F-753

IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 2011

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≪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

SEP. 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	A	44	32	37	37	52	70	63	66	62	67	64	64	67	69	66	65	60	67	67	63	63	64	52
2	52	53	53	39	48	48	58	57	65	67	66	61	67	65	64	68	64	73	69	66	65	64	60	55
3	53	50	48	44	46	51	66	62	65	64	64	64	68	66	67	66	65	67	69	66	66	67	65	64
4	66	38	58	51	34	46	53	58	61	68	63	61	62	66	64	66	65	66	A	66	54	62	59	53
5	52	50	38	42	32	37	44	48	51	A	A	A		A	A	57	59	51	54	59	61	58	54	44
6	42	34	34	32	38	36	47	58	63	A			61	62	56	58	59	A	66	64	58	54	42	46
7	36	45	A	47	41	A	49	56	A	57		A		60	59	60	54	58	55	63	60	52	54	48
8	37	44	45	46	46	46	54	60	62	67	58	60	65	67	A	64	62	66	67	64	63	54	58	48
9	40	48	47	46	47	53	64	70	65	66	66	62	59	A	64	57	61	64	62	62	66	64	63	54
10	34	47	34	40	34		47	43	A	A	A	A		68	66	67	63	56	64	63	60	60	49	42
11	34	44	34	46	47	52	57	58	62	65	63	60	57	66	62	68	67	67	68	67	66	66	54	52
12	48	50	48	45	41	N	68	61	53	66	61	63	55	60	68	70	64	61	67	66	64	52	A	A
13	48	44	41	32	A	28	45	52		57	57	58	64	68	68	68	64	66	66	66	64	43	52	47
14	32	34	32	31	31	43	70	63	66	66	58	60	67	65	66	66	67	70	68	67	65	63	54	58
15	52		53	51	48	47	66	67	59	68	67	64	67	69	68	67	66	67	67	65	66	63	61	54
16	54	25	52	50	52	54	68	64	59	46	62	68	69	45	66	70	68	67	67	62	66	67	52	54
17	49	53	51	51		53	61	81	60	80	59	68	47	70	54	68	68	67	67	65	64	66	63	66
18	53	53	53	48	37	33	52	62	64	67	64	67	67	67	66	67	68	66	66	64	64	58	A	54
19	49	47	A	43	34	A	56	63	64	62	70	65	N	69	68	68	67	67	65	66	57	54	54	A
20	47	47	34	44	43	46	61	63	63	68	67	65	70	68	69	71	70	67	65	66	64	58	A	A
21	A	A	48	A	34	48	67	66	49	68	66	54	69	70	68	68	68	68	66	A	54	63	53	53
22	43	29	52	47	A	48	65	61	65	68	59	71	87	66	68	70	70	67	67	64	63	N	52	58
23	52	53	53	53	52	52	67	68	70	59	70	67	68	65	72	N	70	70	65	66	54	54	51	52
24	52	55	32	53	51	50	67	67	68	70	64	N	68	66	68		70	A	67	65	52	61		50
25	51	54	54	54	54	54	67	69	69	61	59	68	68	70		68	71	67	67	66	65	52	48	50
26	32	53	53	52	54	54	70	59	59	N	59	69	66	68	70	70	72	69	67	63	67	54	53	49
27	43	46	34	32		32	23	A		60	A	59	62	65	62	67	67	64	66	67	65	62	61	54
28	54	54	60	64	47	49	65	68	59	69	67	70	66	68	73	71	68	68	67	64	A	A	55	54
29	53	46	47	50	48	54	65	66	68	71	70	71	69	61	59	59	88	68	65	62	63	54	58	53
30	53	52	48	46	43	47	64	60	73	68	67	69	89	N	85	67	67	70	65	66	66	54	59	49
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	28	28	28	29	26	26	30	29	26	26	25	25	26	27	27	28	30	28	29	29	29	28	26	27
MED	49	47	48	46	44	48	64	62	64	66	64	64	67	66	67	67	67	67	67	65	64	59	54	53
U Q	52	53	53	51	48	52	67	66	66	68	67	68	68	68	68	68	68	68	67	66	65	63	60	54
L Q	41	44	34	41	37	46	53	58	59	62	59	60	62	65	64	66	64	65	65	63	60	54	52	49

HOURLY VALUES OF fEs AT Wakkanai

SEP. 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	33	27	G	G	G	G	40	G	G	G	G	G	G	G	41	38	G	34	36	48	G	G	G	G
2	G	33	G	G	G	G	48	G	G	G	G	G	48	G	G	G	G	G	G	G	G	59	G	G
3	G	G	G	G	G	G	G	54	G	G	G	G	G	G	G	G	38	33	G	G	G	G	G	28
4	33	28	G	G	G	G	36	39	G	83	64	60	G	G	G	54	54	39	37	26	38	38	32	34
5	G	G	G	G	G	G	32	40	44	63	46	44	G	65	51	G	G	36	30	43	34	43	34	28
6	36	33	32	32	27	26	36	45	48	56	G		G	G	G	G	36	62	42	40	40	G	G	34
7	26	33	36	28	38	37	34	39	73	G	G	58	G	G	G	G	40	34	28	G	23	G	G	G
8	26	25	G	G	G	G	G	34	G	49	50	52	G	G	72	G	38	57	52	46	32	26	G	G
9	G	29	G	G	G	34	34	55	59	56	54	G	G	68	52	52	53	38	28	G	28	28	G	32
10	34	24	G	G	G		G	G	51	59	64	60	G	G	G	G	44	45	40	40	38	39	25	32
11	G	26	27	11	26	29	36	42	44	49	50	G	G	G	G	38	42	36	34	50	36	72	57	24
12	G	23	G	30	28	28	31	44	G	G	G	G	G	G	G	G	G	G	36	32	G	32	65	49
13	29	40	30	26	38	34	35	40	G	G	G	G	G	G	G	G	40	38	32	28	33	30	G	G
14	G	G	G	G	28	32	34	39	G	G	42	G	G	G	G	G	G	36	G	G	G	G	G	G
15	G	G	28	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	44	28	G	G	G	G
16	26	G	G	G	G	24	G	G	G	G	G	G	G	G	G	40	34	G	28	27	24	24	G	G
17	G	G	G	G		G	32	39	G	G	41	G	G	G	G	G	35	35	25	25	G	G	G	G
18	G	23	G	G	G	26	G	G	46	52	42	61	55	68	56	38	44	48	43	40	33	25	40	29
19	26	34	35	31	32	41	48	40	37	G	G	G	G	G	G	G	G	G	G	40	43	39	G	40
20	35	G	G	G	G	G	G	36	G	G	41	G	G	G	G	G	38	G	G	28	28	48	40	36
21	34	48	44	38	32	40	G	37	G	G	G	G	G	G	G	G	35	43	59	71	40	G	35	27
22	G	G	24	40	40	35	32	37	38	G	G	G	G	G	G	G	G	37	26	34	27	30	G	G
23	G	G	G	G	G	G	38	39	G	G	G	G	G	G	G	G	32	32	G	G	G	G	27	G
24	26	28	29	28	G	G	G	G	40	G	G	G	G	G	G		52	71	59	48	G	26		G
25	G	G	G	G	G	G	G	34	G	G	G	G	G	G		G	G	31	36	G	G	G	G	G
26	G	G	G	G	G	G	G	34	G	39	G	G	G	G	G	G	38	G	G	26	G	G	26	G
27	G	G	G	G		G	G	40		G	50	46	G	G	G	G	67	69	43	33	27	30	32	G
28	G	G	26	39	42	31	35	39	44	G	G	G	G	G	G	G	36	36	29	32	72	40	25	29
29	25	G	29	G	G	G	33	37	G	G	42	G	G	G	G	G	G	G	G	28	36	34	25	G
30	G	G	G	G	G	G	58	40	42	G	G	G	G	G	G	G	G	G	G	G	G	G	G	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	30	30	30	28	29	30	30	29	30	30	29	30	30	29	29	30	30	30	30	30	30	29	30
MED	G	12	G	G	G	G	32	39	G	G	G	G	G	G	G	G	36	36	30	28	27	26	G	G
U Q	26	28	28	28	28	31	36	40	44	49	42	22	G	G	G	G	40	39	40	40	36	38	32	29
L Q	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

SEP. 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	14	14	15	14	15	14	14	14	15	18	20	15	16	14	14	14	14	14	14	15	15	14	14
2	15	14	14	15	15	15	22	14	15	18	17	17	16	17	18	15	15	14	15	14	14	14	15	15
3	16	14	14	14	15	16	15	14	14	14	20	17	24	16	20	18	14	14	16	15	14	15	15	15
4	15	14	15	14	16	17	14	14	15	21	17	24	21	14	27	22	15	15	14	15	14	14	14	14
5	15	15	14	14	14	14	14	14	14	17	22	30	23	20	20	15	14	14	14	14	14	15	14	14
6	14	14	14	14	14	14	14	14	15	16	21		26	30	18	20	14	14	14	15	14	15	14	14
7	14	14	14	14	14	14	14	14	16	17	21	21	18	16	15	15	14	16	14	14	15	14	14	14
8	15	14	14	14	14	15	15	14	47	18	24	20	21	22	15	14	15	14	14	14	14	15	14	15
9	16	14	14	14	14	14	14	14	15	17	18	27	23	15	14	14	14	14	17	15	14	14	15	15
10	14	14	17	14	14		14	14	14	16	17	20	18	20	15	14	14	14	14	14	14	14	14	14
11	14	15	14	14	14	14	14	14	15	18	18	18	16	18	17	15	15	14	14	14	14	14	14	14
12	14	15	14	14	14	14	14	14	14	18	20	18	17	14	16	15	14	20	14	14	14	14	14	14
13	14	14	15	15	14	14	14	15	15	17	18	48	22	18	21	15	14	15	14	14	14	14	15	14
14	14	14	14	14	14	14	14	14	15	21	24	18	20	15	14	15	15	14	15	14	14	14	14	14
15	14	14	14	14	14	14	15	15	17	17	16	16	17	20	18	14	14	14	14	14	14	14	15	14
16	15	15	15	14	15	15	15	14	18	21	24	22	28	21	22	15	14	14	14	14	14	15	15	14
17	15	15	14	14		14	14	14	15	21	22	23	26	20	16	15	14	14	14	15	15	14	15	15
18	14	15	15	14	15	17	14	15	17	18	17	18	17	17	15	14	14	14	14	14	14	14	15	15
19	14	14	14	14	14	14	14	15	16	18	24	20	22	17	16	14	14	14	14	14	14	14	15	14
20	14	15	15	14	15	14	14	15	17	20	20	18	21	18	20	15	14	14	15	14	14	14	15	14
21	15	14	14	15	14	14	14	15	15	17	20	21	21	23	18	14	14	14	14	14	14	14	14	15
22	14	14	15	14	14	14	14	14	17	16	20	20	21	15	15	16	14	14	15	14	15	15	14	15
23	14	14	15	15	16	15	14	14	17	23	22	53	18	20	15	14	16	15	14	14	14	15	14	14
24	17	14	14	14	14	14	15	14	20	52	18	17	23	21	15		14	14	14	15	14	15		15
25	14	14	14	14	14	14	14	14	15	44	18	20	53	24		18	15	14	14	15	15	15	15	15
26	16	15	15	15	14	14	23	14	14	20	18	45	50	20	17	17	14	14	14	15	14	14	15	15
27	14	15	15	14		16	14	15		17	15	16	18	20	44	14	14	14	14	14	15	14	14	14
28	14	14	15	14	14	14	14	15	17	16	20	20	22	34	18	16	14	14	14	14	14	14	15	14
29	16	14	14	14	15	14	15	16	15	16	21	17	23	20	22	14	14	18	14	14	14	14	14	18
30	15	15	15	14	14	14	14	14	14	15	17	26	14	49	18	15	14	14	14	14	15	14	14	17
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	28	29	30	30	29	30	30	29	30	30	29	29	30	30	30	30	30	30	29	30
MED	14	14	14	14	14	14	14	14	15	18	20	20	21	20	17	15	14	14	14	14	14	14	14	14
U Q	15	15	15	14	15	15	15	15	17	20	21	23	23	21	20	15	14	14	14	15	14	15	15	15
L Q	14	14	14	14	14	14	14	14	14	16	18	18	18	16	15	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

SEP. 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	44	44		32		32	58	72	76	77	69	72	75	72	73	68	73	84	91	91	A	66	52	59
2	53		44	43	28	43	57	71	74	66	63		72	78	88	86	86	80	80	88	78	53	44	44
3		A	39	36	41	44	64	66	63	A	73	80	76	74	72	77	84	91	88	78	78	46	64	54
4	63	47	41	32		46	62	67	81	80	88	90	79	84	77	81	81	81	77	67	54	51	49	51
5	43	46	44	44		45	47	52	A	67				A	63	62	63	59	63	54	53	52		
6	44	A	41	39	39		45	67	75	73	71		A	68	71	71	A	A	80	A	52	45	44	A
7	45	A	A	47		32	47	73	A	A	A	72	A	66	69	56	58	64	69	72	55	48	51	44
8		44	41	47	27	38	51	73		67	57		74	74	76	A	67	64	72	N	59	54	43	A
9	44	47	A	A	39	39	66	67	73	A	76	80	78	81	75	65	62	71	78	72	54	54	54	46
10	54	47	A	N			66	44	55	A		74	A	A	96	76	77	78	73	55	64	A	53	A
11	A	45	44	44	44	45	76	77	78	83	88	80	74	76	76	80	82	83	87	73	54	51	A	48
12	44	44	45	43			A	72	64	65	71	78	80	86	82	84	91	82	104	88	53	A	A	
13	44	42	43	43	34	42	A	67	72	67	68	75	84	83	80	81	86	85	86	77	53	49	43	A
14	48				37	44	59	81	86	78	69	75	73	74	76	80	86	98	100	75	58	A	52	53
15	44		52	46		46	67	108	87	74	72	80	86	96	85	82	78	80	87	N	54		46	48
16	51	N	38	38		44	67	100	107	91	88	82	77	85	84	83	85	88	88	82	54	A	59	53
17	54	A	53	52	A		73	102	93	97	95	96	91	91	83	82	80	87	106	90	77	81	76	78
18	73	53	53	48	A	48	A	81	86	A	108	111	104	85	87	95	96	105	90	A	A	A	52	53
19		44		52	31	44	61	74	86	73	75	82	88	87	84	85	84	88	79	53	52	54	53	51
20	53	53	49	44	38	48	66	76	80	67	74	83	74	87	93	87	95	100	88	74	51	44	52	A
21	52	52	49	44		47	72	80	76	74	91	80	80	88	84	80	82	83	78	73	59	54	64	52
22	52	54	52	A	A	43	69	88	81	71	86	100	112	110	91	81	86	94	87	73	59	52	53	53
23	45	44	44	45		44	66	102	124	74	75	77	102	105	98	85	93	91	84	67	54	53	59	54
24	53	53	54	49	38	42	66	90	88	80	91	92	91	91	88	97	101	101	100	76	50	44		42
25	43	52	45	47	44	47	73	98	105	81	86	98	98	98		100	105	101	90	66	54	52		52
26	44	44	48	42	46	45	65	85	85	N	90	96	102	96	90	94	100	110	101	72	54		53	53
27									78	67	76	93	106	87	73	76	85	91	73	58		A	A	53
28	59	45	52	61	45	46	66	86	76	86	101	104	108	102	91	91	101	101	78	53	46		52	
29	51		38			34	63	N	87	75	88	95	98	97	105	105	106	82	66	66	67	54	54	52
30	52	51	43	N	27		66	90	87	84	100	105	110	105	88	85	84	81	83	67	53	51	51	53
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	20	23	23	15	24	26	28	27	24	27	26	26	28	29	29	29	29	30	26	27	21	24	22
MED	51	46	44	44	38	44	66	76	81	74	76	82	85	86	84	82	85	85	85	72	54	52	52	52
U Q	53	52	52	47	44	46	67	89	87	80	90	96	102	96	89	86	94	96	90	77	59	54	54	53
L Q	44	44	41	42	31	42	59	69	75	67	71	78	76	77	75	76	79	80	78	66	53	48	50	48

HOURLY VALUES OF fEs AT Kokubunji

SEP. 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	46	51	42	G	G	G	45	49	45	43	41	43	45	29	G	28
2	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	31	G	G	G	G	G
3	G	34	G	G	G	23	G	47	G	68	45	G	G	G	G	G	41	G	27	G	52	G	G	G
4	G	G	G	G		G	G	44	G	G	G	G	G	G	G	G	102	34	G	G	30	G	35	28
5	24	G	G	G		G	G	G	47	G				71	G	G	52	56	48	25	G	G		
6	28	36	26	G	G		39	45	50	52	G		57	52	G	G	70	114	72	134	42	35	42	30
7	30	32	31	28		23	G	48	72	63	62	51	51	G	G	G	G	35	33	34	33	34	G	G
8	G	G	G	G	G	G	G	G	G	G	51		G	G	47	81	54	45	119	54	33	34	38	54
9	24	32	29	24	G	G	G	G	G	79	53	68	44	76	55	51	G	58	49	35	34	34	G	G
10	G	25	29	G	G		G	G	40	54	G	49	64	90	78	39	G	43	43	54	48	78	43	53
11	35	G	37	G	25	26	46	47	53	52	57	G	62	49	53	G	G	G	34	43	G	34	28	G
12	G	G	G	G			86	56	G	G	G	G	G	G	G	G	41	G	G	23	G	54	32	
13	G	G	G	G	41	33	85	G	G	G	G	G	G	G	G	G	G	40	30	G	33	G	G	31
14	G		G		G	G	G	G	G	G	G	G	62	G	G	45	46	62	61	79	57	46	G	G
15	24		G	G		G	G	G	G	G	48	G	G	G	G	G	G	G	36	51	60		G	G
16	G	G	G	G	G	G	G	G	G	G	G	G	G	G	52	49	G	29	33	28	31	32	49	27
17	69	33	27	27	28		G	G	G	G	G	G	G	G	G	G	G	34	42	33	50	50	40	24
18	G	G	G	G	26	23	52	54	73	69	48	G	G	G	G	G	G	G	33	79	40	30	27	G
19		G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	G	45	49	G	G	G	G	G	G	G	42	31	34	40	29	33	29
21	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	34	29	G	G	30	36	34
22	29	27	28	28	29	32	28	G	40	G	G	G	G	G	G	G	G	G	31	G	28	G	24	26
23	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	29	32	30	29	53	46	G
24	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	31	29	33	29	G		G
25	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G		G
26	G	G	G	G	24	G	G	G	G	G	G	G	46	G	G	G	48	28	32	26	G		26	G
27							G		G	G	G	G	G	G	G	G	G	27	31	33		28	94	31
28	32	35	G	G	G	G	G	49	G	G	G	G	G	G	G	G	39	33	33	29	G		25	
29	G		G			G	G	G	G	G	G	G	G	G	G	G	G	42	G	26	G	G	G	G
30	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	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	28	26	28	27	21	25	30	29	30	30	29	26	29	30	29	30	30	30	30	30	29	27	27	27
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	32	30	30	29	26	G
U Q	24	27	13	G	24	12	G	44	40	51	43	G	22	G	G	G	41	42	41	43	41	34	38	29
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 Kokubunji

SEP. 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	20	20	20	15	17	24	34	36	35	34	53	53	34	33	31	18	13	21	14	14	15	40	14
2	30	22	17	17	18	17	31	18	42	42	44		52	52	52	47	43	34	14	20	15	17	18	17
3	20	14	18	20	18	23	14	17	42	39	40	49	45	51	49	46	21	35	14	15	17	30	20	13
4	15	14	14	18		13	14	14	42	44	47	53	56	61	50	56	25	14	20	20	14	28	14	13
5	14	22	15	14		15	17	13	33	50				39	49	39	33	25	14	17	15	14		
6	14	13	14	15	13		14	28	31	34	54		36	40	46	44	22	18	15	15	13	13	14	13
7	14	14	14	14		15	33	17	30	34	39	37	36	53	52	20	40	13	14	13	13	14	20	23
8	14	15	14	14	14	17	31	40	43	43	35		50	52	36	38	21	15	20	21	14	14	14	15
9	17	13	13	13	15	18	17	38	40	37	34	36	34	30	33	21	13	15	17	14	13	14	26	18
10	17	13	13	15	21		22	33	31	36	60	36	33	31	34	31	17	15	14	13	15	14	31	15
11	14	14	23	14	15	13	18	31	33	35	36	52	37	33	29	38	36	14	14	14	17	14	17	14
12	17	18	15	18			18	22	42	54	57	65	34	31	43	50	17	33	21	17	36	15	17	
13	36	31	17	14	17	13	18	39	41	58	63	53	52	55	53	42	40	21	14	17	13	14	21	14
14	18		21		17	14	15	34	42	42	52	55	35	52	47	35	30	18	14	17	14	18	15	18
15	13		18	17		14	15	38	39	44	33	54	56	49	46	42	36	25	15	14	14		42	18
16	14	15	14	20	15	15	35	39	42	40	48	46	57	37	36	30	18	14	14	15	14	14	15	15
17	13	15	31	17	14		25	37	42	47	49	50	55	49	44	45	18	23	14	13	15	14	36	18
18	15	17	21	18	13	15	15	18	33	38	40	57	44	42	54	44	38	34	13	14	13	17	14	20
19		20		20	17	15	30	17	39	43	46	48	55	55	39	40	14	13	15	18	18	14	14	14
20	18	33	18	20	14	14	35	38	33	34	45	50	60	49	45	38	38	17	13	14	14	15	14	14
21	20	18	15	14		15	18	18	22	40	44	50	53	52	44	40	35	15	14	17	40	14	13	14
22	14	14	14	14	14	14	14	13	17	39	55	56	52	51	44	44	39	15	14	14	13	15	15	14
23	15	14	14	14		15	34	17	36	44	53	60	53	52	47	20	38	14	13	14	13	15	14	14
24	14	39	15	17	14	14	34	36	43	57	52	53	52	49	40	42	38	18	13	14	14	14		17
25	18	17	18	14	13	15	34	37	39	44	44	52	54	53		42	43	20	14	15	14	15		18
26	14	18	14	14	14	15	38	34	40	42	44	53	52	49	44	45	34	14	13	14	17		14	18
27							21		42	39	52	44	45	42	42	40	33	14	14	15		13	17	18
28	14	14	14	15	20	18	14	17	39	43	43	44	43	43	40	39	15	14	14	13	15		17	
29	14		17			14	41	20	40	40	50	52	44	45	42	38	14	14	15	17	15	14	31	14
30	14	14	17	17	14	18	22	15	38	40	43	46	47	55	39	38	36	33	14	14	13	39	17	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	28	26	28	27	21	25	30	29	30	30	29	26	29	30	29	30	30	30	30	30	29	27	27	27
MED	14	15	15	15	15	15	22	28	39	41	45	52	52	49	44	40	33	15	14	14	14	14	17	15
U Q	17	20	18	18	17	17	33	37	42	44	52	53	53	52	48	44	38	23	15	17	15	15	21	18
L Q	14	14	14	14	14	14	15	17	33	38	40	46	40	40	39	38	18	14	14	14	13	14	14	14

HOURLY VALUES OF foF2 AT Yamagawa

SEP. 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	A	52	52	48	47	42	54	77	74	76	72	71	72	56	72	74	87	88	91	89	79	54	54	45
2	54	54	54	51	43	38	51	83	74	64	58	66	75	69	90	92	88	86	87	54	77	52	44	41
3	44	40	55	36	40	38	48	67	73	72	71	76	84	77	78	94	96	89	89	78	77	53	52	54
4	54	54	42	44	46	43	47	67	76	92	76	59	88	89	77	69	87	87	88	73	65	54	53	51
5	50	47	45	47	43	41	47	63	70	75	69	72	75	69	67	72	72	68	67	72	N	44	44	44
6	43	42	40	37	37	36	42	64	74	72	63	B	A	A	N	68	70	74	76	A	A	A	A	A
7	44	47	44	43	45	44	45	70	71	69	78	A	77	71	66	66	66	71	76	77	66	42	44	40
8	43	44	47	46	41	36	44	70	N	67	70	70	67	71	77	77	69	72	54	50	A	A	A	A
9	A	A	44	41	38	36	42	76	76	67	A	76	85	88	90	78	77	93	78	76	70	53	58	54
10	N	41	42	A	A	37	45	60	62	60	68	79	74	71	96	90	78	85	77	72	54	54	53	A
11	47	47	45	45	43	46	54	72	72	A	81	80	N	69	90	88	88	88	69	90	A	52	54	52
12	51	47	47	47	40	36	48	71	74	72	72	84	77	90	89	90	95	90	N	59	54	47	50	35
13	49	50	47	44	43	36	51	78	73	93	70	80	86	91	93	84	91	91	88	82	64	50	48	50
14	51	N	A	40	40	36	47	82	87	76	72	76	76	69	89	88	90	98	99	A	A	A	A	52
15	A	A	50	51	A	40	50	76	80	75	76	87	77	102	55	77	81	89	88	72	74	A	44	51
16	51	50	47	47	41	36	45	82	98	87	84	77	83	75	78	93	90	87	79	76	73	53	53	53
17	54	53	53	53	38	40	55	84	90	77	87	69	69	91	90	92	88	91	N	84	67	65	67	66
18	55	52	53	60	45	39	47	89	83	87	94	56	N	69	79	N	58	96	28	71	52	51	53	66
19	52	52	53	52	50	43	47	88	90	88	85	77	75	91	89	91	90	90	86	71	54	54	52	52
20	54	53	47	48	44	41	51	77	92	77	78	68	69	A	97	90	N	98	89	79	66	53	52	52
21	52	53	48	42	46	45	53	67	83	91	69	74	72	72	58	88	88	84	87	44	67	54	66	54
22	52	53	52	53	48	43	53	80	84	77	72	69	89	94	69	76	93	91	79	59	53	53	47	53
23	51	47	46	53	46	38	42	88	109	72	66		69	91	79	65	92	73	88	A	53	52	53	52
24	52	52	52	58	34	32	44	78	90	82	75	78	86	94	77	N	94	N	89	74	72	53	52	54
25	52	53	52	52	40	36	47	87	91	81	79	76	76	69	B	89	91	97	90	71	52	A	54	44
26	52	52	52	52	47	50	52	78	87	72	68	80	88	86	94	N	98	99	91	71	45	54	52	67
27	52	52	50	43	33	36	36	44	67	63	74	48	69	59	90	87	88	88	70	64	54	54	52	54
28	52	52	51	54	42	40	47	68	76	86	86	58	69	69	78	92	94	112	52	55	A	53	50	A
29	52	47	43	41	40	32	45	76	81	80	88	90	77	N	N	N	N	90	74	56	67	52	52	53
30	51	52	47	41	36	42	48	75	74	88	85	79	69	79	91	91	90	88	90	72	53	53	53	53
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	29	29	28	30	30	30	29	29	29	27	27	27	27	26	28	29	28	27	24	25	27	26
MED	52	52	47	47	42	38	47	76	76	76	74	76	76	75	79	88	88	89	86	72	66	53	52	52
U Q	52	53	52	52	45	42	51	82	88	86	82	79	84	91	90	91	91	92	89	77	71	54	53	54
L Q	50	47	45	42	40	36	45	68	73	72	69	69	69	69	77	76	79	85	75	59	53	52	50	50

HOURLY VALUES OF fEs AT Yamagawa

SEP. 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	67	49	39	26	32	G	G	48	39	75	G	G	G	51	44	G	G	G	G	G	G	G	G	G
2	G	26	G	G	G	28	G	G	G	G	G	G	G	52	45	54	48	G	30	G	36	48	33	G
3	G	26	G	G	G	G	G	G	46	61	62	70	G	43	G	G	G	G	G	G	27	G	G	32
4	G	G	G	G	G	G	G	31	37	G	G	G	G	G	G	G	43	48	51	32	40	28	G	G
5	G	G	G	G	G	G	G	37	44	46	G	G	G	G	G	G	G	36	40	30	29	31	27	32
6	G	G	G	G	G	G	26	38	44	47	G	B	78	97	48	G	G	37	61	60	70	49	50	46
7	33	36	44	33	35	G	G	40	52	66	70	74	56	G	G	51	G	39	29	44	23	32	29	G
8	G	G	G	G	G	G	G	31	G	50	43	G	44	53	72	111	76	54	81	53	107	82	73	48
9	54	58	40	30	26	26	G	35	46	52	74	53	50	58	G	50	46	34	37	37	37	46	40	46
10	48	32	37	50	43	G	G	36	50	48	55	52	44	50	G	G	G	G	29	G	G	G	G	71
11	39	27	G	G	G	G	27	36	62	77	55	53	51	53	47	G	43	42	40	51	60	34	30	29
12	G	G	G	G	G	G	25	40	79	47	47	48	45	46	56	51	42	39	35	48	34	35	33	36
13	30	27	24	G	G	G	54	58	38	G	46	G	44	G	49	41	G	39	28	50	28	36	33	40
14	31	40	36	30	G	26	G	G	G	G	G	G	G	G	G	G	G	68	110	60	72	72	59	43
15	77	72	58	32	60	G	34	36	64	41	43	46	53	64	52	G	G	G	28	28	33	46	25	G
16	G	G	G	G	G	G	G	G	G	G	43	G	G	G	G	G	G	34	41	33	27	39	31	G
17	G	G	G	G	G	G	G	37	44	39	G	G	G	G	G	G	G	G	G	29	26	G	36	G
18	26	G	G	G	G	G	G	35	53	71	81	52	46	G	G	G	G	G	29	G	G	G	G	35
19	34	32	25	26	25	G	G	34	44	G	53	64	58	43	G	G	G	G	G	G	G	G	26	30
20	27	G	G	G	G	G	G	30	39	G	46	66	49	70	46	G	G	G	29	32	43	28	32	32
21	33	G	G	G	G	G	G	31	G	42	62	68	43	G	G	G	G	G	32	25	G	G	33	43
22	29	G	28	24	G	G	24	34	G	G	G	G	G	62	G	G	G	48	39	34	27	G	G	29
23	G	G	G	G	G	G	G	G	G	49	49	G	53	57	58	41	46	50	78	84	59	31	G	26
24	28	G	G	G	36	G	G	G	G	G	G	G	G	G	G	G	50	61	36	G	27	34	G	28
25	G	G	G	G	G	G	23	32	40	G	G	G	G	G	B	G	G	38	33	23	G	40	40	G
26	26	G	G	G	G	G	G	34	G	G	G	G	G	G	50	G	G	33	50	44	40	33	35	G
27	G	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	39	43	48	57	29	40	G
28	G	G	G	G	G	G	25	34	38	43	G	G	G	G	G	G	38	56	62	58	70	40	38	33
29	39	G	G	G	26	G	G	G	38	40	G	G	G	G	G	44	40	G	26	26	G	24	G	G
30	G	G	G	G	G	G	G	36	G	G	G	47	G	G	G	G	G	G	G	G	G	G	G	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	30	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30	30	30	30
MED	26	G	G	G	G	G	G	34	38	40	22	G	G	G	G	G	G	35	34	32	28	32	30	29
U Q	33	27	25	24	25	G	23	36	46	49	53	52	49	53	47	41	42	42	43	48	43	40	36	36
L Q	G	G	G	G	G	G	G	30	G	G	G	G	G	G	G	G	G	G	28	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

SEP. 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	14	15	15	14	14	14	17	14	15	17	20	21	23	26	27	21	16	14	15	15	14	15	15	15
2	15	16	15	15	15	15	17	14	16	17	20	22	23	21	20	22	16	14	14	15	14	14	14	15
3	17	18	16	22	14	15	18	14	18	18	26	33	34	29	28	20	17	16	21	15	14	15	18	15
4	15	17	18	18	14	15	14	14	15	17	22	54	50	53	56	50	15	14	14	14	15	14	26	20
5	18	15	15	15	15	15	14	14	15	20	45	56	52	52	47	44	20	27	15	14	15	15	15	15
6	15	14	15	20	15	16	16	16	17	22	29	B	29	34	26	44	21	14	15	14	14	15	15	14
7	15	15	14	15	15	15	18	15	18	23	23	28	23	26	24	20	15	14	15	16	14	15	15	15
8	14	14	15	20	15	15	16	14	35	21	22	47	28	27	23	22	20	14	14	15	15	14	14	15
9	14	15	14	14	15	14	17	15	17	20	30	30	29	26	22	17	15	14	14	15	15	16	14	15
10	15	14	14	14	15	15	14	15	17	20	27	27	27	24	23	20	18	17	15	15	15	14	17	14
11	15	15	15	14	16	15	14	14	15	21	27	28	26	35	20	21	16	14	14	14	14	14	14	14
12	17	15	15	14	15	15	15	14	16	18	20	23	38	27	24	27	18	15	14	14	14	14	15	15
13	15	15	18	16	16	17	14	14	17	24	26	26	26	27	18	17	15	14	14	15	15	14	14	14
14	15	15	15	14	15	15	15	15	16	26	29	50	52	53	27	26	18	14	15	15	15	14	14	14
15	14	14	14	14	14	14	14	14	17	20	21	27	28	28	22	18	15	14	15	15	15	14	15	15
16	15	15	15	15	15	15	15	14	15	20	44	48	56	39	48	45	16	15	14	14	15	14	15	17
17	15	15	15	14	15	14	15	15	16	22	46	46	52	47	46	21	16	14	17	14	15	14	14	15
18	14	15	14	15	15	17	15	14	16	21	27	27	51	46	40	20	16	14	14	14	15	15	15	14
19	14	14	15	14	15	15	15	14	15	20	22	22	22	24	49	27	21	16	20	15	15	15	14	14
20	14	15	15	16	17	15	15	14	15	21	20	22	27	26	22	18	15	14	14	14	14	14	14	15
21	15	15	16	16	15	14	15	14	17	18	27	27	24	22	46	44	34	15	15	15	15	15	15	14
22	14	15	16	15	14	15	15	15	14	35	48	53	47	42	47	43	18	14	14	14	16	16	15	14
23	15	17	15	14	16	17	14	14	16	24	28	91	28	27	24	20	18	14	15	16	15	14	15	15
24	15	15	14	14	15	16	17	27	18	55	21	49	52	52	24	26	21	14	14	15	15	14	15	14
25	15	15	15	15	15	15	15	14	17	43	29	53	54	50	B	46	35	15	15	14	15	14	14	14
26	16	15	15	14	15	15	15	16	17	20	37	49	53	60	23	46	17	14	14	14	14	15	15	16
27	17	16	14	16	18	66	22	15	18	21	35	26	24	27	39	20	16	15	14	14	15	15	14	15
28	15	14	14	15	15	14	15	14	16	17	22	24	26	26	23	20	14	14	14	14	15	15	14	14
29	14	14	14	15	14	16	15	14	17	20	21	48	49	15	17	18	18	14	16	15	15	15	15	16
30	21	15	15	14	15	17	14	14	16	20	22	39	44	53	36	22	18	14	16	15	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	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	15	15	14	16	20	26	30	29	28	24	22	17	14	14	15	15	14	15	15
U Q	15	15	15	16	15	16	16	15	17	22	29	49	51	47	43	43	18	15	15	15	15	15	15	15
L Q	14	15	14	14	15	15	14	14	15	20	22	26	26	26	22	20	16	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

SEP. 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	A	A	A	A	A	A	44	77	78	77	77	80	82	113	119	118	131	146	145	130	87	80	83	48
2		82		86	22	44	61	78	66	66	67			101	104	110	110	119	125	129		A	34	A
3	A			34		32		70	76	83			81	69	107	125	128	110	117	103	86	70		59
4	67	44			35	44	43	67	92	87	72	88	102	102	105	103	111	107	113	88	85	67	44	
5	44			39	44	43	47	67	85	78	82	80	94			76	78	81	88	89	76		34	
6			34					67	93	C	C	C	C	C	C	C	C	C	84	A				A
7	A							70		C	C	C	C	C	C	C	C	86	88	88	54	32	41	
8	52	45	44			30	42	70	80	72	66	66	A	80	98	102	79	88	106	107	76	A	A	A
9	A	46	45	A	29	31	42	72	92	75	67	84	118	118	108	102	100	106	102	88	76	A		
10			34	A	A	32		79	67	58	72	96	88		118	N	90	110	102	86	74	53	44	44
11	47	A	A	A	34		44	67	76	73	87	88	124	131	132	126	126	131	146	129	128	78	74	
12	53	52			34		38	72	76	78	86	87	105	111	118	108	123	123	121	108	83	60		
13	N				N	42	47	64	74	86	88	87	110	121	79	108	110	123	126	108	A	A	A	A
14	A	A		43	N		44	82	92	71	76	90	104	108	120	108	109	138	145	108	53			52
15			48	A	43			76	92	85	82	100	108	107	109	107	106	106	121	107	86		51	
16		52	52	47	41	30	41	76	97	94	82	85	107	108	117	108	108	110	102	87	83	53	44	53
17	53	53	54	51			47	75	87	85	88	120	132	148	143	141	131	132	127	108	86	74	69	76
18	69		34	53	44		41	100	86	88	131	144	145	148		137	151	147	140	107	87	84	83	80
19	75	67	66	67	50	36	42	92	105	82	89	102	86	N	126	126	117	115	113	88	74	54	53	58
20	53	53	53	50	43	36	43	77	90	96	84	85	113	119	130	N	139	147	124	131	100	A	71	76
21				50	44	42	47	77	87	88	94	A	101	110	118	105	116	118	108	107	109	82	74	
22	53	53		58	59		A	78	81	88	98	87	104	110	121	117	121	126	126	108	78	74	53	52
23				54				88	116	81	76	100	128	128	124	117	130	134	117	88	85	73	74	79
24	72	79	81	65				77	87	88	87		107	118	130	131	146	145	125	106		82		
25	52	53	67	51			38	88	85	101	86	90	87	108		118	120	130	112	74	67	60	69	54
26	52	80	85	84	45	42	47	92	92	84	87	90	118		108	108	115	127	107	72	83	67		45
27	48		52						65	63	77	128	109	107	120	124	118	108	88	A	A	A	A	
28		A	53	60	38		36	78	91	100	100	120	142	144	144	147	152	139	131	108	N	64	73	A
29	54		48	23			N	84	88	92	107	127	144	144	152	145	145	128	107	84	83	67	46	
30				34			34	80	83	87	120	108	127	140	140	131	130	121	105	78	63			52
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	15	13	16	18	15	13	20	29	29	28	27	24	26	24	25	26	28	29	30	28	24	19	19	14
MED	53	53	52	51	43	36	43	77	87	84	86	90	108	112	119	117	119	123	115	106	83	67	53	54
U Q	67	73	60	60	44	42	47	81	92	88	89	105	124	129	130	126	130	133	126	108	86	78	74	76
L Q	52	49	44	43	34	31	41	70	77	76	76	86	101	107	108	108	109	109	105	88	75	60	44	52

HOURLY VALUES OF fEs AT Okinawa

SEP. 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	70	50	59	66	84	45	G	G	48	48	48	G	G	G	G	G	G	G	32	G	G	G	G	G
2		G		G	G	G	G	G	39	G	G			G	48	G	G	36	35	G		41	32	36
3	32			G	G	G	G	G	44	60	G		84	64	60	G	G	36	G	33	G	G	G	G
4	G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	28	G	32	G	
5	G			G	G	G	G	G	G	G	G	G	G			G	G	G	34	34	G	G	G	G
6			G					32	G	C	C	C	C	C	C	C	C	C	81	60				50
7	66							42	G	C	C	C	C	C	C	C	C	36	53	26	28	26	G	
8	G	G	G		G	G	G	G	49	G	G	56	63	70	62	48	52	72	41	35	35	54	69	71
9	49	50	G	49	G	G	G	33	G	52	G	G	G	G	G	G	G	50	58	60	40	38	G	
10		G	G	34	26	G		36	46	50	G	48	G		G	G	G	G	G	G	G	G	G	28
11	G	67	36	36	28		28	34	36	48	51	48	50	50	G	G	G	G	34	31	56	34	G	
12	G	G	G	G	G		G	37	48	56	69	G	G	G	G	G	G	G	G	G	G	G		
13	G	G		G	G	G	G	G	48	51	G	63	48	47	54	46	G	45	35	68	50	50	60	37
14	37	48		G	G		G	G	G	G	G	G	G	G	G	G	G	53	33	50	G			G
15	G		G	49	29			51	49	G	G	G	G	G	G	G	G	44	38	G	G	G	26	
16		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	40	G	G	G	G	G
17	G	G	G	G		G	G	34	48	G	66	G	G	G	G	G	G	G	G	27	G	G	G	25
18	25		G	G	G		G	34	50	67	66	56	G	G		G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	67	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	G	G	G	G	83	71	G	G	G	G	43	36	45	44	49	37	G
21	G	G	G	G	G	G	G	G	G	G	G	75	49	57	G	G	G	G	34	G	G	G	G	G
22	G	G		G	G		28	G	G	G	G	G	G	G	G	G	44	52	50	59	26	G	24	G
23		G		G				G	G	G	G	G	G	G	G	G	G	45	40	39	G	G	G	G
24	G	G	G	G				30	G	G	G		G	G	G	G	52	52	46	29		26		
25	G	G	G	G			G	G	G	G	G	G	G	G		G	G	G	26	27	G	47	28	G
26	G	G	G	G	G	G	G	G	G	40	G	G	G		G	G	G	G	G	G	40	50		G
27	27		G		G			G	G	G	G	G	G	G	G	G	G	40	67	82	114	59	69	
28		35	39	G	G		25	G	37	39	51	G	48	G	52	G	49	35	54	38	G	G	48	32
29	28	G	G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	
30			G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	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	23	22	21	25	22	15	23	30	30	28	28	25	27	25	25	28	28	29	30	30	27	27	25	21
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	28	G	G	G	G
U Q	28	G	G	G	G	G	G	33	46	48	G	48	48	G	G	G	G	44	41	39	35	41	30	30
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 Okinawa

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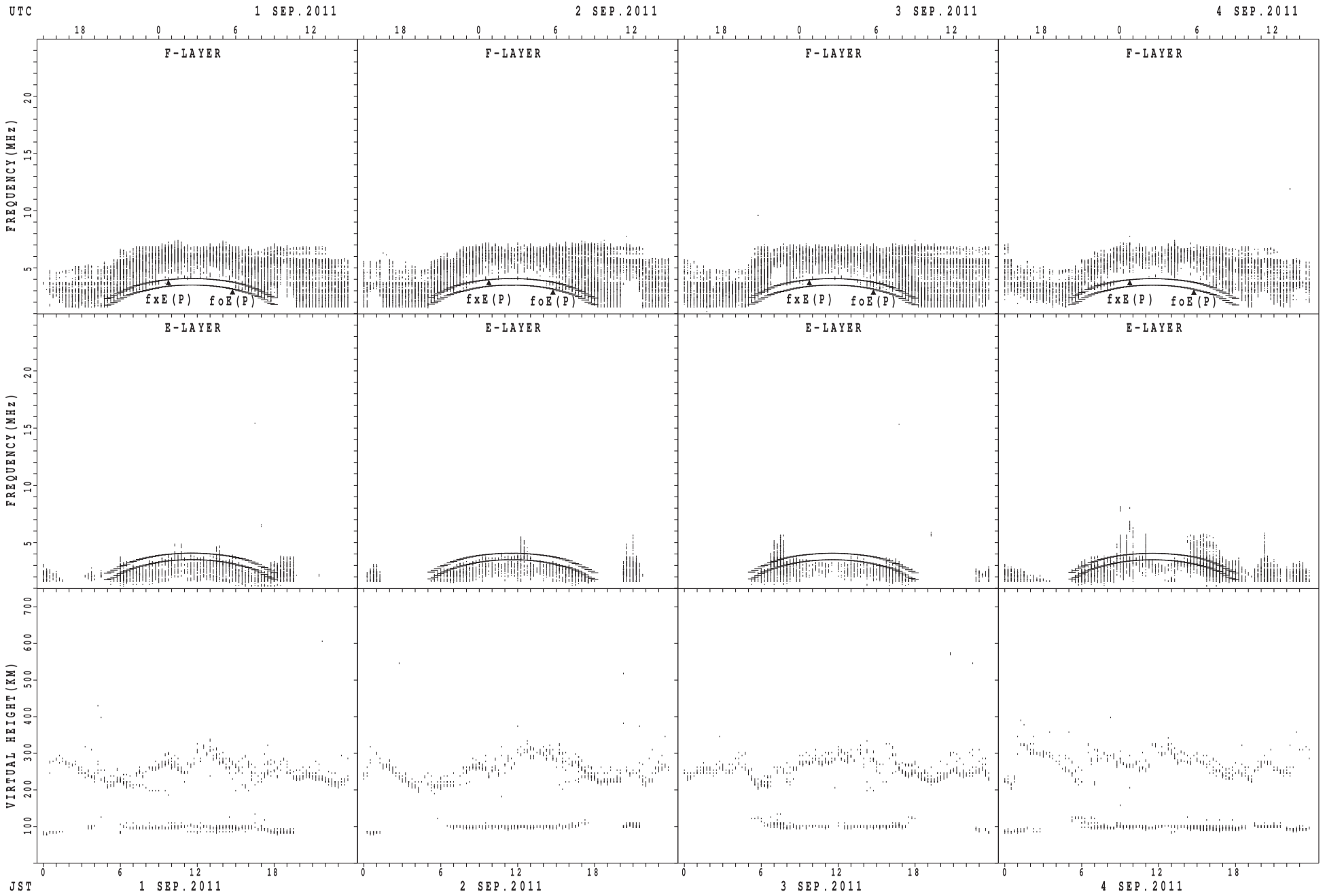
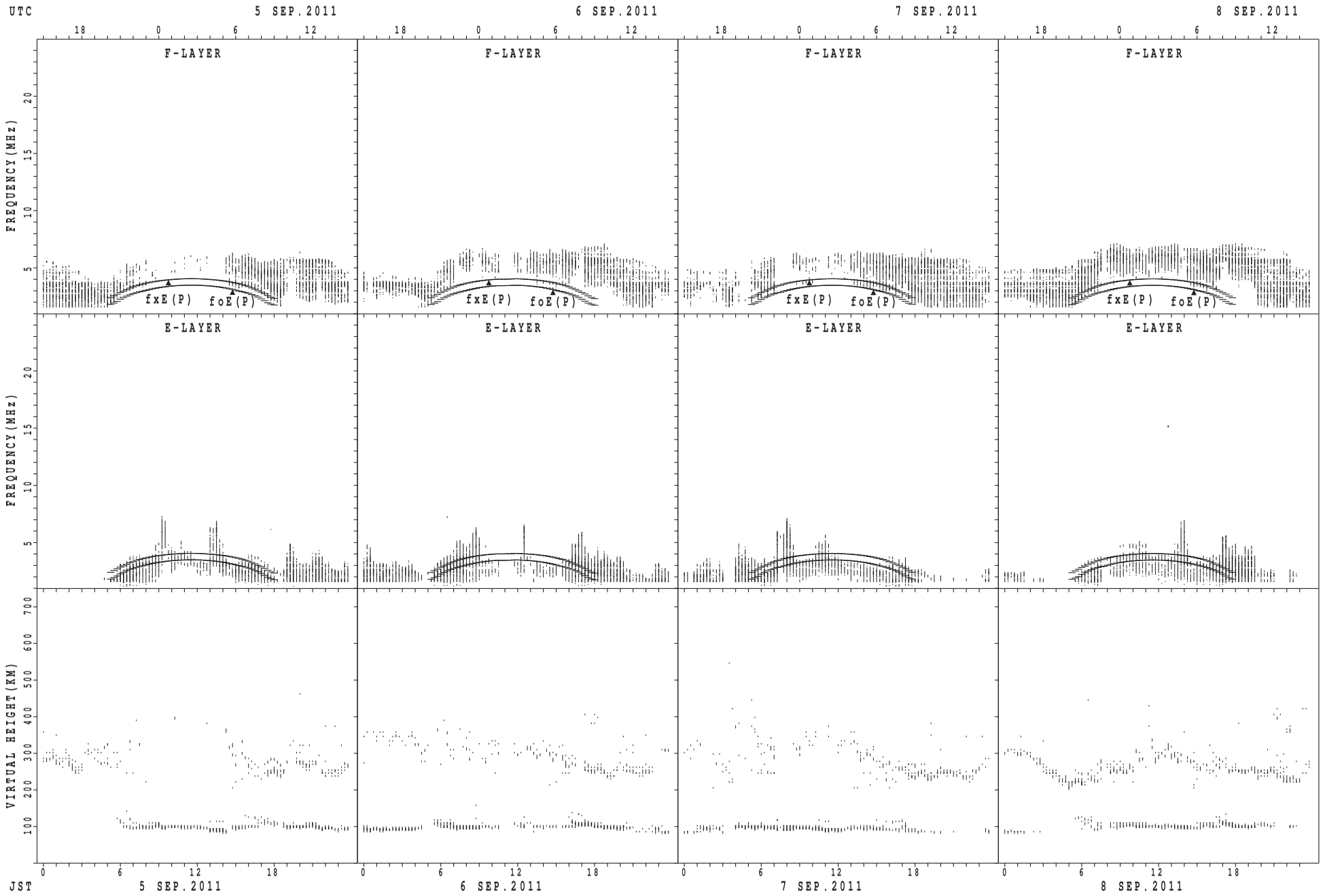
30			27	28			18	27	35	42	45	52	59	60	56	51	40	29	21	18	15		22	20
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	22	21	25	22	15	23	30	30	28	28	25	27	25	25	28	28	29	30	30	27	27	25	21
MED	20	20	21	20	18	21	18	21	31	42	51	56	55	55	54	53	44	29	18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

SUMMARY PLOTS AT Wakkanai



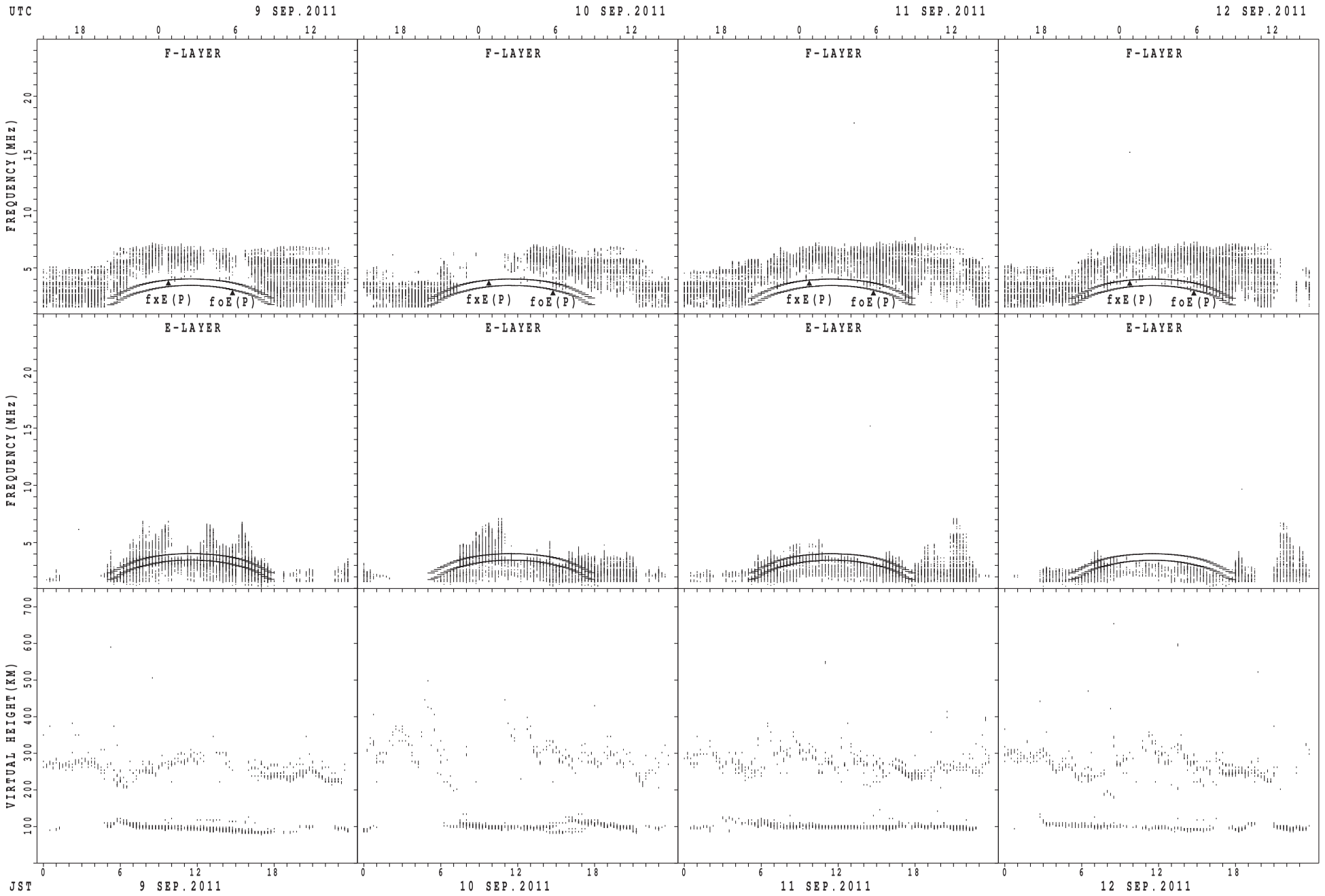
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



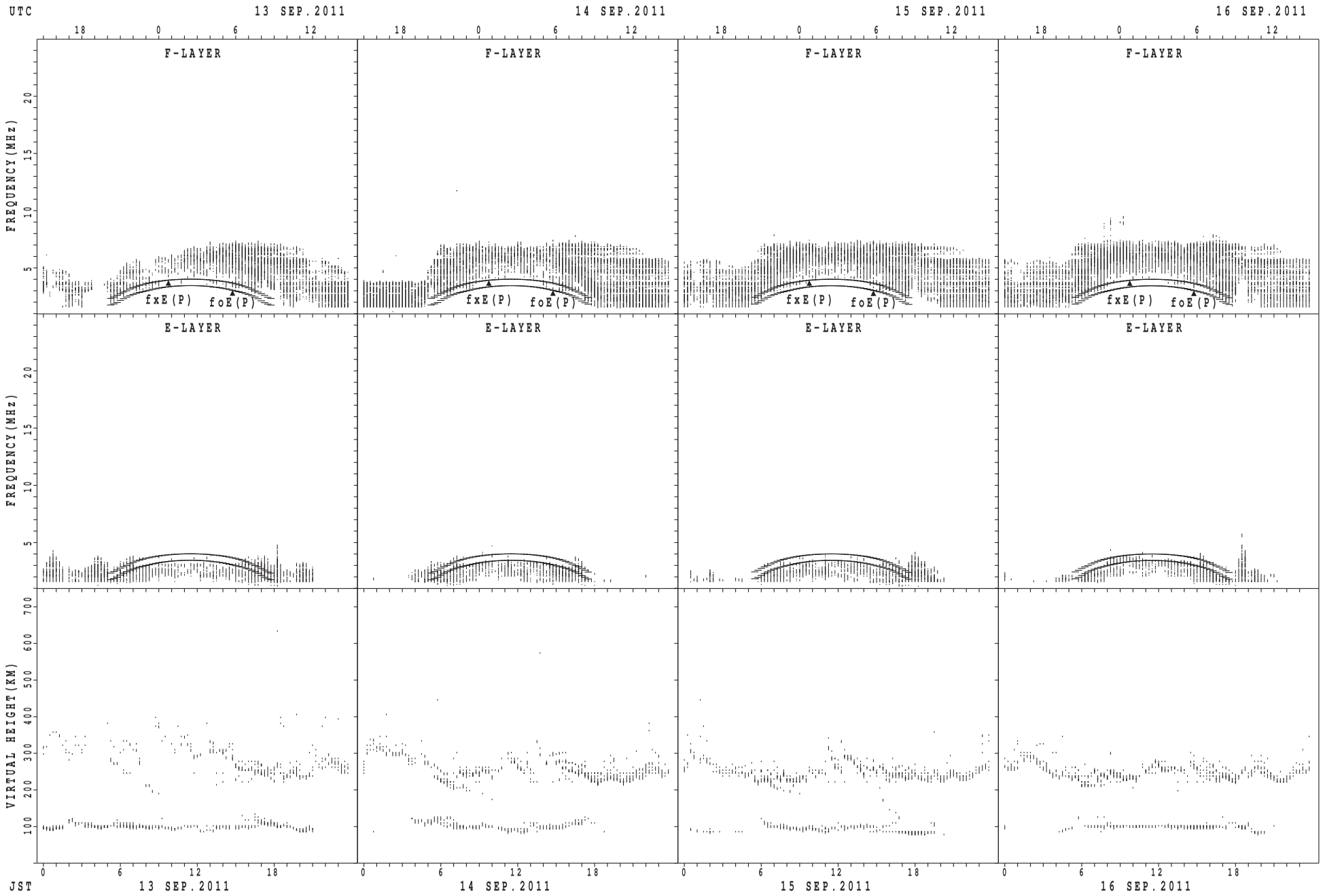
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



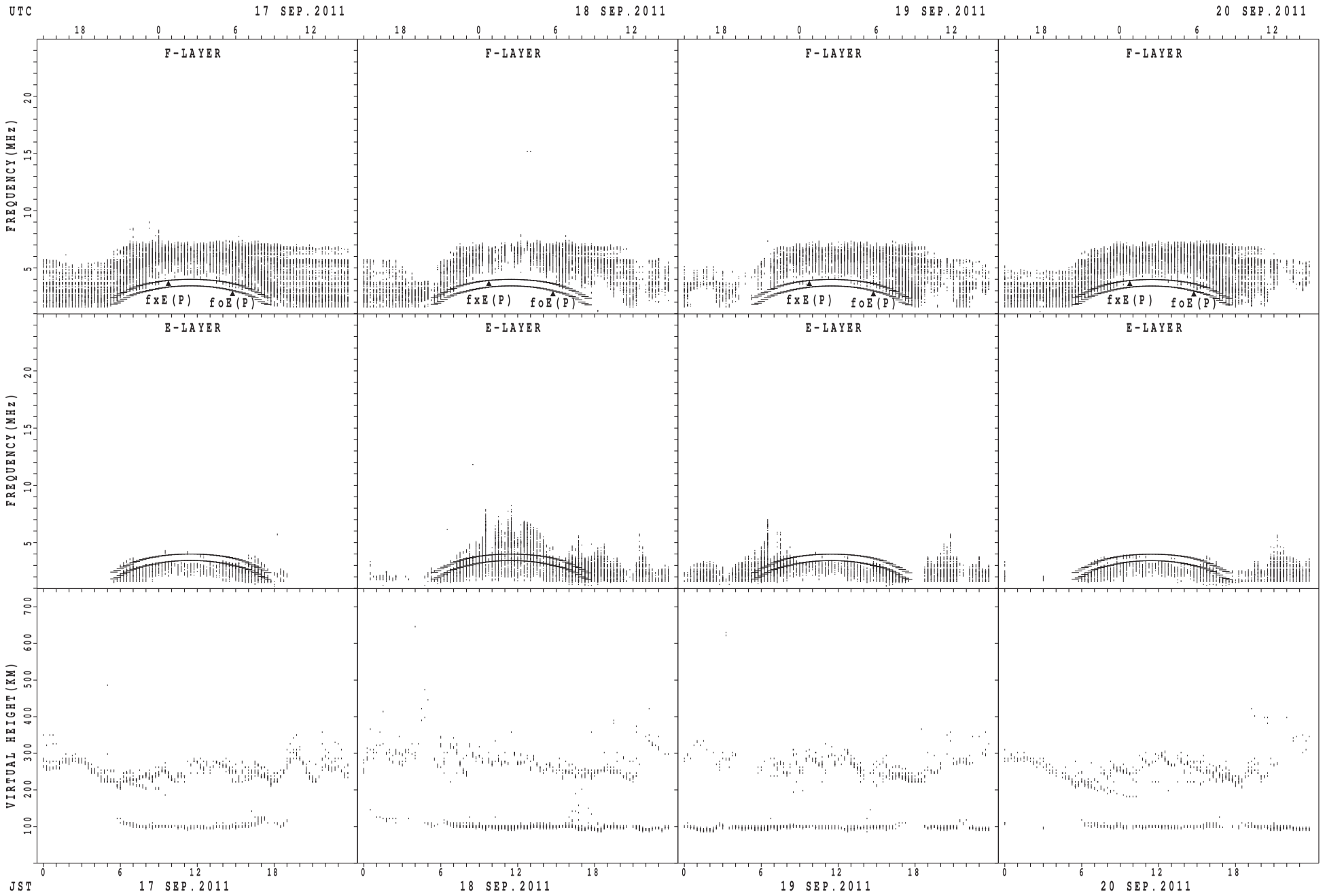
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



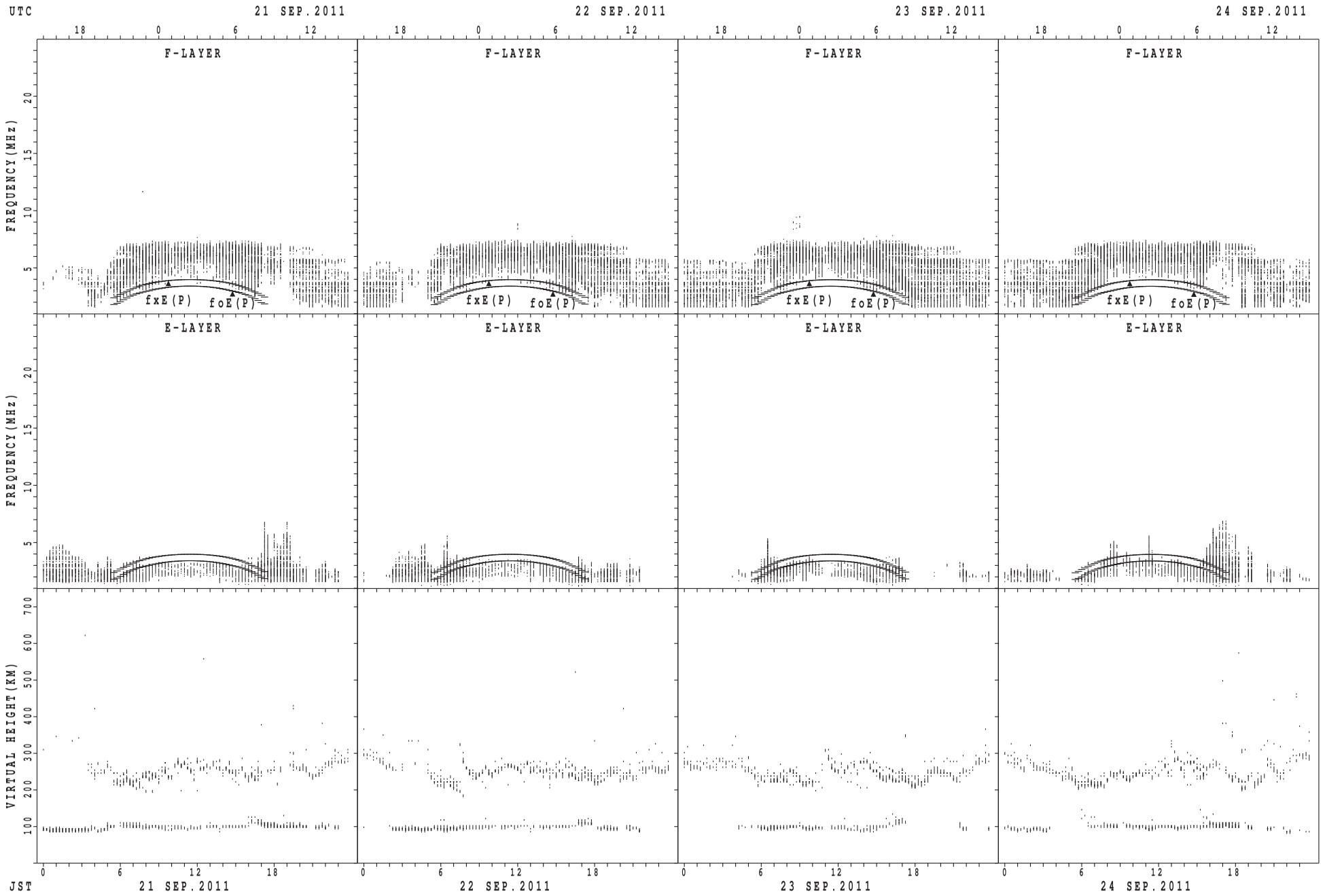
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



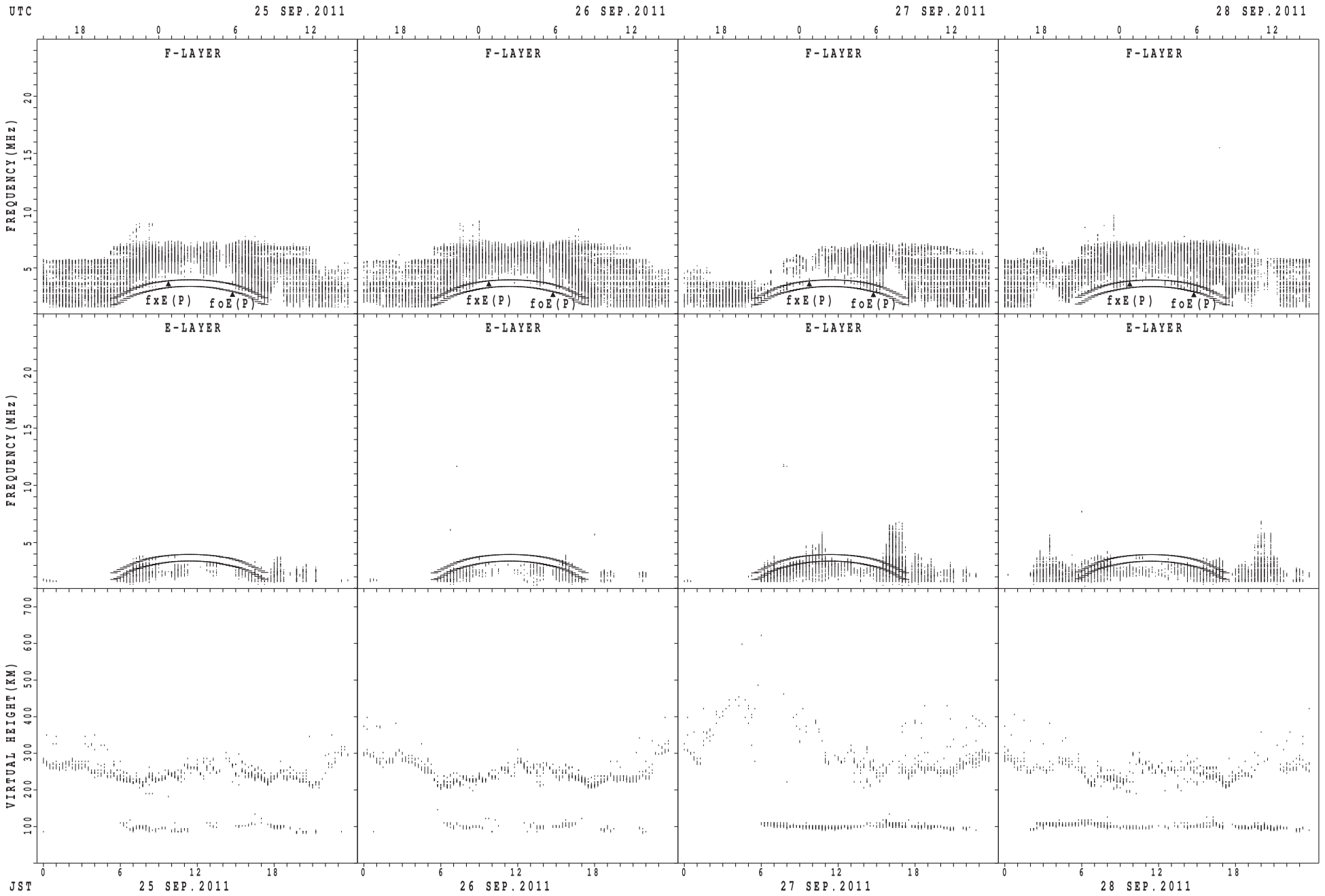
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



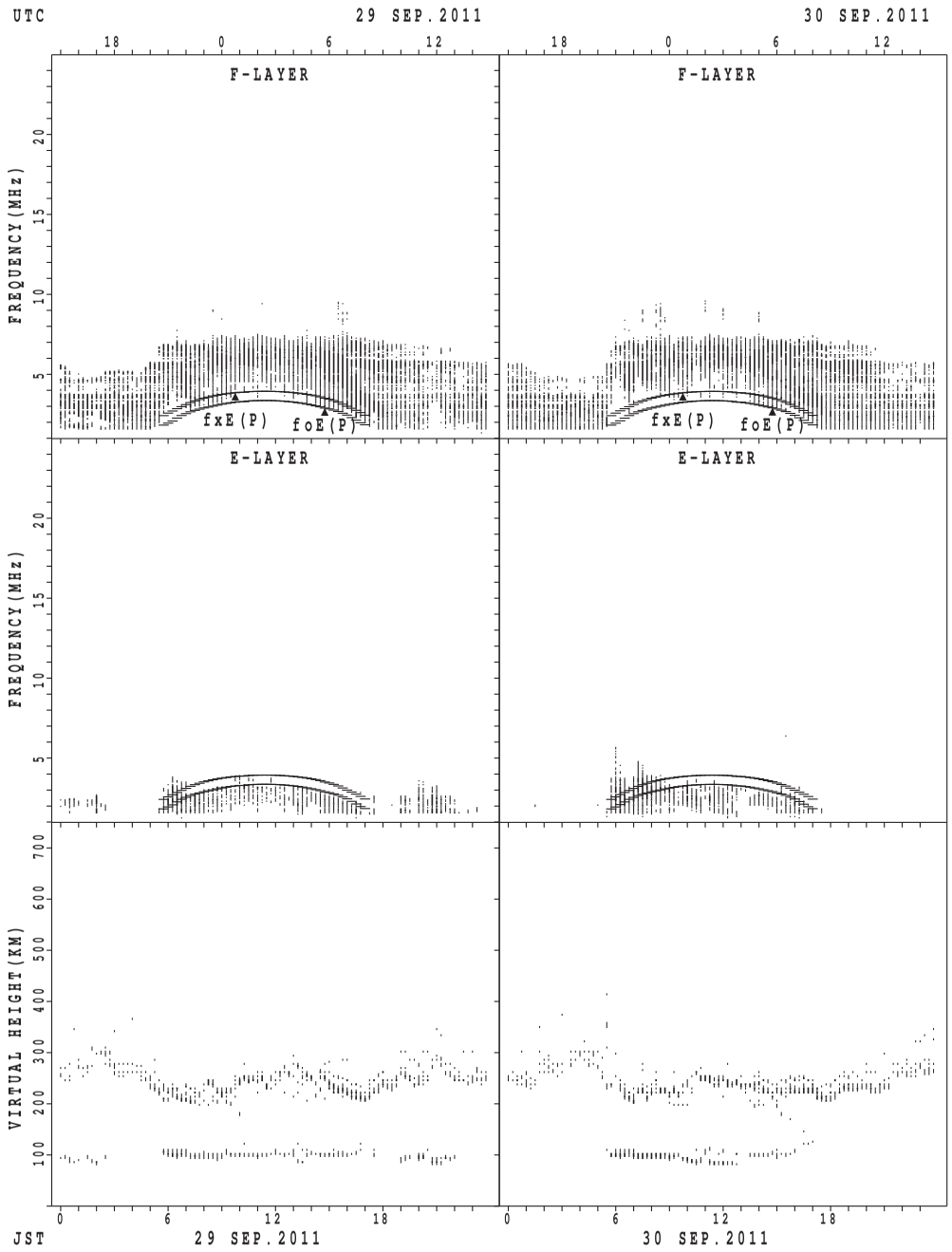
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



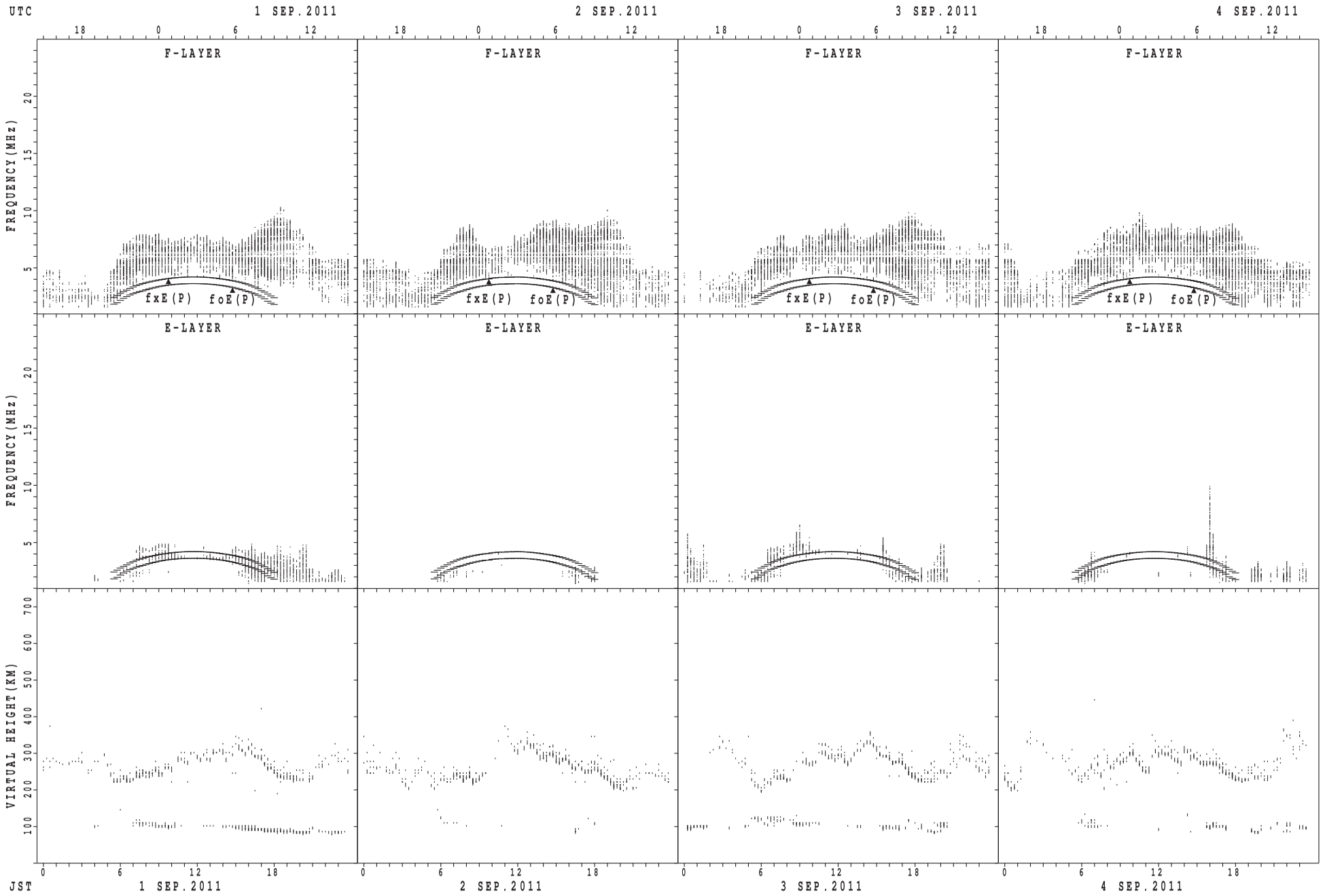
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



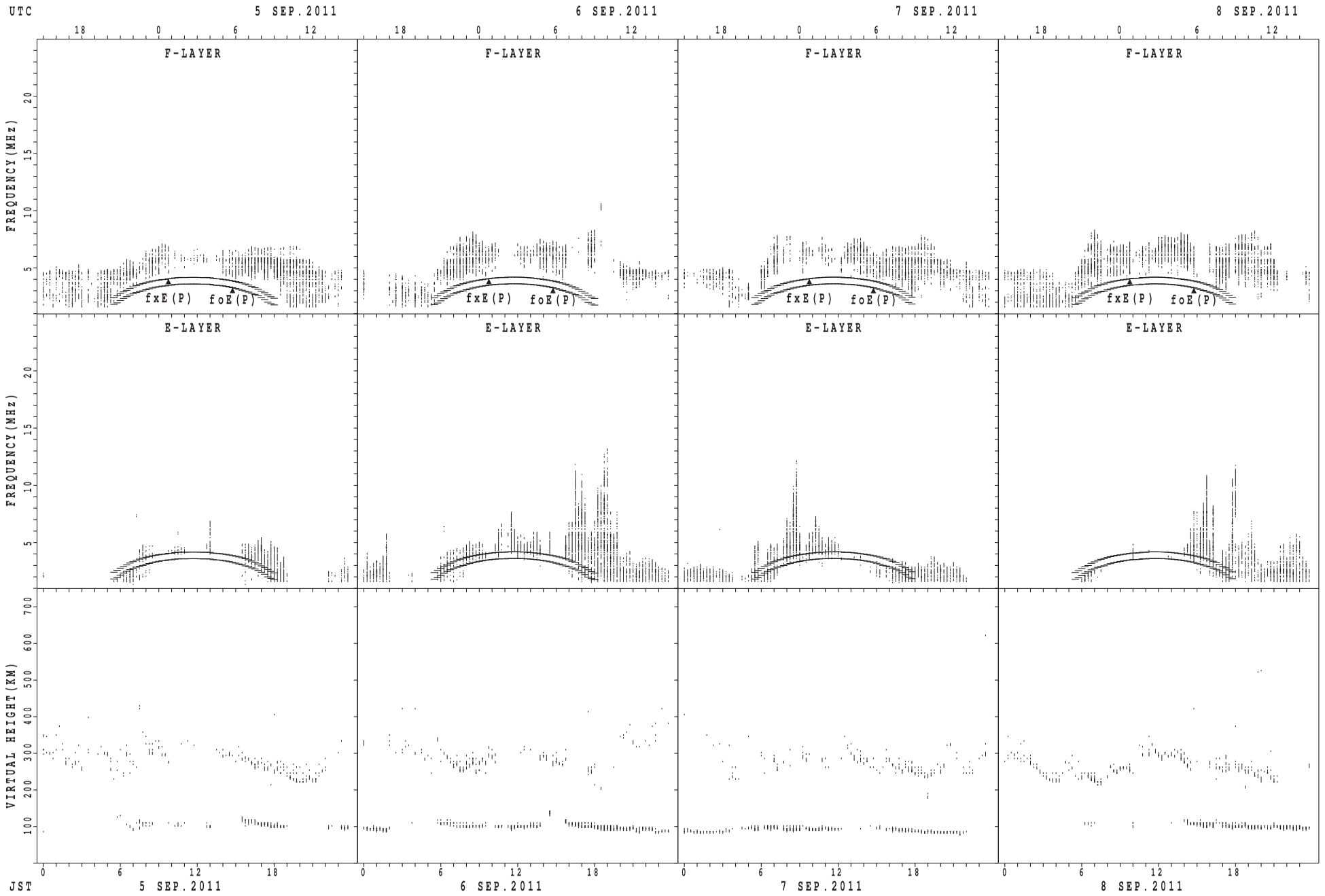
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



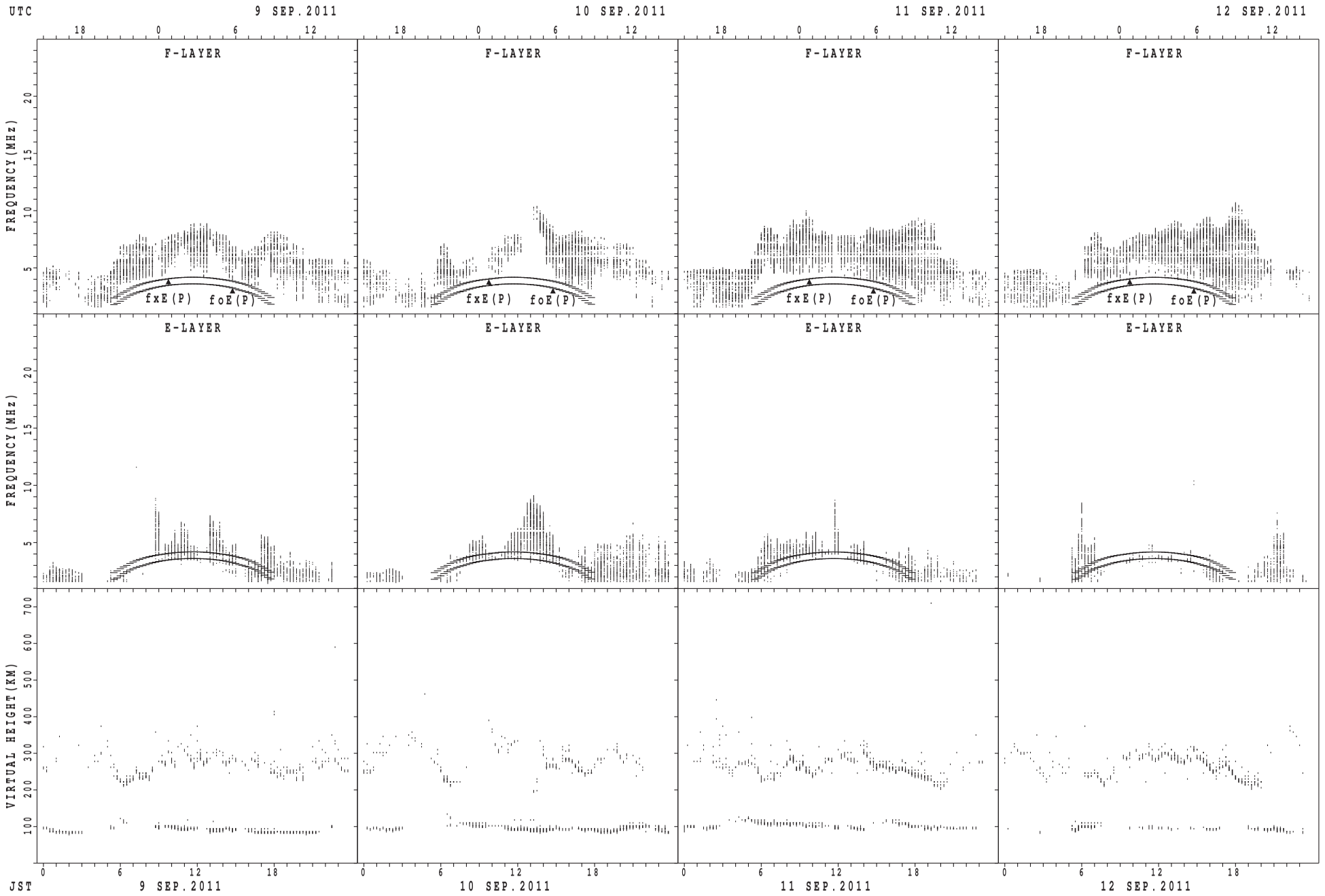
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



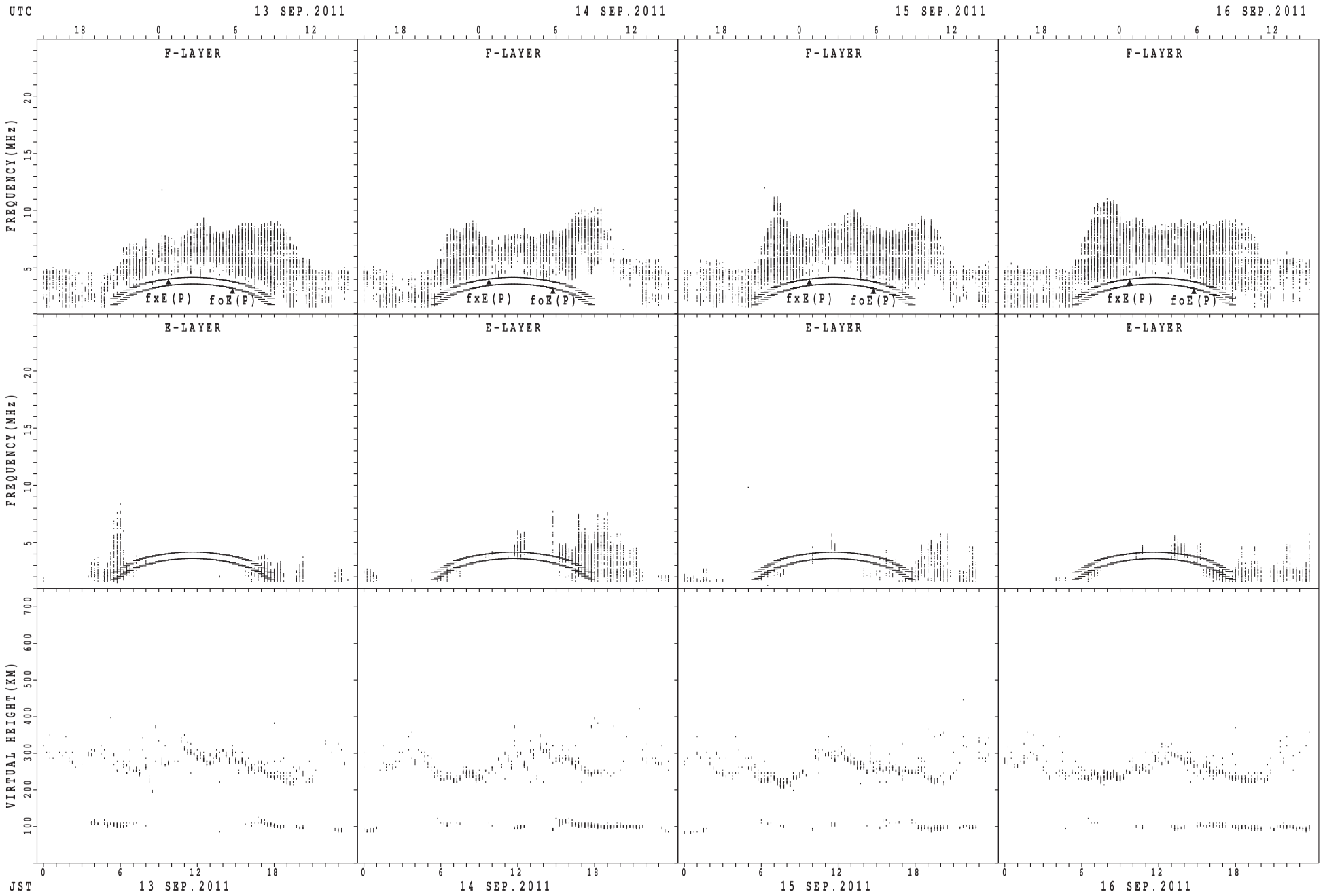
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



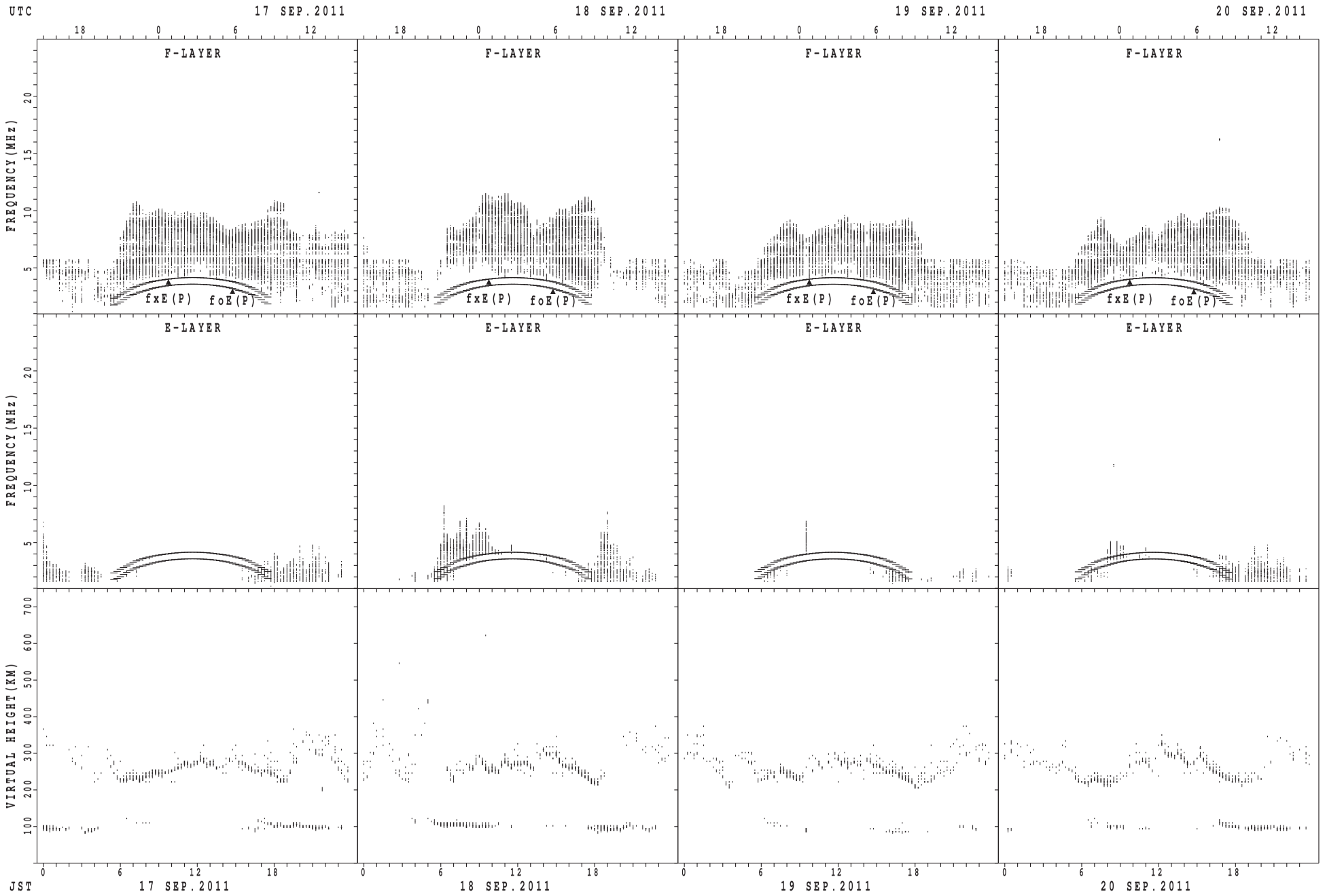
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



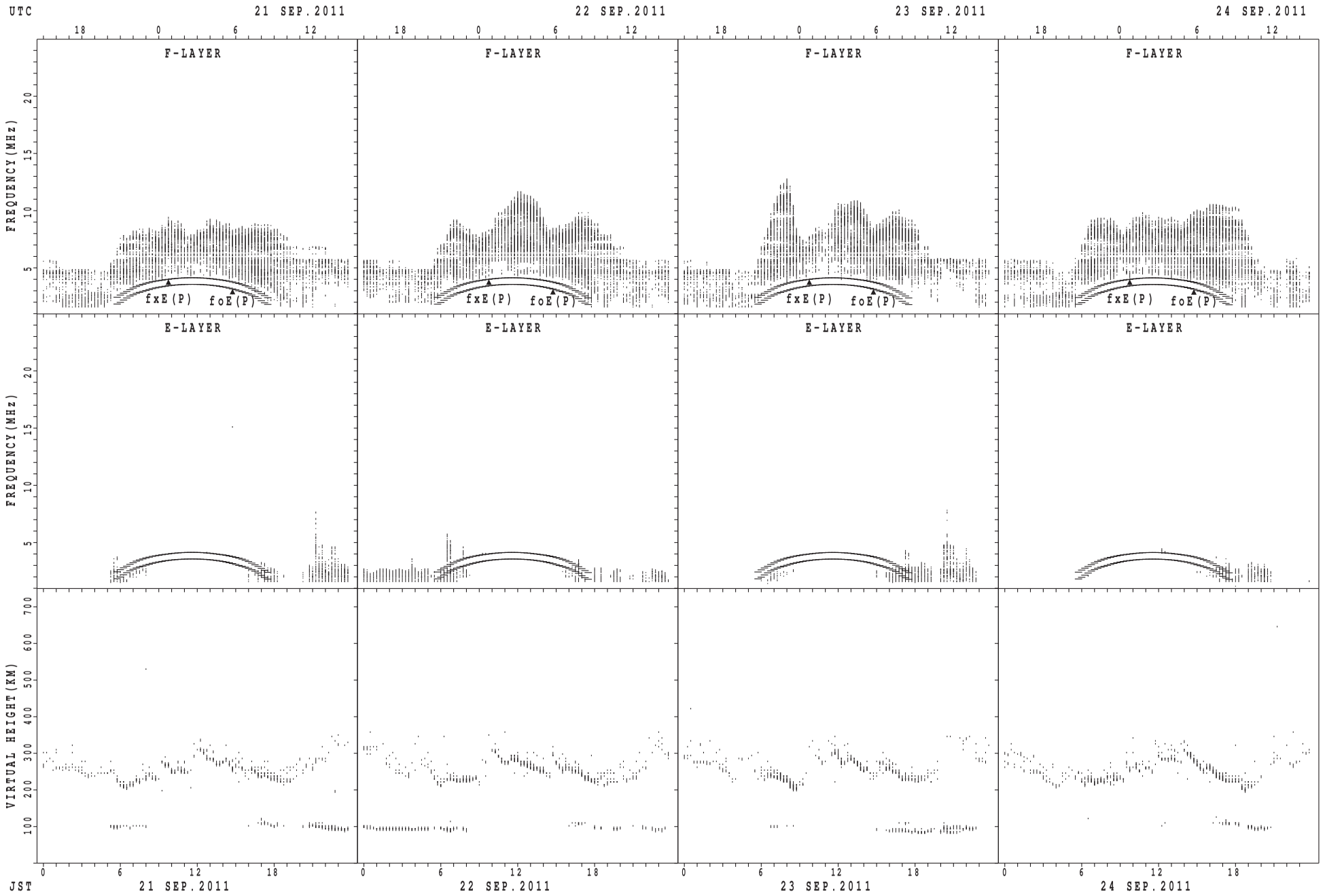
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



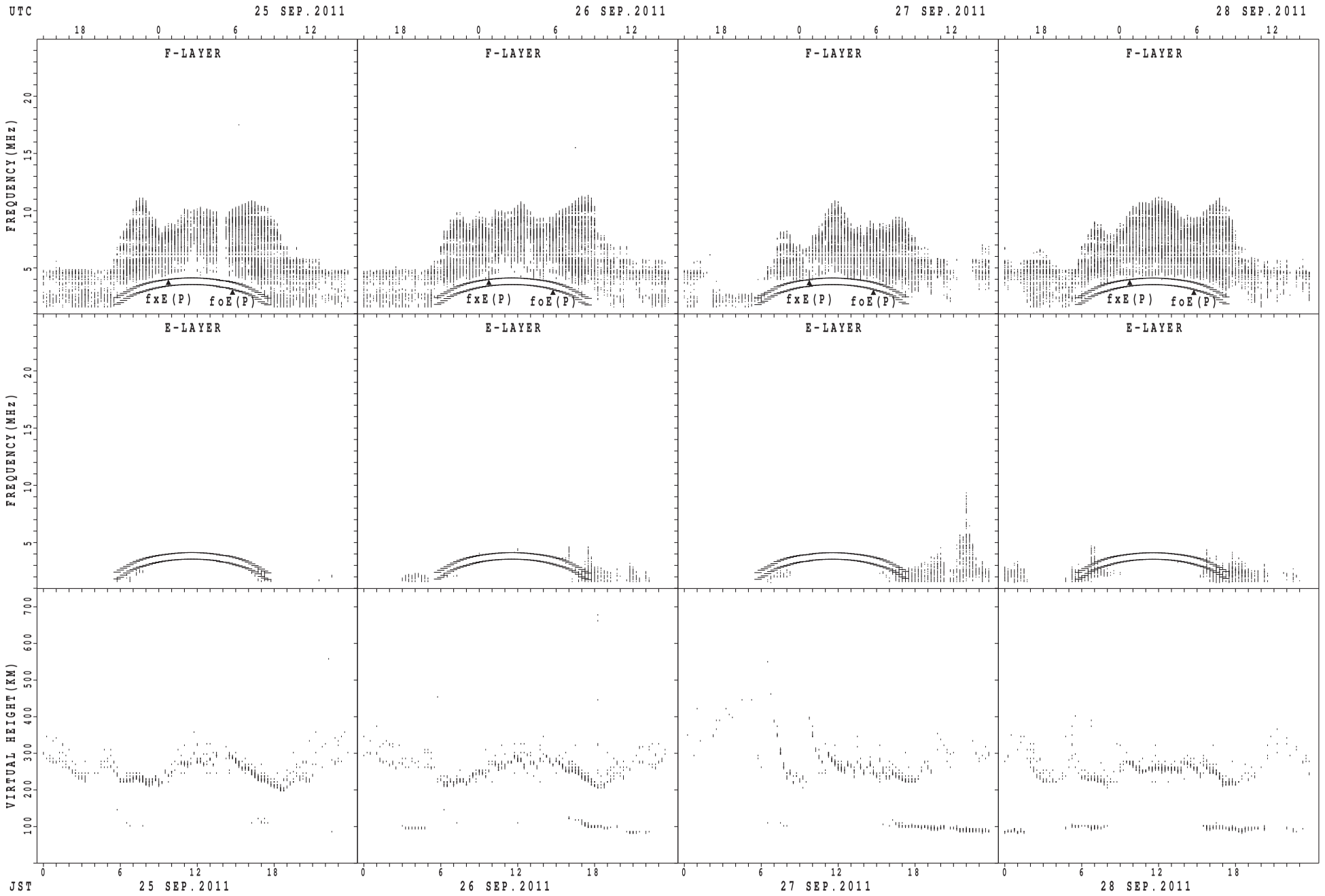
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



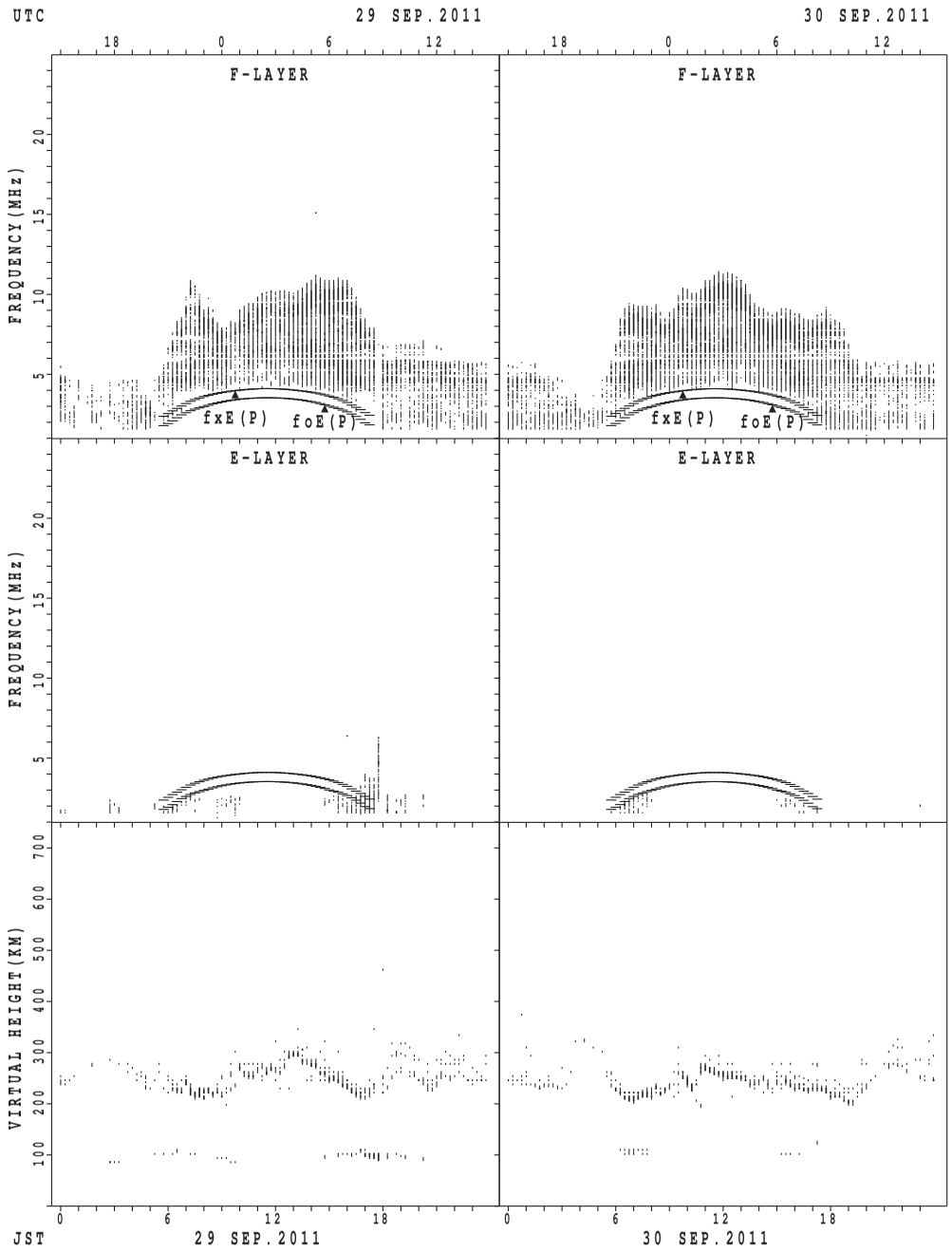
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



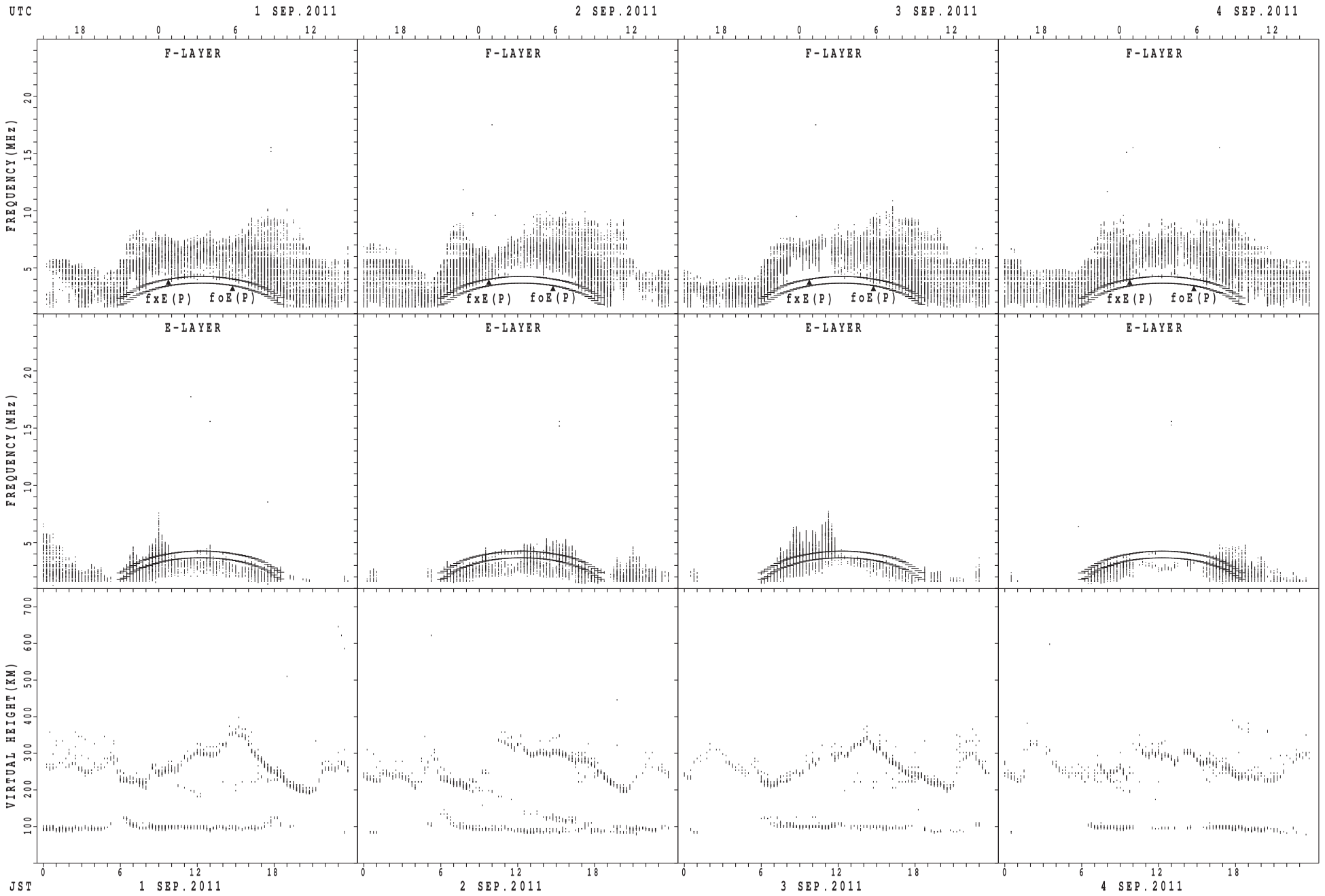
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



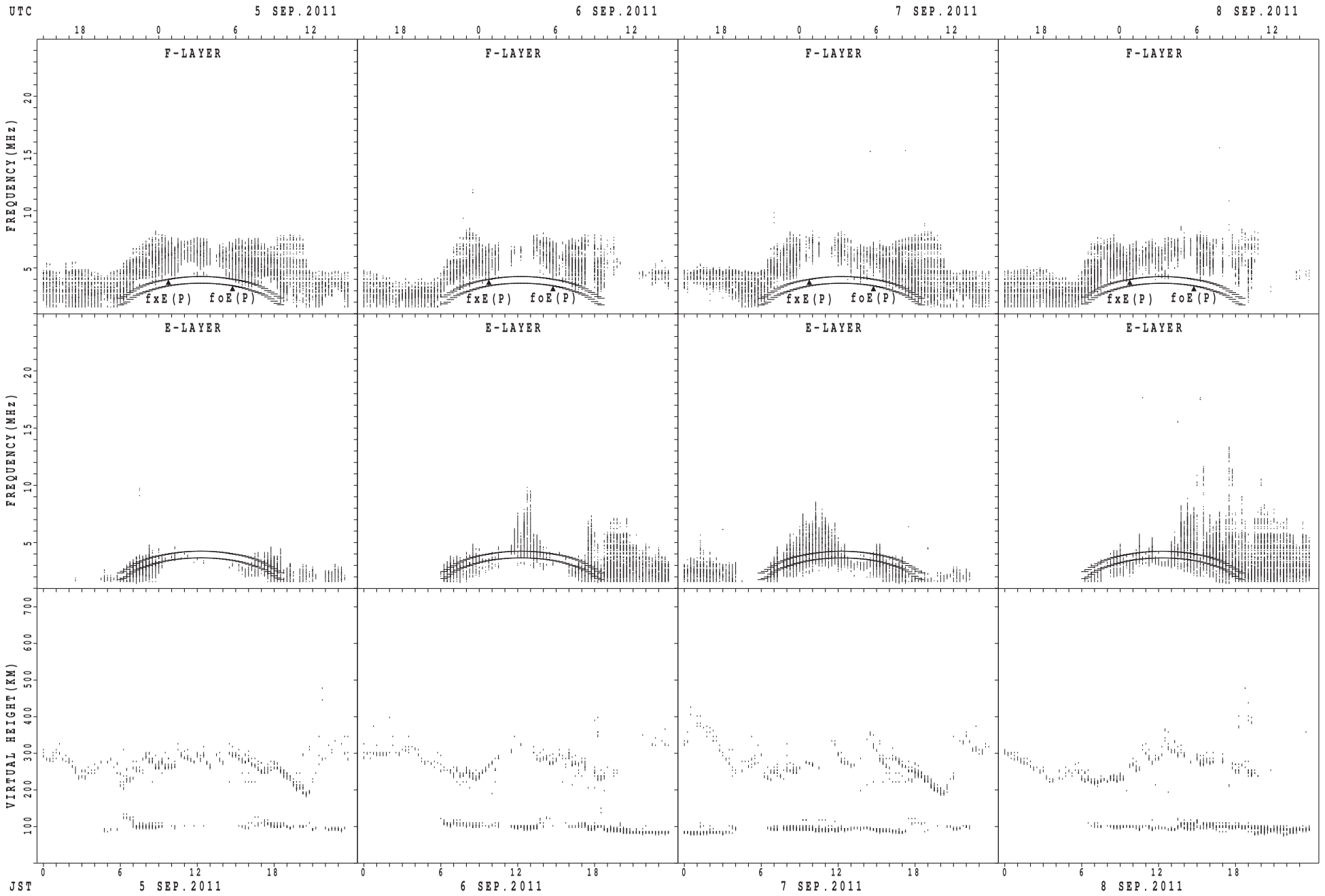
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



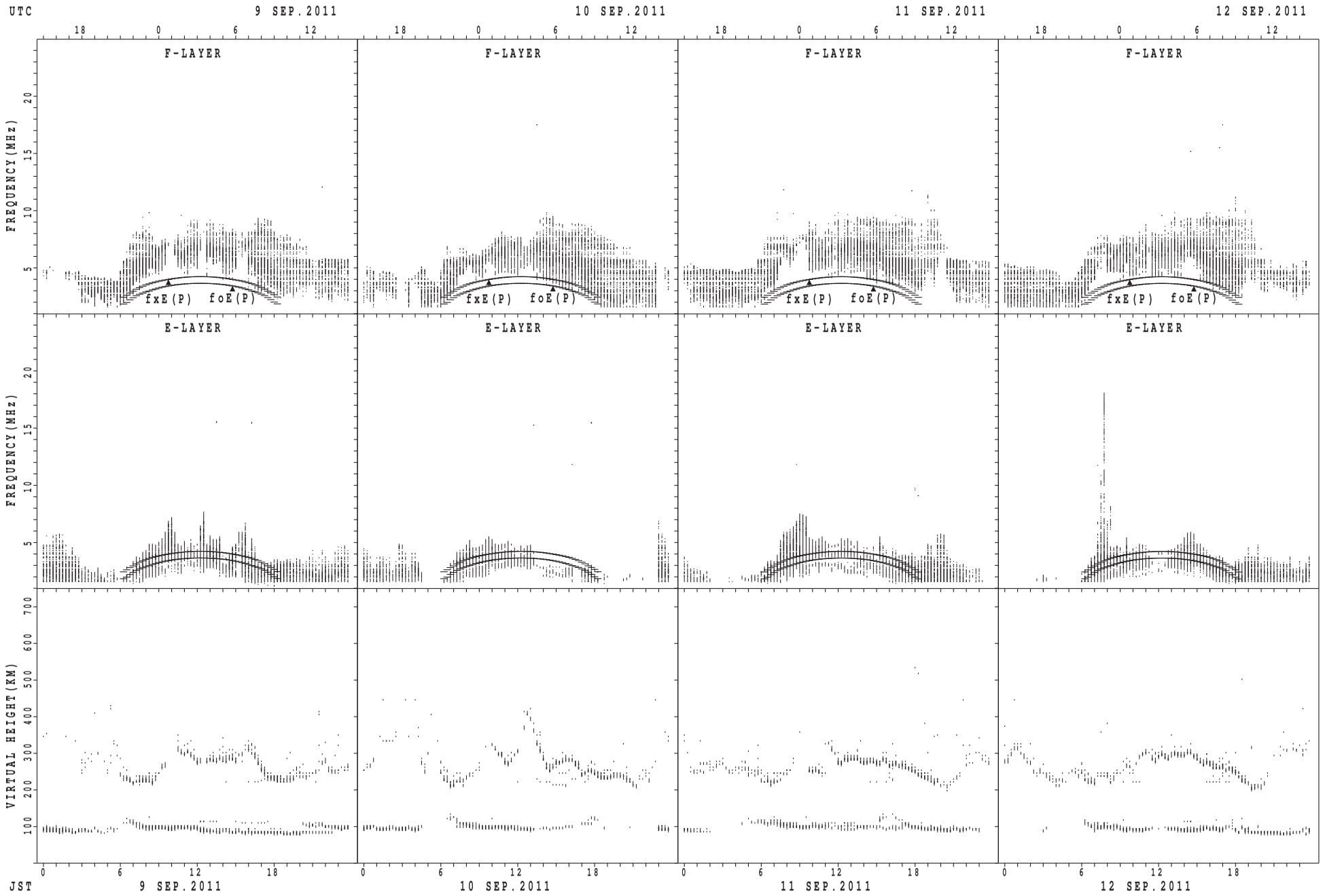
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



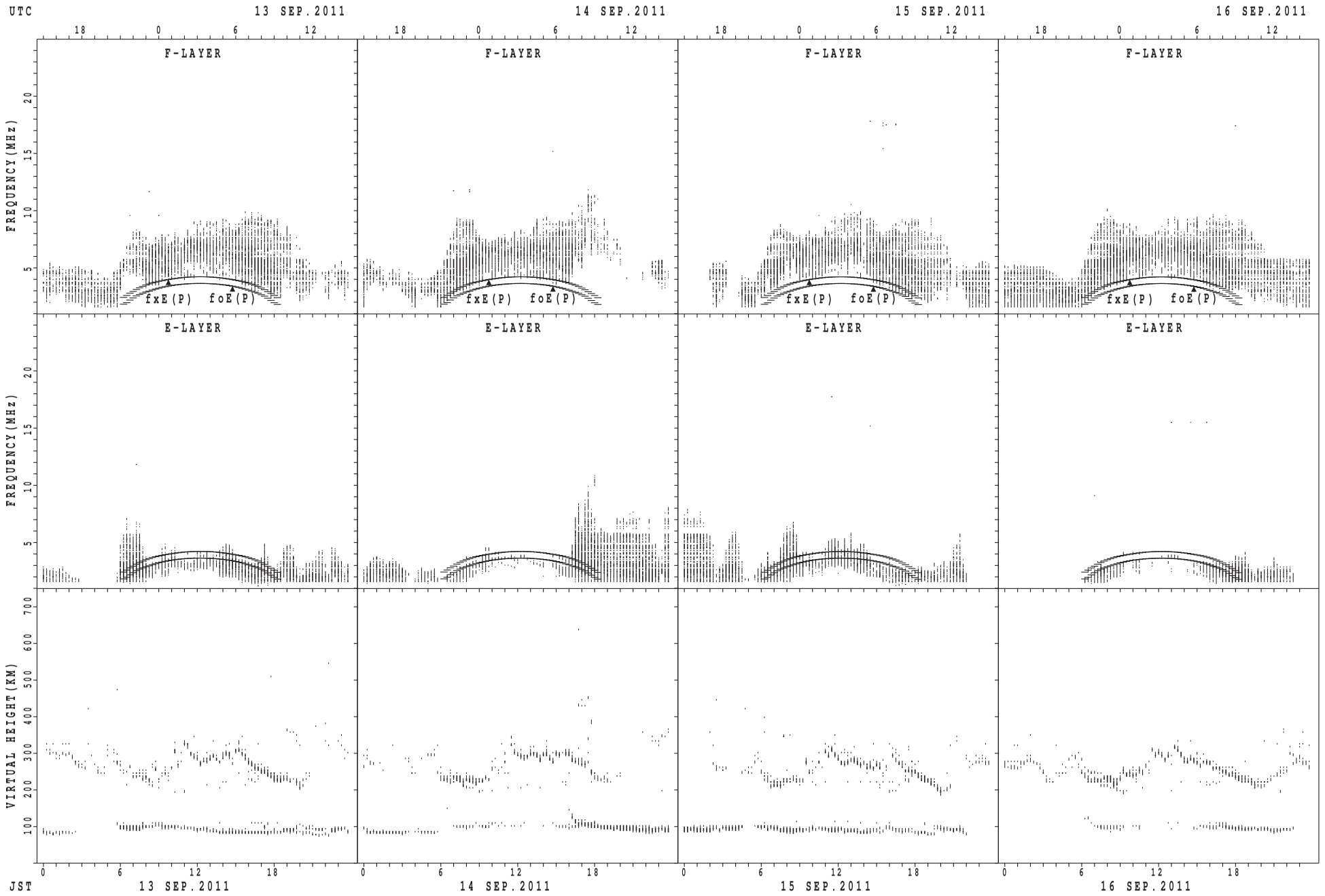
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



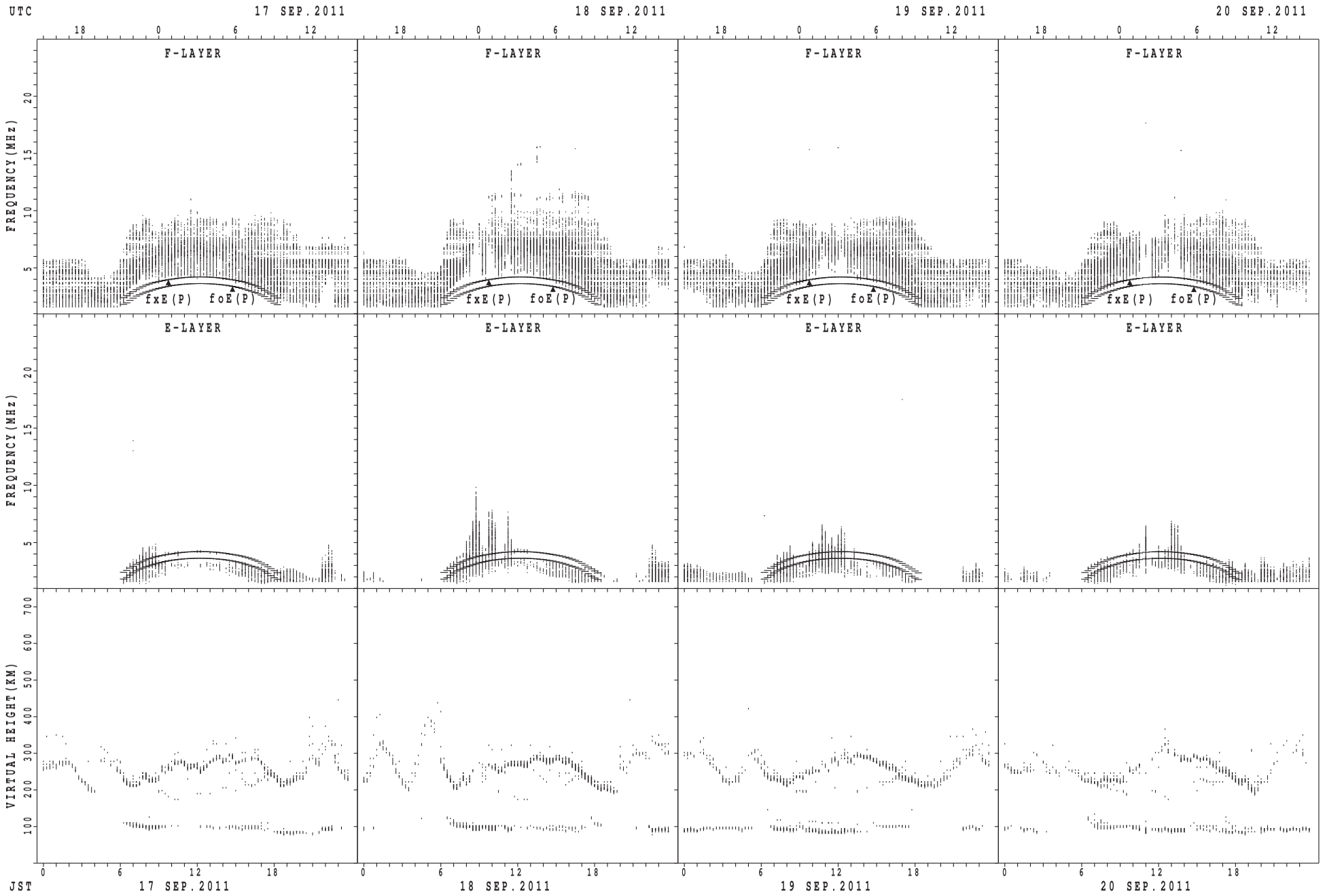
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



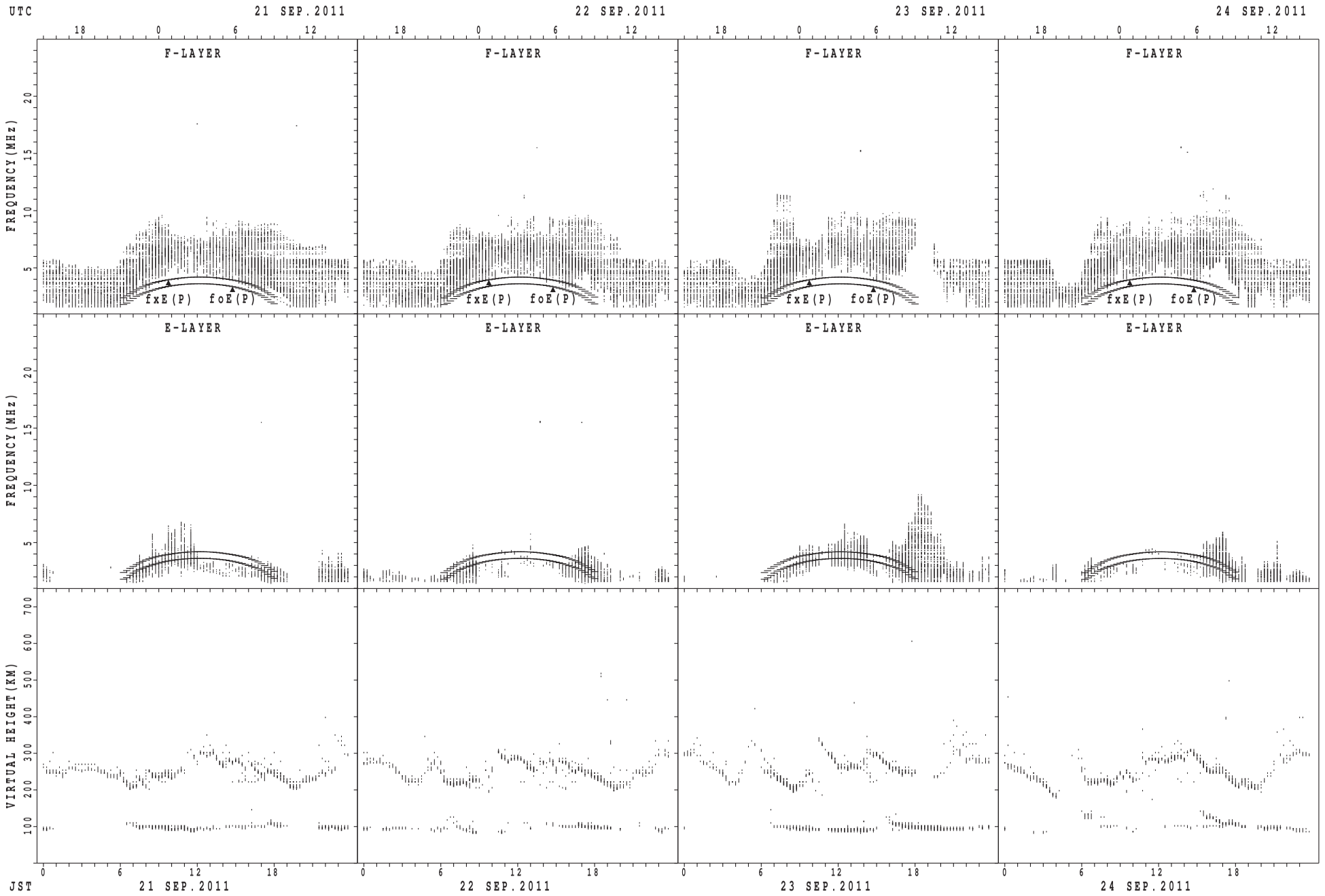
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



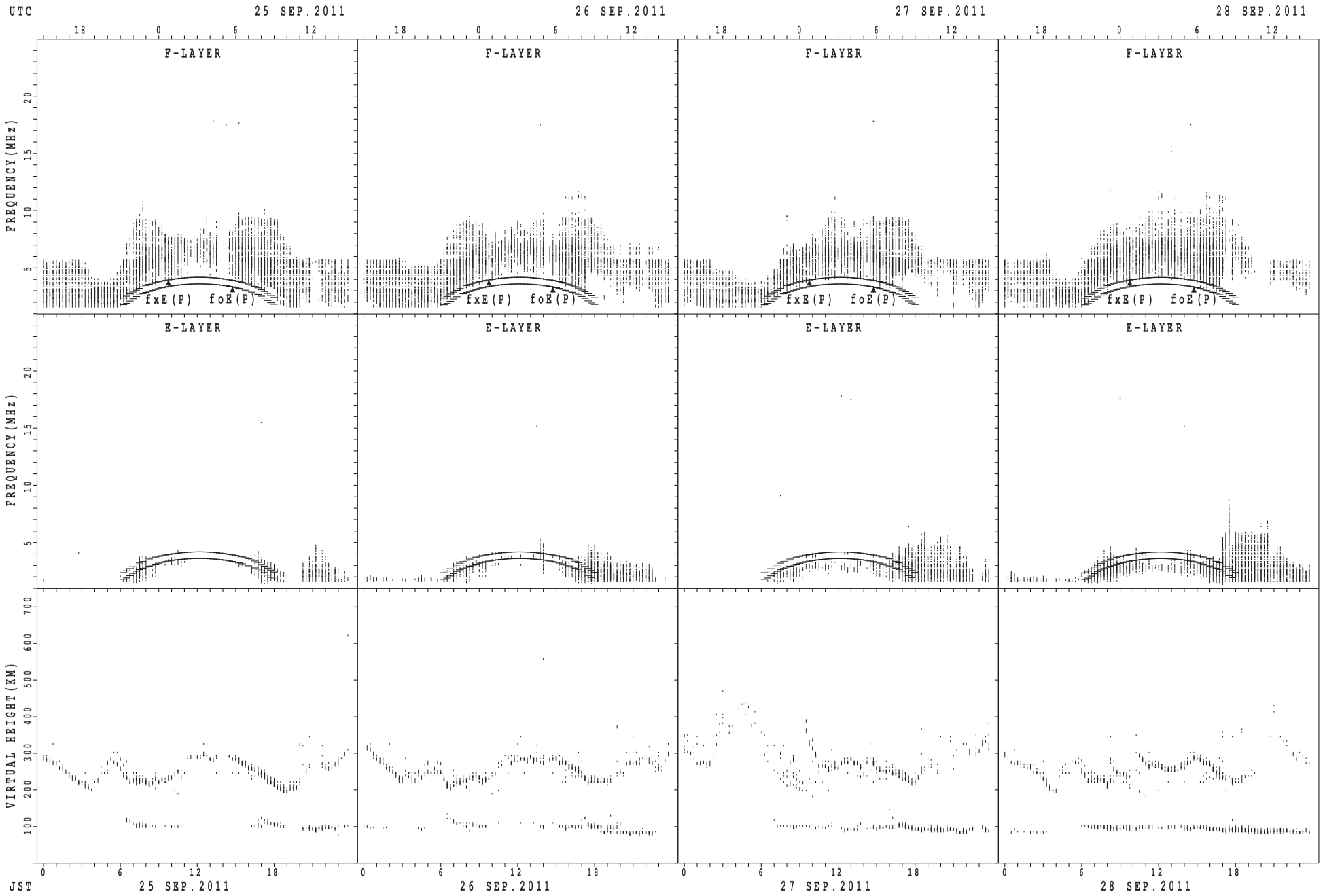
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



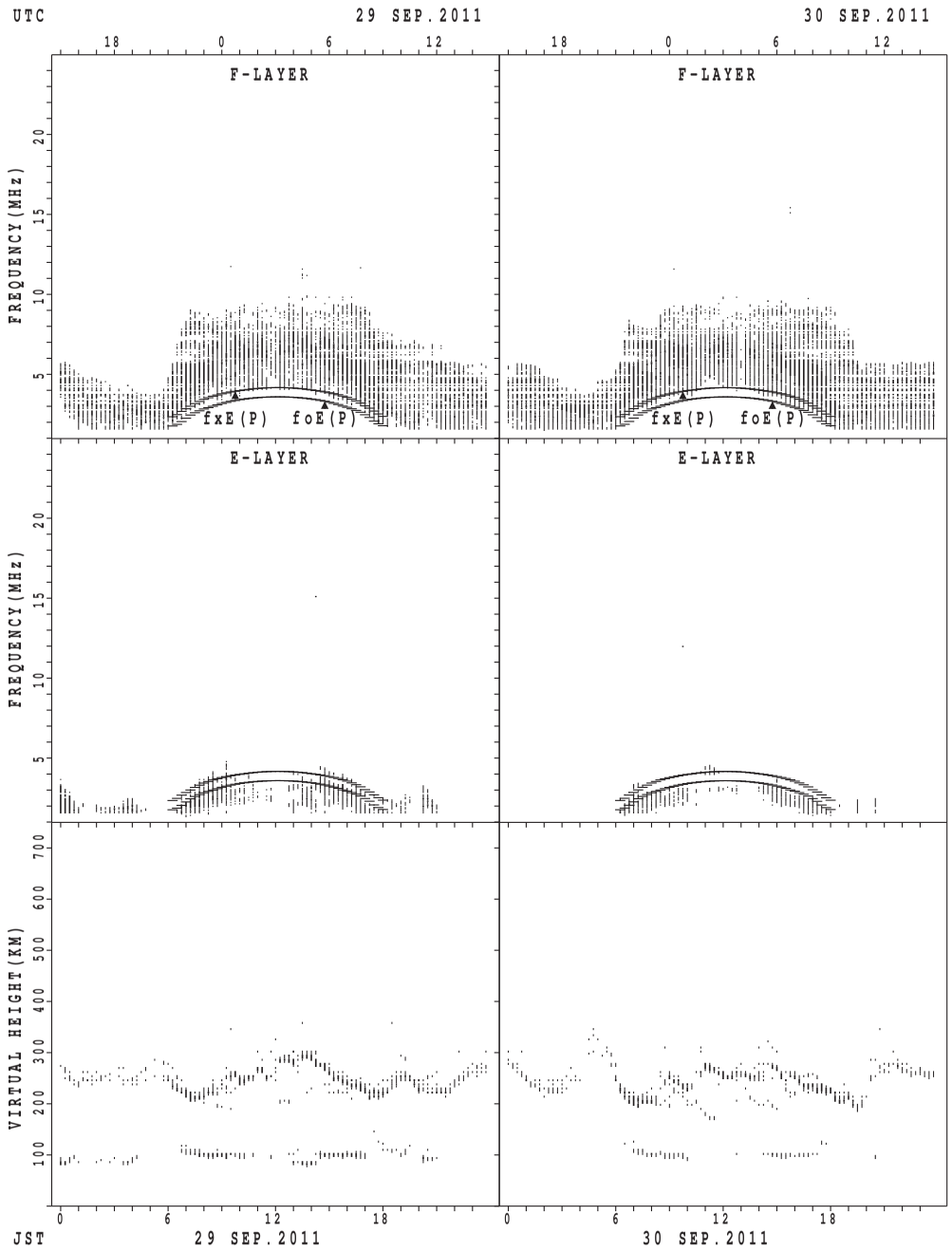
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



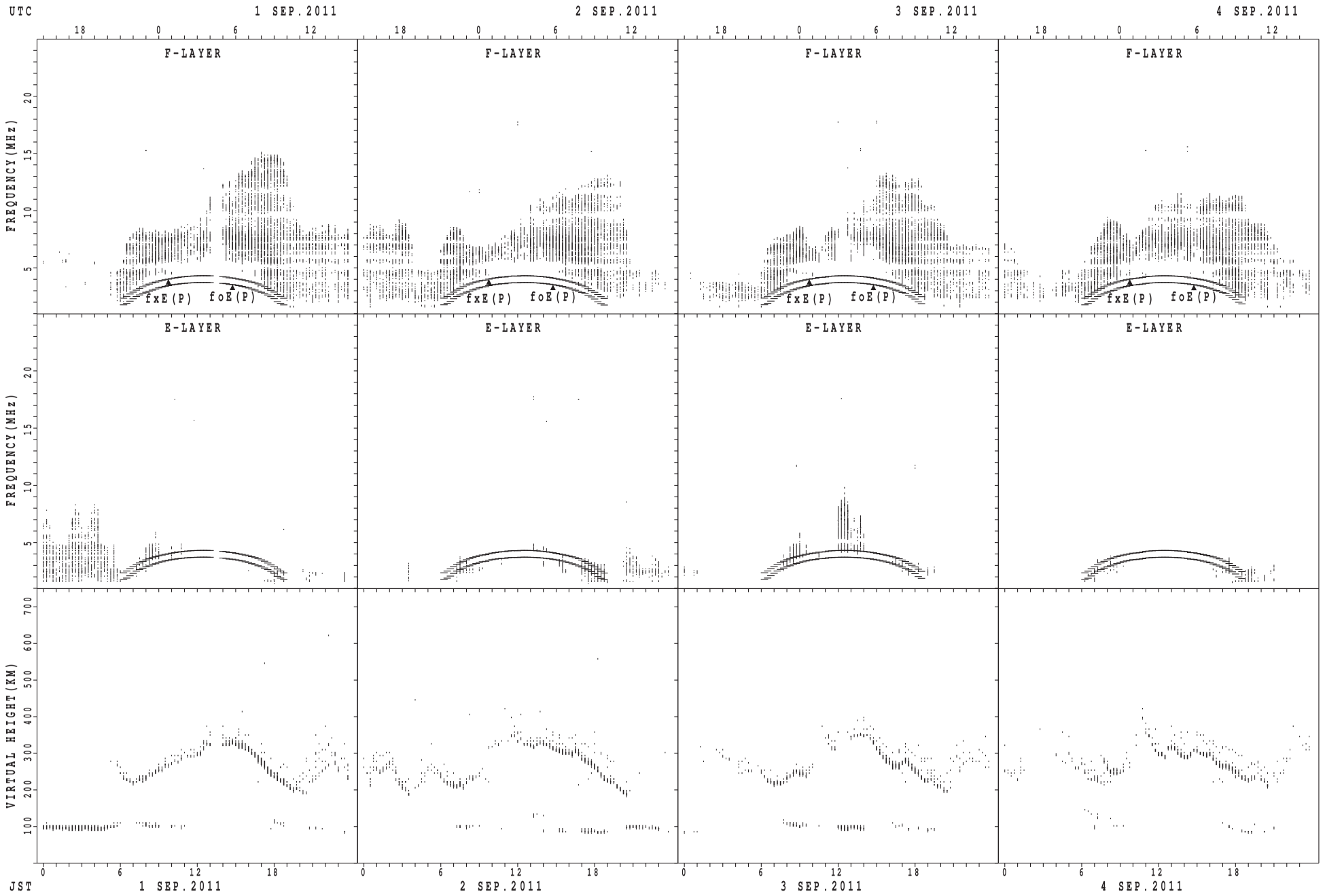
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



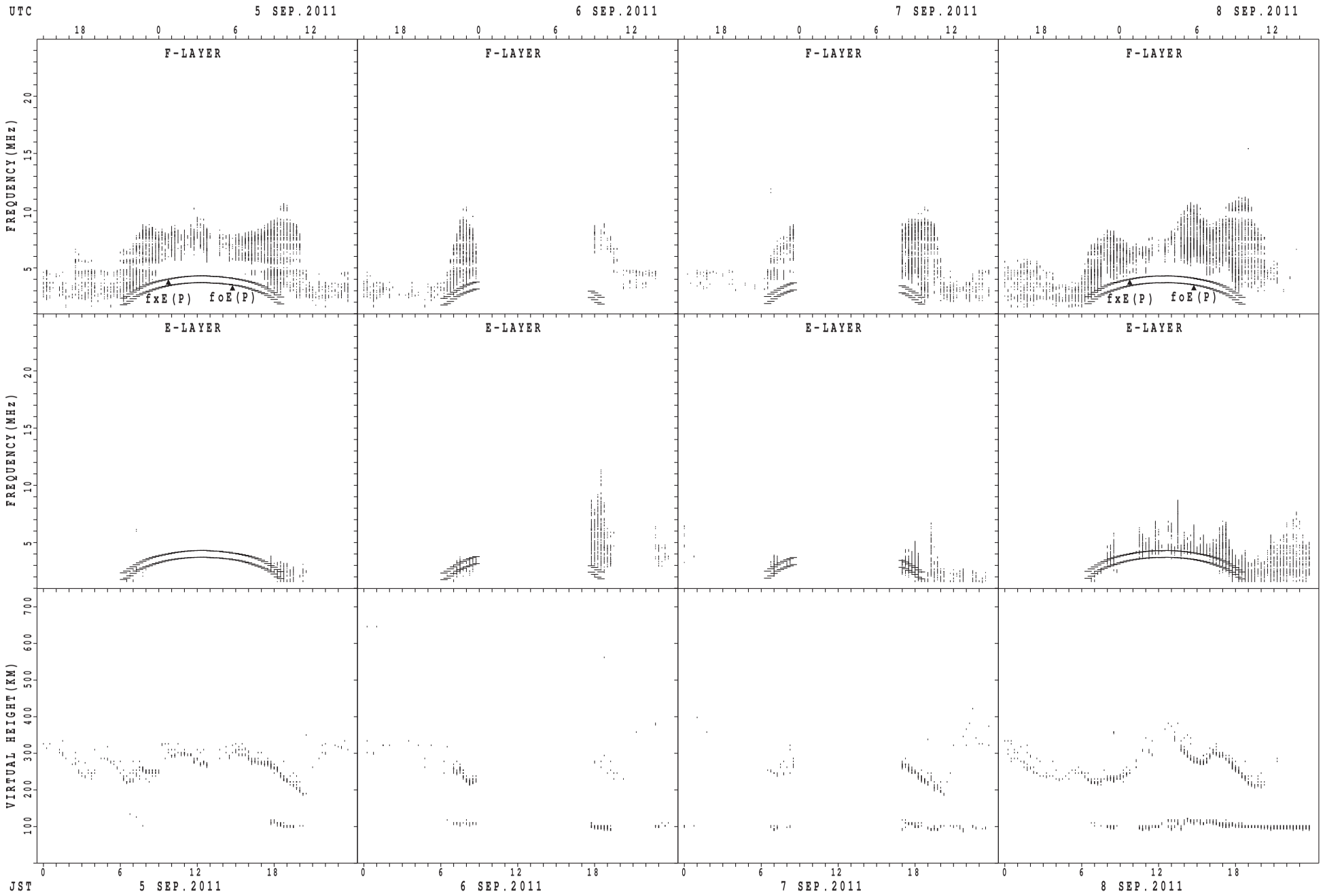
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



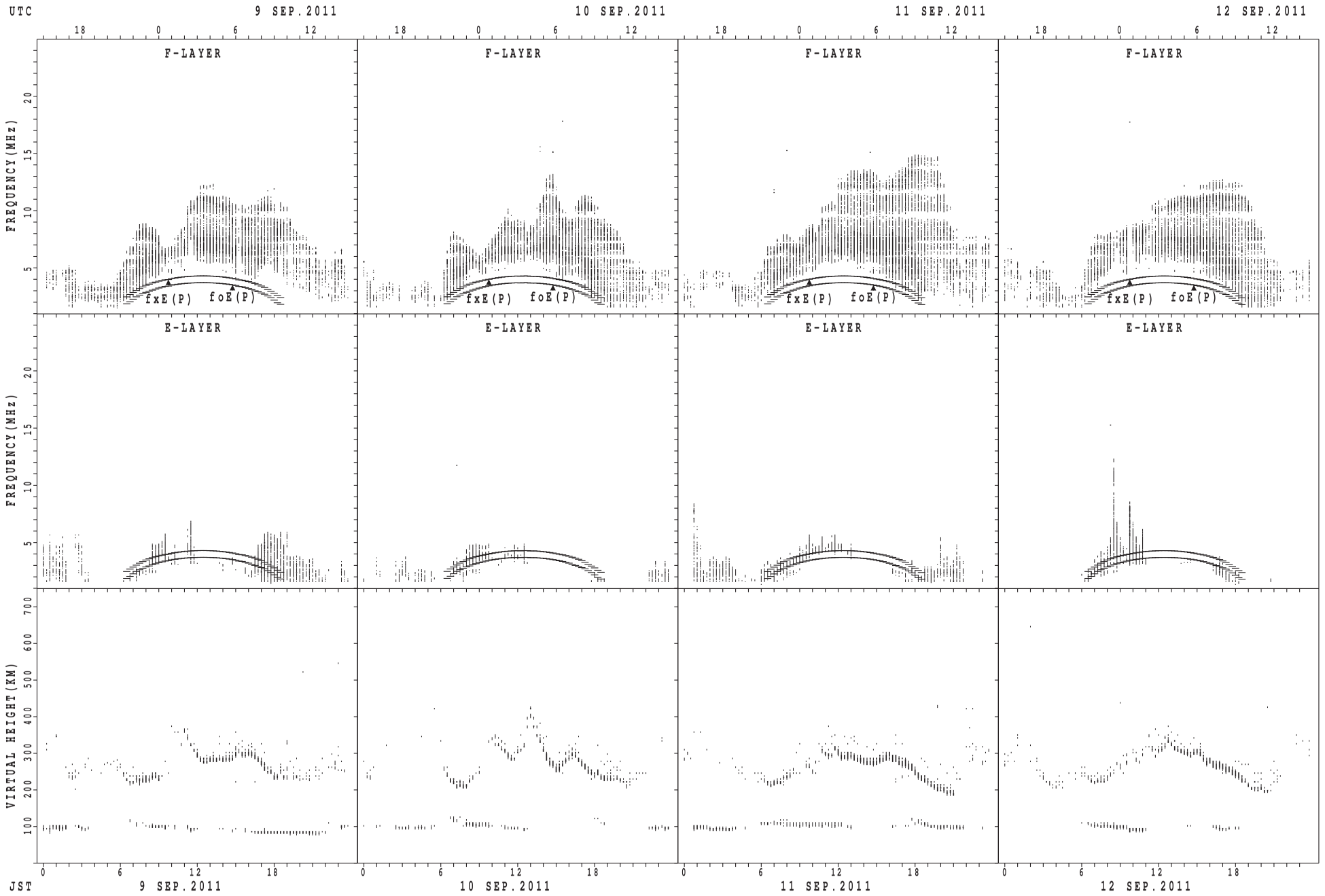
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



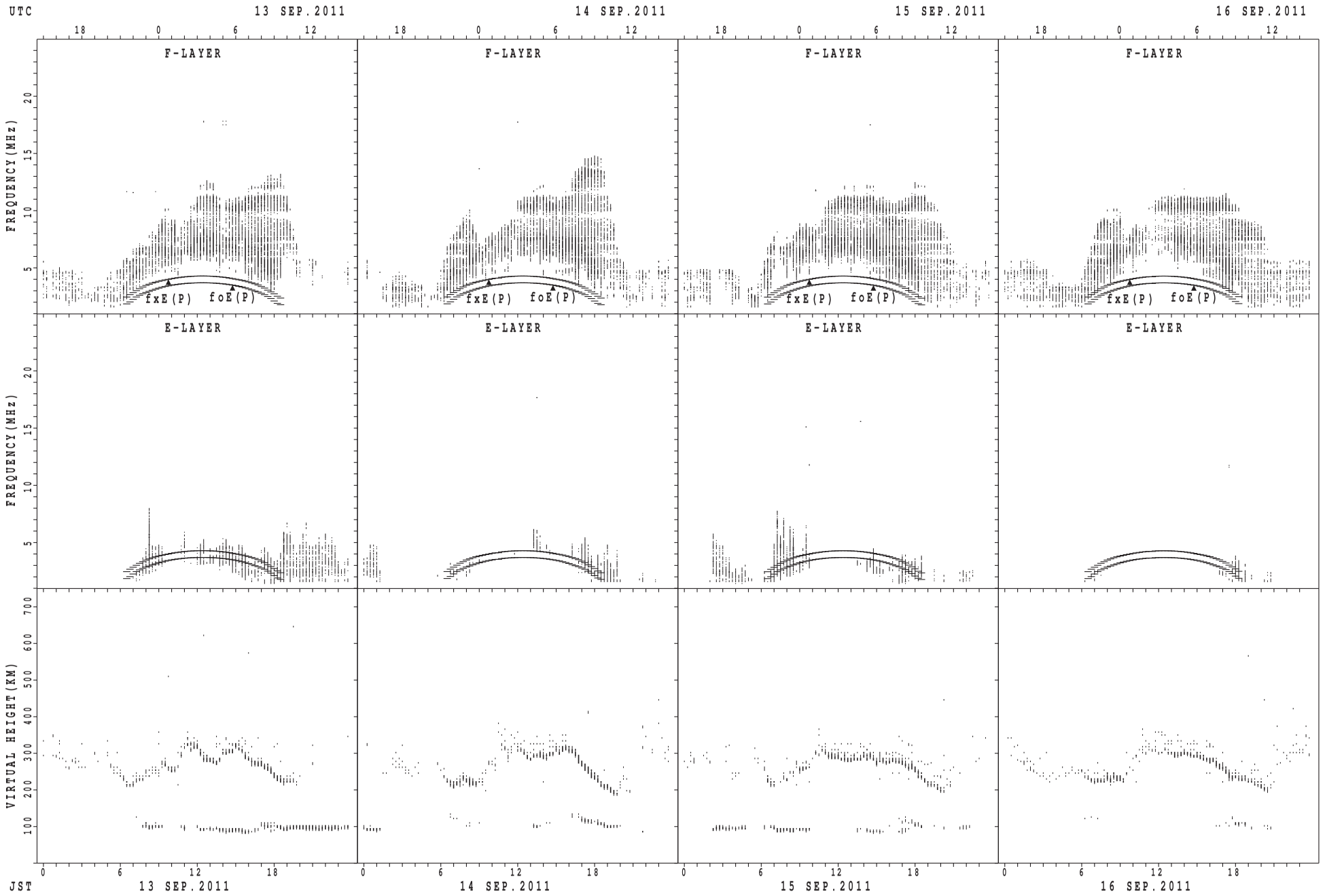
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



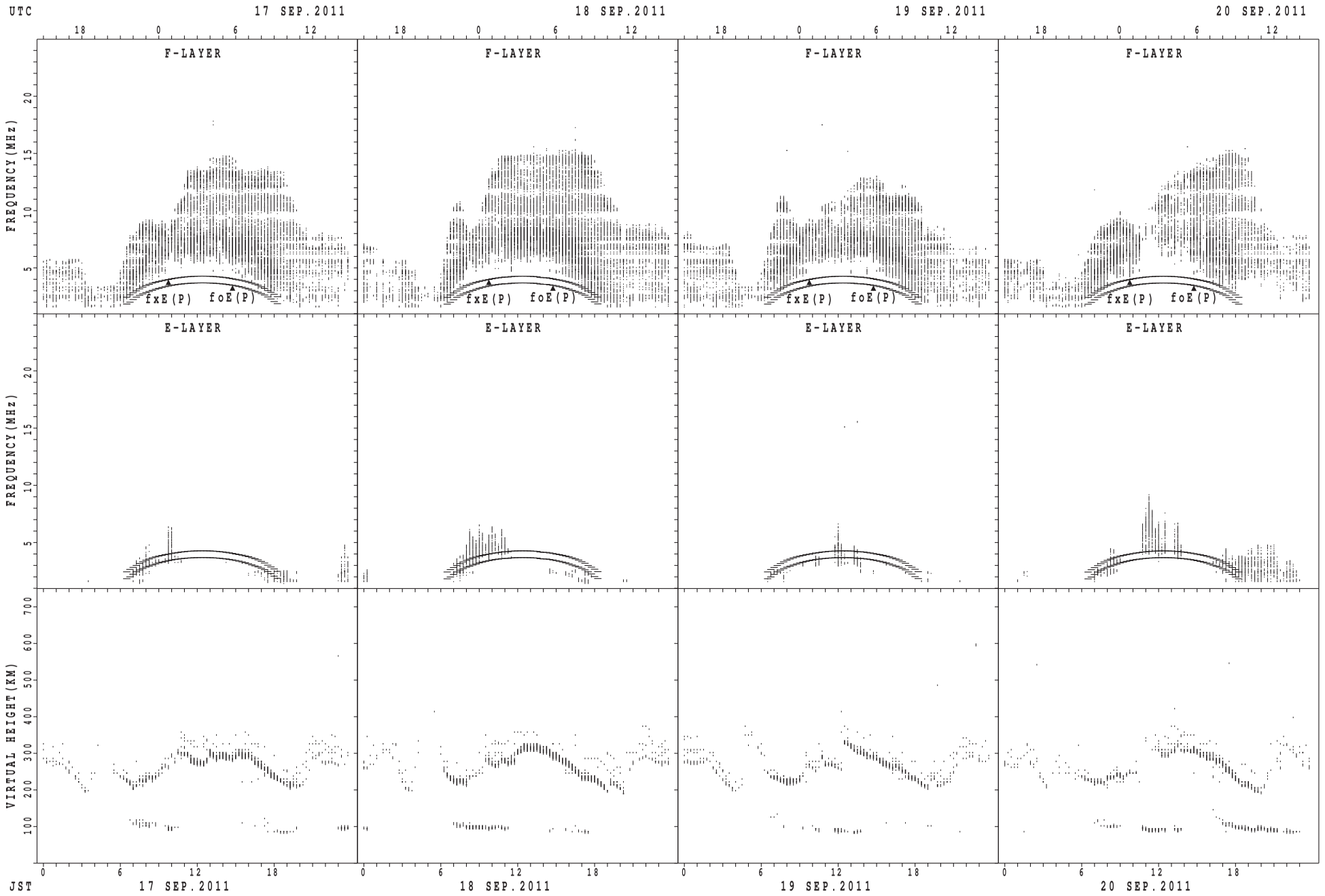
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



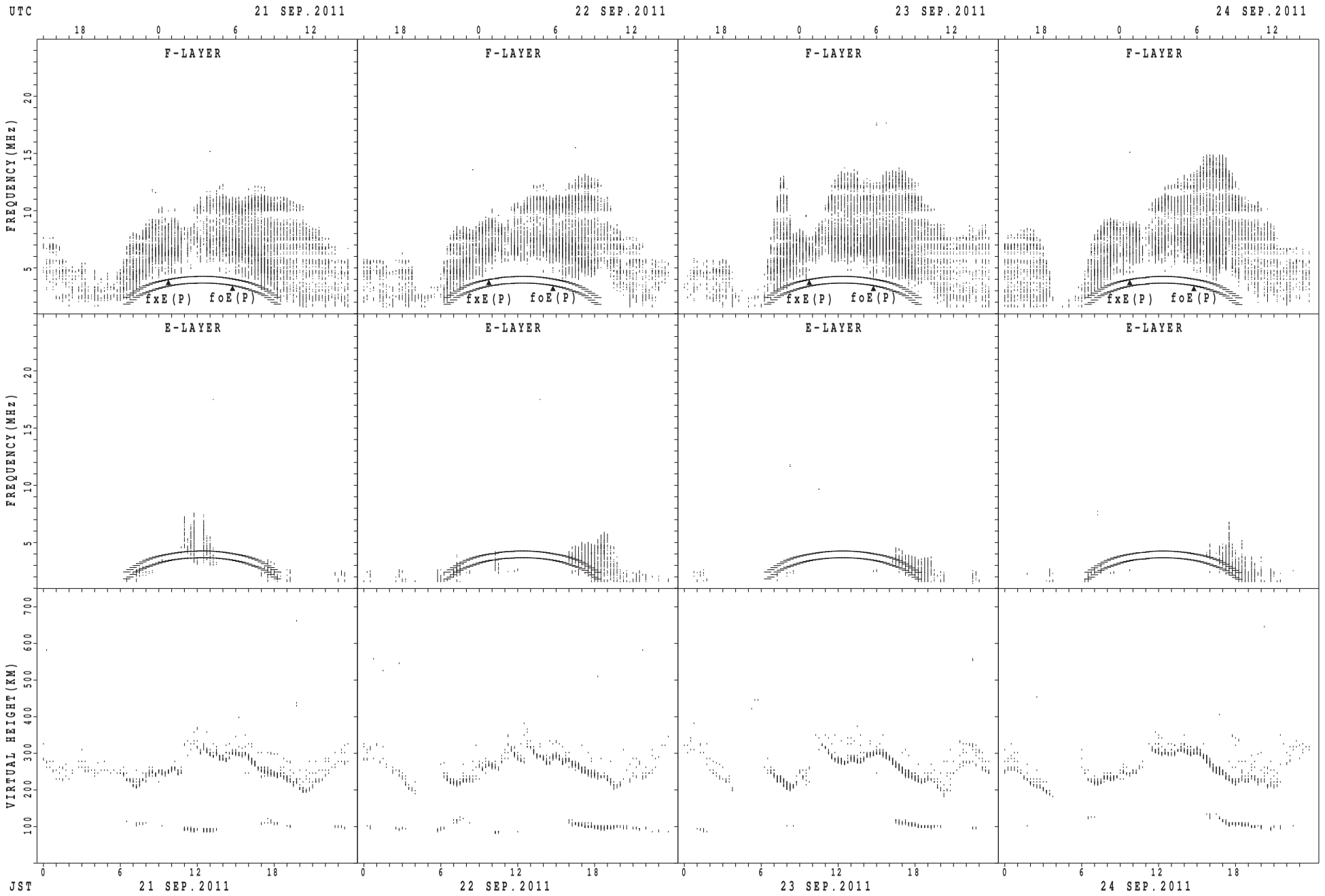
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



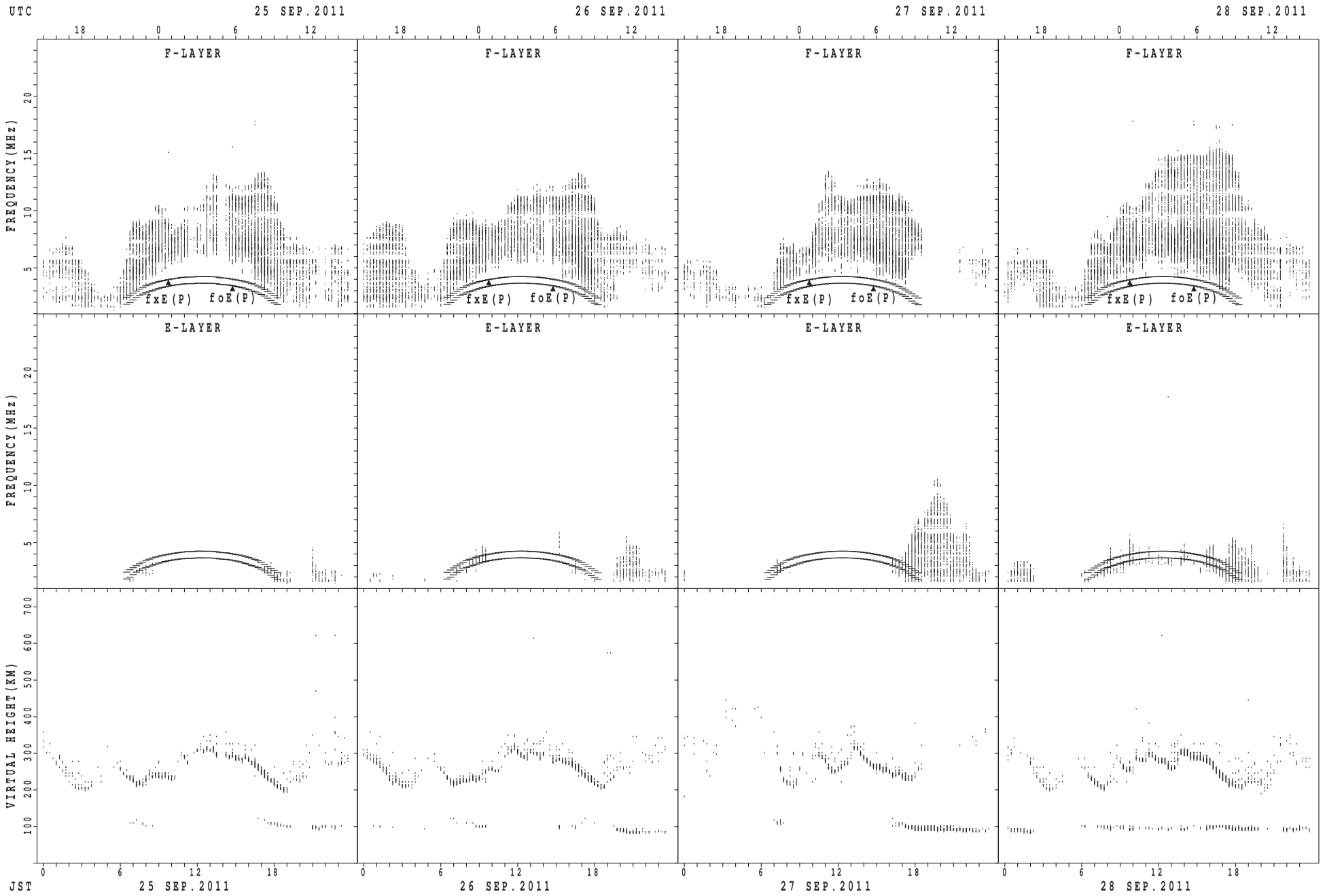
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



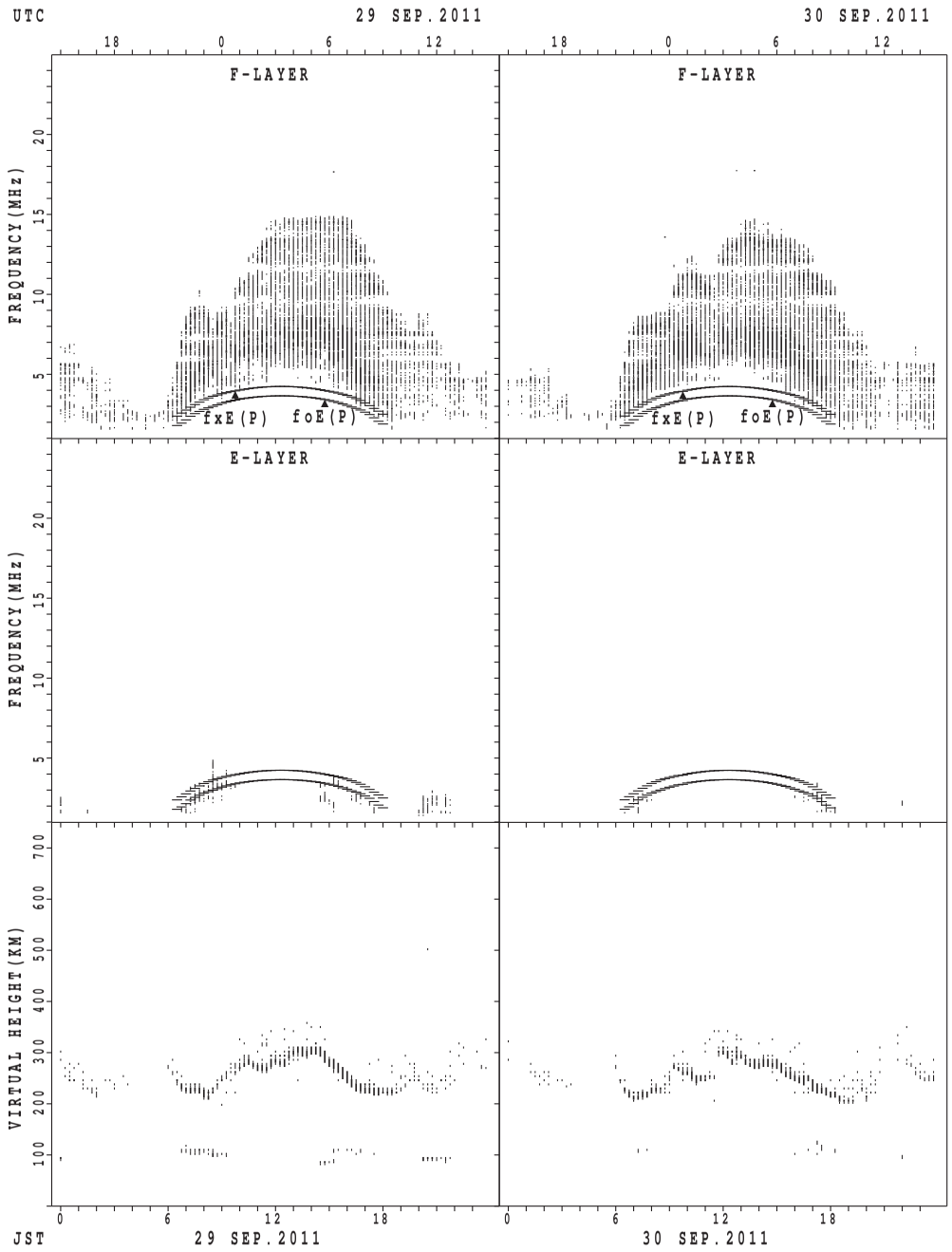
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h′F AND h′Es

SEP.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						12	16	21						2	22	25	21	22	12	5	3		1
MED	248						243	234	240						248	267	272	262	254	271	264	288		328
U Q	124						254	252	265						254	282	284	266	278	292	280	306		164
L Q	124						235	222	230						242	256	254	252	248	259	261	272		164

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	13	15	11	9	10	13	18	23	12	9	12	7	2	3	4	6	20	21	21	22	18	18	13	13
MED	95	95	91	95	102	105	106	105	104	105	105	101	99	93	95	98	113	107	103	102	99	102	97	95
U Q	99	97	95	107	107	112	113	107	109	136	177	103	101	105	101	101	119	113	107	103	103	105	99	97
L Q	88	89	91	91	97	97	103	101	100	101	102	95	97	93	90	97	106	101	95	99	97	95	95	91

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						9	27	26							22	27	26	25	18	4	1		1
MED	270						256	240	238							278	262	255	248	251	257	340		296
U Q	135						270	252	250							280	280	270	256	262	284	170		148
L Q	135						242	230	222							266	258	242	238	246	240	170		148

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	8	7	4	6	6	6	8	9	9	8	3	7	5	6	6	10	20	24	21	18	16	16	12
MED	91	94	95	92	106	106	105	108	103	103	104	97	97	97	98	101	106	105	103	99	96	98	97	96
U Q	100	97	99	96	117	119	111	112	113	107	105	99	103	104	105	113	113	111	105	103	97	101	99	99
L Q	89	89	89	88	95	97	103	103	99	101	98	97	95	90	93	99	97	96	95	96	93	97	95	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	1		1					26	28	26						5	30	29	28	24	8			1
MED	280		296					234	228	239						270	277	254	246	240	235			348
U Q	140		148					240	237	254						286	286	269	256	256	247			174
L Q	140		148					222	222	232						262	262	241	230	232	217			174

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	16	11	9	8	8	3	8	23	19	17	15	12	14	14	11	8	10	18	25	22	22	21	20	18
MED	95	91	95	96	95	91	109	107	103	101	97	97	95	94	97	98	105	105	101	96	95	95	95	94
U Q	97	95	97	97	98	113	121	113	107	104	103	98	97	99	105	119	121	113	107	103	99	97	96	97
L Q	92	87	89	89	94	89	101	99	97	96	95	92	91	91	91	89	95	97	94	91	91	89	88	89

MONTHLY MEDIANS OF h′F AND h′Es

SEP.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	2	3	3	2				27	28	24							28	29	30	27	18	5	4	4
MED	330	304	254	236				228	230	248							284	262	239	232	238	272	326	310
U Q	346	362	256	250				244	237	254							290	270	246	248	256	314	329	314
L Q	314	290	248	222				220	223	236							272	246	230	226	228	237	318	294

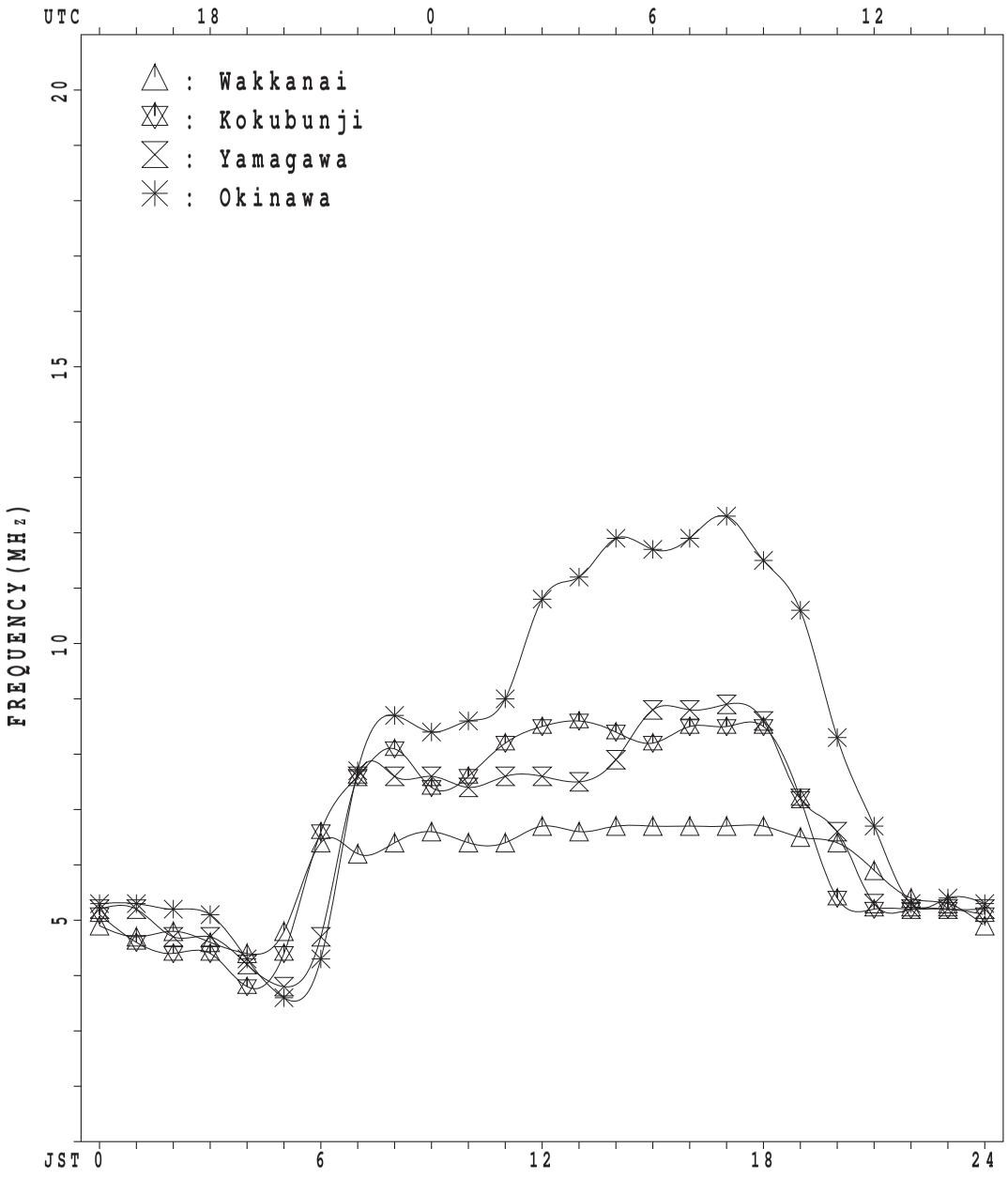
h′Es

	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	8	5	3	5	4	1	3	10	12	10	6	7	8	5	5	2	4	14	20	18	9	13	9	7
MED	98	99	95	97	97	101	107	113	105	103	97	97	99	99	97	105	114	109	104	97	99	99	99	101
U Q	105	103	97	97	98	50	111	115	107	105	105	101	103	106	122	119	122	113	110	105	102	101	101	103
L Q	96	93	87	96	96	50	95	105	100	101	95	95	95	93	93	91	106	105	98	95	95	93	95	95

MONTHLY MEDIANS PLOT OF foF2

SEP.2011

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Kokubunji

SEP. 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 51	X 50	X 48	X 46	X 45														X 102	X 103	X 94	X 72	X 66	X 67
2	X 65	X 62	X 60	X 58	X 50														X 92	X 102	X 91	X 67	X 57	X 55
3	X 55	50	X 46	X 46	X 47														X 101	X 92	X 85	X 71	X 74	X 75
4	X 75	X 54	X 48	X 49	X 50														X 90	X 74	X 67	X 60	X 56	X 58
5	X 60	X 56	X 56	X 54	X 50														X 70	X 71	X 70	X 61	X 52	X 51
6	X 52	O X 48	X 48	X 46	X 46														X 86	A	61	66	59	56
7	X 55	X 53	X 52	X 53	X 49														X 76	X 78	X 68	X 64	X 60	X 56
8	X 57	X 56	X 54	X 55	X 49														X 79	X 85	X 78	67	X 53	A
9	X 53	X 55	X 50	X 48	X 46	47													X 85	X 81	X 75	X 68	X 66	X 66
10	X 64	X 53	X 50	X 45	X 45														X 80	X 77	X 77	X 73	X 61	51
11	X 50	X 53	X 53	54	X 51	60													X 96	X 102	X 73	X 63	X 58	X 57
12	X 53	54	55	X 49	X 46														X 110	X 97	X 65	X 59	X 57	X 58
13	54	X 54	X 55	X 50	X 47														X 92	X 85	X 70	X 58	X 56	X 56
14	X 56	X 52	X 50	X 48	X 48														X 105	X 93	X 73	X 62	X 62	X 62
15	X 59	X 59	X 60	X 60	X 52														X 94	X 104	X 81	X 59	65	X 62
16	X 59	X 58	X 55	X 57	X 54														X 96	X 91	X 70	X 70	X 66	X 66
17	X 66	X 66	X 62	X 63	X 55														X 112	X 98	X 85	X 88	X 84	X 90
18	X 81	X 68	X 67	X 68	X 53														X 104	X 72	X 60	X 61	X 65	X 62
19	X 61	X 60	X 61	X 65	X 50														X 85	X 67	X 65	X 62	X 64	X 64
20	X 64	X 61	X 58	X 55	X 54														X 96	X 83	X 64	X 60	X 65	X 64
21	X 63	X 62	X 58	X 57	X 52														X 89	X 80	X 71	X 73	X 70	X 64
22	X 64	X 62	X 61	X 61	X 54														X 94	X 85	X 72	X 65	X 59	X 60
23	X 61	X 60	X 58	X 59	X 51														X 92	X 75	X 65	X 65	X 66	X 66
24	X 67	X 65	X 65	X 62	X 53														X 106	X 81	X 57	X 58	X 60	X 56
25	X 56	X 57	X 59	X 55	X 52														X 97	X 74	X 70	X 64	X 59	X 58
26	X 56	X 57	X 57	X 56	X 55														X 108	X 78	X 74	X 64	X 64	X 62
27	X 58	X 59	X 51	X 43	X 41														X 79	X 73	X 71	X 72	X 67	76
28	X 70	69	68	X 67	X 56														X 88	X 65	X 61	X 61	X 62	X 63
29	X 59	X 51	X 51	X 49	X 49														X 73	X 72	X 74	X 71	X 66	X 65
30	X 61	X 59	X 56	X 51	X 48														X 90	X 72	X 63	X 64	X 64	X 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	30	30	30	2													30	29	30	30	30	29
MED	X 59	X 57	X 56	X 54	X 50	54													X 92	X 81	X 70	X 64	X 63	X 62
U Q	X 64	X 61	X 60	X 59	X 53														X 101	X 92	X 75	X 70	X 66	X 66
L Q	X 55	X 53	X 51	X 49	X 47														X 85	X 74	X 65	X 61	X 59	X 56

IONOSPHERIC DATA STATION Kokubunji

SEP.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	45	44	42	40	39	43	62	70	75	76	69	74	75	71	73	69	72	85	95	97	88	66	60	61
2	59	56	54	52	44	41	56	71	79	67	63	65	71	78	88	87	87	83	86	96	85	61	50	49
3	48	F	40	40	41	42	62	69	69	69	74	81	82	77	71	78	83	91	95	86	79	65	67	69
4	69	48	42	43	44	46	61	65	79	80	89	88	80	84	78	83	80	82	84	68	61	54	50	52
5	54	50	50	47	44	44	47	52	60	65	51	63	64	59	63	61	62	63	64	65	64	55	46	45
6	46	42	42	40	40	38	51	67	73	73	70	R	68	67	70	70	65	A	80	A	F	F	F	F
7	49	47	46	47	43	34	50	72	74	68	64	70	62	71	68	60	62	64	70	72	62	58	54	50
8	50	50	48	48	43	40	55	79	66	68	64	66	72	73	77	64	68	64	72	79	72	F	47	A
9	49	49	44	42	40	F	66	69	73	73	77	79	80	82	76	65	62	70	79	75	69	62	60	60
10	58	47	44	38	39	30	64	49	55	58	64	74	79	A	93	75	74	78	73	71	71	67	55	F
11	44	47	47	F	F	F	76	76	78	86	88	80	75	76	75	79	80	82	90	96	67	56	51	51
12	47	F	F	43	40	40	A	78	62	69	73	77	80	86	82	84	90	82	104	90	59	53	51	52
13	F	48	49	44	41	40	58	67	72	69	73	75	85	83	80	82	86	84	86	79	64	52	50	50
14	50	46	44	42	41	45	64	82	87	78	71	75	80	74	76	79	86	97	99	87	66	56	56	56
15	53	53	54	54	46	46	65	108	86	76	73	81	86	96	86	82	78	79	88	98	75	53	F	56
16	53	52	49	51	48	45	68	97	104	92	88	86	83	84	86	84	85	88	90	85	64	64	59	59
17	60	59	56	56	49	46	74	103	94	98	93	96	91	92	83	83	86	88	106	92	79	81	78	83
18	75	62	61	62	47	39	58	81	86	101	109	112	103	91	86	94	95	104	98	66	54	55	59	56
19	55	54	55	58	44	43	60	74	86	76	75	83	89	87	84	85	84	88	79	61	59	56	58	58
20	58	55	52	49	48	48	66	81	80	68	74	84	79	87	93	86	94	99	90	77	57	54	58	58
21	57	56	52	51	46	46	72	79	79	80	92	82	80	89	84	81	82	83	83	74	65	67	64	58
22	58	56	55	55	48	48	68	90	82	75	86	97	113	109	91	83	86	96	88	79	66	59	53	54
23	55	54	52	53	45	44	66	100	124	75	78	84	102	104	97	85	93	94	85	69	59	58	60	60
24	61	59	59	56	47	46	66	90	88	82	90	93	90	90	88	97	100	101	100	74	51	52	54	49
25	50	51	52	49	46	48	73	98	104	83	86	97	99	97	94	99	104	101	91	68	64	57	53	52
26	50	50	51	50	49	50	71	91	85	93	94	96	100	95	89	93	98	109	101	72	68	58	58	56
27	52	53	45	37	35	36	45	60	78	66	76	92	106	86	80	82	84	90	73	67	65	62	60	F
28	64	F	F	61	50	45	64	85	75	84	100	103	108	102	90	91	99	100	82	59	55	55	56	57
29	53	45	45	43	43	39	61	94	88	76	88	94	98	97	105	104	106	82	67	66	68	65	60	58
30	55	54	50	45	42	42	70	92	89	85	100	105	111	106	88	85	83	82	86	66	57	58	58	60
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	28	29	29	28	29	30	30	30	30	29	30	29	30	30	30	29	30	29	29	28	28	26
MED	53	51	50	48	44	44	64	79	79	76	76	83	82	86	84	83	84	85	86	74	65	58	57	56
U Q	58	55	53	54	47	46	68	91	87	83	89	95	99	96	89	86	93	96	95	86	70	63	60	59
L Q	50	47	44	42	41	40	58	69	73	69	71	75	79	76	76	78	78	82	79	68	59	55	52	52

IONOSPHERIC DATA STATION Kokubunji

SEP. 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 468	L	A	504	U L 488	496	L	L	A						
2								L	L	A	U L 484	U L 560	496	492	492	456	U L 432	A						
3									A	A	A	U L 508	U L 504	U L 504	L	L	A	L						
4									L	468	484	U L 484	U L 524	U L 512	L	L	A	L						
5									A	464	A	A	A	A	U L 484	L	A	A						
6							A	A	A	A	488	A	A	A	L	A	A	A						
7							L	A	A	A	A	A	A	484	U L 452	A	A	A						
8								L	L	L	A	U L 512	468	488	A	U L 452	A	A						
9								L	U L 448	A	A	A	L	A	A	A	L	A						
10									A	A	484	U L 544	A	A	A	A	L	A						
11								A	A	A	A	A	A	L	A	L	A	A						
12							A	A		U L 512	A	508	500	496	A	A	A							
13								L	U L 440	U L 488	U L 440	U L 520	U L 516	488	L	U L 428	L	A						
14								A	L	L	L	L	A	L	L	A	A	A						
15								L	L	L	A	U L 540	U L 512	512	U L 504	L	U L 400	A						
16								L	L	L	L	U L 504	L	L	A	L	L							
17								L	L	L	L	L	L	L	L	L	L							
18							A	A	A	A	A	U L 540	U L 512	L	L	L	L							
19									L	L	L	L	U L 536	L	L	L								
20								A	A	A	L	A		L	L	L	L							
21									L	L	L	L	L	L	L	L								
22								A	A	A	U 572 L	U L 524	U L 540	U L 500	L	L	L							
23									L	L	L	L	U L 540	L	L	L								
24								L	L	L	L	L	L	L	L	L	L	A						
25									L	L	U L 480	L	L	L	L	L	L							
26									L	U L 540	L	L	L	U L 504	L	L	A							
27							U L 352	U L 376	424	L	U L 532	L	L	L	L	L								
28								A		U L 476	L	L	L	L	L	L								
29								L	L	A	L	L	L	L	L									
30										L	L	L	L	L	L	L	L							
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	1	3	7	8	11	12	11	5	3	2							
MED							U L 352	U L 376	U L 440	U L 476	U L 484	U L 520	U L 512	496	U L 492	U L 452	U L 416							
U Q									U L 448	U L 512	U L 510	U L 540	U L 530	U L 504	500	456								
L Q									424	468	U L 482	U L 508	502	488	U L 468	U L 428								

SEP. 2011 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	208	A	A	A	A	A	A	A	A	A	A	A						
2						B	220	R	A	A	R	R	R	R	R	R	R	A						
3						B	A	A	A	A	A	A	R	R	A	R	A	A						
4						B	A	A	A	A	R	R	R	R	R	R	A	A						
5						B	A	A	A	A	A	A	A	A	R	R	A	A						
6						B	A	A	A	A	A	A	A	A	A	U R 328	A	A						
7						B	R	A	A	A	A	A	A	A	A	A	A	A						
8						B	U R 204	A	R	R	A	R	R	A	A	A	A	A						
9						B	A	A	A	A	A	A	A	A	A	A	A	A						
10						B	204	A	A	A	A	A	A	A	A	A	A	A						
11						B	A	A	A	A	A	A	A	A	A	R	A	A						
12						B	A	A	A	R	A	A	A	A	A	A	A	A						
13						B	A	A	A	R	R	R	R	R	R	R	R	A						
14						B	A	A	R	R	A	R	A	R	R	A	A	A						
15						B	U R 220	R	R	R	A	R	R	A	R	R	R	A						
16						B	U R 220	A	R	R	R	R	A	A	A	A	A	A						
17						B	A	A	A	R	R	R	R	R	R	R	R	U A 208						
18						B	A	A	A	A	A	R	R	R	A	A	R	A						
19						B	R	R	R	A	R	R	R	R	R	R	R	U A 212						
20						B	U R 216	A	A	A	R	A	R	A	R	R	A	A						
21						B	U R 220	R	R	R	R	R	R	R	R	R	R	A						
22						B	A	A	A	A	A	R	A	R	R	R	A	A						
23						B	B	R	R	R	R	R	R	R	R	R	R	A						
24						B	U R 216	R	R	R	R	R	A	A	R	R	R	A						
25						B	196	R	R	R	R	R	R	R	R	R	R	A						
26						B	196	R	R	R	R	R	A	R	R	R	A	A						
27						B	B	R	R	R	R	R	R	R	R	R	A	B						
28						B	A	A	A	R	R	R	R	R	A	R	A	B						
29						B	A	R	R	A	A	R	R	R	R	R	R 276	B						
30						B	208	A	R	R	R	R	R	R	R	R	R	188						
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							12									1	1	3						
MED							212									U R 328	R 276	U A 208						
U Q							U R 220											U A 212						
L Q							204											188						

SEP. 2011 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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 14	E B 15	E B 16	E B 14	J A 18	E B 14	27	35	40	J A 46	43	40	40	41	39	J A 43	J A 40	J A 37	J A 38	J A 40	J A 41	J A 29	22	J A 26
2	20	E B 16	E B 15	E B 15	E B 14	E B 15	28	G	38	40	G	G	G	G	G	G	G 25	32	24	E B 15	E B 14	E B 15	E B 15	E B 15
3	J A 80	J A 46	J A 22	18	J A 18	25	28	J A 42	40	J A 62	46	43	G	G	39	G	J A 39	33	J A 25	J A 21	J A 57	21	20	J A 21
4	E B 15	E B 15	14	E B 15	E B 14	20	26	J A 38	36	41	G 30	G	G 25	G	G	35	J A 97	J A 30	J A 21	J A 20	J A 25	J A 18	J A 30	J A 28
5	J A 20	E B 14	20	E B 15	E B 13	E B 15	24	33	J A 43	40	J A 40	48	43	J A 64	G	G	J A 47	J A 51	J A 43	J A 20	E B 15	E B 15	J A 22	J A 21
6	J A 30	J A 33	J A 26	E B 15	E B 13	E B 16	J A 33	J A 40	J A 44	J A 48	45	39	J A 54	J A 55	41	43	J A 64	J A 112	J A 66	J A 150	J A 52	33	37	31
7	J A 31	J A 29	J A 28	J A 26	J A 20	23	G 20	J A 44	J A 69	J A 64	J A 57	J A 48	J A 45	44	39	J A 38	38	34	J A 29	J A 30	J A 26	35	22	22
8	E B 15	E B 15	E B 15	E B 15	20	E B 15	G	34	G	G	J A 48	G	G	42	J A 42	J A 80	J A 53	J A 40	J A 115	J A 68	J A 28	J A 48	J A 45	J A 56
9	J A 19	J A 29	J A 24	J A 23	E B 14	J A 22	27	J A 35	36	J A 74	J A 47	J A 66	J A 46	J A 72	J A 52	J A 46	J A 38	J A 54	J A 46	37	J A 30	31	23	E B 14
10	21	J A 20	J A 24	21	E B 15	E B 14	24	34	J A 42	J A 50	42	J A 48	J A 59	J A 84	J A 72	J A 39	J A 39	J A 40	46	J A 54	J A 48	J A 88	J A 48	J A 62
11	J A 29	21	J A 33	J A 18	J A 22	J A 24	J A 40	J A 40	J A 48	J A 48	J A 52	46	J A 58	42	J A 48	G 25	36	J A 36	J A 32	J A 40	J A 34	J A 31	J A 25	J A 23
12	E B 16	E B 15	22	21	J A 21	J A 17	J A 83	J A 52	G	G	44	42	46	43	44	44	42	29	E B J 16	A 25	J A 28	J A 63	J A 50	24
13	J A 23	E B 15	E B 15	E B 14	J A 44	J A 28	J A 80	34	36	G 29	G	G	G	G	G	G	G	J A 35	J A 30	J A 17	J A 28	E B 15	E B 15	J A 27
14	J A 24	J A 21	20	E B 15	19	E B 15	24	32	G	G	45	G	J A 57	G	G	43	J A 40	J A 61	J A 60	J A 74	J A 74	J A 47	J A 22	J A 21
15	J A 21	20	J A 24	20	E B 15	E B 16	G 20	G 26	G	G	J A 43	G	G	43	G 31	G 24	G 25	26	J A 34	J A 46	J A 64	J A 29	J A 26	E B 15
16	E B 15	E B 15	E B 15	E B 15	20	22	G	36	G	G	G	G	43	J A 44	J A 49	J A 47	34	33	J A 32	J A 45	J A 33	J A 29	J A 44	J A 24
17	J A 80	J A 33	J A 24	J A 24	J A 28	J A 20	26	38	41	G	G	G	G	G	G	G	G 22	31	J A 40	J A 33	J A 48	J A 49	J A 42	J A 18
18	E B 16	E B 16	20	20	J A 20	J A 18	J A 46	J A 48	J A 69	J A 62	48	G	G	G	38	34	G	27	J A 29	J A 77	J A 45	J A 48	J A 33	J A 24
19	J A 19	E B 14	E B 15	E B 14	E B 14	E B 16	G	G	G 27	41	G	G	G	G	G 26	G 25	G 25	27	20	20	E B 15	J A 20	J A 20	J A 22
20	24	J A 21	20	E B 15	E B 15	E B 14	G	40	J A 41	J A 45	G	47	G 31	43	G	G 26	36	J A 37	J A 28	J A 31	J A 45	J A 31	J A 35	J A 23
21	E B 14	E B 15	E B 15	E B 14	E B 14	E B 16	J A 44	G 26	G 28	G	G	G	G	G	G	G	G 22	28	J A 24	20	22	J A 26	J A 38	J A 45
22	J A 25	J A 22	J A 22	J A 23	J A 24	J A 29	J A 26	34	J A 43	41	44	G	42	G	G	G	34	26	J A 30	E B 14	J A 24	J A 22	J A 24	J A 24
23	20	E B 16	E B 15	E B 14	E B 14	E B 14	20	G 24	G 28	G	G	G	G	G	G	G 26	G 25	32	J A 27	36	J A 26	J A 53	J A 43	J A 23
24	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	G	G	G	43	41	G	G 27	G	J A 32	J A 23	J A 30	J A 28	J A 19	E B 15	E B 14
25	E B 16	E B 15	E B 14	E B 15	E B 15	E B 15	24	G	G	G	G	G	G	G	G	G	G	28	E B 15	E B 15	E B 16	E B 16	E B 15	J A 22
26	E B 15	E B 14	E B 15	20	J A 19	21	24	G	G	G	G	G	46	G	G	G	40	28	J A 32	J A 24	J A 24	J A 29	J A 23	20
27	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	21	G	G 26	G	G	G	G	G	G	G	32	J A 28	J A 27	J A 35	J A 42	J A 37	J A 97	J A 37
28	J A 29	J A 29	J A 20	E B 14	J A 17	18	J A 28	J A 46	36	G 28	G	G	G	G	38	G	J A 34	J A 28	J A 34	J A 26	J A 21	23	J A 30	J A 26
29	J A 22	E B 15	20	J A 23	E B 15	E B 15	J A 24	G 26	G 24	39	39	G	G	G	G	G 26	G 21	J A 38	J A 25	J A 32	20	E B 15	E B 14	E B 14
30	E B 15	E B 16	E B 15	E B 15	E B 15	E B 16	G	28	G 28	G 31	G	G	G	G	G	G	G 22	23	E B 15	E B 15	19	E B 15	E B 14	J A 18
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	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	20	E B 16	20	E B 15	E B 15	E B 16	24	34	36	G	G	G	G	G	G	G	34	32	J A 30	J A 30	J A 28	J A 29	J A 24	J A 23
U Q	J A 24	J A 21	J A 22	J A 20	J A 20	21	J A 28	J A 40	J A 41	J A 46	45	42	J A 45	J A 43	J A 39	J A 39	J A 40	J A 37	J A 38	J A 40	J A 45	J A 37	J A 38	J A 26
L Q	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	G	G	G	G	G	G	G	G	G 25	28	24	20	22	E B 19	E B 20	E B 20

SEP. 2011 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP.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 14	E B 15	E B 16	E B 14	E B 15	E B 14	24	33	38	40	42	38	39	40	38	37	36	35	35	34	32	21	20	20
2	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	26	G	35	38	G	G	G	G	G	G	G 25	30	22	E B 15	E B 14	E B 15	E B 15	E B 15
3	18	22	18	E B 14	E B 16	19	26	40	37	58	43	42	G	G	37	G	36	29	20	17	20	E B 15	E B 15	E B 15
4	E B 15	E B 15	E B 14	E B 15	E B 14	E B 14	23	35	32	40	G 29	G	G 24	G	G	33	38	23	18	E B 15	18	E B 15	19	E B 15
5	E B 15	E B 14	E B 15	E B 15	E B 13	E B 15	23	30	39	38	34	45	37	51	G	G	41	47	39	18	E B 15	E B 15	17	E B 15
6	19	26	E B 15	E B 15	E B 13	E B 16	30	36	40	42	41	36	50	51	39	42	60	A A 112	55	A A 150	28	23	33	24
7	24	24	21	19	E B 15	E B 15	G 18	36	47	48	50	44	44	39	35	36	33	31	24	21	22	28	E B 16	E B 16
8	E B 15	E B 15	E B 15	E B 15	15	E B 15	G	30	G	G	43	G	G	40	42	36	44	36	44	36	23	30	24	A A 56
9	17	21	21	18	E B 14	E B 15	24	30	34	56	44	52	40	65	45	42	28	37	44	30	24	29	E B 14	E B 14
10	E B 15	17	19	E B 15	E B 15	E B 14	22	31	38	46	39	39	55	A A 84	64	36	30	34	35	37	35	38	30	28
11	20	E B 15	18	E B 15	E B 15	E B 15	31	38	44	44	48	45	54	40	44	G 24	33	30	24	34	E B 16	18	19	E B 15
12	E B 16	E B 15	E B 14	E B 15	E B 16	E B 14	A A 83	40	G	G	40	39	41	41	42	37	37	28	E B 16	19	20	32	42	22
13	18	E B 15	E B 15	E B 14	16	17	38	30	34	G 29	G	G	G	G	G	G	G	30	23	E B 15	24	E B 15	E B 15	22
14	18	15	E B 15	E B 15	E B 15	E B 15	22	31	G	G	40	G	51	G	G	40	38	57	50	55	26	30	E B 15	18
15	20	16	E B 15	E B 15	E B 15	E B 16	G 20	G 25	G	G	37	G	G	39	G 29	G 23	G 24	25	29	38	41	E B 15	19	E B 15
16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G	32	G	G	G	G	40	40	45	37	31	28	21	16	19	24	31	20
17	26	28	16	17	18	E B 15	22	33	36	G	G	G	G	G	G	G	G 20	28	33	21	42	30	19	E B 15
18	E B 16	E B 16	19	18	18	E B 15	44	45	57	61	47	G	G	G	34	32	G	24	24	54	31	32	26	19
19	17	E B 14	E B 15	E B 14	E B 14	E B 16	G	G	G 26	38	G	G	G	G	G 25	G 25	G 23	24	16	E B 15	E B 15	E B 16	E B 15	E B 15
20	19	16	E B 15	E B 15	E B 15	E B 14	G	33	39	41	G	45	G 29	38	G	G 24	33	32	24	20	18	16	18	19
21	E B 14	E B 15	E B 15	E B 14	E B 14	E B 16	G 18	G 23	G 27	G	G	G	G	G	G	G	G 22	26	20	E B 15	16	E B 15	20	31
22	17	18	19	20	20	19	23	30	38	39	42	G	42	G	G	G	31	24	20	E B 14	18	E B 15	E B 16	18
23	E B 14	E B 16	E B 15	E B 14	E B 14	E B 14	20	G 22	G 26	G	G	G	G	G	G	G 26	G 24	28	23	34	19	33	25	E B 15
24	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	G	G	G	43	40	G	G 27	G	30	18	23	18	15	E B 15	E B 14
25	E B 16	E B 15	E B 14	E B 15	E B 15	E B 15	23	G	G	G	G	G	G	G	G	G	G	27	E B 15	E B 15	E B 16	E B 16	E B 15	E B 15
26	E B 15	E B 14	E B 15	E B 15	16	E B 15	22	G	G	G	G	G	42	G	G	G	39	25	28	18	18	24	18	16
27	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	20	G	G 25	G	G	G	G	G	G	G	30	23	20	29	35	21	38	26
28	24	19	E B 14	E B 14	E B 15	E B 15	21	38	34	G 27	G	G	G	G	34	G	32	23	30	17	E B 15	17	22	20
29	19	E B 15	E B 16	E B 15	E B 15	E B 15	18	G 24	G 23	36	37	G	G	G	G	G 26	G 20	31	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14
30	E B 15	E B 16	E B 15	E B 15	E B 15	E B 16	G	26	G 27	G 29	G	G	G	G	G	G	G 22	22	E B 15	E B 15	E B 15	E B 15	E B 14	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 16	E B 16	E B 15	E B 15	E B 15	E B 15	22	30	33	G	G	G	G	G	G	G	30	28	24	20	19	18	18	16
U Q	19	17	16	15	15	E B 16	24	35	38	41	42	39	42	40	38	36	36	32	33	34	26	29	24	20
L Q	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	G	G	G	G	G	G	G	G	G 25	25	20	E B 15	E B 16	E B 15	E B 15	E B 15

SEP.2011 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP. 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	14	15	16	14	15	14	14	14	16	20	23	18	18	22	20	17	15	15	16	14	15	15	15	16
2	15	16	15	15	14	15	14	13	18	14	20	25	20	21	19	19	12	13	13	15	14	15	15	15
3	15	15	15	14	16	14	14	16	19	20	22	20	22	24	24	22	16	14	12	14	15	15	15	15
4	15	15	14	15	14	14	14	15	15	19	20	28	14	20	18	17	16	15	15	15	15	14	15	15
5	15	14	15	15	13	15	13	14	17	22	19	19	25	25	24	20	16	16	14	14	15	15	13	14
6	15	15	16	15	13	16	14	14	17	21	19	20	23	27	23	23	19	14	13	15	14	15	14	15
7	15	14	13	15	15	15	15	14	20	16	22	21	20	22	20	19	13	14	15	14	14	14	16	16
8	15	15	15	15	15	15	14	13	23	26	22	26	22	22	21	20	15	13	14	14	15	16	14	14
9	15	15	14	13	14	15	13	14	19	25	23	22	20	19	17	15	13	12	12	12	12	14	14	14
10	15	16	16	15	15	14	14	15	15	18	23	21	28	27	21	16	14	15	14	13	15	15	15	12
11	15	15	14	15	15	15	14	14	15	20	23	20	20	21	18	16	12	13	14	15	16	14	13	15
12	16	15	14	15	16	14	14	14	15	22	19	19	22	21	19	19	14	14	16	14	15	14	14	15
13	14	15	15	14	15	15	14	14	18	19	23	24	20	21	17	18	16	12	12	15	15	15	15	12
14	14	14	15	15	15	15	15	15	18	22	24	21	21	26	22	17	16	14	15	14	15	15	15	16
15	15	14	15	15	15	16	15	16	18	22	22	26	23	19	18	15	14	12	16	13	16	15	15	15
16	15	15	15	15	15	16	14	18	19	20	26	28	24	23	24	19	15	13	14	15	15	15	14	14
17	15	14	15	14	14	15	15	14	19	22	26	26	24	25	24	18	14	13	15	15	13	15	14	15
18	16	16	14	15	15	15	15	15	18	19	27	25	26	25	22	21	18	14	13	15	15	15	15	14
19	15	14	15	14	14	16	13	14	17	20	22	24	23	24	17	14	14	13	14	15	15	16	15	15
20	16	14	15	15	15	14	14	15	17	22	22	22	22	22	18	18	18	14	13	14	14	15	15	15
21	14	15	15	14	14	16	12	12	17	26	26	25	26	22	23	20	14	13	14	15	15	15	15	15
22	15	15	14	14	15	15	15	14	15	18	21	28	23	24	18	19	16	13	14	14	15	15	16	14
23	14	16	15	14	14	14	15	13	16	24	22	26	24	22	22	16	13	13	13	14	14	15	15	15
24	15	15	15	15	15	15	15	16	23	19	24	23	22	22	24	16	14	14	14	14	15	14	15	14
25	16	15	14	15	15	15	14	16	14	18	22	24	23	27	23	19	20	14	15	15	16	16	15	15
26	15	14	15	15	15	15	15	15	22	22	22	28	22	23	22	20	18	15	14	15	15	14	14	16
27	15	16	15	15	15	15	12	14	16	18	21	24	23	23	20	22	15	15	14	14	13	13	14	14
28	14	16	14	14	15	15	15	15	14	19	22	25	24	24	18	17	13	12	14	12	15	16	16	15
29	14	15	16	15	15	15	14	15	13	14	10	22	23	24	20	15	14	14	15	15	15	15	14	14
30	15	16	15	15	15	16	15	15	13	17	23	21	24	24	23	18	13	14	15	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	17	20	22	24	23	23	20	18	14	14	14	14	15	15	15	15
U Q	15	15	15	15	15	15	15	15	19	22	23	26	24	24	23	20	16	14	15	15	15	15	15	15
L Q	15	14	14	14	14	15	14	14	15	18	21	21	21	22	18	16	14	13	13	14	14	14	14	14

SEP. 2011 fmin (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

SEP.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	299	305	306	316	297	310	352	346	364	369	355	337	334	328	326	308	307	299	323	334	348	335	307	306
2	307	304	306	326	322	326	335	355	351	371	319	295	319	309	318	326	326	318	305	334	357	342	310	312
3	333	F	296	296	304	318	350	351	367	341	330	317	318	319	302	305	315	314	334	324	331	295	282	308
4	332	320	277	275	291	308	348	329	326	330	311	329	326	328	312	329	321	326	324	322	328	297	272	275
5	282	288	295	311	289	289	322	333	324	326	345	328	324	334	337	343	332	324	333	334	339	328	307	285
6	285	297	283	282	282	302	329	333	349	328	326	R	326	324	327	342	328	A	338	A	F	F	F	F
7	270	277	286	312	338	293	331	340	332	343	340	346	323	327	349	331	337	338	330	341	323	281	293	291
8	293	289	298	312	326	304	351	379	338	350	364	317	329	329	338	322	339	316	319	325	353	F	293	A
9	305	305	304	309	297	F	350	343	366	336	343	322	312	340	339	333	327	327	337	324	325	308	304	301
10	314	286	289	273	278	246	344	382	352	319	314	307	297	A	320	324	318	334	314	291	310	291	316	F
11	288	293	291	F	F	F	353	361	317	324	337	322	322	336	326	338	332	327	333	338	332	292	288	280
12	296	F	F	324	306	304	A	354	338	314	313	322	320	318	313	314	336	309	330	351	340	288	280	302
13	F	297	291	306	288	269	335	347	359	311	319	316	328	329	323	323	328	330	332	331	323	301	276	283
14	305	311	310	294	307	305	354	366	357	365	359	316	322	317	320	326	314	322	339	349	317	297	280	298
15	304	287	289	326	300	302	334	371	377	342	311	319	317	330	337	327	327	314	316	350	349	305	F	273
16	296	302	292	304	305	311	333	350	356	366	331	332	327	314	329	334	335	327	338	343	317	299	301	308
17	287	302	286	311	323	308	334	351	351	333	330	326	316	323	320	312	321	316	331	336	272	280	273	298
18	301	270	281	310	290	253	304	339	328	308	330	322	315	319	304	312	321	336	351	336	284	264	298	298
19	285	278	293	331	288	303	344	349	363	371	324	323	325	326	319	320	332	339	351	321	289	294	279	290
20	284	301	294	293	301	305	352	351	371	334	328	335	294	318	321	307	319	332	328	337	308	278	276	293
21	302	300	294	313	311	315	354	350	364	320	355	348	305	315	325	320	323	330	327	315	298	299	293	287
22	297	282	307	312	308	307	355	362	356	316	306	313	317	327	333	326	323	335	337	332	311	311	293	279
23	289	297	295	305	291	296	329	345	366	351	312	315	316	317	330	314	328	344	342	340	302	286	288	303
24	298	305	308	319	328	293	355	360	363	363	319	330	313	316	302	319	326	336	338	364	313	282	291	294
25	285	298	306	318	313	301	357	348	373	378	335	317	316	311	304	322	330	334	344	322	315	308	293	293
26	280	286	294	291	296	311	345	356	354	347	318	314	313	311	304	310	323	333	359	317	316	293	293	288
27	271	286	276	256	238	245	232	278	333	351	302	302	333	320	330	315	332	343	341	310	271	300	281	F
28	296	F	F	330	332	293	340	353	340	327	327	321	323	324	319	317	319	348	344	311	287	276	283	302
29	316	297	300	304	313	330	344	353	372	344	337	323	313	302	305	317	337	339	322	301	304	309	304	309
30	308	306	313	305	280	292	348	368	346	336	341	325	326	332	321	333	337	336	341	357	302	287	303	309
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	28	29	29	28	29	30	30	30	30	29	30	29	30	30	30	29	30	29	29	28	28	26
MED	296	297	294	310	301	304	344	351	355	338	329	322	320	323	321	322	327	330	334	334	316	296	293	296
U Q	305	304	305	317	313	309	352	360	364	351	340	328	326	328	330	329	332	336	341	340	332	306	302	303
L Q	285	286	289	295	290	293	334	345	338	326	318	316	315	316	313	314	321	320	327	322	302	286	280	287

SEP.2011 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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 400	L	A	396	U L 399	372	L	L	A						
2								L	L	A	U L 412	U L 348	389	390	358	390	U L 365	A						
3									A	A	A	U L 386	U L 372	U L 382	L	L	A	L						
4									L	398	397	U L 437	U L 385	U L 382	L	L	A	L						
5									A	376	A	A	A	A	U L 361	L	A	A						
6							A	A	A	A	381	A	A	A	L	A	A	A						
7							L	A	A	A	A	A	A	381	U L 368	A	A	A						
8								L	L	L	A	U L 378	434	369	A	U L 385	A	A						
9								L	U L 389	A	A	A	L	A	A	A	L	A						
10									A	A	349	U L 359	A	A	A	A	L	A						
11								A	A	A	A	A	A	L	A	L	A	A						
12							A	A		U L 373	A	389	388	384	A	A	A							
13								L	U L 375	U L 385	U L 389	U L 366	U L 363	393	L	U L 397	L	A						
14								A	L	L	L	L	A	L	L	A	A	A						
15								L	L	L	A	U L 366	U L 377	370	U L 386	L	U L 400	A						
16								L	L	L	L	U L 415	L	L	A	L	L							
17								L	L	L	L	L	L	L	L	L	L							
18							A	A	A	A	A	U L 364	U L 381	L	L	L	L							
19									L	L	L	L	U L 378	L	L	L								
20								A	A	A	L	A		L	L	L	L							
21									L	L	L	L	L	L	L	L								
22								A	A	A	U L 351	U L 377	U L 349	U L 375	L	L	L							
23									L	L	L	L	U L 367	L	L	L								
24								L	L	L	L	L	L	L	L	L	L	A						
25									L	L	U L 426	L	L	L	L	L	L							
26									L	U L 358	L	L	L	U L 382	L	L	A							
27							U L 303	U L 335	383	L	U L 365	L	L	L	L	L								
28								A		U L 399	L	L	L	L	L	L								
29								L	L	A	L	L	L	L	L									
30										L	L	L	L	L	L	L	L							
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	1	3	7	8	11	12	11	5	3	2							
MED							U L 303	U L 335	U L 383	U L 385	U L 385	U L 377	U L 380	382	U L 368	U L 390	U L 382							
U Q									U L 389	U L 399	U L 404	U L 389	388	390	379	U L 397								
L Q									U L 375	U L 373	U L 358	U L 364	U L 370	375	360	U L 385								

SEP. 2011 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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									244	246	260	280	286	282	302	328	316	290						
2								250	240	228	272	346	306	320	286	282	276	266						
3									236	E A 292	266	294	286	274	318	312	290	276						
4									286	274	296	258	302	292	300	290	276	260						
5									326	314	E A 280	310	E A 310	E A 310	296	282	282	E A 268						
6							266	268	260	254	290	E A 292	312	308	292	274	E A 306	A						
7							296	284	282	280	280	266	288	300	274	250	276	256						
8								228	246	254	244	298	298	292	282	274	266	252						
9								242	238	E A 282	278	292	280	E A 274	278	280	286	264						
10									254	E A 318	342	336	E A 322	A	E A 284	264	294	252						
11								236	274	262	242	272	292	282	298	266	262	256						
12							A	242		304	290	296	290	288	274	290	262							
13								258	270	284	272	312	288	274	304	286	256	258						
14								228	242	234	256	300	290	310	308	282	290	250						
15								238	224	244	250	294	292	282	266	274	256	246						
16								252	236	230	268	256	278	294	278	268	262							
17								244	244	246	258	270	276	272	270	286	276							
18							E A 296	222	262	266	252	276	272	268	308	298	272							
19									246	236	254	274	290	268	274	282								
20								234	226	234	260	276		288	284	286	270							
21									234	248	256	256	310	294	276	268								
22								232	230	234	308	278	280	272	262	282	264							
23									232	230	264	262	288	282	260	274								
24								230	240	236	266	266	292	284	300	274	266	238						
25									220	224	256	272	280	284	290	282	268							
26									232	252	268	262	288	276	294	282	258							
27							458	384	252	240	346	310	264	272	262	248								
28								240		268	272	258	258	264	280	270								
29								250	226	222	268	264	270	294	288									
30										236	244	270	260	254	248	260	240							
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							4	19	27	30	30	30	29	29	30	29	24	14						
MED							296	242	242	244	266	276	288	282	284	282	270	256						
U Q							377	252	260	274	280	296	295	294	298	286	284	266						
L Q							281	232	232	234	256	266	279	273	274	269	262	252						

SEP. 2011 h′F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

SEP. 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 248	E B 254	E B 256	E B 258	E B 248	E B 262	222	210	206	198	212	A	192	200	194	208	E A 236	A	E A 244	228	220	216	E A 254	E A 258
2	E B 240	E B 248	E B 242	218	E B 220	E B 236	218	204	198	A	190	210	206	192	216	206	220	A	E A 246	226	204	202	E B 226	228
3	E A 216	E A 292	E A 292	E B 294	E B 266	E A 254	204	232	A	A	A	194	214	192	202	216	A	218	232	218	220	E B 244	E B 276	E B 252
4	228	202	E B 308	E B 306	E B 278	260	220	234	200	208	206	172	208	172	200	200	A	206	224	220	218	E B 232	E A 310	E B 290
5	E B 286	E B 286	E B 268	E B 256	E B 274	E B 286	230	228	A	230	A	A	A	A	244	202	A	A	E A 244	232	220	218	E A 244	E B 290
6	E A 308	E A 328	E B 300	E B 290	E B 294	262	A	A	A	A	216	A	A	A	E A 236	A	A	A	E A 256	A	E A 264	E A 312	E A 292	E A 304
7	E A 330	E A 334	E A 314	E A 258	218	E B 278	236	A	A	A	A	A	A	210	198	A	A	A	236	216	232	E A 280	E B 236	E B 258
8	E B 276	E B 278	E B 262	E B 240	224	E B 246	230	200	196	198	A	200	194	216	A	212	A	A	E A 254	E A 244	224	222	E A 320	A
9	E A 250	E A 270	E A 274	E A 278	E B 272	E B 292	222	204	192	A	A	A	200	A	A	A	222	A	E A 242	E A 246	E A 238	E A 268	E B 254	E B 266
10	238	E A 264	E A 290	E B 338	E B 316	E B 320	250	222	A	A	222	214	A	A	A	A	226	A	E A 246	E A 280	E A 282	E A 270	E A 232	E A 302
11	E A 292	E B 260	E A 286	E B 260	E B 236	E B 242	222	A	A	A	A	A	A	204	A	220	A	A	E A 234	224	202	E A 242	E A 248	E B 274
12	E B 258	E B 296	E B 276	226	E B 238	234	A	A	198	192	A	206	198	216	A	A	A	E A 236	230	214	198	E A 282	E A 366	E A 246
13	E A 300	E A 272	E B 276	E B 258	E A 298	E A 314	E A 250	218	206	200	198	198	206	204	210	210	204	A	226	218	226	E B 220	E B 286	E A 292
14	E A 256	E A 248	E B 252	E B 268	E B 260	E B 258	226	A	204	194	196	196	A	204	212	A	A	A	E A 242	224	224	E A 272	E B 270	E A 260
15	E A 262	E A 282	E B 264	230	220	E B 256	220	206	196	190	A	208	202	204	206	194	198	A	236	232	218	218	E A 294	E B 276
16	E B 268	E B 258	E B 278	E B 244	226	226	224	214	200	196	194	196	212	194	A	210	216	234	228	218	220	E A 246	E A 282	E A 260
17	E A 286	E A 294	E A 282	E A 256	220	E B 268	226	210	204	200	190	190	206	202	190	192	210	E A 238	234	220	E A 326	E A 302	E A 288	E B 254
18	222	E B 298	E B 286	A 228	E A 244	E B 370	A	A	A	A	A	192	192	198	214	206	226	E A 244	216	E A 262	E A 280	E A 354	E A 290	E A 274
19	E A 272	E B 284	E B 266	228	E B 238	E B 278	224	224	210	200	198	198	194	184	204	218	234	232	210	212	E B 228	E B 248	E B 280	E B 280
20	E A 286	E A 268	E A 262	E B 260	E B 248	E B 250	222	A	A	A	192	A	200	202	206	210	220	238	218	212	218	E A 286	E A 312	E A 288
21	E B 250	E B 242	E B 252	E B 248	E B 230	230	214	210	196	200	202	196	192	190	192	198	210	234	224	212	232	E B 250	E A 262	E A 314
22	E A 296	E A 284	E A 260	E A 242	E A 246	E A 260	214	A	A	A	200	208	204	198	198	196	202	232	212	210	222	218	E B 246	E B A 304
23	E B 282	E B 260	E B 260	E B 250	220	E B 280	228	230	196	180	198	202	206	192	190	198	230	226	214	228	E A 246	E A 304	E A 294	E B 278
24	E B 264	E B 252	E B 248	228	208	230	220	190	198	194	192	212	208	202	210	200	206	A	214	200	210	E A 272	E B 270	E B 258
25	E B 282	E B 270	E B 252	226	228	E B 252	222	218	196	192	186	178	194	196	204	210	220	226	208	200	220	E B 232	E B 242	E B 262
26	E B 286	E B 282	E B 268	E B 262	E A 264	E B 258	222	214	200	186	186	198	194	192	212	204	A	236	210	208	E A 240	228	E A 266	E B 262
27	E B 300	E B 282	E B 312	E B 380	E B 368	E B 400	E A 258	248	206	202	192	238	210	208	200	204	222	230	216	E A 254	E A 308	E A 254	E A 348	E A 278
28	E A 268	E A 284	E A 264	E B 216	212	E B 248	234	A	200	188	206	200	202	188	206	208	226	220	214	212	E B 250	E A 290	E A 298	E A 268
29	E A 240	E A 256	E B 250	E B 260	E B 254	226	224	202	202	A	188	192	180	180	228	228	234	208	214	E B 250	E B 246	224	E B 242	E B 238
30	E B 238	232	224	226	E B 282	E B 302	226	208	208	194	192	192	196	202	196	194	212	228	218	204	220	E B 264	E B 264	E B 248
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	27	21	21	19	21	23	24	26	24	24	20	17	30	29	30	30	30	29
MED	E 268	E B 271	E B 267	E B 256	E B 245	E B 259	223	214	200	196	196	198	201	199	204	206	220	229	220	216	219	E 249	E A 273	E B 268
U Q	E A 286	E 284	E A 286	E A E B 262	E B 272	E B 280	230	226	205	200	204	208	206	204	212	210	226	E A 236	E A 242	E A 232	E A 246	E A 280	E A 294	E A 289
L Q	E 248	E B 256	E B 256	228	224	246	220	205	196	192	191	192	194	192	198	199	210	223	214	212	220	224	E B 248	E B 258

SEP. 2011 h′F (KM)

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SEP.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	118	118	A	A	A	A	A	A	A	A	A	A						
2						B	120	114	110	118	122	112	122	122	110	110	118	118						
3						B	120	118	118	A	A	A	118	124	A	126	A	116						
4						B	116	116	116	124	116	128	116	114	116	116	A	A						
5						B	116	126	A	A	A	A	A	A	116	118	A	A						
6						B	A	A	A	A	A	A	A	A	A	120	A	A						
7						B	122	A	A	A	A	A	A	A	A	A	A	A						
8						B	110	124	124	126	A	124	110	A	118	A	A	A						
9						B	116	112	116	A	A	A	A	A	A	A	A	A						
10						B	126	124	A	A	A	A	A	A	A	A	A	A						
11						B	A	A	A	A	A	A	A	A	A	114	116	A						
12						B	A	A	116	128	A	A	A	A	A	A	A	116						
13						B	A	A	A	118	122	126	124	126	124	126	118	122						
14						B	122	A	118	120	A	124	A	124	116	116	A	A						
15						B	124	124	124	126	A	120	120	A	118	114	122	116						
16						B	124	122	122	118	126	126	A	A	A	A	A	A						
17						B	124	124	A	122	122	126	122	122	122	122	116	114						
18						B	A	A	A	A	A	116	116	122	A	A	118	116						
19						B	114	114	114	A	122	122	122	128	116	110	110	112						
20						B	114	114	A	A	118	A	118	118	114	114	A	A						
21						B	120	122	122	126	128	138	120	118	118	114	116	A						
22						B	A	A	A	A	A	118	A	126	126	126	114	A						
23						B	B	114	114	118	116	118	118	116	118	108	116	A						
24						B	116	112	118	118	126	128	A	A	120	118	112	112						
25						B	108	124	122	126	120	122	112	120	124	126	128	114						
26						B	114	116	122	118	118	126	A	126	126	126	122	114						
27						B	B	116	118	114	116	118	122	126	128	122	114	B						
28						B	A	A	A	116	124	126	122	120	120	122	A	B						
29						B	A	122	122	A	A	118	124	120	112	122	112	B						
30						B	122	A	120	116	116	116	118	112	116	114	120	122						
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							20	20	18	17	15	20	17	18	20	22	16	12						
MED							119	118	118	118	122	123	120	122	118	118	116	116						
U Q							122	124	122	126	124	126	122	126	123	122	119	117						
L Q							115	114	116	118	116	118	117	118	116	114	114	114						

SEP.2011 h′E (KM)

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SEP. 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	98	B	138	128	108	106	104	108	104	104	104	102	102	98	90	88	90	94	90	88
2	90	B	B	B	B	B	136	G	116	116	G	G	G	G	G	G	100	120	106	B	B	B	B	B
3	106	102	102	102	98	104	120	124	122	106	108	110	G	G	108	G	102	124	108	90	100	94	94	96
4	B	B	B	B	B	126	114	116	118	122	102	G	94	G	G	122	102	102	98	94	96	96	96	98
5	88	B	94	B	B	B	128	116	106	110	108	106	108	102	G	G	108	108	106	100	B	B	104	98
6	100	96	96	B	B	B	104	106	102	102	102	110	102	102	110	134	106	106	104	100	96	96	94	90
7	92	88	90	90	98	96	98	98	98	96	100	96	96	106	100	98	98	96	88	88	86	86	88	88
8	B	B	B	B	92	B	G	114	G	G	110	G	G	108	120	108	108	104	104	104	100	104	104	98
9	96	94	86	84	B	102	120	122	120	102	102	100	96	96	94	94	94	90	90	88	88	88	88	B
10	90	96	94	94	B	B	140	122	108	106	106	100	100	94	94	98	98	98	92	92	90	100	104	98
11	98	100	100	108	114	120	110	112	110	110	108	106	104	96	94	98	118	108	104	100	104	98	98	98
12	B	B	88	88	94	98	102	100	G	G	100	100	100	100	94	98	96	118	B	98	96	96	92	94
13	94	B	B	B	112	106	108	106	106	102	G	G	G	G	G	G	G	120	104	104	102	B	B	92
14	92	92	90	B	86	B	112	110	G	G	104	G	102	G	G	116	118	104	102	102	100	100	100	92
15	90	90	90	92	B	B	110	106	G	G	96	G	G	100	100	94	100	116	114	100	100	112	106	B
16	B	B	B	B	92	92	G	118	G	G	G	G	102	102	100	104	104	104	104	98	90	92	98	98
17	98	98	98	98	90	98	124	124	104	G	G	G	G	G	G	G	92	112	108	106	104	102	102	102
18	B	B	102	106	118	114	108	104	104	104	106	G	G	G	106	106	G	122	96	96	94	96	96	96
19	96	B	B	B	B	B	G	G	100	106	G	G	G	G	100	96	92	114	94	92	B	98	98	100
20	96	96	96	B	B	B	G	116	102	102	G	100	106	126	G	102	114	102	102	94	92	94	94	96
21	B	B	B	B	B	B	108	102	102	G	G	G	G	G	G	G	102	102	102	108	108	110	100	92
22	96	96	94	96	96	96	96	92	96	110	106	G	118	G	G	G	116	108	102	B	98	96	96	96
23	96	B	B	B	B	B	128	102	100	G	G	G	G	G	G	92	86	92	86	86	90	90	90	102
24	B	B	B	B	B	B	G	G	G	G	G	G	102	106	G	102	G	118	102	106	96	98	B	B
25	B	B	B	B	B	B	148	G	G	G	G	G	G	G	G	G	G	120	B	B	B	B	B	94
26	B	B	B	94	96	96	140	G	G	G	G	G	106	G	G	G	122	112	102	100	100	88	88	88
27	B	B	B	B	B	B	142	G	104	G	G	G	G	G	G	G	120	104	102	100	98	96	94	92
28	90	90	92	B	88	94	102	98	106	108	G	G	G	G	116	G	102	104	98	94	92	94	94	92
29	90	B	90	86	B	B	108	108	100	98	88	G	G	G	G	98	102	100	100	96	98	B	B	B
30	B	B	B	B	B	B	G	106	104	106	G	G	G	G	G	G	104	146	B	B	96	B	B	88
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	18	12	16	12	14	13	24	24	22	18	16	10	15	13	14	18	26	30	27	26	26	24	24	25
MED	95	96	94	94	96	98	113	109	104	106	104	103	102	102	100	100	102	107	102	98	96	96	96	96
U Q	96	97	97	100	98	110	132	117	108	110	107	108	106	106	108	106	108	118	104	100	100	99	100	98
L Q	90	91	90	89	92	96	108	103	102	102	101	100	100	98	94	98	98	102	96	92	92	94	93	92

SEP. 2011 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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					F2		H2	C2	L2	L2	L2	L2	L2	L2	L2	L2	L2	L3	F3	F5	F4	F2	F3	F3
2	F1						H2		C1	C1							L2	CL21	F3					
3	F3	F2	F2	F1	F2	L2	C2	CL21	CL21	L2	L2	L2			L2		L2	CL12	F2	F2	F2	F2	F1	F1
4						C1	C2	C2	C2	C2	L1		L2			C2	L2	L2	F2	F2	F3	F2	F2	F1
5	F2		F1				C2	CL12	L2	L2	L2	L2	L2	L2			L2	L2	F3	F3			F1	F1
6	F2	F5	F2				L2	L2	L2	L2	L2	L2	L2	L2	L2	C1	L3	L3	F3	F4	F4	F4	F3	F3
7	F3	F4	F3	F2	F1	L1	L1	L2	L3	L2	L2	L2	L2	L2	L2	L2	L2	L3	F4	F4	F4	F3	F2	F2
8					F2			C2			L2			L2	C2	L2	L2	L3	F2	F3	F3	F2	F2	F4
9	F2	F3	F3	F2		L1	C2	C1	C1	L2	L2	L2	L2	L4	L2	L3	L2	L2	F3	F5	F4	F3	F2	
10	F1	F2	F4	F2			H2	CL21	L2	L2	L2	L2	L2	L3	L2	L2	L3	L2	F3	F4	F3	F3	F3	F2
11	F2	F1	F2	F1	F2	C1	L2	L3	L2	L2	L2	L2	L2	L2	L2	L2	C2	L1	F3	F3	F2	F2	F3	F2
12			F1	F1	F1	L1	L3	L2			L2	L2	L2	L2	L2	L2	L2	CL22		F2	F3	F3	F2	F2
13	F2				F2	L2	L2	L2	L2	L2								C2	F2	F2	F2			F3
14	F4	F2	F2		F1		C2	L2			L2		L2			C2	C2	L4	F3	F3	F3	F3	F2	F2
15	F4	F4	F2	F2			L2	L1			L2			L2	L2	L2	L2	CL12	F3	F4	F3	F2	F2	
16					F1	L2		C1					L2	L2	L2	L2	L2	L2	F2	F2	F3	F5	F4	F3
17	F3	F3	F1	F1	F3	L1	C2	C2	L2								L2	CL11	F4	F4	F4	F3	F2	F3
18			F2	F1	F2	C2	L3	L3	L2	L2	L2				L2	L2		C1	F4	F3	F3	F2	F2	F1
19	F2								L1	L2					L2	L1	L2	CL12	F1	F1		F1	F1	F2
20	F2	F1	F1					C2	L2	L2		L2	L1	CL11		L2	C1	L2	F4	F3	F3	F3	F3	F2
21							L2	L2	L2								L1	L2	F3	F2	F1	F2	F4	F4
22	F2	F4	F4	F4	F3	L3	L2	L2	L1	L2	L1		C2				C2	L2	F4		F3	F1	F1	F2
23	F1						C1	L2	L1							L2	L2	L2	F6	F3	F2	F2	F3	F1
24													L2	L2		L1		C3	F3	F3	F3	F2		
25							H1											C2						F1
26				F2	F4	L2	H2						L2				C1	C2	F3	F2	F3	F3	F2	F1
27							H1		L2								C1	L3	F3	F4	F4	F4	F3	F3
28	F3	F3	F1		F1	L1	L2	L3	L2	L1					CL12		L2	L3	F2	F2	F2	F1	F2	F2
29	F2		F2	F3			L2	L2	L2	L2	L2					L1	L1	L3	F1	F2	F1			
30								L2	L2	L2							L1	H1			F1			F1
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																								

SEP. 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

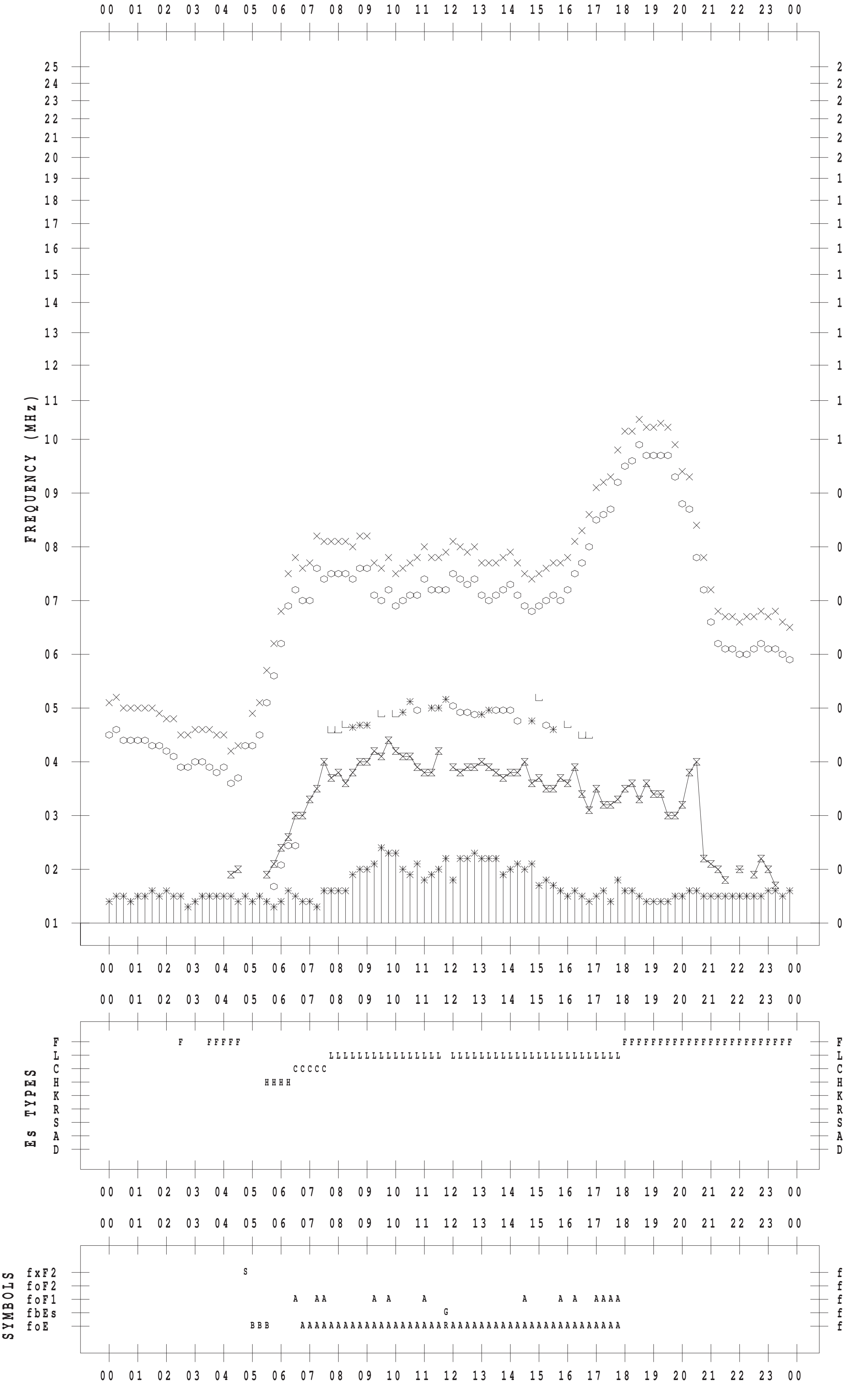
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 1

135 °E MEAN TIME



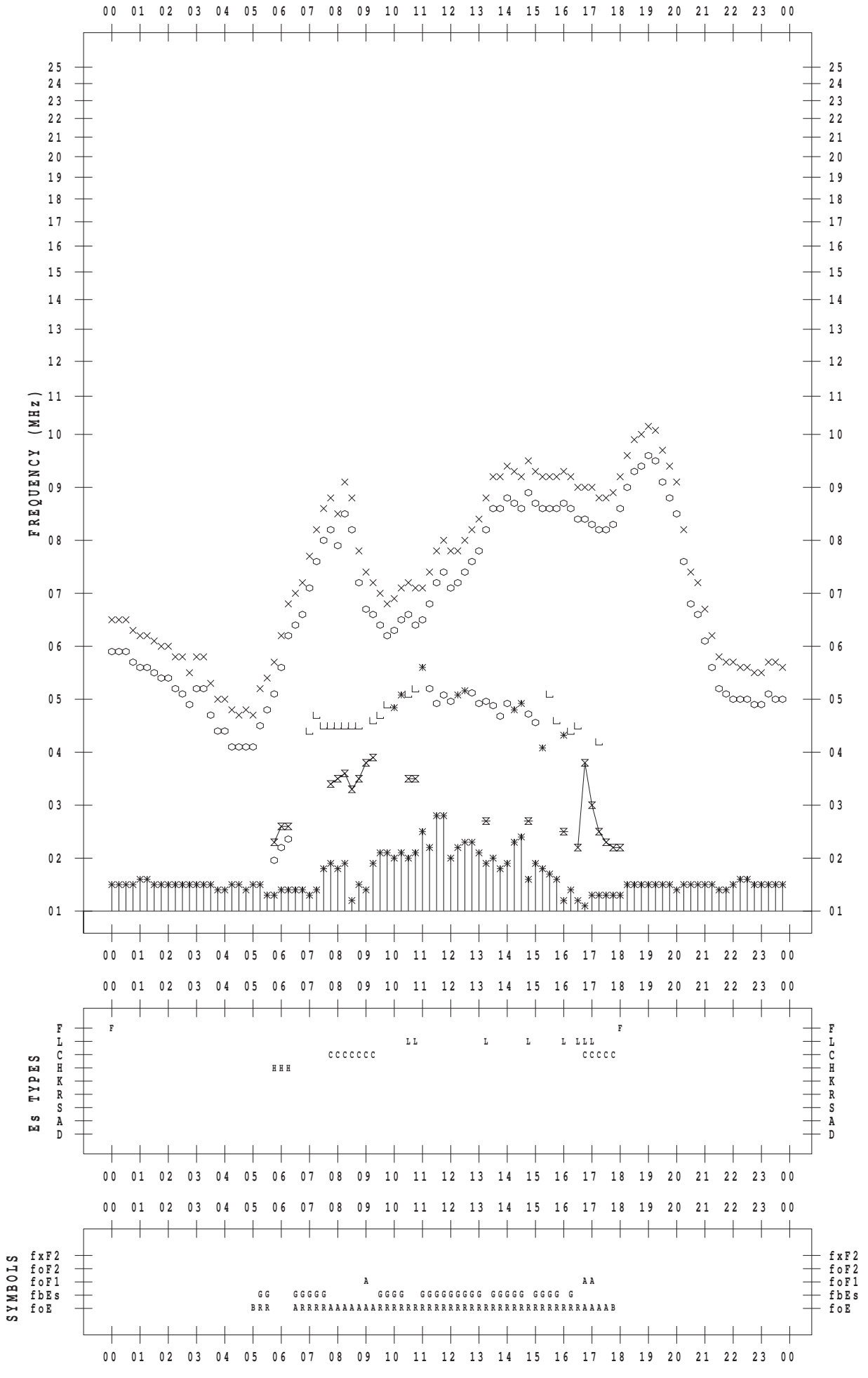
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 2

135 °E MEAN TIME



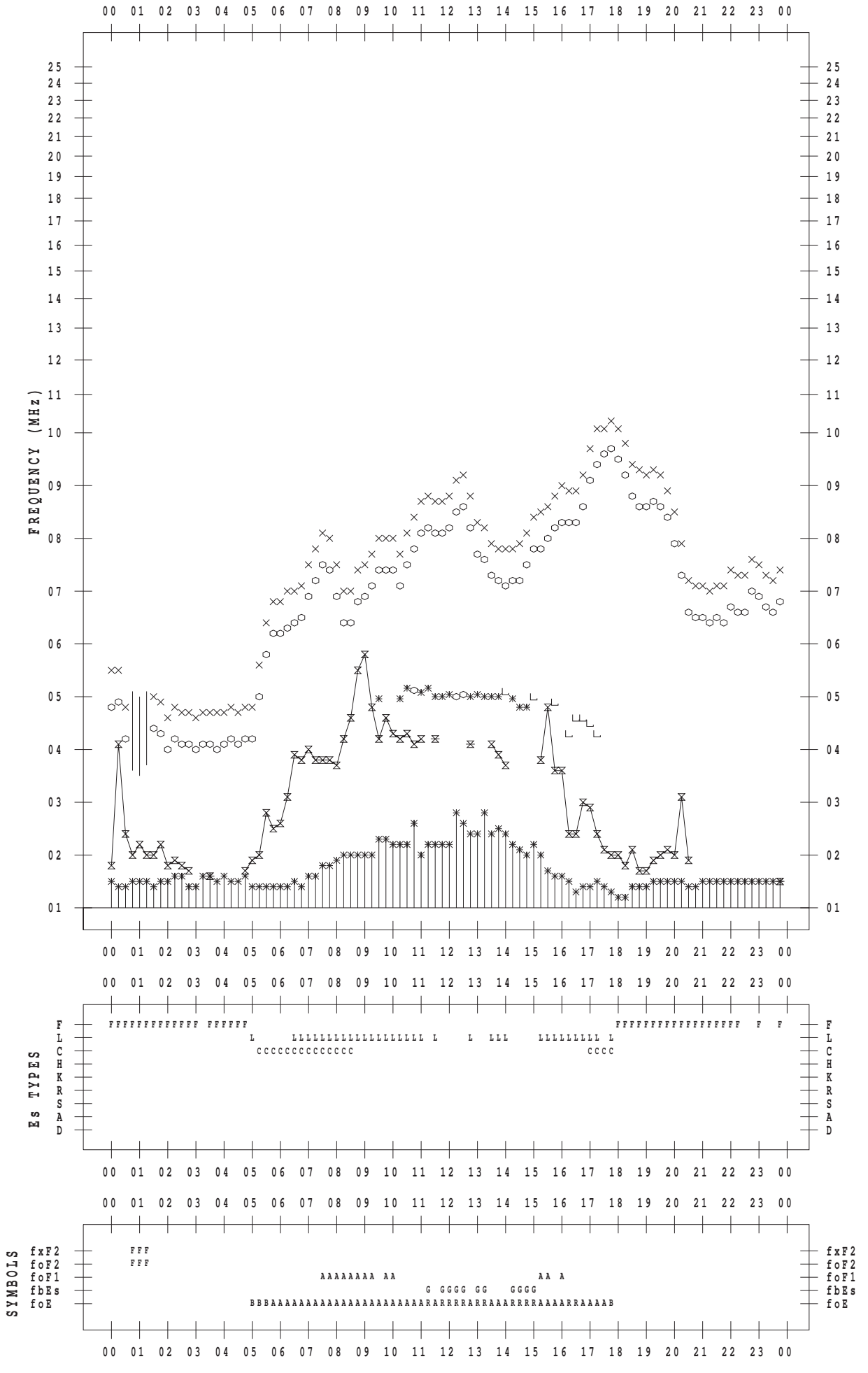
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 3

135 °E MEAN TIME

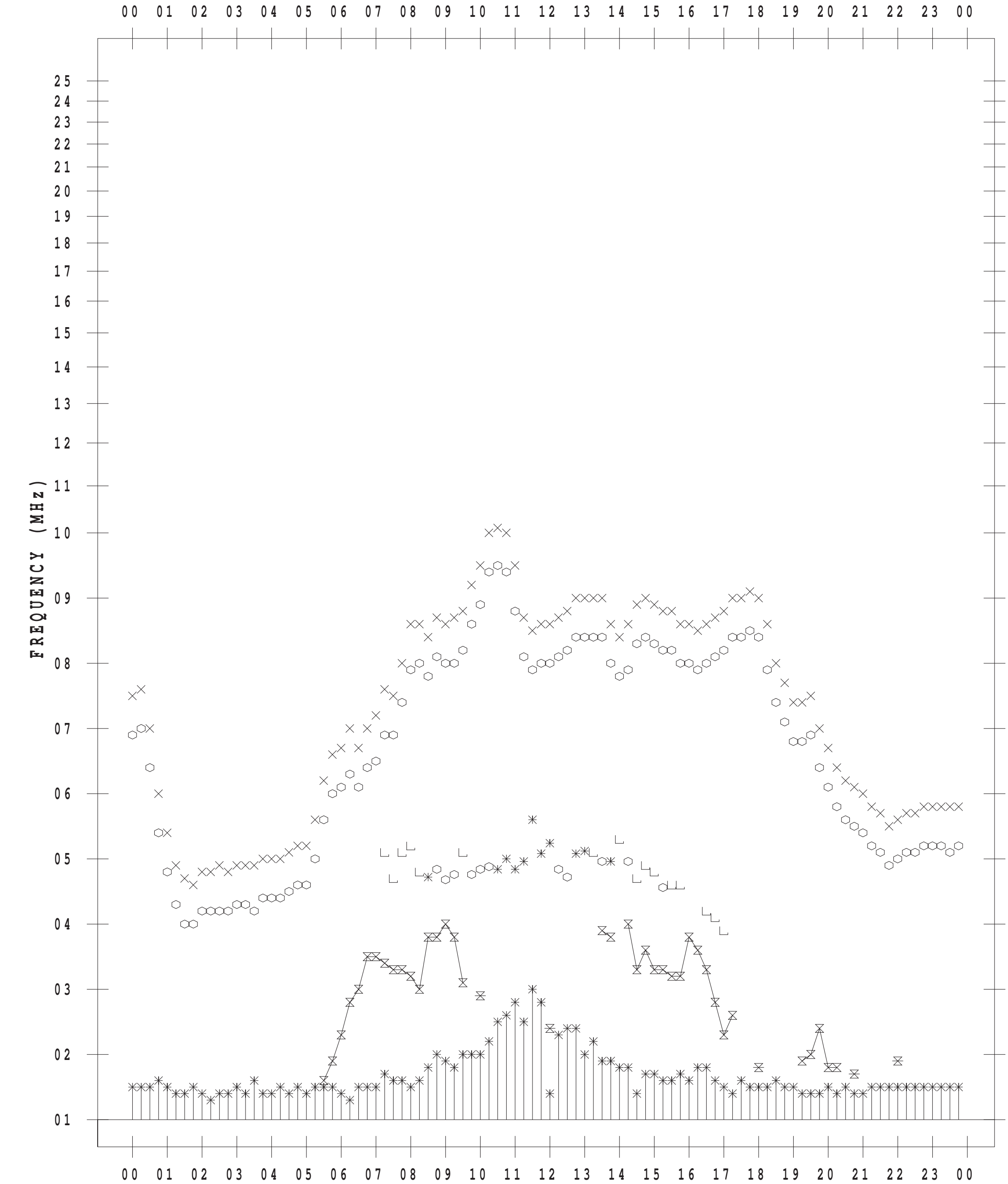


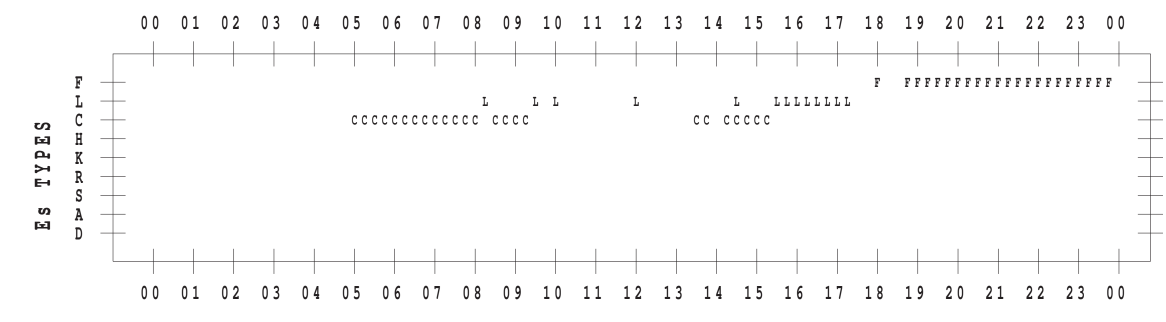
f-PLOT DATA

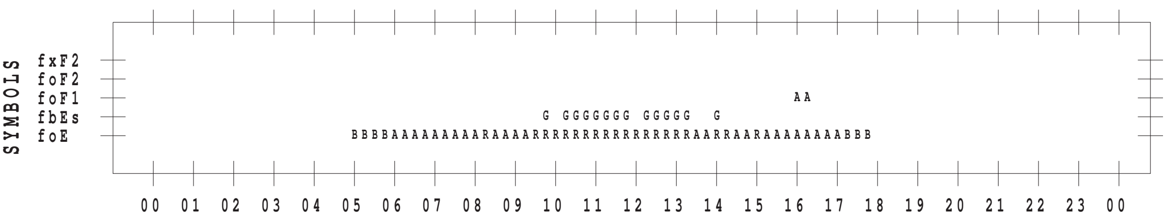
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 9/ 4

135 ° E MEAN TIME







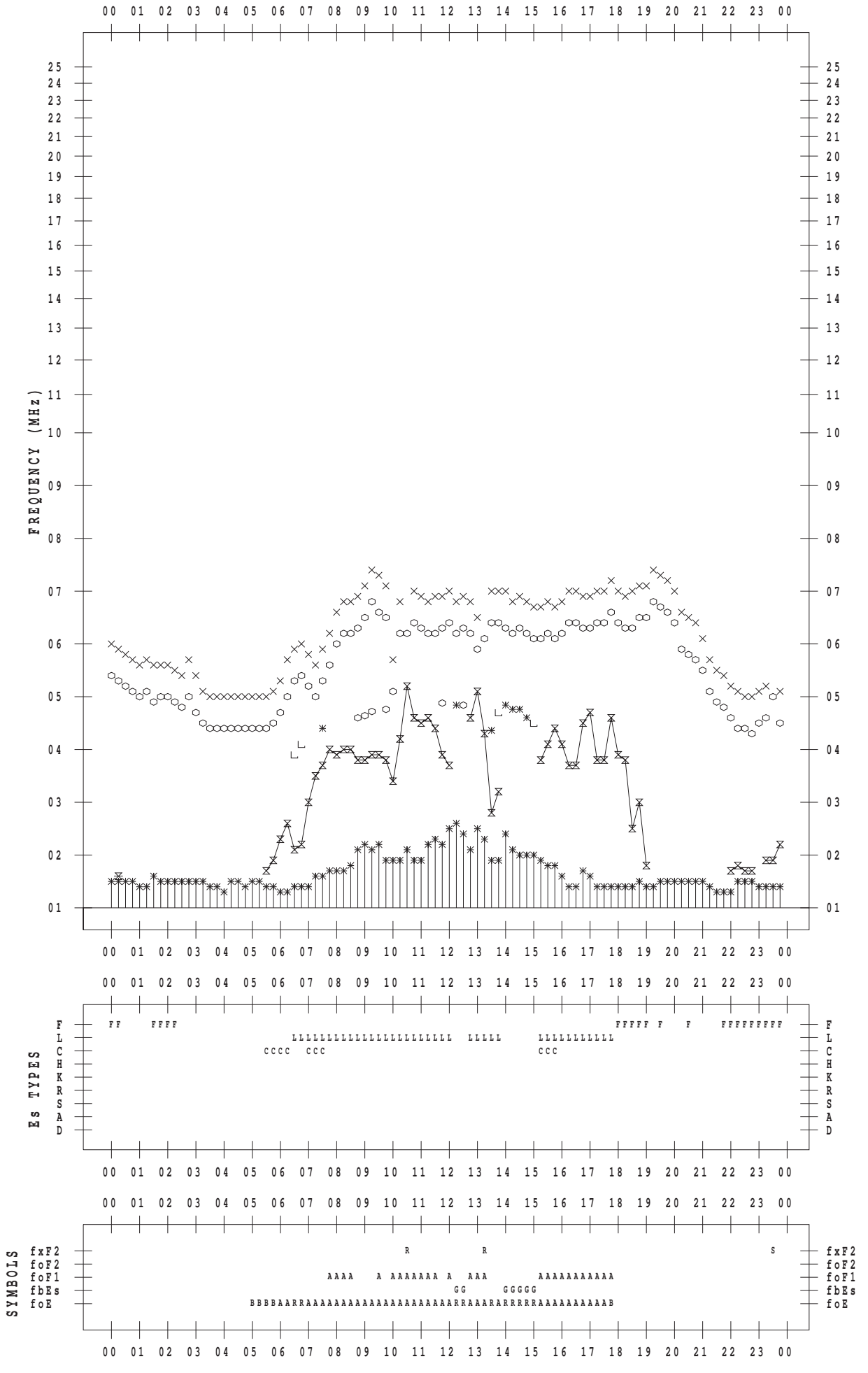
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 5

135 °E MEAN TIME



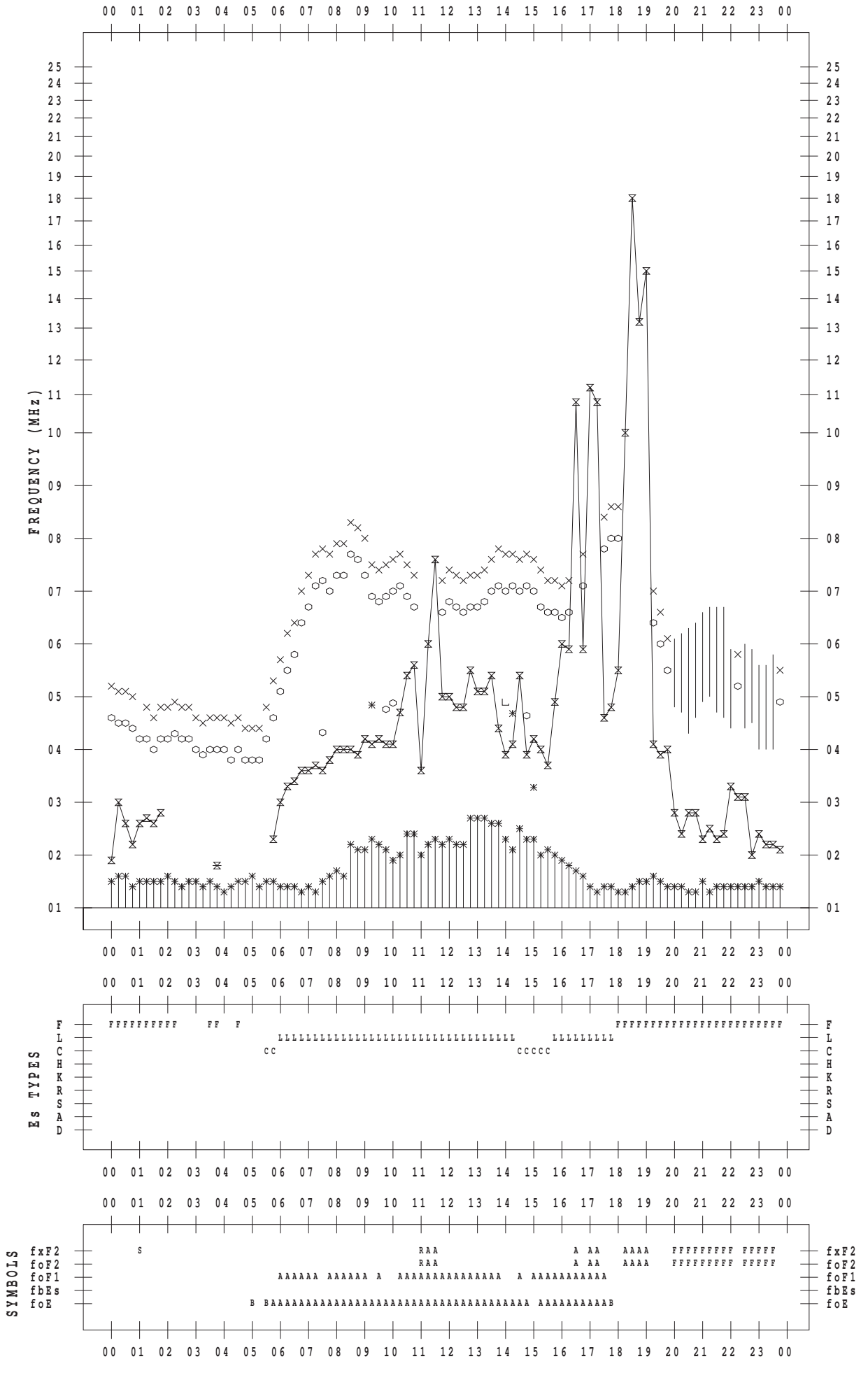
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 6

135 °E MEAN TIME



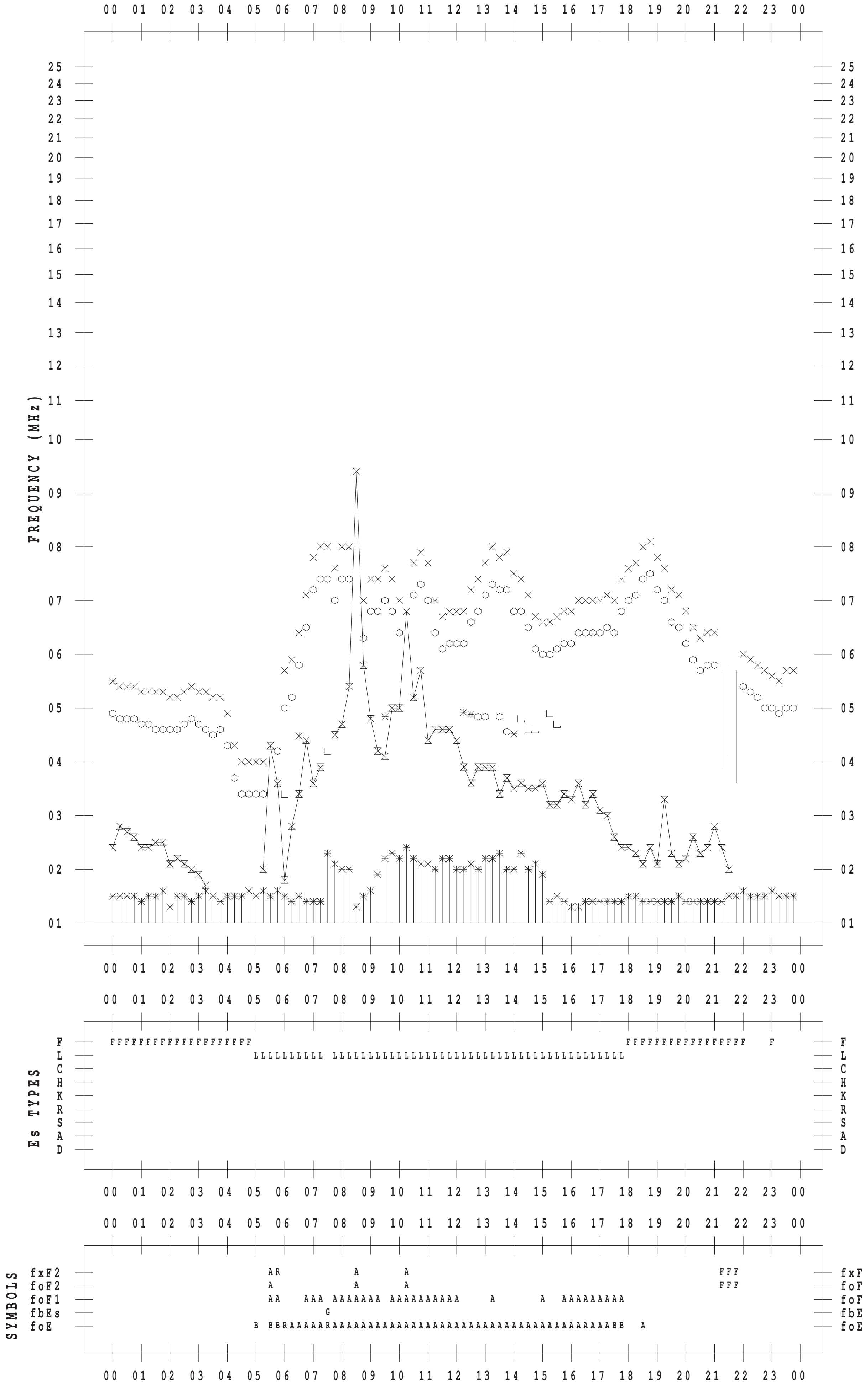
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 7

135 °E MEAN TIME



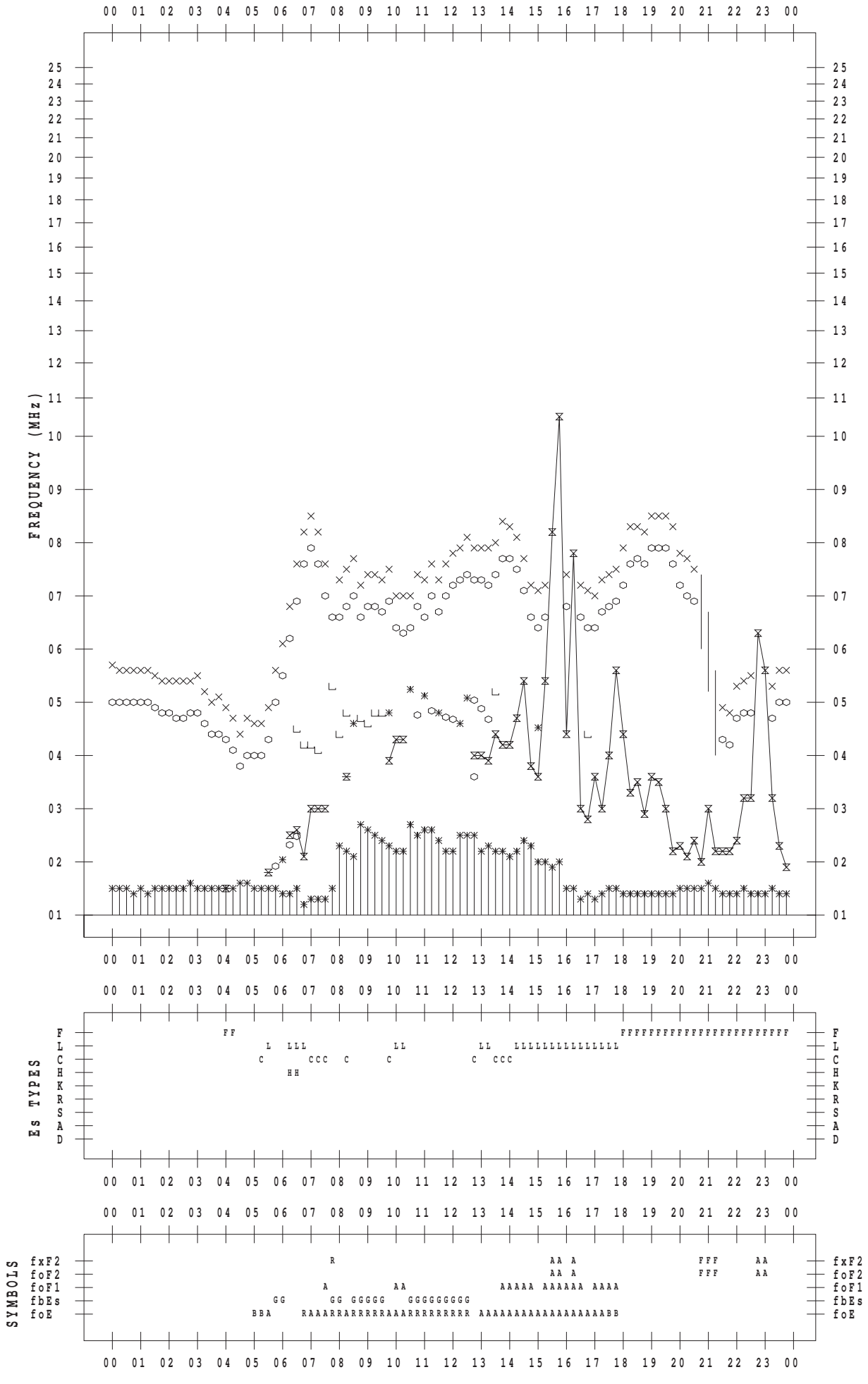
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/ 8

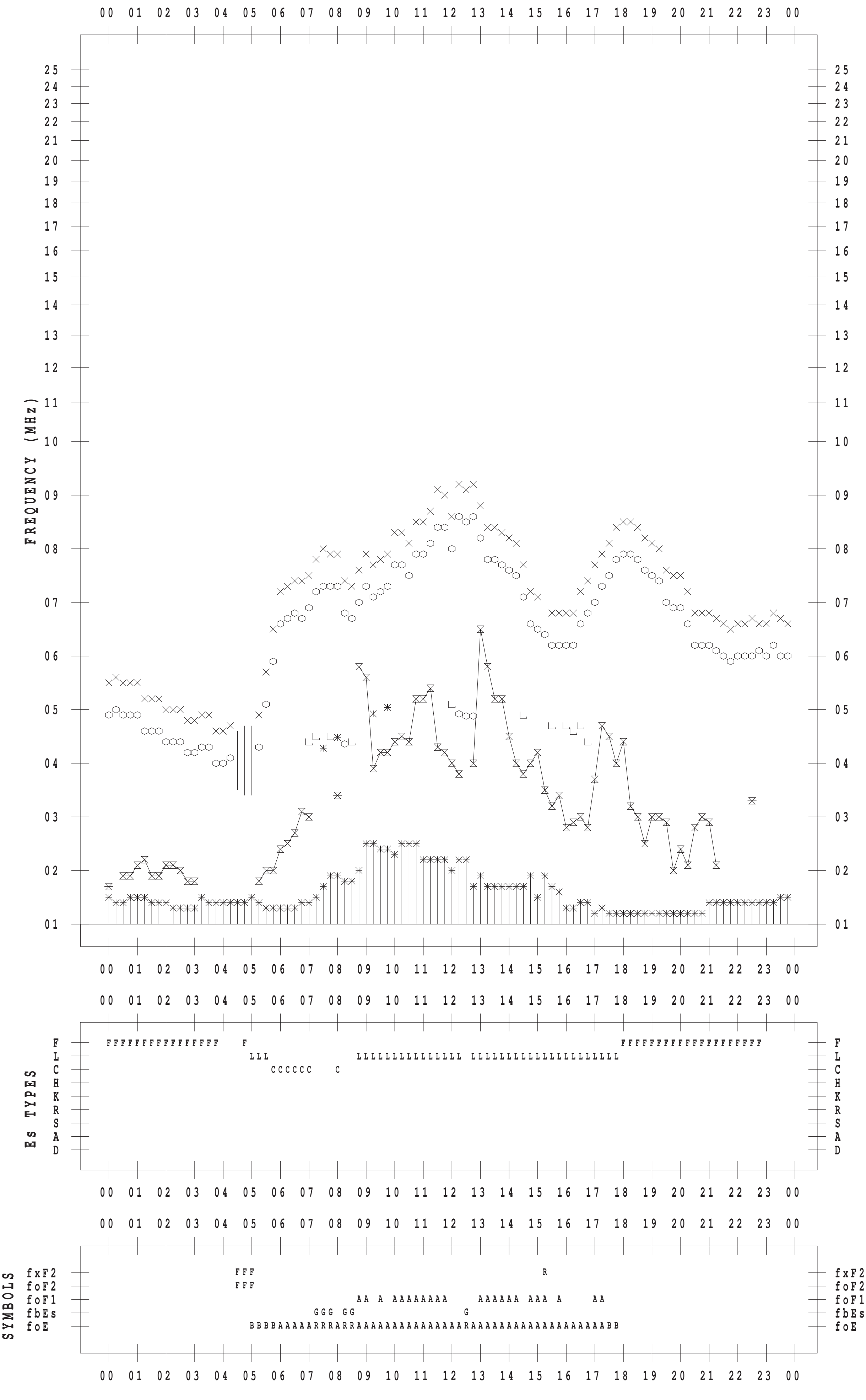
135 °E MEAN TIME



f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 9/ 9



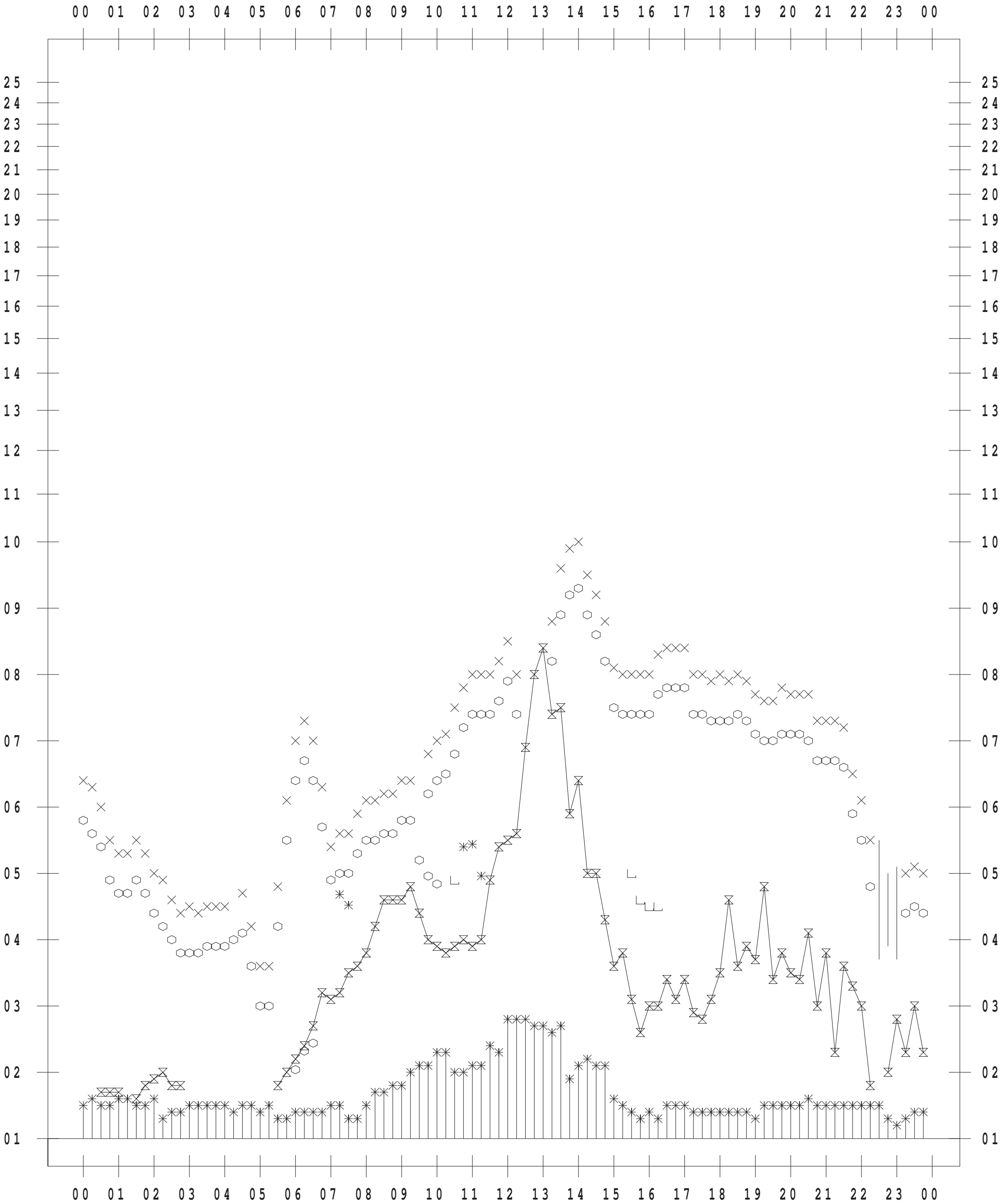
f-PLOT DATA

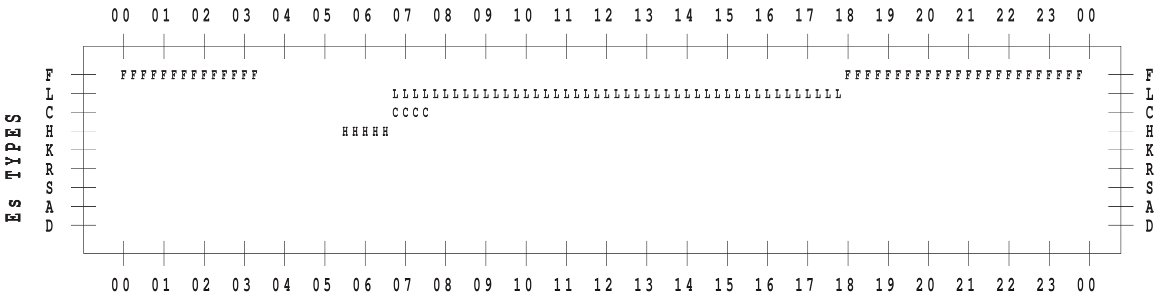
SCALER : I.NISHIMUTA

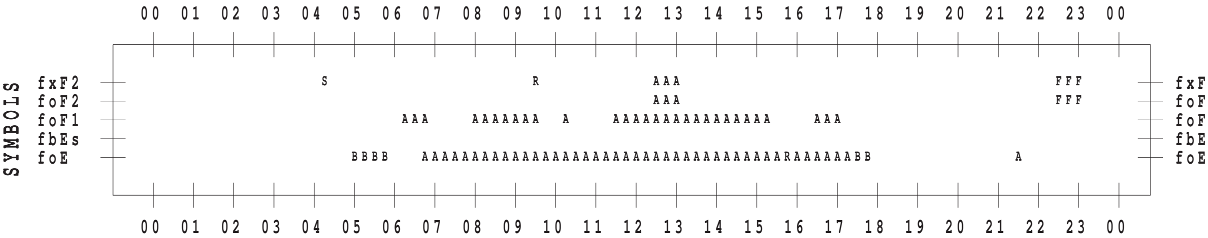
STATION : Kokubunji

DATE : 2011/ 9/10

135 °E MEAN TIME



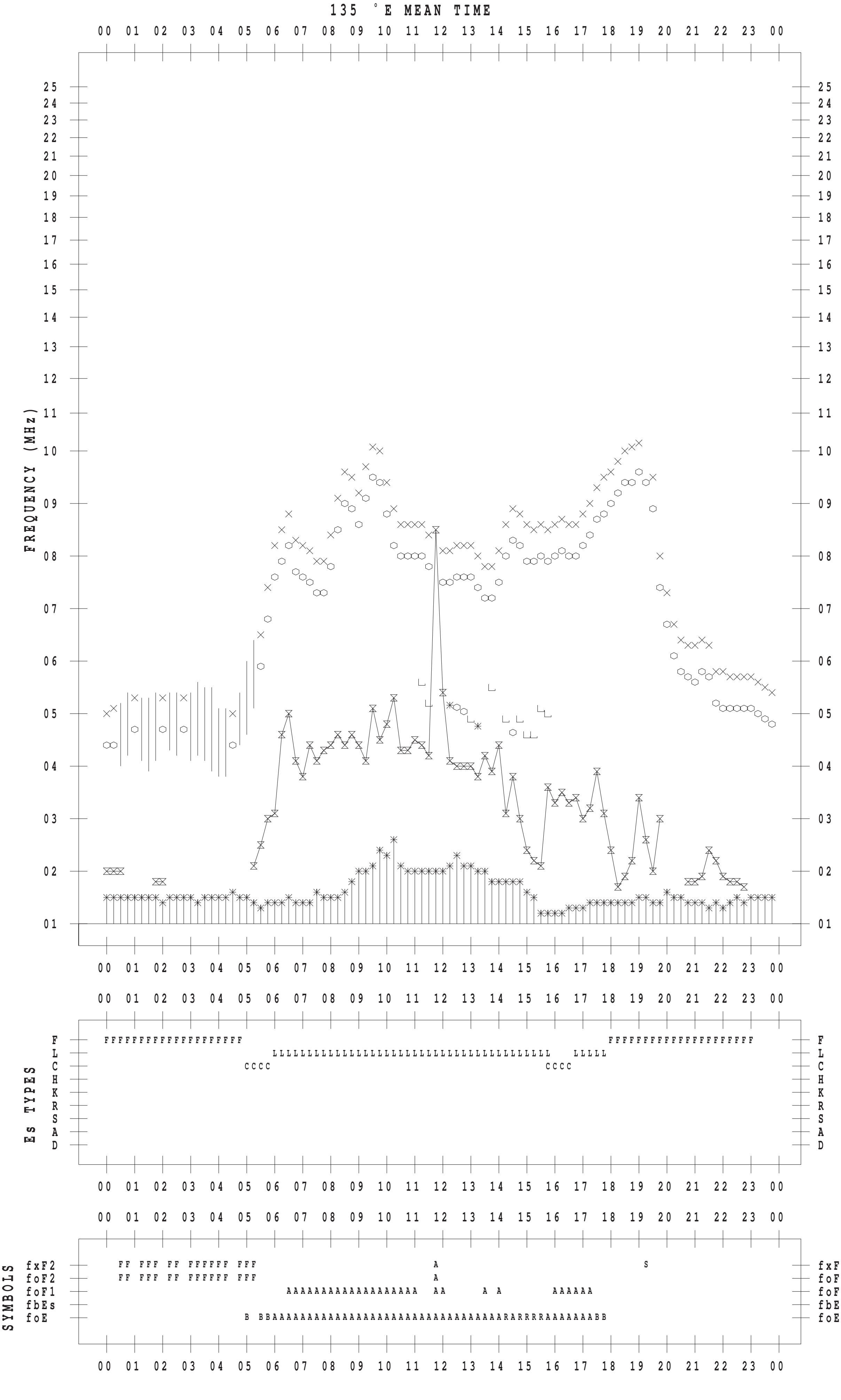




f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 9/11



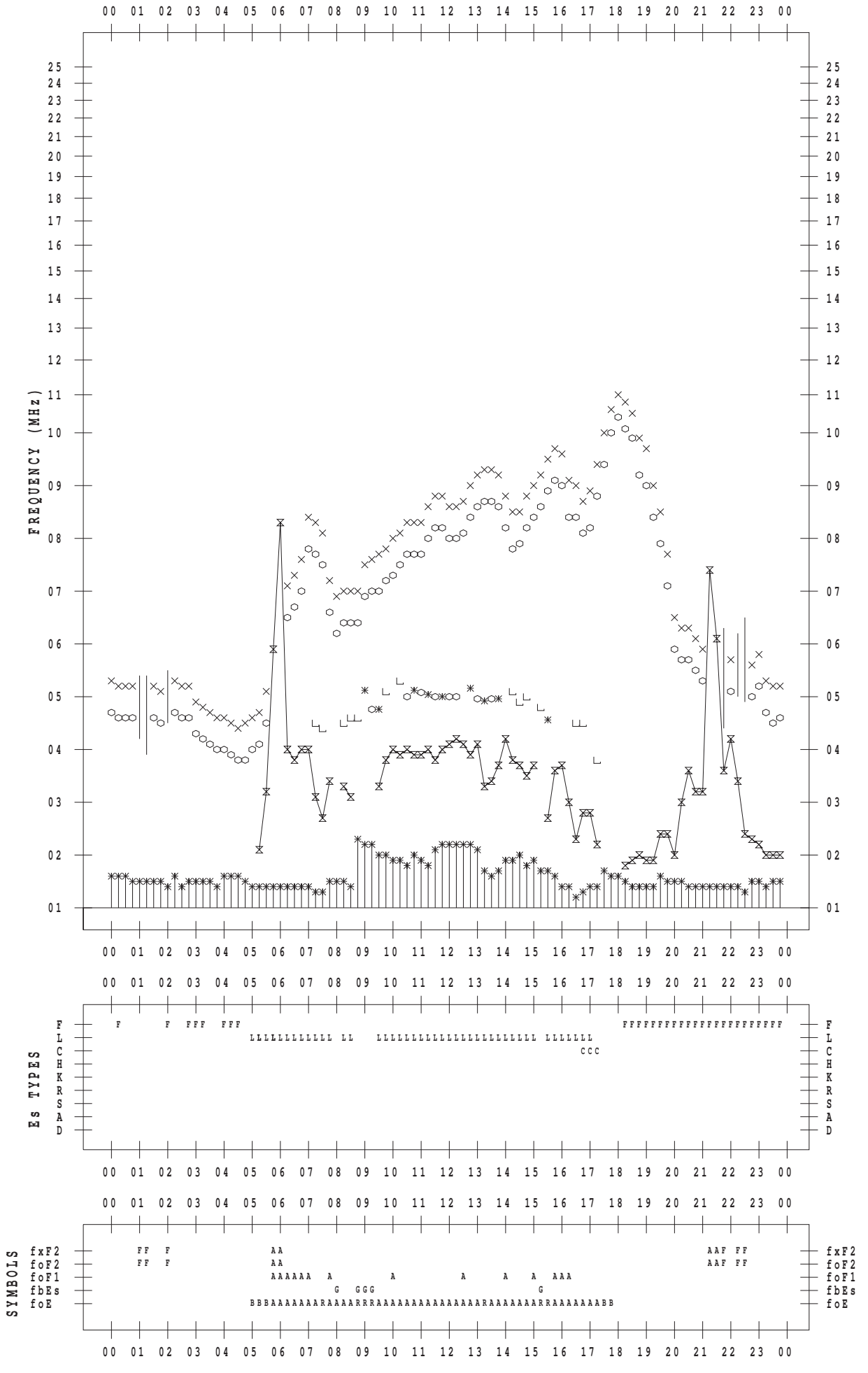
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/12

135 °E MEAN TIME



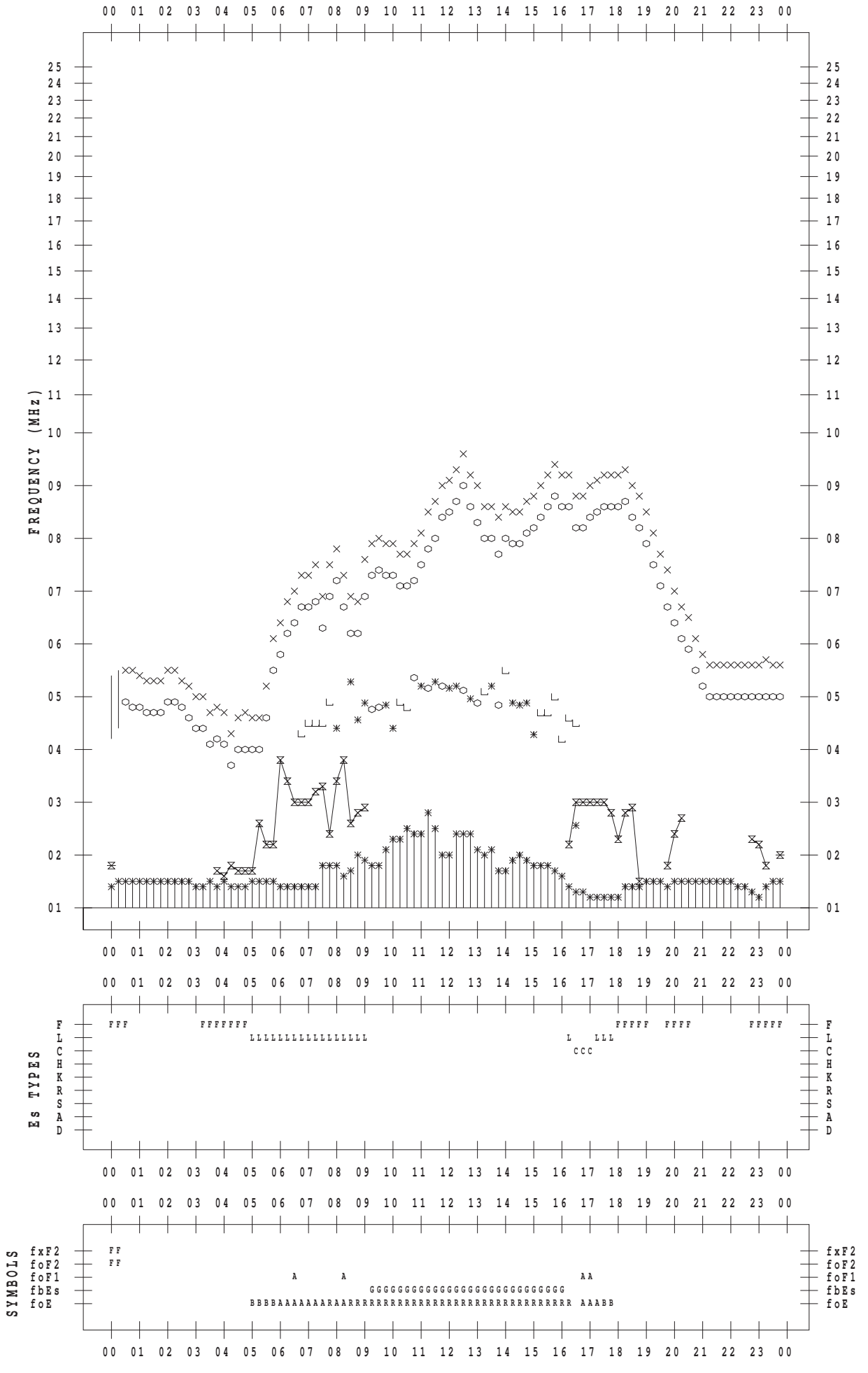
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/13

135 °E MEAN TIME



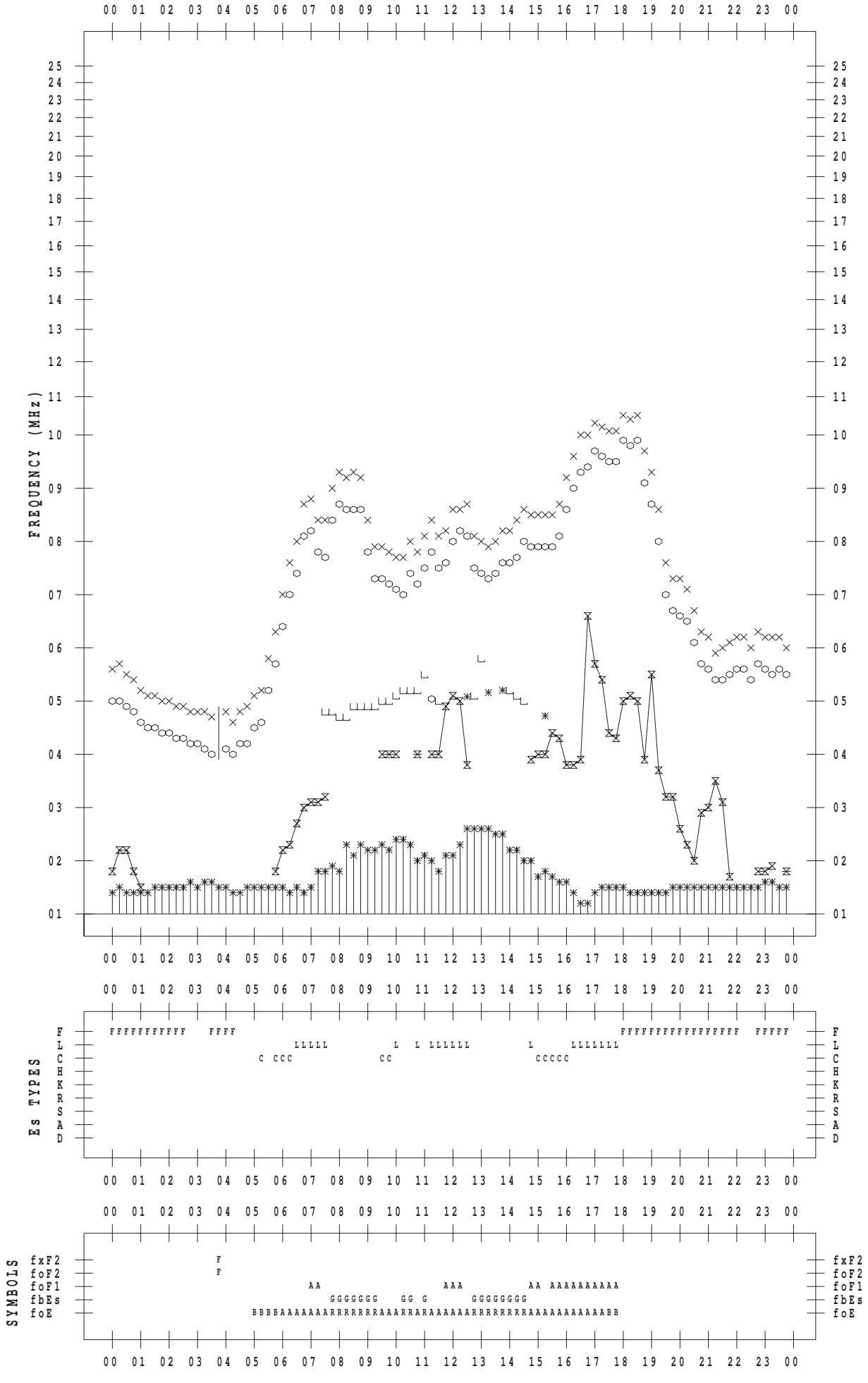
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/14

135 °E MEAN TIME



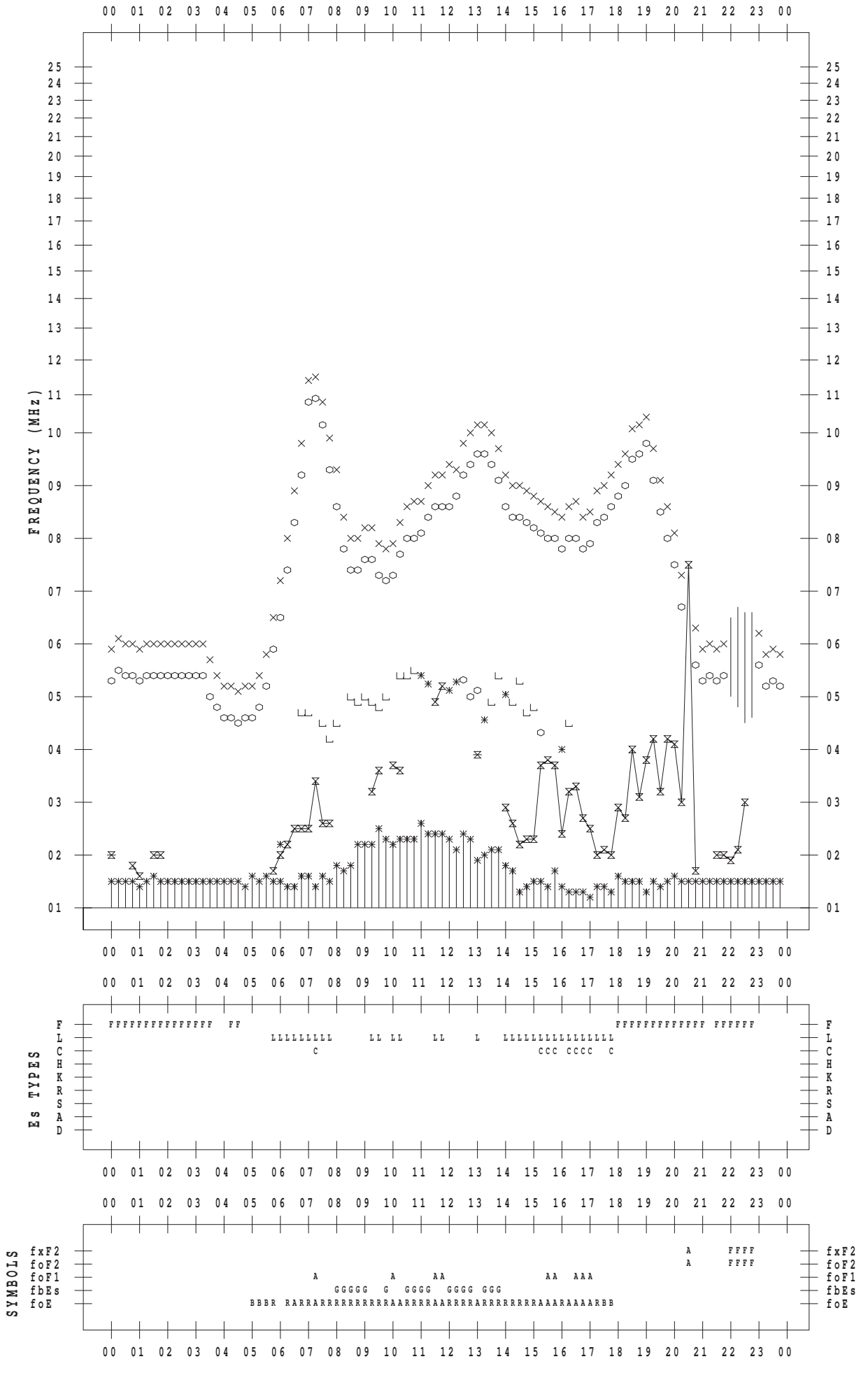
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/15

135 °E MEAN TIME



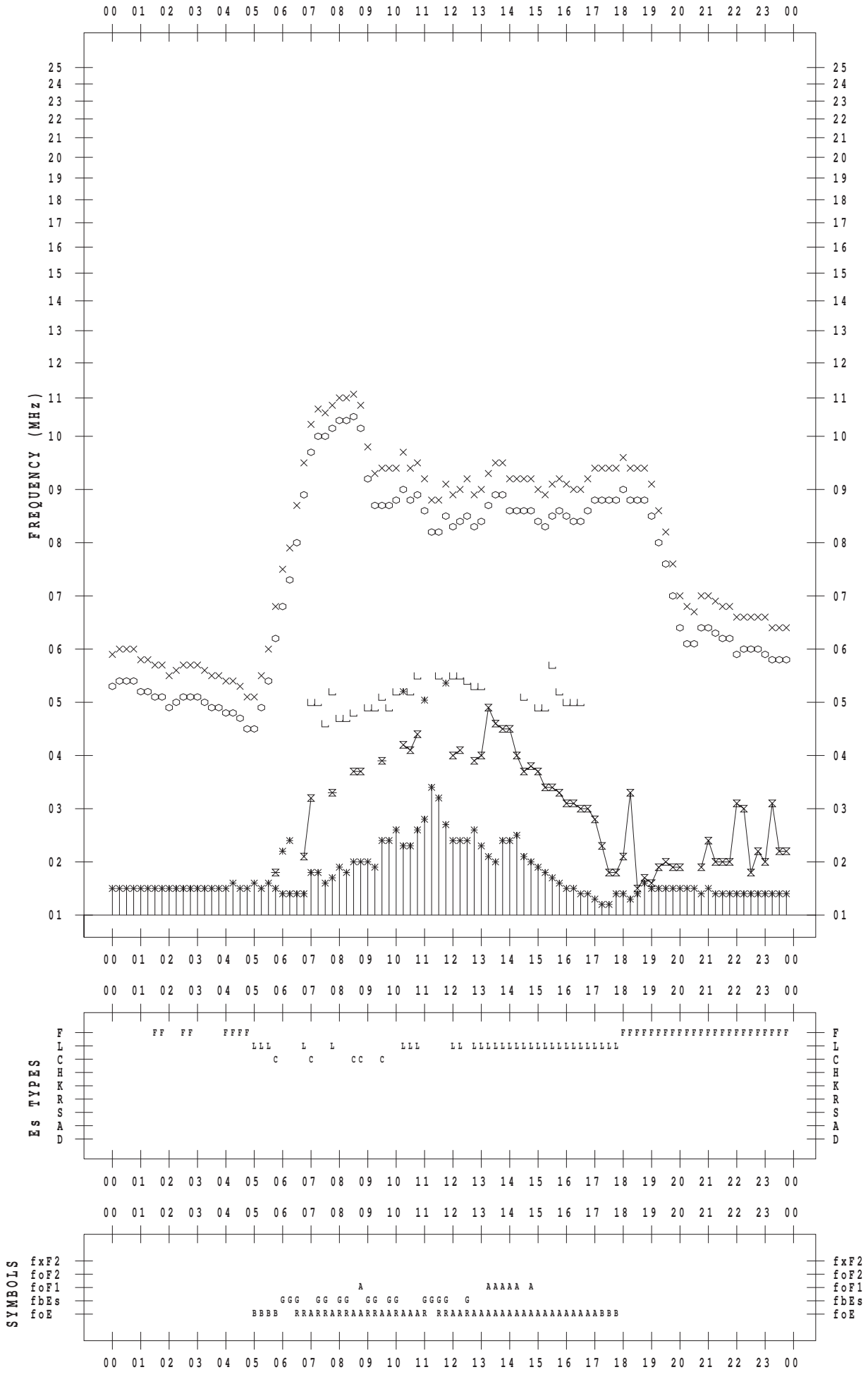
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/16

135 °E MEAN TIME



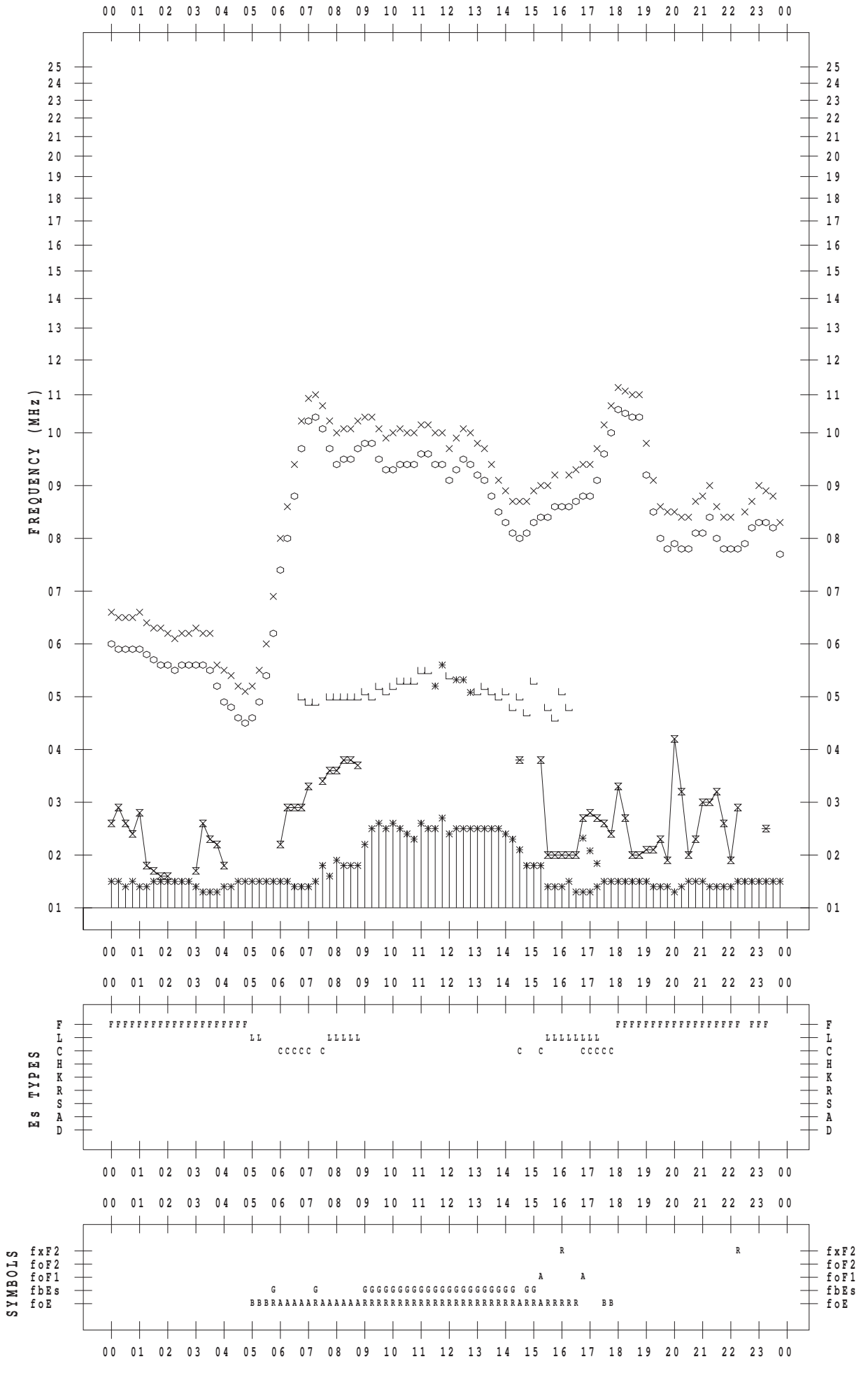
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/17

135 °E MEAN TIME



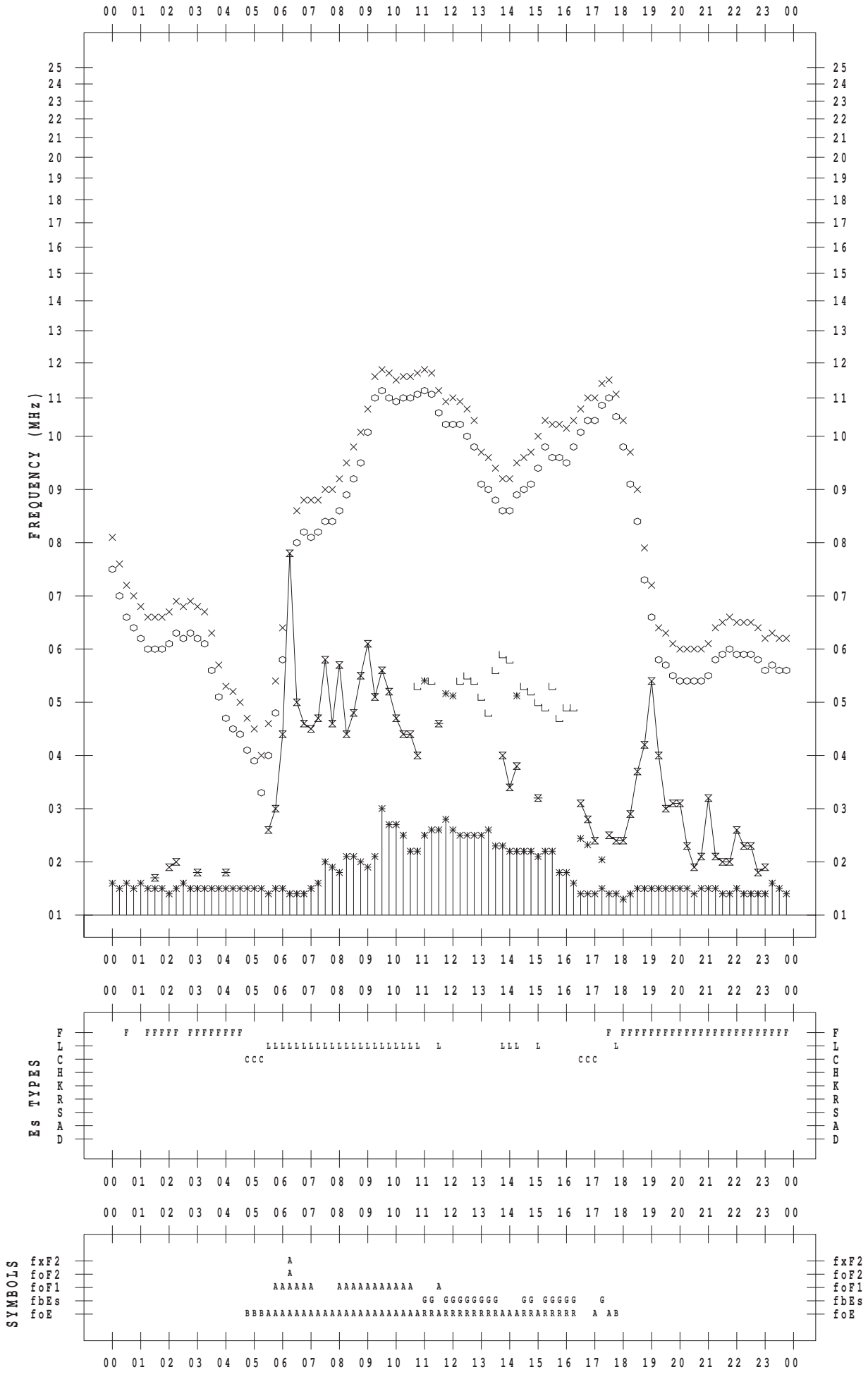
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/18

135 °E MEAN TIME



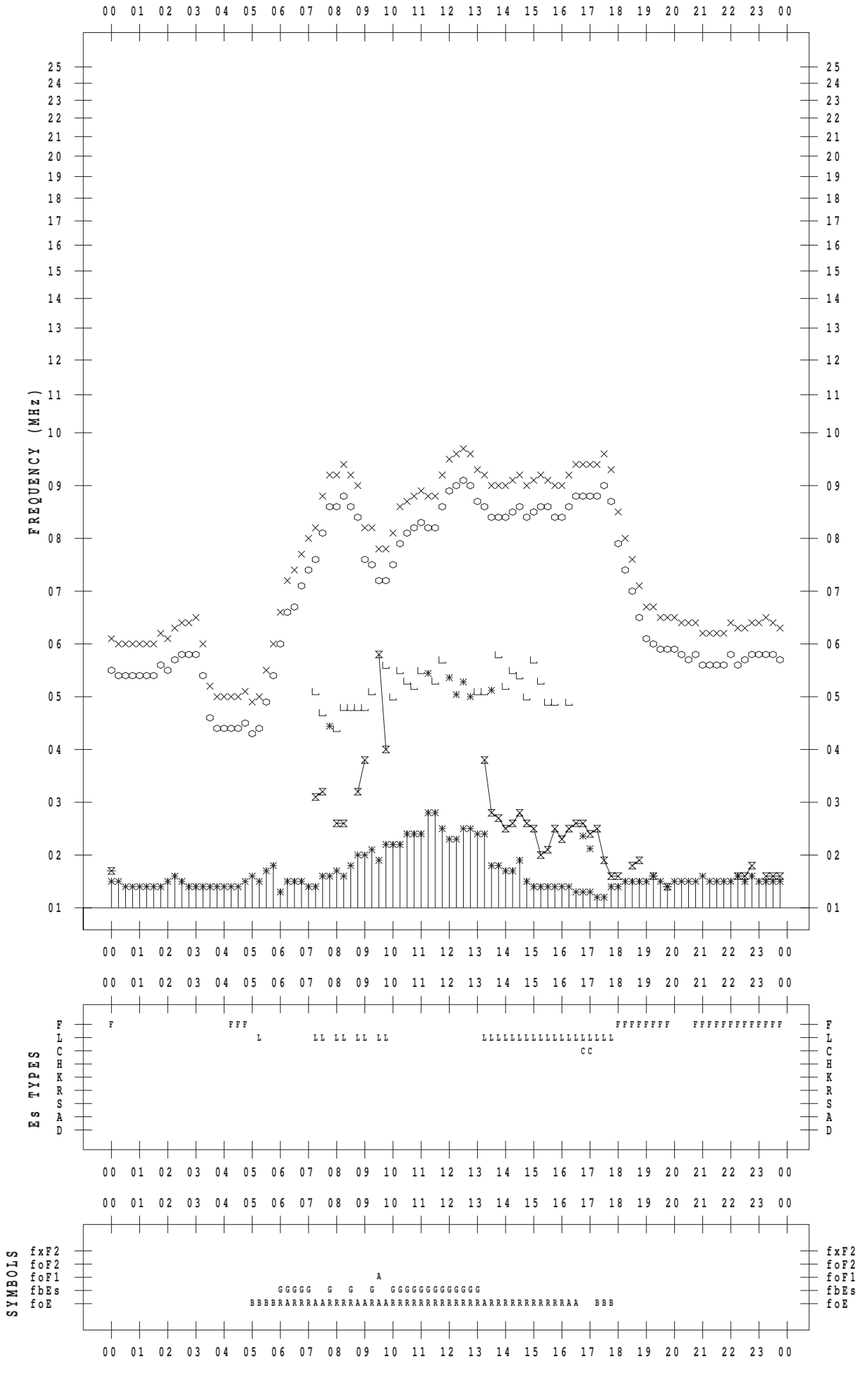
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/19

135 °E MEAN TIME



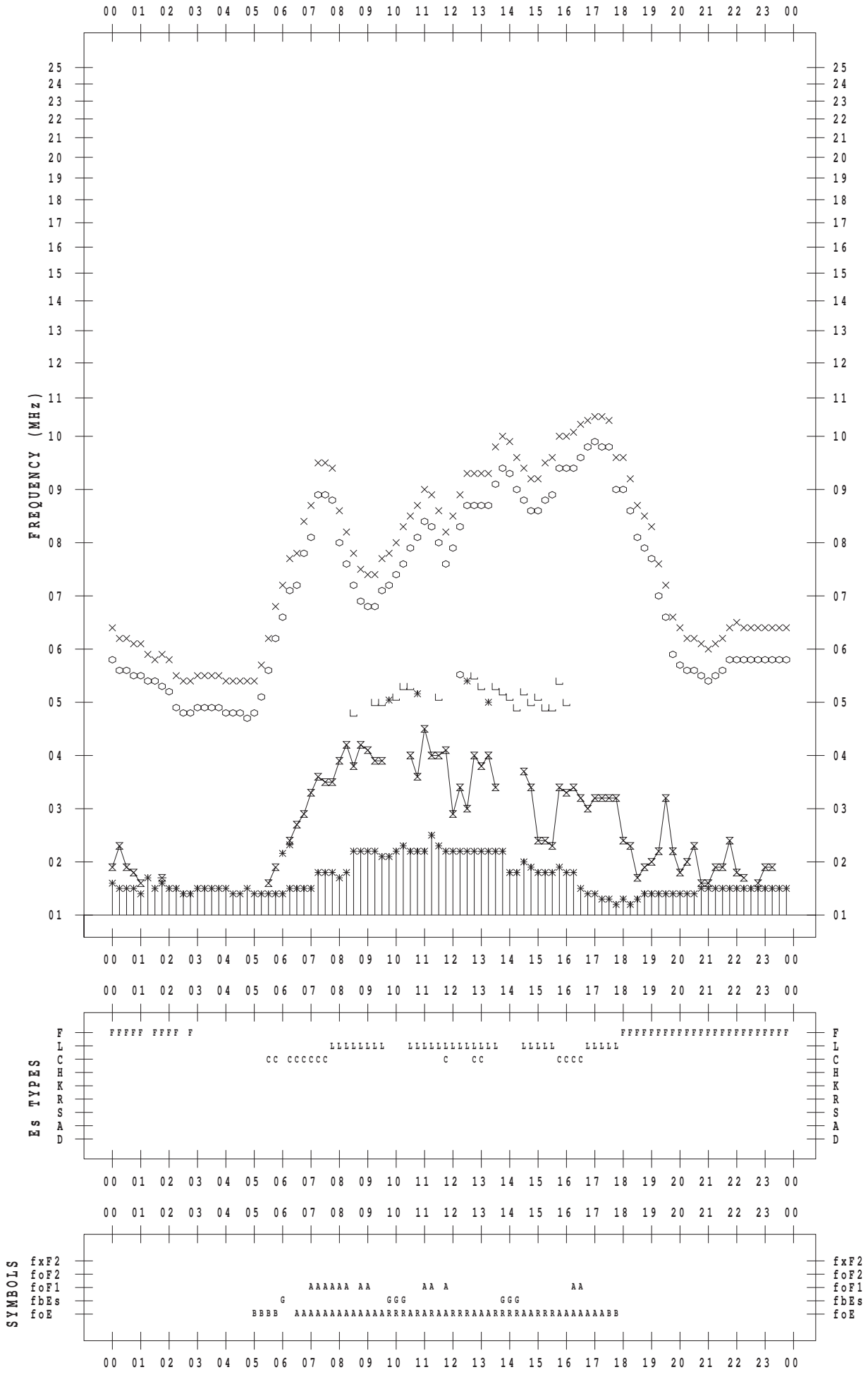
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/20

135 °E MEAN TIME



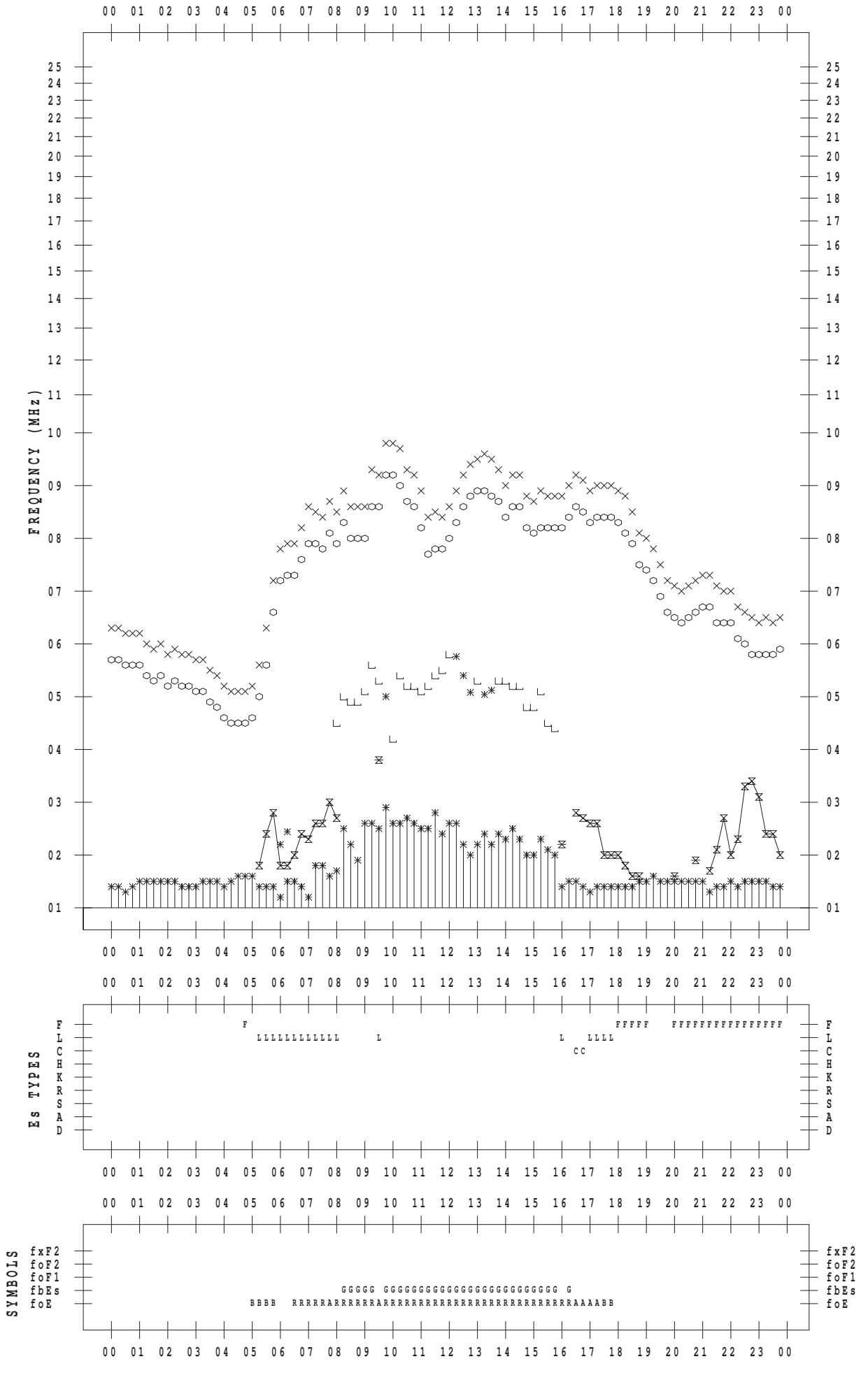
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/21

135 °E MEAN TIME



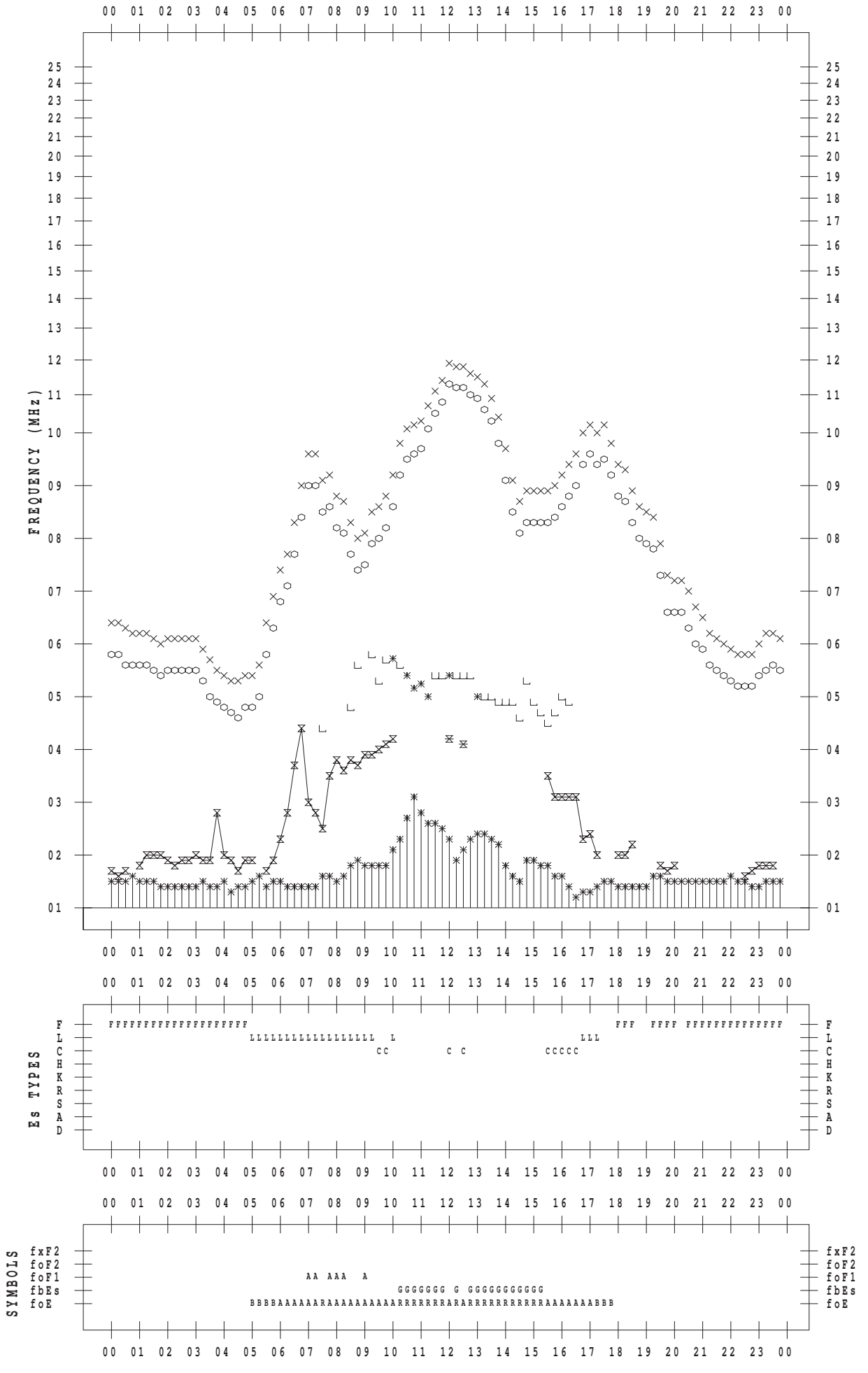
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/22

135 °E MEAN TIME

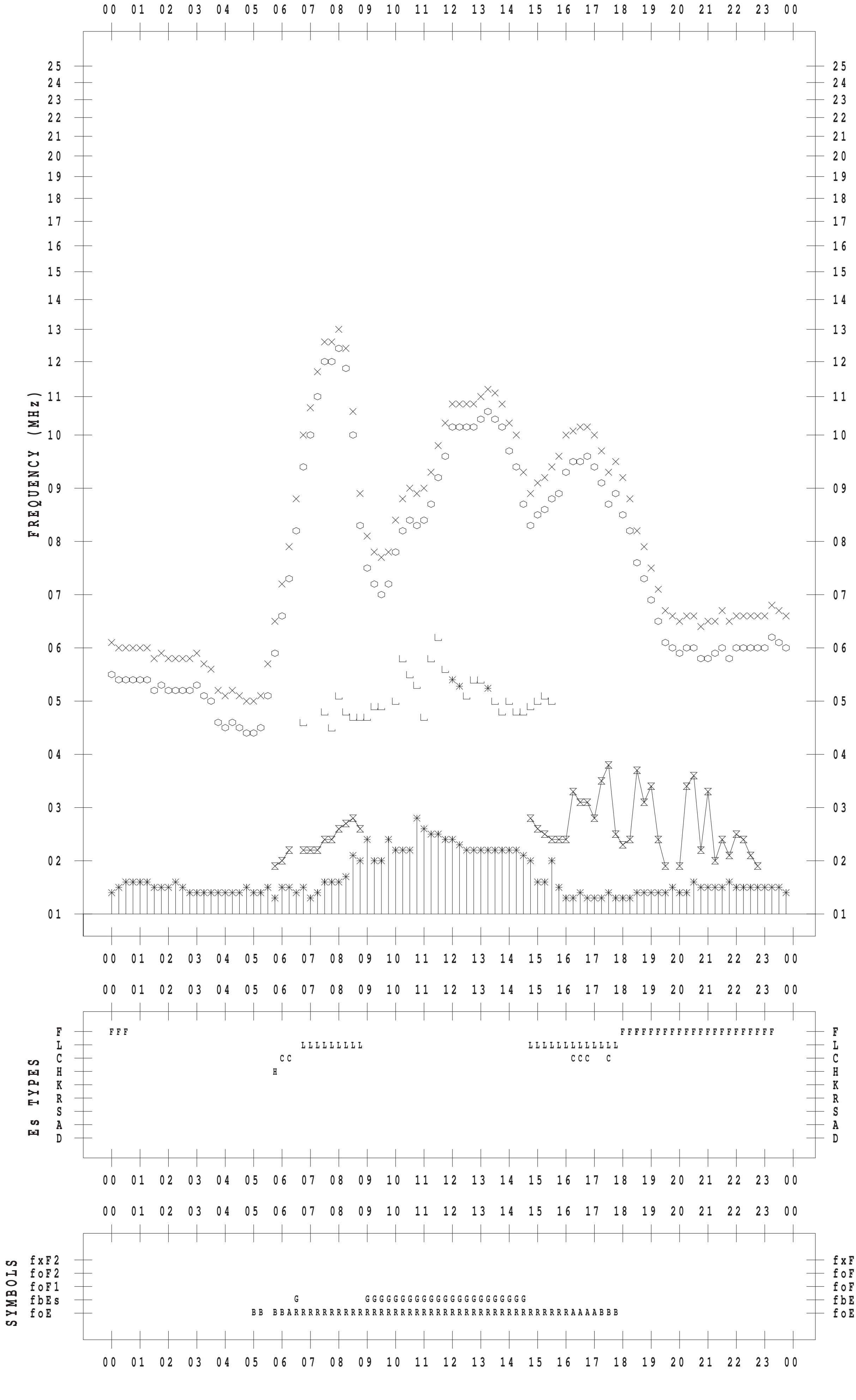


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 9/23

135 °E MEAN TIME



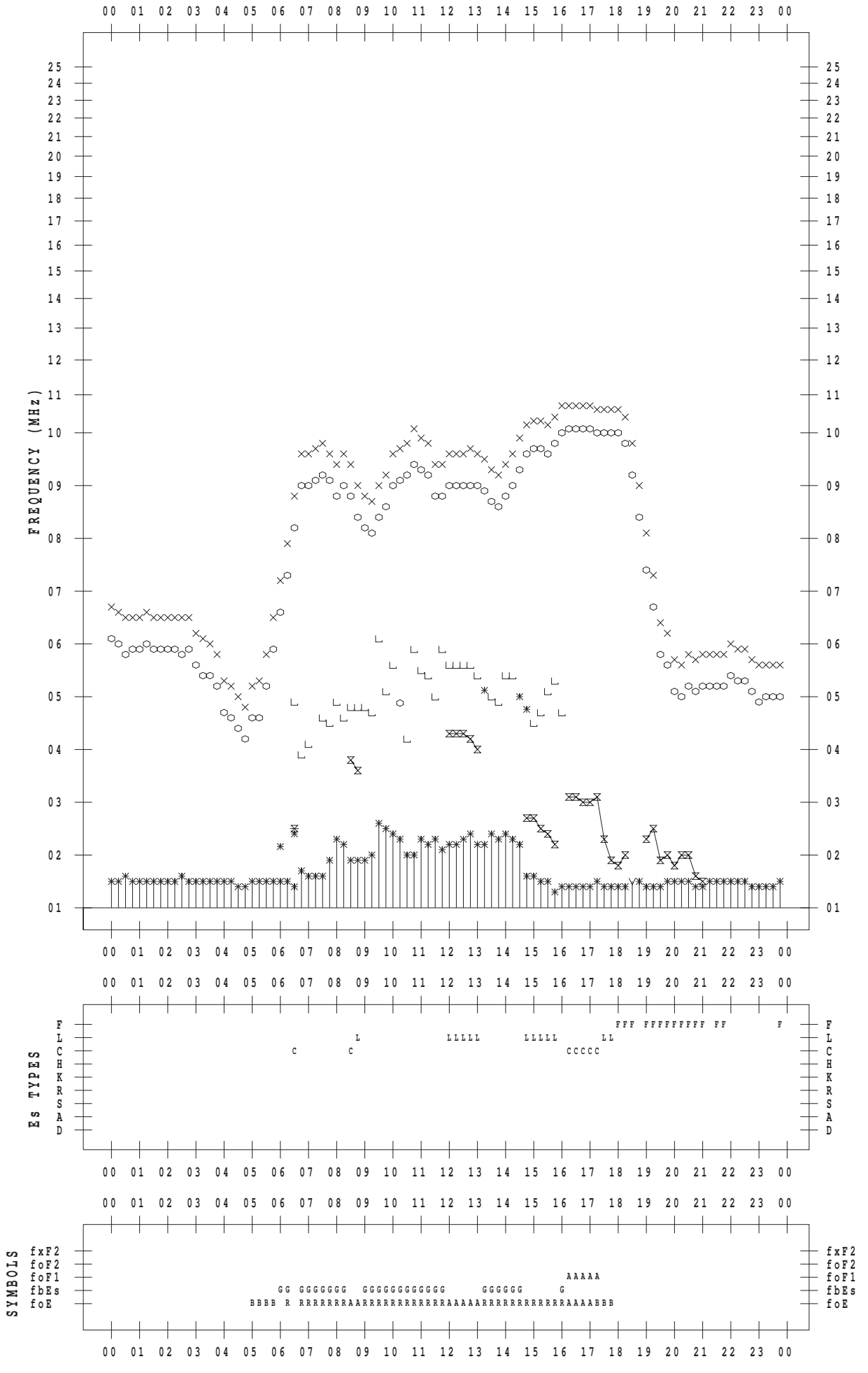
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/24

135 °E MEAN TIME



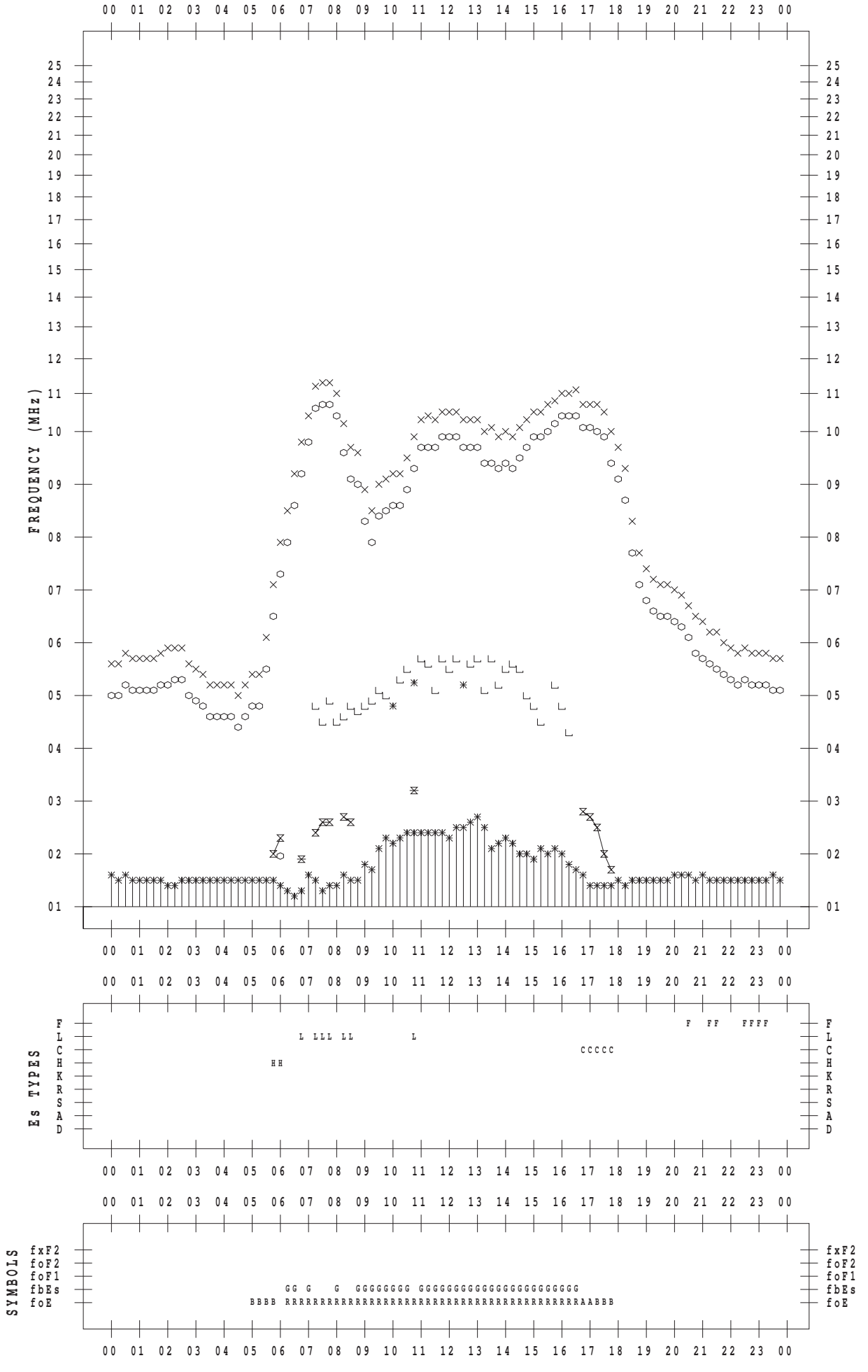
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/25

135 °E MEAN TIME



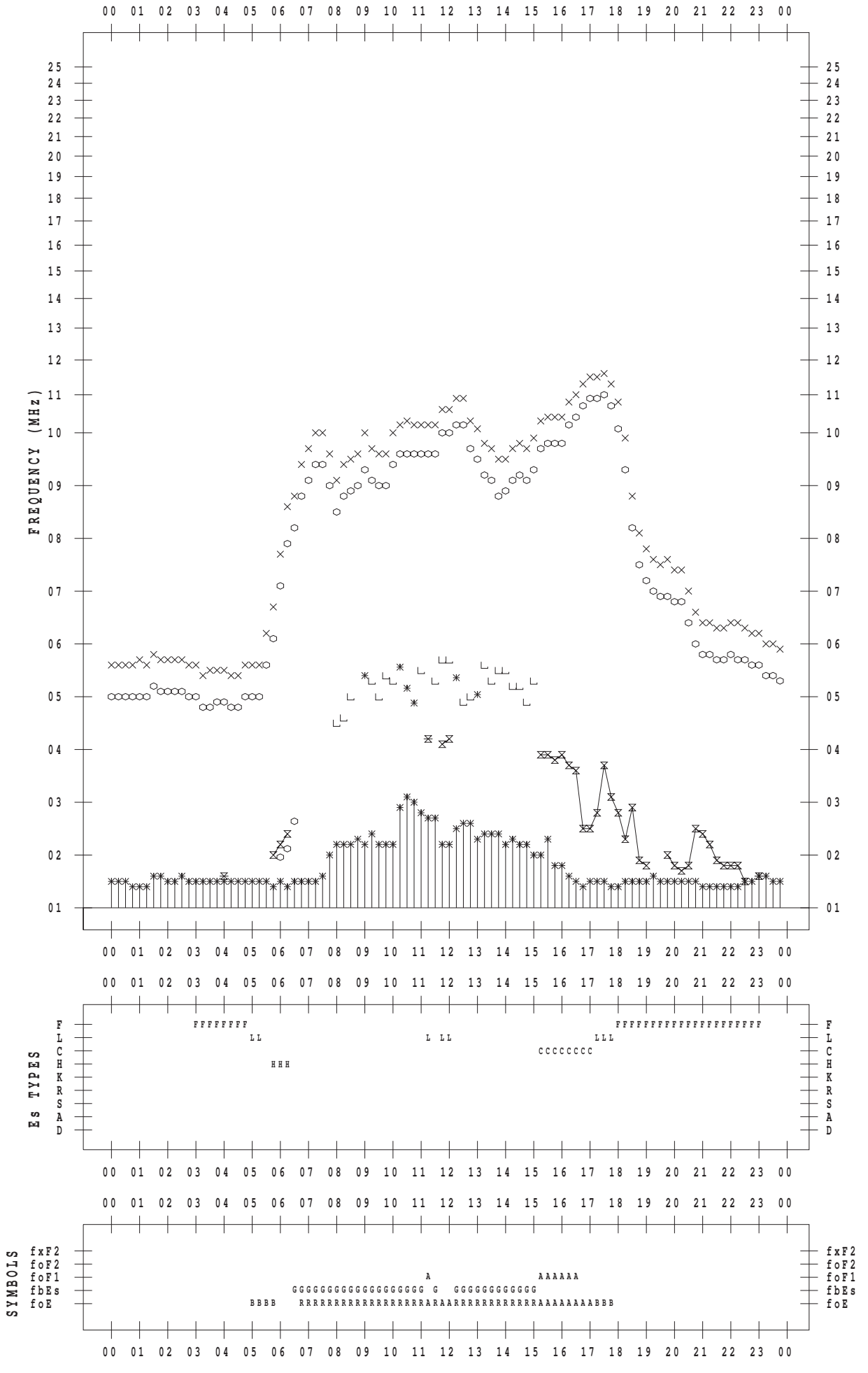
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/26

135 °E MEAN TIME



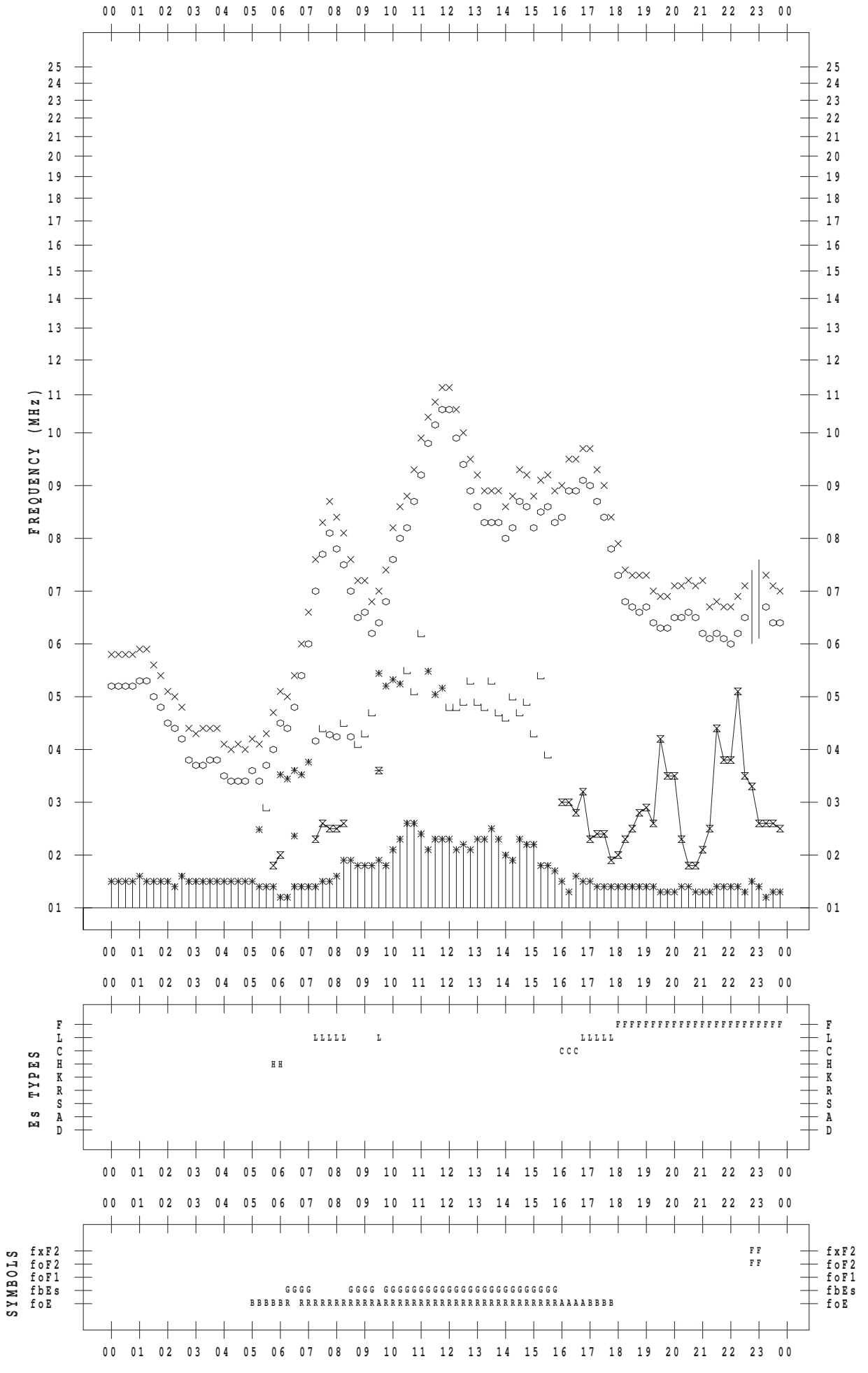
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/27

135 °E MEAN TIME



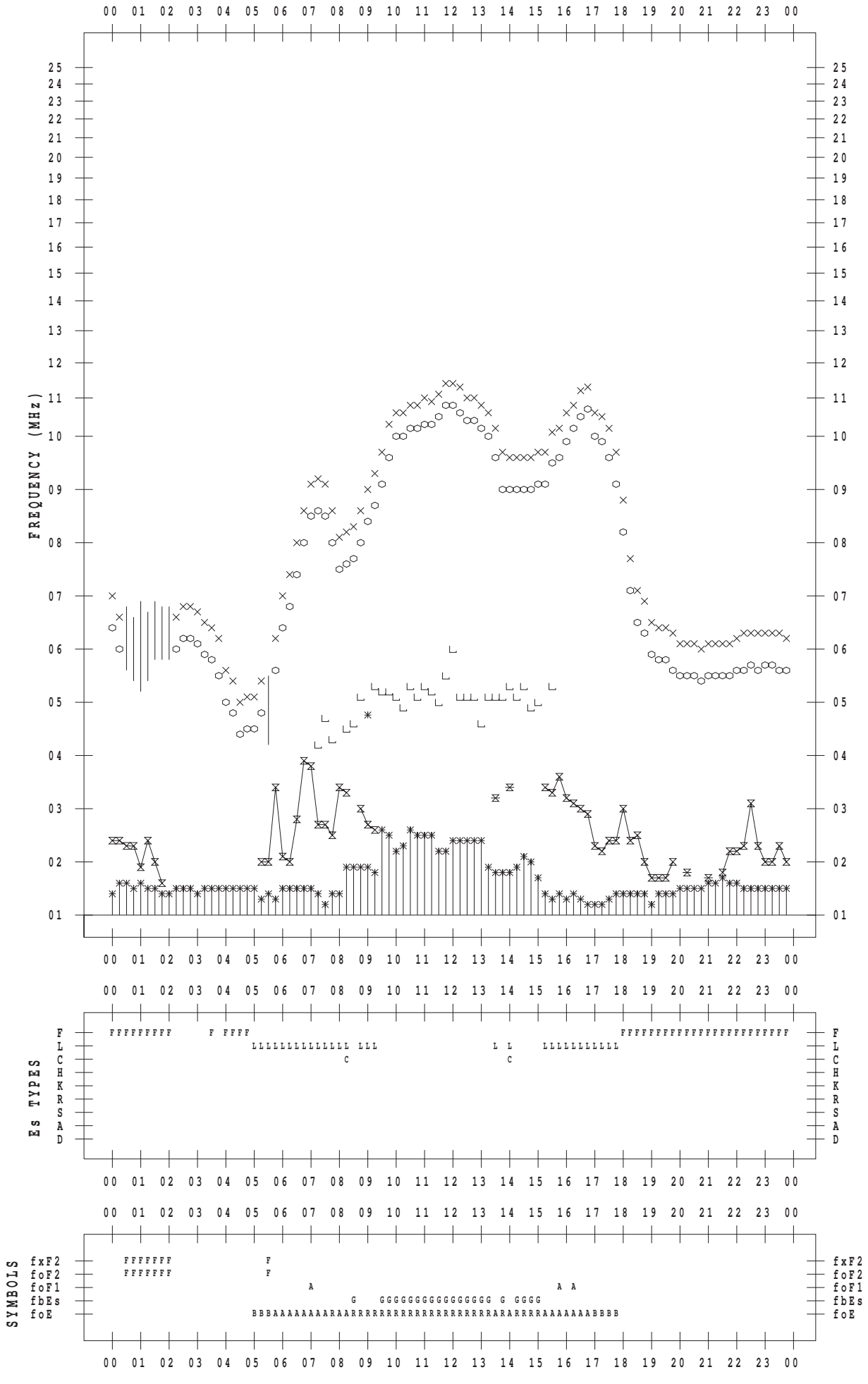
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/28

135 °E MEAN TIME



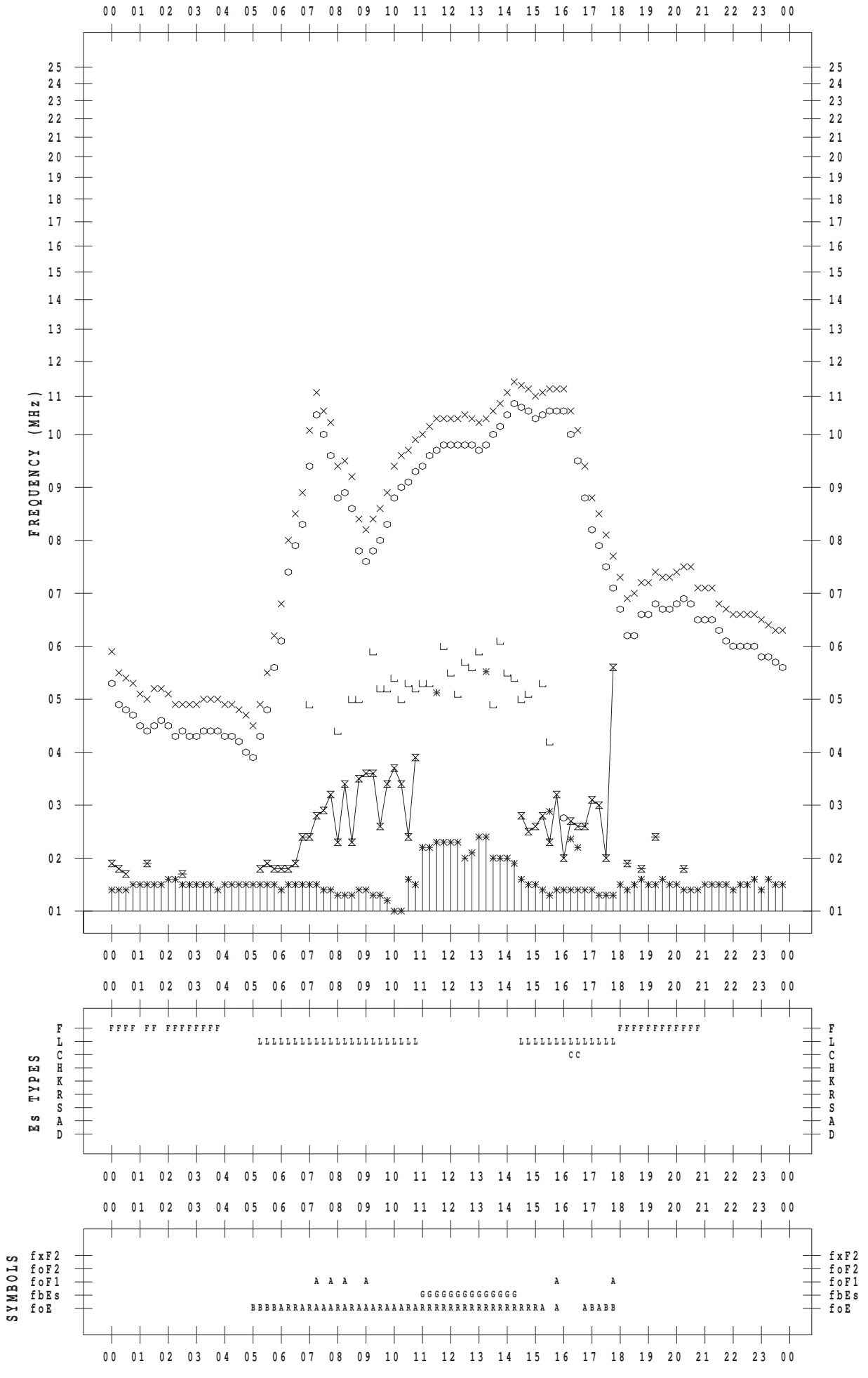
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/29

135 °E MEAN TIME



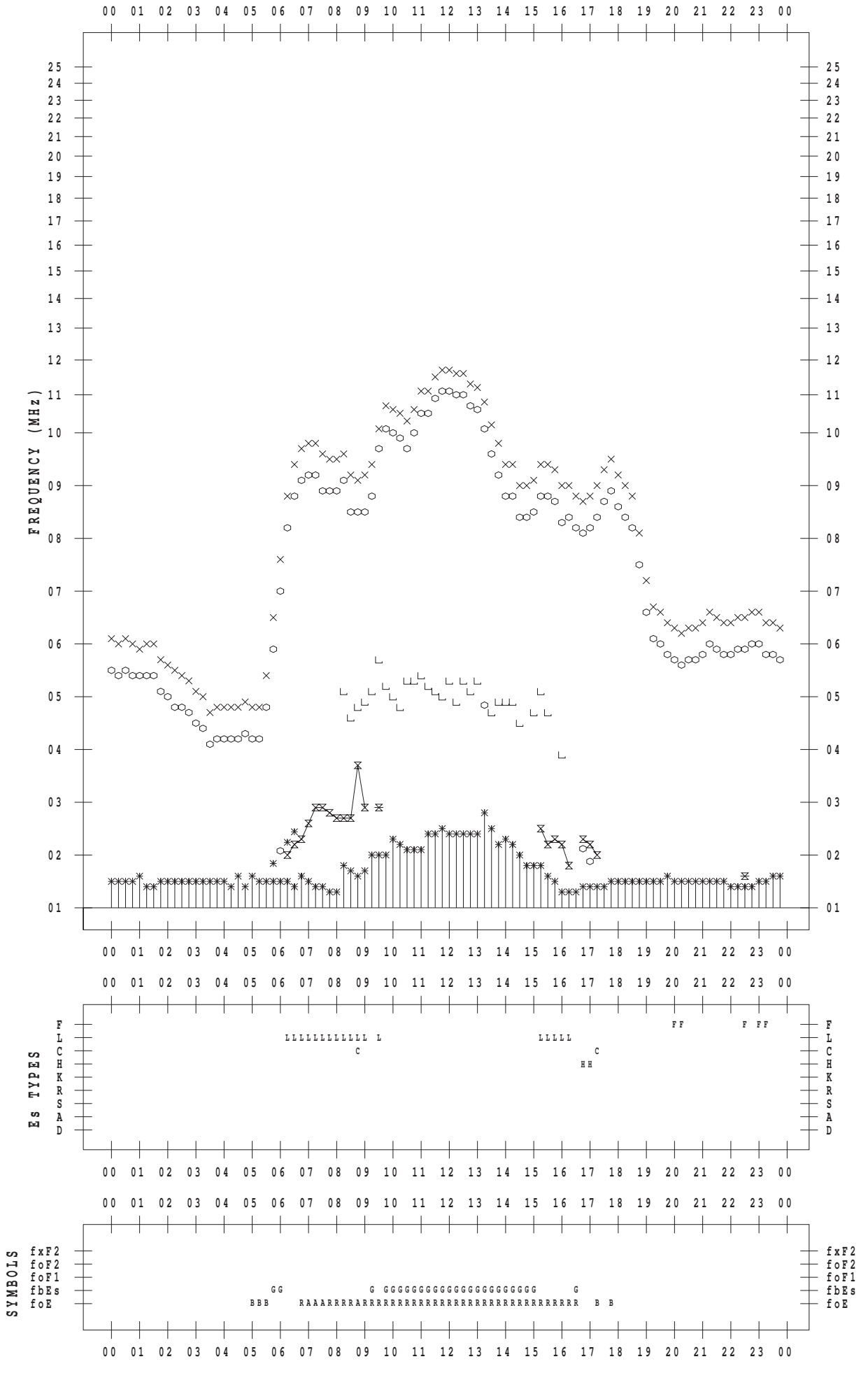
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 9/30

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso September 2011

Single-frequency observations

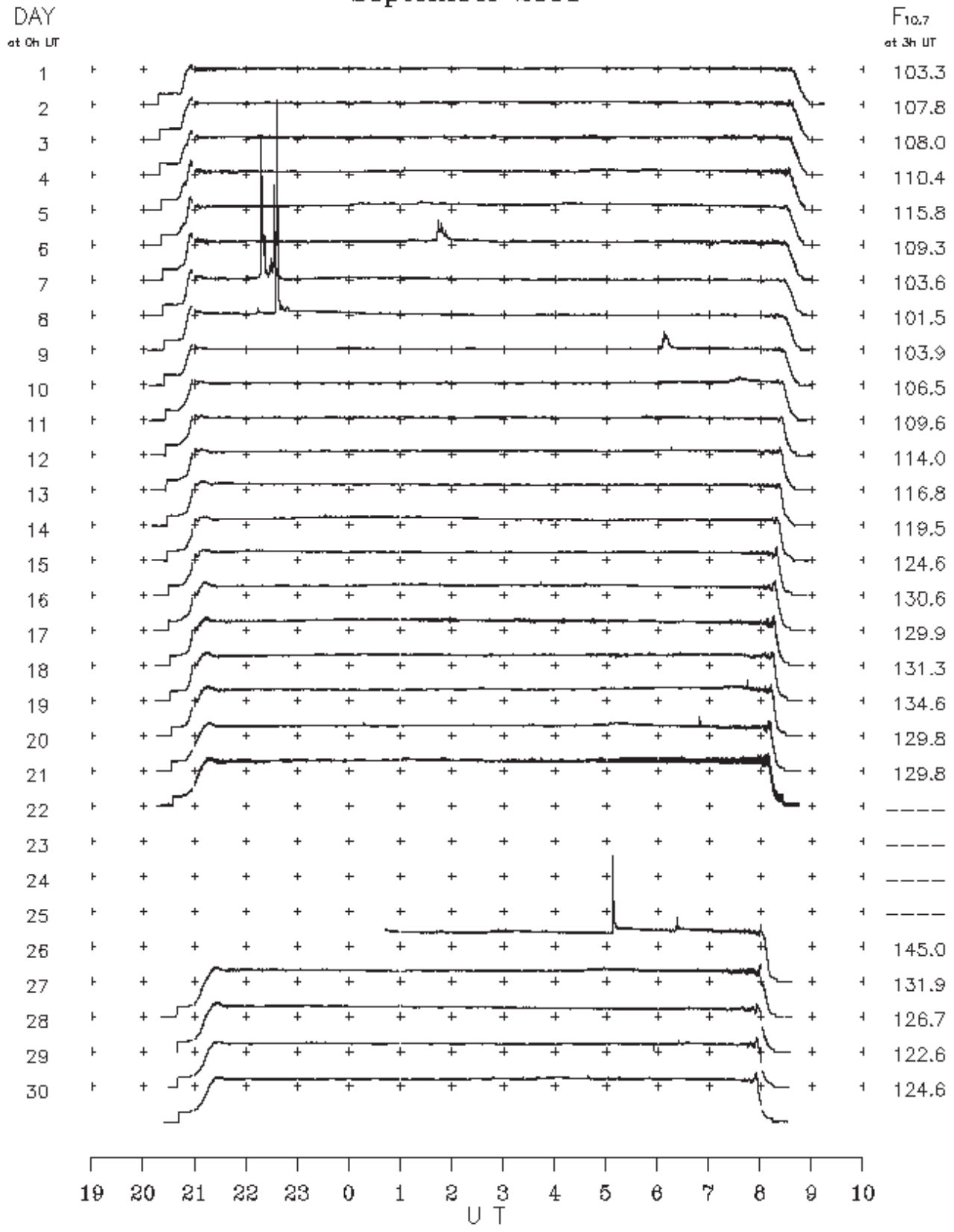
Normal observing period: 2015 - 0850 U.T. (sunrise to sunset)

SEP.	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
4	2800	1 S	0104.0	0105.0	2.0	10	-	
4	2800	20 GFR	0436.0	0441.0	132.0	10	-	
6	2800	4 S/F	0142.0	0144.0	25.0	45	-	
6	2800	7 C	2216.0	2219.0	27.0	400	-	
7	2800	1 S	2214.0	2216.0	3.0	15	-	
7	2800	47 GB	2234.0	2237.0	19.0	535	-	
9	2800	7 C	0600.0	0607.0	21.0	100	-	
10	2800	4 S/F	0718.0	0734.0	46.0	15	-	
20	2800	20 GRF	0501.0	0512.0	47.0	5	-	
20	2800	8 S	0648.0	0648.0	1.0	25	-	
26	2800	8 S	0506.0	0507.0	8.0	215	-	
26	2800	7 C	0620.0	0621.0	7.0	20	-	
29	2800	1 S	0623.0	0623.0	1.0	5	-	

B.Solar Radio Emission

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

September 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/2011/09/