F-754

IONOSPHERIC DATA IN JAPAN

FOR OCTOBER 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

OCT. 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	53	52	48	47	43	37	57	67	81	74	59	68	61	69	74	67	71	92	64	52	61	50	40	49
2	47	44	51	43	47	44	70	74	67	59	64	67	69	69		70	74	68	66	64	54	54	A	53
3	47	50	32	53	50	A	58	68	81	69	59	59	59	66	68	69	70	68	64	60	58	53	53	42
4	49	46	43	34	44	47	60	67	61	N	N	70	70		70	74	55	67	67	63	60	53	52	48
5	34	46	42	34	36	51	58	66	65	70	69	91	69	N	74	71	69	67	64	60	61	60	51	54
6	52	34	49		34	35	54	57	N	68	59		68	A	59	70	71	67	66	62	54	44	42	43
7	39	N	40	32	36	46	A	61	65	68	70	68	84	68	68	77	70	65	64	64	53	42	45	49
8	38	50	51	50	52	52	54	64		60	59	75	59	69	70	67		67	67	66	55	A	A	A
9	A	46	34	46	38	50	52	67	70	69	91	75		73	70	70	70	67	65	65	63	60	59	54
10	54	48	44	50	46	50	67	64	70	96	100	59	69	96	56	68	86	70	62	53	54	46	A	54
11	53	53	53	53	51	52	64	67	67	70	69	69		59	58	70	63	67	57	55	61	63	62	63
12	60	53	53	53	55	52	66	67	59	70	68	59	37	59	59	71		70	63	61	55	53	54	54
13	58		53	52	58	54	60	84	59	71		89		68	90	70		67	66	63	61	53	54	54
14	53	54	53	54	54	54	63	67	N	45	59	60	93	N	70	59	78	70	66	64	60	A	54	34
15	53	43	42	54	53	52	66	83	67	59	71	70	59	57	70	90	66	67	63	34	63	61	A	58
16	53	43	53	32	49	46	63	87	59	69	59	60	59	71	63	72	91	67	52	61	55	54	53	54
17	53	44	52	47	47	42	64	67	86	48	96	59	N	71	86	79	60	48	64	61	55	44	A	48
18	32	49	53	53	53	52	67	66	N	68	94	69	69	80		93	69	67	61	62	54	47	N	47
19	47	34	36	34	34	47	63	59	79	65	70	59	59	85		91	91	68	55	58	54	53	52	53
20	54	A	58	53	53	53	65	84	59	74	92	A	52	70	90		59	60	66	63	54	51	48	43
21	50	A	34	52	A	52	62	68	59	89	A		61		79			60	67	64	52	34	58	54
22	42	42	52	52	54	44	61	67	59	90	69	70	69	59	59	69	69	67	63	61	50	50	46	48
23	48	44	47	48	44	52	58	59	49	69	94	68	116	93	92	79	70	65	63	63	54	52	A	47
24	40	42	48	52	34	42	56	68	94	N	69	N	93		90		60	66	65	61	A	47	51	A
25	A	A	43	52	53	47	54	62		36	N	70	62	59		70	70	70	65	63	65	66	64	63
26	54	63	A	61	60	53	63	63	90	59	69	59	70	69	65	79	70	67	67	66	54	51	50	48
27	47	54	53	37	53	63	64	86	93	91	59	74		N	81	64	60	A	A	A	53	A	A	A
28	50	47	50	52	52	50	53	86	66	90	59	59	59	92		92	49	67	55	46	47	28	A	48
29	50	A	A	47	52	52	50	58	92		56	59	69	89		87	69	64	51	58	46	34	30	34
30	A	32	44	47	45	47	48	70	90	59	90	49	109	N	59	91	70	65	57	48	35	42		46
31	35	44	34	A	42	38	50	67	89	59	69	69	119	113	92	94	87	65	66	53	A	53	34	36
	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	25	29	29	30	30	30	31	26	28	27	27	26	23	25	28	27	30	30	30	29	28	21	28
MED	50	46	48	50	50	50	60	67	67	69	69	68	69	69	70	71	70	67	64	61	54	52	52	48
U Q	53	51	53	53	53	52	64	70	86	72	90	70	70	85	83	83	71	68	66	63	60	53	54	54
L Q	44	43	42	44	43	46	54	64	59	59	59	59	59	66	61	69	63	65	62	58	53	45	45	46

HOURLY VALUES OF fEs AT Wakkanai

OCT. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	32	34	44	48	39	47	G	G	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	33	G	43	38	36
3	29	26	26	G	G	32	32	G	36	50	41	53	41	G	G	35	G	G	G	37	26	G	G	G
4	24	G	G	G	30	36	41	33	G	G	G	G	51		G	G	36	G	28	26	G	25	26	G
5	G	26	G	24	G	G	29	G	G	G	G	G	G	G	G	G	G	31	27	G	G	G	G	G
6	G	G	G		G	G	G	G	43	40	56		G	72	G	G	46	40	60	48	G	G	G	G
7	28	25	G	G	G	24	44	35	G	39	50	G	49	44	G	51	44	65	57	40	27	G	29	29
8	27	24	27	26	G	G	G	G		72	62	G	G	G	G	G		44	28	26	35	50	38	34
9	35	G	G	G	G	34	G	G	G	G	G	G		G	G	G	33	35	32	32	33	34	32	G
10	G	G	G	G	G	G	G	G	G	G	40	G	G	G	G	G	G	G	G	G	28	30	31	G
11	G	G	G	G	G	G	G	N	G	G	G	52		G	G	G	G	G	G	G	G	G	G	G
12	G	G	G	G	G	G	G	34	40	41	G	G	G	G	G	G		48	G	G	G	G	30	G
13	G		G	G	G	G	G	34	35	38		G		G	G	G		G	G	G	27	G	32	G
14	G	24	G	G	G	33	G	32	36	40	G	G	G	39	G	G	34	34	32	34	40	58	40	33
15	33	28	25	23	G	25	32	34	39	54	40	G	43	40	38	G	40	G	27	39	73	39	39	34
16	G	G	G	24	G	G	G	52	40	38	G	G	G	40	G	G	G	G	27	G	G	24	26	G
17	G	24	G	G	24	G	G	33	35	G	40	G	G	G	G	33	G	28	G	G	G	G	68	25
18	32	G	G	G	G	G	28	36	G	G	G	G	46	45		34	34	G	26	G	24	26	23	33
19	28	G	29	27	G	G	29	G	34	84	72	G	58	G		34	G	30	32	G	G	32	33	G
20	G	43	36	G	G	G	39	57	42	57	67	71	G	G	G		G	32	G	G	G	G	G	G
21	31	34	32	33	35	G	G	52	44	52	104		62		G			33	35	30	29	29	28	29
22	G	G	G	G	25	G	G	G	39	48	46	41	40	G	36	37	G	G	37	39	34	27	G	26
23	26	G	G	G	26	29	G	G	38	43	49	58	G	G	40	G	G	33	33	39	36	33	40	31
24	G	G	G	33	24	G	G	38	49	G	39	52	G		G		36	40	46	26	40	G	G	52
25	40	40	28	G	G	G	G	G		G	38	G	40	43		49	G	31	G	G	G	G	29	28
26	26	34	36	28	G	G	G	G	44	37	48	G	G	38	G	G	G	G	G	G	G	G	G	G
27	G	G	G	G	G	G	11	G	35	G	56	62		68	53	46	68	71	72	62	43	59	44	31
28	G	27	33	26	33	30	27	G	G	G	G	39	52	73		33	G	G	32	33	31	28	49	40
29	39	53	49	34	33	32	30	44	40		49	G	G	G		52	39	19	29	G	32	29	G	G
30	40	G	G	G	G	27	11	48	34	G	40	42	G	51	35	33	36	24	G	G	30	28	G	G
31	33	25	34	41	33	G	G	G	34	37	50	44	50	40	44	35	G	G	38	38	35	39	30	30
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	30	31	31	31	30	29	30	30	29	27	28	25	28	27	31	31	31	31	31	31	31
MED	G	G	G	G	G	G	G	16	35	38	40	G	G	G	G	G	G	24	27	26	27	26	29	G
U Q	31	26	28	26	24	29	29	36	40	43	50	43	46	41	18	34	36	34	33	37	34	33	38	31
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 Wakkanai

OCT. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	15	15	14	14	14	14	14	18	16	15	16	16	20	15	14	20	14	15	14	14	15	15
2	15	15	15	14	14	14	20	14	14	15	53	23	21	20		15	14	18	14	14	14	14	14	14
3	14	14	16	14	15	14	14	15	15	16	22	18	18	18	15	14	15	18	15	15	14	15	15	15
4	15	15	14	15	14	14	14	14	14	15	17	15	17		14	14	14	18	14	14	15	14	14	14
5	15	15	14	14	14	14	14	14	14	14	15	14	14	14	17	14	14	14	14	16	14	15	14	15
6	14	15	15		15	18	20	14	14	16	20		15	18	16	18	14	14	15	14	16	15	15	14
7	14	14	15	15	14	18	14	14	14	17	15	17	22	16	17	14	14	14	14	14	15	15	14	15
8	15	14	15	14	14	15	21	15		18	17	16	14	15	14	18		14	14	15	14	14	14	14
9	14	16	14	14	15	15	17	15	17	17	18	17		16	15	14	14	14	14	14	14	14	15	15
10	14	15	15	15	15	14	17	15	17	18	20	18	14	41	20	18	23	20	16	20	15	14	14	15
11	14	14	14	14	14	14	20	14	14	17	14	14		20	14	16	16	15	17	14	14	14	14	14
12	14	15	15	14	14	14	17	14	14	14	20	18	18	20	15	15		15	15	15	14	15	15	14
13	14		15	14	14	14	18	14	14	14		15		15	15	14		15	15	14	15	14	15	14
14	15	15	14	15	14	14	18	14	14	15	15	18	15	14	14	14	14	14	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	14	14	14	15	14	14	14	14	14	14	15	15	14	14	14	14
16	14	15	14	17	15	15	18	14	14	14	14	14	15	14	14	14	14	15	15	14	15	14	15	14
17	15	15	14	14	14	14	17	14	14	14	15	15	15	16	14	14	23	16	15	15	14	14	15	15
18	14	14	15	15	15	15	14	14	14	14	14	15	14	15		14	15	15	14	15	15	14	15	14
19	14	14	14	14	15	14	14	14	14	14	16	17	15	16		14	14	14	14	14	14	15	14	14
20	15	14	14	15	14	14	14	14	14	15	15	20	18	44	14		16	15	15	15	14	15	15	15
21	14	15	14	14	14	16	18	14	14	15	16		16		15			14	14	14	14	14	16	14
22	16	14	14	14	14	14	17	14	15	16	14	18	21	14	15	14	22	14	14	14	14	15	15	15
23	14	15	15	14	14	14	17	14	14	14	15	16	14	18	14	14	14	14	14	14	15	15	14	14
24	15	15	14	14	14	14	17	14	14	14	15	16	17		15		14	14	14	14	14	16	17	14
25	14	14	14	15	14	14	16	14		15	17	16	17	20		14	21	14	14	21	22	15	14	14
26	16	14	14	15	14	14	17	14	14	14	17	17	16	14	16	14	20	14	14	15	15	15	15	21
27	14	15	15	15	14	15	14	14	15	14	15	15		17	14	14	14	15	14	14	14	14	14	14
28	15	17	14	15	14	14	14	14	14	16	16	15	18	15		14	18	14	14	14	14	14	14	14
29	14	14	14	14	14	14	14	14	14		14	23	14	14		14	14	16	14	14	14	15	15	16
30	14	14	15	15	15	14	15	14	15	14	15	15	15	14	14	14	14	15	15	17	14	14	24	15
31	14	15	14	14	14	15	15	14	14	14	14	15	15	15	14	14	14	14	14	14	14	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	30	31	31	31	31	29	30	30	29	27	28	25	28	27	31	31	31	31	31	31	31
MED	14	15	14	14	14	14	17	14	14	15	15	16	15	16	15	14	14	14	14	14	14	14	15	14
U Q	15	15	15	15	15	15	18	14	14	16	17	18	18	18	15	14	16	15	15	15	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	14	15	15	14	14	14	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

OCT. 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	54	52	49	N	43	48	64	82	97	88	77	82	97	98	96	87	91	106	106	72		52		
2	N	42	43	43		47	73	104	101	97	87	88	98	99	88	96	96	90	86	54	52		52	
3	52	53	38	52	52	44	64	77	92	98	111	101	87	88	86	91	88	80	75	54	45	52		51
4	44	48	A		45	51	71	90	88	85	90	97	101	95	97	93	100	101	79	67	54	A	52	47
5		42		A	38	44	65	81	87	91	90	105	112	104	97	95	91	86	75	53	54	53	52	46
6	51	43	52		44	38	61	87	114	111	124	118	115	101	100	88	80	91	97	A	52	A	A	A
7		42	A	A	38	43	53	67	86	85	92	100	101	96	88	97	97	91	82	54	A		44	44
8	42		43	42		42	62	75	81	85	90	101	112	88	80	86	97	110	89	A	A	A	A	34
9	A		A		38	39	53	79	100	98	84	104	107	91	91	86	91	91	98	69		52	53	53
10	52	43	42	38	46	43	63	101	90	90	97	106	104	100	93	91	86	91	80	44	A			47
11	42	47	47	43	44	39	66	78	90	83	101	114	111	107	106	100	94	82	49	42	44	53		52
12	44	42	44		47	45	74	82	80	83	96	104	114	112	105	95	86	83	72	55	53	53	52	44
13	52	43	47	42	44	43	66	80	97	97	98	107	111	117	118	112	110	106	88	59	44	43	47	48
14	N	42	45	47	45	52	66	81	90	94	107	111	101	107	115	107	100	88	72	53	A	A	38	
15	A	A	51	44	42	37	61	81	96	96	97	110	107	105	110	105	97	85	74	53	51		52	52
16	53	46	43		46	38	66	85	96	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	96	102	113	110	101	90	84	86	78	63	51	52		42
18	39	34	42	A	43	A	66	86	98	110	86	108	106	115	107	111	105	104	74	54	53	A	45	A
19	A				43	44	56	88	97	101	98	111	118	118	121	114	107	87	54	A	A	44	A	A
20	44	42	43	49	42	44	66	94	104	104	96	108	108	110	115	111	108	88	66		58	52	46	43
21		47	46		38		64	102	100	102	106	124	124	126	127	124	112	102	67	54	47	A	A	53
22		46	45		38	42	64	83	104	111	115	123	98	106	121	112	101	83	A	A	59	60	A	
23	A	43	47	A	52	A	58	88	95	105	101	118	112	112	116	102	96	72	59	64	55	44	43	
24	44	39	A	44	41		58	83	90	88	101	107	112	116	111	102	97	87	68	53	A	A	37	
25		49	47	45	45	N	51	101	126	110	105	107	131	130	125	110	106	103	82	73	64	64	51	52
26	53	52	53	43	44	38	66	86	105	124	118	122	128	122	124	124	120	100	74	67	51	A	A	A
27	A	44	43	28	44	43	55	86	98	101	104	111	115	120	121	122	126	N	66	53	45	89	42	42
28		43	40	44	44		54	68	100	117	110	104	104	122	120	115	104	77	54	51	52	49	42	42
29	43			35	53	N	45	60	97	107	110	114	117	116	115	107	95	90	59		44		41	
30		42	36		42	N	51	78	94	96	94	100	103	105	110	115	111	90	50	44	46	46	34	A
31	39	37	41		41	43	53	80	105	121	128	117	108	112	110	105	100	78	67	67	53	N	44	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	25	23	15	28	22	30	30	30	29	30	30	30	30	30	30	30	29	29	24	22	16	19	17
MED	44	43	44	43	44	43	64	82	97	98	98	107	110	108	110	104	97	90	74	54	52	52	45	47
U Q	52	47	47	45	45	44	66	88	100	108	107	114	114	116	118	112	106	100	82	65	54	53	52	52
L Q	42	42	42	42	41	39	55	79	90	89	92	102	103	100	97	93	91	84	66	53	46	47	42	42

HOURLY VALUES OF fEs AT Kokubunji

OCT. 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	26	G	G	G	G	G	G	G	G	G	G	G	G	47		G		
2	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	
3	G	G	G	G	G	G	29	52	45	G	G	G	G	G	G	G	G	G	G	G	27	30		G
4	G	G	28	G	G	G	G	G	G	G	G	51	50	G	G	G	G	31	27	39	G	33	29	29
5		27		29	G	G	G	G	G	G	51	52	G	G	G	G	G	36	42	40	39	G	G	G
6	G	G	G		G	G	G	G	G	40	49	49	G	G	G	G	G	G	40	80	51	115	58	35
7		G	47	25	29	G	G	37	46	G	G	G	G	G	G	G	G	40	34	38	50		G	G
8	G		G	G		G	G	G	G	58	49	G	G	50	G	G	G	43	57	60	48	33	28	G
9	31		29		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G
10	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	35	34			G
11	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	11	G	G	G		G
12	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
13	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	38	29	34	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	49	G	G	G	G	G	G	G	G	30	36	29	G	G
15	32	50	29	G	G	G	G	G	49	51	54	51	50	G	G	G	G	34	27	G	G		G	G
16	G	G	G		G	G	G	G	52	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	G	56	G	G	G	G	G	G	G	39	G	27		G
18	G	G	G	36	32	26	G	G	G	G	G	G	G	49	52	G	G	42	G	34	29	50	48	24
19	31				G	G	G	G	G	42	G	G	G	G	G	G	53	61	49	39	36	29	30	33
20	28	G	G	24	G	G	G	G	G	G	G	46	G	G	G	G	40	41	33	G	G	G	G	G
21		G	G		G		G	G	G	G	G	G	G	G	G	G	47	G	22	34	34	38	26	G
22		G	G		G	G	G	G	43	G	50	52	G	57	49	G	62	40	115	69	71	27	26	
23	31	24	29	29	29	36	G	G	G	G	G	G	G	G	G	G	G	G	34	27	G	G	G	
24	G	28	28	G	G	G	G	G	G	48	49	G	52	55	60	G	G	G	29	33	38	65	G	
25		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	34	60	34	43	G	G	26
26	G	G	G	G	G	G	G	G	G	47	G	G	48	G	G	G	41	51	29	27	26	60	45	29
27	29	G	G	G	G	G	G	G	G	G	59	G	G	G	G	G	G	G	24	36	30	26	G	G
28	G	G	28	23	G		G	G	G	G	G	G	G	G	G	G	G	29	G	G	G	G	G	G
29	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	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	33
31	G	G	G	G	G	G	G	G	G	G	G	G	59	G	G	49	41	29	33	G	G	27	28	34
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	27	27	22	28	28	30	30	30	29	30	30	30	30	30	30	30	30	30	29	28	25	25	24
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	26	34	26	27	G	G
U Q	14	G	28	23	G	G	G	G	G	G	49	G	G	G	G	G	G	38	34	39	37	33	28	27
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

OCT. 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	15	18	17	18	18	21	18	36	36	42	43	52	44	39	43	38	18	35	15	15		42		
2	15	14	15	20		21	22	13	36	38	60	44	45	43	39	39	36	21	14	15	22		18	
3	14	35	15	14	14	14	14	21	21	42	45	43	40	43	40	38	15	14	14	14	15	15		15
4	15	14	14	21	24	15	21	34	18	42	44	37	36	20	42	40	37	13	14	14	28	14	14	14
5		14		14	17	17	31	17	38	39	35	37	45	45	39	34	40	17	14	14	14	30	17	17
6	13	18	15		22	14	33	36	36	41	48	40	42	44	44	33	15	36	15	14	15	14	14	15
7		18	14	13	13	14	22	34	36	43	43	45	43	44	44	39	34	13	13	20	14		17	21
8	17		18	14		18	20	20	36	34	34	43	43	31	39	14	34	14	14	14	13	14	14	21
9	15		14		21	14	22	14	42	39	43	42	43	44	40	37	33	31	45	14		42	18	18
10	14	14	20	20	21	17	34	17	20	40	43	44	42	17	40	38	34	20	15	14	14			15
11	15	17	14	15	20	14	21	34	34	37	42	39	43	39	39	33	17	20	14	20	15	17		14
12	14	14	21		17	14	20	18	18	39	43	44	44	42	39	35	35	14	15	13	38	18	14	17
13	14	15	14	15	14	14	20	34	33	40	44	45	44	42	36	20	18	14	14	17	20	15	14	15
14	18	15	14	15	36	14	21	35	37	42	35	43	43	43	38	13	39	21	17	13	14	14	18	22
15	13	14	14	20	17	18	20	18	20	36	37	35	36	43	44	15	31	14	13	17	14		20	20
16	14	15	14		15	20	33	17	18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	43	35	44	40	37	15	36	21	14	14	17	15		17
18	14	18	15	13	14	14	34	37	36	40	37	42	42	33	30	38	31	14	14	13	14	13	13	15
19	15				15	14	18	18	38	33	42	43	44	38	42	36	25	15	17	13	13	14	14	13
20	14	14	14	14	15	14	21	18	18	39	40	24	44	43	38	37	18	13	14	14	40	15	15	14
21		18	17		18		20	18	36	39	44	42	43	42	43	36	15	29	15	14	14	14	14	15
22		38	14		13	14	20	34	20	35	38	39	42	35	34	40	15	14	15	14	18	14	15	
23	14	14	14	14	13	13	18	36	37	38	42	44	43	44	42	38	33	18	13	42	18	20	18	
24	14	14	14	14	15	15	18	18	35	33	34	42	35	33	34	17	15	17	14	14	14	13	15	
25		18	14	15	14	17	20	13	38	39	41	40	42	37	42	36	13	14	14	14	13	14	15	14
26	34	40	15	14	17	21	18	39	14	26	42	40	40	40	34	36	20	15	13	14	14	14	14	14
27	14	14	15	15	17	14	17	18	14	20	37	42	42	40	35	21	13	15	17	15	14	13	20	15
28	15	14	14	14	17		18	14	35	39	40	43	42	40	37	21	23	14	13	18	15	14	17	15
29	14	14		14	18	15	17	33	20	39	42	43	42	15	38	34	14	15	21		15		15	
30		14	15		14	21	17	18	15	18	43	43	42	38	40	39	14	15	15	14	14	14	17	14
31	20	14	17	17	18	14	14	18	15	38	40	40	34	55	39	13	14	13	15	17	14	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	27	27	22	28	28	30	30	30	29	30	30	30	30	30	30	30	30	30	29	28	25	25	24
MED	14	14	14	14	17	14	20	18	34	39	42	42	42	40	39	36	22	15	14	14	14	14	15	15
U Q	15	18	15	17	18	17	22	34	36	40	43	43	44	43	42	38	34	20	15	16	17	16	17	17
L Q	14	14	14	14	14	14	18	18	18	35	38	40	42	37	37	21	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Yamagawa

OCT. 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	53	54	48	47	47	44	51	76	88	93	76	76	92	89	76	92	88	97	87	N	47	49	53	52
2	51	46	50	50	45	47	52	93	79	52		78	79	94	90	94	90	88	86	74	54	52	54	52
3	52	52	50	50	58	50	50	71	59	N	84	82	91	92	79	91	78	90	79	70	51	52	52	51
4	51	42	47	43	45	45	52	81	84	92	77	93	79	86	69	91	59	90	90	64	63	54	53	52
5	47	50	46	44	44	46	54	66	84	86	92	90	59	90	95	97	N	93	77	71	A	52	52	52
6	47	45	52	54	34	34	43	94	89	96	88	86	N	79	59	69	88	114	79	54	54	A	53	A
7	A	44	46	44	44	45	49	74	84	88	86	64	91	96	91	89	91	89	78	76	48	A	A	42
8	47	42	36	36	41	38	47	71	83	87	96	94	61	N	98	89	56	113	A	A	A	52	53	49
9	52	50	47	44	42	38	44	66	87	111	93	97	69	69	92	88	90	80	84	70	53	54	54	54
10	54	54	50	44	44	44	47	72	87	93	N	86	N	96	69	94	87	93	86	66	53	53	44	50
11		42	51	52	51	38	38	66	76	88	90	97	79	94	62	60	94	85	76	55	54	52	52	50
12	47	47	40	45	37	42	44	76	86	88	94	89	98	97	91	N	94	92	87	67	55	54	54	44
13	47	52	48	46	48	42	37	68	93	94	89	83	N	79	89	99	90	58	N	66	53	53	52	50
14	50	51	52	51	44	40	38	66	91	92	89	101	90	89	74	110	92	90	74	52	50	53	A	A
15	47	A	48	48	45	36	43	77	87	90	93	92	N	94	92	97	95	89	88	72	54	62		52
16	52	42	46	47	53	40	45	78	92	89	92	96	49	84	68	88	87	49	77	66	54	53	53	53
17	52	51	46	47	34	34	41	82	87	89	92	77	N	97	91	92	91	87	N	80	A	53	52	51
18	50	44	44	44	45	42	48	78	86	92	90	93	90	79	58	98	96	92	79	67	58	54	51	47
19	44	44	43	43	45	40	43	66	91	89	98	91	N	N	N	N	94	89	74	52	53	A	A	A
20	48	53	48	52	53	45	47	77	86	N	91	73	83	59	111	96	59	90	74	A	63	51	49	53
21	51	64	43	42	44	41	45	86	89	91	62	91	96	96	85	90	94	81	80	63	52	53	52	52
22	52	50	47	47	46	41	43	66	85	108	89	N	76	88	N	95	96	88	72	73	66	66	64	52
23	62	52	53	52	57	42	49	78	88	77	92	56	91	59	69	96	81	88	72	48	A	54	54	53
24	53	50	47	41	40	37	36	72	84	88	92	89	98	69	85	69	97	88	N	53	53	53	52	A
25	47	52	47	47	52	30	34	78	113	88	86	87	116	79	72	96	94	93	77	55	54	67	62	53
26	52	52	53	44	42	43	50	78	88	94	96	96	96	94	89	92	49	90	86	71	63	53	A	48
27	52	45	52	44	44	45	51	77	86	88	96	92	96	74	111	59	99	35	76	52	51	51	52	52
28	51	47	44	45	47	42	36	76	78	87	90	90	95	N	N	N	96	88	77	54	55	51	52	51
29	51	43	43	42	44	37	30	67	88	94	95	90	N	78	N	90	96	91	76	54	54	63	54	53
30	47	45	A	A	40	34	32	71	84	77	69	79	76	92	N	97	84	82	N	54	52	53	44	40
31	40	34	38	40	41	40	42	74	89	69	92	94	90	93	94	97	92	87	67	68	65	53	46	47
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	31	31	31	31	31	29	29	30	24	28	26	28	30	31	26	28	27	28	26	27
MED	51	48	47	45	44	41	44	76	87	89	91	90	90	89	87	92	91	89	78	66	54	53	52	52
U Q	52	52	50	48	47	44	49	78	89	93	93	93	95	94	92	96	94	92	86	70	55	54	54	52
L Q	47	44	44	44	42	38	38	68	84	87	87	82	77	79	69	89	87	87	76	54	52	52	52	49

HOURLY VALUES OF fEs AT Yamagawa

OCT. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	34	G	G	G	G	44	G	G	G	G	32	G	24	33	G	G	G
2	G	G	G	G	G	G	G	31	36	41	G	G	G	G	G	G	G	37	G	G	G	G	33	33
3	33	25	G	G	G	G	G	32	43	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
4	G	26	G	G	G	G	G	33	G	G	G	G	G	G	50	G	46	43	29	G	34	G	G	32
5	33	34	G	G	G	G	G	34	42	48	58	49	49	52	60	50	G	47	48	54	71	36	G	G
6	G	G	G	G	G	G	29	36	G	G	G	45	43	47	48	43	50	36	35	67	60	71	49	39
7	50	43	28	28	G	G	G	34	41	G	48	49	52	50	G	G	47	35	31	36	56	48	59	G
8	G	G	G	G	G	G	29	38	50	46	46	G	44	48	G	49	44	51	80	60	49	49	31	30
9	45	34	G	G	G	29	45	30	40	51	50	47	G	G	G	G	G	39	51	29	32	33	35	G
10	G	G	G	G	G	G	G	G	G	G	G	G	G	44	G	G	42	41	31	32	G	G	G	G
11	G	G	G	G	G	G	G	48	G	G	48	50	G	G	G	G	G	G	G	G	G	G	G	G
12	G	G	G	G	G	G	G	50	G	G	G	G	G	G	G	G	51	54	32	36	35	G	26	G
13	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
14	G	G	G	G	G	G	G	33	40	44	43	G	G	G	G	39	35	G	35	33	40	56	46	44
15	39	34	28	G	G	G	G	32	51	54	54	51	49	51	48	46	39	33	G	40	39	G	G	G
16	G	G	G	G	G	G	G	32	G	45	G	G	43	G	G	G	G	G	27	30	33	40	G	G
17	G	G	24	G	G	G	G	33	38	46	G	G	G	51	G	40	G	G	34	60	57	40	24	G
18	G	G	G	G	G	G	G	31	36	G	G	G	44	G	47	53	59	50	27	23	33	26	27	28
19	G	G	G	G	G	G	G	G	39	G	G	G	G	G	G	G	35	G	34	G	56	84	65	57
20	G	G	29	G	G	G	G	33	G	57	49	53	55	68	50	G	54	63	72	72	43	33	39	28
21	25	34	26	G	G	G	G	G	G	40	40	44	48	G	G	G	40	38	32	34	37	27	26	G
22	29	G	G	G	G	G	G	29	36	G	G	44	45	52	52	G	51	31	28	28	G	28	27	G
23	24	G	G	G	G	G	G	G	34	40	43	G	G	52	G	G	G	G	11	G	34	G	G	25
24	G	G	G	G	30	25	24	31	G	42	49	50	66	56	54	47	48	G	26	G	27	G	32	35
25	G	24	25	G	G	G	G	G	38	45	40	G	G	G	G	G	38	30	G	G	G	G	G	25
26	36	30	G	G	G	G	G	G	G	G	G	G	42	G	G	G	36	34	G	23	28	G	59	41
27	G	26	23	G	G	G	G	32	G	40	42	48	G	G	G	40	34	32	32	32	28	G	32	25
28	28	G	23	G	G	G	G	G	34	42	G	46	G	G	G	G	46	G	G	27	24	26	G	G
29	28	G	G	G	G	G	G	G	G	44	48	49	G	G	G	41	G	35	30	G	G	G	G	G
30	G	G	34	32	G	G	G	G	G	G	G	G	G	G	G	G	35	29	11	G	G	G	28	G
31	26	G	27	G	G	G	G	G	G	43	47	47	G	G	41	G	G	G	26	G	G	32	25	58
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	G	G	G	G	G	G	G	32	G	40	G	G	G	G	G	G	35	32	28	27	33	G	26	G
U Q	28	26	24	G	G	G	G	34	39	45	48	48	44	50	47	40	46	39	34	36	40	36	33	32
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 Yamagawa

OCT. 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	15	15	14	14	18	15	20	28	45	18	47	38	21	16	14	15	15	15	17	15	15
2	15	15	15	15	16	15	15	14	15	18	101	48	51	43	28	22	17	14	17	15	15	15	14	14
3	14	14	15	15	15	14	15	14	15	18	39	26	49	28	27	22	18	14	17	14	15	15	15	15
4	15	15	15	17	15	15	15	14	14	18	22	27	27	28	18	22	18	14	14	15	14	15	15	14
5	16	14	15	15	15	14	15	15	14	20	23	34	34	22	26	27	17	14	14	14	15	14	15	15
6	17	15	15	15	15	15	14	14	15	18	23	24	28	27	23	18	14	14	14	15	16	14	14	14
7	15	15	15	14	15	18	15	16	17	21	20	26	30	33	38	24	14	15	14	14	15	14	14	15
8	15	15	15	15	14	15	14	14	16	20	28	29	44	28	30	23	18	15	14	14	14	14	15	14
9	16	14	15	14	14	15	14	15	16	17	28	28	42	23	17	23	16	14	15	15	14	14	14	17
10	14	14	15	15	15	15	15	15	17	17	24	44	43	26	24	20	16	14	14	14	15	15	15	15
11	66	15	15	15	15	15	14	24	14	18	21	27	48	44	14	20	17	15	15	15	16	15	15	15
12	15	15	16	16	14	15	14	18	14	16	36	45	45	42	40	24	16	14	14	15	15	15	16	16
13	17	15	15	14	15	15	15	20	16	15	20	28	44	44	46	20	16	16	16	15	15	14	15	14
14	15	15	14	15	15	15	15	20	16	17	20	26	28	42	27	17	15	18	15	14	14	14	14	14
15	14	14	15	17	17	15	15	14	14	16	20	33	26	20	18	14	14	14	15	14	14	20	20	20
16	24	15	15	17	15	15	15	15	14	15	22	18	20	20	17	15	18	24	14	15	14	14	16	15
17	15	16	15	14	15	15	15	14	14	17	27	22	21	30	41	20	15	14	15	15	14	14	15	15
18	15	15	15	15	15	15	14	14	14	34	38	28	50	41	20	16	18	14	14	15	14	14	15	14
19	15	15	15	16	14	15	15	16	17	17	28	48	27	43	38	24	17	23	14	15	15	14	14	15
20	15	15	14	16	16	15	15	17	14	15	20	23	18	23	17	16	20	16	17	15	14	14	14	14
21	15	15	15	15	20	18	14	24	16	21	24	23	27	18	14	14	14	14	15	16	14	18	15	15
22	14	15	15	16	14	15	15	15	15	17	20	35	36	29	23	20	16	15	14	15	17	14	16	16
23	15	15	15	15	15	15	15	22	16	18	21	21	27	21	18	20	14	26	15	16	14	15	15	16
24	17	15	16	15	15	14	14	14	16	17	21	20	26	22	27	21	17	15	15	15	15	15	15	15
25	15	15	15	15	14	15	16	14	14	16	23	24	26	23	22	20	15	14	15	15	15	15	16	15
26	14	16	15	15	15	15	15	22	15	18	36	24	28	37	20	21	17	16	14	15	14	15	14	14
27	15	15	15	15	15	15	15	16	14	16	21	27	22	28	26	20	16	15	14	15	15	15	14	14
28	15	15	15	15	14	15	14	22	14	17	21	26	27	28	29	20	16	21	14	15	15	15	15	15
29	15	15	15	15	18	15	15	15	14	22	21	27	27	26	20	14	15	14	14	15	16	15	15	14
30	15	16	14	14	15	15	15	15	14	16	18	21	39	27	21	21	15	17	14	16	15	16	15	15
31	14	15	14	14	15	15	15	15	14	15	17	33	23	24	22	18	17	22	16	18	15	15	15	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	15	15	15	17	22	27	28	28	23	20	16	15	14	15	15	15	15	15
U Q	15	15	15	15	15	15	15	18	16	18	28	33	43	41	29	22	17	16	15	15	15	15	15	15
L Q	15	15	15	15	15	15	14	14	14	16	20	24	26	23	18	18	15	14	14	15	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

OCT. 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	53	46		49	36		40	76	87	101	88	86	88	118	124	126	126	131	128	88	66	52	53	53
2	46		44	43	46	41	51	94	112	108	86	87	108	131	137	133	N	130	107	108	87	67	64	
3	49	52	53			42	43	94	105	102	89	86	102	124	142	144	132	143	131	76	82	72	72	63
4	44	52		39		37	44	81	85	94	104	107	130	127	144	142	142	148	144	107	100	86	77	
5		52		30	44	32	43	66	87	100	96	89	108	108	126	130	137	138	130	106	84	67	70	71
6	54		47	58				76	106	130	108	124	136	134	A	130	134	132	108	108	104	80	67	A
7	A	39		43	43	A	51	73	88	102	108	108	104	120	130	130	117	126	127	76	63		A	60
8	53	39			37		69	73	90	98	N	130		142	150	135	N	148	108	53	A	82	83	75
9	79	67	73	53	32			71	88	112	121	117		148	142	134	131	127	107	87	76	89	86	88
10	88	89	87	53	52			76	85	105	122	118	107	133	131	142	134	126	106	89	N	76	73	73
11	74	74	79	84	62			54	89	91	115	108	126	148	140	142	134	123	107	N	86	71		65
12	52			45	43	34		64	82	112	131	117	126	131	144	145	142	132	126	87	84	86	73	65
13	63	39	46	43	47			64	81	106	112	110	118	134		139	151	149	107	87	83	72	66	53
14	52	52	63	49	41			67	87	93	88	106	116	124	137	145	144	130	108	82	84	77		49
15	62	39	48	53	45	40		73	82	114	112	126	131	144	144	146	142	131	126	N	87	87	74	64
16	59		43		52	36	32	81	105	104	101	110	123	131	143	143	130	126	113	107	87	88	100	86
17	76	64		51	29		29	71	94	102	121	109	108	122	126	131	131	126	120	88	102	87	79	80
18	44		45		44	35	59	72	80	97	110	121	121	131	141	142	140	142	131	109	106	113	99	73
19			44		54	34	32	66	86	114	110	124	129	150	146	144	139		105	103	73	79	63	A
20	59		47		52			76	104	107	C	C	C	C	131	C	C	118	108	106	87	85	83	83
21	67	67	52	54	A		37	76	88	C	C	C	C	C	C	C	C	C	C	C	74	80	82	67
22	67	64	47		44	31		83	98	C	C	C	C	110	127	131	131	128	108	108	N	110	108	86
23	87	88	86	81	74	47	48	80	88	102	119	128	118	132	149	139	144	143	130	109	108	108	88	80
24	67	67	52	52	47			64	92	96	105	119	105	118	128	130	130		106	88	74	81	71	64
25	A	63	63	54			N	74	130	88	91	108	128	127	128	135	131	127	109	87	84	A	82	52
26	67	77	72	50	46	48	44	83	88	97	110	128	121	147	141		144	134	128	108	87	86	76	67
27	73	85	63	62	52	46	45	66	86	90	107	131	118	127	134	152	142	143	126	108	80	87	87	77
28	N	67	52	57	45			72	97	88	124	133	131	141	N	N	146		136	130	108	108	105	N
29	88	88	88	54	60	40		66	84	88	110	132	130	142	139	144	144		136	130	130		108	87
30	87	78	52	A	46	43		66	84	90	105	111	101	112	131	133	141	131	110	75	88	67	76	50
31		A		43			43	82	104	110	88	116	101	127	131	134	131	118	89	89	88	88	67	60
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	23	23	23	25	15	16	31	31	29	27	28	26	29	27	27	27	26	30	28	28	28	28	26
MED	63	64	52	52	46	40	44	73	88	102	108	116	118	131	137	139	137	131	112	96	86	84	76	67
U Q	75	77	72	54	52	43	49	80	98	107	115	125	128	141	143	144	142	142	128	108	94	87	86	80
L Q	52	52	47	43	43	34	38	66	85	93	96	108	107	123	130	131	131	126	107	87	81	74	70	60

HOURLY VALUES OF fEs AT Okinawa

OCT. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	39	42	33	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	36	G	28	G	G	28	G
3	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	26	G	G	G
4	G	G		G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
5	G	G		G	G	G	G	G	G	57	G	G	G	G	G	G	G	G	G	G	G	G	36	G
6	G		G	G				40	40	47	51	49	52	96	96	G	G	36	52	61	51	79	50	50
7	25	G		G	G	24	G	G	G	G	48	54	51	G	G	G	G	53	60	47	36		24	G
8	G	G	G		G		G	G	48	56	64	79		G	G	G	40	40	40	36	58	44	G	G
9	G	G	G	G	G			G	42	42	G	49		56	G	G	G	50	G	G	68	43	34	G
10	G	G	G	G	G		G	G	G	39	G	G	G	G	G	G	G	48	37	G	G	G	G	G
11	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	44	G	G	G	G	G	G	G
12	G	G		G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	41	34	G	G	G
13	G	G	G	G	G			G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G
14	G	G	G	G	G			G	G	52	G	G	78	53	G	G	G	G	G	51	51	G		30
15	45	26	G	G	G	G	G	G	36	50	59	50	56	54	49	62	47	79	G	57	26	G	G	G
16	G		G		G	G	G	32	G	45	G	G	G	85	G	G	G	G	G	28	G	G	G	G
17	27	G	G	G	G		G	G	G	G	G	G	G	G	54	G	38	G	G	58	35	36	25	G
18	G		G		G	G	G	G	G	G	G	G	G	G	G	G	57	52	40	36	G	29	G	G
19	G		G	G	G	G	G	G	G	43	G	51	58	G	G	G	36		G	G	G	G	G	27
20	34		G		G			G	G	52	C	C	C	C	50	C	C	65	37	48	G	33	30	G
21	G	G	G	G	29	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	G	54	32	G
22	G	G	G	G	G	G		35	G	C	C	C	C	G	G	G	G	G	G	G	34	43	26	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	40	G	G	G
24	G	G	G	G	G			G	G	G	G	52	50	49	81	46	39		27	40	G	G	G	G
25	56	43	30	G	G		G	G	G	41	47	G	G	G	47	G	G	43	36	28	G	59	G	G
26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	48		42	37	26	30	G	G	G	G
27	46	G	G	G	G	G	G	G	G	47	G	48	G	G	G	48	38	G	G	G	G	G	G	G
28	G	G	G	G	G			G	G	G	G	G	G	47	43	G	G		27	49	28	G	G	G
29	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	44		G	24	36		G	G
30	G	G	G	27	G	G		G	G	G	47	G	52	G	G	46	G	32	28	58	27	G	G	G
31		25		G	G		G	G	G	44	50	G	G	G	G	G	48	36	G	G	G	25	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	26	25	26	29	19	19	31	31	29	28	28	26	29	29	28	29	26	30	30	31	29	30	30
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	G	28	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	46	24	48	50	24	45	G	39	43	36	47	35	34	25	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

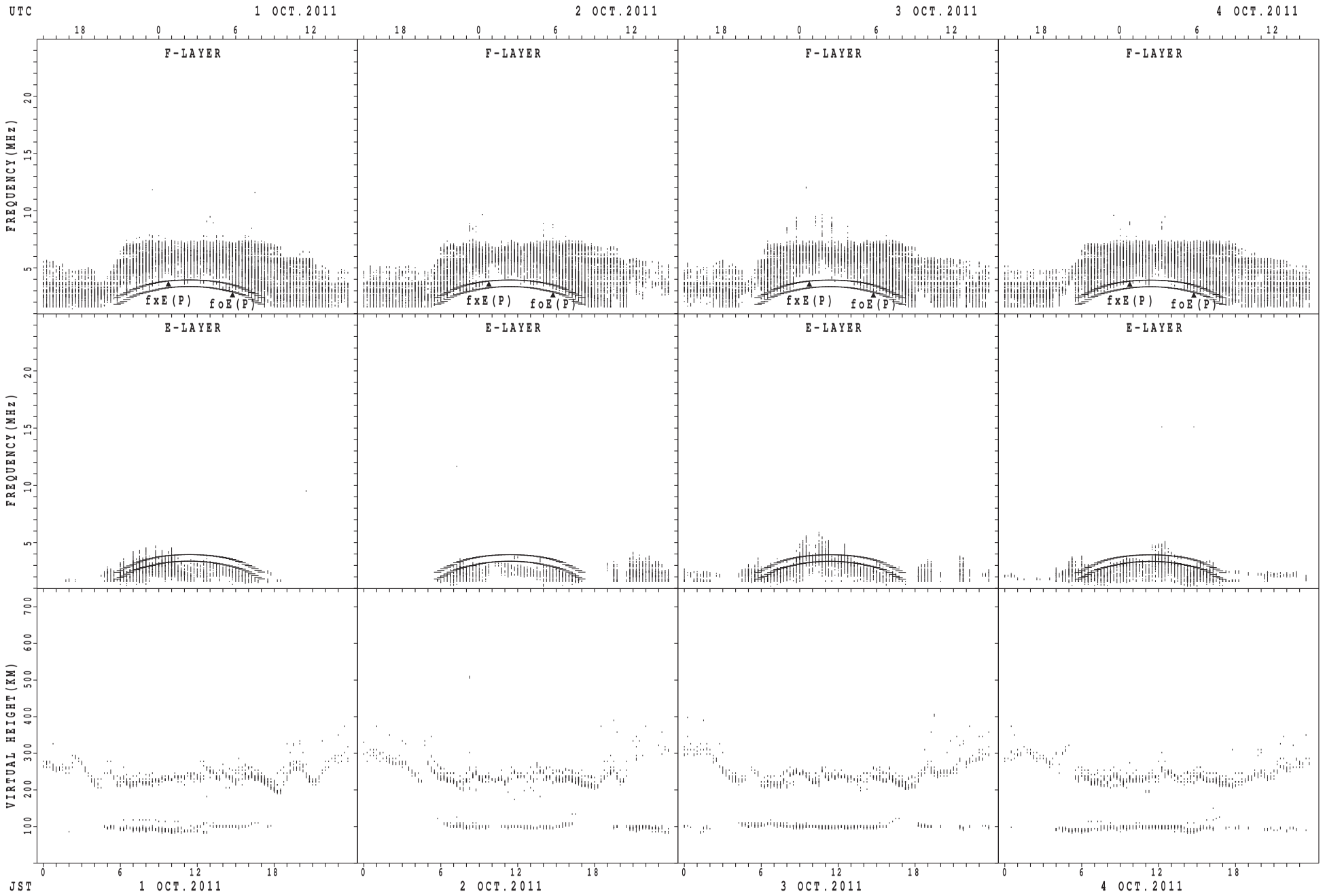
HOURLY VALUES OF fmin AT Okinawa

OCT. 2011

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

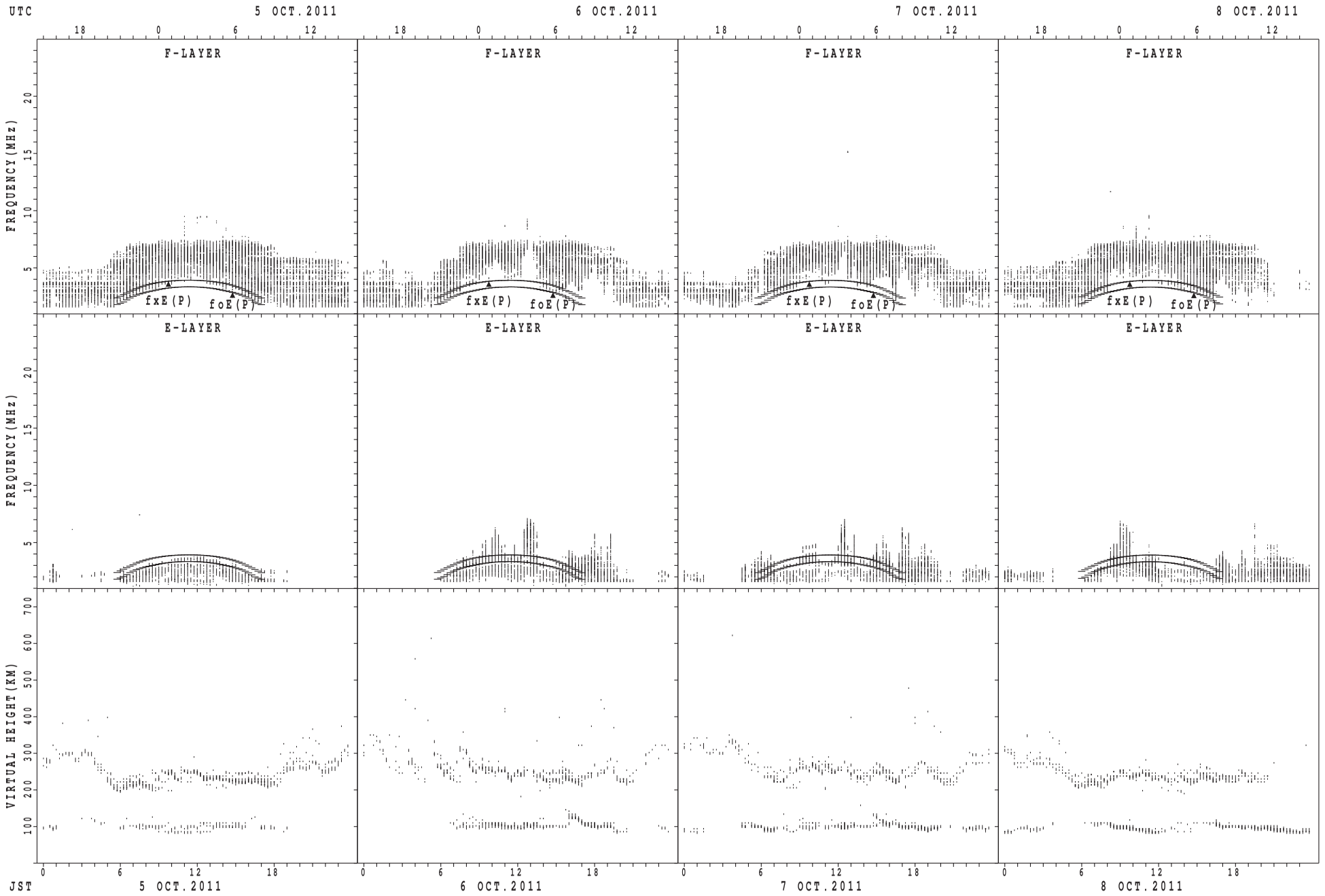
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	16		21	20	18	18	29	33	39	44	58	60	56	54	56	38	26	15	15	15	18	16	23
2	15	16	21	23	18	20	15	27	30	42	59	54	58	58	53	51	39	34	22	17	20	17	15	26
3	21	22	15		23	15	16	32	24	28	54	50	62	58	52	44	39	33	22	14	17	23	16	16
4	20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

SUMMARY PLOTS AT Wakkanai



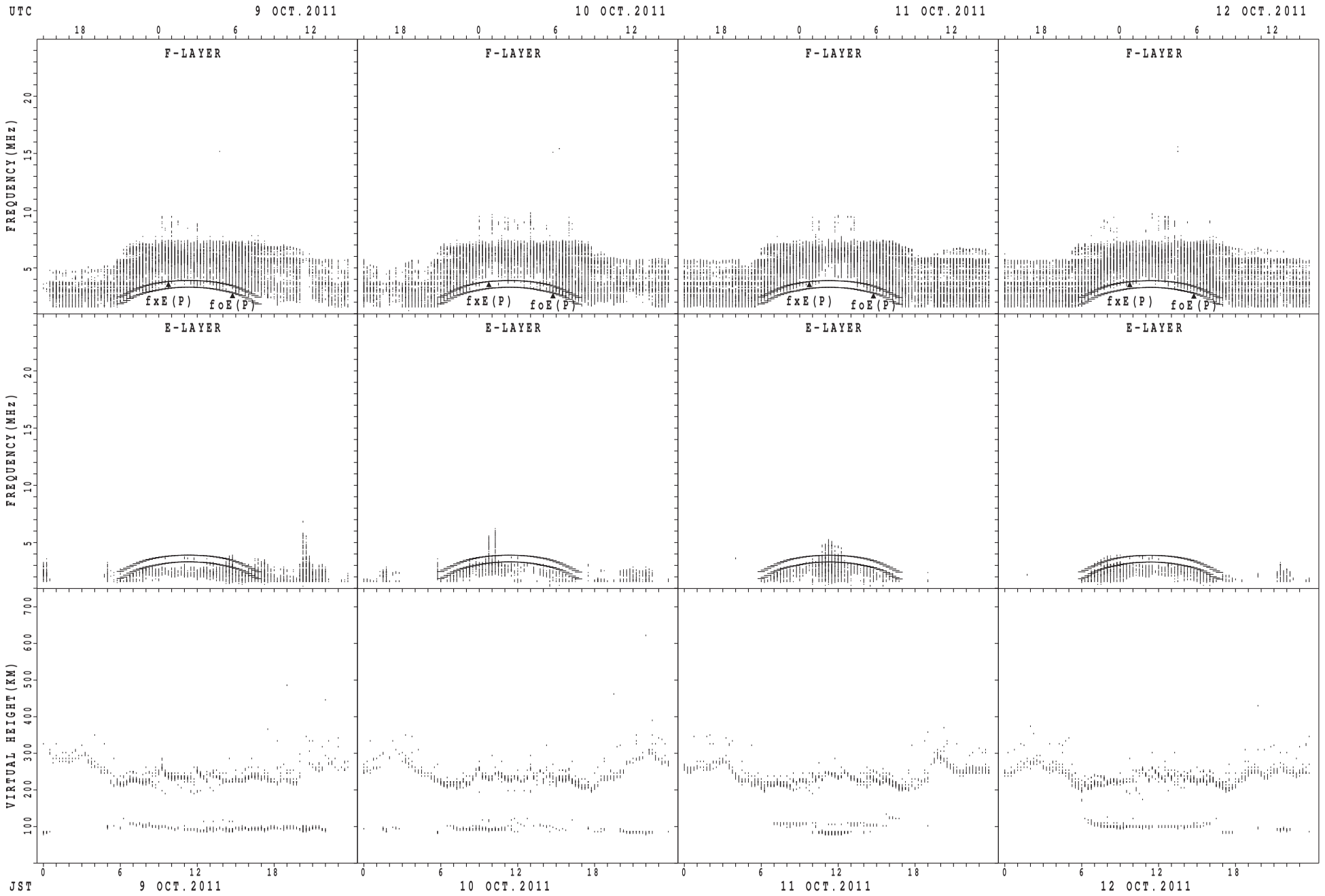
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



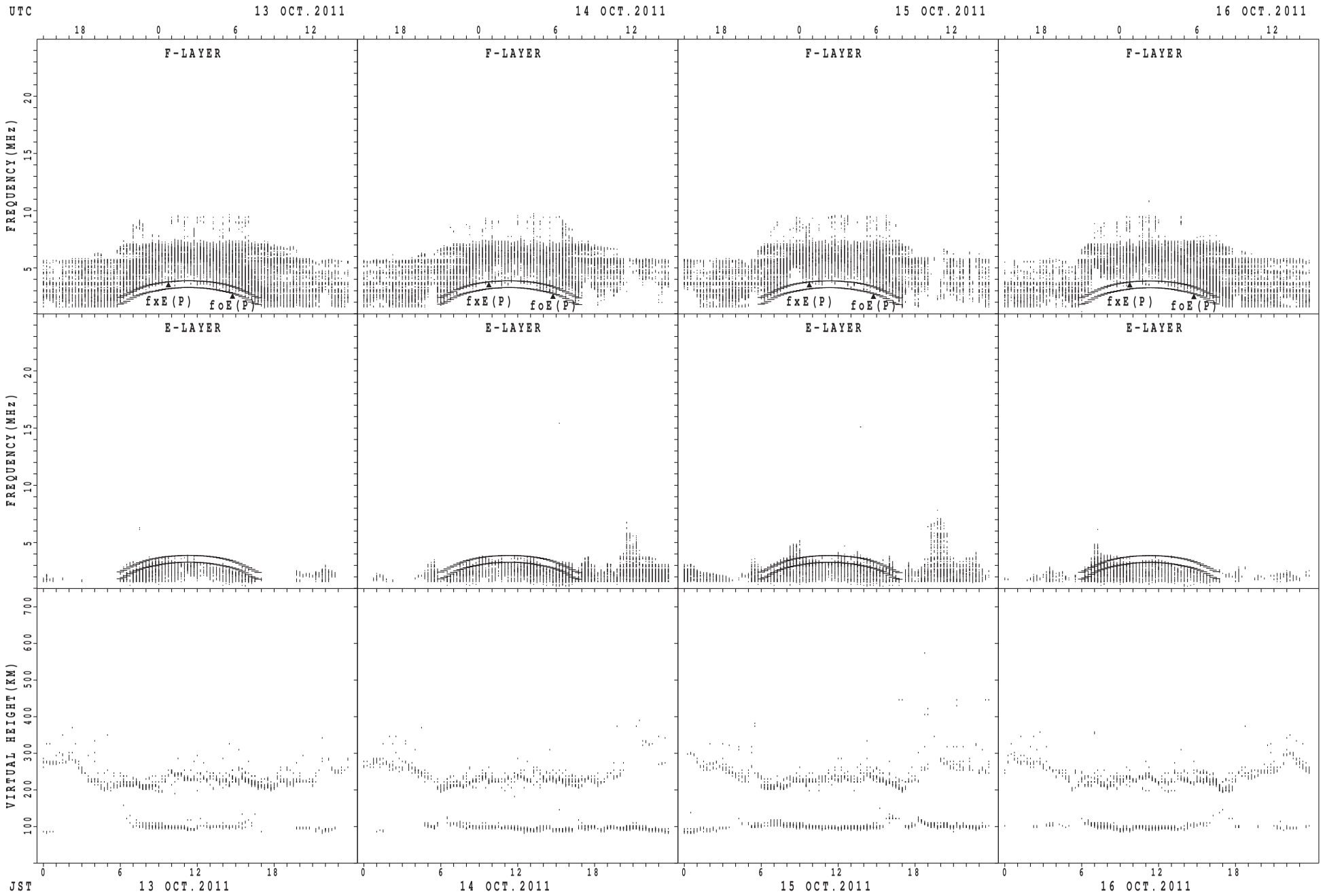
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



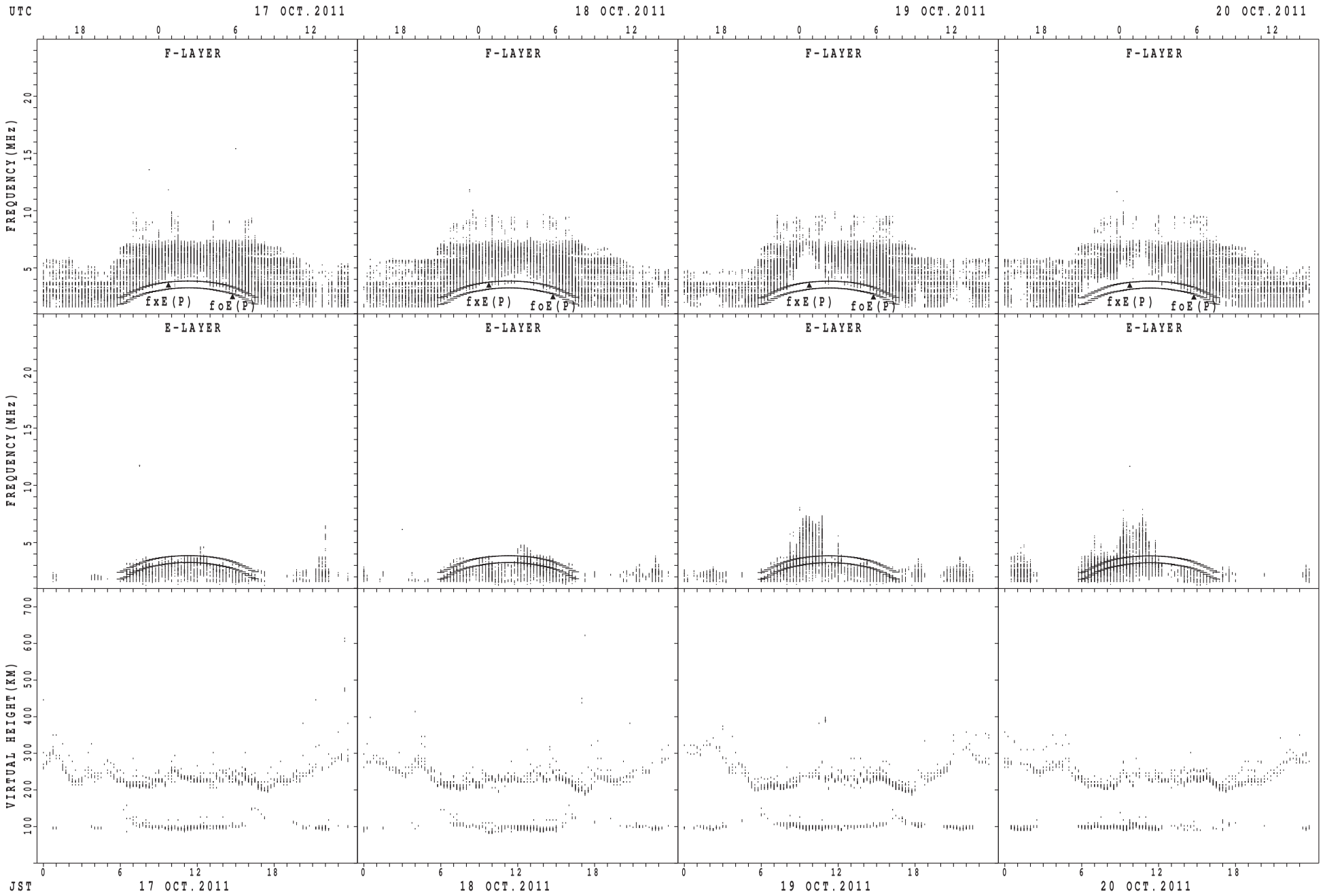
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



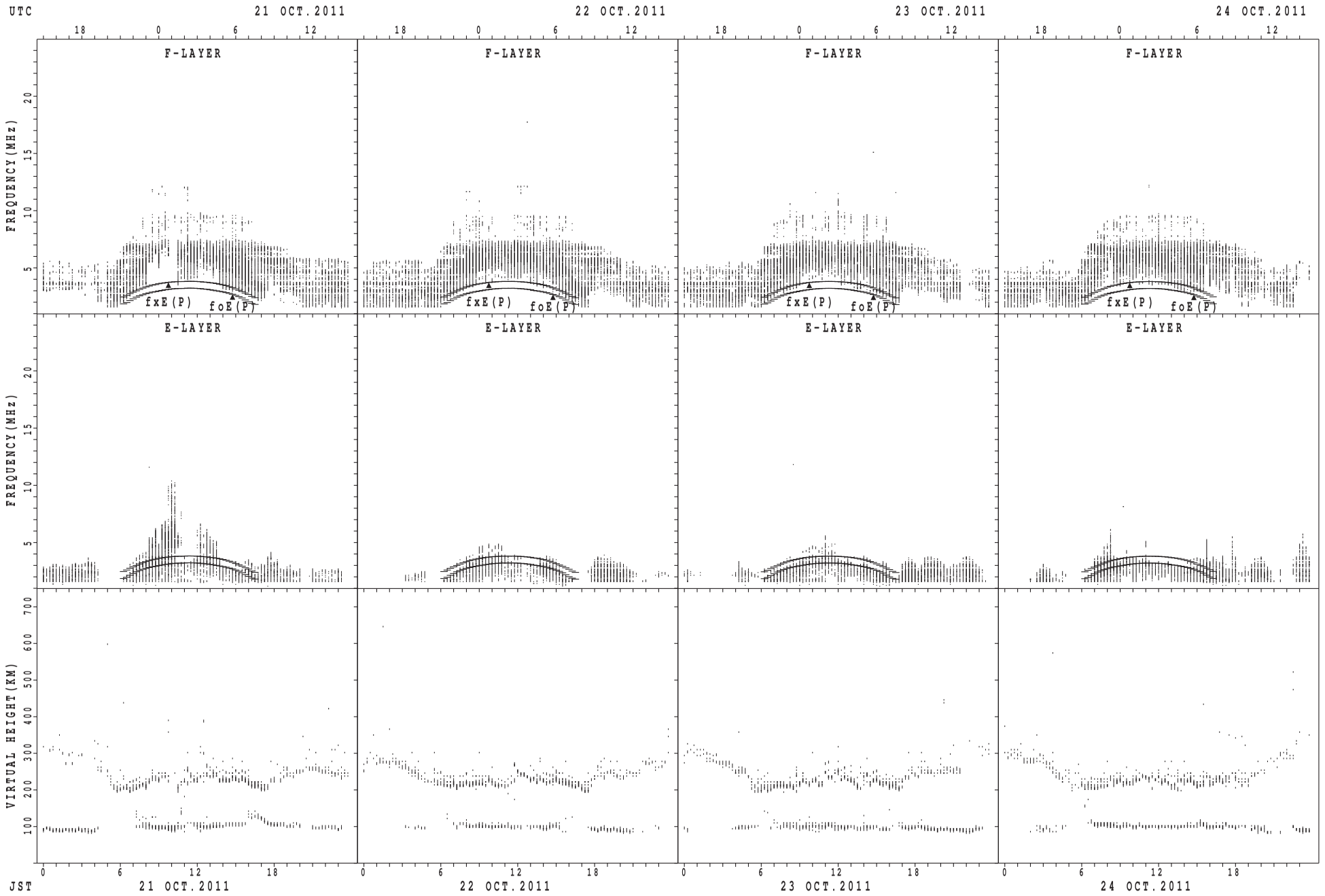
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



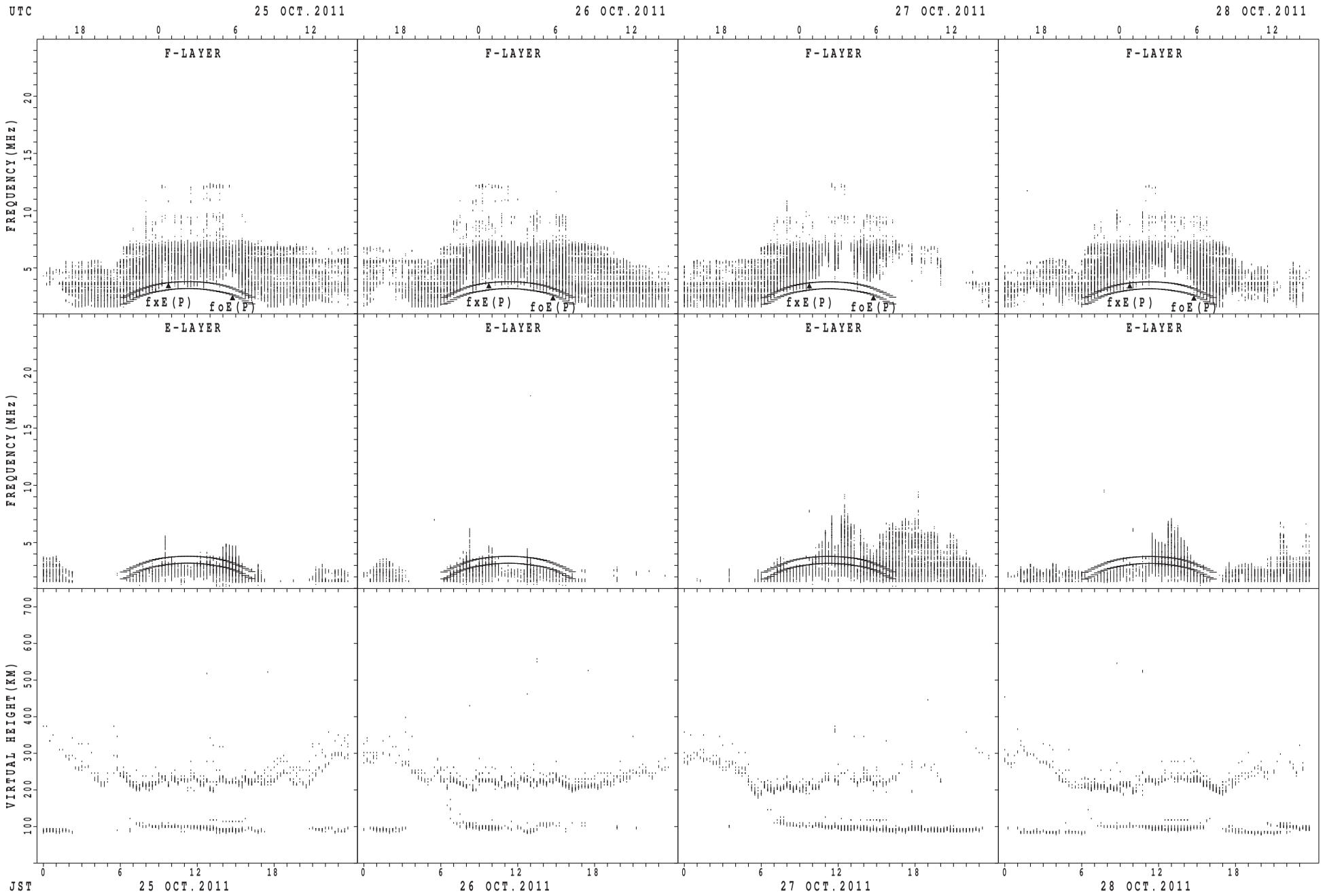
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



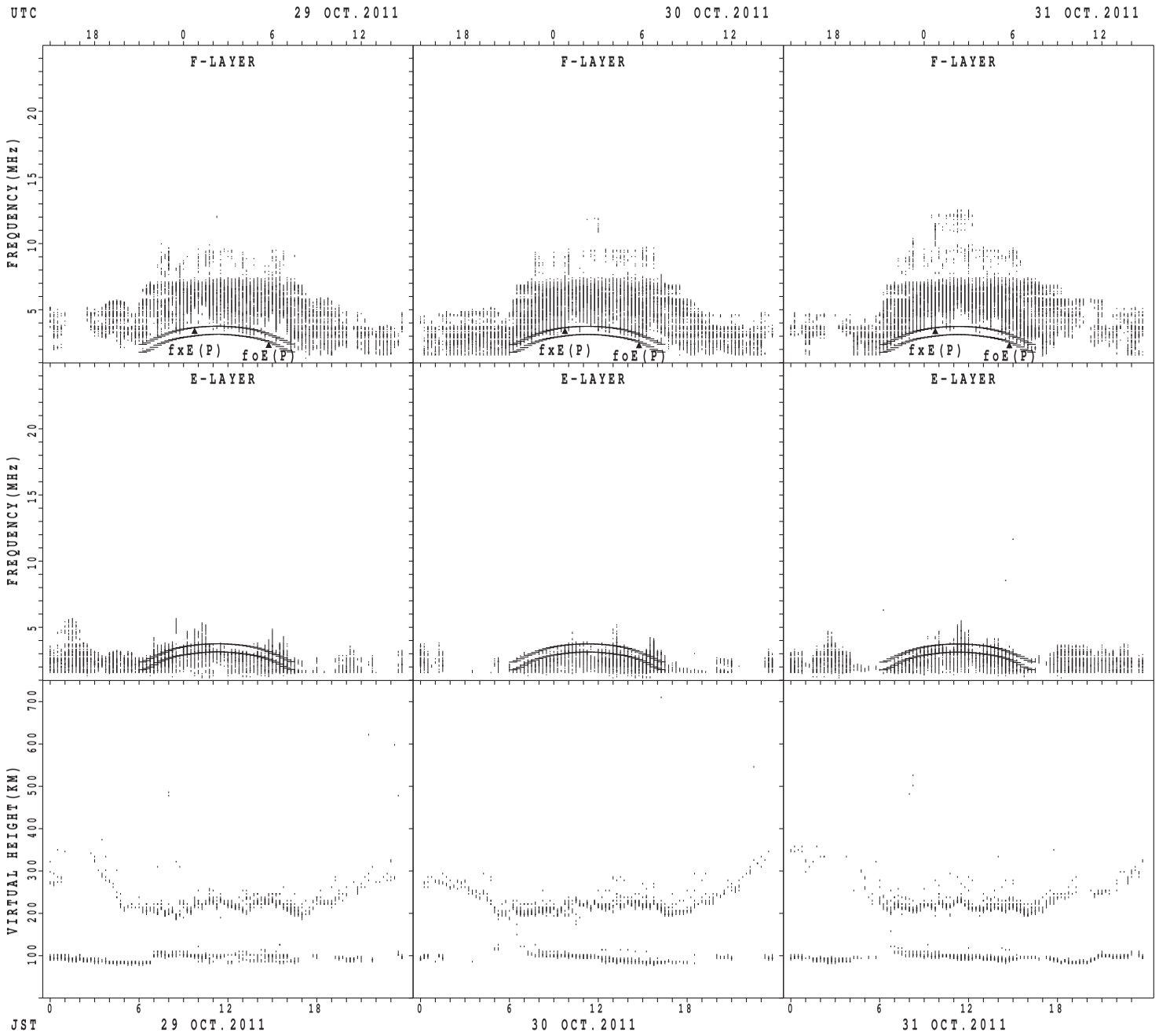
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



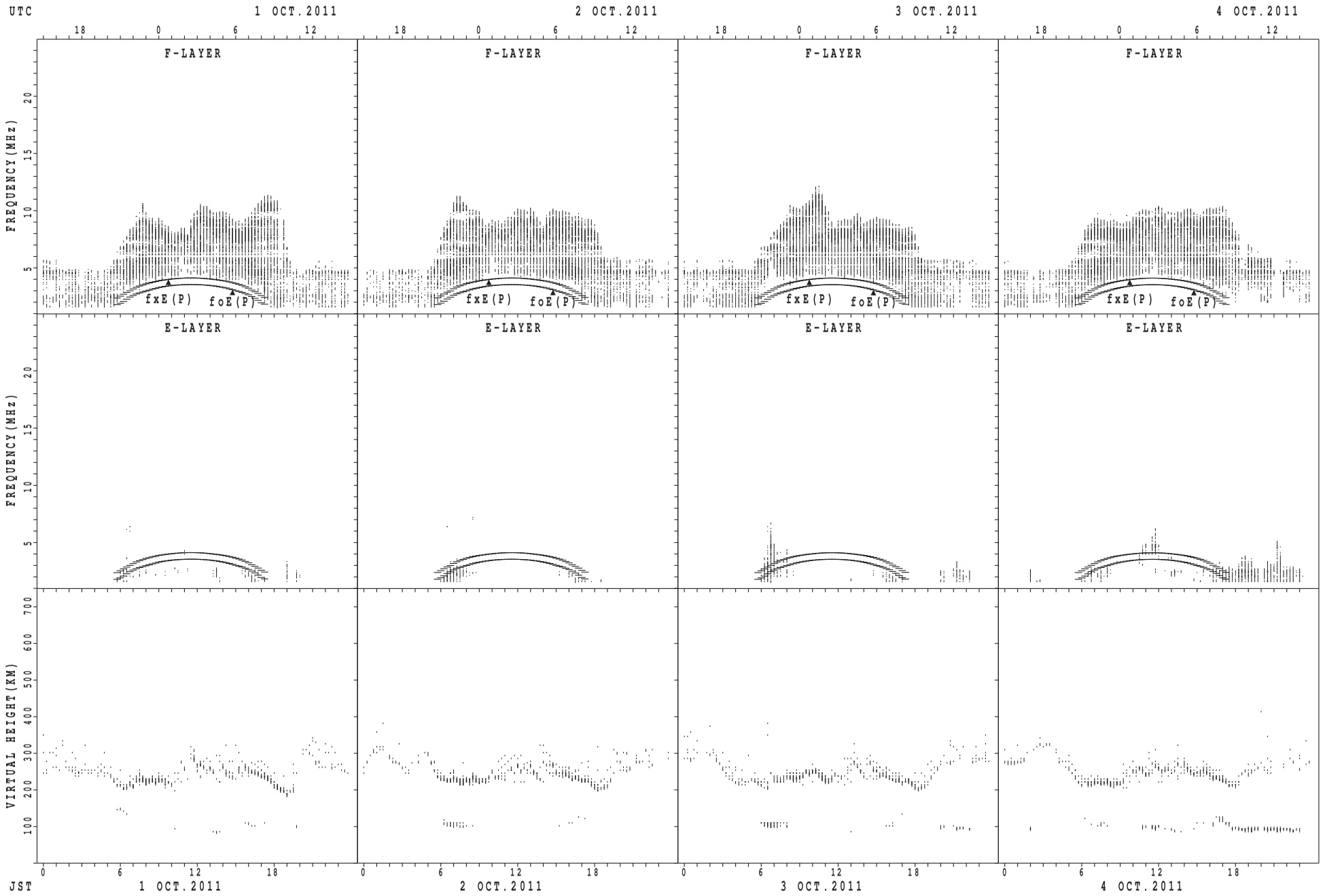
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



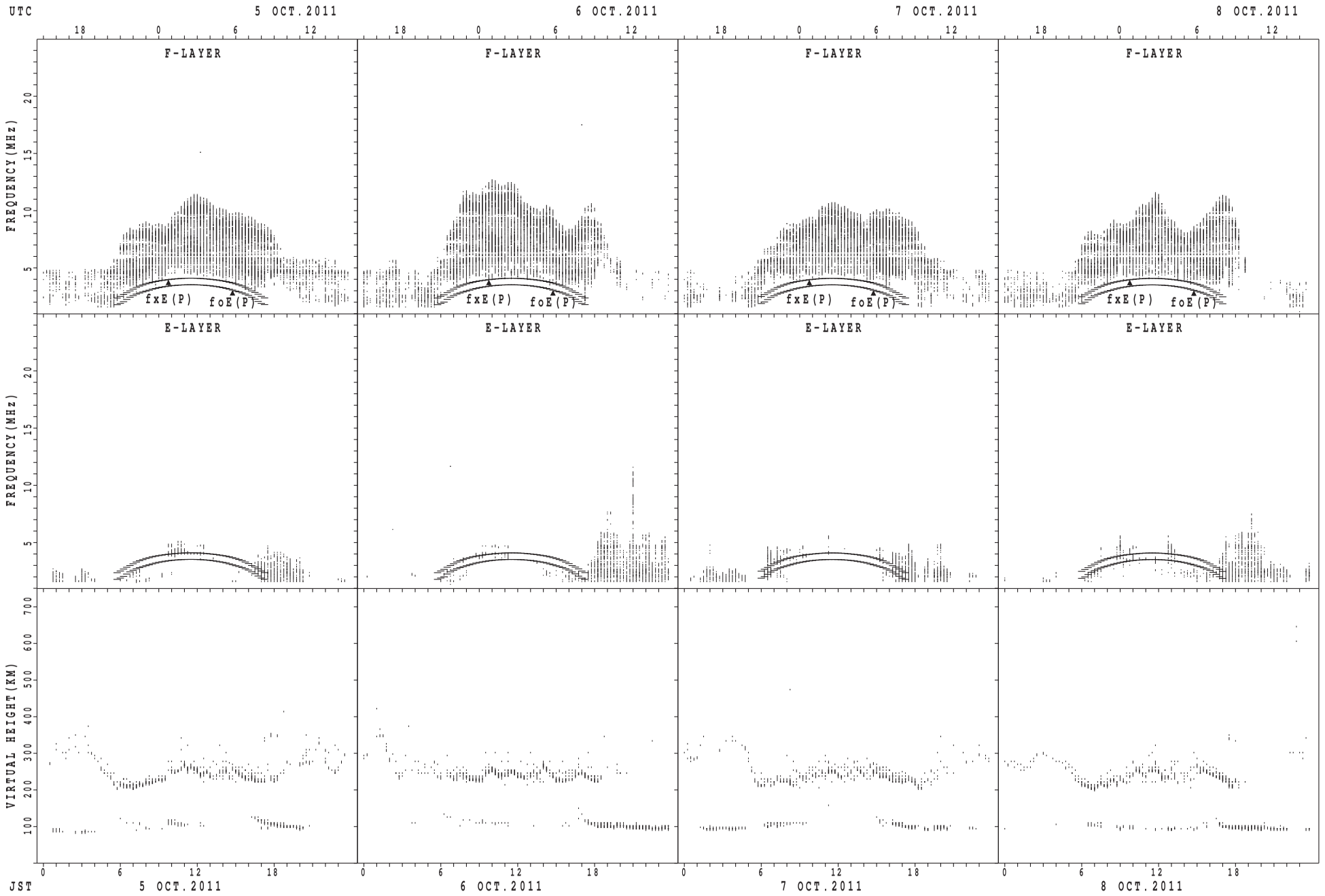
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



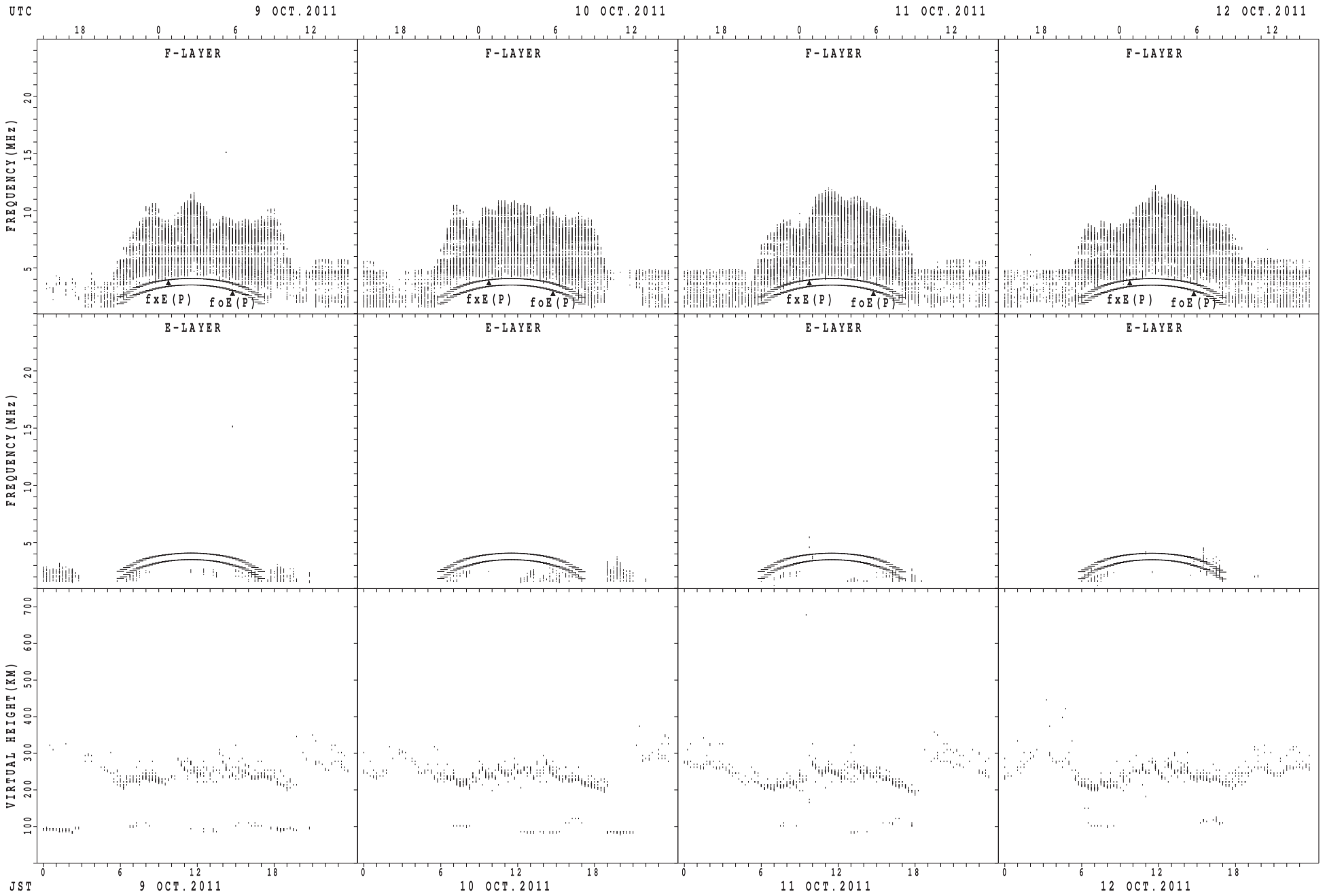
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



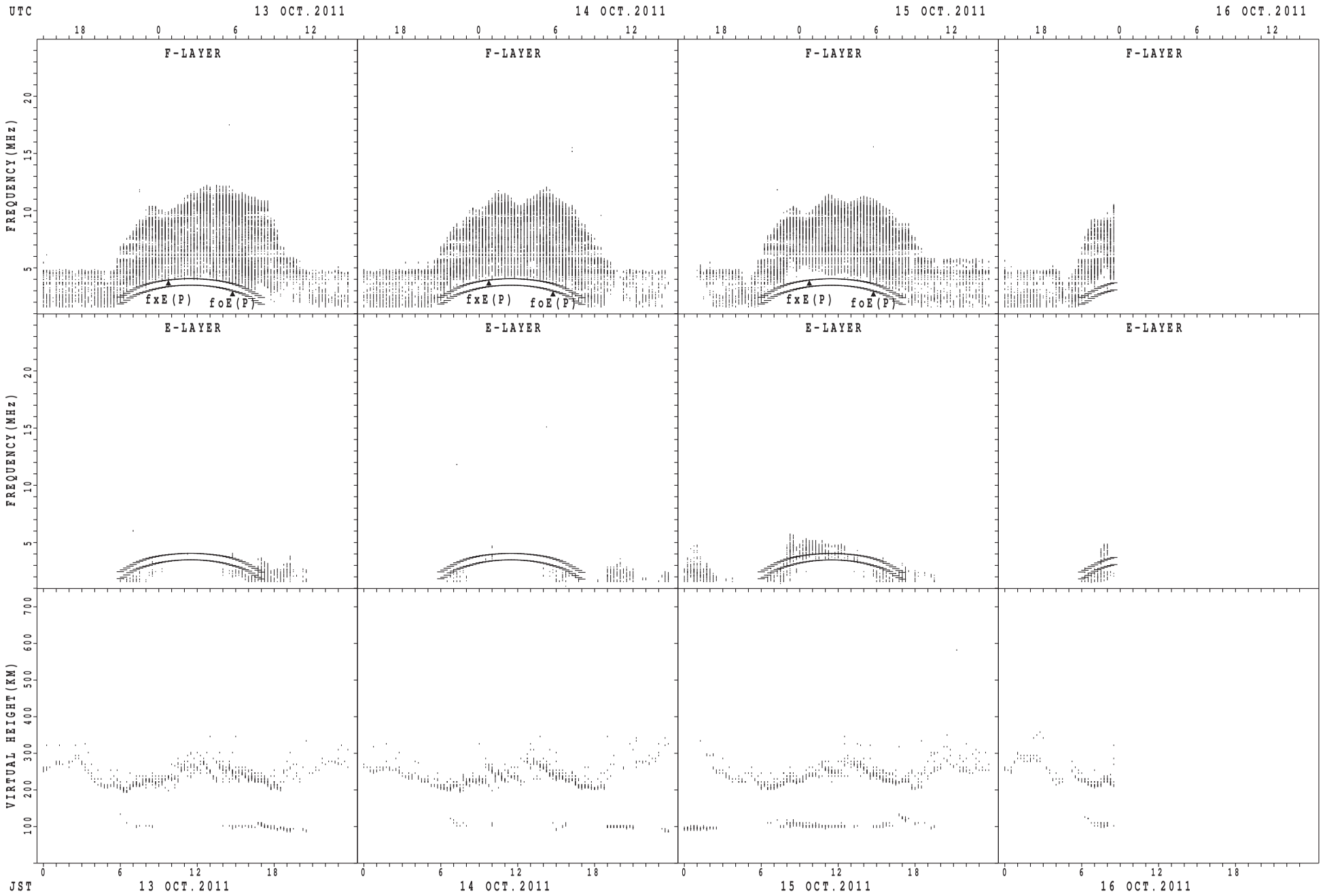
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



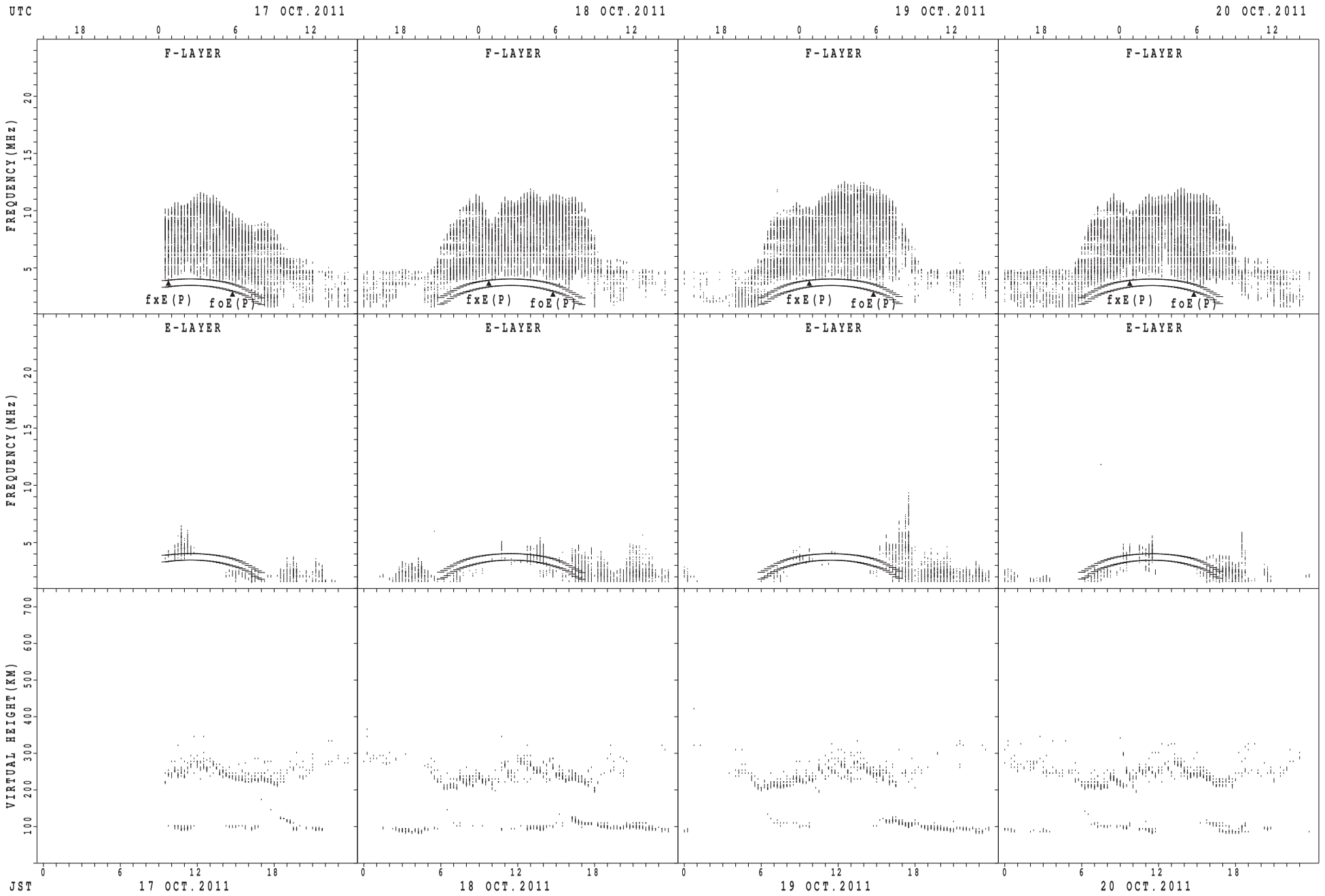
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



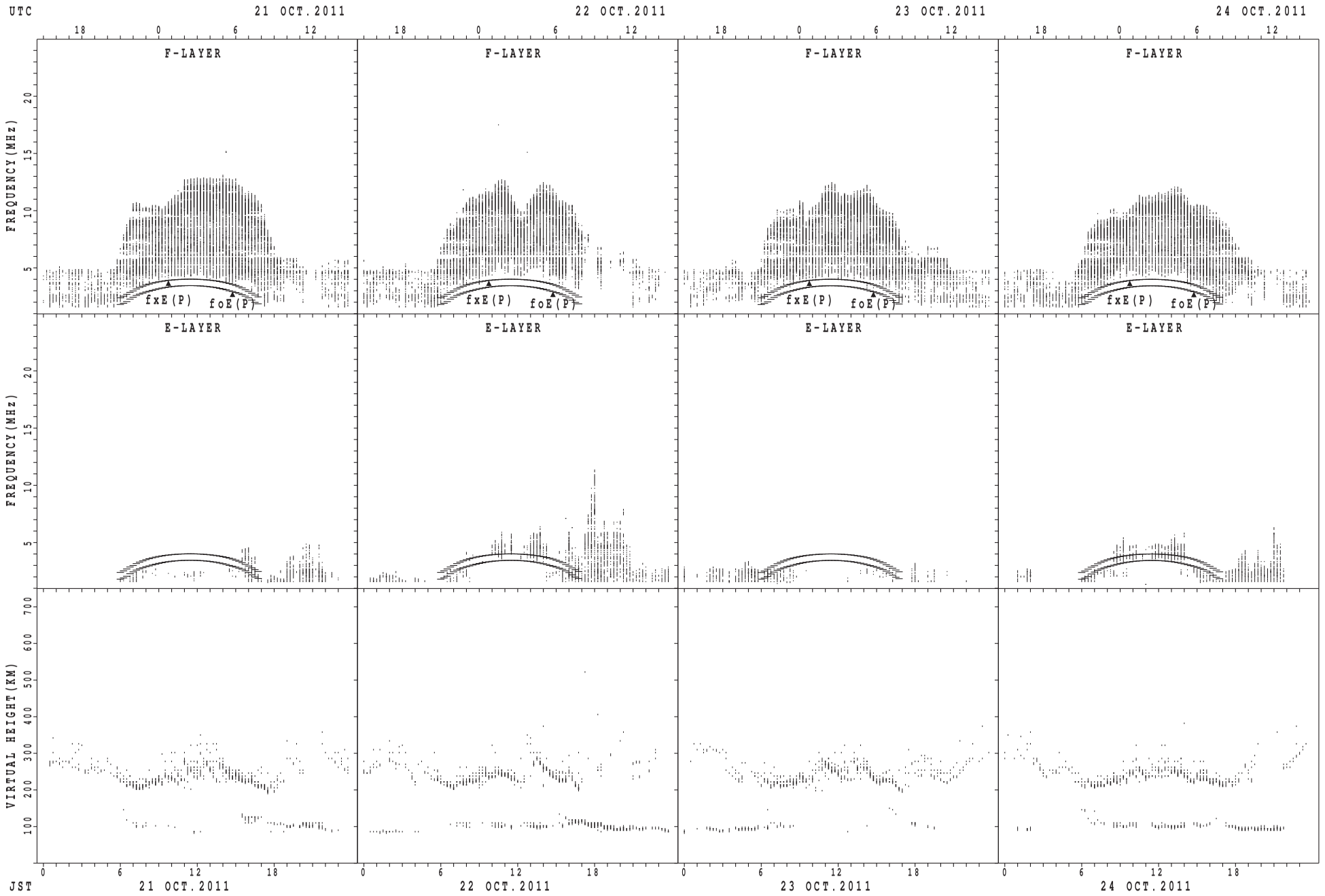
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



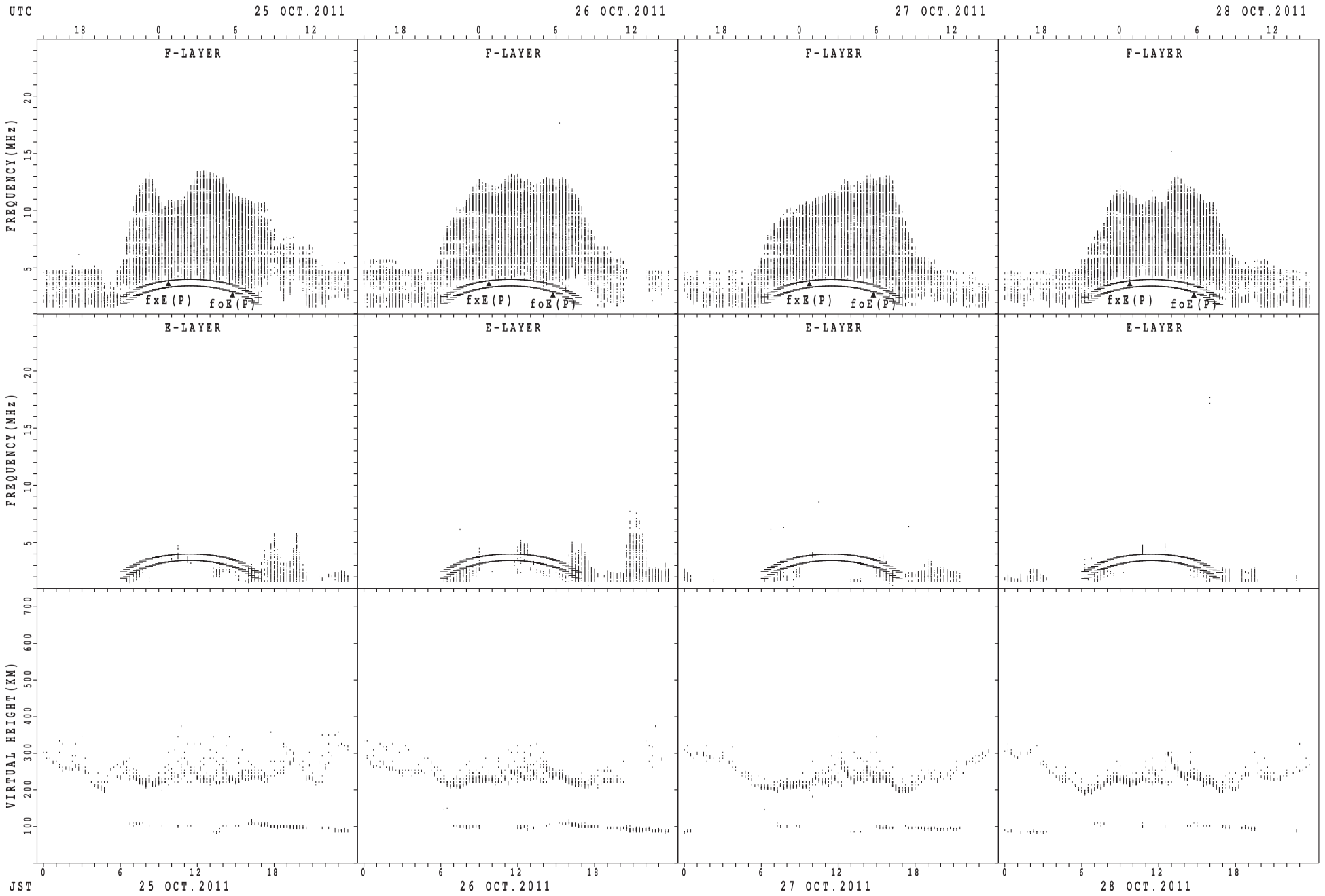
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



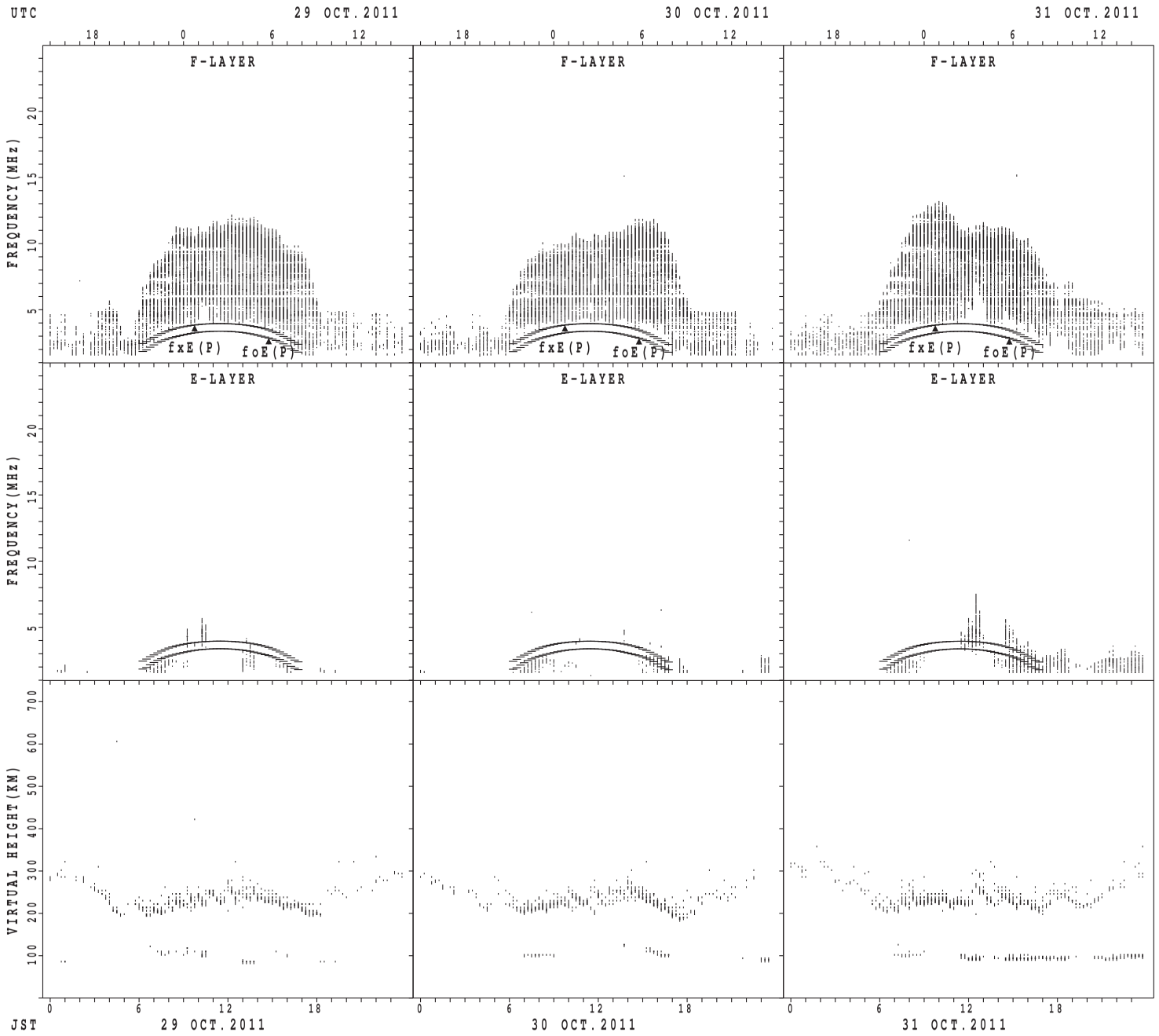
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



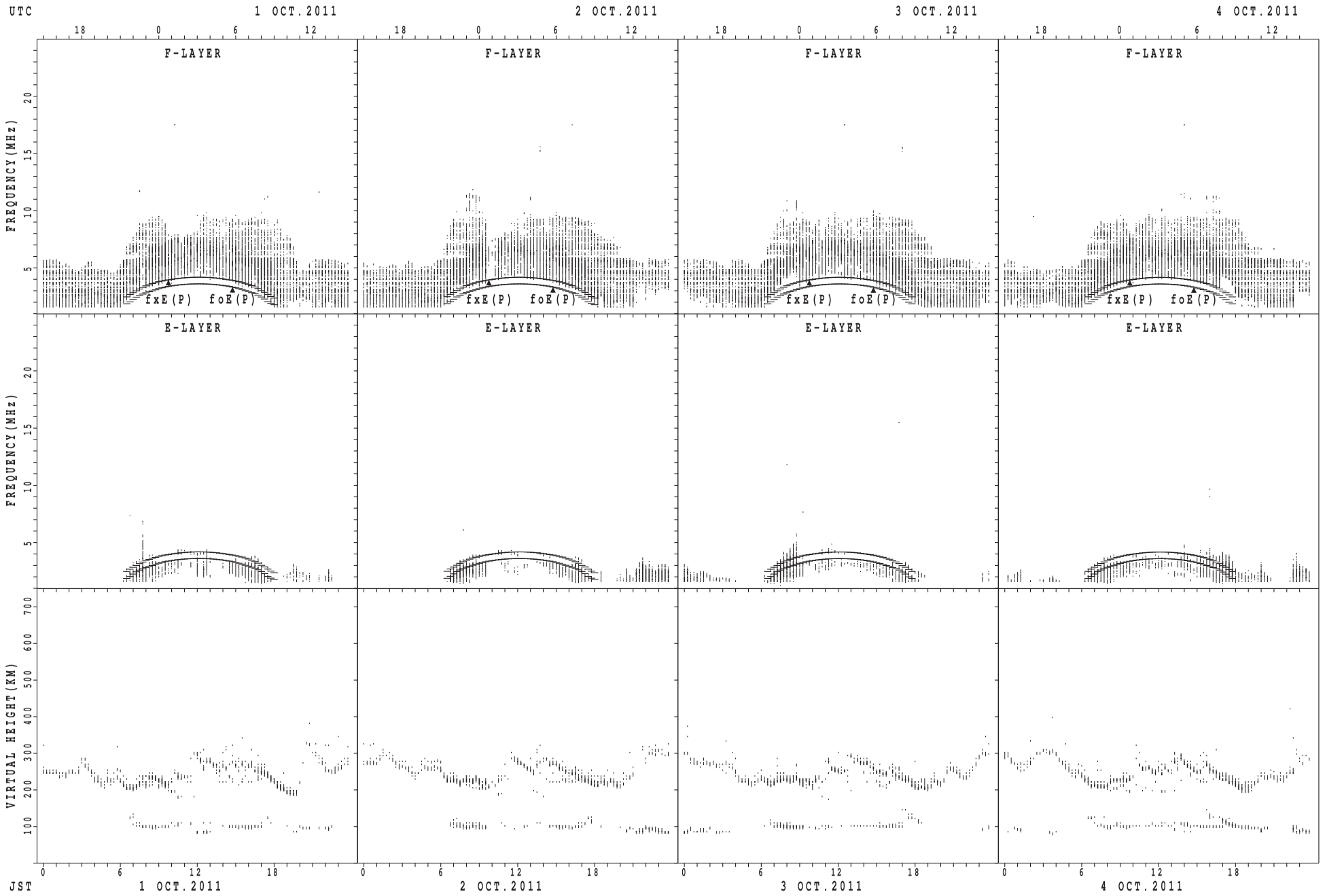
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



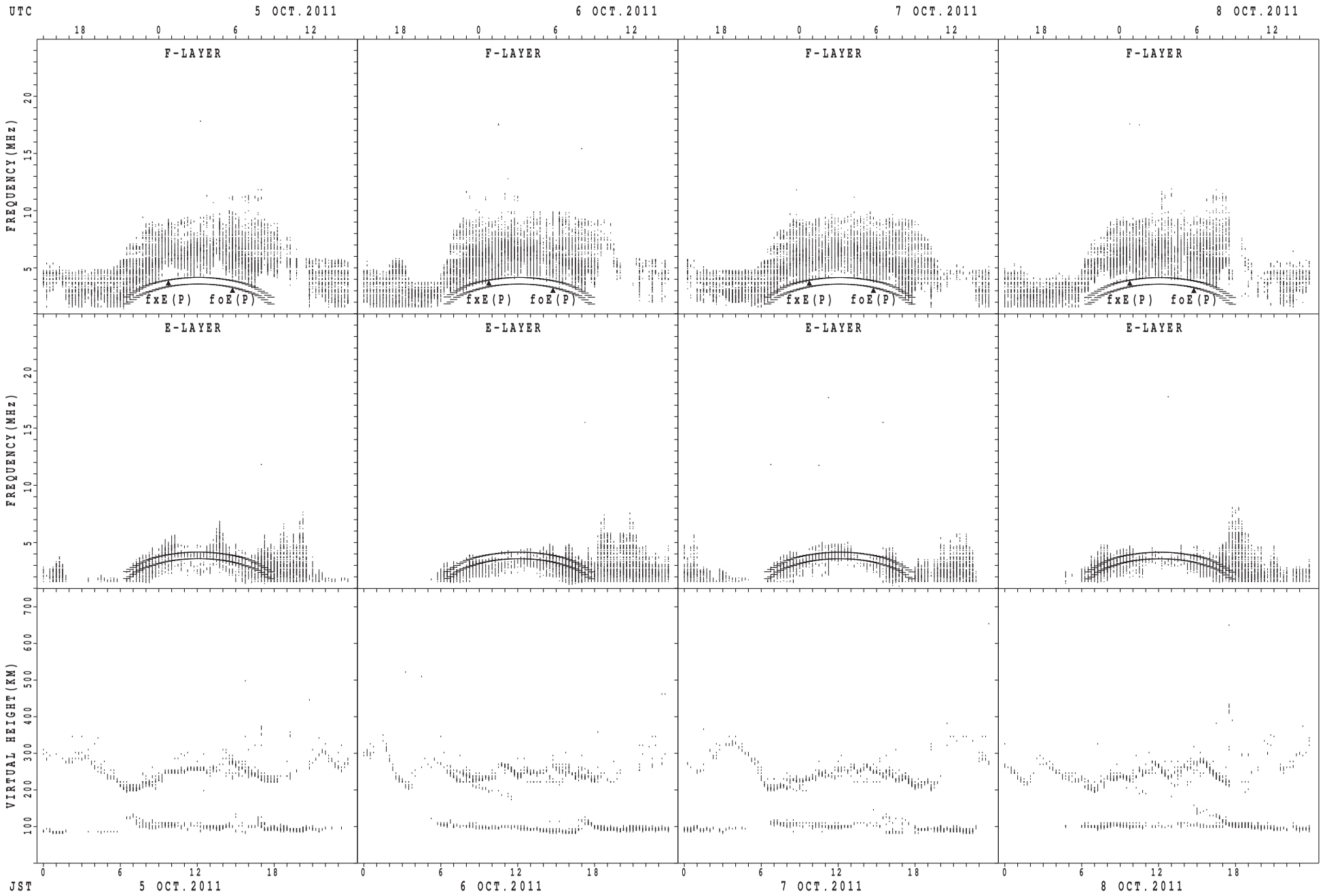
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



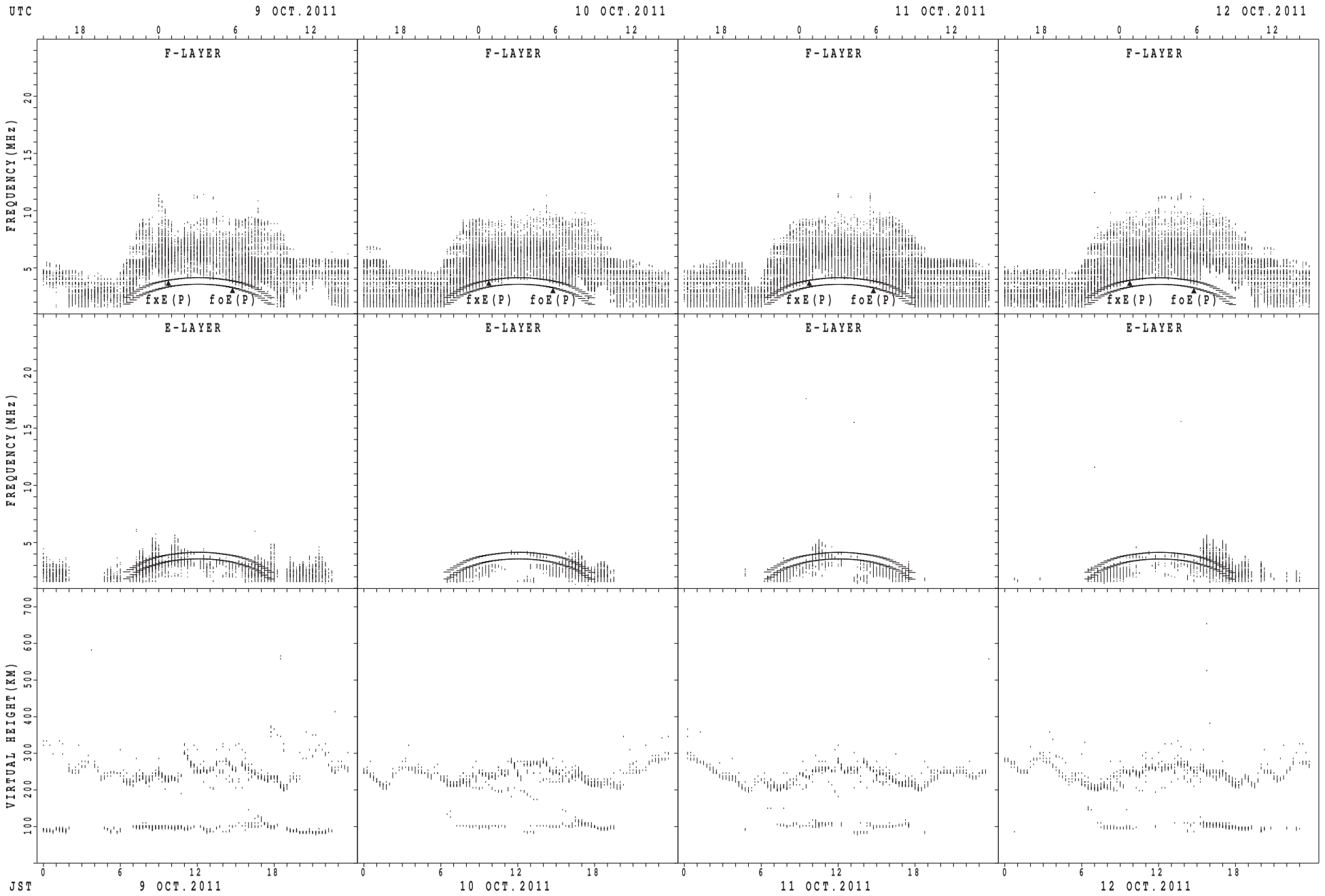
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



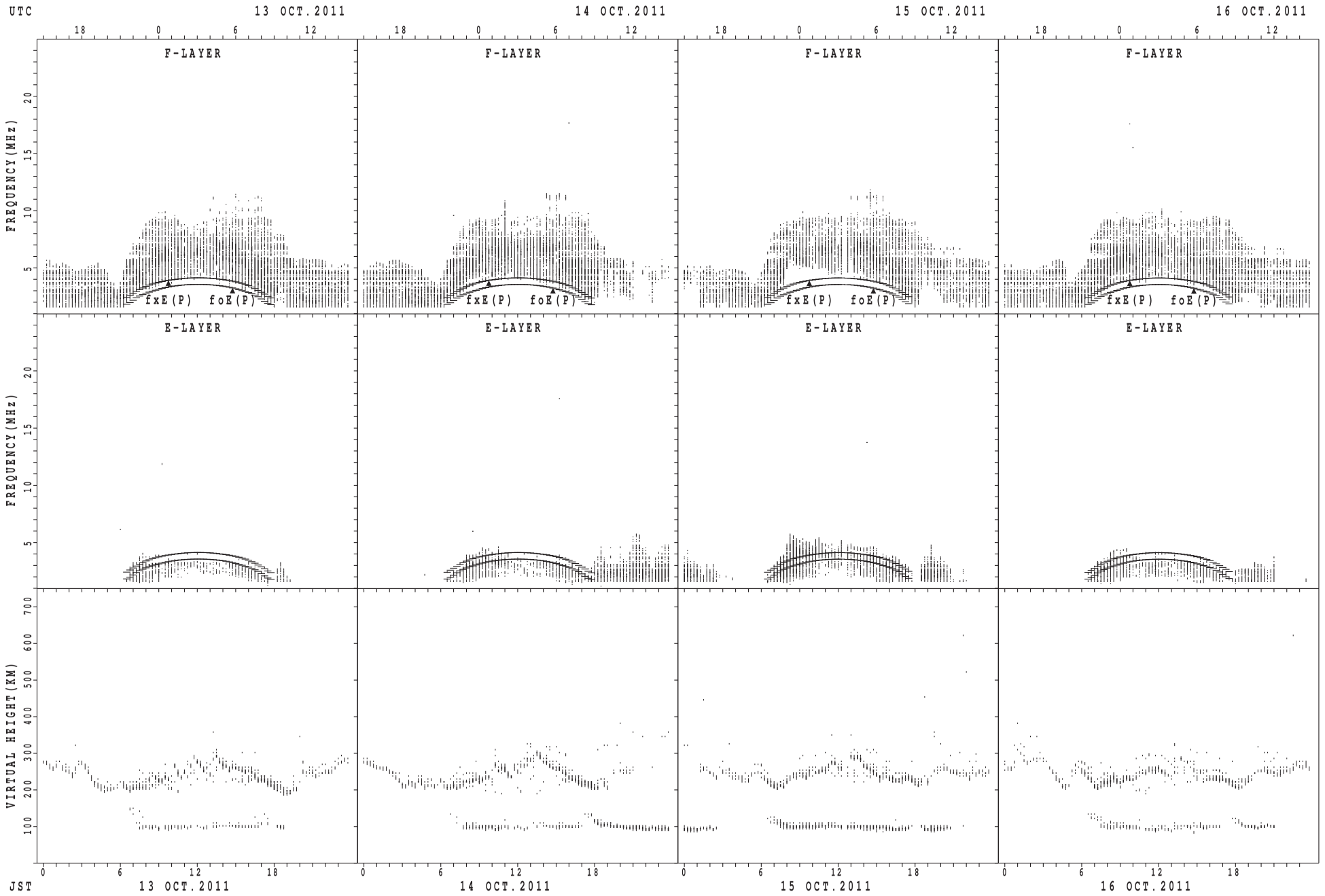
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



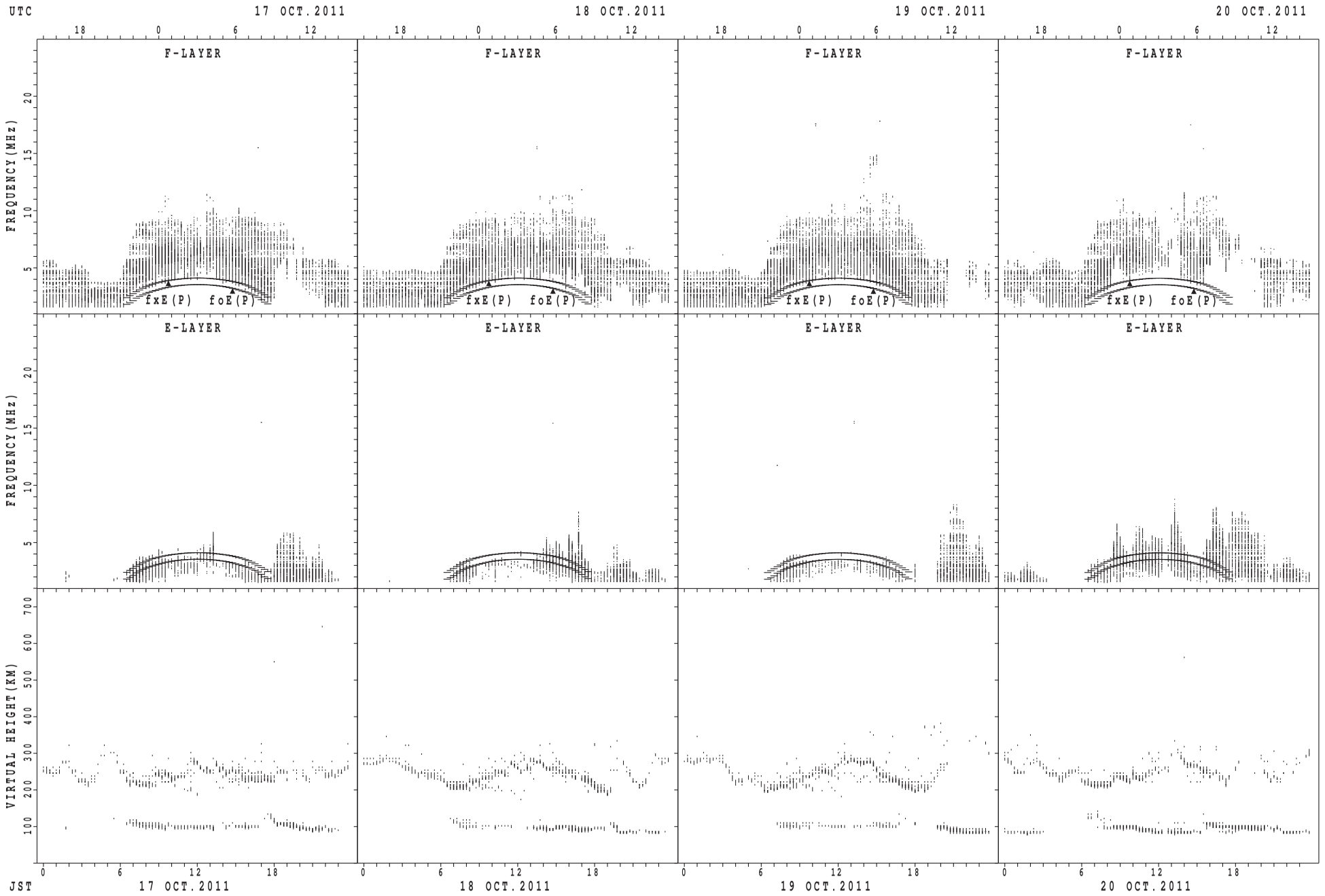
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



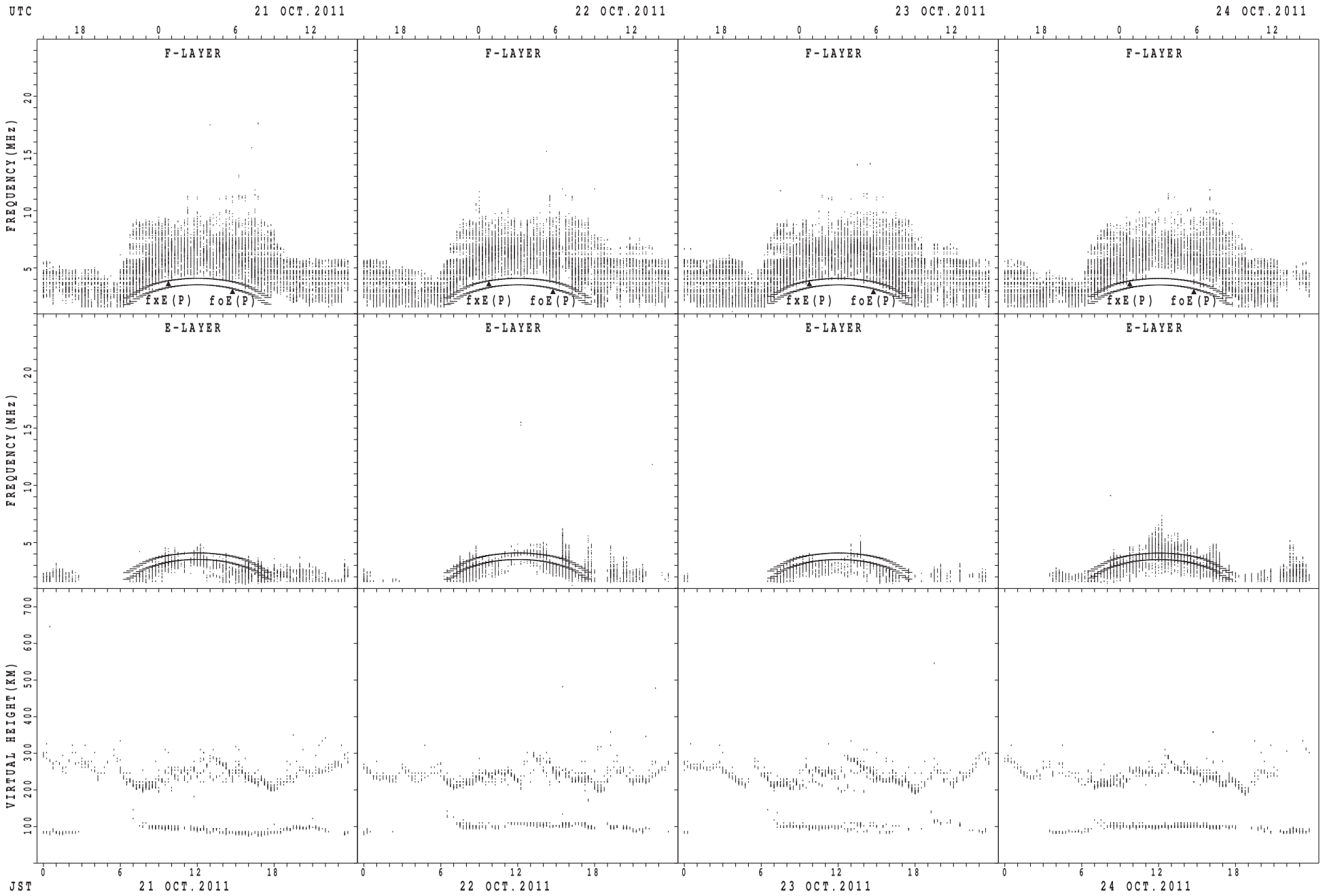
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



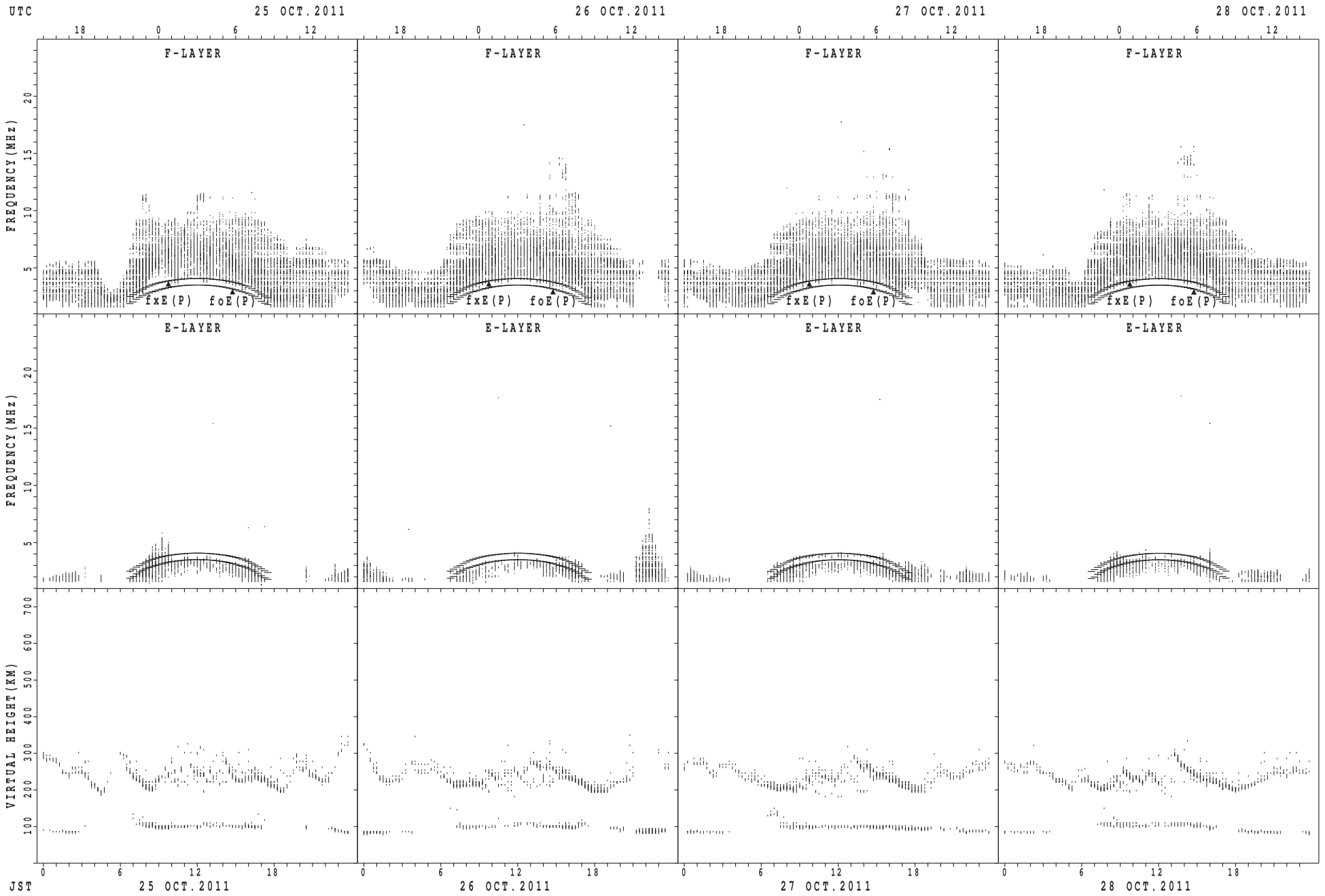
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



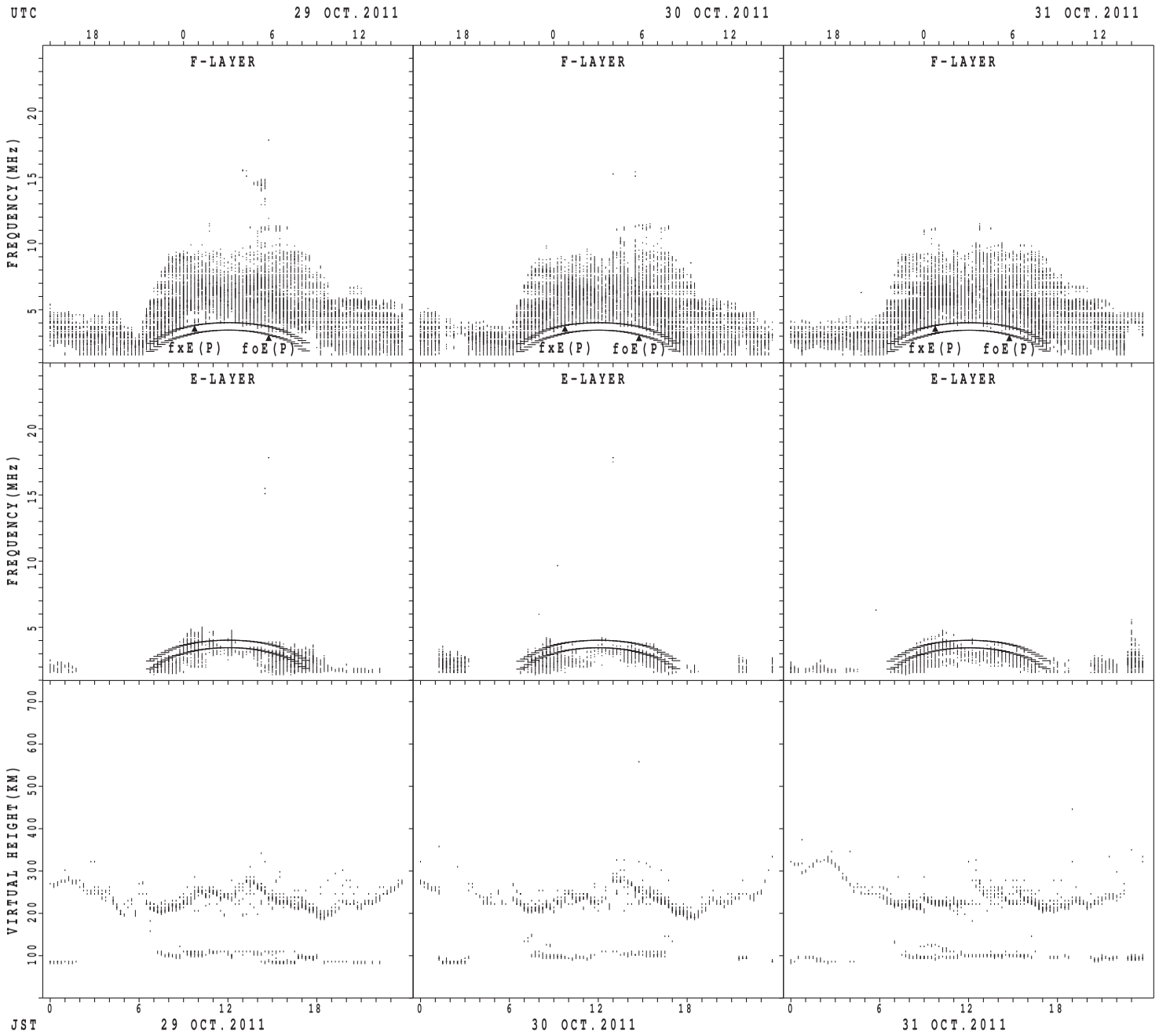
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



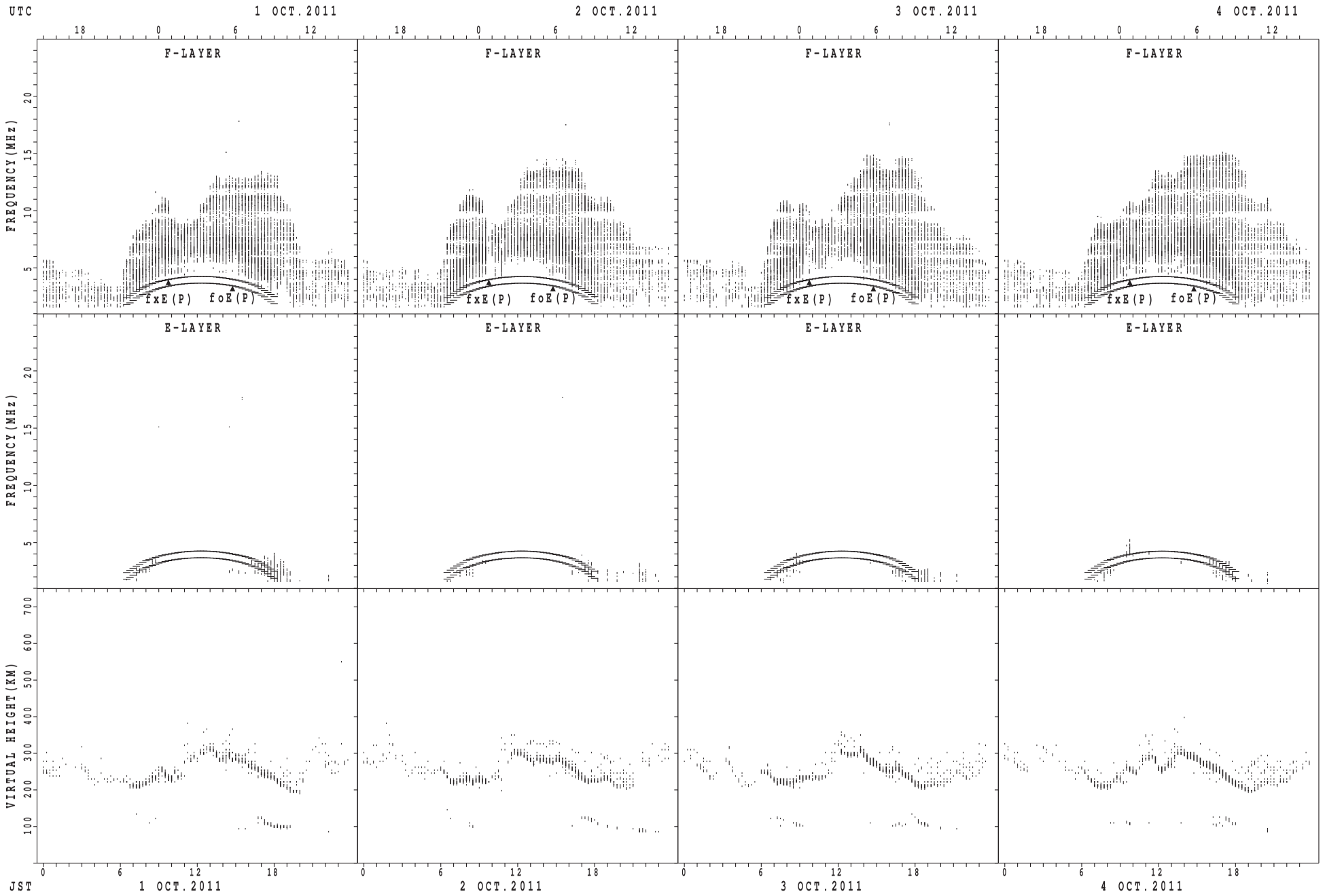
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



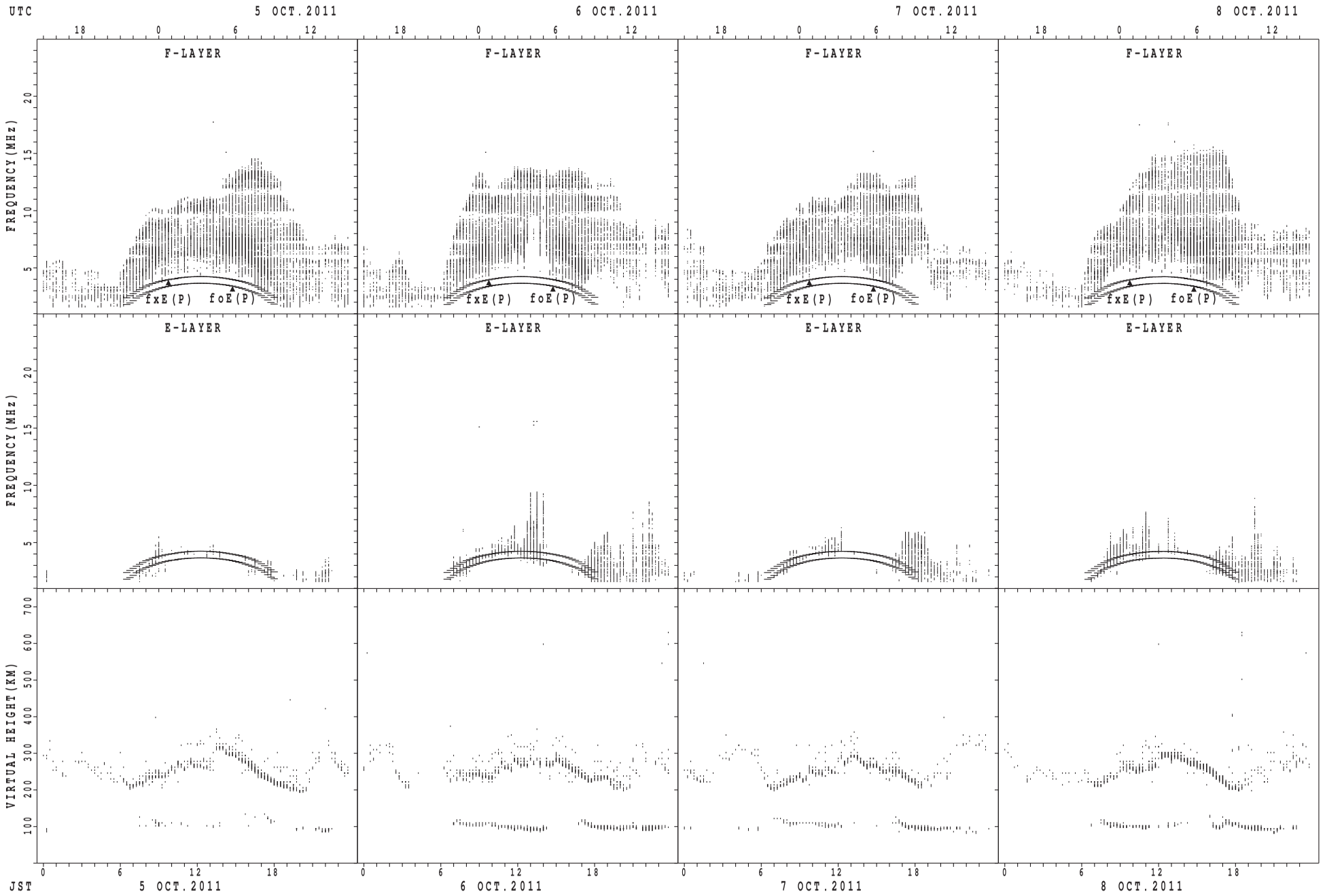
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



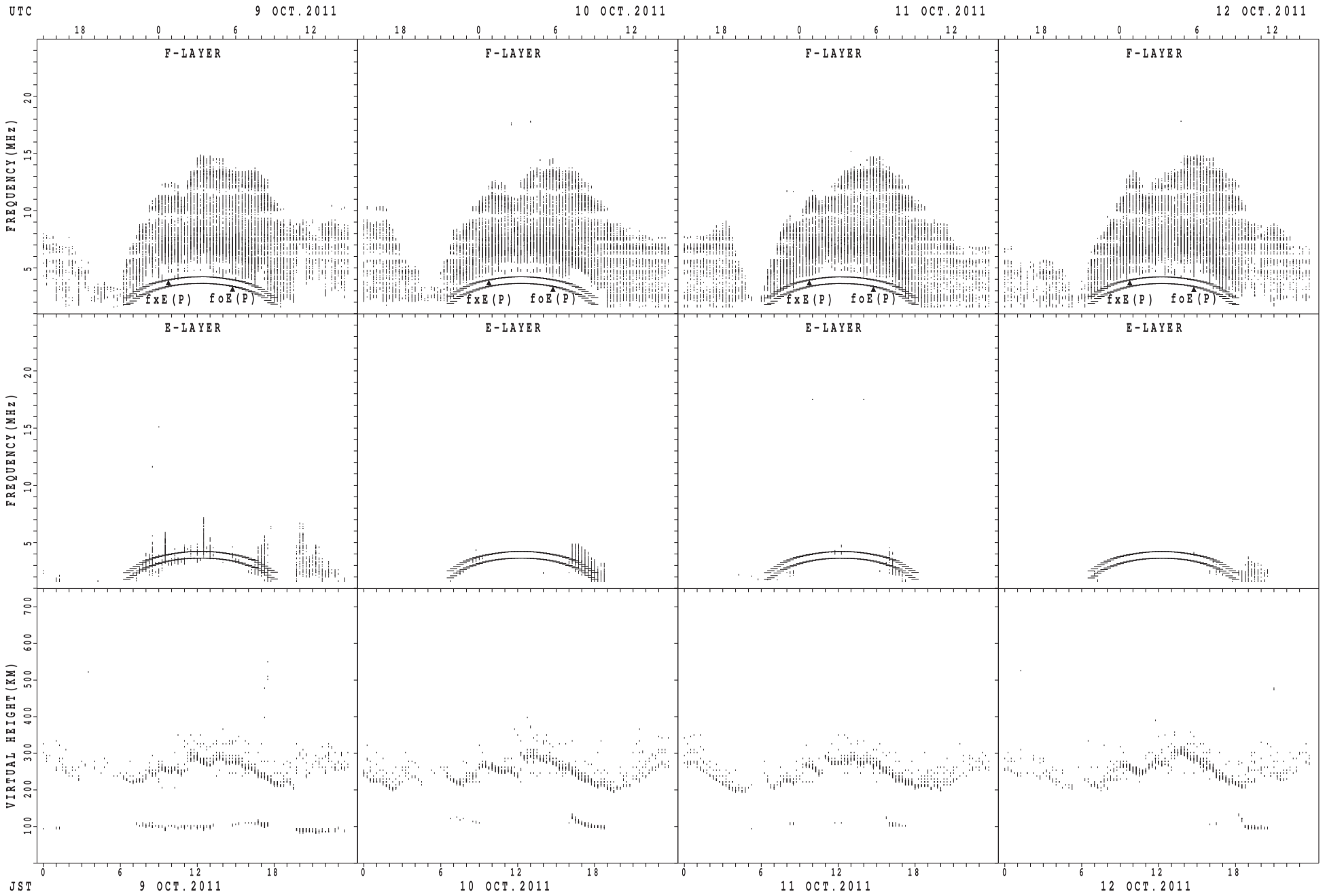
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



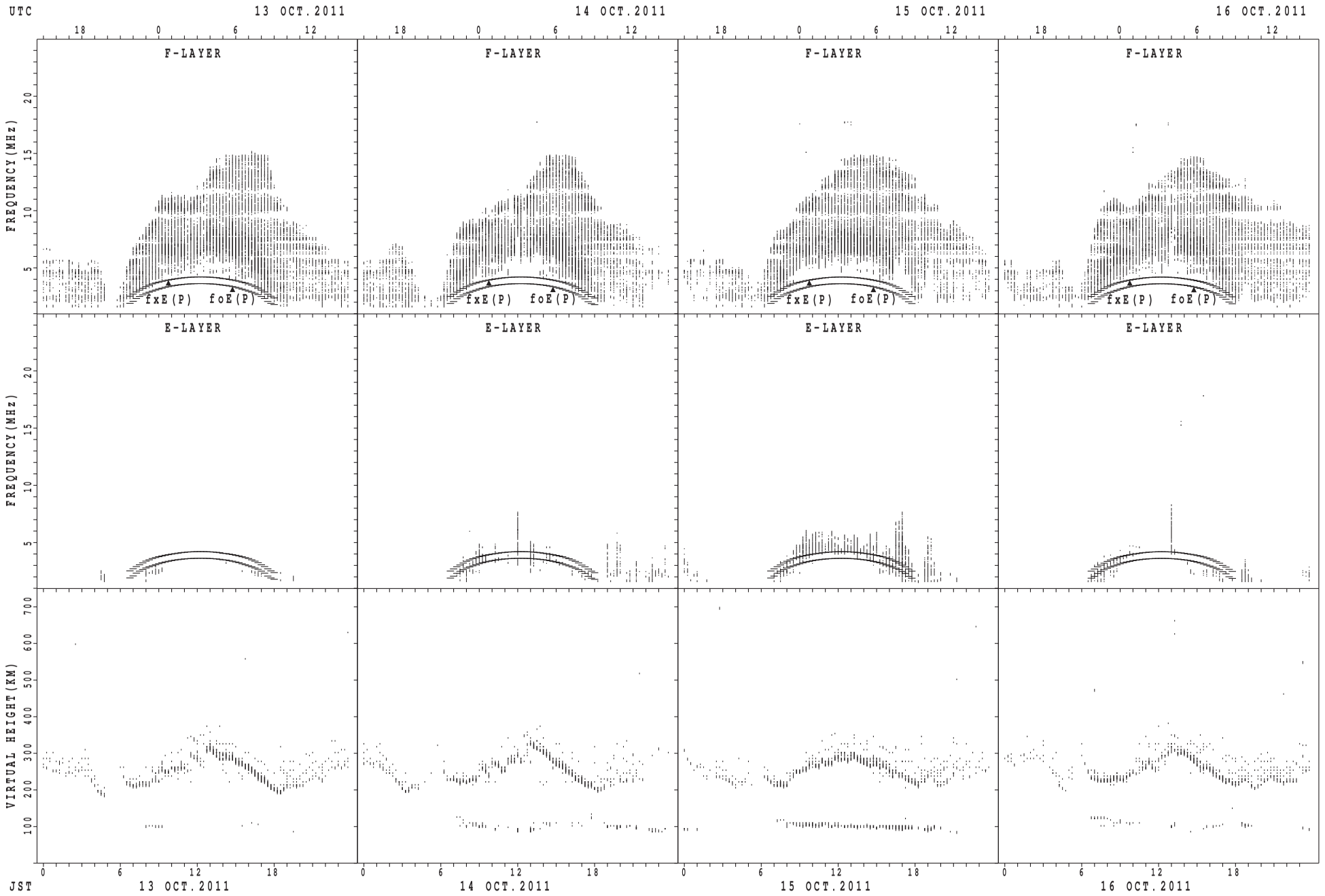
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



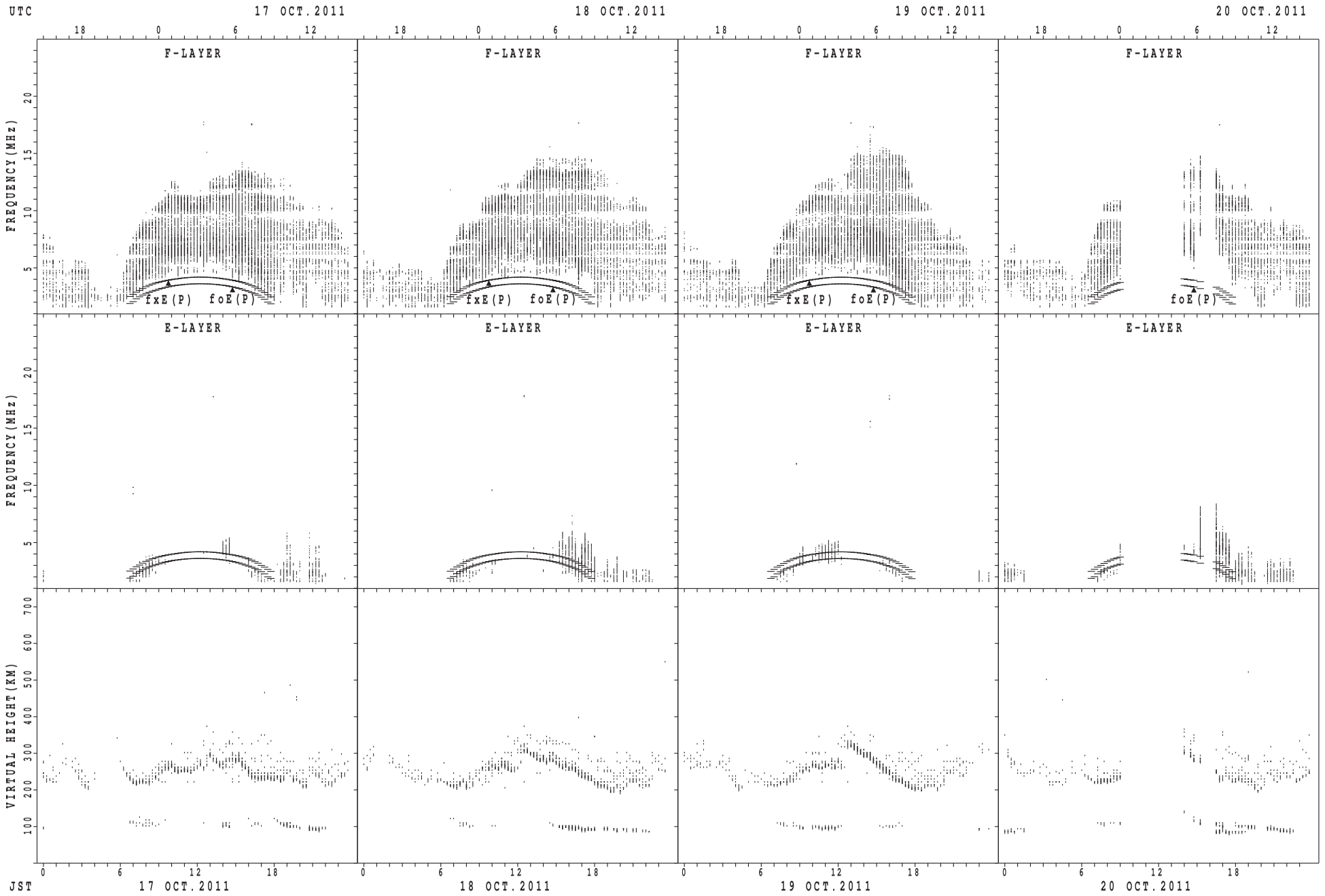
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



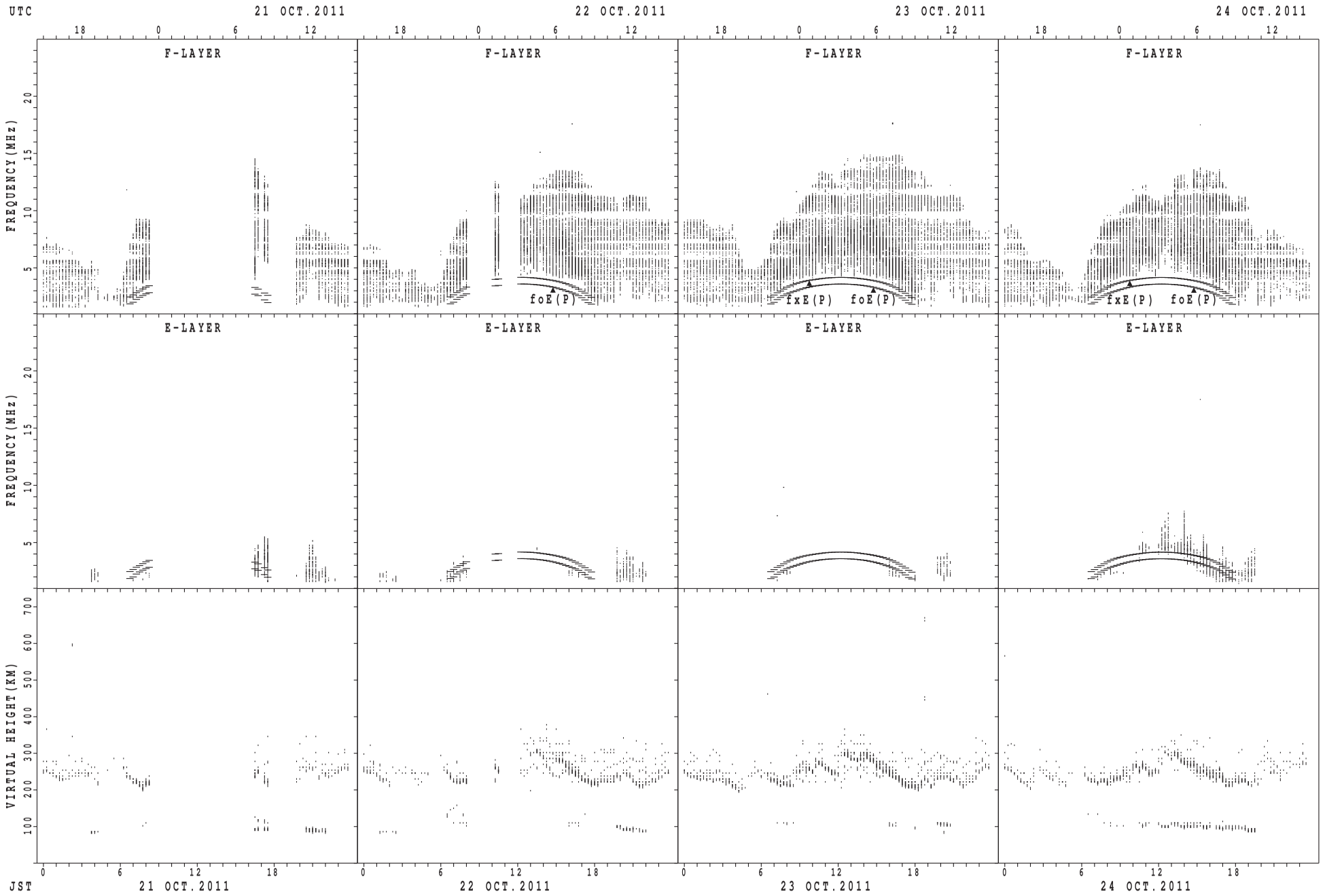
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



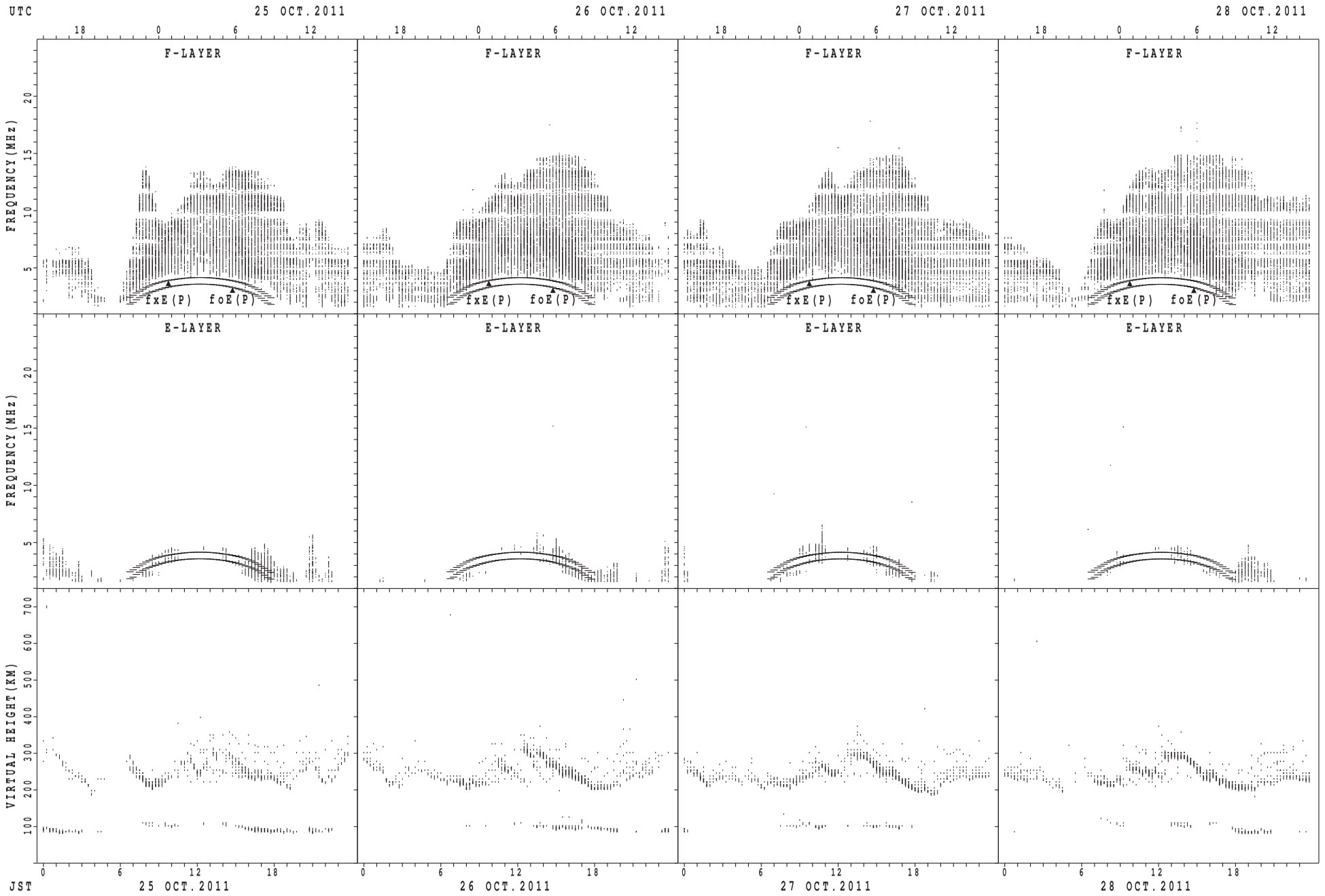
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



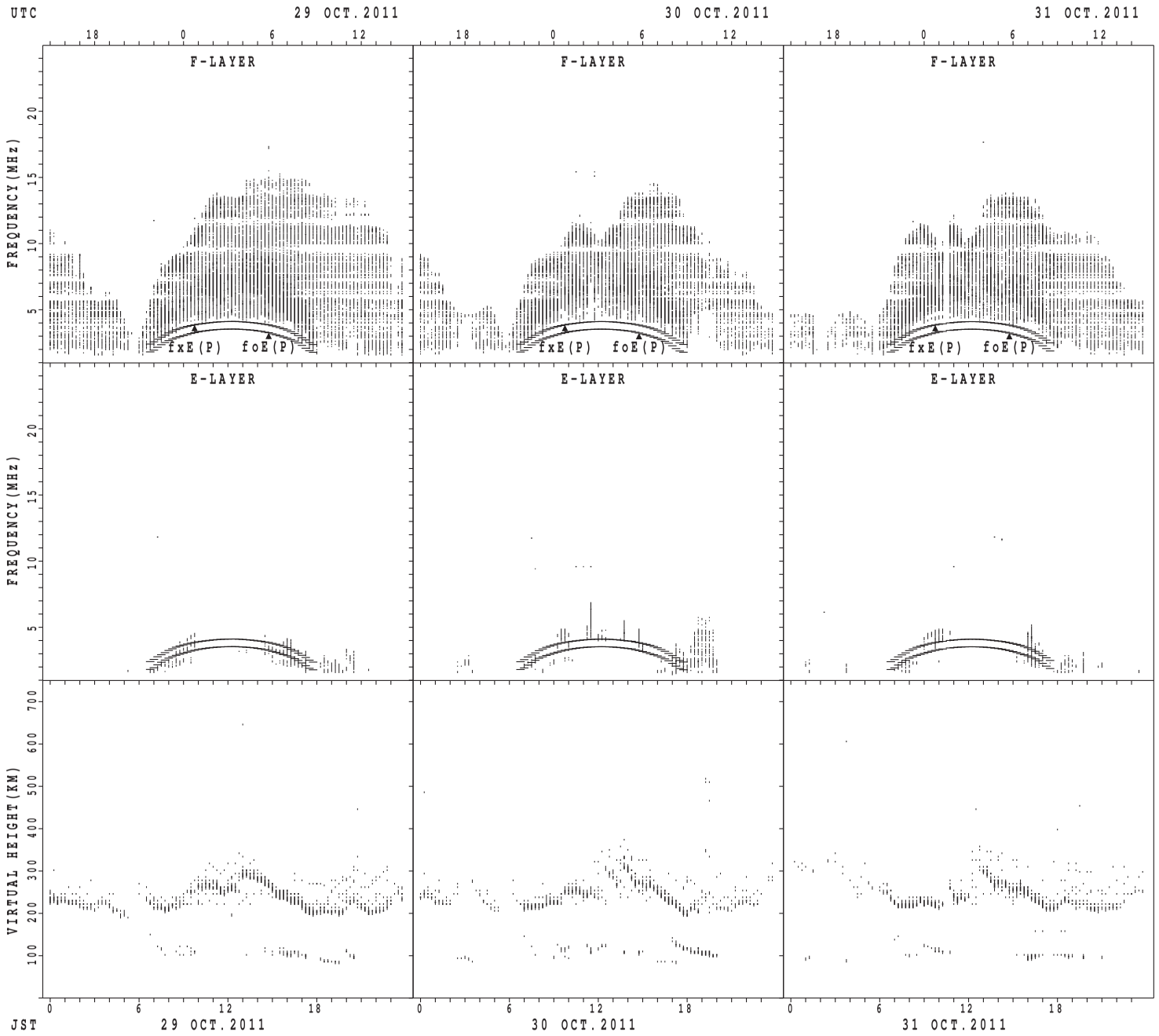
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

OCT. 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							6	29	28	29	11	4	5	14	24	28	27	29	8	7				
MED							261	224	219	230	222	222	218	230	238	239	230	238	246	272				
U Q							266	232	231	243	232	226	221	238	246	246	240	242	263	284				
L Q							246	218	212	222	214	222	215	222	232	231	222	230	246	254				

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	15	14	11	11	9	11	11	15	20	17	20	10	11	12	6	12	11	17	19	16	18	18	20	15
MED	93	94	91	95	91	99	101	111	105	103	102	102	101	95	95	101	99	101	99	99	95	97	94	95
U Q	97	97	93	103	96	103	105	137	107	107	104	103	103	97	101	105	129	115	107	105	103	99	100	97
L Q	89	91	91	89	88	89	89	105	102	98	97	99	95	94	91	93	91	96	95	93	91	93	93	93

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							10	30	30	24				1	25	30	30	29	16	3				
MED							234	222	222	230				252	258	242	235	238	231	270				
U Q							244	230	230	236				126	262	248	246	247	245	276				
L Q							232	214	218	224				126	246	238	230	230	230	206				

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6	4	7	6	3	2	2	2	5	6	8	7	5	4	3	1	7	14	17	19	15	14	9	8
MED	92	96	95	90	95	94	130	108	109	105	106	101	101	98	105	97	111	105	103	99	97	97	95	93
U Q	95	98	97	93	95	95	147	111	114	107	112	109	104	101	105	48	117	111	110	103	103	101	97	96
L Q	89	93	93	89	91	93	113	105	105	99	104	97	97	96	95	48	111	103	100	95	97	95	95	91

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		2						27	31	31	10				8	31	31	31	29	11	1	3		
MED		271						228	224	232	244				263	250	246	234	230	236	296	268		
U Q		278						238	230	242	248				276	262	254	240	237	244	148	324		
L Q		264						222	222	230	238				262	246	234	224	223	232	148	266		

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	12	10	10	2	1	2	4	21	15	17	15	14	13	11	9	10	19	20	20	19	21	15	18	14
MED	89	89	89	89	87	93	98	119	105	105	103	104	105	103	103	104	103	108	99	97	97	95	94	90
U Q	95	95	93	89	43	95	106	131	107	110	107	111	184	113	105	105	111	119	106	105	100	101	95	93
L Q	87	87	87	89	43	91	91	108	103	101	97	101	94	99	94	99	97	99	97	95	91	91	91	89

MONTHLY MEDIANS OF h'F AND h'Es

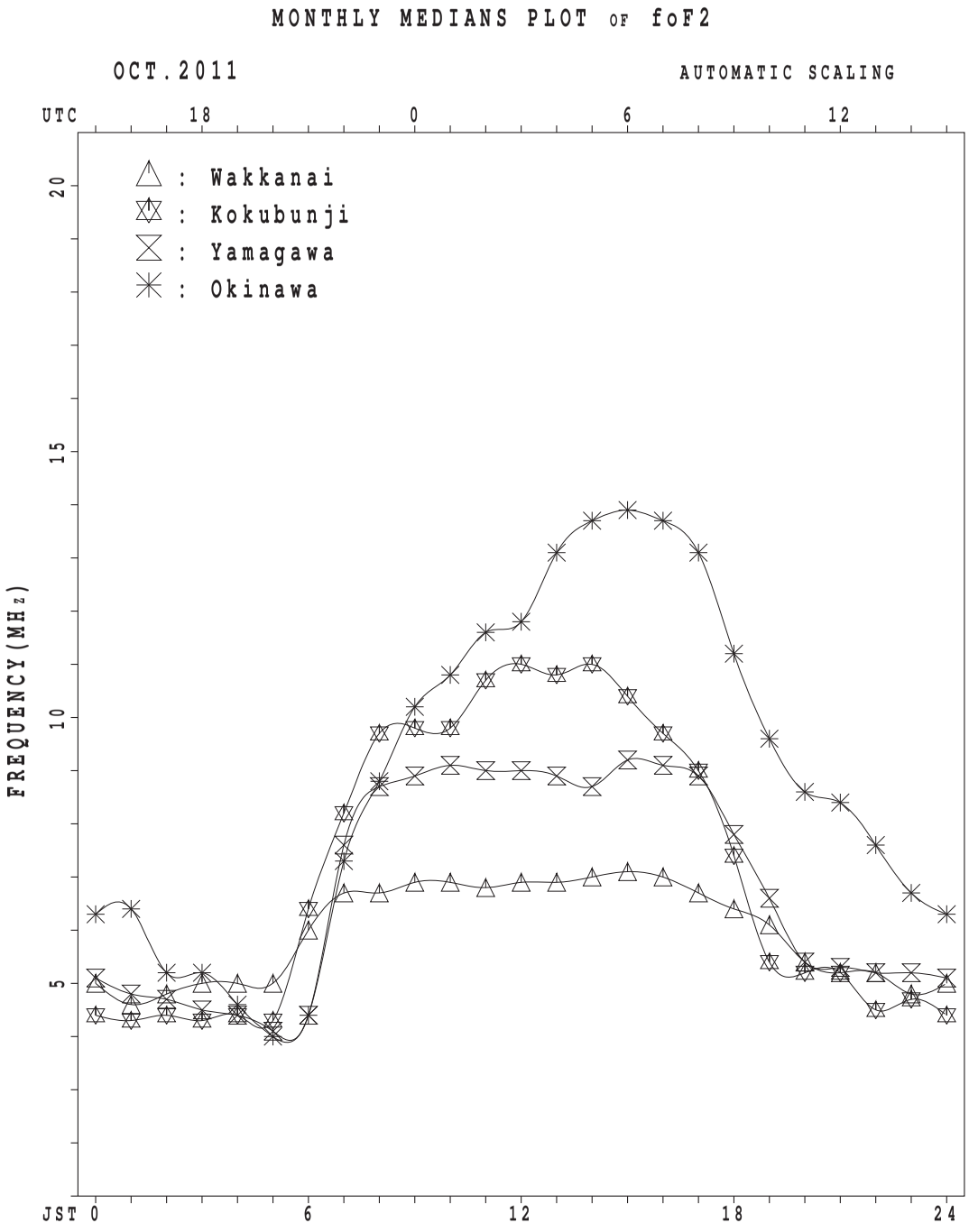
OCT.2011 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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	7	7	4	3	1			23	31	29	9					28	29	26	30	30	25	21	17	11
MED	274	256	272	240	234			232	228	238	256					270	252	231	224	232	250	268	262	282
U Q	294	278	276	248	117			240	236	253	265					280	262	238	236	240	264	292	282	296
L Q	264	248	251	234	117			232	220	232	249					264	246	222	216	224	239	250	248	258

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	6	3	1	1	1	1		3	4	13	7	8	7	7	8	4	11	14	12	19	14	10	9	3
MED	96	95	91	97	87	95		121	106	109	105	103	105	105	105	105	105	108	100	99	98	93	91	95
U Q	97	95	45	48	43	47		153	110	114	115	108	111	109	109	109	111	121	103	105	105	95	93	99
L Q	95	89	45	48	43	47		111	103	104	103	100	99	97	104	101	99	101	94	93	97	91	90	91


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

IONOSPHERIC DATA STATION Kokubunji

OCT. 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 62	X 62	X 60	X 56	X 56	X 55													X 112	X 78	X 55	X 59	X 60	X 60
2	X 54	X 54	X 55	X 56	X 52	X 54													X 92	X 66	X 64	X 62	X 65	X 61
3	X 60	X 59	X 58	X 62	X 58	X 50													X 82	X 62	X 61	X 64	X 61	X 60
4	X 60	X 57	A	X 54	X 55	X 57													X 87	X 74	X 67	X 65	X 60	X 58
5	X 55	X 54	X 52	X 53	X 52	X 54													X 82	X 67	X 65	X 66	X 65	X 60
6	X 56	X 53	X 59	X 48	X 50	X 48													X 106	X 76	X 59	A	X 50	X 50
7	X 50	X 49	X 48	X 45	X 46	X 48													X 89	X 69	X 60	X 54	X 51	X 52
8	X 52	X 51	X 49	X 48	X 50	X 51													X 96	X 52	X 48	X 46	X 47	X 47
9	X 48	X 49	X 47	X 46	X 47	X 46													X 104	X 75	X 57	X 60	X 62	X 60
10	X 60	X 56	X 49	X 50	X 52	X 50													X 89	X 56	X 53	X 55	X 55	X 55
11	X 56	X 56	X 54	X 54	X 52	X 46													X 58	X 53	X 59	X 63	54	X 60
12	X 59	X 53	X 52	X 52	X 54	X 56													X 79	X 68	X 67	X 68	X 62	X 61
13	X 59	X 56	X 56	X 54	X 57	X 48													X 98	X 67	X 60	X 55	X 55	X 57
14	X 58	X 57	X 56	X 60	X 57	X 59													X 79	X 63	X 56	X 57	X 57	X 57
15	O X 58	X 55	X 59	X 57	X 55	X 47													X 81	X 68	X 64	X 68	X 66	X 62
16	X 60	X 55	X 56	X 55	X 56	X 47				C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C									X 87	X 70	X 64	X 59	X 56	X 52
18	X 52	X 52	X 51	X 52	X 51	X 50													X 82	X 60	X 61	X 56	X 51	X 51
19	X 49	X 50	X 50	X 51	X 52	X 51													X 71	X 58	X 57	X 57	X 50	X 55
20	X 57	X 56	X 56	X 57	X 56	X 54													X 72	X 67	X 64	X 58	X 54	X 53
21	X 55	X 55	X 55	X 56	X 54	X 51													X 74	X 65	X 63	X 56	O X 57	X 61
22	X 61	X 57	X 58	X 56	X 52	X 51													X 78	X 68	X 68	X 65	X 57	X 54
23	X 54	X 52	X 54	X 59	X 60	X 47													X 68	X 70	X 71	X 57	X 51	X 51
24	X 50	X 50	X 52	X 52	X 48	X 47												X 94	X 77	X 62	X 58	X 56	X 53	X 52
25	X 54	X 56	X 54	X 56	X 57	X 43												X 110	X 89	X 80	X 80	X 72	X 60	X 60
26	X 61	X 61	X 60	X 59	X 56	X 53												X 106	X 82	X 72	X 62	A	X 54	X 51
27	X 50	X 50	X 50	X 47	X 51	X 51												X 103	X 73	X 62	X 57	X 51	X 48	X 48
28	X 48	X 50	X 49	X 51	X 54	X 52													X 63	X 58	X 60	X 58	X 53	X 52
29	X 49	X 48	X 49	X 51	X 58	X 35													X 69	X 52	X 52	X 51	X 50	X 48
30	X 48	X 48	X 48	X 47	X 47	X 38													X 62	X 52	X 53	X 52	X 48	X 46
31	X 47	X 47	X 46	X 48	X 46	X 50													X 75	X 74	X 61	X 60	X 56	X 54
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	30	30												4	30	30	30	28	30	30
MED	X 55	X 54	X 54	X 54	X 53	X 50												X 104	X 82	X 67	X 60	X 58	X 55	X 54
U Q	X 59	X 56	X 56	X 56	X 56	X 53												X 108	X 89	X 70	X 64	X 64	X 60	X 60
L Q	X 50	X 50	X 49	X 50	X 51	X 47												X 98	X 73	X 60	X 57	X 56	X 51	X 51

OCT. 2011 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

OCT. 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	56	56	54	50	49	49	70	81	94	90	80	82	97	98	97	87	91	106	106	72	49	53	54	53
2	48	48	49	50	46	48	72	103	101	97	89	87	97	98	88	96	96	90	86	60	58	56	58	55
3	54	53	52	56	52	44	62	76	92	99	112	100	87	88	86	90	88	81	76	56	55	58	55	54
4	54	51	A	48	49	51	72	90	88	86	91	98	99	94	97	93	98	100	81	67	61	59	54	52
5	49	48	46	47	46	48	71	81	87	86	90	104	112	103	98	94	91	86	76	60	59	60	59	54
6	50	47	53	42	44	42	60	87	113	111	123	118	114	99	99	88	81	93	100	70	52	A	44	44
7	43	43	42	39	40	42	58	68	84	86	92	100	102	94	88	97	97	91	82	63	54	48	44	46
8	46	45	43	42	43	45	67	75	80	86	89	101	110	89	80	85	96	110	90	46	41	40	40	41
9	41	43	41	40	41	40	59	78	100	98	87	103	106	92	92	85	90	91	97	69	51	54	56	54
10	54	50	43	44	46	44	63	100	91	91	97	106	103	100	92	92	88	93	83	50	47	48	49	49
11	50	50	48	48	46	40	65	79	89	86	100	113	112	107	105	99	93	84	52	47	53	56	S	54
12	53	47	46	46	48	50	74	81	80	84	97	104	115	112	104	95	86	84	73	62	60	62	56	55
13	52	50	50	48	51	42	65	80	96	97	97	107	113	116	117	112	108	105	92	61	54	49	49	51
14	52	51	50	54	51	53	65	81	92	97	110	112	100	108	115	107	100	86	73	57	50	51	50	51
15	52	49	53	51	48	41	61	81	97	96	97	110	106	104	108	104	97	86	75	62	58	62	60	56
16	54	49	50	49	50	41	63	90	95	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	101	100	111	110	100	91	84	87	81	64	58	53	50	46
18	45	46	45	46	45	44	66	85	102	110	88	107	106	114	108	111	107	103	76	54	55	50	45	45
19	43	44	44	45	46	45	60	92	96	100	98	110	118	118	121	114	107	87	65	52	50	50	43	49
20	51	50	50	51	50	48	69	94	105	106	V 95	108	108	110	115	111	108	94	66	61	58	52	48	47
21	49	48	49	50	48	44	63	102	99	100	107	124	124	126	128	124	112	102	68	58	57	50	51	55
22	55	51	52	50	46	45	64	84	103	110	114	122	99	107	120	112	100	85	72	62	62	58	51	48
23	49	46	48	52	54	41	58	89	96	106	98	118	111	111	115	103	96	72	62	64	65	51	46	45
24	44	44	46	46	42	40	60	83	93	94	100	108	113	115	111	101	97	88	70	55	52	50	47	46
25	48	49	48	50	51	37	54	99	126	110	107	110	131	132	125	109	106	104	83	73	74	66	54	54
26	55	55	54	52	50	47	65	93	106	123	119	122	130	121	124	124	120	100	76	66	56	A	48	45
27	44	44	44	41	45	45	58	85	97	102	103	110	115	120	121	122	126	97	67	56	50	45	42	42
28	42	44	43	45	48	46	54	72	99	117	109	104	104	122	120	113	103	78	56	52	54	52	47	46
29	43	42	43	45	52	29	51	80	96	106	110	115	116	116	114	107	94	92	63	46	46	45	43	42
30	42	41	42	41	41	32	52	76	94	96	96	100	102	105	109	114	112	91	56	46	47	46	42	40
31	41	40	40	42	40	44	54	80	105	120	128	117	108	111	108	104	99	78	69	68	55	54	50	48
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	28	29	30
MED	49	48	48	48	47	44	63	82	96	98	98	108	109	109	108	104	97	91	76	60	54	52	49	48
U Q	53	50	50	50	50	47	66	90	101	108	109	113	114	116	117	112	107	100	83	64	58	57	54	54
L Q	44	44	43	44	45	41	58	80	92	90	92	101	102	99	97	93	91	86	67	54	50	50	44	45

OCT. 2011 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

OCT. 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	L	L	U L 528	L	L	L	L								
2									L	L	L	L	L	L	L									
3									L	L	L	U L 444	L	L	L	L	L							
4										L	L	A	L	L	L	L	L							
5										L	A	L	L	L		L								
6									L	A	L	L	L	L	L	L								
7								A	A	L	A	L	L	L										
8											U L 488	L	L	L	L	L								
9									A	L	L	L	L		L		L							
10									A		L	L	L	L	L									
11										L	L	L	L	L		L								
12										L	L	L	L	L	L									
13									L	L	L	L	L	L	L	L								
14										L	L	L	L	L	L									
15												L	L	L	L	L								
16										C	C	C	C	C	C	C	C	C						
17							C	C	C	C	L	A	L	L										
18										L		L	L	L	A	A								
19											L	L			L	L	A							
20											L	U L 480	L	L	L	A	A							
21									L	L	L	L		L	L									
22										L	A	L	L	L	A									
23										L	L	L	L	L	L	L								
24											L	L	A	A										
25												A		L										
26										A	L	L	L	L		L								
27											L	L		L	L									
28											L	L	A	L										
29									L	A	L	U L 484	L											
30											L	L	L	L	L	A								
31														L										
	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	4												
MED											U L 488	U L 482												
U Q												U L 506												
L Q												U L 462												

OCT. 2011 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

OCT. 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							184	260	R	R	A	R	R	R	R	R	R	B						
2							184	A	A	R	R	R	R	R	R	R	R	A						
3							B	A	A	R	R	R	R	R	R	R	R	B						
4							U R 196	A	A	A	A	A	A	A	A	R	R	B						
5							B	R	R	R	A	A	A	R	A	R	A	B						
6							U A 176	A	A	A	A	A	R	R	R	R	R	U A 192						
7							B	A	A	A	A	R	R	A	A	A	A	B						
8							B	A	A	A	A	A	A	A	R	R	R	B						
9							B	R	A	A	R	R	R	R	R	R	R	R						
10							B	R	A	R	R	R	R	R	A	R	A	B						
11							B	256	R	R	A	R	R	R	R	R	R	B						
12							B	R	A	R	R	R	U R 412	R	R	A	A	B						
13							B	R	284	R	R	R	R	R	A	A	A	B						
14							B	A	A	R	A	R	R	R	R	R	A	B						
15							B	U R 260	A	A	A	A	A	A	R	R	R	B						
16							B 200	A	A	C	C	C	C	C	C	C	C	C						
17							C	C	C	C	A	A	A	R	R	R	R	B						
18							B	R	R	R	A	A	A	A	A	R	A	B						
19							B	A	A	A	A	R	R	R	R	R	A	B						
20							B	U A 252	A	A	R	A	R	R	R	A	A	B						
21							B	R	R	R	R	R	R	R	R	R	A	B						
22							B	248	A	R	A	A	R	A	A	R	A	B						
23							B	244	R	R	R	R	R	R	R	R	U A 220	B						
24							B	252	R	A	A	A	A	A	A	R	A							
25							B	R	R	A	A	A	R	R	A	R	A							
26							B	U R 256	A	A	R	R	A	A	A	R	A							
27							B	U R 236	R	A	R	R	R	R	R	A	U R 236							
28							B	R	R	R	R	A	A	R	R	A	R	B						
29							B	228	R	A	A	A	R	A	A	R	R	B						
30							B	236	R	R	R	R	R	R	A	A	A	B						
31							B	A	R	R	A	A	A	A	A	A	A	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	11	1				1				2	1						
MED							184	252	284				U R 412				U 228	U A 192						
U Q							198	U R 256																
L Q							180	236																

OCT. 2011 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

OCT. 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	21	E B 14	E B 14	E B 14	E B 15	E B 14	26	33	G	G	38	G 25	G	G	G	G	G 24	23	E B 14	J A 18	J A 22	E B 16	E B 15	E B 14
2	E B 15	E B 16	E B 15	J A 19	E B 15	E B 15	G	32	37	G 30	G	G	G	G	G	G	G 22	22	J A 22	20	E B 15	E B 15	E B 15	E B 14
3	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	23	J A 49	J A 41	G	G	G	G	G	G	G	G 23	24	E B 14	E B 15	J A 22	J A 43	J A 20	E B 15
4	E B 15	E B 15	30	20	E B 14	E B 15	G	33	36	39	41	J A 46	J A 45	J A 40	43	G	G	27	J A 24	J A 35	J A 19	J A 29	J A 28	J A 26
5	J A 24	J A 24	J A 19	J A 26	20	E B 15	23	G	G 21	G 24	45	46	43	G	38	G	35	J A 36	J A 42	J A 44	J A 43	30	E B 14	J A 24
6	E B 16	E B 15	E B 16	E B 14	J A 19	E B 15	21	36	39	43	42	42	G	G	G	G	G 23	24	J A 38	J A 78	J A 61	J A 116	J A 55	J A 39
7	J A 54	22	J A 46	J A 19	J A 24	21	22	J A 38	J A 41	J A 42	43	G	G	37	41	39	33	J A 35	J A 31	J A 34	J A 57	J A 21	J A 19	21
8	20	E B 15	E B 14	21	J A 22	E B 15	E B 16	29	35	J A 53	J A 43	41	41	J A 45	G 26	G 24	G 22	J A 38	59	J A 66	J A 60	J A 31	J A 23	E B 15
9	J A 31	J A 28	J A 24	J A 21	19	20	22	G 23	40	37	G	G	G 30	G 25	G 25	G 27	G 24	G	J A 32	J A 25	J A 22	J A 21	E B 15	E B 16
10	E B 14	E B 14	E B 15	E B 14	E B 14	E B 15	E B 16	G 22	37	G	G	G	G	G 29	37	G 23	31	21	E B 15	J A 32	J A 38	J A 20	20	E B 15
11	E B 15	E B 16	E B 14	E B 15	E B 15	E B 14	20	34	G	G 26	42	G	G	G 22	G 21	G	G	20	E B 15	E B 15	20	E B 15	E B 14	20
12	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14	20	G	36	G 29	G 32	G	G	G	G	38	32	23	E B 14	E B 15	20	E B 15	E B 15	E B 15
13	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 20	37	G	G	G	G	G	J A 40	35	34	J A 34	J A 23	36	J A 20	20	E B 15	E B 15
14	E B 15	E B 15	E B 15	E B 15	E B 14	18	19	32	37	G	J A 44	G	G	G	G 24	G 21	28	21	E B 15	J A 25	J A 47	J A 30	J A 20	J A 18
15	J A 34	J A 43	J A 24	18	E B 14	E B 15	E B 15	G 20	J A 46	J A 46	J A 50	J A 47	J A 45	42	G 29	G 27	G 21	28	J A 24	J A 19	J A 20	E B 15	20	J A 17
16	E B 14	E B 15	E B 15	E B 15	E B 14	E B 14	G 20	32	J A 46	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	41	J A 53	40	G	G	G 26	G 21	E B 13	E B 15	J A 34	J A 26	J A 24	19	22
18	J A 19	J A 17	21	J A 30	J A 30	J A 23	19	G	G	G	38	43	G 35	J A 44	J A 48	G 26	33	J A 36	J A 19	J A 33	J A 24	J A 56	J A 56	28
19	J A 30	22	E B 15	E B 15	E B 14	E B 14	20	32	38	41	J A 40	G	G	G	G	G 27	J A 51	J A 56	J A 59	J A 45	J A 39	J A 30	J A 28	J A 33
20	J A 24	23	21	J A 21	18	19	19	33	35	J A 43	G 28	J A 41	G	G	G	36	34	J A 37	J A 28	26	20	E B 15	E B 15	E B 15
21	E B 15	E B 16	E B 15	E B 14	E B 15	E B 15	20	G	G	G 32	G	G 26	G 34	G 27	G	G	J A 42	22	J A 26	36	J A 32	J A 46	J A 20	22
22	E B 15	22	J A 17	20	21	18	22	32	37	G	J A 44	J A 48	G	J A 55	50	G 27	J A 62	J A 45	J A 113	J A 74	J A 73	J A 28	J A 28	J A 29
23	34	J A 28	J A 31	J A 24	J A 24	J A 38	19	28	G 25	G 25	G	G	G	G 24	G	G 27	32	E B 16	J A 34	J A 27	J A 19	E B 15	J A 26	E B 15
24	E B 15	J A 22	J A 30	E B 15	E B 14	E B 15	20	30	G 28	J A 42	44	40	J A 46	J A 48	J A 55	G 27	28	20	J A 25	J A 28	J A 42	J A 65	19	E B 15
25	E B 15	E B 14	E B 15	E B 15	E B 15	20	E B 16	G 20	G	36	40	41	G 36	G	J A 36	G 28	30	J A 33	J A 57	J A 29	J A 45	E B 15	21	J A 20
26	J A 18	E B 15	20	E B 14	E B 16	E B 15	E B 16	G 22	32	J A 43	39	G	J A 44	40	35	G 27	J A 36	J A 44	J A 24	J A 22	J A 20	J A 72	J A 51	J A 23
27	J A 24	19	E B 15	E B 14	E B 15	E B 15	17	G	G 24	36	G	G	G	G	G	33	J G 20	J A 20	J A 20	J A 33	J A 26	J A 22	20	E B 15
28	J A 16	20	J A 24	J A 19	21	21	E B 16	G	G 28	G 29	G	43	40	G 35	G	32	G 20	J A 25	E B 15	J A 21	J A 18	E B 15	E B 14	J A 18
29	E B 16	J A 18	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 24	42	41	41	G	37	35	G 26	G 20	E B 14	23	20	E B 15	E B 15	E B 15	E B 16
30	19	E B 15	E B 15	E B 15	E B 14	E B 14	18	G 21	G 26	G 26	G 28	G	G	G	37	37	31	J A 21	E B 15	E B 14	E B 15	E B 15	E B 14	J A 29
31	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 14	28	G 22	G 28	42	41	J A 53	J A 42	38	J A 46	J A 38	J A 24	J A 34	J A 18	J A 16	J A 22	J A 23	J A 28
	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	29	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	G	28	35	G	40	G	G	G	G	G	29	24	J A 24	J A 28	J A 22	J A 22	20	18
U Q	J A 24	J A 22	J A 21	J A 20	J A 19	18	20	32	37	J A 42	42	42	J A 40	J A 40	38	32	J A 34	J A 35	J A 34	J A 35	J A 42	J A 30	J A 23	J A 24
L Q	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	E B 16	G	G 28	G 30	G	G	G	G	G	G 27	G 23	21	E B 15	20	20	E B 15	E B 15	E B 15

OCT. 2011 foEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

OCT. 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 14	E B 14	E B 14	E B 15	E B 14	25	32	G	G	33	G 23	G	G	G	G	G 22	21	E B 14	E B 14	E B 15	E B 16	E B 15	E B 14
2	E B 15	E B 16	E B 15	E B 16	E B 15	E B 15	G	29	31	G 29	G	G	G	G	G	G	G 21	21	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14
3	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	20	37	35	G	G	G	G	G	G	G	G 22	22	E B 14	E B 15	16	E B 15	E B 14	E B 15
4	E B 15	E B 15	A A 30	E B 15	E B 14	E B 15	G	30	34	36	38	41	40	37	41	G	G	24	20	29	15	22	23	18
5	19	17	E B 15	21	E B 15	E B 15	20	G	G 18	G 22	42	44	42	G	34	G	32	30	34	30	20	25	E B 14	E B 16
6	E B 16	E B 15	E B 16	E B 14	E B 16	E B 15	19	33	35	42	40	40	G	G	G	G	G 21	23	29	36	20	A A 116	31	28
7	E B 15	E B 17	21	E B 14	20	E B 15	18	31	38	38	39	G	G	34	35	37	30	32	25	29	29	E B 15	17	20
8	E B 15	E B 15	E B 14	E B 15	18	E B 15	E B 16	26	31	52	39	38	37	39	G 25	G 22	G 21	33	54	36	27	21	18	E B 15
9	21	24	21	E B 15	E B 16	E B 15	19	G 21	37	35	G	G	G 27	G 23	G 23	G 27	G 20	G	28	21	18	18	E B 15	E B 16
10	E B 14	E B 14	E B 15	E B 14	E B 14	E B 15	E B 16	G 21	32	G	G	G	G	G 26	34	G 20	28	18	E B 15	19	31	17	E B 15	E B 15
11	E B 15	E B 16	E B 14	E B 15	E B 15	E B 14	18	30	G	G 25	39	G	G	G 20	G 20	G	G	18	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
12	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14	18	G	32	G 28	G 30	G	G	G	G	35	30	19	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15
13	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	19	G 19	32	G	G	G	G	G	32	32	31	30	17	32	16	E B 14	E B 15	E B 15
14	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	17	27	34	G	39	G	G	G	G 22	G 20	26	18	E B 15	18	19	23	E B 15	16
15	23	26	18	E B 15	E B 14	E B 15	E B 15	G 18	33	41	45	42	40	40	G 29	G 26	G 21	23	18	E B 15	E B 15	E B 15	E B 15	E B 15
16	E B 14	E B 15	E B 15	E B 15	E B 14	E B 14	G 18	28	38	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	39	47	39	G	G	G 26	G 20	E B 13	E B 15	29	E B 15	20	E B 14	E B 15
18	E B 15	E B 15	E B 15	28	30	17	18	G	G	G	36	41	G 32	39	44	G 25	31	32	E B 15	18	18	30	20	23
19	24	20	E B 15	E B 15	E B 14	E B 14	18	28	35	40	38	G	G	G	G	G 24	36	32	E B 14	21	24	19	20	24
20	18	E B 15	E B 15	E B 16	E B 14	E B 15	18	29	33	34	G 26	37	G	G	G	33	31	32	21	22	E B 15	E B 15	E B 15	E B 15
21	E B 15	E B 16	E B 15	E B 14	E B 15	E B 15	18	G	G	G 29	G	G 25	G 32	G 24	G	G	39	22	21	30	22	37	14	E B 15
22	E B 15	E B 15	16	E B 14	E B 15	15	19	28	32	G	41	40	G	44	46	G 25	52	32	56	35	37	E B 15	20	22
23	30	E B 15	18	20	20	25	17	28	G 24	G 22	G	G	G	G 22	G	G 26	29	E B 16	18	18	16	E B 15	18	E B 15
24	E B 15	18	18	E B 15	E B 14	E B 15	18	28	G 25	36	40	38	44	44	44	G 26	25	17	22	20	33	34	E B 15	E B 15
25	E B 15	E B 14	E B 15	E B 15	E B 15	E B 16	E B 16	G 19	G	33	37	38	G 34	G	35	G 26	29	27	34	25	34	E B 15	E B 15	16
26	E B 16	E B 15	E B 15	E B 14	E B 16	E B 15	E B 16	G 20	28	39	33	G	39	37	32	G 26	29	40	19	18	16	A A 72	38	19
27	20	E B 15	E B 15	E B 14	E B 15	E B 15	16	G	G 24	32	G	G	G	G	G	30	G 19	E B 15	16	27	21	18	E B 15	E B 15
28	E B 15	E B 15	19	E B 15	E B 15	E B 15	E B 16	G	G 24	G 28	G	38	40	G 30	G	30	G 19	22	E B 15	18	E B 15	E B 15	E B 14	E B 14
29	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 23	35	38	39	G	32	31	G 24	G 19	E B 14	20	E B 16	E B 15	E B 15	E B 15	E B 16
30	E B 16	E B 15	E B 15	E B 15	E B 14	E B 14	16	G 21	G 25	G 25	G 24	G	G	G	36	35	30	16	E B 15	E B 14	E B 15	E B 15	E B 14	24
31	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 14	24	G 20	G 26	38	38	47	37	33	31	33	21	24	E B 16	E B 15	18	20	23
	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	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	25	31	G	36	G	G	G	G	G	27	22	18	20	16	16	E B 15	E B 15
U Q	16	16	16	E B 15	15	E B 15	18	29	34	36	39	39	39	37	34	30	31	30	24	29	22	22	18	19
L Q	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	E B 16	G	G 25	G 28	G	G	G	G	G	G 26	G 21	18	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15

OCT. 2011 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

OCT. 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	303	297	304	283	306	320	372	370	377	365	349	333	314	322	320	315	315	328	341	380	278	293	295	296
2	297	270	294	302	297	306	347	355	360	364	345	327	330	333	314	320	331	341	345	304	307	286	306	300
3	280	285	282	307	327	321	389	351	341	336	333	367	328	318	323	339	342	341	357	310	299	294	298	289
4	294	297	A	275	284	308	354	364	373	347	331	324	335	318	321	323	336	353	348	326	307	323	296	302
5	295	299	290	292	299	327	369	385	364	354	328	326	327	317	322	322	333	341	343	305	300	300	301	307
6	277	260	294	314	300	296	340	332	343	327	337	324	336	332	330	343	335	329	349	355	328	A	292	283
7	290	279	292	281	279	296	372	359	359	340	344	323	327	331	326	340	343	350	352	329	320	310	305	301
8	301	307	295	297	301	322	373	381	365	348	330	327	347	329	331	327	335	353	377	387	306	302	292	292
9	295	294	300	301	295	316	376	345	355	362	331	321	329	321	319	321	335	322	348	358	282	286	304	296
10	311	320	291	290	317	311	343	357	374	328	338	335	331	340	323	334	336	345	359	353	291	290	294	284
11	294	302	299	315	329	327	377	357	366	355	324	327	330	316	323	336	352	353	332	289	289	307	S	308
12	316	308	291	291	303	302	361	384	365	347	325	318	330	326	321	334	327	332	324	304	305	313	305	306
13	305	297	298	295	330	345	373	356	351	340	326	317	317	310	313	316	328	338	343	331	316	299	292	294
14	308	307	307	314	321	342	370	363	345	350	330	324	315	310	320	328	330	352	336	327	299	303	307	291
15	296	298	303	316	327	315	351	359	356	347	329	320	316	309	319	329	331	335	339	305	297	301	303	314
16	301	277	284	296	346	308	356	374	362	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C		318	315	309	326	325	327	326	331	315	309	308	303	293
18	303	299	306	307	309	314	358	353	341	360	322	330	300	320	306	315	319	338	358	300	313	318	302	298
19	289	274	295	303	326	316	359	374	359	356	333	314	307	297	313	319	329	342	333	306	300	304	296	283
20	302	302	303	310	311	300	354	362	341	V 327	332	322	304	303	314	319	335	343	341	321	322	318	295	293
21	299	297	299	307	315	288	339	363	362	359	317	313	309	302	312	324	327	335	328	308	318	302	298	304
22	311	302	304	308	307	306	346	356	341	340	331	337	309	296	321	329	328	324	330	304	308	329	316	289
23	287	288	288	306	337	305	337	360	356	343	319	318	326	307	318	325	331	328	311	311	326	315	305	292
24	290	302	308	330	317	321	353	365	358	341	332	320	315	316	324	325	331	330	341	321	296	283	297	290
25	287	302	305	314	357	321	306	343	349	341	311	289	292	306	311	306	311	305	312	291	299	312	287	275
26	283	298	304	306	300	303	333	349	326	341	322	310	319	313	310	323	336	349	336	331	327	A	314	307
27	302	297	288	316	315	325	363	381	355	350	337	333	314	310	316	321	345	343	346	325	329	309	310	290
28	297	300	296	308	337	339	361	360	349	356	351	329	321	321	327	337	346	348	341	315	323	330	314	317
29	298	301	300	314	352	377	342	380	360	350	345	332	323	316	328	333	337	353	363	307	320	318	308	296
30	303	318	317	318	345	317	341	374	365	351	343	339	336	321	319	330	345	355	342	308	326	325	297	281
31	287	295	284	309	311	314	341	348	329	344	342	341	318	327	325	338	347	335	324	328	337	310	317	302
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	28	29	30
MED	297	298	298	307	315	316	355	360	357	347	331	324	320	316	320	325	334	341	341	315	308	308	302	295
U Q	303	302	304	314	329	322	370	374	364	356	340	332	330	322	324	334	337	349	348	329	322	316	306	302
L Q	290	294	291	296	301	306	342	355	345	340	326	318	314	309	314	321	328	330	332	305	299	300	296	290

IONOSPHERIC DATA STATION Kokubunji

OCT. 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	L	L	U L 397	L	L	L	L								
2									L	L	L	L	L	L	L									
3									L	L	L	U L 432	L	L	L	L	L							
4										L	L	A	L	L	L	L	L							
5										L	A	L	L	L		L								
6									L	A	L	L	L	L	L	L								
7								A	A	L	A	L	L	L										
8											U L 406	L	L	L	L	L								
9									A	L	L	L	L		L		L							
10									A		L	L	L	L	L									
11										L	L	L	L	L		L								
12										L	L	L	L	L	L									
13									L	L	L	L	L	L	L	L								
14										L	L	L	L	L	L									
15												L	L	L	L	L								
16										C	C	C	C	C	C	C	C	C						
17							C	C	C	C	L	A	L	L										
18										L		L	L	L	A	A								
19											L	L			L	L	A							
20											L	U L 420	L	L	L	A	A							
21									L	L	L	L		L	L									
22										L	A	L	L	L	A									
23										L	L	L	L	L	L	L								
24											L	L	A	A										
25												A		L										
26										A	L	L	L	L		L								
27											L	L		L	L									
28											L	L	A	L										
29									L	A	L	U L 395	L											
30											L	L	L	L	L	A								
31														L										
	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	4												
MED											U L 406	U L 408												
U Q												U L 426												
L Q												U L 396												

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OCT. 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									230	230	230	266	274	262	276	278								
2									232	228	244	260	264	266	282									
3									248	238	254	224	246	272	252	262	246							
4										234	250	246	260	262	276	254	256							
5										242	250	266	256	250		262								
6									238	234	256	246	250	256	274	238								
7								220	232	240	240	250	252	252										
8											248	256	254	252	254	278								
9									244	230	244	266	248		286		258							
10									224		248	254	262	260	266									
11										248	278	254	246	270		260								
12										250	258	254	262	272	266									
13									242	242	246	268	268	254	264	260								
14										242	262	242	250	268	274									
15												264	264	282	276	256								
16										C	C	C	C	C	C	C	C	C						
17							C	C	C	C	252	248	278	262										
18										242		274	294	274	250	248								
19											242	264			270	254	228							
20											252	262	262	260	260	248	238							
21									232	232	250	276		272	274									
22										250	246	246	242	304	266									
23										248	248	282	250	280	272	226								
24											254	242	254	258										
25												248		254										
26										244	238	262	258	246		262								
27											240	244		254	266									
28											236	240	232	284										
29									240	228	244	250	272											
30											240	234	246	268	270	242								
31														262										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	10	18	26	29	25	27	20	15	5							
MED								220	235	241	248	254	256	262	270	256	246							
U Q									242	244	252	265	264	272	275	262	257							
L Q									232	232	242	246	249	254	265	248	233							

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IONOSPHERIC DATA STATION Kokubunji

OCT. 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 246	E B 244	E B 256	E B 236	E B 238	E B 236	212	210	194	190	188	186	198	204	214	218	232	230	206	188	E B 254	E B 276	E B 256	E B 256
2	E B 244	E B 292	E B 282	E B 254	E B 254	E B 272	230	222	204	198	192	210	194	194	196	220	234	228	206	202	E B 238	E B 268	E B 264	E B 260
3	E B 282	E B 274	E B 284	E B 256	216	208	214	208	206	202	198	184	184	190	196	216	208	216	208	202	E A 264	E B 264	E B 256	E B 276
4	E B 276	E B 264	A	E B 298	E B 286	E B 254	218	212	216	188	186	A	192	192	220	210	216	226	208	234	E A 236	234	E A 266	E A 252
5	E A 262	E A 268	E B 292	E A 298	E B 274	E B 234	216	208	212	204	A	214	196	192	214	214	224	224	222	E A 248	E A 260	E A 280	E B 266	E B 250
6	E B 284	E B 328	E B 276	222	226	E B 236	228	228	214	A	194	200	196	200	208	202	220	240	222	218	230	A	E A 310	E A 330
7	E B 292	E B 280	E A 322	E B 296	E A 332	E B 280	208	A	A	192	A	192	200	204	214	E A 256	234	220	212	230	230	228	E A 262	E A 288
8	E B 266	E B 260	E B 250	E B 266	E A 272	E B 250	208	202	210	214	190	204	190	202	200	216	228	224	216	202	E A 292	E A 290	E A 294	E B 280
9	E A 298	E A 300	E A 294	E B 286	E B 276	E B 252	210	210	A	192	190	200	200	226	190	222	224	236	226	204	E A 238	E A 282	E B 254	E B 262
10	E B 242	E B 228	E B 250	E B 288	E B 254	E B 240	214	234	A	210	196	194	194	208	208	232	222	222	202	198	E A 310	E A 278	E B 276	E B 278
11	E B 270	E B 256	E B 258	E B 258	E B 232	216	210	206	208	192	192	200	196	200	224	208	226	212	190	E B 254	E B 270	E B 258	E B 266	E B 246
12	226	E B 244	E B 262	E B 286	E B 270	E B 260	210	202	214	204	196	180	208	210	198	220	222	216	204	232	E B 252	E B 234	E B 250	E B 254
13	E B 254	E B 264	E B 264	E B 266	210	204	206	212	202	206	192	192	184	184	206	202	224	218	204	234	216	E B 236	E B 258	E B 260
14	E B 254	E B 240	E B 254	E B 234	232	216	204	214	204	200	202	192	192	202	214	218	222	208	206	206	226	E A 268	E B 264	E A 280
15	E A 286	E A 284	E A 266	E B 246	E B 222	216	206	206	216	218	228	216	210	212	220	216	222	218	204	222	E B 246	E B 264	E B 244	E B 244
16	E B 244	E B 274	E B 274	E B 270	210	E B 234	224	212	216	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	198	A	196	202	226	218	216	222	212	E A 238	226	E A 250	E B 264	E B 264
18	E B 270	E B 272	E B 266	E B 290	E A 282	E A 262	218	210	218	200	208	208	202	210	A	A	224	216	200	E A 250	E A 240	E A 268	E A 274	E A 302
19	E A 318	E A 312	E B 294	E B 280	E B 232	E B 244	202	208	212	214	200	186	228	222	218	220	A	212	206	E A 234	230	E A 268	E A 284	E A 312
20	E A 270	E B 252	E B 248	E B 244	E B 240	E B 242	214	208	210	212	204	182	188	202	204	A	A	210	202	E A 244	232	220	E B 252	E B 274
21	E B 280	E B 262	E B 262	E B 252	E B 248	E B 252	218	210	196	198	206	206	230	212	208	226	220	210	198	E A 248	232	E A 308	E A 286	E B 260
22	E B 242	E B 250	E A 268	E B 252	216	234	214	208	216	202	A	210	198	222	A	230	232	208	E A 280	E A 276	E A 276	230	E A 244	E A 288
23	E A 306	E A 282	E B 290	E A 266	232	E A 270	214	210	214	206	196	190	194	214	216	196	220	202	228	E A 246	220	222	E A 254	E B 270
24	E B 276	E A 282	E A 276	E B 236	230	E B 252	210	212	214	212	206	200	A	A	234	230	224	212	210	220	E A 298	E A 304	E B 252	E B 272
25	E B 288	E B 266	E B 244	E B 250	212	214	228	230	216	212	222	A	230	210	218	222	228	228	228	E A 258	E A 258	222	E B 254	E B A 296
26	E B 290	E B 252	E B 258	E B 234	E B 230	E B 242	222	212	216	A	200	200	202	200	220	220	220	210	206	218	218	A	E A 314	E A 258
27	E A 278	E B 288	E B 270	E B 272	E B 250	228	204	206	210	216	180	204	218	202	214	220	224	198	202	236	E A 228	E A 246	E B 244	E B 276
28	E B 286	E B 276	E A 286	E B 252	230	212	202	198	216	222	202	186	A	206	224	230	216	194	E B 196	230	228	E B 218	228	E B 244
29	E B 266	E B 274	E B 274	E B 252	E B 224	188	214	208	200	A	204	198	202	220	214	222	222	206	198	E B 236	E B 232	E B 244	E B 252	E B 268
30	E B 274	E B 264	E B 256	E B 246	216	E B 248	220	H 186	206	212	192	180	188	216	226	A	224	198	186	214	228	E B 232	E B 252	E B A 320
31	E B 298	E B 280	E B 296	E B 270	E B 246	E B 238	216	210	220	220	216	210	216	206	220	224	218	200	226	230	214	E A 236	E A 262	E A 274
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	30	30	30	29	27	26	27	27	28	29	28	27	28	30	30	30	30	28	30	30
MED	E B 275	E B 270	E B 268	E B 257	E B 232	E B 239	214	210	212	205	198	200	197	204	214	220	223	216	206	U 216	E 234	E 254	E B 260	E B 271
U Q	E B 286	E 282	E 285	E B 280	E B 254	E B 252	218	212	216	212	204	206	205	212	220	224	225	224	216	E A 244	E A 258	E A 272	E A 266	E A 280
L Q	E B 254	E B 256	E B 257	E B 246	224	216	208	207	206	198	192	186	193	200	207	216	220	208	202	214	228	233	E B 252	E B 258

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IONOSPHERIC DATA STATION Kokubunji

OCT. 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							116	114	112	112	A	112	114	122	112	114	120	B						
2							120	A	A	120	120	126	122	124	124	126	120	116						
3							B	A	A	112	114	122	124	120	116	118	118	B						
4							120	118	110	116	118	A	A	A	A	110	116	B						
5							B	112	114	114	114	A	A	118	A	112	116	B						
6							114	120	116	A	A	A	118	126	118	118	118	126						
7							B	A	A	A	A	126	126	A	A	118	118	B						
8							B	A	A	A	A	A	A	A	118	116	116	B						
9							B	124	A	A	124	126	124	116	114	124	122	122						
10							B	118	A	118	112	114	126	114	A	110	118	B						
11							B	120	114	114	A	120	122	118	116	120	116	B						
12							B	112	122	122	122	116	116	122	124	122	120	B						
13							B	120	118	118	118	118	118	118	A	A	120	B						
14							B	118	120	118	A	112	118	120	116	114	122	B						
15							B	120	A	A	A	A	A	A	120	120	120	B						
16							B	124	A	C	C	C	C	C	C	C	C	C						
17							C	C	C	C	A	A	A	122	124	124	122	B						
18							B	118	118	120	A	A	114	A	A	116	120	B						
19							B	124	116	A	A	116	122	122	124	118	118	B						
20							B	116	116	A	118	A	118	128	124	120	114	B						
21							B	116	120	120	110	114	112	114	116	114	118	B						
22							B	114	A	124	A	A	118	A	A	124	A	B						
23							B	122	118	118	122	122	122	114	114	122	114	B						
24							B	116	120	A	A	A	A	A	A	118	120							
25							B	124	124	A	A	A	122	114	A	112	114							
26							B	122	A	A	112	126	A	A	A	126	122							
27							B	114	120	A	124	124	130	118	114	A	120							
28							B	116	122	118	120	A	A	120	124	A	124	B						
29							B	114	120	120	120	A	116	A	A	116	120	B						
30							B	118	116	114	116	122	118	124	118	116	A	B						
31							B	112	118	118	118	A	A	A	A	A	A	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	26	20	18	17	16	21	20	18	26	27	3						
MED							118	118	118	118	118	121	118	120	118	118	120	122						
U Q							120	120	120	120	121	125	123	122	124	122	120	126						
L Q							115	114	116	114	114	115	117	117	116	114	116	116						

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IONOSPHERIC DATA STATION Kokubunji

OCT. 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	92	B	B	B	B	B	146	130	G	G	100	96	G	G	G	G	104	118	B	112	100	B	B	B
2	B	B	B	112	B	B	G	104	108	104	G	G	G	G	G	G	104	124	116	102	B	B	B	B
3	B	B	B	B	B	B	104	106	106	G	G	G	G	G	G	G	104	124	B	B	102	102	100	B
4	B	B	98	92	B	B	G	126	118	114	114	102	102	102	98	G	G	120	102	96	94	94	94	90
5	94	94	94	88	86	B	116	G	94	94	116	106	106	G	104	G	124	122	106	104	98	98	B	96
6	B	B	B	B	112	B	124	126	122	104	106	104	G	G	G	G	104	146	106	102	102	100	94	94
7	108	106	100	94	92	100	108	106	102	104	110	G	G	110	106	124	122	106	102	96	100	98	96	94
8	92	B	B	92	102	B	B	106	106	100	100	100	96	96	96	94	102	108	104	98	98	98	94	B
9	98	94	94	92	90	102	104	102	100	100	G	G	98	92	90	108	108	G	96	92	94	94	B	B
10	B	B	B	B	B	B	B	102	102	G	G	G	G	90	96	88	130	116	B	90	84	84	86	B
11	B	B	B	B	B	B	156	150	G	104	106	G	G	92	88	G	G	116	B	B	86	B	B	96
12	B	B	B	B	B	B	146	G	124	104	106	G	G	G	G	122	120	110	B	B	100	B	B	B
13	B	B	B	B	B	B	138	102	154	G	G	G	G	G	102	102	122	108	102	92	94	92	B	B
14	B	B	B	B	B	92	148	112	124	G	102	G	G	G	98	98	118	122	B	104	104	96	94	94
15	94	98	100	100	B	B	B	108	108	104	104	104	102	104	104	106	104	122	110	110	98	B	98	96
16	B	B	B	B	B	B	120	126	106	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	102	102	102	G	G	102	102	B	B	116	112	100	90	90
18	96	96	94	94	92	90	158	G	G	G	104	100	98	102	102	102	132	110	108	104	102	102	94	92
19	92	94	B	B	B	B	128	128	118	106	104	G	G	G	G	104	116	108	106	104	100	94	94	92
20	94	94	90	94	90	90	148	126	124	104	102	98	G	G	G	126	114	106	90	84	90	B	B	B
21	B	B	B	B	B	B	164	G	G	102	G	94	94	92	G	G	124	120	114	108	104	106	98	96
22	B	92	92	90	86	86	148	136	104	G	104	106	G	108	104	106	106	110	106	100	96	98	96	96
23	90	92	94	94	92	92	148	148	102	102	G	G	G	92	G	102	132	B	110	98	102	B	100	B
24	B	96	98	B	B	B	142	140	104	104	104	106	104	102	104	102	126	118	98	96	96	94	92	B
25	B	B	B	B	B	110	B	106	G	108	102	100	106	G	100	104	114	106	100	100	100	B	94	92
26	92	B	92	B	B	B	B	106	102	100	108	G	100	98	104	106	120	106	104	104	96	92	92	92
27	90	90	B	B	B	B	148	G	102	106	G	G	G	G	G	104	100	100	100	100	96	96	94	B
28	92	90	90	84	88	90	B	G	106	104	G	106	102	100	G	102	106	106	B	98	98	B	B	92
29	B	92	B	B	B	B	B	G	104	132	116	110	G	90	96	104	102	B	94	92	B	B	B	B
30	86	B	B	B	B	B	156	102	102	102	100	G	G	G	126	118	102	108	B	B	B	B	B	94
31	B	B	B	B	B	B	B	132	104	98	116	106	102	98	100	94	96	96	94	98	96	96	96	102
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	13	12	12	10	9	20	23	25	22	21	16	13	16	18	22	28	26	21	26	27	19	19	17
MED	92	94	94	93	91	92	146	112	106	104	104	103	102	98	101	104	111	110	104	100	98	96	94	94
U Q	94	96	98	94	92	101	148	130	118	104	109	106	103	102	104	106	122	120	107	104	102	100	96	96
L Q	92	92	92	91	88	90	122	106	102	102	102	100	98	92	96	102	104	106	99	96	96	94	94	92

IONOSPHERIC DATA STATION Kokubunji

OCT. 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	F1						H2	H2			L2	L2					L2	C2		F2	F1			
2				F1				L2	L2	L1							L2	C1	F3	F2				
3							L2	L3	L2								L2	C2			F2	F2	F2	
4			F3	F2				C1	C1	C1	C1	L2	L2	L2	L2			C3	F3	F4	F2	F3	F4	F3
5	F1	F3	F1	F3	F2		C1		L2	L2	CL21	L2	L2		L2		C1	CL31	F3	F4	F3	F2		F2
6					F2		C1	C2	C2	L2	L2	L2					L2	H2	F3	F3	F2	F3	F3	F4
7	F2	F2	F4	F2	F5	F2	L2	L3	L2	L2	L2			L2	L2	CL11	C2	L3	F3	F4	F2	F2	F1	F1
8	F1			F2	F1			L2	L1	L2	L2	L1	L2	L2	L1	L2	L1	L2	F2	F3	F2	F3	F2	
9	F3	F3	F4	F2	F1	F1	L2	L2	L2	L2			L2	L2	L2	L1	L2		F3	F3	F1	F2		
10								L1	L2					L2	L2	L2	CL11	C1		F3	F3	F2	F1	
11							H1	H2		L2	L2			L2	L2			C1			F1			F1
12							H1		CL11	L2	L2					CL12	C2	C2			F1			
13							H1	L2	HL22						L2	L2	CL22	L3	F3	F3	F1	F2		
14						F1	H2	C2	C2		L2				L2	L1	CL12	C1		F3	F3	F3	F1	F2
15	F3	F4	F4	F1				L2	L2	L2	L2	L1	L2	L1	L2	L2	L1	C3	F2	F1	F1		F1	F1
16							C2	C1	L2															
17											L2	L2	L2			L2	L1			F5	F2	F3	F2	F1
18	F3	F1	F2	F4	F5	F3	H1				L2	L2	L2	L2	L3	L1	CL22	C2	F3	F3	F2	F2	F2	F2
19	F2	F2					H1	C2	C1	L2	L2					L2	C3	L2	F2	F3	F2	F2	F2	F3
20	F3	F2	F2	F2	F1	F1	H1	C2	C2	L1	L2	L2				CL22	C2	LL32	F3	F2	F1			
21							H2			L2		L1	L1	L2			C1	C2	FF12	F2	F4	F2	F2	F1
22		F3	F2	F2	F2	F1	H2	H2	L2		L2	L2		L2	L3	L2	L2	L2	F3	F3	F3	F3	F3	F2
23	F3	F2	F3	F3	F3	F4	HL22	HL22	L2	L1				L1		L2	CL22		F3	F2	F3		F3	
24		F3	F2				H1	H1	L1	L2	L2	L1	L2	L2	L2	L2	CL11	F1	F3	F3	F3	F3	F1	
25						F1		L1		L2	L2	L2	L2		L2	L2	C2	F2	F3	F3	F5		F2	F3
26	F2		F1					L1	L2	L2	L1		L2	L2	L2	L1	CL22	F3	F3	F2	F3	F4	F4	F3
27	F4	F2					H1		L2	L2						L2	L1	F1	F1	F3	F6	F3	F1	
28	F2	F1	F3	F2	F2	F1			L2	L2		L2	L1	L2		L1	L2	L3		F2	F2			F1
29		F3							L2	C2	CL11	L2		L2	L2	L2	L2		F2	F1				
30	F1						H2	L2	L2	L2	L1				CL21	CL21	L2	L3						F4
31								H1	L2	L2	CL22	L2	L2	L2	L2	L2	L3	L3	F3	F1	F1	F3	F3	F3
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

OCT. 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

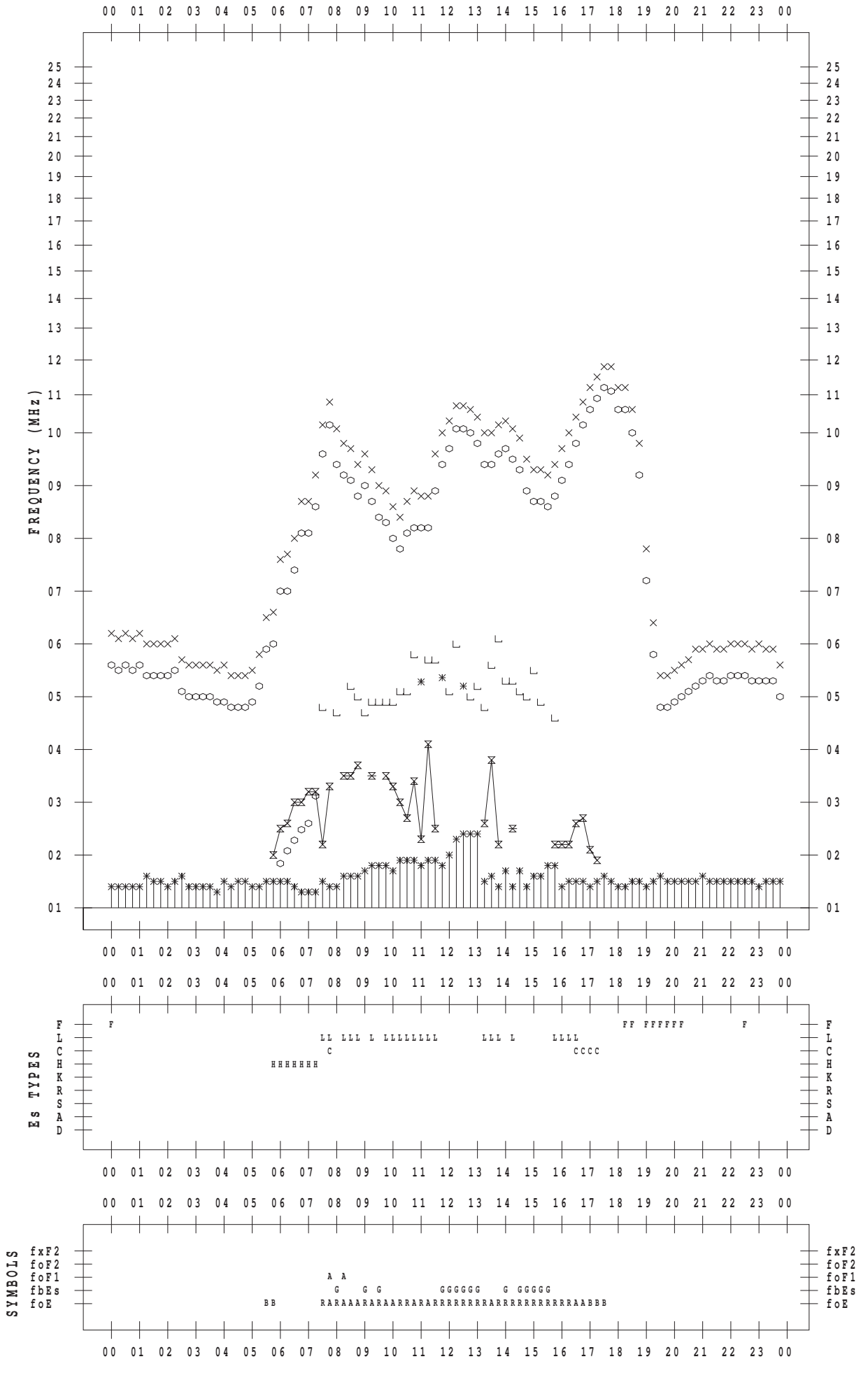
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 1

135 °E MEAN TIME



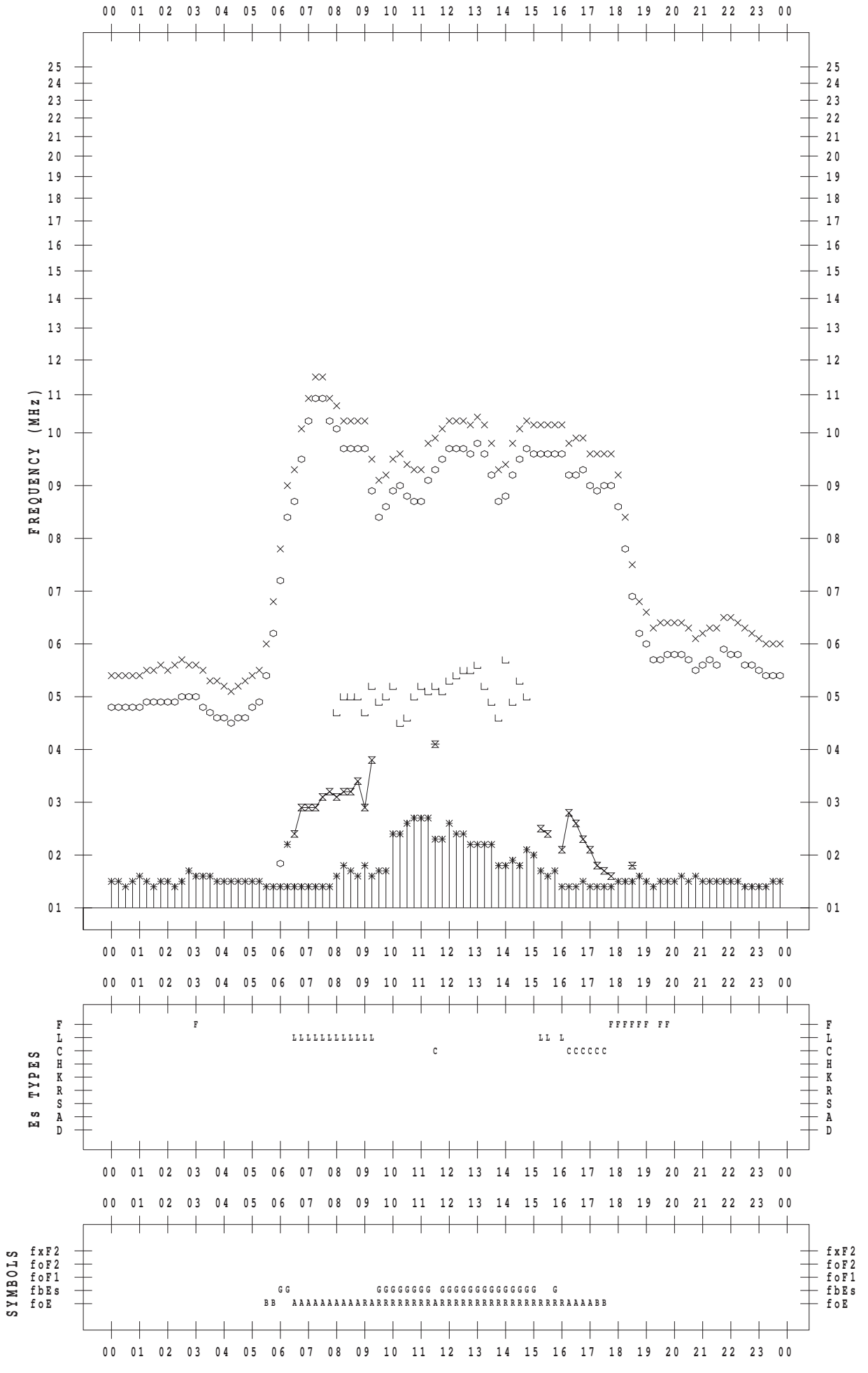
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 2

135 °E MEAN TIME



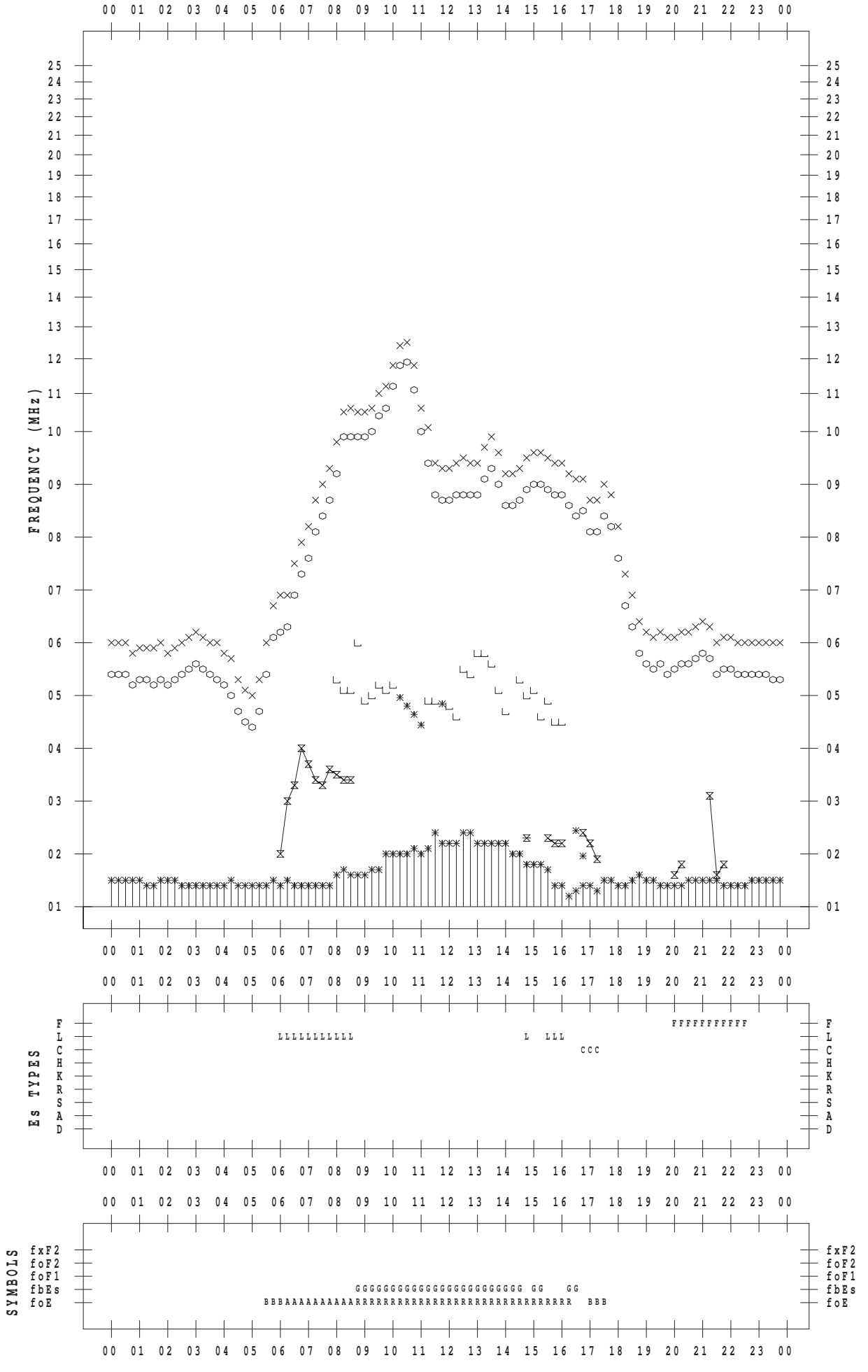
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 3

135 °E MEAN TIME



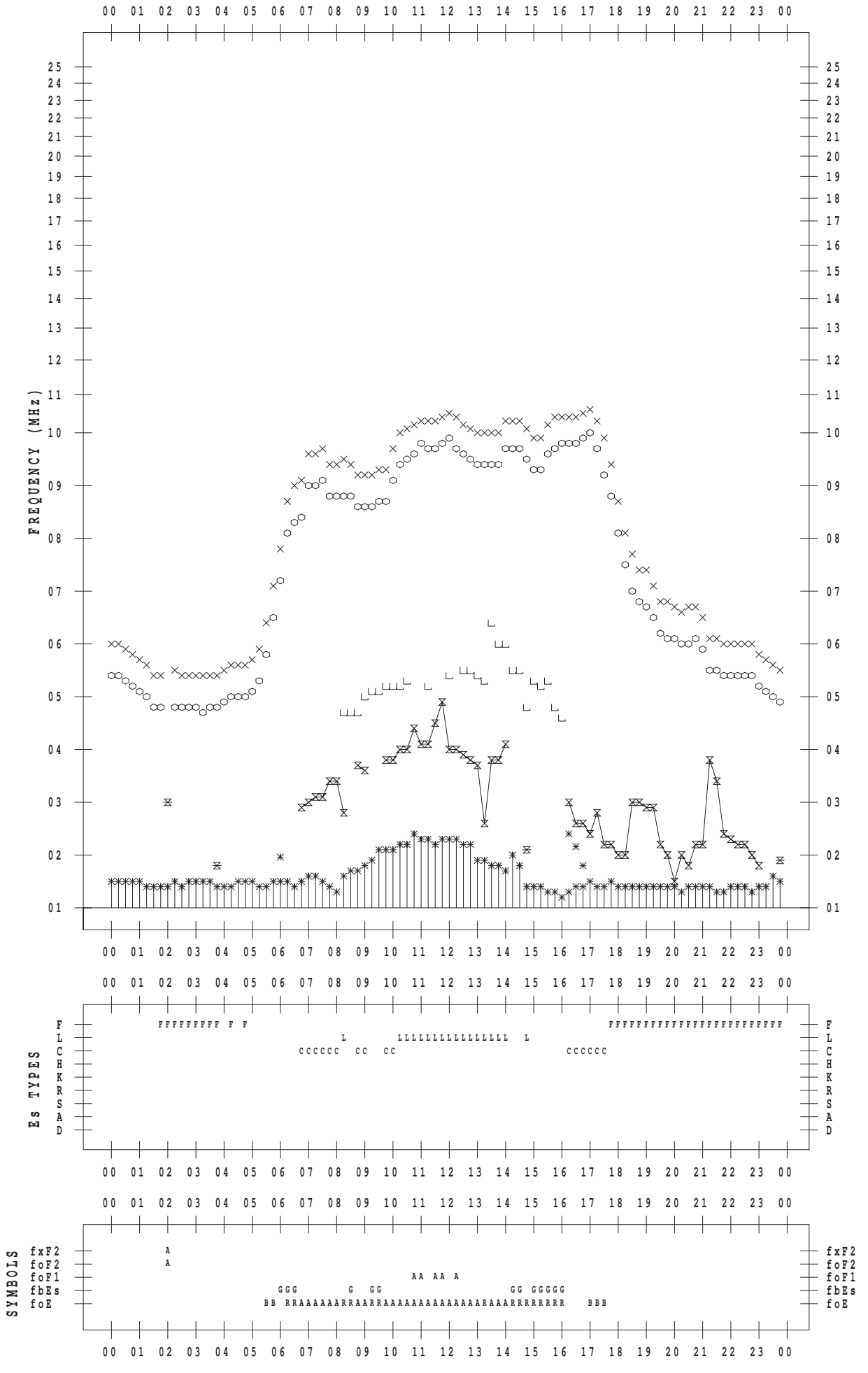
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 4

135 °E MEAN TIME



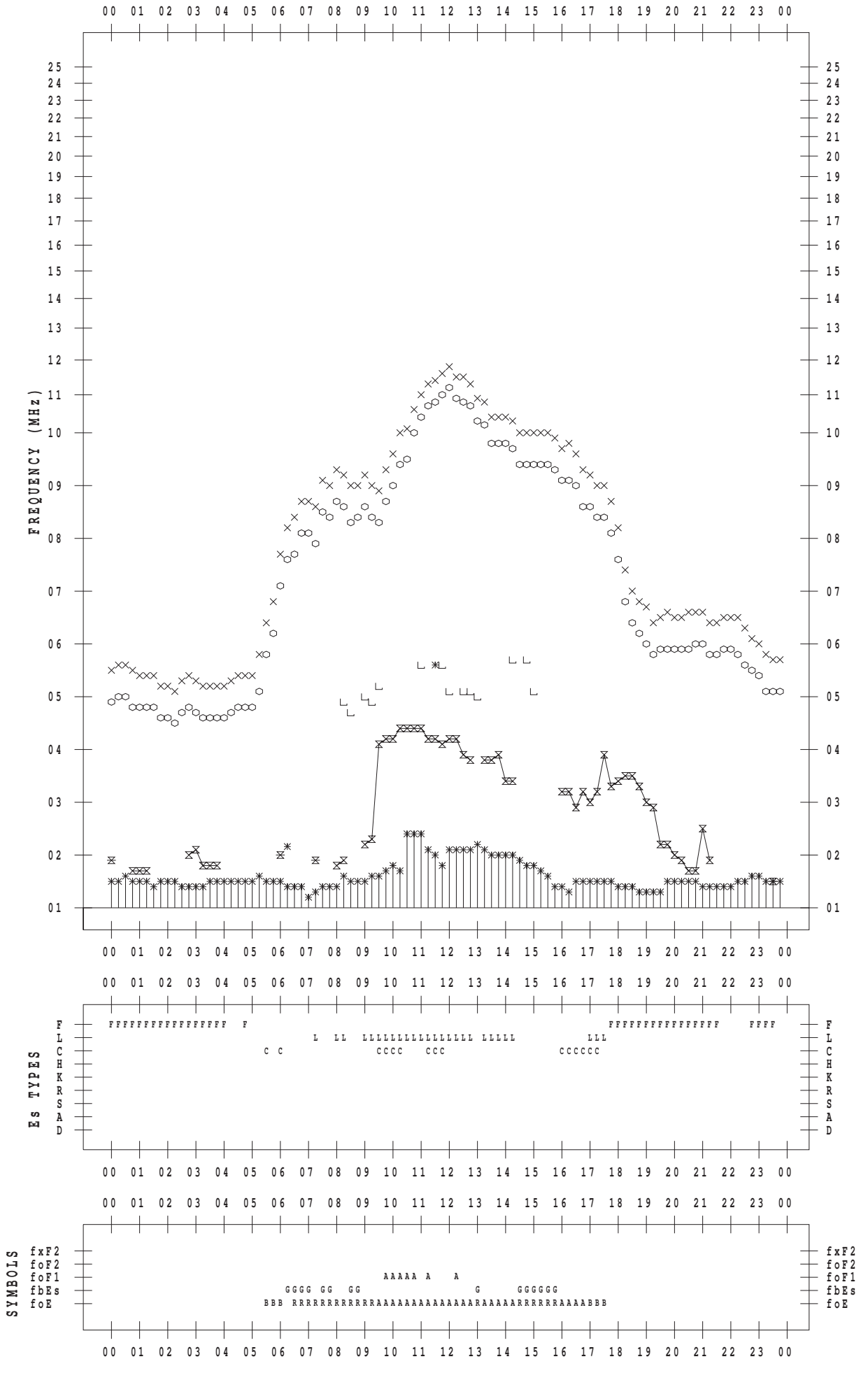
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 5

135 °E MEAN TIME



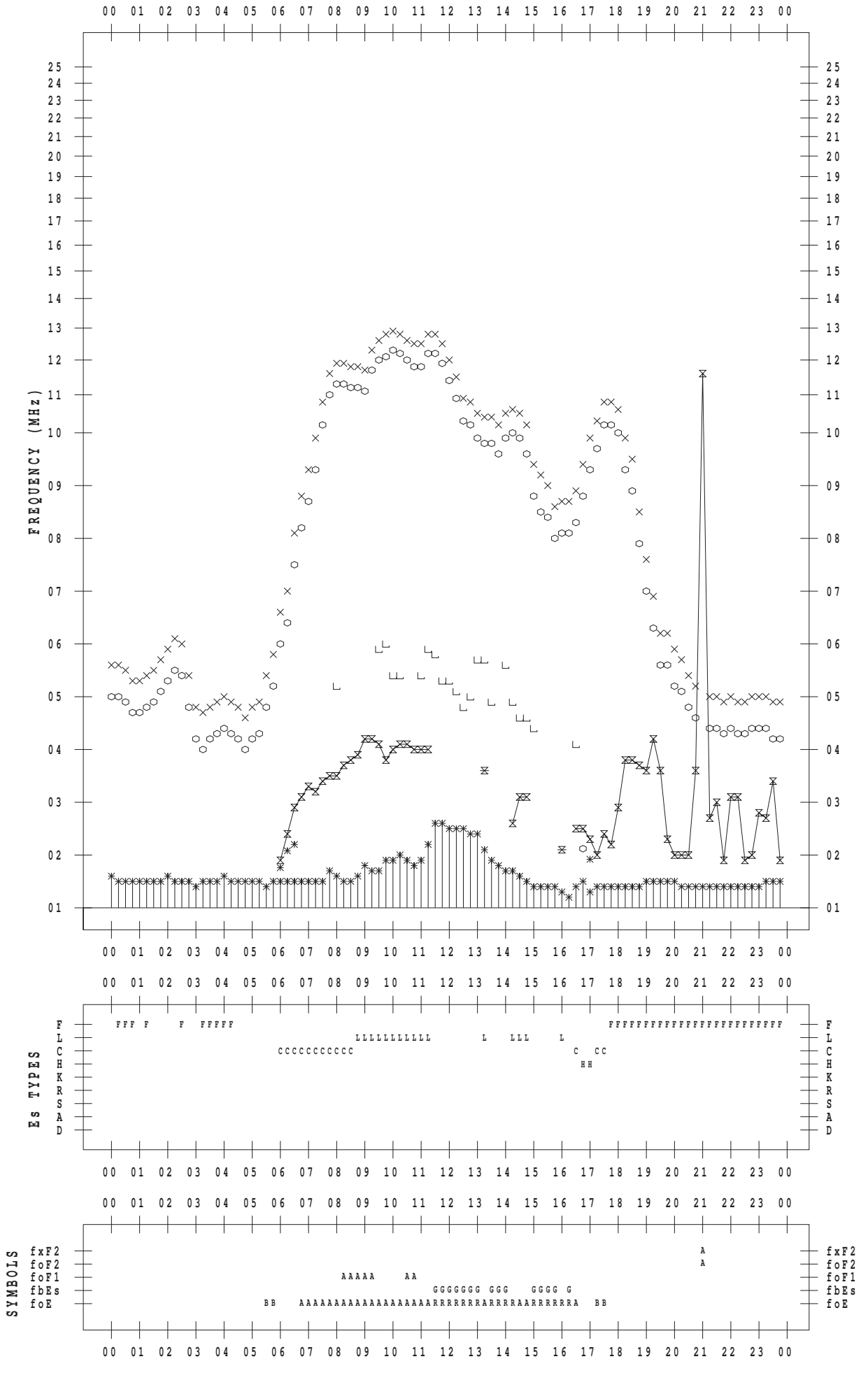
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 6

135 °E MEAN TIME



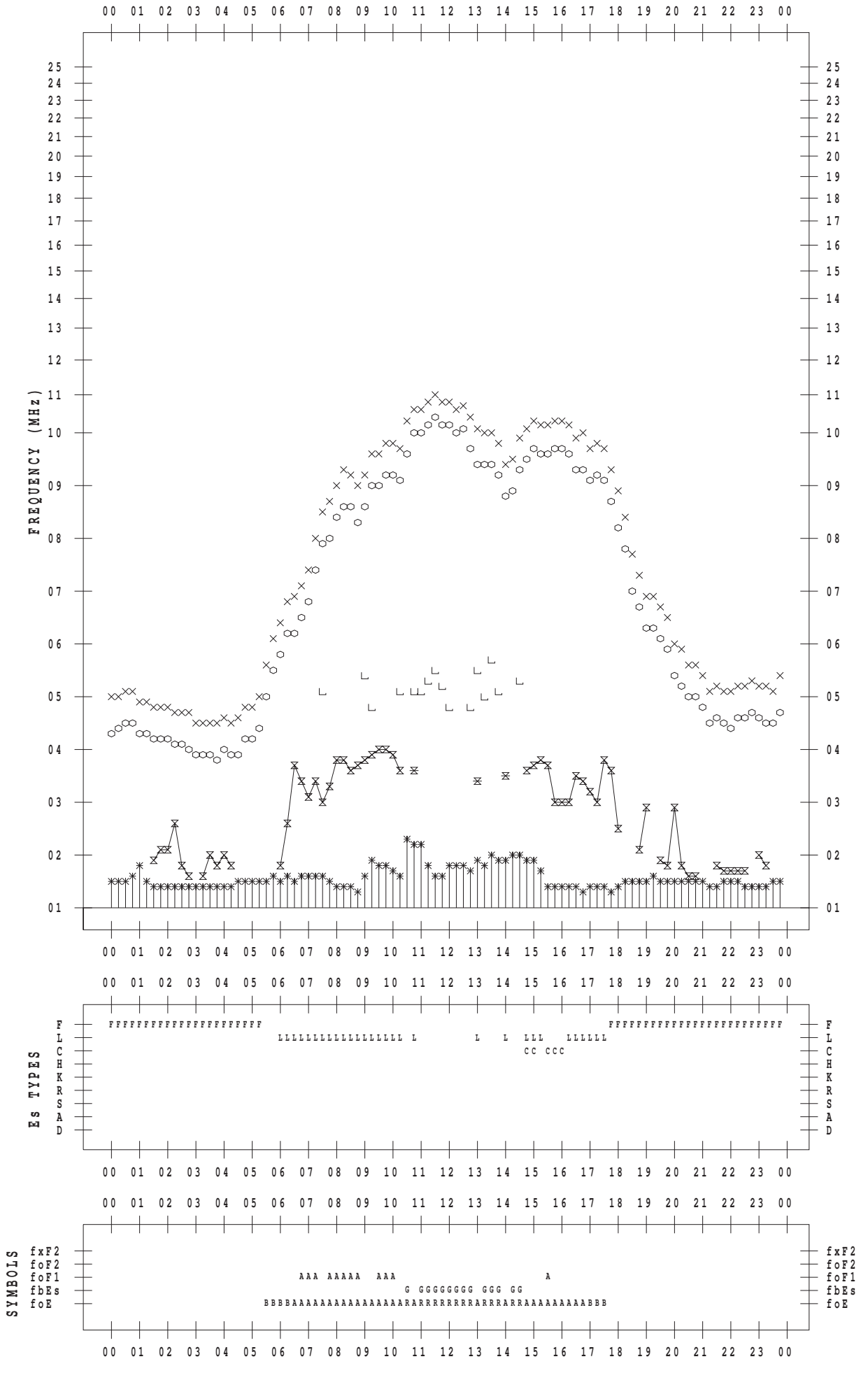
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 7

135 °E MEAN TIME



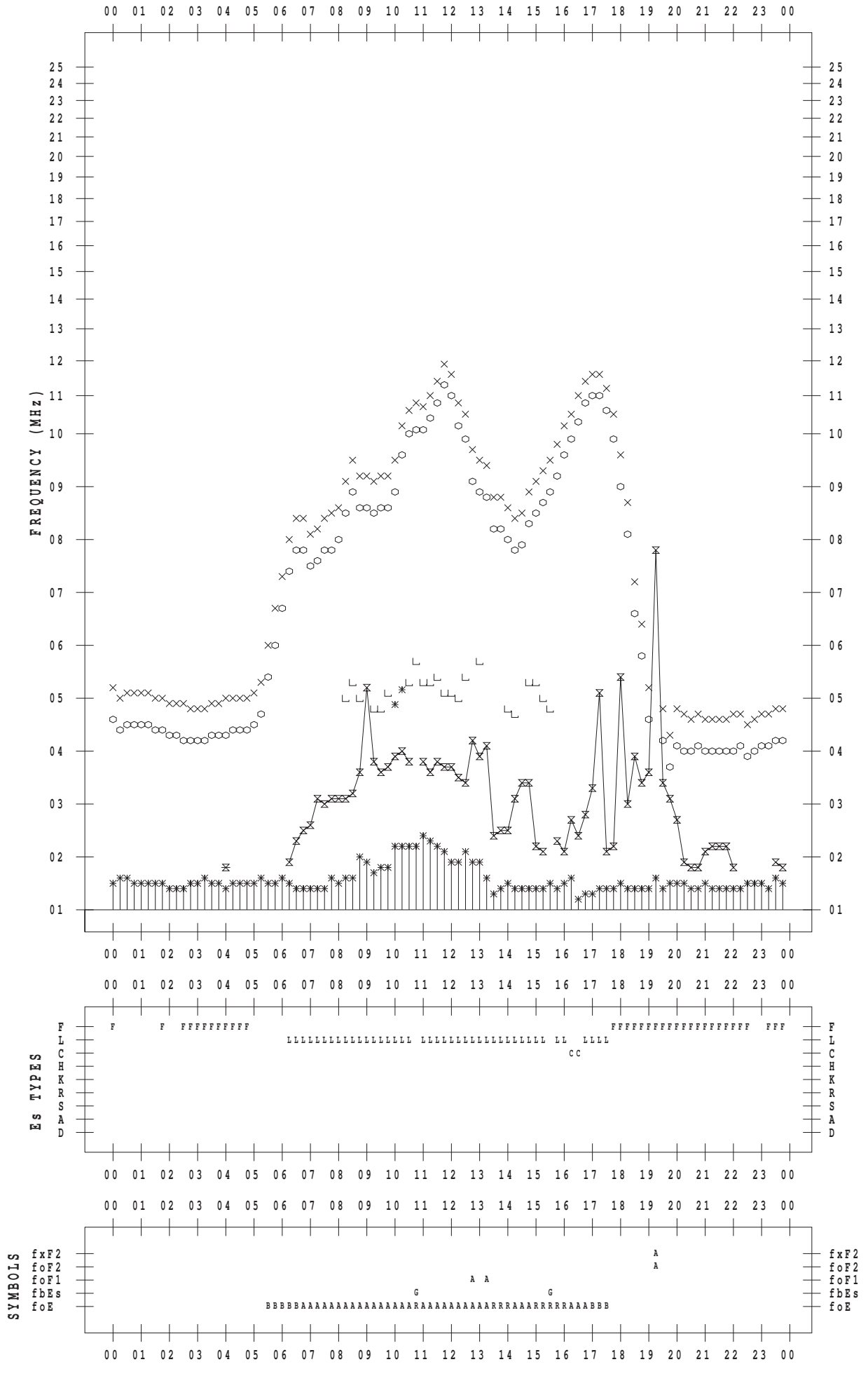
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 8

135 °E MEAN TIME



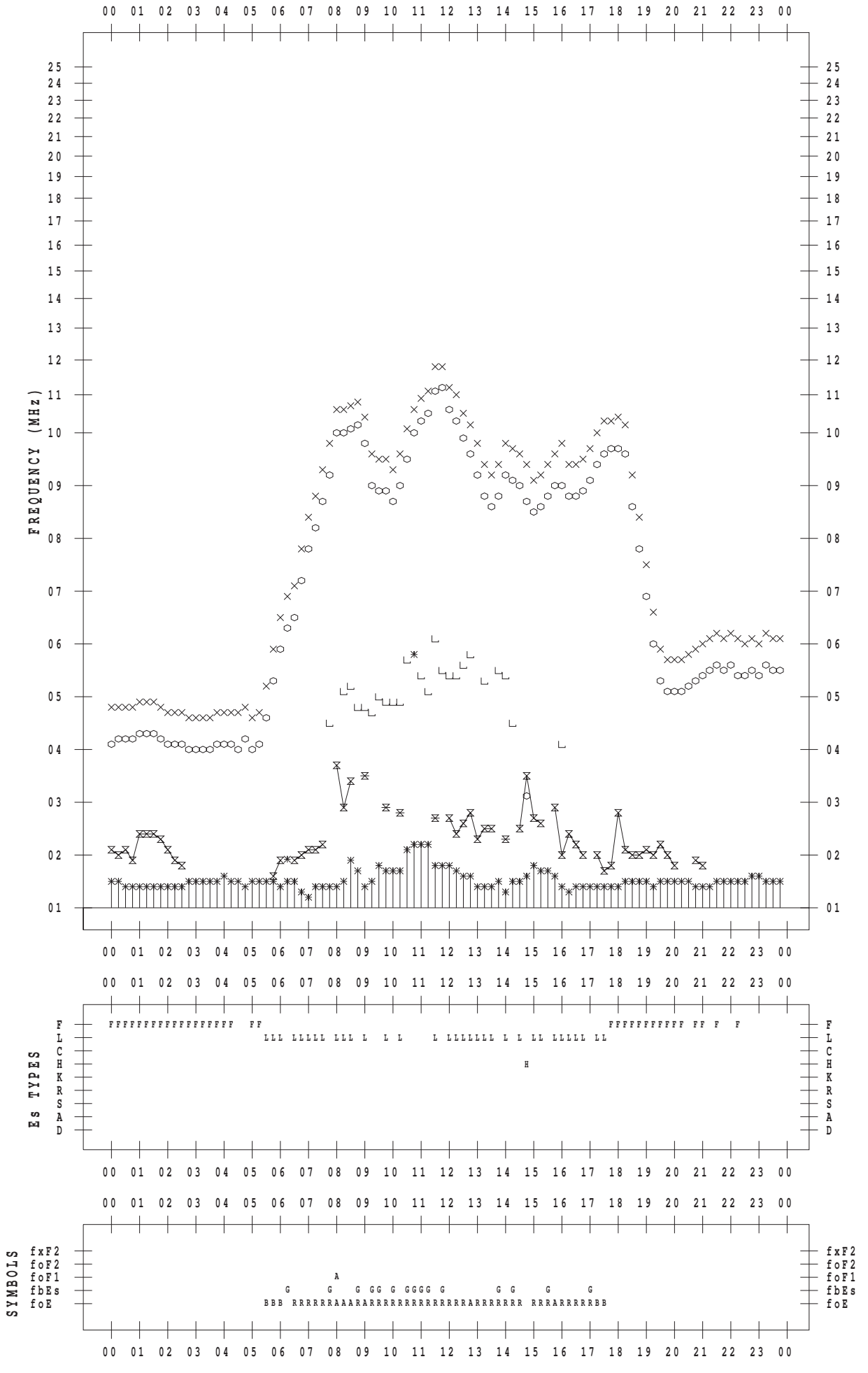
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/ 9

135 °E MEAN TIME



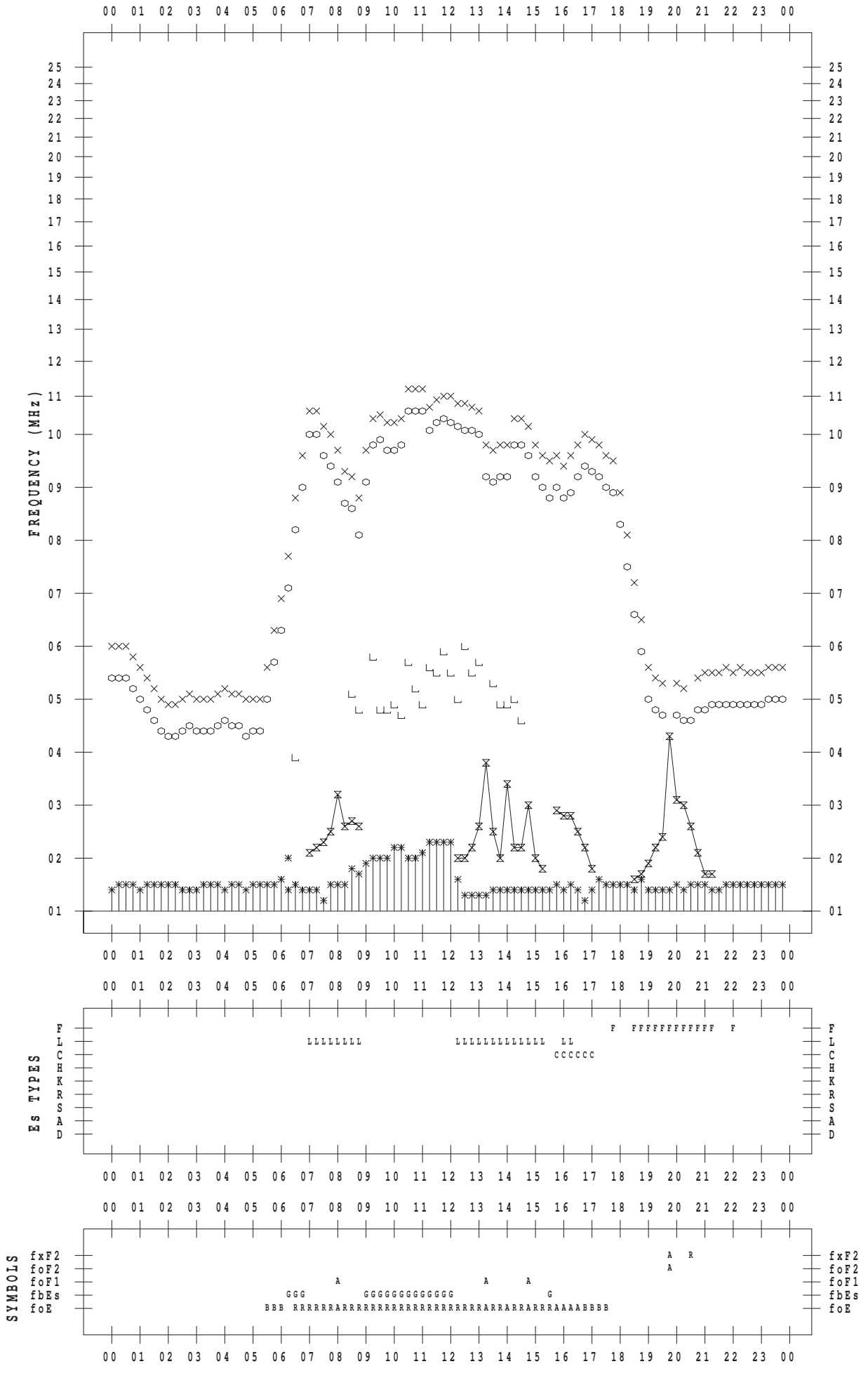
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/10

135 °E MEAN TIME



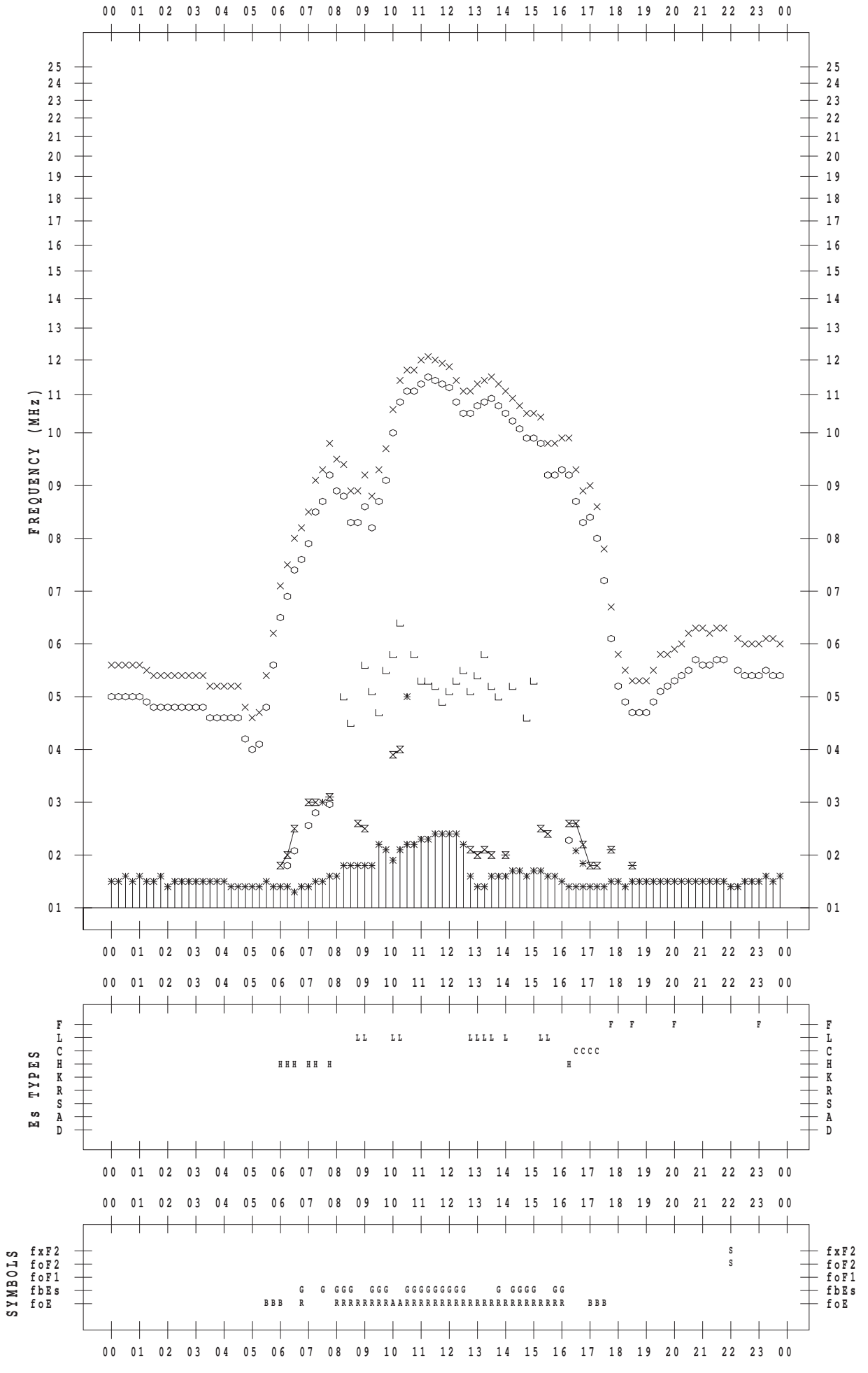
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/11

135 °E MEAN TIME



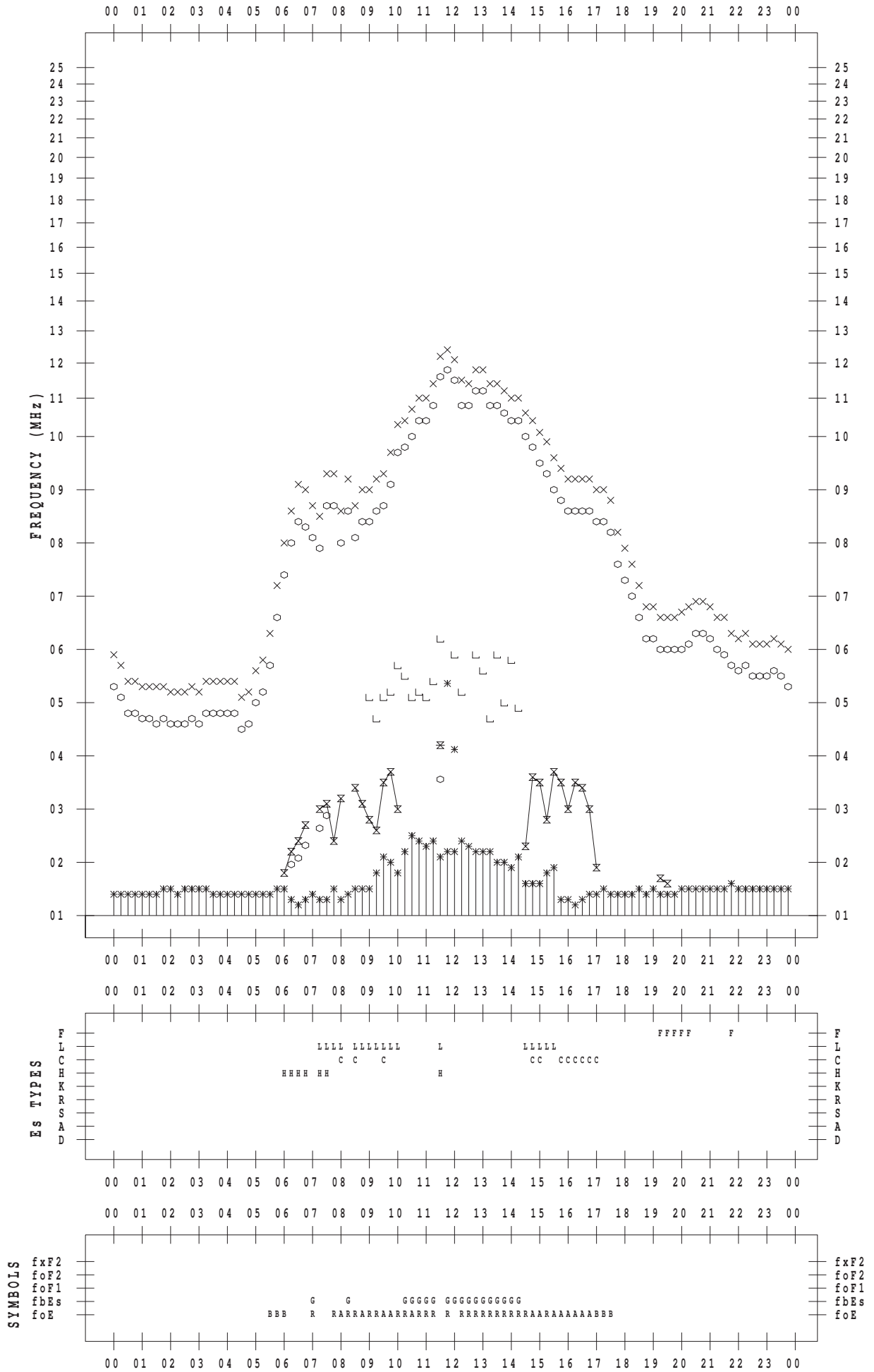
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/12

135 °E MEAN TIME



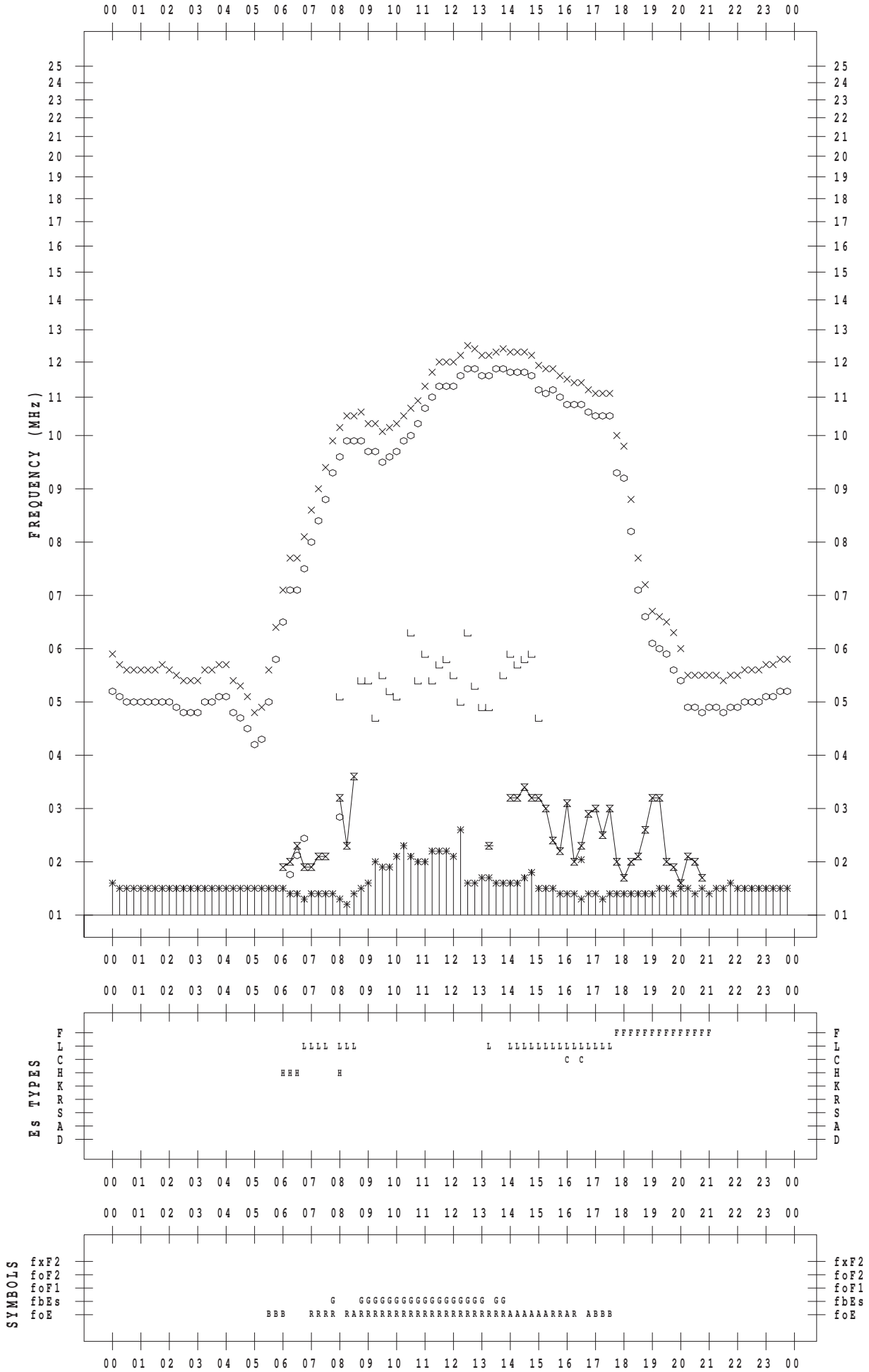
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/13

135 °E MEAN TIME



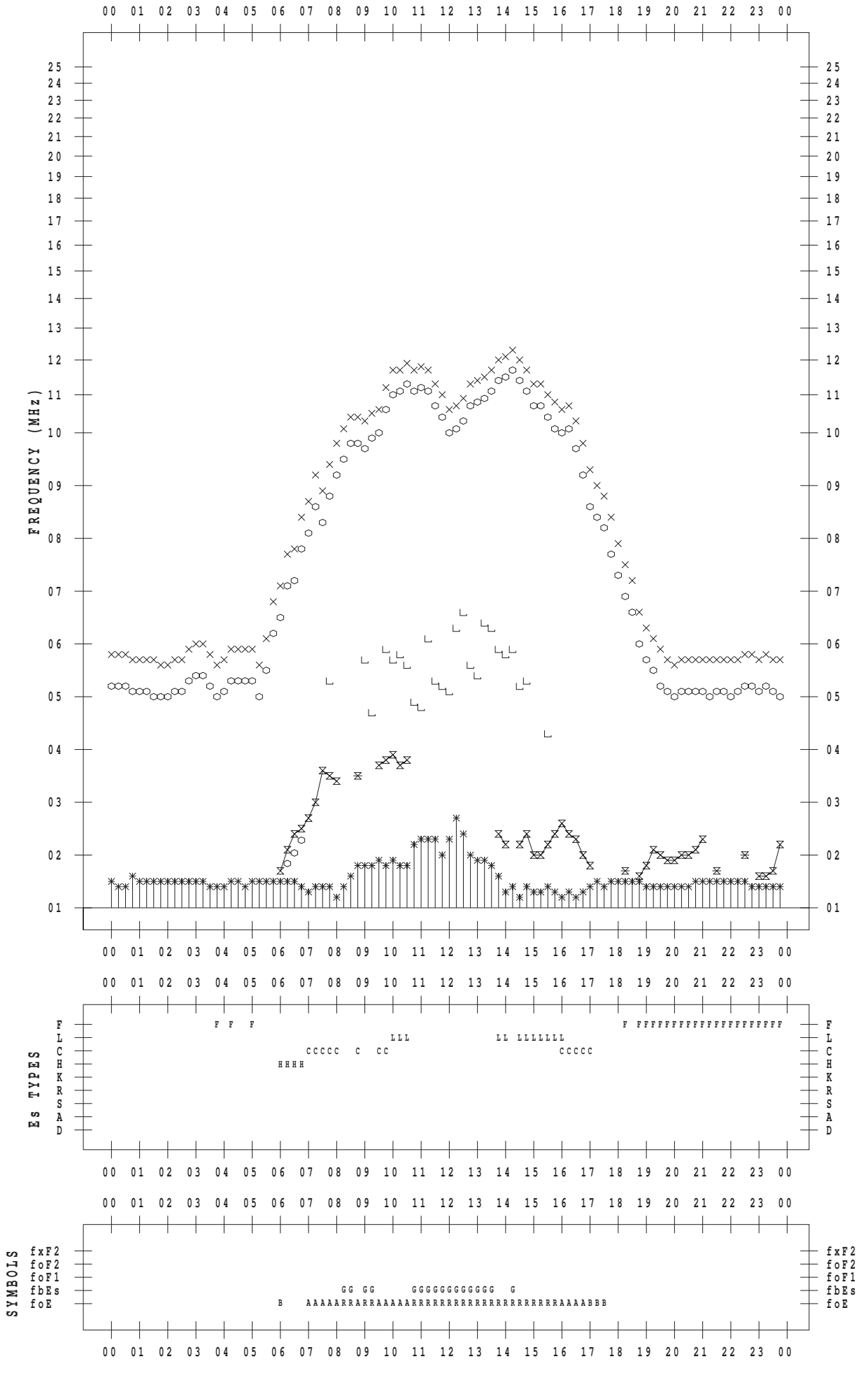
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/14

135 °E MEAN TIME



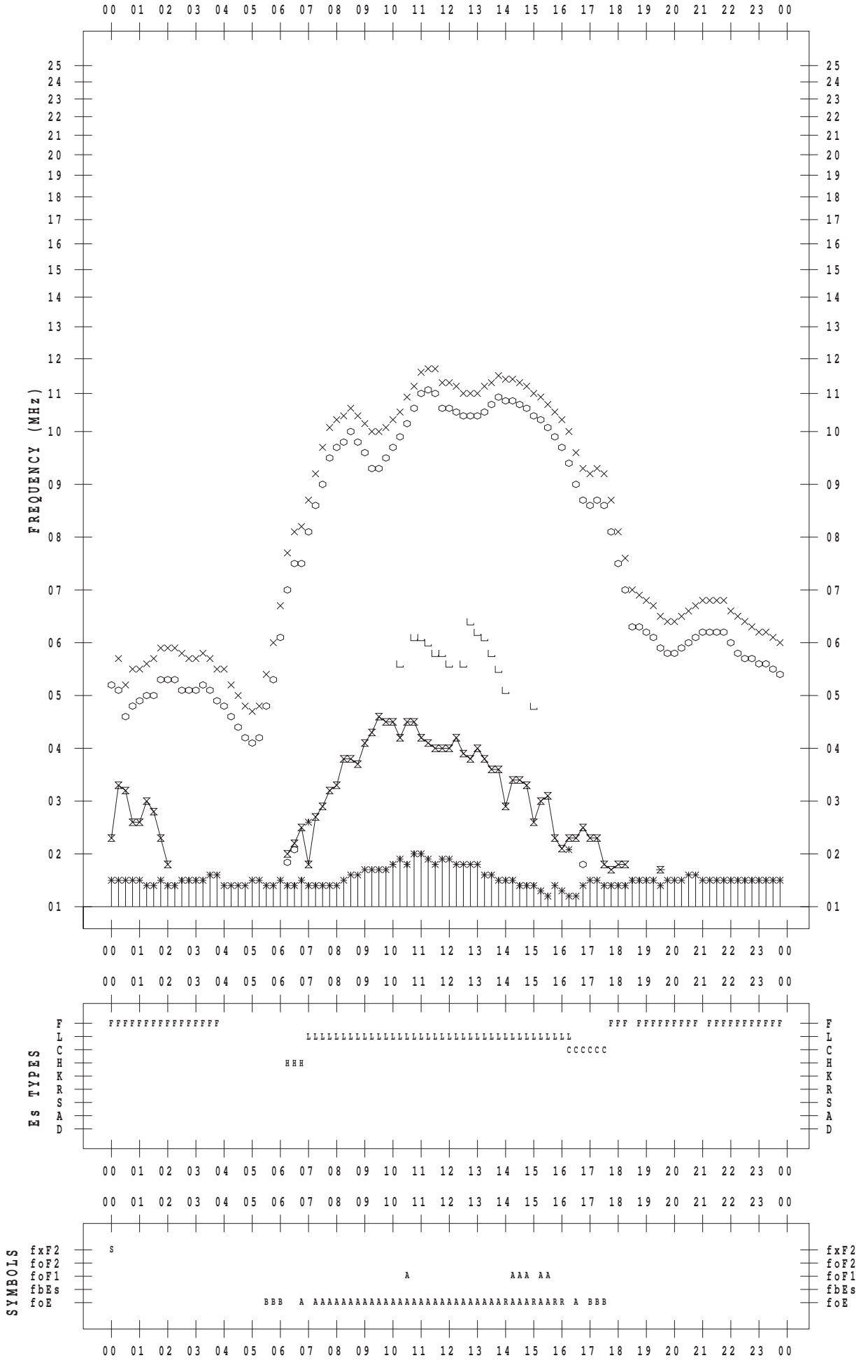
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/15

135 °E MEAN TIME



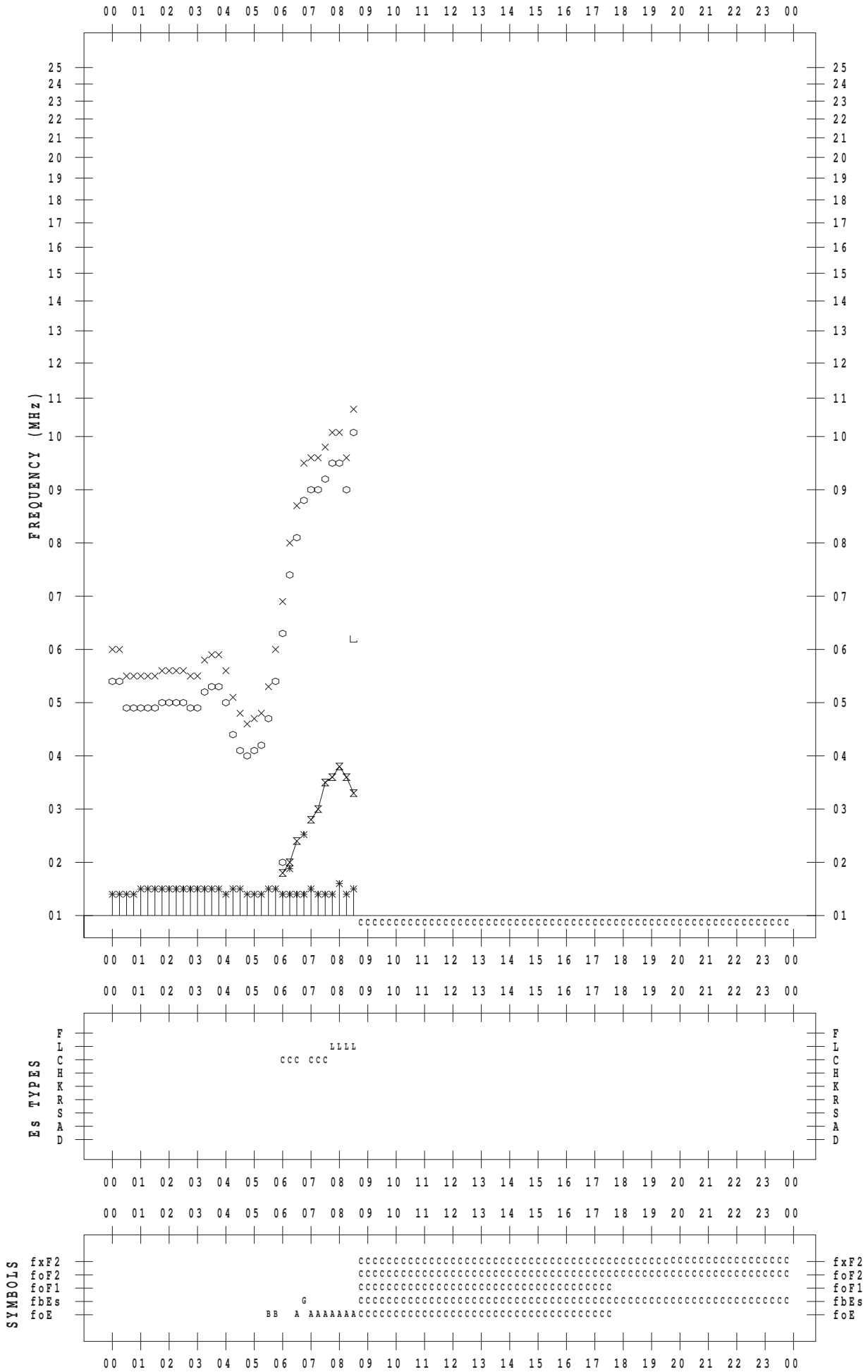
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/16

135 °E MEAN TIME



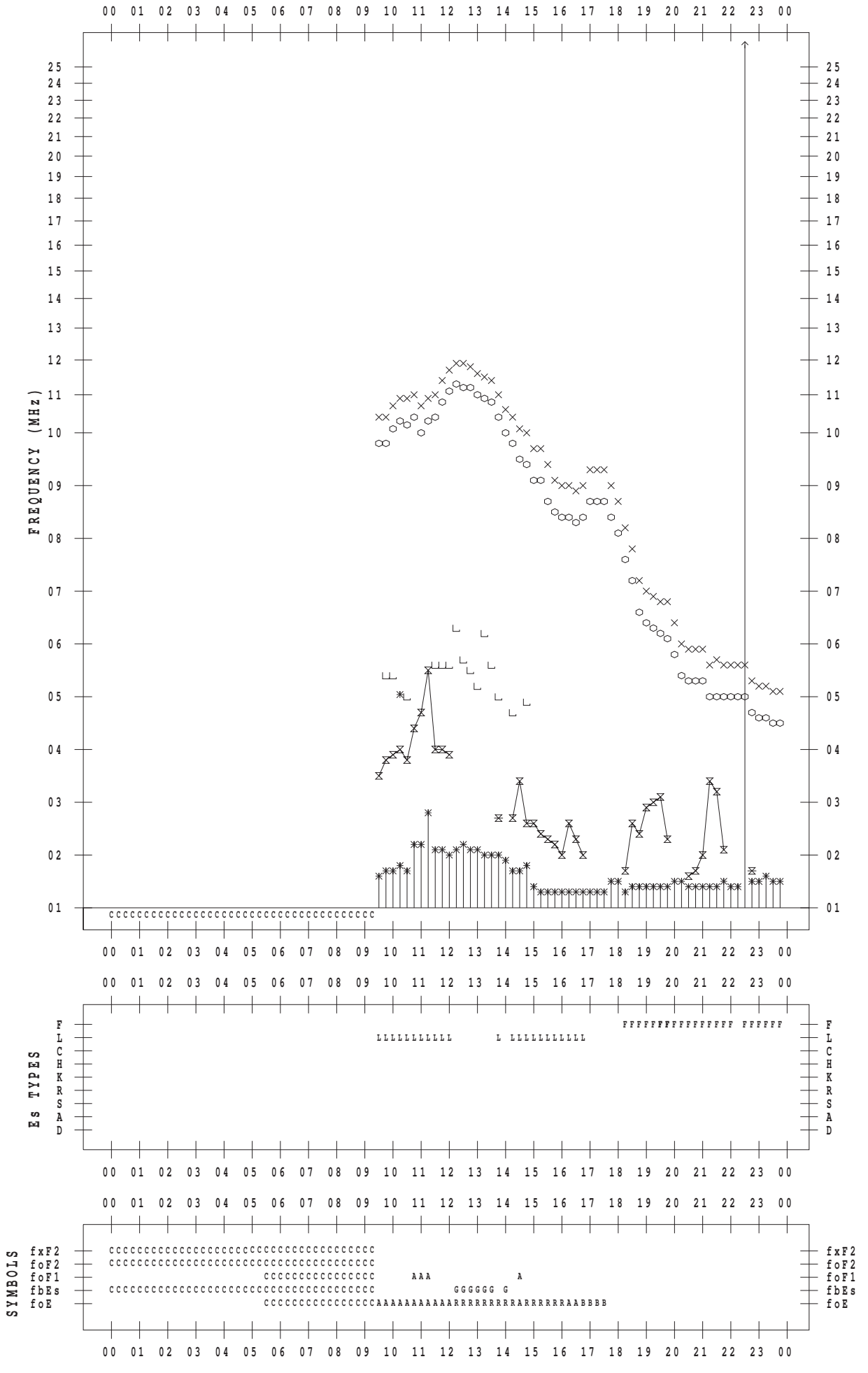
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/17

135 °E MEAN TIME



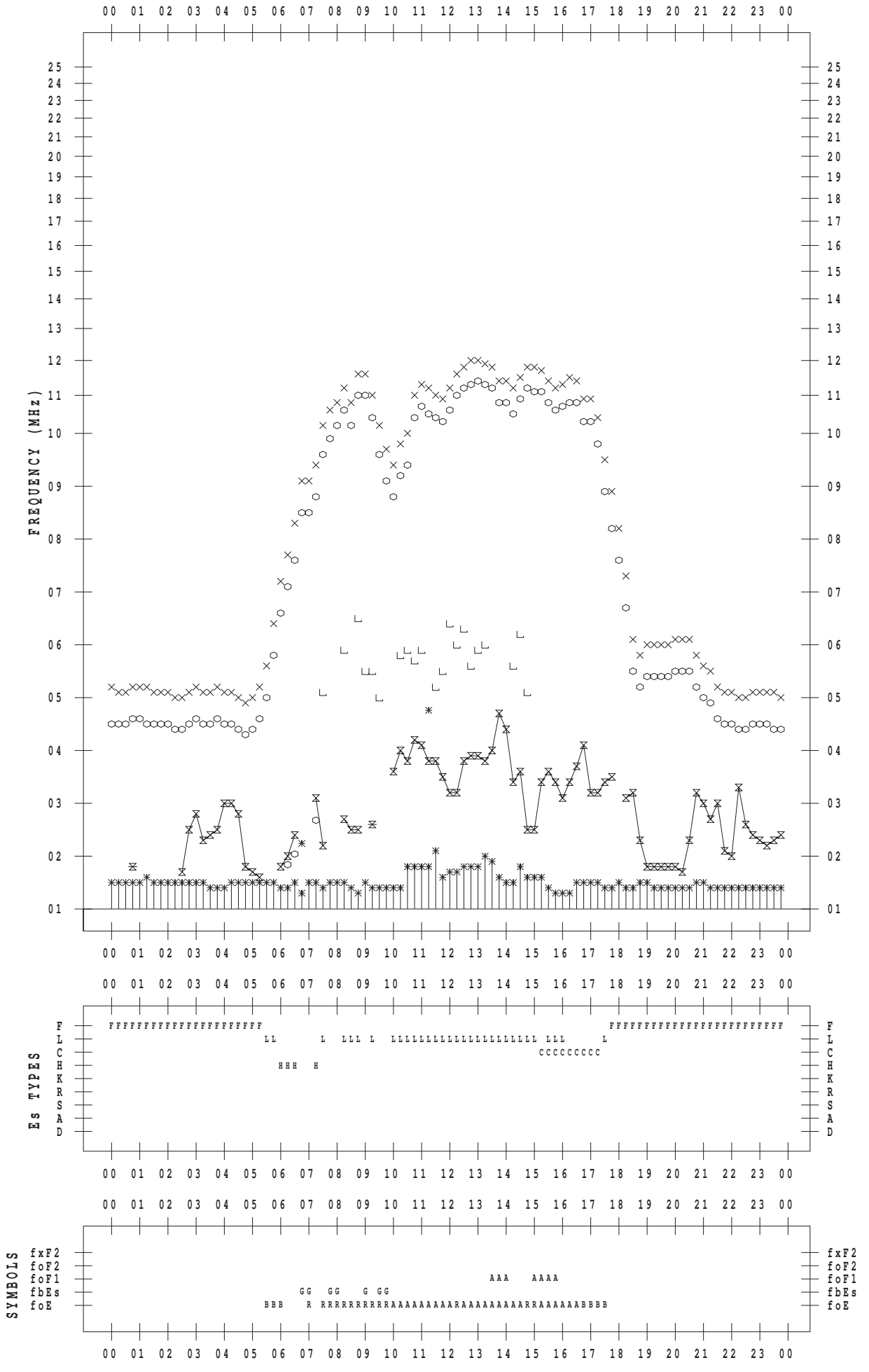
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/18

135 °E MEAN TIME



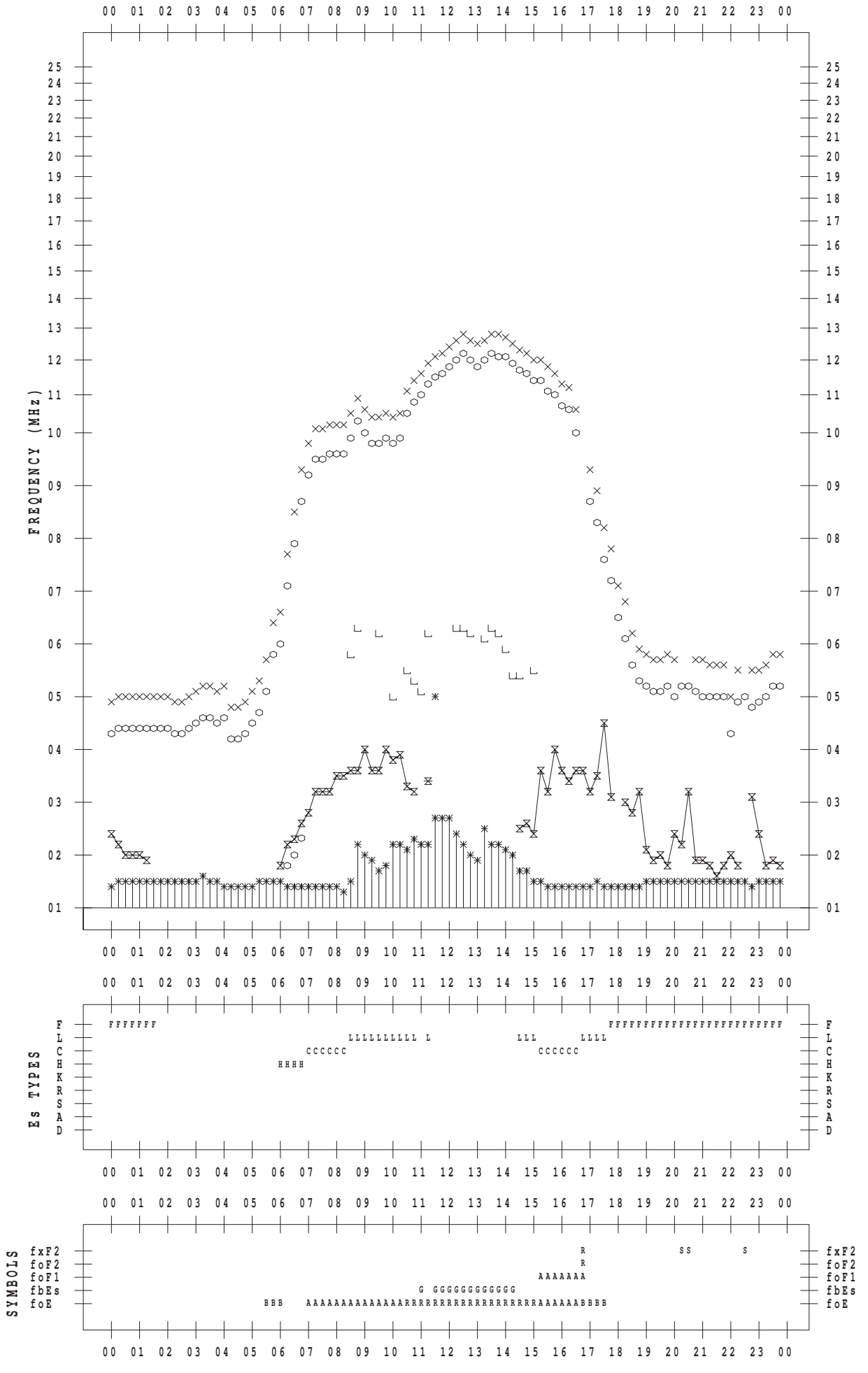
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/19

135 °E MEAN TIME



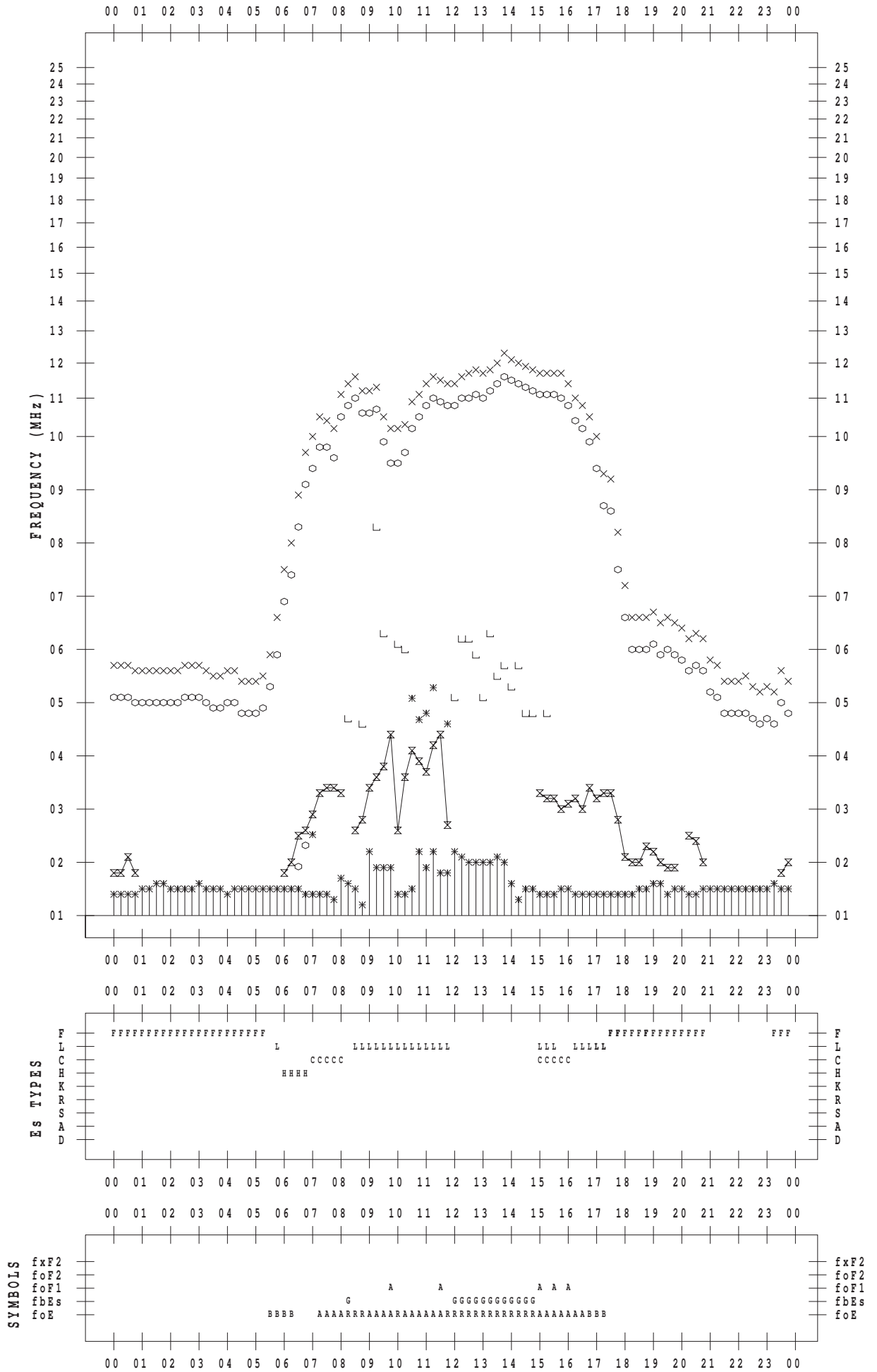
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/20

135 °E MEAN TIME



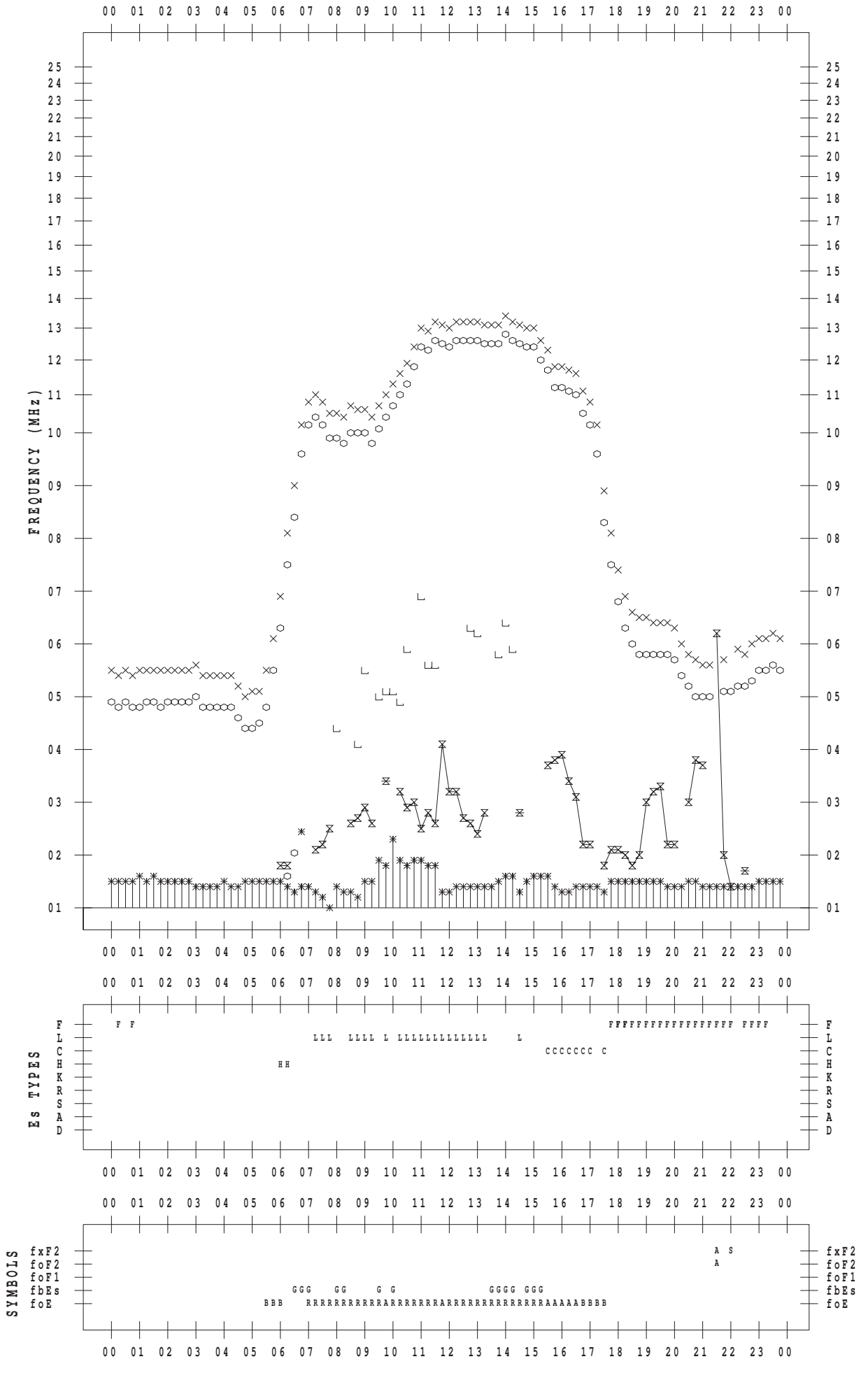
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/21

135 °E MEAN TIME



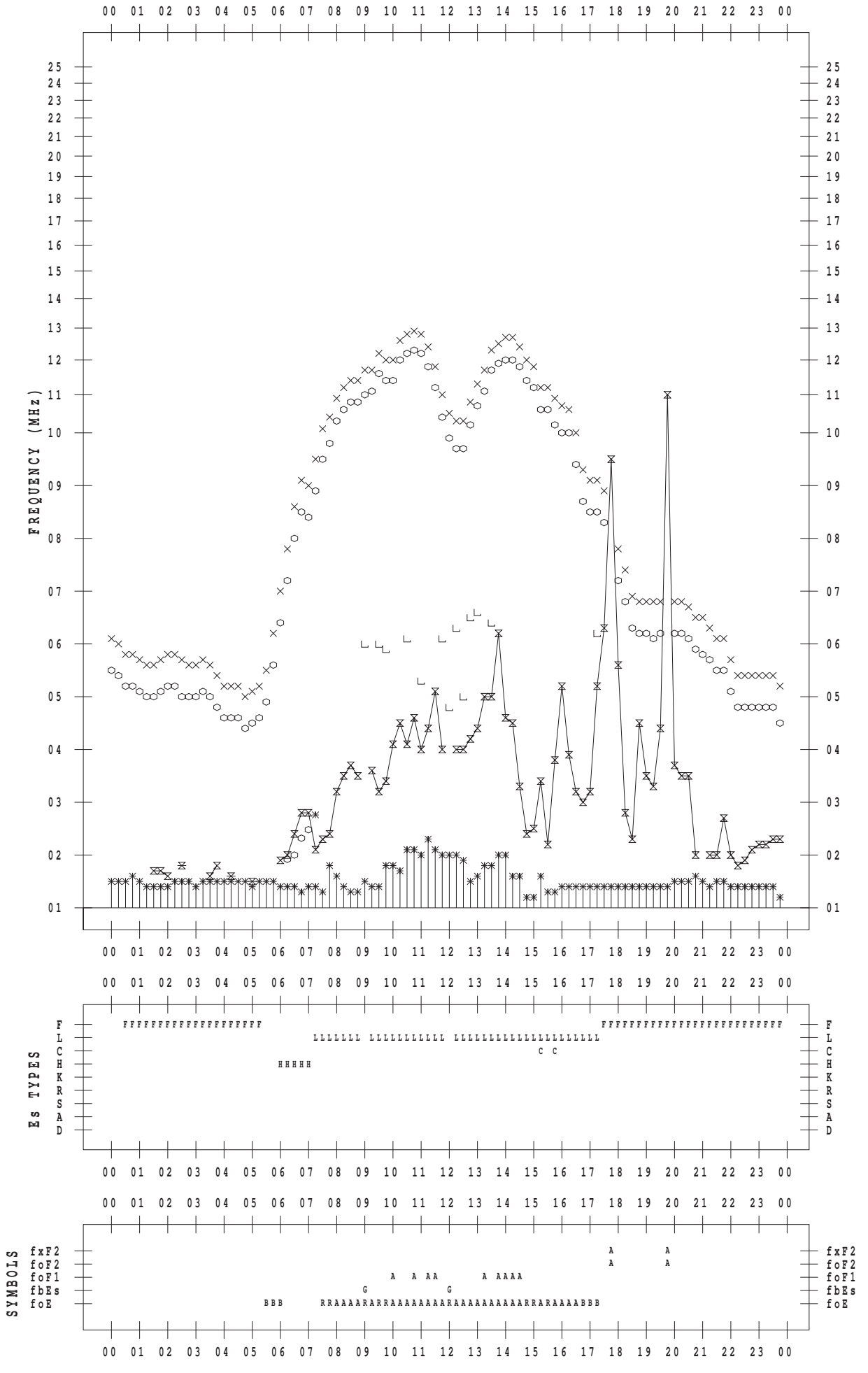
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/22

135 °E MEAN TIME



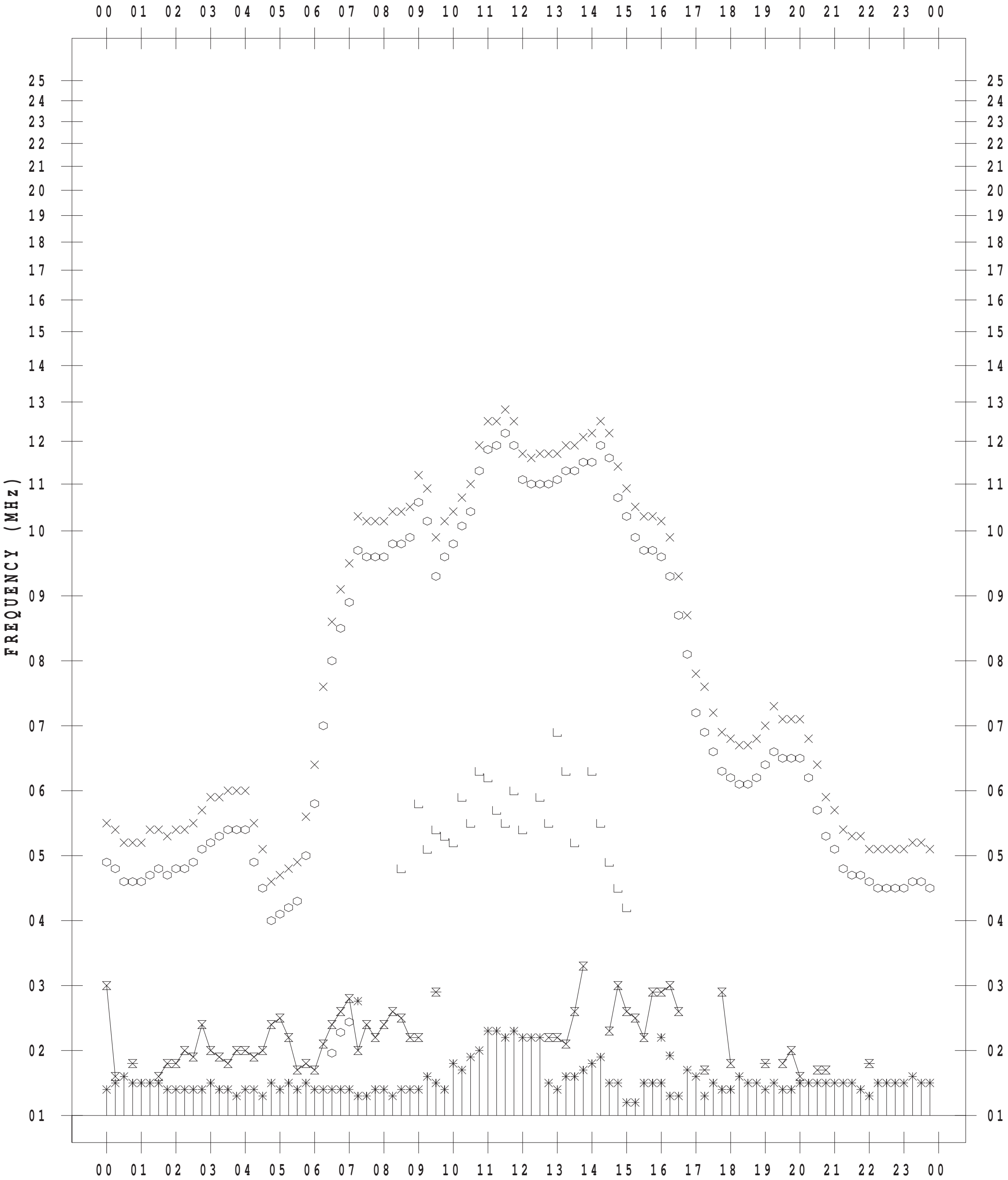
f-PLOT DATA

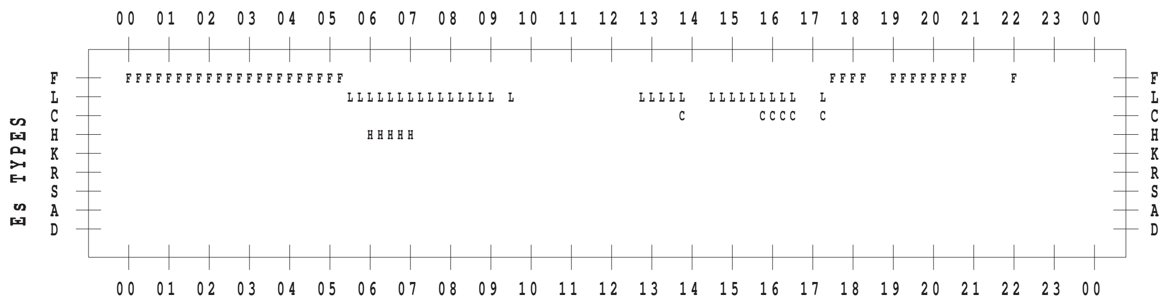
SCALER : I.NISHIMUTA

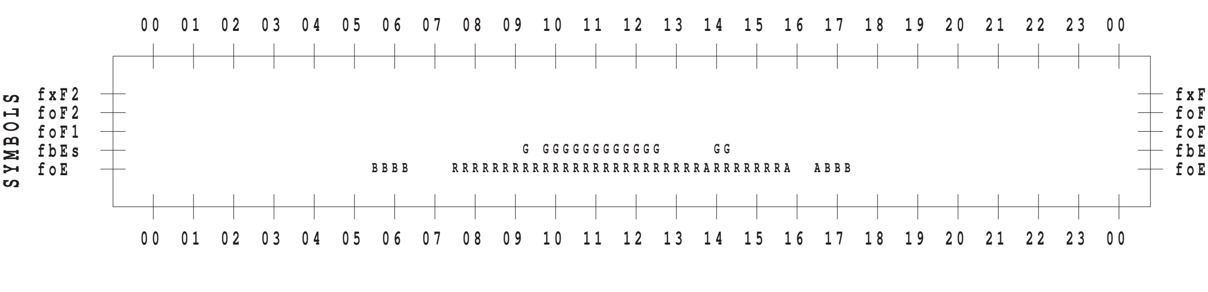
STATION : Kokubunji

DATE : 2011/10/23

135 °E MEAN TIME







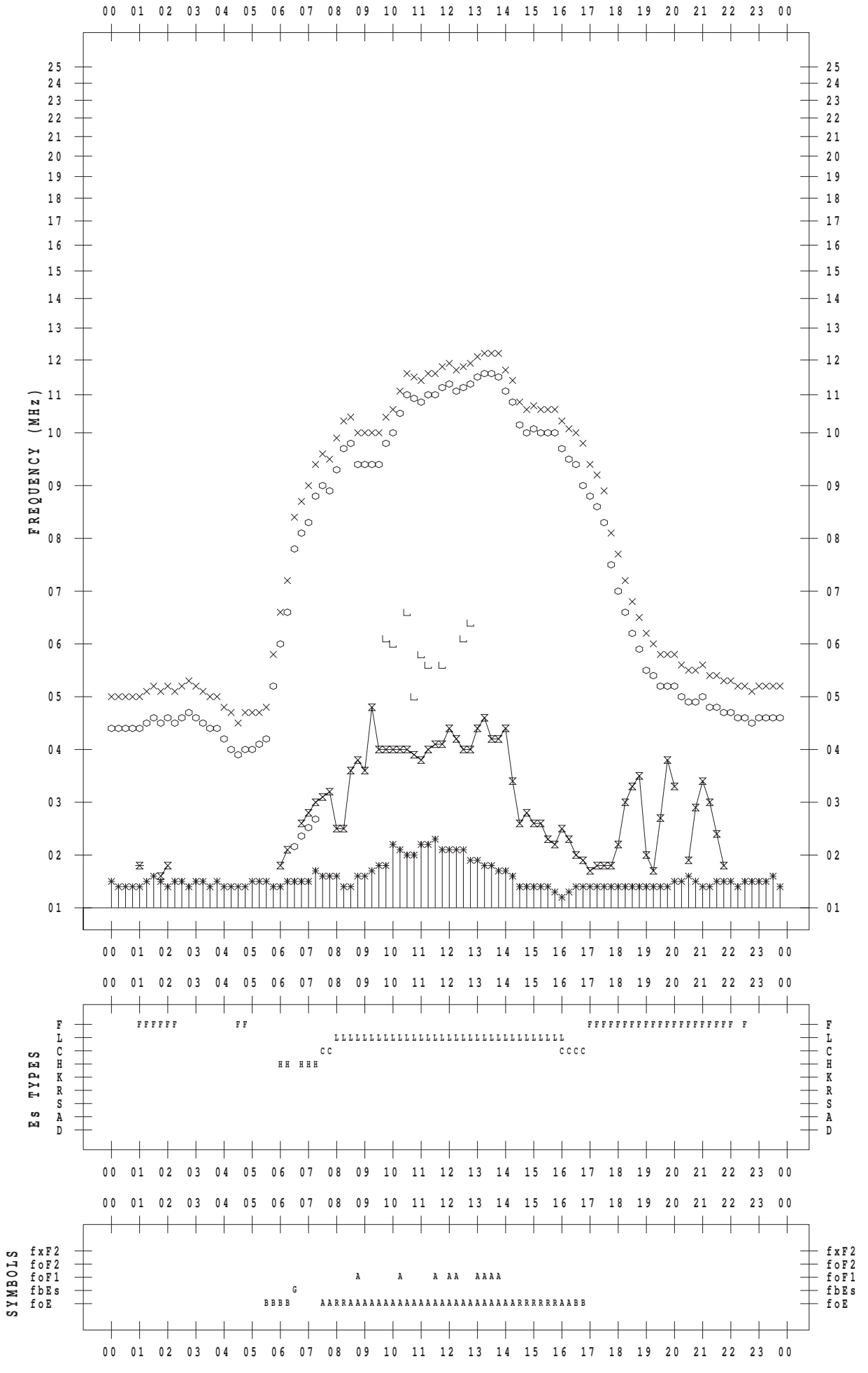
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/24

135 °E MEAN TIME



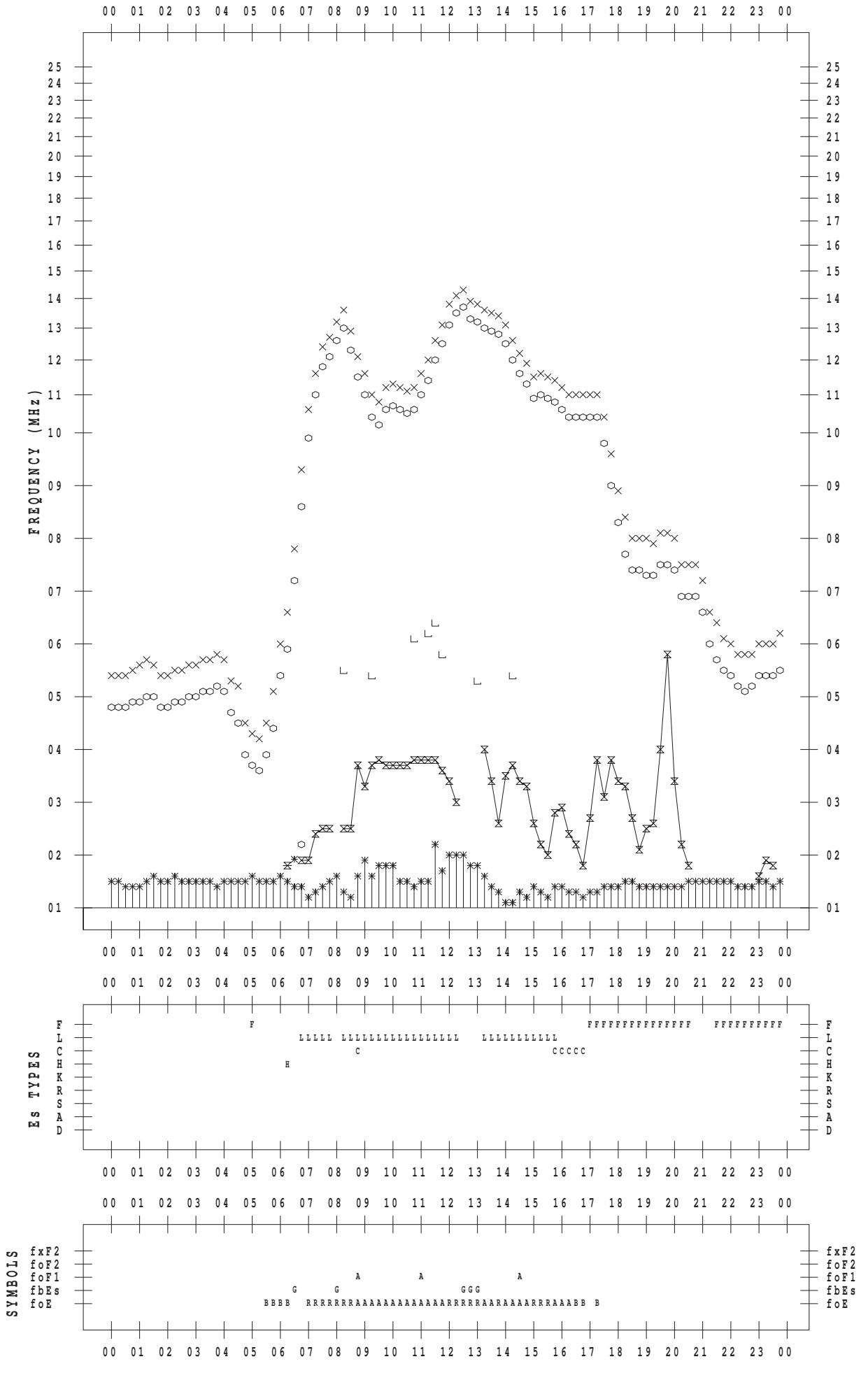
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/25

135 °E MEAN TIME



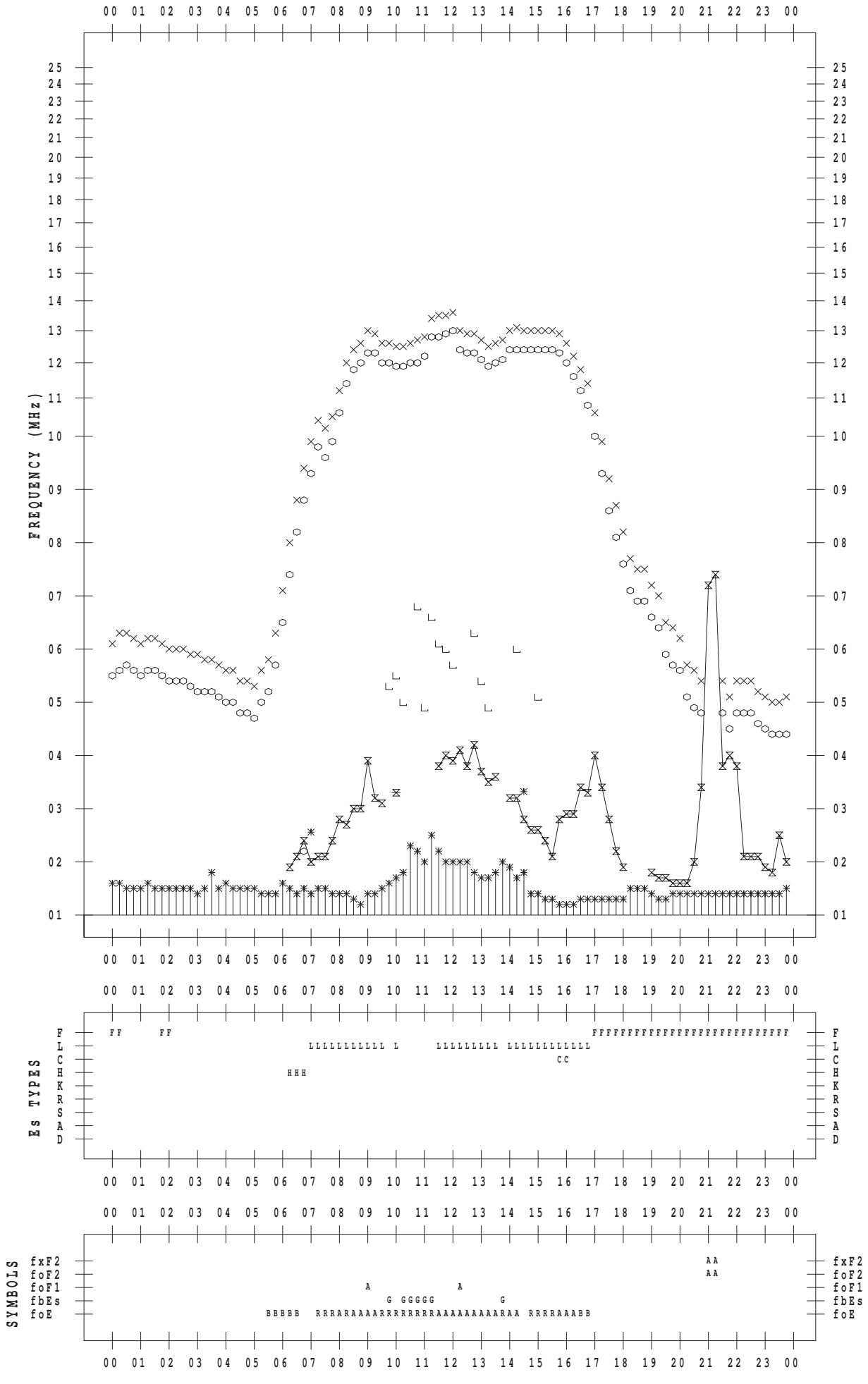
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/26

135 °E MEAN TIME



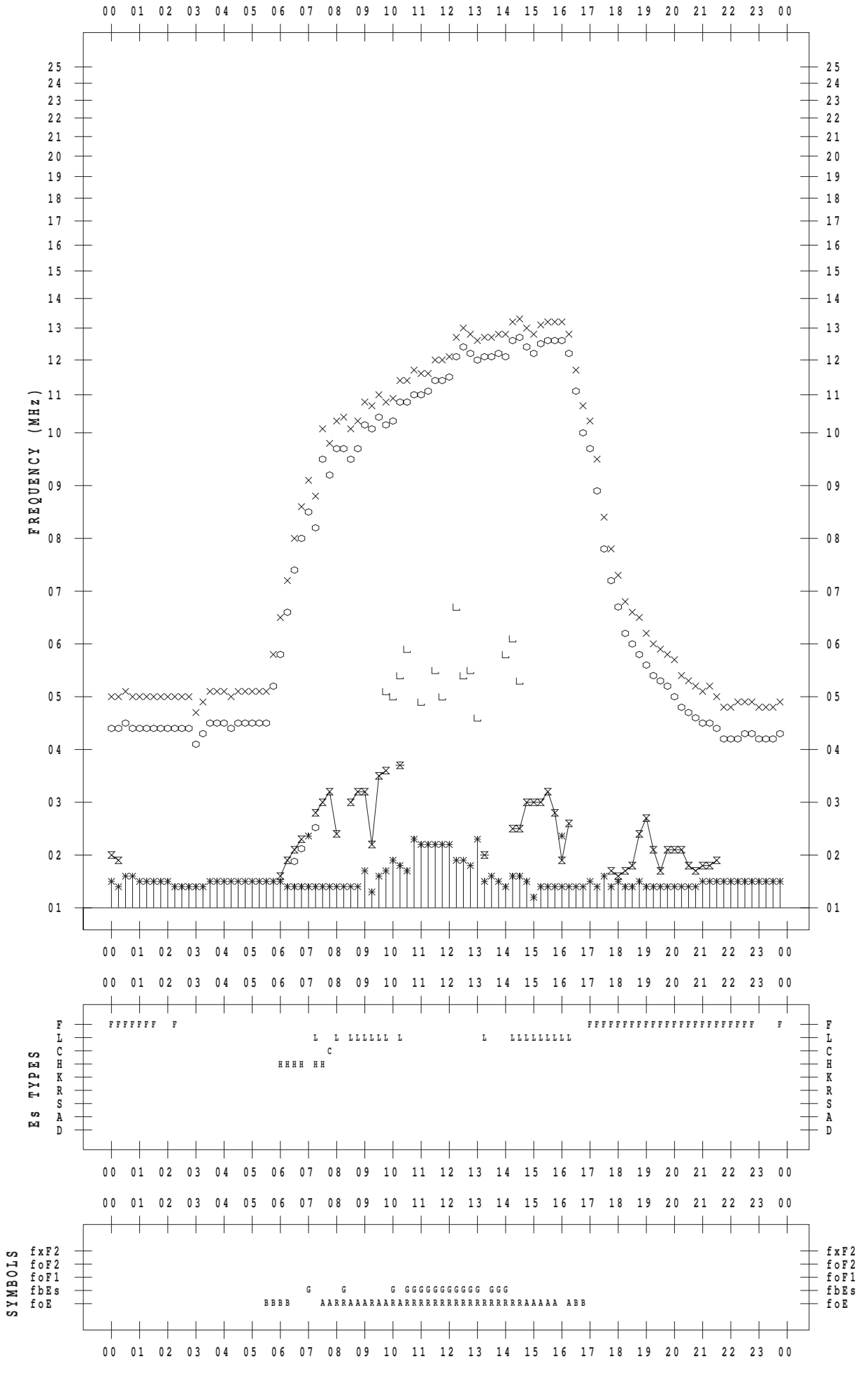
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/27

135 °E MEAN TIME



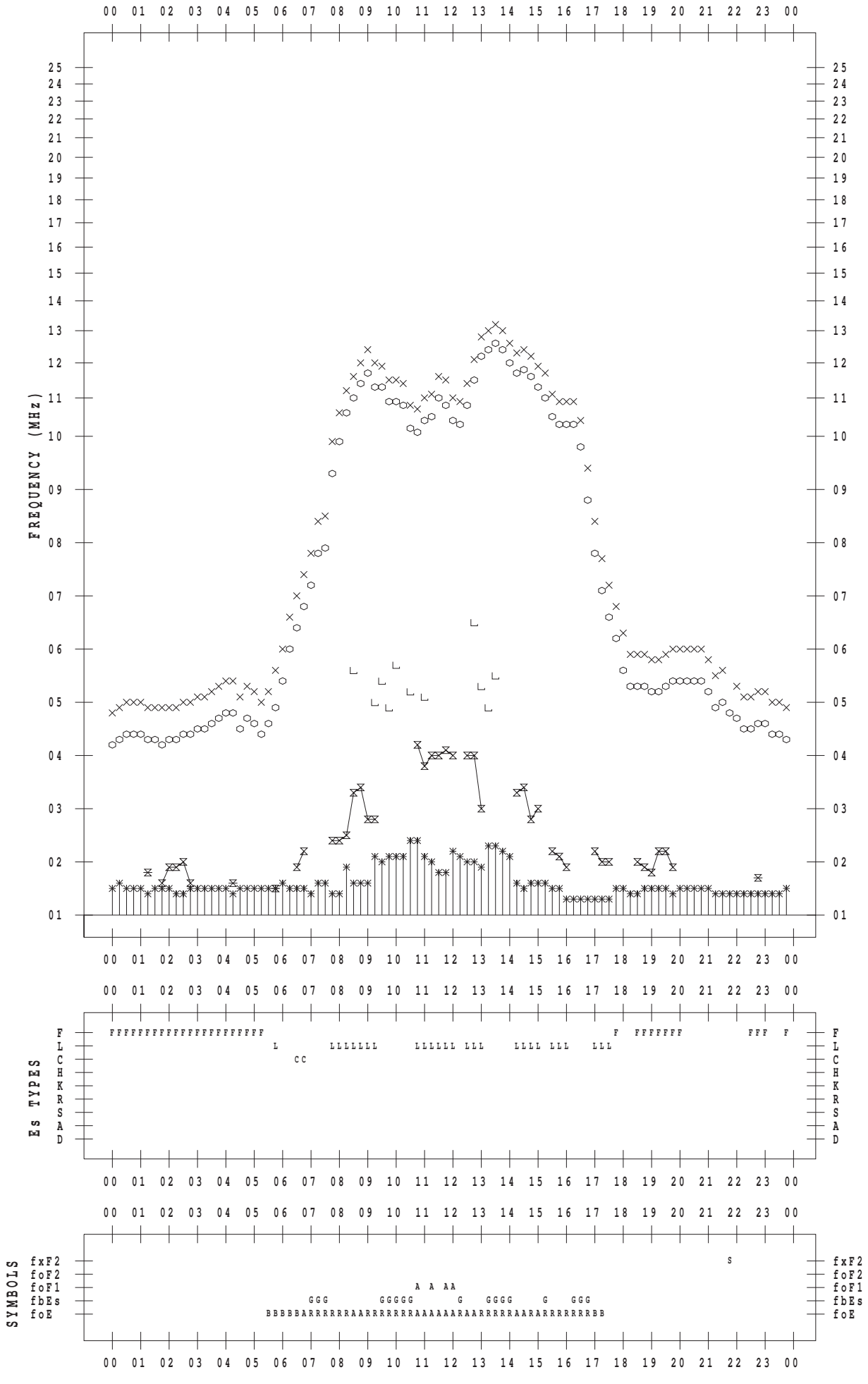
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/28

135 °E MEAN TIME



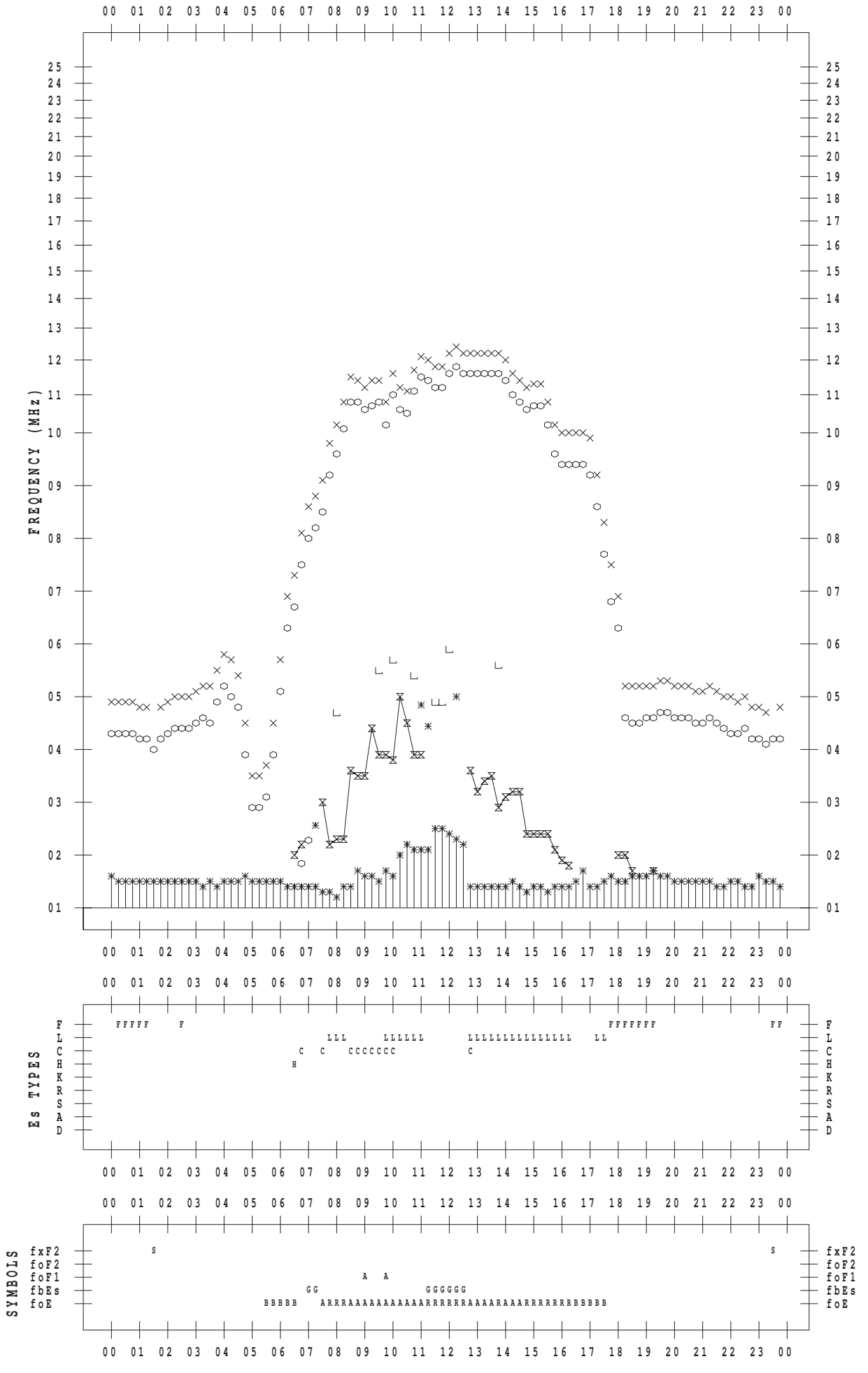
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/29

135 °E MEAN TIME



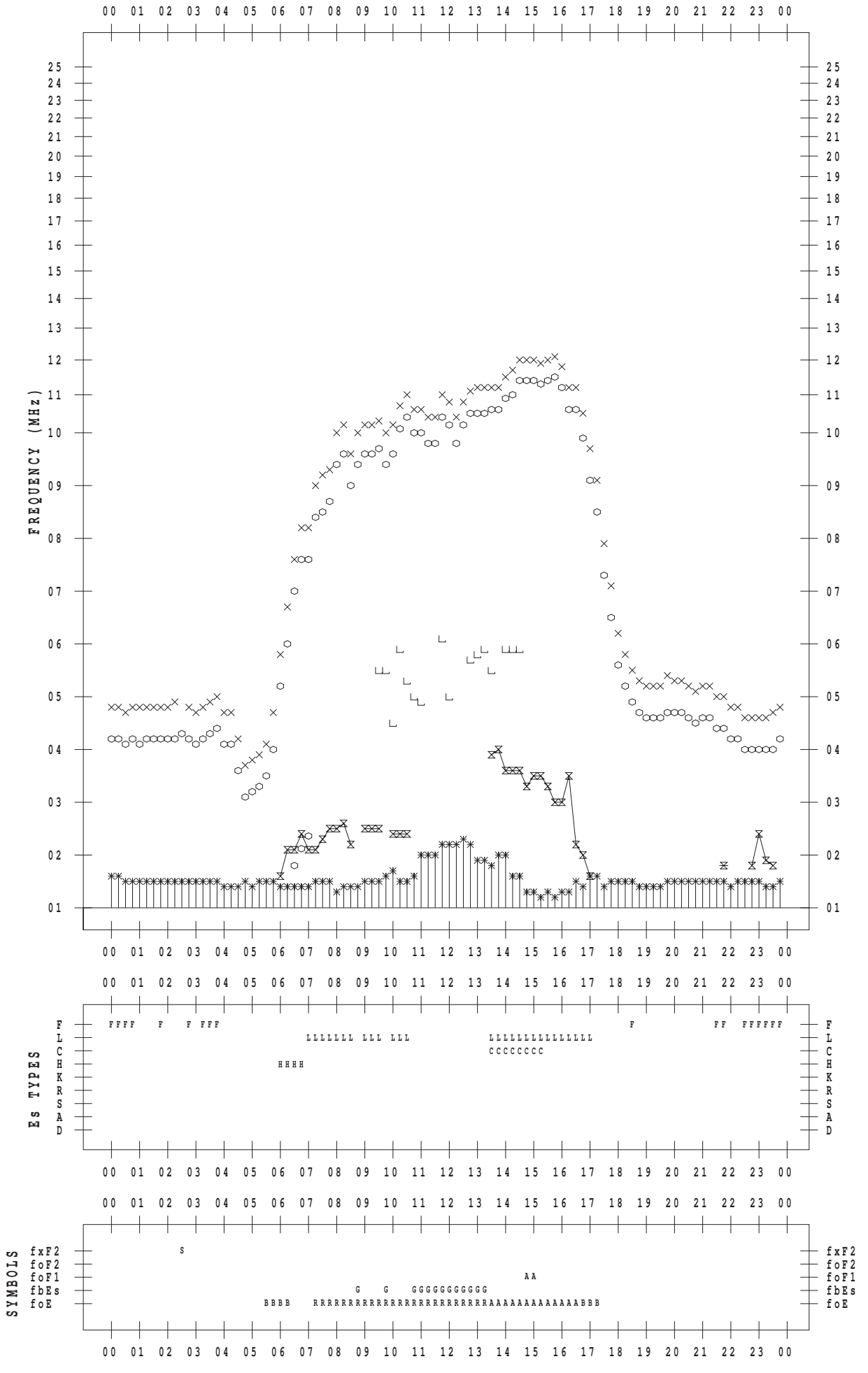
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/30

135 °E MEAN TIME



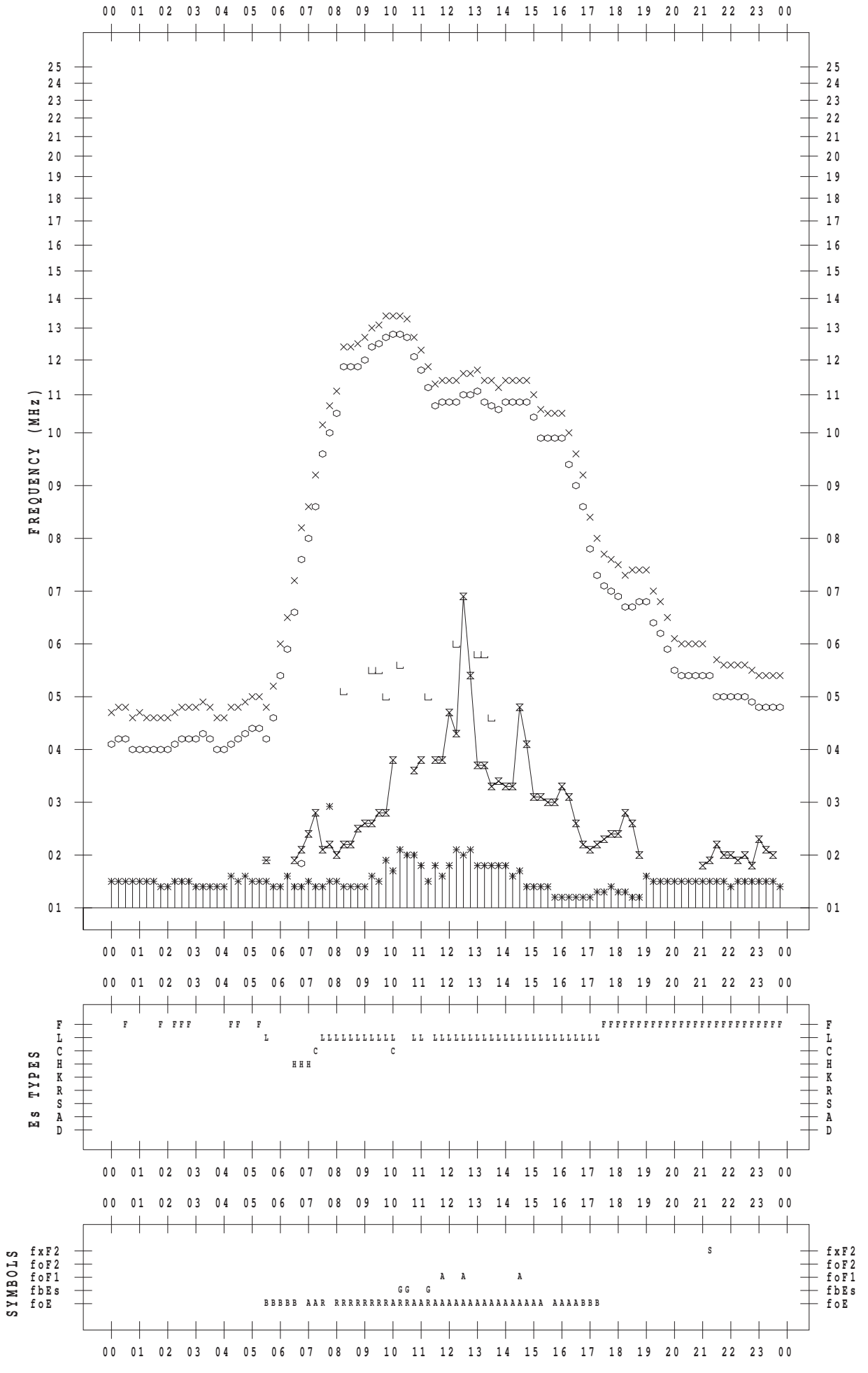
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/10/31

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso October 2011

Single-frequency observations

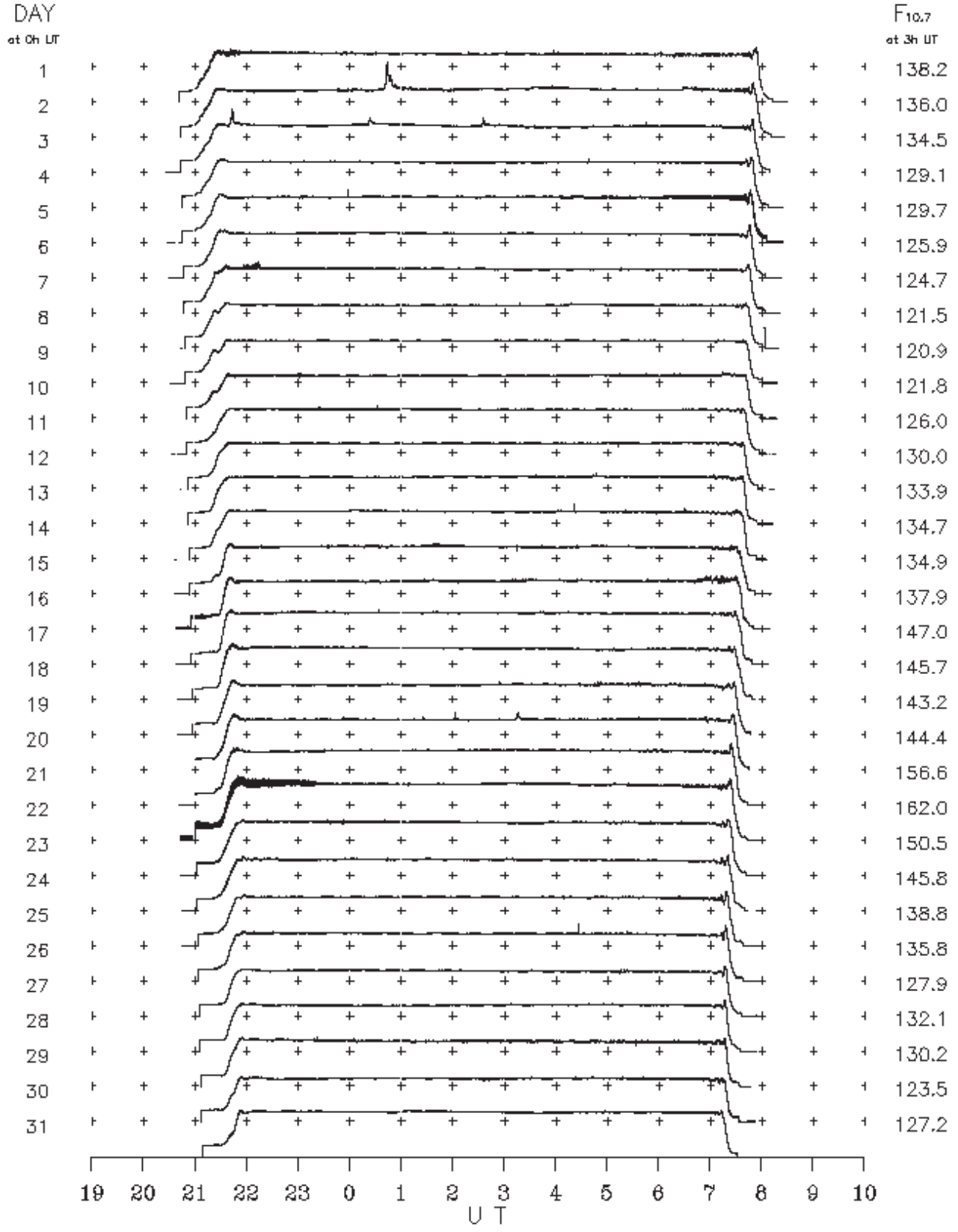
Normal observing period: 2040 - 0805 U.T. (sunrise to sunset)

OCT.	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
2	2800	7 C	0040.0	0045.0	15.0	70	-	
2	2800	8 S	2140.0	2145.0	7.0	40	-	
3	2800	1 S	0023.0	0024.0	4.0	15	-	
3	2800	7 C	0233.0	0236.0	5.0	15	-	
17	2800	1 S	0034.0	0034.0	1.0	5	-	
20	2800	4 S/F	0202.0	0203.0	3.0	10	-	
20	2800	1 S	0313.0	0316.0	5.0	15	-	

B.Solar Radio Emission

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

October 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/2011/10/