	13	13	18
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	28	30	29	30	29	30	30	30	28	30	30	30	30	30	30	30	30	30	30	30	28	30
MED	15	15	14	14	15	15	18	15	20	35	43	46	46	45	44	34	20	17	18	14	14	14	15	15
U Q	17	17	18	15	18	18	24	17	22	42	47	50	52	49	45	41	26	23	18	15	15	15	17	18
L Q	14	14	14	14	14	14	15	14	18	33	35	43	45	43	34	21	18	15	14	14	14	14	14	13

HOURLY VALUES OF foF2 AT Yamakawa

APR. 2004

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	54	53	43	54	37	34	36	70	82	81	84	110	112	113		104	86	80	78	80	78	54	51	51
2	53		49	52	32		36	66	84	81	84	90	111	113		110	90	81	79	78	80	54	49	51
3	51	52	50	48	36	34	41	74	80	75	80	88	110	113	114	123	111	98	92	86	76	50	53	52
4	42	50	54	48	36	41	48	63	66	68	75	82	87	82	82	79	80	80	72	76	54	52	52	36
5	53	55	38	54	47	34	38	57	66	75	87	85	112	113	110		108	90	88	82	66	54	53	53
6	53	53	52	52	34	28	40	62	52	62	86	142	88	88	114		80	84	85	82	76	52	52	53
7	54	54	63	54	32	34	44	64	67	78	87	88		108		88	82	80	74	76	61	51	53	36
8	52	53	52	41	32	36	51	71	78	77	81	84	108	111	110	111	87	112	108	86	74	44	42	42
9	42	51	36	51	47	35	46	68	72	81	88	111	107		110	111		105	A	84	73	52	A	
10	49	49	43	37	43	38	47	72	67	76	82	85	99	108	123	109	114	111	110	85	77	52	36	37
11	47	38		51	A	31	44	67	64	76	89	87	86	110	113	113		87	77	76	78	66	52	54
12	52	54	51	52	42	43	52	66	72	76	82	104	112	89	107	110	88	86	81	84	82	78	66	66
13	54	54	53	52	47	37	50	76		84	82	86	111	119	87	87	87	99	79	88	66	52	53	54
14	54	66	72	54	36	36	51	62	76	84	80	82		104	87	88		88	86	80	66	53	51	42
15	53	51	54	67	32	30	45	63	70	78	80	87	87	109		111	113	88	84	78	72	55	54	50
16	51	51	54	51	36	38	55	78	82		78	89	92	108	112		97	102	88	84	54	52	36	42
17	48	53	48	52	52	40	53	71	77	80	90			110	114	111			92	86	78	51	54	54
18	54	52	52	52	41	37	52	60	67	82	80	80	86	88	93	90	88	20	88	78	80	66	53	43
19	54		54	42		28	48	72	68	77	82	114	113	109		112	111	97	86	78	80	76	52	53
20	51	54	53	48	43	41	54	66	77	80		81	86		110	88		75	80	84	80	54	52	58
21	54	54	52		41		47	66	80	80	84	88	98	111		111	105	91	85	84	74	54	53	52
22	52	52	52	54	46	36	52	81	85	80	82	87	88		109	100	88	86	91	87	80	60	52	54
23	53	52	51	54	36	37	53	68	84	84	81	84	87	99	113	112	113	88	86	84	73	54	65	74
24	54	54	66	68	46	40	52	70	73	80	85	88	109	84	109	110	113	102	86	86	81	52		55
25	54	37	53	60	48	30	48	66	74	76	78	86	85	87			114		87	87	80	77	78	76
26		54	67	64	54	51	64	66	66	67	71	81	85	84	79	86		88	87	77	66	62	66	65
27		66	65	53	47	37	52		77	72	71	76	81	88	86	90		76	92	80	66	60	53	54
28		52	55	50	47	46	68	67		65	67	81	78	88	90	88	88	83	78	66	A		54	66
29	66	54	52	51	53	47	52	66	67		77	76	80			87	A	113	101	80	54	37	44	54
30	A	A	46	54	51	44	63	64	58	66	68	80	87	89	89	89	103		86			53	34	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	29	29	28	28	30	29	28	28	29	29	27	26	22	26	22	27	29	29	28	29	28	28
MED	53	53	52	52	42	37	50	66	72	78	82	86	88	108	110	106	94	88	86	82	75	54	52	53
U Q	54	54	54	54	47	40	52	71	79	80	84	88	110	111	113	111	111	99	89	85	80	60	53	54
L Q	51	51	49	50	36	34	45	64	67	75	78	81	86	88	89	88	87	81	79	78	66	52	51	46

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

HOURLY VALUES OF fEs AT Yamakawa

APR. 2004

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	11	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G
2	G	34	G	G	G	G	G	G	G	G	G	G	44	G		G	G	G	G	G	G	G	G	G
3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	32	30	G	G	G
4	G	G	G	G	G	G	G		41	52	44	G	G	G	G	G	G	G	32	26	G	23	G	G
5	G	33	36	G	G	G	G	G	G	G	G	G	G	G	43	G	G	G	34	G	G	G	25	G
6	G	35	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	26	30	40	43	G	G	G	G	G	G	G	G	32	G	G	G	G	G
9	G	G	G	G	G	G	G	36	G	G	56	74	G		50	67		G	89	49	34	G	58	36
10	G	G	G	G	G	G		33	G	G	G	G	G	G	G	G	G	G	G	G	G	34	28	33
11	G	28	34	28	36	G	28	47	39	G	G	G	43	G	G	46	G	G	G	G	G	G	G	G
12	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	G	G	G	34	36	29	40	G	G
13	26	27	G	G	G	G	G	G		42	42	G	G	G	G	G	G	G	34	G	26	G	G	G
14	G	G	G	G	G	G		34	41	39	G	G	G	75	68	52	G	49	56	40	G	G	G	G
15	G	G	G	G	G	G		40	42	G	G	50	52	43	G	41	G	42	32	G	G	G	24	G
16	G	G	G	G	G	G		36	42		G	G	G	G	G		G	G	G	G	G	30	24	G
17	G	G	G	G	G	G	G	38	G	39	G	43		G	43	42			G	26	36	28	33	33
18	30	24	G	G	G	G	G	39	43	52	50	51	58	61	50	50	53		66	58	40	29	40	30
19	G		G	G	G	G	30	G	39	49	52	56	48	G	G	G	49	42	G	G	25	G	G	G
20	G	G	G	G	G	G	G	44	G	G		G	G		G	G	46	G	36	30	30	G	G	29
21	G	G	G	G	G	G	G	38	39	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G		G	G	33	G	24	G	23
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	48	41
24	G	G	G	G	G	G	G	38	G	G	G	G	48	G	G	G	G	G	G	G	G	28	31	41
25	30	G	G	G	G	G	31	38	50	G	G	G	G	G	G	G	59		44	46	G	G	40	33
26	43	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	28	59
27	G	G	28	G	G	G	32	36	G	50	56	G	G	G	55	44		G	34	39	26	G	23	G
28		26	G	G	G	G	G	G		G	G	G	G	61	78	58	48	56	56	41	60	43	42	40
29	43	32	37	29	28	28	G	38	39		44	50	G			66	103	57	41	40	36	40	32	34
30	56	49	29	36	34	32	34	39	G	50	42	G	G	G	G	G	71		56	43	40	41	39	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	26	29	28	28	29	30	29	26	27	29	25	26	30	30	30	30	30	29
MED	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	G	32	G	G	G	12	G
U Q	G	26	G	G	G	G	G	38	39	40	42	G	G	G	43	43	47	G	36	39	30	29	32	33
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamakawa

APR. 2004

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	15	15	15	15	15	15	17	22	22	26	46	47		22	21	18	22	15	16	15	20	15
2	15	15	16	15	15	18	15	14	15	17	22	22	26	49		21	22	16	20	15	15	15	15	16
3	14	14	15	15	15	16	15	23	16	17	20	28	48	48	49	22	18	18	17	15	15	15	16	15
4	16	17	17	15	17	16	15	18	16	18	20	23	28	29	50	21	34	18	14	15	14	15	16	15
5	27	15	15	14	15	16	17	21	16	20	22	29	28	28	27	62	22	17	18	15	15	15	15	18
6	16	15	15	15	15	17	16	14	17	20	22	46	27	22	48	44	16	15	21	14	15	17	17	16
7	15	15	15	15	16	16	16	15	18	21	20	54	48	44	23	34	30	17	23	16	15	14	15	15
8	17	16	15	15	17	18	18	22	15	18	18	42	26	23	22	21	15	15	18	16	17	15	15	15
9	15	14	16	15	15	15	16	15	17	18	20	27	24		21	24		14	15	21	14	15	17	15
10	15	15	15	14	18	17	16	15	15	20	22	23	48	48	47	46	18	17	23	15	16	15	15	18
11	17	21	15	15	15	15	17	14	18	34	26	28	51	28	27	20	21	16	21	21	15	15	15	15
12	15	16	15	15	16	14	18	27	20	20	22	48	30	26	27	20	21	18	18	14	15	15	15	15
13	17	15	15	15	15	16	18	14	16	18	18	22	50	26	26	22	17	17	15	16	16	15	16	17
14	15	15	15	15	16	15	17	16	17	18	21	30	48	40	27	18	15	15	14	14	15	15	15	21
15	15	15	15	16	17	17	15	15	17	18	26	35	22	36	48	33	21	17	15	15	15	15	15	17
16	15	15	15	15	15	14	18	17	16	32	18	51	46	24	24		18	17	15	15	14	15	16	20
17	15	15	16	15	15	16	17	15	18	24	24	28		23	28	30	31		23	15	16	14	16	15
18	14	17	16	17	15	16	18	15	16	20	24	33	34	38	33	32	21	27	15	15	16	15	16	15
19	24		15	15	18	17	14	16	18	21	29	22	29	27	24	22	22	17	15	15	15	15	15	15
20	16	16	15	15	15	16	14	14	17	21		50	50		26	26	20	17	14	14	14	16	16	15
21	17	15	15	15	15	18	20	15	17	20	24	26	52	28	51	24	22	17	22	15	15	15	15	15
22	18	15	15	15	15	16	18	18	18	20	21	29	28		46	24	18	17	14	14	15	15	16	15
23	20	20	16	15	20	15	21	17	18	48	32	54	52	50	60	27	20	33	15	15	15	14	14	15
24	16	14	24	16	15	15	15	23	20	21	52	50	29	56	55	52	22	18	16	15	15	14	14	14
25	15	16	17	18	15	15	15	17	18	22	45	56	52	48	52	49	22	28	16	14	15	15	14	15
26	15	16	14	15	16	14	21	16	21	42	47	28	54	47	48	23		17	23	17	15	15	15	14
27	15	15	16	17	15	14	15	15	17	21	27	48	28	29	27	21	31	14	14	14	15	15	15	15
28		17	15	15	15	15	20	15	30	20	23	52	46	39	21	27	21	20	15	14	15	14	15	14
29	15	14	15	14	15	15	20	15	17	33	21	26	27		35	24	20	14	15	15	15	14	14	14
30	14	14	15	14	14	14	15	16	17	20	32	29	29	28	50	47	21	28	15	14	15	15	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	29	30	30	30	30	30	30	30	30	29	30	29	26	28	29	28	29	30	30	30	30	30	29
MED	15	15	15	15	15	16	16	15	17	20	22	29	34	32	30	24	21	17	16	15	15	15	15	15
U Q	17	16	16	15	16	16	18	17	18	22	26	48	49	47	48	33	22	18	21	15	15	15	16	16
L Q	15	15	15	15	15	15	15	15	16	18	20	26	28	27	26	21	18	16	15	14	15	15	15	15

HOURLY VALUES OF foF2 AT Okinawa

APR. 2004

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

DAY \ HR	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	54	54	59	40	28	30	72	77	87	88	117	131	127	127	121	109	107	107	108	108	88	74	66
2	54	54	61	68			29	66	78	96	98	105	124	140	130	127		108	107	101	101	73	52	50
3	52	50	52	48	38	28	32	66	76	82	83	114	116	125	134	138	134	133	124	110	86	66	53	54
4	64	54	52	54	28	30	40	65	60	84	91	125	108	107	110	104	96	94	90	85	66	53	54	61
5	63	66	66	73	63	41	38	58	75	84	105	110	138	147	158	150	143		144	135	110	87	72	73
6	72	73	67	60	37		34	62	66	62	107	145	136	132	145	142	126	120	108	104	87	77	66	66
7	66	54	78	53		29	35	63	72	88	97	110	124	137	131	130	104	88	90	87	78	54	52	54
8	53	52	53	50	30	31	41	66	78	84	73	87	108	128	141	131	122	134	131	110	82	52	51	
9	52	31	50	52	46	28	38	62	82	90	97	107	108	119	128	124	123	130	123	110	88	66	52	49
10		51	43	43	41	34	40	70	78	82	84	95	112	134	147	146	150	150	150	138	121	87	52	
11	52	53	60	78	71		40	66	74	78	96	100	106	130	146	138	131	127	118	108	107	84	78	82
12	86	87	87	78	50	42	50	70	82	82	95	110	130	126	130	135	138	136	127	110	126	88	73	73
13	66	66	66	54	43	38	44	66	90	81	86	111	128	141	130	126	132	142	143	145	108	104	107	108
14	108	120	89	52	37	37	43	60	75	90	91	83	97	111	106	114	117	107	100	87	76	72	66	72
15	74	66	78	66	34		41	60	75	87	100	97	105	117	128	131	130	116	108	108	88	79	73	72
16	66	74	77	60	43	37	48	75	81	80	88	107	111	135	136	144	142	131	123	101	65	51	52	53
17	54	69	54	54	48	36	45	65	81	86	100	112	111	127	144	148	148	134	135		110	86	73	65
18	66	63	66	66	52	40	44	66	78	90	81	85	100	111	118	121	126	125	107	108	106	80	54	52
19	54	62	73	43			40	70	78	84	97	118	130	141	151	153	157		146	144	131	110	83	74
20	76	73	66	60	44	38	45	61	81	88	95	101	108	120	127	110	100	102	107	108	78	66	54	54
21	54	54	63	75	23		40	66	78	88	87	100	111	122	131	126	120	122	122	89	81	66	54	54
22	54	54	54	54	43	38	44	80	82	76	92	102	112	122	120	116	111	110	120	110	80	66	54	54
23	53	53	66	53		30	47	71	84	81	81	96	108	128	141	142	127	128	131	127	86	73	76	83
24	66	53	76	66	61	37	48	71	72	82	97	105	115	126	131	142	137	126	123	121	104	86	66	66
25	83	81	73	76		35	52	68	77	81	86	92	101	116	118	131	127	118	110	109	89	87	87	86
26	85	64	72	72	62	61	66	68	74	74	75	84	102	107	108	109	126	130	118	101	78	76	76	78
27	75	82	66		44	42	50	68	81	68	74	88	102	111	117	117	124	126	110	105	72	66	54	66
28	66	66	66	54	44	44	51	70	62	65	77	85	97	104	104	104	107	98	92	77	52	54	64	66
29	66	65	66	54	52	54	50	62	72	77	77	78	90	108	124	123	124	131	117	88	73	66	65	75
30	83	82	84	64		51	63	73	75	77	77	95	107	116	120	122	124	120	90	78	54		59	61
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	29	24	24	30	30	30	30	30	30	30	30	30	30	29	28	30	29	30	29	30	28
MED	66	64	66	59	44	37	44	66	78	82	90	102	110	126	130	128	126	126	118	108	86	73	64	66
U Q	74	73	73	67	51	41	48	70	81	87	97	110	124	132	141	142	135	131	127	110	107	86	73	73
L Q	54	54	54	53	37	30	40	63	74	78	81	92	105	116	120	121	118	109	107	95	78	66	54	54

HOURLY VALUES OF fEs AT Okinawa

APR. 2004

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	11	G	G	34	G	G	G	G	G	47	G	G	G	G	G	G	26	G	G	G
2	G	G	G	G		G	G	G	G	G	G	G	44	G	G	G	G	G	G	G	G	11	G	G
3	G	G	G	G	G	G	G	G	G	G	G	G	G	45	G	G	G	G	G	38	31	32	G	G
4	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	G	G	24	G	G	G	G
5	G	G	G	G	31	25	28	G	G	G	G	G		G	G	G	G		G	29	G	G	G	G
6	G	G	G	G	G	G	24		G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G
7	G	G	G	11		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
8	G	G	26	G	G	G	G	35	G	G	51	G	G	G	G	G	G		G	G	G	G	G	
9	G	G	25	G	11	G	G	G	G	G	G	57	46	G	48	G	G	G	G	36	36	24	G	G
10	50	27	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	G	G	G	G	G	49	28
11	G	34	32	31	24	35	35	G	G	G	G		G	G	G	G	46	49	33	G	G	G	24	32
12	G	G	G	G	G	G	G	33	G	G	G	G	G	62	G	G	G	G	G	30	25	25	G	G
13	G	G	G	G	G	G	G	G	G	G	G	43	46	G	G	G	G	G	32	G	54	G	G	G
14	G	G	G		G	G	G	G	G	G	50	G	64	46	67	50	45		38	43	47	G	G	G
15	G	G	G	11	G	G	26	36	41	46	49	55	52	46	66	62	53	44	36	G	G	G	G	G
16	G	G	G	G	G	G	25	35	G	44	G	G	G	G	G	G	G	G	G	G	G	G	G	G
17	25	G	G	G	G	G	G	36	G	47	51	54	45	45	G	52	G	G	43		G	G	G	G
18	G	26	G	G	G	G	G	34	40	51	56	58	62	51	55	63	50	36		G	G	G	G	G
19	G	37	G	11	G	G	28	35	G	G	58	46	88	50	G	G	G		G	G	G	G	G	G
20	G	G	G	G	G	G	G	G	G	G	G	G	46	G	G	G	G	G	G	N	G	34	29	34
21	G	G	G	G	G	G	G	34	G	45	72	56	G	G	G	G	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G		G	G	G	43	G	G	G	G	G	G	G	G	G	G	G	G	G
23	G	G	G	11	G	G	G	38	42	54	G	G	G	G	G	G	G	G	G	G	G	G	G	46
24	33	G	G	G	G	G	26	37	G	G	G	G	104	56	G	G	G	G	38	30	G	G	G	G
25	G	G	G	G		G	G	34	G	G	G	G	G	G	G	G	G	43	G	29	G	G	G	26
26	G	G	G	31	G	G	G	G	G	42	G	G	G	G	G	G	G	G	G	G	G	G	G	G
27	G	71	56	49	G	G	G	37	45	48	48	G	G	54	G	G	52	56	49	49	52	G	26	G
28	29	28	25	26	G	G	28	G	G	47	51	G	56	66	66	66	66	51	45	32	41	G	G	40
29	33	32	39	58	34	34	G	34	45	48	52	59	61	G	55	51	46	G	G	G	G	G	29	34
30	72	59	35	26	24	48	39	44	43	G	58	46	G	G	G	52	53	55	57	60	71	90	44	44
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	29	27	30	29	29	30	30	30	29	29	30	30	30	30	26	29	28	30	30	30	29
MED	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	G	26	G	11	G	G	25	35	G	45	51	46	49	46	G	G	45	36	34	30	26	G	G	27
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

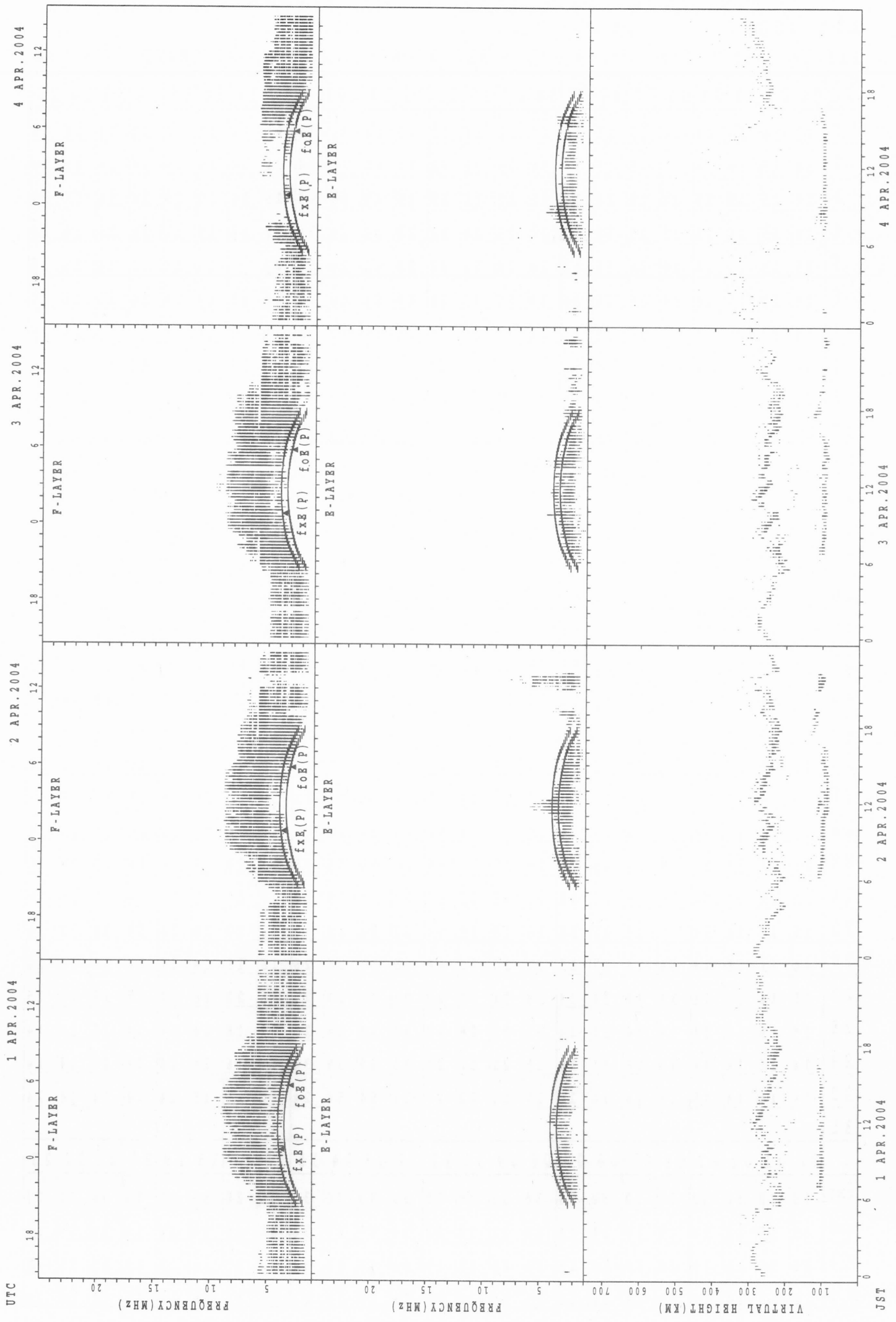
NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

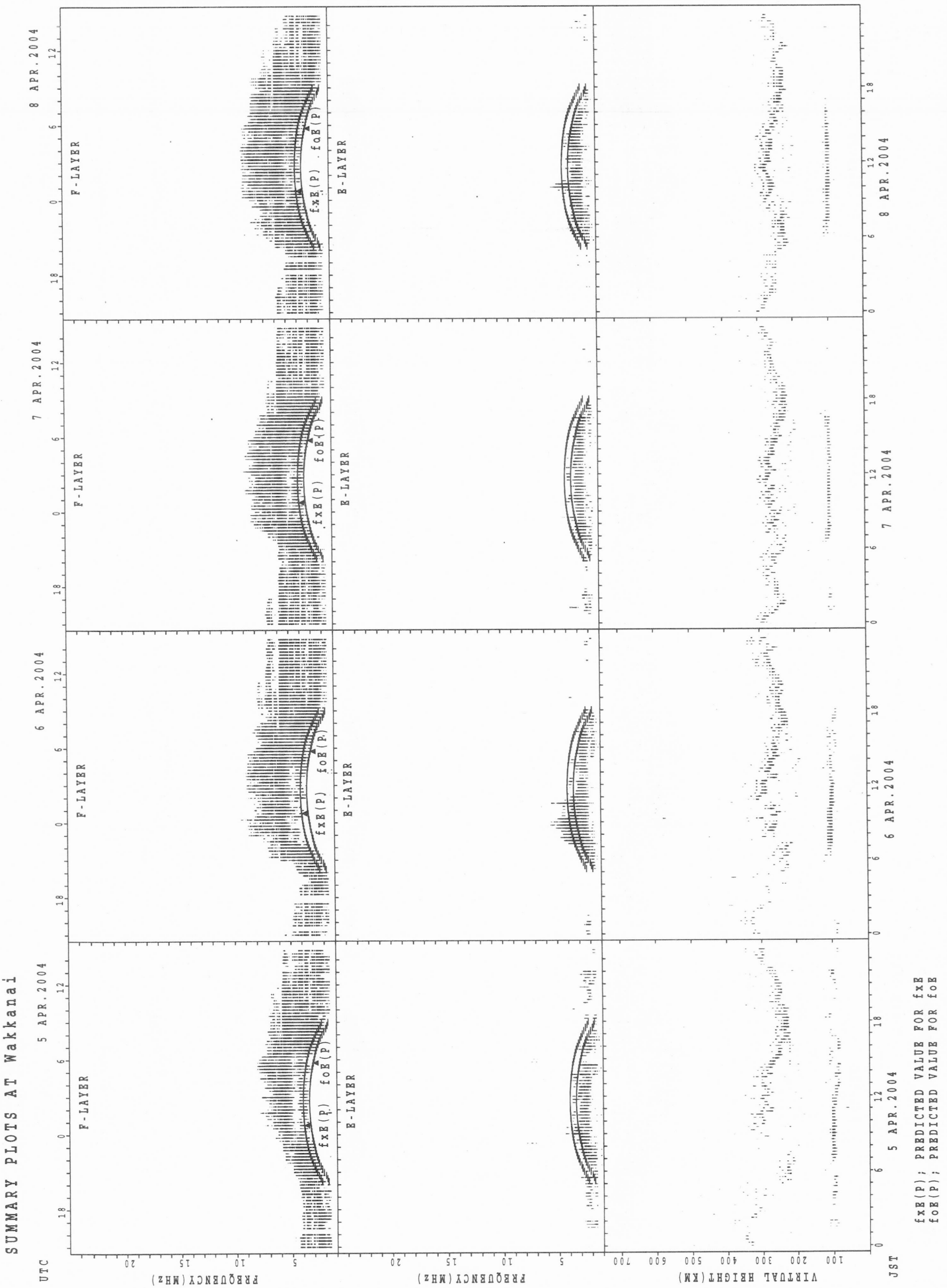
HOURLY VALUES OF fmin AT Okinawa

APR. 2004

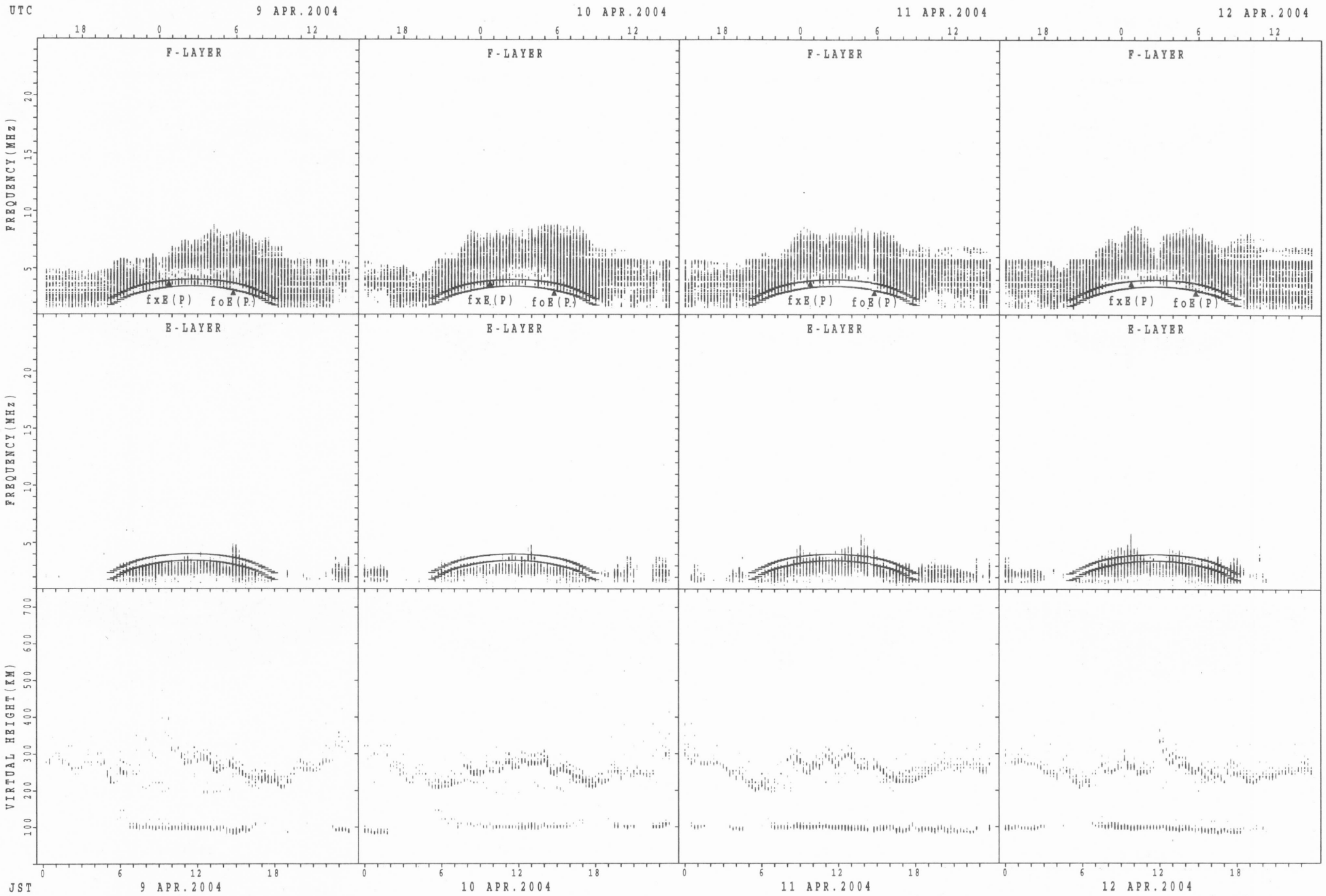
LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	17	14	14	15	15	15	17	21	22	22	48	29	29	22	20	18	15	15	14	15	14	16
2	14	15	14	14		15	15	14	16	15	21	22	23	48	28	39	21	14	14	14	15	14	15	14
3	14	15	15	15	14	14	14	16	15	17	16	22	45	40	45	45	29	16	14	14	14	14	17	16
4	14	15	15	15	15	15	14	17	14	21	24	22	28	22	29	39	18	14	14	14	15	15	14	14
5	15	15	15	14	14	14	14	14	14	18	23	39	29	42	29	53	21		15	14	15	14	15	15
6	15	15	15	14	14	15	14	14	14	20	22	22	45	23	40	22	18	15	14	14	14	14	15	15
7	14	14	15	14		14	14	14	16	21	23	28	45	46	39	39	24	15	14	15	14	15	15	15
8	66	15	15	14	15	15	15	15	16	15	24	27	42	39	27	22	17	15	14	15	16	14	15	
9	14	15	14	14	14	15	14	15	17	21	22	27	39	29	30	22	18	16	15	14	14	16	14	15
10	14	14	15	15	15	15	14	14	16	22	23	45	27	48	45	33	26	16	14	15	14	15	14	14
11	15	14	15	14	16	14	14	15	15	21	27	39	27	49	46	21	16	14	14	15	14	15	14	14
12	15	16	17	14	14	14	16	14	18	22	44	27	48	36	42	24	18	15	14	14	14	15	15	15
13	15	15	14	14	14	15	15	14	16	21	27	28	28	28	24	21	22	15	14	15	14	15	15	15
14	14	15	14	14	15	15	14	15	18	20	24	27	38	29	38	23	18	14	15	14	14	14	15	16
15	16	14	14	14	14	14	14	14	15	14	20	23	39	39	36	34	20	15	14	15	15	15	18	15
16	15	15	14	15	14	15	16	14	17	18	20	22	47	46	29	27	20	17	15	14	14	15	15	15
17	14	14	15	15	14	14	15	15	16	21	26	36	36	38	36	29	21	15	14		15	14	15	15
18	14	14	16	17	14	15	16	15	16	20	26	36	35	36	34	29	23	17	14	15	14	15	14	20
19	15	15	15	14	17	16	14	14	17	21	30	33	30	29	32	38	22		14	16	14	14	15	14
20	15	15	14	14	14	14	15	15	15	21	23	49	48	30	52	24	20	14	14	14	14	14	15	14
21	15	14	14	14	14	15	16	14	15	17	24	27	36	28	27	23	18	15	14	15	15	15	15	14
22	15	15	14	14	14	15	17	14	15	18	23	40	29	28	26	45	17	14	14	14	14	15	15	14
23	15	14	15	14	14	14	18	14	20	28	27	50	29	53	53	38	23	23	14	14	14	15	17	15
24	15	18	14	14	14	14	14	14	20	36	52	50	29	24	24	50	37	18	15	14	14	15	16	14
25	15	14	14	14		15	17	14	16	18	38	50	52	54	48	48	46	20	14	14	15	15	15	14
26	14	14	14	14	14	14	17	15	17	20	26	48	45	33	38	26	16	18	14	14	14	14	14	14
27	15	14	14	14	14	14	14	14	14	21	33	28	21	30	29	21	16	20	14	14	15	15	14	15
28	14	14	14	14	14	14	14	14	20	21	26	30	39	39	35	23	22	18	14	14	14	15	15	14
29	14	14	14	14	14	16	14	14	15	21	22	28	33	59	39	34	22	16	14	16	14	14	14	14
30	14	14	14	15	15	14	14	14	17	21	22	27	26	54	50	24	20	16	15	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	30	30	30	30	27	30	30	30	30	30	30	30	30	30	30	30	30	28	30	29	30	30	30	29
MED	15	15	14	14	14	15	14	14	16	21	24	28	36	37	36	28	20	16	14	14	14	15	15	15
U Q	15	15	15	14	15	15	16	15	17	21	27	39	45	46	42	39	22	17	14	15	15	15	15	15
L Q	14	14	14	14	14	14	14	14	15	18	22	27	29	29	29	23	18	15	14	14	14	14	14	14


SUMMARY PLOTS AT Wakkanai
UTC
1 APR.2004
2 APR.2004
3 APR.2004
4 APR.2004
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE
JST

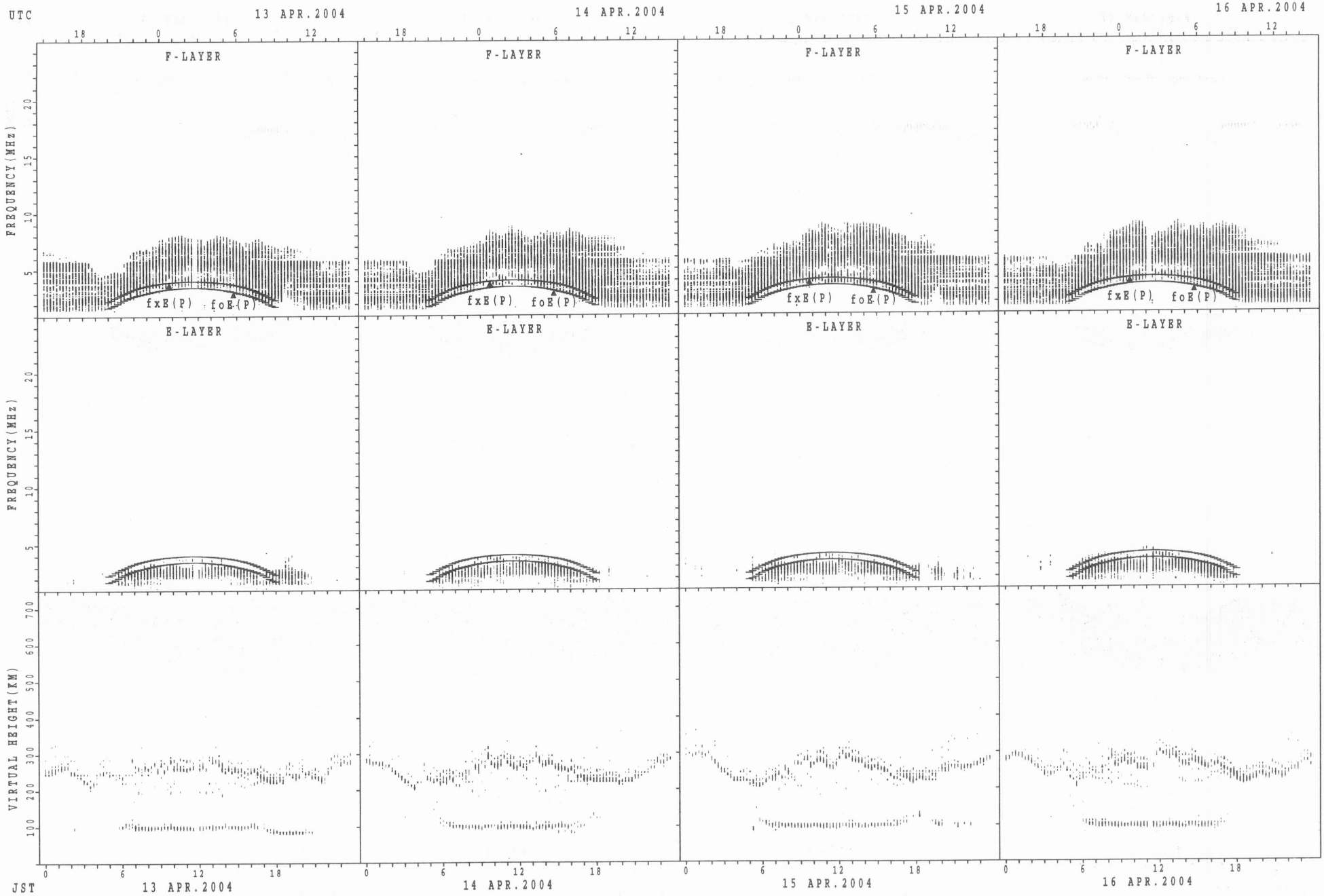

SUMMARY PLOTS AT Wakkanai
UTC
JST
5 APR.2004
6 APR.2004
7 APR.2004
8 APR.2004
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



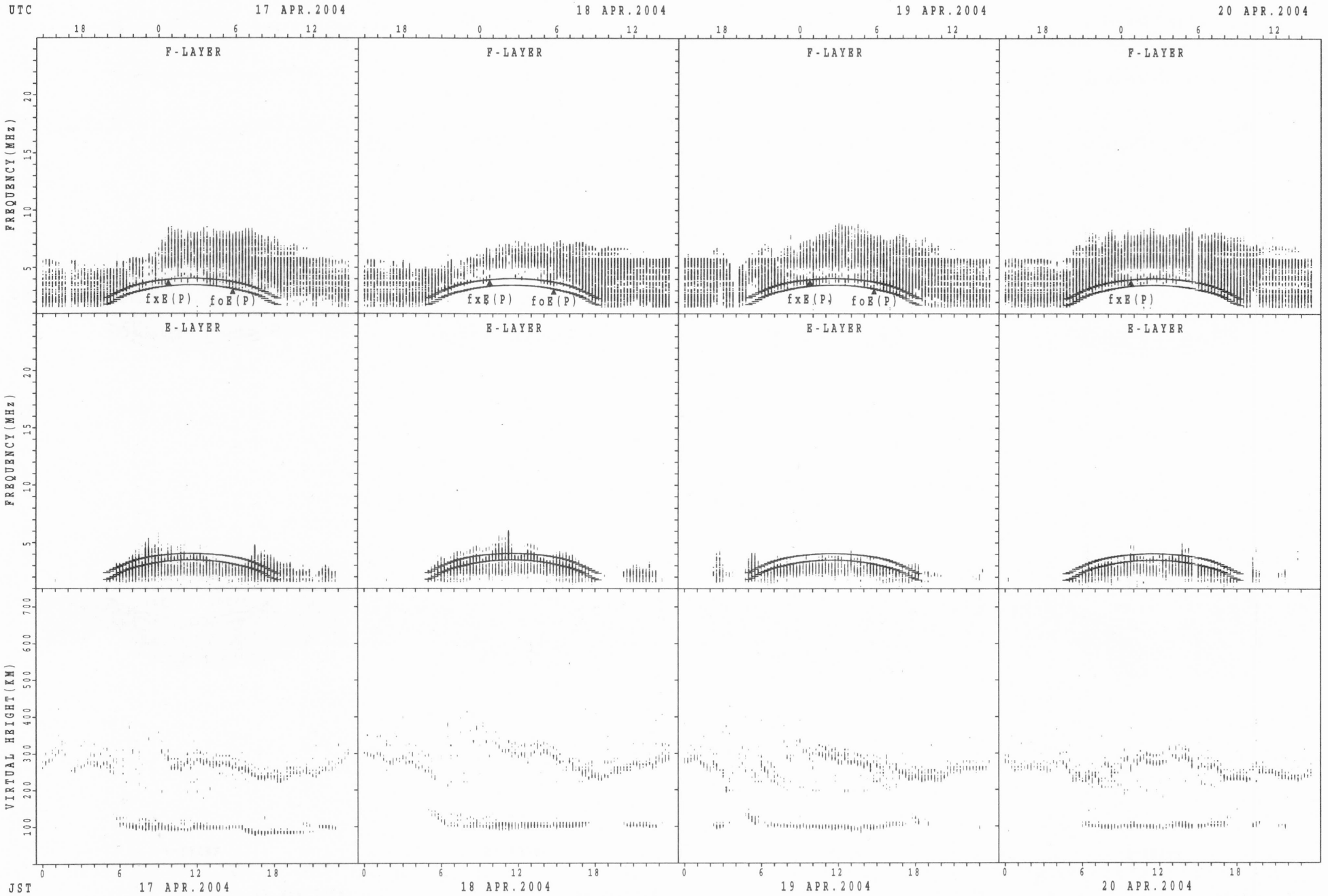
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



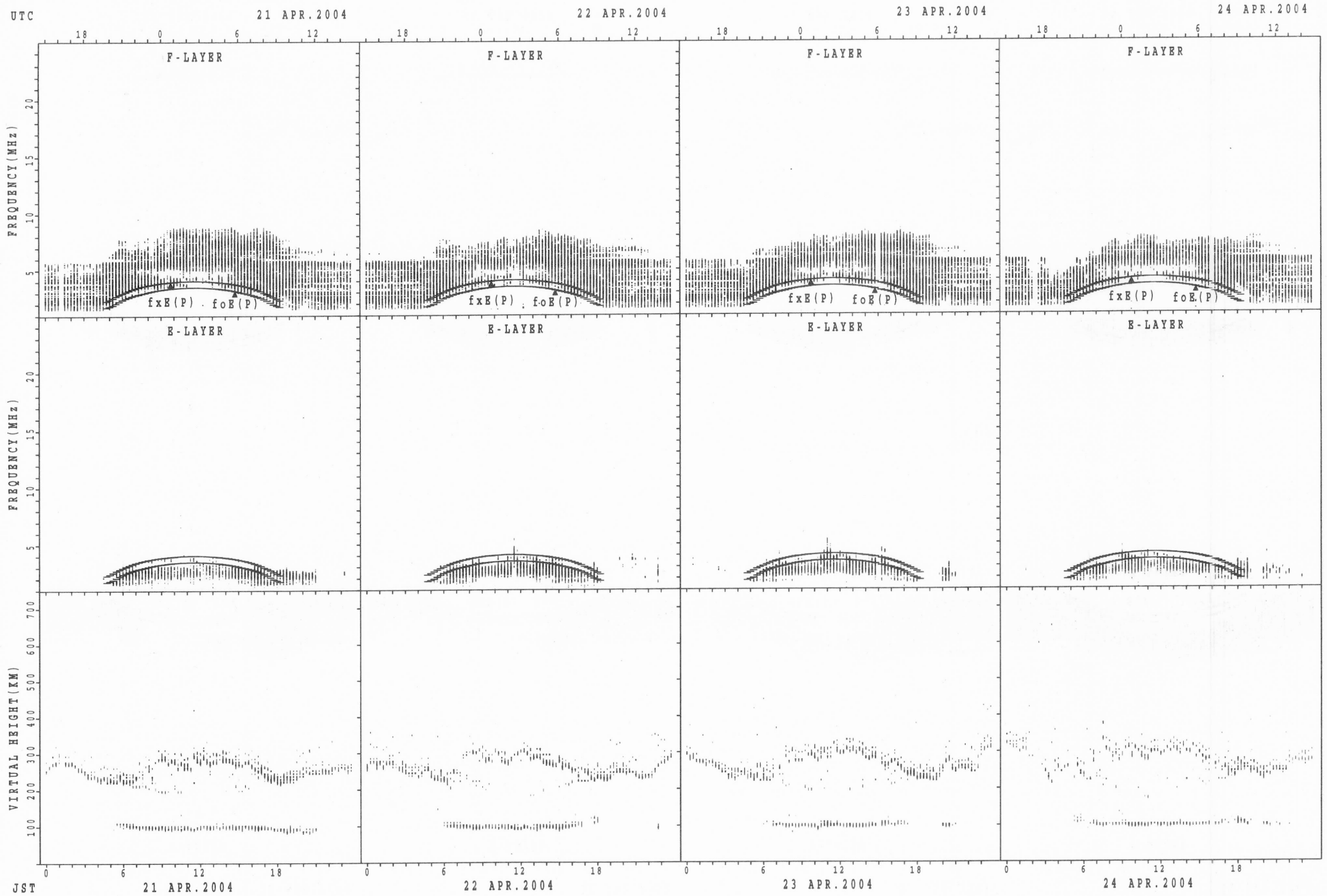
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



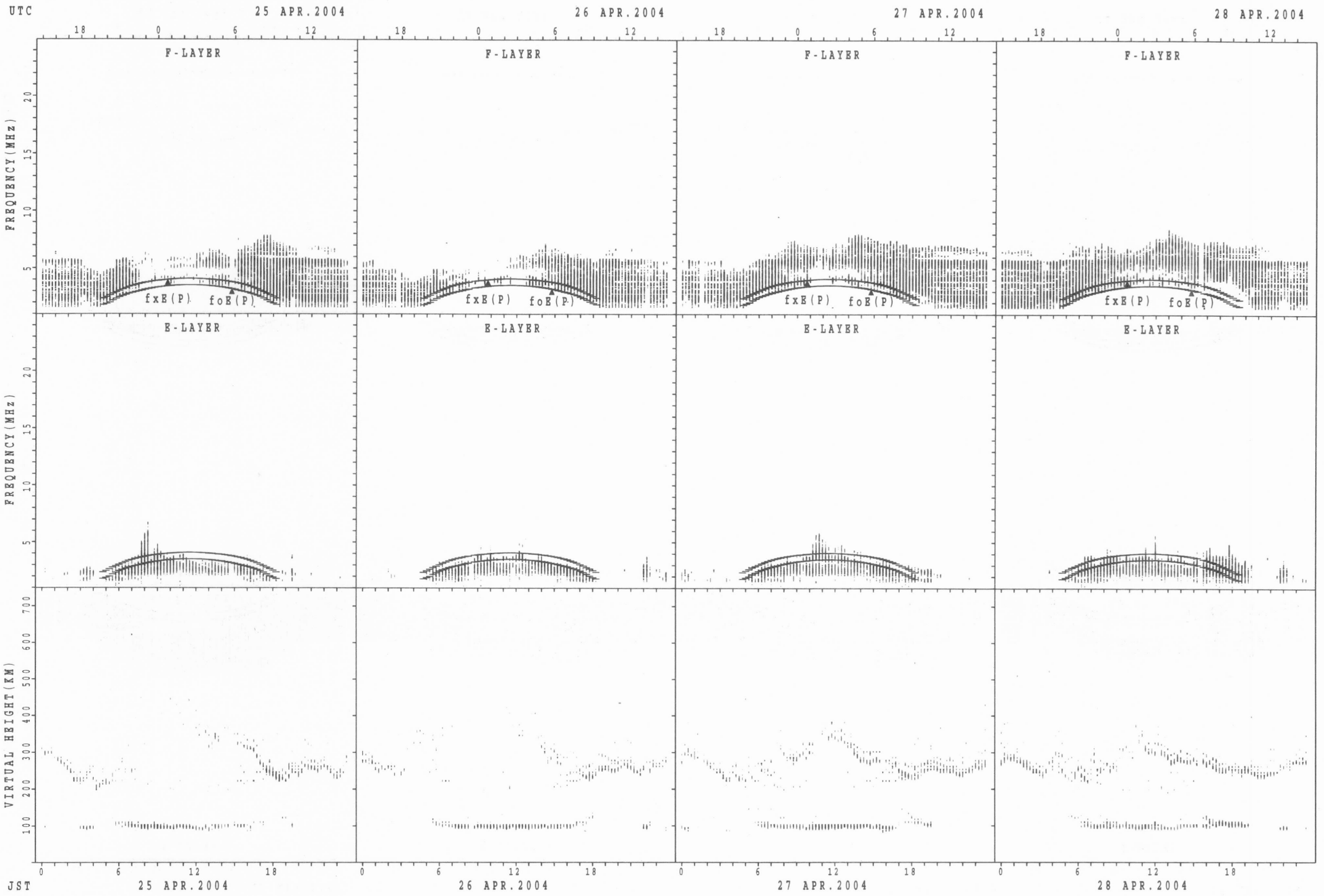
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



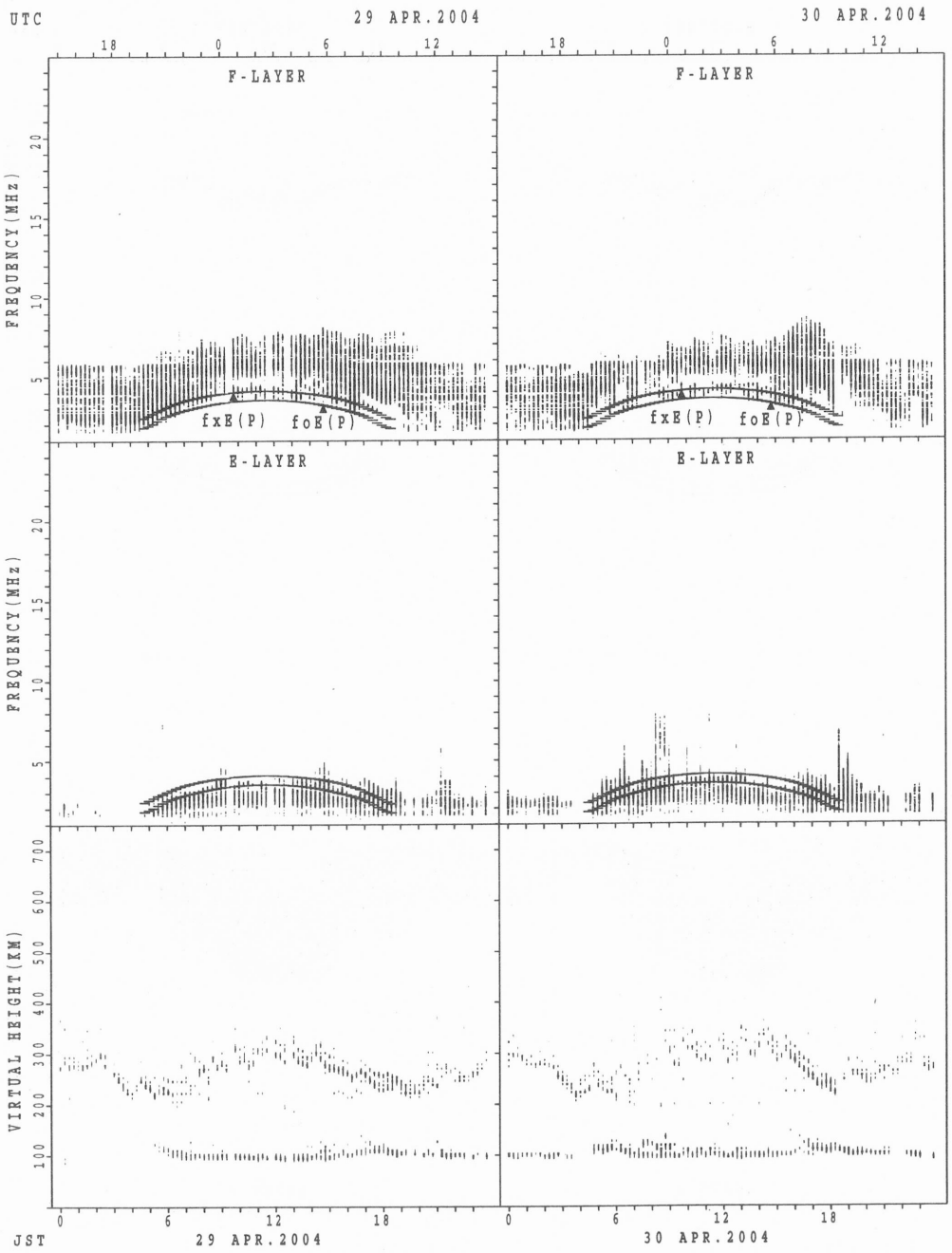
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



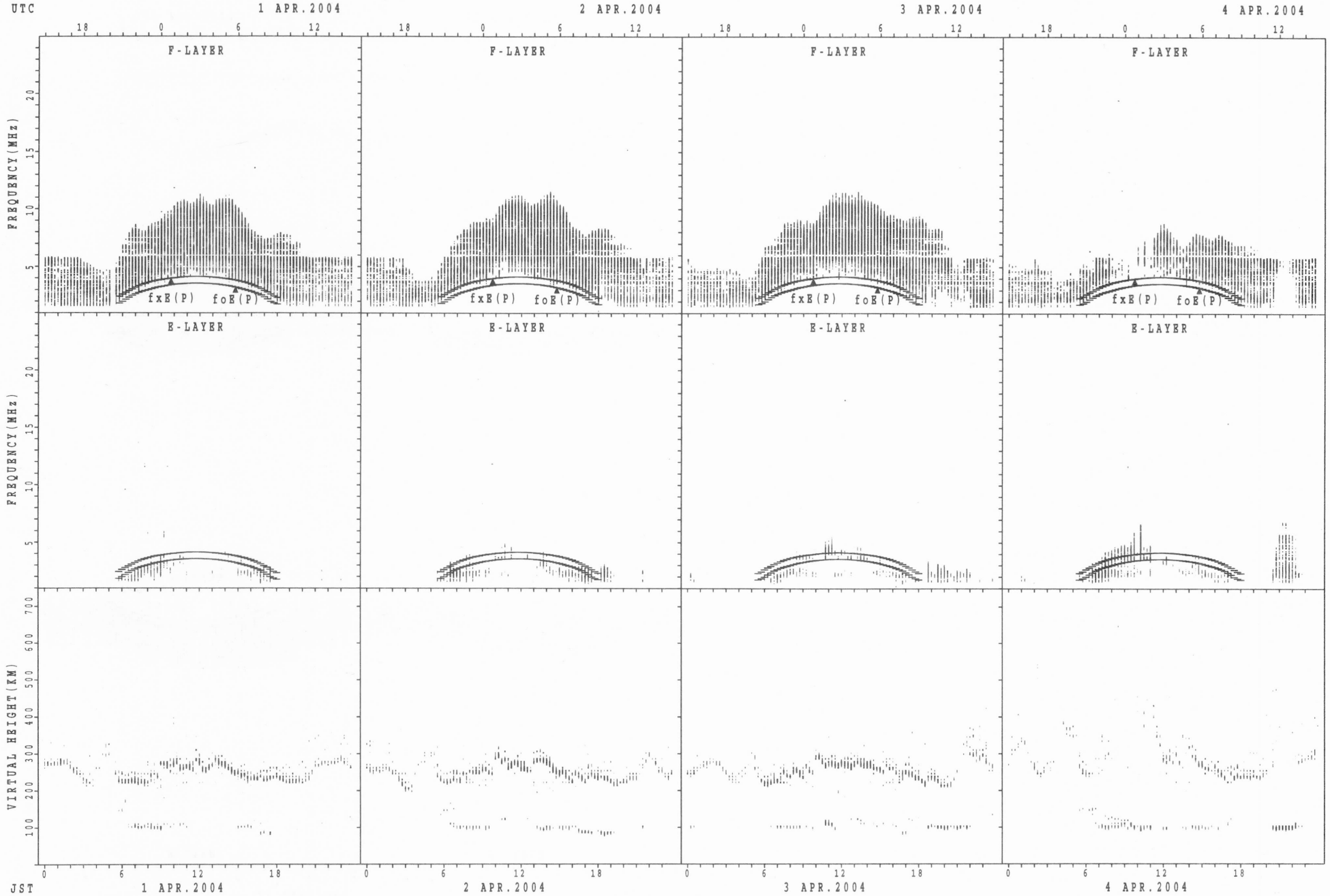
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



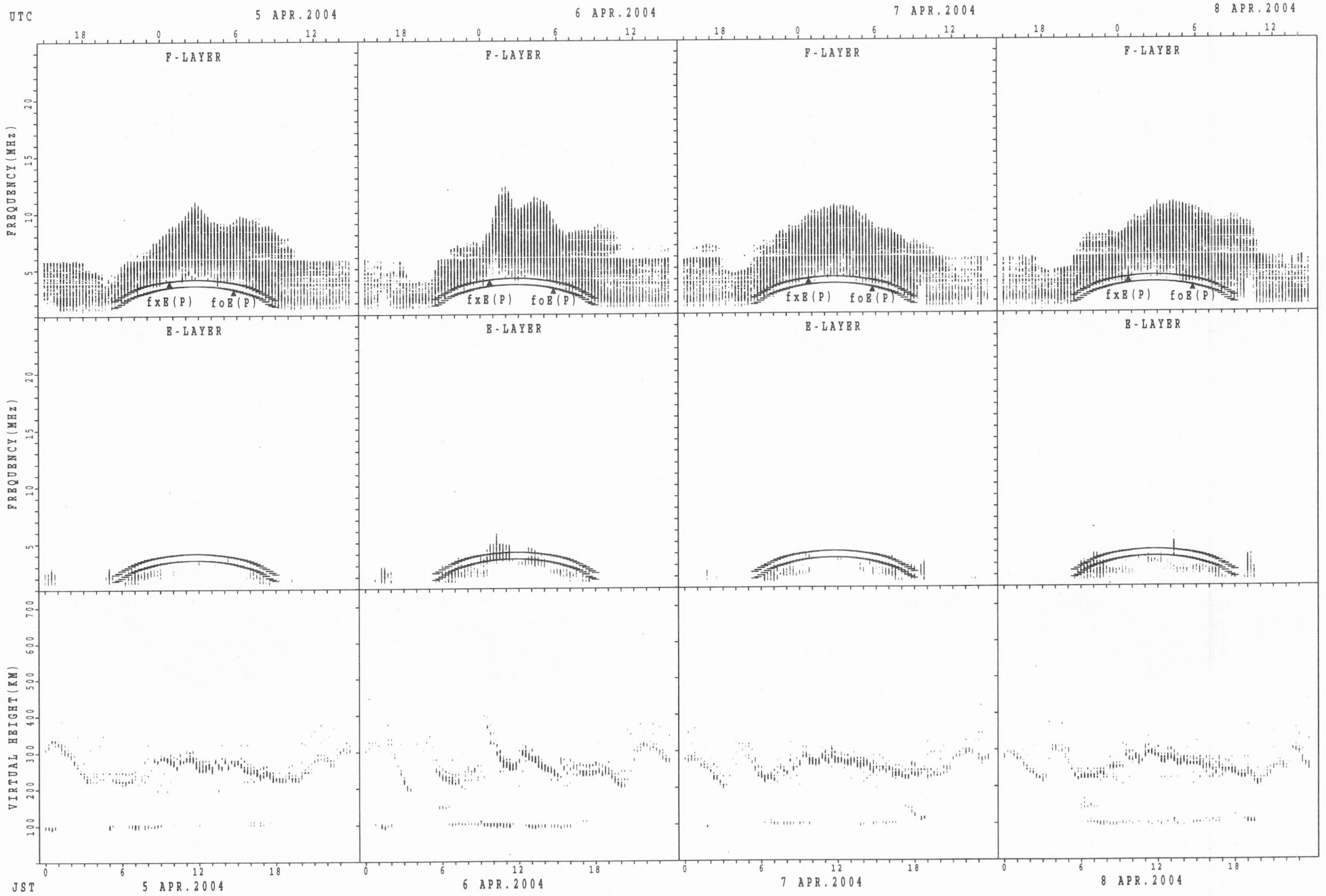
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



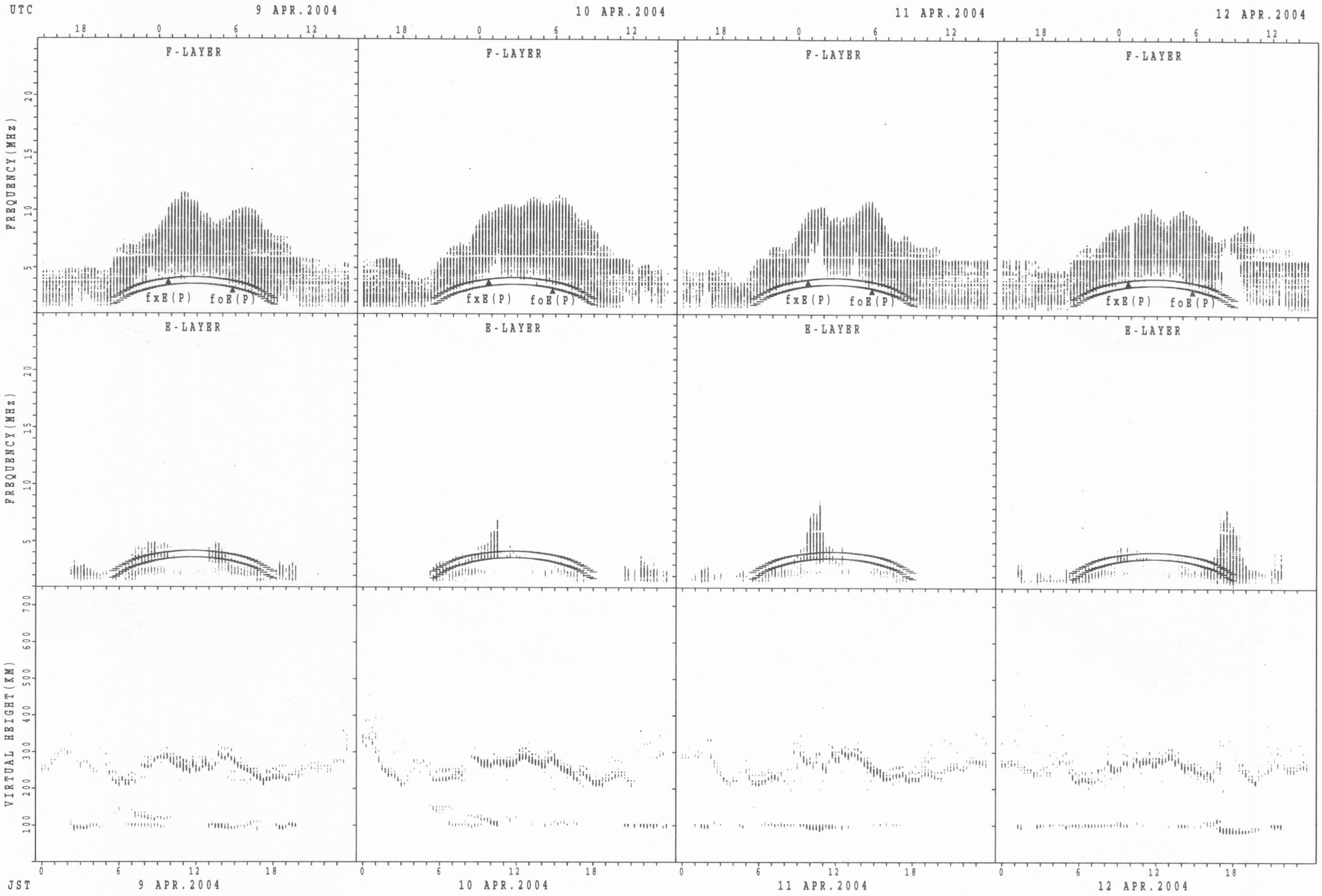
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



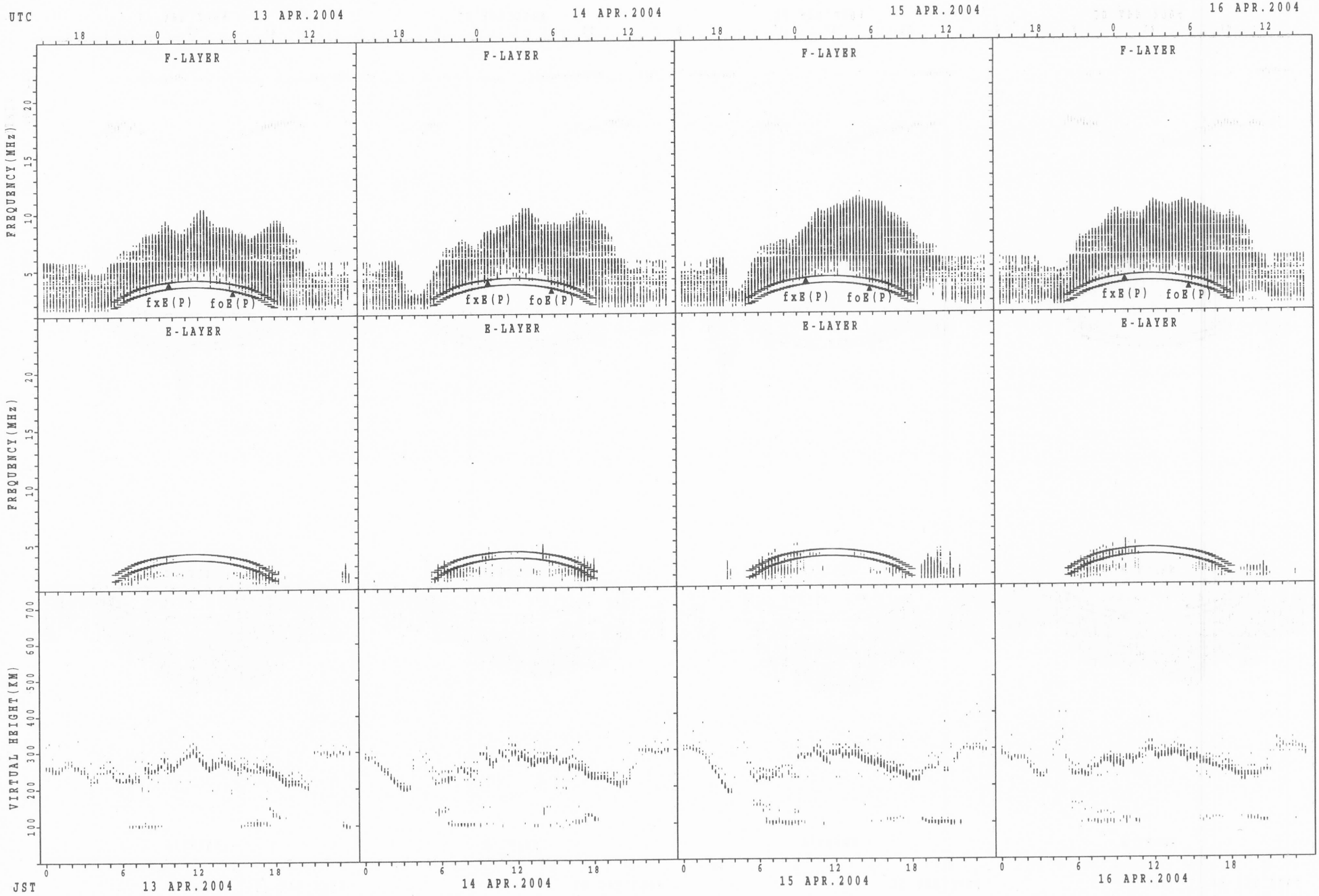
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



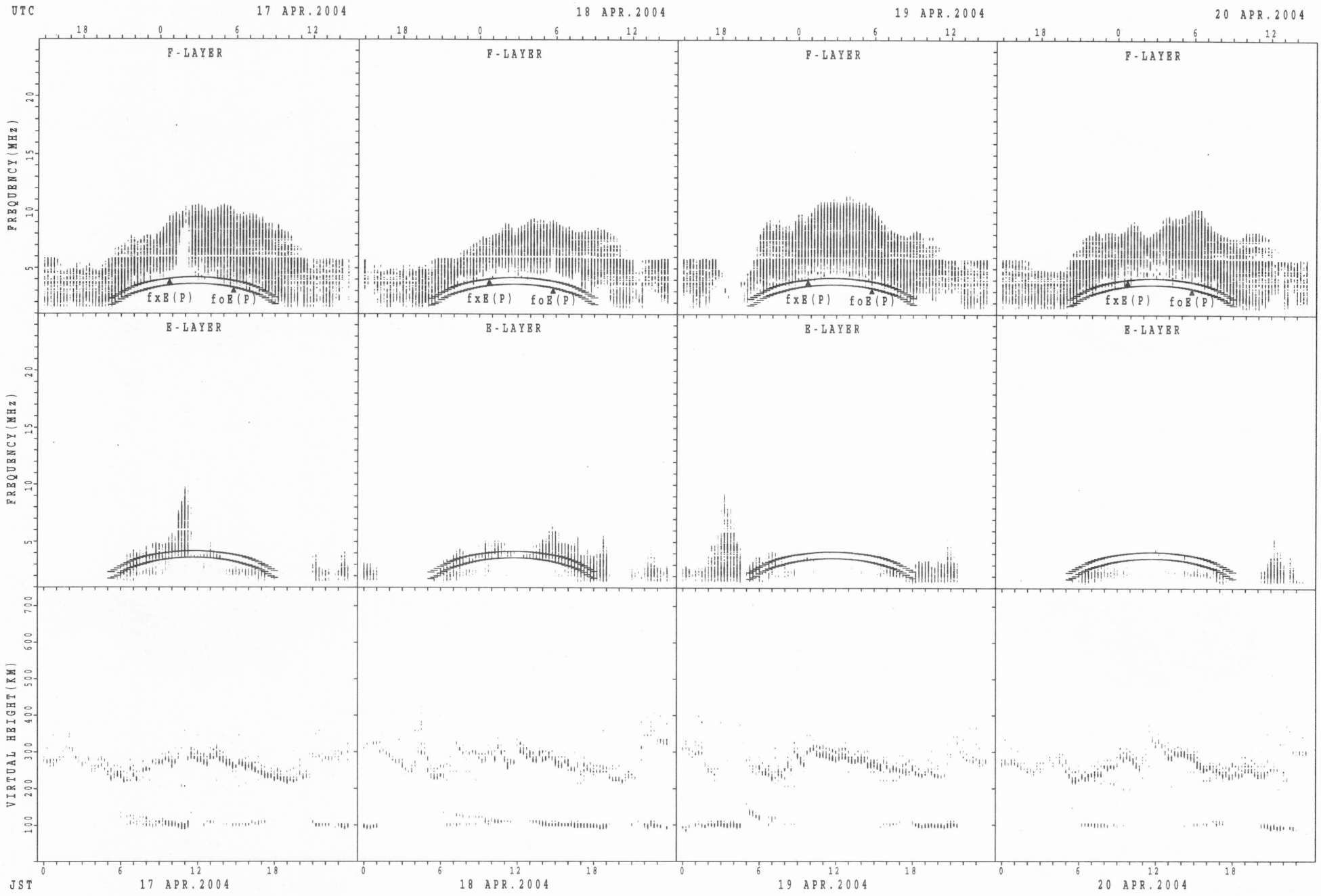
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



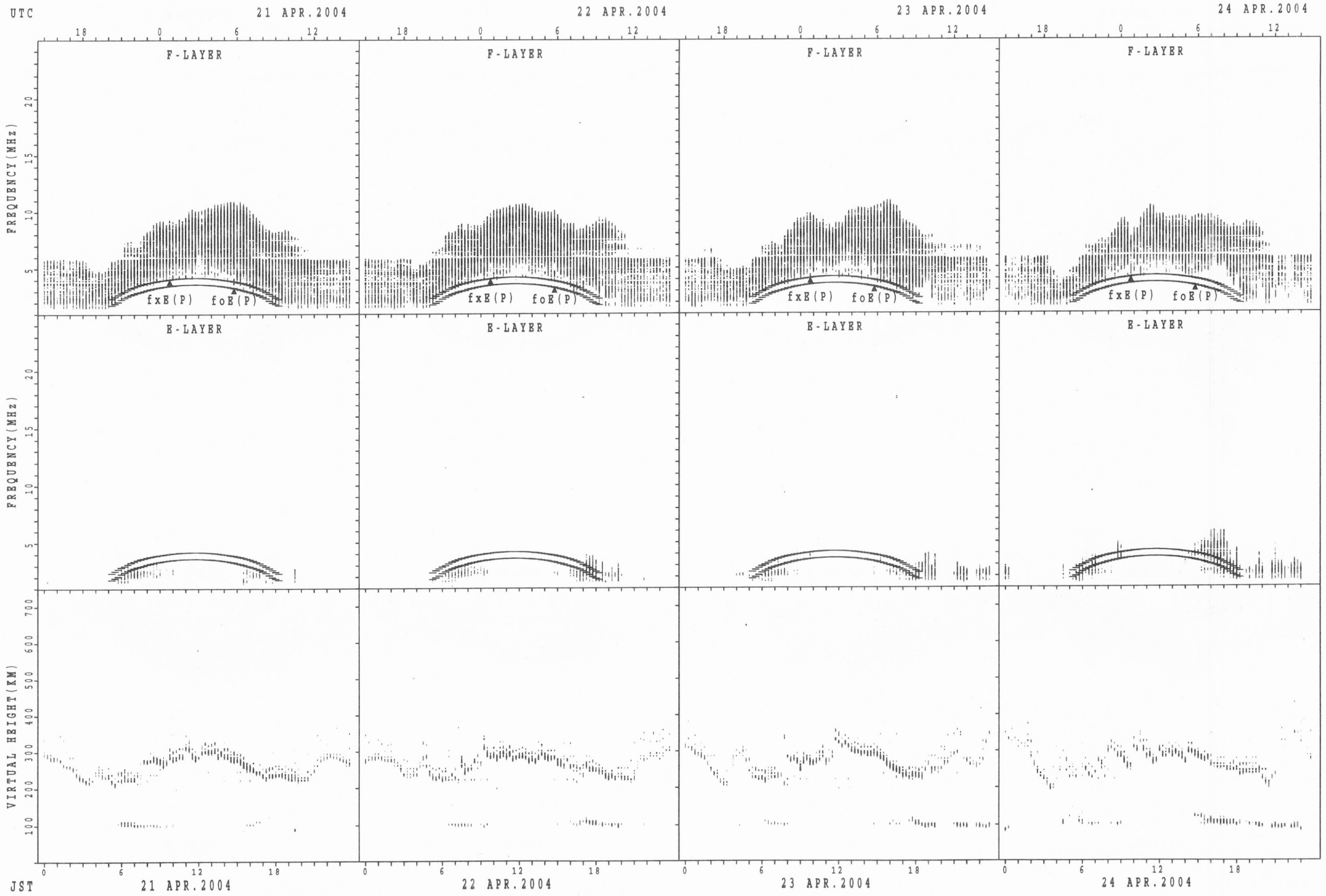
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



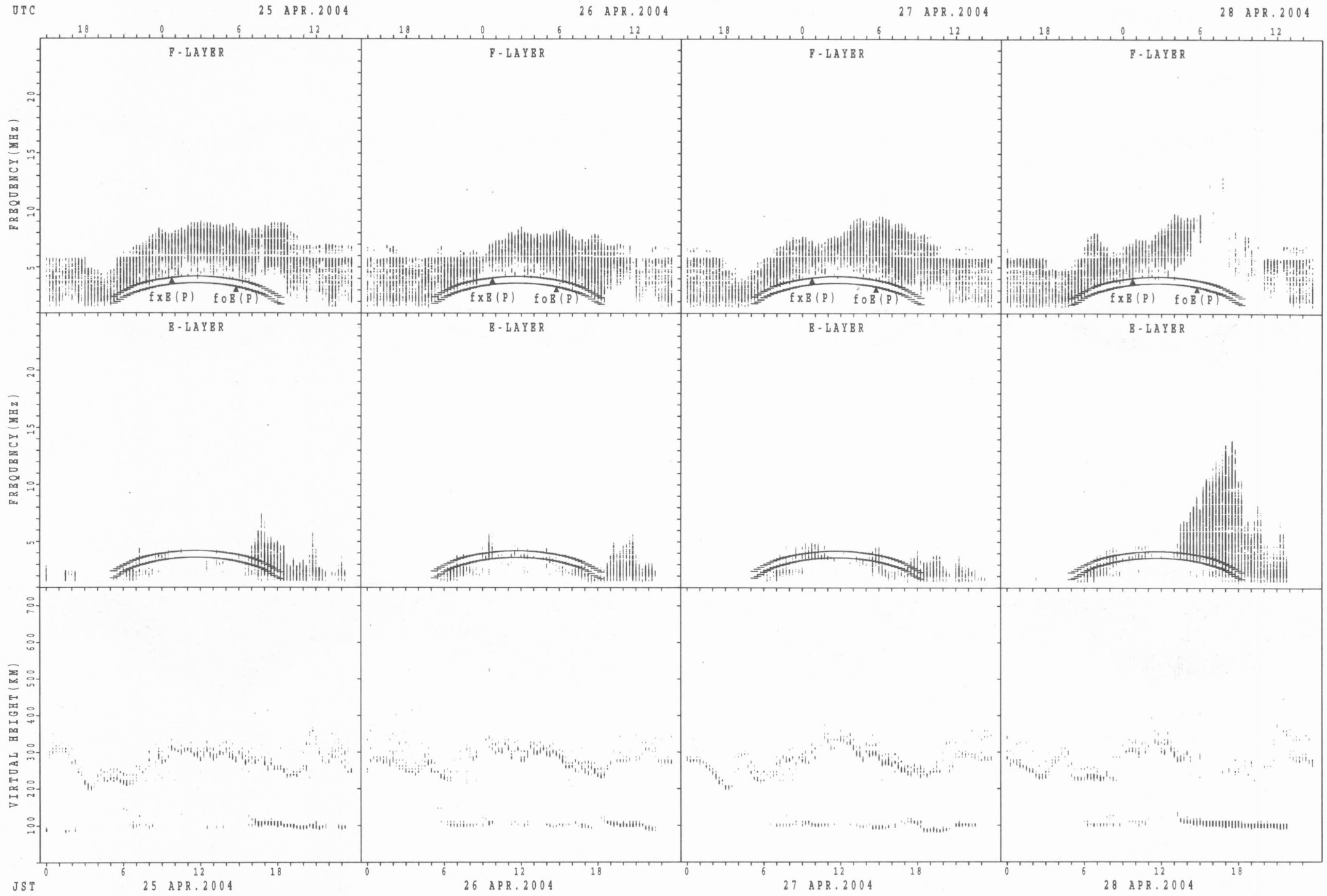
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



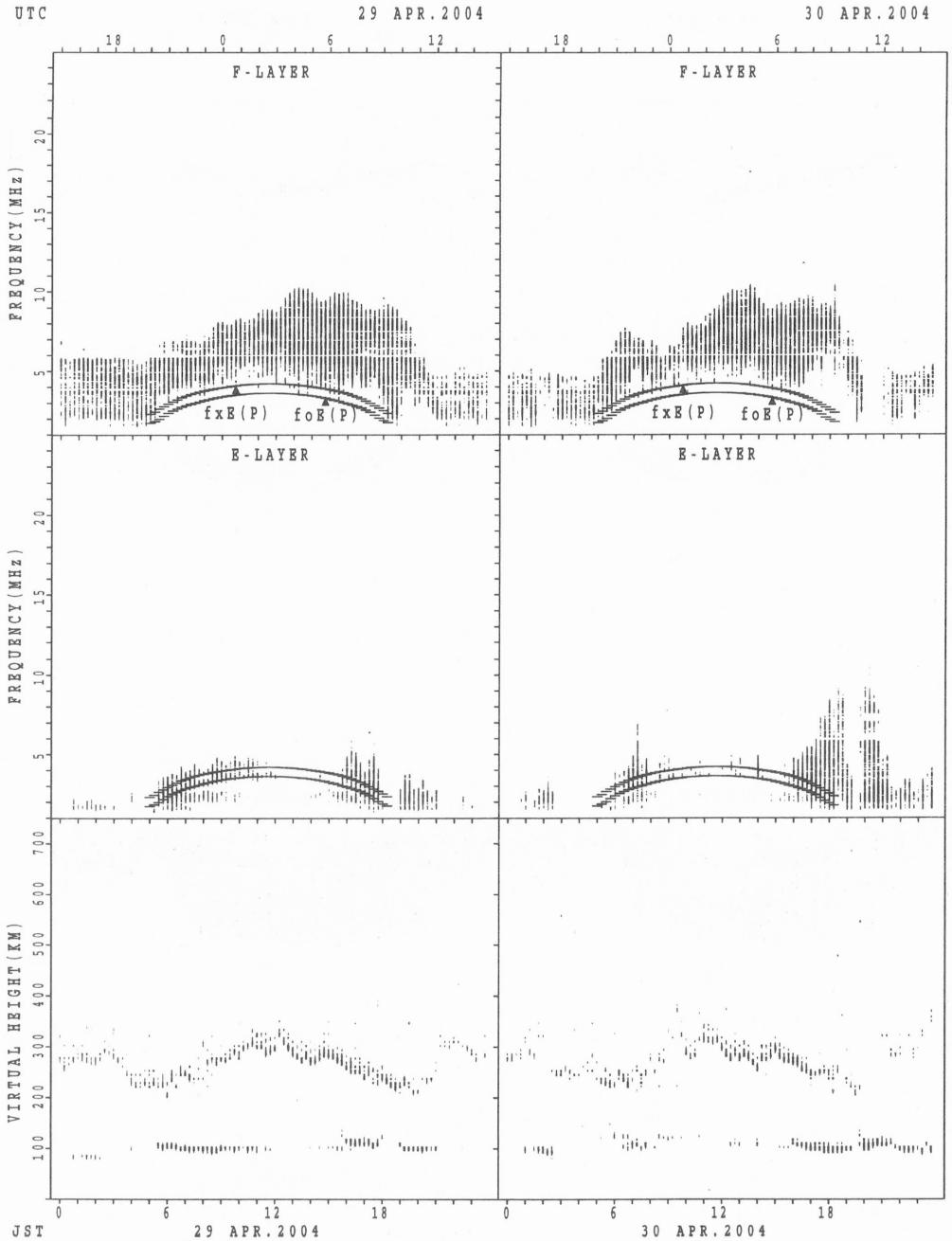
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



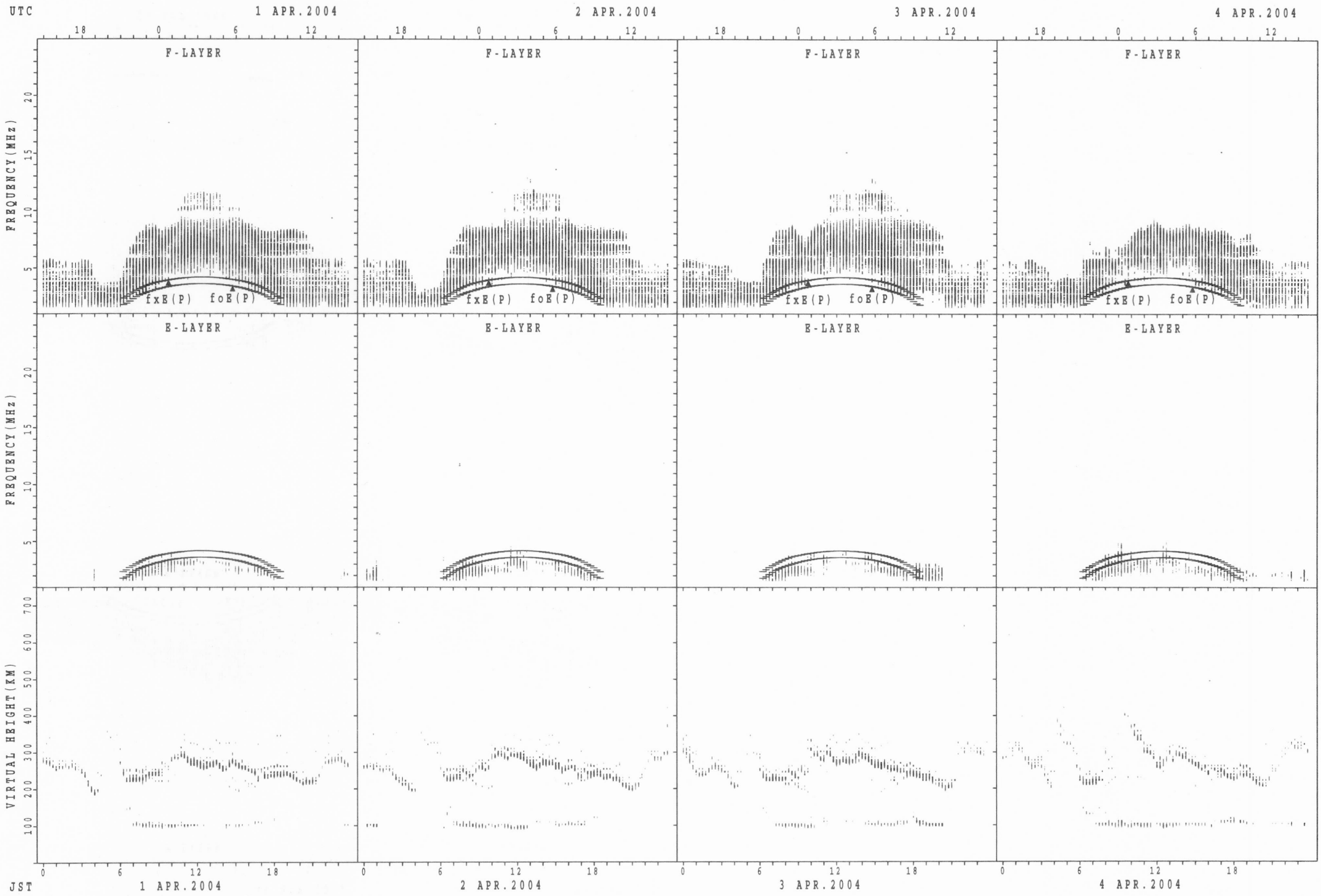
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



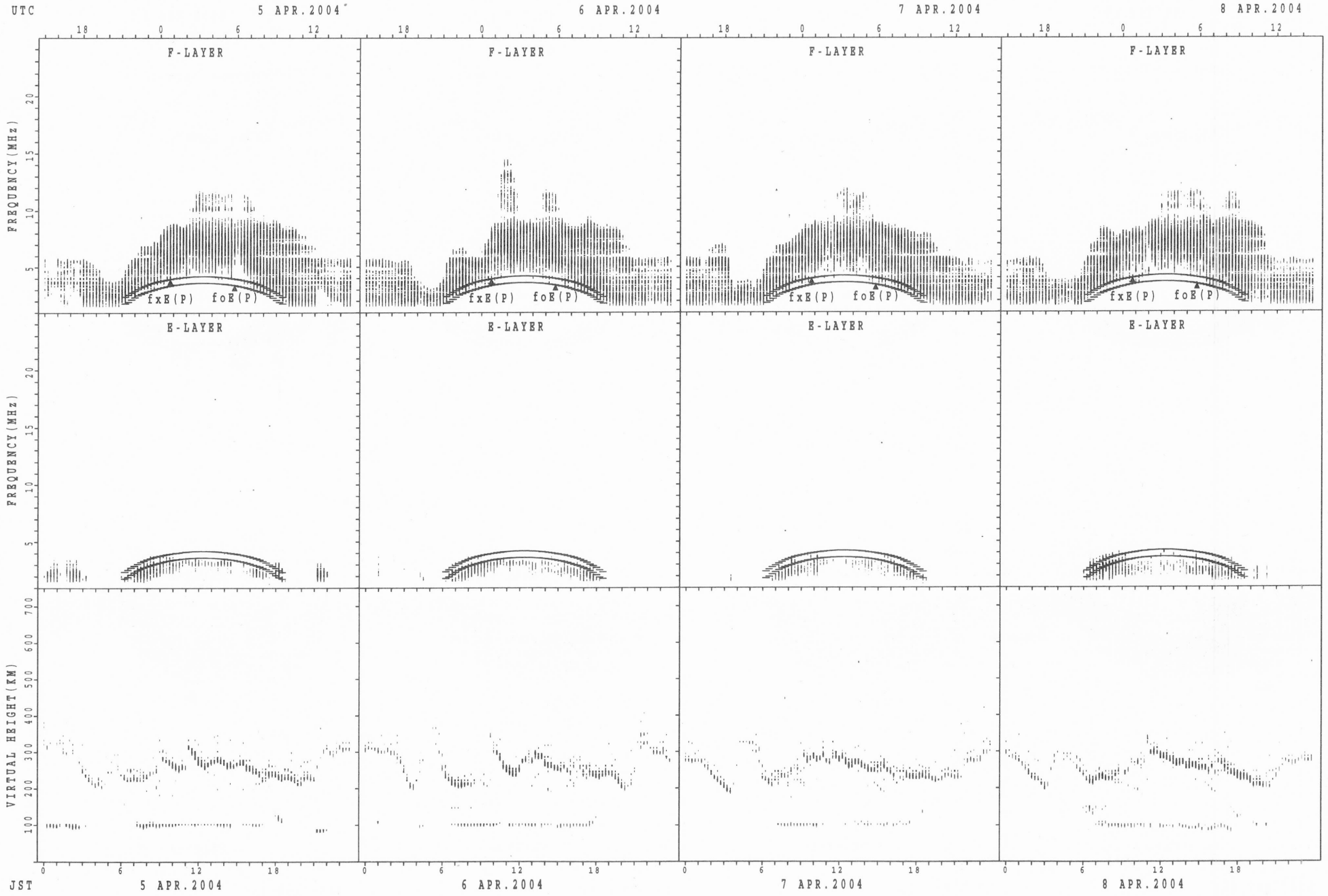
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



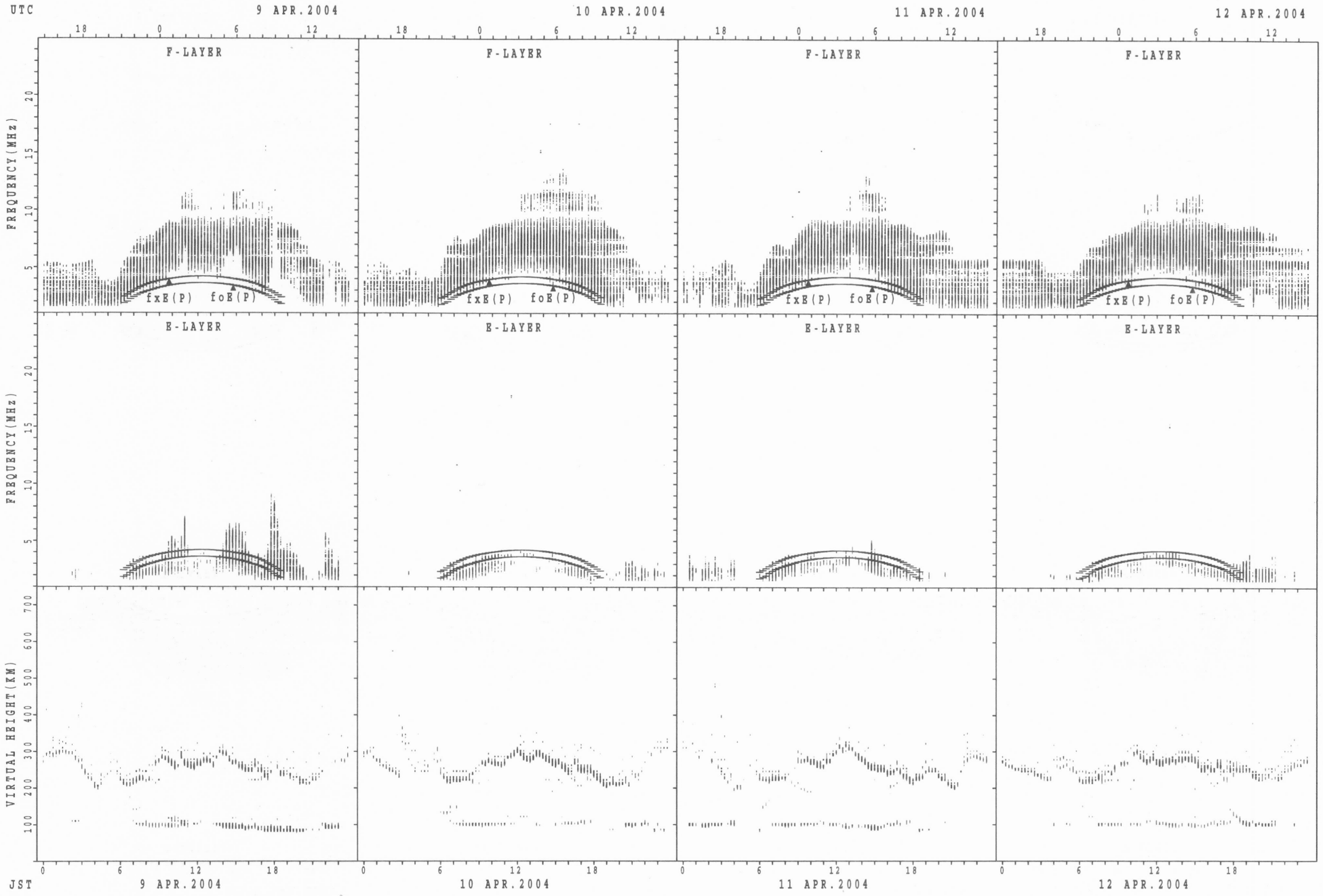
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



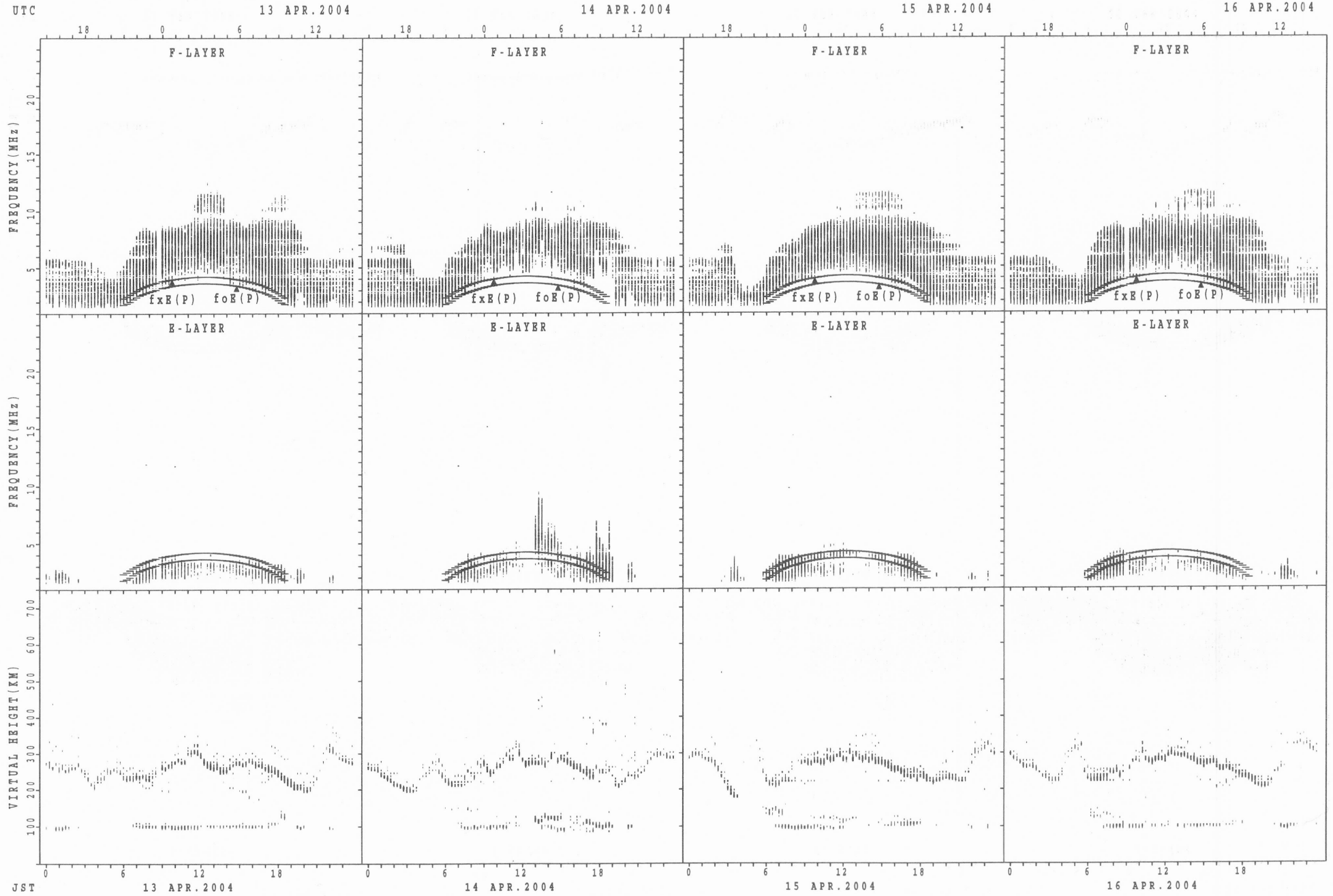
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



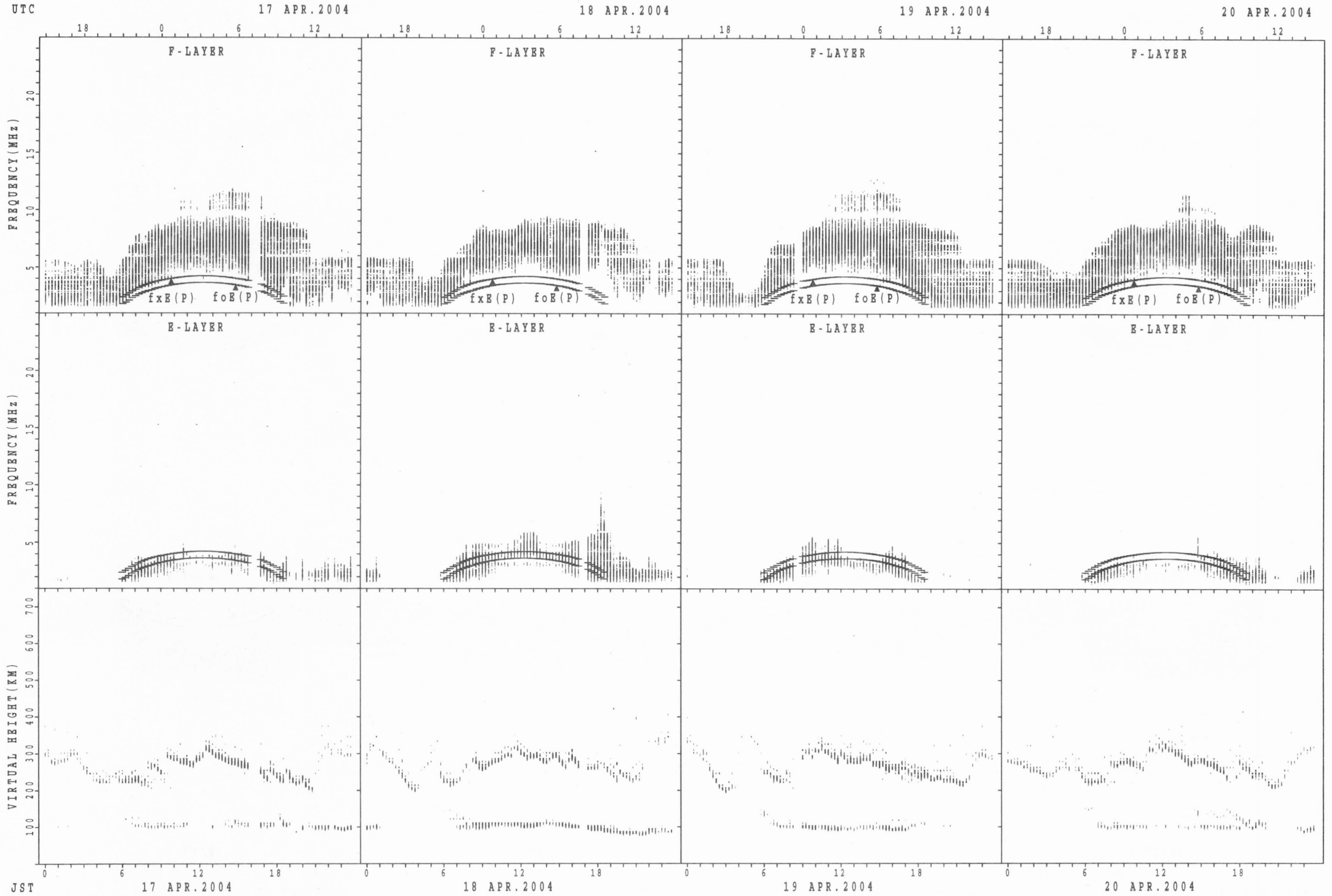
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



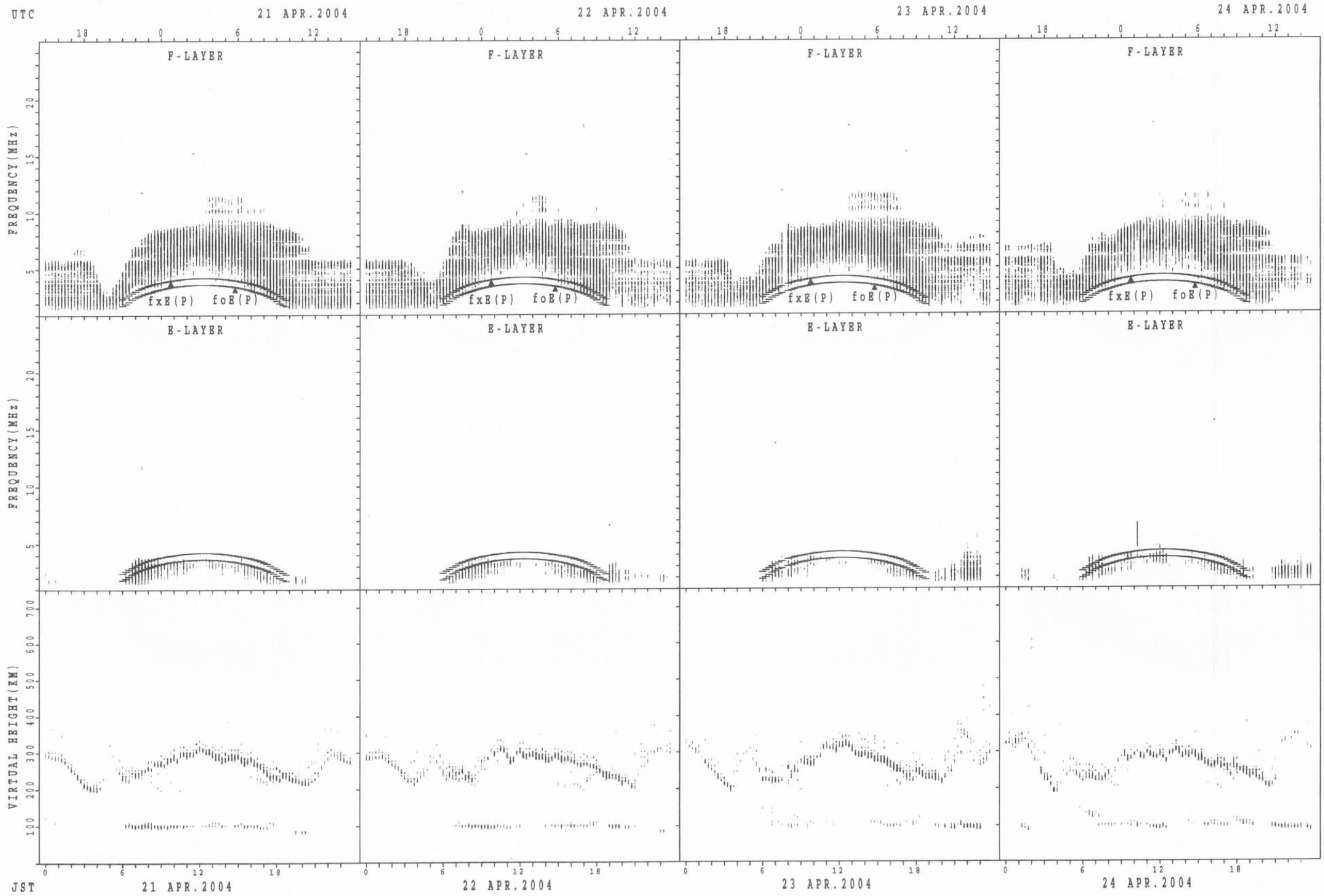
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



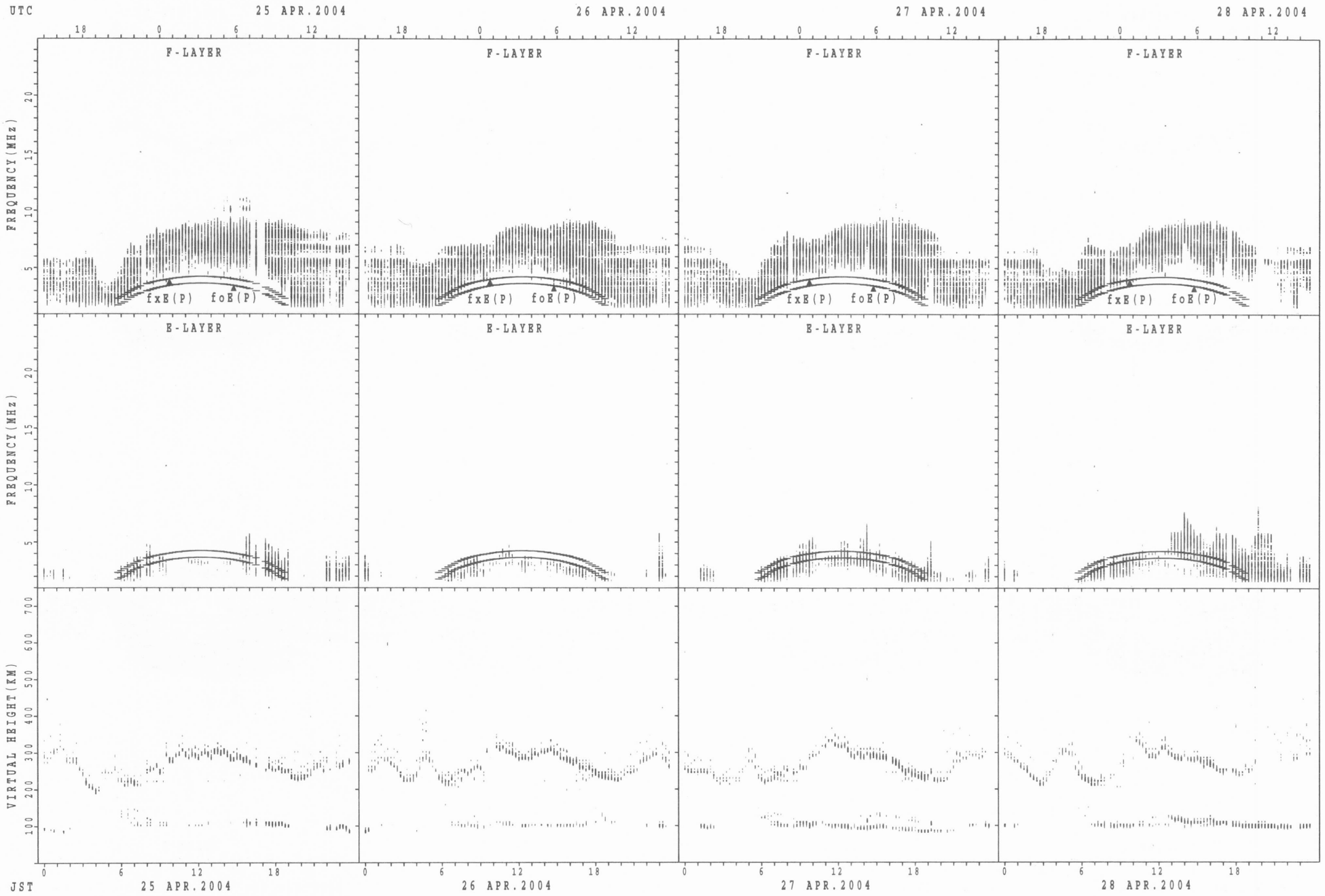
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



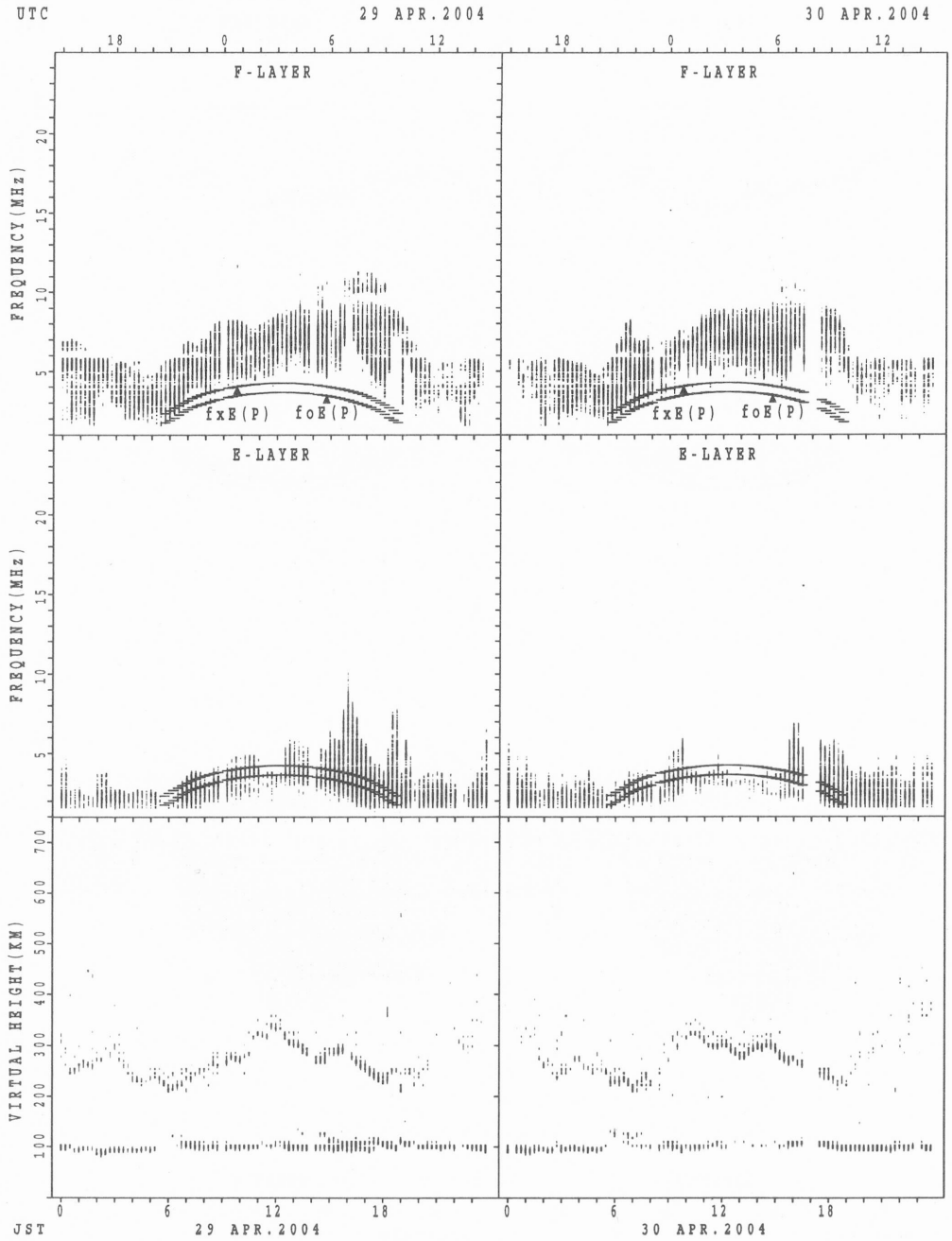
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



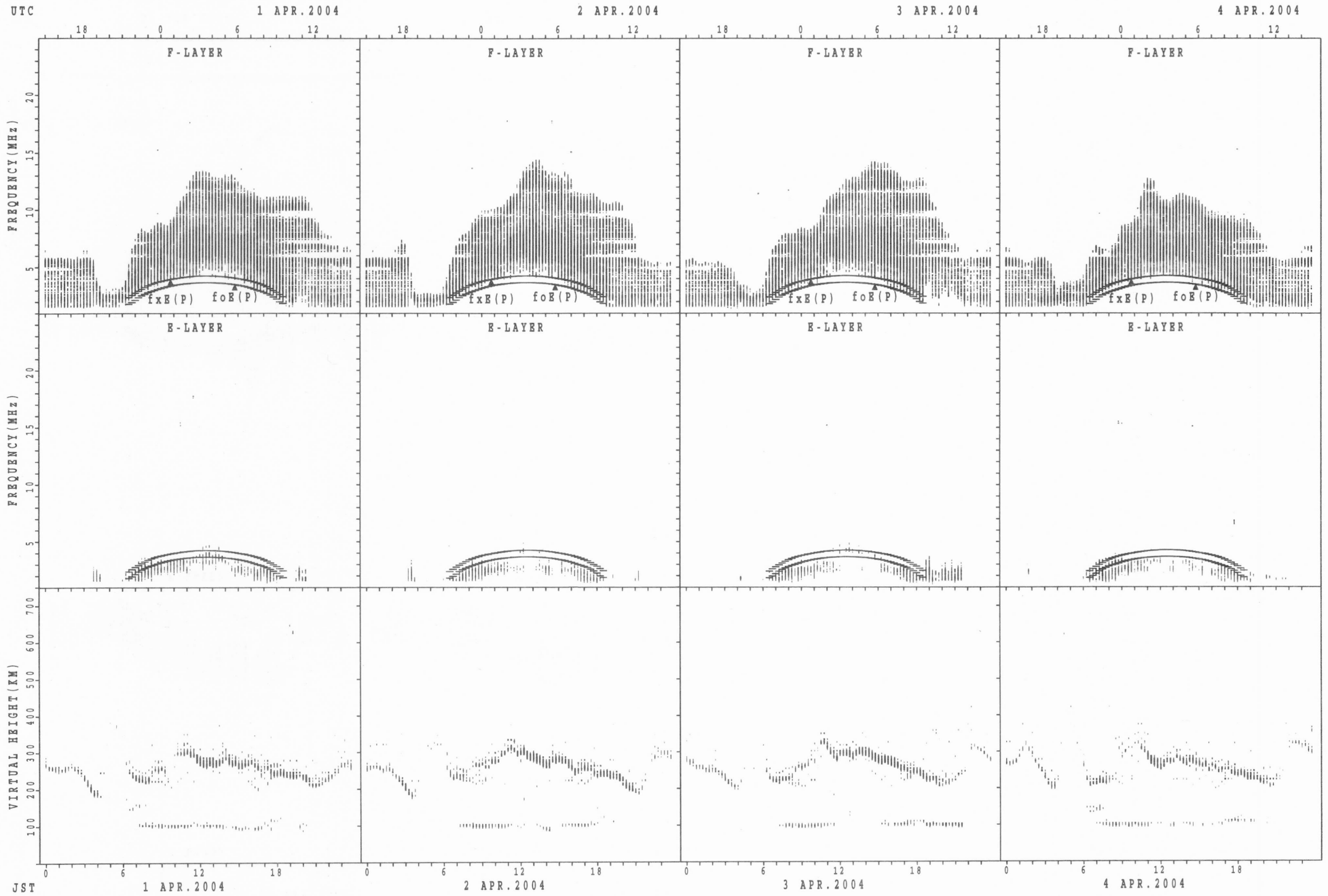
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



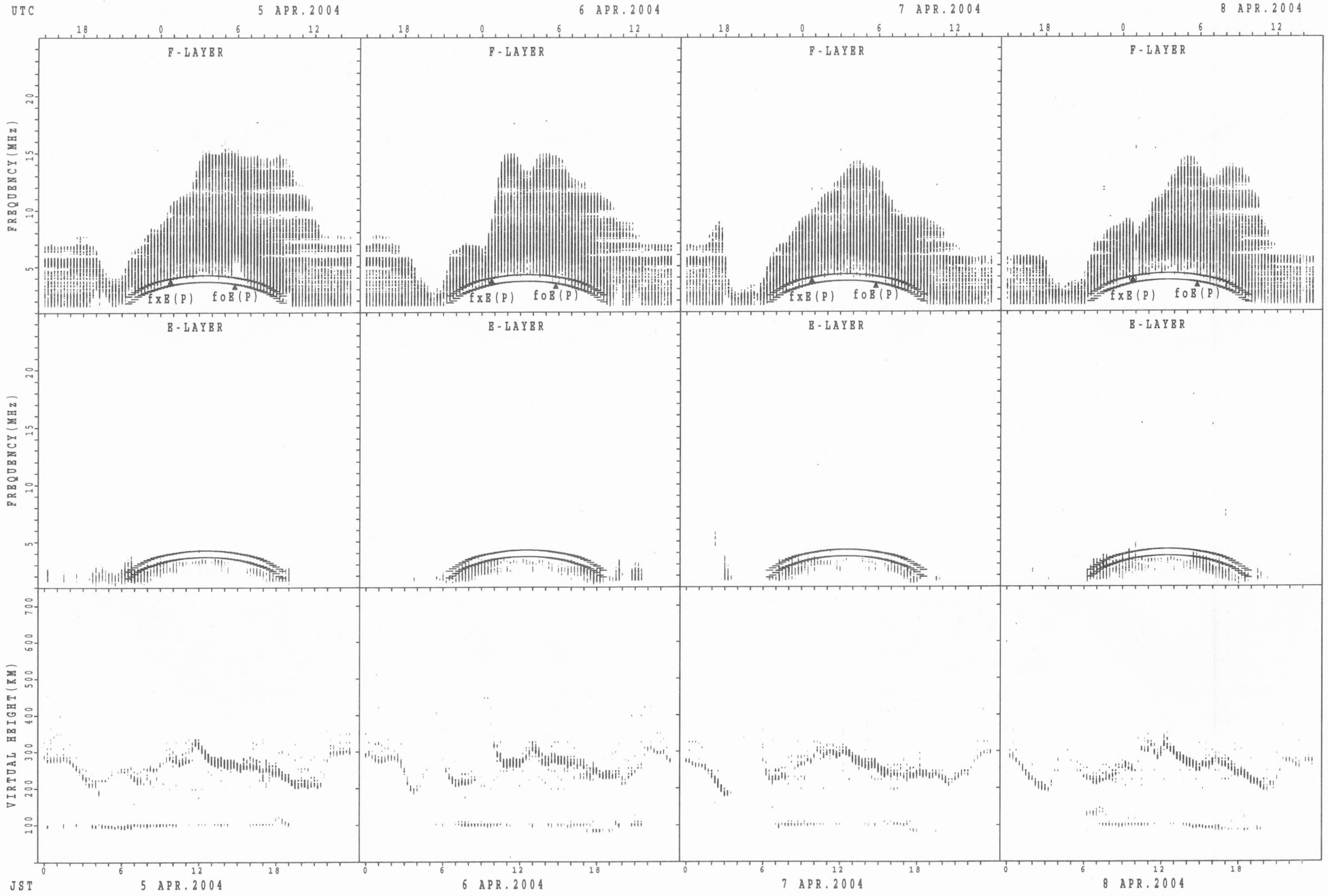
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



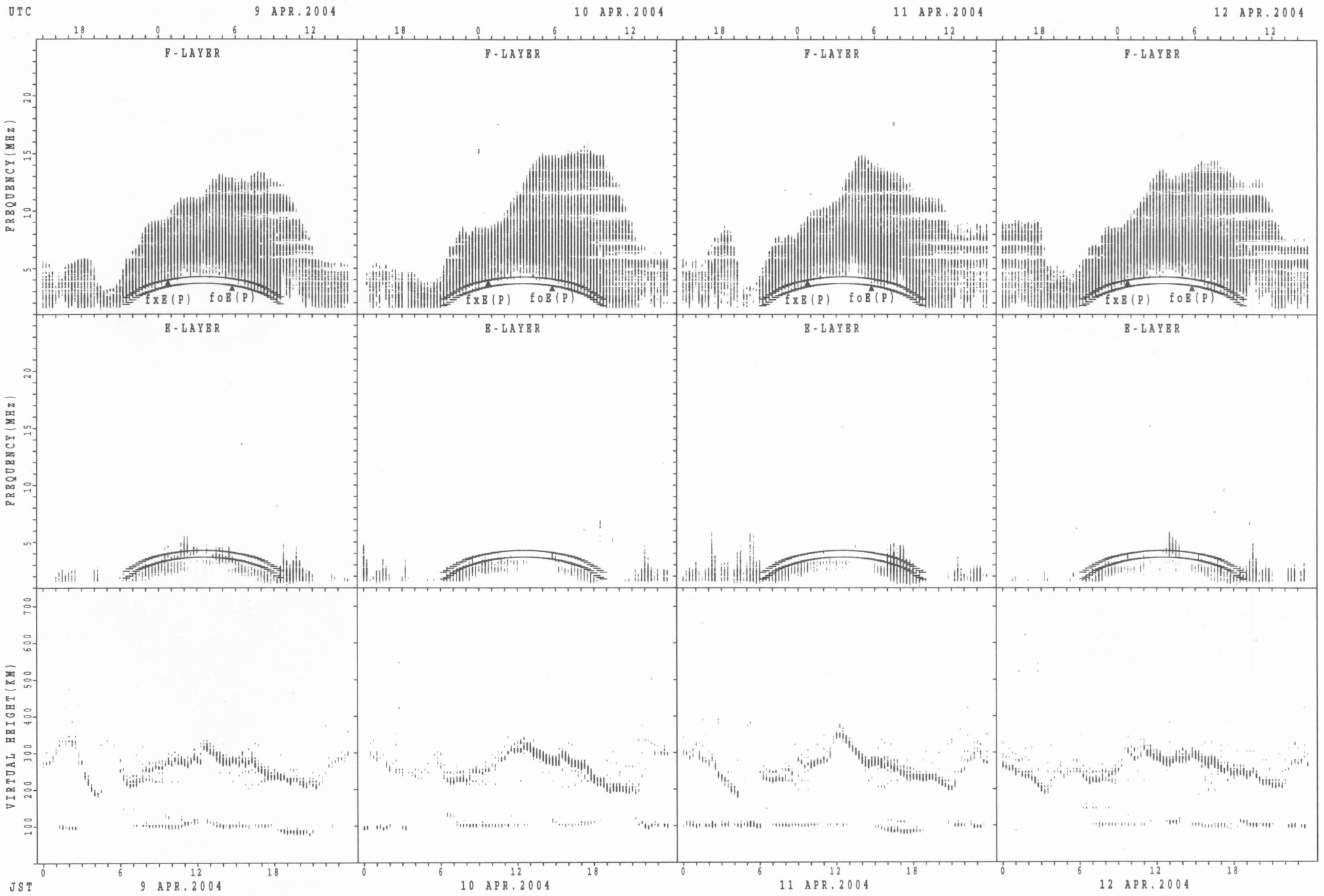
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



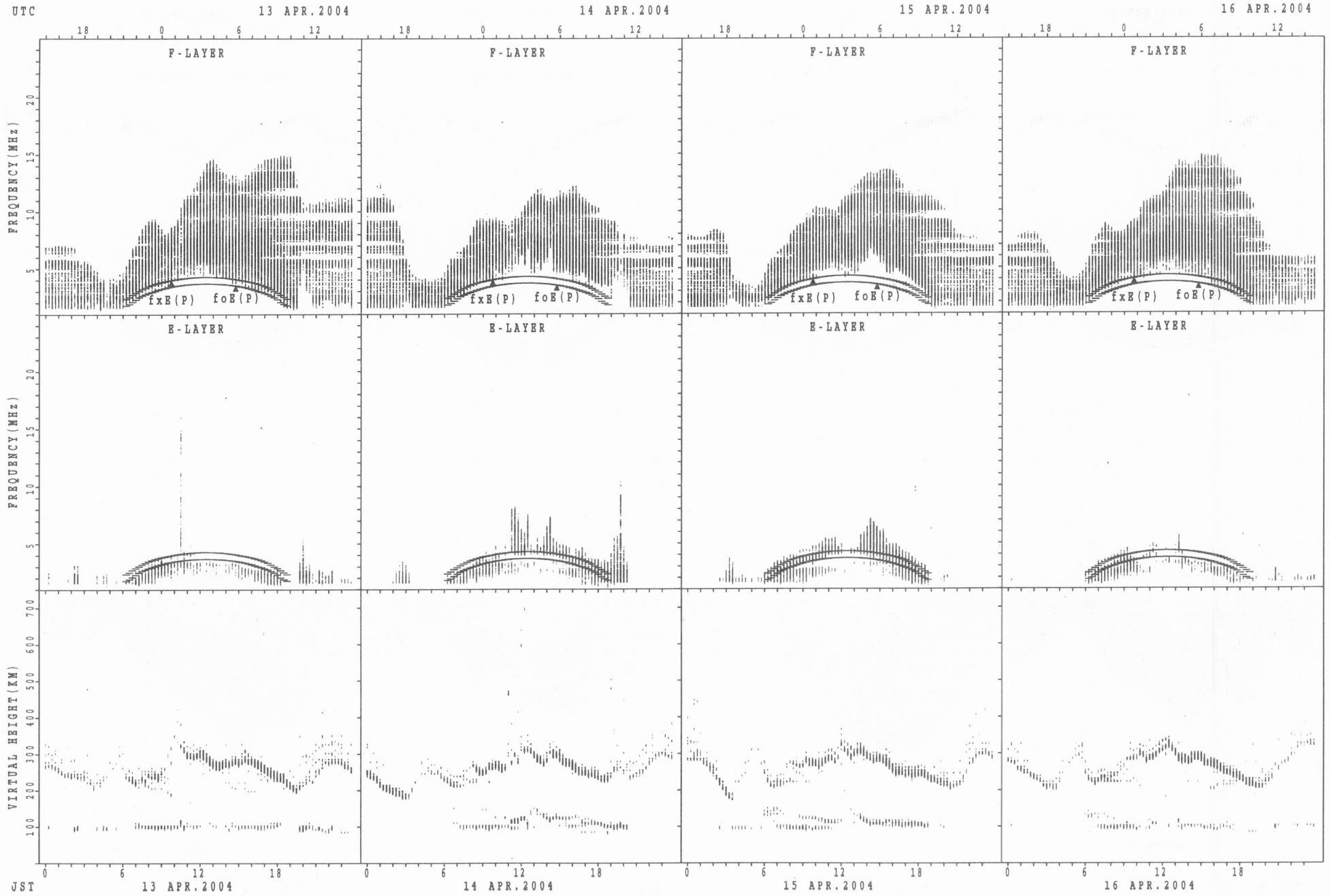
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

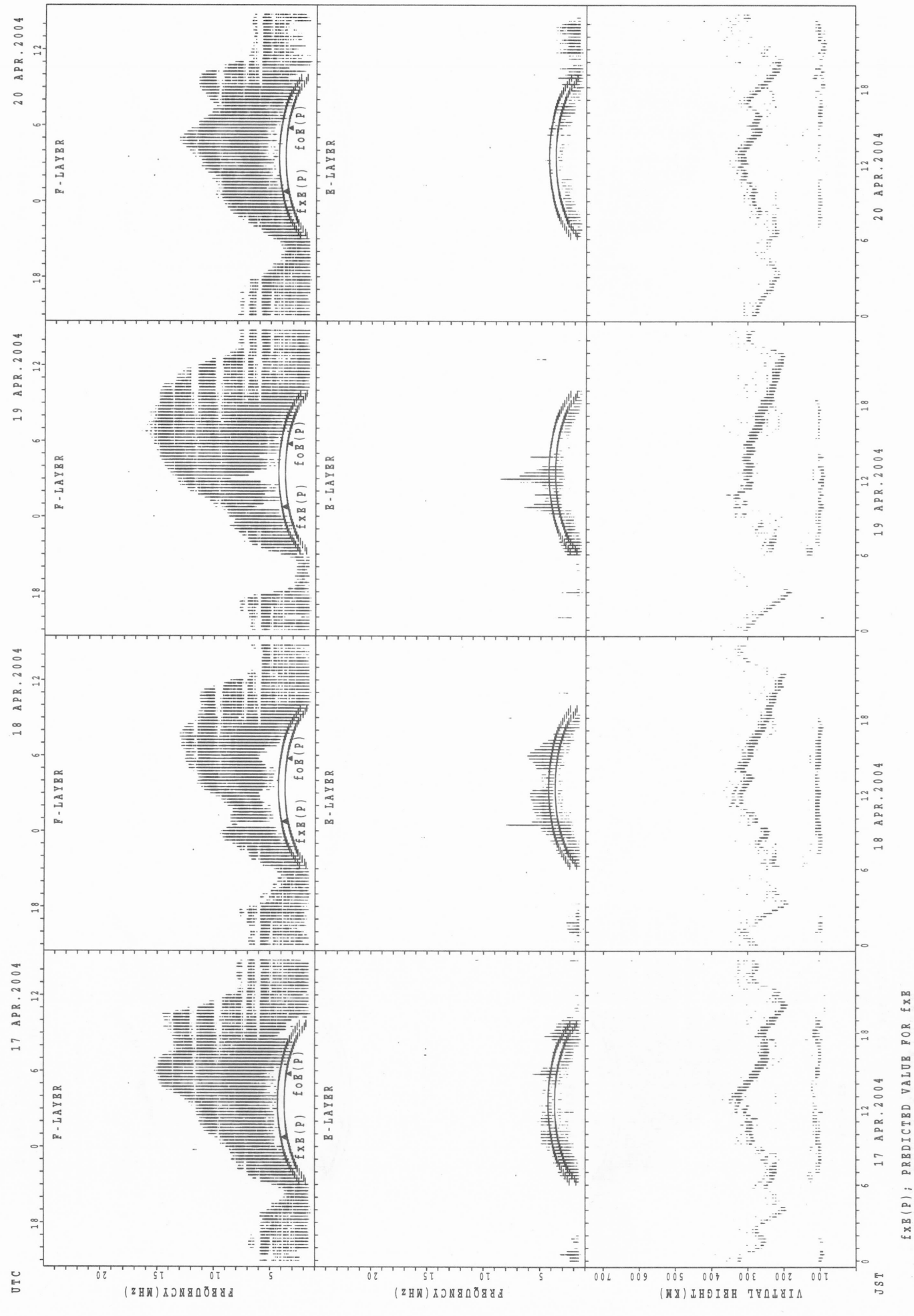


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

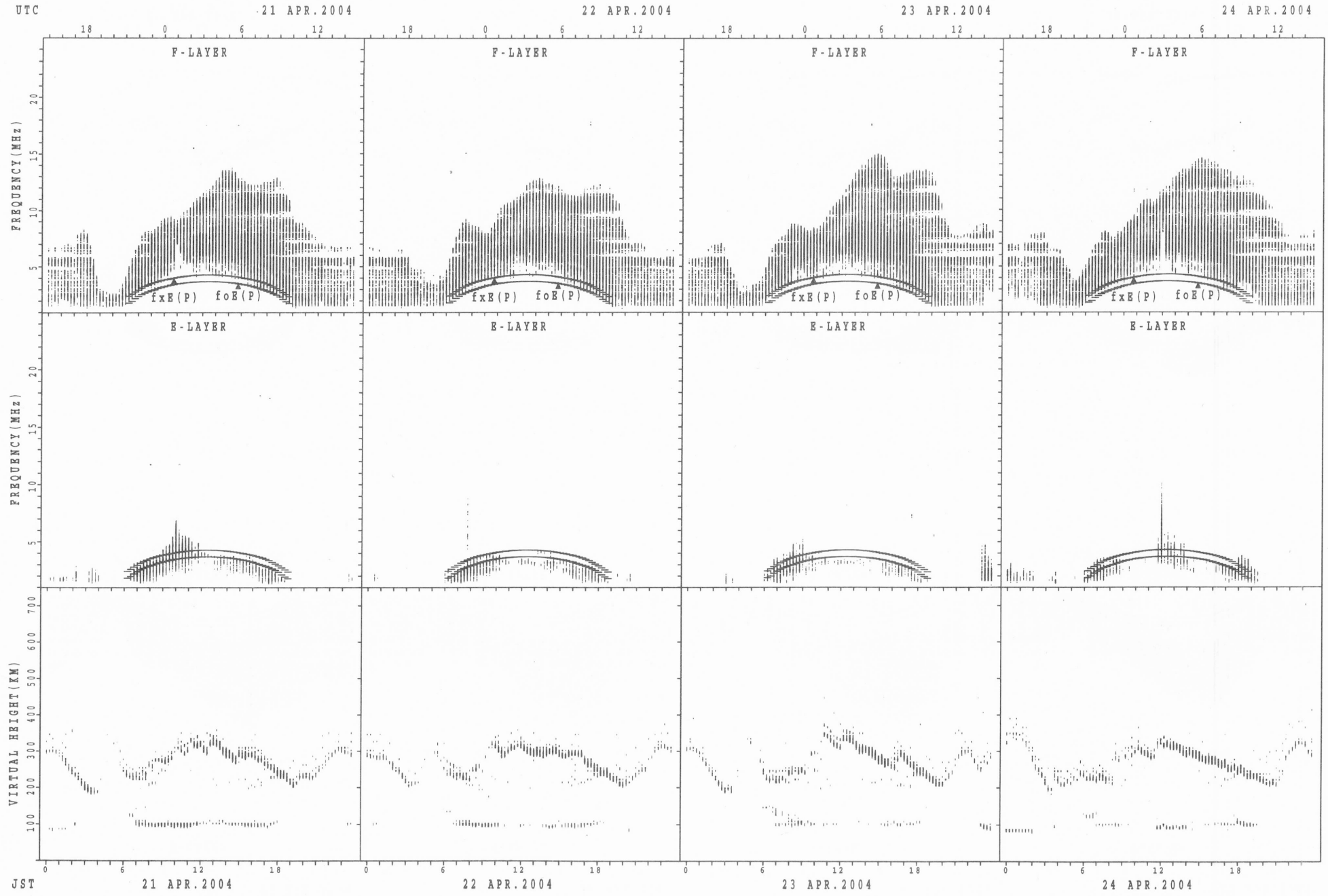
SUMMARY PLOTS AT Okinawa



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

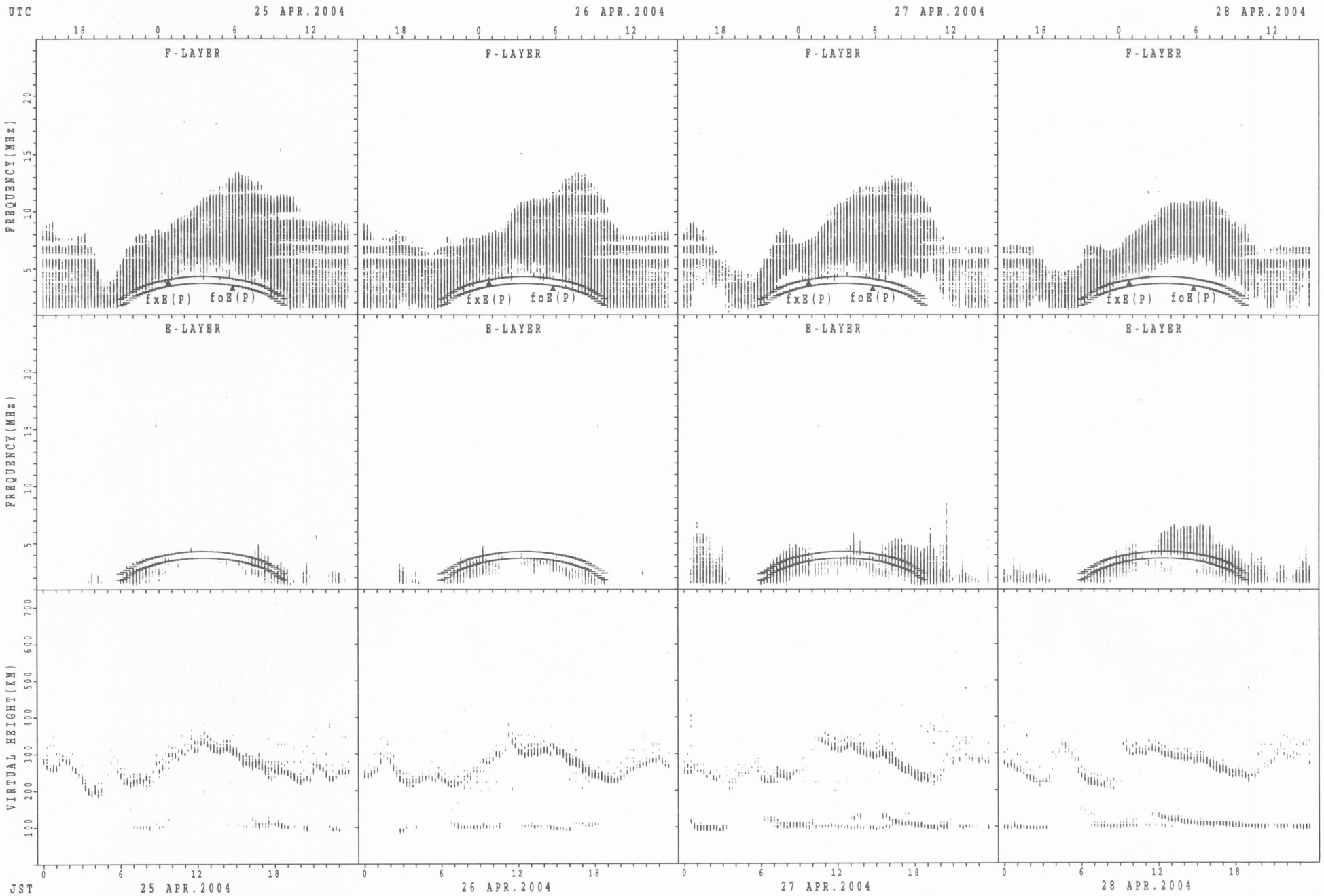

SUMMARY PLOTS AT Okinawa
UTC
JST
17 APR.2004
18 APR.2004
19 APR.2004
20 APR.2004
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



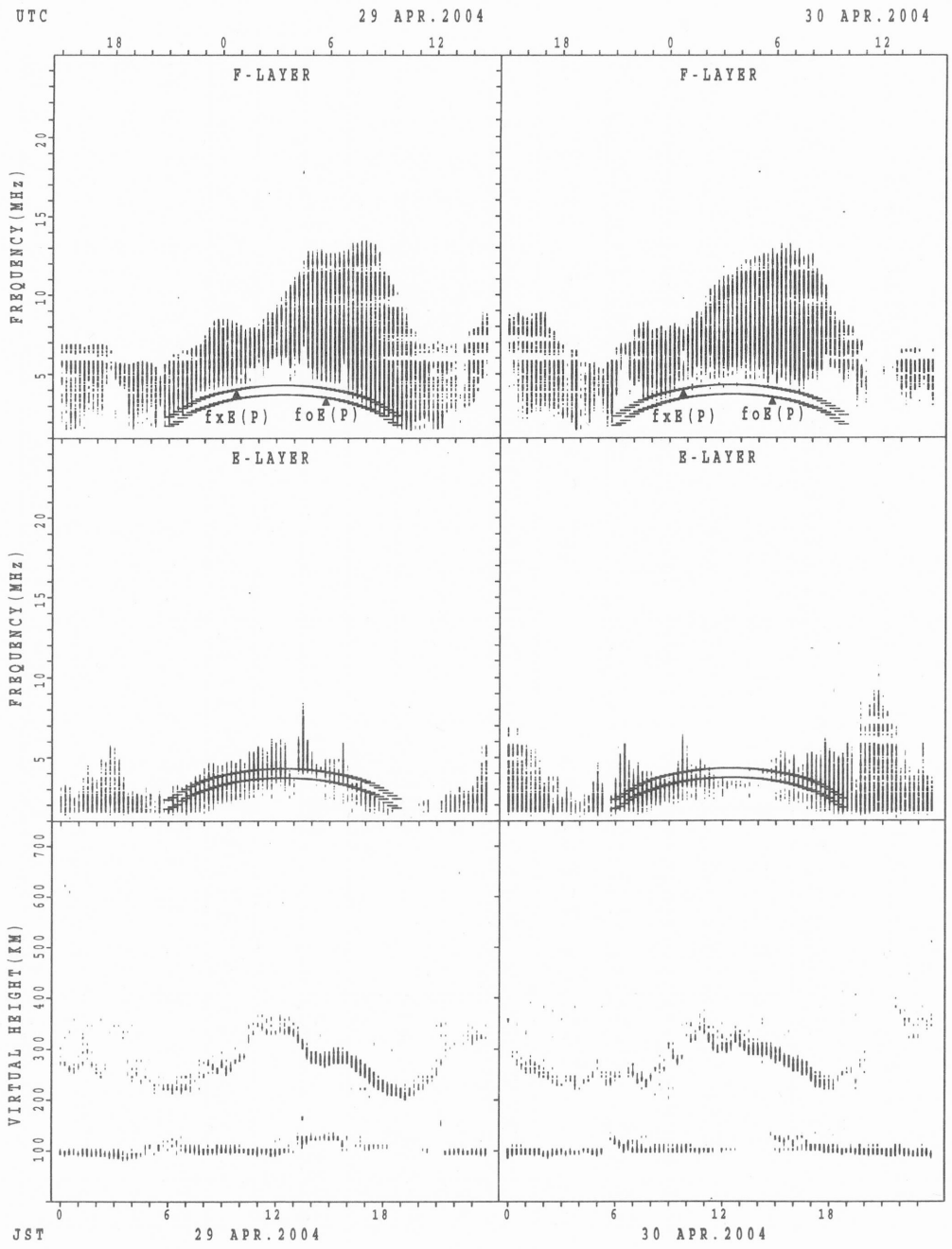
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

APR.2004 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							7	13	6							3	27	26	17	10	9	3		1
MED							246	268	270							248	270	261	262	271	288	296		330
U Q							252	293	294							280	288	268	269	290	295	312		165
L Q							246	248	262							246	258	248	252	262	270	284		165

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	8	4	4	3	9	16	7	9	14	10	8	8	9	7	8	6	9	16	14	11	11	9	7
MED	95	102	98	104	99	121	125	107	111	102	102	107	105	101	105	98	104	105	107	106	103	105	103	97
U Q	100	104	100	105	103	135	137	119	116	111	107	141	107	140	107	105	111	115	113	113	105	107	105	103
L Q	91	96	97	100	99	109	113	105	103	99	97	101	101	95	95	92	101	90	92	91	95	95	96	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2		1				10	22	16								29	28	28	21	5	1		
MED	338		284				253	256	262								262	257	256	262	260	286		
U Q	348		142				262	264	270								266	270	265	272	266	143		
L Q	328		142				248	244	256								252	247	246	246	238	143		

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	4	4	4	3	4	11	9	6	15	9	6		4	7	4	6	8	14	18	11	15	10	8
MED	95	102	101	105	103	102	143	115	116	113	105	100		105	107	106	112	105	106	104	101	101	102	100
U Q	98	104	104	105	105	135	149	134	119	121	113	101		112	111	115	119	112	113	107	105	103	103	104
L Q	90	100	99	100	103	98	125	105	113	107	103	95		98	97	99	105	101	103	99	99	99	99	96

h'F STATION Yamakawa 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				18	27	3							25	26	29	28	13	1		
MED	310			230				248	256	240							262	257	254	257	248	254		
U Q	155			115				258	266	262							272	262	264	273	264	127		
L Q	155			115				240	246	240							255	246	242	248	241	127		

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	6	9	5	3	3	2	6	18	11	9	8	6	6	4	7	9	8	5	16	14	12	12	15	12
MED	96	101	97	97	97	96	131	136	115	111	104	105	101	122	109	113	109	111	109	102	101	99	99	96
U Q	97	104	98	105	103	97	135	143	137	119	110	111	117	123	115	122	115	113	127	105	105	102	105	99
L Q	95	96	94	93	95	95	129	119	101	106	101	103	95	112	97	102	99	102	103	97	88	98	95	92

MONTHLY MEDIANS OF h'F AND h'Es

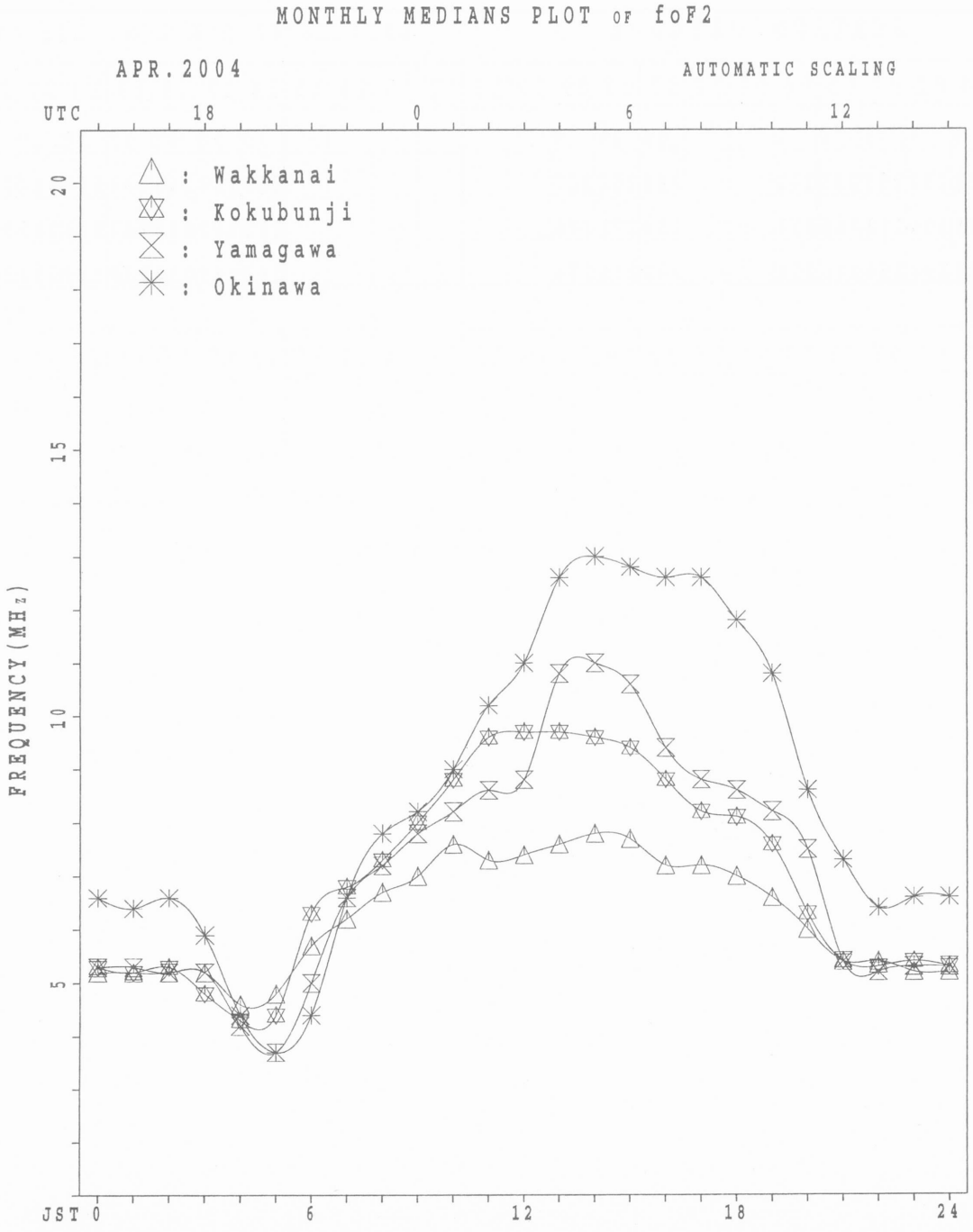
APR.2004 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	5	5	6	6	2			16	29	20							30	28	30	29	20	12	2	3
MED	298	292	255	223	242			248	252	267							266	254	246	238	237	240	303	304
U Q	318	300	272	246	270			254	271	276							272	262	246	247	240	263	304	336
L Q	278	242	254	220	214			242	238	256							262	249	238	230	230	232	302	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	6	8	7	6	4	4	9	17	6	10	12	9	12	11	6	7	8	7	9	11	9	6	6	8
MED	98	99	97	100	98	101	129	131	110	108	108	105	119	113	113	111	115	109	105	103	103	102	101	99
U Q	103	103	103	103	103	109	135	140	113	111	113	112	150	131	123	125	120	111	111	103	106	107	103	101
L Q	95	98	95	95	94	97	101	119	107	105	101	100	100	107	105	107	105	99	103	101	93	89	99	97


MONTHLY MEDIANS PLOT OF foF2
APR. 2004
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Wakkanai
✡ : Kokubunji
⧖ : Yamagawa
✳ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 63	X 62	X 62	X 58	X 52	X 50														X 80	X 72	X 66	X 66	X 65
2	X 65	X 61	X 60	X 55	X 44	X 43														X 82	X 74	X 66	X 64	X 66
3	X 60	X 54	X 52	X 52	X 47	X 46														X 86	X 76	X 57	X 58	63
4	X 57	X 53	X 61	X 51	X 45	X 47														X 72	X 64	X 64	X 62	X 62
5	X 60	X 60	X 59	X 59	X 51	X 44														X 80	X 67	X 66	X 67	X 64
6	X 62	X 60	X 58	X 56	X 42	X 40														X 88	X 74	X 69	X 71	X 72
7	X 69	X 68	X 74	X 58	X 48	X 50								C						X 71	X 65	X 62	X 62	X 64
8	X 61	X 60	X 62	X 51	X 49	X 51														X 92	X 68	X 61	X 59	X 60
9	X 58	X 54	X 53	X 52	X 52	X 53														X 78	X 62	X 61	X 60	X 56
10	58	64	X 59	X 48	X 43	X 45														X 72	X 68	X 58	X 55	X 54
11	X 54	X 52	X 51	X 54	X 45	X 45														X 72	X 70	X 68	X 67	X 66
12	X 66	X 63	X 61	X 56	X 54	X 54					C									X 93	X 76	X 75	X 73	X 69
13	X 68	X 64	X 62	X 61	X 53	X 58														X 86	X 75	X 57	X 60	O X 59
14	X 60	X 59	X 62	X 52	X 36	X 41														X 89	X 68	X 58	X 60	X 60
15	X 59	X 58	X 58	X 64	X 37	X 42														X 74	X 71	X 64	X 65	X 63
16	X 62	X 62	X 61	X 56	X 50	X 50														X 90	X 69	X 59	X 62	X 62
17	X 63	X 61	X 57	X 58	X 56	X 60														X 84	X 71	X 62	X 63	X 64
18	X 59	X 58	X 57	X 57	X 52	X 56														X 84	X 75	X 65	X 62	X 63
19	X 64	X 63	X 65	X 49	X 41															X 77	X 74	X 63	X 66	X 65
20	X 66	X 64	X 60	X 54	X 52															X 85	X 85	X 76	X 68	X 63
21	X 64	X 63	X 62	X 61	X 52	X 55														X 86	X 76	X 67	X 67	X 68
22	X 65	X 64	X 63	X 62	X 56															X 94	X 84	X 69	X 70	X 70
23	X 64	X 65	X 67	X 57	X 54															X 80	X 76	X 73	X 73	X 71
24	X 64	X 63	X 66	X 65	X 43															X 90	X 82	X 62	X 64	X 66
25	X 65	X 61	X 63	X 63	X 49	X 52														X 87	X 76	X 75	O X 75	X 77
26	X 71	X 68	X 68	X 66	X 59															X 74	X 76	X 68	X 70	X 71
27	X 70	X 69	X 68	X 58	X 46															X 79	X 71	X 69	X 70	X 70
28	X 70	X 68	X 68	X 59	X 55															X 77	X 72	X 68	X 70	X 73
29	X 72	X 67	X 64	X 61	X 62															X 88	X 65	X 53	X 54	X 58
30	X 57	X 53	X 52	X 50	X 47															X 76	A	X 56	X 55	X 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	30	30	30	30	30	20														30	29	30	30	30
MED	X 64	X 62	X 62	X 57	X 50	X 50														X 83	X 72	X 64	X 64	X 64
U Q	X 66	X 64	X 64	X 61	X 53	X 54														X 88	X 76	X 68	X 70	X 69
L Q	X 60	X 59	X 58	X 52	X 45	X 44														X 77	X 68	X 61	X 60	X 62

APR. 2004 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	57	56	56	52	46	44	65	82	81	89	100	104	110	100	109	98	78	72	75	74	66	60	60	59
2	59	55	54	49	38	37	58	72	84	86	91	106	109	101	108	101	81	74	79	76	68	60	58	60
3	54	48	46	46	41	40	64	73	84	84	90	106	110	108	104	98	92	88	93	80	70	51	52	F
4	51	47	55	45	39	41	50	57	57	54	65	68	84	71	69	74	72	68	66	66	58	57	56	56
5	54	54	53	53	45	38	51	57	63	74	86	94	105	89	88	92	91	85	81	74	61	60	61	58
6	56	54	52	50	35	34	54	65	69	65	94	119	101	107	107	86	78	81	83	82	68	63	65	66
7	63	62	68	52	42	44	70	70	78	83	95	98	100	C	92	81	79	73	70	65	59	56	56	58
8	55	54	56	45	43	45	67	72	73	76	85	91	102	102	100	96	91	88	91	86	62	55	53	54
9	52	48	46	46	46	47	62	68	75	83	102	112	104	90	90	96	98	89	74	72	56	55	54	50
10	F	F	53	42	37	39	56	65	65	89	95	102	100	108	104	108	102	87	81	66	62	52	49	48
11	48	46	45	47	39	39	55	67	63	80	98	100	91	92	103	100	78	72	69	66	64	62	61	60
12	60	57	55	50	48	48	62	61	76	81	C	94	93	90	98	90	78	72	78	87	70	69	67	63
13	62	58	56	55	47	52	64	70	79	82	84	83	98	90	87	80	76	82	92	80	69	51	54	53
14	54	53	56	46	30	35	57	65	70	69	80	86	93	100	88	87	89	96	90	83	62	52	54	54
15	53	52	52	58	31	36	61	68	69	73	86	97	99	104	109	104	99	90	78	68	65	58	59	57
16	56	56	55	50	44	44	66	74	82	96	94	91	102	98	101	100	96	92	92	84	63	53	56	56
17	57	55	51	52	50	54	67	72	75	79	92	96	102	98	102	94	93	91	82	78	65	56	57	58
18	53	52	51	51	46	49	56	54	63	71	75	87	81	90	88	88	82	78	81	78	69	58	56	57
19	58	56	58	43	35	41	76	87	84	93	96	106	108	110	104	98	82	77	78	71	68	57	59	59
20	60	58	54	48	46	51	66	78	78	76	88	78	81	93	92	99	89	78	74	79	79	70	61	57
21	58	57	56	55	46	49	62	69	78	89	89	92	97	102	105	106	98	86	78	80	70	61	61	62
22	59	58	57	56	50	54	64	80	84	84	98	101	104	100	97	93	86	80	87	88	78	63	64	64
23	58	59	61	51	48	46	65	68	79	90	91	84	86	97	98	100	104	90	82	74	70	67	67	65
24	58	S 56	60	59	V 37	42	61	68	70	88	80	94	92	90	89	92	91	83	81	84	76	56	58	60
25	59	55	57	57	42	45	60	66	74	80	79	84	88	85	83	79	81	83	86	81	70	69	69	71
26	65	62	62	60	53	58	57	55	61	60	69	77	82	77	77	79	74	69	75	68	70	62	64	65
27	64	63	62	52	40	44	54	64	69	73	68	72	76	88	88	92	82	83	75	73	65	63	64	64
28	64	61	62	53	49	50	67	75	60	66	72	71	82	94	91	93	A	A	A	71	66	62	64	67
29	66	60	58	55	56	55	62	70	68	76	79	82	84	97	96	93	95	85	88	82	59	47	48	52
30	51	47	46	44	41	46	63	67	66	62	77	81	93	97	92	88	90	92	88	70	A	50	49	48
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	30	30	30	30	29	30	30	29	30	30	29	29	29	30	29	30	30	29
MED	58	56	56	51	44	44	62	68	74	80	88	93	98	97	96	93	89	83	81	77	66	58	58	58
U Q	60	58	58	55	47	49	65	72	79	86	94	101	102	102	104	99	94	88	88	82	70	62	64	64
L Q	54	52	52	46	39	40	57	65	66	73	79	83	86	90	88	88	78	76	75	71	62	55	54	55

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	L	L	L 496	L								
2									L	L	L	L 468	L 484	L	L	L								
3									L	L	L 512	L	L 508	L 496	L 500	L 468	L							
4									L	L 464	U L 488	476	L 468	L 500	L 472	L 440	L							
5								A		L	L 488	L 504	L 496	L	L	L								
6									L	L	L	L 508	L 488	L 500	L									
7									L	L 472	L	L 508	L	C	L	L	L							
8										L	L	L 508	L 496	L	L 476	L	L							
9									L	L	L	L 484	L 496	L	L 492	L	L							
10										L	A	L	L	L 488	L 480	L 464	L							
11									L	L 468	A	A	L 468	L 476	L 496	L	L							
12									L	L	C	L 508	L 488	L 496	L 456	L 440								
13									L	L	L 500	L	L 512	L 484	L 492	L	L							
14									L	L 480	L 476	U L 472	L	L 484	L 476	L 496	L							
15									L	L	L	L 480	L	L 508	L 488	L	L							
16									L	L	L 500	L	L 508	L 492	L 484	L	L							
17								L	L	L	A	A	L 508	L	L 484	L	L	L						
18									L	L	L 492	L 480	L	L 500	A	A	A	A						
19									L	L 492	L 532	L 496	L 508	L 496	L 496	L	L							
20								L	L	L	L 512	L	L 536	L 500	L 512	L	L							
21									L	L	L 508	L 556	L 504	L	L 500	L 484	L							
22									L	L	L 508	L 528	L 508	U L 508	U L 500	L								
23									L	L	L	L 524	L 528	L 520	L 496	L 488	L							
24									L 464	L 468	L 572	L 500	L 504	L 488	L	L	A	A						
25									L 472	L 488	L 516	L 516	L 484	L 508	L 508	L	L	A						
26								L	L 460	L 480	L 480	504	496	L 500	L 488	L 484	L	L						
27								L	L	L 480	L	L 508	L 504	472	L	L 468	L	L						
28								L	L	L 512	L 488	L 504	L 484	L 452	A	A	A	A	A					
29								L	L	L 476	L	L 476	L 492	L 476	L 476	L 456	A	L						
30								A	L	L 512	472	L 504	484	L 476	L 460	464	A	A						
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									3	12	16	22	24	22	22	11								
MED									L 464	L 480	L 500	L 504	L 496	L 496	L 490	L 468								
U Q									L 472	L 490	L 512	L 508	L 508	L 500	L 496	L 484								
L Q									L 460	L 470	L 488	L 480	L 486	L 484	L 476	L 456								

APR. 2004 foF1 (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							184	260	R	328	U R 352	U R 372	R	R	R	U R 320	R	224	B					
2							164	256	308	R	U R 344	A	A	U R 348	A	U R 316	R	U R 236	B					
3							164	252	300	A	A	A	A	A	A	U R 316	R	U R 236	B					
4							U R 188	248	300	A	A	A	R	R	U R 336	U R 320	U R 288	A	B					
5							B	A	R	R	U R 360	R	U R 380	U R 348	R	B	U R 292	U R 228	B					
6							196	252	A	A	A	A	R	A	A	U R 312	U R 260	U R 228	B					
7							192	U R 260	R	R	R	A	A	C	R	R	U R 276	U R 216	B					
8							184	264	A	R	R	A	A	A	R	U R 316	U R 276	U R 232	B					
9							180	A	A	A	A	R	R	A	A	R	U R 276	U R 232	B					
10							200	256	A	A	A	A	A	R	R	U R 316	U R 268	U R 228	B					
11							196	268	A	A	A	A	A	R	U R 344	R	R	U R 224	B					
12							A	R	A	A	C	A	R	R	R	R	U R 284	A	B					
13							204	R	R	R	R	R	R	R	R	R	U A 276	U A 236	B					
14							196	284	U A 312	U A 336	A	R	U R 372	R	352	R	U R 292	244	B					
15							200	288	U A 320	A	A	A	A	R	U R 352	U A 328	U R 288	U R 252	B					
16							216	272	U A 312	A	A	R	R	R	R	R	R	U R 244	B					
17							220	A	U A 312	A	A	A	A	A	A	U R 320	U R 284	R	U R 184					
18							224	276	A	A	A 360	A	A	A	A	A	A	A	B					
19						B	U A 236	A	U A 320	R	A	R	R	R	R	R	R	U R 248	U R 196					
20						B	192	U R 288	U R 324	R	R	R	R	R	R	A	A	U R 256	B					
21							U R 220	A	A	A	R	R	B	B	R	U R 328	U R 288	C	B					
22						B	228	292	R	R	R	R	B	B	R	R	U R 300	244	B					
23						B	228	284	332	356	A	A	U R 384	R	R	U R 348	U R 312	U R 256	B					
24						B	A	288	U A 328	A	A	B	R	U R 360	A	A	U A 296	U A 244	A					
25							212	U R 284	328	A	A	A	A	A	A	A	U A 300	U A 240	B					
26						B	212	288	320	A	A	R	A	A	A	A	U R 292	240	176					
27						B	228	288	A	A	A	A	R	A	A	A	R	248	B					
28						B	232	U A 292	U A 312	A	A	A	A	U A 356	A	U A 308	A	A	B					
29						B	A	A	A	A	A	A	A	U A 352	A	324	U A 292	252	U A 156					
30						B	A	U A 272	A	A	A	A	A	A	A	R	U A 296	A	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							25	22	14	3	4	1	3	5	4	13	20	23	4					
MED							200	274	U 316	336	U R 356	U R 372	U R 380	U R 352	U R 348	U R 320	U R 288	U R 240	U 180					
U Q							222	288	324	356	360		U R 384	U 358	352	U 326	U 294	U R 248	U R 190					
L Q							190	260	312	328	U R 348		U R 372	U R 348	U R 340	U R 316	U R 276	U R 228	166					

APR. 2004 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 15	E B 15	E B 16	E B 15	E B 15	23	30	G 26	36	G	40	G 34	G 27	G	G 20	G 23	26	E B 17	E B 15	E B 15	E B 14	E B 15	20
2	18	E B 15	E B 15	E B 16	E B 15	E B 16	24	30	35	G 28	40	43	41	G 29	35	G 23	G 18	J A 23	J A 27	J A 21	E B 15	E B 14	E B 15	E B 15
3	E B 14	E B 16	E B 14	E B 14	E B 16	E B 15	22	28	34	40	41	J A 49	41	39	38	G 24	G 19	G 19	20	J A 21	J A 26	J A 24	J A 20	E B 16
4	18	22	E B 17	E B 16	20	E B 16	23	32	38	J A 52	J A 45	J A 54	G 35	G 30	G 27	G 28	G 20	28	20	E B 14	E B 15	J A 54	J A 62	J A 17
5	J A 20	20	E B 16	E B 13	18	J A 24	20	36	G 26	G 30	42	G 29	G 36	G 33	G 28	E B 38	G 26	G 19	E B 16	J A 18	E B 16	E B 16	E B 15	E B 16
6	E B 16	J A 18	J A 20	E B 16	E B 15	E B 16	26	27	33	J A 39	J A 48	J A 45	G 35	J A 40	J A 38	G 27	G 23	G 19	E B 17	18	E B 16	E B 15	E B 16	E B 16
7	E B 16	E B 15	E B 16	J A 19	19	18	G	G 22	G 26	G 26	40	37	38	C	G 28	G 28	G 26	27	J A 23	J A 17	E B 16	E B 15	E B 16	20
8	E B 14	E B 16	E B 16	E B 15	E B 15	E B 15	25	33	35	G 26	G 34	38	41	39	G 26	G 28	G 20	G 20	20	J A 33	E B 15	E B 15	E B 15	E B 15
9	E B 15	E B 15	J A 19	J A 24	J A 20	J A 19	25	32	39	41	41	G 29	G 28	J A 41	J A 43	G 28	G 24	G 19	E B 17	J A 22	20	20	E B 14	E B 15
10	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	27	32	36	41	J A 54	44	41	G 29	G 28	G 23	G 25	G 21	22	E B 15	E B 15	J A 22	J A 33	J A 24
11	J A 16	J A 18	J A 26	J A 19	19	J A 17	25	30	33	38	J A 70	J A 56	37	G 28	G	G	G	G 19	E B 16	E B 15	E B 16	E B	19	E B 15
12	E B 15	E B 15	E B 16	J A 21	20	J A 23	24	G 25	35	40	C	40	G 34	G 32	G 32	G 27	G J A 20	J A 84	J A 60	J A 35	J A 23	J A 25	J A 18	E B 15
13	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	23	G 24	G 25	G 29	G 28	G 27	G 25	G 24	G 28	G 28	32	27	22	19	E B 16	E B 16	E B 15	J A 22
14	19	18	E B 15	E B 14	E B 15	E B 15	27	G 24	36	37	42	G	43	G 26	45	G 28	G 22	30	J A 32	E B 16	E B 15	E B 16	E B 16	E B 15
15	E B 16	E B 15	E B 16	E B 14	E B 14	E B 16	28	34	37	42	40	41	43	G 29	40	37	G 26	G	20	J A 27	J A 42	J A 36	E B 15	E B 15
16	E B 14	E B 15	E B 15	E B 14	E B 16	E B 15	26	33	40	40	41	G 30	G 31	G 28	G 29	G 28	G 23	G E 20	E B J 18	A J 18	A 19	20	E B 15	22
17	E B 16	E B 15	E B 15	E B 15	E B 15	E B 16	26	36	41	J A 49	J A 56	J A 98	41	45	38	G 29	G 26	28	G	E B 15	E B C 28	J A 62	J A 24	J A 24
18	J A 30	J A 24	E B 16	E B 15	E B 16	E B 15	27	33	38	43	J A 44	44	42	41	J A 49	J A 59	J A 43	J A 37	J A 38	J A 44	E B 15	J A 24	J A 52	J A 25
19	J A 24	J A 22	J A 41	J A 88	J A 85	J A 20	32	37	37	G 28	38	G 28	G 26	G 30	G 26	G 28	G 19	G 18	G 19	J A 30	J A 31	J A 45	E B 14	19
20	J A 16	E B 15	19	E B 15	E B 15	E B 16	25	G 26	G 30	G 28	G 27	G 24	G 26	G 28	G 27	38	32	G 20	20	E B 16	E B 14	J A 32	28	J A 20
21	18	E B 16	E B 16	18	E B 15	E B 15	G 19	30	34	35	G 30	G 28	E B 40	E B 40	G 27	G 27	G E 19	C E 29	B E 19	B E 15	B E 15	B E 16	B E 15	B E 15
22	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14	26	32	G 27	G 29	G 29	G 28	E B 42	E B 40	G 29	G 28	G 21	29	J A 34	J A 19	J A 18	A E 16	B E 15	E B 14
23	E B 15	E B 16	E B 15	E B 14	J A 18	J A 16	27	34	37	40	42	40	G	G	G	G 30	G 28	G 22	J A 28	J A 40	E B 15	J A 20	J A 24	J A 26
24	J A 27	J A 21	A E 14	B E 14	B E 14	J A 20	29	33	37	41	40	E B 45	G 34	42	40	44	J A J 55	A J 54	A J 39	A J 21	A J 22	A J 42	A J 22	A J 26
25	J A 26	J A 17	J A 20	19	18	18	28	32	35	41	42	42	45	40	38	39	J A J 44	A J 63	A J 47	A J 24	A J 32	A J 43	A J 17	A J 32
26	E B 16	E B 15	E B 15	E B 15	E B 14	E B 16	25	32	35	40	40	G 34	42	40	39	J A 37	G 23	G 23	20	J A 32	J A 44	A J 37	A J 32	E B 15
27	J A 23	E B 16	E B 15	E B 15	E B 14	J A 19	27	32	39	41	J A 44	41	G 30	38	J A 36	J A 41	G 23	29	J A 38	J A 32	J A 26	A J 30	A J 25	21
28	E B 14	E B 15	E B 16	E B 16	E B 15	E B 16	25	34	39	38	41	43	40	39	J A 66	J A 83	J A J 116	A J 134	A J 109	A J 55	A J 58	A J 44	18	E B 15
29	18	J A 17	J A 18	20	J A 22	E B 17	J A 33	34	36	J A 44	41	40	J A 42	40	34	38	J A J 49	A 42	22	J A 23	J A 24	A J 24	19	19
30	E B 16	J A J 22	A J 29	E B 15	20	J A 20	33	J A 46	36	J A 45	40	41	43	J A 48	J A 46	G	J A J 42	A J 50	A J 85	A J 40	J A J 103	A J 52	A J 24	A J 25
31																								

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	26	32	36	40	41	40	E G 39	U 36	G	28	G 24	25	21	J A E 21	17	J A 23	18	18
U Q	J A 18	J A 18	J A 18	J A 18	19	J A 18	27	34	37	41	J A 43	J A 44	42	40	39	38	J A J 32	A J 30	A J 34	A J 32	A J 26	A J 37	A J 24	22
L Q	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	24	G 30	G 33	G 30	G 39	G 30	G 34	G 29	G 28	G 28	G 21	G 20	E B 19	E B 16	E B 15	E B 16	E B 15	E B 15

APR. 2004 foEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 15	E B 15	E B 16	E B 15	E B 15	22	28	G 26	U Y 36	G	39	U Y 34	U Y 27	G	G 20	G 23	25	E B 17	E B 15	E B 15	E B 14	E B 15	E B 16
2	E B 16	E B 15	E B 15	E B 16	E B 15	E B 16	24	28	34	G 27	39	40	40	G 29	34	G 23	G 18	G 20	17	20	E 15	E B 14	E B 15	E B 15
3	E B 14	E B 16	E B 14	E B 14	E B 16	E B 15	20	28	33	38	39	44	38	38	37	G 23	G 19	G 18	19	18	20	21	E 15	E B 16
4	E B 16	16	E B 17	E B 16	17	E B 16	22	30	35	38	38	42	U Y 35	U Y 30	G 27	G 27	G 18	25	18	E B 14	E B 15	45	26	E B 15
5	17	E B 15	E B 16	E B 13	E B 15	20	20	31	G 25	G 29	41	G 29	G 36	G 32	G 28	E B 38	G 26	G 19	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16
6	E B 16	E B 15	16	E B 16	E B 15	E B 16	25	27	31	35	43	41	G 35	38	36	G 27	G 22	G 19	E B 17	E B 15	E B 16	E B 15	E B 16	E B 16
7	E B 16	E B 15	E B 16	E B 16	E B 14	16	G	G 22	G 25	U Y 26	39	36	37	C	G 28	G 28	G 22	26	19	E B 14	E B 16	E B 15	E B 16	E B 16
8	E B 14	E B 16	E B 16	E B 15	E B 15	E B 15	24	32	34	G U Y 26	34	36	38	36	G 26	G 28	E B 19	G 19	19	29	E B 15	E B 15	E B 15	E B 15
9	E B 15	E B 15	E B 15	19	16	16	24	31	38	38	39	G 28	G 28	38	36	G 28	G 20	G 16	E B 17	17	E 16	E B 15	E B 14	E B 15
10	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	26	30	34	38	50	41	40	G 28	G 27	G 23	G 25	G 20	20	E B 15	E B 15	E B 16	17	17
11	E B 15	16	16	E B 15	E B 15	E B 15	24	29	U Y 33	35	66	52	U Y 37	G 28	G	G	G	G 19	E B 16	E B 15	E B 16	E B 16	E B 16	E B 15
12	E B 15	E B 15	E B 16	18	E B 15	G 14	22	24	33	38	C	39	G 34	U Y 32	U Y 32	G 26	G 19	30	58	24	18	20	E B 16	E B 15
13	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	22	G 24	G 25	G 28	G 27	G 27	G 24	U Y 24	U Y 28	G 27	29	26	21	E B 15	E B 16	E B 16	E B 15	E B 15
14	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	25	G 24	34	36	39	G	41	U Y 26	41	G 25	G 20	30	27	E B 16	E B 15	E B 16	E B 16	E B 15
15	E B 16	E B 15	E B 16	E B 14	E B 14	E B 16	27	32	36	39	39	38	40	U Y 29	39	36	G 26	G	19	22	34	34	E B 15	E B 15
16	E B 14	E B 15	E B 15	E B 14	E B 16	E B 15	25	31	38	38	40	U Y 30	G 31	U Y 28	G 29	G 28	G 23	G 20	E B 18	E B 16	E B 15	16	E B 15	16
17	E B 16	E B 15	E B 15	E B 15	E B 15	E B 16	24	35	38	41	48	58	38	41	37	G 28	G 26	28	G	E B 15	E C 28	E B 14	E B 15	18
18	20	E B 14	E B 16	E B 15	E B 16	E B 15	26	32	35	41	42	43	42	40	46	46	40	32	33	36	E B 15	21	21	18
19	19	E B 14	16	30	29	16	30	35	35	G 28	37	U Y 28	U Y 26	G U Y 30	U Y 26	U Y 28	U Y 19	G 18	G 18	26	20	24	E B 14	E B 15
20	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	23	G 25	G 28	U Y 28	U Y 27	U Y 24	G 26	U Y 28	G 27	34	32	G 18	19	E B 16	E B 14	24	E B 15	E B 15
21	E B 15	E B 16	E B 16	E B 16	E B 15	E B 15	G 19	30	U Y 34	34	G 30	U Y 28	E B 40	E B 40	G 27	U Y 27	G E 18	C E 29	B E 19	B E 15	E B 15	E B 16	E B 15	E B 15
22	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14	25	31	G 23	G 29	G 29	G 28	E B 42	E B 40	G 29	G 28	G 20	27	29	16	E B 16	E B 16	E B 15	E B 14
23	E B 15	E B 16	E B 15	E B 14	E B 15	E B 15	26	33	35	38	41	39	G	G	G	G 29	G 28	G 21	22	37	E B 15	E B 16	19	17
24	19	E B 15	E B 14	E B 14	E B 14	17	27	32	36	38	39	E B 45	U Y 34	40	39	40	48	51	37	18	19	20	19	16
25	20	E B 15	16	E B 14	E B 14	E B 15	27	30	34	38	40	41	42	39	38	38	35	42	44	19	28	21	E B 16	22
26	E B 16	E B 15	E B 15	E B 15	E B 14	E B 16	24	31	34	40	38	U Y 34	42	38	38	34	G 21	G 20	19	31	34	E B 15	22	E B 15
27	E B 15	E B 16	E B 15	E B 15	E B 14	18	26	31	35	40	42	41	G 30	36	35	36	G 22	27	34	30	24	20	E B 15	E B 15
28	E B 14	E B 15	E B 16	E B 16	E B 15	E B 16	24	32	37	37	40	40	40	39	61	72	A 116	A A 134	A A 109	44	30	20	E B 15	E B 15
29	16	E B 15	E B 15	E B 15	16	E B 17	29	33	35	38	39	40	39	38	34	36	42	32	19	20	23	19	E B 16	E B 15
30	E B 16	19	20	E B 15	E B 15	E B 16	30	43	35	40	37	39	41	39	40	G	40	48	68	35	A A 103	20	22	17
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 15	E B 15	E B 15	E B 15	E B 16	24	31	34	38	39	39	E G 38	E G 36	33	28	G E 23	G 25	19	18	E B 16	E B 16	E B 15	E B 15
U Q	16	E B 16	16	E B 16	15	16	26	32	35	38	41	41	40	39	38	36	29	30	29	26	23	20	16	16
L Q	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	22	G 28	G 33	G 29	37	G	G U Y 34	U Y 28	G 28	G 27	G 20	E 19	B E 18	B E 15	E B 15	E B 15	E B 15	E B 15

APR. 2004 fbEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	15	15	16	15	15	16	15	17	16	23	19	20	21	18	15	15	13	17	15	15	14	15	16
2	16	15	15	16	15	16	14	14	15	17	19	20	20	22	21	15	14	14	14	14	15	14	15	15
3	14	16	14	14	16	15	13	12	17	18	20	22	21	19	19	18	13	14	15	13	15	14	15	16
4	16	14	17	16	14	16	16	15	16	17	20	16	17	19	18	17	14	15	14	14	15	14	15	15
5	14	15	16	13	15	14	15	14	16	20	20	22	21	22	23	38	17	15	16	16	16	16	15	16
6	16	15	14	16	15	16	14	14	16	18	18	21	21	21	24	20	13	14	17	15	16	15	16	16
7	16	15	16	16	14	13	13	14	16	20	22	23	21	C	22	20	18	15	14	14	16	15	16	16
8	14	16	16	15	15	15	12	15	15	18	20	22	27	17	15	18	14	14	16	14	15	15	15	15
9	15	15	15	12	16	14	14	15	19	20	22	18	18	21	18	17	14	14	17	14	16	15	14	15
10	15	15	15	15	15	16	14	16	20	20	18	20	18	19	24	12	18	15	17	15	15	16	16	15
11	15	14	14	15	15	14	14	19	16	19	16	19	18	19	29	17	17	13	16	15	16	16	16	15
12	15	15	16	13	15	14	12	16	18	20	C	21	23	18	21	17	16	13	12	15	16	16	16	15
13	15	15	15	14	15	16	14	14	18	21	22	20	21	20	21	14	19	16	16	15	16	16	15	15
14	15	15	15	14	15	15	14	14	16	16	21	24	27	21	20	19	14	16	15	16	15	16	16	15
15	16	15	16	14	14	16	16	14	15	17	20	20	22	18	20	19	16	15	16	15	15	14	15	15
16	14	15	15	14	16	15	16	14	14	18	21	23	18	21	16	17	15	16	18	16	15	15	15	14
17	16	15	15	15	15	16	15	14	17	20	19	20	19	18	18	18	15	14	14	15	E C 28	14	15	14
18	15	14	16	15	16	15	14	16	16	18	20	22	23	23	20	18	18	13	14	14	15	14	15	14
19	13	14	13	14	14	15	14	14	19	20	21	21	20	24	20	22	13	14	13	13	13	14	14	15
20	15	15	15	15	15	16	14	14	15	16	22	19	21	23	22	18	16	12	14	16	14	15	15	15
21	15	16	16	16	15	15	14	15	16	17	19	22	40	40	22	19	14	E C 29	19	15	15	16	15	15
22	15	16	15	15	15	14	15	14	18	19	21	20	42	40	21	20	17	14	15	12	16	16	15	14
23	15	16	15	14	15	15	15	14	19	27	22	22	26	27	26	21	17	16	16	16	15	16	15	13
24	15	15	14	14	14	15	14	14	21	18	21	45	29	28	27	22	20	15	14	14	14	14	14	14
25	14	15	15	14	15	15	14	16	16	17	24	31	24	24	20	25	12	14	16	15	15	15	16	14
26	16	15	15	15	14	16	15	16	17	20	24	24	25	21	20	20	14	14	15	13	14	15	14	15
27	15	16	15	15	14	14	14	14	18	20	21	20	20	27	20	19	15	14	16	14	14	15	15	15
28	14	15	16	16	15	16	13	15	20	20	20	23	20	21	21	18	17	16	16	15	16	15	15	15
29	14	15	15	15	15	17	16	15	15	22	18	27	20	22	18	15	18	13	13	15	14	14	16	15
30	16	15	14	15	15	16	15	16	24	18	17	23	23	29	22	22	17	16	14	15	14	15	15	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	15	14	14	16	18	20	22	21	21	20	18	16	14	16	15	15	15	15	15
U Q	16	15	16	15	15	16	15	15	18	20	22	23	24	24	22	20	17	15	16	15	16	16	16	15
L Q	14	15	15	14	15	15	14	14	16	17	19	20	20	19	19	17	14	14	14	14	15	14	15	15

APR. 2004 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	296	295	296	311	308	282	342	364	328	314	305	319	323	302	321	326	333	335	326	319	315	299	290	290
2	309	298	306	342	300	299	346	343	330	326	312	323	321	303	317	331	322	315	326	331	317	308	293	290 F
3	318	304	302	308	319	309	360	351	327	330	307	310	315	305	316	318	318	319	333	322	353	286	269	
4	286	273	311	291	266	266	342	328	304	272	270	253	321	323	312	332	331	331	332	308	287	280	280	272
5	272	266	282	317	309	311	351	346	317	318	320	302	330	322	320	320	323	320	337	321	297	283	296	278
6	277	271	279	334	288	286	348	349	347	338	285	325	301	308	322	308	316	320	310	313	327	275	270	278
7	289	293	315	357	284	287	350	330	323	316	323	324	322	C	330	325	336	343	332	312	309	281	284	285
8	285	289	329	329	285	300	351	359	341	328	313	309	316	312	317	320	318	318	331	332	323	296	298	288
9	308	289	285	304	307	312	353	358	332	309	320	336	343	328	315	313	325	342	329	332	311	300	300	298
10	F	F	318	346	304	303	350	349	341	324	319	319	311	312	313	317	333	326	340	323	322	350	278	292
11	292	295	288	328	328	326	357	359	331	297	320	330	323	307	313	338	338	330	334	309	312	310	298	298
12	299	299	313	297	294	306	358	348	322	323	C	315	319	309	325	338	332	328	306	326	306	298	300	298
13	305	303	296	305	311	315	343	346	348	322	331	301	316	321	317	329	323	320	335	337	347	281	288	287
14	285	301	340	357	303	326	342	349	352	321	326	307	319	331	320	317	315	327	334	340	330	285	280	286
15	275	283	311	354	295	310	351	353	340	325	306	312	300	309	322	318	322	333	336	317	317	296	279	279
16	285	295	303	315	288	283	341	344	331	333	328	306	316	309	314	313	320	323	327	332	324	277	281	284
17	290	290	276	296	289	317	354	360	335	322	326	311	319	303	317	316	325	334	328	329	320	282	282	296
18	290	280	289	303	291	304	351	308	319	332	321	332	307	319	321	320	325	311	320	321	326	316	271	273
19	275	277	315	302	296	300	333	334	317	310	288	303	304	311	311	323	328	315	325	314	335	282	283	290
20	295	298	308	295	292	311	334	343	335	329	328	308	299	314	307	318	330	331	317	300	320	316	298	287
21	289	292	305	327	315	326	334	344	328	326	312	295	298	297	309	314	333	323	319	323	321	288	285	293
22	292	284	289	313	306	313	339	317	319	294	306	303	305	308	309	322	317	312	314	326	323	288	284	281
23	279	283	318	312	284	318	348	345	325	336	326	322	293	301	301	310	323	334	332	305	292	278	286	287
24	266	268 S	292	329	303 V	333	324	337	320	324	305	309	309	317	303	318	318	329	326	320	326	287	270	280
25	281	269	299	343	318	337	365	340	331	335	304	304	316	313	303	311	313	323	306	311	291	282	280	297
26	286	295	286	306	294	308	365	327	327	308	332	318	340	317	320	315	329	323	327	303	306	284	289	291
27	293	298	322	341	293	318	332	330	331	332	326	309	293	306	301	317	319	339	327	318	299	289	288	293
28	294	304	318	318	285	303	330	363	355	318	322	297	310	314	312	328	A	A	A	317	303	273	277	286
29	294	292	292	287	319	311	348	350	321	317	322	307	289	314	312	315	329	326	330	344	331	288	288	291
30	295	293	310	318	322	336	343	364	344	301	325	298	306	310	325	302	315	338	345	326	A	282	297	290
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	30	30	30	30	29	30	30	29	30	30	29	29	29	30	29	30	30	29
MED	290	292	304	316	298	310	348	346	330	322	320	309	316	311	316	318	323	326	328	321	320	286	284	288
U Q	295	298	315	334	309	318	351	353	340	329	326	319	321	317	320	325	330	334	334	329	326	298	293	292
L Q	283	282	289	304	289	300	341	337	322	314	306	303	304	306	311	315	318	320	322	313	306	282	280	282

APR. 2004 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	L	L	L 393	L								
2									L	L	L	L 416	L 382	L	L	L								
3									L	L	L 381	L	L 407	L 392	L 360	L 364	L							
4									L	L 364	U L 357	373	L 374	L 371	L 379	L 365	L							
5								A		L	L 378	L 376	L 382	L	L	L								
6									L	L	L	L 386	L 400	L 371	L									
7									L	L 387	L	L 372	L	C	L	L	L							
8										L	L	L 376	L 372	L	L 381	L	L							
9									L	L	L	L 384	L 374	L	L 362	L	L							
10										L	A	L	L	L 371	L 372	L 372	L							
11									L	L 393	A	A	L 370	L 386	L 357	L	L							
12									L	L	C	L 367	L 385	L 371	L 409	L 380								
13									L	L	L 368	L	L 361	L 394	L 373	L	L							
14									L	L 388	L 390	U L 380	L	L 394	L 383	L 359	L							
15									L	L	L	L 407	L	L 375	L 367	L	L							
16									L	L	L 375	L	L 376	L 374	L 370	L	L							
17								L	L	L	A	A	L 376	L	L 375	L	L	L						
18									L	L	L 391	L 404	L	L 378	A	A	A	A						
19									L	L 382	L 355	L 396	L 383	L 376	L 368	L	L							
20								L	L	L	L 373	L	L 383	L 378	L 354	L	L							
21									L	L	L 377	L 347	L 373	L	L 370	L 356	L							
22									L	L	L 370	L 371	L 387	U L 375	U L 377	L								
23									L	L	L	L 374	L 382	L 385	L 368	L 361	L							
24									L 373	L 394	L 348	L 364	L 378	L 386	L	L	A	A						
25									L 363	L 366	L 367	L 374	L 388	L 367	L 364	L	L	A						
26								L	L 366	L 373	L 388	367	385	L 367	L 370	L 352	L	L						
27								L	L	L 378	L	L 367	L 374	396	L	L 358	L	L						
28								L	L	L 357	L 381	L 367	L 397	L 433	A	A	A	A	A					
29								L	L	L 379	L	L 390	L 364	L 392	L 367	L 382	A	L						
30								A	L	L 358	401	L 384	399	L 370	L 389	372	A	A						
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									3	12	16	22	24	22	22	11								
MED									L 366	L 378	L 376	L 375	L 382	L 377	L 370	L 364								
U Q									L 373	L 388	L 384	L 386	L 386	L 392	L 379	L 372								
L Q									L 363	L 365	L 368	L 367	L 374	L 371	L 367	L 358								

APR. 2004 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										278	276	266	276	278	272	260								
2									260	256	282	264	260	282	274	246								
3									248	244	290	284	268	272	264	262	268							
4									290	486	414	420	284	296	318	268	272							
5								230		284	268	282	256	254	278	276								
6									254	264	322	264	278	288	256									
7									244	268	272	276	274	C	260	256	254							
8										260	276	284	284	276	268	266	260							
9									266	286	278	250	254	256	288	274	252							
10										282	264	270	268	282	270	270	248							
11									272	262	272	264	280	288	284	242	232							
12									264	254	C	274	268	288	268	250								
13									252	270	254	290	282	256	272	258	264							
14									248	294	262	286	276	262	274	280	266							
15									260	282	286	276	288	286	274	260	258							
16									266	258	270	278	278	278	280	268	258							
17								240	256	280	268	278	280	284	276	262	264	244						
18									284	286	294	278	284	288	280	270	268	242						
19									254	292	308	292	280	280	278	266	262							
20								244	262	268	282	264	314	284	292	284	254							
21									278	274	282	310	282	300	288	276	254							
22									256	272	288	286	284	276	284	268								
23									290	250	268	270	322	302	294	288	262							
24									298	282	304	284	300	288	272	284	262	254						
25									280	270	310	308	280	286	308	298	284	272						
26								280	292	324	300	310	280	302	292	288	266	262						
27								272	280	274	284	330	332	310	300	284	264	254						
28								248	232	320	304	298	304	290	290	E 278	A	A	A	A				
29								250	302	276	282	300	296	290	268	284	262	244						
30								236	274	328	286	314	300	282	258	294	274	242						
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								8	26	30	29	30	30	29	30	29	23	8						
MED								246	265	275	282	283	280	284	277	269	262	249						
U Q								261	280	286	297	298	288	289	288	284	266	258						
L Q								238	254	264	271	270	276	277	270	261	254	243						

APR. 2004 h'F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 264	E B 266	E B 264	224	232	E B 294	222	226	214	210	202	214	216	202	H 194	226	216	230	238	222	218	E B 258	E B 264	E B 270
2	E B 258	248	240	202	232	E B 264	224	226	216	214	208	H 194	212	H 178	206	H 202	220	218	236	220	214	226	E B 280	E B 248
3	234	E B 252	E B 268	244	220	E B 258	220	220	210	208	208	E A 230	H 186	H 182	H 196	H 184	214	H 204	230	228	210	E A 248	E B 296	E B 286
4	E B 262	E A 322	E B 260	E B 254	E A 350	E B 336	242	236	226	234	214	228	214	208	200	212	210	216	234	232	234	E A 346	E A 296	E B 270
5	E A 296	E B 310	E B 280	230	218	240	214	A	H 192	H 182	220	214	H 178	202	190	E B 232	H 204	236	226	232	228	E B 264	E B 272	E B 284
6	E B 296	E B 306	E A 294	216	E B 270	E B 290	228	204	H 188	200	E A 264	210	206	198	196	214	210	238	242	240	208	E B 266	E B 302	E B 292
7	E B 266	E B 268	234	206	E B 260	E A 280	H 176	H 194	204	198	212	H 188	206	C	212	196	H 186	226	232	222	224	E B 254	E B 286	E B 270
8	E B 270	E B 270	240	212	E B 272	E B 262	220	224	212	214	208	202	204	200	202	206	H 196	224	236	222	204	E B 244	E B 238	E B 284
9	E B 244	E B 266	E B 290	E A 264	E A 238	E A 264	212	220	220	222	220	208	212	214	H 188	218	212	226	228	224	230	E B 248	E B 248	E B 258
10	E B 314	E B 292	E B 236	208	E B 246	E B 252	224	228	216	212	A 222		210	202	184	198	222	216	216	216	232	214	E A 298	E A 290
11	E B 276	E A 282	E A 302	236	210	E B 250	214	220	212	H 182	A	A	214	214	210	214	206	204	226	236	228	E B 252	E B 250	E B 266
12	E B 264	E B 260	E B 244	240	E B 250	E B 264	220	216	210	208	C	H 196	200	204	H 186	204	220	234	E A 290	242	224	E A 256	E B 256	244
13	E B 250	242	E B 258	238	220	E B 252	224	214	H 192	202	H 188	232	204	H 192	H 202	220	208	226	240	208	206	E B 264	E B 284	E B 286
14	E B 274	E B 262	228	198	E B 246	246	218	220	212	206	196	208	E A 242	H 192	226	196	H 196	236	224	220	204	226	E B 286	E B 282
15	E B 292	E B 290	E B 262	210	194	E B 258	220	216	212	214	202	196	220	204	218	204	222	232	218	228	E A 248	E A 280	E B 288	E B 296
16	E B 282	E B 264	E B 256	218	E B 260	E B 268	228	222	218	214	208	H 194	196	204	206	204	214	232	236	212	214	216	E B 286	E A 294
17	E B 270	E B 264	E B 300	E B 260	E B 248	238	234	A	210	224	A	A	194	220	206	212	200	220	224	220	E C 240	E B 252	E B 276	E B 276
18	E A 284	E B 302	E B 284	E B 258	E B 254	246	234	226	218	E A 240	206	212	202	H 196	A	A	A	A	E A 244	E A 238	218	226	E A 298	E A 302
19	E A 298	E B 290	E A 246	E A 280	E A 344	E A 270	E A 244	218	208	200	202	H 198	H 190	H 194	210	212	218	224	250	228	228	E A 268	E B 282	E B 268
20	E B 260	E B 260	238	240	E B 258	244	H 180	196	214	210	194	H 184	H 194	198	208	214	214	228	228	E B 242	230	E A 238	E B 272	
21	E B 282	E B 270	E B 256	222	E B 224	232	220	214	200	H 198	202	198	202	210	210	192	214	230	232	224	218	238	E B 276	E B 274
22	E B 264	E B 276	E B 270	232	232	236	222	212	210	H 188	H 188	H 196	202	200	H 190	210	218	216	240	218	222	216	E B 272	E B 270
23	E B 300	E B 286	E B 248	206	E B 258	240	220	226	212	216	202	H 186	202	206	202	206	216	224	232	E A 260	E B 252	E B 284	E A 268	E A 248
24	E A 332	E B 310	E B 282	218	202	226	226	224	216	206	210	E B 242	204	208	216	226	A	A	238	234	214	E A 232	E A 308	308
25	E A 280	E B 296	E A 268	218	208	228	218	H 182	H 192	220	210	220	214	204	210	E A 248	224	A	E A 246	224	E A 258	E A 292	E B 266	E A 270
26	E B 244	E B 274	E B 274	E B 246	236	250	228	202	208	210	198	218	208	H 194	210	200	204	206	236	E A 264	E A 272	E B 264	E B 288	E B 266
27	E B 270	E B 270	240	202	E B 250	238	216	222	208	214	230	214	H 192	198	204	214	212	224	236	234	E A 244	E A 274	E B 280	E B 274
28	E B 278	E B 262	E B 242	226	E B 260	234	226	216	A	H 198	204	216	198	H 192	A	A	A	A	A	E A 268	E A 258	E A 272	E B 280	E B 272
29	E A 262	E B 258	E B 256	E B 276	224	222	206	220	202	204	206	204	212	202	H 192	208	A	A	236	214	208	E A 254	E B 296	E B 276
30	E B 270	E A 290	E A 270	234	224	242	228	A	206	204	198	198	198	202	E A 226	206	A	A	E A 240	224		A E 302	E A 282	E A 278
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	27	29	30	26	28	30	29	28	28	25	24	29	30	29	30	30	30
MED	E B 270	E B 270	E B 259	221	E 242	U 237	220	220	210	208	206	206	204	202	204	208	214	225	234	224	219	E 254	E B 281	E B 274
U Q	E 284	E B 290	E B 274	E B 244	E B 258	E B 264	228	224	215	214	210	217	212	205	210	214	218	231	240	E 236	E A 237	E A 268	E 288	E 286
L Q	E B 262	E B 262	242	212	224	238	218	214	205	H 200	202	H 196	H 198	H 195	H 195	203	H 205	217	228	220	214	238	E B 268	E B 270

APR. 2004 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							E B 140	120	118	112	114	116	112	112	118	114	116	118	B					
2							122	120	116	114	116	112	118	116	A	110	108	110	B					
3							112	118	118	114	116	114	112	116	118	120	114	112	B					
4							E B 136	118	116	116	A	A	A	R	122	118	114	118	B					
5							B	A	114	120	118	116	118	116	R	B	118	118	B					
6							E B 130	116	118	A	A	A	118	A	A	114	114	122	B					
7							120	118	116	114	118	A	A	C	118	120	122	122	B					
8							116	118	116	114	A	A	A	A	112	114	112	118	B					
9							112	116	116	116	118	116	112	A	A	114	114	114	B					
10							128	112	116	116	A	116	116	112	114	120	118	128	B					
11							116	118	116	A	A	A	A	116	118	110	112	118	B					
12							A	120	118	116	C	A	120	116	116	116	114	A	B					
13							116	120	116	116	114	112	112	110	112	114	112	116	B					
14							116	118	118	116	116	116	122	114	116	120	116	122	B					
15							122	120	122	116	114	114	118	110	118	118	120	116	B					
16							122	116	116	116	112	112	116	114	114	114	114	120	B					
17							122	116	116	A	A	A	A	A	120	118	118	122	114					
18							118	114	114	118	114	114	116	116	A	A	A	A	B					
19						B	120	118	120	114	A	116	112	114	112	118	116	122	120					
20						B	110	118	124	116	112	114	112	112	112	114	112	118	B					
21							118	110	A	A	114	112	B	B	114	116	110	C	B					
22						B	118	114	114	112	112	112	B	B	112	114	114	122	B					
23						B	118	112	120	116	118	116	116	108	114	116	118	120	B					
24						B	128	114	118	A	A	B	120	118	112	114	114	116	A					
25							118	116	118	118	114	120	116	110	116	116	114	118	B					
26						B	116	118	112	114	116	116	A	A	A	A	114	114	124					
27						B	118	118	112	114	A	A	114	A	A	A	114	120	B					
28						B	122	116	114	114	114	A	114	112	110	116	A	A	B					
29						B	A	A	A	A	A	A	A	118	A	114	116	120	122					
30						B	118	118	114	114	110	114	112	114	114	112	120	A	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							27	28	28	24	19	19	21	20	22	26	28	25	4					
MED							118	118	116	116	114	114	116	114	114	115	114	118	121					
U Q							122	118	118	116	116	116	118	116	118	118	117	122	123					
L Q							116	116	115	114	114	112	112	112	112	114	114	116	117					

APR. 2004 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	152	164	104	160	G	152	102	96	G	90	100	130	B	B	B	B	B	110
2	108	B	B	B	B	B	134	152	136	102	122	120	128	102	98	98	96	90	92	86	B	B	B	B
3	B	B	B	B	B	B	142	154	136	114	114	112	122	118	122	104	94	88	130	104	102	102	104	B
4	134	130	B	B	108	B	144	138	120	118	104	102	96	98	100	100	94	118	118	B	B	98	102	100
5	96	96	B	B	102	102	132	100	100	102	166	100	102	106	102	B	106	102	B	92	B	B	B	B
6	B	100	100	B	B	B	150	154	128	108	102	100	100	100	98	96	96	108	B	92	B	B	B	B
7	B	B	B	100	104	104	G	104	102	100	162	104	104	C	98	106	102	142	124	116	B	B	B	98
8	B	B	B	B	B	B	138	136	132	100	102	102	100	100	94	106	100	108	114	108	B	B	B	B
9	B	B	106	96	100	100	140	130	124	120	118	102	100	100	98	98	100	92	B	98	110	106	B	B
10	B	B	B	B	B	B	138	140	130	118	104	118	114	102	96	100	110	108	92	B	B	106	102	106
11	100	102	100	102	104	102	150	160	120	106	100	98	98	96	G	G	G	104	B	B	B	B	104	B
12	B	B	B	102	104	100	156	102	116	112	C	106	104	100	100	100	96	98	88	90	92	102	102	B
13	B	B	B	B	B	B	162	104	102	106	102	102	98	96	104	102	112	150	134	120	B	B	B	122
14	100	104	B	B	B	B	138	104	140	132	124	G	162	100	134	102	92	128	118	B	B	B	B	B
15	B	B	B	B	B	B	150	146	132	126	128	126	132	100	142	122	108	G	124	108	104	98	B	B
16	B	B	B	B	B	B	142	128	118	116	112	102	102	102	102	102	104	110	B	110	106	102	B	104
17	B	B	B	B	B	B	136	120	120	106	100	96	104	106	120	102	102	124	G	B	C	110	104	96
18	98	98	B	B	B	B	134	128	122	122	114	114	114	112	104	104	104	102	98	96	B	100	100	100
19	94	104	102	104	102	156	120	114	120	102	102	100	100	100	100	104	94	104	104	100	100	100	B	98
20	98	B	92	B	B	B	112	98	102	98	98	100	100	98	100	120	114	104	148	B	B	94	94	90
21	92	B	B	112	B	B	106	110	102	104	102	102	B	B	100	100	98	C	B	B	B	B	B	B
22	B	B	B	B	B	B	172	170	100	100	102	102	B	B	104	106	104	118	108	104	100	B	B	B
23	B	B	B	B	98	98	178	142	156	138	124	120	G	G	G	108	104	102	112	100	B	102	100	100
24	88	94	B	B	B	130	130	128	134	102	104	B	106	142	130	118	114	110	104	106	98	98	94	90
25	92	96	94	92	94	96	138	148	148	134	128	122	124	112	132	118	118	114	106	102	98	108	100	96
26	B	B	B	B	B	B	144	142	138	116	118	104	104	104	100	100	100	96	138	108	106	106	96	B
27	98	B	B	B	B	168	148	144	120	112	102	102	98	100	100	98	94	126	108	88	90	104	104	102
28	B	B	B	B	B	B	154	118	118	114	112	106	114	126	110	108	104	102	102	100	102	98	98	B
29	86	86	86	84	100	B	106	104	102	98	100	100	102	128	104	146	120	118	114	110	104	102	104	106
30	B	100	100	B	100	106	122	118	118	118	118	120	118	114	112	G	118	102	102	102	104	114	102	100
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	13	11	8	8	11	11	29	30	30	30	28	28	27	26	27	27	29	28	22	22	14	19	16	16
MED	98	100	100	101	102	102	140	129	120	112	108	102	104	101	102	102	102	108	110	102	102	102	102	100
U Q	100	104	101	103	104	130	150	146	132	118	120	116	114	112	112	108	109	118	124	108	104	106	104	105
L Q	92	96	93	94	100	100	133	110	104	102	102	101	100	100	100	100	96	102	102	96	98	98	99	97

IONOSPHERIC DATA STATION Kokubunji

APR. 2004 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

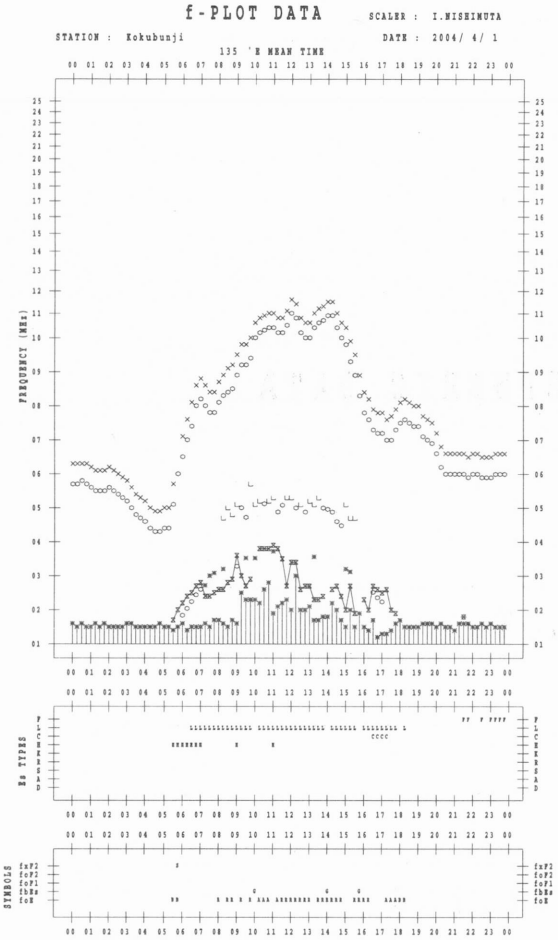
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							H 1	HL 11	L 2	HL 11		HL 11	L 1	L 2		L 1	L 1	CL 11						F 2
2	F 1						H 2	HL 11	HL 11	L 1	CL 11	CL 11	CL 11	L 1	L 2	L 1	L 1	L 2	L 2	F 3				
3							H 1	HL 11	HL 12	CL 21	CL 11	CL 11	CL 11	CL 11	CL 11	L 1	L 1	L 2	L 3	F 3	F 3	F 3	F 2	
4	F 1	FF 21			F 1		H 2	HL 21	CL 21	CL 21	L 2	L 2	L 2	L 1	L 1	L 1	L 2	CL 11	C 1			F 4	F 3	F 1
5	F 2	F 1			F 1	F 2	C 1	L 3	L 2	L 1	HL 11	L 1	L 1	L 1	L 1		L 1	L 1		F 1				
6		F 2	F 2				H 2	HL 11	CL 11	L 1	L 2	L 2	L 1	L 2	L 1	L 1	L 1	L 1		F 1				
7				F 1	F 1	F 1		L 1	L 1	L 1	HL 11	L 1	L 1		L 1	L 1	L 1	HL 11	C 2	F 1				F 1
8							H 2	HL 11	CL 11	L 1	L 1	L 1	L 1	L 2	L 1	L 1	L 1	L 1	L 1	F 4				
9			F 1	F 2	F 1	F 1	H 2	C 1	CL 11	CL 11	CL 11	L 1	L 1	L 2	L 2	L 1	L 1	L 1		F 2	F 1	F 1		
10							H 2	H 1	CL 11	CL 11	L 2	CL 11	CL 11	L 1	L 1	L 1	L 1	L 1	L 1			F 1	F 2	F 2
11	F 2	F 2	F 2	F 2	F 1	F 1	HL 21	HL 11	CL 11	L 1	L 3	L 3	L 1	L 1				L 1					F 1	
12				F 2	F 1	F 2	HL 12	L 1	CL 11	CL 11		L 2	L 1	L 1	L 1	L 1	L 1	L 2	L 5	F 3	F 2	F 2	F 1	
13							H 2	L 1	L 1	L 1	L 1	L 1	L 1	L 1	L 1	L 1	C 1	H 1	H 2	F 1				F 1
14	F 2	F 1					H 2	L 2	HL 11	CL 11	CL 11		HL 11	L 1	HL 11	L 1	L 1	CL 21	C 3					
15							HL 21	HL 12	CL 11	CL 11	CL 11	CL 11	CL 11	L 1	HL 11	CL 11	L 1		C 1	F 3	F 5	F 4		
16							H 2	CL 11	CL 11	CL 21	CL 11	L 1	L 1	L 1	L 1	L 1	L 1	L 1		F 1	F 1	F 2		F 1
17							H 1	CL 11	CL 11	L 1	L 2	L 3	L 1	L 1	CL 11	L 1	L 2	CL 21				F 2	F 2	F 2
18	F 2	F 2					H 1	CL 11	CL 11	CL 11	CL 11	CL 11	CL 11	C 1	L 2	L 3	L 3	L 3	L 3	F 4		F 2	F 3	F 2
19	F 2	F 2	F 2	F 2	F 3	H 1	C 2	CL 11	CL 11	L 1	L 1	L 1	L 1	L 1	L 1	L 1	L 1	L 1	L 1	F 5	F 3	F 2		F 1
20	F 1		F 1				C 1	L 2	L 2	L 1	L 1	L 1	L 1	L 1	L 2	CL 11	CL 11	L 1	H 1			F 3	F 3	F 2
21	F 1			F 1			L 1	CL 11	L 1	L 1	L 1	L 1			L 1	L 1	L 1							
22							H 1	HL 11	L 1	L 1	L 1	L 1			L 1	L 1	L 1	CL 11	L 2	F 3	F 3			
23					F 2	L 1	HL 11	HL 11	HL 11	HL 11	CL 11	CL 11				L 1	L 1	L 1	C 3	F 3		F 2	F 2	F 2
24	F 2	F 1				H 1	CL 21	CL 11	CL 11	L 2	L 1		L 1	HL 11	CL 11	CL 11	CL 21	CL 31	L 7	F 2	F 3	F 2	F 2	F 2
25	F 2	F 1	F 2	F 1	F 1	F 1	HL 11	HL 11	HL 11	CL 11	CL 11	CL 11	CL 11	CL 11	CL 11	CL 11	CL 21	CL 31	L 7	F 3	F 3	FF 23	F 1	F 3
26							HL 11	HL 11	HL 11	CL 11	CL 11	L 1	L 1	L 1	L 1	L 1	L 1	L 2	HL 11	F 6	F 4	F 3	F 2	
27	F 2					H 1	H 1	HL 11	CL 11	CL 11	L 2	L 2	L 1	L 1	L 1	L 2	L 1	CL 21	CL 31	F 3	F 3	F 2	F 2	F 2
28							HL 11	CL 11	CL 11	CL 11	CL 11	L 1	CL 11	CL 11	CL 31	CL 41	L 4	L 4	L 5	F 5	F 3	F 3	F 1	
29	F 1	F 2	F 2	F 2	F 1		L 2	L 2	L 1	L 1	L 1	L 1	L 1	CL 11	L 1	HL 11	CL 21	CL 11	C 1	F 2	F 3	F 2	F 1	F 2
30		F 3	F 3		F 1	L 1	CL 11	CL 11	CL 11	CL 21	CL 11	CL 11	CL 11	C 1	C 1		CL 21	L 4	L 4	F 3	F 5	F 3	F 3	F 2
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																								

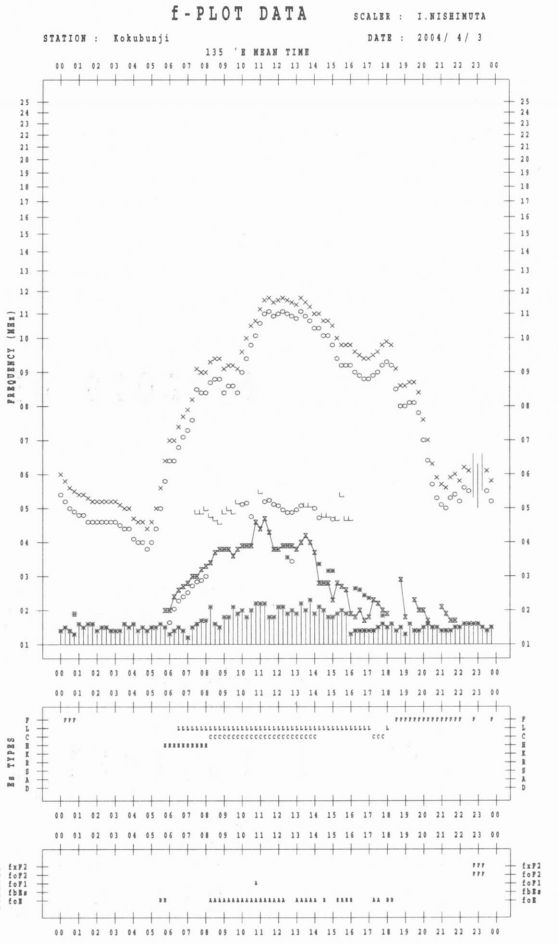
APR. 2004 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

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


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/ 1
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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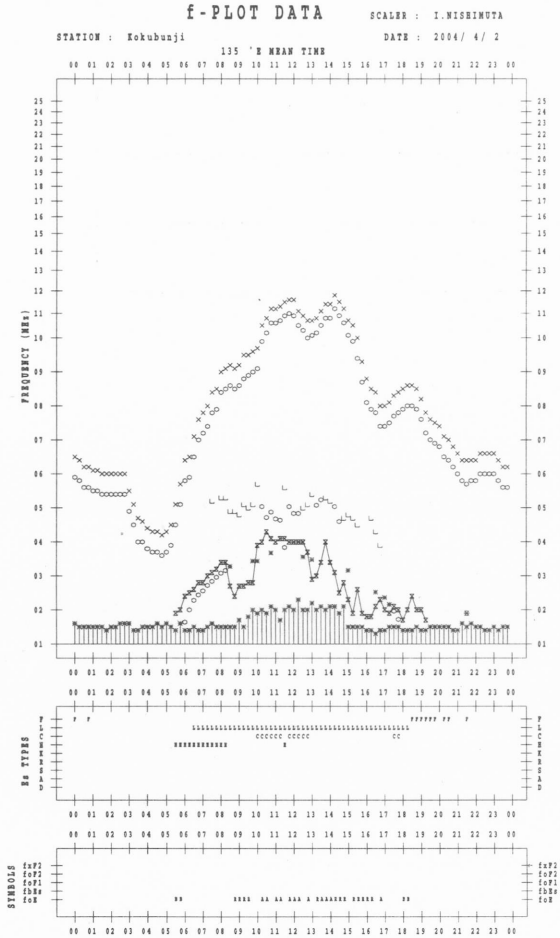
STATION : Kokubunji
DATE : 2004/ 4/ 3
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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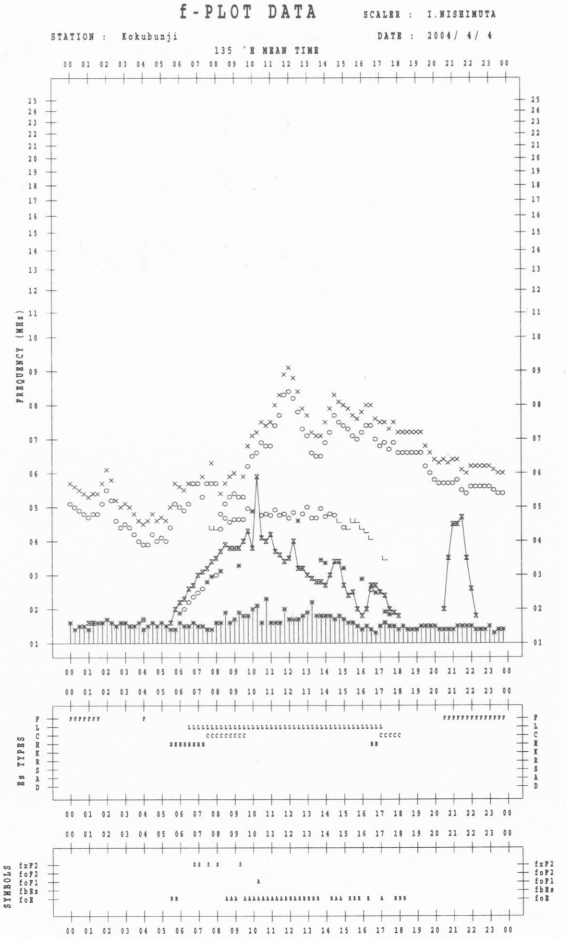
STATION : Kokubunji
DATE : 2004/ 4/ 2
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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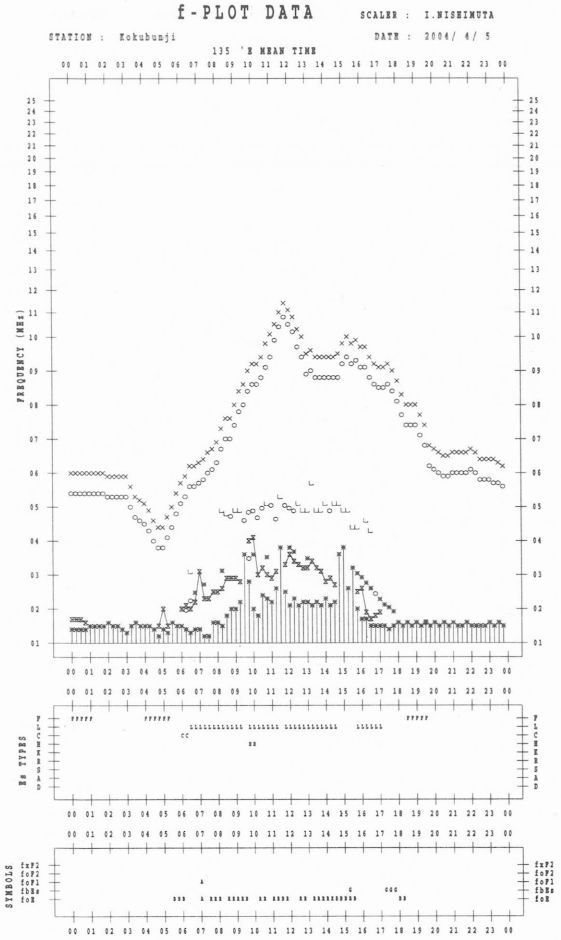
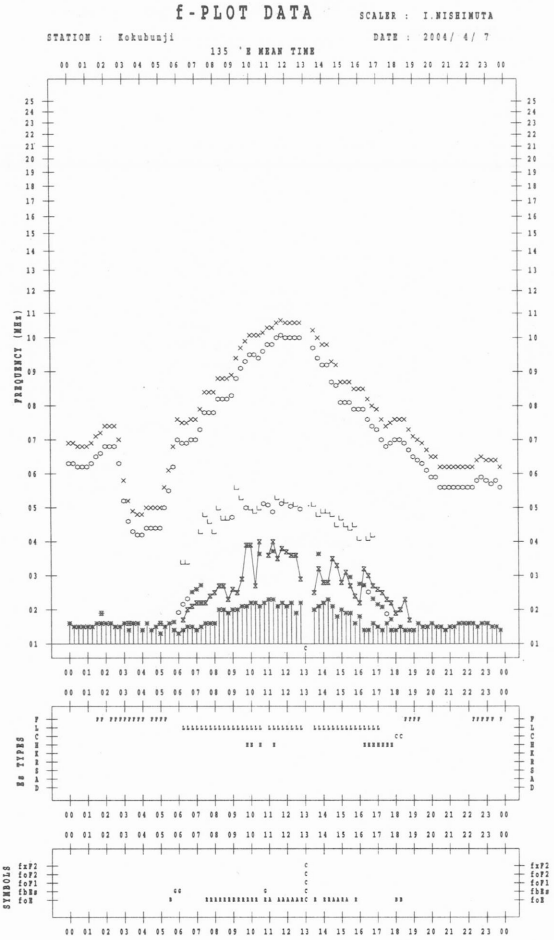
STATION : Kokubunji
DATE : 2004/ 4/ 4
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/ 5
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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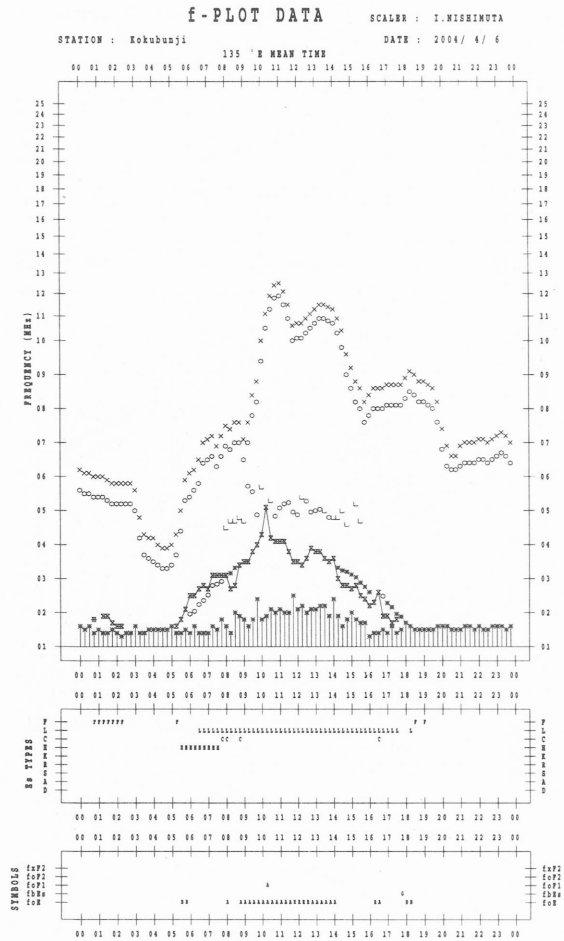
STATION : Kokubunji
DATE : 2004/ 4/ 7
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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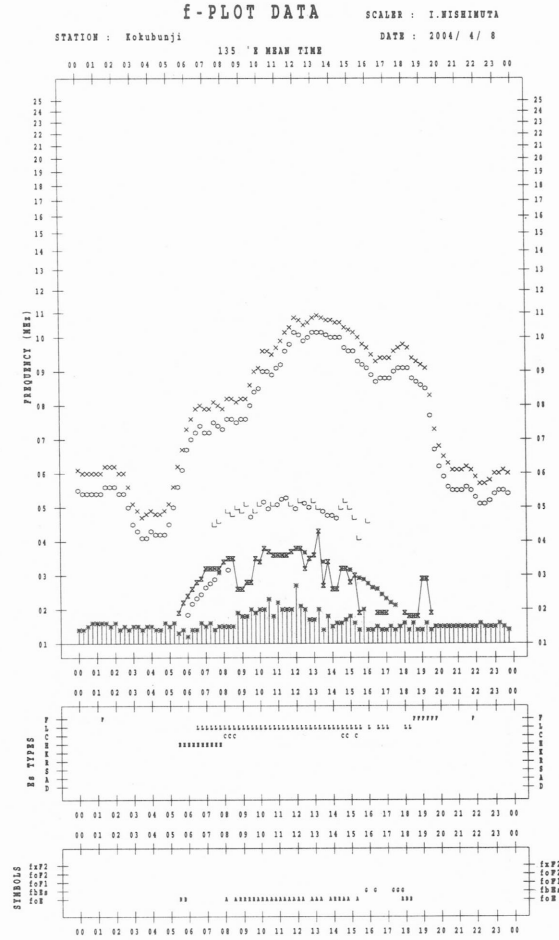
STATION : Kokubunji
DATE : 2004/ 4/ 6
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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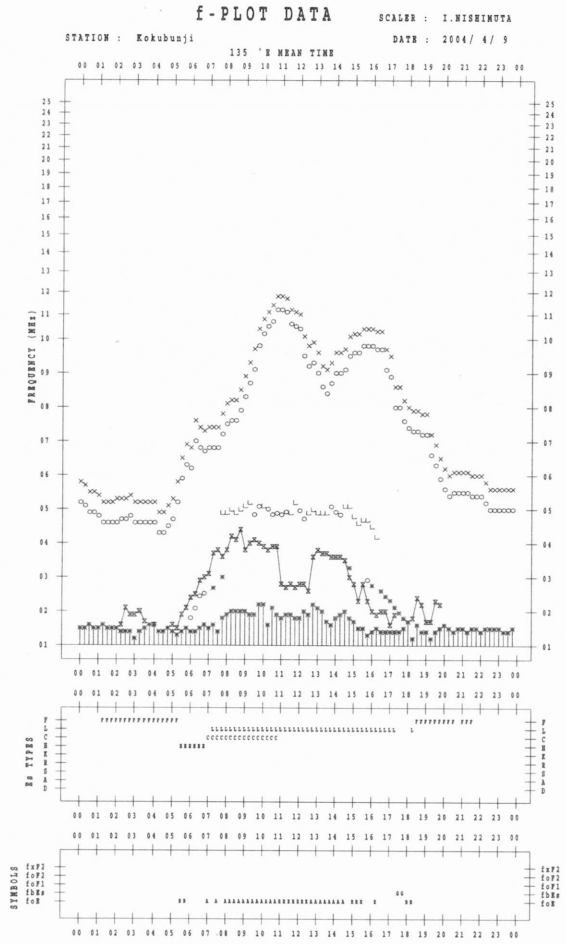
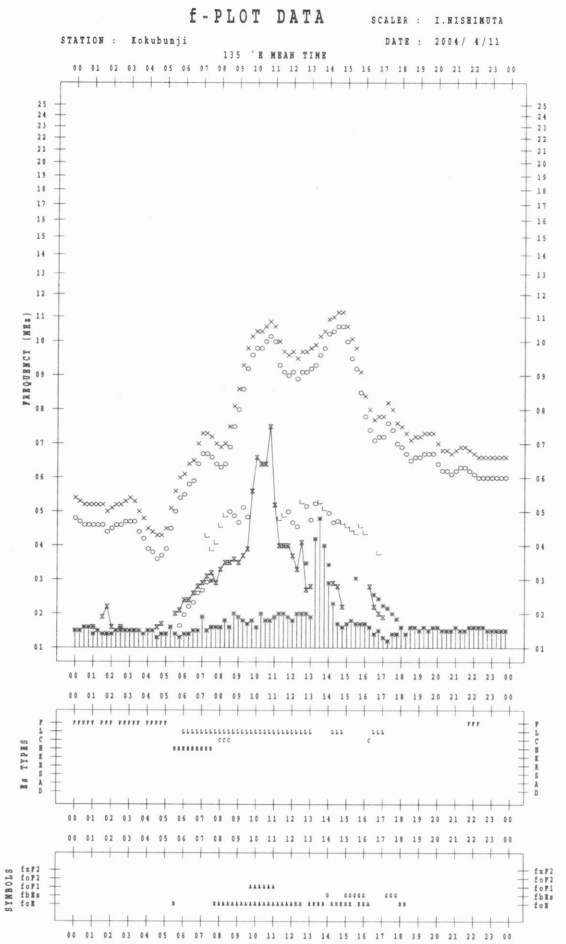
STATION : Kokubunji
DATE : 2004/ 4/ 8
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/ 9
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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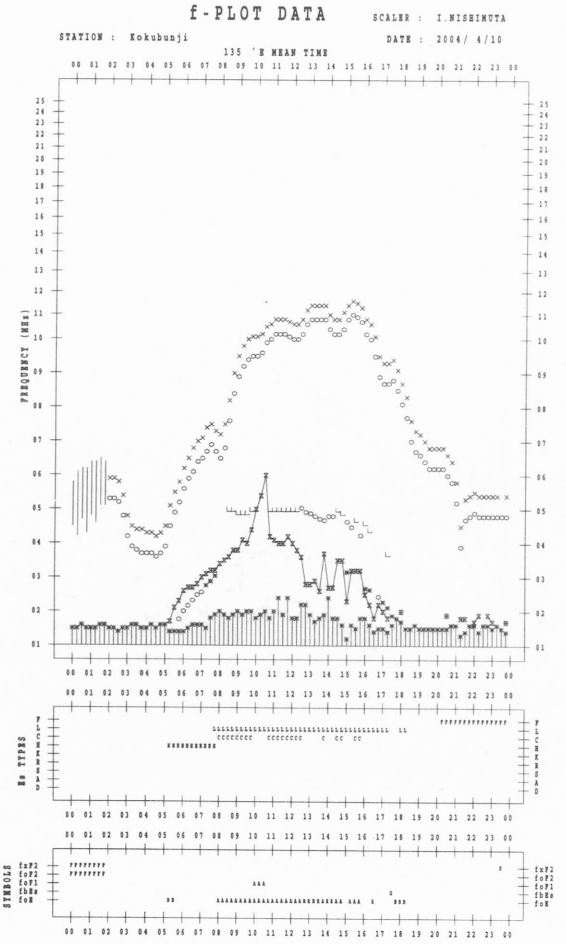
STATION : Kokubunji
DATE : 2004/ 4/11
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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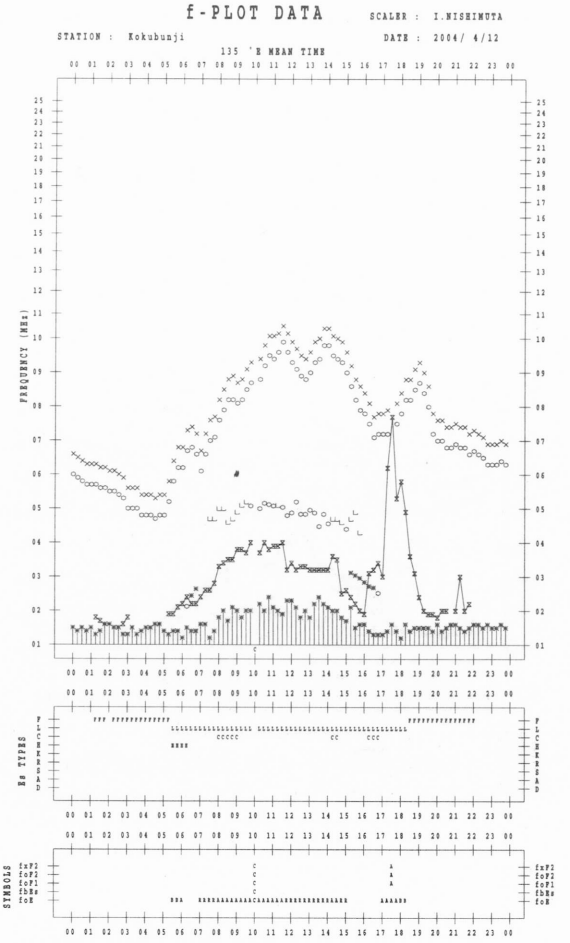
STATION : Kokubunji
DATE : 2004/ 4/10
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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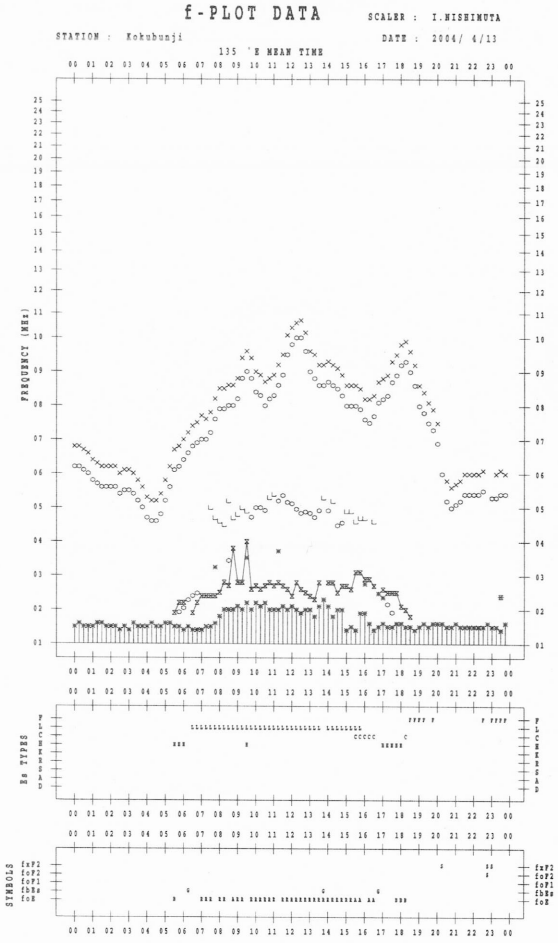
STATION : Kokubunji
DATE : 2004/ 4/12
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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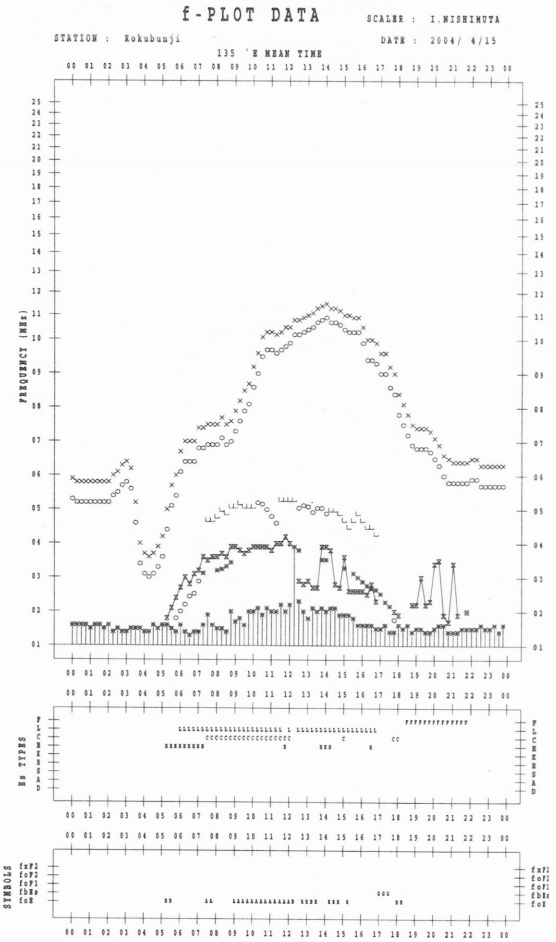
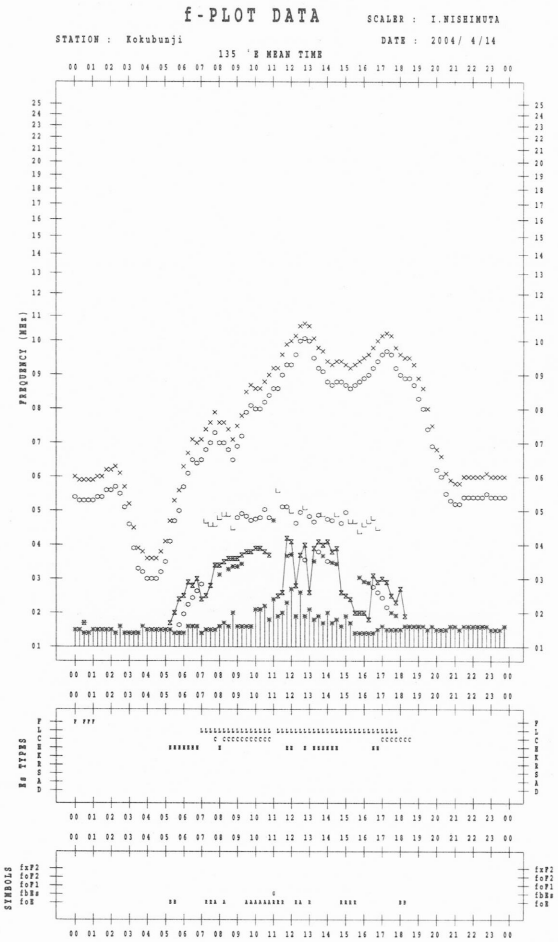
STATION : Kokubunji
DATE : 2004/ 4/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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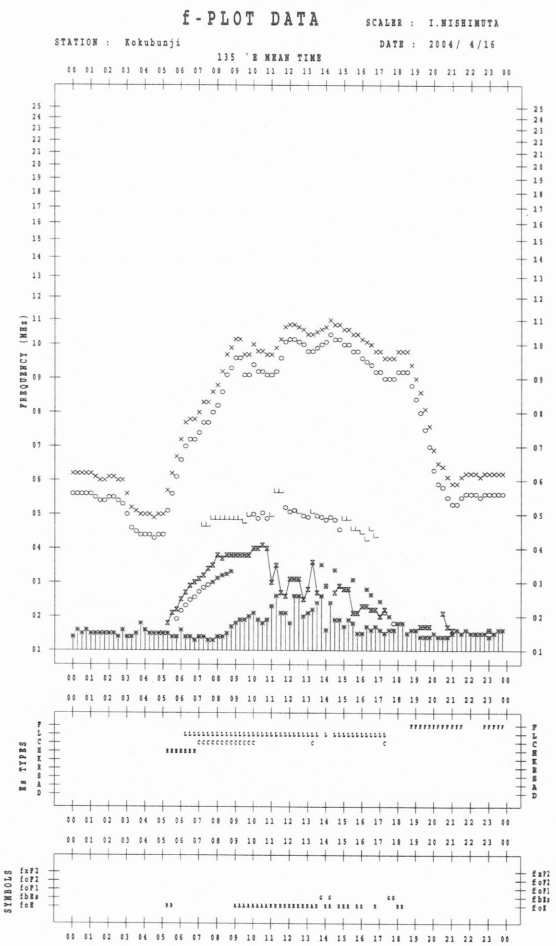
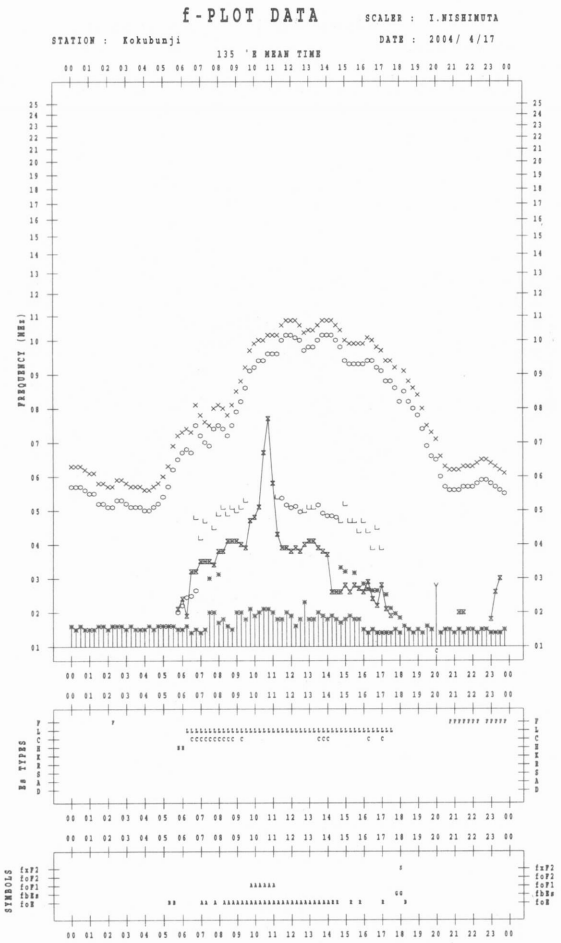
STATION : Kokubunji
DATE : 2004/ 4/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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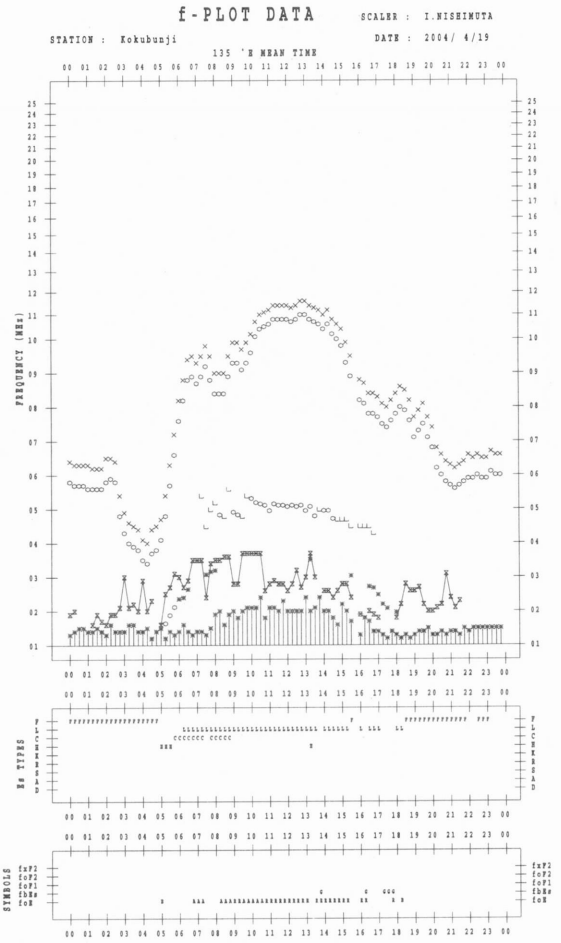
STATION : Kokubunji
DATE : 2004/ 4/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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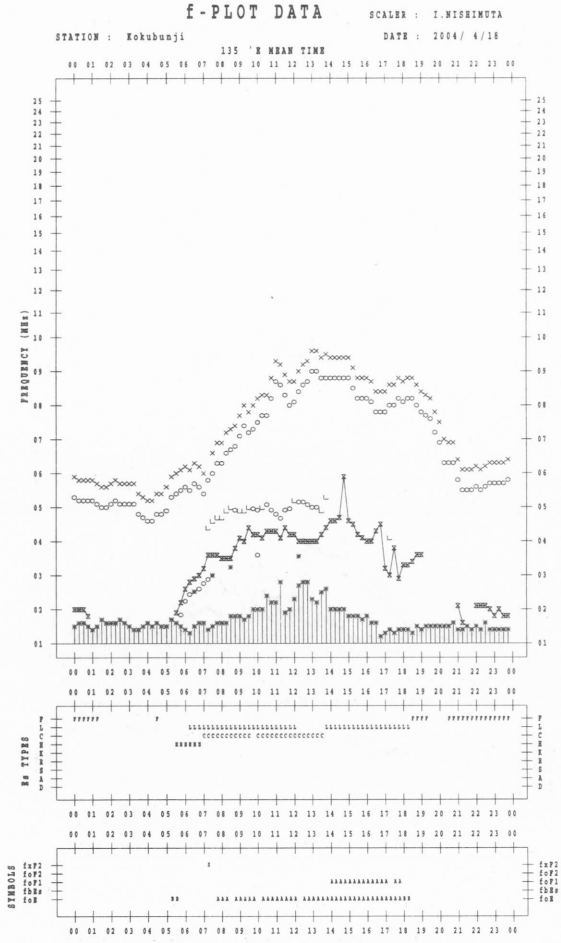
STATION : Kokubunji
DATE : 2004/ 4/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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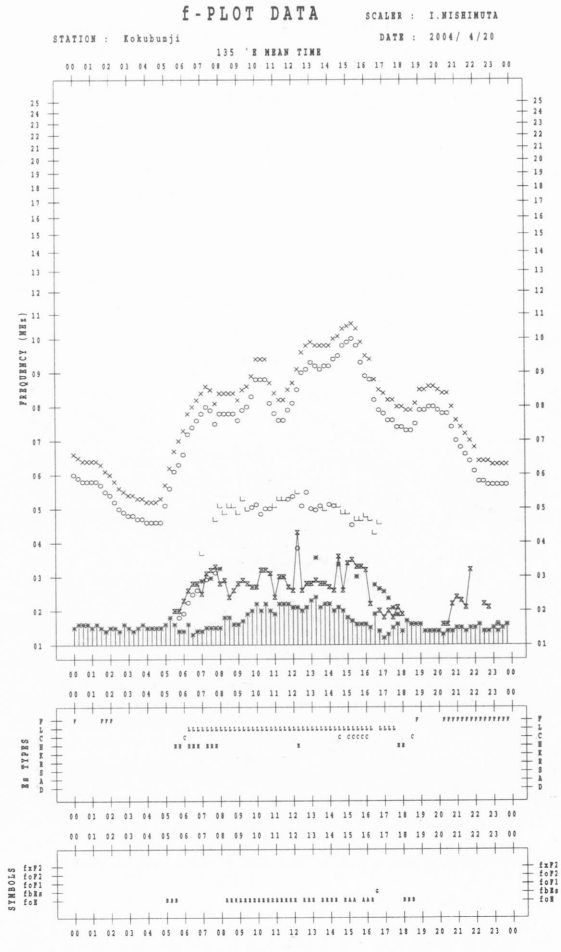
STATION : Kokubunji
DATE : 2004/ 4/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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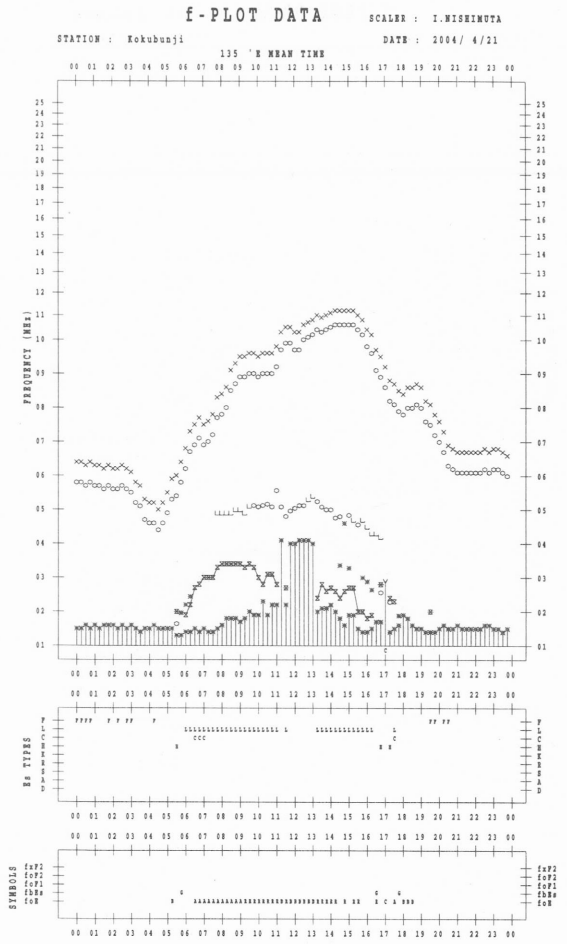
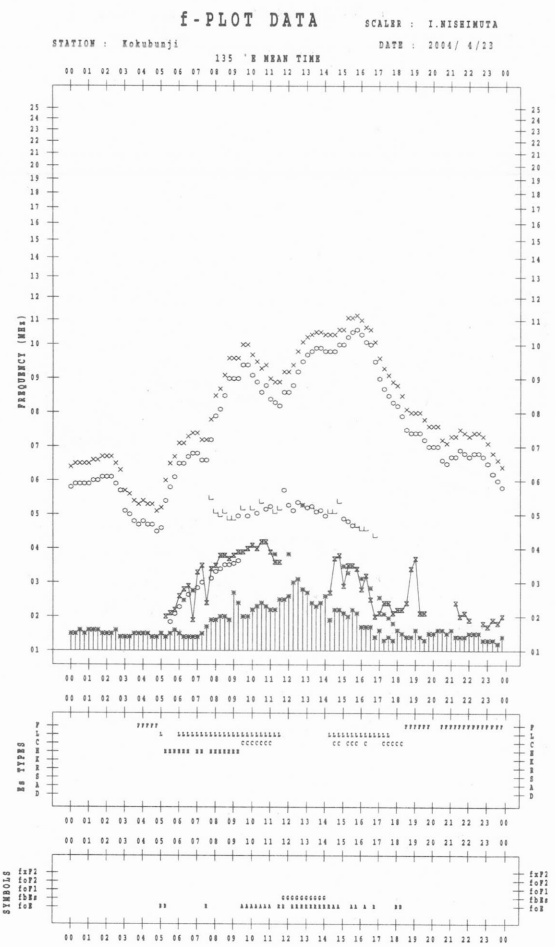
STATION : Kokubunji
DATE : 2004/ 4/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/21
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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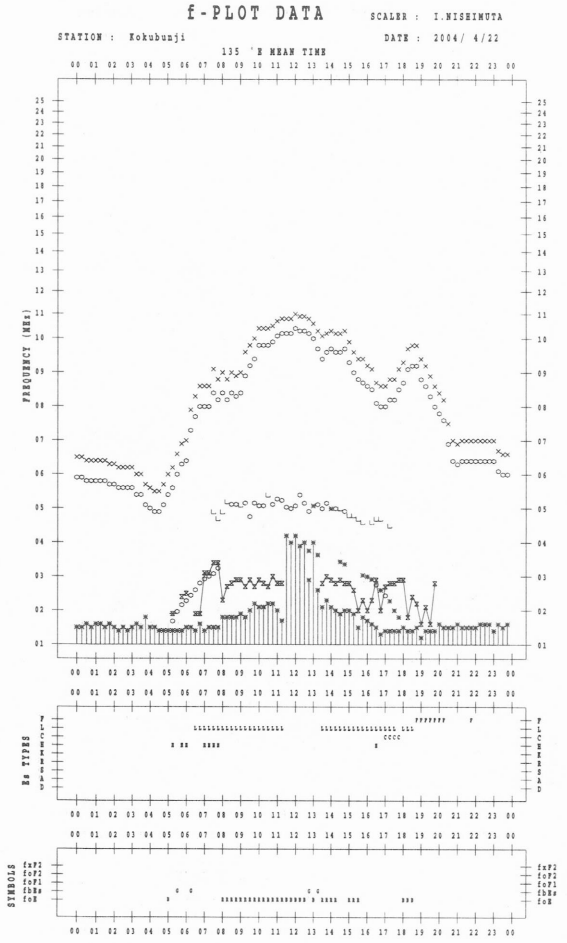
STATION : Kokubunji
DATE : 2004/ 4/23
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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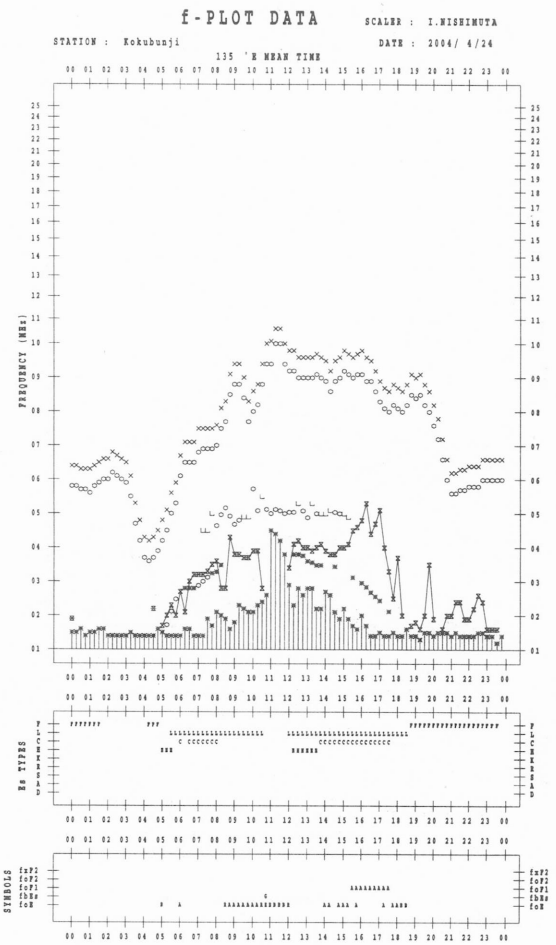
STATION : Kokubunji
DATE : 2004/ 4/22
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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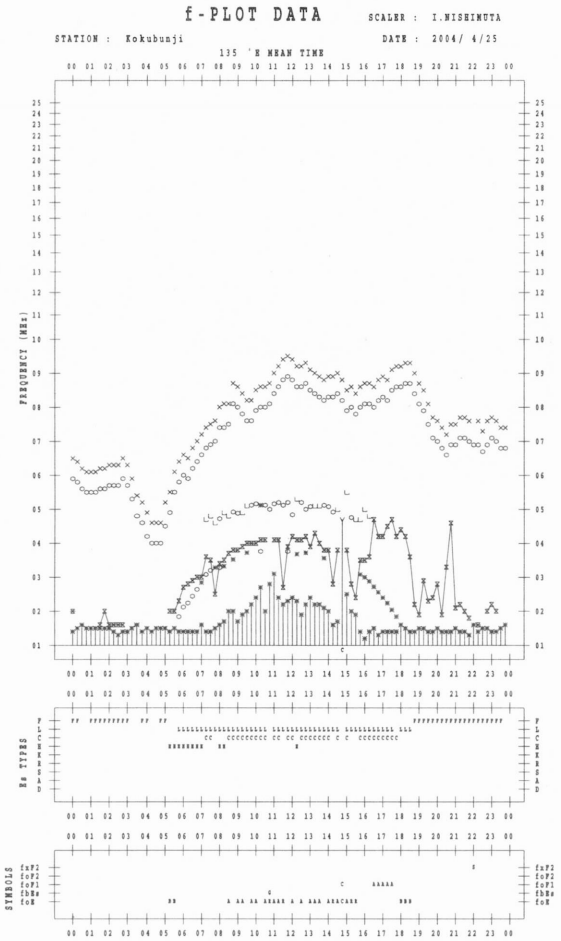
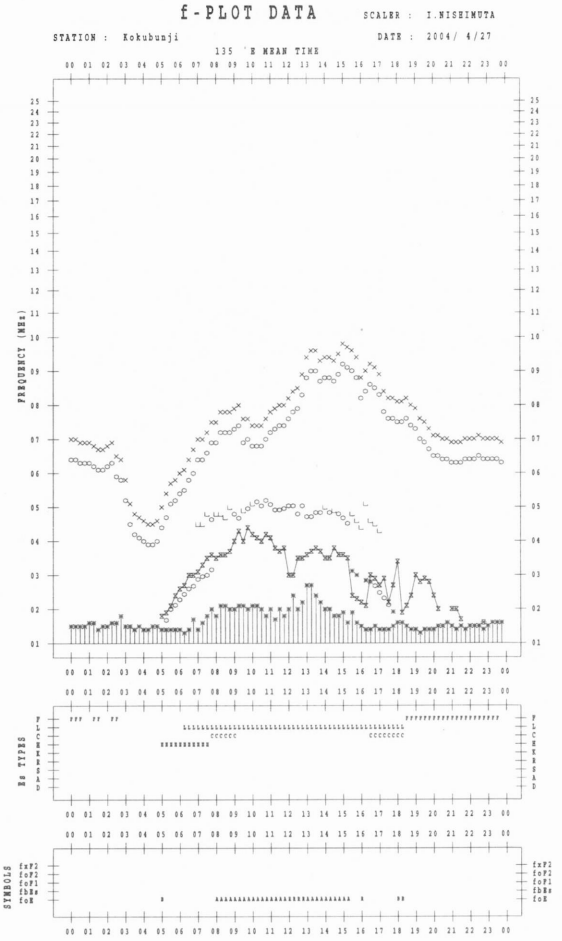
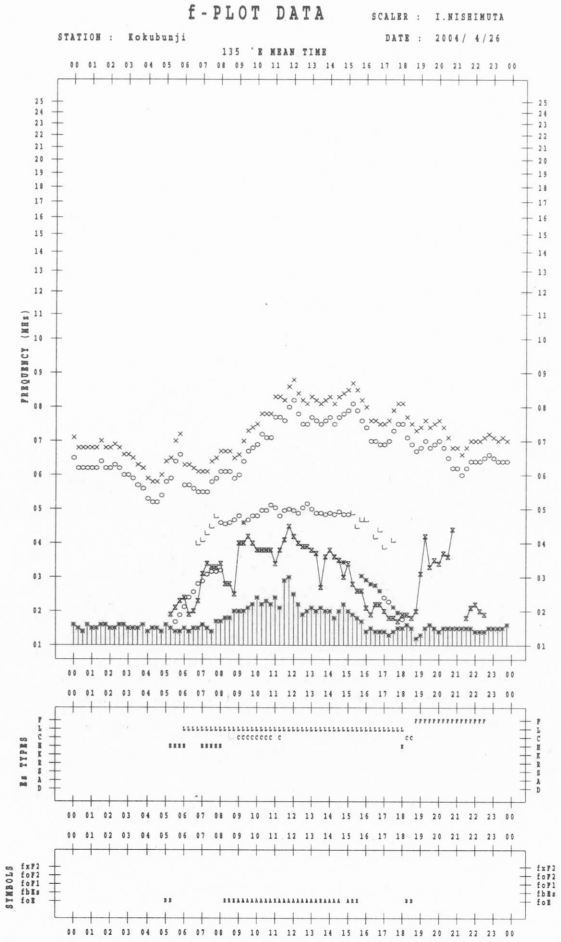
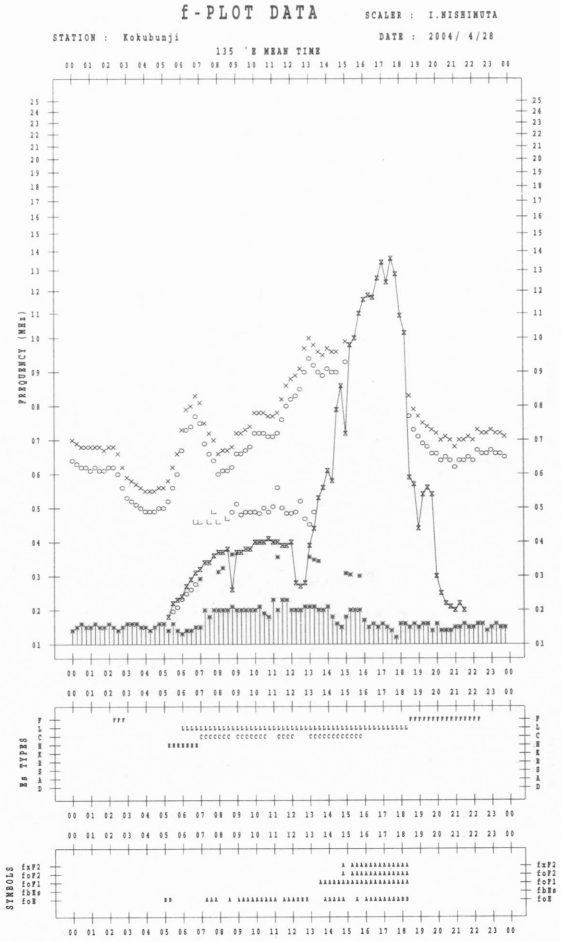
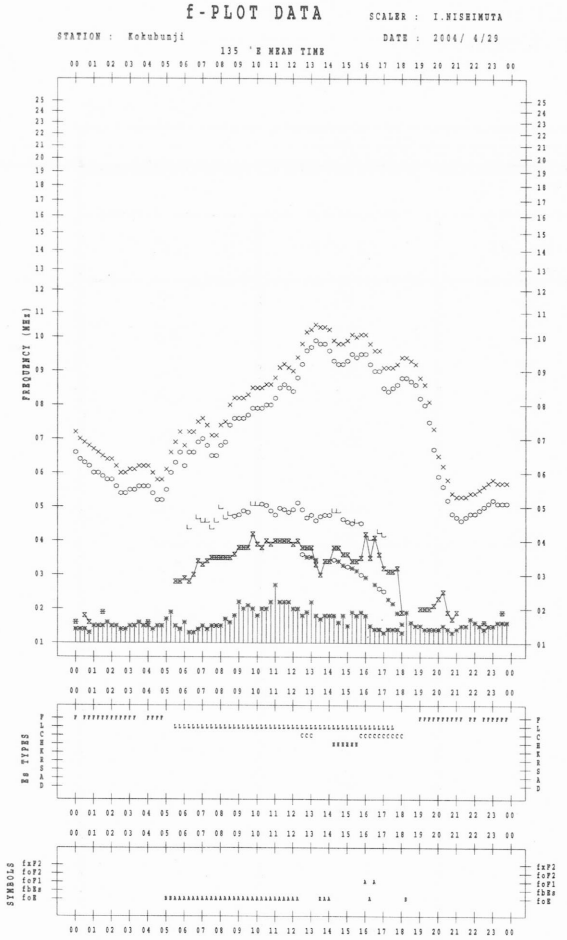
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/24
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

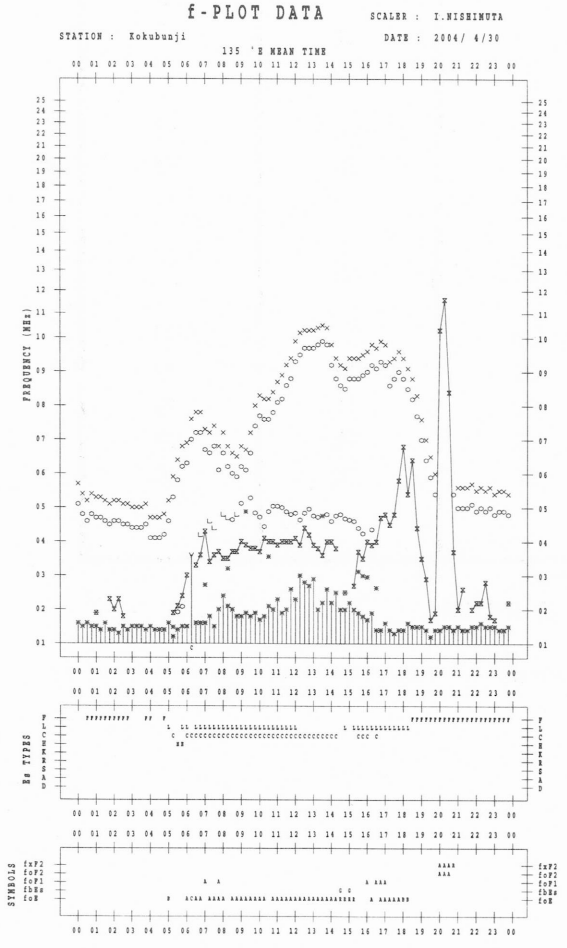

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/29
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2004/ 4/30
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

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

Hiraiso April 2004

Single-frequency total flux observations at 500 MHz					
Flux density: 10^{-22} W m^{-2} Hz^{-1}					
UT / Date	00-03	03-06	06-09	21-24	Day
1	33	31	31	30	31
2	33	31	31	34	32
3	31	30	30	31	30
4	32	32	32	34	33
5	32	30	29	35	32
6	32	30	29	33	31
7	30	29	28	33	30
8	32	30	29	34	31
9	31	29	28	-	30
10	-	-	-	-	-
11	-	-	-	-	-
12	29	28	28	31	29
13	31	30	30	32	31
14	30	30	29	33	31
15	32	31	30	33	32
16	30	28	28	33	30
17	29	27	27	32	29
18	30	28	28	32	30
19	31	30	31	33	31
20	31	30	30	34	31
21	31	29	28	36	31
22	33	32	30	33	32
23	33	32	33	-	33
24	-	-	-	-	-
25	31	30	29	33	31
26	30	30	30	29	30
27	29	29	29	29	29
28	29	28	29	31	29
29	29	28	27	32	29
30	29	26	27	28	28
31					

Note: No data is available during the following periods.
9th 2030 - 12th 0030 23th 1950 - 25th 0200

A superscript * stands for being superposed on a burst.

B. Solar Radio Emission

B2.Outstanding Occurrences at Hiraiso

Hiraiso April 2004

Single-frequency observations

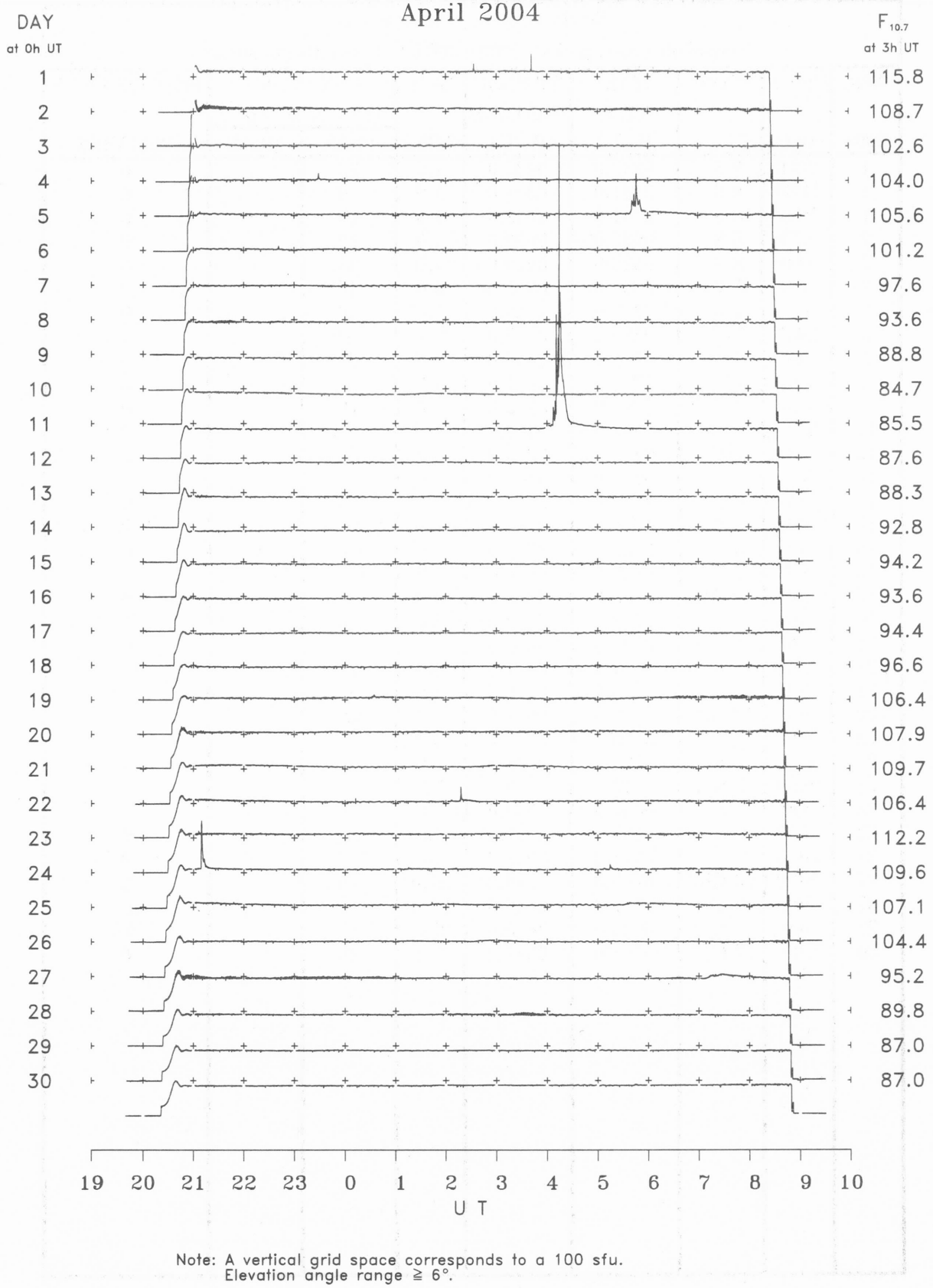
Normal observing period: 2000 - 0915 U.T. (sunrise to sunset)

APR. 2004	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS
1	2800	8 S	0233.0	0233.0	1.0	20	-	0
1	2800	8 S	0341.0	0341.0	1.0	50	-	0
1	500	8 S	0341.0	0342.0	1.0	15	-	0
2	500	8 S	0032.0	0032.0	1.0	10	-	0
2	500	8 S	0529.0	0529.0	1.0	35	-	0
2	500	7 C	0652.0	0655.0	3.0	45	-	0
3	2800	1 S	2327.0	2329.0	5.0	20	-	0
5	2800	7 C	0539.0	0547.0	14.0	115	-	0
5	500	7 C	0541.0	0549.0	16.0	20	-	0
5	2800	1 S	2241.0	2241.0	1.0	10	-	0
5	500	42 SER	2241.0	2242.0	4.0	70	-	0
11	2800	47 GB	0357.0	0415.0	31.0	825	-	0
12	500	7 C	0223.0	0224.0	3.0	30	-	0
14	500	8 S	0233.0	0233.0	1.0	10	-	0
14	500	8 S	2120.0	2121.0	3.0	30	-	0
15	500	8 S	0706.0	0706.0	1.0	20	-	0
15	500	8 S	0733.0	0733.0	1.0	105	-	0
15	500	8 S	0830.0	0830.0	1.0	270	-	0
15	500	42 SER	2159.0	2203.0	5.0	10	-	0
19	2800	1 S	0032.0	0035.0	5.0	10	-	0
21	500	8 S	0507.0	0508.0	1.0	10	-	0
21	500	8 S	2114.0	2114.0	1.0	15	-	
21	500	42 SER	2338.0	2339.0	3.0	35	-	
22	500	47 GB	0012.0	0012.0	1.0	580	-	
22	500	7 C	0040.0	0041.0	2.0	75	-	
22	500	8 S	0209.0	0209.0	1.0	15	-	
22	2800	3 S	0217.0	0218.0	3.0	40	-	
22	500	8 S	0644.0	0644.0	1.0	10	-	
23	2800	3 S	2109.0	2110.0	8.0	135	-	0
24	2800	1 S	0514.0	0515.0	4.0	15	-	0
27	2800	20 GRF	0709.0	0728.0	57.0	10	-	0
27	500	7 C	0711.0	0716.0	25.0	35	-	0
27	500	7 C	0808.0	0810.0	9.0	15	-	WR
30	500	7 C	0545.0	0547.0	7.0	20	-	0

B. Solar Radio Emission

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

April 2004



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

IONOSPHERIC DATA IN JAPAN FOR APRIL 2004
F-664 Vol.56 No.4 (Not for Sale)

電離層月報（2004年４月）
第56巻 第４号（非売品）
2004年７月26日 印刷
2004年７月30日 発行
編 集 兼 独立行政法人情報通信研究機構
発 行 所 〒184-8795 東京都小金井市貫井北町4丁目2－1
☎（042）（327）７４７８（直通）

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Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184-8795 JAPAN