F-750

IONOSPHERIC DATA IN JAPAN

FOR JUNE 2011

VOL. 63 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. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	62	58	54	54	58	58	68	N	58	A	A	A	A	A	57	61	61	62	62	67	64	66	67	58
2	54	54	52	52	54	51	60	68	64	61	A	A		A	A	61	65	A	A	66	63	65	64	66
3	60	58	54	54	51	53	59	A	57	A	A	A	A	58		61	57	56	53	57	67	65	63	62
4	52	54	52	54	58	68	68	49	64	A	62	61	N	62	65	66	63	64	67	67	64	65	64	N
5	60	53	54	52	61	68	67	66	65	66	65	60	65	68	70	63	62	A	A	67	64	66	62	64
6	60	47	53	53	46	50	63	A	59	A	A	A	A	A	A	58	58	58	57	63	64	52	67	54
7	63	63	53	44	54	67	67	64	55	61	60	A	A		58	A	A	60	61	69	64	66	A	A
8	A	A		52	54	51	A	70	A	64	66	A	65	69	66	65	66	65	62	65	65	A	64	65
9	60	54	61	58	58	65	64	A	A	64	A	A	A	A	A	65	71	A	67	A	A	A	A	66
10	65	52	59	56	47	48	56	58	A	C	C	C	C	C	C	C	C	58	62	65	62	66	64	64
11	N	54	54	48	A	A	A	66	67	A	A	A	A	A	66	64	73	69	67	67	A	A	65	66
12	54	52	A	A	A	51	51	61	65	A	A	A	A	A	A	A	A	A	62	65	53	65	A	63
13	A	A	A	A	A	44	A	A	A	A	A	A	A	A	A	A	A	50	A	A	A	65	A	54
14	58	54	53	47	46	47	51	A	A	A	A	A	A	A	A	56	A	A	A	62	A	59	A	54
15	43	43	47	37	19	A	A	62	A	56	A	A	A	A	49	59	56	56	A	64	67	33	53	62
16	58	53	53	51	50	61	65	64	66	A	A				60	A	A	A	60	66	67	74	65	67
17	53	53	53	48	47	50	57	51	57	A	63	A	57	A			58	62	63	63	64	54	63	54
18	53	58	53	47	41	49	A	A	A	A	A			A	A	49	52	51	A	57	62	66	59	61
19	54	54	51	56	54	60	56	A	65	A	A	62	A	49	A	A	54	54	A	63	65	64	67	A
20	54	53	50	48	46	64	67	64	58	A	A	A	A		A	61	61	61	61	64	64	65	66	66
21	64	62	53	52	54	57	56	A	A	A	A	A	A	A	A	A	58	62	58	57	60	59	63	62
22	A	51	53	47	50	49	55	A	A	A	A	A	A	A	A	60	64	60	52	A	A	A	64	54
23	32	61	52	56	51	46	A	A	A	A	A	A	A	A	57	57	58	53	53	66	64	33	65	64
24	60	54	52	52	65	67	67	66	A	A	A	A	A	A	A	A	A	A	A	A	A	A	66	A
25	A	A	A	47	50	A	61	A	A	A	A	A	A		A	57	58	56	60	66	62	65	A	53
26	52	A	53	A	45	56	A	A	66		A	A	56	A	A		58	63	A	68	65	65	60	63
27	58	53		47	52	A	64	A	65	66	A	62	A	A	A	A	A	65	99	64	66	65	66	61
28	64	61	60	52	54	67	A	A	A	A	64	64	A	A	A	A	A	58	62	A	A	64		63
29	52	54	54	58	52	60	65	A	62	A	A	A	64	A	A	A	61	A	64	A	65	64	62	53
30	54	52	47	45	47	63	66	68	A	59	A	A	59			A	A	A	A	A	A	65	A	58
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	25	27	27	26	22	14	16	8	6	5	6	5	9	16	20	21	20	23	22	25	22	26
MED	58	54	53	52	51	56	64	64	64	62	64	62	62	62	60	61	60	60	62	65	64	65	64	62
U Q	60	58	54	54	54	64	67	66	65	65	65	63	65	68	66	63	63	62	63	67	65	65	66	64
L Q	53	53	52	47	47	50	56	61	58	60	62	60	57	53	57	57	58	56	59	63	63	61	63	54

HOURLY VALUES OF fEs AT Wakkanai

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	24	28	28	G	G	36	53	53	49	50	49	45	74	69	G	G	G	G	39	41	38	52	G	28
2	G	33	23	G	G	35	45	47	G	58	48	47		45	44	52	54	58	180	68	56	27	G	G
3	G	33	39	34	43	38	43	48	53	62	56	54	41	G	G	G	G	G	41	39	49	G	G	24
4	28	32	27	26	G	34	40	50	40	49	41	61	G	G	G	G	G	40	36	32	31	35	25	G
5	31	23	34	34	36	34	49	50	52	55	61	41	G	G	59	G	55	59	81	45	34	32	32	G
6	G	25	24	G	G	36	42	57	38	59	50	62	42	50	50	39	50	40	39	43	60	36	34	G
7	32	28	33	G	G	43	52	59	40	51	50	70	70	G	40	56	48	51	50	112	53	38	58	59
8	72	72		40	31	43	73	63	89	54	41	58	64	G	53	48	50	36	35	G	54	73	46	32
9	36	33	29	28	G	38	48	58	71	54	72	69	74	86	75	G	63	59	63	72	73	72	59	28
10	29	G	25	G	G	37	40	52	62	C	C	C	C	C	C	C	C	42	54	59	52	49	32	43
11	36	G	G	33	35	49	60	69	64	65	62	64	69	83	62	56	38	G	39	49	90	49	58	44
12	33	34	59	72	58	43	40	G	58	71	98	68	73	76	83	71	101	84	58	59	58	71	72	83
13	92	92	83	73	70	41	90	95	81	116	134	81	65	122	74	67	51	34	69	73	35	26	71	33
14	48	G	27	26	G	G	40	52	54	62	115	87	117	85	53	38	71	73	73	72	71	54	60	34
15	29	G	29	G	33	48	56	62	63	40	54	62	52	49	G	51	38	47	66	34	60	35	25	26
16	27	G	26	G	G	G	45	40	72	68	40		G	G	49	62	74	80	60	58	48	59	59	25
17	G	G	G	G	26	38	49	62	54	53	53	54	G	68	G	G	36	35	39	37	35	26	G	G
18	29	G	G	G	G	32	38	49	54	70	64		G	52	61	G	G	40	72	40	40	33	32	38
19	40	28	35	27	G	35	48	63	58	58	40	G	42	G	50	46	44	46	87	46	32	G	G	69
20	G	40	36	50	39	34	60	52	53	75	73	53	50	G	48	G	40	G	G	40	33	36	29	48
21	60	29	33	36	31	40	46	60	76	68	61	71	68	50	55	50	38	40	45	29	45	38	26	G
22	39	34	24	G	G	32	42	54	90	69	98	62	80	78	52	G	G	45	50	82	60	38	44	29
23	G	36	G	32	38	33	56	68	101	93	64	74	56	53	G	G	G	G	36	53	44	40	38	34
24	23	28	G	G	32	51	49	48	70	73	74	70	102	52	69	59	76	115	110	80	71	73	70	73
25	70	50	38	28	36	50	60	62	102	67	70	61	42	G	60	39	51	39	44	24	33	G	71	56
26	50	70	50	43	G	36	73	66	51		70	52	G	41	62	G	G	48	63	54	36	34	39	39
27	39	34		32	40	60	44	70	67	60	68	66	69	93	72	72	114	95	127	43	40	38	49	59
28	39	40	33	38	26	36	94	71	98	100	115	60	140	82	51	40	57	52	43	69	103	44		69
29	59	56	33	28	G	34	48	59	58	67	72	75	52	85	51	63	40	70	62	70	40	38	32	32
30	G	G	G	G	G	33	46	52	73	70	126	70	42	G	G	75	73	110	98	87	73	71	73	71
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	28	30	30	30	30	30	30	28	29	27	28	29	29	29	29	30	30	30	30	30	29	30
MED	32	30	28	28	14	36	48	58	60	64	64	62	54	50	51	40	48	46	56	51	48	38	38	34
U Q	40	36	34	34	36	43	56	63	73	70	73	70	71	80	61	57	60	59	72	70	60	52	59	56
L Q	23	G	23	G	G	34	43	50	53	54	50	54	41	G	20	G	18	36	39	40	36	33	25	25

HOURLY VALUES OF fmin AT Wakkanai

JUN. 2011

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

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

HOURLY VALUES OF foF2 AT Kokubunji

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	66	54	54	52	57	67	76	67	62	59	A	A	A	73	73	72	77	80	72	A	53	73	54	54
2	54	52	A	54	A	54	73	80	64	A	A	A	A		69	76	86	82	A	A	77	73	A	64
3	54	61	54	53	59	61	61	67	A	A	A	A	A	A	64	68	64		58	63	66	63	54	53
4	53	52	44	48	49	64	80	69	53	64	A		A	67	73	80	76	77	87	98	90	85	54	58
5	53	N	52	52	54	59	67	74	86	A	A	A	A	A	A	82	75	A	A	91	87	A	A	A
6	54	54	A	A	52	46	A	A	A	A	A	A	A	A		63	64	A	63	70	64	54	54	A
7	A	54	52	A	A	54	67	74	A	A	A	64		A	A	69	A	73	A	A	A	A	A	54
8	A	54	51	51	47	54	54	72	A	A	69	66	A	77	80	82	74	74	59	67	73	61	A	53
9	52	53	54	54	57	62	72	72	67	A	72	77	A	A	90	82	83	77	81	81	A	A	A	A
10		75	67	67	62	64	58	A	A	A	A		58	A	A	A	66	66	72	77	74	A	52	A
11	52	63	54	A	41	51	58	A	A	66	A	A	A	67	78	82	80	87	78	74	66	52	53	52
12	A	47	A	A	A	A	A	A	A	A	A	A	A	69	A	73	72	64	64	74	76	A	54	A
13	54	54	53	52	51	53	62	73	77	A	A		A	A	A	48	57	58	55	61	47	45	54	52
14	44	52	52	51	52	49	39	A	A	A		C	C	C	C	68		80	82	77	74	72	64	61
15	A	53	46	40	44	47	66	73	72	A	A	C		A	C	A	A	A	66	83	80	54	A	52
16	A	A	A	44	47	52	67	72	A	A	A	A	A	A	A	A	A	A	A	59	64	A	A	A
17	A	A	A	A	42	52	A	A	A	63	66	62	A	A	A	A	64	68	74	65	A	54	54	54
18	54	54	44	43	39	A	A	A	A	A	A				A		63	55	A	62	64	58	52	47
19	53	52	53	45	46	54	A	73	A	A	A	A	A	A		A	A	64	72	73	84	80		A
20	54	54	54	52	52	58	67	67	69	A	A	A	A	A	A	A	A	72	69	70	78	74	63	54
21	52	A	A	54	54	54	65	A	A	A	A	A	A	A	A	A	73	A	A	A	46	58	58	53
22	51	53	54	52	A	A	55	61	66	A	A	A	A	A	A	A	76	64	52	52	65	54	54	52
23	54	A	A	52	51	55	54	A	A	A	A	A	A	A				62	A	A	54	67	67	67
24	73	67	53	A	72	74	67	A	A	A	A	A	A			59	63	61	A	A	A	66	A	54
25	A	54	51	47	A	55	52	A	A	A	A	A	A	A	A	61	A	A	72	A	A	51	A	N
26	54	54	52	44	44	A	59	A	81	A	A	A	A	73	A	A	A	A	A	A	71	61	A	54
27	A	A	A	52	44	49	63	A	A	A	A	A	A	A	A	70	76	A	84	77	75	75	A	A
28	A	73	67	52	54	67	67	72	A	A	A	A			A	A	A	99	107	A	A	A	A	A
29	54	A	A	46	48	52	52	A	77	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
30	A	A	A	A	44		A	62	A	A	A	A	A	A	A	A	A	A	A	83	80	67	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	22	20	23	25	25	24	16	11	4	3	4	1	6	7	16	18	19	19	20	23	22	15	18
MED	54	54	53	52	51	54	64	72	69	64	69	65	58	71	73	71	74	72	72	74	73	62	54	54
U Q	54	54	54	52	54	61	67	73	77	65	72	71	29	73	80	81	76	80	81	79	78	73	58	54
L Q	52	53	51	46	44	52	56	67	64	61	66	63	29	67	69	65	64	64	63	64	64	54	54	52

HOURLY VALUES OF fEs AT Kokubunji

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	29	G	G	G	69	62	G	65	82	69	82	G	G	G	G	G	36	73	49	32	31	35
2	58	33	59	31	58	G	47	62	64	61	83	92	59		61	44	G	G	87	82	70	73	60	31
3	36	31	32	G	G	34	42	45	57	74	68	82	70	117	61	40	G		47	41	40	G	G	33
4	G	G	G	G	G	G	G	39	45	51	70	G	48	G	50	53	G	G	32	29	29	G	35	49
5	45	58	42	40	G	31	G	44	84	117	89	144	104	110	100	G	51	62	96	73	89	91	91	90
6	65	29	67	71	33	40	70	85	63	48	74	79	72	52		54	52	60	36	45	30	50	49	107
7	79	29	44	58	53	49	59	60	145	148	78	65		150	59	50	90	58	68	72	103	86	84	86
8	60	58	30	G	G	G	G	59	95	83	62	52	43	71	54	50	G	33	31	32	30	59	70	53
9	26	45	32	49	49	46	45	61	70	87	64	67	88	81	58	G	G	G	51	G	79	59	84	81
10		33	52	48	G	45	53	60	60	48	52		65	87	67	61	G	G	60	80	111	69	53	102
11	48	53	49	49	G	31	G	82	70	62	143	122	51	52	46	G	G	51	51	41	38	71	33	46
12	57	49	57	65	59	49	53	90	114	131	67	76	57	60	70	G	45	40	53	32	49	57	40	40
13	51	27	G	34	34	58	46	53	70	120	87		71	62	49	G	G	G	29	56	45	37	34	46
14	46	48	38	G	28	G	G	48	59	52		C	C	C	C	70		48	43	48	41	45	51	38
15	49	48	40	28	29	31	37	51	52	60	60	C		77	C	135	124	151	67	34	40	41	59	40
16	59	56	73	34	33	32	G	70	99	77	50	59	81	77	91	117	94	92	70	39	58	60	106	85
17	49	52	59	39	29	29	61	72	94	65	G	53	51	48	51	61	55	53	45	70	58	26	50	G
18	33	G	G	G	G	32	42	45	50	54	53				53		53	54	49	G	59	52	47	38
19	34	G	G	G	24	G	62	69	111	83	71	64	102	47		95	73	41	G	60	60	67		52
20	57	53	52	36	45	G	G	45	50	63	117	115	134	74	62	86	68	56	45	31	G	G	29	49
21	60	72	59	40	35	34	53	82	100	95	70	87	82	181	89	83	74	97	107	62	35	28	29	47
22	28	G	G	G	28	40	34	60	62	78	63	67	124	74	156	162	G	G	G	37	27	29	39	51
23	37	84	72	50	39	G	45	78	94	137	78	136	73	72		G		G	78	58	58	58	49	48
24	31	34	59	65	70	34	47	124	146	124	95	152	67			62	47	71	60	108	79	83	70	54
25	67	G	G	45	45	34	50	83	106	130	113	68	110	71	68	G	83	68	G	134	108	59	60	46
26	43	39	33	30	23	33	56	89	68	107	108	54	59	50	81	82	133	71	116	150	60	59	59	49
27	60	70	55	40	26	30	45	78	116	106	109	166	126	81	77	53	41	66	39	61	35	60	93	60
28	59	47	50	27	31	G	G	61	91	185	155	83			118	160	105	105	97	101	61	81	107	110
29	58	70	73	50	49	28	G	73	109	155	87	72	81	111	87	112	144	70	114	109	107	59	83	60
30	46	38	34	29	40		79	47	49	131	57	81	68	55	81	97	127	96	70	73	108	58	71	59
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	30	30	29	30	30	30	30	29	25	25	25	24	29	28	29	30	30	30	30	29	30
MED	49	42	43	35	30	31	45	62	70	83	74	76	72	72	64	54	52	54	51	59	58	58	53	49
U Q	59	53	59	49	45	37	53	78	100	124	92	103	95	84	84	90	86	70	70	73	79	67	77	60
L Q	35	29	30	G	G	G	G	51	59	62	62	64	59	52	53	G	G	G	36	37	38	37	37	40

HOURLY VALUES OF fmin AT Kokubunji

JUN. 2011

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

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

HOURLY VALUES OF foF2 AT Yamagawa

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	67	54	52	52	62	66	66	66	60	A	A	A	67	69	74	75	87	58	78	77	72	72	72	
2	A	52	A	52	A	54	72	77	66	56	A	67	A	A	69	79	86	84	72	72	54	A	66	52
3	A	54	54	54	54	54	70	68	62	A	A	69	A	A	67	69	70	77	70	70	66	44	54	52
4	53	52	A	A	50	54	49	69	A	63	A	A		58	A	64	80	A	92	90	72	67	54	54
5	A	54	53	61	55	54	61	71	94	68	A	A	69	58		90	77	72	80	88	A	A	A	A
6	A	A	A	A	55	58	55	A	A	A	A	A	A	A	A	A	A	A	A	A	48	54	53	54
7	A	A	52	A	45	48	A	62	A	A	73	A	A	A	A	A	A	82	72	70	52	66	A	53
8	53	53	52	54	48	54	52	64	72	A	A	A	A	72	77	78	83	74	76	67	54	54	54	A
9	54	54	A	A	54	54	53	73	72	71	72	77	78	88	58	88	88	87	96	87	N		67	67
10	66	66	71	A	76	72	80	64	A	A	A	A	A	60	65	72	72	80	86	A	65	A	A	A
11	54	52	66	54	46	46	A	A	68	62	A	63	A	74	61	78	77	88	73	88	63	A	A	52
12	52	52	54	50	42	42	48	68	A	106	A	67	A	67	76	85	A	72	86	78	66	A	52	54
13	54	52	54	54	52	50	61	70	83	A	69	A	68	A	A	A	79	67	67	62	54	53	54	52
14	52	52	52	52	46	40	A	57	57	A	A	A	A	A	63	71	86	77	82	74	72	54	54	A
15	39	A	A	A	A	40	A	64		61	A	A	A	70	A	A	A	70	80	A	66	54	60	66
16	66	N	54	44	47	52	57	54	A	A	A	A	A	A	A	A	A	77	77	67	53	67	58	A
17	A	52	53	A	52	51	56	56	A	A	A	A	A	61	A	67	72	78	80	67	53	60	53	54
18	54	54	45	45	45	37	A	A	A	A	A	A	A	62	66	75	69	60	58	64	44	46	A	52
19	53	53	54	47	37	40	55	62	49	A	A	A	A	A	A	73	64	A	A	A	87	53	A	A
20	52	A	54	54	55	54	54	67	A	A	A	70	68	A	A	72	78	70	71	A	A	70	54	52
21	53	48	A	53	C	C	C	C	C	C	C	C	C	C	A	A	A	A	A	54	54	A	54	52
22	50	54	52	51	50	46	54	67	60	A	A	A	A	A	A	68	A	A	A	A	68	63	60	52
23	54	A	44	48	46	52	56	A	A	A	A	A	A	A	109	A	A	39	A	A	A	A	A	A
24	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	71	A	61	63	58	54	A	54
25	53	54	67	62	53	47	A	A	A	A	A	A	68	A	A	A	A	72	72	80	54	54	67	54
26	67	54	65	56	45	42	A	64	72	70	63	69	71	A	A	78	77	86	86	67	64	54	54	54
27	54	A	54	54	A	54	55	70	67	69	63	A	A	A	A	72	71	A	A	A	72	67	65	54
28	66	67	66	67	63	A	68	70	67	A	A	A	A	71	A	A	A	A	A	52	A	A	A	A
29	54	52	52	52	50	49	48	A	73	A	A	A	A	A	A	A	82	A	A	A	A	54	A	A
30	52	A	52	A	53	53	56	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	21	23	21	25	27	21	21	15	9	5	7	7	12	11	18	19	20	21	20	23	20	19	19
MED	54	53	54	53	50	52	56	67	67	68	69	69	68	68	67	74	77	76	77	70	63	54	54	54
U Q	54	54	54	54	54	54	63	70	72	70	72	70	71	71	76	78	83	81	84	79	68	66	65	54
L Q	52	52	52	50	46	46	53	63	60	61	63	67	68	60	63	71	71	70	71	65	54	54	54	52

HOURLY VALUES OF fEs AT Yamagawa

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	29	70	50	59	59	33	37	47	74	62	119	41	52	53	50	54	60	49	44	28	29	34	37	
2	58	40	56	25	58	G	49	119	66	55	57	63	59	49	48	77	46	58	60	51	36	60	51	57
3	59	29	28	40	33	28	43	52	59	74	76	74	83	76	56	63	52	44	39	31	71	51	53	39
4	33	39	59	50	33	35	57	57	74	56	132	52		44	61	56	62	84	65	44	35	32	24	G
5	69	49	35	28	G	G	G	36	49	46	68	71	G	50		G	38	G	70	59	73	71	80	82
6	73	82	78	46	40	29	47	70	106	95	67	64	77	61	87	114	153	116	95	70	43	28	28	40
7	67	59	67	58	57	29	71	61	86	157	67	92	172	70	128	72	86	44	40	49	34	39	59	59
8	72	58	37	33	25	G	38	53	57	76	85	112	157	67	72	65	60	70	65	40	51	38	39	60
9	70	58	59	60	G	G	47	58	66	67	68	41	G	G	54	48	G	G	54	45	39		40	36
10	50	50	47	59	50	46	60	60	63	92	78	114	66	61	66	60	53	91	38	117	73	60	72	58
11	46	50	36	36	33	32	59	66	54	58	76	71	69	46	G	42	38	37	39	32	49	51	53	57
12	57	46	G	34	G	29	33	53	73	150	64	51	59	52	54	79	86	45	48	53	90	68	53	39
13	28	29	G	46	G	29	40	49	74	80	62	73	64	100	123	76	44	46	35	32	G	28	G	36
14	36	43	57	34	78	32	52	56	55	70	74	50	66	72	52	45	50	44	42	43	43	59	38	55
15	59	59	46	40	43	35	49	51		55	53	68	72	49	52	62	64	48	65	92	27	41	40	34
16	40	58	44	36	34	G	32	46	70	70	83	104	96	91	96	98	79	53	72	61	43	41	49	59
17	82	69	59	58	51	29	48	56	72	75	124	116	49	44	54	G	46	47	48	44	34	46	47	49
18	G	29	G	49	40	G	40	67	67	62	60	55	60	42	50	58	52	40	60	28	50	55	60	38
19	G	26	25	G	25	G	32	39	50	60	78	102	133	75	88	G	77	153	117	118	59	59	58	46
20	40	39	36	32	24	25	35	42	92	64	78	43	48	67	92	55	52	58	45	118	85	46	44	30
21	24	43	69	G	C	C	C	C	C	C	C	C	C	C	76	76	70	68	69	46	46	59	35	36
22	33	39	50	39	57	G	40	48	53	53	68	71	90	79	179	68	100	84	76	72	48	40	43	40
23	48	59	55	48	49	58	36	69	69	71	79	90	100	162	148	163	70	47	79	112	143	112	91	72
24	59	83	68	84	93	124	88	68	117	87	119	71	150	73	64	52	61	76	68	35	43	32	59	45
25	33	59	73	49	46	58	59	72	70	71	96	119	66	84	162	83	71	69	73	51	54	32	G	G
26	29	48	33	59	39	57	59	39	57	46	44	55	54	78	80	51	57	65	62	54	48	58	67	43
27	34	59	47	30	72	56	28	41	50	71	57	117	62	51	43	45	58	112	90	84	58	41	38	44
28	50	58	59	41	48	83	48	44	59	63	100	103	50	58	78	79	83	82	57	59	60	92	72	59
29	58	47	39	39	44	27	46	70	62	175	102	124	132	91	75	179	72	113	158	114	82	34	114	59
30	50	57	50	51	40	34	46	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
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	29	29	29	28	27	28	28	28	27	28	28	29	29	29	29	29	29	28	29	28
MED	49	50	48	40	40	29	46	54	66	70	76	71	66	64	69	62	60	58	62	51	48	46	49	44
U Q	59	59	59	51	54	40	54	66	74	78	90	103	96	77	90	78	74	83	72	78	65	59	59	58
L Q	33	40	36	34	29	G	36	46	57	59	65	55	54	49	53	49	51	44	44	41	37	36	38	37

HOURLY VALUES OF fmin AT Yamagawa

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	14	15	14	14	15	14	15	17	22	33	35	30	30	26	20	17	14	14	14	14	14	
2	14	14	14	14	14	16	14	14	17	18	27	29	40	29	27	35	20	17	14	14	14	14	14	14
3	15	15	14	14	14	14	14	14	17	23	24	36	26	33	23	28	28	18	14	15	15	14	14	15
4	14	14	14	15	14	14	14	14	18	18	20	30		29	20	18	20	16	14	14	14	14	15	17
5	14	15	15	14	14	15	22	15	14	18	20	29	58	26		24	17	14	14	14	14	15	14	14
6	15	14	14	14	14	14	14	14	15	23	32	28	27	34	24	22	20	15	14	14	14	14	14	14
7	14	14	14	14	15	15	16	14	15	17	29	26	22	28	23	22	29	17	14	14	14	14	14	14
8	14	14	14	14	15	15	15	15	17	18	21	21	24	29	28	27	20	17	14	14	14	14	15	14
9	14	14	14	14	14	14	14	16	14	16	20	26	26	54	32	24	17	16	14	14	14		14	14
10	14	14	14	14	15	14	14	14	16	17	20	34	23	35	26	20	17	17	14	14	15	15	14	14
11	14	14	14	15	15	15	14	14	14	15	20	18	27	26	28	21	17	14	14	14	15	14	14	14
12	14	14	15	14	14	15	14	14	14	17	20	23	28	22	22	21	18	14	14	14	15	14	14	14
13	14	22	16	15	14	15	14	14	14	18	34	22	35	28	24	22	17	17	14	14	15	15	15	14
14	14	14	15	14	14	15	14	14	14	17	22	24	34	33	34	21	21	17	14	14	15	15	14	15
15	14	14	14	14	14	14	14	18		18	21	26	29	34	22	35	20	20	14	17	15	15	14	14
16	14	14	14	14	15	14	15	14	18	20	29	35	38	30	29	18	21	14	14	14	14	15	14	14
17	15	15	16	14	14	14	15	14	16	20	32	22	30	24	32	18	21	18	14	14	14	14	15	15
18	15	14	14	14	14	17	14	15	18	17	34	28	23	22	30	36	17	16	15	15	15	15	14	14
19	15	15	15	14	14	14	14	14	14	21	24	24	24	27	27	24	20	17	14	14	14	14	16	15
20	15	16	14	14	14	14	16	15	17	23	34	27	35	35	30	21	20	16	14	14	14	14	14	14
21	15	14	14	15	C	C	C	C	C	C	C	C	C	C	35	24	20	14	14	14	14	14	14	14
22	14	14	14	14	15	15	14	15	20	17	20	35	38	39	23	20	17	17	14	14	14	14	14	14
23	14	14	14	14	14	14	14	15	16	21	20	23	35	21	26	26	16	16	15	14	14	14	14	14
24	14	14	14	15	14	14	14	14	14	16	20	26	23	27	20	21	21	17	16	14	14	22	14	14
25	14	14	14	14	14	14	14	14	15	17	21	22	24	35	21	21	18	16	14	14	14	14	15	16
26	14	14	15	15	14	15	14	14	16	16	20	22	28	29	28	26	20	16	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	16	20	21	26	30	32	26	26	17	16	14	14	14	14	14	15
28	14	14	14	14	14	14	14	15	17	18	23	30	33	24	39	24	17	17	14	14	15	14	14	14
29	14	14	14	14	14	14	14	14	17	18	21	30	20	27	28	26	20	18	14	14	14	14	14	14
30	14	14	14	14	15	14	14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
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	29	29	29	28	27	28	28	28	27	28	28	29	29	29	29	29	29	28	29	28
MED	14	14	14	14	14	14	14	14	16	18	21	26	28	29	27	24	20	17	14	14	14	14	14	14
U Q	14	14	14	14	14	15	14	15	17	20	28	30	35	33	30	26	20	17	14	14	15	15	14	14
L Q	14	14	14	14	14	14	14	14	14	17	20	23	24	26	23	21	17	16	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	67	74	52	57	64	64	55	64	69	65	A	A	A	76	81	90	102	88	96	74	86	84	67	67
2	66	65	A	52	58	52	67	67	63	A	75	77	65		83	100	101	105	86	84	77	70	A	A
3	67	75	67	55	57	61	66	A	A	A	62	A	A	A	A	76	A	88	A	87	87	A	A	54
4	54	45	54	A	A	51	65	68	62	A	A	A	A	A	72	84	A	A	110	106	78	A	67	A
5	A	53	54	72	67	63	70	78	86	60		A	81		95	107	100	88	98	104	87	A	A	A
6	A	A	A	56	45	46	53	A	A	A	A	A	A	A	A	A	90	90	91	A	A	A	45	
7	A	A	A	A	44	A	56	A	72	A	A	A	84	A	A	102	A	A	88	85	A	A	67	A
8	66	67	61	63	58	54	53	60	75	A	66	A	A	A	87	A	87	87	85	67	66	63	54	53
9	54	47	46	54	48	46	52	64	67	66	73	A	93	90	105	104	102	106	100	104	87	77	77	78
10	76	A	76	66	67	49	80	67	A	A	A	A	76	76	87	88	86	106	107	86	71	67	52	66
11	67	72	76	61	46	44	44	A	66	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	90	96	88	A	88	80	82	64	63	54
13	63	64	63	58		54	54	74	A	67	A	A	83	88	100	104	97	91	85	77	67	64	53	51
14	53	A	46	A	44	A	49	A	A	A	A	A	A	A	76	90	93	88	90	103	78	71	52	52
15		44	42	43	31	A	A	60	71	57	57	A	68	A		A	77	87	97	88	59	72	64	N
16	65	66	54	64	57	51	44	61	66	A	A	A	A	72	74	78	A	90	90	A	74	A	67	62
17	A	A			46	53	44	A	A	80	A	A	A	A	A	82	A	88	83	76	63	53	54	A
18	A	A	A	A	A	A	A	59	A	A	A	A	A	78	87	88	88	84	74	71	A	A	53	
19	43	43	45				44	70	57	64	61		A	A	68	A	A	91	101	99	88		76	81
20	67	78	76	67	57	52	62	62	54	A	93	A	76	84	83	88	84	86	88	87	88	59	A	48
21	52	53	53	53		A	46	64	65	73	70	A	A	A	A	A	A	A	74	A	67	53	52	A
22	53	52	45	A	A	44	58	61	55	A	A	A	A	A	A	70	A	88	81	80	A	64	58	58
23	A	44	46	51	44	44	A	51	63	A	A	A				72	A	71	90	A	A	54	44	61
24	52	52	A	A	57	54	58	65	A	A	A	A	86	75	A	78	76	77	78	77	67	A	A	44
25	54	67	53	A	45	44	A	A	A	A	A	A	A	A	78	78	85	82	85	73	A	54	A	
26	67	49	70	55	45	42	A	A	A	61	67	A	A	82	88	84	A	90	86	77	A			44
27	66	66	63	A	58	51	55	62	65	67	64	A	A		A	78	90	90	114	A	82	A	67	67
28		67	63	53	46	52	56	A	54	61	70		78	81	77	A	A	A	69	A	77	A	54	A
29	52	53	44	42	29	42	A	71	A	A	A	A	A	A	A	A	88	A	81	A	76	65	77	65
30	52	A	46	45	44	45	52	A	A	A	A	A		A	A	73	A	80	90	99	A	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	22	23	19	23	23	23	19	17	11	11	1	10	10	17	22	17	23	28	22	21	16	21	17
MED	63	58	54	55	46	51	55	64	65	65	67	77	80	80	83	86	88	88	88	84	77	64	58	58
U Q	67	67	63	63	58	54	62	68	70	67	73	38	84	84	89	96	98	90	96	99	86	70	67	66
L Q	52	49	46	52	44	44	49	61	59	61	62	38	76	76	76	78	85	86	84	77	67	56	52	51

HOURLY VALUES OF fEs AT Okinawa

JUN. 2011

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	39	33	35	G	46	G	G	G	G	48	89	108	76	65	47	58	60	35	54	42	27	G	G	G
2	G	41	58	49	28	27	29	33	G	52	61	50	59		G	48	48	54	65	72	59	50	72	58
3	49	53	74	45	32	29	58	68	73	102	54	146	82	95	146	69	90	90	106	67	49	71	69	56
4	58	38	36	72	69	36	48	47	36	167	182	94	117	108	51	56	104	112	64	82	60	74	58	82
5	72	34	29	G	G	G	G	34	42	G		48	49		G	G	G	G	38	29	34	50	78	82
6	70	54	39	35	36	29	39	84	90	83	132	56	79	138	115	94	48	36	60	80	82	54	G	
7	58	70	41	72	38	51	50	82	104	93	135	112	63	130	101	63	104	89	37	48	46	71	G	41
8	48	34	30	G	G	G	G	44	60	81	83	94	136	128	91	98	78	65	56	53	36	29	28	29
9	36	51	49	57	31	35	36	35	36	40	51	96	57	G	G	48	G	G	G	30	G	43	33	48
10	28	48	G	G	27	G	39	55	134	180	150	90	52	68	74	54	61	52	38	31	26	41	38	34
11	24	37	70	36	46	G	57	81	73	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	84	80	116	38	51	50	G	32	32
13	28	41	G	G		34	34	54	83	49	92	92	60	67	86	79	83	42	36	28	34	G	25	G
14	26	55	44	50	48	52	41	73	62	106	108	50	72	89	50	56	G	46	36	G	40	32	G	G
15		G	G	49	34	41	44	48	44	49	51	72	G	78		56	51	84	51	65	49	28	30	27
16	G	G	G	29	34	49	60	68	58	68	72	90	71	58	G	72	88	73	68	92	69	59	26	27
17	72	72			31	G	G	73	86	50	75	105	137	96	85	72	84	57	49	50	44	28	34	59
18	59	72	49	53	40	36	50	50	74	91	67	94	133	83	63	G	51	44	47	G	67	36	28	
19	G	G	28		G		G	G	55	62	54	G	76	73	49	114	107	81	57	60	84		36	36
20	32	G	G	G	G	G	G	39	48	48	G	84	58	49	59	47	G	G	40	28	36	G	36	36
21	28	G	G	G		28	32	39	41	81	77	97	128	185	185	153	106	95	71	44	30	37	29	65
22	G	G	29	51	70	50	38	40	58	81	88	88	116	81	79	70	132	38	44	29	40	29	49	50
23	34	58	33	39	36	34	50	39	66	154	150	162	G			G	51	64	60	124	78	50	38	35
24	48	51	65	67	49	40	41	69	90	81	106	98	62	68	74	76	57	60	60	70	35	72	58	28
25	44	44	40	36	30	29	92	106	91	90	92	96	90	91	G	40	G	47	40	42	60	36	27	
26	33	38	28	28	35	37	79	84	94	56	50	50	70	71	49	92	94	78	60	48	36	G		G
27	36	39	28	51	29	30	31	31	53	65	61	68	74		50	G	50	82	75	92	40	49	36	32
28		G	G	34	38	48	67	84	43	G	G		G	48	71	111	173	180	48	56	29	74	44	33
29	29	G	32	26	G	35	50	42	91	83	64	96	65	63	76	123	72	137	48	113	82	61	44	39
30	36	36	G	31	30	G	33	60	82	136	91	110		68	81	66	96	81	71	84	134	114	82	68
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	29	28	27	27	28	29	29	29	28	27	27	27	24	27	29	29	29	29	29	29	28	28	26
MED	36	38	31	36	34	32	39	50	62	81	77	94	71	76	63	66	72	64	51	51	44	42	35	36
U Q	49	52	42	51	40	38	50	73	88	92	106	98	90	95	85	88	95	86	62	76	63	60	46	56
L Q	28	G	G	G	28	G	30	39	43	49	54	68	58	66	47	48	49	43	39	30	34	28	27	28

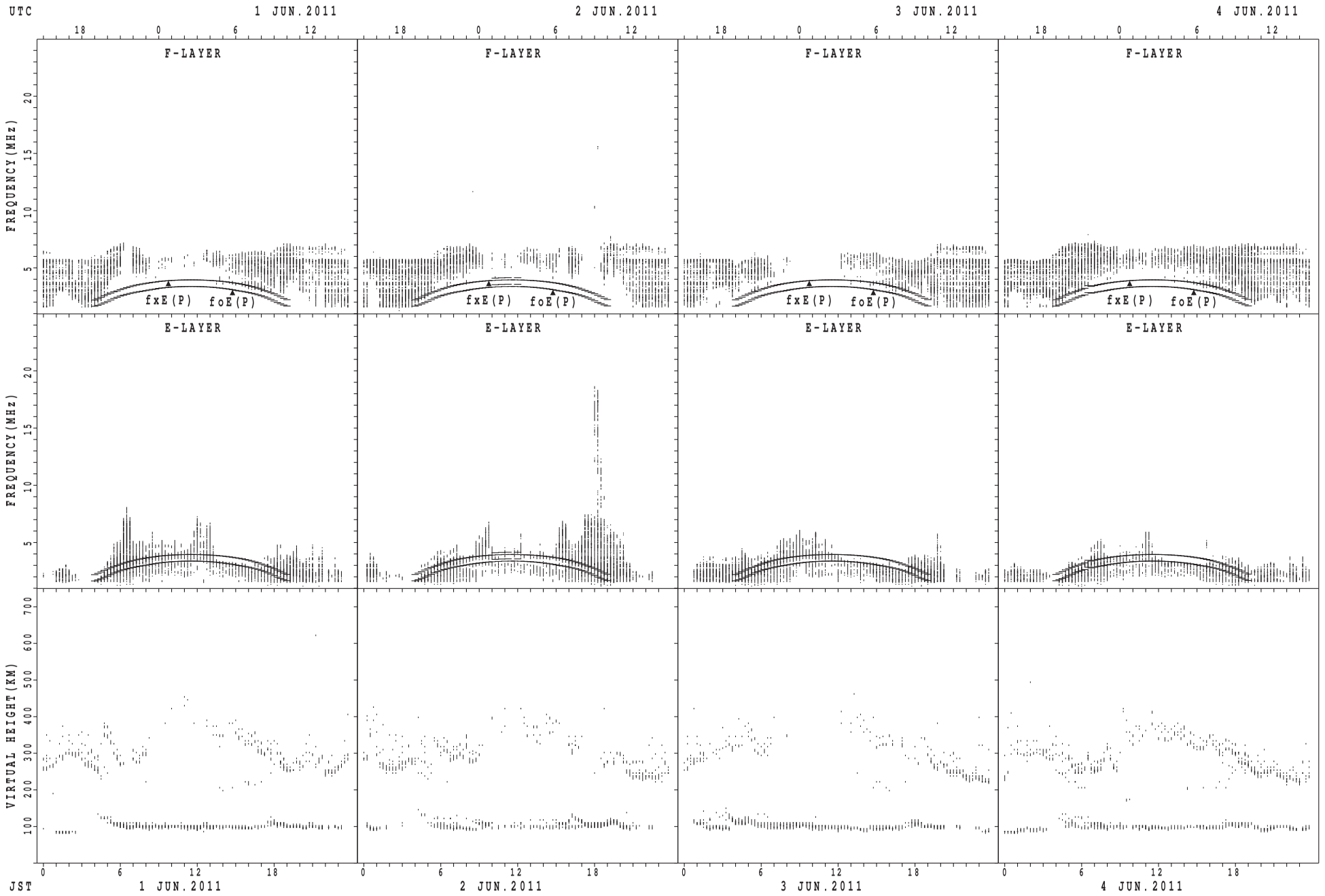
HOURLY VALUES OF fmin AT Okinawa

JUN. 2011

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

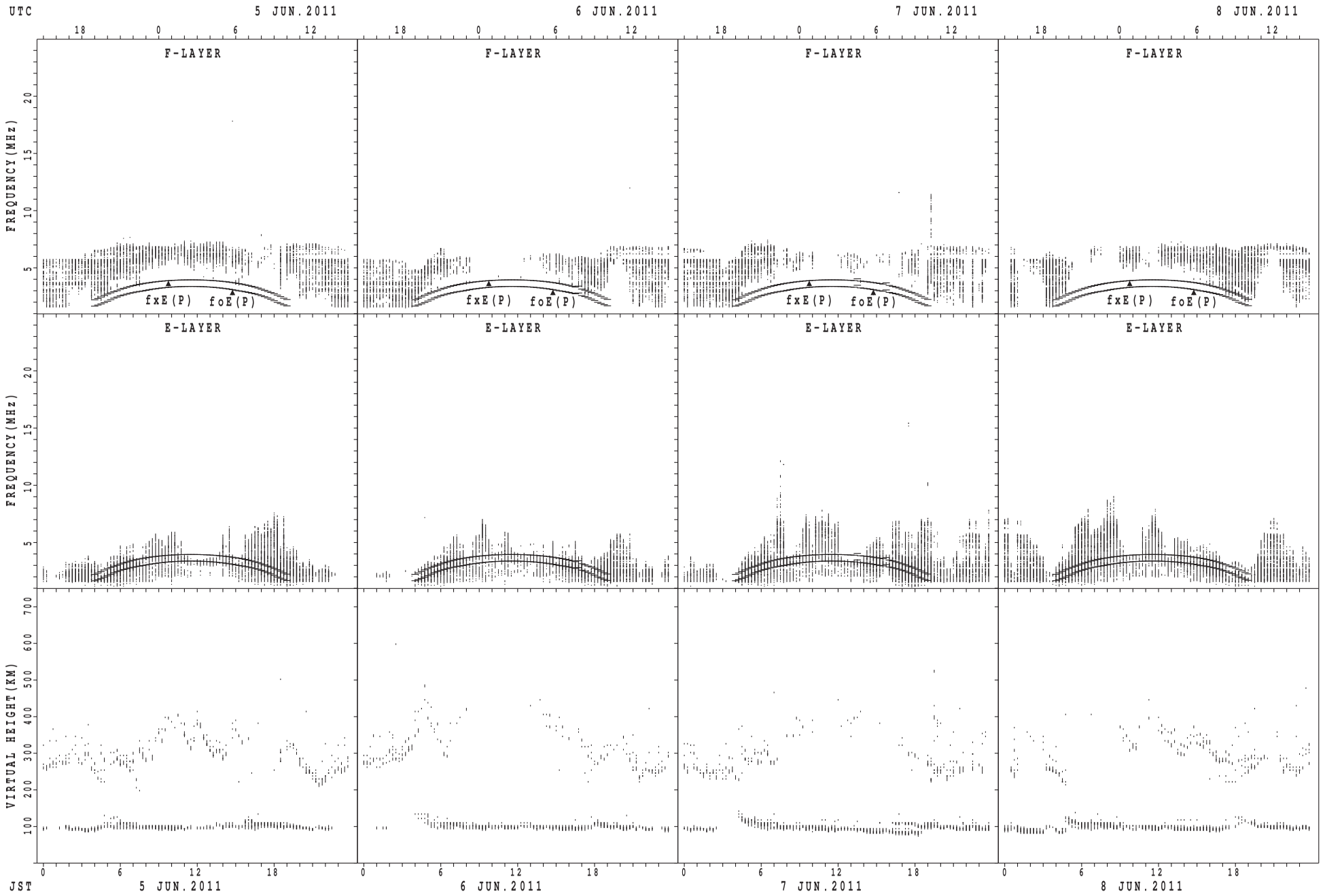
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	15	20	15	16	22	14	22	33	34	34	36	36	32	30	23	20	14	15	14	17	14	16
2	18	14	14	14	14	15	20	21	35	29	30	33	43		55	42	35	30	23	17	17	15	14	15
3	15	14	15	14	14	15	16	22	28	24	36	35	43	42	38	32	30	29	15	15	16	15	16	14
4	15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

SUMMARY PLOTS AT Wakkanai



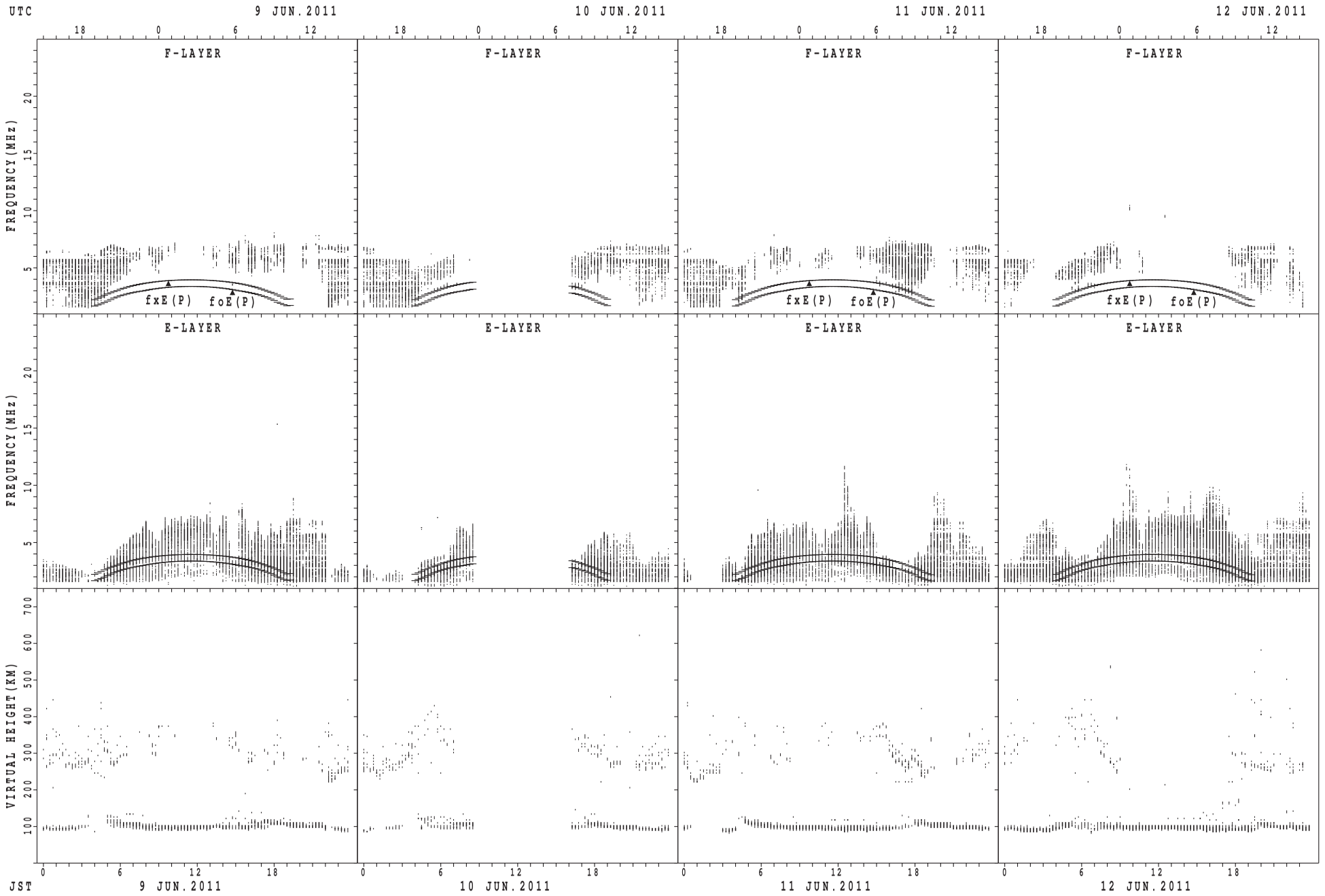
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



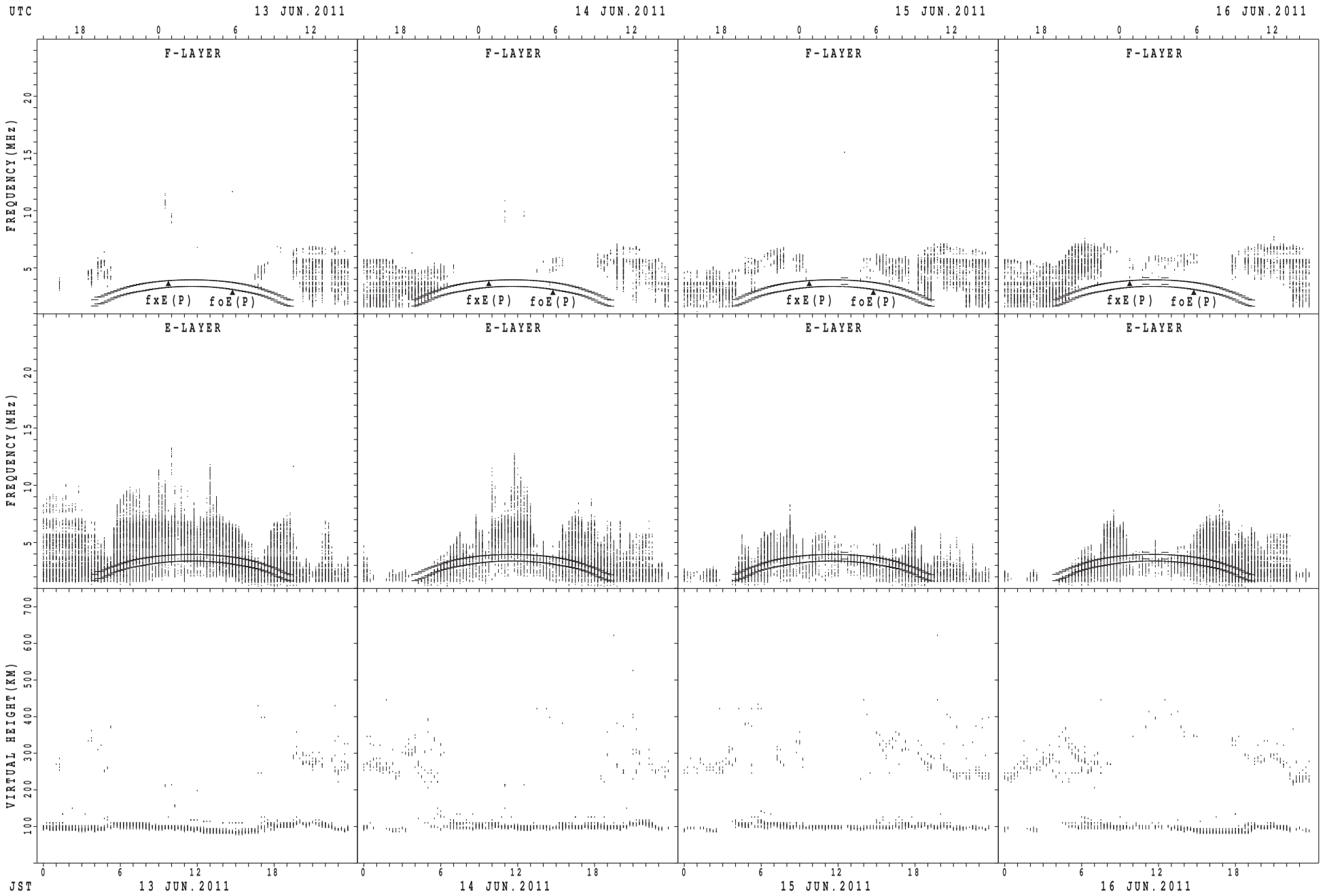
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



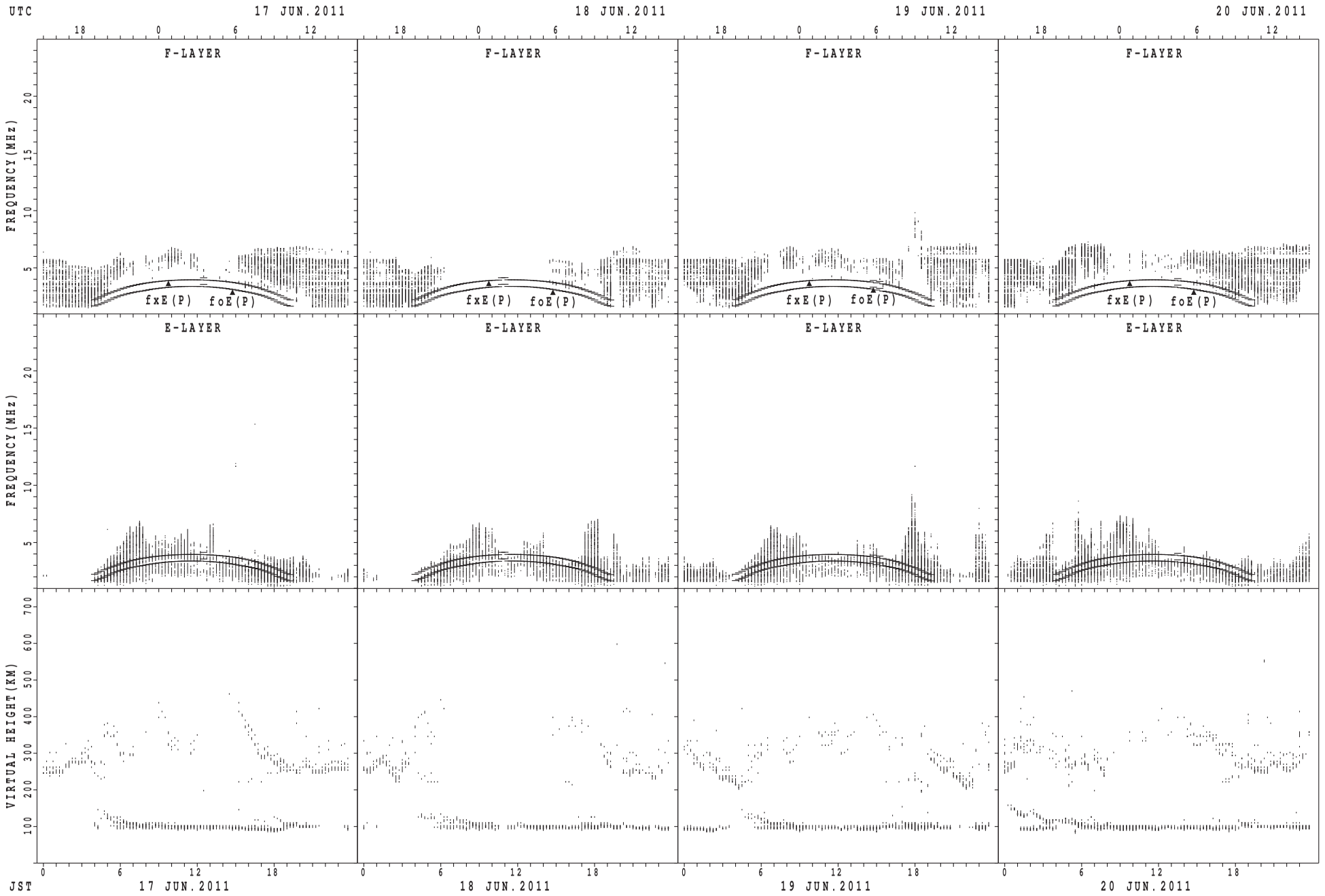
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

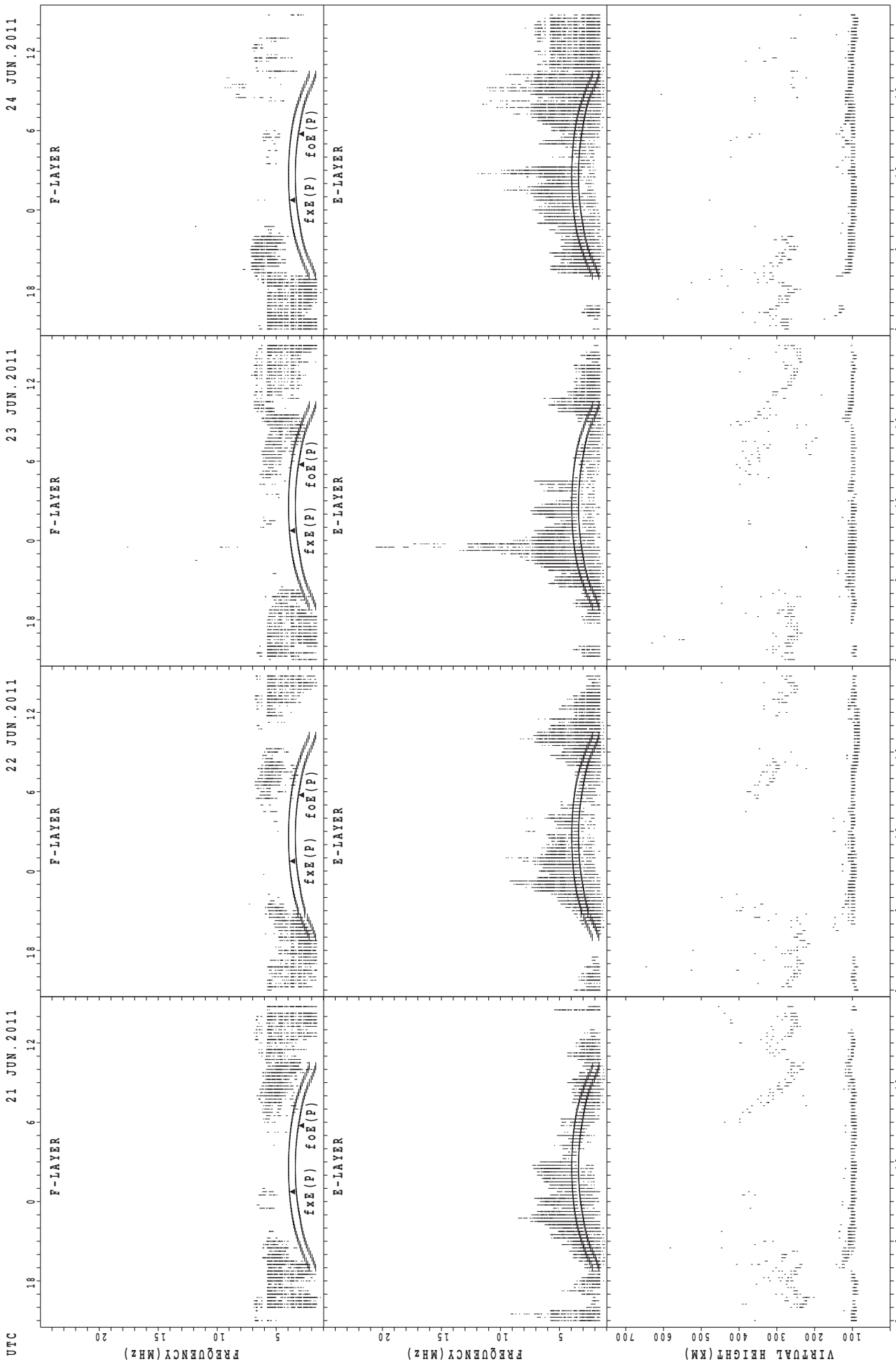


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

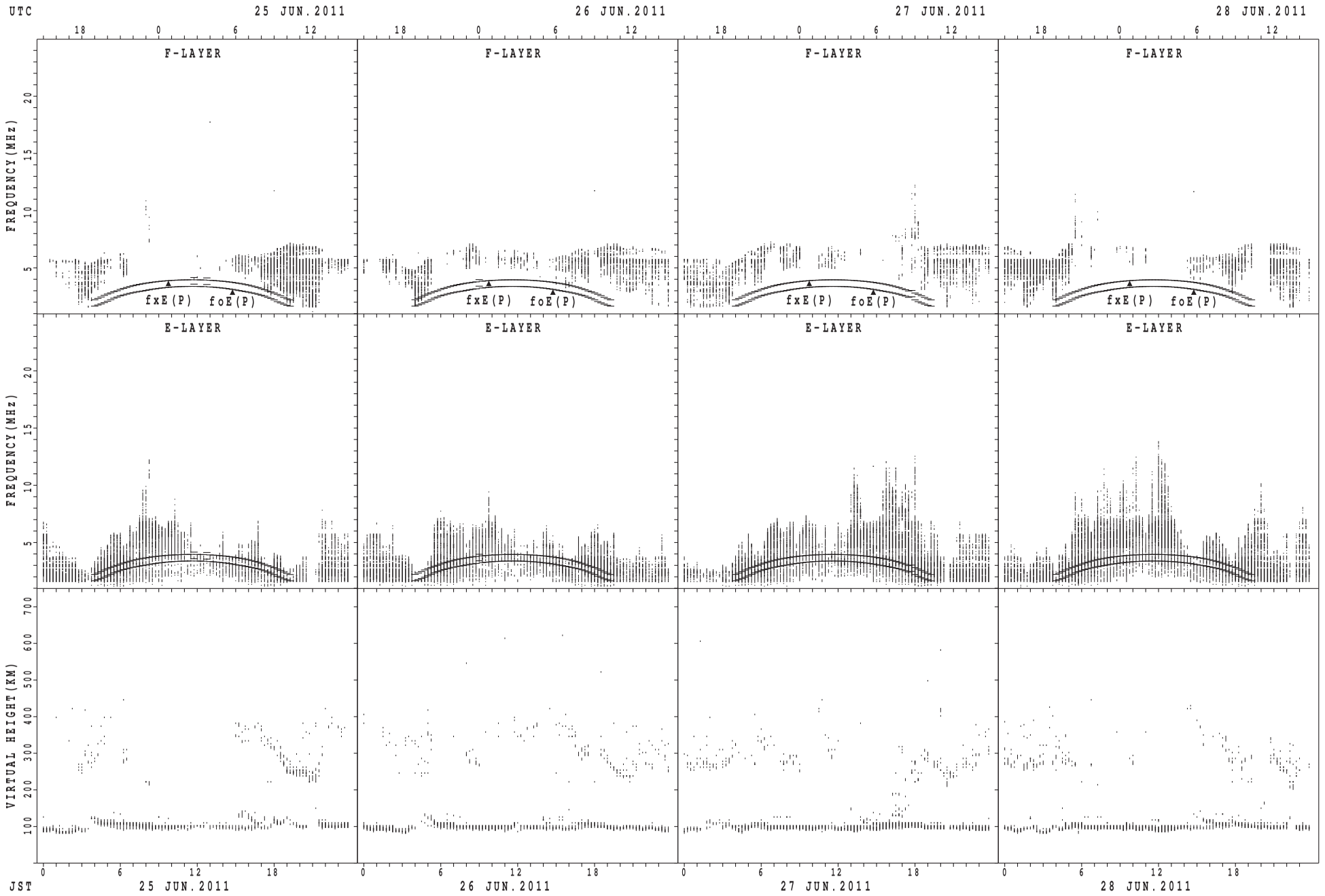
SUMMARY PLOTS AT Wakkanai



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

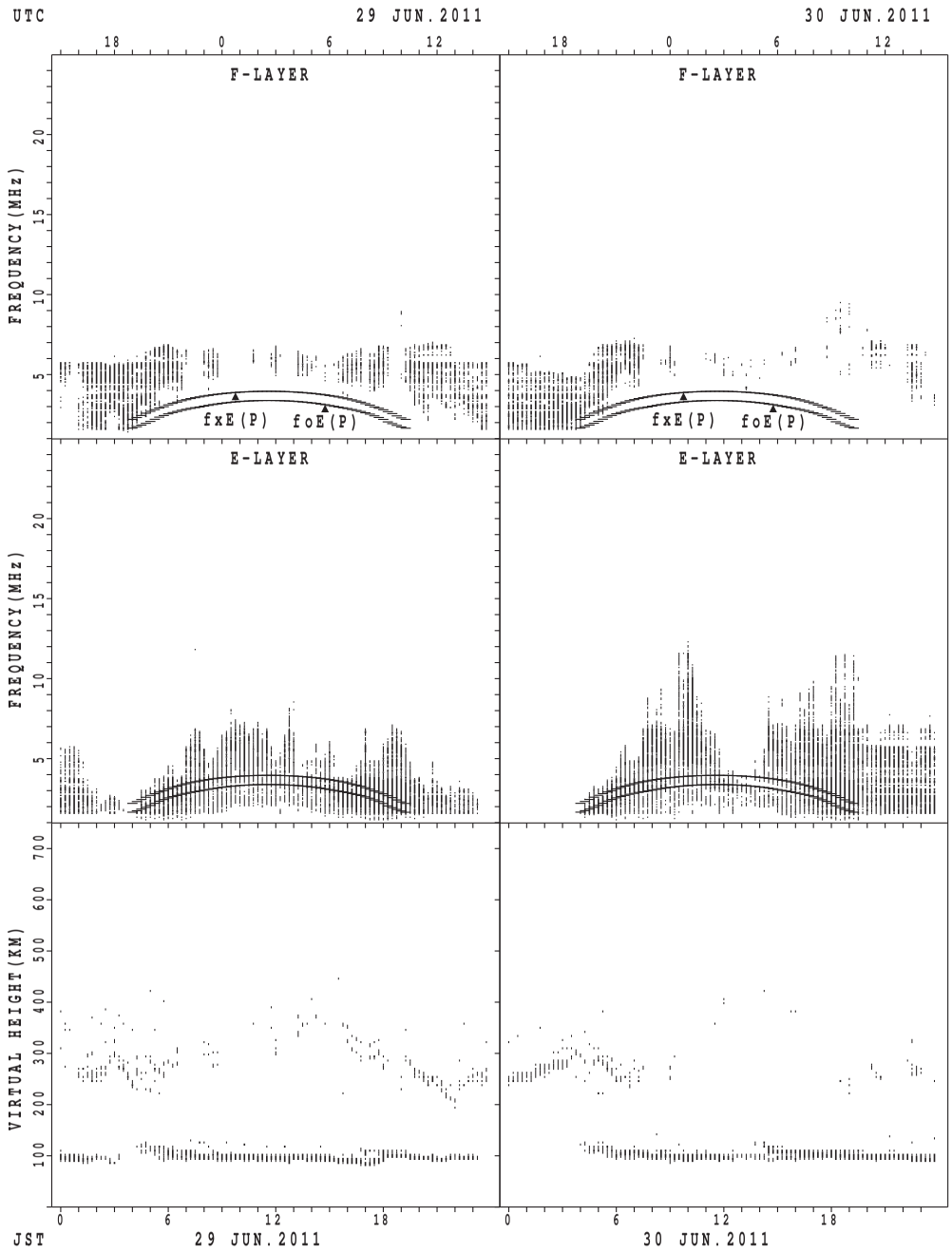

SUMMARY PLOTS AT Wakkanai
UTC
JST
21 JUN.2011
22 JUN.2011
23 JUN.2011
24 JUN.2011
F-LAYER
E-LAYER
fxE(P) foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



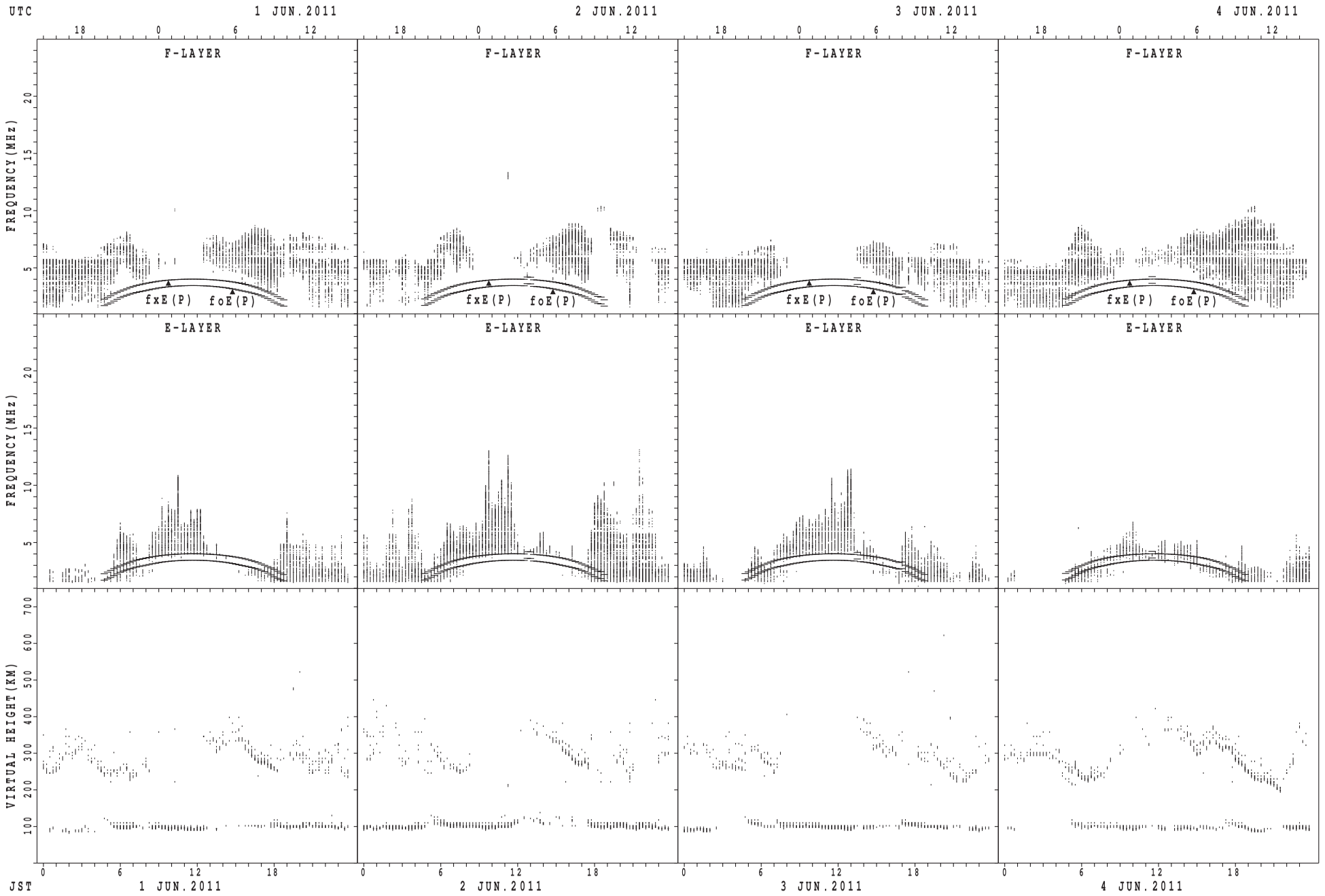
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



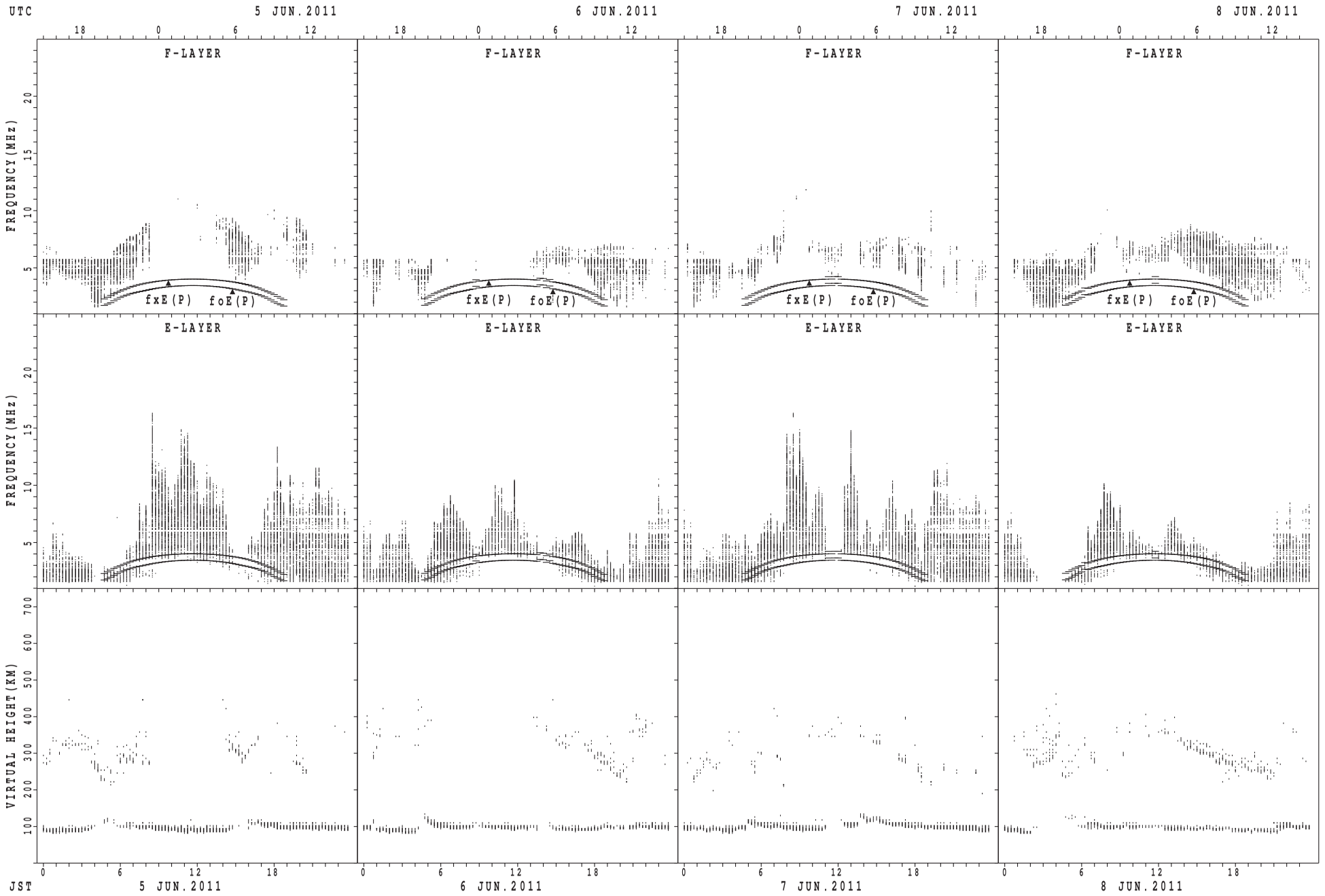
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



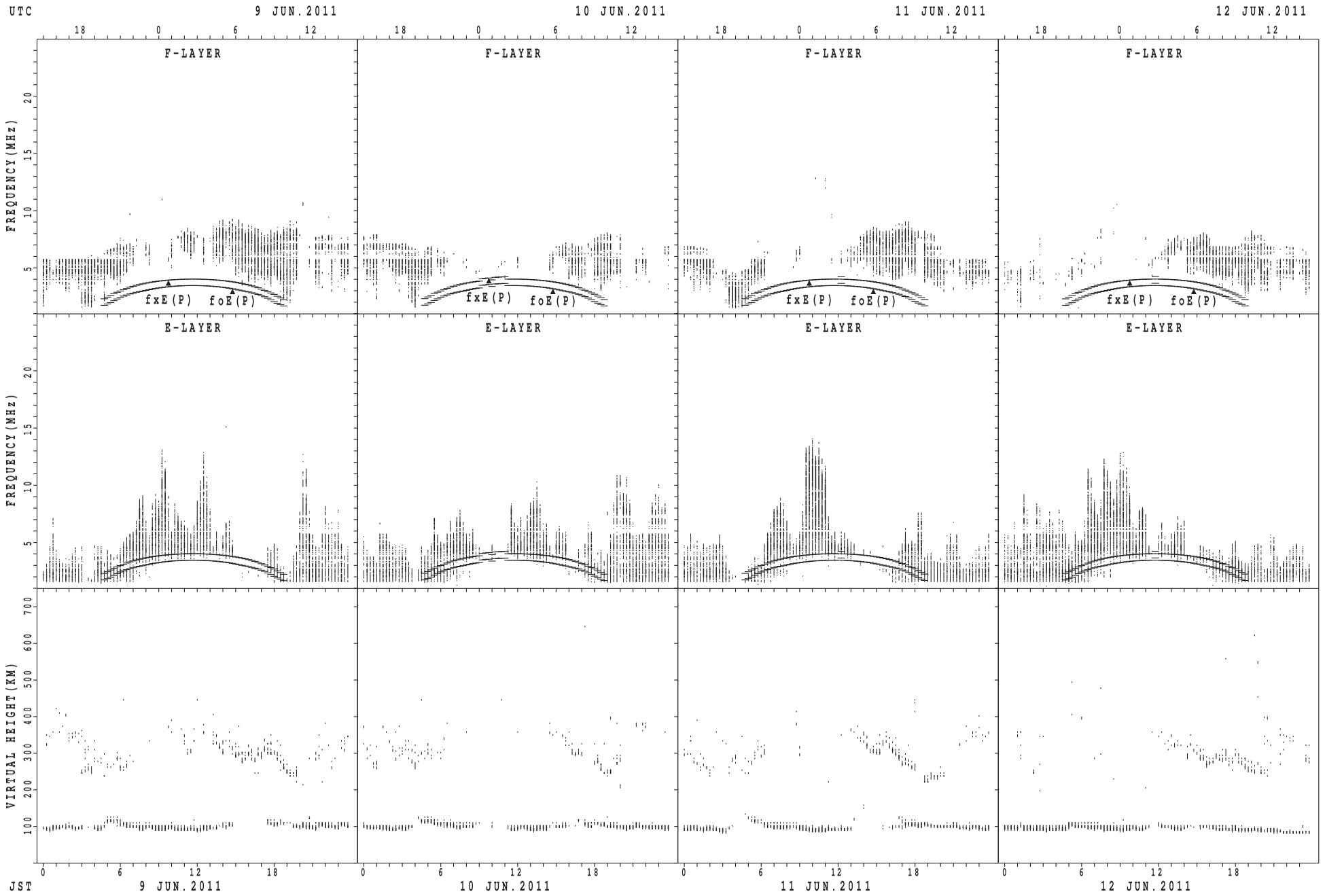
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

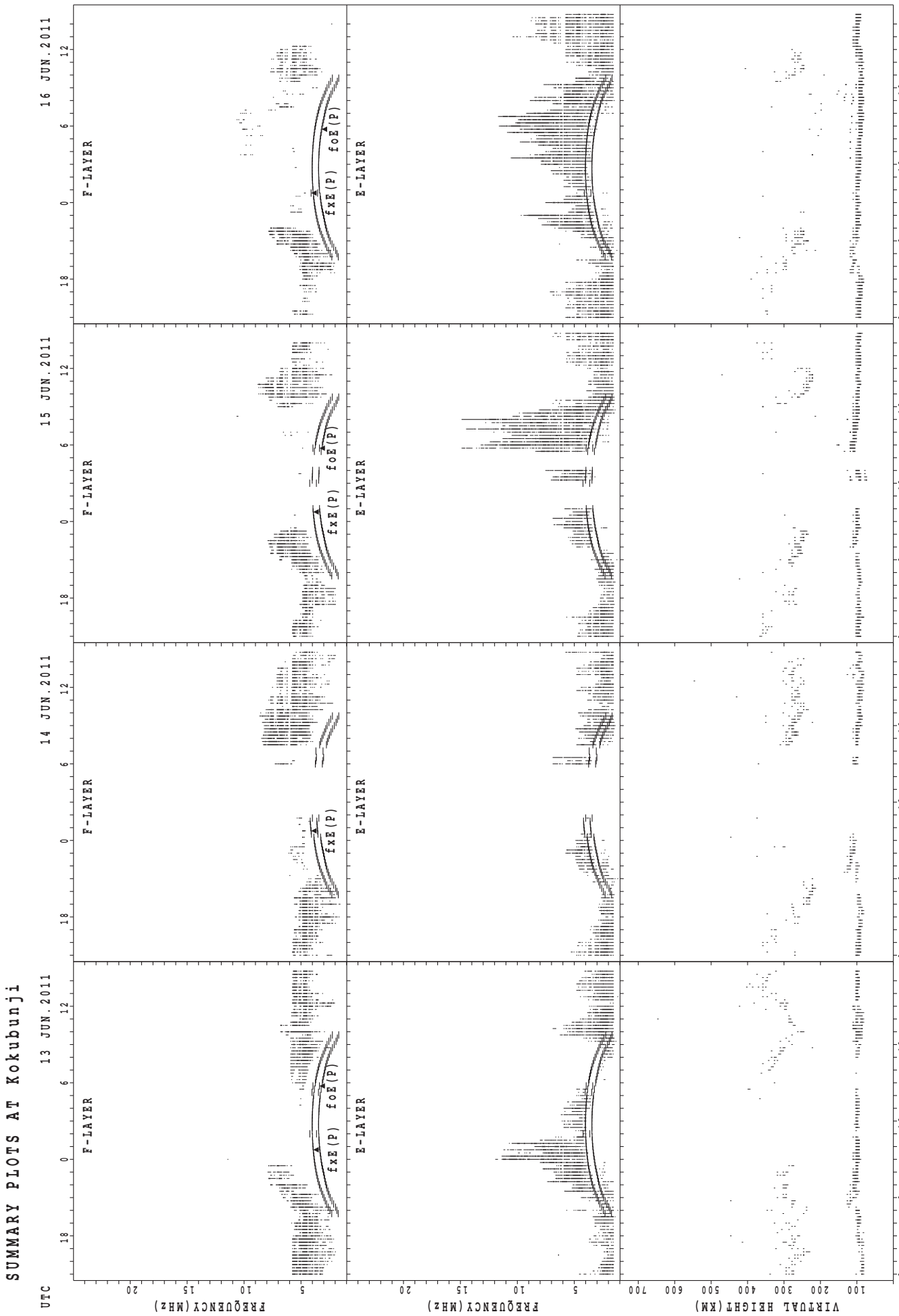


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

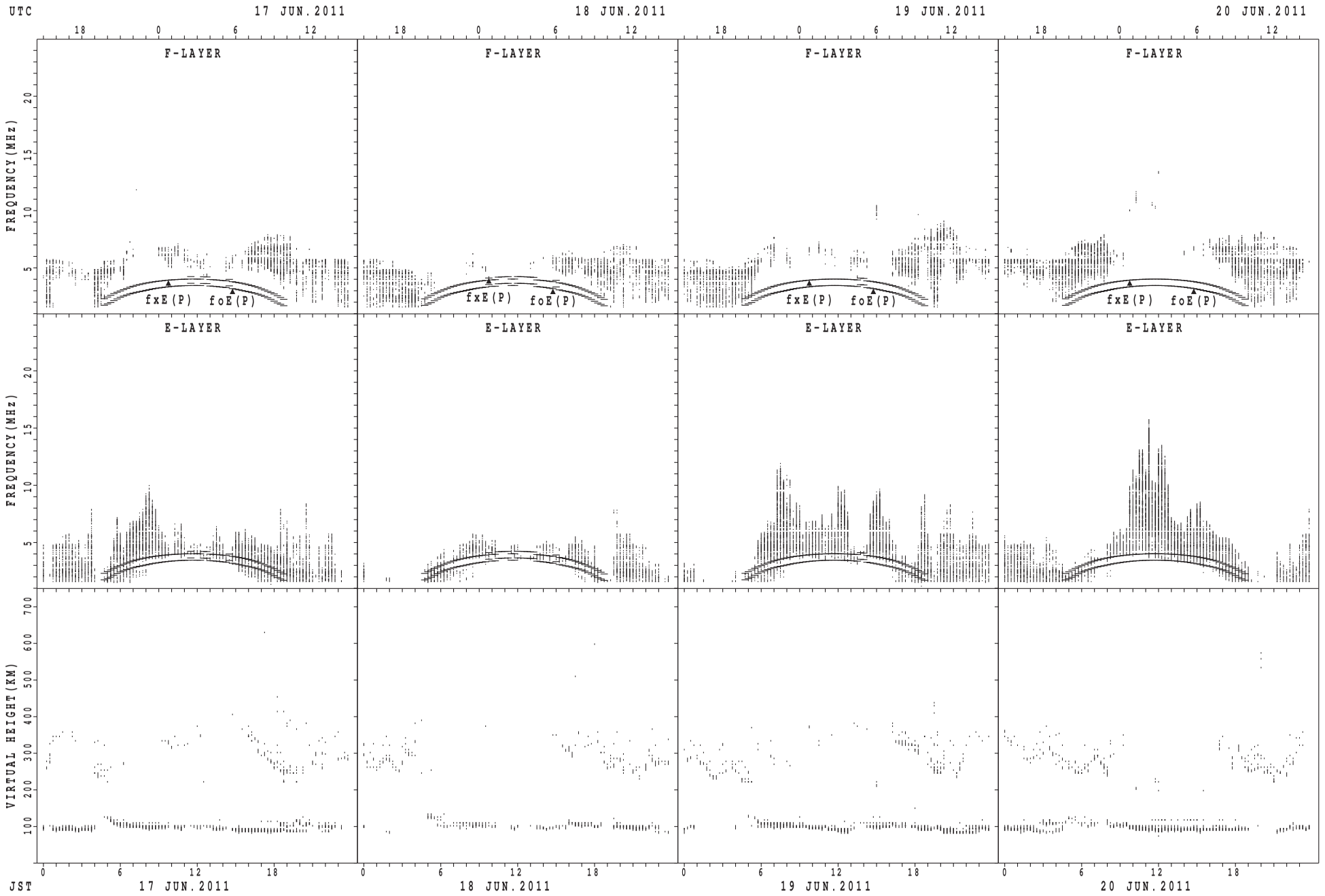
SUMMARY PLOTS AT Kokubunji



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

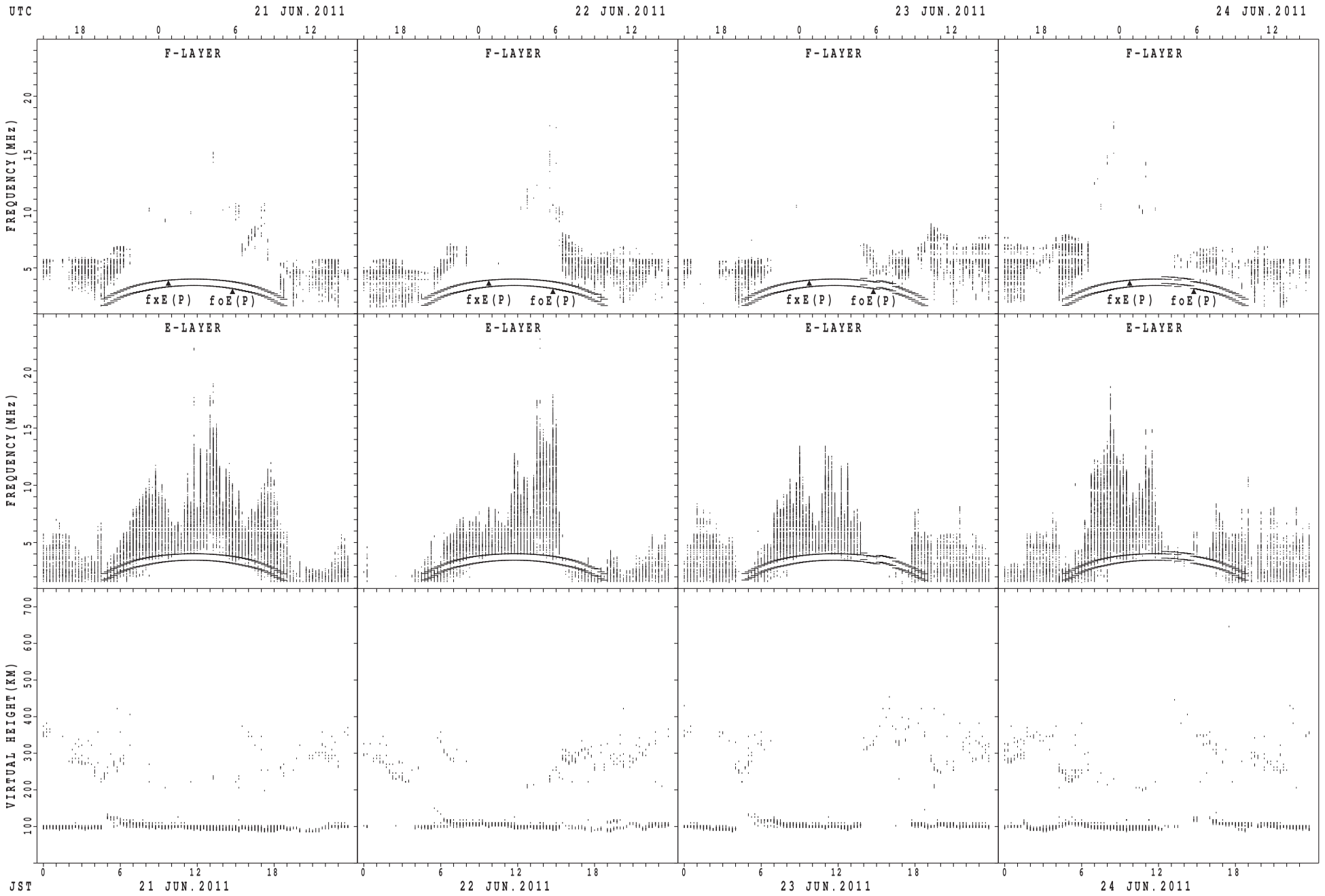

SUMMARY PLOTS AT Kokubunji
UTC
JST
13 JUN.2011
14 JUN.2011
15 JUN.2011
16 JUN.2011
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



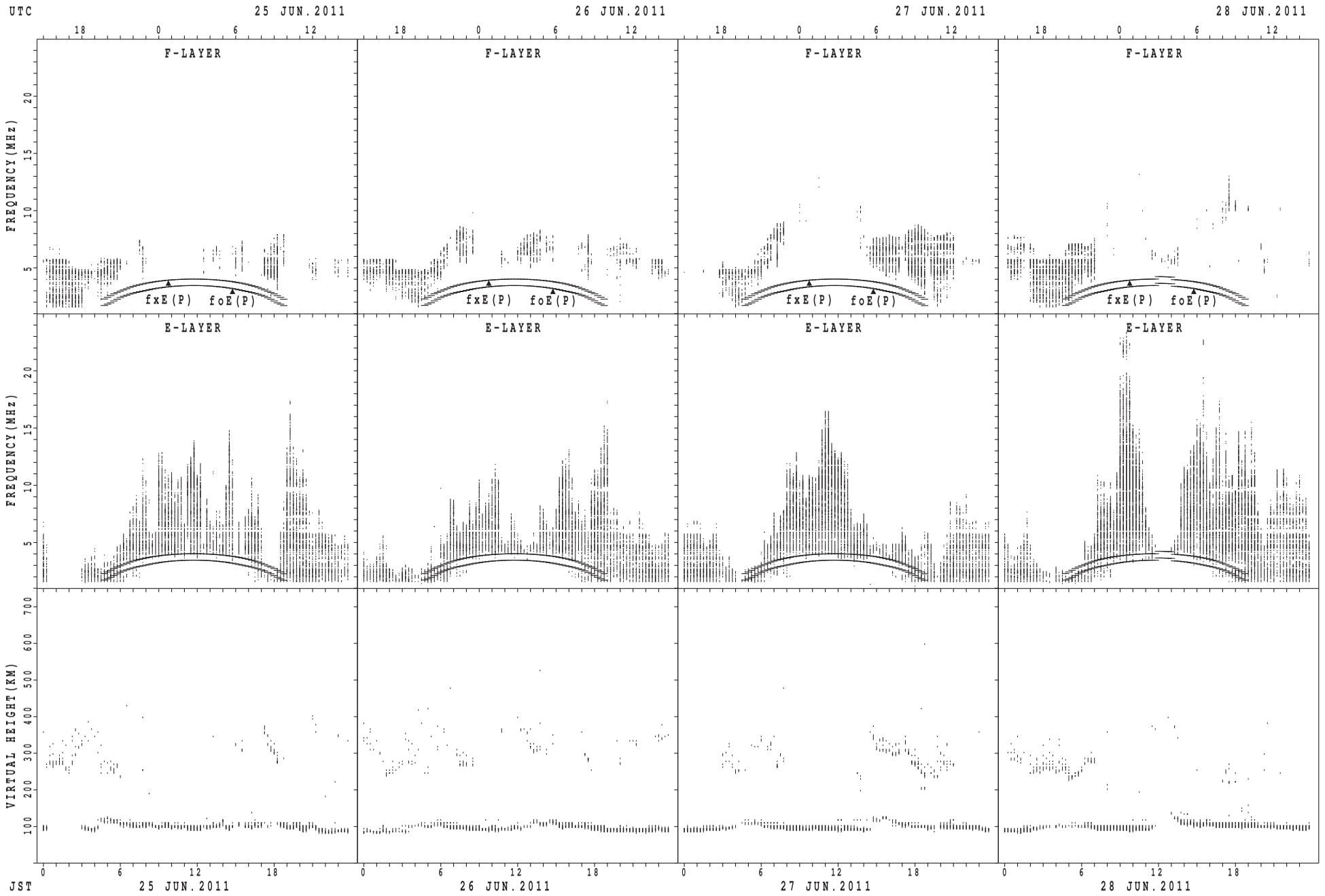
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



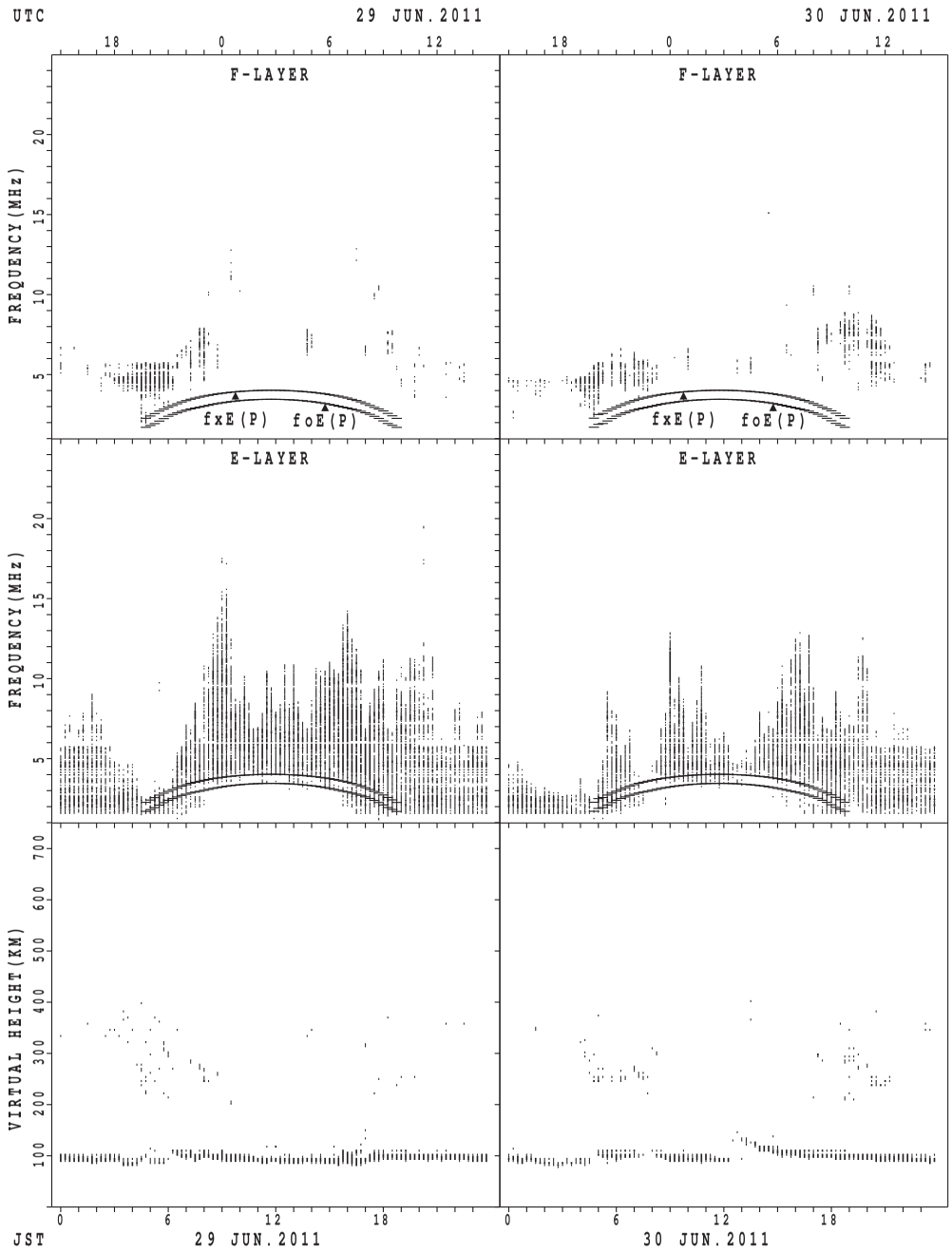
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



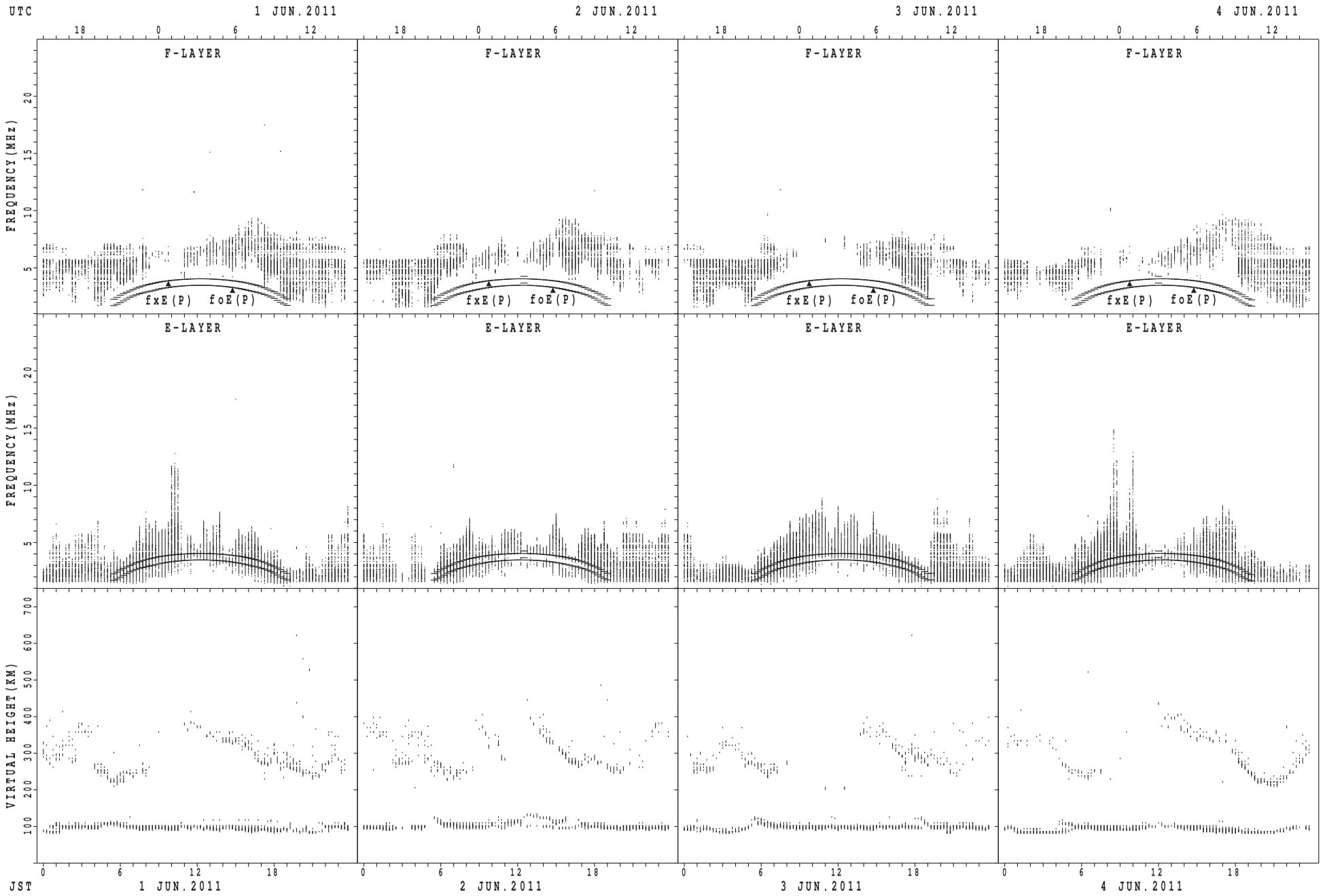
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

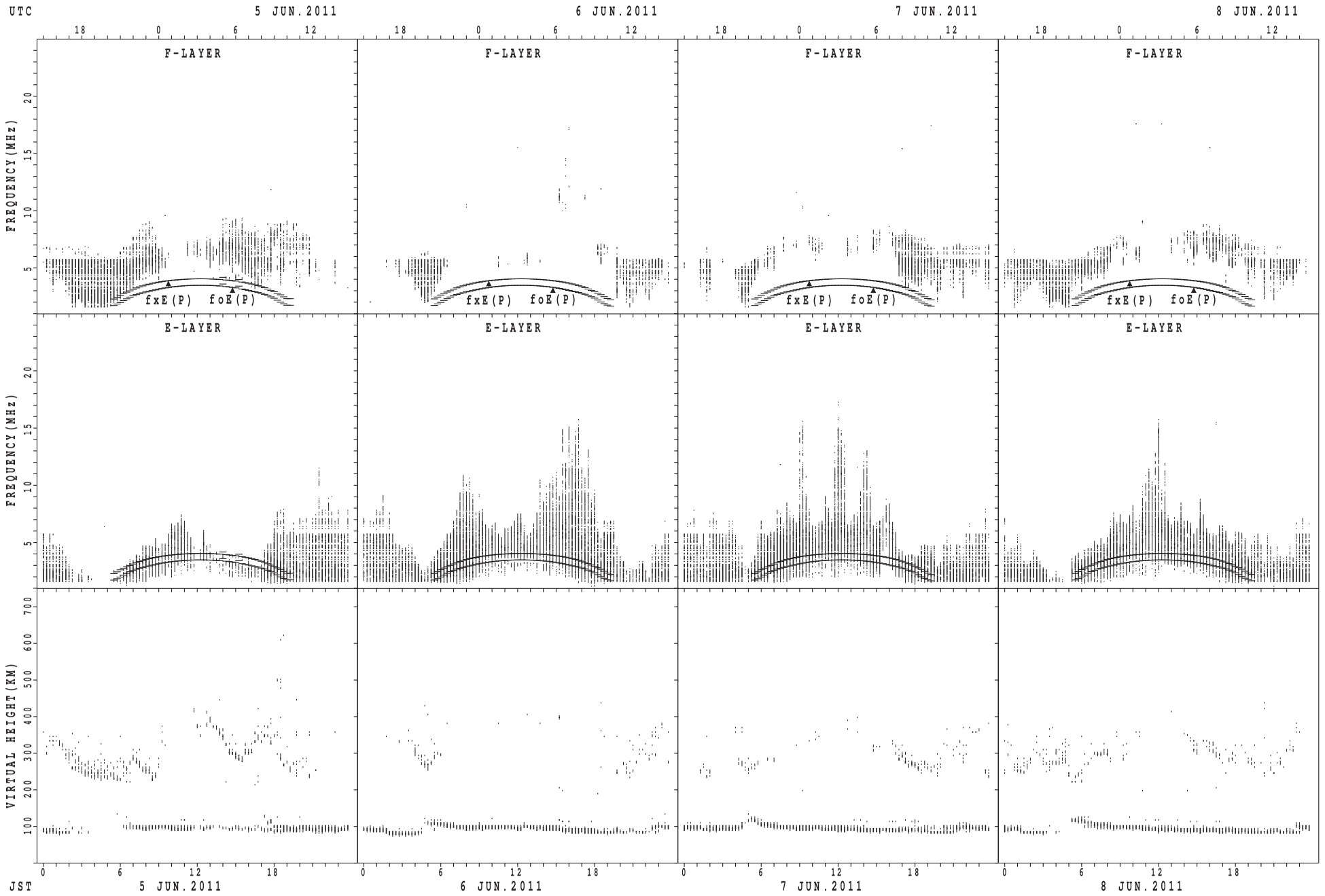


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

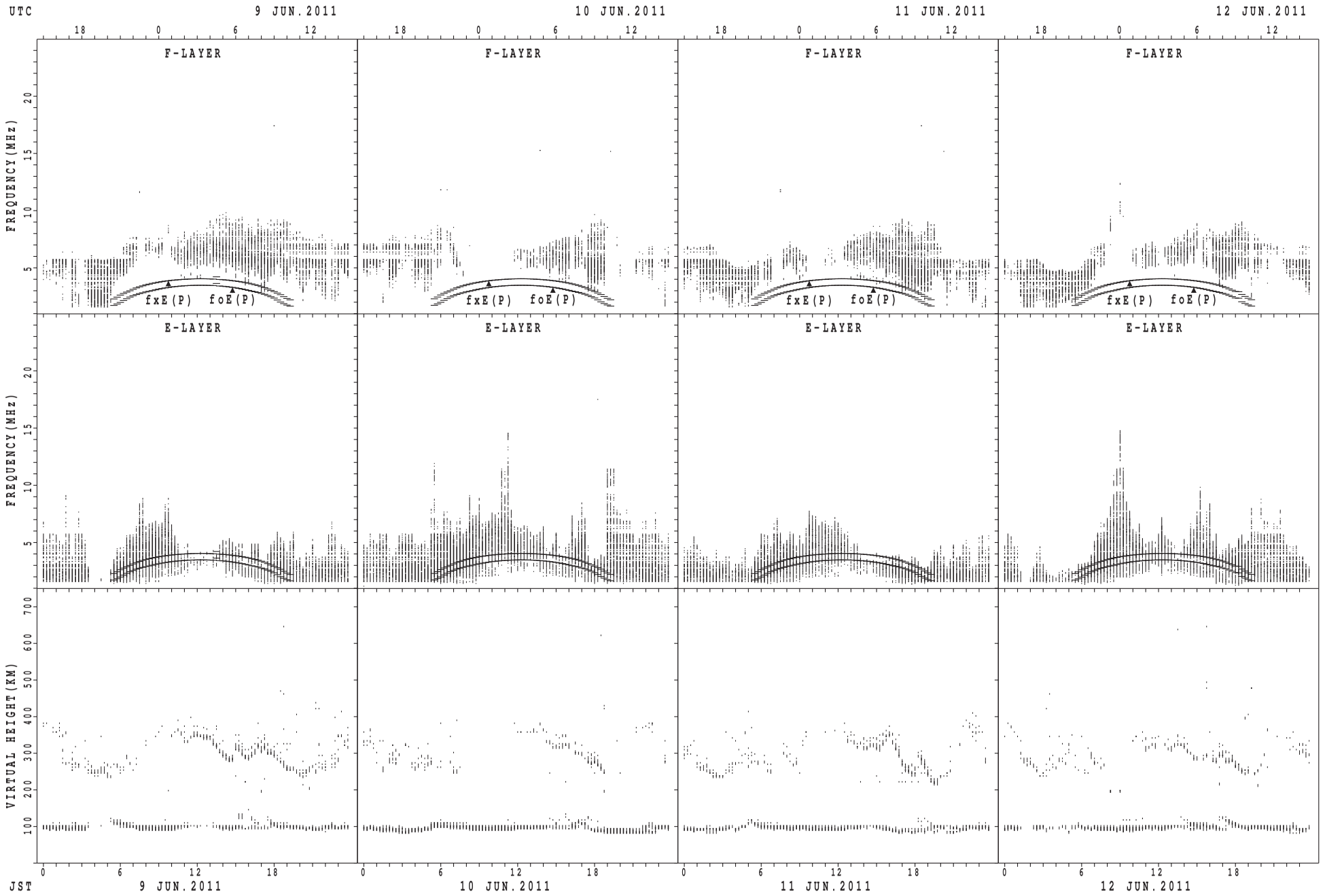
SUMMARY PLOTS AT Yamagawa



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

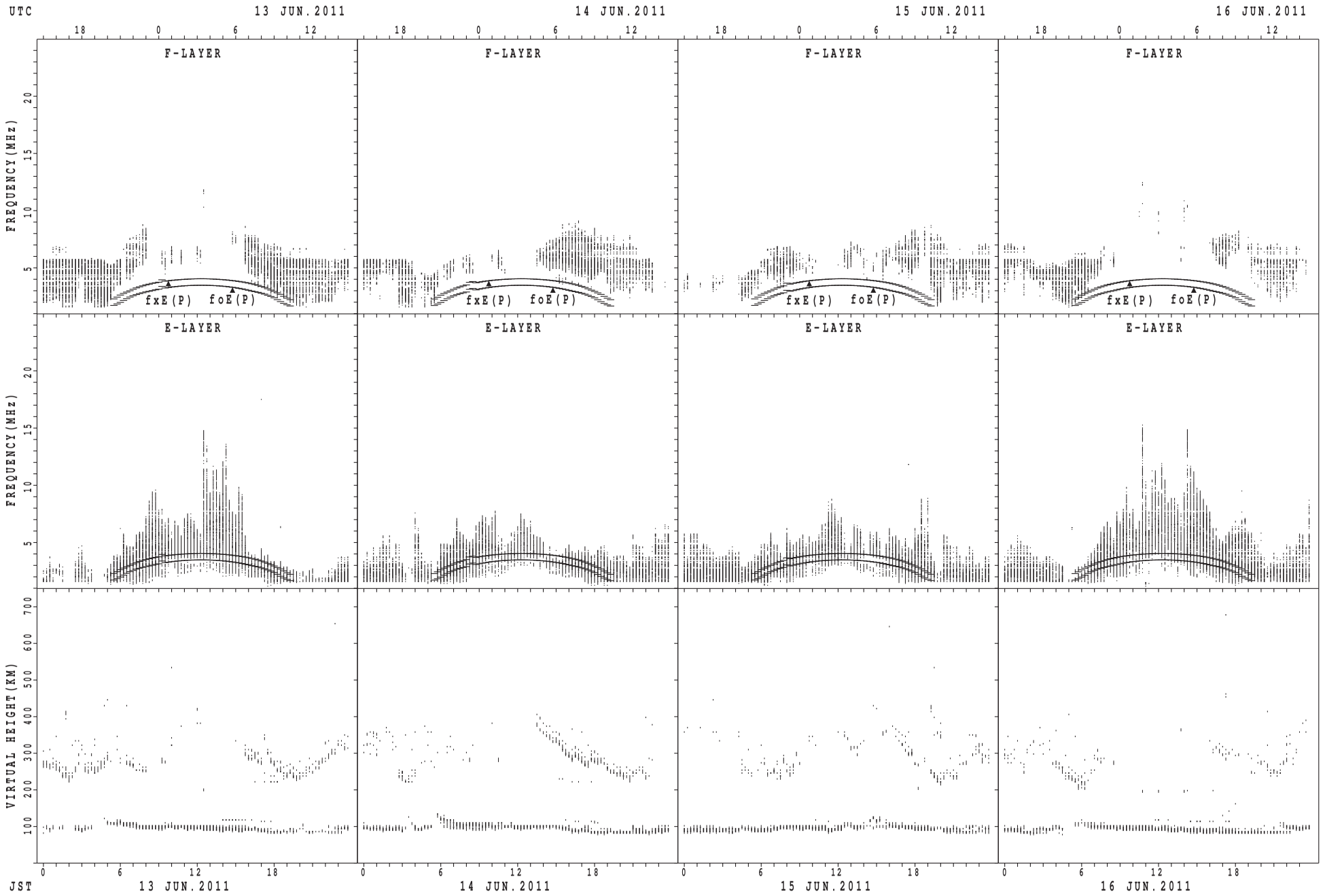

SUMMARY PLOTS AT Yamagawa
UTC
5 JUN.2011
6 JUN.2011
7 JUN.2011
8 JUN.2011
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



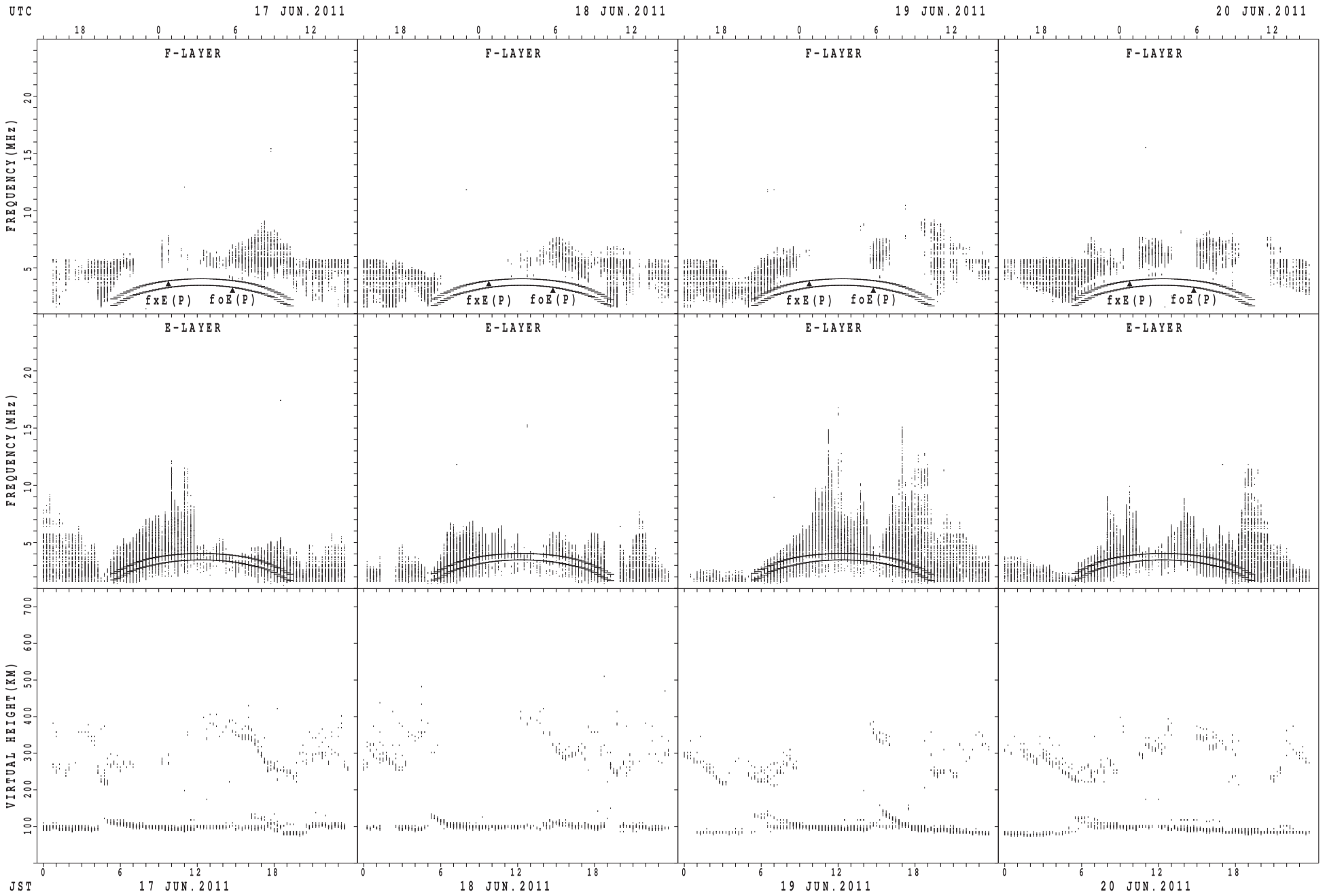
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



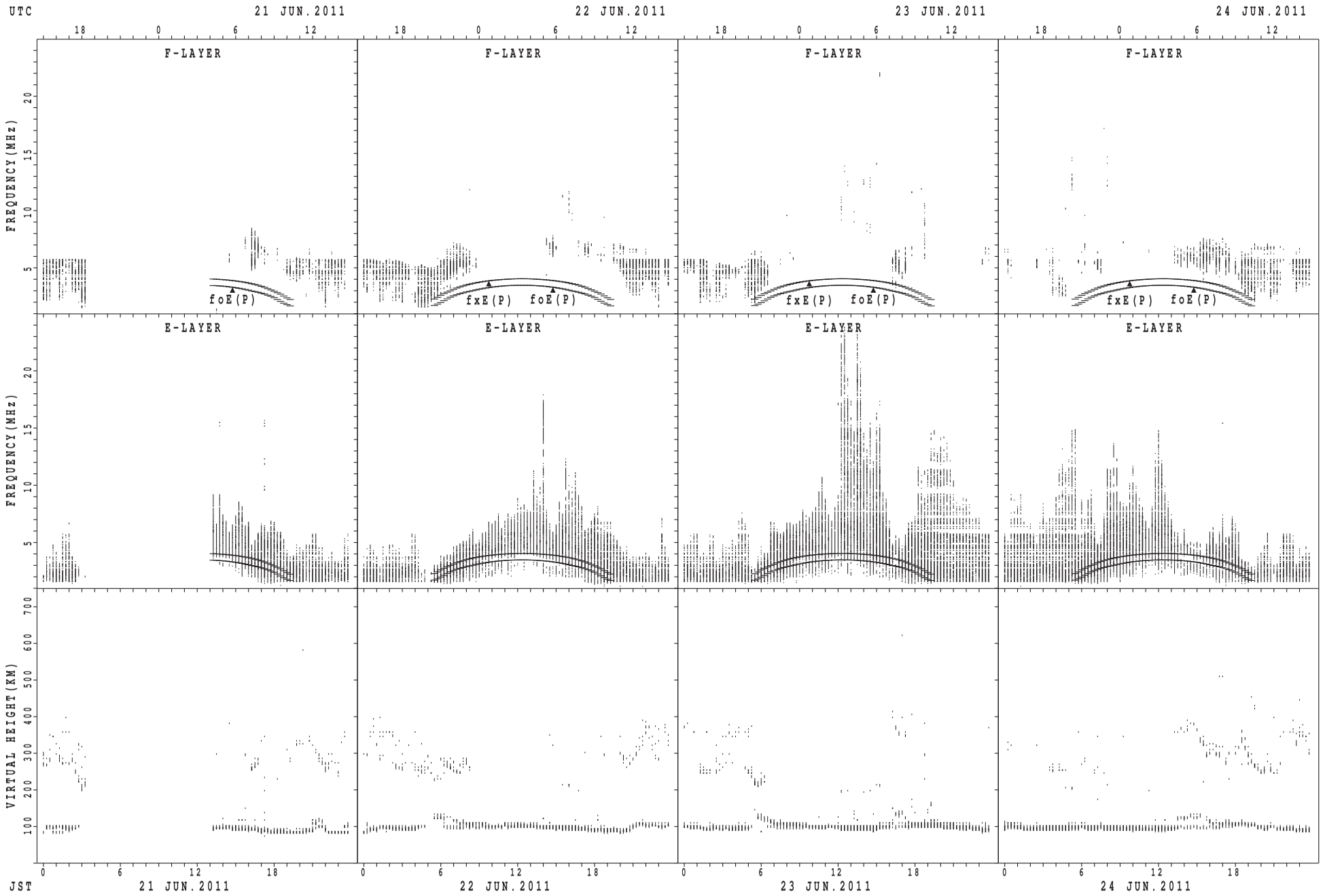
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



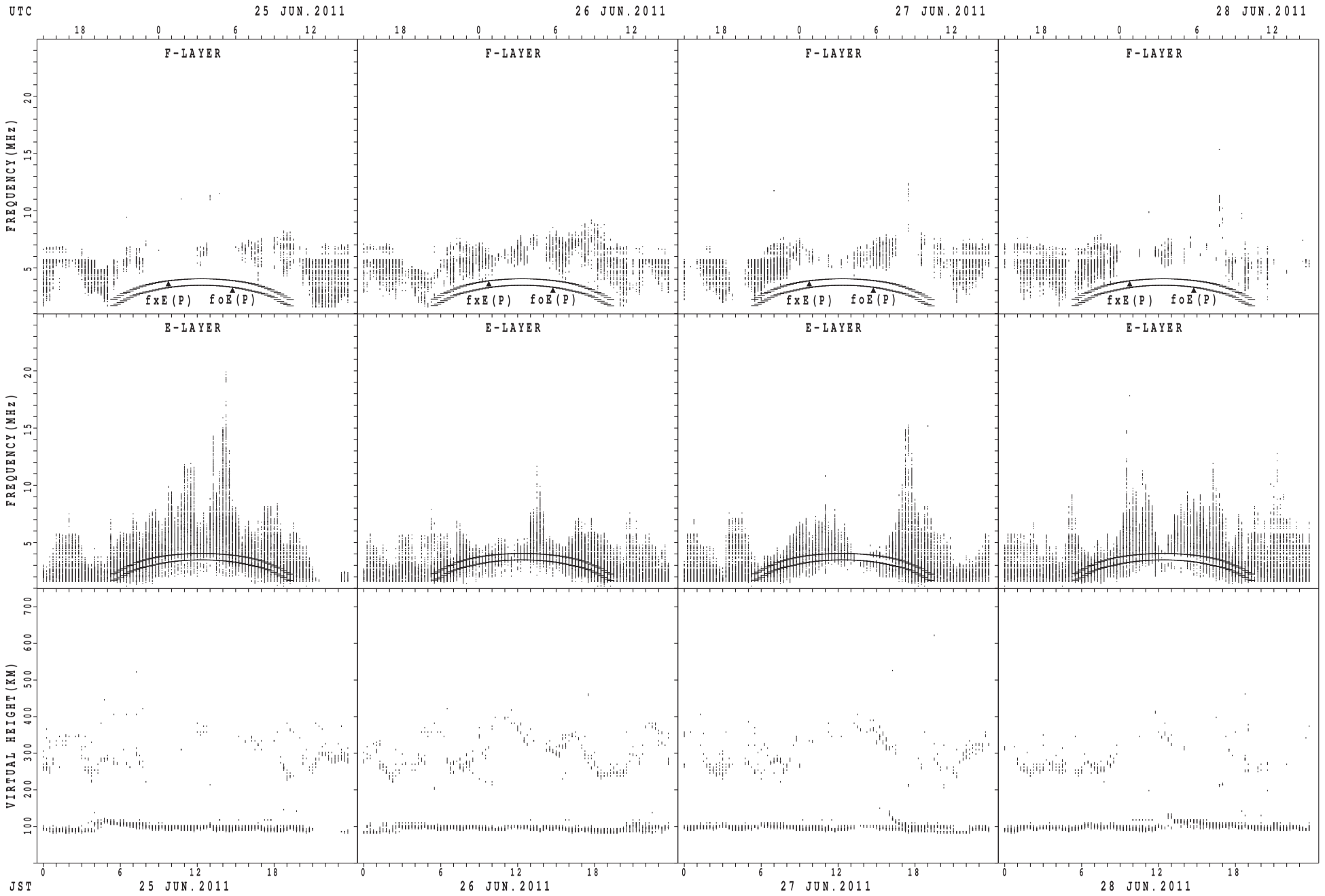
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

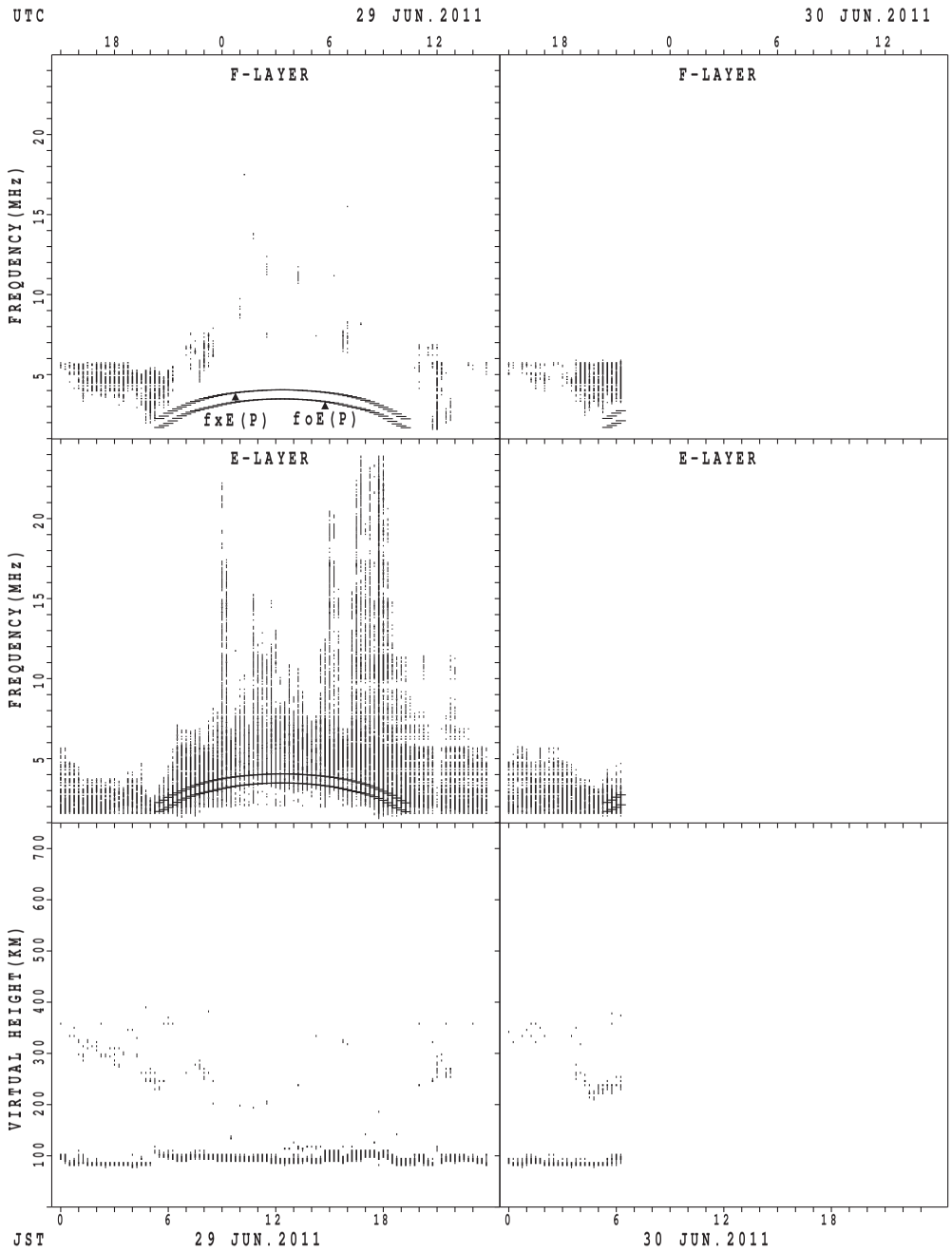


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

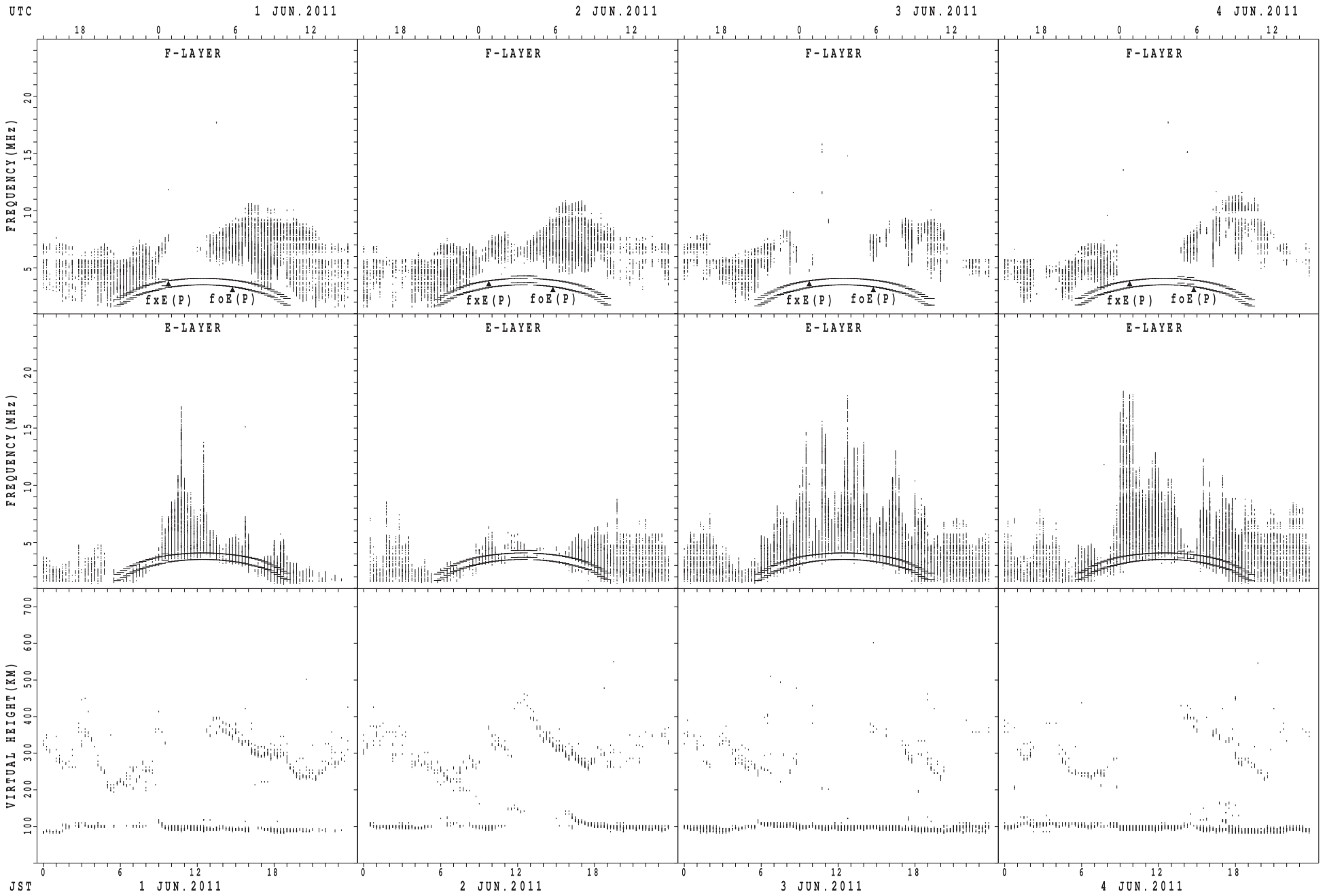
SUMMARY PLOTS AT Yamagawa



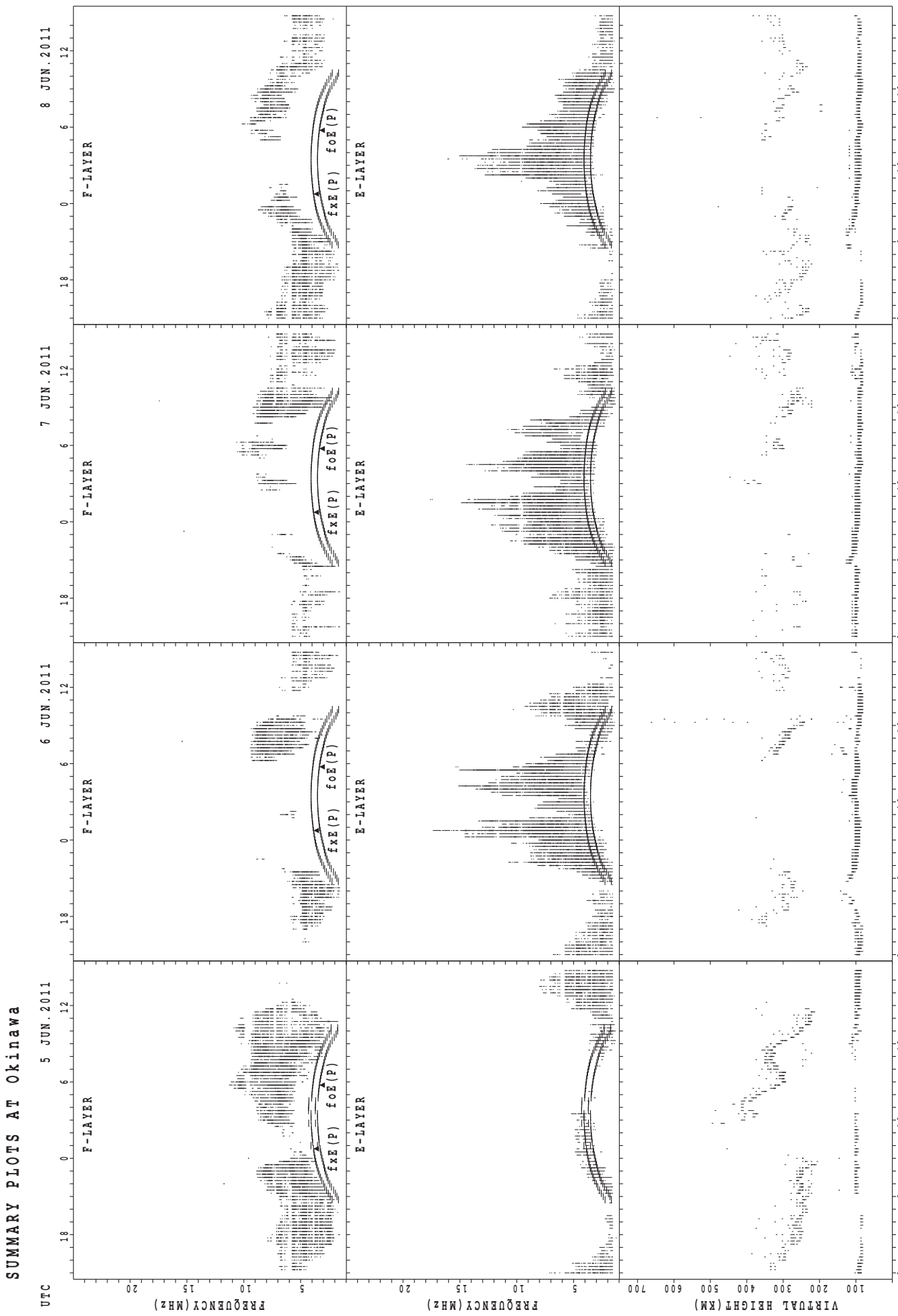
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


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

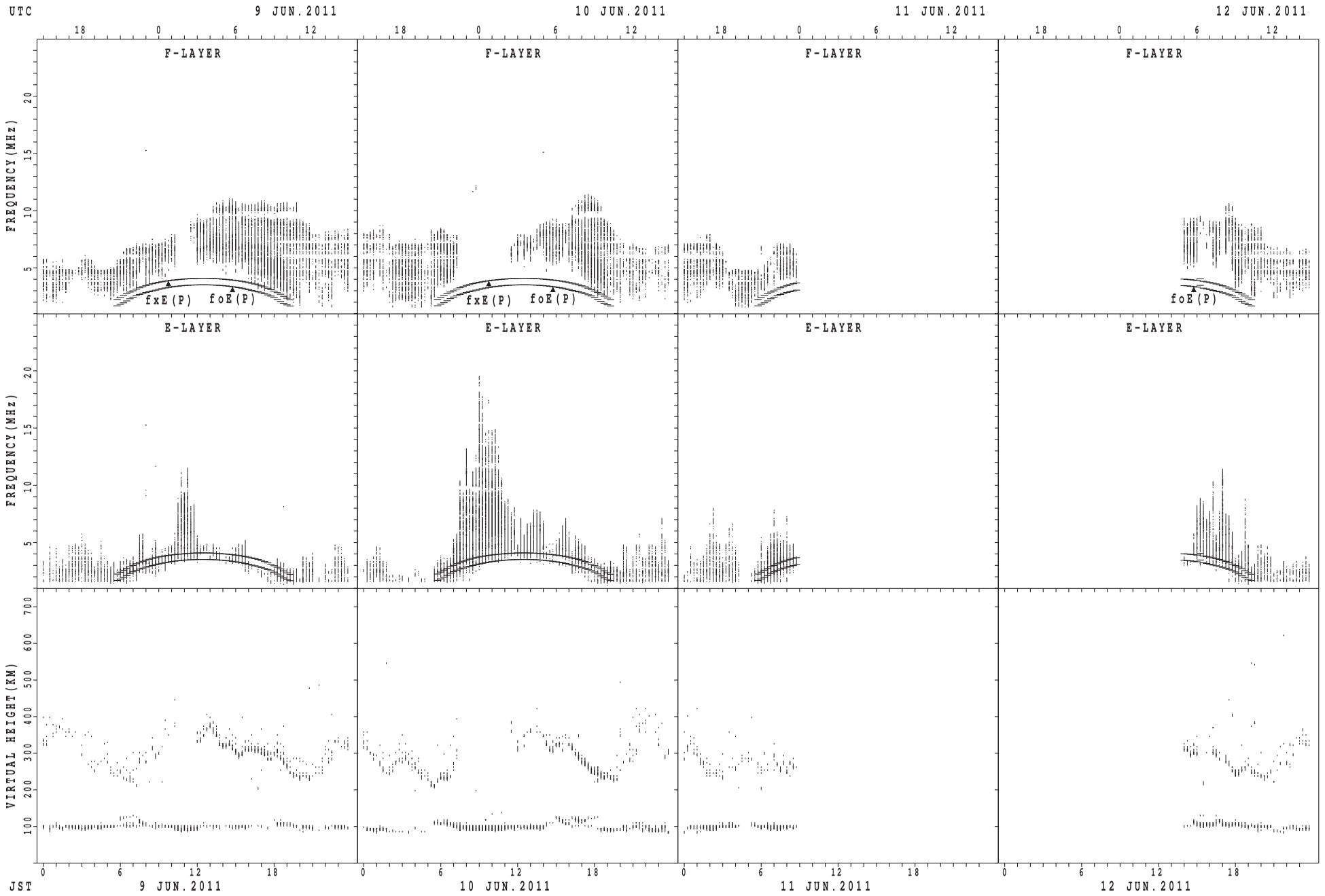
SUMMARY PLOTS AT Okinawa



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

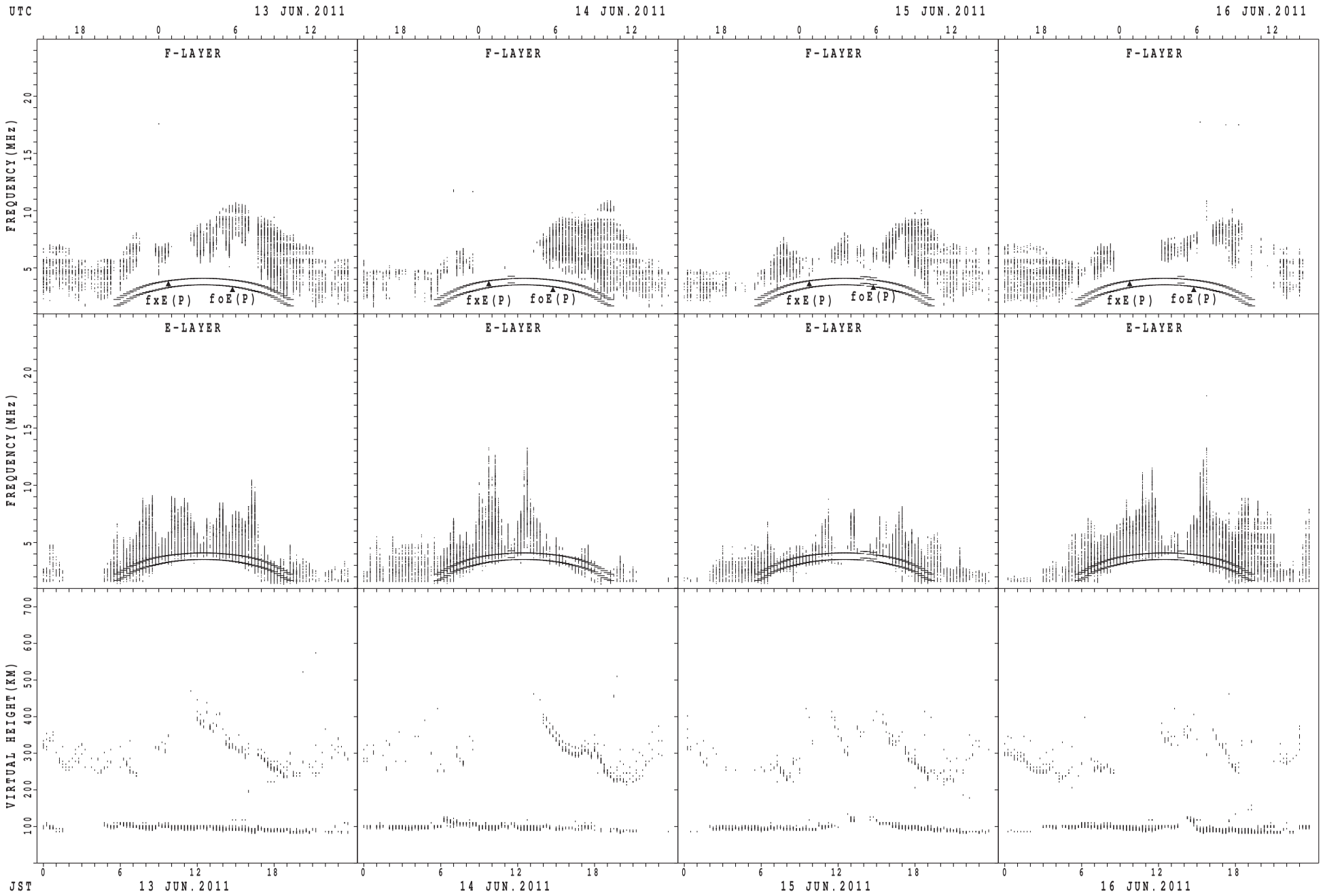

SUMMARY PLOTS AT Okinawa
UTC
JST
5 JUN.2011
6 JUN.2011
7 JUN.2011
8 JUN.2011
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



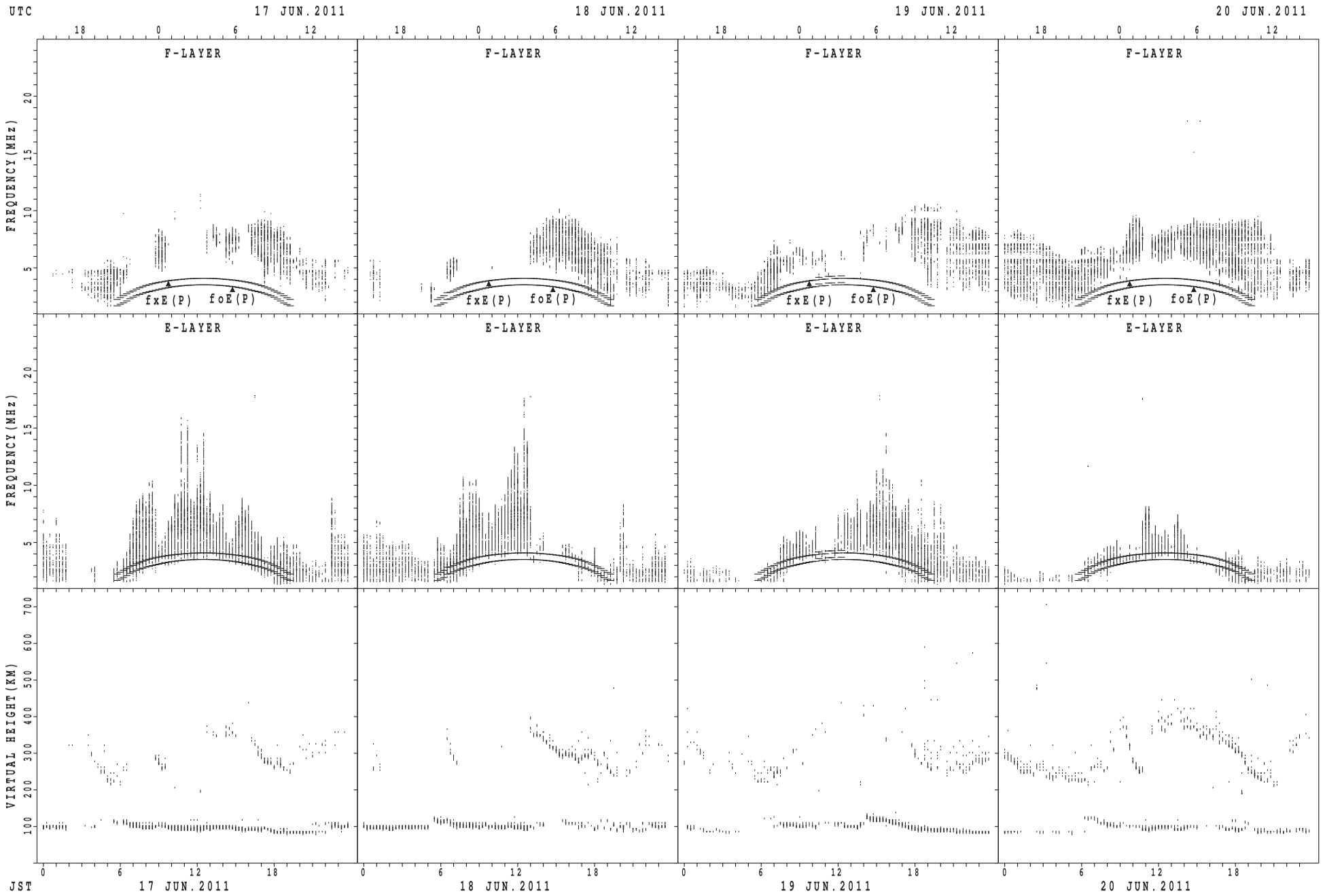
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



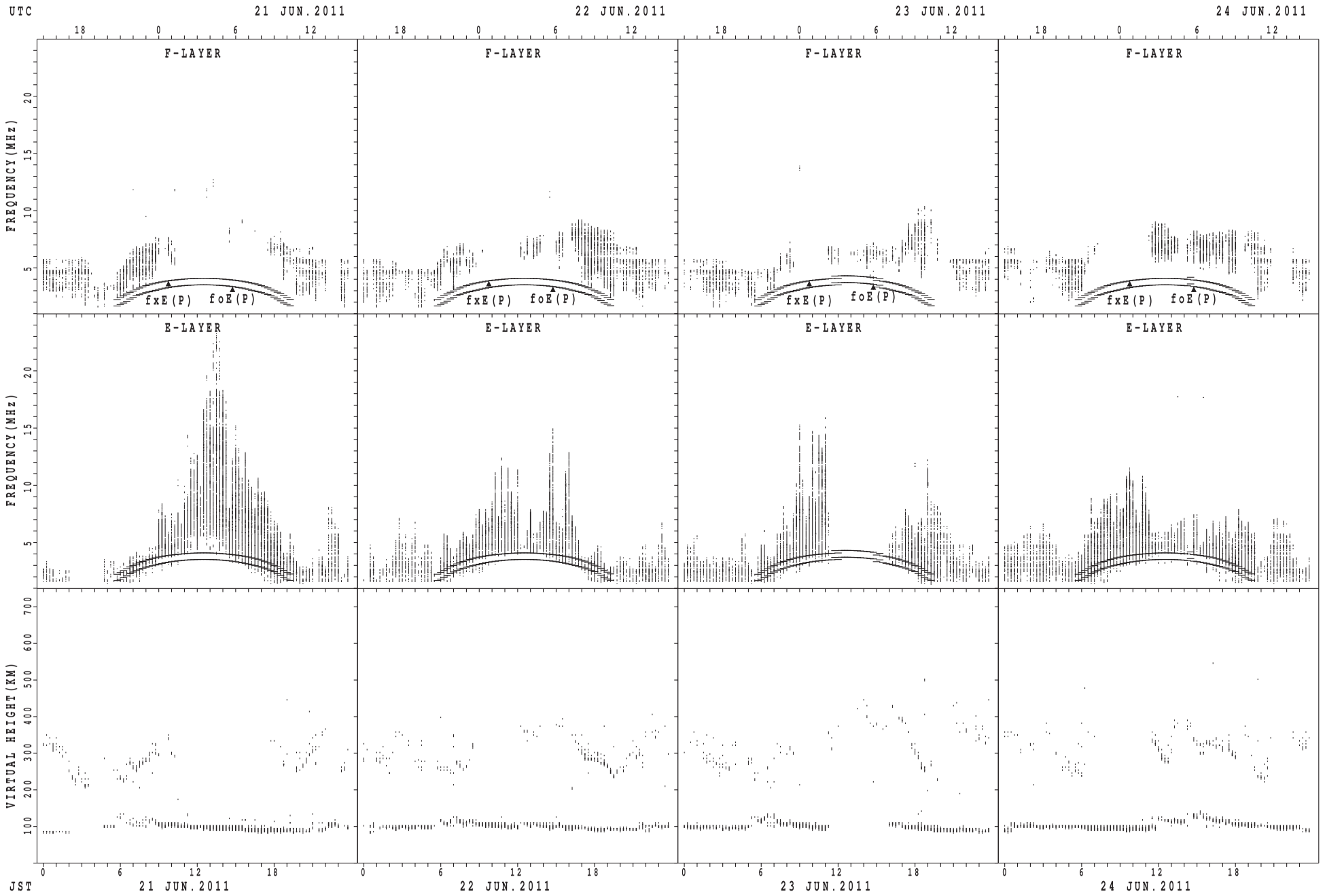
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



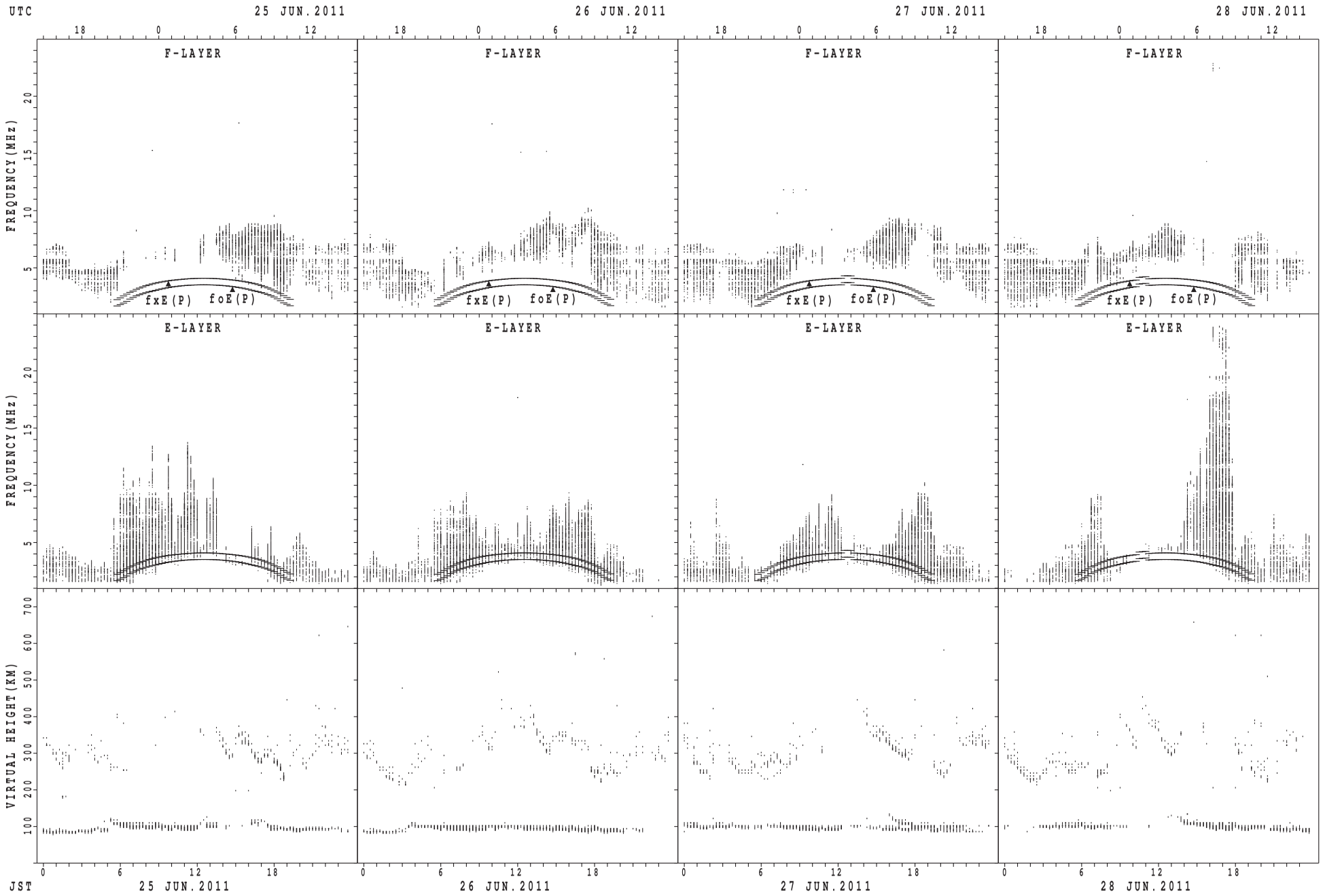
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



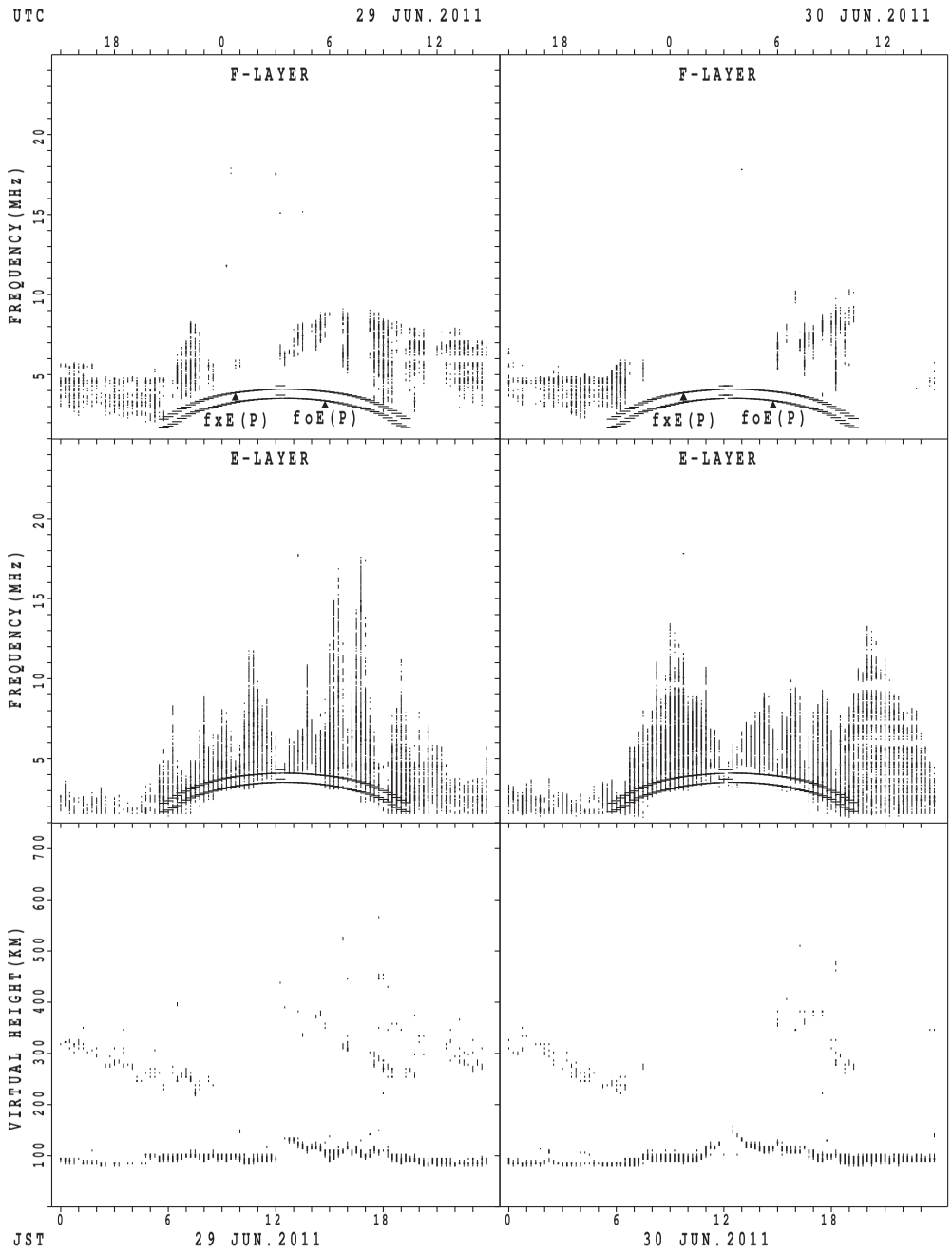
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1					1	10											9	5	8	7	8	2	3
MED	316					312	281											312	286	291	292	284	245	320
U Q	158					156	314											334	318	318	302	295	250	330
L Q	158					156	272											287	262	274	278	264	240	280

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	23	22	22	18	15	28	30	29	29	28	29	26	21	19	22	18	22	25	29	29	30	27	24	24
MED	95	95	96	95	103	113	111	109	103	103	103	99	97	101	99	99	101	107	107	103	103	101	101	97
U Q	99	101	99	97	113	121	113	111	107	105	105	103	104	105	103	115	113	112	111	106	105	105	106	99
L Q	93	95	95	91	97	110	107	105	103	103	97	97	95	99	95	95	95	96	104	103	99	99	98	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	4	1	1			2	6	10										9	9	8	10	5	1	1
MED	353	302	294			287	284	272										288	304	270	276	270	346	348
U Q	362	151	147			336	312	298										318	330	276	302	280	173	174
L Q	340	151	147			238	264	258										271	279	265	246	251	173	174

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	24	24	22	22	20	21	30	29	30	28	24	25	23	23	21	18	21	27	28	29	27	28	29
MED	97	95	95	95	97	115	111	105	103	103	99	100	97	97	99	103	107	103	103	100	103	103	103	99
U Q	101	97	97	99	99	119	113	111	106	103	102	103	102	101	111	112	111	108	105	104	105	107	105	103
L Q	95	93	92	91	95	105	105	103	101	97	97	95	95	95	95	95	95	95	97	95	95	97	98	95

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	3	2	3	1	2	1	3	10	10									16	14	11	8	5	2	3
MED	322	320	304	332	306	294	270	265	263									294	289	272	266	276	334	332
U Q	374	350	318	166	316	147	282	280	290									313	314	280	271	300	336	372
L Q	318	290	266	166	296	147	264	260	244									278	274	254	254	244	332	332

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	30	27	28	25	21	28	28	27	28	28	28	25	27	27	26	28	27	29	29	28	28	27	26
MED	95	97	95	94	95	99	109	103	101	99	97	99	99	97	97	102	97	101	95	95	96	96	99	97
U Q	99	99	99	97	99	112	114	109	103	103	98	103	103	103	101	111	107	107	104	102	102	105	103	101
L Q	95	95	89	89	89	94	101	100	99	97	95	97	95	95	95	95	92	91	89	89	89	90	95	95

MONTHLY MEDIANS OF h′F AND h′Es

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

h′F

STATION Okinawa LAT. 26°41.0′N LON. 128°09.0′E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	3	5	1	2		4	10	11									21	27	17	12	2	4	3
MED	356	316	270	306	321		258	275	272									290	280	272	255	265	315	318
U Q	380	322	319	153	344		281	290	290									309	304	286	263	266	330	342
L Q	350	304	262	153	298		226	262	256									273	256	263	250	264	306	308

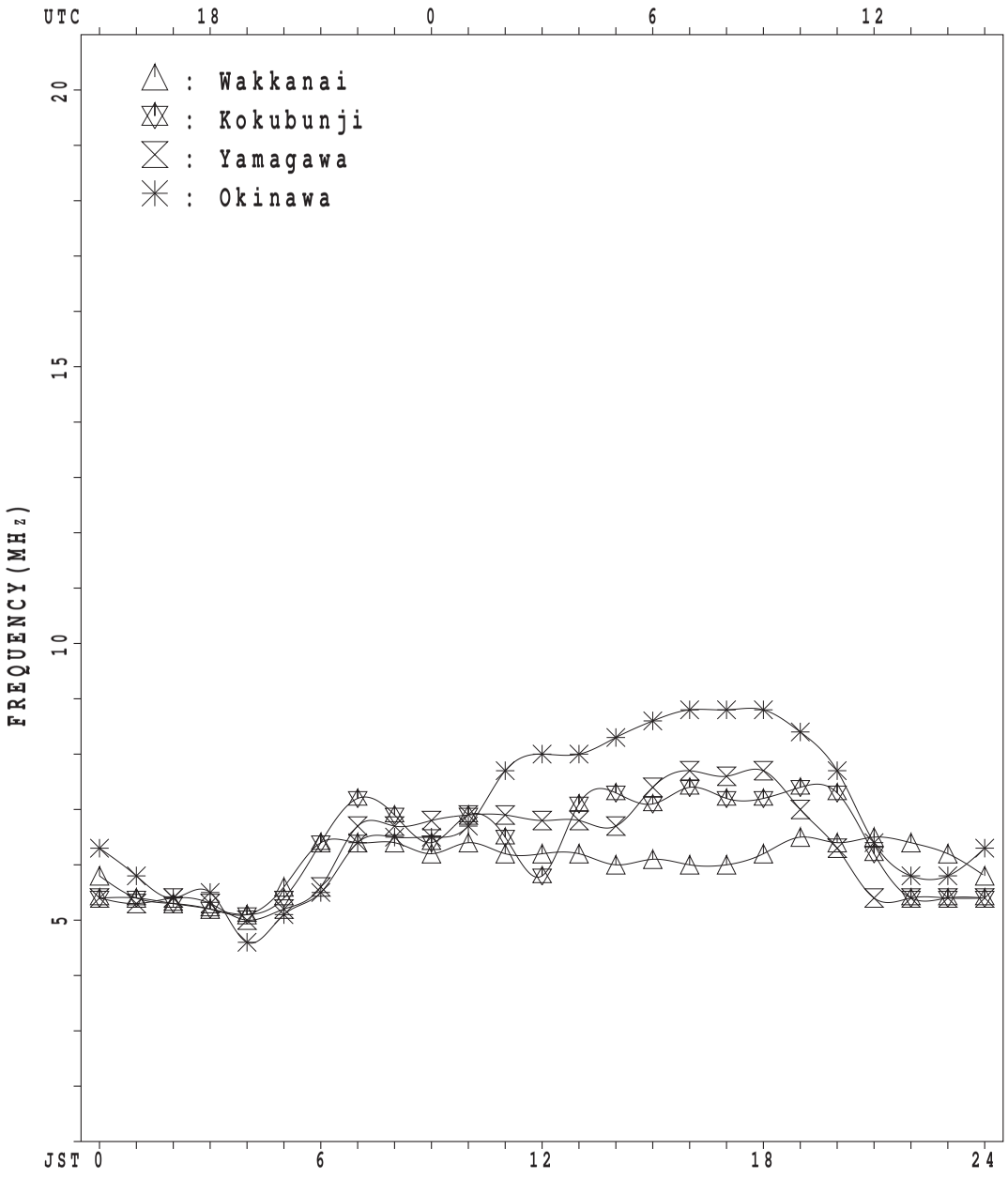
h′Es

	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	23	21	20	20	22	20	23	27	27	26	25	26	24	23	21	25	24	26	28	27	28	23	24	22
MED	99	99	97	101	101	101	107	105	103	101	97	97	99	103	99	101	101	103	95	95	93	97	95	97
U Q	103	104	102	103	105	105	113	111	107	105	103	103	102	111	110	115	112	111	103	103	98	101	97	99
L Q	91	89	90	93	97	99	101	103	99	97	95	95	97	97	97	96	95	95	91	89	90	93	91	91

MONTHLY MEDIANS PLOT OF foF2

JUN.2011

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	78	68	X 64	X 62	X 65															A	X 83	X 80	X 75	78
2	X 69	X 66	67	66	X 59															A	X 87	X 79	X 71	X 70
3	X 69	X 66	70	X 65	X 64															X 70	X 76	X 75	X 68	X 60
4	X 61	X 60	X 56	X 56	X 55															X 105	X 100	X 92	X 74	73
5	71	69	68	63	65															X 97	X 96	X 76	A	A
6	72	69	X 71	66	60															X 74	X 77	70	71	77
7	69	X 68	X 64	X 58	X 57															X 78	A	X 73	68	68
8	68	68	66	64	68															X 74	X 80	X 72	73	71
9	X 62	X 62	67	66	X 63															X 96	A	X 74	X 79	X 77
10	X 80	X 84	X 77	X 72	X 68															X 84	X 79	75	78	A
11	76	71	X 66	X 51	52															X 85	X 73	X 63	X 63	66
12	68	60	X 61	X 51	X 45															X 80	X 80	X 76	X 71	76
13	68	70	65	X 58	X 56															X 71	X 66	X 62	66	66
14	66	64	X 58	X 57	X 57							C	C	C	C		C			X 87	X 80	X 76	X 74	X 68
15	61	65	X 55	X 51	X 49							C	C		C					X 92	X 86	X 72	X 63	X 60
16	A	X 60	X 56	56	58															X 77	X 78	X 71	A	68
17	63	63	62	55	54															X 78	X 68	X 68	X 68	X 66
18	X 66	X 63	X 57	54	47															X 68	X 76	X 74	X 64	X 64
19	X 62	X 58	X 58	X 55	X 55															X 86	X 92	X 86	X 71	72
20	74	74	70	66	62															X 77	X 83	X 80	X 70	X 70
21	68	67	71	68	X 60															X 57	X 62	X 65	X 65	X 63
22	61	X 59	X 66	X 58	X 49															X 68	X 70	X 71	X 68	68
23	66	A	X 62	X 60	59	64														X 87	X 93	X 77	80	80
24	X 80	X 76	X 71	X 74	X 78															X 61	X 72	X 71	X 64	68
25	76	75	X 58	54	X 55															A	A	65	A	67
26	67	66	X 66	57	52															X 72	80	74	X 67	68
27	67	67	X 59	X 58	X 55															X 86	X 81	X 80	X 69	78
28	X 79	X 80	X 74	X 65	X 61															A	X 75	A	A	A
29	70	70	A	64	64	62														X 86	X 78	66	X 59	A
30	64	54	54	52	53															X 90	X 90	X 77	64	67
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	30	30	2														26	27	29	26	26
MED	68	67	X 65	X 58	X 58	63														X 79	X 80	X 74	X 68	68
U Q	73	70	69	65	X 63															X 87	X 86	X 77	X 73	73
L Q	65	X 62	X 58	55	54															X 72	X 75	X 70	X 65	X 66

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	58	56	59	66	74	67	63	60	A	61	A	72	72	71	79	82	72	A	77	74	68	F
2	63	60	F	F	52	52	71	80	70	58	A	A	54	64	70	74	86	82	A	A	80	73	65	64
3	63	60	F	59	58	58	66	66	56	A	A	A	A	A	65	69	63	58	57	64	69	69	62	54
4	55	54	50	50	49	63	83	69	60	64	A	64	65	68	75	81	77	81	88	99	94	86	68	F
5	F	F	F	F	F	58	66	73	85	72	A	A	A	90	91	88	76	64	74	91	90	70	A	A
6	F	F	65	F	F	49	A	A	53	60	A	A	A	60	62	66	64	65	63	68	71	F	F	F
7	F	62	58	52	50	53	66	70	A	A	70	71	67	A	69	71	73	72	72	72	A	67	F	F
8	F	F	F	F	F	53	56	71	A	A	71	70	71	80	84	82	79	73	66	68	74	66	F	F
9	56	56	F	F	56	60	72	70	66	A	72	84	81	81	90	88	84	79	80	90	A	68	73	70
10	73	78	71	66	61	63	59	58	53	52	A	59	61	A	A	65	66	65	72	78	73	F	F	A
11	F	F	60	45	F	51	59	A	56	68	A	A	64	66	78	83	80	87	79	79	67	57	56	F
12	F	F	55	45	41	44	54	72	A	A	64	A	65	72	76	73	72	65	65	74	74	69	65	F
13	F	F	F	52	50	52	60	71	76	A	A	A	A	A	A	58	56	57	55	65	61	56	F	F
14	F	F	52	51	50	51	41	49	57	A	54	C	C	C	C	69	C	83	80	80	74	70	67	61
15	F	F	48	45	42	46	62	73	71	A	A	C	C	A	C	A	62	A	68	86	80	66	57	54
16	A	53	50	F	F	51	67	71	A	A	58	61	A	63	A	A	A	A	A	71	72	64	A	F
17	F	F	F	F	F	51	56	64	A	64	66	64	60	57	A	58	65	70	72	72	62	62	62	60
18	60	56	51	F	F	42	A	A	54	56	A	55	55	57	57	60	62	56	55	62	68	68	58	58
19	56	52	52	49	49	52	62	72	67	A	A	65	A	62	62	A	A	62	70	80	86	80	65	F
20	F	F	F	F	F	57	66	66	69	62	A	A	A	A	62	A	72	73	71	71	77	74	64	64
21	F	F	F	F	54	56	63	A	A	A	A	A	A	A	A	A	77	84	A	50	56	58	59	57
22	F	53	60	52	42	44	56	66	65	60	A	A	A	A	A	A	73	62	59	61	64	65	62	F
23	F	A	56	54	F	F	53	A	A	A	A	A	A	A	69	57	58	61	A	81	86	71	F	F
24	74	70	65	68	72	73	66	A	A	A	A	A	A	58	R	64	64	63	54	55	66	65	58	F
25	F	F	52	F	49	54	57	A	67	A	A	A	A	63	64	65	66	A	71	A	A	F	A	F
26	F	F	59	F	F	48	58	77	80	71	A	63	66	79	81	72	66	68	A	66	F	F	61	F
27	F	F	53	52	49	50	61	81	A	A	A	A	A	A	A	72	74	74	84	80	75	74	63	F
28	72	74	68	59	55	66	67	70	76	A	A	A	63	60	A	A	A	57	A	A	69	A	A	A
29	F	F	A	F	F	F	56	65	77	A	A	A	A	A	75	A	A	70	A	79	72	F	52	A
30	F	F	F	F	F	54	62	61	61	60	64	A	A	56	A	A	A	74	80	84	84	71	F	F
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	9	12	19	16	18	28	28	23	21	13	8	11	12	18	18	21	24	27	23	26	26	24	19	9
MED	63	58	56	52	50	52	62	70	66	60	65	64	64	64	71	71	72	70	71	73	74	68	62	60
U Q	72	66	60	58	56	58	66	72	74	66	70	70	66	72	78	78	77	79	79	80	80	72	65	64
L Q	56	54	52	50	49	50	56	66	56	59	61	61	60	60	64	64	64	62	63	66	68	65	58	56

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	L	456	UL 492	A	A	A	A	480	476	444	L	A					
2						UL 360	A	A	A	A	A	A	A	A	A	A	456	L	A					
3							396	428	A	A	A	A	A	A	A	468	L	A	A					
4						L	L	UL 428	UL 460	UL 484	A	488	UL 504	480	480	A	452	408	356					
5							L	448	A	A	A	A	A	A	A	472	A	A	A					
6						A	A	A	A	460	A	A	A	A	480	A	A	A	L					
7						A	A	A	A	A	A	488	UL 508	A	A	A	A	A	A					
8								A	A	A	A	A	492	A	A	A	436	L	L					
9							A	A	A	A	A	A	A	A	A	464	456	L	A					
10						A	A	A	A	460	A	UL 472	A	A	A	A	436	A	A					
11						L	L	A	A	A	A	A	A	A	A	436	440	A	A					
12						A	A	A	A	A	A	A	A	A	A	448	424	L	A					
13							A	A	A	A	A	A	A	A	A	A	424	388	L					
14								A	A	A	UL 464	C	C	C	C	A	C	A	A					
15						324	UL 404	A	A	A	A	C	C	A	C	A	A	A	A					
16						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
17							A	A	A	A	468	UL 476	476	A	A	A	A	A	A					
18						L	A	A	A	A	A	UL 476	UL 472	UL 480	A	444	A	A	A					
19							A	A	A	A	A	476	A	480	484	A	A	404	368					
20								L	A	A	A	A	A	A	A	A	A	A						
21							A	A	A	A	A	A	A	A	A	A	A	A	A					
22						A	404	A	A	A	A	A	A	A	A	A	432	UL 424	L					
23						UL 268	A	A	A	A	A	A	A	A	444	452	UL 428	UL 456	A					
24								A	A	A	A	A	A	A	UL 444	A	A	A	A					
25								A	A	A	A	A	A	A	A	460	A	A	372					
26							L	A	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	A	A	A	A	A	452	A	A					
28							L	UL 448	A	A	A	A	UL 488	A	A	A	A	A	A					
29							UL 424	A	A	A	A	A	A	A	A	A	A	A	A					
30						A	A	424	452		A	A	A	A	A	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	4	5	3	4	2	6	6	3	6	9	12	5	3					
MED						UL 324	404	428	456	472	466	476	UL 490	480	480	460	438	408	368					
U Q						UL 360	UL 414	448	UL 460	UL 488		488	UL 504	UL 480	480	470	452	UL 440	372					
L Q						UL 268	400	426	452	460		476	476	480	444	446	430	396	356					

JUN. 2011 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	A	A	R	A					
2						192	A	A	A	A	A	A	A	A	A	A	A	R	A					
3						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
4						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
5						A	U A 252	A	A	A	A	A	A	A	A	A	A	A	A					
6						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
8						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
9						A	A	A	A	A	A	A	A	A	A	A	R	R	A					
10						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
11						A	A	A	A	A	A	A	A	A	380	R	R	A	A					
12						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
13						A	A	A	A	A	A	A	A	A	A	A	A	R	A					
14						U R 192	A	A	A	A	A	C	C	C	C	A	C	A	B					
15						A	A	A	A	A	A	C	C	A	C	A	A	A	A					
16						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
17						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
18						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
19						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
20						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
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	R	R	R					
23						B	A	A	A	A	A	A	A	A	R	A	R	R	A					
24						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
25						A	A	A	A	A	A	A	A	A	A	A	A	A	R					
26						B	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						U A 196	R	A	A	A	A	A	R	U R 368	A	A	A	A	A					
29						A	U R 296	A	A	A	A	A	A	A	A	A	A	A	A					
30						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	2							1	1									
MED						U 192	U 274							U R 368	380									
U Q						U A 196																		
L Q						192																		

JUN. 2011 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	J A 19	J A 24	J A 26	21	24	J A 65	J A 59	40	J A 69	J A 84	J A 63	J A 76	48	44	39	38	G 24	J A 32	J A 72	48	J A 27	J A 29	J A 31
2	J A 52	J A 29	J A 73	J A 25	J A 68	23	J A 43	J A 57	J A 59	J A 58	J A 83	J A 97	52	46	61	44	40	G	J A 81	J A 88	J A 70	J A 77	J A 102	J A 27
3	J A 32	J A 28	J A 32	20	E B 15	30	34	38	J A 51	J A 68	J A 64	J A 80	J A 72	J A 114	J A 60	42	36	J A 44	J A 44	J A 37	J A 40	J A 21	J A 20	J A 31
4	20	J A 20	E B 14	E B 14	E B 15	G	31	J A 36	41	J A 49	J A 68	44	J A 44	40	J A 44	48	39	34	28	J A 24	J A 25	25	J A 30	J A 52
5	J A 47	J A 66	J A 43	J A 38	J A 19	26	32	J A 45	J A 78	J A 117	J A 83	J A 140	J A 116	J A 117	J A 94	38	50	J A 64	J A 91	J A 70	J A 104	J A 107	J A 88	J A 88
6	J A 74	J A 26	J A 68	J A 67	J A 30	35	J A 72	J A 79	J A 59	J A 47	J A 70	J A 73	J A 67	J A 46	43	J A 51	J A 50	J A 53	J A 30	J A 41	J A 26	J A 52	J A 46	J A 125
7	J A 90	J A 27	J A 40	J A 56	J A 50	J A 44	J A 54	J A 57	J A 145	J A 147	J A 76	J A 62	42	J A 148	58	45	J A 85	J A 52	J A 65	J A 69	J A 110	J A 100	J A 92	J A 103
8	J A 63	J A 59	J A 28	E B 15	E B 14	23	35	J A 54	J A 90	J A 79	J A 57	J A 51	43	J A 70	J A 55	J A 46	J A 37	J A 30	J A 28	32	J A 25	J A 29	J A 72	J A 53
9	J A 28	J A 39	J A 41	J A 43	J A 43	J A 40	J A 45	J A 58	J A 73	J A 82	J A 62	J A 66	J A 82	J A 76	J A 54	42	G 25	G	J A 46	J A 21	J A 76	J A 67	J A 84	J A 104
10	J A 60	J A 41	J A 46	J A 44	J A 20	J A 40	J A 49	J A 56	J A 56	J A 45	J A 50	43	J A 60	J A 82	J A 66	J A 57	37	J A 42	J A 36	J A 37	J A 106	J A 64	J A 56	J A 101
11	J A 61	J A 47	J A 43	J A 44	J A 17	25	33	J A 77	J A 65	J A 60	J A 138	J A 118	54	J A 50	47	G	G 26	J A 45	J A 46	J A 36	J A 36	J A 68	J A 28	J A 49
12	J A 58	J A 54	J A 71	J A 74	J A 64	J A 45	J A 49	J A 86	J A 117	J A 127	J A 68	J A 70	58	J A 58	J A 64	39	J A 40	J A 36	J A 48	J A 29	J A 43	J A 55	J A 44	J A 45
13	J A 52	J A 22	J A 24	J A 32	J A 30	J A 64	J A 40	J A 50	J A 66	J A 120	J A 82	45	J A 68	J A 56	J A 47	42	34	G 23	28	J A 52	J A 41	J A 36	J A 36	J A 44
14	J A 54	J A 50	J A 34	J A 20	J A 29	G	31	42	J A 53	J A 46	42	C	C	C	C	J A 66	C	J A 44	44	J A 44	J A 38	J A 41	J A 48	J A 34
15	J A 54	J A 42	J A 37	J A 22	J A 24	J A 27	32	J A 49	J A 50	J A 57	J A 54	C	C	J A 71	C	J A 132	J A 225	J A 146	J A 62	J A 32	J A 41	J A 40	J A 58	J A 38
16	J A 65	J A 61	J A 73	J A 35	J A 28	J A 30	32	J A 66	J A 94	J A 72	J A 46	J A 58	J A 75	J A 72	J A 91	J A 112	J A 89	J A 85	J A 64	J A 46	J A 57	J A 61	J A 107	J A 86
17	J A 49	J A 51	J A 55	J A 49	J A 27	27	J A 58	J A 67	J A 94	J A 61	G	J A 52	J A 47	J A 48	J A 50	J A 56	J A 51	J A 48	J A 41	66	J A 56	J A 34	J A 56	J A 21
18	J A 44	E B 16	21	E B 15	E B 15	26	36	J A 42	J A 46	J A 49	J A 50	42	J A 46	42	J A 47	J A 43	J A 48	J A 48	J A 44	29	J A 74	J A 60	J A 29	J A 39
19	J A 29	21	19	20	J A 21	24	J A 58	J A 62	J A 106	J A 82	J A 65	J A 58	J A 96	J A 46	44	J A 94	J A 72	J A 38	27	J A 65	64	64	47	48
20	J A 55	J A 55	J A 54	J A 36	J A 40	26	33	39	J A 46	J A 58	J A 115	J A 112	J A 128	J A 79	J A 58	80	J A 62	J A 51	J A 40	J A 26	21	J A 21	24	J A 48
21	J A 64	J A 72	J A 55	J A 36	J A 29	28	J A 48	J A 78	J A 99	J A 90	J A 65	J A 87	J A 84	J A 177	J A 85	J A 82	J A 69	J A 92	J A 120	J A 58	30	23	29	44
22	J A 34	E B 15	E B 15	E B 15	J A 22	J A 35	36	J A 58	J A 60	J A 73	J A 59	J A 61	J A 125	J A 68	J A 151	J A 158	34	G 28	G 21	J A 33	J A 30	J A 42	J A 35	J A 54
23	J A 37	J A 80	J A 75	J A 53	J A 44	J A 22	J A 41	J A 71	J A 88	J A 131	J A 72	J A 130	J A 69	J A 74	G	40	G 26	G	J A 72	J A 60	J A 57	J A 62	J A 45	J A 49
24	J A 32	J A 28	J A 54	J A 74	J A 64	J A 34	J A 42	J A 119	J A 142	J A 120	J A 90	J A 147	J A 61	J A 44	39	J A 56	43	J A 66	J A 58	J A 122	J A 76	J A 88	J A 76	J A 48
25	J A 81	E B 15	J A 24	J A 46	J A 44	J A 30	J A 46	J A 78	J A 100	J A 126	J A 109	J A 84	J A 106	J A 68	J A 62	J A 48	J A 76	J A 68	G 20	J A 129	J A 134	J A 81	J A 62	J A 44
26	J A 43	J A 39	J A 28	J A 29	J A 20	J A 34	J A 52	J A 83	J A 67	J A 102	J A 102	J A 54	60	50	J A 76	J A 76	J A 129	J A 70	J A 112	J A 190	J A 98	J A 62	J A 73	J A 47
27	J A 74	J A 66	J A 57	J A 40	J A 21	J A 28	J A 42	J A 73	J A 115	J A 102	J A 109	J A 160	J A 119	J A 77	J A 72	J A 50	42	J A 63	J A 34	J A 58	J A 31	J A 60	J A 96	J A 59
28	J A 65	J A 46	J A 57	J A 24	J A 25	J A 24	G 25	J A 60	J A 104	J A 224	J A 189	J A 77	G	48	J A 112	J A 171	J A 99	J A 116	J A 96	J A 109	J A 66	J A 101	J A 112	J A 122
29	J A 55	J A 75	J A 76	J A 53	J A 45	J A 28	G 26	J A 66	J A 108	J A 172	J A 84	J A 67	J A 77	J A 108	J A 84	J A 106	J A 146	J A 65	J A 112	J A 128	J A 172	J A 70	J A 99	J A 76
30	J A 49	J A 42	J A 29	J A 35	J A 37	J A 42	J A 72	J A 43	J A 45	J A 125	J A 56	J A 104	J A 72	50	J A 74	J A 94	J A 122	J A 92	70	J A 73	J A 113	J A 61	J A 74	J A 54
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	28	28	29	28	30	29	30	30	30	30	30	30	30
MED	J A 53	J A 42	J A 42	J A 36	J A 28	J A 28	J A 42	J A 58	J A 70	J A 80	J A 69	J A 68	J A 68	J A 68	J A 59	J A 50	J A 48	J A 48	J A 45	J A 55	J A 56	J A 60	J A 56	J A 48
U Q	J A 63	J A 55	J A 57	J A 46	J A 43	J A 35	J A 49	J A 73	J A 100	J A 120	J A 84	J A 100	J A 83	J A 78	J A 75	J A 82	J A 80	J A 66	J A 70	J A 72	J A 76	J A 68	J A 84	J A 76
L Q	J A 37	26	28	22	20	24	33	J A 49	J A 53	J A 58	J A 57	56	53	48	47	42	37	G 34	32	J A 33	J A 36	J A 36	J A 35	J A 44

JUN. 2011 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 15	17	19	E B 15	21	53	32	38	42	A A 84	58	A A 76	46	40	37	35	G 22	28	A A 72	46	E B 15	16	23
2	19	E B 15	20	17	19	21	36	53	56	49	A A 83	A A 97	48	44	58	42	36	G	A A 81	A A 88	48	32	37	E B 15
3	26	19	20	E B 16	E B 15	28	33	36	46	A A 68	A A 64	A A 80	A A 72	A A 114	49	39	32	39	39	34	E B 15	E B 14	16	19
4	E B 15	E B 15	E B 14	E B 14	E B 15	G	29	34	38	42	A A 68	42	41	39	39	45	36	32	26	20	21	22	16	29
5	25	35	30	23	E B 15	24	28	34	64	53	A A 83	A A 140	A A 116	75	75	37	46	58	56	60	E B 16	54	A A 88	A A 88
6	38	E B 15	42	38	24	32	A A 72	A A 79	46	37	A A 70	A A 73	A A 67	43	40	50	44	46	26	33	22	20	31	30
7	50	20	34	32	38	37	49	50	A A 145	A A 147	61	43	38	A A 148	50	43	62	49	58	60	A A 110	36	31	E B 15
8	39	30	16	E B 15	E B 14	21	32	45	A A 90	A A 79	52	48	40	60	50	44	32	28	25	30	21	20	40	21
9	E B 15	19	17	E B 15	18	36	34	50	44	A A 82	44	57	74	56	50	40	G 24	G	42	19	A A 76	32	37	46
10	43	22	34	24	E B 15	34	44	48	40	38	A A 50	40	50	A A 82	A A 66	49	34	36	28	32	38	39	35	A A 101
11	31	26	20	31	E B 14	21	30	A A 77	47	50	A A 138	A A 118	50	47	45	G	G 24	42	43	34	29	22	25	31
12	18	16	20	E B 15	21	34	44	46	A A 117	A A 127	46	A A 70	55	50	59	37	33	31	44	27	29	40	37	36
13	20	20	18	21	24	20	37	42	59	A A 120	A A 82	A A 45	A A 68	A A 56	A A 47	41	34	G 21	25	30	36	18	25	34
14	16	23	E B 15	E B 16	16	G	29	39	47	A A 46	40	C	C	C	C	54	C	40	40	41	27	38	38	22
15	32	31	28	18	19	23	30	40	43	A A 57	A A 54	C	C	A A 71	C	A A 132	42	A A 146	41	26	29	29	42	30
16	A A 65	41	23	26	18	21	30	54	A A 94	A A 72	40	48	A A 75	53	A A 91	A A 112	A A 89	A A 85	A A 64	39	24	44	A A 107	23
17	30	35	40	24	16	25	46	57	A A 94	50	G	42	42	42	A A 50	51	42	43	37	44	18	E B 15	27	E B 16
18	E B 15	E B 16	E B 15	E B 15	E B 15	21	A A 36	A A 42	41	42	A A 50	39	40	38	42	38	44	44	38	20	24	19	18	20
19	23	E B 16	E B 15	E B 15	17	22	54	49	52	A A 82	A A 65	41	A A 96	42	41	A A 94	A A 72	30	26	38	33	40	32	38
20	39	29	30	28	20	21	28	36	42	51	A A 115	A A 112	A A 128	A A 79	54	A A 80	59	46	36	22	E B 14	17	19	16
21	28	42	18	22	21	26	44	A A 78	A A 99	A A 90	A A 65	A A 87	A A 84	A A 177	A A 85	A A 82	59	63	A A 120	36	18	18	18	E B 15
22	23	E B 15	E B 15	E B 15	20	32	31	50	51	55	A A 59	A A 61	A A 125	A A 68	A A 151	A A 158	32	G 27	G 19	30	26	25	27	42
23	26	A A 80	44	33	E B 15	18	34	A A 71	A A 88	A A 131	A A 72	A A 130	A A 69	A A 74	G	39	G 26	G	A A 72	41	45	16	31	32
24	E B 15	21	38	32	35	20	35	A A 119	A A 142	A A 120	A A 90	A A 147	A A 61	41	34	45	38	40	42	38	39	19	19	32
25	40	E B 15	E B 15	E B 15	30	23	40	A A 78	44	A A 126	A A 109	A A 84	A A 106	53	58	41	45	A A 68	G 18	A A 129	A A 134	24	A A 62	38
26	33	32	23	19	16	24	30	70	53	61	A A 102	49	56	46	70	60	46	41	A A 112	50	20	36	38	32
27	21	42	38	24	16	19	38	66	A A 115	A A 102	A A 109	A A 160	A A 119	A A 77	A A 72	47	39	60	32	52	E B 15	20	45	42
28	49	34	E B 15	E B 15	E B 15	G 17	G 23	35	57	A A 224	A A 189	A A 77	G	45	A A 112	A A 171	A A 99	42	A A 96	A A 109	56	A A 101	A A 112	A A 122
29	40	44	A A 76	33	28	19	G 21	53	45	A A 172	A A 84	A A 67	A A 77	A A 108	57	A A 106	A A 146	53	A A 112	40	45	31	44	A A 76
30	34	30	20	30	29	32	48	36	39	51	48	A A 104	A A 72	48	A A 74	A A 94	A A 122	66	63	58	60	43	30	41
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	28	28	29	28	30	29	30	30	30	30	30	30	30
MED	27	22	20	20	18	22	34	50	52	A A 64	A A 66	A A 68	A A 68	53	52	46	42	42	40	38	29	24	32	32
U Q	39	34	34	28	21	28	44	A A 66	A A 90	A A 120	A A 84	A A 100	A A 80	A A 76	A A 71	A A 82	A A 59	53	A A 63	52	45	38	40	41
L Q	E B 19	E B 16	E B 16	E B 15	E B 15	20	30	39	44	50	50	46	49	44	44	40	34	G 30	28	30	21	19	25	21

JUN. 2011 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

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

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	290	279	300	321	336	353	346	310	A	293	A	310	312	299	302	311	305	A	300	306	313	F
2	278	288	F	F	289	286	319	322	353	333	A	A	292	292	301	301	309	329	A	A	302	316	287	282
3	281	287	F	292	296	281	329	361	324	A	A	A	A	A	295	307	318	315	302	297	303	312	311	283
4	290	295	295	281	296	331	360	371	325	337	A	308	283	291	294	310	286	283	299	308	327	343	295	F
5	F	F	F	F	F	328	317	316	318	311	A	A	A	269	271	297	297	287	278	293	307	294	A	A
6	F	F	284	F	F	275	A	A	295	311	A	A	A	291	288	311	307	304	305	307	316	F	F	F
7	F	299	320	305	306	308	323	286	A	A	301	296	292	A	301	302	317	312	314	296	A	293	F	F
8		F	F	F	F	316	270	320	A	A	308	290	287	279	292	301	302	315	318	301	299	300	F	F
9	284	279	F	F	300	322	333	323	300	A	288	302	287	296	296	307	306	285	288	311	A	313	292	284
10	292	294	286	296	294	288	323	321	323	262	A	308	307	A	A	299	310	312	316	320	303	F	F	A
11	F	F	323	319	F	324	315	A	304	343	A	A	305	295	299	308	289	305	317	307	325	291	279	F
12	F	F	308	285	305	278	289	309	A	A	316	A	310	316	322	321	333	322	313	311	320	309	295	F
13	F	F	F	306	312	307	319	328	329	A	A	A	A	A	A	322	308	305	302	320	297	277	F	F
14	F	F	287	300	337	352	375	296	325	A	274	C	C	C	C	297	C	304	303	316	295	305	314	302
15	F	F	298	304	309	311	319	352	372	A	A	C	C	A	C	A	309	A	297	300	343	325	284	280
16	A	318	288	F	F	332	369	352	A	A	319	308	A	302	A	A	A	A	A	312	322	320	A	F
17	F	F	F	F	F	350	338	358	A	315	324	320	299	320	A	290	294	310	312	333	295	291	301	283
18	294	306	294	F	F	331	A	A	297	302	A	255	275	297	269	310	328	320	298	300	305	306	303	296
19	295	299	324	312	303	350	331	336	340	A	A	325	A	298	300	A	A	310	285	299	321	329	299	F
20	F	F	F	F	F	332	327	329	367	328	A	A	A	A	286	A	310	315	284	297	302	319	290	283
21	F	F	F	F	305	325	325	A	A	A	A	A	A	A	A	A	304	338	A	323	287	297	292	298
22	F	292	322	337	317	307	308	332	342	313	A	A	A	A	A	A	321	301	333	305	300	290	296	F
23	F	A	309	290	F	F	311	A	A	A	A	A	A	A	315	309	274	272	A	307	337	296	F	F
24	292	287	295	294	312	335	320	A	A	A	A	A	A	271	R	298	310	336	315	296	303	317	269	F
25	F	F	292	F	297	324	372	A	338	A	A	A	A	292	316	313	329	A	292	A	A	F	A	F
26	F	F	326	F	F	294	297	317	330	315	A	295	288	305	316	307	316	315	A	315	F	F	290	F
27	F	F	303	310	318	295	298	307	A	A	A	A	A	A	A	319	312	294	314	322	304	320	299	F
28	303	303	304	296	304	340	327	322	322	A	A	A	305	287	A	A	A	304	A	A	333	A	A	A
29	F	F	A	F	F	F	315	311	360	A	A	A	A	A	304	A	A	318	A	319	348	F	315	A
30	F	F	F	F	F	355	333	360	296	313	313	A	A	293	A	A	A	293	309	305	330	343	F	F
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	9	12	19	16	18	28	28	23	21	13	8	11	12	18	18	21	24	27	23	26	26	24	19	9
MED	292	294	298	298	304	323	323	323	325	313	310	302	292	294	300	307	309	310	305	307	304	308	295	283
U Q	294	301	320	308	312	332	333	352	344	330	318	308	305	302	312	310	316	315	314	316	325	320	303	297
L Q	282	288	290	291	297	301	315	316	311	310	294	293	287	291	292	299	302	301	297	300	300	295	290	282

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	L	397	UL 334	A	A	A	A	376	367	366	L	A					
2						UL 352	A	A	A	A	A	A	A	A	A	A	359	L	A					
3							351	380	A	A	A	A	A	A	A	356	L	A	A					
4						L	L	UL 395	UL 415	UL 372	A	424	UL 399	394	362	A	381	354	345					
5							L	376	A	A	A	A	A	A	A	360	A	A	A					
6						A	A	A	A	379	A	A	A	A	363	A	A	A	L					
7						A	A	A	A	A	A	401	UL 388	A	A	A	A	A	A					
8								A	A	A	A	A	373	A	A	A	376	L	L					
9							A	A	A	A	A	A	A	A	A	366	343	L	A					
10						A	A	A	A	382	A	UL 419	A	A	A	A	357	A	A					
11						L	L	A	A	A	A	A	A	A	A	391	355	A	A					
12						A	A	A	A	A	A	A	A	A	A	371	386	L	A					
13							A	A	A	A	A	A	A	A	A	A	323	361	L					
14								A	A	A	UL 399	C	C	C	C	A	C	A	A					
15						328	UL 371	A	A	A	A	C	C	A	C	A	A	A	A					
16						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
17							A	A	A	A	407	UL 418	428	A	A	A	A	A	A					
18						L	A	A	A	A	A	UL 389	UL 404	UL 381	A	351	A	A	A					
19							A	A	A	A	A	409	A	424	352	A	A	371	350					
20								L	A	A	A	A	A	A	A	A	A	A						
21							A	A	A	A	A	A	A	A	A	A	A	A	A					
22						A	339	A	A	A	A	A	A	A	A	A	370	UL 359	L					
23						UL 365	A	A	A	A	A	A	A	A	331	372	UL 388	UL 325	A					
24								A	A	A	A	A	A	A	UL 393	A	A	A	A					
25								A	A	A	A	A	A	A	A	367	A	A	344					
26							L	A	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	A	A	A	A	A	370	A	A					
28							L	UL 373	A	A	A	A	UL 405	A	A	A	A	A	A					
29							UL 358	A	A	A	A	A	A	A	A	A	A	A	A					
30						A	A	374	412		A	A	A	A	A	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	4	5	3	4	2	6	6	3	6	9	12	5	3					
MED						UL 352	354	376	412	376	403	414	UL 402	394	362	367	368	359	345					
U Q						UL 365	UL 364	388	UL 415	380		419	405	424	376	372	378	366	350					
L Q						328	345	374	397	UL 353		401	388	UL 381	352	358	356	340	344					

JUN. 2011 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUN. 2011 h′F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							254	242	266	346	A	E A 414	A	326	330	338	306	274	264					
2						346	278	E A 260	248	306	A	A	E A 382	382	352	330	298	274	A					
3							288	250	350	A	A	A	A	A	354	316	306	330	312					
4						270	242	230	262	304	A	350	384	366	334	296	328	314	290					
5							284	278	E A 288	E A 304	A	A	A	E A 392	E A 396	306	300	E A 382	E A 370					
6						E A 378	A	A	388	342	A	A	A	E A 380	376	334	312	300	288					
7						E A 280	E A 296	E A 316	A	A	E A 360	322	354	A	338	324	E A 356	278	E A 300					
8								274	A	A	324	374	356	E A 350	326	308	298	290	268					
9							262	274	294	A	350	320	E A 414	340	300	296	298	300	298					
10						292	E A 276	E A 324	314	472	A	360	352	A	A	348	310	298	274					
11						282	296	A	E A 322	292	A	A	E A 350	364	328	306	318	270	264					
12						E A 390	E A 390	280	A	A	304	A	E A 342	314	E A 296	302	274	284	E A 288					
13							296	290	E A 288	A	A	A	A	A	A	324	338	324	288					
14								390	312	A	436	C	C	C	C	E A 338	C	282	276					
15						330	286	260	240	A	A	C	C	A	C	A	314	A	306					
16						280	242	246	A	A	334	352	A	E A 348	A	A	A	A	A					
17							E A 274	E A 274	A	312	318	322	372	336	A	E A 368	344	284	262					
18						302	A	A	358	330	A	482	452	384	E A 378	350	310	E A 304	E A 330					
19							E A 306	264	E A 264	A	A	302	A	372	364	A	A	326	312					
20								290	242	E A 302	A	A	A	A	E A 388	A	E A 320	272						
21							274	A	A	A	A	A	A	A	A	A	E A 318	E A 262	A					
22						E A 286	334	278	274	E A 354	A	A	A	A	A	A	278	312	266					
23						272	324	A	A	A	A	A	A	A	306	336	418	360	A					
24								A	A	A	A	A	A	422	394	348	326	276	E A 300					
25								A	250	A	A	A	A	E A 368	E A 342	320	294	A	302					
26							294	E A 330	266	E A 304	A	E A 350	E A 388	312	E A 344	E A 328	312	300	A					
27							334	E A 320	A	A	A	A	A	A	A	314	306	E A 330	272					
28							268	280	E A 274	A	A	A	342	390	A	A	A	330	A					
29							300	E A 326	248	A	A	A	A	A	E A 316	A	A	E A 288	A					
30						250	E A 266	268	298	E A 322	322	A	A	402	A	A	A	E A 366	E A 302					
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	23	23	21	13	8	11	12	18	19	21	24	27	22					
MED						283	281	271	270	308	326	350	358	358	335	320	308	292	281					
U Q						338	300	E A 316	313	344	355	374	386	384	E A 376	338	323	326	302					
L Q						276	268	260	256	E A 304	320	322	351	340	326	307	299	278	272					

JUN. 2011 h′F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 256	E B 246	E A 282	E A 304	240	228	A	200	198	E A 258	A	A	A	A	220	214	210	220	A	A	E A 288	E B 236	238	E A 304
2	E A 288	E B 278	E A 316	E A 278	E A 266	240	A	A	A	A	A	A	A	A	A	A	216	214	A	A	E A 290	232	E A 284	E B 272
3	E A 282	E A 282	E A 276	E B 260	E B 252	E A 256	E A 244	220	A	A	A	A	A	A	A	E A 246	206	A	A	E A 276	E B 260	228	218	E A 272
4	E B 270	E B 272	E B 280	E B 282	E B 282	218	210	192	192	226	A	188	192	208	216	A	210	224	E A 246	246	218	216	224	E A 326
5	E A 260	E A 290	E A 304	E A 272	E B 262	222	210	210	A	A	A	A	A	A	A	216	A	A	A	E A 308	240	E A 310	A	A
6	E A 366	E B 294	E A 338	E A 352	E A 278	A	A	A	A	218	A	A	A	A	232	A	A	A	E A 242	E A 264	232	E A 266	E A 336	E A 290
7	E A 316	232	E A 260	E A 290	E A 308	A	A	A	A	A	A	204	210	A	A	A	A	A	A	E A 326	A	E A 288	E A 308	E B 284
8	E A 308	E A 304	E A 258	E B 262	E B 288	232	224	A	A	A	A	A	218	A	A	A	204	216	230	E A 252	E A 248	224	E A 322	E A 252
9	E B 248	E A 304	E A 314	E B 244	E A 252	E A 242	A	A	A	A	A	A	A	A	A	230	220	202	A	248	A	E A 242	E A 304	E A 330
10	E A 320	E A 256	E A 314	E A 280	E B 264	A	A	A	A	218	A	196	A	A	A	A	226	A	A	230	E A 280	E A 378	E A 334	A
11	E A 282	E A 266	222	E A 306	E B 262	232	234	A	A	A	A	A	A	A	A	224	216	A	A	212	228	E A 254	E A 302	E A 322
12	E A 312	E A 328	E A 244	E B 280	E A 282	A	A	A	A	A	A	A	A	A	A	210	210	232	A	E A 250	E A 240	E A 272	E A 294	E A 282
13	E A 262	E A 252	232	E A 256	E A 266	232	A	A	A	A	A	A	A	A	A	A	230	210	214	E A 244	E A 274	E A 288	E A 308	E A 320
14	E A 260	E A 292	E B 276	E B 258	234	220	210	A	A	A	206	C	C	C	C	A	C	A	A	E A 252	E A 256	E A 258	E A 258	E A 244
15	E A 314	E A 318	E A 300	E A 270	E A 272	E A 244	204	A	A	A	A	C	C	A	C	A	A	A	A	E A 246	216	228	E A 318	E A 310
16	A	E A 298	E A 314	E A 326	E A 282	222	202	A	A	A	A	A	A	A	A	A	A	A	A	E A 262	E A 240	266	A	E A 270
17	E A 254	E A 300	E A 306	E A 286	E A 242	218	A	A	A	A	204	202	194	A	A	A	A	A	A	E A 242	222	E B 262	E A 268	E B 276
18	E B 286	E B 256	E B 266	E B 258	E B 282	E A 250	A	A	A	A	A	220	210	202	A	250	A	A	A	E A 260	E A 262	E A 242	E A 254	E A 270
19	E A 274	E B 272	E B 238	E B 238	E A 252	222	A	A	A	A	A	216	A	184	212	A	A	212	220	E A 264	E A 248	E A 236	E A 254	E A 304
20	E A 320	E A 288	E A 272	E A 276	E A 256	222	220	218	A	A	A	A	A	A	A	A	A	A	E A 246	E A 248	E A 246	224	232	E A 262
21	E A 308	E A 334	E A 266	E A 258	E A 236	230	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 264	E A 284	E A 268	E A 270	E B 256
22	E A 284	E B 266	E B 236	222	E A 254	A	226	A	A	A	A	A	A	A	A	A	204	206	208	E A 238	E A 266	E A 266	E A 292	E A 330
23	E A 322	A	E A 318	E A 310	E B 246	214	A	A	A	A	A	A	A	A	232	226	198	226	A	E A 264	E A 236	E A 246	E A 298	E A 300
24	E B 282	E A 284	E A 314	E A 314	E A 304	224	232	A	A	A	A	A	A	A	228	A	A	A	A	E A 318	E A 300	E A 238	E A 252	E A 346
25	E A 316	E B 258	E B 248	E B 294	E A 304	E A 234	222	A	A	A	A	A	A	A	A	226	A	A	222	A	A	E A 306	A	E A 340
26	E A 316	E A 310	232	E A 260	E A 268	230	204	A	A	A	A	A	A	A	A	A	A	A	A	E A 292	E A 256	E A 286	E A 294	E A 308
27	E A 302	E A 346	E A 302	E A 262	E A 250	224	A	A	A	A	A	A	A	A	A	A	242	A	A	E A 254	E A 242	E B 244	E A 326	E A 318
28	E A 306	E A 276	E B 240	E B 242	E B 250	224	216	226	A	A	A	A	190	A	A	A	A	A	A	A	E A 274	A	A	A
29	E A 310	E A 308	A	E A 290	E A 300	226	208	A	A	A	A	A	A	A	A	A	A	A	A	E A 238	232	E A 306	E A 322	A
30	E A 280	E A 330	E A 292	E A 314	E A 284	A	A	212	208	A	A	A	A	A	A	A	A	A	A	E A 272	E A 254	222	E A 238	E A 326
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	30	30	24	15	7	3	4	2	6	6	3	6	9	13	10	8	26	27	29	26	26
MED	E A 288	E A 288	E A 276	E A 277	E A 265	224	213	212	198	220	205	203	202	202	224	225	210	215	218	E A 253	E A 248	E A 254	E A 293	E A 302
U Q	E A 315	E A 306	E A 310	E A 294	E A 282	E A 233	226	220	208	242		216	210	208	232	238	223	224	E A 244	E A 264	E A 274	E A 279	E A 308	E A 322
L Q	E A 272	E 266	E 246	E B 258	E 252	222	208	200	192	218		196	192	184	216	215	205	210	217	E A 246	236	234	254	E A 272

JUN. 2011 h′F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	A	A	118	116					
2						116	116	A	A	A	A	A	A	122	A	126	122	118	A					
3						120	112	112	A	A	A	A	A	A	A	A	A	A	A					
4						118	A	A	A	A	A	A	A	A	A	A	A	118	A					
5						118	116	A	A	A	A	A	A	A	A	A	114	A	A					
6						116	A	A	A	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	A	A	A	A	A	A	118	118	A	A	A					
8						120	120	A	A	A	A	A	A	A	A	A	A	A	A					
9						A	A	A	A	A	A	A	A	A	A	118	120	120	A					
10						118	A	A	A	A	A	A	A	A	A	A	A	A	A					
11						120	116	A	A	A	A	A	A	A	118	124	124	122	A					
12						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
13						A	116	A	A	A	A	A	A	A	A	A	A	116	114					
14						114	116	114	A	A	122	C	C	C	C	A	C	A	B					
15						A	A	A	A	A	A	C	C	A	C	A	A	A	A					
16						A	114	A	A	A	A	A	A	A	A	A	A	A	A					
17						120	A	A	A	A	114	A	A	A	A	A	A	A	A					
18						122	116	108	A	A	A	A	A	A	A	A	A	A	A					
19						116	A	A	A	A	A	A	A	A	A	A	A	A	A					
20						122	114	A	A	A	A	A	A	A	A	A	A	A	A					
21						126	112	A	A	A	A	A	A	A	A	A	A	A	A					
22						A	112	116	A	A	A	A	A	A	A	A	116	116	116					
23						B	116	116	A	A	A	A	A	A	116	116	118	112	A					
24						A	A	A	A	A	A	A	A	A	A	118	114	A	A					
25						A	A	A	A	A	A	A	A	A	A	A	A	A	114					
26						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
27						A	A	A	A	A	A	A	A	A	A	124	124	A	A					
28						116	120	A	A	A	A	A	120	116	A	A	A	A	A					
29						A	116	A	A	A	A	A	A	A	A	A	A	A	A					
30						B	A	A	A	A	A	A	A	116	A	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						15	15	5			2		1	3	3	7	8	8	4					
MED						118	116	114			118		120	116	118	118	119	118	115					
U Q						120	116	116						122	118	124	123	119	116					
L Q						116	114	110						116	116	118	115	116	114					

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	92	88	90	92	114	102	106	102	104	100	98	98	100	104	106	108	106	116	104	104	106	106	102
2	102	98	100	100	100	148	122	104	102	104	100	100	110	124	106	124	124	G	104	104	104	100	102	102
3	94	94	94	94	B	120	108	114	106	106	106	106	102	96	102	102	106	106	106	106	102	104	106	98
4	96	96	B	B	B	G	108	104	102	102	102	102	102	102	102	98	98	126	106	96	90	88	98	98
5	100	92	92	88	102	118	120	108	102	100	100	92	92	94	92	98	120	110	102	102	102	100	98	98
6	100	92	88	92	90	120	100	98	100	108	106	102	102	104	100	100	100	98	98	102	104	102	104	104
7	96	96	92	94	92	110	104	104	102	98	94	98	104	104	124	120	106	106	104	100	100	100	98	96
8	98	92	92	B	B	126	124	108	102	102	106	104	102	102	96	94	98	98	96	94	90	90	104	104
9	96	98	102	102	102	110	106	106	102	100	100	94	96	98	102	128	100	G	108	108	108	102	104	104
10	104	102	96	100	140	118	106	104	104	104	104	104	98	100	100	102	104	106	106	106	102	100	104	102
11	94	98	96	94	100	120	112	102	102	102	96	94	98	98	150	G	102	118	106	106	106	104	98	98
12	100	100	96	96	96	104	104	104	96	98	104	96	108	102	98	100	102	100	96	94	92	92	92	88
13	102	90	90	94	92	100	112	108	108	106	104	104	104	102	102	106	102	102	110	96	108	102	100	100
14	100	96	96	92	92	G	126	120	108	110	120	C	C	C	C	104	C	104	96	96	94	94	112	98
15	98	98	94	96	96	96	100	108	104	102	102	C	C	96	C	110	108	102	100	100	98	98	96	94
16	94	96	92	92	116	106	118	104	98	100	104	104	98	100	94	96	92	114	112	94	92	94	104	100
17	100	96	96	96	98	120	106	104	104	104	G	102	102	100	98	96	94	92	90	104	112	114	100	104
18	102	B	86	B	B	132	114	116	106	104	106	104	100	98	100	100	106	106	104	106	104	100	98	98
19	98	92	92	92	92	128	106	106	106	102	100	100	96	94	106	106	106	108	146	98	98	88	90	94
20	92	98	98	116	112	120	112	108	108	106	102	100	92	94	96	96	94	94	94	94	96	94	92	96
21	100	102	102	102	102	128	120	108	106	102	100	104	102	98	98	98	100	100	96	98	94	90	92	102
22	106	B	B	B	100	102	126	120	104	106	106	106	106	102	104	98	104	98	94	108	116	110	98	104
23	104	104	98	98	98	130	122	118	104	102	104	102	100	100	G	124	102	G	104	104	104	104	104	104
24	100	100	96	94	94	104	108	106	102	102	100	100	100	104	104	122	124	106	108	104	104	102	102	102
25	100	B	138	96	92	110	108	104	102	102	104	104	96	96	108	108	102	102	106	102	100	100	92	90
26	88	88	88	92	100	104	108	104	100	98	94	96	98	100	108	108	102	104	98	96	94	94	92	92
27	92	92	92	96	100	108	110	98	98	98	94	94	92	94	94	120	118	102	104	100	98	100	98	96
28	96	94	94	94	98	104	106	100	96	98	100	96	G	136	108	108	108	104	106	104	106	100	100	98
29	98	96	96	96	92	96	92	106	102	102	98	98	94	94	94	94	98	98	102	102	102	102	102	96
30	98	94	94	86	90	106	106	102	106	100	100	98	92	132	118	108	110	106	104	104	100	100	100	98
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	27	28	26	26	28	30	30	30	30	29	28	27	29	27	29	29	27	30	30	30	30	30	30
MED	98	96	94	94	98	112	108	106	102	102	102	100	100	100	102	104	102	104	104	102	102	100	100	98
U Q	100	98	96	96	100	120	118	108	106	104	104	104	102	102	106	109	108	106	106	104	104	102	104	102
L Q	96	92	92	92	92	104	106	104	102	100	100	97	96	96	98	98	100	100	98	96	96	94	98	96

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		F2	F2	F2	F2	C2	L3	L2	L2	L2	L3	L2	L2	L2	L2	L2	L2	L2	CL22	F3	F5	F2	F2	F4
2	F3	F2	F3	F3	F3	HL11	C3	L3	L3	L2	L3	L2	L2	C1	L2	C1	C1		L3	F4	F4	F4	F3	F4
3	F5	F4	F4	F2		C2	C3	C2	L2	L3	L3	L3	L3	L3	L2	L2	L2	L2	L3	F5	F3	F3	F3	F3
4	F2	F2					L2	L2	L2	L2	L3	L2	L2	L2	L2	L2	L1	CL11	L2	F3	F5	F2	F3	F3
5	F4	F5	F3	F2	F2	C2	CL11	L2	L3	L3	L3	L3	L2	L2	L2	L2	CL22	L3	L4	F5	F3	F6	F4	F5
6	F6	F5	F3	F4	F2	C3	L3	L3	L3	L2	L2	L3	L2	L3	L2	L2	L3	L3	L2	F4	F3	F3	F5	F3
7	F4	F4	F3	F3	F4	L2	L3	L3	L3	L3	L2	L2	L2	L3	C2	CL22	L2	L3	L3	F5	F4	F3	F3	F3
8	F5	F3	F2			C2	CL21	L2	L3	L3	L2	L2	L2	L2	L2	L2	L2	L2	L3	F4	F4	F4	F4	F4
9	F2	F4	F4	F3	F3	L3	L2	L2	L3	L2	L2	L2	L2	L2	L2	CL22	L2		L2	F3	F4	F3	F5	F4
10	F4	F4	F5	F4	F1	C2	L2	L3	L2	L2	L2	L2	L2	L2	L2	L2	L2	L2	L2	F5	F4	F4	F4	F5
11	F5	F7	F3	F4	F1	C2	C2	L3	L2	L2	L2	L2	L2	L2	HL11		L2	CL22	L3	F4	F6	F4	F3	F5
12	F3	F4	F4	F4	F3	L3	L3	L3	L3	L3	L3	L3	L2	L2	L2	L2	L2	L2	L3	F3	F5	F6	F3	F3
13	FF13	F3	F3	F2	F3	L2	C2	L2	L2	L3	L2	L2	L2	L2	L2	L2	L2	L1	CL12	F3	FF42	F3	F6	F5
14	F3	F4	F2	F2	F3		C1	C2	L2	L2	C2					L2		L2	L3	F3	F4	F4	FF43	F3
15	F2	F4	F3	F2	F2	L3	L2	L2	L2	L3	L3			L2		L2	L2	L2	L3	F4	F5	F3	F4	F4
16	F4	F6	F4	F2	FF22	L2	C2	L3	L3	L2	L2	L2	L2	L2	L3	L3	L3	CL23	CL23	F3	F4	F4	F4	F3
17	F4	F5	F4	F4	F3	C2	L2	L3	L3	L2		L2	L2	L2	L2	L3	L2	L2	L2	FF33	FF23	F2	F2	F2
18	F2		F2			C2	C2	C2	L2	L2	L2	L2	L2	L2	L2	L2	L2	L2	L3	F3	F3	F3	F3	FF22
19	F2	F1	F1	F1	F2	C2	L3	L3	L2	L3	L2	L2	L3	L2	L2	L3	L2	L2	CL22	F2	F3	F3	F2	F3
20	F3	F3	F2	FF23	FF22	C2	C2	L2	L2	L2	L2	L3	L3	L2	L2	L3	L2	L3	L3	F3	F2	F2	F3	F3
21	F2	F5	F5	F4	F4	C2	C3	L3	L3	L3	L3	L2	L2	L2	L2	L3	L3	L3	L3	F2	F3	F2	F2	F3
22	F4				F2	L2	CL22	CL22	L2	L2	L2	L2	L3	L2	L3	L2	L2	L2	L2	FF12	FF22	F2	F3	F6
23	F5	F6	F3	F4	F3	C2	C2	C3	L3	L3	L2	L2	L2	L2		C1	L1		L3	F4	F5	F2	F4	F3
24	F2	F5	F5	F4	F4	L2	L2	L3	L3	L2	L3	L2	L2	L2	L2	C2	C1	L3	L3	F3	F4	F3	F2	F4
25	F3		F1	F2	F2	L3	L3	L2	L2	L2	L2	L2	L3	L2	L2	L2	L2	L2	L2	F3	F4	F3	F4	F4
26	F3	F4	F3	F3	F2	L3	L2	L3	L3	L2	L2	L2	L2	L2	L2	L3	L2	L3	L3	F5	F4	F3	F3	F3
27	F3	F3	F3	F4	F2	L1	L2	L3	L3	L3	L2	L3	L2	L3	L3	CL12	CL22	L3	L2	F3	F3	F3	F4	F3
28	F4	F4	F3	F3	F2	L2	L2	L2	L3	L3	L2	L3		H1	L2	L3	L2	L3	L4	F4	F5	F5	F5	F3
29	F3	F3	F4	F3	F3	L1	L2	L2	L2	L3	L2	L2	L3	L2	L2	L3	L2	L3	L4	F3	F3	F3	F4	F5
30	F3	F3	F2	F2	F2	L2	L2	L2	L2	L2	L2	L2	L2	CL11	C2	L2	L3	L3	L3	F3	F4	F3	F3	F4
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																								

JUN. 2011 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

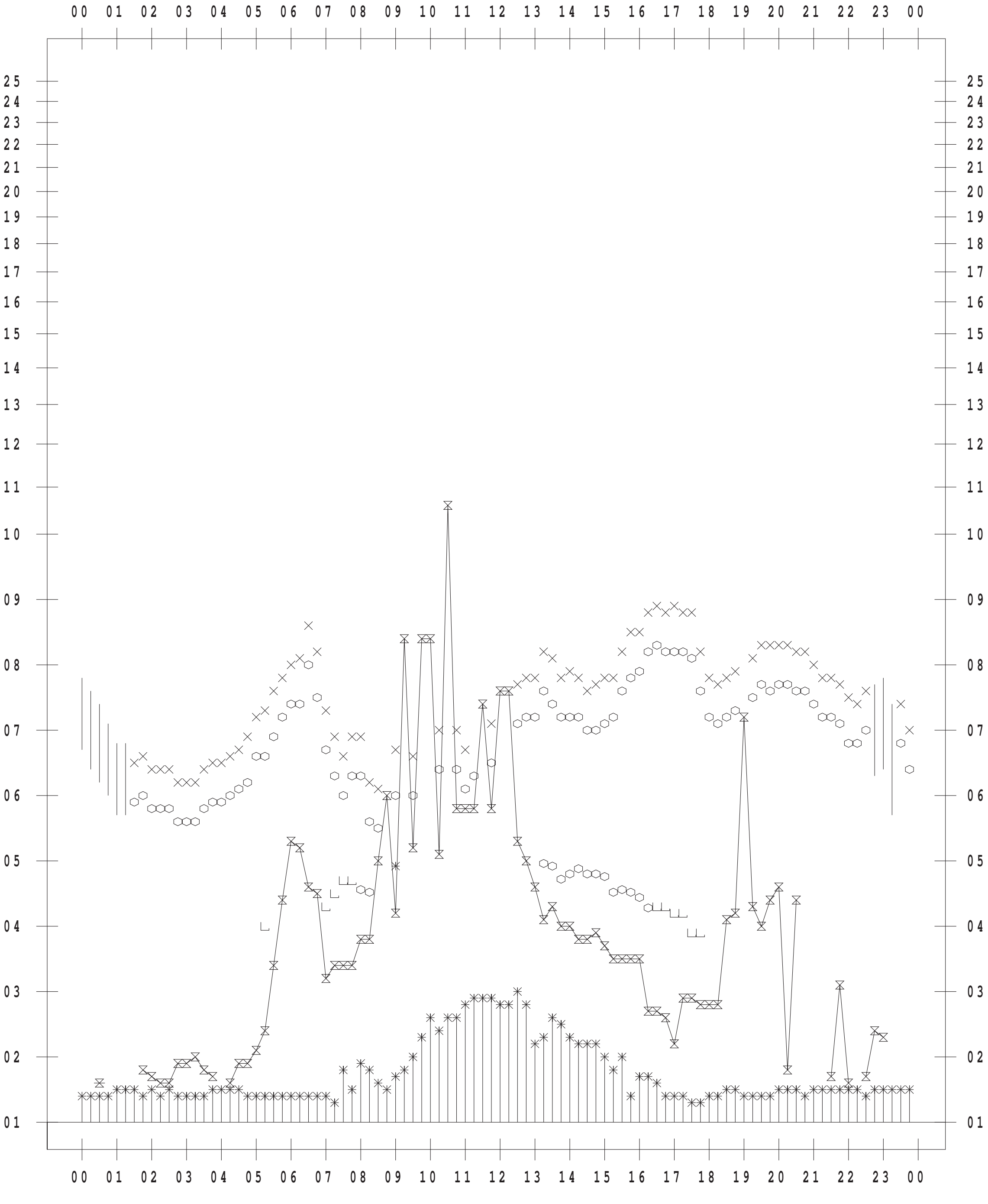
KEY OF f-PLOT	
	SPREAD
	foF2,foF1,foE
	fxF2
	DOUBTFUL foF2,foF1,foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

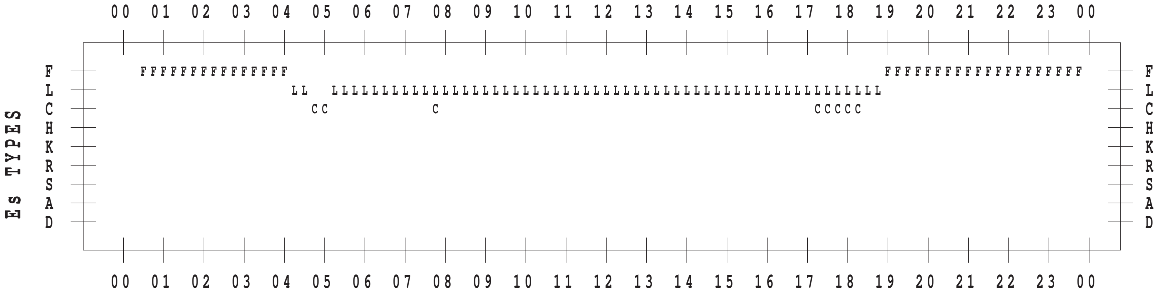
f-PLOT DATA

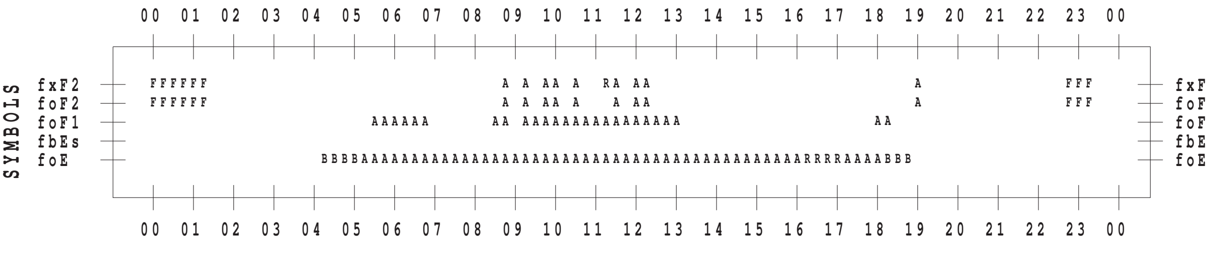
SCALER : I.NISHIMUTA

STATION : Kokubunji   DATE : 2011/ 6/ 1

135 °E MEAN TIME







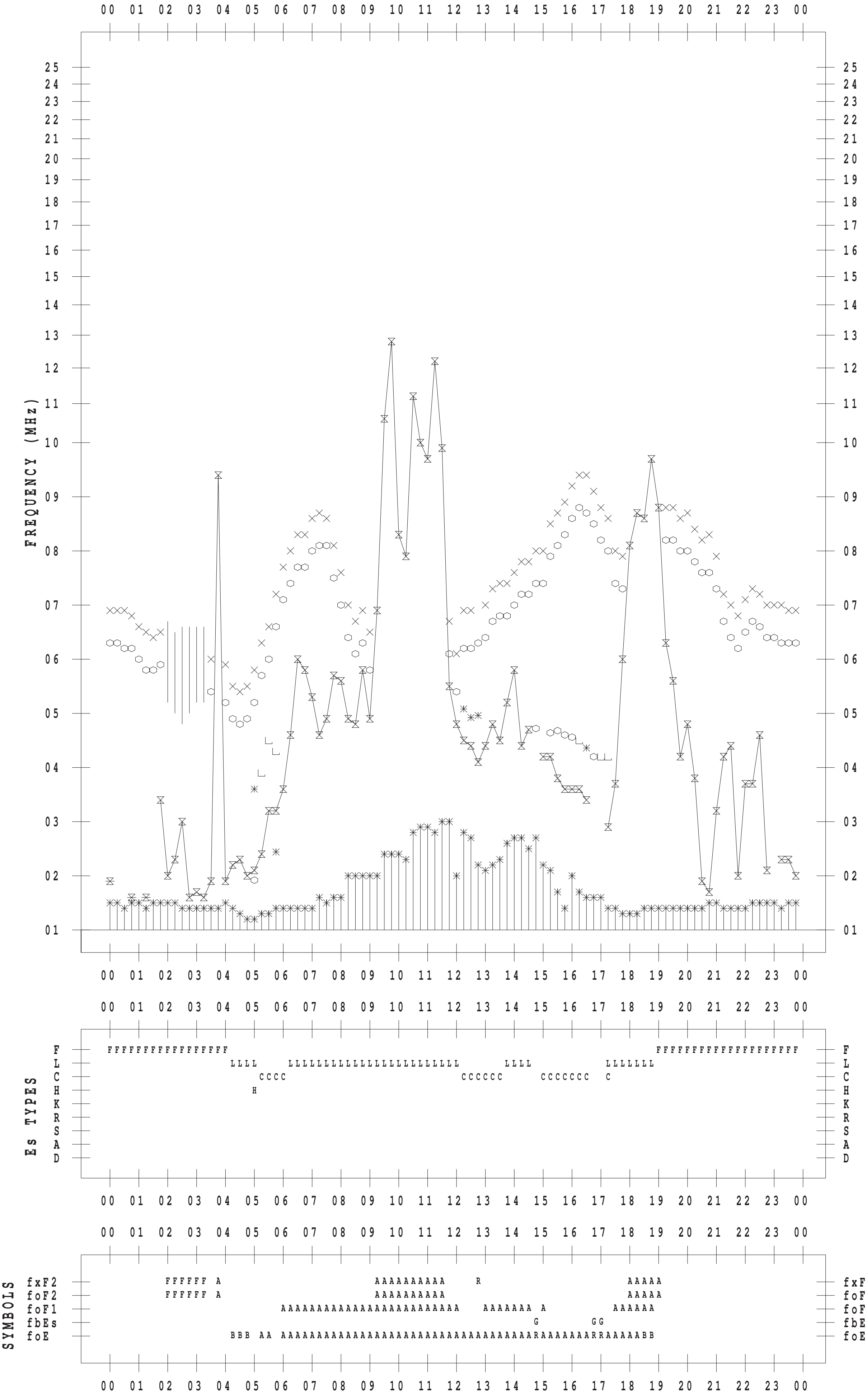
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/ 2

135 °E MEAN TIME



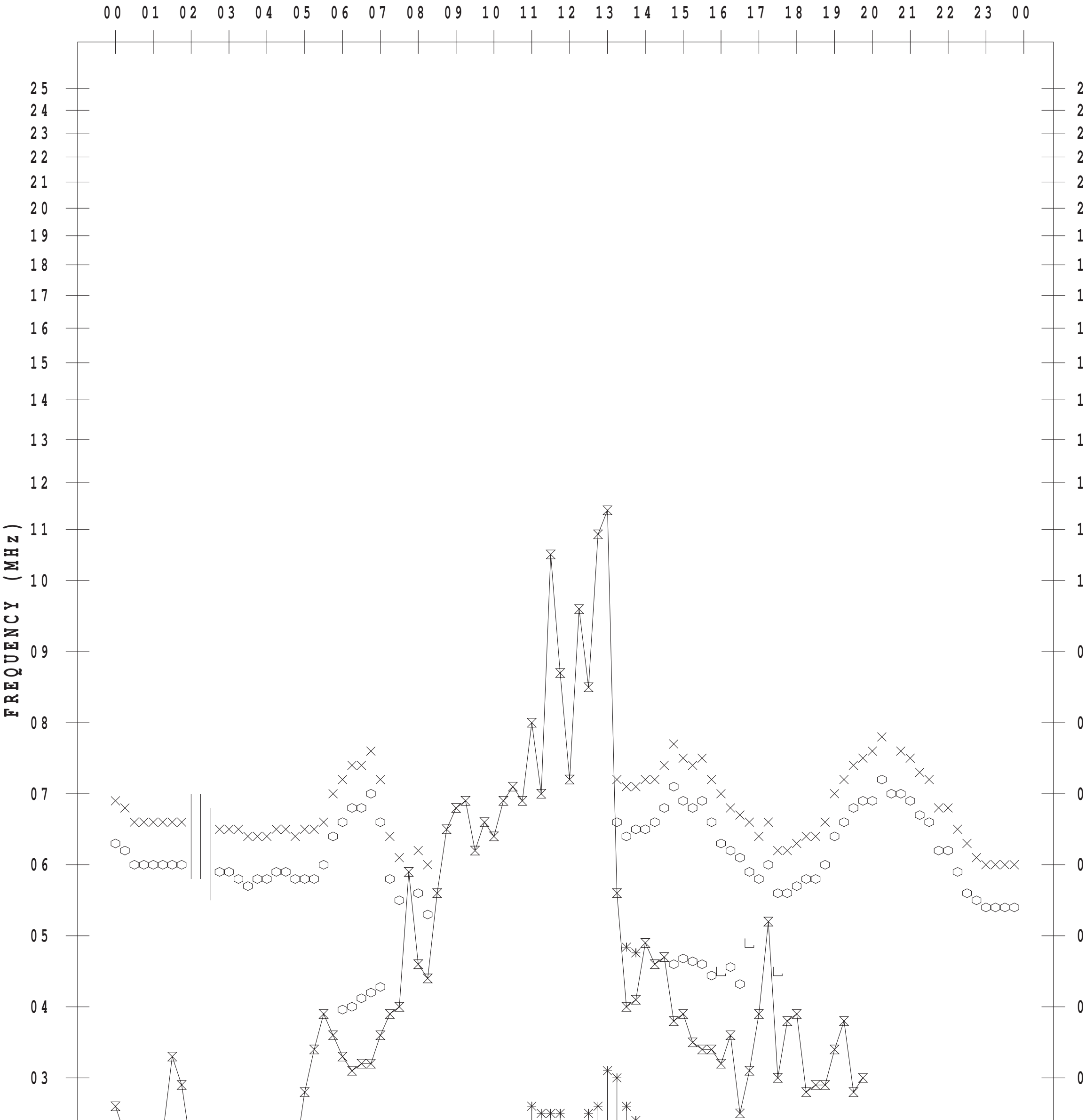
f-PLOT DATA

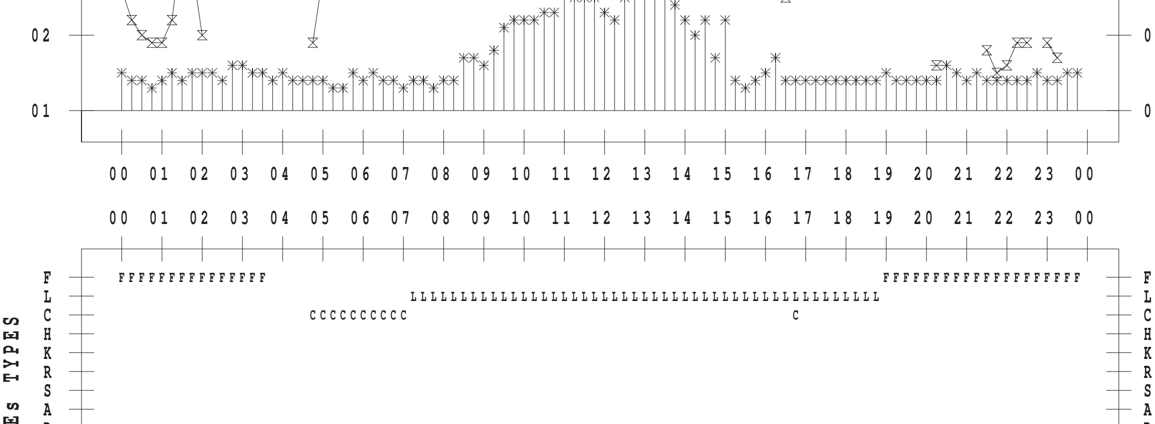
SCALER : I.NISHIMUTA

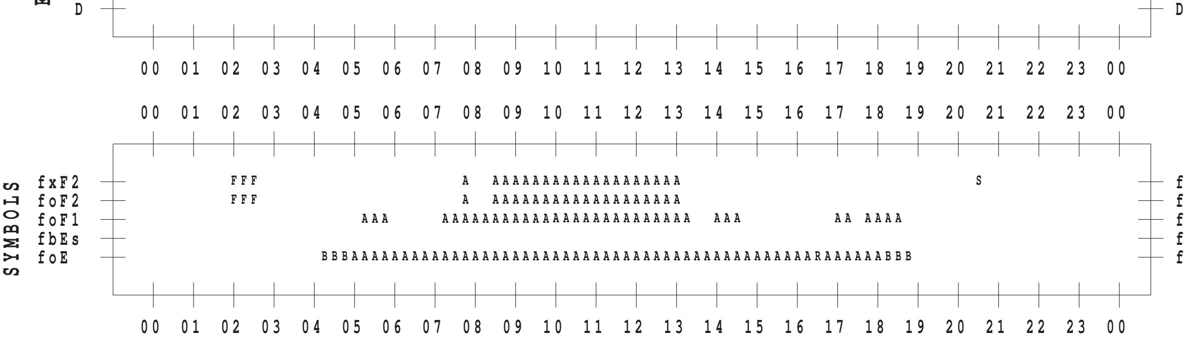
STATION : Kokubunji

DATE : 2011/ 6/ 3

135 °E MEAN TIME







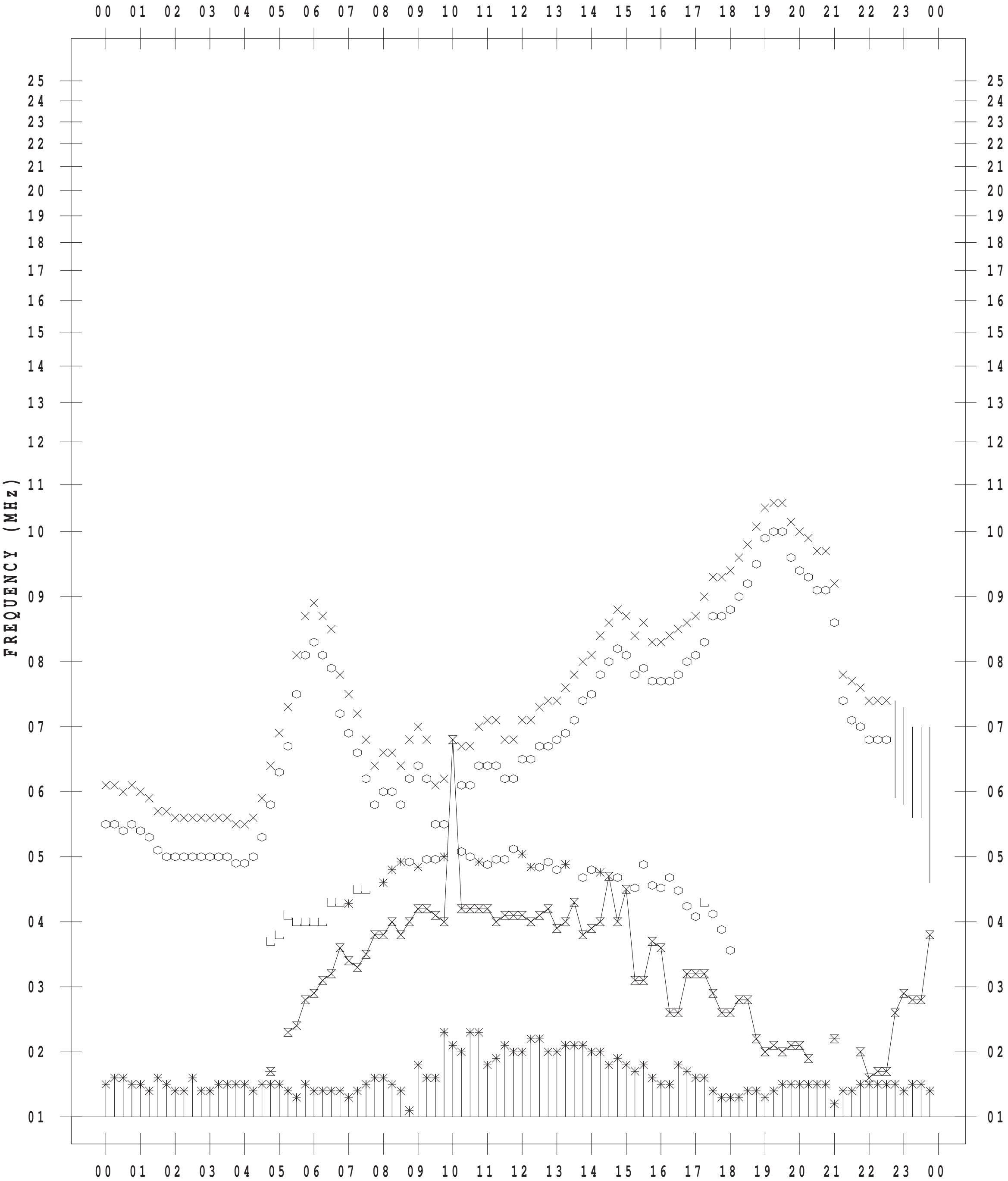
f-PLOT DATA

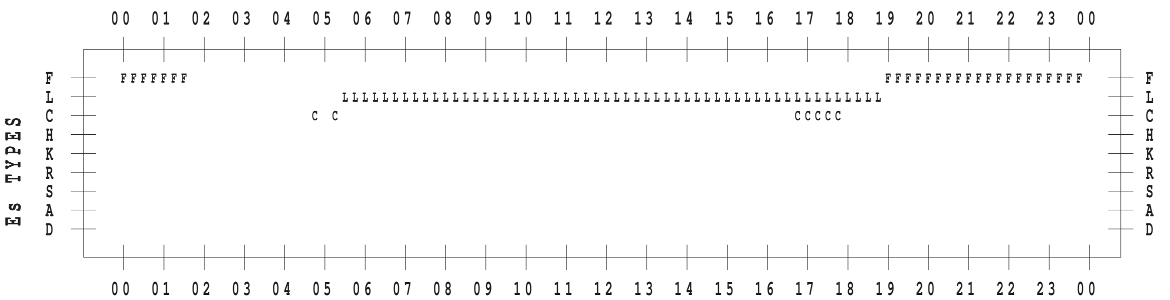
SCALER : I.NISHIMUTA

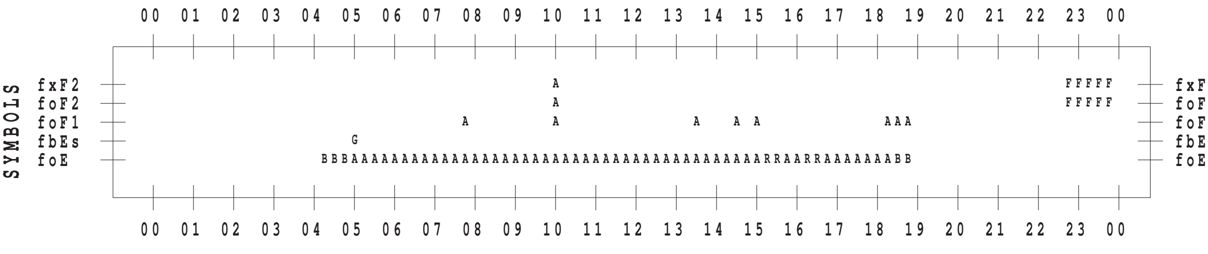
STATION : Kokubunji

DATE : 2011/ 6/ 4

135 °E MEAN TIME





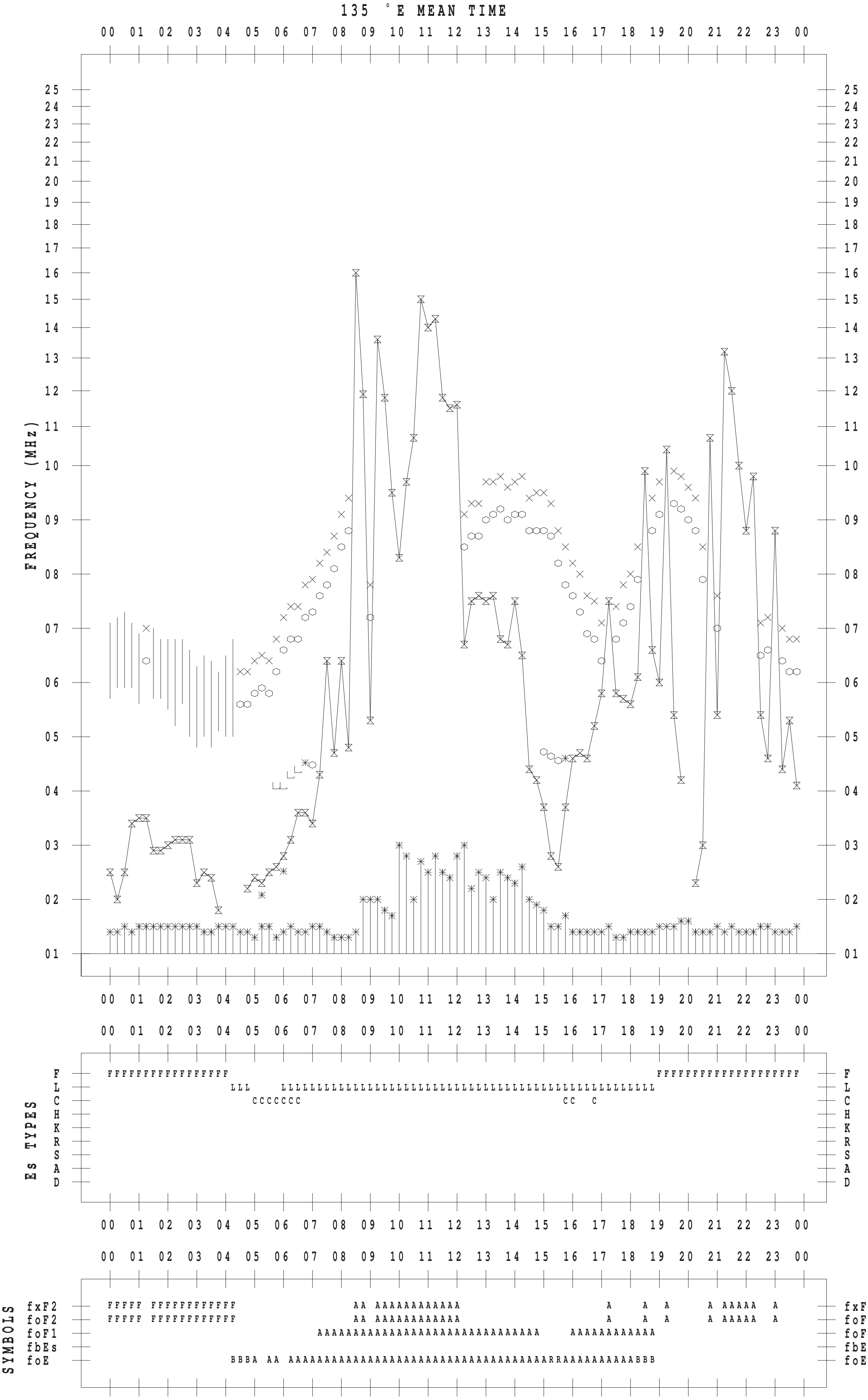


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/ 5

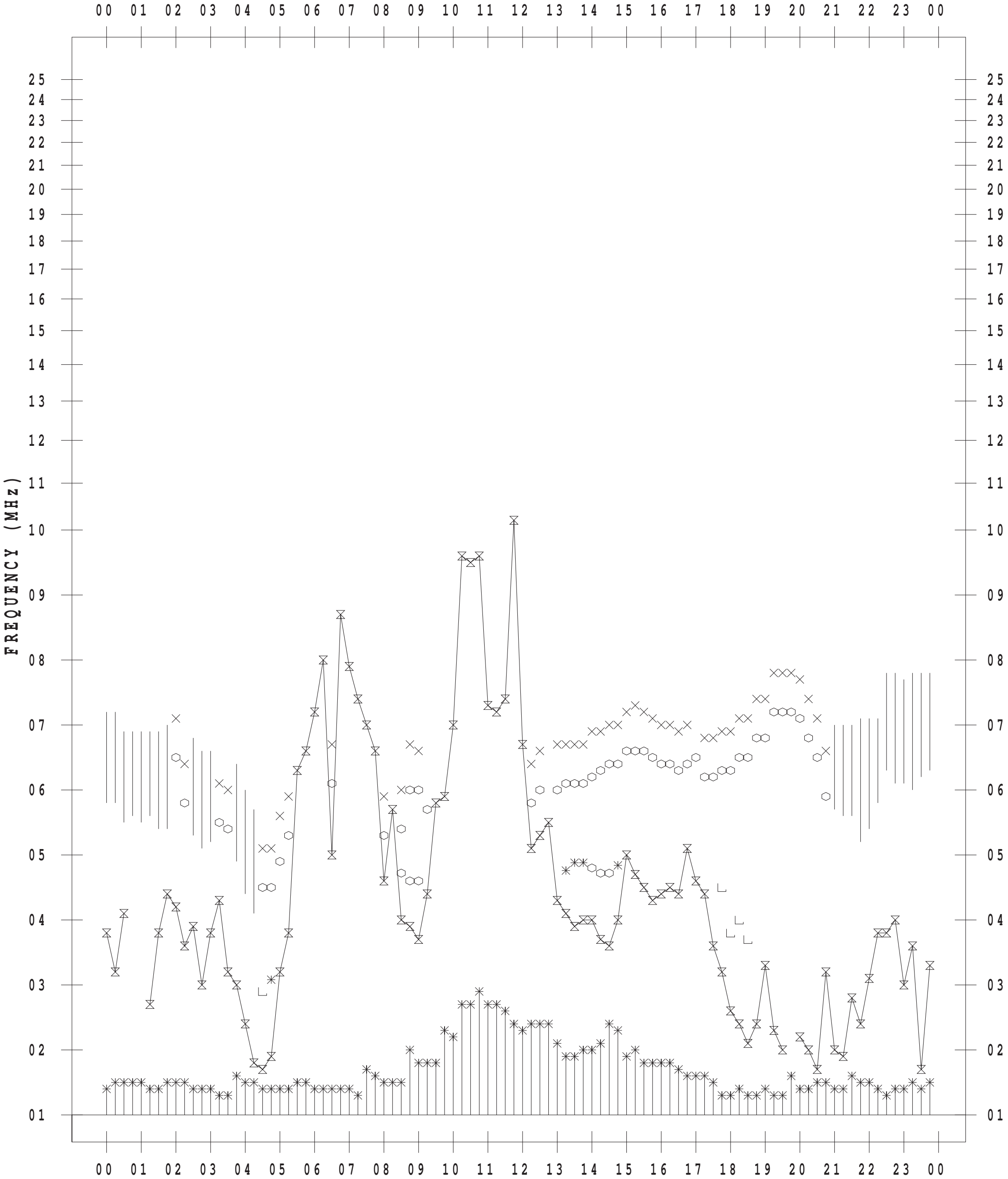


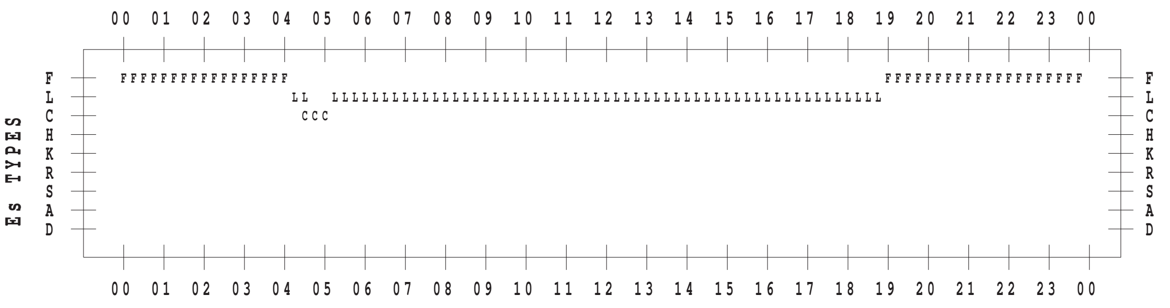
f-PLOT DATA

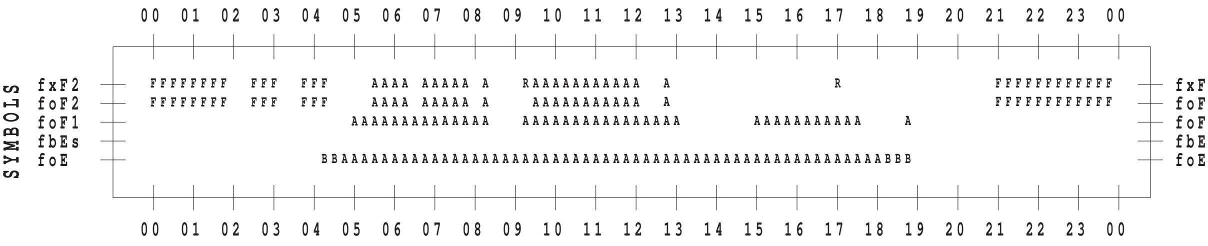
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 6/ 6

135 °E MEAN TIME







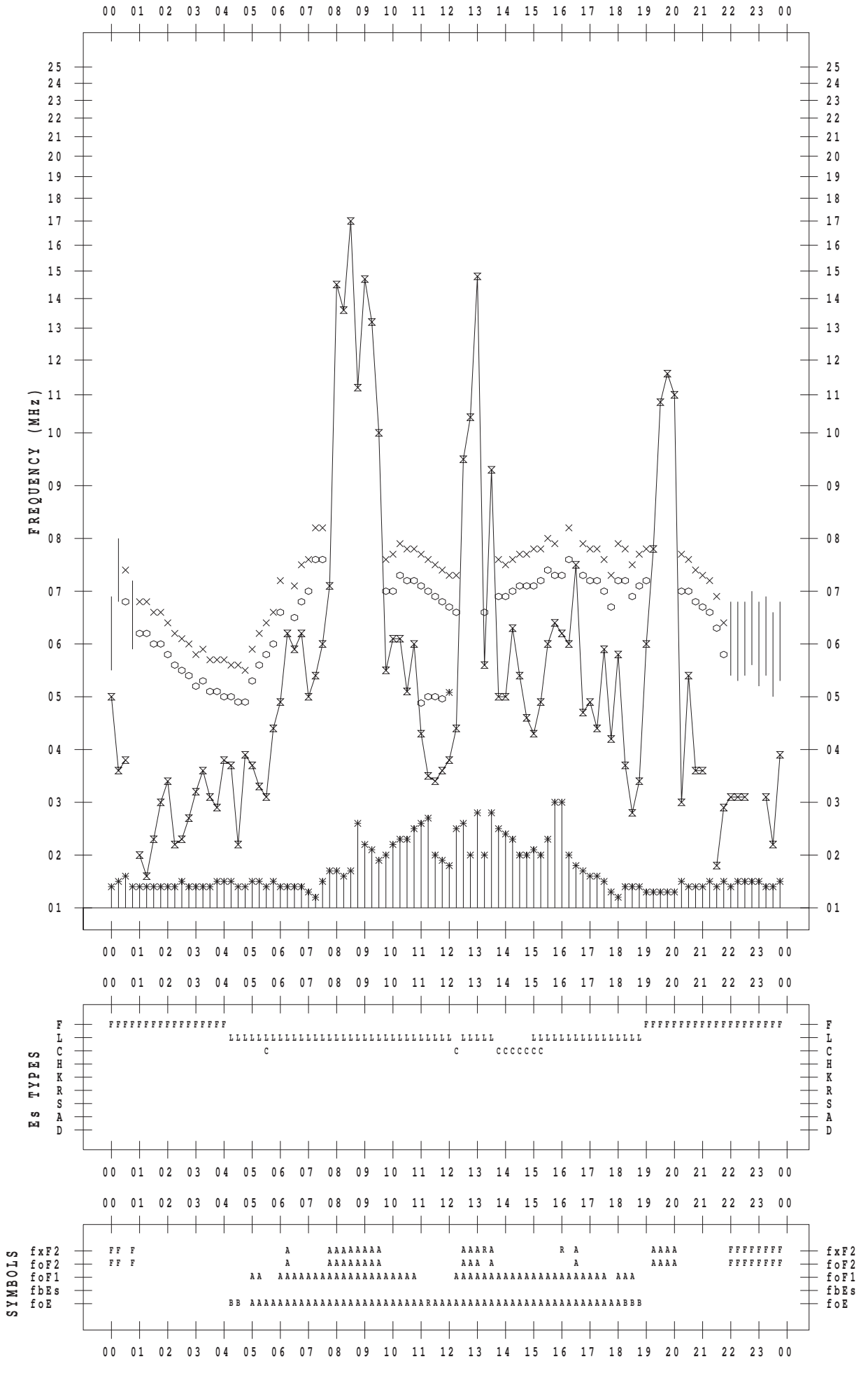
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/ 7

135 °E MEAN TIME

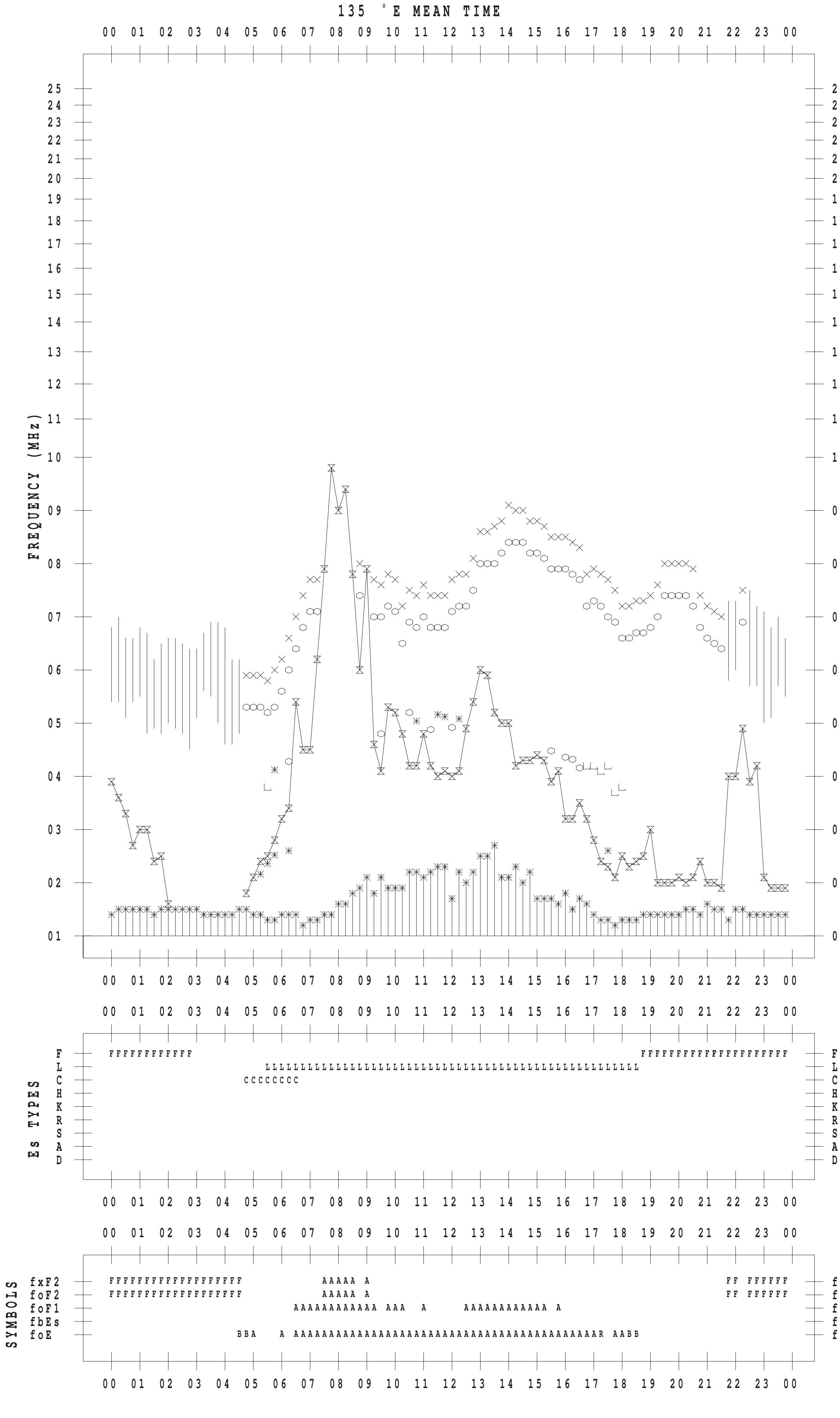


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/ 8



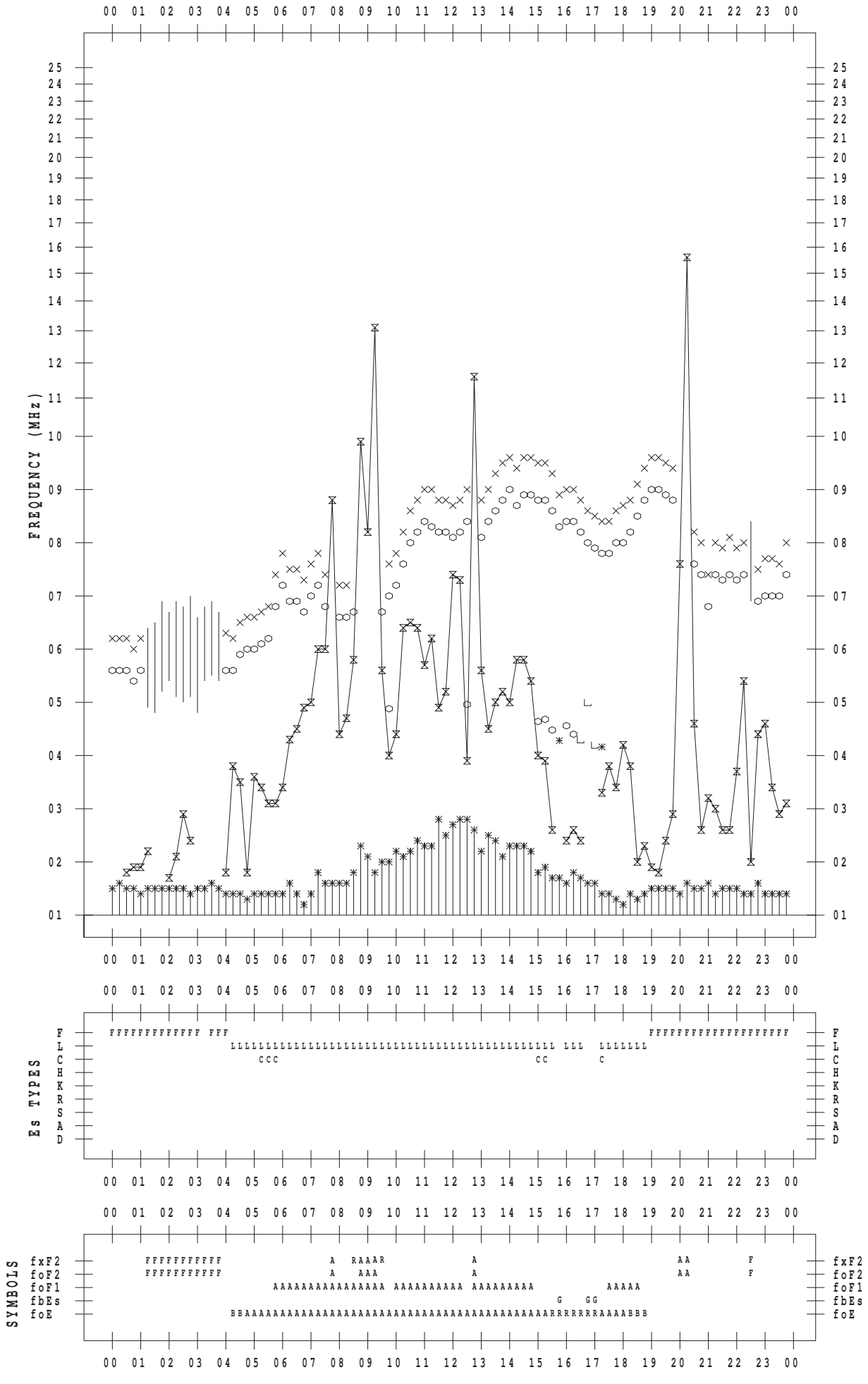
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/ 9

135 °E MEAN TIME



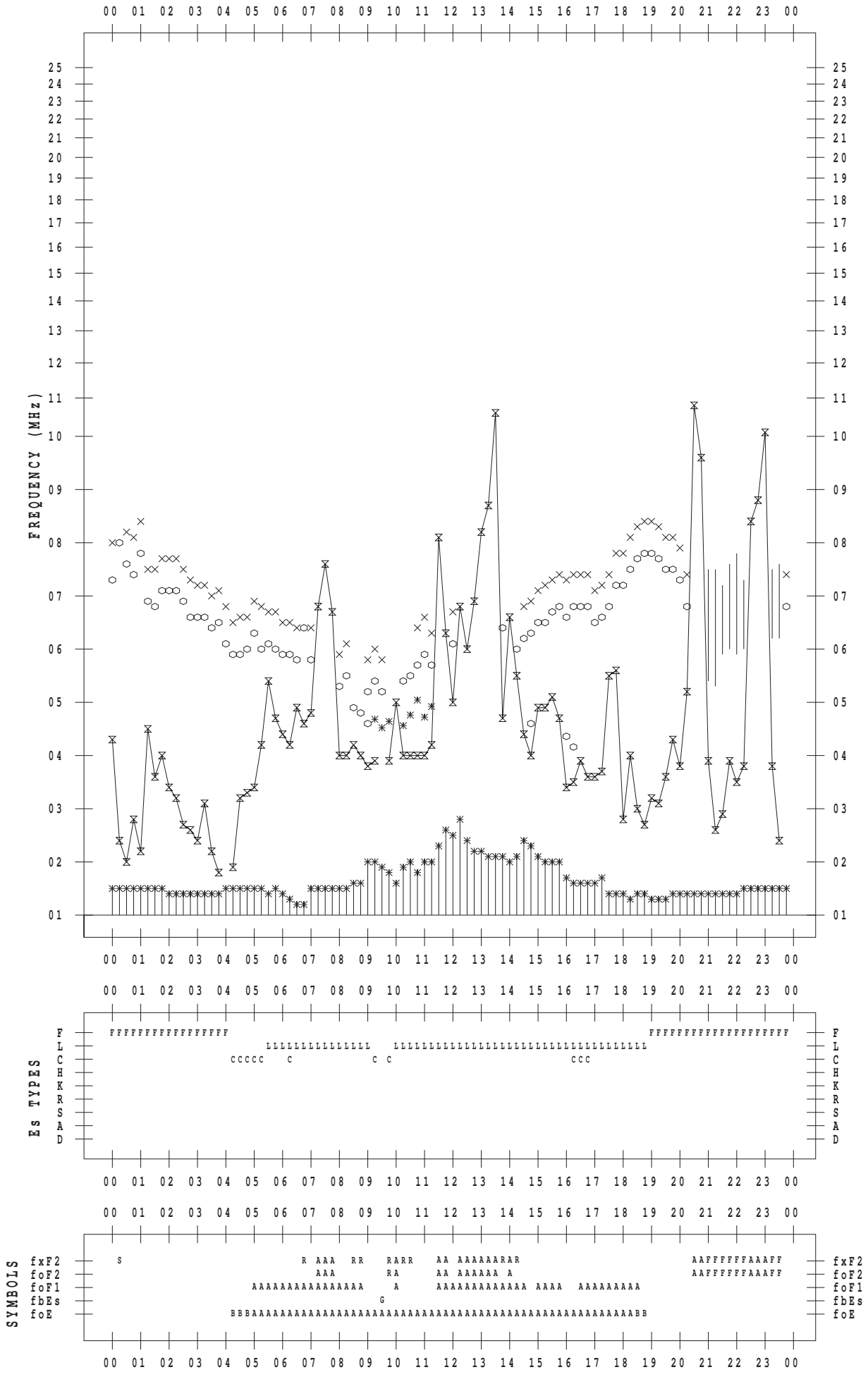
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/10

135 °E MEAN TIME



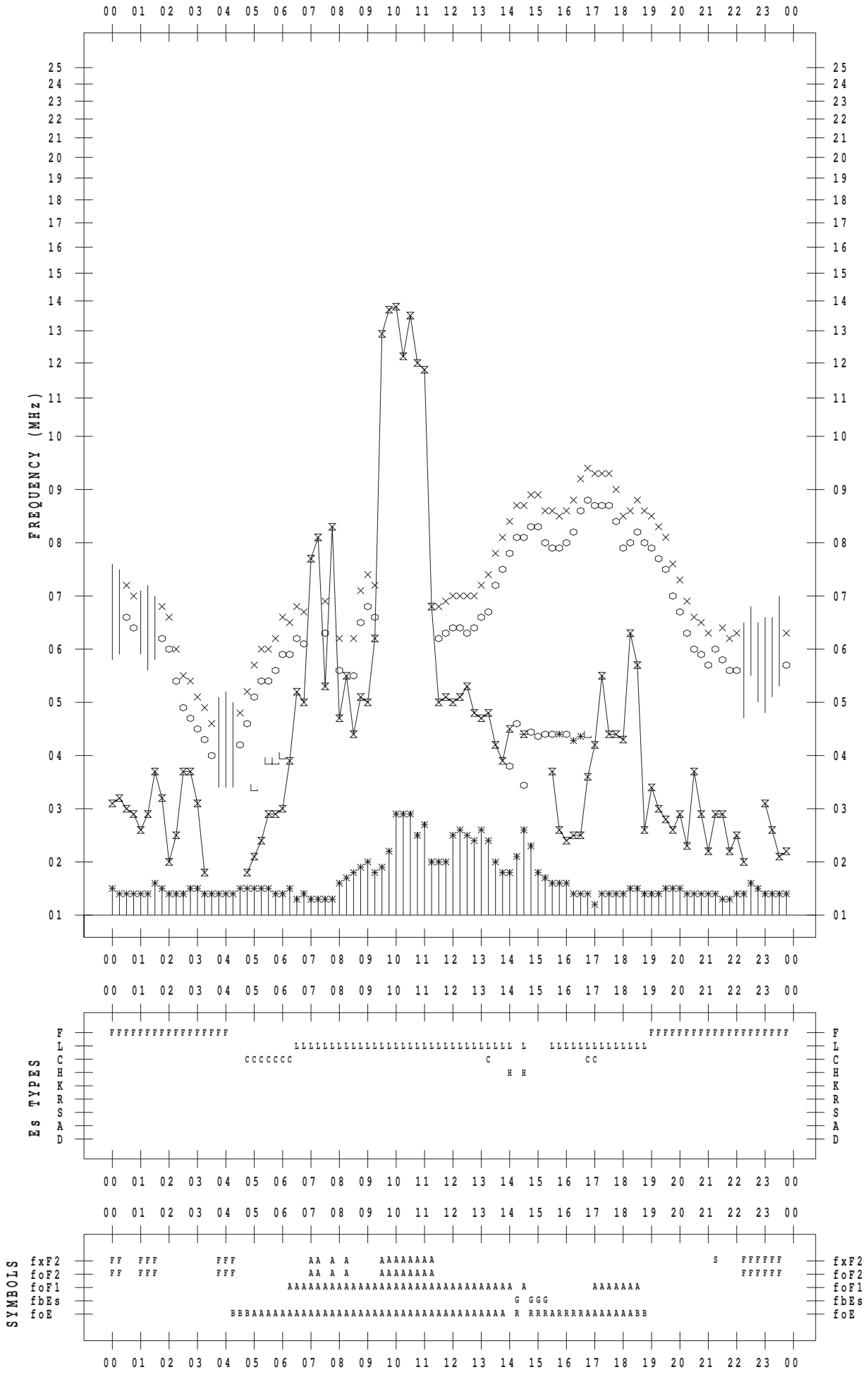
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/11

135 °E MEAN TIME



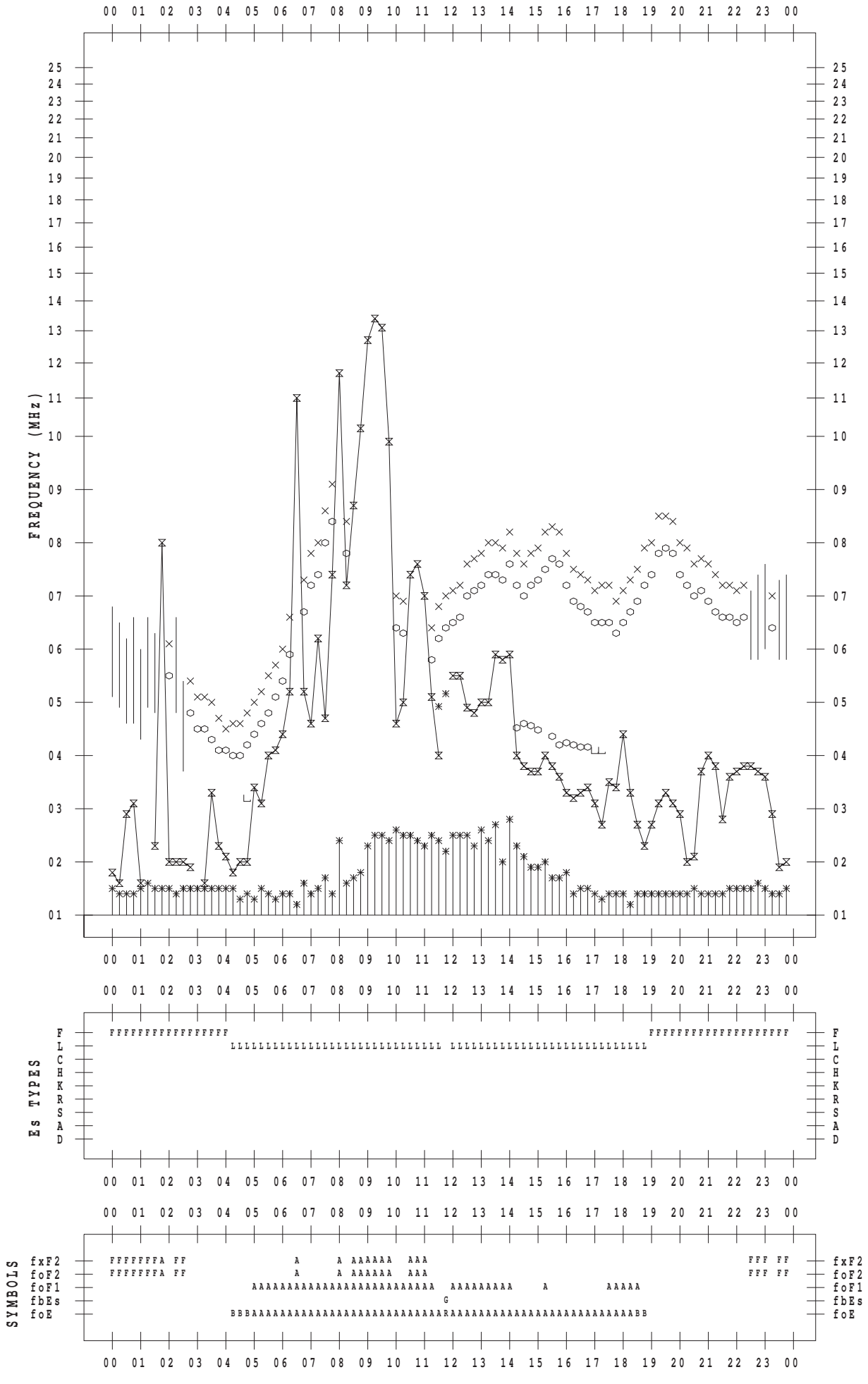
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/12

135 °E MEAN TIME

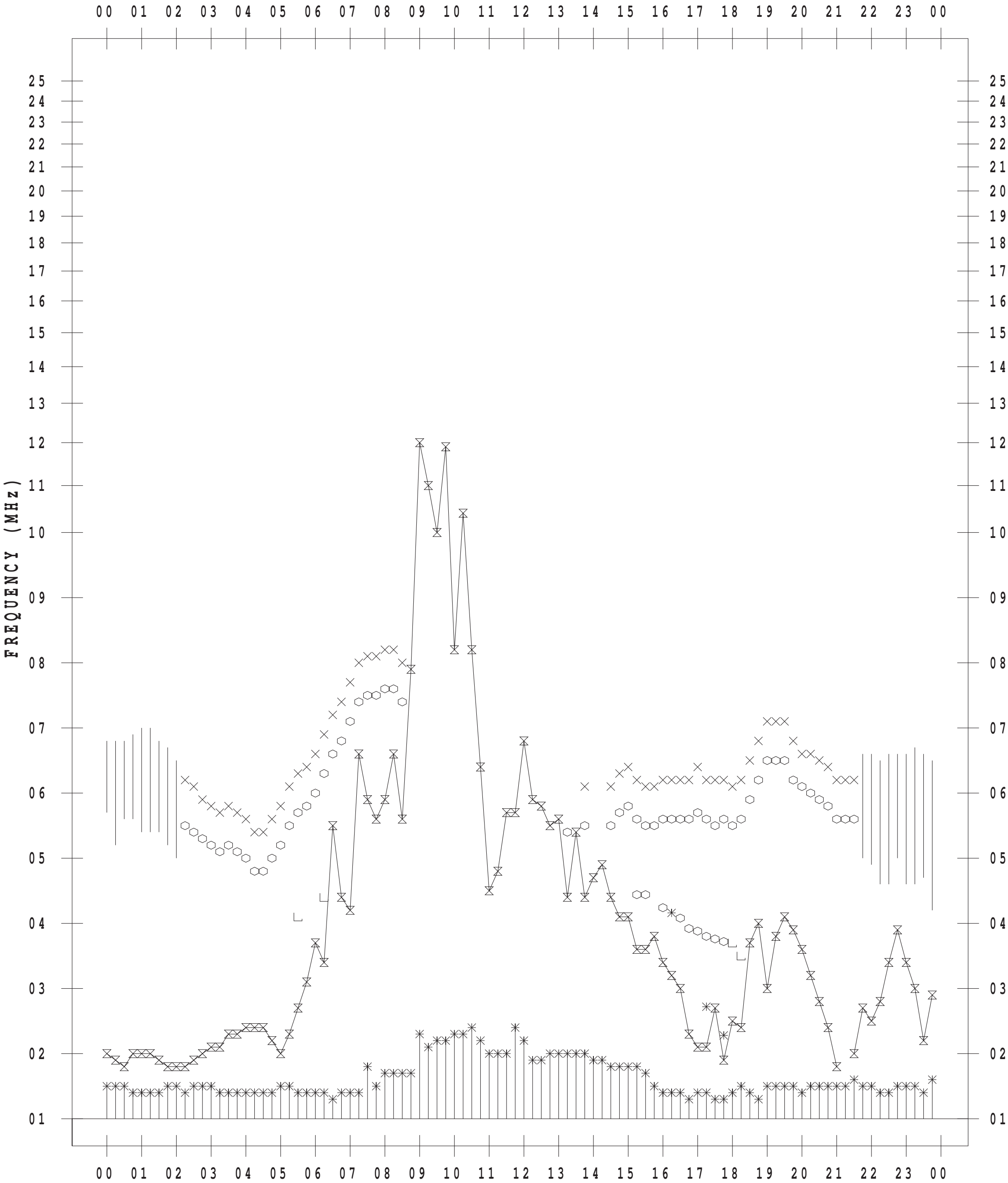


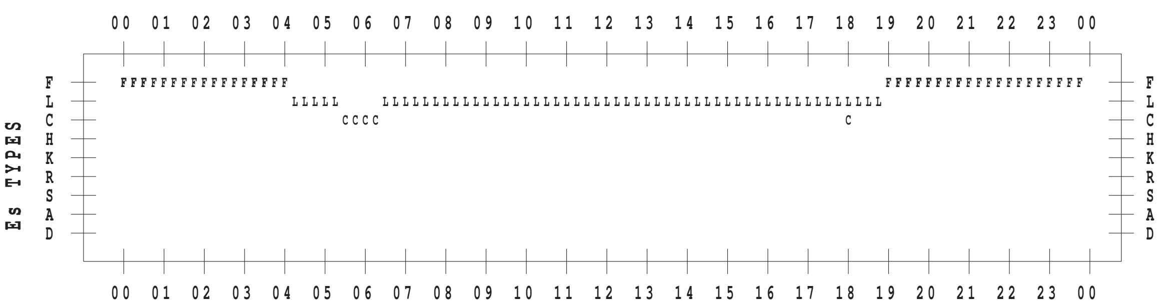
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 6/13

135 °E MEAN TIME





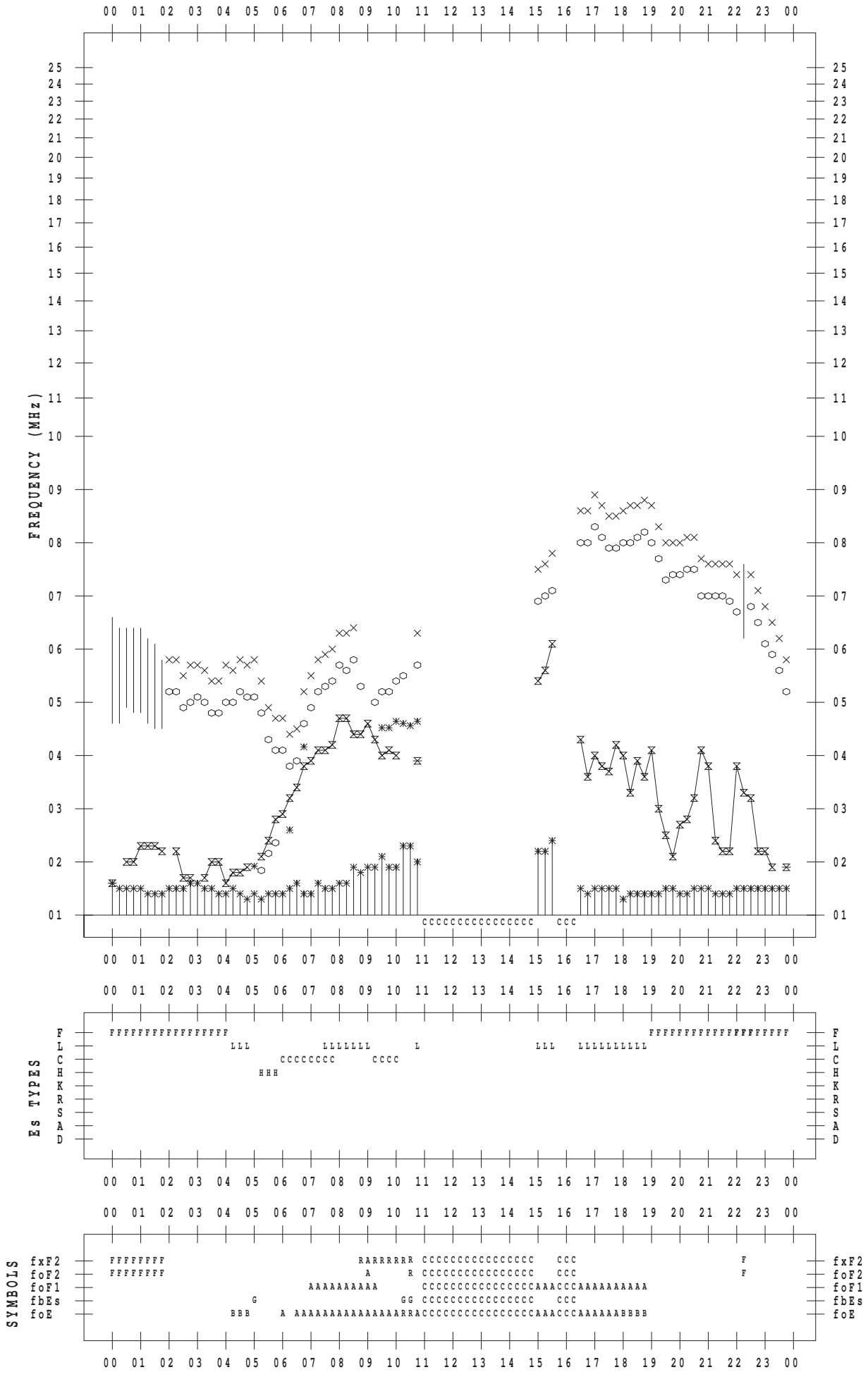
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/14

135 °E MEAN TIME



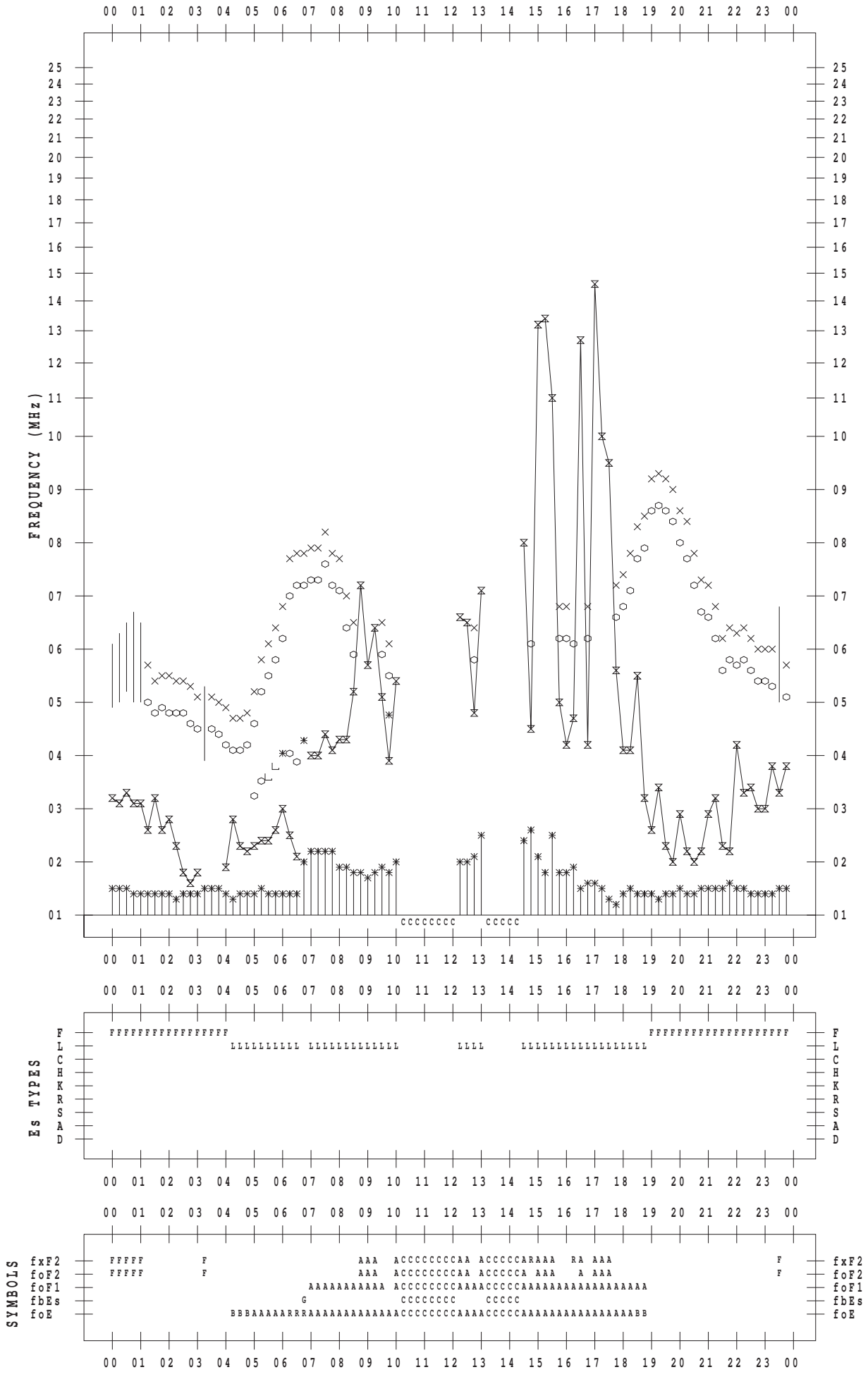
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/15

135 °E MEAN TIME

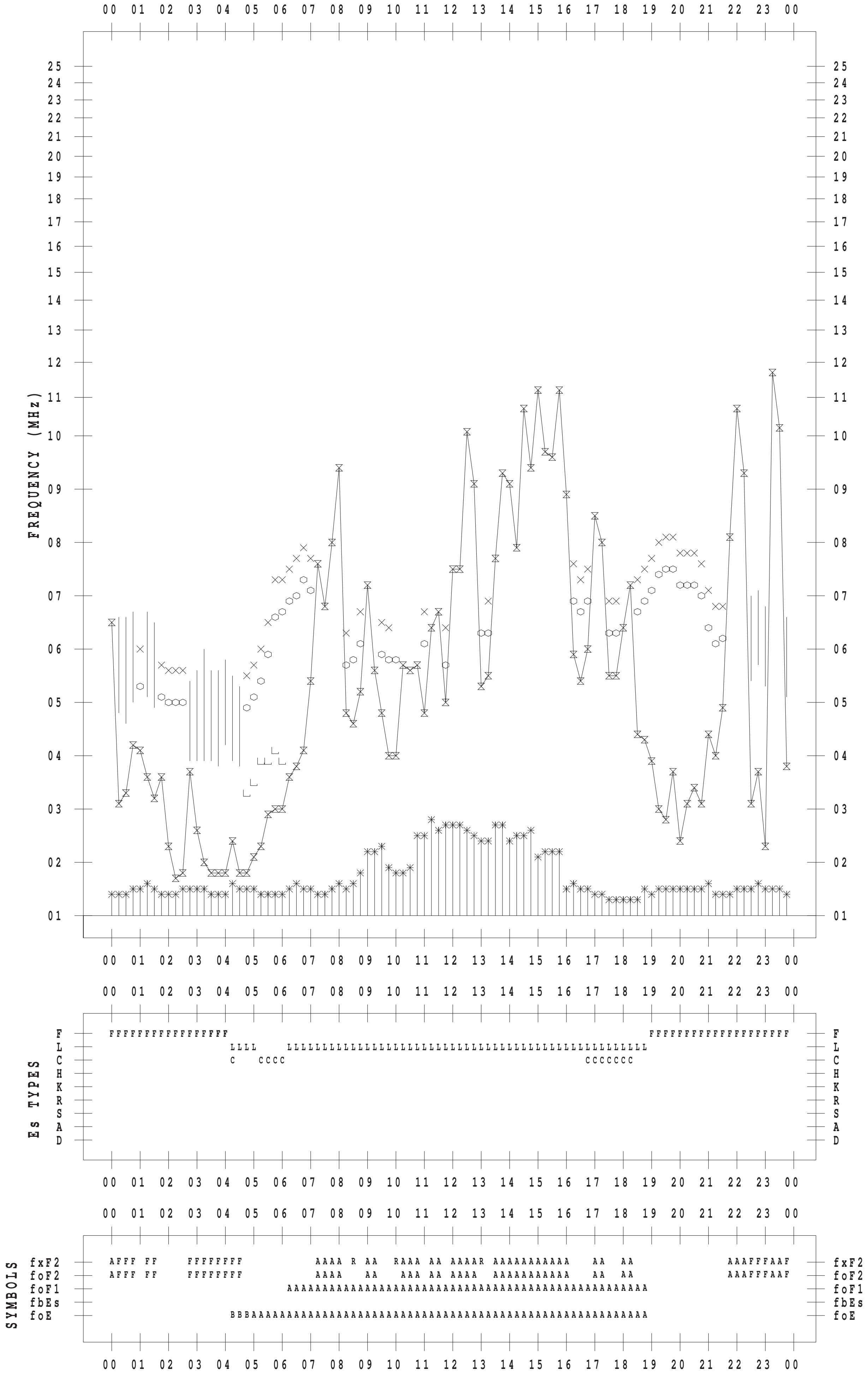


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji   DATE : 2011/ 6/16

135 °E MEAN TIME



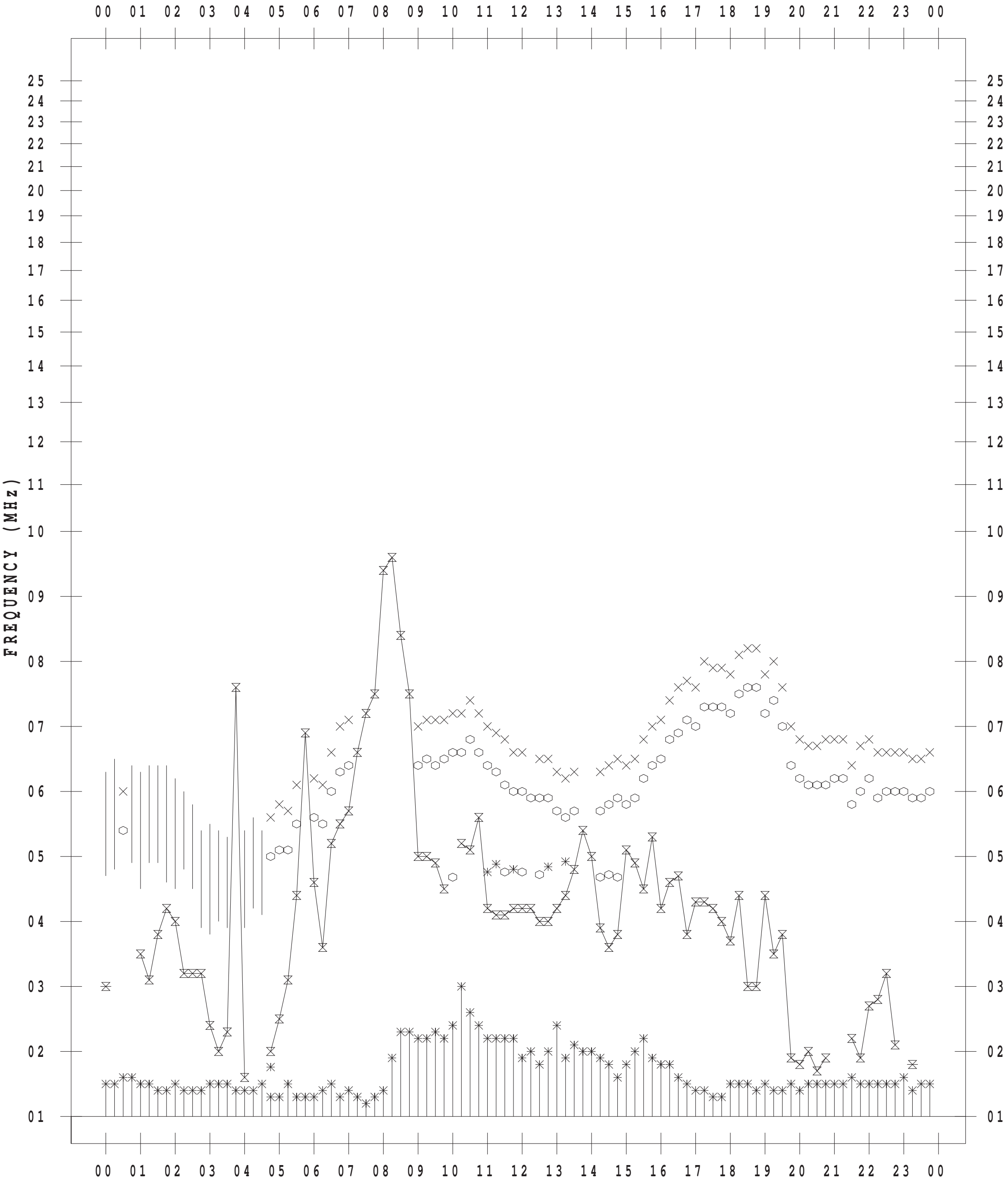
f-PLOT DATA

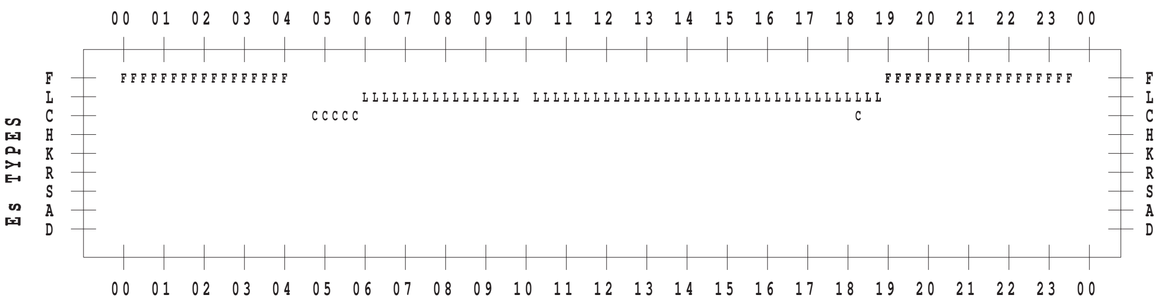
SCALER : I.NISHIMUTA

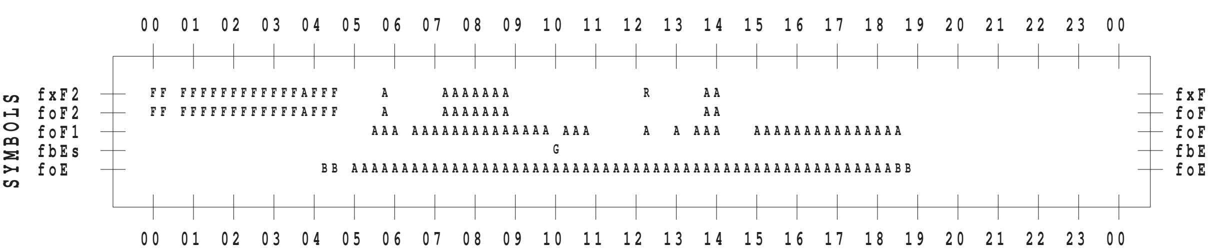
STATION : Kokubunji

DATE : 2011/ 6/17

135 °E MEAN TIME







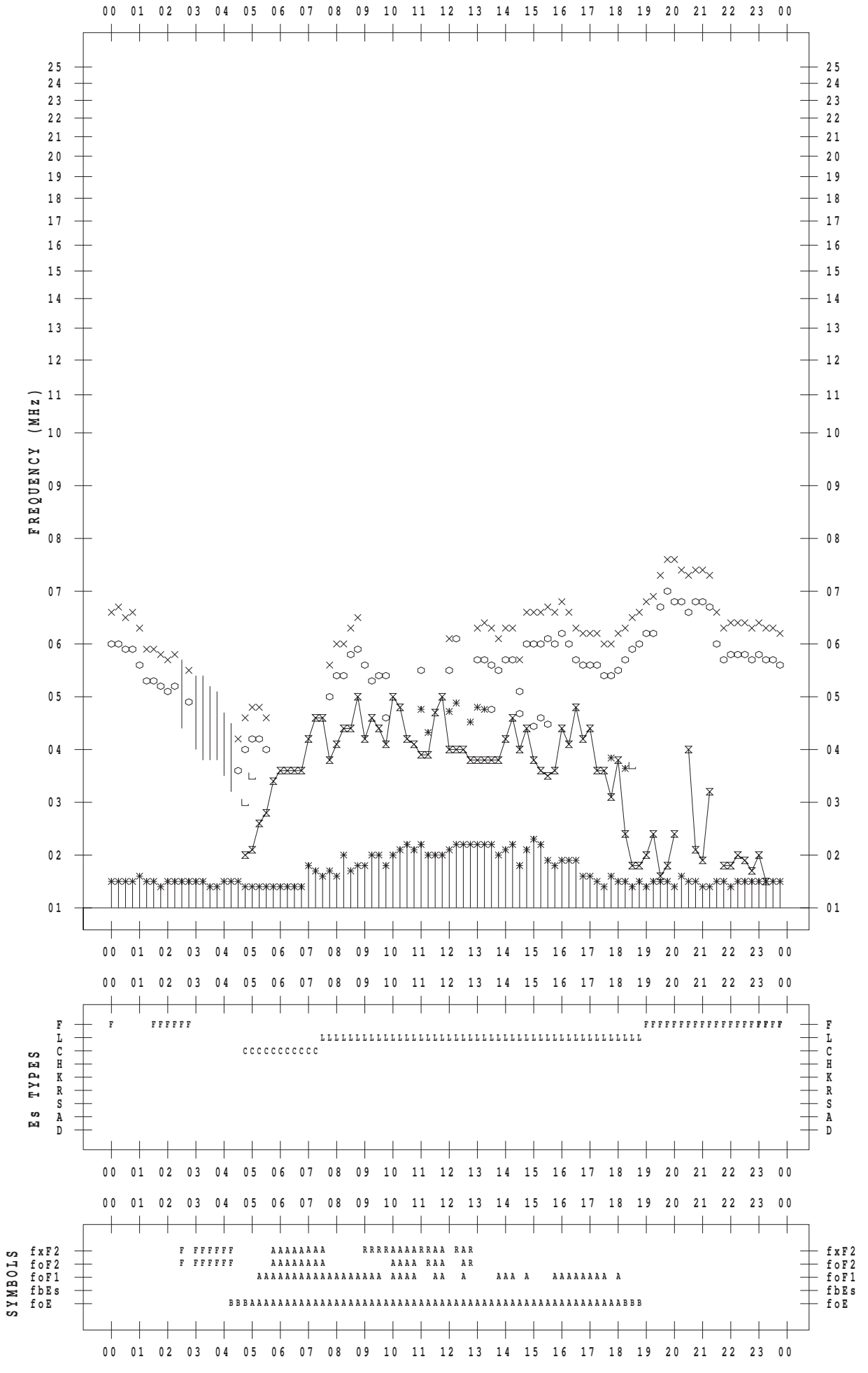
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/18

135 °E MEAN TIME



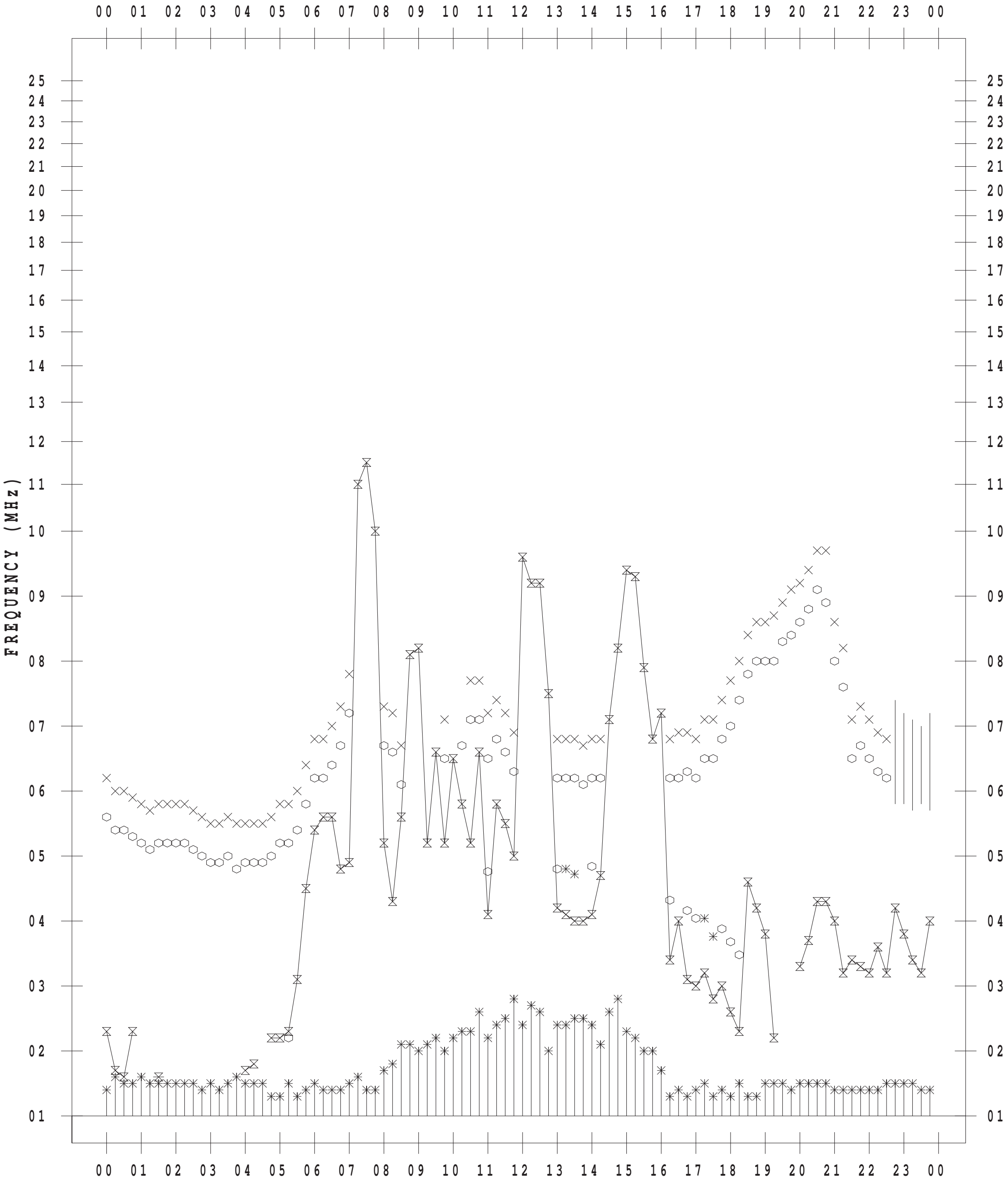
f-PLOT DATA

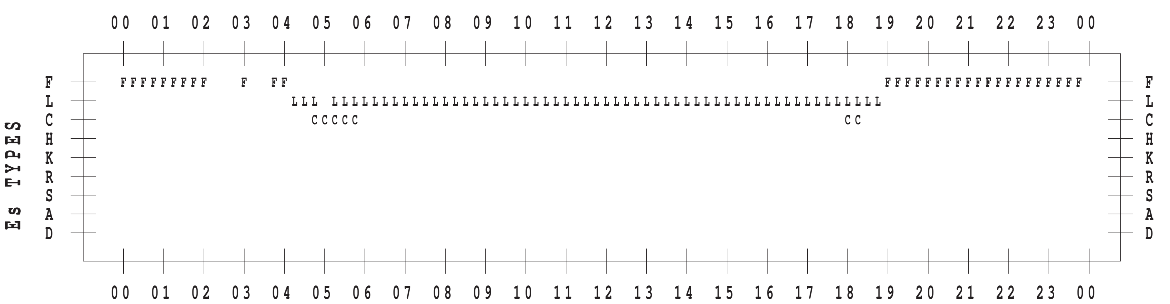
SCALER : I.NISHIMUTA

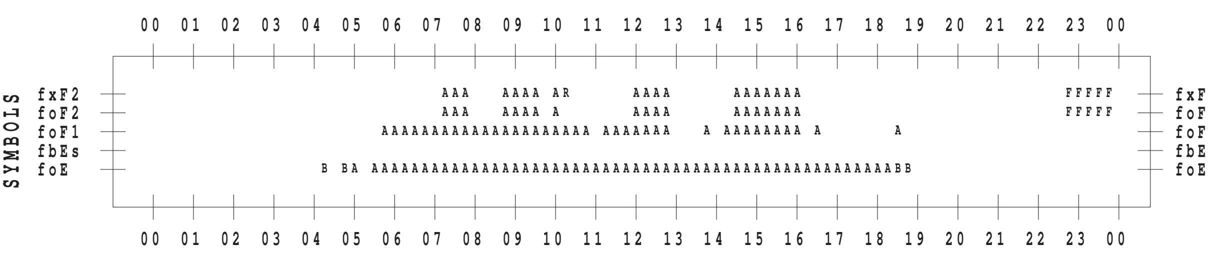
STATION : Kokubunji

DATE : 2011/ 6/19

135 °E MEAN TIME







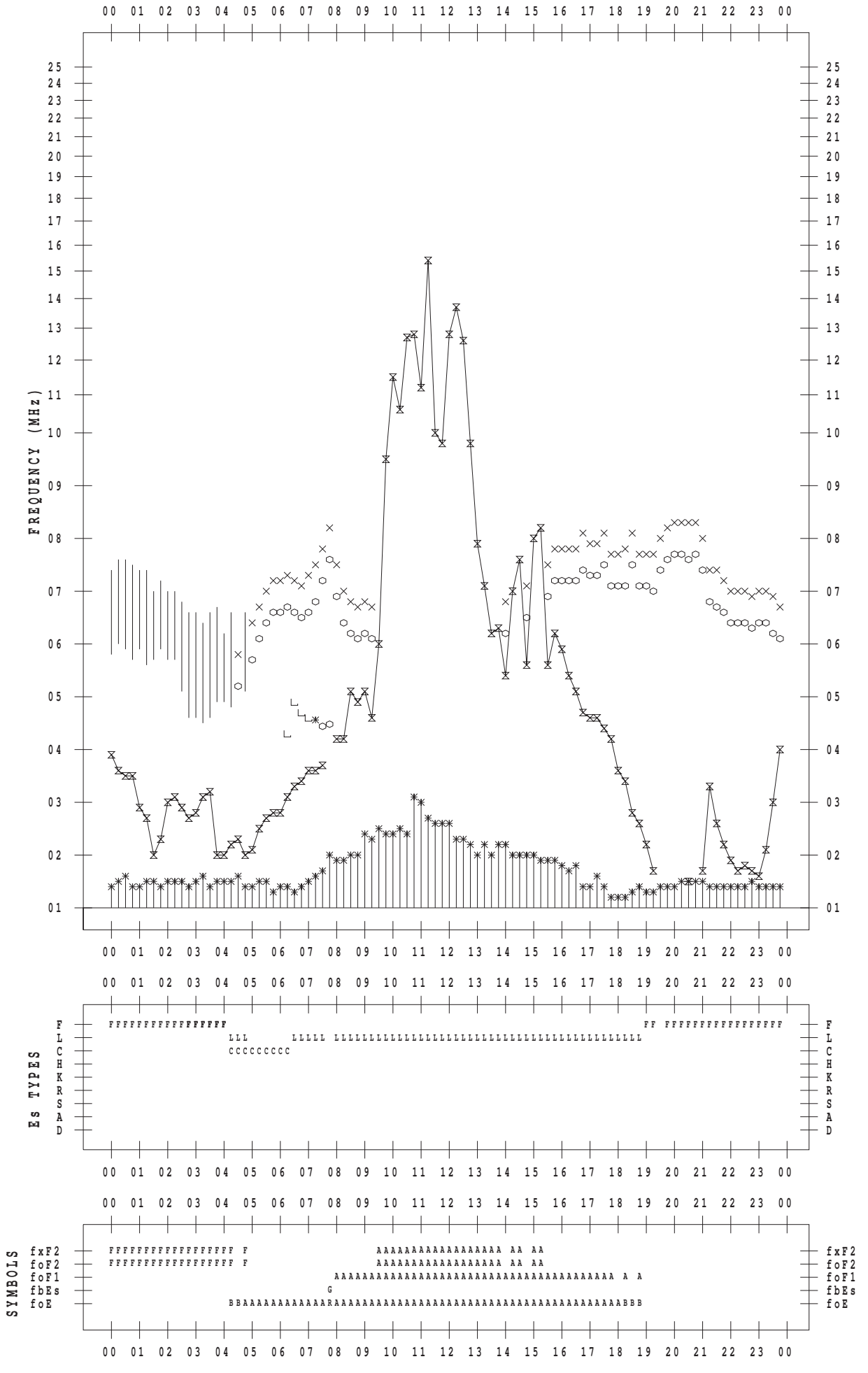
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/20

135 °E MEAN TIME



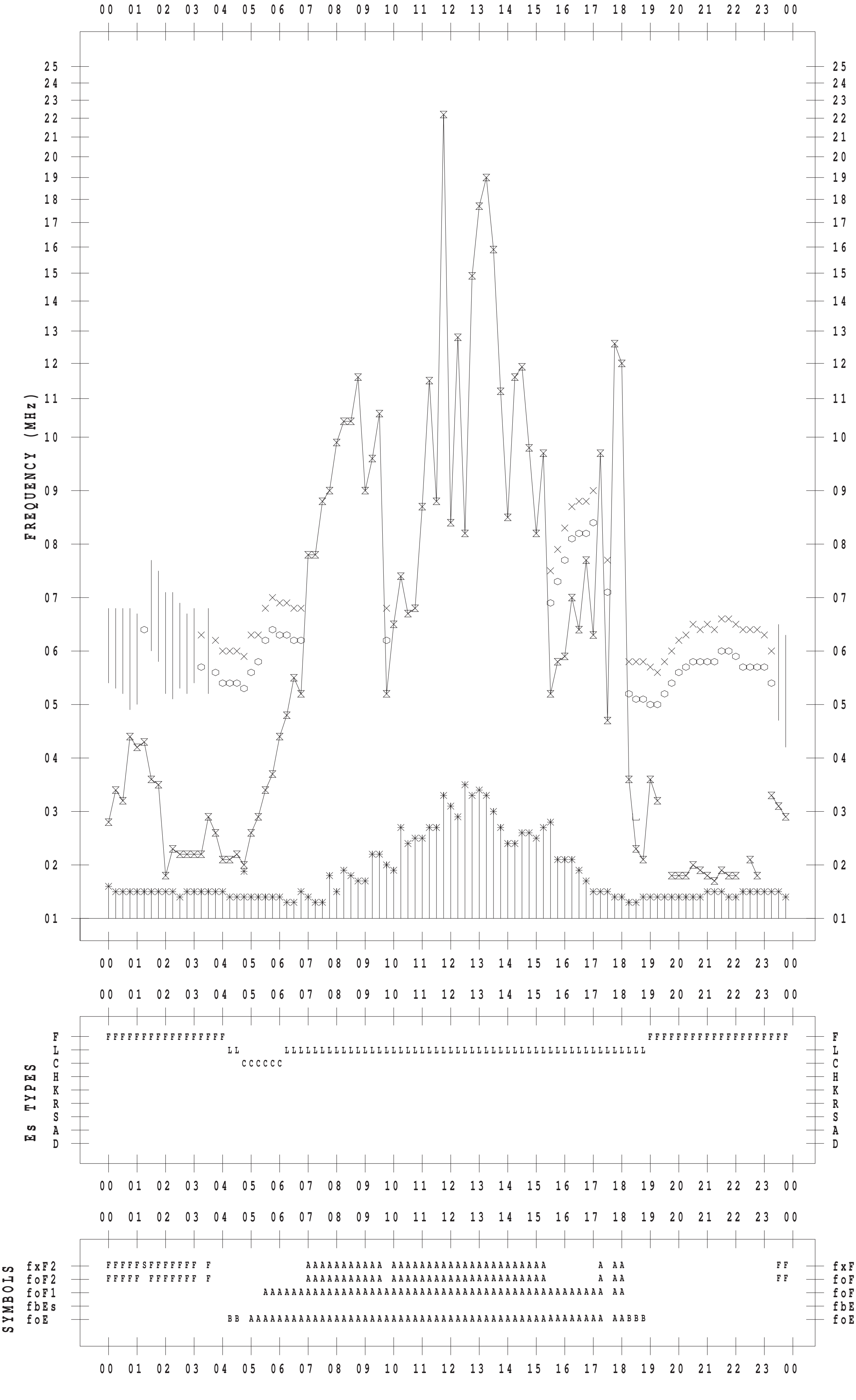
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/21

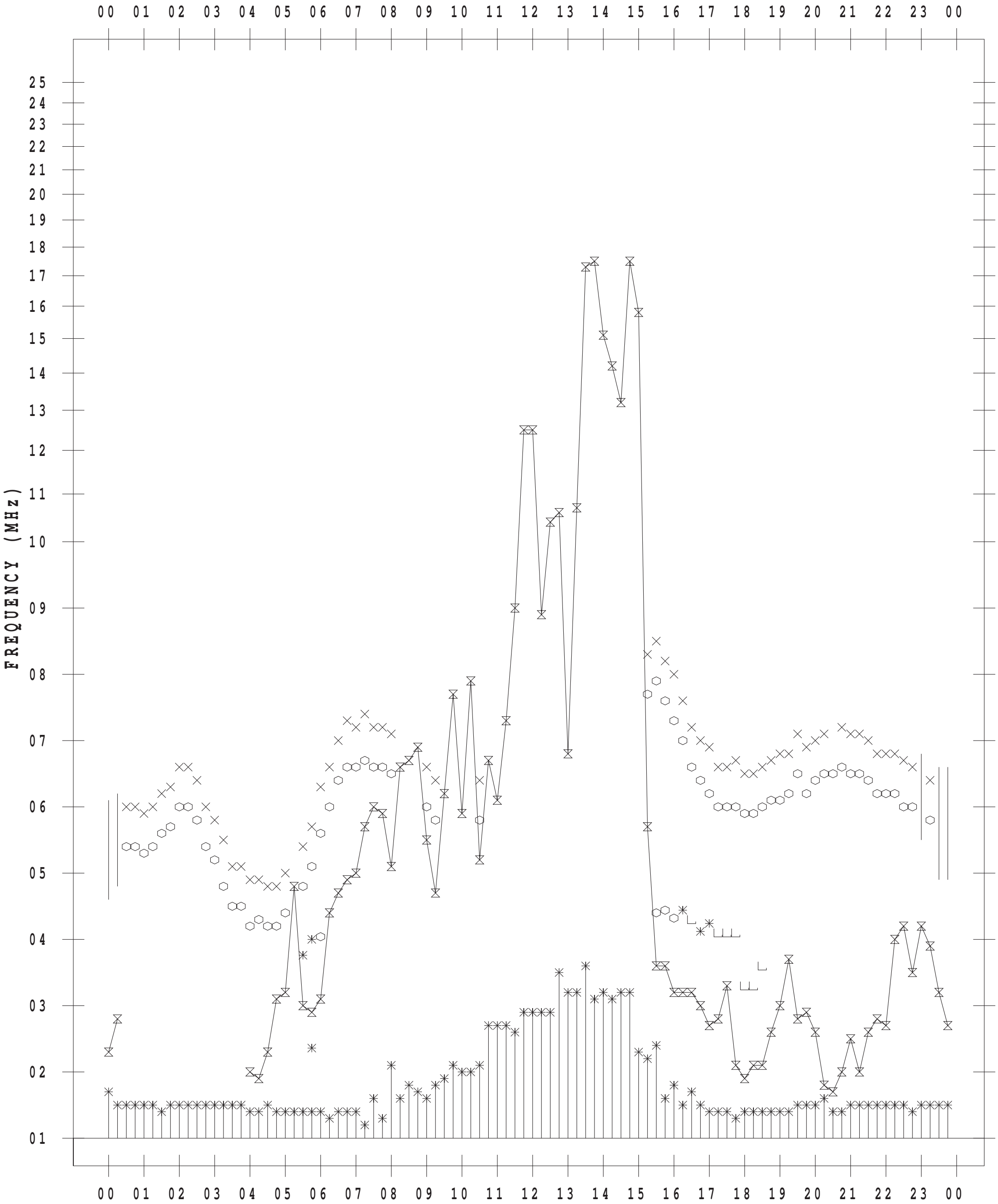
135 °E MEAN TIME

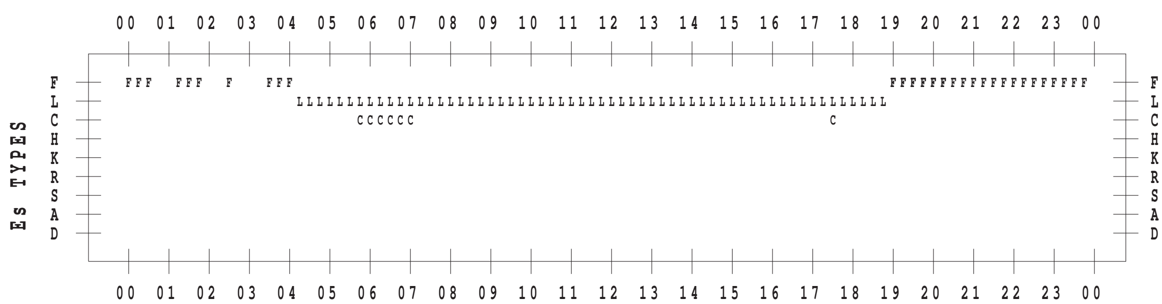


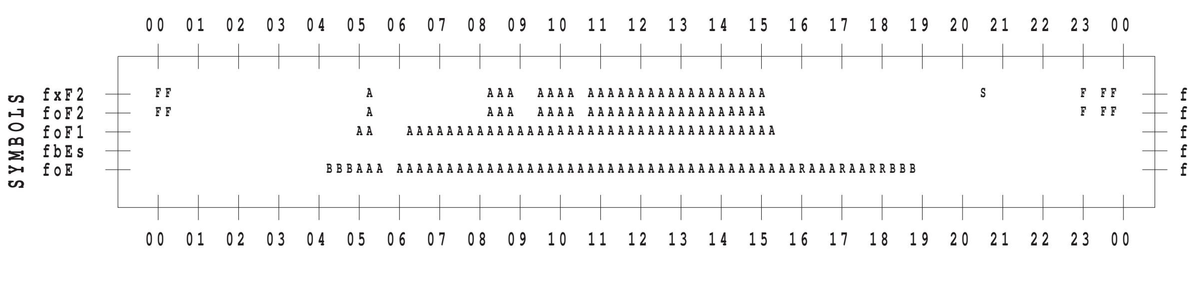
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 6/22







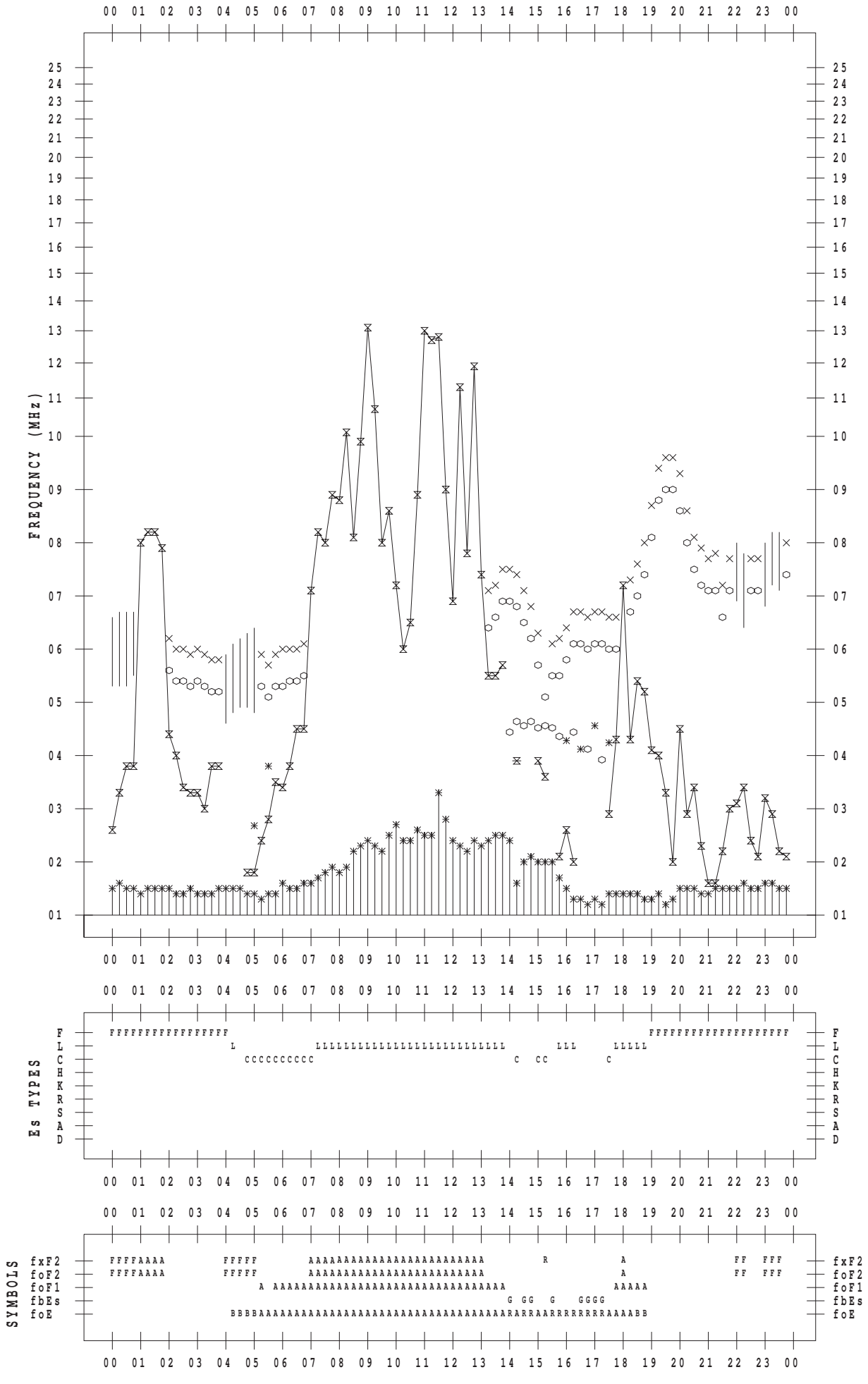
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/23

135 °E MEAN TIME



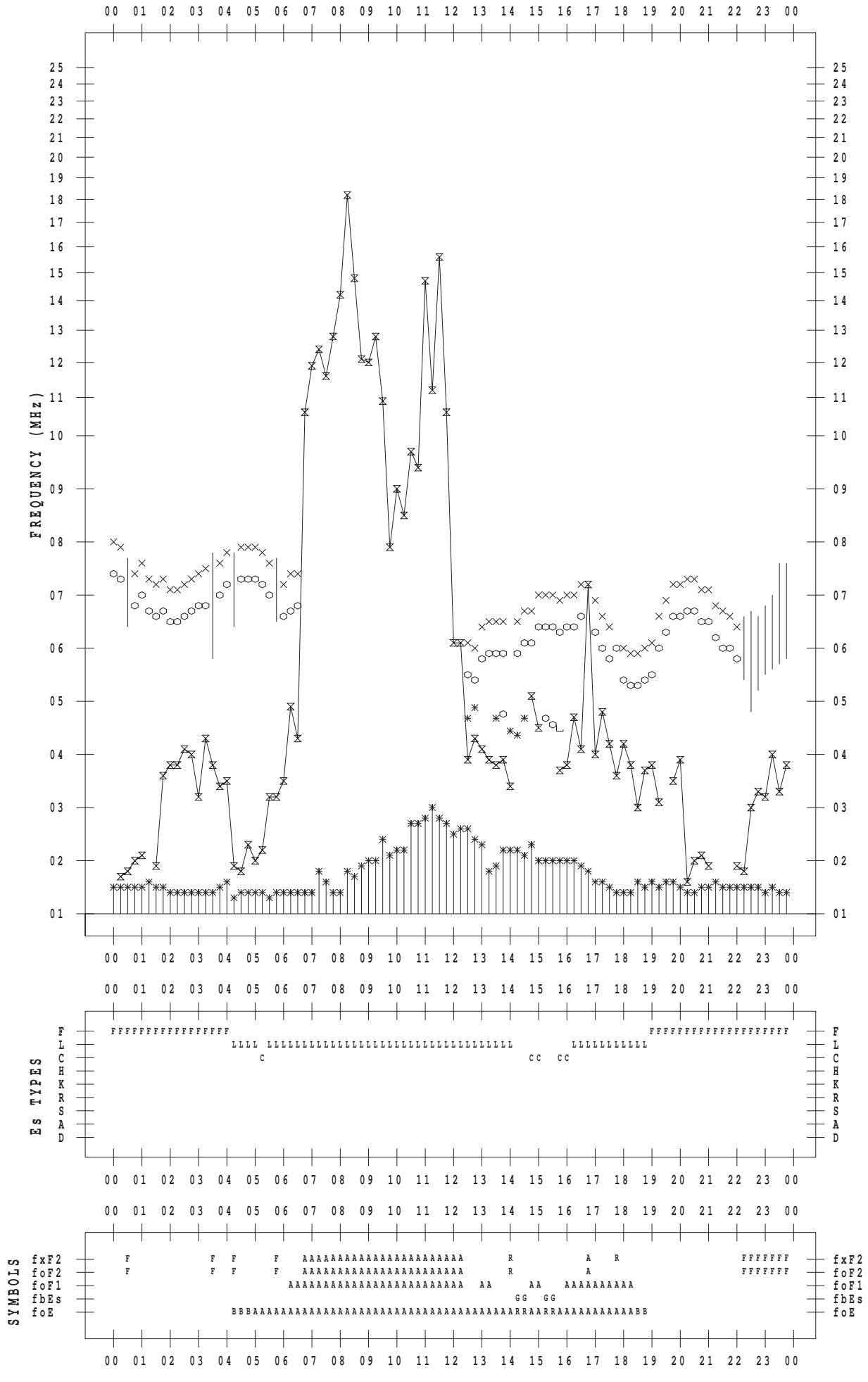
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/24

135 °E MEAN TIME



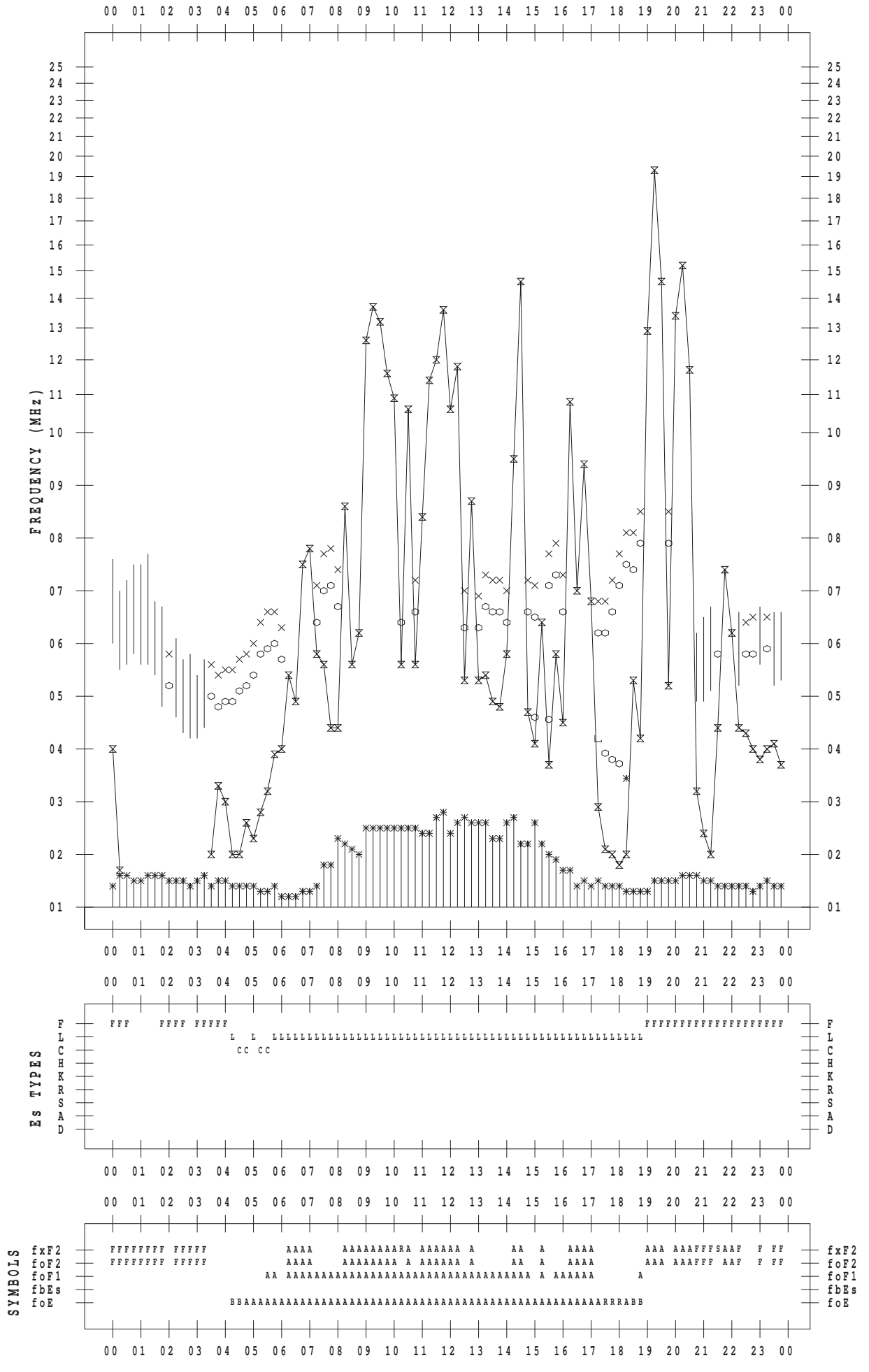
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/25

135 °E MEAN TIME



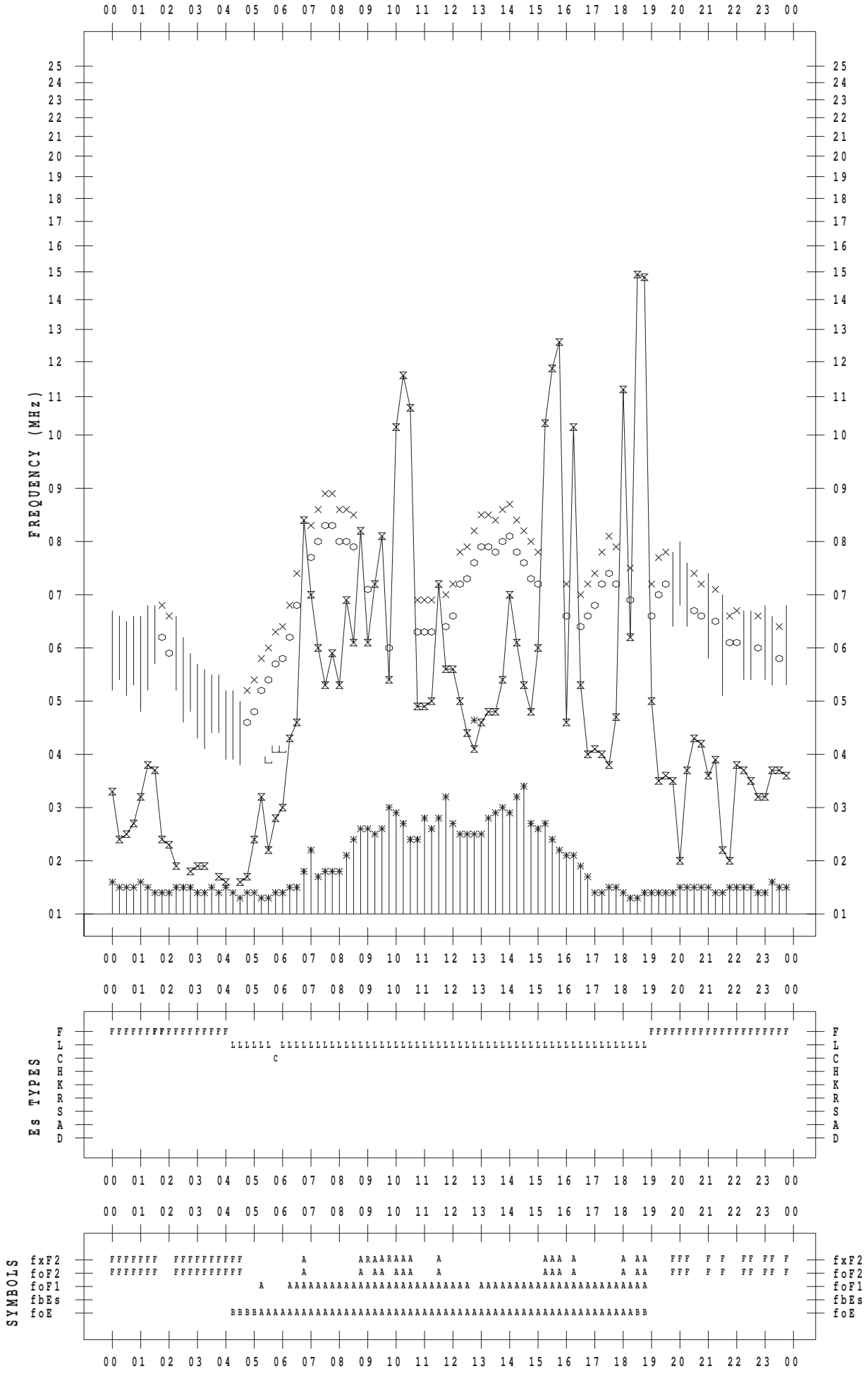
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/26

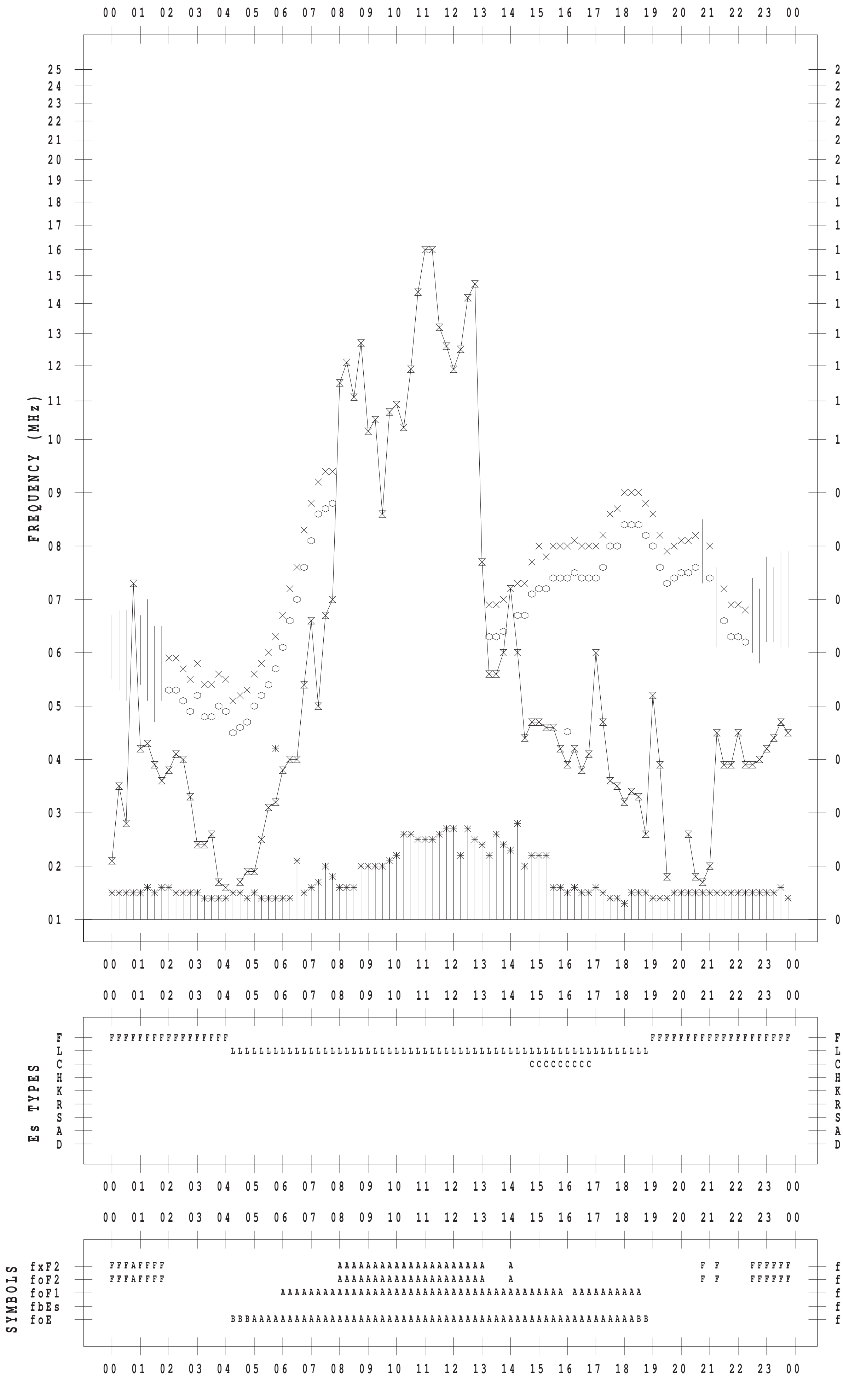
135 °E MEAN TIME



f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 6/27



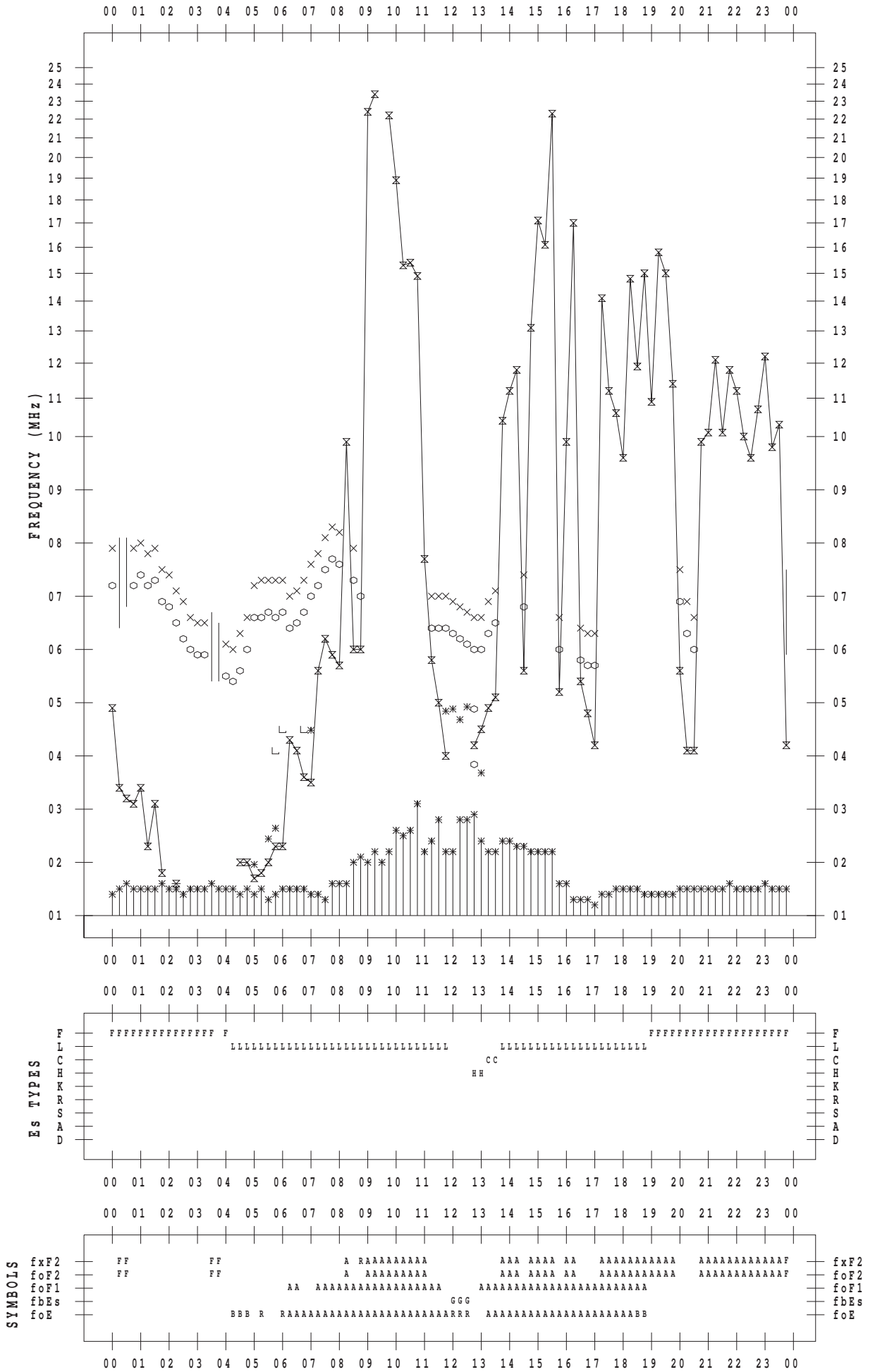
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2011/ 6/28

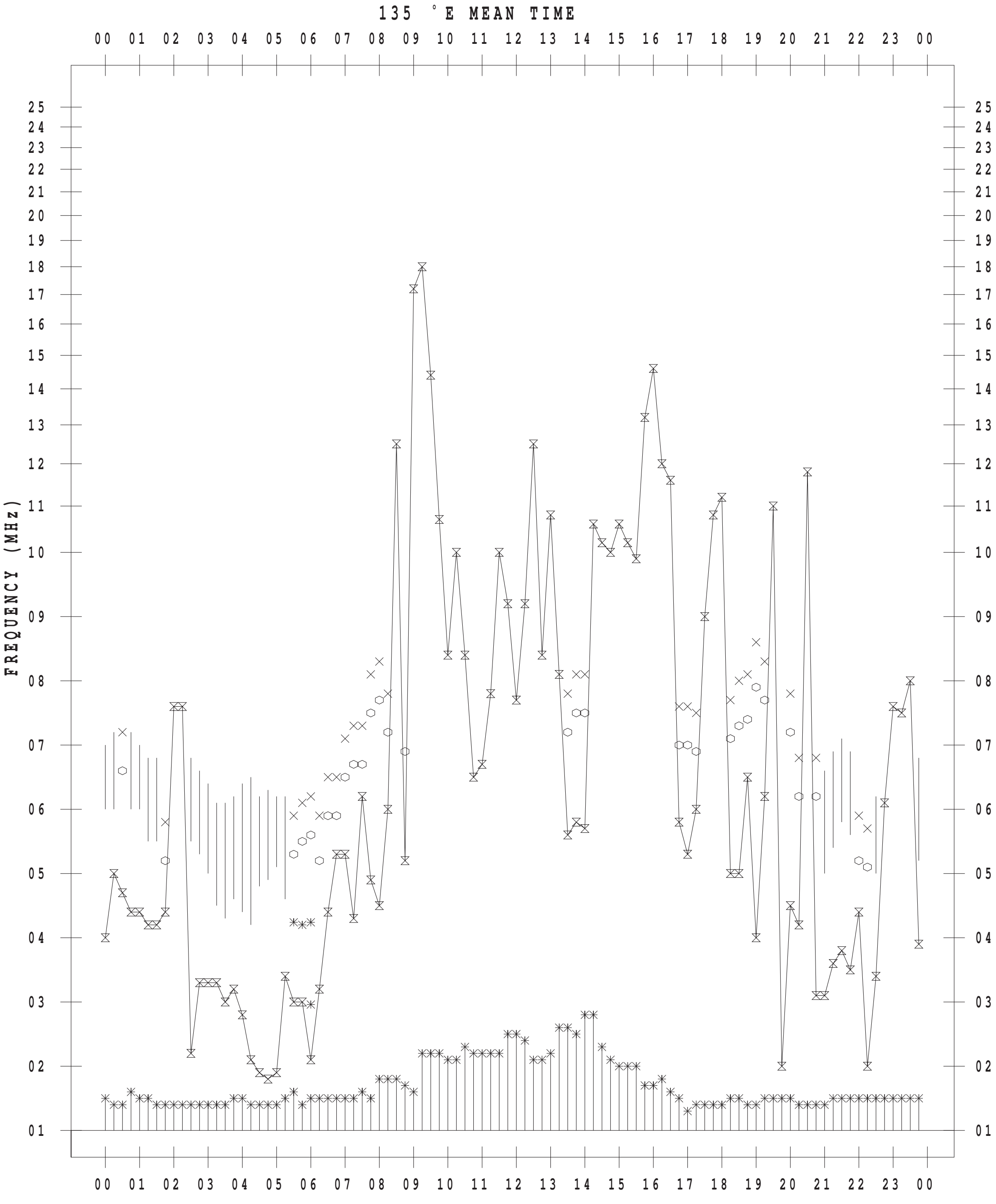
135 °E MEAN TIME

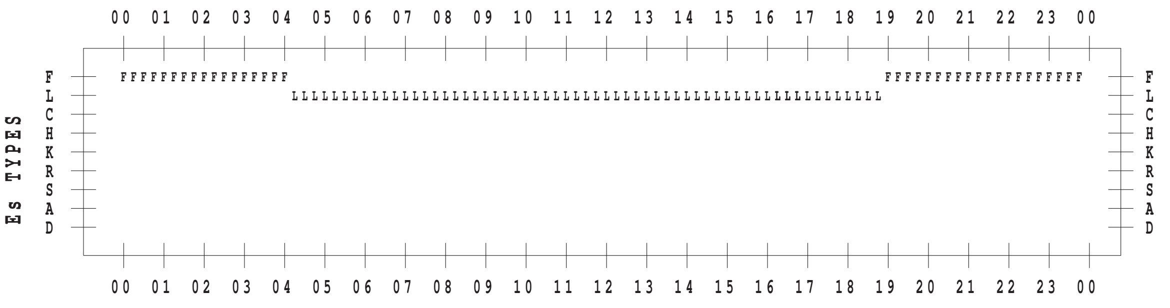


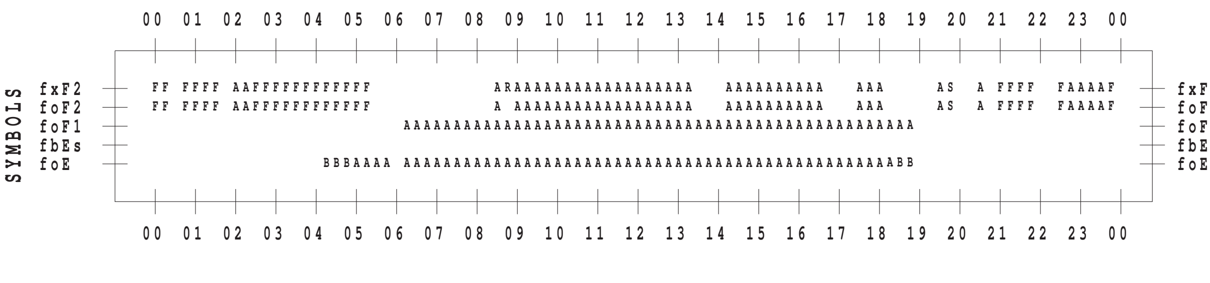
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 6/29





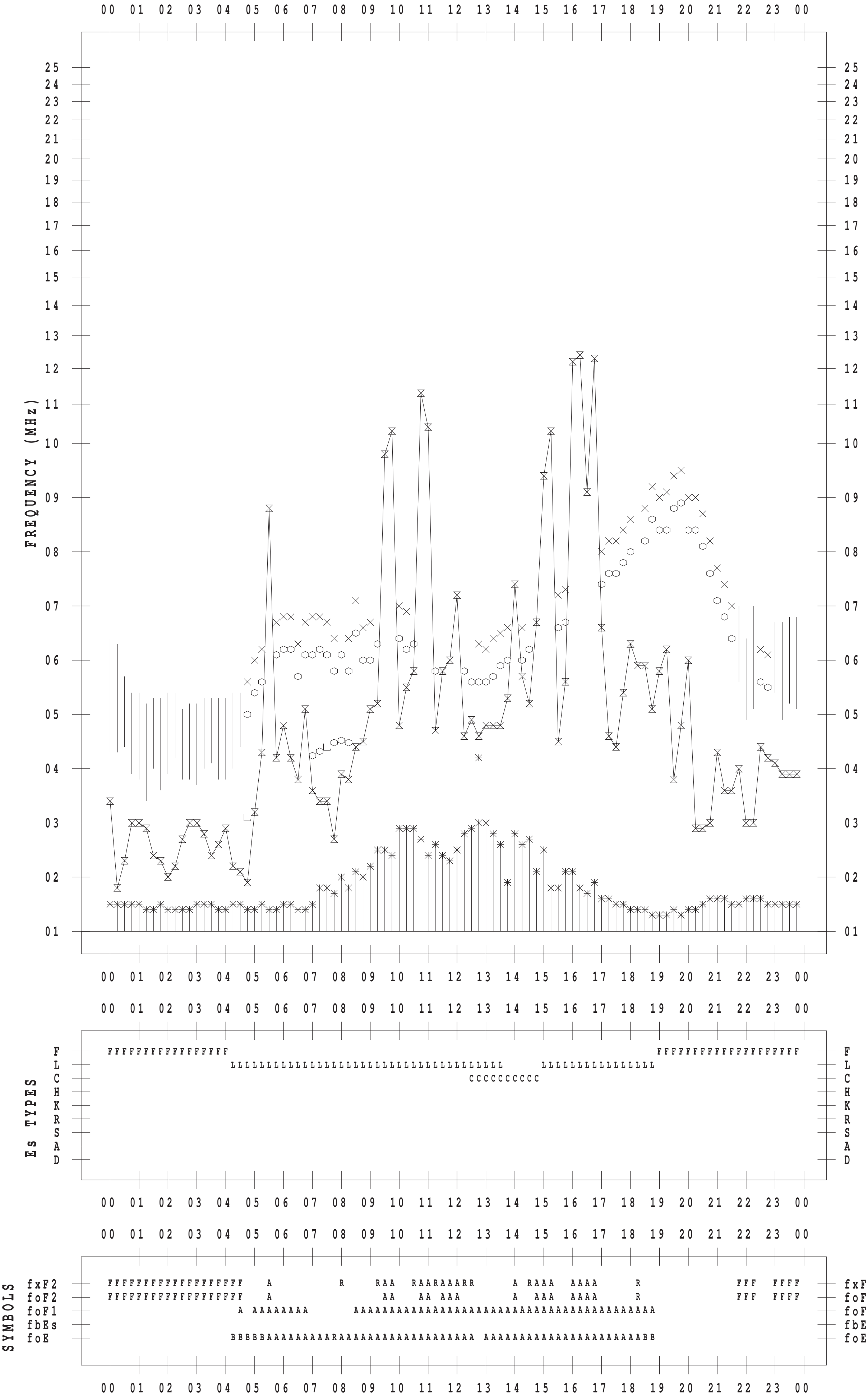


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2011/ 6/30

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso June 2011

Single-frequency observations

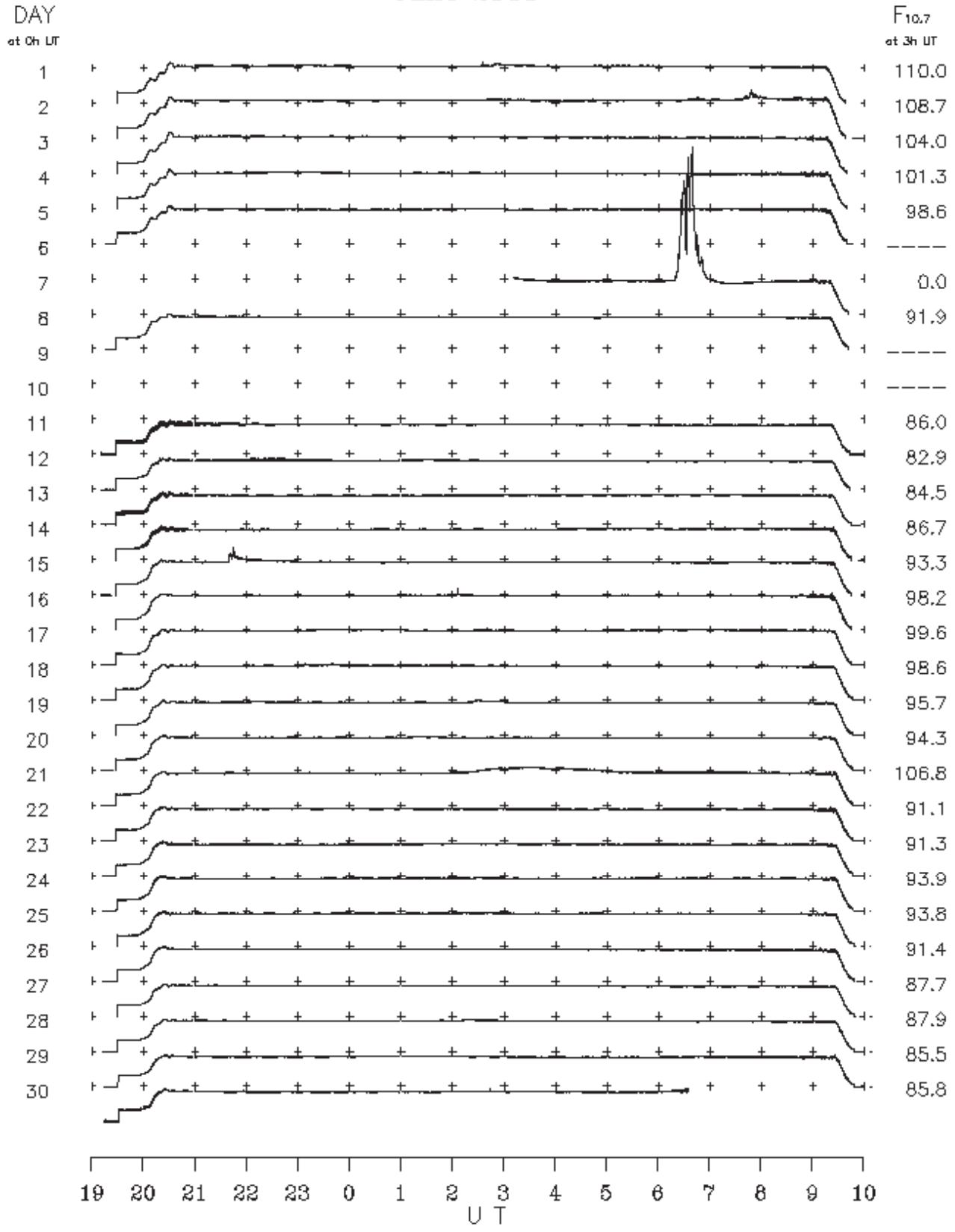
Normal observing period: 1915 - 1005 U.T. (sunrise to sunset)

JUN. 2011	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS
1	2800	7 C	0227.0	0236.0	45.0	10	-	
2	2800	7 C	0630.0	0645.0	14.0	5	-	
2	2800	7 C	0738.0	0747.0	25.0	25	-	
7	2800	7 C	0617.0	0638.0	58.0	375	-	
14	2800	7 C	2141.0	2146.0	86.0	35	-	
17	2800	1 S	2308.0	2310.0	3.0	5	-	
17	2800	1 S	2340.0	2341.0	2.0	5	-	
19	2800	1 S	0223.0	0231.0	12.0	5	-	
21	2800	20 GRF	0154.0	0255.0	226.0	15	-	

B.Solar Radio Emission

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

June 2011



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°
A link to the daily plot data directory : http://sunbase.nict.go.jp/solar/denpa/hirasDB/2011/06/