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IONOSPHERIC DATA IN JAPAN

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CONTENTS

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INTRODUCTION

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

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

A. IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

X Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

Median count (**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

JUL. 2007

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	41	41	43	45	45	55	55	57	A	62	A	A	A	A	A	A	A	A	46	A	A	A	A	A
2	A	45	44	46	46	46	A	A	67	61		A	A	A	55	A	A	A	A	A	A	A	A	A
3	A	A	A	A		41	41	54	A	A	55	A	A	A	A	A	A	A	46	54	54	64	62	54
4	42	42	43	32	38	48	57	54	44	A	A	A	A	A				A	47	59	66	72	65	45
5	37	37	36	41	44	50	33	A	A	A	A	A	A	A	A	A	A	A	48	A	A	A	A	53
6	47	44	40	40	44	45	46	A	56	A		54					A	A	58	57	52	54	54	54
7	54	A	A	A	42	29		59	A	A	A	A	A	A	A	A		A	A	A	61		51	47
8	54	46	46	45	41	45	60	54	A	A	A					A	A	A	A	64	54	63	54	54
9	52	47	45	44	41	47	54	65	.	39						A	A	A		A	A	55	52	51
10	47	45	44	44	40	45	56	54	56		A					A			A	66	66	66	52	46
11	A	A	A	32	36	45	A	A	A	A	A	A	63	56	54	A	A	55	A	70	74	79	66	
12		A		A	34	45	A	A	A	A			A	A	A	A	A	A	A	64	55	39	54	44
13	42	41	36	32	34	35	A	A			A					A	A	44	42	A	55	A	A	45
14	40	40	36	38	43	52	A	A	39	A	A	A	A	A	A	54	A	A	50	A		61	54	54
15	52	47	46	45	36	A	49					A	A	A			A	A	A	A	52	38	53	52
16	45	32		A	35	40	47	58		56	A				54	A	A	A	A	52	66	54	47	42
17	42	41	37	36	40	42	47		41	53			A			42	50	A	38	47	54	61	54	47
18	45	44	41	42	45	50	41	A	A	A	A		A	A	A	A	A	A	A	A	A			45
19	47	40	38	36	37	46	54	64	A	A	A					A	44	44	41	47	54	54	52	52
20	46	42	40	37	37	42	45		A	A	A	A	A		A	53		52	52	61	62	66	54	52
21	54	52	44	36	34	34	34		A		A	A			A	A	51	46	46	46	44	53	45	28
22		40	37	34	34	42	44		55	A	A	A				54	48	41	46	56	A	A	44	39
23		34		35	36	42	39	53	A		A	A				A	46	44	45	A	58	54	49	
24			36	32	40	35		A	A	A	A	A			A	A	60	41	47	A	58	61	53	
25	A		34	34	41	45	39	A	A	A	A	57				A	A	A	A	A	64	52	43	
26		40	36	34	34	45	47	56	A	A	A	A	A	A			54	A	A	60	55	A	A	A
27	36	40			36	A	A	56	A	A	A	A	A	A	49		52	54	58	64	66	65	58	24
28	34	41	40	45	40	A	A	A	A	A	A							A	A	63	65	62	54	50
29		34	34	35	34	A		59	56	A	A		A			A	A	A		70	A	66	66	A
30	A	34	32	32		38			58	A			A	A		55	54	56	35	52	54	58	A	
31	41	36	34	35	35	44	A			49		A	A		A	36	A	A	54		36	60	52	40
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	25	24	26	29	27	19	13	9	6	1	2	1	1	4	6	9	10	17	18	23	23	24	22
MED	45	41	39	36	38	45	47	56	56	54	55	56	63	56	54	54	51	45	46	60	55	61	54	47
U Q	49	44	43	44	41	46	54	59	57	61	27	57	31	28	54	54	54	54	51	64	65	65	54	52
L Q	41	38	36	34	35	41	41	54	42	49	27	54	31	28	51	42	47	44	43	52	54	54	51	44

HOURLY VALUES OF fEs AT Wakkanai

JUL. 2007

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	32	30	G	G	33	44	48	76	47	79	49	51	69	77	52	46	76	35	70	70	59	81	58
2	80	40	33	39	34	36	60	72	78	66		78	71	50	53	60	60	63	65	94	82	84	79	65
3	72	72	60	70	40		40	53	70	76	G	66	70	66	51	46	49	53	50	30	50	40	40	30
4	26	G	G	G	26	35	52	47	G	52	63	74	60	46	G	41	G	59	40	31	38	51	33	29
5	32	25	32	G	G	32	44	69	43	76	111	59	72	51	83	68	96	52	50	69	80	71	59	58
6	39	29	27	26	G	34	45	57	58	58	G	G	G	G	G	46	52	84	50	47	39	29	39	25
7	32	60	65	60	G	34	46	97	77	94	175	144	75	112	88	53	40	62	80	58	72		51	29
8	51	32	32	G	G	33	51	50	69	52	68	G	G	G	40	77	61	100	78	54	34	G	28	29
9	28	29	28	G	33	30	42	52	39	G	G		G	G	48	61	69	59	86	64	78	35	29	G
10	30	34	33	G	G	32	41	69	52	47	47	42	G	G	G	58	45	48	66	G	G	33	34	36
11	60	48	40	33	G	44	63	91	82	51	48	90	52	51	42	68	96	43	93	86	G	39	G	66
12		71		53	G	45	58	60	91	77	52	G	80	89		175	68	73	84	40	45	33	31	G
13	32	G	G	34	35	37	38	44	41	48	62	G	46	43	G	45	53	40	39	48	72	58	45	50
14	29	31	34	30	38	29	62	61	G	75	81	98	100	63	52	40	54	76	43	70	33	G	G	G
15	G	G	G	26	29	43	47		G	44	46	50	88	74	G	42	48	60	66	52	95	67	39	37
16	G	30	33	30	G	36	43	39	58	45	60	G	G	G	G	62	50	52	53	30	G	26	48	40
17	39	G	G	30	G	39	42	60		50	42	G	48	G	G	G	G	79	44	44	43	47	34	26
18	33	27	G	G	G		37	50	84	78	52	47	72	60	67	66	48	50	78	53	78	59	60	43
19	46	38	G	G	G	G	45	60	68	72	51	45	44	G	G	46	G	G	42	35	39	39	46	39
20	36	38	34	39	31	33	38	46	53	52	57	53	56	48	57	58	41	39	G	G	41	40	G	24
21	G	G	27	33	G	29	G	43	70	G	46	47	G	G	45	46	39	G	34	43	47	33	25	26
22	25	G	G	G	24	G	35	G	44	53	83	66	G	G	G	39	G	35	33	G	41	61	33	33
23	49	32	40	30	51	35	37	53	53	46	51	58	64	47	50	45	40	43	42	63	44	40	57	52
24	60	46	26	G	G	34	46	52	59	64	66	52	50	50	66	67	36	G	33	58	59	43	26	
25	45	37	37	34	30	36	42	68	58	78		G	G	G	40	79	86	70	78	69	38	39	32	40
26	34	25	30	G	G	32	43	47	79	78	71	61	58	59	G	51	42	66	66	49	44	70	58	60
27	43	32	44	31	28	68	76	52	71	70	52	54	53	65	G	G	G	38	39	30	34	39	37	30
28	39	39	26	34	39	60	53	50	52	68	63	48	G	G	G	G	45	78	76	37	44	39	39	40
29	39	38	39	39	31	41		62	62	79	49	54	63	G	40	70	177	151	107	79	72	65	58	69
30	58	25	28	29	29	37	40	45	48	74	G	42	46	61	G	52	60	77	40	48	27	52	49	41
31	36	29	G	29	G	32	40	45	G	G		52		46	46	42	97	50	72	54	37	48	27	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	30	31	30	31	31	29	30	30	30	31	28	30	30	31	30	31	31	31	31	31	31	30	31	30
MED	36	32	30	30	G	34	44	52	58	58	52	51	52	47	40	52	48	59	50	49	44	40	39	36
U Q	46	38	34	34	31	38	51	61	71	76	67	61	70	61	52	66	61	76	78	64	72	59	51	50
L Q	29	25	G	G	G	32	40	47	44	47	46	42	G	G	G	42	40	43	40	35	37	35	29	26

HOURLY VALUES OF fmin AT Wakkanai

JUL. 2007

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

HOURLY VALUES OF foF2 AT Kokubunji

JUL. 2007

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	A	A	A	A			52	79	A	A	A	A				62	A	48	47	57	A		45	42
2		A	A	A	A		A	A	A	A	A			A	A	A	A	A	49	62	55	53	A	A
3	38			34	34	35	48	51	A		A	A	A	A	A	A	A	A	A	A		54	54	
4	A					46	52	A	A	A	A	A	A	A			54	A	55	A	55	54	A	44
5	A	A		A	32	45	A	A				A	A			A			A	41		44	A	A
6	A		41	34	32	36	38	52	58	55	A	A	A	A	A	A	A	A	A	A	A	A	52	A
7	A	44	41	41	39	42	47	57	71	A	A	52	A		A	49	55	A		47	A	A	45	45
8	45	A	A	34	38	48	47	A	A	A	A	A	A	47	A	A	A	A	A	A	52	52	53	50
9	46	45		A	A	39	51	A	57		A	A	51		A	34	49	57	61	62	55	45		45
10	42	41			30	31		A	A	A	A	A	A	A		A		A	A	66	A	65	52	47
11	42	39	36	41	30	A	48		A		A	A			73	A		52	61	75	72	72	71	46
12	38			32	A	42	60	48	56	67	A	A	A		62	63	A	A	A	66	55	54		49
13	48	46	43	37	37	41			A	A	A		A	51		55		48		52	48		40	A
14	A	A		31	27	35		46	A	A	A	A	A	64	A	A	A	66	A	59	A	52	51	
15	44	47	45		A		47	A	A	A			A			A	A	A		62	47			
16	A	38	30	32		37	A	56	66	57					54	55		52	55	71	54			
17	37	39		A	A	A	A		64	A	A	A	A	A	A	57	54	49	52	47	A	A	47	49
18	A		37		32	A	A	43	A	A	A	A	A	A	A	A	55	61	64	66	54	47		41
19	39	34	32	21	28	33	54	54	A	A	A	A	A	A	A	A		49	45	40	52	54	51	53
20	52		A		32	36		A	A	A	A	A	A	A	A		75	62	59	54	54	52	52	54
21	51	49	47						48		55	A	56	56		56			51	49	55	48	49	44
22	39	39	34	32		41	47	49		54	A	A		A	A	66		38	51	45	A		A	
23	A	30	A		28		39	A	A	A		A	A	A	58	62	A	A	42	49	55	48		
24	A	A	A	A	32	36	48	45	A	52		A	A	A	52	A	49	58	53	56	53	52	45	39
25	34	32	32	28	28	37	55	48	A	A	55						51	A	A	62	65	52	32	32
26	A	A	32			34	49			51			A		61	76	60	54	48	51	46	A	A	A
27		34	28	28	27	32	42	A	48	63	A	68	A	A	A	68	66	67	62	77	86	52		
28		38	37	34	37			44	53		A	A	A				A	A	A	A	66	A		42
29	A	33	32				A	A	65	A	A	A	A		64	A	53	A	73	86		54	A	54
30	54	A	A	A	A		A	A	A	A	A		56	58	67	55	69	A	69	A	54	52	A	A
31		A		A	32	A	50	55	A	52	A	A	A		A	A	57	63	60		55	48	42	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	15	16	15	14	18	19	18	14	10	8	2	2	3	5	8	13	13	15	19	24	21	21	16	18
MED	42	39	36	33	32	37	48	50	58	54	55	60	56	56	62	57	55	54	55	58	55	52	50	45
U Q	48	44	41	34	34	42	52	55	65	60	55	68	56	61	65	64	63	62	61	66	55	54	52	49
L Q	38	34	32	31	28	35	47	46	53	52	55	52	51	49	56	55	52	49	49	49	52	48	45	42

HOURLY VALUES OF fEs AT Kokubunji

JUL. 2007

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	55	54	36	34	30	G	80	69	71	81	115	119	45	49	50	G	68	37	36	42	113	85	30	34
2	45	70	57	57	57	50	43	65	116	104	67	45	51		162		122		47	60	37	49	55	59
3	36	44	36	37	30	G	38	45	55	84	86	107	73	106	62	104	114	111	72	60		60	58	57
4	59	43	47	34	32	29	35	52	91	95		105	126	75		128	G	60	45	62	26	60	69	39
5	92	47	49	43	35	27	61	87	G	47		52	52		47	62	81	53	71	44	43	32	48	56
6	59	33	37	24	G	29	42	43	56	56	65	68	61	77	68	97	57	70	69	178	116	91	49	60
7	57	48	G	G	G	G	34	41	61	126	72	G	53	G	48	G	G	69	50	36	68	60	43	58
8	29	51	50	30	35	34	40	62	82	124	62	61	60	50	53	104	105	83	79	150		33	57	39
9	59	46		83	53	35	45	73	48	77	94	70	G	45	50	G	G	42	G	G	41	49	49	39
10	27	28	27	26	G	G	G	56	82	103		61	84	120		61	49	68	82		126		55	36
11	25	G	32	40	G	57	45	40	56	57	65	61	66	92	52	80	55	38	30	29	60	58	58	30
12	60	53	37	30	49	31	G	40	47	57	136	78	68	G	G	108	173	105	127	80	33	31	34	29
13	G	G	32	29	G	G	37	40	82		61		60	G	52	81	50	46	51	35	36	34	36	60
14	49	54	44	43	26	G	39	G	62	72	95	51	51	48	83		79	60	71	69	69	34	48	58
15	26	G	34	36	50	35	40	68	68	63			59		61						33	39	36	48
16	82	G	26	G	34	29	50	61	57	51	55	53		G	G	46	42	52	51	61	37	58	33	40
17	G	59	37	40	40	29	45	60	57	80	103	95	72	54	71	43	47	43	39	36	71	58	29	36
18	90	43	31	36	G	40	59	47	70	82	65	68	70	59	126	83	55	55	63	57	59	52	50	29
19	G	28	G	G	G	29	48	50	65	67	124	79		85	91	67	55	39	29	60	57	50	31	55
20	47	50	45	40	G	24	34	86	59	99	56	48		53	82	78	60	37	53	29	58	34	83	49
21	39	47	53	36	55	29	33	37	40	45	50	61	47	53		G		G	28	26	G	26		53
22	27	27	G	G	31	31	33	G	G	48	61	62		112	77		56	40	34	52	60	53	52	43
23	51		49	32	G		44	84	105	117	62	110	79	58	55	56	61	68	G	24	37	23	59	49
24	92	50	72	57	27	29	38	G	51	50	51	55	90	82	47	61	42	38	38	26	28	G	29	33
25	27	G	24	G	G	35	34	46	56	67	50		G		50	G	43	73	93	G	G	27		28
26	51	91	58	38	59	29	48	51	61	G	G	G	49	G	G	G	42	40	34	52		58	53	55
27	40	G	27	G	G	24	34	94	51	47	93	55	119	85	68	52	57	51	40	27	34	29	53	50
28	39	28	G	26	28	29	49	40	42	46	45	70	81	53		54	96	67	83	83	49	69	56	36
29	80	46	35	39	43	29	59	147	104	114	79	60	50	G		84	60	80	50	64		57	70	53
30	50	59	47	38	34	24	51	60	61	62	54		G	47	G	65	61	94	71		81	51	50	55
31	36	37	36	70	51	90	44	52	62	47	73	57	75	49	77	56	44	55	51	70	53	29	34	34
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	30	31	31	30	31	31	31	30	27	27	27	27	26	27	29	29	30	28	27	30	29	31
MED	47	45	36	36	30	29	42	52	61	67	65	61	60	53	54	61	56	55	50	52	49	50	50	48
U Q	59	51	47	40	43	34	48	68	71	95	93	78	75	82	77	83	73	69	71	63	68	58	56	55
L Q	27	28	27	26	G	24	34	40	51	50	55	53	50	45	48	43	43	40	36	29	34	32	35	36

HOURLY VALUES OF fmin AT Kokubunji

JUL. 2007

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	13	13	13	13	13	23	14	14	13	17	22	29	28	35	34	44	17	15	14	15	14	13	13	14
2	13	13	13	13	13	13	13	17	28	20	30	20	33	31	28	20	18	15	13	13	14	14	14	14
3	14	13	13	13	13	18	13	13	17	30	28	31	33	28	28	21	17	14	13	15		13	14	13
4	14	14	14	13	13	13	13	14	20	22	33	34	33	30	23	20	13	14	15	14	15	14	15	13
5	15	14	13	13	13	13	13	17	18	20		21	41		33	18	13	13	13	14	14	14	13	14
6	13	13	14	14	13	13	13	15	15	17	18	29	29	28	30	21	20	14	13	15	13	13	13	13
7	13	14	14	14	13	18	14	17	18	24	21	20	28	29	28	18	14	15	13	13	13	14	14	13
8	13	14	13	13	13	13	13	17	17	21	29	26	29	24	34	33	18	13	13	20	13	14	13	14
9	14	13		13	13	13	20	18	21	21	30	30	31	29	23	21	18	17	22	13	13	13	13	13
10	13	14	14	17	13	21	13	13	18	21	21	31	31	30		17	14	14	15	15	13	13	13	13
11	14	13	13	13	14	14	14	13	18	18	31	33	33	29	30	21	14	17	13	13	13	14	14	14
12	14	14	13	13	14	13	13	17	18	20	30	35	36	34	21	18	17	14	13	13	13	13	13	14
13	14	14	17	13	13	17	15	31	18	20	31		30	44	22	18	20	13	13	13	13	14	13	13
14	13	13	13	13	13	17	13	13	17	18	23	31	20	30	21	28	22	14	13	17	14	14	13	15
15	14	14	14	13	13	14	13	13	18	20			35		31	18	17	15	13	13	14	13	14	17
16	13	14	14	13	13	13	13	13	22	18	25	28		22	21	20	17	20	14	14	14	17	14	13
17	13	13	14	13	13	13	18	15	18	20	20	39	24	21	22	17	13	13	13	13	13	14	14	13
18	13	13	13	13	17	13	13	15	18	23	28	29	30	31	21	18	17	13	13	14	13	17	13	15
19	14	14	13	15	14	13	13	13	14	29	28	30	22	23	20	13	13	13	13	13	13	13	13	14
20	13	15	14	13	14	15	20	14	15	18	22	35	36	33	29	21	17	15	13	13	13	14	13	13
21	14	14	14	18	15	15	15	14	15	23	21	29	26	24		15		13	21	14	14	17	14	13
22	13	14	15	14	14	13	13	17	17	21	21	34		21	23	20	17	13	13	13	14	14	13	13
23	13	14	13	13	13		14	13	14	18	22	30	29	31	24	20	13	13	17	14	13	14	13	14
24	13	14	13	13	14	13	13	14	14	18	22	31	21	28	23	17	14	20	13	14	14	13	13	13
25	14	17	14	13	13	14	13	13	18	18	30		33		21	15	15	14	13	15	14	14	13	13
26	13	14	13	13	13	13	13	14	15	17	22	22	28	22	20	43	14	15	14	13	14	14	14	14
27	14	14	13	13	13	17	14	14	14	20	20	30	21	34	22	20	17	13	13	14	13	14	13	14
28	13	14	13	14	15	13	14	18	15	20	18	33	28	31		21	15	14	13	14	14	14	14	14
29	13	13	13	13	15	13	13	15	17	21	18	25	25	21	20	22	20	14	13	20		14	14	15
30	15	14	14	13	13	17	13	13	17	20	24		20	29	17	17	14	13	13	14	15	13	14	15
31	13	13	13	15	13	13	13	13	17	17	18	22	30	28	21	18	15	13	13	14	13	43	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	31	31	30	31	31	30	31	31	31	31	29	27	29	28	28	31	30	31	31	31	29	31	31	31
MED	13	14	13	13	13	13	13	14	17	20	22	30	29	29	23	20	17	14	13	14	13	14	13	14
U Q	14	14	14	14	14	17	14	17	18	21	29	33	33	31	28	21	17	15	14	15	14	14	14	14
L Q	13	13	13	13	13	13	13	13	15	18	21	26	25	24	21	18	14	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

JUL. 2007

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

HOURLY VALUES OF fEs AT Yamagawa

JUL. 2007

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	34	40	43	55	33	38	34	56	68	40	109	81	63	51	68	75	48	84	67	81	67		67	G
2	51	56	49	35	40	33	34	36	43	84	163	147	134	94	58	103	68	73	82	84	33	G	G	44
3	60	49	54	46	40	24	34	G	49	67	94	84	86	49	52	84	84	87	104	85	47	54	59	38
4	30	28	28	44	43	G	34	57	69	78	76	79	116	112	84	104	69	50	41	32	45	32	28	31
5	47	56	71	36	77	59	49	41	66	61	76	117	124	120	123	50	65	81	71	77	38	58	58	54
6	59	58	39	33	G	G	53	48	59	96	110	91	120	73	152	64	107	65	124	106		90	59	51
7	45	31	30	G	G	G	33	60	116	117	52	52	51	63	62	48	44	36	46	44	27	35	84	60
8	55	46	60	51	39	38	44	86	133	127	146	167	129		G	44	G	43	51	60	106	59	56	71
9	32	69	G	G	G	G	33	G	60	68	99	77	48	50	73	53	N	69	60	54	71	30	G	26
10	G	37	28	26	G	G	28	34	42	G	50	52	58	52	64	64	48	44	66	36	40	67	44	80
11	67	57	34	40	52	40	36	35	42	77	46	68	G	55	60	97	62		32	33	30	33	40	58
12	60	31	46	51	32	37	50		50		79	68	69	64	65	83	74		65	81	33	29	36	29
13	34	29	30	27	30		31	G	46	52	60	70	62	51	69	88	87	77	62	49	47	27	G	40
14	36	51	34	59	44	24	34	37	57	61	59		104	74	73	103	84	56	47	112	108	45	36	30
15	46	36	37	40	29	70	57	47	49	G	48	50	48	50	52	46	44	48	40	31	50	34	33	28
16	36	36	32	27	G	G	G	70	67	93	149	78	105	49	G	G	G	42	42	48	46	71	36	50
17	33	G	28	G	28	24	36	61	76	55	70	118	117	84	56	101	90	83	61	34	30	34	70	57
18	40	43	30	41	33	38	61	71		102	62	92	80	50	57	80	62	78	78		56	59	57	G
19	27	G	29	G	G	G	G	36	56	50	65	47	48	49	53	81	127	G	G	30	27	49	59	82
20	56	47	56	56	59	54	60	39	40	46	49	62	90	87	78	74	95	160	92	38	46	32	32	34
21	24	G	46	23	34	34		46	42	52	48	50	76	58	G	53	G	49	52	42	30	G	23	49
22	60	30	28	G	G	28	28	38	40	70		54	50	62	73	85	61	G	G	29	G	G	G	G
23	G	G	38	31	G	G	43	33	42	52	61	78	72	78	52	49	39	48	36	45	40	33	27	30
24	78	54	32	41	G	35		39	53		46	44	50	75	46	49	49	39	35	48	30	25	G	23
25	26	28	28	G	29	49	50	44	51	45	46	G	G	G	G	G	44	45	47	40	36		29	G
26	34	G	G	28	35	29	34	32	42	44	51	G	G	69	53	51	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	65	55	G	49	G	49	55	36	57	46	84	32	39	31
28		G	26	G	39	49	38	44	40	59	81	54	G	48	66	62	45	40	39	33	32	55	34	30
29	27	30	G	G	41	38	27	40	61	58	48	54	G	50	57	86	91	66	50	81	59	49	28	44
30	48	73	39	34	G	27	35	64	107	76	54	50	44	46	57	90	101	91	51	57	27	59	33	34
31	32	40	69	55	56	89	70	77	63	50	56	67	128	90	62	62	48	62	68	42	90	55	26	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	29	30	30	30	30	29	28	29	29	28	30	30	31	30	31	31	29	28	30	29	29	28	30	30
MED	36	36	33	34	32	33	34	41	53	60	62	68	63	56	58	64	62	53	52	46	40	34	35	34
U Q	55	51	46	44	40	39	49	58	66	77	81	81	105	75	69	86	85	77	67	79	57	56	57	51
L Q	31	28	28	G	G	G	33	35	42	50	50	52	48	50	52	49	44	42	41	35	30	31	27	28

HOURLY VALUES OF fmin AT Yamagawa

JUL. 2007

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	14	14	14	14	14	15	18	23	27	18	20	33	18	14	15	14	14		14	14
2	14	15	14	14	14	14	14	14	14	20	18	20	23	23	23	20	20	14	14	14	15	14	15	14
3	14	14	14	14	14	14	17	14	14	16	18	20	32	27	26	18	18	15	15	15	15	15	15	15
4	14	14	14	14	14	14	15	14	14	15	17	21	18	29	21	18	16	14	14	14	14	15	14	14
5	14	14	15	14	14	14	14	14	15	17	21	29	34	35	27	22	20	16	14	14	14	15	14	14
6	15	14	14	14	14	14	14	14	14	17	17	18	21	22	20	17	17	14	14	14	14	14	14	14
7	14	14	15	14	16	15	14	14	14	16	22	28	22	21	22	14	14	16	14	14	15	14	14	14
8	14	14	14	14	14	14	14	14	14	14	17	26	21		35	26	16	15	15	14	16	14	14	14
9	15	14	14	14	16	17	14	14	16	16	21	32	26	32	23	20	18	15	14	14	14	15	14	14
10	14	14	14	14	14	14	14	14	15	15	29	33	28	29	27	37	17	18	14	14	14	14	15	15
11	14	14	14	15	14	14	14	14	17	16	18	24	24	23	34	22	14		14	15	14	14	14	14
12	15	14	14	15	14	15	14		15		20	21	22	21	20	21	17		14	14	14	15	14	14
13	14	14	15	14	14		14	14	14	17	18	21	33	29	18	26	16	15	14	14	15	14	14	15
14	14	14	14	14	14	14	18	14	14	16	23	23	33	33	24	23	17	14	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	15	15	20	21	24	29	33	21	14	22	14	14	14	15	14	15
16	15	14	14	14	14	14	20	14	14	16	18	20	22	23	21	18	17	14	14	18	15	14	14	14
17	14	15	14	14	14	16	14	14	14	16	17	21	22	20	21	21	14	14	14	14	15	14	14	14
18	14	14	14	14	14	14	14	14	15	17	21	28	21	29	21	18	17	21	14		14	14	15	15
19	14	16	14	14	14	14	18	14	14	15	20	21	34	21	18	20	18	14	14	14	14	14	14	15
20	14	14	14	14	14	15	14	14	14	17	20	33	21	32	21	18	18	15	14	14	14	14	14	14
21	15	20	15	14	14	15		15	14	17	17	27	23	22	21	17	14	14	14	15	14	17	15	14
22	14	14	14	14	14	14	14	14	16	14		20	20	20	18	17	18	15	14	16	14	15	14	15
23	15	15	14	14	14	15	14	14	16	17	17	18	21	20	22	17	14	14	14	14	15	15	15	14
24	14	14	14	14	14	14		14	14		14	20	21	20	18	17	14	14	14	14	15	14	15	15
25	14	15	14	14	16	14	14	14	14	15	18	18	26	26	22	20	17	15	15	14	14	15	14	17
26	14	17	14	15	15	14	14	14	14	15	17	20	21	21	27	20	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	17	21	22	28	22	21	15	17	14	14	14	14	14	15
28		14	15	14	14	14	14	14	15	14	20	24	24	26	23	22	20	14	14	14	14	14	15	15
29	14	14	14	14	15	15	14	14	15	17	23	24	27	20	20	16	15	14	14	14	15	15	15	17
30	15	14	14	14	14	15	14	14	15	18	18	20	23	22	20	16	15	14	15	14	14	14	14	14
31	14	14	15	14	14	14	14	14	16	18	20	21	26	28	24	18	14	14	14	14	15	14	14	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	29	30	30	30	30	29	28	29	30	28	30	31	31	30	31	31	30	28	30	29	30	29	30	30
MED	14	14	14	14	14	14	14	14	14	16	18	21	23	23	22	20	17	14	14	14	14	14	14	14
U Q	14	14	14	14	14	15	14	14	15	17	20	26	27	29	24	22	18	15	14	14	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	15	17	20	21	21	20	17	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

JUL. 2007

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	67	75	52	A	
4	30		A	A			34		A	A	C	C	C	C	C	C	C	C	C	C	A	A		45
5	46	42			30	31	42	A	A	A	A	C	A		A		78	78	80	80	A	A	34	A
6	A	32					34	59	A			A	A	A	A	62		A	A	66	62	63		42
7	42	32		30	31	29	37	48	68	60	A	A		58		A		64	56		53	44		A
8			30	A	24	A	A	A	51	A		A		64	66	64	A	66	62	54	53		50	A
9	A	A		29	A			A	66	62	A	A			66	73	81	81	76	73	74	66	A	
10	32	30	32				29		42								A	A	52	63	74	34		A
11				A	A	A	34		45	A	A	62		74	65	72	71	72	88	83	87	86		A
12	A	A	32	29	20	A	38	54	70	51	A	A	A	72	87	84	73	71	72	74	80	66	54	54
13	54	54	65	54	A	A	30	50	58	A	A	A		72	78	A		A	81	74	51	A	41	37
14	A	36	40		A	A	24	45	A	A	A	A	A	A	A	A	A	85	76	70	A	52	42	51
15	44	45	45	38	29			50	A	A	A		A	A		68	63	56	72	44	A			
16	A	A	30	A	A	A		44	58	A	65	62	A	A	A	68	58	64	72	64	A	A	A	
17	A	A	A	A	A	A	A	57	48	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C		66	85	100	87	84	70	63	51	44	A
20		37	A	32	31	A	36	44	48	45	A	A	A	A	A	A	80	80	70	74	A	76	72	66
21	52	53	51	41	40	35	36	60	45	A	61	60		A			67	85	68	44	43			32
22		29		28			36	32	50	52	A			A	A	80	85	88	82	71	64	66	53	A
23	28	29					40	41	46	53		A	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	A	A	A	A	52	A	73	74	88	86	45			32
25	31	29		28		A		40	54	54	A	A					54	64	73	77	86	30		
26		A				A		50	71	52					66	63	63	62	65	66	67	A		
27			A				32	37	52	61			A		72	82	81	76	82	77	76	42	38	
28	34	36	36	30	36		30	47	54	51		49	62	60		67	68	78	75	82		42		
29							29	54	51	58		A		A	72	77	70	80	86	81	80	48		44
30	31	31	40	30	A	A	32	64	A		A	A		66		A	75	90		75	76	48	31	30
31			31			28	43	A	A	A		A	A	64		A	A	80	82	76	75	63	A	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	14	11	11	8	4	18	18	18	11	2	4	1	8	10	13	17	21	22	24	19	17	10	11
MED	34	34	36	30	30	30	34	49	52	53	63	61	62	65	66	72	73	78	76	74	74	52	43	42
U Q	46	42	45	38	33	33	37	54	58	60	65	62	31	72	72	81	80	83	82	77	76	66	53	51
L Q	31	30	31	29	26	28	30	44	48	51	61	54	31	62	66	65	65	65	70	66	53	43	38	32

HOURLY VALUES OF fEs AT Okinawa

JUL. 2007

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	68	57	48	38	33
4	28	G	32	38	30	G	26	42	87	102	C	C	C	C	C	C	C	C	C	C	43	38	33	26
5	29	G		34	36	33	35	68	65	78	66	C	68	45	104	79	54	46	61	36	60	39	36	41
6	40	34	40	32	26	26	39	50	75	51	49	80	90	122	80	56	58	83	86	30	G	38	50	33
7	35	33		G	G	G	27	32	42	55	81	50	G	78	G	53	43	G	48	29	32	28	28	69
8	38	37	27	36	32	36	49	93	96	110		62	51	G	G	G	88	50	47	94	84	54	G	58
9	86	48		29	39	28	29	56	42	54	60	67		51	G	G	G	G	G	39	94	36	33	
10	36	G	G			G	G		36	G			G			52	66	60	40	48	27	28	32	34
11		G		38	47	30	33	50	49	92	65	48	54	66	49	56	G	G	52	G	38			50
12	80	59	49	G	61	38	28	34	36	48	50	63	72	53	64	62	53	44	50	53	57	76	38	27
13	28	56	38	35	36	32	G	38	52	56	53	64	63	82	84	107	116	148	48	49	34	28	27	G
14	48	33	28		59	52	35	50	67	56	149	63	105	67	100	104	93	G	69	44	150	34	84	46
15	36	34	36	37	25	28	33	69	83	91	42	50	98	59	50	47	G	42	45	42	45	36	28	32
16	37	49	G	49	67	34		34	G	70	G	60	92	148	93	49	45	48	50	50	70	79	58	32
17	59	50	39	39	47	33	56	39	51	50	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	43	54	G	34	27	G	33	50
20	36	33	40	47	G	48	G	31	44	51	71	61	70	58	64	94	72	60	82	58	68	33	G	G
21	G	G	35	25	G	26	29	51	49	46	G	G		49	56	42	G	G	G	G	28	38	25	G
22	32	26	39	G	25		26	38	38	45	76	51	53	79	88	76	81	62	G	40	31	26	36	32
23	G	G				G	G	31	36	G	G	47	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	51	106	111	101	51	84	71	47	50	33	25	28		G
25	G	G	G	G	30	41	34	35	49	49	78	65	G			48	G	42	46	34	40	28		
26		28			27	39	32	41	45	44				51	52	50	51	G	39	55	45	51	24	
27	G	33	37	29			27	G	37	43	G		67	53	57	47	42	58	48	34	31	33	25	36
28	G	G	G	G	G	36	29	34	38	G	G	G	G	G	53	88	61	42	44	78	57		26	
29	24			G			G	G	G	G	48	53	52	90	G	60	62	80	77	42	58	G		G
30	G	G	25	34	43	34	25	41	69	42	67	72	57	55	68	84	74	90	45	48	33	30	G	25
31	34	38	50	37	G	G	60	124	132	80	58	124	79	G	74	88	104	67	50	47	44	34	50	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	23	24	18	21	21	22	24	24	25	25	21	20	20	22	22	24	24	24	24	25	26	24	22	22
MED	34	33	36	34	30	32	29	40	49	51	53	62	65	56	56	56	56	48	48	42	44	34	32	32
U Q	38	37	39	37	45	36	34	50	68	74	69	66	84	79	80	84	73	61	51	51	58	38	38	41
L Q	G	G	25	G	13	26	25	34	37	43	21	50	51	49	49	47	42	21	42	34	31	28	25	G

HOURLY VALUES OF fmin AT Okinawa

JUL. 2007

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
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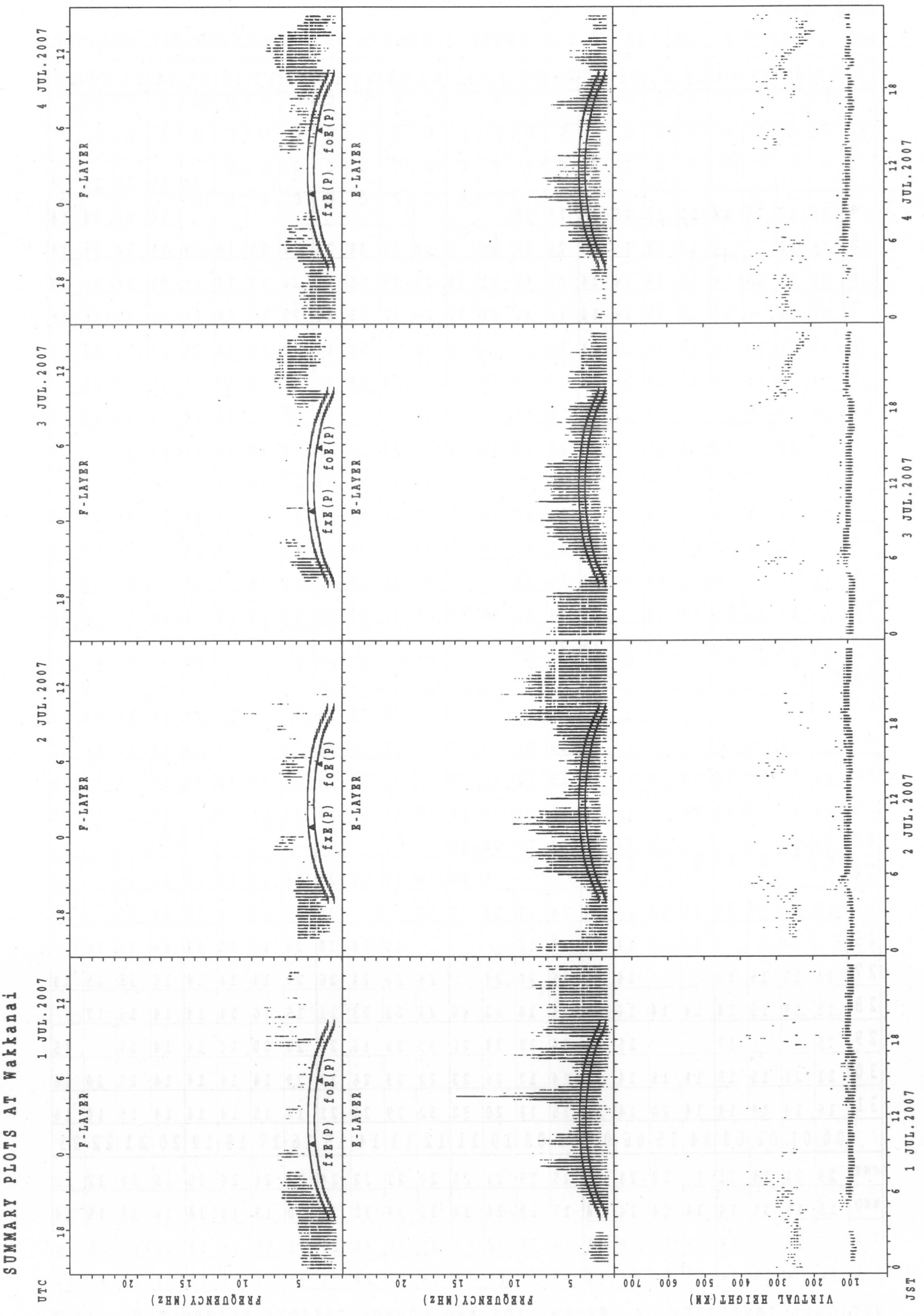
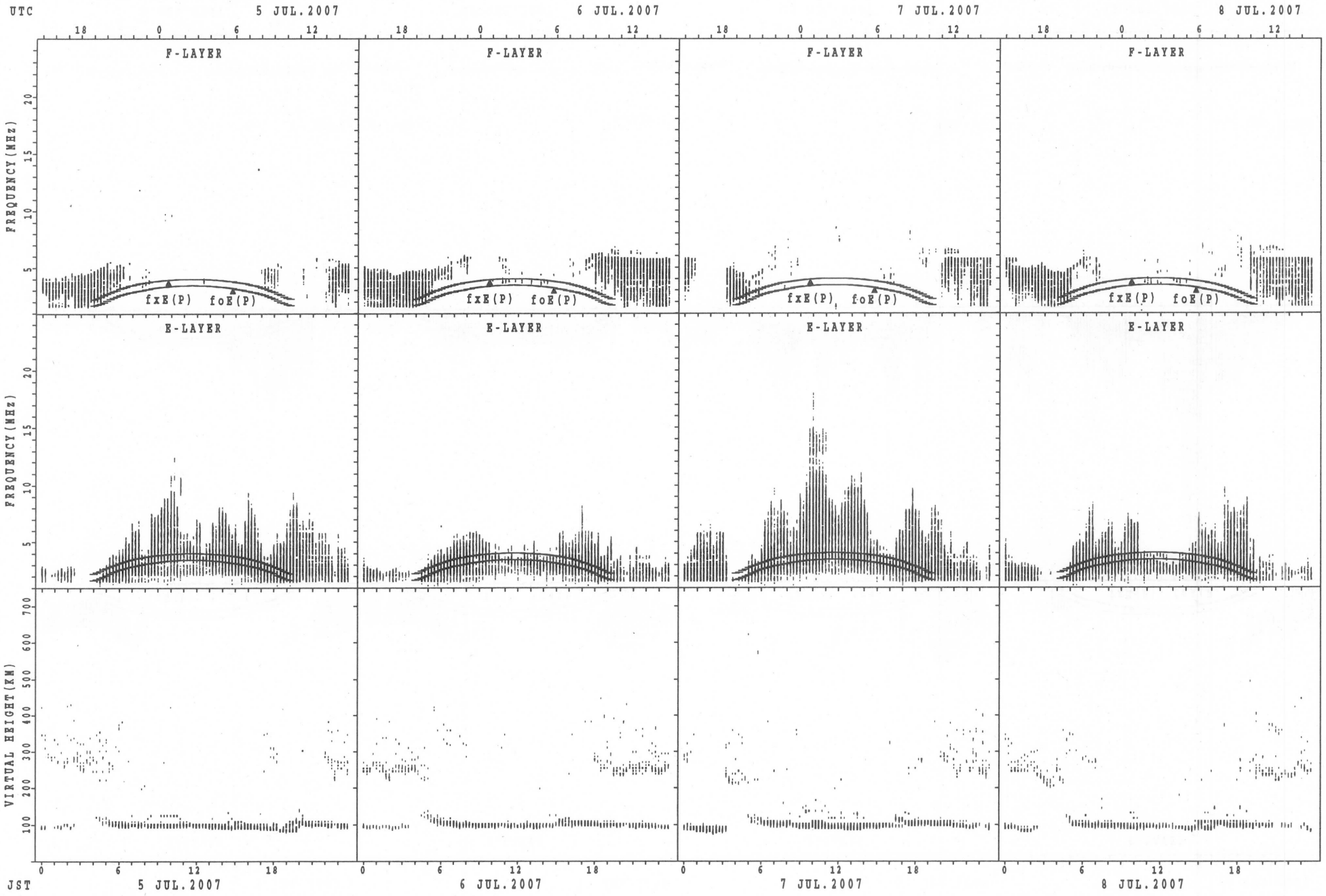
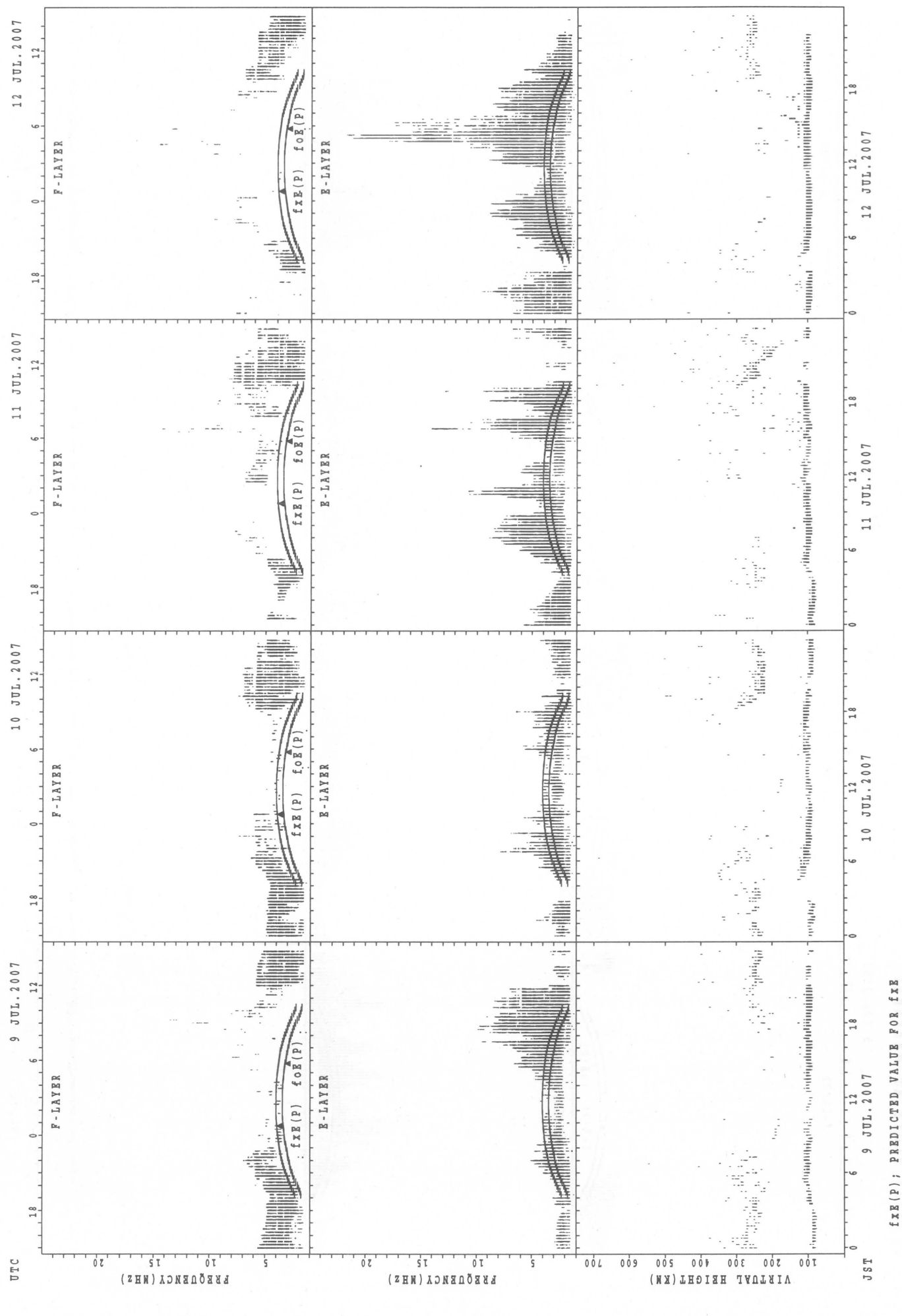
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14	17	16	14	14
4	15	17	14	14	15	15	16	14	14	18	C	C	C	C	C	C	C	C	C	C	14	14	14	14
5	14	18		16	14	14	15	15	20	23	36	C	38	36	38	28	21	21	15	14	14	14	14	14
6	14	15	14	14	14	14	14	14	14	18	21	34	39	36	35	21	20	14	14	14	17	14	14	15
7	14	14		14	15	14	14	14	16	21	27	29	29	22	23	24	23	16	14	14	14	15	16	14
8	14	14	14	14	14	14	14	14	14	20		38	38		51	44	30	15	14	15	15	14	15	14
9	15	15	15	14	14	14	15	14	17	18	34	36		35	48	34	45	15	14	14	15	15	15	
10	14	15	15			15	14		16	44			30			34	20	20	14	14	14	15	14	14
11		18		14	14	15	14	14	18	20	28	30	33	28	26	23	20	18	14	23	15	22		15
12	14	14	14	15	14	15	14	14	15	20	20	23	24	35	38	33	29	16	14	14	14	14	15	15
13	15	15	15	14	16	14	20	14	14	20	30	35	33	32	32	21	18	20	14	14	14	15	15	14
14	14	15	15		14	14	14	14	17	20	30	38	39	39	36	28	20	18	14	14	15	15	15	15
15	14	15	14	14	14	15	15	14	15	18	21	33	36	36	34	22	18	18	14	14	14	14	14	14
16	15	14	15	15	14	14		14	14	21	28	28	29	27	23	22	20	15	14	15	14	15	14	14
17	14	14	14	14	17	14	15	15	20	18	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	24	26	20	17	14	14	14	14	15	14	15
20	14	14	14	15	14	14	17	15	14	20	23	24	35	21	33	23	21	14	15	14	14	15	16	20
21	42	21	15	16	14	15	14	14	15	18	21	29		23	22	20	20	14	15	14	15	14	14	15
22	15	15	14	15	14		14	15	15	20	22	38	35	34	33	22	20	15	14	14	14	17	15	14
23	20	17				14	15	14	14	17	20	22	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	21	22	28	22	21	21	15	14	14	14	14	15		15
25	15	14	17	17	14	15	14	14	14	17	24	22	28			20	18	14	14	16	14	15		
26		14			14	15	14	14	14	16				38	34	20	20	16	15	14	14	14	16	
27	15	15	15	14			14	14	15	20	24		28	27	24	26	20	14	14	14	14	15	15	14
28	15	15	15	14	14	14	14	14	14	18	22	46	24	23	23	21	15	16	14	14	14	15	17	
29	15			17			15	14	14	18	24	26	38	36	46	22	20	20	14	14	14	17		15
30	21	20	15	15	14	15	14	14	14	17	26	23	22	23	26	32	29	14	14	14	14	14	20	16
31	16	14	14	14	14	20	14	14	15	18	20	32	32	29	28	21	18	15	14	14	14	15	14	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	23	24	19	21	21	22	24	24	25	25	21	20	20	21	22	24	24	24	24	25	26	26	22	22
MED	15	15	15	14	14	14	14	14	15	18	24	30	32	29	32	22	20	15	14	14	14	15	15	14
U Q	15	16	15	15	14	15	15	14	16	20	28	35	37	36	36	28	21	18	14	14	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	18	21	23	28	23	24	21	18	14	14	14	14	14	14	14


SUMMARY PLOTS AT Wakkanai
UTC
JST
1 JUL.2007
2 JUL.2007
3 JUL.2007
4 JUL.2007
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

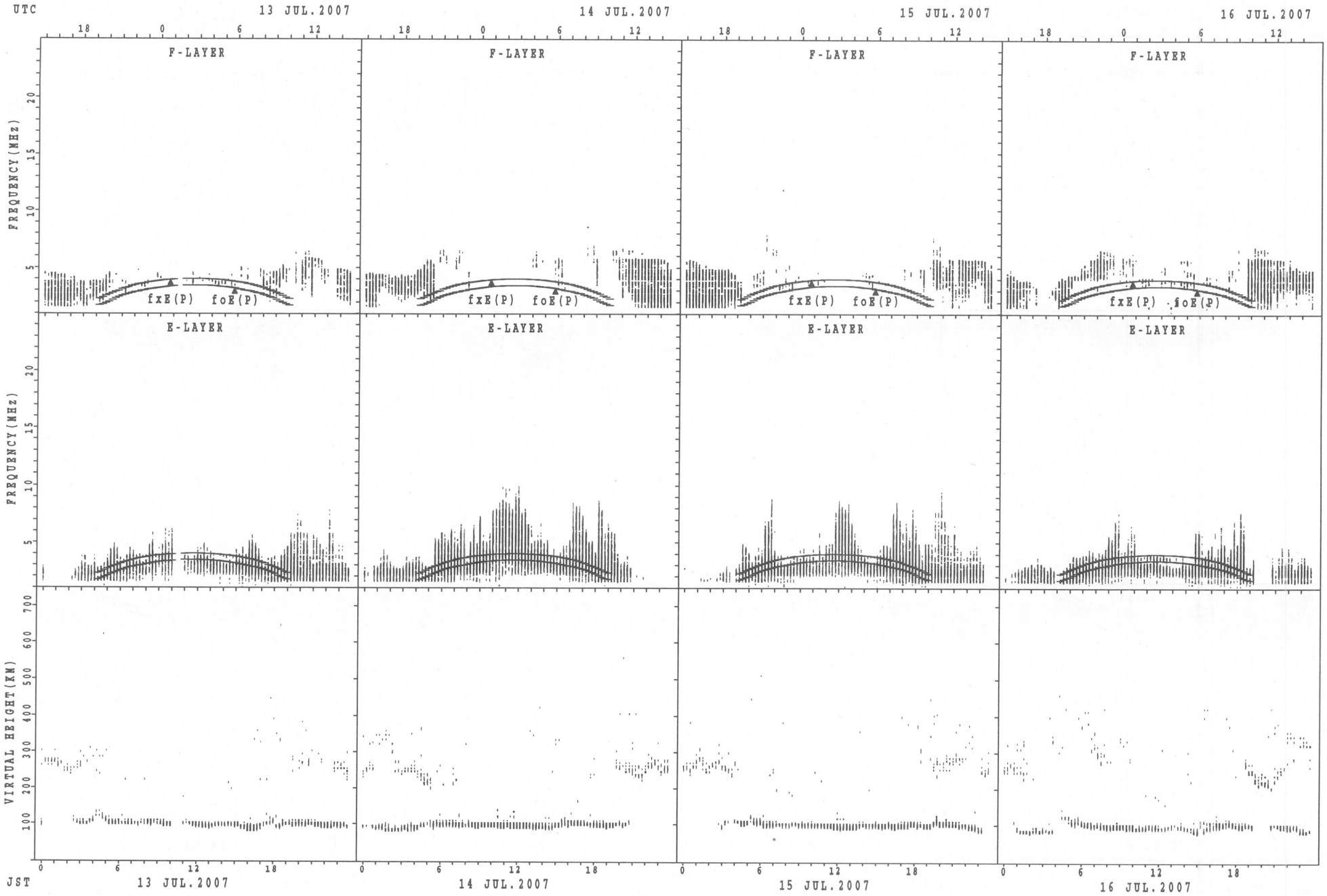
SUMMARY PLOTS AT Wakkanai



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

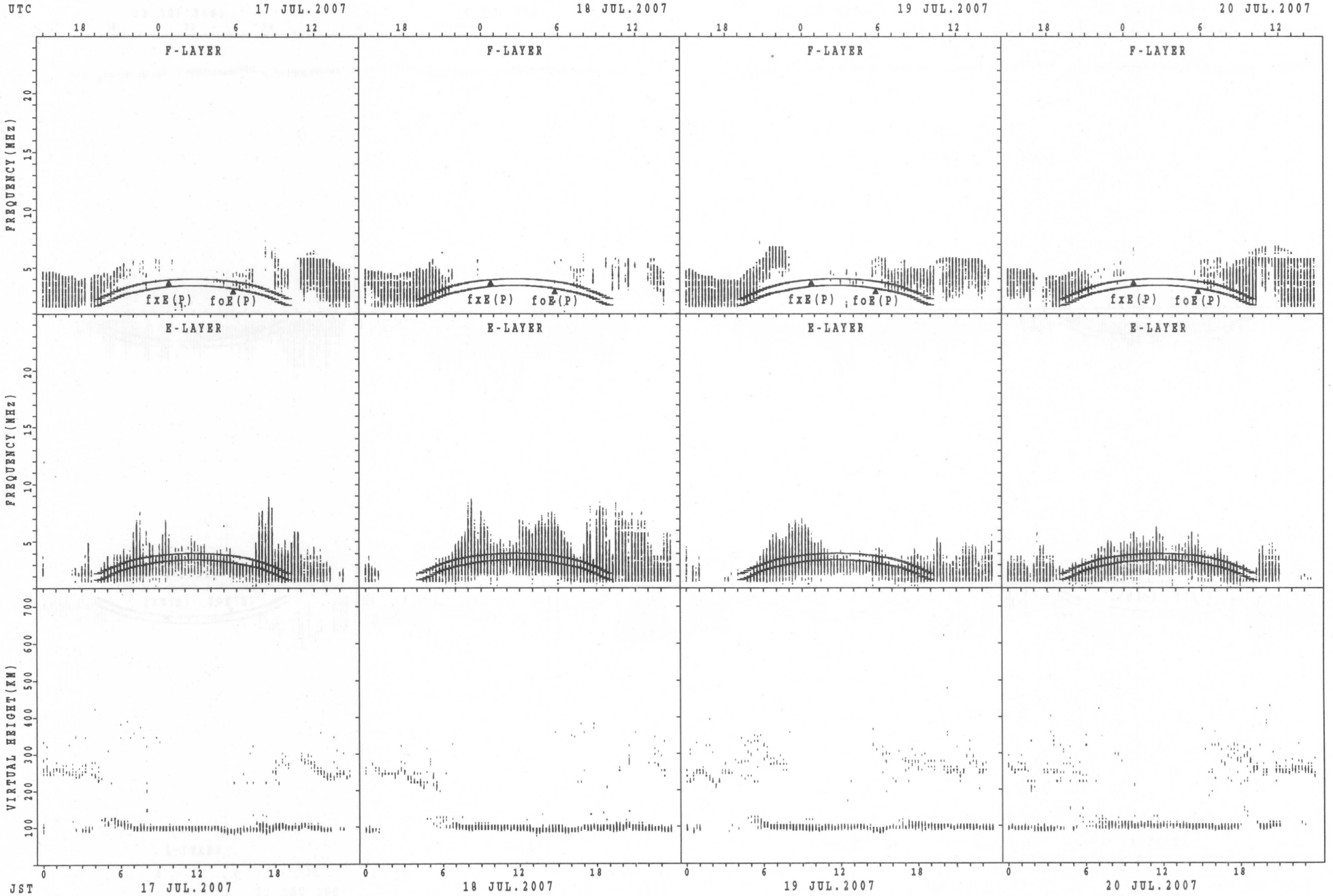

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 JUL.2007
10 JUL.2007
11 JUL.2007
12 JUL.2007
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



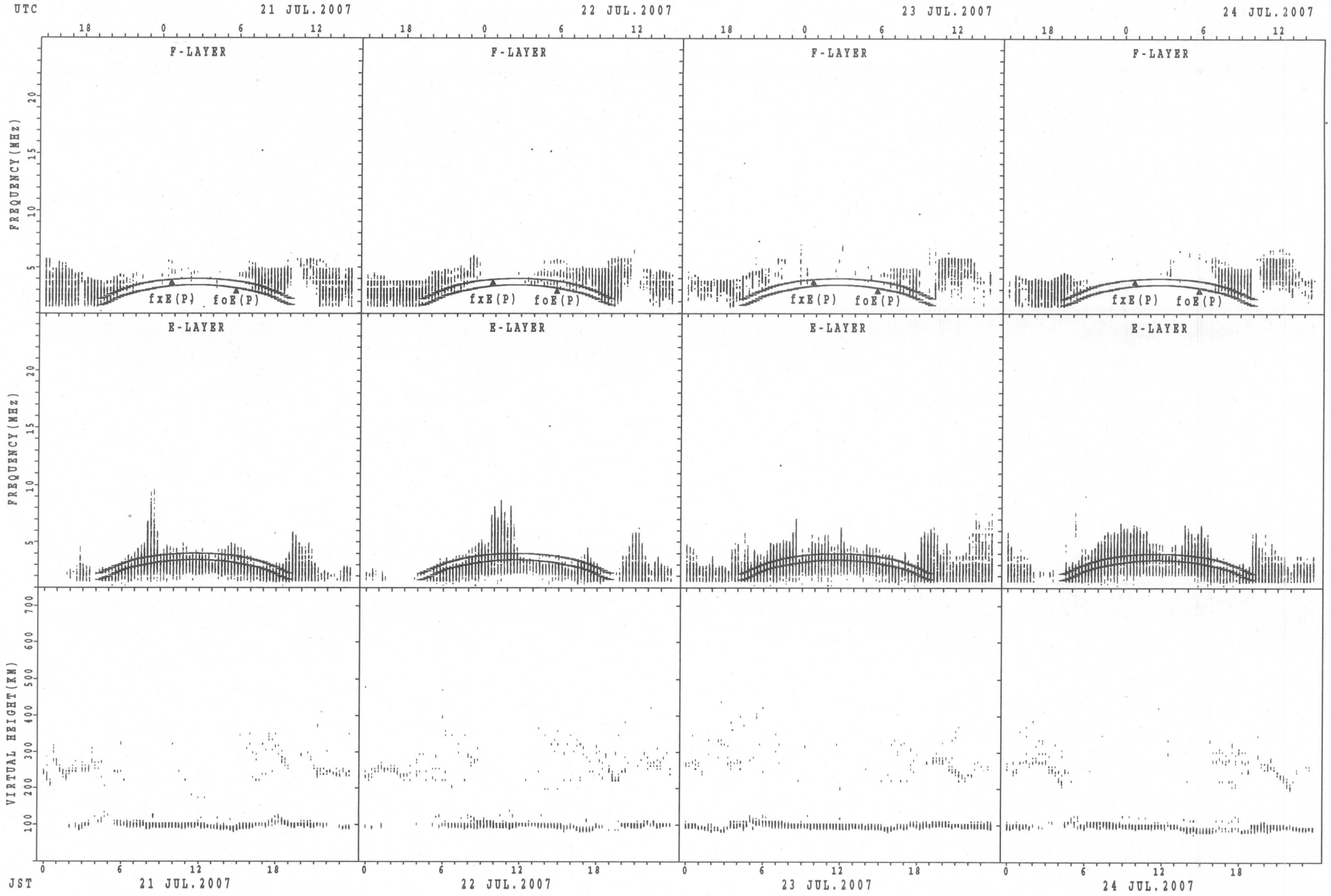
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



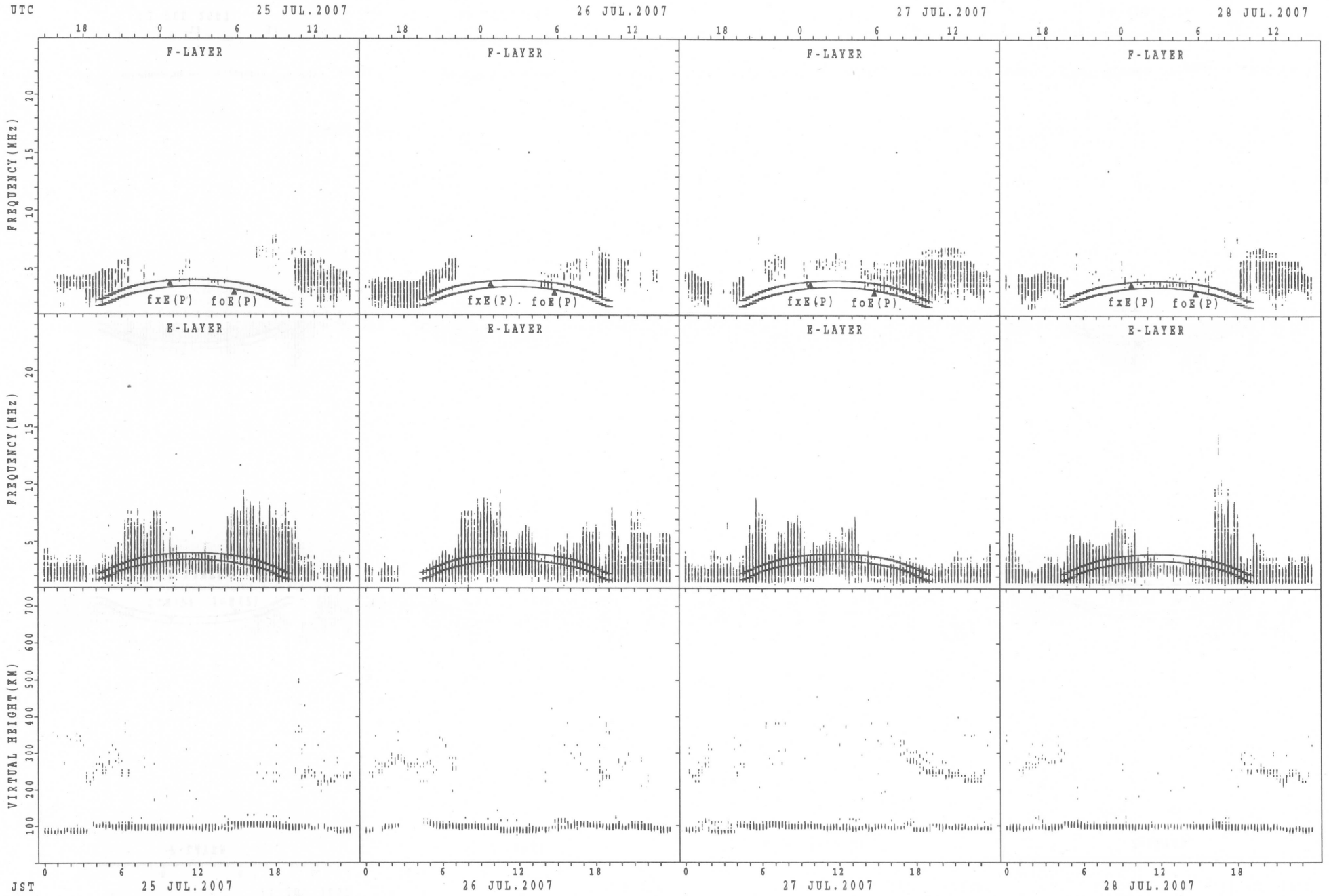
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



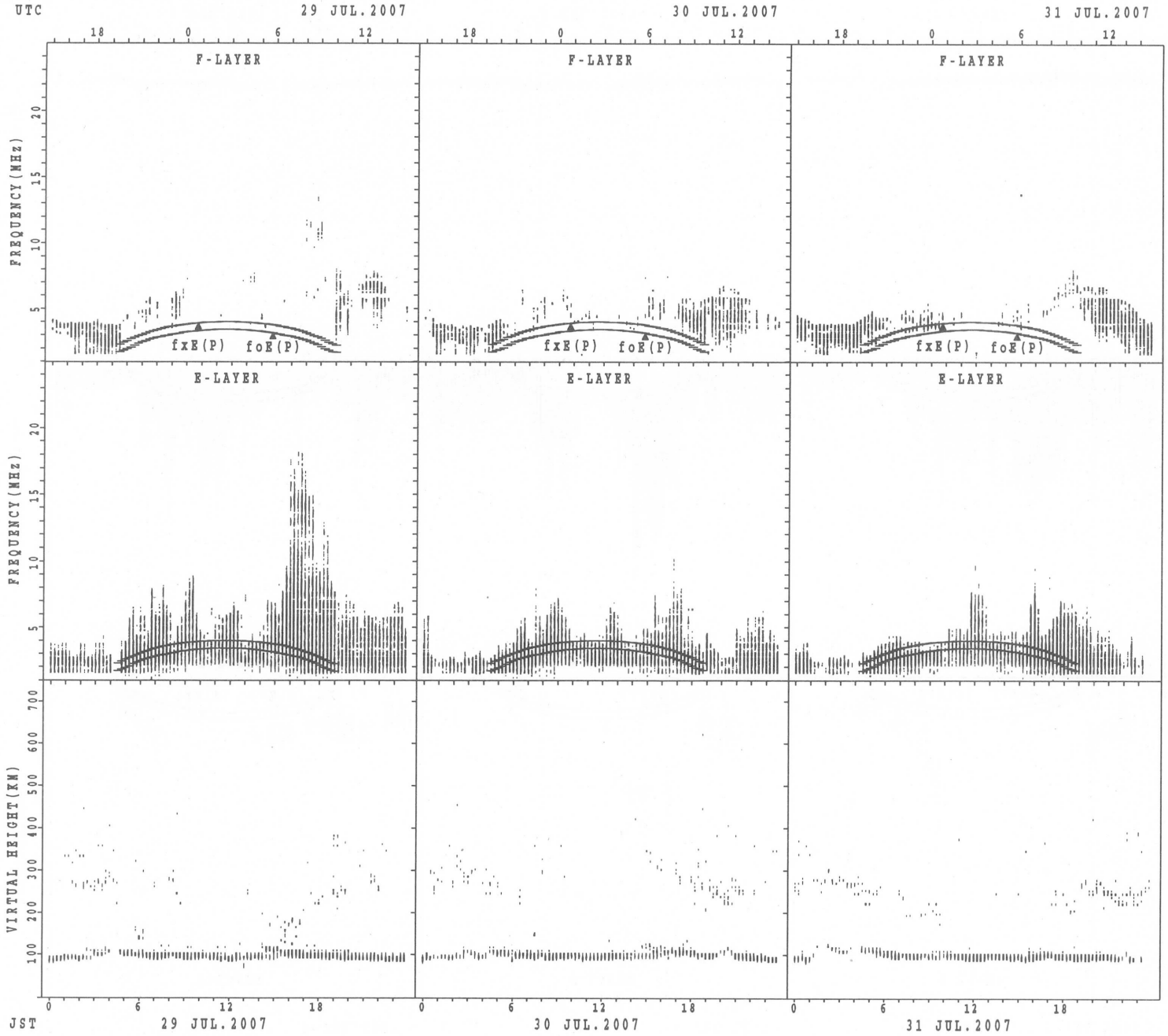
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



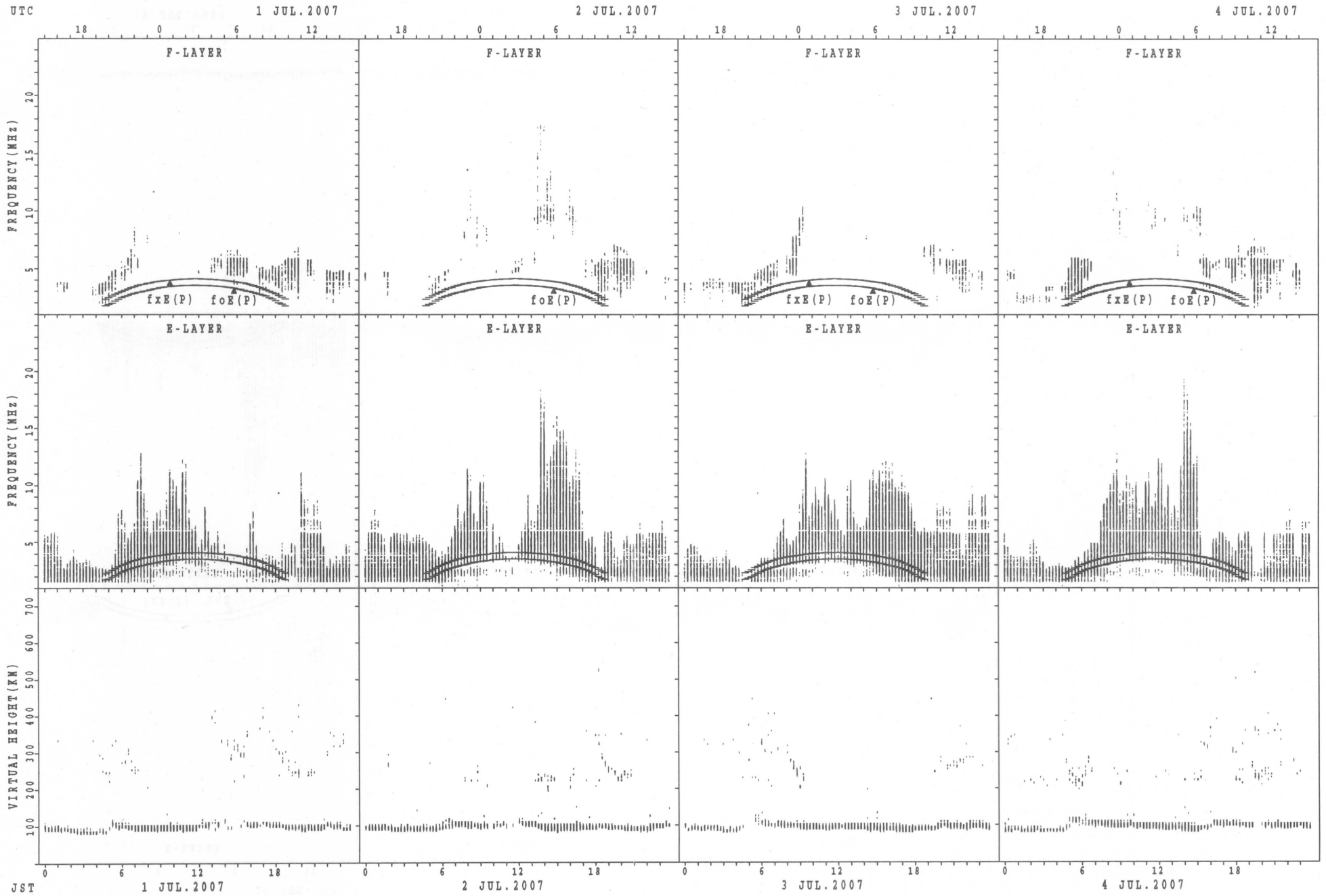
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



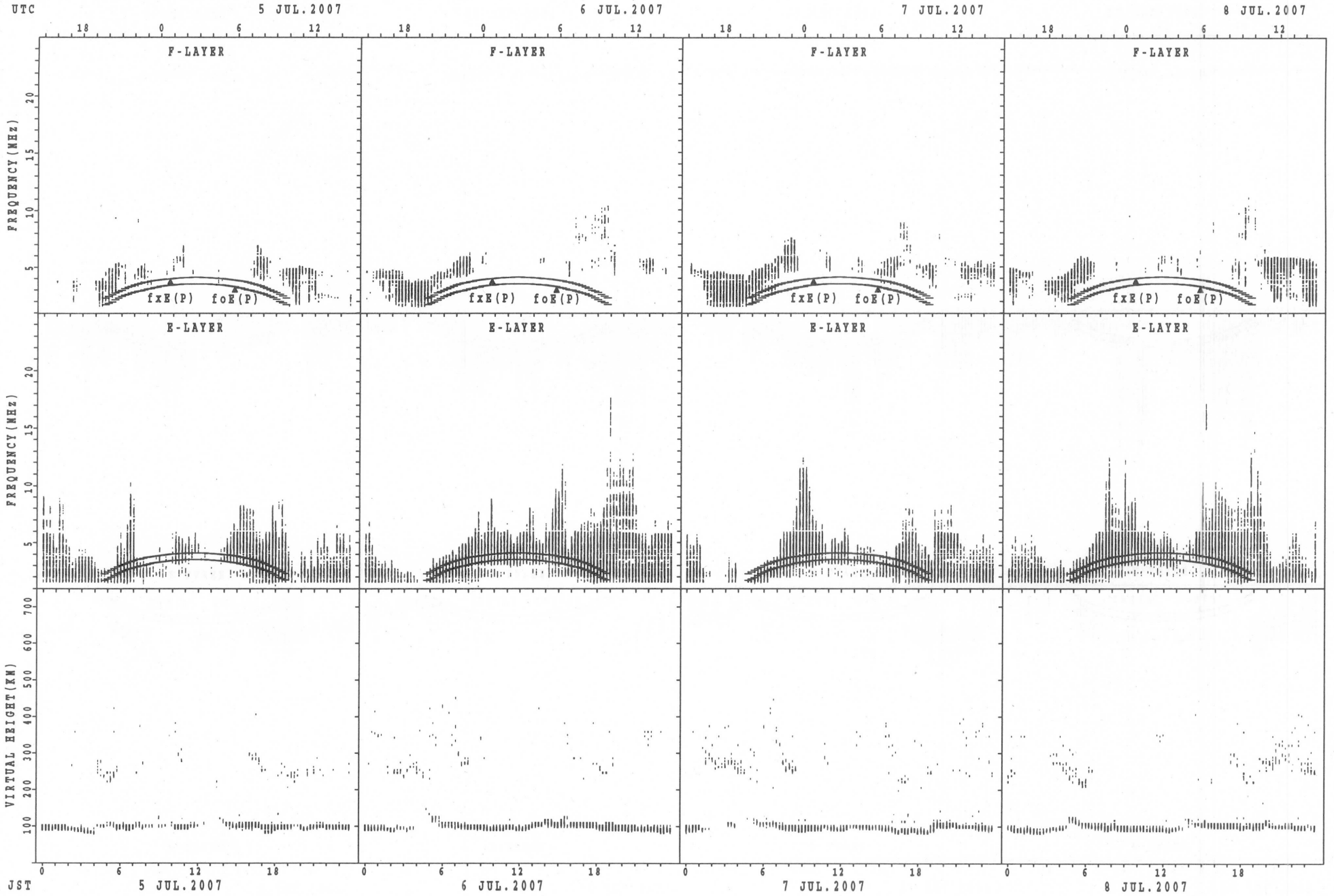
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

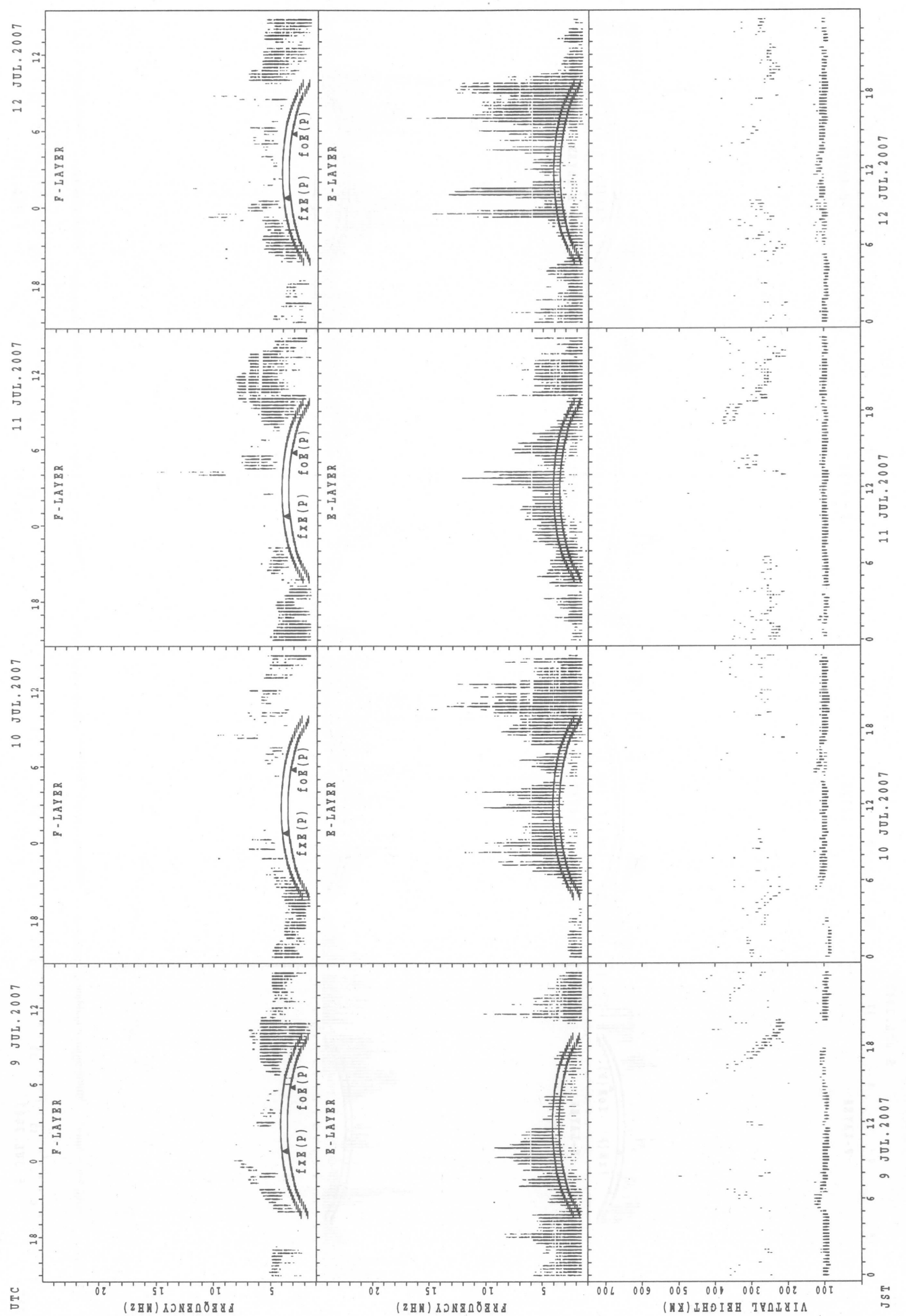


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

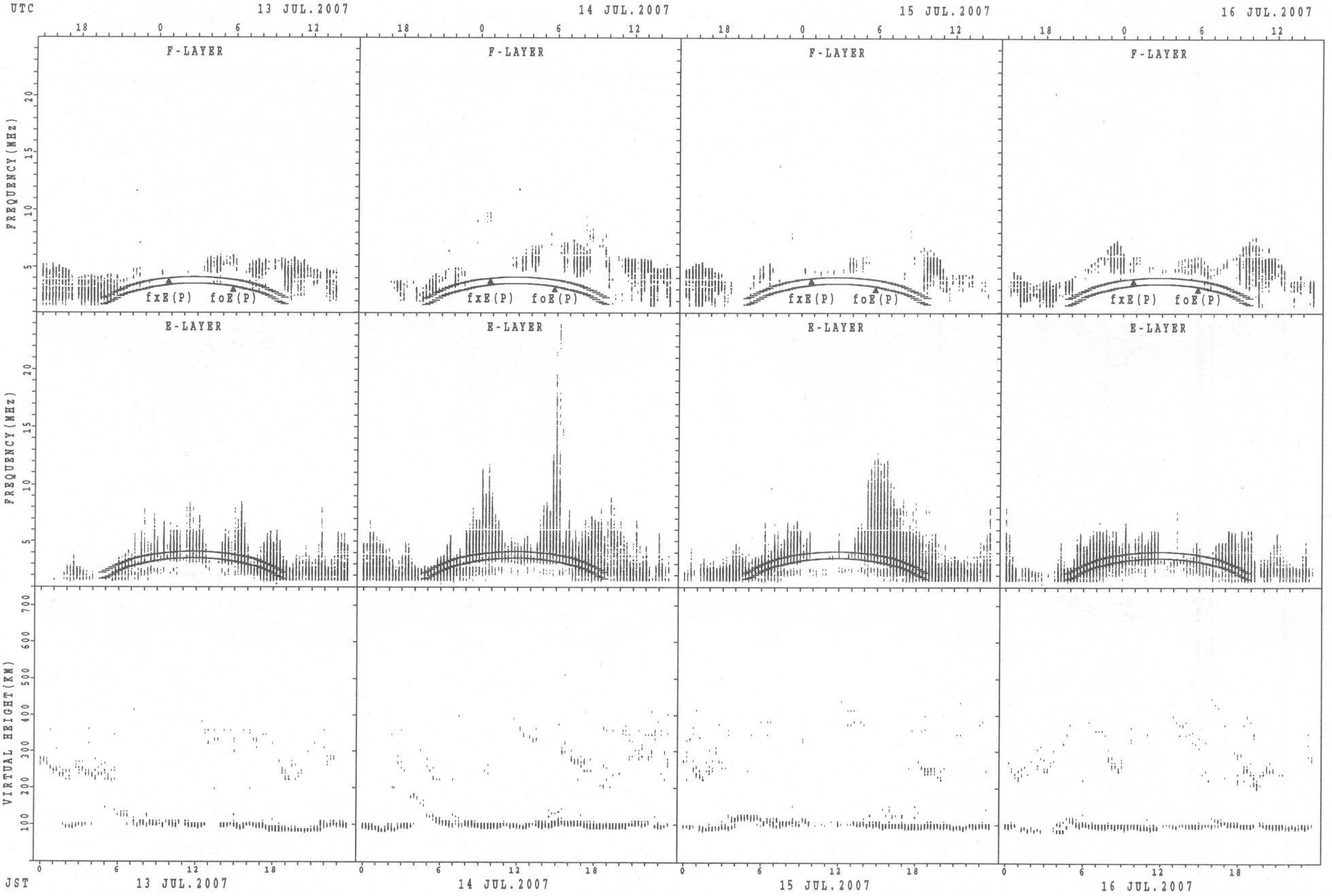
SUMMARY PLOTS AT Kokubunji



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

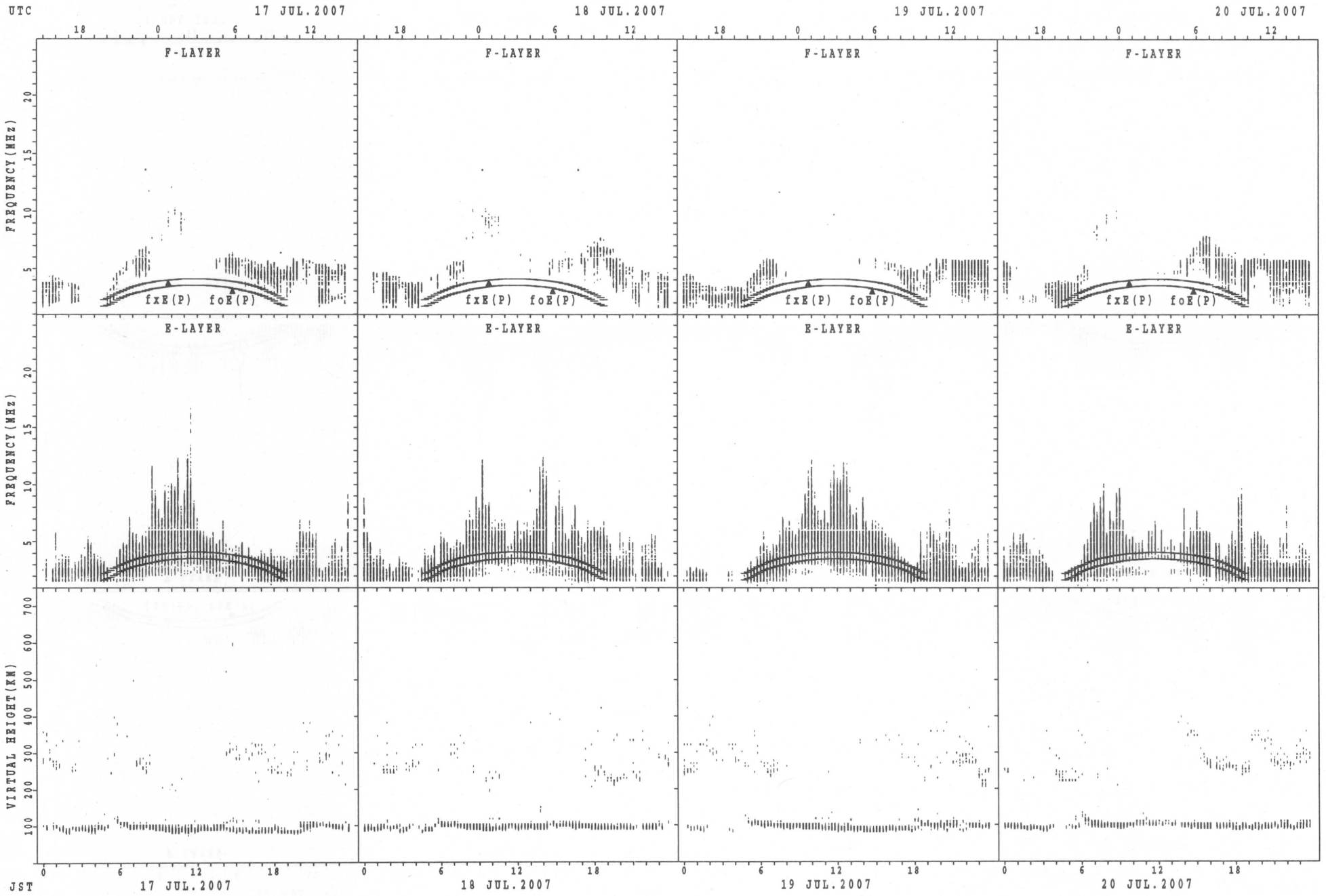

SUMMARY PLOTS AT Kokubunji
UTC
JST
9 JUL.2007
10 JUL.2007
11 JUL.2007
12 JUL.2007
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



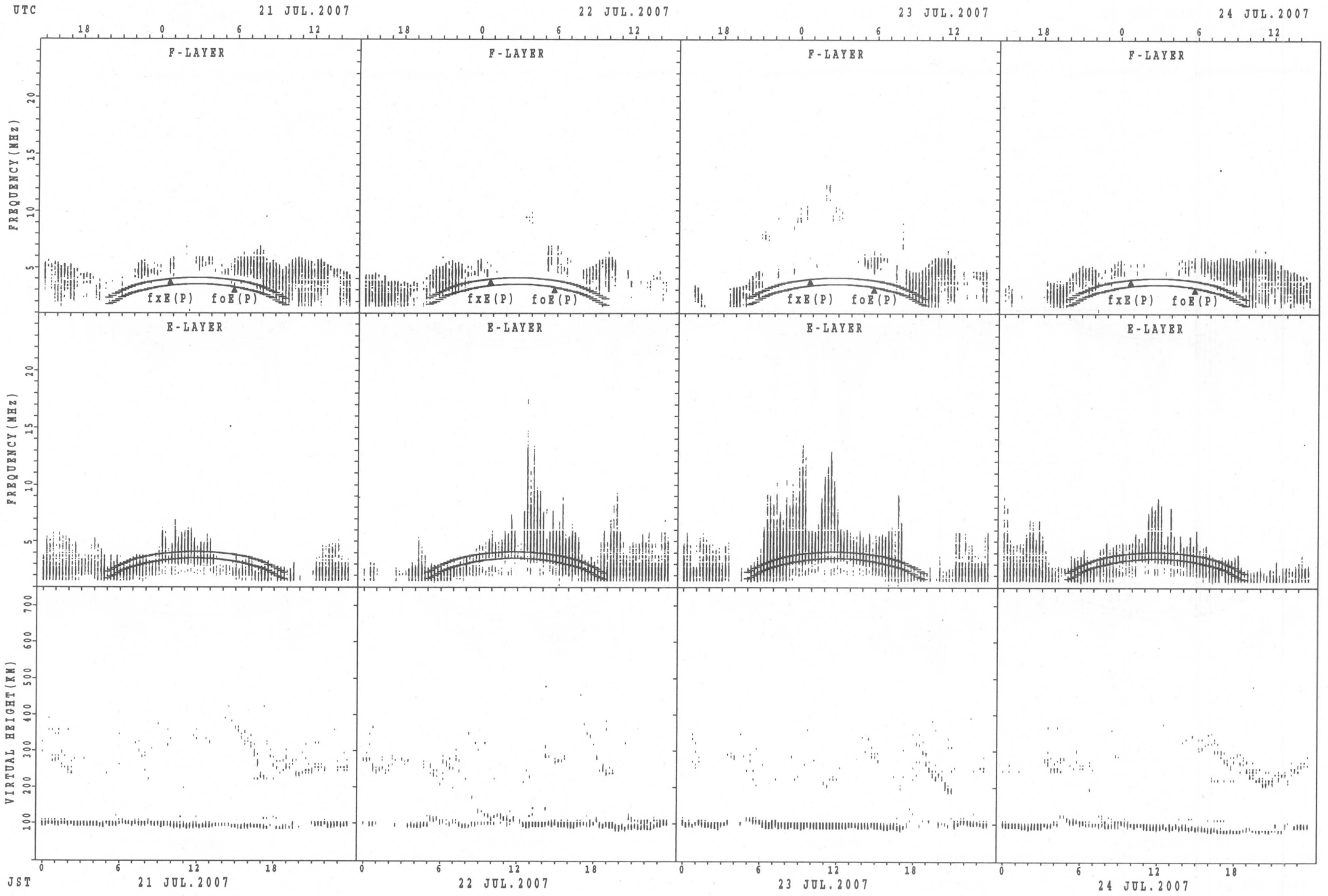
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

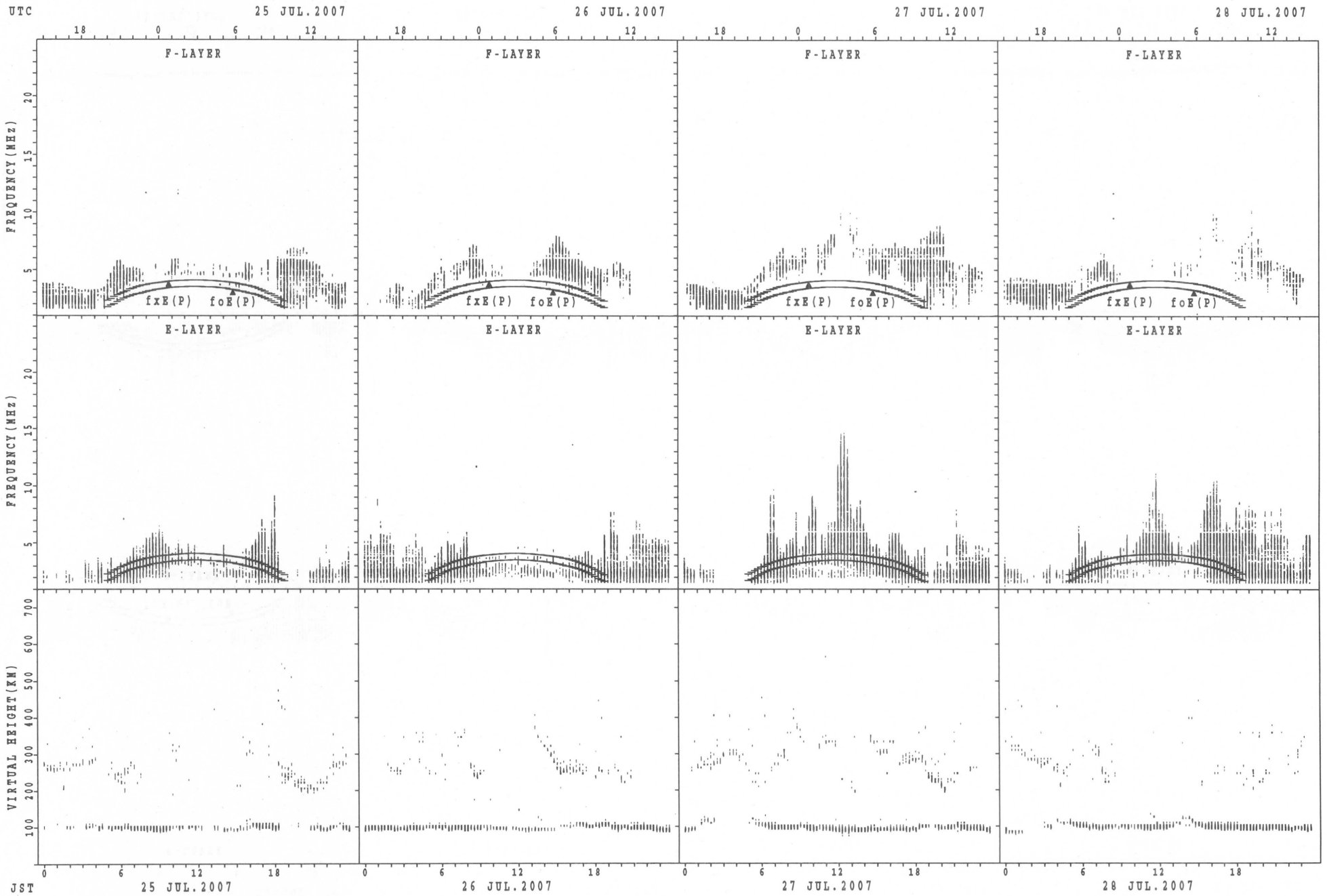


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

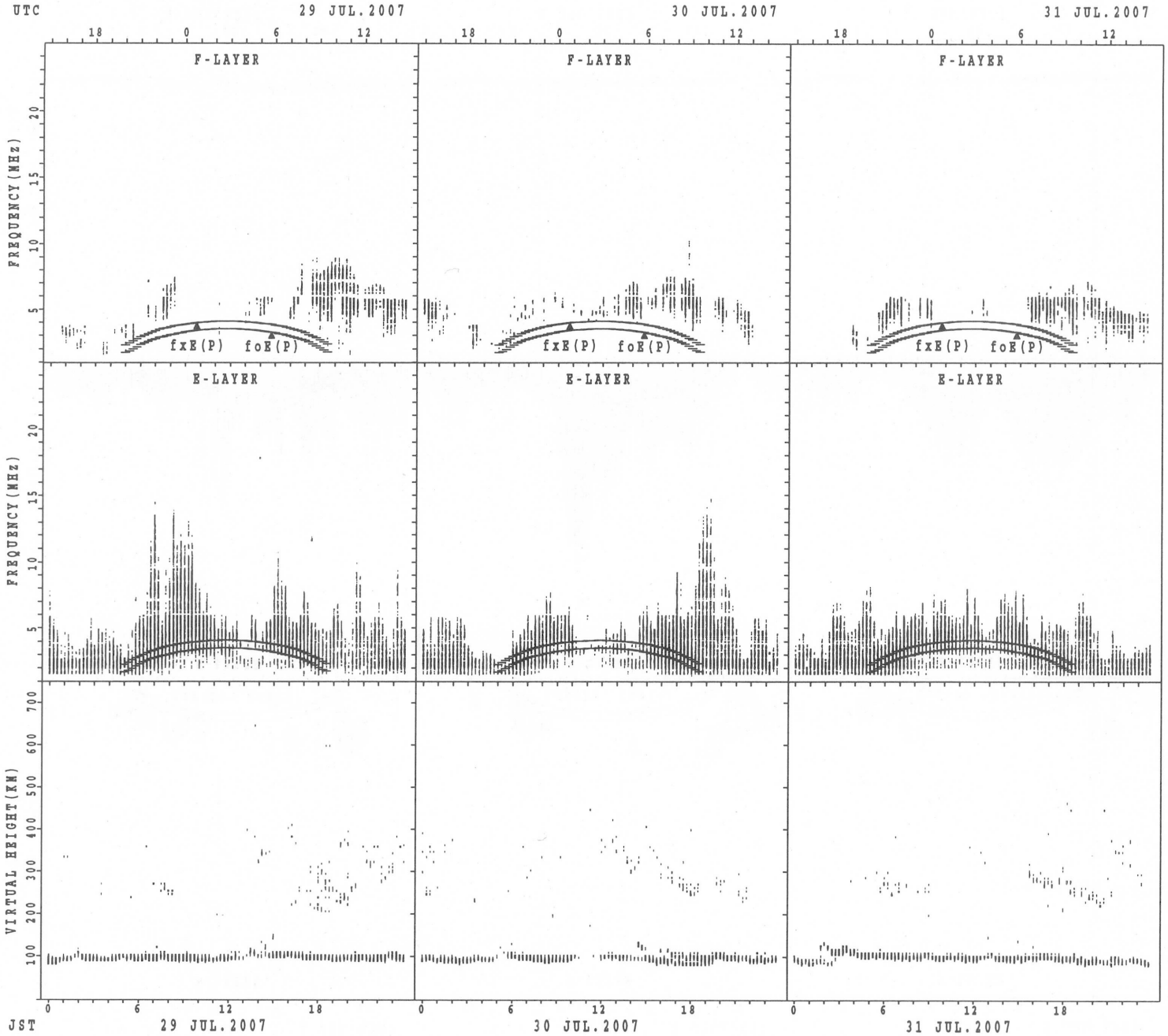


SUMMARY PLOTS AT Kokubunji



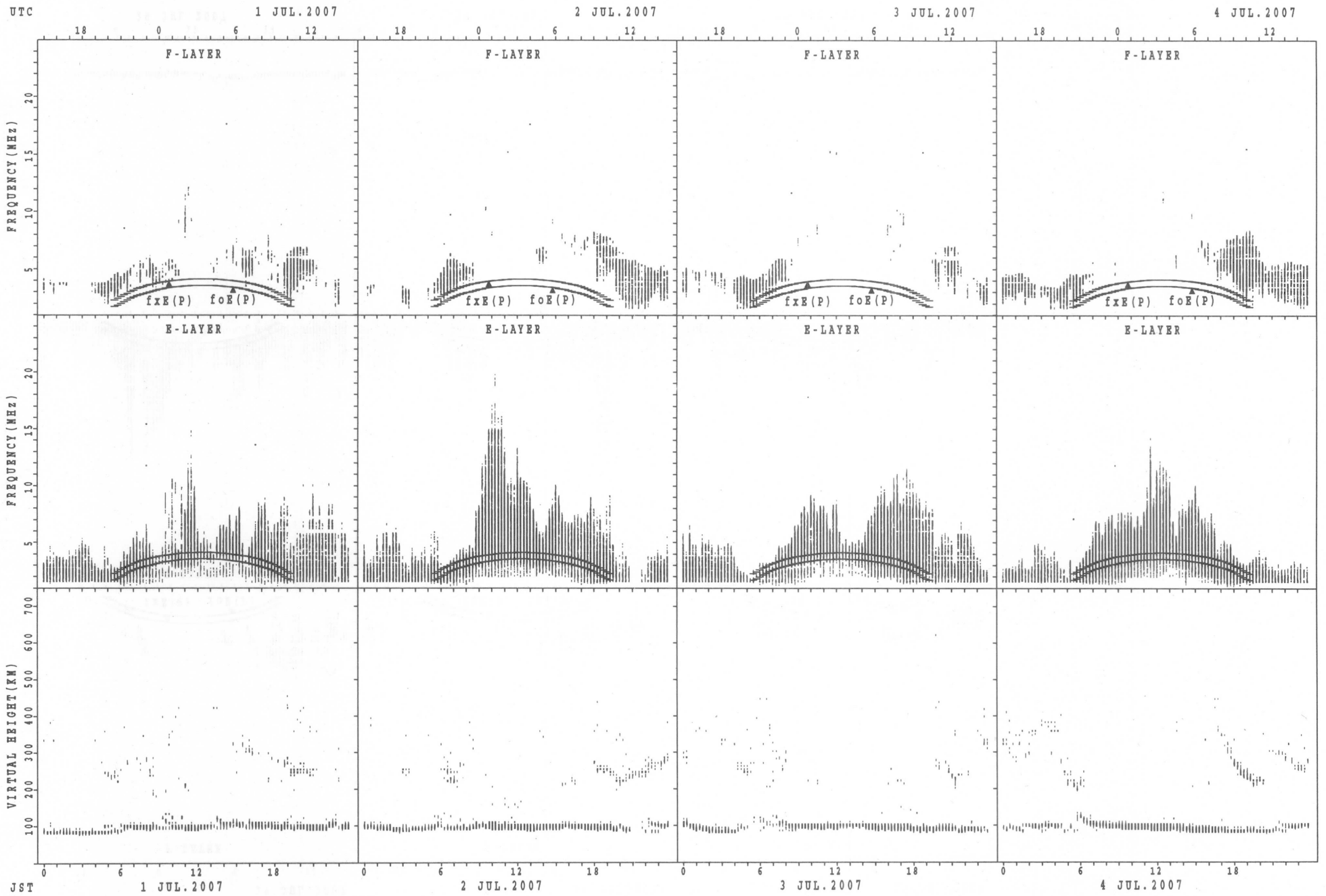
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



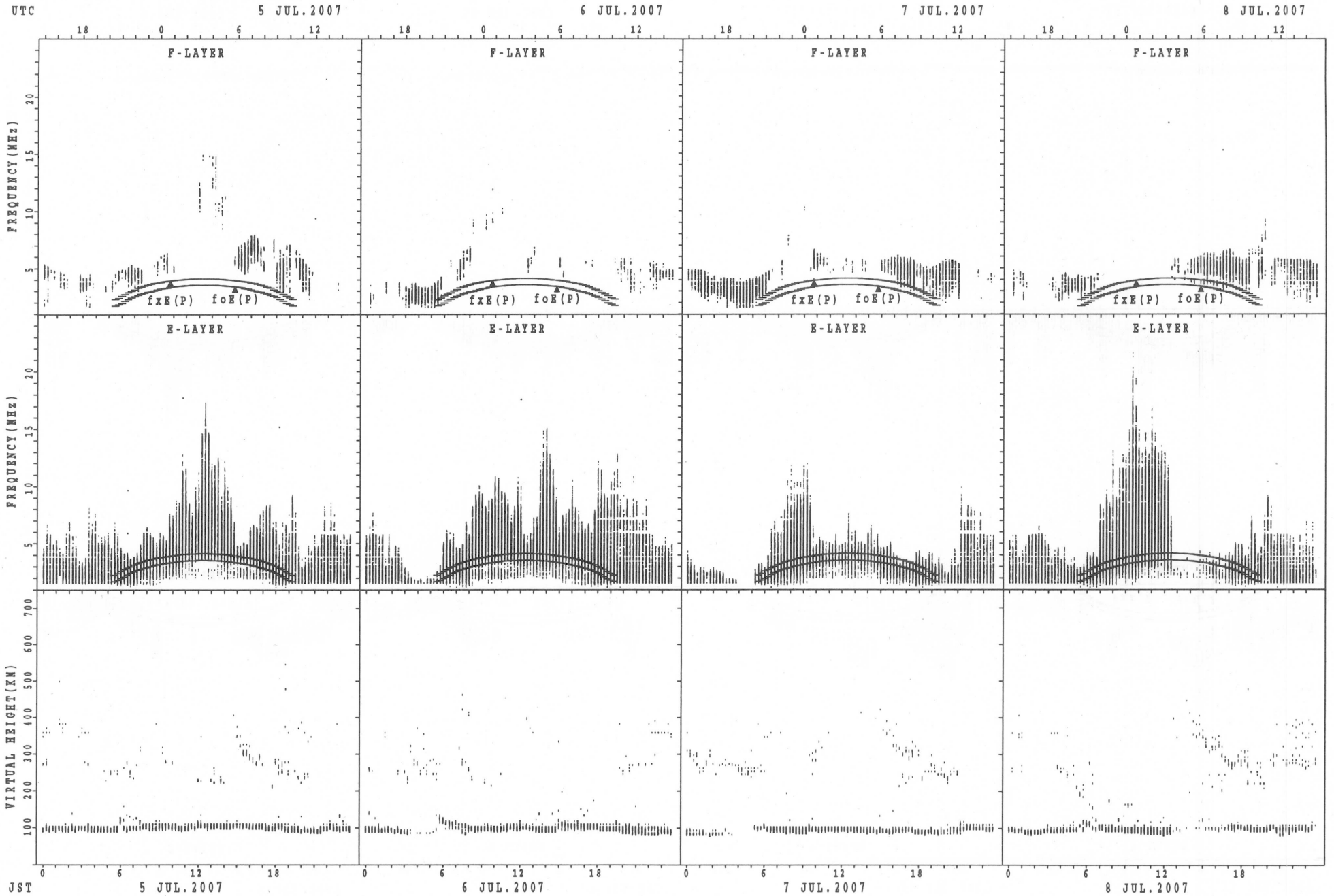
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



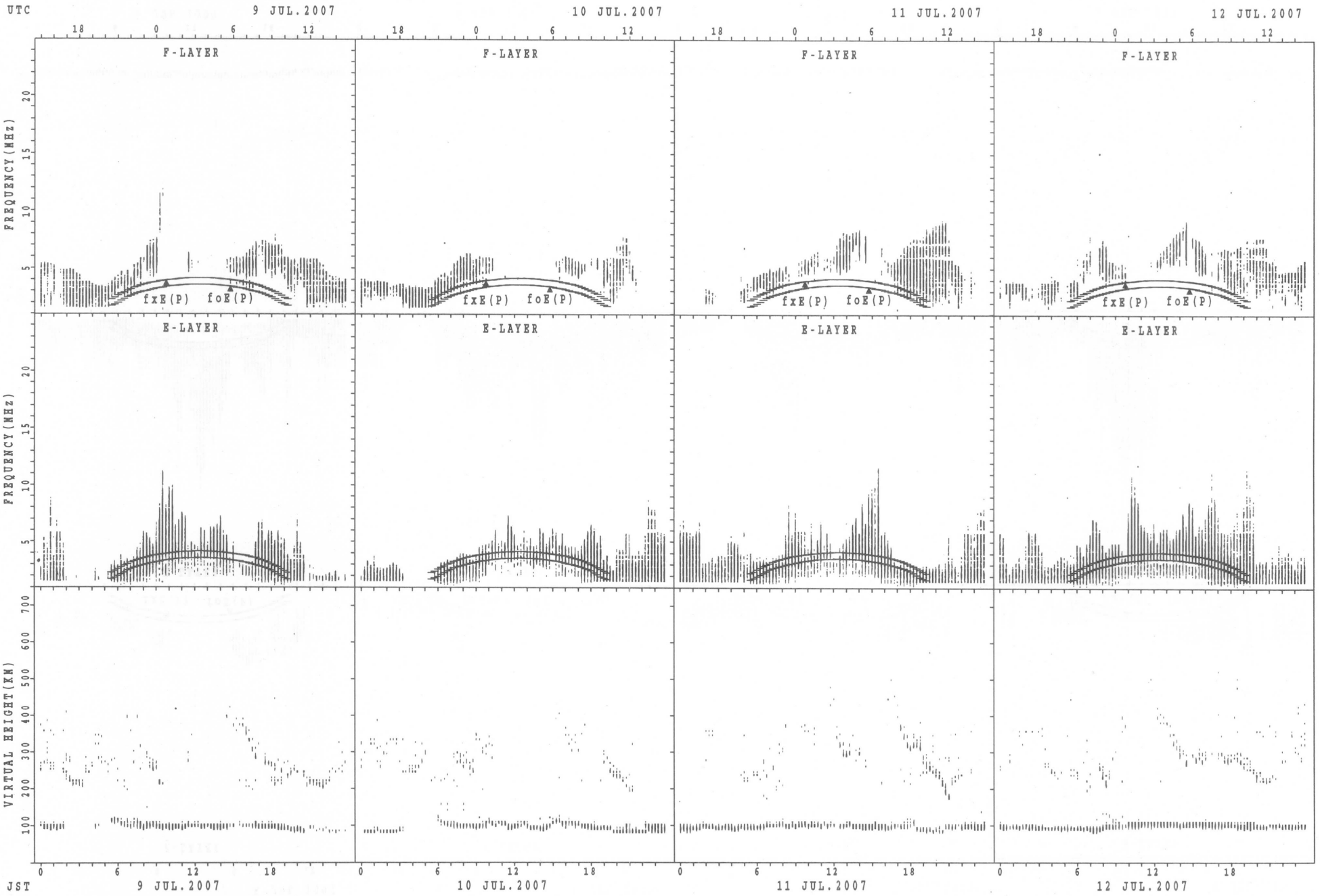
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



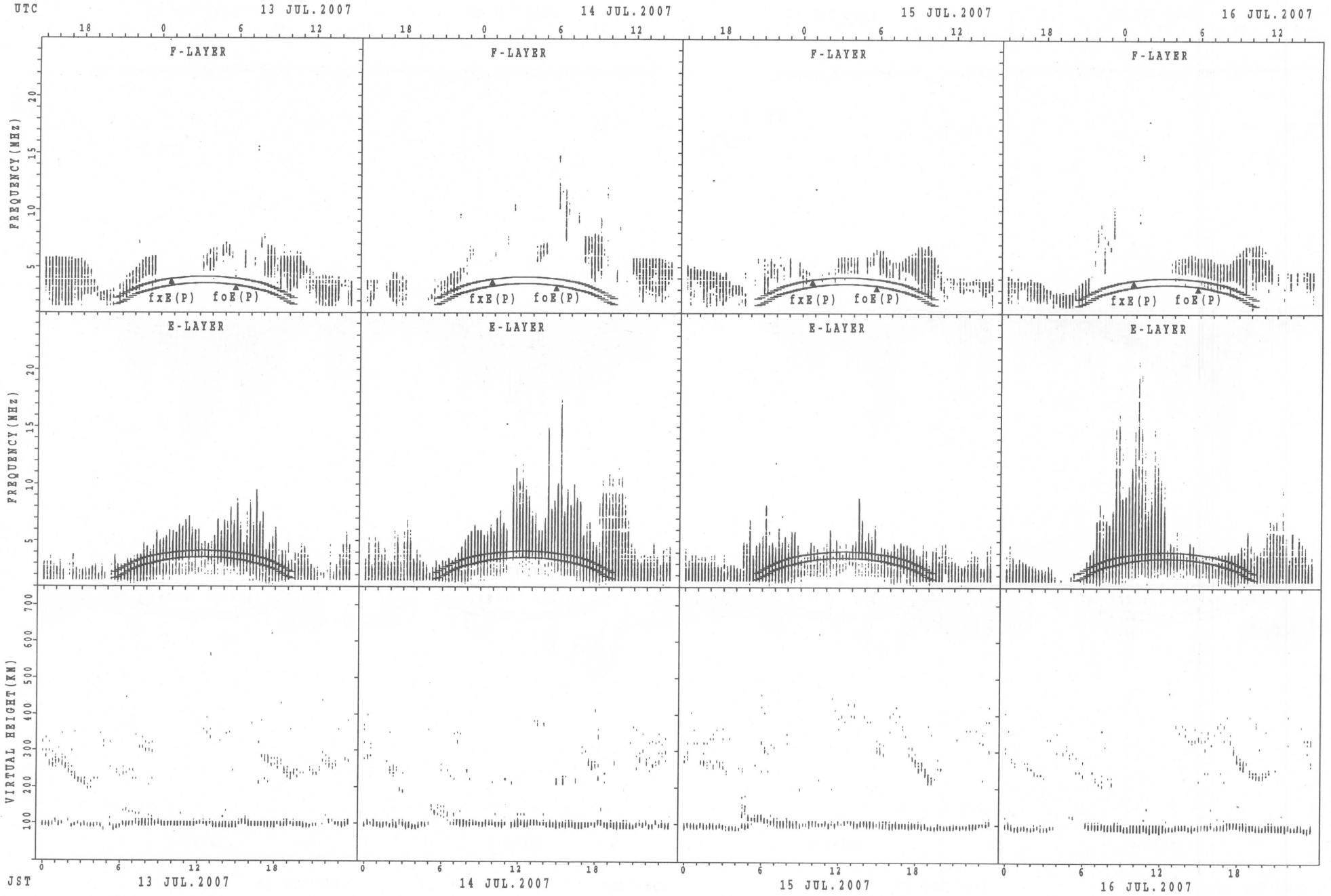
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



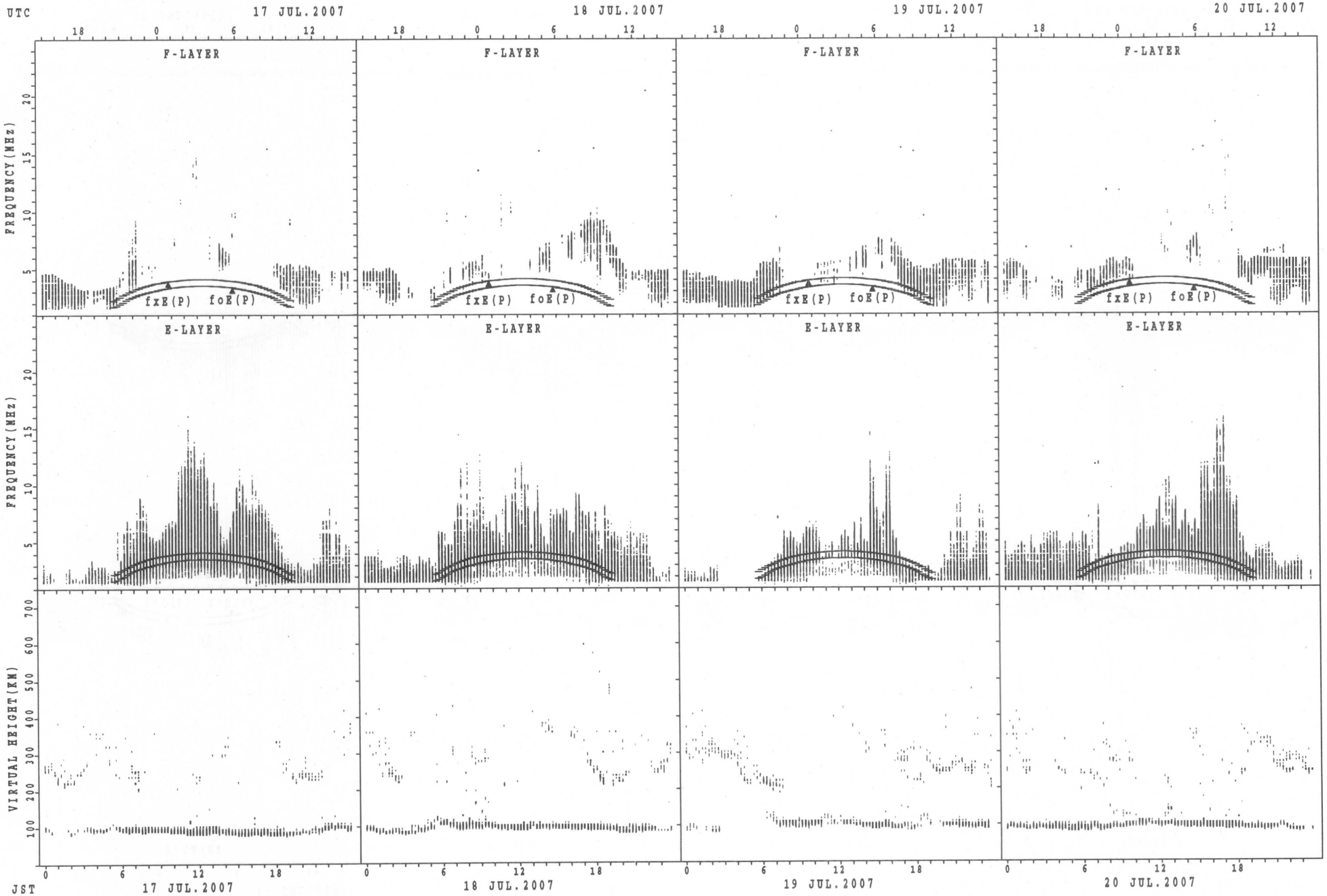
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



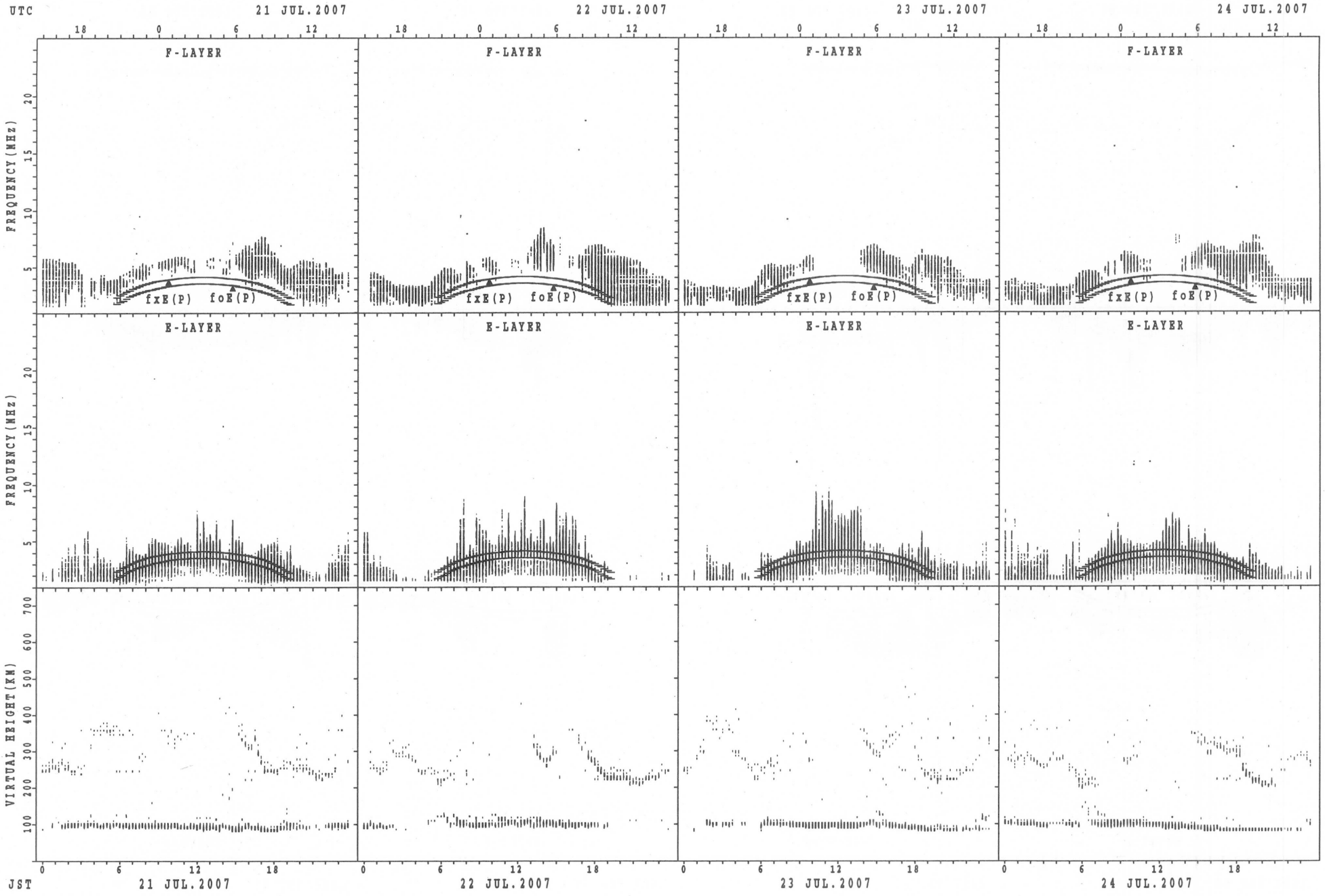
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



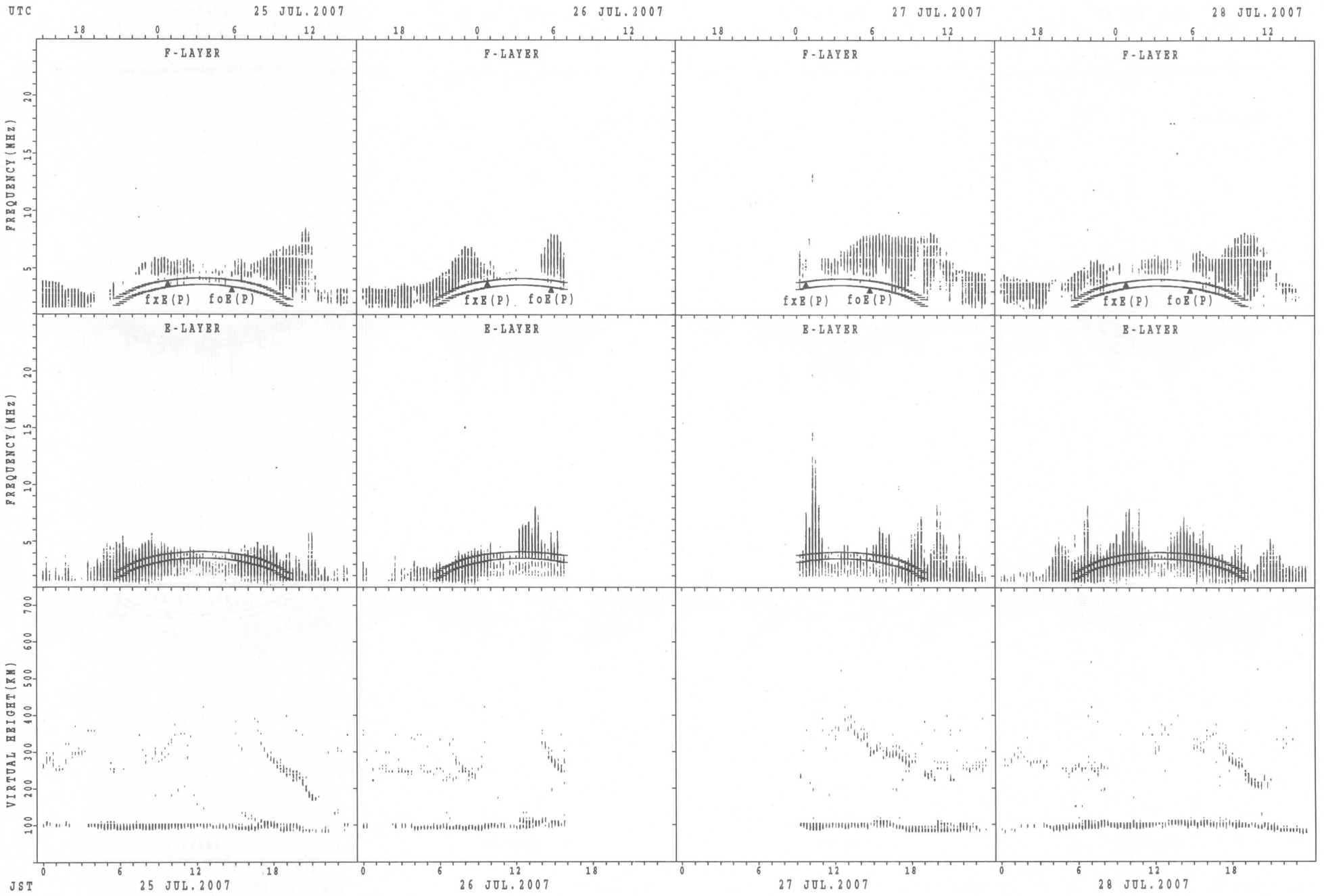
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



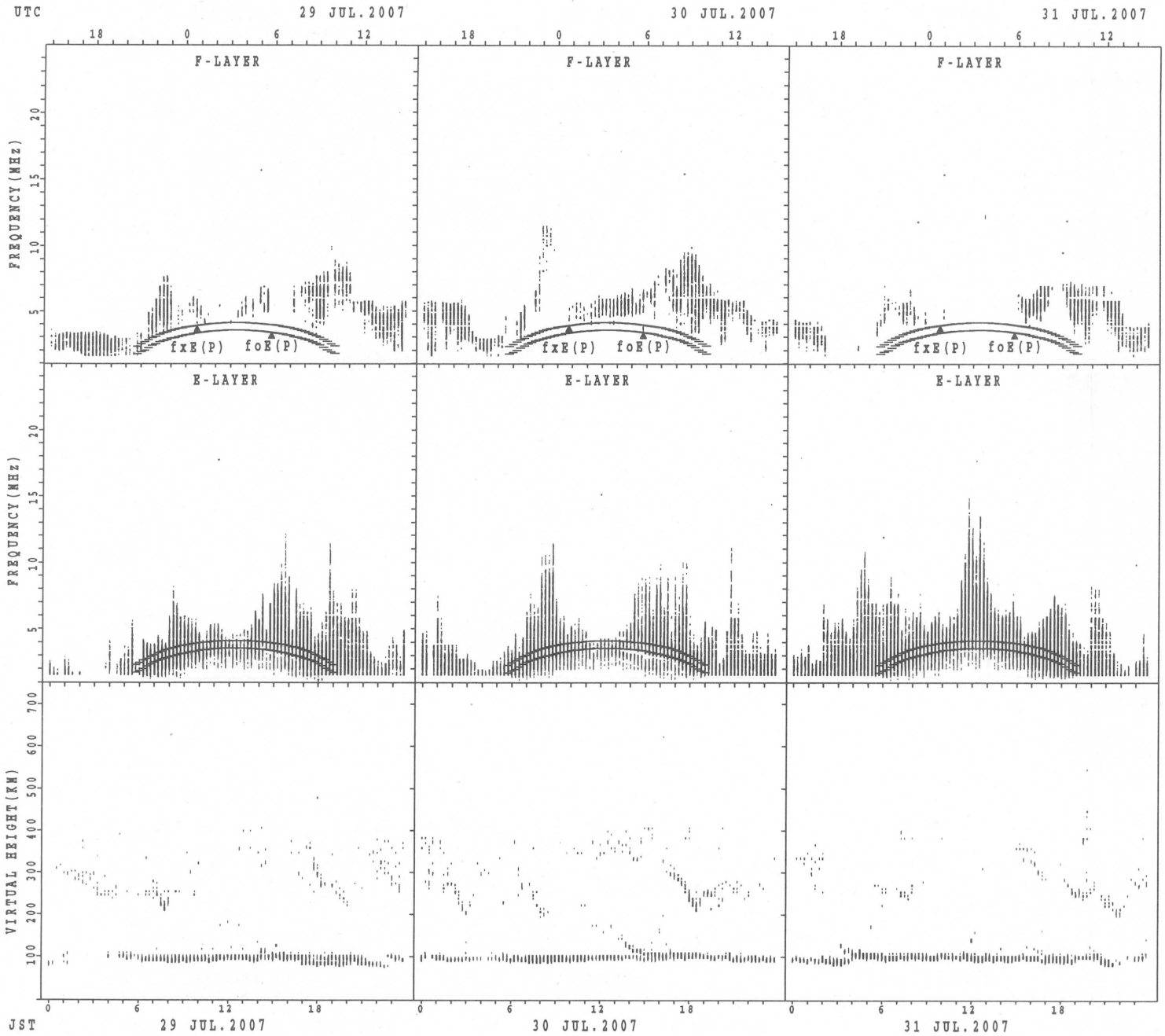
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

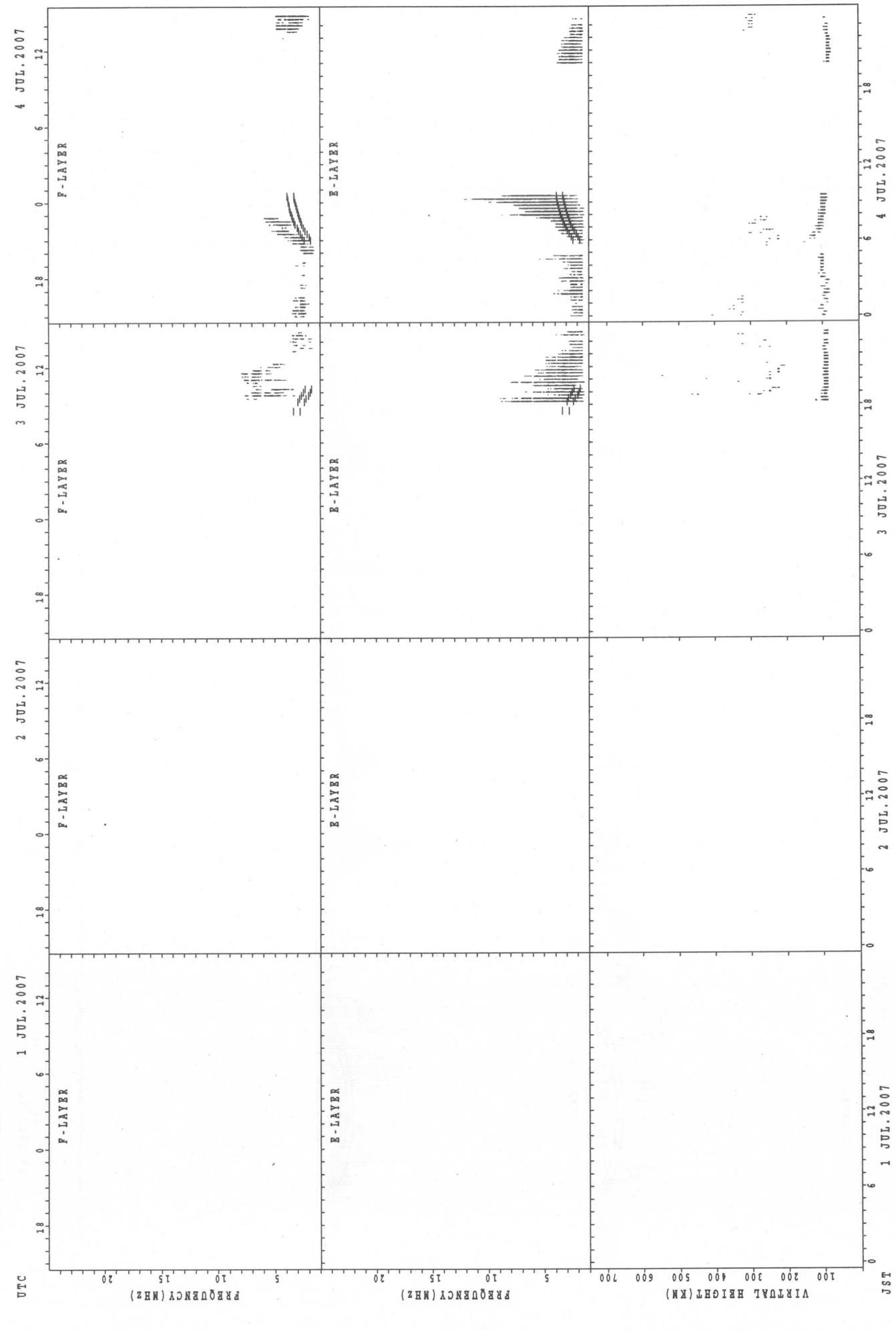


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

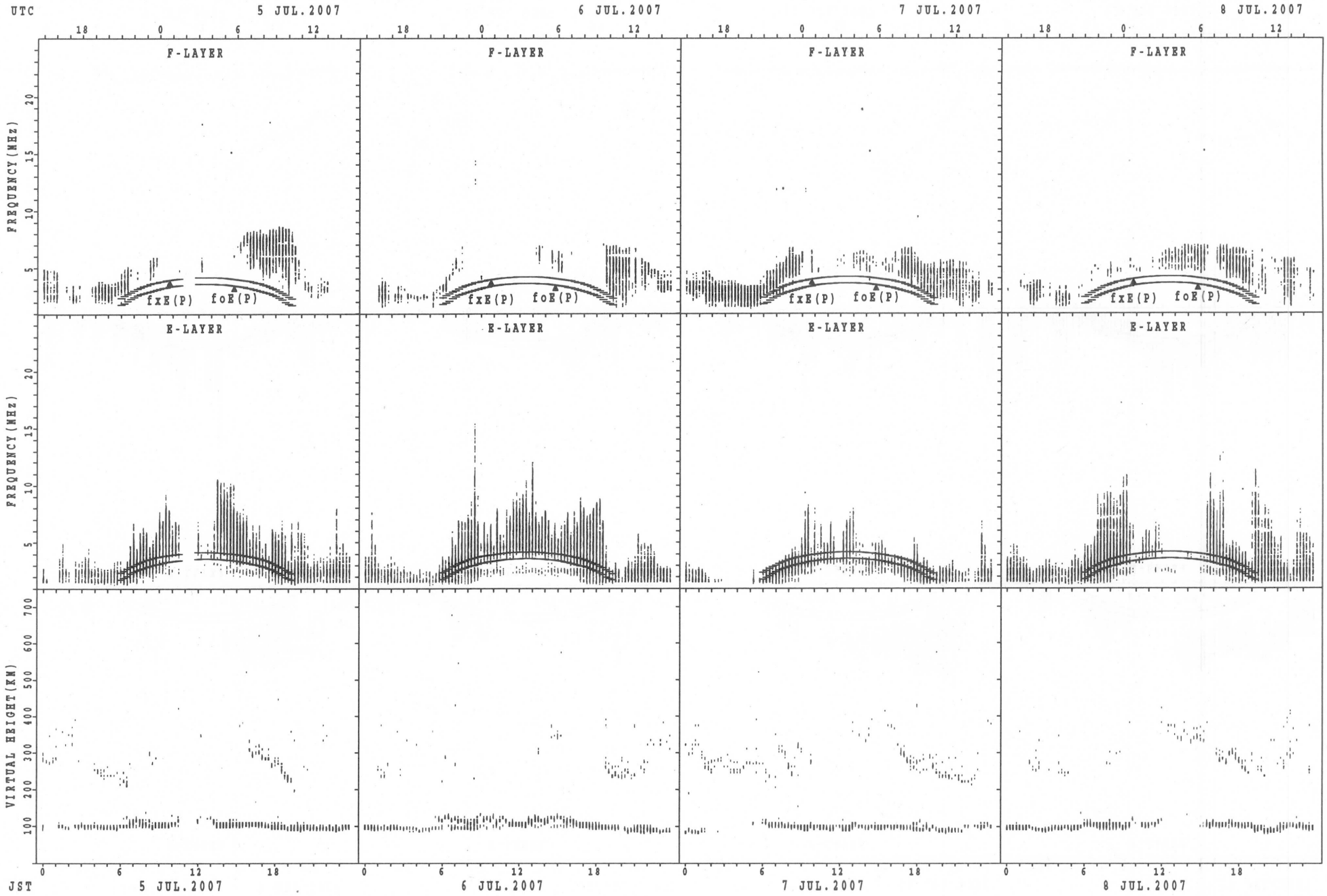
SUMMARY PLOTS AT Yamagawa



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

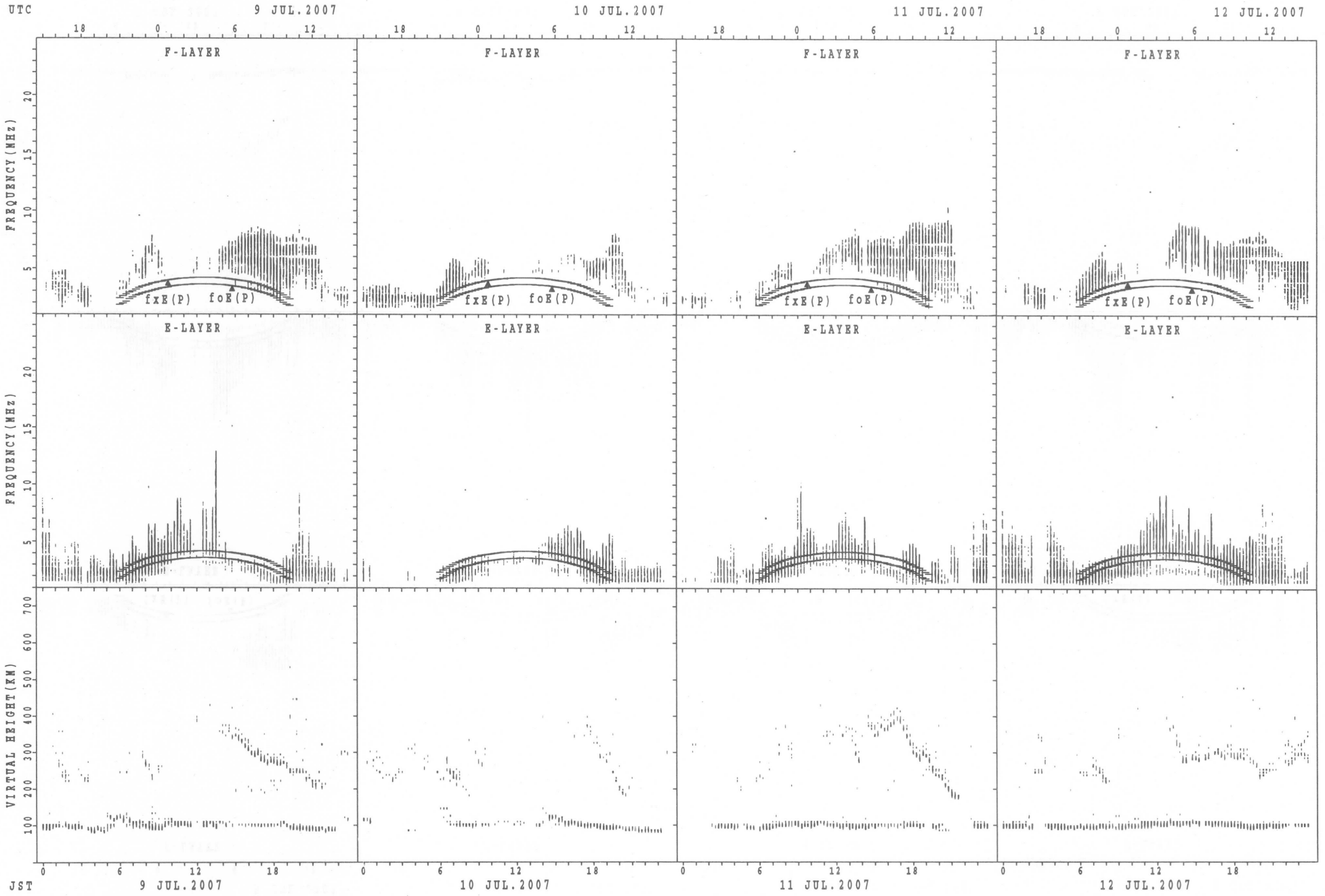

SUMMARY PLOTS AT Okinawa
UTC
JST
1 JUL.2007
2 JUL.2007
3 JUL.2007
4 JUL.2007
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



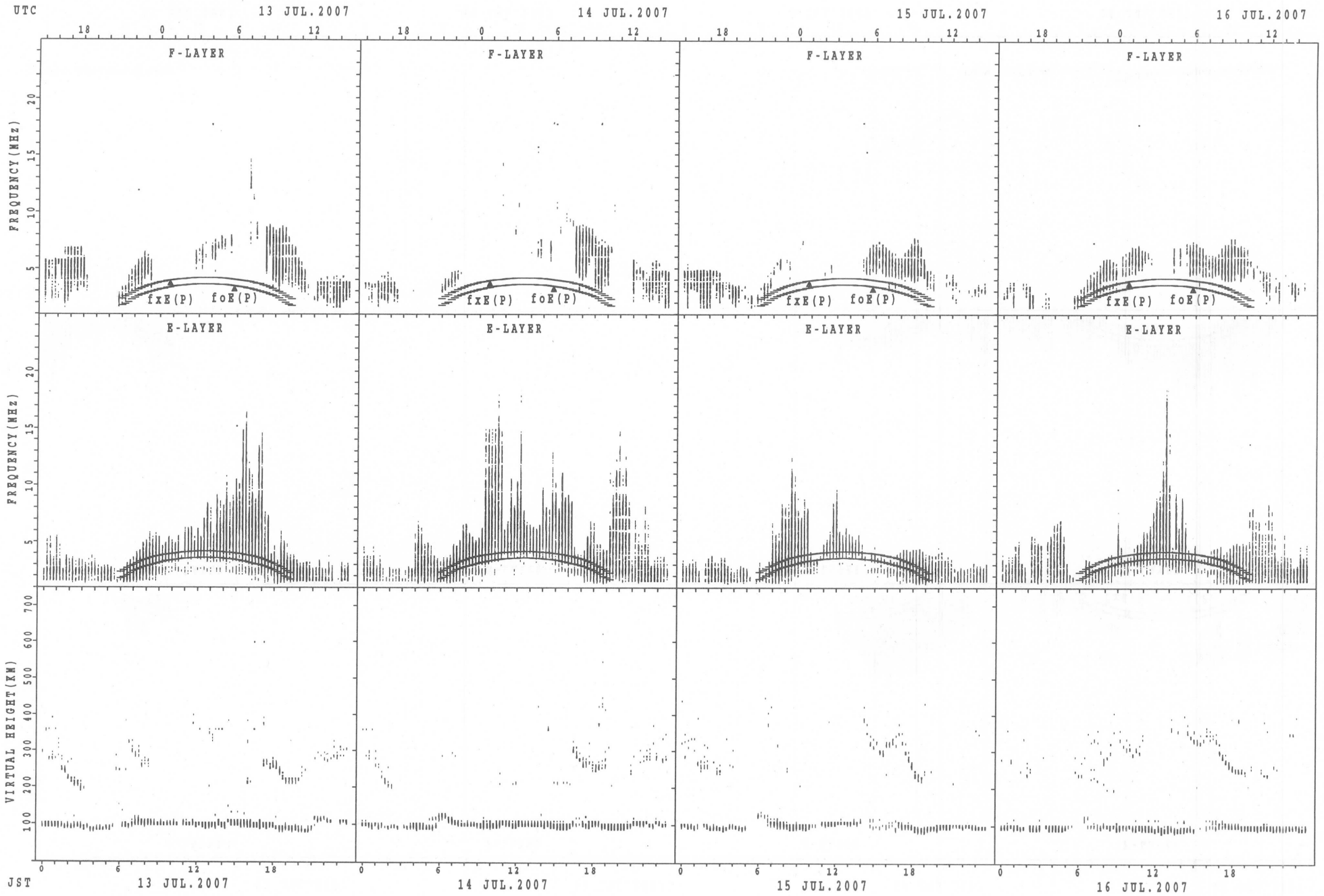
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

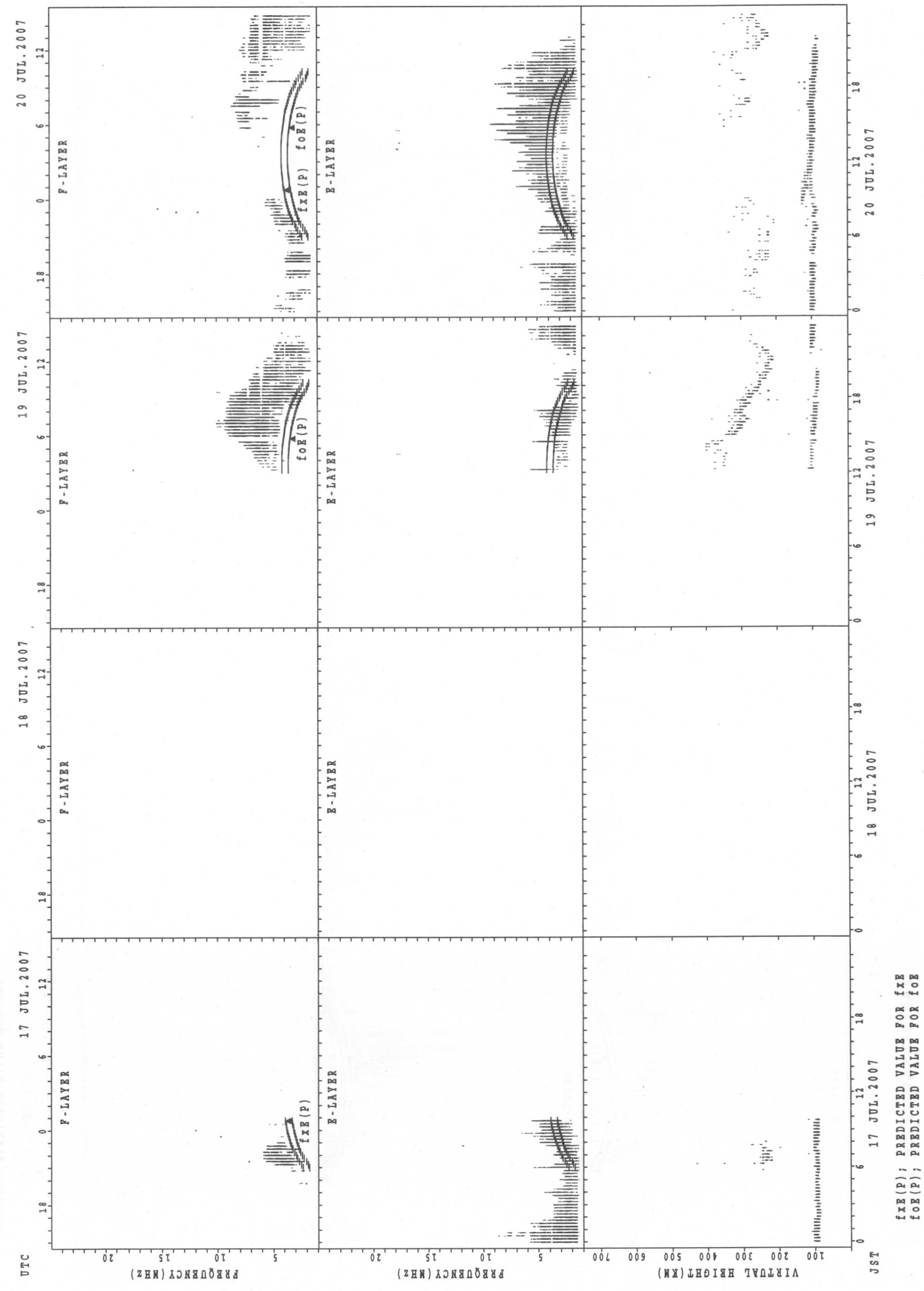


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

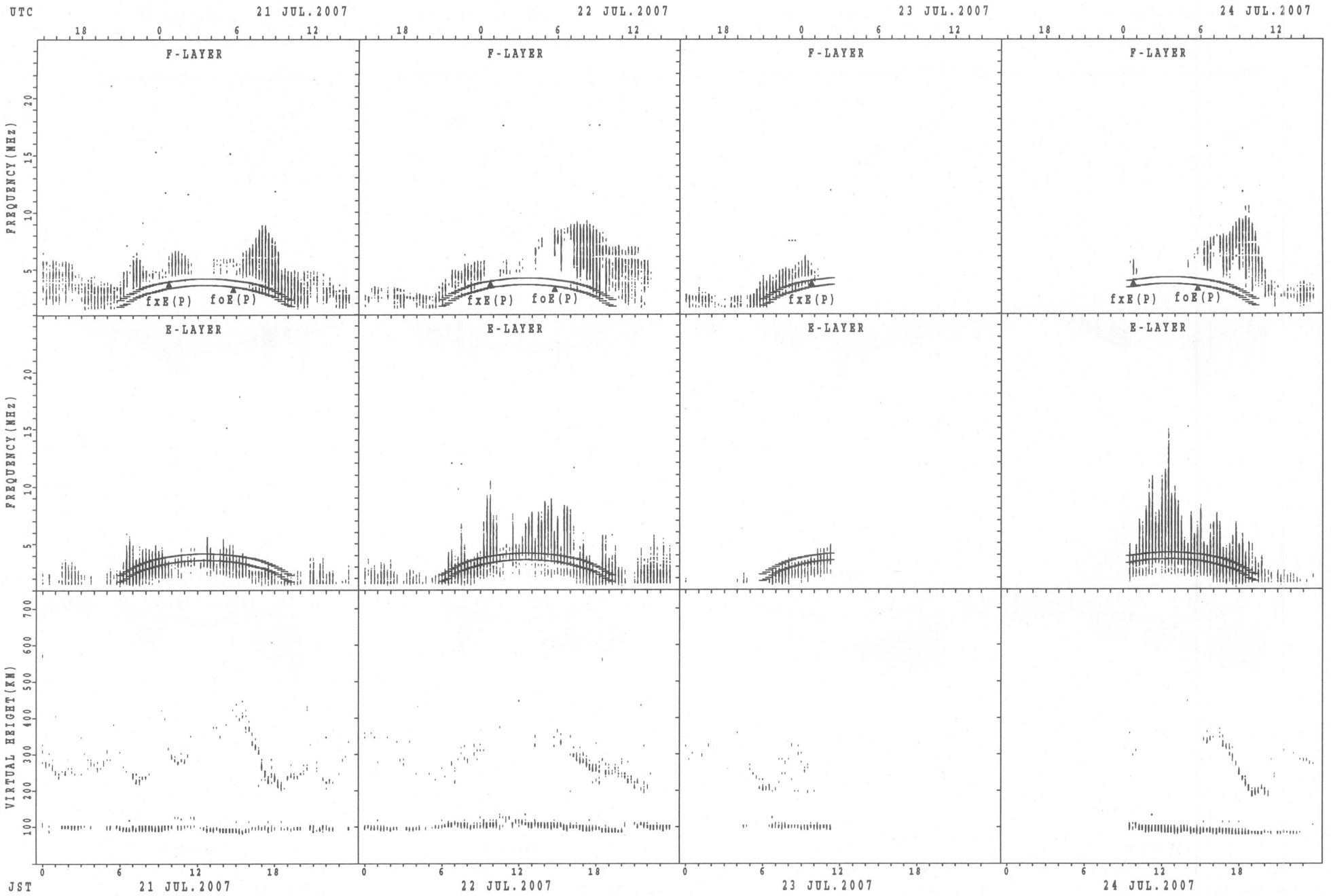
SUMMARY PLOTS AT Okinawa



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

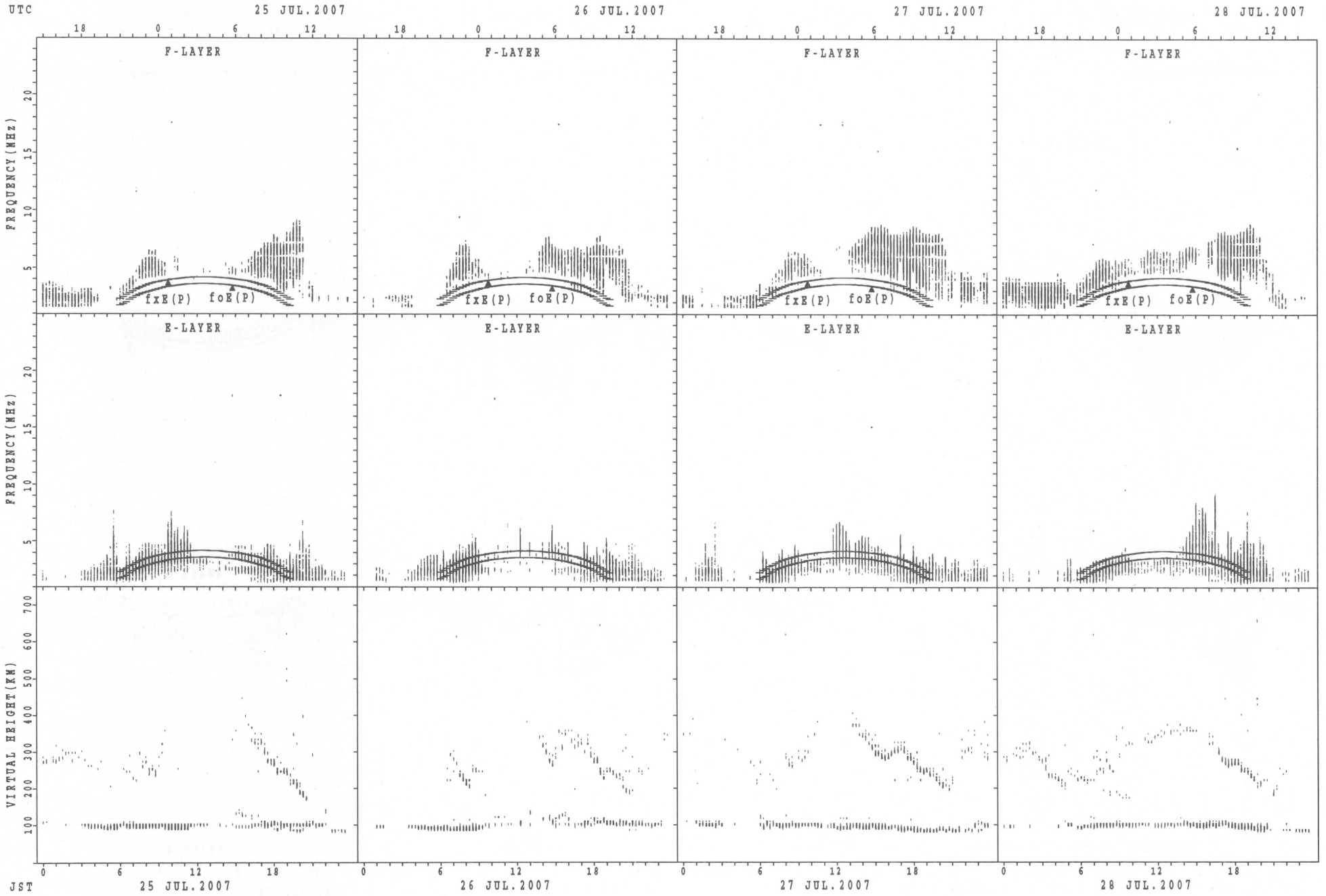

SUMMARY PLOTS AT Okinawa
UTC
JST
17 JUL.2007
18 JUL.2007
19 JUL.2007
20 JUL.2007
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



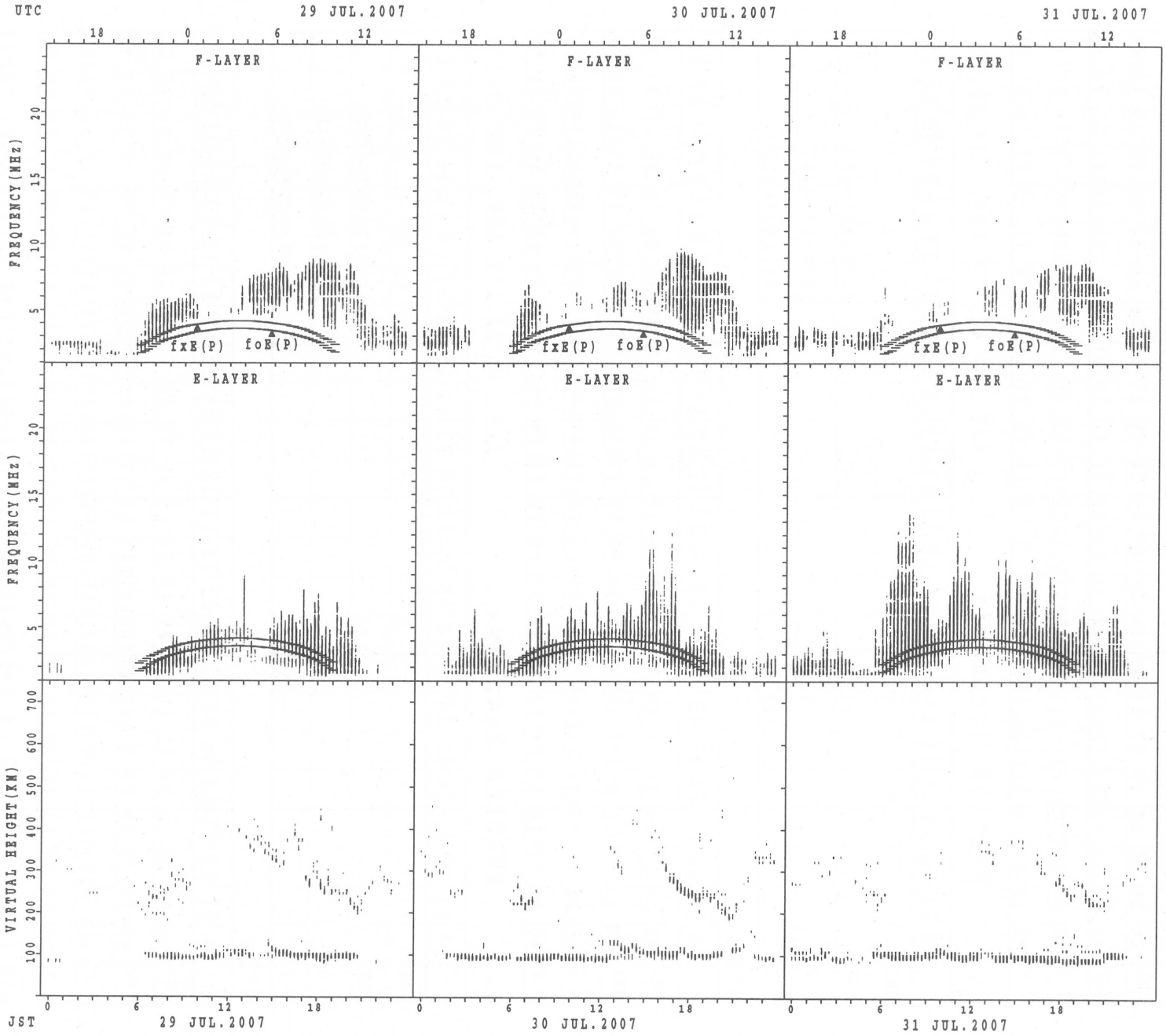
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

JUL. 2007 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	1						1												4	1	6	5	2	
MED	352						296												235	264	283	278	261	
U Q	176						148												252	132	306	283	266	
L Q	176						148												215	132	272	272	256	

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	26	25	22	20	15	27	29	29	26	28	24	23	21	19	17	28	26	28	30	28	28	28	28	26
MED	95	95	94	95	103	111	103	105	102	99	98	99	95	97	95	101	102	103	103	101	103	99	98	97
U Q	97	95	95	100	111	115	111	107	107	103	102	103	100	103	104	111	107	107	105	104	107	103	99	101
L Q	93	91	87	89	95	103	103	102	99	97	97	97	95	95	95	95	95	99	99	99	99	98	97	93

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	1										4	3	3	3			
MED							286	264										287	228	288	258			
U Q							338	132										297	264	300	282			
L Q							234	132										264	224	206	222			

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	28	24	26	25	20	24	29	28	29	29	26	25	24	21	22	21	26	28	28	26	25	29	29	31
MED	97	95	95	95	96	105	107	103	101	99	98	97	97	101	101	103	103	102	100	97	97	101	99	101
U Q	100	100	99	97	104	114	112	107	105	104	103	99	103	105	105	107	107	106	103	105	103	104	104	105
L Q	96	93	91	90	91	99	102	99	97	97	95	95	95	95	95	95	95	95	95	95	95	97	95	97

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	5									10	12	8	2	3		
MED								234	234									296	282	252	244	208		
U Q								254	262									328	296	260	264	240		
L Q								214	221									276	270	247	224	196		

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	27	24	27	22	20	21	26	26	29	26	30	28	25	29	26	29	26	26	28	29	28	25	25	26
MED	97	96	95	95	95	97	106	102	105	103	103	98	99	103	103	103	102	101	98	97	95	95	97	98
U Q	101	100	101	101	99	105	119	113	111	105	107	105	109	106	107	111	107	107	103	103	99	99	104	103
L Q	95	91	89	91	92	95	95	97	96	97	95	95	97	97	95	95	95	95	92	92	90	90	90	93

MONTHLY MEDIANS OF h'F AND h'Es

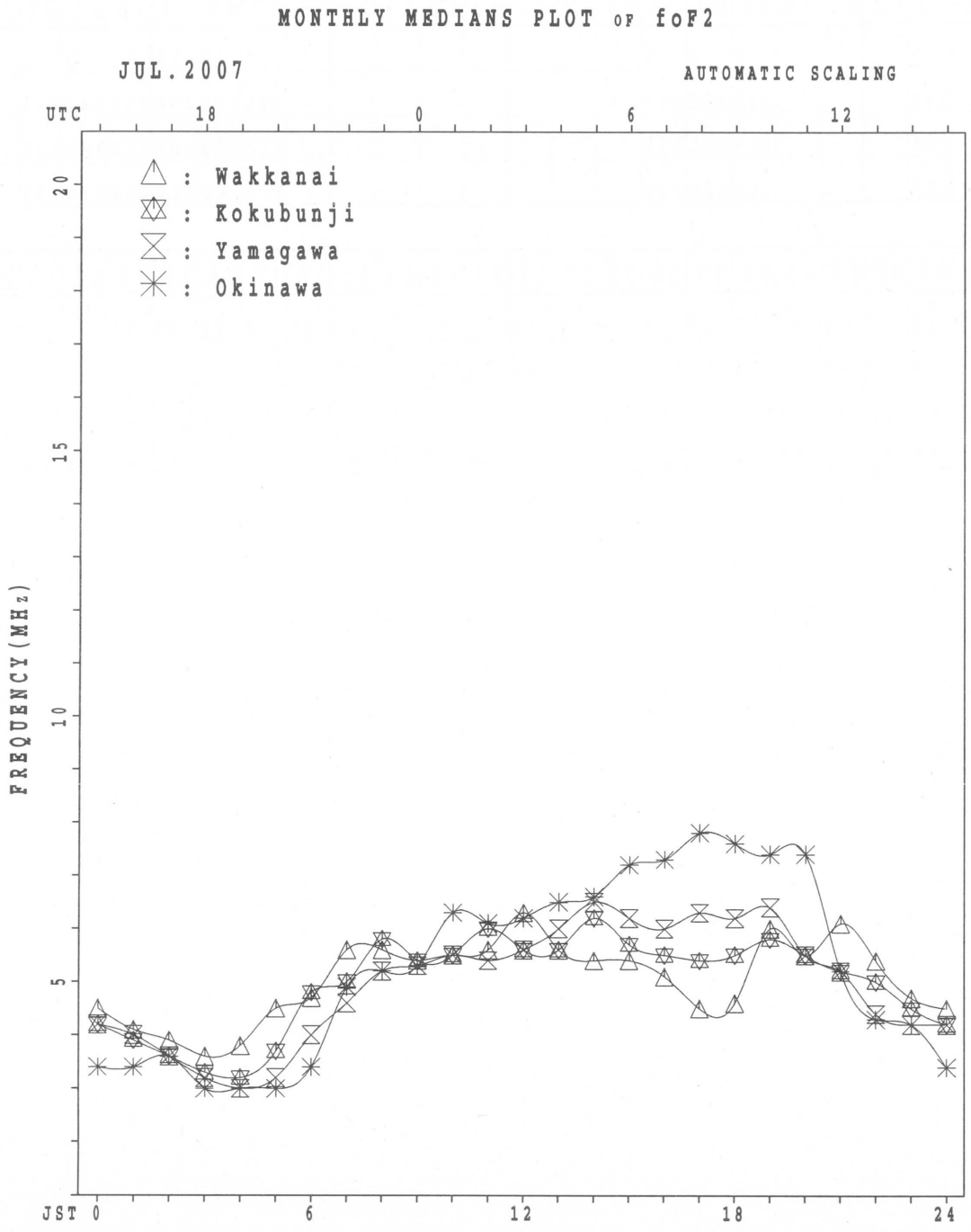
JUL. 2007 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT			1				1	2	5									15	18	11	11	3	1	
MED			248				238	235	274									296	272	256	252	240	262	
U Q			124				119	248	291									312	280	282	262	288	131	
L Q			124				119	222	244									278	258	240	224	198	131	

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	15	14	15	16	17	19	22	23	21	16	18	16	18	17	21	19	18	20	23	25	22	19	16
MED	99	99	97	97	97	95	103	105	103	103	107	105	103	105	103	103	105	103	100	97	93	95	99	99
U Q	103	103	103	103	102	98	115	111	105	107	111	109	112	111	110	114	111	109	103	101	99	103	105	103
L Q	95	97	95	95	95	94	99	95	97	97	99	95	97	97	95	96	95	95	97	93	91	91	91	93


MONTHLY MEDIANS PLOT OF foF2
JUL.2007
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

JUL. 2007 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	A	X 39	43	X 39	X 38																A	X 50	53	52
2	51	A	A	A	A																X 74	X 59	53	X 46
3	48	X 40	X 42	X 41	X 39																X 74	X 69	66	61
4	54	50	46	45	40																X 74	X 60	A	X 50
5	A	X 44	49	47	X 39																X 53	X 48	49	A
6	48	51	50	48	45																X 72	64	62	58
7	57	52	X 45	X 44	X 44																X 58	A	58	57
8	X 52	X 47	46	X 39	46																X 68	67	64	64
9	58	55	53	X 43	X 39																X 62	X 50	50	52
10	51	52	44	44																	X 74	74	X 56	56
11	54	52	47	48																	X 83	X 76	X 76	X 50
12	X 48	X 44	X 41	X 41	A																X 70	X 62	X 58	X 58
13	X 55	X 52	X 48	X 41	X 41																X 58	X 49	X 49	46
14	A	A	X 38	X 38	X 32															X 64	X 62	64	66	55
15	55	56	53	46	X 39																X 51	X 45	X 45	X 43
16	X 45	X 42	40	42	42																X 69	X 60	X 44	46
17	45	X 45	X 40	X 37	X 32																63	X 57	55	56
18	A	49	48	46	40																X 60	X 52	X 50	51
19	48	46	40	40	X 35																X 60	X 60	63	67
20	62	X 52	A	X 35	43																X 64	X 64	X 64	63
21	X 56	X 56	56	X 45																	X 61	X 58	X 54	X 50
22	X 44	X 45	X 40	X 38	X 38																X 57	X 46	X 45	50
23	X 43	X 34	X 32	X 33	X 33																X 66	X 52	52	53
24	X 45	X 38	A	X 39	39																X 67	X 60	X 52	X 46
25	44	40	X 36	X 34	34																X 74	X 62	X 46	45
26	A	X 40	44	X 35	36	X 38															X 64	X 46	X 45	A
27	X 45	X 38	40	35	35																X 92	X 61	56	X 53
28	X 43	45	46	43	X 44																X 71	64	55	49
29	A	42	40	X 38	X 34																X 87	72	72	66
30	64	61	X 48	X 39	X 30																66	X 58	48	A
31	X 36	A	X 35	A	X 38																X 70	X 58	51	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	25	28	28	29	26	1														1	30	30	30	28
MED	48	X 46	44	X 41	X 39	X 38														X 64	X 66	X 60	54	52
U Q	55	52	48	44	41																X 74	64	62	58
L Q	X 45	X 41	40	X 38	X 35																X 61	X 52	X 49	50

JUL. 2007 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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	A	33	F	33	32	38	52	61	A	A	A	A	51	55	60	63	52	46	46	56	A	44	F	F
2	F	A	A	A	A	38	39	A	A	A	A	44	53	58	A	A	A	48	48	62	68	53	F	40
3	F	34	36	35	32	34	46	50	57	A	A	A	A	A	A	A	A	A	60	66	68	63	F	F
4	F	F	F	F	F	45	55	A	A	A	A	A	A	59	A	A	54	54	55	65	68	54	A	44
5	A	38	F	F	32	44	47	47	47	44	53	59	A	48	48	54	61	62	A	45	47	42	F	A
6	F	F	F	F	F	36	42	51	58	57	A	A	45	52	A	A	50	52	54	61	66	F	F	F
7	F	F	39	38	38	41	46	56	69	A	59	58	A	54	46	50	55	A	46	46	52	A	F	F
8	46	40	F	33	F	45	55	A	A	A	60	A	56	52	49	A	A	55	A	A	62	F	F	F
9	F	F	F	37	33	38	50	A	70	73	A	A	57	51	50	54	50	56	60	61	56	44	F	F
10	F	F	F	F	31	36	42	51	A	60	60	A	A	A	R 48	50	50	59	A	64	68	F	50	F
11	F	F	F	F	29	A	48	44	A	52	A	57	62	A	72	A	48	53	60	75	77	70	70	44
12	42	38	34	35	A	39	52	48	56	66	A	54	A	57	63	64	58	59	A	68	64	56	52	52
13	49	46	41	35	35	40	37	43	49	48	A	A	A	58	59	55	50	50	51	53	52	43	42	F
14	A	A	32	32	26	35	39	46	A	A	A	52	57	62	68	A	74	65	A	59	56	F	F	F
15	F	F	F	F	33	29	46	A	A	A	49	47	50	56	56	51	A	50	57	60	45	39	38	37
16	39	36	F	F	F	37	43	54	64	57	56	54	51	52	54	54	46	50	58	73	63	54	38	F
17	F	39	34	31	26	30	44	56	64	A	A	A	A	56	60	60	55	49	49	50	F	51	F	F
18	A	F	F	F	F	34	A	53	A	A	A	A	A	54	A	A	55	58	69	68	54	46	44	F
19	F	F	F	F	29	34	50	54	50	A	A	A	A	A	A	56	53	50	44	48	54	54	F	F
20	F	46	A	28	F	34	41	A	A	A	A	A	A	A	54	68	73	61	57	52	58	58	57	F
21	50	49	F 45	39	36	32	35	45	51	48	55	A	56	56	50	56	57	62	52	50	55	52	48	44
22	38	39	33	32	32	39	46	52	47	54	48	A	A	A	A	66	53	44	49	61	51	40	39	F
23	36	27	26	27	27	33	44	A	A	A	55	A	A	A	58	60	A	A	41	49	59	46	F	F
24	39	32	A	33	F	35	48	44	A	52	49	51	A	A	54	56	54	55	52	58	61	54	46	40
25	F	F	30	28	F	36	54	49	A	51	54	52	50	48	49	48	52	48	57	63	67	56	40	F
26	A	34	F	28	F	32	47	48	57	58	52	46	A	51	60	74	64	54	48	50	58	38	39	A
27	39	32	F	F	F	35	43	59	60	63	69	72	A	A	68	66	64	67	68	78	86	55	F	47
28	37	F	F	F	37	34	43	50	54	46	48	54	A	51	50	51	A	A	60	74	65	F	F	F
29	A	F	F	32	27	32	A	55	68	A	56	48	A	50	56	A	55	72	74	88	81	F	F	F
30	F	F	42	33	24	25	R 41	51	54	A	51	S	55	56	67	57	69	A	68	A	F	52	F	A
31	30	A	29	A	32	A	50	54	A	51	A	A	50	50	A	50	58	62	60	67	64	52	F	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	11	15	12	18	19	29	29	24	17	16	16	14	13	22	23	22	25	26	26	29	28	24	13	8
MED	39	38	34	33	32	35	46	51	57	53	54	53	53	54	56	56	55	54	56	61	62	52	44	44
U Q	46	40	40	35	33	38	50	54	64	59	58	57	56	56	60	63	60	61	60	68	68	54	51	46
L Q	37	33	31	31	27	34	42	48	50	50	50	48	50	51	50	51	51	50	49	51	54	44	39	40

JUL. 2007 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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							A	A	A	A	A	A	A	U L 440	U L 440	U L 428	A	368	324					
2								A	A	A	A	U L 444	U L 444	A	A	A	A	A	A	A				
3						U L 296	U L 368	U L 416	A	A	A	A	A	A	A	A	A	A	A					
4							L	A	A	A	A	A	A	A	A	A	U L 396	A	A	A				
5						L	A	A	U L 412	U L 424	U L 440	A	A	U L 432	U L 428	A	A	A	A					
6							356	U L 388	A	A	A	A	A	A	A	A	A	A	A					
7						U L 300	360	396	A	A	A	U L 444	A	U L 456	U L 424	U L 420	U L 404	A	A					
8							A	A	A	A	A	A	A	U L 444	U L 440	A	A	A	A	A				
9							A	A	A	A	A	A	U L 448	A	U L 456	U L 440	U L 404	U L 380	L					
10								A	A	A	A	A	A	A	U L 416	A	U L 404	A	A					
11						A		U L 396	A	A	A	A	A	A	A	A	A	A	U L 372	U L 328				
12							L	L	428	420	A	A	A	U L 440	U L 436	A	A	U L 356	A					
13								U L 380	U L 408	A	A	A	A	A	A	A	U L 404	U L 368	A					
14								U L 432	A	A	A	A	A	A	A	A	A	A	A					
15							E A	A	A	A	U L 400	U L 424	E A	U L 436	E A	E A	A	U L 368						
16						U L 296	E A	E A	420	U L 432	U L 432	E A	U L 440	U L 448	E A	U L 420	U L 404	E A	E A					
17						268	E A	E A	E A	A	A	A	A	E A	E A	E A	U L 392	U L 372	L					
18						E A	A	U L 388	A	A	A	A	A	E A	A	A	E A	E A	E A					
19						U L 276	E A	E A	E A	A	A	A	A	A	A	E A	E A	U L 380	U L 308					
20							U L 368	A	A	A	A	A	A	A	E A	E A	U L 400	U L 368	E A					
21							U L 320	U L 364	L	U L 408	E A	A	U L 436	E A	U L 424	U L 408	E A	L	L					
22								U L 380	U L 424	E A	E A	A	A	A	A	E A	E A	U L 392	L					
23							U L 364	A	A	A	E A	A	A	A	E A	E A	A	A	U L 340					
24							L	L	A	E A	E A	E A	A	A	E A	E A	U L 408	U L 368	L					
25						L	L	E A	A	E A	U L 440	U L 448	U L 444	U L 424	U L 428	424	E A	E A	E A					
26							E A	392	E A	424	436	U L 436	A	E A	U L 424	E A	U L 396	U L 360	L					
27						U L 280	U L 400	E A	U L 416	U L 444	E A	E A	A	A	E A	E A	E A	E A	E A					
28						L	U L 348	U L 376	U L 408	U L 444	E A	E A	A	E A	U L 428	E A	A	A	E A					
29							A	E A	E A	A	E A	E A	A	U L 436	U L 428	A	U L 420	E A						
30							U L 340	E A	E A	A	E A	U L 436	432	E A	E A	U L 420	E A	A		A				
31						A	L	L 388	A	420	A	A	E A	U L 440	A	E A	U L 400	E A	E 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						6	9	12	7	8	5	6	6	10	12	7	12	13	4					
MED						U L 288	U L 360	U L 388	U L 416	U L 424	U L 436	U L 440	U L 442	U L 440	U L 428	U L 420	U L 404	U L 368	U L 326					
U Q						U L 296	U L 368	U L 396	424	U L 438	U L 440	U L 444	U L 444	U L 444	U L 438	U L 428	U L 404	U L 376	U L 334					
L Q						276	U L 344	U L 380	U L 408	420	U L 416	U L 436	436	U L 436	U L 424	U L 420	U L 398	364	316					

JUL. 2007 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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						A	A	A	A	A	A	A	A	A	A	U A 308	A	A	A	B				
2						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
3						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
4						A	U A 244	A	A	A	A	A	A	A	A	A	U A 288	A	A	B				
5						A	A	A	A	A	A	A	A	R	A	A	A	A	A	B				
6						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
7						U R 188	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
8						B	A	A	A	A	A	A	A	A	U A 332	A	A	A	A	B				
9						A	U A 232	A	A	A	A	A	A	A	A	A	A	A	U R 200	B				
10					B	B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
11					B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
12						A	U R 240	A	A	A	A	A	A	A	A	A	A	A	A	B				
13						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
14						184	A	A	A	A	A	A	A	A	A	A	A	A	A					
15						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
16						A	A	A	A	A	A	A	A	A	A	A	U A 292	U A 236	A	B				
17						A	U A 220	A	A	A	A	A	A	A	A	A	A	A	A	B				
18						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
19						B	A	A	A	A	A	A	A	A	A	A	A	A	216	B				
20					B	B	236	A	A	A	A	A	A	A	A	A	A	A	A	B				
21					B	A	A	A	A	A	A	A	A	A	R	A	A	U A 236	U A 184	B				
22						A	U A 216	A	A	328	A	A	A	A	A	A	A	A	A	B				
23						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
24						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
25						B	A	A	A	A	A	A	A	A	A	A	U A 296	A	A	B				
26							A	A	A	A	R	U A 344	356	328	A	A	U A 284	A	A	B				
27						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
28						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
29						B	A	A	A	A	A	A	A	A	A	A	A	A	B	B				
30						B	A	A	A	A	A	R	A	A	348	A	A	A	A	B				
31						B	A	A	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						2	6			1		1	1	1	2	1	4	2	3					
MED						186	U A 234			328		U A 344	356	328	340	U A 308	U A 290	U A 236	U 200					
U Q							U 240										U A 294		216					
L Q							U A 220										U A 286		U A 184					

JUL. 2007 foE (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 55	J A 58	J A 33	J A 33	J A 26	J A 24	J A 74	J A 73	J A 74	J A 77	J A 116	J A 130	J A 48	J A 50	J A 46	38	J A 67	32	J A 31	J A 36	J A 109	J A 104	J A 26	J A 33
2	J A 42	J A 67	J A 55	J A 57	J A 55	J A 46	J A 38	J A 60	J A 110	J A 98	J A 64	J A 44	J A 52	J A 97	J A 176	J A 189	J A 128	J A 57	J A 41	J A 62	J A 32	J A 46	J A 58	J A 64
3	J A 42	J A 42	J A 33	J A 38	J A 25	19	32	39	J A 49	J A 84	J A 86	J A 107	J A 72	J A 108	J A 65	99	J A 128	J A 128	J A 67	J A 56	78	72	J A 64	J A 57
4	J A 67	J A 39	J A 33	J A 29	J A 28	J A 23	28	J A 45	J A 86	J A 100	76	98	J A 122	75	J A 201	J A 130	35	J A 55	J A 48	J A 57	J A 22	J A 66	J A 67	J A 39
5	J A 87	J A 56	J A 50	J A 42	J A 40	J A 22	J A 56	J A 84	35	41	J A 56	J A 55	J A 56	G 30	J A 48	J A 60	J A 86	J A 50	J A 80	J A 48	J A 37	J A 31	J A 43	J A 59
6	J A 54	J A 32	J A 31	J A 20	20	22	J A 36	J A 38	J A 50	J A 53	J A 59	J A 68	J A 60	J A 80	J A 66	J A 98	J A 50	J A 75	J A 67	J A 176	J A 124	J A 107	J A 50	J A 65
7	J A 57	J A 46	J A 23	J A 20	E B 15	G	J A 33	J A 38	J A 66	J A 131	J A 73	38	J A 52	38	J A 42	J A 39	J A 35	J A 64	J A 48	J A 32	J A 65	J A 60	J A 38	J A 62
8	J A 30	J A 47	J A 50	J A 27	J A 30	J A 28	32	J A 59	J A 98	J A 126	J A 60	J A 65	J A 54	J A 46	J A 46	J A 100	J A 105	J A 78	J A 75	J A 147	J A 108	J A 28	J A 54	J A 41
9	J A 60	J A 48	J A 52	J A 85	J A 54	J A 31	J A 40	J A 67	J A 45	J A 75	J A 89	J A 65	J A 44	J A 47	J A 44	38	35	36	G 18	E B 15	J A 38	J A 52	J A 49	J A 32
10	J A 26	J A 24	J A 23	J A 22	19	20	30	J A 54	J A 76	J A 106	J A 65	J A 108	J A 98	J A 125	42	J A 55	J A 42	J A 66	76	J A 118	J A 131	J A 88	J A 72	J A 39
11	J A 24	J A 18	J A 30	J A 45	J A 23	J A 56	J A 39	J A 37	J A 57	J A 52	J A 62	J A 57	J A 79	J A 87	J A 47	J A 73	J A 54	J A 32	29	J A 23	J A 65	J A 59	J A 58	J A 24
12	J A 56	J A 59	J A 44	J A 30	J A 43	J A 26	G 20	34	40	40	J A 131	J A 57	J A 64	43	38	J A 107	J A 167	J A 100	J A 126	J A 108	J A 31	J A 27	J A 32	J A 26
13	E B 15	18	J A 26	J A 41	J A 19	19	31	34	J A 85	J A 82	J A 67	J A 57	J A 55	J A 48	J A 54	J A 93	J A 45	J A 40	J A 50	J A 29	J A 32	J A 33	J A 50	J A 63
14	J A 56	J A 56	J A 43	J A 43	J A 22	24	31	34	J A 56	J A 80	J A 99	J A 46	J A 50	J A 48	J A 78	J A 219	J A 74	J A 57	J A 64	J A 83	J A 64	J A 51	J A 47	J A 52
15	J A 42	E B 15	J A 32	J A 42	J A 45	J A 31	J A 34	J A 75	J A 63	J A 57	J A 42	40	J A 54	42	J A 55	J A 169	J A 127	J A 64	J A 52	J A 54	J A 42	J A 41	J A 34	J A 44
16	J A 84	20	J A 21	J A 17	J A 34	24	J A 48	J A 55	J A 54	J A 46	J A 55	J A 51	38	39	J A 46	J A 41	36	J A 45	J A 46	J A 61	J A 41	J A 63	J A 30	J A 42
17	J A 23	J A 53	J A 41	J A 35	J A 45	J A 31	J A 38	J A 54	J A 50	J A 74	J A 97	J A 92	J A 66	J A 49	J A 67	43	J A 42	J A 39	J A 34	J A 32	J A 73	J A 54	J A 24	J A 32
18	J A 90	J A 46	J A 35	J A 32	21	J A 43	J A 56	J A 46	J A 64	J A 83	J A 76	J A 62	J A 63	J A 58	J A 130	J A 78	J A 50	J A 50	J A 58	J A 53	J A 55	J A 51	J A 52	J A 32
19	21	J A 24	J A 23	J A 21	20	J A 23	J A 46	J A 44	J A 61	J A 62	J A 142	J A 74	J A 131	J A 82	J A 84	J A 65	J A 52	J A 39	G 20	J A 72	J A 64	J A 54	J A 28	J A 57
20	J A 46	J A 54	J A 42	J A 38	E B 15	J A 20	29	J A 81	J A 55	98	J A 50	J A 44	J A 76	J A 52	J A 76	J A 74	J A 66	J A 41	J A 50	J A 24	J A 60	J A 33	J A 86	J A 45
21	J A 40	J A 56	J A 48	J A 50	J A 51	J A 24	J A 34	30	J A 40	J A 48	J A 46	J A 60	J A 42	J A 51	G 30	39	42	28	24	J A 21	21	J A 20	E B 15	J A 52
22	J A 22	J A 22	E B 15	J A 19	J A 28	J A 27	27	30	38	44	J A 54	J A 56	50	J A 102	J A 73	J A 90	J A 54	J A 34	J A 29	J A 48	J A 68	J A 50	J A 56	J A 54
23	J A 55	J A 54	J A 58	J A 32	20	J A 25	J A 41	J A 82	J A 100	J A 111	J A 63	J A 108	J A 85	J A 60	J A 54	J A 49	J A 54	J A 62	23	J A 20	J A 38	20	J A 63	J A 50
24	J A 90	J A 50	J A 66	J A 54	J A 28	J A 23	J A 34	32	J A 48	46	46	J A 51	J A 85	J A 74	J A 44	J A 54	J A 38	J A 34	J A 32	J A 22	J A 23	J A 20	J A 23	J A 30
25	J A 22	J A 19	J A 20	E B 15	J A 22	J A 33	J A 28	J A 41	J A 50	J A 68	J A 44	J A 42	J A 40	38	J A 46	36	J A 41	J A 69	J A 87	J A 18	J A 20	J A 22	J A 25	J A 23
26	J A 54	J A 88	J A 58	J A 32	J A 55	J A 24	J A 43	J A 47	J A 60	J A 40	G 31	J A 38	J A 44	J A 42	J A 38	J A 42	36	J A 40	J A 33	J A 48	J A 56	J A 53	J A 53	J A 53
27	J A 40	J A 22	J A 23	E B 15	E B 16	J A 18	J A 28	J A 88	J A 45	J A 44	J A 87	J A 54	J A 115	J A 100	J A 66	J A 48	J A 57	J A 52	J A 34	J A 28	J A 33	J A 22	J A 53	J A 52
28	J A 46	J A 27	J A 19	J A 22	J A 23	J A 24	J A 42	J A 35	J A 36	J A 41	J A 41	J A 77	J A 97	J A 53	J A 39	J A 55	J A 92	J A 70	J A 77	J A 86	J A 64	J A 63	J A 50	J A 38
29	J A 92	J A 42	J A 32	J A 44	J A 44	J A 32	J A 58	J A 141	J A 104	J A 118	J A 77	J A 60	J A 52	J A 41	J A 39	J A 77	J A 61	J A 73	J A 44	J A 59	J A 37	J A 56	J A 74	J A 56
30	J A 52	J A 61	J A 47	J A 36	J A 28	J A 23	J A 48	J A 55	J A 56	J A 57	J A 51	G 32	J A 38	J A 46	J A 41	J A 65	J A 56	J A 90	J A 86	J A 168	J A 86	J A 51	J A 47	J A 57
31	J A 40	J A 34	J A 41	J A 65	J A 56	J A 86	J A 40	J A 45	J A 57	J A 40	J A 76	J A 54	J A 72	J A 42	J A 72	J A 53	J A 40	J A 54	J A 45	J A 64	J A 52	J A 23	J A 30	J A 30
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 46	J A 46	J A 33	J A 33	J A 28	J A 24	J A 36	J A 46	J A 56	J A 68	J A 64	J A 57	J A 56	J A 50	J A 48	J A 65	J A 54	J A 54	J A 48	J A 53	J A 55	J A 51	J A 50	J A 45
U Q	J A 57	J A 56	J A 48	J A 43	J A 44	J A 31	J A 43	J A 67	J A 74	J A 98	J A 86	J A 74	J A 79	J A 80	J A 72	J A 98	J A 74	J A 69	J A 67	J A 72	J A 68	J A 60	J A 58	J A 57
L Q	J A 30	J A 24	J A 23	J A 22	20	22	31	37	J A 48	J A 46	J A 51	46	50	42	42	43	41	J A 39	32	J A 28	J A 33	J A 28	J A 30	J A 32

JUL. 2007 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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	A A 55	20	20	22	18	19	43	50	A A 74	A A 77	A A 116	A A 130	42	38	37	35	44	31	24	31	A A 109	33	17	23
2	24	A A 67	A A 55	A A 57	A A 55	22	32	A A 60	A A 110	A A 98	A A 64	39	37	50	A A 176	A A 189	A A 128	42	35	29	21	30	30	22
3	18	21	21	22	20	17	30	35	45	A A 84	A A 86	A A 107	A A 72	A A 108	A A 65	A A 99	A A 128	A A 128	44	50	42	29	24	22
4	34	28	26	21	21	19	28	A A 45	A A 86	A A 100	A A 76	A A 98	A A 122	54	A A 201	A A 130	32	48	34	52	E B 14	32	A A 67	30
5	A A 87	18	20	21	16	20	38	38	32	38	39	44	A A 56	G 30	38	47	41	30	A A 80	21	32	E B 14	31	A A 59
6	18	20	20	E B 16	E B 14	20	31	33	42	44	A A 59	A A 68	45	45	A A 66	A A 98	43	42	45	45	32	30	31	23
7	38	29	E B 16	E B 15	E B 15	G	26	32	44	A A 131	46	35	A A 52	36	37	34	31	A A 64	34	28	32	A A 60	30	20
8	E B 15	33	22	20	16	23	29	A A 59	A A 98	A A 126	52	A A 65	43	39	40	A A 100	A A 105	39	A A 75	A A 147	E B 15	20	19	E B 15
9	33	20	20	31	21	20	35	A A 67	42	60	A A 89	A A 65	36	45	40	33	32	34	G 18	E B 15	30	19	21	22
10	17	20	19	E B 14	E B 15	18	28	40	A A 76	44	48	A A 108	A A 98	A A 125	37	45	33	52	A A 76	31	34	32	30	19
11	E B 15	E B 15	17	19	16	A A 56	35	32	A A 57	45	A A 62	52	54	A A 87	42	A A 73	40	30	22	19	22	22	E B 16	E B 15
12	20	E B 15	19	16	A A 43	21	G 18	32	36	39	A A 131	48	A A 64	40	36	42	42	30	A A 126	31	20	19	22	E B 15
13	E B 15	E B 15	20	E B 15	E B 15	18	29	32	34	41	A A 67	A A 57	A A 55	42	43	43	35	29	34	20	21	22	20	32
14	A A 56	A A 56	18	E B 16	E B 15	22	28	32	A A 56	A A 80	A A 99	45	47	44	63	A A 219	45	41	A A 64	30	40	20	31	18
15	E B 15	E B 15	E B 15	E B 15	24	22	33	A A 75	A A 63	A A 57	32	36	44	38	44	45	A A 127	30	38	20	18	22	22	20
16	17	E B 15	16	E B 14	17	20	37	38	34	35	34	44	37	35	41	35	33	42	34	31	16	42	20	18
17	E B 15	19	20	25	20	18	35	50	42	A A 74	A A 97	A A 92	A A 66	44	50	41	32	29	24	20	23	38	18	25
18	A A 90	19	18	20	E B 16	30	A A 56	32	A A 64	A A 83	A A 76	A A 62	A A 63	44	A A 130	A A 78	42	37	50	34	22	22	20	E B 15
19	E B 16	E B 15	E B 15	E B 15	E B 15	18	32	36	42	A A 62	A A 142	A A 74	A A 131	A A 82	A A 84	44	40	29	G 19	21	30	17	18	19
20	20	21	A A 42	17	E B 15	E B 15	28	A A 81	A A 55	A A 98	A A 50	A A 44	A A 76	A A 52	48	44	34	31	35	17	32	20	18	18
21	23	E B 15	E B 14	22	20	19	22	30	33	34	41	A A 60	39	44	G 30	34	41	27	19	17	15	E B 16	E B 15	E B 15
22	E B 15	E B 16	E B 15	E B 16	18	19	24	29	33	40	45	A A 56	A A 50	A A 102	A A 73	43	41	31	20	20	19	29	22	21
23	31	E B 15	18	18	E B 14	18	30	A A 82	A A 100	A A 111	46	A A 108	A A 85	A A 60	41	42	A A 54	A A 62	22	16	18	E B 15	19	20
24	19	24	A A 66	19	E B 14	20	28	30	A A 48	41	41	41	A A 85	A A 74	42	50	33	28	24	17	18	16	16	18
25	E B 16	E B 15	E B 15	E B 15	E B 15	18	25	36	A A 50	42	37	38	39	35	36	34	38	38	41	E B 15	E B 16	16	E B 15	E B 15
26	A A 54	20	17	17	E B 15	E B 15	39	33	40	34	G 30	37	A A 44	41	37	40	30	30	21	30	19	29	22	A A 53
27	21	E B 15	E B 15	E B 15	E B 16	E B 15	26	46	38	37	64	46	A A 115	A A 100	57	41	39	34	31	17	28	16	31	32
28	20	E B 15	E B 15	E B 15	17	20	30	31	34	34	36	44	A A 97	44	35	44	A A 92	A A 70	48	37	34	38	28	24
29	A A 92	E B 15	18	21	19	17	A A 58	40	43	A A 118	50	42	A A 52	38	36	A A 77	32	56	41	56	29	41	36	23
30	32	19	32	26	18	18	27	37	41	A A 57	42	G 32	36	44	40	36	42	A A 90	32	A A 168	22	28	22	A A 57
31	19	A A 34	20	A A 65	18	A A 86	30	32	A A 57	36	A A 76	A A 54	44	39	A A 72	46	35	36	42	38	24	20	20	22
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	20	19	19	18	16	19	30	36	44	57	52	A A 52	A A 52	44	42	44	40	36	34	29	22	22	22	21
U Q	A A 34	21	20	22	20	21	35	A A 50	A A 63	A A 84	A A 76	A A 68	A A 76	60	65	77	A A 44	A A 48	A A 45	37	32	32	30	24
L Q	E B 16	E B 15	E B 16	E B 15	E B 15	18	28	32	38	39	41	42	43	39	37	40	33	30	24	19	18	19	18	E B 18

JUL. 2007 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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	15	15	15	15	13	14	15	14	16	18	17	14	18	19	16	16	14	14	14	14	16	15	15
2	15	14	14	14	14	15	13	14	15	15	16	18	18	20	18	16	16	16	13	14	15	15	15	16
3	14	14	15	14	15	15	13	12	14	13	15	20	19	15	16	18	16	14	15	15	16	14	15	15
4	15	15	15	15	14	14	12	9	15	16	14	17	19	17	16	16	14	10	14	16	14	16	15	15
5	16	15	14	14	14	13	14	14	14	17	18	16	21	16	17	17	14	14	14	14	15	14	15	14
6	15	15	15	16	14	14	14	15	12	13	17	16	18	17	18	16	14	14	15	13	13	15	16	14
7	15	16	16	15	15	14	14	17	16	15	18	17	18	16	16	13	14	14	15	14	15	15	15	15
8	15	14	15	15	15	15	14	13	14	14	18	16	17	16	17	18	14	15	13	16	15	14	15	15
9	15	15	16	15	14	14	14	14	21	16	18	16	18	16	18	18	16	14	14	15	15	14	14	15
10	15	15	16	14	15	14	15	14	15	18	18	20	18	22	22	12	14	17	15	15	14	14	16	15
11	15	15	15	15	14	14	14	12	17	16	16	21	21	14	18	14	13	14	14	14	15	14	16	15
12	15	15	14	14	14	14	14	14	16	12	16	18	20	18	17	19	15	14	14	15	15	14	15	15
13	15	15	15	15	15	14	15	14	15	18	16	16	19	23	18	16	16	15	13	13	14	13	14	15
14	14	15	15	16	15	13	14	14	14	16	16	17	16	19	18	17	14	14	14	14	14	15	15	15
15	15	15	15	15	15	14	14	13	14	18	14	16	18	20	17	16	13	14	15	14	15	15	16	15
16	14	15	14	14	14	14	14	13	12	15	16	17	19	18	18	18	14	16	14	15	14	16	15	15
17	15	15	15	15	15	14	14	14	16	18	16	15	18	18	18	14	13	13	13	13	15	14	15	15
18	15	15	16	15	16	15	14	15	18	15	16	17	18	19	18	14	15	16	14	14	15	15	14	15
19	16	15	15	15	15	14	14	13	14	16	18	19	16	18	17	13	14	14	14	14	14	15	14	15
20	14	15	14	14	15	15	14	15	14	16	17	18	20	18	16	16	14	16	15	14	15	14	16	15
21	15	15	14	14	16	14	14	15	14	16	16	17	17	18	16	16	14	15	14	14	15	16	15	15
22	15	15	15	16	14	14	14	13	15	16	15	17	18	18	16	17	15	14	14	15	15	14	13	15
23	15	15	14	14	14	14	14	14	14	14	17	18	17	16	16	16	15	14	14	15	15	15	15	14
24	16	15	15	15	14	15	13	13	12	18	18	17	17	16	18	14	14	14	14	14	15	15	15	15
25	16	14	15	15	15	15	14	14	16	14	17	16	18	18	15	16	14	14	14	15	16	16	15	15
26	15	16	15	15	15	15	14	12	13	14	14	19	16	17	16	17	12	14	14	15	16	14	14	15
27	15	15	15	15	16	15	12	14	15	18	18	16	17	17	16	17	16	14	14	14	15	15	14	15
28	15	15	15	15	13	15	14	12	12	15	15	15	16	17	18	16	14	16	16	14	15	16	14	15
29	15	15	15	15	15	12	15	12	14	19	16	18	16	19	18	14	15	13	14	15	16	15	15	16
30	16	15	14	14	14	14	16	15	15	18	20	18	19	18	14	12	13	14	13	15	14	16	15	16
31	15	16	14	16	15	14	14	14	14	11	16	20	16	18	20	17	14	14	14	16	15	14	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	14	14	14	14	16	16	17	18	18	17	16	14	14	14	14	15	15	15	15
U Q	15	15	15	15	15	15	14	14	15	18	18	18	19	18	18	17	15	15	14	15	15	15	15	15
L Q	15	15	14	14	14	14	14	13	14	14	16	16	17	16	16	14	14	14	14	14	14	14	14	15

JUL. 2007 fmin (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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	A 326		F 317		318	318	345	366	A	A	A	A	310	288	311	312	332	288	324	332	A 374		F	F
2	F	A	A	A	A 342	378		A	A	A	A	289	294	308	A	A	A 325	310	334	350	338	F	308	
3	F 319	321	321	322	314	330	293	345	A	A	A	A	A	A	A	A	A	A 307	316	327	327	F	F	
4	F	F	F	F	F 359	373	A	A	A	A	A	A	A	293	A	A	307	317	313	312	331	305	A	331
5	A 290		F	F	297	351	363	366	350	312	308	349	A	275	261	298	326	354	A	350	319	329	F	A
6	F	F	F	F	F 310	292	309	354	324	A	A	295	306	A	A	320	313	310	310	312		F	F	F
7	F	F 295	320	323	333	300	310	343	A	325	357	A	312	R 273	302	334	A	347	357	298		A	F	F
8	338	323	F 318		F	351	401	A	A	A	351	A	327	306	312	A	A 344		A	A	330		F	F	F
9	F	F	F 326		314	336	334	A	309	339	A	A	329	302	298	275	310	326	335	344	339	324	F	F
10	F	F	F	F	314	359	337	324	A	346	358	A	A	A	R 267	291	322	320	A	320	339	F	328	F
11	F	F	F	F	315	A	370	306	A	283	A	327	289	A	313	A	326	288	287	305	316	324	337	327
12	315	322	308	330	A	313	348	372	319	342	A	319	A	309	314	332	338	326	A	331	344	321	317	296
13	311	328	335	340	361	369	357	306	256	311	A	A	A	318	323	325	312	327	326	342	339	322	310	F
14	A	A 313	329		430	342	359	295	A	A	A	289	296	304	311	A	324	345	A	353	301	F	F	F
15	F	F	F	F	298	342	303	A	A	A	288	280	266	297	321	323	A	295	338	342	354	299	308	293
16	329	348	F	F	F	293	278	319	344	357	336	320	283	299	310	329	285	311	317	347	336	341	314	F
17	F	316	321	344	314	272	304	342	352	A	A	A	A	311	320	336	340	336	335	330	F	323	F	F
18	A	F	F	F	F	306	A	340	A	A	A	A	A	288	A	A	297	329	341	363	344	330	313	F
19	F	F	F	F	323	316	344	362	364	A	A	A	A	A	A	330	326	338	326	308	321	312	F	F
20	F	345	A	312	F	355	318	A	A	A	A	A	A	A	298	315	340	337	339	302	302	303	314	F
21	299	310	F 324	313	334	347	249	304	350	317	334	A	315	339	291	292	311	379	334	313	321	331	331	313
22	308	322	319	310	317	343	319	350	310	341	306	A	A	A	A	345	347	274	318	351	351	311	319	F
23	319	331	318	323	311	315	318	A	A	A	327	A	A	A	328	339	A	A	305	319	351	381	F	F
24	340	299	A 327		F	351	378	371	A	352	292	297	A	A	319	316	315	337	322	321	348	349	334	328
25	F	F 331	320		F	335	374	366	A	345	338	291	321	282	313	291	318	312	334	317	345	377	347	F
26	A	338	F	340	F	331	350	333	338	376	332	337	A	286	314	343	353	356	325	324	364	349	356	A
27	308	325	F	F	F	296	278	361	338	296	316	302	A	A	312	314	309	325	306	321	367	328	F	321
28	289	F	F	F	328	342	338	331	392	317	303	332	A	312	311	312	A	A	313	339	356	F	F	F
29	A	F	F	326	323	314	A	351	366	A	337	339	A	300	320	A	276	300	295	331	344	F	F	F
30	F	F 320	340		351	320	R 306	333	348	A	336	S	317	314	320	299	326	A	343	A	F	334	F	A
31	316	A 302	A		324	A	343	372	A	375	A	A	308	293	A	289	339	333	313	335	345	337	F	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	11	15	12	18	19	29	29	24	17	16	16	14	13	22	23	22	25	26	26	29	28	24	13	8
MED	315	323	320	324	322	335	338	336	345	340	330	320	308	303	312	314	324	326	323	331	339	328	319	317
U Q	329	331	322	330	328	349	361	364	353	349	336	337	319	311	320	330	336	337	335	343	349	340	336	328
L Q	308	316	310	318	314	314	305	310	328	314	307	291	292	293	298	298	310	312	310	316	321	322	314	302

JUL. 2007 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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							A	A	A	A	A	A	A	U L 416	U L 423	U L 403	A	364	381					
2								A	A	A	A	U L 414	U L 423	A	A	A	A	A	A	A				
3						U L 359	U L 377	U L 394	A	A	A	A	A	A	A	A	A	A	A					
4							L	A	A	A	A	A	A	A	A	A	U L 380	A	A	A				
5						L	A	A	U L 402	U L 421	U L 408	A	A	U L 395	U L 422	A	A	375	A					
6							365	U L 395	A	A	A	A	A	A	A	A	A	A	A					
7						U L 353	363	372	A	A	A	U L 428	A	U L 415	U L 401	U L 416	U L 364	A	A					
8							A	A	A	A	A	A	A	U L 385	U L 416	A	A	A	A	A				
9							A	A	A	A	A	A	U L 433	A	U L 336	U L 385	U L 390	U L 393	L					
10								A	A	A	A	A	A	A	U L 426	A	U L 385	A	A					
11						A		U L 415	A	A	A	A	A	A	A	A	A	U L 361	U L 340					
12							L	L	361	425	A	A	A	U L 351	U L 384	A	A	U L 400	A					
13								U L 390	U L 398	A	A	A	A	A	A	A	U L 392	U L 376	A					
14								U L 362	A	A	A	A	A	A	A	A	A	A	A					
15							E A	A	A	A	U L 347	U L 389	E A	U L 395	E A	E A	A	U L 367						
16						U L 341	E A	E A	380	U L 413	U L 404	E A	U L 428	U L 406	E A	U L 371	U L 374	E A	E A					
17						354	E A	E A	E A	A	A	A	A	E A	E A	E A	U L 391	U L 384	L					
18						E A	A	U L 380	A	A	A	A	A	E A	A	A	E A	E A	E A					
19						U L 368	E A	E A	E A	A	A	A	A	A	A	E A	E A	U L 368	U L 385					
20							U L 366	A	A	A	A	A	A	A	E A	E A	U L 374	U L 399	E A					
21							U L 389	U L 381	L	U L 397	E A	A	U L 390	E A	U L 332	U L 415	E A	L	L					
22								U L 401	U L 383	E A	E A	A	A	A	A	E A	E A	U L 360	L					
23							U L 365	A	A	A	E A	A	A	A	E A	E A	A	A	U L 346					
24							L	L	A	E A	E A	E A	A	A	E A	E A	U L 377	U L 379	L					
25						L	L	E A	A	E A	U L 448	U L 424	U L 400	U L 426	U L 400	385	E A	E A	E A					
26							E A	394	E A	416	423	U L 442	A	E A	A	U L 409	E A	U L 384	U L 388	L				
27						U L 344	U L 319	E A	U L 364	U L 391	E A	E A	A	A	E A	E A	E A	E A	E A					
28						L	U L 369	U L 397	U L 406	U L 425	E A	E A	A	E A	A	U L 363	E A	A	A	E A				
29							A	E A	E A	A	E A	E A	A	U L 436	U L 398	A	U L 372	E A						
30							U L 371	E A	E A	A	E A	U L 385	416	E A	E A	U L 400	E A	A		A				
31						A	L	L 388	A	416	A	A	E A	U L 381	A	E A	U L 365	E A	E 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						6	9	12	7	8	5	6	6	10	12	7	12	13	4					
MED						U L 354	U L 366	U L 392	U L 383	U L 416	U L 408	U L 419	U L 420	U L 400	U L 400	U L 400	U L 378	U L 376	U L 364					
U Q						U L 359	U L 374	U L 396	U L 402	U L 423	436	U L 428	U L 428	U L 416	U L 419	U L 415	U L 388	U L 390	383					
L Q						U L 344	364	U L 380	364	U L 405	U L 376	U L 389	U L 400	U L 385	U L 374	385	U L 373	U L 366	U L 343					

JUL. 2007 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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							E A 276	258	A	A	A	A	364	390	334	304	E A 300	374	308					
2								A	A	A	A	440	394	E A 344	A	A	A	E A 316	320	248				
3						364	324	370	294	A	A	A	A	A	A	A	A	A	E A 302					
4							230	A	A	A	A	A	A	E A 394	A	A	332	E A 330	296	E A 320				
5						266	246	E A 268	312	362	358	274	A	446	472	360	300	256	A					
6							398	324	266	312	A	A	E A 422	354	A	A	E A 328	E A 306	E A 332					
7						298	366	332	264	A	316	280	A	348	420	380	300	A	E A 260					
8							220	A	A	A	E A 274	A	314	352	386	A	A	E A 278	A	A				
9							296	A	256	E A 278	A	A	294	E A 378	392	448	348	304	264					
10								282	A	268	272	A	A	A	350	E A 400	336	E A 330	A					
11						A		364	A	E A 382	A	E A 336	E A 396	A	286	A	E A 314	364	342					
12							252	270	332	268	A	E A 302	A	356	322	280	292	292	A					
13								378	464	374	A	A	A	320	302	298	346	298	286					
14								422	A	A	A	E A 400	366	338	E A 336	A	290	260	A					
15							344	A	A	A	408	464	E A 450	372	332	E A 314	A	356						
16						378	E A 426	308	282	260	306	340	412	402	338	308	422	336	286					
17						438	E A 350	E A 294	254	A	A	A	A	344	E A 320	284	294	300	262					
18						E A 346	A	296	A	A	A	A	A	372	A	A	348	288	256					
19						318	270	250	256	A	A	A	A	A	A	308	310	290	290					
20							340	A	A	A	A	A	A	A	E A 368	296	260	252	252					
21							430	370	290	344	302	A	328	296	408	364	324	234	262					
22								262	370	294	382	A	A	A	A	268	286	436	306					
23							306	A	A	A	302	A	A	A	308	280	A	A	348					
24							244	260	A	288	402	358	A	A	326	E A 334	318	296	266					
25						286	230	250	A	296	306	402	340	448	350	410	306	336	E A 280					
26							276	312	288	242	308	326	A	396	312	268	260	242	286					
27						336	448	268	288	342	E A 346	326	A	A	E A 322	310	302	280	286					
28						278	294	296	224	328	374	324	A	376	364	330	A	A	E A 322					
29							A	262	250	A	E A 302	E A 298	A	408	320	A	404	326						
30							376	290	294	A	326	S	346	340	296	366	290	A	A					
31						A	268	250	A	260	A	A	374	394	A	E A 360	286	272	290					
	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						10	23	24	17	16	16	14	13	22	23	22	25	26	23	2				
MED						318	286	289	288	293	310	328	U 353	364	330	306	303	294	286	284				
U Q						364	366	328	303	343	366	400	E A 404	394	368	364	334	330	308					
L Q						286	252	262	256	268	302	302	334	344	320	296	291	278	264					

JUL. 2007 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	E A 284	E A 292	E A 292	E A 270	216	A	A	A	A	A	A	A	200	H 182	196	A	228	208	E A 254	A	222	E A 266	E A 290
2	E A 310	A	A	A	A	216	216	A	A	A	A	204	202	A	A	A	A	A	A	A	222	234	E A 282	E A 294
3	E A 272	E A 306	E A 274	E A 268	E A 278	H 202	222	208	A	A	A	A	A	A	A	A	A	A	A	E A 298	E A 258	244	E A 266	E A 256
4	E A 298	E A 300	E A 326	E A 320	E A 334	216	204	A	A	A	A	A	A	A	A	A	228	A	A	A	204	E A 270	A	220
5	A	E A 280	E A 272	E A 288	E A 268	222	A	A	182	202	212	A	A	198	210	A	A	E A 238	A	220	E A 274	228	E A 372	A
6	E A 246	E A 304	E A 254	226	238	226	E A 248	210	A	A	A	A	A	A	A	A	A	A	A	E A 276	E A 266	E A 266	E A 300	E A 300
7	E A 288	E A 314	E B 274	E B 254	240	232	228	226	A	A	A	200	A	186	212	194	218	A	A	236	E A 294	A	E A 318	E A 286
8	206	E A 300	E A 262	E A 282	E A 262	218	A	A	A	A	A	A	A	226	220	A	A	A	A	A	228	E A 270	E A 242	230
9	E A 312	E A 260	236	E A 322	E A 284	230	A	A	A	A	A	A	186	A	E A 260	200	196	222	210	228	214	220	E A 298	E A 278
10	E A 266	E A 246	E A 258	E A 246	E B 248	214	222	A	A	A	A	A	A	A	188	A	210	A	A	E A 256	E A 246	240	E A 250	E A 254
11	218	212	E A 254	212	E A 246	A	248	186	A	A	A	A	A	A	A	A	A	208	218	E A 258	E A 252	224	226	210
12	E A 258	242	E A 306	E A 264	A	210	208	226	E A 240	210	A	A	A	E A 250	208	A	A	212	A	224	216	E A 242	E A 258	E B 258
13	E B 260	E B 240	E A 234	234	228	222	218	226	204	A	A	A	A	A	A	A	216	232	A	220	220	E A 250	E A 276	E A 312
14	A	A	E A 288	E B 248	178	E A 256	216	218	A	A	A	A	A	A	A	A	A	A	A	212	E A 292	E A 262	E A 284	E A 304
15	E B 260	230	230	E B 246	E A 334	E A 258	A	A	A	A	E A 246	212	A	210	A	A	A	230	E A 250	220	218	E A 312	E A 302	E A 324
16	242	216	E A 246	236	E A 270	238	A	A	206	200	196	A	190	200	A	214	226	A	A	228	212	E A 256	E A 264	E A 312
17	E B 272	E A 260	E A 286	E A 266	E A 302	240	A	A	A	A	A	A	A	A	A	A	216	204	204	234	E A 272	E A 284	E A 278	E A 298
18	A	242	234	E A 254	E B 246	A	A	222	A	A	A	A	A	A	A	A	A	A	A	214	212	236	E A 234	E B 274
19	234	244	E B 288	E B 270	E B 262	226	A	A	A	A	A	A	A	A	A	A	A	212	H 186	E A 254	E A 256	E A 250	E A 264	216
20	234	244	A E 256	E A	230	210	232	A	A	A	A	A	A	A	A	A	214	216	A	242	E A 288	E A 264	E A 248	E A 272
21	E A 286	E B 264	226	E A 262	E A 240	220	218	206	210	214	A	A	212	A	242	198	A	212	210	248	226	232	234	238
22	E B 266	236	234	E B 258	E A 266	228	212	196	H 196	A	A	A	A	A	A	A	A	218	218	226	224	E A 298	E A 266	E A 270
23	E A 246	218	E A 302	E A 292	E B 270	232	E A 250	A	A	A	A	A	A	A	A	A	A	A	220	244	220	188	E A 284	E A 274
24	236	E A 318	A	244	228	224	222	194	A	A	A	A	A	A	A	A	228	212	198	246	220	210	220	238
25	E B 260	E B 250	E B 254	E B 262	E B 286	218	196	A	A	A	184	182	214	190	194	208	A	A	A	226	202	200	194	E B 250
26	A	E A 278	E A 244	E A 258	E B 266	214	A	218	A	174	H 180	180	A	A	206	A	200	206	H 196	E A 250	218	E A 258	E A 244	A
27	E A 296	E B 254	E B 248	E B 280	E B 286	226	200	A	E A 276	190	A	A	A	A	E A 318	A	A	A	A	234	208	204	E A 284	A 264
28	E A 300	E B 280	E B 272	E B 258	E A 248	228	E A 250	216	204	188	A	A	A	A	232	A	A	A	A	E A 250	204	E A 266	E A 252	E A 264
29	A	E B 276	E A 262	E A 262	E A 274	228	A	A	A	A	E A	A	A	190	196	A	210	A	E A 278	E A 250	230	E A 302	E A 296	E A 290
30	E A 274	E A 250	E A 282	E A 284	E A 274	E A 308	236	A	A	A	A	H 184	H 184	A	A	206	A	A	238	A	230	228	214	A
31	E A 290	A	E A 298	A	E A 252	A	224	218	A	218	A	A	A	212	A	A	E A 244	A	A	E A 250	220	208	E A 294	E A 266
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	28	28	29	29	28	20	14	8	8	5	6	6	10	13	7	12	14	13	27	30	30	30	28
MED	E A 266	E 257	E A 262	E A 262	E A 266	223	220	217	202	201	190	192	196	200	208	200	216	213	209	U 231	218	U 218	E A 266	E A 271
U Q	E A 289	E A 282	E A 287	E A 281	E A 276	231	234	222	E A 225	212	229	204	212	212	237	208	227	228	229	E A 250	E A 256	E A 266	E A 284	E A 292
L Q	244	242	245	247	243	216	214	206	200	189	182	182	186	190	195	196	210	212	201	226	216	224	244	252

JUL. 2007 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	A	A	A	A	112	114	A	118	A	B				
2						A	A	A	A	A	A	A	116	A	A	A	A	A	A	B				
3						B	116	116	A	A	A	A	A	A	A	A	A	A	A	B				
4						A	124	A	A	A	A	A	A	A	A	A	116	A	A	B				
5						A	A	A	A	116	A	A	A	114	118	A	A	A	A	B				
6						124	114	A	A	A	A	A	A	A	A	A	118	A	A	B				
7						118	122	120	A	A	A	A	A	A	A	A	A	A	A	B				
8						B	118	A	A	A	A	A	A	A	116	A	A	A	A	B				
9						A	120	A	A	A	A	A	A	A	A	A	116	112	116	B				
10					B	B	126	A	A	A	A	A	A	A	118	118	116	A	A	B				
11					B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
12						A	124	118	114	114	A	A	116	118	A	A	A	A	A	B				
13						B	112	118	110	A	A	A	A	114	A	A	A	A	A	B				
14						120	110	114	A	A	A	A	A	A	A	A	A	A	A					
15						A	114	112	A	A	A	118	A	116	A	A	A	A	A	B				
16						122	A	A	A	A	A	A	A	A	A	A	114	114	A	B				
17						A	114	A	A	A	A	A	A	A	A	A	A	A	A	B				
18						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
19						B	A	A	A	A	A	A	A	A	A	A	A	A	112	B				
20					B	B	118	A	A	A	A	A	A	A	A	A	A	A	A	B				
21					B	A	A	A	A	A	A	A	A	A	114	A	A	114	112	B				
22						A	112	120	A	122	120	120	116	A	A	A	A	A	A	B				
23						B	114	A	A	A	A	A	A	A	A	A	A	A	116	B				
24						B	A	120	116	A	A	A	A	A	A	A	A	A	A	B				
25						B	A	A	A	A	A	A	A	A	A	116	112	A	A	B				
26							A	A	A	A	116	116	114	114	114	114	116	A	A	B				
27						B	116	A	A	A	A	A	A	A	A	A	A	A	A	B				
28						B	A	A	A	A	A	A	A	A	116	112	A	A	A	B				
29						B	A	A	A	A	A	A	A	112	114	A	A	A	B	B				
30						B	A	A	A	A	A	114	A	A	112	120	A	A	A	B				
31						B	A	A	A	A	A	A	A	120	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						4	16	8	3	3	2	4	4	7	9	6	7	4	4					
MED						121	116	118	114	116	118	117	116	114	114	115	116	114	114					
U Q						123	121	120	116	122		119	116	118	117	118	116	116	116					
L Q						119	114	115	110	114		115	115	114	113	114	114	113	112					

JUL. 2007 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	98	96	94	88	88	90	102	100	98	98	98	98	102	110	118	130	104	110	104	100	96	96	106	100
2	96	96	96	92	94	94	100	106	106	106	104	108	116	104	98	96	96	96	96	98	96	94	92	98
3	100	94	92	92	94	120	112	116	104	102	98	98	98	96	96	94	92	92	94	94	98	100	96	100
4	88	90	90	86	88	106	124	106	102	102	102	96	96	96	94	92	116	104	106	102	98	100	100	100
5	94	98	96	94	86	104	100	98	106	118	102	102	102	98	118	104	104	102	96	102	100	102	100	102
6	98	96	94	94	94	136	116	104	104	100	98	96	98	102	110	104	116	104	106	100	98	96	96	96
7	98	102	92	106	B	G	124	112	102	98	98	98	96	100	102	102	98	92	92	108	108	106	104	102
8	98	94	92	94	96	118	116	102	98	100	98	98	98	98	118	104	106	106	106	104	114	104	104	104
9	98	96	96	98	98	102	118	104	100	100	96	96	98	98	98	106	116	112	102	B	102	102	96	98
10	92	88	88	92	86	128	126	104	104	100	104	100	102	100	114	118	114	106	100	100	96	98	98	100
11	124	98	98	94	116	98	98	98	102	100	100	100	102	96	106	102	102	100	98	102	104	102	100	102
12	102	100	94	98	94	96	100	112	118	112	104	104	116	112	106	104	102	102	100	98	100	98	96	98
13	B	100	98	100	102	140	124	124	108	102	106	108	102	114	100	104	100	100	94	92	90	88	94	100
14	98	92	88	94	98	150	110	118	106	102	100	100	100	98	102	102	106	104	100	98	98	98	104	100
15	98	B	90	94	114	118	120	112	102	102	104	116	104	116	102	100	100	98	94	98	98	96	96	100
16	98	96	90	90	108	122	102	98	102	98	96	94	98	98	96	102	124	112	104	102	104	100	98	100
17	98	96	94	98	96	100	114	100	102	96	94	92	92	92	98	110	110	92	92	90	106	106	108	98
18	94	92	96	94	98	94	106	104	100	98	92	96	100	100	96	104	104	102	98	98	96	96	96	100
19	98	94	92	98	102	116	104	100	100	100	96	94	94	92	90	88	90	90	90	102	102	102	106	98
20	98	96	94	92	B	92	126	106	104	100	102	104	106	106	102	100	96	94	94	98	96	98	100	96
21	98	106	104	102	104	100	104	102	104	104	98	94	94	94	100	96	92	128	110	92	96	100	B	100
22	100	102	B	100	96	102	114	118	96	140	118	116	122	98	102	100	100	100	106	100	94	118	112	106
23	106	104	102	96	100	114	112	100	98	98	102	96	96	98	94	98	94	94	118	114	106	98	110	106
24	100	100	94	96	106	120	108	132	112	108	102	100	96	96	96	96	92	90	90	88	88	84	100	102
25	100	108	104	B	106	104	98	102	102	98	102	106	104	104	98	124	118	104	102	102	106	100	96	104
26	98	116	96	98	98	106	106	102	100	98	98	132	140	130	120	116	110	106	104	106	100	102	100	94
27	92	94	116	B	B	116	114	102	100	104	98	98	94	94	90	94	92	92	110	106	100	102	100	98
28	94	86	86	108	116	112	102	100	100	106	102	100	100	108	120	110	102	98	98	98	94	98	96	94
29	94	92	104	98	96	100	100	98	100	100	96	94	94	124	120	106	104	102	102	96	96	100	96	100
30	98	98	96	94	96	100	104	100	100	94	98	94	102	102	146	118	116	108	100	92	108	100	98	96
31	96	96	130	112	118	104	108	104	102	104	100	102	100	134	102	100	98	100	100	92	94	90	90	94
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	29	28	30	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	30	31
MED	98	96	94	94	98	105	108	104	102	100	100	98	100	100	102	102	102	102	100	99	98	100	99	100
U Q	98	100	98	98	105	118	116	112	104	104	102	104	102	108	114	106	110	106	104	102	104	102	104	102
L Q	96	94	92	93	94	100	102	100	100	98	98	96	96	96	96	98	96	94	94	96	96	96	96	98

JUL. 2007 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2007 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

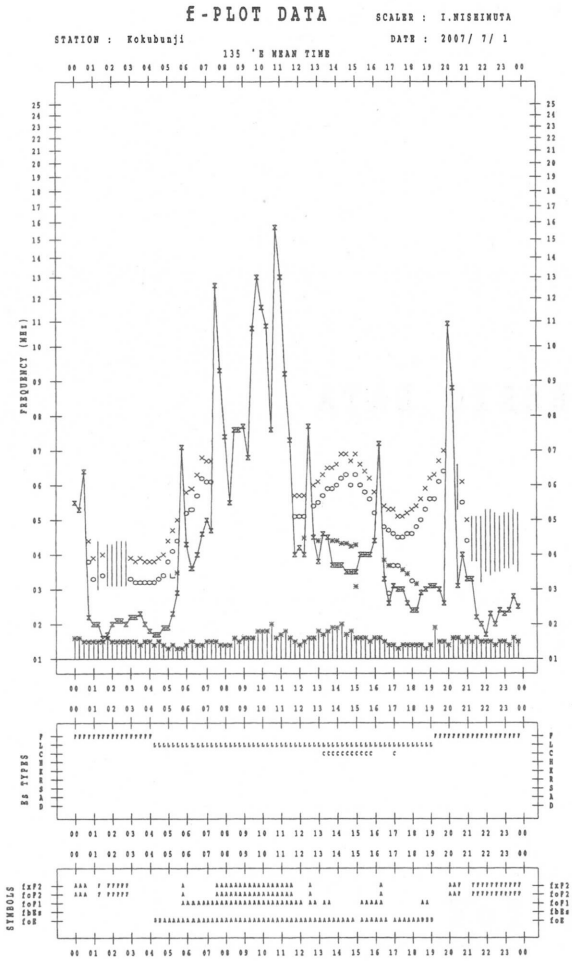
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F4	F3	F3	F3	F2	L2	L3	L3	L3	L3	L3	L3	L2	L2	CL21	CL21	L3	CL21	L2	L3	F5	F4	F3	F4
2	F5	F4	F4	F3	F5	L3	L2	L3	L5	L4	L3	L2	C2	L2	L4	L5	L4	L3	L3	L2	F4	F4	F5	F5
3	F5	F4	F4	F5	F4	C2	C3	C2	L2	L3	L3	L3	L3	L3	L3	L4	L3	L4	L4	L4	F5	F3	F3	F4
4	F4	F4	F5	F4	F4	L2	CL22	L3	L4	L4	L3	L4	L3	L3	L5	L4	CL22	L6	L4	L4	F2	F3	F4	F6
5	F5	F4	F4	F3	F3	L2	L2	L3	L2	CL21	L2	L2	L3	L2	CL22	L3	L3	L2	L3	L2	F4	F3	F5	F4
6	F4	F3	F4	F2	F1	C3	CL22	L2	L2	L3	L3	L3	L2	L3	L3	L3	CL22	L4	L4	L4	F4	F3	F3	F3
7	F3	F3	F1	F1			C2	C2	L3	L4	L3	L2	L3	L2	L2	L2	L3	L5	L5	LL23	F5	F7	F4	F4
8	F2	F6	F3	F3	F3	C3	CL32	L3	L3	L3	L3	L3	L2	L2	CL22	L3	L4	L4	L3	L4	F2	F4	F4	F3
9	F5	F3	F5	F4	F4	L2	CL21	L3	L2	L3	L3	L3	L2	L2	L2	L2	CL22	CL22	L2		F2	F4	F3	F4
10	F2	F3	F3	F2	L2	C1	C2	L2	L3	L3	L3	L3	L3	L3	CL11	CL22	CL32	L3	L3	L4	F3	F3	F4	F4
11	F2	F1	F3	F3	C2	L4	L3	L2	L4	L3	L3	L2	L3	L3	L2	L3	L3	L3	L2	L3	F4	F3	F3	F2
12	F4	F3	F4	F6	F6	L3	L2	CL11	CL21	CL21	L4	L3	CL21	CL11	L2	L2	L2	L2	L4	L3	F4	F5	F4	F2
13		F1	F3	F2	F1	H1	C2	CL21	CL21	L2	L3	L2	L3	CL12	L2	L2	L2	L2	L2	L4	F4	F3	F3	F3
14	F3	F3	F3	F3	F3	H2	C3	CL12	L3	L3	L4	L2	L3	L2	L3	L3	L2	L2	L5	L6	F5	F4	F5	F4
15	F2		F3	F2	FF32	C4	C4	CL22	L3	L3	L2	CL22	L2	CL21	L3	L3	L3	L3	L3	L4	F3	F4	F5	F4
16	F3	F2	F3	F2	FF22	C2	L4	L3	L2	L2	L2	L3	L2	L2	L2	L2	CL22	CL43	L4	L4	F2	F4	F2	F2
17	F1	F2	F2	F5	F3	L2	C4	L3	L3	L3	L3	L4	L2	L2	L3	CL22	CL23	L3	L2	L4	FF32	F5	F2	F5
18	F6	F4	F2	F3	F1	L3	L4	L2	L3	L3	L3	L3	L3	L2	L3	L2	L3	L3	L3	L4	F4	F3	F3	F2
19	F2	F2	F2	F1	F2	C3	L3	L2	L3	L3	L3	L4	L3	L4	L3	L3	L3	L3	L2	L4	F3	F3	FF21	F5
20	F3	F4	F4	F3		L2	CL22	L3	L4	L3	L2	L3	L3	L3	L3	L3	L2	L2	L3	L2	F3	F3	F2	F3
21	F3	F3	F2	F3	L3	L3	L3	L2	L2	L2	L3	L3	L2	L2	L2	L2	L2	CL22	CL22	L3	F1	F2		F4
22	F1	F1		F2	F4	L3	C2	CL12	L2	HL11	CL21	CL21	CL32	L3	L3	L2	L3	L3	L2	L3	F3	FF35	FF33	F3
23	F3	F3	F2	F3	F1	C3	C3	L4	L4	L3	L3	L3	L3	L3	L2	L2	L4	L4	CL22	CL22	F2	F2	F5	F5
24	F5	F6	F5	F4	F2	C3	L2	CL22	CL22	L2	L2	L3	L3	L3	L3	L3	L3	L3	L4	L2	F3	F3	FF22	F2
25	F2	F1	F2		F2	L2	L2	L2	L2	L3	L2	L2	L2	L2	L2	CL11	CL32	L3	L4	L2	F1	F2	F2	F2
26	F4	FF24	F3	F3	F2	L2	L3	L3	L3	L2	L2	CL11	HL22	HL12	CL22	CL12	CL12	L3	L2	L4	F2	F4	F4	F4
27	F3	F2	F2			C1	C2	L3	L3	L2	L3	L2	L4	L3	L3	L3	L3	L3	CL23	L3	F3	F2	F4	F4
28	F3	F3	F2	F1	F2	C3	L3	L2	L2	L2	L2	L3	L3	L2	CL22	CL22	L4	L4	L4	L5	F2	F4	F5	F4
29	F3	F2	F2	F3	F3	F3	L3	L3	L2	L2	L2	L3	L3	CL22	CL22	L3	L2	L4	L4	L4	F4	F4	F3	F3
30	F3	F3	F3	F4	F4	L2	L3	L2	L2	L3	L2	L2	L2	L2	HL12	CL11	CL22	CL22	LL22	L3	F2	F3	F3	F3
31	F2	F3	FF22	F3	F4	L4	L3	L2	L3	L2	L3	L2	L2	CL11	L3	L3	L2	L3	L5	L3	F4	F3	F3	F3
	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																								

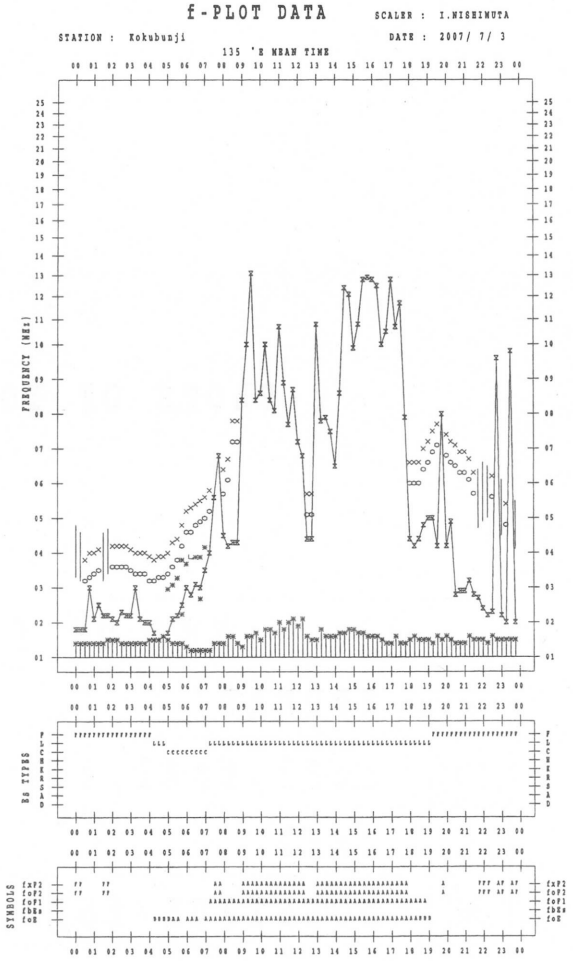
JUL. 2007 TYPES OF Es

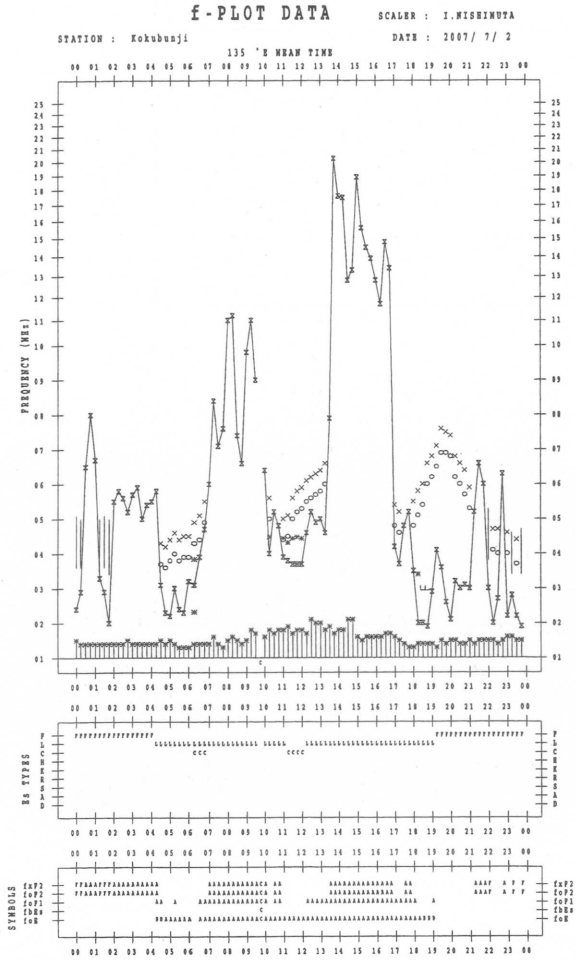
NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

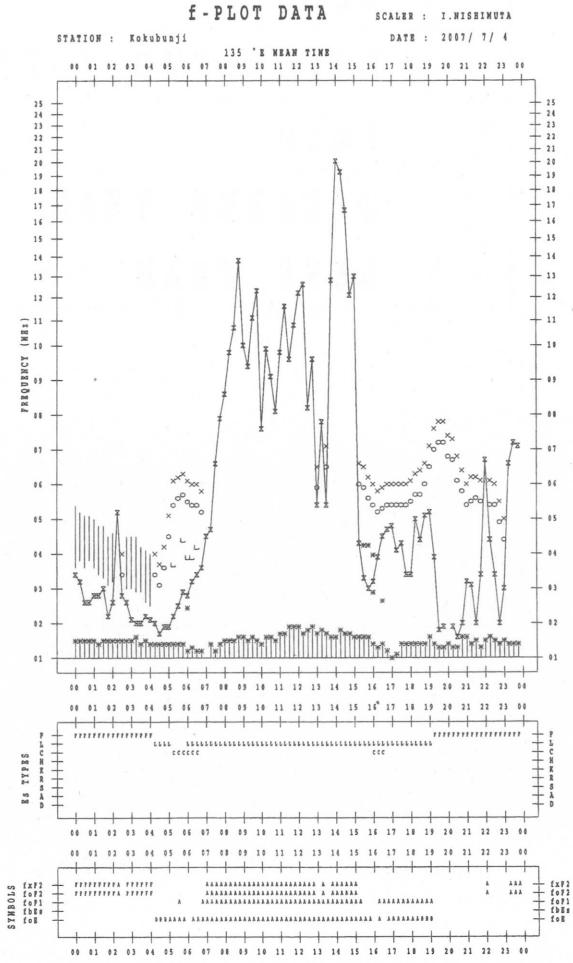
f-PLOTS OF IONOSPHERIC DATA

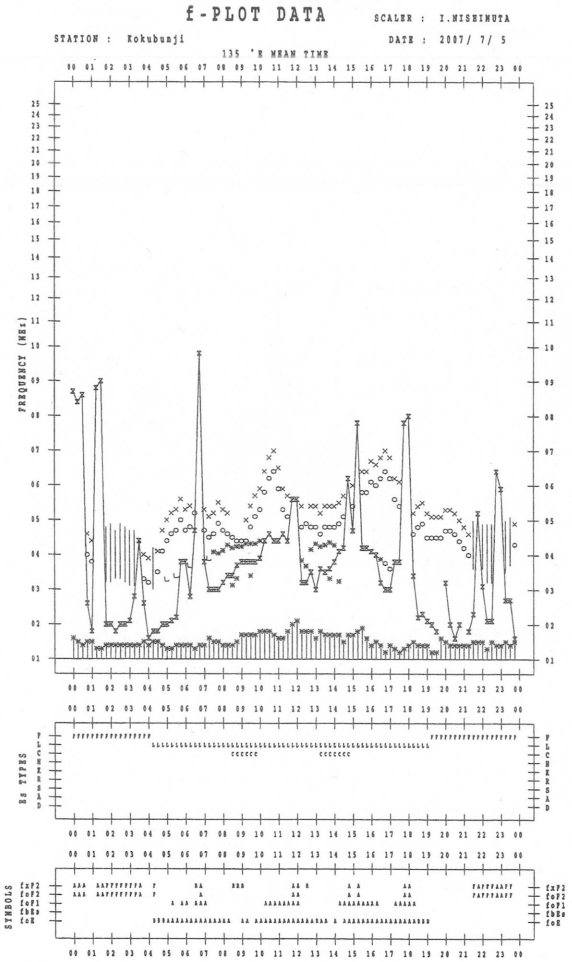
KEY OF f-PLOT	
	SPREAD
	foF2,foF1,foE
	fxF2
	DOUBTFUL foF2,foF1,foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

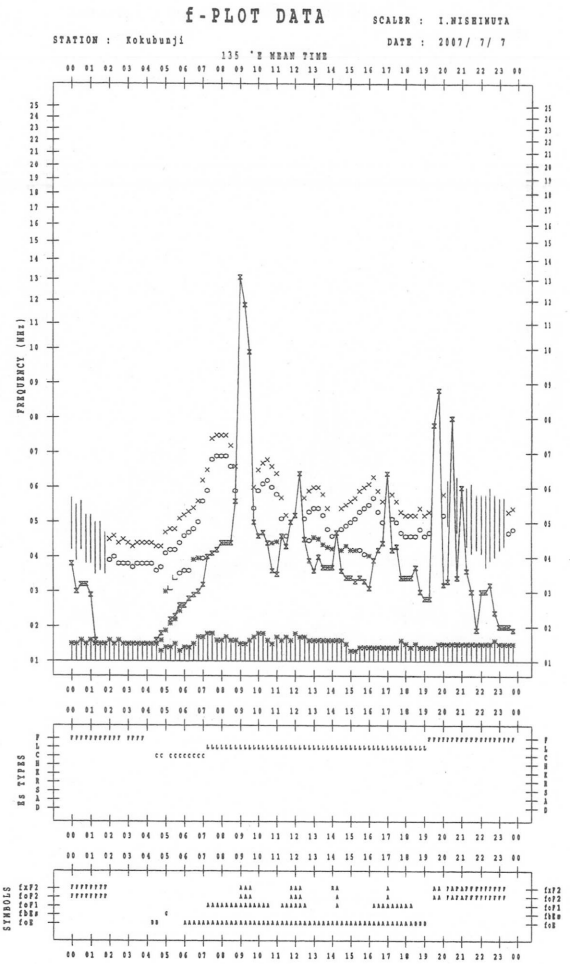

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 1
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS

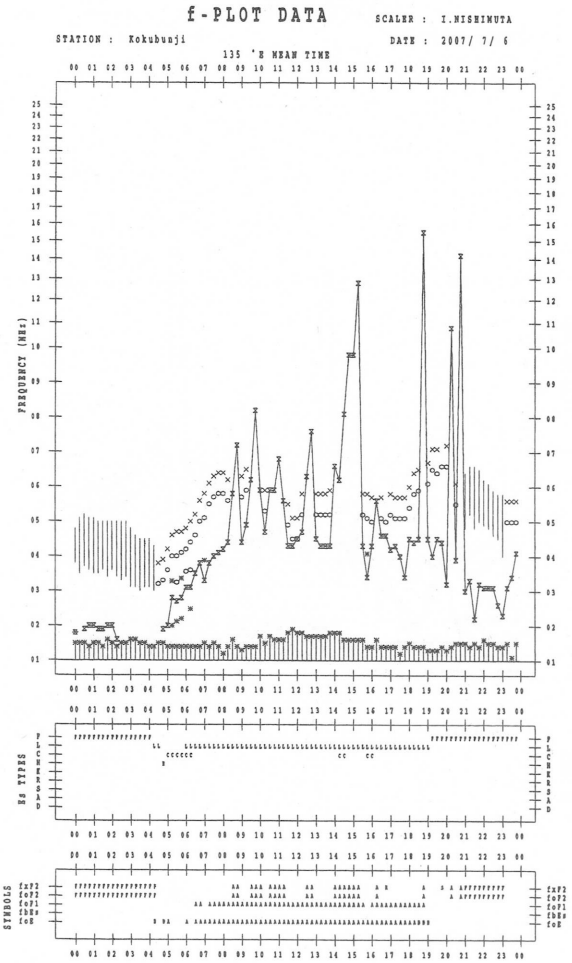

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 3
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS

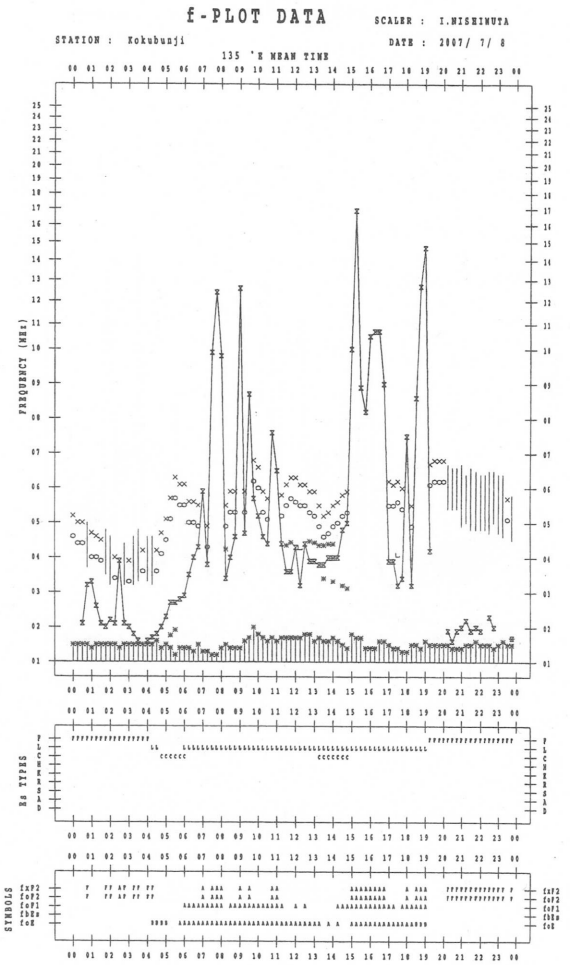

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 2
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS

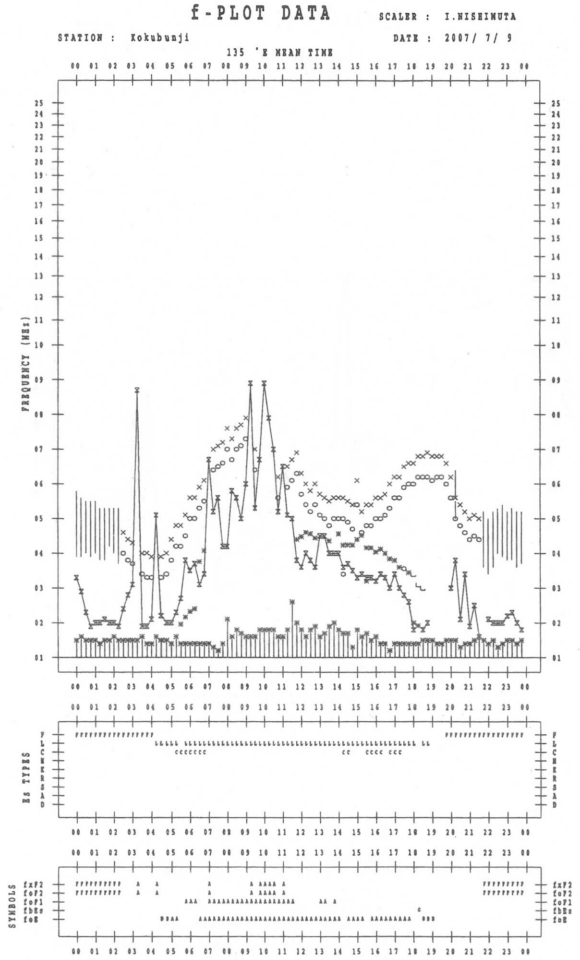

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 4
135 'E MEAN TIME
FREQUENCY (MHz)
Rs TYPES
SYMBOLS

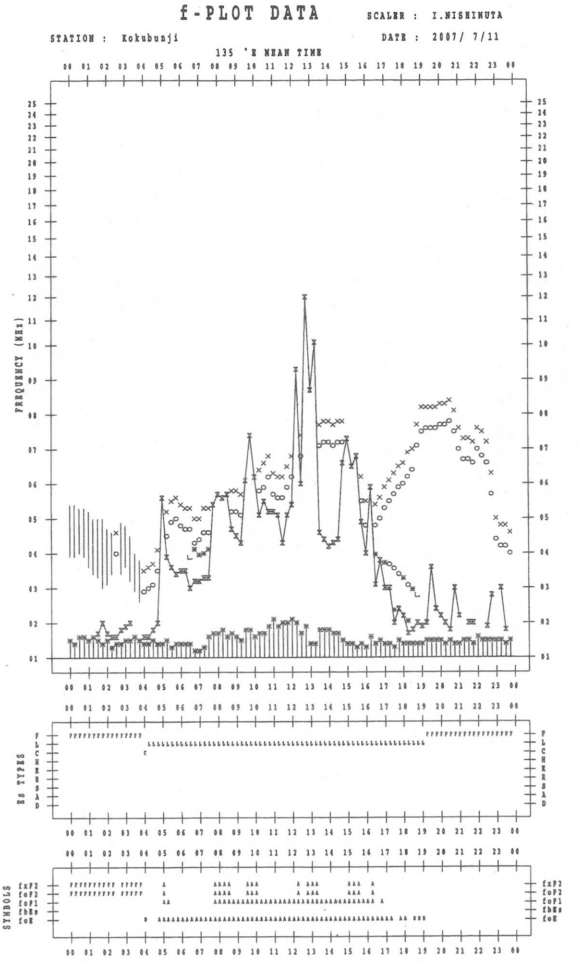

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

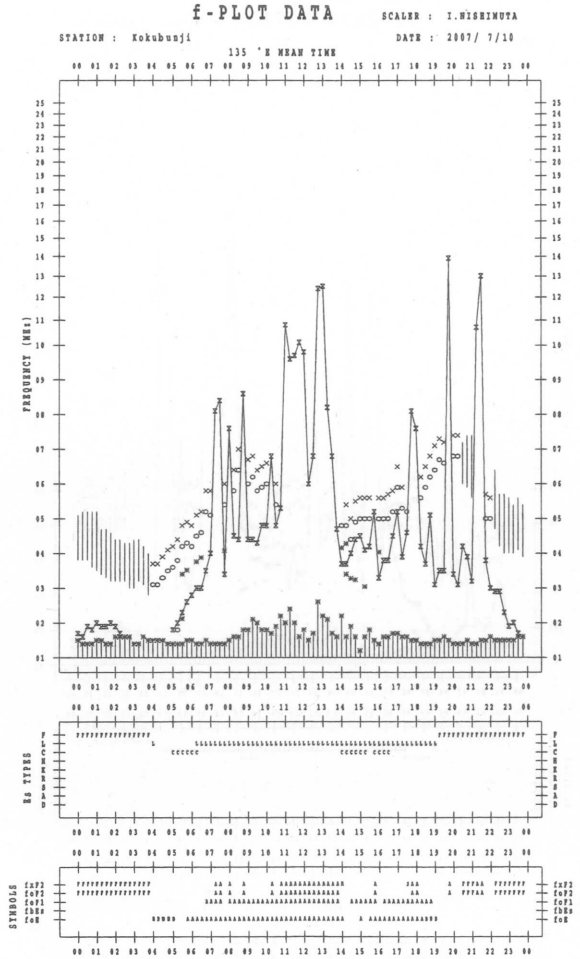

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

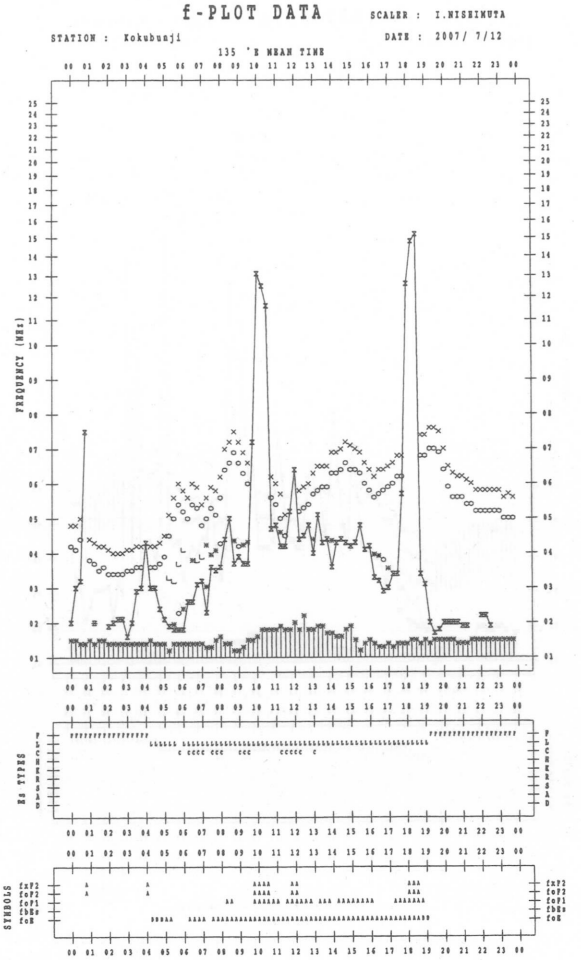

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

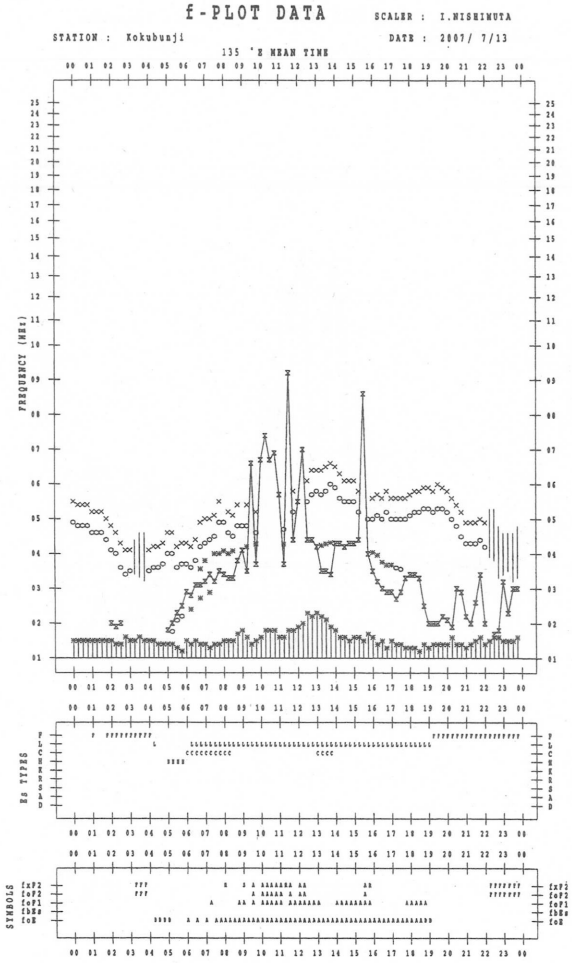

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

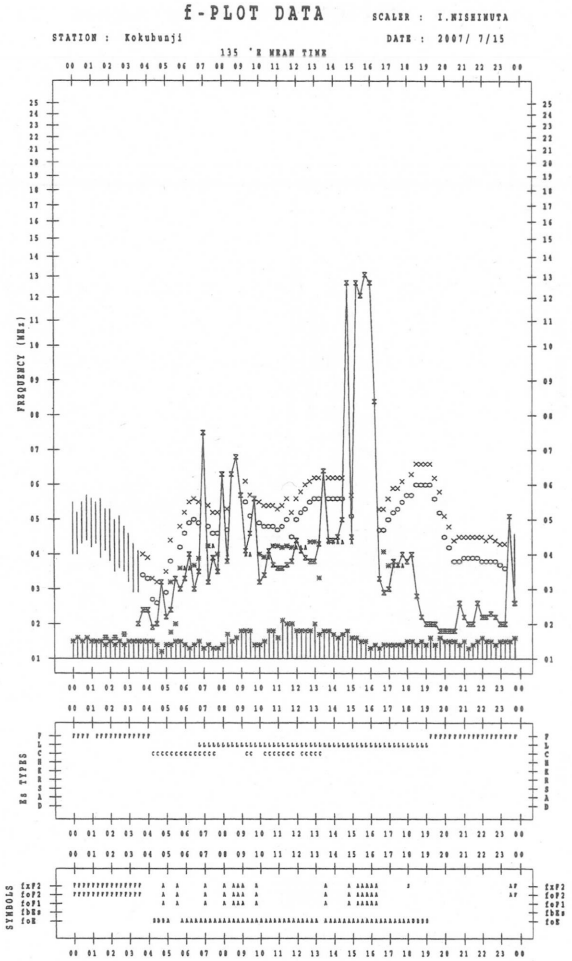

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

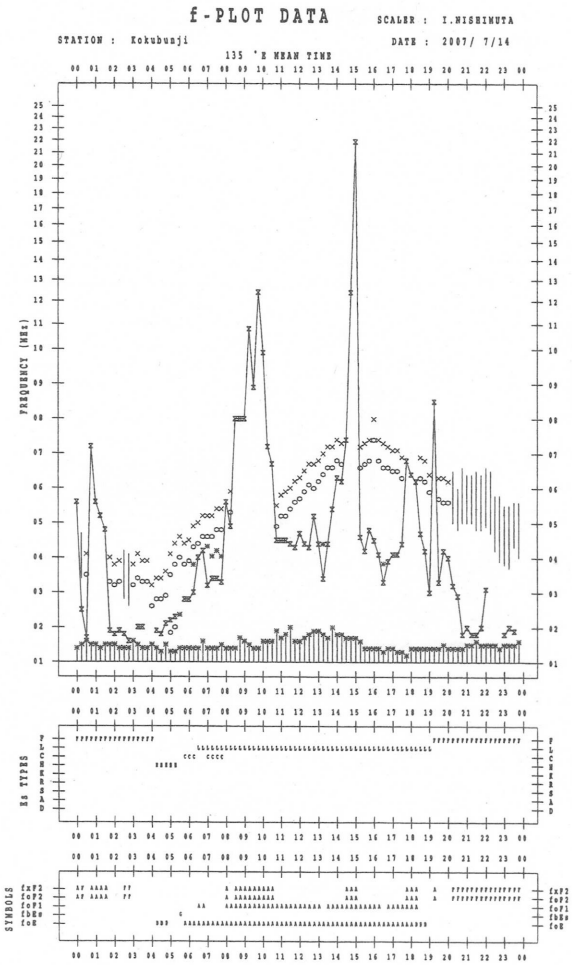

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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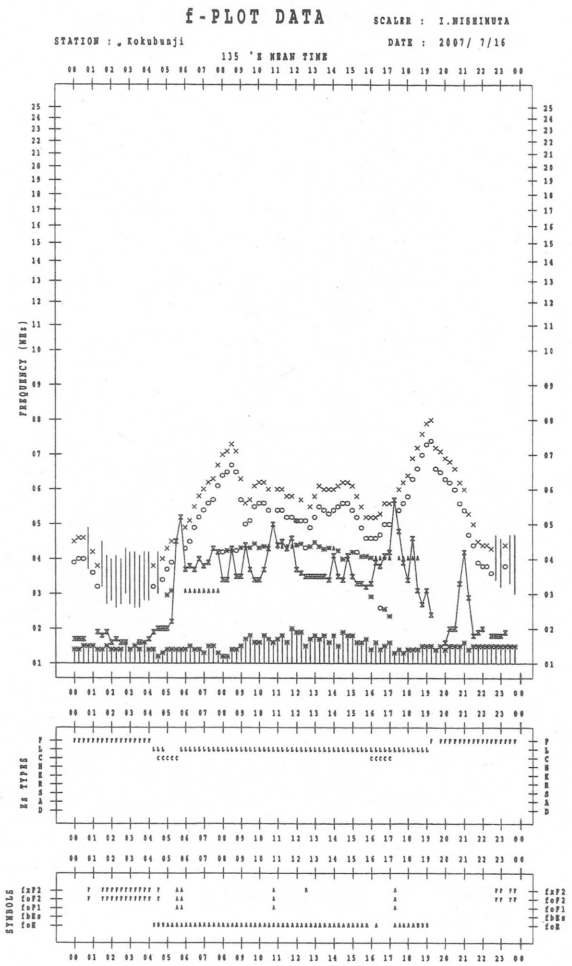
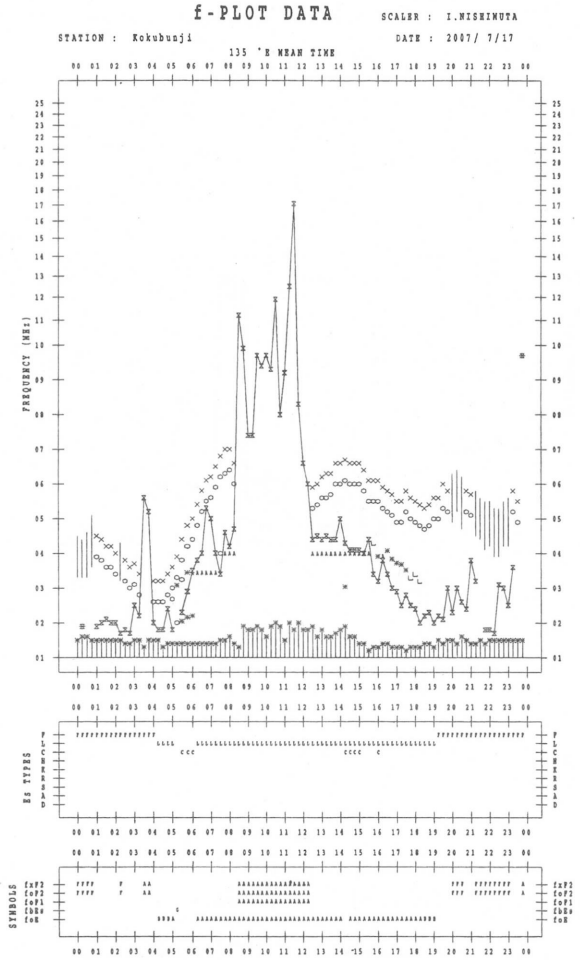
STATION : Kokubunji
DATE : 2007/ 7/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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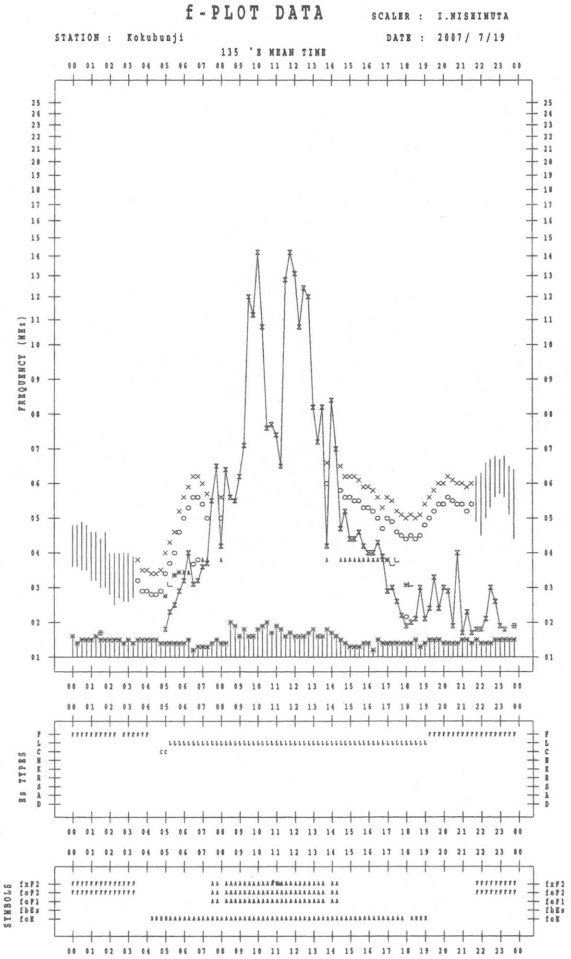
STATION : Kokubunji
DATE : 2007/ 7/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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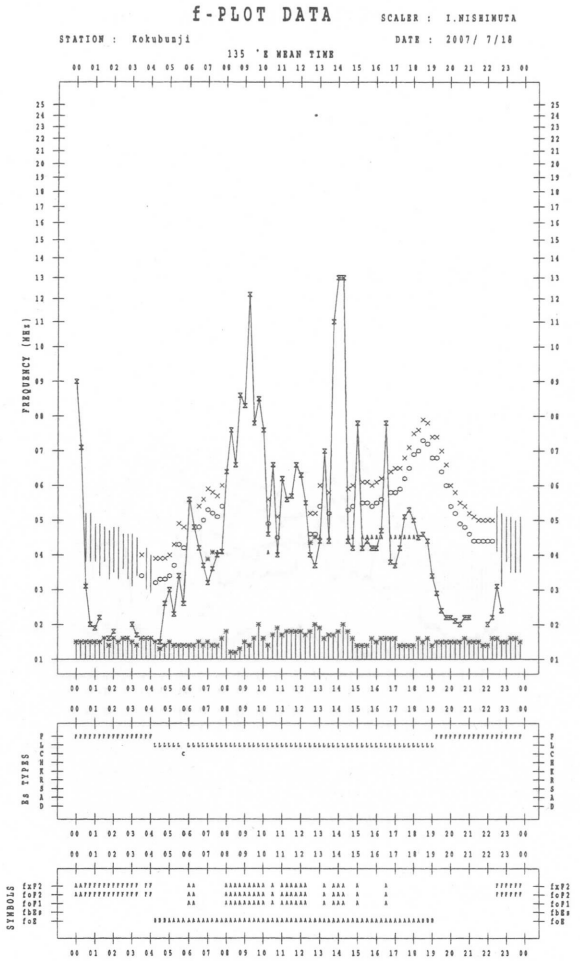
STATION : Kokubunji
DATE : 2007/ 7/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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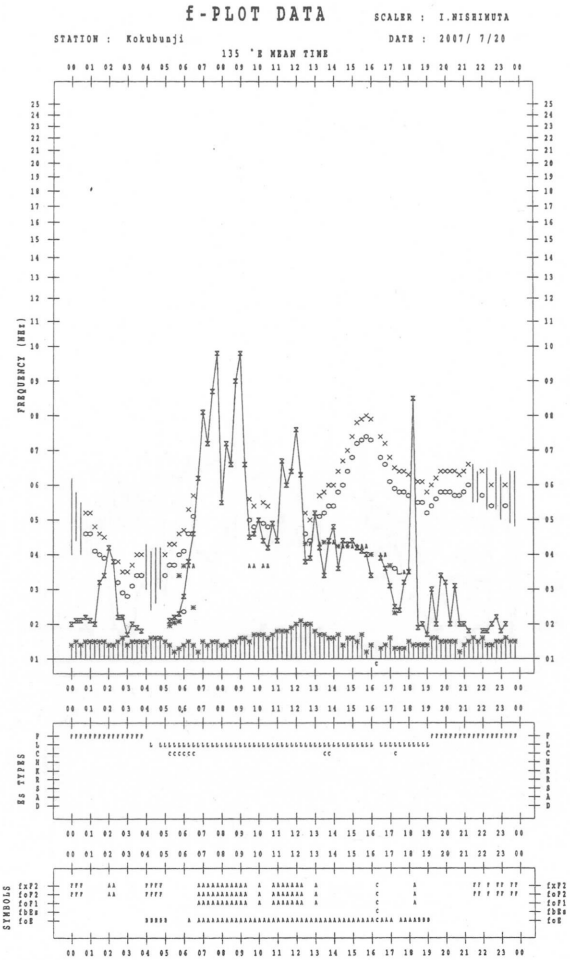
STATION : Kokubunji
DATE : 2007/ 7/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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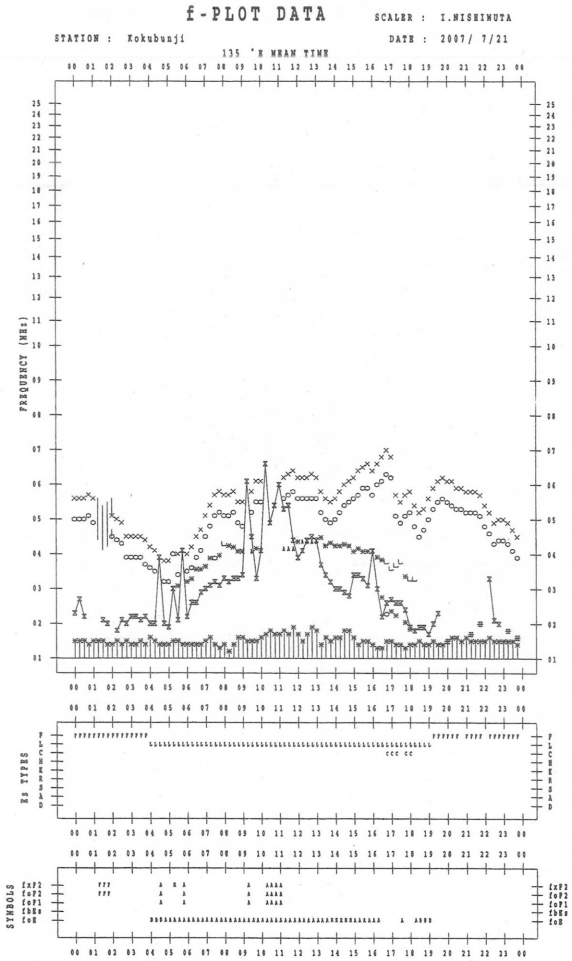
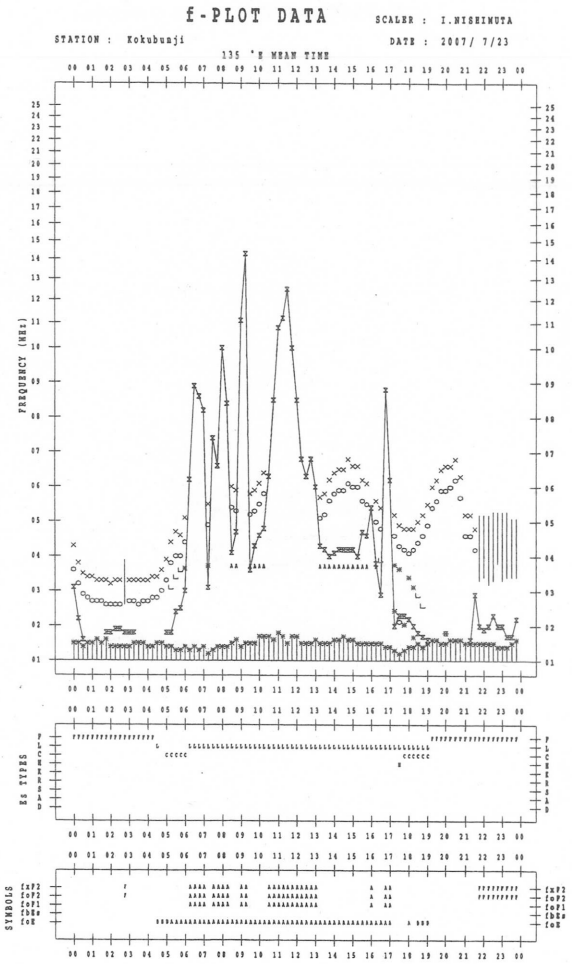
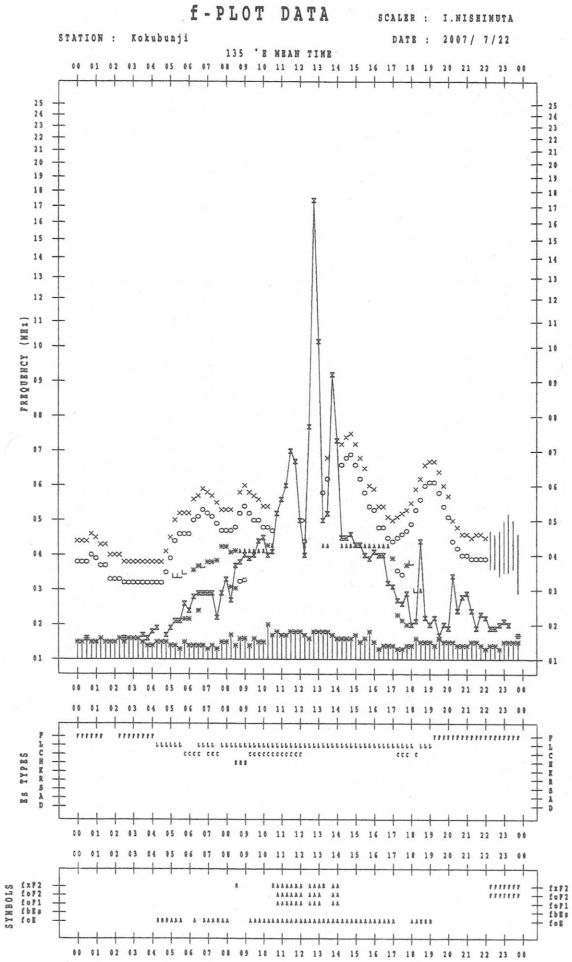
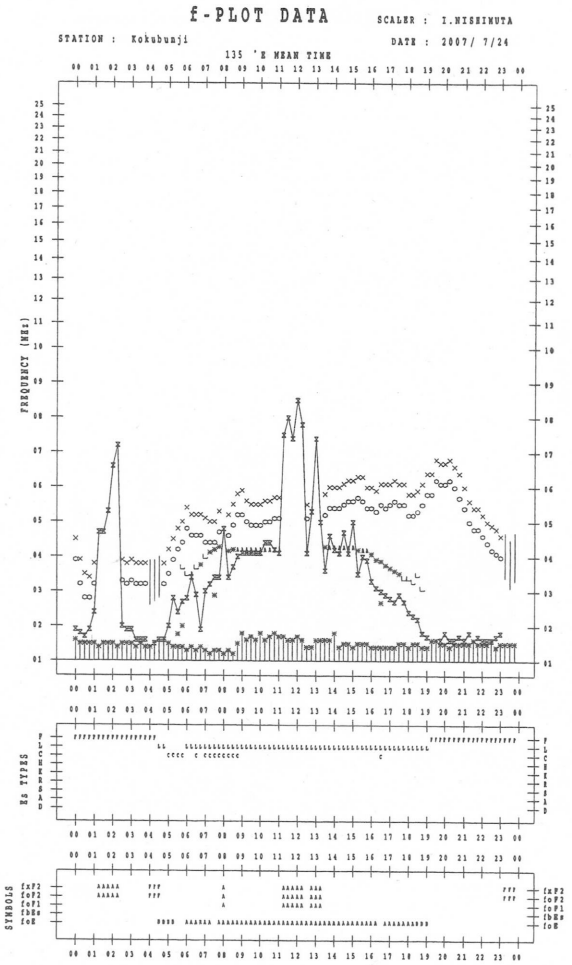
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/21
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/23
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/22
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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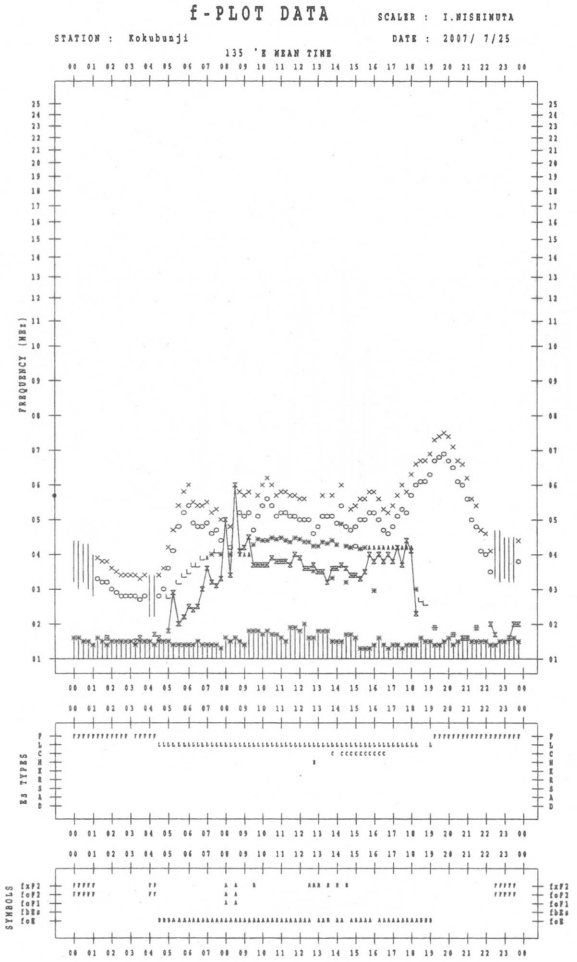
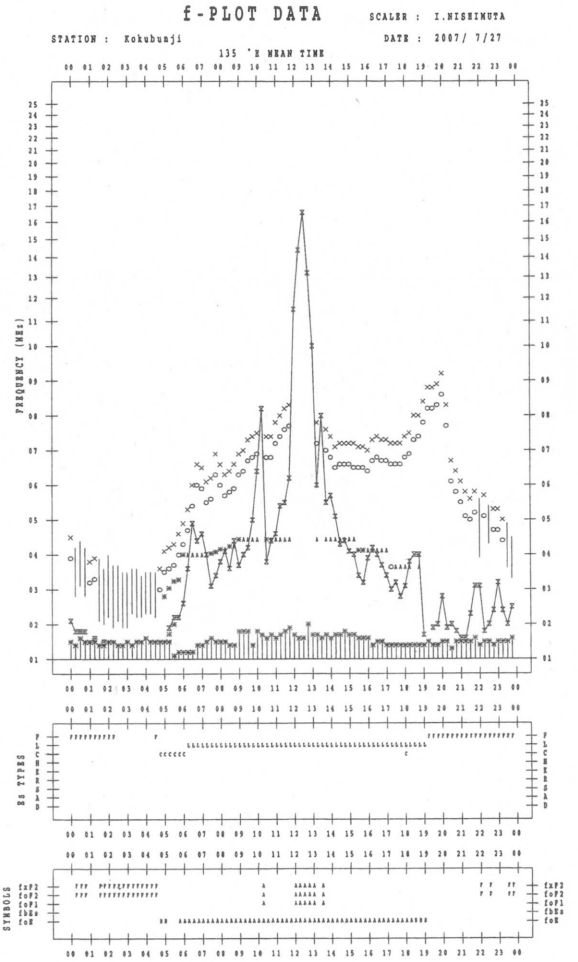
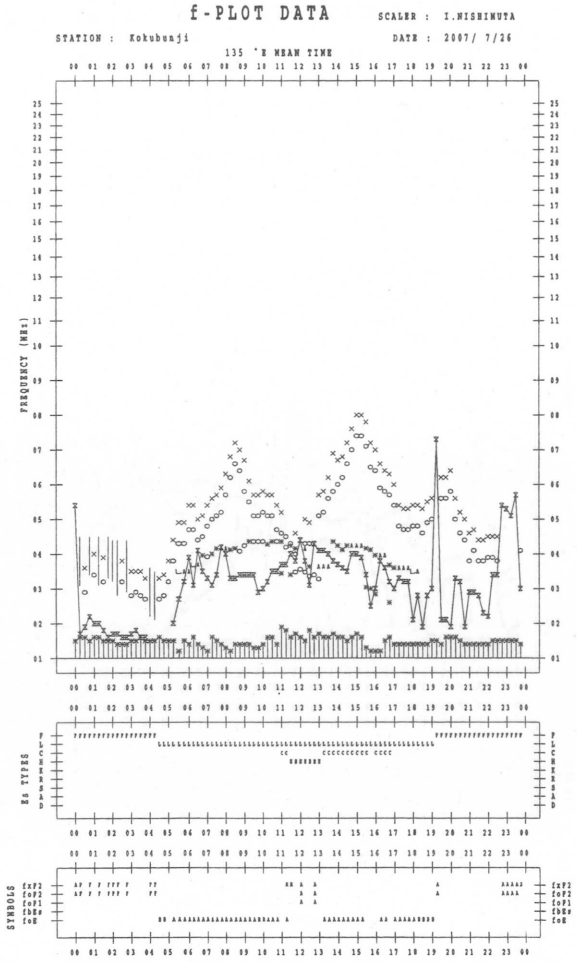
STATION : Kokubunji
DATE : 2007/ 7/24
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/25
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/27
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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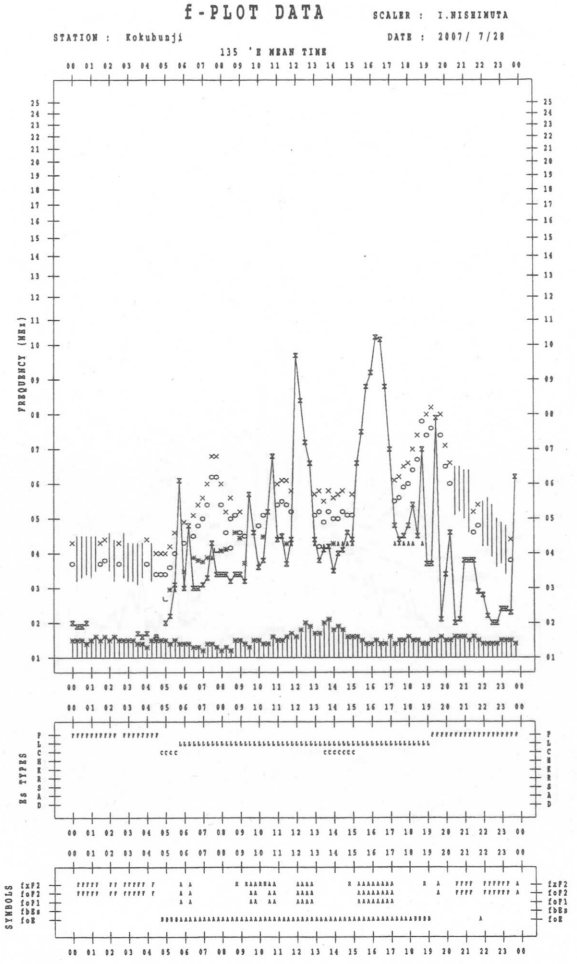
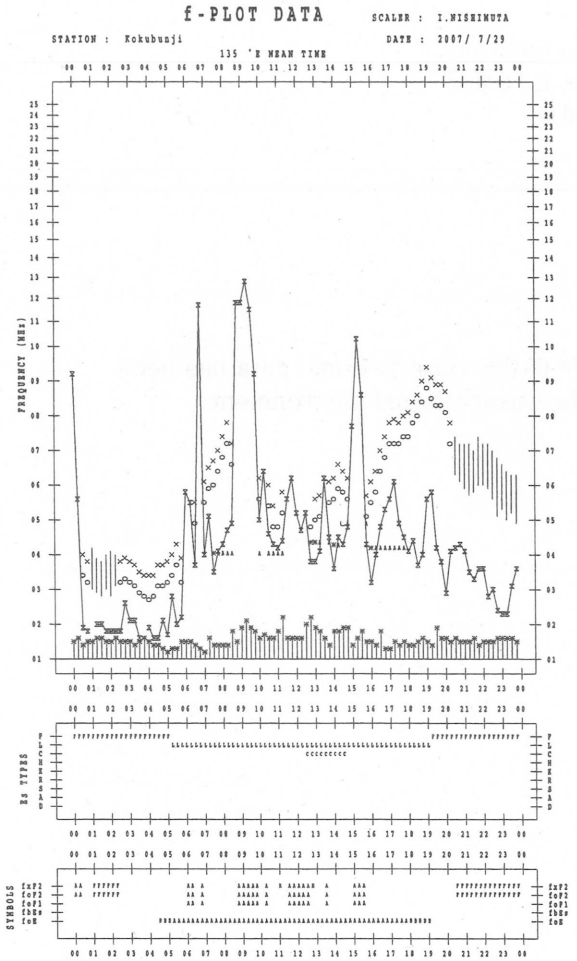
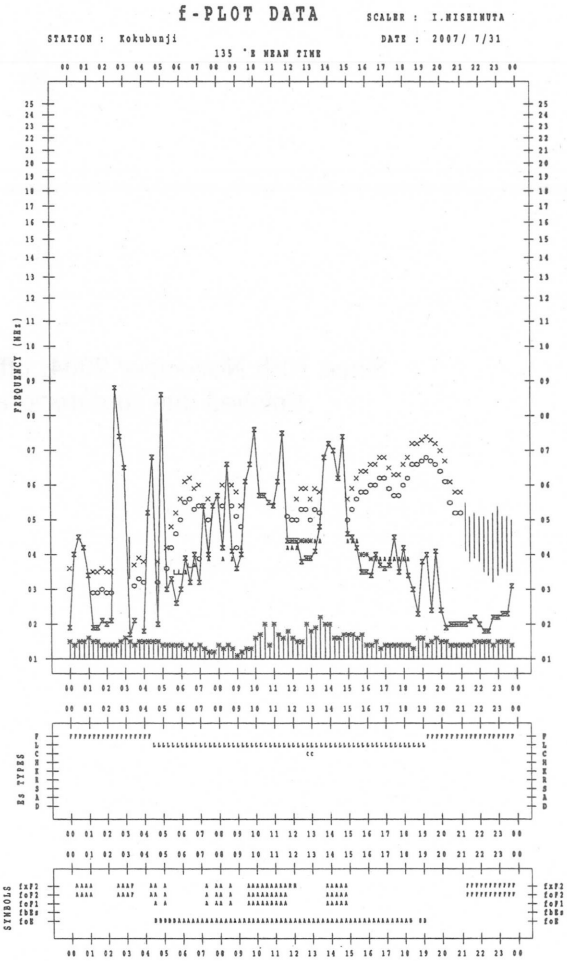
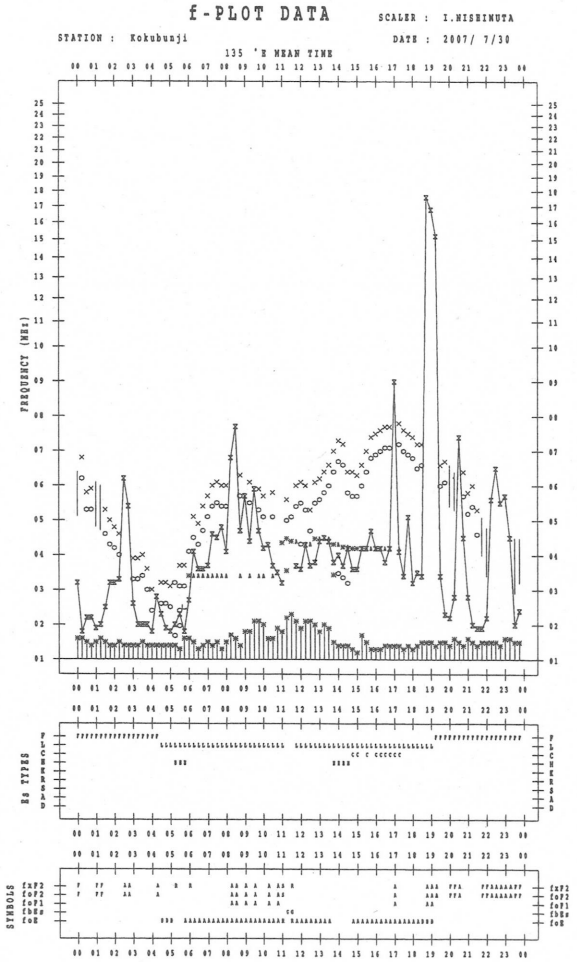
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/26
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/28
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/31
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2007/ 7/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

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

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

B. Solar Radio Emission
B2.Outstanding Occurrences at Hiraiso

Hiraiso July 2007

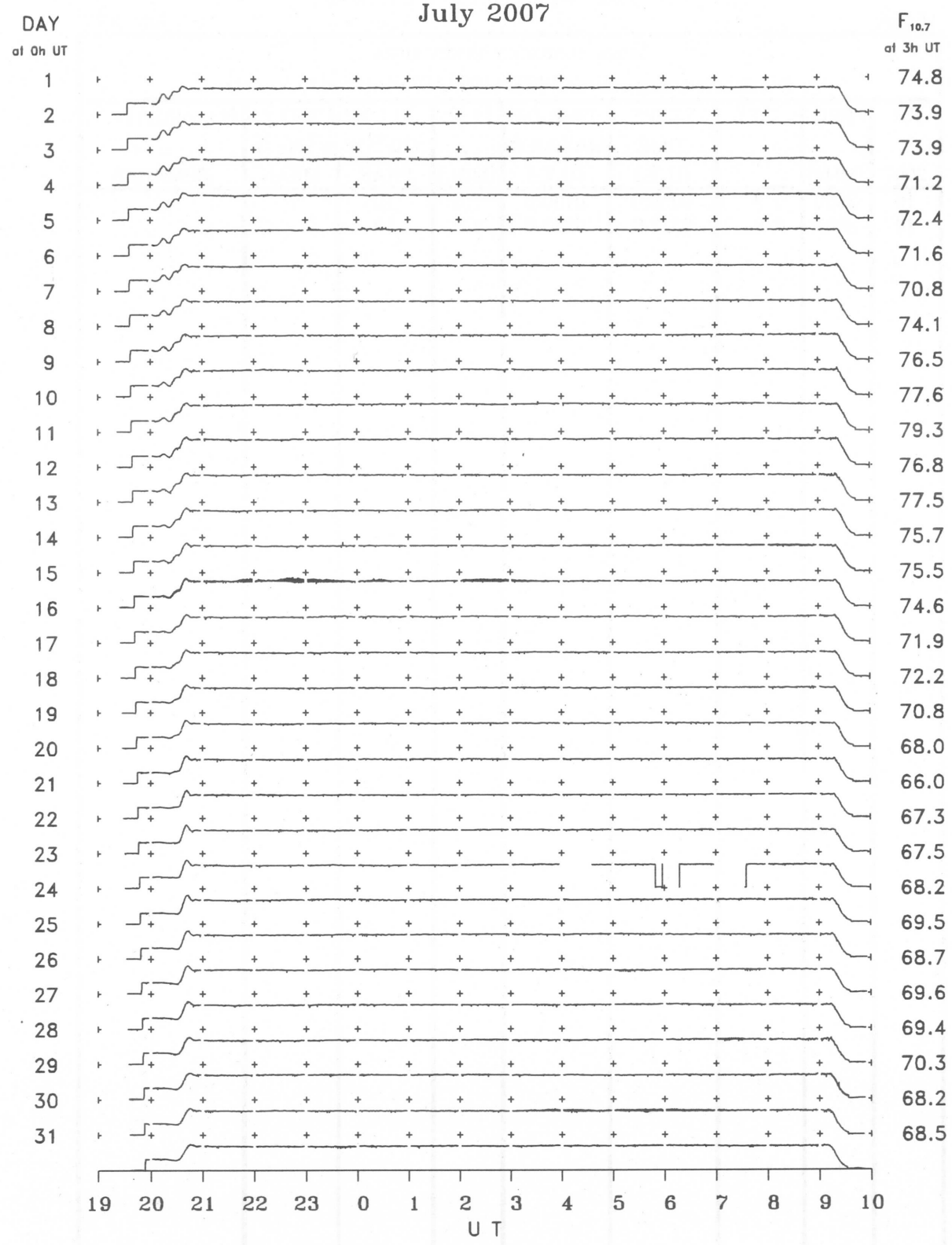
Single-frequency observations
Normal observing period: 1925 - 1000 U.T. (sunrise to sunset)

JUL	FREQ.	TYPE	START TIME	TIME OF MAXIMUM	DUR.	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1})		POLARIZATION
2007	(MHz)		(U.T.)	(U.T.)	(MIN.)	PEAK	MEAN	REMARKS
10	2800	1 S	0059.0	0100.0	2.0	10	-	
10	2800	1 S	0332.0	0333.0	1.0	10	-	

B. Solar Radio Emission

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

July 2007



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

IONOSPHERIC DATA IN JAPAN FOR JULY 2007
F－703 Vol.59 No.7 (Not for Sale)

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2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184-8795 JAPAN