F-738

IONOSPHERIC DATA IN JAPAN

FOR JUNE 2010

VOL. 62 NO. 6

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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

JUN. 2010

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

HOURLY VALUES OF fEs AT Wakkanai

JUN. 2010

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	30	26	24	G	G	37	39	42	45	48	67	51	41	G	59	58	59	56	72	43	44	54	39	33
2	73	33	33	G	29	36	52	48	51	57	52	G	52	60	G	40	37	40	49	44	29	25	G	G
3	30	56	58	42	37	67	74	71	56	40	48	G	G	G	G	G	38	44	G	42	52	33	41	34
4	G	28	G	29	34	37	38	46	50	52	48	G	G	57	59	94	102	103	74	93	84	73	83	59
5	41	52	38	35	28	43	58	125	81	73	74	65	46	72	82	59	54	62	160	112	93	112	73	59
6	81	68	48		39	68	76	74	66	69	61	70	68	68	70	63	72		77	74	49	60	40	23
7	39	G	G	24	G	43	54	62	71	54	67	53	50	G	G	45	38	40	34	29	40	32	24	G
8	25	27	G	G	G		44	59	76	52	G	61	G	G	G	39	41	50	51	36	29	38	G	23
9	G	G	G	G	27	33	48	70	50	50	C	C	C	C	C	C	C	C	85	72	92	80	92	70
10	54	34	31	30	27	39	46	73	71	C	C	C	C	C	C	C	C	50	42	46	40	70	92	68
11	60	39	33	25		42		51	44	58	62	62	76	60	55	40	80	90	82	46	41	44	32	59
12	27	G	27	G		38	45	57	52	66		70	66	50	39	44	G	40	50	52	40	33	36	G
13	G	G	G	G		32	44	56	60	78	56	70	G	G	G	G	50	80	55	51	41	27	34	35
14	32		G	27			52	48	49	58	59	61	G	G	51	40	42	67	40	61	35	40	28	37
15	G	25	G	G	27	36	54	51	65	62	64	50	64	G	45	39	G	43	38	38	47	33	34	38
16	40	39	40	32	33	44	59	57	60	69	G	G	G	G	G	G	49	59	53	45	37	44	39	24
17	G	G	25	32	G	44	73	69	96	125	68	60	G	G	50	G	40		54	51	46	29	26	59
18	G	41	48	35	26	38	48	60	72	90	75		50	42		128	126	57	84	52	73	56	57	73
19	59	29	34	39	58	40	43		57	62	69	92	91	70	97	74	110	87	144	92	51	85	90	68
20	60	41	49	G	G	G	51	73	70	72	67	71	71	81	77	117	80	120		73	93	67	42	60
21	33	36	40	33	28	G		68	70		65	66	97	42	61	88	75	72	82	73	72	48	49	60
22	72	37	60	43	29	G	48	65	66	41	G	79	146	88	52	72	46	71	59	40	43	71	72	72
23	67	38	33	32	28	36	63	73	71	72	123	62	62	52	60	40	67	70	73	67	94	115	72	72
24	52	44	55	59		64	94	90		102	76	51	G	G	66	92	137	129	78	66	72	57	73	72
25	49	53	58	50	42	36	70	67	75	74	122	118	88	76	86	66	86		139	89	103	72	58	29
26	G	29	G	G	33	48	73	118	102	69		G	G	43	68	68	76	75	93	80	73	103	41	31
27	27	38	26	26	40	72	71	58	62		50	52	50	G	58	65	70	112	72	72	48	49	33	G
28	G	G	35	38	39	39	47	62	128	72	73	81	97	41	56	54	61	67	72	50		104	70	60
29	49	44	57	26	80	44	33	61	56	71	50	67	127	G	55	48	40	44	32	G	70	29	24	G
30	29	26	G	24	28	G	38	G	53	69	40	G	G	59	72	58	57	54	116	96	115	48	33	26
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	29	25	28	28	29	29	27	26	27	28	28	27	28	28	26	29	30	29	30	30	30
MED	32	34	33	27	28	38	52	62	65	69	63	61	50	42	56	56	58	64	72	52	49	52	40	38
U Q	54	41	48	35	38	44	66	72	71	72	69	70	73	60	68	70	78	80	83	73	78	72	72	60
L Q	G	25	G	G	26	36	44	53	52	54	50	50	G	G	39	40	40	50	49	44	40	33	33	24

HOURLY VALUES OF fmin AT Wakkanai

JUN. 2010

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

HOURLY VALUES OF foF2 AT Kokubunji

JUN. 2010

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	46	44	A	45	36	44	55	63	A	A	A	A		63	62		A	A	A	A	78	A	A	A
2	A	A	A		A		A		A	A	A	A	A		A	A	A	A	A	62	A	A	A	A
3	A	A	A		37	A	A	A			A	A	58	A	A	A	A	46	51	54	65	66	54	54
4	A		A	A	A	A	64	71	A	A	A	A	A		A	A	A	A	A	A	A	44	54	52
5	A	46	A	47	45	45	49	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A
6		38				A	A	A	A	A	A	A		A	A	55	55	51	A	A	A	A	52	A
7	A	41	A	A	39	45	A	A	A	A	A	A		A	A	A	67	69	67	A	A	A	54	
8	47	41	42	41	41	40	A	A	A	A	A	A	A		A	A	A	63	61	53	54	48	A	44
9	39	39	38	34		45	44	47	A	A	A	A	A	A	A		A	A	59	63	67	A	A	39
10	A	A	A	A	34	A	A	A	A	A	A	A	A		68	76	A		52	64	54	54		54
11	52	52	44	42	36	41	54	A	A	A	A	A	A		A	A	53	A	A	A	65	67	52	51
12	42	44	41	41	19	A	A	A	A	A	A	A	A	A	A	48	A	A	A	63		51	46	44
13	42	39	34	34	38	43	47	57	56	62					A		A	A	51	72	77	53	A	41
14	42	44	40	39	34	42	51	A	A	A		A	A	A	A	A	A	A		53	54	58	A	A
15	A	A	38		36	A	51	A	A	A	A	A	A	A	A	A	56	61	67	55	55	51	54	52
16	A	A	A	A	A	38	A		A	A	A	A	A	A	A		A	A	A		64	52	54	A
17	A	A	A	A		47	A	A	A	A	A	A	A	A	A				45	A	A	A	A	A
18	A	A	A	38	A	41	A		A	A	A	A	A	A		A	A	A	A	57	49	A	A	
19	44	44	A	A	44	44	52	58	54	54		A				A		44		46	A	51	A	A
20	A	A	A	A			45	59	A	A	A	A	A		A	A	A	A	67	A	54	A	A	A
21	42	A	A	A	A		60	A	A	A	A	A	A	A			A	A	64	66	54	A	54	51
22	A	A	A	A	32		A	67	A	A	A		A	A	A	A		A	A	A	A	66		47
23	A	A	42			41	49	52	A	A	A	A	A	A	A	A		54	63	A	A	53	44	
24	41	36	36	32	32	44	44	A	54	67	A	A	A	A			55	A	53	61	A	A	A	A
25	A	A	A	36	34	39	52	57		A	A	A	A	A	A	A	71		A	67	52	A	44	A
26	45	46	A	42	41	28	46	61	64	A	A	A	A	A	A		A	A	A	58	54	65	A	54
27	A	A	A	A	35	A	A	A	A	A		A	A	A	A		49	62	62	54	52	54	52	51
28	42	45	44	44		45	57	75	A		A	A	A	A	A	A	A	62	72	71	52	53	52	54
29	A	52	39	A	A	45		A	A	52	A	A	A	A	A		54	62	69	71	64	54	52	50
30	48	45	42	42	38	42	53	63	A	A	A	A	66	A	A	A	A	73	67	66	54	54	54	45
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	16	12	14	18	19	17	12	4	4			2	1	2	3	8	11	16	19	19	18	15	16
MED	42	44	40	41	36	43	51	60	55	58			62	63	65	55	55	62	62	62	54	54	52	51
U Q	46	45	42	42	39	45	54	65	60	64			66	31	68	76	61	63	67	66	65	58	54	53
L Q	42	40	38	36	34	41	46	57	54	53			58	31	62	48	53	51	52	54	54	51	52	44

HOURLY VALUES OF fEs AT Kokubunji

JUN. 2010

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	53	40	49	26	26	29	G	51	85	124	124	90	62	G	G	70	93	86	134	136	80	87	70	73
2	60	51	57	40	59	41	65	79	84	73	70	69	58	52	108	97	72	150	106	57	93	83	111	60
3	58	58	67	60	32	40	60	137	152		132	80	50	82	104	76	54	37	G	46	45	45	49	53
4	73		61	57	50	59	57	68	113	93	56	56	65		120	71	87	97	84	74	56	33	50	51
5	59	52	53	29	24	G	50	87	83	96	111	178	103	94	141	83	77	65	69	107		60	59	92
6	50	27	47	33	32	40	91	122	84	84	91	142	121	82	75	G	50	40	108		104	79	59	79
7	80	48	43	35	31	28	71	89	94	95	109	58		59	73	90	74	59	55	59	85	72	42	
8	27	34	24	39	33	28	48	106	73	65	61	71	102	100	83	79	59	50	40	50	33	47	73	33
9	26	26	26	G	23	G	G	47	73	62	75	65	114	97		103	129	93	60	27	59	80	60	48
10	50	40	43	51	31	38	86	86	94	124	111	116	74	51	61	68	112	61	35	40	34	37	74	48
11	48	32	39	32	35	29	45	87	154	102	71	87	54	73	59	74	46	94	94	94	69	58	70	
12	45	G	24	36	34	47	51	56	64	65	53	61	82	59	51	51	57	64	67	42	25		40	39
13	40	46	29	G	22	G	G	44	44	53	48		47		51	47	75	107	49	59	93	50	53	29
14	33	31	26	34	G	28	47	78	65	62	96	162	84	67	61	50	53	78	97	40	50	73	80	82
15	126	59	32	30	G	29	49	62	111	72	71	66	57	48	52	61	43	51	46	34	37	27	48	50
16	81		59	71	58	42	72	88	163			65	101	124	52	48	75	114	86	84		53	60	59
17	90	59	68	51	40	58	116	105	72	71	89	122	80	86	97		G	G	29	45	72	134	91	
18	59	51	59	27	50	G	53		53	71	41	53	78	79		66	78	55	71	39	30	57	46	48
19	51	57	52	51	26	34	41	G	38	41		43				50		41		33	60	33	45	73
20	56	49	40	33	27		38	45	90	71	61	116	185		52	78	60	87	78	80	57	82		47
21	56	54	35	42	50	29	39	62	82	67	61	63	129	62	52	57	72	82	52	27	58	93	33	39
22	53		79	58	32	35	68	59	129	109	119		50	78	57	76		82	115	105	85	79	58	59
23	53	40	47	33	35	29	50	56	87	82	85	119		89	112	134		50	35	86	56	35	26	24
24	26	34	29	G	G	33	37	73	G	G	71	57	74	80	47	50	50	75	57	60	86	60	52	68
25	82	84	59	30	26	30	32	55	53	72	110	112	83	60	70	87	79	60	78	62	52	72	31	52
26	58	28	57	29	40	G	G	41	G	51	144	79	70	89	52		126	104	80	106	50	65	127	80
27	57	60	72	52	58	33	52	60	81	52		120	107	154	82		G	34	G	36	45	55	49	31
28	31	50	33	31	47	42	51	69	120		59	58	67	65	53	82	86	40	35	52	47	30	40	40
29	59	49	36	51	50	30	G	53	62	G	78	51	56	54	70	G	G	G	G	29	34	36	35	45
30	G	28	G	26	G	31	G	41	53	107	97	61	57	94	113	67	82	39	G	26	52	39	53	49
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	30	30	30	29	30	29	30	27	27	28	27	26	27	27	27	30	29	29	28	29	29	27
MED	54	48	45	34	32	30	50	62	82	71	78	70	74	78	61	70	72	62	60	52	56	58	53	50
U Q	59	54	59	51	47	40	60	87	94	95	110	116	102	89	97	82	82	87	85	82	76	79	70	68
L Q	45	32	32	29	26	28	37	52	62	62	61	59	57	59	52	50	50	41	35	37	45	38	43	40

HOURLY VALUES OF fmin AT Kokubunji

JUN. 2010

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

HOURLY VALUES OF foF2 AT Yamagawa

JUN. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	46	37	A	48	A		A	A	A	A		63	71	65	A	63	A	74	64	A	A
2	40	39	37	34	A	40	55	A	A	A	A	A	A	A	A	A	A	75	89	A	A	54	A	A
3	A	A	39	40		A		A	A	A	A	A	A	A	A	A	62	A	A	A	73	52	A	A
4	A	A	52	46	37	35	A	64	64	A	A	A	A	62	74	67	A	A	A	82	A	54	52	52
5	52	52	48	50	46	42	48	60	A	A	A	A	A	A	A	70		A	A	A	A	54	A	42
6	47	48	47	42	36	32	44	A	A	A	A	A	A	A	70	71	63	60	56	58	A	A	A	A
7	A	A	A	A	A	A	A	A	A	A	A	A	A	A	62	A	A	81	75	A	A	A	A	52
8	A	52	A	42	A	A	A	A	A	A	A	A	A	A	A	A	60	64	55	A	A	53	A	A
9	A	A	A	37	A	36	46	42	A		A	A	A	A	A	A	83	72	71	A	75	58	54	A
10	42	40	37	34	34	34	60	46	A	A	A	A	A	A	A	A	A	85	85	81	74	65	54	48
11		44	49	45	41	39	44	54	57	58	A	A	A	A	A	A	A	68	A	A	55	62	54	54
12	A	44	A	44	45	42	A	A	A	A	A	A	A	A	A	A	67	59	55	52	52	A	54	
13	A	41	A	34	34	26	44	52	62	62		A				66	66	A	A	84	77	64	67	61
14	52	52	52	42		36	A	A	A	A	A	A	A	A	A	A	A	A	A	A	51	52	54	A
15	A	A	41	A	A	A	A	A	52	64	A	A	A	A	A	A	A	A	A	A	51	A	A	52
16	42	44	A	37	32	26	42	A	A	A	A	A	A	A		62	49	55	A	A	A	A	A	A
17	A	A	A	A	40	36	A	A	A	A	A	A	A	A	A	A	A	50	A	A	A	A	A	A
18	A	A	30	A	29	32	A	45	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A
19	A	A	A		26	32	47	56	54	A	A	A	A				56	62	57	47	53	53		44
20	A	A	A	A	30	28	44	A	A	58	A	A	A	A	A	A	A	A	A	A	A	A	A	41
21	42	41	40	36	A	32	44	A	44	50	A	A	A	A		A	53	70	59	61		A	50	A
22	A	44	46	42	40	36	51	58	53	54	A	52			A		55	64	A	67		A	52	A
23	A	A	A		A	A	56	55	A	A	A	A	A	A	A	A	A	A	A	77	77	54	44	43
24	44	44	38	34	32	36	44	50	A	A	A	A	A	A		A	62	A	A	A	A	A	A	A
25	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	66	A	52	71	A	A	A	A
26	A	A	34	34			43	53	54	A	A	A	A	A	A	57	A	A	A	A	54	54	58	A
27	A	A	41	34	A	A	46	A	A	A	A	A	A	61	A		61	62	63	55	51	53	52	52
28	52	52	47	47	44	A	48	60	84	56	A	A	A	58	A	63	72	80	78	76	47	66	61	50
29	50	48	52	52	46	47	50	A	A		A	A	A	A	A	A	55	63		71	65	44	54	54
30	51	50	46	44	45	45	62	57	A	A	A	A	66	A	64	A	A	A	72	A	52	67	58	52
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	16	18	22	18	20	20	14	9	7		1	1	3	5	8	16	16	14	13	16	18	15	14
MED	47	44	44	42	37	36	46	54	54	58		52	66	61	64	66	62	64	63	71	54	54	54	52
U Q	52	51	48	45	44	39	50	58	63	62		26	33	62	72	70	66	73	75	79	74	64	58	52
L Q	42	42	38	34	32	32	44	50	52	54		26	33	58	62	62	55	61	56	56	51	53	52	44

HOURLY VALUES OF fEs AT Yamagawa

JUN. 2010

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	58	90	56	49	50	51	51	60	58	86	74	116	64	43	51	56	52	80	74	86	87	32	73	49
2	33	33	44	38	46	26	40	56	70	96	67	68	91	59	83	88	77	84	61	157	88	56	59	58
3	50	48	41	30	28	49	40	72	74	58	67	92	110	94	95	118	52	82	58	62	51	78	59	86
4	71	74	40	58	24	110	79	36	51	60	81	50	46	42	42	64	79	78	102	53	74	32	G	34
5	51	48	36	27	27	24	32	G		100	79	78	132	174	116	71	95	108	74	73	60	G	37	29
6	33	39	30	G	G	G	32	74	71	64	116	71	66	78	52	51	49	44	34	45	77	82	106	92
7	80	92	59	40	40	50	49	63	64	72	104	77	73	79	54	76	82	67	61	116	79	115		41
8	67	59	60	58	49	50	73	95	146	80	81	55	58	73	64	46	50	48	44	50	57	39	53	56
9	70	84	54	47	69	G	30	50	90		113	68	91	123	64	68	46	83	60	85	70	51	48	59
10	34	36	28	32	49	G	30	36	54	80	152	144	79	82	163		107	36	G	33	30	27	57	43
11	40	26	36	24	37	48	47	46	45	64	173	132	77	51	73	135	61	63	81	65	116	46	40	59
12	80	48	84	36	48	51	61	83	71	77	90	63	59	64	71	84	51	52	37	32	28		32	65
13	71	36	40	49	G	40	32	44	42	42		48	43	51	50	G	49	81	86	58	51		48	49
14	46	36	44	49	36	G	53	82	70	78	176	116	60	78	58	96	125	110	174	116	40	40	49	70
15	59	60	59	86	73	59	81	66	55	63	118	178	67	60	60	60	85	116	116	59	33	84	58	34
16	49	41	52	86	G	G	35	93	95	91	79	85	60	56		47	46	51	79				70	73
17	80	59	79	57	32	G	50	67	93	118	87	151	169	86	92	78	59	44	82	80	85	87	84	58
18	72	92	92	92	G	G	83	40	65	74	94	60	59	79	80	92	122	72		77	49	77	50	77
19	104	54	73		30	G	29	40	56	70	48	48	42	G	G	40	38	39	57	39	46	46	49	
20	58	57	46	50	34	G	45	52	54	54	67	60	63	81	68	52	69	79	137	144	114	115	115	27
21	29	37	24	46	41	35	32	54	67	47	101	82	64	64	48	66	50	40	35	32	40	52	34	
22	58	41	51	39	29	28	48	51	60	46	63	42	G	G	47	G	G	42	76	37	40	70	48	59
23	72	72	58	43	51	46	37	40	56	71	68	58	97	98	88	103	107	125	106	49	50	48	33	32
24	33	46	40	28	G	G	33	46	124	131	101	123	96	43	G	62	56	61	57	60	92	58	84	70
25	59	57	58	46	48	45	61	73	72	86	120	96	162	149	80	78	42	82	54	33	60	53	46	58
26	49	58	33	G	43	48	32	60	73	153	66	116	162	69	87	43	56	91	157	160	43	33	44	70
27		70	70	33	43	107	36	60	96	76	64	66	72	75	61	41	G	G	G	G	24	36	34	54
28	42	81	43	47	58	54	30	39	56	56	56	58	87	50	116	66	52	69	58	36	59	56	38	54
29	36	27	34	G	24	24	34	54	70		69	72	78	72	60	49	51	42	33	33	59	73	33	36
30	32	37	37	G	G	G	34	46	51	54	52	86	52	72	59	108	98	154	36	73	39	84	34	28
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	29	30	30	30	30	29	28	29	30	30	30	29	29	30	30	29	29	29	27	29	28
MED	58	51	45	43	36	32	38	54	67	73	81	74	70	72	64	66	54	70	61	59	57	53	48	57
U Q	71	70	59	49	48	50	51	67	73	86	108	116	91	81	85	86	82	83	84	82	78	78	59	67
L Q	38	37	37	29	24	G	32	44	55	59	67	60	59	51	51	48	49	44	40	36	40	39	35	38

HOURLY VALUES OF fmin AT Yamagawa

JUN. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14	14	15	14	14	14	14	14	15	16	22	22	22	17	18	16	14	14	14	14	14	14	14
2	14	14	14	15	14	14	14	14	14	16	22	20	23	20	20	18	15	16	14	14	14	14	14	14
3	14	15	14	14	14	14	14	14	14	18	21	18	26	27	22	21	18	14	15	14	14	14	14	15
4	14	14	15	14	14	15	14	14	16	18	18	23	23	21	35	24	20	16	14	14	14	14	14	14
5	14	14	15	14	14	14	14	14	14	17	18	18	18	24	26	22	18	15	14	14	15	15	14	16
6	14	14	14	15	14	14	14	14	14	18	21	23	26	21	21	21	18	14	14	15	14	14	14	15
7	14	14	14	15	14	14	14	14	15	17	21	24	18	26	20	26	15	14	14	14	15	14	14	14
8	15	14	14	14	15	14	14	14	17	18	18	20	18	21	20	17	18	14	14	15	15	14	14	14
9	14	14	14	14	14	14	14	14	14		18	20	27	27	22	18	18	14	14	14	14	14	14	14
10	14	14	14	14	14	15	15	14	15	20	22	22	34	21	21	18	15	15	14	14	15	15	15	14
11	14	14	14	14	14	14	14	14	16	20	20	23	29	30	20	20	17	15	14	15	15	15	14	15
12	14	14	14	14	14	14	14	14	14	17	38	26	34	20	22	20	18	14	14	15	14	14	14	14
13	14	14	14	14	14	14	15	14	14	16		26	27	23	21	24	15	18	14	14	14	14	14	14
14	14	14	14	14	14	15	14	14	15	15	17	27	18	20	18	18	20	15	14	14	15	14	14	14
15	14	15	14	14	14	14	14	14	14	15	18	23	30	21	29	18	16	14	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	14	14	18	18	34	34		22	18	15	14	14	14	14	14	14
17	14	14	14	14	14	14	14	14	14	16	18	20	20	33	24	21	21	16	14	14	14	14	14	14
18	14	14	14	14	15	14	14	14	15	17	21	26	22	26	18	20	15	14		14	14	17	15	14
19	14	14	14		14	14	14	14	14	27	20	18	21	21	21	18	16	14	14	14	15	15	15	14
20	14	15	14	14	15	18	14	14	14	15	18	21	34	21	24	18	16	14	15	14	15	14	14	14
21	14	14	15	14	15	14	14	14	15	17	17	27	33	23	18	24	18	14	14	14	14	14	14	14
22	14	14	14	14	14	14	14	14	15	16	21	22	23	21	21	23	18	14	14	14	14	15	15	14
23	14	14	14	16	14	14	14	14	16	17	17	18	20	27	22	20	17	14	14	14	14	15	14	15
24	14	14	15	15	14	15	14	14	14	16	20	22	20	22	22	17	14	14	14	14	14	14	15	15
25	14	15	14	14	14	14	14	14	14	16	18	23	22	21	34	18	16	14	15	14	15	14	14	14
26	14	14	14	14	14	14	16	14	16	15	16	18	20	21	35	18	17	14	14	14	14	14	15	14
27	14	14	14	15	14	14	14	14	15	17	18	22	20	21	23	18	21	17	14	17	15	14	14	14
28	14	14	14	14	14	14	17	14	16	14	21	20	22	21	23	20	17	14	14	14	15	14	15	14
29	14	14	15	14	15	14	14	14	17		20	18	21	27	23	23	17	14	14	14	14	14	14	14
30	14	15	14	14	14	14	15	14	14	16	17	22	24	24	20	17	15	16	14	14	14	14	14	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	29	30	30	30	30	30	28	29	30	30	30	29	30	30	30	29	30	30	30	30	30
MED	14	14	14	14	14	14	14	14	14	16	18	22	22	22	22	20	17	14	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	15	17	21	23	27	26	23	22	18	15	14	14	15	14	14	14
L Q	14	14	14	14	14	14	14	14	14	15	18	20	20	21	20	18	16	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

JUN. 2010

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	36	42	33	35	A	A	42	46	61	A	A	A	A	A	67	75	72	73	78	77	A	A	A	38
2	A	A	A		32	A	48	47	A	62	A	A	A		A	A	A	92	A	66	A	A	A	47
3	A	A	A	42	31		A	52	A	A	66	77	A	A	A	A	76	70	72	82	63		51	
4	A	A	A	35	A	A	A	58	63	A	A	A	A		78	72	A	A	87	88	67	52	49	
5	53	50	44	44	32	42	42	69	55	A	A	A	A	A	A	87	A	A	76	74	A	40	A	50
6	46	44	48	44	41	32	44	64	53	A	A	A	A	64	77	81	77	76	75	A	54	58	A	A
7	A	A	A		A	A	30	52	63	A	A	A	A	A	A	93	102	105	91	A	53	54	A	A
8	45	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	74	66		A	51		41
9	41	A	A		26		45	57	A	47		A	A	A		76	90	A	79	A	A	A	54	47
10	43		36	34	30	35	29	46	A	A	A	A	A	77	80	90	88	90	96	86	86	64	52	50
11	45	43	45	42	A	A	46	45	55	62	149	A	A	A	A	A		A	A	A	A	67		51
12	46	43	42	41	34		48	69	A	A	A	A	A	65	73	85	87	A	A	A	A	66		A
13	71	42		29	30	26	41	56	A	60	59	64			73	80		A	A	A	78	78	80	74
14	73	67	76	44	44	A	A	A	A	A	A	A	A	A	A	A	66	A	A	A	A	A		A
15	A	A	44	A	A	A	46	A	A	A	A	A	A	A	A	A	A	86	77	A	A	A		46
16	A	A		A			42	61	61	A	A	A				74	84	67	66	A	A	A	54	
17		46	A	A	A	A	A	A	A	A	A	A	A	A	A	A		58	53	A	52	46	A	A
18	A	A	35	A	A	A	A	44	A	A	A	A	A	A	A	A	A	A	A	54	A	A	A	
19		A	A	A			42	56				A	A				62	72	68	62	46	A	A	41
20		A	30	A	A		41	A	A	A	A	A			A	A	A	71	80	80	A	A	A	
21	A		42	A	A		37	46	A	A	A	A	A	A	A		67	74	77	72	67	64	52	43
22	42		A		32	37	45	44	A	57	61						A	A	71	65	67	54		34
23	A	A			29		50	A	A	A	A	A	A	A	A	A	A	A	94	87	60	54		
24		34	32		29		40	50	62		A	A	A		64	A	A	62	A	58	A	A	A	A
25	A	A		A		29	41	A	A	A	57				A	76	A	69	74	55	50			
26			A			31	38	47	60	55	61	A	64		A			66	68	A	A	A	52	A
27	A	A	A	A	A		41	56	59	A	A	A		66		A	68	67	64	67	54	52		47
28	42	45	42	45	45	A	41	61	64	52		A	A	A	A	62	A	86	84	78	A	66	62	52
29	52	52	52	54		45	51	47	A	A	A	A	A	A	A	A	A	67	68	A	A	67	54	44
30	42	A	44	40	30	40	54	A	A	A	A	A	A	A	A	70	A	81	84		77	66	54	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	11	15	13	14	9	24	22	11	7	6	2	1	4	7	13	12	20	23	16	14	17	11	15
MED	45	44	42	42	32	35	42	52	61	57	61	70	64	66	73	76	76	72	76	73	62	58	54	47
U Q	52	50	45	44	34	41	46	58	63	62	66	77	32	71	78	86	87	83	84	81	67	66	54	50
L Q	42	42	35	35	30	30	41	46	55	52	59	64	32	64	67	73	67	67	68	63	53	52	52	41

HOURLY VALUES OF fEs AT Okinawa

JUN. 2010

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	36	26	30	33	50	52	G	37	68	82	82	48	48	60	47	G	48	55	67	61	108	81	40	37
2	36	32	51	G	28	40	38	36	62	G	57	73	103		82	81	82	75	154	72	72	65	58	40
3	72	59	51	51	31	28	42	44	125	69	66	51	102	114	128	78	49	54	59	52	34	32	46	48
4	109	80	68	36	46	60	94	71	58	72	70	51	50	G	G	57	70	76	79	61	49	40	34	
5	28	44	33	G	G	G	G	35	49	51	92	182	153	106	100	84	92	95	79	57	84	48	44	38
6	32	37	G	G	G	G	G	G	G	92	89	92	65	49	42	41	66	62	50	83	72		65	59
7	48	59	57	49	72	40	37	52	61	83	135	112	112	106	138	72	97	73	71	65	39		80	51
8	50	70	59	52	70	50	56	108	163	109	184	126	69	75	77	77	100	57	44	36	57	34	30	G
9	28	48	50	28	G	29	28	40	71	103		59	67	62	50	46	70	95	93	82	92	59	48	33
10	28		G	G	G	G	34	G	54	58	63	116	102	79	73	G	G	G	G	G	36	26	34	44
11	29	27	G	29	52	39	G	51	48	60	48		52	134	73	107	72	108	104	130	74	45	35	29
12	36	G	G	G	G		27	40	107	91	82	60	57		65	68	71	86	88	84		45	33	68
13	90	33	47	32	G	35	30	40	89	46	46	50	G		G	67	93	94	136	150	92	40	54	57
14	59	52	59	43	58	81	90	73	70	125	76	163	91	74	65	107	67	114	130	94	128	83	48	58
15	132	68	51	30	39	43	133	71	112	174	108	118	111	75	96	170	135	78	65	112	78	92	38	34
16	57	38	30	34	29	28	32	42	59	87	89	51				G	58	68	67	69	58	82	58	50
17	40	34	90	50	84	52		94	96	88	138	136	96	178	93	67	53	G	44	86	58	27	48	47
18	56	57	48	50	52	44	50	37	58	66	72	68	61	61	51	80	60	85	82	67	68	70	50	36
19	33		91	40			G	40	37	46	54	50	42	G			G	37	47	43	38	59	87	54
20	37	56	28	42	50	G	31	62	78	62	90	55			64	56	62	62	74	71	93	87	90	38
21	43		38	39	50	37	30	40	53	81	68	52	61	71	46		G	36	41	31	28	G	28	G
22	G	43	57		G	27	G	37	48	48	G						49	58	57	52	25	30		30
23	48	36	34	31	G		40	67	48	70	78	62	95	104	97	111	154	156	81	39	35	33	30	28
24	G	G	G		G	G	G	G	G	50	68	72	96		G	89	83	G	118	44	72	79	53	59
25	58	40	32	34	G	G	35	70	92	84	50		44		86	59	81	G	40	28	50	36	35	31
26	34	30	38	36	G	G	27	42	46	50	48	93	G	53	64	G		45	52	90	104	59	69	50
27	83	84		48	50	G	30	36	45	51	60	56	60	50	50	51	G	G	G	G	G	23		40
28	38	32	30	33	24	54	G	G	37	41	47	55	54	70	58	48	76	58	62	104	88	36	47	36
29	46	28	35	34	G	G	G	42	58	61	70	77	106	102	91	74	61	54	58	80	69	54	36	43
30	29	72	33	30	G	28	36	94	50	66	70	67	82	80	182	82	91	47	103	103	G	27	G	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	29	28	29	27	29	30	30	30	29	27	27	22	27	27	29	30	30	30	29	28	28	28
MED	39	40	38	34	28	29	30	41	58	68	70	67	67	74	65	68	70	60	67	68	68	45	46	40
U Q	57	59	54	42	50	44	39	67	78	87	89	112	102	104	93	82	87	85	88	86	86	67	56	50
L Q	32	32	30	29	G	G	G	37	48	51	55	52	52	60	50	48	51	45	50	44	37	32	34	33

HOURLY VALUES OF fmin AT Okinawa

JUN. 2010

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	15	15	15	15	14	14	14	17	20	26	27	26	39	29	36	50	30	26	20	14	15	15	14	14
2	14	14	17	23	14	16	15	22	28	30	34	39	42		38	35	33	24	17	15	15	15	18	21
3	14	14	14	15	14	14	15	14	21	28	29	28	35	39	30	23	21	20	14	15	17	14	22	15
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11	16	16	22	15	15	15	26	22	27	30	33	35	36	35	35	29	26	20	14	14	14	15	14	14
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14	14	17	14	16	15	16	16	14	21	28	32	29	29	32	40	36	32	27	21	14	20	14	15	14
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18	15	15	15	17	15	15	15	14	22	30	34	35	38	36	36	34	27	26	14	14	17	17	18	16
19	16	17	16	14			20	27	22	23	27	30	29	28			20	28	14	14	28	15	15	17
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21	14		14	15	14	14	15	14	21	27	32	35	36	30	29		44	28	14	14	14	18	15	15
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31																								
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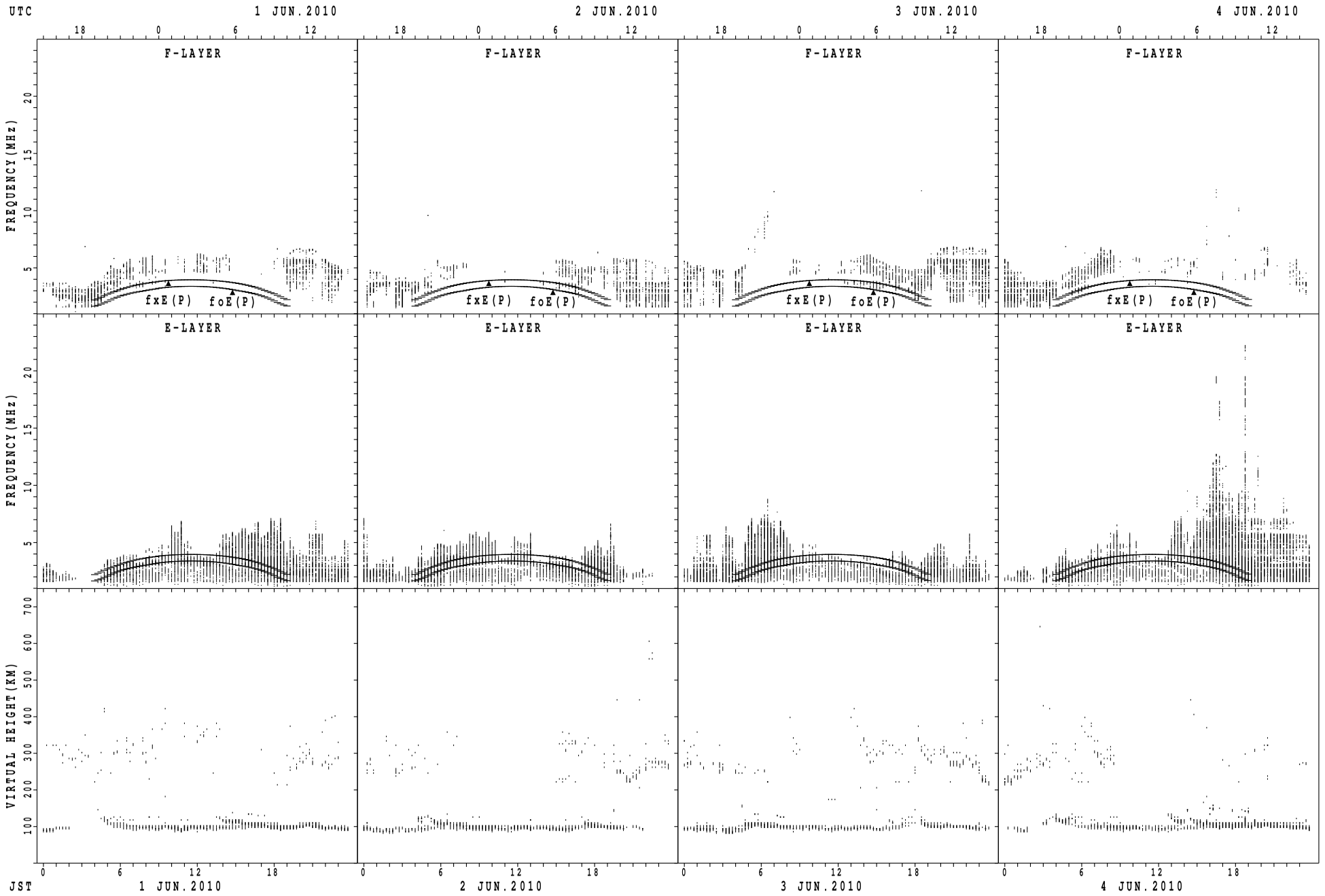
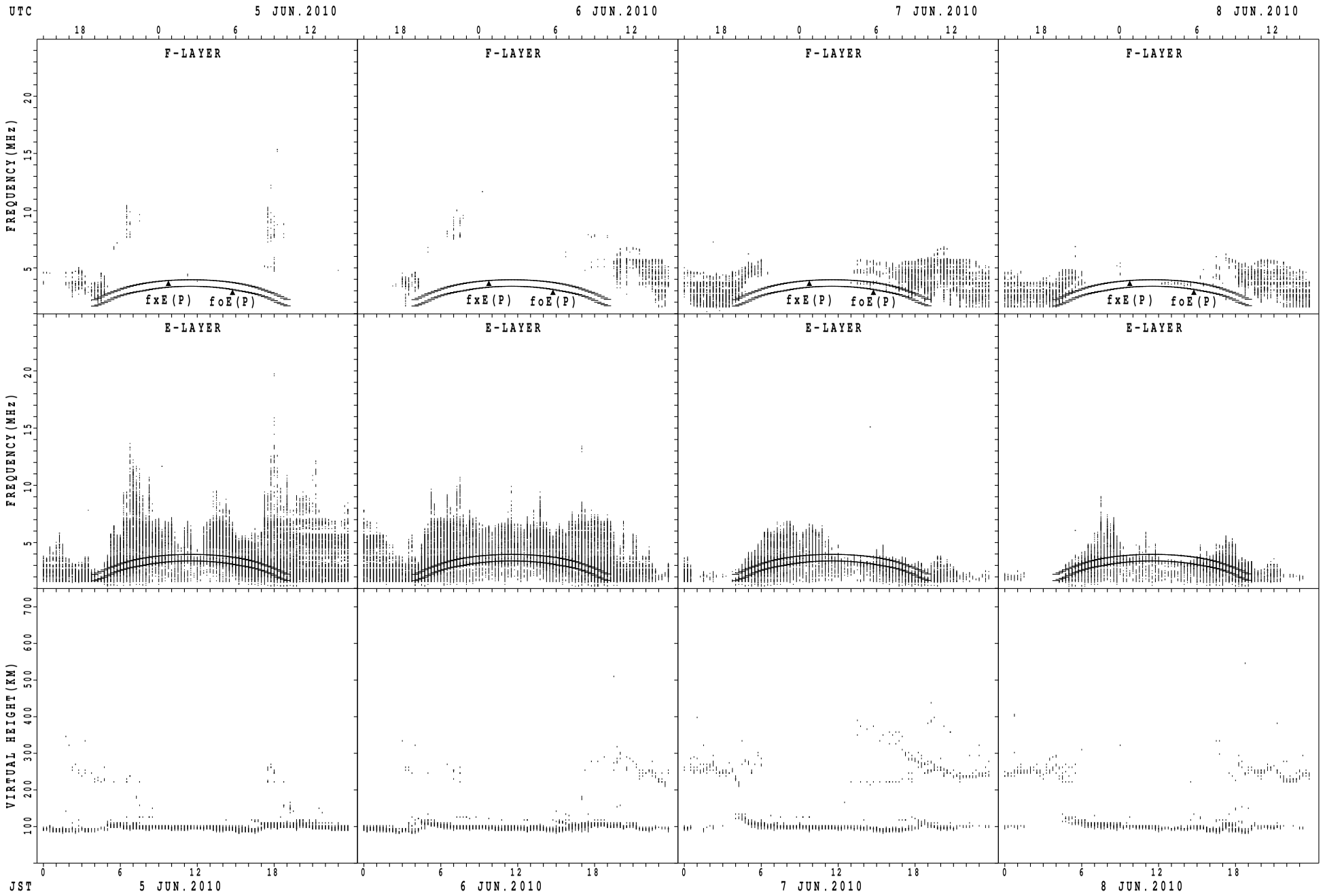
CNT	30	28	30	28	29	27	30	30	30	30	29	28	27	23	27	27	29	30	30	30	30	30	28	28
MED	15	15	15	15	16	15	14	14	20	30	33	34	35	34	35	34	30	25	14	14	15	15	15	14
U Q	16	16	16	16	20	17	16	18	22	30	34	35	38	36	38	36	32	27	18	15	16	15	16	15
L Q	14	14	14	14	15	14	14	14	17	27	29	32	32	32	30	29	25	21	14	14	14	14	14	14

SUMMARY PLOTS AT Wakkanai



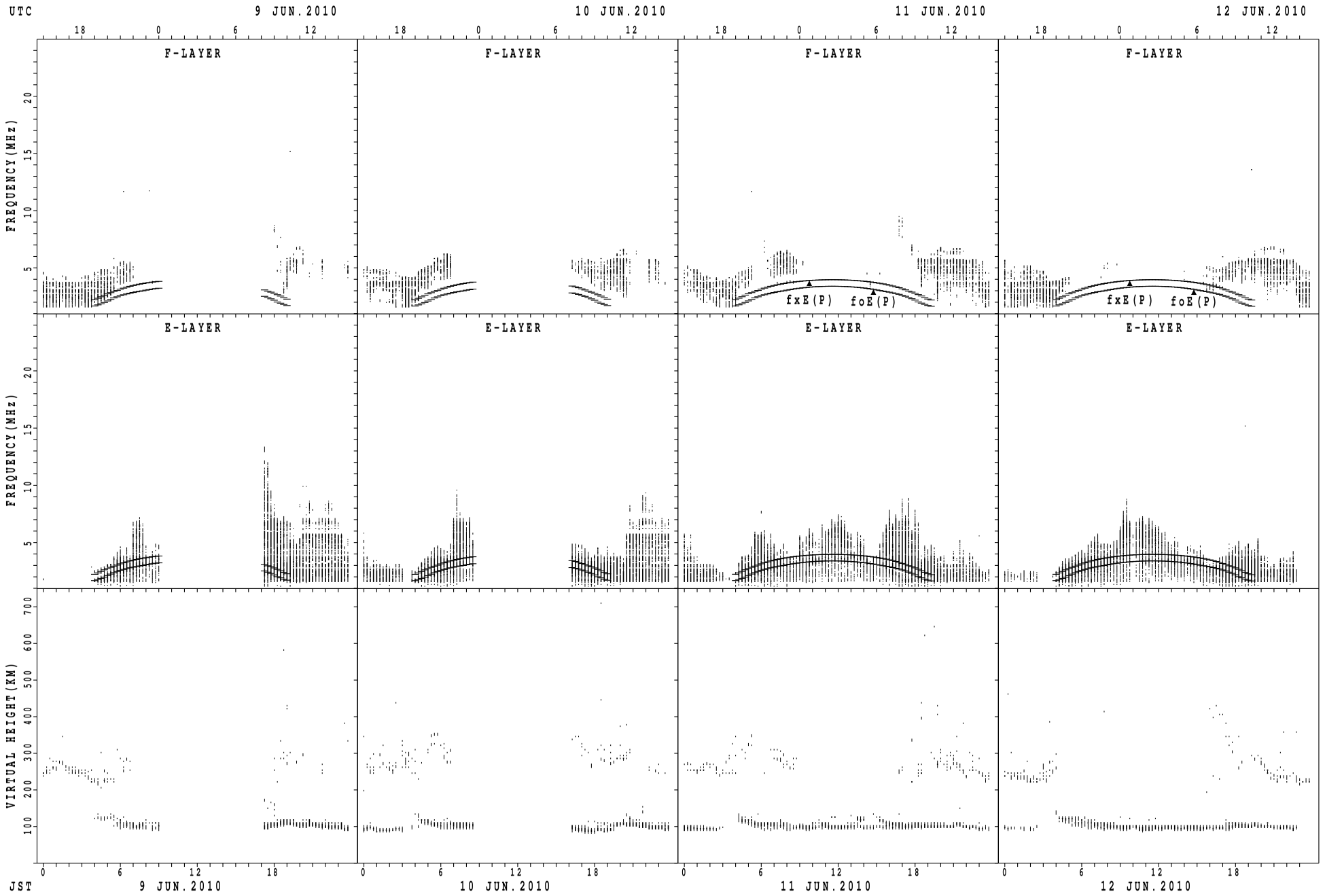
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



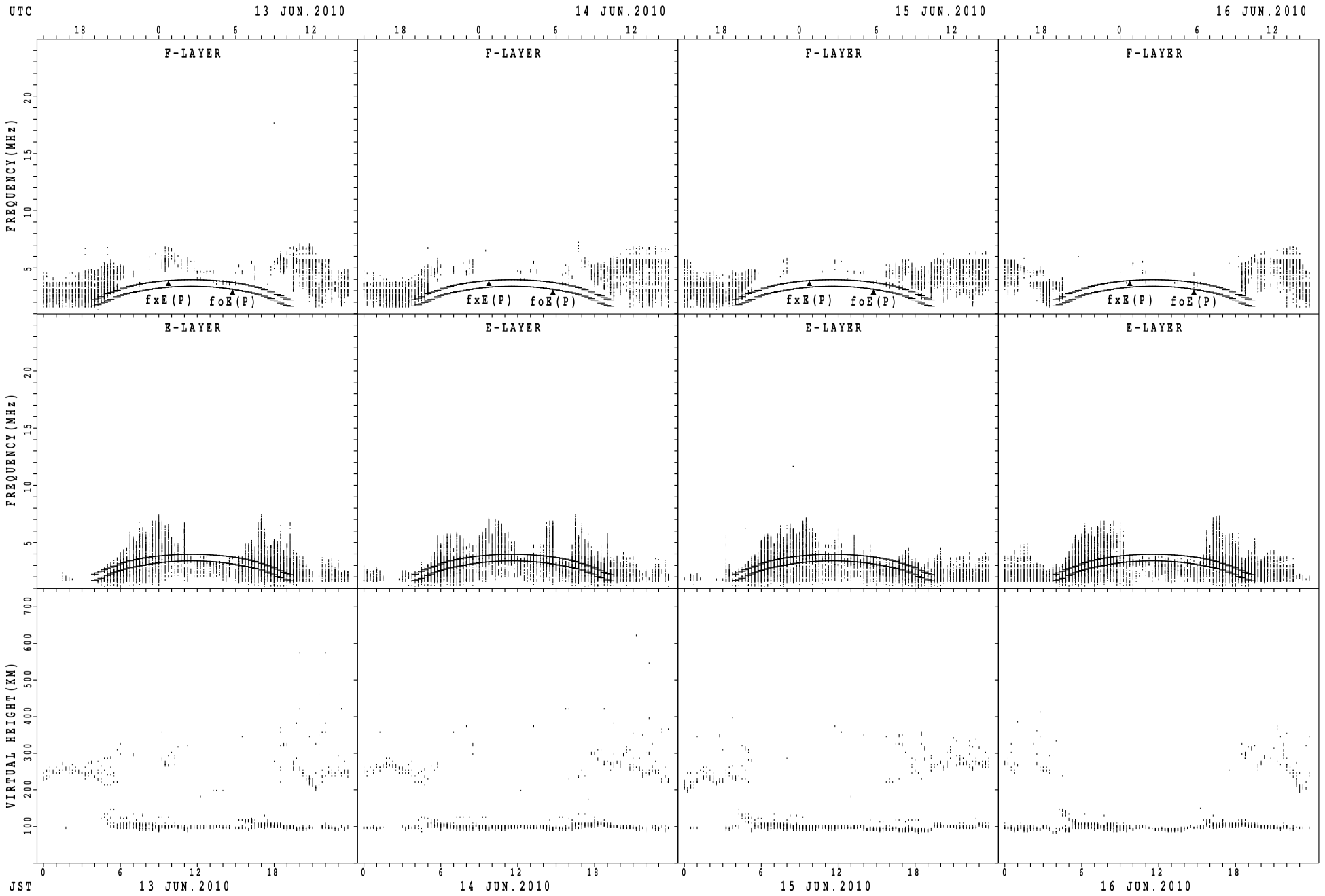
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



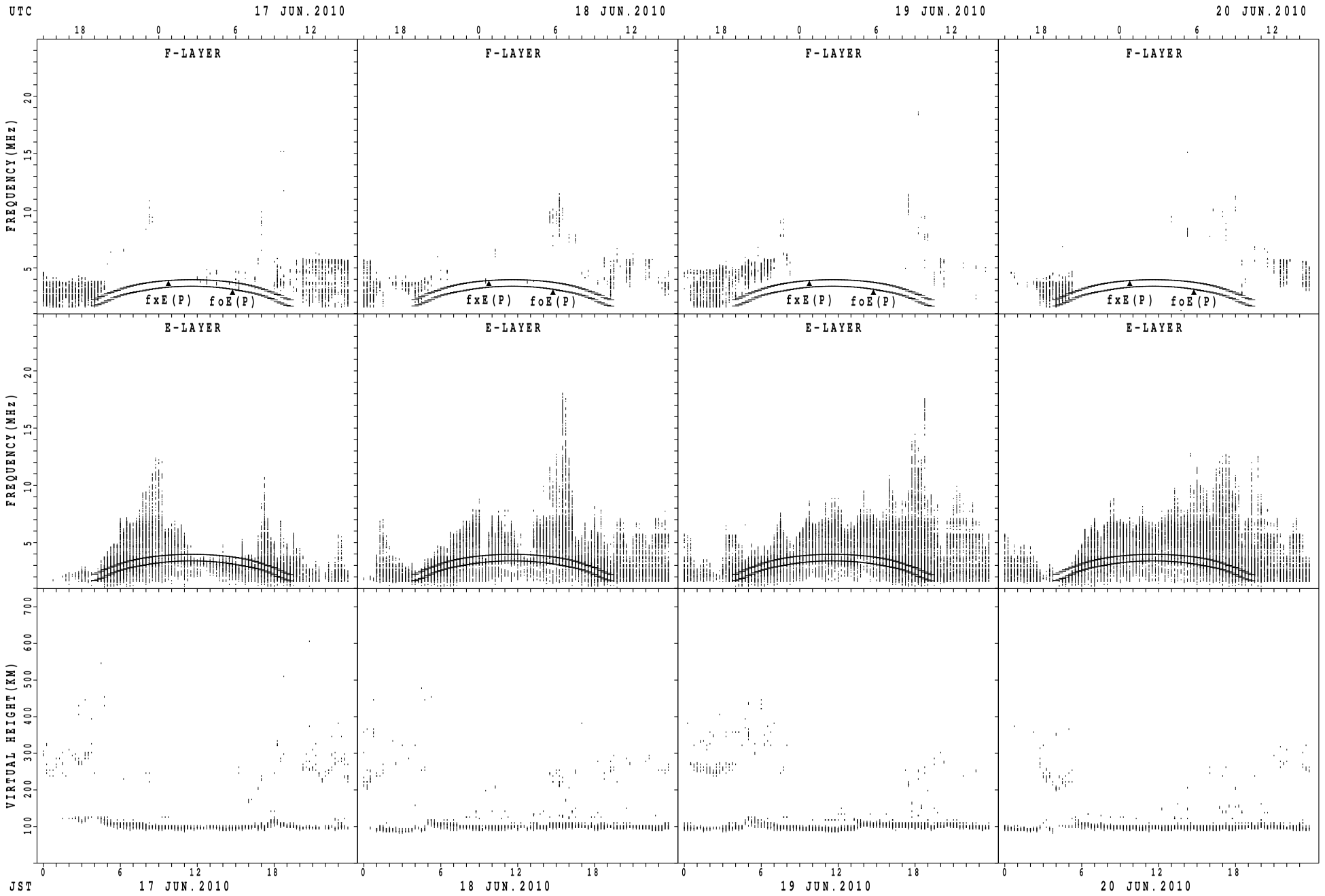
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



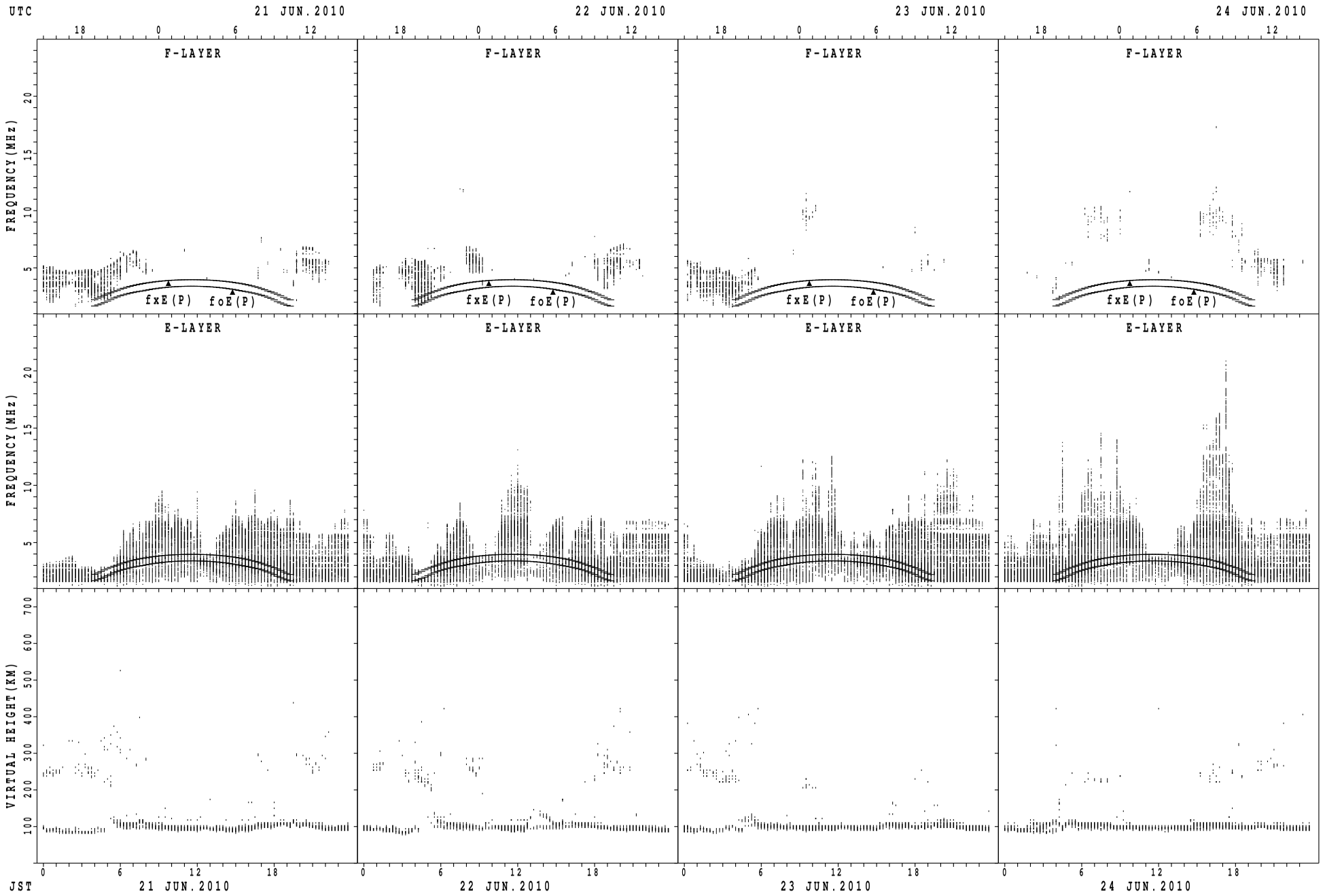
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



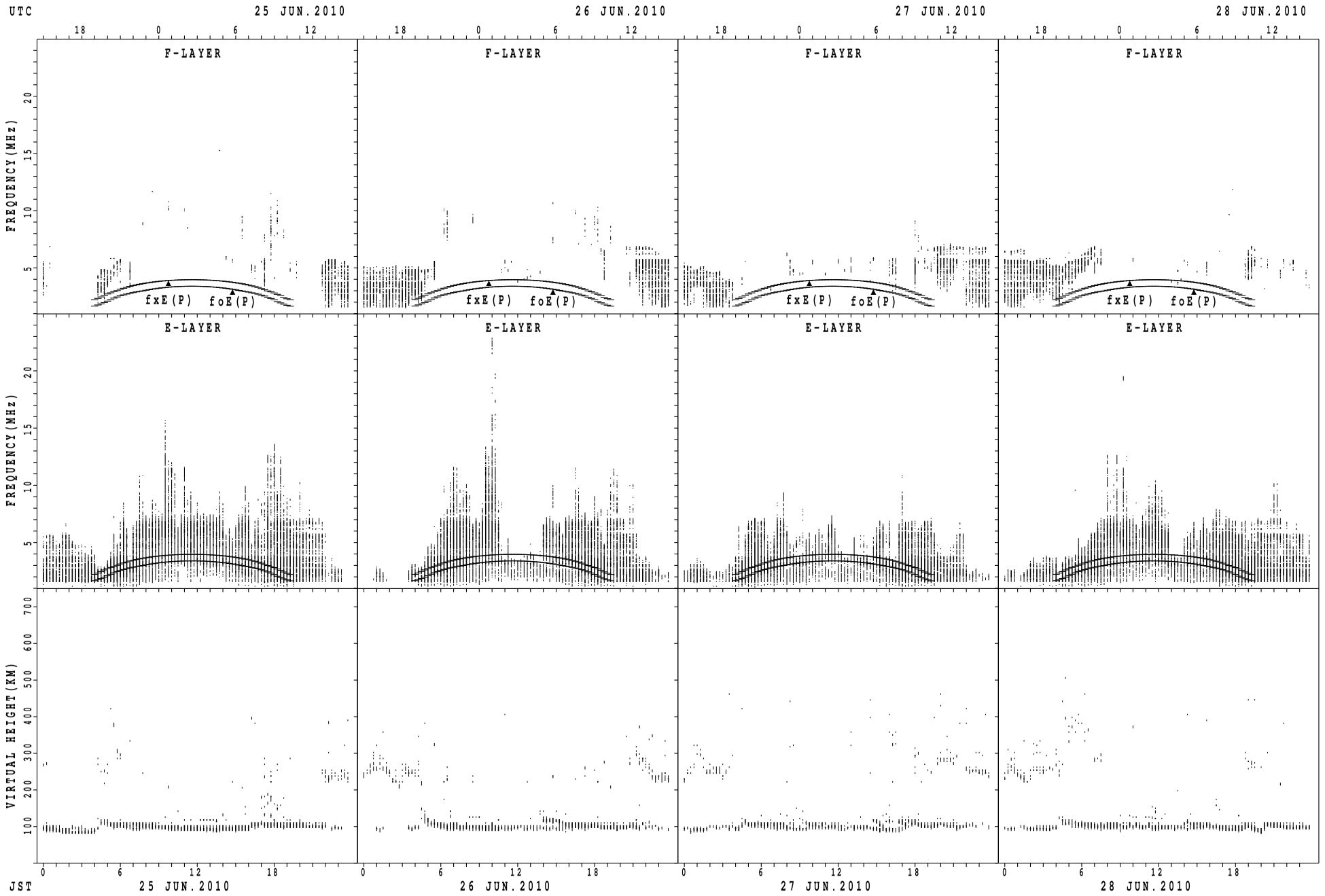
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



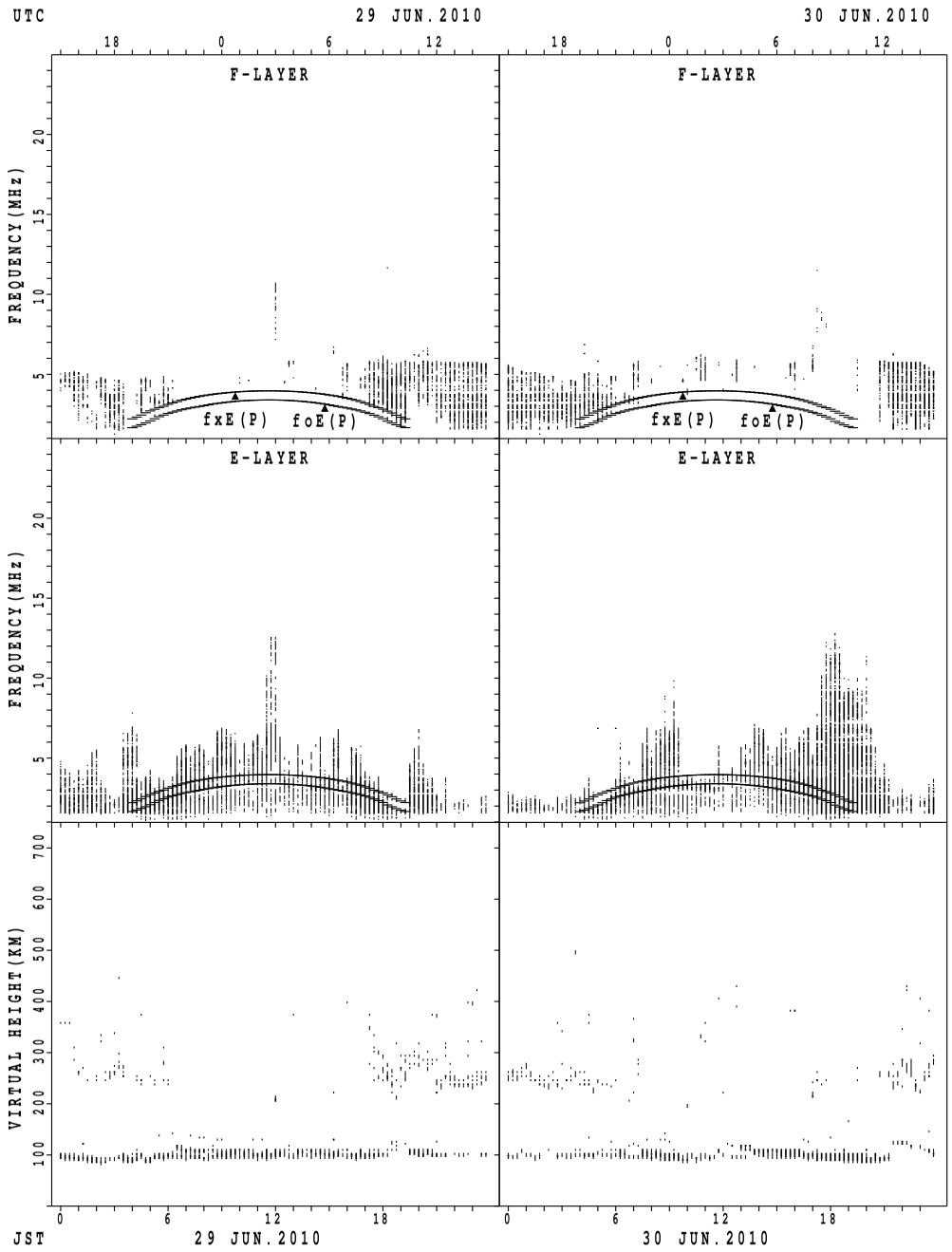
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



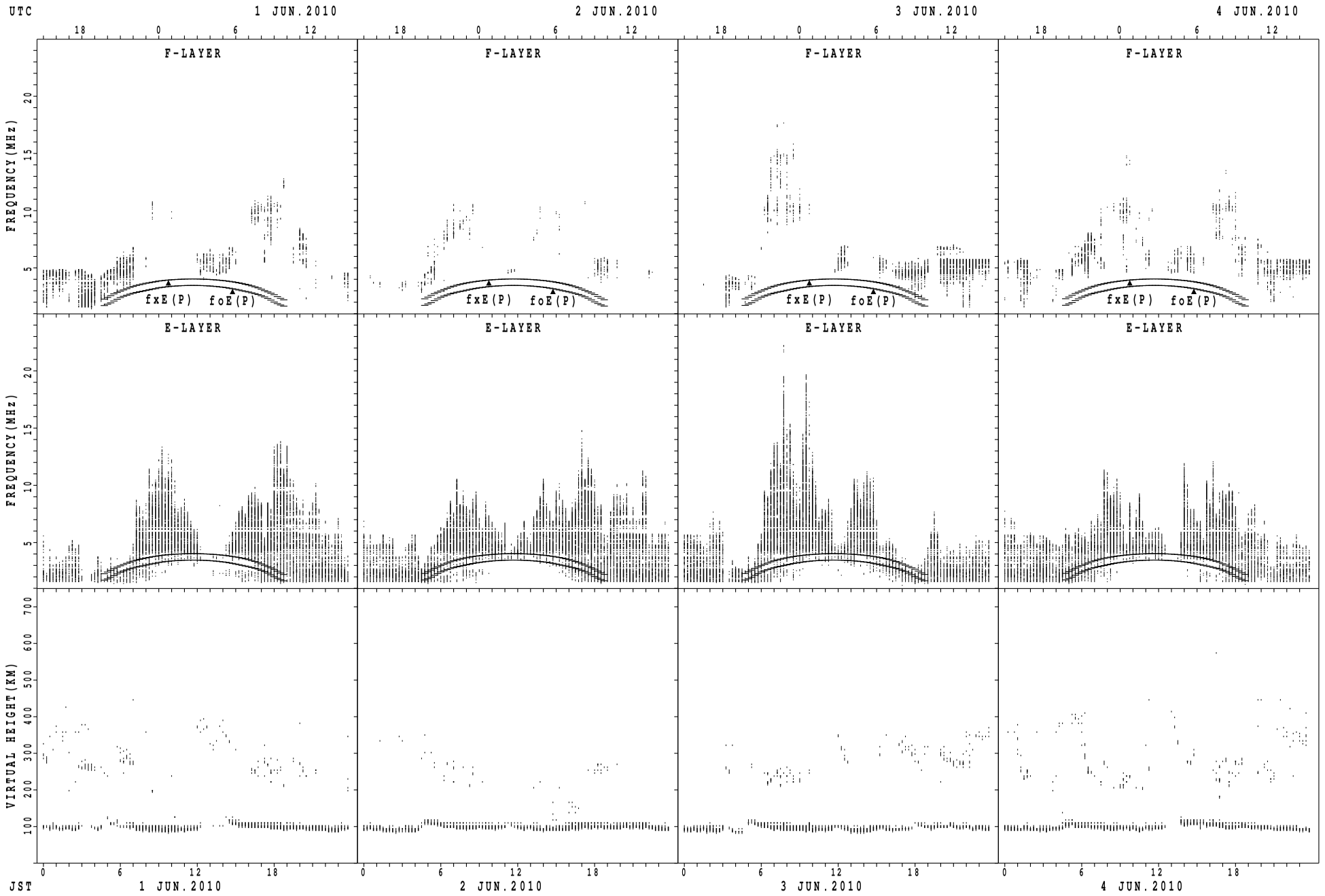
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



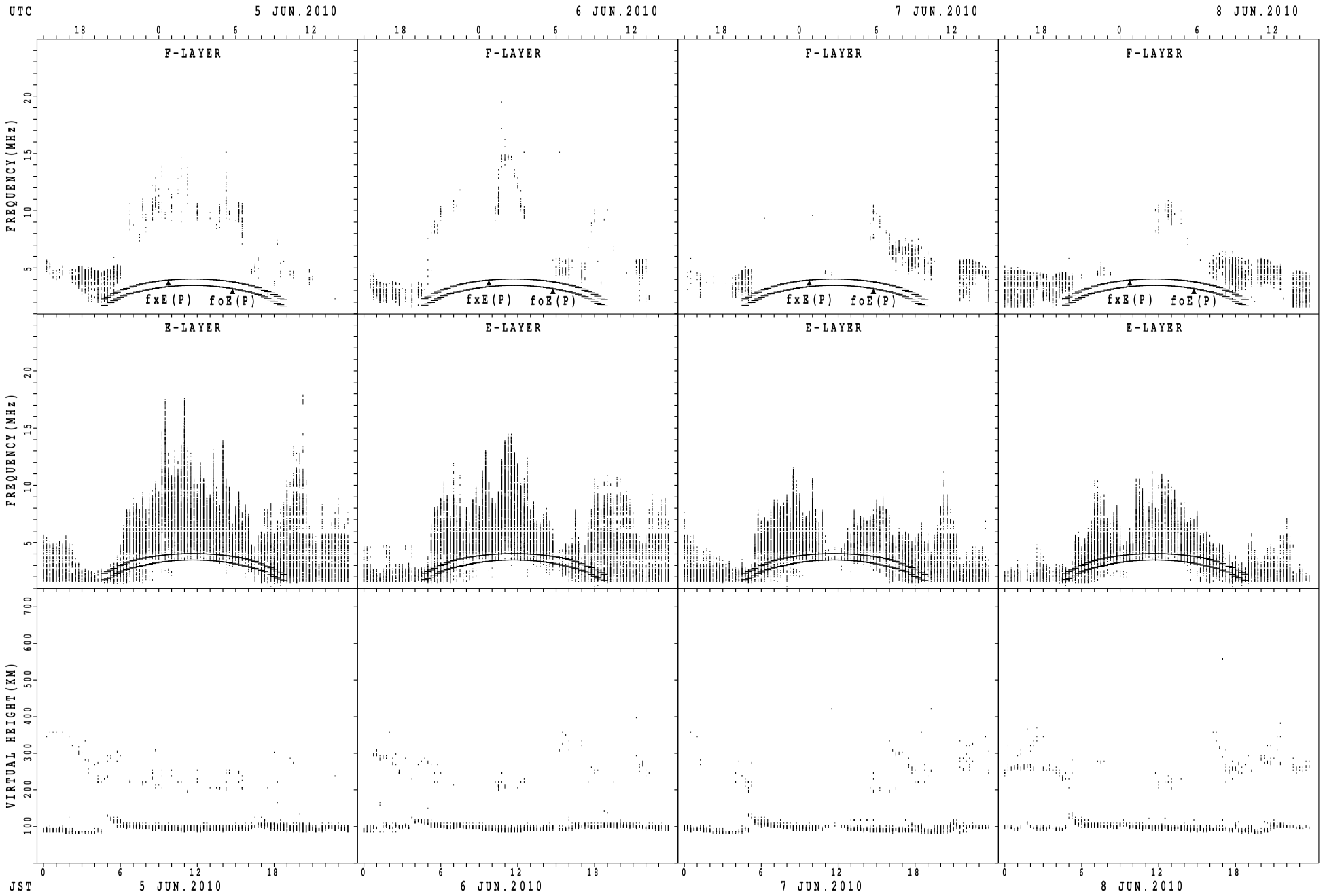
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



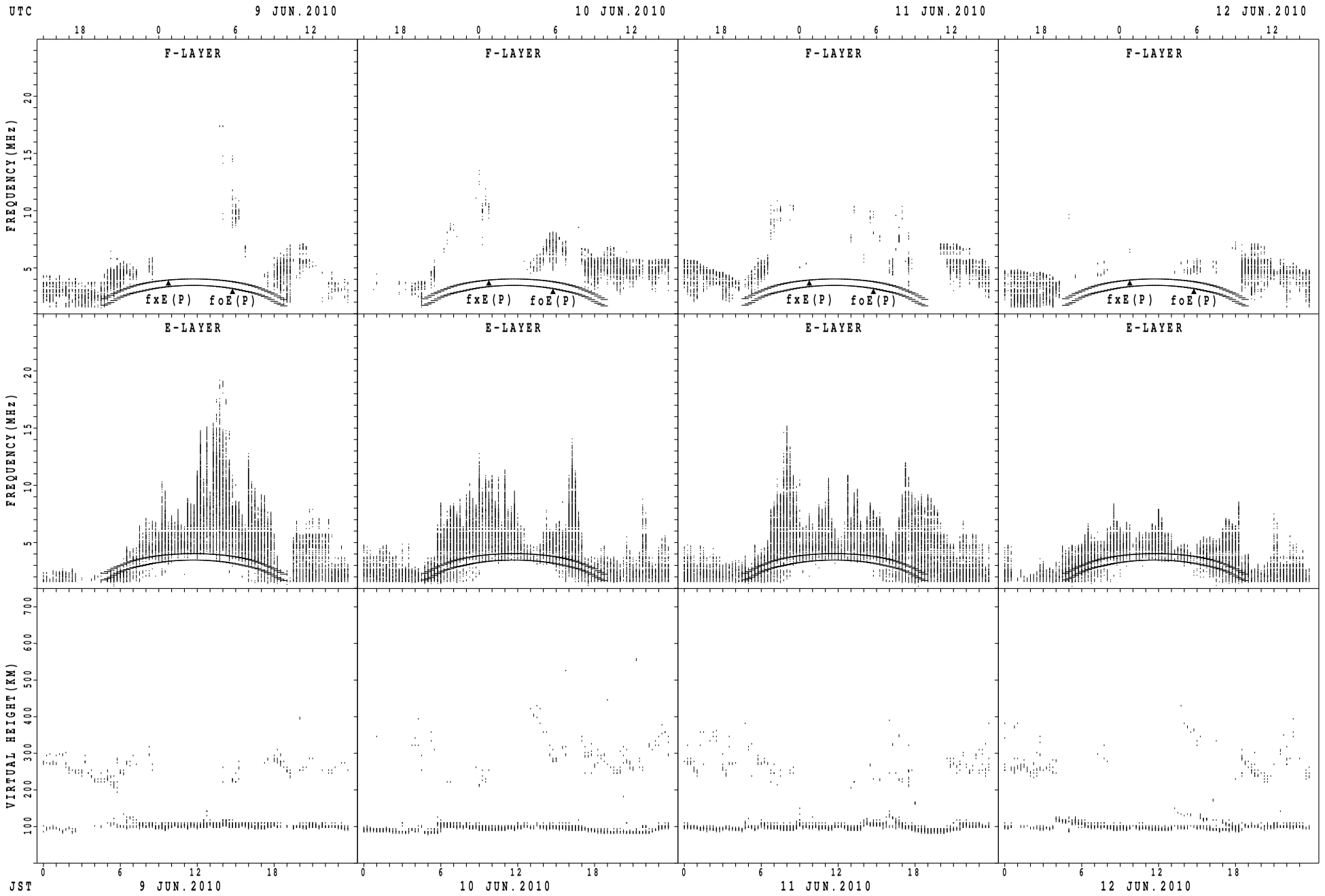
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



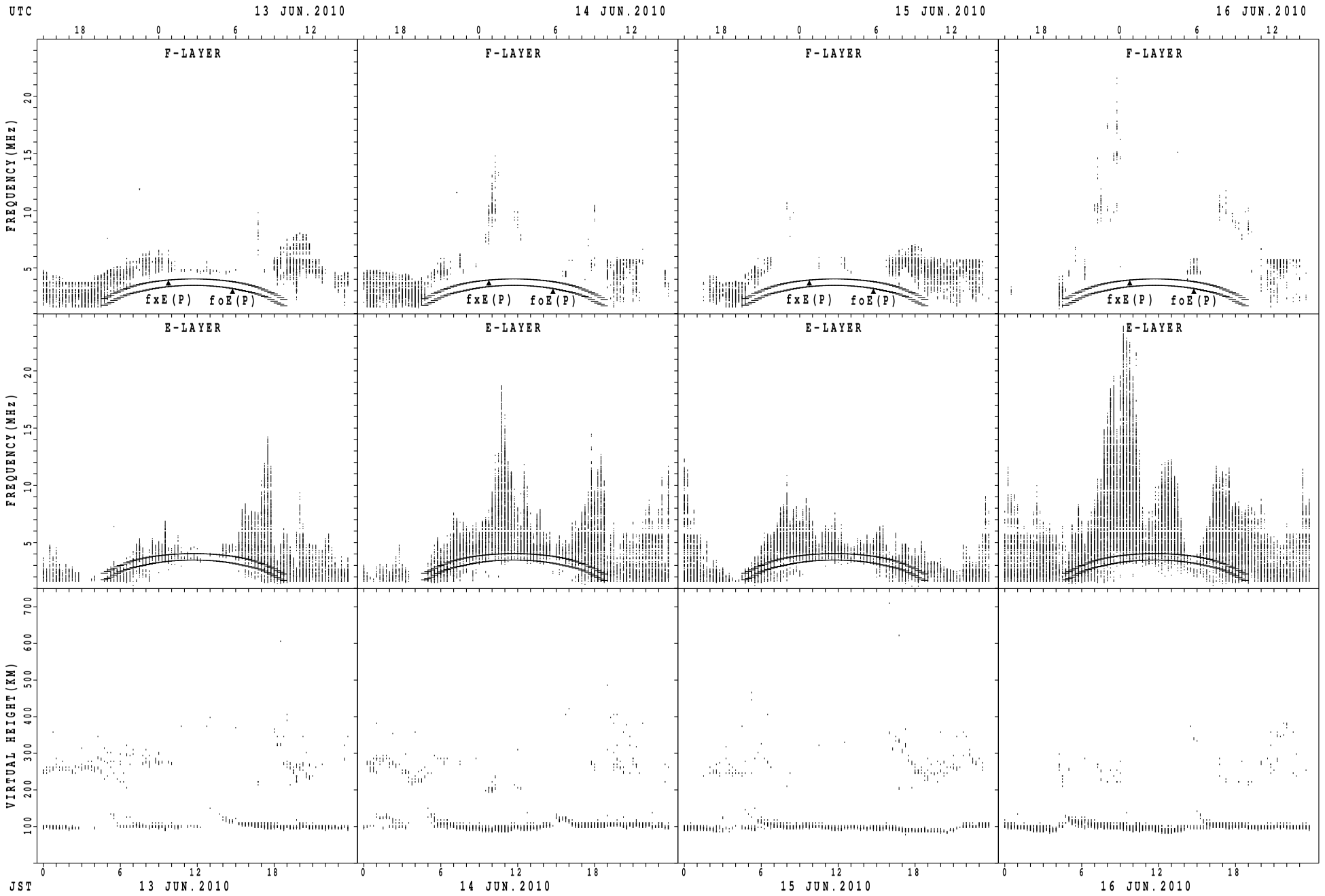
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



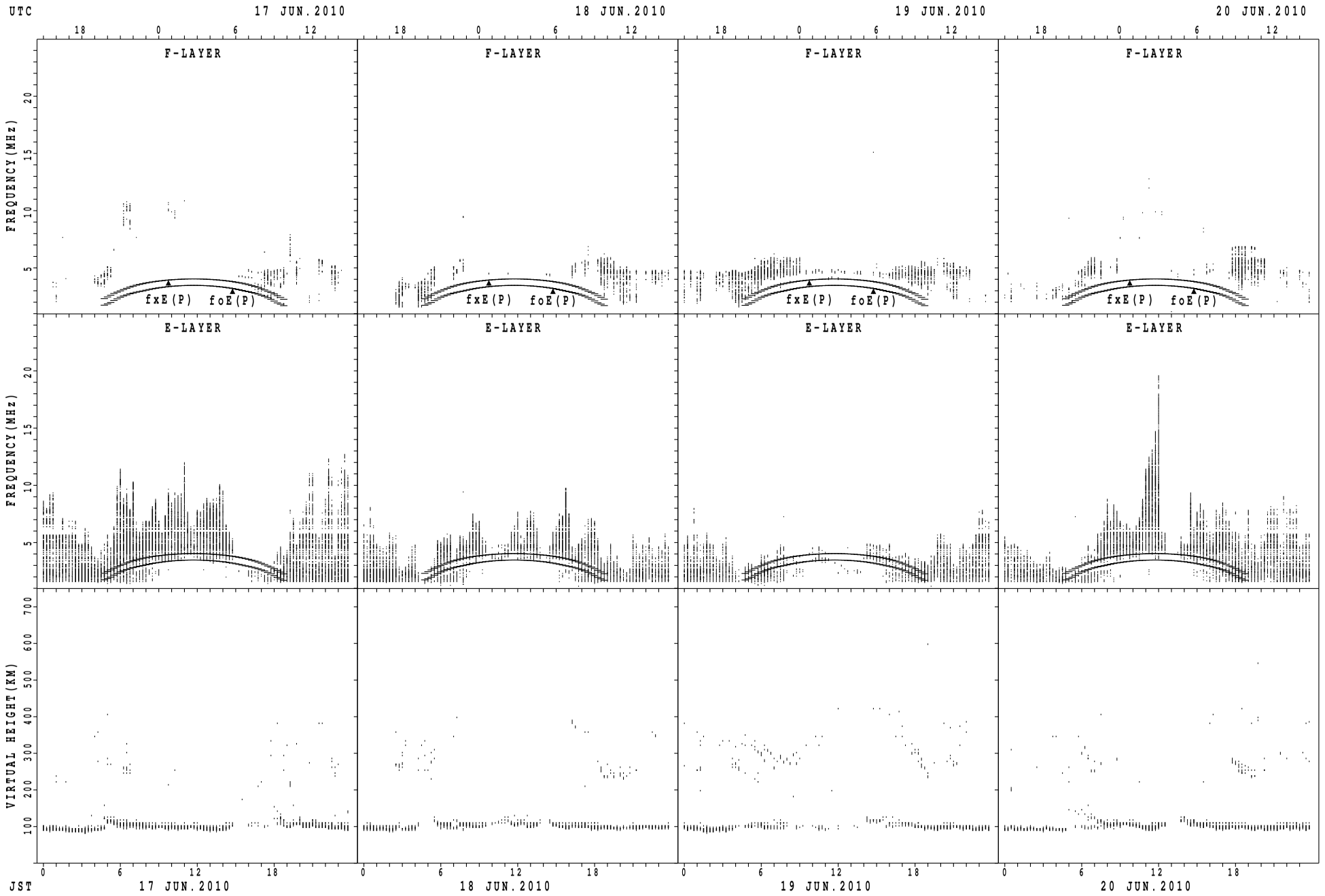
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



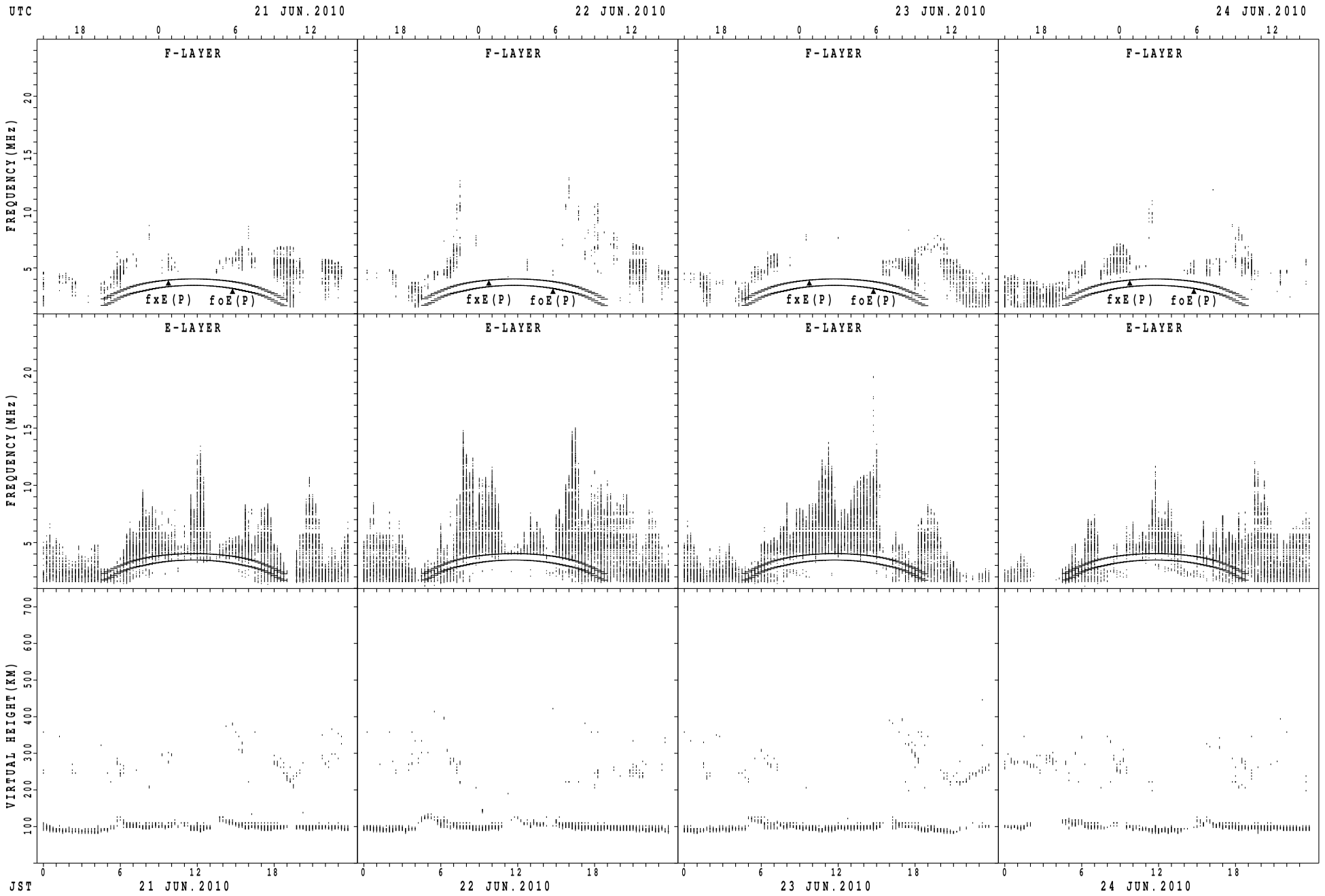
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



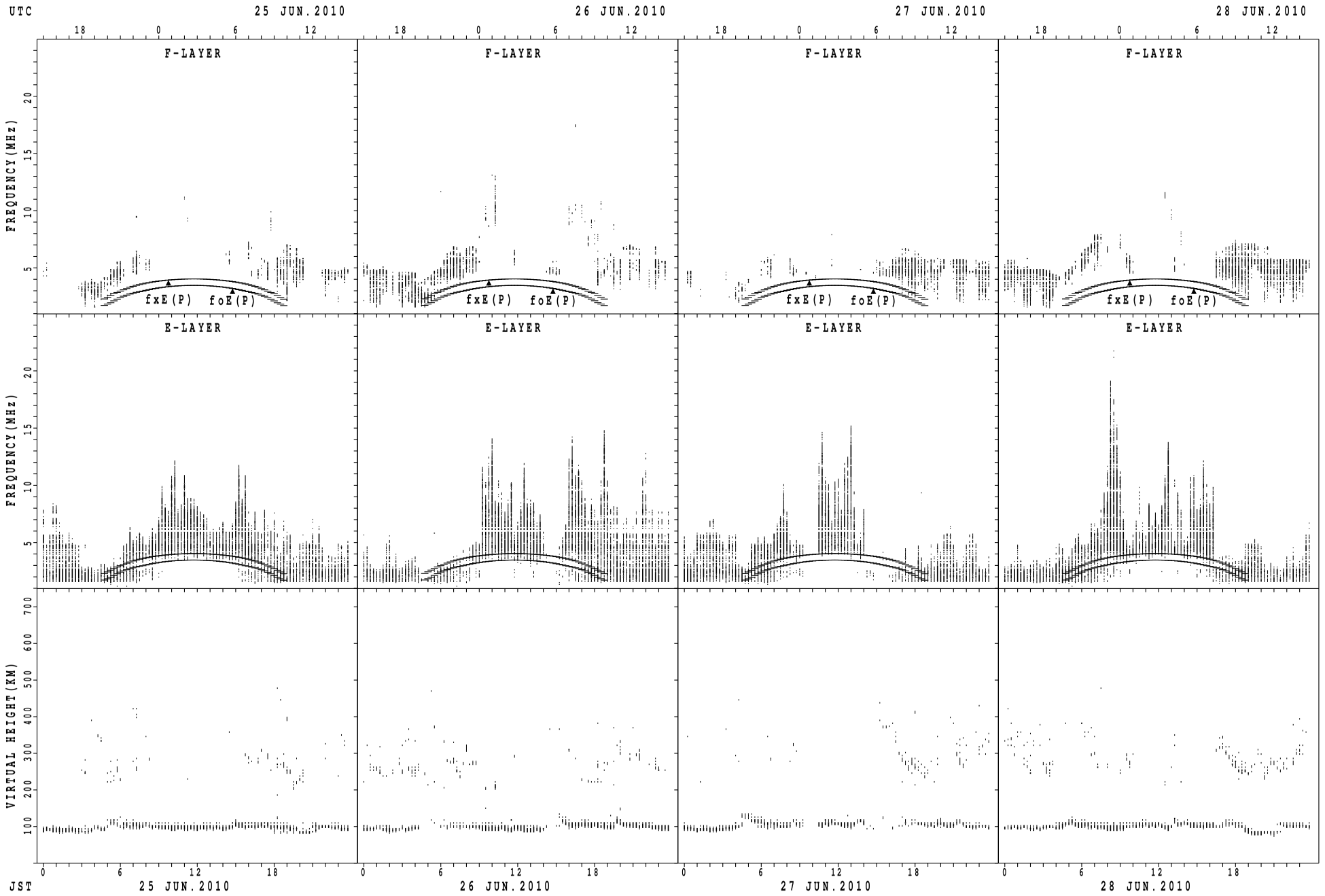
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



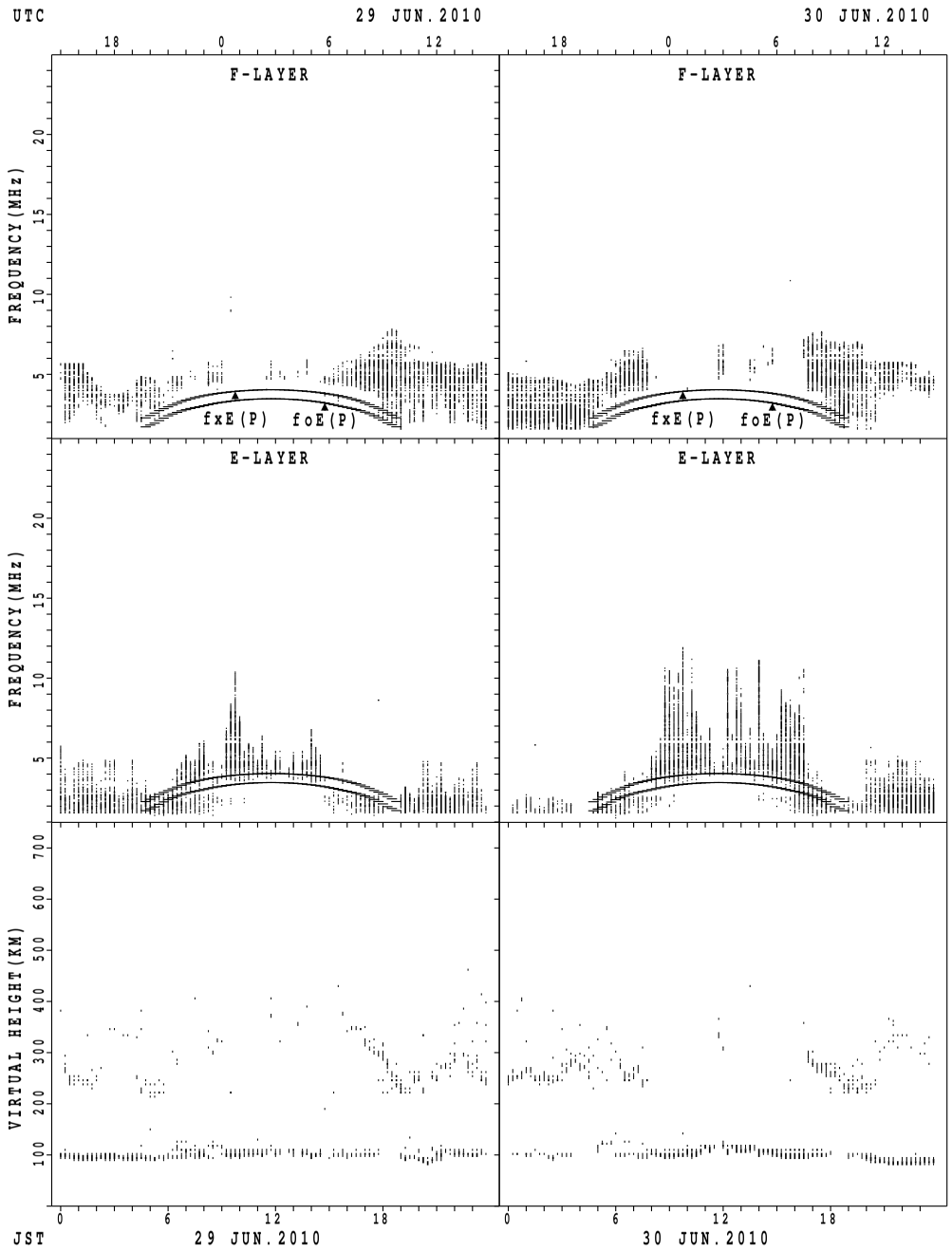
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



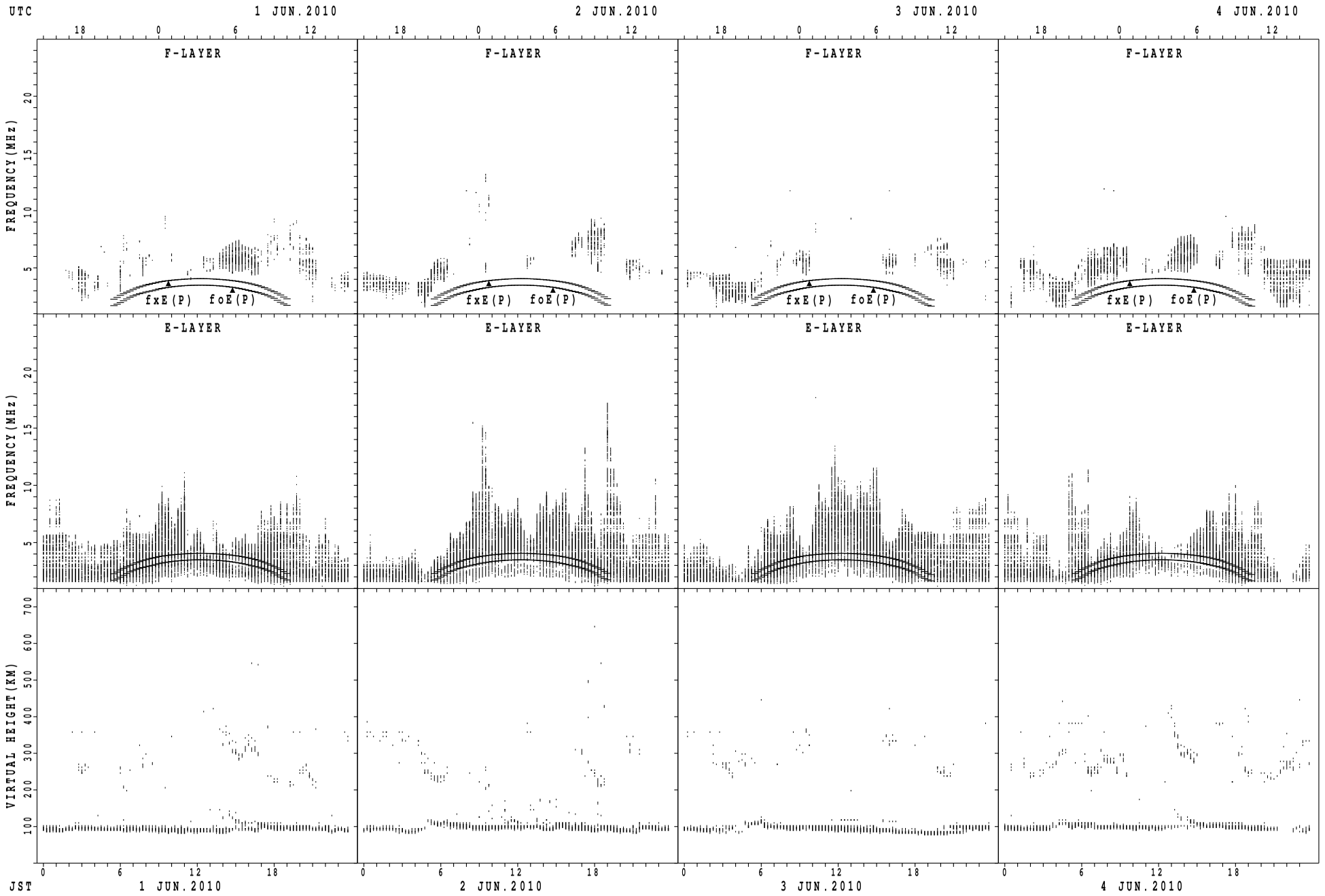
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



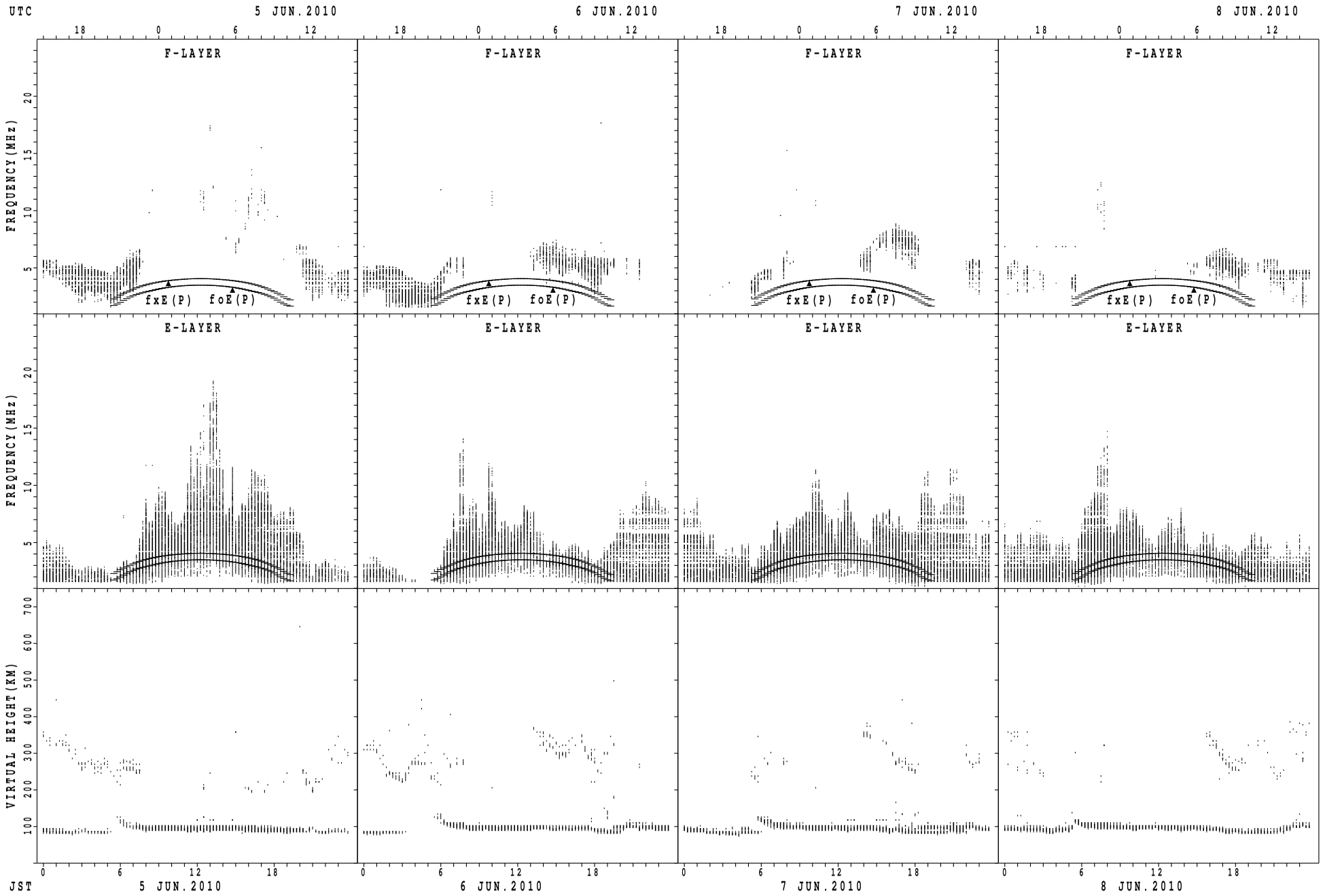
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



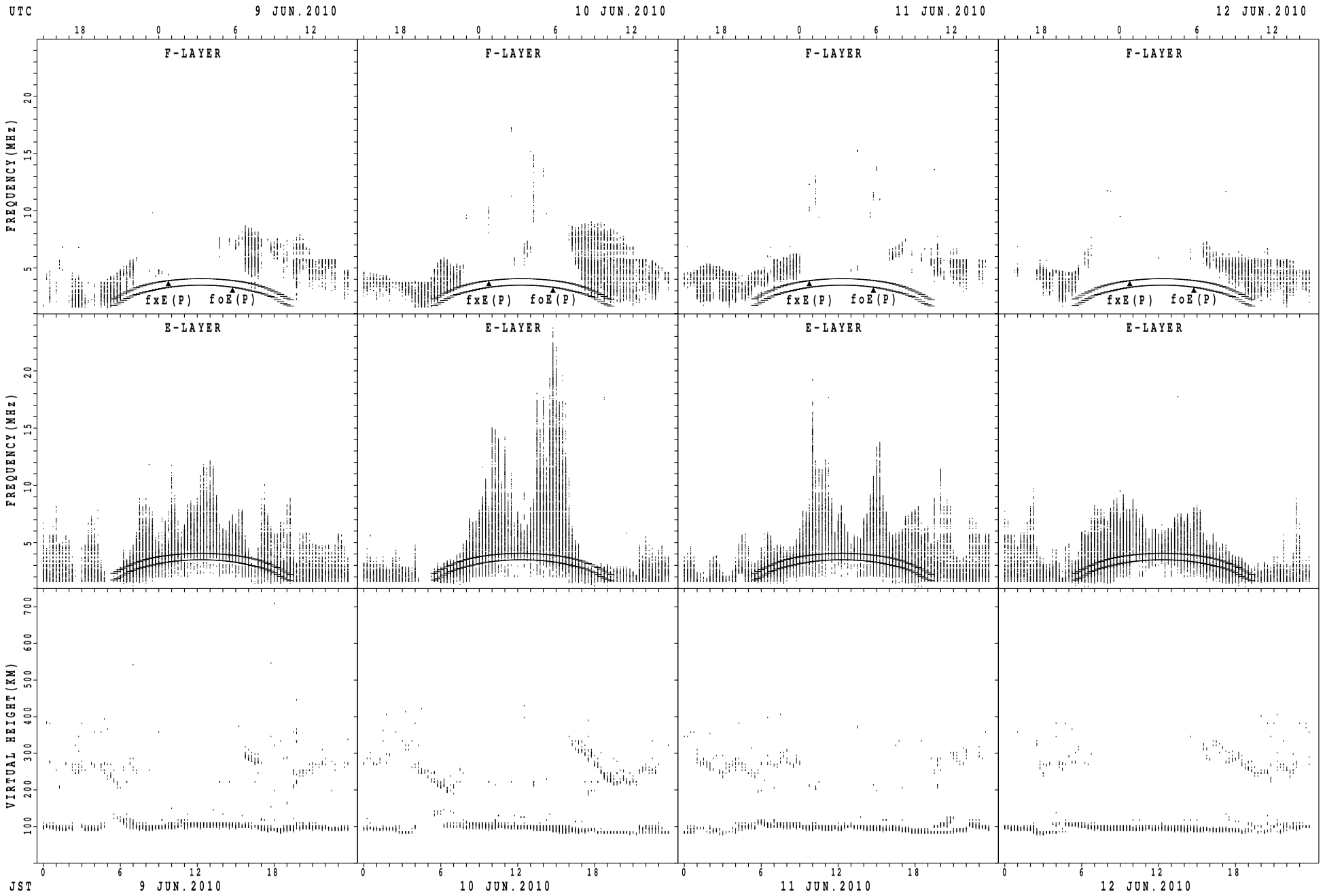
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



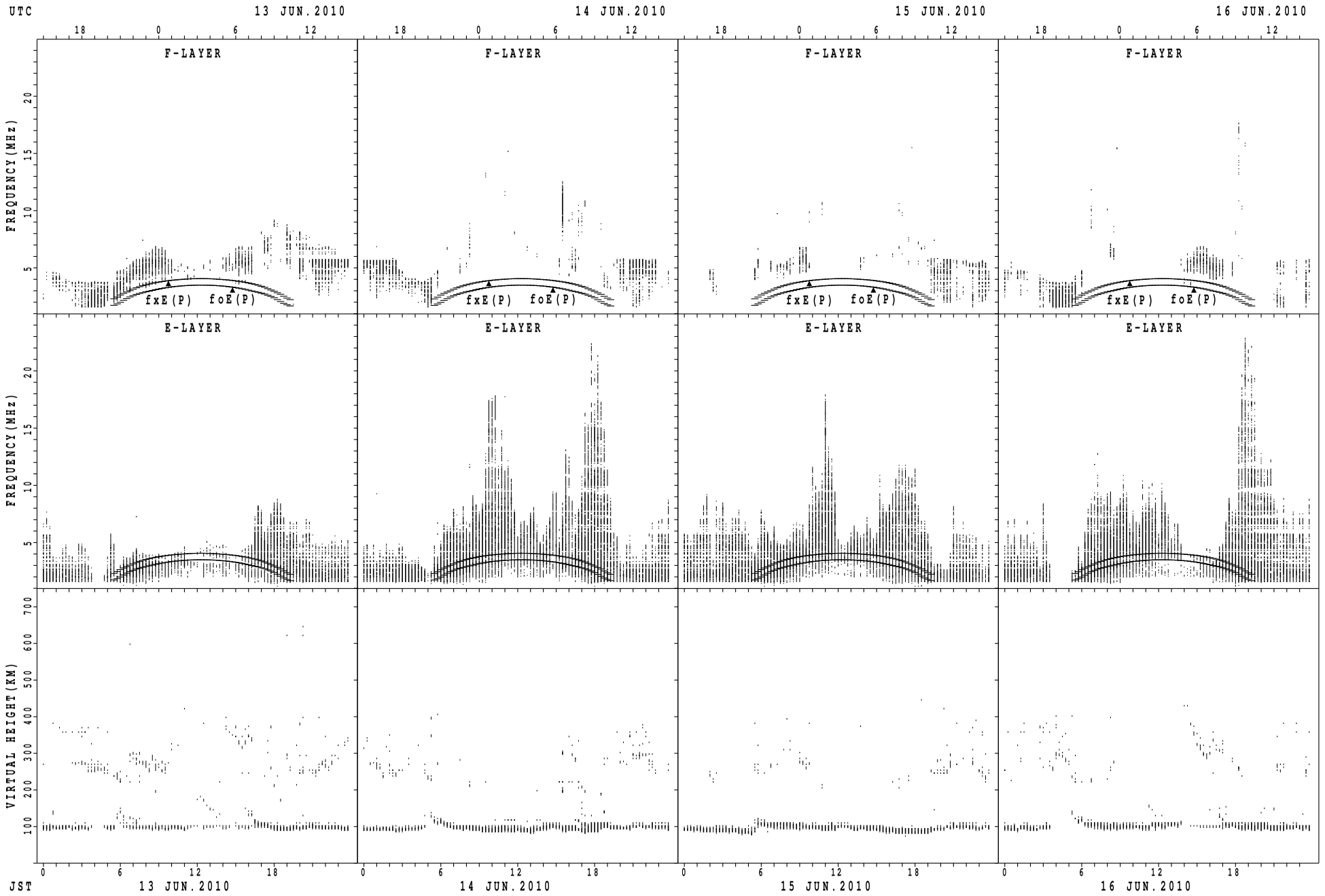
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



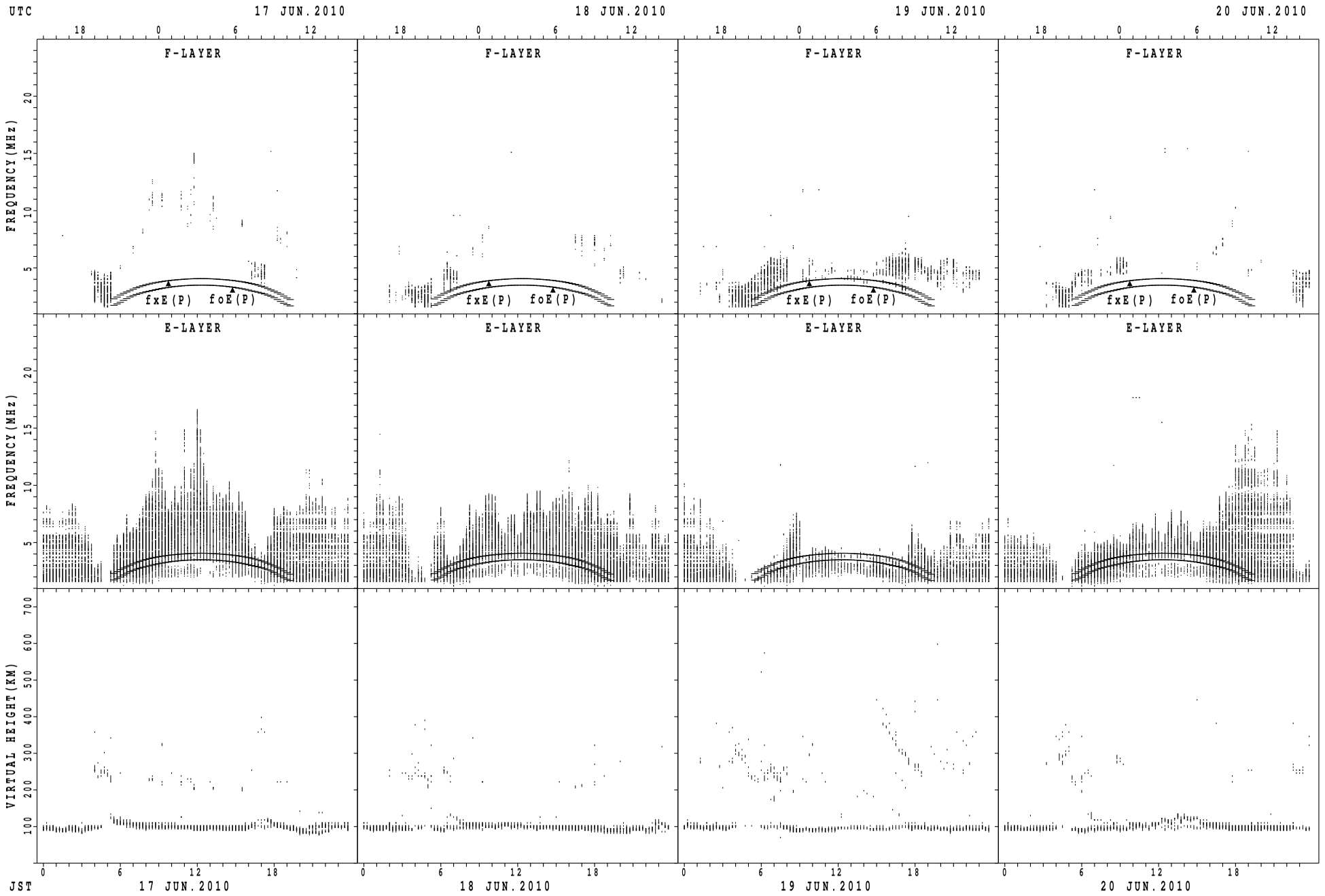
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



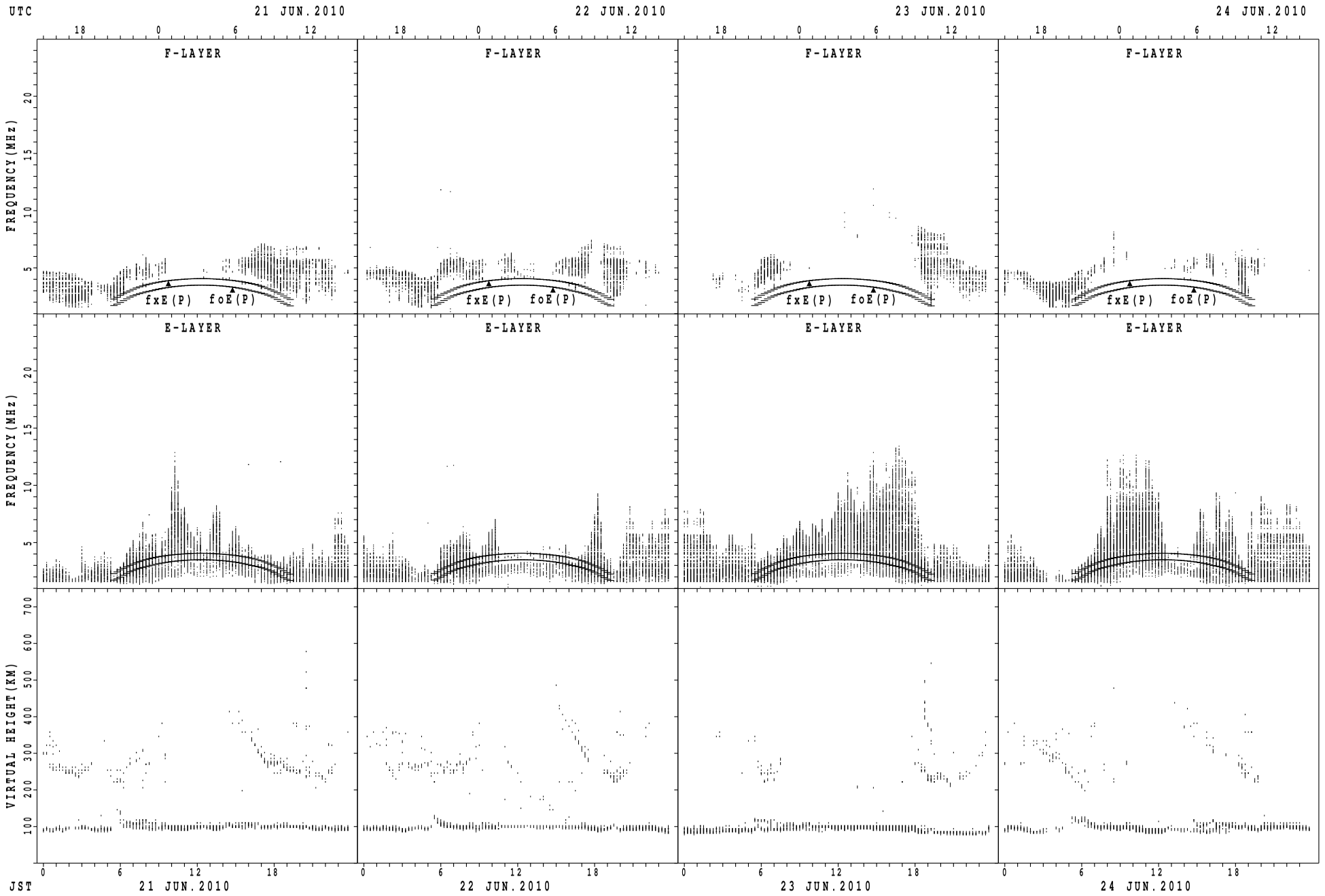
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



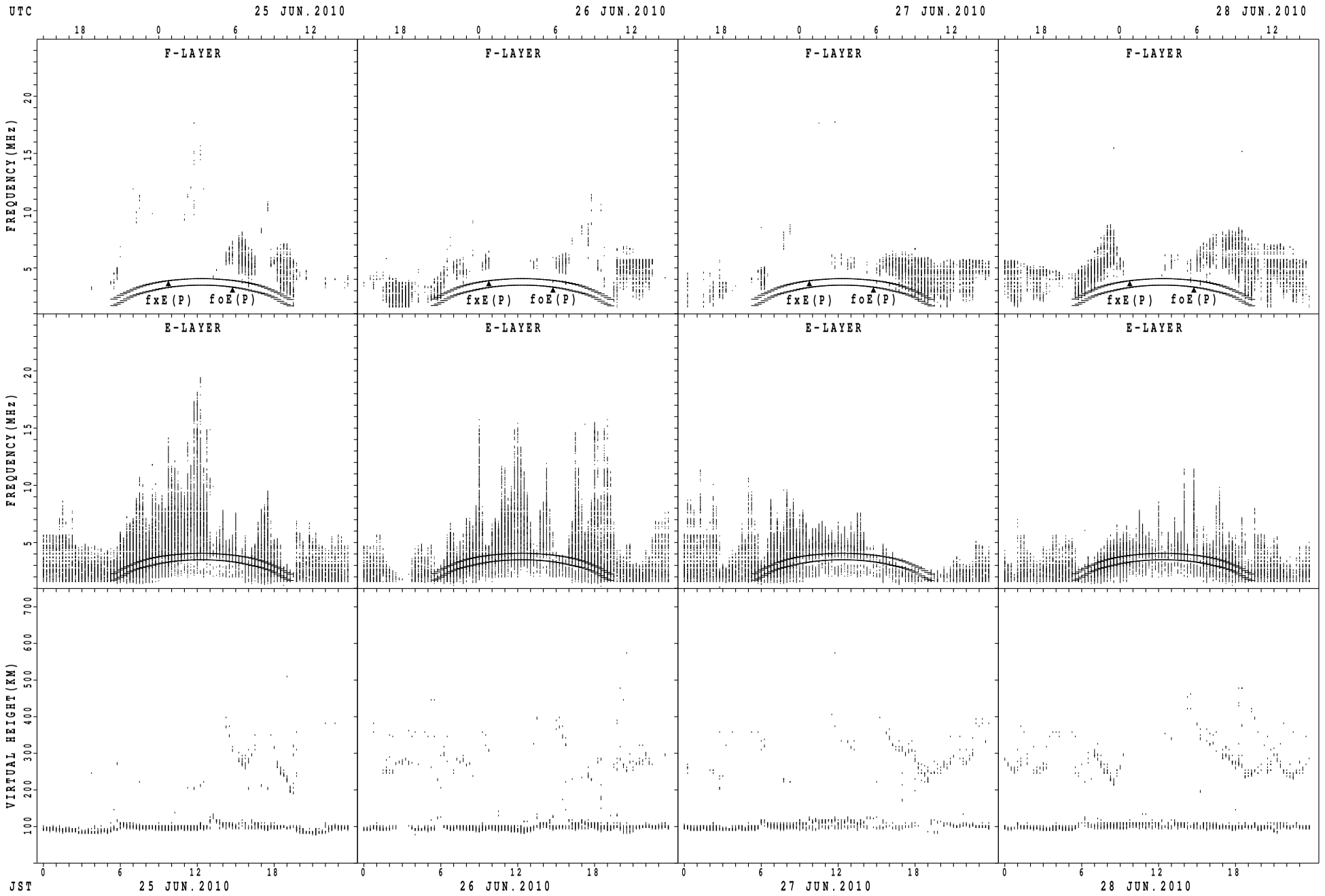
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



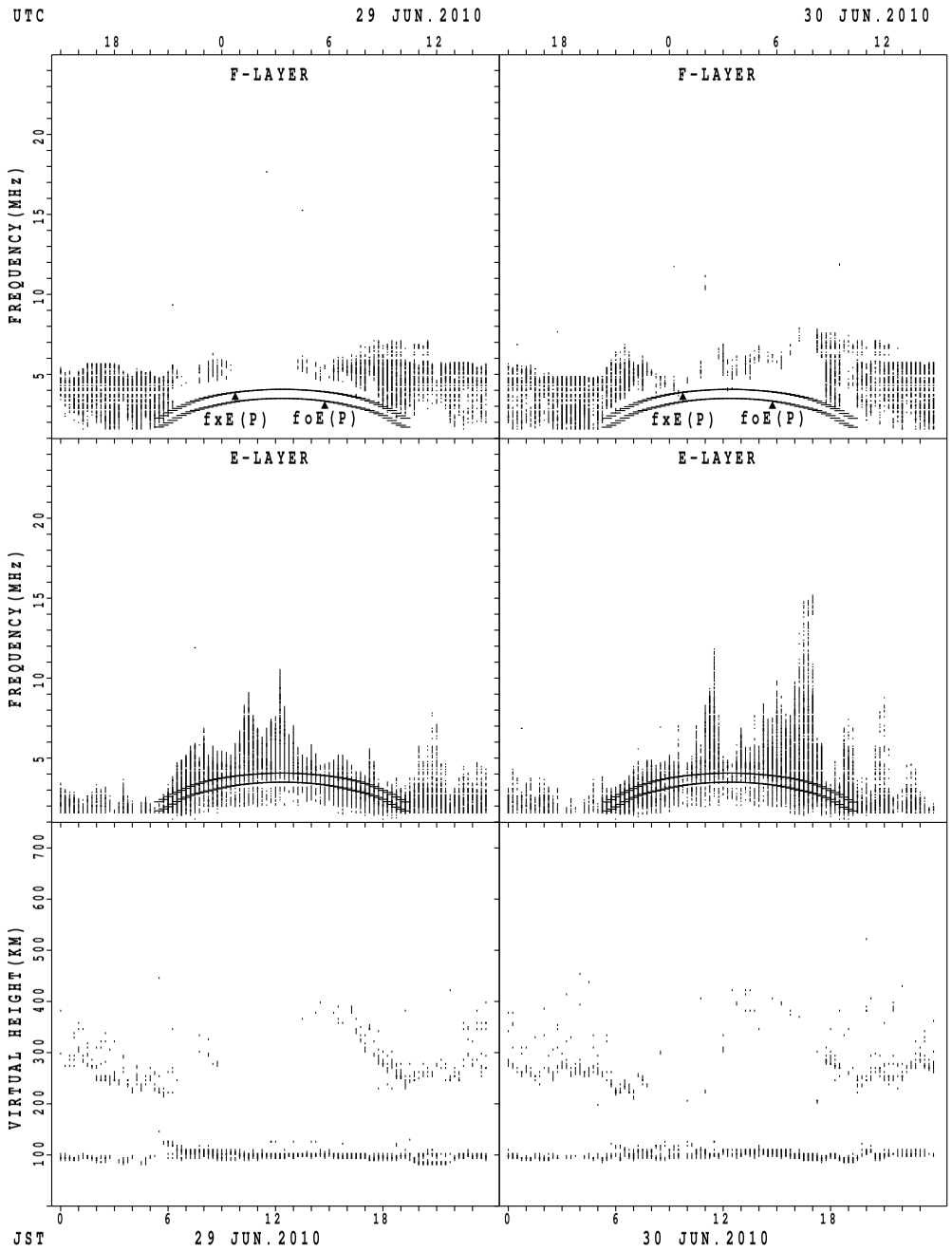
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



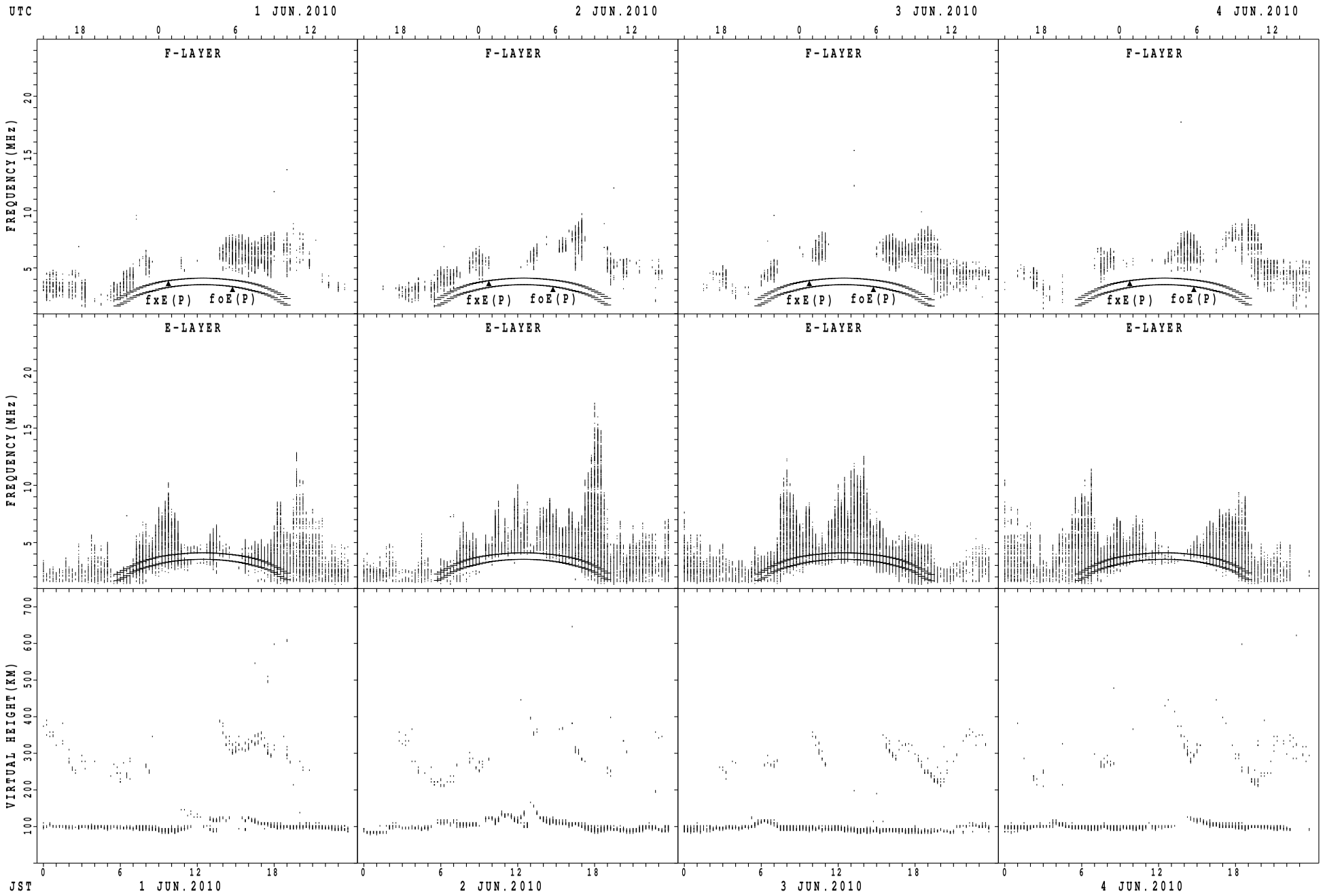
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



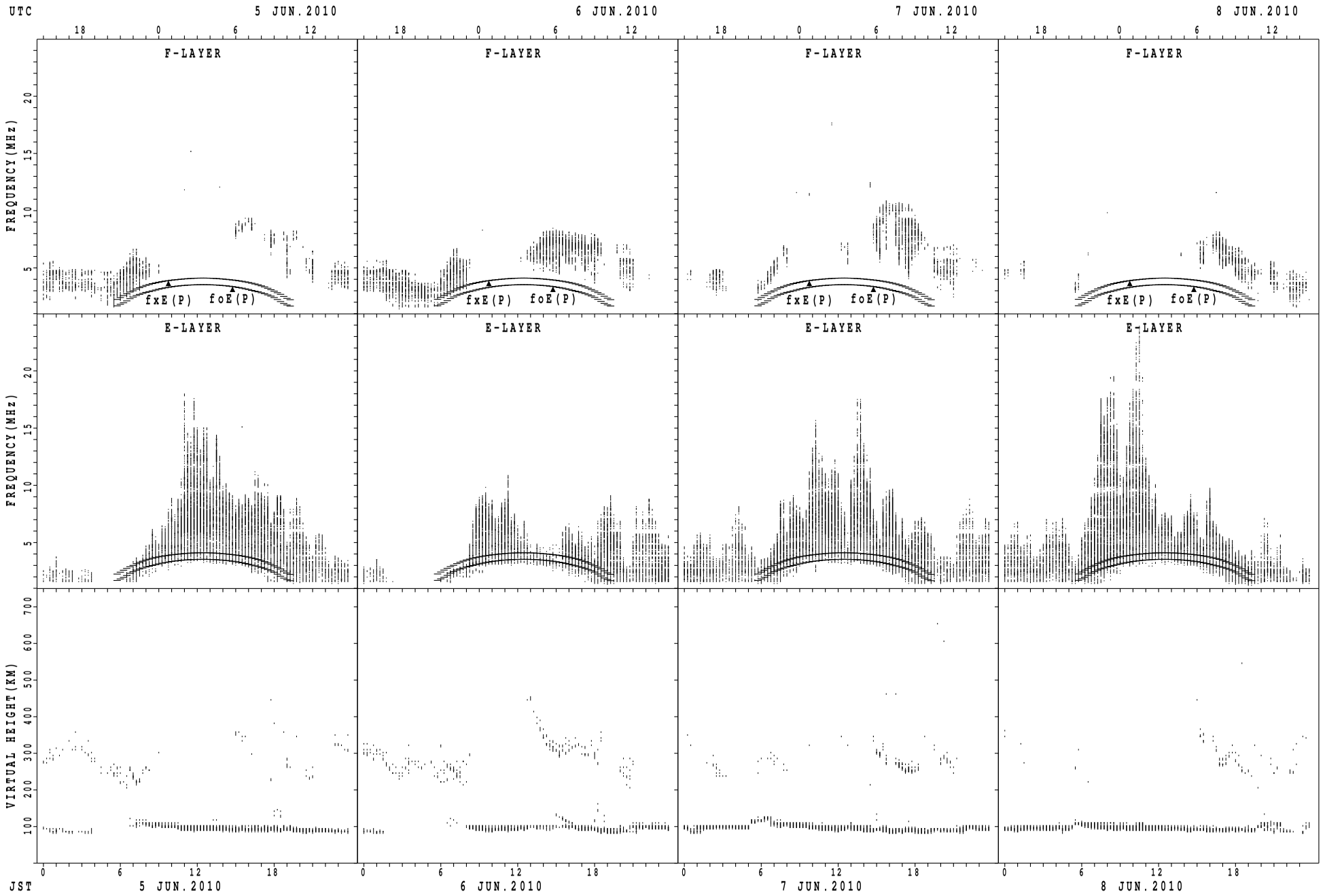
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



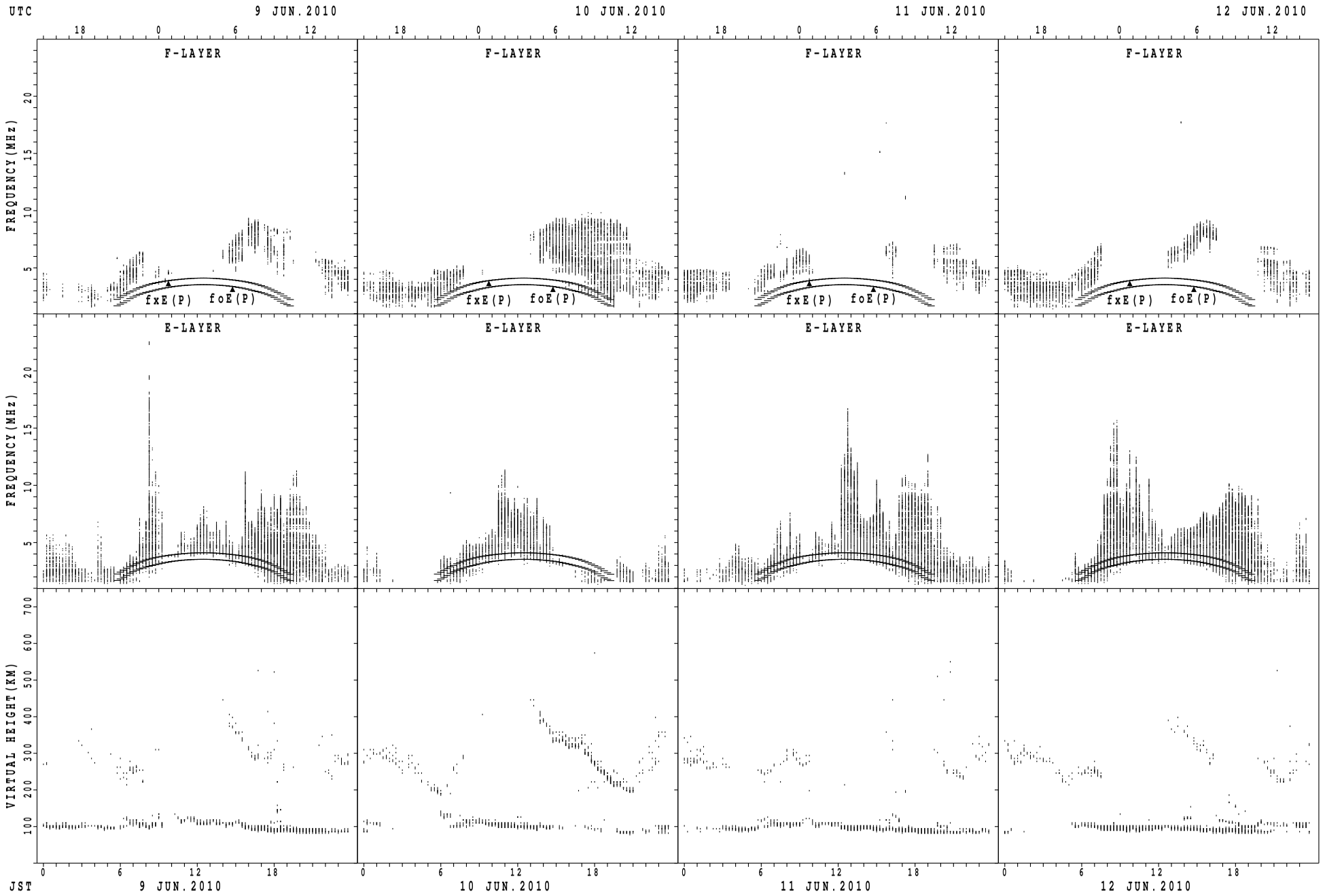
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



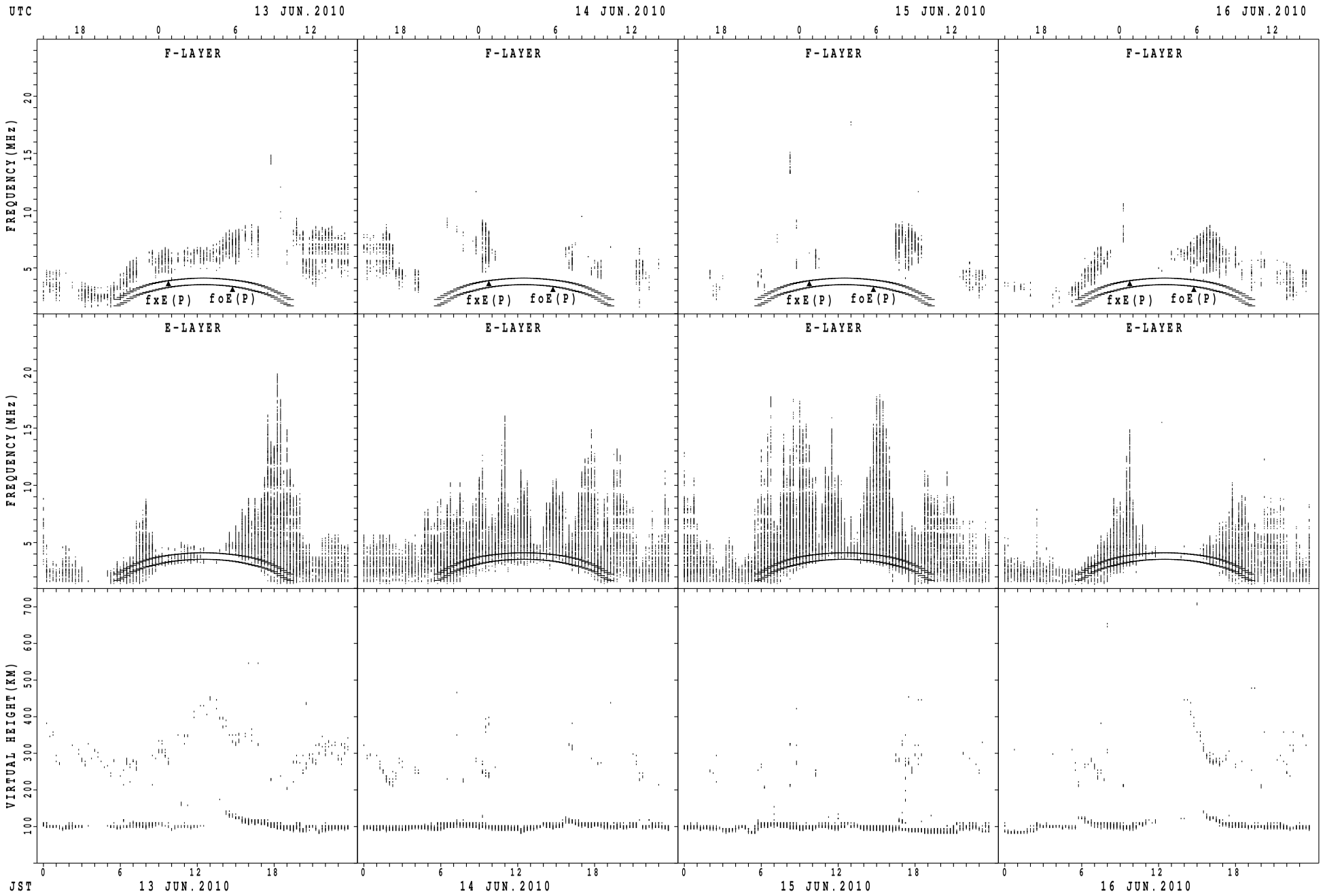
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



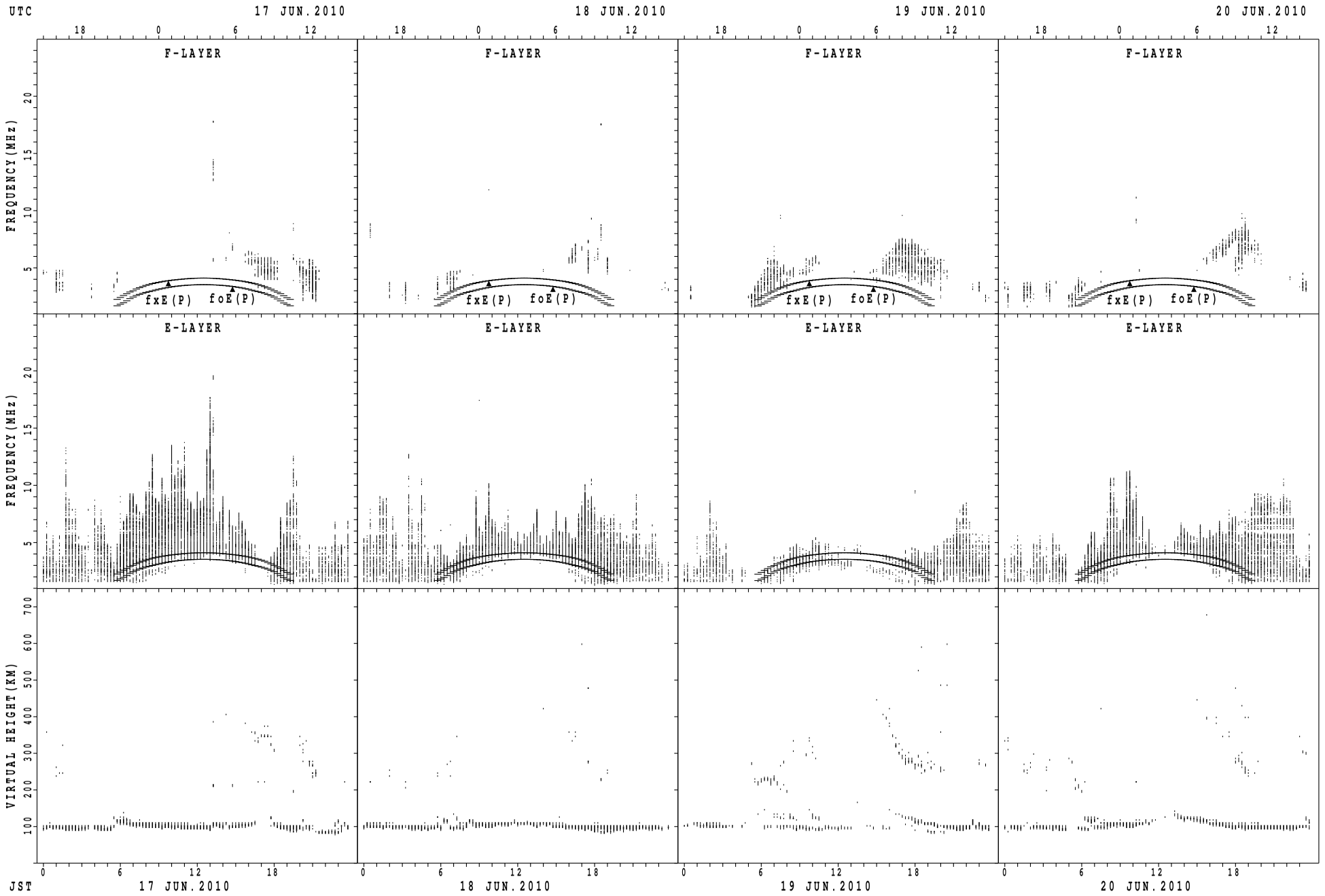
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



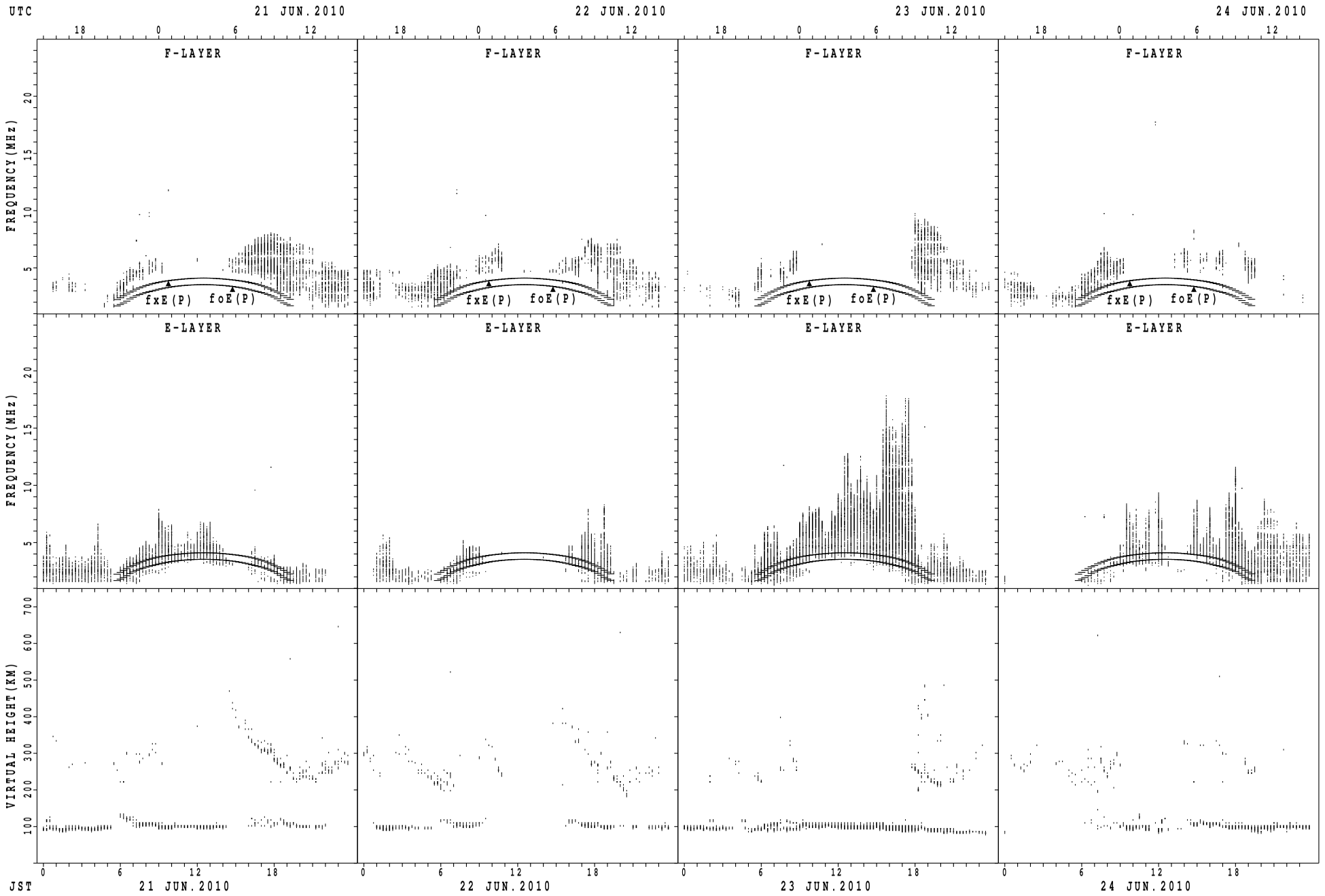
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



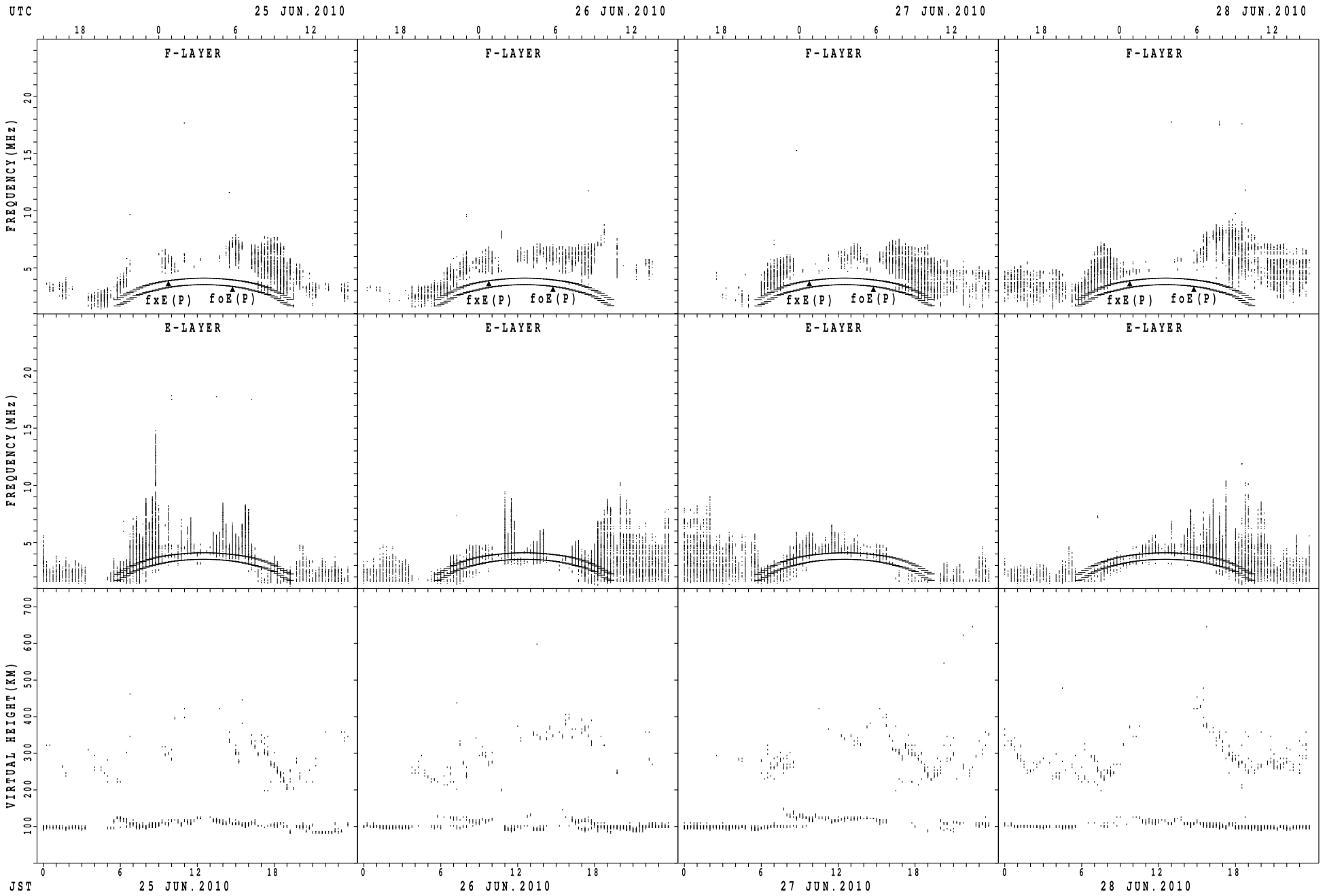
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



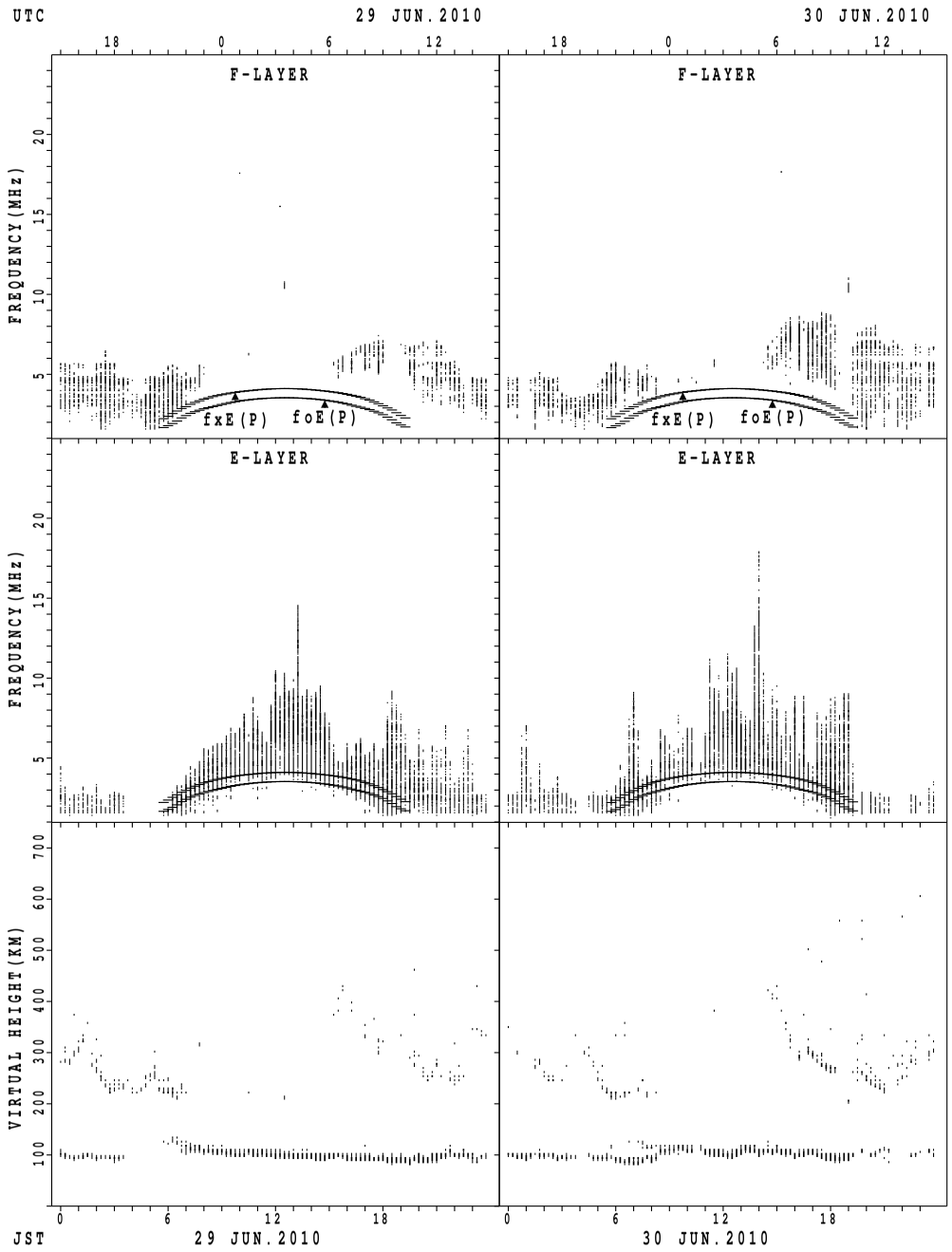
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

JUN.2010 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h′F STATION Wakkanai LAT. 45°10.0′N LON. 141°45.0′E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1																	3	1	2	2	3	1	
MED	252																	222	236	257	282	264	304	
U Q	126																	282	118	314	292	294	152	
L Q	126																	218	118	200	272	244	152	

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	22	23	21	20	20	24	28	28	29	27	23	21	18	16	21	24	26	26	28	29	29	30	28	25
MED	97	95	95	95	96	112	109	107	105	103	99	101	102	99	105	106	109	105	105	103	105	103	101	99
U Q	99	97	96	104	104	117	111	111	107	103	103	103	103	111	115	112	115	111	109	107	112	111	103	105
L Q	97	93	91	93	91	111	107	104	103	99	97	97	99	96	96	97	101	103	102	100	100	99	97	95

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								7										3	5	4	5			
MED								270										312	280	271	282			
U Q								310										348	285	300	292			
L Q								226										286	250	259	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	29	26	29	27	26	24	24	28	28	25	27	28	27	25	26	25	24	28	25	29	28	29	29	27
MED	99	97	97	97	97	111	111	105	103	103	101	98	103	97	99	107	103	103	103	101	99	105	103	99
U Q	103	99	101	99	99	119	114	109	105	105	105	103	107	103	111	114	110	106	107	103	105	108	105	105
L Q	96	95	95	95	95	104	107	103	101	99	97	96	97	95	97	98	98	101	100	96	93	96	97	97

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									4									7	7	6	5	1		
MED									266									310	294	259	248	330		
U Q									276									322	368	270	256	165		
L Q									255									262	242	248	245	165		

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	25	24	19	30	29	29	28	29	30	29	28	27	27	28	29	27	28	29	26	28	28
MED	97	96	95	95	95	95	114	107	105	103	101	99	99	100	101	103	102	101	99	97	99	99	99	99
U Q	101	99	99	98	98	105	119	110	107	105	103	105	107	107	111	111	110	109	103	102	104	105	105	104
L Q	95	95	93	89	93	93	107	103	102	96	97	95	95	96	97	97	95	95	91	91	93	95	97	96

MONTHLY MEDIANS OF h′F AND h′Es

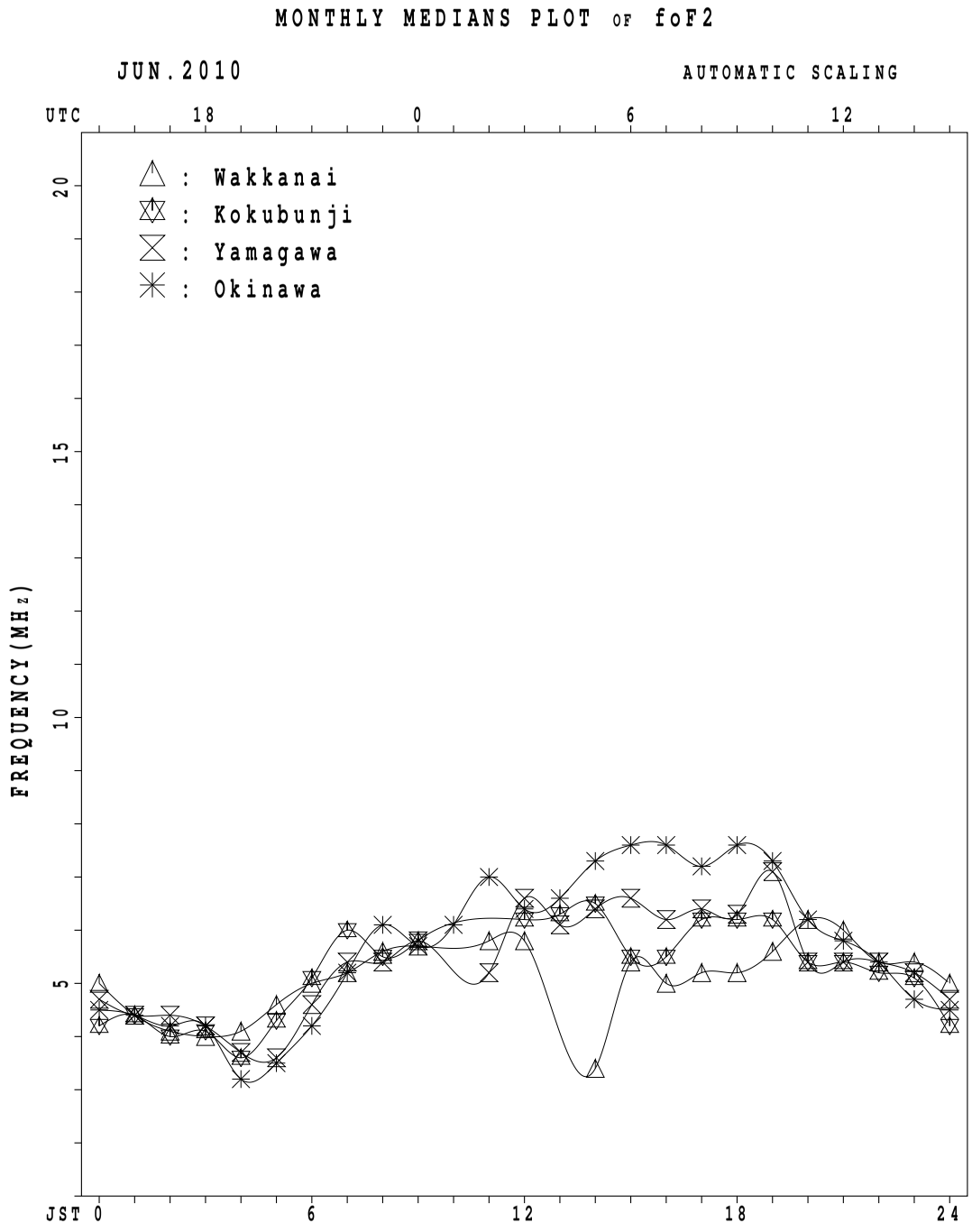
JUN.2010 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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	1		1					5	1									13	16	10	3	3	1	1
MED	334		222					264	256									316	284	253	254	298	312	300
U Q	167		111					287	128									343	302	268	282	302	156	150
L Q	167		111					255	128									293	271	242	226	266	156	150

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	25	24	23	16	18	20	26	28	29	28	27	25	20	24	23	25	25	28	28	27	27	27	26
MED	99	99	99	99	100	98	111	111	105	107	103	103	101	102	103	107	103	103	103	99	101	99	97	101
U Q	103	104	103	103	104	101	116	111	109	111	112	113	112	111	112	117	113	109	109	104	105	103	103	103
L Q	95	97	97	95	97	97	97	107	101	99	99	97	97	98	99	97	95	95	95	94	95	91	91	95


MONTHLY MEDIANS PLOT OF foF2
JUN.2010
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

JUN. 2010 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 53	52	53	51	46															A	X 87	A	X 54	X 48
2	A	47	X 41	47	A															X 68	X 62	A	50	A
3	A	A	X 49	X 45	X 43															X 62	X 70	X 73	X 64	67
4	X 63	70	X 57	X 56	X 52		70													X 77	A	X 60	67	69
5	X 60	X 54	X 54	X 53	X 50															A	X 62	X 56	A	A
6	48	49	46	X 42	X 37															A	A	A	67	A
7	A	50	46	X 42	47															X 69	A	X 61	X 61	X 56
8	X 54	X 52	50	48	X 45															X 58	X 59	X 55	X 52	X 49
9	X 46	X 44	X 42	X 41	X 40															X 70	X 74	X 64	A	X 45
10	A	51	49	49	42	X 40														X 71	X 66	X 68	X 60	66
11	63	60	52	X 47	X 41															A	X 73	X 75	70	60
12	53	51	X 46	X 47	X 41															X 69	X 75	X 62	58	54
13	51	X 44	X 41	45	46															X 76	X 84	67	X 55	47
14	X 49	53	X 46	47	43															X 59	X 66	66	66	66
15	A	A	46	X 38	43	49														X 64	X 64	X 60	X 59	65
16	57	54	48	O X 48	43															A	X 70	X 65	64	X 60
17	A	A	A	X 44	48															X 53	X 58	A	A	X 50
18	A	A	X 42	46	X 40															X 64	X 57	A	X 50	52
19	X 50	X 50	X 50	52	51															X 58	A	X 55	X 53	A
20	A	X 47	47	41	X 33															X 70	X 65	A	X 54	53
21	51	51	50	A	A															X 73	X 68	A	X 60	63
22	55	56	X 49	O X 45	44															X 87	X 81	X 74	70	X 52
23	54	50	53	48	X 40															X 76	X 80	X 65	X 56	X 50
24	X 46	48	X 43	X 37	X 39															X 67	A	A	59	A
25	A	A	48	X 43	43															X 72	66	X 40	54	52
26	X 56	X 53	50	48	X 46															X 64	72	X 71	73	71
27	51	A	A	X 45	X 41															X 60	X 59	X 60	63	63
28	58	58	58	52	X 44															X 76	X 68	X 67	70	66
29	64	X 60	X 44	X 42	X 45															X 76	X 71	X 65	58	62
30	X 56	X 50	X 49	X 47	49															X 72	X 70	X 61	65	X 57
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	24	28	29	28	2	1													25	25	22	27	25
MED	54	51	48	X 47	X 43	44	70													X 69	X 68	X 64	60	57
U Q	58	54	50	48	46															X 74	X 74	X 67	66	66
L Q	X 50	50	X 46	X 42	X 41															X 63	X 63	X 60	X 54	X 51

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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	47	F	F	F	F	41	55	62	55	A	A	A	59	61	61	65	A	A	A	A	81	A	50	41
2	A	F	35	F	A	42	A	A	A	A	A	A	51	51	A	A	A	A	A	62	56	A	F	A
3	A	A	42	39	36	39	A	A	A	A	A	A	58	A	A	59	52	50	51	56	64	67	58	F
4	57	F	50	50	46	A	F	69	A	A	58	63	A	56	71	A	A	A	A	71	A	54	F	F
5	54	48	48	46	44	44	50	A	A	A	A	A	A	A	A	A	A	A	51	A	56	50	A	A
6	F	F	F	36	31	41	A	A	A	A	A	A	A	A	A	55	54	52	A	A	A	A	F	A
7	A	F	F	35	F	44	A	A	A	A	A	50	47	A	A	A	67	67	67	63	A	55	55	50
8	48	46	F	F	39	39	40	A	A	44	A	A	A	A	A	A	52	61	56	52	53	49	46	42
9	40	38	36	35	34	45	51	48	A	A	A	A	A	A	A	A	A	58	56	64	68	57	A	39
10	A	F	F	F	F	34	A	A	A	A	A	A	A	53	66	76	A	62	60	65	60	62	54	F
11	F	F	F	41	35	40	54	A	A	52	A	A	A	A	58	A	53	A	A	A	67	69	F	F
12	F	F	40	41	35	A	A	49	54	A	A	A	A	A	52	55	A	A	A	63	69	56	F	F
13	F	38	35	F	F	43	48	51	59	62	58	52	52	51	48	52	A	50	56	69	77	F	49	F
14	42	F	40	F	F	41	50	56	54	58	A	A	57	A	A	A	54	59	57	52	60	F	F	F
15	A	A	F	32	F	F	48	A	A	A	54	A	56	46	A	A	55	60	65	58	58	54	53	F
16	F	F	F	42	F	40	A	A	A	59	A	A	A	A	50	54	A	A	A	A	64	59	F	54
17	A	A	A	37	F	46	A	A	A	A	A	A	A	A	A	A	44	42	45	46	52	A	A	46
18	A	A	36	F	33	41	A	48	A	A	47	A	A	A	46	A	A	50	A	57	51	A	44	F
19	44	43	44	F	F	42	52	57	58	55	48	40	50	42	47	49	47	48	49	51	A	48	46	A
20	A	41	F	F	27	31	46	56	A	A	A	A	A	50	49	A	50	A	65	64	58	A	48	F
21	F	F	F	A	A	38	54	A	A	58	56	52	A	A	54	60	64	60	64	67	62	A	54	F
22	F	F	43	39	F	40	A	68	A	A	A	R	50	A	A	A	A	60	67	80	75	68	F	46
23	F	F	F	F	34	40	50	57	56	A	A	A	A	A	A	A	53	53	62	69	74	58	49	44
24	40	F	36	31	33	44	49	A	54	68	R 52	56	A	A	50	50	54	A	54	61	A	A	F	A
25	A	A	F	36	F	40	51	56	56	A	A	A	A	A	A	A	70	55	58	65	F	34	F	F
26	50	46	F	F	40	37	46	65	63	57	A	59	61	A	A	52	A	A	A	58	F	65	F	F
27	F	A	A	39	35	30	47	54	A	51	R	A	A	A	A	52	51	60	60	54	54	54	F	F
28	F	F	F	F	38	43	58	73	80	A	51	A	A	A	55	A	56	60	70	70	62	61	F	F
29	F	54	38	36	39	43	42	A	A	52	A	A	57	54	A	50	55	60	66	70	65	59	F	F
30	49	44	43	41	F	41	50	61	60	A	48	53	66	A	A	62	A	71	66	66	64	55	F	51
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	9	14	17	16	27	19	16	11	11	9	8	12	9	13	14	17	20	21	25	23	20	12	9
MED	48	44	40	39	35	41	50	56	56	57	52	52	56	51	52	54	54	60	60	63	62	56	50	46
U Q	50	47	43	41	39	43	52	64	60	59	57	58	58	55	60	60	56	60	66	68	68	62	54	50
L Q	42	40	36	36	34	39	47	52	54	52	48	51	50	48	48	52	52	51	55	56	56	54	47	42

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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							UL 364	396	A	A	A	A	A	448	424	A	A	A	A					
2						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	456	A	A	A	A	380	L					
4						A	A	A	A	A	A	A	A	UL 444	A	A	A	A	A					
5						L	A	A	A	A	A	A	A	A	A	A	A	A	A					
6							A	A	A	A	A	A	A	A	A	428	A	A	A					
7							A	A	A	A	A	A	UL 436	A	A	A	A	A						
8						L	A	A	A	428	A	A	A	A	A	A	A	A	A					
9							340	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	A	A	A	L					
11						UL 304	A	A	A	UL 432	A	A	A	A	A	A	UL 424	A	A					
12						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
13							UL 376	UL 408	412	A	A	UL 456	UL 452	A	A	UL 424	A	A	A					
14							A	A	A	A	A	A	A	A	A	A	A	A	A					
15							A	A	A	A	A	A	A	A	A	A	A	A	A					
16						A	A	A	A	A	A	A	A	A	A	444	A	A	A					
17							A	A	A	A	A	A	A	A	A	A	388	UL 368	UL 352					
18						L	A	392	A	A	424	A	A	A	UL 420	A	A	A	A					
19						UL 320	368	392	432	428	UL 432	A	448	UL 420	A	A	A	372	336					
20							L	A	A	A	A	A	A	UL 424	A	A	A	A	A					
21							UL 364	A	A	A	A	UL 456	A	A	A	A	A	A	A					
22						A	A	A	A	A	A	UL 452	UL 460	A	A	A	A	A						
23							A	A	A	A	A	A	A	A	A	A	416	A	336					
24						A	UL 404	A	UL 404	A	A	A	A	A	UL 444	A	A	A	A					
25							A	A	A	A	A	A	A	A	A	A	A	A	A					
26							372	A	436	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	UL 436	A	A	A	A	A	UL 412	364	L					
28						A	A	UL 412	A	A	A	A	A	A	A	A	A	384	UL 336					
29								A	A	432	A	A	A	A	A	UL 424	A	364	344					
30						L	UL 384	400	UL 544	A	UL 448	A	A	A	A	A	A	372	L					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	8	6	5	4	4	3	5	4	3	4	4	7	5					
MED						UL 312	UL 370	398	432	430	UL 434	UL 456	UL 452	UL 434	UL 424	426	414	372	336					
U Q							UL 380	UL 408	490	432	UL 442	UL 456	458	446	UL 444	436	420	380	348					
L Q							UL 364	392	408	428	428	UL 452	442	UL 422	UL 420	UL 424	400	364	336					

JUN. 2010 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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						A	A	A	A	A	A	A	A	324	A	A	A	A	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
3						AU	A	A	A	A	A	A	A	A	A	A	A	A	B					
4						A	A	A	A	A	A	A	A	344	A	A	A	A	B					
5						A	A	A	A	A	A	A	A200	A	A	A	A	A	A					
6						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	A	A	A	A	A	A	A	A	A	A	B					
8						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
9						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	A	A	A	A					
11						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
12						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
13						180	A	A	A	A	A	A	A	356	340	A	A	A	A					
14						196	A	A	A	A	A	A	A	A	A	A	A	A	A					
15						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
16						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
17						B	A	A	A	A	A	A	A	A	A	A	R	R	200					
18						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
19						A	A	A	A	A	A	A	R	R	A	A	A	A	A					
20						160	252	A	A	A	A	A	A	R	A	A	A	A	A					
21						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
22						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
23						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
24						A	A	A	R	A	A	A	A	A	A	A	A	A	A					
25						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
26						172	A	A	A	A	A	A	A	A	A	A	A	A	A					
27						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
28						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
29						U A 172	A	A	A	A	A	A	A	A	A	A	A	A	U R 208					
30						A	A	A	A	A	A	A	A	A	A	A	A	A	U R 212					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						5	1						1	3	1				3					
MED						172	252						A200	344	340				U R 208					
U Q						188								356					U R 212					
L Q						166								324					200					

JUN. 2010 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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	J A 54	J A 34	J A 45	J A 26	J A 21	22	32	J A 68	J A 92	J A 123	J A 128	J A 85	J A 61	39	40	J A 67	J A 86	J A 82	J A 132	J A 155	J A 74	J A 89	J A 69	J A 80
2	J A 76	J A 50	J A 58	J A 39	J A 62	J A 38	J A 60	J A 73	J A 78	J A 66	J A 66	J A 64	J A 54	J A 58	J A 104	J A 90	J A 66	J A 145	J A 101	J A 53	J A 105	J A 81	J A 117	J A 61
3	J A 54	J A 54	J A 75	J A 70	J A 26	J A 34	J A 60	J A 143	J A 150	J A 97	J A 128	J A 77	J A 46	J A 79	J A 99	J A 74	J A 50	J A 37	26	J A 42	J A 46	J A 44	J A 47	J A 52
4	J A 77	J A 47	J A 60	J A 52	J A 49	J A 53	J A 54	J A 62	J A 108	J A 92	56	J A 49	J A 60	41	J A 115	J A 65	J A 84	J A 95	J A 77	J A 71	J A 57	J A 26	J A 44	J A 48
5	J A 70	J A 51	J A 52	J A 27	J A 24	22	J A 47	J A 88	J A 99	J A 98	J A 106	J A 172	J A 103	J A 99	J A 141	J A 85	J A 72	J A 63	J A 66	J A 101	J A 162	J A 74	J A 74	J A 106
6	J A 50	J A 23	J A 42	J A 30	J A 44	J A 36	J A 84	J A 118	J A 78	J A 81	J A 85	J A 136	J A 116	J A 76	J A 74	J A 37	J A 46	J A 42	J A 103	J A 86	J A 123	J A 75	J A 54	J A 81
7	J A 78	J A 45	J A 42	J A 31	J A 26	24	J A 66	J A 84	J A 93	J A 90	J A 103	J A 56	39	J A 53	J A 68	J A 85	J A 72	J A 53	J A 50	J A 56	J A 100	J A 70	J A 38	J A 42
8	J A 24	J A 29	J A 20	J A 33	J A 29	24	J A 43	J A 101	J A 68	J A 62	J A 58	J A 64	J A 100	J A 94	J A 88	J A 74	J A 54	49	J A 35	J A 46	J A 30	J A 42	J A 74	J A 28
9	J A 27	J A 24	J A 21	22	J A 19	24	30	J A 42	J A 69	J A 60	J A 70	J A 59	J A 108	J A 100	J A 209	J A 84	J A 125	J A 95	J A 61	22	J A 57	J A 94	J A 64	J A 46
10	J A 53	J A 39	J A 47	J A 46	J A 46	J A 34	J A 82	J A 82	J A 94	J A 126	J A 109	J A 113	J A 76	47	J A 56	J A 62	J A 112	J A 60	J A 33	J A 43	J A 40	J A 34	J A 83	J A 44
11	J A 48	J A 26	J A 40	J A 30	J A 32	24	J A 41	J A 79	J A 149	J A 104	J A 70	J A 84	J A 55	J A 69	J A 54	J A 69	J A 42	J A 88	J A 82	J A 90	J A 67	J A 52	J A 74	J A 82
12	J A 46	J A 21	J A 19	J A 32	J A 30	J A 45	J A 45	J A 51	J A 58	J A 59	J A 50	J A 56	J A 75	J A 54	46	J A 46	J A 52	J A 60	J A 60	J A 38	J A 24	J A 98	J A 41	J A 42
13	J A 39	J A 48	J A 24	21	22	23	32	38	J A 40	J A 47	J A 48	40	40	42	J A 48	J A 47	J A 70	J A 102	J A 43	J A 52	J A 102	J A 45	J A 52	J A 22
14	J A 28	J A 27	J A 25	J A 32	E B 14	27	J A 43	J A 72	J A 62	J A 61	J A 90	J A 170	J A 82	J A 82	J A 55	J A 46	J A 52	72	J A 93	J A 42	J A 44	J A 72	J A 75	J A 83
15	J A 143	J A 60	J A 30	J A 30	21	22	41	J A 56	J A 115	J A 70	J A 80	J A 60	J A 56	J A 45	J A 51	J A 55	45	J A 45	J A 41	J A 28	J A 32	J A 21	J A 45	J A 45
16	J A 88	J A 104	J A 64	J A 86	J A 53	J A 40	J A 73	J A 86	J A 166	J A 266	J A 231	J A 73	J A 104	J A 126	J A 52	41	J A 68	J A 108	J A 80	J A 86	J A 113	J A 55	J A 77	J A 74
17	J A 97	J A 60	J A 64	J A 59	J A 39	J A 53	J A 110	J A 98	J A 72	J A 65	J A 88	J A 116	J A 74	J A 80	J A 92	J A 48	G 25	G	28	J A 39	J A 85	J A 146	J A 105	J A 113
18	J A 73	J A 56	J A 53	J A 27	J A 46	J A 23	J A 52	34	J A 49	J A 66	42	46	J A 74	J A 72	38	J A 60	J A 71	J A 50	J A 66	J A 38	J A 24	J A 62	J A 44	J A 43
19	J A 58	J A 65	J A 49	J A 50	J A 27	J A 28	J A 37	36	38	37	J A 42	38	G 34	G	43	45	J A 44	35	J A 32	J A 26	J A 54	J A 29	J A 44	J A 79
20	J A 60	J A 48	J A 40	J A 26	J A 22	20	33	40	J A 83	J A 68	J A 57	J A 111	J A 192	G 26	45	J A 72	J A 60	J A 89	J A 79	J A 76	J A 53	J A 87	J A 113	J A 63
21	J A 59	J A 50	J A 36	J A 37	J A 44	J A 24	32	J A 56	J A 79	J A 62	J A 70	J A 66	J A 129	J A 56	45	J A 51	J A 76	J A 76	J A 46	J A 23	J A 52	J A 101	J A 30	J A 38
22	J A 54	J A 80	J A 72	J A 61	J A 29	J A 29	J A 62	J A 59	J A 122	J A 90	J A 124	45	44	J A 74	J A 53	J A 70	J A 107	J A 78	J A 116	J A 102	J A 81	J A 75	J A 55	J A 70
23	J A 64	J A 38	J A 46	J A 45	J A 30	24	J A 45	J A 49	J A 86	J A 77	J A 81	J A 114	J A 98	J A 83	J A 105	J A 138	37	J A 44	J A 34	J A 81	J A 55	J A 29	J A 25	23
24	J A 24	J A 30	J A 27	22	21	J A 29	32	J A 70	G 27	46	J A 68	J A 54	J A 68	J A 75	J A 48	J A 45	J A 44	J A 70	J A 51	J A 61	J A 90	J A 63	J A 46	J A 68
25	J A 78	J A 84	J A 60	J A 30	J A 20	25	33	J A 51	J A 49	J A 68	J A 104	J A 105	J A 78	J A 55	J A 63	J A 82	J A 62	J A 54	J A 73	J A 57	J A 47	J A 72	J A 31	J A 52
26	J A 74	J A 25	J A 66	J A 24	J A 44	J A 20	J A 29	J A 44	J A 37	J A 55	J A 141	J A 73	J A 66	J A 92	J A 57	42	J A 120	J A 102	J A 78	J A 105	J A 50	J A 63	J A 129	J A 82
27	J A 60	J A 56	J A 73	J A 63	J A 58	J A 28	J A 48	J A 56	J A 78	J A 47	J A 43	J A 116	J A 102	J A 148	J A 76	J A 44	J A 38	J A 33	J A 27	J A 35	J A 44	J A 57	J A 45	J A 28
28	J A 31	J A 47	J A 28	J A 28	J A 42	J A 36	J A 49	J A 70	J A 116	J A 139	J A 57	J A 53	J A 61	J A 74	J A 48	J A 78	J A 85	J A 33	J A 26	J A 50	J A 44	J A 28	J A 37	J A 39
29	J A 64	J A 48	J A 36	J A 52	J A 48	J A 22	J A 30	J A 48	J A 58	J A 43	J A 73	J A 54	J A 51	J A 49	J A 64	J A 36	J A 40	J A 31	G J A 24	J A 24	J A 29	J A 32	J A 33	J A 43
30	20	J A 25	20	J A 23	E B 14	25	30	37	J A 48	J A 100	J A 96	J A 63	J A 58	J A 91	J A 107	J A 61	J A 87	J A 39	G 18	J A 22	J A 51	J A 35	J A 61	J A 48
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J A 58	J A 48	J A 44	J A 32	J A 30	25	J A 44	J A 60	J A 78	J A 68	J A 76	J A 65	J A 71	J A 73	J A 56	J A 62	J A 64	J A 60	J A 56	J A 51	J A 54	J A 62	J A 53	J A 50
U Q	J A 74	J A 56	J A 60	J A 50	J A 44	J A 34	J A 60	J A 82	J A 99	J A 97	J A 104	J A 111	J A 100	J A 83	J A 92	J A 74	J A 84	J A 88	J A 79	J A 81	J A 85	J A 75	J A 74	J A 79
L Q	J A 46	J A 29	J A 28	J A 27	J A 22	23	J A 32	48	J A 58	J A 60	J A 57	54	55	49	48	46	45	42	33	J A 38	J A 44	J A 35	J A 44	J A 42

JUN. 2010 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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 16	E B 15	34	E B 15	16	21	25	33	45	A A 123	A A 128	A A 85	44	38	38	53	A A 86	A A 82	A A 132	A A 155	55	A A 89	32	35
2	A A 76	20	21	E B 15	A A 62	35	A A 60	A A 73	A A 78	A A 66	A A 66	A A 64	43	43	A A 104	A A 90	A A 66	A A 145	A A 101	37	41	A A 81	28	A A 61
3	A A 54	A A 54	24	18	22	31	A A 60	A A 143	A A 150	A A 97	A A 128	A A 77	39	A A 79	A A 99	43	46	30	23	38	34	34	28	36
4	40	33	20	45	36	A A 53	44	52	A A 108	A A 92	54	45	A A 60	39	58	A A 65	A A 84	A A 95	A A 77	56	A A 57	18	36	34
5	35	34	38	18	18	19	40	A A 88	A A 99	A A 98	A A 106	A A 172	A A 103	A A 99	A A 141	A A 85	A A 72	A A 63	33	A A 101	46	34	A A 74	A A 106
6	30	E B 15	E B 15	16	E B 15	30	A A 84	A A 118	A A 78	A A 81	A A 85	A A 136	A A 116	A A 76	A A 74	36	39	35	A A 103	A A 86	A A 123	A A 75	40	A A 81
7	A A 78	17	30	24	21	21	A A 66	A A 84	A A 93	A A 90	A A 103	44	38	A A 53	A A 68	A A 85	47	40	45	44	A A 100	43	23	32
8	E B 15	16	E B 16	E B 15	17	22	34	A A 101	A A 68	35	A A 58	A A 64	A A 100	A A 94	A A 88	A A 74	44	46	28	24	25	28	17	E B 15
9	E B 15	16	E B 15	E B 16	E B 15	20	28	38	A A 69	A A 60	A A 70	A A 59	A A 108	A A 100	A A 209	A A 84	A A 125	51	28	18	41	41	A A 64	19
10	A A 53	28	24	19	16	26	A A 82	A A 82	A A 94	A A 126	A A 109	A A 113	A A 76	45	50	51	A A 112	38	21	27	24	29	42	26
11	28	19	21	20	22	21	35	A A 79	A A 149	39	A A 70	A A 84	A A 55	A A 69	50	A A 69	35	A A 88	A A 82	A A 90	52	26	36	21
12	18	E B 16	E B 15	17	E B 15	A A 45	A A 45	44	47	A A 59	A A 50	A A 56	A A 75	A A 54	44	43	A A 52	A A 60	A A 60	34	20	20	17	23
13	16	E B 15	18	E B 15	15	21	30	35	36	44	43	38	38	40	44	37	A A 70	46	41	39	33	38	36	20
14	E B 14	E B 15	E B 15	E B 15	E B 14	25	38	49	43	53	A A 90	A A 170	48	A A 82	A A 55	A A 46	41	47	42	32	15	E B 15	36	39
15	A A 143	A A 60	18	17	E B 14	22	37	A A 56	A A 115	A A 70	44	A A 60	44	38	A A 51	A A 55	41	41	34	23	27	17	23	19
16	36	18	22	30	E B 15	31	A A 73	A A 86	A A 166	44	A A 231	A A 73	A A 104	A A 126	41	39	A A 68	A A 108	A A 80	A A 86	17	E B 15	19	37
17	A A 97	A A 60	A A 64	23	24	36	A A 110	A A 98	A A 72	A A 65	A A 88	A A 116	A A 74	A A 80	A A 92	A A 48	G 22	G	26	30	38	A A 146	A A 105	16
18	A A 73	A A 56	20	E B 14	18	20	A A 52	30	A A 49	A A 66	39	A A 46	A A 74	A A 72	37	A A 60	A A 71	42	A A 66	23	20	A A 62	28	27
19	19	E B 15	20	23	19	22	26	32	36	34	36	37	G 34	G	39	42	38	31	26	20	A A 54	22	38	A A 79
20	A A 60	31	20	19	17	19	30	40	A A 83	A A 68	A A 57	A A 111	A A 192	G 23	43	A A 72	44	A A 89	35	40	42	A A 87	21	27
21	15	25	24	A A 37	A A 44	21	29	A A 56	A A 79	45	44	40	A A 129	A A 56	44	48	55	47	41	19	32	A A 101	22	20
22	40	22	29	31	E B 15	27	A A 62	45	A A 122	A A 90	A A 124	42	41	A A 74	A A 53	A A 70	A A 107	55	45	72	55	18	18	26
23	20	29	17	22	19	20	38	46	44	A A 77	A A 81	A A 114	A A 98	A A 83	A A 105	A A 138	34	41	23	61	49	18	E B 16	15
24	E B 16	E B 15	E B 15	E B 15	E B 15	24	31	A A 70	G 26	43	45	49	A A 68	A A 75	40	41	41	A A 70	44	48	A A 90	A A 63	38	A A 68
25	A A 78	A A 84	19	17	E B 16	21	30	46	42	A A 68	A A 104	A A 105	A A 78	A A 55	A A 63	A A 82	57	38	45	19	32	21	24	32
26	31	E B 16	23	16	E B 15	20	27	38	36	43	A A 141	50	51	A A 92	A A 57	40	A A 120	A A 102	A A 78	45	28	38	18	39
27	29	A A 56	A A 73	32	18	24	39	46	A A 78	43	39	A A 116	A A 102	A A 148	A A 76	42	35	30	24	24	35	38	34	18
28	18	19	17	17	20	33	44	32	62	A A 139	44	A A 53	A A 61	A A 74	44	A A 78	48	32	25	22	E B 23	20	23	18
29	30	18	E B 15	17	20	19	27	A A 48	A A 58	38	A A 73	A A 54	48	43	A A 64	35	39	28	G	E B 16	17	16	17	20
30	E B 16	E B 15	E B 14	E B 15	E B 14	21	28	33	42	A A 100	40	48	46	A A 91	A A 107	57	A A 87	29	G 18	17	E B 16	19	28	32
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	30	19	20	17	17	22	38	48	A A 70	A A 66	A A 70	A A 62	A A 64	A A 73	A A 56	A A 54	50	46	41	36	34	32	28	27
U Q	A A 54	A A 33	24	23	20	30	A A 60	A A 82	A A 94	A A 90	A A 104	A A 111	A A 100	A A 83	A A 88	A A 74	A A 72	A A 70	A A 66	A A 56	A A 52	A A 62	36	A A 37
L Q	E B 16	E B 16	E B 16	E B 15	E B 15	21	30	38	44	44	44	48	44	43	44	42	41	35	26	23	24	19	21	20

JUN. 2010 fbEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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	16	15	15	15	14	16	14	16	16	14	18	24	29	18	18	15	16	15	14	15	14	14	14	15
2	15	14	14	15	15	13	14	16	16	14	15	22	24	22	23	16	14	15	14	15	14	15	15	15
3	15	14	15	15	15	14	14	15	16	18	23	20	19	25	20	20	15	14	12	13	14	14	15	15
4	15	16	16	14	14	13	14	14	17	16	19	23	19	18	16	19	14	20	14	14	14	13	14	16
5	15	15	14	14	15	14	13	13	14	21	21	25	20	20	23	18	16	12	12	14	14	15	15	14
6	15	15	15	15	15	15	14	12	13	16	18	26	22	20	19	18	13	12	14	13	14	15	15	15
7	15	15	15	14	13	14	14	12	15	18	20	20	18	18	20	19	12	13	14	16	15	14	14	14
8	15	16	16	15	14	13	14	14	20	18	17	20	31	26	21	17	14	14	15	14	14	14	14	15
9	15	16	15	16	15	14	12	15	11	17	18	20	22	22	26	20	13	14	12	14	15	15	14	14
10	15	15	14	15	14	14	13	14	14	16	20	20	20	17	20	15	15	12	14	14	14	14	14	15
11	14	14	15	14	13	14	14	15	14	20	22	18	18	22	22	17	13	12	12	14	16	15	16	14
12	15	16	15	15	15	14	15	14	14	17	25	21	21	16	16	14	14	14	13	15	14	14	14	14
13	15	15	15	15	14	14	14	14	14	20	22	22	22	18	24	22	19	14	13	14	15	14	14	15
14	14	15	14	15	14	13	14	14	17	16	30	19	24	22	20	16	15	12	14	13	15	15	15	14
15	16	15	14	15	14	14	13	14	14	20	16	17	25	17	20	16	14	15	14	14	16	14	15	15
16	16	15	14	14	15	14	14	14	14	14	15	15	18	18	19	16	14	13	15	13	16	15	14	15
17	15	15	15	14	14	14	12	14	14	18	18	27	17	21	18	15	12	16	11	13	14	15	15	15
18	15	15	15	14	14	14	13	13	14	16	22	19	21	22	20	16	13	14	13	13	14	15	15	14
19	15	15	15	14	13	12	13	14	16	18	19	17	20	21	19	18	14	13	13	13	14	14	15	16
20	16	15	15	14	14	14	14	14	17	14	21	22	19	16	19	16	14	14	14	13	16	16	14	14
21	15	16	15	14	14	13	13	13	15	17	26	22	28	27	21	21	19	11	14	15	15	15	15	13
22	15	13	14	14	15	13	13	16	15	20	22	23	22	23	20	18	18	15	13	16	15	16	15	15
23	14	15	14	14	15	14	14	12	14	21	23	27	24	25	20	21	14	15	14	14	15	14	16	15
24	16	15	15	15	15	14	13	16	14	18	21	17	15	18	19	15	15	14	14	14	15	15	15	14
25	16	15	14	15	16	12	14	15	17	14	20	28	27	21	20	18	15	15	15	14	15	14	15	14
26	14	16	15	14	15	14	13	14	14	16	23	19	18	23	24	16	15	14	15	15	14	15	15	15
27	15	14	13	15	15	14	14	14	13	18	19	26	28	22	15	13	16	14	15	14	16	15	15	15
28	15	15	14	15	14	14	14	13	14	17	18	19	21	22	20	18	15	14	14	14	14	14	15	15
29	16	15	15	16	15	14	14	13	12	15	16	19	25	21	24	20	14	14	14	16	15	14	16	15
30	16	15	14	15	14	15	13	14	14	12	16	19	22	24	17	18	14	14	12	14	16	15	15	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	14	14	14	14	14	17	20	20	22	21	20	18	14	14	14	14	15	15	15	15
U Q	16	15	15	15	15	14	14	15	16	18	22	23	24	22	21	19	15	15	14	15	15	15	15	15
L Q	15	15	14	14	14	13	13	13	14	16	18	19	19	18	19	16	14	13	13	13	14	14	14	14

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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	296	F	F	F	F	323	338	352	327	A	A	A	311	321	295	322	A	A	A	A	326	A	299	295
2	A	F	318	F	A	323	A	A	A	A	A	A	278	276	A	A	A	A	A	330	299	A	F	A
3	A	A	293	301	326	323	A	A	A	A	A	A	315	A	A	328	315	323	318	301	297	311	293	F
4	291	F	339	309	307	A	F	381	A	A	342	336	A	279	315	A	A	A	A	317	A	296	F	F
5	307	287	315	309	343	332	328	A	A	A	A	A	A	A	A	A	A	A	310	A	319	321	A	A
6	F	F	F	352	342	329	A	A	A	A	A	A	A	A	A	316	328	322	A	A	A	A	F	A
7	A	F	F	308	F	397	A	A	A	A	A	317	244	A	A	A	319	332	352	326	A	296	314	319
8	312	306	F	F	319	364	349	A	A	294	A	A	A	A	A	A	300	338	348	333	311	315	337	317
9	316	307	320	345	351	375	363	356	A	A	A	A	A	A	A	A	A	325	326	319	345	342	A	326
10	A	F	F	F	F	339	A	A	A	A	A	A	A	284	295	327	A	307	316	316	319	325	306	F
11	F	F	F	324	331	323	342	A	A	317	A	A	A	A	338	A	295	A	A	A	315	320	F	F
12	F	F	324	329	334	A	A	350	350	A	A	A	A	A	300	315	A	A	A	309	337	326	F	F
13	F	328	323	F	F	338	352	335	345	355	349	301	313	302	263	300	A	293	296	314	322	F	311	F
14	309	F	307	F	F	364	343	343	336	347	A	A	343	A	A	A	292	327	365	307	327	F	F	F
15	A	A	F	315	F	F	329	A	A	A	338	A	331	352	A	A	301	315	336	319	318	303	299	F
16	F	F	F	316	F	369	A	A	A	346	A	A	A	A	276	313	A	A	A	A	301	299	F	323
17	A	A	A	302	F	362	A	A	A	A	A	A	A	A	A	A	293	262	307	314	293	A	A	346
18	A	A	335	F	309	339	A	314	A	A	293	A	A	A	286	A	A	315	A	339	330	A	299	F
19	304	325	328	F	F	322	338	357	335	356	320	310	290	290	294	311	295	310	325	351	A	314	325	A
20	A	300	F	F	329	367	342	366	A	A	A	A	A	303	287	A	303	A	328	338	326	A	303	F
21	F	F	F	A	A	324	368	A	A	340	338	316	A	A	305	311	329	310	310	326	338	A	300	F
22	F	F	337	308	F	317	A	335	A	A	A	R	295	A	A	A	A	316	322	325	320	322	F	316
23	F	F	F	F	329	329	333	339	360	A	A	A	A	A	A	A	291	293	312	324	342	339	318	315
24	310	F	308	318	317	372	327	A	309	359	R 312	327	A	A	277	306	324	A	318	350	A	A	F	A
25	A	A	F	336	F	358	382	352	314	A	A	A	A	A	A	A	345	313	330	339	F	305	F	F
26	322	311	F	F	338	323	304	331	328	329	A	299	326	A	A	294	A	A	A	339	F	304	F	F
27	F	A	A	321	316	339	294	339	A	317	R	A	A	A	A	292	292	331	329	326	293	287	F	F
28	F	F	F	F	297	302	282	311	345	A	349	A	A	A	289	A	300	310	329	327	302	306	F	F
29	F	322	321	310	297	384	345	A	A	333	A	A	320	297	A	261	305	306	301	345	329	302	F	F
30	313	312	320	300	F	327	318	354	335	A	249	264	329	A	A	299	A	330	326	315	306	285	F	315
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	9	14	17	16	27	19	16	11	11	9	8	12	9	13	14	17	20	21	25	23	20	12	9
MED	310	311	320	315	328	338	338	346	335	340	338	313	314	297	294	311	301	315	325	326	319	308	304	317
U Q	313	324	328	326	336	364	349	355	345	355	346	322	328	312	302	316	322	326	330	338	329	322	316	324
L Q	304	303	315	308	312	323	327	335	327	317	302	300	292	282	282	299	294	308	311	316	302	300	299	315

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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							UL 364	392	A	A	A	A	A	381	437	A	A	A	A					
2						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	418	A	A	A	A	350	L					
4						A	A	A	A	A	A	A	A	UL 321	A	A	A	A	A					
5						L	A	A	A	A	A	A	A	A	A	A	A	A	A					
6							A	A	A	A	A	A	A	A	A	374	A	A	A					
7							A	A	A	A	A	A	UL 422	A	A	A	A	A						
8						L	A	A	A	400	A	A	A	A	A	A	A	A	A					
9							411	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	A	A	A	L					
11						UL 351	A	A	A	UL 409	A	A	A	A	A	A	UL 355	A	A					
12						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
13							UL 385	UL 390	415	A	A	UL 413	UL 434	A	A	UL 394	A	A	A					
14							A	A	A	A	A	A	A	A	A	A	A	A	A					
15							A	A	A	A	A	A	A	A	A	A	A	A	A					
16						A	A	A	A	A	A	A	A	A	A	437	A	A	A					
17							A	A	A	A	A	A	A	A	A	A	357	UL 412	UL 338					
18						L	A	386	A	A	455	A	A	A	UL 420	A	A	A	A					
19						UL 350	374	396	401	437	UL 449	A	418	UL 349	A	A	A	388	374					
20							L	A	A	A	A	A	A	UL 439	A	A	A	A	A					
21							UL 375	A	A	A	A	UL 411	A	A	A	A	A	A	A					
22						A	A	A	A	A	A	UL 390	UL 321	A	A	A	A	A						
23							A	A	A	A	A	A	A	A	A	A	375	A	358					
24						A	UL 352	A	UL 345	A	A	A	A	A	UL 347	A	A	A	A					
25							A	A	A	A	A	A	A	A	A	A	A	A	A					
26							380	A	381	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	UL 439	A	A	A	A	A	UL 385	379	L					
28						A	A	UL 380	A	A	A	A	A	A	A	A	A	365	UL 373					
29								A	A	384	A	A	A	A	A	UL 399	A	388	359					
30						L	UL 361	391	UL 365	A	UL 426	A	A	A	A	A	A	383	L					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	8	6	5	4	4	3	5	4	3	4	4	7	5					
MED						UL 350	UL 374	390	381	404	UL 444	UL 411	UL 418	UL 365	UL 420	396	366	383	359					
U Q							382	392	408	423	452	UL 413	UL 428	410	437	418	380	388	374					
L Q							UL 362	386	UL 355	392	UL 432	UL 390	370	UL 335	UL 347	384	356	365	348					

JUN. 2010 M(3000)F1 (0.01)

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JUN. 2010 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							284	274	E A 280	A	A	A	332	330	360	E A 314	A	A	A					
2						E A 276	A	A	A	A	A	A	E A 422	E A 436	A	A	A	A	A					
3							A	A	A	A	A	A	340	A	A	E A 302	E A 352	304	290					
4						A	E A 298	222	A	A	294	308	A	408	E A 314	A	A	A	A					
5						282	E A 280	A	A	A	A	A	A	A	A	A	A	A	298					
6							A	A	A	A	A	A	A	A	A	330	308	304	A					
7							A	A	A	A	A	344	530	A	A	A	290	272						
8						246	E A 266	A	A	408	A	A	A	A	A	A	E A 354	266	256					
9							248	272	A	A	A	A	A	A	A	A	A	E A 318	282					
10							A	A	A	A	A	A	A	402	E A 344	274	A	290	268					
11						312	268	A	A	318	A	A	A	A	E A 294	A	382	A	A					
12						A	A	E A 294	E A 284	A	A	A	A	A	368	328	A	A	A					
13							276	290	280	272	266	378	360	380	496	364	A	E A 360	E A 326					
14							E A 282	E A 306	296	E A 294	A	A	294	A	A	A	E A 382	300	238					
15							E A 306	A	A	A	306	A	306	284	A	A	358	282	244					
16						256	A	A	A	278	A	A	A	A	420	338	A	A	A					
17							A	A	A	A	A	A	A	A	A	A	416	440	326					
18						294	A	340	A	A	366	A	A	A	366	A	A	E A 330	A					
19						308	300	260	280	278	362	E A 330	400	422	E A 368	356	392	344	300					
20							286	248	A	A	A	A	A	376	416	A	E A 368	A	274					
21							250	A	A	294	290	358	A	A	362	328	E A 290	E A 310	E A 272					
22						E A 278	A	278	A	A	A	400	398	A	A	A	A	E A 350						
23							276	E A 274	260	A	A	A	A	A	A	A	388	E A 366	296					
24						238	312	A	340	246	E A 338	E A 322	A	A	428	356	316	A	E A 304					
25							236	264	336	A	A	A	A	A	A	A	E A 270	304	E A 284					
26							368	280	308	288	A	E A 344	E A 294	A	A	372	A	A	A					
27							E A 358	E A 298	A	332	R	A	A	A	A	388	364	280	264					
28						E A 338	E A 358	308	266	A	284	A	A	A	382	A	E A 356	322	270					
29								A	A	314	A	A	E A 338	388	A	468	332	320	290					
30						320	300	252	332	A	506	E A 480	310	A	A	E A 356	A	276	264					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						11	19	16	11	11	9	9	12	9	13	14	17	20	19					
MED						280	280	272	284	294	300	344	337	384	368	340	354	U 294	276					
U Q						312	E A 306	E A 296	332	318	364	389	399	415	418	364	382	E A 337	298					
L Q						256	268	262	280	278	287	E A 326	308	353	E A 352	328	312	286	264					

JUN. 2010 h′F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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 284	E B 286	E A 342	E B 256	E A 252	E A 234	220	212	A	A	A	A	A	210	212	A	A	A	A	A	E A 274	A	E A 282	E A 354
2	A	E A 288	E A 300	E B 274	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 240	E A 296	A	E A 324	A
3	A	A	E A 296	E A 284	E A 258	E A 260	A	A	A	A	A	A	206	A	A	A	A	220	220	E A 294	E A 292	E A 266	E A 290	E A 296
4	E A 316	E A 290	212	E A 348	E A 328	A	A	A	A	A	A	A	A	E A 244	A	A	A	A	A	E A 294	A	224	E A 322	E A 308
5	E A 292	E A 330	E A 314	E A 276	220	230	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 296	E A 252	A	A
6	E A 296	E B 284	E B 262	230	212	E A 268	A	A	A	A	A	A	A	A	A	E A 242	A	A	A	A	A	A	E A 248	A
7	A	E A 242	E A 302	E A 298	216	196	A	A	A	A	A	A	206	A	A	A	A	A	E A 238	E A 250	A	E A 342	E A 270	E A 282
8	E B 230	E A 254	E B 250	E B 236	E A 238	186	A	A	A	200	A	A	A	A	A	A	A	A	A	220	E A 264	E A 266	234	E B 242
9	E B 256	E A 266	E B 250	E A 240	222	218	194	A	A	A	A	A	A	A	A	A	A	A	A	234	E A 250	E A 250	A	E A 238
10	A	E A 304	E A 310	E A 292	E A 266	E A 272	A	A	A	A	A	A	A	A	A	A	A	A	204	E A 246	E A 240	E A 248	E A 316	E A 304
11	E A 270	E A 248	E A 266	E A 252	E A 266	E A 248	A	A	A	216	A	A	A	A	A	A	226	A	A	A	E A 290	E A 250	E A 246	216
12	226	E B 250	E B 236	E A 244	E B 234	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 262	226	222	E A 256	E A 278
13	224	E B 248	E A 246	E B 250	E A 250	230	214	218	198	A	A	212	188	A	A	206	A	A	A	E A 258	E A 252	218	E A 288	E A 292
14	E B 276	E B 248	E B 250	E B 240	214	228	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 280	E B 246	E B 264	E A 338	E A 274
15	A	A	E A 248	230	E B 234	222	A	A	A	A	A	A	A	A	A	A	A	A	A	222	E A 246	E A 254	E A 292	E A 262
16	E A 286	E A 250	E A 300	E A 310	E B 260	A	A	A	A	A	A	A	A	A	A	208	A	A	A	A	E A 246	E B 236	E A 258	E A 286
17	A	A	A	E A 314	E A 296	E A 254	A	A	A	A	A	A	A	A	A	A	220	206	E A 260	E A 266	E A 352	A	A	214
18	A	A	E A 234	E B 254	E A 292	242	A	220	A	A	190	A	A	A	196	A	A	A	A	226	E A 242	A	E A 316	E A 314
19	E A 268	E B 242	E A 246	E A 276	E A 256	232	210	202	202	186	184	A	196	218	A	A	A	210	214	220	A	E A 262	E A 306	A
20	A	E A 328	E A 306	E A 256	E A 276	214	218	A	A	A	A	A	A	192	A	A	A	A	A	E A 242	E A 262	A	E A 266	E A 286
21	E B 244	E A 294	E A 268	A	A	E A 238	218	A	A	A	A	202	A	A	A	A	A	A	A	226	224	A	E A 256	E A 268
22	E A 318	E A 260	E A 256	E A 292	E B 254	A	A	A	A	A	A	226	E A 308	A	A	A	A	A	E A 284	E A 316	E A 266	220	210	E A 272
23	E A 270	E A 306	222	E A 284	E A 258	224	A	A	A	A	A	A	A	A	A	A	212	A	218	E A 304	E A 250	212	208	232
24	E B 254	E B 262	E B 260	E B 236	E B 250	A	224	A	190	A	A	A	A	A	E A 258	A	A	A	A	E A 246	A	A	E A 320	A
25	A	A	E A 284	E A 246	E B 274	214	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 244	224	E A 278	E A 284	E A 316
26	E A 288	E B 248	222	E A 248	226	214	208	A	208	A	A	A	A	A	A	A	A	A	A	E A 256	E A 288	E A 298	E A 284	E A 242
27	E A 288	A	A	E A 294	E A 262	E A 272	A	A	A	A	196	A	A	A	A	A	208	220	206	228	E A 316	E A 330	E A 276	E A 302
28	E A 292	E A 292	E A 244	E A 266	E A 282	A	A	216	A	A	A	A	A	A	A	A	A	228	214	240	E A 246	E A 258	E A 242	E A 298
29	E A 290	E A 234	216	E A 286	E A 300	212	212	A	A	E A 250	A	A	A	A	A	196	A	202	222	226	226	214	E A 268	E A 254
30	E B 234	E B 256	E B 236	E B 240	E B 258	224	228	214	224	A	210	A	A	A	A	A	A	216	214	222	220	E A 260	E A 264	E A 282
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	24	28	29	28	23	10	6	5	4	4	3	5	4	3	4	4	7	11	25	25	22	27	25
MED	E A 276	E A 261	E A 253	E A 256	E A 257	222	216	215	202	200	193	212	201	208	204	204	216	216	216	E A 244	E A 250	E A 253	E A 276	E A 282
U Q	E A 291	E A 291	E A 298	E A 289	E A 270	E A 248	220	218	216	233	203	226	257	231	E A 258	225	223	220	E A 238	E A 264	E A 289	E A 266	E A 306	E A 300
L Q	E B 249	E B 248	240	E 242	234	214	210	212	194	193	187	202	192	201	196	201	210	206	214	226	241	224	E A 256	248

JUN. 2010 h'F (KM)

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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						114	A	A	A	A	A	A	A	120	120	A	A	A	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
3						A	A	A	A	A	A	A	A	A	A	A	A	A	B					
4						A	A	A	A	A	A	A	A	118	A	A	A	A	B					
5						124	120	A	A	A	A	A	A	A	A	A	A	122	A					
6						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
7						116	110	A	A	A	A	A	A	A	A	A	A	A	B					
8						126	A	A	A	A	A	A	A	A	A	A	A	A	A					
9						B	120	120	A	A	A	A	A	A	A	A	A	A	A					
10							120	A	A	A	A	A	A	A	A	A	A	A	A					
11						124	A	A	A	A	A	A	A	A	A	A	124	A	A					
12						118	A	A	A	A	A	A	A	A	A	A	A	A	A					
13						122	112	A	A	A	A	A	A	114	114	114	A	A	A					
14						120	116	A	A	A	A	A	A	A	A	116	116	A	A					
15						124	122	A	A	A	A	A	A	A	A	A	A	A	A					
16						A	118	A	A	A	A	A	A	A	A	118	118	A	A					
17						B	A	A	A	A	A	A	A	A	A	A	118	118	124					
18						120	108	A	A	A	A	A	A	A	A	A	A	A	A					
19						A	A	114	A	A	A	A	116	118	116	A	116	A	A					
20						120	116	116	A	A	A	A	A	116	126	A	A	A	A					
21						A	120	A	A	A	A	A	A	A	118	A	A	A	A					
22						122	A	A	A	A	A	126	122	A	A	118	A	A	A					
23						118	118	118	A	A	A	A	A	A	A	A	118	A	A					
24						124	122	A	114	A	A	A	A	A	A	118	118	A	A					
25						118	A	A	A	A	A	A	A	A	A	A	A	A	A					
26						116	112	108	A	A	A	A	A	A	A	118	A	A	A					
27						118	108	A	A	A	A	A	A	A	112	112	112	112	114					
28						A	A	A	A	A	A	A	A	A	A	A	A	114	A					
29						118	118	A	A	A	A	A	A	A	A	114	118	A	124					
30						122	118	118	A	A	A	A	118	A	A	A	A	A	116					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						19	17	6	1			1	3	5	6	8	9	4	4					
MED						120	118	117	114			126	118	118	117	117	118	116	120					
U Q						124	120	118					122	119	120	118	118	120	124					
L Q						118	112	114					116	115	114	114	116	113	115					

JUN. 2010 h′E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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	104	104	104	104	104	116	108	108	98	98	98	98	98	150	118	106	106	106	100	100	100	100	98	92
2	94	94	94	92	90	110	106	106	102	106	106	104	106	104	100	100	112	116	102	102	102	102	104	100
3	98	96	96	96	94	106	106	102	100	100	98	98	98	96	94	96	96	96	108	108	106	106	106	100
4	100	94	98	98	98	104	106	106	100	100	100	100	100	134	106	104	106	106	102	104	102	96	96	96
5	98	96	88	88	88	134	116	102	104	102	102	98	98	98	98	98	98	116	106	100	100	100	100	100
6	96	96	104	102	120	108	104	102	102	100	100	96	96	94	94	96	122	104	104	102	102	102	102	98
7	96	96	96	94	92	124	116	102	102	102	102	102	102	102	96	96	96	96	108	90	92	110	102	102
8	106	100	106	98	100	126	104	102	102	106	104	104	102	100	100	96	96	94	104	90	88	106	104	102
9	96	96	96	92	100	106	124	122	104	104	106	106	106	106	108	108	106	106	106	104	100	106	100	104
10	98	92	92	104	94	92	110	106	106	106	100	100	106	100	106	104	102	98	92	92	90	88	100	102
11	102	102	100	96	94	118	110	104	102	104	104	98	104	102	104	106	128	104	96	96	92	98	104	104
12	104	102	100	100	112	116	108	102	102	100	100	100	98	98	128	100	92	118	102	104	102	102	102	102
13	102	102	100	98	98	138	124	108	104	104	102	98	102	140	120	118	108	104	102	100	98	102	100	100
14	100	124	128	104	B	140	114	104	102	100	96	98	102	102	108	122	120	102	104	104	110	106	106	106
15	98	98	96	130	94	132	120	106	104	104	104	104	98	100	100	100	100	100	98	94	94	94	108	108
16	104	102	102	98	98	122	116	108	102	102	102	100	100	100	100	128	112	106	104	102	100	100	104	104
17	104	96	94	92	92	114	110	106	104	104	104	100	102	100	98	106	100	G	154	108	110	108	104	100
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19	104	98	92	92	94	102	108	116	106	102	102	100	104	G	122	116	116	106	102	100	98	100	100	100
20	98	98	96	96	96	136	128	118	106	102	106	102	104	104	120	106	106	102	102	100	100	100	100	100
21	98	92	94	88	92	90	116	102	104	108	106	106	100	96	112	106	102	104	98	100	102	100	100	98
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23	94	94	94	92	96	124	114	116	104	104	102	98	98	100	100	100	122	108	102	96	96	92	96	104
24	104	100	106	102	100	118	110	102	G 106	108	96	98	92	96	96	116	116	100	96	98	98	96	100	96
25	96	92	92	90	94	114	106	104	104	100	100	100	100	100	100	104	102	104	100	98	86	90	102	102
26	94	96	94	94	98	122	116	106	102	100	98	98	98	98	94	122	106	108	104	102	110	108	104	102
27	102	98	98	96	100	126	118	104	104	108	108	110	104	104	114	112	116	116	120	106	110	110	110	106
28	96	100	100	100	106	106	106	104	104	100	102	104	108	102	110	106	106	116	106	94	88	88	104	104
29	104	98	98	98	98	136	124	108	102	108	104	102	104	106	104	120	116	108	G	100	108	104	108	108
30	106	102	102	100	B	118	120	118	106	104	104	112	122	110	106	104	104	106	106	102	100	90	88	88
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	28	30	30	30	30	30	30	30	30	29	30	30	30	29	29	30	30	30	30	30
MED	99	98	97	97	97	118	112	106	104	103	102	100	102	102	105	106	106	104	102	100	100	100	102	101
U Q	104	100	100	100	100	126	116	108	104	106	104	104	104	105	110	116	116	108	106	102	102	106	104	104
L Q	96	96	94	92	94	108	106	102	102	100	100	98	98	99	100	100	102	101	100	98	96	96	100	100

JUN. 2010 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

JUN. 2010 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	F3	F3	F5	F2	F4	C3	L2	L3	L3	L3	L2	L3	L2	HL22	CL12	L2	L3	L4	L5	F4	F6	F6	F5	F5
2	F5	F4	F3	F4	F4	L3	L4	L4	L4	L3	L3	L3	L2	L3	L3	L3	LL33	LL33	L4	F6	F4	F4	F5	F5
3	F5	F3	F3	F3	F4	L3	L4	L3	L3	L3	L3	L3	L2	L3	L3	L2	L2	L2	L2	F4	F5	F5	F6	F6
4	F5	F6	F5	F6	F4	L4	L5	L3	L3	L3	L3	L3	L3	HL12	L3	L3	L3	L3	L4	F6	F6	F4	F6	F5
5	F5	F4	F4	F4	F2	C2	CL32	L4	L4	L3	L3	L3	L3	L3	L3	L3	L3	CL32	L3	F5	F4	F3	F4	F4
6	F5	F2	F3	F2	F2	L4	L4	L3	L3	L3	L4	L3	L3	L3	L3	L2	CL12	L2	L4	F5	F6	F6	F5	F5
7	F5	F3	F4	F3	F4	CL22	C4	L4	L3	L3	L3	L2	L2	L2	L3	L3	L3	L3	LL42	F4	FF54	FF42	F4	F7
8	F4	F3	F2	F3	F4	C3	L4	L3	L3	L2	L2	L3	L2	L3	L3	L4	L3	L3	L3	F4	F5	F5	F4	F3
9	F5	F3	F2	F2	F2	L3	C2	CL22	L3	L3	L3	L2	L3	L3	L3	L3	L3	L3	L3	F2	F5	F4	F7	F3
10	F5	F5	F4	FF24	F3	L2	CL42	L4	L4	L4	L3	L3	L2	L2	L2	L2	L3	L3	L4	F5	F6	F4	FF24	F5
11	F4	F5	F5	F4	F3	CL22	L2	L4	L3	L2	L3	L2	L2	L3	L2	L3	CL22	L5	L4	F5	F5	F3	F3	F3
12	F3	F1	F2	F3	F2	CL32	L5	L3	L3	L3	L2	L2	L3	L3	CL22	L2	L2	CL42	LL43	F5	F2	F3	F3	F3
13	F3	F3	F3	F2	F2	H2	C2	L2	L2	L2	L2	L2	L2	H1	C2	C2	L2	L3	L3	F5	F3	F6	F5	F5
14	F4	FF21	FF21	F3		H2	C2	L4	L2	L3	L3	L3	L3	L3	L2	CL22	CL22	L3	L3	F5	F2	F3	F5	F5
15	F5	F5	F4	FF22	F2	CL23	CL32	L3	L3	L3	L3	L3	L3	L2	L3	L2	L3	L3	L3	F5	F5	F4	F4	F4
16	F5	F4	F4	F5	F4	C4	C4	L4	L4	L3	L3	L2	L2	L3	L2	CL12	CL32	L4	L5	F7	F4	F3	F3	F5
17	F5	F5	F6	F3	F5	C4	L3	L4	L3	L3	L3	L3	L2	L3	L3	L2	L2		H3	F4	F4	F4	F5	F5
18	F4	F4	F3	F4	F3	C2	C3	L2	L3	L3	L2	L2	L3	L3	L2	L3	L3	L3	L4	F4	F5	F4	F6	F4
19	F4	F3	F4	F3	F4	L3	L2	CL22	L2	L2	L2	L2	L2		CL21	C2	C2	L2	L3	F5	F4	F5	F6	F5
20	F6	F6	F5	F4	F5	H2	CL22	CL32	L3	L3	L3	L3	L3	L2	C2	L3	L3	L3	L3	F3	F6	F4	F6	F6
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22	F4	F3	F5	F4	F3	C4	L3	L2	L3	L3	L3	CL11	CL11	L3	L5	CL32	L4	L4	L3	F6	F4	F3	F4	F3
23	F3	F4	F4	F3	F4	CL22	CL22	CL32	L3	L3	L3	L3	L3	L3	L3	L3	C2	L3	L3	F4	F5	F6	F3	F3
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25	F6	F5	F4	F3	F3	C3	L2	L4	L3	L3	L3	L3	L3	L3	L3	L3	L3	L2	L3	F3	F3	F4	F3	F6
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27	F3	F5	F5	F5	F3	C2	C3	L3	L3	L2	L2	L2	L3	L3	C2	C2	C2	CL12	C2	F3	F6	F5	F6	F2
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29	F7	F5	F4	F3	F4	CL22	CL24	L3	L3	L2	L3	L2	L2	L3	L3	C2	CL11	L3		FL21	FF22	F3	F3	F5
30	F1	F2	F2	F2		C3	C2	CL22	L3	L3	L3	L3	C3	L3	L3	L2	L3	L2	L2	F2	F3	F4	F4	F3
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

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

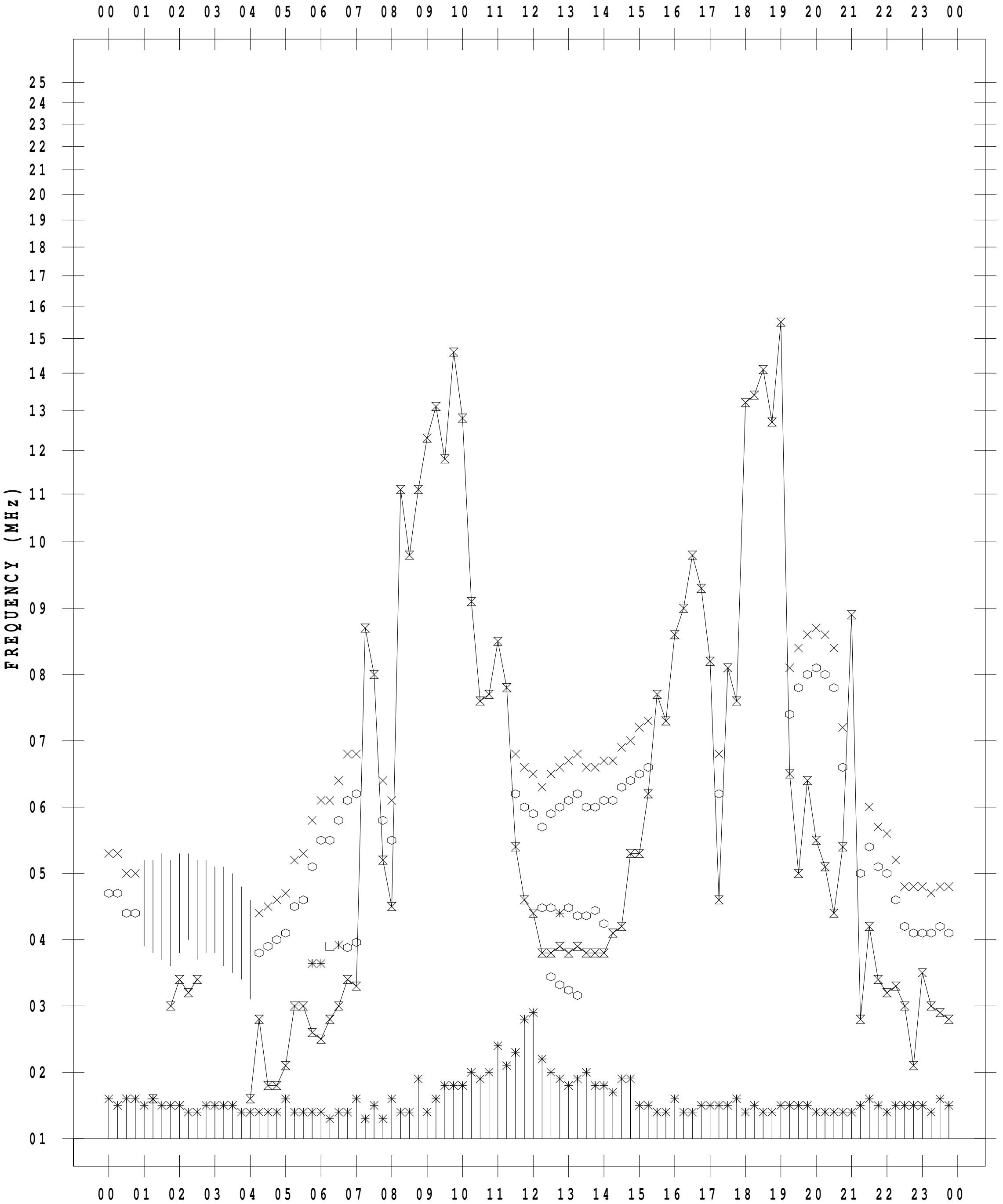
f-PLOT DATA

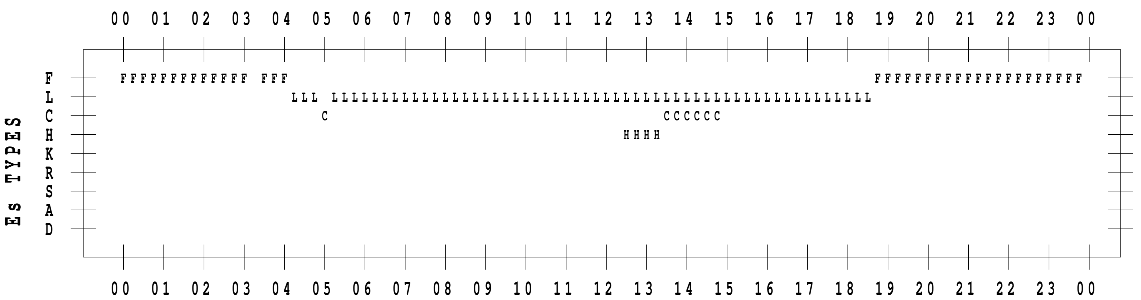
SCALER : I.NISHIMUTAO

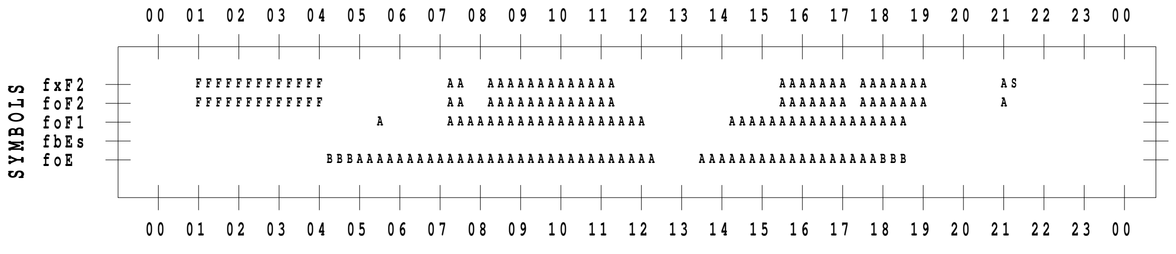
STATION : Kokubunji

DATE : 2010/ 6/ 1

135 °E MEAN TIME







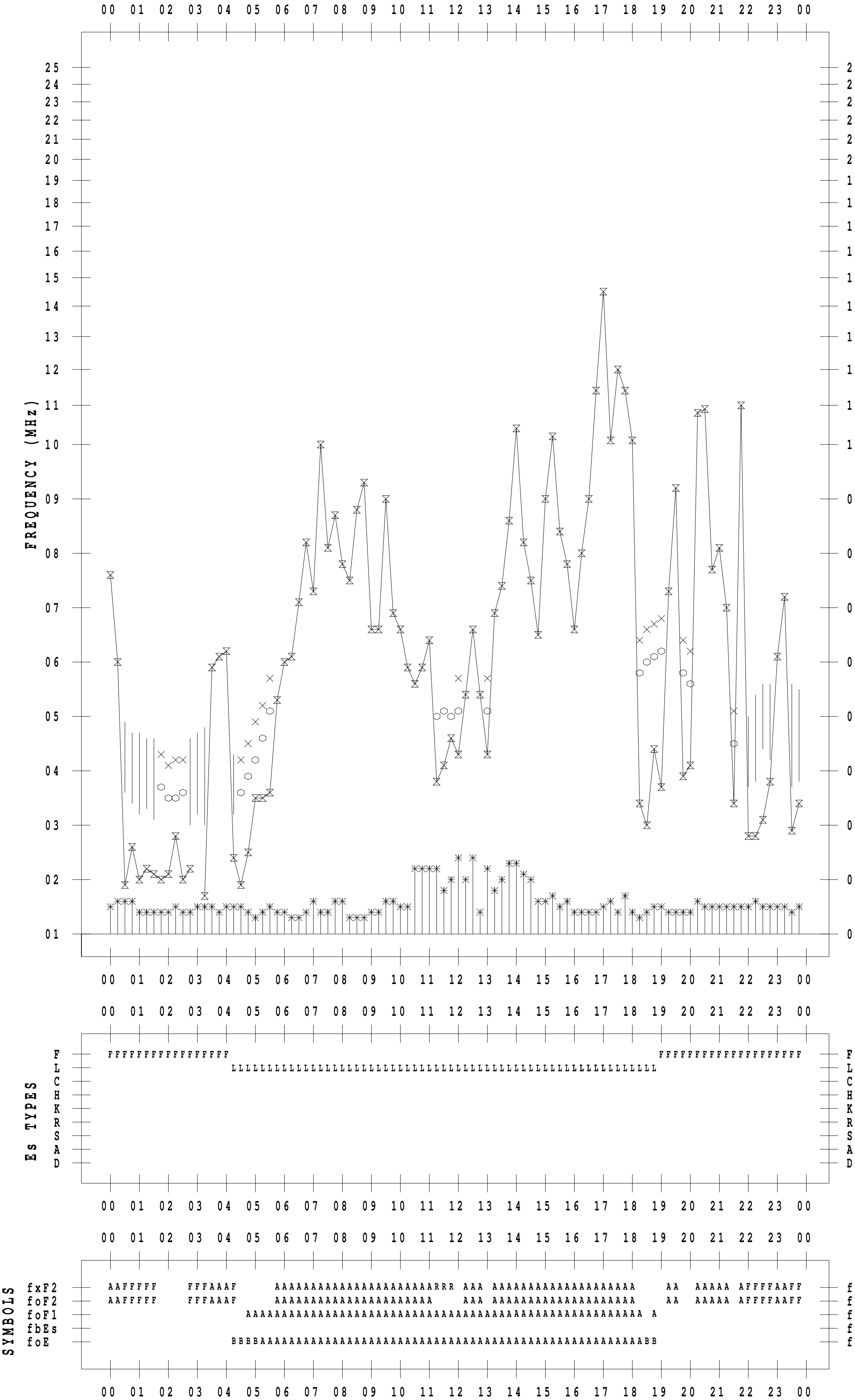
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/ 2

135 °E MEAN TIME

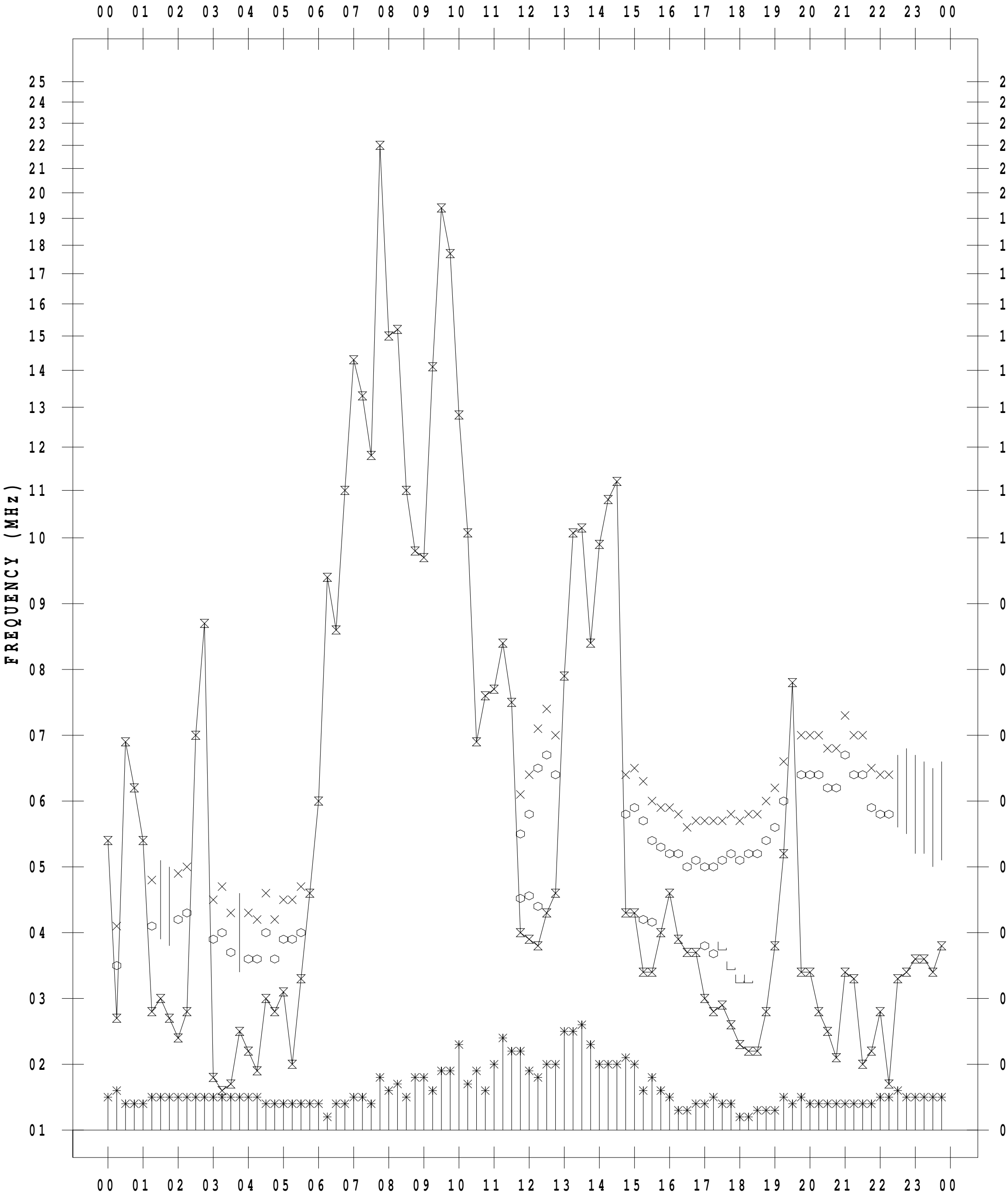


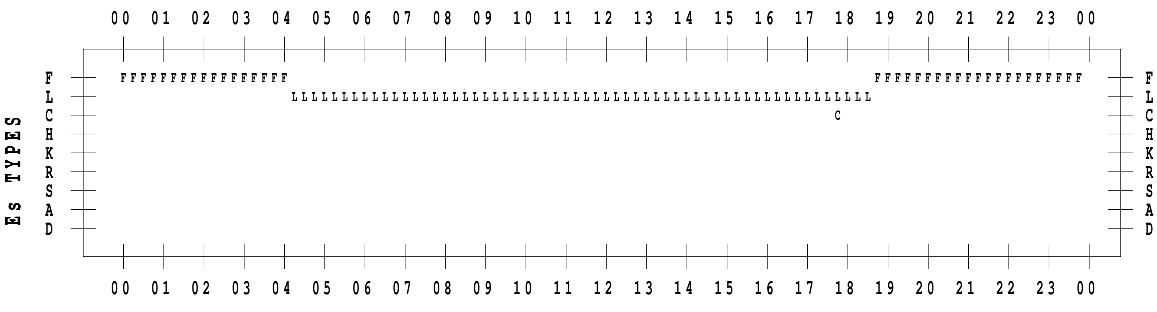
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji DATE : 2010/ 6/ 3

135 °E MEAN TIME





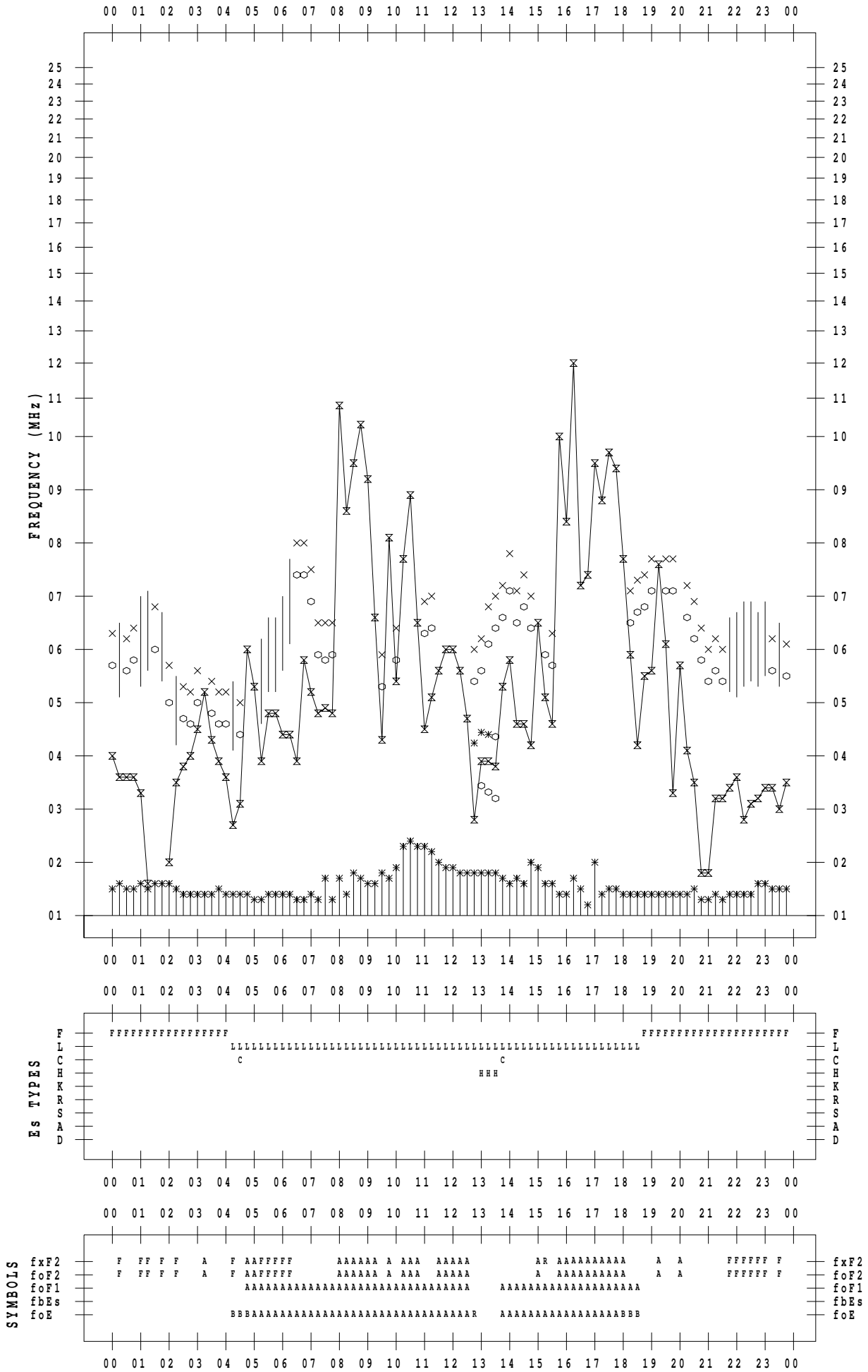
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/ 4

135 °E MEAN TIME



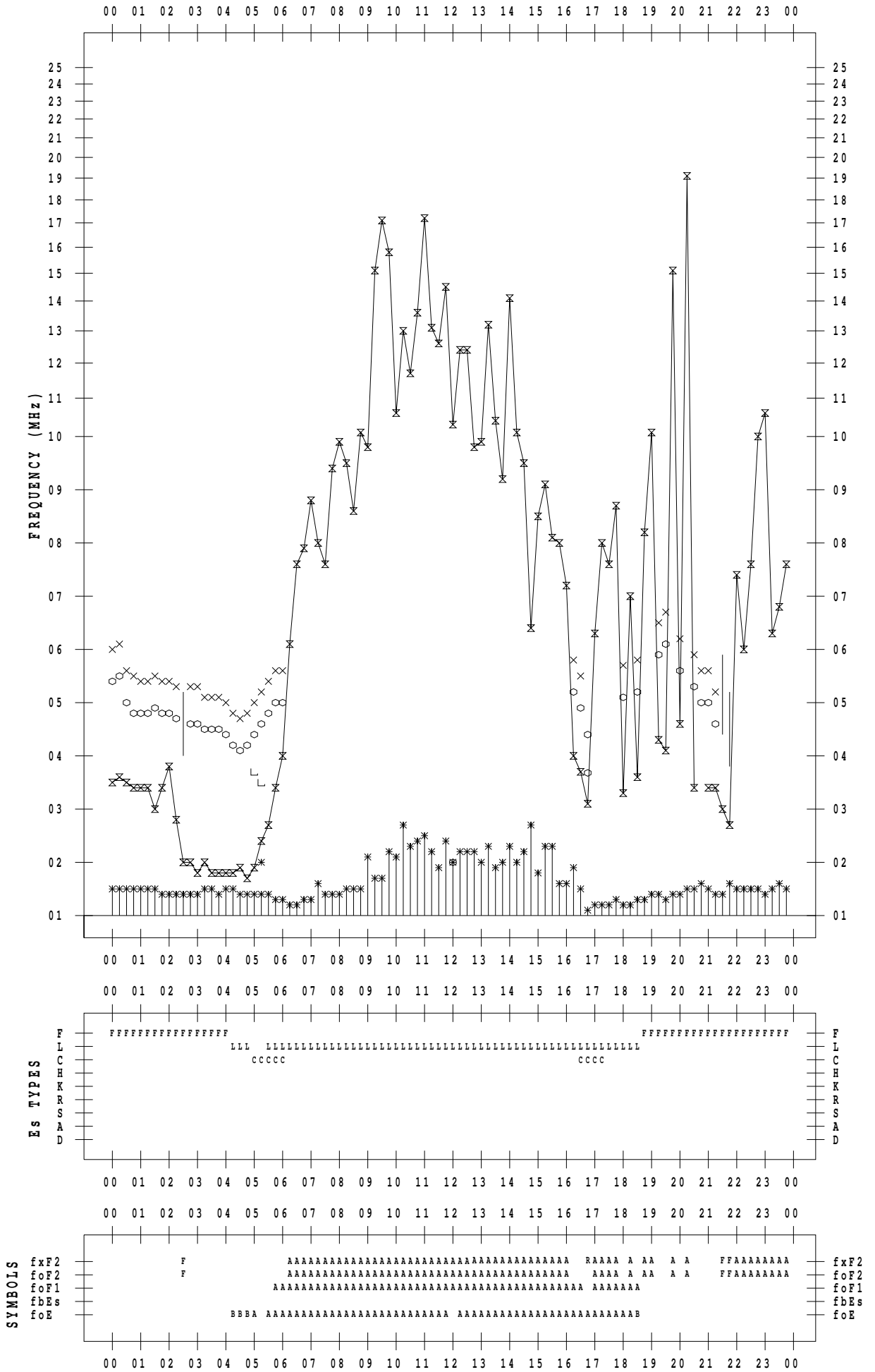
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/ 5

135 °E MEAN TIME



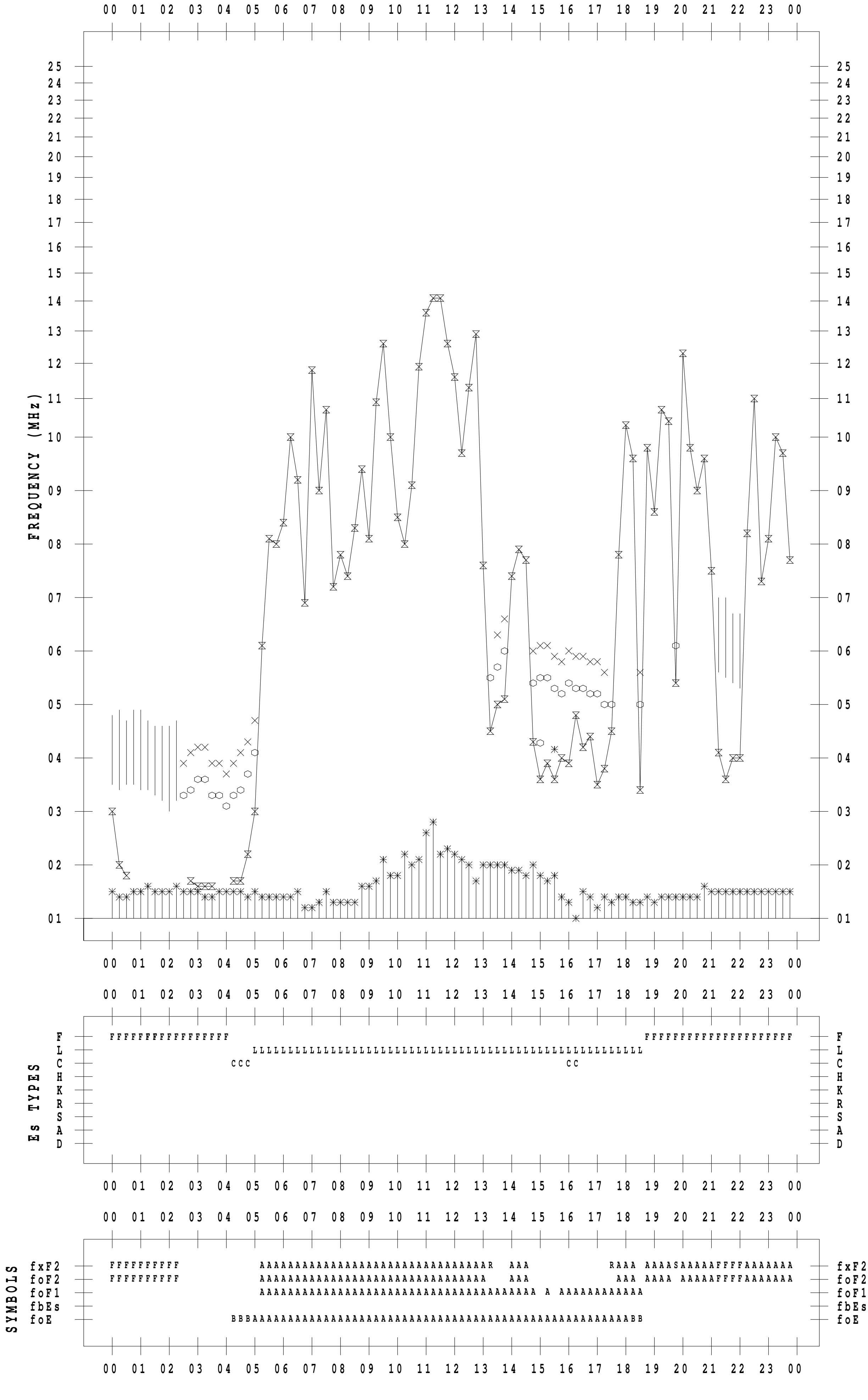
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/ 6

135 °E MEAN TIME



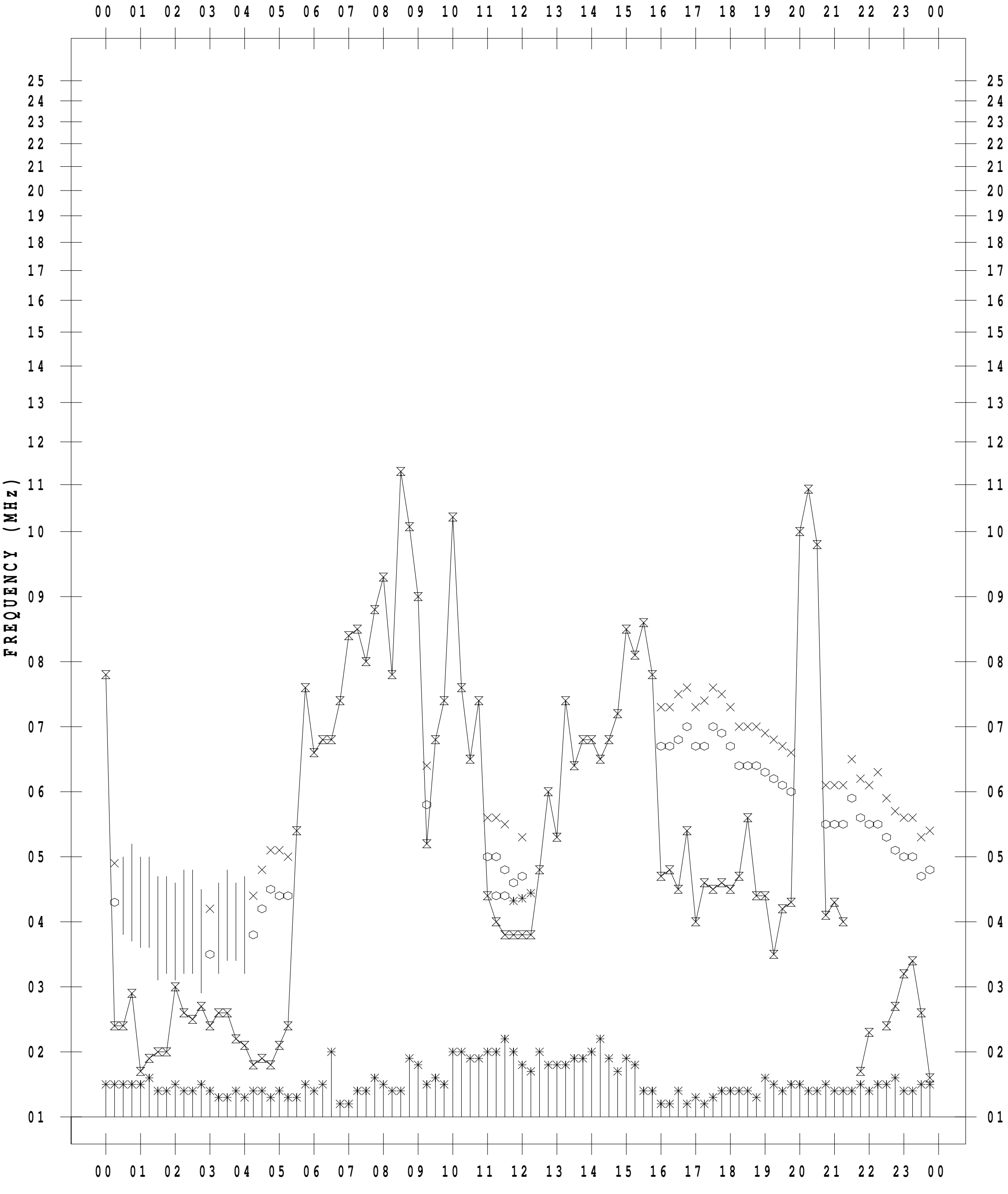
f-PLOT DATA

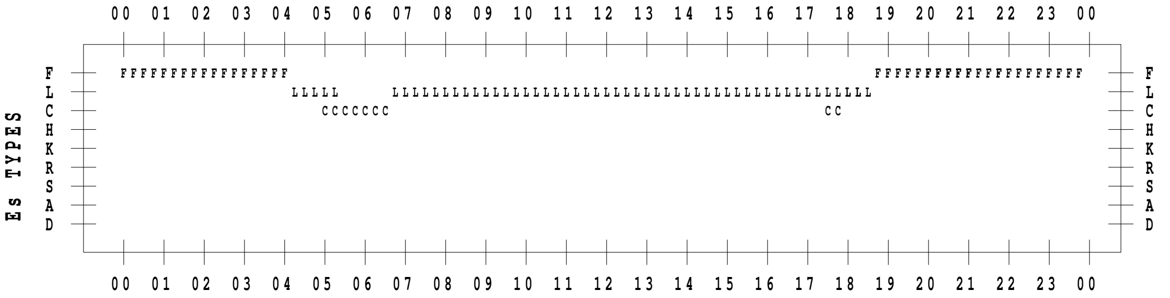
SCALER : I.NISHIMUTAO

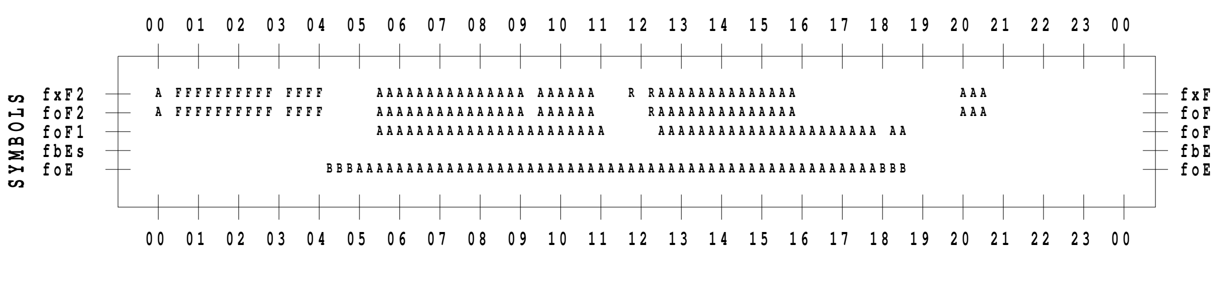
STATION : Kokubunji

DATE : 2010/ 6/ 7

135 °E MEAN TIME







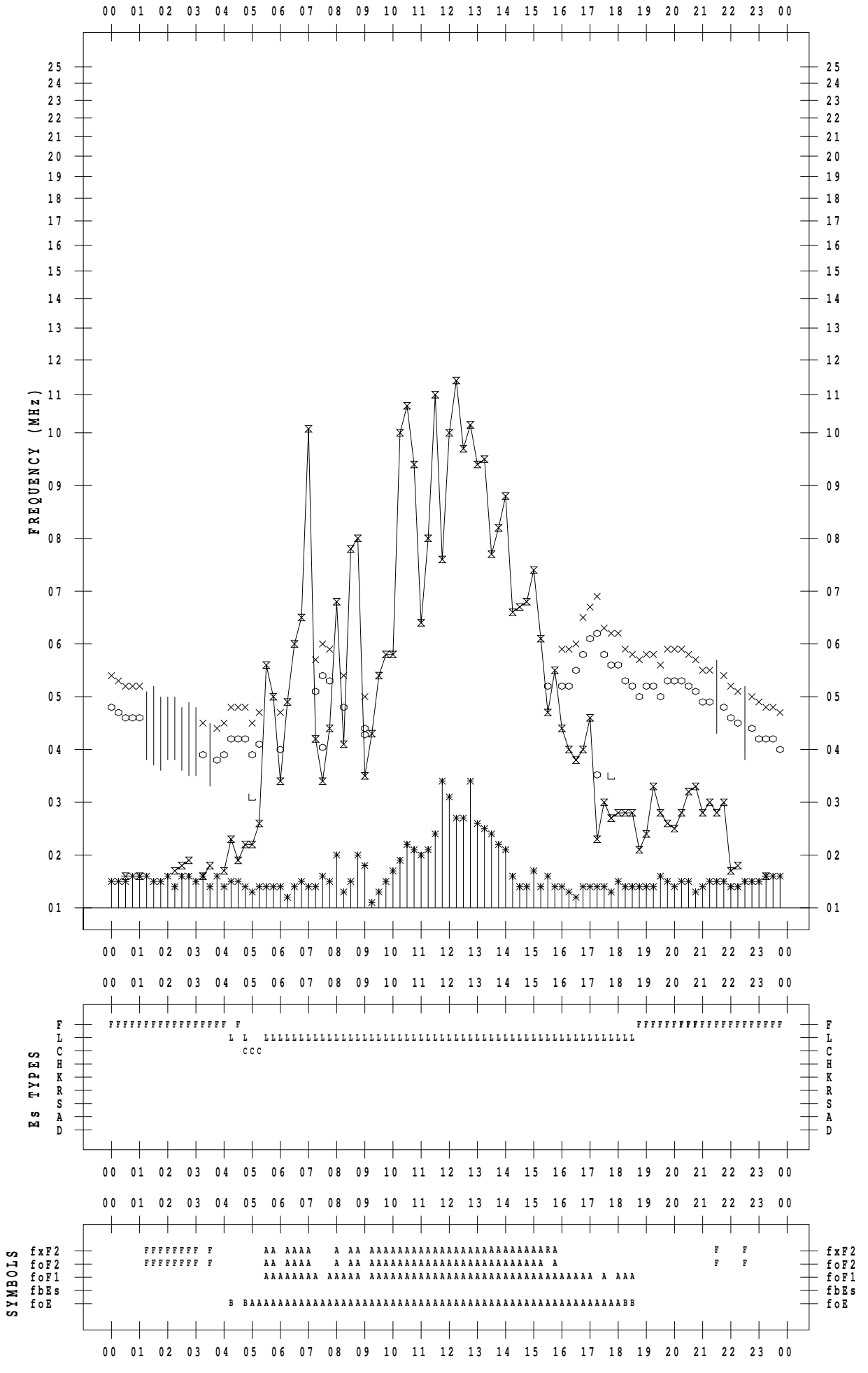
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/ 8

135 °E MEAN TIME

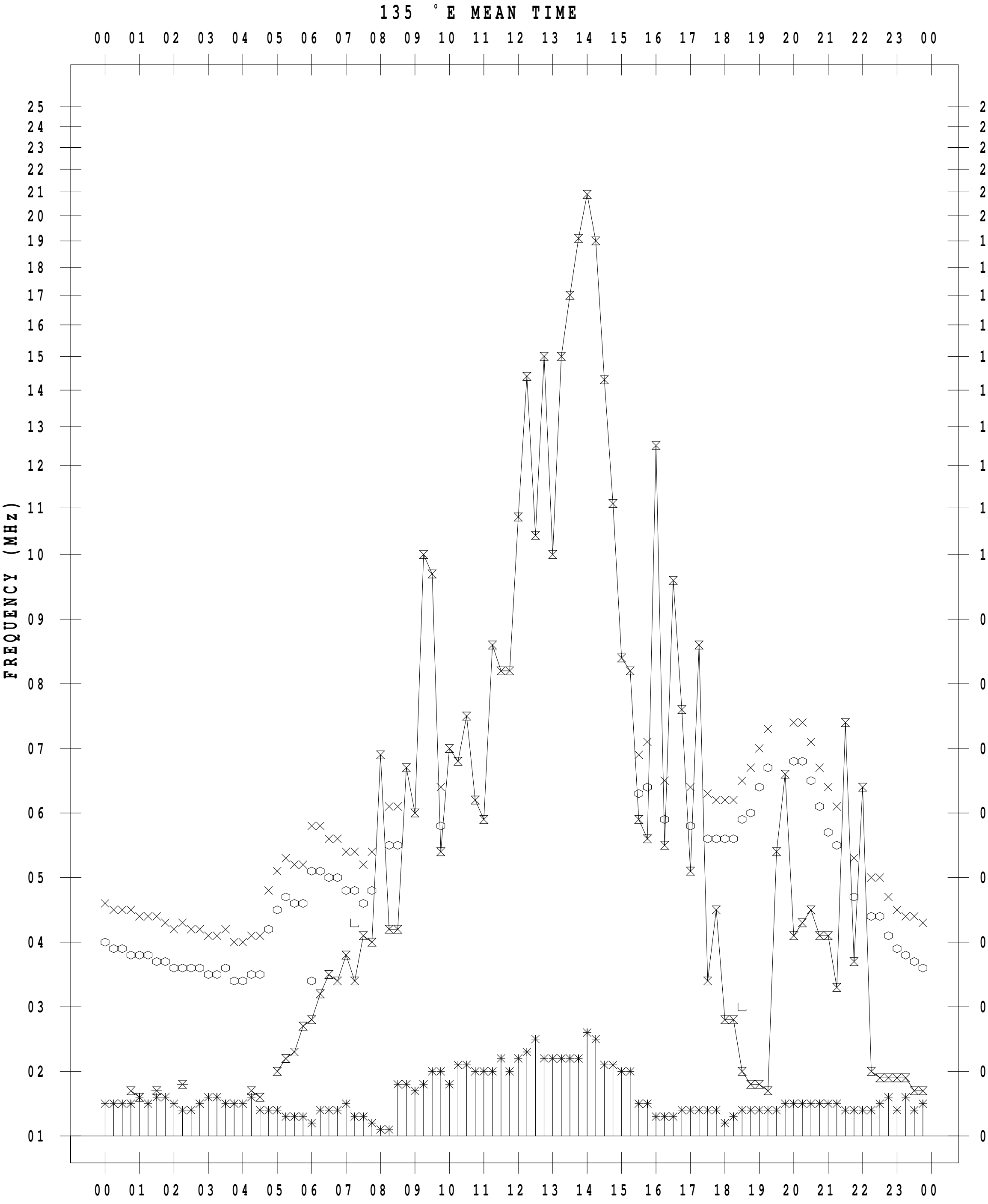


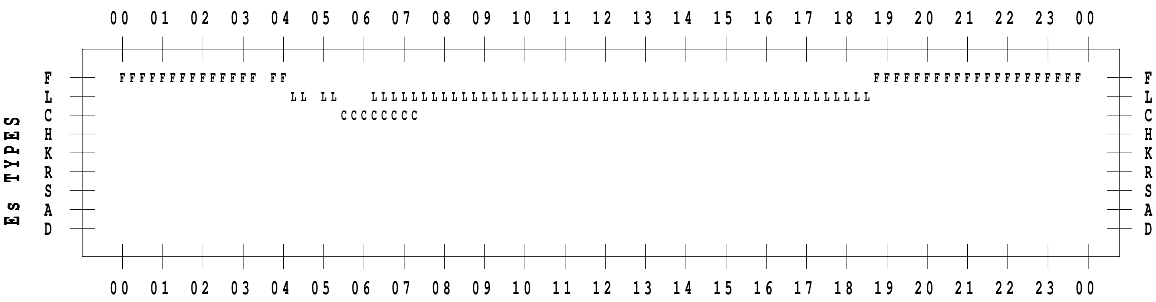
f-PLOT DATA

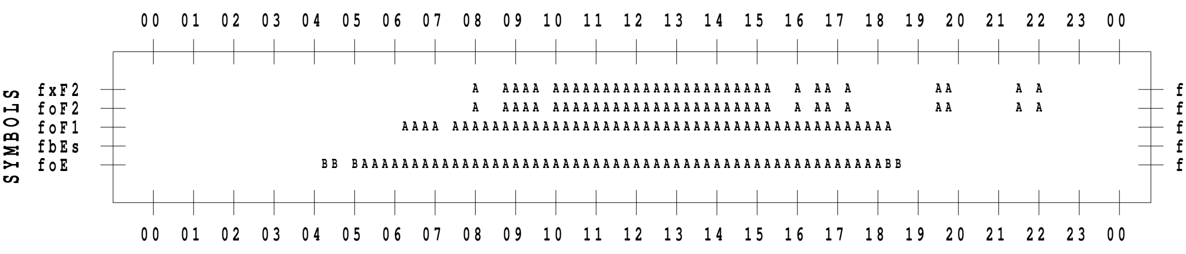
SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/ 9







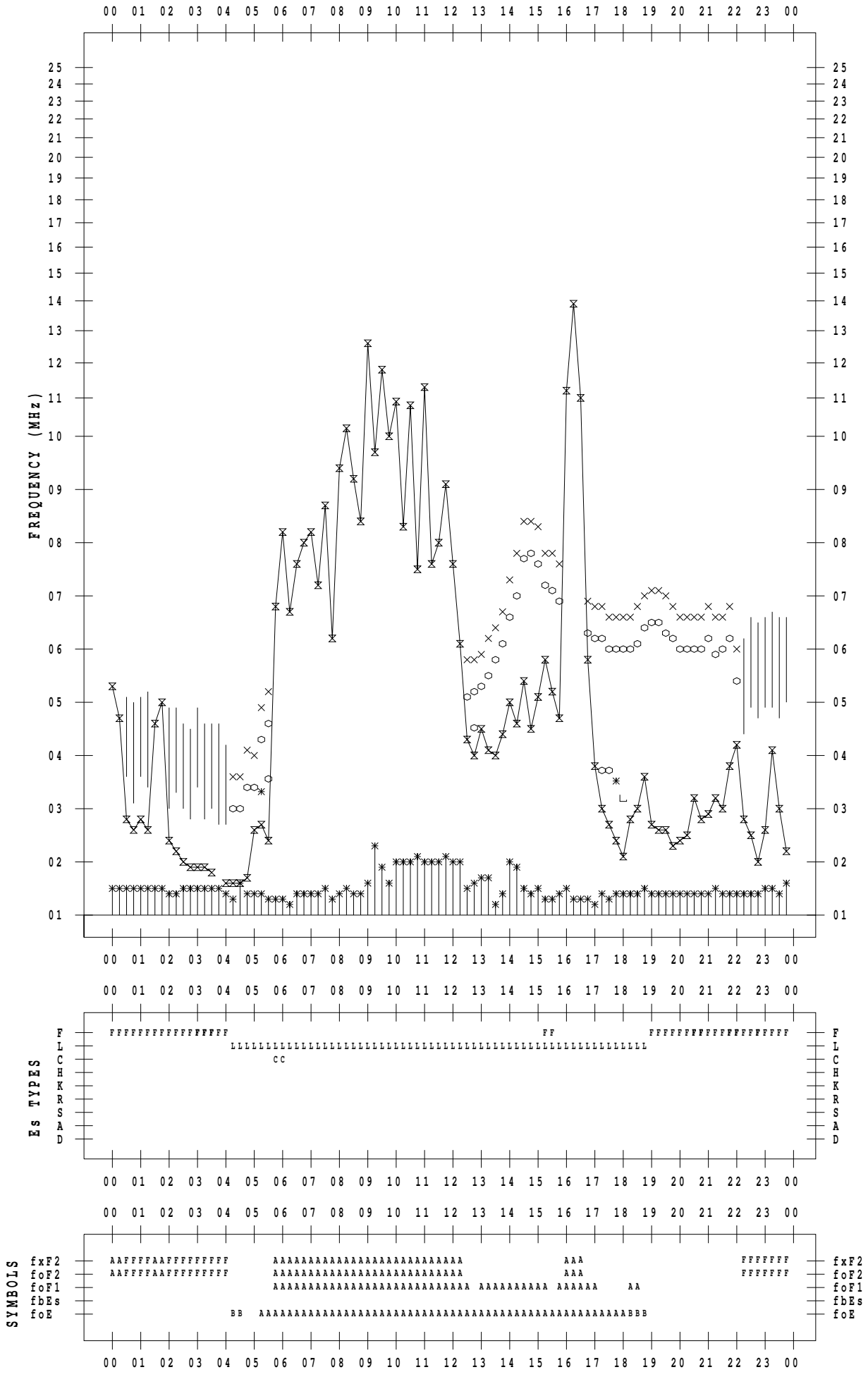
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/10

135 °E MEAN TIME



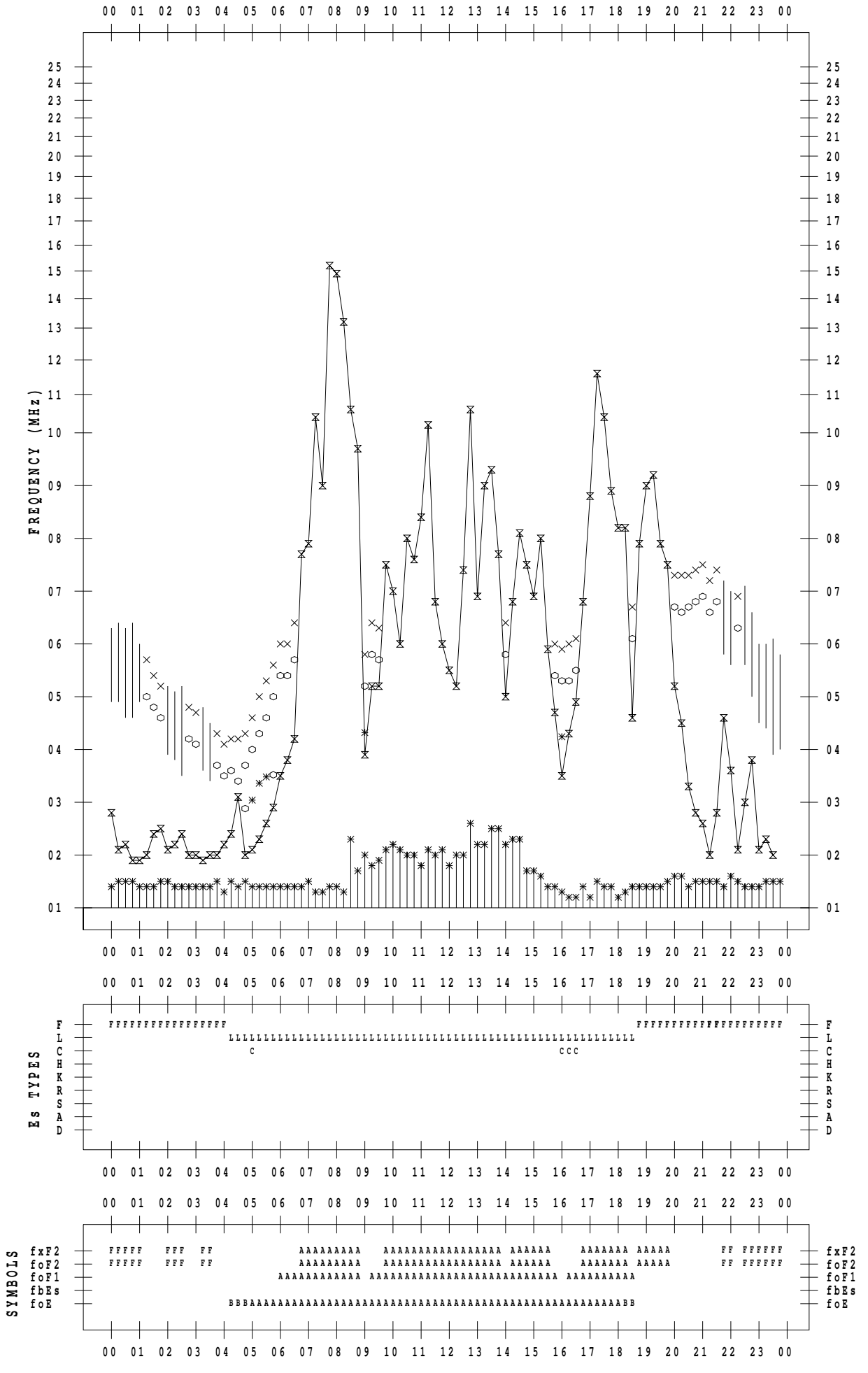
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/11

135 °E MEAN TIME



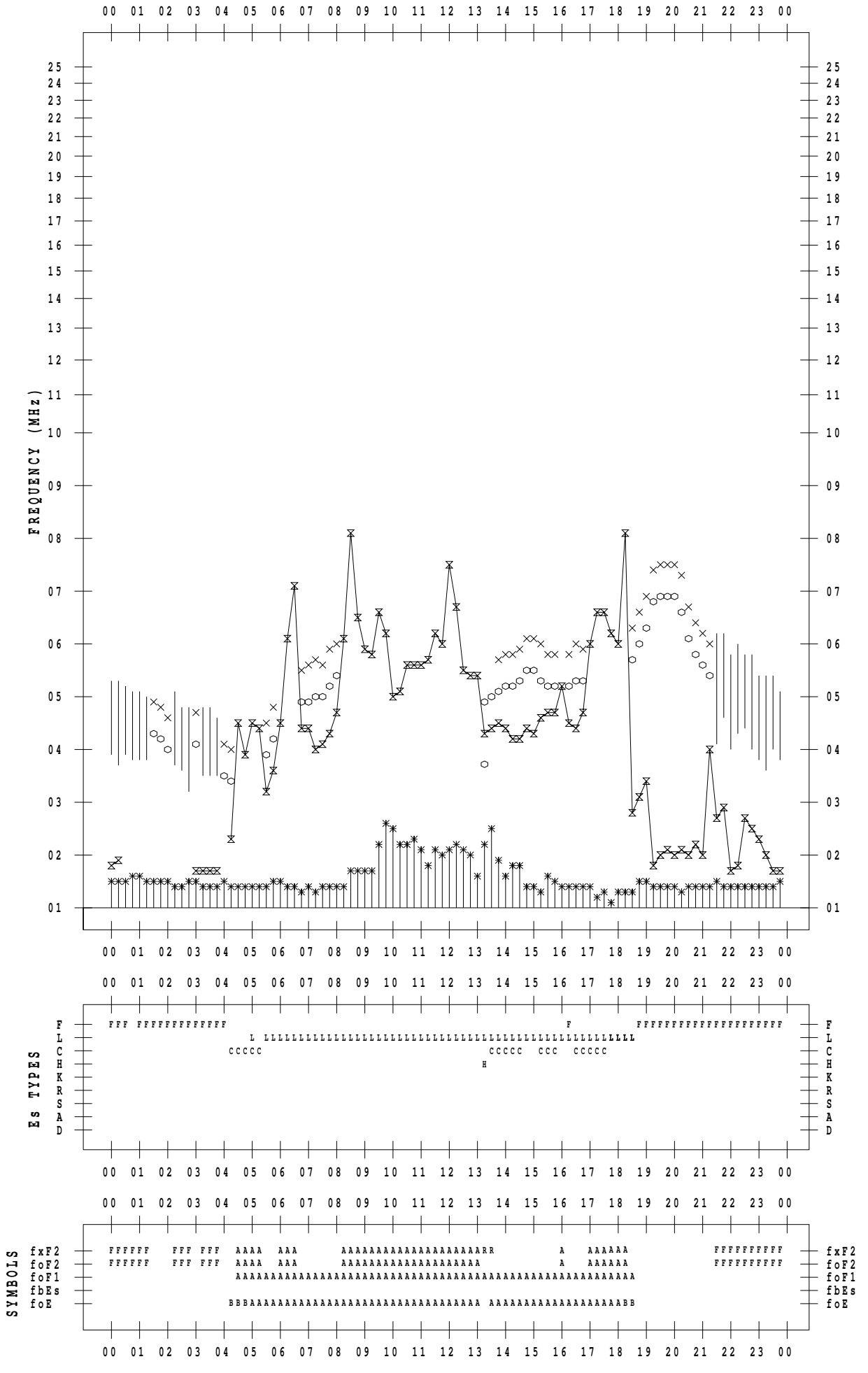
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/12

135 °E MEAN TIME



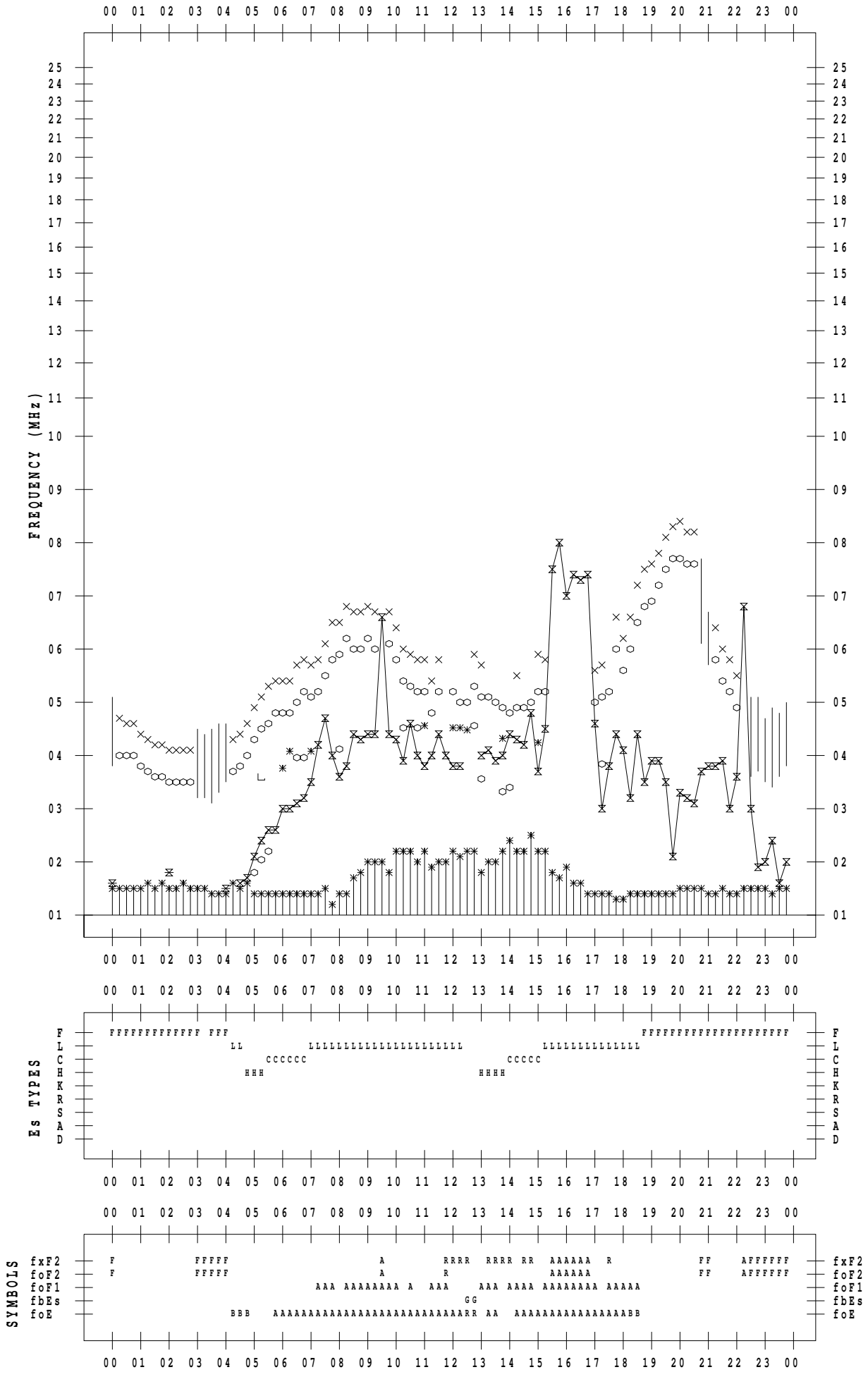
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/13

135 °E MEAN TIME



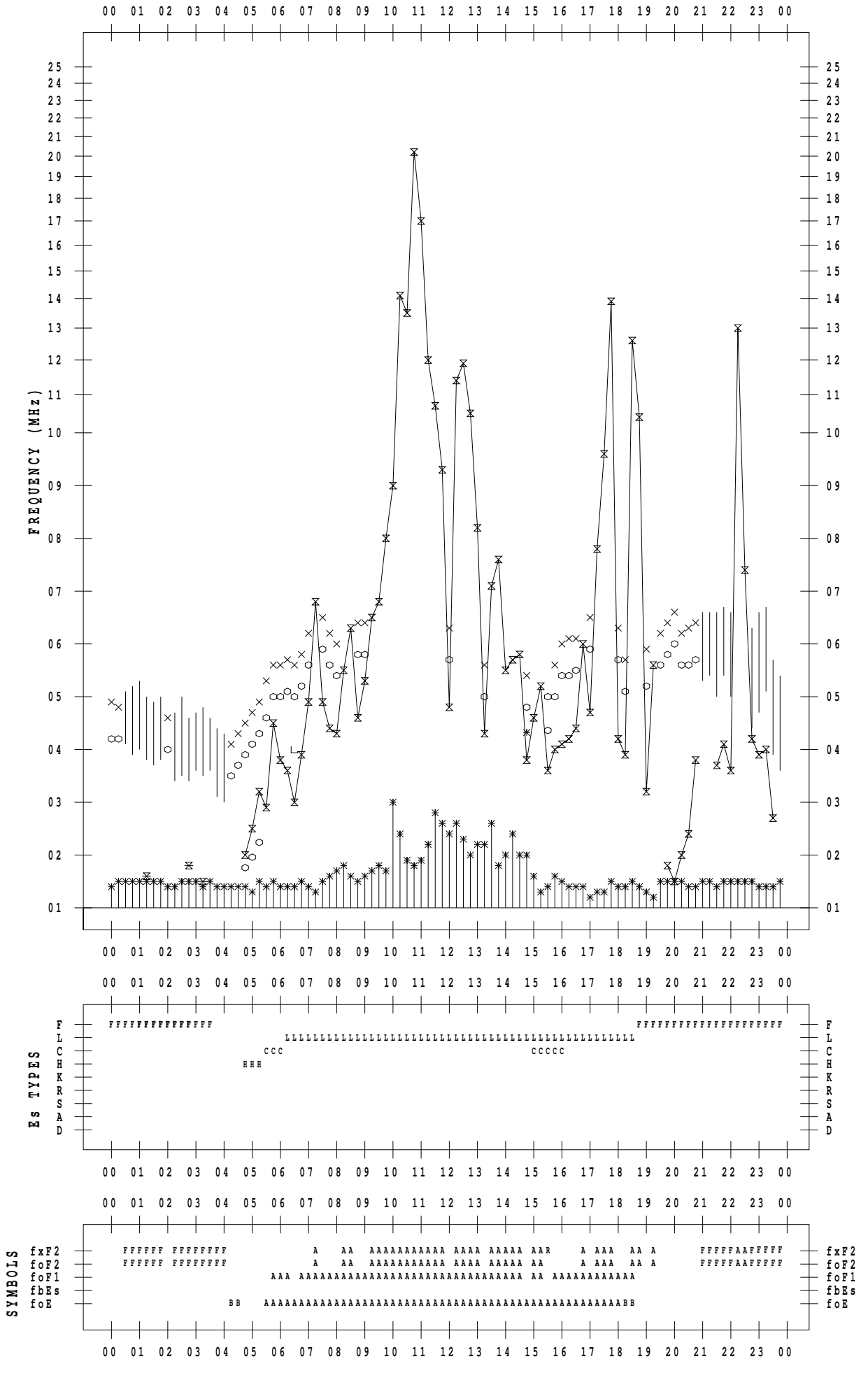
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/14

135 °E MEAN TIME

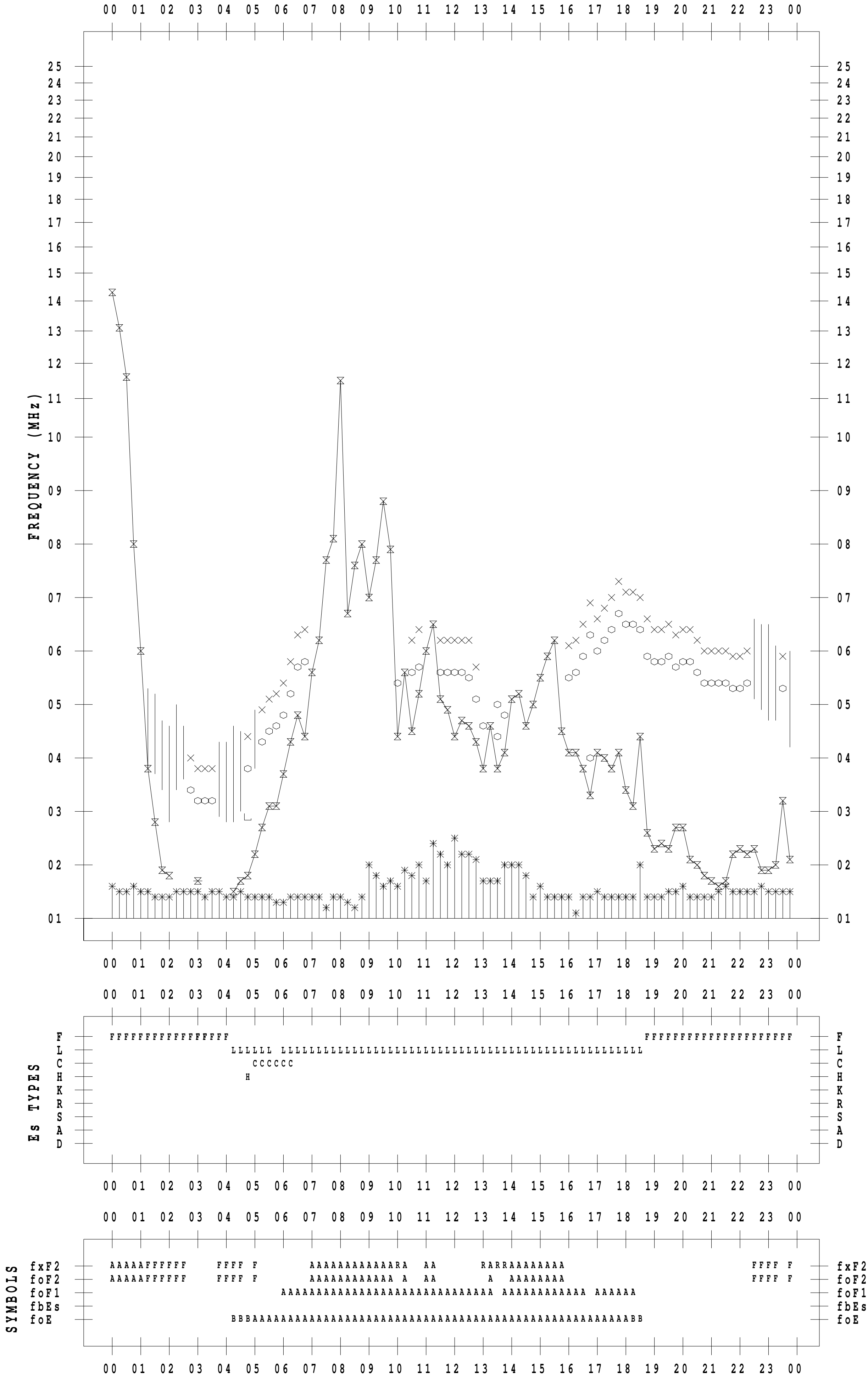


f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/15



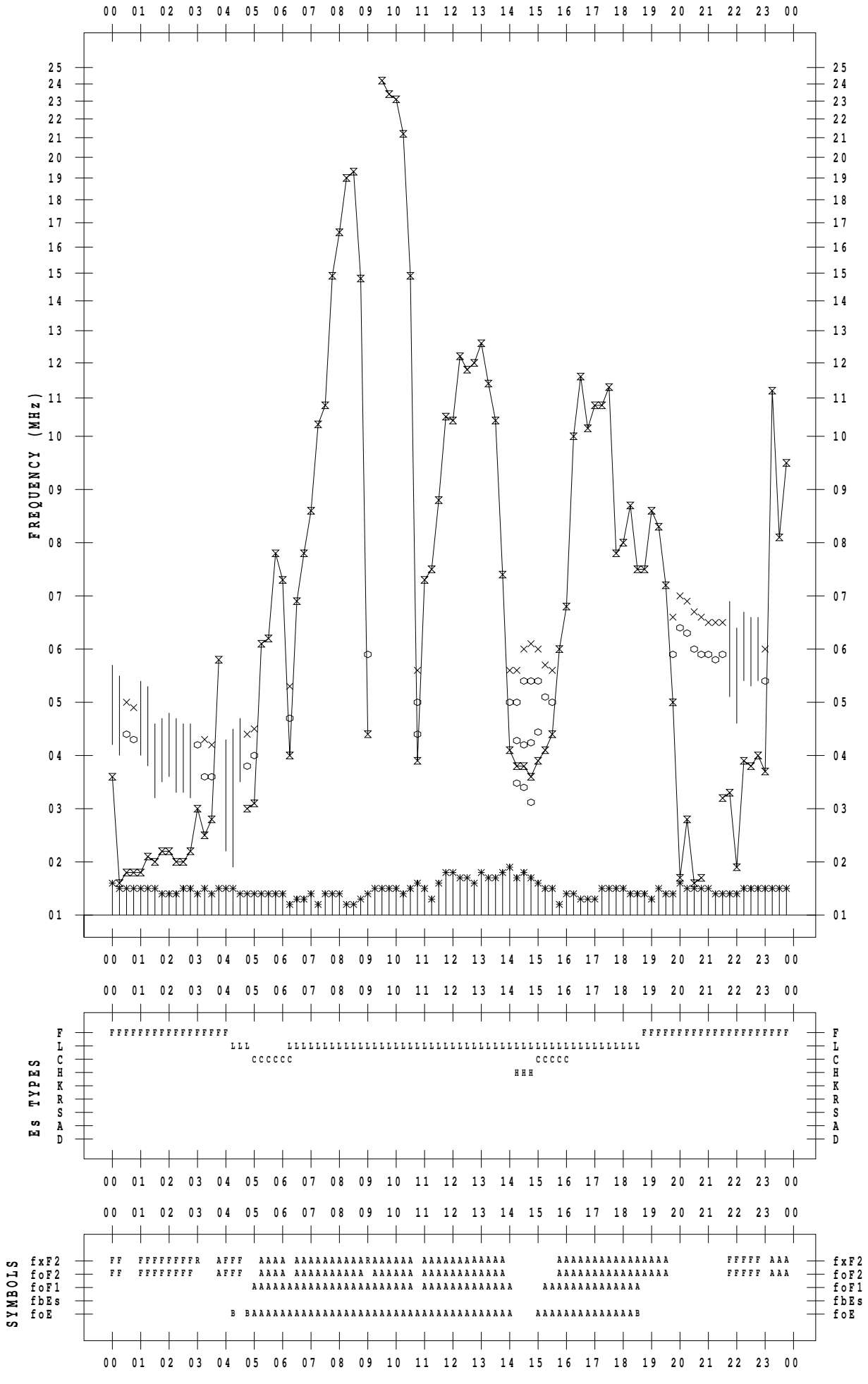
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/16

135 °E MEAN TIME

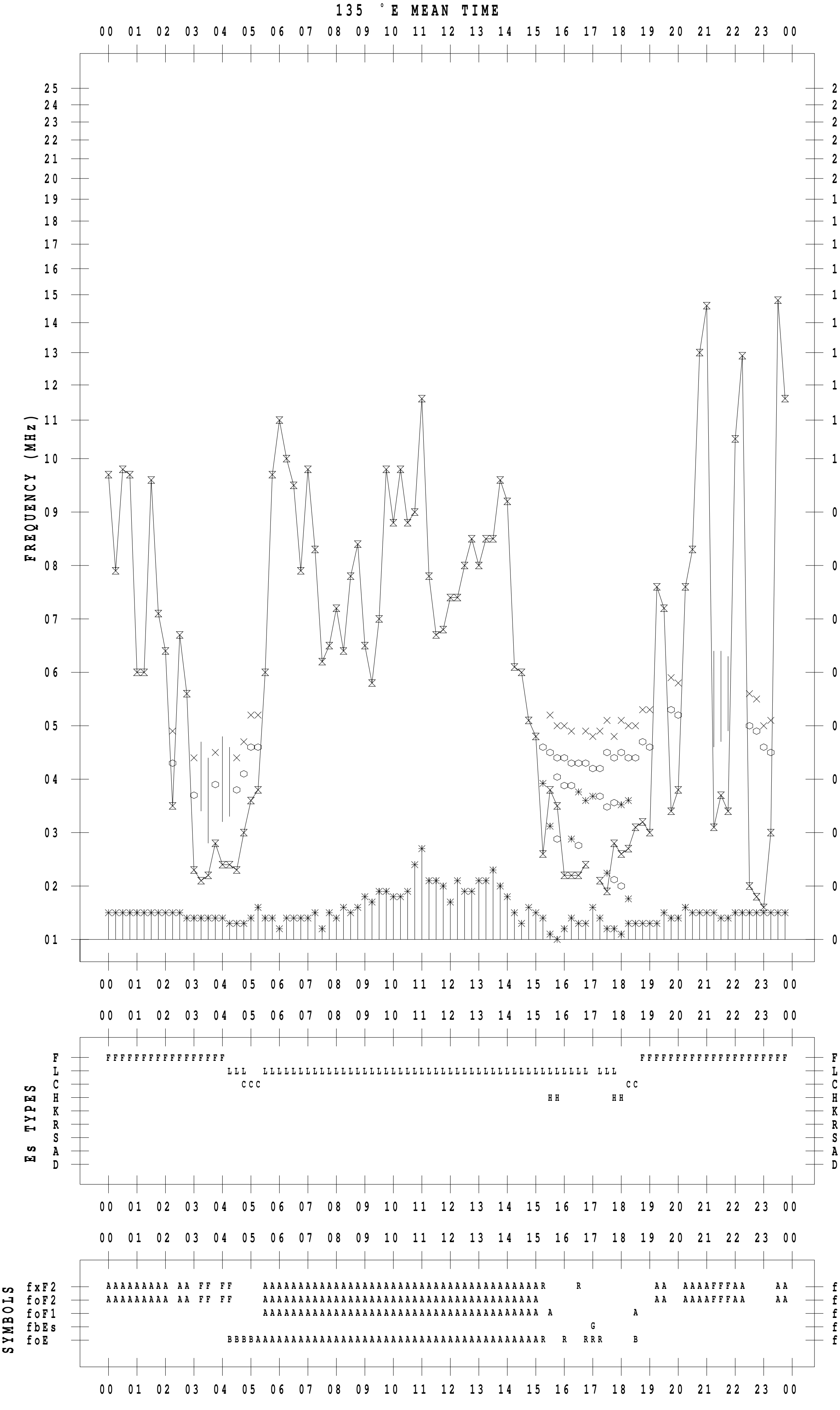


f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/17



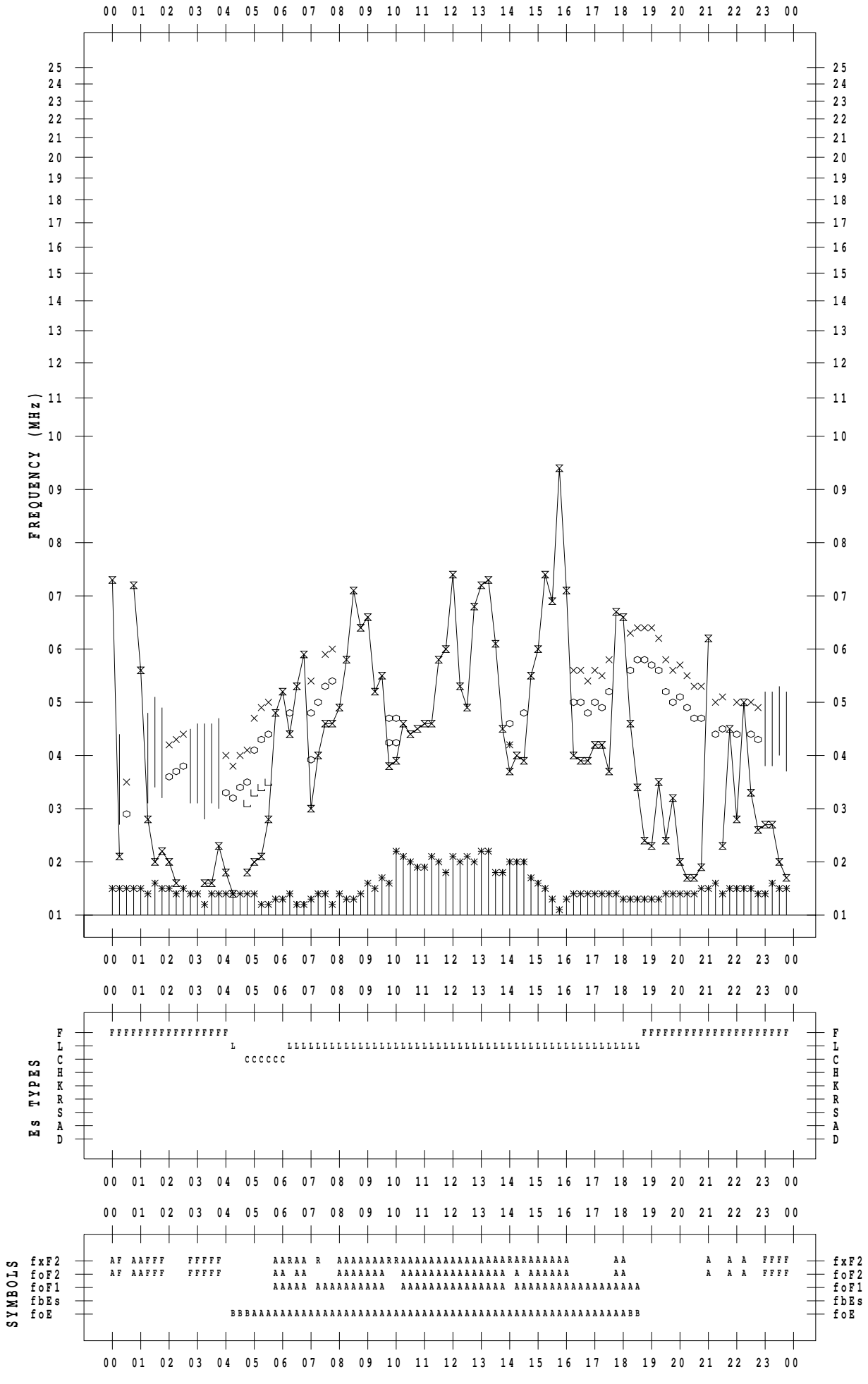
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/18

135 °E MEAN TIME



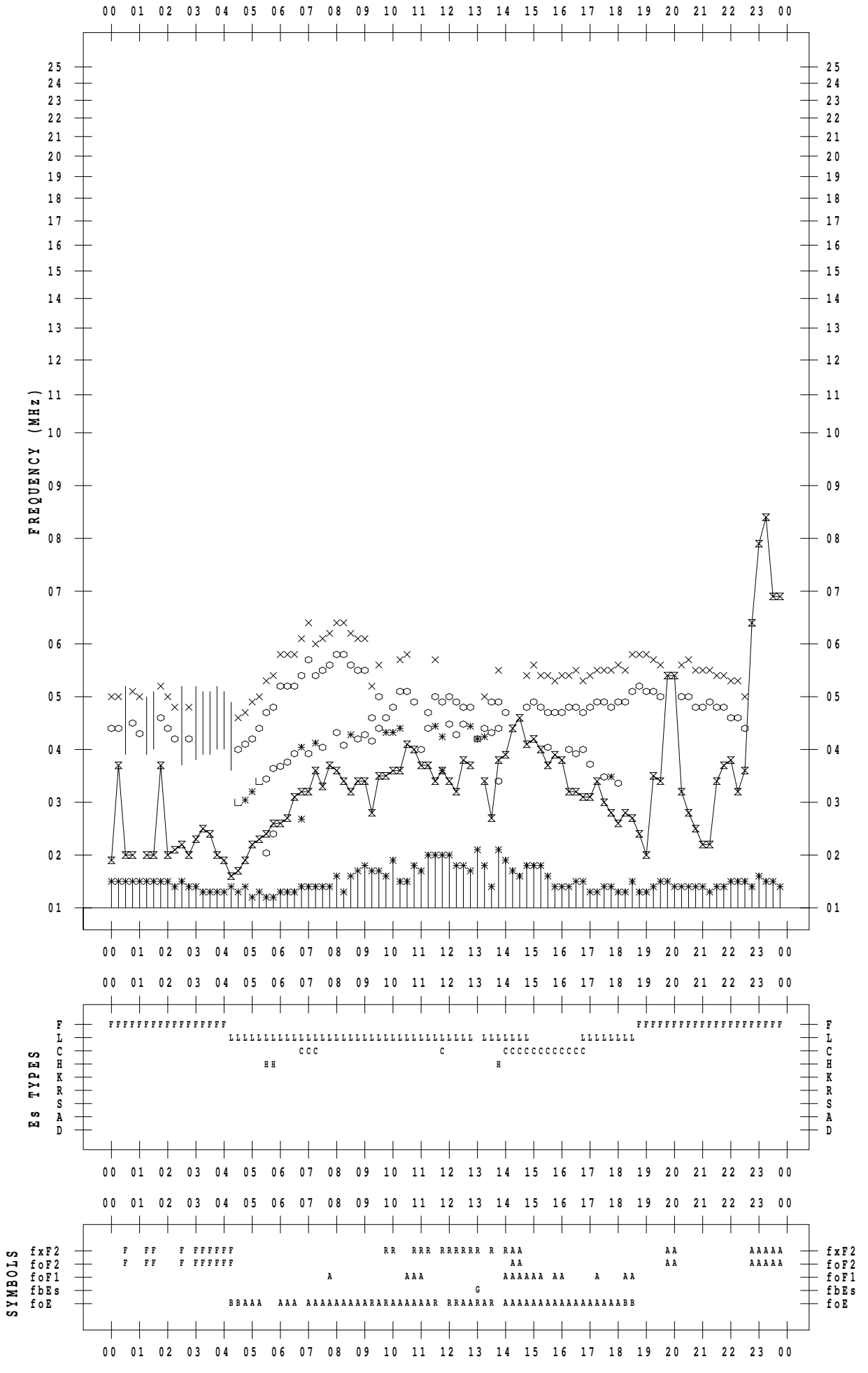
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/19

135 °E MEAN TIME



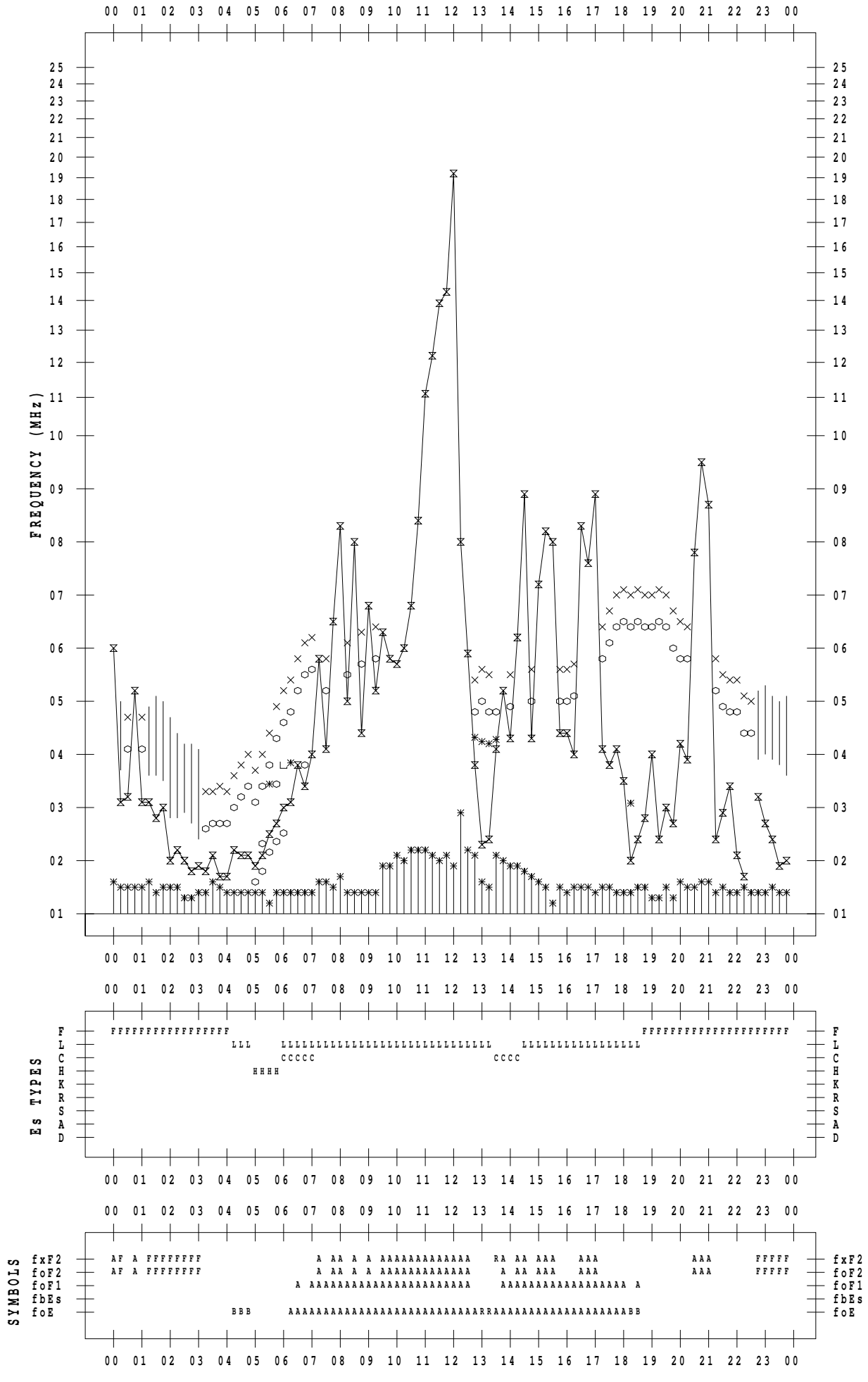
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/20

135 °E MEAN TIME



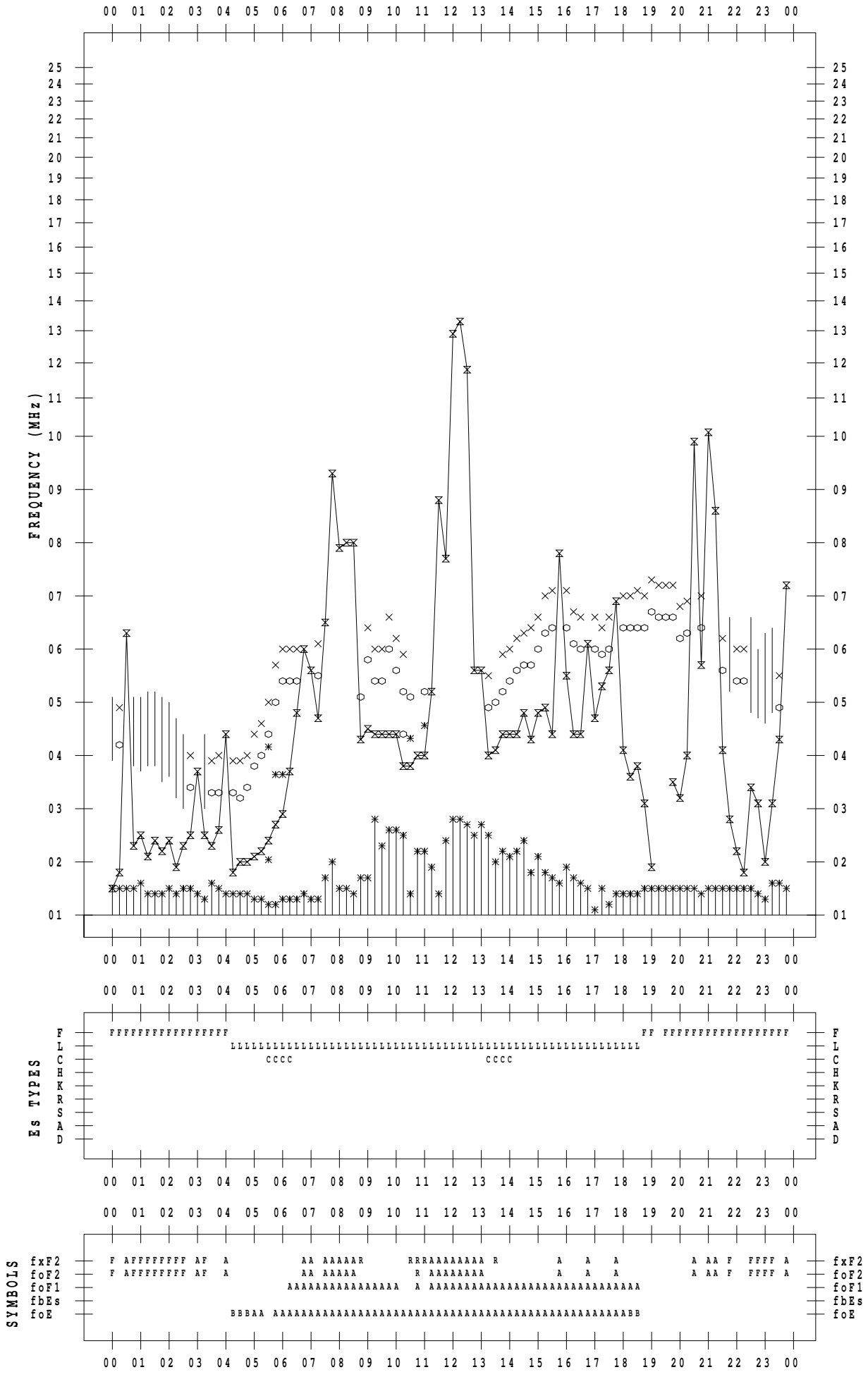
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/21

135 °E MEAN TIME



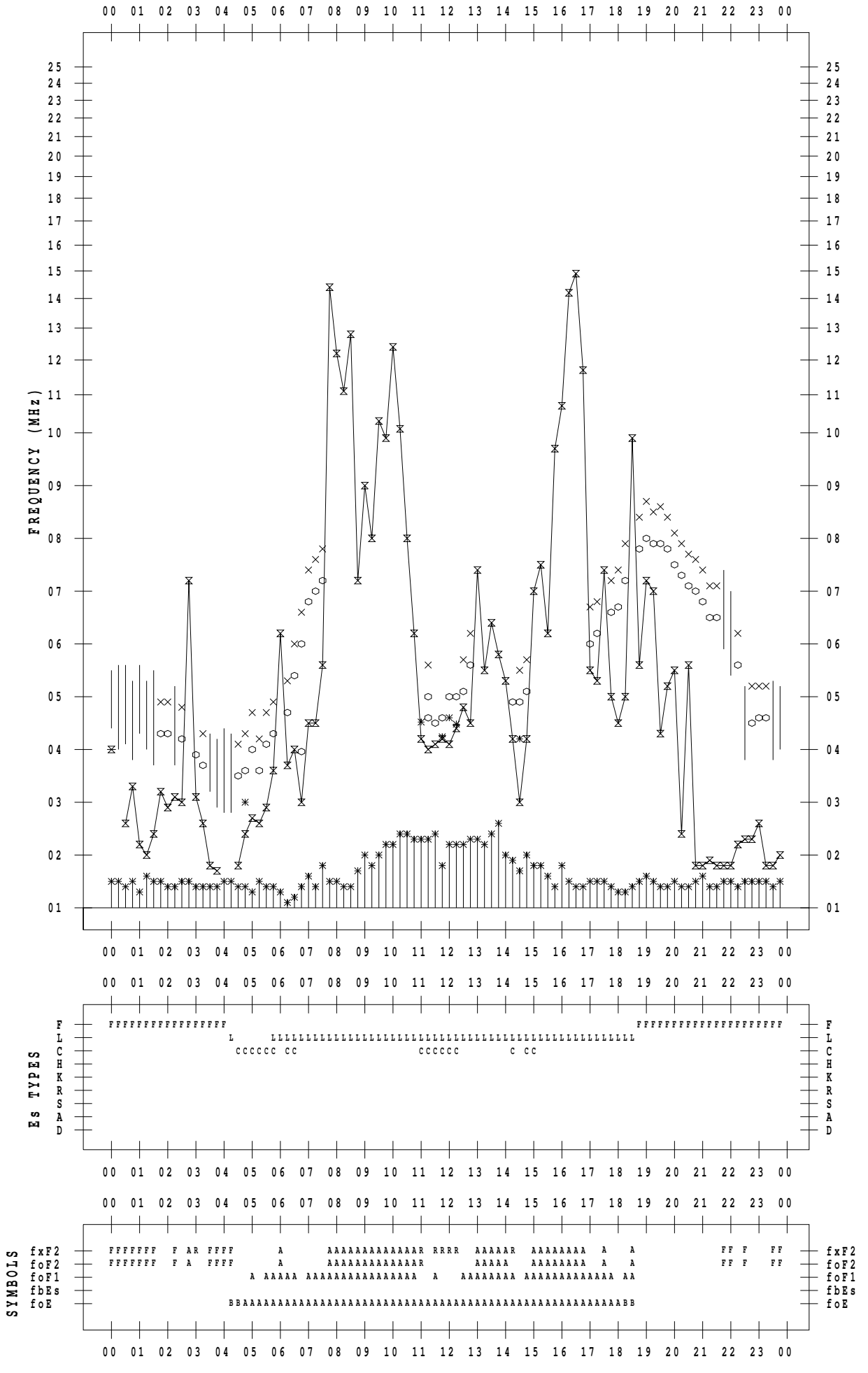
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/22

135 °E MEAN TIME



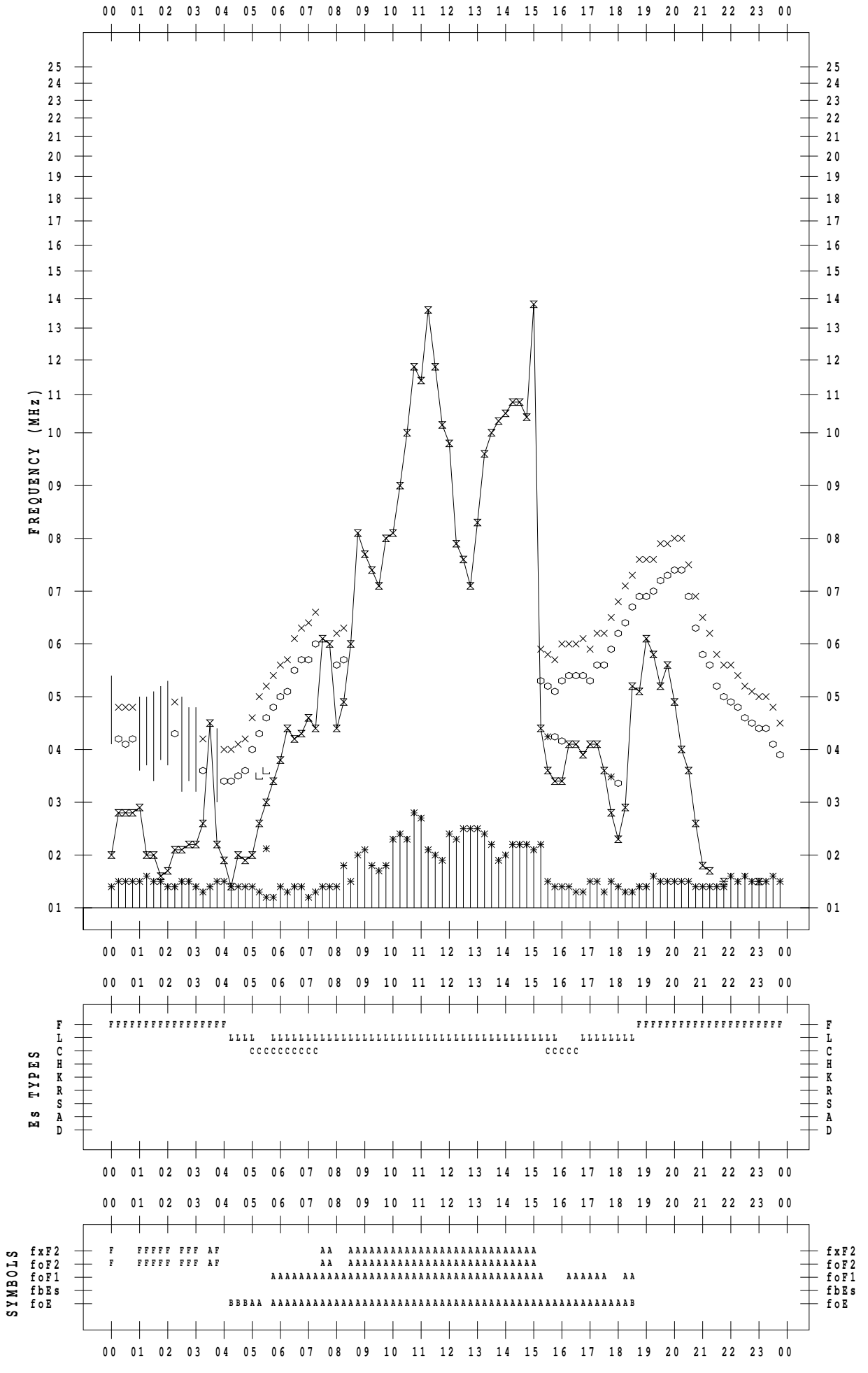
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/23

135 °E MEAN TIME



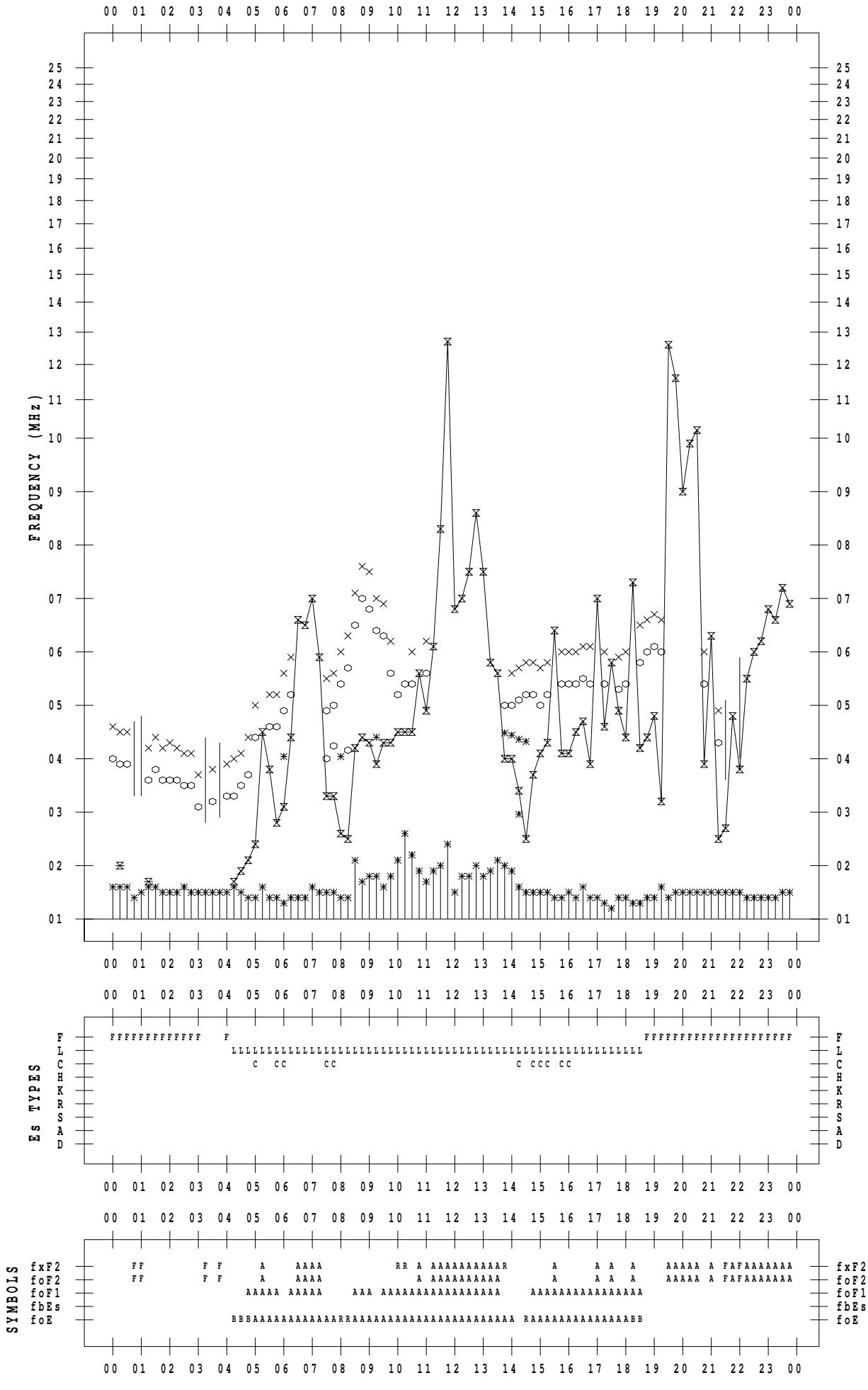
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/24

135 °E MEAN TIME



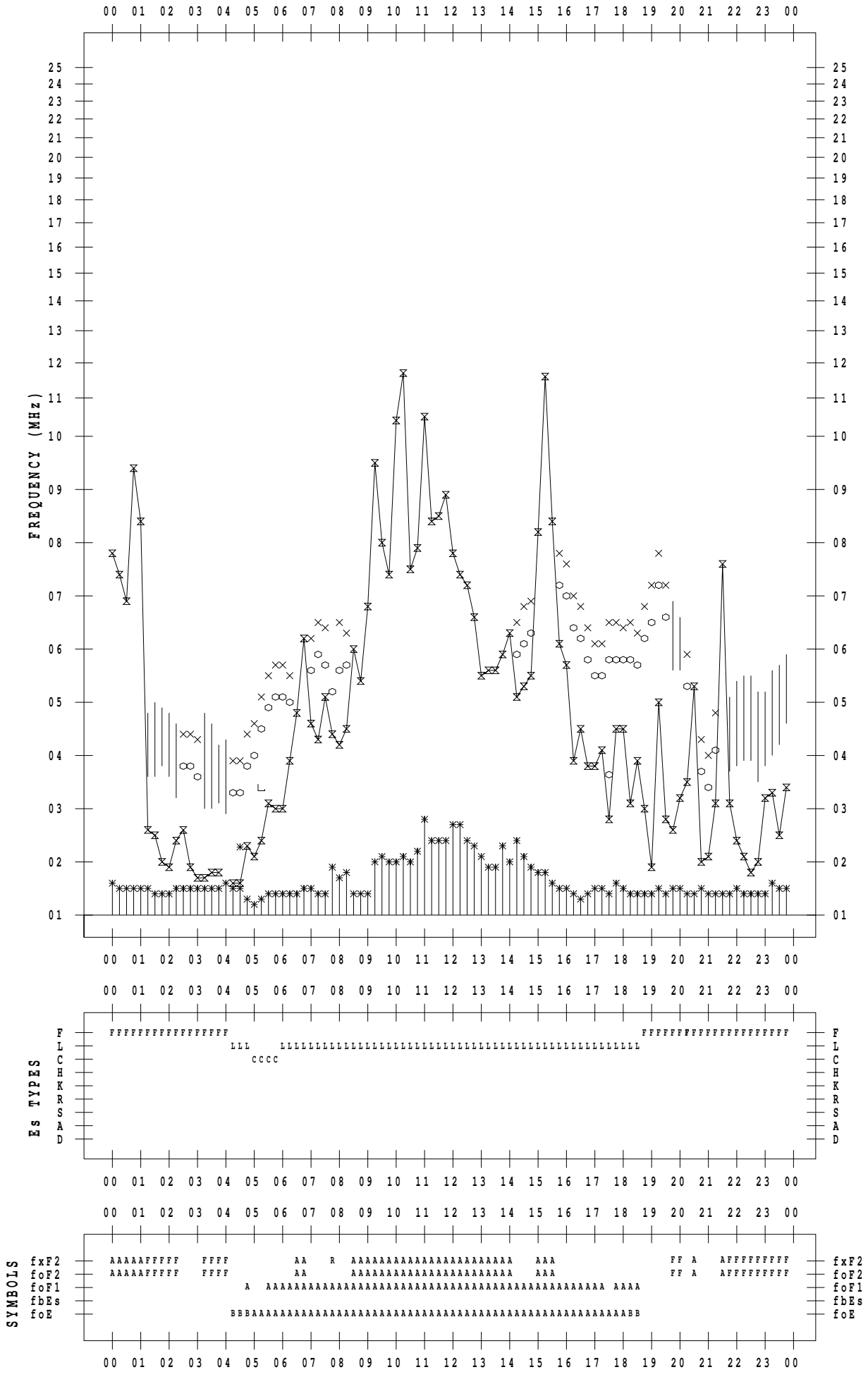
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/25

135 °E MEAN TIME



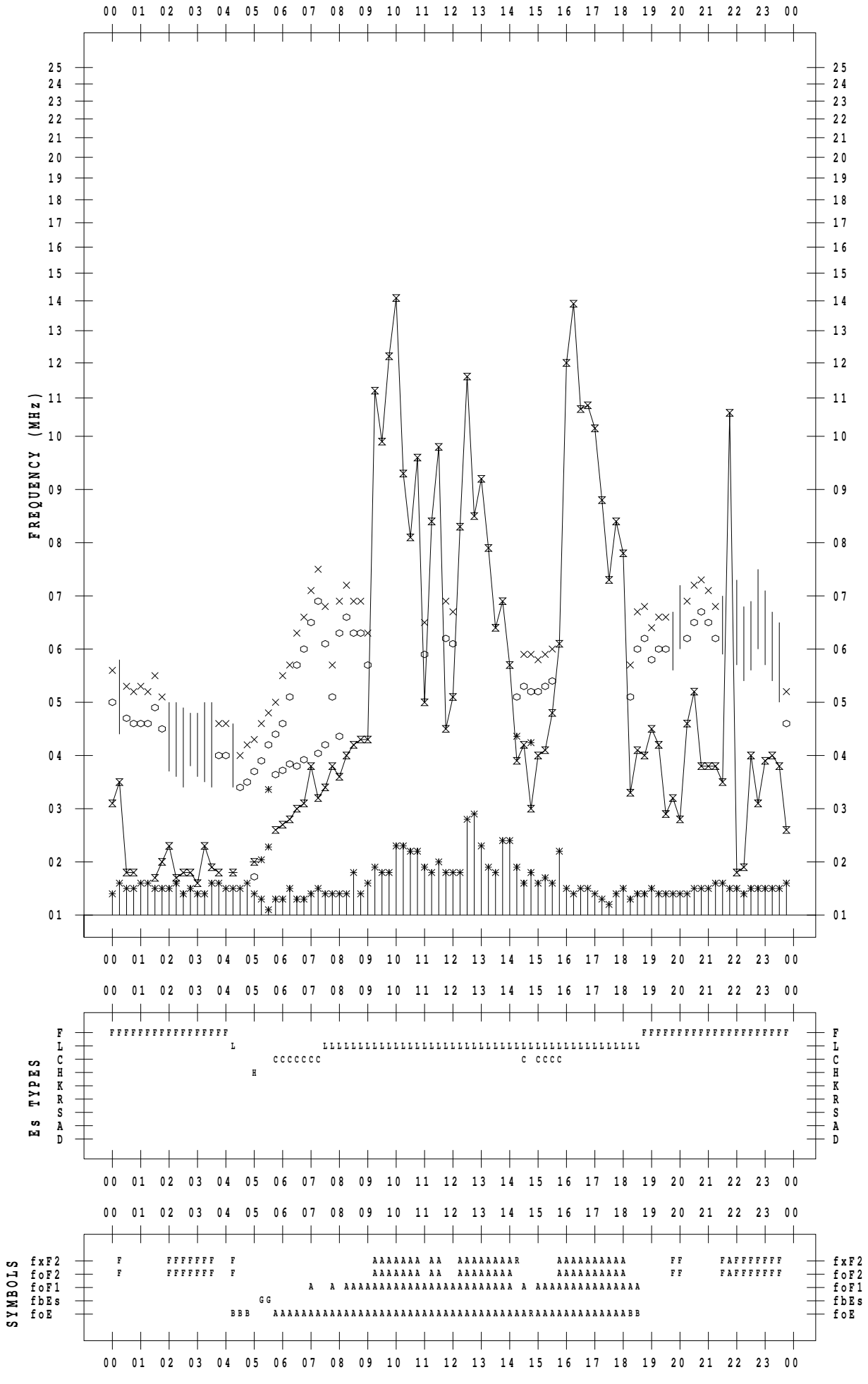
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/26

135 °E MEAN TIME



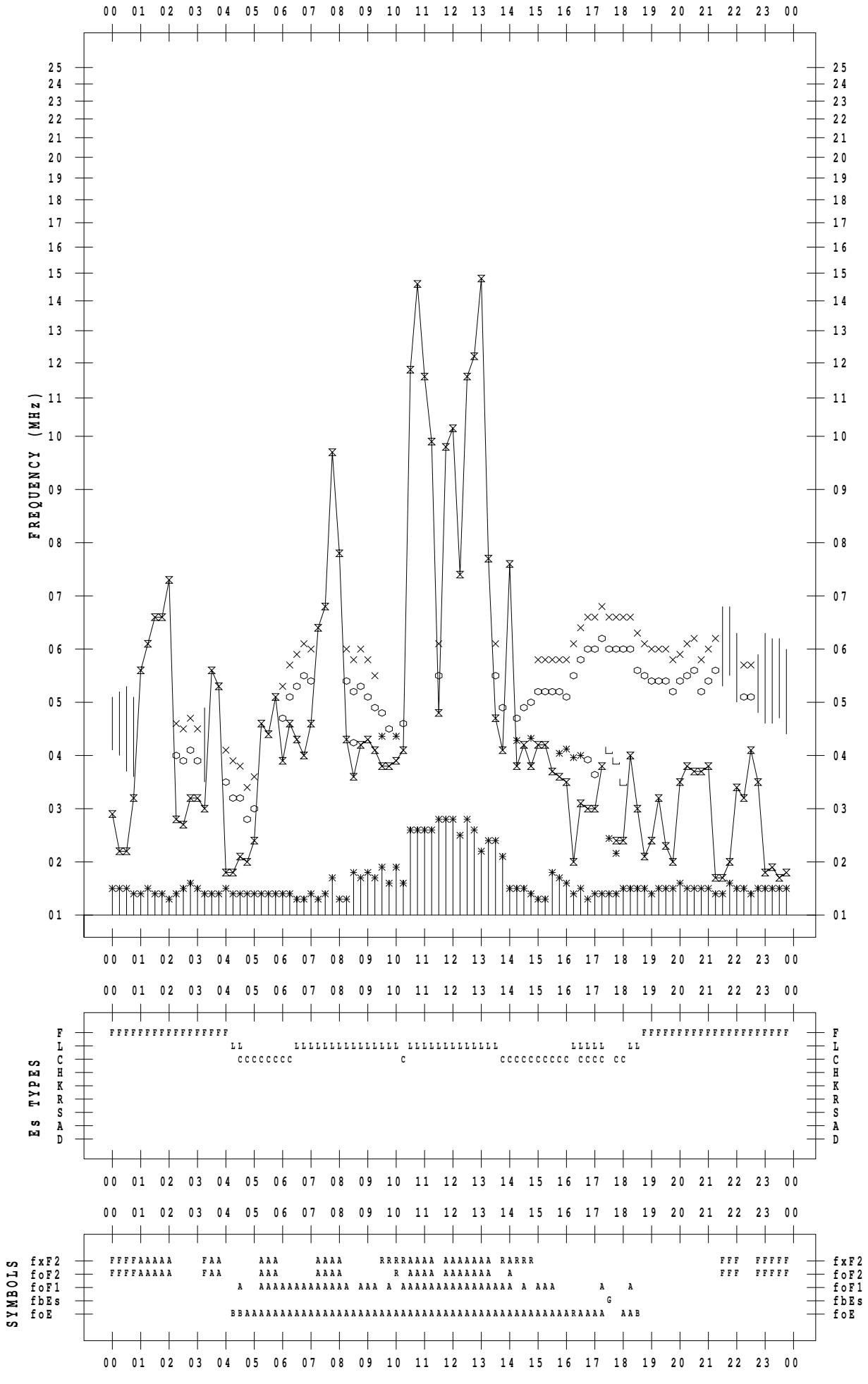
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/27

135 °E MEAN TIME



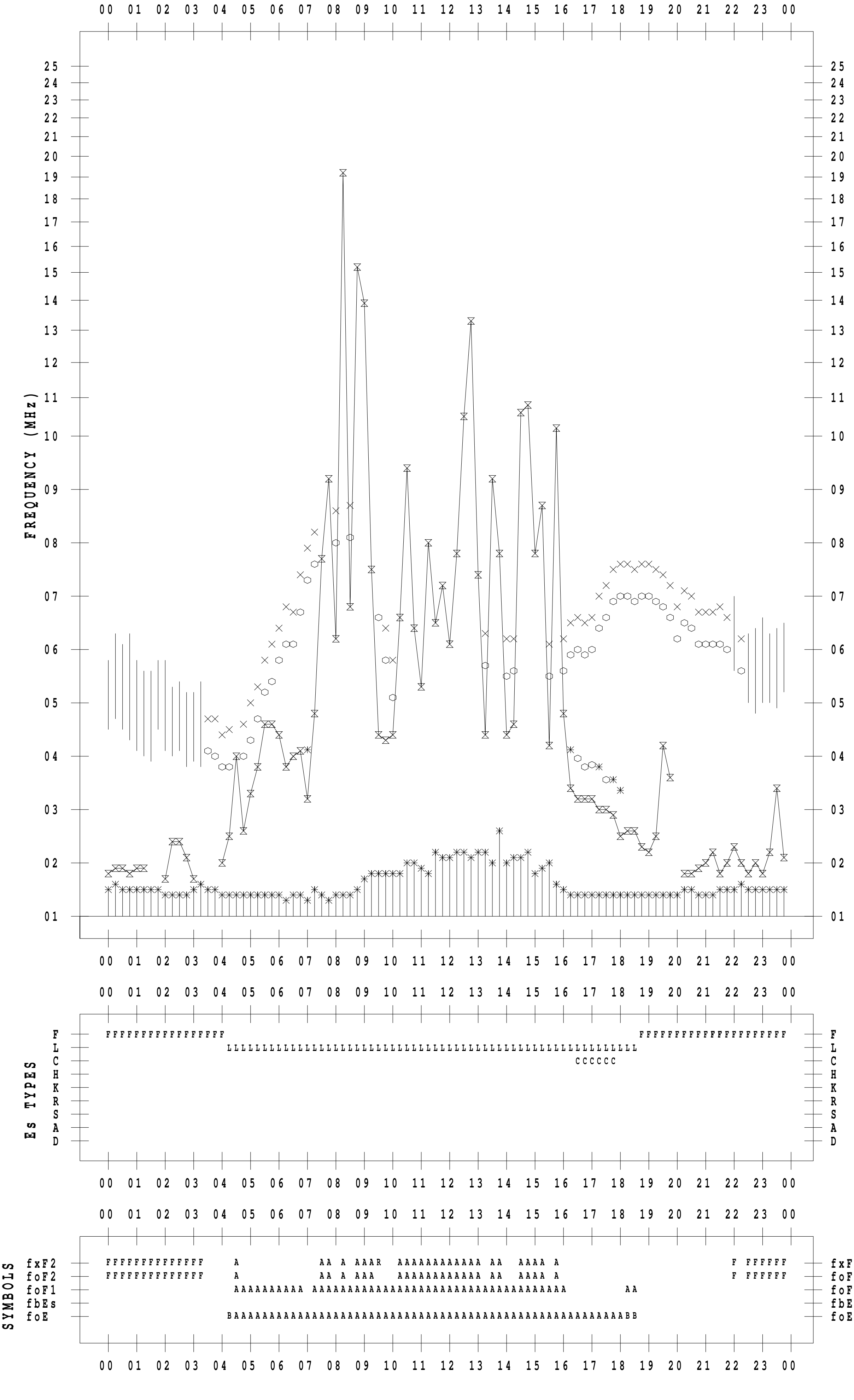
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/28

135 °E MEAN TIME



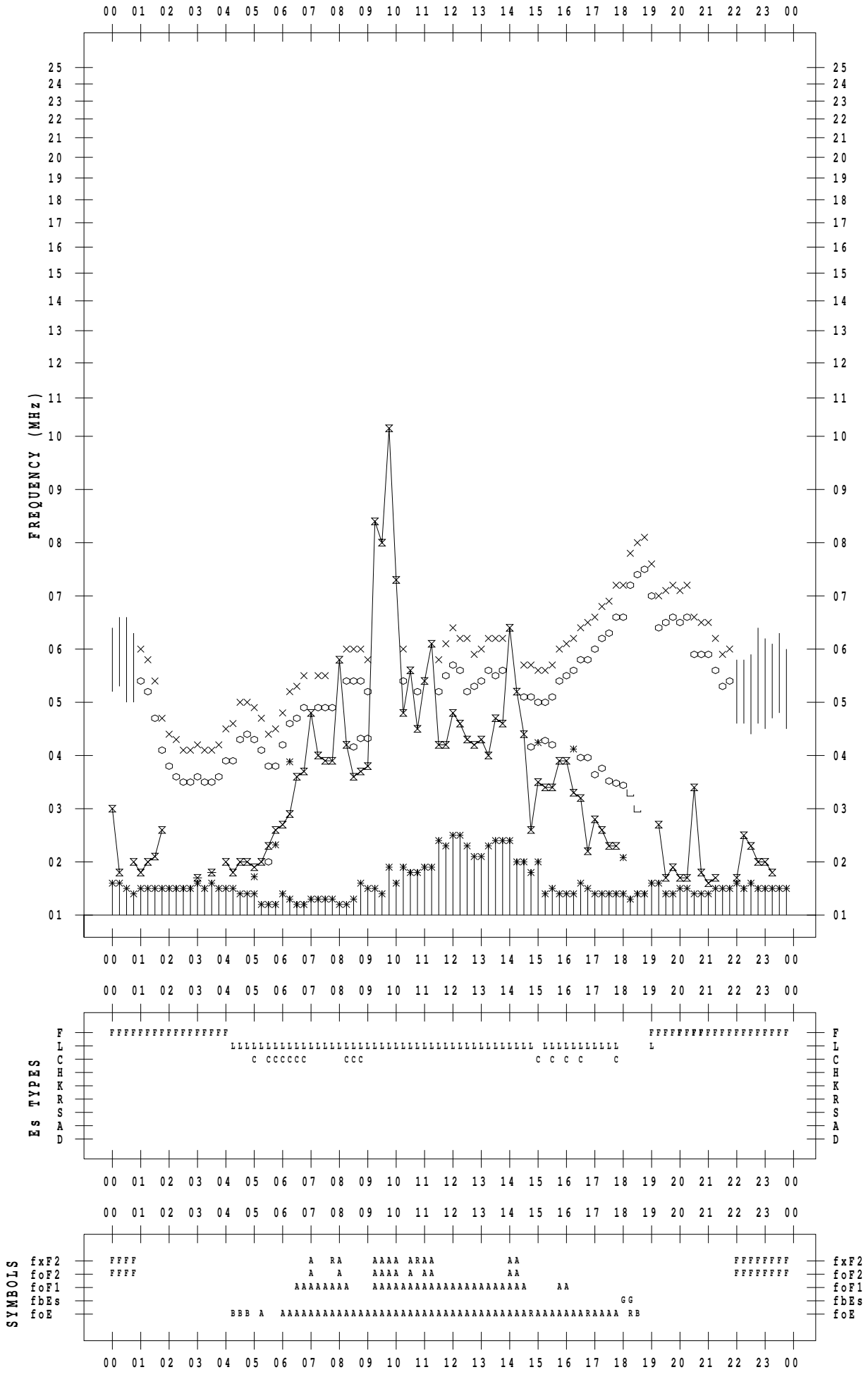
f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji

DATE : 2010/ 6/29

135 °E MEAN TIME

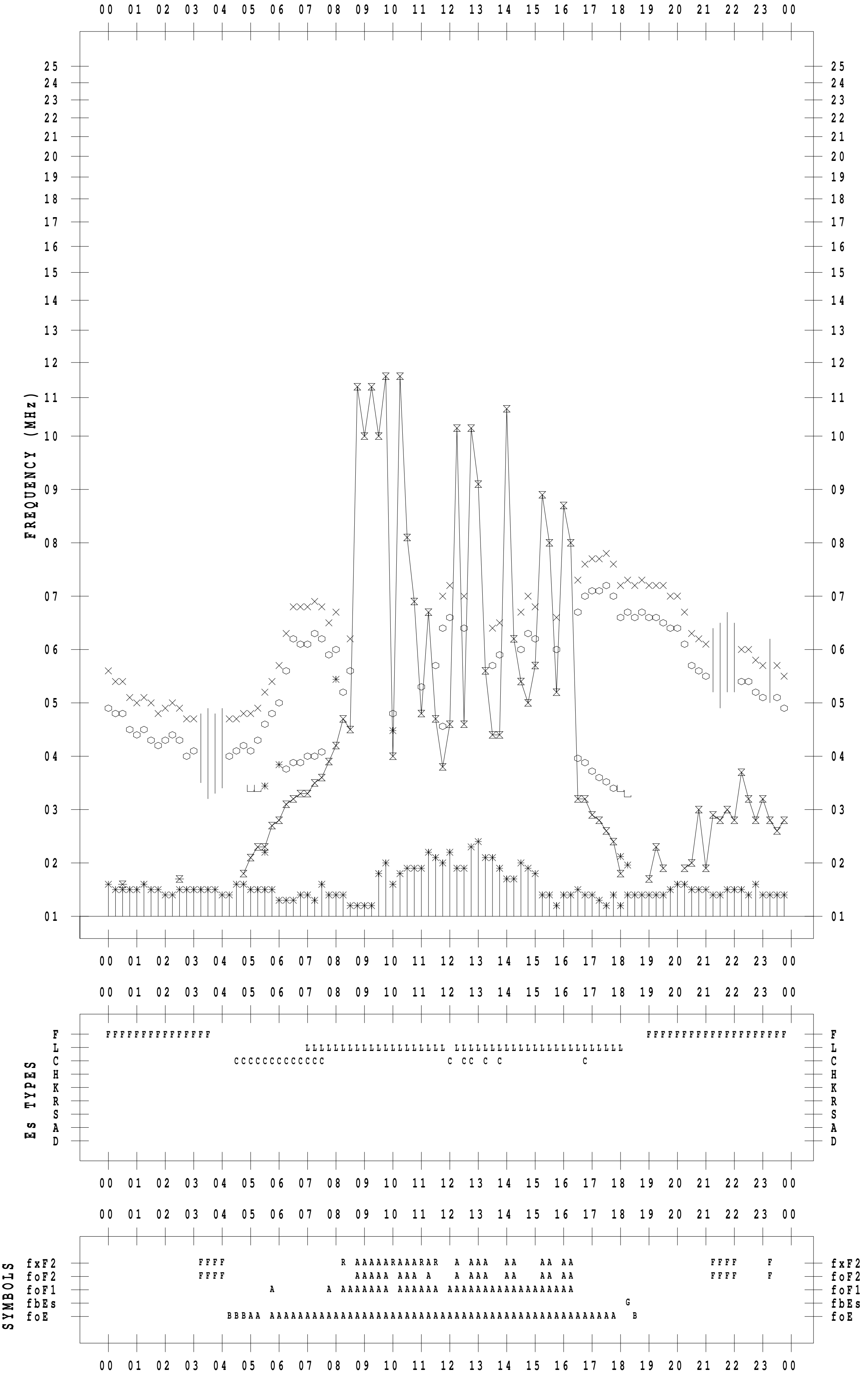


f-PLOT DATA

SCALER : I.NISHIMUTAO

STATION : Kokubunji DATE : 2010/ 6/30

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso June 2010

Single-frequency observations

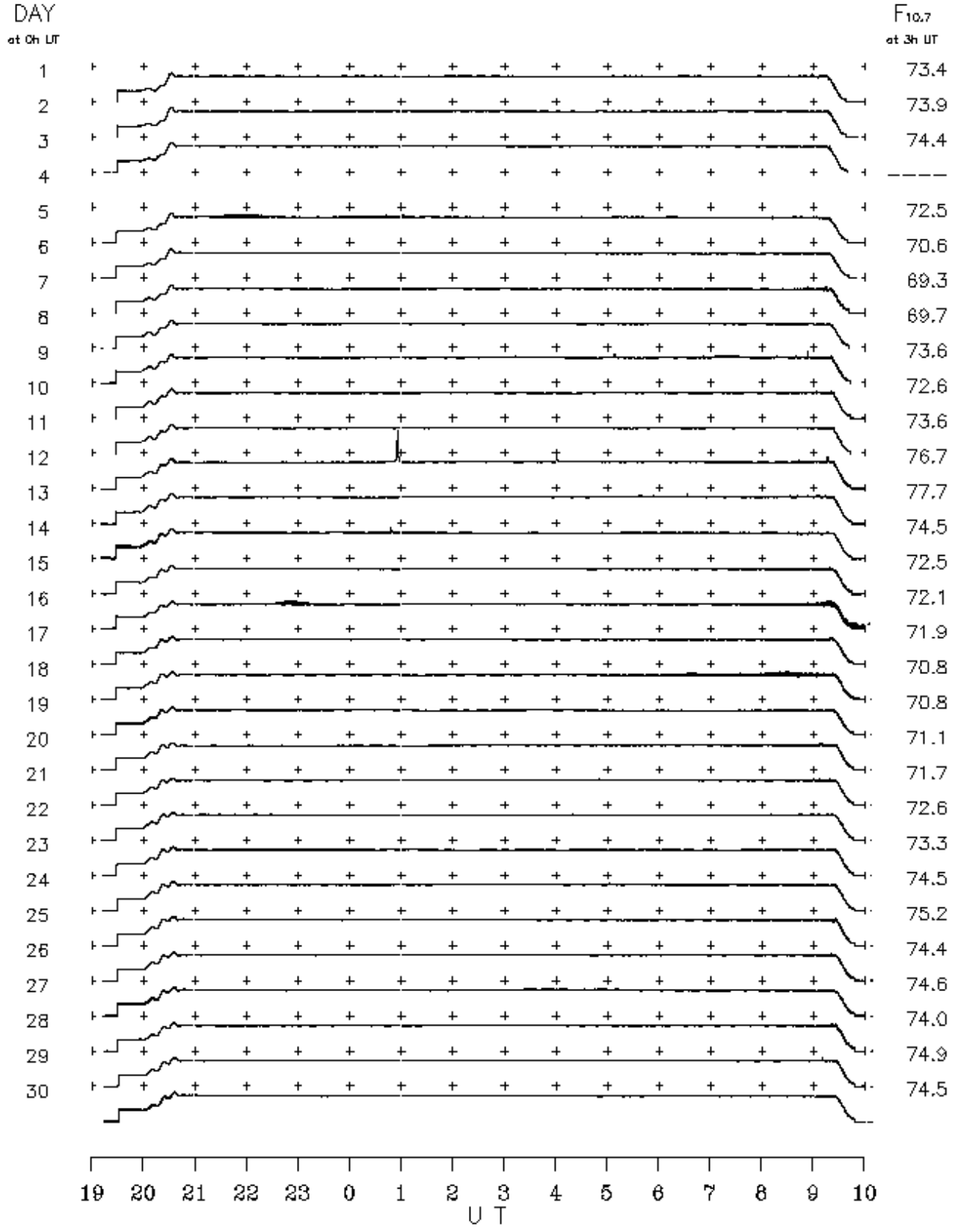
Normal observing period: 1915 - 1005 U.T. (sunrise to sunset)

JUN.	FREQ.	TYPE	START TIME	TIME OF MAXIMUM	DUR.	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1})		POLARIZATION
2010	(MHz)		(U.T.)	(U.T.)	(MIN.)	PEAK	MEAN	REMARKS
9	2800	1 S	0507.0	0509.0	4.0	5	-	
12	2800	7 C	0053.0	0056.0	7.0	85	-	
12	2800	1 S	0401.0	0401.0	1.0	10	-	
12	2800	1 S	0914.0	0915.0	2.0	15	-	
14	2800	1 S	0048.0	0048.0	2.0	10	-	

B.Solar Radio Emission

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

June 2010



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/2010/06/