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IONOSPHERIC DATA IN JAPAN

FOR MAY 2008

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《Real Time Ionograms on the Web ..... *http://wdc.nict.go.jp/index_eng.html*》

NiCT
NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

A. IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

X Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. SOLAR RADIO EMISSION

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

B1. Daily Data at Hiraiso

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

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

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

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

B2. Outstanding Occurrences at Hiraiso

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

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

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

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

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

The polarization is expressed by the polarization degree and sense as follows:

R or L	right or left-handed polarization,
W, M or S	weak, moderate or strong polarization,
0	almost zero or unable to detect polarization due to small increase of flux,
00	polarization degree of less than 1

One of the following symbols may be attached after numerical values, if necessary.

D	greater than, or later than,
E	less than or earlier than,
U	approximate, or uncertain.

B3. Summary Plots of F10.7 at Hiraiso

The 10.7 cm solar radio flux at Hiraiso is plotted over a one month period. The 10.7 cm flux ($F_{10.7}$) is determined by adjusting the 10.7 cm radio flux measured at Hiraiso to the Pentincton 10.7 cm radio flux. The figure on the right-hand side shows the $F_{10.7}$ index estimated at Hiraiso.

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

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

HOURLY VALUES OF foF2 AT Wakkanai

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	34	32	37	37	45		45						55	56	55	52	50	51	58	54	58	54	42
2	42	44	44	43	44	44	45	46	46	A	65	A	A	49	49	54	A	A	A	66	69	42	40	37
3	37	40	41	41	40	36	44	47	41	39				A	36	53	60	57	62	51	44	47	44	41
4	40	38	36	34	36	A		46		41			A	39	41	39	53	54	50	55	59	59	41	41
5		36	34	32	31	33				49						46	48	45	A	54	58	43	A	A
6	34	32	30	34	32	35	31		A			A					41	41	41	40	41		44	34
7	34	34	32	34	34	39	A	A		A	A	A	A	A	A	A		39	A	46	45	42	38	41
8	34	34	34	34	34	38		A		A		A	A			35	46	44	46	46	38	45	42	40
9	34	34	34	32	32	40	45	47			39	39				51	46	44	51	60	54	55	45	36
10	36	34	34	32	30	34	A	A	A	A	A				39	38	46	46		56	54	42	43	43
11	38	37	34	28	31	34	37	43							39		44	45	46	41	53	54	44	45
12	43	31	36	34	37	35	41	43					A	A	A		57	43	44	46	55	52	54	45
13	34	45	40		48		44	42		56		A					40	44	54	54	63	54	47	41
14		45	45	45	45	41	50	A	A		A	A			A	46	36	A	47	50	54			32
15	44	40	45	46	44	52	45	39	52						57	45	41	45	46	51	53	51	52	47
16	46	41	48	47	46	51	51	53	58	56	A	A			A	A	48		57	58		55		50
17	44	44	44	40	31	40	44				A	A		A		A	A	A	45	56	54	54	50	44
18	34	36	34	34	34	41	45	50	A		A	A				A	40	43	54	60	54	52	53	
19	41	34	41	43	38	38	41	A	A	A			A		A	A	46	A	A	53		51	A	47
20	46	44	38	48	47	51			A			A	A				55	41	46	53	52	54	52	46
21	39	44	51	46	44	45		A	A	A	A	A	A	A			54	56	43	55	54	53	52	45
22	40	41	42	52	48	38	A		A	A	A	A	A	A	A	A	58	56	46	45	45	47	A	A
23	A	41	43	41	37		A	A	A	A	A	A			A		44	44	47	58		54	58	53
24	52	52	51	46	41	40	A	A	A	A	A	A		A	A		A	A	A	47		A	26	42
25	41	A	40	28	37	40	36	A	A	A	A	A	A		39	52	44	A	A	45	53		51	45
26	42	42	44	45	45	45	40	45	A	A	A	A			39	40	A	A		58	54	A		42
27	42	A	36	36	39	45	A	A	A	A	A	A	A		A	48	47	40	A	52		54	54	49
28	47	42	42	40	39	41	A	A	A	A	C	C		A			57	54	A	58	64	A	54	53
29	52	47	39	37	34	38	A	A	A	A	A	A				34	A		A	A	A	A	47	A
30	40	40	40	39	41	38	A	A		A	A		A	A	A	A		A		A	55	A	52	46
31	45	42	40	38	40	41	A	A	A	A	A	A		A	A		A	A	A	55	58	54	A	45
	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	29	31	30	31	28	15	12	4	5	2	1		3	9	14	23	20	18	29	25	23	24	27
MED	41	40	40	38	38	40	44	46	49	49	52	39		49	39	46	46	44	46	54	54	53	48	44
U Q	44	44	44	45	44	44	45	47	55	56	65	19		55	52	52	54	52	51	58	56	54	52	46
L Q	36	34	34	34	34	38	40	43	43	40	39	19		39	39	39	44	43	46	46	52	47	43	41

HOURLY VALUES OF fEs AT Wakkanai

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	34	27	24	G	G	G		38	G	G	G	G	G	G	G	46	41	G	32	27	G	29	G	G
2	G	G	G	G	G	G	G	G	G	48	G	59	54	G	38	38	60	77	77	G	G	40	30	G
3	G	G	27	G	G	G	36	39	41	G		G	39	39	G	G	G	43	41	34	29	G	29	26
4	29	33	29	29	32	44	36	35	G	G	G	G	50		G	G	G	G	G	G	33	G	G	G
5		G	G	G	G	G	G	39	39	G	G	G	G	G	G	G	G	41	53	54	46	31	39	39
6	26	G	G	G	26		G	40	44	G	G	97	G	G	G	G	G	31	G	27	31	39	33	G
7	G	28	G	G	G	31	40	57	90	90	95	46	58	48	40	45	34	41	47	47	32	33	40	G
8	G	G	G	G	G	G		46	45	38	G	53	59		38	G	G	G	G	31	41	38	35	G
9	G	G	G	G	G	G	G	34		G	G	G	G	G	G	G	41	40	36	34	33	32	34	34
10	29	25	G	28	30	42	50	53	46	63	74	G	40	40	G	G	36	37	32	26	25	G	G	G
11	G	G	G	G	G	G	G	G	42	38	G	G	G	40	38	40	G	36	31	G	G	G	G	G
12	G	G	G	G	G	G	G	G	G	G	G	G	46	76	48	G	G	G	32	G	G	33	27	29
13	28	30	G	G	24		36	39		46	48	70	G	42	46	G	45	60	50	30	30	G	G	26
14	36	26	G	G	G	34	59	80	63	48	60	52	G	G	60	42	G	53	41	45	27	28	39	38
15	36	30	G	G	G	28	G	G	46	48	G	G	G	G	G	37	35	39	37	34	32	40	32	28
16	G	G	G	G	G	32	39	42	49	40		111	40	50	50	58	34	40	36	29	32	34	28	28
17	26	G	G	G	G	30	40	40	42	60	59	78	G	60	G	60	65	60	35	32	39	70	46	30
18	33	32	25	29	28	46	36	42	62	59	52	49	G	G	41	46	37	G	33	33	29	26	G	31
19	G	G	33	25	G	33	39	53	50	48	48	48	47	40	47	61	44	52	52	33	34	39	45	25
20	G	G	G	G	26	38	43	42	51	39	G	58	62	G	G	G	51	41	38	28	29	29	G	G
21	29	32	G	G	G	34	43	60	64	83	71	49	41	47	41	46	48	51	53	34	27	34	30	28
22	26	26	G	G	G	32	50	50	66	56	72	51	78	73	132	76	51	33	42	32	32	44	78	81
23	70	48	48	59	26	40	68	65	81	83	52	54	G	G	43	46	G	46	47	31	40	30	25	25
24	G	24	G	G	G	29	46	62	52	70	65	60	G	47	46	G	64	90	94	49	45	58	71	78
25		51	37	32	30	28	40	64	79	59	66	68	56	G	G	G	G	93	81	32	34	45	40	28
26	25	27	26	29	40	32	39	42	50	61	54	69	G	G	G	G	46	80	51	43	52	103	50	38
27	34	60	32	G	28	34	46	59	78	72	77	80	78	60	62	G	G	40	47	71	59	39	39	34
28	30	G	38	G	34	44	49	49	51	73	C	C	G	51	39	G	G	41	105	28	70	77	59	27
29	25	G	26	33	28	37	44	53	75	61		45	40	G	G	G	43	32	51	72	76	59	30	58
30	32	32	G	26	G	29	46	51	G	59	59	G	101	59	59	63	G	59	75	67		60	28	39
31	30	37	35	30	26	34	56	54	51	55	53	42	G	61	54	45	50	90	102	43	44	45	44	44
	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	31	31	31	31	29	29	31	29	31	27	30	31	29	31	31	31	31	31	31	30	31	31	31
MED	26	25	G	G	G	32	40	42	50	48	52	49	39	40	38	G	35	41	42	32	32	34	32	28
U Q	31	32	27	28	28	35	46	54	63	61	65	60	54	50	47	46	46	59	53	43	41	45	40	38
L Q	G	G	G	G	G	G	18	39	41	38	G	G	G	G	G	G	G	33	33	28	29	29	25	G

HOURLY VALUES OF fmin AT Wakkanai

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	15	15	18	20		14	20	18	21	21	20	18	22	18	14	14	14	16	15	14	15	15
2	14	14	14	14	15	16	14	15	16	18	18	17	20	18	18	17	14	16	14	14	15	14	17	18
3	15	15	14	15	16	15	14	16	15	18		35	22	17	18	17	22	15	15	15	16	17	15	18
4	15	14	16	14	15	14	15	16	18	18	20	22	20	17	18	18	14	15	15	15	14	17	14	17
5		14	14	16	14	18	15	16	14	15	20	22	21	16	16	15	14	14	15	15	15	14	14	15
6	14	15	18	14	22	14	14	14	15	16	18	16	18	15	14	16	15	14	20	18	14	15	14	18
7	15	17	18	16	16	15	14	16	18	18	21	21	20	20	18	17	27	14	14	14	14	15	15	14
8	17	14	15	14	14	17		18	20	20	20	21	18		21	17	15	21	20	14	14	14	15	17
9	15	14	14	15	20	21	14	15		16	20	21	21	15	21	21	16	21	15	14	14	15	16	15
10	14	14	14	15	14	14	15	15	15	20	18	18	18	21	18	18	15	15	18	16	15	14	15	15
11	15	15	15	16	16	18	14	18	15	14	20	21	18	21	20	18	18	14	15	15	15	15	15	14
12	15	15	15	17	15	20	14	16	14	17	18	18	16	21	21	17	16	17	16	20	15	15	14	15
13	16	14	15	14	15		14	14		16	20	18	18	21	18	14	14	14	15	14	14	14	15	15
14	14	15	15	14	14	14	21	14	17	18	17	22	20	18	15	18	14	16	14	14	15	16	15	15
15	14	15	14	15	15	14	21	16	15	18	20	22	18	21	21	15	17	14	16	15	14	15	14	14
16	14	15	15	15	15	15	15	18	15	14	20	17	18	18	15	16	15	14	16	14	14	14	15	14
17	14	15	15	15	22	15	14	14	15	18	20	21	18	16	20	15	16	22	15	14	14	14	14	14
18	15	15	15	15	15	15	14	14	15	16	16	18	20	18	17	15	15	27	16	14	14	16	15	15
19	15	14	15	15	15	14	14	15	14	18	21	18	16	18	20	21	15	16	14	14	14	15	14	16
20	15	15	15	15	18	15	14	14	14	21	20	20	20	18	18	20	15	15	15	16	15	14	15	15
21	16	15	15	14	17	15	17	14	15	15	18	23	18	20	18	15	14	14	17	14	15	15	16	15
22	15	14	14	15	16	15	21	17	15	18	17	20	18	18	16	15	14	14	15	14	14	14	14	15
23	16	14	14	15	15	16	14	16	15	18	18	18	26	26	29	18	14	14	15	14	15	15	15	15
24	36	15	16	14	14	14	21	15	17	20	18	18	17	16	15	18	17	15	14	14	14	15	14	18
25	14	15	14	15	14	15	20	16	20	18	32	21	17	21	18	17	20	14	14	14	15	15	15	17
26	15	15	14	15	14	15	14	14	15	16	16	18	16	16	16	15	16	14	14	14	14	15	15	14
27	14	15	14	14	14	15	16	14	15	14	21	18	27	22	18	15	14	16	17	14	15	14	14	14
28	14	14	14	14	14	15	16	15	14	30	C	C	20	18	20	21	20	14	17	14	14	14	14	15
29	14	16	14	14	16	14	15	22	20	22	18	18	23	23	18	18	17	22	15	14	14	14	15	15
30	15	14	18	14	15	14	14	14	20	20	21	20	22	18	16	20	15	15	15	14	15	15	15	15
31	14	14	14	14	17	17	14	17	15	18	21	18	21	21	21	18	15	15	15	14	14	15	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	30	29	31	29	31	29	30	31	30	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	14	15	15	18	20	20	20	18	18	17	15	15	15	14	14	15	15	15
U Q	15	15	15	15	16	16	16	16	17	18	20	21	21	21	20	18	17	16	16	15	15	15	15	16
L Q	14	14	14	14	14	14	14	14	15	16	18	18	18	17	16	15	14	14	14	14	14	14	14	15

HOURLY VALUES OF foF2 AT Kokubunji

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	32	32	31	A	39	48	60		48	54	54	56	64	62	60	62	56	61	62	65	39	37	32
2	A	34		36	32	36	47	57	45	44	A		54	63	62	65	69	66	76	87	87	A	26	27
3		27	27		31	39	46	51	54	48	48			56	54	64	81	76	52	48	45	39	42	44
4	42	42	42	30		36	47	50	61	56		52		62	59	54	54	58	55	52	61	48	42	45
5	45	39	36	34	30	34	44	A	55	44	A	48		51		51	62	58	60	63	52	49	32	A
6	A					37	47	A	A	A		A			56	56	46	45	38	44	45	45	42	A
7	34	A	28	A	A	35	42	52	46	56				52	54	52	50	51	48	45	49	44	39	A
8	32	30	26	23		32	44	A	54	A	A	A	A	A	59	65	62	53	49	55	55	36	25	26
9	34	32	34	30	30		47	62	53		A		A	54	60	57	58	59	62	69	72	32	28	
10		30		26	27			47	A	A	A	A	A	A		55	56	54	59	61	52	48	A	39
11	39	36	34	28	31	35	47	42	42	53	57	A			A	A	52	48	51	55	54	49	A	42
12	41	34	31	30	30	36	45	48	51	49		A				66	A	A	49	51	51	49		
13		31	25	34	30	33	49	56	55	46				54	56	61	59	55	57	71	55	A	36	36
14	34	A	A	A	A	42	A	A	A			56	55	55	A	51	51	54	A	55	53	52	49	42
15	38	34	32			38	45	48	49	48					57	58	64	57	49	51	52	52	54	44
16	38	A	38	34	34	42	47		54	48			A	A	55	53	54	54	59	89	54	51	44	44
17	42	42		34	34	42	50	54	A	A	48			A	A	A	49	64	58	54	A		A	A
18	42	39	37	34	32	41	45	59	58	A	A		52		54	56	56		55	66	54	51	A	A
19	41	A	A	A	A	38	A	A	56	A	59	A		67	72	80	60	56	A	52	54	54	51	49
20	40	41	44	31	34	37	46	54	A	A	A	57		A	A	68	61	56	46	A	54	64	47	A
21	42	38		34	30	A	42	A	A	A	A	54	A	A	A	A	66	76		A	54	53	47	48
22	46	42	42	38	32	38	59	A	A	A	38	A		66	77	72	58	56	48	A	A	51	52	47
23	47	A	A	A	A		A	A	A	A	A	A	A	A		A	76	A	A	63	54	51	A	45
24		A	42		39		A	A		A	A	A	A	A	A		A	A		A	A	A	A	A
25	A	37	A	39	27	40	44	46	A		A	A		57	57	A	54	52	65		51	48		49
26	39	39		34	28		52	A	55	A	A	A		A	A	53	55			65	A	52	52	45
27		44		38	30	37	A	A	82	A	A	A	A	A		52	A	57	56	52		53	48	47
28	45	A	41	A		A	47	A	A	A	52	A			56	57	62	66	A	62	65	63	51	
29	42		39	37	34	35	A	A	A	A	A			A			47	A	A	52	51	47		44
30	44	41	39	44			A	A	A	A						57	59	55	53	A	50	48	A	A
31	A		A	32	27	38	48	A	A	A	A	A	A	A		61	67		A	A	54	54		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	21	19	22	20	23	23	15	16	11	7	6	4	12	16	24	28	24	22	24	26	27	20	19
MED	41	37	36	34	30	37	47	52	54	48	52	54	54	56	57	57	58	56	55	55	54	49	43	44
U Q	42	41	41	36	33	39	48	57	55	53	57	56	55	63	61	64	62	58	59	64	55	52	50	47
L Q	38	32	31	30	30	35	45	48	50	46	48	52	53	54	55	53	54	54	49	52	51	47	36	39

HOURLY VALUES OF fEs AT Kokubunji

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	27	G	31	G	G	G	G	G	G	G	G	G	G	G	G	G	34	25	27	29	28	27
2	45	25	G	G	G	G	G	G	G	50	74	G	G	G	G	G	G	36	29	G	23	34	G	25
3	32	37	24		G	G	G	34	G	G	G			G	49	G	36	36	G	G	G	G	23	G
4	G	G	G	22		26	35	G	G	G		G	G	G	G	G	G	40	52	49	29	37	40	32
5	33	G	G	G	G	G	36	82	58	53	50	G		G		G	41	49	35	G	51	G	31	36
6	44	23	33	G	G	G	33	40	50	50	43	45			G	50	46	G	31	25	G	G	45	80
7	46	48	46	67	59	G	G	G	42	43	G	48	G	G	G	G	G	32	43	G	39	29	29	53
8	40	G	29	G	25	68	G	50	57	72	75	71	79	59	G	54	48	G	31	35	G	30	29	33
9	26	23	22	24	G	G	G	G	G	52	62		57	44	48	45	42	40	36	37	34	25	24	25
10	33	25	28	G	G	30		44	61	64	65	62	83	57	49	51	53	53	49	52	59	81	67	92
11	91	G	G	G	27	G	G	G	44	46	51	61	51	52	56	62	35	42	57	50	40	23	51	34
12	32	G	48	50	22	G	39	43	48	50	50	72			57	62	78	80	35	35	29	34	33	49
13		G	23	26	G	30	37	57	81	55				G	G	G	G	G	30	G	G	40	33	31
14	33	70		68	59	49	52	68	57	137	78	G	G	G	70	G	G	43	58	40	43	34	53	23
15	G	26	G	34	37	G	36	36	G	G	G				G	G	42	45	47	55	50	58	46	59
16	54	45	32	G	G	29	34	40	49	43	45	40	73	96	G	G	G	37	42	83	34	47	37	28
17	31	33	37	G	24	29	36	49	108	64	G	47	68	84	85	90	58	50	54	34	43	49	91	107
18	32	22	G	G	G	26	35	65	61	86	151	59	G	G	G	44	45	65	60	65	35	80	57	70
19	29	53	93	62	69	28	67	60	56	61	58	117	57	59	61	G	46	51	62	43	50	41	34	43
20	44	37	40	G	25	33	G	48	60	60	76	46	G	65	74	49	50	36	45	70	52	40	40	54
21	49	48	36	37	30	43	47	62	70	62	80	58	61	104	94	90	G	70		91		37	48	25
22	G	G	29	G	G	26	37	57	64	90	G	70	52	55	40	40	50	57	43	59	57	32	59	53
23	90	81	59	84	79	40	59	80	68		70	58	59	67	83	84	72	98	59	55	37	56	60	67
24	59	55	37	39	30	42	55	77	103		108	136	115	134	61	49	60	62	93	72	104	59	58	84
25	82	57	59	40	46	G	G	45	60	G	72	64	74	56	46	62	56	38	43	45	33	G	34	35
26	G	103	40	31	24	32	34	62	54	80	77	53		61	75	61	49	75	95	36	60	35	33	35
27	29	47	37	31	37	33	45	68	72	77	79	65	68	50	50	50	96	42	31	40	59	82	59	58
28	50	59	37	107	36	58	G	53	64	64	50	49	40	50	48	50	59	72	77	42	59	45	58	52
29	37	52	34	G	24	G	59	61	50	71	71			62	44	52	40	94	94	46	32	28	35	39
30	33	32	29	25	G	37	42	53	70	54	50	50				G	G	G	47	70	59	49	83	65
31	45	48	70	34	G	G	38	68	83	69	67	60	56	61		53	G	57	103	61	G	48	45	47
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	30	30	30	31	30	31	31	29	29	26	22	27	28	31	31	31	30	31	30	31	31	31
MED	33	33	32	24	24	26	36	50	57	55	62	56	56	55	48	49	42	43	46	43	38	37	40	43
U Q	46	52	40	39	36	33	42	62	68	70	75	64	68	62	61	54	53	62	59	59	52	49	58	59
L Q	29	G	23	G	G	G	G	36	44	44	44	45	G	G	G	G	G	36	35	34	29	29	33	31

HOURLY VALUES OF fmin AT Kokubunji

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	17	13	13	13	13	13	13	13	15	17	42	45	47	45	18	18	14	13	13	14	13	13	13	13
2	13	13	13	13	13	13	13	14	17	17	29	43	42	44	20	17	13	13	13	31	13	14	18	13
3	13	13	13		13	30	13	13	14	43	42			44	34	14	13	13	18	13	13	13	13	21
4	13	13	14	13		14	13	37	41	17		44	43	43	42	22	18	13	13	13	13	13	13	13
5	13	13	15	13	14	15	13	13	17	17	33	45		18		15	13	13	13	30	13	14	14	13
6	14	14	14	20	14	14	13	14	15	22	20	24			17	13	17	13	13	14	13	13	13	13
7	13	14	13	14	13	14	13	13	15	41	24	21	22	44	42	42	35	14	17	13	13	13	14	13
8	13	13	13	13	13	13	13	15	21	21	22	33	33	20	44	25	17	13	13	13	33	14	14	13
9	14	14	13	13	13	15	13	15	15	29	28		29	30	33	21	14	13	13	13	13	13	14	14
10	14	13	14	13	13	13		14	13	29	30	30	29	22	18	20	13	13	13	13	13	13	13	13
11	13	13	13	13	13	15	14	13	17	14	33	34	31	30	24	15	14	13	13	13	13	14	13	13
12	13	13	13	13	13	17	13	13	20	30	33	33			30	21	18	14	13	13	13	14	13	13
13		14	13	13	13	13	13	13	20	21				44	17	17	13	18	13	13	13	13	13	13
14	14	14	13	13	13	13	13	13	15	14	29	44	44	44	21	41	14	22	14	13	14	13	13	13
15	13	13	13	13	13	13	13	14	15	20	37				43	18	13	14	14	14	13	13	14	13
16	13	13	13	13	13	13	13	13	17	30	29	18	28	29	23	18	13	13	13	13	13	13	13	14
17	13	13	13	13	13	13	13	14	15	31	43	34	34	30	22	17	15	13	13	13	14	13	13	15
18	13	14	13	13	13	13	13	13	13	29	29	17	45	46	43	20	18	13	13	13	14	13	13	13
19	13	13	13	13	13	13	21	13	14	14	21	33	33	33	33	42	14	13	13	13	13	13	13	13
20	13	13	13	14	13	17	21	13	14	29	33	33	49	33	33	15	14	13	14	13	13	14	13	13
21	13	14	13	13	13	13	13	14	18	22	31	33	31	30	30	21	14	22	13	13	13	13	13	13
22	13	13	13	13	13	13	18	14	18	15	20	33	31	29	30	18	14	13	13	13	13	13	13	14
23	13	13	13	13	13	13	13	15	15	17	31	33	31	36	31	29	17	13	13	13	13	13	13	13
24	13	13	14	13	13	13	13	13	14	31	21	29	33	30	35	33	20	15	13	13	13	13	13	13
25	13	13	13	13	13	18	18	14	14	21	33	30	31	30	28	22	14	13	13	13	17	13	13	14
26	14	13	13	13	14	13	13	17	17	25	28	35		33	18	31	13	23	13	13	15	13	13	13
27	13	13	13	13	13	13	13	15	17	22	30	33	33	31	33	26	23	13	13	13	13	13	13	13
28	14	13	13	13	13	13	13	13	13	31	33	33	14	31	18	18	18	13	13	13	13	14	13	13
29	13	13	13	13	13	13	14	13	13	20	31			21	28	17	14	14	13	13	13	13	13	13
30	13	13	13	13	13	14	13	13	29	15	34	29				21	13	13	13	14	13	13	13	13
31	14	13	13	13	13	13	13	13	14	30	31	35	36	35		30	25	13	13	14	23	13	13	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	30	30	31	30	31	31	31	29	26	22	27	28	31	31	31	31	31	31	31	31	31
MED	13	13	13	13	13	13	13	13	15	22	31	33	33	31	30	20	14	13	13	13	13	13	13	13
U Q	14	13	13	13	13	14	13	14	17	30	33	35	42	44	33	26	18	14	13	13	13	13	13	13
L Q	13	13	13	13	13	13	13	13	14	17	28	30	31	30	20	17	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	37	36	34	A	28	25	46	57	50	55	57	60	62	76	81	70	67	68	70	72	54	37	34	34
2	34	31	28	28	28	25	42	51	54	53	54	67	70	70	65	74	80	81	82		98	A	A	
3				29			41	52	57	55	54		68	70	72	90	103	57	50	55	54	52	46	48
4	51	50	47	47			40	60	62	57		56	62	71	81	67	59	56	A	A	54	51	47	52
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	52			58	65	65	61	46	54	45	50	A	36	34
8	A		A	28	A	A	A	51	60	56		A		57	67	71	60	65	49	55		A	A	36
9	34		30		28		41	58	52	45	54	49		64	66	69	72	75	84	86	72	38	28	
10	A		26	26			44	40	52	48	52	A	A		62	65	66	62	67	70		A	A	41
11	A	A	A	31	A	25	44	51	47	A	A	53	58			60	62	42	58	61	54	54	A	50
12	40	37	36	32	29	28	41	50	44	50	56		A	A	62	74	70		54	48	52	51	48	42
13	42	37	34	30	26	29	45	57	51	46	49		A	58	54	59	63	72	84	80	40	37	37	34
14	A	A	A	A	25	25		50	A	A	A	A	A	A	55	64	65	60	52	52	54	54	48	46
15	44	38	34	34	32	34	42	46	54	50		56				55	63	63	62	55	51	58	52	37
16	34	34	34	34	28	29	49	59	62	54	52		A		62	74	68	66	66	63	62	54	48	42
17	42	44	38	34	25	32	44	A	64	54	A	A	63	A	77	90	90	88	66	A	50	50	50	44
18	42	A	41	37	29	34	43	A	A		A	58	60	A		56	60	64	71	A	66	A	52	52
19	A	A	A	A	A	A	46	A	54	A	63	A	A	81	90	91	88	75	54	A	A	A	A	41
20	47	A	42	42	A	28	45	A	A	A	A	A	61	63	70	76	76	65	56	A	54	66	A	A
21	42	A	A	A	A			47	A	A	A	A	A		A	A	A	76	66	53	A	A	52	54
22	52	52	48	41	32	32	A	A	A	A	A	A	60	77	76	72	67	A	A	57	51	54	52	A
23	51	A	A	A	A	26	45	62	A	A	A	A	A	56	65	A	A	A	A	A	A	A	44	A
24	41	A		A	A	28			A	A	A	A	A	A	52	60	52	A	A	A	A	A	A	A
25	A	42	A	A	A	29	42	47	A	A	A	A	A	A	59	56	54	57	A	A	A	50	42	42
26	A	A	A	A	A	A	49	55	56	A				56		56	60	65	66	66			42	44
27	41	39	36	31	29		39	52	50	A	A	A	A	A	A	56	A			62	54	52	46	A
28	A	A	A	A	A	35	46		A	A	A	A	A	A	A	56	62	72	66	61	64	54	58	A
29	52	52	52	49	28	32		50	A	A	A		A	A		52	52	55		A	A		51	A
30	42		41	37	A	26	A	57	56	A	A	A	A	A	A	77	81	61	45	46	50	51	41	45
31	44	41	A	28	26	26	42	A	A		A	A		A	52	63	A	A	69	65	A	A	52	43
	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	19	13	16	18	14	19	21	20	17	12	10	7	9	13	20	27	25	23	22	19	19	17	22	20
MED	42	39	36	33	28	28	44	52	54	54	54	56	62	64	65	65	65	65	66	61	54	52	48	42
U Q	47	47	41	37	29	32	45	57	58	55	56	60	65	73	74	74	74	72	69	66	62	54	52	47
L Q	40	36	34	29	26	26	41	50	50	49	52	53	60	57	60	56	60	57	54	53	51	50	42	39

HOURLY VALUES OF fEs AT Yamagawa

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	31	32	G	54	G	G	G	33	39	40	40	43	40	G	G	40	G	G	38	33	G	G	26	24
2	30	31	G	G	G	G	G	32	41	42	45	48	48	49	49	G	47	55	44	32	30	32	28	G
3	G	G	G	G			28	36	41	40	49	47	50	48	47	51	54	52	53	42	43	G	G	G
4	26	G	24	11	G	27	33	35	40	43	49	G	42	56	G	45	G	41	59	68	55	26	32	28
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	47	40	42	41	G	G	G	42	30	G	G	49	38	30
8	50		43	39	51	48	58	36	42	42		70	47	44	G	G	46	63	55	73		71	72	39
9	27	26	26	29	G		27	44	42	39	40	42	G	G	G	G	G	G	G	30	11		G	26
10	39	40	G	24		G	30		41	39	G	53	56	56	43	G	44	48	36	37	44	80	79	40
11	47	79	56	38	50	G	31	38	46	68	60	55	52	49		39	G	40	40	55	56	50	78	27
12	38	G	40	24	G	33	34	40		48	48	49	76	48	42	52	38		G	G	25	32	34	59
13	36	28	G	G	G	G	30	39	G		G		61	G	G	G	G	G	30	G	G	G	27	26
14	57	40	58	40	36	G	38	43	61	61	79	97	103	86	G	G	G	G	39	38	48	27	27	29
15	G	G	G	G	G	G	G	36	38	38	G	G	42	41	G	39	42	G	55	36	36	53	59	35
16	45	39	39	51	G	G	32	38	53	49	44	55	54	50	49	N	G	42	35	30	33	44	58	41
17	39	32	24	25	G	G	46	61	42	54	60	76	48	83	51	66	47	58	54	57	35	32	40	59
18	56	59	43	39	31	23	35	51	65	58	94	61	76	63	50	G	52	54	50	72	57	49	44	38
19	58	72	59	70	50	71	40	57	62	69	62	90	119	52	54	G	48	49	71	92	60	70	59	46
20	72	59	53	50	51	G	37	64	60	74	70	60	49	48	53	68	37	42	59	62	59	67	59	59
21	39	49	49	73	58		42	47	61	75	61	76	100	49	126	91	106	48	42	58		108	41	36
22	29	G	28	26	G	G	50	59	61	68	69	64	56	45	G	G	53	88	76	36	40	40		90
23	56	109	72	78	50	34	38	66	88	147		78	62	48	G	85	69	92	74	91	88	58	36	83
24	36	70	44	52	59	36		50	78	97	68	111	91	98	G	48	38	76	80	94	95	90	55	58
25	85	58	57	86	40	G	31	44	52	68	48	62	100	129	49	49	44	50	67	80	82	40	58	90
26	82	58	69	76	58	67	33	35	G	62	56	48	42	51	40	G	G	40	39	32	29	33	36	29
27	55	24	G	G	G		33	50	52	79	76	89	76	77	70	54	116	99	95	53	57	46	G	80
28		58		44	61	44	38	47	68	104	126	93	135	73	72	64	48	53	105	46	49	49	34	71
29	50	57	55	32	38	38	40	42	59	79	152	101	50	63	G	42	37	52	51	77	79	56	36	58
30	32	46	32	28	32	33	40	60	52	66	79	84	60	45	61	75	G	58	80	48	34	44	G	G
31	26	28	46	26	G	G	39	72	59		80	80	41	66	54	52	76	91	64	37	67	71	33	33
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	28	26	24	27	27	27	26	27	28	29	29	28	28	29	28	29	29	27	28	28	29
MED	39	40	40	35	32	G	34	44	52	62	60	62	54	49	42	41	42	50	53	46	44	48	36	38
U Q	56	58	55	51	50	35	40	57	61	74	76	82	76	64	52	53	50	58	69	70	59	62	58	59
L Q	30	26	G	24	G	G	30	36	41	42	45	48	44	45	G	G	G	40	38	32	30	32	27	27

HOURLY VALUES OF fmin AT Yamagawa

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	17	15	15	14	17	17	20	20	47	26	45	17	15	14	14	14	15	15	15	14
2	14	14	14	14	14	14	20	14	15	16	20	18	26	18	21	21	18	14	14	14	14	14	14	17
3	17	15	15	14			14	14	14	18	18	28	34	22	18	21	15	14	14	14	14	15	15	14
4	15	15	15	14	18	14	16	22	15	20	32	21	28	34	18	17	17	14	14	14	14	16	15	14
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	20	21	27	26	17	17	17	15	14	15	15	14	15	14
8	15		15	14	14	15	15	15	16	18		22	28	27	24	24	18	14	15	14		15	14	14
9	14	15	15	14	15		14	14	14	17	18	27	20	46	21	23	21	15	24	17	15	14	16	14
10	14	14	15	15		15	14	14	14	16	20	20	23	18	21	18	18	14	14	14	14	14	14	15
11	14	14	14	14	15	15	14	14	16	18	18	18	20	29		20	15	14	14	14	14	14	15	14
12	14	16	14	14	14	14	14	14	14	16	18	24	26	26	18	18	18		21	15	14	14	14	14
13	14	15	15	14	17	14	15	14	14	15	20		29	20	20	44	14	14	14	14	14	15	14	15
14	14	14	14	14	14	17	14	14	14	16	18	22	21	26	21	18	15	14	14	14	14	14	14	14
15	16	15	14	14	14	14	17	14	14	18	21	26	23	26	18	44	18	14	14	14	14	14	14	14
16	15	14	14	14	14	14	14	14	14	17	20	28	18	27	18	22	14	17	15	14	14	14	14	14
17	14	14	14	15	14	15	14	14	16	16	17	29	26	29	18	18	17	14	14	14	14	14	14	14
18	14	14	14	14	14	15	14	14	14	14	16	18	18	20	23	18	16	14	16	14	14	14	14	14
19	14	14	14	14	14	14	14	14	15	17	18	24	29	26	21	21	16	14	14	16	14	14	14	14
20	14	14	14	14	15	15	14	14	14	16	32	20	23	21	32	20	17	14	14	14	15	14	14	15
21	14	14	14	14	14		14	14	14	18	20	22	21	20	30	21	15	14	14	14	14	14	14	14
22	14	14	14	15	14	14	14	14	14	17	30	18	26	28	27	20	15	14	14	14	14	14	15	14
23	14	14	15	14	14	14	14	14	15	17	18	27	21	21	20	18	14	14	14	15	14	14	14	14
24	14	14	14	14	14	14		14	14	15	17	20	34	28	20	20	16	16	14	14	15	14	15	15
25	15	14	14	14	16	14	17	14	15	21	17	21	24	28	20	17	17	14	14	14	15	15	14	14
26	14	14	14	15	14	14	14	14	15	18	21	20	26	21	22	20	17	16	15	14	14	15	14	15
27	14	14	15	14	14		14	14	16	29	18	18	33	30	21	28	18	16	14	14	14	15	16	14
28	14	14	14	14	14	14	15	14	14	14	17	18	18	35	20	32	17	14	14	14	15	15	15	14
29	15	14	14	14	15	14	15	14	14	18	18	21	20	24	20	20	21	14	14	15	14	14	14	14
30	14	15	14	15	14	16	15	14	15	17	21	20	29	21	22	20	20	15	14	14	14	15	15	16
31	15	15	15	14	14	16	14	14	15		21	21	35	21	23	32	22	16	14	14	14	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	28	28	26	24	27	28	28	27	28	28	29	29	28	29	29	28	29	29	28	29	29	29
MED	14	14	14	14	14	14	14	14	14	17	19	21	26	26	21	20	17	14	14	14	14	14	14	14
U Q	15	15	15	14	15	15	15	14	15	18	20	24	29	28	22	22	18	15	14	14	14	15	15	14
L Q	14	14	14	14	14	14	14	14	14	16	18	20	21	21	19	18	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

MAY 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	31						45	54	48	54	61	67	81	92	98	90	84	84	80	71	42	32		32
2		31	30		29		38		48	48		70	80	74	76	88	86	86	97	130	54		A	
3	26	26	31	37			37	57	55	60	51	62	80	87	96	111	111	65	63	65	51	49	53	54
4	52		53	53			37	63	60	67	59	62	73	88	97	90	71	61	64	76	A	54	44	52
5		53	46	42	30	32	42	65	56	50	55	A	69	82	67	62	77	90	76	58	54	42	A	A
6	42	41	34	31	32	30	36	55	54	58	57	60	80	86	73	70	62	65	58	66	66	52	42	37
7		A					A	49	52	52		59	71	76	88	94	90	85	64	49	44	43	29	25
8		A	A	A			36	49	60	62		A		71	80	84	78	78	76	72	55	34	A	
9	A	29	25				37	58	57	52				65	76	85	97	100	101	100	70	43	32	30
10							42	57	53	48	56	54		A	75	81	77	78	84	77	54	42		A
11	A	A	A			A	41	47	49	A	A	A	A	61	73	77	85	84	A	55	52	41	43	
12	A	A	32	A	A	A	38	58	54	A	A	A	A	A	78	84	82	78	73	62	54	52	41	42
13	34	34	42		A		42	60			52	61	62	62	60	61	76	95	97	62	45	32	40	37
14	A	34	29	34	A		34	51	55		A	A	A	A	63	77	81	71	55	48	53	50	A	42
15	42	40	34	34	30	26	43	50	56		49			58	62	59	66	71	78	59	62	52	42	30
16	32	30		28			41	58	57	55	55	49	59	76	88	90	86	101	85	73	60		42	42
17	41		39		29		37	54	57	51	54	60	78	90	100	108	114	115		A	A		47	43
18	A		42	32	28	29	41	50	A	A	A	73	A		61	60	73	91	88	73		A	A	A
19	A	28	29	32			A	58	A	A	A	A	77	101	107	118	125	106	80	A	A	53	42	42
20	54	A	42	34	30		43	A	A	A	A	A	70	78	85	86	84	90	84		66	66	A	
21	A	42	A	44	34	A	45	A	48	52	56	A		62	73	90	92	81	81	A	A	54	61	
22	A	50		A	A	32	41	A	A	A	A	A	A	84	88	96	93	85	96	86	66	65	54	54
23	A	A	50	A	A	A	A	68	A	A	A		A		68	86	80	80	70	62	A	51	47	A
24	44	41	A	44	A	A		A	A	A		A			71	78	64	64	62	54	A	A	A	A
25	A	A	A		A		30	46	69	A	A		A	67	64	62	56	63	66	A	52	42	41	
26	A	A	A	A	A	29	A	53	46	A	53			A	64	70	72	72	70	77	76	66	34	40
27			34		A		38	51	67		A	A	A	A	A	63		83	77	66	A	54	50	37
28	30	A	A	A		A		54	56	49					60	A	71	84	78	52	53	52	52	
29	42	43		A	A			A	A	A	A	A	A	A	53		57	58	A	54	52	54	44	42
30		32		A	A		A	A	A	A	A	A	A	A	A	A	A	71	67	58	54	51	A	43
31	41	42	41	A	31	26	47	51		A	A	A	A			65	76	84	80	70	66		58	53
	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	16	17	12	9	7	23	24	21	14	12	11	12	19	28	28	29	31	28	26	23	25	21	19
MED	41	37	34	34	30	29	41	54	55	52	55	61	75	76	74	84	80	83	78	66	54	51	43	42
U Q	43	42	42	43	31	32	42	58	57	58	56	67	80	87	88	90	88	90	84	73	66	54	51	43
L Q	31	30	30	32	29	26	37	50	50	50	52	59	69	65	64	67	71	71	66	58	52	42	41	37

HOURLY VALUES OF fEs AT Okinawa

MAY 2008

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

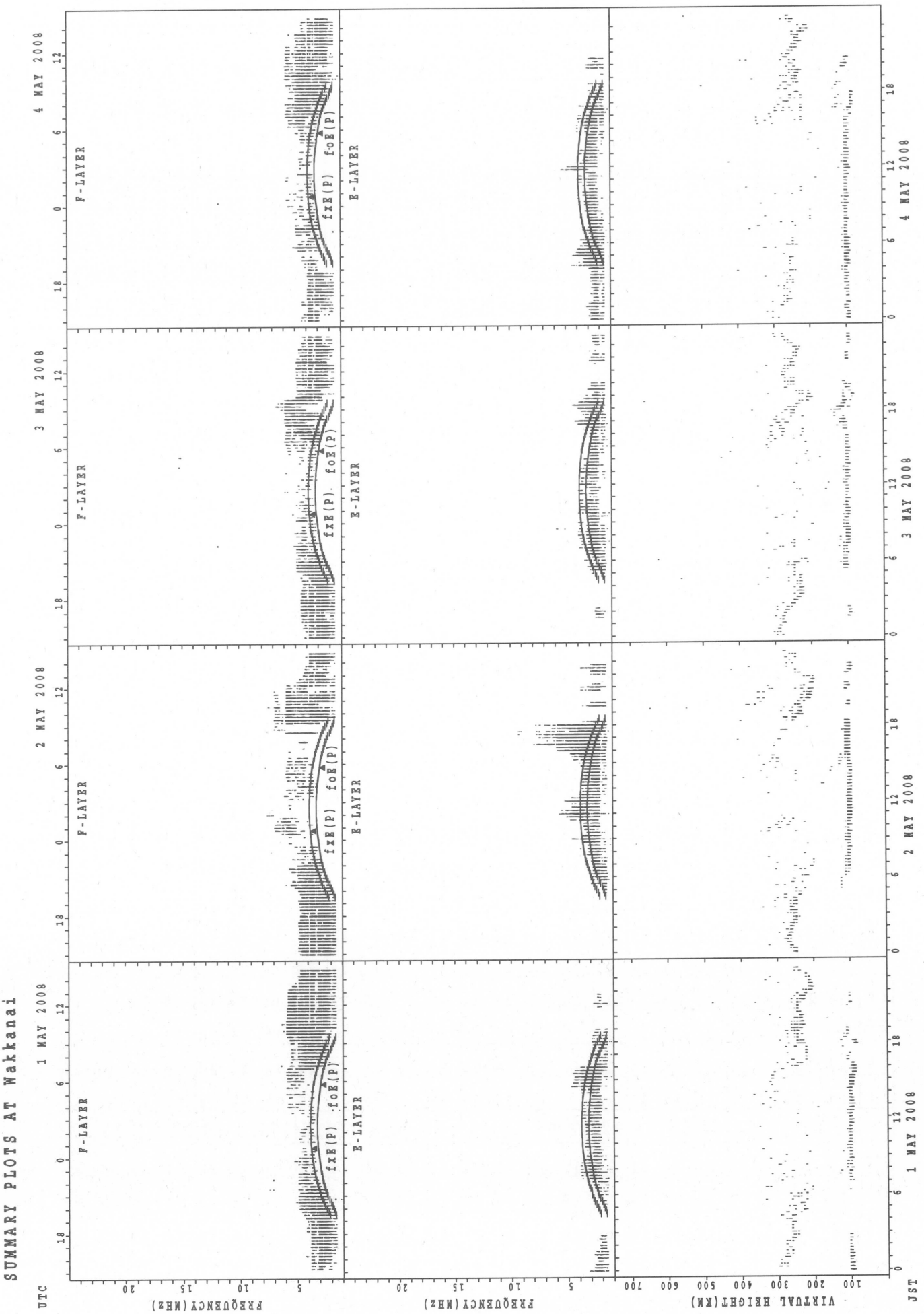
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	30	39	30				G	37	49	49	54	46	G	42	48	47	46	48	46	32	28	29		G
2		G	G		37	24			G	G		G	42	42	G	G	44	49	43	36	28	24	29	26
3	G	G	G	G			26	34	G	38	G	G	G	50	G	46	39	39	37	45	27	G	G	G
4	G		G	48			26	38	39	G	G	42	G	G	G	52	74	G	32	40	94	G	G	G
5	36	G	G	G	G	G	28	38	38	42	53	64	48	41	51	53	73	48	48	52	44	40	48	58
6	47	24	G	G	G	G	G	G	36	G	G	G	45	G	G	G	G	38	40	46	60	39	G	G
7	23	48	27	32	G	29	56	G	34	G		G	G	G	G	G	G	38	31	25	24	28	32	24
8	27	41	49	47	36	31	48	36	50	37	47	47		53	G	39	43	39	32	35	29	G	56	32
9	38	G	G			G	G	30	38	G	G	G	47	G	G	G	G	G	G	G	G	G	G	G
10	G	G	G		G	G	G	35	39	G	50	47	41	59	43	G	G	43	48	40	40	29	29	40
11	40	72	53	35	34	34	29	38	48	52	64	78	91	68	G	48	50	86	104	53	26	30	38	40
12	46	71	35	57	49	46	27	41	58	60	50	72	60	88	53	G	38	45	30	28	28	G	31	29
13	34	26	G	38	40	G	29	38	46	G	40	46	46	G	G	G	G	G	G	G	G	G	G	28
14		87	33	30	46		28	38	54		74	86	76	97	G	66	38	38	39	36	30	33	59	38
15	32	29	G	32	G	G	G	35	35	40	40	40	43	G	41	46	G	G	50	34	28	40	28	33
16	G	34	34	27	28	30	34	42	45	42	52	G	42	G	G	46	38	38	36	29	27	34	58	36
17	34	39	34	32	G	G	31	47	42	G	48	51	47	G	58	62	60	69	69	86	58	67	38	28
18	60	32	28	G	G	G	28	47	148	90	52	83	82	49	48	49	51	60	56	59			67	90
19	67	58	72	26	27	26	48	51	88	59	105	96	65	57	61	G	52	75	61	62	103	40	37	40
20	48	56	35	25	G	G	31	62	76	87	152	60	47	59	51	G	G	41	62	62	58	40	72	
21	58	56	58	67		50	45	60	49	60	57	70	49	56	51	83	57	46	84	110	88	38	43	70
22	88	38	49	59	50	59	30	72	94	107	76	86	88	75	G	71	52	58	62	36	33	27	G	G
23		90	59	35	70	71	52	58	97	88	61	56	58	G	G	G	38	G	41	58	81	38	30	50
24	47	38	52	39	35	48	38	56	66	86	94	77	49	G	G	G	G	G	36	55	108	59	58	67
25	60	81		36	40	27	28	42	50	83	64	48	84	G	G	G	G	39	36	70	40	33		33
26	49	84	47	108	57	35	87	37	38	57	56	43	54	78	44	G	44	34	G	G	26	G	36	G
27	G	48	29	37	49	28	28	42	55	106	81	73	54	91	68	59	73	68	73	47	92		G	G
28	G	50	39	38	30	72		37	46	48	45	49	51		52	90	56	38	45	36	49	59	41	44
29	32	28	47	50	33	30	37	68	63	68	94	176	81	62	G		41	68	78	28	34	48	26	32
30	28	30	29	56	29		38	71	80	111	72	85	82	142	113	106	96	46	51	27		31	58	39
31	28	36	32	35	G	G	G	39		72	114	66	63		49	G	56	70	62	52	30	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	30	30	27	26	26	29	30	30	30	29	31	30	29	31	30	31	31	31	31	29	29	29	30
MED	34	38	32	35	32	28	29	38	48	50	54	51	49	49	G	42	43	41	45	40	33	31	32	32
U Q	47	56	47	48	40	35	38	51	63	83	75	77	65	65	51	53	56	58	62	55	59	40	52	40
L Q	25	28	G	27	G	G	26	37	38	G	46	42	43	G	G	G	G	38	36	29	27	G	G	G

HOURLY VALUES OF fmin AT Okinawa

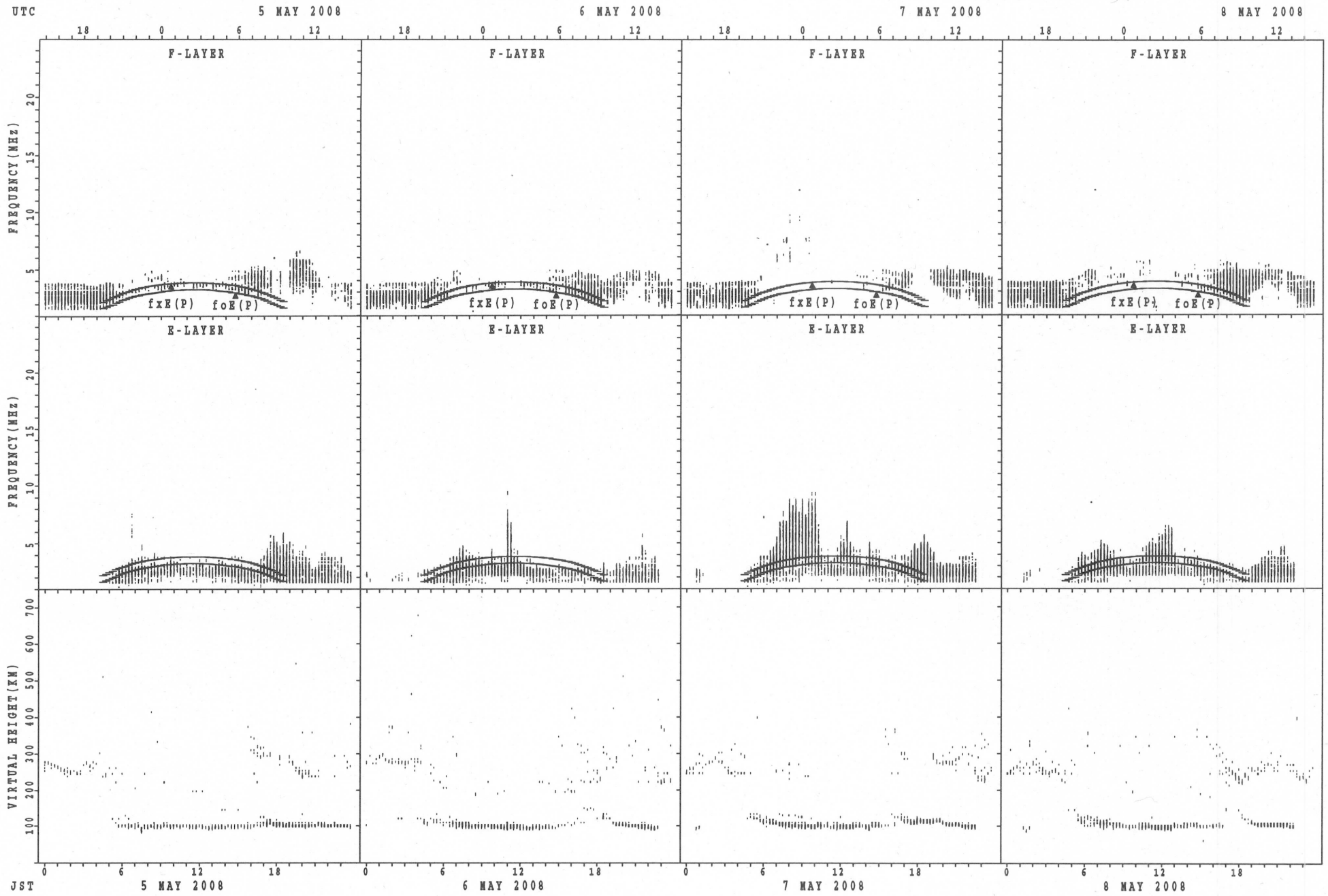
MAY 2008

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

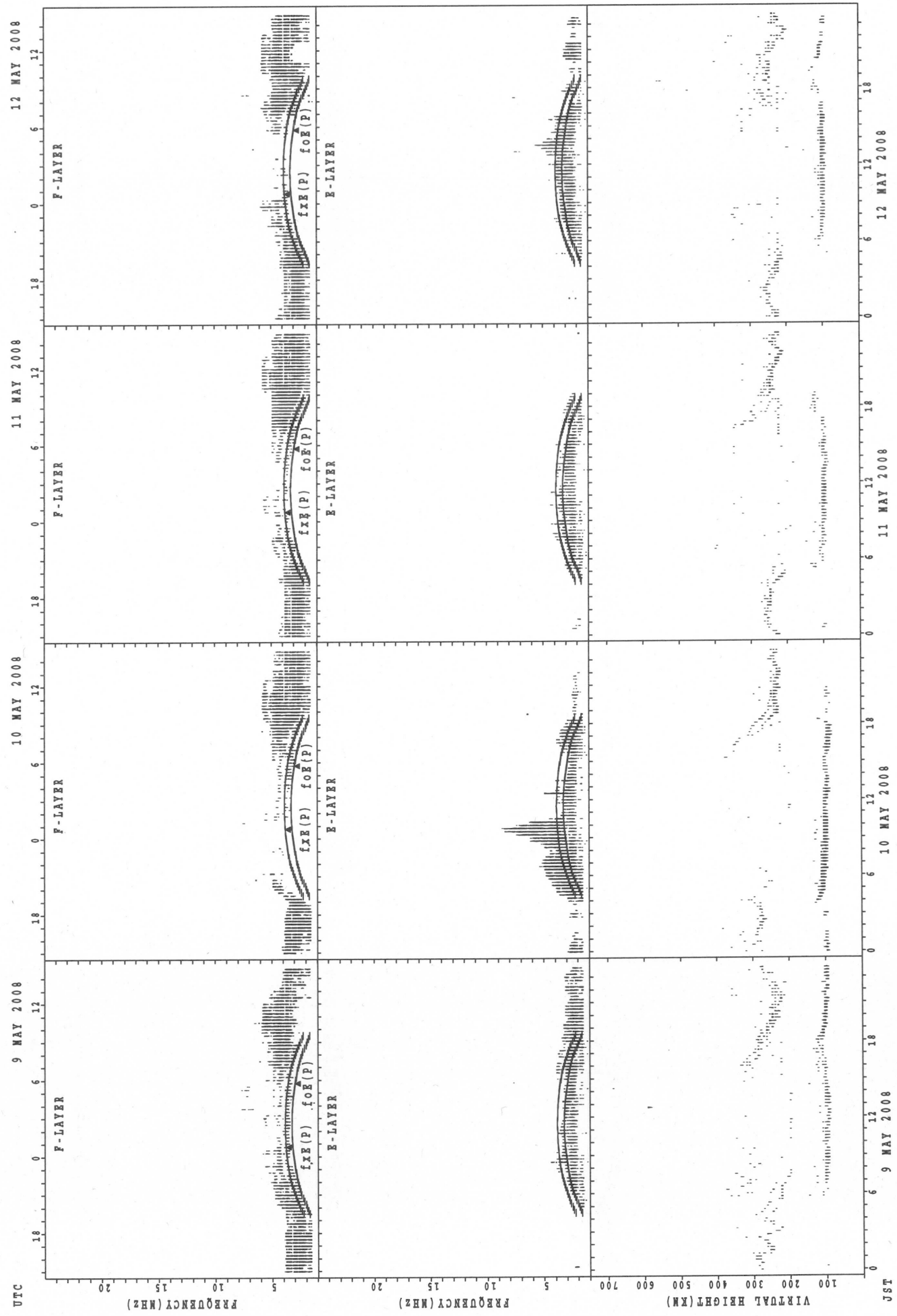
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14	14				14	14	15	20	23	27	35	26	24	33	30	14	14	14	14	14		15
2		18	22		15	14	17		15	20		45	36	48	45	44	29	16	14	14	14	17	14	15
3	15	20	15	15			16	14	14	21	26	28	48	35	27	33	20	18	15	14	18	18	15	17
4	16		15	14			14	14	14	21	24	24	47	48	27	21	15	14	14	14	14	18	14	15
5	15	15	15	14	18	15	14	14	14	15	15	27	30	26	27	23	21	26	14	14	15	14	14	14
6	15	15	15	15	14	15	17	14	14	18	18	23	26	26	28	26	16	14	14	14	14	15	16	15
7	15	14	14	14	14	14	15	14	15	20		24	27	46	45	23	16	14	14	15	15	14	14	15
8	15	14	14	15	15	15	14	14	16	22	22	23		39	46	22	17	14	14	14	14	15	14	15
9	14	14	17			15	20	15	14	21	26	24	28	48	27	24	32	27	14	17	14	15	15	15
10	21	17	16		15	15	18	14	14	20	24	29	22	26	26	24	18	15	14	14	14	14	15	14
11	14	15	14	14	14	14	15	14	14	22	32	29	29	30	46	34	29	16	14	14	14	15	15	14
12	14	15	14	14	14	16	14	14	15	21	23	29	24	29	26	24	18	15	14	14	15	15	15	15
13	15	14	15	14	15	15	14	14	14	16	21	27	27	27	45	21	15	15	14	15	14	17	15	14
14	14	15	15	14	14		16	14	14		23	26	28	27	28	23	18	14	14	15	14	14	14	14
15	14	15	14	14	15	15	18	14	16	20	24	26	27	46	46	34	44	15	14	14	14	14	14	14
16	15	14	14	14	14	15	14	14	15	16	23	24	22	28	28	23	16	15	14	14	14	15	14	15
17	15	15	15	14	16	14	14	14	15	14	21	24	26	23	27	23	21	15	14	14	14	14	15	15
18	15	14	14	14	15	14	14	14	14	16	24	26	24	21	27	18	20	14	14	14		14	14	14
19	14	14	14	14	14	14	14	14	17	22	26	28	28	28	34	22	20	15	14	14	14	14	15	14
20	14	15	15	15	14	14	14	14	16	22	26	29	33	24	34	22	18	14	14	14	15	14	14	
21	15	14	14	14	14	14	14	14	14	21	33	28	33	26	24	24	15	26	14	14	14	14	15	15
22	15	14	14	14	14	14	14	14	14	22	23	27	32	28	29	24	22	17	14	14	14	15	15	15
23	14	14	14	14	14	15	14	14	15	20	23	28	28	27	23	22	18	14	14	14	14	14	14	15
24	14	14	14	14	14	16	15	14	14	15	27	27	26	28	46	44	32	17	14	14	14	15	14	15
25	15	14	14	14	14	14	14	14	14	14	24	32	27	45	23	45	16	17	14	14	14	14	14	15
26	14	14	15	15	14	15	15	14	15	18	26	26	39	26	28	22	20	15	14	14	14	15	15	15
27	21	15	15	14	14	14	16	14	14	21	23	27	27	30	34	28	18	24	14	14	14	15	14	15
28	14	16	14	14	14	14		14	16	17	23	24	37		35	22	20	14	14	14	14	14	14	14
29	14	17	14	14	14	14	16	14	16	21	26	23	27	28	23		15	15	24	14	14	15	15	15
30	14	14	16	15	15		14	14	16	17	29	30	29	29	27	24	18	14	14	14	14	15	14	14
31	14	15	15	14	14	16	15	14		21	22	29	36		27	44	20	15	14	14	14	17	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	27	27	26	30	30	30	30	29	31	30	29	31	30	31	31	31	31	30	31	30	30
MED	15	14	14	14	14	14	14	14	14	20	24	27	28	28	28	24	18	15	14	14	14	15	14	15
U Q	15	15	15	14	15	15	16	14	15	21	26	29	33	37	35	33	21	17	14	14	14	15	15	15
L Q	14	14	14	14	14	14	14	14	14	17	23	24	27	26	27	22	16	14	14	14	14	14	14	14


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

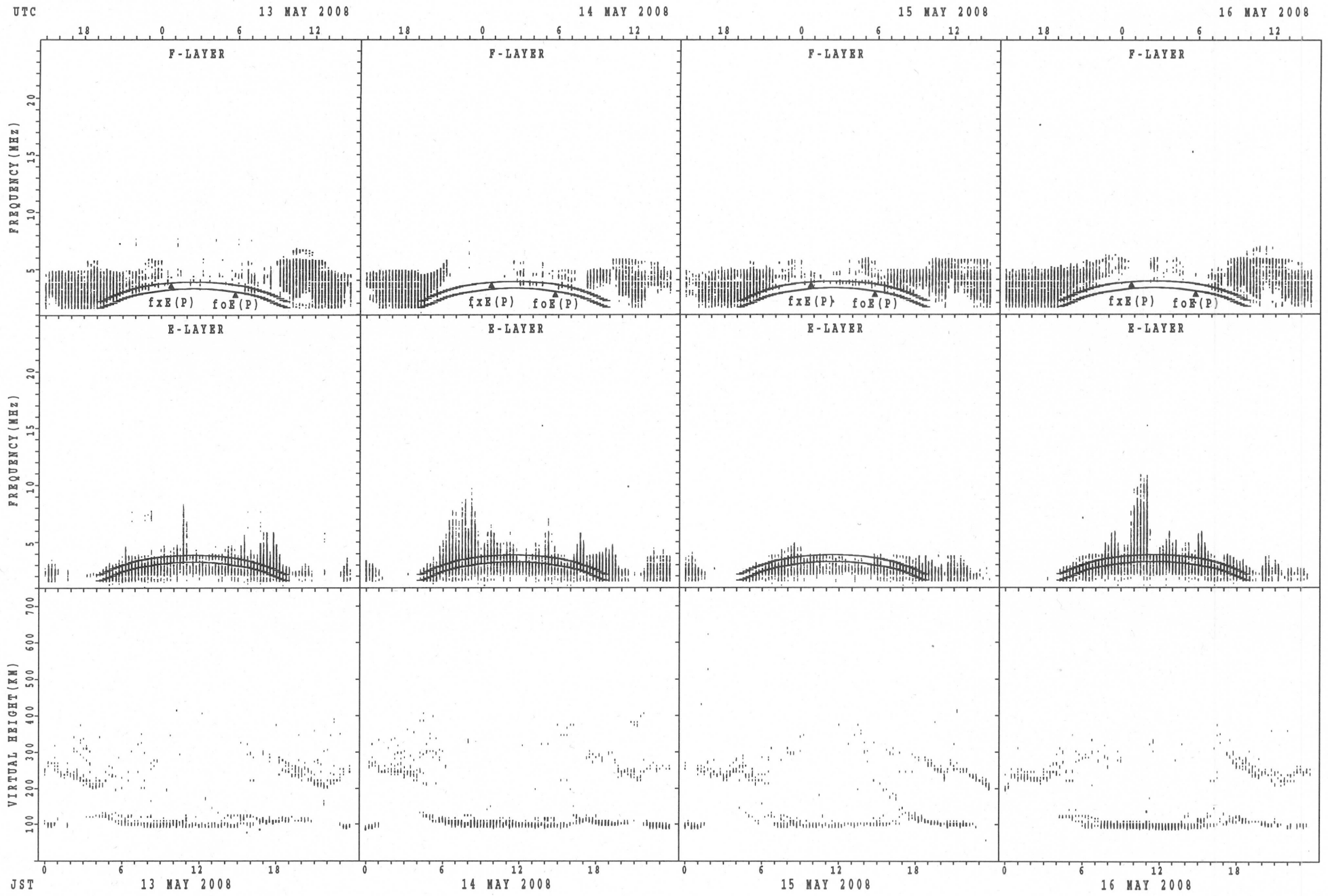
SUMMARY PLOTS AT Wakkanai



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

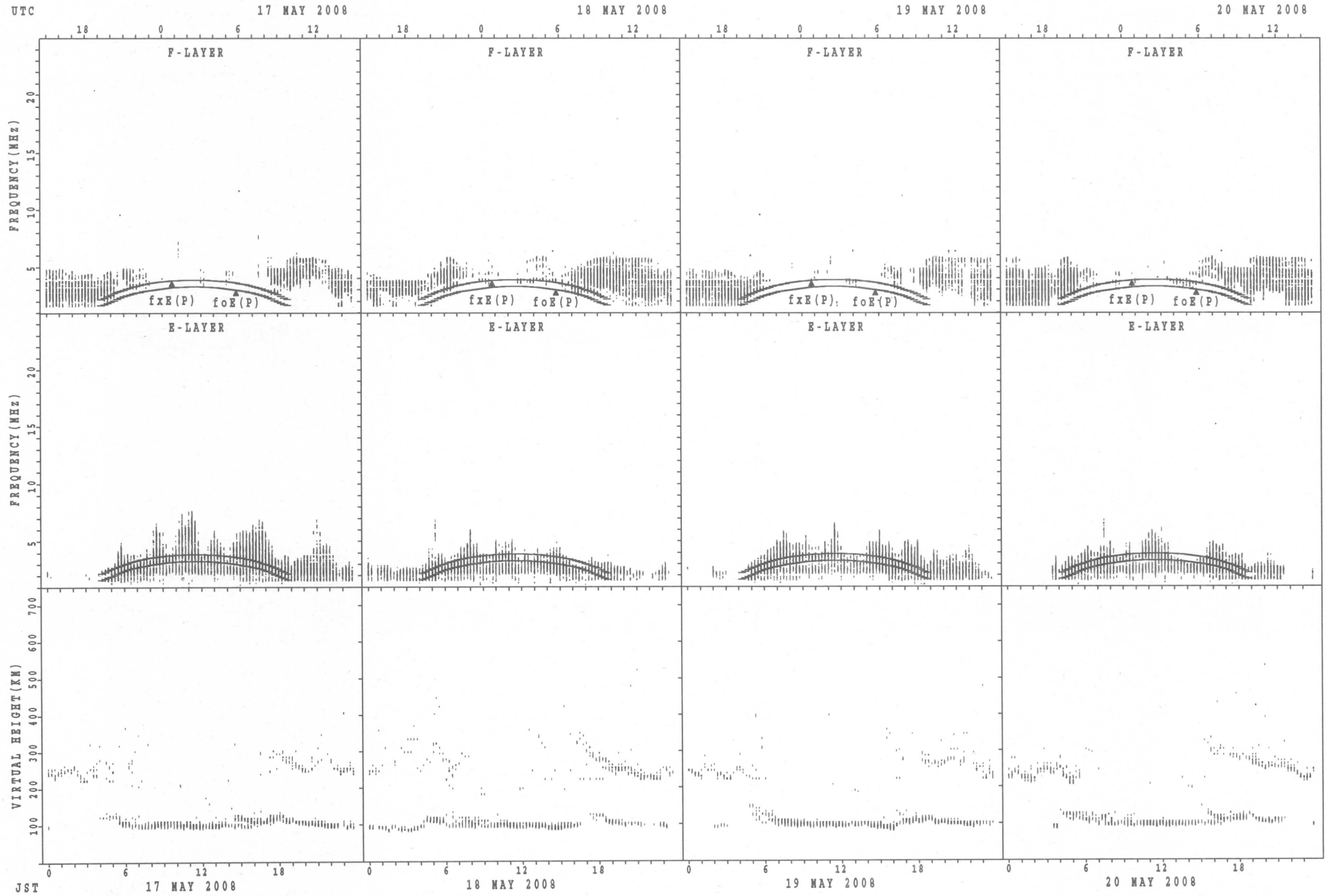

SUMMARY PLOTS AT Wakkanai
UTC
9 MAY 2008
10 MAY 2008
11 MAY 2008
12 MAY 2008
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



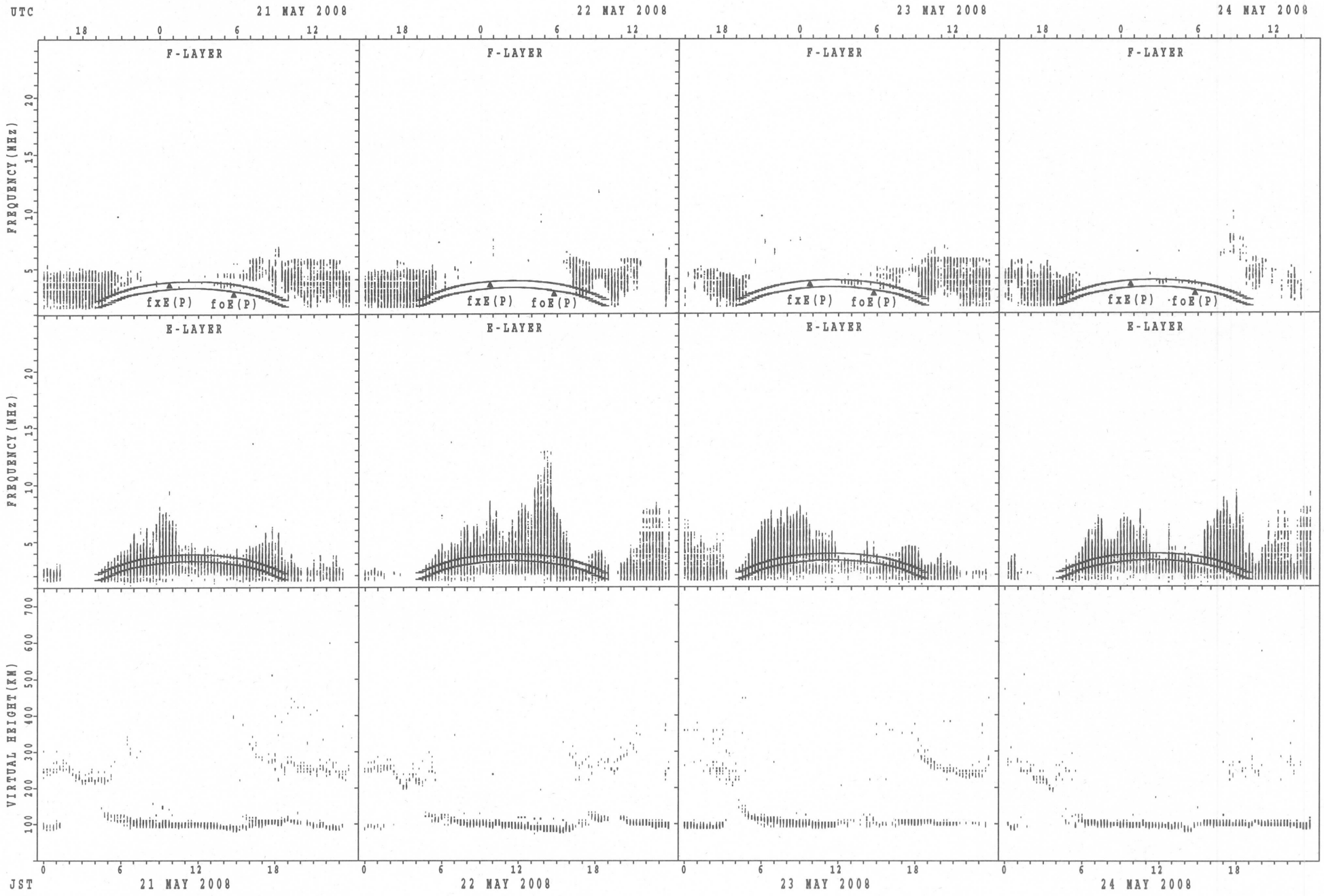
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

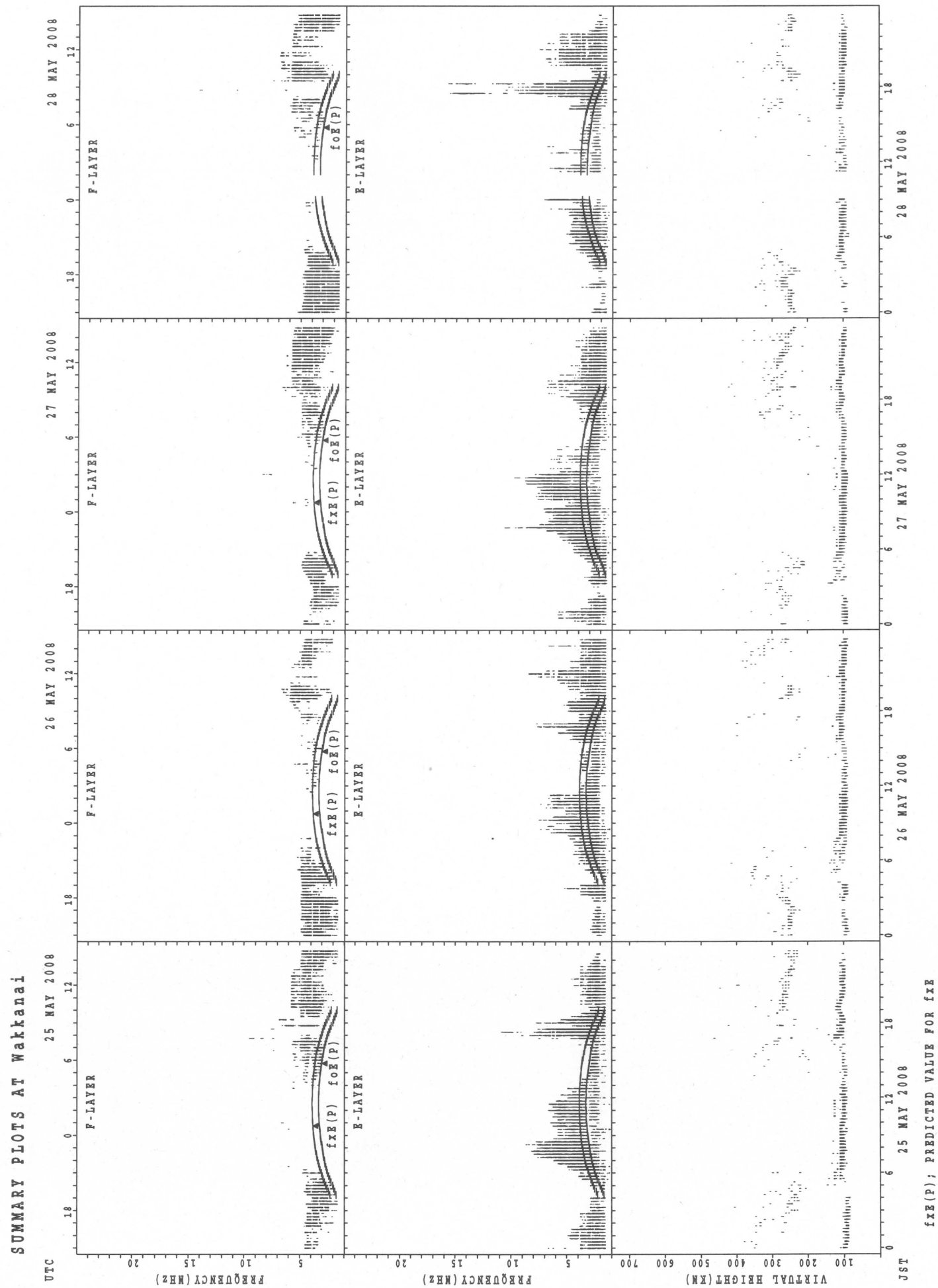


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

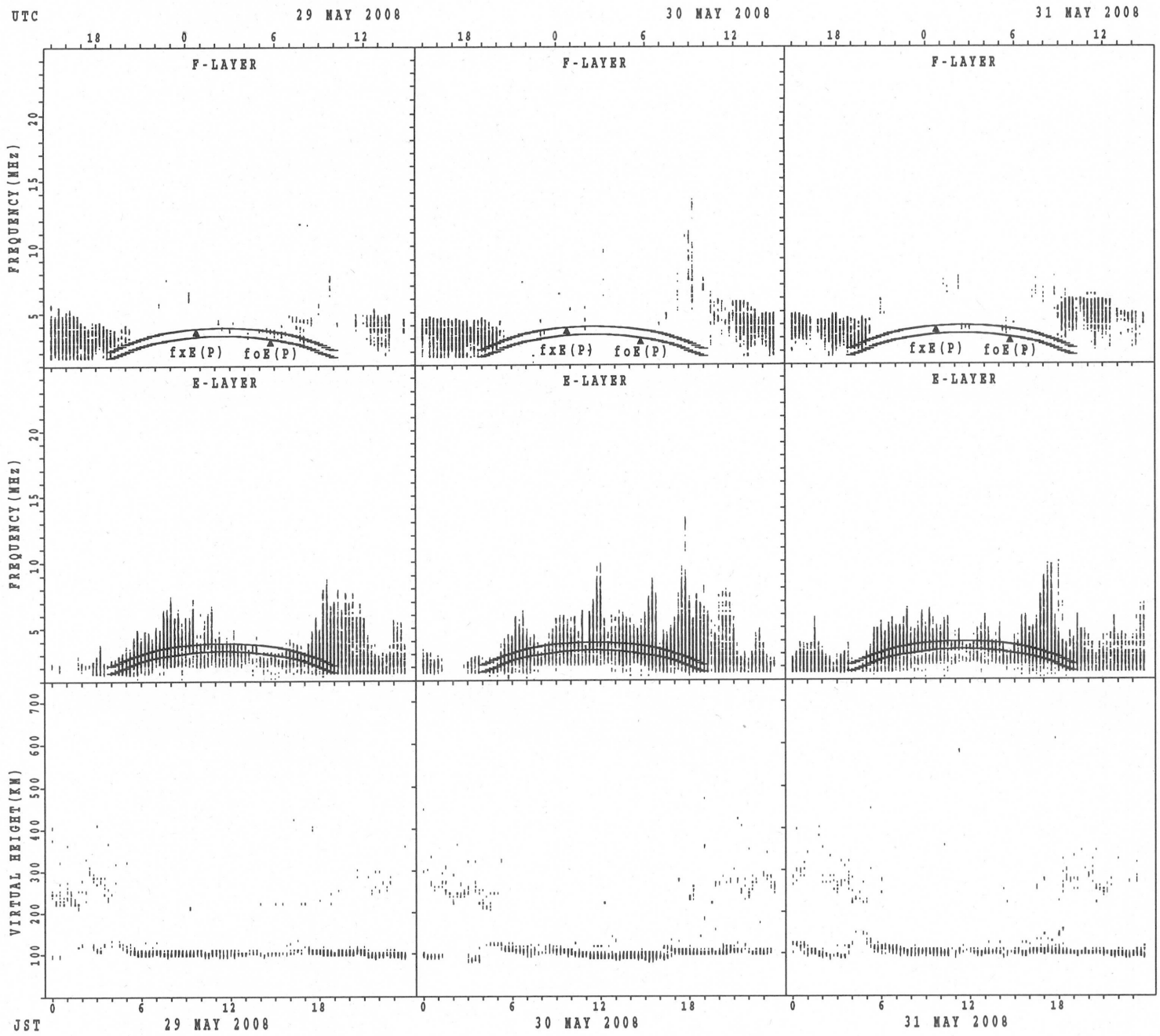
SUMMARY PLOTS AT Wakkanai



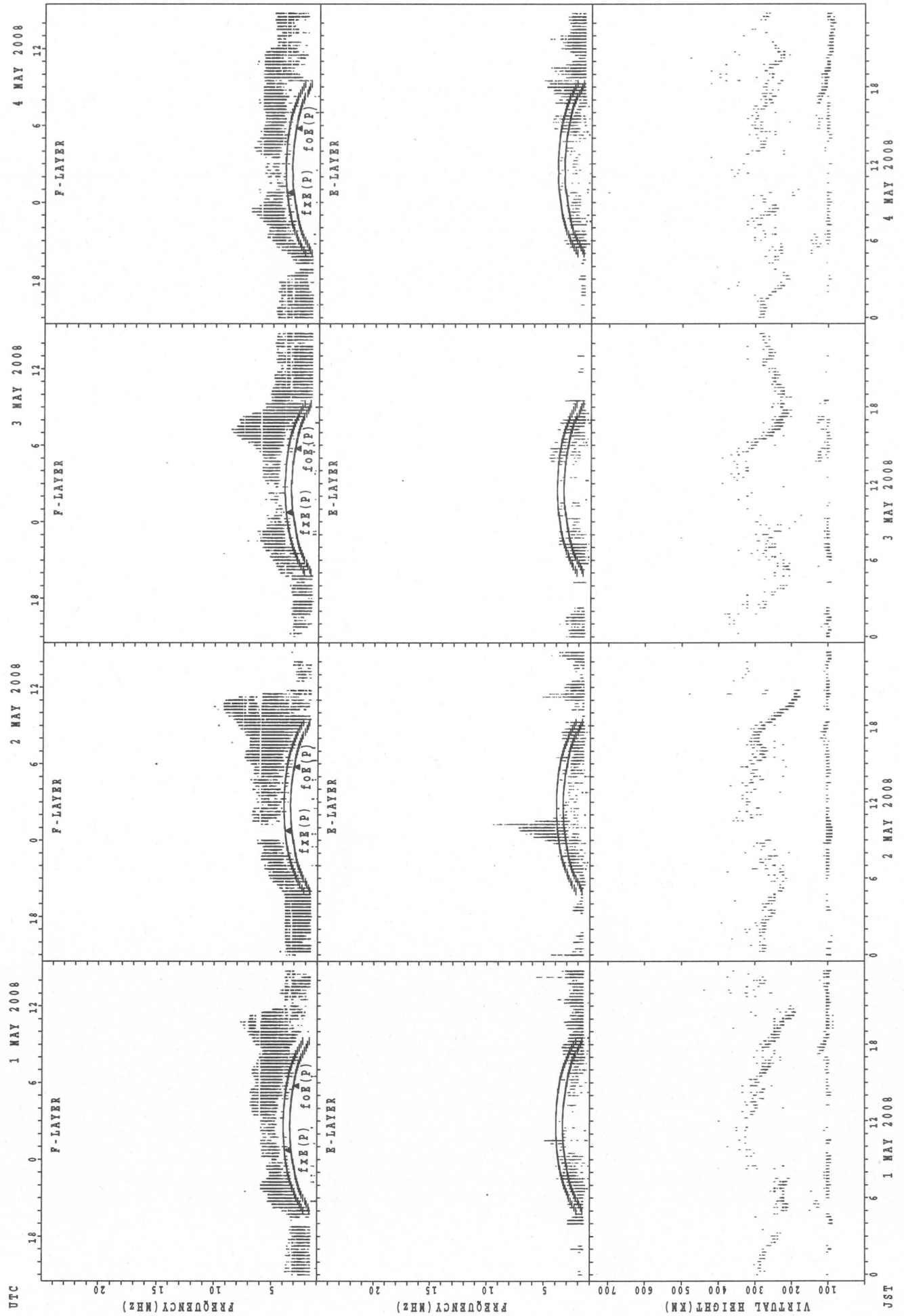
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

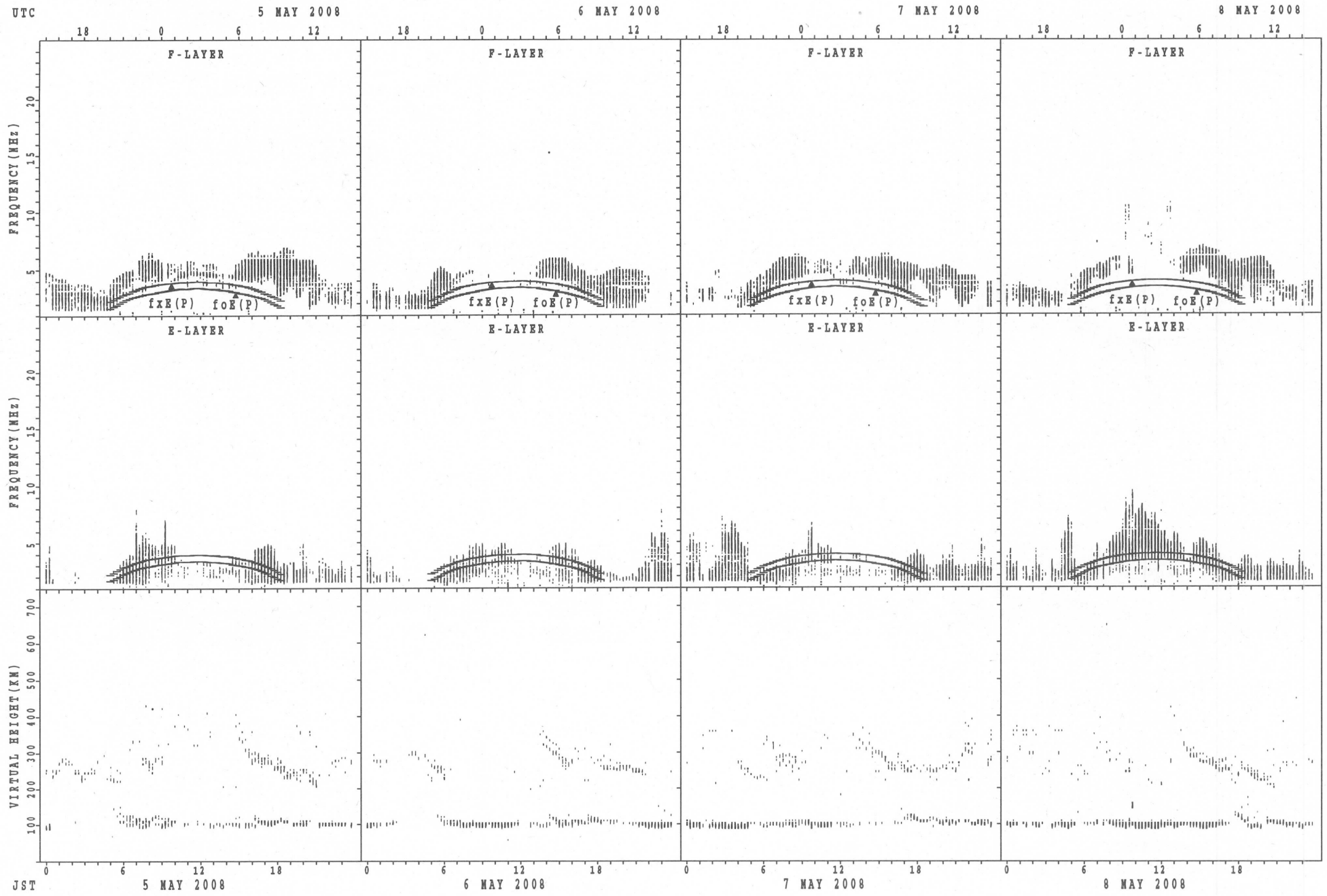

SUMMARY PLOTS AT Wakkanai
UTC
JST
25 MAY 2008
26 MAY 2008
27 MAY 2008
28 MAY 2008
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



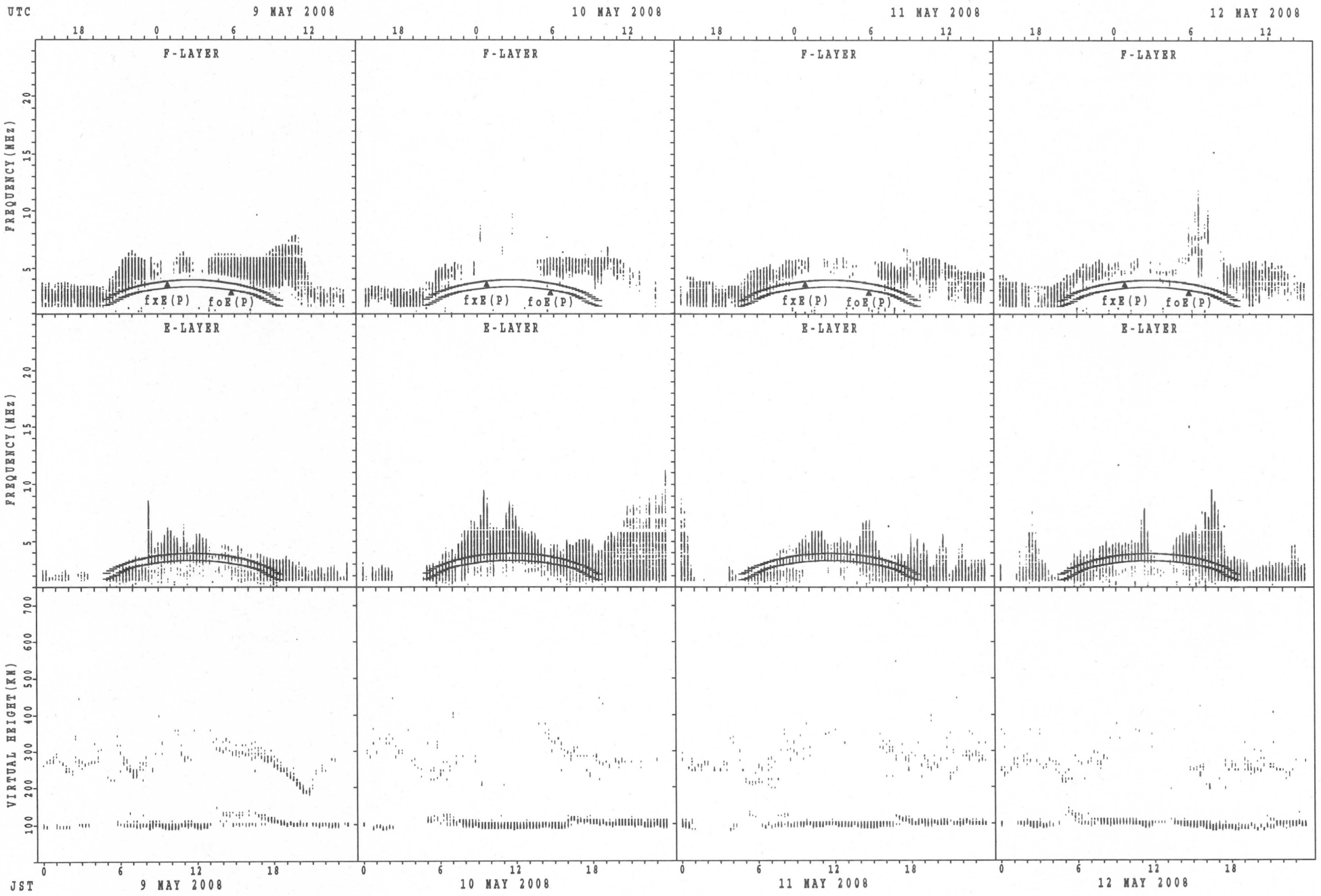
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
JST
1 MAY 2008
2 MAY 2008
3 MAY 2008
4 MAY 2008
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

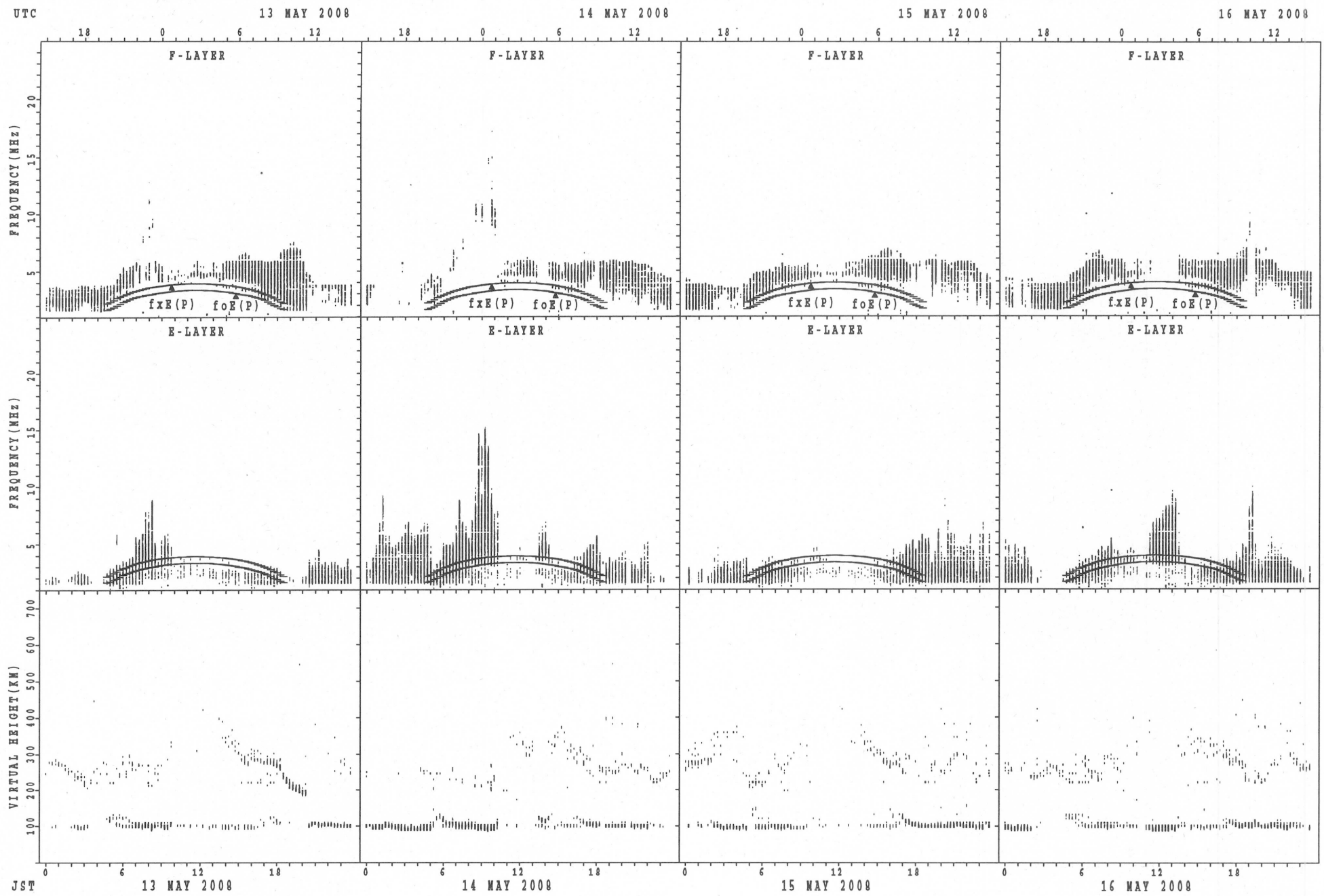


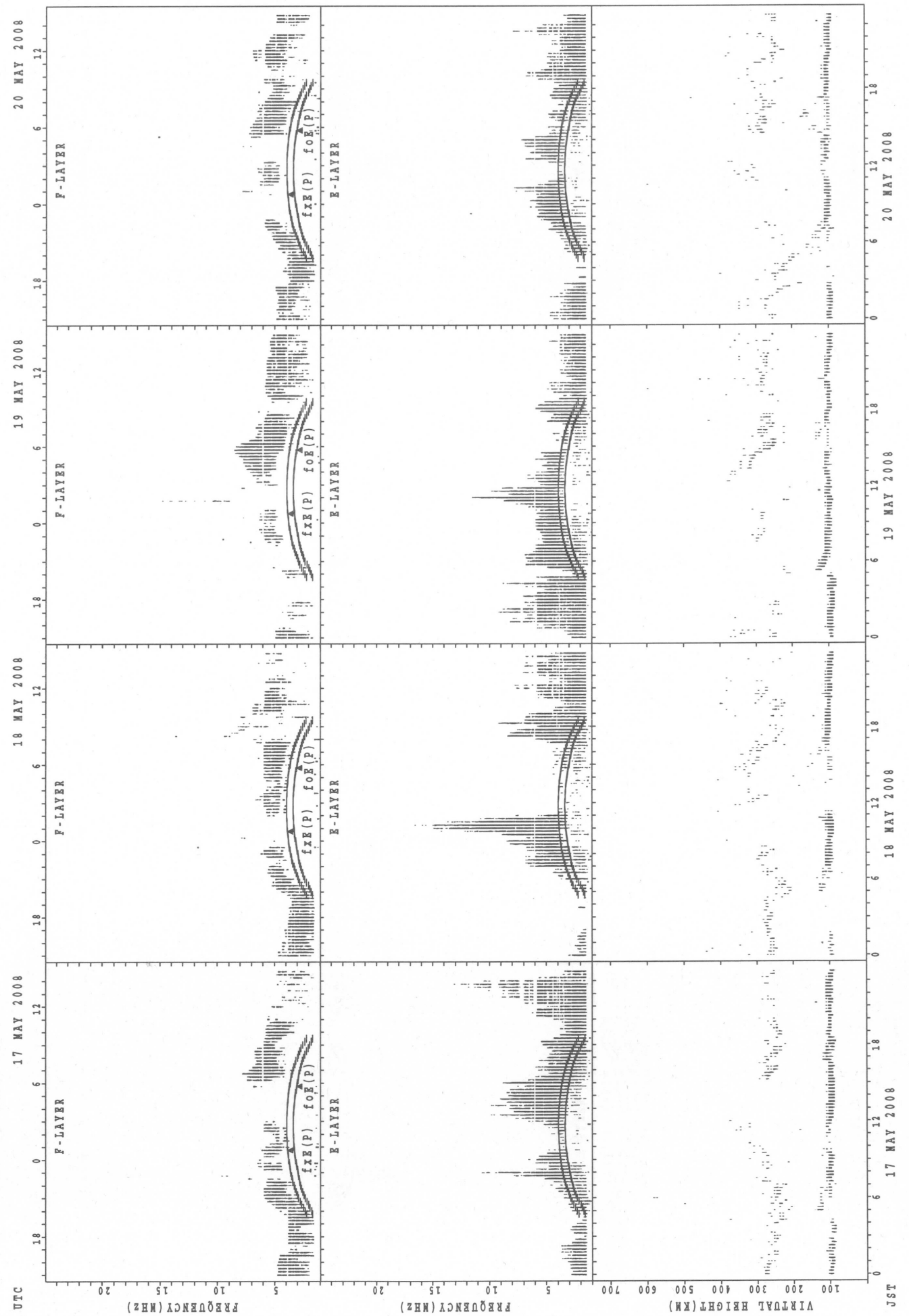
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

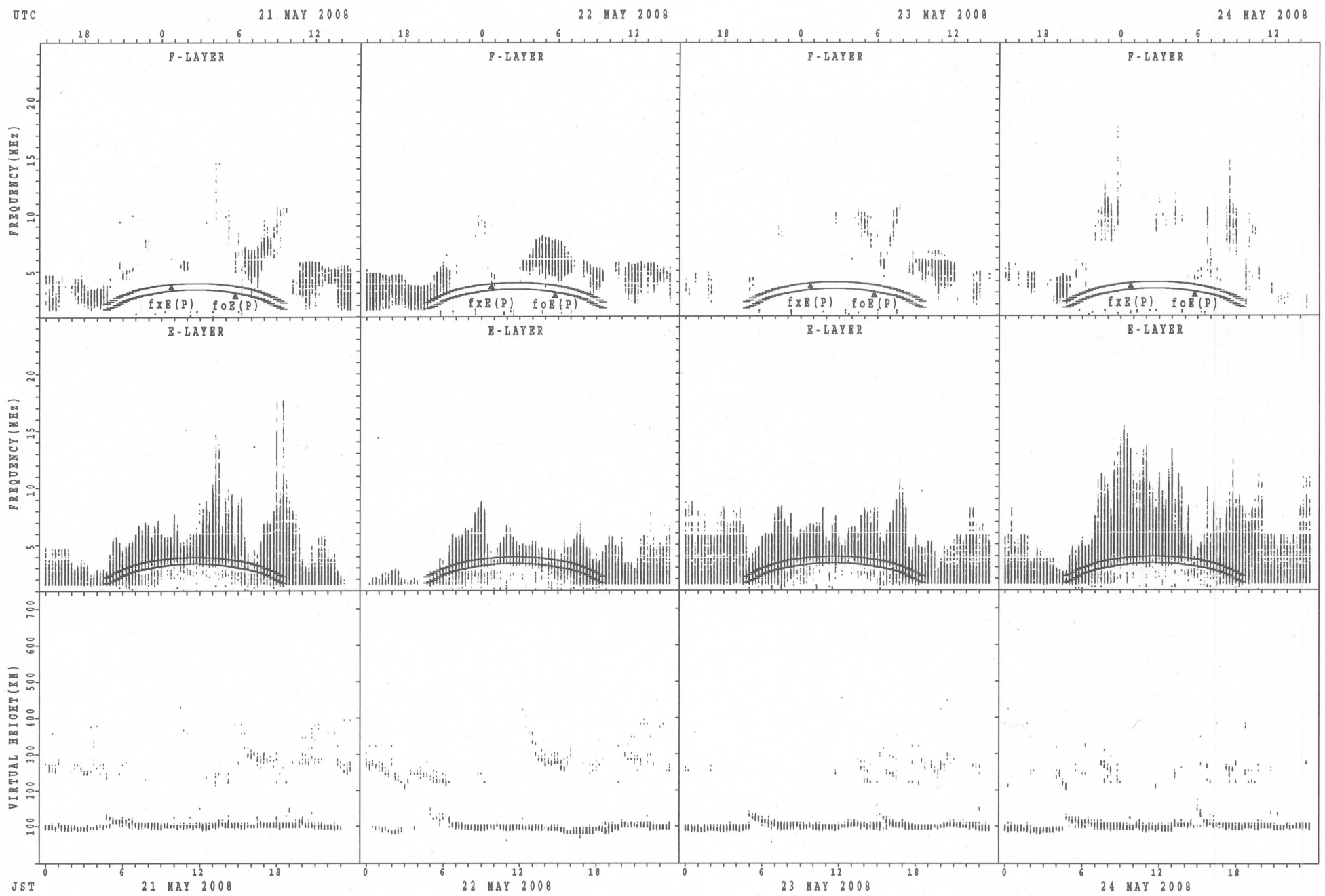
SUMMARY PLOTS AT Kokubunji



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

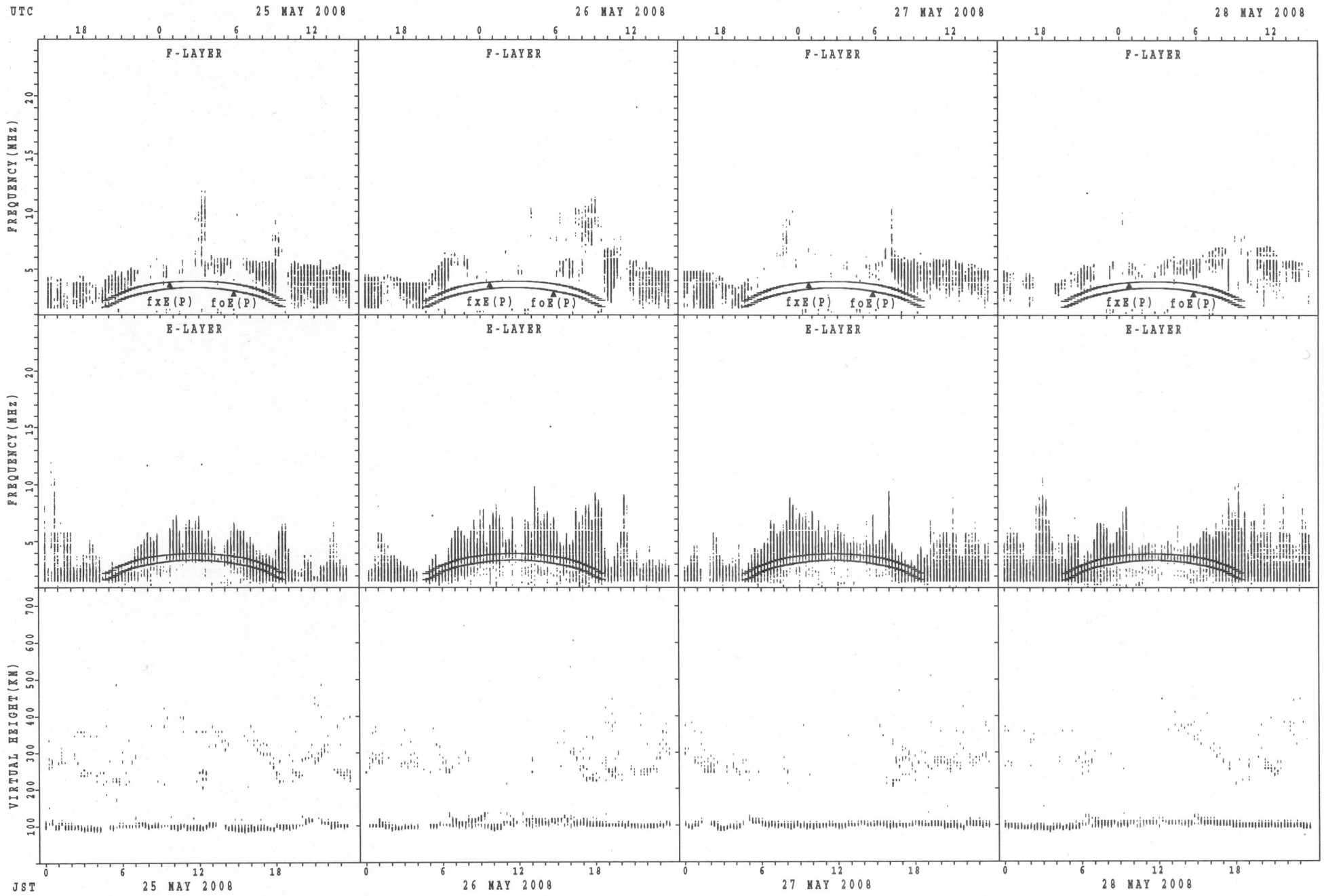

SUMMARY PLOTS AT Kokubunji
UTC
13 MAY 2008
14 MAY 2008
15 MAY 2008
16 MAY 2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
JST
17 MAY 2008
18 MAY 2008
19 MAY 2008
20 MAY 2008
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



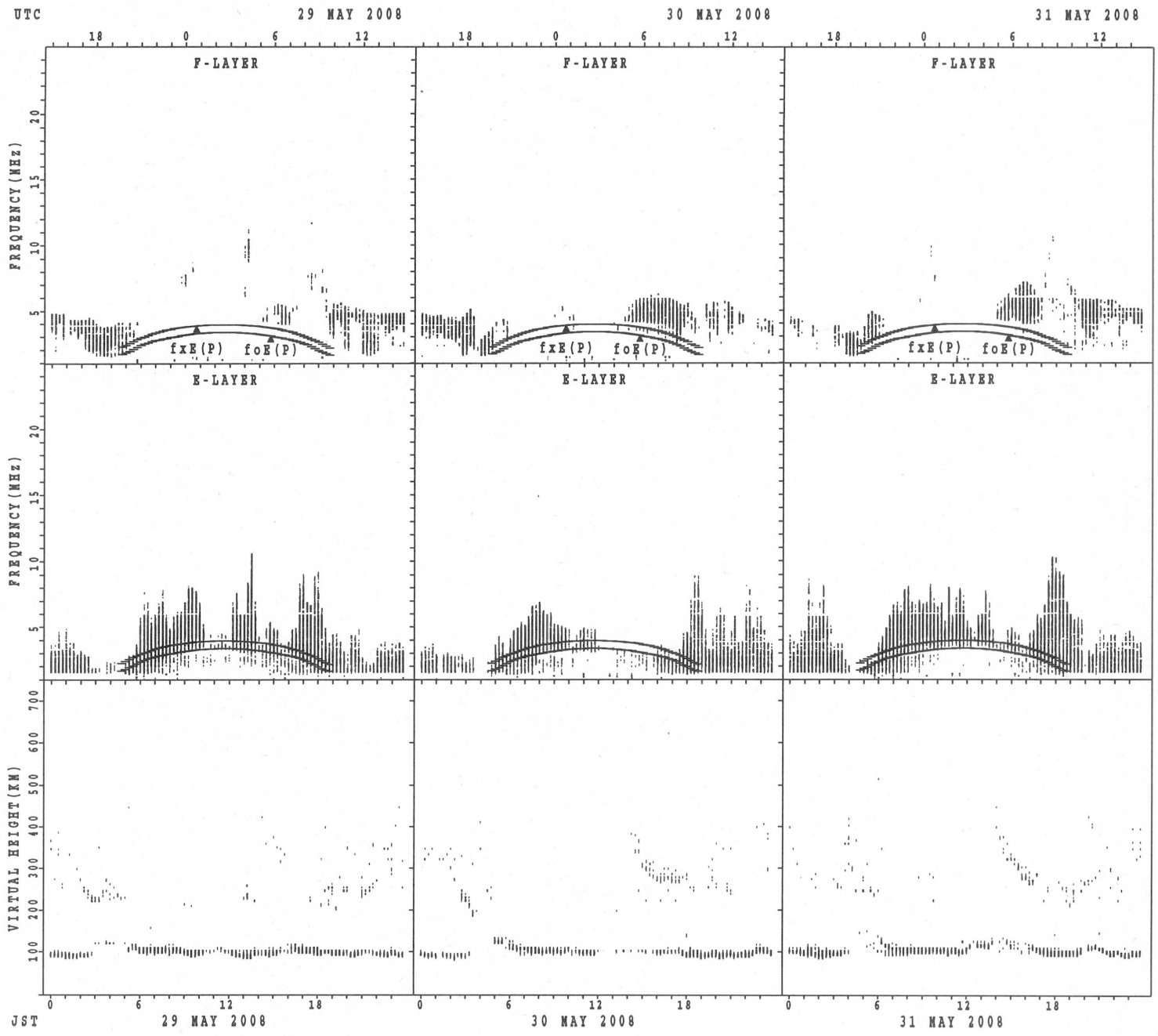
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



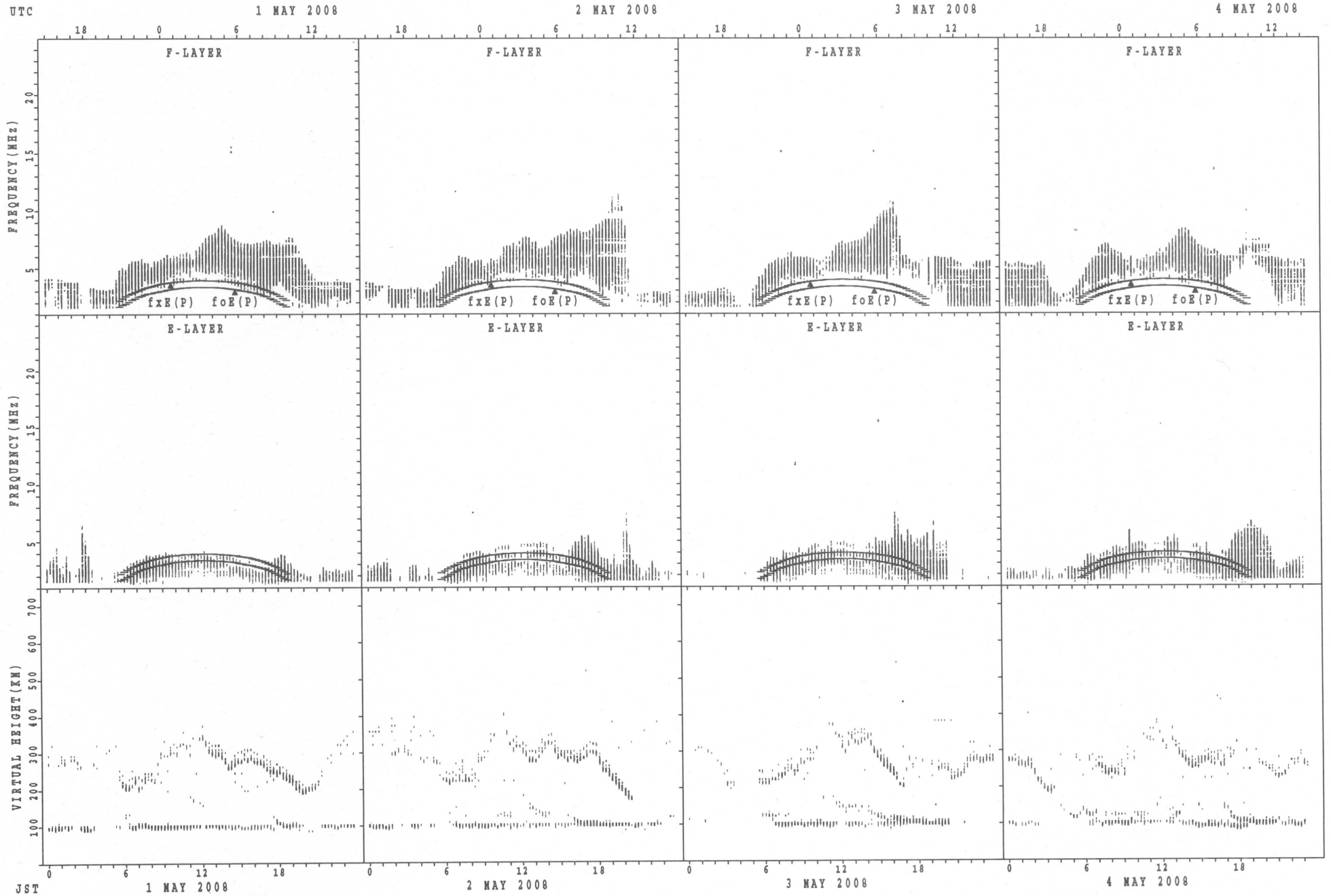
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



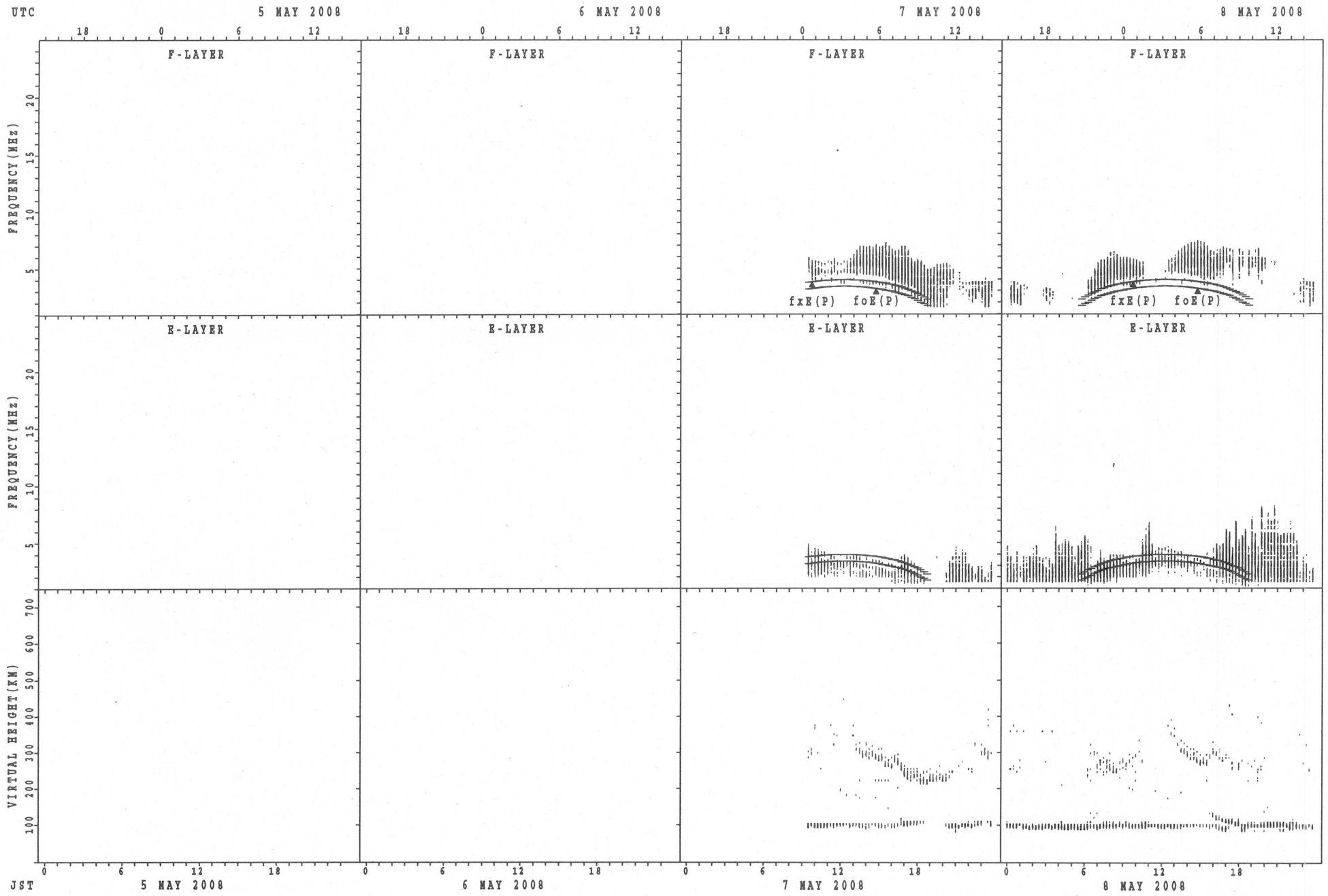
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

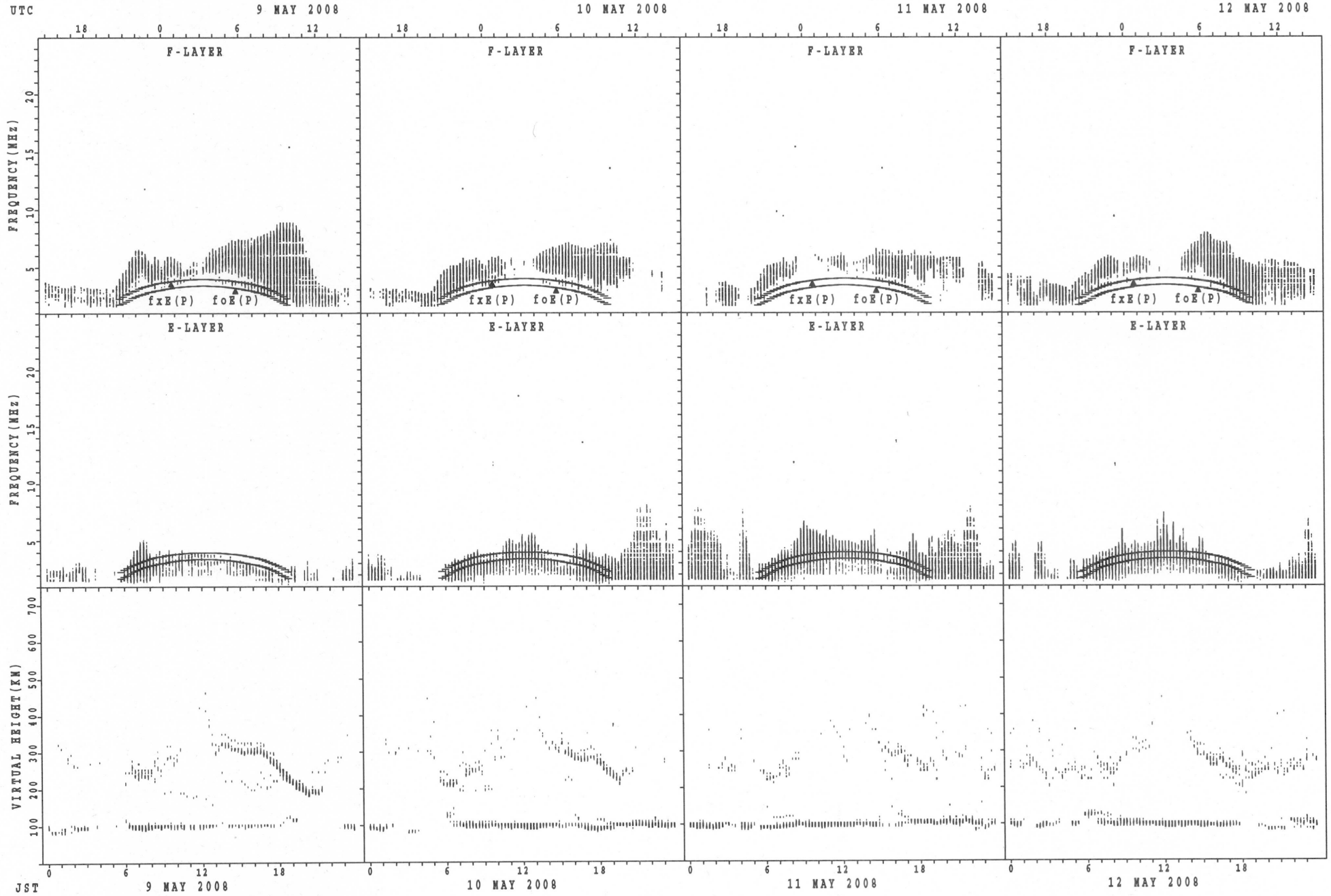


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

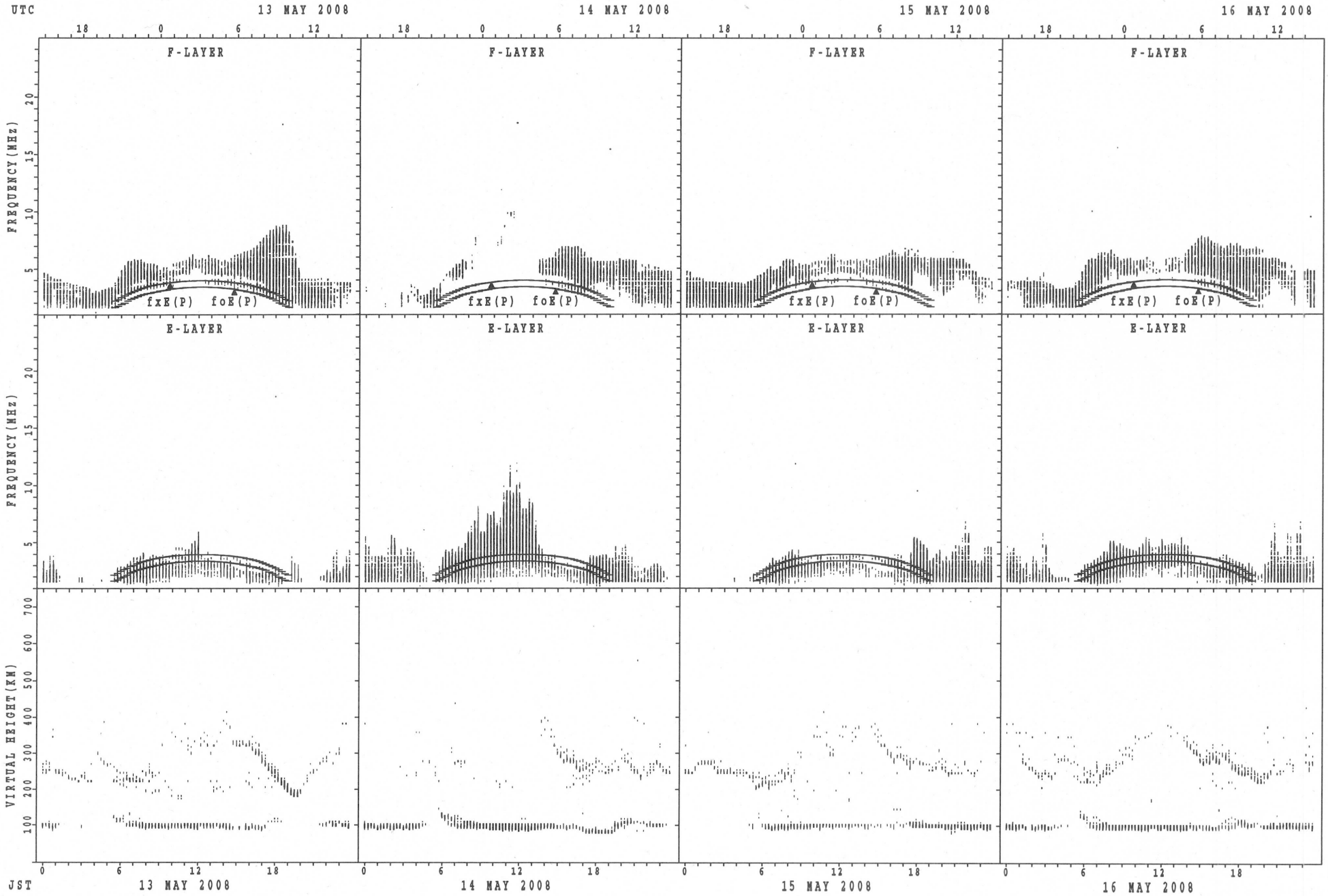
SUMMARY PLOTS AT Yamagawa



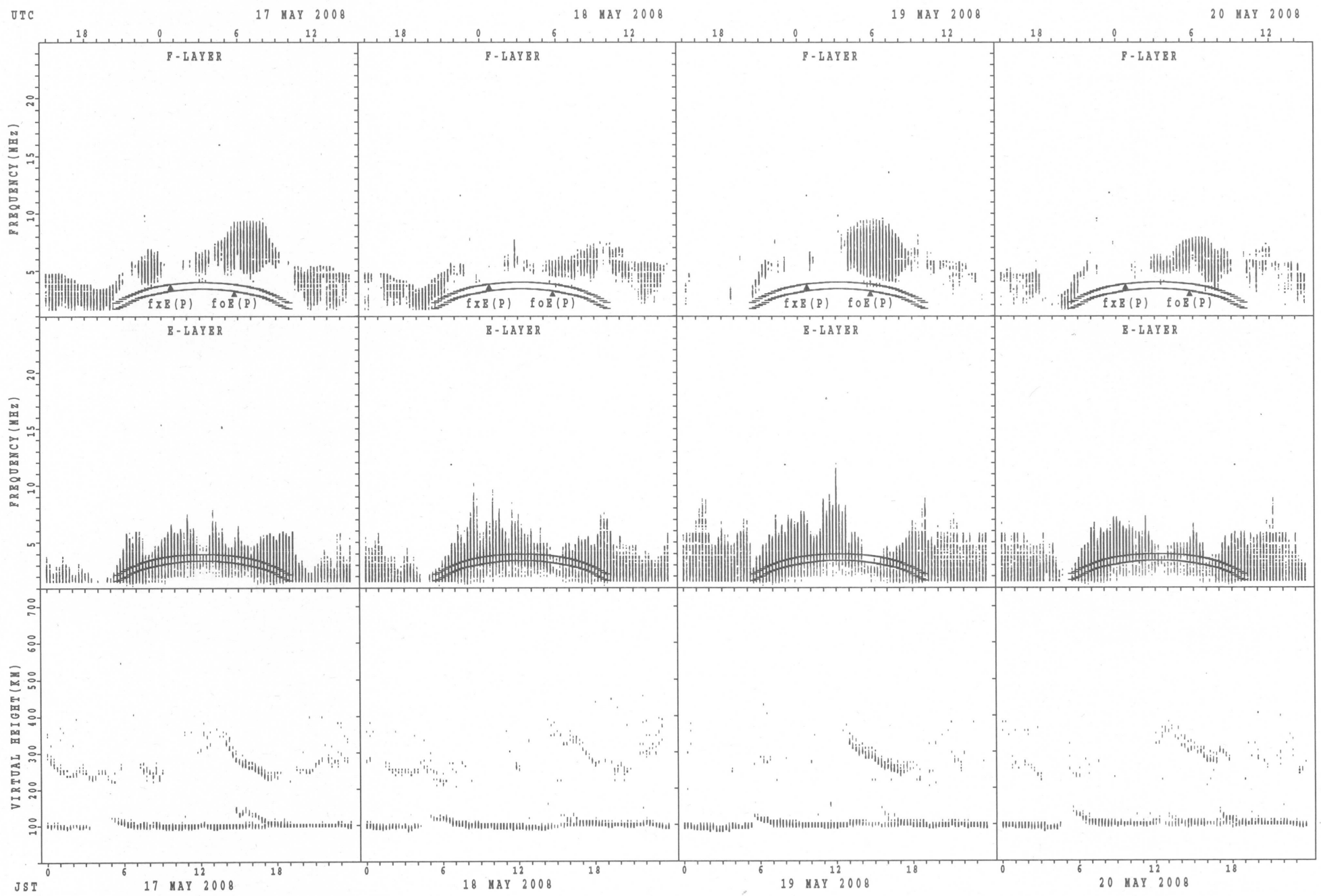
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


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

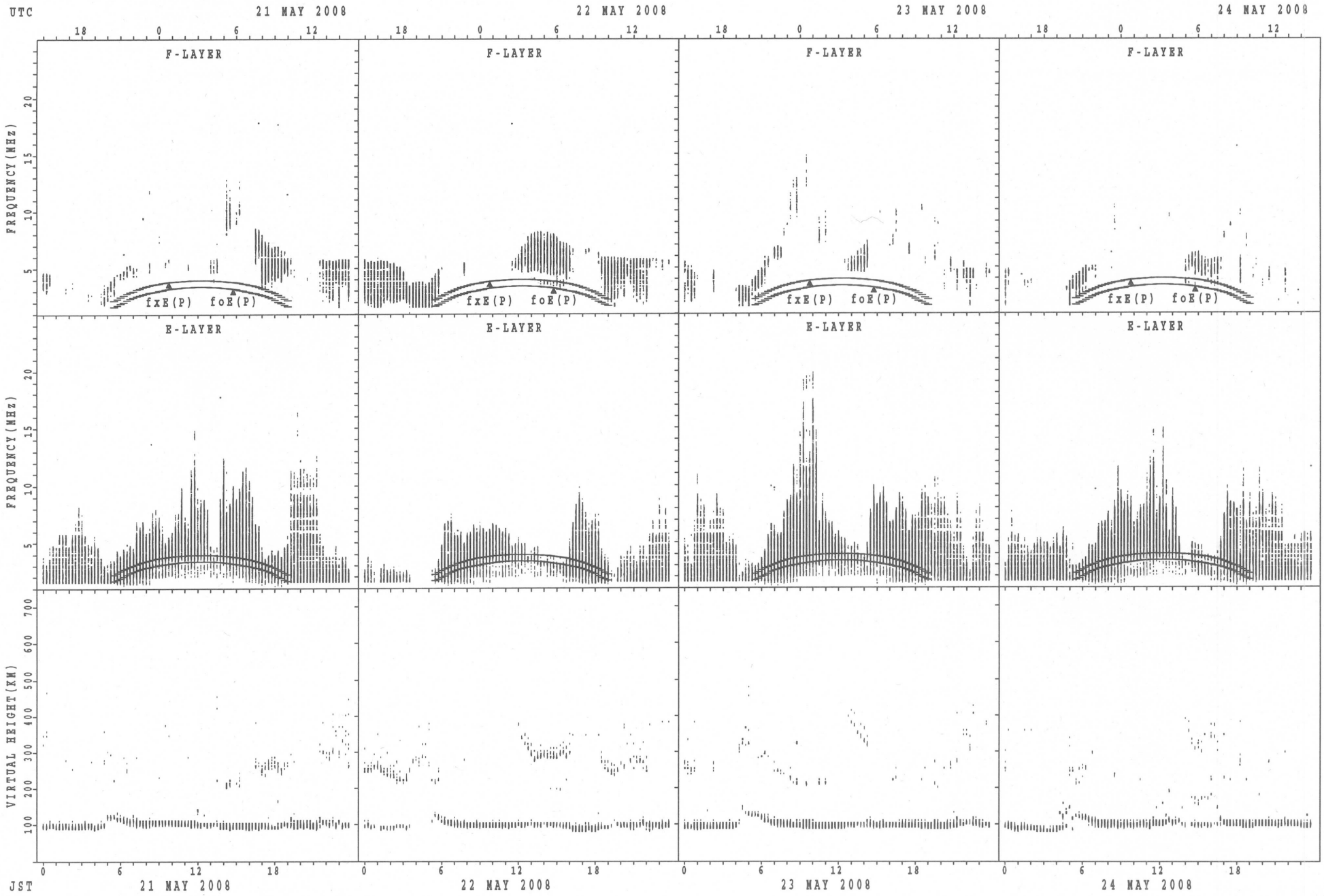
SUMMARY PLOTS AT Yamagawa



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

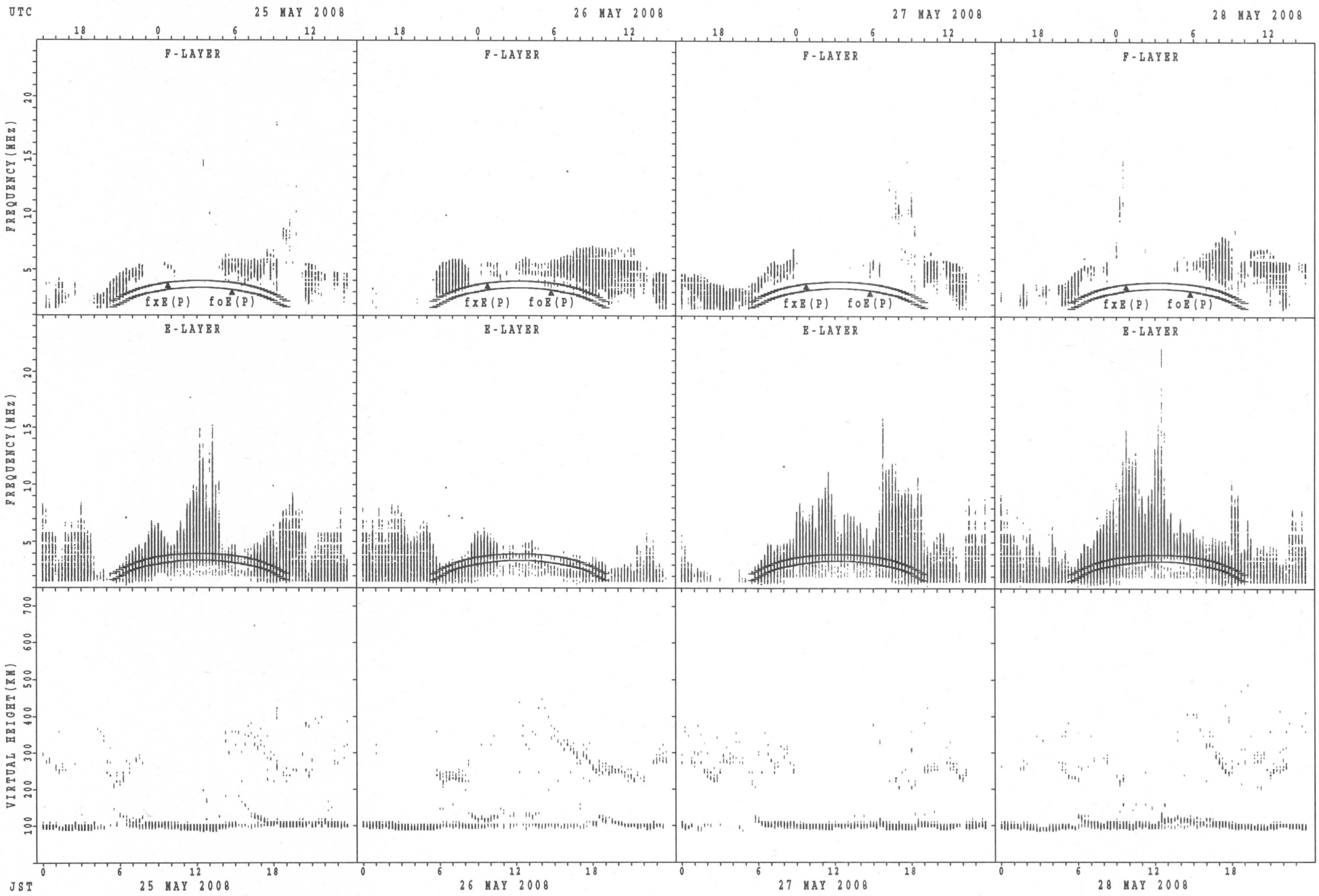

SUMMARY PLOTS AT Yamagawa
UTC
17 MAY 2008
18 MAY 2008
19 MAY 2008
20 MAY 2008
F-LAYER
fxE(P) foE(P)
FREQUENCY(MHz)
E-LAYER
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



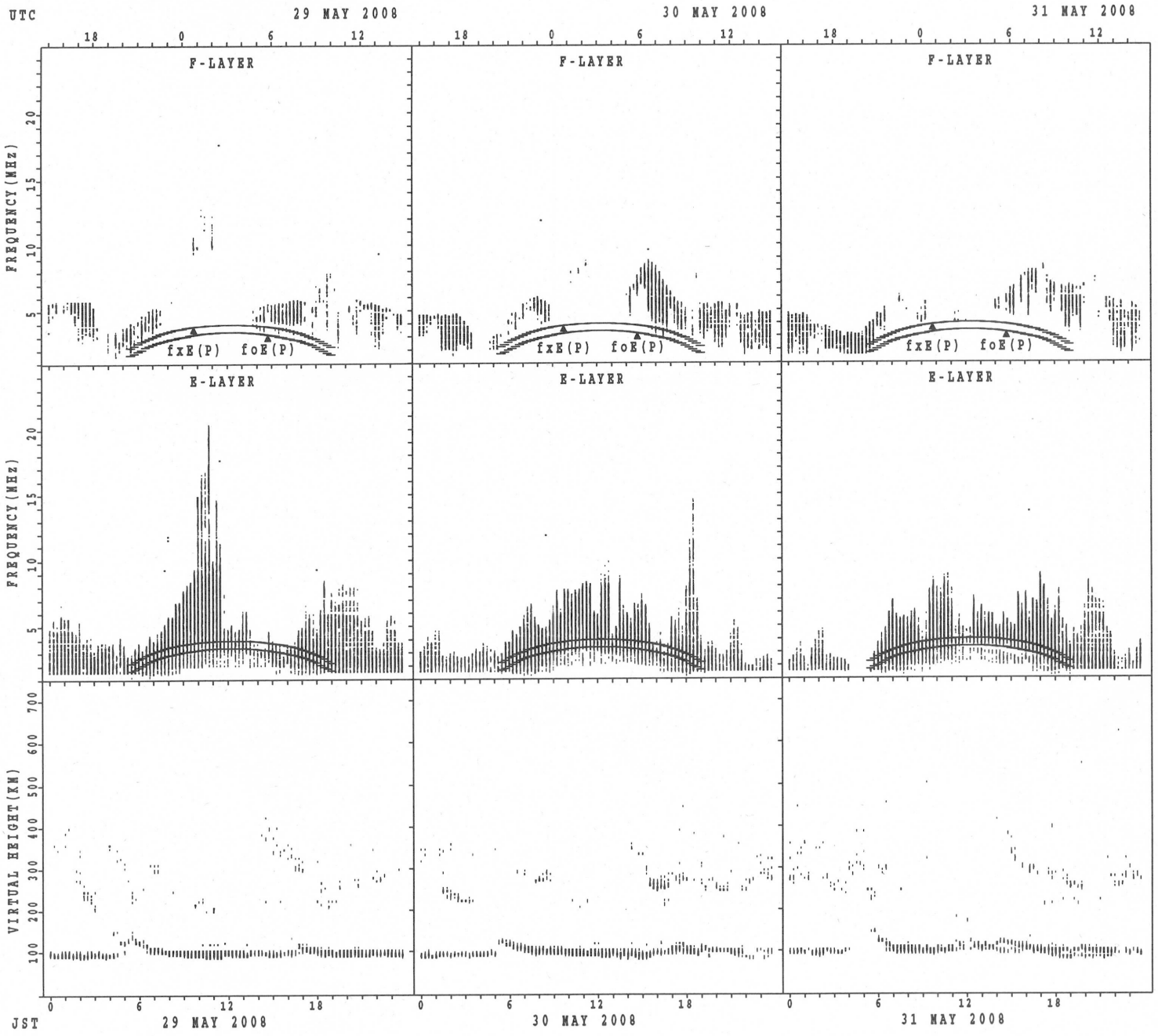
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



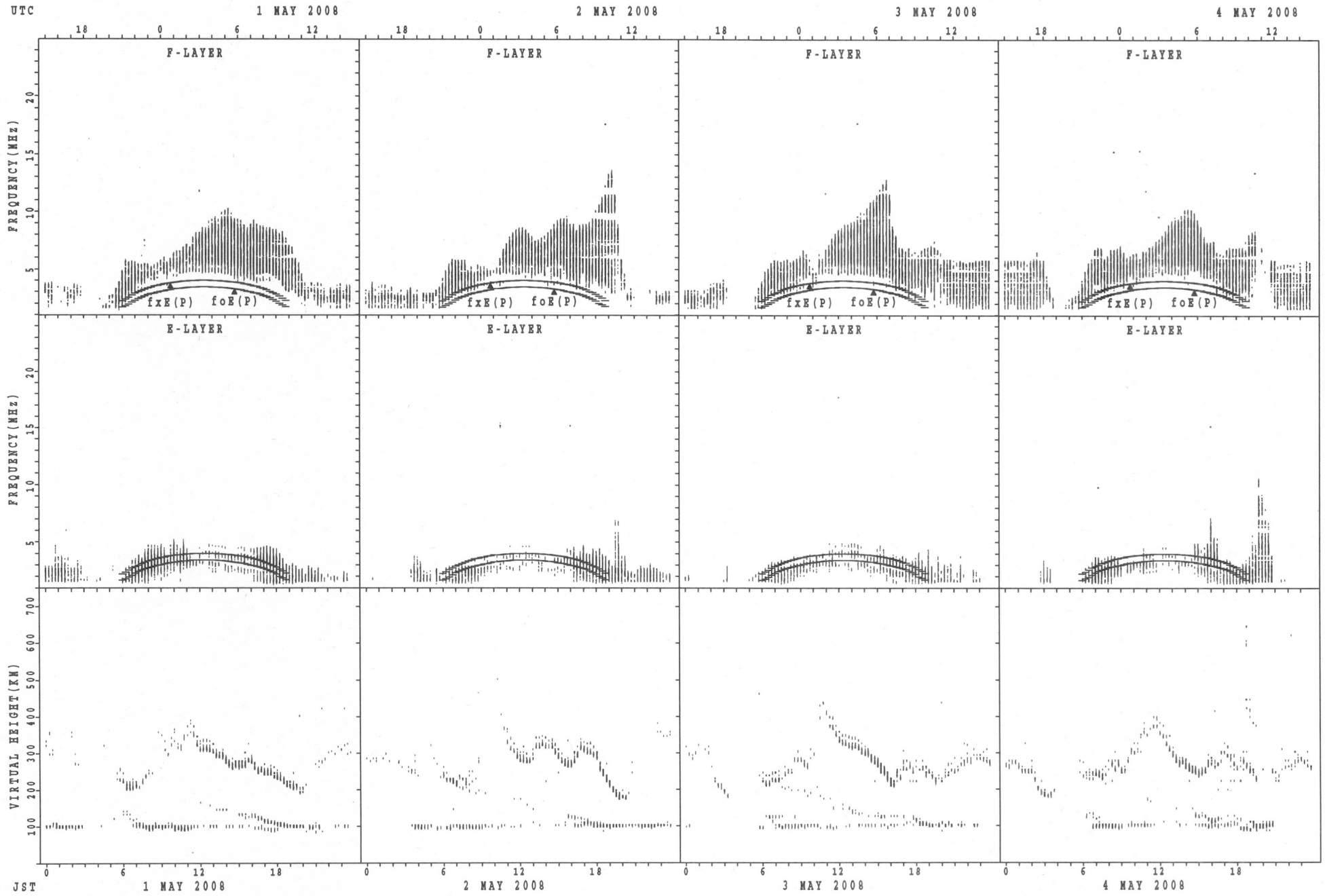
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



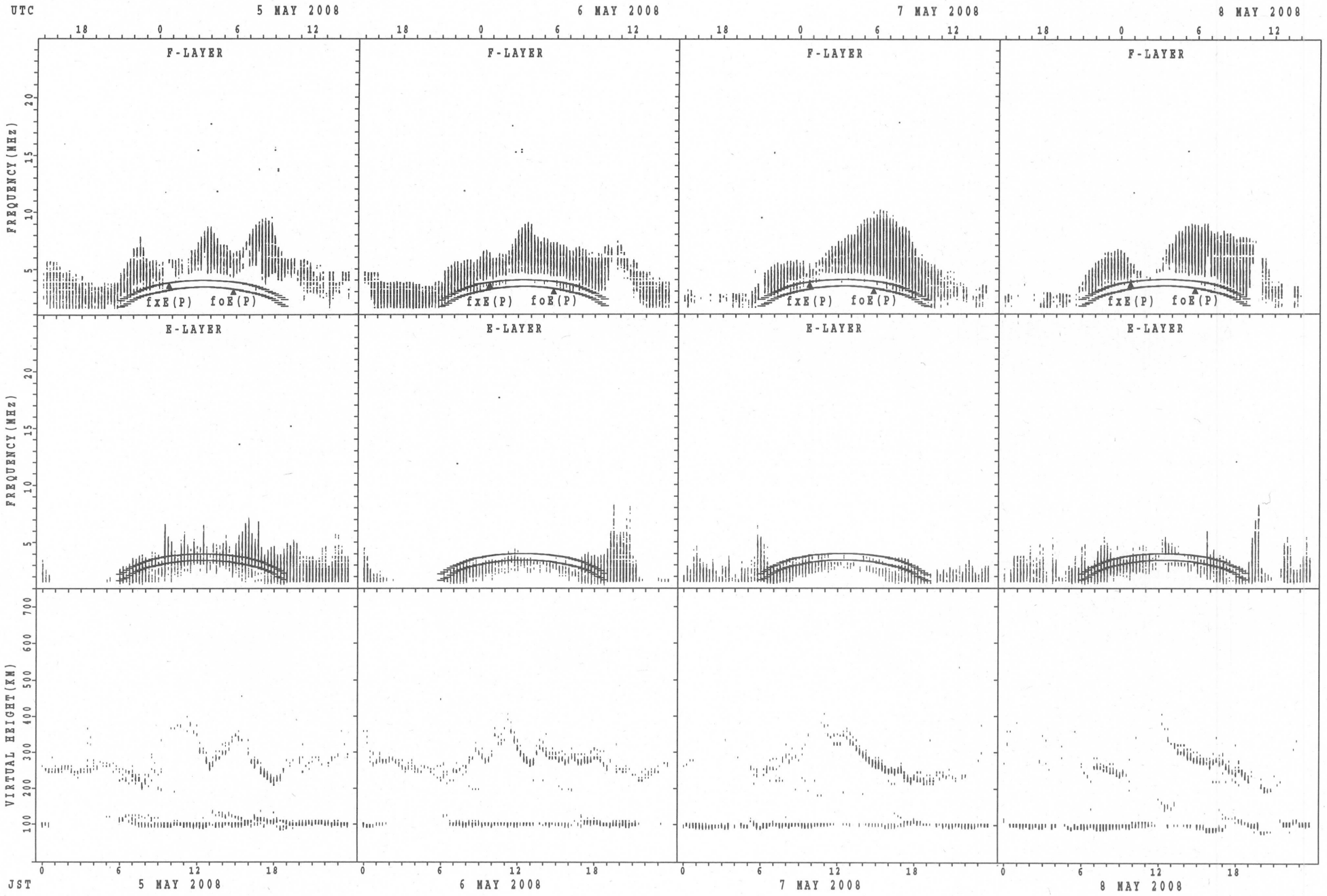
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



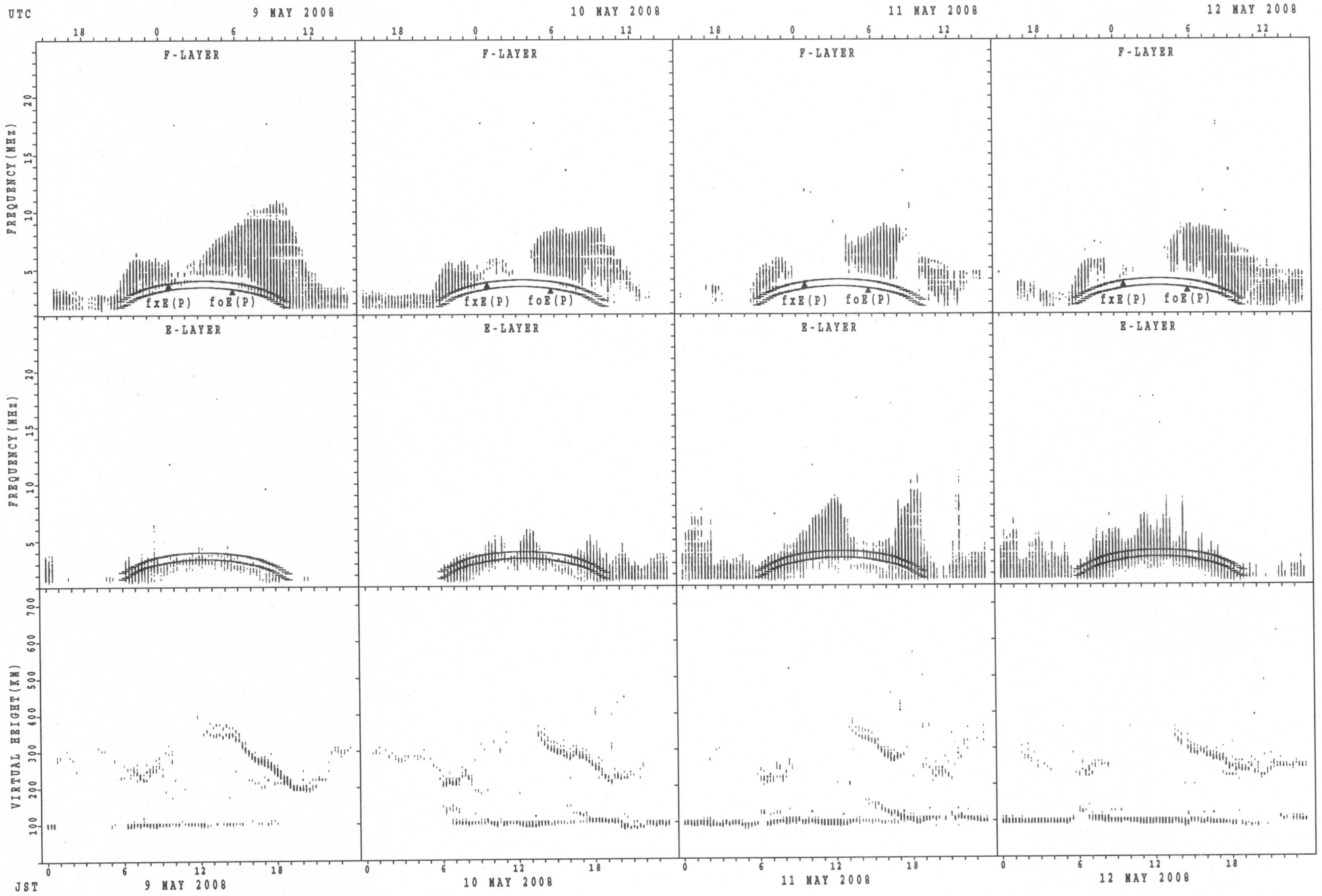
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

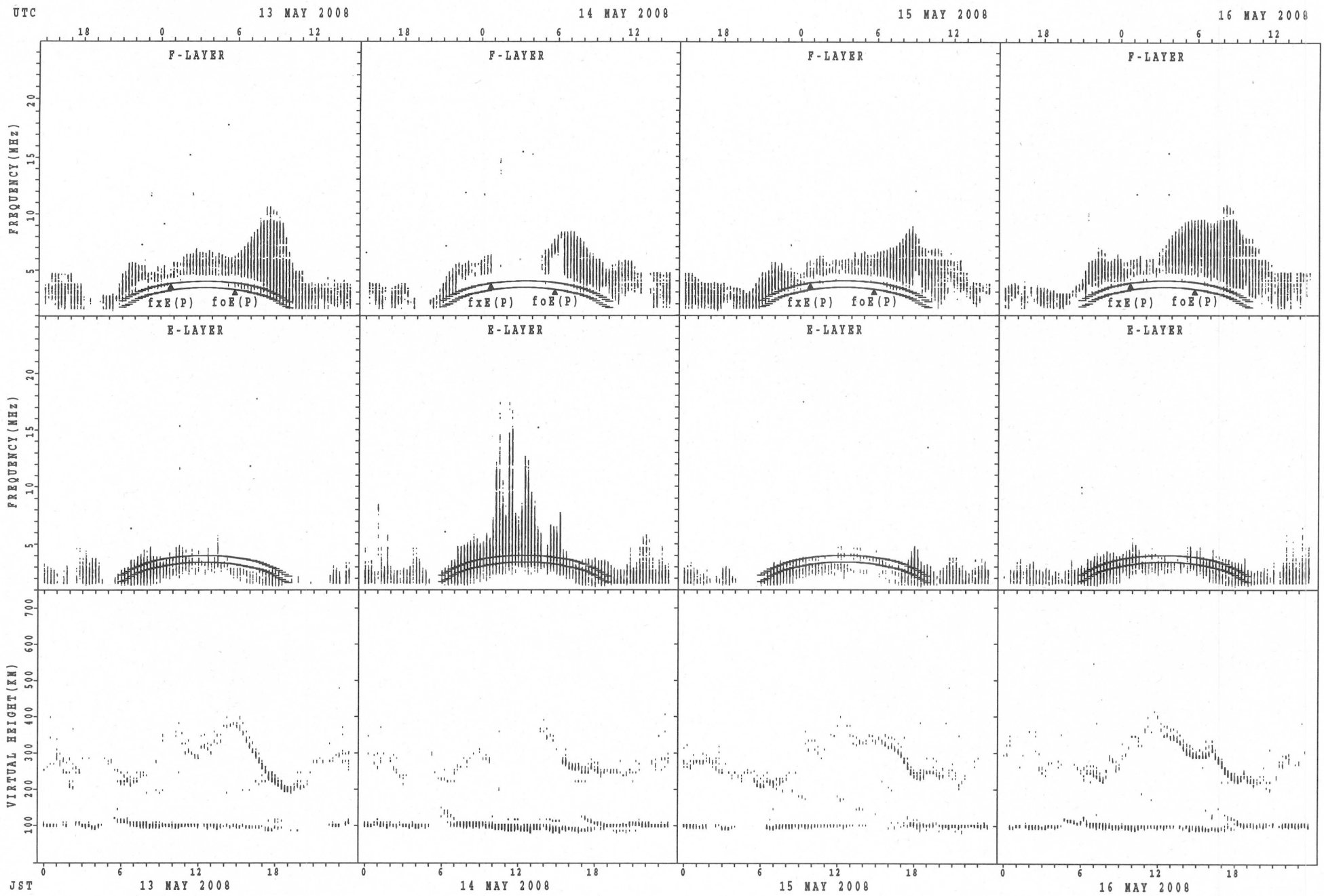


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

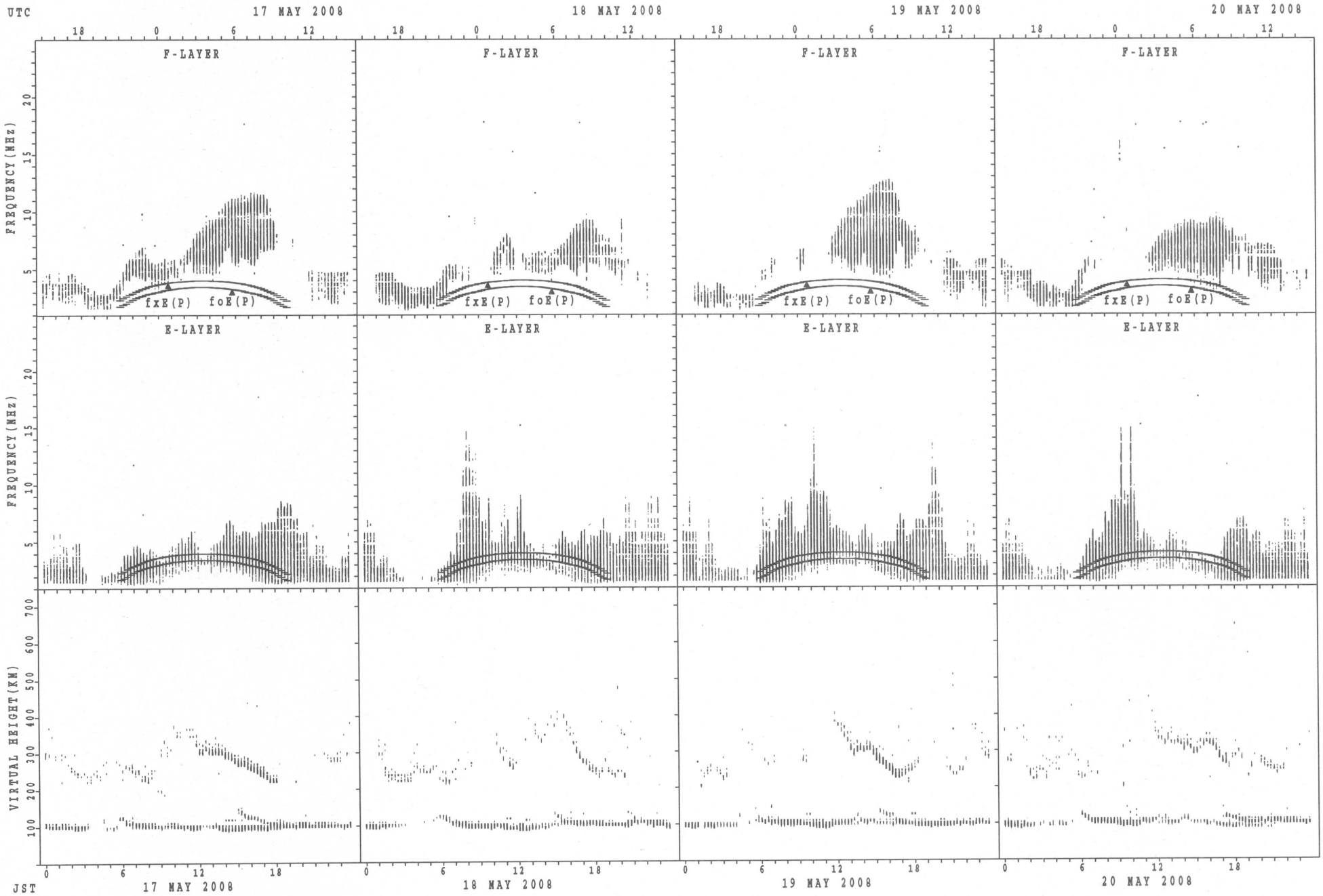
SUMMARY PLOTS AT Okinawa



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

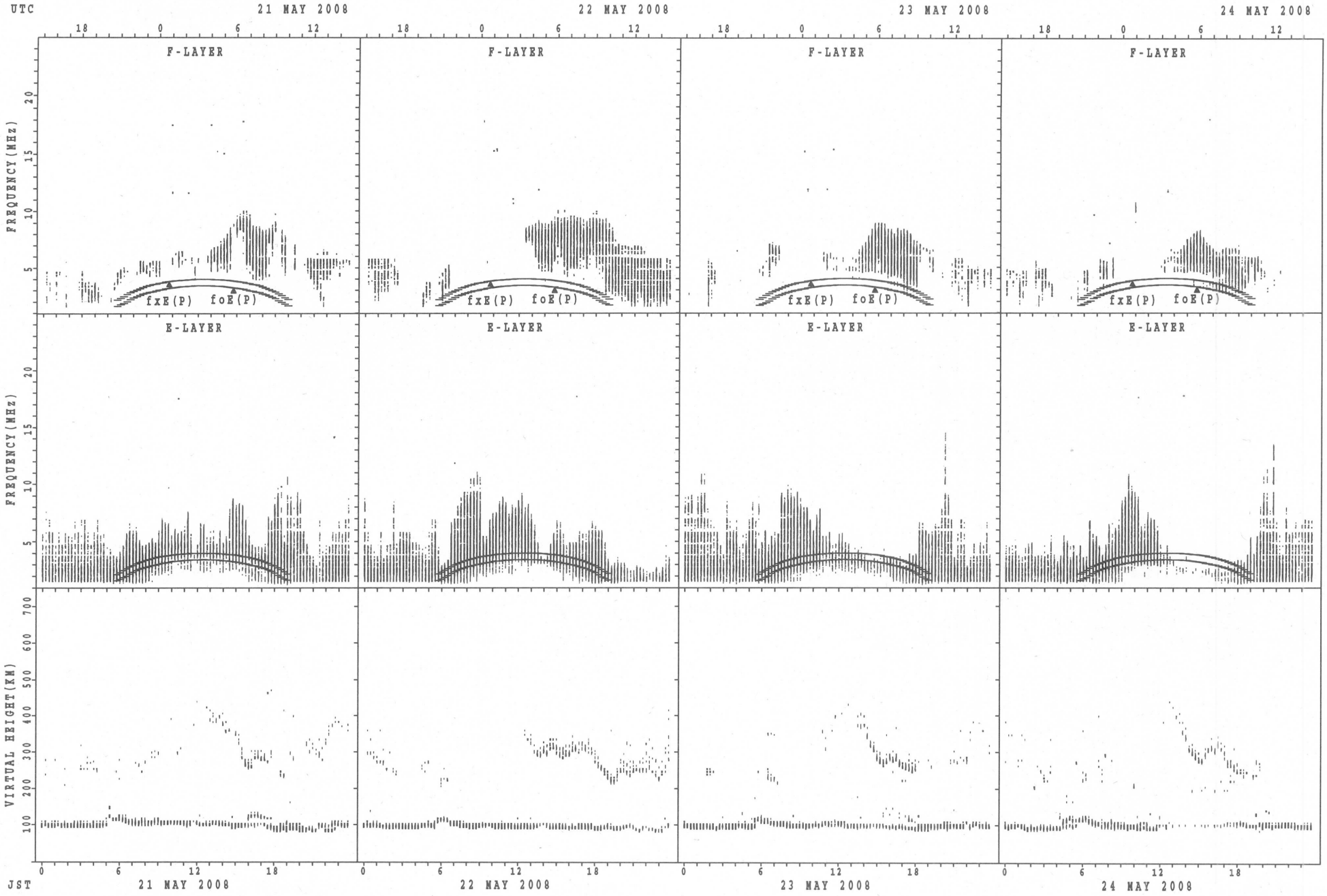

SUMMARY PLOTS AT Okinawa
UTC
13 MAY 2008
14 MAY 2008
15 MAY 2008
16 MAY 2008
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



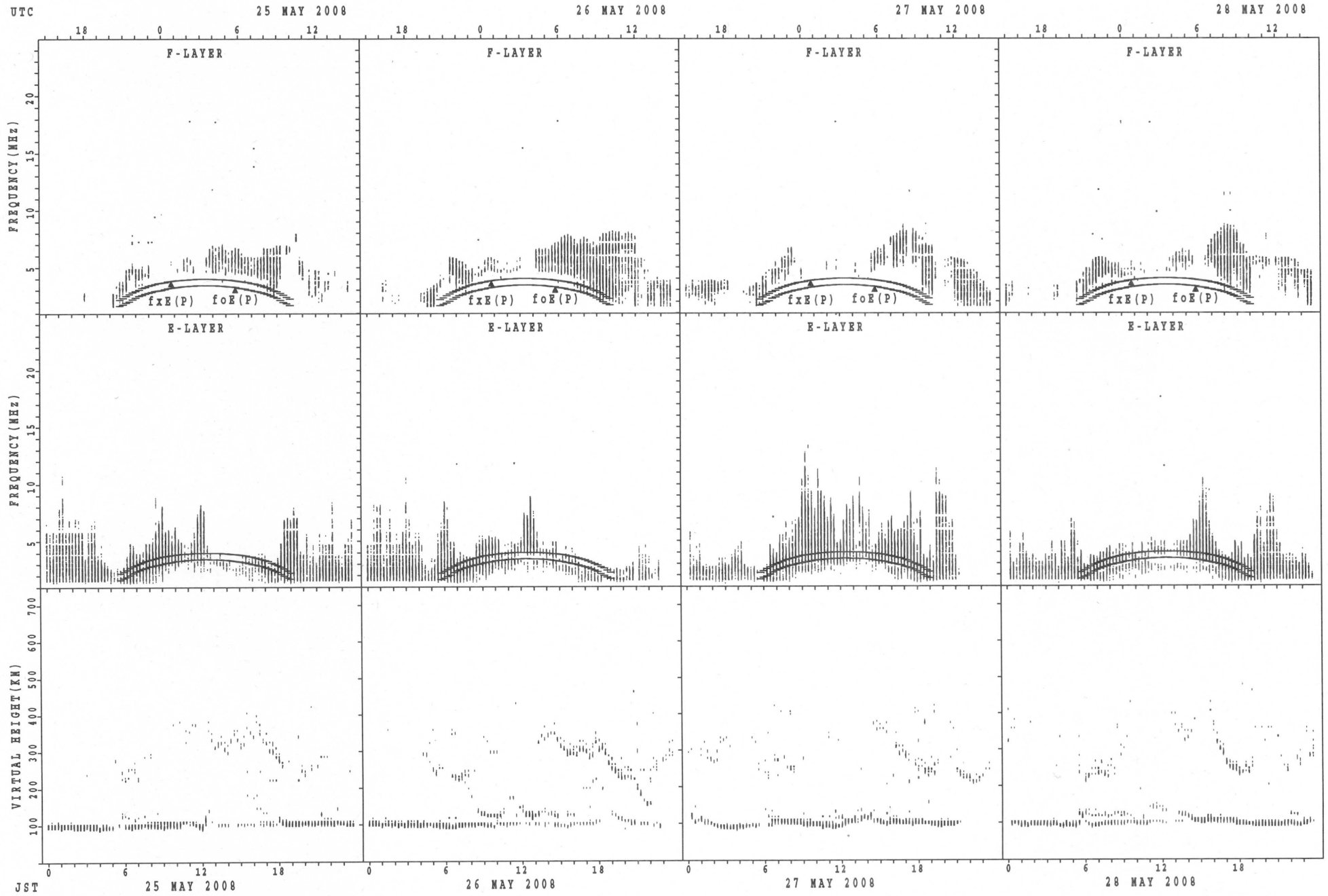
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



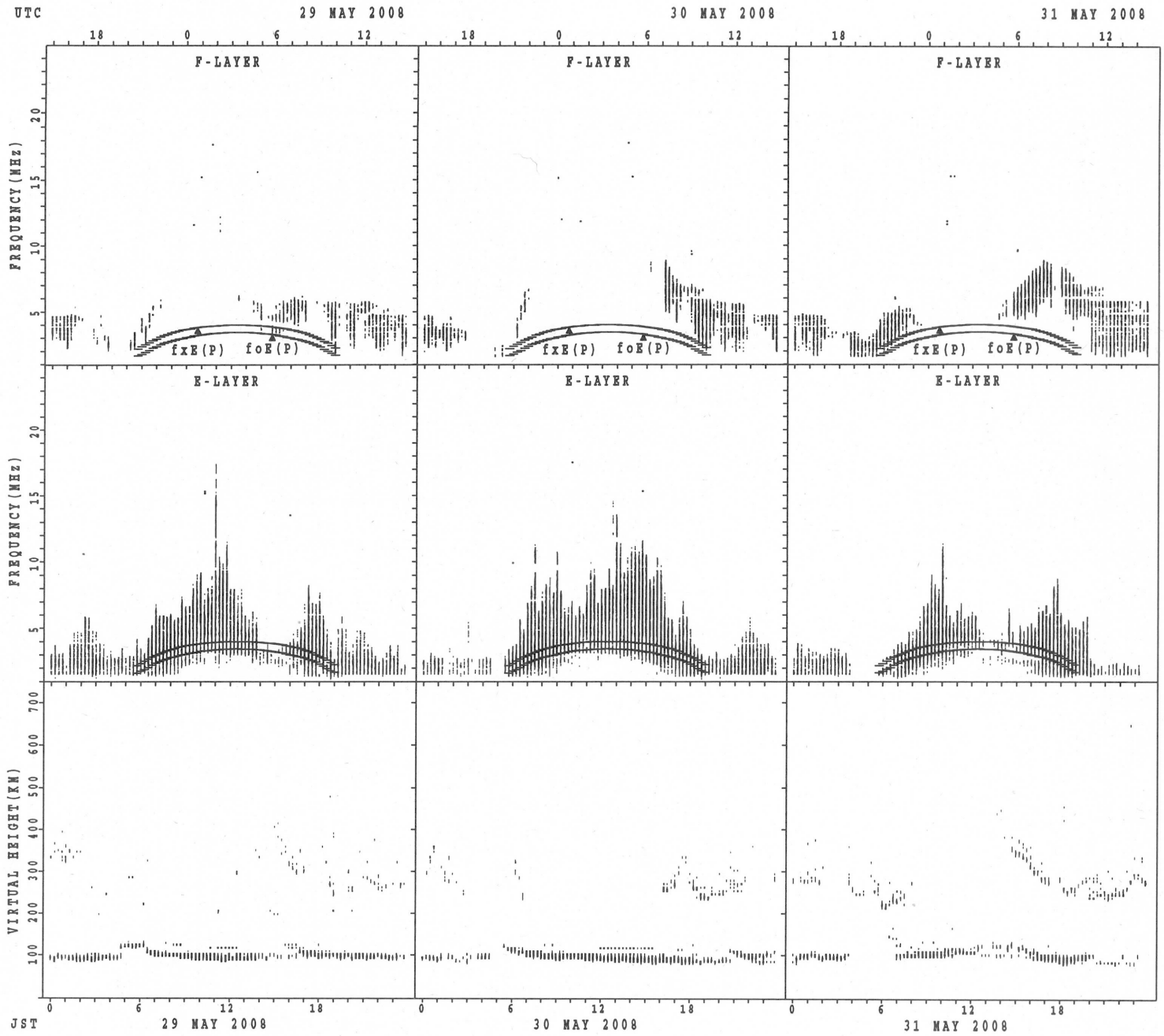
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																			3	1	1	1		
MED																			254	240	314	264		
U Q																			264	120	157	132		
L Q																			222	120	157	132		

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	18	17	12	10	13	21	22	27	24	24	16	20	16	16	18	15	18	26	28	27	26	26	24	21
MED	97	97	98	99	119	123	113	111	105	103	103	103	99	101	103	103	114	112	112	111	107	105	103	101
U Q	97	98	103	103	130	131	119	113	107	107	105	106	103	107	119	113	125	119	116	113	109	109	104	103
L Q	95	95	95	93	100	113	111	107	103	103	100	99	97	97	97	95	107	109	105	103	105	103	100	97

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3									7	6	6	5	3			
MED								252									288	238	235	240	216			
U Q								264									298	250	266	265	224			
L Q								242									254	226	218	236	202			

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	25	23	24	17	18	18	20	25	25	24	23	21	15	18	18	19	21	26	29	26	25	27	30	30
MED	99	99	97	95	96	120	118	107	105	103	103	101	99	103	105	107	107	111	105	103	105	103	103	104
U Q	103	103	104	98	99	129	123	111	108	107	105	107	103	105	111	117	120	113	111	105	106	111	105	107
L Q	98	95	95	94	95	111	111	104	103	101	97	97	97	97	99	95	100	105	101	99	103	99	99	101

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	4									17	13	5	4	2		
MED								243	257									286	258	232	238	263		
U Q								246	268									307	279	244	266	276		
L Q								240	248									251	239	218	204	250		

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	25	22	20	22	14	11	24	27	25	26	24	26	28	26	16	16	19	23	27	26	23	25	24	26
MED	101	98	97	97	97	99	118	111	105	103	101	100	103	105	102	109	115	107	105	103	103	103	104	103
U Q	103	101	97	101	99	125	126	113	107	109	105	103	131	115	112	133	129	113	107	105	105	106	105	107
L Q	97	95	95	95	95	97	113	105	103	101	97	95	97	97	99	99	101	103	101	99	99	101	102	99

MONTHLY MEDIANS OF h'F AND h'Es

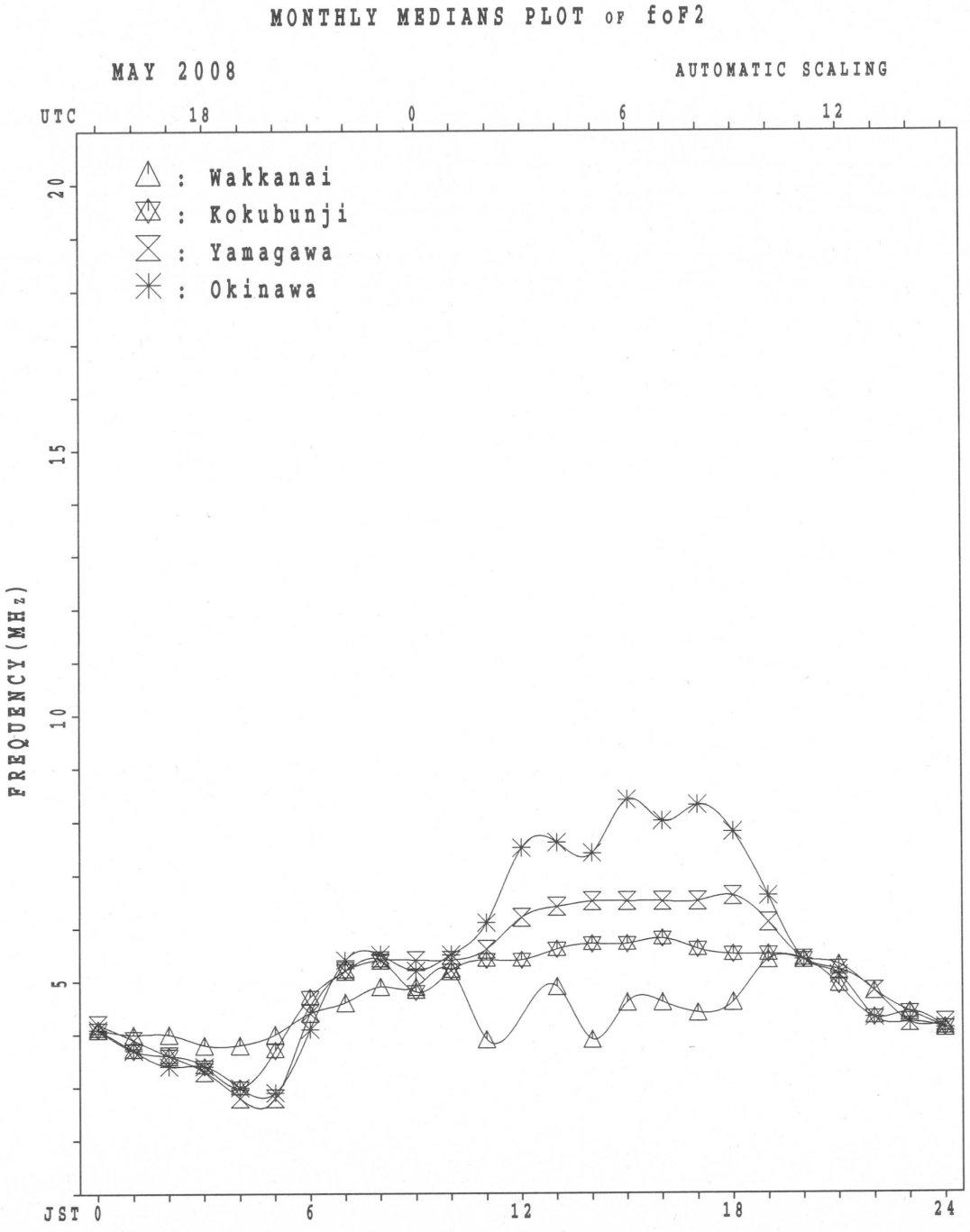
MAY 2008 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	4									29	23	12	4	1		
MED								255	253									272	244	245	245	252		
U Q								256	339									289	268	260	268	126		
L Q								244	240									258	224	227	234	126		

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	22	25	21	23	17	16	23	28	28	22	25	25	26	18	15	16	22	25	28	28	27	21	21	21
MED	103	101	99	99	97	99	119	109	105	103	101	103	101	104	113	106	111	113	107	103	103	103	105	105
U Q	105	103	103	103	99	108	125	113	107	109	103	109	113	123	119	127	121	124	109	105	105	107	111	105
L Q	99	99	95	97	95	96	113	106	101	101	99	95	97	95	97	96	97	104	99	96	93	99	101	103


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

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 40	X 40	X 38	X 38	X 36															X 75	X 76	X 45	44	46
2	43	45	44	44	42															X 93	X 94	X 29	X 33	X 35
3	X 35	X 34	X 34	X 33	40															X 54	X 51	X 48	X 50	X 50
4	X 47	X 46	X 46	X 43	C															X 64	X 66	X 56	X 49	X 50
5	X 50	X 44	X 42	X 39	X 36															X 70	X 64	X 56	X 42	X 42
6	X 40	X 39	X 36	X 35	X 34															X 50	X 51	X 51	X 47	A
7	40	X 34	X 33	X 32	X 34															X 51	X 54	X 50	49	46
8	44	41	X 32	36	32															X 60	X 60	X 42	X 39	X 38
9	X 39	X 39	X 40	X 37	X 36															X 76	X 77	X 42	X 37	X 35
10	X 35	X 36	X 34	X 32	X 32															X 68	X 62	X 54	A	X 46
11	48	X 42	X 40	X 39	X 36															X 61	X 61	X 54	X 48	50
12	X 46	X 41	X 37	X 36	X 34															X 57	X 58	X 57	X 53	X 44
13	X 39	X 37	X 36	X 38	X 39															X 76	X 64	X 41	X 40	X 41
14	X 40	A	X 43	A	A															X 62	X 60	X 57	X 55	X 48
15	X 43	44	42	X 36	37															X 62	X 64	X 57	62	X 49
16	X 44	X 42	X 43	X 41	X 40															X 76	X 73	X 56	X 50	51
17	49	X 47	X 42	X 39	X 38															X 60	X 58	X 54	A	X 48
18	X 47	X 45	X 41	X 39	X 38															X 73	X 67	X 62	56	A
19	52	51	X 46	X 42	X 35															X 59	X 60	X 60	X 58	X 54
20	X 51	X 46	X 47	X 38	42															X 58	X 68	X 73	X 54	54
21	50	50	46	X 39	X 35															X 56	X 59	62	X 52	57
22	X 52	X 49	X 46	X 45	X 40															X 54	A	X 57	58	57
23	X 53	X 46	X 48	A	X 37															X 67	X 68	X 56	A	56
24	56	53	53	50	47															A	A	X 44	A	A
25	44	X 42	46	46	X 37															X 55	X 56	X 54	54	55
26	50	48	X 45	X 40	X 39															X 69	X 65	X 59	X 56	X 51
27	52	51	50	46	38															X 62	65	X 58	59	58
28	53	47	50	A	X 40															X 69	X 70	X 68	66	60
29	57	50	X 42	X 42	X 39															X 58	X 56	X 54	X 51	X 49
30	X 50	48	47	X 47	X 28																X 59	X 54	X 45	46
31	49	X 42	X 41	41	36															A	X 65	X 62	X 58	53
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	28	29															28	29	31	27	28
MED	X 47	X 44	X 42	X 39	X 37															X 62	X 64	X 56	X 51	X 50
U Q	51	48	46	42	40															X 70	X 68	X 58	56	54
L Q	X 40	X 41	X 38	X 36	X 35															X 58	X 58	X 50	X 45	X 46

MAY 2008 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	34	33	32	32	30	38	48	57	49	52	54	54	56	62	63	60	62	54	59	68	70	39	F	F
2	F	F	F	F	F	35	46	50	50	60	56	63	58	62	59	63	68	67	75	87	88	23	27	29
3	29	28	28	27	F	38	45	55	57	53	48	52	51	56	54	63	81	75	52	48	45	42	44	44
4	41	40	40	37	C	36	46	50	60	56	51	52	52	62	58	53	54	59	56	58	60	49	43	44
5	44	38	36	33	30	35	44	47	61	53	52	53	50	52	R	52	61	59	60	64	58	50	36	36
6	34	33	30	29	28	44	46	42	46	A	46	46	50	47	54	56	50	43	40	44	46	45	41	A
7	F	28	26	26	28	33	40	51	57	54	50	51	44	53	54	56	57	51	48	45	48	44	F	F
8	F	F	26	F	F	32	43	48	54	54	A	A	A	59	59	64	62	55	51	54	54	36	33	32
9	33	33	34	31	30	32	47	61	52	48	50	61	52	54	59	58	57	56	62	70	71	36	31	29
10	29	30	28	26	26	32	46	48	48	A	52	A	A	50	53	55	56	54	54	62	56	47	A	40
11	F	36	34	33	30	36	46	49	49	52	55	A	53	54	46	51	51	46	50	55	55	49	42	F
12	40	34	31	30	28	34	45	48	51	51	50	56	48	49	56	64	62	A	48	50	52	51	47	38
13	33	31	30	32	33	35	48	54	54	50	48	48	52	53	55	59	56	55	57	70	58	35	34	35
14	34	A	36	A	A	40	A	A	49	A	A	53	54	54	52	51	51	53	A	56	54	51	49	42
15	37	F	F	30	F	37	45	47	50	49	49	50	47	54	56	59	63	56	50	56	57	50	F	43
16	38	36	37	35	34	42	49	59	54	58	52	57	55	58	54	53	54	53	58	70	67	50	44	F
17	F	41	36	33	32	40	53	54	A	60	54	54	54	54	A	66	69	63	57	53	52	48	A	42
18	41	39	35	33	32	39	44	51	56	51	A	53	58	54	55	56	56	53	54	67	61	56	F	A
19	F	F	40	36	28	37	A	A	56	56	59	A	58	68	74	79	60	56	A	53	53	53	52	48
20	45	40	41	32	F	37	45	52	A	A	A	58	59	A	A	67	58	54	48	52	62	67	47	F
21	F	F	F	33	29	38	47	A	A	A	A	54	44	A	A	64	66	74	A	50	52	F	46	F
22	46	43	40	38	33	37	50	52	A	A	49	A	53	66	76	71	59	55	49	48	A	51	F	F
23	46	40	42	A	31	38	A	A	A	A	A	A	A	A	A	A	A	A	54	61	62	50	A	F
24	F	F	F	F	F	37	A	A	A	A	A	A	A	A	A	47	46	46	A	A	A	38	A	A
25	F	36	F	F	31	36	43	46	47	48	A	A	A	56	58	A	52	50	52	49	50	48	F	F
26	F	F	39	34	33	37	51	58	54	50	A	A	50	A	A	53	55	57	A	63	59	53	50	45
27	F	F	F	F	F	36	41	A	A	A	A	A	A	A	48	50	A	57	54	56	F	52	F	F
28	F	F	F	A	34	A	47	48	A	A	51	45	55	56	55	56	60	64	A	63	64	61	F	F
29	F	F	38	35	33	34	A	A	41	A	A	42	45	A	45	50	48	A	A	52	50	48	45	43
30	44	F	F	41	22	38	36	A	A	51	46	A	42	45	48	57	58	55	51	A	52	47	38	F
31	F	36	34	F	F	35	38	A	A	A	A	A	A	A	51	59	65	54	A	A	59	56	52	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	19	23	22	21	30	26	22	21	19	19	19	24	23	24	29	29	28	23	28	28	30	19	15
MED	38	36	35	33	30	37	46	50	52	52	51	53	52	54	55	57	58	55	54	56	56	49	44	42
U Q	44	40	39	35	33	38	47	54	56	56	54	56	55	59	58	64	62	58	57	64	62	51	47	44
L Q	34	33	30	30	28	35	44	48	49	50	49	50	49	53	52	53	54	53	50	51	52	44	36	35

MAY 2008 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L		UL 448	448	UL 452	UL 452	UL 444	432	404	UL 388	L						
2							L	L	UL 424	A	A	UL 428	436	UL 424	424	UL 416	UL 372	UL 372	L					
3						C	L	L	UL 400	UL 416	UL 420	UL 428	452	440	UL 424	412	UL 384	L	L					
4							L	UL 396	396	UL 416	UL 420	436	432	UL 432	UL 412	UL 416	UL 412	A	A					
5							L	UL 372	A	A	UL 424	UL 440	UL 444	UL 436	UL 452	408	388	A						
6						L		360	400	A	UL 400	UL 408	UL 452	UL 400	416	A	A	L						
7								368	400	408	UL 424	UL 432	UL 432	UL 428	412	UL 416	UL 384	L						
8							L	A	A	A	A	A	A	UL 496	UL 404	A	A	L						
9							UL 348	L	UL 400	UL 448	A	A	A	428	A	400	388	UL 360	A					
10							A	424	A	A	A	A	A	A	A	A	A	A	A					
11							L	UL 388	UL 404	420	A	A	A	A	A	A	392	UL 380	A					
12							A	L	A	A	428	A	UL 432	436	A	A	A	A						
13							L	A	A	A	UL 440	UL 440	440	UL 440	UL 424	408	392	368	L					
14							A	A	A	A	A	UL 436	UL 440	UL 440	A	412	392	A	A					
15								UL 392	UL 396	424	432	UL 440	UL 444	UL 436	420	UL 412	396	A	A					
16							L	UL 396	A	428	444	UL 440	A	A	432	412	UL 404	360	A					
17							L	L	A	A	440	UL 444	444	A	A	A	392	A						
18								A	404	428	A	436	444	UL 448	UL 424	UL 420	UL 404	A	A					
19							A	A	A	A	A	A	A	A	A	412	396	A	A					
20							L	A	A	A	A	UL 432	UL 432	A	A	UL 436	A	L	A					
21								A	A	A	A	A	A	A	A	A	392	A	A					
22							A		A	A	UL 440	A	A	A	UL 428	412	A	A						
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24							A	A	A	A	A	A	A	A	A	A	UL 396	UL 372	A					
25						L	UL 340	UL 448	A	UL 420	A	A	A	A	UL 436	A	UL 400	L	A					
26						UL 328	L	A	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	A	A	A	424	UL 416	A	A	L					
28						A	L	A	A	A	428	UL 428	UL 432	A	436	A	A	A	A					
29							A	A	UL 392	A	A	UL 416	UL 420	A	UL 404	A	A	A	A					
30								A	A	A	A	A	UL 424	UL 412	UL 408	UL 404	384	352	A	A				
31							UL 352	A	A	A	A	A	A	A	UL 432	A	UL 384	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	3	9	10	10	13	16	17	15	19	17	20	7						
MED						UL 328	UL 348	UL 392	UL 400	422	UL 428	UL 436	UL 440	UL 436	UL 424	UL 412	392	UL 368						
U Q							UL 352	UL 410	UL 404	UL 428	440	UL 440	UL 444	UL 440	UL 432	UL 416	UL 396	UL 372						
L Q							UL 340	370	UL 396	UL 416	UL 422	UL 428	UL 432	UL 428	UL 412	408	UL 386	360						

MAY 2008 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	200	264	A	A	A	A	R	R	R	R	R	232	B					
2						B	UR 228	UA 264	R	A	A	R	A	R	UR 340	292	A	UA 228	A					
3						EC	UR 224	A	A	A	UR 352	R	R	R	A	A	A	A	UR 184					
4						B	A	C	A	R	R	A	R	A	316	A	A	228	B					
5						B	UA 216	A	A	A	C	R	A	A	R	A	A	UA 216	B					
6						B	UA 192	A	A	A	A	A	A	R	R	A	A	A	B					
7						B	208	264	A	A	A	A	A	A	C	R	UA 292	A	B					
8						B	UA 212	A	A	A	A	A	A	A	A	A	A	R	UA 164					
9						B	228	UR 296	A	A	A	A	A	A	A	UA 304	A	232	B					
10						B	220	A	A	A	A	A	A	A	A	A	UA 284	A	A					
11						B	A	268	A	A	A	A	A	A	A	A	R	A	B					
12						B	UA 212	A	A	A	A	A	A	R	A	A	A	A	A					
13						B	UA 232	A	A	A	R	A	R	UR 368	R	296	R	UR 236	B					
14						B	UA 244	A	A	A	A	UR 348	R	R	A	A	A	A	A					
15						B	A	A	UA 300	A	C	A	UR 332	R	R	A	UA 296	UA 240	A					
16						B	240	A	A	A	A	A	A	A	A	UR 312	A	UA 232	B					
17						B	UA 220	A	A	A	A	A	A	A	A	A	A	A	A					
18						B	UA 208	A	A	A	A	A	A	R	R	316	A	A	A					
19						UA 176	A	A	A	A	A	A	A	A	A	308	A	A	A					
20						B	244	A	A	A	A	A	A	A	A	A	292	240	UA 164					
21						B	A	A	A	A	A	A	A	A	A	A	R	A	A					
22						188	UA 236	A	A	A	A	A	A	A	A	A	A	A	A					
23						B	UA 240	A	A	A	A	A	A	A	A	A	A	A	A					
24						UA 172	A	A	A	A	A	A	A	A	A	332	A	A	A					
25						B	R	A	A	R	A	A	A	A	A	A	A	A	A					
26						B	UA 228	A	A	A	A	A	A	A	A	A	A	A	A					
27						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
28						A	UA 240	A	A	A	A	A	A	A	A	UA 308	A	A	A					
29						160	A	A	A	A	A	A	A	A	A	A	A	A	A					
30						A	A	A	A	A	A	A	A	A	EC	UR 316	A	R	A	A				
31						168	236	A	A	A	A	A	A	A	A	A	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						5	21	5	1		1	1	1	1	2	9	4	9	3					
MED						172	UA 228	264	UA 300		UR 352	UR 348	UR 332	UR 368	328	308	UA 292	U 232	UA 164					
UQ						182	UA 238	282								316	UA 294	U 238	UR 184					
LQ						164	UA 212	264								300	288	UA 228	UA 164					

MAY 2008 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	19	20	J A 21	E B 15	J A 26	16	26	32	35	38	37	38	G 27	G 29	G 26	G 20	G 23	28	J A 29	J A 22	J A 21	J A 23	J A 22	J A 45
2	J A 42	J A 20	E B 15	E B 14	21	E B 15	G 19	31	G 28	J A 44	J A 68	G 33	38	G 27	G 29	35	32	30	J A 23	E B 15	J A 18	J A 30	22	J A 20
3	J A 31	J A 34	J A 20	E B 15	E B 14	E C 32	G 21	34	35	J A 38	G 31	G 31	G	G 25	41	37	36	29	G 18	E B 15	21	J A 17	E B 14	
4	E B 16	19	20	22	C	18	30	E C 35	35	G 26	G 28	39	G 28	38	37	38	33	35	J A 46	J A 46	J A 25	J A 36	J A 36	J A 27
5	J A 33	E B 15	E B 15	E B 15	E B 15	E B 15	30	J A 75	J A 55	J A 47	J A 46	G 28	36	38	G 29	36	35	J A 43	J A 29	34	J A 45	18	J A 27	J A 31
6	J A 38	J A 18	J A 27	18	E B 15	J A 18	27	J A 34	J A 44	J A 44	J A 40	J A 40	J A 43	G 30	G 26	J A 44	J A 40	29	J A 24	J A 20	20	20	J A 46	J A 77
7	J A 62	J A 46	J A 42	J A 61	J A 55	J A 23	23	30	J A 36	38	36	J A 42	38	40	39	G 24	34	33	J A 38	J A 24	J A 34	J A 23	J A 30	J A 50
8	J A 40	20	J A 26	J A 20	J A 22	J A 62	24	J A 43	J A 46	J A 67	J A 68	J A 65	J A 74	J A 54	36	J A 48	J A 42	G 23	24	J A 29	E C 32	J A 26	J A 24	J A 32
9	J A 20	22	J A 17	J A 20	E B 14	18	27	G 25	34	J A 51	J A 56	J A 66	J A 54	J A 43	41	38	36	33	J A 30	J A 31	J A 30	J A 19	J A 22	J A 22
10	J A 29	J A 20	J A 24	E B 15	E B 14	J A 24	28	38	J A 54	J A 60	J A 64	J A 64	J A 76	J A 55	J A 47	J A 46	J A 47	47	J A 45	J A 47	J A 54	86	J A 68	J A 108
11	J A 107	20	E B 15	21	J A 22	19	25	30	37	40	J A 45	J A 56	J A 46	J A 48	J A 49	J A 56	G 28	35	J A 51	J A 44	J A 36	22	J A 46	J A 29
12	J A 35	E B 15	J A 60	J A 48	21	18	32	36	J A 41	J A 44	J A 44	J A 67	J A 40	G 28	J A 50	J A 57	J A 71	J A 74	J A 29	J A 30	J A 23	J A 29	J A 28	J A 44
13	20	20	J A 19	J A 20	J A 19	23	30	J A 51	J A 76	J A 49	G 30	38	G 28	G 28	G 26	34	G 22	G 20	24	21	20	J A 37	J A 28	28
14	J A 31	J A 64	J A 82	J A 67	J A 54	J A 43	J A 46	J A 63	J A 51	J A 132	J A 72	G 33	G 31	39	J A 65	36	32	J A 37	J A 51	J A 34	J A 37	J A 29	J A 48	22
15	E B 16	J A 21	J A 32	J A 29	J A 32	19	30	33	34	38	40	38	42	G 25	G 26	37	36	35	J A 41	J A 50	J A 61	J A 70	J A 46	J A 59
16	J A 52	J A 40	J A 28	E B 15	19	J A 23	28	35	J A 43	38	39	J A 41	J A 66	J A 98	38	G 26	36	30	J A 37	J A 78	J A 36	J A 43	J A 33	J A 24
17	J A 27	J A 28	J A 42	22	J A 18	22	30	34	J A 103	J A 61	J A 40	41	J A 67	J A 78	J A 80	J A 83	J A 53	J A 44	J A 48	J A 28	J A 39	J A 52	J A 95	J A 116
18	J A 26	J A 21	18	20	J A 16	19	30	J A 56	J A 62	J A 80	J A 170	J A 55	38	G 26	G	38	J A 39	J A 62	J A 54	J A 62	J A 30	J A 74	J A 55	J A 66
19	J A 24	J A 60	J A 101	J A 74	J A 81	22	J A 63	J A 58	J A 52	J A 58	J A 58	J A 117	J A 50	J A 54	J A 56	36	36	J A 44	J A 57	J A 38	J A 44	J A 39	J A 32	J A 39
20	J A 42	J A 33	J A 33	J A 20	J A 22	E B 14	29	J A 42	J A 53	J A 56	J A 73	41	40	J A 60	J A 68	43	44	32	J A 40	64	J A 46	J A 38	J A 38	J A 56
21	J A 53	J A 44	J A 32	J A 37	J A 24	J A 37	43	J A 56	J A 64	J A 56	J A 73	J A 56	J A 62	J A 98	J A 100	85	G 25	J A 64	J A 80	J A 85	J A 63	J A 45	J A 46	J A 22
22	18	21	J A 22	21	21	23	31	J A 52	J A 61	J A 84	39	J A 64	J A 46	J A 49	J A 41	37	J A 43	J A 52	J A 38	J A 56	J A 64	J A 26	J A 55	J A 53
23	J A 98	J A 96	J A 61	J A 89	J A 79	J A 34	J A 52	J A 76	J A 61	J A 58	J A 63	J A 52	J A 56	J A 62	J A 76	J A 80	J A 66	J A 95	J A 54	J A 48	J A 33	J A 52	J A 61	J A 65
24	J A 54	J A 52	J A 36	J A 37	J A 29	J A 37	J A 53	J A 71	J A 97	J A 170	J A 114	J A 131	J A 112	J A 129	J A 58	42	J A 56	J A 63	J A 97	J A 74	J A 109	J A 58	J A 55	J A 86
25	J A 101	J A 72	J A 62	J A 41	J A 39	J A 23	G 21	38	J A 52	G J A 30	J A 65	J A 59	J A 68	J A 51	J A 42	56	J A 55	34	J A 38	J A 38	J A 19	22	J A 38	J A 36
26	J A 17	J A 97	J A 39	J A 29	J A 20	J A 26	29	J A 57	J A 48	J A 76	J A 74	44	45	J A 63	J A 72	J A 56	J A 43	J A 71	J A 93	30	J A 54	29	J A 27	J A 33
27	J A 28	J A 41	J A 32	J A 31	J A 37	J A 28	J A 40	J A 62	J A 70	J A 71	J A 72	J A 63	J A 62	J A 45	J A 46	J A 46	J A 91	J A 36	J A 24	J A 36	J A 54	J A 97	J A 60	J A 70
28	J A 52	J A 57	J A 31	J A 110	J A 46	J A 55	28	J A 47	J A 58	J A 58	J A 45	43	41	J A 44	J A 44	43	J A 52	J A 68	J A 72	J A 44	J A 61	J A 42	J A 66	J A 59
29	J A 32	J A 52	J A 32	20	J A 19	19	J A 54	J A 56	J A 48	J A 66	J A 66	38	37	J A 57	37	J A 45	39	J A 88	J A 88	J A 40	J A 28	J A 24	J A 30	J A 34
30	J A 32	J A 31	J A 24	J A 21	E B 14	J A 32	35	J A 46	J A 64	J A 51	J A 44	J A 44	38	J A 38	E C 35	G 26	J A 32	G 23	J A 42	J A 70	J A 53	J A 46	J A 88	J A 66
31	J A 40	J A 43	J A 73	J A 39	20	23	31	J A 62	J A 77	J A 62	J A 62	J A 54	J A 52	J A 57	39	J A 47	34	J A 51	J A 97	J A 60	J A 40	J A 43	J A 40	J A 42
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 32	J A 31	J A 31	J A 21	J A 21	23	30	J A 43	J A 52	J A 56	J A 56	J A 44	J A 43	J A 45	41	42	36	J A 36	J A 41	J A 38	J A 36	J A 36	J A 38	J A 42
U Q	J A 52	J A 52	J A 42	J A 39	J A 32	J A 32	J A 35	J A 57	J A 62	J A 66	J A 68	J A 63	J A 62	J A 57	J A 56	J A 48	J A 47	J A 62	J A 54	J A 56	J A 54	J A 46	J A 55	J A 65
L Q	24	20	20	E B 20	E B 18	18	27	34	37	40	40	38	G 38	G 30	G 35	36	33	30	29	J A 29	J A 25	23	J A 28	J A 28

MAY 2008 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	E B 15	E B 15	24	E B 15	24	30	33	36	36	36	G 26	G 28	G 25	G 20	G 22	26	26	16	E B 15	17	20	E B 15
2	E B 14	E B 14	E B 15	E B 14	E B 15	E B 15	G 18	30	G 28	41	48	G 33	35	G 27	G 28	32	30	28	18	E B 15	E B 15	E B 14	E B 16	18
3	E B 15	E B 15	16	E B 15	E B 14	E B E C 32	G 20	31	32	36	G 31	G 31	G	G 25	38	34	34	28	G	E B 15	E B 15	E B 15	E B 15	E B 14
4	E B 16	E B 15	E B 15	19	C	17	28	E C 35	34	G 26	G 26	36	G 28	38	35	35	31	32	40	21	21	23	25	19
5	22	E B 15	E B 15	E B 15	E B E B 15	E B 15	28	32	40	40	36	G 27	34	35	G 29	34	32	40	26	32	28	15	21	19
6	20	E B 15	20	E B 15	E B E B 15	E B 15	25	31	32	A A 44	33	32	34	G 27	G 24	40	36	27	24	18	E B 15	E B 16	22	A A 77
7	E B 15	16	E B 15	20	E B 16	E B 16	22	29	32	36	34	36	35	38	37	G 24	32	30	33	E B 15	29	18	19	26
8	E B 15	E B 16	E B 15	E B 15	16	23	24	40	40	48	A A 68	A A 65	A A 74	39	34	44	39	G 22	21	24	E C 32	17	20	16
9	E B 15	E B 15	E B 15	E B 15	E B 14	16	26	G 24	32	38	44	42	48	37	40	35	34	31	29	23	25	E B 15	16	E B 15
10	16	E B 16	E B 15	E B 15	E B 14	20	27	35	43	A A 60	48	A A 64	A A 76	48	42	40	45	44	41	41	20	18	A A 68	E B 15
11	E B 15	E B 15	E B 15	E B 14	16	18	23	29	35	39	43	A A 56	44	43	44	45	G 27	32	42	40	29	16	30	20
12	E B 15	E B 15	16	15	E B 15	17	31	34	40	41	38	48	36	G 27	45	47	57	A A 74	24	24	20	20	22	29
13	E B 15	E B 15	E B 15	16	E B 15	22	U Y 28	42	43	41	G 29	35	G 27	G 28	G 26	33	G 22	G 19	23	E B 15	E B 14	22	22	20
14	19	A A 64	27	A A 67	A A 54	31	A A 46	A A 63	44	A A 132	A A 72	G 33	G 31	38	46	35	31	35	A A 51	32	19	19	18	E B 15
15	E B 16	E B 16	E B 14	20	17	19	28	31	33	36	38	37	38	G 25	G 24	33	35	33	38	47	28	20	28	17
16	20	22	E B 16	E B E B 15	E B 15	20	27	32	40	36	38	34	48	44	36	G 24	33	29	33	64	28	22	22	E B 15
17	20	18	17	E B 15	14	19	28	32	A A 103	48	38	38	41	49	A A 80	53	32	39	43	24	36	32	A A 95	23
18	E B 15	18	E B 14	E B E B 16	E B 13	17	27	40	36	39	A A 170	36	36	G 25	G	36	32	43	45	56	26	34	22	A A 66
19	18	29	E B 15	18	16	20	A A 63	A A 58	42	50	47	A A 117	46	47	46	35	32	35	A A 57	21	23	25	18	20
20	16	16	18	E B 14	E B E B 15	E B 14	28	40	A A 53	A A 56	A A 73	39	37	A A 60	A A 68	40	42	30	35	31	39	33	18	19
21	16	E B 16	18	16	19	31	31	A A 56	A A 64	A A 56	A A 73	43	40	A A 98	A A 100	44	G 24	61	A A 80	30	E B 15	E B 16	28	E B 15
22	E B 14	E B 15	18	E B 14	E B 15	21	29	46	A A 61	A A 84	36	A A 64	43	43	36	33	38	37	25	36	A A 64	21	22	23
23	21	33	19	A A 89	20	30	A A 52	A A 76	A A 61	A A 58	A A 63	A A 52	A A 56	A A 62	A A 76	A A 80	A A 66	A A 95	46	46	18	32	A A 61	25
24	28	29	19	20	16	30	A A 53	A A 71	A A 97	A A 170	A A 114	A A 131	A A 112	A A 129	A A 58	42	34	31	A A 97	A A 74	A A 109	24	A A 55	A A 86
25	20	E B 15	20	16	16	19	G 21	34	42	G 30	A A 65	A A 59	A A 68	44	37	A A 56	34	28	28	36	E B 15	E B 15	17	E B 16
26	E B 15	E B 15	21	18	E B 14	22	28	52	44	46	A A 74	A A 44	41	A A 63	A A 72	43	40	43	A A 93	20	46	17	E B 15	E B 16
27	16	E B 15	E B 15	19	16	21	35	A A 62	A A 70	A A 71	A A 72	A A 63	A A 62	A A 45	37	34	A A 91	35	21	25	E B 15	18	19	19
28	E B 15	30	17	A A 110	19	A A 55	26	41	A A 58	A A 58	40	40	39	39	36	42	49	50	A A 72	35	21	E B 15	27	30
29	E B 15	20	20	E B 15	E B 15	18	A A 54	A A 56	32	A A 66	A A 66	38	34	A A 57	35	40	35	A A 88	A A 88	26	18	17	19	21
30	24	18	18	16	E B 14	28	33	A A 46	A A 64	41	40	A A 44	36	34	E C 35	G 26	27	G 22	36	A A 70	31	22	29	22
31	21	23	20	18	E B 15	20	29	A A 62	A A 77	A A 62	A A 62	A A 54	A A 52	A A 57	35	40	33	40	A A 97	A A 60	20	20	28	27
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 16	E B 16	16	16	E B 15	20	28	40	42	44	44	40	39	39	37	36	34	33	36	30	21	18	22	19
U Q	20	20	19	19	16	23	A A 31	A A 56	A A 61	A A 58	A A 68	A A 56	A A 48	A A 49	A A 46	43	39	43	A A 51	41	29	22	28	25
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 17	25	31	33	38	36	36	G 34	G 28	G 34	33	31	28	25	21	E B 15	E B 16	18	E B 16

MAY 2008 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	16	15	15	14	15	13	14	15	14	18	20	16	16	19	14	14	14	14	14	15	15	14	15
2	14	14	15	14	15	15	14	13	14	16	15	19	16	17	17	14	13	15	13	15	15	14	16	14
3	15	15	13	15	14	E C 32	14	13	14	18	19	19	16	18	17	14	14	14	14	15	15	15	15	14
4	16	15	15	16	C	14	14	E C 35	14	15	18	22	20	21	14	14	14	13	14	15	15	14	15	14
5	15	15	15	15	15	15	14	14	14	14	E C 33	18	18	14	17	14	14	14	14	15	16	14	14	15
6	15	15	14	15	15	15	12	13	12	14	16	14	15	15	13	14	14	15	15	14	15	16	15	15
7	15	14	15	16	16	16	14	15	14	18	19	17	16	16	E C 33	15	14	15	14	15	14	15	15	14
8	15	16	15	15	13	14	14	15	16	19	17	17	20	16	13	14	14	14	13	14	E C 32	15	14	15
9	15	16	15	15	14	14	13	14	15	15	15	15	14	22	18	13	13	13	14	14	15	15	15	15
10	15	16	15	15	14	15	14	14	14	20	15	18	18	16	18	14	13	14	14	13	15	15	15	15
11	15	15	15	14	14	13	15	15	14	14	14	32	16	29	18	15	14	14	14	16	15	14	15	15
12	15	15	16	14	15	14	14	15	14	14	22	19	18	16	22	20	14	16	15	15	15	14	15	15
13	15	15	15	15	15	14	14	14	16	15	18	18	14	15	14	13	14	14	15	15	14	14	16	15
14	16	14	14	15	14	14	14	14	14	14	17	19	19	23	15	13	15	12	13	14	15	14	14	15
15	16	16	14	15	14	14	13	15	16	15	E C 34	20	18	18	19	13	14	14	14	16	15	15	14	15
16	15	15	15	15	15	12	14	15	16	17	21	18	15	19	17	13	14	14	15	14	15	14	15	15
17	15	15	15	15	14	14	14	12	13	14	E C 33	20	34	17	18	14	15	14	14	14	14	15	15	14
18	15	15	14	16	13	14	14	12	14	19	14	14	14	14	19	15	15	15	15	14	14	15	15	15
19	15	14	15	15	14	12	15	14	15	15	13	32	22	20	19	20	14	15	14	13	14	14	14	14
20	14	15	14	14	15	14	13	14	14	14	23	18	22	21	18	14	15	14	13	15	15	14	15	15
21	14	16	14	14	14	14	15	14	14	13	17	13	24	16	16	16	15	13	13	15	15	16	15	15
22	14	15	15	14	15	12	14	15	17	14	14	16	18	22	17	15	14	13	14	14	13	14	16	14
23	16	15	15	14	14	14	12	15	15	12	17	24	14	23	15	14	15	15	13	14	15	15	14	14
24	15	14	15	14	14	13	14	15	14	17	17	17	15	24	16	14	12	14	13	14	15	15	15	14
25	15	15	14	15	14	15	14	14	14	20	20	21	14	21	16	16	16	13	14	14	15	15	15	16
26	15	15	14	14	14	12	14	12	14	16	15	14	24	16	17	15	13	13	15	14	16	14	15	16
27	14	15	15	14	14	15	14	13	14	14	14	18	20	15	18	18	16	14	14	13	15	16	15	15
28	15	15	15	15	15	14	13	14	15	12	16	20	16	22	15	15	14	14	14	14	15	15	16	15
29	15	15	15	15	15	13	14	15	16	15	18	17	17	16	18	16	14	14	14	15	15	14	15	14
30	14	14	15	14	14	13	12	14	14	15	14	16	18	21	E C 35	14	14	13	13	15	16	14	15	14
31	15	15	14	15	14	12	13	14	15	17	17	24	15	20	20	17	14	14	14	15	14	15	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	14	14	14	14	14	15	17	18	17	18	17	14	14	14	14	14	15	15	15	15
U Q	15	15	15	15	15	15	14	15	15	17	19	20	20	21	19	15	15	14	14	15	15	15	15	15
L Q	15	15	14	14	14	13	13	14	14	14	15	17	15	16	16	14	14	13	13	14	15	14	14	14

MAY 2008 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	315	310	318	329	310	359	367	389	326	291	313	310	311	321	326	319	342	334	327	326	369	348	F	F
2	F	F	F	F	F	349	350	369	329	359	284	331	330	317	319	319	331	306	310	342	378	383	296	303
3	302	292	318	330	F	379	343	376	359	318	340	339	302	330	296	319	341	366	351	335	314	303	311	316
4	302	301	331	374	C	342	342	325	351	352	333	312	322	338	352	344	322	341	331	324	342	329	313	306
5	333	316	322	345	314	347	334	325	359	364	318	316	305	321	R	313	338	334	324	333	336	366	316	307
6	318	321	312	309	315	350	375	303	313	A	256	287	256	257	324	341	353	350	328	306	315	325	334	A
7	F	303	304	330	315	345	329	344	353	342	297	345	295	319	329	337	354	348	363	329	338	321	F	F
8	F	F	311	F	F	355	343	331	352	345	A	A	A	298	331	338	342	353	341	334	364	346	330	322
9	319	307	322	313	314	308	334	370	361	324	329	352	315	307	329	329	332	329	329	337	374	358	316	314
10	312	311	316	310	326	344	380	305	340	A	343	A	A	294	319	328	342	335	331	335	344	349	A	323
11	F	327	322	324	310	376	366	364	320	350	354	A	316	338	314	319	340	318	333	327	330	326	312	F
12	326	313	313	330	336	372	367	359	345	325	313	342	313	298	310	333	356	A	349	325	322	321	335	330
13	322	320	334	369	321	367	350	374	383	369	322	283	330	326	313	327	332	333	329	362	384	300	308	315
14	330	A	323	A	A	378	A	A	345	A	A	308	320	332	324	305	324	344	A	329	321	322	328	330
15	327	F	F	318	F	405	389	352	361	328	306	301	268	321	317	317	352	348	336	318	331	316	F	333
16	327	337	343	330	322	355	341	347	336	364	293	253	316	328	349	330	318	325	322	336	351	327	306	F
17	F	319	326	335	326	342	340	356	A	349	349	299	318	319	A	339	352	357	363	341	316	313	A	315
18	321	322	325	311	313	365	362	355	363	325	A	315	327	333	326	327	338	325	318	334	333	331	F	A
19	F	F	366	340	316	370	A	A	347	313	339	A	294	300	301	341	342	353	A	312	305	294	306	301
20	318	308	348	307	F	362	351	349	A	A	A	328	330	A	A	319	314	339	323	294	313	362	310	F
21	F	F	F	335	341	373	365	A	A	A	A	323	267	A	A	300	316	332	A	299	306	F	292	F
22	313	318	324	363	327	345	386	368	A	A	312	A	281	307	334	339	330	346	335	308	A	307	F	F
23	339	319	312	A	316	365	A	A	A	A	A	A	A	A	A	A	A	A	314	320	325	311	A	F
24	F	F	F	F	F	377	A	A	A	A	A	A	A	A	A	304	312	326	A	A	A	316	A	A
25	F	308	F	F	362	344	352	237	331	293	A	A	A	308	326	A	304	317	340	323	312	298	F	F
26	F	F	335	325	312	291	347	370	359	358	A	A	320	A	A	321	328	331	A	324	328	316	325	304
27	F	F	F	F	F	356	304	A	A	A	A	A	A	A	286	305	A	310	305	319	F	320	F	F
28	F	F	F	A	320	A	357	337	A	A	355	269	254	309	296	314	320	337	A	316	296	342	F	F
29	F	F	324	349	332	339	A	A	285	A	A	346	264	A	245	316	318	A	A	331	315	312	307	303
30	301	F	F	343	304	342	367	A	A	336	280	A	327	322	280	331	346	345	337	A	326	344	304	F
31	F	316	307	F	F	336	285	A	A	A	A	A	A	A	293	312	333	327	A	A	307	315	321	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	19	23	22	21	30	26	22	21	19	19	19	24	23	24	29	29	28	23	28	28	30	19	15
MED	319	316	322	330	316	355	350	354	347	342	318	315	314	319	319	321	333	334	331	326	327	322	312	315
U Q	327	320	331	343	326	370	367	369	359	358	340	339	321	328	328	335	342	347	340	334	343	344	325	323
L Q	312	308	313	318	314	344	341	331	330	324	297	299	288	307	298	315	321	326	323	318	314	313	306	304

MAY 2008 M(3000)F2 (0.01)

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MAY 2008 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L		UL 383	390	UL 400	UL 383	UL 408	399	408	UL 370	L						
2							L	L	UL 380	A	A	UL 413	407	UL 412	379	UL 381	UL 385	UL 363	L					
3						C	L	L	UL 396	UL 434	UL 444	UL 489	396	375	UL 342	371	UL 380	L	L					
4							L	UL 381	390	UL 409	UL 432	420	408	UL 400	UL 391	UL 400	UL 353	A	A					
5							L	UL 386	A	A	UL 401	UL 402	UL 396	UL 389	UL 367	UL 395	365	A						
6						L		385	381	A	UL 423	UL 405	UL 388	UL 443	395	A	A	L						
7								379	372	417	UL 425	UL 416	UL 403	UL 390	406	UL 380	UL 379	L						
8							L	A	A	A	A	A	A	UL 333	UL 443	A	A	L						
9							UL 385	L	UL 406	UL 389	A	A	A	396	A	388	377	UL 376	A					
10							A	362	A	A	A	A	A	A	A	A	A	A	A					
11							L	UL 399	UL 410	411	A	A	A	A	A	A	374	UL 369	A					
12							A	L	A	A	428	A	UL 422	386	A	A	A	A						
13							L	A	A	A	UL 407	UL 413	420	UL 388	UL 403	390	374	365	L					
14							A	A	A	A	A	UL 429	UL 446	UL 374	A	389	379	A	A					
15								UL 409	UL 432	419	429	UL 397	UL 401	UL 403	407	UL 382	376	A	A					
16							L	UL 388	A	414	419	UL 432	A	A	383	377	UL 385	383	A					
17							L	L	A	A	408	UL 429	410	A	A	A	384	A						
18								A	412	381	A	411	403	UL 417	UL 433	UL 385	UL 371	A	A					
19							A	A	A	A	A	A	A	A	A	399	373	A	A					
20							L	A	A	A	A	UL 399	UL 405	A	A	UL 387	A	L	A					
21								A	A	A	A	A	A	A	A	A	370	A	A					
22							A		A	A	UL 403	A	A	A	UL 407	390	A	A						
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24							A	A	A	A	A	A	A	A	A	A	UL 355	UL 358	A					
25						L	UL 384	UL 345	A	UL 387	A	A	A	A	UL 379	A	UL 361	L	A					
26						UL 336	L	A	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	A	A	A	410	UL 381	A	A	L					
28						A	L	A	A	A	383	UL 413	UL 348	A	396	A	A	A	A						
29							A	A	UL 384	A	A	UL 413	UL 413	A	UL 422	A	A	A	A						
30								A	A	A	A	A	UL 428	UL 400	UL 409	UL 375	388	370	A	A				
31							UL 381	A	A	A	A	A	A	A	UL 373	A	UL 405	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	3	9	10	10	13	16	17	15	19	17	20	7						
MED						UL 336	UL 384	UL 385	UL 393	410	UL 419	UL 413	UL 405	UL 396	UL 399	UL 387	375	UL 369						
U Q							UL 385	UL 394	UL 410	417	428	UL 424	UL 416	UL 408	UL 409	392	UL 382	376						
L Q							UL 381	370	381	UL 387	402	UL 404	UL 396	386	UL 379	UL 380	UL 370	UL 363						

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MAY 2008 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								224		394	348	356	360	292	298	292	270	284						
2							276	250	308	262	E A 386	286	314	304	286	308	274	294	282					
3						E C 242	260	248	270	294	320	314	384	320	366	304	256	234	238					
4							296	304	266	272	282	358	332	296	274	292	302	262	254					
5							298	324	256	262	336	354	366	324	374	338	272	264						
6						264		374	384	A	504	394	456	536	320	284	270	292						
7								282	274	268	384	312	396	344	304	294	256	260						
8							296	E A 306	270	E A 292	A	A	A	386	302	274	266	256						
9							298	238	262	336	338	282	E A 360	364	300	294	294	288	262					
10							240	348	E A 298	A	E A 306	A	A	E A 414	326	300	278	278	270					
11							254	280	328	294	286	A	340	288	E A 364	E A 344	290	304	E A 278					
12							258	274	270	324	350	298	346	398	336	284	E A 276	A						
13							286	242	240	266	346	430	326	328	338	300	286	284	274					
14							A	A	E A 298	A	A	350	332	306	324	342	306	270	A					
15								286	264	326	376	390	478	336	330	304	262	254	E A 276					
16							272	258	288	252	386	424	E A 346	320	282	306	328	292	282					
17							266	246	A	278	284	376	336	E A 356	A	308	256	254						
18								244	266	328	A	346	314	318	320	306	292	E A 302	E A 316					
19							A	A	284	E A 346	282	A	378	334	314	252	272	246	A					
20							288	268	A	A	A	310	304	A	A	288	288	280	E A 284					
21								A	A	A	A	316	444	A	A	326	296	282	A					
22							226		A	A	350	A	410	328	268	276	286	260						
23							A	A	A	A	A	A	A	A	A	A	A	A	E A 320					
24							A	A	A	A	A	A	A	A	A	370	358	324	A					
25						276	268	492	330	404	A	A	A	336	306	A	324	308	252					
26						404	272	254	256	E A 280	A	A	348	A	A	320	296	286	A					
27							E A 342	A	A	A	A	A	A	A	400	364	A	282	278					
28						A	264	E A 300	A	A	294	446	520	328	366	336	E A 312	262	A					
29							A	A	516	A	A	416	478	A	528	336	332	A	A					
30								A	A	304	E A 424	A	366	360	426	304	266	266	264	A				
31							426	A	A	A	A	A	A	A	396	322	272	278	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	19	21	20	19	19	19	24	23	25	29	29	28	15					
MED						270	272	266	271	293	341	354	360	328	322	304	282	278	269					
U Q						340	296	305	303	328	384	394	403	360	366	331	299	290	E A 282					
L Q						253	260	247	265	268	294	312	334	318	301	292	270	261	262					

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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 268	E B 272	E B 256	230	E A 308	212	222	A	198	198	200	210	228	216	196	198	188	228	E A 244	220	206	198	E A 304	E B 266
2	E B 286	E B 266	E B 266	E B 256	E B 252	226	210	212	210	A	A	232	190	212	196	196	224	234	220	222	184	180	E B 286	E A 290
3	E B 292	E B 306	E A 278	E B 250	216	E C 240	198	A	210	186	180	184	208	204	E A 296	228	E A 232	204	194	216	230	234	E B 248	E B 246
4	E B 274	E B 272	238	210	C	224	228	236	218	214	190	202	208	212	208	212	208	A	A	238	224	218	E A 282	E A 280
5	E A 248	E B 262	E B 248	224	238	228	232	228	A	A	210	190	190	210	210	212	230	A	252	228	232	208	E A 260	E A 286
6	E A 272	E B 256	E A 292	E B 256	E B 282	216	226	226	218	A	196	212	204	204	200	A	A	212	244	E A 252	E B 248	240	242	A
7	244	E A 272	E B 282	E A 318	E B 258	218	216	224	224	202	192	202	H 180	234	216	226	214	226	228	222	E A 252	232	E A 300	E A 304
8	E B 266	E B 288	E B 274	222	E A 268	E A 236	212	A	A	A	A	A	A	E A 236	206	A	A	210	226	230	E B 214	204	E A 248	E A 248
9	E B 254	E B 264	232	E B 254	E B 260	222	214	206	206	208	A	A	A	210	A	232	E A 248	236	A	228	206	194	244	E B 258
10	E A 284	E B 270	E B 286	E B 278	E B 264	E A 246	A	214	A	A	A	A	A	A	A	A	A	A	A	E A 250	238	228	A	E B 250
11	E B 258	240	E B 256	236	E A 264	210	210	194	204	208	A	A	A	A	A	A	220	230	A	E A 276	E A 248	218	E A 280	E A 284
12	238	E B 258	E A 268	E A 262	E B 256	214	A	224	A	A	200	A	184	210	A	A	A	A	220	242	242	244	230	E A 250
13	238	E B 262	234	210	216	222	228	A	A	A	200	188	182	214	188	194	210	216	244	212	190	E A 294	E A 282	E A 276
14	E A 248	A	E A 294	A	A	220	A	A	A	A	A	194	H 172	E A 230	A	202	206	A	A	E A 248	236	238	236	212
15	E B 250	E B 260	E B 276	E A 288	E A 278	210	212	194	194	196	194	H 174	228	200	200	204	234	A	A	E A 310	244	E A 264	E A 276	214
16	242	E A 270	216	224	240	220	208	210	A	196	192	186	A	A	228	212	218	210	A	E A 300	218	228	E A 274	E B 248
17	E A 268	E A 262	E A 248	228	236	212	206	208	A	A	198	196	200	A	A	A	224	A	228	222	E A 248	E A 284	A	E A 272
18	244	E A 252	E B 256	E B 258	E B 252	204	212	A	208	E A 250	A	198	178	198	196	228	212	A	A	E A 282	220	E A 248	E A 282	A
19	E A 250	E A 302	210	238	E A 282	208	A	A	A	A	A	A	A	A	A	212	214	A	A	E A 250	E A 282	E A 294	E A 256	E A 262
20	224	E A 268	228	202	218	H 150	228	A	A	A	A	230	208	A	A	238	A	224	A	E A 294	E A 288	220	232	232
21	E A 258	240	E A 308	224	E A 262	E A 250	240	A	A	A	A	A	A	A	A	A	202	A	A	E A 302	240	E B 256	E A 298	E B 254
22	E B 260	E B 254	246	202	234	228	A	E A 268	A	A	202	A	A	A	192	208	A	A	E A 246	E A 296	A	E A 274	E A 268	E A 288
23	228	E A 304	232	A	E A 290	E A 242	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 268	232	E A 252	A	E A 254
24	E A 300	E A 330	222	E A 270	212	230	A	A	A	A	A	A	A	A	A	A	E A 274	E A 268	A	A	A	E A 264	A	A
25	E A 266	E B 258	E A 270	232	214	200	H 188	216	A	222	A	A	A	A	210	A	238	216	A	E A 270	220	E B 272	E A 292	216
26	232	E B 272	E A 258	E A 260	E B 258	228	222	A	A	A	A	A	A	A	A	A	A	A	A	234	E A 272	220	226	E B 276
27	E A 292	248	E B 242	E A 250	242	220	A	A	A	A	A	A	A	A	222	204	A	A	214	E A 252	246	E A 242	E A 246	E A 246
28	238	E A 300	E A 258	A	220	A	204	A	A	A	E A 242	222	228	A	212	A	A	A	A	E A 260	E A 248	206	E A 256	E A 298
29	E B 290	240	E A 270	212	226	226	A	A	228	A	A	202	204	A	202	A	A	A	A	232	E A 240	E A 238	E A 256	E A 286
30	E A 284	E A 298	E A 288	220	E B 288	E A 262	E A 268	A	A	A	A	A	198	208	190	226	206	206	A	A	E A 246	218	E A 308	E A 334
31	E A 306	E A 298	E A 302	E A 266	E B 278	230	224	A	A	A	A	A	A	A	216	A	216	A	A	A	E A 252	242	E A 268	E A 318
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	28	29	30	22	14	11	10	13	16	17	15	19	17	20	14	12	28	29	31	27	28
MED	E 258	E 267	E 258	U 220	E 256	218	214	214	210	202	197	200	200	210	204	212	215	218	226	E A 249	U 227	U 222	E A 268	E A 264
U Q	E A 284	E A 288	E A 278	E A 259	E A 273	E A 230	228	226	218	214	201	211	208	216	216	227	231	230	244	E A 273	E A 248	E A 256	E A 282	E A 286
L Q	244	258	238	223	230	212	210	208	204	196	192	189	183	204	196	203	209	210	220	228	220	218	246	248

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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 116	118		118	114	A	A	116	114	110	110	116	124	B					
2						B 118	120		118	A	A	116	A	114	114	116	116	122	A					
3						C 124	124		A	A	118	118	120	108	118	118	112	126	124					
4						B 120	C		120	116	112	A	116	114	116	116	120	120	B					
5						B 118	118		116	112	C	112	A	A	114	114	116	116	B					
6						B 120	A		A	A	A	A	A	114	118	A	A	122	B					
7						B 118	118		A	A	A	A	A	116	C	122	122	124	B					
8						B 120	116		A	A	A	A	A	A	A	A	A	120	120					
9						B 124	118		118	A	A	A	A	A	118	114	114	122	B					
10						B 124	114		A	A	A	A	A	A	A	A	116	116	110					
11						B 118	118		114	114	A	A	A	A	A	A	118	116	B					
12						B 108	108		A	A	A	A	A	120	A	A	A	A	A					
13						B 120	A		A	A	116	A	114	114	114	112	114	120	B					
14						B 126	A		A	A	A	118	116	116	114	112	114	114	A					
15						B 118	116		118	114	C	112	116	112	118	114	114	124	A					
16						B 120	120		A	A	A	A	A	A	116	114	114	118	B					
17						B 116	114		A	A	A	114	A	A	A	A	A	120	A					
18						B 124	118		A	A	A	A	118	110	112	114	120	A	A					
19					124	114	A		A	A	A	A	A	A	A	120	112	A	A					
20						B 120	118		A	A	A	A	A	A	A	116	118	118	112					
21						B 118	A		A	A	A	A	A	A	A	A	112	116	A					
22					118	118	A		A	A	A	A	A	A	A	A	A	A	A					
23						B 122	114		A	A	A	A	A	A	A	A	114	A	A					
24					120	116	A		A	A	A	A	A	A	A	120	118	A	A					
25						B 122	124		A	122	A	A	A	A	A	A	A	114	A					
26						B 108	112		114	116	A	114	116	116	116	118	120	120	A					
27						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
28						A 116	118		A	A	A	A	A	A	A	114	116	A	A					
29					116	A	A		A	A	A	116	A	A	A	A	116	A	A					
30					122	114	108		A	A	A	A	A	A	C	114	A	116	A	A				
31					116	120	112		A	A	A	A	A	112	112	120	122	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						6	29	21	8	7	3	8	8	13	14	19	23	21	4					
MED						119	118	118	118	114	116	115	116	114	115	114	116	120	116					
U Q						122	121	118	118	116	118	117	117	116	118	118	118	122	122					
L Q						116	116	114	115	114	112	113	116	112	114	114	114	116	111					

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	96	100	100	B	96	148	134	142	120	112	104	104	100	100	100	98	102	138	112	106	104	106	102	114
2	100	96	B	B	104	B	100	128	102	104	100	102	102	98	102	126	122	124	106	B	106	104	104	102
3	102	108	102	B	B	C	102	110	102	102	104	102	G	100	124	118	122	124	G	88	B	100	100	B
4	B	102	102	98	C	138	130	C	120	100	100	102	96	130	136	124	132	122	112	112	104	98	96	94
5	98	B	B	B	B	B	122	114	118	118	112	102	100	98	102	116	130	110	108	110	106	104	102	104
6	102	102	104	106	B	144	114	104	102	104	102	98	110	102	98	106	104	126	112	106	106	104	98	96
7	106	100	100	98	96	104	156	168	106	104	104	100	106	116	160	102	126	128	116	116	106	106	110	104
8	102	106	102	102	100	104	132	116	106	100	98	102	100	100	102	98	98	102	120	92	C	106	104	102
9	98	102	106	102	B	136	144	106	116	104	100	106	104	102	122	124	128	120	116	108	106	106	104	102
10	102	94	94	B	B	114	132	112	104	104	100	100	98	102	104	102	116	114	112	106	104	104	104	104
11	104	94	B	112	94	128	134	140	120	110	106	100	104	104	102	100	100	116	106	112	106	106	104	108
12	104	B	100	100	96	126	120	114	104	106	106	102	104	100	100	98	94	94	94	92	88	110	102	100
13	92	100	100	96	112	118	118	106	106	104	104	104	102	100	98	154	102	106	110	110	110	108	106	106
14	102	102	104	100	96	98	120	108	102	102	100	100	100	134	118	122	120	116	104	104	106	106	102	100
15	B	108	114	102	100	130	122	126	128	124	112	116	124	98	106	122	136	128	106	104	104	104	106	104
16	100	100	100	B	108	124	128	120	106	102	102	104	98	98	142	102	118	122	112	106	106	106	102	108
17	100	100	104	98	96	126	124	118	104	102	122	108	106	98	98	98	102	116	98	104	104	102	106	106
18	100	100	102	100	118	118	118	112	106	104	96	102	126	98	G	136	122	106	102	104	104	100	100	96
19	94	96	96	96	94	134	116	104	108	102	102	100	104	106	106	144	120	108	102	102	104	108	104	96
20	100	100	102	108	110	B	142	116	106	104	102	108	108	108	108	134	158	134	112	108	106	104	102	108
21	102	104	100	96	98	128	120	106	106	106	104	104	106	104	106	102	102	110	106	108	114	106	106	102
22	98	98	88	94	96	142	118	108	106	102	102	102	102	96	98	98	92	88	94	98	102	110	108	104
23	102	92	96	96	96	102	120	112	106	106	102	100	102	106	104	106	114	108	102	102	102	106	104	102
24	102	98	90	94	96	128	118	104	106	104	104	98	100	100	106	146	114	104	102	102	106	102	104	104
25	104	106	102	94	96	98	104	116	108	104	104	102	100	104	102	98	96	118	104	100	106	128	116	102
26	104	104	96	98	100	102	134	118	116	122	96	122	120	120	116	118	120	112	106	106	104	102	100	104
27	108	102	110	94	96	118	106	102	102	102	102	102	104	104	108	104	102	102	104	106	108	102	106	106
28	104	98	98	96	96	100	128	118	106	102	104	106	106	108	106	120	112	104	102	100	102	100	100	100
29	96	96	94	120	122	134	106	108	106	106	104	112	106	98	102	96	124	106	106	102	100	98	100	98
30	98	94	90	98	B	126	122	110	104	104	104	102	104	98	C	100	98	104	98	98	98	96	96	106
31	102	106	104	100	104	138	130	112	104	104	108	108	108	118	124	120	118	104	100	102	108	112	102	100
	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	28	25	24	27	31	30	31	31	31	31	30	31	29	31	31	31	30	30	29	31	31	30
MED	102	100	100	98	96	126	122	112	106	104	104	102	104	102	106	106	116	112	106	104	106	104	104	103
U Q	103	103	103	102	104	134	132	118	108	106	104	106	106	106	117	124	122	122	112	108	106	106	106	106
L Q	98	97	96	96	96	104	118	108	104	102	100	100	100	98	102	100	102	104	102	102	104	102	100	100

MAY 2008 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

MAY 2008 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

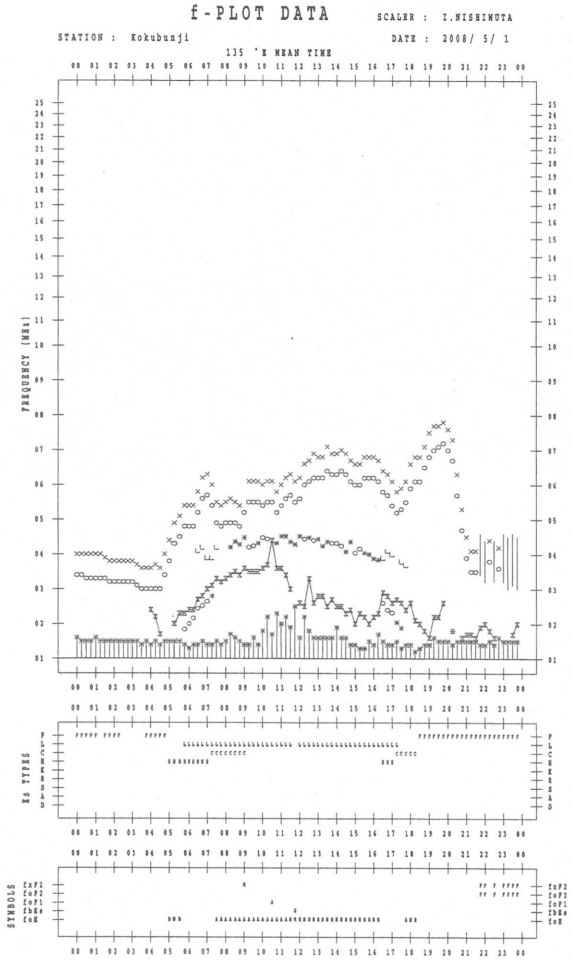
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F1	F1	F3		F6	H2	HL22	HL22	CL11	CL11	L1	L2	L2	L2	L2	L2	L1	HL11	C3	F3	F2	F3	F5	F3
2	F4	F2			F1		L2	CL22	L1	L2	L2	L1	L2	L2	L1	CL11	CL11	CL21	L3		F2	F3	F1	F3
3	F3	F2	F3				L2	CL22	L2	L1	L2	L2		L2	CL11	CL11	CL21	CL21		F1		F1	F3	
4		F1	F2	F3		H2	CL22		CL12	L1	L1	L2	L2	CL22	HL12	CL11	CL21	CL21	C4	F3	F5	F4	F4	F3
5	F3						CL22	CL22	CL22	C2	C2	L2	L2	L2	L1	CL11	CL22	C3	L4	F2	F4	F2	F6	F3
6	F3	F3	F3	F1		H1	CL42	L3	L2	L2	L2	L2	L2	L2	L2	L2	L2	CL11	C2	F3	F2	F3	F6	F4
7	F2	F3	F3	F4	F3	L2	HL22	HL22	L2	L2	L2	L2	L2	CL11	H1	L2	CL12	CL11	CL42	FF21	F5	F2	FF51	F5
8	F5	F2	F2	F2	F2	L3	CL21	CL21	L3	L3	L3	L3	L3	L2	L2	L3	L2	L2	C3	F3		F2	F6	F3
9	F4	F4	F4	F2		H1	HL22	L2	CL22	L2	L2	L2	L2	L2	CL11	CL11	CL11	CL21	C3	F6	F6	F2	F3	F2
10	F1	F2	F2			C4	C3	CL22	L3	L3	L3	L3	L3	L3	L2	L2	CL22	C5	C4	F4	F4	F4	F5	F4
11	F3	F2		F1	F5	C2	C2	HL12	CL22	CL21	L2	L2	L2	L2	L3	L3	L2	CL21	L3	F4	F8	F3	F5	F6
12	F3		F3	F3	F2	C2	C2	C2	L2	L2	L2	L2	L2	L2	L2	L3	L3	L4	L4	F4	F4	FF24	F5	F4
13	F2	F2	F2	F3	F1	C3	CL22	L3	L2	L2	L2	L2	L2	L2	L1	HL11	L2	L2	C3	F1	F1	F5	F4	F6
14	F7	F7	F5	F7	F5	L4	CL32	L3	L3	L3	L3	L2	L2	C1	CL21	CL21	CL11	CL31	L3	F6	F3	F3	F3	F2
15		F2	F2	F5	F4	H2	CL22	CL11	CL11	CL11	C1	CL11	CL11	L2	L2	CL11	HL11	CL22	L6	F5	F5	F3	F5	F3
16	F3	F5	F3		F1	C4	CL22	CL11	L2	L2	L2	L2	L2	L3	HL11	L2	CL11	CL22	C3	F7	F5	F4	F3	F2
17	F5	F5	F3	F2	F2	C3	CL22	CL11	L3	L2	C2	C2	L2	L2	L3	L2	L2	CL22	L4	F7	F7	F8	F5	F4
18	F3	F2	F1	F1	F1	C2	CL22	CL22	L2	L2	L2	L2	CL12	L1		HL11	CL11	L3	L5	F5	F7	F5	F5	F7
19	F5	F4	F3	F3	F3	CL11	C4	L3	L2	L3	L2	L2	L2	L2	L2	HL11	CL21	L4	L4	F4	F3	F6	F6	F7
20	F3	F2	F3	F2	F1		HL21	CL21	L3	L3	L3	L1	L1	L3	L2	CL21	HL11	HL21	C3	F5	F4	F3	F3	F5
21	F3	F3	F3	F5	F3	CL63	C3	L3	L3	L3	L3	L2	L2	L2	L3	L2	L2	CL32	L5	F5	F2	F3	F4	F2
22	F1	F2	F5	F2	F1	H2	C2	L3	L3	L3	L2	L3	L2	L2	L2	L2	L4	L3	L2	F3	F4	F6	F4	F3
23	F3	F4	F4	F4	F4	L3	CL41	CL41	L3	L3	L3	L3	L2	L3	L3	L3	CL41	L4	L5	F5	F3	F6	F7	F5
24	F5	F4	F3	F3	F3	C3	C3	L4	L4	L3	L2	L2	L3	L3	L2	HL22	CL22	L2	L4	F6	F5	F4	F8	F5
25	F5	F3	F3	F3	F3	L2	L2	CL22	L2	L2	L3	L2	L3	L2	L2	L3	L2	CL12	L3	F6	F2	F2	F4	F2
26	F2	F3	F4	F4	F4	L3	C2	C3	CL12	CL22	L3	CL22	CL22	CL32	CL22	CL22	CL22	CL52	L5	F5	F6	F3	F3	F2
27	F2	F3	F1	F3	F3	C2	L3	L4	L3	L3	L3	L3	L2	L2	L2	L2	L2	L3	L3	F5	F3	F4	F4	F3
28	F3	F5	F5	F5	F3	L3	CL22	CL32	L3	L3	L2	L2	L2	L2	L2	CL22	CL32	L3	L4	F5	F5	F2	F4	F3
29	F2	F4	F4	F3	F2	C2	L3	L3	L2	L3	L4	CL22	L2	L3	L2	L2	CL11	L4	L4	F4	F4	F4	F4	F6
30	F7	F4	F4	F3		C4	C2	C3	L3	L3	L2	L2	L2	L2		L2	L2	L2	L4	F7	F5	F5	F5	F5
31	F5	F5	F4	F5	F1	H2	HL32	CL42	L3	L3	L3	L2	L2	CL22	CL22	CL22	CL22	L3	L4	F5	F4	F5	F5	F5
	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																								

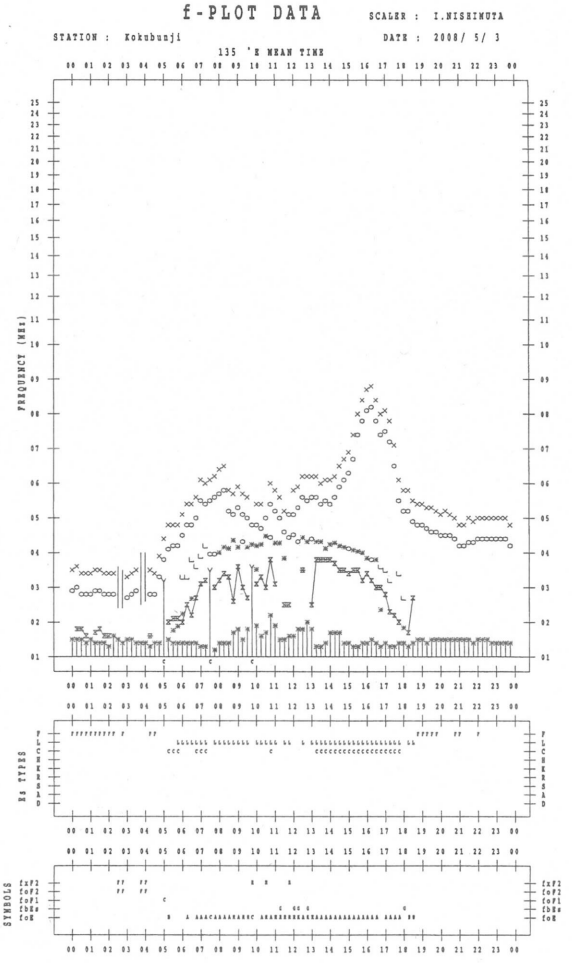
MAY 2008 TYPES OF Es

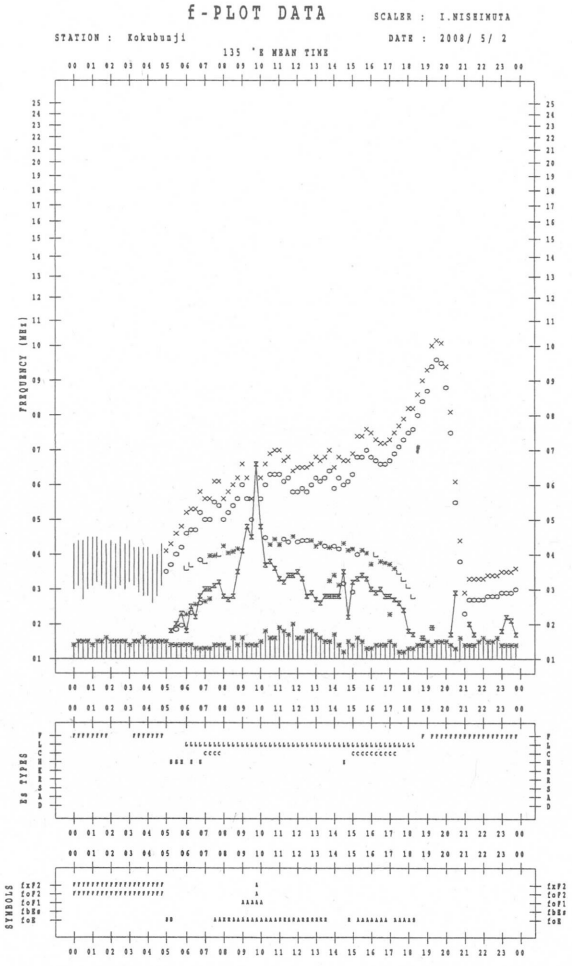
NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

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


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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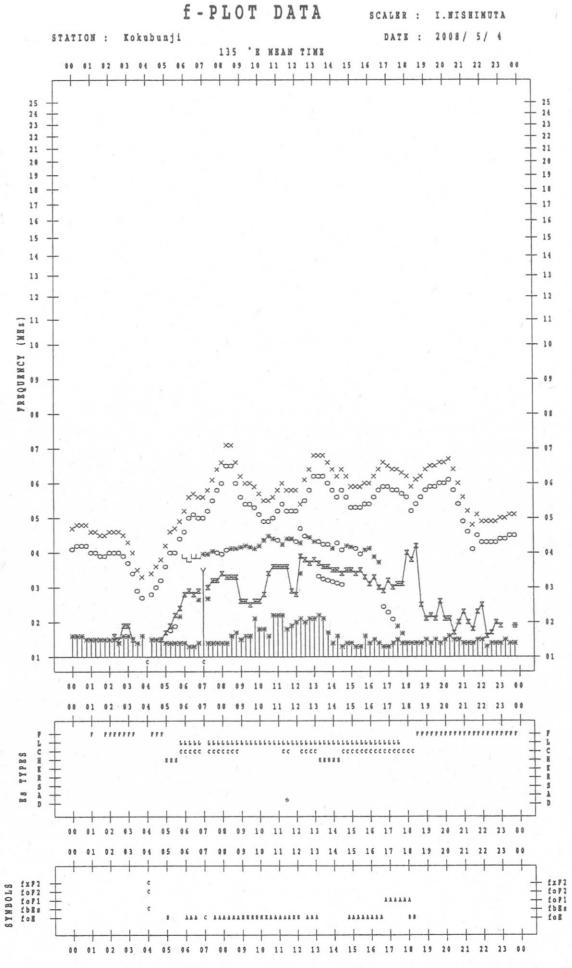
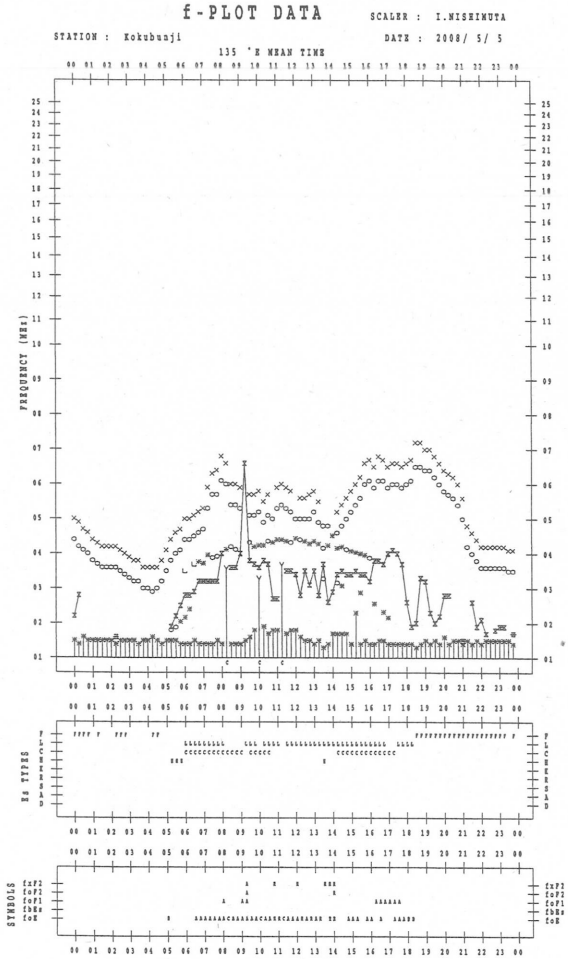
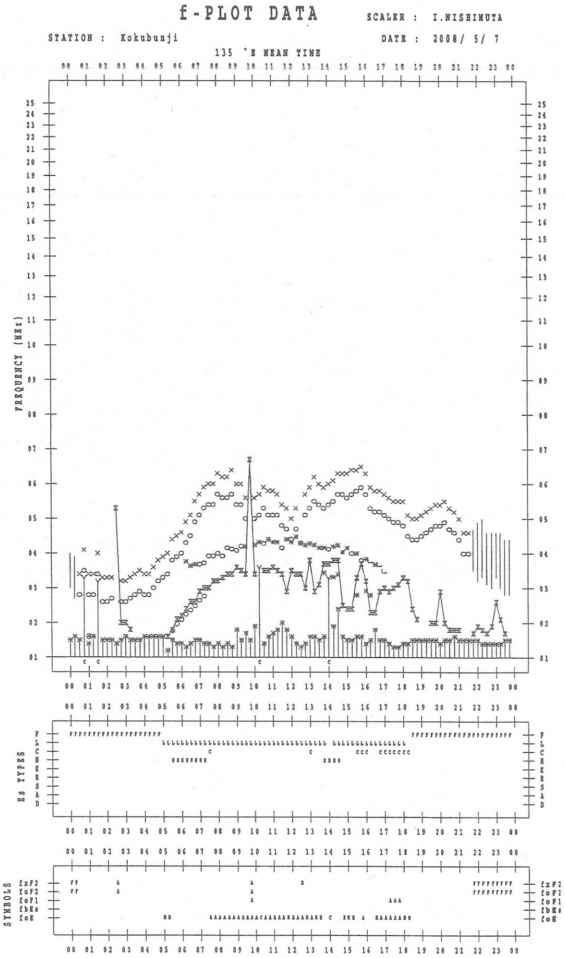
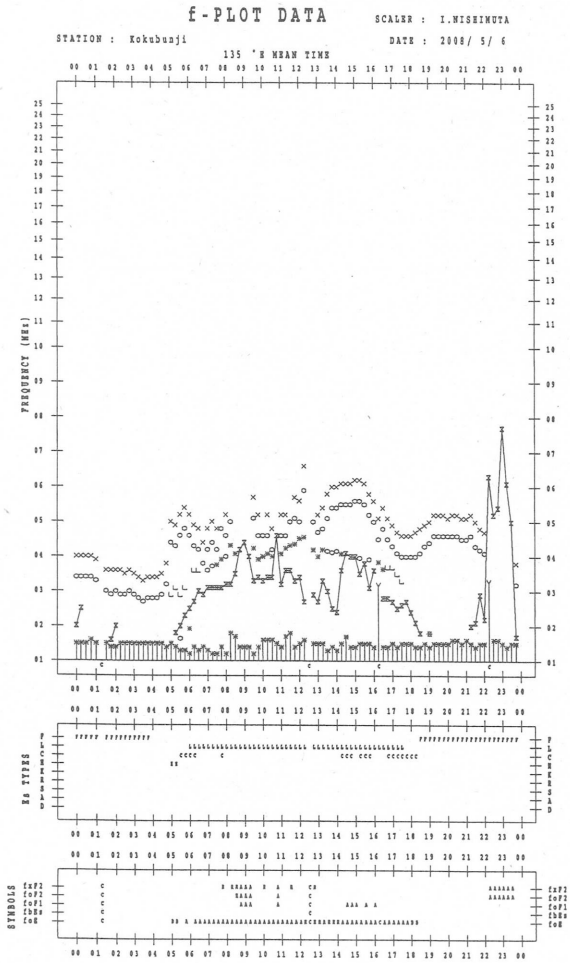
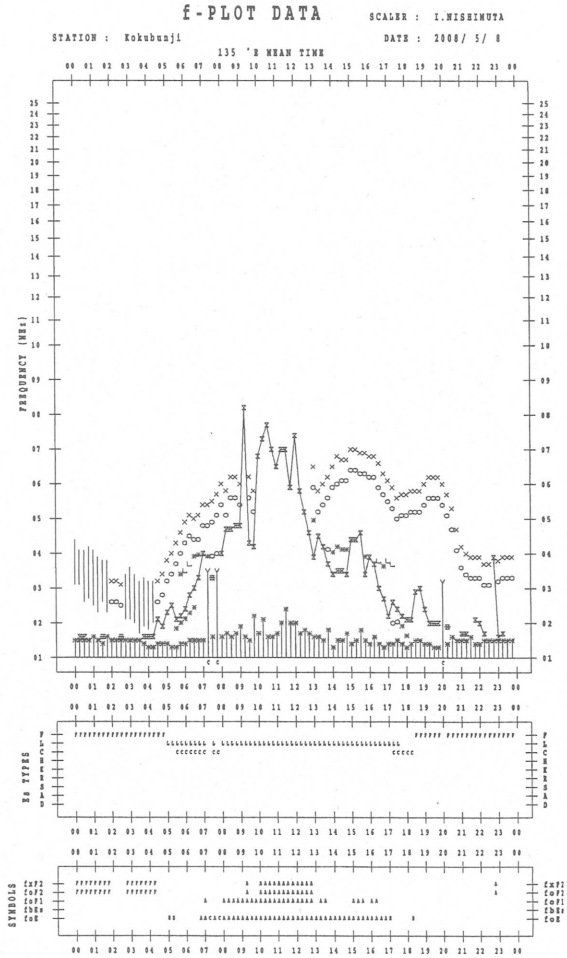
STATION : Kokubunji
DATE : 2008/ 5/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

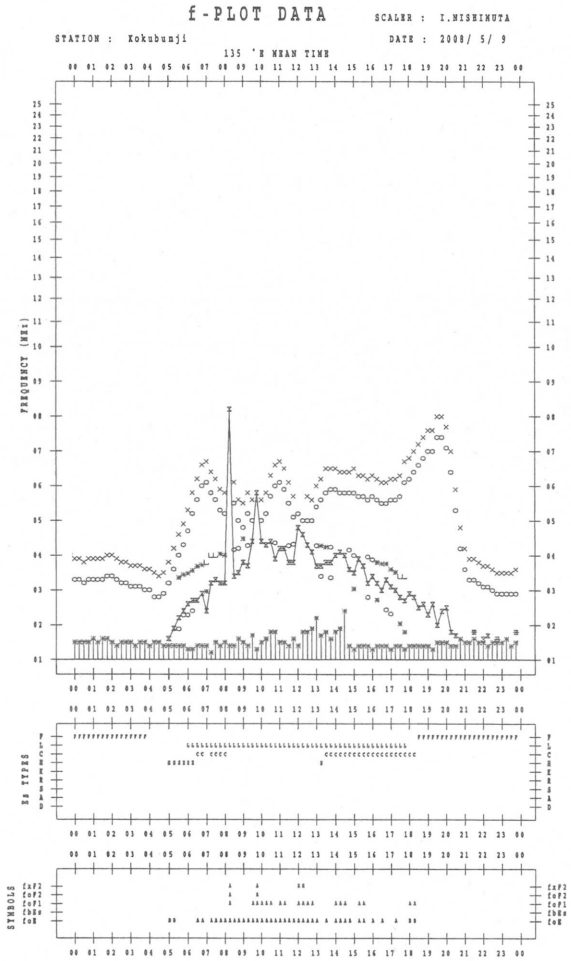

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

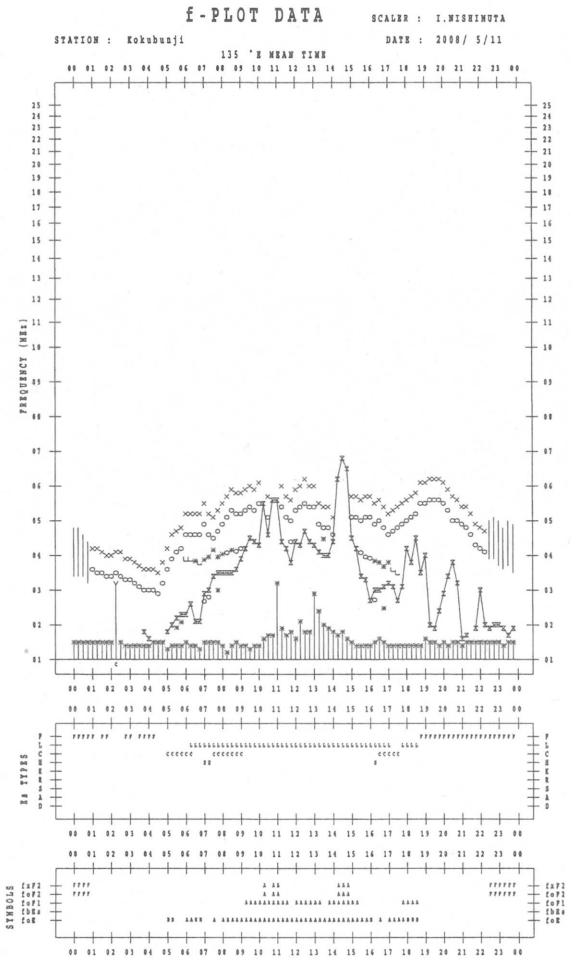

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

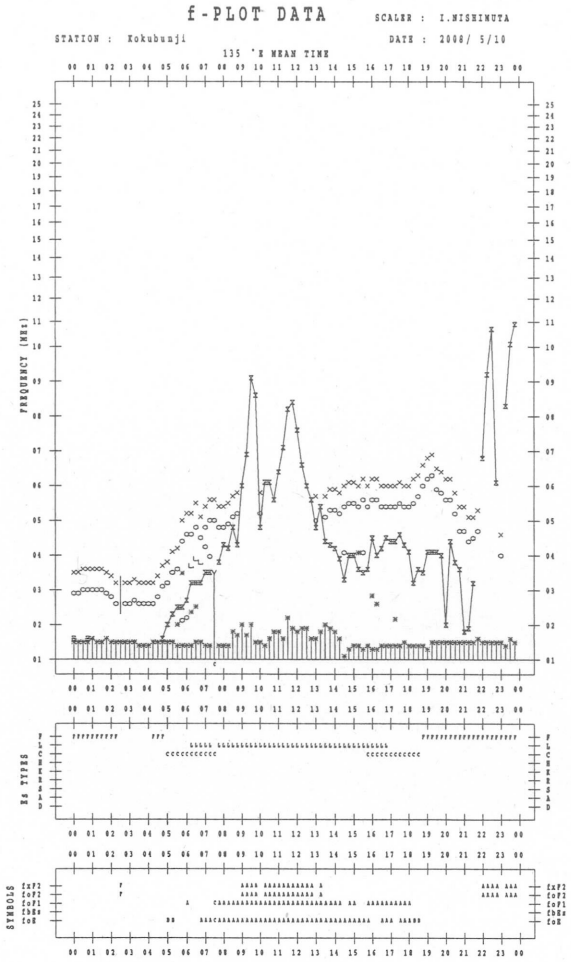

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

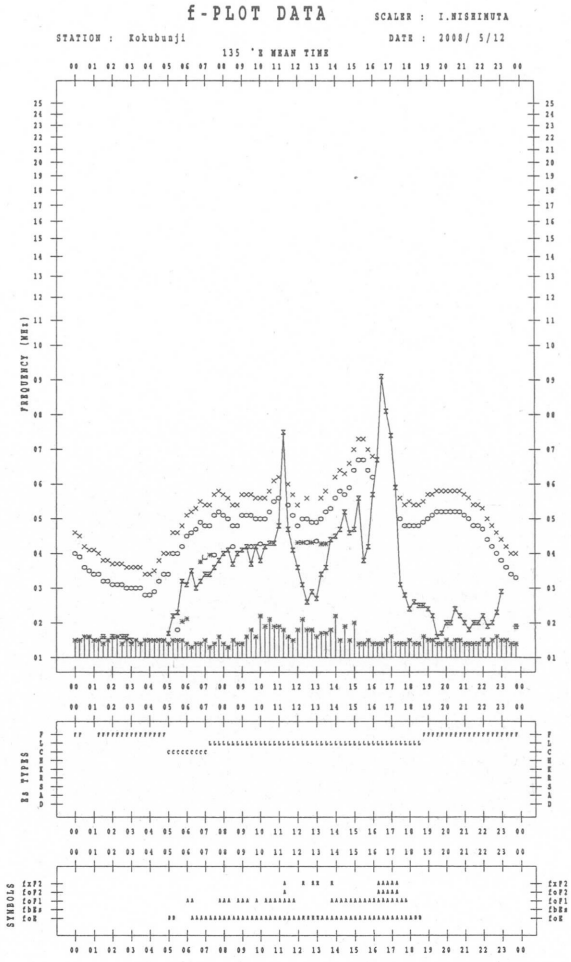

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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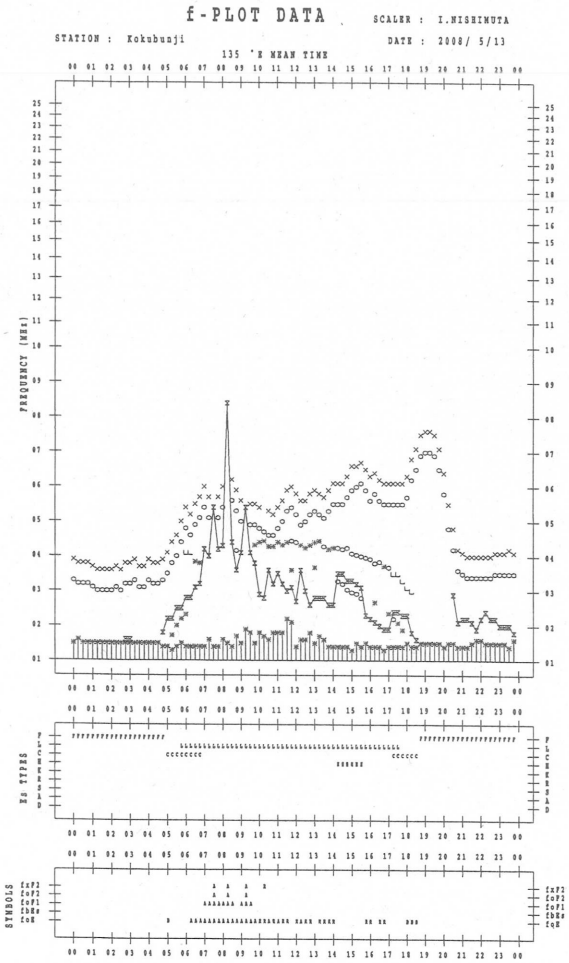
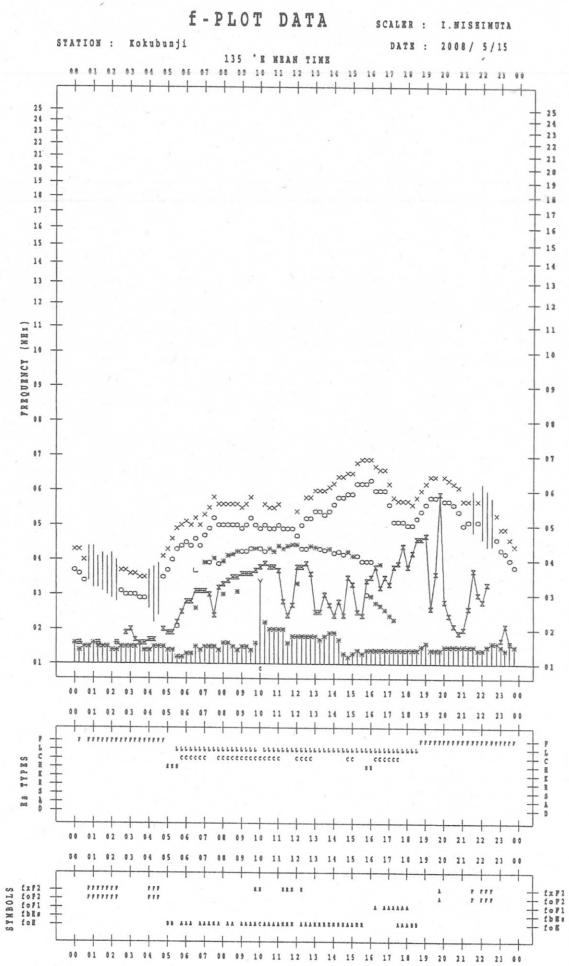
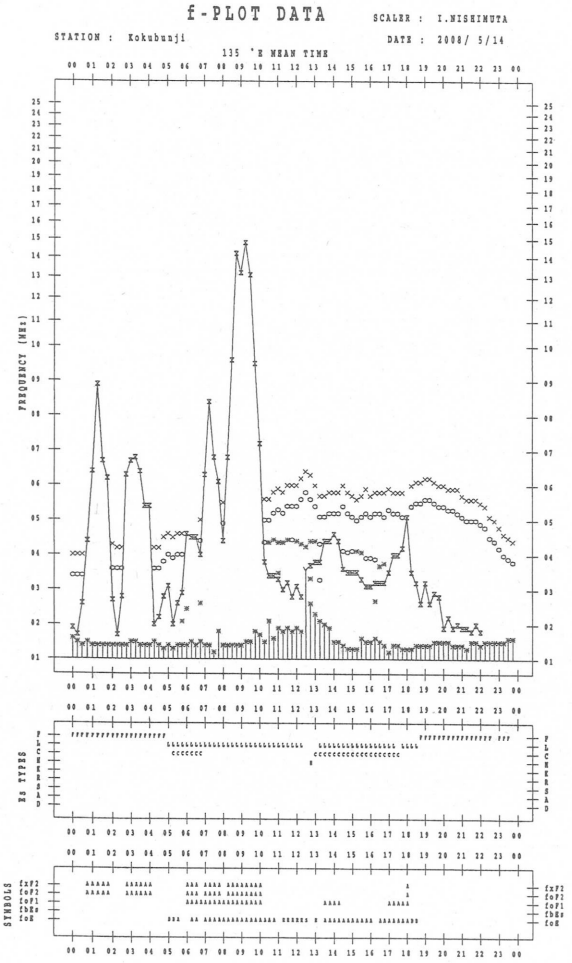
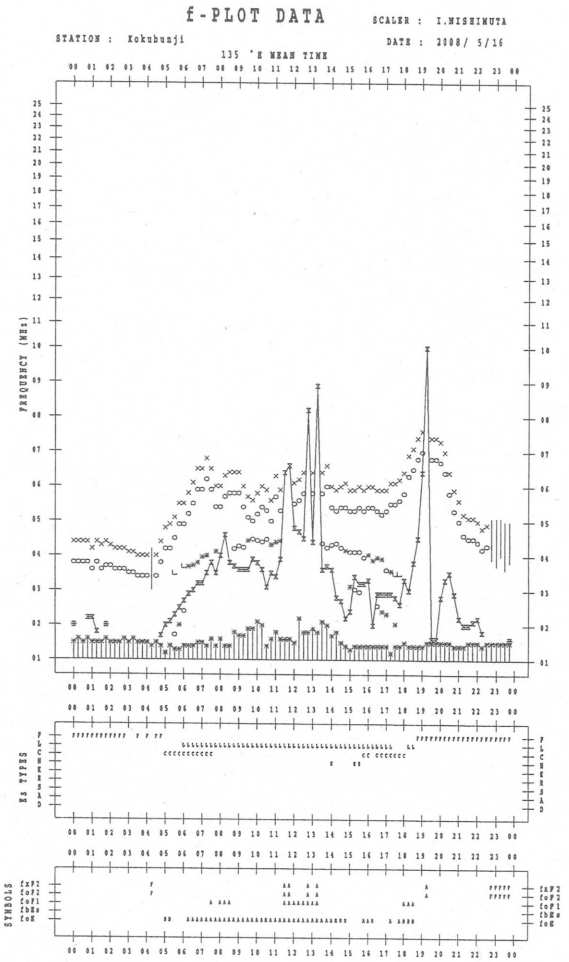
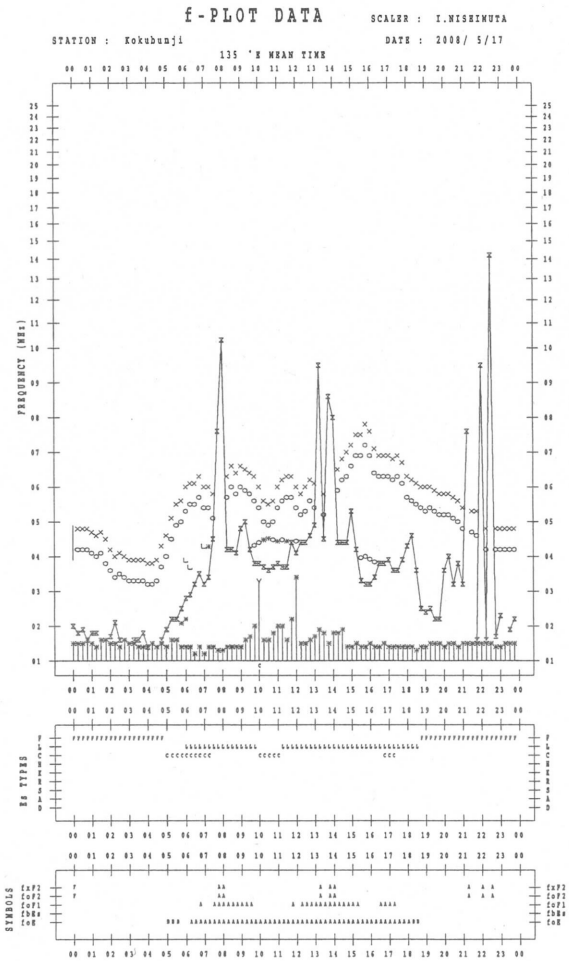
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

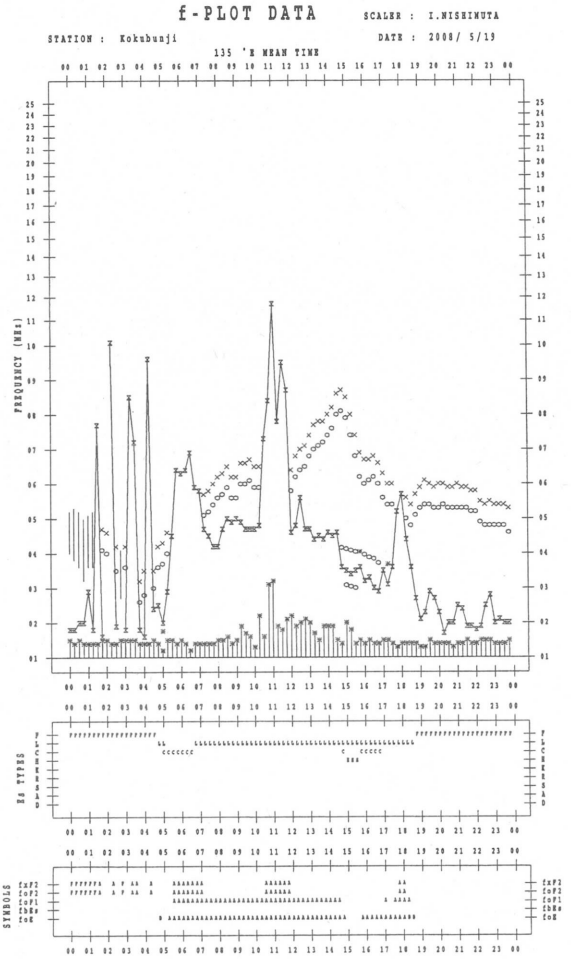

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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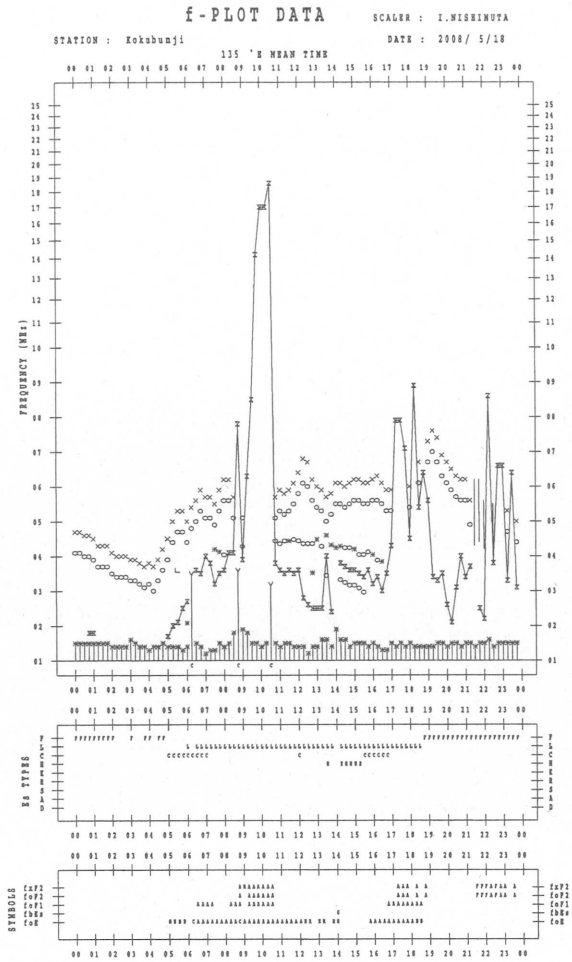
STATION : Kokubunji
DATE : 2008/ 5/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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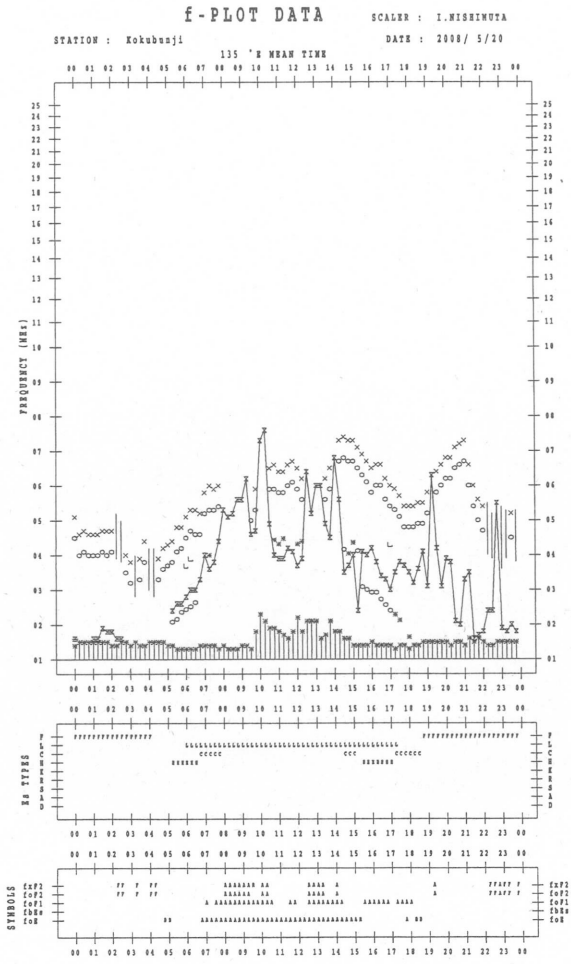
STATION : Kokubunji
DATE : 2008/ 5/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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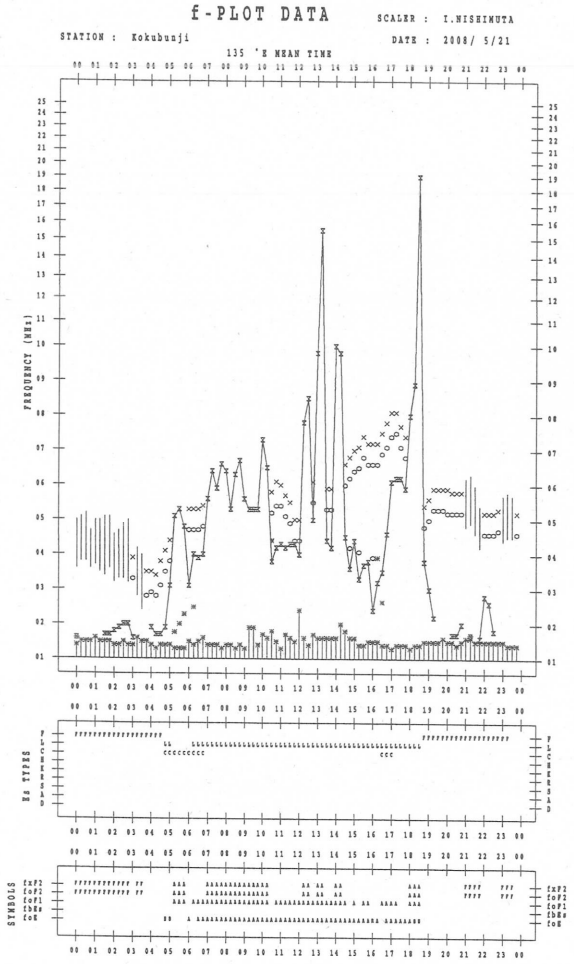
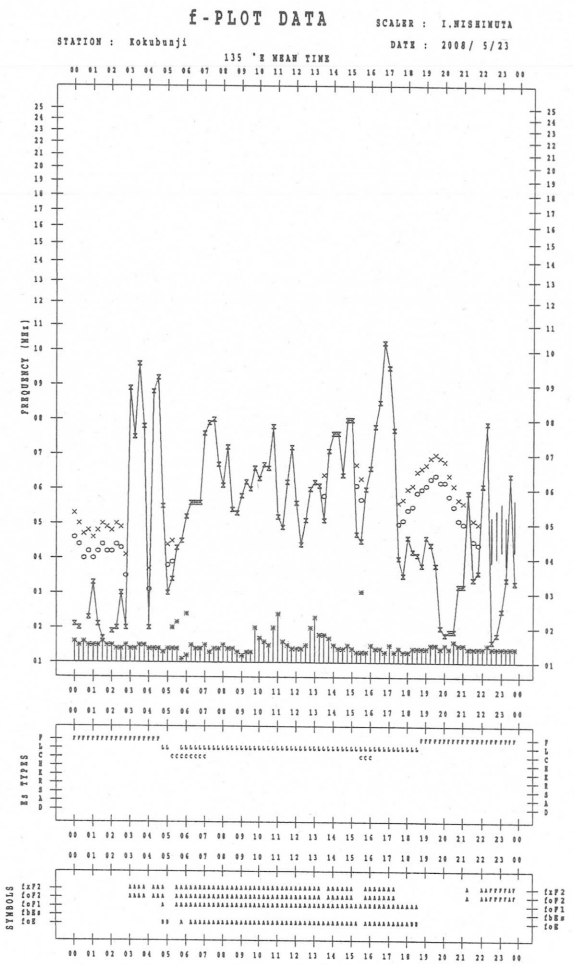
STATION : Kokubunji
DATE : 2008/ 5/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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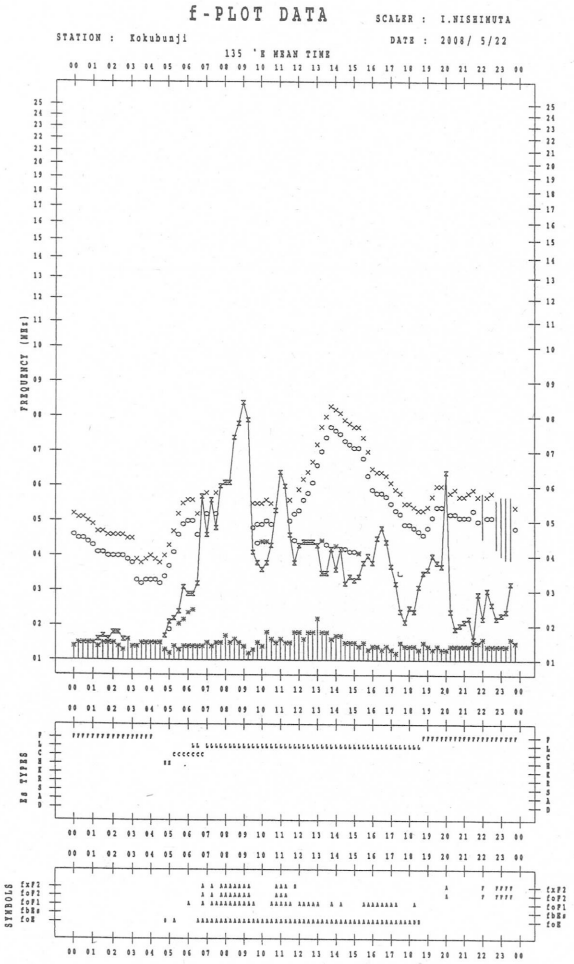
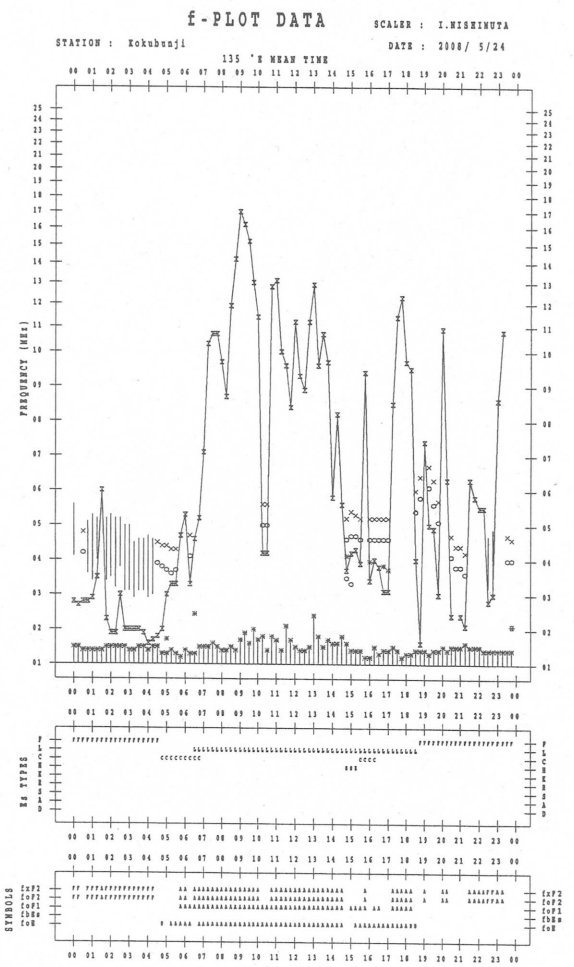
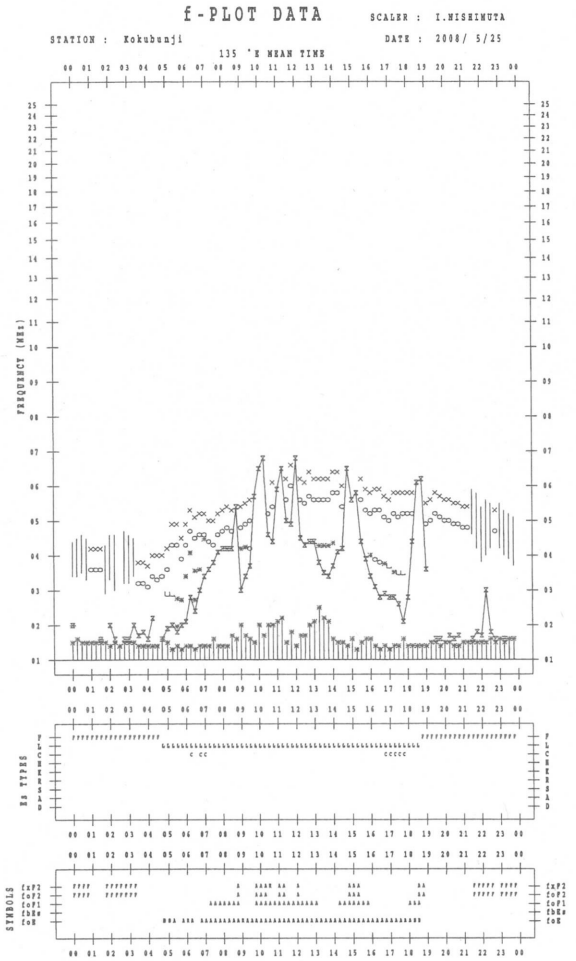
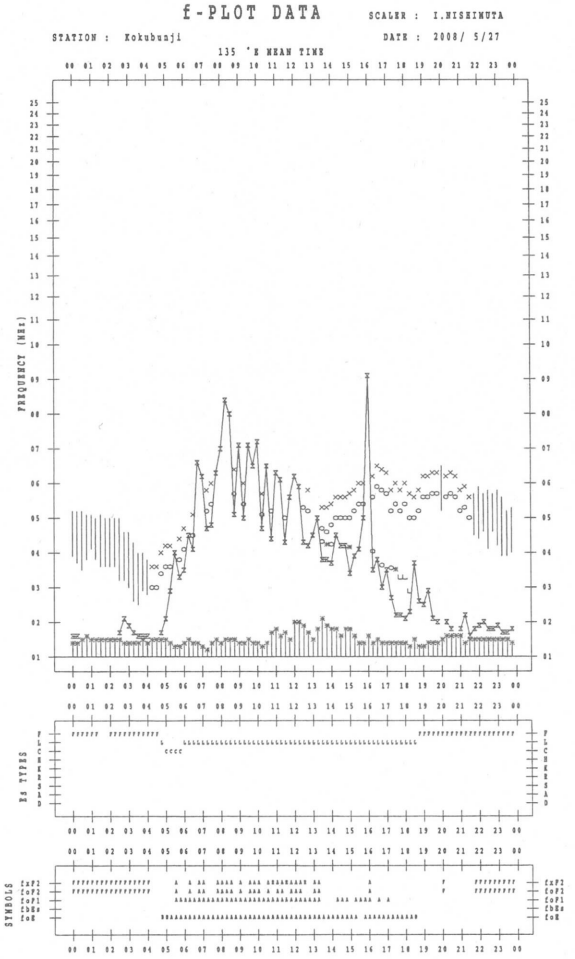
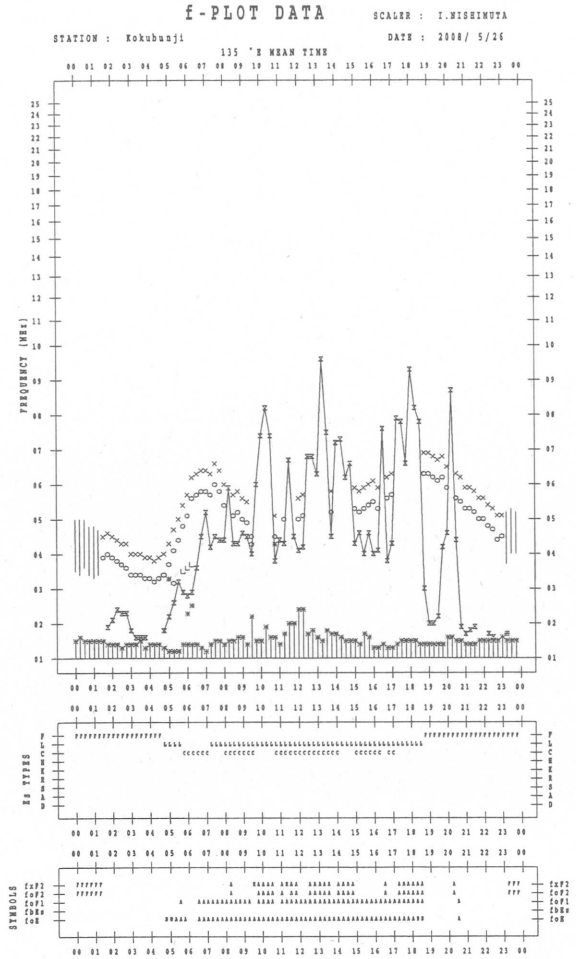
STATION : Kokubunji
DATE : 2008/ 5/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

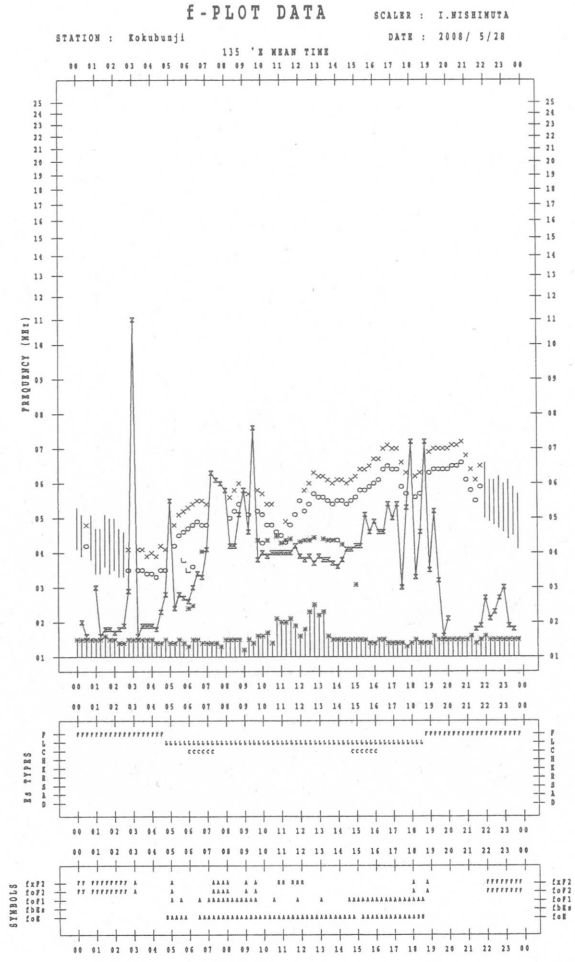

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

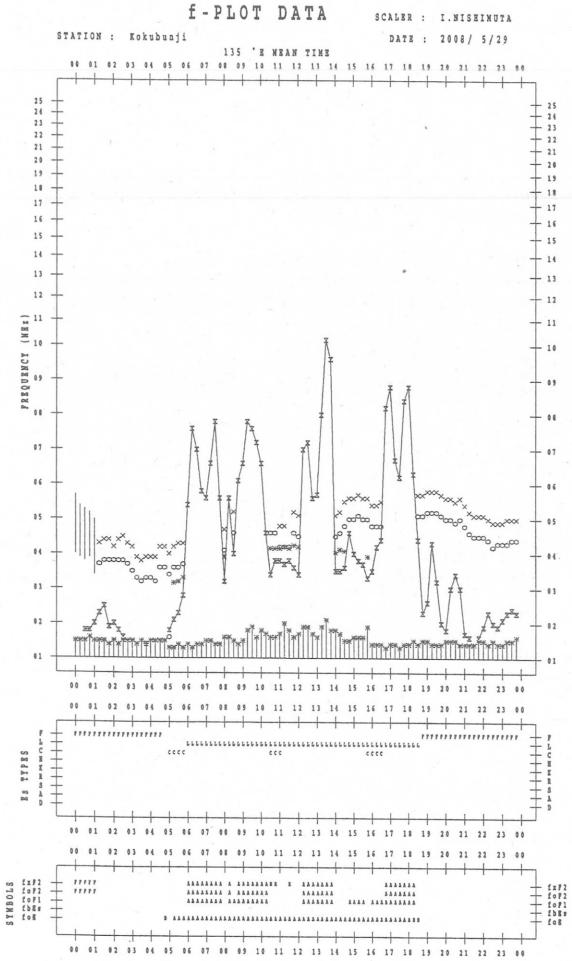

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

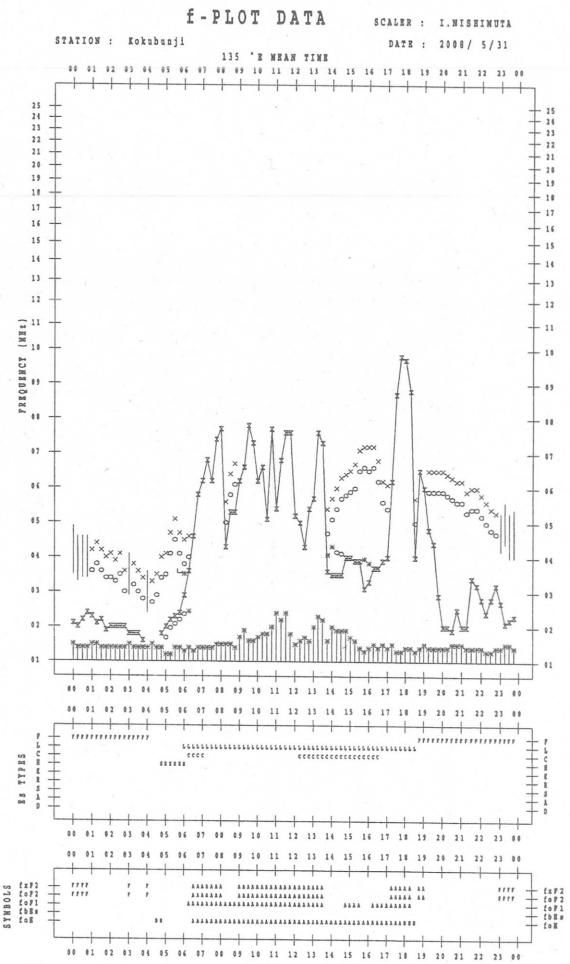

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

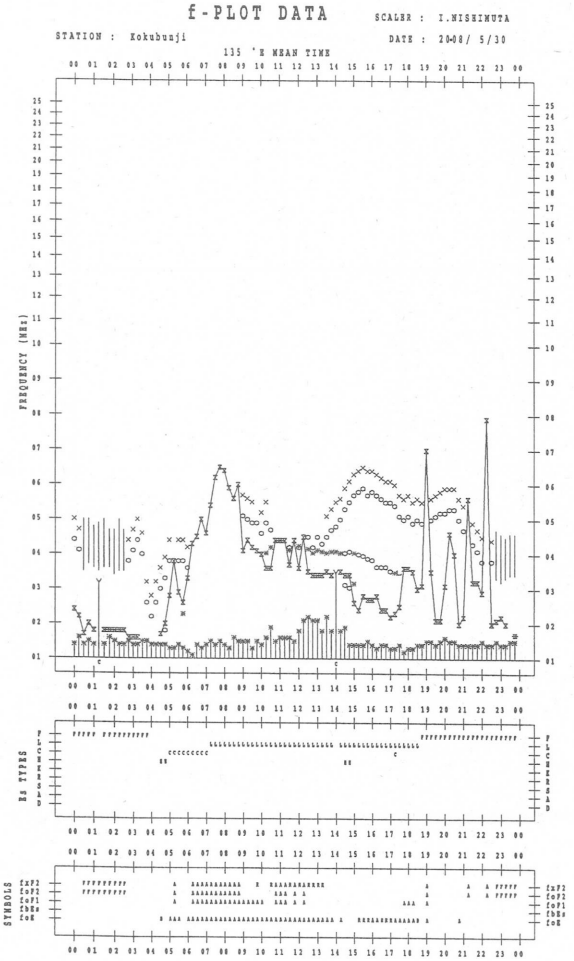

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/31
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 5/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso May 2008

Single-frequency observations

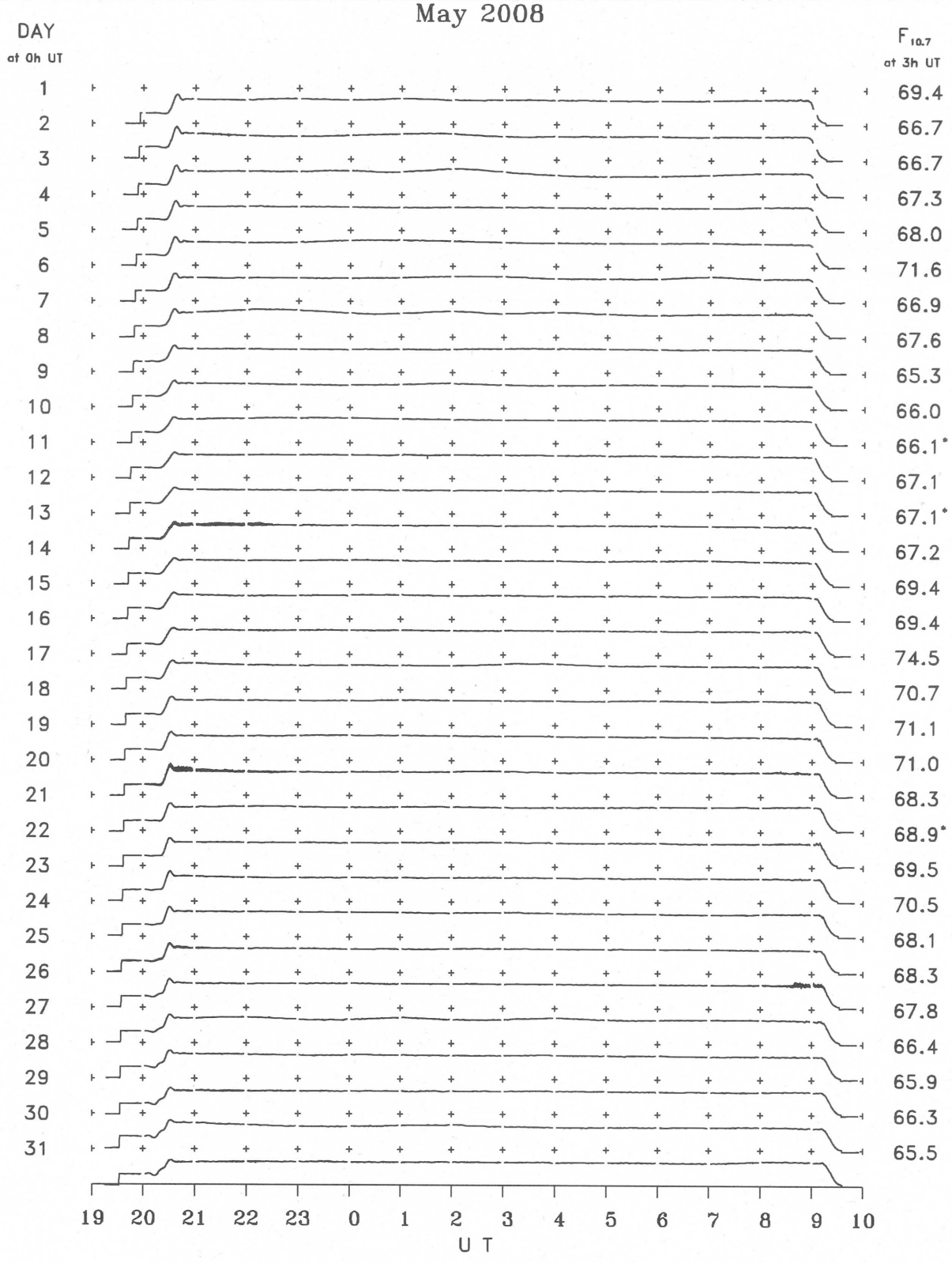
Normal observing period: 1925 - 0945 U.T. (sunrise to sunset)

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

B. Solar Radio Emission

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

May 2008



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

IONOSPHERIC DATA IN JAPAN FOR MAY 2008
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☎(042)(327)7540(直通)

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