F-748

IONOSPHERIC DATA IN JAPAN

FOR APRIL 2011

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CONTENTS

≪Real Time Ionograms on the Web ・・・・・・・・・・・・・http://wdc.nict.go.jp/index_eng.html≫

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

Stations	Geographic(WGS84)		Geomagnetic (IGRF-10(2005))		Technical Method
	Latitude	Longitude	Latitude	Longitude	
✳Wakkanai/Sarobetsu	45˚10'N	141˚45'E	36.4˚N	208.9˚	Vertical Sounding (I)
Kokubunji	35˚43'N	139˚29'E	26.8˚N	208.2˚	Vertical Sounding (I)
Yamagawa	31˚12'N	130˚37'E	21.7˚N	200.5˚	Vertical Sounding (I)
Okinawa	26˚41'N	128˚09'E	17.0˚N	198.6˚	Vertical Sounding (I)
Hiraiso	36˚22'N	140˚37'E	27.6˚N	209.1˚	Solar Radio Emission (S)

✳We moved the observation facilities at Wakkanai to Sarobetsu on February 2009. The new observatory is located at approximately 26km south from the old observatory. The observation at Sarobetsu commenced on March 6, 2009.

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 a 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 by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of problems occurring in the auto matic data processing system, but existence of film record.

c. Definitions of 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 spread ***F*** trace
foF2 ***foF1*** ***foE*** ***foEs***	Ordinary wave critical frequency for the ***F2***, ***F1***, ***E,*** and ***Es*** (including particle type ***E)*** layers, respectively
fbEs	Blanketing frequency of the ***Es*** layer, e.g. the lowest ordinary wave frequency visible through ***Es***
fmin	Lowest frequency that shows vertical ionospheric reflections
M(3000)F2 ***M(3000)F1***	Maximum usable frequency factor for a path of 3000 km for transmission by the ***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.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. SOLAR RADIO EMISSION

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

B1. Outstanding Occurrences at Hiraiso

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

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T. expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} Wm^{-2} Hz^{-1} unit, and the polarization.

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

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

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

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

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

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

B2. Summary Plots of F10.7 at Hiraiso

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

APR. 2011

LAT. 45°10.0′N LON. 141°45.0′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	51	53	53	53	46	47	62	63	62	46	70	55	N	68	N	74	71	70	61	63	63	67	54	66
2	54	65	53	50	43	47	53	56	54	62	67	67	70	68	81	70	73	66	63	64	63	64	61	65
3	61	63	54	62	53	54	60	65	72	67	70	68	71	70	91	69	74	68	66	64	66	65	65	62
4	65	52	52	34	53	52	53	63	66	69	87	79	N	46	N	70	75	69	66	64	54	62	54	63
5	66	66	64	63	57	58	60	60	68	70	71	70	70	67	N		74	70	65	66	54	59	53	52
6	53	51	54	50	43	50	60	67	68	70	59	69	66	75	68	90	75	71	67	67	54	58	53	52
7	42	48	34	37	38	48	61	67	65	69	59	70	69	60	61	N	75	69	65	62	63	54	53	61
8	53	52	A	32	19	51	61	64	67	68	70	70	67	61	74		70	73	71	67	66	66	53	60
9	50	50	53	55	52	60	58	63	65	70	70	70	60	70	70	73	71	73	65	66	67	65	64	61
10	53	54	53	47	50	62	64	67	N	N	N	67	82	68	67	74	70	70	66	66	65	66	62	52
11	54	53	52	54	43	54	66	N	88	N	86	67	70	73	69	69	70	70	67	66	65	66	62	63
12	61	62	53	61	58	53	63	65	80	68	70	61	73	N	53	81	70	67	68	67	54	66	58	53
13	54	52	34	38	34	37	43	A	58		A				61	62	62	58	62	63	53	52	38	48
14	25	48	32	47	49	48	60	62	67	67	70	69	71	69	68	70	67	70	66	66	67	66	54	54
15	53	55	54	53	47	53	65	64	69	59	68	68	N	59	69	68	68	67	67	67	67	64	54	54
16	52	52	52	54	54	51	65	64	67	70	68	70	69	67	71	74	68	73	69	67	67	64	63	54
17	62	54	54	60	57	52	57	63	62	64	70	59	71	67	71	67	70	70	69	66	66	65	54	54
18	54	54	61	57	59	66	65	66	67	69	70	67	68	70	71	70	71	68	67	67	66	67	54	54
19	52	53	53	53	52	52	66	66		67	68	70	59	46	71	67	67	63	66	67	67	65	66	62
20	52	54	52	52	42	53	65	66	58	67	66	73	N	N	59	57	N	85	66	64	54	60	34	40
21	38	53	53	50	50	41	51	57	63	65	62	66	63	69	66	70	66	67	65	66	64	54	54	53
22	54	62	54	59	56	54	58	66	66	63	69	59	70	68	67	70	70	70	67	65	64	64	62	54
23	54	52	52	52	52	61	70	65	67	68	70	59	67	69	70	68	69	67	67	66	67	66	62	54
24	64	63	54	57	46	34	46	52		A	63	64	67	67	67	67	68	68	65	62	54	60	52	59
25	54	55	43	41	42	46	45	A	A				A		60	54	60	61	58	57	51	53	53	45
26	54	53	52	58	47	54	61	68	68	68	65	66	68	68	66	67	67	68	67	66	66	54	63	62
27	60	54		54	52	64	68	62	68	64	70	70	60	69	71	70	70	67	67	65	66	54	61	51
28	53	36	53	50	51	55	70	66	68	70	68	68	69	59		N	70	74	66	66	66	66	55	53
29	42	54	53	53	48	62	61	67	66	67	58	59	68	73	68	68	70	A	70	69	67	67	54	52
30	54	49	54	53	53	63	68	65	62	62	65	59	66	59	69	80	68	67	66	65	64	64	63	54
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	28	30	30	30	30	27	26	25	27	28	24	26	26	26	29	29	30	30	30	30	30	30
MED	54	53	53	53	50	53	61	65	67	67	69	68	68	68	68	70	70	69	66	66	65	64	54	54
U Q	54	55	54	57	53	58	65	66	68	69	70	70	70	69	71	73	71	70	67	67	66	66	62	61
L Q	52	52	52	50	43	48	58	63	63	64	65	62	66	61	66	67	68	67	65	64	54	59	53	52

HOURLY VALUES OF fEs AT Wakkanai

APR. 2011

LAT. 45°10.0′N LON. 141°45.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	32	G	G	32	G	37	38	G	39	G	G	G	G	35	29	G	G	G	G	G	G
2	G	24	26	G	G	G	G	33	36	38	G	49	G	G	37	G	G	29	G	G	G	G	G	G
3	G	G	G	G	G	G	27	32	G	G	40	G	G	G	G	42	36	G	G	25	G	G	G	G
4	G	G	G	G	G	26	36	33	35	G	G	G	G	G	G	36	35	29	G	G	G	G	G	G
5	G	G	26	G	24	G	G	G	G	G	G	G	49	38	52		34	29	G	G	G	G	G	30
6	G	G	G	G	G	G	G	38	G	G	G	44	G	G	44	G	43	58	42	30	36	G	G	G
7	G	24	23	G	G	G	31	32	G	G	G	40	G	57	G	37	47	34	27	31	29	26	G	G
8	G	58	41	40	26	G	G	32	G	38	G	G	40	G	G		36	32	G	G	G	29	28	33
9	26	G	G	G	G	G	G	34	37	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G
10	G	G	G	G	G	G	33	36	37	38	G	G	G	G	G	39	34	30	G	24	G	G	G	G
11	G	G	G	G	G	G	32	34	37	G	40	G	G	G	G	G	G	G	30	G	24	G	G	G
12	G	G	G	G	G	G	34	34	38	38	39	G	G	G	G	G	G	33	34	G	G	34	G	G
13	G	G	G	24	24	G	31	39	G	G	39	G	G	G	G	G	34	32	34	27	29	G	35	33
14	G	G	G	G	G	G	G	33	G	G	G	G	G	G	39	G	35	33	28	G	59	G	G	G
15	G	G	G	G	G	G	29	36	37	G	G	G	G	G	G	G	G	36	G	G	G	G	G	G
16	G	G	G	G	G	G	G	36	G	G	G	G	G	39	G	G	35	G	G	G	G	G	G	G
17	27	G	G	G	G	28	36	35	G	G	G	G	G	G	38	G	34	G	G	G	G	G	G	G
18	G	G	G	G	G	G	48	36	G	G	G	G	G	G	G	G	G	70	G	G	G	G	G	G
19	G	G	G	G	G	G	34	35		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	34	39	G	G	G	41	G	G	G	G	35	G	G	G	G	G	G	G
21	G	G	G	G	G	G	29	34	G	G	39	G	41	G	G	38	35	G	32	27	26	G	G	G
22	G	G	G	G	G	G	34	34	36	49	50	G	G	G	G	G	G	G	31	G	27	G	G	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	36	G	G	G	G	G
24	G	G	G	G	G	G	G	G	G	40	40	G	G	G	40	G	G	34	G	G	11	G	G	G
25	G	G	G	G	G	G	G	34	37	G	G	G	40	G	G	G	35	G	33	32	25	G	G	G
26	G	G	G	26	G	28	32	34	G	G	G	G	G	G	G	G	G	G	31	G	G	G	G	G
27	G	G		G	G	G	G	35	G	G	G	G	G	G	G	G	36	41	38	26	G	G	G	G
28	G	G	G	G	G	G	G	35	G	38	G	G	42	G		G	G	45	34	G	33	25	G	G
29	G	G	G	G	G	30	35	G	N	56	40	G	G	G	54	54	69	90	40	44	28	G	G	G
30	G	G	G	G	G	G	G	G	36	G	50	41	G	58	50	48	G	G	G	29	31	G	25	24
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	30	30	30	30	28	30	30	30	30	30	29	28	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	29	34	G	G	G	G	G	G	G	G	34	29	G	G	G	G	G	G
U Q	G	G	G	G	G	G	34	35	36	38	39	G	G	G	37	18	35	34	33	26	27	G	G	G
L Q	G	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

APR. 2011

LAT. 45°10.0′N LON. 141°45.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	14	15	14	14	14	14	14	14	18	26	15	21	14	15	14	14	16	14	15	15	14	14
2	14	14	14	14	14	14	14	14	14	15	14	17	15	16	14	15	14	14	17	16	14	14	14	15
3	14	15	16	14	15	14	17	14	14	14	18	14	27	20	17	14	14	14	17	15	15	14	14	14
4	14	14	15	14	14	16	15	14	14	16	15	16	16	15	15	14	14	14	18	14	14	15	14	14
5	15	15	14	14	15	15	17	14	14	14	14	15	16	16	14		15	14	16	15	15	15	14	14
6	14	14	14	15	15	15	24	14	14	14	17	20	16	18	14	14	14	14	14	14	14	15	14	14
7	15	15	14	14	14	15	15	15	15	16	14	16	20	20	21	17	14	14	15	14	14	14	15	15
8	16	14	14	15	14	15	14	14	15	15	14	20	17	20	17		14	14	20	14	15	14	14	14
9	15	15	14	15	14	15	14	14	14	14	20	14	16	22	18	15	14	14	17	16	16	15	15	14
10	14	14	15	14	14	15	14	14	14	14	14	15	18	17	15	17	14	14	17	15	14	14	15	15
11	16	15	14	14	14	16	14	14	14	14	15	15	16	14	14	14	14	14	14	15	15	15	14	14
12	14	15	15	15	15	15	14	14	14	14	15	16	15	16	14	14	14	14	14	14	14	15	14	14
13	15	14	15	14	15	16	14	15	14	15	15	17	16	18	15	15	14	14	14	15	14	14	14	15
14	16	15	15	15	15	15	14	14	14	17	18	16	23	20	18	14	14	14	14	14	14	14	16	14
15	15	15	15	14	14	16	14	14	14	16	14	20	18	21	18	16	14	14	17	14	14	14	15	14
16	14	14	17	14	14	18	14	14	14	17	48	27	26	22	18	14	14	14	17	14	14	14	14	14
17	14	15	14	14	14	14	14	14	14	18	18	22	21	17	17	14	14	14	17	14	14	14	14	15
18	14	15	14	14	14	14	14	14	14	18	20	20	21	18	18	14	14	14	20	14	14	14	14	14
19	15	15	15	14	14	15	14	14		17	16	17	16	18	17	17	14	14	18	14	14	14	14	14
20	14	14	14	16	15	17	14	14	14	14	15	15	18	18	18	16	14	14	14	14	14	14	15	17
21	15	14	14	14	14	17	14	14	14	16	23	18	20	21	18	17	14	14	15	14	14	15	14	15
22	14	14	14	14	14	17	14	14	15	17	15	20	22	23	55	18	14	14	14	15	15	15	14	14
23	14	15	14	14	14	18	14	15	14	15	18	23	20	45	15	17	14	14	16	14	15	14	14	15
24	14	15	15	14	14	18	14	14	14	14	18	51	26	20	17	16	16	14	20	15	14	15	14	14
25	15	14	14	14	14	18	14	14	14	15	21	18	22	20	15	14	14	14	14	15	14	14	15	14
26	14	14	15	14	15	14	14	14	14	15	18	17	47	15	15	14	14	14	14	14	14	14	15	14
27	14	14		14	14	18	14	14	15	15	17	18	21	22	16	15	14	14	14	14	14	14	14	14
28	16	14	14	14	15	18	14	14	14	15	18	20	26	17		15	14	14	14	14	14	15	14	14
29	14	15	15	14	14	14	14	14	15	17	18	20	32	26	18	14	14	14	14	14	14	14	15	14
30	14	15	15	14	15	17	14	14	15	15	17	16	18	20	24	14	14	14	15	14	14	15	14	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	30	30	30	30	29	30	30	30	30	30	29	28	30	30	30	30	30	30	30	30
MED	14	15	14	14	14	15	14	14	14	15	17	18	19	20	17	15	14	14	16	14	14	14	14	14
U Q	15	15	15	14	15	17	14	14	14	16	18	20	22	21	18	16	14	14	17	15	15	15	15	15
L Q	14	14	14	14	14	15	14	14	14	14	15	16	16	17	15	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

APR. 2011

LAT. 35°43.0′N LON. 139°29.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52	52	44	52	46	44	64	72	84	81	91	95	98	102	90	86	78	78	78	64	54	54	53	54
2	53	52	51	42	27	30	54	68	78	88	94	100	104	91	91	82	82	76	75	67	54	54	54	54
3	67	54	52	43	44	44	51	75	78	82	81	91	102	97	100	98	98	92	78	67	54	54	52	52
4	53	54	52	53	53	52	67	78	85	97	91	97	107	108	97	92	87	85	77	73	53	54	54	53
5	52	64	54	51	46	53	69	77	82	86	87	92	102	103	108	106	101	87	76	63	52	53	54	54
6	54	53	54	44	44	44	62	73	88	86	98	100	100	106	101	102	105	101	86	76	64	54		54
7	54	62	52	43	37	43	54	81	85	77	86	108	105	107	111	110	100	86	78	73	66	64	66	67
8	54	54	52	51	39	42	54	72	78	85	90	93	97	107	110	111	102	95	97	97	80	54	54	53
9	58	52	54	53	42	45	73	64	72	78	85	83	88	102	110	106	101	93	87	87	86	80	64	54
10	54	52	51	42	43	45	73	80	90	97	86	91	96	101	101	100	92	90	97	98	81	67	62	53
11	53	51	52	44	44	46	67	81	94	88	90	88	92	94	98	98	92	84	90	80	54	54	54	51
12	53	53	51	49	N	52	66	68	81	91	96	100	110	116	120	107	90	76	81	86	86	54	53	53
13	48		44	51	41	39	58	58	N			66	80	86	82	75	73	76	81	88	64	A	43	43
14	45	43	41	42	27	54	63	68	72	78	90	98	107	110	105	100	96	88	88	80	67	46	53	54
15	54	53	52	45	51	53	67	82	90	82	78	90	101	102	100	92	88	91	101	100	76	A	45	54
16	54	54	54	53	51	55	63	71	66	74	85	98	103	105	102	104	97	97	90	82	63	53	53	51
17	53	53	53	53	47	46	58	67	76	76	90	90	88	88	85	96	101	102	90	N	67	54	54	54
18	54		54	54	53	53	61	69	78	78	86	93	95	97	96	95	101	100	98	87	73	71	64	54
19	54	54	53	66	53	53	68	77	78	92	98	94	100	100	91	85	85	84	84	80	73	54	52	51
20	52	49	53	47	42	44	64	67	73	80	90	102	106	116	116	104	101	97	90	81	52	47	53	52
21	44	53	46	51	42	45	58	65	65	67	80	87	84	84	97	87	87	75	76	67	54	52	54	53
22	54	54	53	47	47	44	57	65	74	76	74	72	88	102	103	105	95	81	71	72	54	54	64	54
23	65	54	66	56	51	52	66	65	75	76	80	81	96	96	104	102	90	81	80	80	73	74	64	54
24	54	54	54	54	53	60	67	65	67	72	73	80	80	86	94	96	96	84	76	64	54	54	64	54
25	54	53	52	53	54	53	A	47				66	73	85	83	77	72	74	76	73	52	52	53	44
26	53	47	53	47	39	39	63	72	72	76	78	91	87	94	85	84	80	81	87	73	66	54	54	52
27	52	52	54	67	58	46	62	67	67	72	95	107	103	108	105	104	107	108	106	90	75	77	54	51
28	52	53	54	44	42	45	69	71	76	88	88	91	98	101	106	112	102	90	91	N	75	64	66	53
29	54	54	54	53	52	54	80	68	75	78	70	84	97	105	102	101	91	98	101	102	81	A	53	54
30	54	52	51	54	53	52	62	72	76	87	100	97	91	87	117	116	88	68	99	76	78	72	66	54
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	28	30	30	29	30	29	30	28	28	28	30	30	30	30	30	30	30	30	28	30	27	29	30
MED	54	53	52	51	46	46	63	70	77	80	88	92	98	102	101	100	94	86	86	80	66	54	54	54
U Q	54	54	54	53	52	53	67	75	83	87	91	98	103	106	106	105	101	95	91	87	75	64	64	54
L Q	52	52	51	44	42	44	58	67	72	76	80	87	88	94	94	92	87	81	78	72	54	54	53	52

HOURLY VALUES OF fEs AT Kokubunji

APR. 2011

LAT. 35°43.0′N LON. 139°29.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	G	G	G	G	G	G	50	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	26	24	36	G
3	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	26	G	G	28	G	G
4	23	27	G	G	G	G	26	G	G	G	52	50	G	G	G	G	G	G	G	G	G	G	G	G
5	G	G	G	27	G	G	G	G	G	G	G	G	G	G	G	G	53	29	G	G	G	29	G	G
6	G	G	G	23	G	G	G	G	G	G	G	G	G	46	41	G	42	35	G	G	G	G		G
7	G	G	G	G	G	G	G	G	G	G	49	G	53	G	47	40	G	G	G	26	26	23	G	30
8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
9	G	27	G	31	28	29	G	G	G	G	G	G	G	G	G	G	G	G	40	30	29	G	G	G
10	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	G	G	G	35	G	42	24	G
11	G	G	G	G	G	G	34	G	G	40	G	G	G	G	G	G	G	40	32	36	33	G	G	G
12	G	G	G	G	G	G	G	40	46	50	G	G	G	G	G	G	G	56	51	55	49	26	28	G
13	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	25	27	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	33	24	26	27	G	31
15	33	G	G	G	G	G	G	G	G	G	G	G	G	40	47	G	38	34	33	61	28	37	G	G
16	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	31	28	G	G	G	G	G
17	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	29	24	G	G	G
18	G		G	G	G	G	28	G	G	G	G	G	59	47	G	47	G	31	35	30	G	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	G	G	G	G	G
20	G	G	G	G	G	G	32	G	G	45	G	G	G	51	G	G	48	G	37	32	G	G	G	G
21	G	G	G	G	G	G	G	G	G	49	G	G	G	G	G	G	G	G	31	35	G	36	28	G
22	G	G	G	G	G	G	29	G	39	G	G	G	G	41	G	53	53	G	34	34	48	G	G	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	48	G	42	G	G	32	28	32	39	27
24	26	23	G	G	G	G	G	G	G	G	G	G	G	G	G	61	68	73	53	28	29	29	29	G
25	27	29	G	30	34	28	30	G				49	G	64	G	G	G	G	36	40	51	G	G	G
26	G	G	G	G	G	G	29	G	G	G	47	51	60	49	G	G	47	45	54	45	50	57	33	49
27	51	53	52	29	33	G	29	45	G	53	63	52	73	84	59	53	60	46	35	52	60	51	23	G
28	G	G	G	G	G	G	46	65	G	G	G	G	45	65	G	68	50	48	134	51	52	28	22	G
29	G	G	G	G	G	G	G	G	G	52	65	G	G	62	57	G	60	54	63	49	36	72	G	26
30	G	G	G	G	G	G	G	G	G	G	G	G	G	59	G	40	G	38	135	60	29	49	27	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	29	29	28	30	30	30	30	30	30	30	30	30	30	30	29	30
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	30	26	24	G	G
U Q	G	G	G	G	G	G	29	G	G	G	G	G	G	49	G	G	47	38	37	40	33	32	27	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

APR. 2011

LAT. 35°43.0′N LON. 139°29.0′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	13	14	14	14	25	14	18	18	44	50	45	36	42	36	15	14	20	17	14	13	14	14
2	14	14	14	13	21	21	22	17	17	40	48	43	33	47	44	39	18	14	17	14	15	15	13	14
3	14	13	14	14	14	14	22	13	17	42	44	45	45	44	45	39	37	20	13	14	14	14	20	20
4	14	14	14	14	15	14	15	17	18	42	38	36	48	47	44	38	39	13	18	15	14	14	14	14
5	18	17	14	14	14	14	14	14	20	40	44	48	42	45	36	20	13	13	18	14	14	13	13	14
6	13	13	13	15	14	14	18	15	21	42	43	40	52	33	33	42	13	13	20	14	14	14		14
7	14	14	17	14	14	14	14	17	15	37	35	53	34	47	38	20	15	14	18	18	14	14	13	14
8	13	14	17	21	14	14	14	13	22	38	45	46	44	51	43	22	17	14	20	14	18	14	13	14
9	21	14	14	13	13	13	29	14	18	42	44	48	48	45	45	43	13	13	14	14	14	14	14	14
10	14	14	14	13	18	14	15	13	18	40	42	47	47	50	43	43	17	31	14	14	14	14	14	15
11	15	14	13	14	14	14	29	13	37	34	42	53	46	49	44	42	14	15	13	13	14	14	14	14
12	14	14	20	13	14	15	17	13	20	35	44	53	50	47	45	39	15	14	13	13	13	14	13	17
13	14	22	14	40	14	13	23	17	20	35		55	47	52	44	40	15	14	13	20	13	14	14	14
14	14	13	13	14	17	14	24	14	40	45	51	42	52	45	43	42	36	15	13	14	15	13	18	13
15	13	14	14	14	14	13	14	14	17	44	44	49	52	33	34	40	15	13	13	14	14	14	20	34
16	13	17	14	13	13	13	13	14	39	43	51	45	49	38	47	26	39	21	14	15	14	14	14	17
17	14	14	13	14	14	14	36	15	41	39	48	45	45	54	50	22	40	18	13	14	14	20	14	14
18	14		14	14	13	13	18	37	38	42	44	46	39	52	45	40	17	18	15	13	17	15	15	14
19	20	14	14	13	14	14	24	14	39	37	44	39	48	50	44	43	34	14	14	14	14	14	14	14
20	14	14	13	14	13	14	13	14	14	42	44	48	20	36	44	35	34	28	13	13	14	17	14	14
21	17	14	14	15	14	15	31	15	37	35	52	47	43	52	48	40	37	18	13	14	14	13	13	14
22	18	14	14	18	15	15	15	15	40	35	52	54	51	34	55	33	21	18	14	13	13	14	13	13
23	13	14	14	14	15	17	30	18	40	35	44	53	47	52	33	43	21	15	20	13	14	14	13	14
24	17	14	14	13	21	15	14	17	21	43	49	47	51	55	45	31	18	15	13	14	15	14	13	20
25	14	14	14	13	14	14	14	20				36	55	37	52	44	40	18	14	14	13	14	20	14
26	14	14	14	15	13	18	15	20	43	44	34	35	34	37	40	44	31	14	13	13	13	13	13	14
27	13	13	13	14	13	20	14	18	40	34	38	37	39	37	33	31	26	14	13	13	13	14	14	14
28	14	14	13	13	14	21	22	17	21	46	45	58	56	37	37	30	18	14	23	13	13	14	13	14
29	13	13	14	14	13	20	18	15	21	38	34	54	53	40	39	36	20	13	15	13	14	13	22	15
30	14	13	13	14	13	36	14	35	42	18	52	60	53	34	45	41	22	34	14	15	14	14	13	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	29	29	28	30	30	30	30	30	30	30	30	30	30	30	29	30
MED	14	14	14	14	14	14	18	15	21	40	44	47	47	45	44	39	19	14	14	14	14	14	14	14
U Q	14	14	14	14	14	15	24	17	39	42	48	53	51	50	45	42	34	18	18	14	14	14	14	14
L Q	14	14	13	13	13	14	14	14	18	35	42	43	43	37	39	31	15	14	13	13	14	14	13	14

HOURLY VALUES OF foF2 AT Yamagawa

APR. 2011

LAT. 31°12.0′N LON. 130°37.0′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	54	54	52	51	46	53	59	78	80	89	88	93	69	90	87	84	88	91	77	55	A	54	54
2	54	54	54	49	29	29	38	66	77	74	93	88	90	88	79	86	91	90	83	76	54	54	54	54
3	54	67	50	43	42	37	41	72	81	80	76	66			85	90		96	87	80	71	54	54	54
4	66	54	52	47	48	44	44	78	91	92	77	86	78	100	96		94	90	87	78	72	52	54	52
5	67	34	52	49	46	44	52	71	81	87	80	85	94	62	N	95	93	96	90	78	74	54	54	54
6	53	52	53	53	43	32	46	72	87	96	90	90	91	96	49	97	57	88	96	87	82	77		54
7	52	67	54	54	57	54	77	69	67	71	83	92			96	99	98	73	91	86	77	54	54	55
8	54	54	54	46	42	34	46	68	80	86	86	83	91		89		N	N	91	N	80	72	54	54
9	53	54	51	46	41	42	58	70	72	77	75	93	84	85	112	109	106	91	110	79	85	77	46	54
10	52	52	54	47	38	34	54	78	84	86	76	80		96	58	98	104	97	88	78	79	54	54	51
11	52	53	52	48	45	41	52	84	85	78	78	94	97	N	97	94	94	89	96	88	67	52	54	52
12	52	52	54	52	42	43	52	66	78	86	83	86	79		73	110	97	90	93	77		52	50	54
13	43	52	50	53	48	36	58	56	63	65	67	76	82	91	86	90	84	88	90		72	A	43	43
14	45	44	44	44	47	47	54	66	67	80	87	69	89	69		108	N	90	94	88	67	72	54	54
15	53	53	52	51	50	45	54	56	85	88	78	80	90	N	107	99	89	97	89		77	33	53	54
16	54	47	54	54	57	40	52	66	67	74	76	91	64		79	79	N	110	88	74	54	52	54	50
17	52	53	53	49	45	32	54	69	74	77	78	88	87	69		96	94	96	84	88	77	67	73	54
18	67	52	63		50	42	54	64	78	86	72		88	69	91	79		88		89	77	54	54	54
19	52	54	54	54	47	40	54	66	75	86	93	91	96	49	96	65	90	94	91	86	64	53	52	52
20	52	52	53	50	47	34	53	70	72		88	58	69	69	79	98	58	113	96	87	64	52	54	52
21	48	51	52	54	47	42	54	65	68	74	77	86	87	66	69	110	90	78	80	78	54	54	53	53
22	52	53		66	53	48	61	70	75	75	78	68	88	79	94	69	89	88	85	78	64	33	54	53
23	67	66	54	62	50	53	63	68	72	72	72	84	91	60	96	94	94		97	92	76	73	54	54
24	54	52	54	53	54	45	72	78	83	75	74	78	92	86	95	79	91	90	88	84	54	54	43	54
25	46	54	51	54	52	54	66	67	58	64	72	80	69	79		91	90	86	84	79	66	52	54	53
26	54	51	52	52	41	40	54	71	72	75	77	A	98	94	64	96	95	90	92	76	54	A	66	54
27	60	54	54	66	45	34	54	67	68	78	90	86	79	105	A	116	131	114	81	79	87	74	80	78
28	73	53	66	72	50	44	54	66	74	85	88		87	111	79	69	111		89	54	77	54	67	54
29	54	52	53	54	54	50	43	66	67	66	73	84	90	94				94	88	79	84	52	52	54
30	67	54	54	53	52	47	54	63	74	81	72	76	A	69	N	110	64	78	A	78	79	83	54	66
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	29	30	30	30	30	30	29	30	27	26	23	23	27	24	27	28	27	29	27	29	30
MED	53	53	53	52	47	42	54	68	74	78	78	85	88	79	89	95	92	90	90	79	72	54	54	54
U Q	54	54	54	54	51	46	54	71	81	86	87	88	91	94	96	99	96	96	92	87	78	72	54	54
L Q	52	52	52	48	43	36	52	66	68	74	75	78	82	69	79	86	89	88	87	78	64	52	53	53

HOURLY VALUES OF fEs AT Yamagawa

APR. 2011

LAT. 31°12.0′N LON. 130°37.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	53	34	46	G	54	G	44	43	44	G	33	G	G	23	58	G	29
2	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	43	50	46	35	31	39	G	49	34
3	40	26	G	G	G	G	G	G	34	G	G	48			57	38		36	34	27	G	34	G	G
4	G	24	46	24	G	G	26	34	35	G	G	G	47	57	50		G	34	35	34	G	G	39	40
5	G	29	G	G	G	G	G	G	36	G	G	G	42	43	44	G	G	G	G	28	G	G	G	49
6	33	29	43	30	32	33	24	35	36	38	41	50	G	47	G	G	52	55	36	24	26	G		G
7	G	G	G	G	G	G	24	36	48	48	46	48			43	G	36	37	27	G	40	34	30	29
8	G	G	27	G	G	G	G	G	G	G	G	G	44		44		41	36	28	29	G	G	G	G
9	G	G	G	G	26	G	30	54	34	G	41	44	50	44	G	58	53	45	40	28	G	30	32	G
10	G	G	G	G	G	G	26	36	38	40	G	G		G	G	39	G	35	34	43	29	32	59	51
11	25	G	G	G	G	G	26	36	41	46	G	G	G	G	49	G	G	33	G	30	G	G	G	G
12	G	G	G	G	G	G	G	37	47	48	G	46	G		45	G	G	34	36	42		45	32	30
13	G	G	G	G	G	G	G	31	39	G	G	G	G	G	G	G	G	G	G		11	34	G	G
14	G	G	G	G	G	G	29	35	35	G	G	G	G	42		G	48	46	39	32	G	35	28	G
15	36	34	G	G	G	G	G	36	35	44	45	44	46	G	42	G	G	43	44		39	43	33	G
16	G	G	G	G	G	11	G	G	36	G	G	46	52		G	49	50	49	61	72	44	32	G	G
17	G	G	G	G	G	G	30	G	41	39	G	46	G	G		G	40	40	28	29	G	G	36	G
18	G	G	G		11	G	29	G	G	G	G		G	G	G	44		49		32	G	G	G	G
19	G	G	G	G	G	G	29	36	35	39	G	G	G	41	G	G	37	52	61	32	39	25	G	G
20	G	G	G	G	G	G	G	36	G		G	G	42	G	G	G	G	42	39	35	40	32	G	G
21	G	G	G	G	G	G	30	39	43	48	G	G	43	47	62	53	G	56	80	32	25	29	G	33
22	G	G		G	G	G	G	35	36	47	49	G	G	41	G	42	G	G	61	40	36	49	44	40
23	G	G	G	G	G	35	G	38	44	56	41	44	G	G	49	44	49		40	26	29	G	28	27
24	G	G	G	G	26	27	G	G	G	G	49	50	55	61	49	46	48	35	G	34	G	G	G	G
25	G	G	G	G	G	G	32	46	49	50	52	42	49	G		G	G	G	41	46	49	40	28	G
26	G	G	G	G	G	G	G	37	36	50	62	75	60	62	42	G	G	42	52	31	31	71	46	G
27	G	33	50	G	G	G	G	40	53	64	42	54	58	82	92	76	71	91	86	59	57	36	49	32
28	34	33	G	27	33	36	40	44	36	47	40	G	43	45	47	48	81		59	57	44	44	26	48
29	G	G	G	G	G	G	G	32	G	G	43	G	44	61				63	69	72	70	27	36	43
30	G	G	G	G	G	G	G	33	120	46	62	52	49	62	52	62	68	67	84	56	37	46	35	29
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	29	30	30	30	30	30	29	30	29	27	25	26	27	27	28	29	28	29	30	29	30
MED	G	G	G	G	G	G	G	36	36	39	G	42	42	42	43	38	36	41	39	32	29	32	28	G
U Q	G	G	G	G	G	G	29	37	41	47	43	48	49	52	49	46	50	49	60	42	39	40	36	33
L Q	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	34	28	28	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

APR. 2011

LAT. 31°12.0′N LON. 130°37.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

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

HOURLY VALUES OF foF2 AT Okinawa

APR. 2011

LAT. 26°41.0′N LON. 128°09.0′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	80	76	74	67	57	46	53	80	88	92	103	104	108	110	110	111	117	124	123	108	86	84	79	73
2	66		64	44			N	68	78	86	101	105	97	106	112	110	112	122	108	88	83	72	66	67
3	77		45	36			34	72	89	86	77	90	118	121	128	133	140	130	130	112	100	84	67	73
4	81	54	59	34	A	43	47	77	88	89	85	103	117	130	133	126	121	112	110	102	88	67	67	77
5	66	54	44	34			44	70	87	90	97	102	108	120	125	127	132	118	110	108	100	83	64	67
6	67	54	67	63	42		38	68	87	111	108	98	110	134	146	146	141	143	140	110	125	131		
7	110	88	79	72	79	78	82	85	84	83	88	101	122	132	145	148	144	146	141	142	135	110	84	77
8	80	49	71	67	47		N	67	77	82	90	102	121	147	144	146	130	157	N	N		108	107	106
9	88	86	86	72	53	42	52	72	70	76	87	103	104	116	130	126	131	141	142	132	132	108	87	N
10	87	87	76		48	46	52	78	82	86	96	106	118	126	127	131	134	133	141	140	110	86	74	67
11	75	74	75	67	52	44	58	83	81	78	97	110	121	130	140	138	137	138	136	127	88	77	67	67
12		53	64	46	43		36	66	77	85	92	99	122	144	141	137	131	124	101	102	99	52	A	A
13	53	49	38	52			47	63	67	81	86	101	122	124	131	123	126	140	128	123	77	49	44	
14	44	43	52		47	46	46	61	67	82	100	113	141	152	150	150	156	157	144	131	108	104	88	85
15	83	86	87	80	64	44	51	82	86	86	87	97	121	148	146	147	152	147	141	130	86	84	86	81
16	79	76	89	101	81	28	42	70	67	76	88	110	141	138	148	150	157	148	138	123	84	68	68	66
17	67	67	67	66	44		46	66	72	75	77	90	108	125	135	137	130	126	110	108	87	88	88	86
18	85	86	78	86	50	32	46		85	77	86	98	117	131	142	141	140	137	131	110	88	67	69	66
19		N	67	66	44		50	62	73	95	101	105	118	124	129	142	150	150	137	110	87	64	62	
20	53	53	54	63	52	A	54	66	74	87	96	106	126	141	141	141	141	141	123	104	A	A		54
21		52	67	64	46	42	53	70	70	75	82	84	104	108	120	132	113	88	95	88	53	A	54	N
22	67	72	76	70	58	47	54	71	73	81	85	90	109	130	131	131	131	134	117	102	A	77	A	65
23	82	78	85	74	58	45	60	67	70	68	74	88	104	110	120	121	123	125	127	118	86	77	54	66
24	67		67		51		66	76	78	75	70	86	110	120	129	131	138	128	126	110	86	86	54	66
25	67		53	64	63		66	82	67	77	83	104	126	138	141	129	123	108	128	118	81	53	73	77
26	67	80		67	34		46	66	77	81	88	108	120	131	140	144	133	110	107	88	79	52	42	73
27	76	77	88	87	53	31	58	71	74	88	101	107	121	138	147	151	150	147	151	147	84	88		
28	79	106	107	88	72	65	67	64	93	82	85	100	108	117	130	130	127	127	140	130	87	A		77
29	74	66	64	53	53	47	54	72	65	71	73	97	110	109	123	131	131	122	122	79	A	A	A	82
30	84	88	89	84	67	45	52	72	79	76	97	101	102		132	131	113	104	98	108	108		85	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	25	29	27	25	17	28	29	30	30	30	30	30	29	30	30	30	30	29	29	26	25	23	22
MED	76	74	67	67	52	45	52	70	77	82	88	102	118	130	132	132	132	132	128	110	87	83	68	73
U Q	82	86	82	74	60	46	56	76	85	86	97	105	121	138	142	144	141	143	140	128	100	88	85	77
L Q	67	53	61	53	46	42	46	66	70	76	85	97	108	118	128	129	126	122	110	103	84	67	62	66

HOURLY VALUES OF fEs AT Okinawa

APR. 2011

LAT. 26°41.0′N LON. 128°09.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	27	34	G	G	G	G	G	G	51	41	54	38	39	30	29	G	G
2	G		G	G			G	G	G	G	G	G	G	G	G	40	49	37	36	36	G	G	G	G
3	33		G	G			G	G	G	G	G	G	G	G	G	G	37	G	29	G	36	41	27	G
4	G	G	G	G	39	26	36	G	G	G	G	G	G	G	G	59	G	52	50	39	34	G	G	29
5	40	G	G	G			G	G	35	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	28	G	G	G		G	32	36	G	G	G	G	G	G	G	G	G	G	G	G	26		
7	G	G	G	G	G	G	G	G	46	G	51	63	50	G	G	42	38	G	G	G	G	G	G	G
8	32	28	G	G	G		G	31	34	G	G	G	G	G	G	G	G	G	G	G		G	G	G
9	G	G	G	G	G	G	G	G	G	G	G	G	G	G	41	G	G	G	33	G	G	G	G	G
10	G	G	G		G	G	G	G	G	G	G	70	G	72	G	G	G	G	38	36	G	28	32	G
11	G	G	G	G	G	G	G	34	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
12		G	G	G	G		G	G	G	G	G	G	46	58	G	G	G	G	33	G	24	G	67	53
13	48	G	G	G	G	G	G	G	35	48	G	G	G	G	G	G	G	G	34	G	26	G	G	
14	G	G	G		G	G	G	34	G	G	39	52	G	G	G	G	G	G	40	54	30	G	G	G
15	G	G	G	G	G	G	G	32	G	G	51	50	49	G	G	G	G	48	36	G	29	G	G	G
16	27	G	G	G	G	G	G	G	35	G	G	49	G	G	G	G	G	G	34	36	32	48	34	G
17	G	G	G	G	G		G	G	G	G	G	G	42	G	G	G	50	47	53	60	32	29	G	G
18	G	G	G	G	31	G	G		G	G	G	G	G	G	G	G	G	36	44	29	G	G	G	G
19	G	G	G	G	G		29	39	34	G	G	G	G	50	G	G	40	57	47	61	G	G	G	
20	G	G	G	G	G	27	30	G	36	46	42	G	G	G	G	G	G	35	38	38	72	28	G	G
21	G	G	G	G	G	G	G	31	44	41	41	G	44	G	G	G	53	67	46	61	39	32	G	G
22	G	G	G	G	G	G	G	37	37	48	G	57	G	G	G	G	G	G	42	28	35	49	70	27
23	30	26	28	G	G	G	G	G	38	G	42	G	G	68	60	58	G	G	41	G	G	G	G	29
24	G	G	G	G	G		G	40	G	G	G	G	G	49	56	65	41	43	G	G	G	G	G	G
25	G		G	G	G	G	G	G	50	48	82	54	57	G	G	G	G	G	34	G	G	33	50	G
26	38	G		G	G		G	G	46	48	50	50	G	92	81	G	69	71	37	28	G	28	30	40
27	32	28	G	G	G	G	G	G	38	40	52	42	G	G	65	66	84	81	60	49	29	G	G	
28	30	G	30	32	28	G	30	47	55	53	40	G	61	G	G	G	G	G	G	33	57	34	G	G
29	G	G	G	G	G	G	G	G	G	G	G	G	48	60	60	61	60	86	94	84	91	70	71	32
30	G	26	28	G	G	G	G	35	44	G	G	G	G		49	59	54	59	72	30	33		38	32
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	27	29	28	27	20	30	29	30	30	30	30	30	29	30	30	30	30	30	30	29	29	29	26
MED	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	36	28	26	G	G	G
U Q	30	G	G	G	G	G	G	33	38	40	41	49	42	25	G	42	41	52	44	39	33	30	31	27
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G	G	G	G

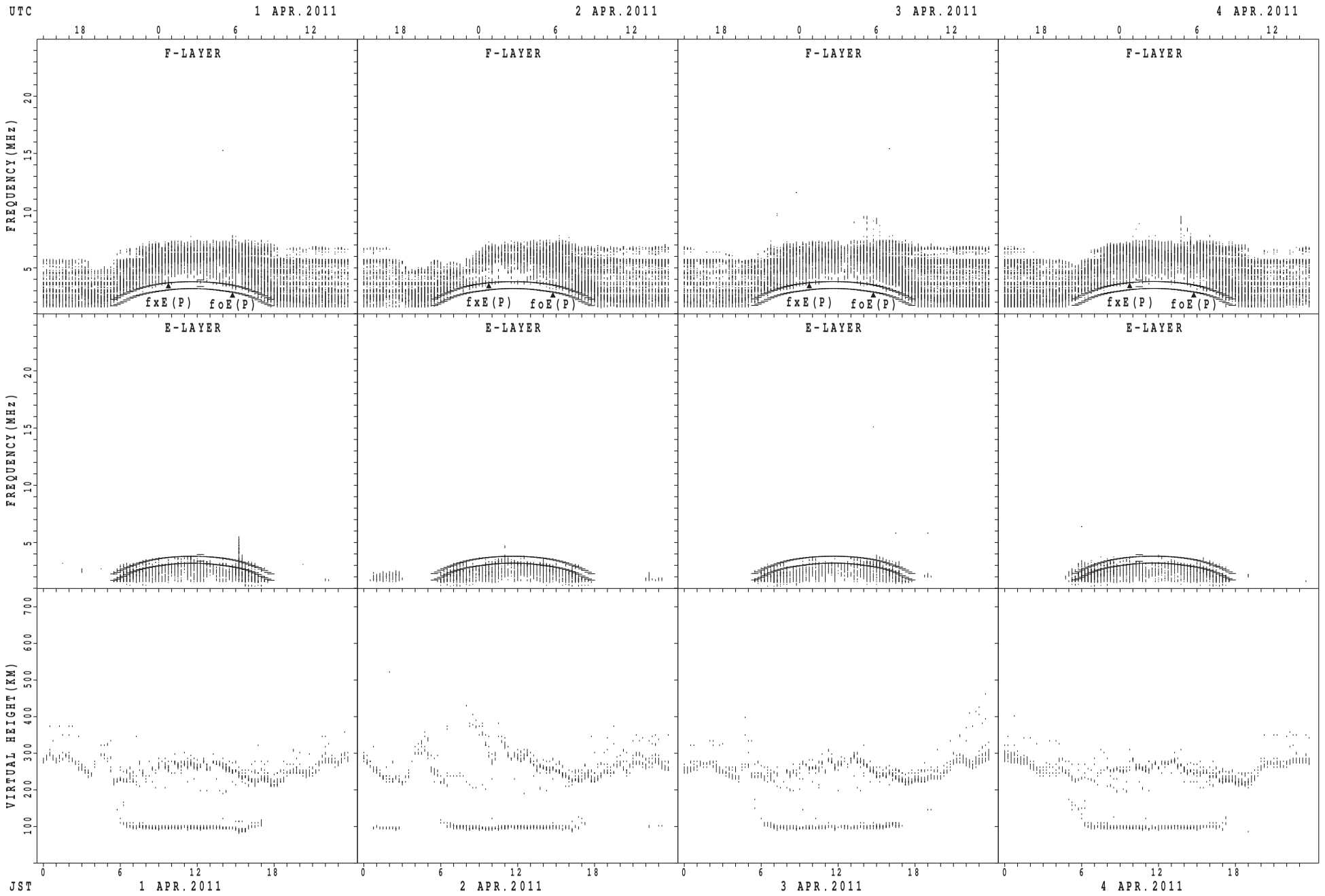
HOURLY VALUES OF fmin AT Okinawa

APR. 2011

LAT. 26°41.0′N LON. 128°09.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

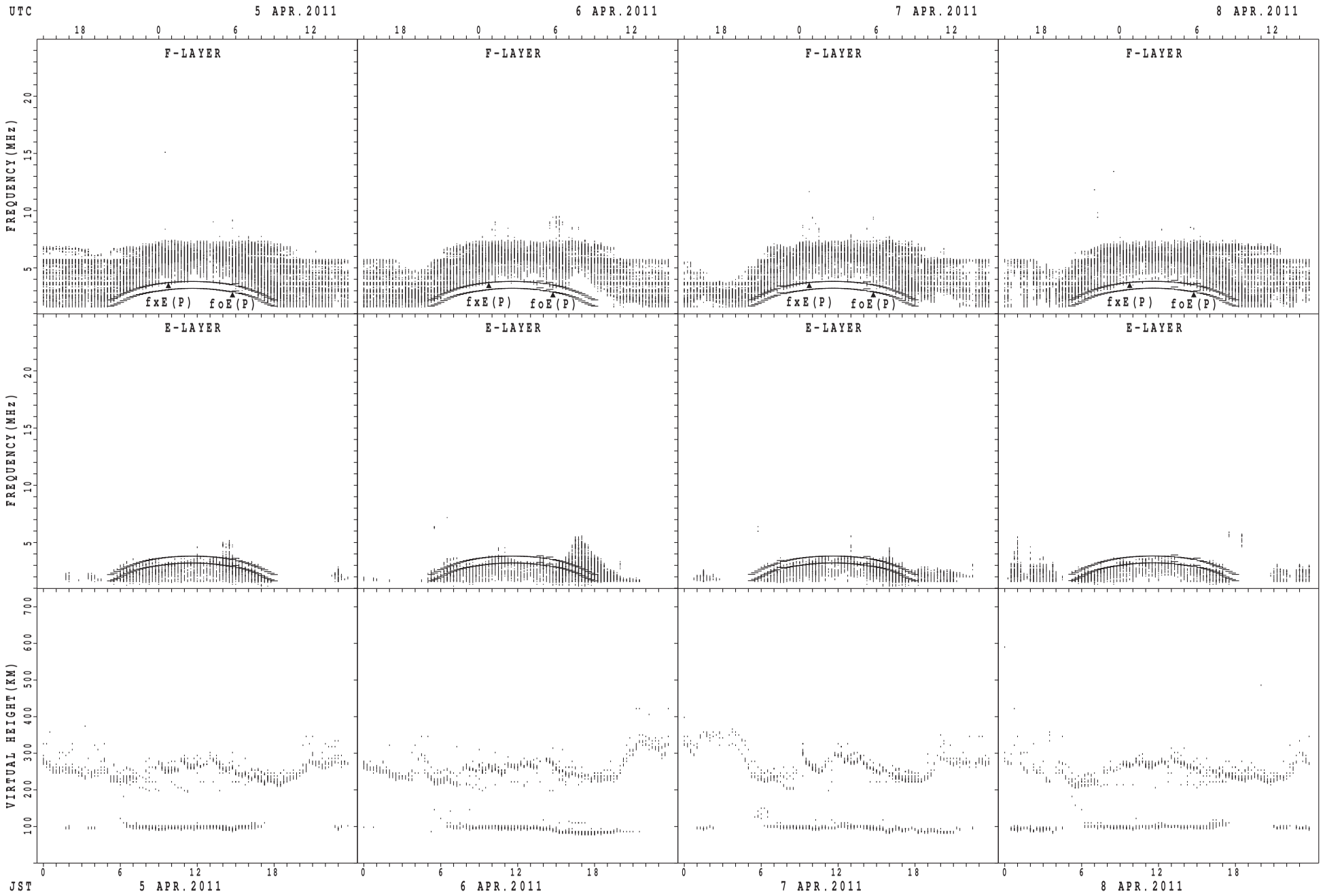
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	22	15	21	21	17	23	15	26	32	21	46	53	52	52	53	34	26	24	15	15	15	16	24	22
2	15		16	16			20	24	17	40	48	46	53	52	53	32	28	23	14	16	20	20	40	21
3	21		15	24			21	24	29	38	38	52	54	53	55	42	29	30	15	22	15	17	16	26
4	27	15	16	21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

SUMMARY PLOTS AT Wakkanai



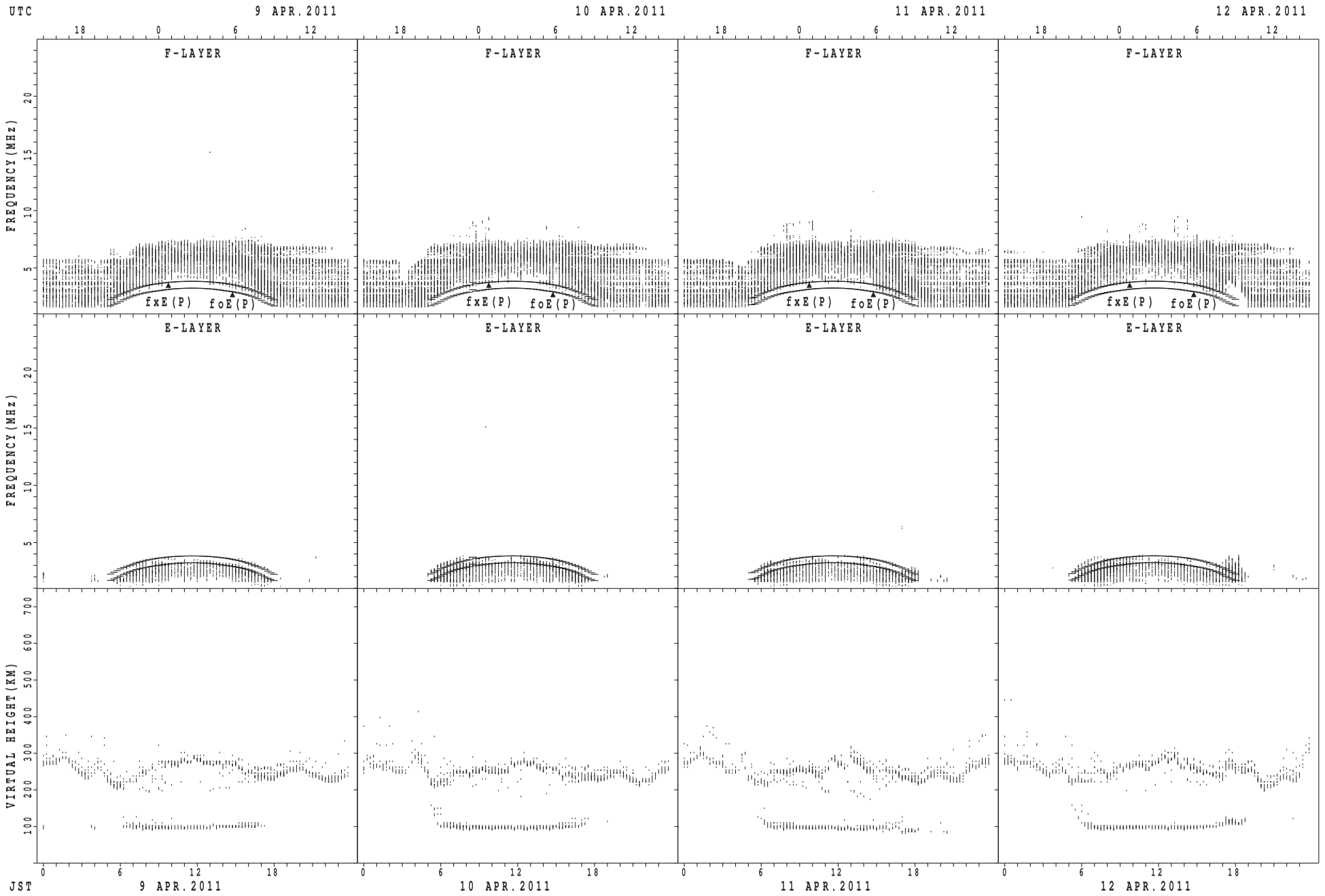
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



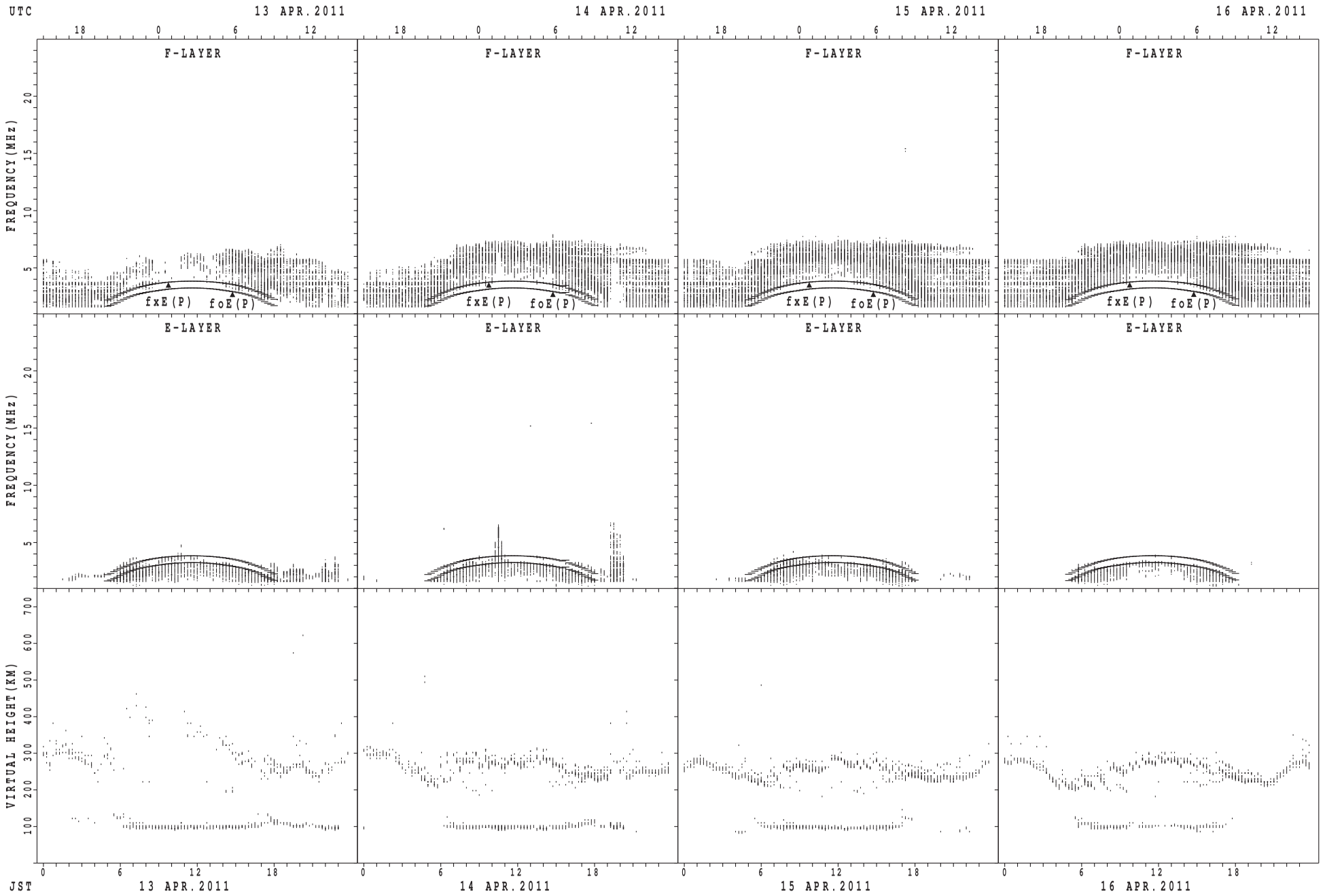
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

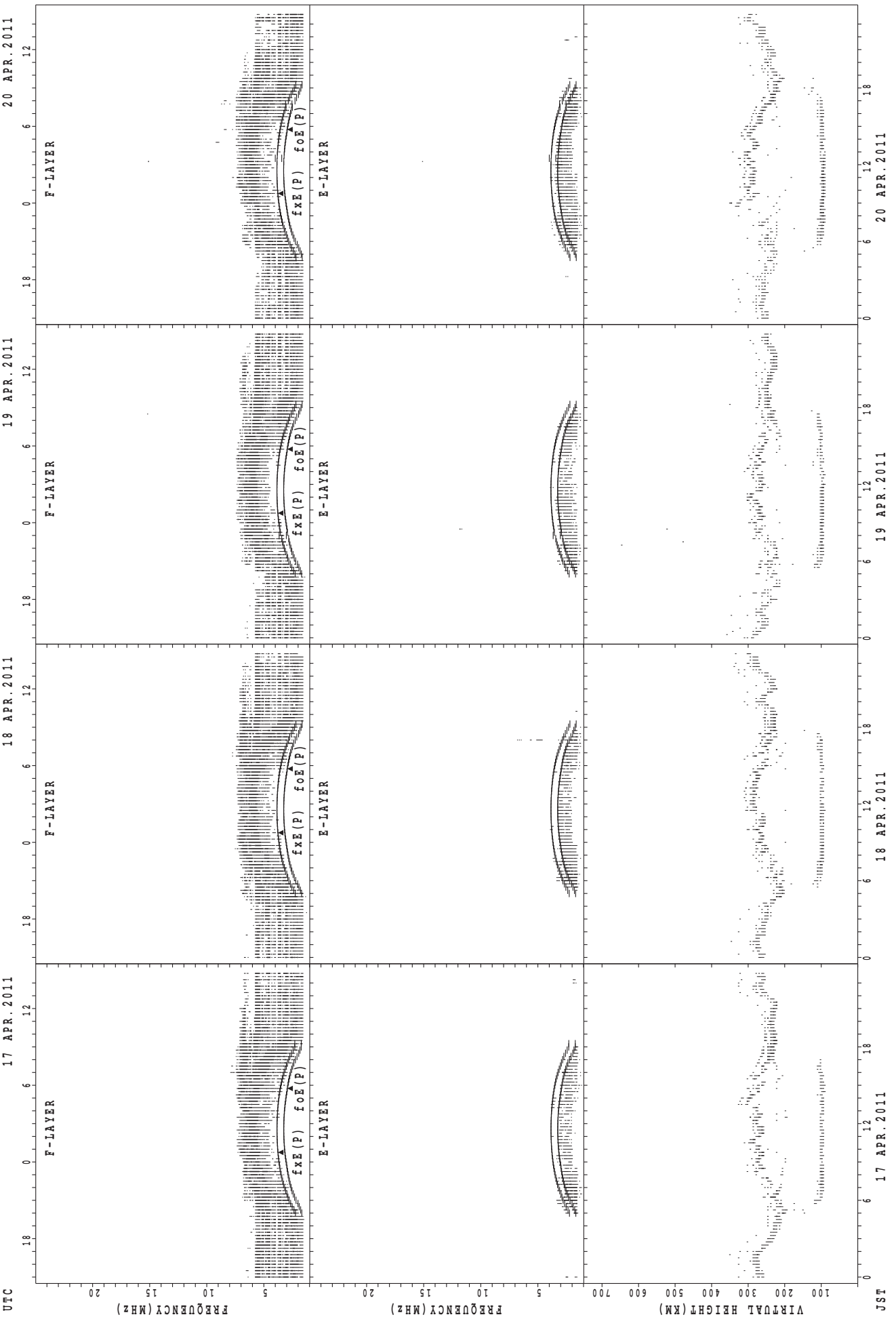


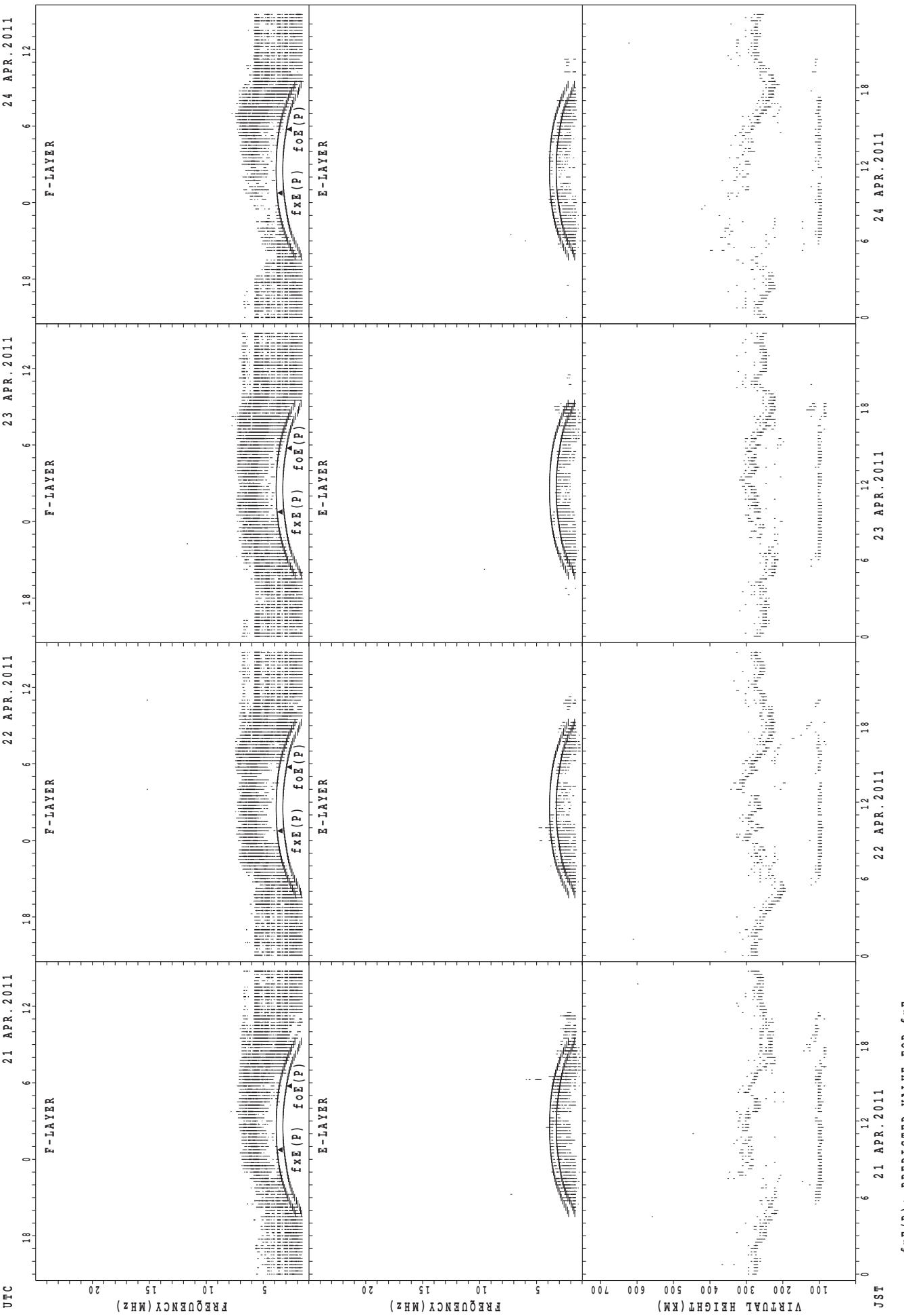
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

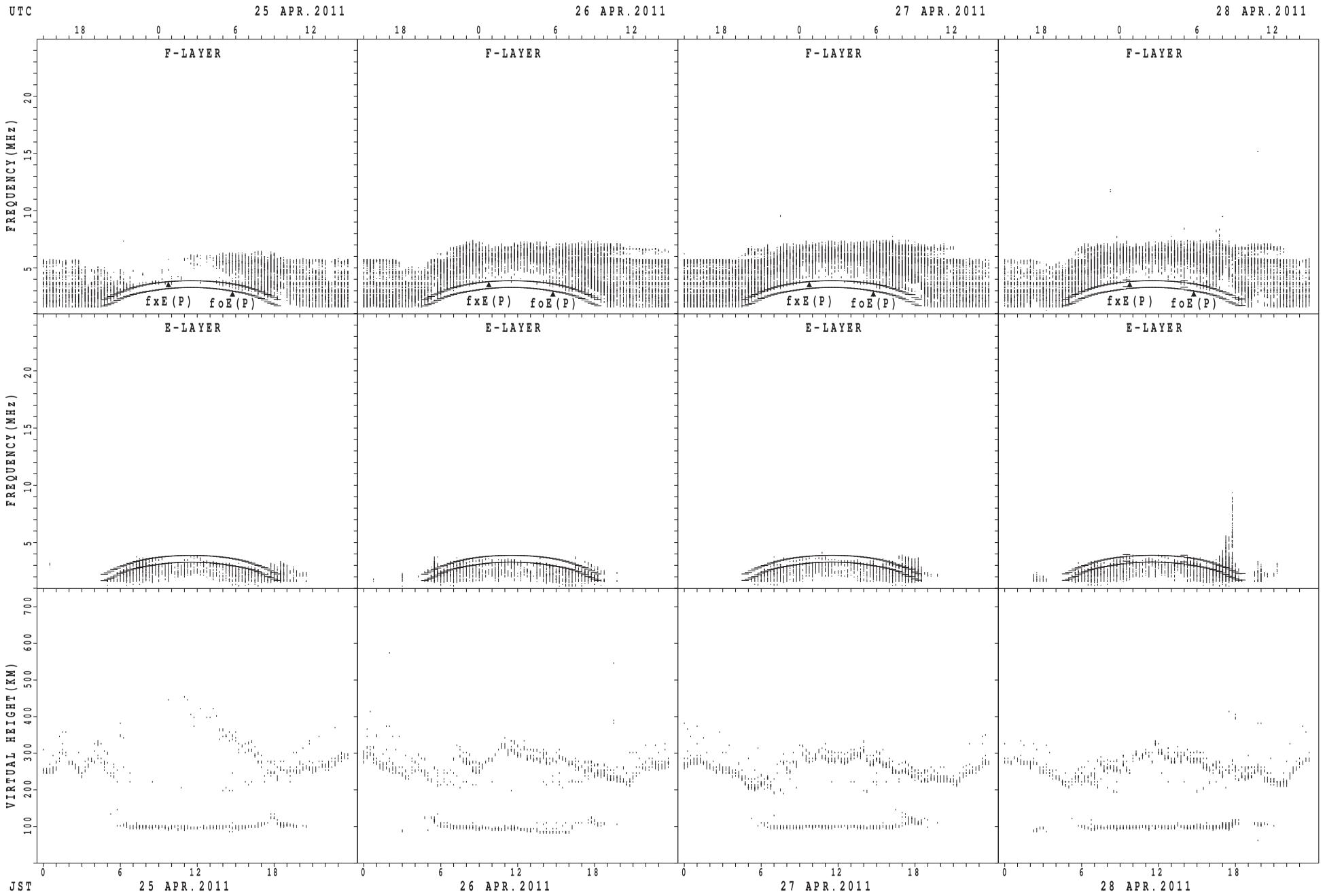


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

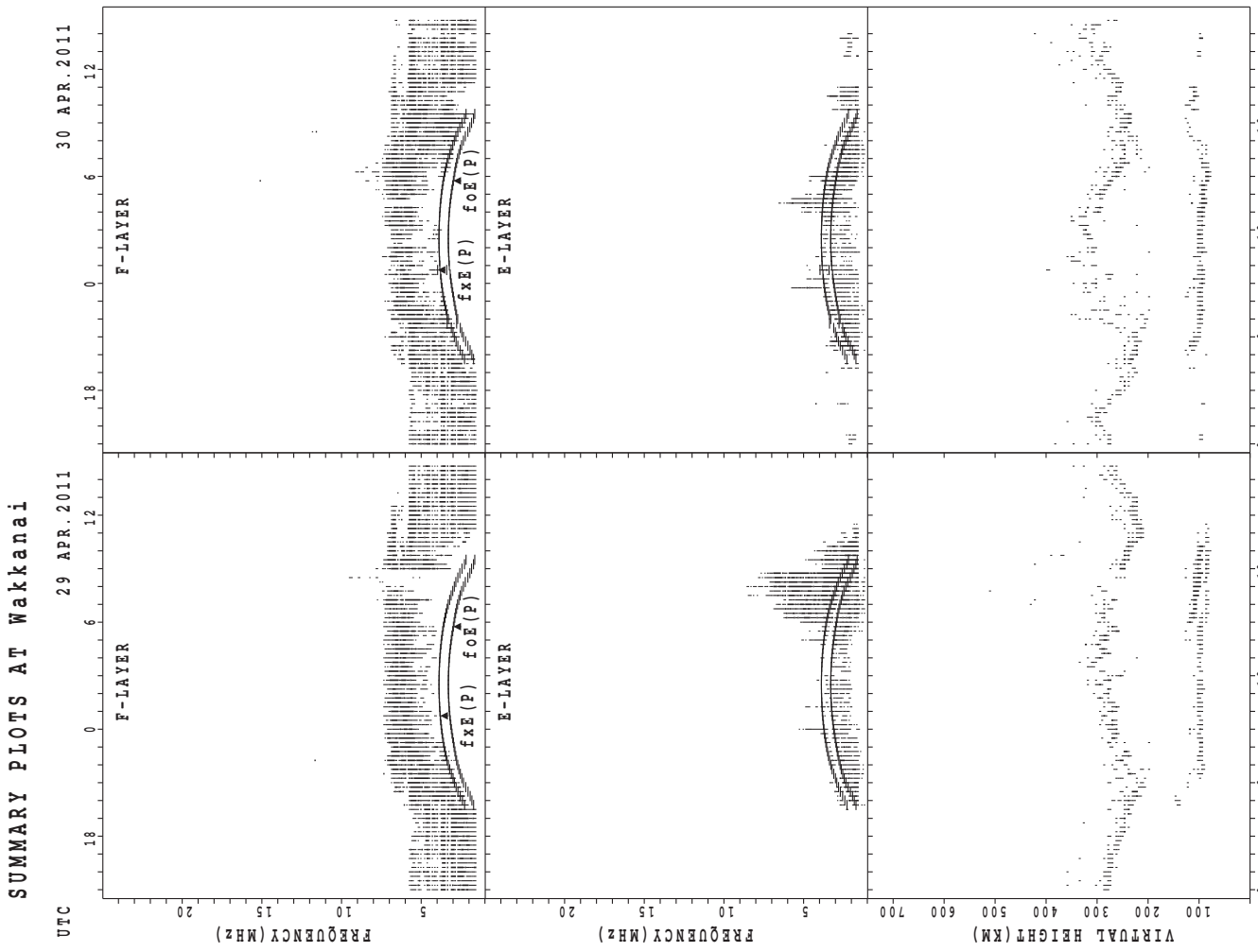

SUMMARY PLOTS AT Wakkanai
UTC
JST
17 APR.2011
18 APR.2011
19 APR.2011
20 APR.2011
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
21 APR.2011
22 APR.2011
23 APR.2011
24 APR.2011
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

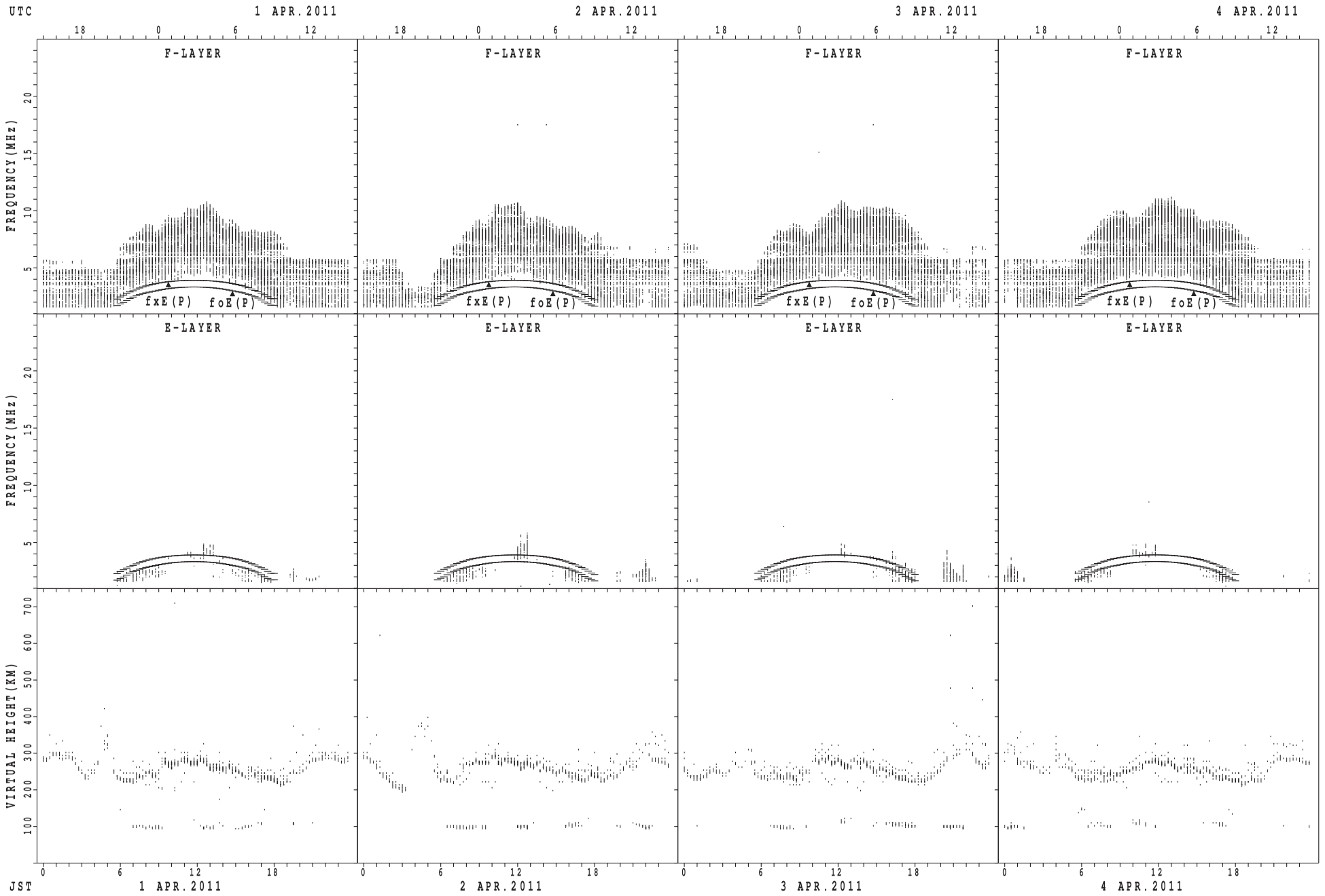
SUMMARY PLOTS AT Wakkanai



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

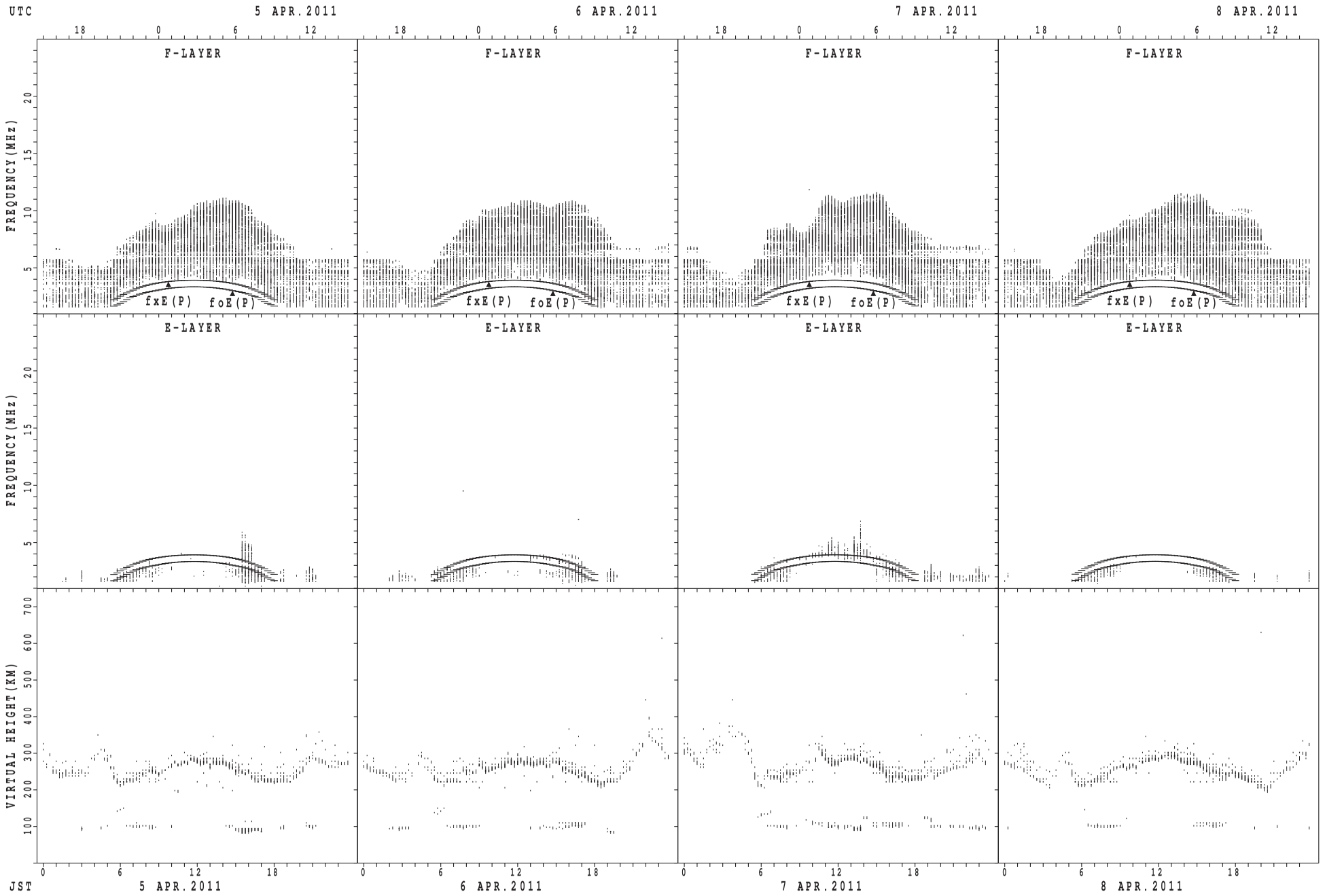

SUMMARY PLOTS AT Wakkanai
UTC
29 APR.2011
30 APR.2011
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



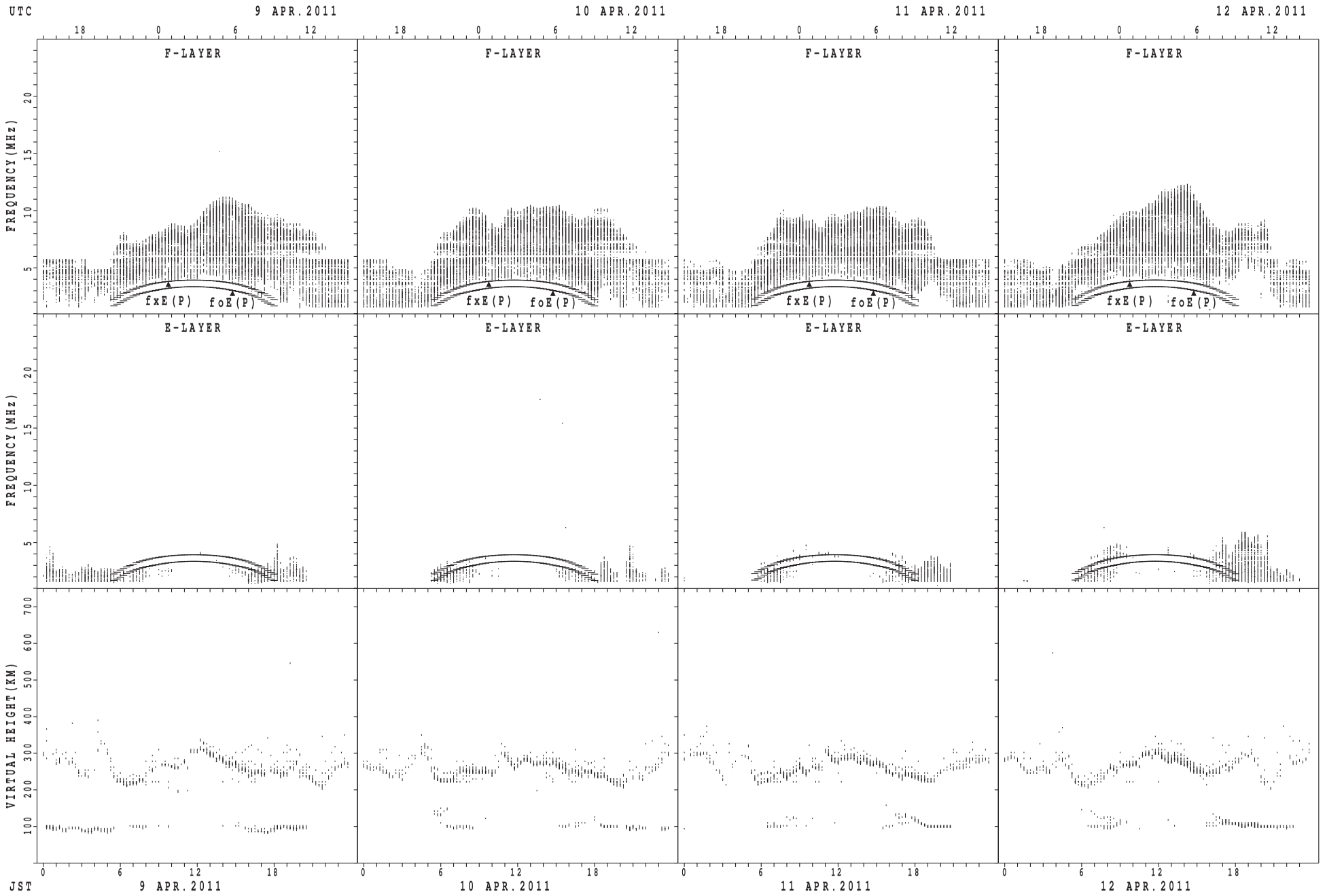
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



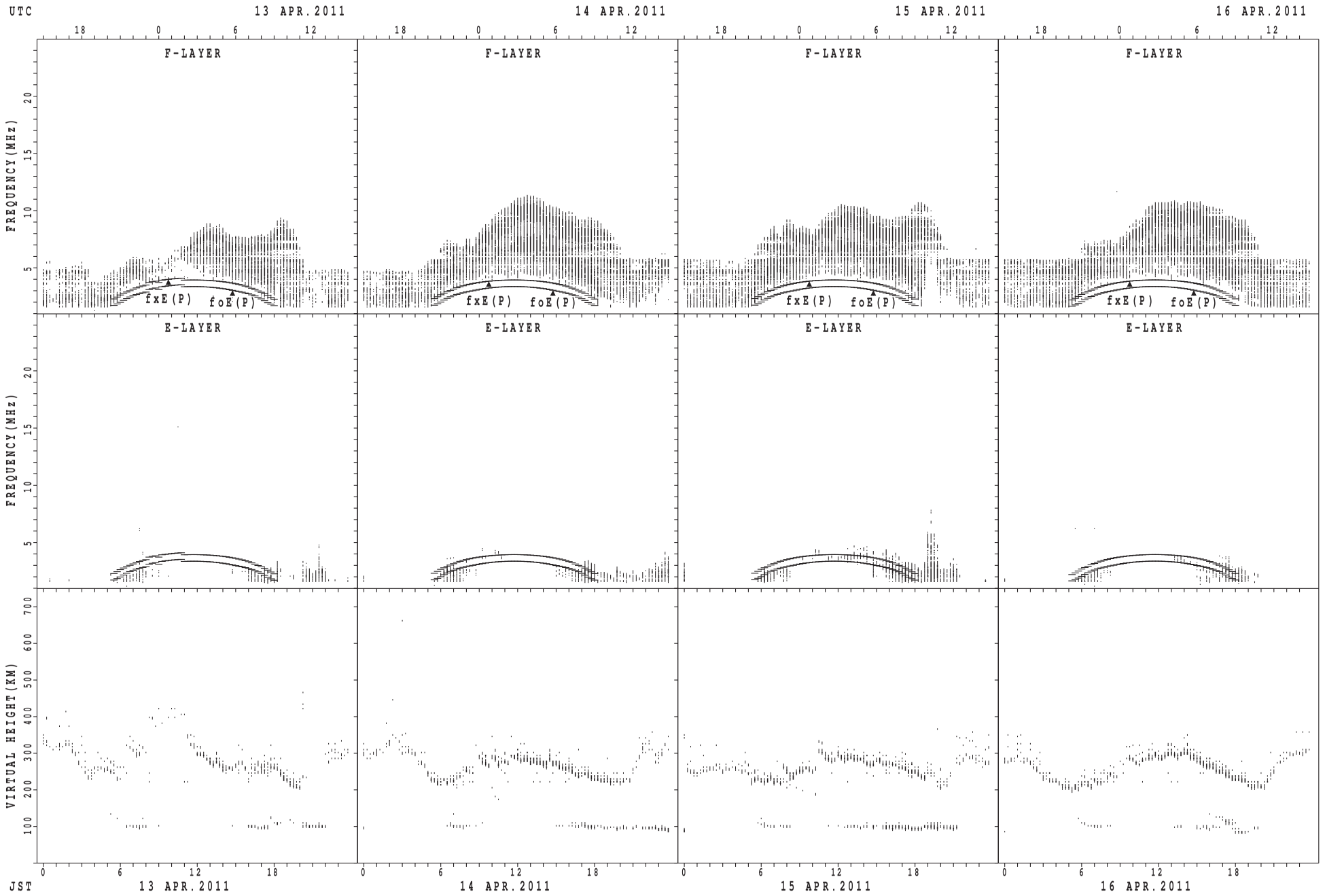
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



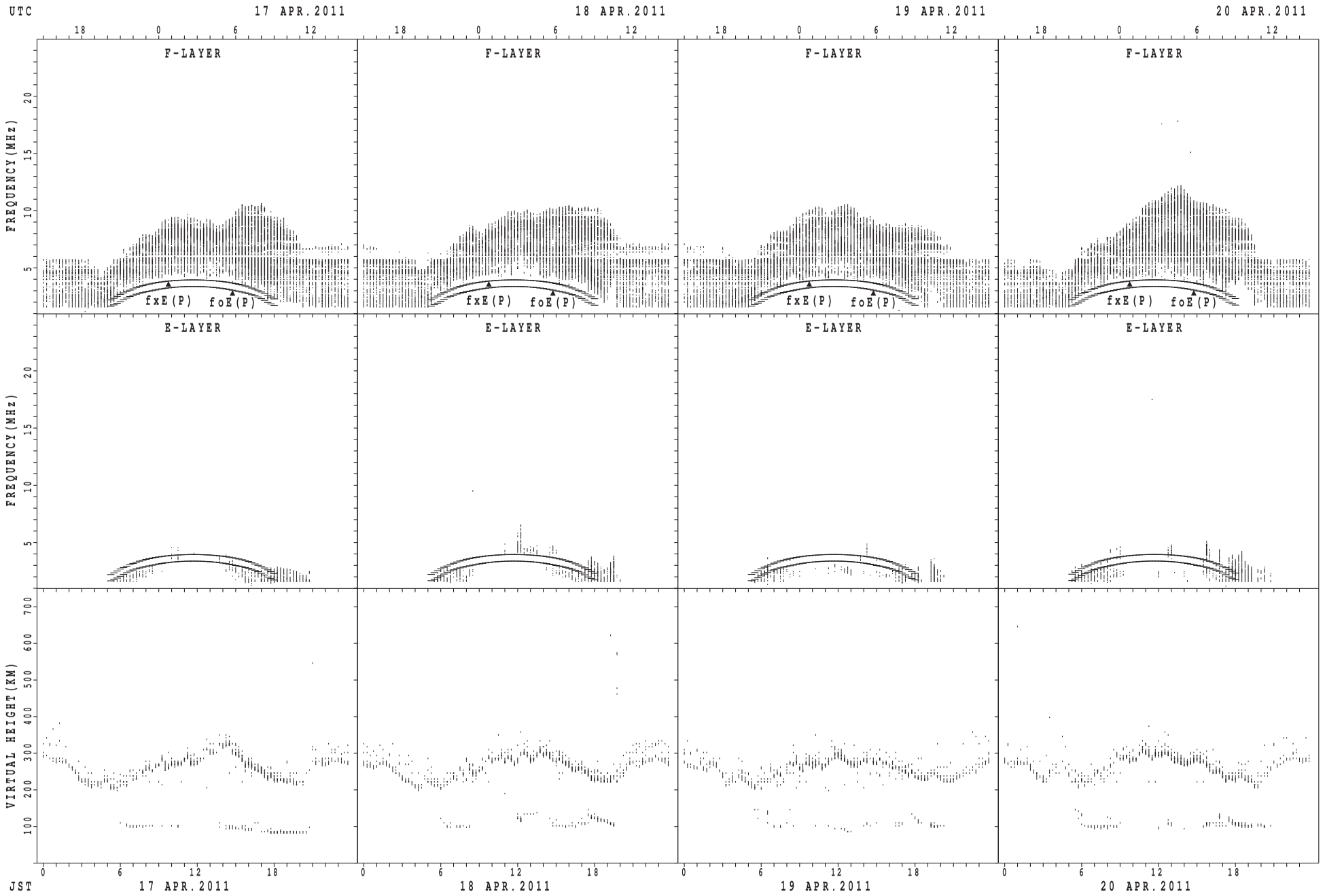
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



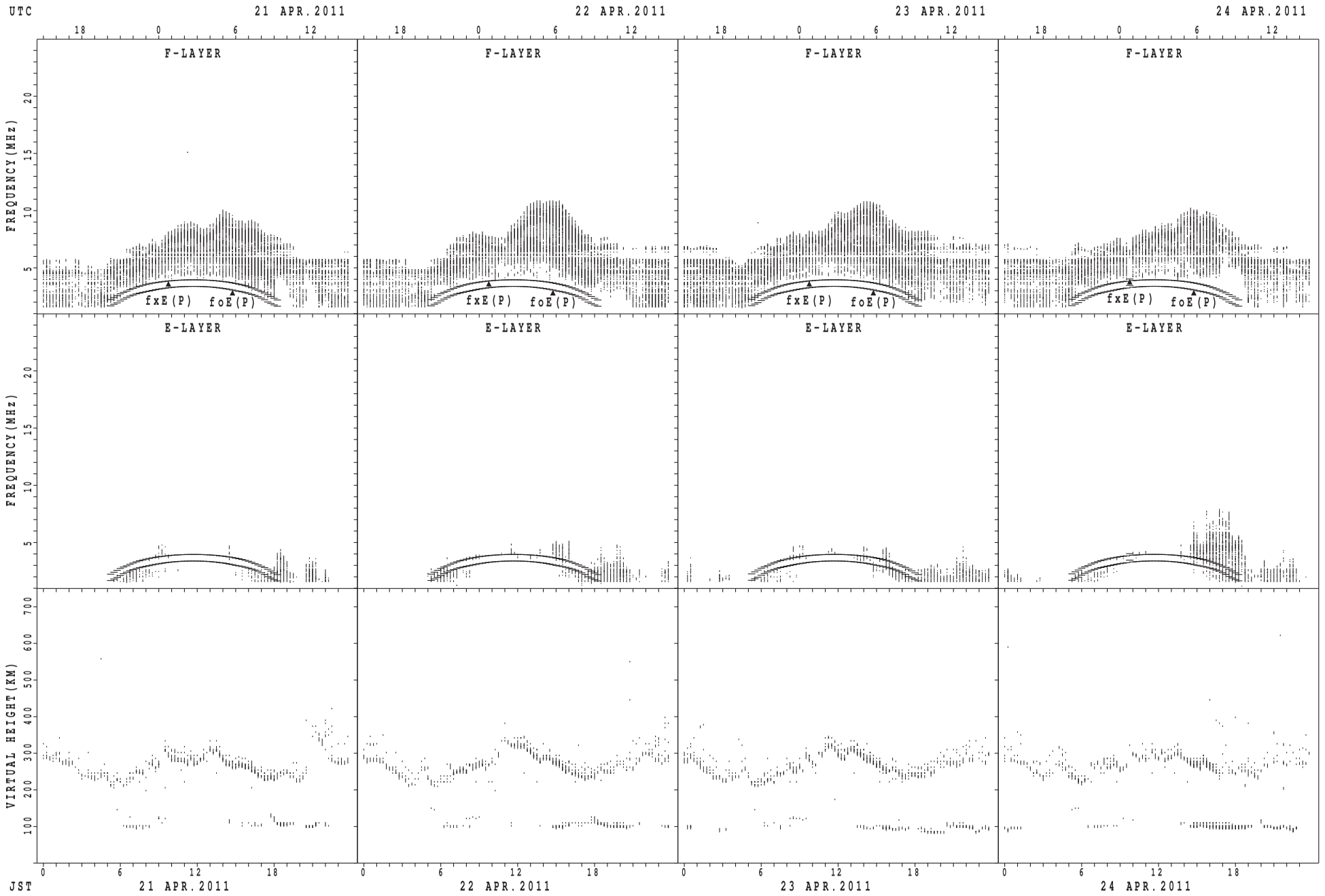
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



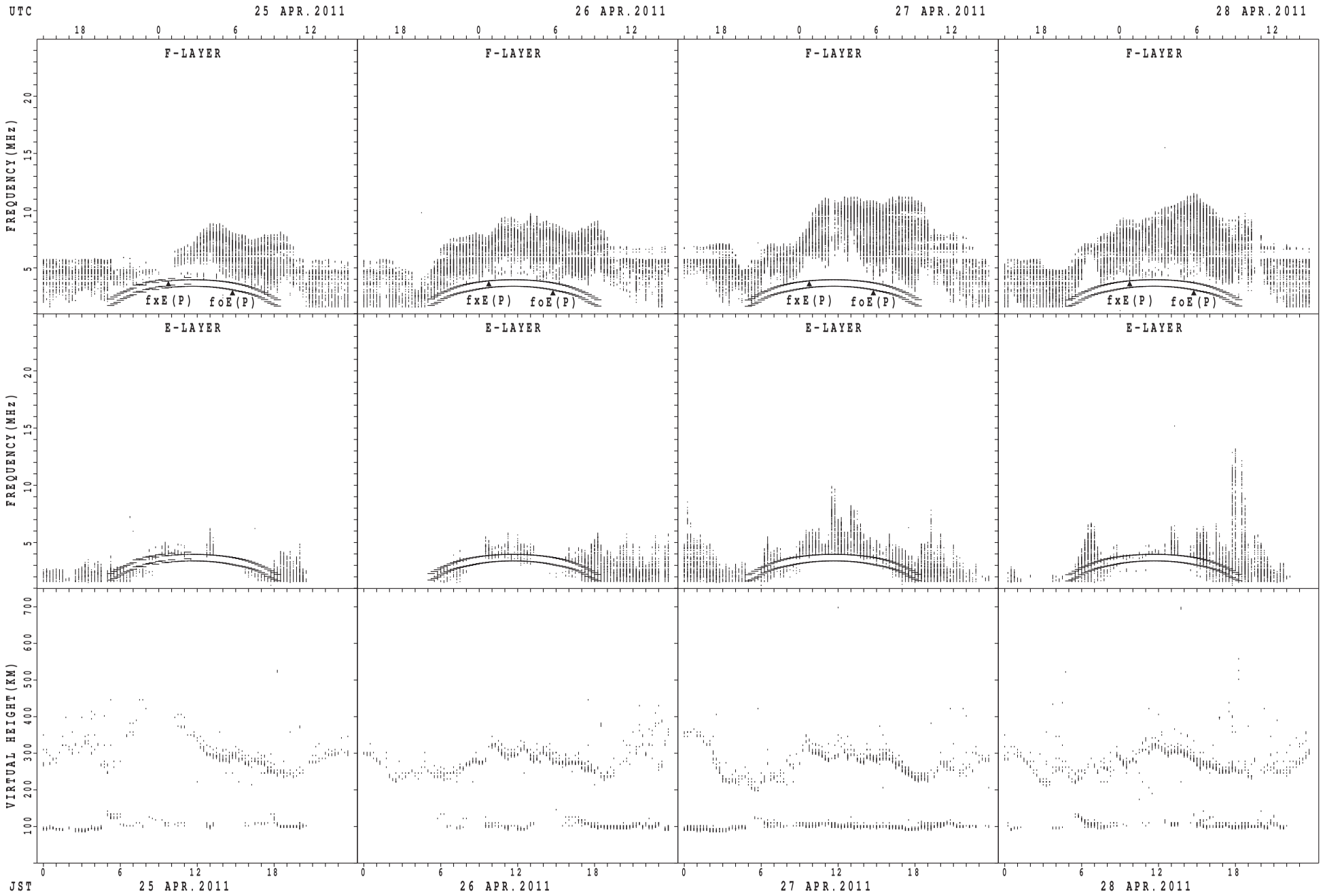
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



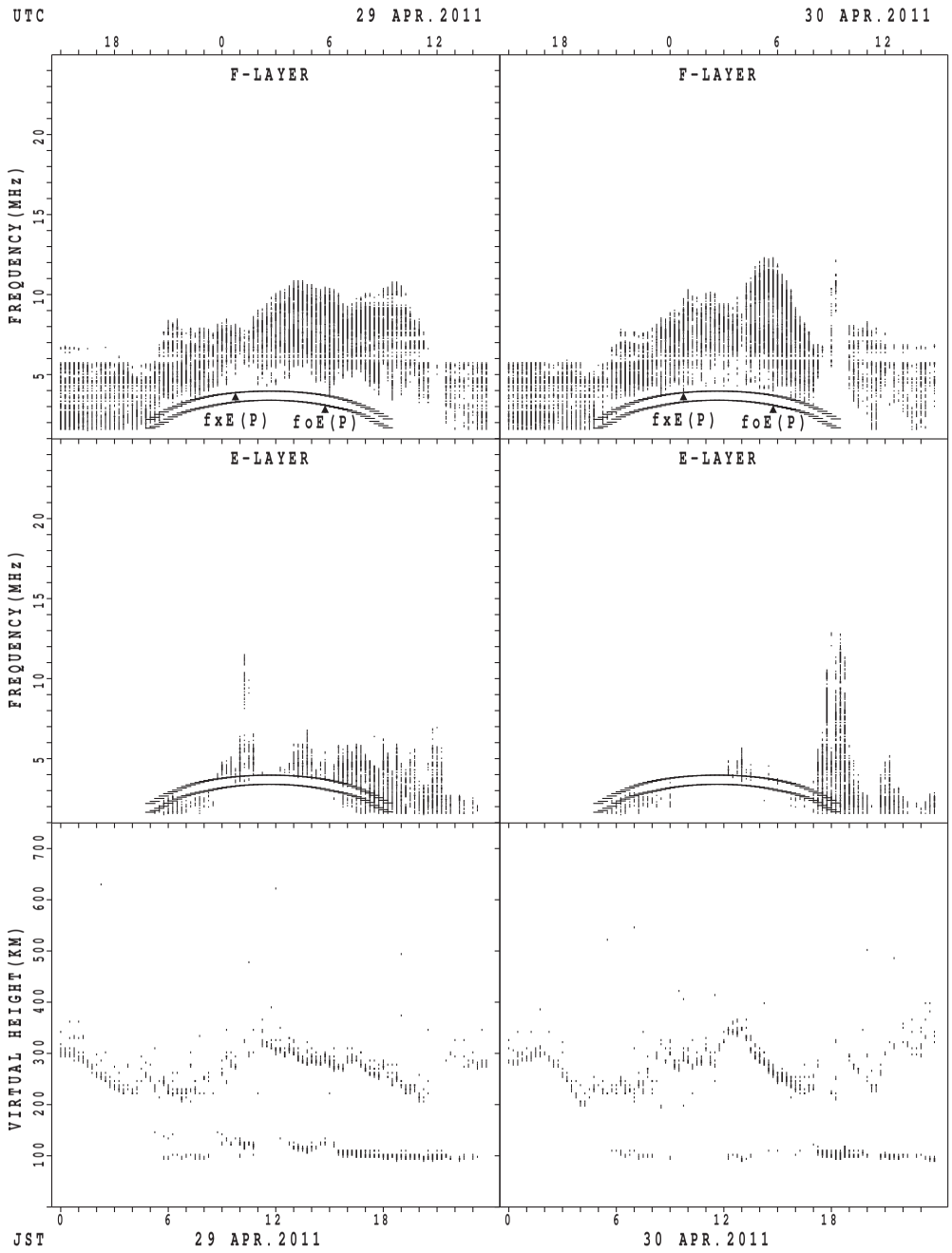
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



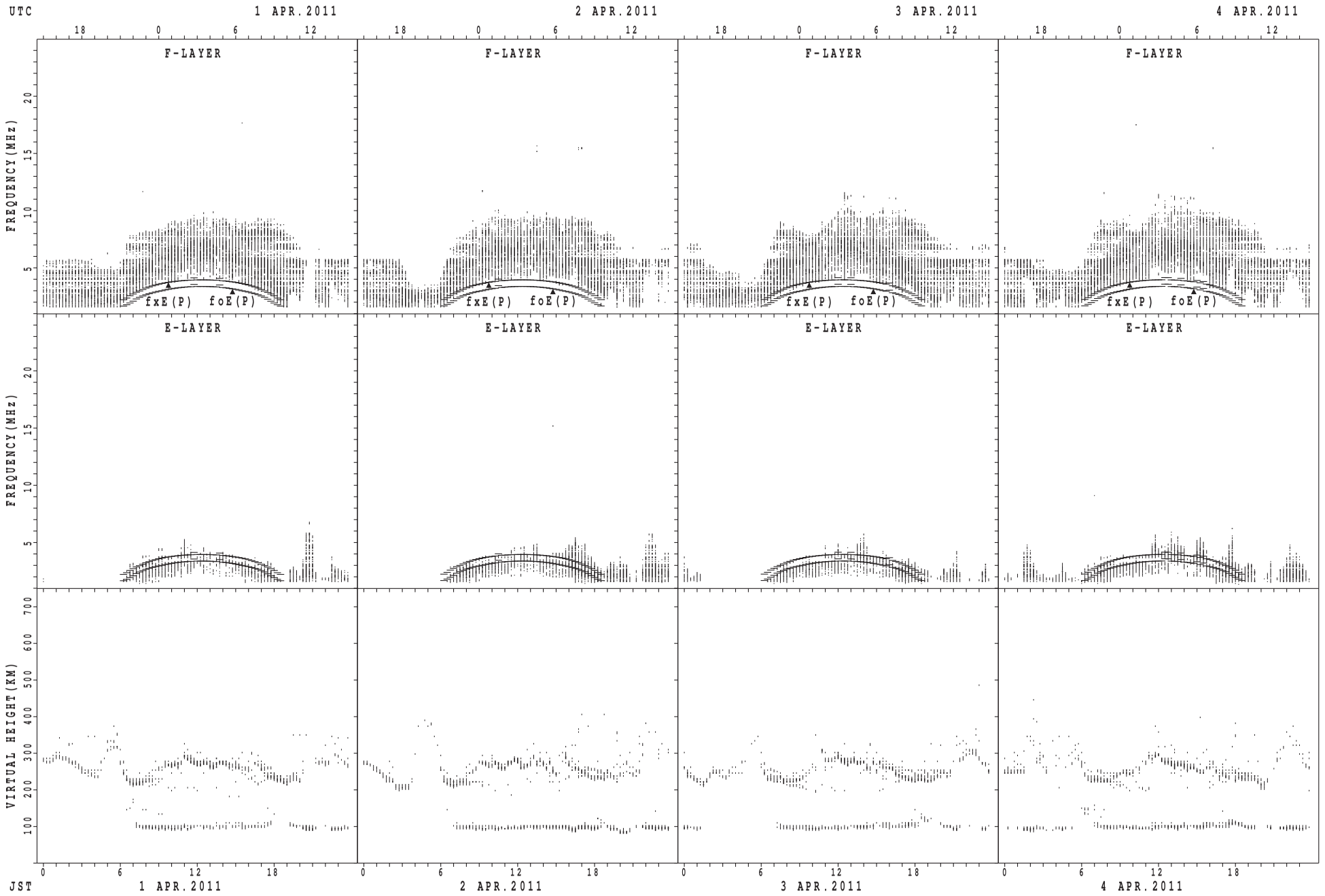
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



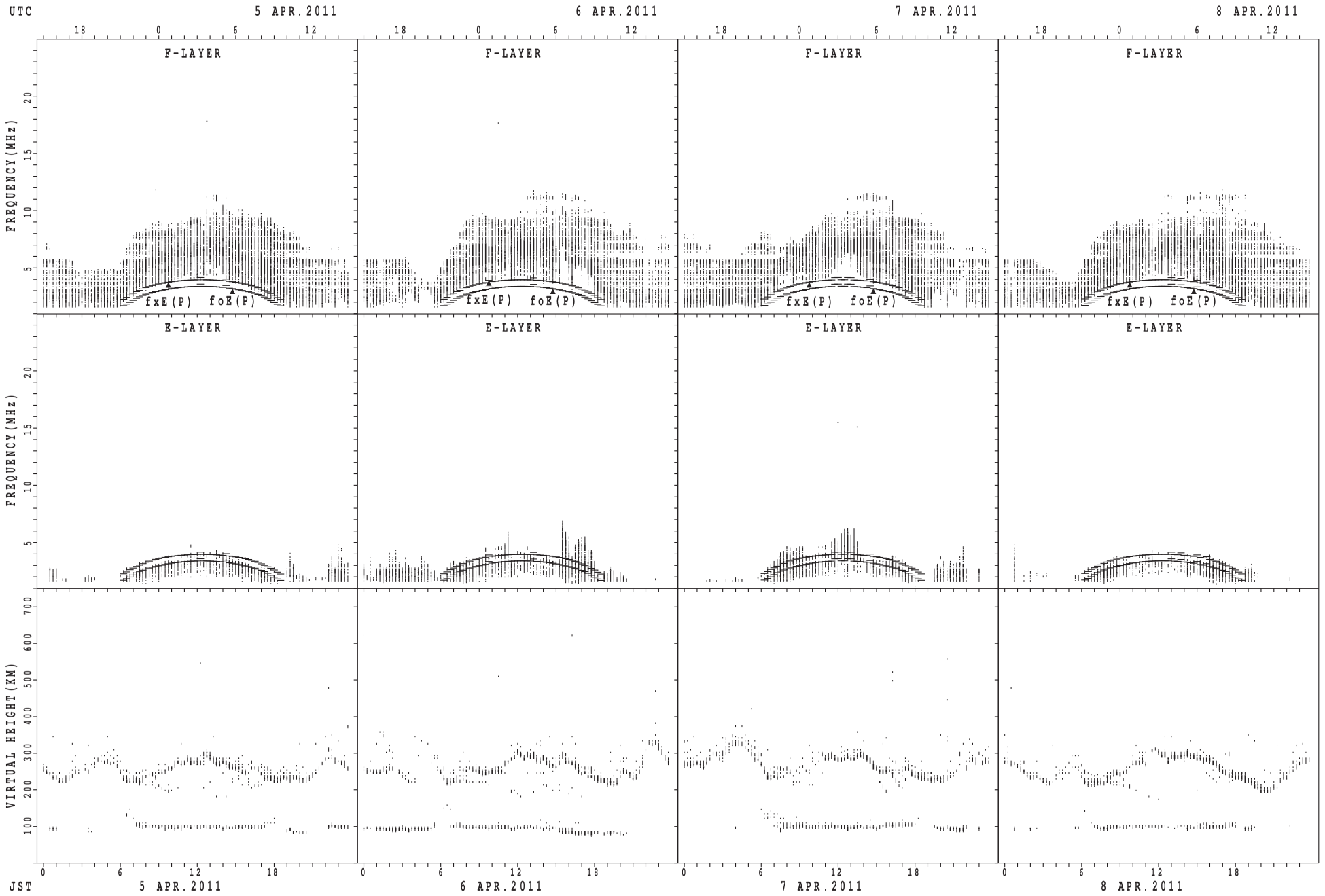
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



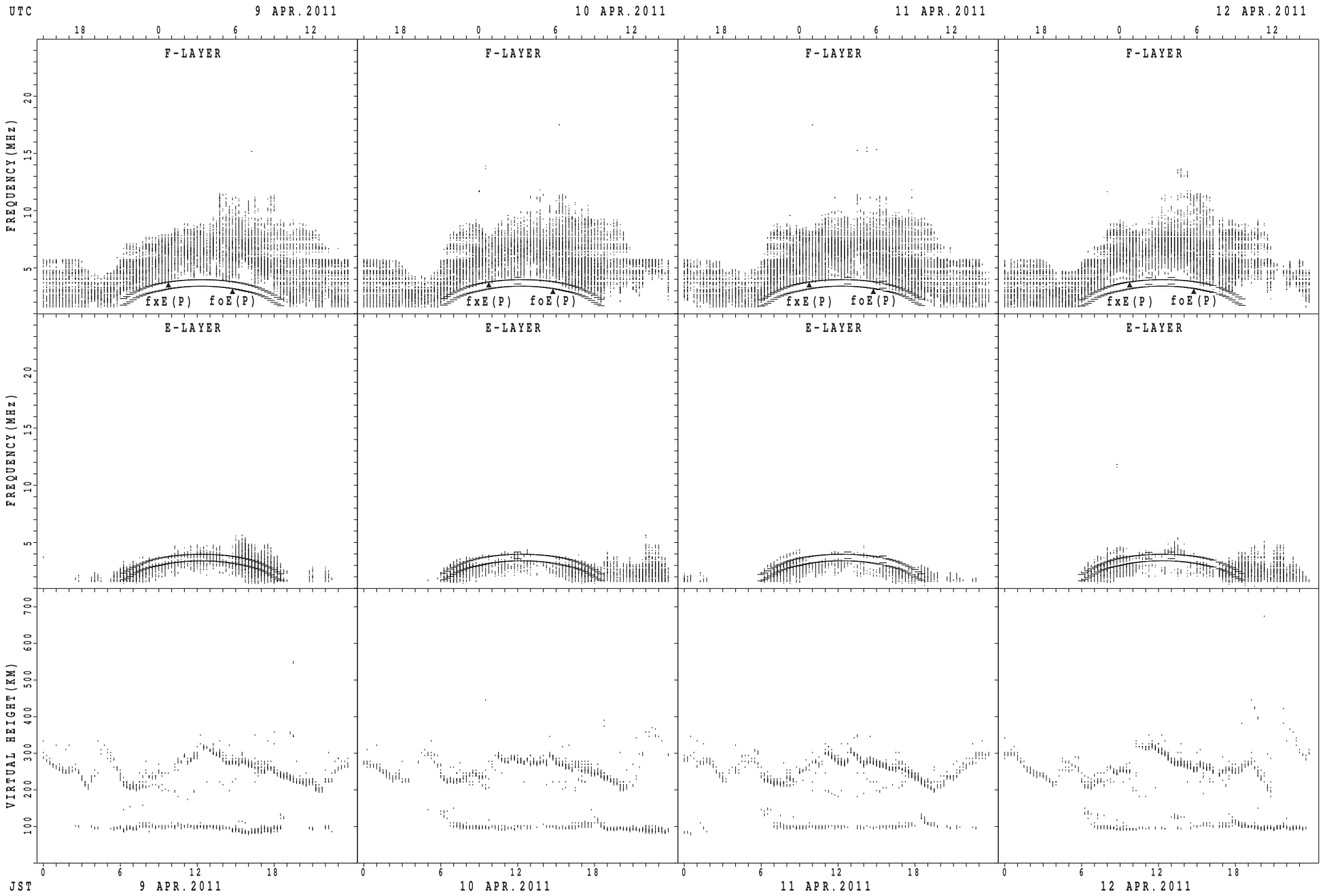
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



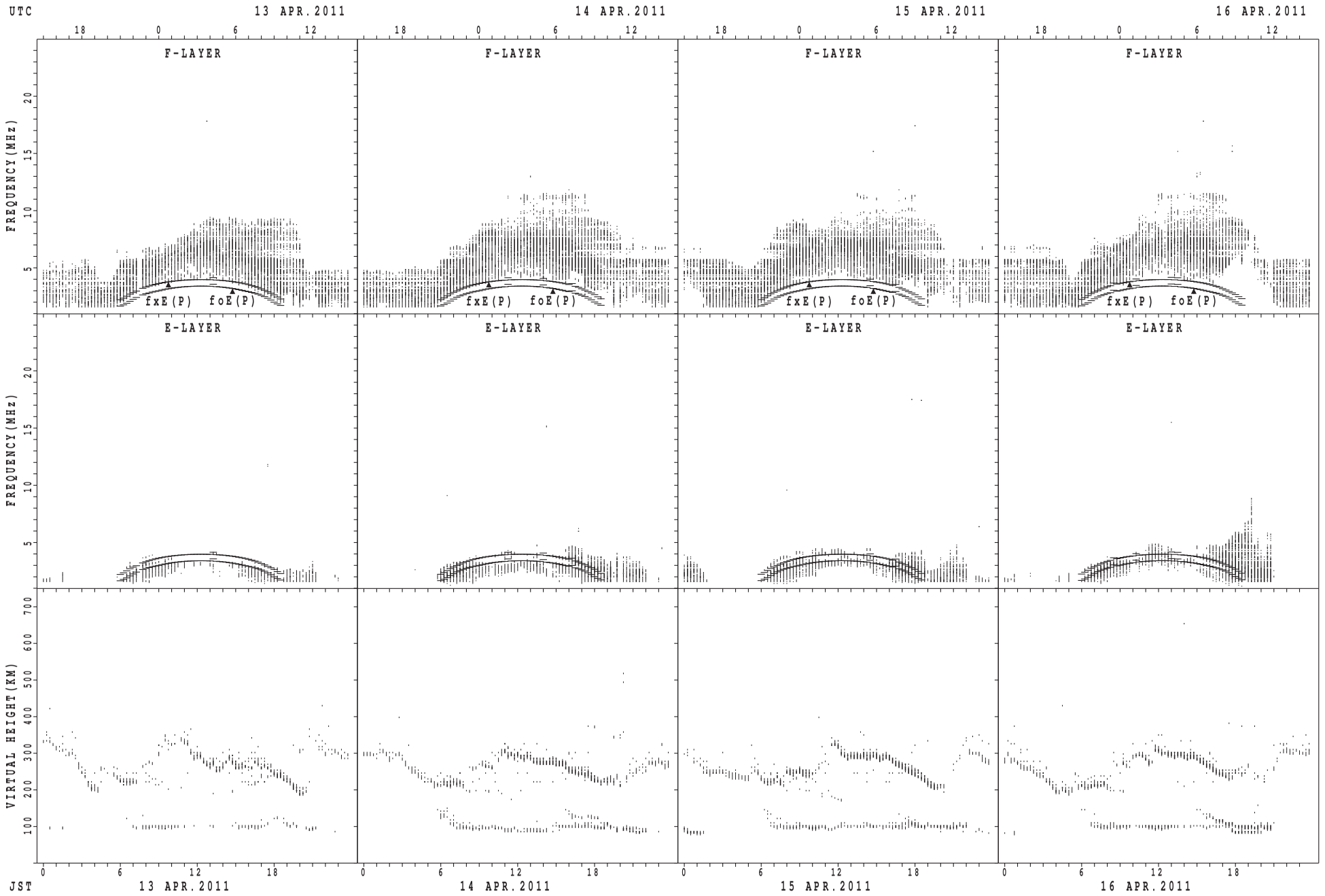
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



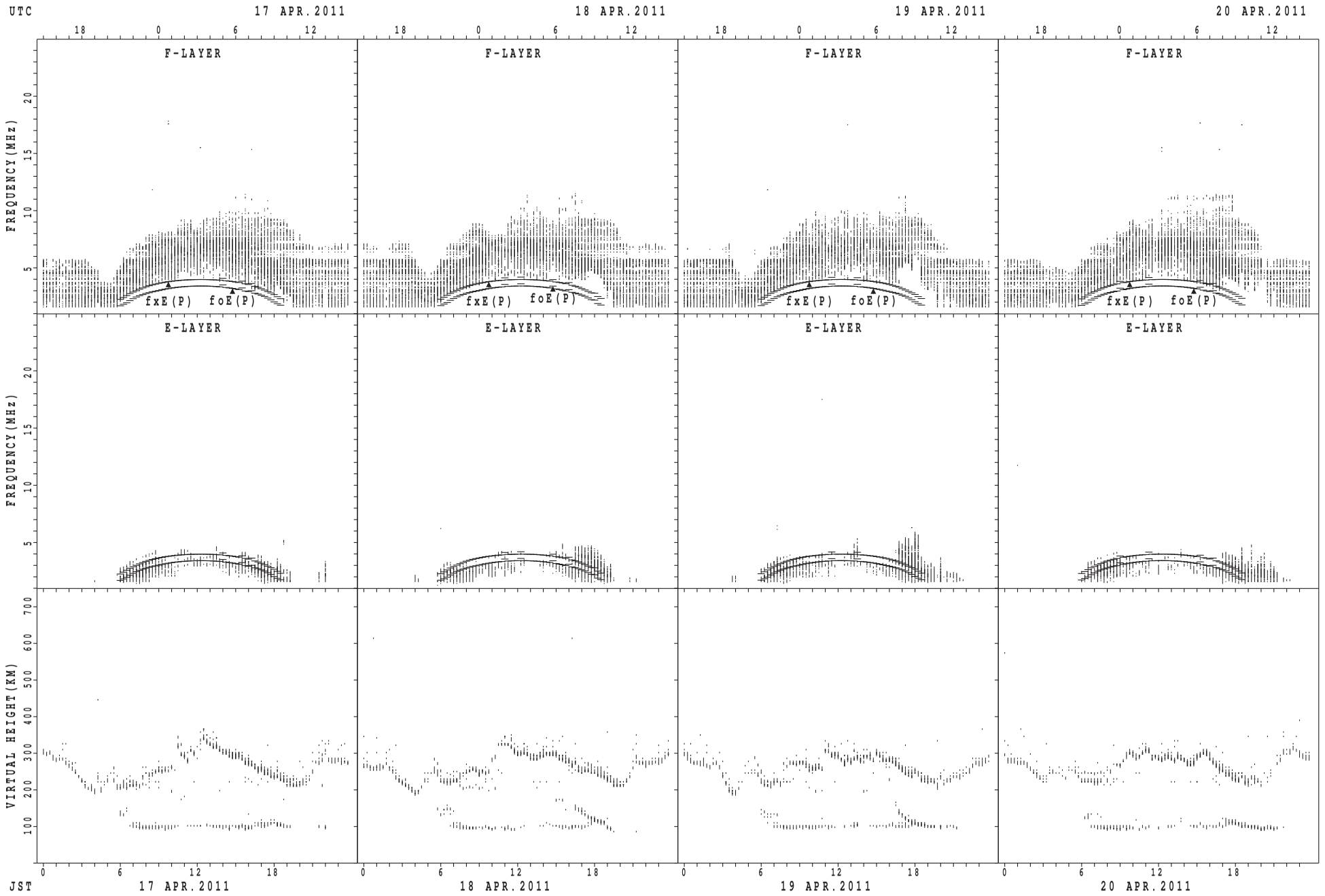
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



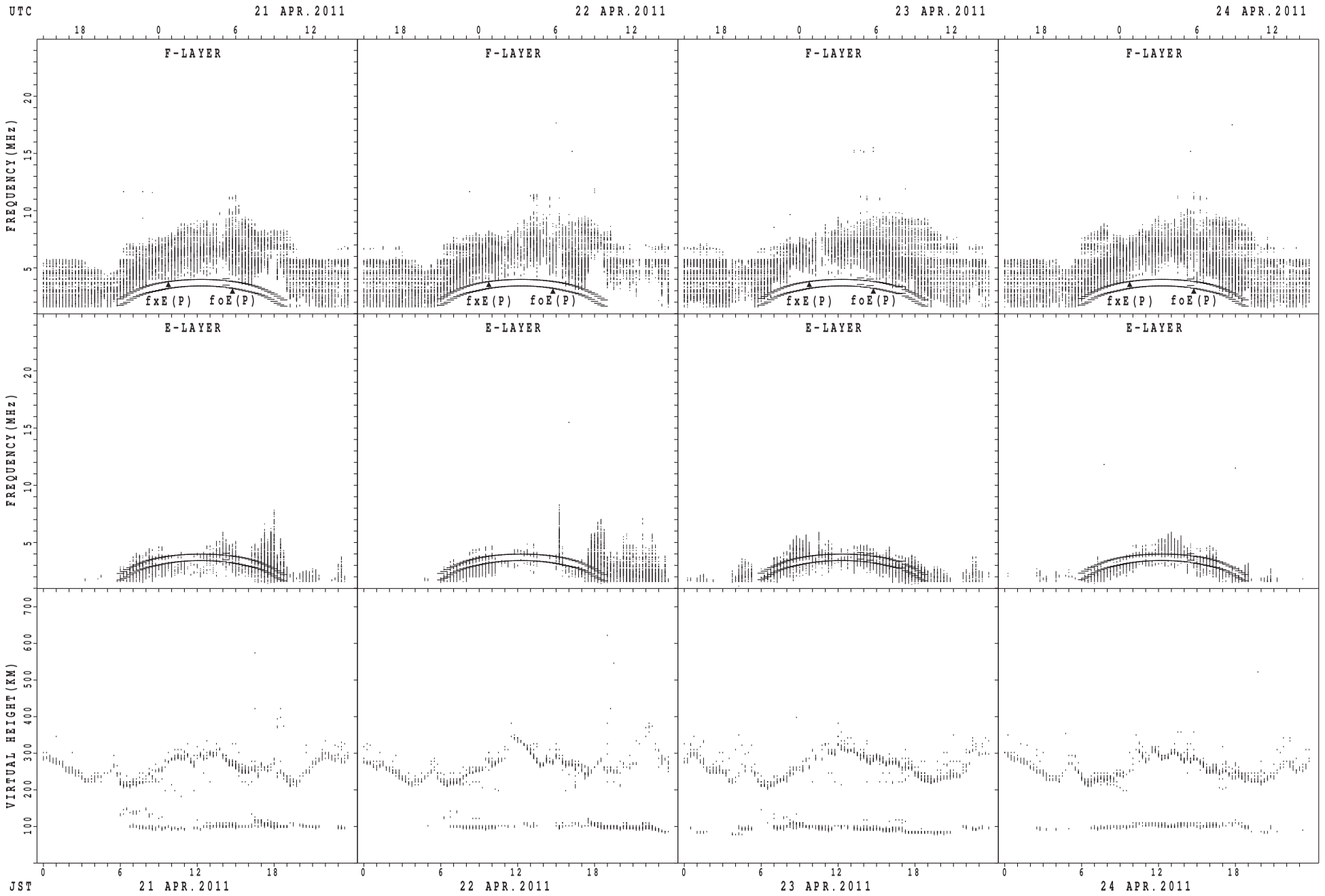
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



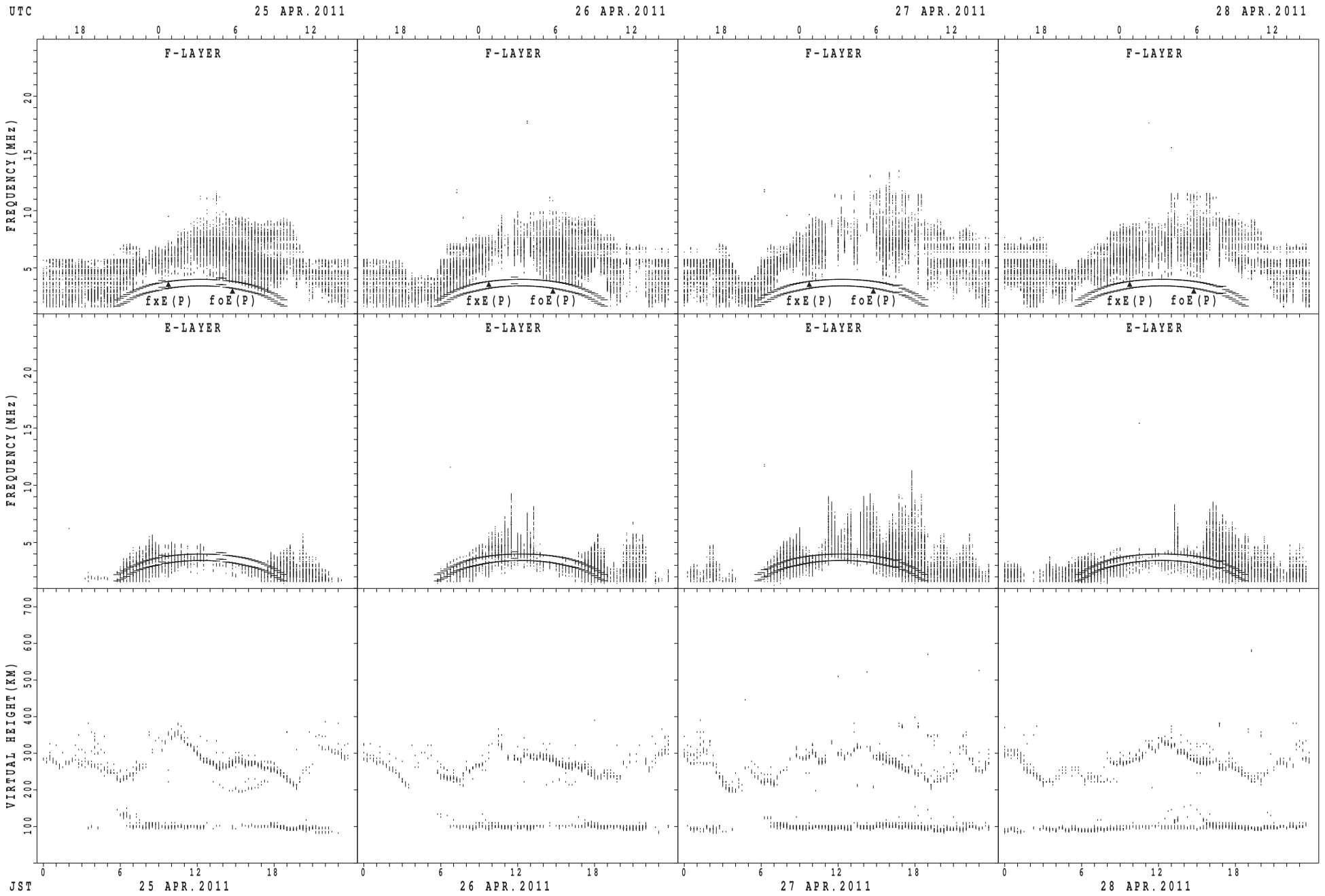
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



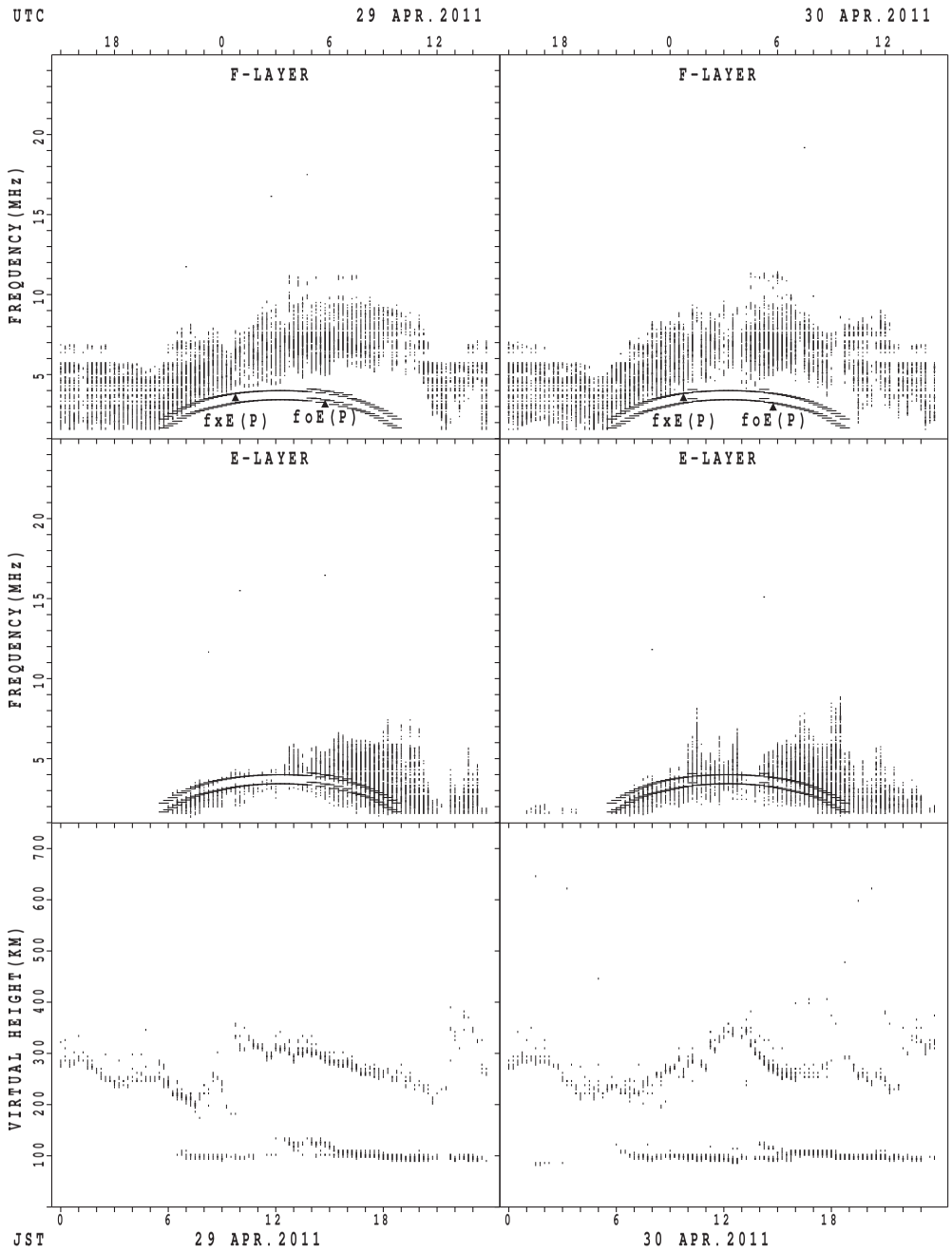
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



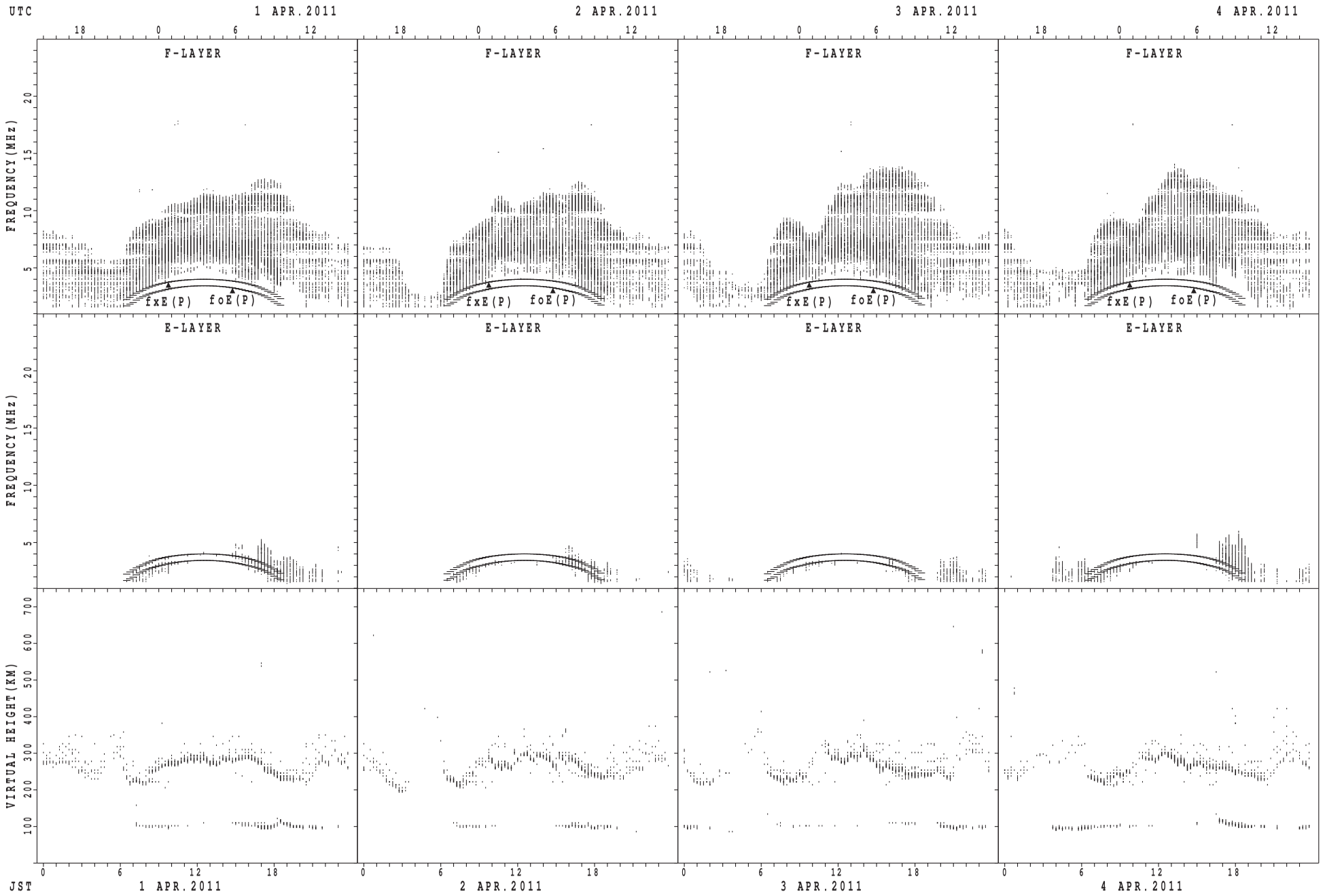
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



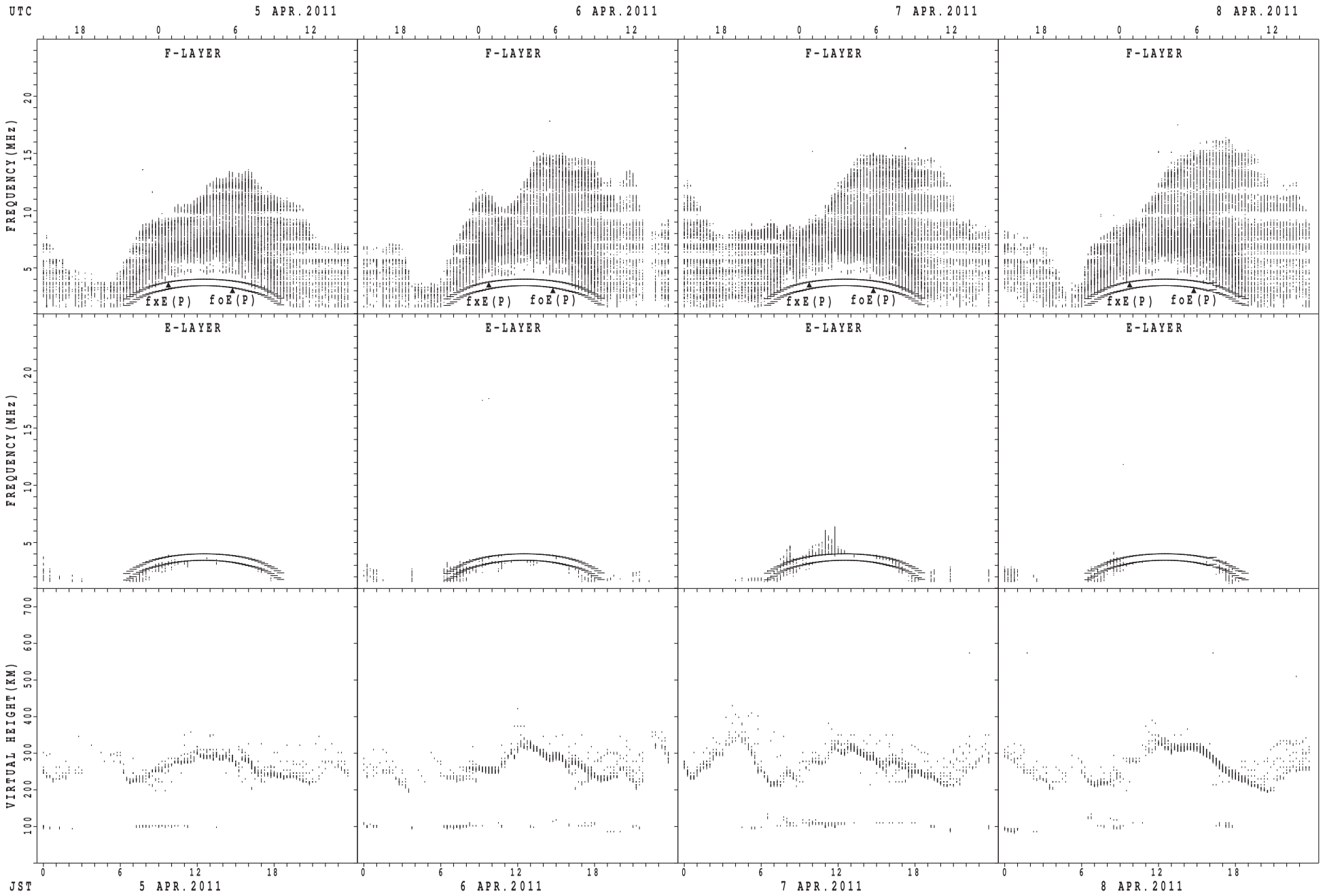
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



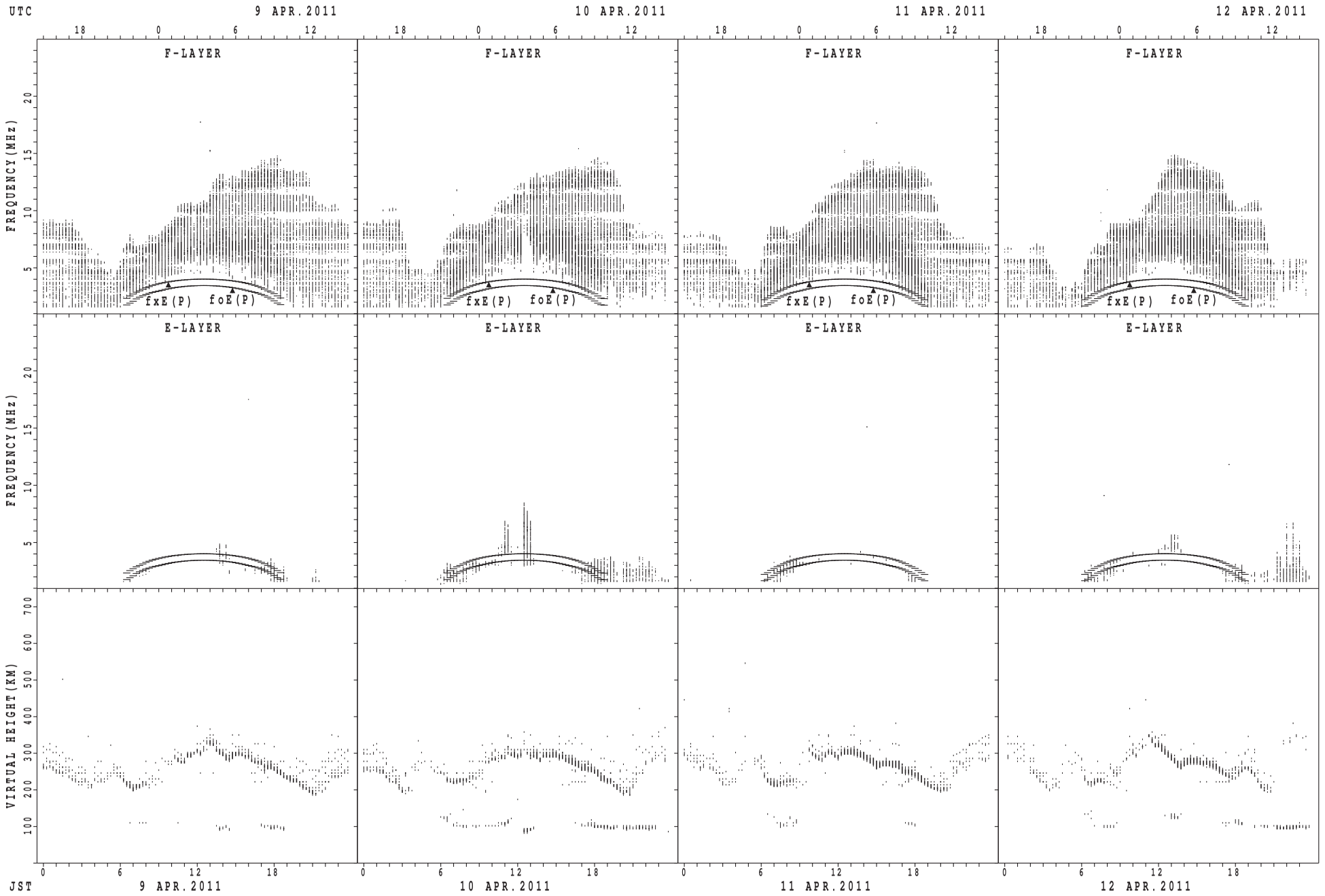
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



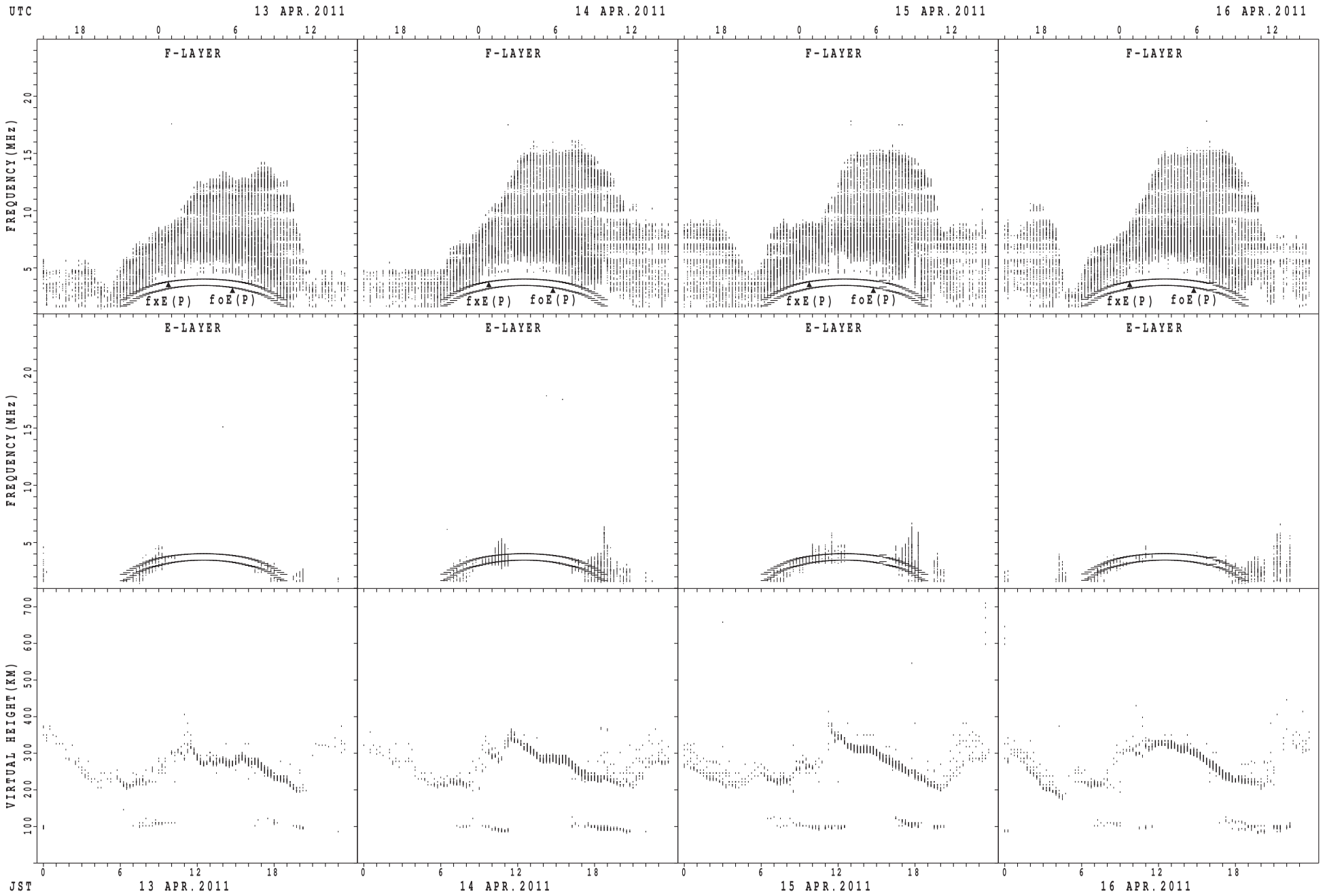
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



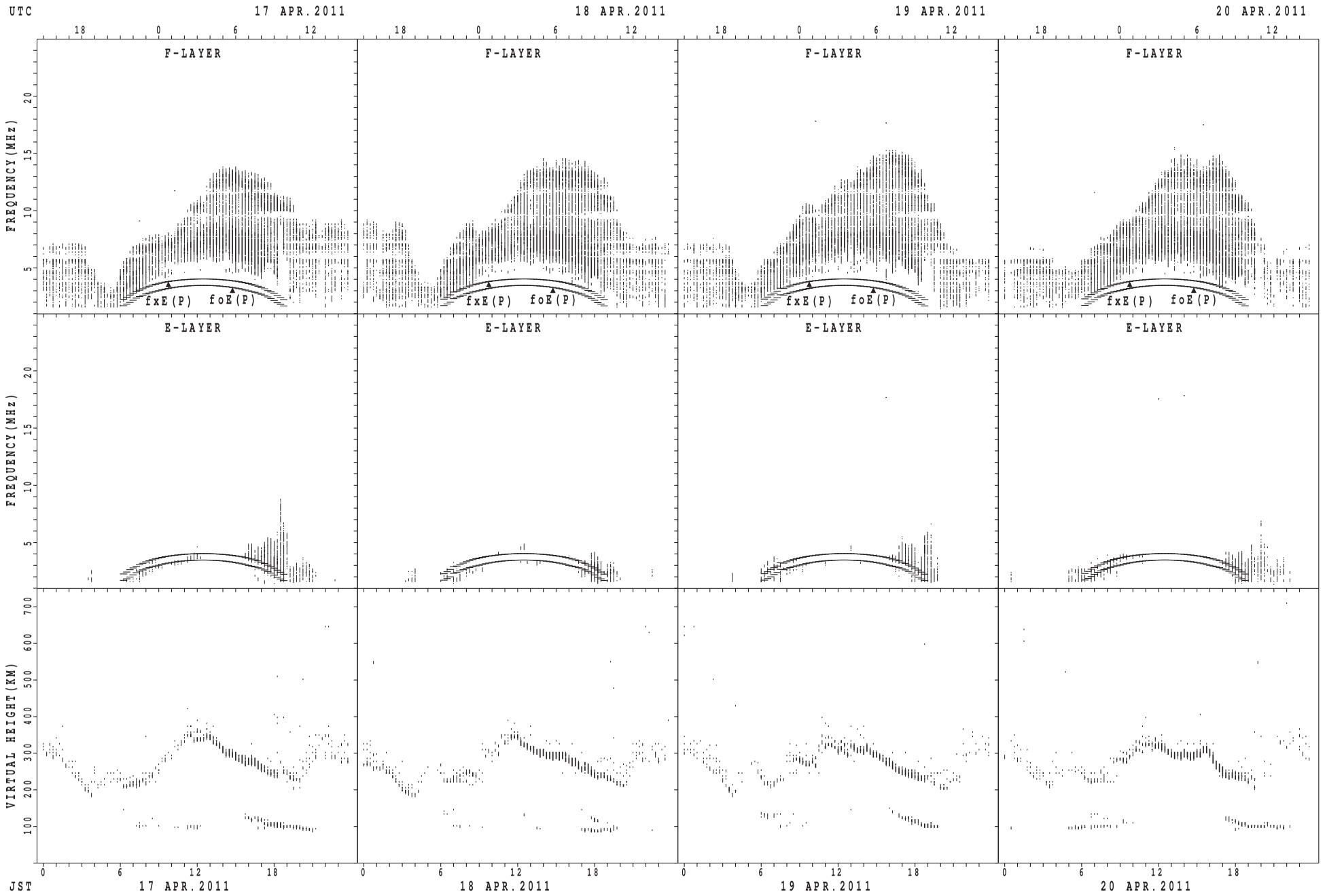
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



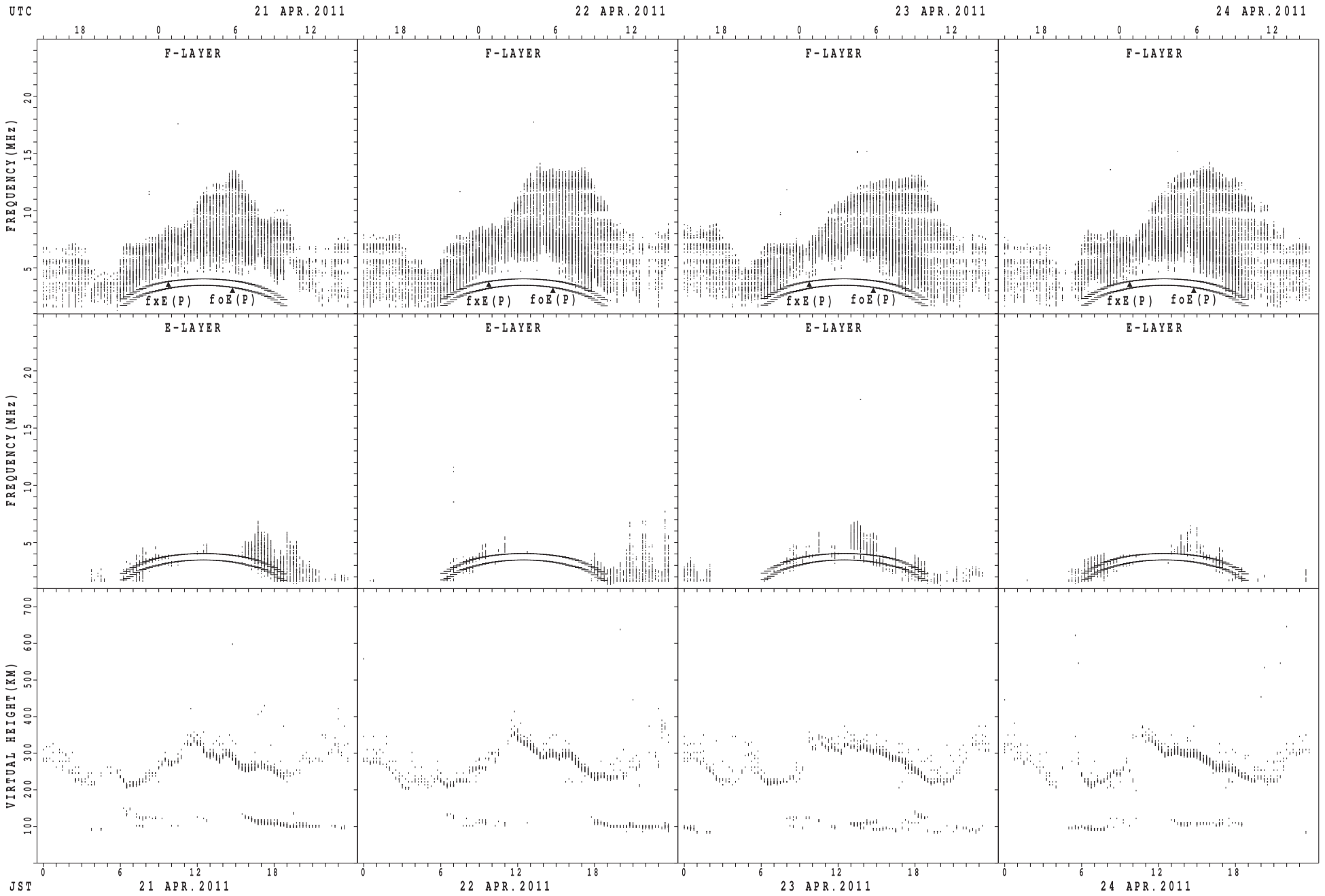
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



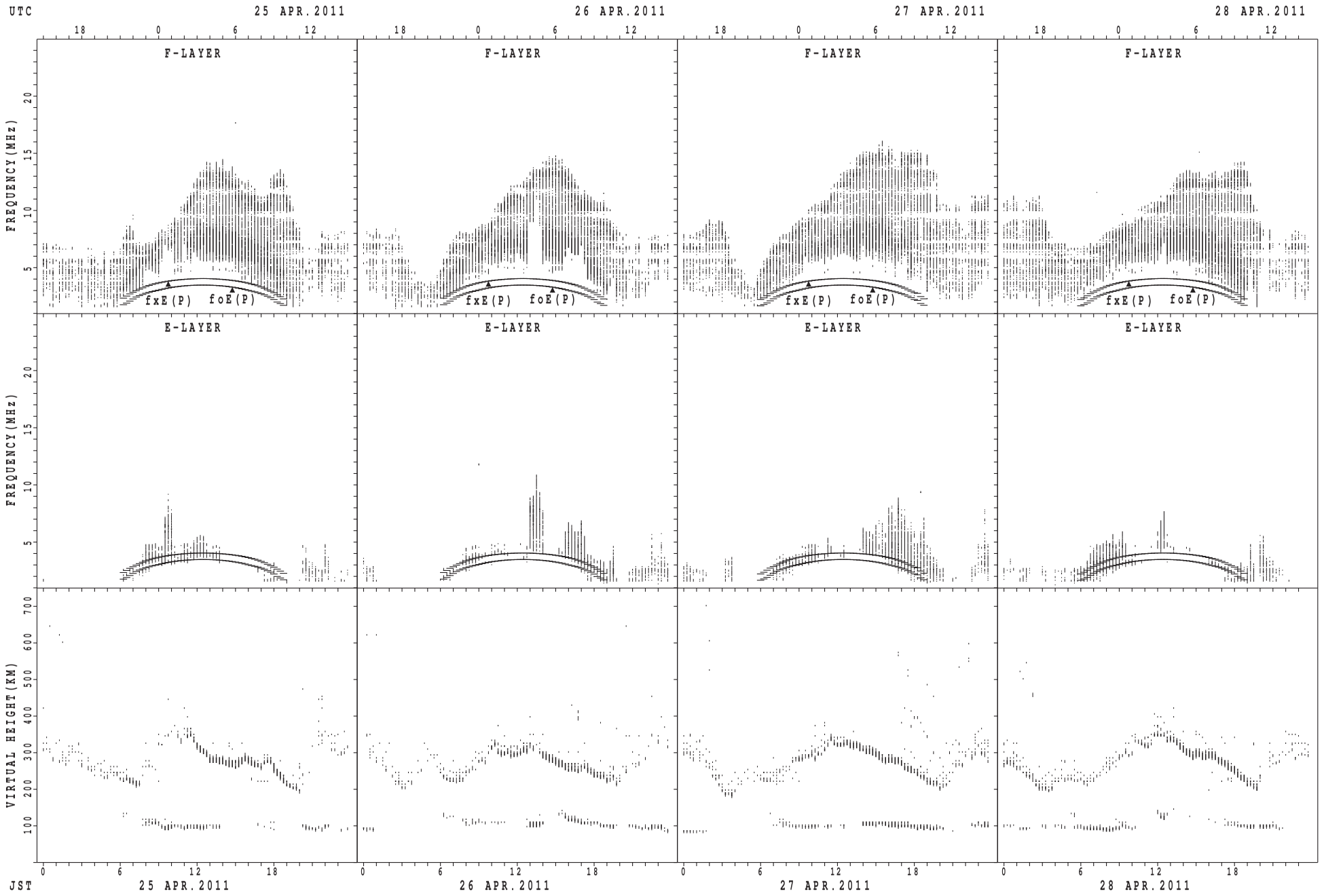
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



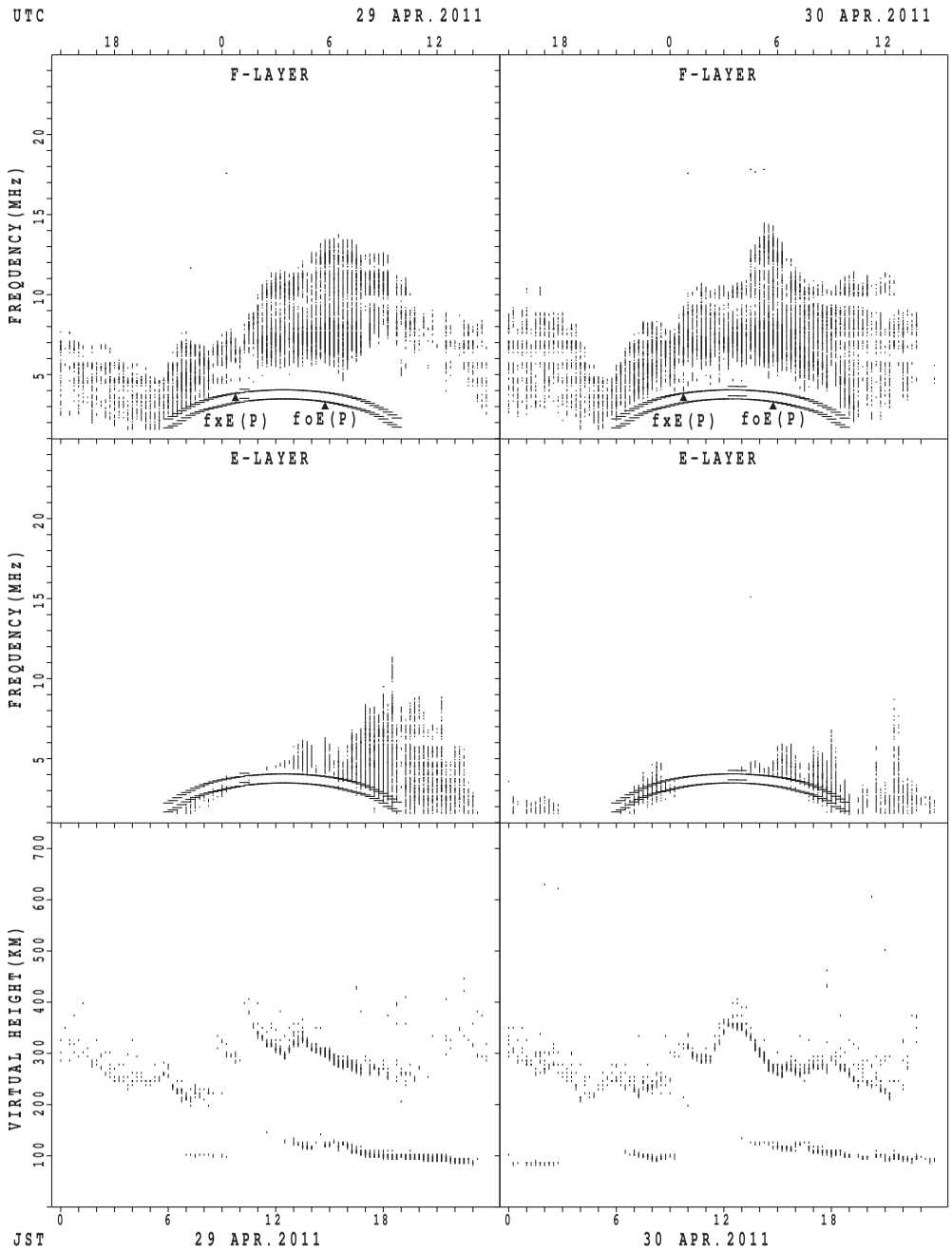
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

APR. 2011 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h′F STATION Wakkanai LAT. 45°10.0′N LON. 141°45.0′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						7	19	2								28	25	22	10	14	10	2	1
MED	320						258	264	263								263	262	256	274	278	275	309	412
U Q	160						268	286	272								267	267	264	280	306	288	338	206
L Q	160						238	254	254								253	254	254	262	262	262	280	206

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	2	3	4	4	3	4	17	24	11	9	9	6	5	4	8	7	18	17	14	10	10	3	3	4
MED	138	99	97	105	97	147	143	103	101	101	107	100	101	102	96	99	102	107	111	109	106	103	99	97
U Q	177	103	98	149	115	161	161	113	107	110	107	103	141	143	111	103	107	129	115	119	111	107	105	100
L Q	99	99	95	90	95	131	134	101	99	98	99	97	99	98	95	95	101	103	95	93	95	87	95	96

h′F STATION Kokubunji LAT. 35°43.0′N LON. 139°29.0′E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1					8	24	10								29	29	28	23	10	2	1	
MED	328	336					248	256	252								256	254	252	248	268	297	338	
U Q	164	168					248	274	256								267	262	262	276	296	330	169	
L Q	164	168					241	245	248								254	248	246	240	246	264	169	

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	5	5	1	5	3	2	10	3	2	6	5	4	6	12	6	7	11	14	20	20	17	17	11	5
MED	97	97	91	91	95	112	136	113	110	116	113	106	103	105	105	105	103	107	105	103	103	103	103	97
U Q	101	100	45	97	95	135	139	141	113	119	120	107	123	110	115	113	113	117	119	106	105	107	105	107
L Q	94	96	45	91	95	89	119	109	107	113	103	102	99	99	103	101	97	103	98	101	100	101	99	93

h′F STATION Yamagawa LAT. 31°12.0′N LON. 130°37.0′E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	1	3	1			2	20	26								10	28	28	28	17	3	1	2
MED	330	312	306	272			264	239	250								263	254	246	247	248	268	352	357
U Q	338	156	318	136			274	250	266								270	261	258	261	281	284	176	408
L Q	322	156	286	136			254	232	238								258	250	239	232	232	234	176	306

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	5	7	4	3	4	4	13	22	25	17	13	15	15	15	16	12	14	24	24	26	18	20	17	14
MED	93	95	95	97	95	96	137	134	103	107	103	103	101	103	107	105	104	110	105	102	99	97	99	97
U Q	97	97	96	99	96	99	143	143	113	110	104	107	139	107	184	124	111	116	111	103	101	101	102	97
L Q	89	89	93	95	93	93	132	107	99	102	98	99	99	101	104	102	95	104	101	97	95	95	96	95

MONTHLY MEDIANS OF h′F AND h′Es

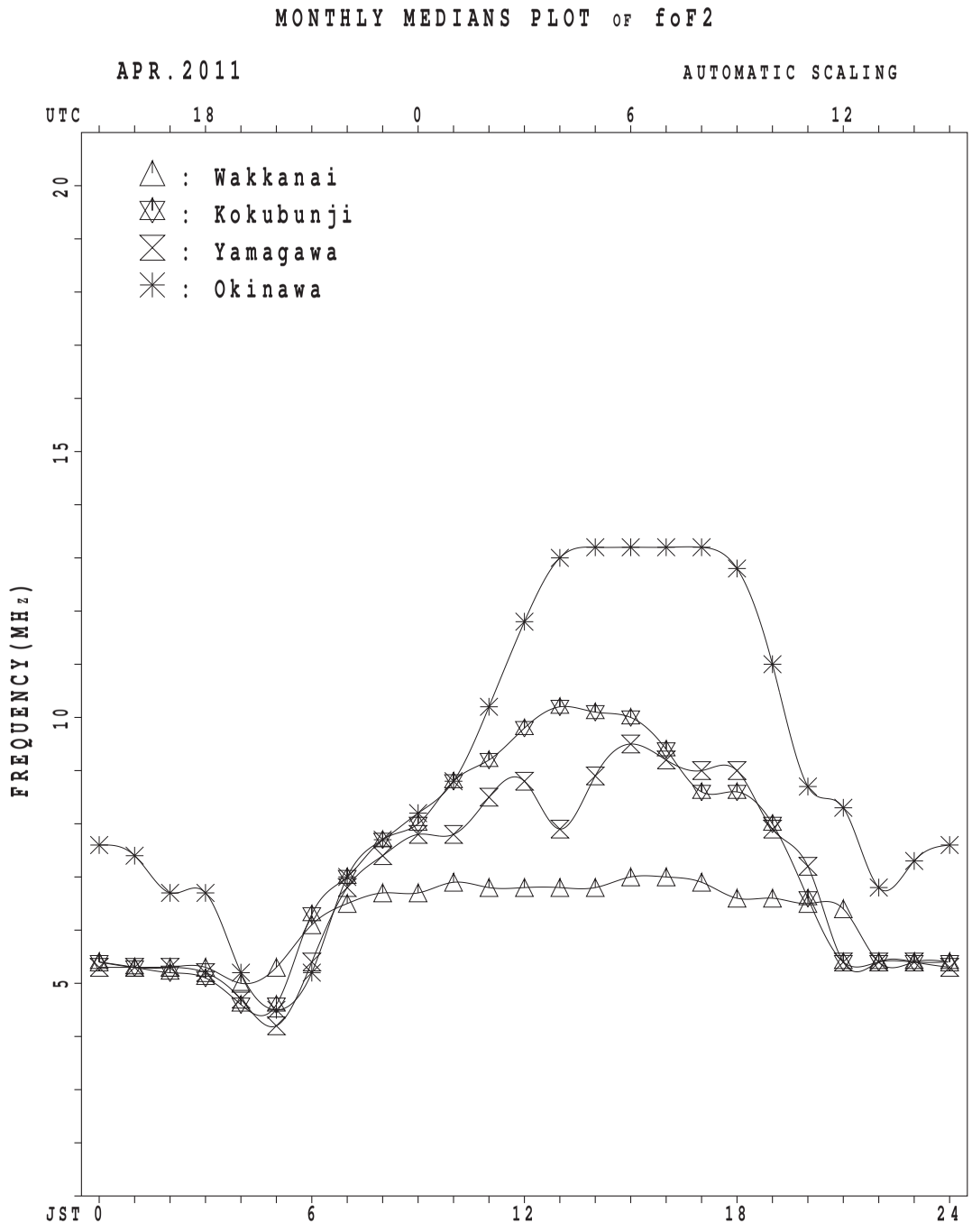
APR.2011 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h′F STATION Okinawa LAT. 26°41.0′N LON. 128°09.0′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	15	14	13	11	2		3	23	27	5							1	30	30	30	23	13	9	8
MED	314	307	274	238	230		282	240	248	254							288	257	246	236	238	282	292	318
U Q	328	316	301	248	248		292	254	268	267							144	262	252	248	256	300	326	337
L Q	304	282	262	222	212		264	230	240	242							144	254	236	224	224	258	282	303

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	5	3	1	3	2	4	12	18	8	10	9	8	7	7	9	12	14	23	17	16	13	9	7
MED	99	89	89	103	105	98	100	126	112	112	105	103	121	121	111	111	117	113	109	103	102	103	99	97
U Q	104	99	97	51	185	99	117	135	115	113	113	109	139	129	119	116	123	119	113	105	105	105	102	101
L Q	93	87	87	51	95	97	98	104	105	107	99	97	100	103	109	107	110	105	103	100	100	98	96	95


MONTHLY MEDIANS PLOT OF foF2
APR.2011
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Wakkanai
✡ : Kokubunji
⧖ : Yamagawa
✳ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 61	X 60	X 58	X 58	X 53	X 51														X 70	X 65	X 66	X 66	X 66
2	X 62	X 64	X 64	X 48	X 40	X 40													X 82	X 73	X 71	X 71	X 69	X 69
3	X 74	X 71	X 58	X 56	X 52	X 50														X 71	X 69	X 68	X 70	X 73
4	X 70	X 67	X 64	X 60	X 59	X 60														X 79	X 68	X 68	X 70	X 70
5	X 69	X 69	X 64	X 58	X 56	X 58														X 75	X 70	X 69	X 69	X 68
6	X 68	X 66	X 64	X 57	X 51	X 52														X 83	X 70	X 69	X 68	X 71
7	X 72	X 70	X 58	X 48	X 48	X 54														X 80	X 74	X 73	X 71	X 72
8	X 70	X 69	X 67	X 58	X 47	X 48														X 102	X 87	X 69	X 66	X 64
9	X 64	X 64	X 62	X 62	X 53	X 55														X 95	X 91	X 86	X 72	X 67
10	X 65	X 62	X 60	X 53	X 51	X 54														X 104	X 88	X 74	X 68	X 64
11	X 61	X 58	X 58	X 56	X 51	X 54														X 90	X 69	X 66	X 66	X 65
12	X 62	X 62	X 60	X 57	X 53	X 57														X 95	X 100	X 66	X 60	X 61
13	X 56	X 58	X 56	X 57	X 47	X 46														X 94	X 70	X 55	X 55	X 54
14	X 53	X 50	X 48	X 48	X 50	X 57														X 87	X 72	X 63	X 65	X 66
15	X 64	X 63	X 60	X 58	X 60	X 60														X 106	X 84	X 66	X 67	X 70
16	X 68	X 66	X 66	X 62	X 63	X 61														X 90	X 68	X 62	X 62	X 63
17	X 63	X 63	X 62	X 61	X 54	X 54														X 91	X 75	X 72	X 72	X 73
18	X 73	X 71	X 68	X 66	X 62	X 60														X 98	X 78	X 76	X 77	X 78
19	X 75	X 72	X 69	X 70	X 60	X 61														X 88	X 81	X 70	X 65	X 62
20	X 62	X 60	X 61	X 53	X 50	X 52														X 88	X 66	X 64	X 64	X 64
21	X 61	X 60	X 61	X 58	X 54	X 56														X 75	X 67	X 64	X 68	X 69
22	X 66	X 66	X 66	X 64	X 53															X 79	X 74	X 70	X 70	X 72
23	X 71	X 70	X 71	X 65	X 57															X 86	X 80	X 79	X 77	X 76
24	X 73	X 70	X 71	X 68	X 61	X 64														X 77	X 72	X 68	X 70	X 68
25	X 66	X 66	X 60	X 60	X 60															X 80	X 64	X 60	X 59	X 61
26	X 59	X 59	X 60	X 54	X 46															X 79	X 72	X 69	71	73
27	76	72	X 73	78	X 63	X 56														X 99	X 82	X 82	X 78	X 69
28	X 63	X 60	X 59	58	52															X 100	X 80	X 75	X 71	X 69
29	X 69	X 68	X 69	X 68	X 59															X 108	X 90	X 63	X 66	X 66
30	X 66	X 64	X 62	X 64	X 60															X 84	X 86	X 76	X 72	X 71
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	23													1	30	30	30	30	30
MED	X 66	X 65	X 62	X 58	X 53	X 55													X 82	X 88	X 73	X 69	X 68	X 68
U Q	X 70	X 69	X 66	X 64	X 60	X 60														X 95	X 82	X 73	X 71	X 71
L Q	X 62	X 60	X 60	X 56	X 51	X 52														X 79	X 69	X 66	X 66	X 64

APR. 2011 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	55	54	52	52	47	45	63	73	83	80	90	95	97	102	90	86	78	78	78	64	59	59	60	60
2	56	57	58	42	34	34	54	64	77	89	95	98	103	90	90	82	82	75	75	67	64	65	63	63
3	68	65	52	50	46	44	57	75	78	83	81	92	102	96	99	98	98	91	80	64	63	62	64	67
4	64	61	58	54	53	54	65	78	90	96	90	96	106	107	97	92	86	86	83	72	62	62	64	64
5	63	63	58	52	50	52	64	75	82	86	87	93	102	102	107	104	100	87	76	69	64	63	62	62
6	62	60	58	51	45	45	61	71	88	92	97	100	102	104	100	101	104	100	92	77	64	63	62	65
7	66	64	52	42	42	48	61	81	86	78	86	109	103	106	110	112	98	87	79	74	68	67	65	66
8	64	63	60	52	41	42	60	73	78	85	89	92	97	108	112	110	100	94	96	96	81	63	59	57
9	58	58	56	55	46	49	73	69	72	78	86	82	89	102	109	106	101	94	93	89	85	80	66	60
10	59	56	54	47	45	48	72	80	94	97	86	93	96	100	99	100	92	90	97	98	82	68	62	58
11	55	52	52	49	45	48	65	82	93	95	89	88	91	94	97	98	94	83	90	84	62	60	60	58
12	56	56	54	50	47	51	64	70	82	92	96	98	110	114	119	106	90	80	84	89	93	60	54	55
13	50	52	50	51	41	40	46	57	52	56	60	67	79	85	81	73	72	74	82	88	64	49	49	48
14	47	44	42	42	44	51	62	70	72	78	91	98	107	109	102	98	95	88	90	81	66	57	59	60
15	58	57	54	52	53	54	68	82	89	82	78	91	100	101	98	92	88	91	100	100	77	60	60	64
16	62	59	60	56	57	55	64	70	70	73	86	97	103	104	102	103	98	96	90	84	62	56	56	57
17	57	57	56	55	48	48	58	68	75	81	90	89	89	88	86	96	100	102	94	88	69	66	66	67
18	67	65	62	60	56	54	60	68	78	78	86	91	94	95	95	98	100	98	98	92	72	70	71	71
19	69	66	63	64	54	55	66	78	79	92	97	94	98	100	90	86	84	84	83	82	75	64	59	56
20	56	54	55	49	44	46	63	70	71	79	90	100	106	116	116	104	100	98	90	81	60	58	58	58
21	55	54	54	52	48	50	59	64	65	68	80	86	84	84	96	87	87	81	76	69	60	58	61	63
22	60	60	60	57	47	50	57	70	74	76	74	72	89	102	104	104	94	80	70	72	68	64	64	66
23	65	64	65	59	51	53	63	70	73	76	80	82	96	96	104	102	88	81	80	80	74	73	70	70
24	67	64	65	62	55	58	66	65	68	72	73	80	82	84	93	96	95	83	74	71	66	63	64	62
25	59	60	54	54	53	50	46	50	51	53	59	65	73	85	83	77	72	72	75	74	58	54	53	54
26	53	53	54	47	40	41	63	71	74	76	80	90	86	92	87	84	78	82	87	75	66	63	F	F
27	F	F	67	F	57	50	59	69	67	74	94	108	105	108	104	103	106	108	106	92	76	76	72	63
28	57	54	53	F	F	48	66	70	75	89	88	91	97	98	106	113	100	89	90	94	74	69	65	63
29	64	62	63	62	53	55	80	66	74	83	76	86	97	105	102	100	90	97	100	102	83	57	60	60
30	59	58	56	58	54	53	66	69	76	87	100	98	91	96	116	115	88	68	65	78	80	70	66	65
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	28	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29
MED	59	58	56	52	47	50	63	70	76	80	86	92	97	100	100	99	94	87	86	81	67	63	62	62
U Q	64	63	60	56	53	53	66	75	82	89	90	98	103	105	106	104	100	94	93	89	76	67	65	65
L Q	56	54	54	50	44	46	59	68	72	76	80	86	89	94	93	92	87	81	78	72	63	59	59	58

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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		U L 492	L	U L 488	U L 500	L	L								
2									L	L	L	U L 556	U L 520	L	L	L								
3										L	L	L	L	L	L									
4										L	L	L	L	L	L	L	L							
5										L	L	L	U L 548	U L 508	L	L	L							
6									L	L	L	L	U L 540	U L 512	L	L	L							
7										L	L	U L 532	A	L	L	L								
8								L	L	L	L	U L 512	U L 520	U L 548	L	L	L							
9										L	L	L	U L 552	U L 520	L	L								
10									L	L	L	U L 556	L	U L 500	L	L								
11									A	L	L	L	L	U L 524	L	L	A							
12										L	L	L	U L 528	U L 500	484	A		A						
13								U L 392	U L 448	U L 472	U L 484	500	492	500	L	L								
14									L	L	U L 540	L	520	U L 508	L	L	L							
15									468	476	U L 488	U L 520	U L 528	L	U L 512	L	L	L						
16									L	L	U L 520	U L 516	U L 516	U L 524	U L 508	L	L	A						
17									L	L	U L 512	U L 500	L	U L 540	U L 524	L	L	L						
18									L	L	U L 512	488	A	488	U L 496	U L 484	L	L						
19								A	L	L	L	488	U L 528	496	U L 488	L		L						
20								L		U L 500	U L 508	512	516	500	U L 472	L	A	A						
21									L	U L 484	488	500	504	512	504	464	L							
22								L	L	U L 496	U L 484	U L 524	U L 516	U L 516	L	A	A							
23									L	L	U L 488	U L 508	L	L	500	U L 480	L							
24								L	464	468	U L 532	U L 520	U L 520	U L 488	496	A	A	A						
25								416	436	452	U L 472	U L 488	U L 508	A	480	464	L	L						
26									L	L	U L 524	508	516	496	L	L	A	A	A					
27							L	A	L	L	A	A	A	A	A	A	A	A						
28								A	L	L	U L 524	U L 532	U L 520	A	480	A	L	L	A					
29								A	L	A	A	L	520	A	A	L	A	A	A					
30									L	L	524	U L 548	U L 532	U L 600	U L 512		L	L	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	4	7	16	19	21	20	13	4								
MED								404	456	U L 476	U L 510	U L 512	U L 520	U L 508	U L 496	472								
U Q									466	U L 496	U L 524	U L 532	U L 528	U L 522	U L 510	U L 482								
L Q									442	468	U L 488	500	516	500	482	464								

APR. 2011 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR. 2011 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	R	R	A	340	R	R	A	A	A	UR 292	UR 236	B					
2							UR 200	R	R	R	R	R	A	A	A	R	A	220						
3							196	UR 268	R	R	R	A	R	A	A	A	A	A	B					
4							176	260	R	A	A	A	A	R	R	R	R	UA 240	B					
5							184	260	R	R	R	R	A	R	R	R	A	A	B					
6							196	276	R	R	A	R	A	A	A	A	A	A	B					
7							B	A	A	A	A	A	A	A	A	A	A	R	B					
8							180	R	R	R	A	R	R	R	R	R	R	R	B					
9							196	R	R	R	R	R	R	R	R	R	R	A	A					
10							192	A	A	R	R	R	R	R	R	R	R	240	B					
11							220	A	A	A	A	A	R	R	R	R	300	UA 240	B					
12							192	A	A	A	A	R	R	A	R	336	A	A	B					
13							UR 236	R	A	A	R	R	R	R	R	R	R	A	B					
14							200	A	A	A	A	R	A	R	R	R	R	A	B					
15							B	R	A	A	R	R	A	A	A	A	A	A	B					
16							228	R	R	A	R	R	R	R	A	R	A	A	B					
17							220	A	R	R	A	A	R	A	R	R	R	244	B					
18							240	A	R	R	R	A	A	A	R	A	R	240	B					
19							216	A	R	A	R	R	R	R	A	352	R	244	A					
20							A	A	A	A	R	R	R	A	A	R	A	A	B					
21							220	272	R	A	A	R	R	R	R	R	R	248	A					
22						B	220	A	A	A	UR 408	R	A	A	R	A	A	R	B					
23						B	216	A	A	A	A	R	R	R	A	A	A	UR 256	B					
24							208	284	R	A	A	R	A	R	A	A	A	A	B					
25						B	232	R	A	A	A	A	A	A	R	R	R	R	B					
26						B	240	A	A	A	A	A	A	A	R	328	A	A	B					
27							A	A	A	A	A	A	A	A	A	A	A	A	B					
28						B	240	A	A	A	R	A	A	A	R	A	A	A	B					
29						B	232	A	R	A	A	A	R	A	A	A	A	A	B					
30						B	UR 260	A	R	A	R	R	A	A	A	A	R	A	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							25	6			2					3	2	10						
MED							216	270			374					336	296	240						
U Q							232	276								352		244						
L Q							196	260								328		240						

APR. 2011 foE (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR. 2011 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	E B 15	E B 15	E B 15	E B 15	E B 15	22	G 23	G 27	39	42	G	G	J A 47	39	40	G 24	G	E B 15	J A 18	19	20	E B 15	E B 15
2	E B 15	E B 15	E B 14	E B 15	E B 15	E B 14	G	G 25	G 28	G 29	G 28	G	J A 45	44	38	G 34	34	26	E B 17	E B 15	J A 22	J A 18	J A 31	E B 15
3	E B 15	20	18	E B 14	E B 14	E B 15	24	G 23	G 26	G 29	G 31	43	G	43	41	38	36	29	J A 26	E B 15	E B 16	J A 23	19	E B 15
4	J A 18	J A 23	E B 15	E B 16	E B 16	E B 16	26	36	G 30	J G 37	46	J A 45	42	G	G 35	G 29	G 24	27	E B 15	E B 15	E B 15	E B 14	E B 16	J A 18
5	E B 15	E B 15	E B 16	J A 21	E B 15	20	24	34	G 28	G 29	G 30	G 33	41	G	G	G 28	J A 48	30	20	22	J A 18	J A 24	E B 15	E B 15
6	E B 14	E B 15	21	J A 18	20	E B 15	26	34	G 28	G 34	40	G 36	41	J A 42	41	38	J A 37	28	21	J A 26	E B 15	E B 15	E B 15	E B 15
7	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	24	33	36	38	42	42	J A 51	45	46	J A 39	J A 35	G 24	E B 16	20	J A 21	23	21	J A 25
8	21	E B 15	E B 15	E B 16	E B 14	E B 15	24	G 24	G 29	G 32	42	G 33	G	G	G	G 31	G 28	G 21	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14
9	22	J A 23	J A 22	J A 25	J A 26	J A 24	24	G 25	G 26	G 31	G 33	G	G	G 28	G 30	G 29	G 24	33	J A 37	J A 25	J A 30	E B 15	E B 15	E B 15
10	E B 16	E B 15	E B 15	E B 14	E B 16	E B 16	26	32	36	G 28	G 30	G 26	G	G	G	G 25	G 25	28	20	J A 30	E B 14	E B J A 45	J A 18	J A 23
11	22	19	E B 14	E B 15	E B 15	E B 15	28	34	37	40	42	43	G	G	G	G 29	35	34	24	J A 30	J A 28	E B 14	E B 15	E B 15
12	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	26	35	40	43	41	G	G 28	44	G 28	40	38	J A 50	J A 49	J A 49	J A 52	J A 22	J A 22	22
13	E B 15	E B 16	20	E B 15	E B 15	E B 15	G 19	G 24	36	39	G	G	G	G	G	G	G 29	25	20	J A 18	20	J A 19	J A 25	E B 16
14	21	E B 16	E B 15	E B 14	E B 14	E B 15	25	32	36	38	42	G	40	G 35	G 30	G 27	G 24	29	J A 26	J A 18	J A 20	J A 20	J A 23	J A 28
15	J A 30	E B 16	E B 15	E B 15	E B 14	E B 15	24	G 24	37	38	G 37	G	40	42	42	36	39	J A 36	J A 27	J A 63	J A 44	J A 33	20	E B 14
16	20	E B 16	E B 15	E B 15	E B 14	E B 14	G	G 24	G 27	39	G	G	G	G	37	G 34	37	35	22	22	E B 15	E B 15	E B 15	E B 14
17	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	G	36	G 26	G	42	43	G 34	42	G 34	G 28	G 26	28	J A 24	J A 24	J A 20	18	E B 15	E B 15
18	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	30	37	G 22	G	G	43	52	47	G	J A 44	G 24	32	J A 30	J A 24	J A 20	E B 15	E B 15	E B 14
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	26	35	G 28	40	G 28	G 34	G 34	G 30	J A 39	40	G 26	32	26	21	J A 22	E B 15	E B 14	E B 15
20	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	29	36	38	J A 44	G	G	G 26	J A 50	38	G	J A 46	34	J A 31	J A 27	J A 22	21	E B 15	E B 16
21	E B 16	E B 14	E B 14	E B 14	E B 15	E B 14	27	36	G 28	42	40	G	G	G	G	G 26	G 26	28	25	J A 31	E B 15	J A 32	J A 22	E B 15
22	E B 14	E B 15	E B 16	E B 15	E B 15	18	29	35	40	43	G 36	G	41	42	G	J A 48	J A 48	G 24	J A 28	J A 29	J A 44	J A 20	21	E B 16
23	J A 27	J A 22	20	J A 18	21	J A 18	26	35	39	42	42	G	G	G	42	35	J A 37	G 24	21	J A 29	J A 26	J A 31	J A 40	J A 21
24	J A 22	J A 20	19	E B 15	E B 15	E B 15	27	35	G 30	40	44	G	43	G	44	J A 60	J A 64	J A 72	J A 48	J A 24	J A 26	J A 25	J A 26	J A 26
25	J A 23	J A 24	21	J A 27	J A 31	24	32	G 25	37	42	44	42	40	J A 60	G	G	G 24	G	J A 33	J A 36	E B 51	14	20	E B 16
26	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	30	35	39	38	J A 45	44	J A 53	J A 45	G	40	42	J A 40	J A 49	J A 38	J A 50	J A 60	J A 26	J A 51
27	J A 50	J A 52	J A 51	J A 24	J A 30	J A 21	30	38	38	J A 48	J A 59	J A 51	J A 67	J A 79	J A 54	J A 49	J A 54	J A 40	J A 30	J A 54	J A 55	J A 47	J A 22	19
28	E B 15	21	J A 18	18	22	E B 16	42	J A 61	38	43	G 34	44	44	J A 60	G 31	J A 68	J A 52	J A 42	J A 146	J A 50	J A 58	J A 23	21	E B 15
29	E B 14	E B 16	E B 15	E B 15	E B 15	E B 15	30	36	G 27	48	J A 60	46	G	J A 58	J A 52	40	J A 54	J A 50	J A 59	J A 45	37	J A 80	21	J A 22
30	E B 15	E B 15	J A 24	E B 15	E B 15	E B 15	G	36	G 28	40	G	G	44	J A 54	40	42	G 28	J A 35	J A 55	J A 58	J A 29	J A 52	J A 24	J A 20
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	26	34	G 30	39	40	G	G	42	G	36	35	30	J A 26	J A 26	J A 22	J A 20	20	E B 16
U Q	J A 21	J A 20	19	J A 16	16	16	29	36	37	42	42	43	43	J A 47	41	J A 40	J A 42	J A 35	J A 33	J A 36	J A 37	J A 31	J A 22	J A 21
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G 24	G 25	G 28	G 37	G 36		G	G	G	G 29	G 26	G 26	E B 20	20	E B 18	E B 15	E B 15	E B 15

APR. 2011 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR. 2011 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 21	G 26	36	38	G	G	40	38	36	G 22	G	E B 15	E B 14	E B 15	E B 16	E B 15	E B 15
2	E B 15	E B 15	E B 14	E B 15	E B 15	E B 14	G	G 24	G 27	G 26	G 27	G	40	39	37	G 32	31	24	E B 17	E B 15	17	14	25	E B 15
3	E B 15	E B 15	E B 16	E B 14	E B 14	E B 15	22	G 21	G 25	G 28	G 30	41	G	41	38	36	32	27	19	E B 15	E B 16	18	17	E B 15
4	E B 16	E B 15	E B 15	E B 16	E B 16	E B 16	26	35	G 28	G 33	44	43	41	G	G 33	G 28	G 24	26	E B 15	E B 15	E B 15	E B 14	E B 16	E B 15
5	E B 15	E B 15	E B 16	18	E B 15	E B 16	23	31	G 26	G 27	G 29	G 32	39	G	G	G 26	34	26	20	E B 16	E B 15	21	E B 15	E B 15
6	E B 14	E B 15	E B 16	16	E B 15	E B 15	24	30	G 26	G 32	38	G 35	38	39	40	36	33	24	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15
7	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	22	30	34	37	41	41	45	41	43	37	30	G 23	E B 16	19	15	E B 15	E B 15	22
8	E B 15	E B 15	E B 15	E B 16	E B 14	E B 15	23	G 22	G 26	G 28	40	G 28	G	G	G	G 28	G 28	G 20	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14
9	E B 14	18	16	18	19	20	22	G 23	G 26	G 29	G 32	G	G	G 28	G 29	G 27	G 20	25	29	17	E B 15	E B 15	E B 15	E B 15
10	E B 16	E B 15	E B 15	E B 14	E B 16	E B 16	24	30	35	G 27	G 28	G 25	G	G	G	G 24	G 24	26	19	20	E B 14	18	E B 15	E B 15
11	E B 16	E B 15	E B 14	E B 15	E B 15	E B 15	26	31	36	39	39	42	G	G	G	G 28	34	32	20	20	26	E B 14	E B 15	E B 15
12	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	23	32	39	41	38	G	G 27	40	G 25	39	34	47	37	47	41	18	18	E B 15
13	E B 15	E B 16	E B 14	E B 15	E B 15	E B 15	G 18	G 24	35	37	G	G	G	G	G	G	G 28	21	18	E B 15	E B 15	E B 15	17	E B 16
14	E B 15	E B 16	E B 15	E B 14	E B 14	E B 15	23	30	35	36	40	G	39	G 33	G 28	G 26	G 23	28	22	16	19	18	18	19
15	20	E B 16	E B 15	E B 15	E B 14	E B 15	22	G 22	33	36	G 35	G	38	40	40	35	35	26	23	21	20	20	E B 14	E B 14
16	E B 15	E B 16	E B 15	E B 15	E B 14	E B 14	G	G 22	G 25	38	G	G	G	G	36	G 34	36	32	20	E B 14	E B 15	E B 15	E B 15	E B 14
17	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	G	32	G 25	G	40	41	G 33	40	G 32	G 28	G 26	26	21	20	15	E B 15	E B 15	E B 15
18	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	27	34	G 22	G	G	38	46	44	G	37	G 23	30	27	22	18	E B 15	E B 15	E B 14
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	25	33	G 26	37	G 27	G 30	G 31	G 28	37	37	G 24	29	23	E B 14	17	E B 15	E B 14	E B 15
20	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	24	32	36	38	G	G	G 26	44	36	G	40	29	28	23	18	E B 15	E B 15	E B 16
21	E B 16	E B 14	E B 14	E B 14	E B 15	E B 14	24	33	G 27	41	39	G	G	G	G	G 26	G 26	28	23	27	E B 15	23	E B 15	E B 15
22	E B 14	E B 15	E B 16	E B 15	E B 15	16	27	33	37	40	G 36	G	40	40	G	44	44	G 21	24	25	19	E B 15	E B 15	E B 16
23	E B 16	E B 15	E B 15	16	14	E B 16	24	32	38	40	40	G	G	G	39	32	34	G 22	19	24	22	17	18	18
24	19	E B 16	E B 15	E B 15	E B 15	E B 15	25	32	G 25	38	42	G	40	G	38	43	41	42	46	18	E B 15	18	E B 15	18
25	E B 15	17	E B 15	22	19	19	30	G 24	35	41	43	42	39	54	G	G	G 24	G	29	31	21	E B 14	E B 16	E B 16
26	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	28	35	37	37	43	42	39	42	G	37	40	38	48	36	30	40	21	E B 16
27	29	38	23	19	18	19	28	35	36	44	56	50	64	74	51	44	52	38	26	20	43	E B 14	E B 15	16
28	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	39	54	37	41	G 33	41	41	52	G 30	39	35	30	44	19	41	17	E B 15	E B 15
29	E B 14	E B 16	E B 15	E B 15	E B 15	E B 15	26	32	G 27	46	54	43	G	54	49	38	51	46	56	22	34	38	E B 15	E B 15
30	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	35	G 28	38	G	G	42	50	38	39	G 26	32	45	44	E B 15	38	19	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	24	32	G 28	37	38	G	G	40	G	G	32	26	22	20	16	E B 15	E B 15	E B 15
U Q	E B 16	E B 16	E B 15	16	E B 15	16	26	33	36	40	40	41	40	42	38	37	35	32	29	23	21	18	17	16
L Q	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	G 22	G 24	G 26	G 33	G 35	G	G	G	G	G 28	G 24	G 24	E B 19	E B 15	E B 15	E B 15	E B 15	E B 15

APR. 2011 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR. 2011 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	15	15	15	15	15	14	14	12	14	15	28	23	26	21	20	14	15	15	14	15	16	15	15
2	15	15	14	15	15	14	14	14	14	15	19	20	20	21	22	18	15	12	17	15	15	14	15	15
3	15	15	16	14	14	15	16	14	14	15	18	20	21	20	23	16	15	12	14	15	16	14	15	15
4	16	15	15	16	16	16	14	18	18	19	19	23	19	26	26	20	13	14	15	15	15	14	16	15
5	15	15	16	16	15	16	15	14	13	19	19	23	23	22	16	14	13	14	15	16	15	15	15	15
6	14	15	16	15	15	15	15	15	16	14	18	21	18	18	17	17	13	14	16	15	15	15	15	15
7	15	15	14	15	15	15	14	13	14	19	23	24	20	19	23	14	14	14	16	14	15	15	15	15
8	15	15	15	16	14	15	15	15	18	15	16	22	30	22	26	17	14	15	16	15	15	15	15	14
9	14	15	16	14	14	14	15	15	13	19	18	25	24	17	19	18	14	14	14	14	15	15	15	15
10	16	15	15	14	16	16	14	13	15	14	16	17	18	26	19	18	14	14	15	14	14	15	15	15
11	16	15	14	15	15	15	14	15	14	14	21	21	22	22	25	18	13	15	14	15	15	14	15	15
12	15	15	15	15	15	16	16	14	14	18	20	23	22	20	20	18	14	14	14	14	14	14	15	15
13	15	16	14	15	15	15	14	15	14	19	16	22	22	20	25	17	14	16	14	15	15	15	15	16
14	15	16	15	14	14	15	15	14	16	20	20	22	24	22	19	16	13	13	14	12	14	14	14	15
15	16	16	15	15	14	15	16	14	16	22	20	24	21	22	20	16	16	13	14	15	14	15	14	14
16	15	16	15	15	14	14	16	13	14	19	20	25	28	22	22	16	13	14	14	14	15	15	15	14
17	15	14	15	15	15	14	16	14	16	18	19	17	18	17	20	14	15	13	14	14	14	15	15	15
18	15	15	16	15	15	15	15	14	13	22	20	26	24	21	21	19	12	13	14	14	16	15	15	14
19	15	15	15	15	15	14	15	14	13	14	17	21	18	19	20	16	14	14	14	14	15	15	14	15
20	15	15	15	15	14	15	14	12	13	13	17	20	19	19	18	18	14	14	14	15	14	15	15	16
21	16	14	14	14	15	14	14	14	13	18	20	22	22	26	21	18	17	14	13	14	15	15	15	15
22	14	15	16	15	15	14	14	14	18	18	27	24	22	22	19	17	16	16	16	14	15	15	15	16
23	16	15	15	14	14	16	14	14	17	17	20	25	22	22	21	15	18	12	13	14	13	14	15	14
24	15	16	15	15	15	15	14	15	15	19	24	20	24	25	21	20	15	14	14	14	15	14	15	14
25	15	15	15	14	14	15	14	14	18	17	20	20	20	22	24	18	16	16	15	14	15	14	16	16
26	15	15	15	14	14	14	14	14	20	18	21	21	21	25	22	17	18	14	14	14	15	14	14	16
27	15	15	14	15	14	15	14	13	15	20	27	21	27	30	26	18	20	16	14	15	15	14	15	16
28	15	15	15	15	15	16	14	14	18	16	22	19	23	26	21	16	16	14	12	15	15	15	15	15
29	14	16	15	15	15	15	14	13	14	19	22	26	22	24	28	19	16	14	15	15	15	14	15	15
30	15	15	15	15	15	15	14	14	16	18	18	22	20	21	21	15	16	16	14	15	15	15	14	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	15	14	14	14	18	20	22	22	22	21	17	14	14	14	14	15	15	15	15
U Q	15	15	15	15	15	15	15	14	16	19	21	24	23	25	23	18	16	15	15	15	15	15	15	15
L Q	15	15	15	14	14	14	14	14	14	15	18	20	20	20	20	16	14	14	14	14	15	14	15	15

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	287	283	280	309	288	278	345	338	341	316	333	312	314	332	330	336	327	326	335	316	293	290	278	287
2	283	299	337	369	266	264	344	336	327	316	299	314	323	322	326	330	336	347	321	297	288	292	280	289
3	311	328	299	283	291	287	328	327	340	338	315	317	316	308	309	314	323	338	333	317	292	281	272	290
4	284	289	289	285	286	300	332	327	335	334	324	310	323	323	319	338	334	332	328	311	309	278	283	288
5	297	311	303	295	283	286	360	343	332	340	322	318	318	319	319	319	332	327	330	317	296	289	302	301
6	300	317	313	317	283	303	349	342	338	322	326	323	311	323	315	308	311	324	325	321	301	276	253	266
7	275	289	260	265	258	276	337	348	338	326	298	314	311	306	308	320	321	325	315	308	296	292	290	290
8	295	302	312	328	301	300	356	343	342	332	326	315	299	303	307	316	306	311	323	331	345	306	298	284
9	287	300	280	317	287	300	365	366	339	325	321	315	293	299	308	315	314	317	316	308	312	314	302	299
10	295	301	307	304	288	293	352	339	340	339	343	316	312	315	315	318	318	312	323	335	335	314	307	293
11	293	287	293	318	284	292	347	341	348	325	326	305	319	310	310	318	338	325	336	350	299	299	294	290
12	285	301	304	305	304	301	367	332	324	316	314	301	303	308	321	334	320	318	290	297	330	312	274	290
13	265	283	267	307	307	321	330	324	329	287	283	291	318	329	347	335	319	332	312	337	360	282	288	284
14	284	287	271	278	308	336	356	351	350	319	300	303	313	312	325	325	328	331	335	337	324	284	275	293
15	304	305	301	305	305	321	355	353	356	339	310	312	305	307	316	306	309	321	324	338	346	290	294	297
16	290	299	295	313	339	359	358	369	357	329	320	301	303	295	300	310	319	327	334	348	336	290	280	273
17	283	292	302	329	333	350	358	340	340	320	326	306	304	302	289	294	312	332	332	326	323	289	291	290
18	297	295	307	328	343	317	368	355	327	329	316	311	304	313	298	304	315	326	322	339	312	291	289	287
19	293	293	293	326	301	321	345	337	326	327	323	317	311	321	317	310	316	322	335	330	328	309	304	295
20	291	299	302	329	307	315	361	342	326	320	304	303	301	309	320	307	319	324	325	342	309	293	285	294
21	279	282	296	315	316	335	364	343	329	328	327	324	322	301	322	323	328	344	342	321	311	275	272	297
22	291	296	308	318	302	333	357	348	344	338	332	307	290	302	302	317	326	333	329	316	302	286	272	276
23	286	294	317	328	313	319	358	324	344	338	325	299	308	291	314	319	319	323	317	308	293	294	293	287
24	283	289	308	313	307	308	353	329	354	356	317	329	316	316	320	329	328	327	328	312	299	285	290	293
25	298	294	277	278	276	320	310	305	281	281	269	293	305	311	318	317	328	325	337	334	315	278	280	271
26	283	289	327	315	319	312	339	349	325	330	299	312	300	321	311	325	327	332	333	325	283	275	F	F
27	F	F	286	F	353	342	352	367	334	308	301	311	300	303	303	304	304	327	331	337	306	302	296	282
28	289	284	312	F	F	334	350	344	341	323	318	303	294	294	305	321	324	315	317	319	324	308	295	292
29	281	280	304	325	315	312	359	363	353	299	295	291	299	305	311	313	303	311	311	333	345	289	287	296
30	294	280	283	302	347	336	351	310	288	313	311	296	290	290	305	329	338	337	294	299	315	294	272	270
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	28	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29
MED	289	294	302	314	304	314	352	342	338	326	318	311	306	308	314	318	320	326	326	323	312	290	288	290
U Q	295	300	308	326	316	333	358	349	344	334	326	315	316	319	320	325	328	332	333	337	328	299	294	294
L Q	283	287	286	303	286	300	345	332	327	316	301	303	300	302	307	310	315	322	317	312	299	284	276	284

APR. 2011 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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		U L 390	L	U L 407	U L 392	L	L								
2									L	L	L	U L 347	U L 373	L	L	L								
3										L	L	L	L	L	L									
4										L	L	L	L	L	L	L	L							
5										L	L	L	U L 361	U L 378	L	L	L							
6									L	L	L	L	U L 353	U L 382	L	L	L							
7										L	L	U L 370	A	L	L	L								
8								L	L	L	L	U L 390	U L 389	U L 350	L	L	L							
9										L	L	L	U L 354	U L 351	L	L								
10									L	L	L	U L 351	L	U L 388	L	L								
11									A	L	L	L	L	U L 365	L	L	A							
12										L	L	L	U L 359	U L 366	373	A		A						
13								U L 350	U L 361	U L 385	U L 377	359	371	358	L	L								
14									L	L	U L 369	L	374	U L 365	L	L	L							
15									390	408	U L 409	U L 370	U L 363	L	U L 348	L	L	L						
16									L	L	U L 375	U L 395	U L 365	U L 361	U L 364	L	L	A						
17									L	L	U L 378	U L 406	L	U L 360	U L 348	L	L	L						
18									L	L	U L 385	418	A	387	U L 365	U L 346	L	L						
19								A	L	L	L	404	U L 366	396	U L 389	L		L						
20								L		U L 359	U L 375	375	369	356	U L 395	L	A	A						
21									L	U L 385	388	381	373	379	355	383	L							
22								L	L	U L 366	U L 400	U L 377	U L 378	U L 374	L	A	A							
23									L	L	U L 406	U L 408	L	L	364	U L 349	L							
24								L	372	394	U L 361	U L 388	U L 373	U L 395	367	A	A	A						
25								353	381	377	U L 387	U L 404	U L 371	A	378	370	L	L						
26									L	L	U L 360	377	382	392	L	L	A	A	A					
27							L	A	L	L	A	A	A	A	A	A	A	A						
28								A	L	L	U L 365	U L 378	U L 395	A	393	A	L	L	A					
29								A	L	A	A	L	375	A	A	L	A	A	A					
30									L	L	366	U L 368	U L 359	U L 344	U L 362		L	L	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	4	7	16	19	21	20	13	4								
MED								352	376	U L 385	U L 378	U L 378	U L 371	U L 370	U L 365	360								
U Q									386	394	U L 389	U L 404	U L 376	388	384	376								
L Q									366	U L 366	U L 368	U L 370	U L 362	U L 359	U L 358	U L 348								

APR. 2011 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°43.0'N LON. 139°29.0'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									256		266	278	272	260	260	264								
2									276	280	290	282	274	270	264	258								
3										252	284	284	286	262	278									
4										256	258	286	274	268	270	258	262							
5										248	266	278	282	264	274	258	254							
6									264	272	256	264	276	274	274	278	260							
7										264	282	288	272	288	282	272								
8								238	250	268	268	282	284	292	278	276	256							
9										272	270	278	306	298	282	270								
10									254	248	244	298	272	282	274	272								
11									238	260	266	306	280	290	282	272	250							
12										284	270	298	302	278	272	252		262						
13								308	308	414	394	374	296	272	254	272								
14									258	300	292	280	286	272	270	272	262							
15									254	248	256	290	294	288	286	284	284	270						
16									248	282	290	286	290	300	302	280	270	252						
17									260	268	266	284	276	304	314	302	270	260						
18									282	260	276	278	274	282	298	284	270	264						
19								244	270	262	268	270	288	272	284	284		266						
20								256		286	282	300	292	288	270	282	256	242						
21									274	268	282	282	272	308	280	266	264							
22								250	256	268	274	328	318	308	284	274	252							
23									266	264	276	310	296	308	288	268	256							
24								270	264	254	300	284	292	286	284	270	264	234						
25								352	420	428	428	370	338	296	282	292	274	274						
26									276	278	322	292	292	282	302	276	276	268	244					
27							230	234	280	300	302	284	290	292	276	282	286	256						
28								E A 248	268	288	284	312	318	302	298	272	266	254	256					
29								224	258	262	268	318	304	302	286	286	282	272	266					
30									256	300	284	306	318	344	284		232	240	E A 296					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	10	23	29	30	30	30	30	30	28	21	14	4					
MED							230	249	264	268	276	286	289	288	282	272	264	261	256					
U Q								270	276	285	290	306	296	300	286	282	272	268	281					
L Q								238	256	260	266	282	276	272	274	269	256	252	250					

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 h′F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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 278	E B 284	E B 280	E B 246	E B 238	E B 310	228	216	204	210	196	210	188	198	196	206	214	212	230	214	E B 238	E B 274	E B 280	E B 278
2	E B 280	E B 258	220	198	E B 290	E B 330	226	212	224	212	204	174	214	204	200	198	228	222	234	224	E A 238	E A 248	E A 306	E B 280
3	E B 254	E B 228	E B 248	E B 238	E B 262	E B 268	230	224	210	206	208	214	206	208	198	226	238	230	216	218	E B 242	E A 280	E A 306	E B 266
4	E B 268	E B 270	E B 258	E B 242	E B 266	262	232	222	220	210	206	216	226	206	208	222	214	228	222	214	220	E B 270	E B 278	E B 274
5	E B 262	E B 244	E B 236	E A 236	E B 258	E B 276	216	220	222	206	196	186	218	200	202	202	214	226	216	220	E B 236	E B 284	E B 272	E B 260
6	E B 264	E B 244	232	222	E B 246	E B 250	216	222	216	204	198	208	192	196	204	204	216	216	220	212	226	E B 270	E B 328	E B 314
7	E B 300	E B 266	E B 302	E B 314	E B 332	E B 292	208	228	222	206	202	198	A	214	226	206	218	220	H 204	232	E A 236	E B 250	E B 262	E A 278
8	E B 264	E B 264	E B 236	214	224	E B 264	208	192	208	210	202	200	214	196	204	206	208	218	240	226	208	206	E B 252	E B 276
9	E B 284	E A 266	E A 272	E A 236	E A 244	E A 288	224	214	210	206	200	194	192	204	208	218	216	238	244	236	E B 232	E B 224	E B 212	E B 256
10	E B 258	E B 252	E B 234	226	E B 262	E B 282	224	218	216	206	200	192	194	196	196	208	222	232	242	226	210	222	E B 236	E B 260
11	E B 274	E B 280	E B 274	222	E B 270	E B 282	216	218	A	206	202	202	232	208	196	200	A	228	234	218	236	E B 250	E B 260	E B 270
12	E B 270	E B 282	E B 242	E B 248	E B 254	E B 258	214	210	218	218	198	204	206	212	212	A	228	A	E A 254	E A 286	E A 238	198	E A 292	E B 266
13	E B 324	E B 304	E B 312	E B 248	E B 236	E B 252	224	220	226	206	204	212	198	200	200	202	208	E A 236	256	226	202	E B 246	E A 274	E B 280
14	E B 280	E B 288	E B 324	E B 294	E B 288	238	218	214	208	202	198	184	198	208	210	224	216	224	228	216	208	E A 244	E A 298	E A 274
15	E A 260	E B 236	E B 248	E B 246	E B 254	238	220	220	200	194	188	208	208	202	216	208	216	230	244	214	210	E A 232	E B 282	E B 272
16	E B 268	E B 282	E B 266	226	218	206	214	216	202	192	204	182	186	214	206	218	224	A	228	216	206	236	E B 280	E B 288
17	E B 288	E B 274	E B 260	220	212	222	206	226	216	200	202	194	224	206	216	232	226	222	228	220	212	E B 266	E B 264	E B 274
18	E B 262	E B 260	E B 262	228	208	218	204	222	214	194	196	186	A	222	218	216	204	218	222	218	E A 232	E B 266	E B 274	E B 278
19	E B 264	E B 256	E B 256	238	218	214	210	A	210	206	202	200	202	188	200	222	228	222	232	228	226	216	232	E B 256
20	E B 272	E B 260	E B 254	222	E B 246	E B 238	226	212	220	212	208	208	204	218	202	218	A	A	226	218	216	E B 258	E B 276	E B 278
21	E B 278	E B 280	E B 268	228	224	230	220	228	192	216	194	222	190	206	228	208	200	230	224	E A 236	218	E A 314	E B 302	E B 270
22	E B 270	E B 276	E B 254	228	210	230	214	212	210	208	204	196	192	194	198	A	A	218	228	242	242	E B 254	E B 294	E B 274
23	E B 272	E B 268	240	224	224	232	214	218	214	202	196	188	218	210	194	206	216	218	234	240	E A 254	E A 266	E A 274	E A 270
24	E A 278	E B 268	E B 254	230	E B 244	230	218	212	206	202	204	186	198	204	210	A	A	A	230	E A 240	232	E A 270	E B 262	E A 270
25	E B 268	E A 268	E B 300	E A 300	E A 288	E A 244	E A 252	228	210	E A 242	E A 254	198	208	A	202	210	204	216	E A 248	226	220	E B 258	E B 274	E B 290
26	E B 292	E B 278	234	224	E B 232	E A 246	228	228	210	198	224	212	204	202	218	218	A	A	A	226	E A 250	E A 322	E A 286	E B 260
27	E A 312	E A 320	E A 290	222	208	214	200	A	198	E A 246	A	A	A	A	A	A	A	A	228	218	E A 264	240	234	E B 270
28	E B 280	E B 286	E B 262	220	E B 246	234	230	A	198	222	202	204	184	A	210	A	210	212	A	222	230	E A 238	240	E B 268
29	E B 288	E B 286	E B 254	228	222	244	224	A	192	A	A	212	212	A	A	224	A	A	A	230	212	E A 326	E B 274	E B 270
30	E B 278	E B 284	E B 288	E B 250	204	216	220	204	198	198	222	210	220	E A 252	222	246	198	204	A	E A 286	E B 234	E A 286	E A 304	E B 292
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	26	29	29	28	29	27	26	28	25	23	23	26	30	30	30	30	30
MED	E B 273	E B 269	E B 257	224	E B 244	U 229	218	218	210	206	202	200	204	204	205	210	216	222	228	222	U 220	E 256	E B 274	E B 273
U Q	E B 280	E B 282	E B 274	E B 246	E B 262	E B 268	226	222	217	211	204	210	214	210	214	222	224	230	240	232	E A 238	E A 270	E A 292	E B 278
L Q	E B 264	E B 260	242	222	222	230	214	212	203	202	198	190	192	200	200	206	208	218	224	218	212	238	E B 262	E B 268

APR. 2011 h′F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 h′E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°43.0′N LON. 139°29.0′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	116	A 112	116	114	A	116	A	118	114	B							
2							124	128	122	120	124	126	A	A	A	126	A	120						
3							128	124	122	118	118	114	106	A	118	A	A	A	B					
4							114	110	116	A	120	A	A	128	126	128	122	122	B					
5							128	112	120	120	118	114	A	116	114	114	A	A	B					
6							114	112	116	116	A	116	A	A	116	118	A	A	B					
7							B	118	114	114	A	A	A	A	126	A	A	128	B					
8							116	122	122	120	120	114	114	120	120	124	124	124	B					
9							116	116	116	118	118	118	118	118	124	120	116	A	A					
10							124	114	114	114	116	114	114	116	124	122	124	124	B					
11							116	116	114	116	118	A	118	126	126	120	114	120	B					
12							112	118	120	A	A	118	118	120	116	122	124	A	B					
13							124	120	120	120	118	120	120	124	120	122	122	A	B					
14							118	122	122	120	A	116	A	120	116	118	118	A	B					
15							B	116	A	114	126	124	A	A	A	A	A	A	B					
16							122	122	122	A	126	130	134	134	A	118	114	116	B					
17							118	118	120	124	A	A	116	A	118	116	116	112	B					
18							124	118	118	120	126	A	126	130	120	118	118	124	B					
19							120	118	120	120	120	120	122	116	A	116	120	114	116					
20							128	128	120	122	122	124	118	A	A	116	A	122	B					
21							120	116	116	118	118	118	120	126	124	122	122	120	126					
22						B	118	118	118	118	120	122	A	A	120	A	A	124	B					
23						B	120	120	120	120	120	120	120	122	A	A	A	114	B					
24							116	120	120	124	120	124	128	134	A	A	A	A	B					
25						B	120	120	122	122	A	A	A	A	124	118	116	116	B					
26						B	118	118	116	118	A	A	A	A	118	114	118	118	B					
27							116	114	120	A	A	A	A	A	A	A	A	A	B					
28						B	118	A	118	A	118	A	118	A	118	A	120	A	B					
29						B	114	120	116	116	120	128	130	126	120	120	A	A	B					
30						B	116	A	118	118	118	116	A	A	A	118	118	120	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							27	28	29	24	22	21	18	16	20	21	18	18	2					
MED							118	118	120	119	120	118	118	123	120	118	118	120	121					
U Q							124	120	120	120	120	124	122	127	124	122	122	124						
L Q							116	116	116	117	118	116	116	119	118	117	116	116						

APR. 2011 h′E (KM)

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 h′Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	138	100	100	100	126	G	G	100	102	100	100	G	B	108	110	108	B	B
2	B	B	B	B	B	B	G	104	100	100	100	G	104	104	108	108	108	134	B	B	108	116	108	B
3	B	100	100	B	B	B	154	102	102	100	100	122	G	110	124	104	106	108	104	B	B	102	100	B
4	104	102	B	B	B	B	144	162	106	110	118	108	104	G	106	106	106	146	B	B	B	B	B	106
5	B	B	B	96	B	96	142	156	104	100	100	100	106	G	G	98	94	94	130	94	100	106	B	B
6	B	B	96	96	94	B	138	146	106	100	104	104	104	104	110	112	104	104	98	92	B	B	B	B
7	B	B	B	B	B	B	132	122	124	120	106	104	104	104	126	106	106	106	B	126	102	100	102	98
8	98	B	B	B	B	B	144	102	102	102	118	106	G	G	G	106	102	110	B	B	B	B	B	B
9	98	98	96	96	92	92	152	102	102	104	102	G	G	96	108	102	96	94	92	100	98	B	B	B
10	B	B	B	B	B	B	132	130	114	98	100	104	G	G	G	102	104	158	118	106	B	98	98	104
11	96	94	B	B	B	B	138	122	122	118	114	108	G	G	G	104	146	124	118	108	104	B	B	B
12	B	B	B	B	B	B	146	122	118	104	108	G	102	120	100	156	130	110	104	104	106	100	100	104
13	B	B	102	B	B	B	106	108	114	118	G	G	G	G	G	G	102	100	118	112	112	104	104	B
14	96	B	B	B	B	B	130	124	126	114	104	G	102	104	104	104	104	106	102	100	98	98	98	96
15	92	B	B	B	B	B	120	106	104	110	106	G	102	100	100	100	96	98	96	102	102	100	96	B
16	90	B	B	B	B	B	G	108	106	104	G	G	G	G	100	100	122	122	104	92	B	B	B	B
17	B	B	B	B	B	B	G	132	102	G	102	100	100	96	102	100	102	128	92	86	84	90	B	B
18	B	B	B	B	B	B	144	122	96	G	G	104	120	132	G	116	100	152	124	118	110	B	B	B
19	B	B	B	B	B	B	152	124	106	118	100	102	100	94	106	162	104	144	120	92	106	B	B	B
20	B	B	B	B	B	B	126	128	124	116	G	G	98	106	100	G	110	126	112	106	106	106	B	B
21	B	B	B	B	B	B	140	156	102	118	118	G	G	G	G	102	102	148	122	106	B	106	112	B
22	B	B	B	B	B	156	138	134	118	116	100	G	106	102	G	102	104	106	116	108	104	104	104	B
23	110	134	98	98	96	104	156	128	120	120	114	G	G	G	104	98	98	96	98	92	86	102	102	94
24	98	96	98	B	B	B	146	144	102	118	116	G	116	G	108	104	102	102	100	102	110	100	100	96
25	94	94	92	94	94	132	124	104	120	116	106	104	102	102	G	G	104	G	132	106	104	B	94	B
26	B	B	B	B	B	B	134	128	116	118	102	98	98	100	G	140	124	120	102	102	102	102	108	104
27	94	94	94	92	98	102	124	116	118	106	106	106	108	106	102	102	104	102	96	106	106	114	106	104
28	B	96	96	96	96	B	120	106	116	106	98	106	118	104	108	104	120	102	104	102	104	110	100	B
29	B	B	B	B	B	B	132	126	98	120	126	132	G	118	118	126	104	106	106	100	100	100	100	100
30	B	B	100	B	B	B	G	106	100	112	G	G	100	100	100	112	104	122	104	104	106	106	102	102
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	9	10	7	6	6	26	30	30	28	25	16	19	20	20	27	30	28	25	26	23	21	18	11
MED	96	96	97	96	95	103	138	122	106	111	106	104	104	104	105	104	104	109	104	103	104	102	101	102
U Q	98	101	100	96	96	132	144	130	118	118	115	107	106	106	108	112	106	127	118	106	106	106	104	104
L Q	94	94	96	94	94	96	130	106	102	103	100	103	100	100	101	102	102	102	99	100	100	100	100	96

IONOSPHERIC DATA STATION Kokubunji

APR. 2011 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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							C 2	L 2	L 2	L 2	CL 11			L 2	L 2	L 2	L 2			F 1	F 2	F 2		
2								L 1	L 2	L 2	L 2		L 2	L 2	L 2	L 2	L 2	CL 11			F 3	F 2	F 6	
3		F 1	F 1				H 2	L 2	L 2	L 2	L 2	CL 12		L 2	C 2	L 2	L 2	L 2	L 2			F 4	F 1	
4	F 2	F 2					H 2	H 2	L 2	L 2	C 2	L 2	L 2		L 2	L 2	L 2	HL 12						F 2
5				F 3		F 1	H 2	HL 22	L 2	L 2	L 2	L 2	L 2			L 2	L 2	L 2	C 2	F 2	F 2	F 4		
6			F 1	F 2	F 2		H 2	HL 22	L 2	L 2	L 2	L 1	L 2	L 2	CL 22	CL 12	L 2	L 2	L 2	F 2				
7							H 2	CL 22	CL 12	CL 12	L 2	L 2	L 2	L 2	C 2	L 2	L 2	L 2		F 3	F 2	F 2	F 2	F 5
8	F 2						H 2	L 2	L 2	L 1	CL 21	L 2				L 2	L 1	L 2						
9	F 1	F 2	F 2	F 3	F 2	F 2	H 2	L 2	L 2	L 2	L 2			L 2	L 2	L 2	L 2	L 2	L 2	F 2	F 2			
10							HL 22	CL 22	CL 22	L 2	L 2	L 2				L 2	L 2	HL 22	H 3	F 5		F 3	F 2	F 1
11	F 1	F 1					H 2	CL 22	CL 22	CL 22	CL 22	L 2				L 2	HL 22	C 2	C 3	F 5	F 5			
12							H 2	CL 21	CL 21	L 2	L 2		L 2	CL 11	L 2	HL 22	CL 12	L 2	L 4	F 4	F 5	F 6	F 4	F 3
13			F 2				L 2	L 2	CL 12	CL 12							L 2	L 2	C 2	F 2	F 2	F 2	F 4	
14	F 4						H 2	CL 21	CL 21	CL 22	L 2		L 2	L 2	L 2	L 2	L 2	L 2	L 3	F 3	F 2	F 4	F 4	F 3
15	F 5						C 2	L 2	L 2	CL 22	L 2		L 2	L 2	L 2	L 2	L 2	L 3	L 3	F 4	F 2	F 4	F 1	
16	F 2							L 2	L 2	L 2					L 2	L 2	CL 22	CL 22	L 2	F 2				
17								CL 11	L 2		L 2	L 2	L 2	L 2	L 2	L 2	L 2	CL 12	L 3	F 4	F 2	F 2		
18							H 2	CL 22	L 2			L 2	C 1	C 2		CL 21	L 2	HL 11	C 2	F 5	F 3			
19							H 2	CL 11	L 2	CL 22	L 2	L 2	L 2	L 2	L 2	HL 12	L 2	HL 11	CL 22	F 1	F 3			
20							C 1	CL 22	CL 22	CL 22			L 2	L 2	L 2		L 2	CL 22	C 3	F 3	F 3	F 1		
21							H 2	HL 12	L 2	CL 21	CL 11					L 2	L 2	HL 11	C 3	F 4		F 5	F 2	
22						H 2	H 3	CL 22	CL 22	CL 22	L 2		L 2	L 2		L 2	L 2	L 2	C 4	F 6	F 3	F 2	F 1	
23	F 1	F 1	F 2	F 1	F 1	L 1	H 2	CL 22	CL 12	CL 12	CL 22				L 2	L 1	L 2	L 1	L 2	F 3	F 2	F 2	F 3	F 2
24	F 2	F 2	F 1				H 2	HL 12	L 2	CL 12	CL 12		CL 12		L 2	L 2	L 2	L 2	L 4	F 4	F 2	F 3	F 3	F 2
25	F 2	F 3	F 2	F 4	F 4	H 3	C 2	L 2	CL 11	CL 22	L 2	L 2	L 2	L 2			L 2		C 2	F 4	F 5		F 1	
26							H 2	CL 12	CL 22	CL 22	L 2	L 2	L 3	L 2		HL 12	CL 22	CL 22	L 4	F 3	F 4	F 3	F 3	F 2
27	F 3	F 4	F 3	F 2	F 3	F 2	C 2	C 2	CL 11	L 2	L 2	L 2	L 2	L 2	L 2	L 2	L 2	L 2	L 3	F 3	F 3	F 2	F 2	F 1
28		F 2	F 1	F 1	F 2		C 2	L 3	CL 12	L 2	L 2	L 2	CL 11	L 2	L 2	L 2	CL 22	L 2	L 3	F 2	F 3	F 2	F 1	
29							HL 22	CL 22	L 2	CL 12	CL 22	CL 22		C 2	C 2	C 1	L 2	L 2	L 4	F 5	F 4	F 3	F 2	F 2
30			F 2					L 1	L 2	CL 11			L 2	L 2	L 2	CL 11	L 2	CL 11	L 4	F 3	F 3	F 3	F 3	F 2
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

APR. 2011 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

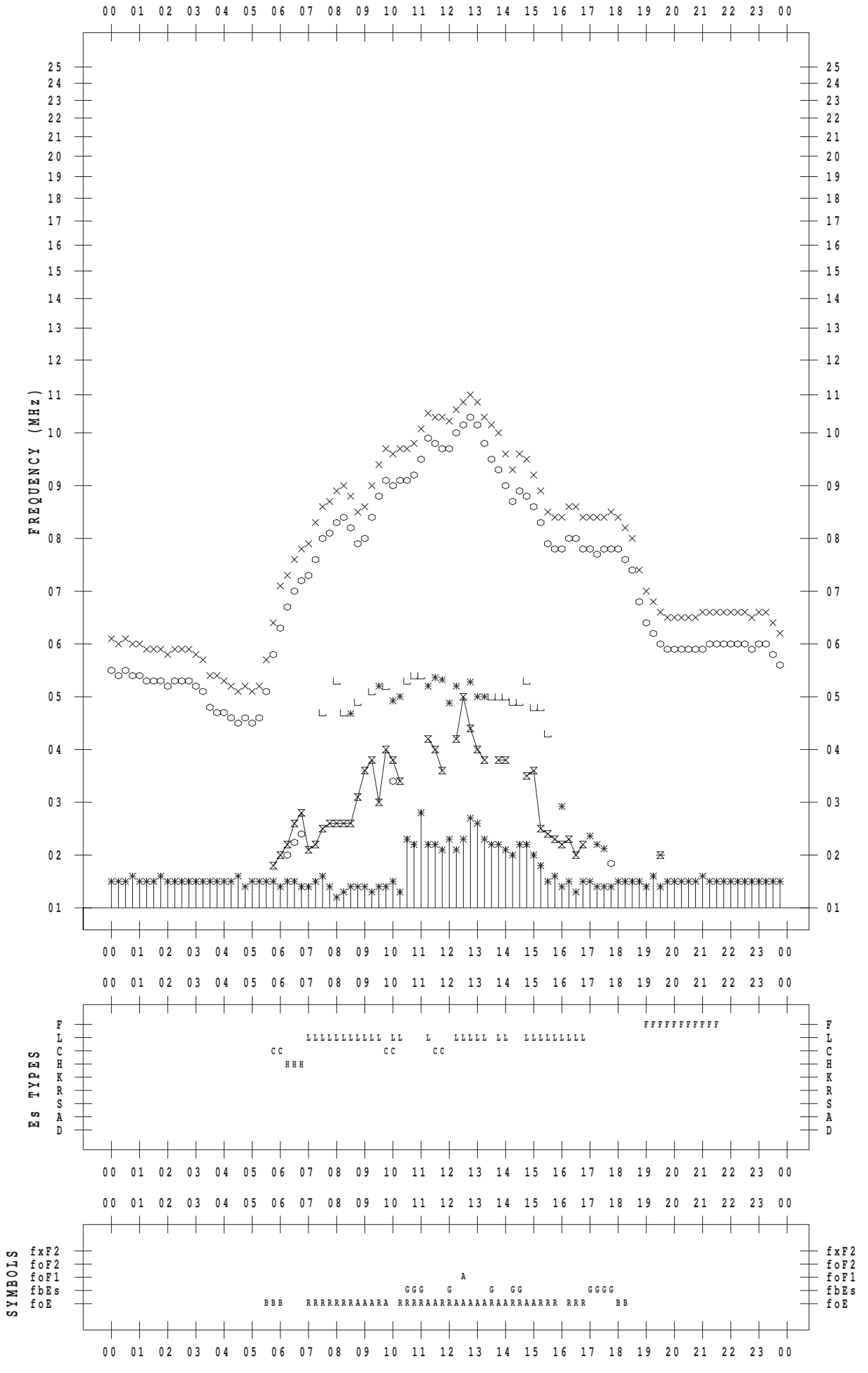
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 1

135 °E MEAN TIME



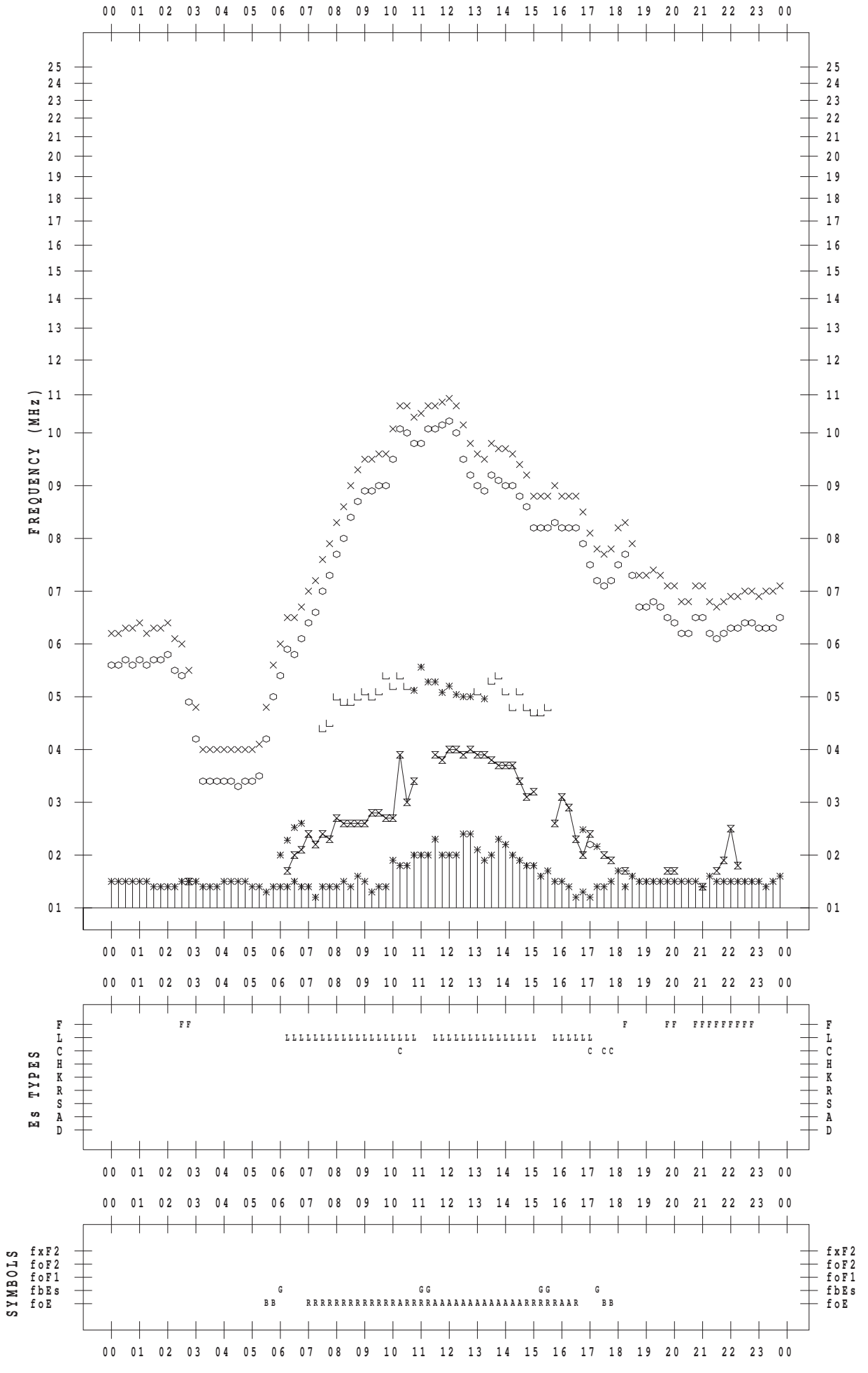
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 2

135 °E MEAN TIME

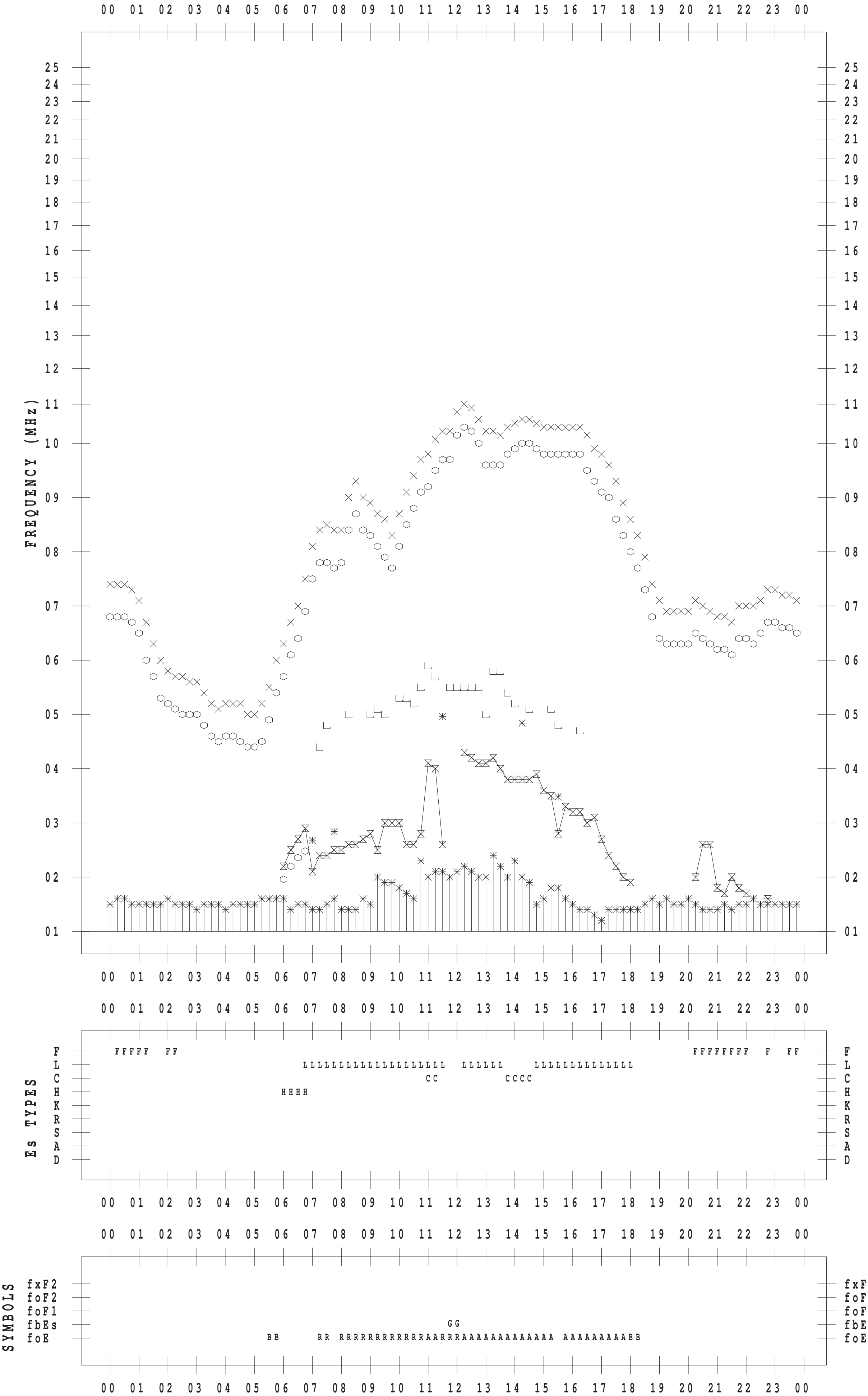


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 4/ 3

135 ° E MEAN TIME



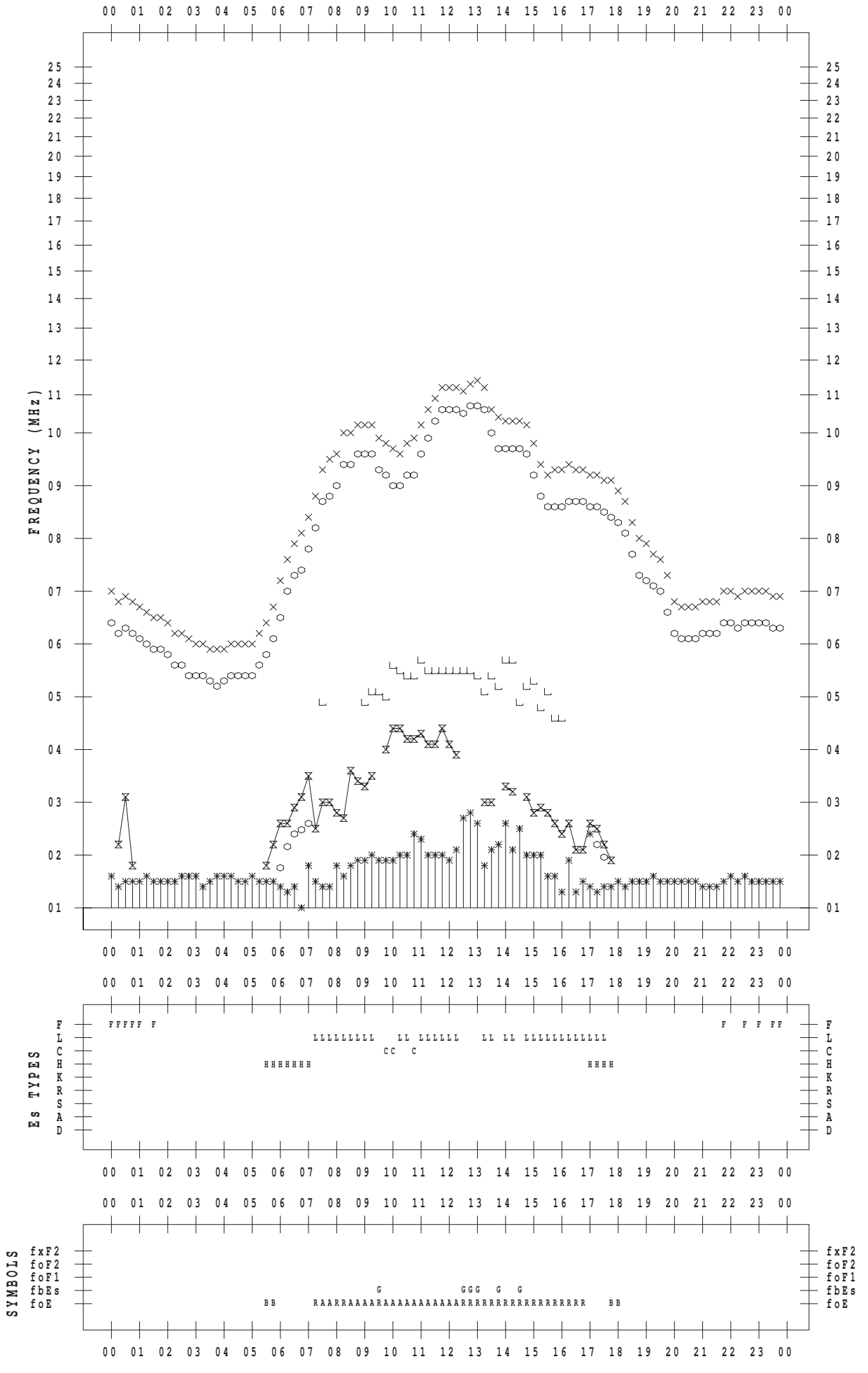
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 4

135 °E MEAN TIME



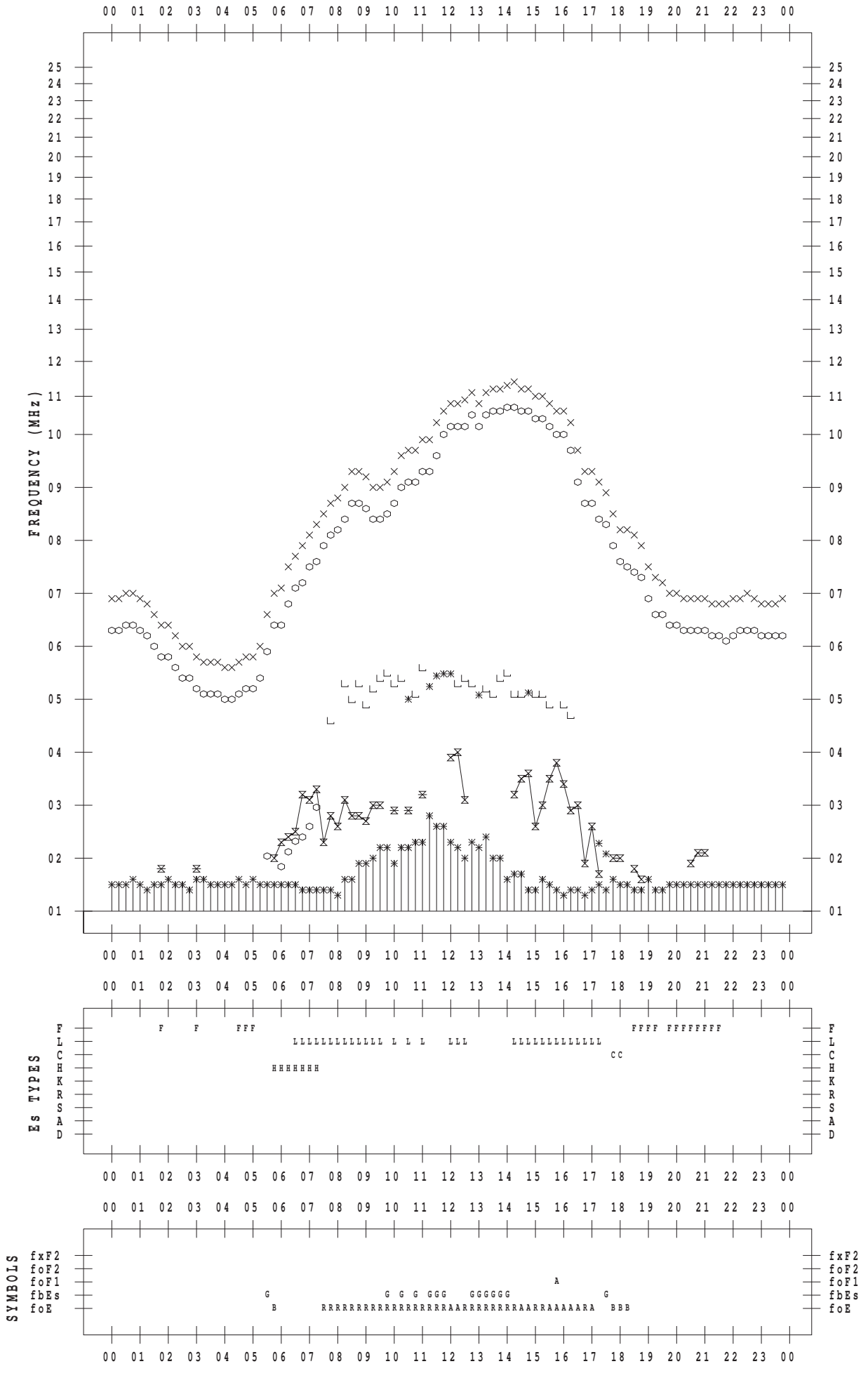
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 5

135 °E MEAN TIME



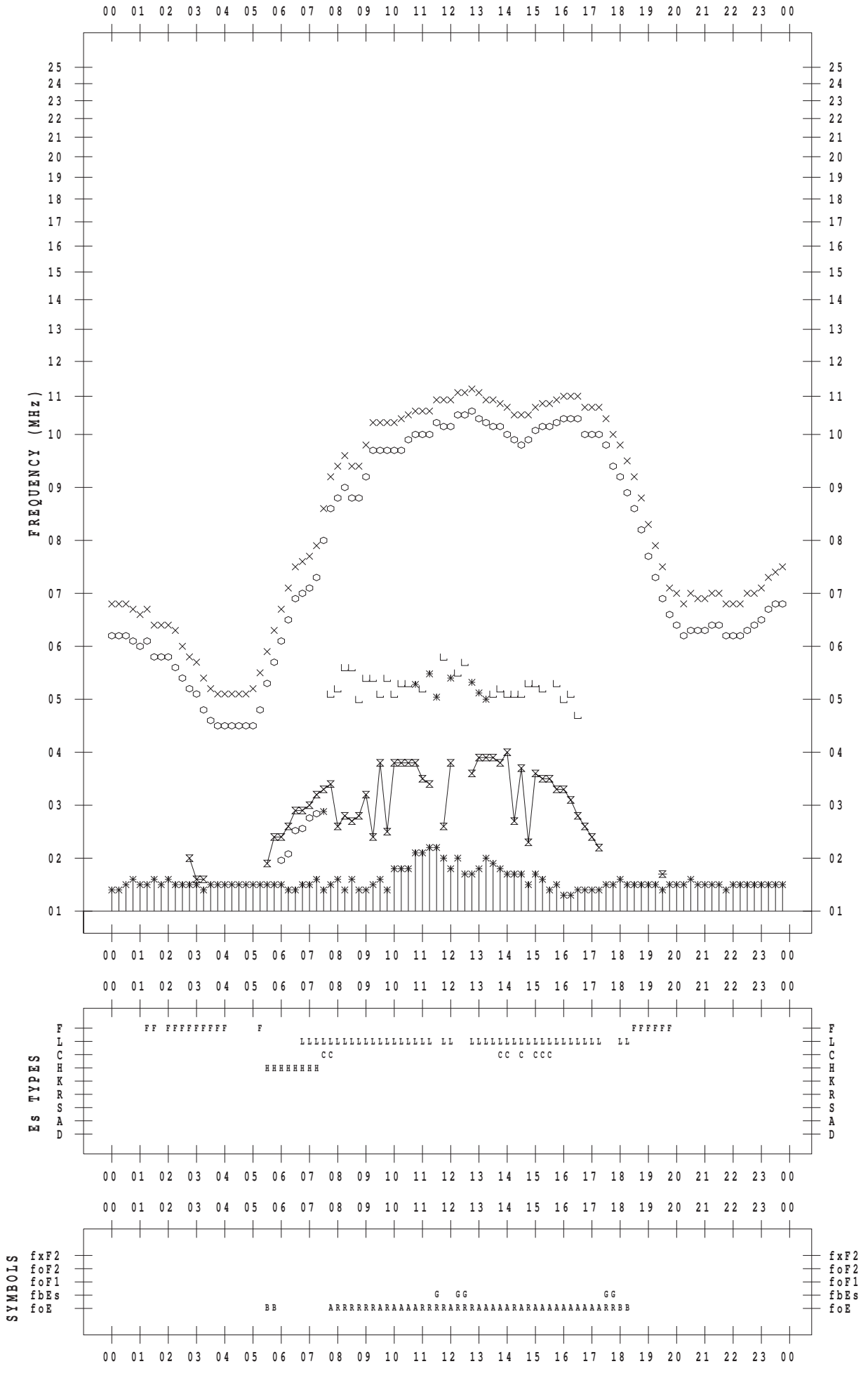
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 6

135 °E MEAN TIME



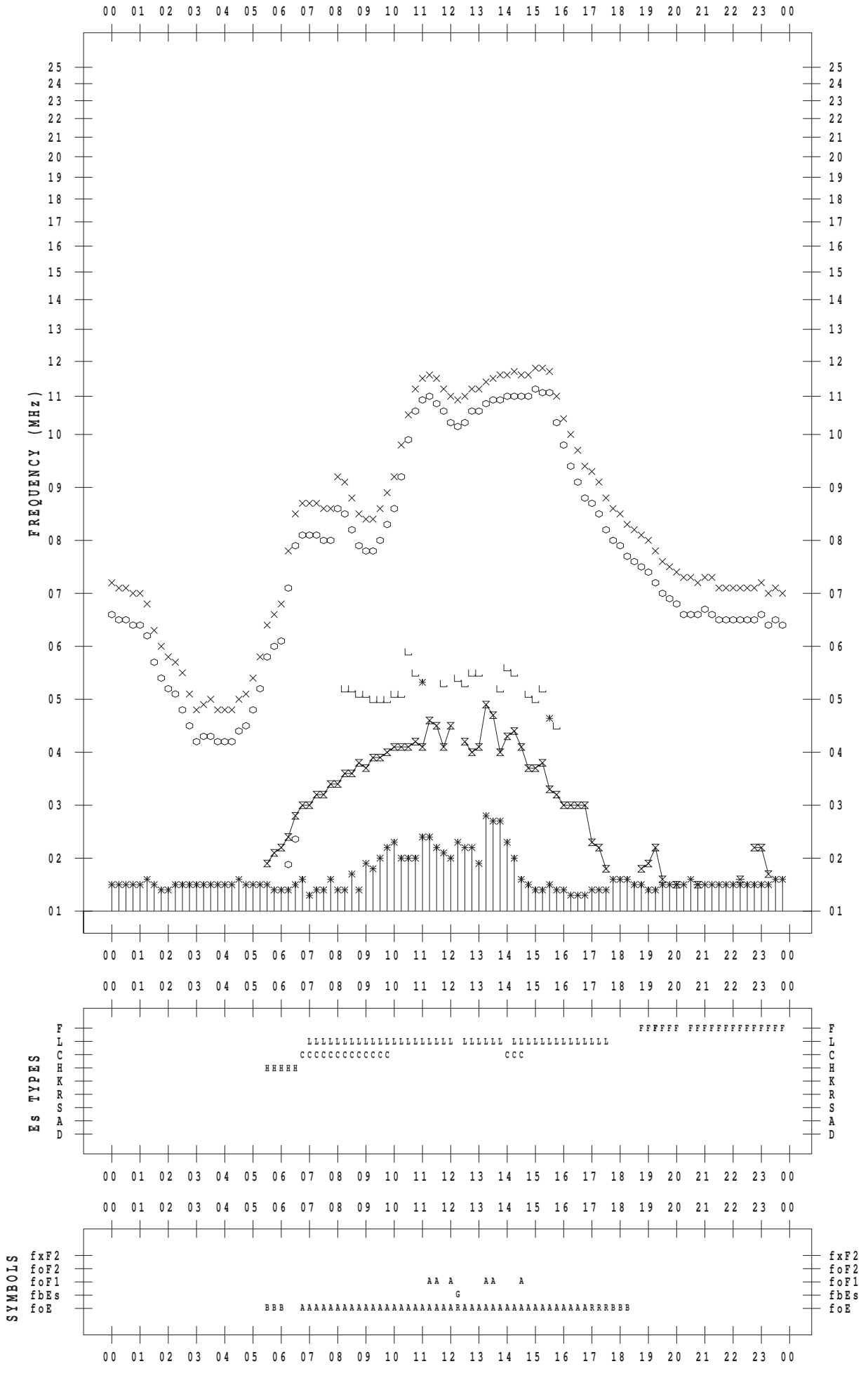
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 7

135 °E MEAN TIME



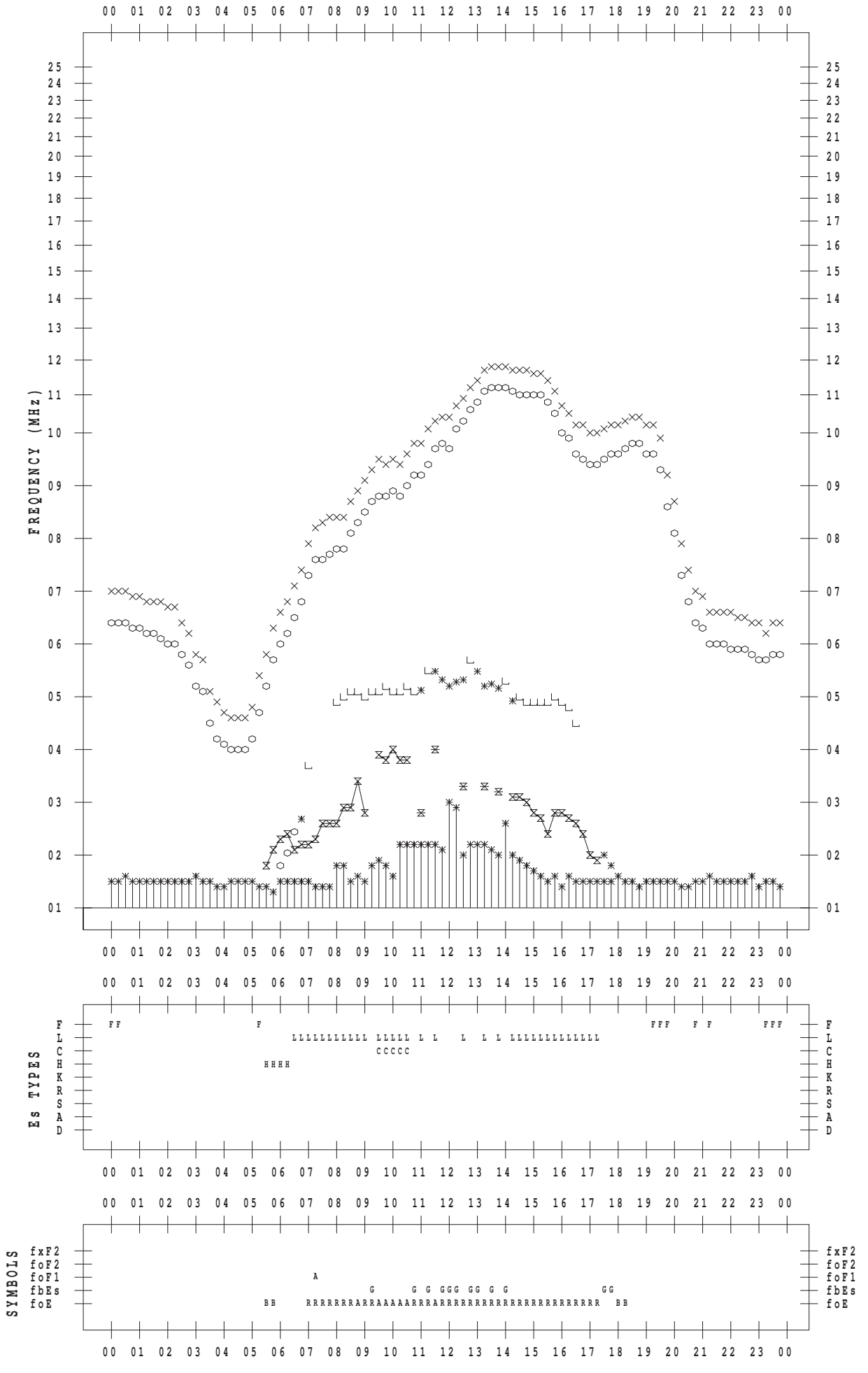
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 8

135 °E MEAN TIME



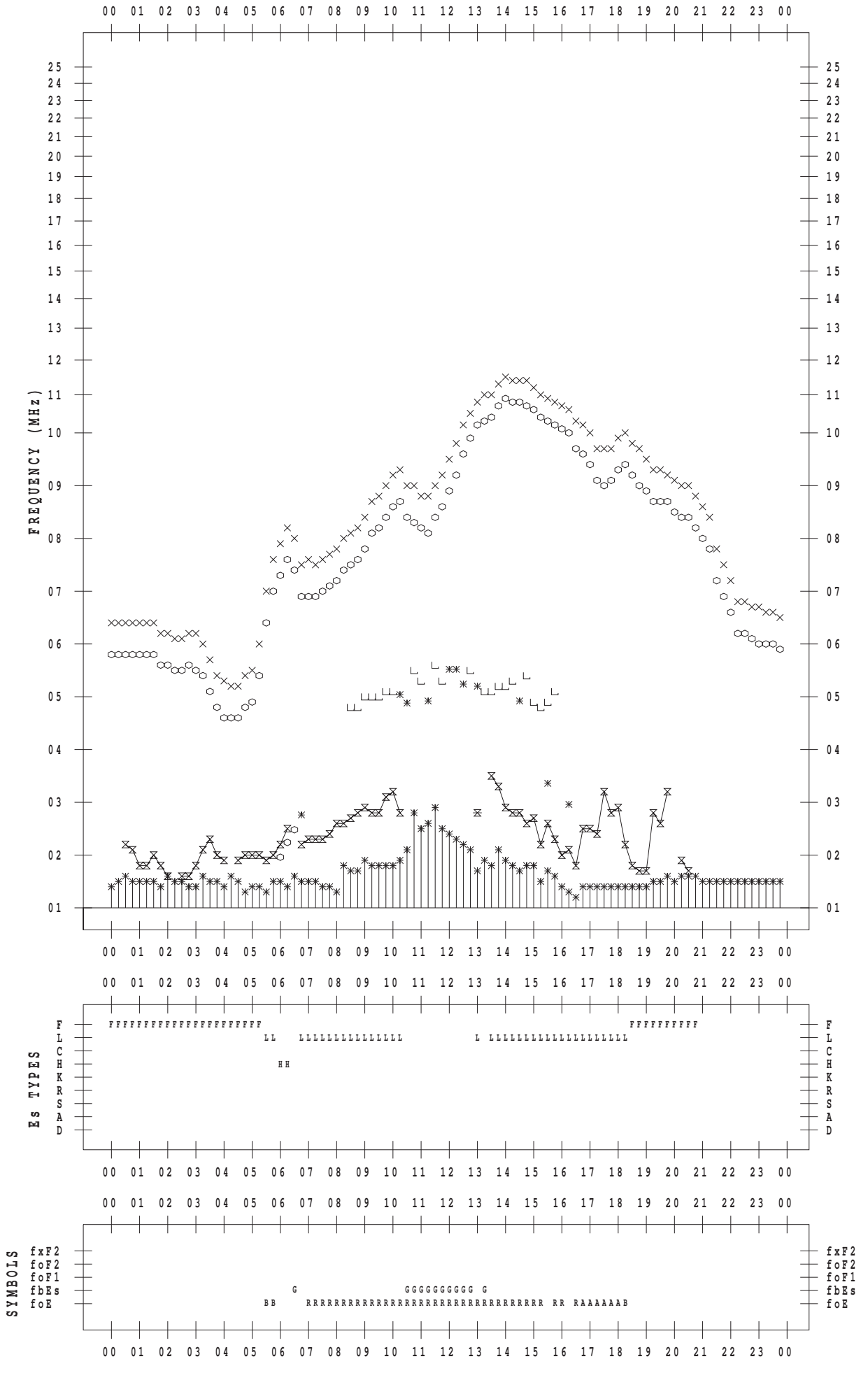
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/ 9

135 °E MEAN TIME



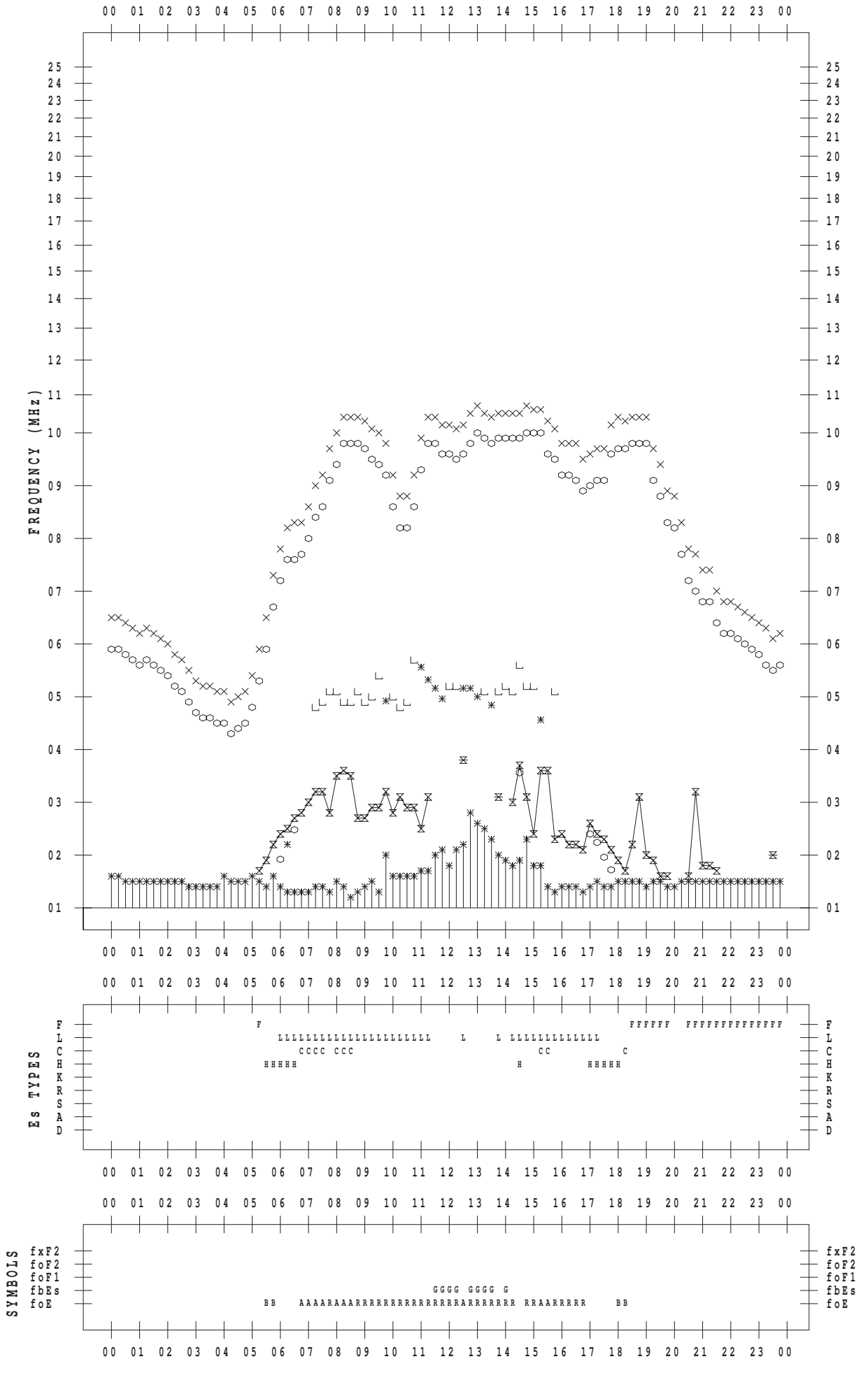
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/10

135 °E MEAN TIME



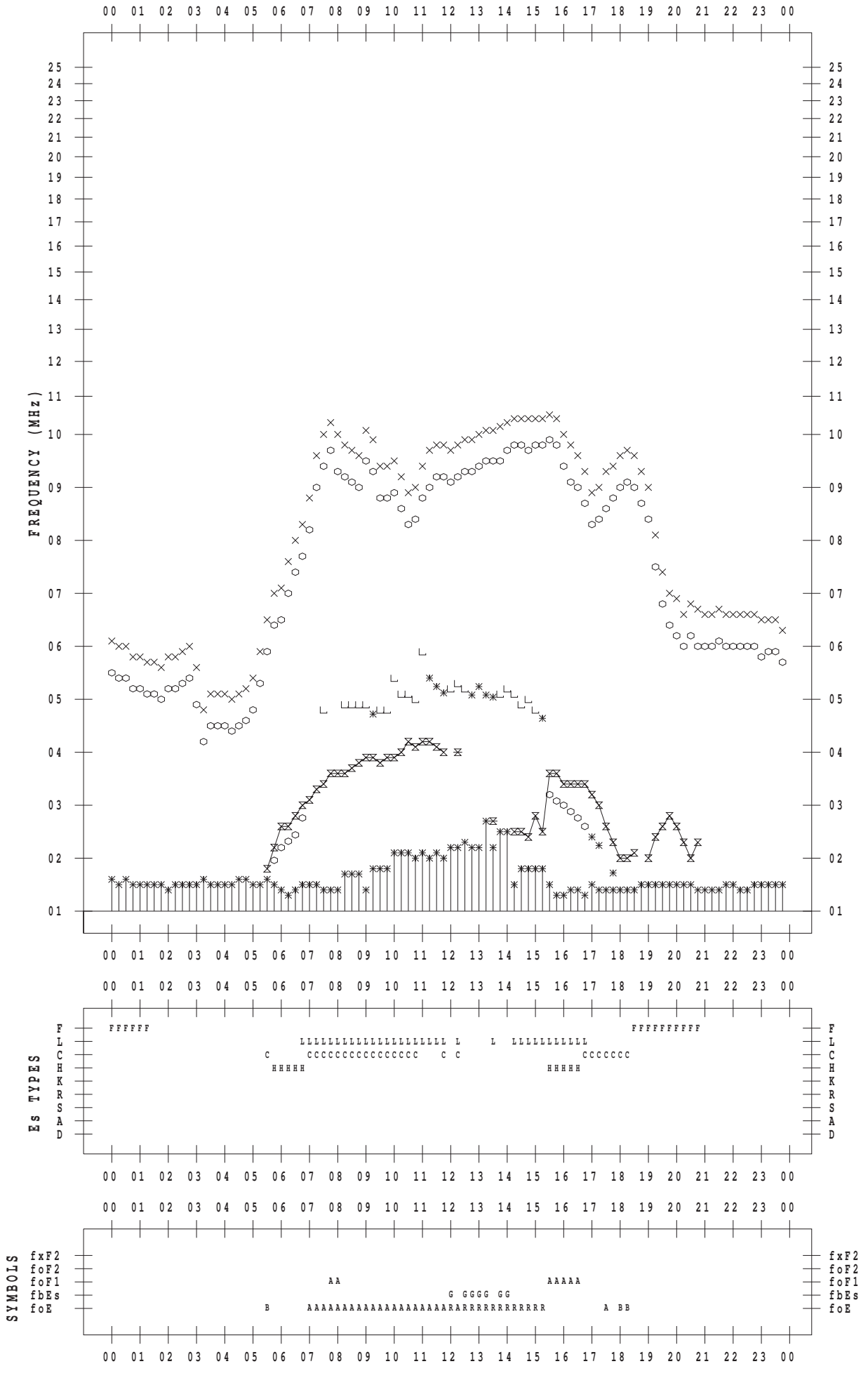
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/11

135 °E MEAN TIME



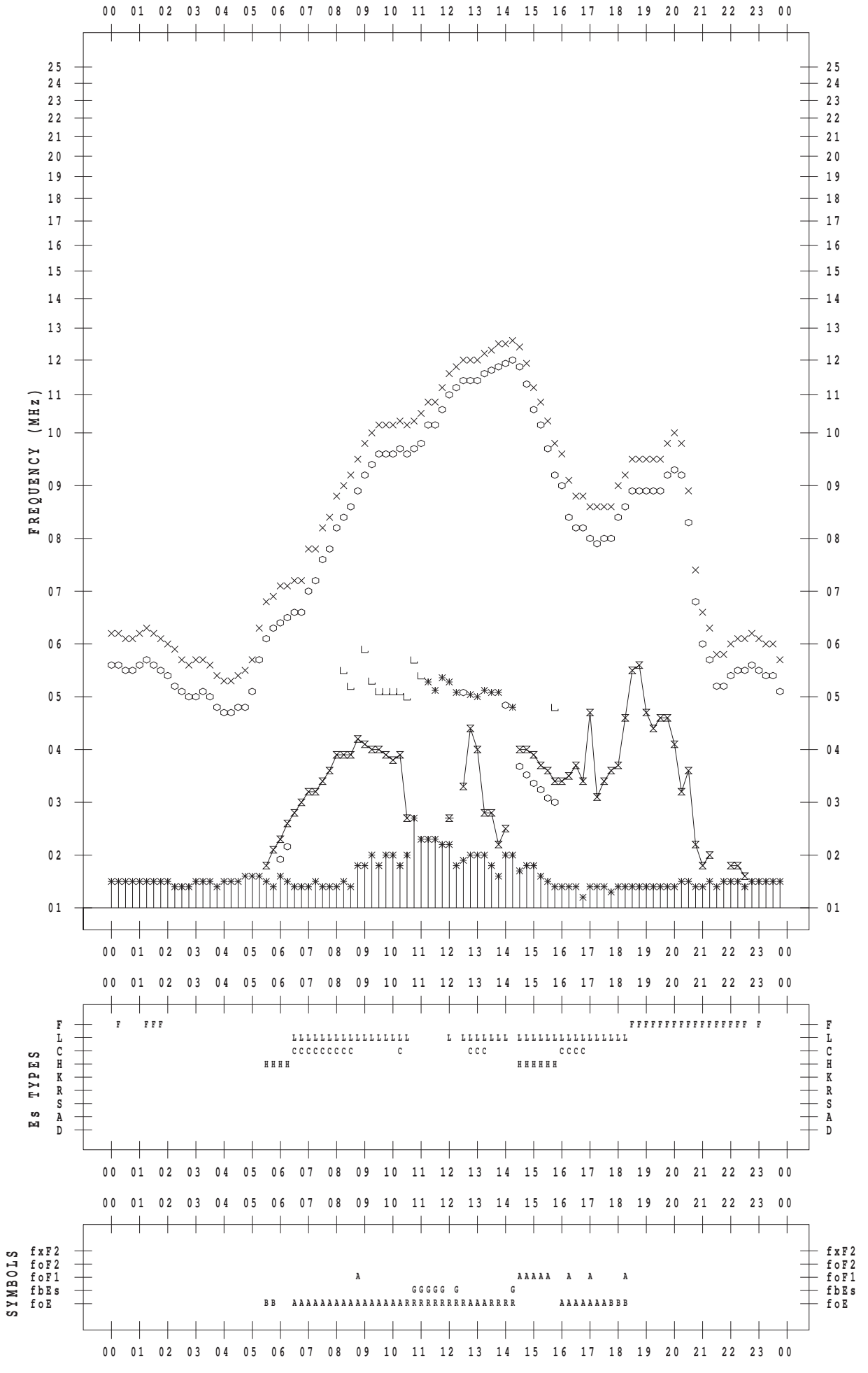
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/12

135 °E MEAN TIME



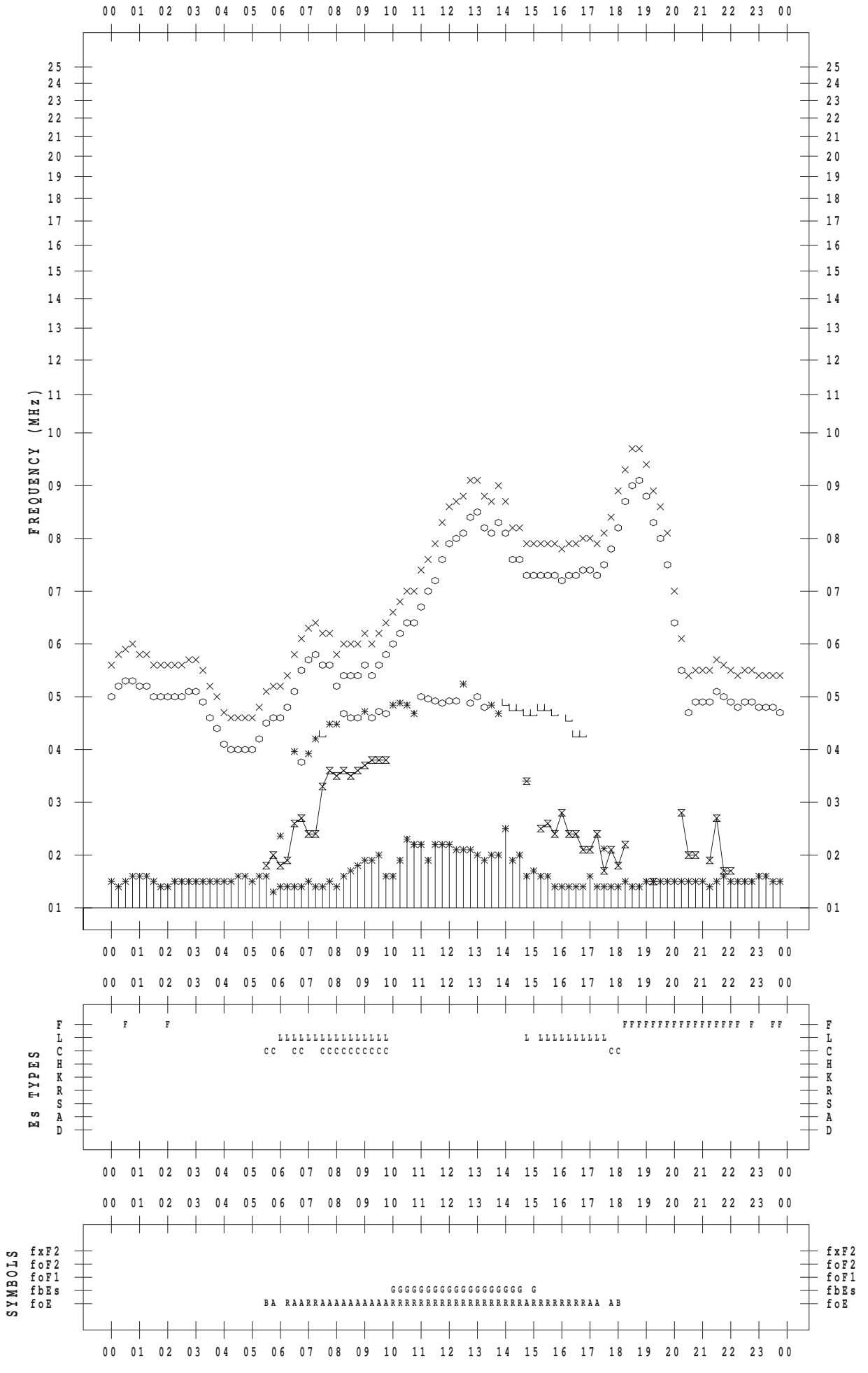
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/13

135 °E MEAN TIME



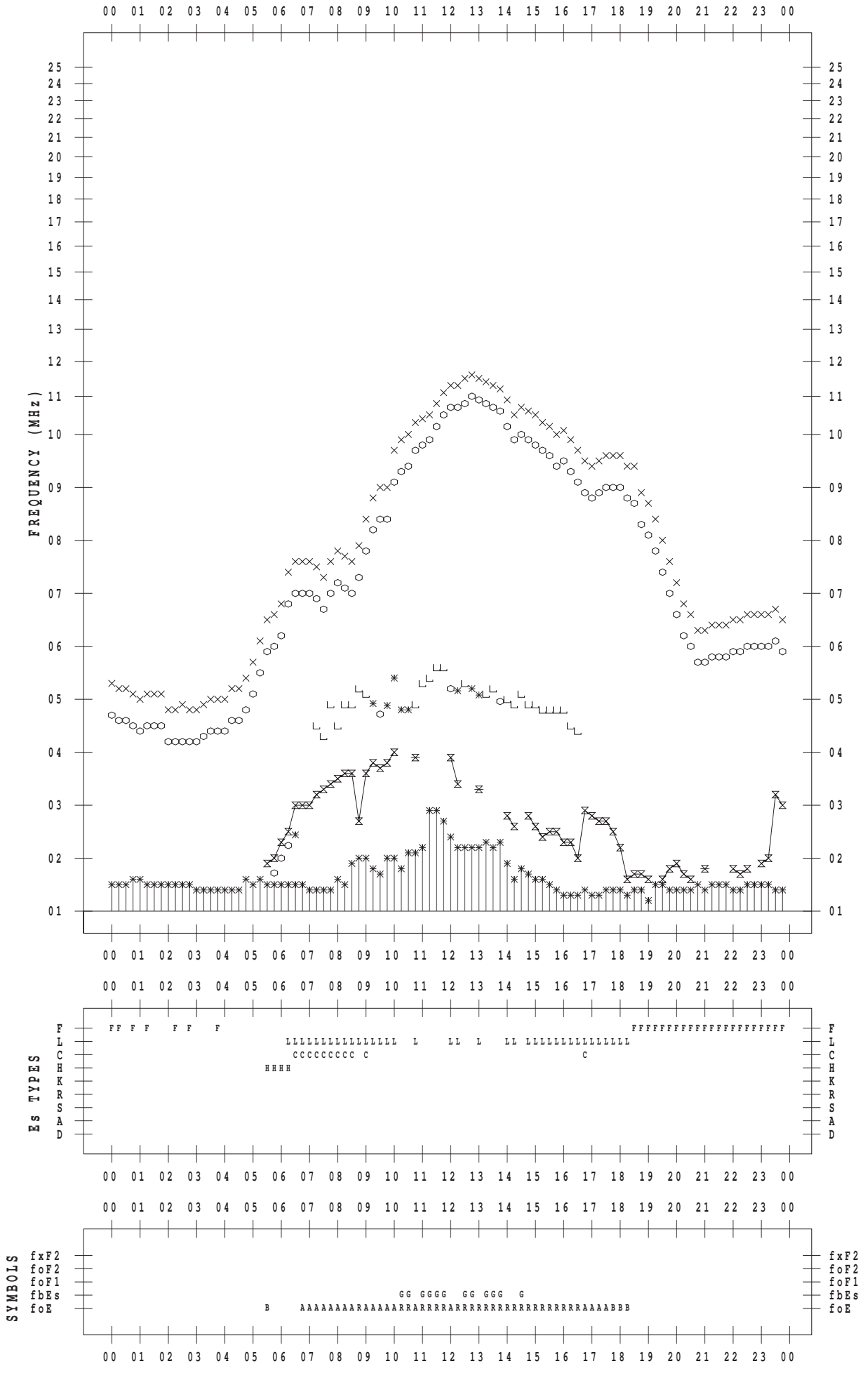
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/14

135 °E MEAN TIME



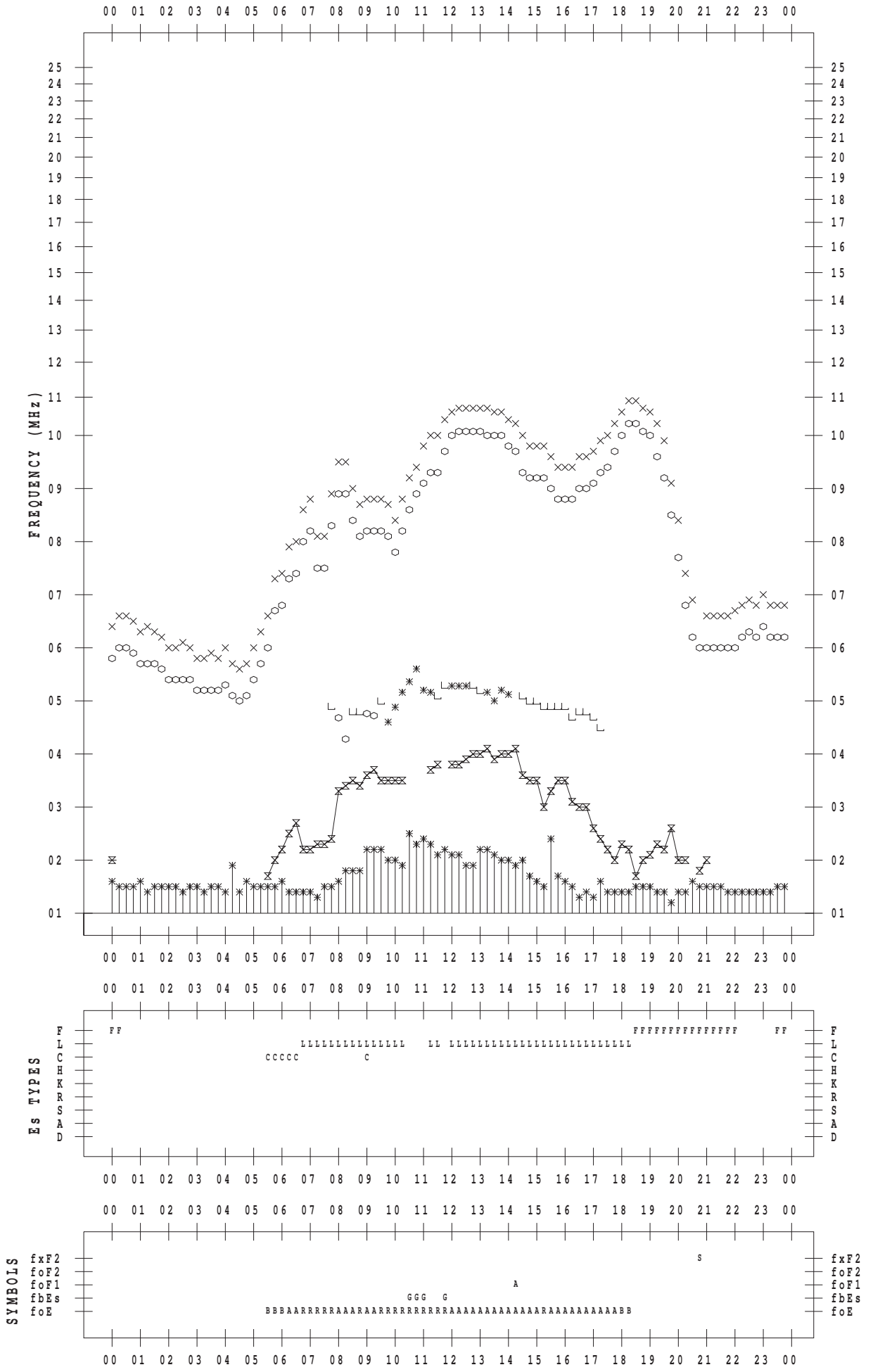
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/15

135 °E MEAN TIME



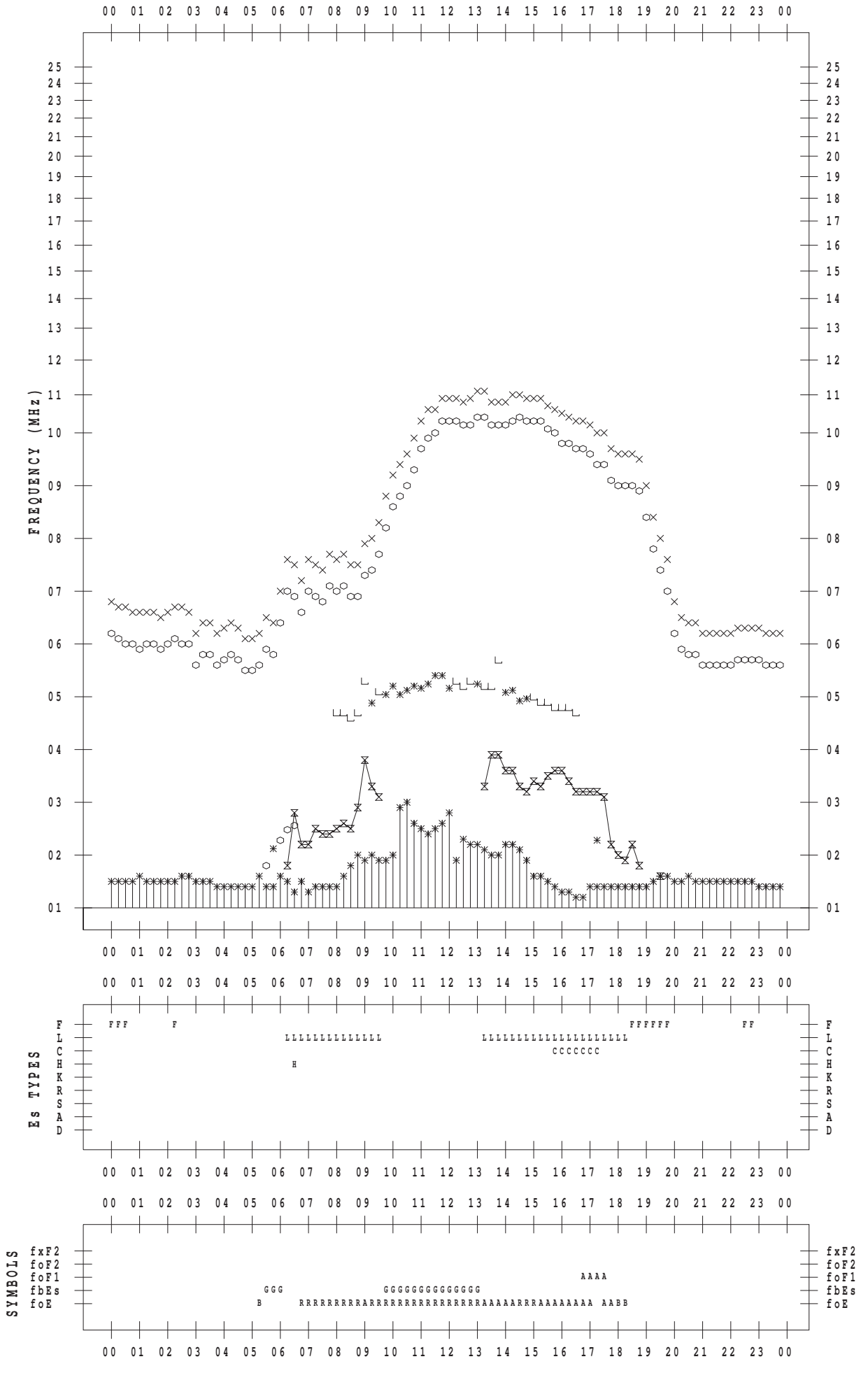
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/16

135 °E MEAN TIME



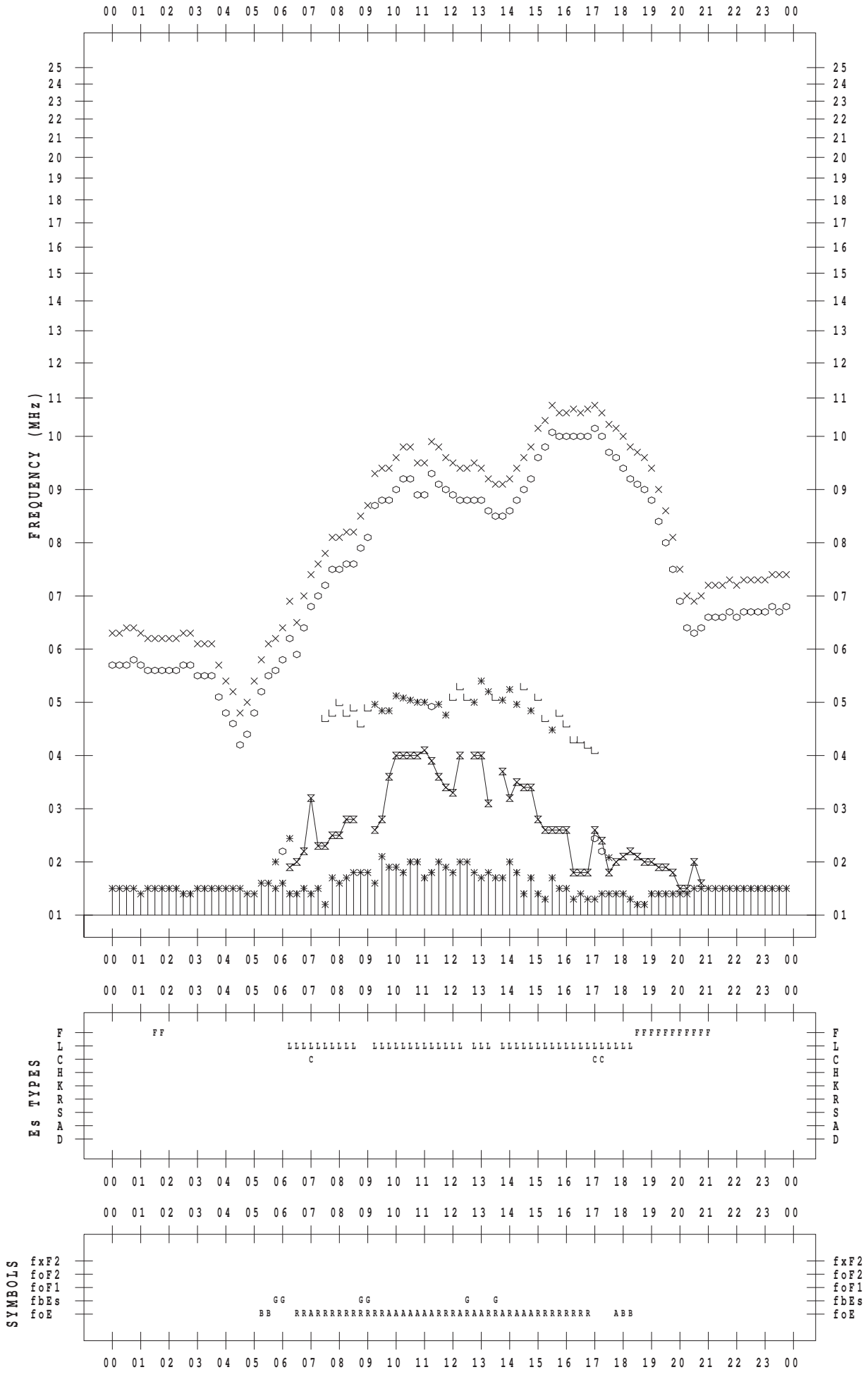
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/17

135 °E MEAN TIME

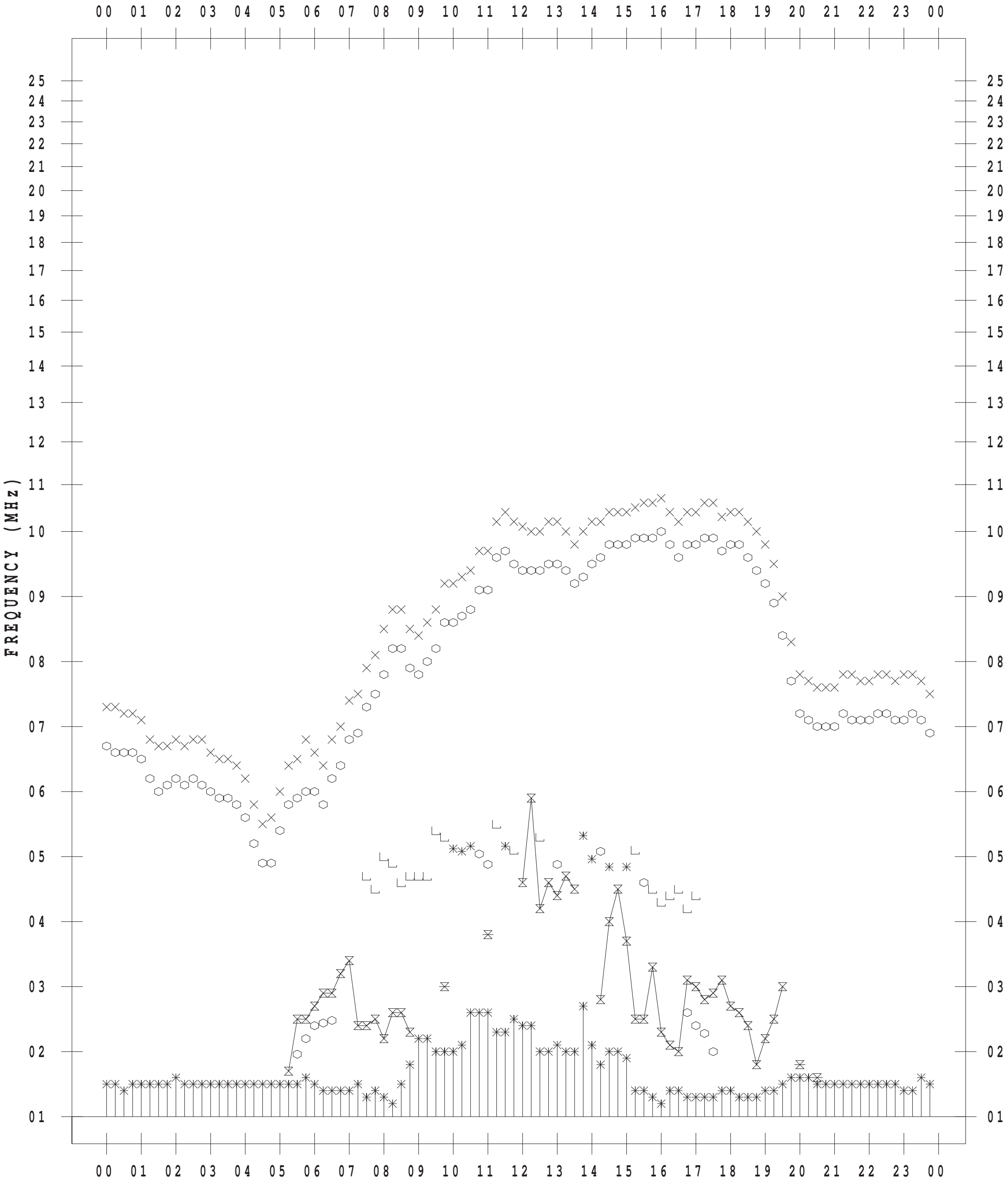


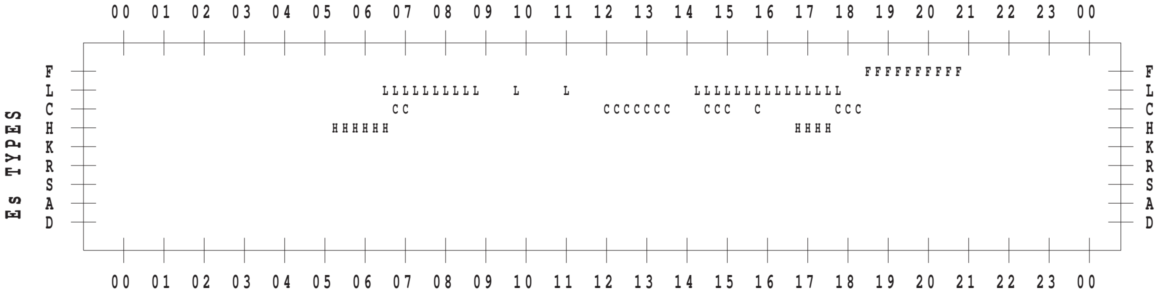
f-PLOT DATA

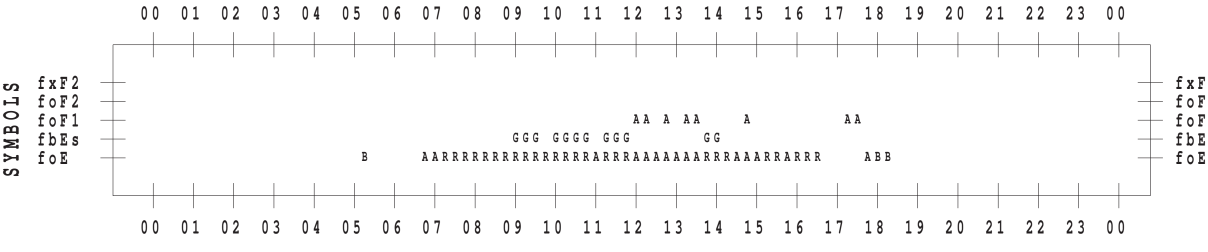
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 4/18

135 °E MEAN TIME







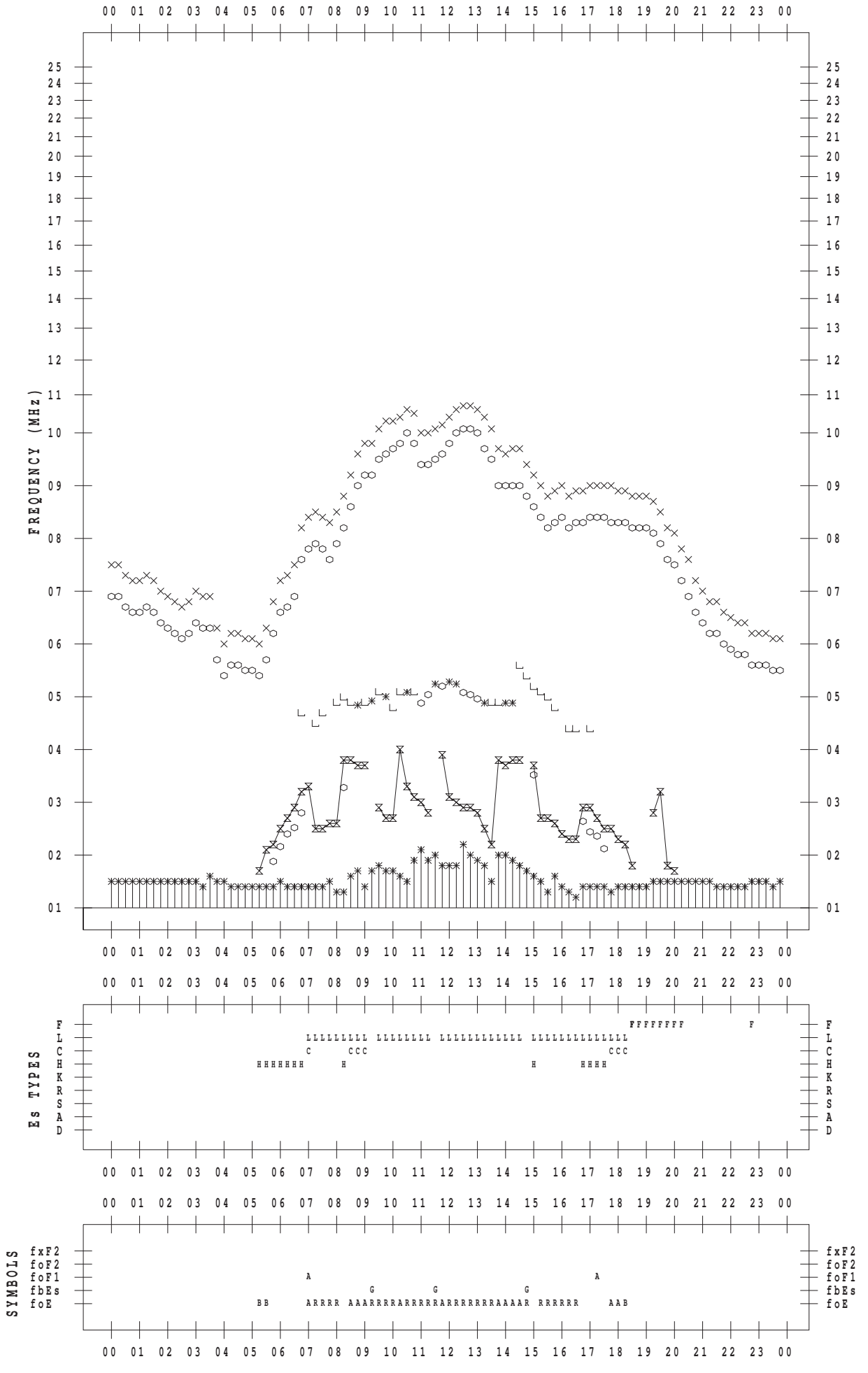
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/19

135 °E MEAN TIME



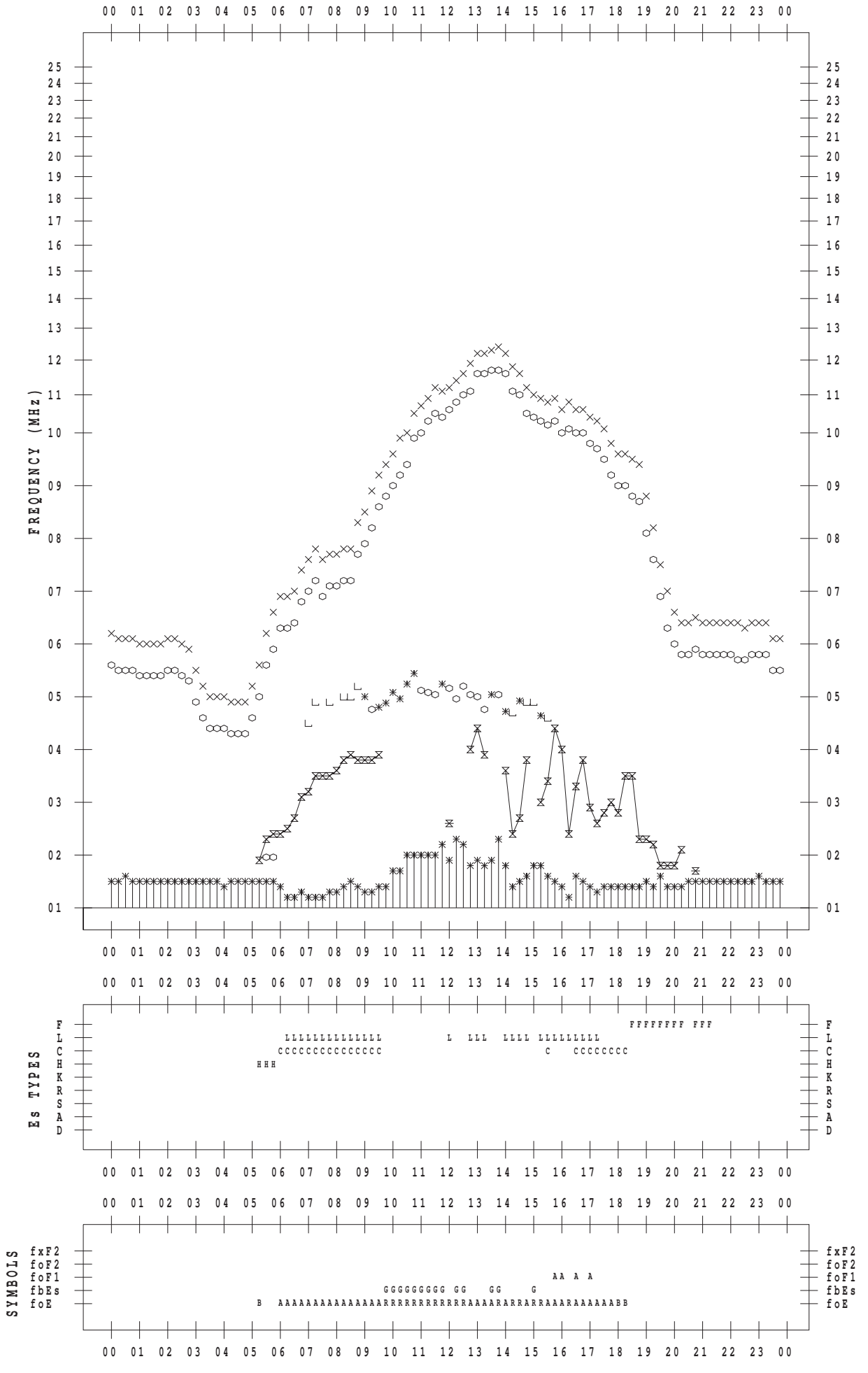
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/20

135 °E MEAN TIME



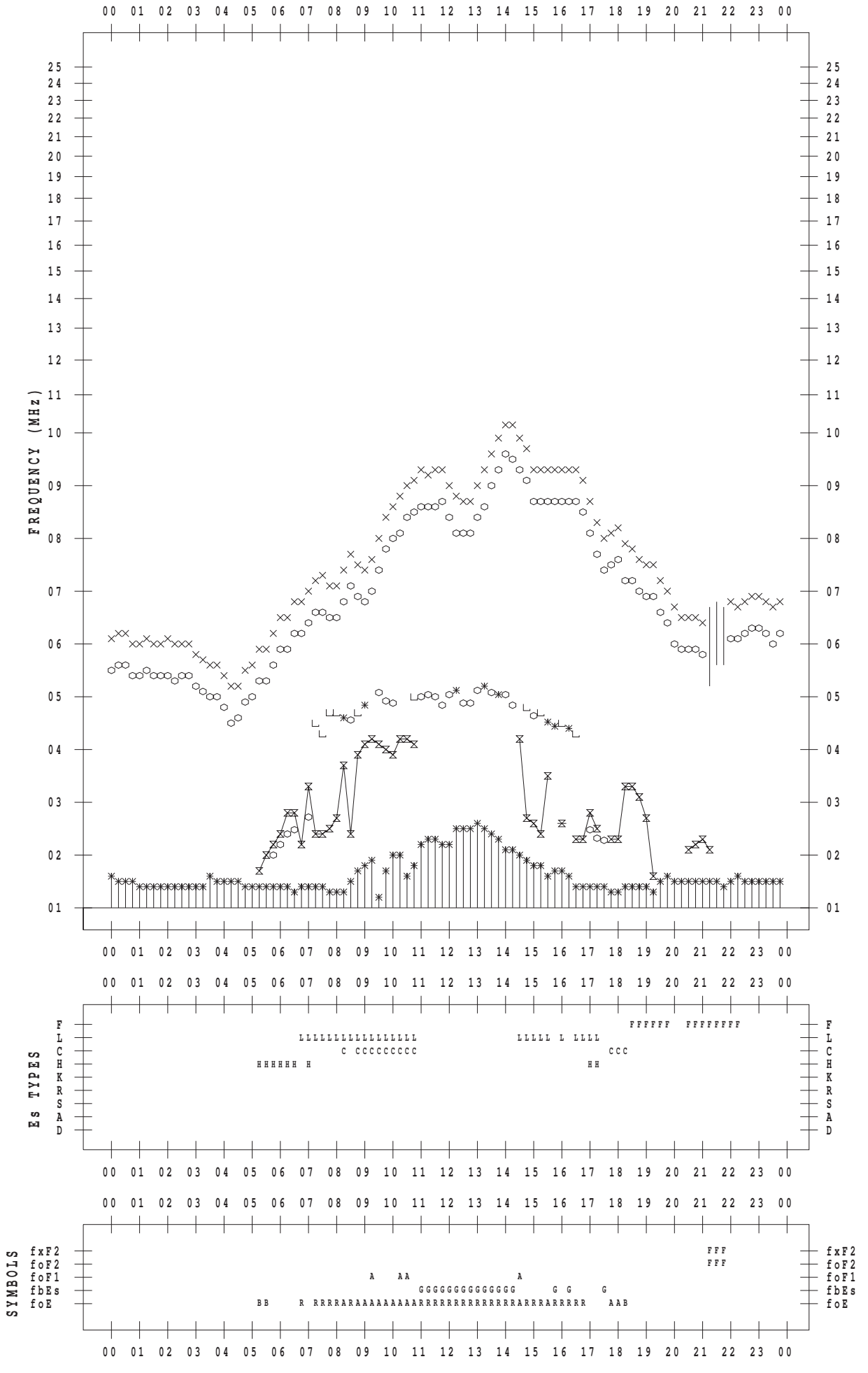
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/21

135 °E MEAN TIME



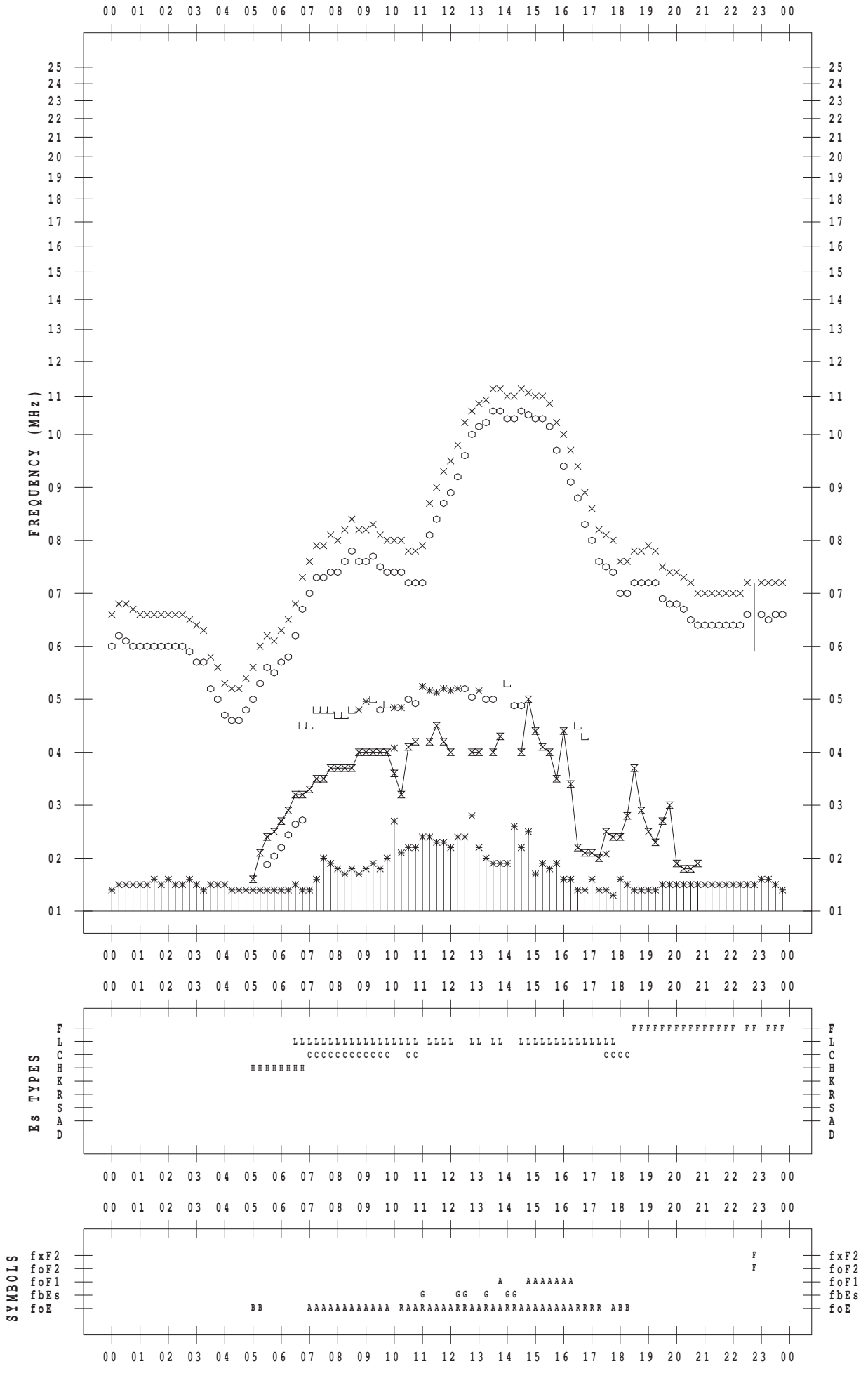
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/22

135 °E MEAN TIME



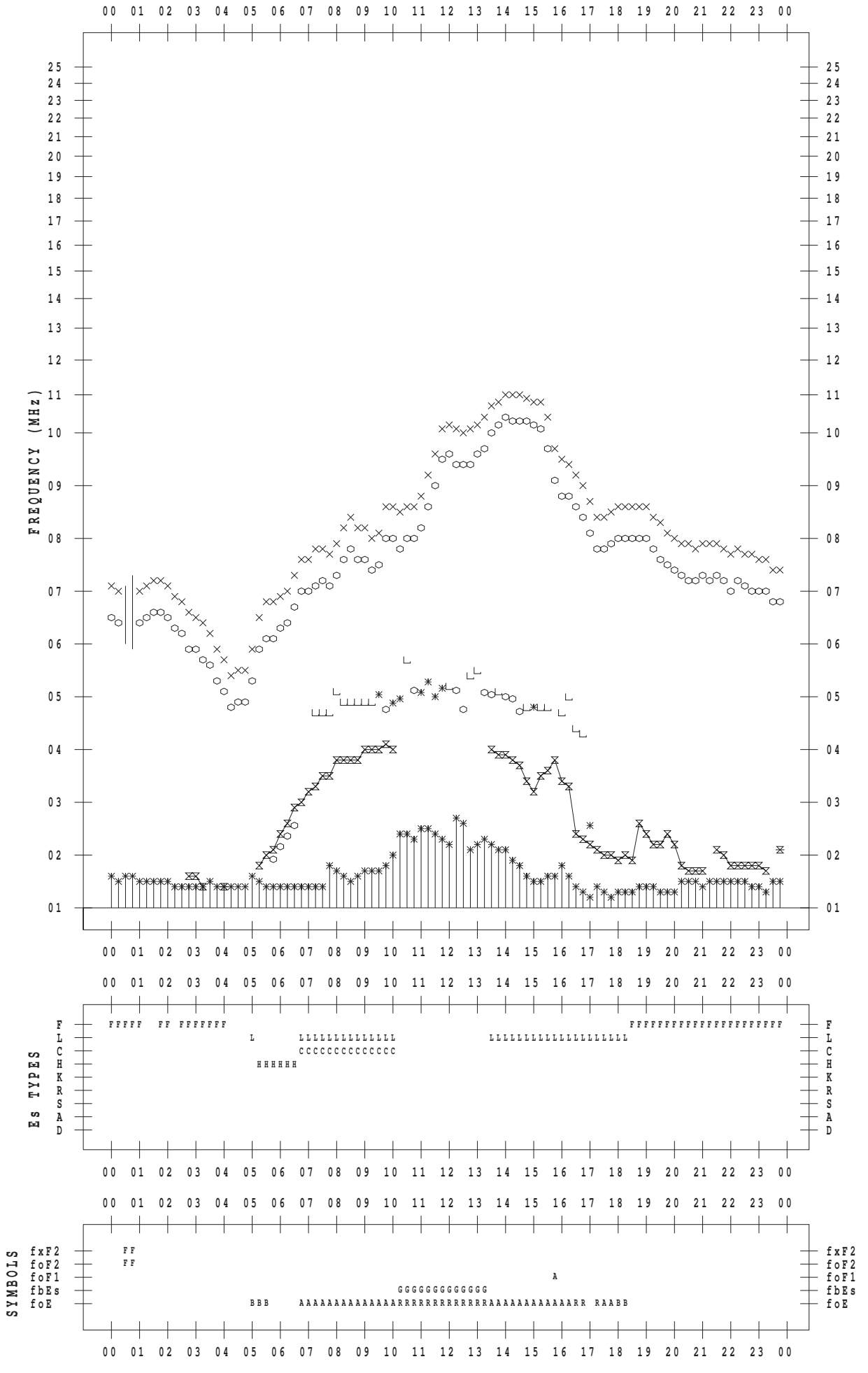
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/23

135 °E MEAN TIME



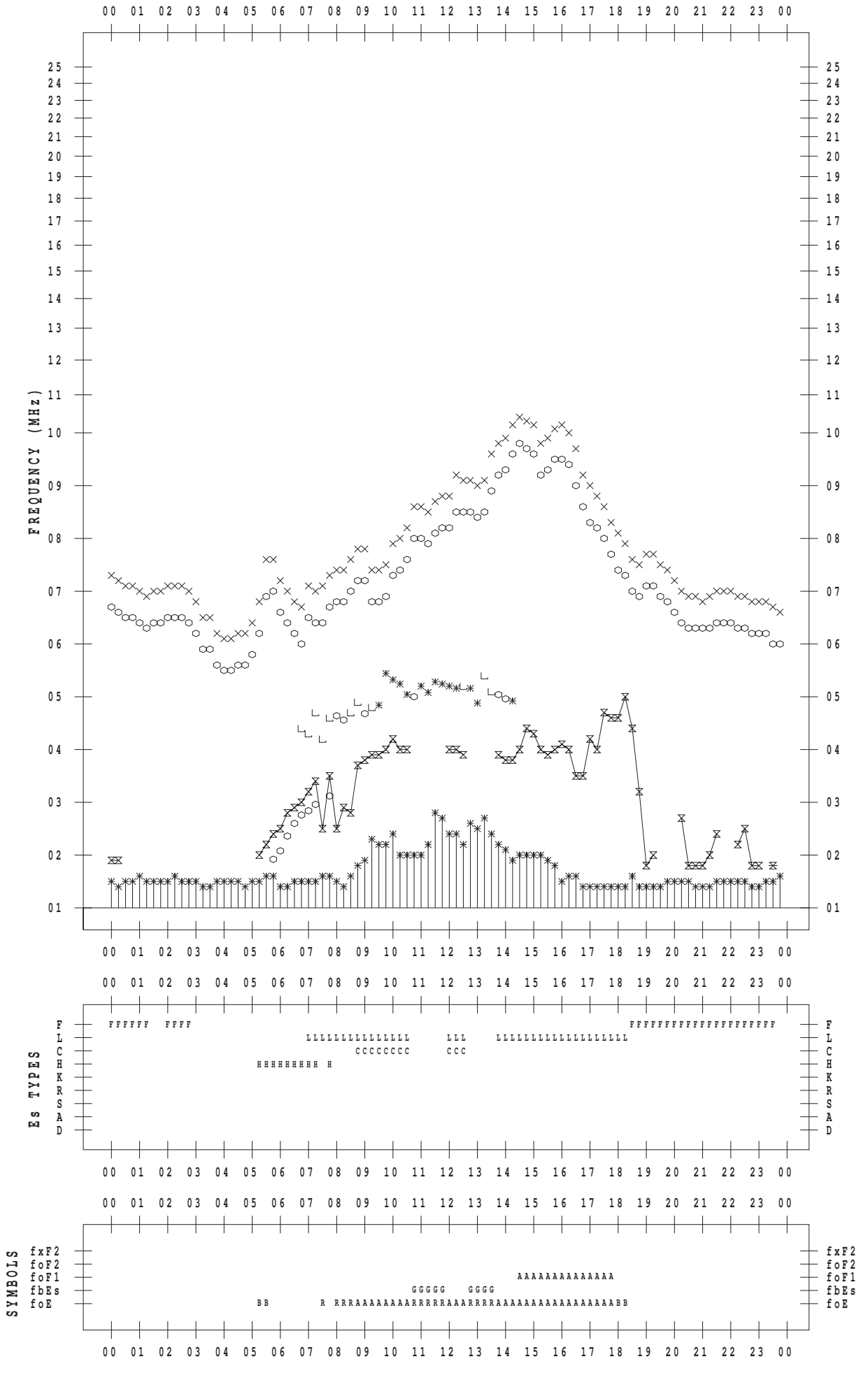
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/24

135 °E MEAN TIME



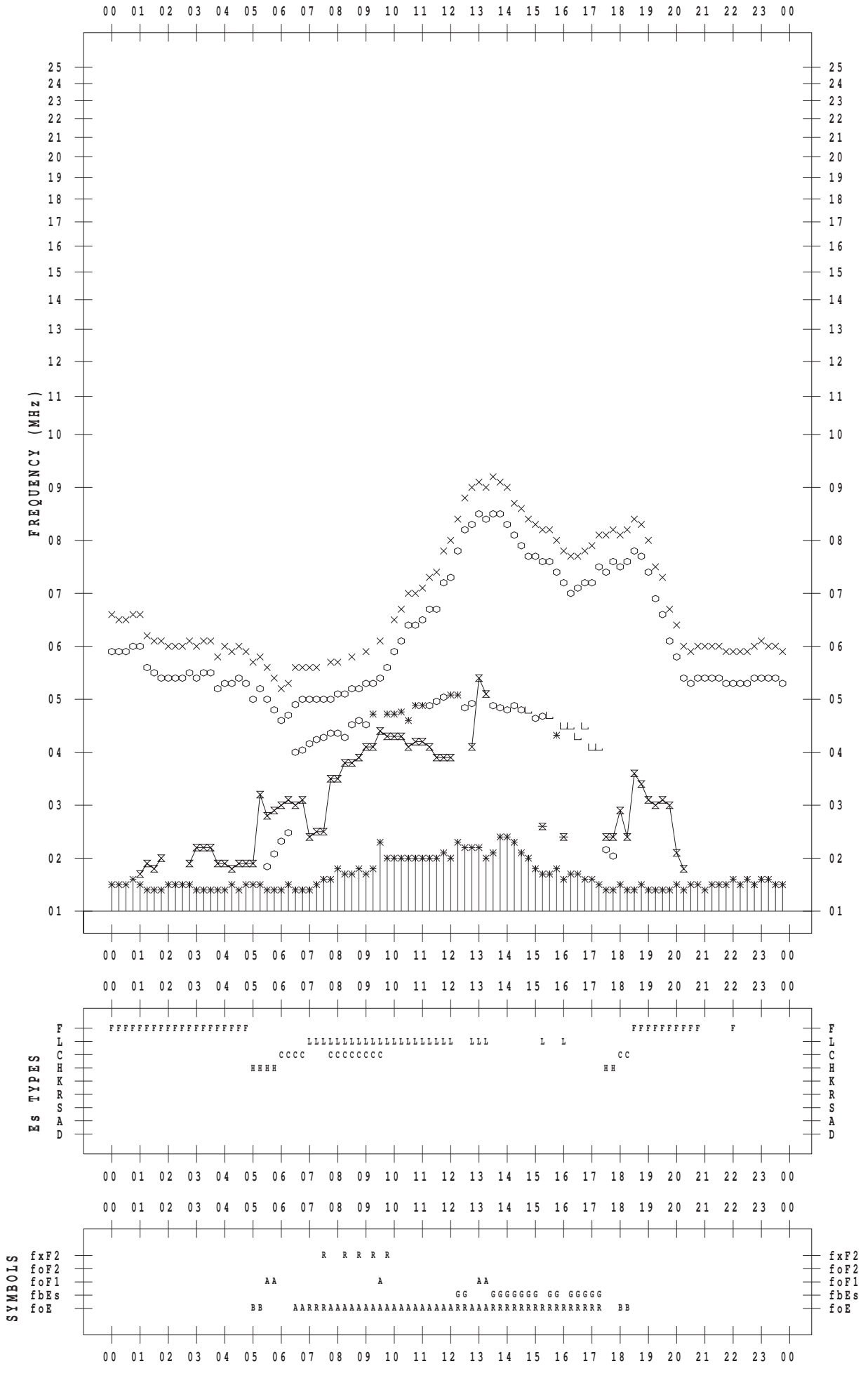
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/25

135 °E MEAN TIME



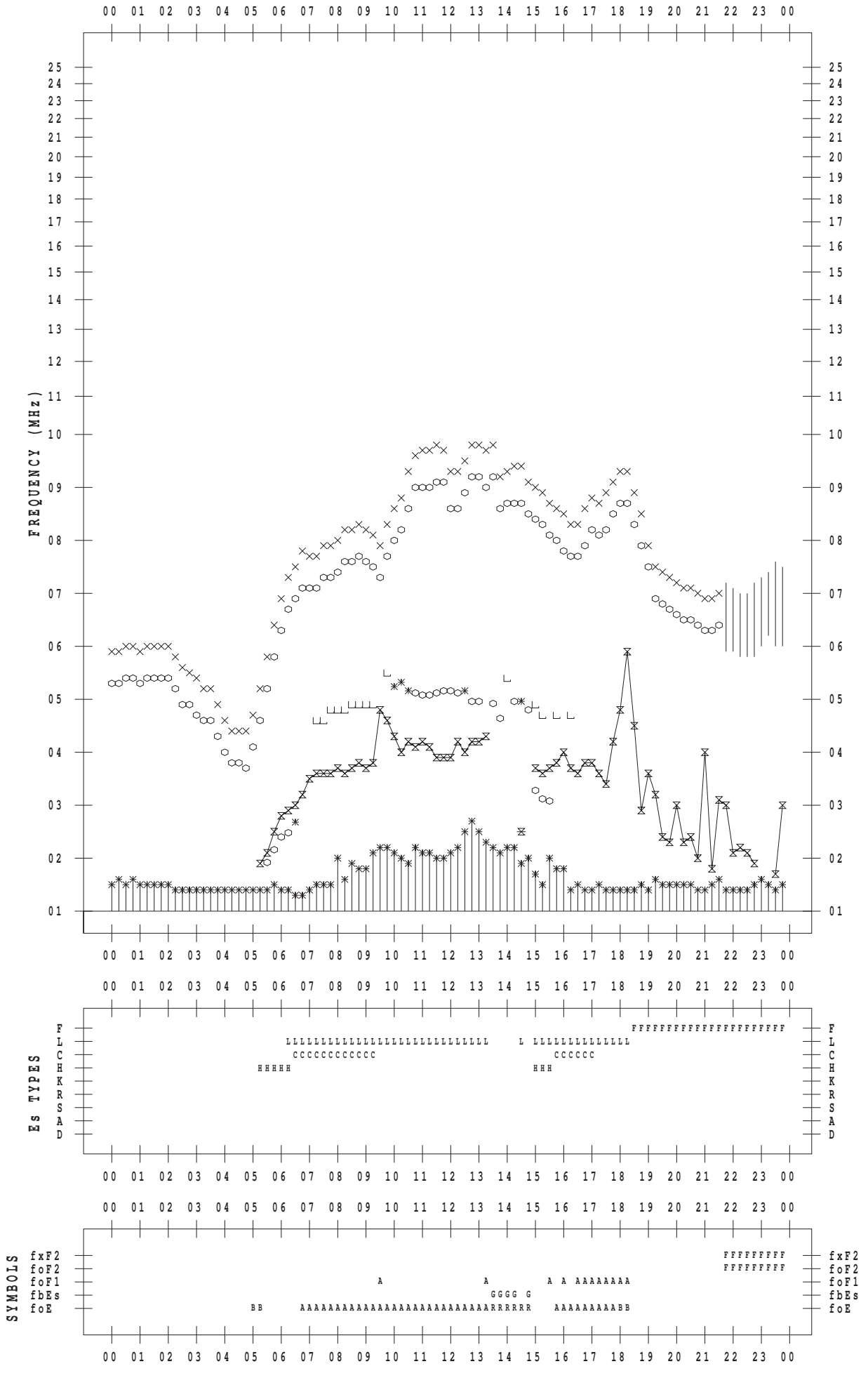
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/26

135 °E MEAN TIME



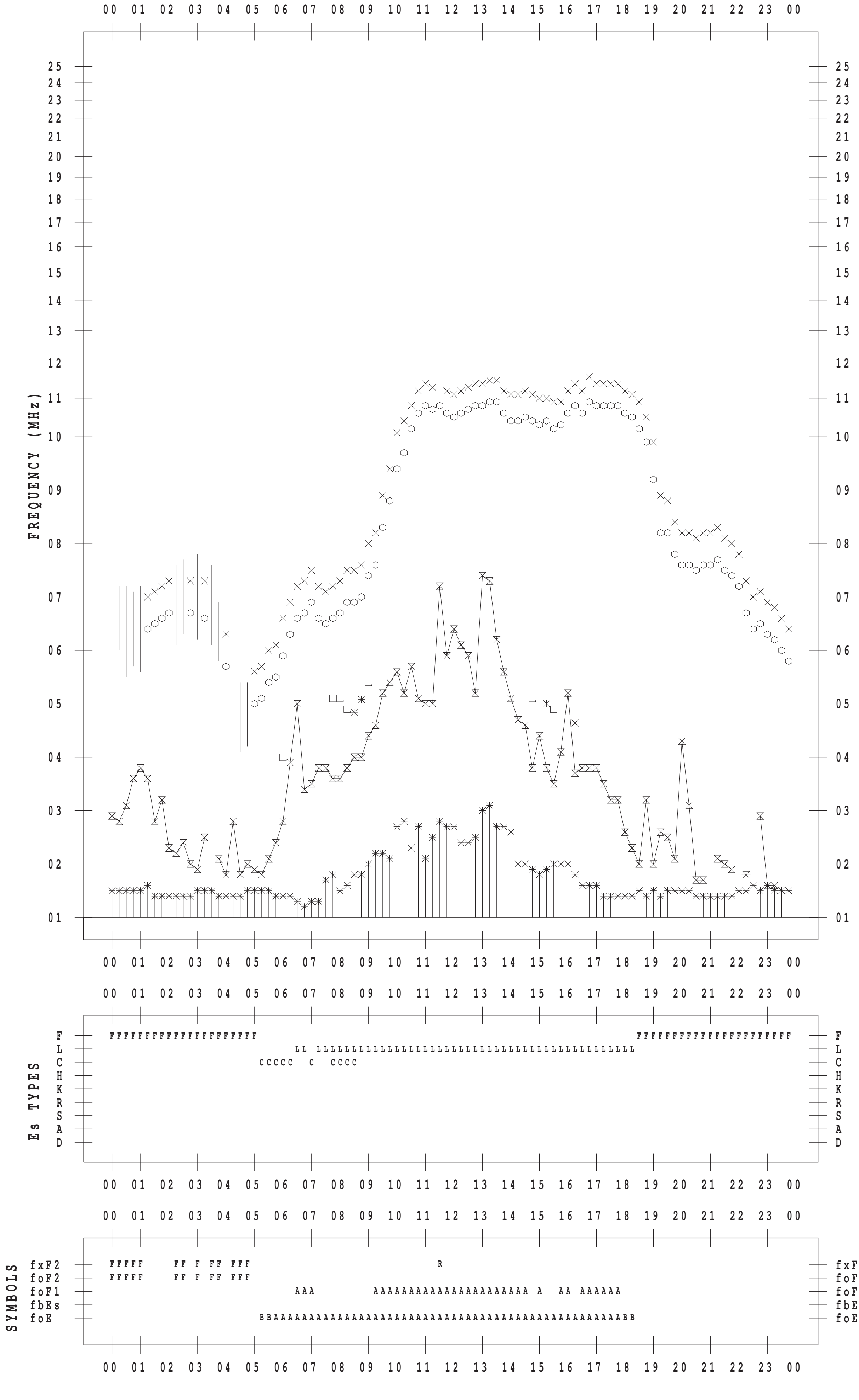
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/27

135 °E MEAN TIME



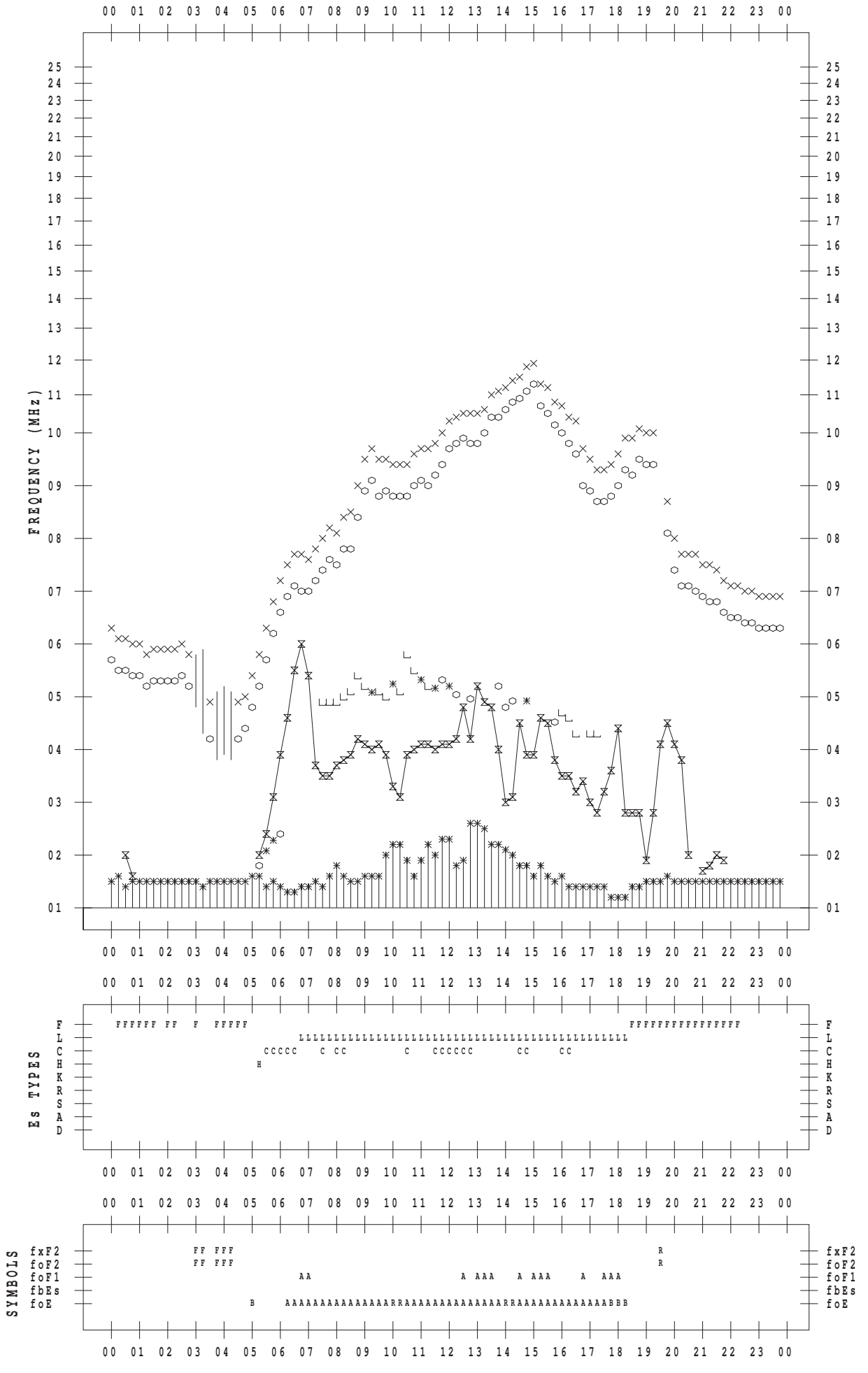
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/28

135 °E MEAN TIME



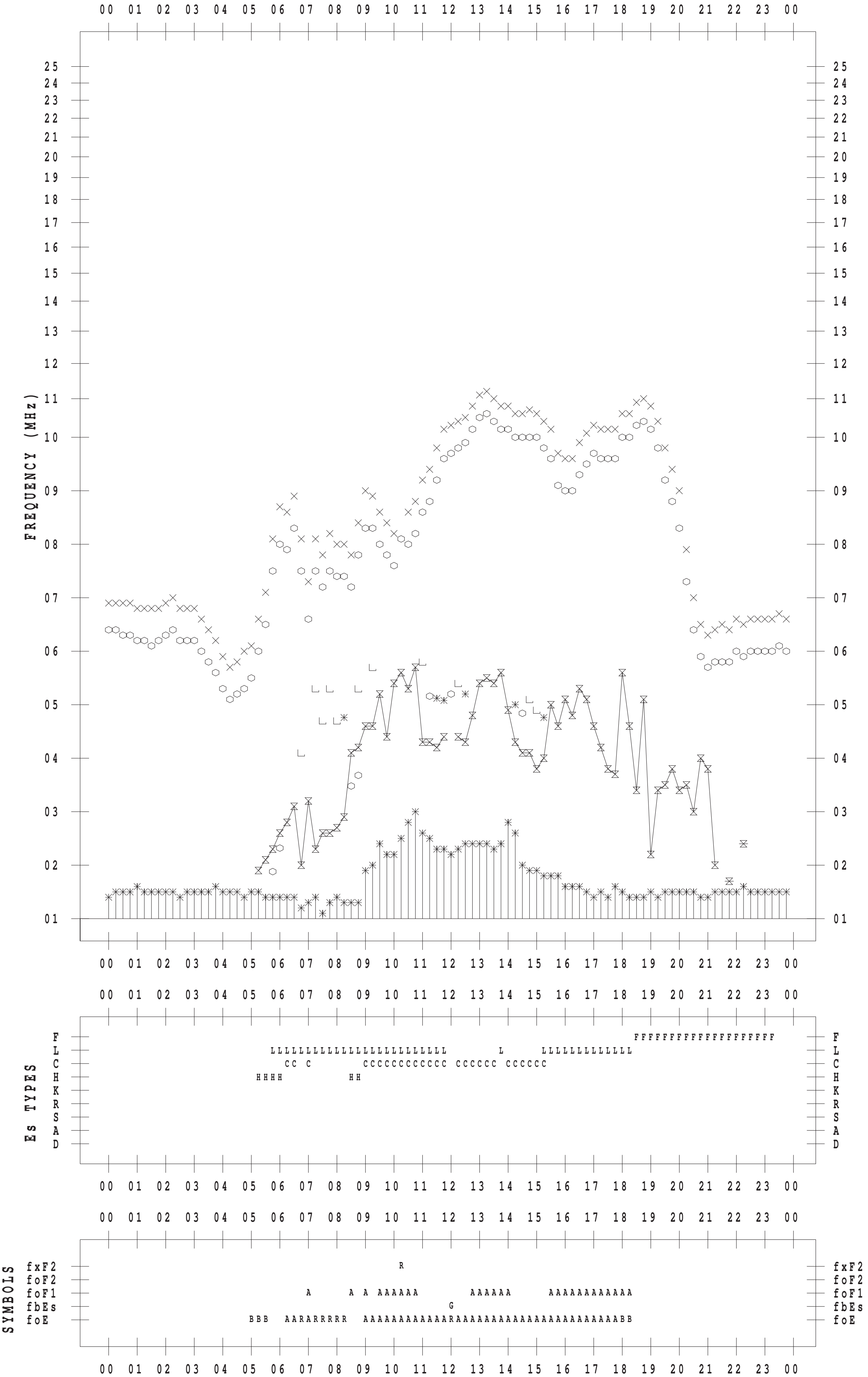
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/29

135 °E MEAN TIME



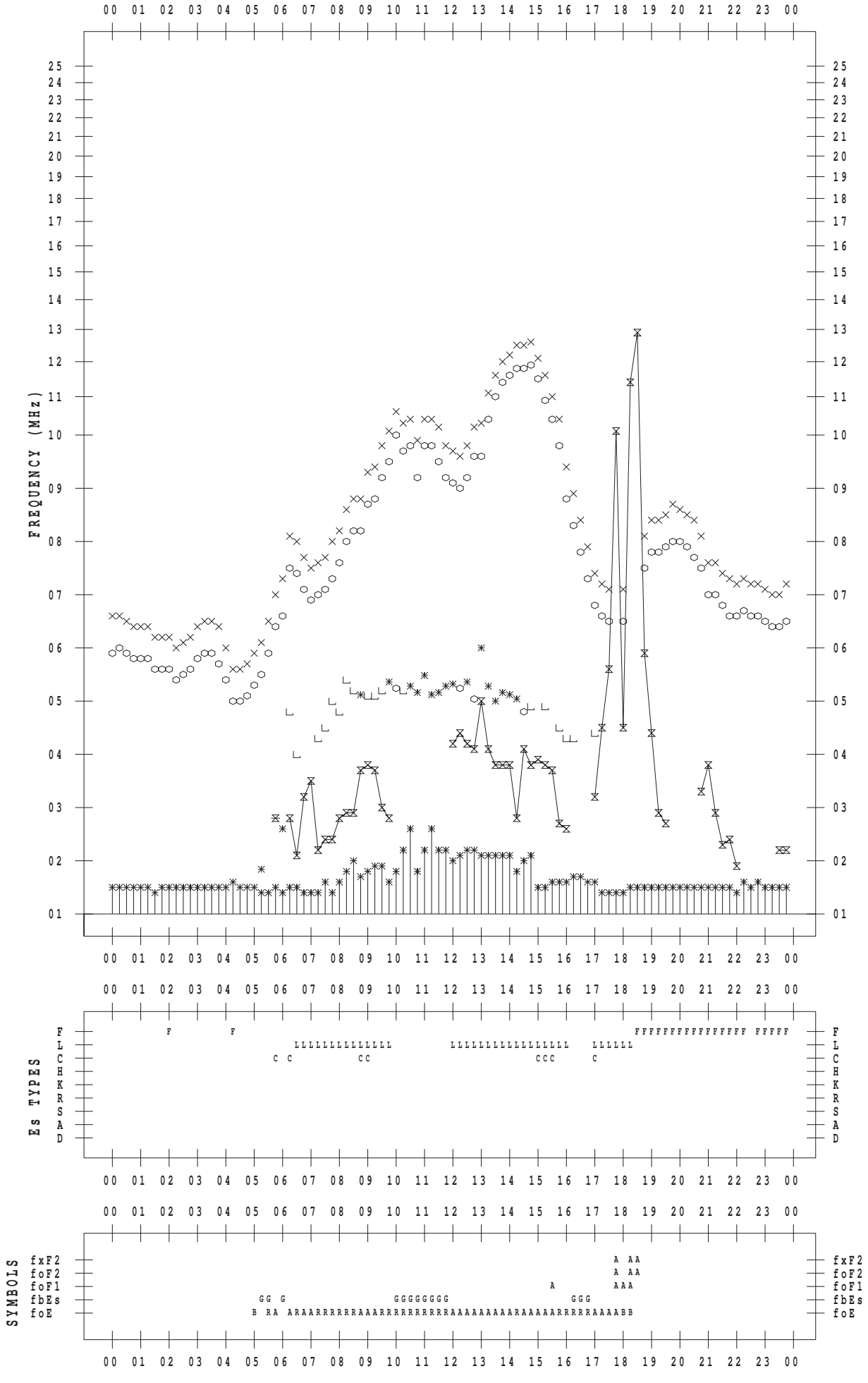
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 4/30

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso April 2011

Single-frequency observations

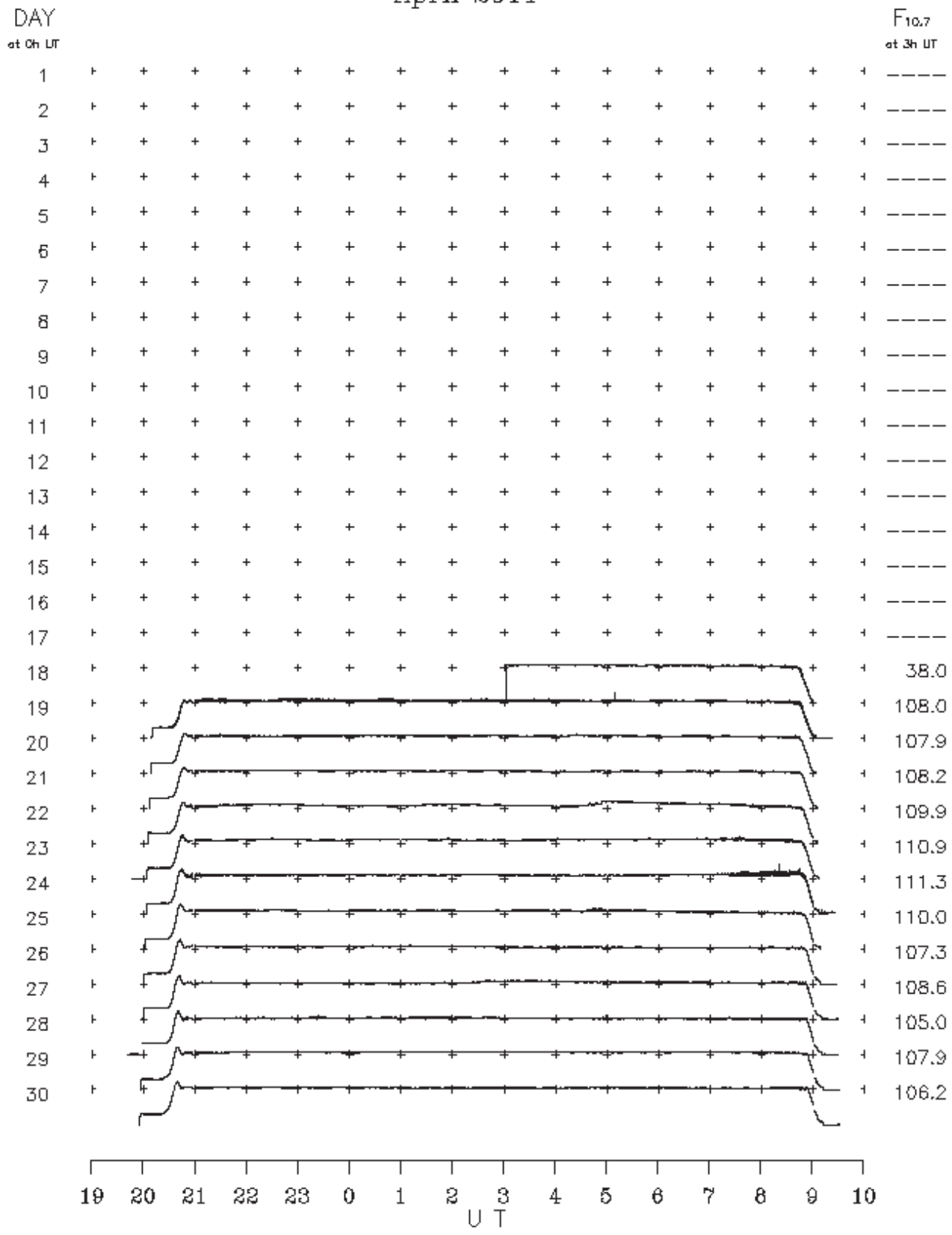
Normal observing period: 1950 - 0920 U.T. (sunrise to sunset)

APR.	FREQ.	TYPE	START TIME	TIME OF MAXIMUM	DUR.	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1})		POLARIZATION
2011	(MHz)		(U.T.)	(U.T.)	(MIN.)	PEAK	MEAN	REMARKS
19	2800	1 S	2130.0	2131.0	2.0	5	-	
22	2800	20 GRF	0422.0	0455.0	210.0	15	-	
28	2800	1 S	0235.0	0237.0	4.0	5	-	

B.Solar Radio Emission

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

April 2011



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°
A link to the daily plot data directory : http://sunbase.nict.go.jp/solar/denpa/hirasDB/2011/04/