F-739

IONOSPHERIC DATA IN JAPAN

FOR JULY 2010

VOL. 62 NO. 7

CONTENTS

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

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

A. IONOSPHERE

Ionospheric observations are carried out at the above four stations in Japan by means of vertical sounding using ionosondes. The ionosonde produces ionograms, which are recorded digitally on a computer storage medium. The digitally-recorded ionograms are collected from each station by the central computer and reduced to numerical values and Summary Plots by the automatic processing system. The ionograms obtained at Kokubunji are manually scaled by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

Median count (**CNT**) is the number of numerical values from which the median has been computed. In addition to numerical values, the count may include a descriptive letter G.

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

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

If CNT is less than 10, there are blank spaces left.

d. Reliability of Automatic Scaling

The results of the comparison between automatically-scaled values and manually-scaled ones showed that hourly values of *foF2 , fEs* and *fmin* were scaled within a difference of 1 MHz from about 90, 90 and 99%, respectively of the test ionograms.

e. Summary Plot

Daily Summary Plots which are made from quarter-hourly digital ionograms are published to present general ionosphere conditions. The upper and middle parts of a Summary Plot show the diurnal variation of the frequency range of the echoes reflected from the *F* and *E* regions, respectively. The two solid arcing lines indicate the predicted values of *fxE* and *foE* calculated by the method described in the CCIR report 340. The lower part shows the diurnal variation of the virtual height where the echo traces become horizontal.

A2. Manual Scaling

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily *f*-plot.

All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Hand-book of Ionogram Interpretation and Reduction (Second Edition) 1972 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

fxI	Top frequency of spread ***F*** trace
foF2 ***foF1*** ***foE*** ***foEs***	Ordinary wave critical frequency for the ***F2***, ***F1***, ***E,*** and ***Es*** (including particle type ***E)*** layers, respectively
fbEs	Blanketing frequency of the ***Es*** layer, e.g. the lowest ordinary wave frequency visible through ***Es***
fmin	Lowest frequency that shows vertical ionospheric reflections
M(3000)F2 ***M(3000)F1***	Maximum usable frequency factor for a path of 3000 km for transmission by the ***F2*** and ***F1*** layers, respectively
h'F2 ***h'F*** ***h'E*** ***h'Es***	Minimum virtual height on the ordinary wave for the ***F2,*** whole ***F, E*** and ***Es*** layers, respectively
Types of ***Es***	See below b. (iii)

b. Symbols

(i) Descriptive Letters

The following letters are entered after, or used to replaced a numerical value on the monthly tabulation sheets, if necessary.

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *Es*.
B Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.
C Measurement influenced by, or impossible because of, any non-ionospheric reason.
D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.
E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.
F Measurement influenced by, or impossible because of, the presence of spread echoes.
G Measurement influenced by, or impossible because the ionization density of the layer is too small to enable it to be made accurately.
H Measurement influenced by, or impossible because of, the presence of a stratification.
K Presence of particle *E* layer.
L Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.
M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.
N Conditions are such that the measurement cannot be interpreted.
O Measurement refers to the ordinary component.
P Man-made perturbations of the observed parameter; or spur type spread *F* present.
Q Range spread present.
R Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.
S Measurement influenced by, or impossible because of, interference or atmospherics.
T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
V Forked trace which may influence the measurement.
W Measurement influenced or impossible because the echo lies outside the height range recorded.
X Measurement refers to the extraordinary component.
Y Lacuna phenomena, severe layer tilt.
Z Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets, if necessary.

A Less than. Used only when *fbEs* is deduced from *foEs* because total blanketing of higher layer is present.
D Greater than.
E Less than.
I Missing value has been replaced by an interpolated value.
J Ordinary component characteristic deduced from the extraordinary component.
M Mode interpretation uncertain.
O Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristics only.)
T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
U Uncertain or doubtful numerical value.
Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

f An *Es* trace which shows no appreciable increase of height with frequency.
l A flat *Es* trace at or below the normal *E* layer minimum virtual height or below the part *E* layer minimum virtual height.
c An *Es* trace showing a relatively symmetrical cusp at or below *foE*. (Usually a daytime type.)
h An *Es* trace showing a discontinuity in height with the normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normal *E* trace. (Usually a daytime type.)
q An *Es* trace which is diffuse and non-blanketing over a wide frequency range.
r An *Es* trace showing an increase in virtual height at the high frequency end similar to group retardation.
a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.
s A diffuse *Es* trace which rises steadily with frequency and usually emerges from another type *Es* trace.
d A weak diffuse trace at heights below 95 km as-sociated with high absorption and large *fmin.*
n The designation 'n' is used to denote an *Es* trace which cannot be classified into one of the standard types.
k The designation 'k' is used to show the presence of particle *E*. When *foEs* > *foE* (particle *E*) the *Es* type precedes k.

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

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

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

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

B. SOLAR RADIO EMISSION

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

B1. Outstanding Occurrences at Hiraiso

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

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

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

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

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

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

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

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

B2. Summary Plots of F10.7 at Hiraiso

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

JUL. 2010

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

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

HOURLY VALUES OF fEs AT Wakkanai

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	58	44	44	G	38	48	54	40	G	92	94	70	76	114	70	75	38	61	60	67	73	51	43	40
2	41	42	33	G	G	37	58	81	102	67	75	65	62	52	62	73	72	72	112	55	73	72	58	72
3	33	40	38	36	29	G	36	38	62	G	44	63	86	69	G	48	84	52	57	72	67	40	39	52
4	32	58	29	38	30	28	62	74	75	58	87	80	85	56	45	48	68	65	112		35	59	70	69
5	46	38	51	36	27	32	39	73	61	49	49	44	52	114	68	72	97	61	95	56	51	38	33	36
6	68	29	26	32	26	38	44	68	71	68	60	66	70	65	90	70	60	43	62	52	56	38	67	43
7	34	28	24	30	G	54	50	50	73	61	50	67	56	62	44	44	43	48	69	70	43	82	59	53
8	60	59	37	52	58	32	46	114	81	123		96	102	89	49	69	80	118	72		52	60	69	40
9	34	29	G	26	27	33	52	60	56	72	95	59	69	70	74	71	96	117	164	104	124	68	39	50
10	40	53	48	34	G	44	66	68	62	58	60	48	52	50	56	54	103	67	71	73	84	50	71	30
11	37	48	40	28	27	34	72	70	70	75	84	68	59	82	G	G	G	G	34	44	41	56	95	82
12	59	59	51	38	34	43		61	66	64	62	54	41	53	61	53		71	52	49	39	54	70	49
13	32	G	33	25	25	32	46	69	55	70	48	63	68	53	42	42	57	45	47	73	50	72	71	38
14	38	32	39	36	38	39	59	69	71	80	71	69	69	58	62	61	69	78	57	40	45	73	70	57
15	54	39	48	53	73	30	62	73	75	96	102	106	103	68	74	50	69	123	118	72	104	44	58	39
16	34	40	36	44	40	56	55	60	73	69	76	74	126	73	75	102	76	62	70	72	60	50	55	66
17	70	43	39	G	38	44	43	57	58	70	68	96	117	121	85	60	49	116	117	158	113	51	69	70
18	69	69	71	50	24	49	39	52		106	135	104	87	111	115	73	112	86	50	45	48	36	34	35
19	26	38	26	28	34	34	G	46	61	60	43	G	59	G	49	74	80	59	67	61	73	59	38	38
20	40	29	29	G	G	27	38	40	44	G	40		100	55	52	G	95	76	116	58		40	31	G
21	27	29	39	29	40		39	51	83	103		72	63	67	G	69	G	75	46	G		40	70	70	34
22	30	34	40	27	40	37	44	44	72	66	94	76	63	42	39	51	49	69	54	43	53		68	40
23	33	39	34	38	32	53	60	65	67	59	52	53	41	58	51	52	101	54	34	32	29	49	G	36
24	82	94	66	28	34	33	34	35	48	G	74	61	41	103	84	39	44	88	35	39	27	59	41	52
25	40	37	39	66	33	36	38	50	79	96	76	76	70	78	73	88	105	124		39	53	40	48	59
26	56	41	57	38	28	38	61	73	72	142	70	72	44	G	59	54	94	59	97	69	38	33	58	60
27	69	39	40	49	34	G	38	49	70	69	178	117	128		71	92	61	62	34	71	58	56	36	59
28	33	40	39	38	25	33	37	108	69	63	70	68	94	42	63	103	59	58	60	35	38	26	49	73
29	52	32	34	40	33	41	45	50	52	39	71	64	G	77	69	71	73	90	118	54	36	39	33	27
30	G	30	26	28	30	39	40	49	50	G	44	G	44	G	62	52	G		31	46	50	G	37	G
31	G	44	G	33	32	27	G	71	64	58	42	56	G	42	G	38	54	74	72	30	26	32	34	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	30	30	31	30	31	29	30	31	30	31	31	30	30	30	29	30	30	31	31
MED	40	39	39	34	32	36	44	60	68	67	70	68	68	64	62	60	69	68	64	55	50	50	55	43
U Q	58	44	44	38	38	43	58	71	73	80	85	76	87	78	73	73	94	86	97	71	67	59	69	59
L Q	33	32	29	28	26	32	38	49	58	58	49	59	52	52	45	48	49	59	50	41	39	39	37	36

HOURLY VALUES OF fmin AT Wakkanai

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	14	14	14	14	14	17	16	18	15	17	15	14	14	14	14	14	14	14	14	14
2	15	14	14	14	21	14	14	14	15	14	16	17	20	24	15	15	14	14	14	14	14	14	14	14
3	15	14	14	14	14	14	14	14	15	14	18	18	18	23	20	16	14	14	14	14	14	14	14	14
4	14	14	14	14	14	14	14	14	14	15	15	17	18	29	18	15	15	14	14		14	14	14	14
5	15	14	14	14	14	14	14	14	14	14	17	21	15	14	18	17	14	14	14	14	14	14	14	14
6	14	14	14	14	15	14	14	14	14	15	21	20	16	18	20	17	14	14	14	14	14	14	14	14
7	14	14	14	14	14	14	14	17	14	14	16	18	15	20	16	14	14	14	14	14	14	14	14	14
8	14	14	14	14	14	14	14	14	15	14	23	15	21	21	17	14	14	14	14	14	15	14	15	14
9	14	14	14	14	14	14	14	14	15	15	15	15	16	20	16	15	14	14	14	14	14	14	14	14
10	14	14	14	14	14	14	14	14	14	15	16	18	26	20	21	14	14	14	14	14	14	14	14	14
11	14	14	14	14	14	14	14	14	14	15	17	24	17	14	16	15	14	14	14	14	14	14	14	15
12	15	14	14	14	15	14		14	14	14	16	14	18	15	15	15	15	14	14	14	14	14	14	14
13	14	14	14	14	15	14	14	14	16	15	15	15	15	14	14	14	14	14	14	14	14	15	14	14
14	14	14	14	14	14	14	14	14	14	14	15	17	14	16	15	14	14	14	14	14	14	14	14	14
15	14	14	15	14	14	14	14	14	15	14	15	16	22	17	17	15	14	14	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	15	17	15	20	18	16	21	16	14	14	14	14	14	14	14	14
17	14	15	14	14	14	14	14	14	14	15	15	20	32	18	18	18	15	14	14	15	14	14	14	14
18	14	14	14	15	15	14	14	15	15	17	17	16	20	15	16	17	14	14	14	14	14	14	14	14
19	15	14	14	14	14	14	14	14	14	16	15	21	17	18	20	14	15	14	14	14	14	14	14	14
20	14	14	14	14	14	14	14	14	14	14	15		15	21	20	17	14	14	14	14	15	14	14	14
21	14	14	14	14	14		14	14	15	18	16	16	21	18	20	15	15	14	14	14	14	14	14	14
22	14	14	14	14	14	14	14	14	18	15	20	30	18	16	15	14	15	14	14	14	14	14	14	14
23	14	14	14	14	14	14	14	14	14	15	18	20	18	26	18	18	14	14	14	14	14	14	14	15
24	14	14	14	14	14	14	14	14	14	16	30	17	33	29	15	14	14	14	14	14	14	14	14	14
25	14	14	14	14	14	14	14	14	17	18	18	18	17	21	20	16	14	14	14	14	14	14	14	14
26	14	14	14	14	14	14	14	14	14	14	18	17	24	21	15	26	15	14	14	14	14	14	14	14
27	14	14	15	14	14	14	14	14	15	15	20	18	20	23	15	16	14	14	14	14	14	14	15	14
28	14	14	14	14	14	14	14	14	17	15	14	14	26	16	14	16	14	14	14	14	14	16	14	14
29	14	14	14	14	14	14	14	14	14	14	15	18	20	15	15	14	14	14	14	14	14	14	14	15
30	21	14	14	14	15	14	14	14	15	17	27	20	18	16	17	17	15	14	14	14	14	14	14	14
31	14	14	15	14	14	14	14	14	14	14	15	15	18	15	15	15	14	14	14	14	15	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	30	30	31	31	31	31	30	31	31	31	31	31	31	31	30	31	31	31	31
MED	14	14	14	14	14	14	14	14	14	15	16	18	18	18	16	15	14	14	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	15	16	18	20	21	21	20	17	15	14	14	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	14	14	15	16	16	16	15	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	46	45	42	45	46	46	45	55	55	A	A	A	A	A	A	A	58	59	56	54	67	66	47	52
2	47	47	46		39	44		57	55				A	A	56	58	62	52	53	63	71		A	46
3	44	42	A	37	36	41	54		66	64				A	A	66	63	68	67	71	66	54	52	52
4	47	55	42	42	42	44	53	56	A	64	71	A	A	A	A		48	55	66	67	71	52	A	
5		A			34	A	A	57		68		A	A	A	A	A	61	A	A	74	65	A		A
6	A	A	A	A	26	A	49	A	55	A	A	A	A	A	A	A	56	A		67	66	A	51	54
7	44	44	A	A	A	A	A	52	67	59	A	A	A	A			60	52	53	59	54	54	52	45
8	A		42	42		34	49	52	56		A		A	A	A	A	59		A	A	66	54	54	A
9	A	42	A	32	34	A	A	75	A		A	A	A	A	A	64	A	A	A	69	52	63	64	52
10	46	44	A	31	35	A	A	A	A	A	A	A	A	A	A		52	52	A	A	45	58	52	A
11	A	A	A		37	39	48	44	48	68	52			A	A	A	A	56	A	72	59	46	44	
12				37	39	43	A	A	A	A		A	A	64	A		55	58	A	63	54	54	A	A
13	A	A		27	34	35		71	55	A		A	A	67	A		A	A	A	A	A	57	52	A
14	A	A	A		38		A	63	A	A	A	A	A	A	A	69	58	53	53	59	A	54	45	A
15	A	A	36	36	34		47	51	A	A	A	A	A	A	A	77	77	67	77	59	52		52	
16	44	44	42	44	38		A	47				A		A	A	A	A	A	A	53	52	A	42	A
17		42	A	38		A	40	A	56	A	A	A	A	A	A	A	A	A	69	72	75	49	A	
18	A	38			31	38		54	52			A	A	A	A		64	A	60	66	65	53	49	
19	31	A	A		30	38		A	69	A	A	A	A	A	A	A	A		A	72	A	52	54	42
20	A	42	36	32	34		A	55	A	A	60	A				59	66	65	A	66	73	53	54	59
21	52	42	44	44	45	41		A	59	72	68			A	A	58	61	73	61	69	54	48	44	44
22	A	45	43	42	36	38	54	56	A	A	67	A	60	75	74	77	72	78	96	86	53	46		A
23	44	44	44	45	52	47	A	59	A	A	A		A	A	A	A	A	A	A	A	52	52	51	44
24	44	47	52	36	41	43	49	56	61	A					A	63	63	A	51	62	54	A	53	
25	48	41	46		37		52	54	53					A	A	A	A	A	A	67	72	63	44	52
26	53	48	46	45	41	43	A	A		54		56			A	A	A	58	66	75	53	67	54	43
27	42			44	36	39		57	A	A	A	A	A	A	A	62	62		61		77	76	67	67
28	53	55	42	41			54	52	64	48	48	A			62	62	63	64	61	72	A	51	54	54
29	52	44	45	44		45		A						A	57	58	69	74	69	66	52	54	A	51
30	47	42	41	42	34	36		A			A	62	A	A		56	48	53	56	55	51	54	45	44
31	46	44	44	36	34	32	44	54	54	A		67	A	A		54	60	63	68	61		44	45	44
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	21	17	22	26	19	13	21	16	8	6	3	1	3	4	14	22	18	18	26	26	25	24	17
MED	46	44	43	42	36	41	49	55	56	64	64	62	60	67	60	62	61	58	61	66	56	54	52	51
U Q	48	46	45	44	39	44	53	57	62	68	68	67	30	75	68	66	63	67	68	72	67	57	54	53
L Q	44	42	42	36	34	38	46	52	54	56	52	56	30	64	56	58	58	53	56	61	52	51	45	44

HOURLY VALUES OF fEs AT Kokubunji

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	37	24	G	29	28	33	41	46	48	51	53	86	47	80	60	95	G	G	G	G	G	G	G	G
2	G	G	G	26	G	32	50	35	62	54			103	122	G	40	G	G	38	32	G	33	36	33
3	29	29	37	23	G	31	35	60	49	70				51	123	47	53	G	46	G	29	G	26	26
4	29	27	35	G	28	30	59	59	70	60	61	58	70	95	65	78	60	G	57	G	34	59	42	37
5	52	39	28	G	G	47		50		102		80	80	62	104	153	45	117	86	40	51	52	32	107
6	54	33	34	26	29	29	31	60	55	79	66	110	73	48	49	106	65	76	82	35	60	80	42	79
7	43	34	43	72	54	51	45	G	50	52	67	50	51	61	60	47	49	51	33	48	34	47	40	48
8	59	49	29	29	31	G	G	52	G	53	54		78	87	94	119	71	60	124	115	81	70	44	55
9	38	G	53	G	G	42	59	69	80		123	106	67	78	115	49	103	154	163	29	29	36	58	33
10	53	49	28	G	G	27	56	64	69	70	79	52	50	49	48		G	44	97	95	50	27	38	93
11	60	54	34	34	G	G	G	G	42	51	G			64	68	60	103	40	81	62	33	33	36	39
12	43	34	34	34	34	29	42	61	72	60	79	78	58	61	48	51	G	53	106	41	51	36	72	57
13	48	34		G	G	27		40	46	59	G	62	61	51	76	G	51	62	59	81	107	80	40	41
14	49	43	34	G	G	35	48	56	135	109	74	81	101	87	101	58	G	39	G	25	60	50	80	70
15	59	87	48	34	27	40	46	50	79	115	175	184	99	92	78	55	53	55	49	30	57	49	33	34
16	36	35	29	28	28		57	G				50		65	71	54	62	62	94	51	G	83	G	
17	29	38	73	30	32	56	34	53	63	70	128	135	80	64	80	61	150	78	28	G	G	29	65	41
18	85	35	29	34	G	G	G	43	51			57	132	90	87	51	48	131	64	38	48	39	29	26
19	29	34	43	36	24	G		75	57	90	62	57	51	100	80	96	137		78	79	59	50	32	29
20	50	28	28	G	G	28	43	44	64	116	47	45				40	53	61	72	55	52	29	28	49
21	G	30	25	G	G	31		72	52	G	G			107	73	53	81	94	72	85	30	G	46	39
22	66	40	45	29	26	G	G	G	73	73	60	49	50	48	G	G	G	49	85	53	36	28		59
23	40	48	55	27	26	G	68	G	86	60	72	80	61	70	64	111	87	60	82	62	48	29	30	36
24	25	27	27	28	G	26	G	G	46	81					86	51	60	80	62	106	32	56	31	42
25	27	40	29	28	34	38	31	36	45		56		47	122	80	105	105	85	131	70	79	60	48	35
26	29	33	29	28	27	61	79	60	50	52		G			123	81	127	51	48	43	35	30	39	33
27	31	73	81	28	G	28	G	53	87	73	64	74	62	60	58	50	G	60	50	54	53	49	50	G
28	36	33	40	27	29	29	G	G	G	G	G	48		52	46	G	62	58	38	63	60	39	G	32
29	G	53	45	32	35	30	G	61		G				65	G	51	60	50	40	29	40	38	59	26
30	33	47	26	26	G	29	G	79	G		78	57	77	72		G	G	34	G	G	28	G	41	40
31	33	G	G	G	G	G	G	G	G	55		G	90	69		G	G	G	37	33	33	32	27	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	31	31	30	31	31	30	27	31	28	26	22	23	22	28	28	30	31	30	31	31	31	31	30	30
MED	37	34	34	28	24	29	35	50	54	60	63	58	68	67	72	52	53	56	62	43	40	38	38	38
U Q	52	47	43	30	29	35	50	60	71	79	78	81	80	88	86	81	81	76	85	63	57	52	46	49
L Q	29	29	28	G	G	26	G	G	46	52	53	50	51	60	53	47	G	40	38	29	30	29	30	32

HOURLY VALUES OF fmin AT Kokubunji

JUL. 2010

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

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

HOURLY VALUES OF foF2 AT Yamagawa

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52	52	51	44	37	38	47	A	52	A						A	A	58	55	55		54	52	A
2	50		48	42	32	38	49	58	53	A	A		A	A		61	67	63	63	72	73	60	40	43
3	44	34	36	41	38	37	47	51	56	48	A	A		A	60	65		81	81	80		52	44	42
4	42		47	52	42	37	46	50		56	66	A	A		58	68	76	79	94	79				37
5	37		34	34		30	38		77	47	A	A	A	A	A	58	A	71	82	88		50	A	40
6	38	36	34	29	29	29	47		A	55	A	A	A	A	A	A	A	66	69		67	A	A	50
7	45	45	42	40	34	32	40	52	62	57		A	A	A	49				A	54	66	67	54	52
8	52	52	44	47	29	29	43	51	56	A	A	A	A			55	A	A	A		73	64	47	
9		32	32			30	47	54	A	A			A		A	63	61	61	72	67		52	60	A
10	44	42		41	42	34	44	71	44	A	A	A	A		A	55	57	52	51	53		58	42	42
11	42	41	41	41	30	28	34	46	58	62		A					55	57	68	71	A	A	47	A
12	40	42	38	38	36	30	41	50	63	A	A	A	A		A	66	57	61	69	61	61	54	54	A
13	46	A		34	38	32		59	A	A	A	A	A	68		A	52	42	42	67	66	54	A	A
14	50	45	37		32	34	47	51	58	A	A	A	A	A	64	66	70	70	76	81	52	53	41	
15	A	A	A	A	A	26	44	44	61	63	A	A	A	A	A	83	78	86	82	53	51	52	A	50
16	48	47	48	38	30	30	42	55		55	A	A		A		A	A		50	52	54	42		36
17		34	A	A	23	A	A		49	61	A	A	A	A	A	A	56	A	77	86	67	34		26
18	A	A	A	34	32	A	A	58	45	A	A	A	A	A	39	67		A	54	62	54	53	43	38
19	38	38	32			A	42	54	50	A	A	A			A	A	A	77	78	A	79	A	52	
20		A	37	34	26	30	38	59	57	A	A	A	A	A		A	77	77	71	53	54	54	50	52
21	A	A	34	32	34		45	46	51	54	A	A	A	A	A		77	A	88	77	53	46		A
22		42	36	34	32	26	43	A	58	A	A	A	64		82	90	96		114	89	A	51	52	51
23	47	42	41	41	41	42	56	44	A	A	A	A		A	A	A	A	88	78	65	A		52	42
24	46	50	48	40	34	31	42	56	72	47	A	A	A	A	63	64	71	75	69	A	52	67	54	47
25	A	44	34	A	A		48	54	48	53		A	A	A	A	A	63	72	80	81	65	39	A	A
26	A	52	54	51	A		40	53	61	50	A	A	A	49	A	66	56	64	74	84	78		53	42
27	38	36	32	34	30	30	40	54	A	A	A	52	A	A	A	A	75	77	74	74	76	78	66	53
28	40	41	41	42	44	42	49	58	58	55	49				63	75	76	86	93	88	86	53	61	A
29	A		42	42	45	69	A	47	56	51	A	A	A	A	A	A	70	70	A	A	A	A	A	47
30	47	44	41	40	37			50	54	53	A	A	A				57	64		58	51	51	46	47
31	47	52	48	45	38	31	37	51			A	A	62	66	A	67	A	A	A	A	A	A		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	22	26	25	25	24	26	26	23	16	2	1	2	3	8	16	20	23	26	25	20	23	20	19
MED	45	42	41	40	34	31	44	52	56	54	58	52	63	66	62	66	68	70	74	71	66	53	52	43
U Q	47	47	47	42	38	37	47	56	61	56	66	26	64	68	63	67	76	77	81	81	73	58	54	50
L Q	40	38	34	34	30	30	40	50	51	50	49	26	62	49	53	62	57	61	68	56	53	51	45	40

HOURLY VALUES OF fEs AT Yamagawa

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	28	G	31	35	G	44	50	152	51	G	42	G	46	62	82	50	34	32	51	54	40	49
2	G		40	48	50	G	33	40	50	62	90	51	52	54	54	40	G	G	G	28	G	G	G	G
3	G	G	G	25	G	G	36	65	44	42	43	47	43	42	G	63	82	G	40	G	G	G	G	G
4	G	G	G	G	G	G	27	38	53	50	50	78	84	50	51	48	59	40	87	34	53	44	52	29
5	29	48	33	32	40	G	35	59		50	62	54	88	75	58	58	98	38	40	33	80	34	54	28
6	G	32	37	32	32	G	36	52	44	94	82	68	115	76	96	74	81	52	40	74	36	50	48	40
7	34	36	G	G	G	28	G	42	46	82	67	54	46	53	44	47	50	45	59	53	55	26	59	39
8	33	31	33	37	44	28	40	44	53	60	78	80	83	50	G	47	52	61		65	51	56	49	34
9	37	34	32	31	44	38	44	59	73	55	G	55	53		51	G	G	42	60	48	91	84	59	59
10	39	36	39	27	G	G	36	46	45	63	63	52	53	G	48	G	47	47	35	41	49		49	35
11	34	G	G	G	G	G	G	G	44	45	42	68			42	G	46	43	52	83	80	60	53	53
12	34	26	G	G	G	G	28	38	74	85	59	96	101	57	52	68	50	36	36	30	49	49	59	82
13	51	46	40	33	45	28		46	73	74	66	58	63	43	69	59	62	38	39	83	51	56	65	71
14	44	34	33	29	24	G		53	84	92	82	62	59	99	64	41	G	G	38	29	34	40	28	49
15	40	50	58	70	80		33	33	54	49	95	61	62	103	108	61	61	48	40	40	40	G	70	46
16	34	G	G	G	G	G	36	40		61	49	49	G	76	G	58	59	39	36	44	50	34	26	34
17	59	36	58	45	32	59	55		40	62	84	92	98	58	74	81	61	82	64	114	51	33	45	29
18	81	58	70	43	40	58	56		46	60	67	55	49	72	46	91	94	118	39	43	34	40	29	24
19	28	40	33	72	34	50	35	42	46	71	130	68		G	57	76	97	80	46	104	70	86		59
20	50	57	33	G	36	28	28	36	49	89	64	75	88	82	61	132	51	51	44	57	49	36	50	54
21	71	67	G	28	32	39	27	39	45	41	57	61	54	70	91	64	46	96	44	52	70	50	57	82
22	40	29	27	33	36	38	32	72	52	77	79	95	60	66	54	62	64	64	59	68	81	49	34	33
23	36	28	34	G	G	G	31	42	50	90	74	74	61	62	86	104	116	71	53	56	65	33	34	32
24	33	26	26	29	G	G	28	44	36	47	124	102	63	88	52	58	62	63	60	60	53	53	38	39
25	57	29	55	72	39	40	40	40	38	46	54	52	80	52	50	50	48	40	40	36	29	36	93	51
26	50	36	50	40	44	38	31	32	67	52	44	44	82	56	44	G	G	36	48	G	G	G	G	G
27	G	G	G	28	G	29	29	34	61	93	96	51	61	80	112	74	67	89	36	34	35	28	25	G
28	40	34	48	34	26	G	32	32	G	39	G	G	G	G	43	40	46	G	36	45	36	24	30	70
29	70	54	40		50	86	59	36	44	56	59	79	82	62	83	83	49	56	116	94		60	56	40
30	32	34	38	28	27	33	46	40	G	G	56	50	87		42	44	40	38	60	38	33	G	47	49
31	43	G	46	27	G	G	27	34		40	56	55	48	G	52	63	79	122	104	88	89	59	49	49
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	30	31	30	29	29	28	31	31	31	29	28	31	31	31	31	30	31	30	30	30	31
MED	36	34	33	29	32	28	33	40	48	60	63	58	61	58	52	59	59	47	42	45	50	40	48	40
U Q	50	40	40	37	40	38	38	46	53	82	82	75	83	75	69	74	79	64	59	68	65	54	56	53
L Q	29	26	G	G	G	G	28	36	44	47	51	51	50	46	44	44	46	38	38	34	35	28	30	29

HOURLY VALUES OF fmin AT Yamagawa

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	15	14	17	15	14	15	15	14	18	18	33	20	20	46	20	14	16	14	14	14	15	14	14
2	15		14	14	14	14	14	14	14	16	17	34	33	21	30	18	16	14	14	15	14	15	15	17
3	17	16	18	15	14	22	14	14	14	18	20	22	22	20	20	18	18	14	14	14	15	15	14	15
4	21	24	14	15	15	14	14	15	15	16	16	17	21	28	27	21	14	14	15	14	15	14	14	15
5	16	15	14	14	14	14	14	15	14	17	20	21	26	26	20	21	15	14	14	14	14	14	15	15
6	21	14	14	14	14	14	18	17	15	17	17	26	21	26	18	18	15	14	14	14	14	14	15	15
7	14	15	16	14	14	14	21	14	17	16	18	18	21	21	20	18	17	15	14	14	14	14	14	14
8	14	14	16	14	14	14	14	14	14	18	20	20	35	47	17	24	17	14	14	14	14	14	14	14
9	14	15	14	15	14	14	14	14	15	18	20	24	28		21	18	18	14	14	14	15	15	15	14
10	14	22	14	14	15	15	14	14	14	17	20	27	26	24	18	18	17	14	14	14	14	14	14	14
11	14	15	14	15	14	14	15	14	15	17	21	27			26	20	18	14	15	14	14	14	15	14
12	14	15	16	14	14	15	14	14	14	17	22	21	21	20	28	21	17	14	14	15	14	14	14	14
13	15	14	14	15	14	14		14	14	18	20	26	23	22	23	20	18	15	14	14	15	15	14	14
14	14	14	14	14	14	15	14	14	14	14	20	27	30	28	30	23	17	14	14	14	15	14	14	14
15	14	14	14	14	14	14	14	14	14	17	18	22	38	35	21	18	17	16	15	14	14	15	15	14
16	14	14	15	14	15	15	14	14		17	20	29	30	27	24	22	18	15	15	14	15	17	16	14
17	14	14	15	14	14	14	14		14	20	18	20	26	26	21	18	16	16	14	15	14	14	14	14
18	14	14	15	14	14	14	14	14	16	17	21	23	24	27	23	22	15	14	14	14	14	14	14	15
19	15	14	14	21	14	14	14	14	16	18	18	18		21	35	18	16	16	14	14	15	15	14	14
20	14	14	14	14	15	14	14	14	14	18	18	21	33	20	28	22	15	16	14	15	15	15	14	14
21	14	14	15	14	14	14	14	14	21	15	21	24	26	23	26	20	20	17	15	14	14	14	14	14
22	14	15	15	14	14	14	15	14	14	18	20	33	26	23	24	22	17	15	14	14	14	14	14	14
23	14	15	14	16	14	14	14	14	15	16	18	22	24	27	27	23	20	15	14	15	14	14	14	14
24	15	14	15	15	14	14	15	15	16	15	30	24	34	30	34	18	20	15	14	14	15	14	14	14
25	15	15	15	15	14	14	14	14	15	17	20	21	27	29	22	18	15	15	14	14	15	14	14	14
26	14	14	14	14	14	14	14	14	17	18	20	21	27	26	26	20	17	14	14	18	17	14	15	15
27	15	15	15	16	14	15	14	14	14	18	23	28	24	29	20	21	20	14	14	14	14	14	14	15
28	14	14	14	14	14	14	14	14	14	18	18	26	27	21	20	18	15	18	14	14	15	15	14	15
29	14	14	14	14	14	14	14	14	14	18	18	22	21	24	21	20	15	15	14	14	15	15	14	14
30	14	21	14	14	15	14	14	14	14	16	18	21	27		27	27	20	18	14	14	15	24	14	14
31	14	14	14	15	14	15	15	14		15	21	21	23	50	22	21	17	14	14	14	15	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	31	31	31	30	30	29	31	31	31	29	28	31	31	31	31	31	31	31	31	31	31
MED	14	14	14	14	14	14	14	14	14	17	20	22	26	26	23	20	17	15	14	14	14	14	14	14
U Q	15	15	15	15	14	14	14	14	15	18	20	27	29	28	27	22	18	16	14	14	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	16	18	21	22	21	20	18	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	62	53	53	46				34	56	52					A		63	A	73	81		63		52
2	52	52	50	44	43	45	45	44	53	A				A	A	66	68	75	82	84	73	51		
3	47	46	43	35	36	29	42	54	44	53	A		A		A	67	81	88	90	78	76	50		
4	50	52	50	45	42	36	40	46	52	60	66	A	A		54	72	80	90	114		52		43	40
5	34	37	45	30	34	32	34	60	67			A	A			A	63	76	96	96	54			A
6				28	30		48	56	54	51	39		A			A	59	67	77	71	A	A	52	47
7	44		42	36	A	28		51	55	56	A			A	A	A	A	54	63	A	59	54	52	51
8	44	43	42	42	A	A	32	A	41	A	A	A	A	59		A		60	63	66	76	A	A	A
9	A	A	A	A			A	A	A	A	66						67	72	81	71	53	52	52	42
10			34				55	58	A	A		A	A		A		56	55	53	66	54		32	
11	32	31	34	32	A	A	34	44	57	54	57	A				A	A	67	74	61	A	A	43	A
12	29	29	30	29		A	A	47	52	57	A	A	A	A	61	A	70	71	67	73	63		48	34
13		41	35	30	32	A	42	A	54	46	A		68	77	70	61	A	58	85	81	62		A	A
14	35	A	29	30			43		60	58	A	A		67	70	76	81	86	97		64		42	40
15		A		A	A	A	A	A	A	49	A	A	A	A	A	82	86	89	75	55	A	A		44
16	43	42	44			29	A	63	61	54	A			A	A	63	A		60	63	A	44	30	
17		A	A		A	A	A	A	58		A	A	A	A	A	A	A	A	A	77	A	A	A	A
18	A	A	A				34	A	A	A	A		A	A	A	A	85	76	75	72	67	54		34
19			32	28		A	45	52			A	A	A	A	62	74	76	80	78	72	67	66	54	A
20		38		A	A	A	41	67	49	A	A	A	A		A	78	A	88	90	82	63	46		44
21	52	A	A	A	A			56	58	A	A				A		A	85	88	71	46	A		
22		34	A	29		29		52	A	58	A		A	A	A	100	118	141	131	102			62	51
23		47	43	34	29		44	44	54	A	A	A		67	66	A	96	A	90	A	A	58	52	39
24	44	43			29		32	70	50					68	71	74	88	100	87	81	78	53	49	52
25	53	A	A	A	A	A	44	54	55	49			A	A	A		75	85	92	81	67	63	53	53
26	A	A	52	44	A	34	38	50	56	56	59			67	73	80	77	80	97	102	100	88	53	36
27			30				37	51	56	47	57		A	A	A	68	83	86	87	85	84		72	54
28		44	44	41	36	48	55	72	57	57						88	101	112	130		128	82		
29	47			41	A	34	40	42		A		A	A	65	A	71	A	78	77	80	40	35	A	34
30	34	41	36	36	37	A	A	46	62	63	A						67	75	73	67	53			
31	A	45	42	31	31		A	45	51	53	A	A	A	65	77	80	72	63	60	58	A	43	44	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	17	20	20	11	10	20	24	24	18	6		1	8	9	16	22	27	30	26	22	16	17	17
MED	44	43	42	34	34	33	42	52	55	54	58		68	67	70	74	76	78	82	75	64	54	52	44
U Q	51	46	44	41	37	36	44	57	57	57	66		34	67	72	80	85	88	90	81	76	63	53	51
L Q	34	37	34	30	30	29	35	45	52	51	57		34	65	61	67	67	67	73	67	54	48	43	37

HOURLY VALUES OF fEs AT Okinawa

JUL. 2010

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	32	G	G	G	G	G		36	44	G					58	58	G	76	43	31	40	35	29	34
2	G	G	G	G		30	57	69	50	66	41			50	54	54	G	G	G	G	G	G	G	
3	G	G	G	G	G	G	G	G	39	G	59		48		54	54	65	48	37	G	33	28		G
4	29	G	G	G	G	G	30	G	48	91	59	51	48		44	50	52	64	50	G	G	30	G	G
5	24	G	38	28	G	G	G	51	49			49	49			69	49		37	37	G		43	42
6	30			G	G	G	G	37	134	G	50		51			48	G	G	32		71	58	40	31
7	G	34	G	33	28	G		G	40	40	51	G	G	61	47	52	51	83	56	84	55	51	G	G
8	G	G	40	G	49	32	28	52	50	60	63	51	78	G		42	39	36	46	35	41	46	43	33
9	40	41	68	50	24	G	61	56	73	50	G	G				40	G	G	39	G	29	33	36	27
10			G				G	G	72	54	50	64	52		43	G	G	G	38	34	G	28	G	
11	G	G	G	28	34	28	26	36	G	47	56	61			G	68	60	47	50	54	50	50	G	49
12	G	G	29	G		32	33	36	57	G	44	61	66	72	53	50	52	47	34	G	G		G	29
13	35	G	G	G	50	34	27		41	G	66		G	50	G	50	71	37	G	G	23	G	51	46
14	28	33	G	G		G	28		71	G	102	88		63	60	G	46	37	40		30	30	34	29
15		58	35	66	41	34	90	66	57	50	53	83	82	86	92	79	48	G	38	38	58	50	50	44
16	32	29	G			G	42	47	50	G	52			90	94	63	76		58	51	84	G	34	34
17	42	40	39	28	36	60	68	66	49	47	76	57	59	144	96	82	122	88	88	71	72	71	30	80
18	88	70	67	31	35	29	34	70	72	60	62		71	96	102	74	G	61	33	49	35	G		G
19	27		G	G	39	54	50	48	35		52	112	68	59	G	G	50	50	51	G	28	37	36	57
20		G		35	39	38	32	36	G	73	88	48	77		72	82	110	48	60	42	G	G	G	37
21	32	53	57	51	38	31	31	46	72	58	52				105		78	72	G	53	48	49	34	29
22	40	27	39	26		G	30	32	96	50	66	G	55		153	G	G	82	48	80	47	34	36	G
23		G	G	G	30	G	G	37	52	58	74	67		45	48	94	60	138	76	110	61	34	32	28
24	G	G	G		G		G	G	51	40				55	59	81	75	59	59	39	40	29	27	29
25	49	39	58	51	41	36	28	36	43	G			60	57	63	55	46	47	39	28	G	G	G	G
26	51	59	49	47	40	G	G	G	36	44	54			G	G	G	G	G	G	G	G	G	G	G
27			G				G	G	G	G	G		61	153	49	58	49	39	52	36	36	37	26	G
28		G	50	G	31	27	G	G	G	G						50	G	G	39	35	27	G	G	
29	25	48	36	G	47	29	28	58	50	49		70	68	63	72	60	154	59	40	44	28	38	49	27
30	29	29	31	30	35	36	37	69	50	G	51						52	G	G	G	G		G	48
31	49	29	26	G	28	G	40	37	G	G	65	60	74	56	G	87	58	49	45	45	81	40	33	38
	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	27	29	27	24	28	29	29	31	29	25	17	19	18	25	29	31	29	31	29	31	28	29	28
MED	29	27	26	G	34	28	28	37	50	44	54	60	60	60	54	54	50	47	40	36	33	34	30	29
U Q	40	40	39	33	39	33	38	54	57	56	65	68	71	86	82	71	65	62	51	50	50	43	36	40
L Q	G	G	G	G	12	G	G	G	39	G	50	48	49	50	43	45	G	G	34	G	G	G	G	G

HOURLY VALUES OF fmin AT Okinawa

JUL. 2010

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

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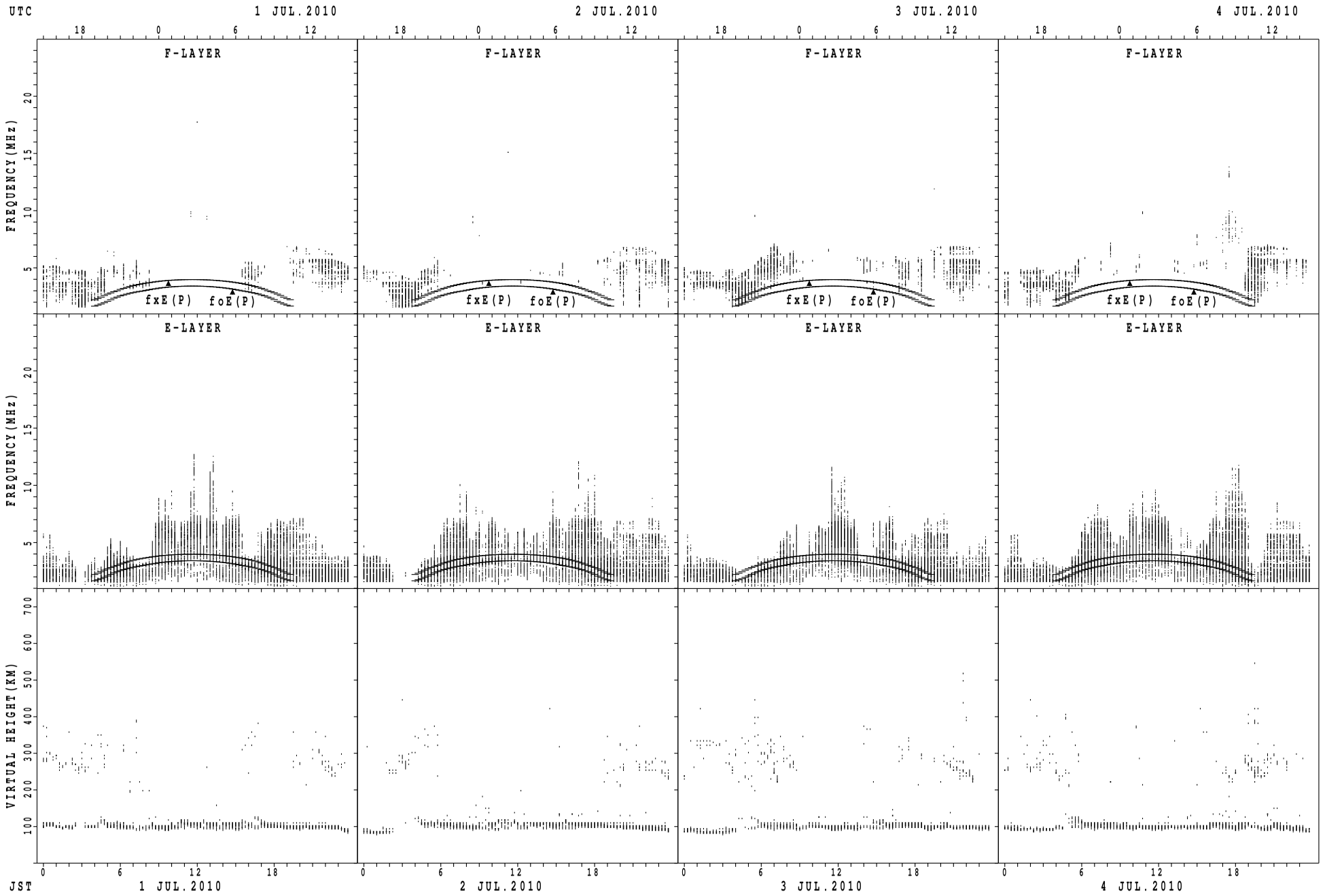
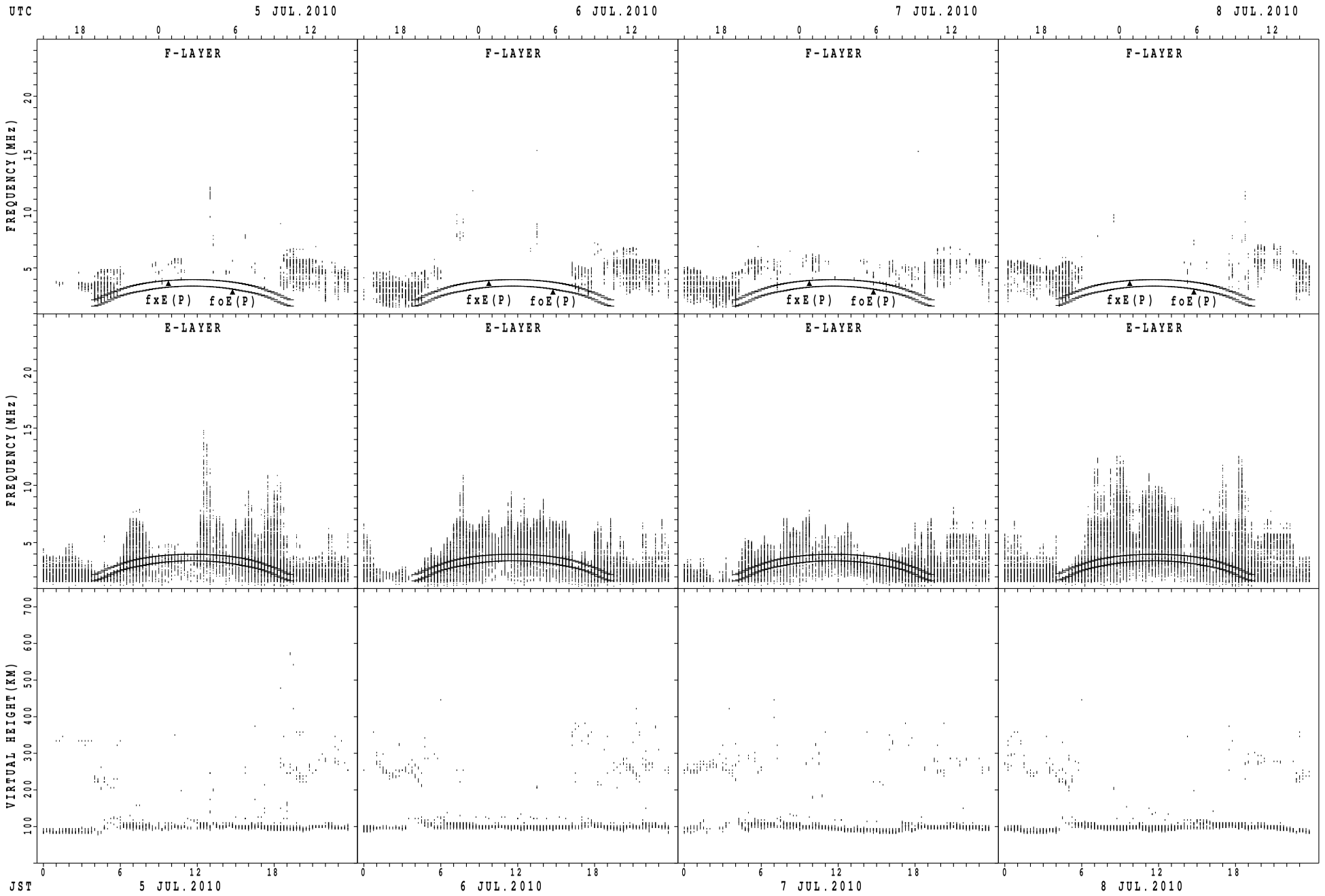
18	18	15	14	15	16	16	14	15	27	23	32		38	35	32	29	23	16	14	14	15	20		23
19	17		20	15	14	15	14	15	18		35	35	40	40	52	50	24	20	20	20	17	20	21	18
20		21		17	17	17	16	17	17	30	34	35	35		35	30	22	21	14	16	15	29	14	14
21	15	15	14	14	14	14	15	14	14	28	38				36		30	27	22	15	15	15	15	16
22	15	16	15	17		20	15	17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

SUMMARY PLOTS AT Wakkanai



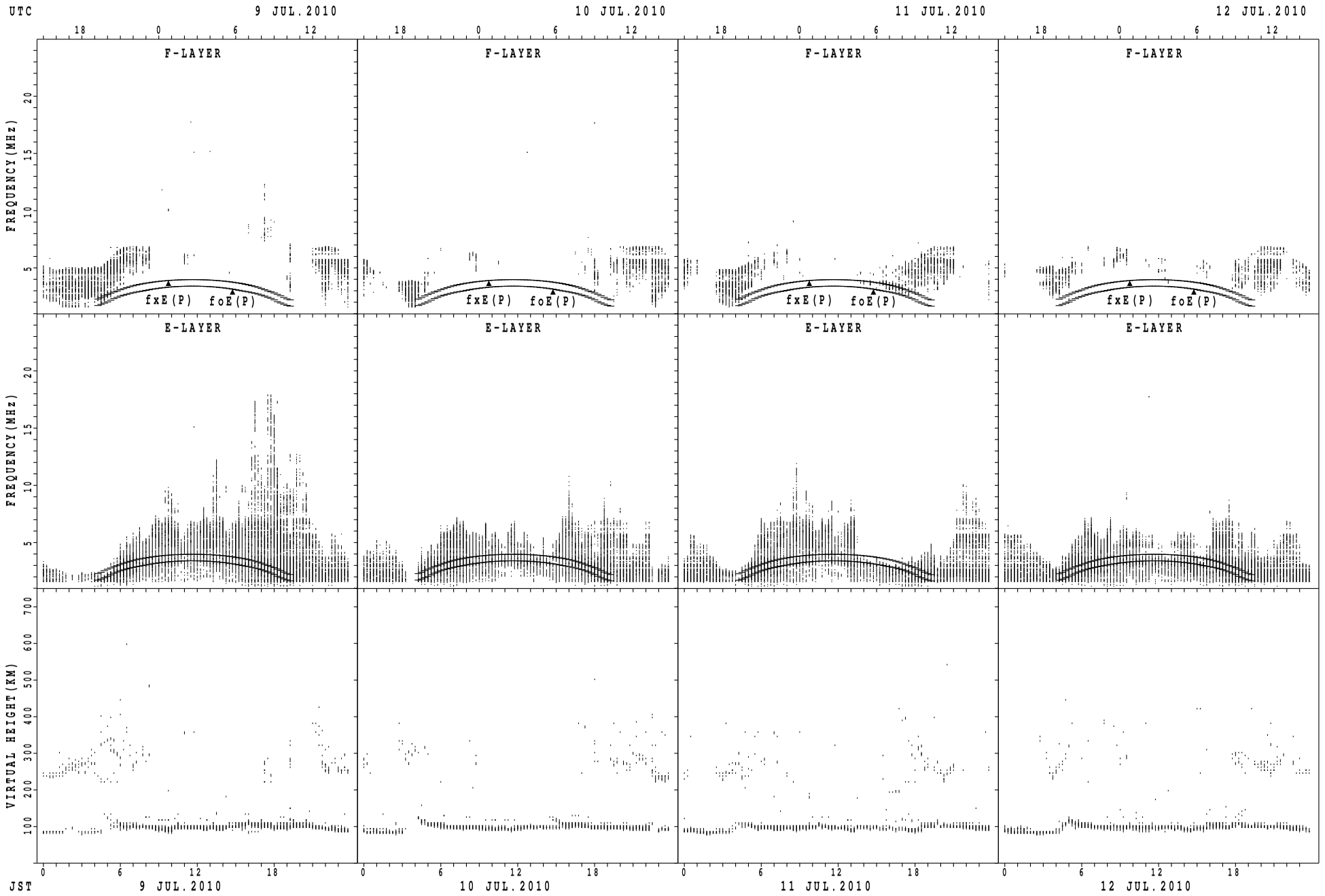
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



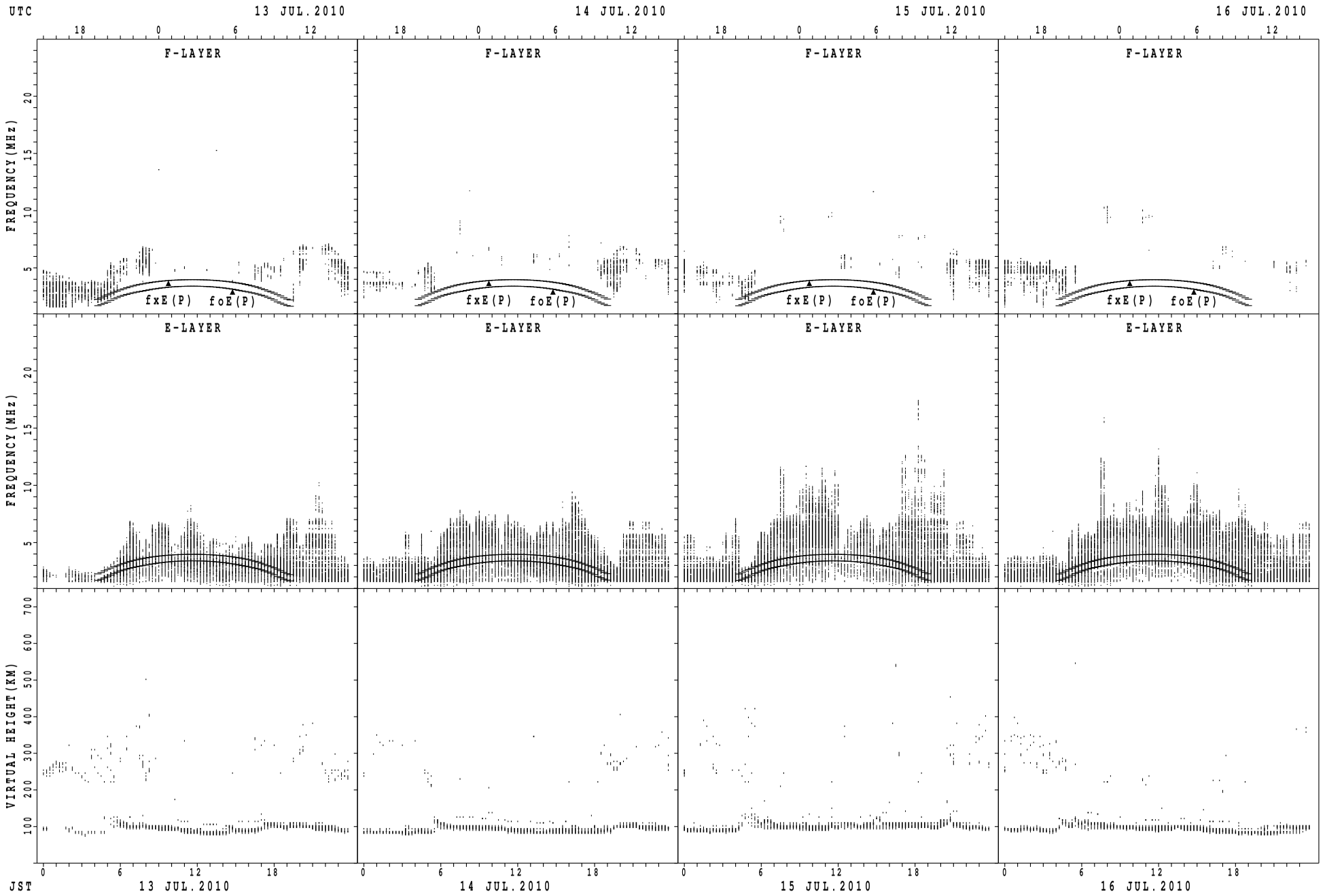
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



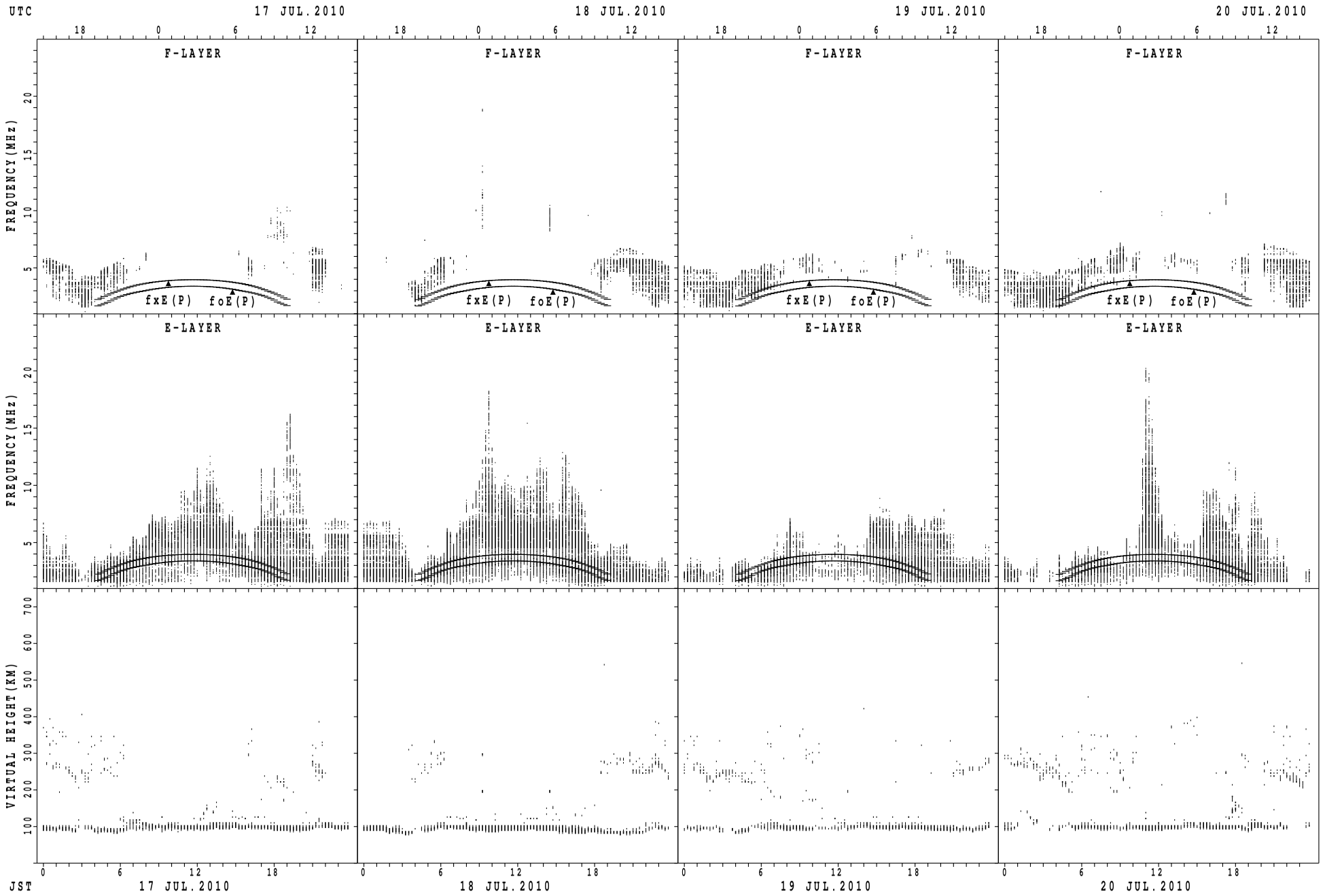
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



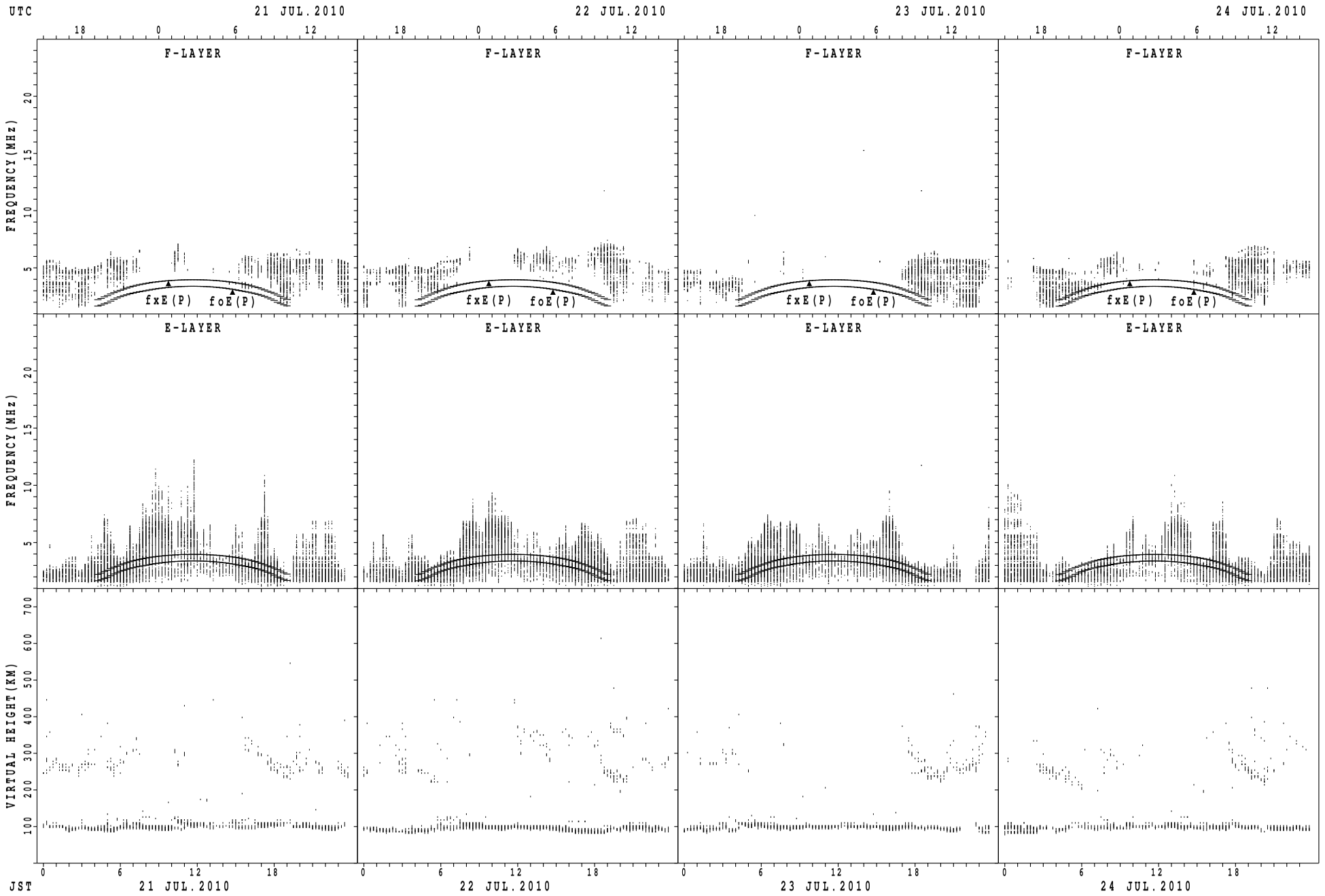
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



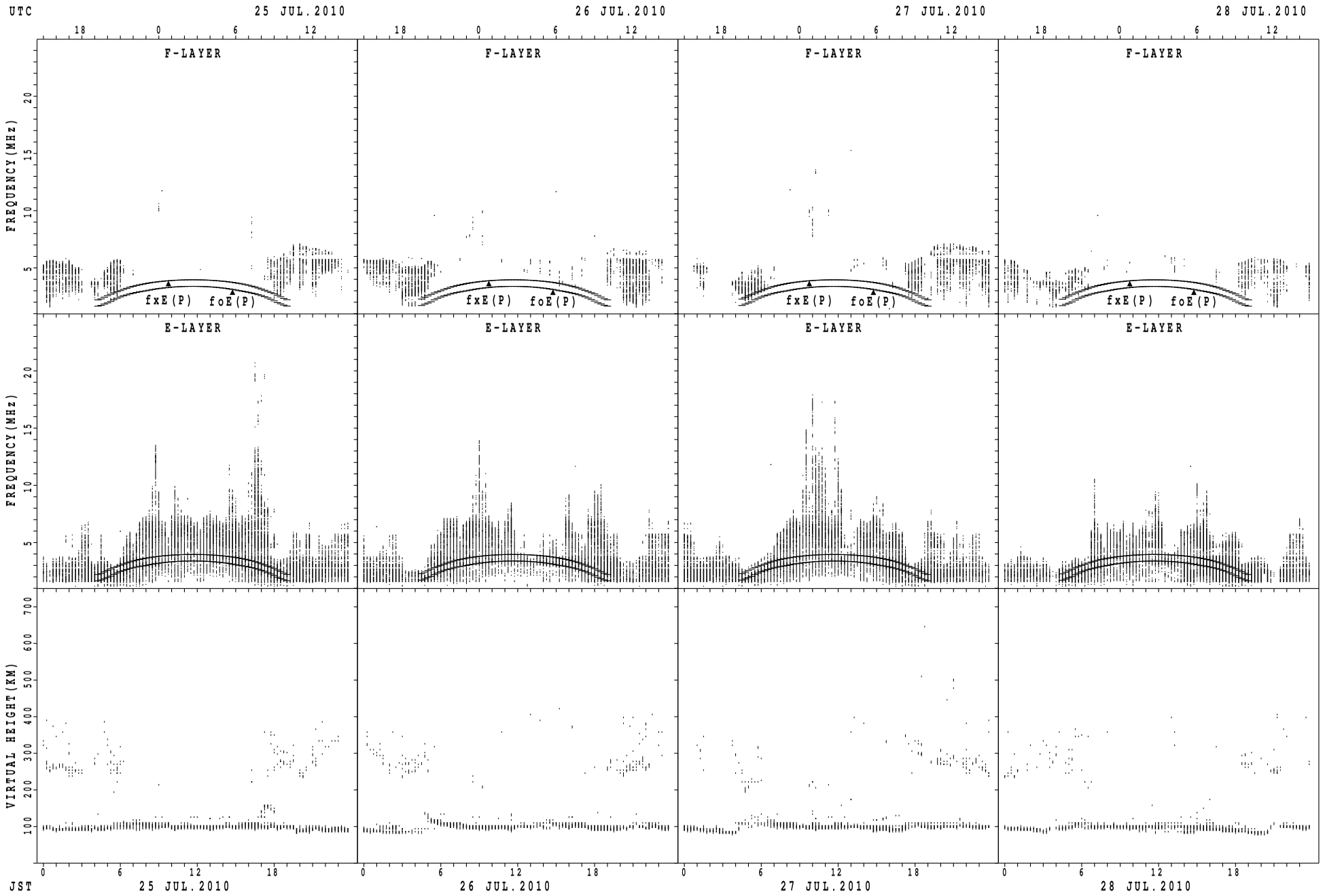
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



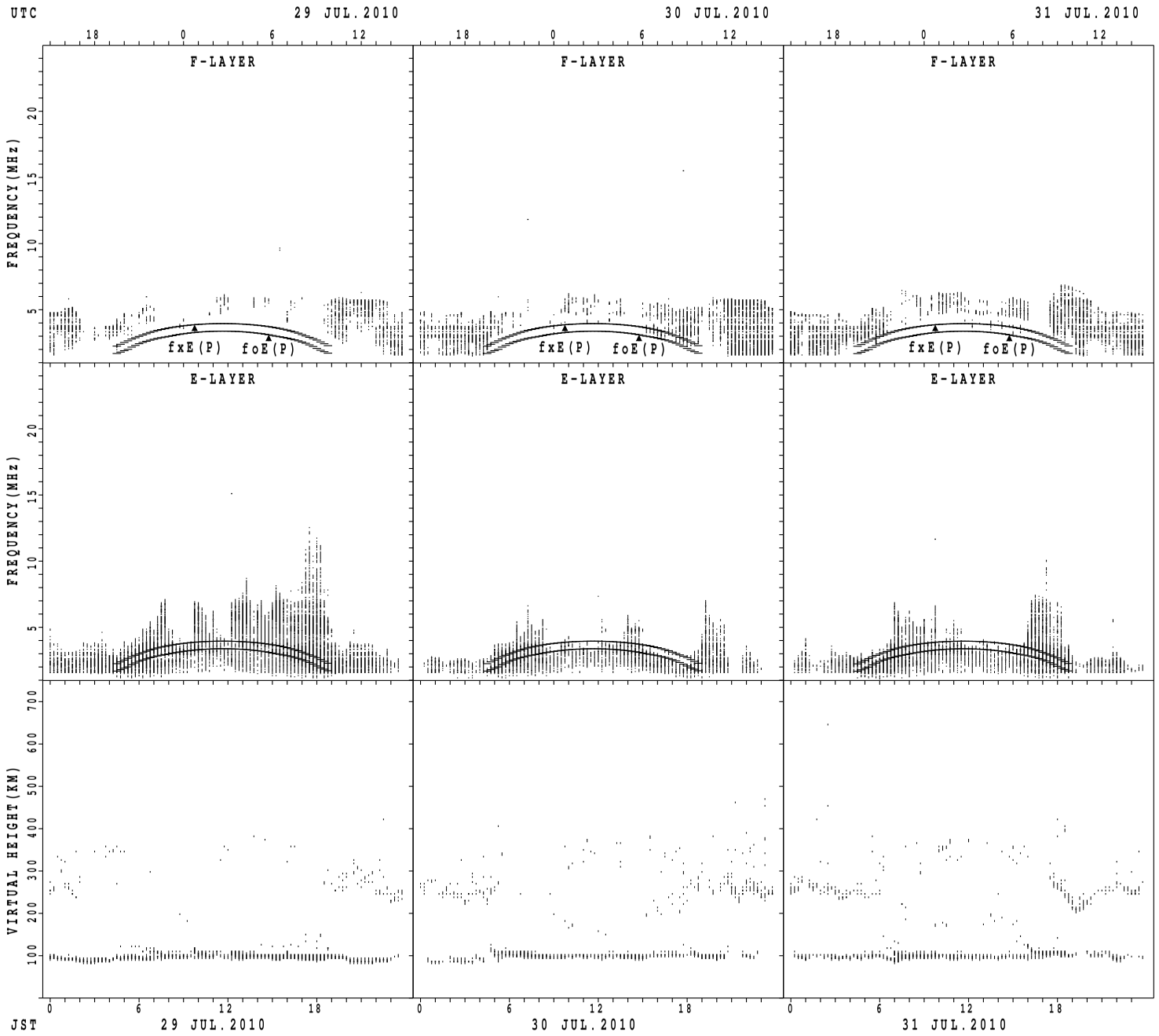
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



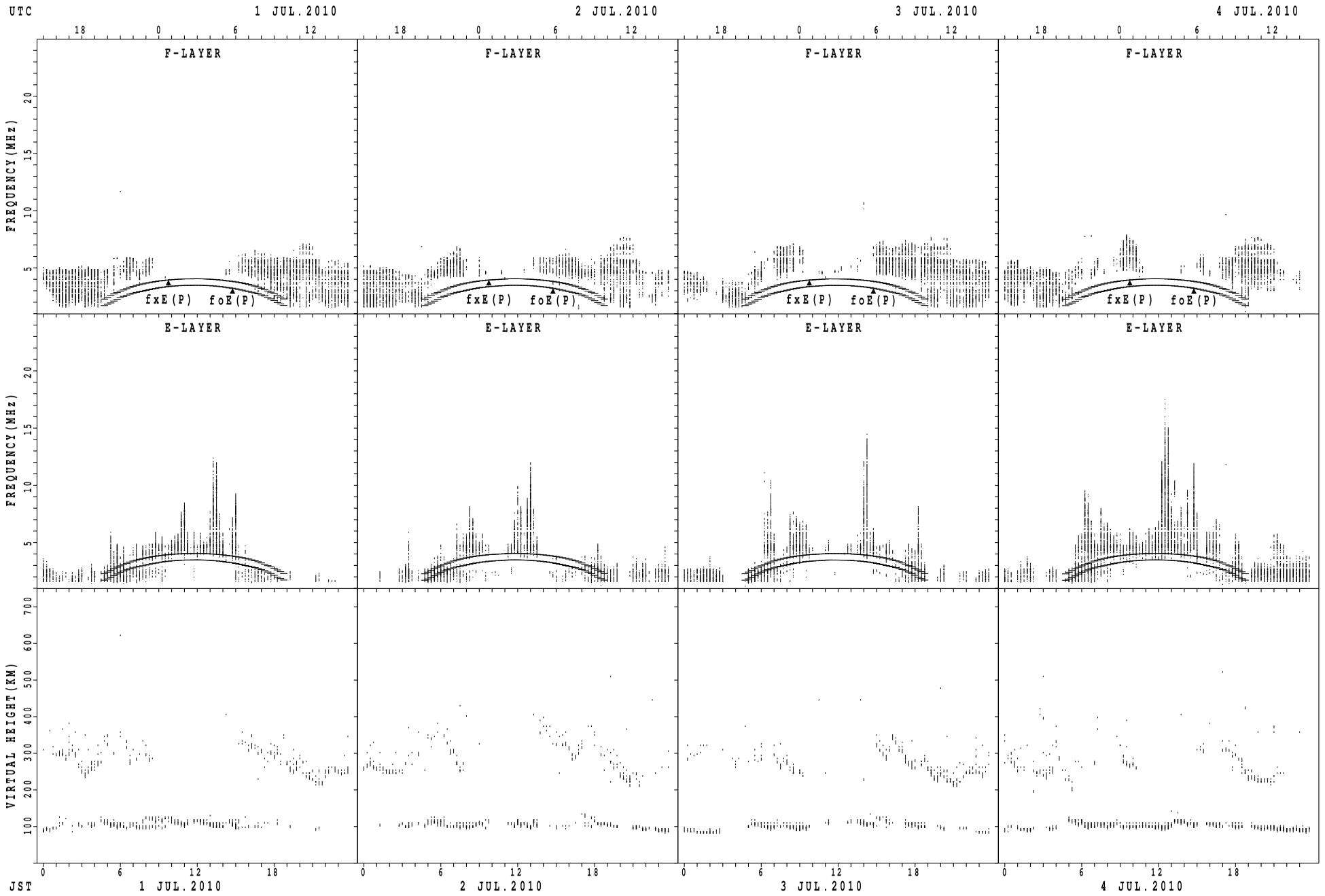
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



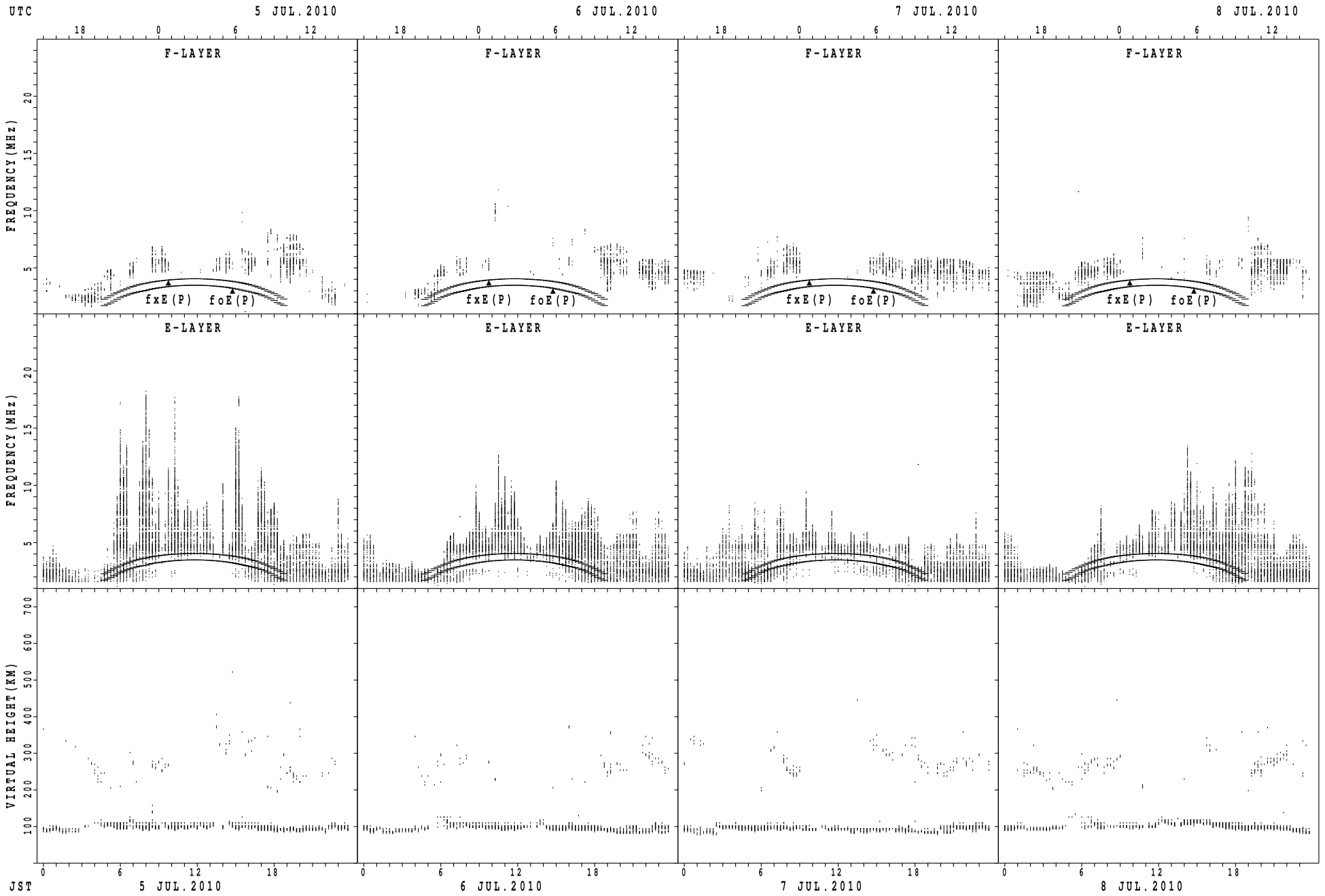
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



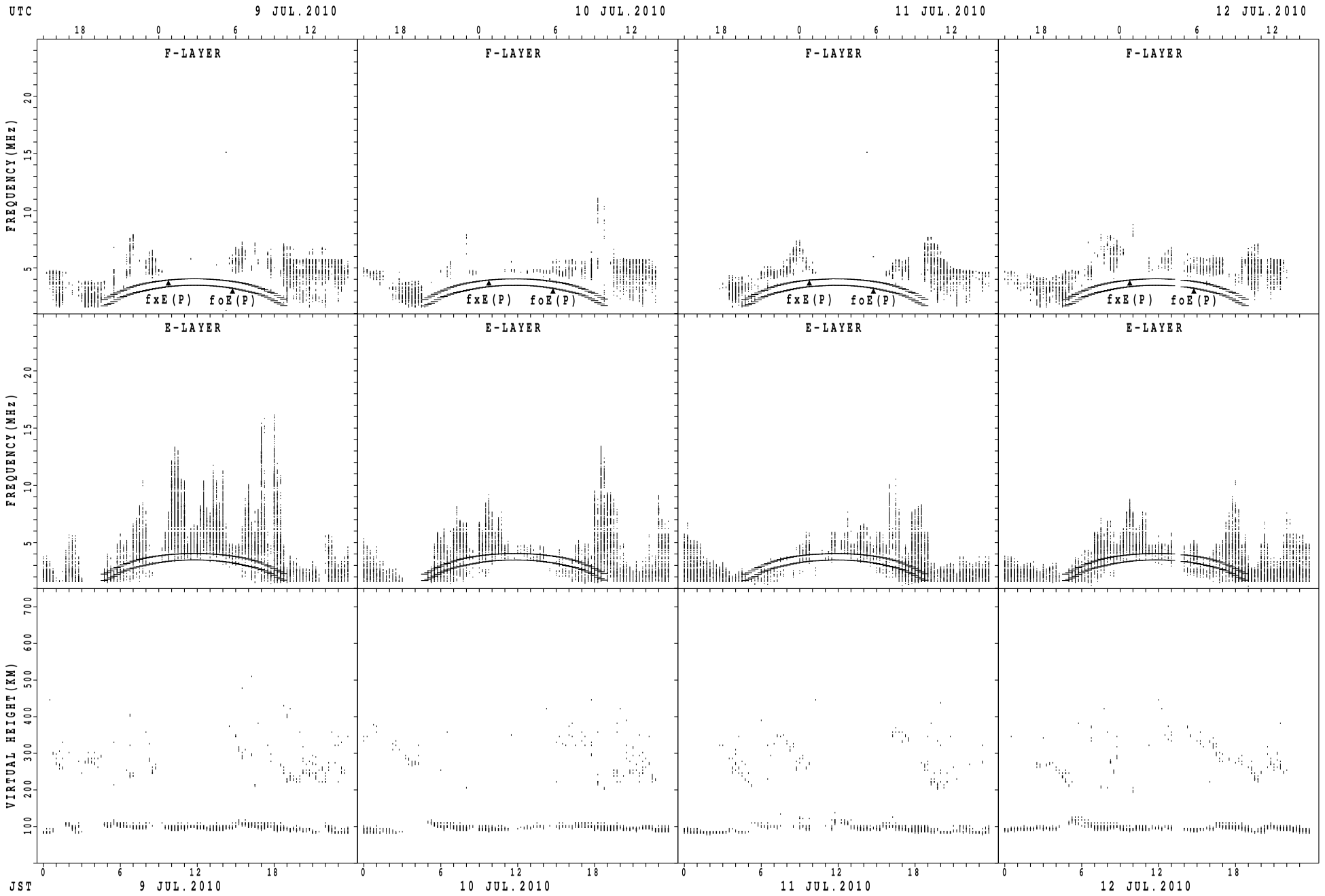
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



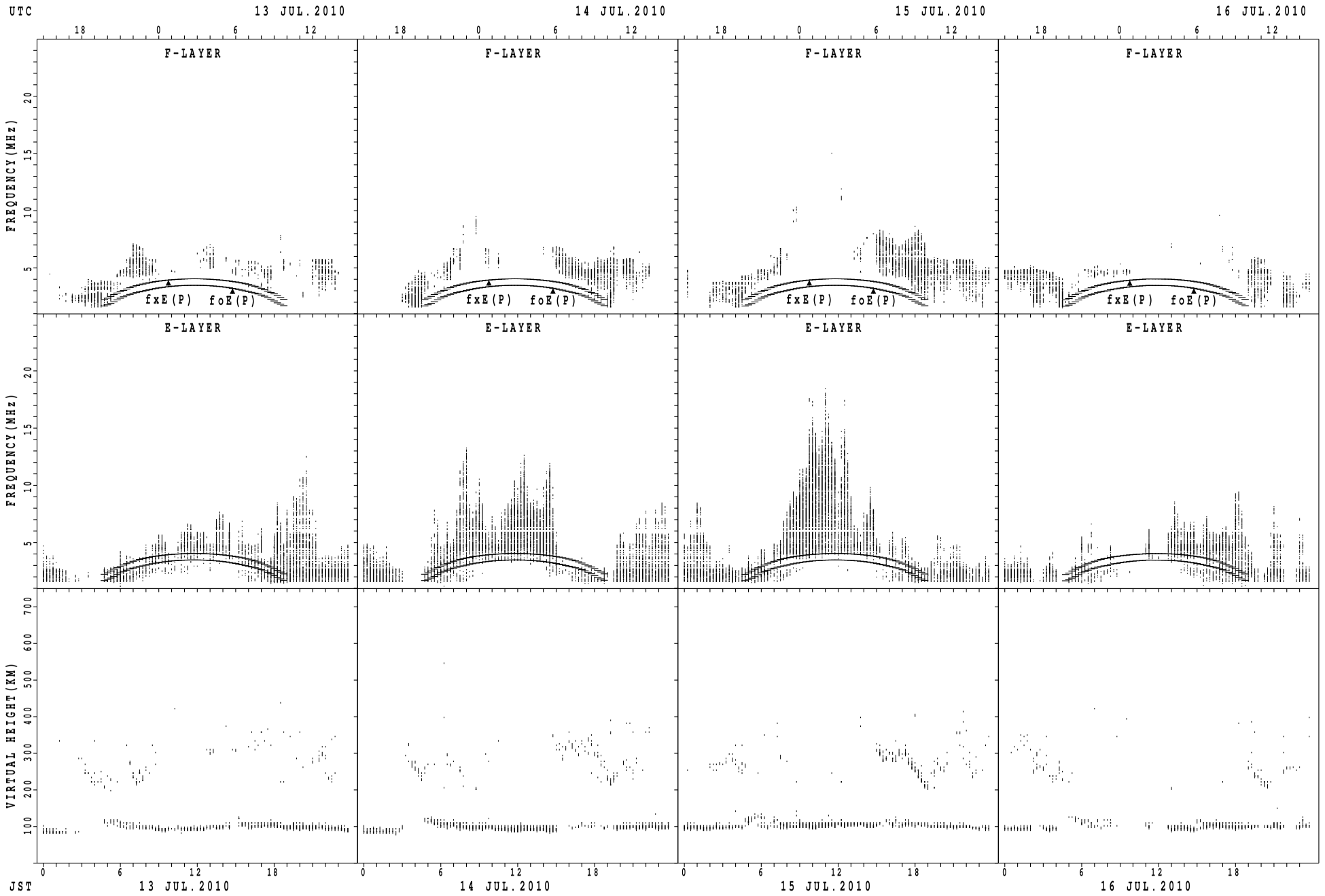
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



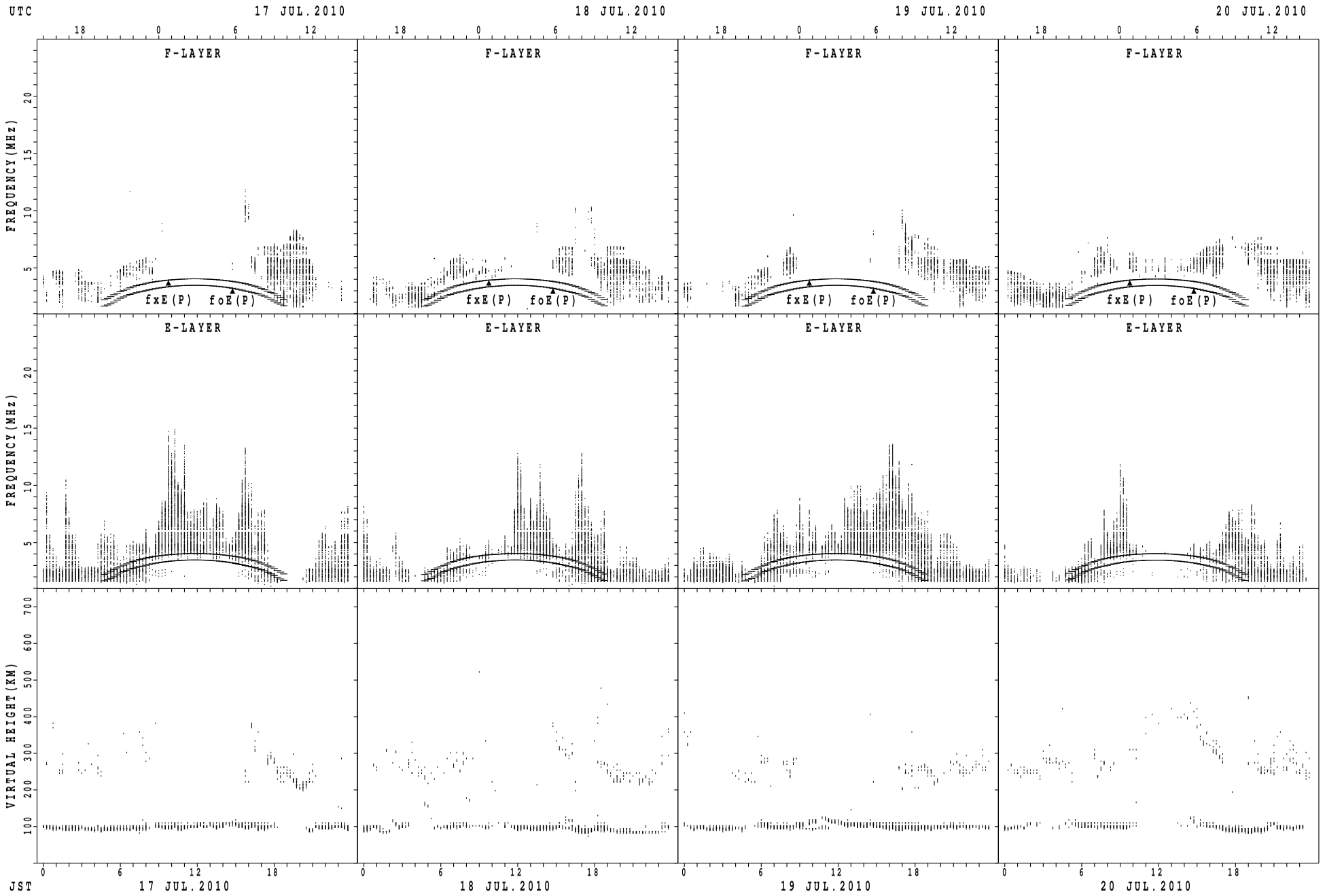
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



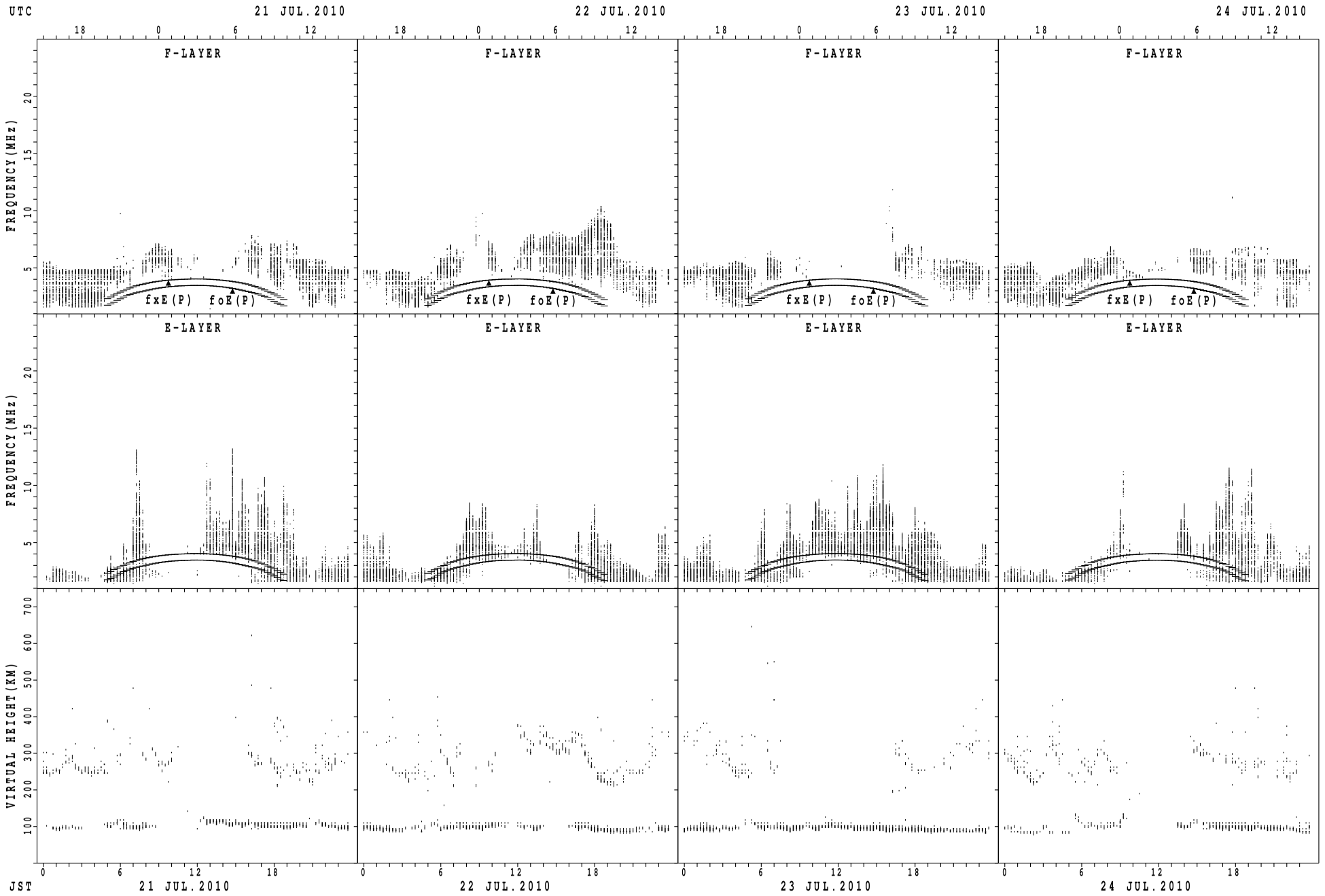
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



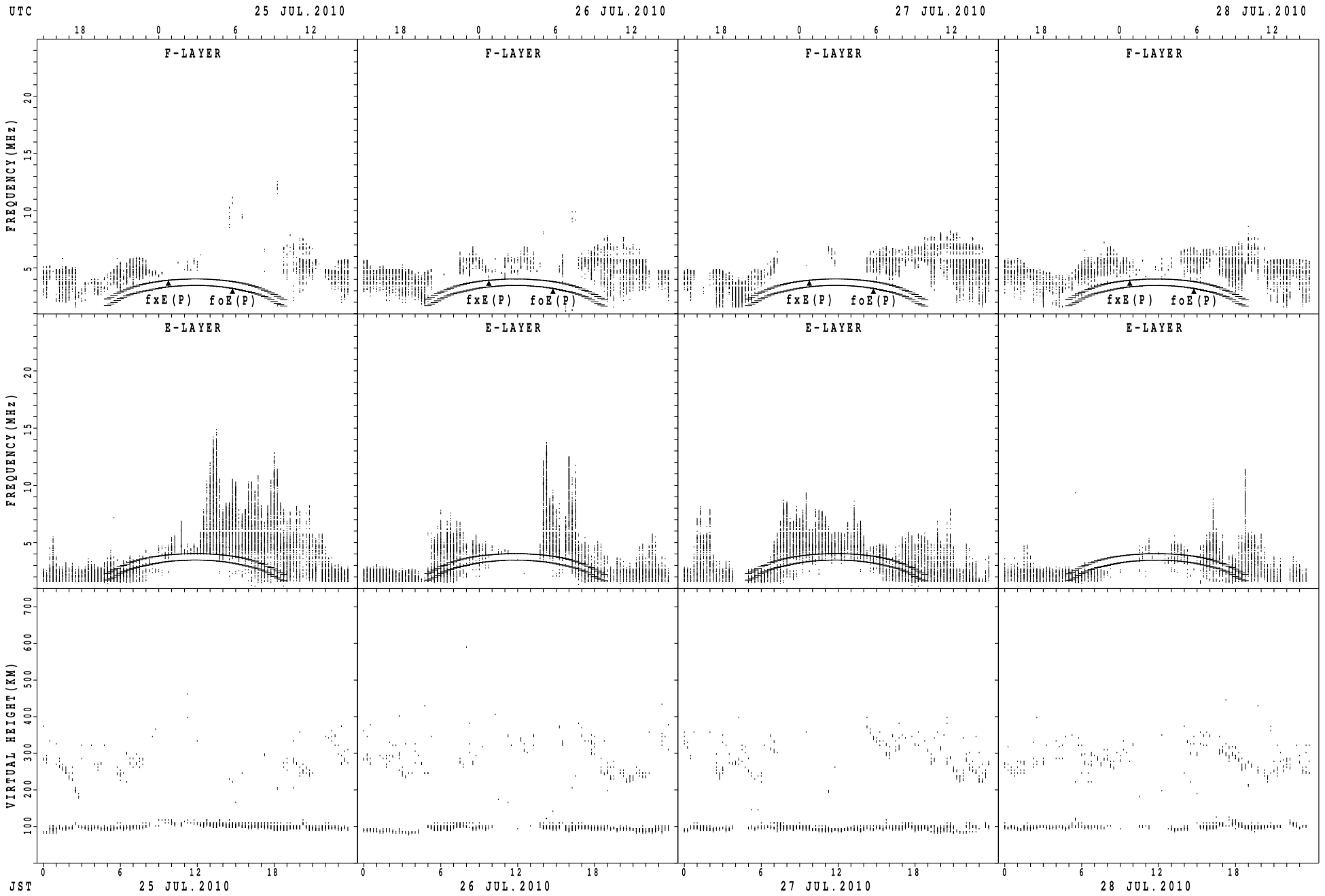
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



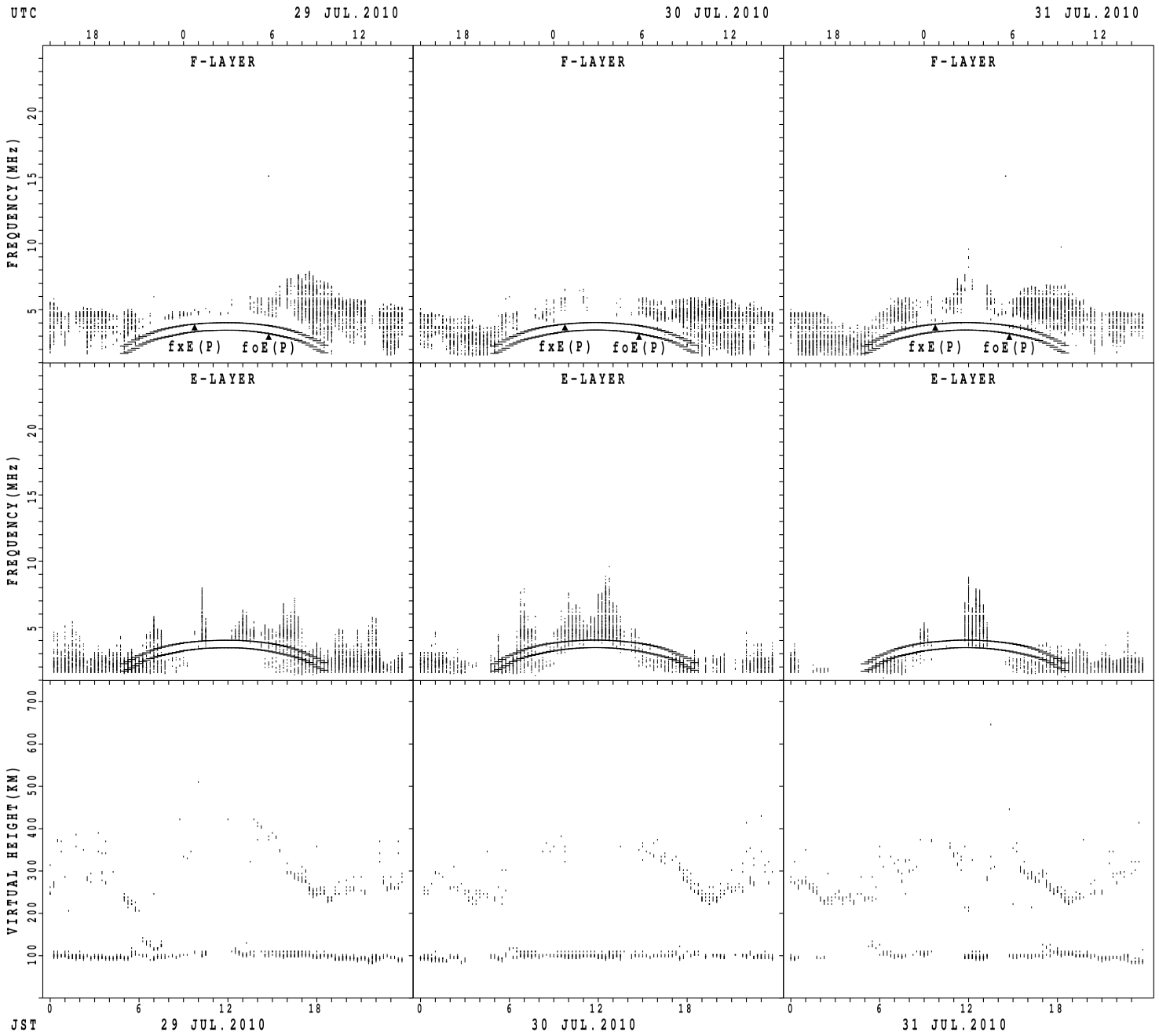
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



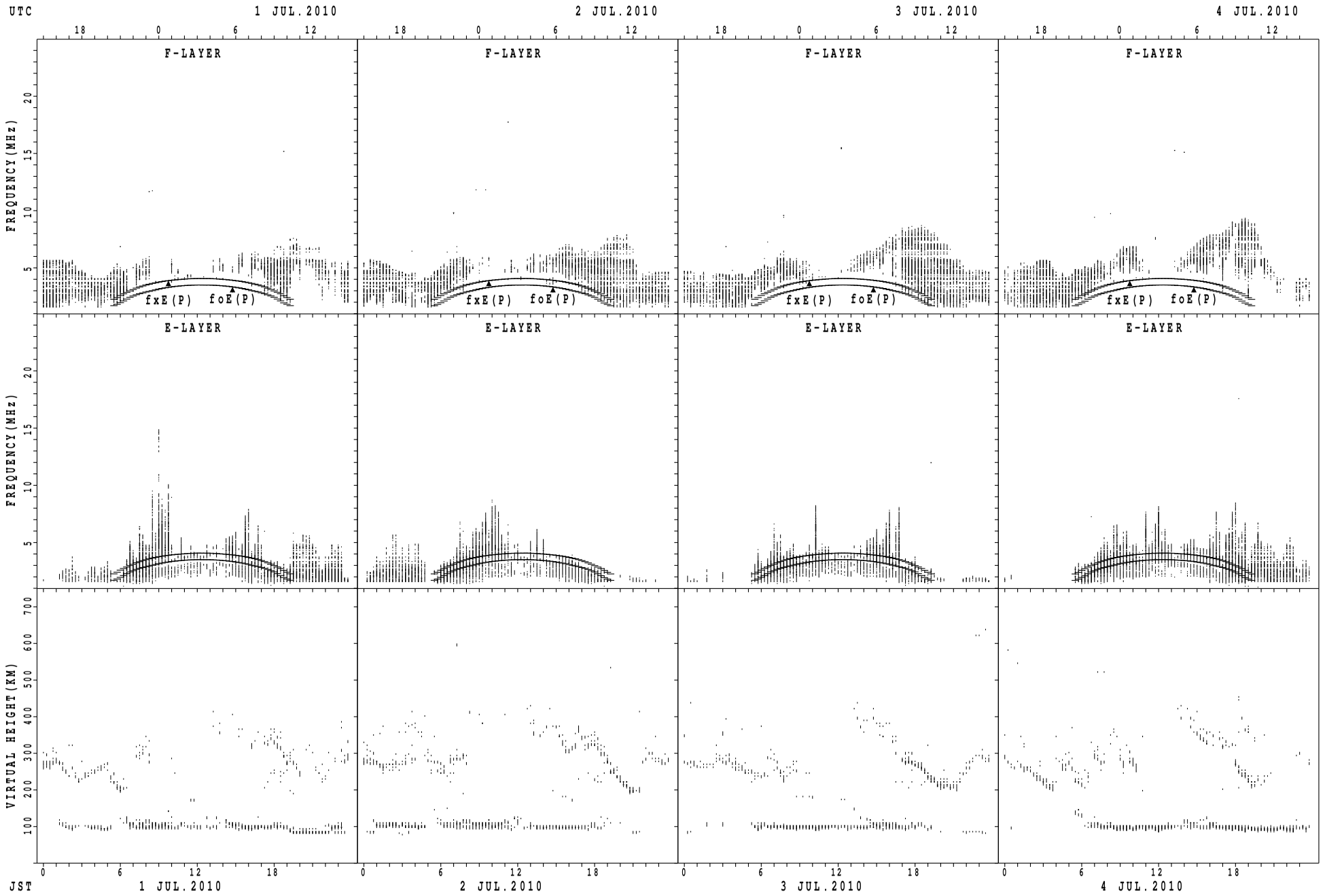
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



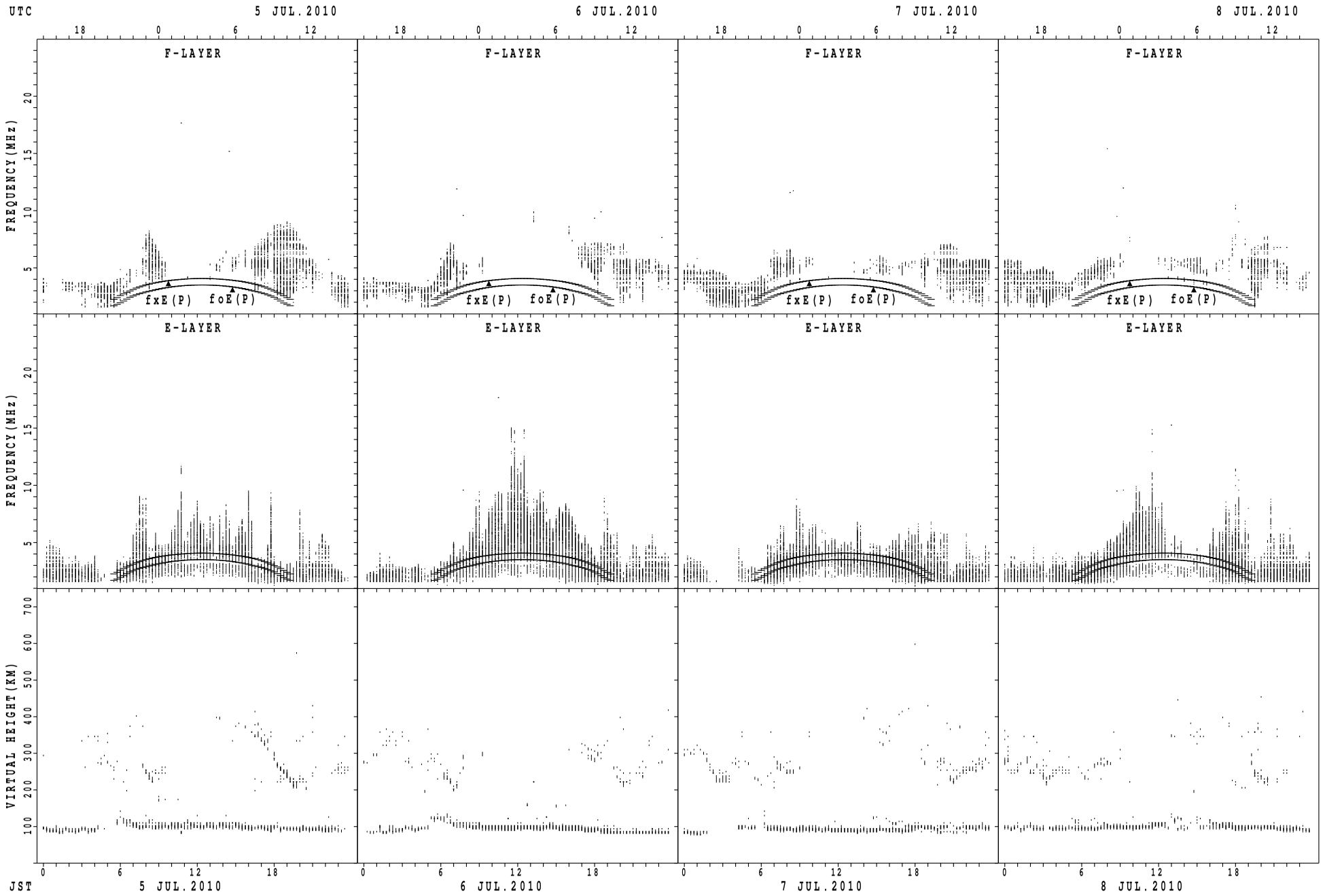
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



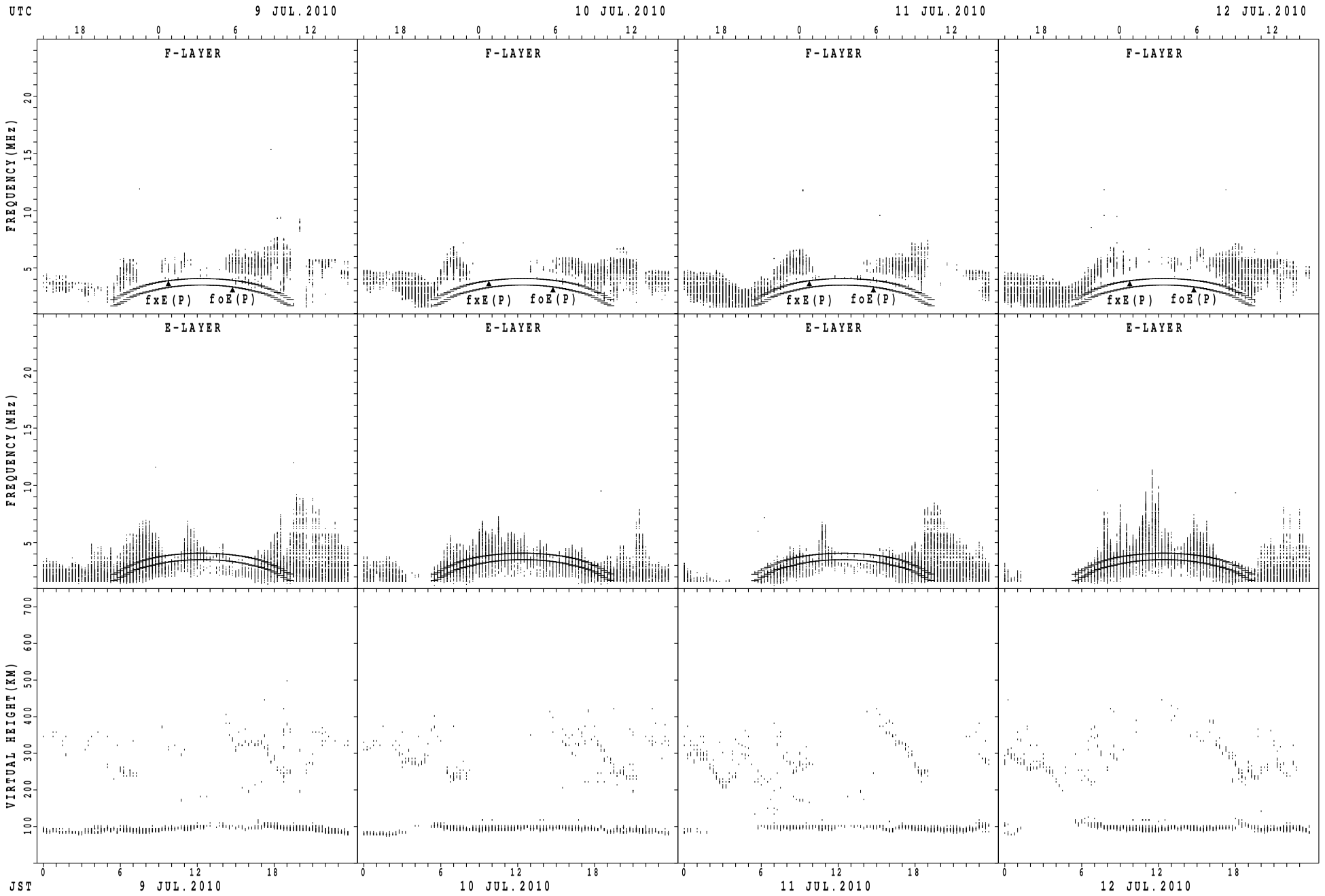
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



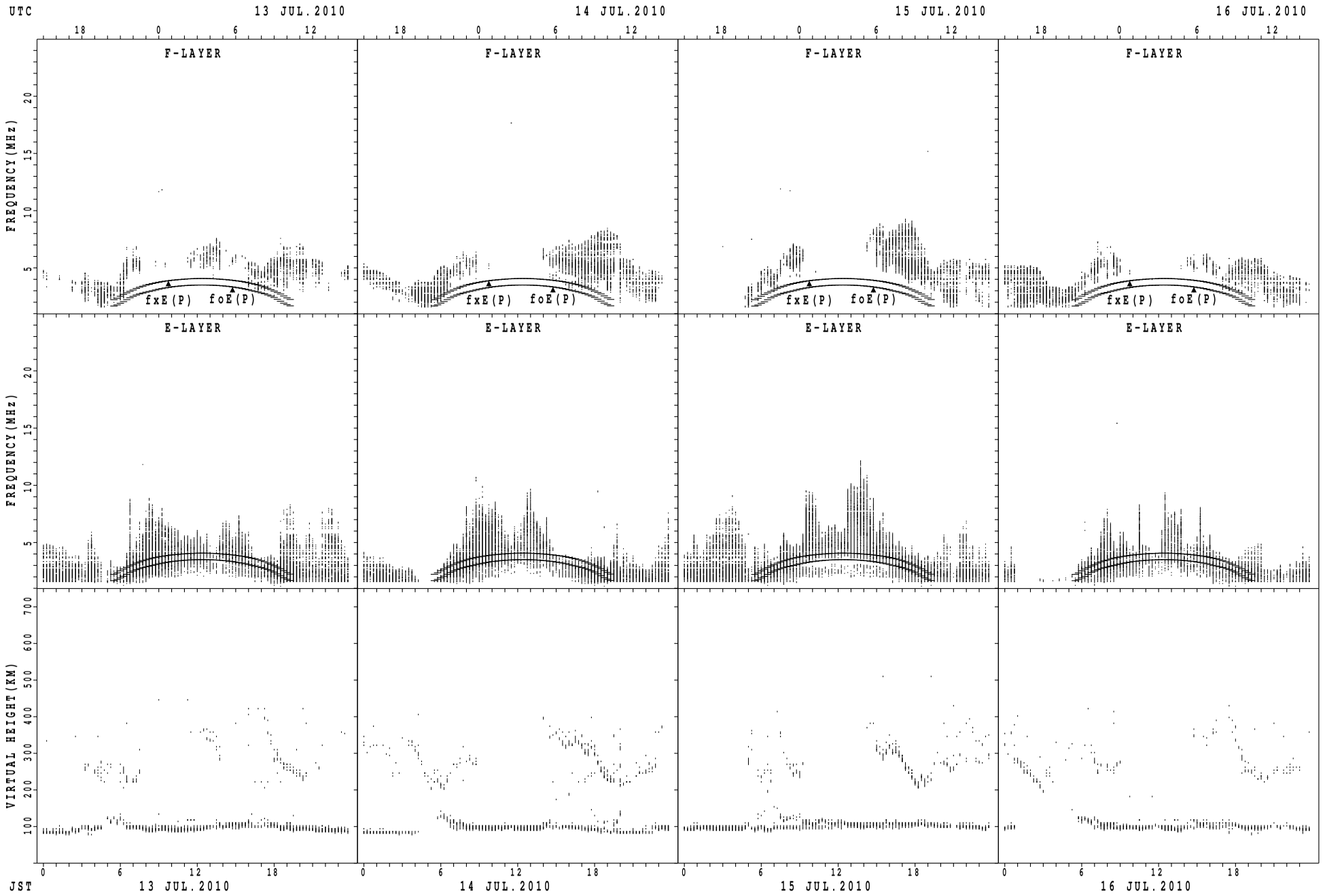
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



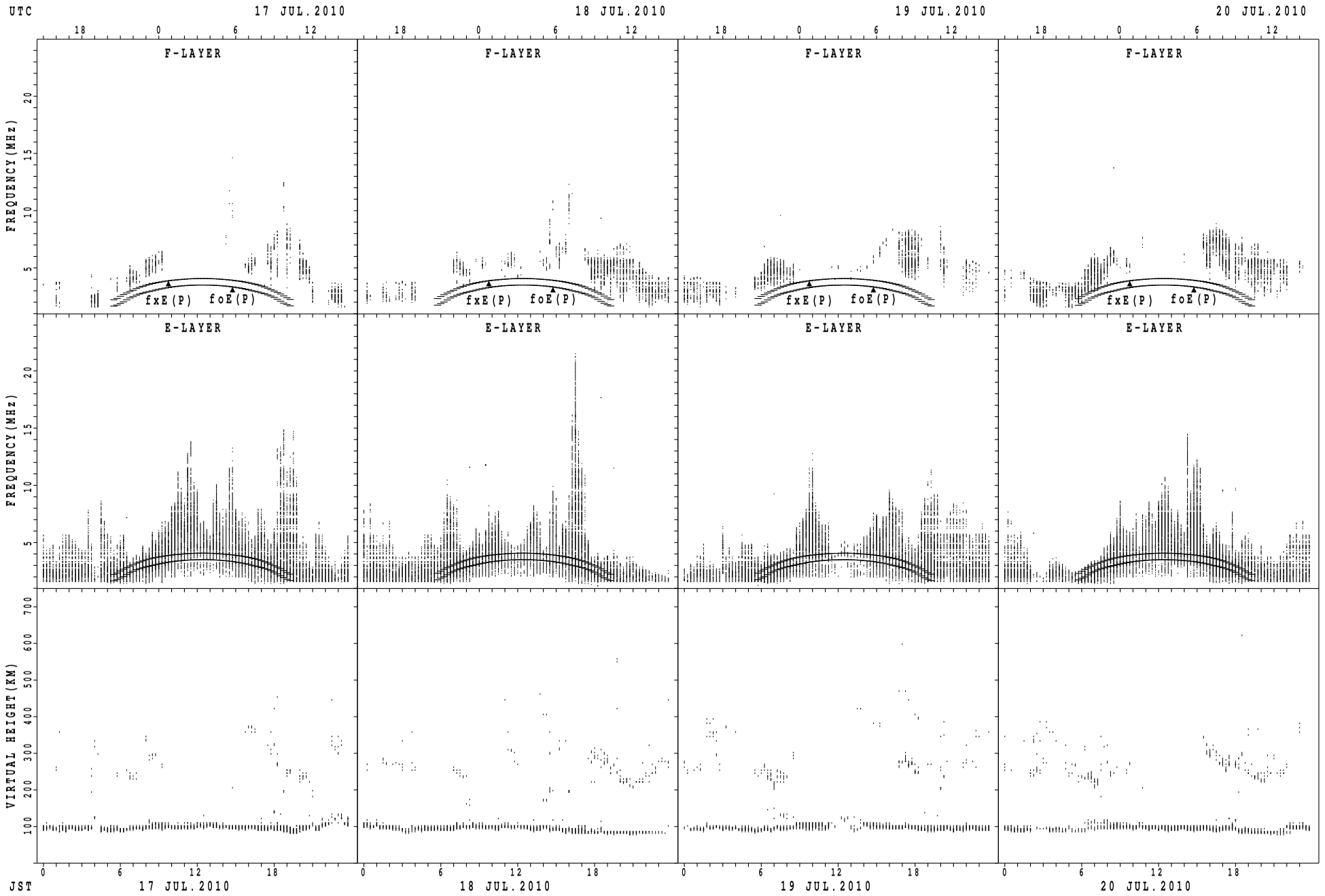
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



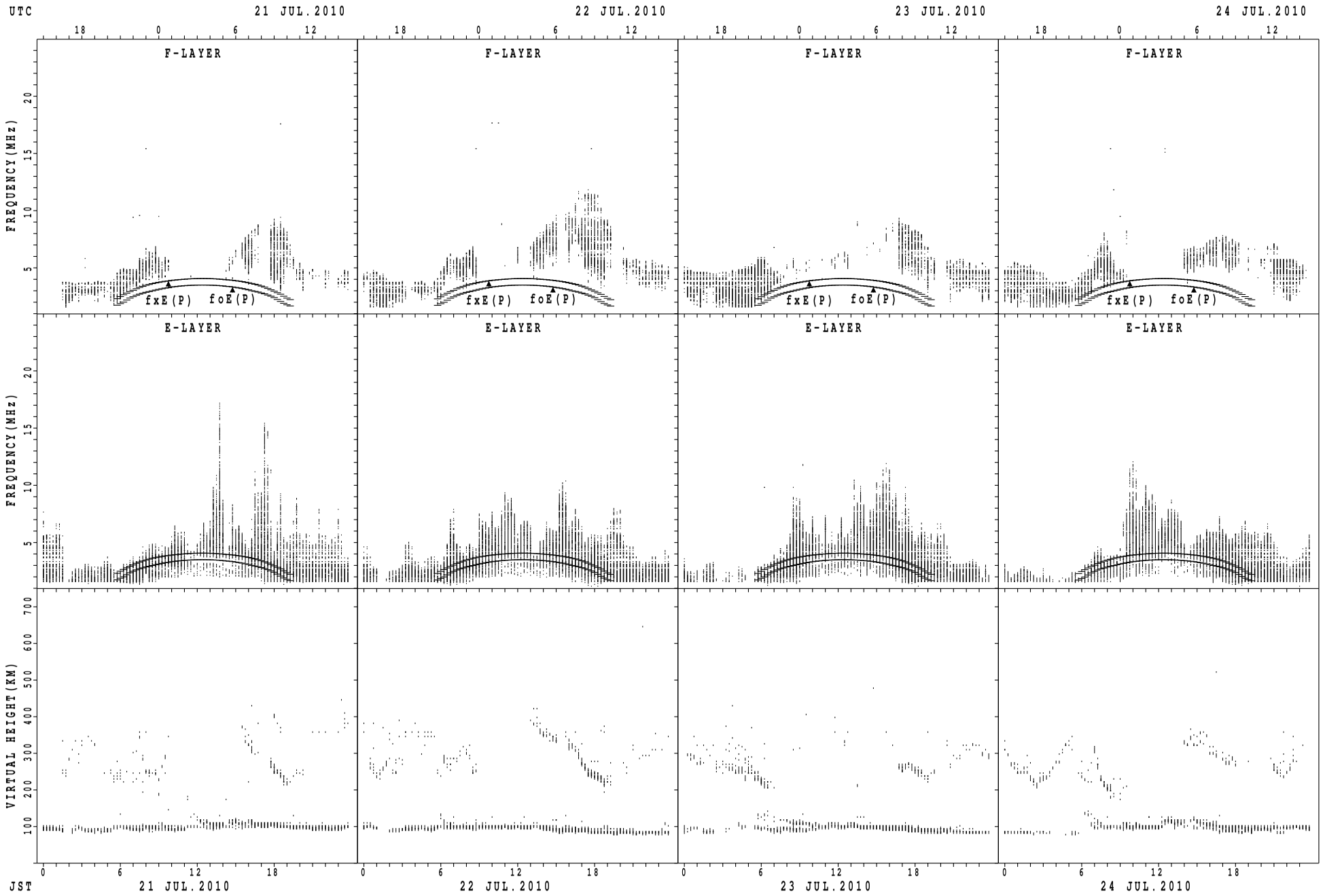
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



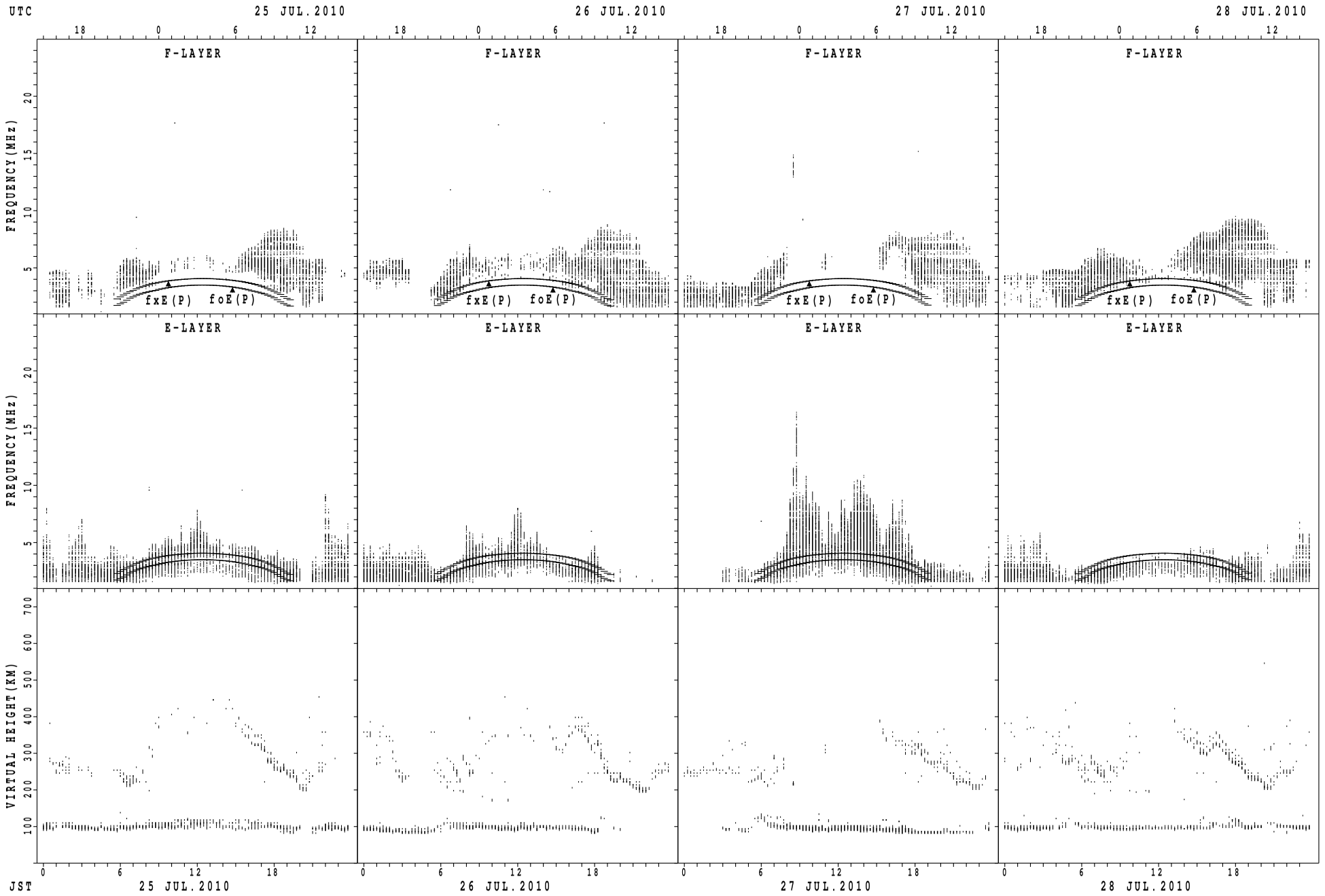
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



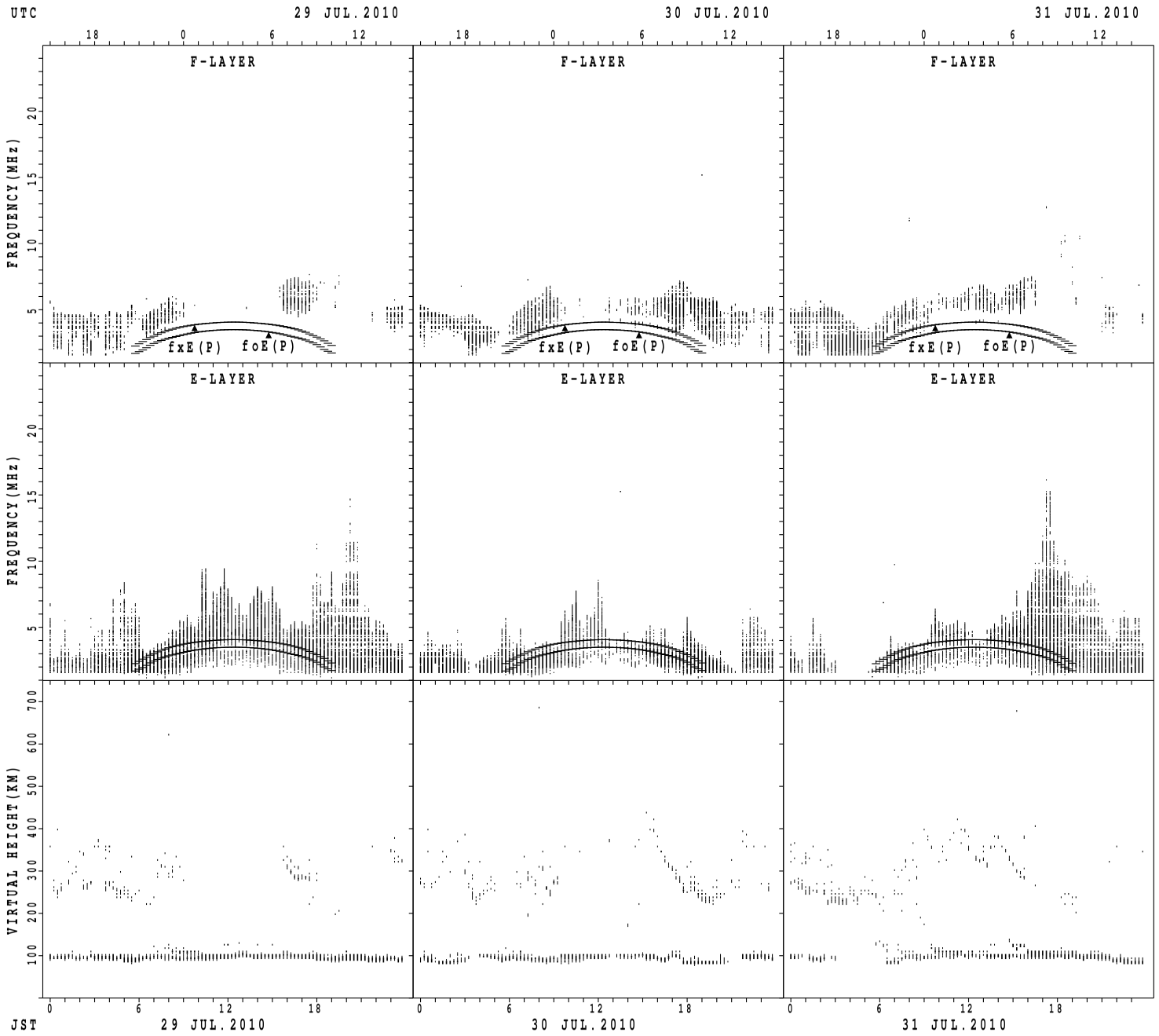
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



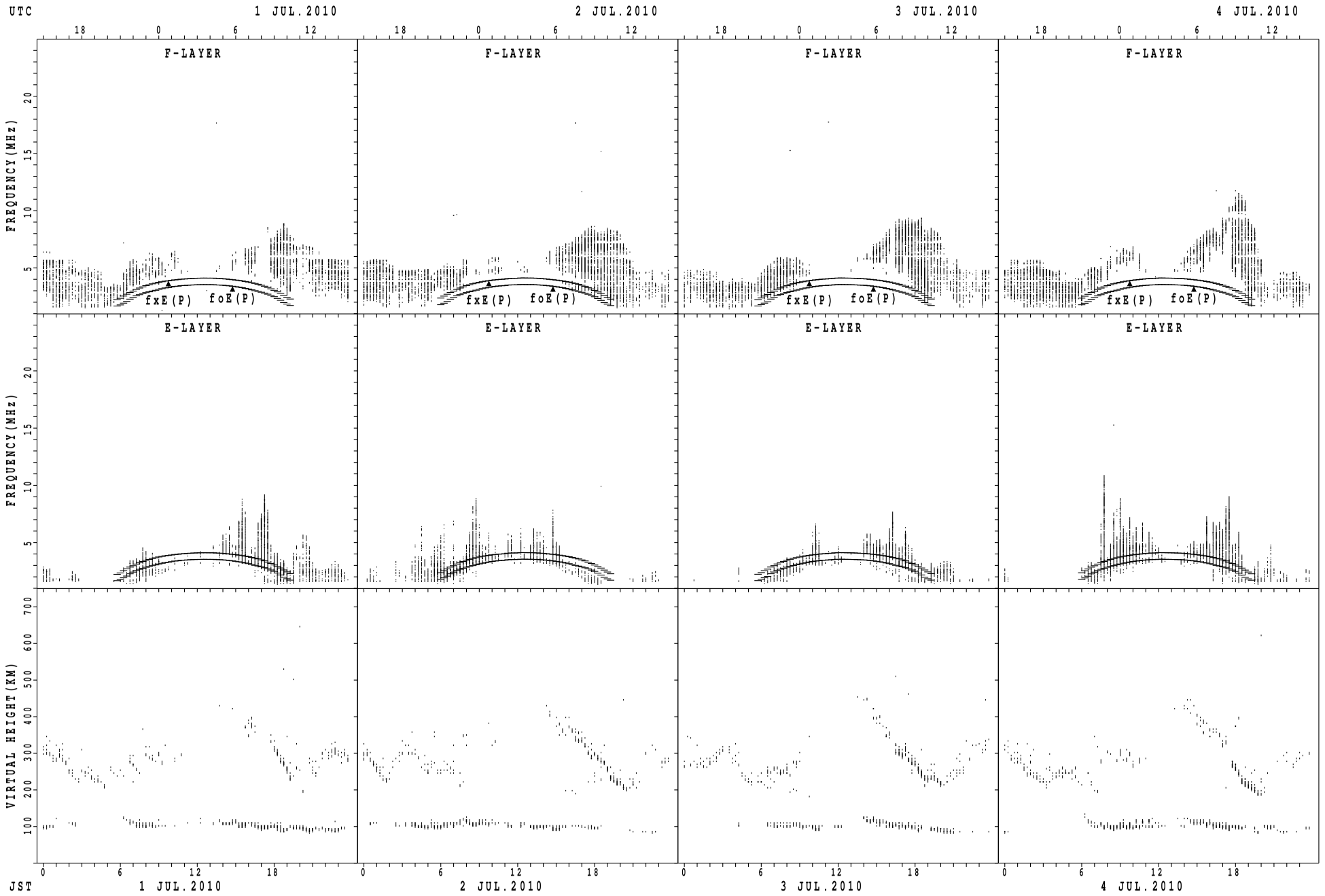
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



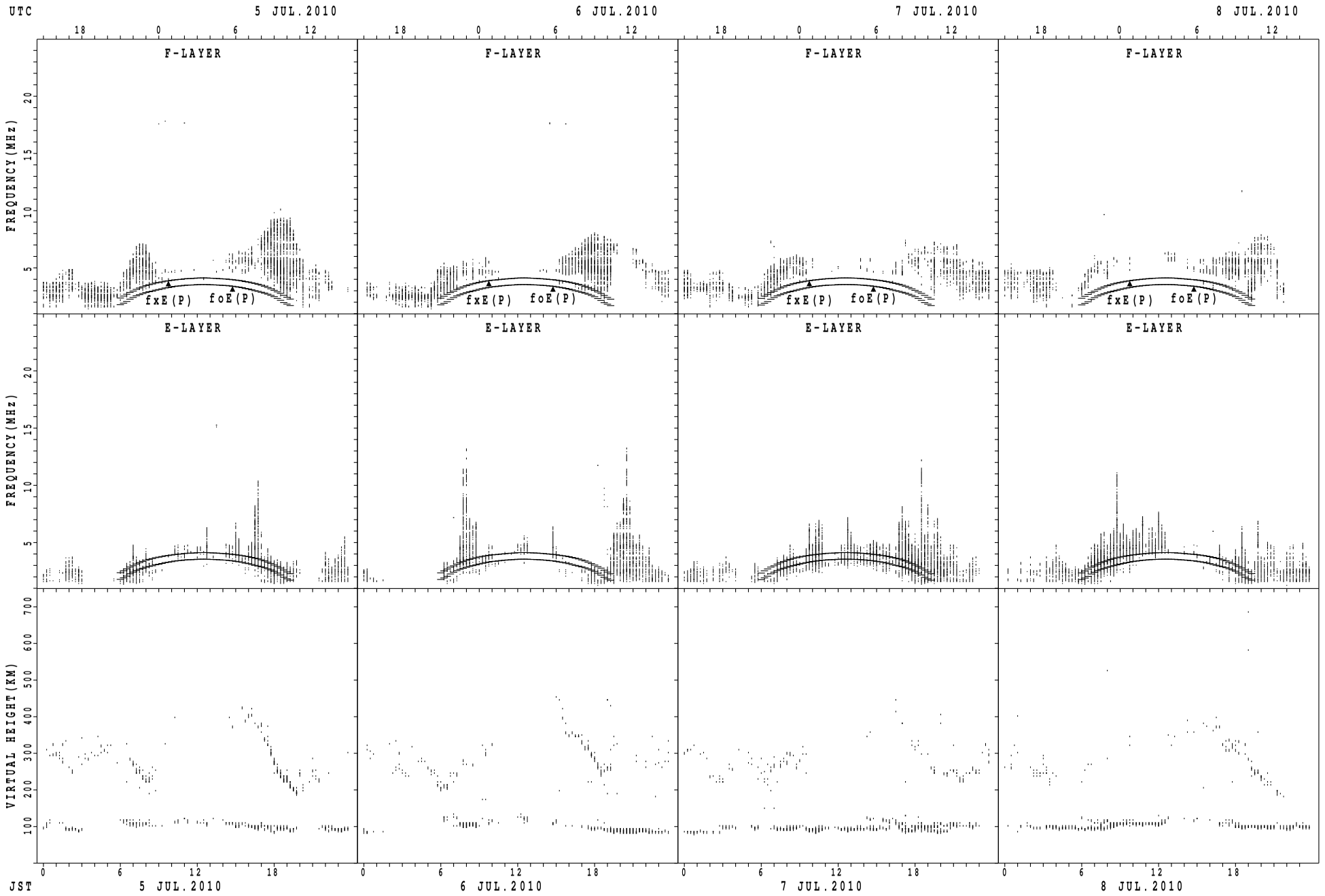
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



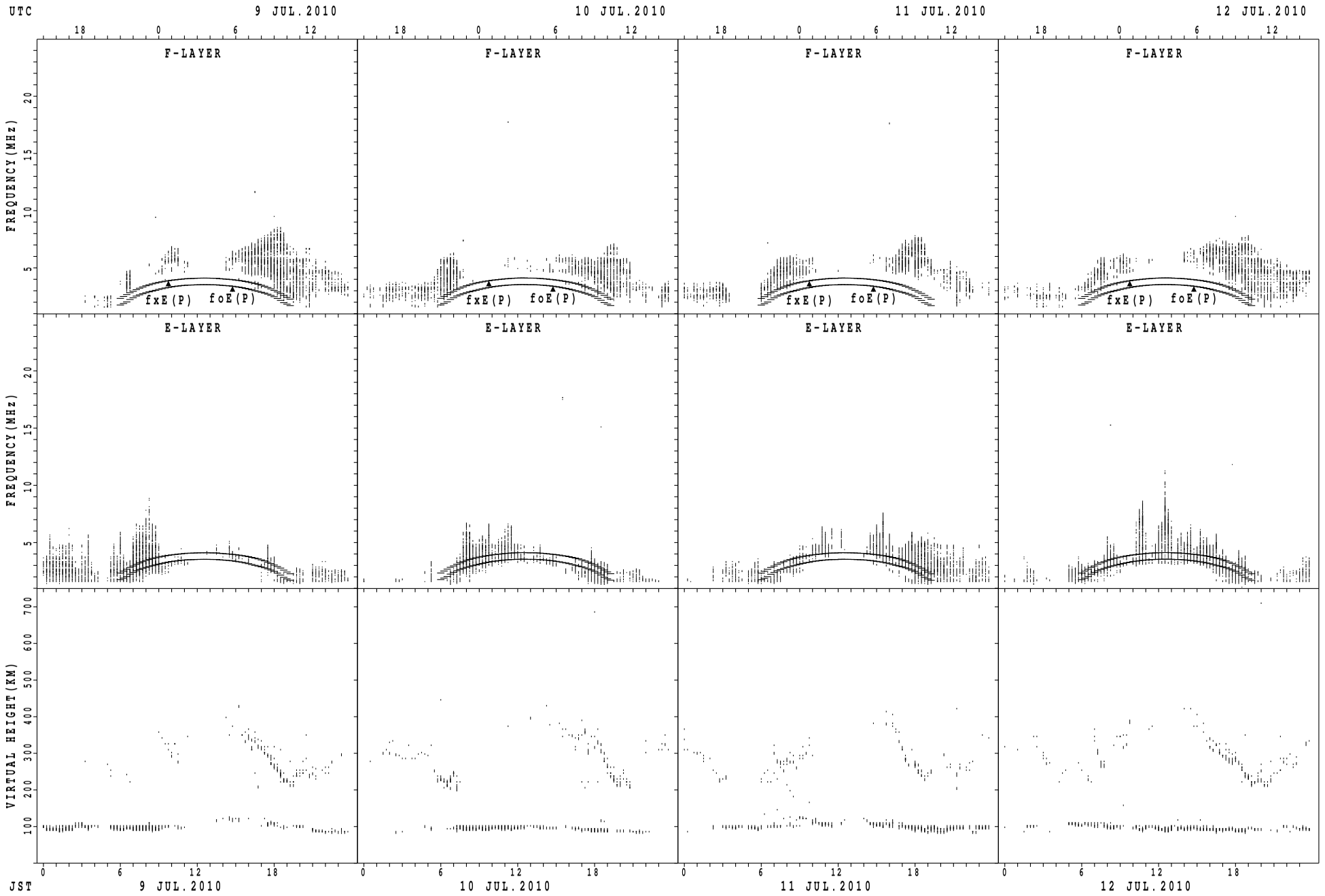
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



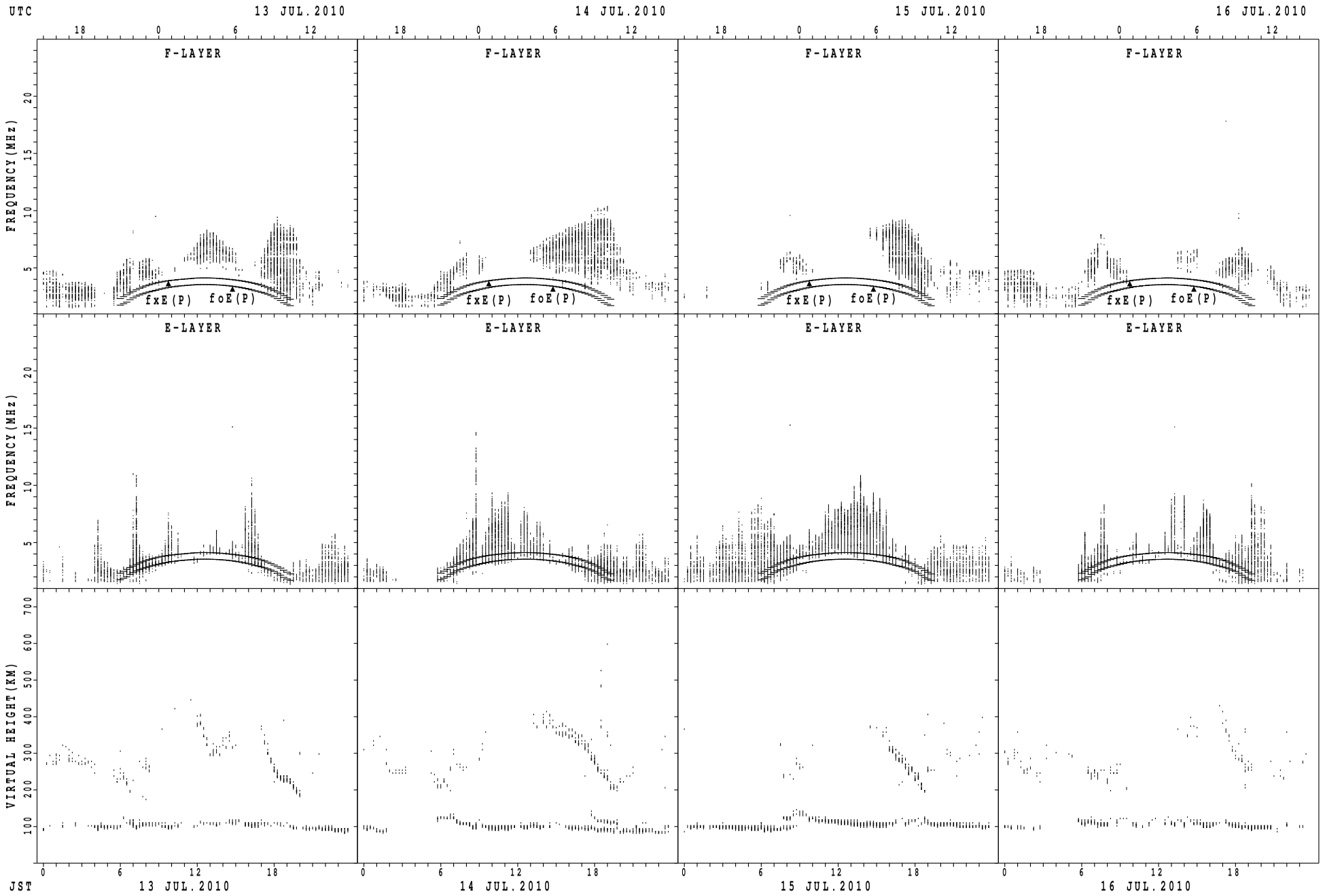
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



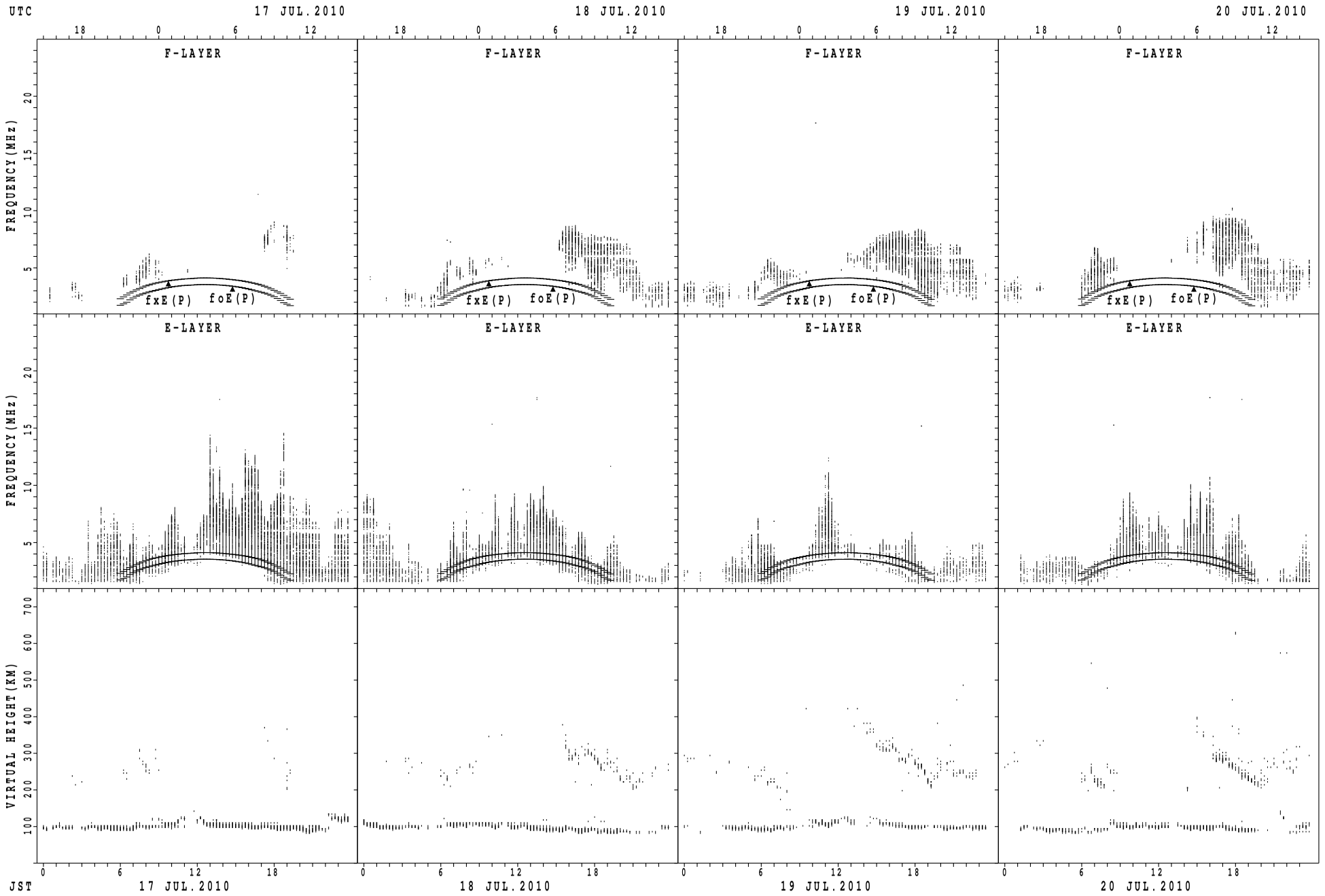
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



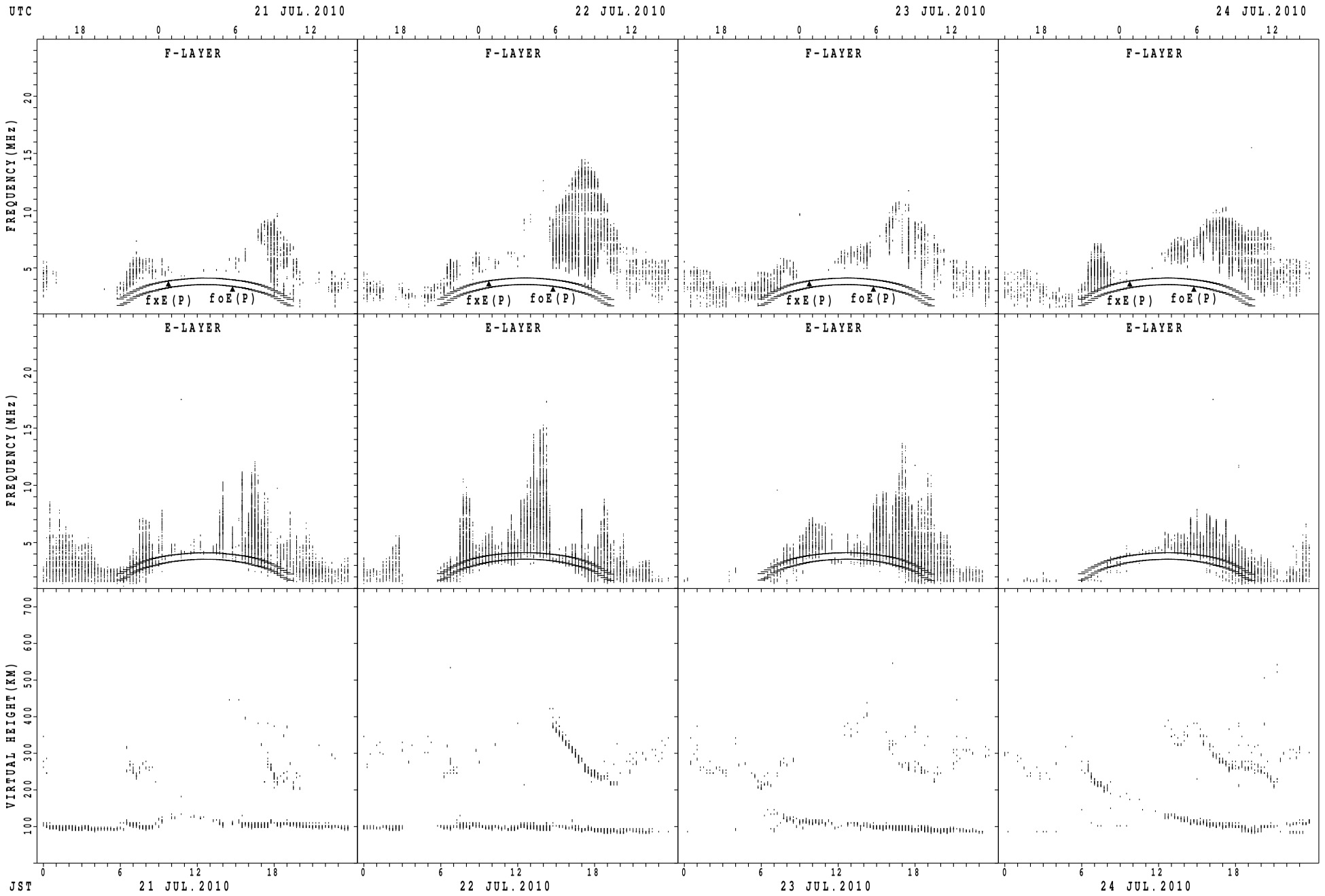
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



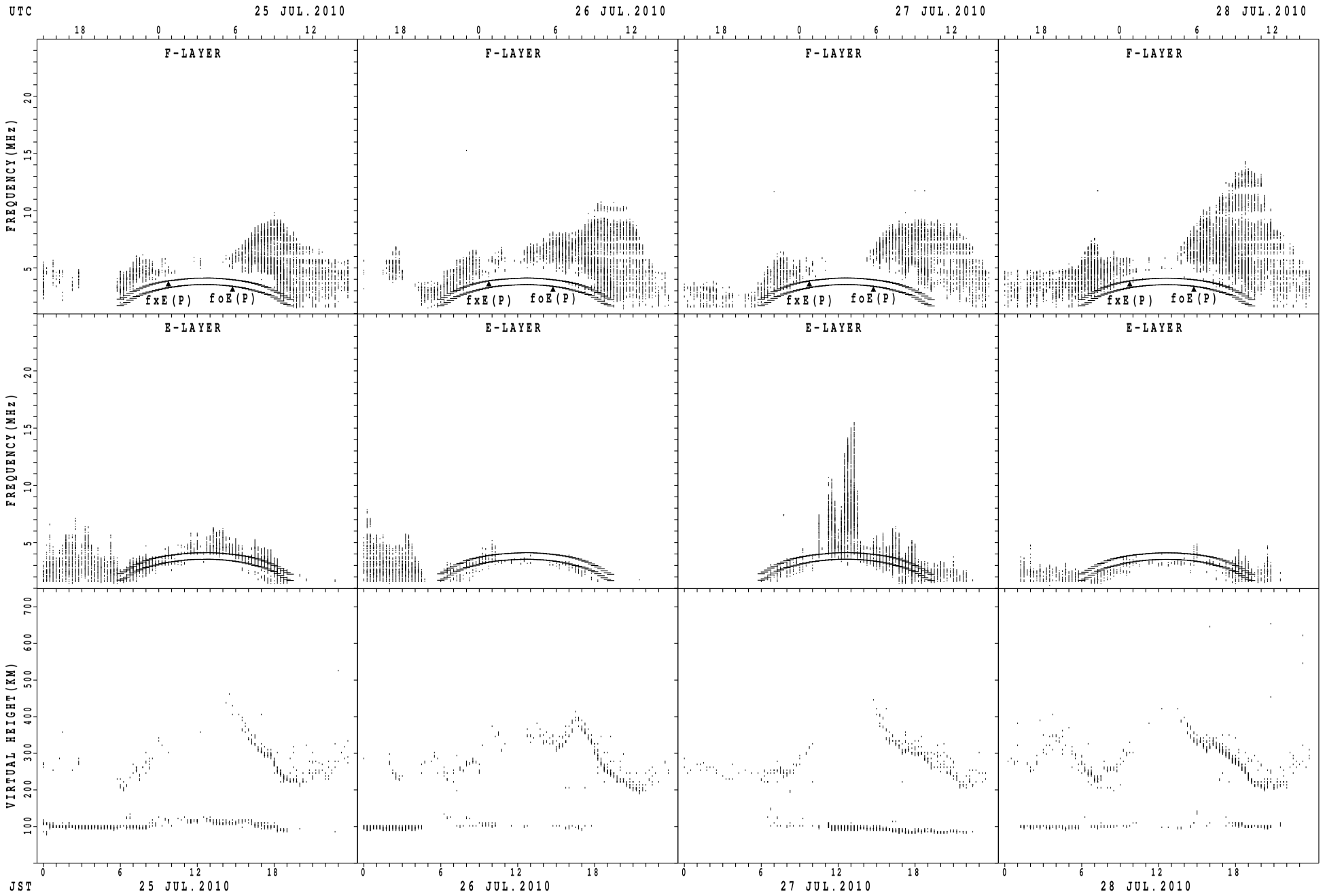
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



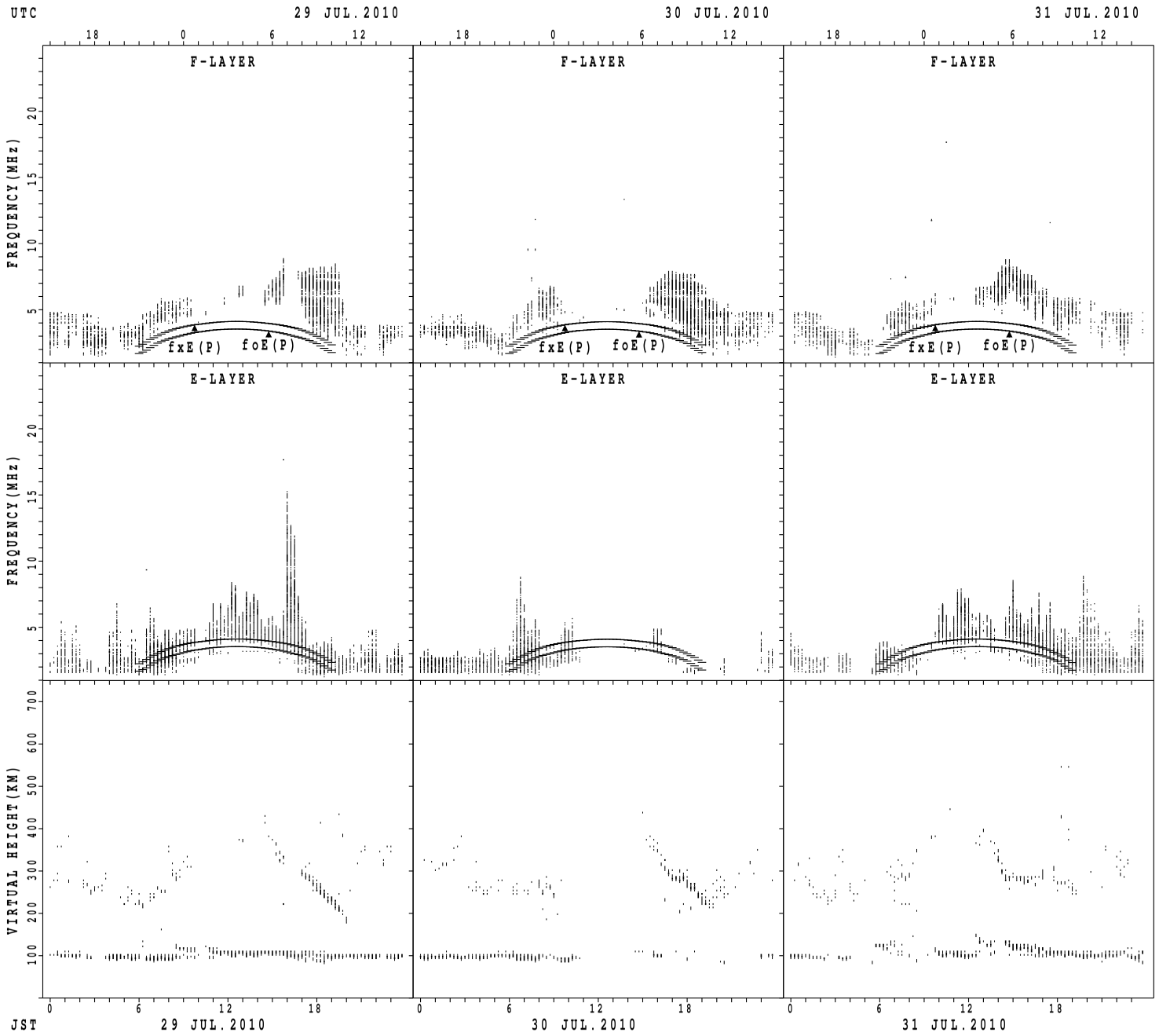
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h′F AND h′Es

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																		1	1	1	2	3	2	
MED																		196	326	282	287	288	268	
U Q																		98	163	141	326	298	290	
L Q																		98	163	141	248	254	246	

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	29	27	27	28	28	31	29	27	29	28	29	27	27	29	27	29	30	28	30	29	30	28
MED	97	95	91	91	95	106	107	105	103	103	103	103	103	103	103	103	103	105	104	100	101	101	103	97
U Q	99	97	97	95	97	122	111	109	106	105	105	104	107	107	105	109	111	107	107	104	105	105	105	99
L Q	91	91	89	87	91	97	105	103	101	99	99	99	98	99	99	97	95	101	99	97	95	98	97	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								6										5	4	11	5		1	1
MED								292										308	273	266	262		262	262
U Q								336										341	283	278	300		131	131
L Q								238										260	263	222	229		131	131

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	28	27	22	16	23	17	23	24	23	18	20	22	28	25	25	22	25	28	26	27	27	27	28
MED	95	95	95	97	97	105	105	105	104	103	101	103	101	103	103	105	104	103	102	98	99	99	97	97
U Q	97	99	97	99	99	113	113	107	105	107	105	105	111	107	110	110	111	105	106	103	103	103	101	98
L Q	91	92	89	93	96	99	100	101	102	99	97	97	99	97	97	99	103	99	95	95	95	93	93	92

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	5	8									12	16	14	7	2	1	
MED							232	232	277									289	288	255	232	272	258	
U Q							116	257	301									324	306	268	264	278	129	
L Q							116	219	256									276	264	242	206	266	129	

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	25	23	23	22	20	16	26	28	26	30	28	29	27	23	27	27	27	27	29	29	27	25	27	27
MED	97	95	93	93	95	95	100	107	105	103	103	101	103	101	103	107	103	101	101	99	97	95	95	97
U Q	100	97	101	97	99	97	121	109	111	109	105	103	107	107	107	113	109	105	106	101	99	100	103	101
L Q	89	89	89	91	91	95	95	101	101	99	96	95	97	97	99	99	97	97	95	93	89	89	89	89

MONTHLY MEDIANS OF h′F AND h′Es

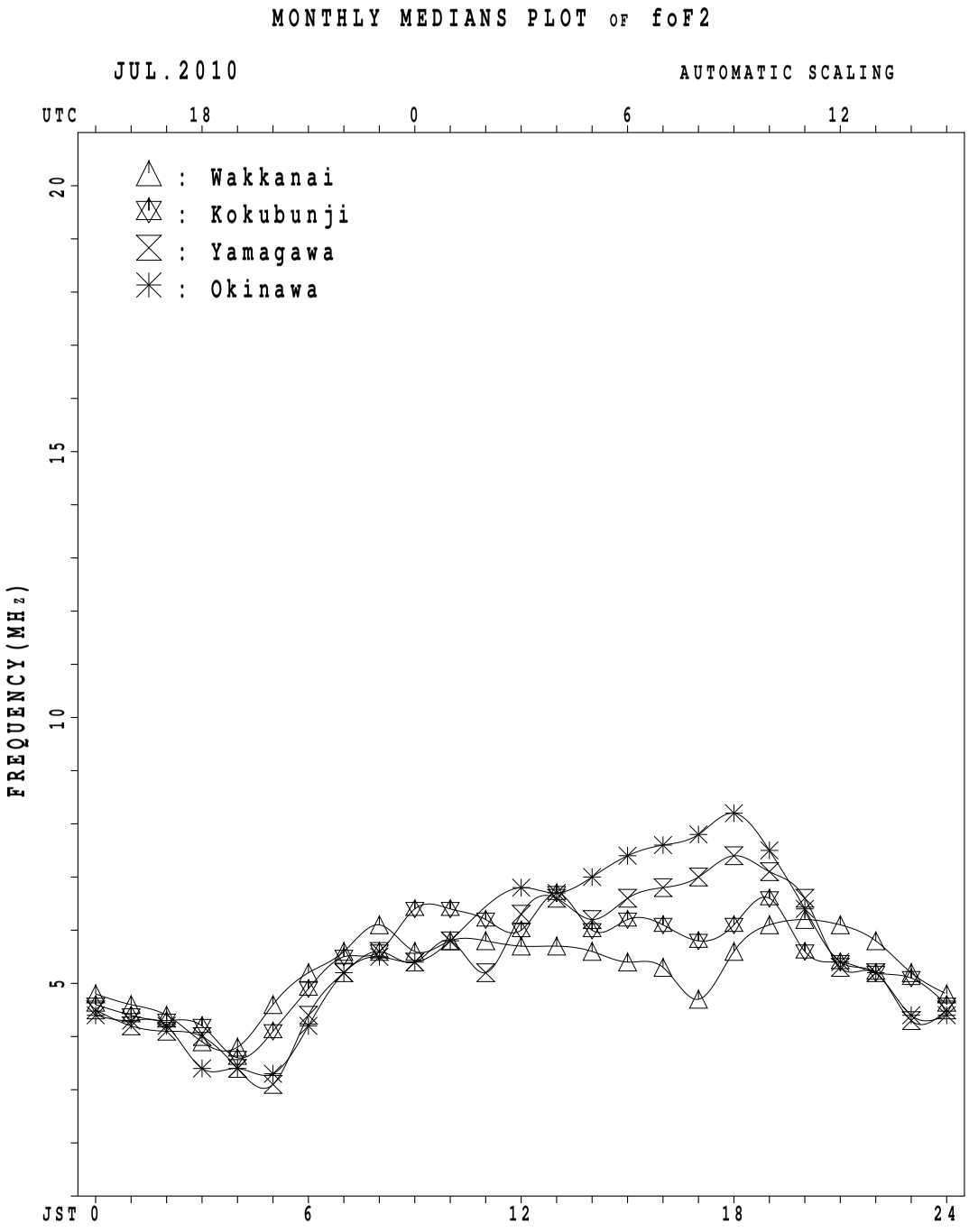
JUL.2010 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								6	8									22	24	19	10	3		
MED								242	279									303	274	240	256	264		
U Q								254	287									322	293	282	272	464		
L Q								230	247									284	264	236	234	226		

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	18	14	15	13	18	15	20	21	26	17	23	14	17	16	20	24	22	21	26	20	22	20	18	20
MED	101	102	101	99	98	99	103	105	105	113	103	110	105	109	103	109	105	103	99	97	102	97	95	97
U Q	103	103	103	102	103	101	112	112	111	120	113	115	115	113	108	113	111	108	103	103	105	103	101	103
L Q	97	99	97	96	95	99	98	95	99	106	99	103	99	103	99	102	101	96	93	91	91	90	91	89


MONTHLY MEDIANS PLOT OF foF2
JUL.2010
AUTOMATIC SCALING
UTC
18
0
6
12
: Wakkanai
: Kokubunji
: Yamagawa
: Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 54	51	52	56	53															X 65	X 73	X 75	X 60	X 59
2	X 55	X 55	X 52	X 47	X 46																X 80	X 73	X 55	X 51
3	X 49	X 46	X 42	X 43	X 41																X 79	X 70	X 62	X 60
4	X 55	X 58	X 53	X 53	X 48																X 77	X 69	X 48	52
5	51	X 40	39	X 34	X 38																X 77	X 53	X 44	A
6	X 39	X 40	X 35	X 33	X 32																X 74	X 64	61	66
7	57	53	52	A	X 41																X 66	X 61	X 58	57
8	54	50	51	X 48	X 41																X 77	68	66	64
9	X 48	50	X 47	X 44	X 40																X 66	X 69	X 72	67
10	60	53	49	48	X 40																X 67	X 65	68	A
11	A	A	46	49	46																X 66	X 53	X 50	51
12	X 48	52	52	X 44	X 44																X 68	X 63	X 60	X 50
13	52	44	47	46	42																X 64	68	66	50
14	A	A	46	44	49																X 66	X 59	56	50
15	51	A	49	43	45																X 64	X 60	X 61	X 55
16	55	56	55	X 56	X 47																X 66	X 48	X 48	O X 48
17		54	A	51	44																X 81	X 56	A	49
18	A	48	45	43	38																X 71	X 62	X 55	X 45
19	44	46	48	48	X 36																X 68	X 65	X 59	X 54
20	52	X 47	X 42	39	X 39																X 79	X 72	67	68
21	X 57	X 54	52	51	X 50																69	65	65	56
22	54	X 50	X 47	50	45																X 65	X 61	X 54	X 48
23	54	61	58	57	X 56	X 53															X 62	X 59	X 57	58
24	57	X 54	X 56	X 43	48																X 72	X 68	X 65	X 58
25	X 54	X 52	X 50	X 38	45																X 76	69	X 56	60
26	62	X 56	X 52	57	47																X 76	X 71	X 62	53
27	55	54	53	51	46																X 83	X 84	X 75	X 74
28	68	X 60	X 53	50	X 46																A	X 63	68	X 65
29	X 58	52	54	53	53															X 72	X 64	X 62	58	X 57
30	X 53	X 47	X 46	X 46	X 41															X 66	X 64	X 58	57	56
31	54	X 50	X 50	X 44	X 39															X 68	X 58	X 52	X 51	X 50
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	30	30	31	1														4	30	31	30	29
MED	54	52	50	48	X 45	X 53														X 67	X 68	X 64	X 60	56
U Q	57	X 54	52	51	47															X 70	X 77	X 69	65	60
L Q	X 51	X 48	46	X 43	X 40															X 66	X 66	X 59	X 55	X 50

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	48	F	F	F	F	45	49	62	55	50	51	A	A	A	50	A	59	60	56	59	67	69	53	52
2	49	49	46	41	40	45	53	59	54	58	A	R	A	A	55	59	60	51	51	61	74	67	49	46
3	43	40	36	37	35	40	52	59	66	66	47	48	52	56	A	66	63	68	67	69	72	64	56	54
4	49	52	47	46	41	48	51	53	A	64	71	52	A	A	56	63	54	58	63	70	70	63	42	F
5	F	34	F	28	32	44	A	52	A	68	54	A	A	A	A	A	60	A	A	71	71	47	38	A
6	33	34	29	26	26	34	48	A	56	A	A	A	A	50	52	A	56	A	63	67	68	58	F	F
7	F	F	F	A	35	40	46	54	66	59	A	45	42	A	54	58	59	54	51	58	60	55	52	F
8	F	F	F	42	34	34	48	53	54	52	A	R	A	51	55	54	56	54	52	62	71	F	F	F
9	42	F	41	38	34	A	A	74	54	51	A	A	53	A	A	63	A	A	63	69	60	63	66	F
10	F	F	F	F	34	24	A	A	A	A	A	54	A	52	51	54	52	52	A	A	61	59	F	A
11	A	A	F	F	F	40	44	49	55	71	53	46	A	A	A	A	50	52	56	71	60	47	44	F
12	42	F	F	37	38	43	44	57	70	68	A	59	55	63	59	56	54	56	55	62	62	57	54	44
13	F	F	F	F	F	36	44	69	59	R	A	A	59	66	57	53	52	50	50	A	58	F	F	F
14	A	A	F	F	F	38	46	61	A	A	59	A	A	A	68	68	58	52	52	60	60	52	F	F
15	F	A	F	F	F	40	48	50	66	A	A	A	A	A	71	78	76	67	77	61	58	54	55	49
16	F	F	F	50	41	33	A	48	50	50	50	A	A	A	A	50	A	A	A	53	60	42	42	42
17	F	F	A	F	F	A	44	50	56	A	A	A	A	54	A	A	A	64	69	70	74	50	A	F
18	A	F	F	F	F	35	42	56	57	48	48	62	A	A	55	62	62	A	58	64	65	56	49	38
19	F	F	F	F	30	36	46	A	61	A	A	55	A	A	54	68	A	A	74	72	62	58	53	48
20	F	41	35	F	33	37	44	57	67	A	60	54	54	54	55	59	65	70	67	71	73	66	F	F
21	51	48	F	F	44	46	51	52	59	70	64	53	55	A	53	59	68	73	67	67	F	F	F	F
22	F	43	41	F	F	36	53	60	A	A	68	54	59	76	73	77	72	78	95	93	59	55	48	41
23	F	F	F	F	50	46	47	59	A	55	A	64	56	55	A	55	A	64	65	60	56	53	51	F
24	F	48	50	37	F	40	48	53	60	60	48	45	53	54	A	62	60	62	62	65	66	62	59	52
25	47	46	44	32	F	39	50	53	52	47	51	51	58	56	A	A	A	A	A	68	70	F	50	F
26	F	49	46	F	F	41	A	46	54	58	53	57	61	59	A	A	A	58	65	74	70	65	56	F
27	F	F	F	F	F	38	45	56	A	A	58	A	A	A	58	62	62	62	66	75	77	78	69	68
28	F	54	47	F	40	38	54	57	64	59	54	50	56	57	61	62	61	65	65	73	A	57	F	59
29	52	F	F	F	F	45	38	A	48	52	54	53	53	60	55	59	68	72	68	65	58	56	F	51
30	46	40	40	40	35	36	44	45	52	56	63	63	A	58	53	54	52	53	54	60	57	52	F	F
31	F	44	44	38	33	35	45	53	58	55	54	66	A	68	52	55	62	62	64	62	52	46	45	44
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	14	13	13	18	29	26	27	24	21	19	19	14	17	21	24	24	24	27	29	29	27	20	14
MED	47	45	44	38	35	39	46	54	56	58	54	54	55	56	55	59	60	61	63	67	62	57	52	48
U Q	49	49	46	42	40	44	50	59	62	65	60	59	58	62	58	63	62	66	67	71	70	63	56	52
L Q	42	40	38	34	33	36	44	52	54	52	51	50	53	54	53	55	55	54	55	61	60	52	46	44

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						UL 308	UL 376	A	412	432	A	A	A	A	A	A	412	368	L					
2						L	A	A	A	A	A	UL 432	A	A	UL 448	A	UL 408	UL 388	UL 344					
3							L	A	A	A	A	UL 456	UL 428	A	A	A	A	UL 384	A					
4							A	A	A	A	A	A	A	A	A	424	A	384	UL 368					
5							A	A	A	A	A	A	A	A	A	A	408	A	A					
6							UL 388	A	A	A	A	A	A	A	A	A		A	A					
7						A	A	412	A	A	A	A	A	A	A	A	A	A	UL 352	A				
8								A	420	436	A	UL 444	A	UL 452	A	A	416	A	336	A				
9						A	A	A	UL 436	448	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	UL 460	A	456	436	432	408	A	A	A				
11							UL 416	UL 424	A	A	444	A	A	A	A	A	UL 420	388	A	A				
12							UL 400	A	A	A	A	A	448	A	A	428	UL 448	A	A	A				
13							364	400	420	476	A	A	A	464	A	424	404	UL 400	A	A				
14								A	A	A	A	A	A	A	A	A	428	408	340					
15							A	A	A	A	A	A	A	A	A	A	A	A	L					
16							A	A	A	UL 444	UL 428	A	A	A	A	A	A	A	A					
17						A	UL 372	UL 432	A	A	A	A	A	464	A	A	A	A	340					
18							UL 412	392	428	A	468	A	A	A	A	A	A	A	A					
19							L	A	420	A	A	A	A	A	A	A	A	A	A	A				
20							UL 380	A	A	A	456	464	468	460	452	UL 444	A	A	A	A				
21							A	A	A	UL 428	464	UL 432	UL 480	A	A	A	A	A	A					
22						UL 252	UL 380	L	A	A	460	UL 464	468	A	456	444	416	396	A					
23							A	400	A	A	A	A	A	472	A	A	A	A	A					
24							A	UL 408	424	A	452	448	UL 444	UL 452	A	452	A	A	L					
25							L	392	UL 444	UL 448	A	A	A	A	A	A	A	A	A					
26							A	A	432	440	456	468	A	452	A	A	A	380	L					
27								A	A	A	A	A	A	A	A	444	428	A	A	A				
28						UL 276	352	388	420	440	UL 452	456	460	488	UL 440	432	A	A	A	A				
29							L	A	416	A	452	UL 452	UL 452	A	A	A	A	392						
30							L	A	UL 460	460	A	A	A	A	A	UL 444	440	UL 392	L					
31							L	408	424	A	UL 468	464	A	A	UL 444	436	UL 416	UL 396	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	10	10	13	10	11	12	8	9	6	11	13	12	6					
MED						UL 276	UL 380	404	424	442	456	UL 456	456	460	446	436	416	390	342					
U Q						UL 308	UL 400	UL 412	UL 434	448	464	464	468	468	452	UL 444	428	396	UL 352					
L Q						UL 252	372	392	420	436	452	UL 446	UL 446	UL 452	440	428	408	384	340					

JUL. 2010 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	A	A	A	A	A	A	A	U R 268	A					
2						A	A	A	A	A	A	A	A	A	A	A	R	252	A	B				
3						A	A	A	A	A	A	A	R	A	A	A	A	R	A	B				
4						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
5						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
6						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
7						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
8						A	U A 248	A	A	A	A	A	A	A	A	A	A	A	A	B				
9						A	A	A	A	R	A	A	A	A	A	A	A	A	A	B				
10						B	A	A	A	A	A	A	A	A	A	A	R	A	A	B				
11						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
12						B	U A 248	A	A	A	A	A	A	A	A	A	A	A	A	B				
13						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
14						B	A	A	A	A	A	A	A	A	A	A	R	A	U R 204	B				
15						B	U A 244	A	A	A	A	A	A	A	A	A	A	A	A	B				
16						B	A	A	A	R	R	A	A	A	A	A	A	A	A	B				
17						A	A	A	A	A	A	A	A	A	A	A	A	A	U R 232	B				
18						192	252	A	A	A	A	A	A	A	A	A	A	A	A	B				
19						172	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
20						B	A	A	A	A	A	S	R	R	R	A	A	A	A	B				
21						B	A	A	A	R	A	R	A	A	A	A	A	A	A	B				
22						A	240	R	A	A	A	A	A	A	A	A	A	A	A	B				
23							A	A	A	A	A	A	A	A	A	A	A	A	A	B				
24						A	A	A	A	A	A	A	R	A	A	A	A	A	A	B				
25						A	A	U A 276	A	A	A	A	A	A	A	A	A	A	A	B				
26						A	A	A	A	A	A	R	A	R	A	A	A	A	A	B				
27						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
28						A	A	R	R	R	R	A	A	A	A	A	A	A	A	B				
29						B	228	A	A	A	A	A	A	A	A	A	A	A	A					
30						A	R	A	A	A	A	A	A	A	A	A	A	A	A					
31						B	A	A	A	A	A	A	A	A	R	A	R	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	6	1										2	2					
MED						182	246	U A 276										260	U R 218					
U Q							248																	
L Q							240																	

JUL. 2010 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 32	J A 24	20	J A 24	J A 24	J A 28	J A 41	J A 44	J A 43	J A 48	48	82	J A 46	J A 78	J A 54	J A 88	35	G 22	25	E B 14	20	E B 16	21	22
2	E B 15	E B 15	E B 16	J A 24	J A 21	J A 33	J A 44	39	J A 58	J A 50	46	43	J A 108	J A 116	40	41	G 26	34	32	J A 27	J A 16	J A 39	J A 31	J A 32
3	J A 27	J A 24	J A 43	J A 24	20	J A 33	J A 37	J A 72	J A 45	J A 68	J A 46	46	G	51	J A 118	J A 42	J A 48	G 24	J A 42	J A 22	31	E B 15	J A 22	J A 24
4	J A 28	J A 23	J A 29	22	J A 22	26	J A 55	J A 61	J A 67	J A 57	J A 60	56	J A 64	J A 78	J A 70	J A 74	J A 57	31	J A 62	J A 26	J A 30	J A 57	J A 43	J A 43
5	J A 55	J A 40	J A 25	J A 24	J A 25	J A 42	J A 173	J A 44	J A 218	J A 96	J A 100	74	J A 80	J A 65	J A 98	J A 155	J A 40	J A 120	J A 81	J A 37	J A 54	J A 60	J A 31	J A 108
6	J A 53	J A 53	J A 28	J A 30	J A 24	J A 29	32	J A 54	J A 50	J A 72	J A 64	J A 106	J A 68	J A 46	J A 48	J A 100	J A 62	J A 70	J A 77	J A 39	J A 71	J A 86	J A 37	J A 76
7	J A 53	J A 44	J A 43	J A 67	J A 58	J A 46	J A 40	36	J A 46	J A 48	J A 61	J A 44	J A 48	J A 56	J A 54	J A 44	J A 43	J A 53	J A 31	J A 42	J A 29	J A 47	J A 41	J A 45
8	J A 63	J A 54	J A 24	J A 28	J A 27	22	31	J A 47	36	J A 48	J A 49	40	J A 79	J A 88	J A 96	J A 114	J A 67	J A 61	J A 118	J A 131	J A 80	J A 74	J A 43	J A 56
9	J A 40	J A 20	J A 61	22	E B 15	J A 44	J A 55	J A 64	J A 82	G	J A 116	J A 101	J A 60	J A 74	J A 109	J A 46	J A 97	J A 170	J A 158	J A 24	J A 28	J A 32	J A 60	J A 30
10	J A 50	J A 49	J A 34	J A 22	J A E B 14	24	J A 50	J A 60	J A 64	J A 65	J A 88	J A 51	J A 48	J A 44	J A 42	36	G 27	J A 40	J A 92	J A 89	J A 58	J A 26	J A 36	J A 99
11	J A 53	J A 55	J A 32	J A 29	J A 20	22	28	34	42	50	43	42	54	J A 59	J A 63	J A 56	J A 96	J A 38	J A 76	J A 60	J A 27	J A 30	J A 35	J A 36
12	J A 44	J A 34	J A 31	J A 32	J A 29	23	35	J A 58	J A 73	J A 65	J A 72	J A 74	J A 54	J A 58	J A 44	J A 47	J A 37	J A 49	J A 104	J A 44	J A 46	J A 37	J A 76	J A 56
13	J A 43	J A 33	J A 26	J A 21	E B 15	J A 20	J A 39	34	J A 42	J A 53	47	J A 56	J A 55	J A 48	J A 76	J A 54	J A 46	J A 60	J A 54	J A 76	J A 108	J A 81	J A 38	J A 39
14	J A 46	J A 46	J A 45	J A 25	20	J A 31	J A 46	J A 56	J A 144	J A 107	J A 68	J A 91	J A 97	J A 89	J A 105	J A 54	G 24	38	G	J A 20	J A 55	J A 48	J A 79	J A 86
15	J A 62	J A 84	J A 53	J A 41	J A 24	J A 34	J A 40	J A 45	J A 75	J A 112	J A 169	J A 182	J A 116	J A 86	J A 74	J A 50	J A 48	J A 49	J A 45	32	J A 60	J A 47	J A 29	J A 30
16	J A 34	J A 32	J A 29	J A 23	J A 24	23	J A 51	38	41	G 30	G 24	J A 48	J A 49	J A 66	J A 75	J A 53	J A 62	J A 61	J A 101	J A 40	22	J A E B 84	J A 15	J A 171
17	J A 27	J A 38	J A 78	J A 27	J A 28	J A 50	J A 35	J A 47	J A 58	J A 67	J A 147	J A 152	J A 84	J A 58	J A 80	J A 57	J A 170	J A 76	G 22	E B 16	E B 14	J A 24	J A 62	J A 43
18	J A 104	J A 30	J A 26	J A 38	J A 22	26	33	J A 38	J A 47	41	J A 43	J A 52	J A 137	J A 84	J A 84	J A 45	41	J A 128	J A 61	J A 44	J A 60	J A 37	J A 24	J A 22
19	J A 26	J A 34	J A 43	J A 36	J A 22	20	J A 38	J A 70	J A 56	J A 86	J A 60	J A 55	J A 58	J A 96	J A 75	J A 96	J A 131	J A 104	J A 72	J A 79	J A 65	J A 51	J A 28	J A 24
20	J A 47	J A 22	J A 24	J A 22	J A 19	22	J A 40	J A 40	J A 60	J A 132	J A E S 48	40	G	G	G 29	42	J A 48	J A 60	J A 67	J A 49	J A 50	J A 29	J A 24	J A 48
21	19	J A 24	J A 21	19	19	J A 32	33	J A 67	J A 62	G 29	42	G	45	J A 109	J A 69	J A 60	J A 81	J A 91	J A 69	J A 95	J A 29	21	J A 43	J A 39
22	J A 72	J A 37	J A 47	J A 25	J A 20	18	29	G 26	J A 68	J A 68	J A 58	J A 44	J A 49	J A 44	42	35	39	J A 47	J A 82	J A 49	J A 34	J A 27	J A 20	J A 63
23	J A 36	J A 47	J A 53	J A 22	J A 23	J A 22	J A 67	36	J A 80	J A 55	J A 65	75	J A 56	J A 79	J A 60	J A 105	J A 83	J A 54	J A 78	J A 64	J A 48	J A 25	J A 28	J A 34
24	J A 20	J A 29	J A 20	J A 23	20	25	32	35	40	J A 74	43	44	G	43	J A 80	J A 46	J A 55	J A 76	J A 58	J A 102	J A 34	J A 52	J A 31	J A 47
25	J A 29	J A 37	J A 23	J A 23	J A 32	J A 35	J A 29	33	38	42	J A 52	45	J A 49	J A 118	J A 78	J A 98	J A 100	J A 81	J A 128	J A 66	J A 91	J A 54	J A 46	J A 35
26	J A 26	J A 28	J A 24	J A 26	J A 26	J A 59	J A 74	J A 59	J A 46	J A 48	J A 44	G	44	G	J A 117	J A 84	J A 122	J A 48	J A 46	J A 40	J A 46	J A 30	J A 42	J A 30
27	J A 29	J A 83	J A 78	J A 28	20	21	31	J A 47	J A 81	J A 67	J A 58	J A 68	J A 59	J A 58	J A 52	J A 45	38	J A 60	J A 43	J A 50	J A 54	J A 44	J A 45	J A 23
28	J A 37	J A 30	J A 42	J A 24	J A 26	J A 30	27	G 25	G 29	G 33	G J A 44		40	J A 49	J A 43	37	J A 56	J A 53	J A 35	J A 60	J A 71	J A 36	J A 26	J A 27
29	23	J A 53	J A 47	J A 34	J A 32	J A 29	30	J A 59	38	44	41	44	43	J A 59	45	J A 48	J A 56	J A 46	J A 38	J A 28	J A 39	J A 48	J A 62	J A 21
30	J A 30	J A 43	J A 23	J A 22	J A E B 14	J A 28	G	J A 76	43	J A 44	J A 75	J A 54	J A 71	J A 70	J A 46	47	40	J A 37	J A 28	20	J A 24	J A 23	J A 52	J A 40
31	J A 29	E B 16	22	E B 16	20	G	29	34	38	J A 50	39	38	J A 84	J A 63	G	38	G 24	32	J A 33	34	J A 31	28	23	J A 38
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 36	J A 34	J A 29	J A 24	J A 22	J A 28	J A 37	J A 45	J A 50	J A 53	J A 52	J A 51	J A 55	J A 63	J A 69	J A 50	J A 48	J A 53	J A 61	J A 42	J A 46	J A 37	J A 36	J A 39
U Q	J A 53	J A 47	J A 45	J A 29	J A 26	J A 33	J A 46	J A 59	J A 68	J A 68	J A 68	J A 74	J A 79	J A 84	J A 80	J A 84	J A 81	J A 76	J A 81	J A 64	J A 60	J A 52	J A 45	J A 56
L Q	J A 27	J A 24	J A 24	22	20	22	31	36	42	44	43	44	46	J A 49	45	44	39	38	35	J A 27	J A 29	J A 27	J A 26	J A 30

JUL. 2010 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	31	E B 16	E B 15	17	E B 16	21	31	41	36	40	46	A A 82	A A 46	A A 78	42	A A 88	33	G 21	22	E B 14	E B 15	E B 16	16	E B 15
2	E B 15	E B 15	E B 16	19	E B 16	20	42	36	42	42	A A 46	38	A A 108	A A 116	35	38	G 25	32	28	23	E B 15	18	22	E B 15
3	18	19	22	18	15	21	29	40	40	50	39	40	G	48	A A 118	41	43	G 22	34	E B 16	28	E B 15	E B 15	16
4	21	E B 16	22	E B 15	16	23	39	41	A A 67	44	44	48	A A 64	A A 78	42	36	42	30	27	20	18	17	27	22
5	19	22	17	E B 14	18	37	A A 173	40	A A 218	44	42	A A 74	A A 80	A A 65	A A 98	A A 155	34	A A 120	A A 81	33	39	32	22	A A 108
6	19	16	21	17	16	20	29	A A 54	45	A A 72	A A 64	A A 106	A A 68	42	40	A A 100	41	A A 70	49	28	41	25	30	27
7	30	22	36	A A 67	22	32	34	35	40	44	A A 61	41	40	A A 56	43	41	40	37	23	29	21	20	24	28
8	24	17	16	E B 15	19	18	30	39	35	37	A A 49	38	A A 79	40	45	49	35	38	29	35	18	22	32	37
9	21	E B 15	28	16	E B 15	A A 44	A A 55	58	34	G	A A 116	A A 101	51	A A 74	A A 109	43	A A 97	A A 170	49	19	17	19	16	23
10	34	28	25	E B 14	E B 14	18	A A 50	A A 60	A A 64	A A 65	A A 88	40	A A 48	40	37	34	G 26	38	A A 92	A A 89	23	17	22	A A 99
11	A A 53	A A 55	26	25	E B 15	19	26	31	41	46	38	42	A A 54	A A 59	A A 63	A A 56	36	28	43	43	22	18	19	18
12	29	19	17	18	19	20	30	52	60	60	A A 72	50	40	45	40	35	32	44	32	24	31	21	35	32
13	29	22	16	E B 14	E B 15	18	34	33	35	37	A A 47	A A 56	49	39	45	36	32	30	35	A A 76	31	22	24	20
14	A A 46	A A 46	20	E B 14	E B 14	21	30	48	A A 144	A A 107	50	A A 91	A A 97	A A 89	50	42	G 23	33	G	E B 15	38	28	25	21
15	18	A A 84	16	16	E B 15	29	36	43	57	A A 112	A A 169	A A 182	A A 116	A A 86	60	45	45	37	26	28	26	26	18	20
16	24	19	19	17	18	20	A A 51	36	39	G 28	G A 24	A A 48	A A 49	A A 66	A A 75	44	A A 62	A A 61	A A 101	25	E B 15	23	E B 15	23
17	20	23	A A 78	18	18	A A 50	24	33	47	A A 67	A A 147	A A 152	A A 84	41	A A 80	A A 57	A A 170	37	G 20	E B 16	E B 14	19	A A 62	23
18	A A 104	E B 16	16	E B 16	E B 14	21	30	34	36	38	39	49	A A 137	A A 84	46	44	41	A A 128	32	18	18	28	E B 15	E B 15
19	E B 16	21	30	18	16	19	26	A A 70	36	A A 86	A A 60	48	A A 58	A A 96	48	52	A A 131	A A 104	45	25	39	19	17	18
20	19	E B 15	16	E B 15	E B 15	18	25	38	58	A A 132	37	E S 40	G	G	G 27	38	44	43	58	43	34	18	E B 14	16
21	E B 15	20	E B 15	E B 14	E B 15	17	28	47	42	G 29	39	G	42	A A 109	46	45	44	46	34	45	18	E B 16	E B 15	22
22	20	27	19	16	E B 14	17	28	G 26	A A 68	A A 68	39	40	40	43	38	34	35	33	52	31	20	18	E B 15	34
23	20	32	19	E B 15	E B 15	E B 15	32	32	A A 80	43	A A 65	53	52	42	A A 60	46	A A 83	49	55	43	29	18	19	22
24	E B 15	16	17	17	E B 15	20	28	34	38	50	38	39	G	41	A A 80	38	48	53	22	46	16	48	E B 15	22
25	18	16	20	18	17	26	25	32	36	39	38	45	46	46	A A 78	A A 98	A A 100	A A 81	A A 128	34	26	33	36	18
26	19	22	18	17	18	20	A A 74	43	38	36	37	G	42	G	A A 117	A A 84	A A 122	31	25	25	20	19	24	22
27	24	31	24	16	E B 16	18	28	41	A A 81	A A 67	53	A A 68	A A 59	A A 58	48	37	34	42	36	38	36	34	21	E B 15
28	26	18	25	E B 16	16	20	25	G 24	G 27	G 31	G	41	40	44	38	33	40	41	27	52	A A 71	20	E B 16	21
29	16	E B 15	29	17	20	17	26	A A 59	35	38	38	41	41	54	45	43	42	27	29	17	23	23	35	E B 16
30	23	20	16	E B 15	E B 14	17	G	35	35	38	45	46	A A 71	48	40	37	36	31	22	E B 15	E B 15	E B 15	24	18
31	19	E B 16	E B 15	E B 16	E B 15	G	27	32	35	45	37	35	A A 84	59	G	33	G 24	31	31	30	23	21	E B 15	18
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	20	19	19	16	E B 16	20	30	39	40	44	45	46	A A 51	54	46	43	41	38	32	28	23	20	21	21
U Q	29	23	25	18	18	21	A A 36	47	A A 60	A A 67	A A 61	A A 68	A A 79	A A 78	A A 75	A A 52	A A 48	A A 53	49	43	31	25	25	23
L Q	18	E B 16	16	E B 15	E B 15	18	26	33	36	38	38	40	41	42	40	37	34	31	26	E B 19	E B 18	18	E B 15	E B 18

JUL. 2010 fbEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	16	15	14	16	15	13	14	14	13	24	21	20	21	23	14	15	14	13	14	15	16	16	15
2	15	15	16	15	16	13	15	13	14	18	18	17	17	24	20	15	14	15	11	14	15	15	15	15
3	15	15	15	15	14	14	13	13	14	19	16	25	20	19	20	18	16	18	13	16	15	15	14	15
4	14	16	15	15	16	14	16	15	13	18	18	21	24	23	20	18	15	15	14	14	14	14	14	14
5	15	15	15	14	15	16	13	14	13	14	18	20	17	23	20	17	15	15	15	14	15	15	15	15
6	15	15	15	15	15	14	15	14	14	13	24	21	18	20	18	16	14	15	13	14	14	14	15	15
7	15	15	15	15	15	16	13	15	15	16	18	20	17	20	18	20	14	15	11	14	15	15	15	14
8	16	16	15	15	15	14	14	15	14	18	14	20	25	29	22	18	13	13	14	15	14	14	15	15
9	15	15	15	15	15	12	14	13	13	25	26	22	24	23	25	15	16	15	15	14	14	15	16	15
10	16	14	14	14	14	15	16	13	14	18	23	24	18	18	22	18	15	14	14	14	15	14	15	16
11	14	15	15	14	15	14	13	14	18	18	22	16	26	25	21	18	14	15	13	15	13	14	16	14
12	16	15	14	15	14	15	13	14	17	21	22	20	18	20	15	12	17	14	14	15	15	15	15	15
13	16	15	14	14	15	15	15	14	14	15	15	16	22	23	20	17	14	13	14	12	15	14	15	14
14	15	16	14	14	14	14	12	12	12	25	18	22	22	20	20	15	14	12	12	15	14	15	14	14
15	15	15	16	16	15	14	14	14	13	22	21	24	22	24	20	16	14	14	14	15	15	15	14	14
16	15	16	14	14	14	13	12	15	14	17	16	22	18	22	17	17	14	13	14	13	15	14	15	15
17	15	15	15	15	14	14	14	15	12	18	16	22	18	23	22	19	14	14	12	16	14	15	15	15
18	14	16	14	15	14	14	14	12	13	18	18	22	22	20	16	15	13	14	14	14	16	14	15	15
19	16	14	15	14	13	14	14	12	12	20	10	16	19	18	20	15	15	13	13	13	14	15	15	14
20	14	15	15	15	15	14	13	13	14	15	21	E S 40	20	23	18	21	17	15	14	15	14	15	14	14
21	15	15	16	14	15	14	14	12	14	16	18	22	18	28	24	22	19	14	12	14	15	16	15	15
22	14	15	14	15	14	15	12	14	18	18	22	20	23	19	20	20	15	16	14	15	14	15	15	15
23	15	15	15	15	15	15	14	14	13	14	22	25	20	22	18	18	17	10	12	14	14	13	14	13
24	16	15	16	15	15	15	14	16	14	18	24	23	24	22	27	17	15	13	14	12	15	16	15	15
25	15	14	14	15	14	14	14	14	15	18	22	20	21	25	21	18	15	14	13	13	14	14	15	14
26	16	15	14	16	13	14	15	14	13	16	17	27	21	24	20	14	19	15	14	14	15	15	15	15
27	15	15	15	16	16	14	14	14	15	19	18	24	22	24	22	18	15	14	16	14	15	14	14	15
28	14	15	15	16	15	14	14	13	17	16	21	17	23	20	18	17	16	15	14	15	15	15	16	15
29	16	15	15	15	14	14	14	14	14	13	21	22	24	22	19	14	14	14	14	15	15	14	16	16
30	16	15	15	15	14	14	12	14	12	16	25	25	26	26	18	17	15	16	13	15	15	15	15	14
31	15	16	15	16	15	15	15	13	13	17	20	22	30	23	26	16	13	14	14	16	15	15	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	14	14	14	14	18	20	22	21	23	20	17	15	14	14	14	15	15	15	15
U Q	16	15	15	15	15	15	14	14	14	18	22	24	24	24	22	18	16	15	14	15	15	15	15	15
L Q	15	15	14	14	14	14	13	13	13	16	18	20	18	20	18	15	14	14	13	14	14	14	15	14

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	305	F	F	F	F	310	303	321	332	269	309	A	A	A	280	A	312	320	324	303	306	331	320	309
2	302	305	324	315	302	294	289	319	311	322	A	R	A	A	307	302	318	324	292	301	317	337	303	314
3	307	306	297	311	321	332	334	318	344	386	328	317	276	305	A	309	315	310	327	323	328	331	313	314
4	321	315	305	330	294	374	350	325	A	314	350	283	A	A	302	313	292	319	306	337	341	359	319	F
5	F	307	F	304	350	380	A	350	A	345	332	A	A	A	A	A	302	A	A	313	364	355	324	A
6	314	319	311	323	319	361	343	A	343	A	A	A	A	303	280	A	305	A	308	319	318	336	F	F
7	F	F	F	A	331	327	310	322	367	363	A	327	338	A	313	316	336	321	307	329	317	317	325	F
8	F	F	F	344	384	366	363	349	355	346	A	R	A	292	311	311	322	317	324	325	328	F	F	F
9	291	F	338	315	316	A	A	380	315	385	A	A	338	A	A	302	A	A	330	343	311	308	338	F
10	F	F	F	F	302	275	A	A	A	A	A	317	A	300	308	322	309	311	A	A	326	315	F	A
11	A	A	F	F	F	358	299	311	317	353	353	354	A	A	A	A	295	311	316	335	346	326	317	F
12	320	F	F	311	339	379	312	324	317	345	A	316	275	314	305	322	309	338	333	307	335	310	328	322
13	F	F	F	F	F	353	298	380	353	R	A	A	285	325	336	336	323	322	315	A	311	F	F	F
14	A	A	F	F	F	350	348	347	A	A	326	A	A	A	308	306	308	318	322	334	340	343	F	F
15	F	A	F	F	F	338	316	287	344	A	A	A	A	A	284	305	308	310	332	342	306	288	294	307
16	F	F	F	305	346	313	A	294	287	309	305	A	A	A	A	296	A	A	A	315	335	325	312	282
17	F	F	A	F	F	A	319	304	350	A	A	A	A	301	A	A	A	317	320	321	359	317	A	F
18	A	F	F	F	F	366	303	358	302	298	317	312	A	A	294	312	319	A	317	314	336	331	341	316
19	F	F	F	F	339	358	351	A	364	A	A	316	A	A	273	288	A	A	338	331	312	310	321	314
20	F	322	328	F	313	337	306	347	370	A	346	317	305	301	291	291	308	327	325	321	333	323	F	F
21	320	328	F	F	310	352	341	285	332	339	349	315	332	A	276	293	321	341	328	340	F	F	F	F
22	F	305	322	F	F	326	320	303	A	A	353	281	297	312	288	306	290	286	330	357	326	298	299	305
23	F	F	F	F	315	312	321	358	A	344	A	303	309	284	A	288	A	310	332	327	302	294	288	F
24	F	319	332	311	F	322	350	342	340	345	330	328	307	295	A	325	333	332	323	313	310	319	322	311
25	317	311	331	317	F	342	376	356	352	336	247	295	322	314	A	A	A	A	A	305	315	F	292	F
26	F	303	303	F	F	355	A	330	297	326	303	302	296	320	A	A	A	302	302	319	315	329	339	F
27	F	F	F	F	F	341	334	332	A	A	310	A	A	A	283	309	316	313	302	297	294	324	302	334
28	F	325	305	F	291	303	319	321	345	337	352	280	296	304	304	326	307	308	305	315	A	307	F	305
29	303	F	F	F	F	366	385	A	294	331	304	309	283	309	304	296	320	310	337	325	322	302	F	299
30	314	328	328	327	331	374	351	330	289	306	331	333	A	320	293	318	303	311	327	334	330	305	F	F
31	F	306	340	323	345	327	325	318	322	309	286	305	A	334	283	306	338	325	344	336	306	325	303	307
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	14	13	13	18	29	26	27	24	21	19	19	14	17	21	24	24	24	27	29	29	27	20	14
MED	314	313	324	315	320	342	323	325	336	337	328	315	301	305	294	308	310	317	324	323	322	323	318	310
U Q	320	322	332	325	339	364	350	349	351	346	349	317	322	317	308	317	320	323	330	334	335	331	324	314
L Q	303	306	305	311	310	324	310	318	313	312	305	302	285	300	283	299	306	310	308	314	311	308	302	305

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						UL 338	UL 366	A	392	412	A	A	A	A	A	A	382	375	L					
2						L	A	A	A	A	A	UL 436	A	A	UL 379	A	UL 351	UL 357	UL 356					
3							L	A	A	A	A	UL 392	UL 453	A	A	A	A	UL 352	A					
4							A	A	A	A	A	A	A	A	A	394	A	359	UL 344					
5							A	A	A	A	A	A	A	A	A	A	395	A	A					
6							UL 357	A	A	A	A	A	A	A	A	A		A	A					
7						A	A	385	A	A	A	A	A	A	A	A	A	A	UL 358	A				
8								A	399	393	A	UL 455	A	UL 400	A	A	374	A	357	A				
9						A	A	A	UL 399	408	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	UL 406	A	370	381	383	381	A	A	A				
11							UL 379	UL 378	A	A	359	A	A	A	A	A	UL 389	362	A	A				
12							UL 357	A	A	A	A	A	384	A	A	402	UL 349	A	A	A				
13							353	376	418	394	A	A	A	369	A	398	401	UL 362	A	A				
14								A	A	A	A	A	A	A	A	A	369	361	353					
15							A	A	A	A	A	A	A	A	A	A	A	A	L					
16							A	A	A	UL 403	UL 422	A	A	A	A	A	A	A	A					
17						A	UL 378	UL 374	A	A	A	A	A	403	A	A	A	A	351					
18							UL 345	430	423	A	402	A	A	A	A	A	A	A	A					
19							L	A	406	A	A	A	A	A	A	A	A	A	A	A				
20							UL 384	A	A	A	471	453	418	385	417	UL 299	A	A	A	A				
21							A	A	A	UL 437	426	UL 394	UL 397	A	A	A	A	A	A					
22						UL 382	UL 331	L	A	A	403	UL 417	433	A	377	372	380	332	A					
23							A	393	A	A	A	A	A	384	A	A	A	A	A					
24							A	UL 402	416	A	438	438	UL 344	UL 414	A	374	A	A	L					
25							L	384	UL 382	UL 399	A	A	A	A	A	A	A	A	A					
26							A	A	374	426	429	443	A	411	A	A	A	376	L					
27								A	A	A	A	A	A	A	A	370	366	A	A	A				
28						UL 338	373	389	416	379	UL 407	428	417	321	UL 394	408	A	A	A	A				
29							L	A	387	A	414	UL 357	UL 359	A	A	A	A	364						
30							L	A	UL 413	407	A	A	A	A	A	UL 402	352	UL 378	L					
31							L	374	379	A	UL 391	388	A	A	UL 411	399	UL 381	UL 360	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	10	10	13	10	11	12	8	9	6	11	13	12	6					
MED						UL 338	UL 362	384	399	405	414	UL 422	407	385	388	394	380	362	354					
U Q						UL 382	UL 378	393	416	412	429	440	426	407	411	402	386	370	357					
L Q						UL 338	UL 353	376	384	394	402	UL 393	UL 372	370	379	372	359	358	351					

JUL. 2010 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 h′F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						322	342	310	292	436	E A 368	A	A	A	416	A	308	300	292					
2						346	E A 368	302	336	320	A	384	A	A	362	318	314	318	336					
3							280	292	272	242	E A 306	398	436	E A 362	A	316	306	304	254					
4							256	E A 264	A	316	264	E A 410	A	A	360	310	368	304	296					
5							A	264	A	276	298	A	A	A	A	A	324	A	A					
6							286	A	282	A	A	A	A	382	E A 412	A		A	E A 302					
7						E A 274	E A 280	306	256	248	A	E A 362	E A 360	A	342	310	292	294	320	240				
8								270	280	290	A	R	A	404	344	E A 354	316	314	320	280				
9						A	A	232	334	260	A	A	E A 314	A	A	342	A	A	272					
10							A	A	A	A	A	344	A	390	362	330	352	324	A	A				
11							372	318	324	256	276	302	A	A	A	A	372	328	E A 304	254				
12							348	E A 332	E A 310	E A 280	A	E A 340	424	326	326	328	328	278	276	E A 256				
13							384	242	252	284	A	A	E A 394	300	302	310	316	320	302	A				
14								262	A	A	E A 304	A	A	A	E A 316	314	330	328	292					
15							322	E A 400	E A 262	A	A	A	A	A	E A 386	306	300	290	252					
16							A	370	E A 394	356	368	A	A	A	A	E A 388	A	A	A					
17						A	336	322	272	A	A	A	A	382	A	A	A	290	278					
18							388	268	280	E A 376	362	362	A	A	E A 372	328	288	A	284					
19							278	A	256	A	A	E A 360	A	A	E A 440	E A 382	A	A	234	240				
20							334	288	E A 274	A	282	352	374	382	396	378	314	276	E A 310	E A 268				
21							266	402	280	268	280	364	308	A	430	354	298	266	258					
22						258	308	256	A	A	252	428	376	302	348	302	312	320	266					
23							290	252	A	296	A	E A 330	E A 382	392	A	388	A	316	E A 294					
24							274	272	290	300	334	340	366	404	A	306	292	E A 298	276					
25							248	262	278	344	E A 466	376	334	340	A	A	A	A	A					
26							A	E A 338	358	300	364	374	334	306	A	A	A	330	306					
27								302	A	A	E A 384	A	A	A	E A 400	332	290	296	304	E A 292				
28						342	298	292	284	282	312	420	370	362	352	298	320	306	296	E A 276				
29							236	A	402	328	378	372	418	E A 370	370	356	296	280						
30							262	274	390	346	296	290	A	328	378	330	360	324	276					
31							326	320	302	360	396	336	A	E A 310	414	350	284	286	248					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						5	23	27	24	22	19	20	14	17	21	24	23	24	26	8				
MED						322	294	282	282	296	305	362	368	362	U 359	323	314	304	284	U 251				
U Q						344	342	320	329	344	368	380	394	386	406	354	328	320	304	E A 278				
L Q						266	274	264	273	276	282	340	334	318	346	310	296	290	272	247				

JUL. 2010 h′F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 h′F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E A 284	E B 278	E B 284	E A 244	E B 250	234	230	A	E A 236	E A 236	A	A	A	A	A	A	194	204	210	204	242	220	236	E B 242
2	E B 246	E B 248	E B 242	E A 242	E B 252	240	A	A	A	A	A	204	A	A	214	A	202	E A 244	E A 262	E A 278	234	214	222	E B 256
3	E A 256	E A 268	E A 326	E A 282	E A 268	E A 232	218	A	A	A	A	198	196	A	A	A	A	208	A	E A 244	232	212	232	E A 240
4	E A 260	E A 250	E A 274	E B 238	E A 284	224	A	A	A	A	A	A	A	A	A	206	A	196	226	228	212	206	E A 232	E A 306
5	E A 316	E A 300	E A 298	E B 274	E A 244	E A 238	A	A	A	A	A	A	A	A	A	A	212	A	A	E A 232	212	218	E A 240	A
6	E A 282	E A 266	E A 302	E A 316	E A 278	212	214	A	A	A	A	A	A	A	A	A	332	A	A	230	E A 252	224	E A 280	E A 268
7	E A 256	E A 284	E A 308	A	E A 282	A	A	218	A	A	A	A	A	A	A	A	A	A	208	A	232	226	E A 266	E A 284
8	E A 246	E A 274	E A 238	230	198	214	218	A	206	210	A	192	A	200	A	A	222	A	E A 272	A	218	E A 256	E A 282	E A 260
9	E A 286	E B 264	E A 272	E A 238	E B 256	A	A	A	194	198	A	A	A	A	A	A	A	A	A	214	216	E A 236	214	E A 252
10	E A 280	E A 308	E A 310	E B 260	E B 256	E B 274	A	A	A	A	A	194	A	208	234	210	232	A	A	A	218	E A 246	E A 242	A
11	A	A	E A 294	E A 292	E B 248	212	218	202	A	A	E A 248	A	A	A	A	A	216	232	A	A	204	216	E A 260	224
12	E A 290	E A 264	E A 256	E A 270	E A 256	210	E A 240	A	A	A	A	A	232	A	A	202	208	A	A	A	218	E A 244	220	E A 270
13	E A 304	E A 282	E A 290	E B 260	212	218	216	216	194	196	A	A	A	234	A	218	198	214	A	A	E A 294	E A 256	E A 244	224
14	A	A	E A 332	E B 288	E B 246	232	220	A	A	A	A	A	A	A	A	A	202	212	210	230	228	230	E A 300	E A 270
15	E A 272	A	E A 254	E A 252	E B 260	E A 262	A	A	A	A	A	A	A	A	A	A	A	A	E A 234	212	E A 250	E A 288	E A 264	E A 250
16	E A 310	E A 286	E A 276	E A 256	214	210	A	A	A	212	192	A	A	A	A	A	A	A	A	E A 260	210	E A 240	E B 246	E A 260
17	E A 316	E A 274	A	236	E A 260	A	208	210	A	A	A	A	A	210	A	A	A	A	218	236	204	E A 234	A	E A 304
18	A	E B 250	E A 266	230	226	216	224	204	184	A	214	A	A	A	A	A	A	A	A	244	214	228	218	E B 244
19	E B 314	E A 318	E A 312	E A 250	220	224	200	A	214	A	A	A	A	A	A	A	A	A	A	A	E A 250	240	228	E A 252
20	208	E B 238	226	212	E B 270	220	216	A	A	A	176	176	198	212	188	A	A	A	A	A	E A 246	232	E B 248	232
21	232	E A 246	E B 268	E B 244	E B 242	220	A	A	A	208	202	224	200	A	A	A	A	A	A	E A 246	222	210	E B 246	E A 278
22	E A 306	E A 300	E A 258	E A 232	220	194	250	214	A	A	206	190	192	A	214	206	216	E A 278	A	208	212	232	E B 248	E A 338
23	E A 296	E A 310	E A 268	E B 282	E A 236	222	A	216	A	A	A	A	A	224	A	A	A	A	A	E A 262	E A 248	E A 258	E A 284	E A 312
24	E B 278	E A 250	220	E A 232	E B 288	E A 238	A	208	198	A	168	192	204	194	A	222	A	A	210	E A 274	E A 216	E A 296	230	E A 256
25	E A 266	E A 256	226	E A 274	E A 240	228	212	206	216	212	A	A	A	A	A	A	A	A	A	E A 244	234	E A 238	E A 308	E A 286
26	E A 272	E A 270	E A 270	232	E A 264	238	A	A	238	182	198	184	A	204	A	A	A	222	204	240	232	218	226	E A 256
27	E A 300	E A 314	E A 312	E A 238	E B 264	246	212	A	A	A	A	A	A	A	A	E A 234	206	A	A	A	E A 298	E A 254	E A 242	218
28	E A 258	232	E A 284	E B 260	E A 274	E A 250	218	204	208	216	204	190	188	E A 292	210	198	A	A	A	A	A	230	E B 258	E A 260
29	236	E B 256	E A 326	E A 284	E A 272	232	198	A	212	A	200	210	226	A	A	A	A	208	238	226	E A 238	E A 246	E A 326	E B 254
30	E A 256	E A 262	E A 256	E B 244	224	226	214	A	212	206	A	A	A	A	A	194	234	210	226	230	218	E B 240	E A 264	E A 286
31	E A 260	E B 266	226	234	226	226	226	206	234	A	206	200	A	A	194	198	194	214	A	218	228	E A 248	E B 268	E A 260
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	30	30	31	28	19	11	13	10	11	12	8	9	6	10	14	12	12	21	30	31	30	29
MED	E A 275	E A 267	E A 273	E A 247	E 252	222	217	208	210	208	201	193	199	209	212	205	210	211	216	223	222	U 222	E 246	E A 260
U Q	E A 298	E A 285	E A 302	E A 274	E A 268	E A 238	224	216	225	212	206	202	215	229	214	218	222	227	E A 236	E A 245	E A 242	E A 246	E A 266	E A 281
L Q	E 256	E 253	256	236	226	217	212	204	196	198	192	190	194	202	194	198	202	208	210	222	216	220	232	247

JUL. 2010 h′F (KM)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 h′E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	118	116	116	A	128	A	A	A	124	122	118					
2						A	120	120	A	A	A	120	A	A	A	A	116	120	112	B				
3						A	A	A	A	A	A	A	110	116	A	116	116	118	A	B				
4						122	A	A	A	A	A	A	A	A	A	A	A	116	A	B				
5						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
6						A	116	A	A	A	A	A	A	A	A	A	A	A	A	B				
7						A	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
8						122	116	A	A	A	A	A	A	A	A	A	A	A	A	B				
9						A	A	A	A	122	A	A	A	A	A	A	A	A	A	B				
10						B	A	A	A	A	A	A	A	A	A	A	122	A	A	B				
11						A	114	A	118	118	118	122	A	124	A	A	A	A	A	B				
12						B	122	A	A	A	A	A	A	A	A	A	A	A	A	B				
13						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
14						B	A	A	A	A	A	A	A	A	A	A	118	A	116	B				
15						B	116	116	A	A	A	A	A	A	A	A	114	116	A	B				
16						B	116	112	108	116	114	A	A	A	A	118	A	A	A	B				
17						A	A	A	A	A	A	A	A	A	A	A	A	A	132	B				
18						116	116	A	A	A	A	A	A	A	A	A	118	A	A	B				
19						116	114	A	A	A	A	114	A	A	A	A	A	A	A	B				
20						B	A	A	A	A	A	S	118	126	118	114	A	A	A	B				
21						B	122	A	A	122	A	120	118	A	A	A	A	A	A	B				
22						A	122	122	A	A	A	A	A	A	A	A	128	A	A	B				
23							A	A	A	A	A	A	A	A	A	A	A	A	A	B				
24						A	116	122	A	A	A	A	124	124	A	A	A	A	A	B				
25						A	A	124	A	118	A	122	A	A	A	A	A	A	A	B				
26						A	A	A	A	A	A	124	A	118	A	A	A	A	A	B				
27						B	122	A	A	A	A	A	A	A	A	A	A	A	A	B				
28						A	122	122	124	122	124	A	120	A	A	A	A	A	A	B				
29						B	114	116	116	A	A	116	120	A	A	A	A	A	A					
30						A	122	A	120	A	A	A	A	A	A	A	A	A	120					
31						B	118	118	118	A	A	A	A	A	124	A	124	124	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	17	9	7	7	4	7	7	5	2	3	9	6	5					
MED						119	116	120	118	118	117	120	120	124	121	116	118	119	118					
U Q						122	122	122	120	122	121	122	124	125		118	124	122	126					
L Q						116	116	116	116	116	115	116	118	117		114	116	116	114					

JUL. 2010 h′E (KM)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	92	96	94	106	106	108	102	106	122	122	118	104	116	102	106	108	116	104	116	B	100	B	94	98
2	B	B	B	106	102	108	116	118	104	108	108	120	108	104	106	106	104	126	118	108	106	102	96	96
3	94	92	90	88	90	104	100	98	100	98	106	106	G	114	108	120	116	106	102	106	100	B	98	86
4	92	98	96	96	96	118	108	102	104	106	100	102	102	106	110	108	106	116	104	108	100	96	90	90
5	90	92	92	90	104	104	104	106	100	100	102	102	102	102	102	106	102	98	98	94	94	92	92	98
6	98	94	88	92	92	96	124	104	104	102	102	100	100	100	108	98	106	96	98	96	90	92	92	98
7	96	90	90	102	102	102	96	106	100	102	100	100	96	98	94	92	90	110	92	92	96	92	94	96
8	100	100	98	98	96	124	130	108	106	102	102	104	110	110	108	110	108	106	104	102	98	98	96	96
9	94	92	108	94	B	104	106	104	102	G	102	102	102	100	100	102	106	102	104	100	96	92	98	92
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12	94	94	94	94	94	108	118	104	100	100	98	98	96	96	96	96	100	102	102	102	92	100	96	94
13	94	90	88	86	B	102	104	106	98	94	94	92	92	94	98	106	106	102	104	98	96	100	100	100
14	92	88	88	92	94	116	108	106	106	104	104	102	100	100	100	96	100	106	G	100	100	100	100	102
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17	102	102	100	96	94	98	100	98	106	100	102	102	104	110	104	108	108	102	106	B	B	92	96	102
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19	104	100	100	96	96	154	112	102	102	106	118	122	116	108	108	106	106	102	102	100	100	100	104	104
20	104	102	104	110	100	108	104	102	104	104	106	S	G	G	102	120	102	100	98	96	92	108	102	102
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27	94	96	96	96	98	150	120	104	102	102	98	98	96	96	96	96	100	102	102	100	100	100	102	102
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31	100	B	96	B	94	G	124	120	122	104	104	108	106	102	G	100	104	122	114	104	102	98	96	108
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	27	30	30	31	31	30	30	28	28	29	30	31	31	31	30	29	30	29	30	31
MED	96	96	95	96	98	107	110	104	104	102	103	104	104	102	102	106	104	104	102	100	100	98	97	98
U Q	100	100	100	100	104	116	122	108	106	106	106	108	109	109	106	108	108	106	106	104	102	101	100	102
L Q	94	92	90	92	94	102	104	102	100	100	100	102	100	100	100	100	100	102	98	98	96	93	94	94

JUL. 2010 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

JUL. 2010 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F3	F2	F2	F5	F1	L3	L4	L3	CL22	CL22	CL22	L3	CL22	L3	L2	L3	CL22	L2	CL22		F2		F2	F2
2				F5	F3	L2	C3	C2	L2	L2	L2	CL22	L2	L3	L2	L2	L2	C2	C2	L3	F2	F3	F4	F3
3	F2	F3	F3	F2	F1	L2	L2	L2	L2	L3	L2	L2		C2	L3	CL22	CL22	L2	L3	L2	F4		F3	F3
4	F2	F3	F5	F2	F2	C4	L3	L2	L3	L2	L2	L2	L3	L3	L2	L2	L2	CL12	L3	L3	F3	F2	F4	F4
5	F4	F4	F2	F2	F3	L3	L3	L2	L3	L2	L2	L3	L3	L3	L2	L3	L2	L3	L4	L5	F4	F5	F4	F4
6	F4	F3	F4	F6	F3	L4	C2	L3	L2	L3	L3	L3	L2	L2	L2	L3	L3	L4	L3	L6	F4	F4	F4	F3
7	F2	F3	F2	F3	F2	L4	L4	L2	L2	L2	L3	L3	L3	L3	L3	L2	L3	CL23	L3	L3	F4	F2	F3	F4
8	F4	F3	F3	F4	F3	CL22	CL22	L2	L2	L2	L2	L3	L2	L2	L2	L3	L2	L2	L3	L5	F3	F4	F4	F3
9	F2	F1	F4	F2		L3	L3	L2	L2		L3	L3	L2	L3	L3	L2	L2	L3	L3	L2	F3	F4	F3	F4
10	F4	F3	F2	F2		C2	L4	L3	L3	L3	L3	L2	L3	L2	L2	L2	L2	L2	L4	L4	F4	F5	F3	F3
11	F5	F4	F4	F3	F2	L2	C2	L3	CL22	CL22	CL22	CL22	L3	CL22	L3	L3	L2	L2	L3	L3	F3	F4	F2	F4
12	F3	F4	F3	F3	F3	L2	C2	L3	L4	L3	L3	L2	L2	L2	L2	L2	L2	L2	L3	L2	F3	F2	F3	F3
13	F3	F2	F2	F2		L2	L2	L2	L2	L2	L2	L3	L2	L3	L3	L3	L2	L2	L3	L3	F4	F4	F4	F4
14	F3	F3	F2	F2	F1	C2	L3	L3	L3	L3	L3	L3	L3	L3	L3	L3	L2	L2		L2	F4	F5	F3	F4
15	F4	F5	F4	F4	F4	C6	CL22	CL22	L3	L3	L3	L2	L2	L2	L2	L2	CL22	CL22	L3	L6	F3	F3	F3	F4
16	F4	F3	F2	F2	F2	C2	C2	C2	C2	L2	L2	L2	L2	L2	L3	CL12	L3	L3	L4	L3	F2	F4		F3
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18	F3	F3	F2	F3	F2	H2	HL22	L2	L2	L2	L2	L2	L3	L3	L2	L2	CL22	L3	L3	L3	F3	F4	FF13	F3
19	F2	F3	F4	F3	F3	H2	C2	L4	L2	L2	CL22	CL22	CL22	L2	L2	L2	L3	L3	L3	L2	F3	F2	F3	F2
20	F2	F2	F2	F1	F2	L2	L2	L2	L2	L3	L2				L2	CL21	L2	L3	L5	L5	F4	F2	F2	F3
21	F2	F5	F3	F2	F1	L1	CL22	L2	L2	L2	L2		CL21	L2	L2	L2	L2	L3	L3	L3	F2	F1	F4	F5
22	F3	F4	F3	F3	F2	L2	HL12	L2	L3	L3	L2	L2	L2	L2	L2	L2	CL11	L3	L3	L3	F3	F2	F2	F3
23	F3	F4	F3	F3	F2	C2	L3	L2	L3	L2	L3	L2	L2	L2	L3	L3	L3	L3	L3	L4	F4	F2	F4	F4
24	F2	F4	F3	F3	F1	L2	C2	CL22	L2	L2	L2	L2		CL21	L3	L2	L3	L3	L2	L3	F4	F4	F2	F2
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28	F3	F3	F3	F2	F2	L2	CL22	L2	L2	L2		L2	C2	L2	L2	L2	L2	L2	L3	L3	F3	F4	F2	F5
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30	F4	F4	F2	F2		L2		L2	CL12	L2	L2	L2	L3	L2	L2	L2	L2	L2	C1	F1	F2	F2	F3	F3
31	F3		F2		F1		C2	C2	CL12	L3	L2	L2	L3	L3		L2	L2	CL12	C3	F4	F4	F4	F2	FF23
	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																								

JUL. 2010 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

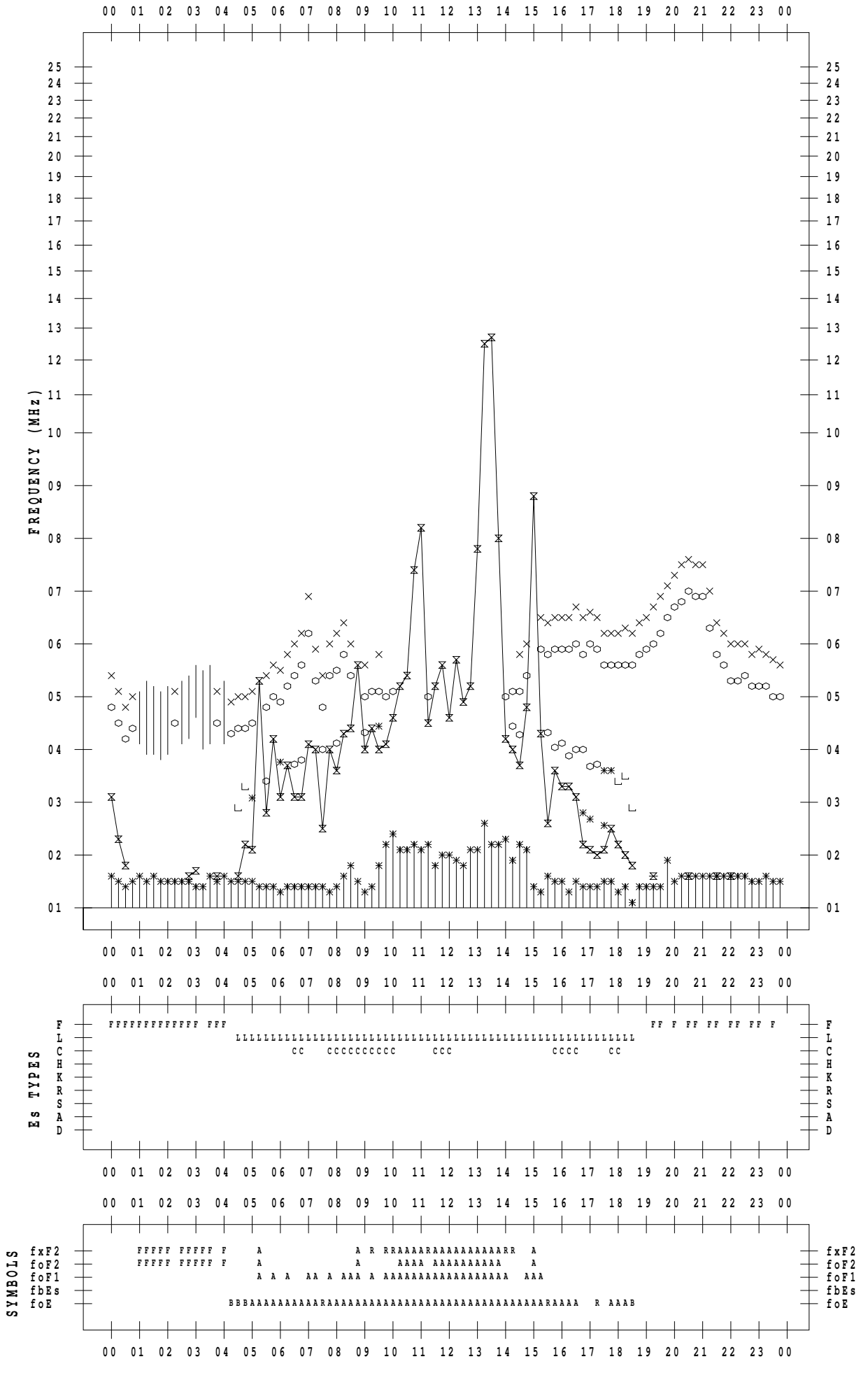
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/ 1

135 °E MEAN TIME



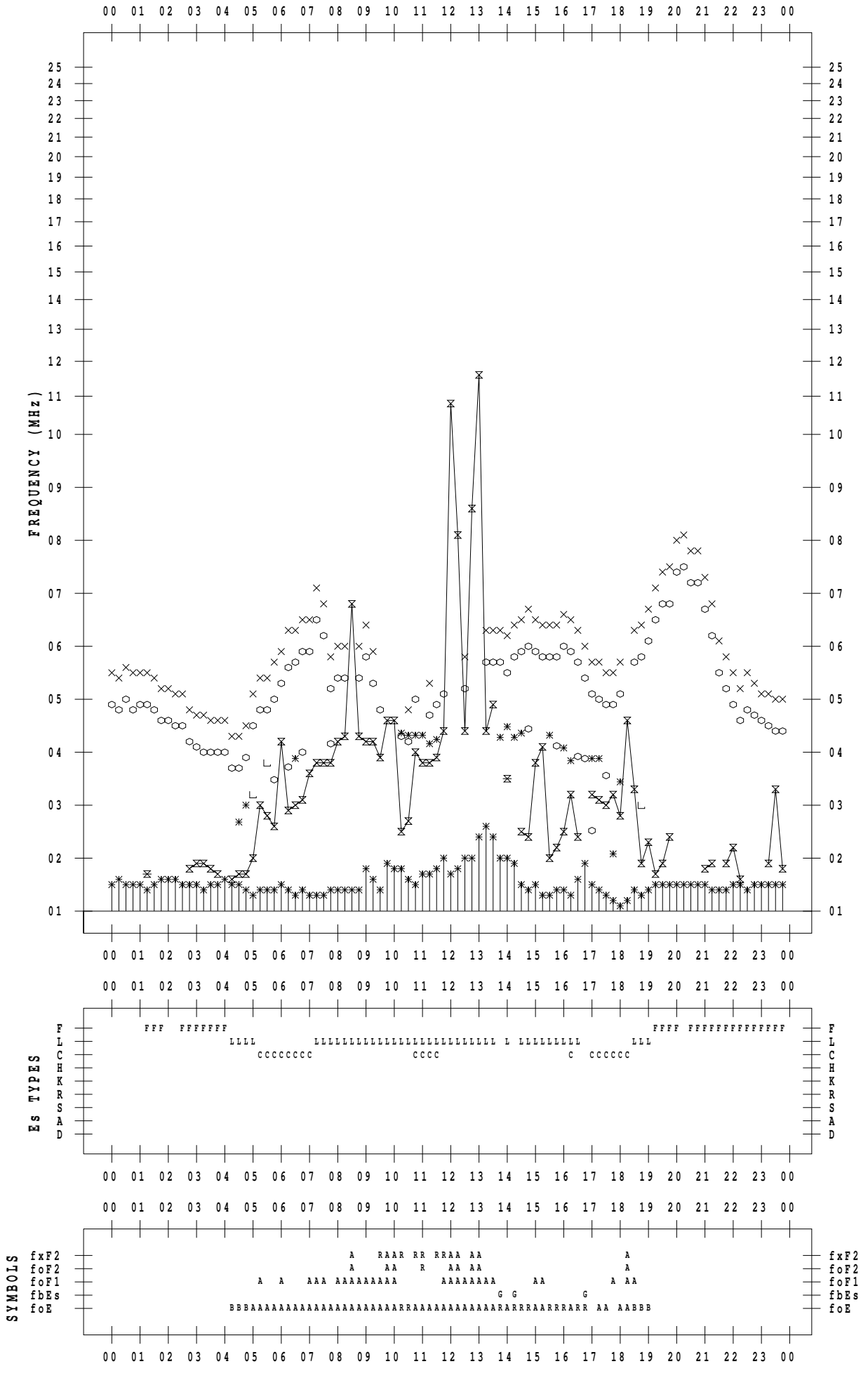
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/ 2

135 °E MEAN TIME



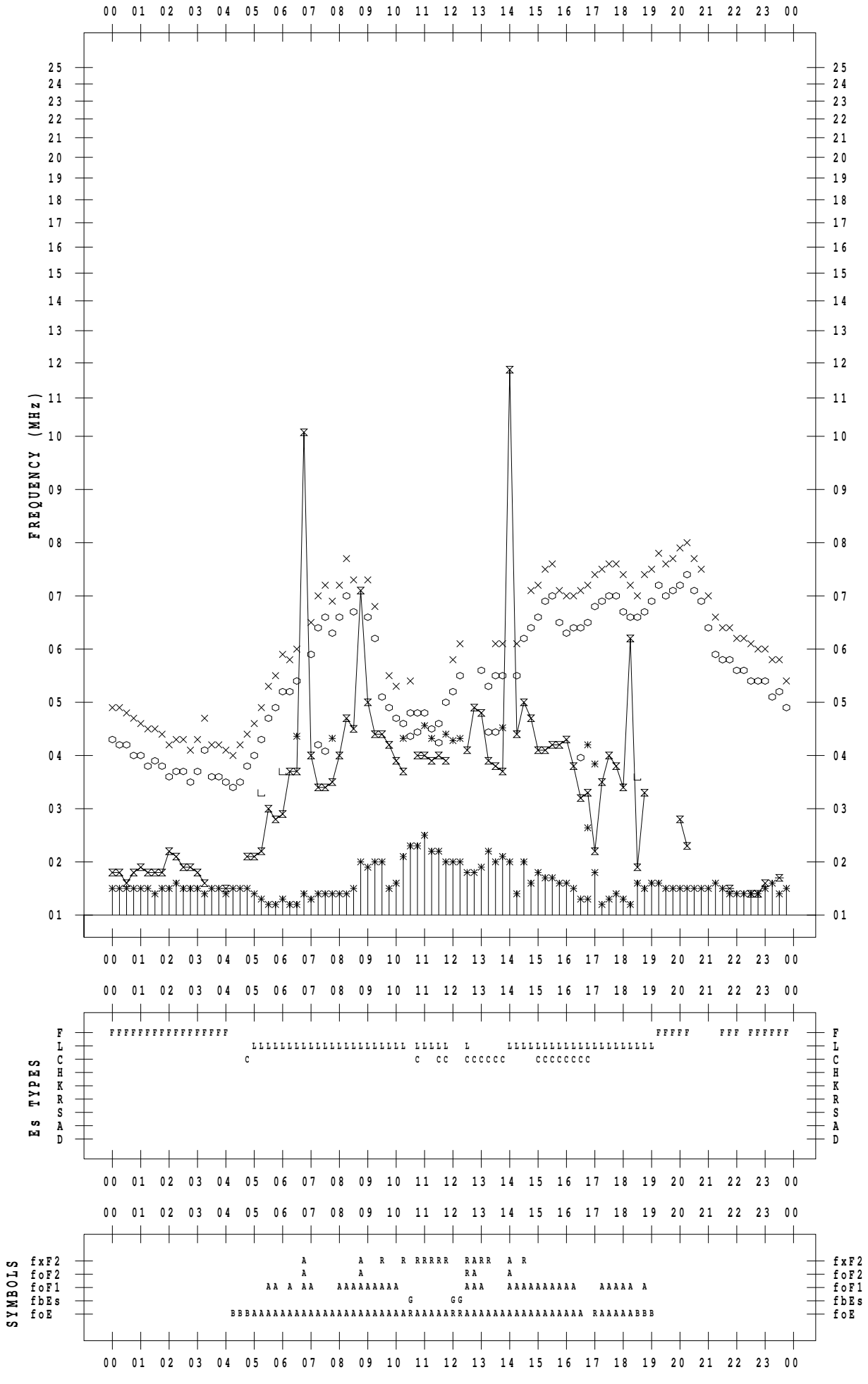
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/ 3

135 °E MEAN TIME



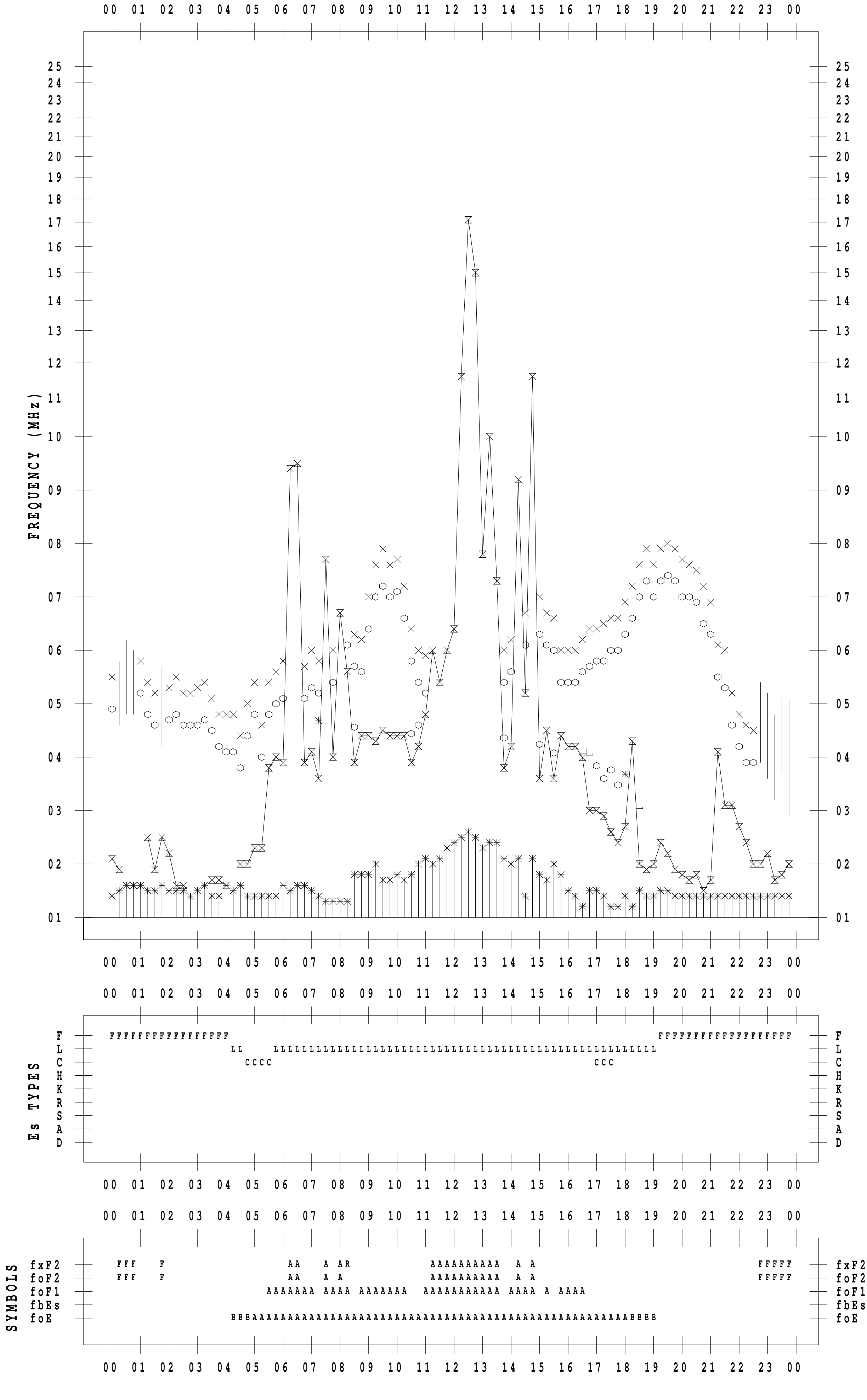
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/ 4

135 °E MEAN TIME



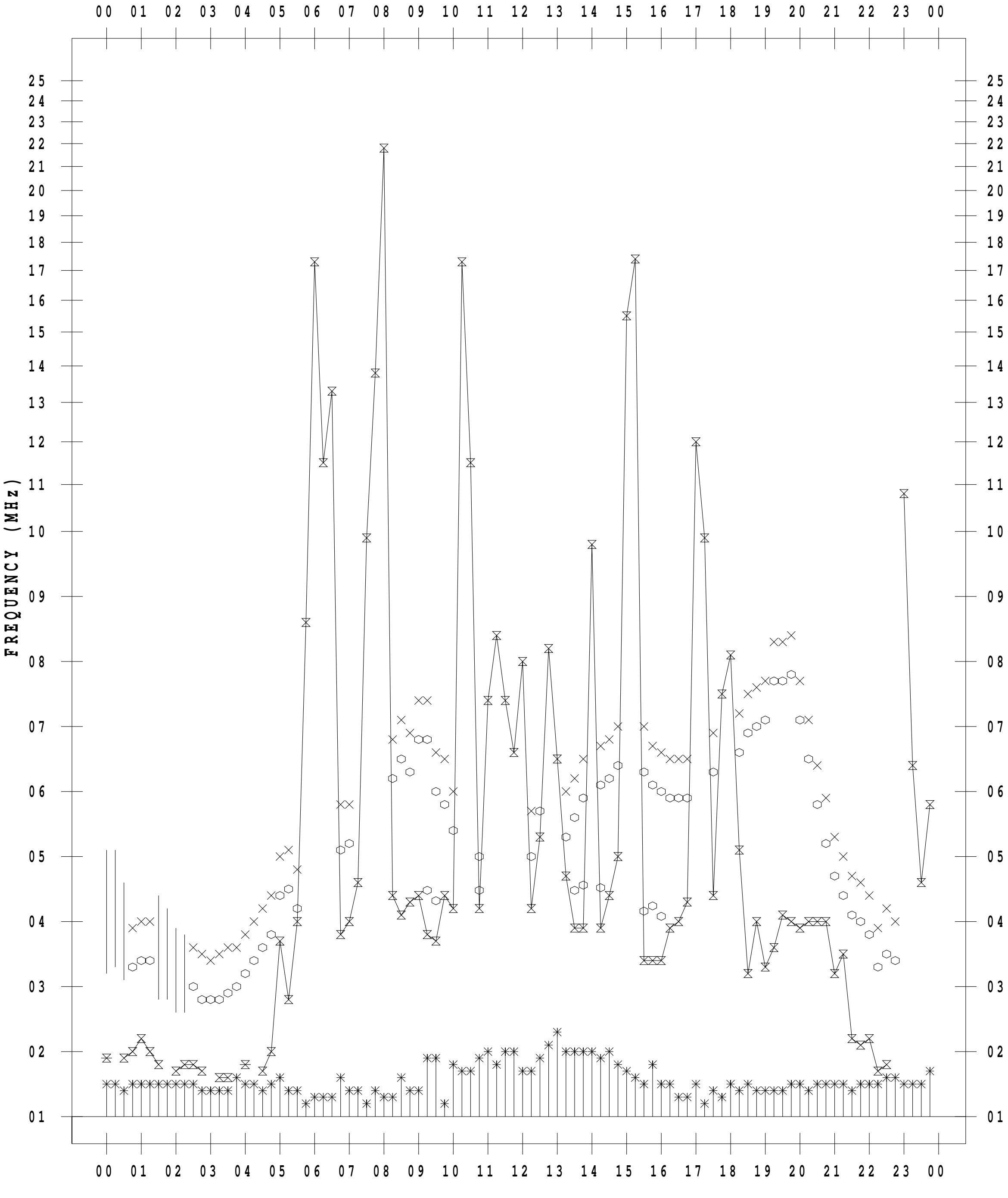
f-PLOT DATA

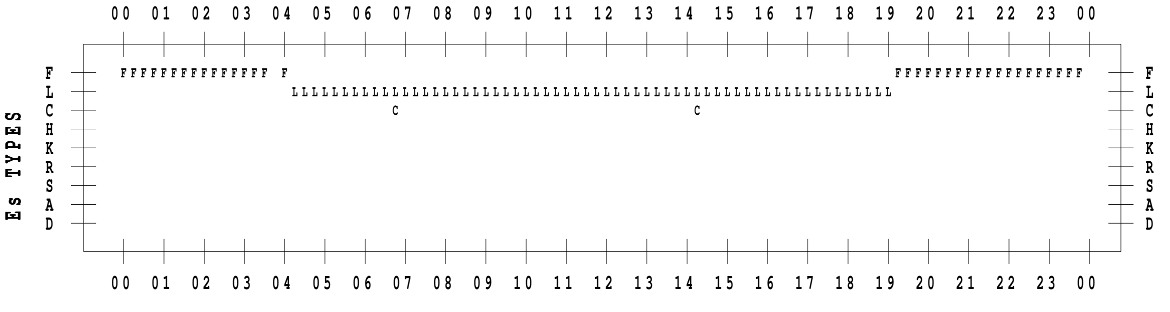
SCALER : I.NISHIMUTA

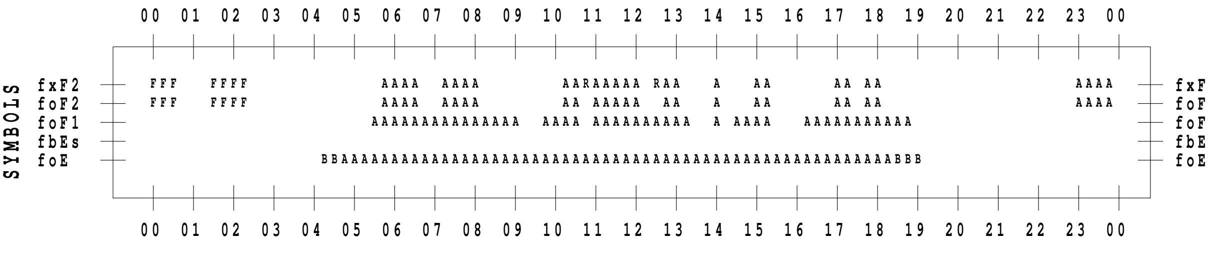
STATION : Kokubunji

DATE : 2010/ 7/ 5

135 °E MEAN TIME







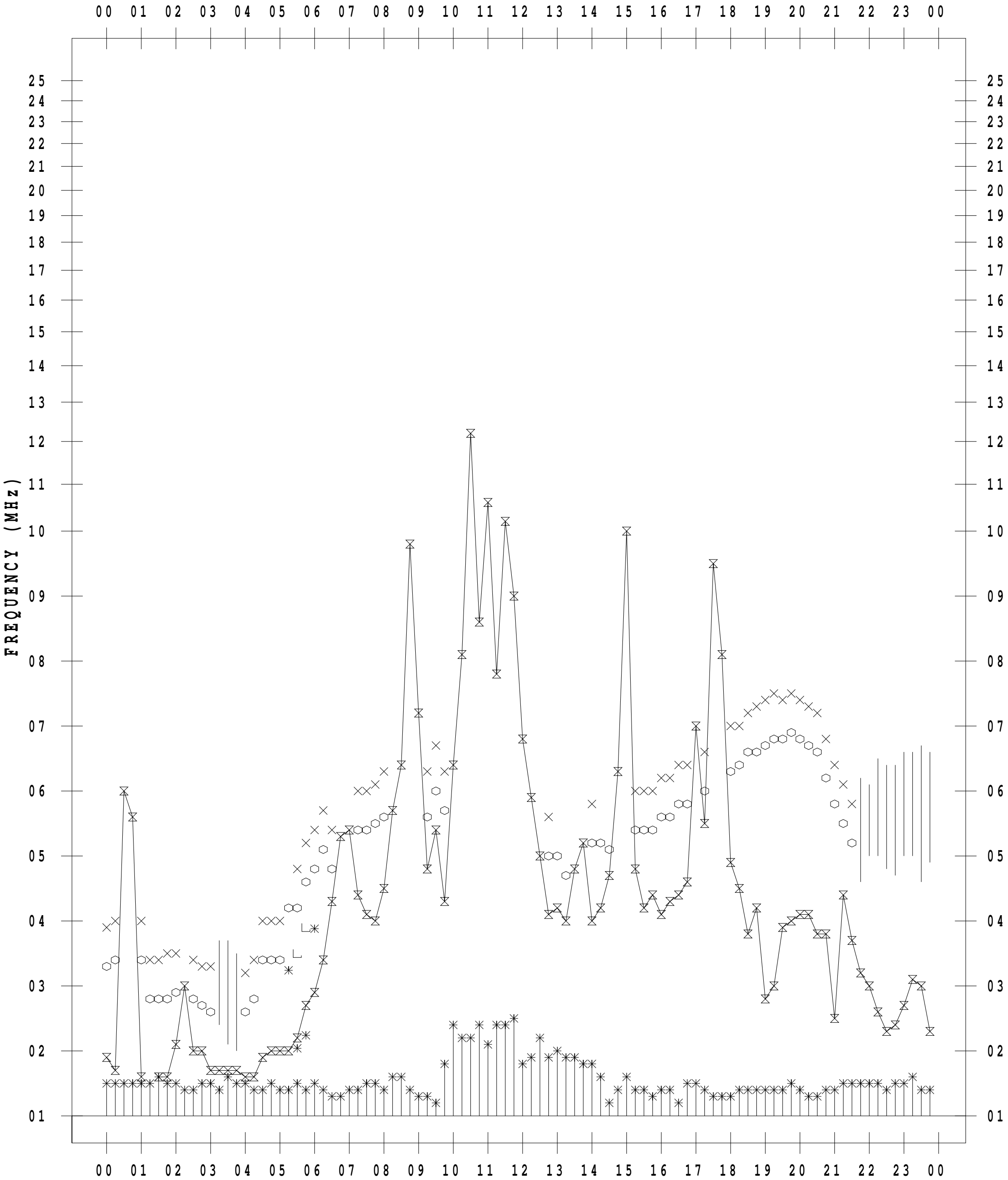
f-PLOT DATA

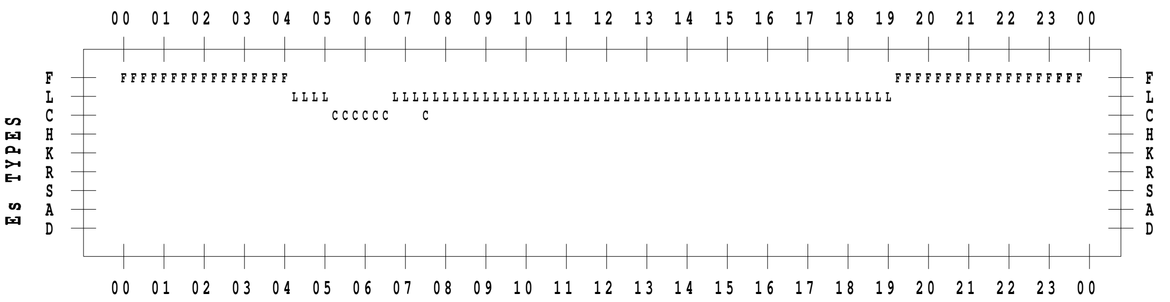
SCALER : I.NISHIMUTA

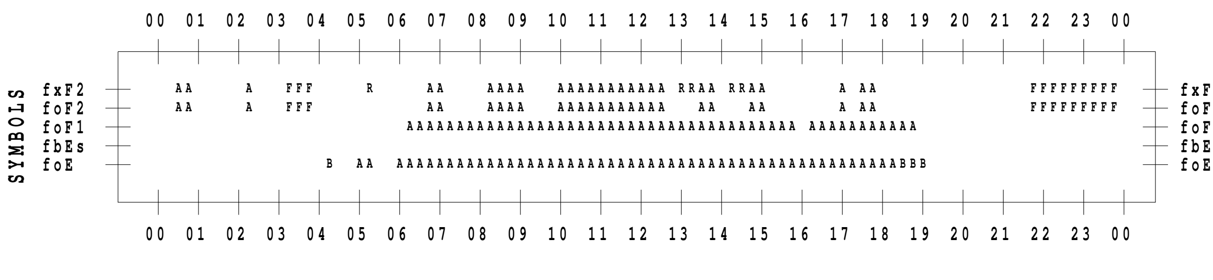
STATION : Kokubunji

DATE : 2010/ 7/ 6

135 °E MEAN TIME







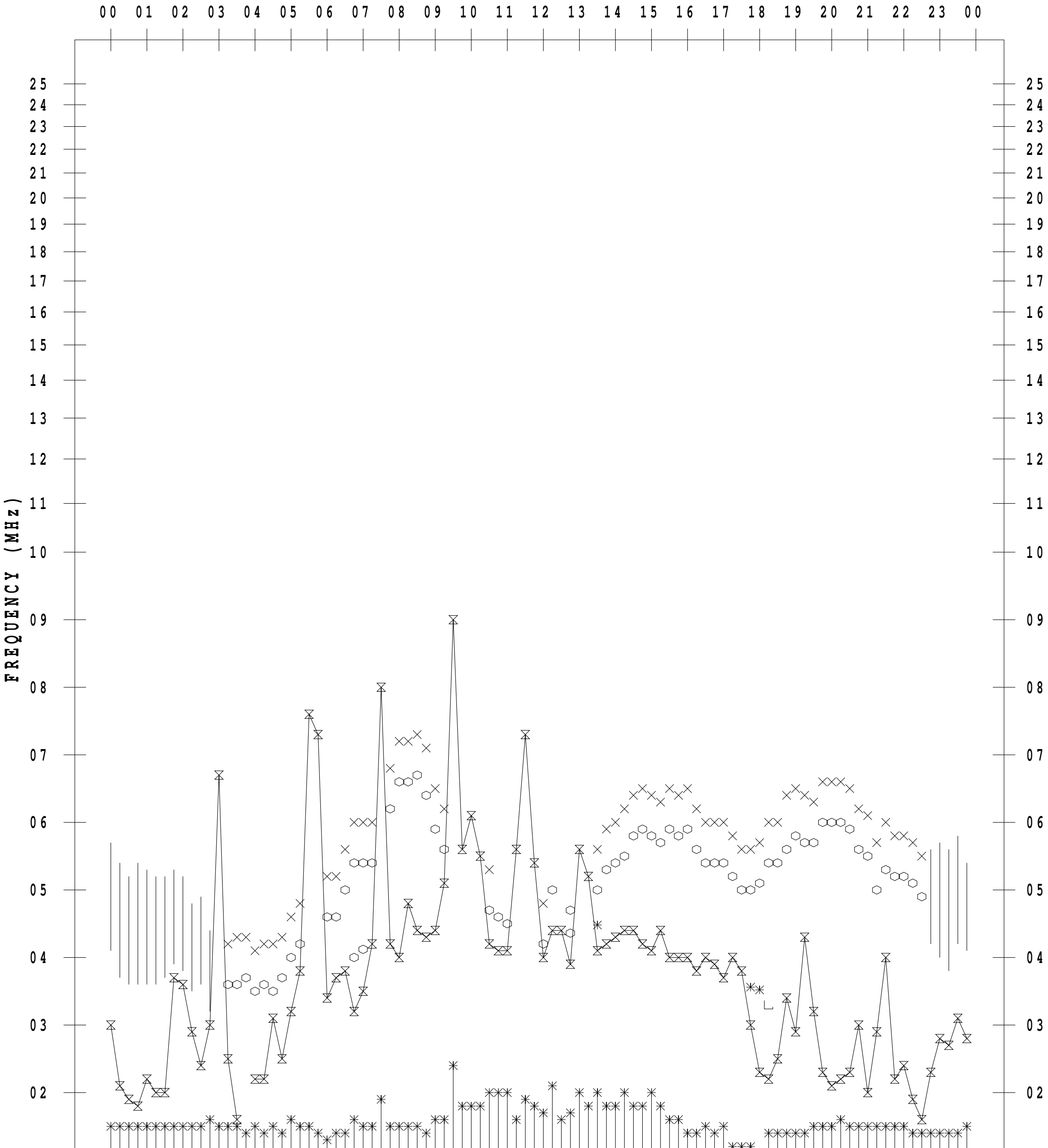
f-PLOT DATA

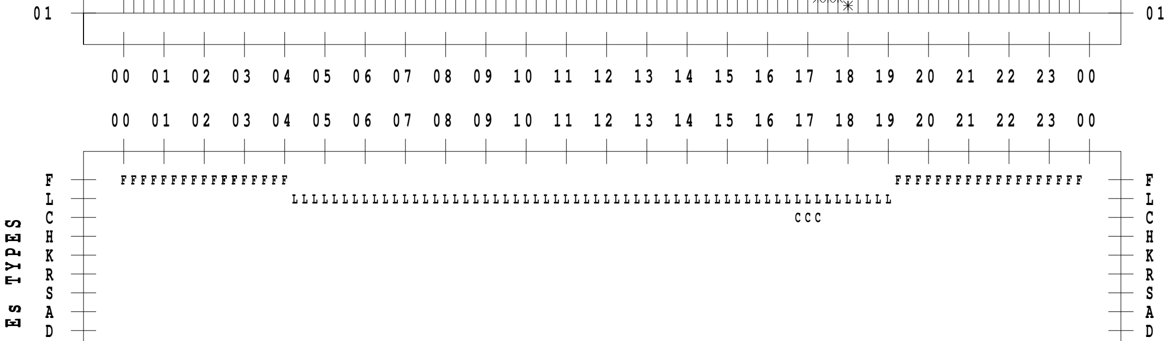
SCALER : I.NISHIMUTA

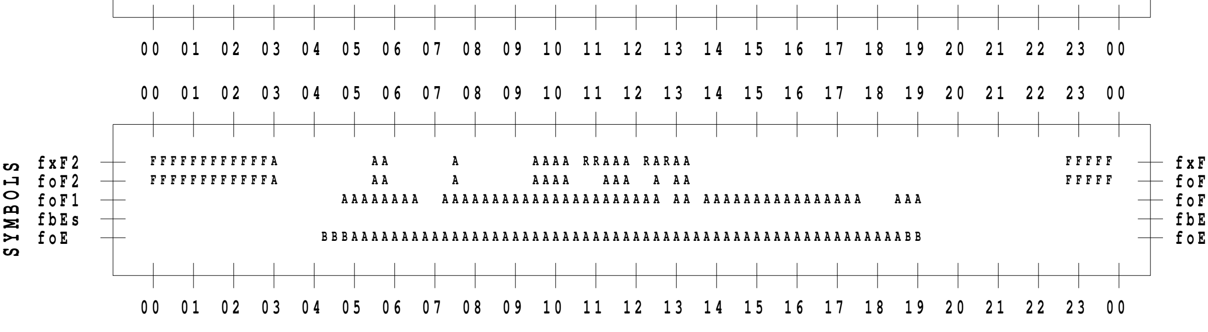
STATION : Kokubunji

DATE : 2010/ 7/ 7

135 °E MEAN TIME







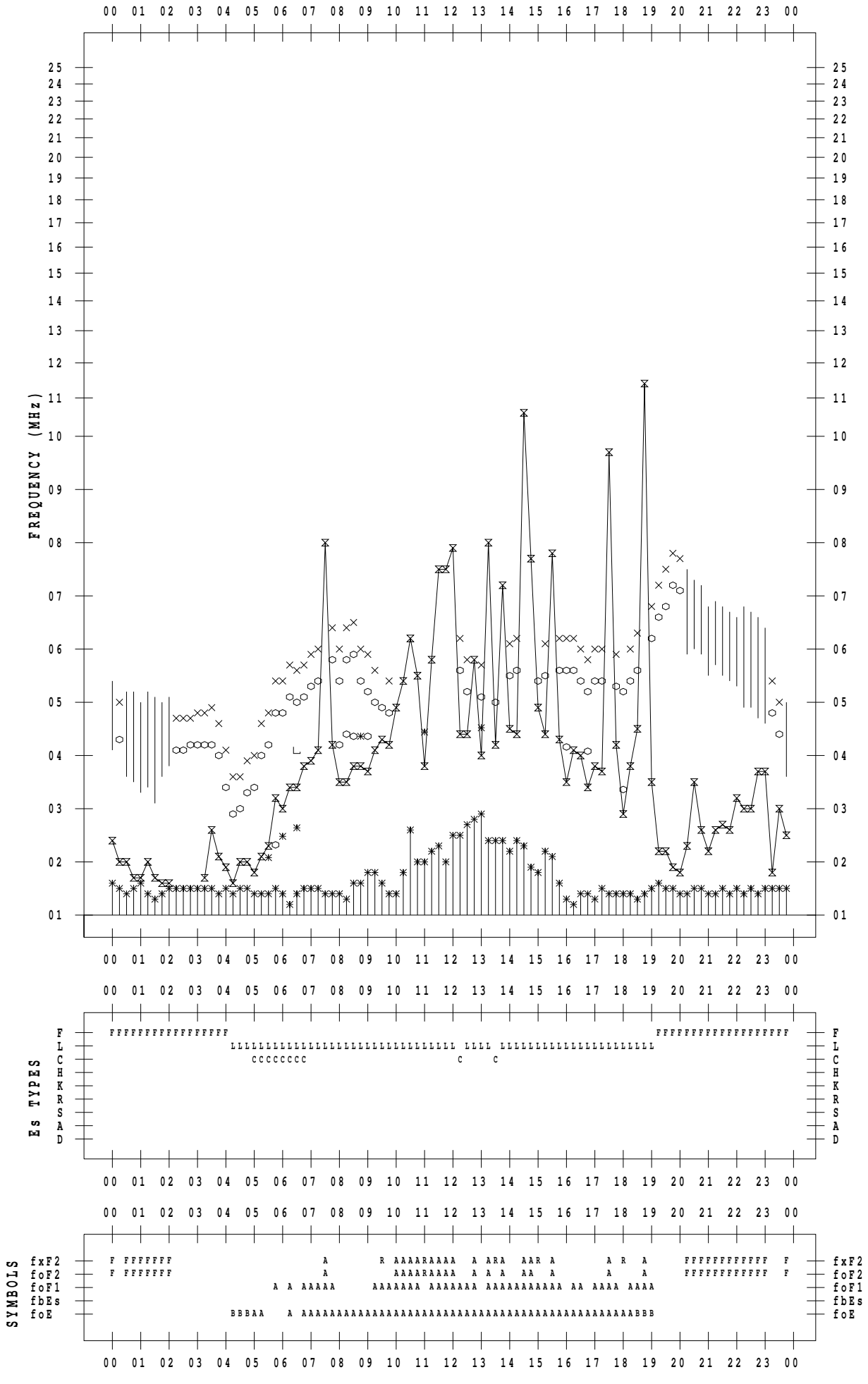
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/ 8

135 °E MEAN TIME

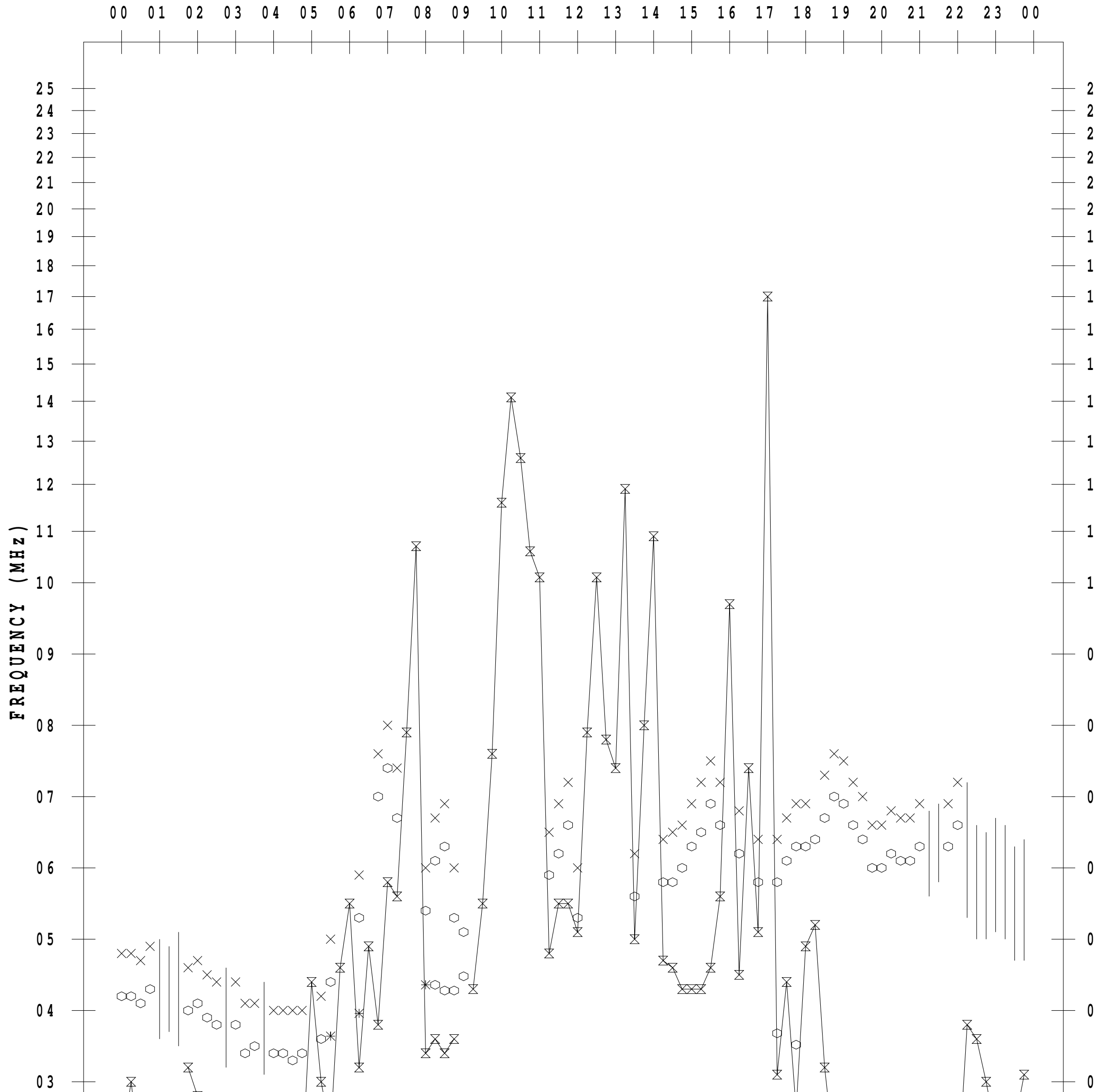


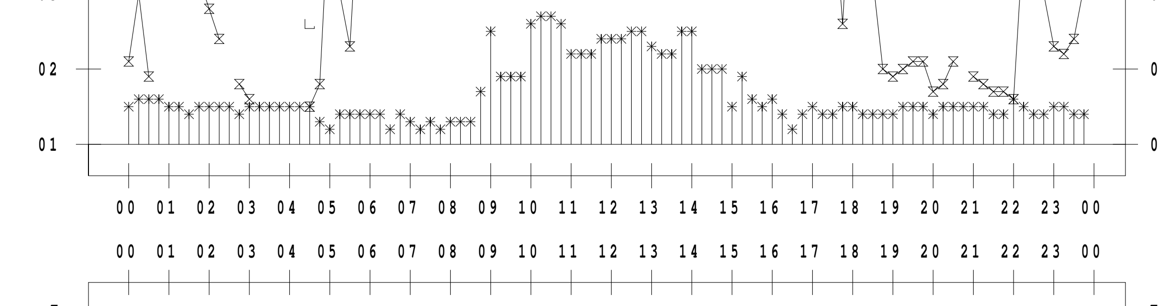
f-PLOT DATA

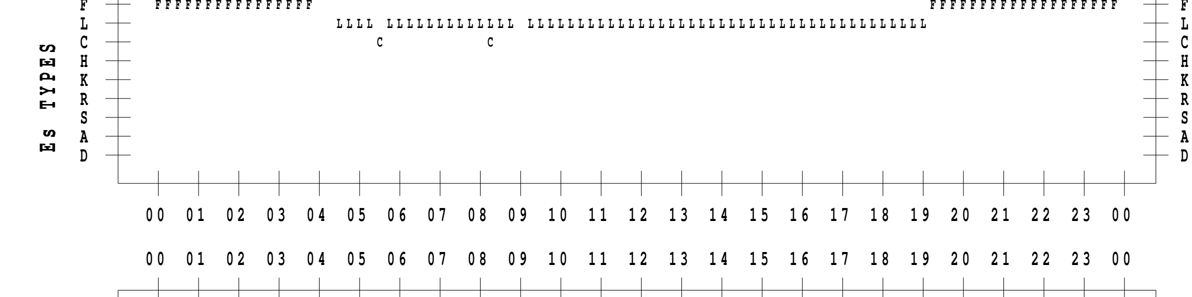
SCALER : I.NISHIMUTA

STATION : Kokubunji　　　　DATE : 2010/ 7/ 9

135 °E MEAN TIME







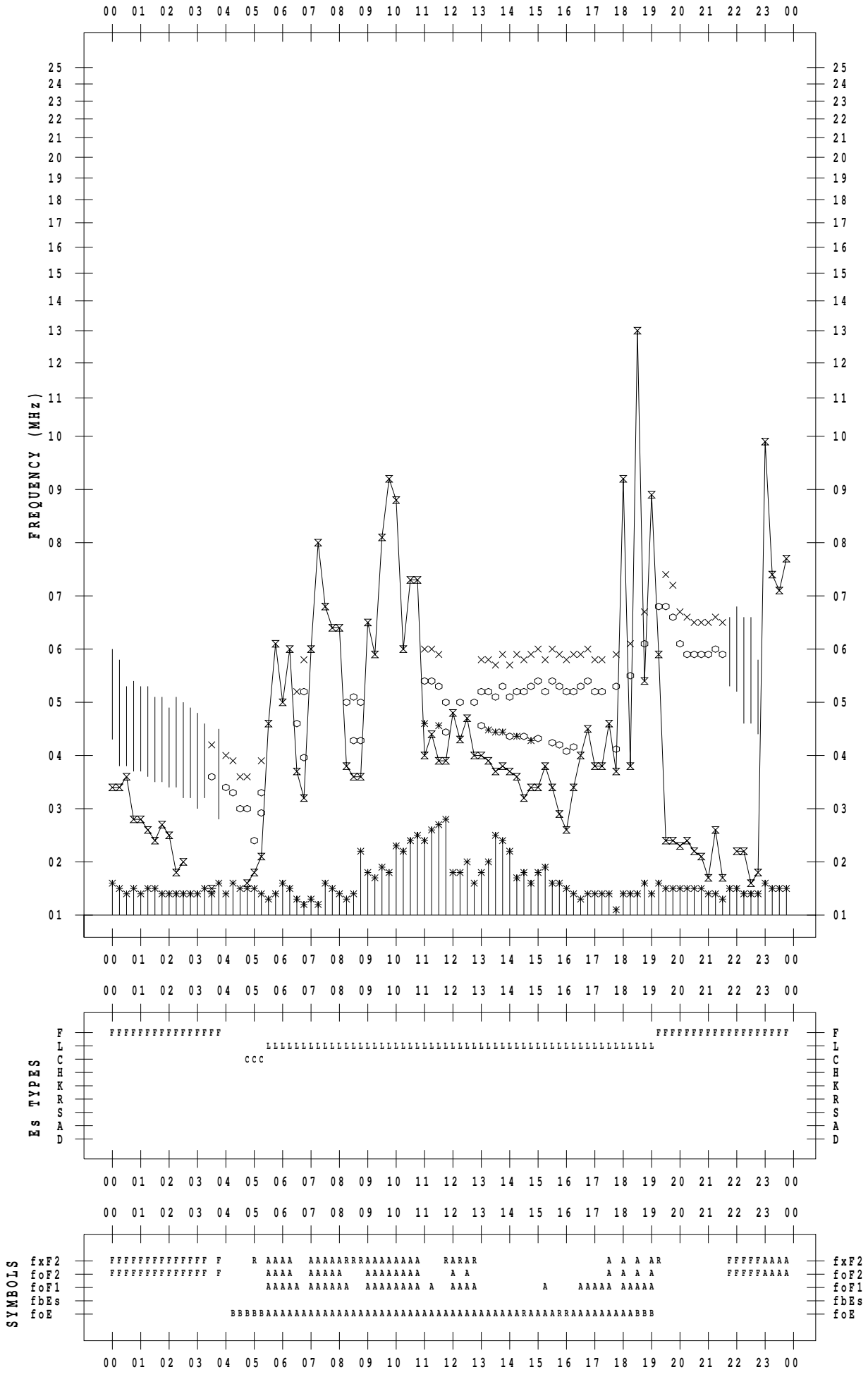
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/10

135 °E MEAN TIME

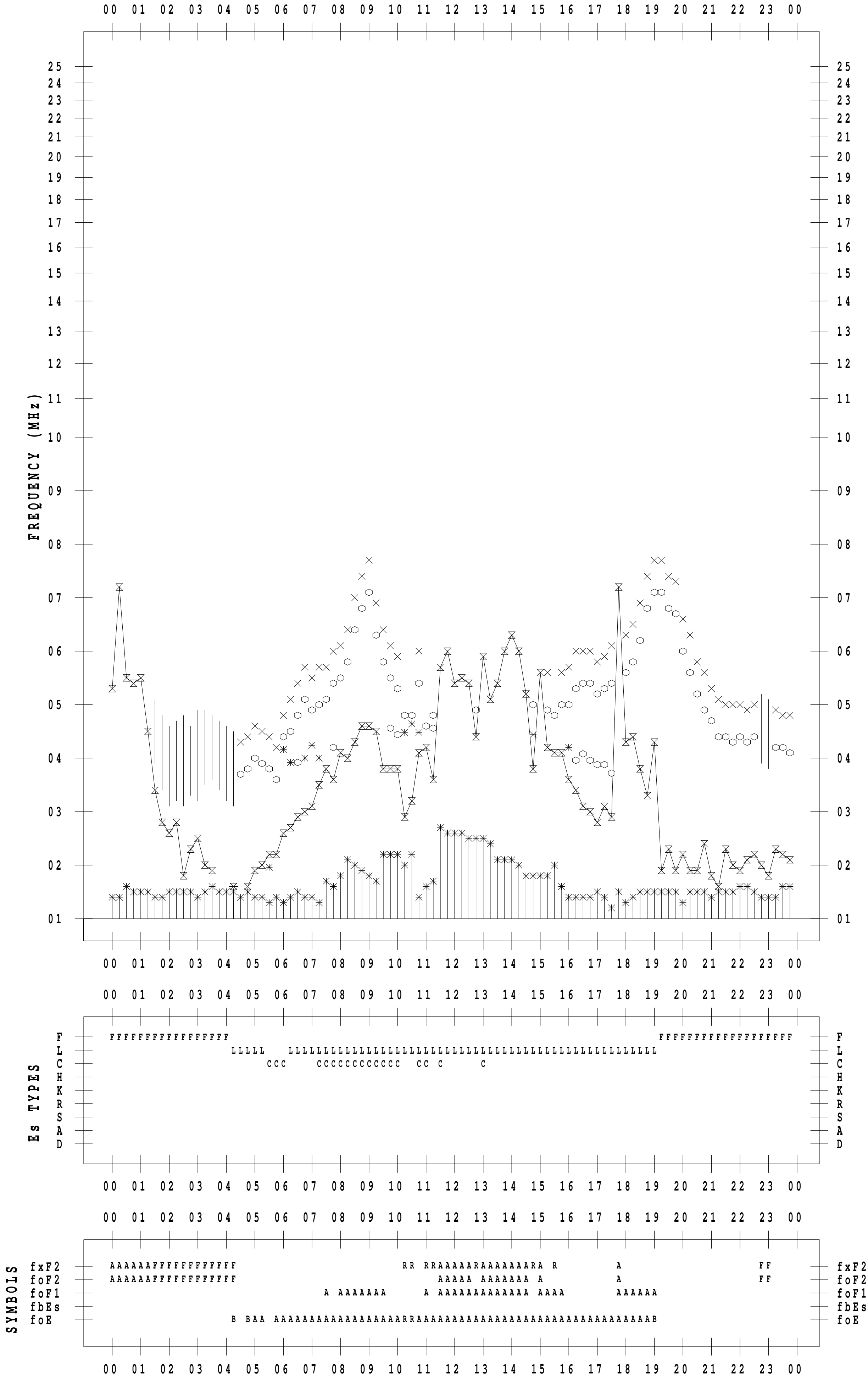


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2010/ 7/11

135 °E MEAN TIME



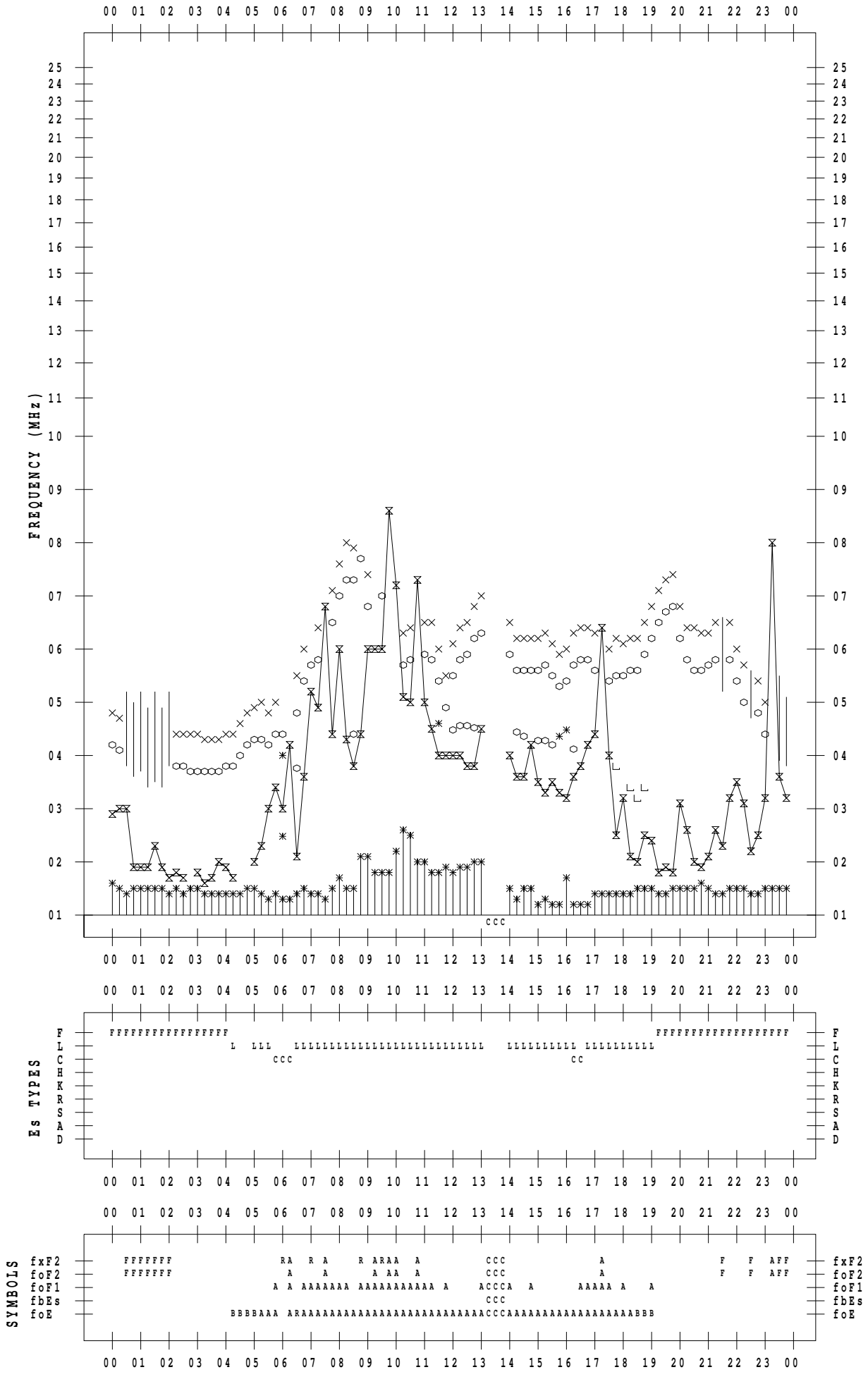
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/12

135 °E MEAN TIME



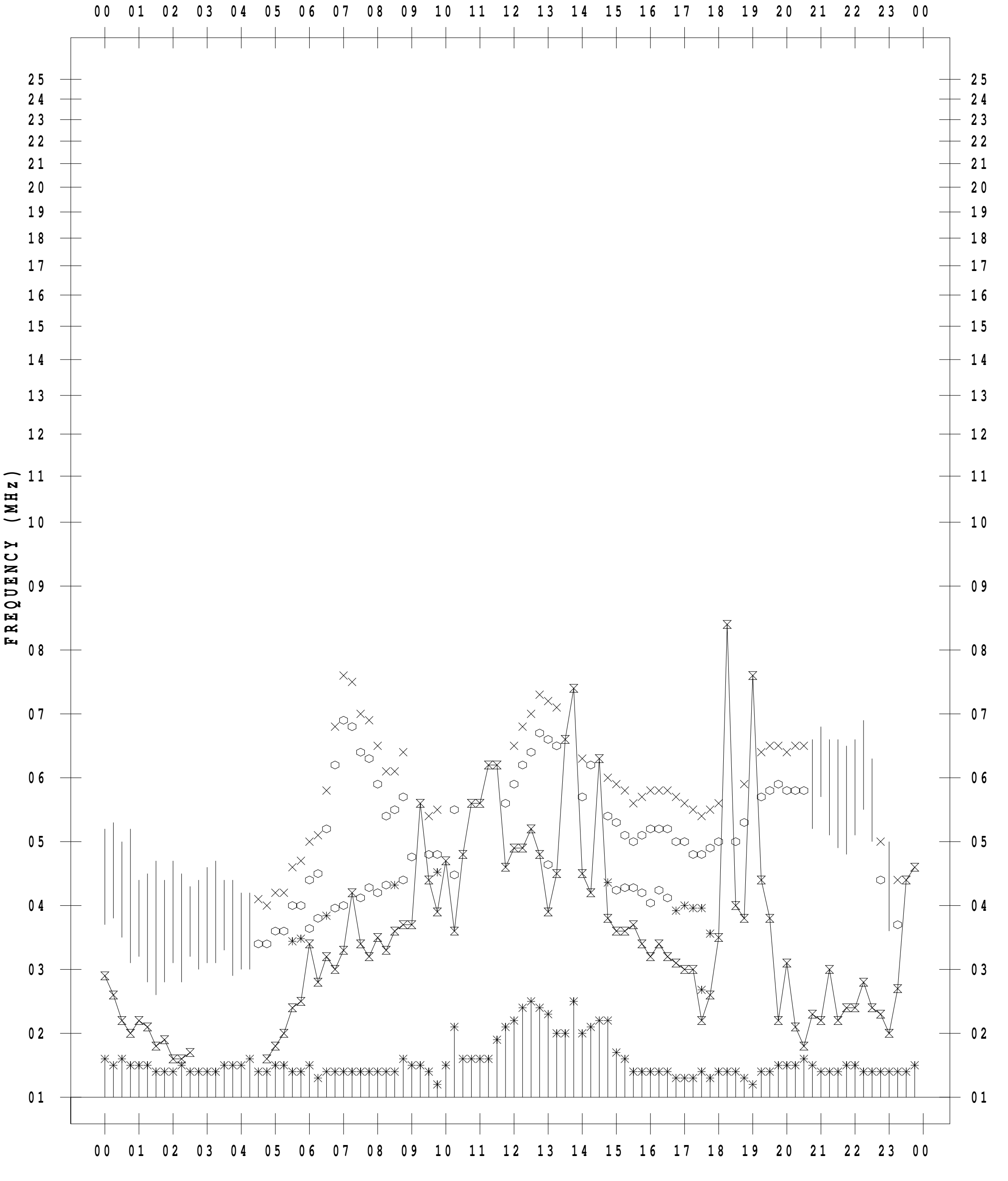
f-PLOT DATA

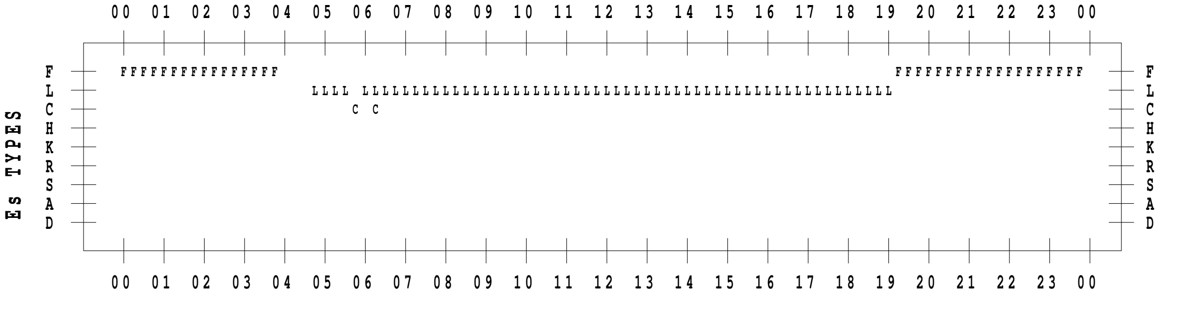
SCALER : I.NISHIMUTA

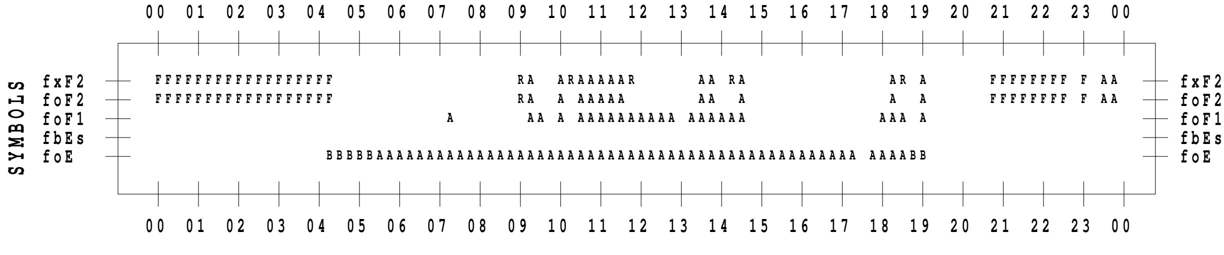
STATION : Kokubunji

DATE : 2010/ 7/13

135 °E MEAN TIME







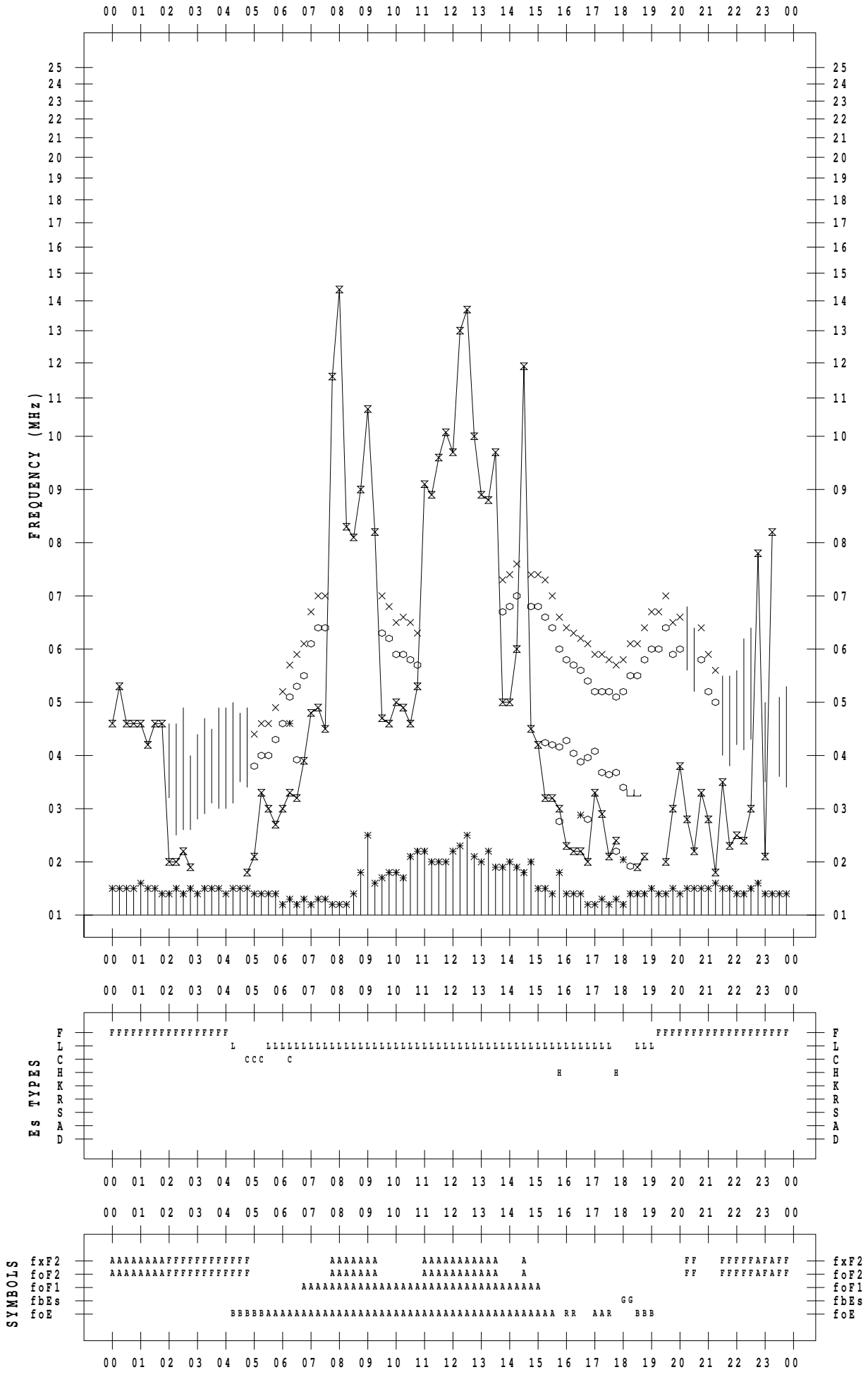
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/14

135 °E MEAN TIME



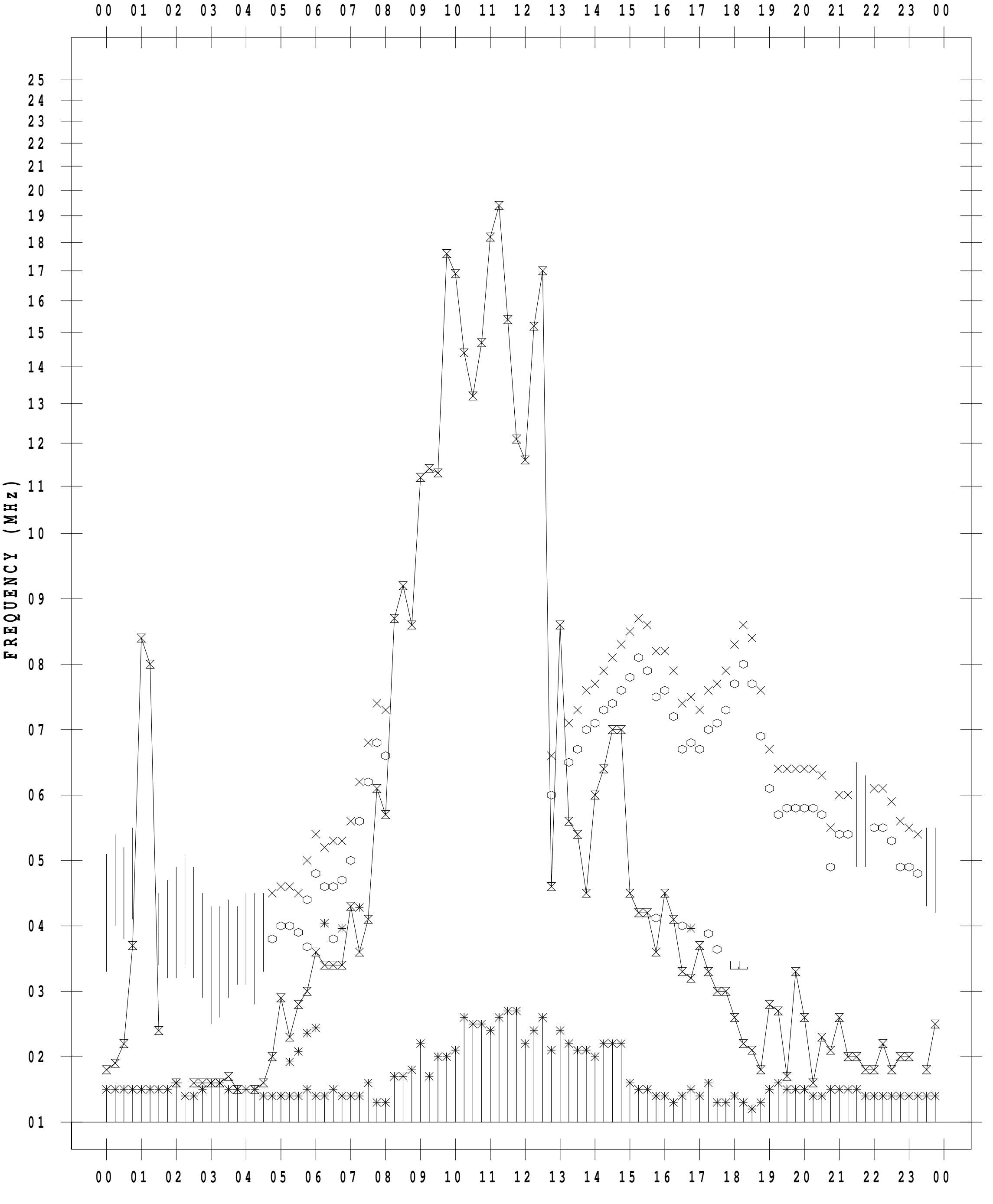
f-PLOT DATA

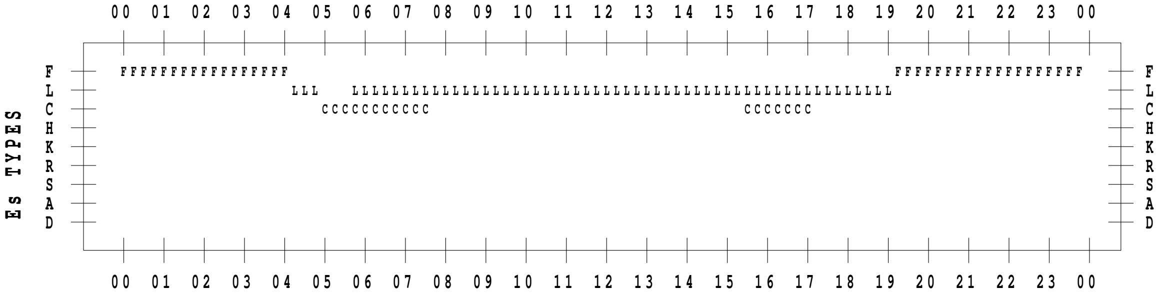
SCALER : I.NISHIMUTA

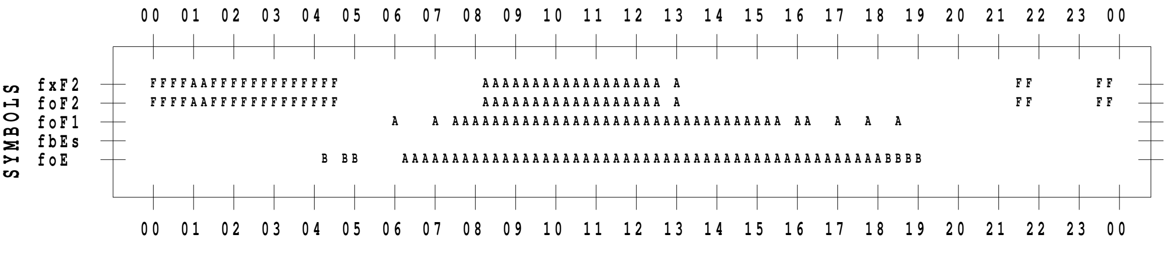
STATION : Kokubunji

DATE : 2010/ 7/15

135 °E MEAN TIME







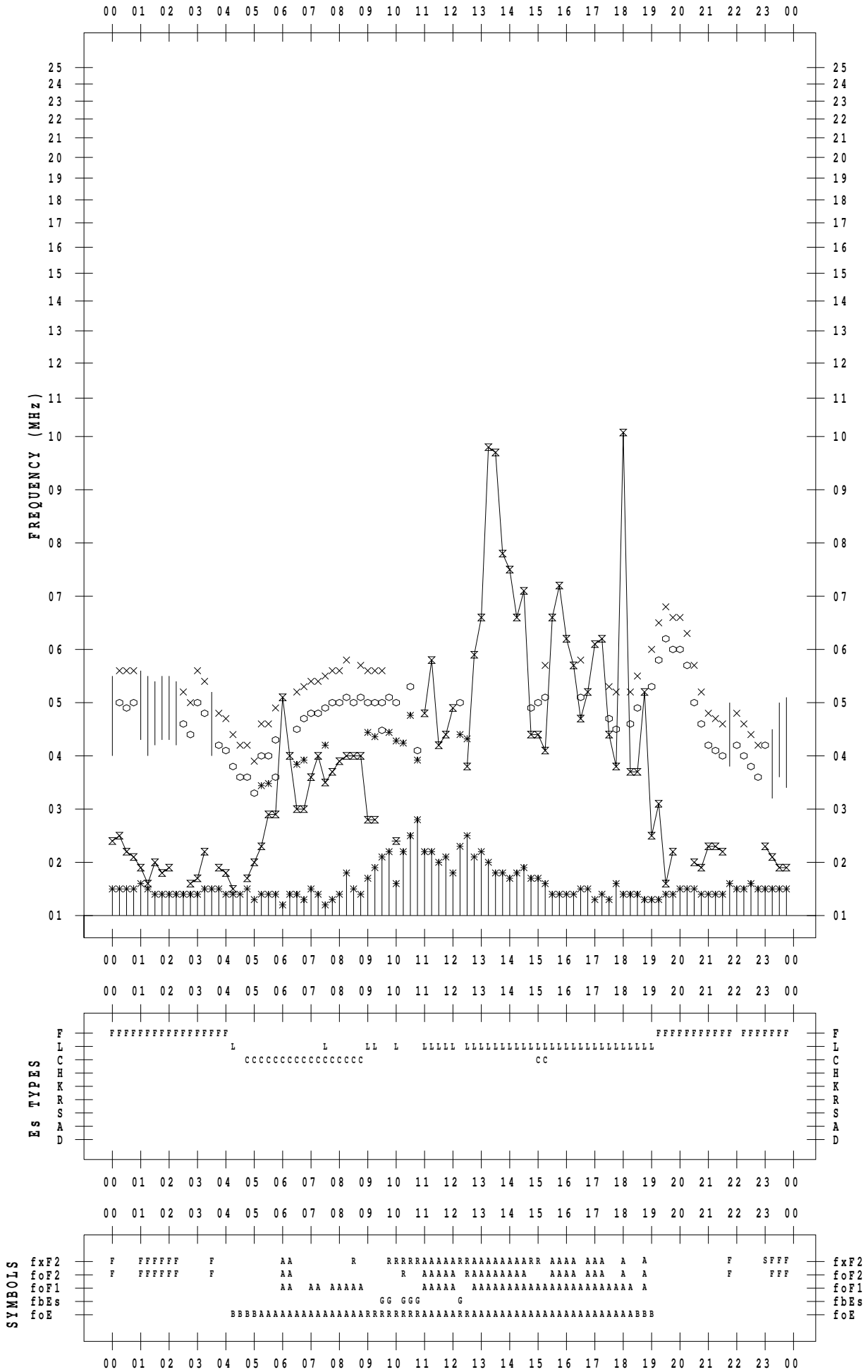
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/16

135 °E MEAN TIME

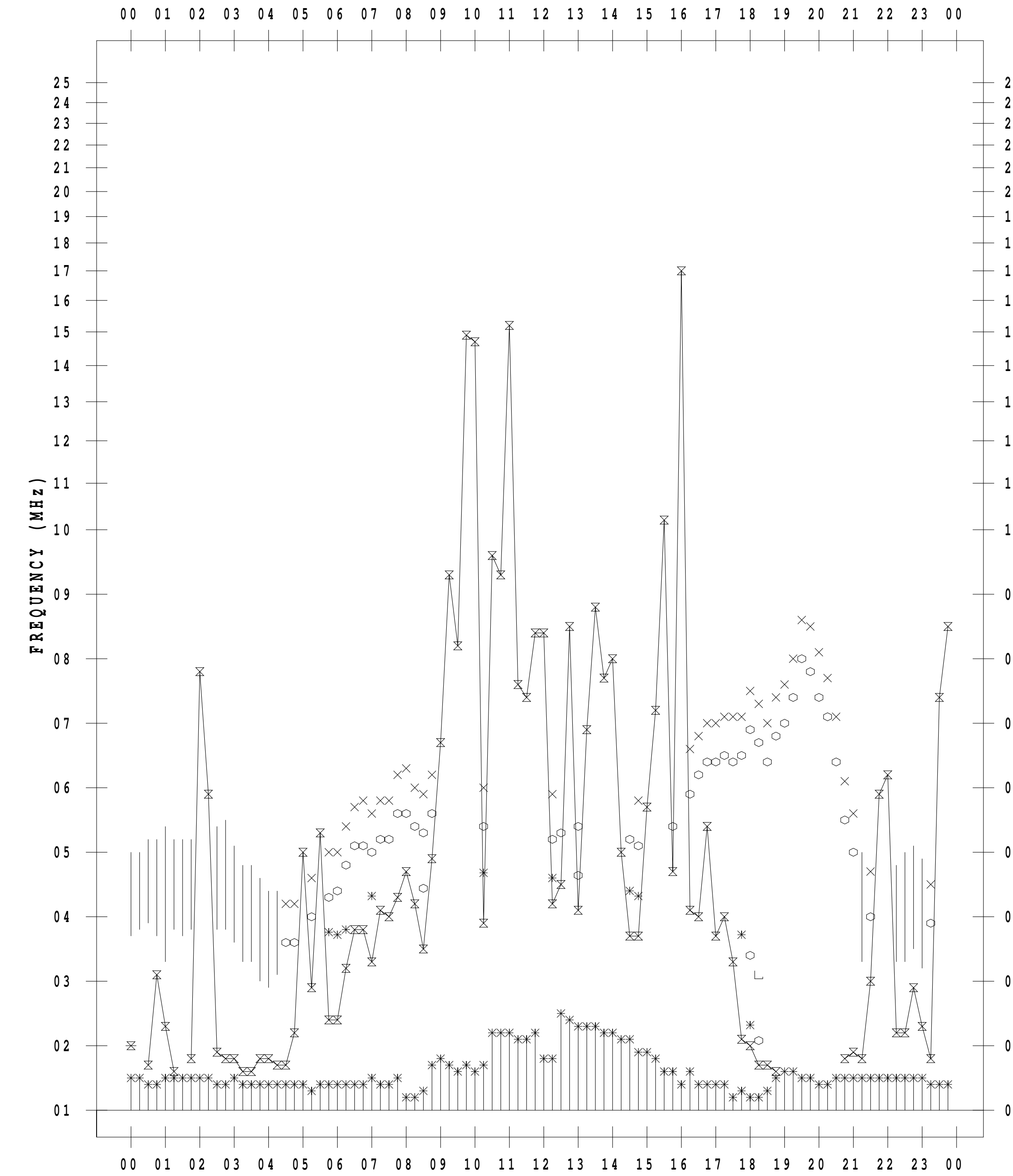


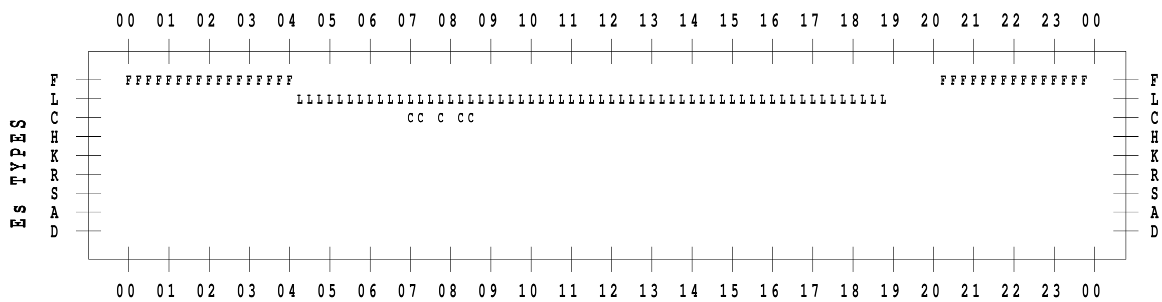
f-PLOT DATA

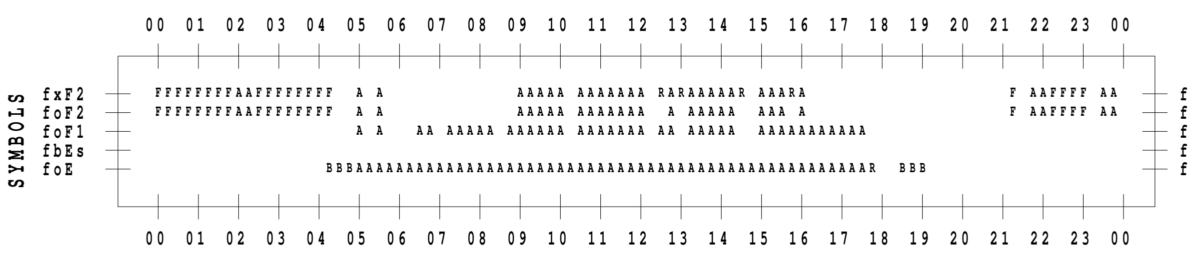
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/17



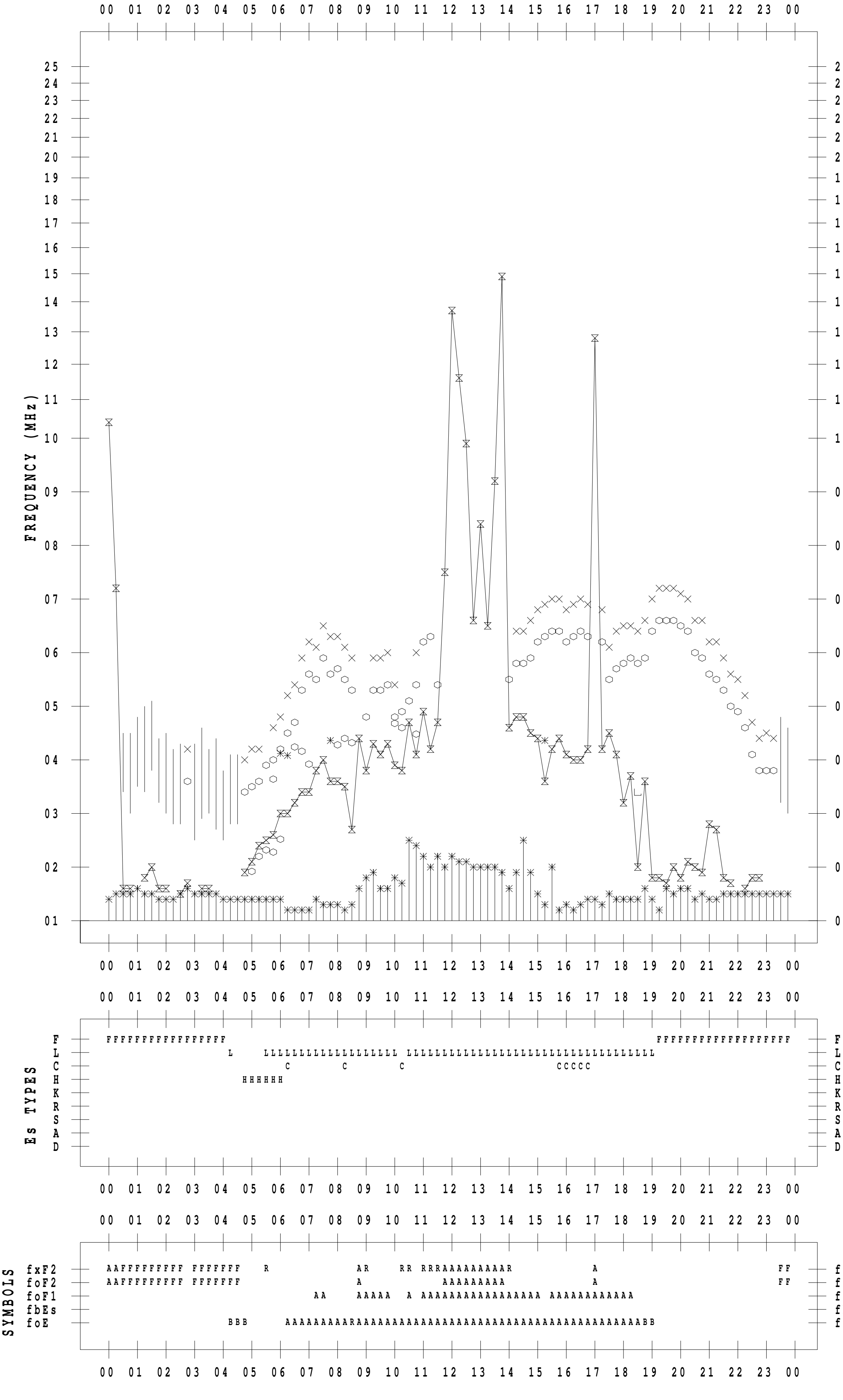




f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2010/ 7/18



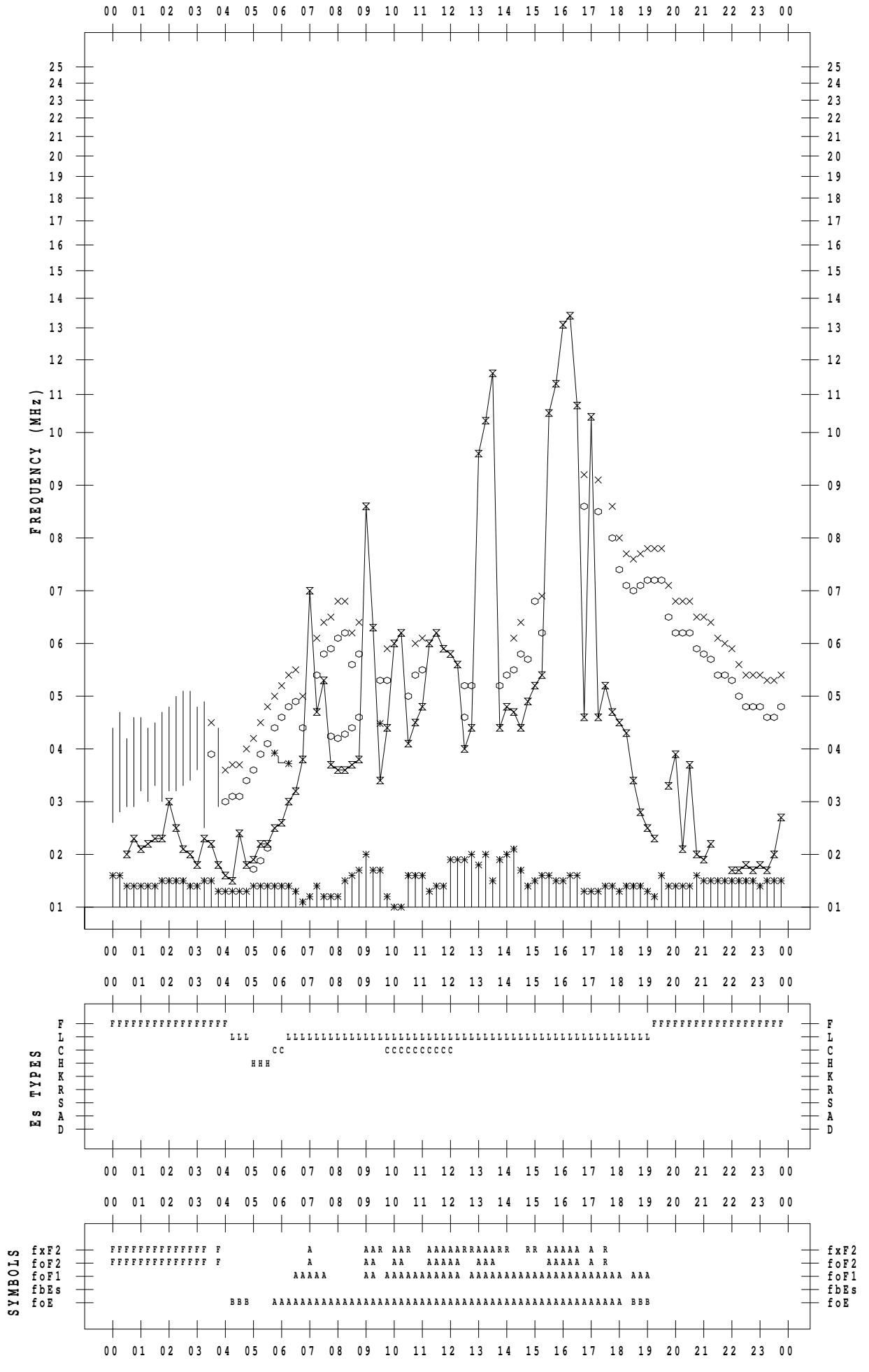
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/19

135 °E MEAN TIME



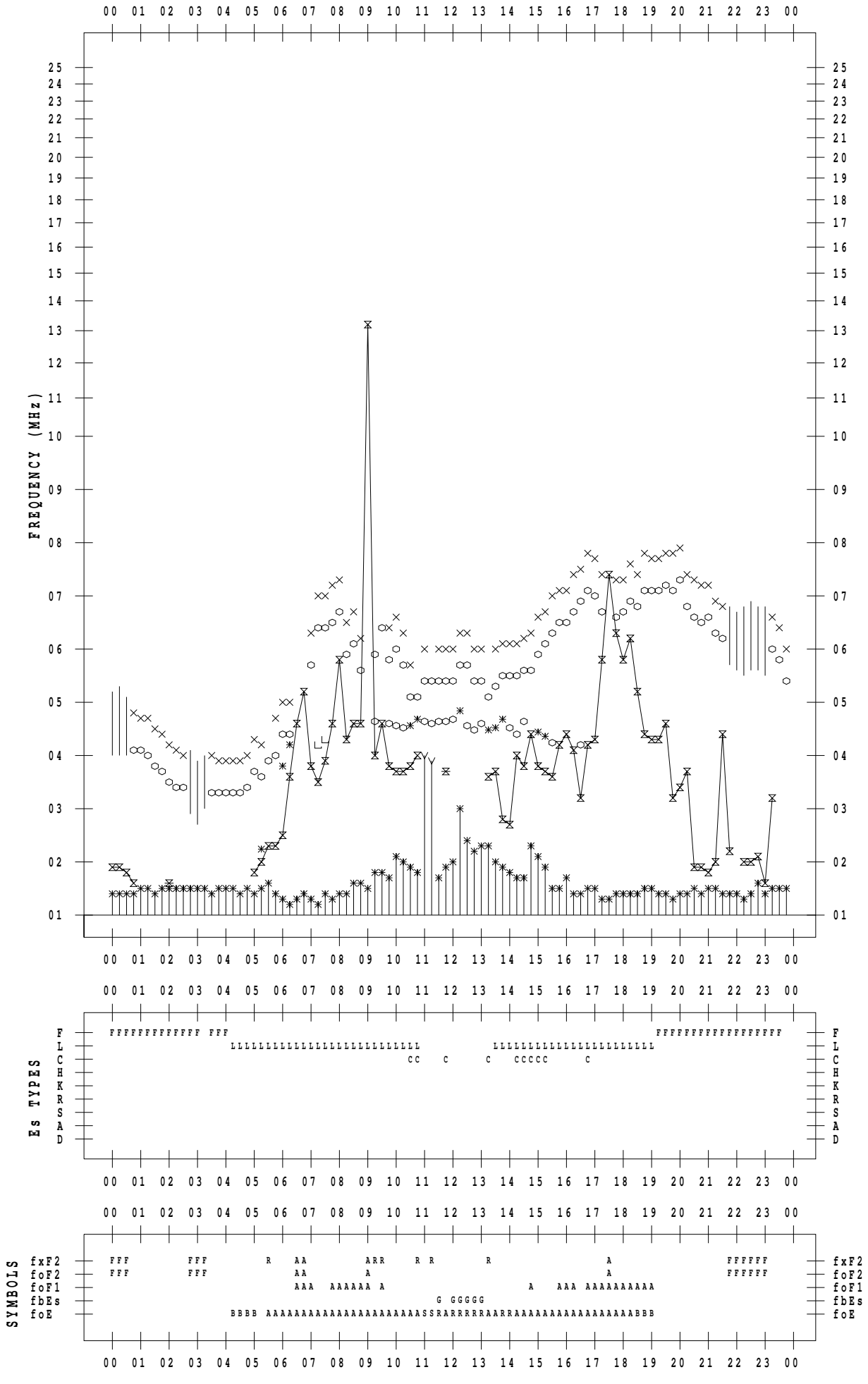
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/20

135 °E MEAN TIME



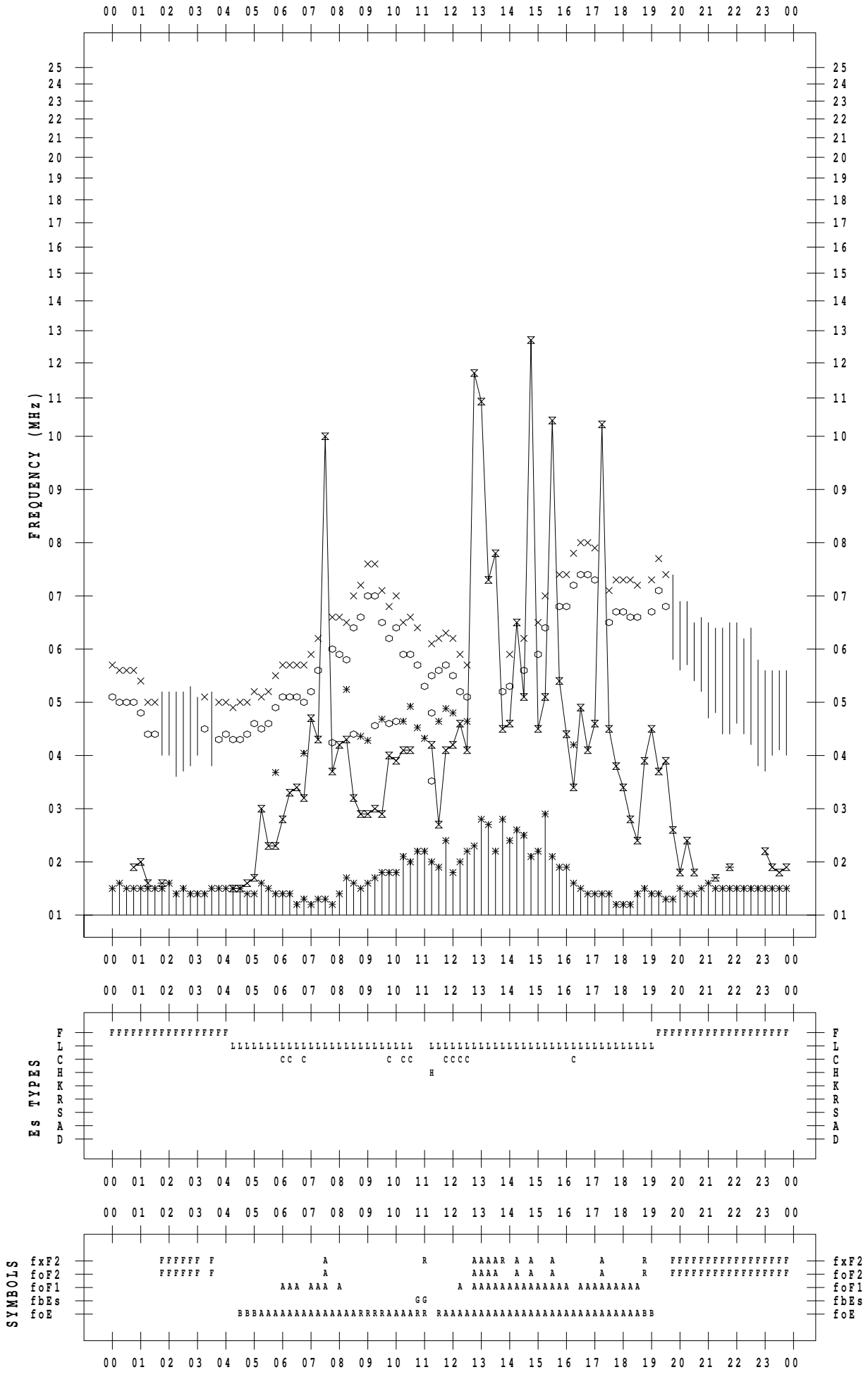
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/21

135 °E MEAN TIME



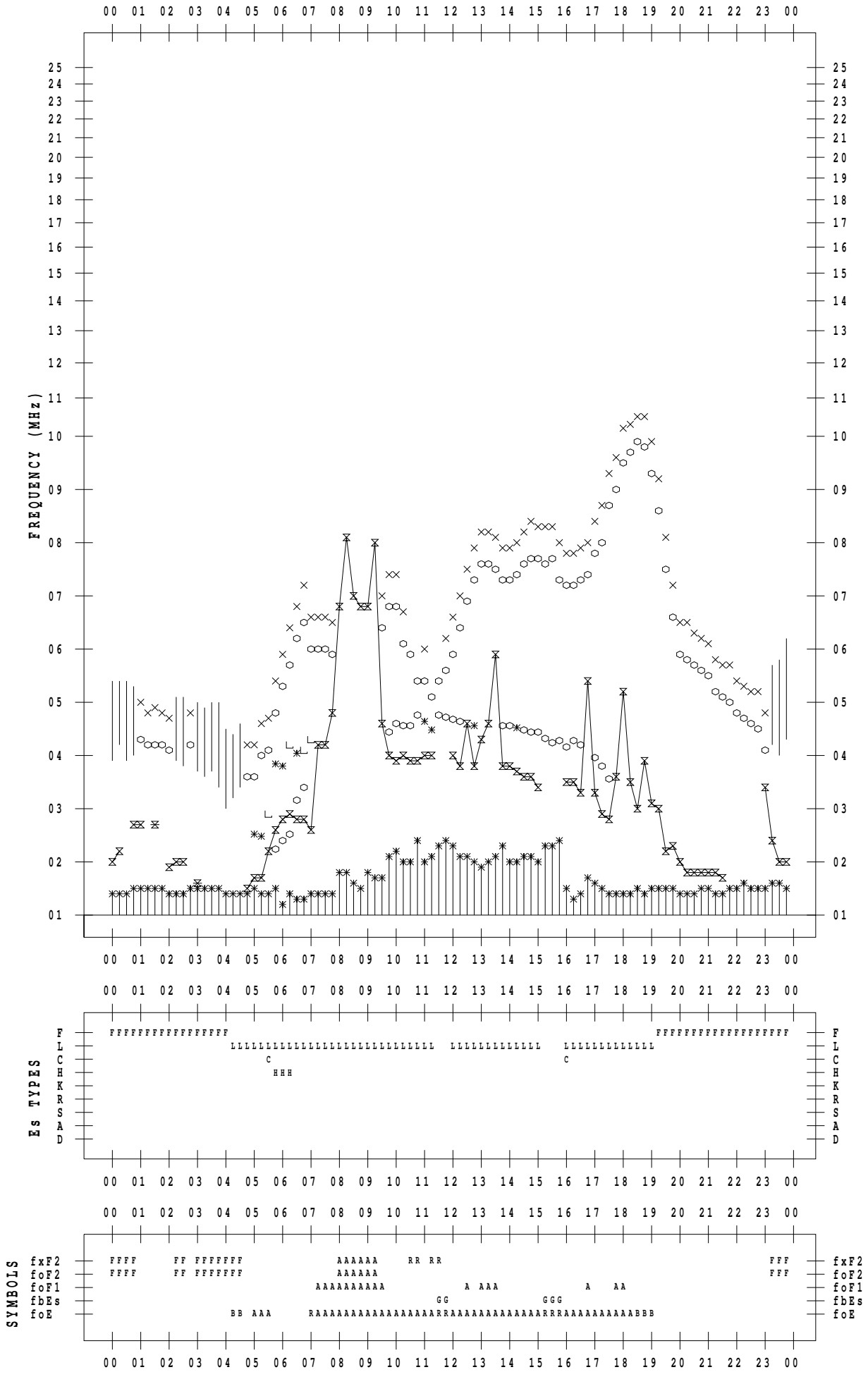
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/22

135 °E MEAN TIME



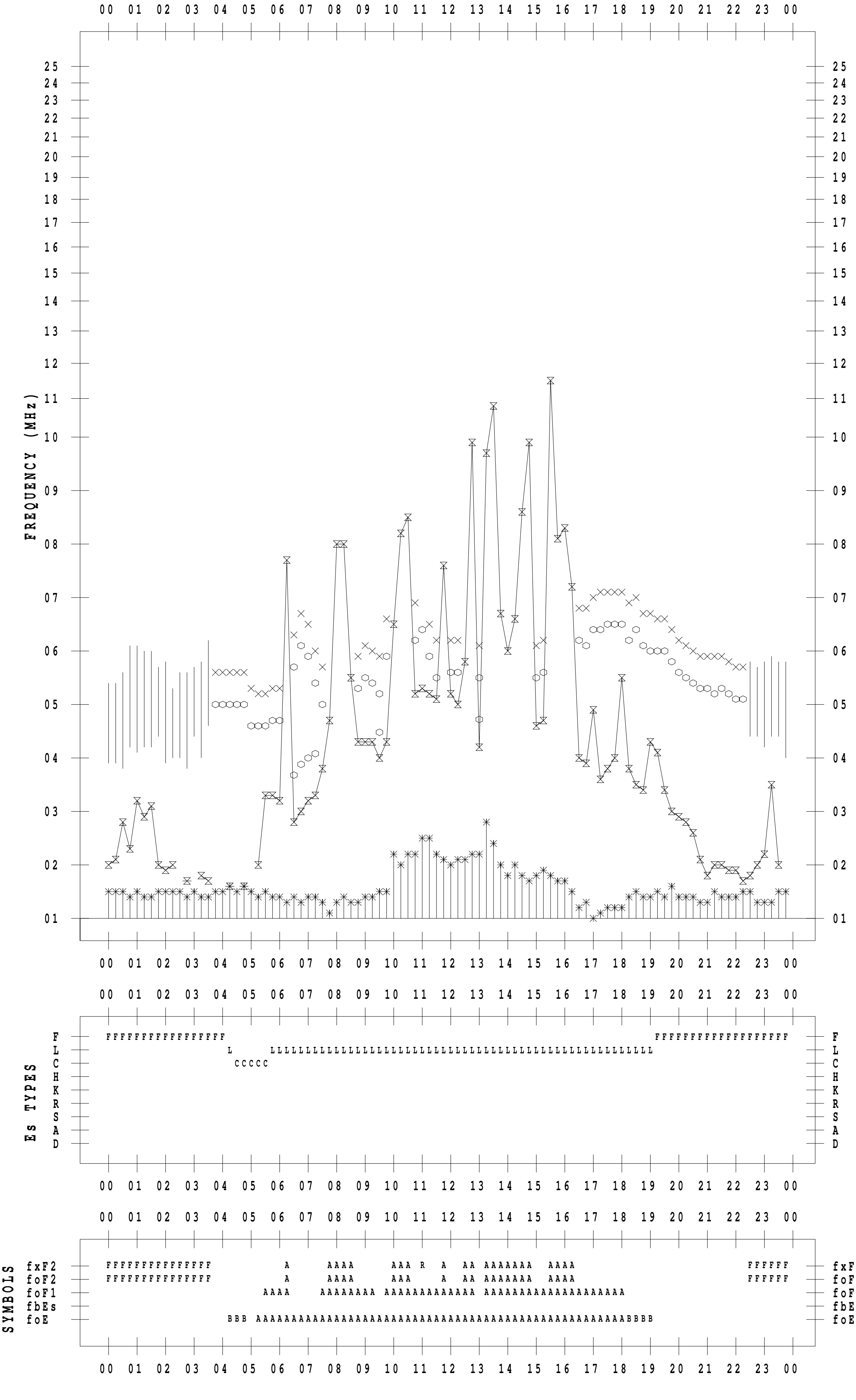
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/23

135 °E MEAN TIME



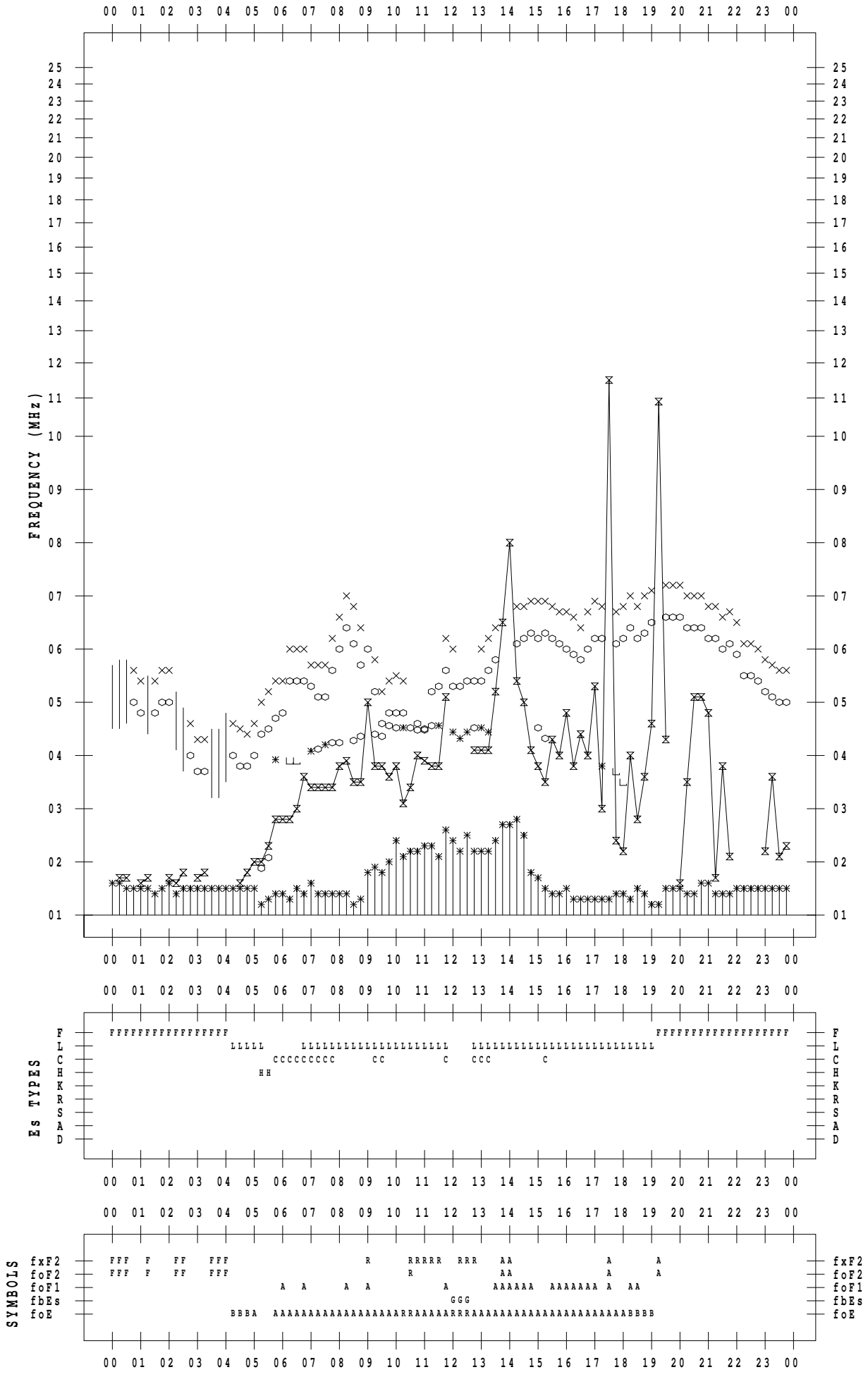
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/24

135 °E MEAN TIME



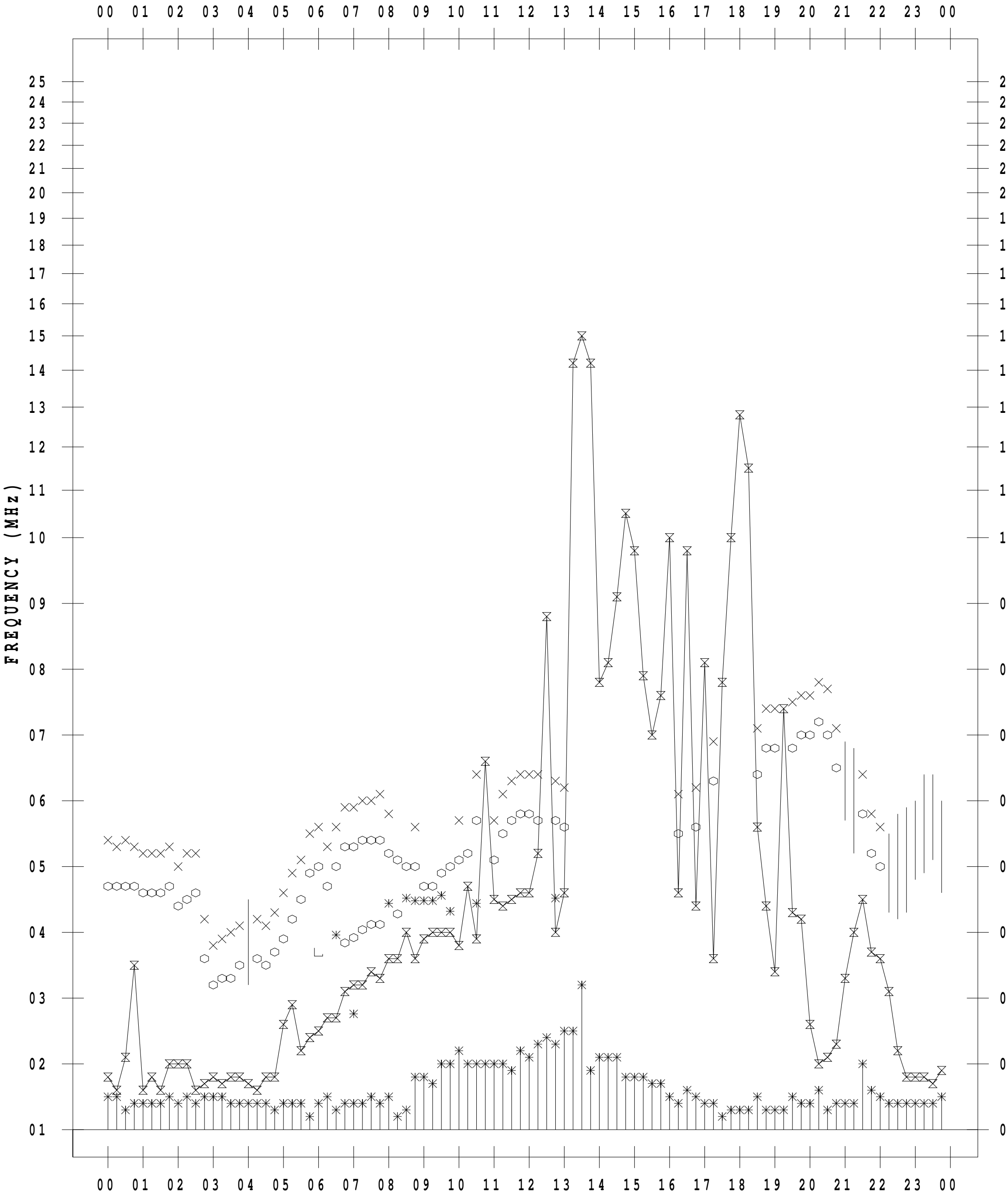
f-PLOT DATA

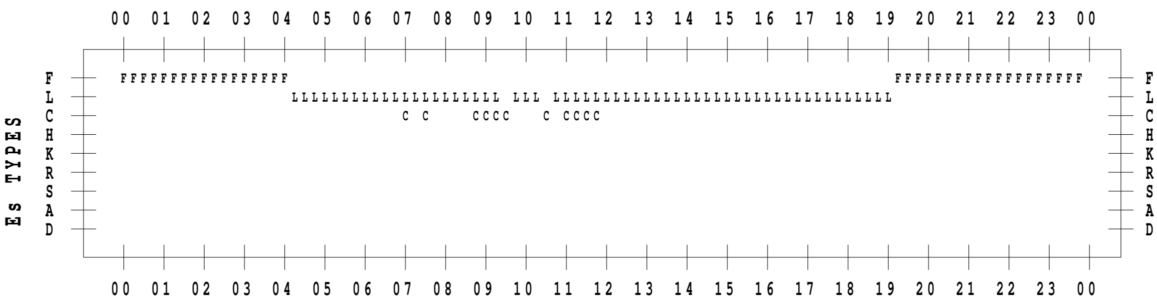
SCALER : I.NISHIMUTA

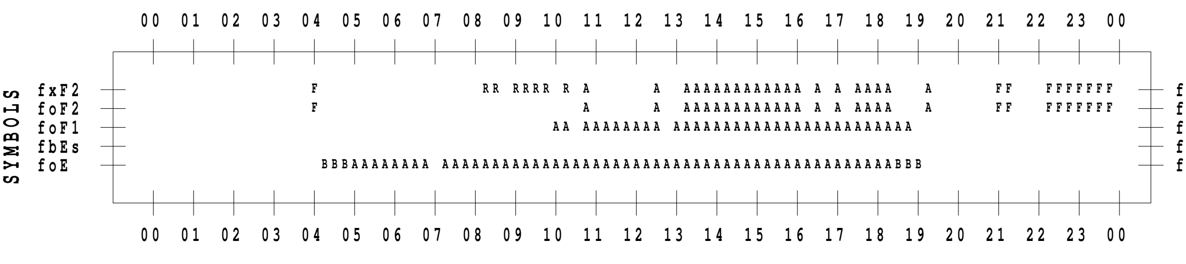
STATION : Kokubunji

DATE : 2010/ 7/25

135 °E MEAN TIME







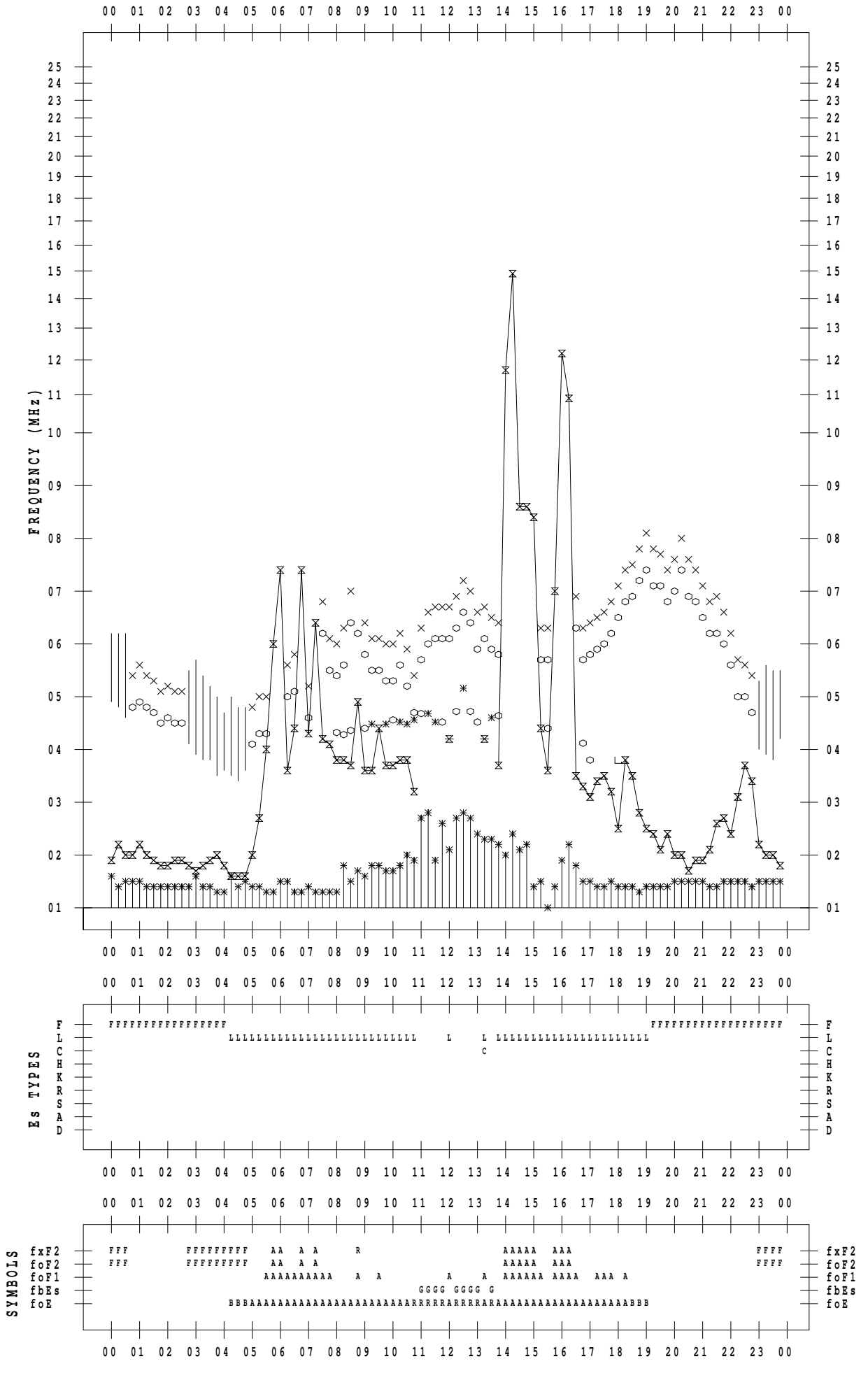
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/26

135 °E MEAN TIME



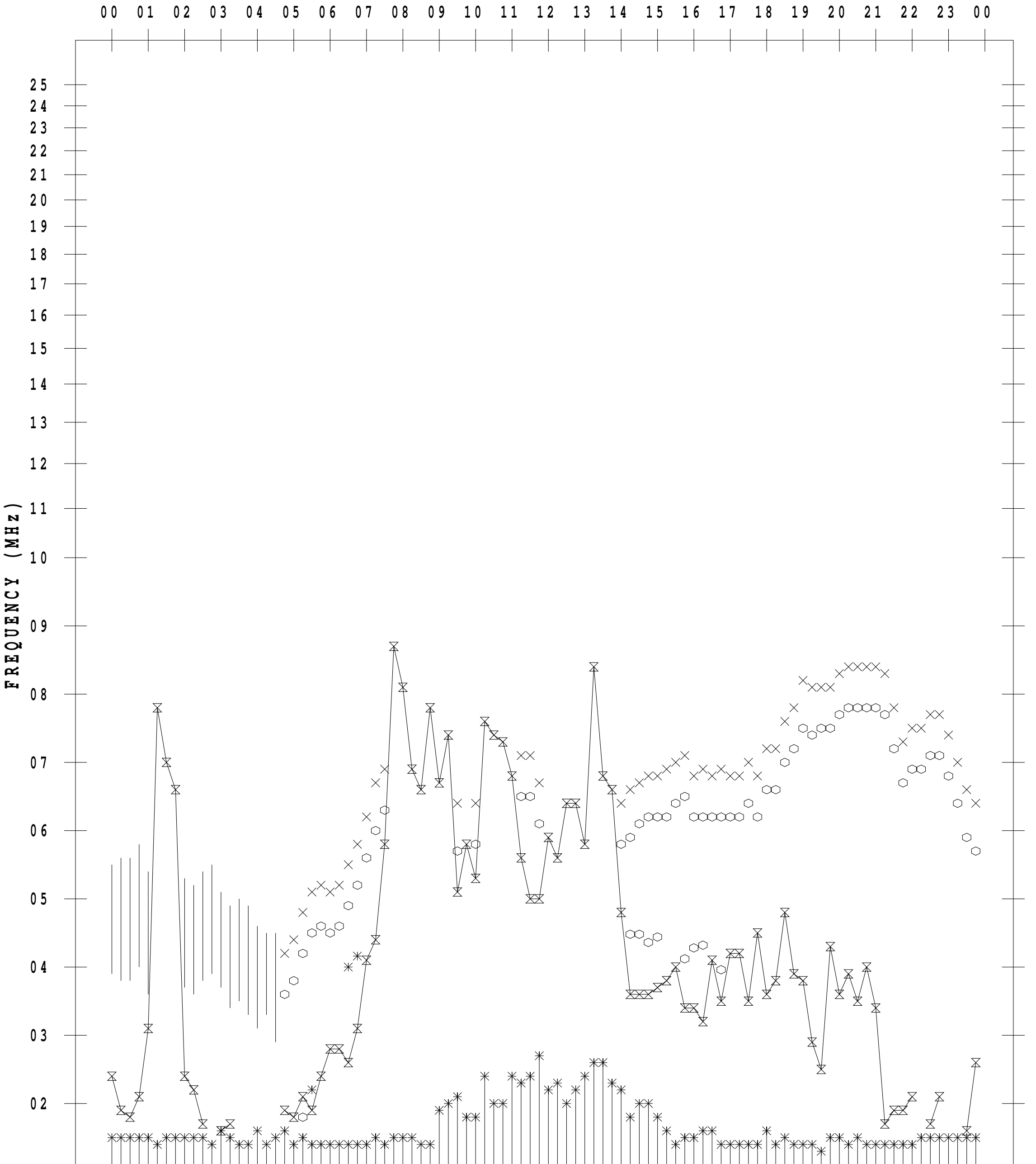
f-PLOT DATA

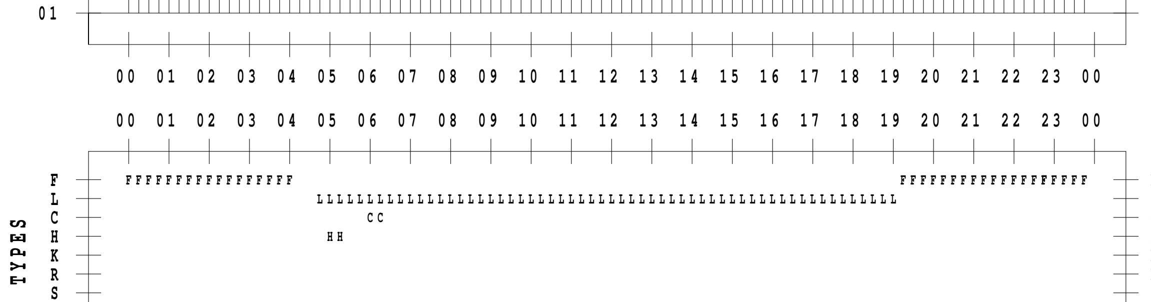
SCALER : I.NISHIMUTA

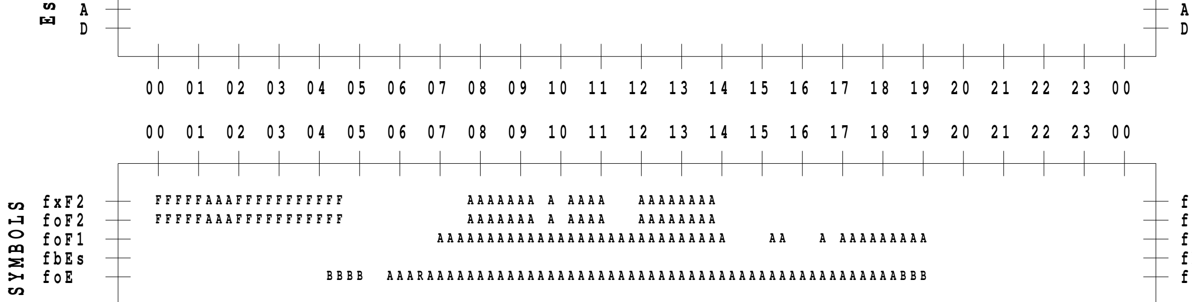
STATION : Kokubunji

DATE : 2010/ 7/27

135 °E MEAN TIME







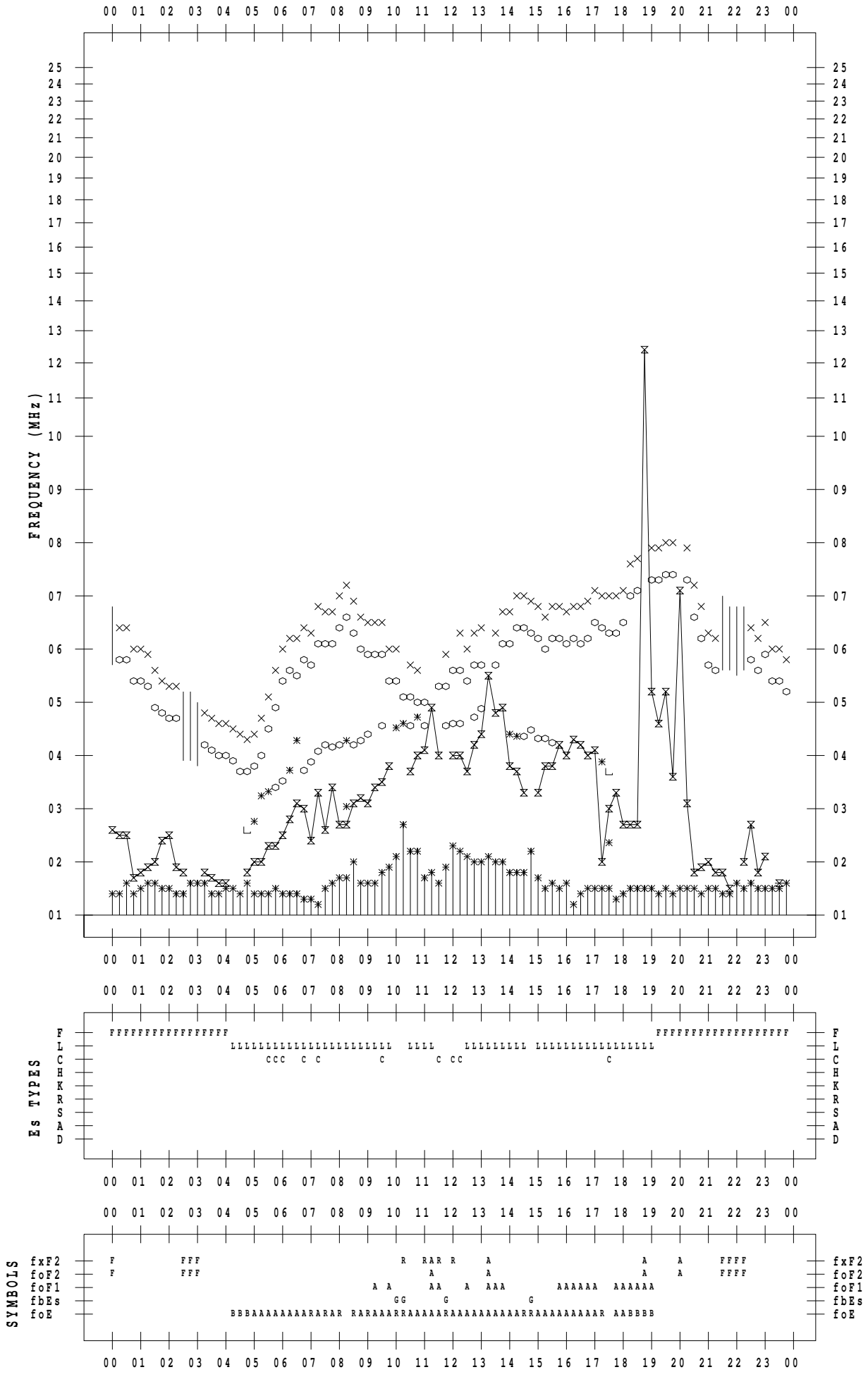
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/28

135 °E MEAN TIME



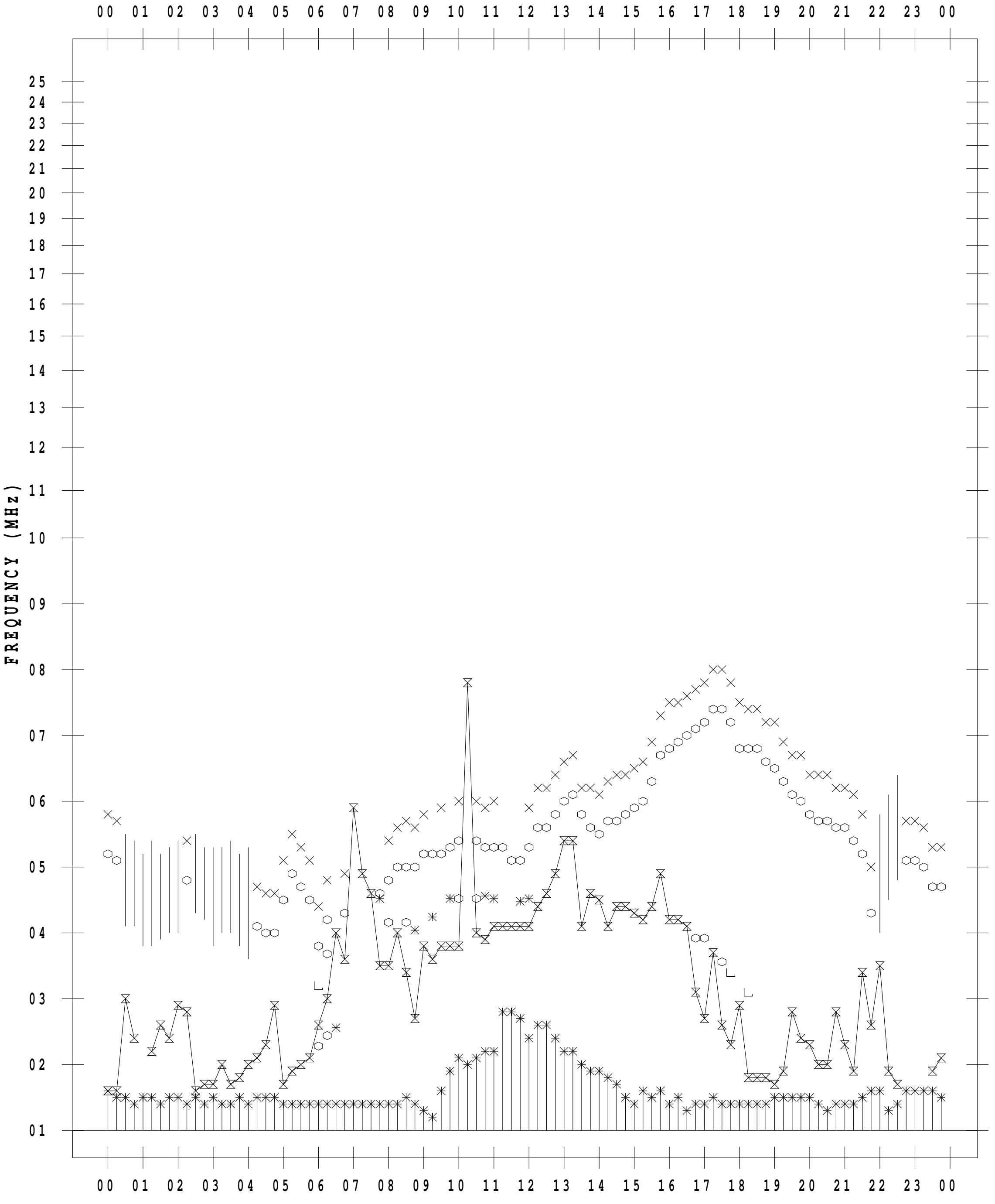
f-PLOT DATA

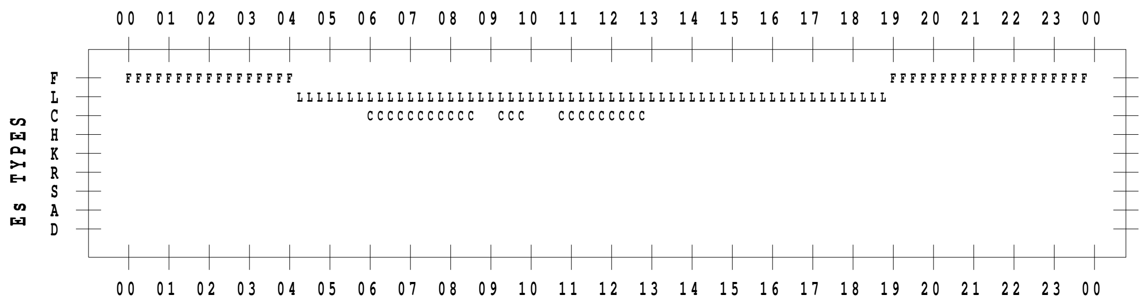
SCALER : I.NISHIMUTA

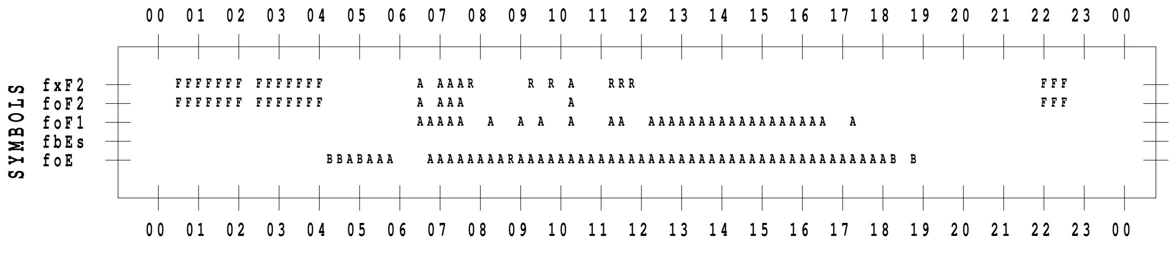
STATION : Kokubunji

DATE : 2010/ 7/29

135 °E MEAN TIME







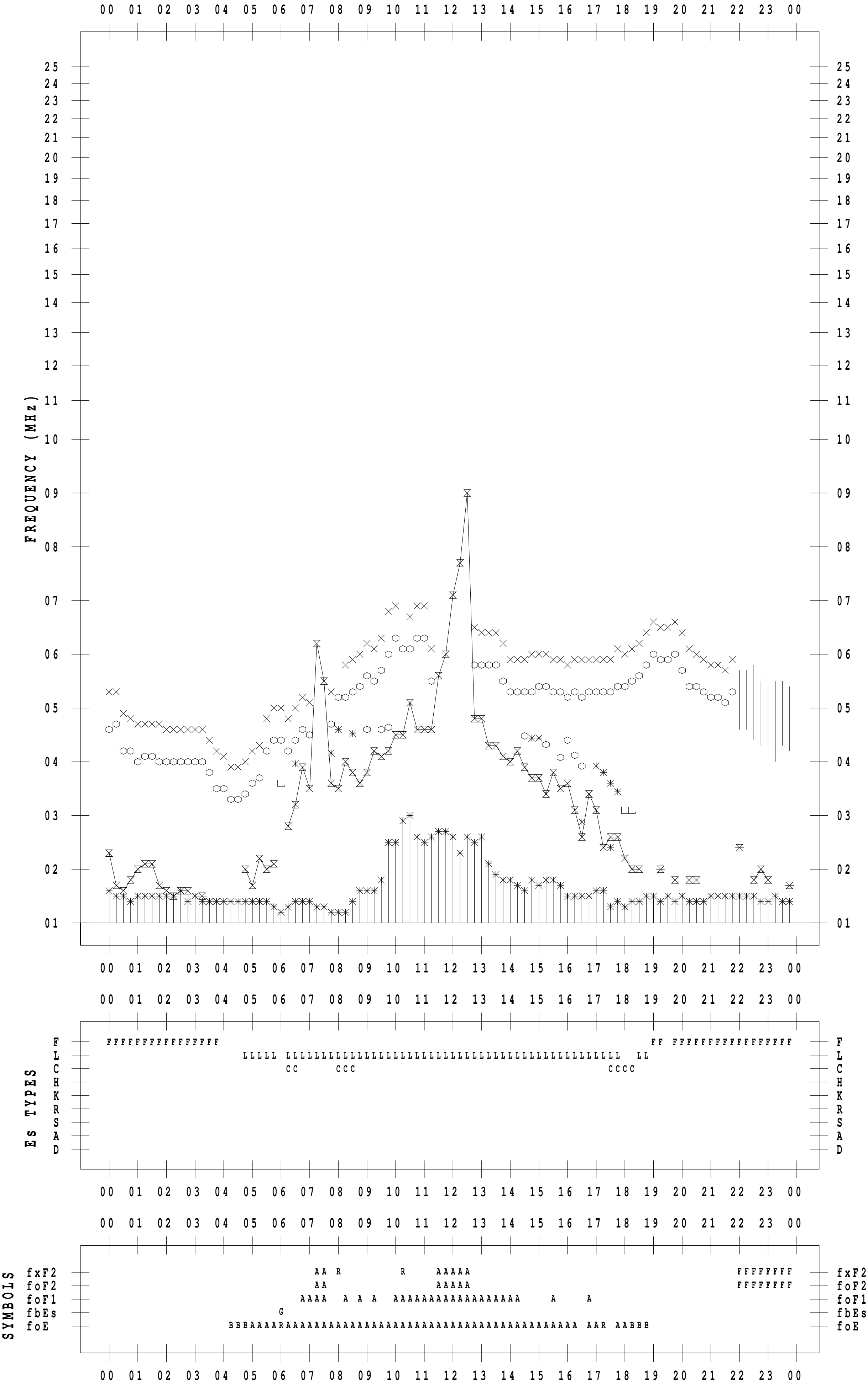
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/30

135 °E MEAN TIME



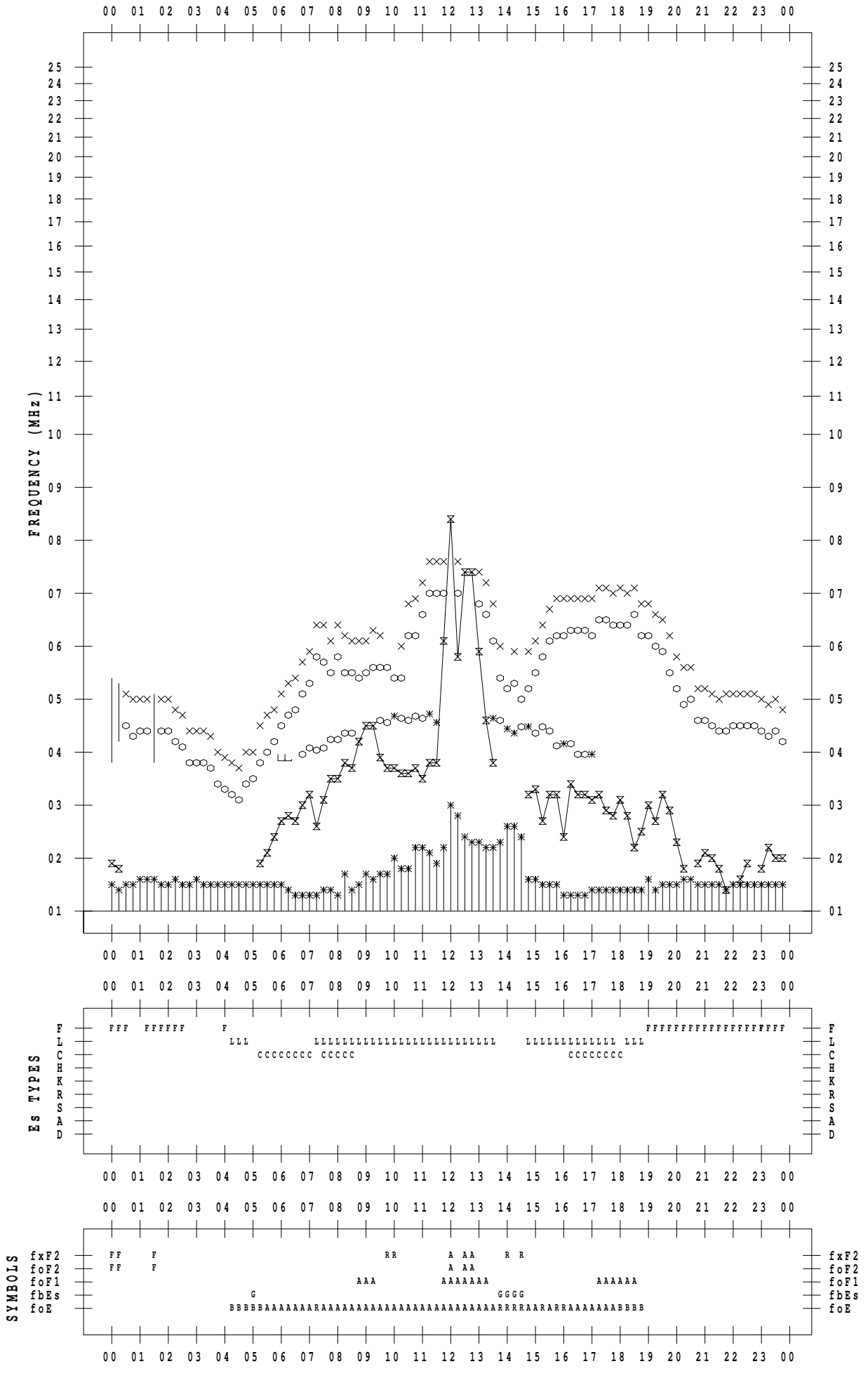
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2010/ 7/31

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso July 2010

Single-frequency observations

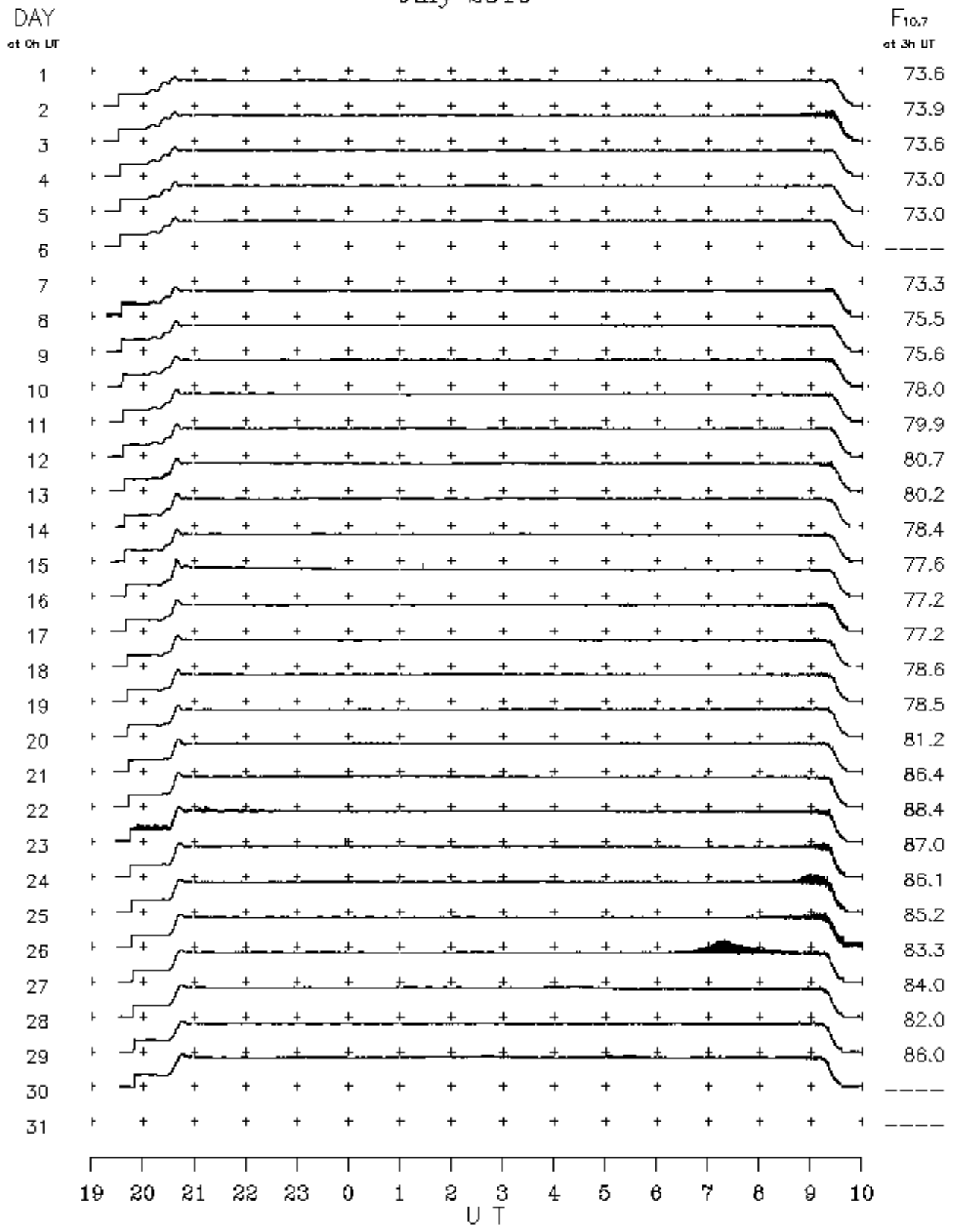
Normal observing period: 1925 - 1000 U.T. (sunrise to sunset)

JUL. 2010	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

B.Solar Radio Emission

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

July 2010



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°.
A link to the daily plot data directory : http://sunbase.nict.go.jp/solar/denpa/hirasDB/2010/07/