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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. 2008

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

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

HOURLY VALUES OF fEs AT Wakkanai

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	82	54	47	41	35	46	70	62	61	48	68	78	78	48	40	81	38	62	40	40	51	41	47	40
2	49	49	34	33	40	49	65	82	76	78	95	75	76	69	72	84	77	106	100	83	38		58	38
3	48	30	40	30	G	30	60	68	79	66	58	49	48	49	49	48	49	47	31	57	72	46	38	69
4	24	33	G	26	30	34	44	47	76	56	52	65	41	G	G	39	46	45	47	51	39	41	40	59
5	40	34	30	35	28	36	52	73		83	53	86	80	100	148		149	90	76	73	77		57	59
6	39	40	52	32	28	48	63	78	65		72	45	53	G	G	38	36	60	40	G	29	G	33	G
7	33	G	40	45	32	33	51	68	73	58			67	44	G	38	52	38	42	72	50	46	58	G
8	29	G	G	G	G	33	41	52	62	80	48	G	44	46	42	43	41	39	45	29	28	38	29	32
9	33	44	48	39	60	45	47	77	66	79		106		144	98	46	60	82	96	82	61	41	45	59
10	48	59	59	40	31	34	46	51	84	80	77	66	105	110	78	78	109	136	90	79	71	46	35	59
11	71	46	38	36	41	48	72	88	152		104	109	109	152	68	58	65	58	139		77	69	29	59
12		56	52	59	43	47	57	54	65	81	71	78	83		84	62	68		79	109	59	39	45	59
13	32	34	32	38	34	40	50	66	61	78	69	81	77	66	50	63	71	131		79	46	76	59	60
14	46	70	41	57	N	39	60	87	90		84		101	78	89	49			80	78	84			84
15	92	73	52	59	66	34	60	114	104	110	70	68	41	40	63	83	53	50	83	59	58	60	59	50
16	41	39	41	55	29	36	50	89	134		79	65	72	49	50	80	77	71	77	60	51	37	40	34
17	36	46	39	32	33	30	58	75	73	90	75	55	60	57	47	50	50	47	51	51	51	50	38	49
18	46	60	47	43	38	36	43	64	65	66	69	46	62	81	68	72	84	46	72	149	72	56	79	85
19	78	66	51	39	58	40	31	61	81		83	95	61	67	65	64	59	82		111	108	78	83	77
20	67	44	40	37	36	44	43		80	47	50	115	130	106	69	39	G	38	35	33	40	26	G	36
21	43	39	49	49	44	33	45	53	72	68	118	77	50	45	101	47	G	G	76	69		60	78	58
22	60	71	51	43	40	36	53	69	64	112	112	57	G	G	G	37	44	51	38	73	45	32	33	36
23	43	32	60	44	28	32	67	62	79	70	65	76	59	46	51	110	100	148	80		60	60	34	71
24	66	61	45	32	36	45	60	61	80	59	75	84	92	60	49	68	77	41	76	36	80	46	33	90
25	46	50	39	77	40	59	50	69	72	83	58	89	74	76	64	46	70	77	110	63	83	45	59	53
26	72	60	69	33	26	42	57	86	148	88	89	48	52	79	74	74	146	81	77	88	114	86	61	65
27	58	45	39	32	29		47	57	72	84	67	51	G	48	75	67	82		52	69	80	60	44	65
28	58	48	48	29	29	42	61	62	70	63	82	144		51	60	78	90	60	71	71	41	39	51	49
29	32	34	73	69			50	158			108	136	64	69	77	G	36	33	52	73	47	58	59	35
30	47	45	45	36	37	43	71	62	76	87	86	77	46	71	100	77	G	51	94	86	67	72	96	60
31	81	60	56	40	45	36	50	88	72	78	114	78	64	70	46	71	59	74	46	49	44	76	72	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	30	31	31	31	29	29	31	30	29	25	29	29	29	30	31	30	30	28	29	29	30	28	30	31
MED	46	46	45	39	35	39	52	68	73	78	75	77	64	63	64	62	60	59	76	71	58	46	46	59
U Q	66	60	52	45	40	45	60	82	80	83	87	87	79	78	77	77	77	81	81	80	77	60	59	65
L Q	39	34	39	32	29	34	47	61	65	64	66	56	49	46	47	46	44	45	45	51	45	40	35	38

HOURLY VALUES OF fmin AT Wakkanai

JUL. 2008

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

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

HOURLY VALUES OF foF2 AT Kokubunji

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1			A					A		A		A	A	A		A	A	A	A			A	A	A
			32		31		36								99					62	63			
2	A	A	A	A	A			A	A	A						A	A	A	A					A
						30	48													53	66	54		
3	A	A	A	A	A			A	A	A	A	A	A		A	A	A	A						A
						39	38							79							54	53	51	
4	A	A	A	A	A			A	A	A	A	A	A	A		A		A	A				A	A
							42													44	48	47		
5	A	A	A	A				A	A	A	A	A	A	A	A			A					A	
						28	42													51	61	52		
6						A	A	A	A		A	A	A	A	A	A	A	A	A	A	A		A	A
				32	34					58												42		
7		A				A		A	A	A			A	A	A						A		A	A
	41			26	27		48									52	58	52	47	42		47		
8	A	A				A	A		A		A	A	A	A		A	A	A			A	A	A	A
					26			49							63				62					
9	A	A	A				A	A	A	A			A	A		A								
					26						48	38					56		50	49	51	24	42	
10					A		A	A							A								A	
									57		48	55					58		54	52	47	41		
11		A					A	A			A			A	A				A	A				
	34		34	30	32	36			55	52						52	51			52	50	52	43	
12										A				A	A		A							
	37	34	34	30	30		37	48	51									62	68	65	71	63	54	
13	A		A					A			A	A	A	A		A	A	A	A					A
		52		32	32	34				54					54						52		44	
14	A	A	A	A			A	A	A			A	A	A	A			A						A
																52	49		62	41	42	52	42	
15	A	A	A						A	A	A				A	A	A							
				30	31		42	52										52	59	52	48	47	44	42
16									A		A		A	A		A	A						A	A
	44	44	38	36		41	44	43		99					99			55	62	71	54	24		
17	A	A		A				A	A	A	A				A	A	A	A		A	A	A	A	A
						34	41																	
18	A	A	A	A	A	A	A	A	A		A	A	A		A									A
																	47	56	54	55	54	49	42	
19	A	A	A		A	A			A	A	A			A	A	A		A	A		A			
							37															53	54	
20		A			A	A	A	A	A	A	A	A	A		A									
			31	26																73	55	32	31	
21	A		A		A	A	A	A	A	A		A	A	A	A	A	A	A	A					
		46																		60	50	A	A	A
22	A	A	A						A	A		A	A	A	A	A	A				A		A	A
					30	36		46			51							51		62		42		
23	A	A	A	A	A		A	A	A	A	A	A		A	A	A	A		A				A	
																		48		52	54			44
24	A	A							A	A	A	A		A	A			A					A	A
			30		20	30										51					51	51		
25		A		A	A			A		A		A	A	A	A	A	A	A	A					A
						26														52	58	54	45	
26	A		A	A		A	A	A	A			A	A	A	A	A		A						
										66							55		52	59	49	47	45	38
27		A		A			A	A	A	A		A	A	A	A	A								
			37								55						49		A	A	51	42	39	34
28	A	A					A		A	A					A	A								A
								45					56	48				49	48	48	47	44		
29	A	A	A	A	A					A	A		A		A	A			A		A			
						32	41	45						98			45	51				38	38	38
30	A	A	A	A	A	A	A	A	A		A				A	A				A	A		A	A
										61		38						45				39		
31	A	A	A	A				A	A	A	A	A	A	A		A								A
						32													38	46		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	4	4	6	9	11	12	12	7	3	6	4	3	1	3	4	4	9	10	12	21	22	25	14	5
MED	39	45	34	30	30	33	42	46	55	60	50	38	56	79	81	52	51	52	54	52	52	47	44	38
U Q	42	49	37	32	32	36	43	49	57	66	53	55	28	98	99	52	57	55	62	61	55	52	45	43
L Q	35	39	31	28	26	30	37	45	51	54	48	38	28	48	58	51	48	49	49	48	49	41	42	36

HOURLY VALUES OF fEs AT Kokubunji

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	31	31	43	28	27	38	36	60	84	70	80	85	49	79	92	54	87	71	61	29	39		59	49
2	58	58	66	53	84	34	60	81	60	62					47	53	62	80	76	71	81	80	35	103
3	45	59	39	43	43	29	41	61	61	80	87	82	138	83	72	71	75	93	82	81	57	54	57	57
4	57	59	49	45	55	34	36	60	102	108	65	51	74	82	G	51	G	51	52	68	25	23		109
5	57	59	67	56	40	28	34	93	56	114	168	105	153	58	91	96	40	62		40	82	60	72	54
6	36	27	29	26	G	38	52	57	89	81	128	72	73	51	85	68	135	166	124	113	126	50	83	57
7	58	59	27	28	G	35	40	55	61	93	119	65	93	61	66	40	46	42	31	50	60	92	59	50
8	140	50	37	43	56	48	39	61	148	102	104	112	104	84	53	70	75	68	63	59	60	56	52	49
9	40	81	48	29	27	27	47	89	79	125	G	47	53	72		62	50	51	49	26	G	27	27	36
10	29	27	26	30	57	49	37	104	62	48	48	G	46	G	60	45	42	60	42	29	G	31	59	37
11	33	40	48	36	33	34	40	71	43	45	51		45	51	60	44	66	60	103	G	G	27	39	29
12	27	G	23	G	G	29	G	42	45	51	50		51	54	48	46	57	40	39	49	49	34	33	51
13	60	39	59	28	59	31	34	40	42	54	68	62	86	57	G	100		170	138	70	49	54	37	49
14	50	58	52	50	34	29	51	70	114		46	51	61	65	51	50	45	108	53	34	G	G	46	57
15	37	37	51	49	G	31	32	45	52	70	46	G			50	59	62	45	50	59	26	48	48	28
16	26	33	33	31	48	33	40	36	51	60	60	50	144		63		62	41	60	G	G	26	93	60
17	37	36	30	32	G	30	37	60	99	125		163	131	112	61	100	73	84		116	72	103	59	53
18	81	86	86	50	48	35	58	60	73	63	80	102	76	49	82	45	48	48	47	36	29	28	47	54
19	60	59	48	37	50	61	G		51	68	120	146		135		74	58	94				60	56	50
20	36	71	34	36	95	134	85	77	75	70	67	85	78	40	51	G	45	52		G	30	27	29	31
21	39	46	47	33	49	52	45	55	57	67		56	59	92	55	51	87	116	146	84	40	59	59	83
22	60	79	38	32	24	G	39	47	113	152	52	102	83	96	84	118	65	45	50	49	54	32	69	72
23	59	85	72	60	53	36	76	79	94	133	106	116	135	132	92	62	125	117	103	59		49		56
24	49	54	24	G	G	25	30		64	99	114	81	93	79	78	G	53	62	41	36	51	60	53	83
25	37	52	41	59	31	59	49	47	70	99	111	105		76	56	65	84	117	94	35	60	47	34	78
26	56	49	59	39	51	81	51	65	70	G	45	56	53	59	78	65	45	74	40	28	32	69	50	53
27	40		30	50		30	43	42	93	62	74	106	146	91	79	101	70	51	56	53	50	46	25	25
28	47	35	39	G	G		36	39	52	50		51	51	45	58	50	G	34	31	36	33	51	41	68
29		53	52	35	53	37	33	40	53	114	130	59		75	48	48	45	48	53		58	32	34	35
30	58	60	52	59	44	70	58	172		94	68	41		G	54	50	53	47	37	69	102	G	60	69
31		59	59	53	39	26	35	63	78	152	137	92	102	55		72	G		29	34	30	55		53
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	31	31	30	30	31	29	30	30	27	28	25	28	28	30	30	30	27	29	29	30	28	31
MED	47	54	47	36	42	34	40	60	67	75	74	76	78	68	60	56	58	61	53	49	49	48	51	53
U Q	58	59	52	50	53	48	51	74	89	108	114	103	117	83	78	71	73	93	82	68	60	59	59	68
L Q	36	37	33	29	24	29	35	46	53	62	51	51	53	52	51	48	45	48	41	31	27	28	36	49

HOURLY VALUES OF fmin AT Kokubunji

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	13	13	14	13	13	13	13	17	15	30	22	31	28	17	28	14	13	13	13	13	13	14	13
2	13	13	13	13	13	13	13	13	13	28					34	22	14	13	14	13	13	13	13	13
3	13	13	13	13	14	13	13	13	13	29	31	34	33	30	20	15	13	13	13	13	13	13	13	14
4	13	13	13	13	13	13	13	13	15	34	28	31	33	28	20	20	17	13	13	13	13	13	13	13
5	13	13	13	13	13	13	13	13	17	18	21	21	28	23	20	14	15	13		13	13	13	14	15
6	13	13	13	13	13	13	13	13	14	17	28	29	29	26	13	28	15	13	13	13	13	13	13	14
7	13	13	13	13	17	13	13	13	23	17	22	28	30	29	34	17	14	13	13	13	13	13	13	13
8	13	13	13	14	13	14	13	13	13	21	17	24	28	22	21	18	13	13	13	13	14	14	13	13
9	13	13	13	13	13	13	13	13	18	30	24	34	25	34		20	15	13	13	14	14	14	13	13
10	13	13	13	13	13	13	13	13	13	23	29	35	33	21	33	29	20	13	13	13	17	13	13	13
11	13	13	13	13	13	13	13	15	14	30	25		35	35	33	30	15	13	13	15	13	13	13	13
12	13	13	13	15	14	13	28	13	14	20	25		37	36	31	30	13	13	13	13	13	13	13	14
13	13	13	13	13	13	13	13	13	17	29	30	31	33	33	42	33	13	13	13	13	14	13	13	13
14	14	13	13	13	13	13	13	34	13		29	31	35	34	21	29	13	13	13	13	13	14	13	13
15	13	13	14	13	13	13	13	14	18	20	30	30			31	25	14	13	13	13	13	13	13	13
16	13	13	13	13	13	13	13	13	17	17	31	30	30	28	23	18	13	13	13	14	15	15	13	13
17	14	13	14	13	13	13	14	13	15	18	30	30	29	29	15	18	15	13	13	13	13	13	13	13
18	13	14	13	13	13	13	13	13	13	15	26	33	33	34	18	17	13	13	17	13	13	13	13	13
19	13	13	13	13	13	13	18		20	14	30	31		29	17	17	13	13	13		14	13	13	13
20	13	13	13	14	13	14	14	14	17	20	28	29	29	25	25	22	14	13		14	13	13	13	13
21	13	13	13	13	13	13	13	13	13	14		33	34	33	34	31	13	13	13	13	13	13	13	13
22	13	13	13	13	13	33	13	13	13	20	18	31	29	28	18	13	15	13	13	14	14	13	13	14
23	13	13	14	13	13	13	13	13	13	13	22	30	33	30	21	28	13	22	18	14	13	14	13	13
24	13	13	13	15	13	14	13	13	17	21	31	31	31	31	30	41	30	13	13	13	13	13	14	13
25	13	13	13	14	14	13	13	13	17	15	21	34	28	29	28	33	14	13	13	13	13	13	14	13
26	13	13	13	17	13	13	13	15	15	14	34	34	34	35	31	29	13	13	13	13	13	13	13	13
27	13	13	13	13		13	13	13	17	14	29	31	31	28	13	28	17	14	13	17	13	13	13	14
28	13	13	13	13	22		13	15	14	28	45	28	31	28	23	17	13	14	13	13	13	13	13	13
29	14	14	14	13	13	13	13	13	21	22	30	30	25	22	21	23	17	13	13	13	13	14	13	13
30	14	13	13	21	13	13	13	14	14	13	21	25		22	33	14	13	13	13	14	13	14	13	13
31	13	13	13	13	13	14	13	13	15	26	29	29	25	29	29	26	14		13	13	13	13		13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	30	31	30	31	30	29	28	27	29	30	31	31	30	29	30	31	31	30	31
MED	13	13	13	13	13	13	13	13	15	20	29	30	31	29	23	23	14	13	13	13	13	13	13	13
U Q	13	13	13	14	13	13	13	13	17	26	30	32	33	33	31	29	15	13	13	14	13	13	13	13
L Q	13	13	13	13	13	13	13	13	13	15	23	29	29	27	20	17	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A				26	37	42	48	A	A	A	A	A	A		A	A	A		A	A	43	A
2	29	A	A	A	A	A	A		A	46	A	A	A	A	A		57	52	45	51		44	A	34
3	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	61	66	46	A
4		28	28	28	26		36	A		A	46	A	A	A	A	A		55	56	52	50	42	48	39
5	30	25				25	38	A	A	A	52	A	A	A	A			47		A	52		42	A
6	42	39	37	34	32	34		A	62	A	A	A	A	A	A	54	A	A	58	A	A	A	A	A
7	A	A	A	A	A	A	A	A	54	55				A	A	A	68	66	58	41	36	42	42	
8		A	37	32			31	50	42	44				55	A	A		A	47	47	46	43	40	37
9	34	32	A	28	26		37	43	57	56		41				55	56		52	48	50	42	A	A
10	A		36	32	32	34	35	A	A	A	61	52		A	A	A	62	62	58	50	48	42	36	A
11	A	A	A	A	29	A	A	48		A	A	A	A		A	54	56	50	47	48		54	36	30
12	32	30	30	30	26		42	40			45				A	A	55	66	70	66	54	66	64	51
13	48		48	41	A	30	36	A	46	A	A	A	A	A	A	61	A	A	A	A	50	45		37
14	40	40	34	36	A		A	52	49	A	A	A	A	A	A	58	55	43	58	52	51	A		A
15	28	28	26	28	29	30	42	36	44	A	A							52	39	50	50	51	40	44
16	42	38	38	42	34	29	36		A			A	A	A	A		A	A	78	A	51	43		
17	A	A	30	28	26	28	45	35	A	A	A	A	A		A	52	57	61	68	70		A	A	A
18	A	A	A	A	A	A	A	A	A	44	A	A	49	A	A		A	41	A	59	54	53	32	34
19	32	30	34	34	A	A	A	A	A	A	A	A	A	A	A	A	A			A	A	A	A	A
20	A	A				23	38	42		44	A	A	A	A		A	A	56	71	62	52	50	37	37
21			28	28			36	49	44	42	A	A	A	A	A	A	A	A		61	51	52	50	47
22	A	A	A	A	26	28		54	52	54	A	A		A	A	A	A	57	73	71	A		34	34
23	A	A	A	A	26	A	37	A	A	A	A	A	A	A		A	A	52	A	A	43	54		A
24		A	29	26	25	A	A	A	54	A	54	A	A	A	A	71	A	A		53	54	53	A	
25		A	A	A	A	A		41	50	A	A	A	A	A	A	A	A	A	A	A	73	66	34	
26	29	26	28				A	44	48		A	A	A	A	A	52	58	A	45	55	58	51	42	
27	A	26	29	A		A	A	A	A	A	A		A	A			47	49	A	A	A		42	38
28	39	37	32	32	31	29	34	48	44		52		A	A	A	49	A		44	46	47	36	34	A
29	32	A	A	A		A	A	A	A		A	A		A	A	57	58	49	A		44		38	40
30	37	A	28	A		A	35	36	50	56	60		A		A	A	A	A	A	A	48	45	A	A
31	A	A		A	A		A	A	A	A	A	A	A	54	A	A	A	A	A	A	A	52	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	14	12	17	15	13	11	16	15	15	9	7	2	1	2		10	11	16	17	18	22	22	20	14
MED	33	30	30	32	26	29	36	43	49	46	52	46	49	54		54	57	52	58	52	50	50	40	37
U Q	40	37	36	34	31	30	38	49	54	55	60	52	24	55		58	58	59	69	61	54	53	42	40
L Q	30	27	28	28	26	26	35	40	44	44	46	41	24	54		52	55	49	46	48	48	43	35	34

HOURLY VALUES OF fEs AT Yamagawa

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	50	50	32	G	36	G	31	36	41	65	68	74	78	101	133	135	95	86		81	79	58	34	28
2	32	46	72	53	84	60	55	44	59	46	53	61	50	48	40	G	G	39	41	30	36	43	46	28
3	56	57	59	45	45	70	40	67	83	94	106	112	92	65	76	71	70	86	94	84	53	58	34	46
4	38	28	G	G	G	G	29	80	50	66	46	90	65	64	49	57	46	G	33	G	25	30	30	48
5	27	G	G		28	G	31	58	70	150	53	47	56	62	64	G	46	46	53	53	55	46	40	71
6	57	36	31	25	29	30	31	44	58	83	72	90	116	82	50	47	77	109	114	116	92	91	58	68
7	85	60	67	59	54	54	59	80	54	45	51	46	G	51	52	60	G	G	34	24	29	34	36	46
8	54	58	48	33	39	G	32	48	45	39	40	41	47	49	78	74	64	53	43	30	G	G	33	36
9	28	36	57	G	G	33	30	43	44	43	42	42	G	50	51	53	57	58	40	33	48	69	59	65
10	50	40	23	22	G	28	32	55	72	110	44	G	G	61	55	122	48	51	37	G	G	30	28	59
11	92	59	58	60		71	34	44	70	116	110	57	68	G	58	47	48	37	G	43	49	34	24	G
12	G	G	G	G	G	G	29	35	45	39	41	G	G	42	54	58	G	42	39	41	44	54	40	50
13	44	49	38	59	58	32	30	49	56	59	84	59	65	50	68	57	66	90	54	72	36	28	46	40
14	34	36	24	26	39	35	42	47	53	70	65	77	69	62	82	50	45	56	G	G	34	59	36	32
15	24	G	G	G	G	G	33	33	39	83	49	44	41	49	42	45	44	G	42	53	25	G	G	G
16	G	G	28	G	G	28	28	39	70	58	70	75	163	68	81	112	102	110	76	81	39	34	45	54
17	42	56	30	24	G	G	33	38	72	70	102	64		59	55	44	45	48	55	40		68	59	53
18	53	47	48	39	41	48	58	84	66	48	63	60	G	48	52	52	101	47	66	61	43	49	32	27
19	G	G	39	23	38	57	58	68	149	85	67	77	131	116	128	128	82	124		116		153	83	58
20		56	32	G	G	39	32	56	90	49	84	66	70	113	47	61	62	46	54	43	51	39	36	29
21	43	33	28	33	31		26	G	43	46	89	53	56	65	68	67	79	87		54	56	56	59	54
22	71	59	48	38	25	G	49	46	48	56	100	130	127		145	106	58	49	33	40	67	39	29	27
23	48	48	58	72	49	58	32	47	74	91	82			116		56	158	76	64		92	32	45	47
24	38	46	28	G	G	26	38	60	106	81	48	82	76	125	86	61	78	75	64	60	27	54	55	38
25	48	60	71	60	36	39	38	38	40		53	67	83	79	58	46	69	57	70	77	81	33		36
26	G	48	G	G			39	42	69		50	66	55	57	88	49	48	105	53	G	27	58	32	44
27	66	58	55	59	32	39	43	71	58	80	125	100		50	G	G	38	36	60	70	77	44	27	32
28	34	59	56	32	44	48	28	36	41	46	46	64	101	150	52	45	53	51	34	33	36	28	G	59
29	48	50	59	38	30	54	80	61	104		74	51	42	48	56	40	50	42	48	56	45	28	25	G
30	30	43	24	40	28	40	26	36	44	47	40	52	46	46	58	60	65	92	91	78	65	36	58	
31	46	33	32	34	56	G	34	113		83			76	52	52	62	85	104	123	59	69	79	65	58
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	30	29	29	31	31	30	28	30	29	28	30	30	31	31	31	28	30	29	31	30	30
MED	44	47	32	32	31	33	33	47	58	66	64	64	65	60	57	57	58	53	53	53	45	43	36	45
U Q	53	57	57	45	42	51	42	61	72	83	84	77	80	79	78	67	78	87	65	72	66	58	55	54
L Q	30	33	24	G	G	G	30	38	45	46	48	49	44	49	52	46	46	42	38	33	31	32	30	29

HOURLY VALUES OF fmin AT Yamagawa

JUL. 2008

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

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

HOURLY VALUES OF foF2 AT Okinawa

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A			A	A	34	36	52	56		53	A	A	A	49	61	66	64		54	A		
2	32		A	A	A	A	A	A	56		A	A	A	A		53	57	54	56	61	66		A	A
3			A	A	A		31	A	54	A	A	A	A	A	A	A	A	58	A		74	76		A
4			29	29	30	29	37	48	A	54	A	A	A	A	A	58	65	72	63		44	A		34
5	31	30	29				40		A	A	A	A	A	A	A		A	57	58	62	54	48	42	40
6	34	32	28	29	29		A	38	61		A	A	A	A	A		A	A	A	58	A	A	A	A
7	A	A	A				A	A	A	A	A			A	49	A	76	77	55	46	46	40	42	
8	34	30	32	A	A	A	A	54	50				54			66	64	56		48	42	43	35	37
9	34	A	A	30	28		32	39	52			A				61	58		62	51		34	31	A
10	A	34		26		A	30	51	45	47	C	C		A	A		62	68	58	45	44	42	32	34
11		30	30	A	A	A	31	54	48	A	A				49	52	49	A	A	60	51			
12	30	30	28				34	41	46		57						57	63	64	67	72	71	52	54
13	42	42	A	41	30	28	A	49	A	A	A	A	A	A		61	A	A	60	A	A	47	42	
14	32	32	30	31		A	A	68	A	A	A	A		A	A	49	61	71	75	66	64	71	42	36
15		35	34	31	24		32	46	44				A					56	61	53	51	44	43	43
16	44	42	36	32	23		31		48	A	A	60	A	A	A	A	A	84	77	52	A	34	C	C
17	C	C	C	C	C	C	C	C	C	C		A	A	A	A		61	67	77	86	71	A	A	A
18	A	A	A	A	A		A	A	A	A	A	A				52	A	65	66	67	71	42	34	30
19		A	A	28	26	A			38	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
20	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	54	66	72	A	A	A	A	34
21				A			38	44		A	A		A	A	A	A	A	A	A	A	54	A	48	50
22	A	A	A		A		41	A	A	56	A	A	A	A	A	A	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	51	59	64	66			
24	A	A	A		A		A	A	A	C	C	C	C	C	C	C	C	C	62	72	62		A	A
25	A		A	A	A	A	A	34	62	C		A	A		A			A	58	66	87	A	A	A
26	C	C	C	C	C	C	C	C	C	C		A		A	A	A	63	74	A	78	74	66	47	25
27		A	A	A	A	A	A	A	A	A		A	A	A	A	54	51	48	47	55	55			35
28		35					30			A	56	64	A	A	A	A	58	52	63	55	43			
29			A	A	A	A	A	A	50	55	A		A	A		64	72	63	38	35	41	41	32	31
30		30				A	A	34	58	57		64	A		62	60			A	A		52	42	A
31	A	A				A		A	A		A	A	A	A	A	A	A	A	A	A	A	48	36	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	9	12	9	9	7	2	13	14	15	6	2	4	1		3	12	16	20	21	21	22	16	15	14
MED	34	32	30	30	28	28	32	45	50	56	56	62	54		49	56	61	64	62	60	54	46	42	34
U Q	38	35	33	31	30	29	37	51	56	56	57	64	27		62	61	63	69	65	66	71	59	43	40
L Q	31	30	28	28	24	28	31	38	46	54	56	56	27		49	52	57	56	58	51	46	41	34	31

HOURLY VALUES OF fEs AT Okinawa

JUL. 2008

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	30	45			35	26	G	32	47	54	50	58	70	98	71	47	G	35	G	59	52	71	39	38
2	24	32	36	67	48	40	112	60	40	42	60	49	49	49	G	G	39	46	52	36	11	30	38	38
3	33	58	49	40	25		G	44	60	64	90	152	171	78	78	68	61	59	88	73	50	48	40	69
4	34	29	24	G	G	G	G	33	60	45	59	63	82	52	71	52	56	41	47	52	34	46	25	G
5	G	24	25	G	27	28	26	41	52	59	94	66	50	56	49	46	54	48	43	26	G	31	45	40
6	G	G	G	G	G	G	31	43	51	53	81	60	96	93	90	51	66	85	111	111	116	88	69	59
7	56	60	51	34	25	36	52	71	84	179	92	G		54	52	69	60	47	52	40	30	G	G	
8	G	67	G	52	70	39	51	66	G	G	40	42	51	49	56	49	G	48	62	40	39	G	G	G
9	G	38	57	G	30	26	G	37	42		G	46	G	G	G	40	50	50	57	43	44	24	29	80
10	48	49	G	G	G	58	29	40	41	40	C	C		54	74	52	G	35	46	37	26	28	30	39
11	39	37	51	57	48	40	40	51	56	60	153	40	G	G	42	G	G	51	61	40	G	34	30	G
12	G	G	G	G	24		G	G	39	37	40	G	G	G	G	G	G	G	31	35	35	33	28	40
13	29	56	70	40	33	30	52	38	56	49	57	71	50	53	50	57	70	68	61	56	70	40	26	43
14	38	60	38	32		46	53	56	81	84	97	50	49	81	76	44	52	36	32	40	27	G	G	30
15	25	26	G	G	G	G	G	32	39	G	G	G	51		43	47		36	G	33	G	G	G	G
16	G	G	G	G	G		26	38	44	72	142	72	59	52	64	66	72	69	70	60	50	36	C	C
17	C	C	C	C	C	C	C	C	C	C	78	52	72	78	75	39	59	53	44	50	50	49	40	46
18	49	40	43	38	28		79	69	69	50	49	58	G	G	43	49	62	59	52	38	36	24	26	31
19	27	44	56	40	G	39	47	39	45	92	131	112	124	88	73	61	52	55	81	116	154	81	54	69
20	69	27	87	65	50	35	59	104	147		107	58	62	87	77	84	58	61	83	137	147	84	56	34
21		34	41	49	26	27	28	35	45	58	85	51	89	82	80	69	69	75	81	61	45	59	58	44
22	48	48	38	26	39	G	31	60	93	38	72	134	136	95	128	118	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	54	G	32	32	48	32	G
24	40	30	30		26		71	153	49	C	C	C	C	C	C	C	C	C	39	32	35		46	36
25	50	G	51	58	32	55	39	36	36	C	40	64	50		49		G	55	52	40	43	49	40	36
26	C	C	C	C	C	C	C	C	C	C		72		53	48	60	61	61	89	51	37	28	G	G
27		34	28	37	36	53	45	51	92	63	53	88	104	80	112	G	G	G	34	34	34	G	39	28
28	G	G		G	34	G	25	38	41	47	51	G	52	71	48	53	46	41	50	36	27	26	28	29
29		G	39	37	35	48	84	72	39	53	67	G	66	65	51	G	G	58	36	40	G	G	G	G
30		28	29	28	36	32	35	33	42	48	65	56	50	44	G	49	46	48	59	79	32	32	41	57
31	43	33				37	27	60	72	55	60	81	163	178	106	76	54	82	88	112	59	56	39	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	24	28	25	25	26	23	28	28	28	24	27	28	26	27	29	28	27	29	30	30	30	29	29	28
MED	32	34	38	34	29	35	33	42	48	53	65	58	56	56	56	50	52	51	52	40	36	33	32	36
U Q	45	46	51	44	36	40	52	60	64	61	92	71	89	82	76	63	61	60	70	60	50	49	40	43
L Q	G	25	12	G	24	26	25	36	41	43	50	44	50	49	45	42	G	41	39	36	27	24	25	G

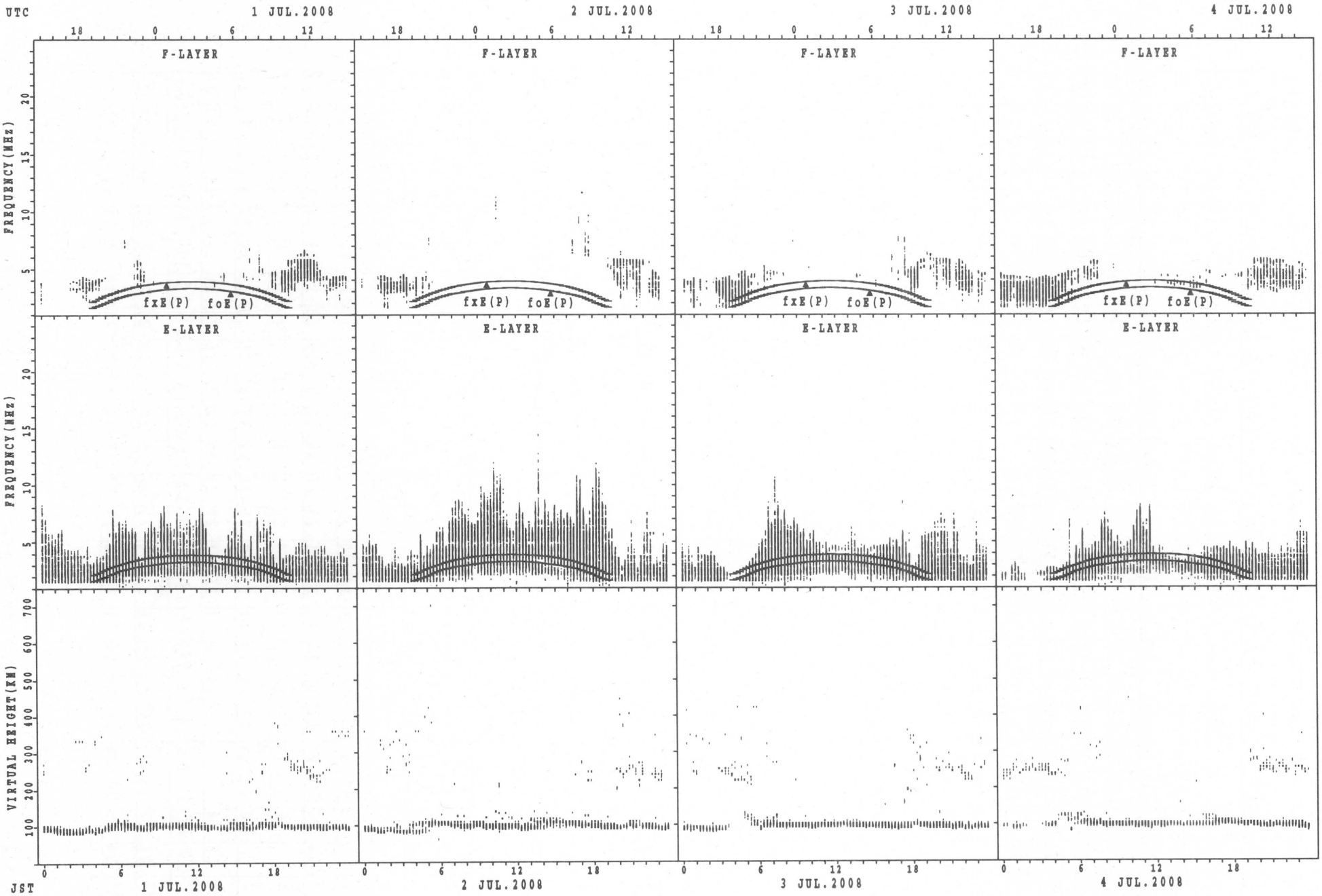
HOURLY VALUES OF fmin AT Okinawa

JUL. 2008

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

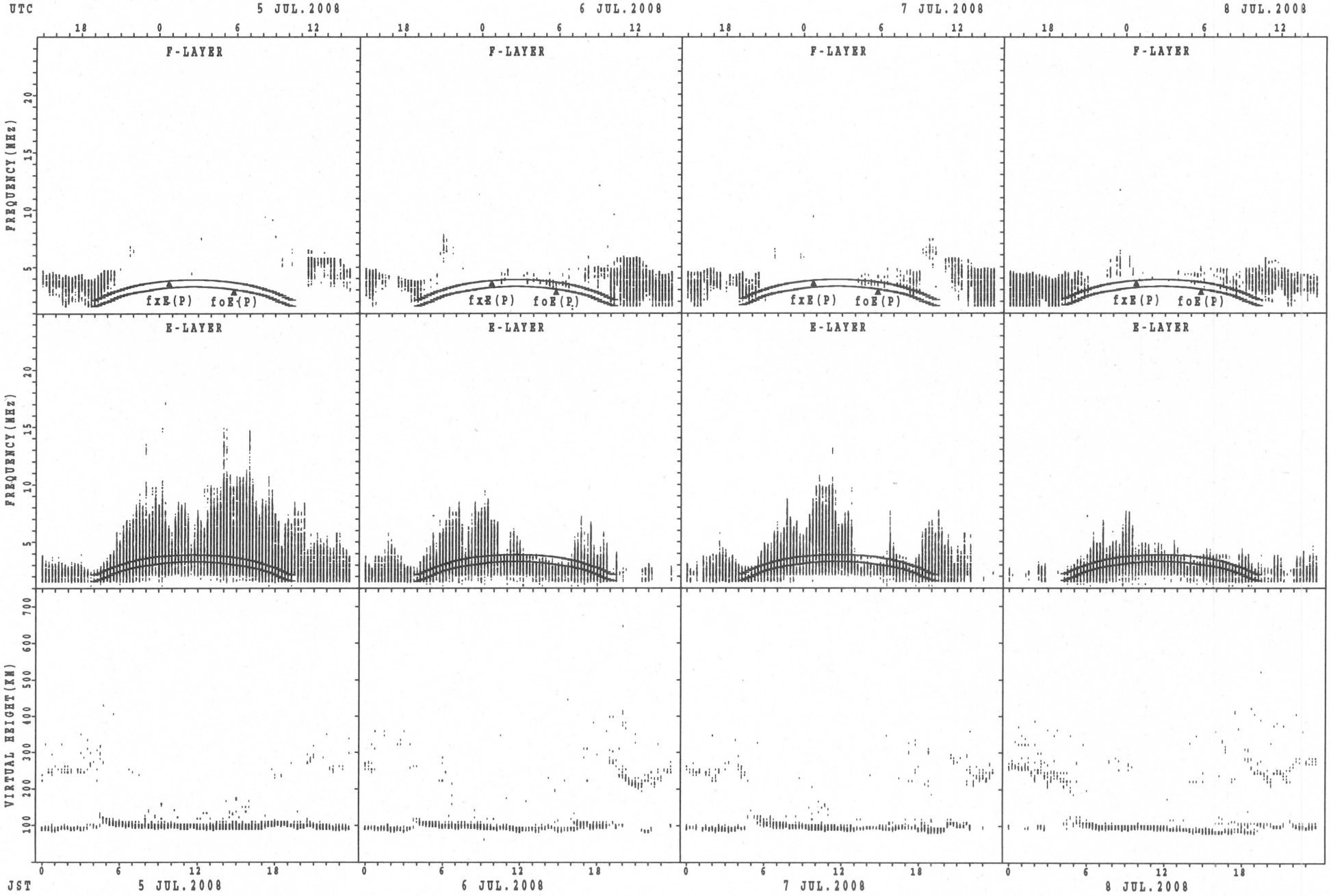
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14			14	15	17	14	14	15	22	30	26	28	28	21	17	15	14	14	14	15	14	15
2	14	15	15	14	14	15	14	14	14	17	21	17	29	30	28	29	21	14	14	14	14	14	14	14
3	14	15	14	14	15		14	16	17	21	21	26	32	30	24	23	21	14	14	14	14	14	14	14
4	14	15	15	20	17	15	16	14	14	17	21	24	26	28	23	27	20	14	14	14	14	14	15	15
5	14	16	15	15	16	14	14	14	14	16	22	23	26	28	27	22	21	14	14	14	14	14	15	15
6	14	14	15	15	15	16	14	14	14	15	21	34	24	28	27	24	24	16	14	14	14	15	15	14
7	14	14	14	14	14	15	14	14	15	18	22	24		24	26	23	21	15	14	14	14	16	15	
8	15	14	18	14	15	14	14	14	14	18	23	22	21	34	29	28	44	27	14	14	14	16	16	15
9	21	15	16	14	14	14	17	14	15		24	27	27	27	26	22	21	14	14	15	15	17	15	14
10	14	14	16	14	14	14	14	14	15	21	C	C		35	34	22	21	15	14	14	14	14	15	14
11	14	14	14	14	14	14	14	14	15	20	23	24	26	28	26	23	17	15	14	14	14	14	15	18
12	16	16	16	16	16		16	14	14	18	18	23	27	28	27	22	20	16	14	14	14	14	14	14
13	15	14	14	14	14	14	14	14	14	20	33	24	35	35	24	32	23	16	14	14	15	14	15	14
14	14	14	14	14		14	16	14	14	20	22	23	28	29	23	22	20	14	14	14	15	15	18	14
15	15	16	16	15	18	15	17	14	14	18	26	28	29		28	26		14	14	14	14	15	15	17
16	15	15	15	15	14		15	14	15	23	23	28	28	22	27	23	18	15	14	14	14	14	C	C
17	C	C	C	C	C	C	C	C	C	C	23	32	34	26	23	24	18	15	14	14	14	14	14	14
18	14	14	14	14	16		14	14	17	15	23	24	29	26	23	23	15	14	14	14	15	14	15	14
19	16	14	14	14	14	14	14	14	14	17	21	26	29	35	24	22	20	14	14	14	16	14	14	15
20	15	15	15	14	14	14	14	14	14		22	24	24	27	22	22	17	14	14	14	15	14	15	15
21		14	15	14	14	14	14	14	14	15	15	34	36	36	36	33	20	14	14	14	14	14	14	14
22	14	14	14	23	15	15	14	14	14	21	23	28	29	29	28	22	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	20	18	15	14	15	15	16
24	14	15	15		15		15	14	17	C	C	C	C	C	C	C	C	C	18	14	14		15	15
25	15	15	15	14	14	15	14	14	14	C	29	32	35		39		21	16	14	14	15	15	15	15
26	C	C	C	C	C	C	C	C	C	C		34		36	35	32	29	18	14	14	14	15	15	17
27		21	15	15	14	15	16	14	16	20	29	32	33	30	30	43	17	16	14	14	15	17	14	14
28	18	26		21	14	17	16	14	17	21	29	46	30	28	29	28	23	17	14	14	15	16	15	14
29		18	17	15	15	15	15	14	15	18	23	30	28	28	28	22	42	14	14	14	18	15	15	15
30		16	15	14	17	14	14	14	17	24	26	28	30	27	45	35	30	15	14	15	14	15	15	14
31	15	14				14	14	14	15	21	27	29	29	28	28	26	21	15	14	14	15	15	14	20
	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	24	28	25	25	26	23	28	28	28	24	27	28	26	27	29	28	27	29	30	30	30	29	29	28
MED	14	15	15	14	14	14	14	14	14	18	23	28	29	28	27	23	21	15	14	14	14	15	15	14
U Q	15	15	15	15	15	15	16	14	15	21	26	31	30	30	29	28	23	16	14	14	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	17	21	24	26	27	24	22	18	14	14	14	14	14	14	14

SUMMARY PLOTS AT Wakkanai

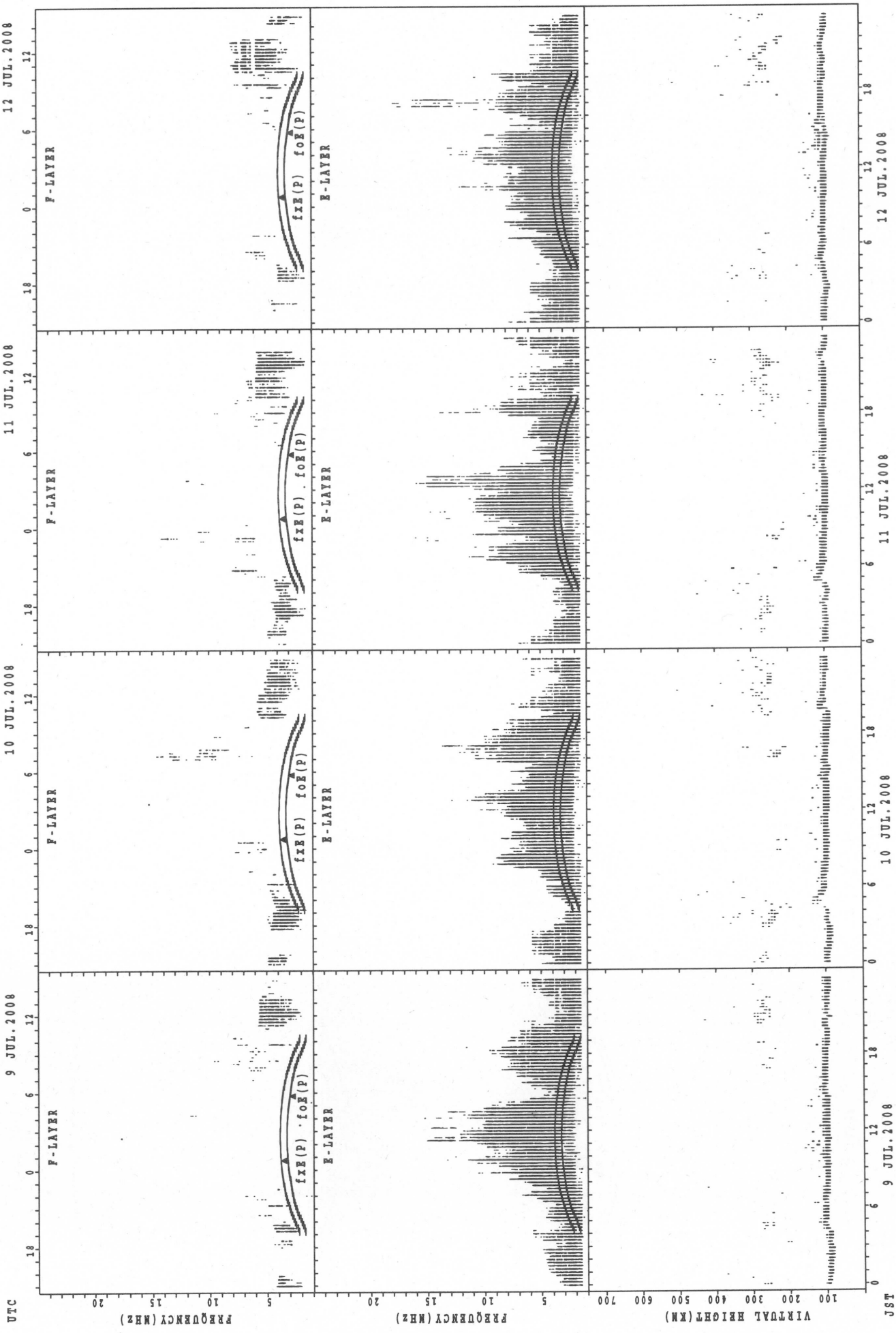


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

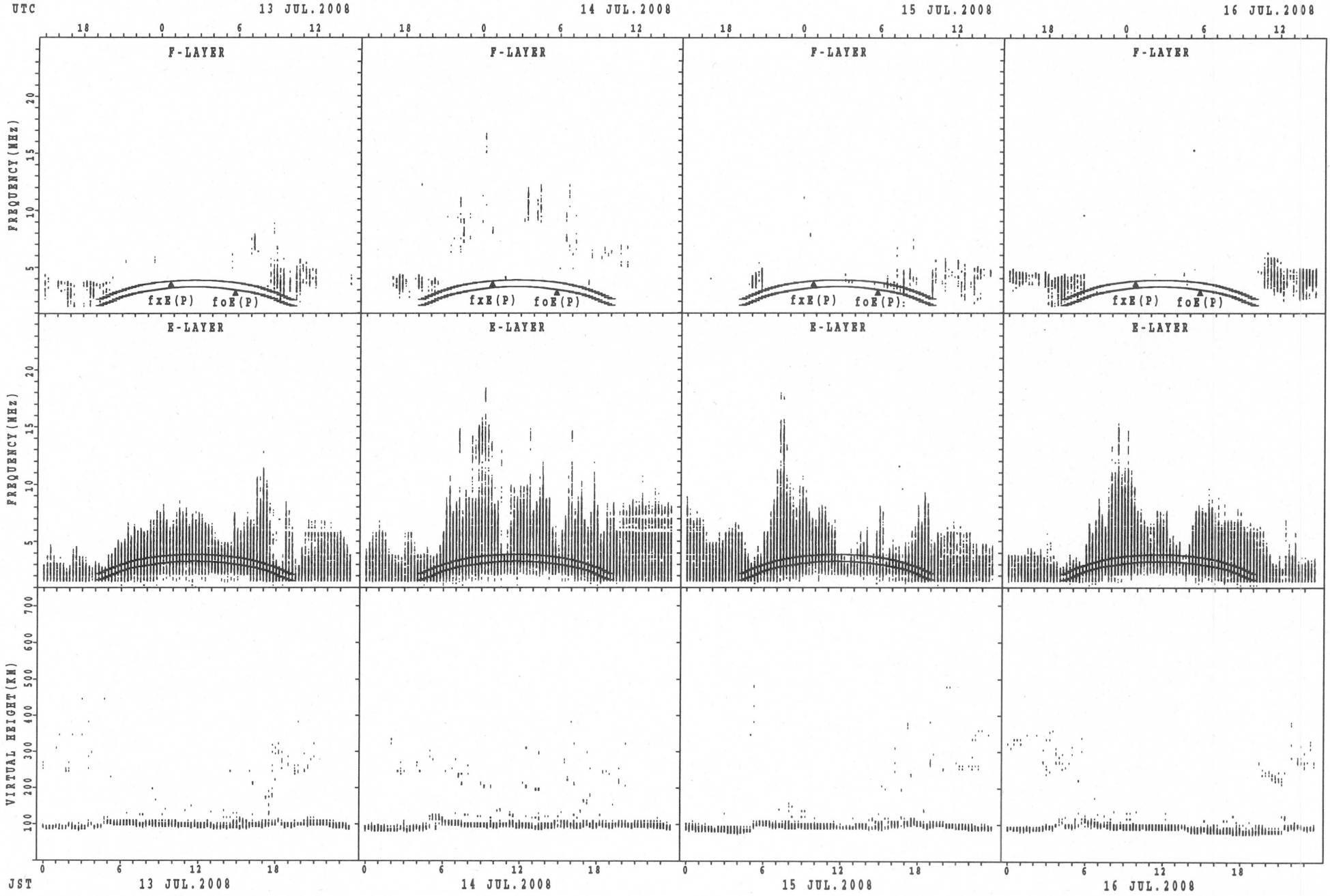
SUMMARY PLOTS AT Wakkanai



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

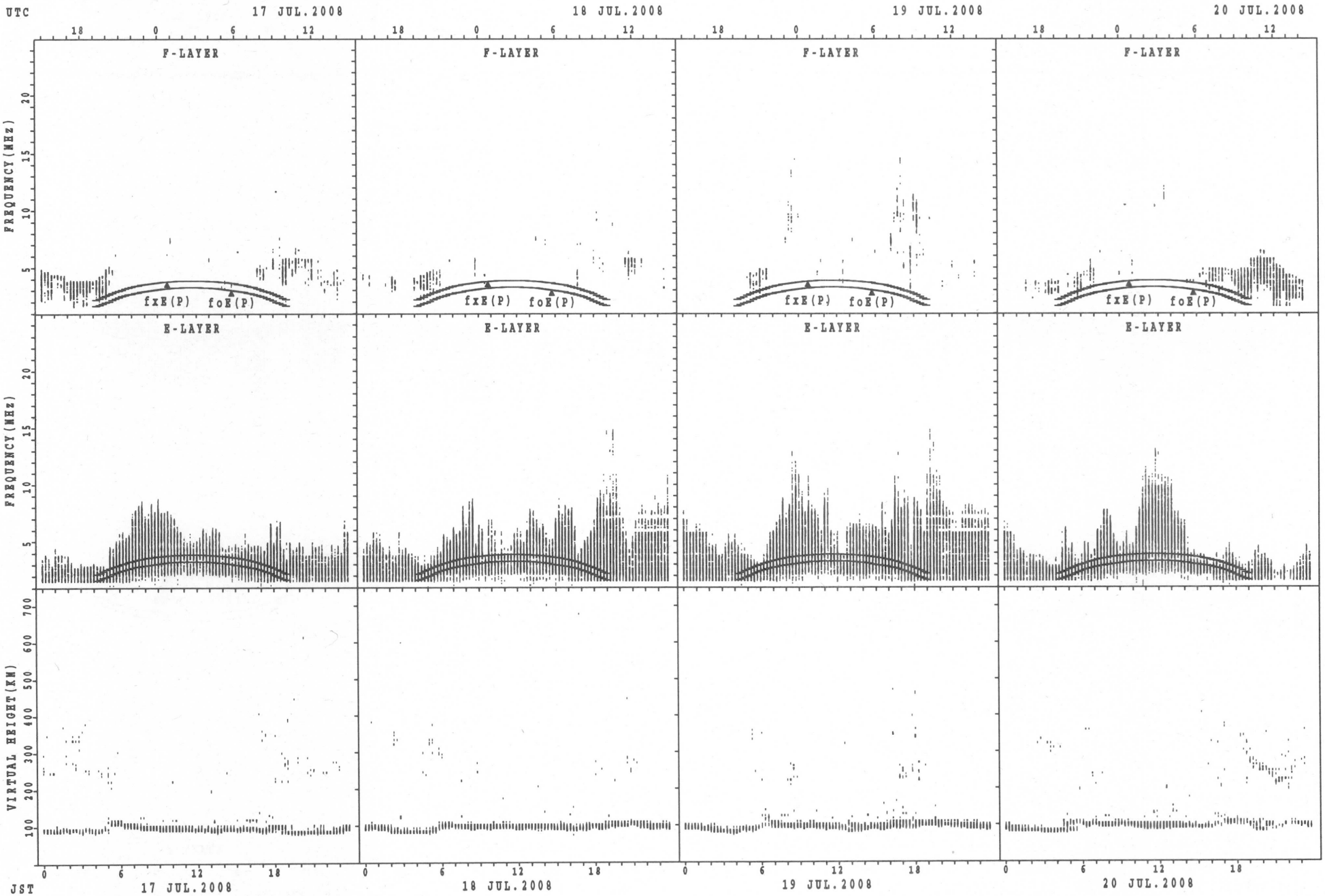

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 JUL.2008
10 JUL.2008
11 JUL.2008
12 JUL.2008
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



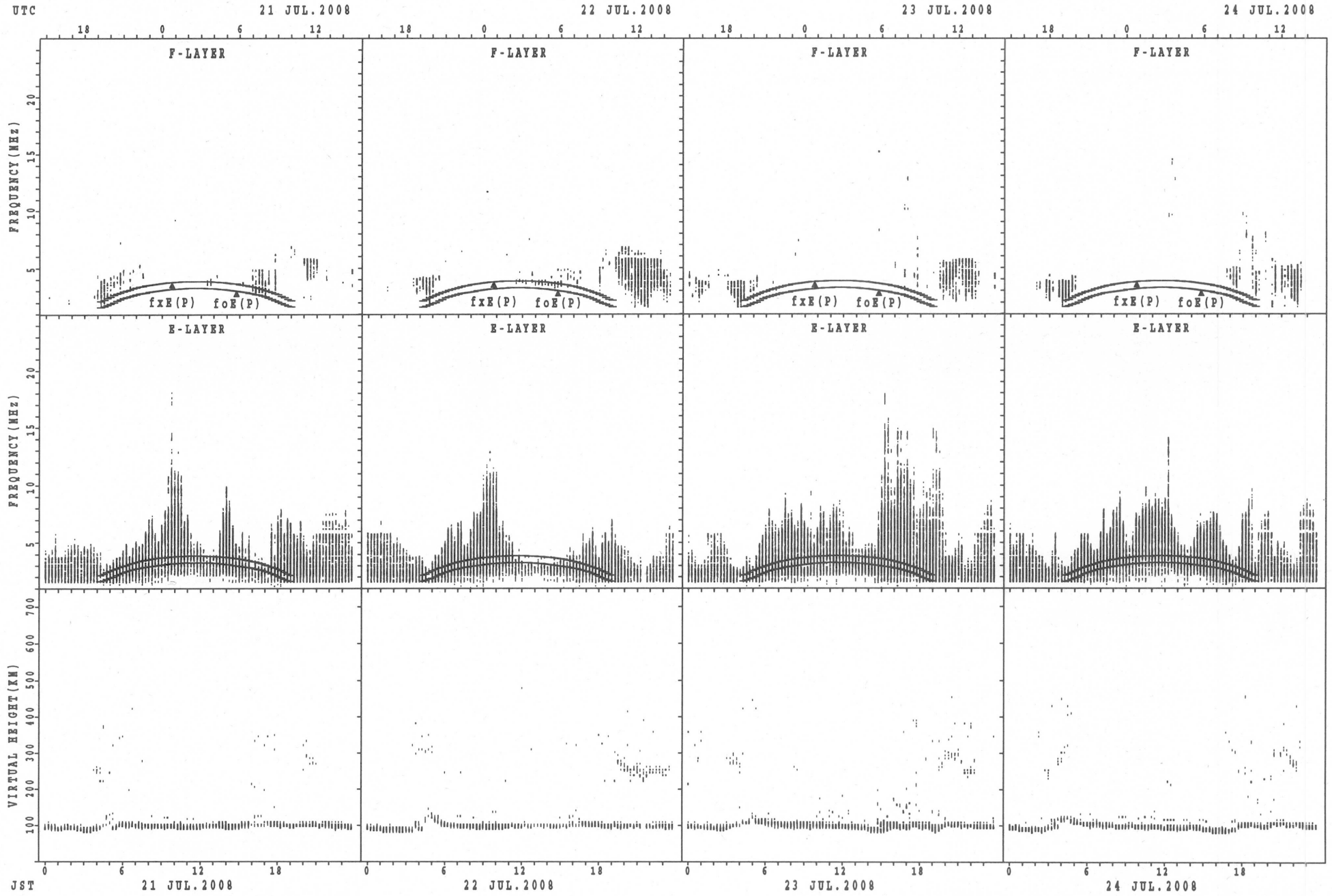
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



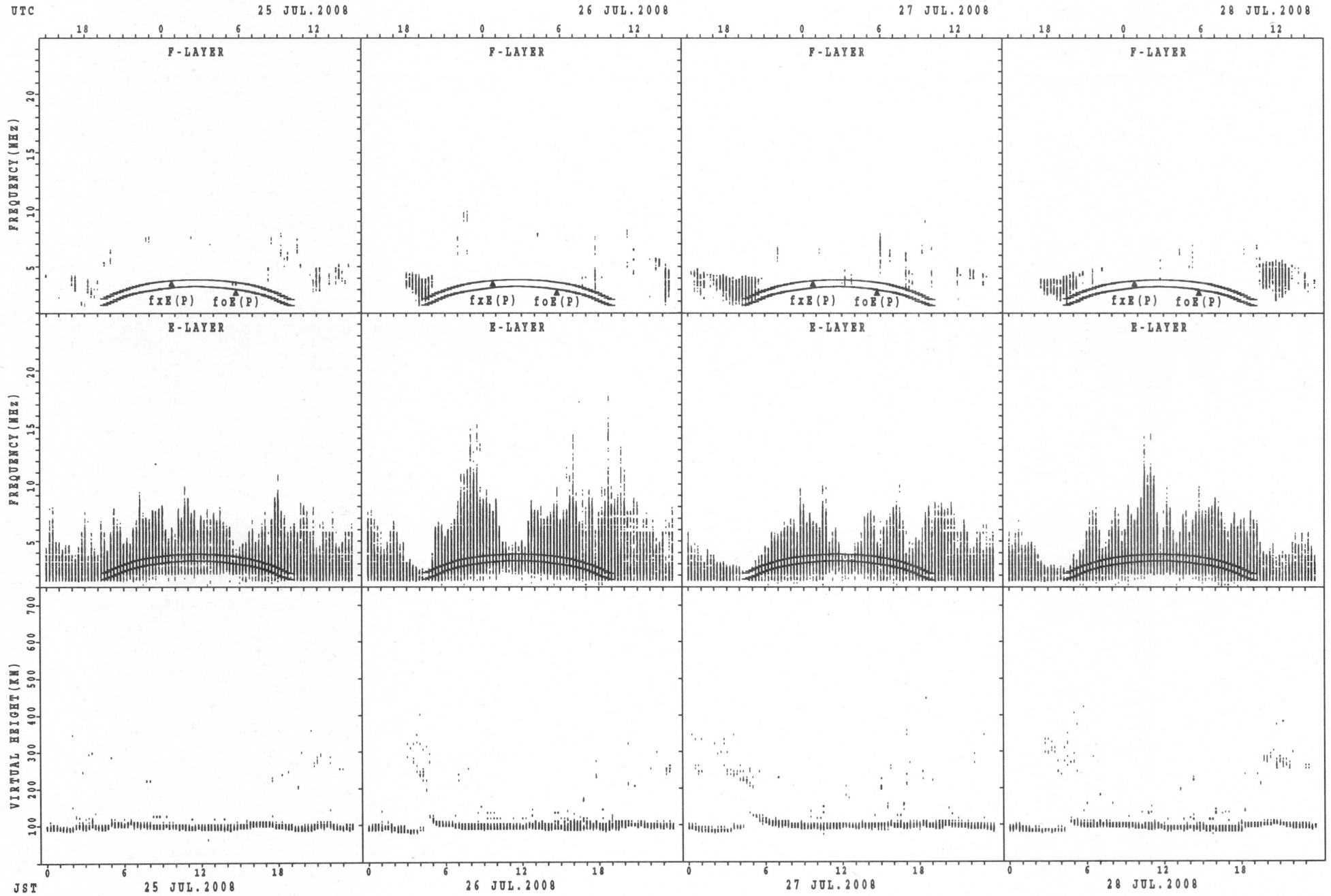
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



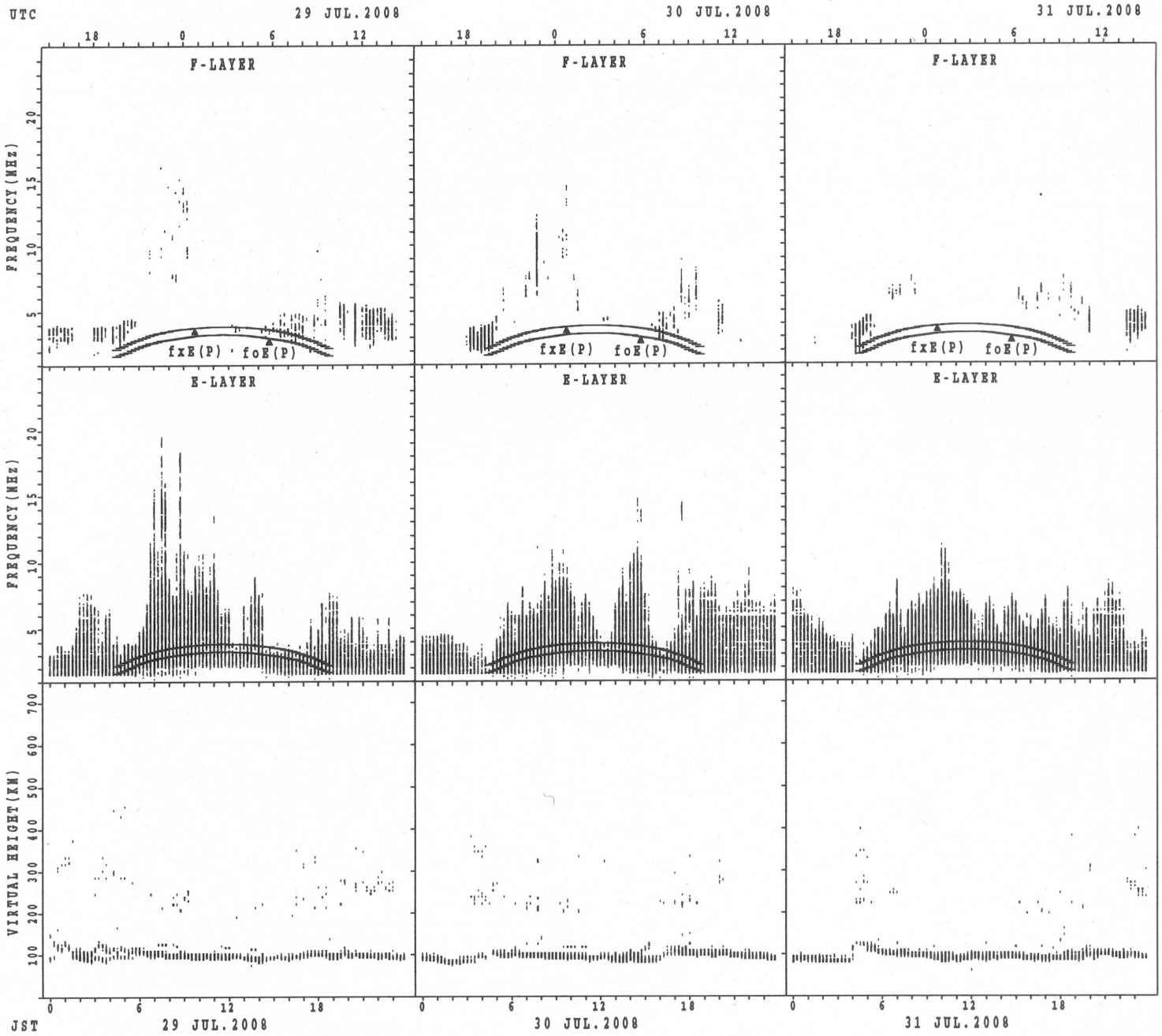
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



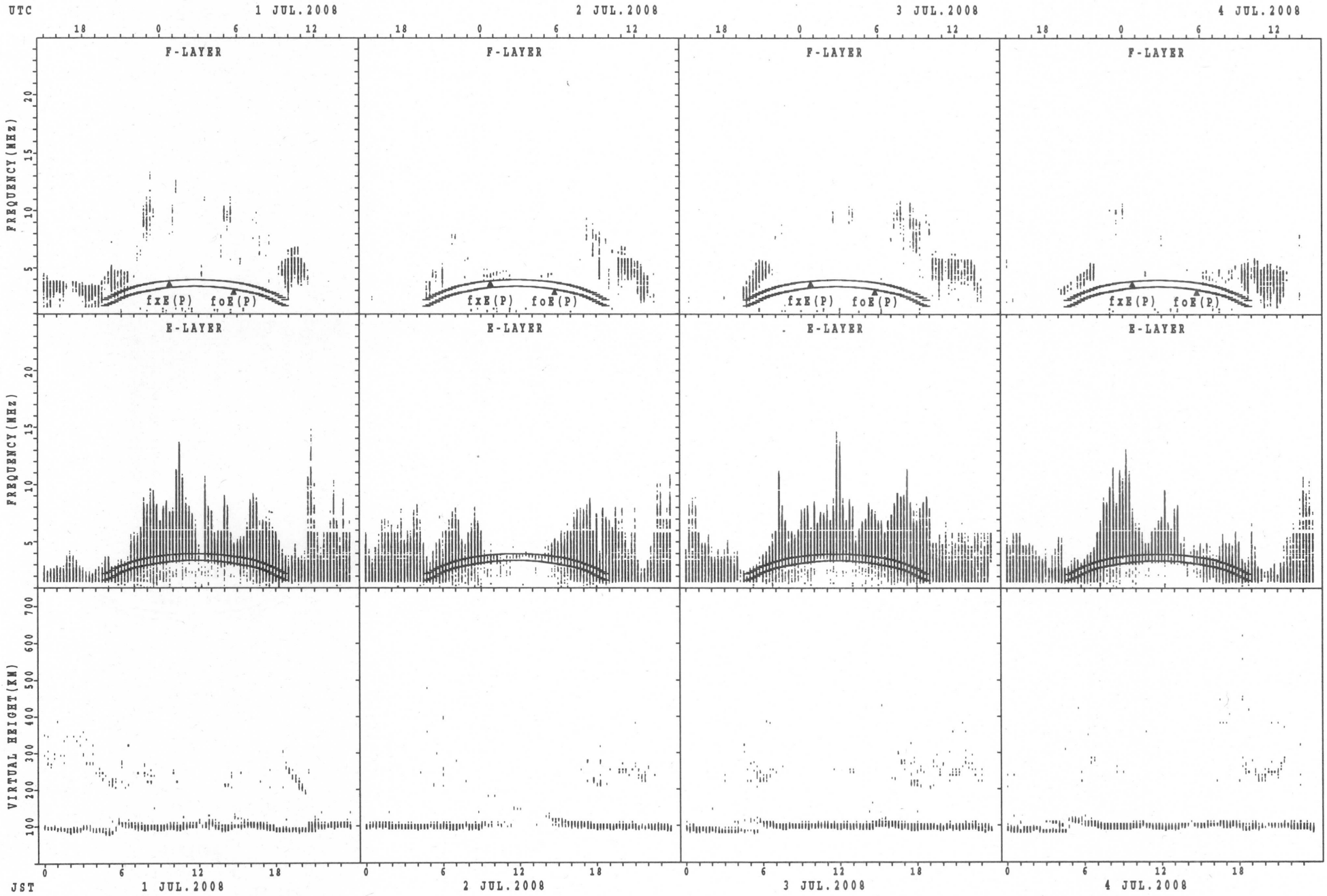
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



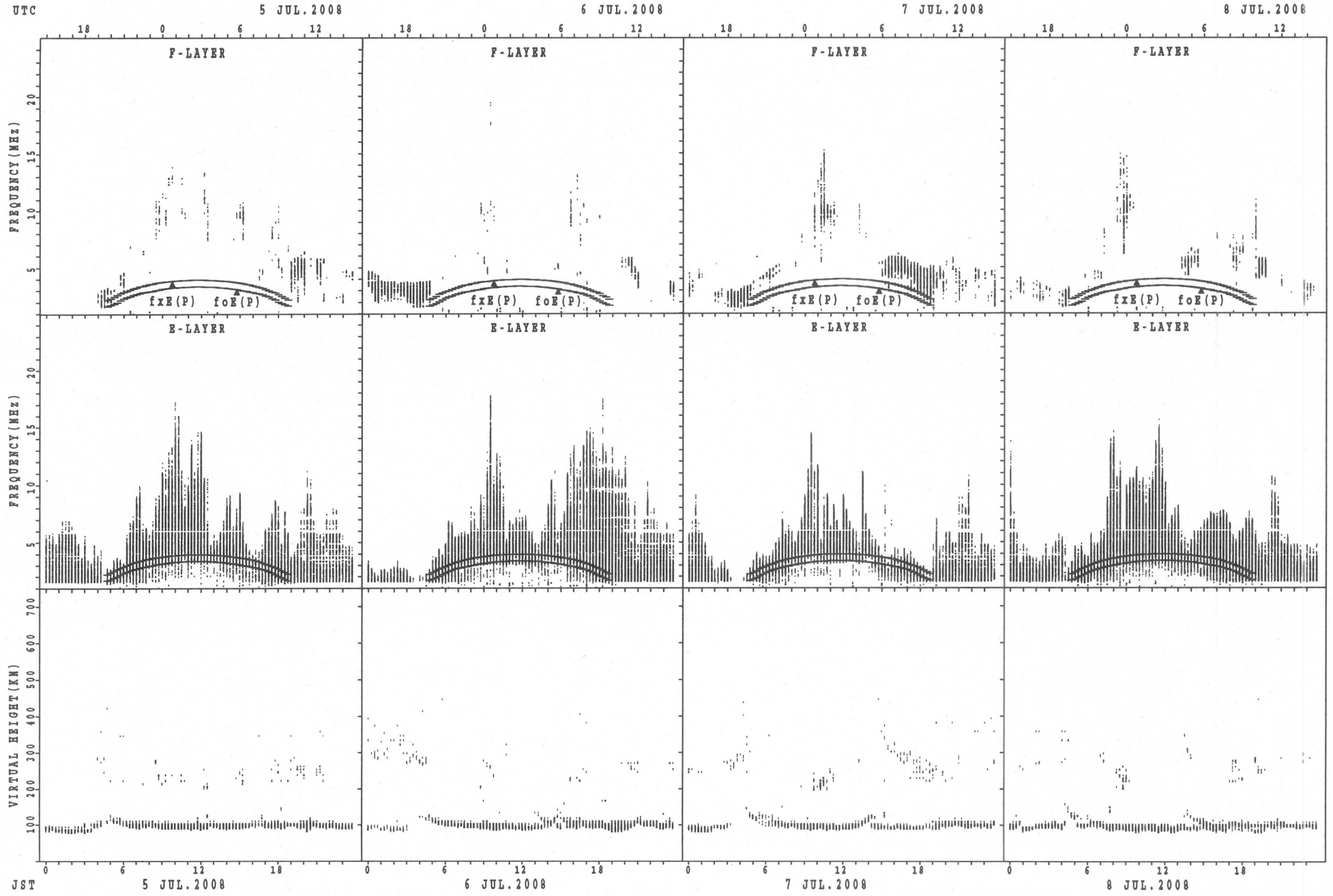
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



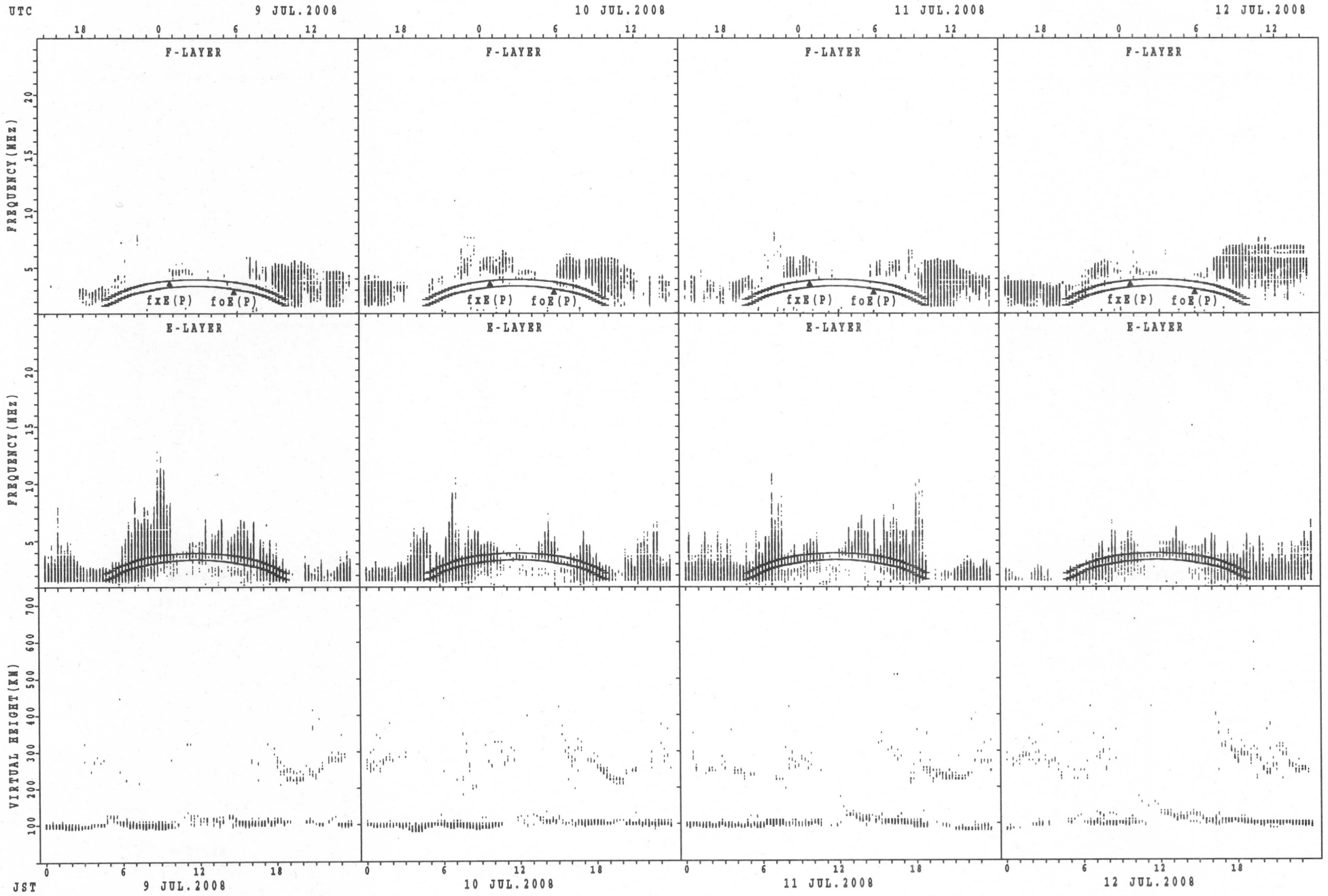
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



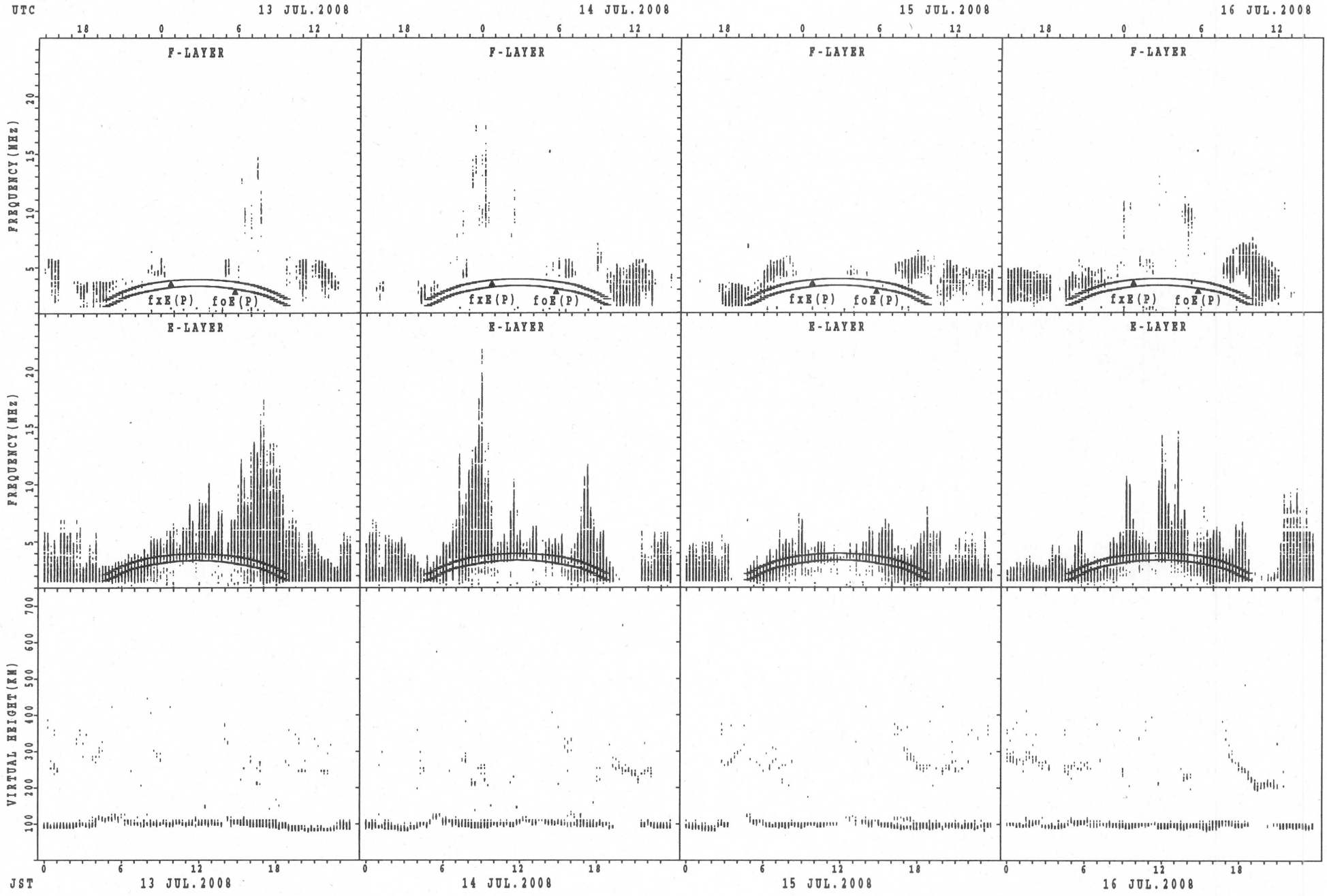
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



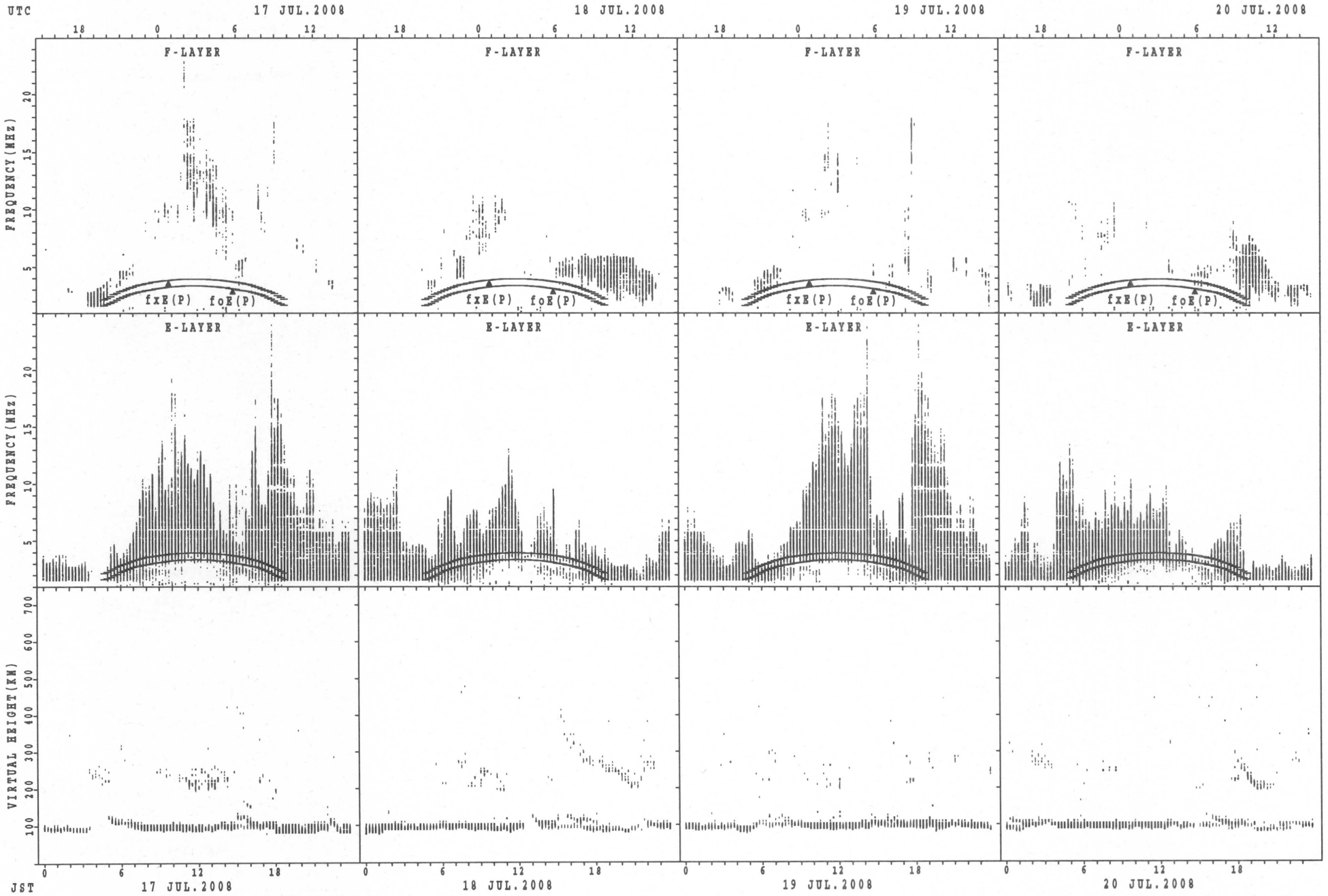
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



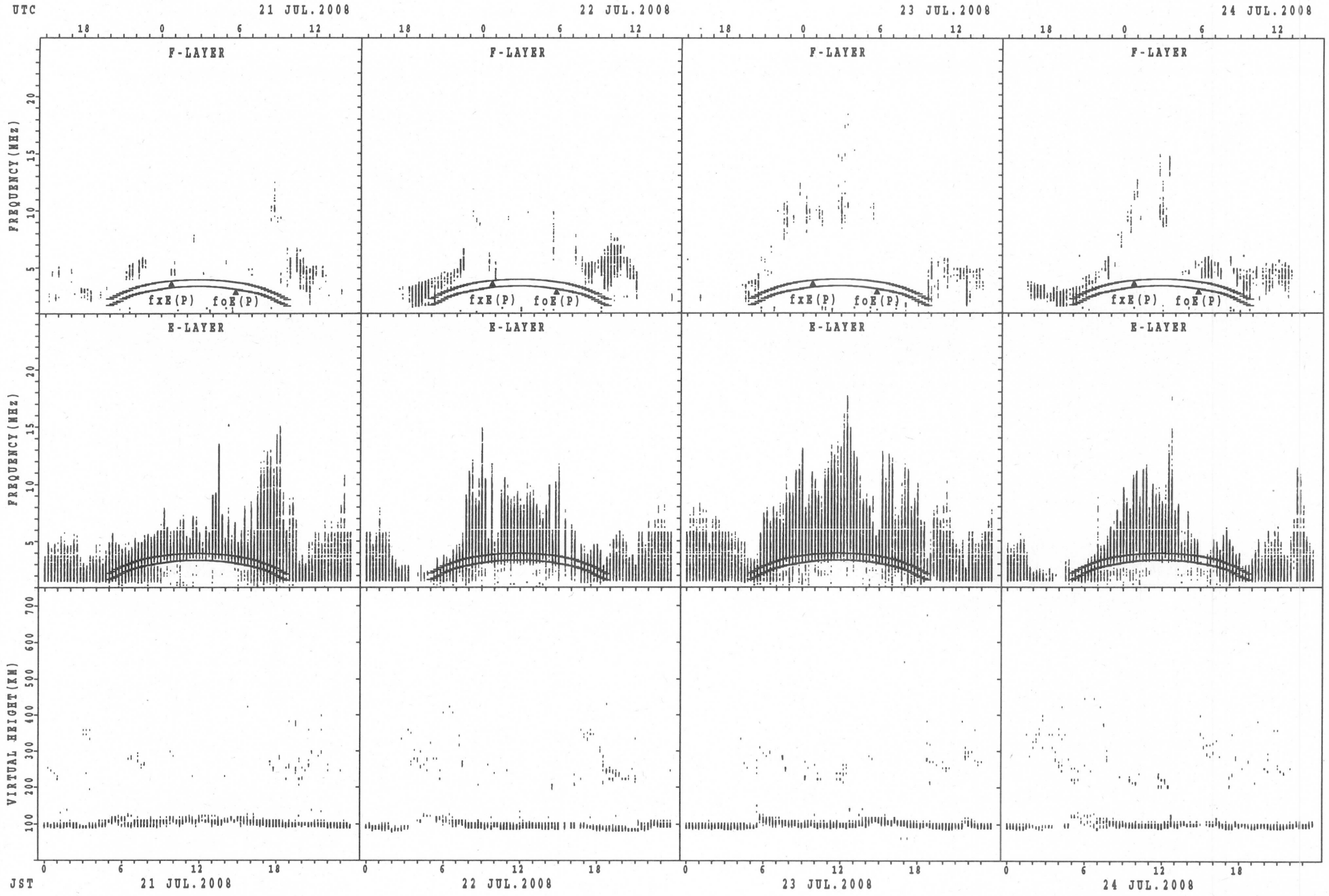
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



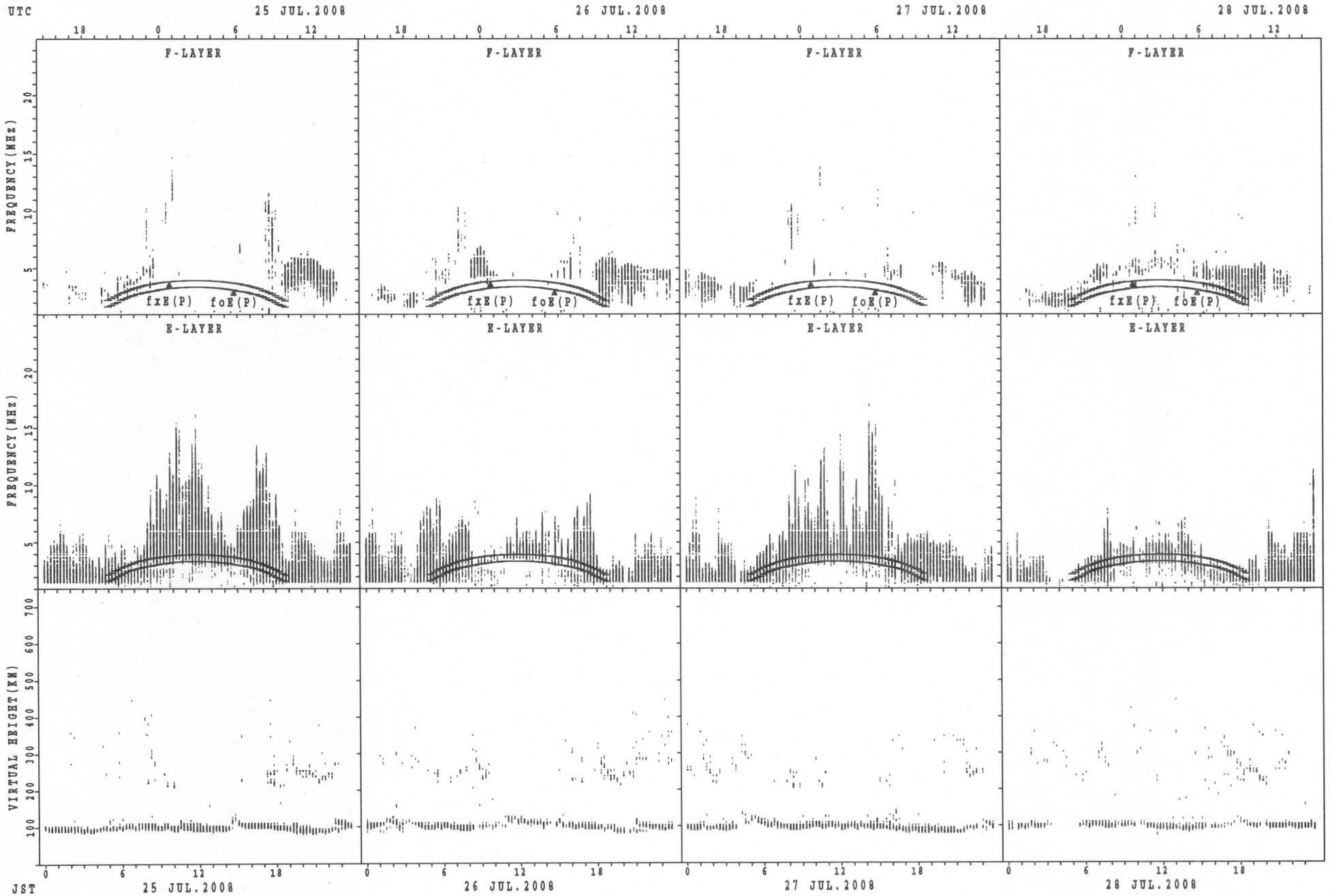
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



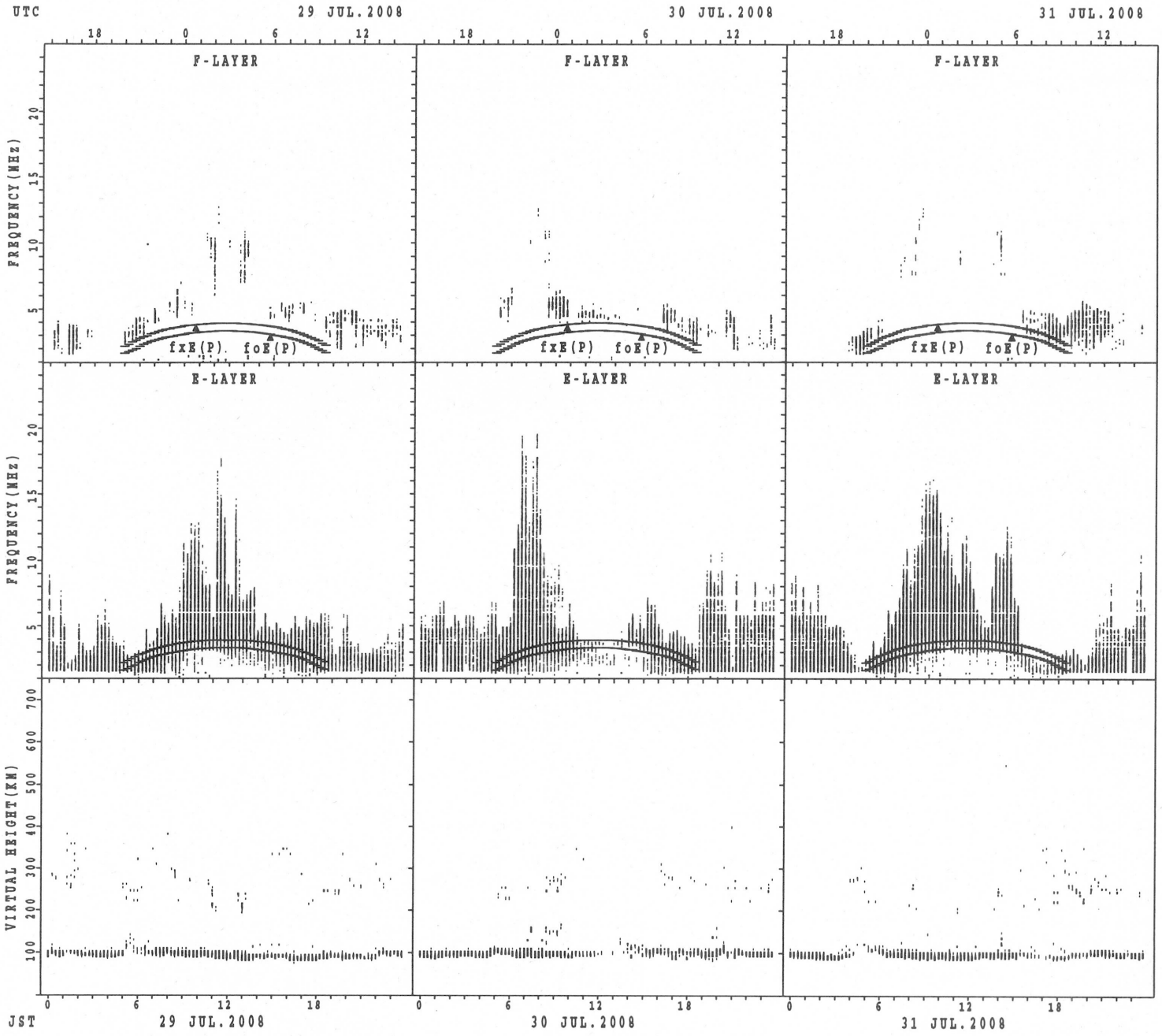
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



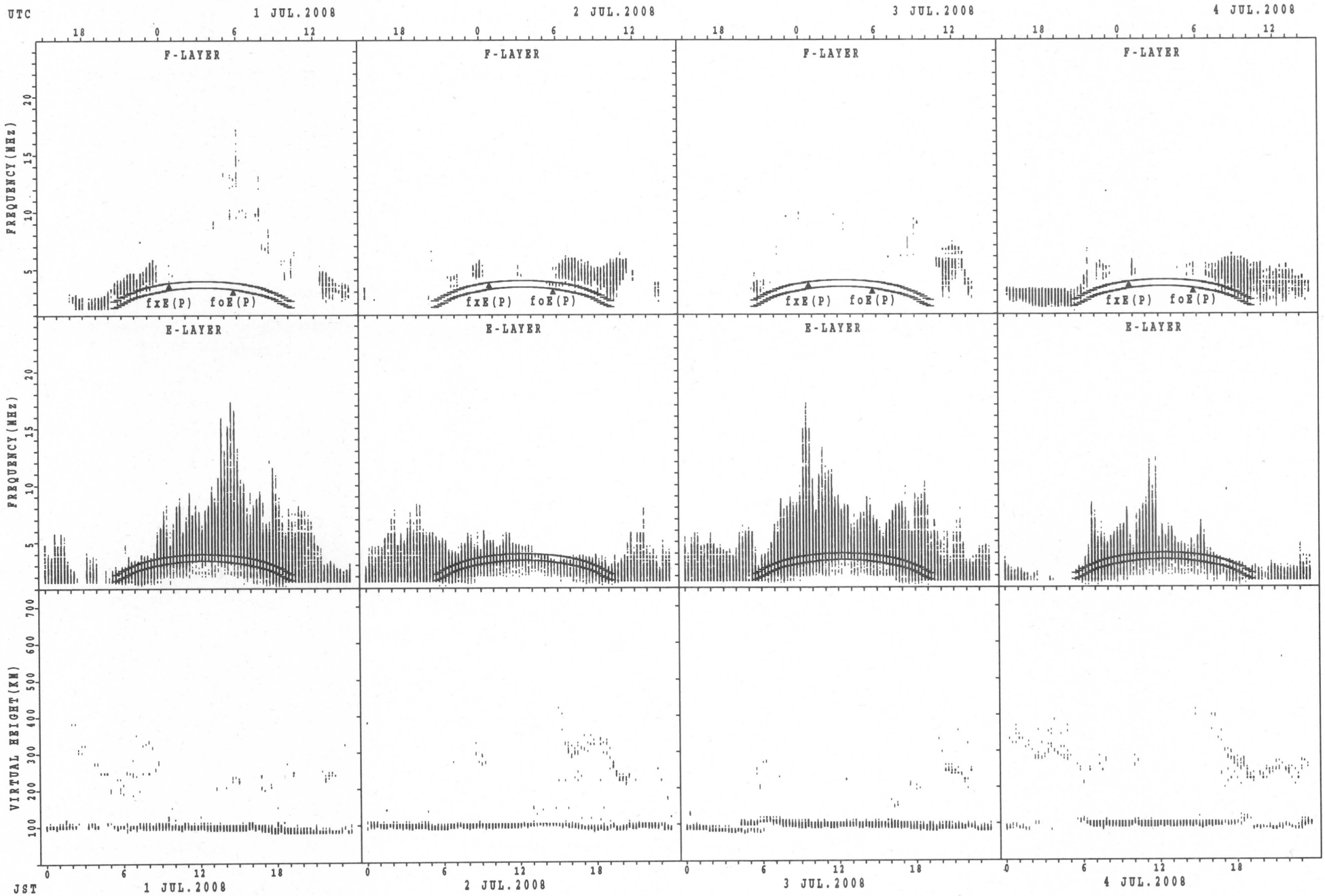
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



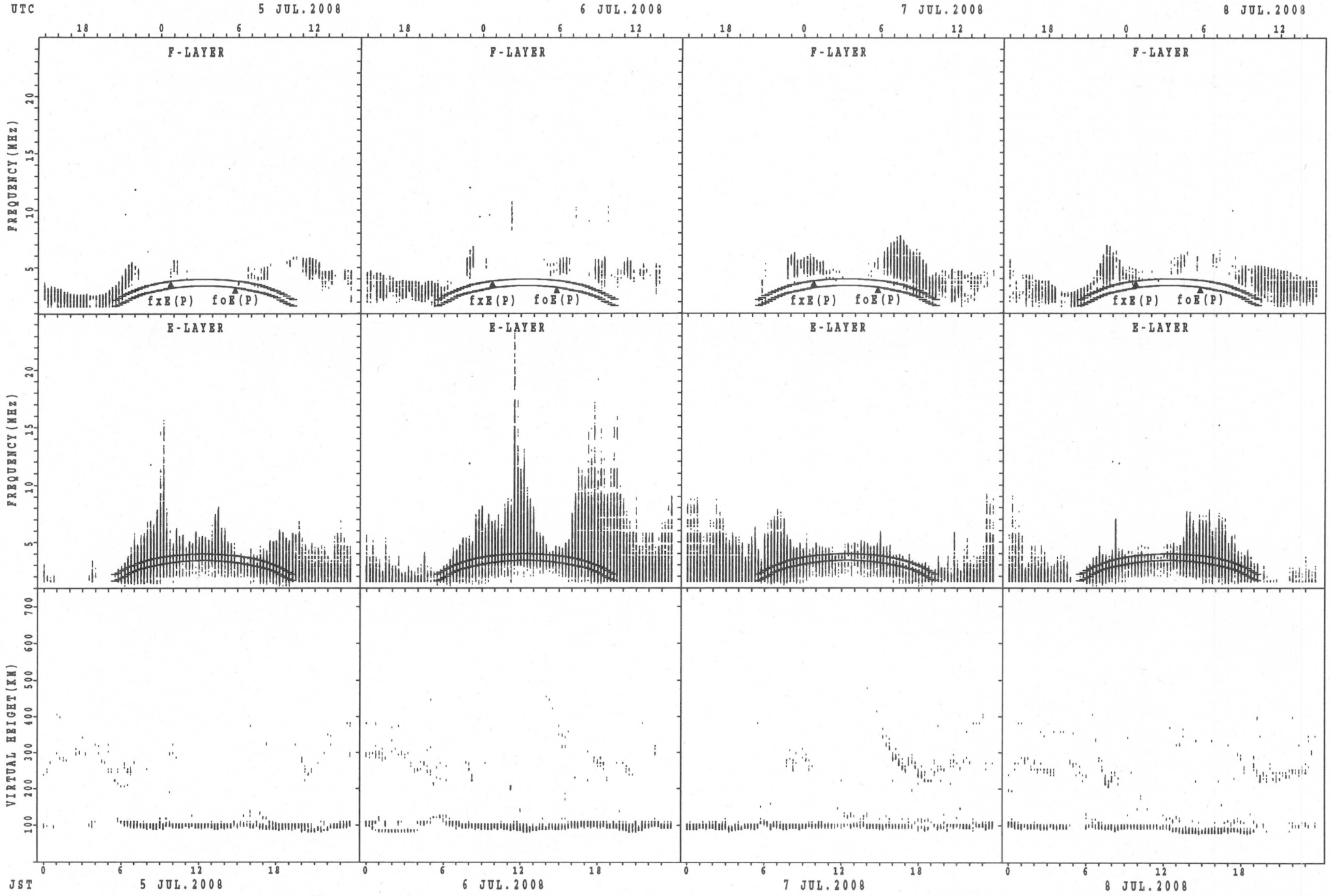
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



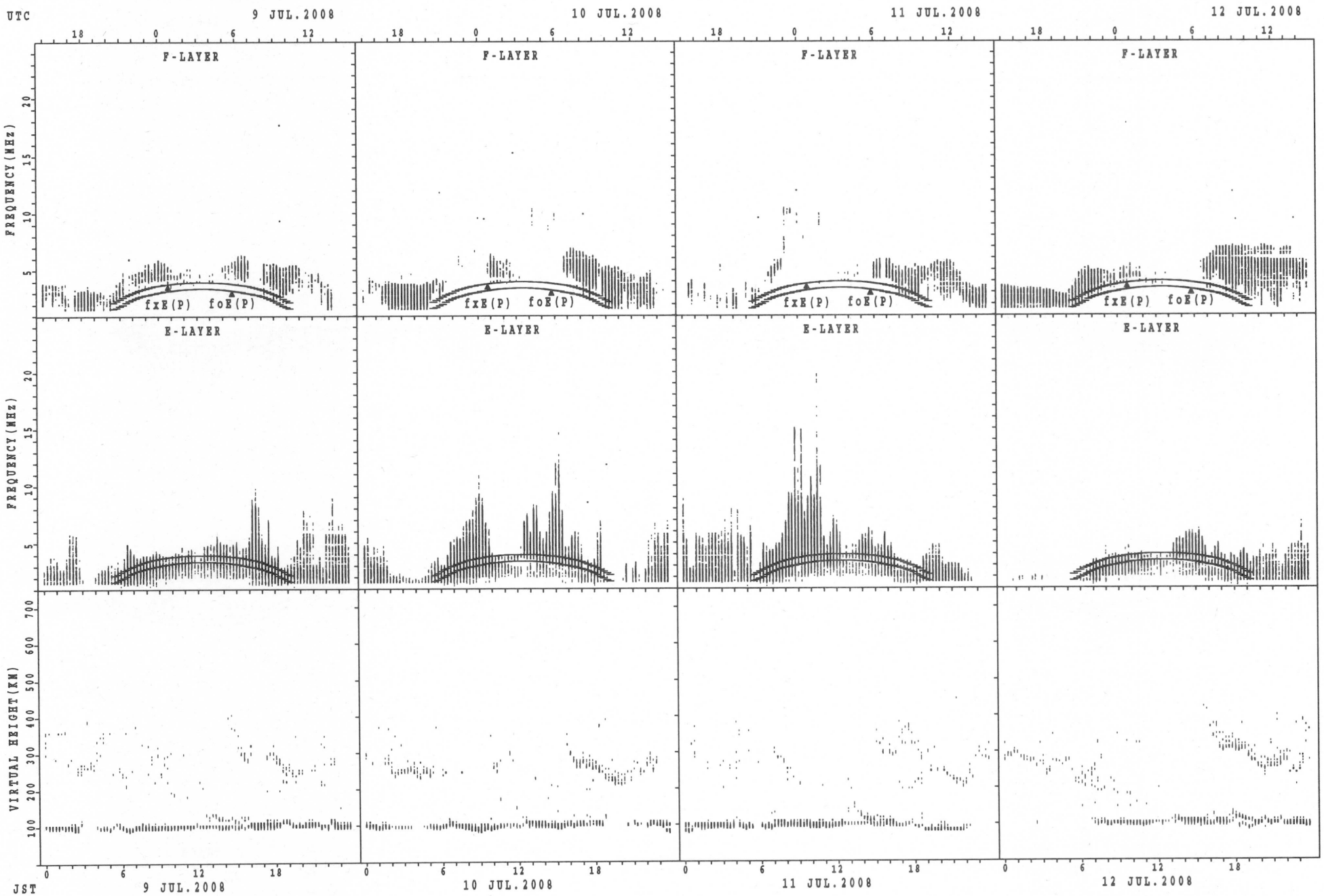
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



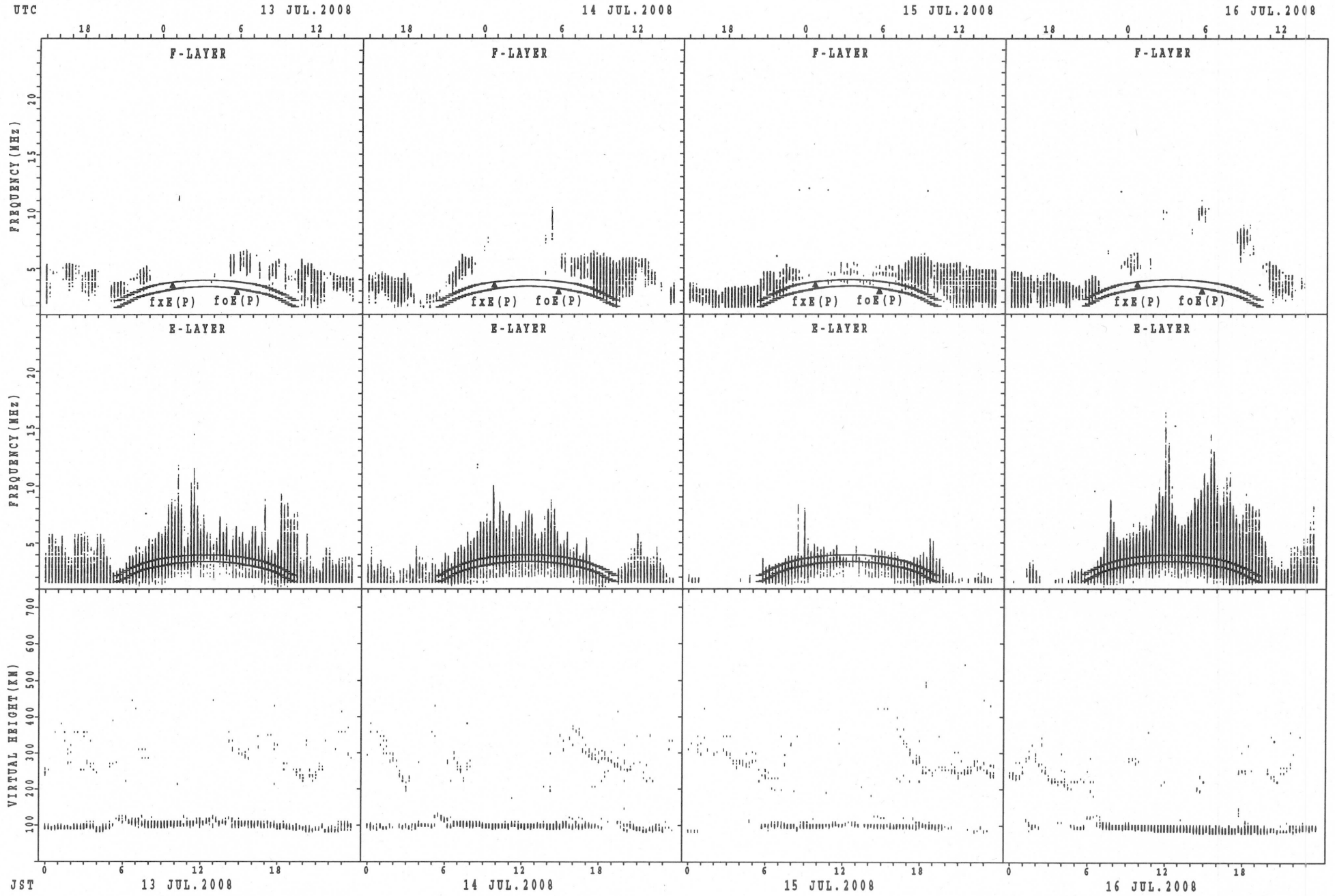
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



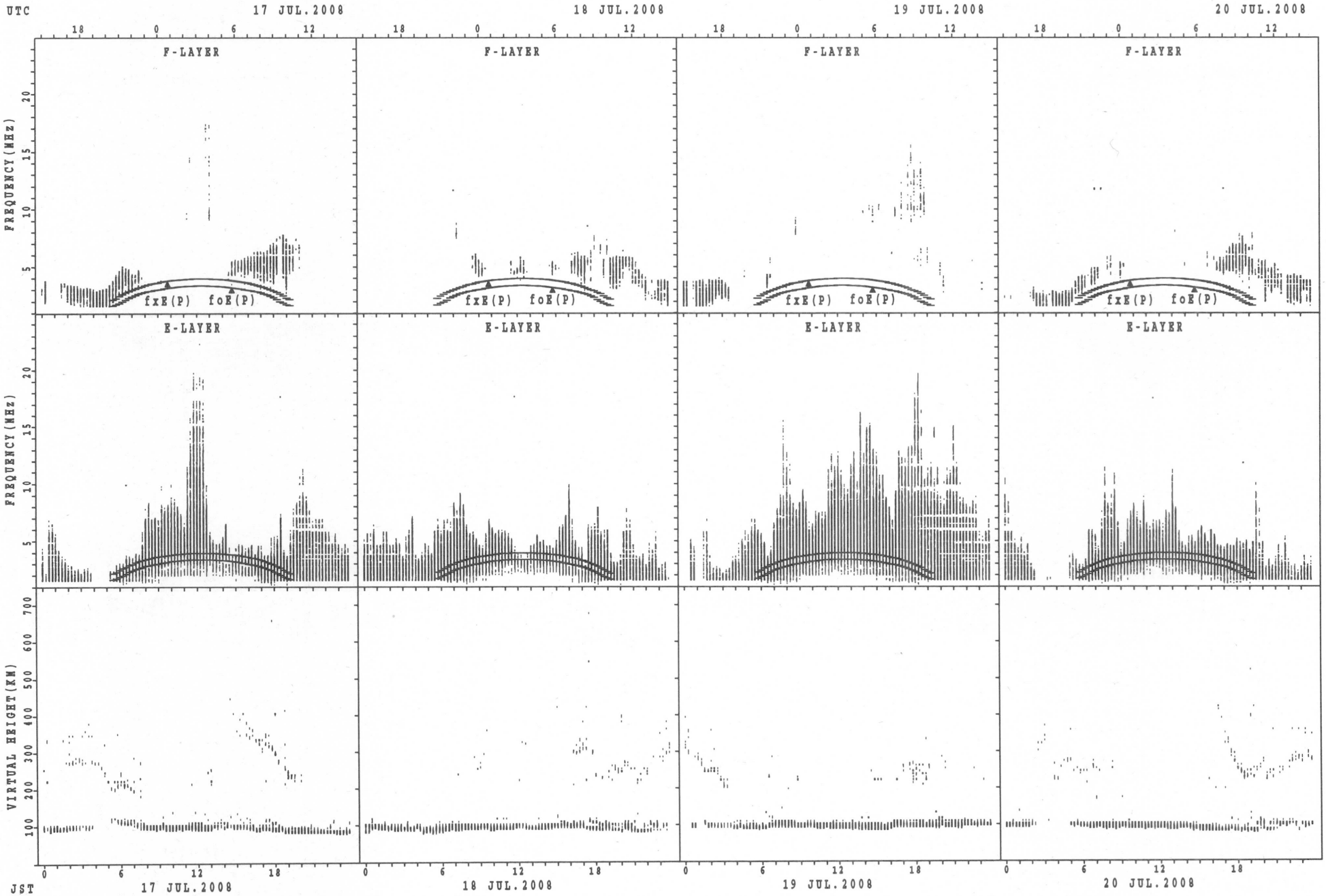
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



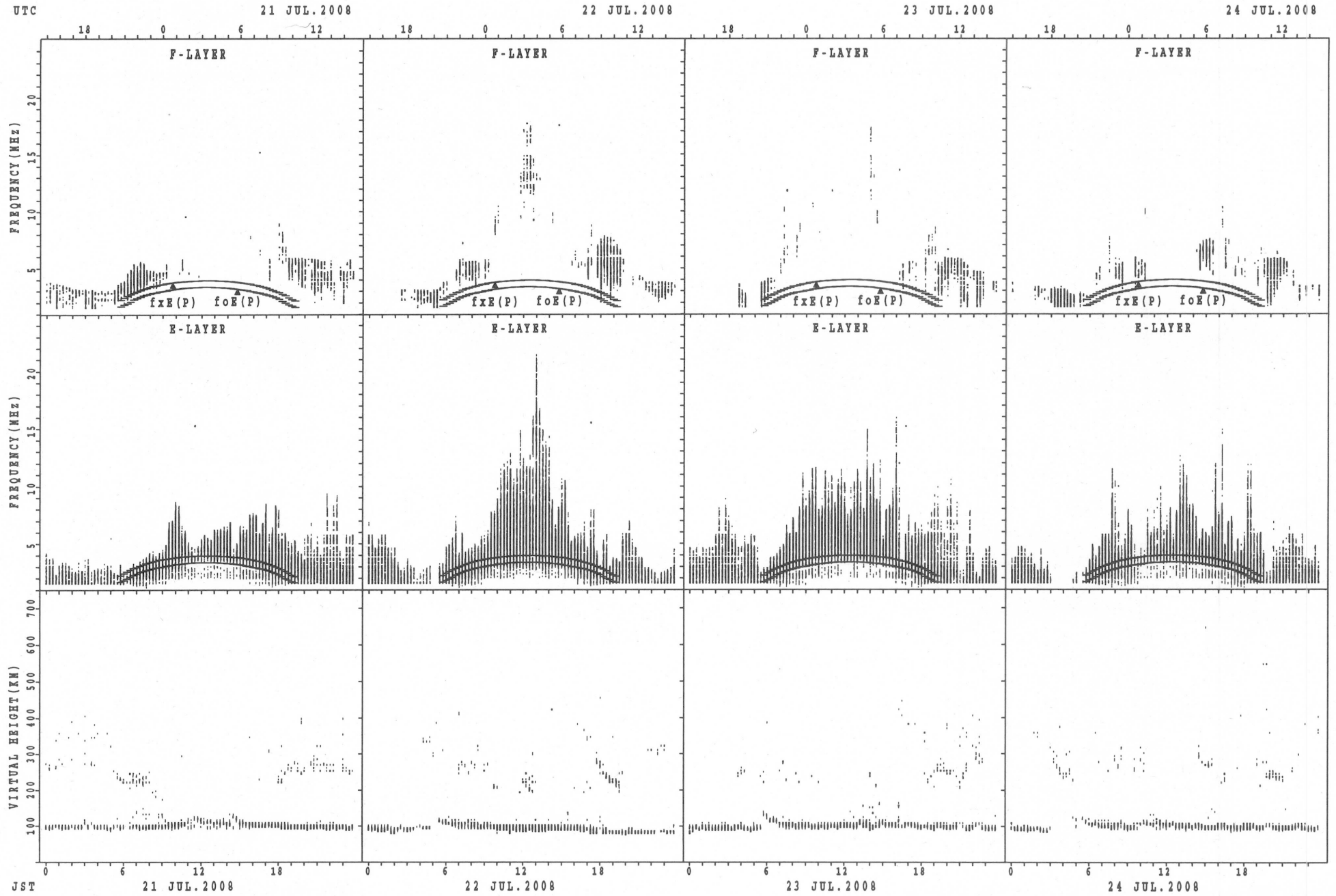
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



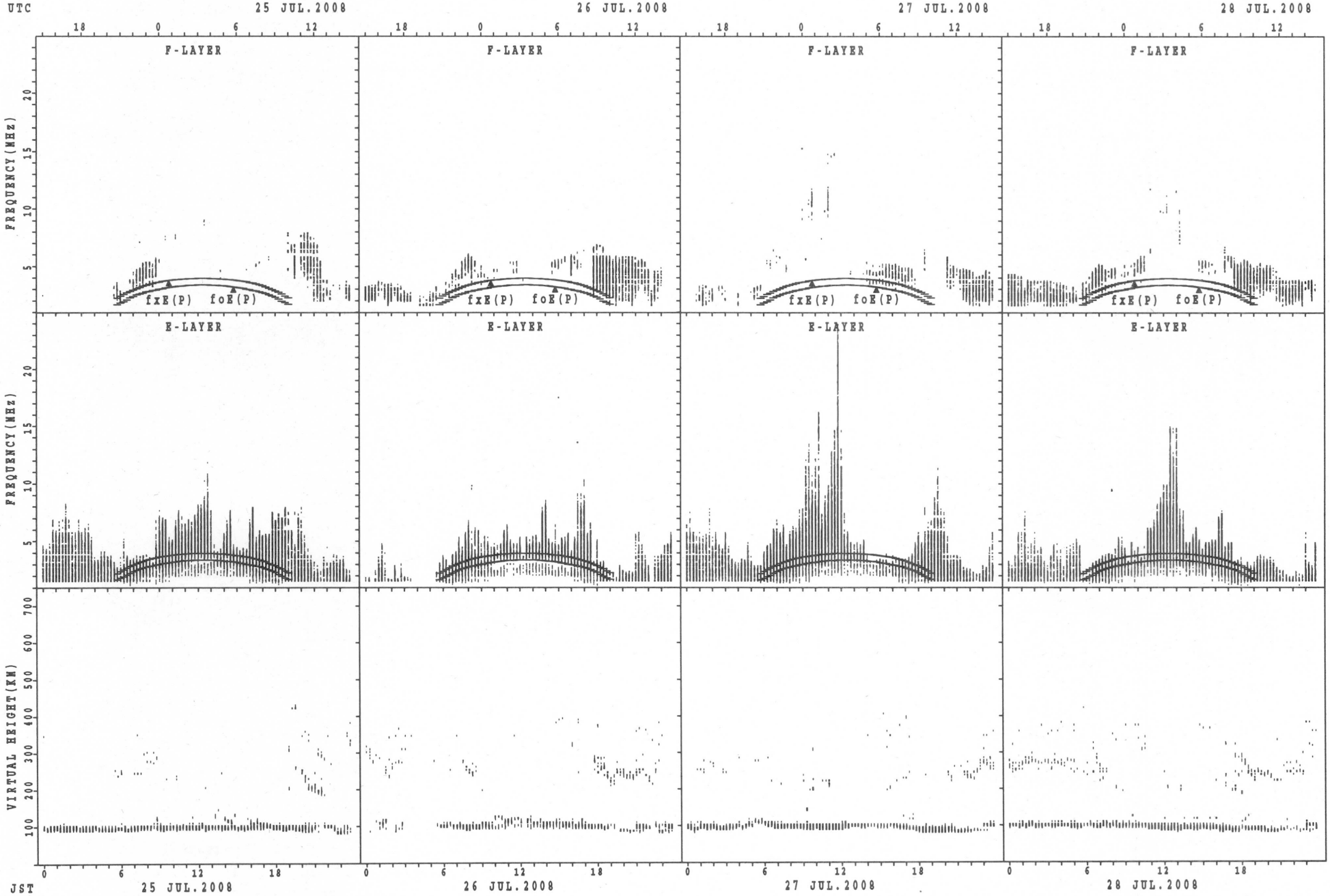
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



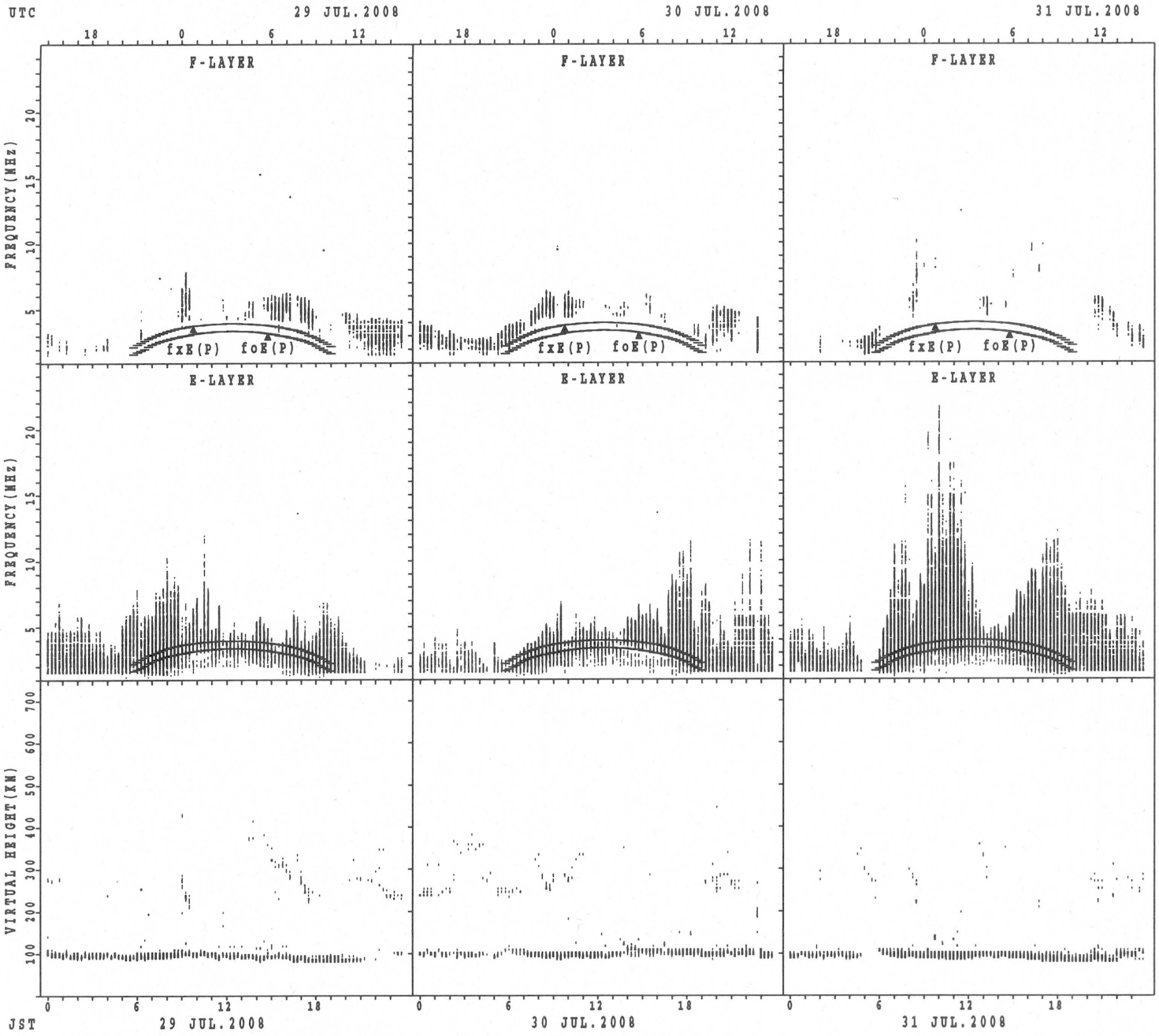
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



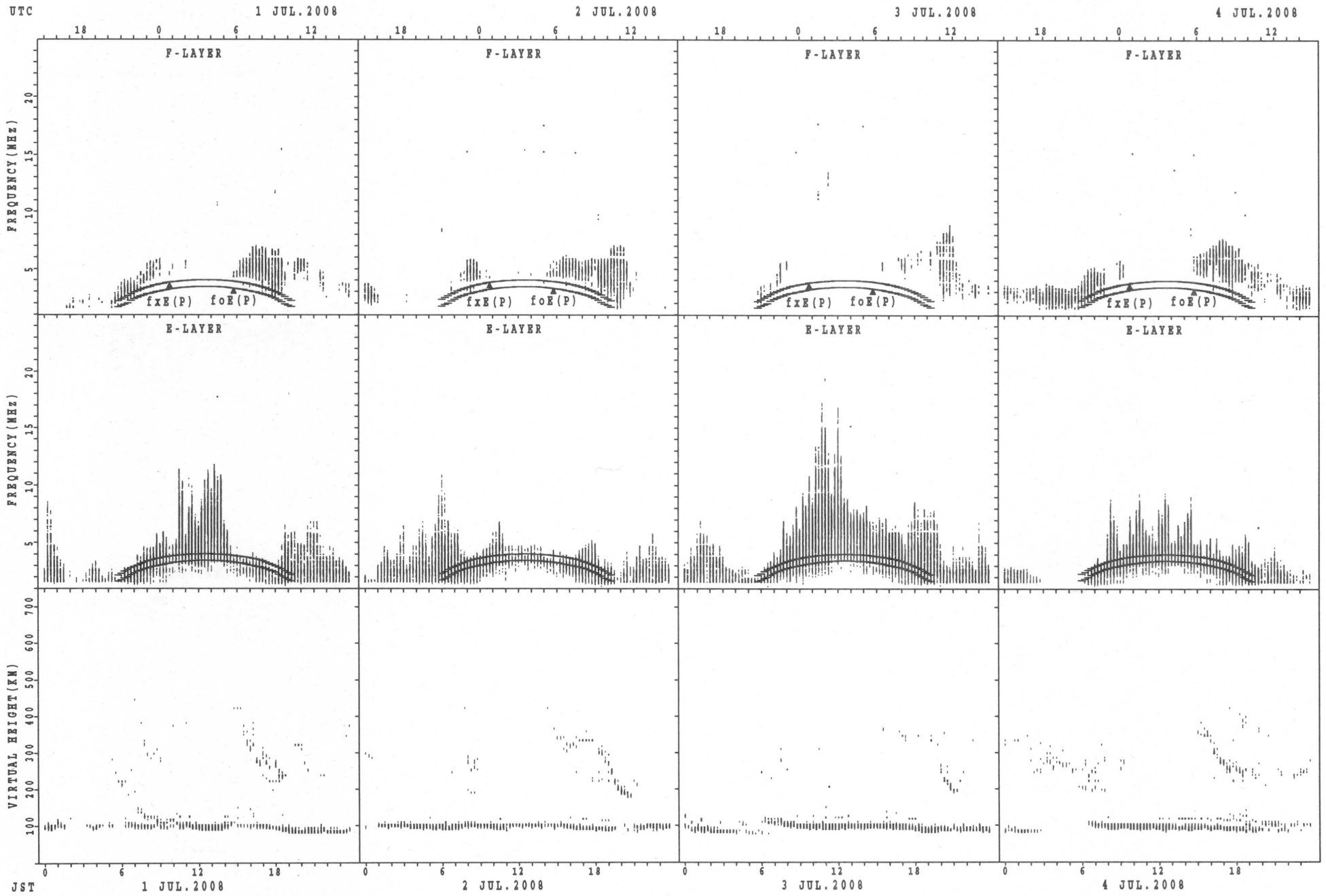
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



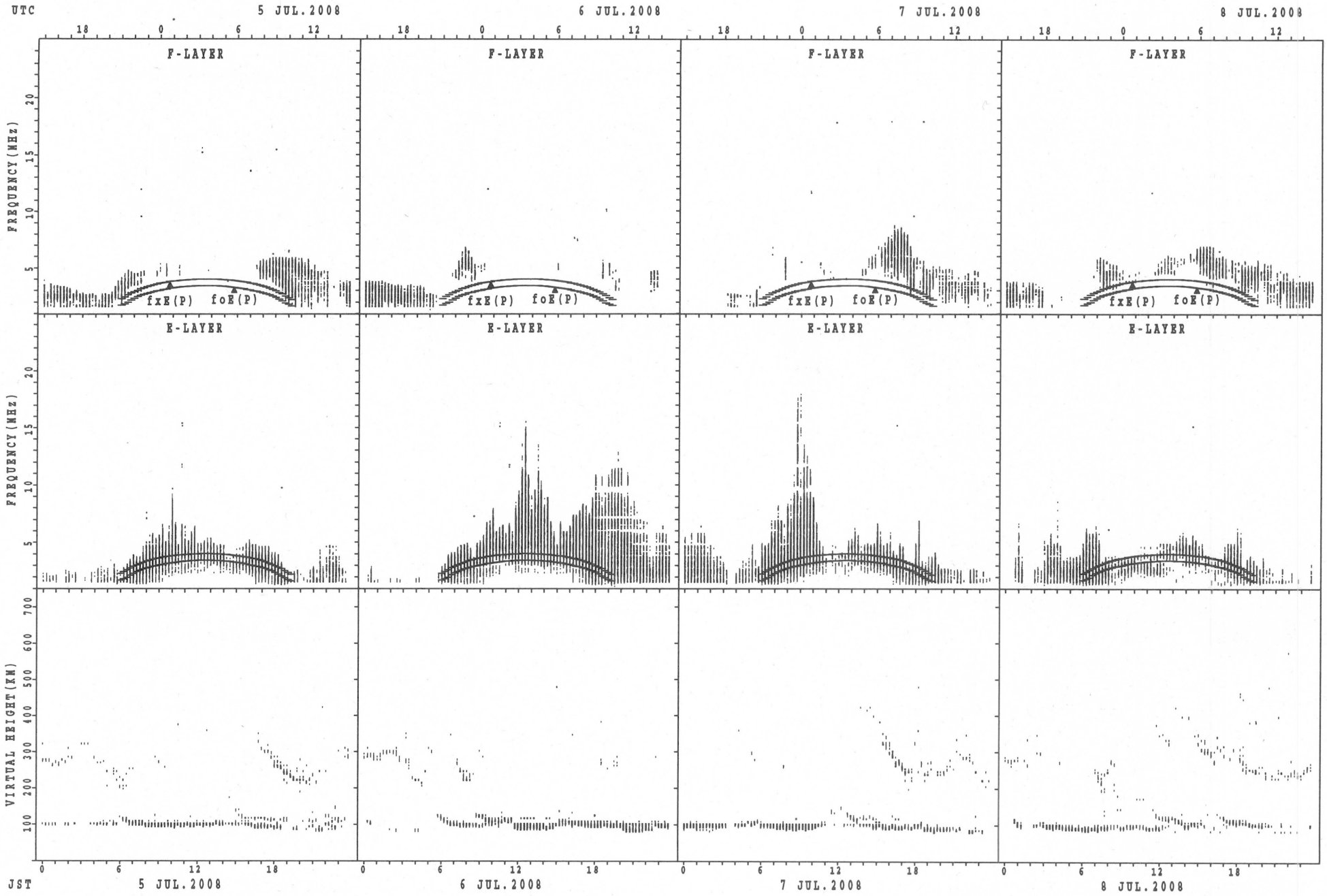
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



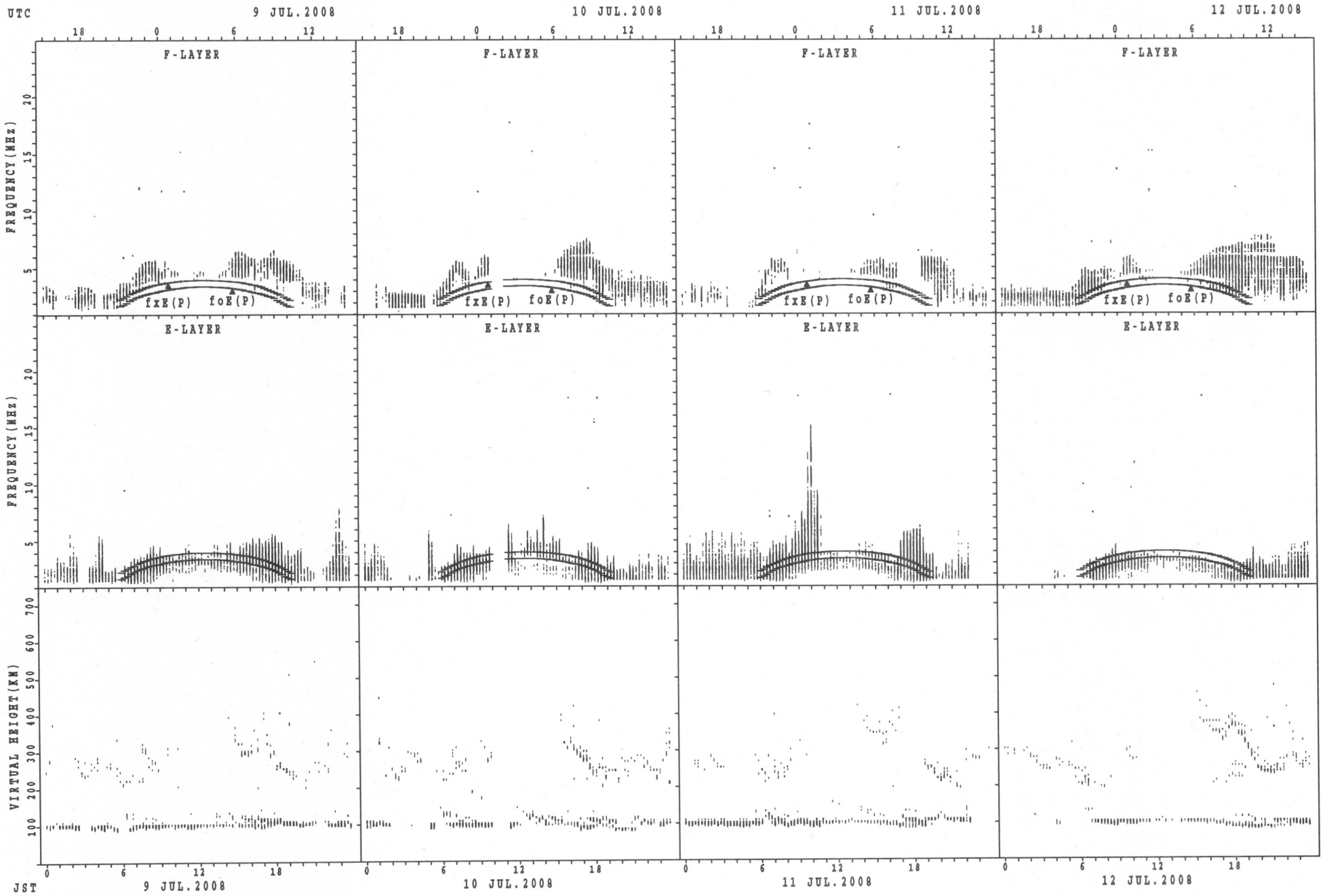
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



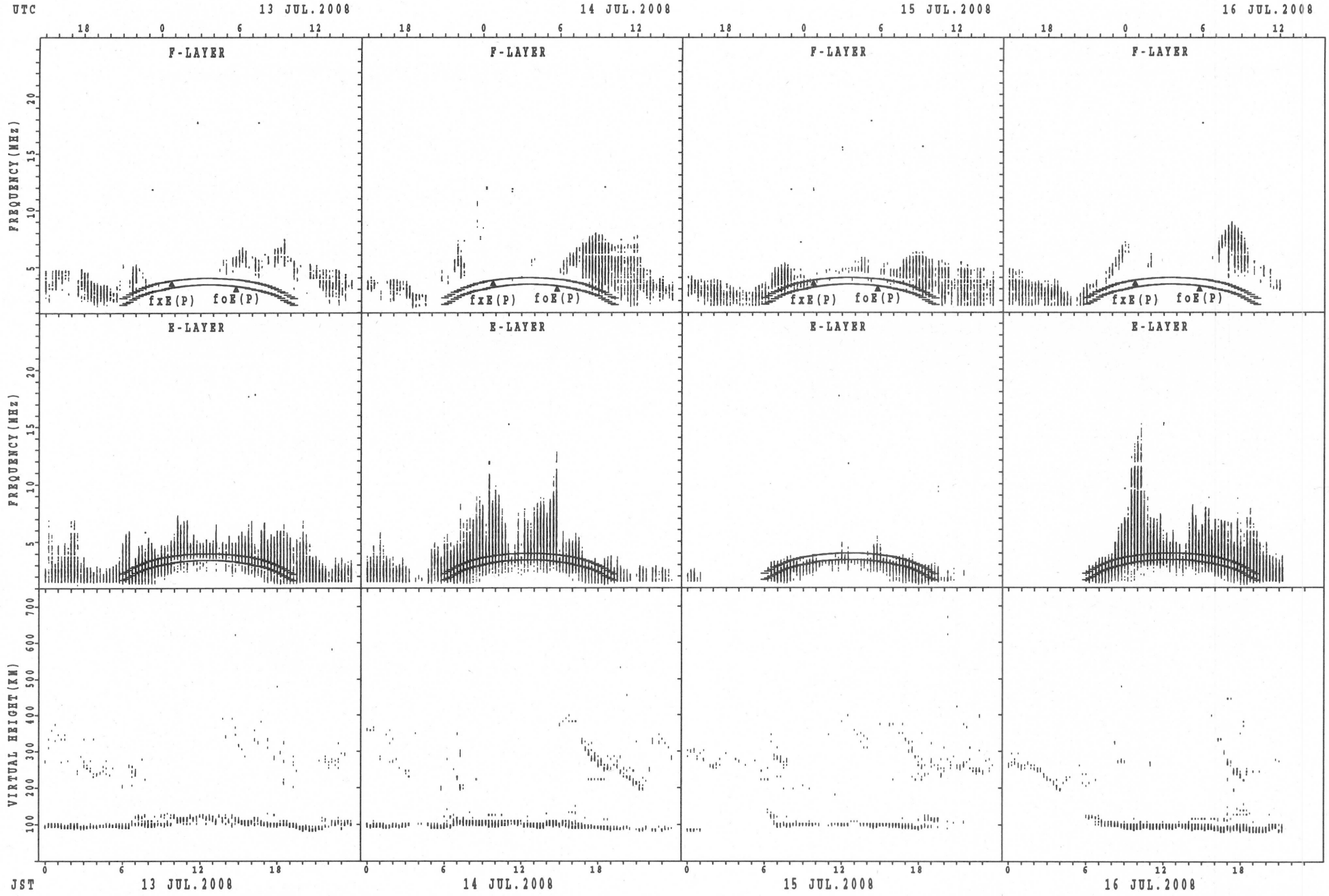
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



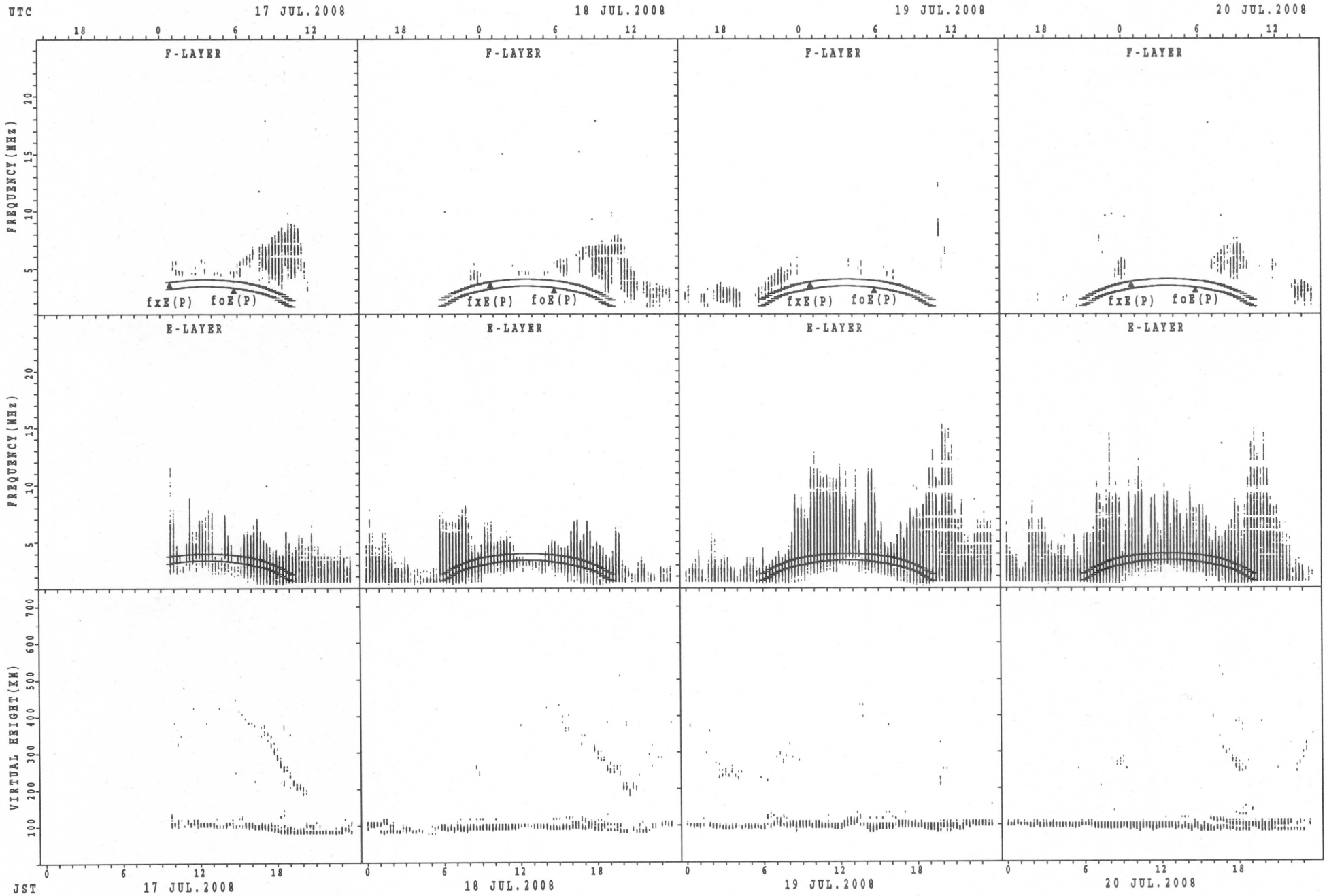
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



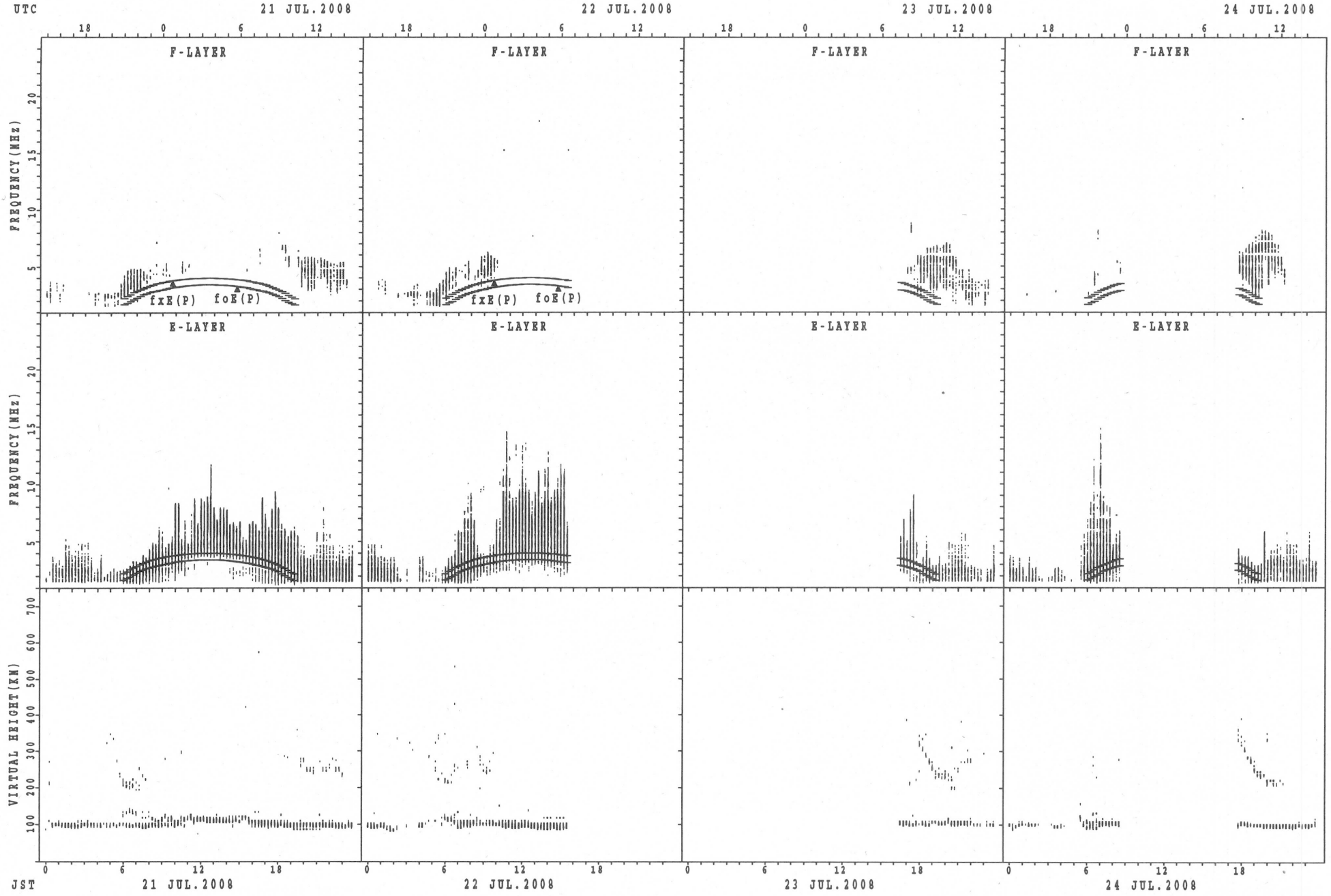
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



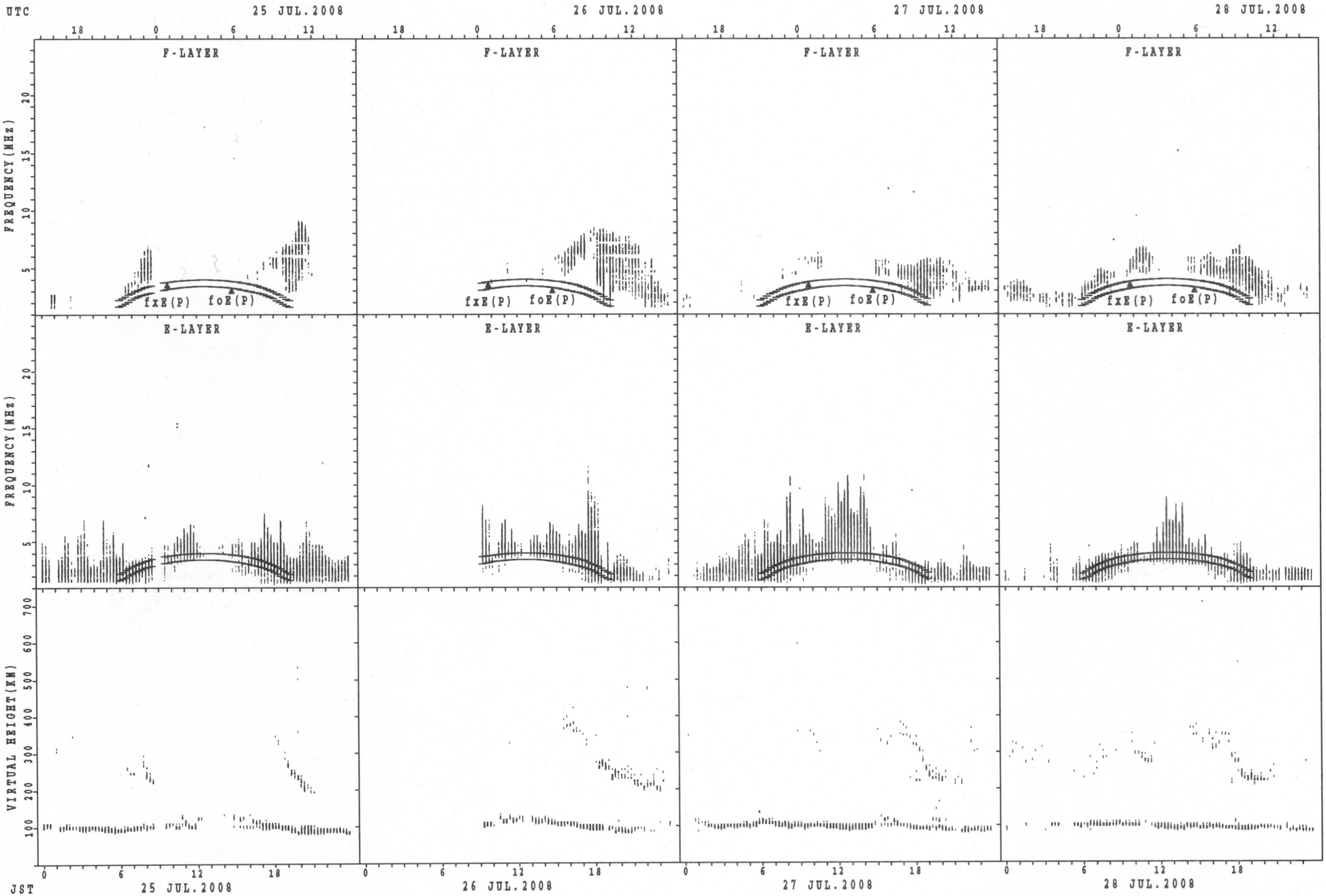
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



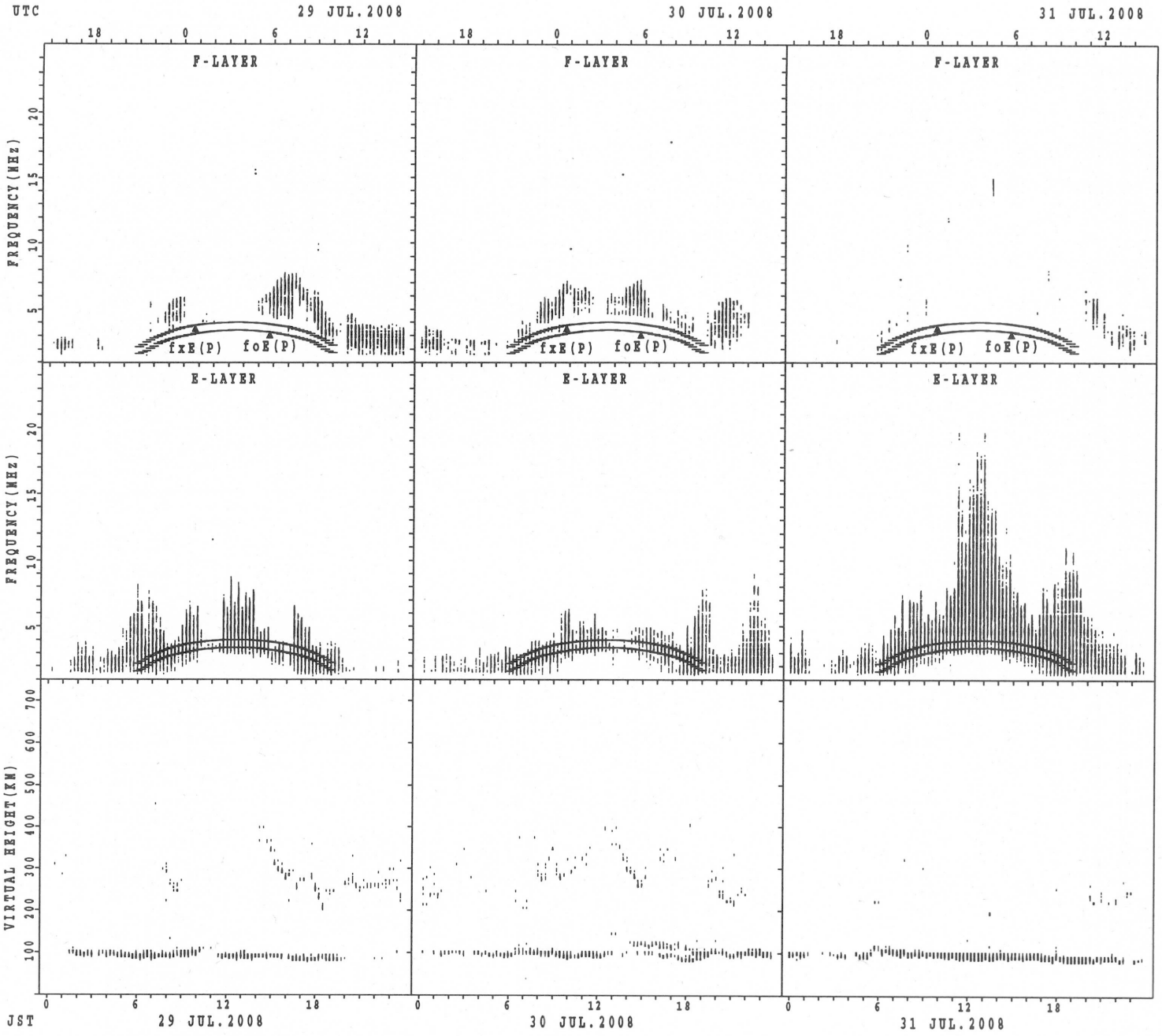
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	2										1	2		2	1		
MED							224	227										216	237		286	290		
U Q							112	232										108	244		292	145		
L Q							112	222										108	230		280	145		

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	30	29	29	30	27	29	31	30	29	25	29	28	27	27	27	29	27	27	29	28	30	27	29	29
MED	95	95	91	89	95	107	105	105	103	99	101	98	97	97	99	101	103	105	103	102	105	103	101	97
U Q	97	97	95	95	101	116	113	105	103	103	103	103	105	105	107	108	111	111	107	105	109	107	104	100
L Q	95	90	89	87	89	101	103	103	101	97	97	95	95	95	95	95	95	99	103	97	101	99	98	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																		1	5	5	1			1
MED																		224	218	238	276			258
U Q																		112	247	269	138			129
L Q																		112	203	222	138			129

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	29	29	31	28	23	29	29	29	30	29	26	26	25	26	26	28	27	30	27	26	24	28	28	31
MED	97	97	95	97	97	111	109	105	103	99	99	102	103	101	111	108	107	103	101	99	100	101	102	101
U Q	101	100	99	101	103	119	113	108	107	103	103	113	113	111	113	115	111	107	103	103	103	105	103	103
L Q	96	95	95	95	95	101	104	99	97	96	97	97	95	97	97	100	105	101	95	95	91	92	96	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									3									3	6	2	1	1		
MED									236									268	252	245	248	218		
U Q									262									296	282	248	124	109		
L Q									220									218	224	242	124	109		

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	26	26	21	20	20	31	30	30	28	30	27	23	29	29	28	28	28	26	26	27	29	28	27
MED	101	99	101	97	99	99	109	103	102	101	101	99	99	103	99	104	104	103	101	101	95	101	95	99
U Q	103	103	103	101	103	104	113	107	105	105	103	105	107	111	111	111	109	107	107	103	103	105	102	105
L Q	97	95	95	96	97	96	99	103	97	97	97	95	97	96	95	95	95	100	95	95	91	89	91	89

MONTHLY MEDIANS OF h'F AND h'Es

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

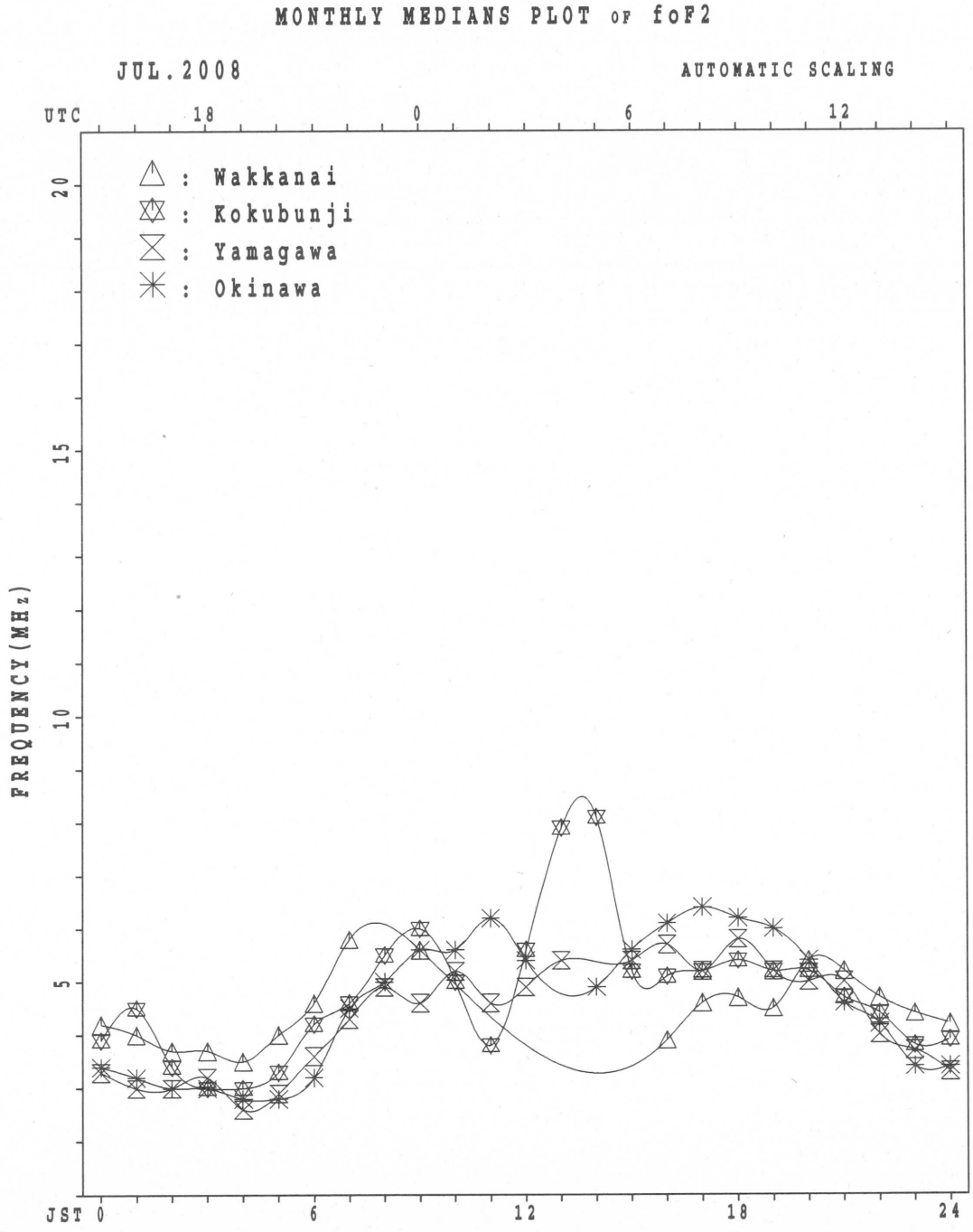
STATION Okinawa LAT. 26°40.5'N LON. 128°09.2'E

h'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								1	1									6	9	2	7	3		
MED								230	232									297	276	260	224	228		
U Q								115	116									312	290	282	264	252		
L Q								115	116									280	268	238	214	200		

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	22	19	16	20	18	22	27	27	22	25	23	22	23	25	23	19	27	27	30	25	23	23	20
MED	101	103	103	100	101	97	105	103	103	103	103	103	103	99	103	103	107	103	101	97	93	97	101	97
U Q	107	105	105	104	103	101	117	111	109	107	108	115	107	115	107	111	111	111	105	103	103	105	105	103
L Q	96	97	95	96	99	95	95	99	101	101	97	99	95	95	97	95	97	95	95	91	89	91	89	89


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

IONOSPHERIC DATA STATION Kokubunji

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

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

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

JUL. 2008 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

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

JUL. 2008 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	A	A	A	A	A	A	A	A	A	A	A	A					
2							U L 348	A	A	U L 424	U L 412	424	A	U L 420	U L 424	A	A	A	A					
3						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
4						U L 292	352	A	A	A	A	A	A	A	U L 388	A	U L 388	U L 364	A					
5							340	A	A	A	A	A	A	A	A	A	U L 372	A	A					
6							A	A	A	A	A	A	A	A	A	A	A	U L 368	A					
7							U L 340	A	A	A	A	A	A	A	A	A	U L 396	U L 364	L					
8						A	U L 364	A	A	A	A	A	A	A	A	A	A	A	A					
9							U L 352	A	A	A	424	A	U L 416	A	U L 420	A	A	A	U L 312					
10							A	A	400	A	U L 416	428	424	U L 444	A	408	396	A	A					
11								A	U L 404	U L 416	A	U L 448	U L 460	A	A	412	A	A	A					
12							U L 340	372	A	U L 420	428	U L 424	A	A	A	A	A	U L 360	A					
13						U L 272	U L 320	U L 356	U L 388	A	A	A	A	A	U L 412	A	A	U L 372	A					
14							A	A	A	A	U L 420	A	A	A	A	A	A	U L 368	A					
15						U L 256	U L 336	A	A	A	A	A	A	U L 428	A	U L 408	A	A	A					
16							L	U L 380	A	A	A	A	A	A	A	U L 392	A	A	A					
17							U L 352	A	A	A	A	A	A	A	A	U L 404	A	A	L					
18							A	A	A	A	A	A	A	A	A	U L 408	A	U L 352	A					
19						A		372	A	A	A	A	A	A	A	A	U L 396	A	A					
20						A	A	A	A	A	A	A	A	A	U L 420	412	A	A	A					
21						A	A	A	A	A	A	A	A	A	A	A	404	A	A					
22							U L 352	A	A	A	440	A	A	A	A	A	A	356	A					
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24							U L 328	A	A	A	A	A	A	A	A	U L 408	A	A	A					
25							U L 340	U L 368	A	A	A	A	A	A	A	A	A	352	A					
26						A	A	A	A	U L 408	A	A	A	A	A	A	U L 388	A	A					
27							A	A	A	A	A	A	A	A	A	A	400	A	A					
28							U L 352	372	A	U L 408	U L 428	A	A	U L 424	A	U L 420	U L 432	U L 356	L					
29							U L 332	A	A	A	A	A	A	A	A	A	A	A	A					
30						A	A	A	A	416	424	436	U L 416	U L 424	A	A	A	A						
31							U L 336	A	A	A	A	A	A	A	A	A	392	364						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	16	6	3	6	8	5	4	5	5	9	10	11	1					
MED						U L 272	U L 340	372	U L 400	U L 416	424	428	U L 420	U L 424	U L 420	U L 408	U L 396	U L 364	U L 312					
U Q						U L 292	U L 352	372	U L 404	U L 420	428	442	442	U L 436	U L 422	412	400	U L 368						
L Q						U L 256	U L 336	U L 368	U L 388	U L 408	U L 418	424	U L 416	U L 422	U L 400	U L 406	U L 388	356						

JUL. 2008 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
2						B	A	A	A	A	A	364	A	A	A	A	A	A	A					
3						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
4						B	A	A	A	A	A	A	A	A	R	A	A	A	A					
5						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
6							A	A	A	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
8						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
9						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
10						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
11						B	A	A	A	A	A	A	360	A	A	A	A	A	A					
12						B	A	A	A	A	A	U A 348	340	A	A	A	A	A	A					
13						B	A	A	A	A	A	A	A	A	C	A	A	A	A					
14						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
15						B	A	A	A	A	A	A	A	A	A	A	A	U A 240	A					
16						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
17						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
18						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
19						B	232	A	A	A	A	A	A	A	A	A	A	A	A					
20						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
21						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
22						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
23						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
24						B	U A 216	A	A	A	A	A	A	A	A	A	A	A	A					
25							A	A	A	A	A	A	A	A	A	A	A	A	A					
26						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
27						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
28						B	A	A	A	A	R	A	A	A	A	A	276	A	A					
29						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
30						B	A	A	A	A	A	A	U R 348	U A 340	A	A	A	A	A					
31						B	A	A	A	A	A	A	A	A	A	A	R	248	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							2					2	3	1			1	2						
MED							224					356	348	U A 340			276	244						
U Q													360											
L Q													340											

JUL. 2008 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 25	J A 28	J A 44	J A 22	J A 20	J A 34	30	J A 57	J A 79	J A 66	J A 74	J A 81	J A 44	J A 73	J A 86	J A 49	J A 83	J A 64	J A 55	J A 25	J A 33	J A 131	J A 63	J A 65
2	J A 60	J A 76	J A 62	J A 61	J A 80	J A 29	J A 58	J A 75	J A 53	J A 60	41	40	40	40	42	J A 48	J A 60	J A 74	J A 70	J A 69	J A 88	J A 74	J A 30	J A 107
3	J A 49	J A 64	J A 40	J A 42	J A 37	22	J A 35	J A 56	J A 57	J A 74	J A 82	J A 80	J A 140	J A 77	J A 66	J A 68	J A 69	J A 87	J A 78	J A 77	J A 45	58	J A 51	J A 58
4	J A 61	J A 66	J A 51	J A 44	J A 52	27	30	J A 54	J A 96	J A 106	J A 63	J A 46	J A 73	J A 79	G J A 33	J A 46	36	J A 46	J A 46	J A 63	J A 22	22	J A 77	J A 104
5	J A 58	J A 54	J A 68	J A 56	J A 34	23	28	J A 86	J A 47	J A 118	J A 168	J A 88	J A 152	J A 54	J A 93	J A 89	34	J A 56	J A 77	J A 35	J A 100	J A 64	J A 71	J A 57
6	J A 33	J A 22	J A 25	J A 22	22	J A 34	J A 47	J A 52	J A 88	J A 101	J A 122	J A 66	J A 67	J A 47	J A 83	J A 62	J A 132	J A 170	J A 119	J A 128	J A 144	J A 65	J A 89	J A 59
7	J A 56	J A 77	J A 24	J A 28	E B 14	J A 30	34	J A 54	J A 59	J A 89	J A 117	J A 61	J A 86	J A 62	J A 67	42	J A 41	J A 36	J A 26	J A 44	J A 65	J A 106	J A 55	J A 54
8	J A 141	J A 56	J A 37	J A 44	J A 51	J A 43	32	J A 60	J A 142	J A 108	J A 102	J A 102	J A 86	J A 88	J A 49	J A 64	J A 71	J A 62	J A 58	J A 58	J A 56	J A 66	J A 49	J A 46
9	J A 43	J A 77	J A 48	J A 22	J A 22	J A 24	J A 41	J A 85	J A 74	J A 120	42	43	J A 48	J A 70	43	J A 58	J A 43	J A 46	J A 44	J A 22	E B 15	22	J A 23	J A 33
10	J A 24	J A 24	J A 22	J A 26	J A 60	J A 41	J A 36	J A 101	J A 60	J A 42	J A 46	38	39	40	J A 52	J A 38	36	J A 54	J A 37	J A 25	J A 19	J A 26	J A 64	J A 33
11	J A 32	J A 38	J A 41	J A 65	J A 28	J A 28	J A 34	J A 72	J A 40	38	J A 45	38	41	46	J A 56	J A 39	J A 63	J A 54	J A 86	E B 15	J A 19	J A 24	J A 33	J A 28
12	J A 22	20	J A 18	J A 22	E B 15	J A 23	26	35	40	J A 46	J A 45	41	44	J A 50	J A 42	40	J A 51	34	J A 34	J A 43	J A 45	J A 46	J A 28	J A 45
13	J A 62	J A 37	J A 56	J A 29	J A 54	J A 23	28	34	37	J A 49	J A 65	J A 61	J A 90	J A 53	J A 40	J A 108	J A 156	J A 170	J A 147	J A 65	J A 59	J A 54	J A 33	J A 51
14	J A 60	J A 55	J A 49	J A 52	J A 35	J A 24	J A 46	J A 86	J A 112	J A 213	J A 44	J A 47	J A 58	J A 59	J A 46	J A 46	40	J A 102	J A 51	J A 32	J A 20	E B 15	J A 48	J A 61
15	J A 46	J A 46	J A 46	J A 45	E B 15	J A 26	27	J A 43	J A 48	J A 64	J A 42	J A 48	45	40	J A 44	J A 52	J A 56	J A 39	J A 48	J A 60	J A 46	J A 43	J A 58	J A 31
16	J A 22	J A 28	J A 31	J A 25	J A 44	J A 28	J A 37	31	J A 46	J A 60	J A 55	J A 44	J A 140	J A 77	J A 70	J A 78	J A 62	J A 38	J A 54	J A 20	20	J A 24	J A 108	J A 71
17	J A 32	J A 37	J A 29	J A 30	J A 19	J A 27	J A 32	J A 54	J A 92	J A 118	J A 229	J A 156	J A 137	J A 108	J A 60	J A 93	J A 68	J A 77	J A 180	J A 120	J A 76	J A 106	J A 58	J A 45
18	J A 83	J A 86	J A 86	J A 62	J A 48	J A 31	J A 55	J A 56	J A 67	J A 76	J A 82	J A 96	J A 79	43	J A 76	J A 44	J A 45	J A 47	J A 41	J A 30	J A 24	J A 30	J A 44	J A 54
19	J A 66	J A 64	J A 46	J A 34	J A 46	J A 56	28	36	J A 45	J A 62	J A 114	J A 158	J A 149	J A 129	J A 232	J A 69	J A 54	J A 90	J A 190	J A 220	J A 171	J A 65	J A 54	J A 48
20	J A 43	J A 72	J A 46	J A 45	J A 90	J A 140	J A 89	J A 71	J A 73	J A 70	J A 66	J A 84	J A 82	J A 46	J A 39	J A 37	J A 41	J A 48	J A 63	J A 22	J A 24	J A 24	J A 28	J A 26
21	J A 40	J A 54	J A 55	J A 31	J A 46	J A 47	J A 39	J A 49	J A 54	J A 60	J A 57	J A 51	J A 52	J A 85	J A 50	J A 45	J A 80	J A 123	J A 141	J A 82	J A 54	J A 69	J A 56	J A 84
22	J A 68	J A 77	J A 45	J A 29	J A 19	J A 26	J A 34	J A 46	J A 107	J A 148	J A 48	J A 99	J A 81	J A 99	J A 80	J A 121	J A 62	J A 46	J A 44	J A 44	J A 54	J A 30	J A 70	J A 72
23	J A 58	J A 86	J A 70	J A 58	J A 53	J A 32	J A 69	J A 76	J A 87	J A 129	J A 101	J A 116	J A 134	J A 126	J A 89	J A 60	J A 121	J A 114	J A 98	J A 59	J A 104	J A 51	J A 102	J A 54
24	J A 49	J A 53	J A 20	J A 20	22	18	26	J A 42	J A 59	J A 93	J A 108	J A 76	J A 95	J A 73	J A 74	35	J A 48	J A 57	J A 36	J A 31	J A 58	J A 64	J A 51	J A 77
25	J A 31	J A 52	J A 40	J A 53	J A 37	J A 58	J A 38	32	J A 63	J A 92	J A 106	J A 107	J A 170	J A 72	J A 53	J A 62	J A 80	J A 114	J A 88	J A 31	J A 75	J A 42	J A 31	J A 77
26	J A 56	J A 44	J A 58	J A 45	J A 45	J A 74	J A 59	J A 60	J A 66	J A 40	J A 44	J A 53	J A 51	J A 56	J A 83	J A 58	J A 42	J A 67	J A 34	J A 23	J A 28	J A 58	J A 52	J A 54
27	J A 37	J A 84	J A 26	J A 48	J A 21	J A 25	J A 38	J A 46	J A 87	J A 60	J A 72	J A 107	J A 141	J A 90	J A 72	J A 95	J A 62	J A 45	J A 52	J A 51	J A 55	J A 41	J A 21	J A 21
28	J A 44	J A 41	J A 38	J A 32	J A 28	E B 14	J A 31	J A 36	J A 47	J A 44	G J A 32	J A 48	J A 45	J A 39	J A 56	J A 44	J A 32	J A 28	J A 25	J A 31	J A 32	J A 49	J A 36	J A 79
29	J A 124	J A 53	J A 50	J A 33	J A 55	J A 34	J A 28	J A 36	J A 47	J A 108	J A 125	J A 63	J A 131	J A 78	J A 42	J A 48	J A 39	J A 43	J A 48	J A 54	J A 55	J A 28	J A 31	J A 32
30	J A 73	J A 64	J A 47	J A 53	J A 38	J A 70	J A 53	J A 176	J A 136	J A 54	J A 70	J A 40	G 30	J A 38	J A 49	J A 44	J A 49	J A 42	J A 32	J A 97	J A 116	J A 24	J A 54	J A 73
31	J A 106	J A 58	J A 67	J A 60	J A 37	J A 20	J A 29	J A 60	J A 90	J A 160	J A 141	J A 92	J A 101	J A 52	J A 134	J A 86	G 24	J A 29	J A 25	J A 29	J A 27	J A 54	J A 46	J A 56
	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 49	J A 54	J A 46	J A 42	J A 37	J A 28	J A 34	J A 54	J A 63	J A 74	J A 70	J A 63	J A 81	J A 62	J A 56	J A 52	J A 54	J A 54	J A 52	J A 44	J A 54	J A 49	J A 51	J A 54
U Q	J A 62	J A 72	J A 55	J A 53	J A 51	J A 41	J A 46	J A 72	J A 88	J A 108	J A 108	J A 96	J A 134	J A 79	J A 80	J A 69	J A 69	J A 87	J A 86	J A 65	J A 75	J A 65	J A 63	J A 72
L Q	J A 33	J A 38	J A 31	J A 28	J A 22	J A 24	J A 29	J A 42	J A 47	J A 60	J A 45	J A 46	J A 45	J A 46	J A 44	J A 44	J A 41	J A 43	J A 37	J A 29	J A 24	J A 26	J A 33	J A 45

JUL. 2008 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	17	18	16	E B 15	29	28	36	A A 79	A A 66	A A 74	A A 81	A A 44	A A 73	A A 86	42	A A 83	A A 64	35	21	22	A A 131	A A 63	A A 65
2	A A 60	A A 76	A A 62	18	A A 80	21	29	A A 75	A A 53	36	35	38	39	38	41	38	A A 60	44	A A 70	28	18	34	21	A A 107
3	A A 49	A A 64	A A 40	A A 42	18	18	29	A A 56	A A 57	A A 74	A A 82	A A 80	A A 140	A A 77	A A 66	A A 68	A A 69	A A 87	A A 78	A A 77	23	29	32	22
4	A A 61	A A 66	A A 51	20	18	22	28	40	A A 96	A A 106	A A 63	42	A A 73	A A 79	G 30	39	32	32	34	22	E B 15	E B 15	A A 77	A A 104
5	A A 58	A A 54	A A 68	A A 56	E B 15	19	26	A A 86	44	A A 118	A A 168	A A 88	A A 152	A A 54	A A 93	A A 89	31	A A 56	A A 77	28	19	36	A A 71	A A 57
6	20	E B 15	E B 14	E B 15	E B 15	27	A A 47	A A 52	A A 88	48	A A 122	44	A A 67	A A 47	A A 83	A A 62	A A 132	36	38	A A 128	34	19	17	A A 59
7	16	29	15	E B 14	E B 14	25	29	42	42	A A 89	A A 117	A A 61	A A 86	A A 62	A A 67	40	30	27	22	16	21	E B 15	A A 55	30
8	E B 15	20	17	21	E B 15	A A 43	28	37	A A 142	A A 108	A A 102	A A 102	A A 86	A A 88	43	A A 64	A A 71	A A 62	A A 58	36	A A 56	23	27	19
9	18	18	A A 48	17	E B 15	20	28	A A 85	41	A A 120	40	42	38	A A 70	38	44	39	37	22	16	E B 15	16	E B 15	18
10	16	17	16	17	19	19	A A 36	39	32	40	38	36	38	38	A A 52	34	34	38	33	20	E B 15	20	19	17
11	18	29	17	16	17	21	30	A A 72	36	36	44	36	39	A A 46	A A 56	36	38	A A 54	38	E B 15	E B 15	E B 15	19	17
12	16	E B 15	E B 15	16	E B 15	19	24	31	38	35	35	38	40	A A 50	A A 42	40	A A 51	31	31	31	27	20	20	33
13	39	18	A A 56	E B 15	E B 15	19	25	31	33	42	A A 65	A A 61	A A 90	A A 53	E C 35	41	A A 156	29	31	27	20	29	20	23
14	20	19	26	A A 52	20	17	A A 46	A A 86	A A 112	A A 213	38	A A 47	A A 58	A A 59	38	41	39	28	A A 51	25	16	E B 15	16	26
15	19	21	20	E B 16	E B 15	18	24	38	38	A A 64	A A 42	A A 48	A A 45	38	40	37	A A 56	36	37	18	E B 15	17	19	E B 16
16	E B 15	19	E B 14	16	19	19	25	29	A A 46	44	48	42	A A 140	43	37	32	A A 62	36	42	16	E B 15	19	19	A A 71
17	19	A A 37	17	19	E B 15	20	29	A A 54	A A 92	A A 118	A A 229	A A 156	A A 137	A A 108	A A 60	34	A A 68	A A 77	41	A A 120	38	33	A A 58	A A 45
18	A A 83	A A 86	A A 86	E B 14	A A 48	21	A A 55	A A 56	A A 67	A A 76	A A 82	A A 96	A A 79	40	A A 76	34	40	30	32	20	18	E B 14	18	A A 54
19	A A 66	A A 64	A A 46	18	A A 46	A A 56	26	32	A A 45	A A 62	A A 114	A A 158	A A 149	A A 129	A A 232	A A 69	31	A A 90	A A 190	23	A A 171	28	33	36
20	17	18	E B 15	16	A A 90	A A 140	A A 89	A A 71	A A 73	A A 70	A A 66	A A 84	A A 82	42	37	33	38	39	34	17	18	18	18	19
21	A A 40	A A 54	A A 55	17	17	A A 47	A A 39	A A 49	A A 54	A A 60	42	A A 51	A A 52	A A 85	A A 50	39	32	A A 123	39	40	30	34	38	18
22	A A 68	17	A A 45	20	E B 15	22	29	36	A A 107	A A 148	38	A A 99	A A 81	A A 99	A A 80	A A 121	A A 62	29	40	33	40	21	A A 70	A A 72
23	A A 58	A A 86	A A 70	A A 58	A A 53	22	A A 69	A A 76	A A 87	A A 129	A A 101	A A 116	A A 134	A A 126	A A 89	A A 60	A A 121	A A 114	A A 98	20	35	23	17	19
24	22	19	E B 15	E B 15	E B 15	16	24	38	A A 59	A A 93	A A 108	A A 76	A A 95	A A 73	41	32	37	A A 57	34	29	23	21	20	A A 77
25	21	A A 52	17	E B 15	20	19	23	30	44	A A 92	A A 106	A A 107	A A 170	A A 72	A A 53	A A 62	A A 80	29	A A 88	21	26	28	19	20
26	16	16	E B 15	16	E B 15	A A 74	33	37	A A 66	34	42	A A 53	A A 51	43	A A 83	40	39	A A 67	30	16	18	20	28	18
27	16	21	16	17	E B 15	19	A A 38	A A 46	A A 87	A A 60	42	A A 107	A A 141	A A 90	A A 72	A A 95	34	37	36	30	16	22	E B 16	15
28	22	16	E B 15	E B 15	15	E B 14	22	29	A A 47	36	G 32	44	42	39	A A 56	34	30	25	23	21	E B 16	17	22	A A 79
29	26	24	E B 15	18	A A 55	17	24	34	39	46	A A 125	A A 63	A A 131	A A 78	40	A A 48	37	38	A A 48	22	32	20	19	22
30	A A 73	A A 64	A A 47	A A 53	A A 38	A A 70	A A 53	A A 176	A A 136	36	36	36	G 30	37	A A 49	42	39	36	28	33	19	E B 15	A A 54	A A 73
31	16	19	23	A A 60	E B 15	16	25	A A 60	49	A A 160	A A 141	A A 92	A A 101	A A 52	46	42	G 24	28	20	25	17	E B 14	35	A A 56
	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	21	18	17	15	20	29	42	A A 54	A A 66	A A 65	A A 61	A A 81	A A 59	A A 52	41	39	37	37	23	19	20	20	30
U Q	A A 58	A A 54	A A 48	A A 20	A A 20	A A 27	A A 38	A A 71	A A 87	A A 108	A A 108	A A 96	A A 134	A A 79	A A 76	A A 62	A A 68	A A 62	A A 51	31	30	28	A A 38	A A 65
L Q	16	18	E B 15	E B 16	E B 15	19	25	36	42	42	40	42	44	43	40	36	34	30	31	20	E B 16	E B 16	19	19

JUL. 2008 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

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

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

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

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	F	297	332	392	371	293	A	A	A	A	A	A	A	279	A	A	306	324	384	A	A	A
2	A	A	A	308	A	347	374	A	A	342	301	R 287	274	269	302	278	A	324	A	319	349	F	F	A
3	A	A	A	A	314	362	384	A	A	A	A	A	A	A	A	A	A	A	A	A	328	350	F	F
4	A	A	A	292	313	315	314	350	A	A	A	330	A	A	271	292	271	305	340	332	324	329	A	A
5	A	A	A	A	323	368	319	A	352	A	A	A	A	A	A	A	307	A	A	319	336	361	A	A
6	F	F	F	F	F	309	A	A	A	363	A	357	A	A	A	A	A	305	329	A	F	F	F	A
7	F	F	328	F	F	314	301	322	341	A	A	A	A	A	A	306	316	346	342	351	308	F	A	F
8	F	346	F	358	F	A	309	338	A	A	A	A	A	A	333	A	A	A	A	328	A	F	327	F
9	337	298	A	F	336	316	302	A	333	A	335	336	303	A	282	330	348	319	348	340	333	341	309	F
10	F	F	F	F	315	345	A	300	361	334	326	350	297	310	A	293	348	325	343	344	355	334	310	F
11	F	F	352	F	349	379	377	A	368	355	331	277	294	A	A	325	327	A	303	333	327	348	346	F
12	F	F	F	F	F	324	288	351	349	392	335	336	295	A	A	264	A	309	311	306	322	304	317	F
13	F	337	A	300	313	311	262	291	293	361	A	A	A	A	312	336	A	324	328	319	314	323	329	F
14	316	345	334	A	361	321	A	A	A	A	260	A	A	A	278	315	339	273	A	308	319	326	331	317
15	F	F	281	F	306	271	305	352	351	A	A	A	A	304	302	320	A	328	348	331	312	333	314	F
16	F	F	F	F	339	359	364	322	A	336	317	340	A	324	308	314	A	296	329	356	340	342	342	A
17	306	A	F	334	364	376	338	A	A	A	A	A	A	A	A	302	A	A	293	A	329	349	A	A
18	A	A	A	F	A	358	A	A	A	A	A	A	A	272	A	294	318	337	315	332	338	352	324	A
19	A	A	A	315	A	A	348	356	A	A	A	A	A	A	A	A	313	A	A	325	A	F	F	F
20	F	F	F	F	A	A	A	A	A	A	A	A	A	320	247	298	289	309	332	343	370	323	320	327
21	A	A	A	331	323	A	A	A	A	A	367	A	A	A	A	274	297	A	321	330	380	F	F	335
22	A	326	A	312	320	331	298	314	A	A	403	A	A	A	A	A	A	316	310	340	368	359	A	A
23	A	A	A	A	A	301	A	A	A	A	A	A	A	A	A	A	A	A	A	311	343	329	F	F
24	299	296	F	F	F	353	290	295	A	A	A	A	A	A	292	312	334	A	314	309	335	326	328	A
25	F	A	F	F	F	328	299	265	322	A	A	A	A	A	A	A	A	323	A	301	346	339	F	F
26	311	333	F	345	339	A	331	277	A	373	360	A	A	305	A	305	325	A	316	342	335	307	F	F
27	F	F	F	364	331	321	A	A	A	A	352	A	A	A	A	A	323	353	329	334	329	F	F	F
28	298	F	F	F	330	324	255	339	A	268	342	306	323	301	A	277	269	339	340	324	361	338	F	A
29	F	312	F	F	A	352	334	321	323	350	A	A	A	A	298	A	319	356	A	340	322	321	324	333
30	A	A	A	A	A	A	A	A	A	360	340	339	315	315	A	319	315	367	330	331	310	332	A	A
31	327	323	335	A	346	332	275	A	335	A	A	A	A	A	337	323	323	314	312	331	326	333	331	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	7	9	5	11	18	25	22	16	11	11	13	10	7	9	12	21	18	20	22	28	28	23	14	4
MED	311	326	334	315	330	331	312	322	341	355	335	336	297	305	300	305	318	324	328	331	334	333	326	330
U Q	327	341	344	345	339	358	348	344	352	363	356	340	315	318	310	320	327	338	340	340	348	348	331	334
L Q	299	305	304	300	315	316	298	294	323	336	322	306	294	286	280	286	307	309	312	319	323	326	317	322

JUL. 2008 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	A	A	A	A	A	A	A	A	A	A	A	A					
2							UL 408	A	A	UL 423	UL 447	443	A	UL 412	UL 398	A	A	A	A					
3						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
4						UL 361	381	A	A	A	A	A	A	A	UL 429	A	UL 385	UL 373	A					
5							380	A	A	A	A	A	A	A	A	A	UL 395	A	A					
6							A	A	A	A	A	A	A	A	A	A	A	UL 343	A					
7							UL 363	A	A	A	A	A	A	A	A	A	UL 374	UL 376	L					
8						A	UL 383	A	A	A	A	A	A	A	A	A	A	A	A					
9							UL 362	A	A	A	446	A	UL 446	A	UL 426	A	A	A	UL 384					
10							A	A	403	A	UL 430	445	446	UL 426	A	398	378	A	A					
11								A	UL 409	UL 430	A	UL 408	UL 443	A	A	385	A	A	A					
12							UL 359	388	A	UL 460	447	UL 419	A	A	A	A	A	UL 384	A					
13						UL 338	UL 365	UL 406	UL 392	A	A	A	A	A	UL 326	A	A	UL 366	A					
14							A	A	A	A	UL 390	A	A	A	A	A	A	UL 365	A					
15						UL 372	UL 387	A	A	A	A	A	A	UL 331	A	UL 411	A	A	A					
16							L	UL 401	A	A	A	A	A	A	A	UL 470	A	A	A					
17							UL 381	A	A	A	A	A	A	A	A	UL 385	A	A	L					
18							A	A	A	A	A	A	A	A	A	UL 406	A	UL 373	A					
19						A		402	A	A	A	A	A	A	A	A	UL 368	A	A					
20						A	A	A	A	A	A	A	A	A	UL 406	411	A	A	A					
21						A	A	A	A	A	A	A	A	A	A	A	366	A	A					
22							UL 382	A	A	A	418	A	A	A	A	A	A	360	A					
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24							UL 356	A	A	A	A	A	A	A	A	UL 385	A	A	A					
25							UL 370	UL 399	A	A	A	A	A	A	A	A	A	374	A					
26						A	A	A	A	UL 427	A	A	A	A	A	A	UL 402	A	A					
27							A	A	A	A	A	A	A	A	A	A	388	A	A					
28							UL 358	378	A	UL 437	UL 416	A	A	UL 430	A	UL 409	UL 365	UL 377	L					
29							UL 385	A	A	A	A	A	A	A	A	A	A	A	A					
30						A	A	A	A	438	421	423	UL 445	UL 418	A	A	A	A						
31							UL 368	A	A	A	A	A	A	A	A	A	388	367						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	16	6	3	6	8	5	4	5	5	9	10	11	1					
MED						UL 361	UL 375	400	UL 403	UL 434	426	423	UL 446	UL 418	UL 406	UL 406	UL 382	UL 373	UL 384					
U Q						UL 372	UL 382	402	UL 409	438	446	444	446	UL 428	UL 428	UL 411	UL 388	UL 376						
L Q						UL 338	UL 362	388	UL 392	UL 427	UL 417	UL 414	UL 444	UL 372	UL 362	UL 385	UL 368	UL 365						

JUL. 2008 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							260	352	A	A	A	A	A	A	A	E A 440	A	A	E A 332					
2							244	A	A	310	390	432	E A 456	436	378	E A 378	A	E A 340	A					
3						266	226	A	A	A	A	A	A	A	A	A	A	A	A					
4						364	348	280	A	A	A	324	A	A	478	404	478	362	280					
5							338	A	E A 290	A	A	A	A	A	A	A	370	A	A					
6							A	A	A	260	A	276	A	A	A	A	A	354	E A 300					
7							406	E A 320	292	A	A	A	A	A	A	352	304	280	262					
8						A	362	290	A	A	A	A	A	A	280	A	A	A	A					
9							380	A	308	A	298	314	392	A	428	E A 318	270	318	264					
10							A	E A 372	258	322	322	276	402	368	A	376	260	296	260					
11								A	250	278	E A 302	476	386	A	A	312	308	A	E A 322					
12							438	284	268	282	314	334	422	A	A	468	A	314	268					
13						364	474	380	406	268	A	A	A	A	336	298	A	302	278					
14							A	A	A	A	394	A	A	A	E A 446	332	302	364	A					
15						454	354	276	292	A	A	A	A	368	410	364	A	300	248					
16							272	330	A	E A 310	E A 352	300	A	324	E A 356	384	A	334	246					
17							312	A	A	A	A	A	A	A	A	368	A	A	352					
18							A	A	A	A	A	A	A	428	A	370	308	274	278					
19						A		268	A	A	A	A	A	A	A	A	334	A	A					
20						A	A	A	A	A	A	A	A	338	562	394	400	344	266					
21						A	A	A	A	A	278	A	A	A	A	E A 456	388	A	E A 296					
22							382	352	A	A	250	A	A	A	A	A	A	316	E A 324					
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24							410	E A 386	A	A	A	A	A	A	378	344	290	A	E A 286					
25							362	460	E A 330	A	A	A	A	A	A	A	A	326	A					
26						A	320	E A 440	A	236	282	A	A	E A 394	A	366	308	A	296					
27							A	A	A	A	276	A	A	A	A	A	328	272	E A 300					
28							476	292	A	484	302	352	328	348	A	390	458	290	276					
29							308	344	326	280	A	A	A	A	380	A	334	274	A					
30						A	A	A	A	254	300	310	358	370	A	348	344	260						
31							422	A	E A 308	A	A	A	A	A	E A 316	E A 334	326	344						
	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	20	16	11	11	13	10	7	9	12	21	18	20	20					
MED						364	358	U 314	291	279	301	319	389	368	378	360	327	312	270					
U Q						409	408	E A 376	326	310	337	352	422	411	437	392	370	342	E A 300					
L Q						315	310	287	268	260	280	300	358	343	346	339	304	285	265					

JUL. 2008 h'F2 (KM)

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 276	E A 276	E A 294	E A 268	E B 244	208	210	A	A	A	A	A	A	A	A	A	A	A	A	242	198	A	A	A
2	A	A	A	E A 328	A	218	196	A	A	198	188	194	A	214	218	A	A	A	A	E A 248	222	E A 252	E A 240	A
3	A	A	A	A	E A 276	208	210	A	A	A	A	A	A	A	A	A	A	A	A	A	224	220	E A 242	208
4	A	A	A	E A 370	E A 274	232	222	A	A	A	A	A	A	A	202	A	208	E A 252	A	218	212	220	A	A
5	A	A	A	A	E B 248	224	226	A	A	A	A	A	A	A	A	A	212	A	A	E A 276	224	220	A	A
6	E A 288	E B 284	E B 284	E B 254	E B 256	E A 308	A	A	A	A	A	A	A	A	A	A	A	E A 242	A	A	E A 232	218	E A 272	A
7	224	206	E B 268	E B 240	E B 266	E A 274	238	A	A	A	A	A	A	A	A	A	206	208	224	218	E A 234	230	A	E A 318
8	E B 256	218	E A 244	226	E B 270	A	222	A	A	A	A	A	A	A	A	A	A	A	A	E A 262	A	E A 258	E A 288	E A 262
9	E A 238	E A 292	A	E A 274	E B 244	226	220	A	A	A	200	A	206	A	206	A	A	A	210	222	212	222	E B 266	E A 276
10	E A 254	E A 238	E A 268	E A 270	E A 280	214	A	A	202	A	208	190	190	196	A	198	E A 232	A	A	218	210	228	E A 242	E A 280
11	E A 292	E A 300	220	E A 238	232	212	218	A	204	194	A	212	182	A	A	226	A	A	A	214	218	214	216	E A 254
12	E A 244	E A 256	E B 270	E A 264	E B 240	212	210	216	A	186	184	202	A	A	A	A	A	228	A	E A 262	E A 242	240	E A 252	226
13	E A 320	228	A	E B 280	E B 256	E A 248	228	208	216	A	A	A	A	A	E C 288	A	A	E A 230	A	E A 252	E A 230	E A 260	218	E A 368
14	E A 302	E A 256	E A 304	A	E A 268	218	A	A	A	A	234	A	A	A	A	A	A	214	A	E A 288	E A 244	224	218	E A 286
15	E A 290	E A 284	E A 364	E B 254	E B 278	228	216	A	A	A	A	A	E A 288	A	A	216	A	A	A	216	236	222	E A 270	E B 254
16	E B 274	E A 260	E B 268	E A 240	E A 250	214	198	188	A	A	A	A	A	A	A	206	A	A	A	224	198	206	224	A
17	E A 314	A	E A 288	E A 286	E B 226	214	224	A	A	A	A	A	A	A	A	224	A	A	230	A	232	226	A	A
18	A	A	A	E B 286	A	E A 236	A	A	A	A	A	A	A	A	A	194	A	240	A	234	220	200	E A 232	A
19	A	A	A	E A 266	A	A	210	208	A	A	A	A	A	A	A	A	210	A	A	228	A	232	E A 274	E A 264
20	E A 252	E A 292	E B 246	230	A	A	A	A	A	A	A	A	A	A	218	196	A	A	A	214	202	202	E A 260	E A 278
21	A	A	A	E A 264	E A 290	A	A	A	A	A	A	A	A	A	A	A	216	A	A	E A 250	206	E A 302	E A 326	214
22	A	E A 252	A	E A 296	E B 254	E A 254	222	A	A	A	200	A	A	A	A	A	A	E A 248	A	236	220	206	A	A
23	A	A	A	A	A	E A 244	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 264	E A 250	E A 252	E A 274	E A 230
24	E A 320	E A 308	E B 274	E B 294	E B 248	216	234	A	A	A	A	A	A	A	A	218	A	A	A	E A 278	E A 244	232	216	A
25	E A 298	A	E A 268	E B 262	E A 298	E A 232	216	210	A	A	A	A	A	A	A	A	A	210	A	E A 242	218	228	226	228
26	E A 300	E A 266	E B 264	230	234	A	A	A	A	206	A	A	A	A	A	A	220	A	A	226	218	E A 256	E A 300	E A 248
27	226	E A 280	214	206	E B 248	242	A	A	A	A	A	A	A	A	A	A	208	A	A	E A 264	226	E A 278	220	224
28	E A 296	E A 286	E B 280	E B 248	E A 274	208	220	206	A	198	198	A	A	198	A	204	204	204	216	238	202	220	E A 290	A
29	E A 316	E A 280	E B 280	E A 290	A	224	208	A	A	A	A	A	A	A	A	A	A	A	A	228	E A 276	E A 242	E A 256	E A 256
30	A	A	A	A	A	A	A	A	A	184	184	186	182	180	A	A	A	A	E A 256	E A 292	E A 264	204	A	A
31	228	E A 296	E A 304	A	E B 238	230	222	A	A	A	A	A	A	A	A	A	192	242	210	E A 244	220	216	E A 328	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	21	20	19	25	24	25	21	6	3	6	8	5	4	5	5	9	10	11	6	28	29	30	24	18
MED	E A 288	E A 278	E 270	E A 264	E B 255	219	220	208	204	196	199	194	186	197	212	206	208	220	216	U 227	216	221	E A 254	E A 255
U Q	E A 301	E A 289	E A 288	E A 286	E A 274	E A 239	223	210	216	198	204	207	198	251	253	221	216	E A 242	230	E A 262	E A 235	E A 242	E A 274	E A 278
L Q	248	254	E 264	240	E B 244	214	210	206	202	186	186	188	182	188	204	197	206	210	210	223	212	218	225	228

JUL. 2008 h'F (KM)

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JUL. 2008 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						B	116	A	A	A	A	A	A	A	A	A	S	A	A					
2						B	A	A	A	A	116	116	122	112	120	118	A	A	A					
3						B	114	A	A	A	A	A	A	A	A	A	A	A	A					
4						B	114	A	A	A	A	A	A	A	122	A	A	A	A					
5						B	114	A	A	A	A	A	A	A	A	A	A	A	A					
6							A	A	A	A	A	A	A	A	A	A	A	A	A					
7						126	126	A	A	A	A	A	A	A	A	A	A	A	A					
8						B	A	A	A	A	A	A	A	A	A	118	A	A	A					
9						B	112	A	A	A	118	122	116	116	114	116	A	A	A					
10						B	A	A	A	A	A	116	114	114	116	116	116	A	A					
11						B	A	A	A	A	A	120	112	116	112	112	A	A	A					
12						B	118	120	118	A	A	118	116	120	116	116	116	A	A					
13						B	118	114	A	A	A	A	A	A	C	A	A	A	A					
14						B	120	A	A	A	A	A	A	A	A	A	116	A	A					
15						B	116	A	A	A	A	A	A	116	A	A	A	114	A					
16						B	A	114	A	A	A	A	A	A	A	A	112	A	A					
17						B	114	A	A	A	A	A	A	A	A	118	118	A	A					
18						B	A	A	A	A	A	A	A	118	118	116	118	116	A					
19						B	126	124	118	A	A	A	A	A	A	A	A	A	A					
20						B	A	A	A	A	A	A	A	116	114	114	116	114	A					
21						B	124	112	A	A	114	A	A	A	A	114	114	A	A					
22						B	118	A	A	A	A	A	A	A	A	A	A	A	A					
23						B	120	118	A	A	A	A	A	A	A	118	A	A	A					
24						B	118	114	A	A	A	A	A	A	A	114	A	A	A					
25							A	A	A	A	A	A	A	A	A	112	A	A	A					
26						B	A	A	A	A	A	114	110	110	A	110	A 124	A	A					
27						B	A	A	A	A	A	A	A	A	A	A	118	A	A					
28						B	A	A	A	A	122	A	A	A	A	A	114	118	114					
29						B	116	108	A	A	A	A	A	A	A	A	A	A	A					
30						B	A	A	A	A	A	A	110	116	118	112	112	A	A					
31						B	116	A	A	A	A	A	A	A	A	A	116	112	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	18	8	2		4	6	7	10	9	15	13	5	1					
MED						126	117	114	118		117	117	114	116	116	116	116	114	114					
U Q							120	119			120	120	116	116	119	118	118	117						
L Q							114	113			115	116	110	114	114	112	114	113						

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	100	94	94	92	94	116	104	102	106	104	106	106	108	96	122	104	104	94	94	90	96	100	108
2	102	106	106	100	102	102	102	100	104	102	112	142	134	124	122	118	108	106	100	98	100	100	98	98
3	96	92	92	90	108	114	110	104	104	104	104	104	104	100	116	116	104	100	96	98	98	98	96	92
4	106	92	92	104	104	114	110	102	100	100	104	106	102	96	102	100	104	106	106	100	100	100	100	100
5	94	86	84	88	94	114	116	100	104	100	100	100	90	102	102	102	102	110	102	108	102	102	98	100
6	92	98	98	96	118	118	104	104	104	102	98	102	100	102	106	94	108	104	104	100	98	108	108	100
7	100	90	94	96	B	124	124	104	102	102	100	98	96	98	114	96	94	96	94	112	104	110	108	104
8	98	94	98	102	100	122	118	104	94	96	94	98	94	94	124	112	102	100	102	106	106	110	106	102
9	102	100	100	100	100	118	112	102	102	102	124	130	118	116	124	114	106	104	108	106	B	106	106	106
10	106	104	104	100	92	100	104	102	100	98	100	112	110	116	112	114	116	102	108	104	110	106	106	104
11	104	100	98	104	100	96	102	104	104	108	102	116	144	126	114	116	106	104	98	B	102	92	92	94
12	88	92	94	98	B	106	132	126	120	104	104	130	128	116	114	114	112	106	104	104	102	102	104	100
13	96	100	98	102	102	116	116	118	102	106	100	102	110	102	118	106	106	102	102	88	92	88	88	94
14	96	94	96	92	94	102	116	104	104	98	100	102	108	108	108	104	116	104	98	102	100	B	100	100
15	100	100	98	100	B	116	114	100	100	100	102	100	104	116	106	104	102	116	114	98	100	98	100	96
16	96	104	102	98	96	108	104	110	106	102	98	100	98	102	100	98	110	108	104	104	100	104	102	102
17	98	96	100	100	126	128	116	102	100	100	94	96	94	92	112	120	114	106	100	92	90	92	96	90
18	98	90	102	102	98	100	104	102	102	100	98	100	100	118	110	120	124	116	112	96	96	98	100	102
19	96	98	98	96	96	98	152	122	116	108	96	92	96	96	102	106	108	104	96	104	104	104	104	104
20	94	108	106	104	96	96	96	96	102	98	100	98	96	114	126	116	116	110	104	96	90	96	98	96
21	100	100	102	100	102	108	116	116	106	108	118	106	108	108	104	118	114	102	106	104	102	102	100	100
22	94	94	94	90	106	124	120	106	102	98	102	96	96	96	96	98	102	104	92	94	90	88	94	102
23	104	98	98	96	92	94	118	114	104	104	104	102	102	100	104	116	104	106	104	104	98	96	106	100
24	100	96	100	94	100	120	120	114	108	100	100	100	100	102	102	110	102	98	96	98	102	98	98	104
25	104	98	96	94	92	116	100	102	104	106	102	106	104	98	98	114	100	106	106	102	94	94	94	112
26	106	112	116	114	110	104	104	104	100	104	108	120	116	116	106	112	104	102	100	94	90	112	108	96
27	96	96	98	96	100	118	106	106	100	100	102	102	98	104	98	100	112	92	92	92	92	92	92	96
28	100	102	102	104	106	B	104	106	108	106	104	104	100	100	94	96	142	118	108	100	104	98	102	100
29	100	104	106	106	94	98	116	118	102	102	102	96	98	98	94	92	98	94	92	94	88	92	94	100
30	100	98	96	102	100	104	102	104	100	102	96	98	98	118	116	114	108	102	98	100	102	104	102	100
31	98	98	96	96	96	120	114	98	102	98	100	98	100	96	96	100	102	164	98	102	102	110	100	106
	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	28	30	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31
MED	100	98	98	100	100	111	114	104	102	102	102	102	100	102	106	112	106	104	102	100	100	99	100	100
U Q	102	100	102	102	103	118	116	110	104	104	104	106	108	116	114	116	112	106	106	104	102	104	104	104
L Q	96	94	96	96	95	100	104	102	100	100	100	98	98	98	100	100	102	102	96	96	92	96	96	96

JUL. 2008 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

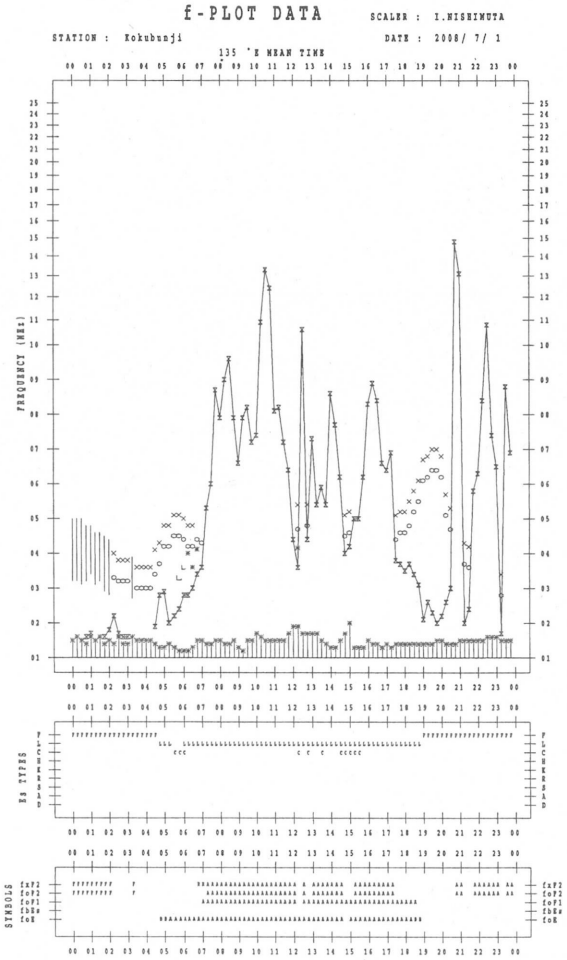
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 3	F 3	F 5	F 3	F 3	L 4	CL 22	L 3	L 3	L 3	L 3	L 3	L 2	L 2	L 3	CL 22	L 4	L 4	L 4	F 4	F 3	F 4	F 5	F 4
2	F 4	F 3	F 5	F 4	F 4	L 5	L 4	L 4	L 3	L 2	CL 11	HL 12	CL 22	CL 22	CL 22	CL 32	L 3	L 4	L 5	F 4	F 4	F 5	F 7	F 4
3	F 5	F 5	F 5	F 5	FF 25	CL 22	CL 22	L 4	L 3	L 3	L 3	L 3	L 3	L 3	CL 23	CL 32	L 4	L 4	L 5	F 6	F 5	F 6	F 5	F 6
4	FF 26	F 5	F 4	FF 24	FF 24	C 3	C 2	L 3	L 3	L 4	L 2	L 2	L 3	L 3	L 2	L 3	L 2	L 3	L 3	F 4	F 3	F 2	F 6	F 8
5	F 5	F 5	F 5	F 5	F 3	C 2	C 2	L 4	L 3	L 3	L 3	L 3	L 3	L 3	L 3	L 3	L 2	CL 32	L 5	F 7	F 5	F 7	F 7	F 8
6	F 5	F 3	F 3	F 3	F 1	C 4	L 4	L 4	L 3	L 3	L 3	L 2	L 3	L 2	L 3	L 3	L 3	L 3	L 3	F 4	F 3	F 3	F 4	F 5
7	F 3	F 4	F 2	F 2		C 4	CL 22	L 4	L 3	L 3	L 4	L 3	L 4	L 3	CL 32	L 3	L 3	L 3	L 3	FF 33	F 5	F 4	F 5	F 6
8	F 4	F 4	F 4	F 3	F 3	C 4	CL 23	L 3	L 4	L 4	L 4	L 4	L 3	L 3	CL 22	CL 52	LL 42	LL 42	L 6	FF 42	FF 32	F 3	F 4	F 4
9	F 3	F 3	F 4	F 3	F 2	C 5	C 4	L 5	L 3	L 3	CL 22	CL 22	CL 22	CL 22	CL 22	CL 42	L 3	L 4	L 3	F 2		F 2	F 3	F 3
10	F 3	F 3	F 3	F 3	F 3	L 3	L 3	L 3	L 3	L 3	L 2	CL 12	CL 11	CL 11	CL 21	CL 22	CL 22	L 3	L 4	F 3	F 2	F 4	F 3	F 4
11	F 5	F 4	F 5	F 3	F 8	L 4	L 3	F 4	L 3	L 2	L 2	CL 12	HL 22	CL 22	CL 32	CL 22	L 3	L 3	L 4		F 3	F 2	F 4	F 3
12	F 3	F 2	F 2	F 2		L 4	C 3	CL 22	CL 22	LC 22	LC 22	CL 11	CL 11	CL 21	CL 22	CL 22	CL 22	L 2	L 3	F 5	F 5	F 5	F 6	F 8
13	F 6	F 7	F 8	F 3	F 3	C 5	C 3	C 3	L 2	L 2	L 3	L 3	L 3	L 3	C 2	L 3	L 3	L 3	L 3	F 4	F 4	F 4	F 4	F 3
14	F 3	F 4	F 4	F 4	F 4	L 2	CL 42	L 5	L 4	L 3	L 3	L 3	L 3	L 2	L 3	L 3	CL 22	L 3	L 4	F 3	F 2		F 3	F 5
15	F 3	F 4	F 5	F 3		C 2	C 2	L 3	L 3	L 3	L 3	L 3	L 2	CL 22	L 2	L 2	L 3	CL 32	CL 32	F 4	F 3	F 3	F 3	F 3
16	F 2	F 5	F 3	F 3	F 5	L 4	L 2	CL 22	L 3	L 3	L 3	L 2	L 4	L 3	L 3	L 3	CL 33	L 3	L 4	F 3	F 2	F 3	F 4	F 5
17	F 3	F 3	F 3	F 3	F 2	C 4	CL 32	L 4	L 3	L 3	L 3	L 4	L 5	L 4	L 4	CL 22	CL 32	L 5	L 5	F 5	F 4	F 5	F 4	F 4
18	FF 46	FF 54	F 5	F 4	F 5	L 4	L 4	L 3	L 3	L 3	L 3	L 3	L 2	CL 22	CL 22	CL 22	CL 22	CL 32	CL 33	F 2	F 3	F 2	F 3	F 6
19	F 5	F 4	F 5	F 3	F 4	L 3	HL 22	CL 22	CL 32	L 4	L 6	L 4	L 5	L 4	L 5	L 3	L 3	L 5	L 7	L 4	F 4	F 3	F 6	F 5
20	F 5	FF 23	F 3	F 3	F 5	L 5	L 4	L 3	L 4	L 3	L 3	L 3	L 3	CL 12	CL 22	C 2	CL 32	CL 32	L 4	F 4	F 3	F 3	F 4	F 7
21	F 7	F 6	F 7	F 3	F 4	L 3	CL 22	CL 22	L 3	L 3	CL 22	L 3	L 2	L 3	L 3	CL 22	CL 22	L 4	L 3	F 4	F 3	F 4	F 6	F 5
22	F 4	F 4	F 4	F 3	F 2	C 2	CL 22	L 2	L 4	L 3	L 2	L 3	L 4	L 3	L 3	L 4	L 5	L 3	L 3	F 5	F 6	F 5	F 6	F 7
23	F 8	F 7	F 5	F 5	F 5	L 4	CL 52	CL 42	L 4	L 3	L 3	L 3	L 3	L 3	L 3	CL 32	L 3	L 3	L 5	F 4	F 4	F 2	F 4	F 5
24	F 4	F 4	F 3	F 2	F 2	C 2	C 2	CL 22	L 4	L 3	L 3	L 3	L 4	L 3	L 2	CL 12	L 2	L 4	L 4	F 3	F 5	F 4	F 5	F 4
25	F 6	F 5	F 5	F 3	F 3	CL 24	L 4	L 3	L 4	L 3	L 3	L 3	L 3	L 3	L 3	CL 33	L 3	L 4	L 4	F 3	F 3	F 4	F 4	FF 32
26	F 3	FF 21	FF 12	FF 21	F 2	L 4	L 3	L 3	L 3	L 2	L 2	CL 21	CL 21	CL 21	L 2	CL 22	L 2	L 3	L 4	F 3	F 5	FF 23	FF 52	F 4
27	F 5	F 6	F 4	F 3	F 2	C 3	L 4	L 3	L 4	L 4	L 2	L 3	L 3	L 3	L 3	L 3	CL 32	L 3	L 3	F 4	F 5	F 4	F 3	F 3
28	F 3	F 3	F 3	F 3	F 2		L 2	L 2	L 3	L 2	L 2	L 2	L 2	L 2	L 3	L 3	HL 12	CL 22	C 3	F 3	F 2	F 3	F 5	F 6
29	F 4	F 5	F 3	F 3	F 4	L 4	C 3	CL 21	L 3	L 3	L 3	L 3	L 4	L 3	L 3	L 3	L 4	L 3	L 4	F 4	F 4	F 4	F 3	F 5
30	F 3	F 4	F 4	F 5	F 5	L 4	L 5	L 4	L 4	L 2	L 2	L 2	L 2	CL 12	CL 32	CL 22	L 3	L 3	L 3	F 4	F 4	F 2	F 7	F 6
31	F 4	F 4	F 4	F 5	F 4	C 5	CL 23	L 4	L 4	L 4	L 3	L 3	L 4	L 3	L 4	L 4	L 2	HL 22	L 3	F 4	F 5	F 4	F 7	F 5
	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																								

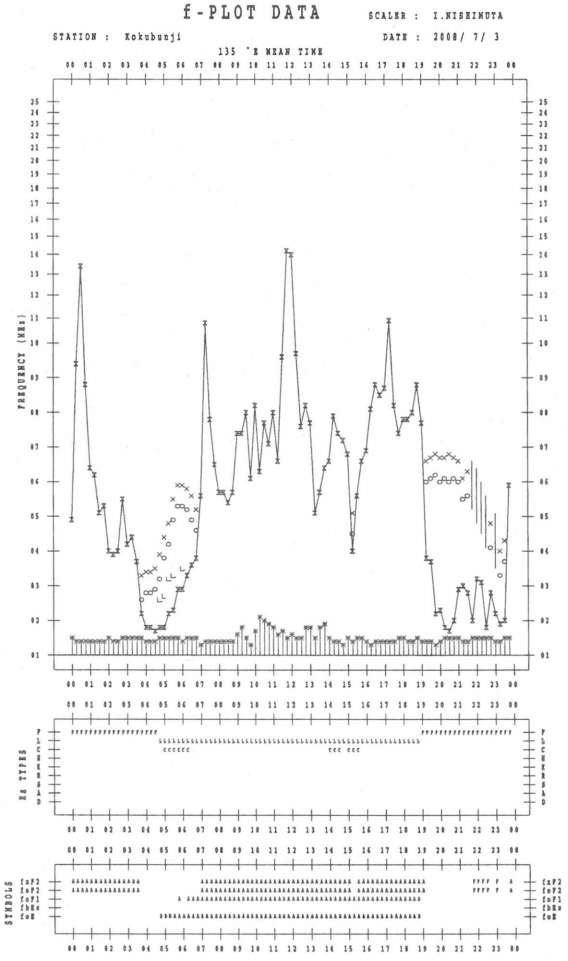
JUL. 2008 TYPES OF Es

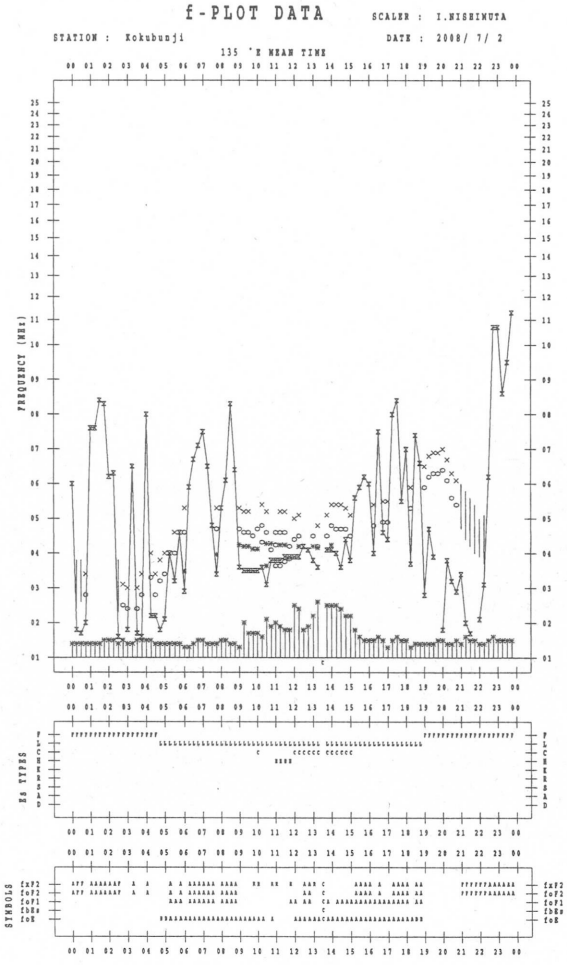
NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

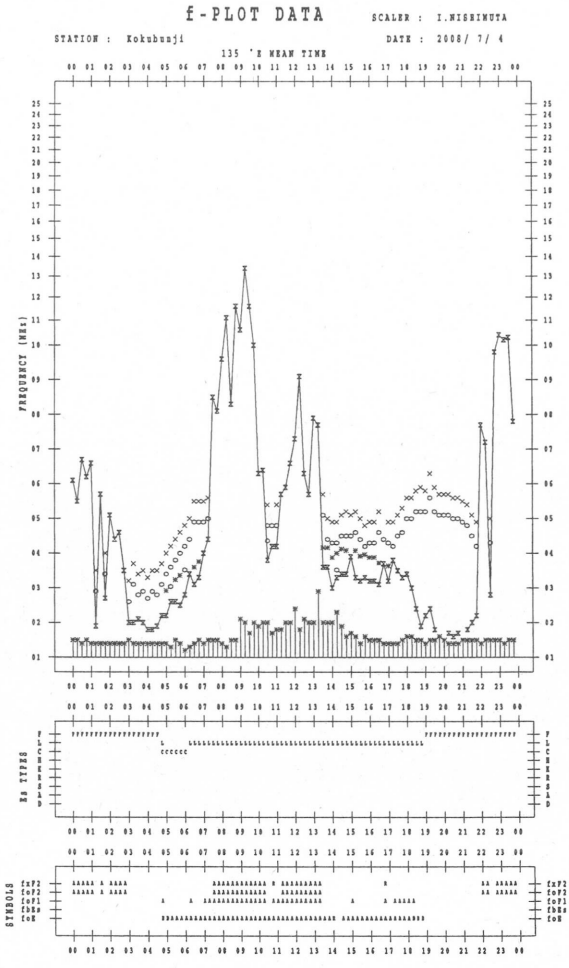
f-PLOTS OF IONOSPHERIC DATA

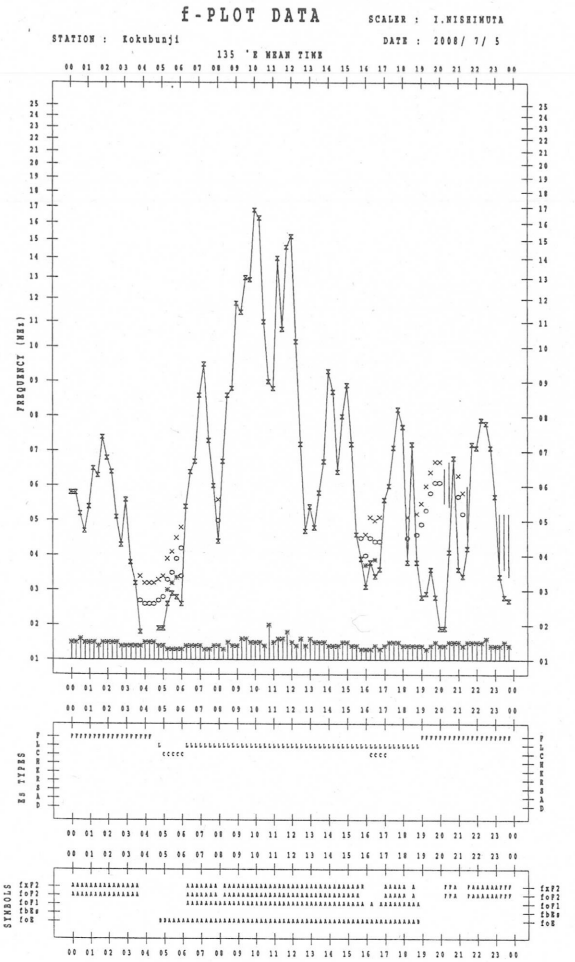
KEY OF f-PLOT	
	SPREAD
	foF2, foF1, foE
	fxF2
	DOUBTFUL foF2, foF1, foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

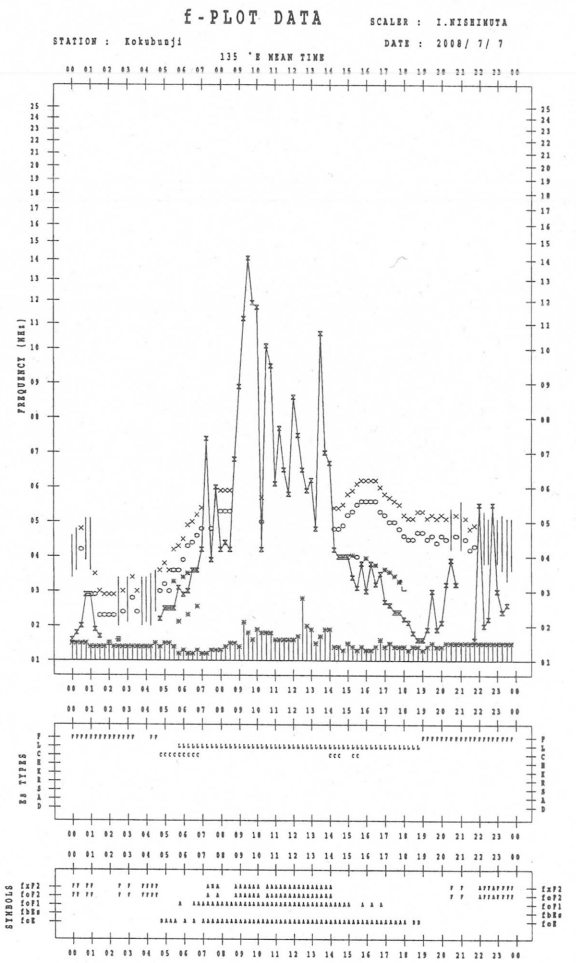

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

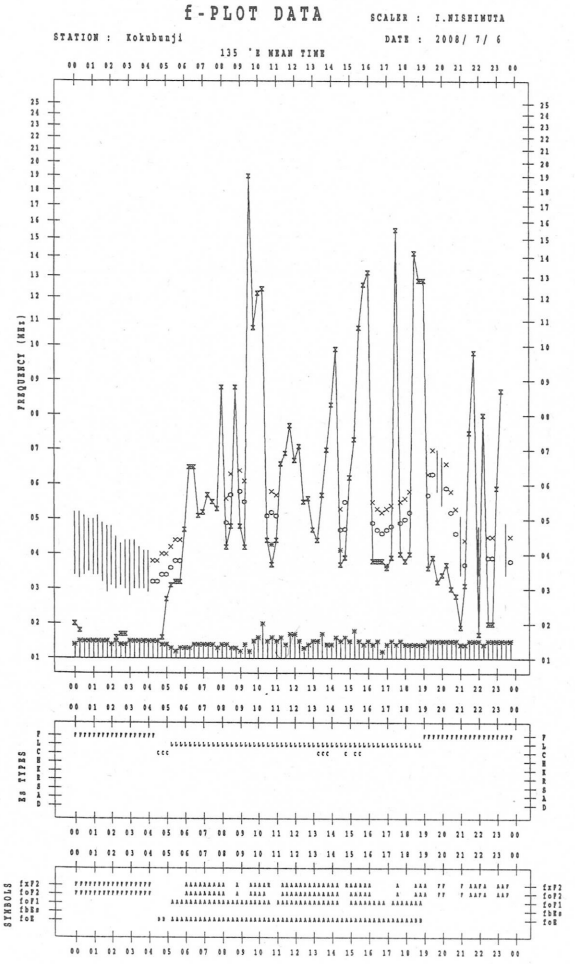

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

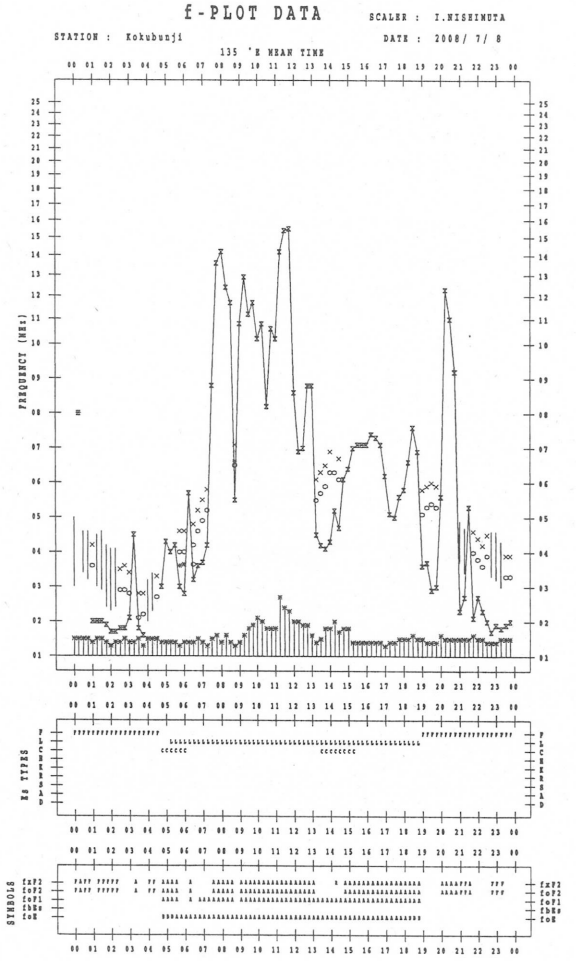

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

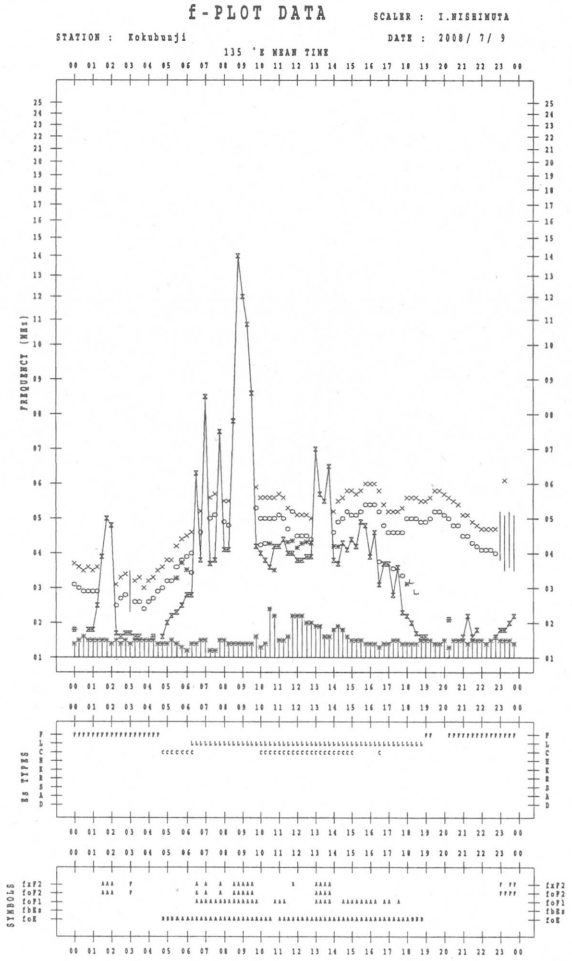

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

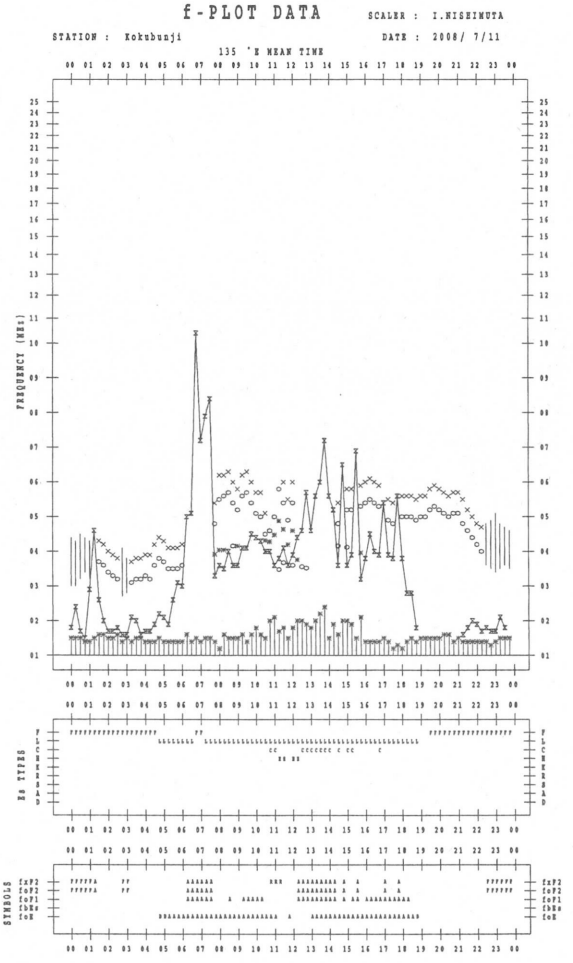

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 5
135 'E MEAN TIME
FREQUENCY (MHz)
Rx TYPES
SYMBOLS

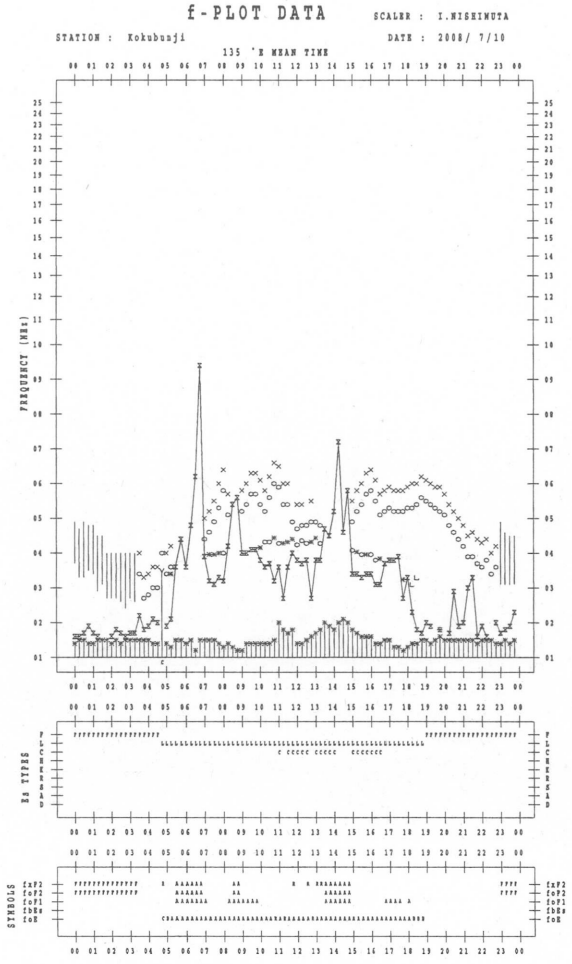

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 7
135 'E MEAN TIME
FREQUENCY (MHz)
Rx TYPES
SYMBOLS

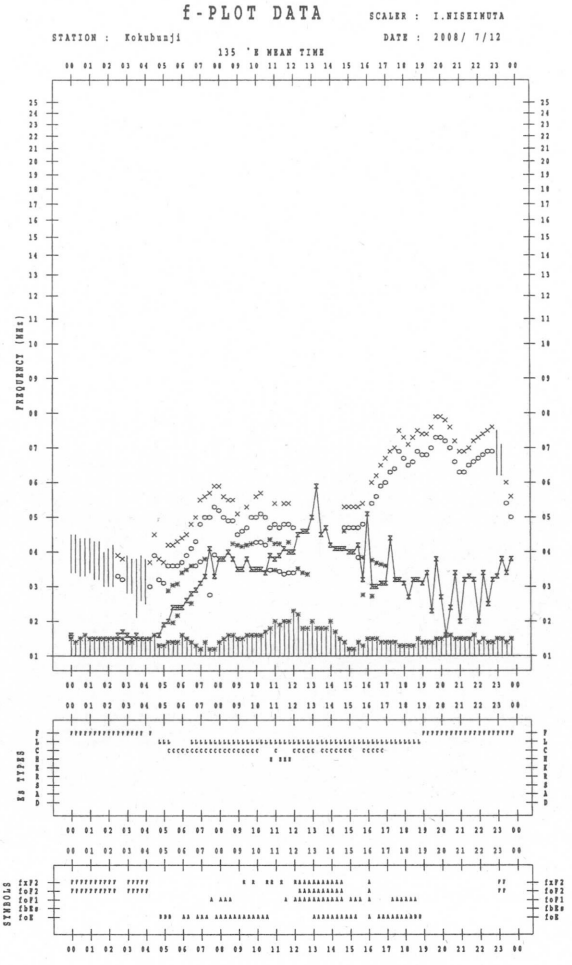

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 6
135 'E MEAN TIME
FREQUENCY (MHz)
Rx TYPES
SYMBOLS

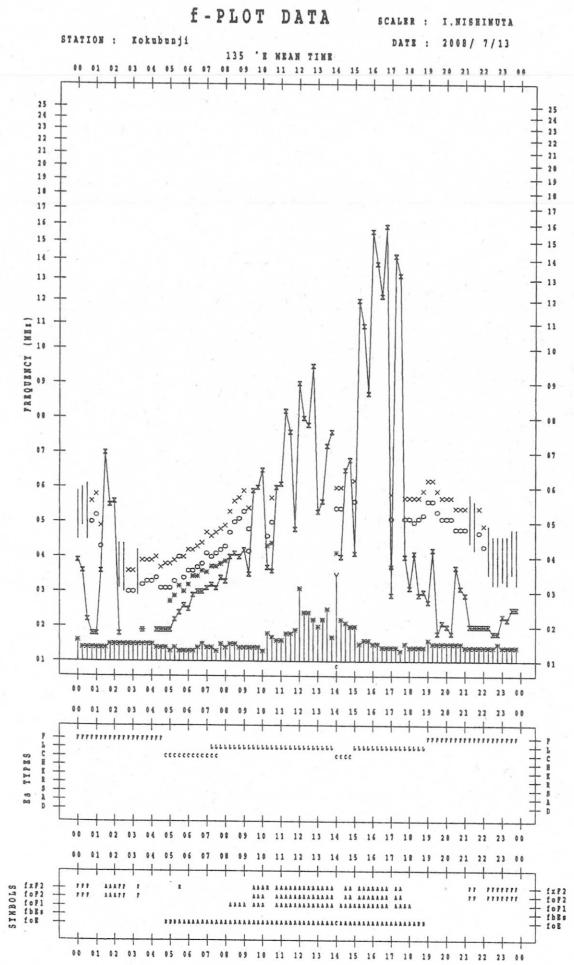

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 8
135 'E MEAN TIME
FREQUENCY (MHz)
Rx TYPES
SYMBOLS

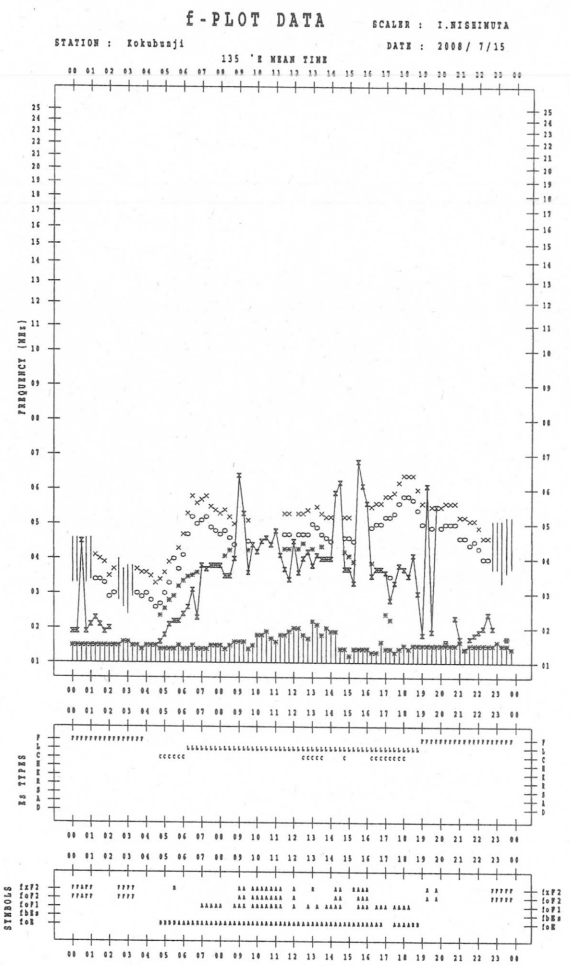

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/ 9
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

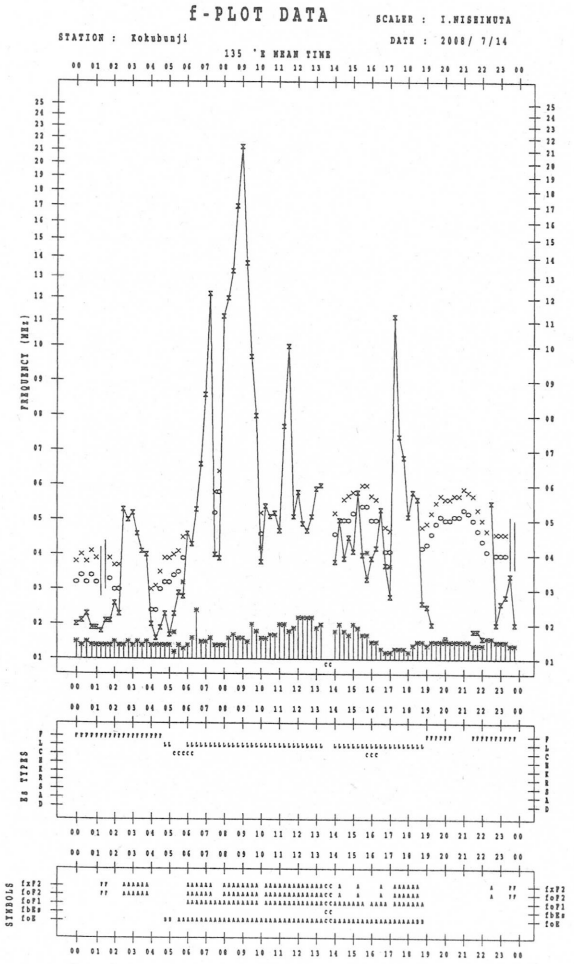

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/11
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

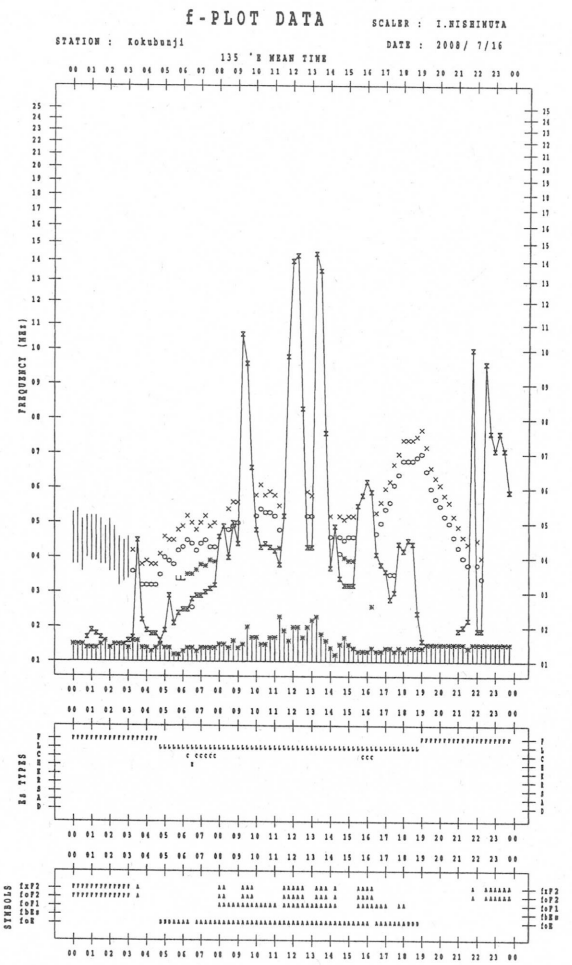

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/10
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

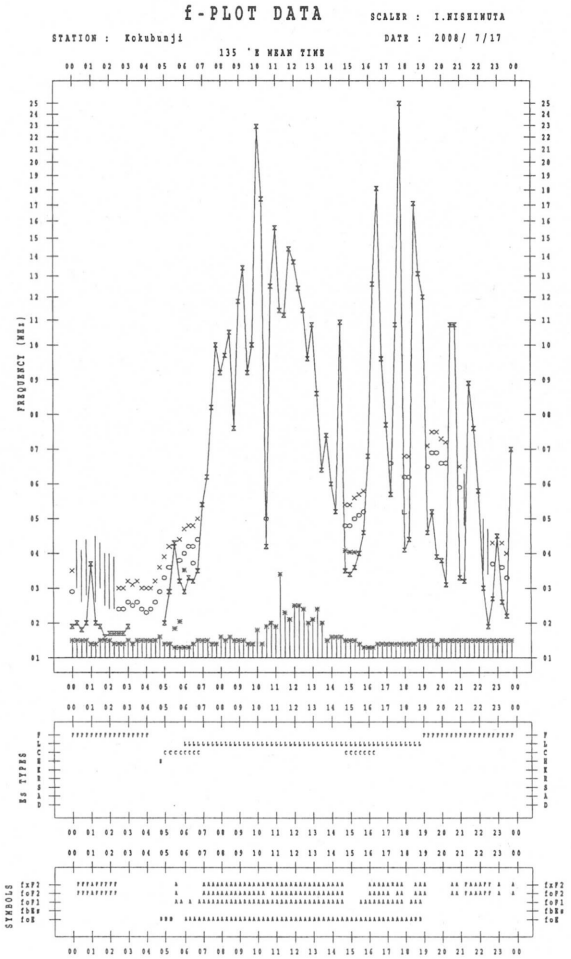

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/12
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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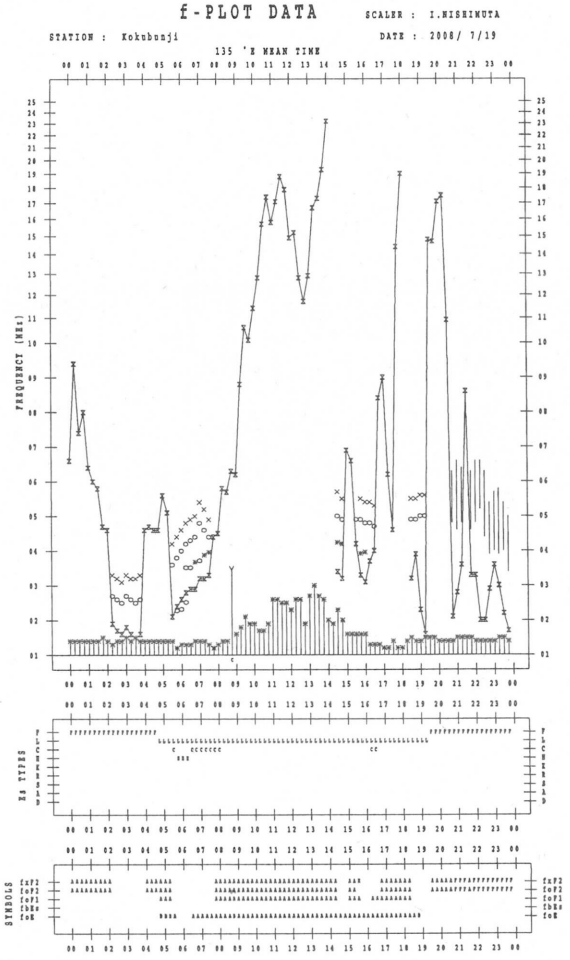
STATION : Kokubunji
DATE : 2008/ 7/17
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
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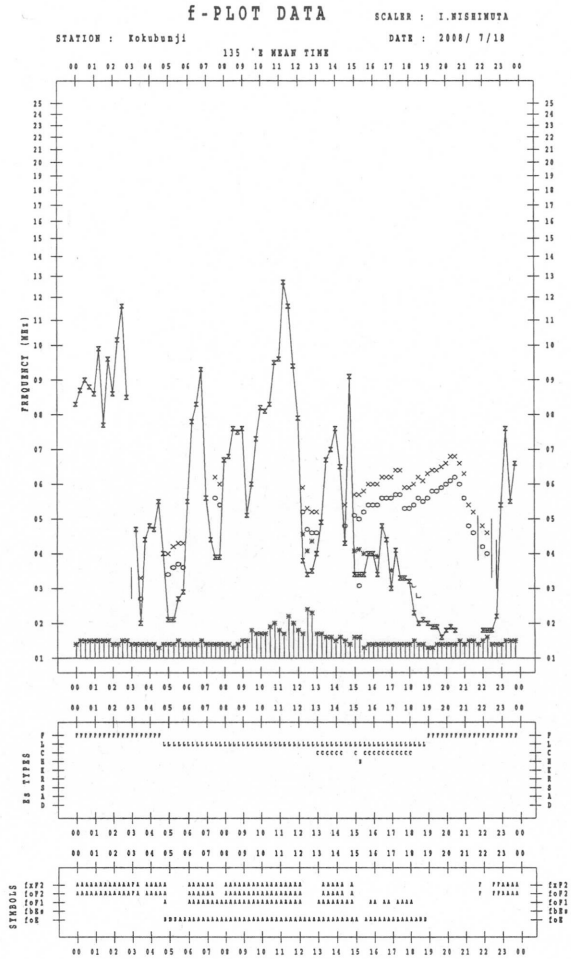
STATION : Kokubunji
DATE : 2008/ 7/19
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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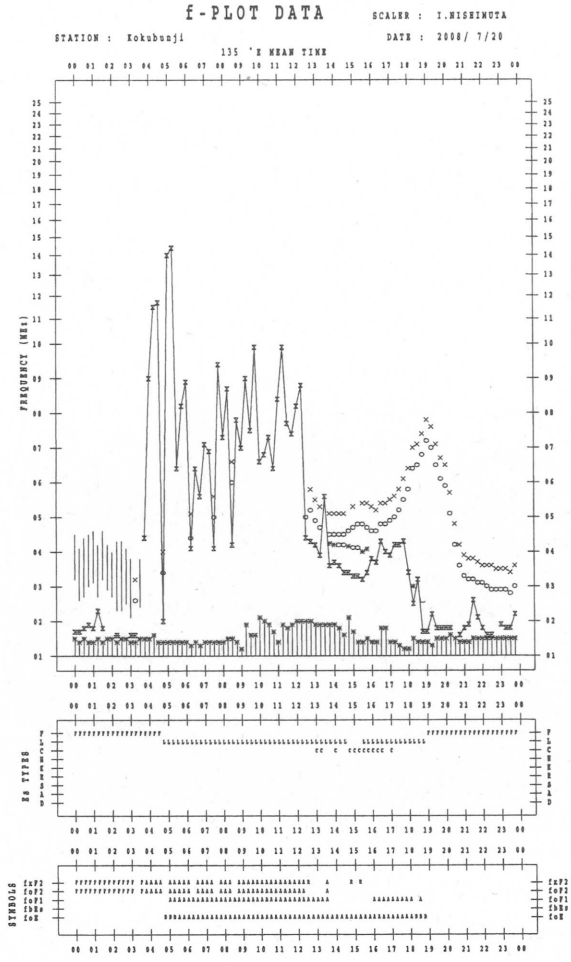
STATION : Kokubunji
DATE : 2008/ 7/18
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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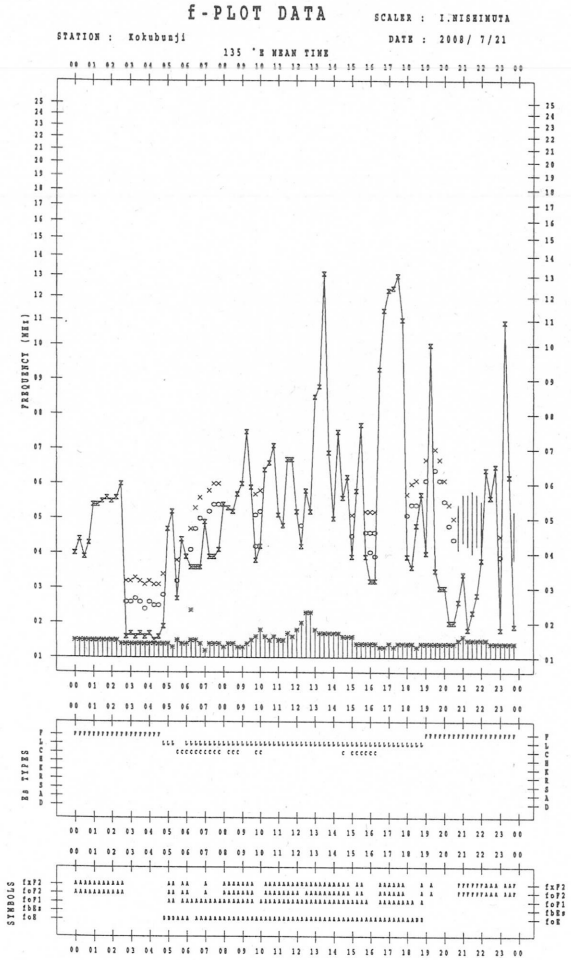
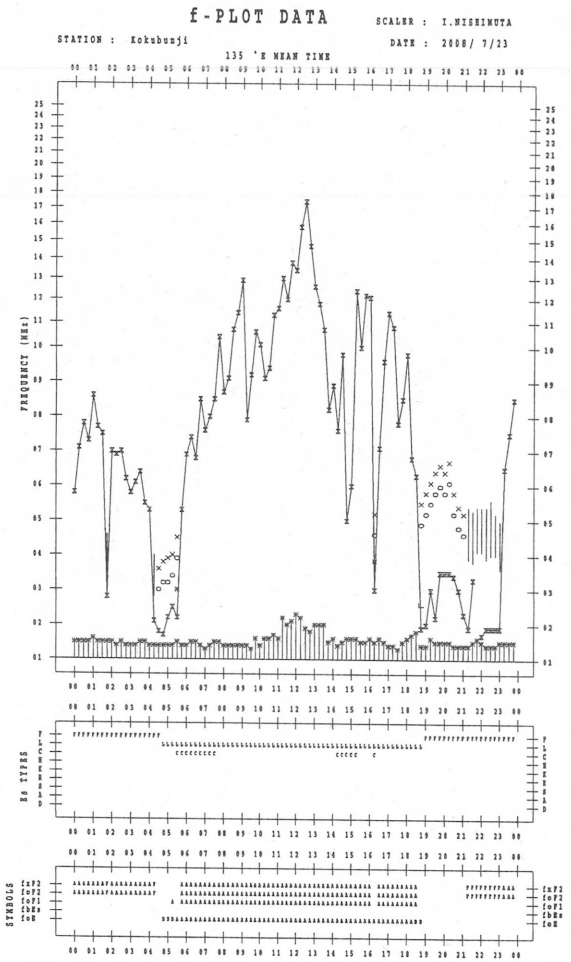
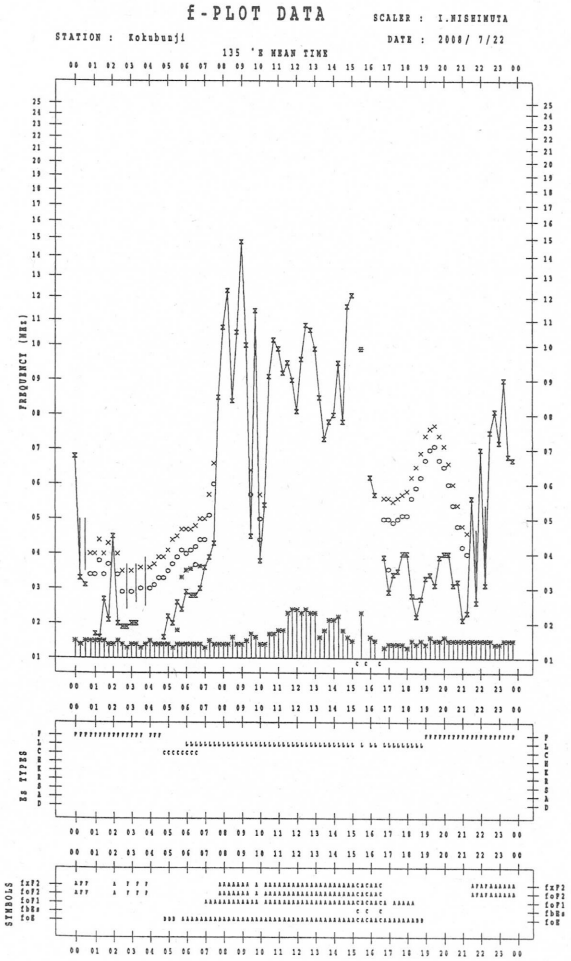
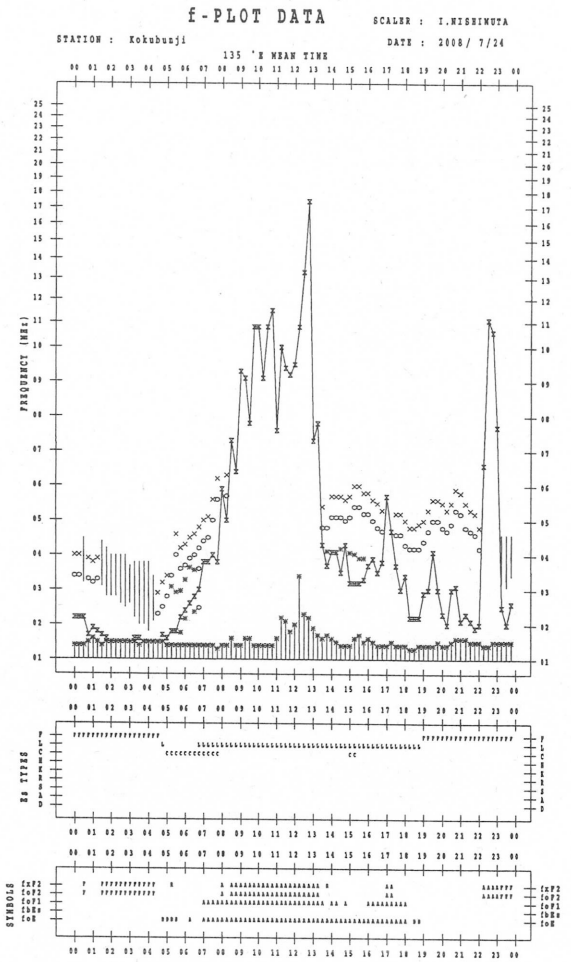
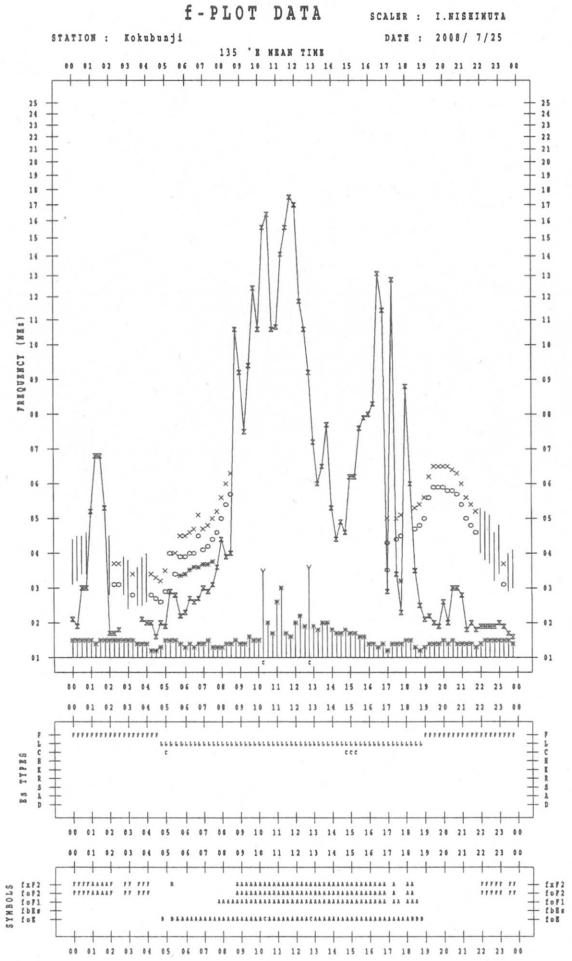
STATION : Kokubunji
DATE : 2008/ 7/20
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

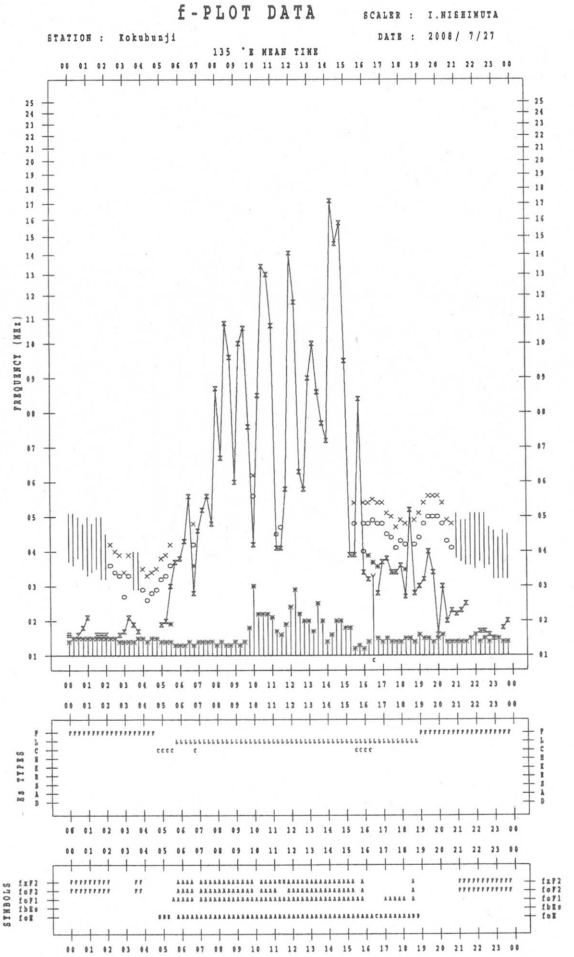

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/21
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

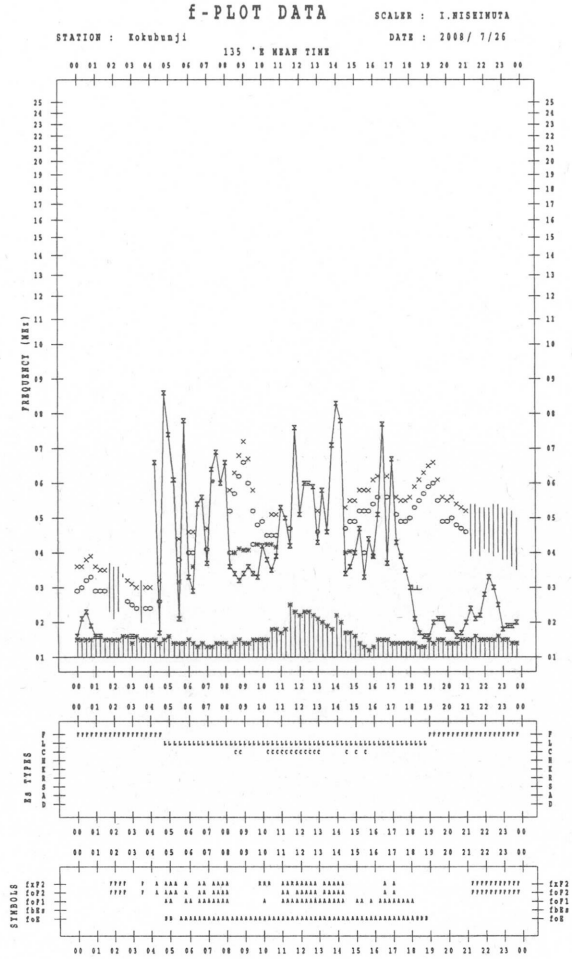

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/23
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

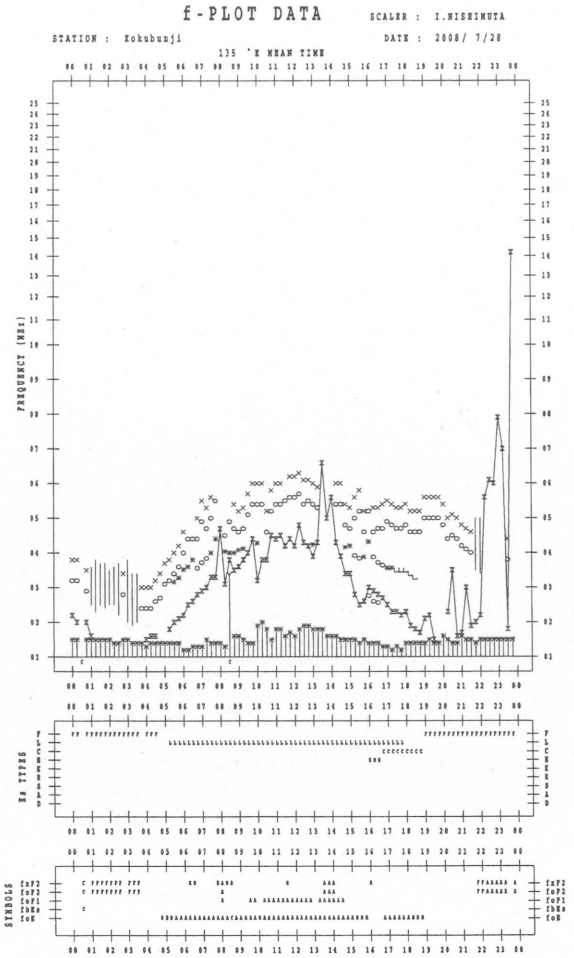

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/22
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

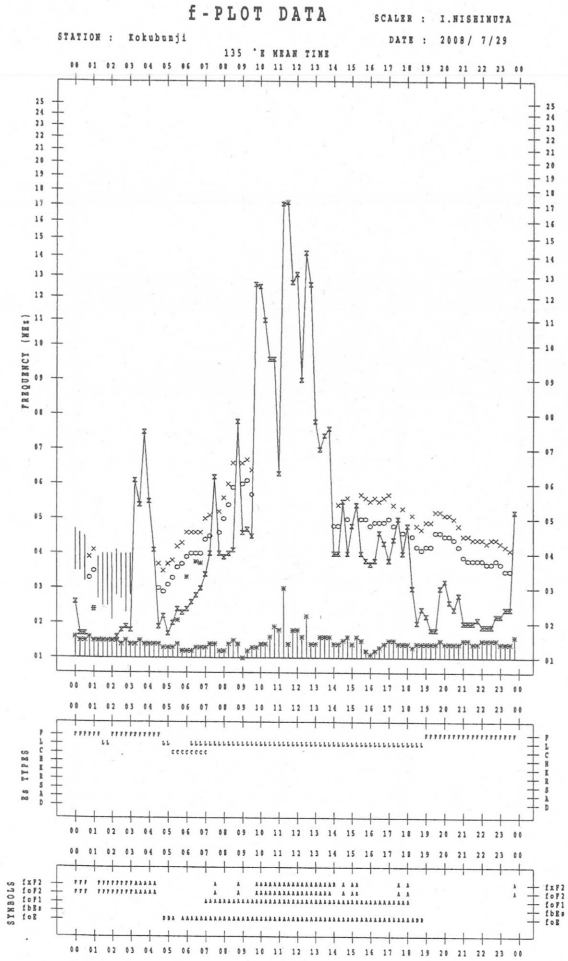

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/24
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

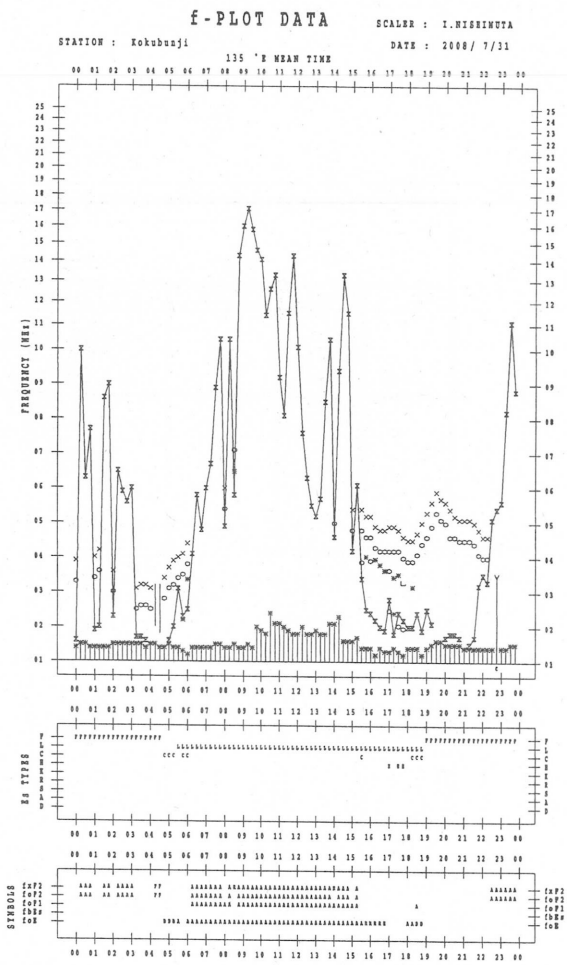

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

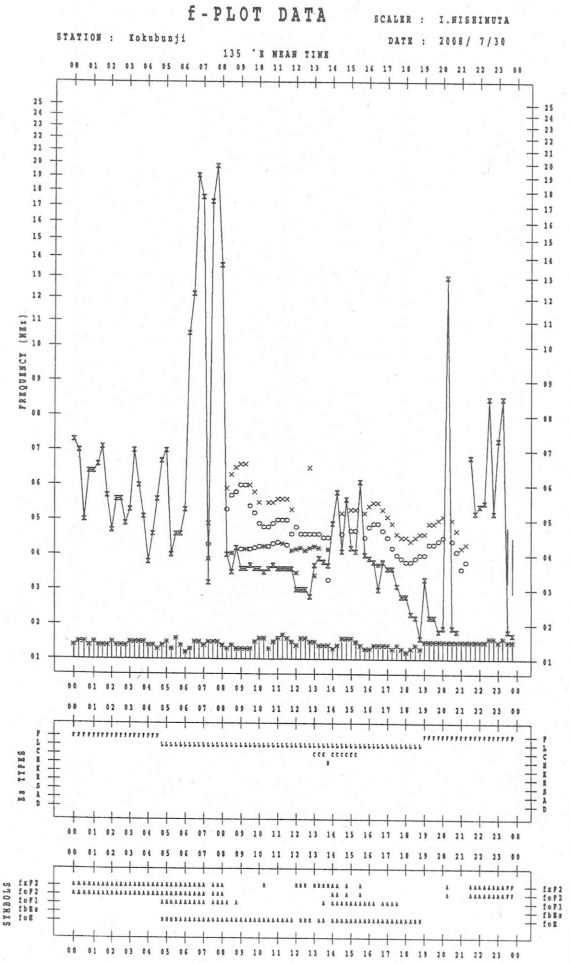

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/31
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2008/ 7/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

B. Solar Radio Emission

B1. Outstanding Occurrences at Hiraiso

Hiraiso July 2008

Single-frequency observations

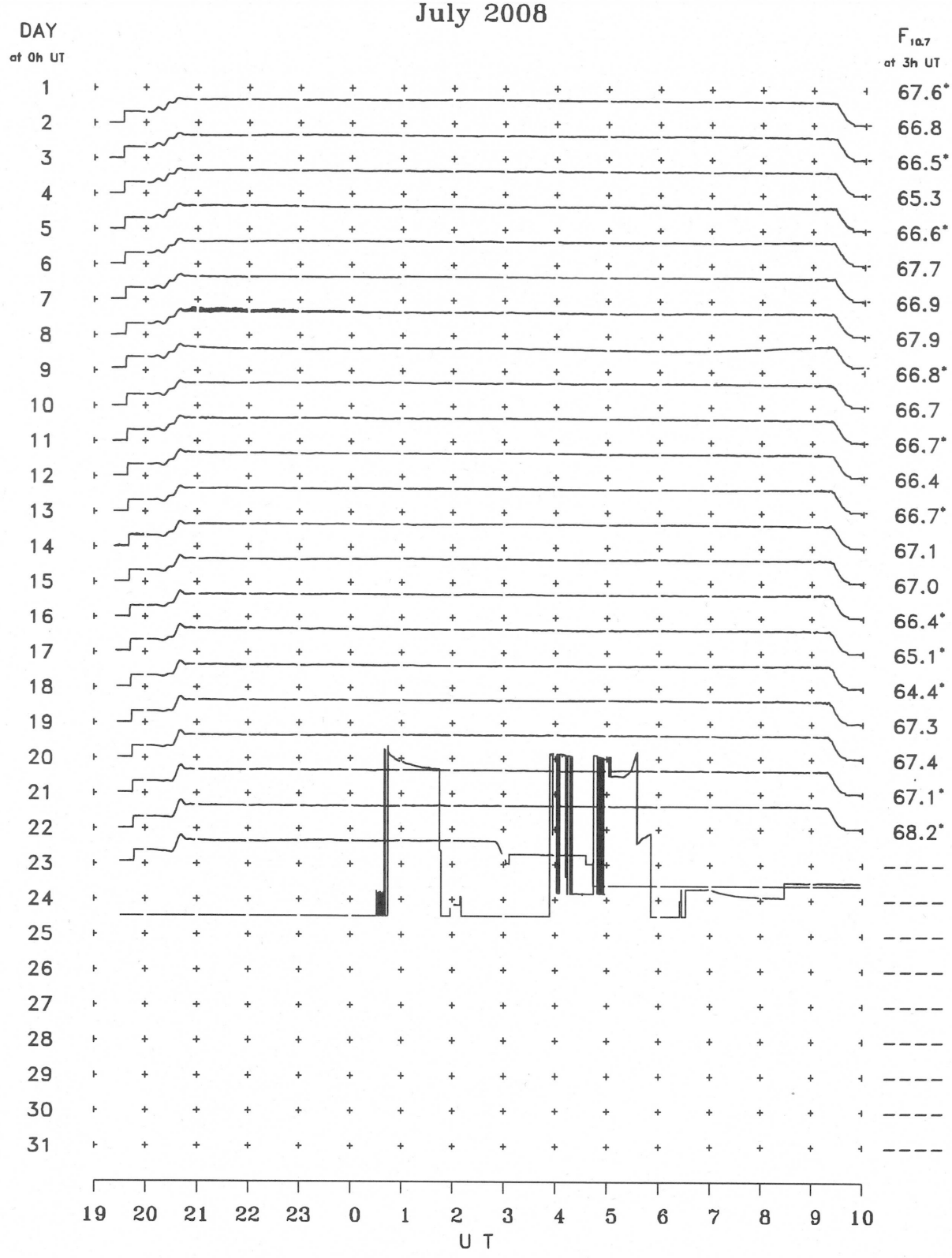
Normal observing period: 1925 – 1000 U.T. (sunrise to sunset)

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

B. Solar Radio Emission

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

July 2008



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

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

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