F-801

IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 2015

VOL. 67 NO. 9

CONTENTS

Preface
Introduction ・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 1
A. Ionosphere
A1. Automatic Scaling
Hourly Values at Wakkanai (*foF2, fEs* and *fmin*) ・・・・・・・ 4
Hourly Values at Kokubunji (*foF2, fEs* and *fmin*) ・・・・・・・ 7
Hourly Values at Yamagawa (*foF2, fEs* and *fmin*) ・・・・・・・ 10
Hourly Values at Okinawa (*foF2, fEs* and *fmin*) ・・・・・・・ 13
Summary Plots at Wakkanai ・・・・・・・・・・・・・・・・・ 16
Summary Plots at Kokubunji ・・・・・・・・・・・・・・・・・ 24
Summary Plots at Yamagawa ・・・・・・・・・・・・・・・・・ 32
Summary Plots at Okinawa ・・・・・・・・・・・・・・・・・・ 40
Monthly Medians *h'F* and *h'Es* ・・・・・・・・・・・・・・・・ 48
Monthly Medians Plot of *foF2* ・・・・・・・・・・・・・・・・ 50
A2. Manual Scaling
Hourly Values at Wakkanai ・・・・・・・・・・・・・・・・・・ 51
Hourly Values at Kokubunji ・・・・・・・・・・・・・・・・・・ 65
Hourly Values at Yamagawa ・・・・・・・・・・・・・・・・・・ 79
Hourly Values at Okinawa ・・・・・・・・・・・・・・・・・・・ 93
f-plot at Wakkanai ・・・・・・・・・・・・・・・・・・・・・ 108
f-plot at Kokubunji ・・・・・・・・・・・・・・・・・・・・・ 138
f-plot at Yamagawa ・・・・・・・・・・・・・・・・・・・・・ 168
f-plot at Okinawa ・・・・・・・・・・・・・・・・・・・・・・ 198

≪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.

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.

HOURLY VALUES OF foF2 AT Wakkanai

SEP. 2015

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	46	A	A	A	45	45	57	56	54	63	59	62	A	60	65	61	60	61	62	67	N	A	A	55
2	48	51	48	46	47	44	61	54	69	70	64	58	60	62	62	64	61	A	A	66	A	54	55	28
3	37	50	50	48	46	49	55	52	66	64	A	A	A	A	66	60	64	55	66	A	64	A	60	58
4	51	A	45	46	36	42	57	52	39	A	A	60	A	A	58	55	55	50	54	64	52	55	46	A
5	A	A	A	A	31	37	57	60	55	53	56	A	A	A	55	48	55	55	55	64	A	A	43	34
6	A	34	38	A	36	A	A	A	A	A	A	A	52	A	A	41	49	50	52	58	53	51	A	44
7	A	43	38	34	32	37	54	56	A	53	49	A	57	58	58	59	64	60	62	65	33	53	34	38
8	A	34	32	34	31	34	32	30	A	A	A		A	A	A	A	A	47	47	A	54	37	A	34
9	34	34	34	32	31	A	36	41	35	A	56	54	A	57	56	62	64	61	61	63	54	50	64	54
10	38	34	34	34	A	A	35	A	A	A	A	A	A		A		49	45	43	34	A	32	34	28
11	26			N	A	A	52	51	61	55	A	A	A	A	57	57	52	56	55	62	63	65	54	32
12	28	A	A	32	30	A	38	47	39	A	A	A	A	54	A	55	56	55	A	54	52	58	42	30
13	A	34	32	32	32	34	29	56	61	60	54	54	58	58	57	60	61	57	63	64	66	52	34	37
14	A	A	28	A	32	A	A	62	67	53	63	64	64	62	57	56	55	57	60	54	52	51	42	47
15	34	34	34	34	32	29	50	56	65	A	A	55	64	68	68	55	57	55	A	A	54	54	A	39
16	A	34	40	34	32	A	47	A	65	54	61	60	58	60	61	58	58	54	62	64	61	57	48	42
17	34	38	38	32	37	34	57	58	63	51	66	62	66	66	61	60	58	65	67	64	54	53	34	36
18	34	38	37	34	37	42	62	60	62	58	63	66	67	66	63	62	62	60	62	55	52	51	47	A
19	34	36	31	34	34	34		54	52	62	62	62	61	62	64	61	56	62	66	64	53	60	54	47
20	40	34	37	37	34	40	54	64	67	64	67	67	68	69	63	68	67	66	66	67	64	63	54	43
21	34	34	34	34	38	A	36	32	A	A	A	A	A		39	44	44	43	38	42	34	32	34	32
22	32	31	32	31	32	26	33	52	60	54	62	58	61	64	57	60	58	61	62	61	55	46	42	34
23	34	31	A	26	A	37	46	A	66	65	67	56	68	65	64	65	62	67	62	50	54	50	50	44
24	43	37	32	34	28	35	29	54	54	62	65	68	67	68	74	67	61	67	60	58	54	48	44	34
25	38	34	A	A	37	38	53	67	67	67	66	59	80	70	67	67	66	67	64	53	58	54	50	48
26	47	37	47	34	43	43	60	67	66	67	69	66	68	70	70	70	77	72	67	54	50	53	48	39
27	44	37	39	44	36	44	56	66	66	67	72	67	70	69	70	70	66	67	63	57	54	58	50	54
28	53	53	54	54	54	52	61	64	67	79	70	71	70	65	66	68	68	68	62	62	62	66	69	62
29	54	54	53	54	54	58	65	61	67	74	59	74	63	70	67	70	70	70	64	58	58	57	52	54
30	54	53	55	54	56	32	54	59	66	70	70	68	69	70	67	71	70	68	66	52	58	A	A	51
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	24	24	24	27	22	27	26	25	22	21	21	20	22	26	28	29	29	27	27	26	26	25	28
MED	38	35	38	34	36	38	54	56	65	62	63	62	65	65	63	60	61	60	62	61	54	53	48	40
U Q	47	40	46	45	43	44	57	61	66	67	67	67	68	69	67	67	65	67	64	64	58	57	54	49
L Q	34	34	33	33	32	34	36	52	54	54	59	58	60	60	57	56	55	55	55	54	52	50	42	34

HOURLY VALUES OF fEs AT Wakkanai

SEP.2015

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	36	43	40	36	26	27	34	40	44	35	52	37	37	46	53	34	40	27	37	G	40	73	70	34
2	34	40	33	37	G	G	24	32	33	39	48	39	40	45	40	40	35	62	63	43	60	39	G	30
3	25	33	28	28	33	30	32	48	71	60	79	126	80	41	35	37	42	50	45	73	112	109	54	44
4	36	39	33	32	25	G	33	39	34	49	64	81	54	54	54	40	30	36	36	34	27	39	30	51
5	58	49	41	52	G	G	30	37	31	34	40	40	40	40	34	33	44	46	48	60	70	72	34	28
6	43	28	35	36	33	59	42	48	87	51	41	40	40	40	37	29	40	34	40	53	32	34	57	32
7	29	28	G	G	G	G	30	45	74	46	58	40	40	33	31	34	33	33	39	40	71	33	G	G
8	88	G	G	28	30	25	34	36	39	52	34	G	31	31	38	43	44	40	36	40	30	G	33	G
9	25	27	G	G	27	43	31	37	61	30	33	31	34	G	30	28	32	32	G	G	G	G	G	G
10	25	27	24	24	32	30	32	40	42	37	37	39	54	G	95		38	32	G	35	43	40	G	25
11	G			G	32	40	57	40	52	52	45	40	38	38	41	49	34	27	G	G	G	G	G	G
12	24	28	27	27	28	26	G	G	28	32	46	32	37	33	30	33	57	38	56	41	40	G	34	30
13	31	25	25	G	G	26	40	36	43	38	31	34	33	32	34	32	37	29	28	34	29	G	29	28
14	27	28	24	27	28	29	43	45	37	53	38	42	32	32	31	29	G	35	34	33	G	24	24	G
15	G	G	G	G	G	26	43	53	55	64	62	38	39	36	33	35	40	68	81	58	50	39	40	34
16	33	G	28	G	11	34	34	38	39	36	34	40	33	33	31	30	30	23	G	54	41	34	32	32
17	G	G	G	G	G	27	32	37	44	34	39	38	33	32	31	29	29	29	G	32	G	G	33	G
18	G	G	G	G	G	27	36	33	30	49	51	59	57	52	40	50	34	30	G	G	G	28	28	34
19	26	24	G	G	G	G		40	33	38	34	34	33	33	31	34	29	31	27	G	27	24	G	G
20	G	G	G	G	G	G	35	35	40	32	40	39	33	39	32	29	34	30	G	G	G	G	G	G
21	G	G	26	32	33	34	G	32	34	31	31	33	32	G	33	34	34	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	33	37	51	G	39	41	41	31	34	32	G	26	G	36	31	30	29
23	30	26	39	27	34	29	73	64	34	32	30	32	37	32	35	33	39	G	26	G	G	G	G	G
24	G	G	G	G	G	G	G	26	29	32	32	39	39	33	36	52	40	35	34	36	G	G	G	G
25	G	30	33	46	34	29	32	31	33	32	33	40	33	35	30	33	30	56	28	26	G	30	G	G
26	G	G	G	G	G	G	G	35	29	32	33	33	40	31	32	29	38	42	G	33	G	27	G	27
27	G	G	G	23	G	G	G	32	34	32	33	36	38	45	44	40	38	30	38	28	27	G	G	G
28	G	G	G	G	G	G	G	48	39	42	34	32	35	G	33	31	34	G	G	G	G	G	G	G
29	36	G	G	G	26	G	45	36	40	50	37	37	36	34	40	30	26	G	G	26	29	28	G	G
30	G	G	G	G	25	33	35	48	38	38	35	34	32	32	36	34	26	G	G	27	59	103	70	40
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	29	30	30	30	29	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30
MED	25	24	G	G	18	26	32	37	38	38	37	38	37	33	34	34	34	32	28	32	28	28	12	13
U Q	33	28	30	28	30	30	38	45	44	50	46	40	40	40	40	38	40	38	38	40	41	39	33	32
L Q	G	G	G	G	G	G	12	33	33	32	33	34	33	32	31	30	30	27	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

SEP. 2015

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

HOURLY VALUES OF foF2 AT Kokubunji

SEP. 2015

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	42	42	41	39	38	39	54	66	69	61	63	59	68	59	62	68	71	69	73	83	75	67	59	61
2	54	50	51	46	45	46	59	69	74	68	67	A	65	A	A	76	70	74	69	80		A	54	51
3	51	47	44	44	42	40	54	84	90	66	66	64	68	65	67	72	64	64	69	69	72	67	51	52
4	52	49	50	47	47	48	54	67	69	62	A	A	69	64	65	68	65	55	N	44	66	54	43	A
5	38	41	44	39	35	37	61	77	76	54	A	A	59	59	55	59	62	66	63	66	52	48	47	47
6	44	42	A	39	37	36	44	43	58	59	A	A	A	57	A	57	55	62	66	72	49	42	42	42
7	42	38	42	23	A	A	47	67	69	63	59	A	61	64	63	67	65	54	73	84	69	A	36	32
8	A	A	36	A	A	30	A	48	47	A					55	45	56	49	51	55	54	38	36	36
9		37	37	35	N	34	44	43	54	57	60	71	69	63	65	66	72	77	66	54	44	67	52	53
10	47	47	44	48	52	A	48	41	83	A	48		63	68	59	62	62	A	66	71	52	A	47	39
11	39	36	35	25	N	36	45	41	52	59	56	51	66	64	67	66	65	71	76	71	72	54	71	42
12	30	N	32	34	A	16	56	64	53	59	61	68	67	64	58	59	61	68	66	69	71	46	54	42
13	A	36	36	34	34	36	56	61	A	58	66	63	64	67	65	58	63	78	90	81	68	54	A	A
14	A	39	A	A	34	34	62	59	52	62	72	65	67	66	60	61	61	63	71	72	64	52	57	52
15	44	42	32	39	36	32	53	72	62	N		64	82	75	74	66	65	71	74	71	54	48	44	44
16	44	43	43	38	34	37	53	71	61	A	A	62	67	64	65	64	69	84	77	65	52	44	44	45
17	A	42	39	38	38	38	54	61	66	62	52	67	68	69	66	63	65	70	81	76	47	45	47	44
18	44	42	43	42	39	39	61	59	60	67	65	65	63	71	70	66	75	77	72	52	47	44	48	A
19	45		44	45	39	36	52	80	68	67	78	78	66	67	64	63	71	66	64	67	61	54	53	46
20	47	44	43	39	38	42	65	62	75	62	72	69	71	76	68	65	82	78	72	78	74	67	51	51
21	39	39	39	43	42	46	47	45	A						48		47	51	47	44	42	39	36	36
22	38	34	32	32	31	32	46	57	58	58	60	N	64	64	69	66	68	72	74	67	49	A	A	42
23	41	38	39	39	39	31	59	58	57	66	70	67	67	77	72	69	74	72	72	69	52	55	48	53
24	45	48	44	42	39	42	52	61	69	68	71	78	85	77	72	77	80	88	88	64	38	42	47	43
25	39	34	34	30	32	36	63	68	72	72	72	75	77	80	71	72	74	80	87	76	53	52	49	48
26	46	46	44	42	38	36	59	84	90	84	75	66	71	76	77	78	76	84	84	67	53	52	55	42
27	47	45	42	44	41	43	58	75	84	74	74	76	75	83	77	71	78	96	78	55	57	A	52	51
28	52	51	49	49	46	47	62	72	74	82	86	85	72	71	72	72	75	77	83	75	67	66	52	54
29	52	46	46	45	48	44	59	73	77	74	77	90	86	75	76	76	81	95	85	66	51	46	49	47
30	43	43	42	42	42	37	54	67	64	75	74	82	81	84	77	69	84	88	86	72	65	53	48	45
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	27	28	28	25	28	29	30	28	25	23	21	27	27	28	29	30	29	29	30	29	25	28	27
MED	44	42	42	39	39	37	54	65	68	63	67	67	68	67	66	66	68	72	73	69	54	52	48	45
U Q	47	46	44	44	42	42	59	72	74	70	74	77	72	76	72	71	75	79	82	75	67	54	52	51
L Q	40	38	36	36	35	35	50	58	58	59	60	64	65	64	62	62	63	65	66	65	50	44	45	42

HOURLY VALUES OF fEs AT Kokubunji

SEP. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	26	G	45	45	45	49	61	51	G	30	29	44	47	36	90	33	48	38
2	34	G	26	G	G	G	29	31	G	39	52	81	70	70	72	55	80	53	61	60		70	40	31
3	24	G	G	24	G	36	39	40	48	37	35	G	G	52	54	G	42	42	40	32	33	58	40	34
4	30	34	27	33	G	G	34	58	56	41	53	48	45	57	47	46	43	35	35	32	28	32	G	35
5	40	33	G	G	25	22	G	29	31	G	70	113	G	G	50	52	49	41	45	43	56	48	46	50
6	28	31	26	G	G	G	39	46	44	41	41	65	58	41	49	51	50	47	52	78	82	34	G	22
7	G	G	G	G	29	28	34	35	31	38	37	78	51	G	62	143	41	81	60	50	46	59	33	25
8	80	136	46	34	35	22	35	46	30	35	G	G			G	G	41	86	40	33	33	27	26	G
9		G	G	G	24	25	G	G	G	31	34	51	G	G	G	G	G	36	29	G	26	22	29	G
10	G	G	24	27	39	40	37	40	42	38	G		G	G	52	55	56	90	94	78	38	71	34	31
11	G	G	23	G	G	G	40	52	48	54	60	G	G	G	G	49	33	32	G	25	24	34	28	G
12	G	G	G	27	31	34	31	35	42	52	55	G	G	G	32	47	G	33	40	35	28	29	34	34
13	36	30	25	23	G	G	27	36	70	37	47	34	33	32	G	31	42	33	33	26	28	40	53	54
14	40	37	45	46	31	28	33	43	34	G	G	33	G	G	32	34	31	50	43	38	37	30	G	G
15	G	G	23	G	G	G	G	37	35	G		G	G	G	G	36	43	41	27	33	33	39	G	G
16	33	G	G	G	G	G	31	28	42	79	70	45	33	55	G	G	G	30	G	G	31	31	29	32
17	47	36	29	25	G	G	G	35	61	45	45	G	45	71	48	32	45	43	59	67	57	48	39	G
18	G	27	G	G	G	G	G	28	G	35	G	G	G	G	G	31	G	30	G	G	G	G	G	29
19	G		G	G	G	G	27	38	29	31	G	G	G	34	31	36	30	33	27	G	22	G	G	G
20	G	G	G	G	G	G	22	37	38	G	34	G	G	G	G	G	28	37	45	G	G	G	30	G
21	G	G	G	G	G	31	32	31	51	G	G				31	G	38	33	G	G	27	G	G	G
22	G	G	G	G	G	G	G	27	30	33	43	48	G	G	G	30	29	29	29	36	30	36	33	G
23	27	29	26	26	G	26	23	40	G	50	33	G	G	G	G	52	41	31	26	G	G	G	G	G
24	G	G	G	G	G	G	G	26	29	40	32	G	36	G	33	31	26	24	24	G	G	G	27	32
25	G	G	G	G	G	G	33	55	40	G	G	G	G	G	G	30	G	29	G	G	G	32	34	29
26	23	G	G	G	G	G	G	28	30	35	34	G	G	G	G	G	G	G	G	G	G	G	G	G
27	G	G	G	G	G	G	26	26	43	G	33	G	G	32	G	29	43	26	38	29	G	59	48	31
28	23	G	G	G	G	G	24	34	30	30	G	G	G	G	32	G	27	28	G	29	G	G	G	G
29	G	27	G	G	G	G	G	40	31	37	35	36	34	G	G	G	27	G	G	25	40	40	29	G
30	G	G	G	G	G	G	43	26	40	31	45	G	G	G	G	29	G	G	G	G	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	30	30	30	30	29	28	28	28	30	30	30	30	30	30	29	30	30	30
MED	G	G	G	G	G	G	27	35	36	36	35	G	G	G	G	31	32	33	31	29	28	32	29	12
U Q	31	29	25	24	G	25	34	40	44	41	46	48	35	37	47	47	43	43	45	36	37	40	34	32
L Q	G	G	G	G	G	G	G	28	30	30	G	G	G	G	G	G	26	29	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

SEP. 2015

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

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

HOURLY VALUES OF foF2 AT Yamagawa

SEP. 2015

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	70	80	86	90	82	A	47	A	46
18	45	42	45	45	41	38	46	54	67	66	62	67	75	83	76	70	79	86	80	67	54	53	54	51
19	47	44	46	47	40	34	38	70	73	67	76	72	78	67	67	71	75	73	67	72	76	54	54	53
20	51	50	48	44	40	42	47	66	72	71	66	75	87	82	77	71	82	84	75	85	85	54	52	47
21	41	41	43	40	40	43	57	76	74	A	51	A		B	A	53	A	59	A	53	48	47	46	43
22	42	37	34	34	34	32	41	54	60	48	A	62	66	76	80	74	74	88	77	73	51	A	37	40
23	40	36	37	37	34	32	40	54	63	70	61	66	74	78	85	77	75	78	78	76	58	51	54	53
24	48	48	43	43	37	40	48	57	72	71	76	86	88	85	81	80	91	97	92	40	43	A	47	47
25	45	42	37	34	34	34	44	71	77	84	78	75	81	77	85	81	75	78	90	85	52	48	48	47
26	47	50	47	42	32	36	37	76	85	87	74	74	76	81	85	84	77	88	88	78	54	48	52	47
27	48	47	43	38	40	38	44	67	76	74	76	76	84	77	78	82	84	84	86	81	60	53	52	51
28	52	51	51	22	43	36	41	57	68	83	80	85	80	73	84	68	75	90	86	77	74	52	51	54
29	51	50	44	48	44	30	42	62	81	76	75	80	90	94	94	94	96	109	96	78	51	43	46	47
30	47	49	44	43	40	34	41	60	71	72	75	84	78	84	81	85	83	98	97	86	66	47	41	38
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	12	12	12	12	12	12	14	13	14	13	14	13	12	13	14
MED	47	47	44	42	40	36	42	62	72	72	75	75	79	80	81	76	79	86	86	78	54	50	51	47
U Q	49	50	46	44	40	39	46	70	76	79	76	82	85	83	85	82	83	90	91	82	70	53	53	51
L Q	43	41	40	35	34	33	40	55	67	68	64	69	75	76	77	70	75	78	77	72	51	47	46	46

HOURLY VALUES OF fEs AT Yamagawa

SEP.2015

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	48	57	50	54	59	82	35	40	34
18	25	G	G	G	G	G	G	44	27	N	32	G	G	G	32	G	29	31	G	G	G	G	G	G
19	G	G	G	G	G	G	G	35	40	44	50	58	34	G	52	37	34	33	33	28	69	G	G	G
20	G	G	G	G	G	G	G	36	32	33	33	G	G	G	G	34	35	64	27	23	33	28	39	G
21	G	G	G	G	G	G	30	34	39	82	50	36	G	B	52	52	58	53	70	70	24	G	25	G
22	G	G	G	G	G	G	G	24	30	G	42	42	32	G	G	50	42	51	58	32	33	36	30	29
23	32	24	G	G	G	G	G	27	40	34	G	44	42	44	34	33	34	36	33	24	G	G	G	G
24	27	G	G	G	G	G	G	32	45	37	36	43	36	G	G	47	46	49	36	40	47	44	51	G
25	G	G	G	23	G	G	26	32	34	32	G	G	G	35	G	32	29	G	G	G	G	G	G	G
26	G	G	G	G	G	G	G	34	33	33	34	G	G	G	35	33	32	40	29	49	30	32	30	32
27	G	G	G	G	G	G	G	42	37	32	42	G	32	48	33	32	29	34	G	G	G	G	34	G
28	G	G	24	29	37	34	32	36	35	34	G	40	35	G	G	G	29	32	G	G	26	40	27	29
29	G	27	G	G	G	G	60	36	32	34	34	G	G	G	G	G	37	35	G	38	24	G	29	26
30	G	G	26	G	G	G	G	36	34	32	34	G	G	G	G	G	28	26	G	G	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	12	13	13	13	12	13	14	14	14	14	14	14	14	14	14
MED	G	G	G	G	G	G	G	35	34	34	34	G	G	G	G	33	34	36	28	26	25	G	28	G
U Q	13	G	G	G	G	G	28	36	39	35	42	42	34	18	34	47	42	50	36	40	33	35	34	29
L Q	G	G	G	G	G	G	G	32	32	32	16	G	G	G	G	G	29	32	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

SEP. 2015

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	18	15	14	17	14	15	14	14	14
18	15	14	14	14	15	17	18	14	20	17	18	42	44	46	23	44	17	14	17	14	15	15	15	15
19	16	15	17	15	14	15	15	14	14	17	26	23	22	44	23	21	33	14	14	14	14	16	15	15
20	15	15	15	15	15	15	15	14	14	18	20	46	45	20	52	26	17	14	14	15	14	16	15	16
21	16	16	15	32	14	16	14	14	14	18	18	28	81	B	34	34	21	14	14	14	15	15	15	15
22	17	15	15	15	18	15	15	15	16	18	21	20	21	50	21	18	17	14	14	15	14	15	15	14
23	14	15	15	15	15	15	17	18	15	17	17	45	50	14	23	26	18	15	15	15	15	16	17	18
24	16	15	16	16	15	15	15	14	15	18	26	23	27	50	51	33	22	15	16	15	14	14	15	18
25	17	14	18	15	15	15	15	14	17	20	45	46	46	38	35	20	17	14	17	16	15	16	15	17
26	15	15	16	17	15	15	14	15	20	20	36	46	46	46	22	21	17	15	15	15	15	15	16	14
27	14	15	14	15	15	14	15	14	18	20	20	47	47	22	21	21	17	14	18	15	15	15	15	15
28	16	17	15	15	15	14	14	14	14	20	35	17	28	52	49	38	18	15	16	15	16	15	17	15
29	18	17	18	18	20	16	15	16	17	20	24	45	46	48	50	49	26	17	14	14	16	16	17	15
30	18	18	15	14	15	15	15	15	17	18	38	45	47	45	50	35	34	15	16	15	15	16	16	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	14	14	14	14	14	14	14	14	14
MED	16	15	15	15	15	15	15	14	16	18	24	45	46	46	34	26	18	14	16	15	15	15	15	15
U Q	17	16	16	16	15	15	15	15	17	20	35	46	47	49	50	35	22	15	17	15	15	16	16	16
L Q	15	15	15	15	15	15	14	14	14	17	19	23	27	30	22	21	17	14	14	14	14	15	15	15

HOURLY VALUES OF foF2 AT Okinawa

SEP.2015

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	51	46	42	46	38		41	102	58	62	71	72	87	86	82	82	80	91	104	116	A	A	43	44
2	47	49	51	50	38	37	41	82	75	68	70	72	90	87	106	118	A	90	92	97	88	72	52	51
3	58	66	67	49	45	42	46	64	64	67	68	81	80	80	80	90	81	80	77	88	80	54	44	A
4	51	48	47	50	45	42	48	72	81	65	66	A	78	95	101	87	85	91	94	110	96	A	A	42
5	41	43	45	42	38	34	40	71	66	60	68	68	80	86	88	95	91	100	110	108	88	80	67	67
6	58	51	51	51	36	36	46	74	61	62	53	60	75	72	76	80	88	97	99	81	67	47	40	48
7	50	48	54	56	B	B	B	64	88	72	65	70	96	N	111	108	108	108	120	110	99	A	52	A
8	A	46	A	40	42	A	A	67	87	60	48	80	77	80	66	62	67	94	71	72	54	51	51	54
9	52	50	44	46	46	31	31	47	68	66	71	82	90	92	83	86	96	86	87	72	78	81	44	60
10	58	52	52	50	51	46	51	74	81	A	62	98	88	84	71	70	91	106	88	88	88	A	49	49
11	47	46	42	42	39		34	51	54	94	63	68	78	81	90	95	101	102	111	88	78	67	63	54
12	42	38	37	42	51	B	34	59	69	70	62	84	97	80	76	82	82	98	101	88	81	47	43	43
13	40	B	34	40	29	28	38	64	67	67	70	90	105	98	105	91	91	111	111	85	A	A	54	52
14	52	52	42	36	42	34	41	55	62	62	64	80	82	84	81	71	A	75	93	80	A	A	40	42
15	46	40	34	A	34	A	40	63	67	62	63	87	107	100	101	120	104	104	95	87	51	47	50	50
16	49	52	63	42	40	37	36	A	62	67	72	67	88	73	76	87	101	107	A	86	63	48	A	44
17	42	42	40	43	36	30	44	72	64	67	78	93	104	114	108	97	105	106	98	89	65	51	44	A
18	42	44	44	49	50	39	40	62	68	71	70	59	82	102	94	80	88	104	100	72	54	54	52	52
19	48	47	46	47	36	30	34	66	77	74	72	75	82	77	75	76	76	80	75	69	78	66	62	54
20	53	52	51	47	40	40	40	71	67	76	77	80	97	105	90	86	93	96	88	88	87	52	48	42
21	42	42	41	34	36	38	48	67	87	61	67	73	74	68	61	64	68	65	65	A	58	58	51	51
22	50	A	41	A	34	31	36	54	64	67	62	68	86	100	111	107	101	101	100	76	63	54	47	46
23	47	48	A	42	N	B	31	58	64	71	64	77	87	97	96	91	87	84	81	75	54	52	51	52
24	50	50	43	34	32	34	45	51	67	72	84	92	107	111	103	105	111	117	102	A	39	54	50	52
25	52	49	52	B	37	38	44	74	74	86	88	87	91	98	102	97	91	98	101	88	64	58	52	A
26	48	48	51	32	32	30	32	72	84	82	78	92	89	95	90	80	88	97	104	88	83	64	62	53
27	52	52	51	47	43	38	47	66	78	75	78	82	95	90	96		91	94	73	84	72	54	52	54
28	58	64	72	61	45	28	30	58	65	84	96	103	110	112	112	108	101	105	105	87	88	76	79	81
29	72	80	72	72	52	38	37	67	72	78	85	90	121	145	144	150	147	151	146	127	100	80	76	74
30	73	78	72	60	54	30	31	60	66	80	85	82	85	98	105	111	117	108	107	88	81	62	61	52
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	28	28	27	28	23	28	29	30	29	30	29	30	29	30	29	28	30	29	28	27	24	28	26
MED	50	48	46	46	40	36	40	66	67	68	70	80	88	92	92	90	91	98	99	88	78	54	51	52
U Q	52	52	52	50	45	38	44	72	77	75	78	88	97	100	105	106	101	106	104	88	88	66	57	54
L Q	46	46	42	42	36	30	34	58	64	63	64	71	82	80	80	80	86	91	87	80	63	51	45	46

HOURLY VALUES OF fEs AT Okinawa

SEP.2015

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	26	26	G	G	G	G	G	32	43	48	57	55	52	G	50	54	68	67	63	73	146	41	35	28
2	29	24	G	G	G	G	G	28	35	41	47	46	68	68	68	62	98	62	61	72	57	36	54	48
3	32	G	52	36	33	35	34	52	38	44	50	51	47	49	36	34	30	G	24	28	45	82	59	59
4	50	49	28	33	30	32	G	31	49	46	59	78	66	112	73	60	65	61	45	78	48	82	72	44
5	29	G	G	G	32	35	35	36	35	48	48	G	54	54	42	40	38	36	38	36	29	24	G	G
6	53	G	G	40	34	24	35	40	44	47	49	45	G	35	39	48	35	41	34	53	G	G	G	37
7	G	34	G	11	B	B	B	27	34	40	49	50	46	48	G	47	43	52	76	72	58	111	26	59
8	78	39	45	28	32	25	25	34	65	56	45	G	48	G	G	46	G	G	40	45	48	40	39	G
9	25	30	G	G	G	G	G	26	34	41	41	50	44	G	34	32	36	38	36	26	30	G	G	G
10	G	G	G	G	G	G	23	34	48	60	G	61	50	G	G	46	52	52	53	41	58	94	53	42
11	25	G	G	G	G	G	G	30	39	50	49	50	45	50	G	39	30	27	32	26	28	G	24	40
12	32	29	26	G	27	B	32	39	52	48	44	G	G	G	G	49	52	45	36	27	G	40	27	G
13	G	B	G	G	G	G	G	32	35	58	54	40	G	G	42	36	44	40	46	38	94	71	23	G
14	24	G	G	G	G	G	G	32	38	43	42	44	G	40	42	46	74	88	64	58	128	124	30	G
15	25	G	G	28	G	29	29	26	56	35	48	47	49	35	G	G	30	32	32	G	26	28	G	G
16	36	G	G	G	G	G	G	58	40	72	38	G	61	39	G	148	34	49	106	69	57	44	92	34
17	G	24	G	G	G	G	G	26	38	43	56	49	54	52	41	50	58	63	72	50	45	33	44	67
18	41	28	33	35	G	G	G	25	34	34	38	48	50	G	G	G	48	53	54	28	G	G	G	G
19	G	G	G	G	G	G	G	34	41	40	38	56	52	65	G	39	30	46	35	61	56	47	G	G
20	G	G	G	G	G	G	G	32	36	40	33	35	G	G	G	34	35	39	34	33	43	28	28	27
21	24	G	G	G	G	G	G	36	39	36	48	35	49	G	52	G	61	53	46	60	58	57	40	40
22	27	31	29	34	G	G	G	22	36	34	49	48	42	G	48	72	66	69	55	59	35	38	27	G
23	45	33	29	G	G	B	G	32	34	34	G	34	G	G	G	50	46	43	G	G	G	G	G	G
24	G	G	G	G	G	G	G	24	39	45	36	35	G	G	53	54	47	49	52	76	54	G	26	40
25	47	G	G	B	G	G	G	33	39	45	36	36	36	G	34	45	37	26	34	31	G	40	33	24
26	G	G	23	G	G	G	G	33	47	44	G	G	36	G	35	34	70	46	79	27	33	G	G	44
27	27	G	G	G	G	G	G	36	44	52	G	G	G	35	G		29	28	G	29	G	G	G	G
28	G	G	G	G	G	G	G	36	35	40	G	36	G	G	G	34	31	26	G	33	36	29	33	31
29	G	G	G	25	G	G	G	35	40	39	42	G	50	G	G	55	G	30	G	G	23	G	G	G
30	G	G	G	G	G	G	G	39	40	33	G	G	G	G	G	G	46	50	31	24	28	25	29	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	29	29	27	29	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30
MED	25	G	G	G	G	G	G	32	39	44	43	42	46	G	18	46	44	46	39	37	40	34	27	26
U Q	32	28	23	26	G	G	12	36	44	48	49	50	50	48	42	52	58	53	55	60	57	47	39	40
L Q	G	G	G	G	G	G	G	28	35	40	36	G	G	G	G	34	31	32	32	27	26	G	G	G

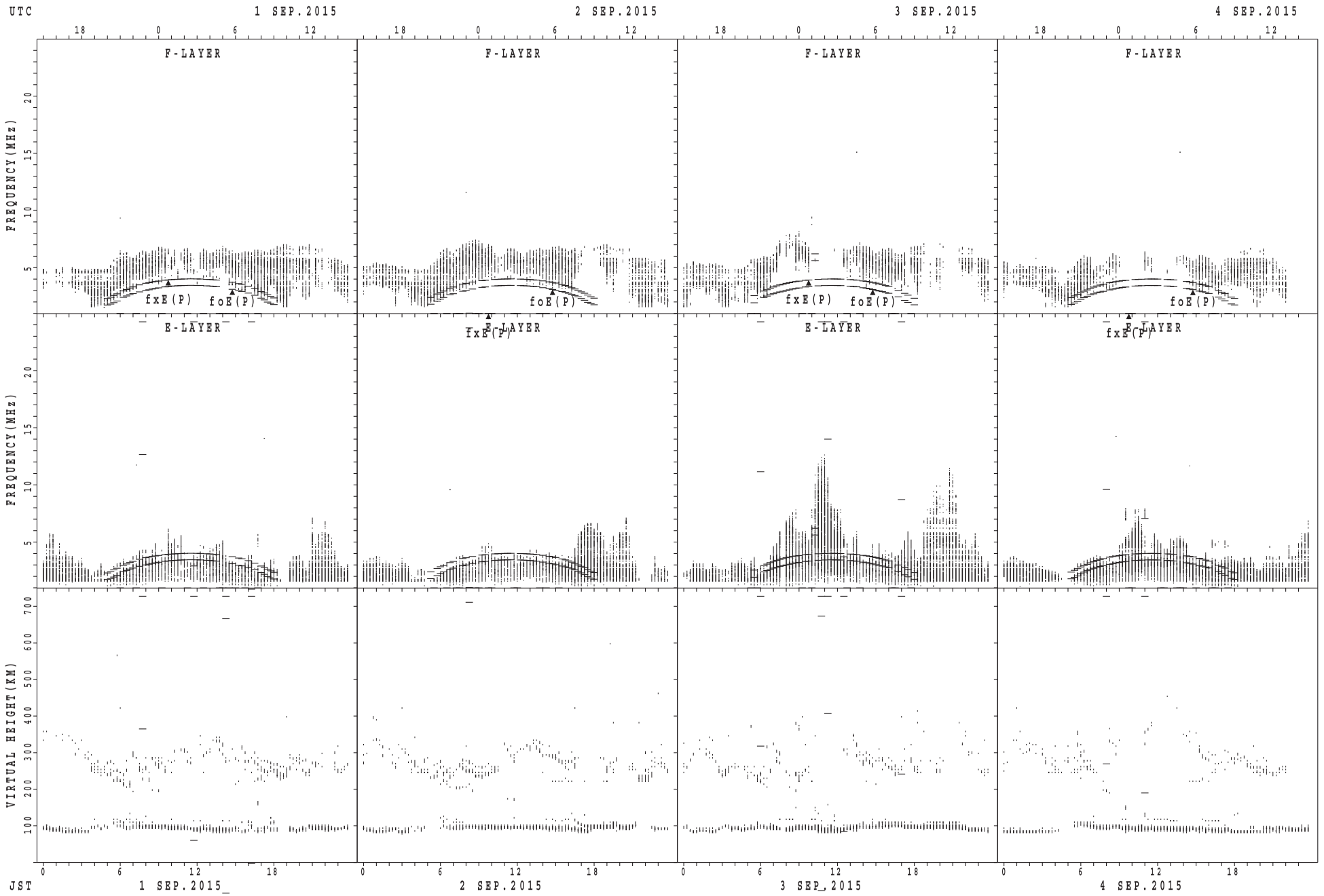
HOURLY VALUES OF fmin AT Okinawa

SEP. 2015

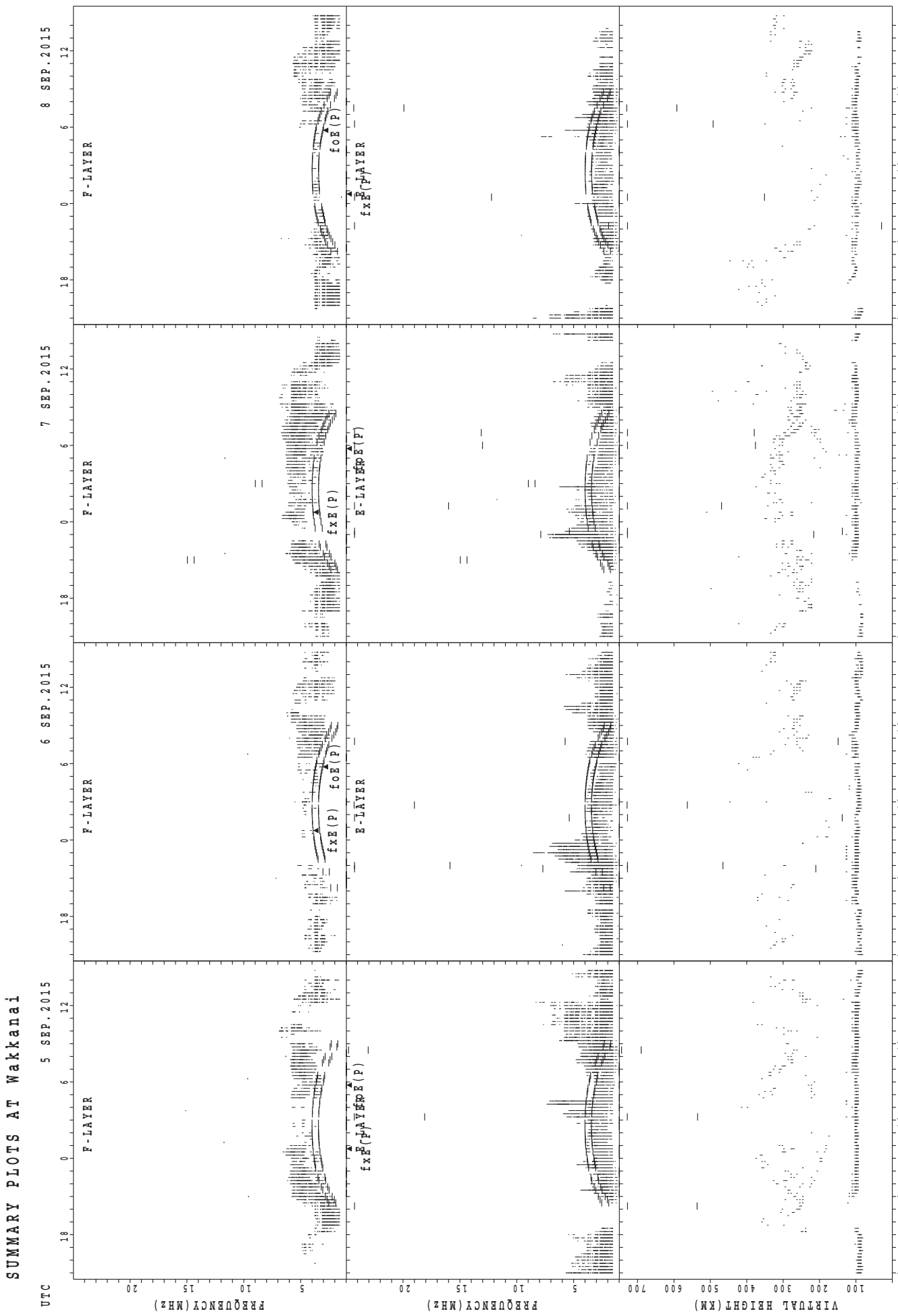
LAT. 26°41.0'N LON. 128°09.0'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

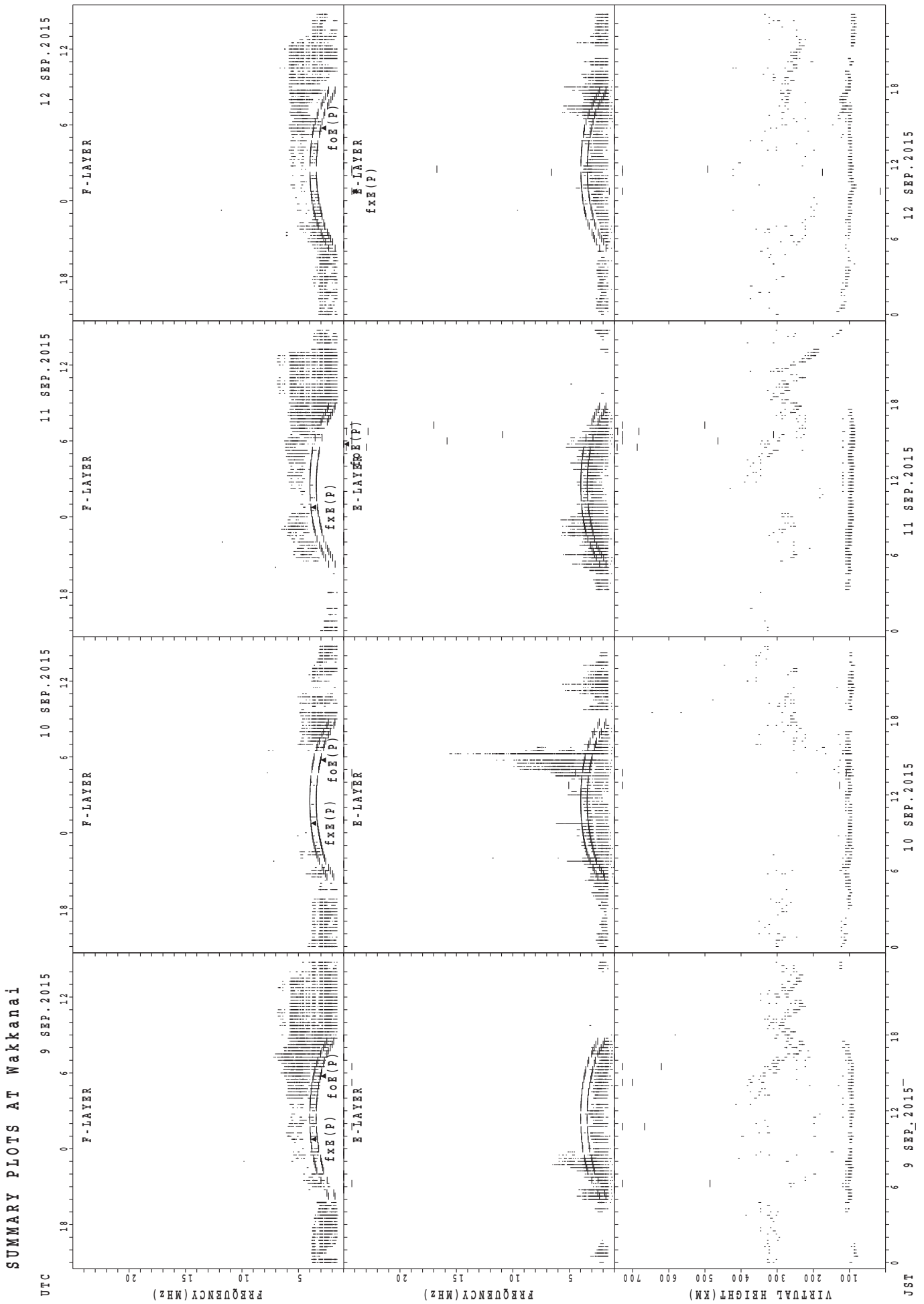
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	17	14	14	71	15	15	16	20	28	34	35	48	34	28	33	17	14	14	14	14	14	14
2	14	14	15	16	15	15	16	14	14	17	23	24	29	28	23	20	20	14	14	14	14	15	14	14
3	15	15	14	14	14	14	14	14	14	20	22	30	26	29	29	24	18	15	14	14	14	15	14	14
4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

SUMMARY PLOTS AT Wakkanai

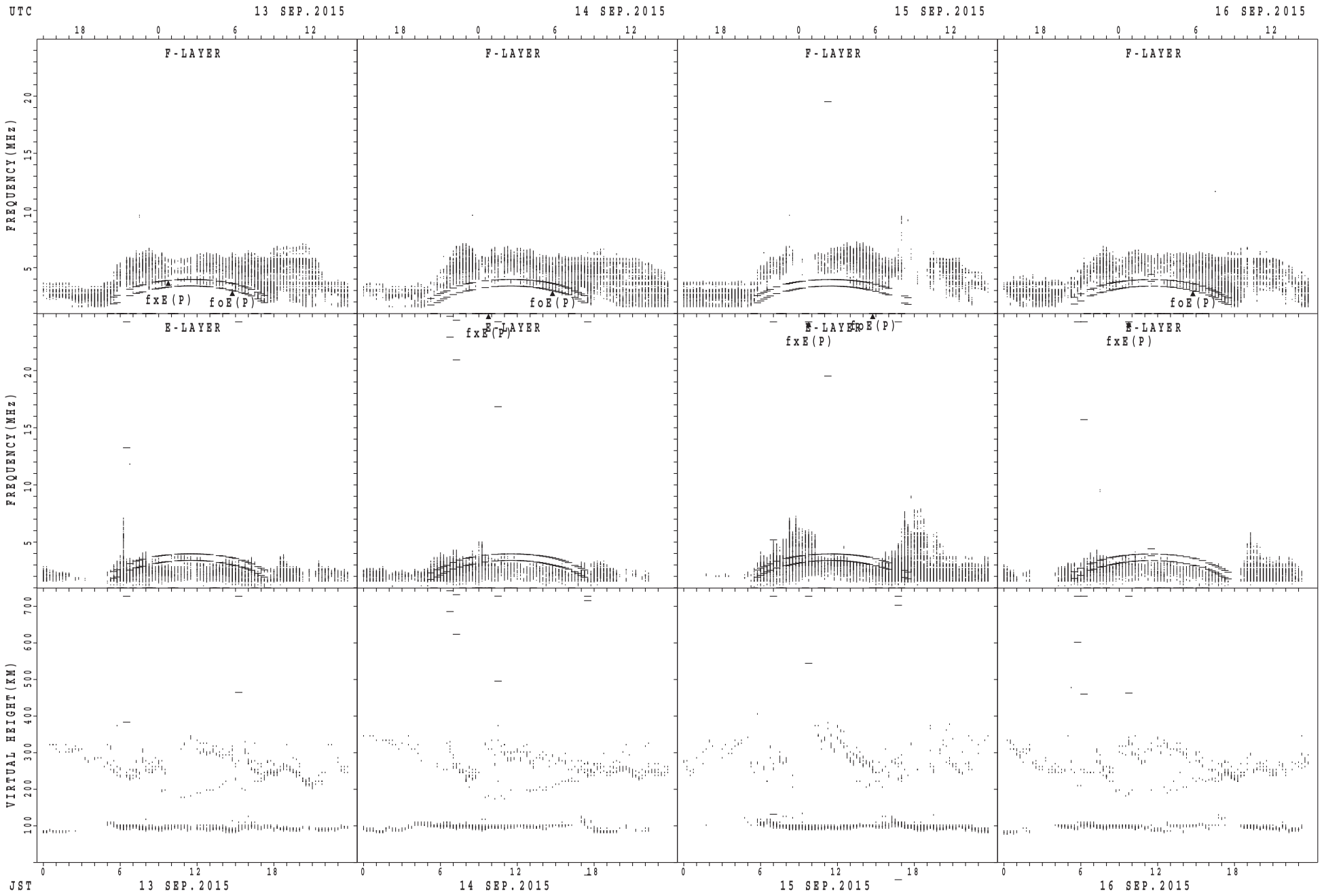


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
5 SEP.2015
6 SEP.2015
7 SEP.2015
8 SEP.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

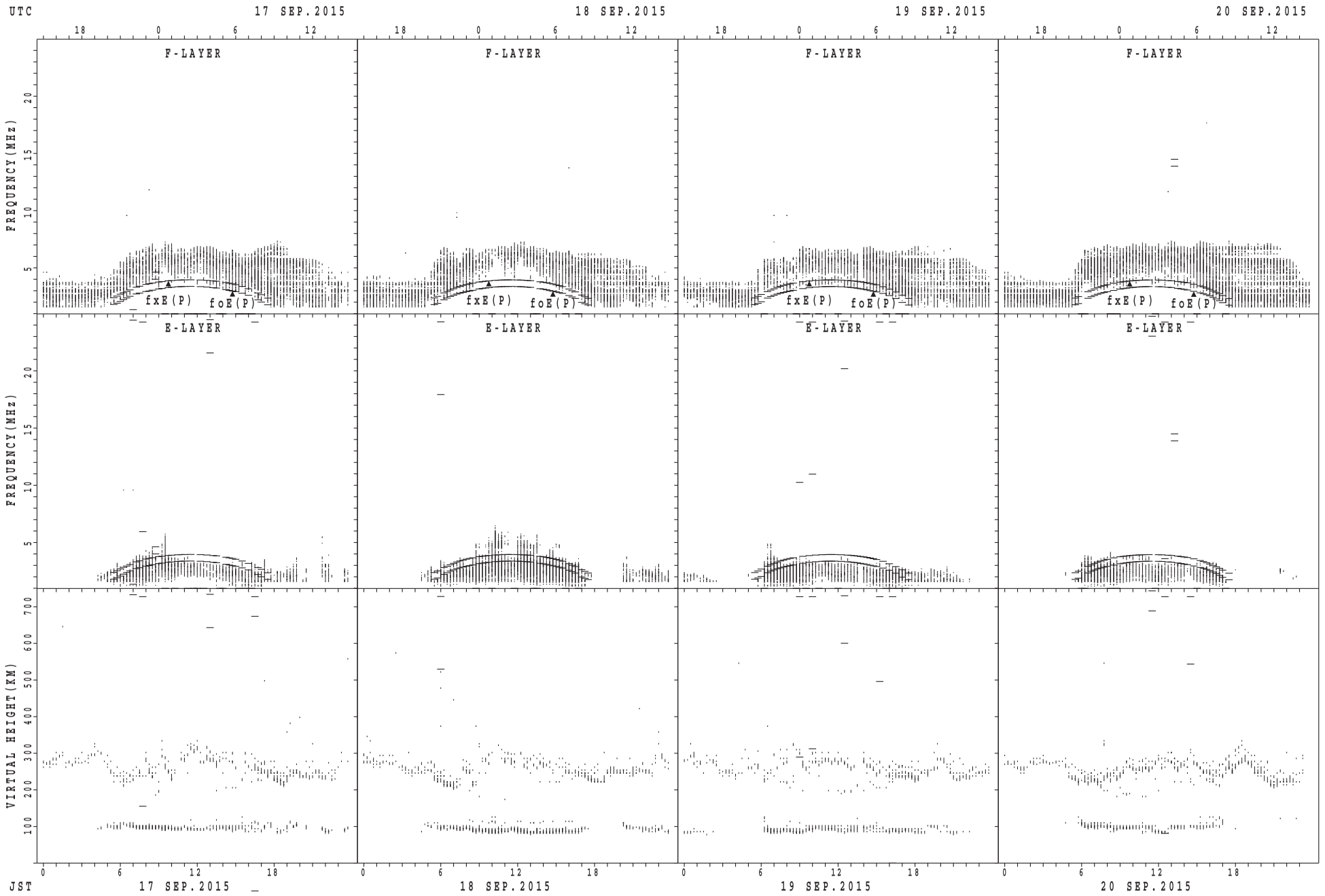

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 SEP.2015
10 SEP.2015
11 SEP.2015
12 SEP.2015
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



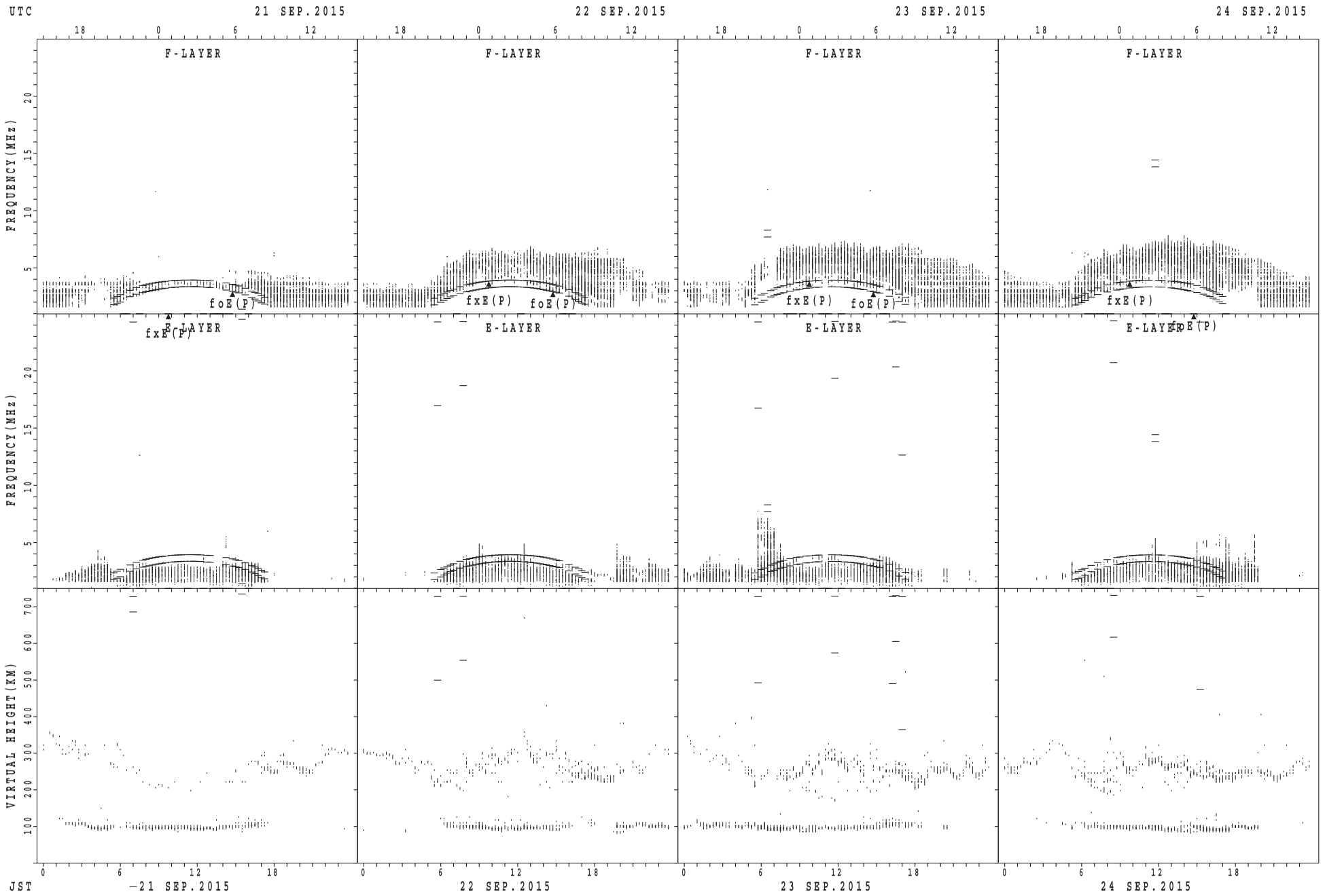
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

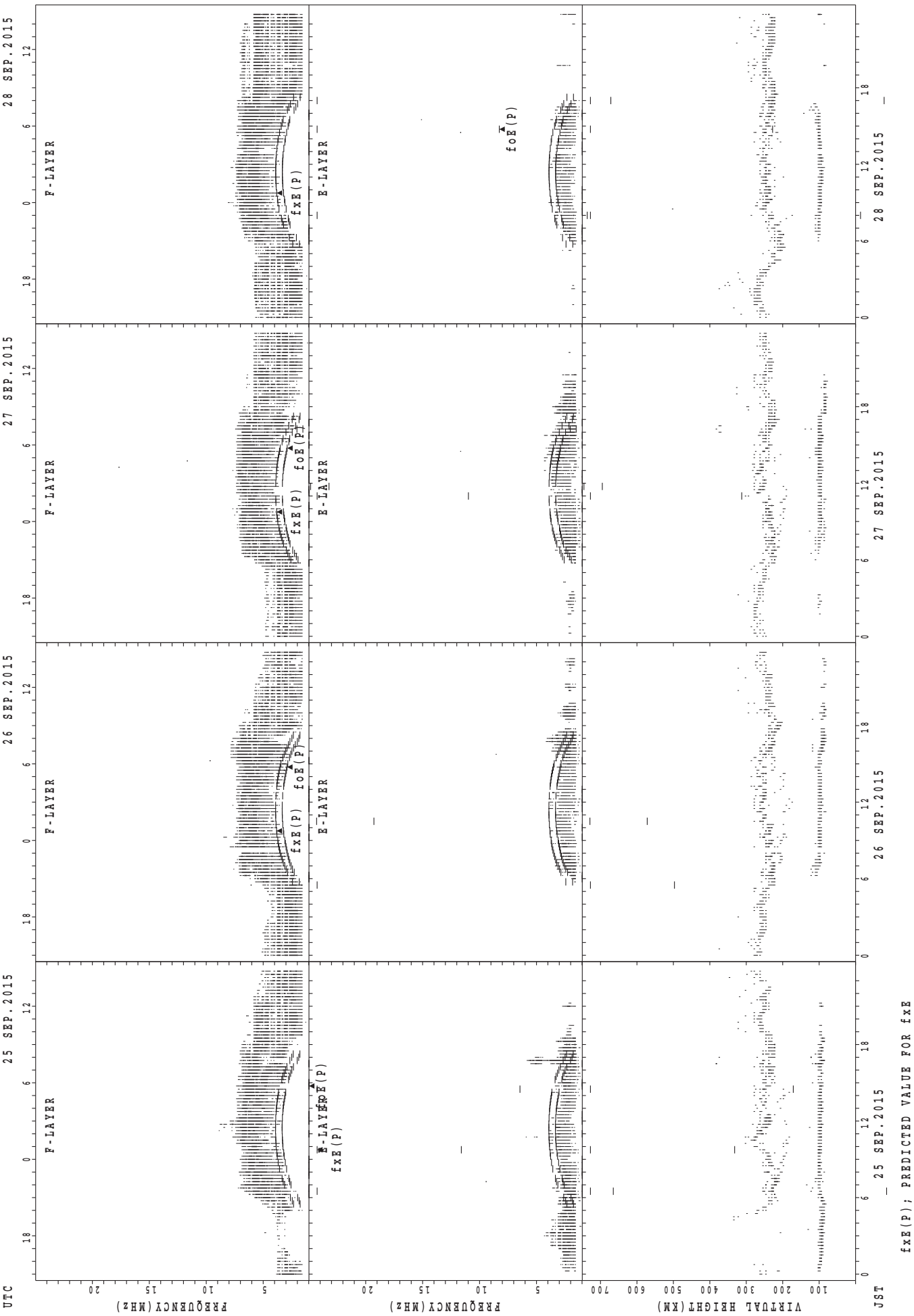


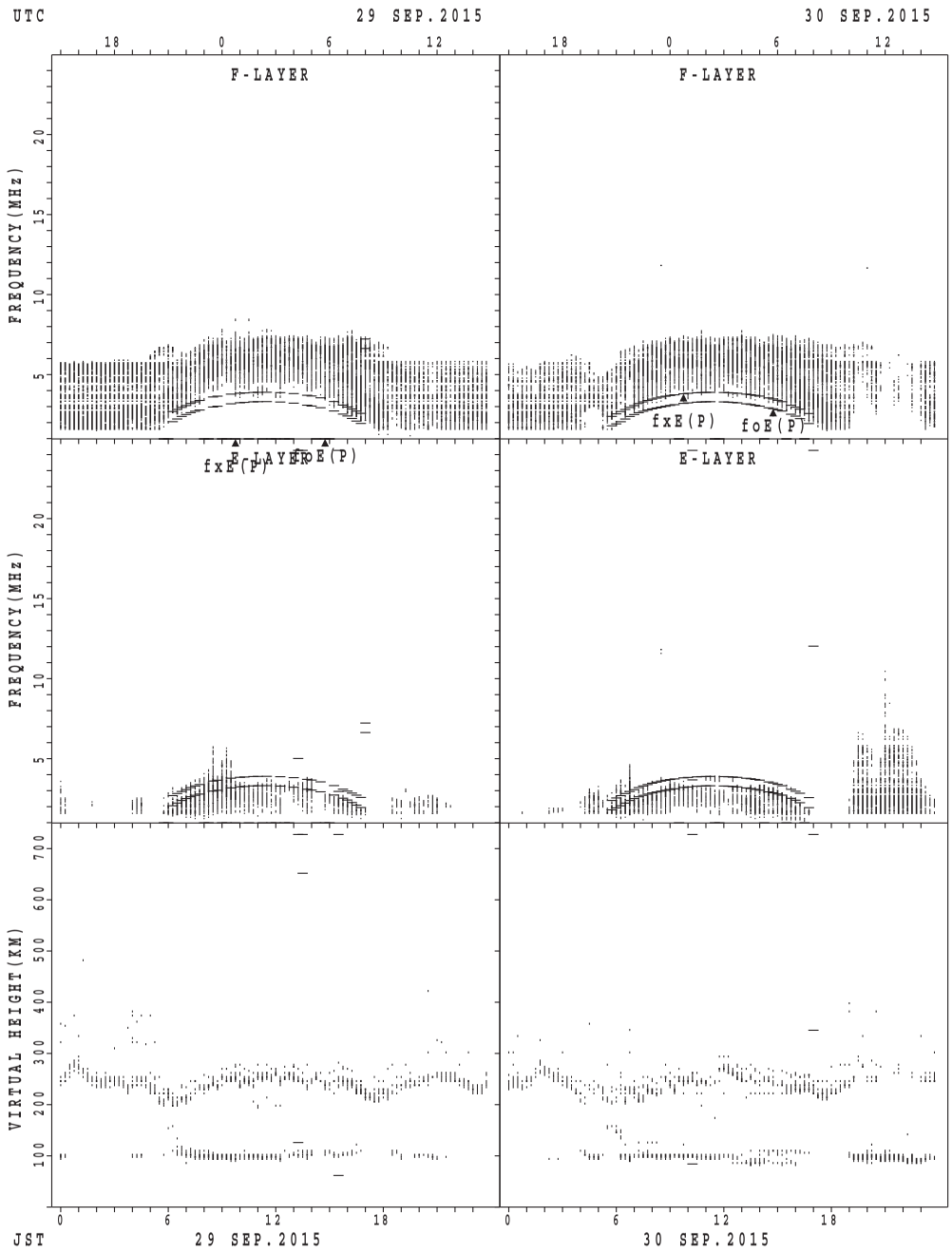
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

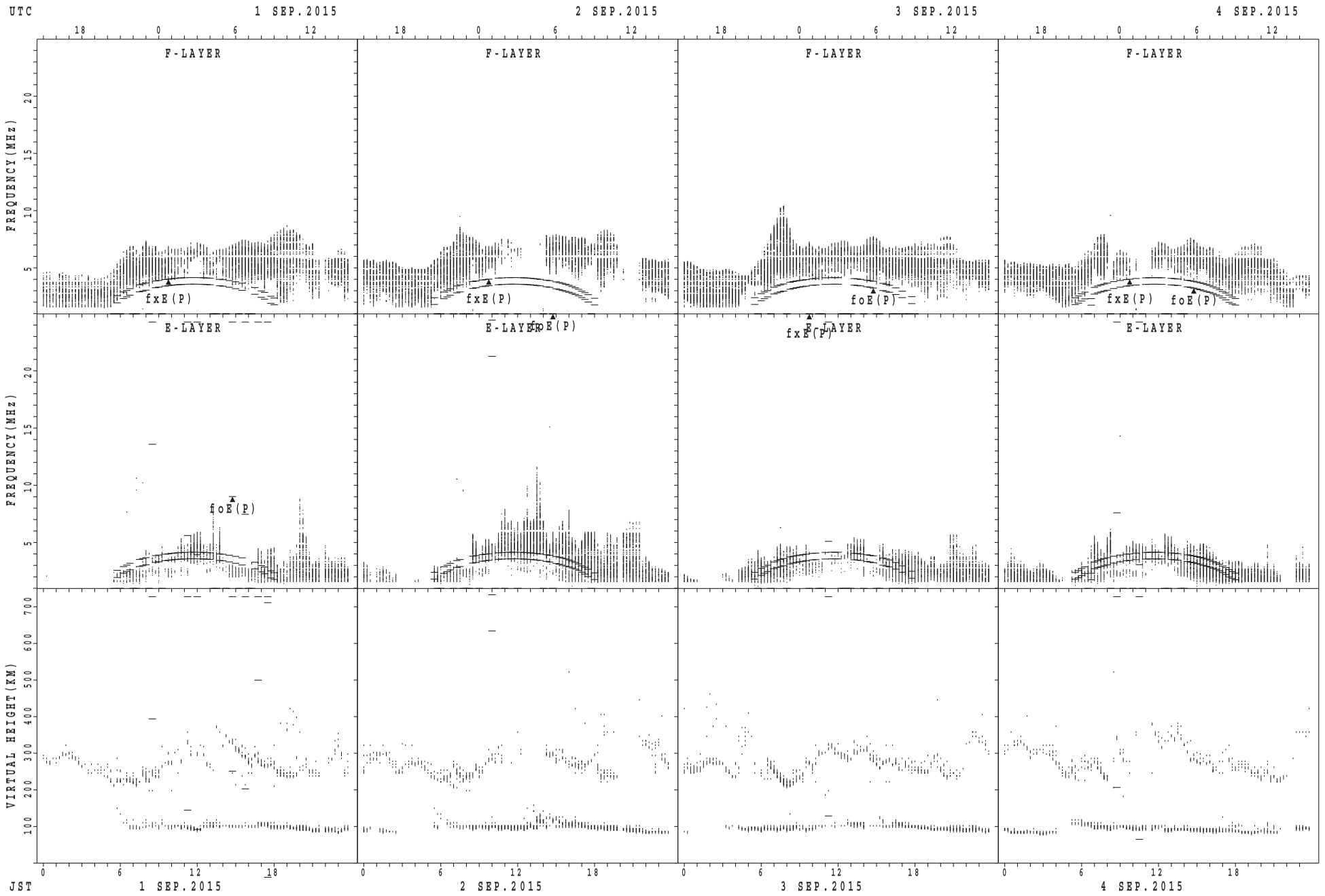


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
25 SEP.2015
26 SEP.2015
27 SEP.2015
28 SEP.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

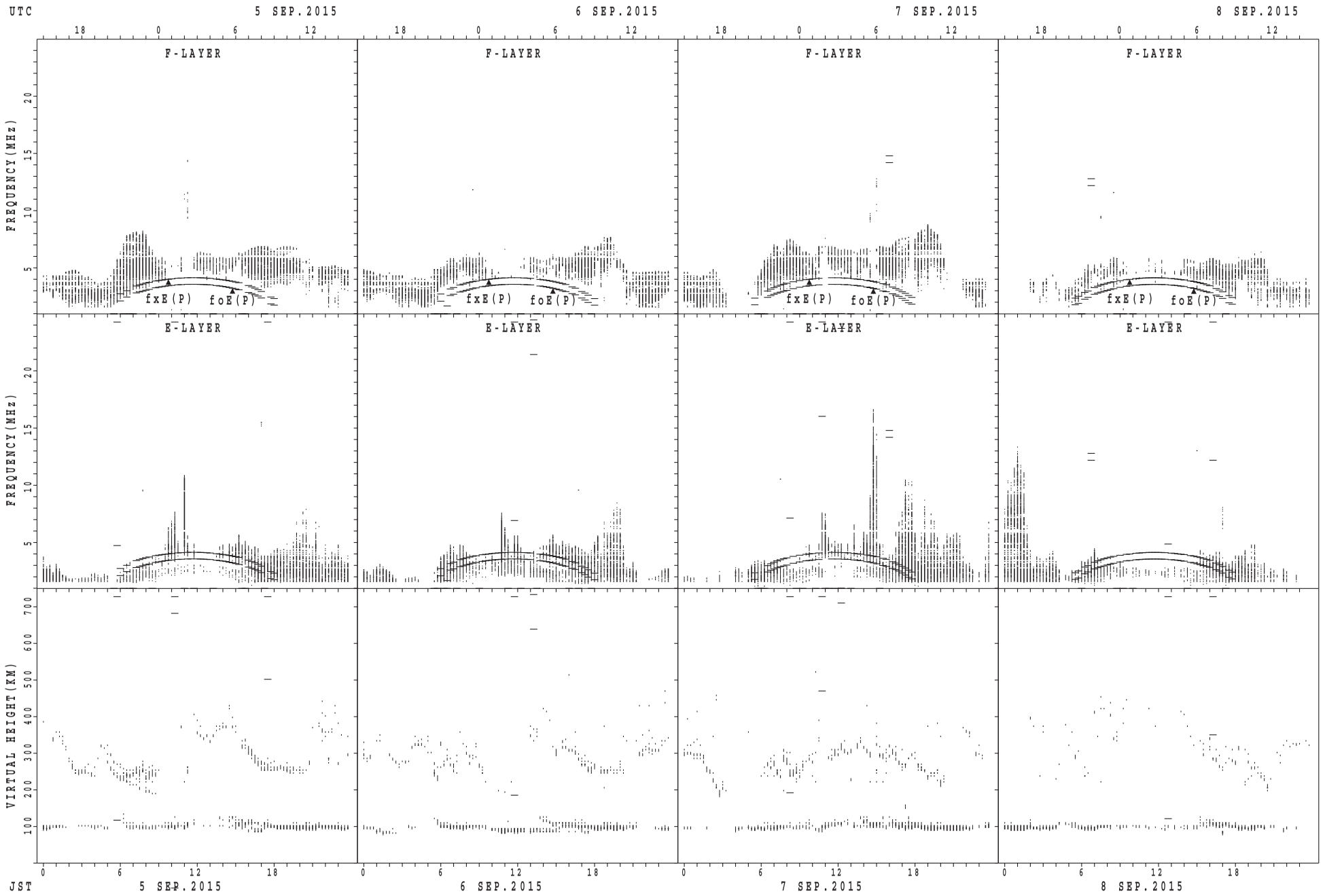

SUMMARY PLOTS AT Wakkanai
UTC
29 SEP.2015
30 SEP.2015
F-LAYER
F-LAYER
FREQUENCY(MHz)
fxE(P)
foE(P)
E-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
29 SEP.2015
30 SEP.2015
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



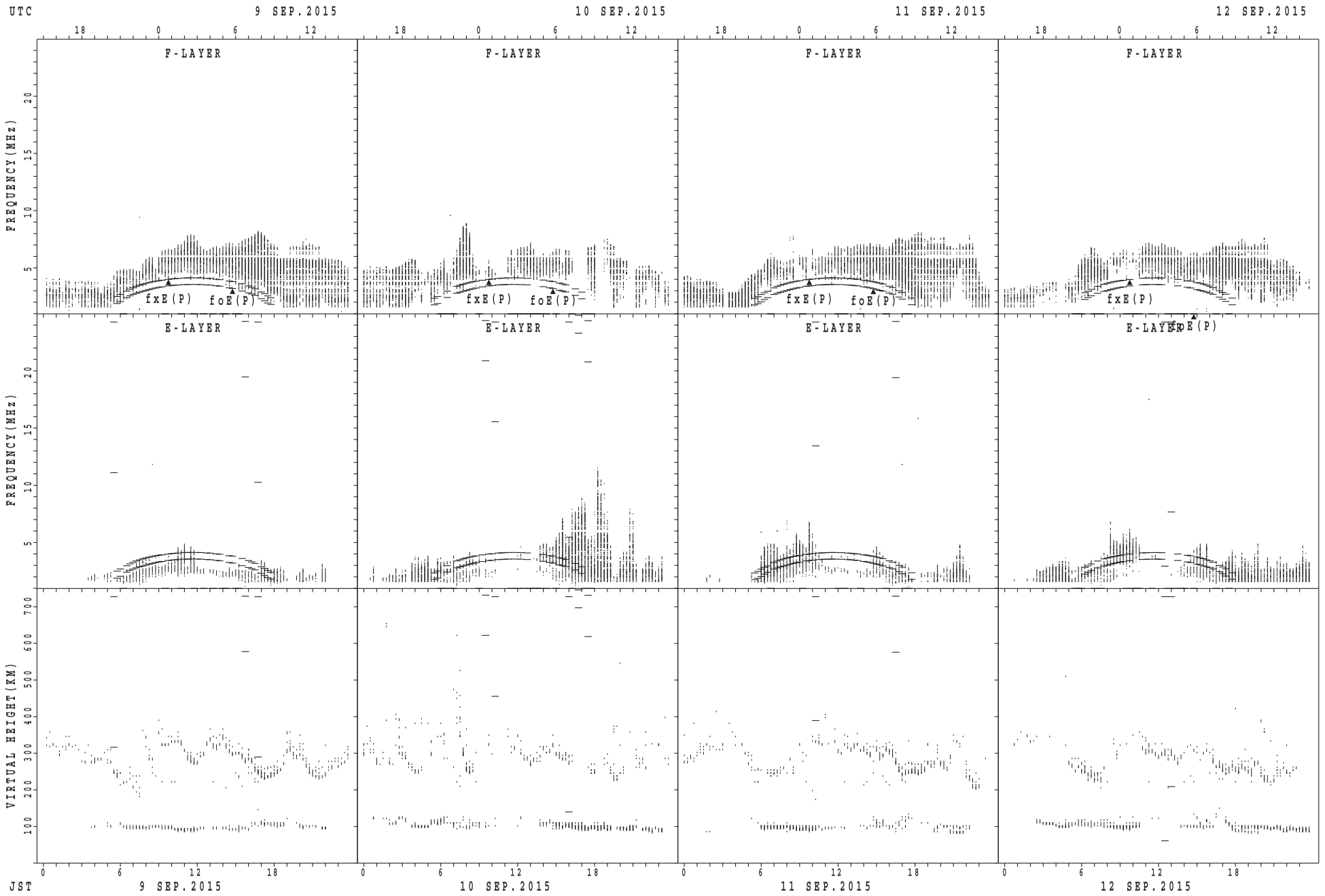
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

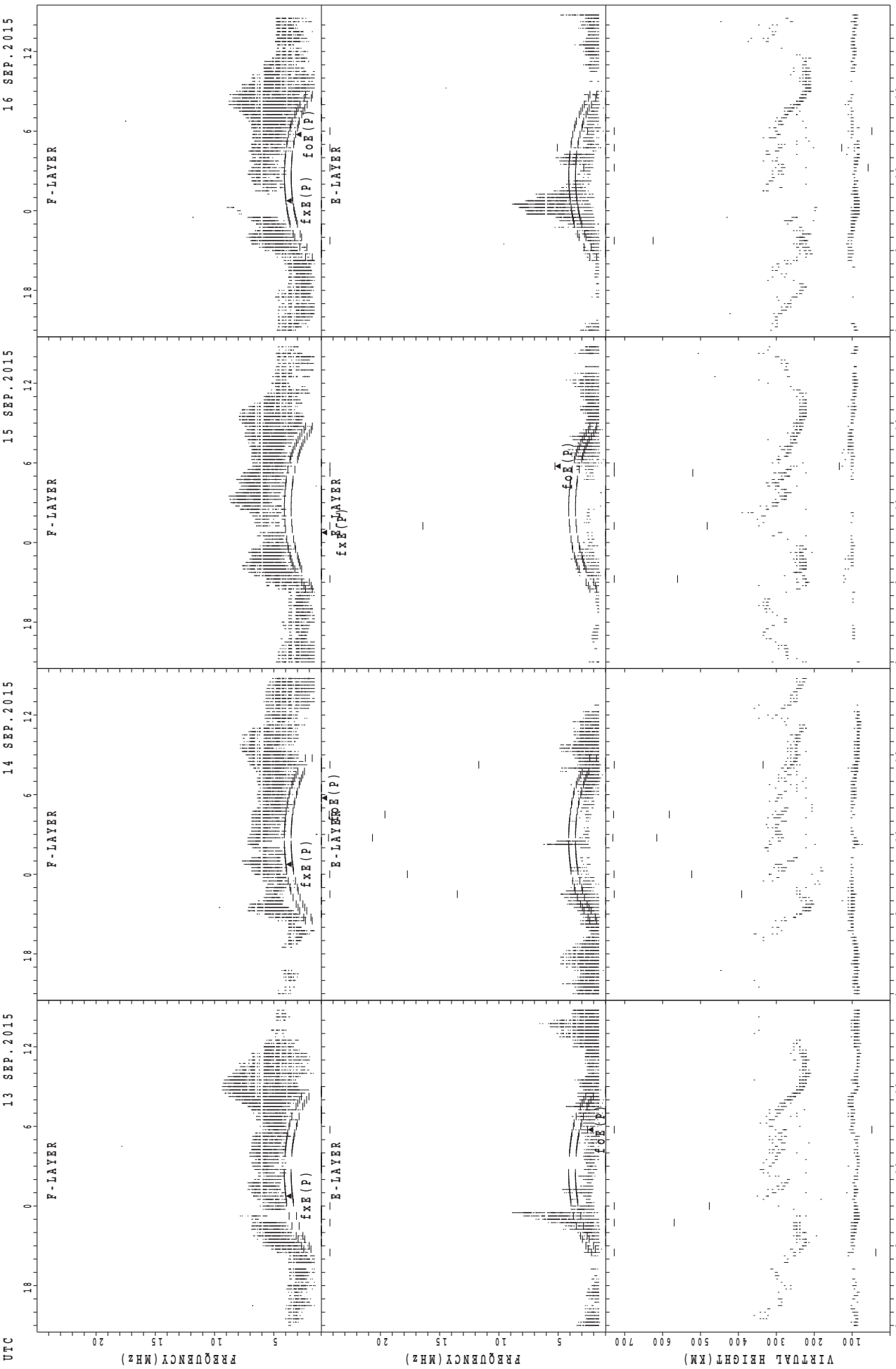


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

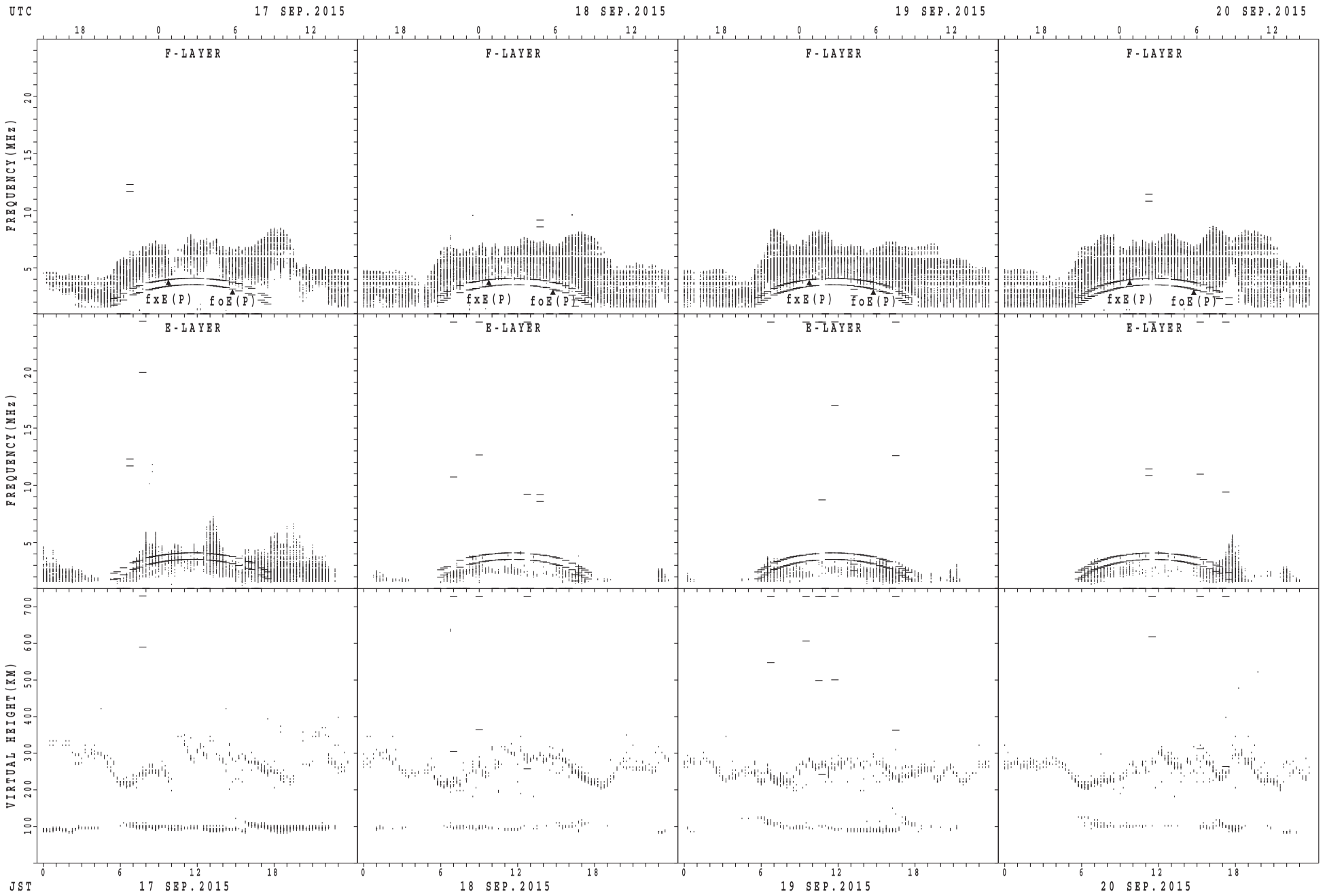
SUMMARY PLOTS AT Kokubunji



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

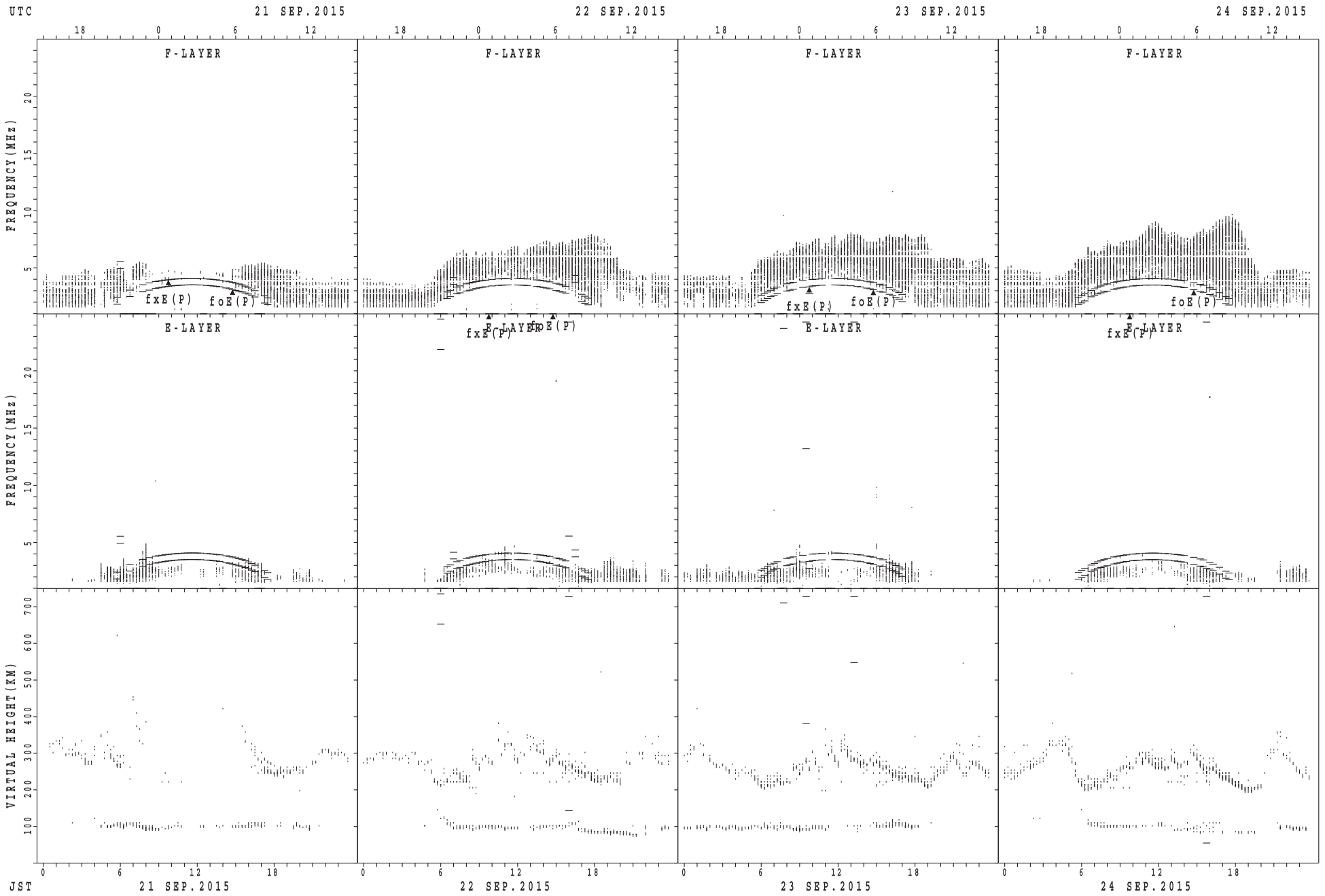

SUMMARY PLOTS AT Kokubunji
UTC
JST
13 SEP.2015
14 SEP.2015
15 SEP.2015
16 SEP.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



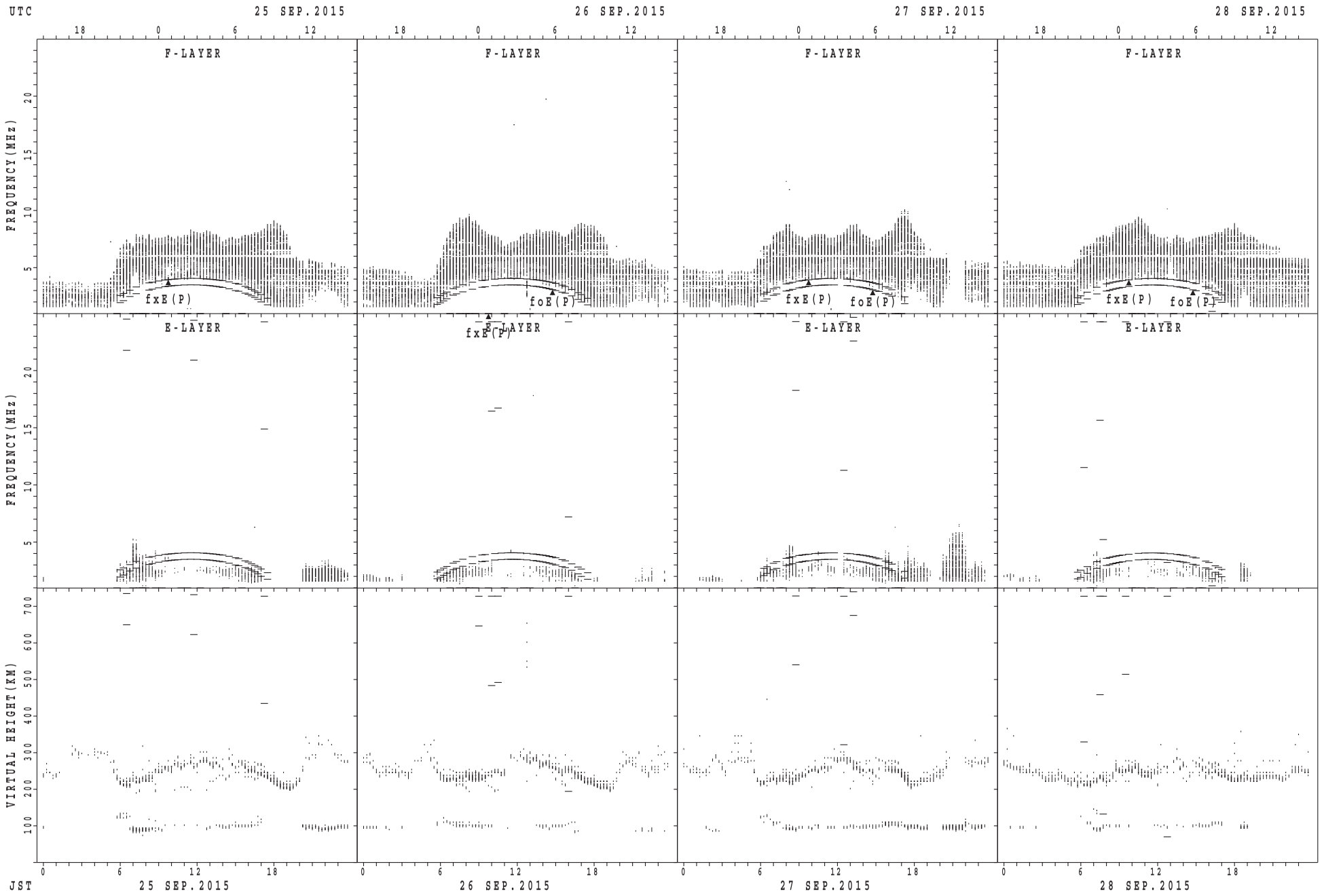
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



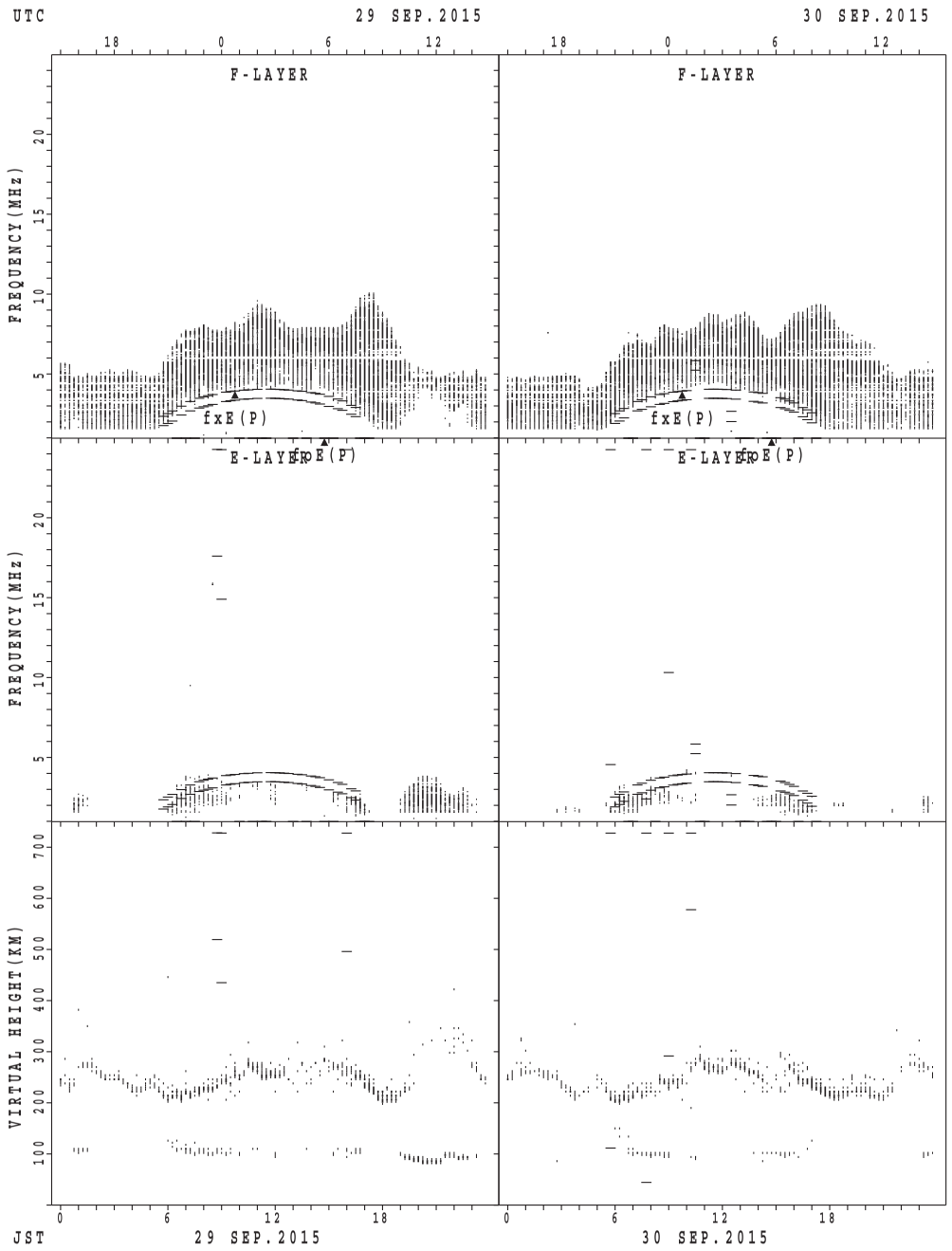
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



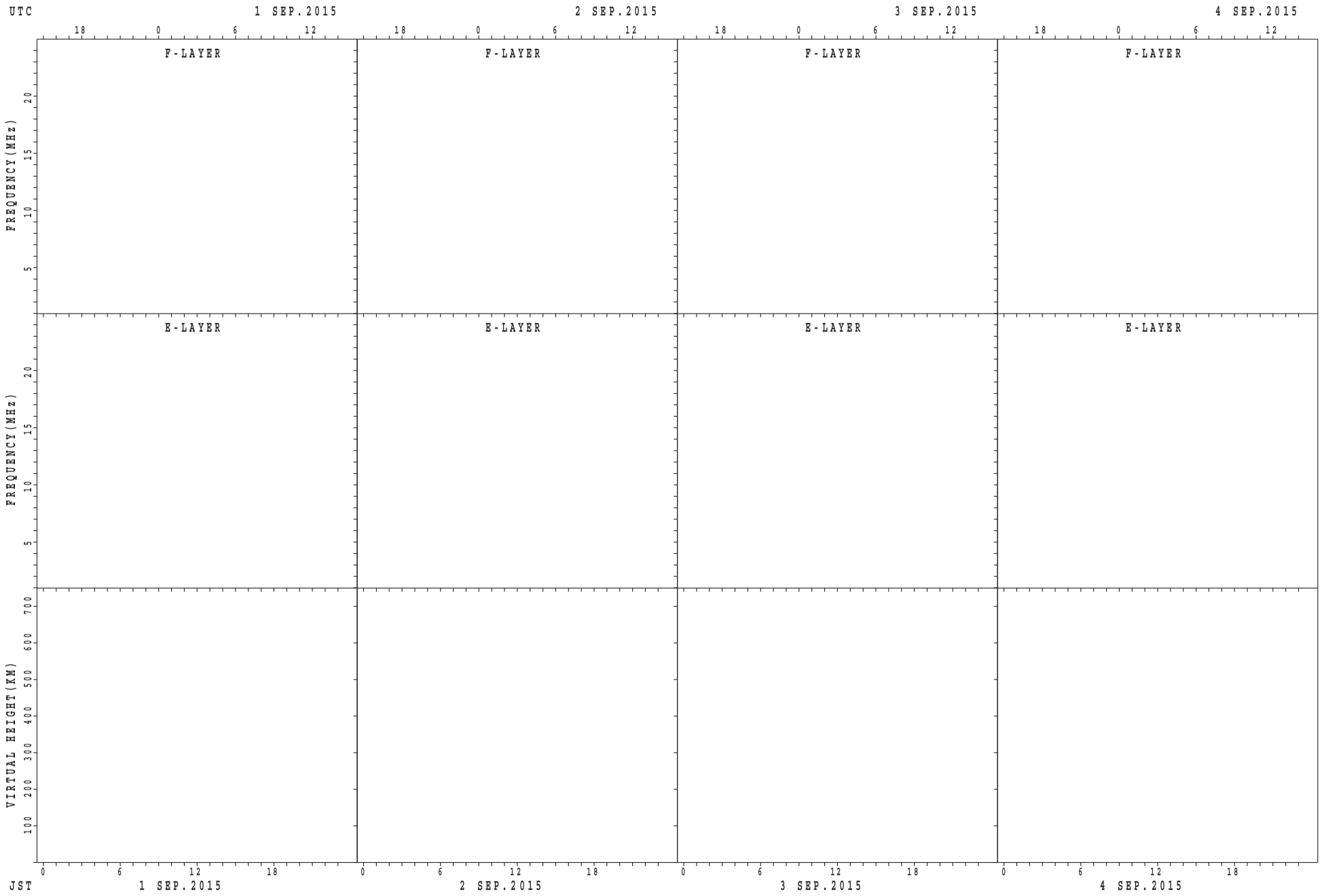
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



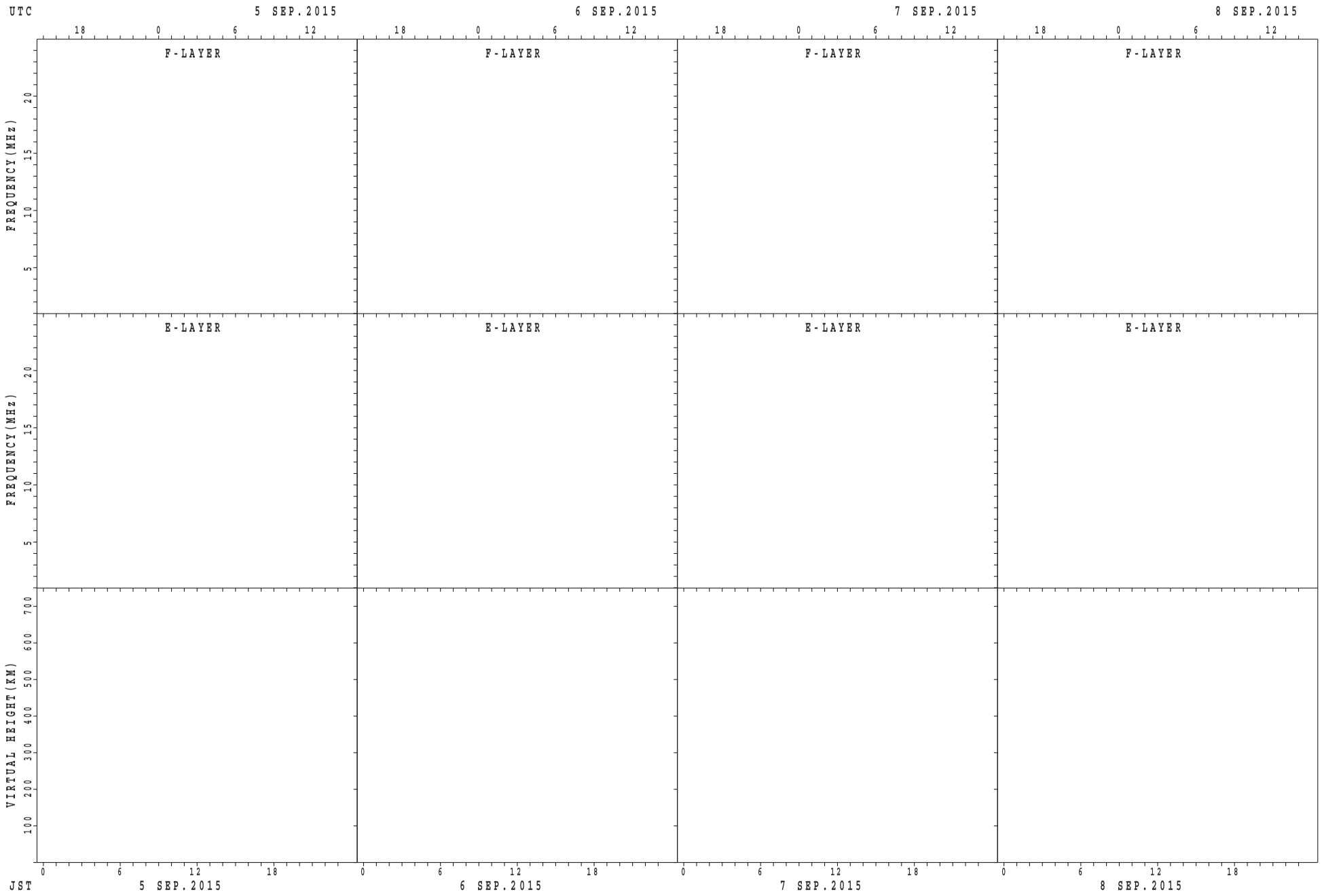
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



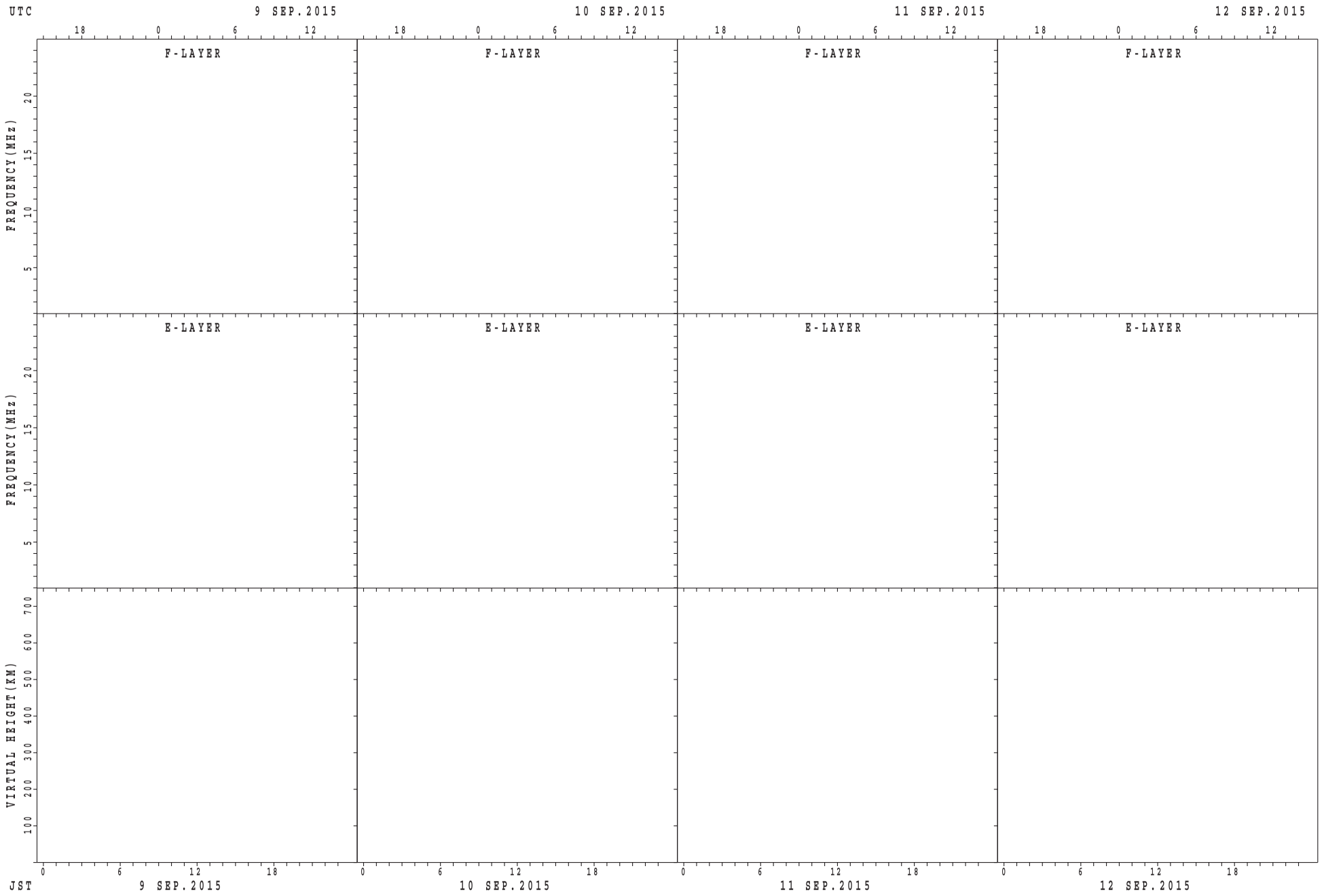
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



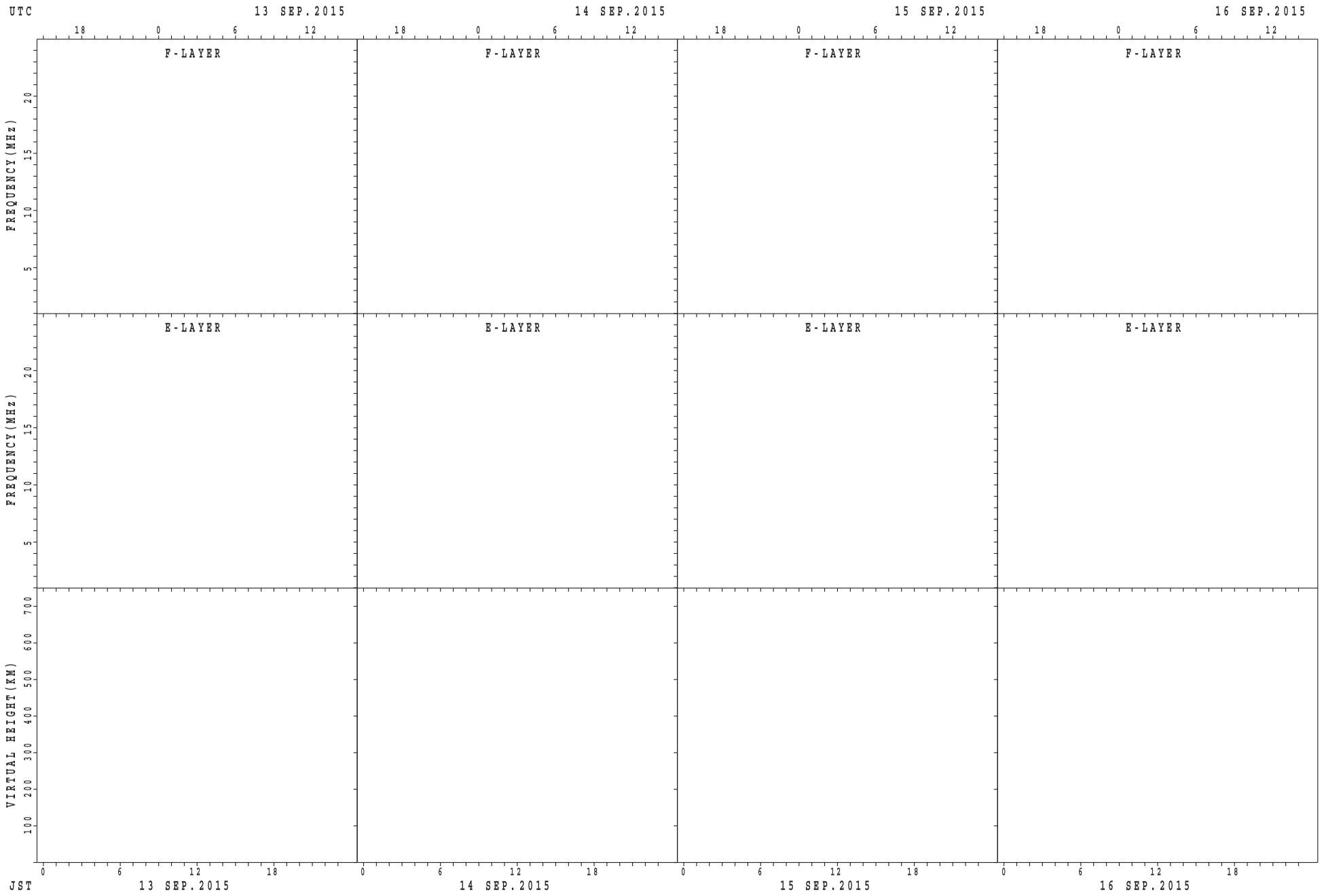
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

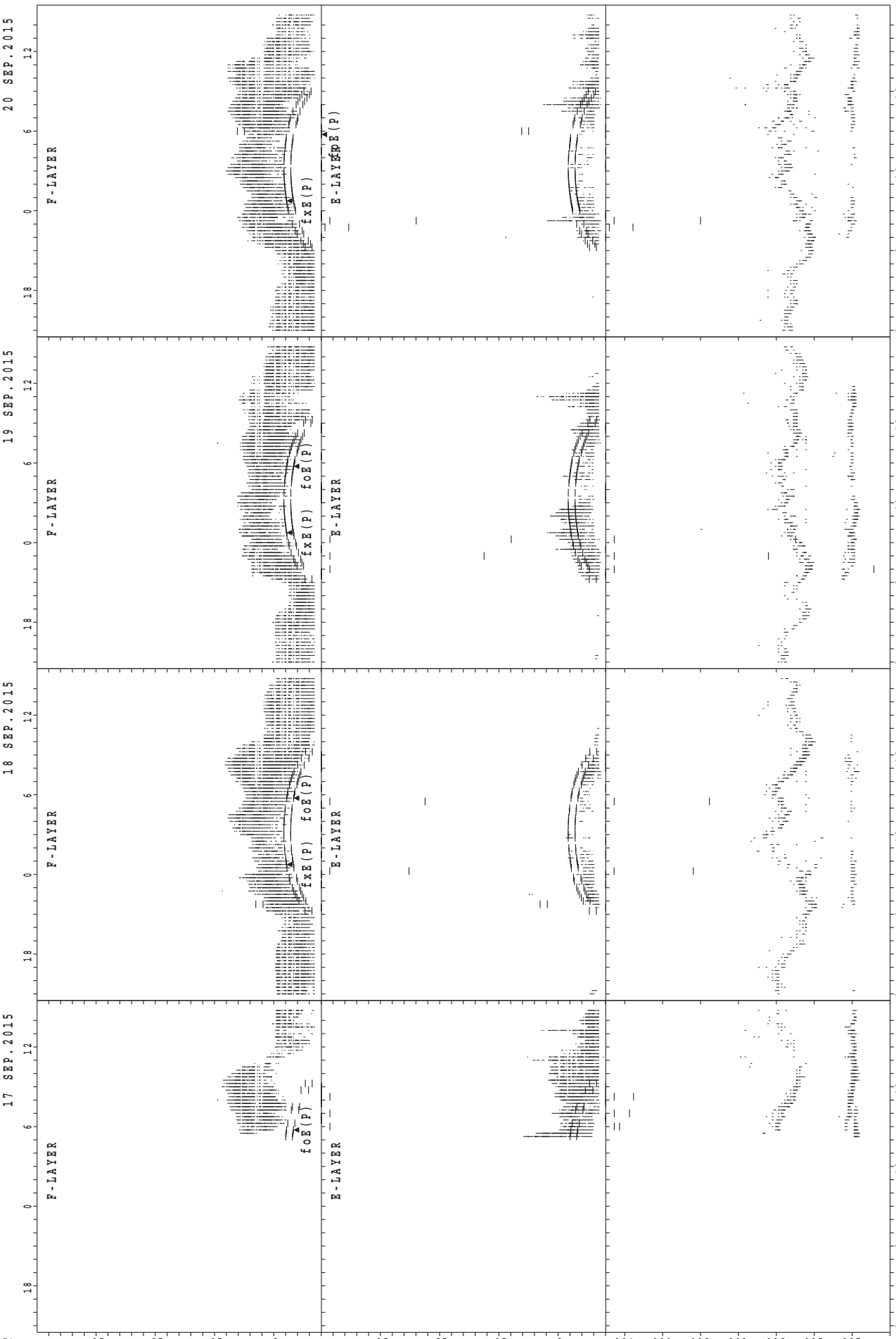


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

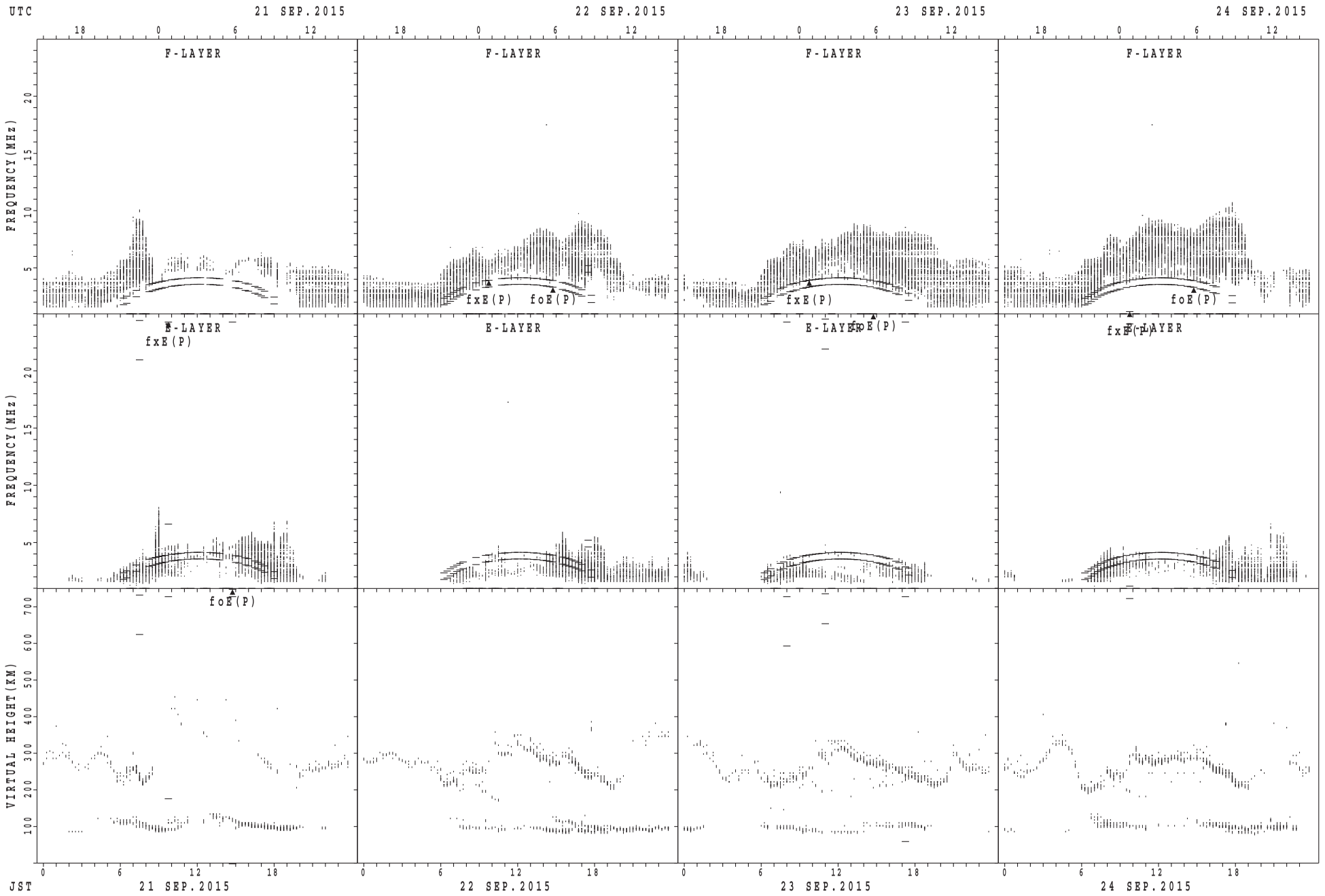
SUMMARY PLOTS AT Yamagawa



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

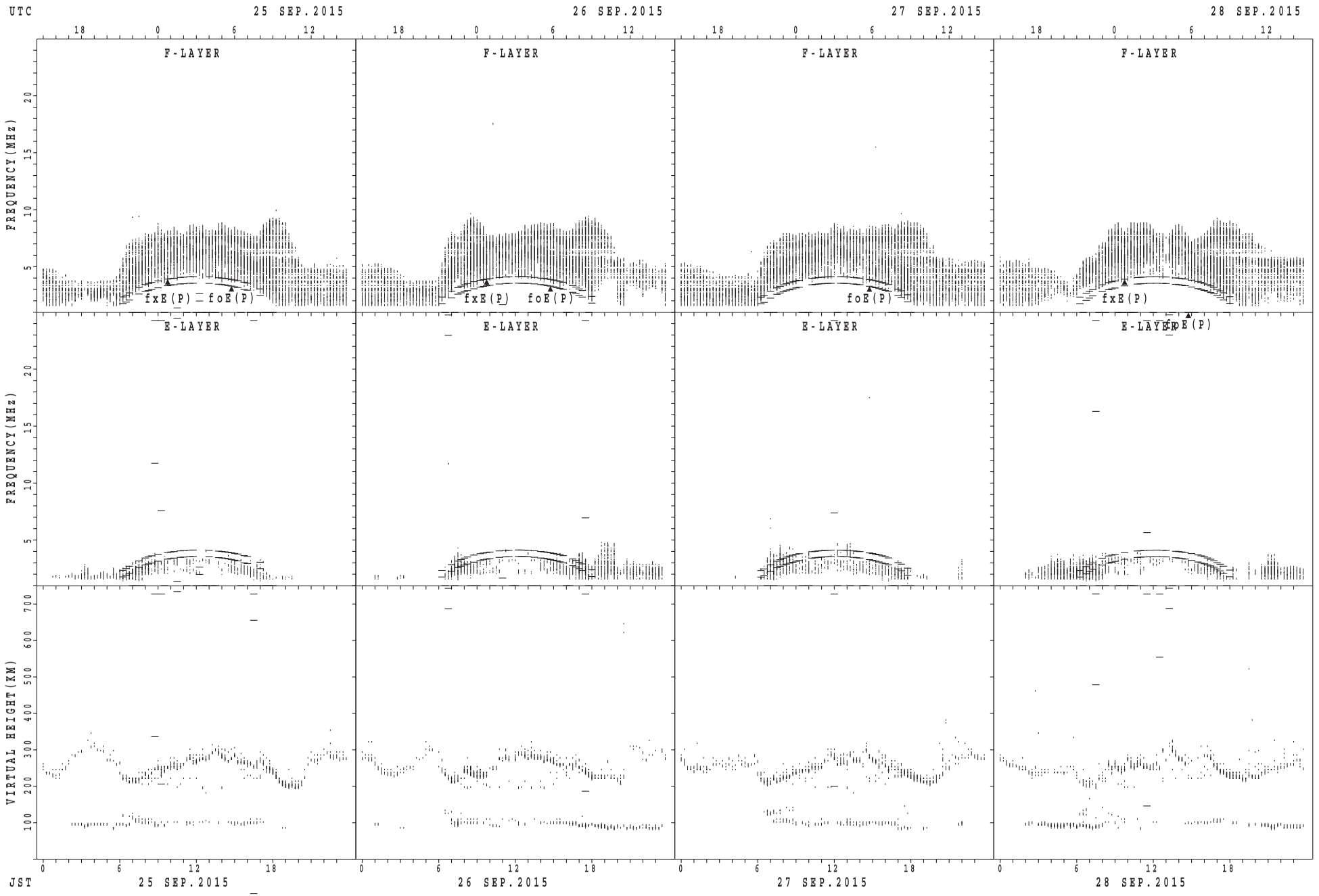

SUMMARY PLOTS AT Yamagawa
UTC
JST
17 SEP.2015
18 SEP.2015
19 SEP.2015
20 SEP.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
foE(P)
fxE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



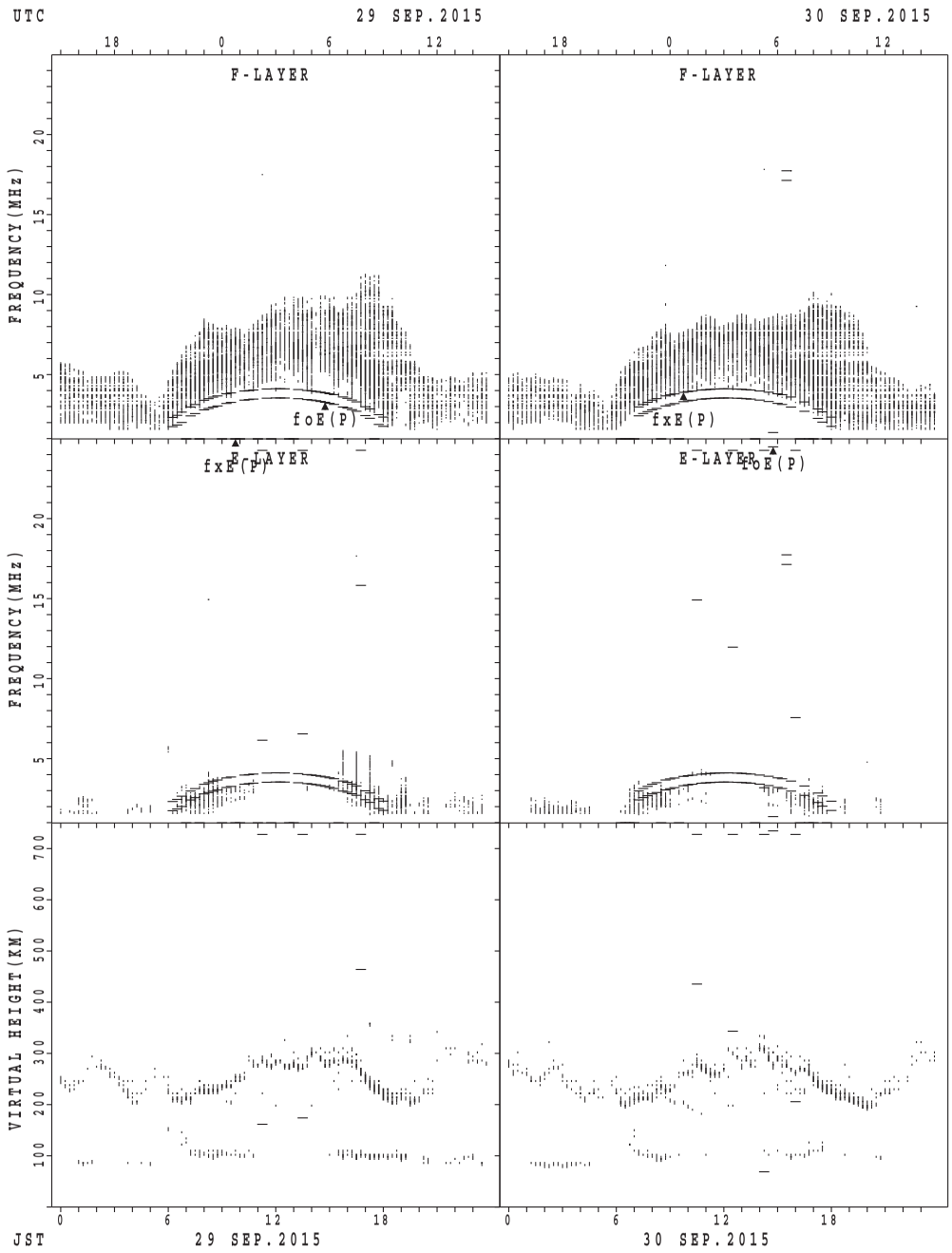
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



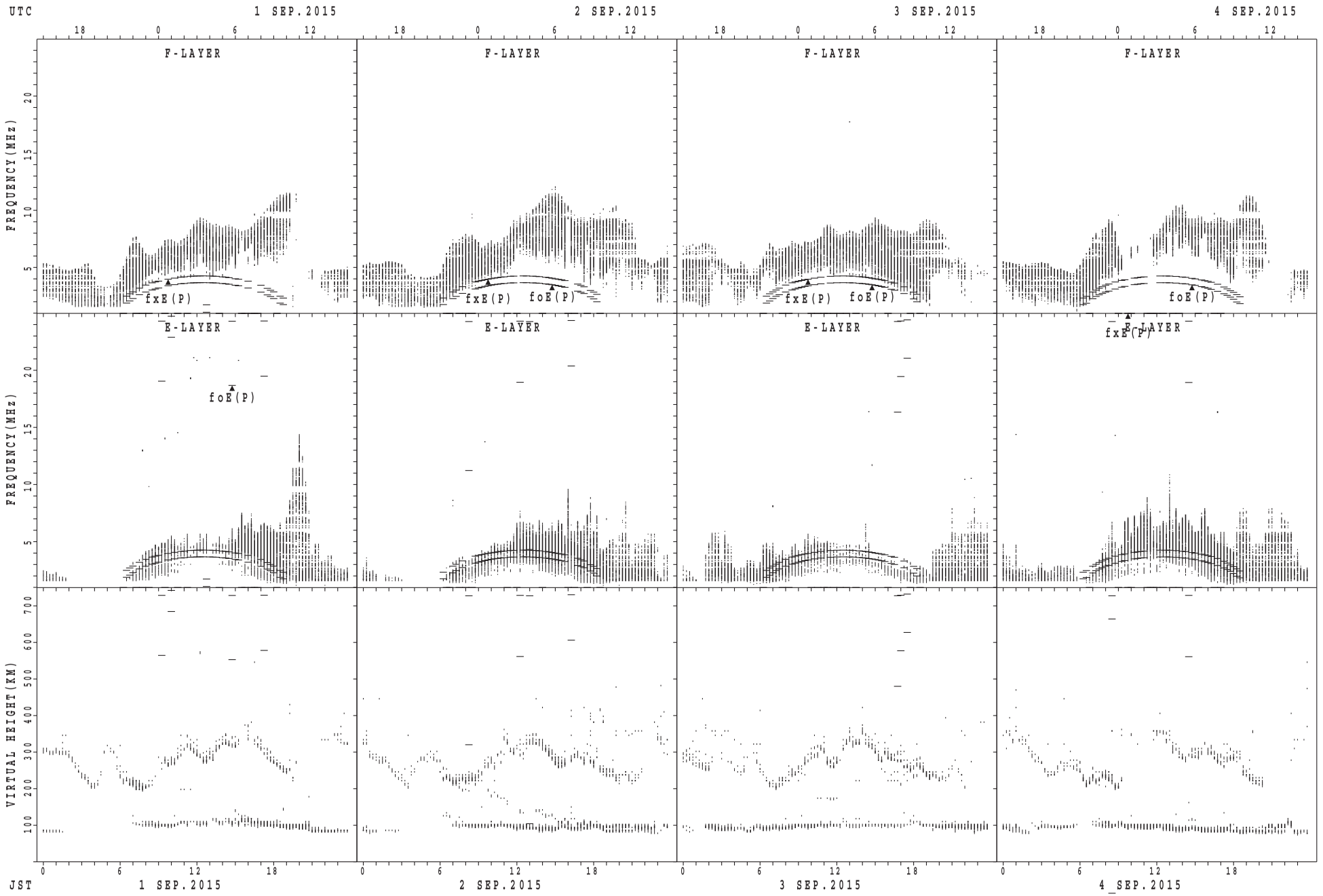
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



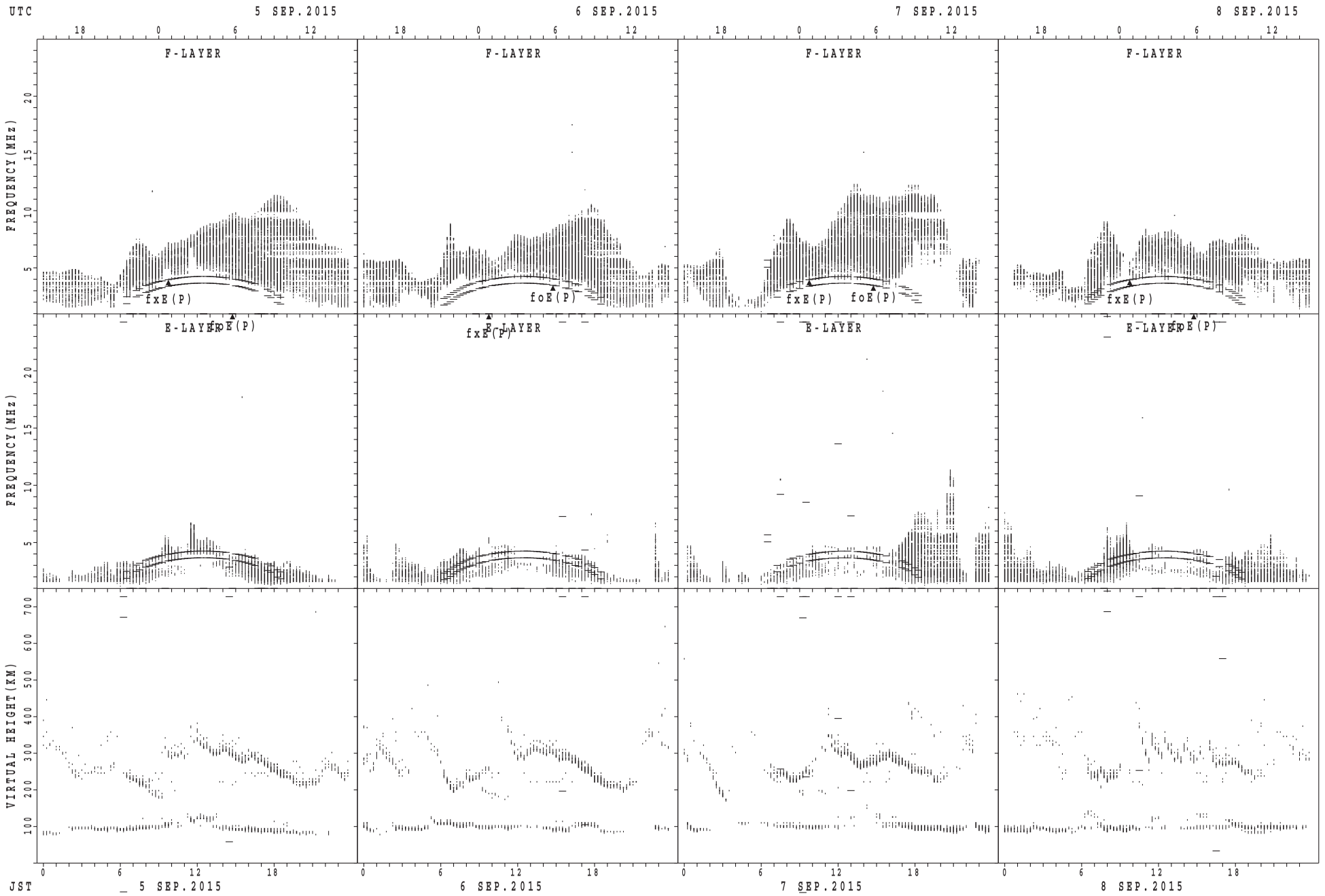
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



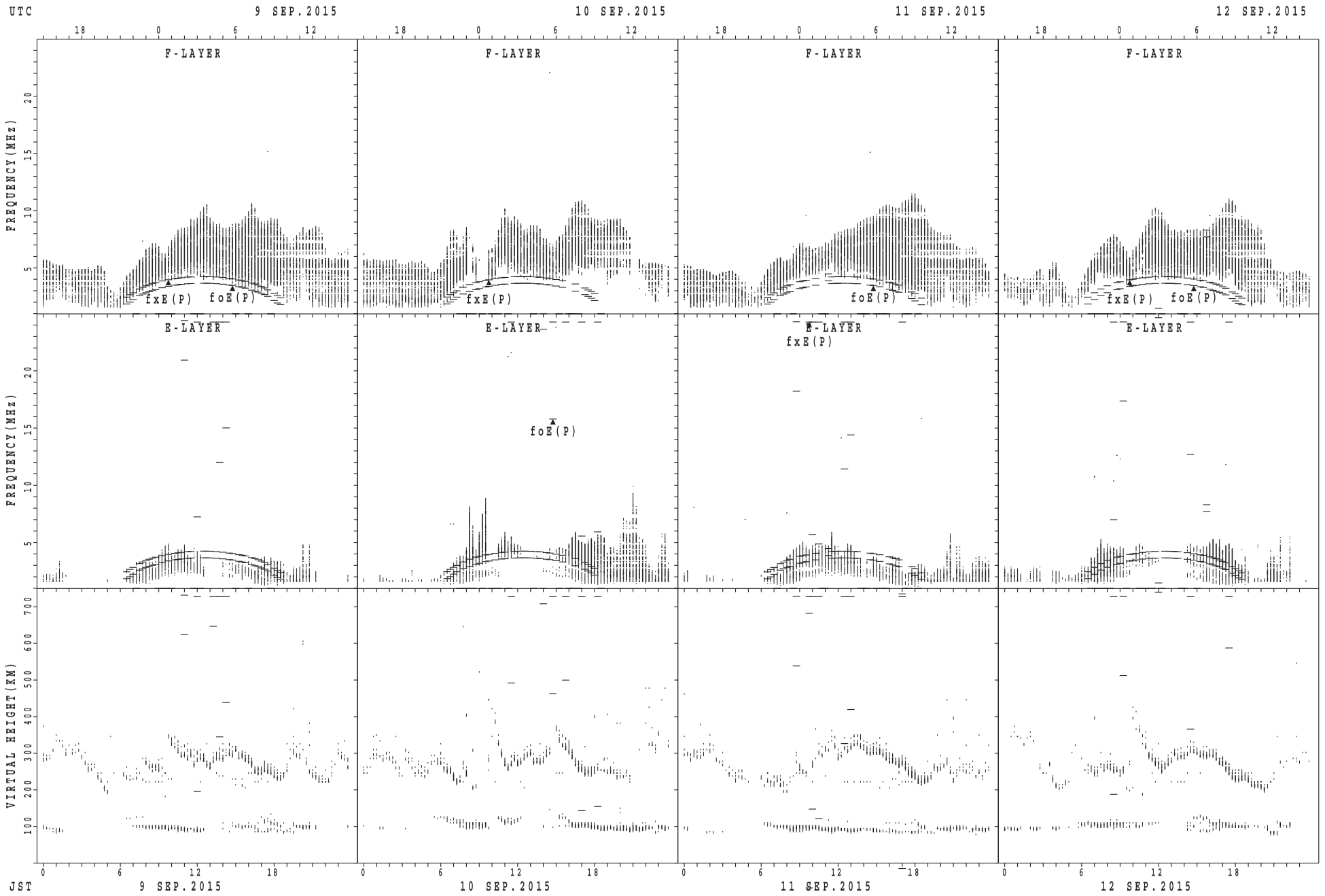
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



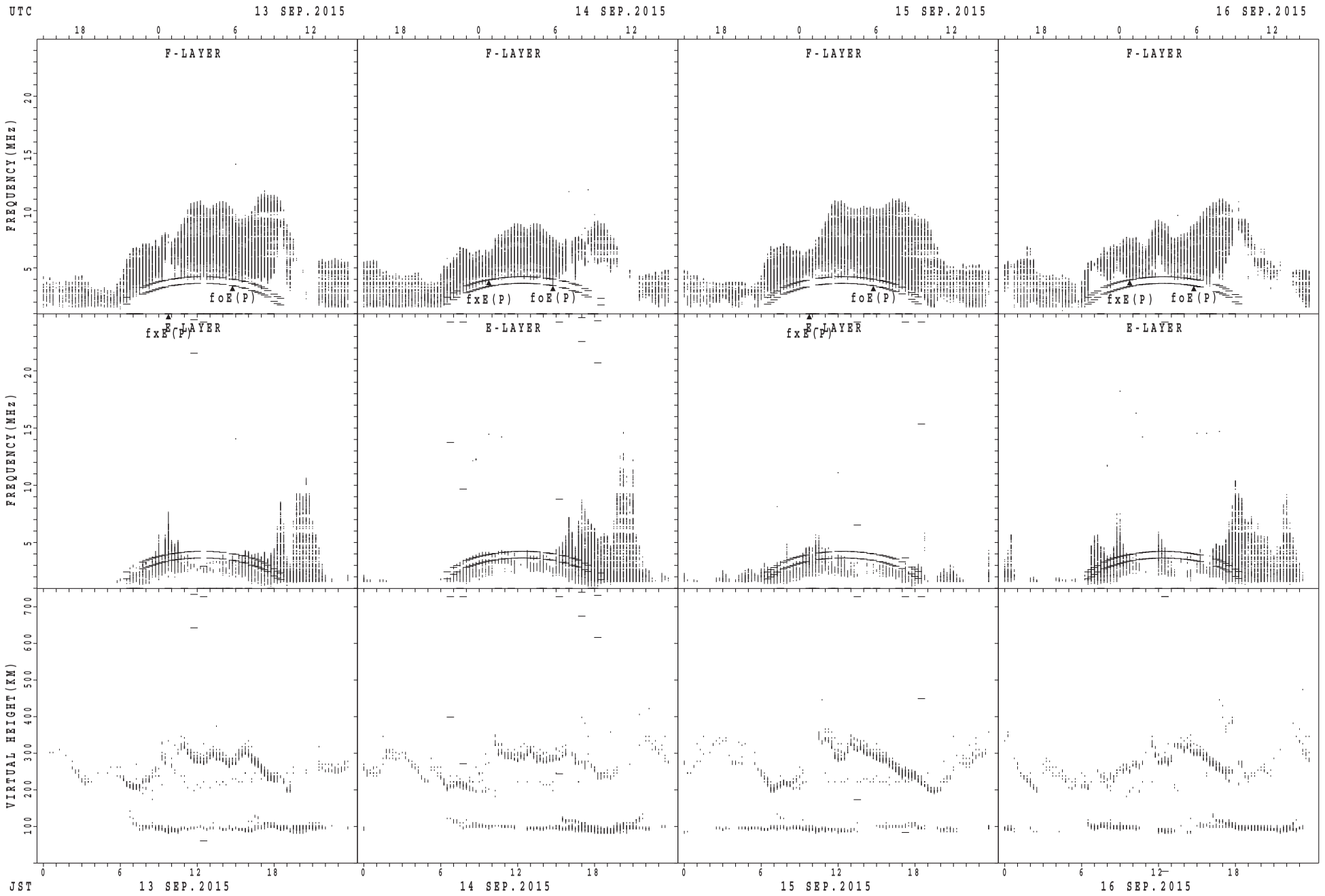
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



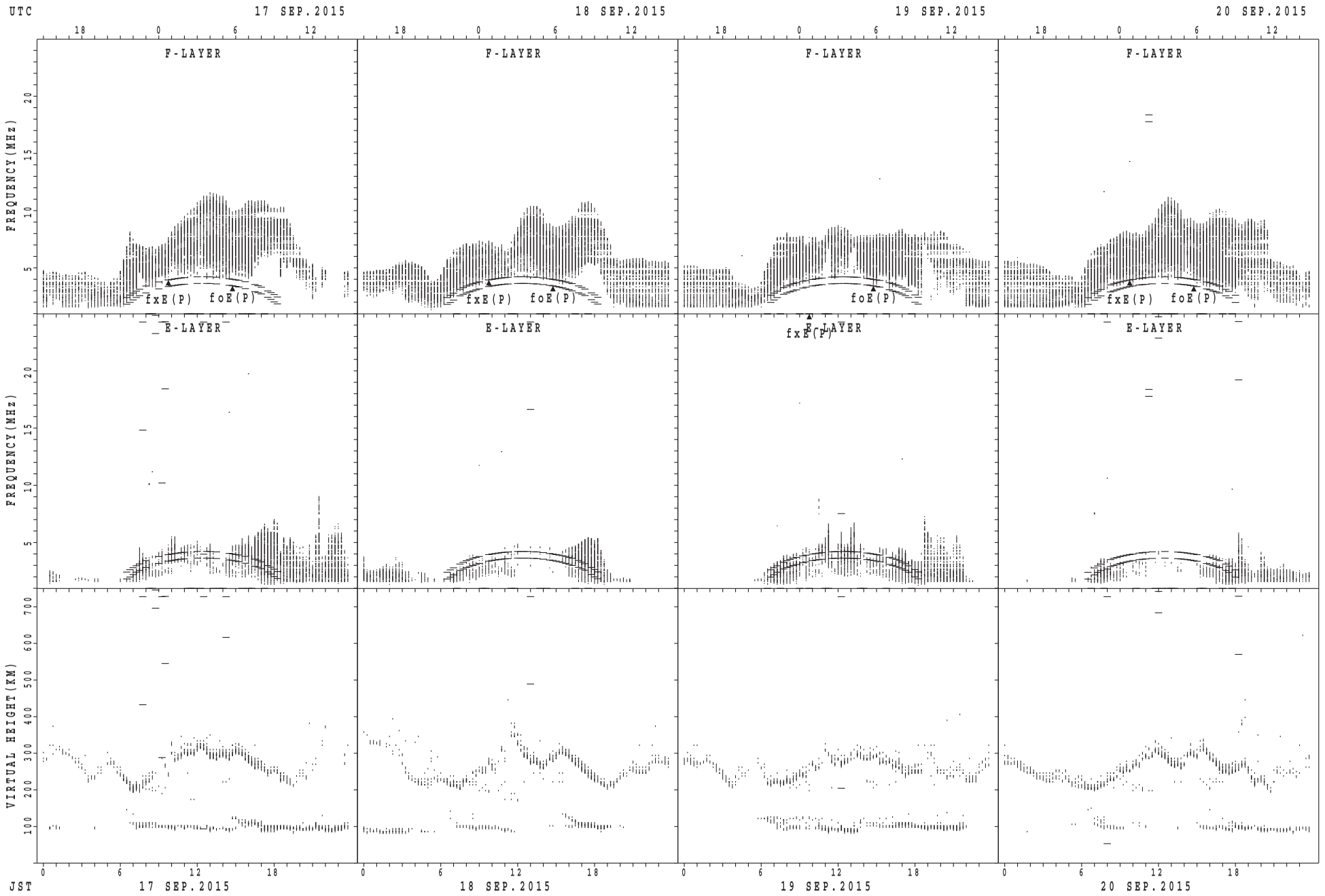
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



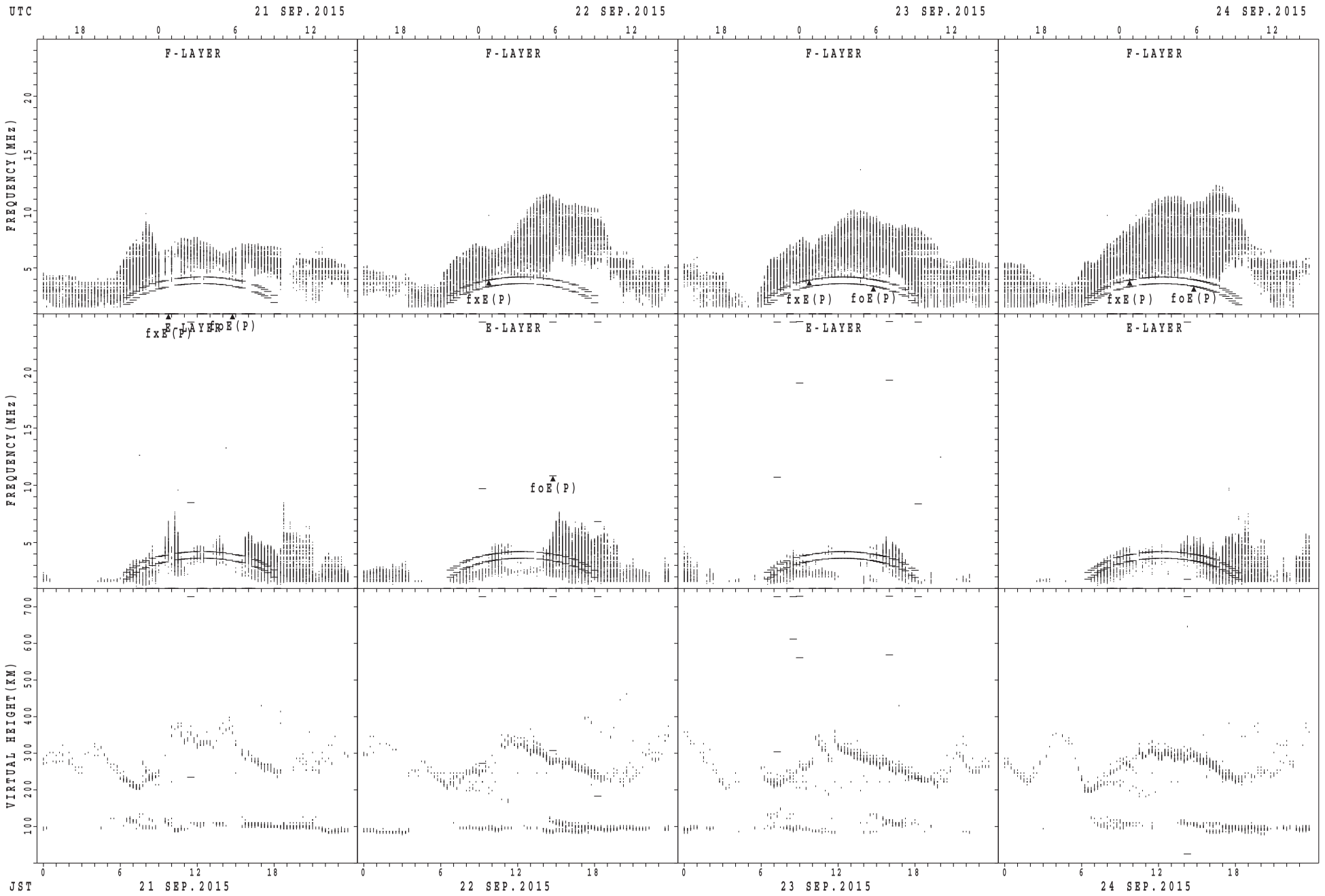
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



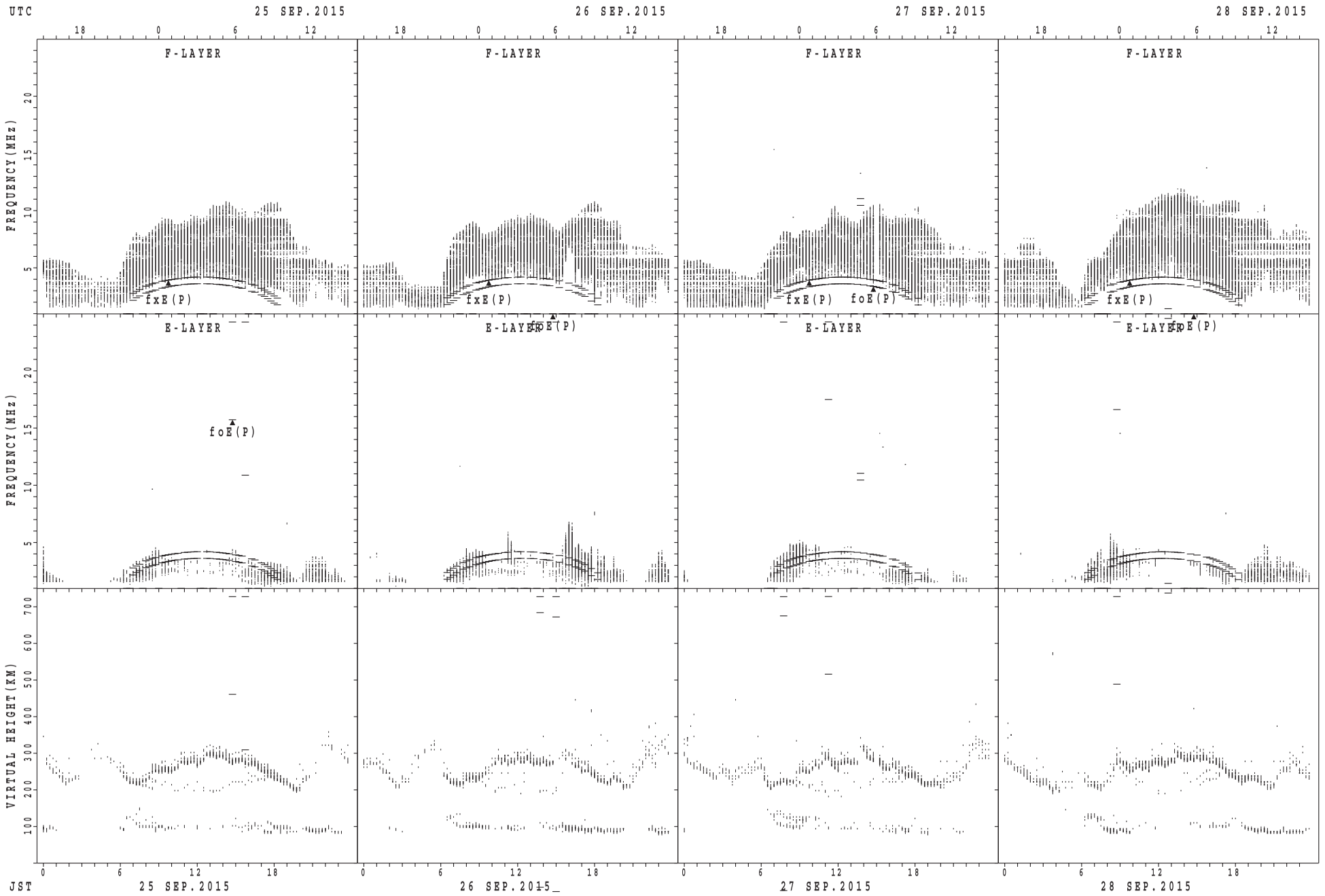
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



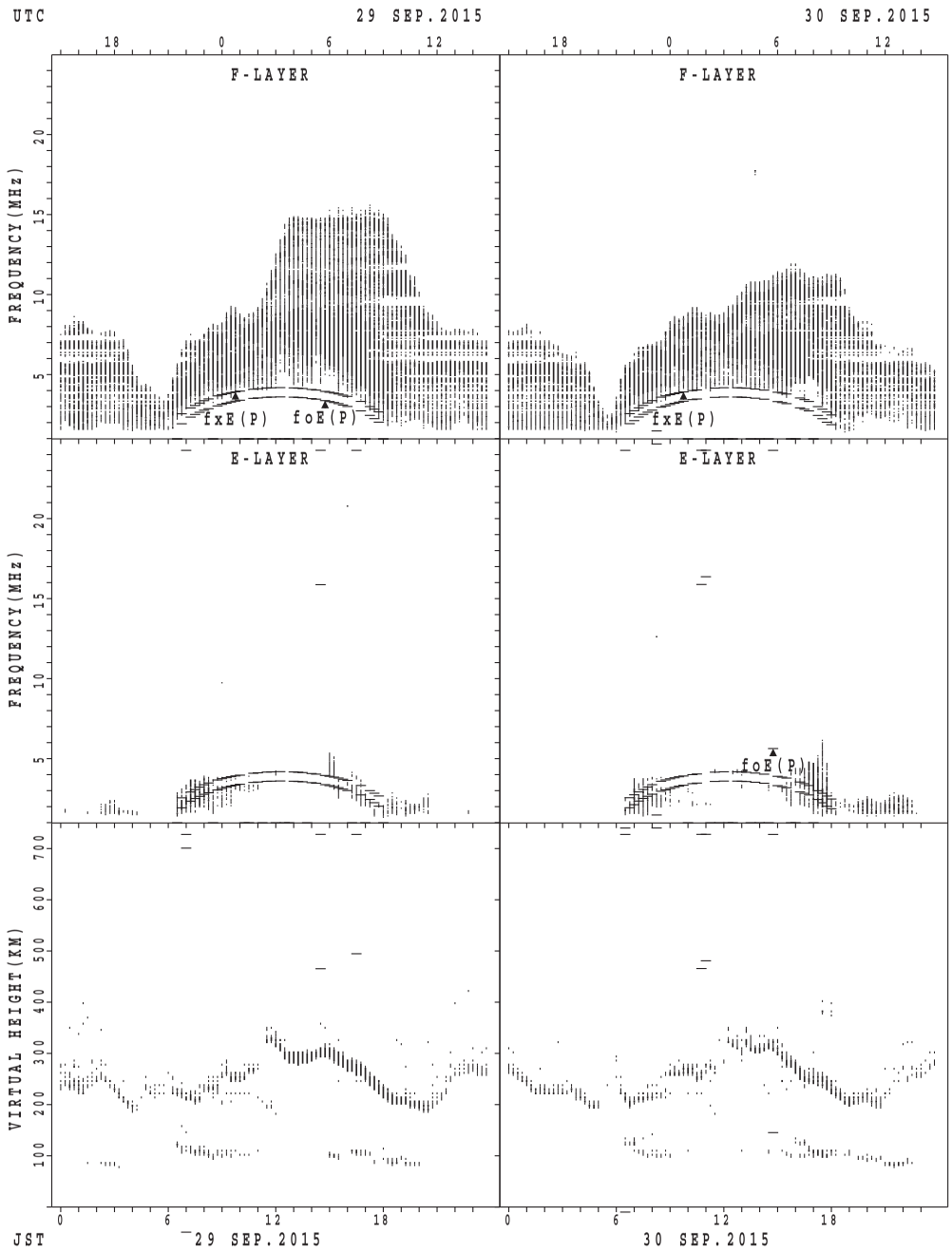
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

SEP.2015 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							2	8	17						1	12	15	8	3	1	3	1	1	
MED							258	249	256						264	276	266	250	264	264	276	322	338	
U Q							280	269	282						132	303	288	254	270	132	282	161	169	
L Q							236	237	242						132	268	258	241	264	132	272	161	169	

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	17	15	14	14	16	18	22	29	30	30	29	29	30	26	30	29	29	24	18	20	18	18	15	15
MED	95	89	90	96	100	105	105	103	101	99	101	101	101	102	101	101	107	103	99	99	96	98	95	95
U Q	99	95	103	111	106	107	113	107	103	99	107	176	107	113	107	107	113	111	103	103	105	103	97	95
L Q	88	87	89	93	96	97	101	99	97	97	97	97	95	95	97	96	103	96	91	93	91	95	91	89

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							2	16	20							8	19	20	16	12	4			
MED							261	239	238							287	280	255	239	246	263			
U Q							294	246	248							324	296	268	264	258	276			
L Q							228	231	230							283	264	246	230	243	245			

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	10	11	9	7	10	21	28	26	23	21	12	10	10	14	21	23	27	21	19	20	21	19	15
MED	93	94	91	99	101	103	107	105	101	101	99	97	97	98	102	105	107	105	99	99	100	97	97	95
U Q	101	97	105	110	105	103	126	110	105	103	104	101	99	105	115	111	113	109	105	99	103	98	99	99
L Q	91	91	89	93	95	99	99	100	97	97	95	92	93	89	97	101	103	103	95	91	93	90	91	91

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								7	13	12						2	12	13	11	9	2	1		
MED								230	238	241						283	274	252	238	248	268	298		
U Q								260	253	253						288	286	260	248	254	296	149		
L Q								222	229	236						278	271	247	230	233	240	149		

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	3	2	2	2	1	1	4	13	13	11	10	6	6	3	6	10	14	13	8	9	9	6	9	5
MED	97	95	90	96	93	93	121	125	111	103	105	142	104	107	102	105	106	105	100	97	97	94	95	95
U Q	97	99	95	97	46	46	143	137	116	107	113	179	109	187	105	107	109	112	102	103	104	95	98	98
L Q	95	91	85	95	46	46	102	114	104	97	101	93	97	107	97	103	103	102	98	93	93	93	90	90

MONTHLY MEDIANS OF h'F AND h'Es

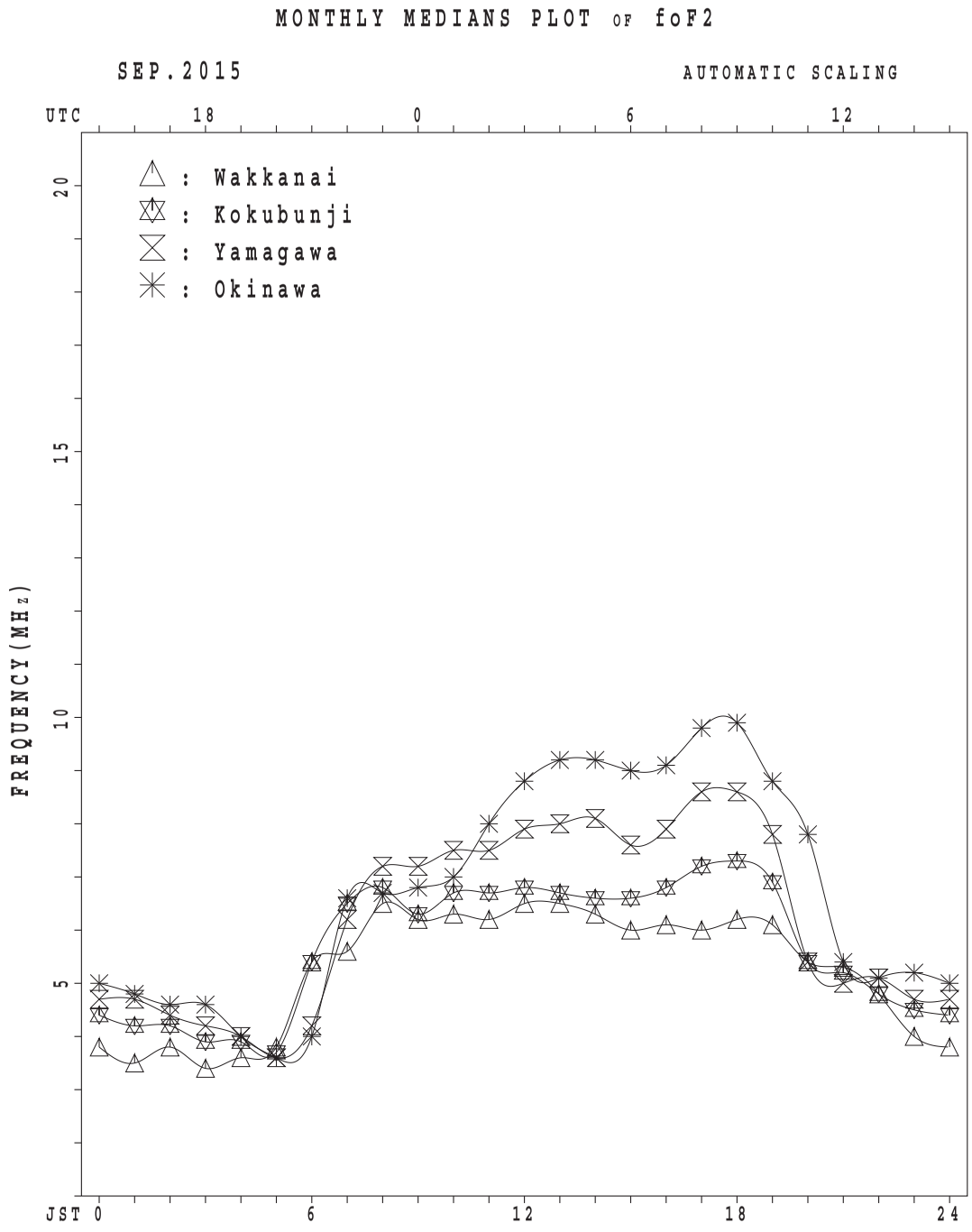
SEP.2015 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		2	1	1				15	24	23							27	30	28	24	14	3		1
MED		281	266	284				224	239	256							278	254	238	238	236	272		280
U Q		308	133	142				232	248	264							292	270	259	251	246	276		140
L Q		254	133	142				216	225	246							270	246	229	229	230	240		140

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	19	11	8	8	6	6	7	30	30	30	24	22	20	13	15	25	27	28	26	25	24	21	20	16
MED	95	91	94	93	95	95	99	118	107	103	99	103	102	95	99	107	103	107	101	97	97	95	96	95
U Q	97	97	96	96	95	97	111	125	111	107	106	113	123	105	109	116	117	111	103	100	99	105	100	97
L Q	89	87	87	87	89	93	95	107	103	99	98	95	96	89	95	100	99	103	99	94	92	89	93	89


MONTHLY MEDIANS PLOT OF foF2
SEP.2015
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 Wakkanai

SEP.2015 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	56	X 56	X 58	X 52																	X 73	X 69	X 65	X 60
2	X 53	57	X 55	X 52																	X 67	X 68	X 65	X 59
3	X 57	X 55	X 56	X 53																	X 75	A	68	X 64
4	X 55	X 54	X 53	X 53																	X 69	X 63	X 52	A
5	A	X 47	X 53	X 47																	X 65	A	X 49	X 47
6	X 47	X 47	X 45	X 46																	X 57	X 57	X 48	X 48
7	X 47	X 48	X 53	X 42																	X 67	X 62	X 49	X 45
8	X 47	X 41	X 39	X 39																X 57	X 57	X 50	X 41	X 41
9	X 41	X 41	X 41	X 38																	X 72	X 64	X 71	X 54
10	X 46	X 42	X 42	X 44																	X 47	46	41	X 34
11	X 32	X 29	X 26	X 26																X 72	X 69	X 70	X 60	X 39
12	X 35	X 35	X 37	X 40	X 35															X 67	X 66	X 63	X 47	X 43
13	X 40	X 39	X 39	X 38	X 37															X 73	X 74	X 65	X 45	X 43
14	X 37	X 39	X 38	X 38	X 38		X 50													X 67	X 65	X 65	X 57	X 53
15	X 47	X 45	X 41	X 41	X 41															X 62	X 61	X 60	54	X 48
16	X 44	X 46	X 47	X 43	X 42															X 69	X 66	X 63	X 54	X 50
17	X 49	X 47	X 47	X 44	X 43															X 68	X 67	X 61	X 57	X 50
18	X 49	X 47	X 47	X 46	X 45															X 62	X 64	X 58	X 53	X 46
19	X 46	X 46	X 45	X 42	X 39	X 39														X 71	X 65	X 67	X 60	X 54
20	X 48	X 48	X 44	X 42	X 42															X 81	X 79	X 77	X 63	X 50
21	X 42	X 45	X 46	X 46	X 47															X 49	X 47	X 42	X 40	X 40
22	X 39	X 39	X 39	X 39	X 39															X 69	X 63	X 53	X 47	X 44
23	X 42	X 43	X 47	X 44	X 42															X 63	X 62	X 62	X 56	X 51
24	X 50	X 47	X 43	X 42	X 40															X 65	X 61	X 56	X 50	X 47
25	X 45	X 42	X 42	X 43	X 43															X 65	X 65	X 65	X 59	X 55
26	X 55	X 51	X 52	X 50	X 49	X 49														X 67	X 63	X 60	X 56	X 53
27	X 52	X 51	X 50	X 52	X 50															X 66	X 66	X 65	X 63	X 59
28	X 57	X 57	X 60	X 59	X 59															X 73	X 73	X 74	X 73	X 65
29	X 60	X 59	X 57	X 62	60															X 65	X 65	X 64	X 63	X 62
30	X 60	X 57	X 60	X 61	X 61															X 71	X 71	X 64	X 61	X 64
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	19	2	1													21	30	28	30	29
MED	X 47	X 47	X 46	X 44	X 42	X 44	X 50													X 67	X 66	X 63	X 56	X 50
U Q	X 54	X 51	X 53	X 52	X 49															X 71	X 69	X 65	X 63	X 57
L Q	X 42	X 42	X 41	X 41	X 39															X 64	X 63	X 59	X 49	X 44

SEP.2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E {SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 46	48	51	45	42	43	59	57	59	61	61	61	59	59	64	59	59	61	61	68	66	62	58	53
2	46	F 44	48	45	45	43	57	58	70	71	62	59	59	61	61	64	59	59	62	68	60	61	58	52
3	50	48	49	46	44	47	55	58	R	77	62	A	62	62	66	60	62	57	64	R 73	68	A	F 57	57
4	48	47	46	46	43	40	54	50	52	54	A	59	52	50	56	55	53	50	54	62	62	56	45	A
5	A	40	46	40	30	36	52	55	53	52	54	R 52	52	53	53	50	54	51	55	64	58	A	42	40
6	40	40	38	39	36	40	40	48	A	R	R	49	50	R	R	48	50	50	50	57	51	50	41	41
7	40	41	46	35	32	38	52	53	A	52	56	R 53	56	57	58	58	61	58	62	64	60	55	42	38
8	R 40	34	32	32	30	34	37	R 38	38	A	R	R	R	41	R 41	Z 46	R 43	45	44	50	50	43	34	34
9	34	34	34	31	30	A	38	R 48	48	48	55	R 55	49	56	56	61	63	59	60	66	65	57	64	47
10	39	35	35	37	29	28	34	44	R	48	R	R	A	R	A	A	46	44	43	45	40	F 38	F 32	27
11	25	22	19	19	A	A	50	50	60	53	R	R 52	J R 54	55	56	56	51	54	54	65	62	63	53	32
12	28	28	30	33	28	28	37	46	R 48	48	51	53	51	52	51	53	53	53	53	60	59	56	40	36
13	33	32	32	31	30	33	50	56	62	59	52	52	57	57	56	56	60	54	62	66	67	58	38	36
14	30	32	31	31	31	31	43	59	68	53	62	63	62	61	57	54	54	56	57	60	58	58	50	46
15	40	38	34	34	34	33	48	57	64	54	53	58	64	72	68	59	53	53	57	55	54	53	F 42	41
16	37	39	40	36	35	34	44	51	65	54	59	57	58	60	58	58	57	55	60	62	59	56	47	43
17	42	40	40	37	36	39	51	57	65	62	68	62	65	64	60	59	57	62	70	61	60	54	50	43
18	42	40	40	39	38	40	54	58	59	61	62	67	67	64	63	61	59	58	61	55	57	51	46	39
19	39	39	38	35	33	33	53	52	50	61	61	61	61	60	63	59	59	61	65	64	58	60	53	47
20	42	41	37	35	35	39	54	63	65	65	69	R 68	69	70	66	70	S 69	64	72	74	72	70	56	43
21	35	38	40	39	40	36	37	40	39	40	R 42	42	R 44	R	43	43	43	42	40	42	40	35	33	33
22	32	32	32	32	32	31	40	51	58	58	60	59	60	63	57	58	58	58	60	62	56	46	40	37
23	35	36	40	37	35	39	48	A	64	65	67	67	70	68	63	64	59	67	66	56	55	55	49	44
24	43	40	36	35	33	36	46	52	R 60	S 61	62	69	74	71	75	64	67	67	62	58	54	49	43	40
25	38	35	35	36	36	39	52	66	66	66	67	J R 82	78	72	68	68	66	66	65	58	58	58	52	48
26	48	44	45	43	42	42	58	71	72	74	75	U R 75	75	72	72	70	77	73	69	60	56	53	49	46
27	45	44	43	45	43	43	54	64	67	72	73	R 72	74	76	70	70	70	66	63	59	59	58	56	52
28	50	50	53	52	52	52	58	62	66	J R 79	Y 74	76	76	R 73	68	68	68	67	66	66	66	67	66	58
29	53	52	50	55	F 47	55	62	58	68	74	J R 80	Y 74	J R 83	Y	74	70	74	71	64	58	58	57	56	55
30	53	50	53	54	54	46	52	64	71	Y 74	74	74	75	76	71	71	70	68	64	64	64	57	54	57
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	29	28	30	29	26	28	25	27	28	26	28	29	30	30	30	30	30	28	30	29
MED	40	40	40	37	35	39	52	56	63	61	62	61	62	62	62	59	59	58	62	62	58	56	49	43
U Q	46	44	46	45	42	42	54	58	66	68	68	69	72	71	68	66	66	66	64	65	62	58	56	50
L Q	35	35	34	34	32	34	43	50	53	53	56	53	55	57	56	56	53	53	55	58	56	52	42	38

SEP. 2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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								444	428	432	U R 468	U R 452	L	L	A	444	L	L						
2							L	L	436	452	452	U L 488	L	472	448	L 448	L	A	A	A				
3							L	L	L	A	A	A	A	L 464	L	L 440	L	L						
4							L	L	U R 404	A	A	L	A	A	A	428	L	L	A	A				
5								416	L	432	L	U R 460	R 444	432	L	L	L							
6						A		L	A	R 444	R 464	U R 444	L	L	L	L	L							
7							L	L	A	L	A	L	L	L	436	L	392	L						
8					A			L	L	A	U R 404	U R 424	L	L	376	L	L	L						
9						A	L	L	L	436	L	U L 448	L	L	U L 444	412	372	L						
10								L	R 388	R 408	R 408	L	A	U R 448	A	A	380	L						
11					A	A		L	396	L	L	L	460	L	444	L	L	L						
12							R 208	368	L	380	L	L	L	L	R	L		L						
13							L	L	420	440	456	452	L	L	L	L	L	L						
14								L	412	L	L	432	L	460	440	L	L	L						
15									A	A	L	L	464	L	440	L	L							
16							L	L	L	L	L 452	L	L	L	L	424	L							
17							L	L	L	L	L	H 404	L	L	L	L	L	L						
18								L	L	432	L	L	L	L	L	420	L	L						
19							L	L	400	L	L	448	L	448	L	L	348							
20								L	420	L	448	448	480	L	L	L	L	L						
21													L	L	L	A	L	L						
22							L	L	L 420		L 464	L 468	L	448	L	L 444	L							
23								A	L 404	L	L	476	L	L	L	L 456	248	L						
24							L		L	L	L	L	480	L 436	L 448									
25							212	L	436	444	U L 492	L 464	L	L	420	L	L							
26							L	L	L	L	L	L	L	L 460	L	L	L							
27									L	L	L	L	L	L	L	332								
28									L	L	L	468	L	B	L	L		L						
29									L	L	L	U L 456	L	L	L		L							
30								L		L	L	460	L	L	L	A								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	3	13	10	10	17	5	9	9	10	5							
MED							210	416	412	434	454	452	464	448	440	434	372							
U Q								444	424	444	U R 464	L 466	480	462	L 446	L 444	386							
L Q								368	398	432	R 448	446	452	442	428	420	298							

SEP.2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E ↑SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					B	A	204	272	296	308	A	A	A	A	A	304	280	232	A	A				
2					B	B	204	260	288	296	296	A	A	A	252	312	272	A	192	144				
3					A	A 188	196	204	U A 252	252	268	204	228	A	324	320	272	212	A	A				
4					A	A	192	240	252	280	A	A	A	A	A	A	264	A	A	A				
5					B	B	200	244	284	284	288	320	320	320	304	308	256	212	A	4 206				
6					B	A	196	248	276	276	288	324	A	324	312	288	252	208	A	A				
7					B	B	180	240	276	308	308	332	332	332	304	288	252	208	216	A				
8					6 107	180	172	240	268	A 300	280	304	320	284	300	272	240	A	A					
9					4 198	A	196	244	260	308	324	324	316	324	300	288	252	200	A	B				
10					A	U A 212	188	232	264	288	296	316	320	316	296	272	232	240	164	A				
11					B	B	168	228	248	268	A	A	A	A	A	A	252	196	B					
12						172	B	220	A	A	A	264	A	320	312	276	264	208	A					
13						164	180	216	A	304	316	332	332	332	316	284	240	200	192					
14						184		236	292	308	312	336	336	324	308	292	256	192	A					
15						U A 200	200	244	268	276	A	320	A	A	320	292	252	184	A					
16						A	172	140	248	A	336	136	320	336	324	300	244	212	B					
17						172	A	236	232	284	A	344	352	320	320	292	248	180	192					
18						A 204	A	256	280	312	A	340	A	A	A	A	260	184	B					
19							224	268	292	R 308	316	332	8 170	320	312	296	252	196	B					
20						B	196	264	280	324	336	R 340	R 360	300	328	292	256	184	B					
21						B	200	260	288	304	316	328	R 328	304	308	296	244	192	B					
22						S	200	252	284	296	296	316	332	328	304	280	244	172	U A 212					
23						204	A	A 296	320	312	344	336	328	312	288	244	A	B						
24						B	188	256	288	316	332	324	292	332	324	228	252	A	A					
25						B	208	260	284	304	324	344	336	312	316	276	256	A	A					
26							196	240	296	312	344	340	U R 344	320	320	292	A	A	B					
27						B	192	244	284	324	324	344	332	316	308	256	A	A	A					
28						B	180	232	280	300	A	348	316	B	332	292	252	188	B					
29						B	184	260	276	292	320	308	308	A	308	300	252	188	B					
30						B	192	244	312	324	A	U R 352	328	316	316	292	260	180	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					2	10	25	29	28	28	21	26	22	21	26	27	28	22	6	2				
MED					152	186	196	244	280	304	316	330	328	320	312	292	252	196	192	175				
U Q						A 204	200	258	288	310	324	340	336	328	320	296	258	208	212					
L Q						172	182	234	266	286	296	316	316	316	304	280	246	184	192					

SEP. 2015 foE (0.01MHz)

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	36	JA 44	JA 44	37	JA 24	JA 19	26	32	37	35	JA 45	37	37	JA 39	52	34	40	28	JA 30	24	40	JA 66	JA 65	36
2	JA 30	JA 33	34	41	JA 18	22	24	32	33	38	JA 41	37	33	JA 38	42	35	35	JA 62	62	JA 37	EB 14	JA 45	19	32
3	25	JA 29	30	JA 21	34	JA 25	JA 24	JA 39	JA 64	JA 52	JA 59	JA 123	72	JA 40	36	36	36	JA 42	JA 39	JA 98	JA 152	JA 121	JA 51	JA 38
4	JA 31	40	34	30	JA 24	23	25	JA 33	34	49	JA 57	JA 78	JA 47	JA 47	JA 48	34	30	JA 43	35	35	JA 26	38	JA 31	52
5	JA 61	JA 43	JA 39	JA 53	EB 14	20	23	29	32	34	39	39	38	39	34	34	34	46	48	JA 85	JA 83	72	37	JA 52
6	45	28	35	36	JA 29	60	41	JA 41	JA 80	43	35	G 35	37	37	37	33	33	27	40	JA 46	JA 27	34	JA 63	32
7	JA 22	JA 21	23	23	21	21	22	JA 38	73	39	JA 52	40	40	36	34	33	29	26	JA 32	JA 35	JA 78	33	20	20
8	JA 87	23	26	25	G 30	25	26	29	33	44	34	34	36	33	38	36	JA 37	JA 36	37	40	30	24	JA 31	23
9	24	28	24	EB 14	G 27	JA 39	24	30	JA 57	34	G 34	G 29	35	G 28	33	34	32	24	22	EB 14	EB 14	EB 14	EB 14	22
10	25	27	24	24	33	30	24	34	34	37	35	38	JA 46	36	JA 87	JA 165	32	32	G	35	JA 35	JA 50	25	25
11	28	EB 14	19	36	32	39	JA 49	33	JA 45	51	JA 37	39	38	34	34	45	32	24	EB 14	EB 14	EB 14	EB 14	EB 14	22
12	24	27	27	27	JA 29	26	21	24	27	32	37	34	36	G 30	36	34	JA 50	32	JA 52	JA 40	JA 50	27	33	32
13	30	26	26	22	22	26	JA 33	JA 29	JA 35	38	32	G	G 28	G 23	34	31	29	JA 22	28	JA 32	29	24	28	28
14	JA 26	28	23	27	JA 20	30	JA 35	JA 38	37	JA 49	33	38	37	G 23	G 20	G 18	JA 26	26	JA 29	34	27	27	JA 21	28
15	EB 14	26	23	23	21	27	JA 36	53	54	JA 61	JA 54	G 37	JA 42	JA 35	G	32	33	JA 63	JA 105	JA 59	JA 51	JA 33	39	39
16	35	25	28	26	24	36	JA 28	JA 31	JA 31	JA 33	G 33	33	34	G 19	G	G	28	JA 23	EB 14	BJ A 51	JA 46	JA 29	35	32
17	EB 14	EB 14	EB 14	23	EB 14	25	JA 24	JA 31	JA 38	35	35	G	G 32	G 25	G	G 24	28	22	24	JA 28	28	20	JA 49	22
18	24	23	20	EB 14	JA 25	27	JA 29	32	32	JA 45	JA 50	JA 54	JA 49	JA 44	39	JA 44	34	JA 24	JA 17	22	22	JA 21	30	35
19	29	24	JA 19	EB 14	EB 14	24	JA 23	38	33	38	36	G	G	G 25	G 20	G 20	33	JA 25	26	JA 22	28	JA 21	24	EB 14
20	20	EB 14	22	19	EB 14	EB 14	BJ A 29	36	34	G 32	G	G 31	G 32	32	G 31	34	34	23	33	EB 14	28	EB 14	EB 14	19
21	19	20	25	33	33	JA 29	25	32	33	37	G 30	G	G	G 27	G 20	33	33	31	JA 21	EB 14	JA 20	EB 14	EB 14	EB 14
22	22	26	EB 14	EB 14	18	ES 15	22	30	36	43	32	39	40	34	34	G 28	33	22	26	25	JA 30	JA 24	JA 26	JA 21
23	29	26	JA 32	27	34	32	JA 66	64	34	G 32	G 23	G 28	G 28	35	37	32	30	20	28	EB 14	EB 16	BJ A 28	EB 14	EB 14
24	JA 43	EB 14	EB 14	22	EB 14	22	G	33	36	36	36	40	40	35	36	JA 46	JA 33	JA 49	33	36	EB 14	EB 14	EB 14	22
25	EB 14	29	33	JA 41	34	JA 27	JA 25	29	33	33	35	G 33	G 32	34	34	33	GJ A 26	JA 53	JA 25	27	19	JA 26	20	EB 14
26	EB 14	EB 14	EB 14	EB 14	22	EB 14	32	28	33	G	G	G 28	39	G	G	33	JA 32	JA 35	EB 14	BJ A 28	23	27	24	26
27	19	EB 14	22	22	20	27	24	28	34	G 25	36	G	38	38	38	JA 33	37	JA 23	37	JA 26	26	19	EB 14	EB 14
28	EB 14	EB 14	21	ES 20	ES 18	20	22	27	31	34	34	38	35	EB 52	G	35	30	G 18	EB 14	EB 14	EB 14	EB 14	20	21
29	JA 34	24	EB 14	20	25	20	21	29	34	41	37	37	36	36	40	G	G 22	G	EB 14	26	28	28	20	EB 14
30	EB 14	20	20	21	25	JA 28	27	27	JA 31	38	35	G 33	G	35	36	36	34	G 18	EB 14	BJ A 26	JA 62	JA 105	JA 64	JA 37
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	25	26	24	23	24	26	25	32	34	38	35	G 36	36	34	34	34	33	26	28	28	28	27	24	24
U Q	JA 31	28	30	30	29	29	JA 29	36	JA 37	43	JA 39	39	40	JA 38	38	35	34	JA 36	37	JA 37	JA 40	JA 34	JA 35	32
L Q	EB 19	EB 20	EB 20	EB 20	EB 18	21	23	29	33	34	G	G 34	G	G 30	G	G 32	30	23	EB 17	EB 22	EB 20	EB 20	EB 19	EB 20

SEP.2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	14	22	20	E B 14	14	24	30	35	33	40	35	34	37	43	31	33	24	22	14	30	18	36	E B 14
2	16	22	20	18	E B 14	E B 14	22	30	30	36	36	35	27	35	34	33	30	52	54	29	E B 14	16	E B 14	19
3	E B 15	16	17	E B 14	17	G 18	22	38	60	46	45	A A 123	54	38	34	34	33	27	30	55	17	A A 121	46	18
4	20	20	16	14	E B 14	14	23	30	34	47	A A 57	38	46	46	41	30	28	23	22	22	E B 14	25	19	A A 52
5	A A 61	30	20	20	E B 14	14	21	27	29	32	33	37	37	35	33	32	34	35	22	G 20	21	A A 72	E B 14	14
6	27	17	20	E A 20	E B 14	24	26	36	A A 80	35	34	G 33	36	35	37	33	29	23	22	22	22	20	24	19
7	A 18	16	E B 14	E B 14	E B 14	E B 14	22	30	A A 73	36	46	36	37	G 33	33	32	26	23	G 22	18	22	E B 14	E B 14	15
8	E B 14	E B 14	E B 14	E B 14	G E B 20	E B 14	23	27	30	A A 44	A	32	34	29	33	E A 33	A 33	25	22	21	19	E B 14	14	E B 14
9	E B 14	E B 14	E B 14	E B 14	E B 14	A A 39	22	28	33	33	G 32	G 25	33	G 27	G 30	G 28	G 25	22	15	E B 14	E B 14	E B 14	E B 14	14
10	15	18	14	E B 14	17	G 19	21	32	32	35	32	34	A A 46	34	A A 87	A A 165	29	G 22	G	24	18	20	E B 14	E B 14
11	E B 14	E B 14	E B 14	E B 14	A A 32	A A 39	30	30	32	40	35	35	35	33	33	35	27	21	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
12	E B 14	18	16	15	E B 14	G 17	19	G 22	27	30	34	G 24	36	G 26	36	33	38	26	29	21	23	E B 14	16	E B 14
13	20	15	15	15	E B 14	G 16	26	28	33	32	G 30	G	G 26	G 22	G 31	30	27	G 20	G 19	20	17	E B 14	15	15
14	E B 14	17	14	14	14	G 17	28	34	30	32	33	38	36	G 22	G 20	G 16	G 26	22	18	20	E B 14	E B 14	E B 14	E B 14
15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	28	43	45	44	41	G 34	37	34	G	31	28	38	36	24	26	22	22	22
16	21	E B 14	E B 14	E B 14	E B 14	22	22	29	28	30	G 31	U Y 30	G 32	G 18	G	G	28	G 20	E B 14	19	E B 14	E B 14	14	16
17	E B 14	E B 14	E B 14	E B 14	E B 14	G 14	20	27	30	32	33	G	G 29	G 25	G	G 23	26	21	G 16	14	E B 14	E B 14	E B 14	E B 14
18	E B 14	E B 14	E B 14	E B 14	E B 14	G 14	26	30	30	G 31	38	36	42	39	34	30	G 22	20	E B 14	E B 14	E B 14	17	14	20
19	16	E B 14	E B 14	E B 14	E B 14	E B 14	G 21	G 26	30	31	35	G	G	G 23	G 20	G 18	27	21	14	E B 14	E B 14	E B 14	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 19	30	32	G 30	G	G 31	G 29	31	G 30	32	G 25	20	14	E B 14	E B 14	E B 14	E B 14	E B 14
21	E B 14	E B 14	E B 14	19	22	16	20	G 22	G 27	G 30	G 27	G	G	G 27	G 18	30	25	G 19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
22	E B 14	E B 14	E B 14	E B 14	E B 14	E S 15	G 20	G 25	30	41	31	37	37	G 33	G 30	G 25	G 24	18	E B 14	E B 14	22	21	18	19
23	20	16	19	E B 14	19	G 17	26	A A 64	G 30	G 29	G 22	G 28	G 27	34	32	30	G 22	18	E B 14	E B 14	E B 16	E B 14	E B 14	E B 14
24	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	31	30	34	34	39	37	G 33	33	37	26	23	19	20	E B 14	E B 14	E B 14	E B 14
25	E B 14	16	22	26	18	E B 14	17	G 26	31	32	33	G 32	G 31	33	G 32	29	G 24	21	15	E B 14	E B 14	14	E B 14	E B 14
26	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 19	26	G 30	G	G	G 27	38	G	G	30	26	31	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	26	32	G 25	34	G	36	36	35	30	26	21	20	14	18	E B 14	E B 14	E B 14
28	E B 14	E B 14	E B 14	E S 20	E S 18	E B 14	20	27	31	33	U Y 32	G 35	34	E B 52	G	32	27	G 16	E B 14	E B 14	E B 14	E B 14	E B 14	14
29	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G 24	G 24	39	35	34	34	33	38	G	G 20	G	E B 14	16	16	16	E B 14	E B 14
30	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	25	G 22	G 28	35	33	G 32	G	33	33	30	G 26	G 16	E B 14	E B 14	18	49	37	19
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 14	E B 14	E B 14	E B 14	E B 14	14	22	28	30	33	33	G	34	E G 33	33	30	26	G	17	15	E B 15	E B 14	E B 14	E B 14
U Q	16	16	16	15	17	17	25	30	33	36	36	36	37	35	34	33	29	24	22	21	19	20	16	18
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	20	G 26	G 30	G	G	G 32	G	G 27	G 32	G 29	G 25	G 20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14

SEP.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E KSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	14	14	15	13	12	16	13	14	15	14	14	13	13	14	14	14	14	14	14	14
2	14	14	14	14	14	14	14	14	14	14	17	14	14	16	13	14	14	14	12	13	14	14	14	14
3	15	14	14	14	14	14	13	11	11	12	15	12	14	16	20	14	13	13	14	13	14	14	14	14
4	17	14	14	14	14	14	14	11	14	13	14	14	14	16	15	13	12	12	12	14	14	14	14	14
5	14	14	14	14	14	14	14	12	12	14	14	16	16	16	14	14	12	13	14	14	14	14	14	14
6	14	14	14	14	14	14	14	14	14	14	14	15	13	14	13	14	12	14	13	14	14	14	14	14
7	14	14	14	14	14	14	14	12	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
8	14	14	14	14	14	14	13	12	12	15	15	13	14	15	14	13	14	14	14	14	14	14	14	14
9	14	14	14	14	14	14	13	13	14	13	14	14	14	15	13	14	13	14	13	14	14	14	14	14
10	14	14	14	14	14	14	14	13	13	14	13	16	17	16	13	13	13	13	13	14	14	14	14	14
11	14	14	14	14	14	14	14	14	14	14	14	20	16	14	13	13	14	13	14	14	14	14	14	14
12	14	14	14	14	14	14	14	14	13	16	15	15	12	15	15	15	12	14	14	14	14	14	14	14
13	14	14	14	14	14	14	14	13	12	14	14	17	16	16	15	12	12	13	13	14	14	14	14	14
14	14	14	14	14	14	14	14	13	13	13	15	15	15	15	14	14	14	16	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	14	14	15	14	15	14	14	13	12	14	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	13	14	14	13	14	14	14	14	14	14	14	14	14	14	14	14
17	14	14	14	14	14	14	14	14	14	14	14	21	15	14	14	12	14	14	14	14	14	14	14	14
18	14	14	14	14	14	14	14	14	14	15	16	14	14	14	14	14	14	14	14	14	14	14	14	14
19	14	14	14	14	14	14	14	12	14	14	14	14	14	14	14	14	12	14	14	14	14	14	14	14
20	14	14	14	14	14	14	14	12	15	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14
21	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	13	14	14	14	14	14	14	14
22	14	14	14	14	14	15	15	14	16	15	15	15	16	14	14	14	14	13	14	14	14	14	14	14
23	14	14	14	14	14	14	14	14	14	14	15	13	14	14	14	12	12	14	14	14	16	14	14	14
24	14	14	14	14	14	14	14	14	14	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14
25	14	14	15	14	14	14	12	15	13	14	15	13	19	14	14	14	14	14	14	14	14	14	14	14
26	14	14	14	14	14	14	14	14	14	14	14	15	13	13	14	14	14	14	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	12	14	13	15	14	14	14	14	14	14	14	14	14	14	14	14
28	14	14	14	ES 20	18	14	14	14	15	16	15	15	ES 20	52	15	14	14	14	14	14	14	14	14	14
29	14	14	14	14	14	14	14	14	14	14	15	14	16	23	14	20	14	14	14	14	14	14	14	14
30	14	14	14	14	14	14	14	14	14	17	14	14	16	17	14	14	12	14	14	14	14	14	14	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	14	15	15	15	16	16	14	14	14	14	14	14	14	14	14	14
L Q	14	14	14	14	14	14	14	13	13	14	14	14	14	14	14	13	12	14	14	14	14	14	14	14

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E ↑SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 269	268	270	285	302	310	346	314	336	351	336	326	301	310	332	318	324	326	326	294	297	320	325	307
2	290	F 288	287	305	300	322	322	332	350	364	371	311	322	319	322	321	331	332	317	319	299	299	306	289
3	297	290	286	314	307	326	341	309	R	379	258	A	324	305	334	315	334	312	324	R 241	315	A	F 286	311
4	317	279	282	284	305	299	316	323	279	319	A	318	278	264	317	288	334	290	306	302	303	315	306	A
5	A	275	302	311	263	295	319	310	334	313	339	R 283	295	290	321	283	309	327	306	297	300	A	300	298
6	282	279	292	289	286	204	290	333	A	R	R	263	314	R	R	284	304	317	315	320	302	302	288	277
7	285	287	321	318	327	315	341	316	A	285	333	R 303	323	312	325	311	327	318	316	317	313	321	295	289
8	R 286	259	252	267	247	296	355	R 361	361	A	R	A	R	292	R 323	Z 273	R 298	304	297	287	295	345	285	277
9	271	271	282	261	269	A	309	R 355	330	302	298	R 308	266	305	276	310	314	334	295	272	306	278	307	301
10	268	291	269	286	303	269	335	281	R	318	R	R	A	R	A	A	309	308	312	298	307	F 267	F 296	276
11	274	269	292	292	A	A	359	306	334	364	R	R 272	R	309	309	331	317	317	309	285	314	306	364	287
12	283	271	271	282	281	310	334	352	R 296	275	295	292	284	335	321	342	323	320	319	287	313	313	314	294
13	283	287	287	290	297	301	342	320	347	346	344	325	325	326	331	331	330	324	317	302	324	339	303	306
14	285	271	281	281	303	275	301	343	371	361	323	332	327	339	326	326	324	326	319	321	298	298	298	310
15	295	284	274	279	279	275	337	351	344	334	308	301	302	333	334	340	335	323	321	283	289	290	F 309	296
16	280	287	281	293	312	309	323	302	365	337	324	311	318	330	317	317	322	324	327	317	308	322	312	297
17	290	285	289	281	278	305	331	354	323	319	372	327	314	330	318	323	326	327	335	341	303	296	315	292
18	291	305	297	296	298	328	358	395	333	314	335	326	327	329	337	323	339	337	327	297	305	310	316	299
19	300	300	295	315	314	314	350	330	337	320	342	334	334	342	333	347	345	336	329	303	286	319	308	306
20	283	313	296	313	307	315	354	353	371	333	341	R 336	315	325	324	315	S 320	301	288	290	298	326	311	307
21	282	270	271	299	274	301	295	327	360	380	R 364	R 367	R 372	R	268	315	297	318	303	293	307	304	287	291
22	289	289	289	290	305	313	375	344	343	346	332	339	344	335	325	318	318	324	319	313	325	297	316	288
23	292	282	270	291	280	322	372	A	367	349	350	329	320	304	358	321	322	336	341	295	299	304	287	312
24	302	307	300	278	268	297	324	344	R 381	S 329	340	329	315	333	323	338	332	338	322	325	308	315	295	292
25	297	293	292	289	294	303	346	365	370	354	318	R	353	327	325	330	329	331	326	300	308	298	307	297
26	294	296	309	306	308	308	330	365	351	346	361	R	339	324	339	316	333	334	331	317	303	307	305	294
27	299	299	296	297	307	304	337	357	358	360	359	R 302	322	342	324	324	347	335	329	297	301	311	304	308
28	323	316	291	293	321	331	364	356	344	R	Y 360	353	331	R 311	332	341	341	341	325	301	301	322	302	316
29	294	288	307	298	F 292	302	368	356	347	342	R	Y	R	Y	319	334	332	346	330	307	303	300	328	318
30	304	319	293	309	326	311	348	365	355	Y 355	342	342	338	353	326	326	327	339	320	324	324	306	312	292
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	29	28	30	29	26	27	24	24	26	26	28	29	30	30	30	30	30	28	30	29
MED	290	287	289	292	300	306	339	344	347	342	340	326	322	326	324	321	326	326	320	300	303	306	306	297
U Q	297	296	296	305	307	314	354	356	361	355	354	333	331	333	332	331	333	335	327	317	308	320	312	307
L Q	282	275	281	284	280	298	323	318	334	319	324	R 302	314	309	320	315	318	318	312	293	299	298	296	290

SEP.2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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								356	377	388	U R 374	U R 407	L	L	A	360	L	L						
2							L	L	382	369	393	U L 392	L	361	372	L 347	L	A	A	A				
3							L	L	L	A	A	A	A	L 367	L	L 370	L	L						
4							L	L	U R 399	A	A	L	A	A	A	339	L	L	A	A				
5								344	L	383	L	U R 397	R 390	390	L	L	L							
6						A		L	A	R 429	R 434	U R 414	L	L	L	L	L							
7							L	L	A	L	A	L	L	L	381	L	370	L						
8					A			L	L	A	U R 368	U R 391	L	L	419	L	L	L						
9						A	L	L	L	372	L	U L 379	L	L	U L 350	342	350	L						
10								L	R 385	R 376	R 401	L	A	U R 362	A	A	344	L						
11					A	A		L	365	L	L	L	364	L	359	L	L	L						
12							R 384	339	L	404	L	L	L	L	R	L		L						
13							L	L	369	373	382	386	L	L	L	L	L	L						
14								L	387	L	L	447	L	356	372	L	L	L						
15									A	A	L	L	364	L	367	L	L							
16							L	L	L	L	L 379	L	L	L	L	356	L							
17							L	L	L	L	L	H 417	L	L	L	L	L	L						
18								L	L	420	L	L	L	L	L	365	L	L						
19							L	L	383	L	L	387	L	380	L	L	365							
20								L	389	L	397	398	371	L	L	L	L	L						
21													L	L	L	A	L	L						
22							L	L	L 356		L 380	L 359	L	356	L	L 342	L							
23								A	L 390	L	L	354	L	L	L	L 347	361	L						
24							L		L	L	L	L	369	L 394	L 366									
25							380	L	383	384	U L 375	L 385	L	L	416	L	L							
26							L	L	L	L	L	L	L	378	L	L	L							
27									L	L	L	L	L	L	L	411								
28									431	L	L	387	L	B	L	L		L						
29									L	L	L	U L 388	L	L	L		L							
30								L		L	L	395	L	L	L	A								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	3	13	10	10	17	5	9	9	10	5							
MED							382	344	383	384	381	391	369	367	372	352	361							
U Q								356	390	404	R 397	402	380	385	398	365	368							
L Q								339	373	373	U R 375	L 386	364	358	L 362	342	347							

SEP.2015 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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								294	266	266	250	312	334	306	302	292	284	272						
2							280	260	260	244	260	332	306	312	300	292	270	294	298	250				
3							230	328	R	232	438	A	290	308	278	284	276	264						
4							304	280	398	320	A	320		E 476	A	366	292	326	A	258				
5								330	298	346	298	430	394	394	340	384	328							
6						A 530		306	A	250	R	450	344	R	R	414	334							
7							278	316	A	314	292	304	322	326	306	314	278	288						
8					360			246	262	A	262	270	272	286	302	382	336	324						
9						A	316	234	336	366	366	340	332	372	390	312	312	270						
10								406	R	354	R	374	A	R	A	A	352	316						
11					A	A		316	292	274	362	414	394	346	328	304	282	308						
12							246	288	386	R 360	370	376	410	302	326	286		290						
13							258	268	264	278	280	332	316	312	292	282	282	272						
14								272	240	248	320	302	306	282	286	280	286	278						
15									280	292	310	350	346	286	272	272	256							
16							280	322	250	298	306	286	324	292	312	312	284							
17							276	248	292	280	242	294	322	288	294	276	276	268						
18								222	272	304	274	292	292	294	278	292	260	274						
19							254	290	290	310	288	288	284	266	284	258	254							
20								242	248	250	268	274	298	290	290	290	258	254						
21													250	R		260	292	300						
22							234	258	274		318	294	278	302	278	318	280							
23								A	240	258	256	302	286	292	256	298	250	266						
24							256		240	294	268	292	292	274	282									
25							238	244	252	254	278	266	246	268	274	262	268							
26							240	240	240	240	248	262	268	270	276	280	254							
27									236	252	254	256	280	270	258	248								
28									242	252	254	258	248	256	264	260		250						
29									250	268	248	264	264	264	256		256							
30								236		260	250	256	284	264	258	254								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	1	14	23	24	27	26	28	28	27	26	27	25	18	1	2				
MED					360	A 530	257	272	263	274	276	298	295	291	285	290	280	276	298	254				
U Q							280	316	291	310	310	336	328	312	302	312	292	300						
L Q							240	244	245	252	254	272	279	270	274	272	259	268						

SEP.2015 h'F2 (KM)

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	308	296	314	278	250	236	230	202	210	200	206	180	180	188	A	208	218	230	240	248	268	232	252	234
2	266	288 Q	274	282	268	254	212	210	210	192	194	182	182	202	202	212	222	A	A	A	E A 274	258	238	272
3	270	286	286	246	258	234	A	A	242	A	A	A	A	210	210	214	232	E A 228	234	E A 528	226	A	A 294	222
4	250	300	286	272	262	282	236	222	196	A	A	208	A	A	A	212	218	232	A	A	244	226	258	A
5	A	A	274	260	286	258	248	224	210	198	206	210	204	224	218	218	240	276	236	244	260	A	232	278
6	E A 322	286	288	E A 282	294	A	244	A	A	180	182	184	194	194	202	216	232	234	258	248	264	264	280	286
7	304	278	252	236	232	270	226	220	A	208	A	208	194	206	212	204	216	210	256	226	238	230	240	284
8	284	336	332	332	A	304	232	204	204	A	A	202	216	212	198	A	A	254	278	278	258	230	254	302
9	306	288	272	302	288	A	240	200	238	204	196	196	194	204	210	210	224	234	288	298	248	276	254	262
10	304	280	330	280	288	E A 312	266	E A 284	208	A 240	226	192	A	212	A	A	230	238	258	298	264	Q 308	Q 244	308
11	294	314	316	316	A	A	228	226	208	A	192	194	194	212	212	A	214	234	264	266	232	264	202	290
12	256	322	322	264	282	282	A 228	224	206	206	208	194	212	200	200	208	292	234	258	282	258	246	252	252
13	300	298	298	290	260	278	216	204	204	194	194	190	190	198	210	222	206	218	258	254	242	216	208	274
14	280	314	310	284	286	286	232	E A	212	196	192	182	212	198	198	208	224	224	236	238	266	250	256	246
15	252	268	306	306	308	292	236	260	A	A	216	176	202	212	220	220	220	264	232	252	282	260	Q 242	266
16	300	288	288	262	262	262	212	212	222	206	196	182	194	194	202	220	222	246	238	238	256	230	250	250
17	280	284	276	276	300	268	220	220	220	198	186	180	202	202	210	210	232	230	254	230	248	256	256	268
18	288	282	286	268	268	268	238	212	202	192	198	190	A	A	A	208	208	222	234	252	254	258	258	298
19	262	280	280	248	248	272	238	210	212	204	204	196	196	196	196	216	220	250	250	252	284	250	250	250
20	274	266	274	282	274	262	236	214	204	204	192	186	206	196	204	224	224	224	294	290	264	226	232	242
21	276	316	316	316	316	266	260	228	224	214	186	210	198	194	196	A	234	252	276	264	264	258	274	298
22	302	298	298	288	266	248	202	220	210	248	192	198	198	190	206	204	208	268	250	250	250	258	240	278
23	A	302	274	278	262	238	210	A	198	202	198	A 220	216	230	224	202	222	232	232	256	262	258	278	248
24	258	260	278	302	302	274	204	210	194	194	192	200	228	200	208	250	256	242	238	238	248	244	240	280
25	262	264	A	A	292	260	206	220	208	206	198	188	204	204	200	200	226	238	228	256	270	254	254	258
26	272	272	262	262	272	266	200	218	212	206	192	194	186	200	200	208	222	232	222	252	252	250	250	262
27	260	264	282	258	272	266	232	234	218	206	202	198	198	198	212	212	244	230	230	248	248	250	250	254
28	244	260	278	E S 258	232	232	224	234	H 188	198	220	188	188	B	212	214	244	222	242	250	250	250	244	244
29	246	280 Q	250 Q	250 Q	226 Q	230	228	220	204	210	204	198	198	198	E A 208	236	222	228	228	248	248	262	260	234
30	246	252	272	252	220	220	226	224	236	210	202	192	214	214	214	A	248	238	238	238	238	A	A	246
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	29	28	27	29	26	27	25	26	29	26	27	26	25	29	29	28	28	30	27	29	29
MED	274	286	286	277	270	266	228	220	210	204	197	194	198	200	208	212	224	234	241	252	254	250	250	262
U Q	300	299	308	289	288	278	237	224	218	207	204	199	206	212	212	219	233	244	258	265	264	258	257	282
L Q	259	270	274	259	259	248	214	210	204	197	192	185	194	196	200	208	219	228	234	246	248	232	240	247

SEP.2015 h'F (KM)

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E [SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					B	A	112	112	112	108	A	A	A	A	A	108	112	98	A	A				
2					B	B	122	122	110	110	110	A	A	A	110	110	110	A	102	106				
3					A	114	114	114	106	106	106	106	106	A	116	116	116	116	A	A				
4					A	A	110	110	98	112	A	A	A	A	A	A	112	A	A	A				
5					B	B	116	112	112	112	104	108	116	116	116	116	116	116	A	A				
6					B	A	116	116	116	110	110	112	A	104	104	116	116	120	A	A				
7					B	B	110	118	110	110	110	110	110	110	110	110	118	118	118	A				
8					118	118	112	112	112	112	112	106	106	106	116	116	112	A	A					
9					B	A	112	112	112	112	112	112	112	112	118	118	118	122	A	B				
10					A	124	134	120	114	114	114	114	114	114	114	114	114	114	114	A				
11					B	B	100	106	106	106	A	A	A	A	A	A	118	118	B					
12						118	B	110	A	A	A	110	A	110	110	110	122	122	A					
13						116	116	110	A	110	114	112	114	110	112	112	112	114	108					
14						114		114	114	106	112	112	112	112	112	112	116	122	A					
15						120	128	118	112	112	A	112	A	A	116	116	122	122	A					
16						A	110	116	114	A	114	A	112	108	108	108	108	132	B					
17						120	A	120	120	112	A	112	106	106	106	106	106	108	104					
18						118	A	118	118	118	A	118	A	A	96	A	114	118	B					
19							118	124	120	110	110	110	110	114	108	108	114	114	B					
20						B	124	124	124	124	112	110	110	110	116	116	132	126	B					
21						B	126	118	118	118	118	116	108	110	120	120	130	130	B					
22						S	130	120	120	122	122	114	114	114	114	114	124	124	116					
23						120	A	A	116	116	110	112	112	112	120	120	120	A	B					
24						B	122	122	118	118	118	110	110	110	116	114	124	A	A					
25						B	122	124	116	116	112	116	114	110	116	116	126	A	A					
26							126	120	116	116	116	116	110	110	114	114	A	A	B					
27						B	136	126	122	120	110	106	122	116	116	116	A	A	A					
28						B	A	116	112	112	A	112	112	B	112	112	120	120	B					
29						B	118	118	118	118	118	110	110	A	116	116	124	126	B					
30						B	126	118	130	122	A	112	112	112	114	114	114	E A 156	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	10	24	29	28	28	21	25	22	21	27	27	28	22	6	1				
MED					118	118	118	118	115	112	112	112	112	110	114	114	116	120	111	106				
U Q						120	126	120	118	118	115	113	114	113	116	116	122	124	116					
L Q						116	112	112	112	110	110	110	110	110	110	110	113	116	104					

SEP.2015 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

SEP.2015 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	108	102	102	102	102	102	114	114	114	108	104	104	96	104	94	98	118	94	120	104	104	104	104	104
2	104	104	104	94	104	104	120	120	106	106	106	108	100	106	104	124	126	118	114	110	B	112	116	106
3	100	100	100	108	106	106	120	108	102	108	100	100	100	108	122	122	112	112	112	112	122	112	106	106
4	100	100	100	104	104	122	106	110	110	106	106	136	102	102	102	102	128	106	98	98	98	106	106	106
5	106	102	102	102	B	112	118	108	108	108	104	104	104	118	118	120	120	114	114	114	114	110	110	118
6	104	104	104	104	108	108	108	112	106	106	102	112	100	140	130	130	116	116	110	110	110	110	110	96
7	96	96	96	104	104	104	122	110	110	110	110	114	116	126	134	124	142	114	114	108	116	112	88	118
8	112	112	96	130	116	112	112	124	114	114	108	120	134	122	118	118	110	112	112	106	102	110	96	96
9	98	98	98	B	118	112	112	112	116	154	106	100	100	100	100	112	112	124	124	B	B	B	B	116
10	128	122	122	114	114	114	120	116	116	116	112	114	116	124	110	114	116	112	G	112	112	114	106	106
11	106	B	132	104	114	108	114	114	114	104	104	104	104	104	104	104	98	104	B	B	B	B	B	172
12	136	122	124	112	96	104	114	106	112	106	98	G 80	104	104	132	140	122	132	112	118	112	112	100	100
13	100	98	98	98	98	108	108	108	104	100	100	G	104	198	100	100	112	108	102	104	104	104	104	104
14	108	100	100	100	114	114	114	110	110	102	112	170	176	104	102	102	116	122	102	100	100	106	102	98
15	B	100	108	108	92	124	118	118	108	108	108	104	104	114	G	138	130	116	112	112	112	108	108	104
16	94	94	94	106	112	112	112	112	104	112	106	102	128	92	G	G	128	132	B	108	108	108	108	100
17	B	B	B	100	B	110	110	112	112	112	112	G	98	102	G	102	112	108	94	108	108	94	94	94
18	100	122	94	B	104	112	108	108	116	104	98	122	102	96	96	108	116	104	100	94	94	102	102	102
19	94	94	94	B	B	104	102	102	102	94	148	G	G	100	100	96	124	96	96	104	94	94	94	B
20	86	B	104	104	B	B	122	118	106	106	G	104	94	110	110	128	150	122	96	B	96	B	B	136
21	130	130	120	120	110	Q 110	110	110	110	110	110	G	G	104	102	110	116	116	108	B	108	B	B	B
22	100	124	B	B	102	S	158	148	124	116	124	116	116	130	170	106	114	132	118	102	112	112	116	116
23	108	124	116	124	116	112	112	104	104	100	100	106	106	160	134	132	114	114	114	B	B	114	B	B
24	102	B	B	120	B	120	G	118	114	146	160	116	106	98	110	110	110	114	114	114	B	B	B	114
25	B	104	104	104	104	104	104	128	114	126	126	106	106	106	106	106	134	120	108	108	108	102	102	B
26	B	B	B	B	96	B	106	112	110	G	G	104	170	G	G	110	106	106	B	106	98	98	98	98
27	94	B	110	110	120	114	180	170	112	106	120	G	120	114	114	112	106	106	100	100	92	92	B	B
28	B	B	112	S	S	104	152	108	112	112	106	106	106	B	G	118	124	112	B	B	B	B	104	96
29	106	134	B	112	112	112	158	102	108	118	114	106	106	110	114	G	114	G	B	106	112	108	108	B
30	B	92	100	100	110	110	152	166	112	110	110	106	G	134	108	110	116	116	B	112	112	112	104	104
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	24	23	25	24	24	27	29	30	30	29	28	25	27	28	25	28	30	29	23	24	24	24	23	24
MED	103	102	102	104	107	110	114	112	110	108	107	106	104	107	110	111	116	114	112	108	108	108	104	104
U Q	108	122	111	112	114	112	121	118	114	113	112	115	116	123	120	123	124	119	114	112	112	112	108	115
L Q	99	98	98	102	103	104	109	108	106	106	104	104	100	103	102	105	112	107	100	104	99	103	100	99

SEP.2015 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E kSWEEP 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	F4	F3	F3	F3	LL11	LL11	C2	C2	C2	C2	L1	L1	L1	L2	L3	LC11	C2	C2	LL32	L1	F4	F4	F3	FQ41
2	FQ31	FQ31	F3	F2	L1	L1	C2	C1	C2	C2	C2	L2	L1	L2	C2	C2	C2	LL43	CQ31	CQ41		F2	F1	F2
3	F1	F2	F2	F2	L3	L3	C2	C3	C2	C2	C2	C2	C2	L1	C1	C1	C2	C4	L2	L5	F4	FQ31	FQ31	FQ51
4	FQ41	FQ41	FQ51	FQ21	LQ21	LL11	C2	C2	C2	C2	L2	LL12	L2	L2	L2	L2	C2	LL12	L4	L4	F3	F5	F3	F5
5	F4	F8	F5	F4		L1	C2	C2	C2	C2	C2	C2	C2	C1	C2	C1	C3	C4	L4	L3	FQ32	FQ51	FQ21	FF12
6	F4	F4	F4	F8	C2	L4	C3	C3	C3	C2	C2	C1	C2	CL12	C1	C2	C2	C2	L3	L3	F3	F3	F3	F3
7	F2	F2	F1	F1	C2	L1	C2	C2	C4	C2	C2	C1	C1	C2	CL21	C2	C2	C3	LC31	L5	F3	F1	F1	F1
8	F3	F1	F1	F4	F7	C2	C3	C2	C2	C2	C1	C1	C1	C1	C2	C2	C2	C3	L4	L4	F3	F1	F3	F1
9	F2	FF11	F1		L1	L3	C2	C2	C2	C1	C2	L1	LC21	LC21	LC21	LC21	C2	C2	L1					F1
10	F2	F3	F2	F2	L2	C4	C2	C3	C3	C2	C2	C1	C1	C1	C2	C2	C2	C2		L2	F5	F3	F1	F1
11	F1		F1	FF11	L5	L3	C3	C2	C2	C2	C2	L2	L2	L2	L2	LL31	LC21	LC21						F1
12	L1	F3	F3	F2	FF11	C2	C2	C1	L1	L1	L2	L1	L2	LC11	C1	C2	C2	C2	L5	F4	F5	F2	F2	F3
13	F4	F2	F2	F1	F1	C1	C3	C3	L2	LC21	LC11		C1	C1	LC21	CL12	C2	CL11	C2	FQ21	FQ31	F1	F3	F2
14	F2	F3	F2	F2	F2	C3	C3	C2	C1	C1	C1	CL11	C1	LC11	LC11	LC11	C2	C2	L3	F3	F1	F2	F1	F1
15		F1	F1	F1	F1	C2	C2	C3	C3	C2	C2	C1	C1	C1		C2	C3	C5	L4	FQ32	FQ42	FQ31	FQ21	F3
16	FQ31	F2	F2	FF11	F1	L5	C3	C2	C2	C2	L2	L1	CL11	L1			C2	C2		C2	F3	F3	F2	F3
17				F1		C2	L2	C2	C2	C2	L1		L2	L1		L2	C2	CL21	C2	FF11	F1	F1	F1	F1
18	F2	F1	F1		F1	C3	L2	C2	CL21	LC11	LC21	C1	C2	L2	C2	L3	CL22	LC12	L1	F1	F1	F2	F2	F4
19	F2	F1	F1			L1	L2	L2	L1	LC22	C2			L2	L1	L2	CL22	LC22	L1	F3	FF11	F2	F1	
20	F1		F1	FF11			C2	C3	C2	C1		L1	L1	C1	L1	C1	C2	C2	L1		F1			F1
21	F1	F2	F3	F5	F6	L3	LC11	LC11	C1	L1	L1			L1	L1	L2	L2	L2	L1		F1			
22	F1	F1			F1		C1	CL22	C2	CL22	CL12	C1	C2	C1	C1	C2	C2	C2	C1	F1	FF33	F4	F5	F7
23	F5	F3	F4	F3	F3	C3	L3	L3	L1	L2	L1	L1	L1	CL11	CL21	CL21	C2	C2	L1			F1		
24	F1			FF11		L1		C2	C1	CL11	C1	C2	C1	L1	CL12	CL22	CL32	C4	L4	F4				FF11
25		F3	F5	F4	F4	L2	C2	C2	C2	C1	C1	L1	L1	LC11	L1	L3	CL12	L2	L2	F1	F1	F2	F1	
26					F1		LC12	C2	CL11			LC11	C1			C2	L3	L4		F2	F1	F1	F1	F1
27	F1		F1	F1	F1	L1	C2	C2	LC11	L1	C1		C1	C1	C2	C2	L3	L2	L3	F1	F2	F1		
28			F1			L1	CL12	C2	C2	C2	L1	C2	C2			CL11	C2	C2					F1	F1
29	F3	F1		F1	F2	L1	L1	C2	C2	CL21	C1	C1	C1	L1	C1		L2			F2	F2	F3	F1	
30		F1	F1	F1	F1	L3	CL21	C1	C1	C1	L1	L2		C1	C2	CL11	CL21	L1		F2	F2	F3	F3	F3
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

SEP. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 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 49	X 48	X 46	X 46	X 45															X 89	X 80	X 75	X 66	X 66
2	X 61	X 57	X 56	X 52	X 51															X 88	X 69	X 62	65	X 56
3	X 56	X 52	X 48	X 49	X 47														X 75	X 77	X 78	X 74	X 57	X 59
4	X 59	X 54	X 56	X 54	X 54															X 74	X 72	X 64	X 49	X 46
5	X 46	X 46	X 49	X 46	X 41															X 72	X 64	X 53	57	X 52
6	X 50	X 47	X 46	X 45	X 43															X 78	X 63	X 48	X 48	52
7	52	50	X 46	X 39	A															X 88	X 75	A	X 42	X 43
8	A	A	X 41	X 40	X 43															X 64	X 67	X 44	X 43	X 42
9	X 43	X 43	X 42	X 43	X 42															X 70	X 73	X 75	X 66	X 61
10	X 54	X 55	X 50	X 55	X 59															X 75	X 62	X 56	X 54	X 46
11	X 44	X 43	X 40	X 30	X 30															X 77	X 79	X 71	X 78	X 49
12	X 37	X 36	X 39	X 39	X 40														X 72	X 77	X 78	X 60	X 58	X 48
13	X 43	X 43	X 42	X 40	X 39															X 88	X 76	X 66	X 53	X 51
14	X 52	X 45	X 48	X 46	X 41															X 78	X 71	X 61	X 62	X 60
15	X 51	X 49	X 44	X 46	X 44															X 79	X 60	X 55	X 52	X 50
16	X 49	X 49	X 49	X 48	X 40															X 72	X 64	X 51	X 50	X 50
17	X 47	X 47	X 46	X 45	X 44															X 81	X 54	X 53	X 52	X 51
18	X 50	X 49	X 49	X 49	X 48															X 65	X 55	X 56	X 56	X 53
19	X 52	X 51	X 51	X 51	X 46															X 73	X 68	X 69	X 60	X 54
20	X 53	X 52	X 50	X 47	X 46														X 80	X 86	X 82	X 74	X 58	X 58
21	X 46	X 46	X 48	X 50	X 49															X 52	X 49	X 45	X 45	X 44
22	X 45	X 41	X 40	X 39	X 38															X 73	X 56	X 48	X 47	X 47
23	X 46	X 44	X 44	X 44	X 45															X 76	X 64	X 62	X 60	X 60
24	X 56	X 54	X 49	X 48	X 46														X 94	X 70	X 46	X 48	X 52	X 52
25	X 47	X 42	X 40	X 40	X 40															X 82	X 60	X 58	X 57	X 55
26	X 54	X 55	X 52	X 49	X 45															X 73	X 59	X 61	X 61	X 55
27	X 53	X 52	X 50	X 50	X 49															X 70	X 66	X 59	X 58	X 58
28	X 57	X 58	X 57	X 58	X 54															X 81	X 75	X 71	X 65	X 64
29	X 62	X 53	X 55	X 55	X 56														X 91	X 70	X 58	X 55	X 56	X 56
30	X 52	X 49	X 51	X 53	X 47	48														X 78	X 75	X 61	X 56	X 57
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	29	1													5	30	30	29	30	30
MED	X 51	X 49	X 48	X 46	X 45	48													X 80	X 76	X 66	X 60	X 56	X 52
U Q	X 54	X 52	X 50	X 50	X 48														X 92	X 81	X 75	X 68	X 60	X 58
L Q	X 46	X 44	X 44	X 43	X 41														X 74	X 72	X 60	X 53	X 52	X 49

SEP.2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'E KSWEEP 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	43	42	40	40	38	39	54	66	69	61	63	62	67	57	62	68	70	69	76	83	74	69	59	60
2	55	51	50	46	45	47	58	68	76	68	67	71	64	61	72	75	73	72	72	82	63	56	F	50
3	50	46	42	43	41	39	56	82	90	65	64	64	69	66	67	72	64	64	69	70	72	68	50	52
4	53	48	50	48	48	48	53	65	68	63	56	R 54	69	64	67	68	63	54	59	68	66	57	42	40
5	40	40	43	40	35	35	61	76	76	55	55	A	60	59	56	58	62	65	62	66	58	47	F	46
6	44	41	40	39	37	35	43	54	58	58	49	A	A	56	52	56	55	60	64	72	56	42	42	F
7	F	F	40	32	A	25	48	63	70	65	60	66	62	62	64	63	64	72	72	82	68	A	36	37
8	A	A	35	34	37	29	41	52	50	50	52	50	56	52	54	51	54	50	50	58	61	38	36	36
9	36	37	36	36	36	34	44	45	54	58	62	70	70	64	65	67	71	77	66	64	67	69	60	55
10	48	49	44	49	53	42	48	50	79	53	51	52	63	68	58	62	62	A	65	69	56	50	48	40
11	38	36	34	24	24	35	46	56	52	57	57	58	65	64	66	65	64	71	76	71	73	65	72	43
12	31	30	33	33	34	36	56	64	53	60	60	67	67	64	58	60	62	67	66	71	72	54	52	41
13	36	37	36	34	33	37	54	62	66	59	66	63	64	66	64	58	64	78	92	82	70	60	47	45
14	46	39	42	40	35	35	60	59	52	60	72	64	66	65	60	60	59	63	70	72	65	55	56	54
15	45	43	38	40	38	35	53	73	66	57	58	64	82	75	74	64	64	71	72	73	54	49	46	44
16	43	43	43	42	34	36	53	71	63	74	58	63	66	64	64	63	70	83	78	66	57	45	44	44
17	41	41	40	39	38	39	56	61	66	68	54	68	68	69	65	62	63	71	82	75	48	47	46	45
18	43	42	43	43	42	40	59	64	63	66	65	64	69	71	70	65	74	77	73	59	49	50	50	46
19	46	45	45	45	40	36	54	79	70	67	79	78	68	67	63	65	70	65	63	67	62	63	54	48
20	47	46	44	40	40	42	64	69	75	65	72	70	69	77	69	66	78	78	74	80	76	68	52	52
21	40	40	42	44	43	45	46	47	48	R 46	44	48	49	48	47	47	49	50	48	45	43	39	38	38
22	39	35	34	33	32	34	47	57	60	58	60	59	64	63	71	66	68	71	74	67	50	42	40	41
23	40	38	38	38	39	39	59	60	57	69	70	67	68	77	72	69	74	72	72	70	58	55	53	54
24	50	48	43	42	40	41	57	62	71	68	69	79	86	78	73	77	79	88	88	64	40	42	46	45
25	40	36	34	34	34	34	63	68	71	72	72	74	77	79	70	72	73	79	86	76	54	52	50	49
26	48	49	46	43	39	38	57	84	92	83	76	68	71	76	77	78	77	86	83	67	53	55	55	49
27	47	46	44	44	43	44	60	74	84	74	74	76	74	83	76	70	78	96	78	64	60	53	52	52
28	51	52	51	52	47	48	62	68	73	82	86	85	73	71	72	72	74	78	86	75	69	65	59	56
29	56	47	49	49	50	45	60	74	76	73	77	89	85	75	76	76	80	95	85	64	52	49	50	50
30	46	43	45	47	41	F	57	66	68	76	73	82	80	84	76	70	84	89	86	72	69	55	50	51
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	30	30	29	29	30	30	30	30	30	28	29	30	30	30	30	29	30	30	30	29	28	29
MED	44	42	42	40	39	38	56	64	68	65	64	66	68	66	66	66	69	72	72	70	60	54	50	46
U Q	48	46	44	44	42	42	59	71	75	69	72	72	72	75	72	70	74	78	82	75	69	62	54	52
L Q	40	38	38	36	35	35	48	59	58	58	57	62	64	63	62	62	63	65	66	66	54	47	45	42

SEP.2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								A	L	L	U L 484	U L 508	A	U L 464	U L 484	452	L	A						
2								L	U L 440	U L 468	U L 476	A	A	A	A	A	A	A	A					
3								L	A	A	U L 464	U L 492	480	A	A	L	L	A						
4								A	A	436	U L 496	U L 464	U L 452	472	456	U L 436	L	A	A					
5								L	L	L	A	A	452	452	U L 464	A	A	A	A					
6							A	A	416	440	U L 452	A	A	456	U L 472	A	A	A	A					
7								L	U L 436	L	U L 480	A	A	472	A	U L 452	L	L						
8							U L 272	U L 464	U L 420	432	U L 448	U L 440	460	U L 444	428	U L 424	U L 392	A	A					
9							L		416	452	456	A	460	472	U L 476	L	L	A						
10						A	A	U L 416	396	U L 436	404	448	U L 520	U L 408	A	A	A	A						
11							A	A	U L 440	A	U L 460	U L 496	456	460	U L 452	A	U L 436	L						
12						A	L	L	U L 440	A	A	472	476	456	U L 476	A	L	L						
13								L	A	U L 464	476	464	476	476	U L 460	U L 460	L	L						
14							A	A	A	U L 476	452	U L 492	480	U L 472	L	U L 448	L	L	A					
15								L	L	L	U L 476	U L 484	484	L	U L 468	L	A	A						
16							U L 240		L	A	A	U L 500	476	A	U L 464	L	L	L						
17									A	U L 460	L	476	U L 480	A	L	L	A	A						
18									L	452	500	U L 480	L	U L 480	U L 456	L	L							
19									L	L	U L 472	L	U L 484	476	L	L	L							
20									L	L	U L 476	U L 472	U L 488	480	L	U L 476	L	A						
21							A	U L 392	U L 420	412	U L 420	412	U L 440	436	432	U L 432	U L 408	L						
22								L	L	U L 460	U L 476	U L 472	L	U L 460	460	U L 444	L							
23								L		L	L	512	L	484	L	L	L	L						
24								L	L	L	L	U L 532	U L 476	L	L	L	L							
25								A	L	U L 456	L	L	L	L	L	L	A							
26									L	U L 460	L	L	L	U L 500	L	L	L							
27									L	L	L	U L 508	U L 508	U L 504	L	L	L							
28										L	L	U L 480	L	L	L	L								
29										L	L	U L 496	L	L	L	L	L							
30										L	L	U L 496	L	L	L	L	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	3	9	14	18	22	18	20	14	9	3							
MED							U L 256	U L 416	U L 420	U L 454	U L 474	U L 482	476	472	U L 462	U L 448	U L 408							
U Q								U L 464	U L 440	U L 460	U L 476	U L 496	U L 484	478	U L 472	U L 456	U L 436							
L Q								U L 392	416	436	U L 452	472	460	456	456	U L 434	U L 392							

SEP.2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	212	A	A	A	A	A	A	A	A	R	U R 304	A	B					
2						B	U A 212	A	R	A	A	A	A	A	A	A	A	A	B					
3						B	A	A	A	A	A	R	A	A	A	A	A	A						
4						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
5						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
6						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
7						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
8						B	A	A	A	A	A	R	332	R	A	A	A	A	B					
9						B	B	U R 264	R	R	R	A	R	R	R	R	R	A	B					
10						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
11						B	A	A	A	A	A	A	A	R	R	A	A	U A 204	B					
12						B	A	A	A	A	A	A	A	R	R	A	U R 292	A						
13						B	B	A	A	A	A	A	A	R	A	R	A	A	B					
14						B	R	A	A	A	R	A	A	A	R	A	U R 264	A	B					
15						B	200	A	A	A	A	A	A	A	A	A	A	A	B					
16						B	B	R	A	A	A	A	R	A	A	R	U R 280	A	B					
17						B	B	A	A	A	A	A	A	A	A	A	A	A	B					
18						B	B	R 280	R	A	R	R	R	R	A	R	R	A	B					
19						B	A	A	R 296	U R 364	R	A	R	A	R	U R 316	268	A	B					
20						B	U A 184	A	A	A	R	A	R	R	R	R	R	A						
21						B	B	A	A	R	R	R	352	A	A	A	A	A	B					
22						B	U R 208	A	U R 328	R	R	A	R	A	U A 336	A	A	R	B					
23						B	A	264	U R 320	A	R	R	R	R	R	U R 328	A	A	B					
24						B	176	U R 260	A	A	A	R	R	R	R	R	A	A						
25						B	A	A	A	A	A	A	A	R	R	R	A	A	B					
26						B	U R 192	U R 284	R	R	A	R	A	A	R	U R 316	U R 268	188	B					
27						B	164	U R 272	A	R	R	A	R	A	R	R	A	U R 216	B					
28						B	U A 196	272	A	R	A	R	A	R	R	R	R	A	B					
29						B	U R 212	A	A	A	A	R	R	R	R	R	U R 276	U R 220						
30						B	180	A	A	R	R	R	R	A	R	U R 324	U R 280	A	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							11	7	3	1			2		1	4	8	4						
MED							U 196	U R 272	U R 320	U R 364			342		U A 336	U R 320	U R 278	U 210						
U Q							U 212	R 280	U R 328							U R 326	U R 286	U R 218						
L Q							180	264	R 296							U R 316	U R 268	196						

SEP.2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 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 22	E B 14	E B 14	E B 15	E B 15	E B 15	27	33	38	J A 43	40	J A 44	J A 55	J A 48	42	G	G	J A 40	J A 44	J A 37	J A 84	J A 27	J A 45	J A 34
2	J A 30	J A 26	J A 20	19	20	E B 15	26	31	G	J A 40	J A 47	J A 75	J A 66	J A 66	J A 66	J A 52	J A 76	J A 48	J A 57	J A 60	J A 54	J A 76	J A 33	J A 26
3	J A 22	19	J A 19	J A 20	20	J A 32	J A 33	J A 39	38	40	42	G	41	45	J A 50	37	36	J A 38	J A 36	J A 26	J A 29	J A 62	J A 42	J A 30
4	J A 28	J A 34	J A 28	J A 29	J A 24	J A 22	J A 30	J A 53	J A 50	36	J A 49	J A 43	J A 44	J A 52	J A 47	J A 43	J A 41	29	J A 31	J A 30	J A 24	J A 27	22	J A 31
5	J A 38	J A 31	22	22	J A 20	22	24	30	34	36	J A 65	J A 108	42	39	43	J A 48	J A 44	J A 37	J A 39	J A 39	J A 57	J A 56	J A 44	J A 52
6	J A 25	J A 27	J A 28	21	22	E B 14	J A 34	J A 42	J A 44	J A 41	J A 40	J A 62	J A 54	J A 38	43	J A 46	J A 46	J A 42	J A 46	J A 78	J A 88	J A 29	20	21
7	J A 20	21	20	E B 15	J A 28	J A 25	J A 28	J A 30	33	40	41	J A 75	J A 46	41	J A 58	J A 142	35	J A 77	J A 60	J A 47	J A 47	J A 60	J A 32	J A 19
8	J A 84	J A 142	J A 45	J A 34	J A 33	22	J A 35	J A 40	J A 36	J A 40	J A 37	G	38	39	38	35	J A 37	J A 39	J A 34	J A 30	J A 30	J A 24	J A 27	J A 23
9	22	E B 15	E B 14	E B 15	J A 20	J A 22	21	G 23	G 28	G 30	G 33	J A 46	G 30	G 30	G 26	G 27	G 20	28	21	21	J A 21	22	J A 24	E B 15
10	E B 15	21	J A 18	J A 27	J A 39	J A 37	J A 36	J A 36	35	40	38	39	41	40	44	J A 51	J A 52	J A 87	J A 54	J A 75	J A 38	J A 80	J A 37	J A 30
11	E B 15	E B 15	J A 19	19	E B 16	E B 14	J A 34	J A 48	J A 44	J A 49	J A 60	37	38	G	G	J A 44	33	28	E B 15	J A 19	J A 20	J A 30	J A 24	19
12	E B 16	20	21	J A 21	J A 26	J A 30	25	29	J A 42	J A 47	J A 53	40	40	G	G	40	G	26	J A 36	J A 30	J A 23	J A 30	J A 28	J A 31
13	J A 36	J A 28	J A 23	J A 21	J A 18	23	22	J A 31	J A 65	J A 42	J A 43	40	39	G 32	38	G	35	27	J A 28	J A 23	J A 24	J A 36	J A 58	J A 54
14	J A 38	J A 35	J A 46	J A 45	J A 27	J A 22	J A 27	J A 39	J A 36	36	G 32	37	39	39	G	J A 34	G	J A 44	J A 38	J A 33	J A 40	J A 28	20	19
15	J A 23	20	22	19	19	21	23	31	36	36	40	40	37	42	40	37	35	J A 38	J A 24	J A 29	J A 28	J A 33	22	J A 21
16	J A 26	18	E B 15	20	21	21	J A 25	G	J A 42	J A 72	J A 65	J A 40	G 31	J A 50	36	G	G	22	20	E B 14	J A 26	J A 32	J A 25	J A 34
17	J A 42	J A 32	J A 23	J A 24	22	20	21	31	J A 60	J A 48	J A 44	44	J A 44	J A 67	J A 43	36	J A 41	J A 39	J A 58	J A 62	J A 64	J A 46	J A 38	J A 22
18	J A 19	J A 22	22	20	E B 15	E B 14	22	G 24	G	38	G 31	G	G 29	G	38	G	G	23	E B 14	21	E B 14	E B 14	E B 14	J A 27
19	J A 20	J A 18	E B 15	E B 15	E B 15	22	22	34	G	G	G	41	G 31	41	G 30	G 28	31	26	J A 22	J A 20	21	J A 20	21	J A 23
20	E B 15	E B 15	E B 14	E B 15	18	20	23	32	J A 39	38	G	39	G	G	G	G	G 19	J A 33	J A 45	22	J A 19	J A 21	28	20
21	18	E B 15	E B 15	E B 15	19	J A 26	J A 28	29	J A 44	G 28	G	G	39	40	37	36	33	J A 27	J A 20	E B 16	J A 25	J A 20	E B 15	E B 14
22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	28	G	G 29	G 36	J A 42	G 29	41	40	36	33	G 20	J A 25	J A 32	J A 30	J A 24	J A 34	E B 14
23	J A 24	J A 24	J A 24	J A 25	J A 20	J A 24	23	G 23	G 28	J A 46	G	G 29	G	G	G	G	34	23	28	J A 24	E B 15	E B 14	E B 14	E B 14
24	E B 15	E B 15	19	19	20	E B 16	20	G	34	J A 38	40	G	G	G	G	G	34	23	J A 20	21	E B 14	E B 15	J A 24	J A 26
25	21	E B 15	E B 13	20	E B 14	E B 14	27	J A 49	J A 37	38	39	41	44	G	G	G	34	22	E B 15	E B 14	E B 15	J A 28	J A 36	J A 22
26	23	21	21	J A 20	E B 14	E B 14	G	G	G	G	42	G	40	41	G	G	G	22	21	E B 15	E B 15	J A 22	J A 24	J A 23
27	18	21	21	19	19	E B 15	26	G	J A 44	G 28	G 32	42	G	40	G	G	J A 40	J A 29	J A 35	J A 30	22	J A 61	J A 46	J A 28
28	J A 20	22	21	20	E B 15	J A 25	24	34	39	G	41	G	40	G	G	G	G	22	E B 14	J A 26	E B 14	E B 16	E B 14	E B 14
29	E B 15	J A 24	E B 14	18	E B 15	E B 15	G	J A 36	36	40	38	G	G	G	G	G	G	G	E B 15	J A 23	J A 36	J A 38	J A 26	J A 26
30	E B 15	20	E B 15	21	20	E B 14	24	33	36	G 30	G	G	G	41	G	G	G	25	J A 52	J A 23	J A 22	20	23	J A 24
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J A 22	21	20	20	20	21	24	31	36	38	40	40	39	40	36	G	34	28	J A 30	J A 26	J A 24	J A 28	J A 26	J A 23
U Q	J A 26	J A 26	J A 22	J A 21	J A 22	J A 23	28	36	J A 42	J A 41	J A 43	J A 43	J A 42	J A 41	J A 43	J A 40	J A 37	J A 39	J A 44	J A 33	J A 38	J A 38	J A 36	J A 30
L Q	E B 16	E B 15	E B 15	E B 18	E B 15	E B 15	22	G 28	G 33	G	G	G	G	G	G	G	G	23	E B 20	21	E B 20	21	22	E B 19

SEP.2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 14	E B 14	E B 15	E B 15	E B 15	24	30	36	36	37	40	48	40	39	G	G	35	37	18	38	19	22	24
2	17	E B 15	18	E B 15	E B 14	E B 15	23	30	G	35	43	50	52	54	58	44	39	42	52	40	44	49	24	19
3	E B 15	E B 15	E B 15	E B 15	E B 16	23	28	30	36	38	39	G	38	42	46	36	34	34	33	21	24	20	18	19
4	20	20	E B 15	21	E B 15	E B 15	26	48	46	35	41	39	37	39	35	34	30	28	27	21	E B 16	18	E B 16	17
5	18	E B 15	E B 15	E B 15	E B 15	E B 15	22	28	32	34	46	A A 108	39	37	41	43	40	32	32	31	31	27	E B 16	E B 15
6	E B 14	20	E B 15	E B 16	E B 15	E B 14	27	36	35	35	35	A A 62	A A 54	36	40	42	40	37	42	30	23	17	E B 15	E B 15
7	E B 15	E B 16	E B 15	E B 15	A A 28	18	23	26	30	37	38	60	43	38	50	35	32	25	19	22	22	A A 60	20	E B 15
8	A A 84	A A 142	E B 15	20	18	E B 16	19	35	30	36	35	G	36	37	35	33	31	26	23	27	20	E B 15	18	E B 16
9	E B 16	E B 15	E B 14	E B 15	E B 16	E B 16	19	G 22	G 27	G 30	G 32	42	G 28	G 28	G 25	G 25	G 19	27	19	E B 14	18	E B 16	18	E B 15
10	E B 15	E B 15	E B 15	E B 15	18	28	31	32	34	36	35	36	38	36	44	40	45	A A 87	20	32	19	25	17	19
11	E B 15	E B 15	E B 15	E B 15	E B 16	E B 14	30	31	33	44	36	37	36	G	G	40	31	24	E B 15	E B 15	E B 15	19	18	E B 15
12	E B 16	E B 15	E B 15	18	22	21	21	28	34	42	43	37	39	G	G	38	G	25	28	22	19	18	20	22
13	19	E B 15	E B 15	E B 15	E B 15	E B 15	20	26	52	35	36	37	36	G 30	37	G	32	22	20	E B 15	18	19	32	25
14	24	20	30	33	17	19	24	34	34	34	G 30	36	37	36	G	32	G	24	22	19	22	20	E B 15	E B 15
15	E B 15	E B 16	E B 15	E B 15	E B 16	E B 15	20	29	33	33	37	37	35	36	36	34	33	32	17	18	18	23	E B 15	E B 15
16	20	E B 15	E B 15	E B 15	E B 15	E B 15	21	G	32	68	54	38	G 30	41	33	G	G	22	19	E B 14	17	18	16	19
17	26	E B 15	20	E B 15	E B 15	E B 15	20	27	45	37	38	39	39	42	36	35	37	34	44	18	17	23	20	E B 15
18	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	20	G 21	G	36	G 29	G	G 28	G	36	G	G	22	E B 14	E B 15	E B 14	E B 14	E B 14	18
19	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	20	30	G	G	G	38	G 29	37	G 28	G 28	28	24	19	E B 15	E B 15	15	E B 15	E B 15
20	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	20	31	32	34	G	36	G	G	G	G	G 18	27	38	E B 15	E B 15	E B 15	20	E B 15
21	E B 15	E B 15	E B 15	E B 15	E B 15	22	23	28	34	G 26	G	G	38	38	35	34	30	26	E B 16	E B 16	15	E B 14	E B 15	E B 14
22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	27	G	G 28	G 35	40	G 27	38	38	34	30	G 19	18	25	22	19	E B 15	E B 14
23	E B 14	15	E B 15	E B 16	E B 15	E B 15	20	G 22	G 25	36	G	G 27	G	G	G	G	30	21	24	E B 15	E B 15	E B 14	E B 14	E B 14
24	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	19	G	32	36	38	G	G	G	G	G	28	21	E B 15	E B 15	E B 14	E B 15	18	21
25	E B 16	E B 15	E B 13	E B 15	E B 14	E B 14	23	41	33	36	38	38	39	G	G	G	31	20	E B 15	E B 14	E B 15	16	18	17
26	E B 16	E B 15	E B 15	E B 16	E B 14	E B 14	G	G	G	G	38	G	38	39	G	G	G	21	E B 15	E B 15	E B 15	17	18	E B 16
27	17	E B 15	E B 16	E B 15	E B 15	E B 15	21	G	34	G 27	G 32	40	G	36	G	G	29	G 18	16	16	E B 16	40	17	20
28	E B 16	16	E B 15	15	E B 15	E B 14	22	31	34	G	38	G	39	G	G	G	G	20	E B 14	E B 15	E B 14	E B 16	E B 14	E B 14
29	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	31	34	37	34	G	G	G	G	G	G	G	E B 15	16	26	30	E B 15	16
30	E B 15	E B 16	E B 15	E B 16	E B 15	E B 14	22	30	31	G 29	G	G	G	38	G	G	G	20	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	21	30	33	35	36	37	36	36	34	G	30	24	19	16	18	18	17	E B 16
U Q	17	16	E B 15	16	16	16	23	31	34	36	38	40	39	38	38	35	32	32	28	22	22	23	18	19
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 26	G 30	G	G	G	G	G	G	G	G	21	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

SEP.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 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	14	14	15	15	15	13	11	14	14	18	16	24	19	17	17	15	12	14	16	16	15	15	14
2	15	15	15	15	14	15	15	14	14	13	19	24	22	16	16	14	14	14	15	14	15	15	14	16
3	15	15	15	15	16	14	14	14	15	14	15	18	16	16	17	17	13	14	14	14	15	14	15	15
4	14	14	15	15	15	15	14	12	16	14	14	14	16	16	16	13	12	12	14	14	16	15	16	15
5	15	15	15	15	15		14	13	14	14	19	17	17	17	16	13	13	14	15	15	15	14	16	15
6	14	16	15	16	15	14	14	16	14	14	11	16	14	14	15	15	14	13	15	15	15	15	15	15
7	15	16	15	15	14	14	14	13	13	13	16	15	14	17	11	11	14	14	15	15	15	15	14	15
8	16	15	15	15	14	16	14	14	14	16	14	14	16	14	15	14	14	13	14	14	16	15	15	16
9	16	15	14	15	16	16	15	14	14	17	18	16	16	18	16	14	14	14	14	14	15	16	15	15
10	15	15	15	16	16	15	14	13	14	16	18	14	15	16	18	14	14	14	13	15	14	16	15	15
11	15	15	15	15	16	14	14	14	13	13	16	15	18	14	20	18	14	13	15	15	15	16	15	15
12	16	15	15	14	15	15	13	14	14	14	18	16	17	19	16	13	13	15	13	15	15	15	16	16
13	15	15	15	15	15	15	14	15	15	14	17	17	14	14	14	12	13	13	14	15	14	15	16	16
14	16	14	14	15	15	15	14	14	15	12	16	15	20	17	16	13	14	14	14	15	15	14	15	15
15	15	16	15	15	16	15	15	16	14	12	13	16	17	19	18	13	14	14	15	15	15	15	15	15
16	14	14	15	15	15	15	15	14	14	16	15	14	20	16	11	13	13	15	15	14	15	15	14	15
17	15	15	16	15	15	15	15	14	14	17	13	18	25	18	17	14	14	16	16	15	17	15	15	15
18	15	14	15	16	15	14	15	14	17	14	15	20	19	19	17	15	14	14	14	15	14	14	14	16
19	15	16	15	15	15	15	13	14	14	15	15	13	16	14	17	15	14	15	14	15	15	15	15	14
20	15	15	14	15	15	15	13	13	14	15	15	16	15	17	16	18	14	14	14	15	15	15	14	15
21	15	15	15	15	15	14	14	13	15	12	13	11	16	18	14	12	12	14	16	16	15	14	15	14
22	15	15	15	15	15	15	15	14	19	15	20	16	16	20	16	16	14	12	14	14	16	15	15	14
23	14	15	15	16	15	15	15	14	13	16	15	18	16	17	14	13	12	13	14	15	15	14	14	14
24	15	15	15	15	15	16	14	14	14	14	17	17	18	15	14	12	12	14	15	15	14	15	16	15
25	16	15	13	15	14	14	15	13	14	12	16	16	16	20	18	16	13	14	15	14	15	14	15	14
26	16	15	15	16	14	14	16	15	15	19	13	16	13	15	14	13	14	15	15	15	15	15	16	16
27	15	15	16	15	15	15	14	13	13	18	18	21	18	17	16	14	14	14	14	16	16	15	14	16
28	16	16	15	15	15	15	15	13	15	17	16	19	19	17	17	15	14	14	14	15	14	16	14	14
29	15	15	14	15	15	15	13	12	12	14	16	18	18	17	17	16	14	14	15	14	15	16	15	15
30	15	16	15	16	15	14	14	14	15	16	17	16	20	17	16	13	14	14	15	15	15	15	14	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	15	14	14	14	14	16	16	16	17	16	14	14	14	14	15	15	15	15	15
U Q	16	15	15	15	15	15	15	14	15	16	18	18	19	18	17	15	14	14	15	15	15	15	15	15
L Q	15	15	15	15	15	14	14	13	14	14	15	15	16	16	15	13	13	13	14	14	15	15	14	15

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 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	290	298	294	309	303	335	365	369	378	370	345	308	345	366	310	316	336	324	316	318	321	305	318	283
2	300	288	296	296	300	307	345	339	366	364	338	337	318	308	308	330	338	332	305	335	343	292	F	288
3	305	307	287	308	303	290	341	343	377	361	359	309	321	310	306	339	327	322	308	300	311	342	302	268
4	284	282	292	288	295	325	321	334	373	331	285	R 239	304	302	310	337	335	315	311	309	329	324	301	285
5	272	279	302	311	300	294	332	343	361	352	306	A	308	316	296	303	320	326	329	316	329	292	F	294
6	291	292	301	300	285	296	326	363	334	365	332	A	A	317	278	328	325	324	329	343	348	272	282	F
7	F	F	332	366	A	321	316	347	330	370	335	327	329	332	315	309	306	318	306	333	366	A	277	289
8	A	A	271	281	377	282	296	277	281	286	267	255	295	268	295	312	326	319	307	298	335	292	287	288
9	278	278	283	305	298	300	353	377	322	303	309	319	334	309	300	299	321	345	326	265	276	309	294	284
10	277	287	288	280	335	291	284	249	351	255	347	267	307	345	327	326	332	A	324	323	316	279	290	286
11	296	298	283	312	292	305	334	370	336	333	325	280	323	319	316	324	315	325	320	285	293	270	313	342
12	282	272	289	289	303	338	348	349	333	316	313	325	335	330	325	320	311	340	324	314	321	297	314	303
13	289	280	317	304	304	310	353	346	353	322	332	346	323	334	333	311	313	328	341	333	329	320	297	293
14	313	274	262	280	300	302	359	379	354	309	361	314	334	344	335	332	333	327	328	325	332	280	296	312
15	304	290	278	295	281	294	364	358	366	349	277	302	316	316	326	314	329	329	338	351	333	299	297	274
16	306	287	306	332	300	323	352	370	325	362	359	310	331	327	338	324	330	349	356	333	336	289	269	291
17	294	295	286	288	299	301	366	363	369	360	377	310	319	311	332	315	326	339	338	353	288	284	283	292
18	300	288	285	315	316	311	371	357	366	350	323	323	295	327	340	326	331	351	354	339	287	292	301	320
19	301	303	294	323	329	320	339	371	354	342	346	344	347	354	344	328	345	333	313	308	308	305	318	301
20	300	296	299	297	297	322	368	373	377	380	352	348	322	340	320	326	329	325	291	290	304	318	299	327
21	277	270	284	289	276	282	342	278	302	R 258	272	257	277	299	293	282	314	329	328	315	308	290	289	277
22	290	291	296	299	299	312	367	355	367	343	352	319	326	318	322	326	326	329	331	343	332	302	282	303
23	300	284	300	320	319	323	382	365	342	357	319	321	325	330	327	334	352	350	323	348	303	285	295	295
24	300	302	319	286	280	283	375	359	363	345	338	319	320	326	319	325	331	341	355	356	308	286	297	332
25	312	314	278	291	298	311	362	355	377	357	359	334	335	335	316	332	337	330	344	346	312	286	283	295
26	291	300	308	315	297	300	326	352	355	367	346	349	315	328	334	340	329	341	348	358	290	300	315	307
27	310	319	289	310	301	305	367	358	356	369	349	347	334	331	343	326	326	340	338	325	316	300	292	301
28	305	300	309	310	325	338	351	368	350	353	340	362	341	326	339	325	335	330	317	332	320	311	312	302
29	313	287	297	312	330	315	360	361	354	344	345	337	345	321	314	318	317	335	341	337	296	275	280	299
30	301	310	308	321	328	F	374	362	350	362	327	335	326	323	339	318	326	330	340	334	331	324	281	288
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	30	30	29	29	30	30	30	30	30	28	29	30	30	30	30	29	30	30	30	29	28	29
MED	300	290	294	304	300	307	352	358	354	351	338	320	323	326	321	325	328	330	328	332	318	292	296	294
U Q	304	300	302	312	318	322	366	368	366	362	349	337	334	332	334	328	333	340	340	343	332	307	302	303
L Q	290	283	285	289	297	295	334	346	336	331	319	308	316	316	310	315	321	325	316	314	304	286	283	287

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								A	L	L	U L 385	U L 370	A	U L 395	U L 401	368	L	A						
2								L	U L 394	U L 407	U L 418	A	A	A	A	A	A	A	A					
3								L	A	A	U L 416	U L 404	402	A	A	L	L	A						
4								A	A	431	U L 397	U L 409	U L 403	385	376	U L 358	L	A	A					
5								L	L	L	A	A	402	390	U L 359	A	A	A	A					
6							A	A	397	407	U L 408	A	A	378	U L 358	A	A	A	A					
7								L	U L 380	L	U L 367	A	A	379	A	U L 363	L	L						
8							U L 368	U L 305	U L 357	336	U L 374	U L 392	375	U L 375	384	U L 361	U L 355	A	A					
9							L		395	388	395	A	395	376	U L 348	L	L	A						
10						A	A	U L 359	405	U L 394	414	400	U L 336	U L 411	A	A	A	A						
11							A	A	U L 374	A	U L 420	U L 379	414	392	U L 376	A	U L 337	L						
12						A	L	L	U L 374	A	A	390	386	392	U L 369	A	L	L						
13								L	A	U L 392	384	395	385	377	U L 377	U L 371	L	L						
14							A	A	A	U L 387	411	U L 364	374	U L 383	L	U L 362	L	L	A					
15								L	L	L	U L 413	U L 380	369	L	U L 365	L	A	A						
16							U L 434		L	A	A	U L 376	398	A	U L 363	L	L	L						
17									A	U L 401	L	419	U L 369	A	L	L	A	A						
18									L	396	385	U L 399	L	U L 384	U L 367	L	L							
19									L	L	U L 393	L	U L 384	391	L	L	L							
20									L	L	U L 417	U L 403	U L 413	392	L	U L 356	L	A						
21							A	U L 341	U L 355	401	U L 423	427	U L 383	377	376	U L 353	U L 354	L						
22								L	L	U L 399	U L 398	U L 424	L	U L 414	378	U L 375	L							
23								L		L	L	387	L	374	L	L	L	L						
24								L	L	L	L	U L 360	U L 404	L	L	L	L							
25								A	L	U L 411	L	L	L	L	L	L	A							
26									L	U L 396	L	L	L	U L 366	L	L	L							
27									L	L	L	U L 397	U L 379	U L 367	L	L	L							
28										L	L	U L 403	L	L	L	L								
29										L	L	U L 383	L	L	L	L	L							
30										L	L	U L 397	L	L	L	L	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	3	9	14	18	22	18	20	14	9	3							
MED							U L 401	U L 341	U L 380	U L 398	U L 403	U L 396	386	384	U L 372	U L 362	U L 354							
U Q								U L 359	396	407	U L 416	U L 403	U L 402	392	377	U L 370	U L 355							
L Q								U L 305	U L 366	392	U L 385	U L 380	375	376	U L 363	U L 357	U L 337							

SEP.2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 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								226	242	240	274	298	282	266	324	312	274	268						
2								270	236	240	280	272	E A 316	E A 348	E A 330	278	268	256	E A 282					
3								256	218	236	260	312	304	286	E A 310	276	290	252						
4								278	232	298	402	560	330	348	328	284	278	264	260					
5								252	238	258	E A 310	A	358	332	364	350	304	266	256					
6							234	252	304	270	340	A	A	350	418	300	306	268	E A 258					
7								272	280	246	286	E A 316	290	304	310	324	302	264						
8							278	406	396	390	422	498	382	446	378	318	314	262	268					
9							258		320	346	338	308	276	338	336	300	288	248						
10						E A 318	E A 348	444	260	440	296	446	342	268	308	296	274	A						
11							242	236	282	310	326	384	308	312	310	308	314	260						
12						E A 272	258	252	296	320	334	304	290	292	294	310	306	266						
13								244	248	300	306	272	314	290	288	314	294	270						
14							238	216	234	318	254	328	288	290	280	298	282	284	246					
15								236	238	258	308	332	304	276	274	296	270	256						
16							220		270	E A 280	E A 290	326	288	272	284	304	286	252						
17									244	250	250	328	308	294	282	312	280	258						
18									246	262	312	312	282	280	286	294	276							
19									240	264	266	264	266	264	270	280	256							
20									230	230	272	260	306	278	296	292	274	230						
21							264	424	352	476	484	496	460	418	410	420	324	284						
22								250	238	276	274	310	278	318	306	302	274							
23								228		264	308	322	266	284	272	280	260	260						
24								228	242	256	266	290	272	282	284	282	266							
25								230	238	254	256	268	278	278	268	278	258							
26									244	228	242	246	296	282	268	264	260							
27									244	238	260	260	282	286	258	274	276							
28										256	256	242	246	266	266	278								
29										246	258	268	260	260	288	290	274							
30										242	282	272	268	280	262	274	272							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	9	19	26	30	30	28	29	30	30	30	29	19	6					
MED						E A 295	250	252	244	259	280	308	289	286	289	296	276	262	258					
U Q							271	272	280	300	312	328	311	318	324	310	298	268	268					
L Q							236	230	238	246	260	270	277	278	274	280	271	256	256					

SEP.2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 272	E B 266	E B 282	E B 262	E B 242	E B 236	222	A	206	186	184	206	A	212	196	204	226	A	E A 256	226	E A 240	E A 236	E A 252	E A 296
2	E A 238	E B 282	E A 270	E B 242	E B 254	E B 246	220	208	194	178	192	A	A	A	A	A	A	A	A	E A 230	E A 230	E A 392	E A 308	E A 250
3	E B 252	E B 248	E B 260	E B 258	E B 234	E A 308	E A 234	224	A	A	190	192	192	A	A	224	216	A	E A 244	E A 238	E A 254	224	E A 236	E A 304
4	E A 280	E A 294	E B 270	E A 274	E B 266	230	228	A	A	186	206	196	196	192	212	222	222	A	A	E A 252	220	220	222	E A 296
5	E A 330	E B 312	E B 280	E B 234	E B 230	E B 276	226	208	190	186	A	A	204	196	E A 272	A	A	A	A	E A 250	E A 234	E A 272	E B 304	E B 256
6	E B 264	E A 296	E B 270	E B 254	E B 292	E B 290	A	A	214	190	188	A	A	196	230	A	A	A	A	216	216	E A 308	E B 292	E B 292
7	E B 284	E B 282	E B 240	194	A	E A 286	236	222	190	202	192	A	A	210	A	210	228	E A 236	E A 256	222	212	A	E A 330	E B 274
8	A	A	E B 330	E A 332	216	E B 322	208	E A 272	214	236	234	214	206	226	208	212	226	A	A	E A 274	232	E B 280	E A 292	E B 296
9	E B 310	E B 300	E B 288	E B 276	E B 266	E B 266	214	208	190	206	204	A	208	208	E A 238	208	220	A	E A 238	E B 298	E A 288	E B 246	228	E B 258
10	E B 292	E B 272	E B 268	E B 280	234	A	A	234	204	210	208	202	228	210	A	A	A	A	E A 240	E A 250	222	E A 296	E A 260	E A 282
11	E B 268	E B 284	E B 292	E B 278	E B 310	E B 262	A	A	218	A	178	198	188	182	206	A	212	222	E B 244	E B 270	E B 264	E A 300	228	206
12	E B 292	E B 298	E B 306	E A 324	E A 308	A	228	212	202	A	A	200	200	196	216	A	232	222	E A 246	E A 248	234	212	E A 244	E A 262
13	E A 300	E B 284	E B 276	E B 266	E B 282	E B 242	214	190	A	190	194	190	194	200	206	208	218	230	226	212	214	218	E A 294	E A 292
14	E A 256	E A 316	E A 346	E A 388	E A 294	E A 286	A	A	A	190	186	194	206	192	204	204	226	228	A	226	218	E A 278	E B 244	E B 236
15	220	E B 258	E B 298	E B 266	E B 294	E B 294	214	210	204	194	182	196	196	196	202	220	A	A	230	220	218	E A 272	E B 260	E B 282
16	E A 276	E B 280	E B 256	E B 230	E B 256	E B 258	170	230	198	A	A	194	196	A	196	200	232	232	216	208	208	E A 244	E A 294	E A 282
17	E A 300	E B 278	E A 298	E B 266	E B 278	E B 264	212	210	A	206	182	184	190	A	214	206	A	A	E A 238	214	202	E A 256	E A 298	E B 250
18	E B 260	E B 270	E B 280	E B 244	E B 240	E B 240	214	210	198	190	190	198	204	188	190	206	228	232	222	208	E B 248	E B 250	E B 250	E A 258
19	E B 254	E B 254	E B 256	E B 230	222	226	218	228	204	196	204	218	202	192	190	200	224	222	E A 234	E B 246	224	E B 240	220	E B 244
20	E B 240	E B 262	E B 254	E B 248	E B 258	E B 238	208	214	210	186	188	174	184	184	212	212	218	A	E A 278	E B 264	218	212	E A 256	E B 242
21	E B 264	E B 304	E B 284	E B 290	E B 270	E A 296	A	230	230	214	206	204	210	214	214	232	236	E A	240	E B 236	E B 240	E B 260	E B 276	E B 280
22	E B 264	E B 272	E B 278	E B 272	E B 270	E B 248	214	212	210	192	194	184	192	192	210	200	220	224	226	222	216	E A 262	E B 272	E B 264
23	E B 272	E A 300	E B 272	E B 254	224	E B 240	214	H 168	202	208	190	200	204	194	206	206	218	212	230	202	230	E B 280	E B 234	E B 256
24	234	230	E B 246	E B 266	E B 306	E B 290	H 198	H 174	214	178	190	178	192	208	212	212	212	230	214	194	E B 198	E B 276	E A 278	E A 240
25	226	222	E B 272	E B 274	E B 284	E B 274	222	A	210	196	188	206	194	198	202	194	A	238	222	206	214	E A 268	E A 298	E A 272
26	E B 272	E B 242	E B 242	E B 242	E B 248	E B 270	230	226	202	188	202	182	190	210	204	222	208	230	218	200	232	E A 264	E A 244	E B 244
27	E A 250	E B 244	E B 238	E B 256	E B 264	E B 264	220	224	210	200	198	186	186	194	190	208	218	244	206	210	232	E A 300	E A 272	E A 268
28	E B 266	254	E B 240	226	E B 222	214	214	214	218	206	204	192	190	192	198	210	236	236	222	212	220	226	220	E B 240
29	236	228	E B 256	E B 240	220	222	204	214	226	194	182	190	194	196	208	202	230	234	210	206	E A 260	E A 300	E B 284	E A 280
30	E B 242	E B 250	E B 250	E B 234	206	224	210	212	214	202	190	182	186	190	212	216	224	234	216	212	212	206	E B 244	E B 264
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	29	28	25	24	25	26	27	25	26	26	26	24	23	17	24	30	30	29	30	30
MED	E B 264	E B 272	E B 271	E B 260	E B 258	E B 263	214	212	206	194	190	194	195	196	206	208	224	230	221	213	218	E A 262	E 260	E B 264
U Q	E 282	E 295	E B 284	E B 274	E B 283	E 286	224	225	214	206	204	201	204	208	212	214	228	235	E A 242	E A 248	E 234	E A 280	E A 292	E A 282
L Q	246	E B 252	E B 256	E B 242	232	239	211	209	200	188	188	185	190	192	202	204	218	223	220	210	216	231	244	E B 250

SEP.2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	116	112	110	108	A	A	A	A	A	116	112	A	B					
2						B	112	114	112	A	A	A	A	A	114	114	A	A	B					
3						B	A	A	A	A	A	118	A	A	A	116	114	A						
4						B	A	A	A	A	A	A	A	A	A	A	A	114	B					
5						B	116	112	A	A	A	A	110	110	112	110	110	110	B					
6						B	A	A	A	A	A	A	A	A	116	112	112	A	B					
7						B	A	A	A	112	118	A	A	A	116	A	116	A						
8						B	A	A	A	A	A	112	112	112	110	110	112	A	B					
9						B	B	122	122	114	114	A	114	112	116	116	116	116	B					
10						B	110	114	112	A	114	114	112	112	110	A	A	A	B					
11						B	A	A	A	A	A	A	A	114	112	110	110	108	B					
12						B	A	A	A	A	A	122	122	122	116	110	110	116						
13						B	B	A	A	A	A	A	A	112	112	112	110	110	B					
14						B	B	A	A	A	116	A	A	A	116	A	118	A	B					
15						B	114	112	112	A	A	112	A	112	112	112	112	112	B					
16						B	B	118	A	A	A	A	106	A	A	110	110	114	B					
17						B	B	A	A	A	A	A	A	A	A	112	110	A	B					
18						B	B	114	114	A	114	114	114	112	A	110	110	112	B					
19						B	110	110	112	112	112	A	114	112	112	112	110	116	B					
20						B	124	118	A	A	114	114	114	112	112	112	116	A						
21						B	B	112	A	116	116	116	116	114	112	110	110	108	B					
22						B	126	110	110	116	120	A	114	110	114	110	108	110	B					
23						B	A	118	120	A	110	112	112	110	110	110	112	A	B					
24						B	120	114	A	A	A	112	110	110	112	114	112	112						
25						B	124	A	A	114	A	A	A	112	112	110	112	120	B					
26						B	118	118	112	112	A	114	A	114	110	112	110	112	B					
27						B	114	116	A	116	116	A	116	A	110	112	A	118	B					
28						B	128	110	110	110	A	112	A	116	118	114	114	A	B					
29						B	118	116	116	A	A	116	112	114	112	114	110	112						
30						B	116	118	A	120	112	116	118	A	116	116	112	114	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							15	19	12	11	12	14	16	19	24	26	26	18						
MED							116	114	112	114	114	114	114	112	112	112	112	112						
U Q							124	118	115	116	116	116	115	114	116	114	112	116						
L Q							114	112	111	112	113	112	112	112	112	110	110	110						

SEP.2015 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 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	96	B	B	B	B	B	146	126	116	116	106	102	98	104	106	G	G	106	104	104	100	98	96	92
2	92	96	92	90	92	B	130	124	G	104	104	102	102	104	120	120	106	106	104	98	98	96	90	88
3	88	88	124	102	102	96	96	92	116	98	98	G	108	102	106	130	122	104	102	100	98	98	98	96
4	96	90	90	86	88	110	102	98	98	100	100	100	102	94	96	96	94	112	104	92	90	90	90	98
5	98	100	104	102	102	104	128	120	104	102	106	104	112	112	120	116	114	114	104	104	96	98	102	100
6	100	92	92	100	100	B	104	102	102	100	100	92	92	92	120	118	114	102	104	100	100	98	102	102
7	98	110	94	B	94	98	98	98	102	112	120	100	106	106	120	106	116	104	106	98	98	94	94	102
8	102	102	102	102	108	106	104	98	102	102	106	G	122	118	110	122	116	106	106	100	100	102	96	96
9	96	B	B	B	104	104	108	102	102	104	102	94	96	94	94	98	100	116	112	110	102	102	102	B
10	B	122	114	126	106	106	118	114	114	106	122	114	118	122	110	106	104	100	100	100	96	94	94	92
11	B	B	92	90	B	B	102	102	100	102	100	100	100	G	G	116	118	116	B	116	104	102	100	96
12	B	144	128	118	114	110	104	104	104	102	102	114	112	G	G	118	G	124	102	102	102	100	94	94
13	94	94	94	94	92	110	98	102	98	92	92	92	94	92	114	G	120	114	96	96	92	92	90	90
14	90	92	92	92	92	102	102	102	102	100	100	100	98	104	G	100	G	98	94	94	86	86	90	98
15	90	96	96	92	100	100	134	120	118	106	106	112	106	124	116	124	118	112	110	110	96	96	94	94
16	98	92	B	106	106	100	106	G	102	98	94	94	92	94	94	G	G	120	104	B	102	98	104	102
17	92	92	94	94	94	94	104	104	102	102	102	100	100	100	94	120	114	104	98	98	96	96	96	98
18	100	98	104	102	B	B	122	104	G	104	102	G	94	G	102	G	G	112	B	106	B	B	B	96
19	98	98	B	B	B	126	128	116	G	G	G	102	98	114	96	94	144	126	114	112	100	100	94	94
20	B	B	B	B	122	104	128	118	C 106	108	G	124	G	G	G	G	102	104	96	98	94	100	94	94
21	108	B	B	B	118	102	106	124	100	102	G	G	128	122	122	122	116	110	108	B	106	98	B	B
22	B	B	B	B	B	B	G	112	G	100	100	100	98	116	126	124	118	96	94	88	86	84	98	B
23	94	102	100	100	102	102	100	100	102	100	G	96	G	G	G	G	118	104	104	112	B	B	B	B
24	B	B	114	118	118	B	132	G	104	104	100	G	G	G	G	G	124	118	88	84	B	B	106	98
25	98	B	B	128	B	B	120	90	96	118	106	100	106	G	G	G	126	120	B	B	B	106	98	98
26	98	98	94	96	B	B	G	G	G	G	104	G	100	124	G	G	G	146	88	B	B	94	94	94
27	94	94	94	94	94	B	128	G	98	96	96	100	G	104	G	G	104	106	102	102	90	96	104	100
28	104	98	104	98	B	112	136	146	124	G	104	G	108	G	G	G	G	104	B	102	B	B	B	B
29	B	110	B	98	B	B	G	112	114	102	104	G	G	G	G	G	G	G	B	102	94	90	96	98
30	B	98	B	96	96	B	158	124	100	100	G	G	G	106	G	G	G	124	96	96	94	94	92	98
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	22	20	23	21	18	27	26	25	27	25	21	24	21	18	17	21	29	25	26	24	26	26	25
MED	97	98	95	98	102	104	108	104	102	102	102	100	101	104	110	118	116	110	104	100	97	97	96	96
U Q	98	102	104	102	107	110	128	120	110	104	106	103	108	117	120	122	119	117	105	104	100	100	100	98
L Q	94	92	93	94	94	100	102	102	100	100	100	98	98	97	96	103	105	104	96	98	94	94	94	94

IONOSPHERIC DATA STATION Kokubunji

SEP.2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F1						H2	CL12	C2	C1	L2	L2	L2	L2	L2			L2	L4	F6	F5	F3	F3	F4
2	F3	F2	F2	F1	F2		CL22	C2		L2	L2	L2	L2	L2	C2	C2	L2	L3	L4	F4	F7	F6	F5	F3
3	F2	F1	F1	F2	F1	L4	L3	L2	CL12	L2	L1		L2	L1	L2	C1	C1	L3	L6	F6	F4	F4	F3	F3
4	F5	F3	F2	F3	F2	L1	L2	L3	L3	L2	L1	L2	L2	L2	L2	L2	L2	CL12	LL33	F3	F2	F2	F1	F2
5	F2	F1	F1	F1	F4	L2	C2	C2	L2	L2	L2	L4	C2	C2	C1	C3	CL32	CL33	L4	F4	F4	F4	F3	F3
6	F2	F4	F2	F1	F2		L3	L3	L3	L2	L2	L4	L3	L2	CL22	CL22	C2	L3	L4	F6	F4	F2	F1	F2
7	F2	F1	F1		F4	L2	L3	L3	L2	C1	C2	L3	L2	L2	C2	L2	C1	L3	L2	F3	F4	F4	F4	F2
8	F6	F5	F3	F7	F3	L2	L2	L4	L2	L2	L2		H1	C1	C1	C1	C2	L3	L3	F7	F5	F1	F2	F2
9	F1				F2	L1	L2	L2	L2	L2	L2	L2	L2	L1	L1	L2	L2	C2	C4	F1	F2	F2	F3	
10		F1	F2	F2	F5	L4	C3	C2	C2	L1	C1	C2	C2	C1	C2	L2	L5	L3	L2	F4	F4	F5	F3	F3
11			F2	F1			L3	L3	L2	L3	L2	L2	L1			C2	CL11	C3		F2	F2	F3	F2	F2
12		F1	F2	F7	F6	L5	L3	L2	L2	L2	L2	C2	C2			C2		C1	F3	F3	F4	F2	F3	F3
13	F2	F2	F2	F1	F2	L1	L2	L2	L3	L2	L2	L1	L2	L1	CL22		C1	C3	L3	F3	F4	F3	F4	F2
14	F3	F4	F4	F5	F4	L8	L2	L3	L2	L2	L2	L2	L2	L2		L1		L2	L3	F4	F4	F4	F1	F1
15	F1	F1	F2	F1	F2	L2	H2	C2	C1	L2	L2	C1	L2	C1	C1	C1	C1	C3	C2	F3	F2	F4	F3	F2
16	F3	F1		F1	F2	L1	L2		L2	L3	L3	L1	L2	L3	L2			C3	L2		F3	F3	F2	F3
17	F4	F2	F4	F2	F2	L1	L2	L2	L3	L3	L2	L2	L2	L2	L2	CL22	CL22	L3	L6	F2	F2	F2	F3	F2
18	F1	F2	F2	F2			C1	L2		L1	L1		L1		L2			C2		F1				F3
19	F1	F1				C1	C2	C2				L1	L1	CL11	L2	L2	HL12	CL22	C3	F2	F3	F2	F1	F2
20					F2	L1	C2	C1	L2	L1		C2					L2	L3	F4	F2	F1	F1	F4	F1
21	F1				F1	L5	L3	CL11	L2	L1			C1	C1	C1	C1	C1	C2	C2		F2	F1		
22								C2		L2	L2	L1	L1	CL11	C1	C1	C1	L2	L4	F3	F4	F4	FF12	
23	F2	F2	F2	F2	F2	L2	L2	L2	L2	L2		L1					C2	L4	L3	F1				
24			F1	F1	F1		H1		L2	L2	L2						CL11	CL11	L1	F1			F3	F4
25	F1			F1			C3	L3	L2	CL22	L2	L2	L2				C1	C2				F2	F2	F2
26	F2	F2	F3	F2							L1		L1	C1				H1	L1			F1	F1	F2
27	F1	F2	F2	F2	F1		C2		L2	L2	L2	L2		L2			L2	L2	L3	F3	F1	F3	F2	F2
28	F2	F2	F2	F1		F1	H2	HL22	C2		L1		L1					L2		F1				
29		F2		F1				C2	C2	L2	L2									F1	F5	F4	F2	F2
30		F1		F1	F1		H2	C2	L2	L2				L2				C1	L1	F1	F2	F1	F2	F2
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

SEP.2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C					X 89	X 69	X 52	X 50	X 51
18	X 50	X 50	X 50	X 49	X 46	X 47														X 72	X 60	X 61	X 62	X 58
19	X 54	X 52	X 52	X 53	X 46	X 39														X 79	X 83	X 72	X 69	X 60
20	X 58	X 55	X 54	X 51	X 46	X 48														X 93	X 92	X 67	X 58	X 53
21	X 47	X 47	X 49	X 45	X 44	X 49														X 58	X 56	X 55	X 54	X 51
22	X 47	X 44	X 41	X 41	X 39	X 39														X 79	X 57	X 45	X 43	X 45
23	X 45	X 42	X 43	X 43	X 40	X 38														X 81	X 64	X 58	X 63	X 58
24	X 54	X 54	X 49	X 47	X 44	X 45														X 68	X 50	X 48	X 52	X 54
25	X 53	X 48	X 44	X 40	X 40	X 40														X 92	X 64	X 55	X 55	X 55
26	X 54	X 56	X 54	X 48	X 42	X 42														X 86	X 68	X 56	X 57	X 55
27	X 56	X 54	X 50	X 46	X 45	X 46														X 86	X 67	X 60	X 57	X 58
28	X 58	X 57	X 56	X 52	X 49	X 41														X 83	X 80	X 68	X 64	X 64
29	X 63	X 56	X 51	X 54	X 50	X 37														X 84	X 57	X 50	X 52	X 53
30	X 54	X 56	X 49	X 49	X 46	X 40														X 96	X 72	X 54	X 47	X 46
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13														14	14	14	14	14
MED	X 54	X 54	X 50	X 48	X 45	X 41														X 84	X 66	X 56	X 56	X 54
U Q	X 57	X 56	X 53	X 52	X 46	X 46														X 89	X 72	X 61	X 62	X 58
L Q	X 48	X 48	X 46	X 44	X 41	X 39														X 79	X 57	X 52	X 52	X 51

SEP.2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	77	79	86	90	83	63	46	44	45
18	44	44	44	43	40	41	45	56	66	70	63	68	76	84	76	70	78	86	80	66	54	55	56	52
19	48	46	46	47	40	33	40	67	73	67	76	72	78	68	67	71	75	72	67	73	77	66	63	54
20	52	49	48	45	40	42	47	66	71	71	66	75	87	82	78	71	82	83	76	87	86	61	52	47
21	41	40	43	39	38	43	52	78	73	A	56	58	54	55	49	54	54	55	R 62	52	50	49	48	45
22	41	38	35	35	33	33	40	55	58	60	56	63	68	76	80	76	74	88	83	73	51	39	37	39
23	39	36	37	37	34	32	39	53	64	69	62	69	74	82	84	77	74	78	80	75	58	52	57	52
24	48	48	43	41	38	39	49	56	71	70	76	87	90	86	82	82	90	99	98	62	44	42	46	48
25	47	42	38	34	34	34	46	70	76	84	78	75	81	78	85	82	75	78	100	86	58	49	49	49
26	48	50	48	42	36	36	38	76	84	87	74	74	76	81	85	84	77	88	92	80	62	50	51	49
27	50	48	44	40	39	40	42	67	76	74	76	77	84	80	82	83	84	84	88	80	61	54	51	52
28	52	51	50	46	43	35	40	55	68	83	81	85	R 80	75	84	70	75	90		77	74	62	58	58
29	57	50	45	48	44	31	42	64	81	76	74	82	R U 95	R U 106	R U 98	98	R 96	R 110	R U 106	78	51	44	46	47
30	48	50	43	43	40	34	40	60	70	71	74	84	80	84	82	84	83	99	99	90	66	48	41	40
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	12	13	13	13	13	13	14	14	14	13	14	14	14	14	14
MED	48	48	44	42	39	35	42	64	71	71	74	75	80	81	82	77	78	86	88	78	60	50	50	48
U Q	51	50	47	46	40	40	46	68	76	80	76	83	86	84	84	83	83	90	98	83	66	55	56	52
L Q	42	41	40	38	35	33	40	56	67	70	62	68	75	76	77	71	75	78	78	73	51	46	46	45

SEP.2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'E KSWEEP 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							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	C	C					
16							C	C	C	C	C	C	C	C	C	C	C	C	C					
17							C	C	C	C	C	C	C	C	C	U L 468	A	A	A					
18								280	L	U L 432	500	500	L	U L 484	U L 488	U L 488	L 440	L						
19									L	L	U L 472	U L 488	496	L 480	U L 476	L	U L 440	L						
20									L	L	U L 480	U L 492	L 484	L 504	U L 496	L 500	L	L						
21								L	U L 396	A	440	448	R 456	444	A	A	A	A	A					
22								L	L	L 452	U L 464	U L 464	U L 504	488	U L 488	U L 464	U L 456							
23								268		U L 476	U L 480	U L 500	U L 512	472	L 476	U L 464	L 436	L						
24									L	L	L	L 500	L 508	U L 516	L 500	U L 500	444	A						
25									L	U L 476	U L 496	U L 500	U L 500	L	U L 508	L	L	L	L					
26								L	L	L	L	U L 516	L 504	U L 504	L 496	L 472	L	L						
27									L	L	U L 480	U L 488	L 516	L 508	U L 476	U L 476	L 440	L						
28								A	L	L	U L 516	488	U L 508		L 488	L	L	L						
29								300	L	L	L 484	L 492	U L 508	L	U L 532	L	L	L						
30									L	L	480	U L 492	U L 504	L	U L 536	U L 500	L	L	180					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	1	4	11	13	12	9	12	9	6		1					
MED								280	U L 396	U L 464	U L 480	U L 492	L 504	L 488	U L 492	U L 476	L 440		180					
U Q								300		U L 476	U L 496	U L 500	U L 508	U L 506	U L 504	U L 500	444							
L Q								268		L 442	U L 472	488	498	476	L 482	U L 466	L 440							

SEP.2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	C	C					
16							C	C	C	C	C	C	C	C	C	C	C	C	C					
17							C	C	C	C	C	C	C	C	C	A	312	252	A					
18							B	A 228	R 272	320	332	348	R 336	R 360	R 348	328	U A 292	A 252	B					
19							B	A 232	296	U A 296	344	A	A	R 348	U A 344	340	300	248	B					
20							B	236	284	A 312	A 332	R 352	356	R	B	340	300	244	B					
21							B	200	A 268	A	324	356	356	R 368	352	332	296	240	A					
22							B	U A 212	A 268	U A 300	A 328	U A 320	U A 336	U A 320	328	340	A 304	U A 248	A					
23							B	200	284	320	332	328	R	R 336	344	R 332	A 312	248	B					
24							A	A 252	A 292	A 324	352	368	R 360	R	R 344	A 340	300	A 236	A					
25							B	244	300	332	R 348	R	R 368	U R 364	348	332	R 288	236	A					
26							B	228	A 300	328	R 340	364	364	U R 364	348	328	292	A	A					
27							B	216	A 288	336	344	360	364	U R 352	R 324	328	292	232	A					
28							A	248	304	332	352	R 364	396	B	352	R 328	296	252						
29							A	A 244	U A 308	324	356	R 364	364	B	U R 364	A	U A 312	U A 240	A					
30							B	248	A 288	324	344	R	B	B	348	336	308	248	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								13	13	12	13	10	10	8	12	12	14	13						
MED								232	A 288	324	344	358	362	R 356	348	332	300	248						
U Q								246	300	330	350	R 364	364	U R 364	350	340	308	250						
L Q								214	278	A 316	332	348	356	R 342	344	328	292	238						

SEP.2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	J A 44	J A 52	J A 44	J A 51	J A 53	J A 106	J A 36	J A 37	J A 30
18	J A 22	18	E B 16	20	E B 16	18	E B 16	26	G	35	G 27	G	G	G 22	G 22	G	34	27	18	21	J A 18	E B 16	E B 16	E B 16
19	E B 16	J A 16	21	17	17	E B 16	J A 20	J A 28	34	43	J A 46	J A 53	38	G 22	J A 50	37	33	29	J A 26	J A 22	J A 64	20	18	E B 16
20	J A 19	E B 16	E B 16	E B 16	E B 16	E B 16	G	27	32	33	35	G	G	28	E B 44	G 22	32	J A 59	J A 23	J A 20	J A 31	J A 26	J A 39	J A 21
21	J A 20	18	J A 16	20	E B 16	20	J A 25	27	31	J A 76	J A 44	40	42	43	J A 46	44	J A 51	J A 46	J A 64	J A 64	J A 18	E B 16	J A 20	20
22	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	37	38	36	34	35	44	J A 39	J A 44	J A 51	J A 27	J A 28	J A 34	J A 25	J A 24
23	J A 29	J A 18	19	E B 16	E B 16	18	J A 31	23	34	35	G 33	G 33	G 26	G 23	G 19	G 32	36	30	J A 26	J A 18	E B 16	20	18	J A 19
24	J A 23	J A 20	J A 19	17	21	20	19	27	J A 38	38	G	J A 40	G 26	G	G	40	38	49	J A 30	J A 36	J A 48	J A 70	J A 50	E B 16
25	J A 17	21	20	J A 22	J A 17	J A 16	J A 18	G 26	32	35	G	G	41	G	G	G	G	28	18	J A 16	E B 16	E B 16	E B 16	20
26	E B 16	21	18	21	18	17	E B 16	26	34	G 29	G 25	G 24	G 23	G 24	36	G 18	32	J A 33	J A 23	J A 43	J A 30	J A 30	J A 27	J A 27
27	E B 16	E B 16	E B 16	J A 23	19	19	E B 16	J A 35	38	38	41	38	40	J A 46	36	G	G	26	J A 21	J A 22	J A 19	E B 16	J A 32	E B 16
28	E B 16	E B 16	J A 18	J A 24	J A 32	J A 30	J A 30	J A 30	34	36	36	40	41	E B 50	G	G 26	33	27		20	J A 20	J A 40	J A 23	J A 25
29	J A 21	J A 21	J A 20	J A 16	21	J A 16	J A 180	31	37	34	G 34	G	G	E B 41	G 32	36	38	28	J A 20	J A 36	J A 20	J A 20	J A 28	J A 26
30	J A 16	21	J A 23	23	J A 24	22	E B 16	31	30	G 26	G 28	G 25	E B 40	E B 38	G 24	J A 47	33	28	J A 17	J A 18	E B 16	J A 18	18	E B 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14	13	14	14	14	14	14
MED	J A 19	18	18	20	17	18	18	27	34	35	G	G	E G 36	26	G	G	34	30	J A 23	J A 22	J A 20	J A 20	J A 24	20
U Q	J A 22	21	20	J A 22	21	20	J A 28	30	36	38	39	40	40	42	40	44	J A 38	J A 44	J A 40	J A 36	J A 31	J A 34	J A 32	J A 25
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	30	34	G 30	G	G	G 24	G 28	G 32	32	28	19	J A 20	E B 18	E B 16	18	E B 16

SEP.2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	39	46	40	42	50	52	E B 16	E B 16	20
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	G	35	G 27	G	G	G 22	G 22	G	31	26	18	E B 16	E B 16	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	35	38	47	36	G 22	38	37	33	28	24	20	23	18	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	27	31	33	35	G	G	G 28	E B 44	G 22	31	36	17	E B 16	19	E B 16	20	E B 16
21	E B 16	E B 16	E B 16	19	E B 16	E B 16	21	27	30	A A 76	39	37	38	U Y 43	46	44	49	44	56	36	E B 16	E B 16	E B 16	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	34	36	37	U Y 36	U Y 34	U Y 35	42	36	40	44	18	21	21	20	E B 16
23	21	17	E B 16	E B 16	E B 16	E B 16	E B 16	22	32	34	G 33	G 33	G 26	G 23	G 19	G 32	36	28	24	E B 16	E B 16	E B 16	E B 16	E B 16
24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 24	35	36	G	G 36	G 26	G	G	39	35	43	27	29	23	23	27	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 26	31	35	G	G	U Y 41	G	G	G	G	27	17	E B 16	E B 16	E B 16	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	G 29	G 25	G 24	G 23	G 24	36	18	32	29	19	38	E B 16	26	20	20
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	29	34	34	41	U Y 38	39	39	36	G	G	26	18	16	E B 16	E B 16	16	E B 16
28	E B 16	E B 16	E B 16	E B 16	21	16	18	28	32	36	36	40	39	E B 50	G	G 26	32	26		E B 16	16	E B 16	E B 16	17
29	16	19	18	E B 16	16	E B 16	E B 16	28	32	33	G 34	G	G	E B 41	G 32	U Y 36	35	27	20	E B 16	E B 16	E B 16	19	20
30	E B 16	E B 16	18	18	E B 16	E B 16	E B 16	26	29	G 26	G 28	G 25	E B 40	E B 38	G 24	35	32	25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14	13	14	14	14	14	14
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	34	G	G	E G 36	G	G	G	32	28	20	16	E B 16	E B 16	E B 16	E B 16
U Q	16	16	16	16	16	E B 16	G	28	32	36	37	38	39	40	37	39	36	40	34	29	21	18	20	17
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	33	G 30	G 34	G	G 24	G 28	G 32	31	26	18	E B 16	E B 16	E B 16	E B 16	E B 16

SEP.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	20	16	16	16	16	16	16	16	16
18	16	16	16	16	16	16	16	16	20	19	17	18	20	20	17	24	16	16	16	16	16	16	16	16
19	16	16	16	16	16	16	16	16	16	16	16	21	21	21	16	16	16	16	16	16	16	16	16	16
20	16	16	16	16	16	16	16	16	16	16	18	20	23	20	44	17	17	16	16	16	16	16	16	16
21	16	16	16	16	16	16	16	16	16	18	20	20	21	23	20	21	20	16	14	16	16	16	16	16
22	16	16	16	16	16	16	16	13	16	18	19	20	18	21	20	19	16	16	16	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	17	16	17	16	16	20	16	16	16	16	16	16	16	16
24	16	16	16	16	16	16	16	16	16	19	22	21	20	20	21	20	18	16	16	16	16	16	16	16
25	16	16	16	16	16	16	16	16	16	20	22	22	20	18	18	16	16	16	16	16	16	16	16	16
26	16	16	16	16	16	16	16	16	20	16	20	21	21	20	17	16	16	16	16	16	16	16	16	16
27	16	16	16	16	16	16	16	16	16	16	21	21	20	20	17	16	17	16	16	16	16	16	16	16
28	16	16	16	16	16	16	16	16	16	16	16	16	17	50	22	20	18	16		16	16	16	16	16
29	16	16	16	16	16	16	16	16	16	19	21	26	25	41	29	30	22	16	15	15	16	16	16	16
30	16	16	16	16	16	16	16	16	16	19	20	21	40	38	21	19	21	16	16	16	16	16	16	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14	13	14	14	14	14	14
MED	16	16	16	16	16	16	16	16	16	18	20	21	20	20	20	20	16	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	19	21	21	22	30	22	20	18	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	16	16	17	19	19	20	17	16	16	16	16	16	16	16	16	16

SEP.2015 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	316	318	332	342	351	358	302	304	299
18	295	290	303	313	320	342	365	367	377	409	333	319	304	330	331	317	326	342	356	347	290	295	308	312
19	299	301	306	331	344	324	337	385	373	364	358	354	341	348	334	328	334	345	329	304	325	315	316	311
20	302	306	320	314	308	341	359	377	373	367	349	334	341	330	338	309	326	337	304	319	344	320	328	321
21	297	300	306	296	291	300	348	329	370	A	285	281	271	308	276	301	322	333	R 301	333	308	296	298	298
22	302	304	303	312	315	324	357	378	352	375	H 314	331	318	318	321	331	324	345	348	360	344	301	293	276
23	299	290	299	336	331	309	340	370	348	339	340	336	316	320	335	343	334	346	346	342	328	277	307	306
24	304	318	314	305	281	290	360	375	361	373	324	322	324	313	329	315	333	340	365	371	307	276	294	312
25	319	329	308	304	298	315	342	381	365	366	347	335	333	320	325	326	331	322	342	375	358	296	286	294
26	296	309	326	323	319	301	316	386	359	363	345	333	329	322	325	335	325	331	338	344	331	304	299	299
27	298	317	319	303	316	315	331	368	375	369	357	346	337	334	321	329	335	330	345	353	333	289	289	295
28	302	312	322	334	343	370	359	378	362	350	334	344	R 344	313	331	326	317	339		330	337	322	309	306
29	325	316	302	324	363	332	349	374	373	361	355	319	R 309	U R 307	U R 306	310	R 303	R 339	U R 348	367	350	286	287	304
30	303	314	320	327	344	366	354	378	359	370	339	342	320	317	308	317	322	336	350	356	361	322	319	297
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	13	13	12	13	13	13	13	13	14	14	14	13	14	14	14	14	14
MED	302	309	308	314	319	324	349	377	365	366	340	334	324	320	325	322	326	338	345	349	335	298	302	302
U Q	304	316	320	329	344	342	359	380	373	372	352	343	339	330	332	329	333	342	349	360	350	315	309	311
L Q	298	300	303	304	303	305	338	369	359	362	328	320	312	313	314	315	322	332	334	333	325	289	293	297

SEP.2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'E KSWEEP 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							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	C	C					
16							C	C	C	C	C	C	C	C	C	C	C	C	C					
17							C	C	C	C	C	C	C	C	C	U L 353	A	A	A					
18								479	L	U L 390	H 388	H 382	L	U L 408	U L 366	U L 353	L 362	L						
19									L	L	U L 387	A	385	L 388	U L 390	L	U L 375	L						
20									L	L	U L 401	U L 388	L 407	L 370	U L 356	H 366	L	L						
21								L	U L 390	A	399	389	R 397	A	A	A	A	A	A					
22								L	L	L 392	U L 421	U L 436	U L 379	385	U L 355	U L 370	U L 353							
23								500		U L 401	H 391	U L 411	U L 392	425	L 388	U L 367	L 399	L						
24									L	L	L	L 393	L 400	U L 366	L 364	U L 362	377	A						
25									L	U L 376	U L 386	U L 384	U L 397	L	U L 367	L	L	L	L					
26								L	L	L	L	U L 379	L 388	U L 378	L 376	L 370	L	L						
27									L	L	U L 397	H 388	L 383	L 388	U L 387	U L 368	L 372	L						
28								A	L	L	U L 372	H 411	H 386		H 380	L	L	L						
29								A	L	L	L 389	L 393	U L 389	L	U L 354	L	L	L						
30									L	L	414	U L 404	U L 388	L	U L 357	U L 357	L	L	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	1	4	11	12	12	8	12	9	6							
MED								490	U L 390	U L 391	U L 391	L 391	L 388	L 386	U L 366	U L 366	L 374							
U Q										L 396	U L 401	U L 408	L 397	L 398	L 384	U L 369	377							
L Q										U L 383	U L 387	386	386	U L 374	U L 356	U L 355	L 362							

SEP.2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	C	C					
16							C	C	C	C	C	C	C	C	C	C	C	C	C					
17							C	C	C	C	C	C	C	C	C	294	288	254	236					
18								206	230	212	290	308	324	272	278	306	282	248						
19									232	236	252	252	274	258	284	288	274	242						
20									214	232	250	276	272	282	276	314	272	248						
21								256	222	A	408	384	442	354	442	372	334	286	344					
22								226	242	244	294	296	324	308	286	268	290							
23								212		254	264	284	310	294	278	264	260	244						
24									250	236	292	288	278	288	280	286	264	244						
25									234	248	252	260	266	276	280	286	266	272	236					
26								212	242	230	244	274	274	276	280	266	256	252						
27									222	236	240	252	276	258	268	272	258	246						
28								200	230	256	272	260	248		276	270	284	250						
29								208	226	236	246	278	284	278	298	278	284	248						
30									232	230	262	264	270	288	308	286	264	246	220					
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								7	12	12	13	13	13	12	13	14	14	13	4					
MED								212	231	236	262	276	276	280	280	286	273	248	236					
U Q								226	238	246	291	292	317	291	292	294	284	253	290					
L Q								206	224	231	248	260	271	274	277	270	264	245	228					

SEP.2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	242	A	A	A	232	254	224	254	282
18	272	284	278	258	226	216	218	166	210	212	192	H 182	H 172	176	198	218	220	224	220	202	242	242	254	240
19	272	272	272	232	210	254	240	210	210	204	206	A	164	188	206	218	220	220	244	248	242	232	222	236
20	256	262	242	250	246	230	204	200	210	202	192	186	186	212	A 256	H 204	200	242	246	242	222	218	226	242
21	264	278	274	272	280	266	226	228	210	A	212	212	212	A	A	A	A	A	A	264	234	248	258	258
22	268	272	278	270	254	252	228	224	200	210	180	166	192	196	228	A 260	214	244	238	208	214	274	292	312
23	294	302	282	228	228	244	226	144	220	200	H 182	176	164	182	210	208	206	218	230	216	214	280	254	252
24	252	236	250	280	314	298	204	200	220	216	186	178	186	218	198	224	216	A	214	202	240	330	308	244
25	242	222	246	272	290	266	238	216	220	202	208	194	210	190	194	H 186	228	224	238	200	196	266	278	276
26	270	258	226	232	236	286	250	212	196	216	200	H 190	188	178	192	206	230	228	218	222	202	284	272	266
27	268	238	238	252	246	254	232	210	218	206	220	H 196	184	192	180	208	210	226	226	212	210	244	270	274
28	266	250	242	228	230	202	214	A	204	212	196	170	H 170	268	H 208	220	226	240		214	222	222	240	258
29	240	238	268	250	208	226	224	A	224	H 148	202	202	194	208	198	238	238	246	214	206	202	250	288	282
30	268	252	240	246	216	210	218	208	H 150	208	192	180	198	H 184	H 200	232	232	238	B	208	192	220	234	280
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	13	13	13	13	13	13	11	13	12	13	12	13	12	12	13	12	11	10	14	14	14	14	14
MED	268	258	250	250	236	252	226	210	210	207	196	184	186	191	199	218	220	228	228	213	218	246	256	262
U Q	271	275	276	271	267	266	235	216	220	212	207	195	196	210	209	235	229	242	238	232	240	274	278	280
L Q	254	238	241	232	221	221	216	200	202	202	189	177	171	183	196	207	212	224	218	206	202	224	240	244

SEP.2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	C	C					
16							C	C	C	C	C	C	C	C	C	C	C	C	C					
17							C	C	C	C	C	C	C	C	C	A	106	102	A					
18							B	114	98	118	104	102	104	104	102	102	102	102	B					
19							B	116	96	96	96	A	A	102	96	96	90	102	B					
20							B	106	98	98	98	98	102	110	B	102	98	98	B					
21							B	104	98	A	110	A	98	100	98	108	104	102	A					
22							G	96	96	96	96	104	94	100	108	108	108	108	A					
23							B	120	124	104	104	104	104	104	102	102	102	104	B					
24							A	100	100	100	100	106	106	102	102	102	102	102	A					
25							B	112	102	110	100	96	96	96	96	94	98	100	A					
26							B	108	108	110	108	110	108	108	102	102	A	A	A					
27							B	102	102	106	106	106	100	102	102	100	100	98	A					
28							A	130	A	102	102	102	102	B	104	104	102	102						
29							A	108	100	100	106	106	102	B	108	A	106	102	A					
30							B	110	102	104	110	104	B	B	110	106	106	102	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								13	12	12	13	11	11	10	12	12	13	13						
MED								108	100	103	104	104	102	102	102	102	102	102						
U Q								115	102	108	107	106	104	104	106	105	106	102						
L Q								103	98	99	99	102	98	100	100	101	99	101						

SEP.2015 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'E KSWEEP 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	92	106	106	100	96	112	96	102	96
18	96	110	B	94	B	88	B	134	G	160	92	G	G	96	92	G	110	124	106	102	94	B	B	B
19	B	96	90	92	98	B	120	120	112	100	110	88	90	90	108	176	142	122	104	100	96	98	104	B
20	100	B	B	B	B	B	G	120	122	124	114	G	G	92	B	92	158	108	114	106	106	90	104	88
21	94	92	90	90	B	126	112	112	104	90	108	126	112	136	118	112	106	102	98	96	102	B	92	100
22	96	B	B	B	B	B	B	120	114	110	110	110	120	114	92	116	114	106	98	100	92	92	92	98
23	94	96	84	B	B	94	102	134	134	142	92	92	92	86	86	92	116	110	102	102	B	112	104	96
24	92	92	88	92	90	90	90	104	108	110	G	96	98	G	G	110	106	102	100	96	104	106	104	B
25	98	96	94	94	96	96	120	98	148	132	G	G	178	G	G	G	G	136	86	88	B	B	B	98
26	B	94	94	88	108	100	B	134	112	98	94	94	96	92	124	92	178	94	94	90	90	86	90	86
27	B	B	B	98	148	142	B	124	122	124	112	124	112	106	94	G	G	138	86	84	102	B	98	B
28	B	B	94	96	92	92	90	90	146	112	112	166	142	B	G	98	110	154		104	96	94	108	90
29	90	88	90	90	88	88	154	126	122	106	100	G	G	B	98	100	106	102	98	98	94	92	88	94
30	94	86	84	82	86	88	B	134	132	96	98	98	B	B	92	90	154	134	104	108	B	96	88	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	9	9	10	8	10	7	13	12	13	11	9	9	8	9	11	12	14	13	14	11	10	12	9
MED	94	94	90	92	94	93	112	120	122	110	108	98	112	94	94	98	112	109	100	99	96	95	100	96
U Q	97	96	94	94	103	100	120	134	133	128	112	125	131	110	113	112	148	134	104	102	104	98	104	98
L Q	93	90	86	90	89	88	90	108	112	99	94	93	94	91	92	92	106	102	96	96	94	92	91	89

SEP.2015 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																LC 21	CL 22	C 3	L 5	FF 82	FF 14	FF 32	FF 32	FQ 21
18	F 1	F 1		F 1		F 1		HL 11		HL 11	L 1			L 1	L 1		CL 11	CL 11	CL 21	F 1	FF 11			
19		F 1	FF 11	F 1	F 1		C 1	C 3	C 2	C 2	C 1	L 2	L 1	L 1	C 2	H 1	H 1	C 2	C 4	F 6	FQ 31	F 2	F 1	
20	F 1							C 2	C 1	C 1	C 1			L 1		L 1	H 2	C 3	CL 21	FF 11	FF 22	F 2	FF 12	F 1
21	F 1	F 1	F 1	F 1		F 1	C 7	C 3	C 2	L 4	CL 11	CC 11	C 1	H 1	C 2	CL 21	C 2	C 4	L 5	F 5	F 1		FF 21	F 1
22	F 1							C 2	C 1	C 1	C 1	CL 11	C 1	C 1	L 1	CL 12	CL 23	CL 32	LL 62	FF 11	F 3	F 3	F 4	FQ 21
23	F 8	F 5	F 1			F 1	C 1	HL 11	HL 11	HL 11	L 1	L 1	L 1	L 1	L 1	L 1	C 1	C 2	C 4	F 1		F 1	F 1	FF 11
24	F 2	F 1	F 1	F 1	F 1	F 2	L 1	C 2	C 2	C 2		L 1	L 1			C 1	C 2	C 3	LL 42	FF 62	FF 32	FF 31	FF 31	
25	FF 21	F 1	F 1	F 2	F 2	FF 11	CL 11	L 1	H 1	H 1			H 1					H 1	LH 11	F 1				F 1
26		F 2	F 1	F 2	F 1	F 1		HL 22	C 1	L 1	L 1	L 1	L 1	L 1	CL 11	L 1	HC 11	L 4	L 4	F 5	F 3	F 2	F 2	FF 21
27				F 1	F 1	F 1		C 2	C 2	CL 11	CL 21	CL 11	CL 11	CL 11	L 1			HCL 11	L 1	F 1	F 1		F 2	
28			F 2	F 3	F 4	F 2	LC 31	LHC 11	HCL 11	CL 11	CL 11	HL 11	H 1			L 1	C 1	H 1		F 1	F 2	F 2	FF 12	FF 31
29	FFF 11	F 3	F 1	F 1	F 1	F 1	H 1	C 2	C 1	C 1	L 1				L 1	L 1	C 1	C 1	L 2	F 1	F 1	F 1	F 2	F 1
30	F 1	F 1	F 2	F 2	F 2	F 1		H 2	H 1	L 1	L 1	L 1			L 1	L 1	H 1	H 1	C 1	F 1		F 1	F 1	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

SEP.2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E KSWEEP 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 56	X 53	X 50	X 51	X 43	X 37															A	X 51	X 50	X 51
2	56	X 55	X 56	X 55	X 45	X 44															X 100	X 92	X 57	62
3	70	X 76	X 74	65	52	54	55														X 86	X 71	55	57
4	X 57	56	55	56	51	X 47															X 101	X 55	A	52
5	51	X 49	X 54	48	X 44	X 39	47														X 105	X 89	X 74	X 71
6	X 66	59	59	X 56	45	44															X 75	X 53	X 47	X 55
7	X 55	X 55	X 59	X 62	X 27	X 27															X 108	X 72	X 62	62
8	57	59	52	50	50	38															X 65	X 55	X 57	X 60
9	X 59	X 55	X 53	X 51	X 52	X 38															X 85	X 88	X 74	X 66
10	X 65	X 61	X 60	X 56	X 57	X 52	56														X 97	X 68	55	57
11	56	54	50	X 47	X 46	X 38															X 84	X 76	X 68	X 66
12	X 47	X 45	X 45	X 48	X 60	X 30															X 87	X 54	X 48	X 49
13	X 46	X 42	X 43	X 45	X 37	X 35															O X 69	X 57	X 59	X 59
14	X 58	X 57	X 48	X 46	X 48	X 40															X 70	A	X 46	X 47
15	X 51	X 45	X 41	X 39	X 40	X 38															X 61	X 54	X 56	X 55
16	X 55	X 64	X 68	X 47	X 45	X 43															X 68	X 53	A	52
17	X 49	X 48	X 47	X 49	X 44	X 42															X 72	X 56	52	51
18	51	51	55	60	56	46	47														X 61	X 62	X 61	X 59
19	X 56	X 54	X 52	X 52	X 42	X 36															X 85	X 75	X 68	X 60
20	X 58	X 58	X 56	X 53	X 46	X 46															X 94	X 58	X 57	X 49
21	X 49	X 48	X 46	X 42	X 43	X 43															X 64	X 64	66	X 56
22	X 54	X 50	X 47	X 44	X 39	X 39														X 82	X 69	X 63	X 55	X 54
23	X 56	X 56	X 47	X 46	X 33	X 28														X 80	X 64	X 58	X 64	X 58
24	X 57	X 56	X 49	X 43	X 40	X 40														X 81	X 72	X 63	X 57	X 59
25	X 60	X 61	X 56	X 46	X 45	X 44														X 98	X 72	X 67	X 59	X 56
26	X 56	X 54	X 57	X 46	X 39	X 38														X 96	X 92	X 74	79	80
27	X 60	X 59	X 57	X 53	X 49	X 45														X 90	X 78	X 72	88	80
28	X 67	X 70	88	X 68	X 52	X 34														X 99	X 108	X 86	X 88	X 89
29	X 81	91	X 78	X 81	X 58	X 44														X 134	X 106	X 90	X 82	X 81
30	X 81	X 84	X 78	X 67	X 59	X 35														X 96	X 88	X 76	X 82	X 66
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	4													9	29	29	28	30
MED	X 56	X 56	X 54	X 50	X 45	X 40	51													X 96	X 84	X 64	X 59	X 58
U Q	X 60	X 59	X 59	X 56	X 52	X 44	56													X 98	X 96	X 76	X 71	X 66
L Q	X 54	X 51	X 48	X 46	X 42	X 37	47													X 82	X 69	X 56	X 55	X 54

IONOSPHERIC DATA STATION Okinawa

SEP. 2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	50	47	44	45	37	31	39	71	58	63	70	71	88	86	82	82	80	92	103	116	A	45	44	45
2	F 46	49	50	49	39	38	40	68	75	68	70	73	89	94	104	118	J R 102	94	96	98	94	86	51	F 54
3	F 59	70	68	F 58	40	F 45	F 47	63	62	67	68	81	79	78	80	90	82	79	76	88	80	65	F 46	F 51
4	51	F 49	F 48	F 49	F 44	41	48	72	81	65	65	A	79	94	101	89	85	91	90	110	95	49	A	F 44
5	F 42	43	F 44	F 41	38	33	F 38	65	65	59	68	71	80	86	89	94	90	100	111	107	99	83	68	65
6	60	F 50	F 50	50	36	36	45	73	60	62	53	60	75	71	76	82	88	96	98	80	69	47	41	49
7	49	49	53	56	21	21	27	63	89	72	65	72	96	117	114	109	J R 110	111	121	H 118	102	66	56	F 54
8	U F 51	F 50	F 38	F 36	F 40	F 28	31	69	87	59	55	80	77	79	66	62	67	71	70	73	59	49	51	54
9	53	49	48	45	46	32	30	46	62	66	70	82	92	93	82	86	96	87	91	74	79	82	68	60
10	59	55	54	50	51	46	50	79	82	56	63	97	89	83	73	70	90	105	89	91	91	62	F 46	F 47
11	F 47	F 44	F 41	41	40	32	36	51	53	68	63	68	78	83	89	94	101	103	114	91	78	70	62	60
12	41	39	39	42	54	24	34	59	71	69	64	84	97	78	78	80	82	99	101	90	81	48	42	43
13	40	36	37	39	31	29	37	63	67	70	72	91	104	99	104	92	93	112	110	86	U A 63	51	53	53
14	52	51	42	40	42	34	40	56	62	62	63	79	85	84	80	71	70	74	86	79	64	A	40	41
15	45	39	35	33	34	32	40	62	66	61	63	89	104	100	101	98	102	103	95	87	55	48	50	49
16	49	58	62	41	39	37	34	50	61	68	71	68	88	74	76	87	100	107	A	85	62	47	A	F 43
17	43	42	41	43	38	36	43	72	63	67	79	94	106	114	112	96	104	106	99	94	66	50	F 46	F 44
18	F 41	F 41	F 42	F 48	F 48	F 38	F 39	61	68	69	68	62	84	101	91	84	88	102	100	72	55	56	55	53
19	50	48	46	46	36	30	36	66	76	73	72	75	83	78	75	76	76	80	74	78	79	69	62	54
20	52	52	50	47	40	40	40	62	69	76	76	80	98	106	90	86	90	95	88	92	88	52	51	43
21	43	42	40	36	37	37	49	68	86	60	68	74	74	68	60	64	68	65	65	A	58	58	F 55	50
22	48	44	41	38	33	33	36	53	61	66	64	68	85	100	112	107	101	100	99	76	63	57	49	48
23	50	50	41	40	27	22	31	58	64	71	64	76	87	96	95	92	87	83	82	74	58	52	58	52
24	51	50	43	37	34	34	46	51	68	74	83	94	108	111	105	105	112	116	103	75	66	57	51	53
25	54	55	50	40	39	38	43	74	73	85	88	87	93	98	102	98	93	100	102	92	66	61	53	50
26	50	49	51	40	33	32	32	73	83	81	79	88	91	94	90	80	88	97	104	90	86	68	F 65	F 67
27	54	53	51	47	43	38	43	66	78	74	79	84	95	91	96	102	90	93	98	84	72	66	F 70	F 68
28	61	64	F 77	62	46	28	31	58	64	85	95	103	110	116	115	108	102	104	105	93	102	80	82	83
29	75	F 81	72	75	52	38	36	69	72	78	84	90	122	154	R 156	159	160	160	156	128	100	84	76	75
30	75	78	72	61	53	29	34	60	66	80	84	85	86	99	106	110	117	108	109	90	82	70	H 76	60
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	29	29	29	29	28	30
MED	50	49	47	44	39	34	38	63	68	68	69	80	88	94	90	91	90	100	99	90	78	58	53	52
U Q	54	53	51	49	44	38	43	69	76	74	79	88	97	100	104	102	102	105	104	94	90	70	64	60
L Q	46	44	41	40	36	30	34	58	62	63	64	72	83	83	80	82	85	91	88	78	63	50	48	47

IONOSPHERIC DATA STATION Okinawa

SEP.2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E +SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	U L 496	488	504	500	L	A	A	A					
2									L 412	L 448	496	L	A	516	A	A	A	A						
3									L	L	488	L 504	L 504	516	516	L 476	L 460	L	L					
4								L	L	L 432	L 492	A	U L 484	A	A	A	A	L 420						
5								L	L		U L 484	L 492	516	488	496	472	L 468	L	L					
6									L 396	U L 436	L 444	L	476	L 496	492	472	468	L 416						
7								L	L	L 444	U L 468	U L 500	496	488	480	L 476	L 468	A						
8								L	A	L	496	U L 472	476	468	472	L 460	L 448	L	L					
9									U L 396	L 444	U L 492	U L 480	504	488	L 476	496	L 448	L						
10								L	L	A	L	A	L 488	476	476	504	U A 436	A						
11										452	472	U L 500	U L 484	L 496	500	476	444	L	L					
12									L	L 448	L 516	L 492	L 484	L 496	U L 492	L 480	L	L 416	A					
13								L	L	L	A	512	496	496	484	472	452	412						
14									L	L	L	484	500	504	476	L 472	A	A						
15									L	L	L	L 508	L 488	504	488	472	444	L	L					
16										L	U L 492	L	A	L 492	L 492	472	456	A	A					
17									L	U L 468	512	U L 516	532	L 500	500	484	452	A	A					
18									L	L	L 472	480	L	L 504	484	L 476	L 460	A	A					
19									L	L	U L 468	U L 536	L 488	504	L 492	U L 496	L 456	L						
20									L	L	L 496	L 488	512	L 496	L	L 476	U L 460	L						
21									L	L	480	484	468	472	464	456	A			A				
22									L	L	L	U L 484	500	484	488	A	A	A						
23										U L 464	U L 484	L 512	504	504	496	L 480	444	L						
24										L	U L 488	L	492	L 512	L 512	492	464	A						
25									L	L	L 496	L 512	500	U L 532	L 524	U L 504	L	L						
26								L	L	U L 464	L	L 520	L 528	L 512	512	L	A	L						
27										L	U L 480	L 508	L 508	L 504	536	U L 484	L	L						
28									L	L	L	L 488	U L 512	L	L 520	L 516	L	L						
29										L	492	U L 520	L 540	U L 552	U L 524	L	L	L						
30										L	U L 496	U L 508	U L 532	U L 484	L 524	L 504	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									3	10	22	24	27	28	27	24	17	4						
MED									L 396	L 448	L 490	L 500	500	498	492	L 476	456	L 416						
U Q									L 412	U L 464	L 496	L 512	L 512	L 504	L 512	L 494	L 462	L 418						
L Q									L 396	L 444	L 480	L 486	488	488	484	472	446	414						

SEP.2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E ;SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	240	284	312	328	R 352	356	R 376	368	352	328	280	200	A				
2							B	224	A	A	A	A	A	A	A	A	A	276	196	A				
3							A	A	284	A	A	A	A	A	372	R 356	320	260	208	A				
4							B	212	A	304	332	340	A 324	A	A	A	A	A	A	A				
5							A	A	A	U A 312	324	R 356	380	R 380	A	332	304	272	U A 192	A				
6							B	U A 216	268	A	A	R 364	U R 372	A	368	A 348	308	268	A	A				
7							B	220	264	A	A	352	368	368	368	340	312	264	A	A				
8							B	208	A	A	A	344	364	364	348	336	304	260	U A 196	A				
9							B	212	A	A	A	A	A	U R 356	348	336	288	264	A	A				
10							B	212	268	296	312	360	360	364	356	336	308	252	A	A				
11							B	A	A	A	A	A	A	A	344	336	304	264	180	A				
12							A	196	U A 268	A	328	U A 336	A	U R 312	R 340	340	308	260	U A 188	B				
13							B	A	288	A	A	348	R 356	364	356	344	A	256	A	A				
14							B	A	U A 272	U A 300	320	A	U R 368	A	A	A	308	264	A	A				
15							A	248	272	A	A	A	A	R 372	352	336	308	256	A	B				
16							B	A	A	A	A	U R 328	A	368	R	348	312	260	A	A				
17							B	A	312	A	A	A	A	A	A	348	320	260	A	A				
18							B	216	280	328	A	R 356	R 356	U Y 316	360	360	312	264	A	A				
19							B	220	272	324	344	A	A	A	R 368	340	312	264	A	A				
20							B	216	292	320	348	U A 328	356	R 356	B	340	308	256	A	A				
21							B	212	280	320	344	R	A	R 380	356	328	308	252	A	A				
22							B	216	244	316	A	R 352	R 376	R	360	336	308	256	A					
23							B	200	288	324	336	A	R 380	B	384	344	316	260	A					
24							B	U A 212	296	328	356	356	372	360	360	A	A	264	A					
25							B	216	280	R 284	352	360	360	R 352	368	340	312	252	A					
26							B	200	A	A	R 348	R	372	364	356	340	A	A	A					
27							B	236	284	320	360	360	368	368	356	336	304	260	188					
28							B	232	A	340	364	356	U R 384	B	B	344	316	276	A					
29							B	240	292	332	352	376	380	B	B	A	A	A	A					
30							B	228	292	336	344	R 356	B	368	B	356	324	264	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								23	21	17	17	19	19	18	20	25	24	27	8					
MED								216	280	320	344	356	368	364	358	340	308	260	194					
U Q								228	290	328	352	360	R 376	R 368	368	348	314	264	198					
L Q								212	270	308	328	U 344	356	U R 356	354	336	308	256	188					

SEP.2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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 22	J A 21	19	E B 13	E B 13	E B 13	E B 14	26	36	J A 44	J A 50	J A 51	J A 50	40	44	48	J A 66	J A 61	J A 57	J A 69	J A 143	J A 44	J A 31	J A 22
2	J A 25	J A 18	J A 16	18	E B 13	E B 13	E B 13	27	34	J A 36	J A 44	47	J A 64	J A 63	J A 65	J A 56	J A 93	J A 56	J A 57	J A 41	J A 54	J A 50	J A 52	J A 46
3	J A 26	20	J A 54	J A 41	J A 28	J A 32	J A 33	J A 48	J A 33	J A 40	J A 44	J A 46	44	J A 42	42	40	34	G	25	J A 22	J A 44	J A 76	J A 92	J A 74
4	J A 47	J A 48	J A 20	J A 34	J A 25	J A 28	E B 14	25	J A 49	J A 42	J A 55	J A 86	J A 65	J A 109	J A 67	J A 55	J A 59	J A 54	J A 50	J A 73	J A 44	J A 76	J A 73	J A 48
5	J A 26	J A 16	J A 17	J A 16	J A 29	J A 33	J A 31	J A 29	J A 30	35	J A 42	40	48	48	J A 38	J A 35	J A 38	J A 33	J A 36	J A 32	J A 30	J A 20	21	E B 13
6	J A 82	J A 18	J A 15	J A 45	J A 33	J A 18	J A 28	J A 34	J A 38	J A 41	40	40	40	40	G J 33	A 44	34	35	J A 28	J A 17	J A 17	19	E B 13	J A 48
7	J A 20	J A 28	J A 17	J A 15	E B 13	21	J A 16	24	29	34	J A 43	G	40	40	39	40	36	J A 46	J A 66	J A 78	J A 84	J A 116	J A 22	J A 64
8	J A 101	J A 40	J A 46	J A 25	J A 29	J A 23	J A 19	27	J A 60	J A 53	40	G 32	42	39	G 29	39	34	29	J A 37	J A 40	J A 48	J A 41	J A 49	J A 20
9	J A 20	J A 29	J A 17	J A 19	E B 13	E B 13	E B 14	25	30	J A 34	J A 37	J A 44	J A 39	G 25	G 27	36	G 19	31	J A 32	J A 23	J A 26	J A 22	E B 13	19
10	J A 20	J A 18	18	20	18	18	J A 35	27	J A 46	J A 57	G	J A 54	44	40	G 30	39	J A 45	J A 46	J A 47	J A 44	J A 72	J A 125	J A 53	J A 42
11	J A 21	20	J A 16	19	J A 22	J A 17	J A 16	24	J A 32	J A 44	J A 43	43	45	J A 44	G 30	J A 32	G 24	G 19	26	J A 20	J A 22	J A 16	J A 32	J A 40
12	J A 26	J A 24	J A 24	J A 20	J A 20	J A 17	J A 26	J A 36	J A 45	J A 41	J A 38	37	36	G	G 24	42	45	J A 38	J A 30	J A 21	19	J A 48	J A 26	J A 19
13	E B 13	J A 17	19	E B 13	E B 13	E B 13	J A 14	J A 26	G 28	J A 53	J A 48	G 33	G 29	G 31	J A 36	G 30	J A 38	33	J A 40	J A 33	J A 105	J A 88	J A 18	18
14	J A 20	E B 13	E B 13	E B 13	18	E B 13	E B 13	26	31	36	37	38	G	36	36	J A 39	J A 67	J A 86	J A 60	J A 53	J A 156	J A 124	J A 39	J A 20
15	J A 21	J A 20	E B 13	J A 20	J A 17	J A 25	J A 26	G 22	J A 57	J A 33	J A 44	J A 42	42	41	G 25	37	G	28	25	E B 14	J A 20	J A 26	18	18
16	J A 37	J A 18	J A 16	E B 13	B J A 16	19	E B 13	J A 53	J A 35	J A 72	J A 39	G	J A 55	J A 34	22	38	35	J A 42	J A 99	J A 67	J A 56	J A 44	J A 104	J A 32
17	J A 16	J A 20	J A 16	J A 15	20	18	J A 21	26	J A 39	J A 36	J A 53	J A 44	J A 52	J A 46	42	43	J A 53	J A 57	J A 66	J A 44	J A 48	J A 43	J A 49	J A 72
18	J A 47	J A 26	J A 32	J A 39	J A 24	J A 20	E B 14	25	31	J A 34	40	J A 42	G	G	40	G	40	J A 48	J A 48	J A 22	20	E B 13	18	E B 13
19	E B 13	E B 13	18	E B 13	E B 13	E B 13	E B 14	27	34	34	40	J A 50	J A 51	J A 60	41	38	G	J A 39	J A 29	J A 61	J A 54	51	J A 18	17
20	E B 13	J A 15	E B 13	E B 13	B J A 22	19	E B 13	26	32	34	G	37	G	G 32	E B 46	G	34	32	J A 30	J A 29	J A 40	J A 26	J A 23	J A 21
21	J A 19	19	E B 13	E B 13	18	19	J A 17	29	32	36	J A 48	38	J A 42	40	J A 46	G	J A 56	J A 47	J A 40	J A 94	J A 81	J A 62	J A 37	J A 40
22	J A 24	J A 35	J A 34	J A 36	19	18	E B 13	G	30	G 29	J A 45	G 30	41	G 30	40	J A 66	J A 60	J A 64	J A 49	J A 58	J A 31	J A 33	J A 22	E B 13
23	J A 50	J A 32	J A 24	18	20	J A 18	E B 14	26	32	36	38	J A 39	41	E B 41	G 22	43	40	J A 37	21	J A 16	18	18	J A 20	18
24	E B 13	E B 13	J A 17	J A 21	E B 13	18	J A 15	24	33	38	G	G	G	G	J A 47	J A 52	J A 45	J A 44	J A 47	J A 84	J A 52	J A 19	J A 21	J A 45
25	J A 48	J A 21	18	E B 13	E B 13	19	J A 19	26	32	J A 38	40	G 30	G 31	G 29	G 24	38	34	27	J A 28	J A 25	J A 17	J A 40	J A 30	19
26	E B 13	19	J A 19	J A 17	E B 13	18	E B 13	26	J A 40	J A 38	G 29	G 27	38	40	G 22	G	J A 63	J A 40	J A 21	J A 26	J A 31	J A 19	J A 20	J A 44
27	J A 24	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	29	36	J A 48	40	G	G 30	G 35	G	G	J A 42	J A 28	J A 18	J A 23	J A 21	J A 25	J A 23	E B 13
28	E B 13	J A 19	E B 14	E B 13	18	20	J A 16	29	32	J A 38	G 26	G	G	E B 48	E B 41	G	34	G	22	J A 31	J A 32	J A 30	J A 32	J A 30
29	J A 16	J A 18	J A 22	J A 20	E B 13	E B 13	E B 14	29	J A 34	G	G	G	G 27	E B 41	E B 43	J A 49	37	30	22	J A 21	J A 17	19	J A 20	J A 21
30	E B 13	20	E B 13	E B 13	19	E B 13	E B 13	32	34	G	G 28	G 28	E B 43	G	E B 41	G	39	J A 47	J A 42	J A 22	J A 30	J A 22	J A 47	J A 18
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J A 21	J A 20	J A 17	18	18	18	14	26	34	J A 37	J A 40	38	40	39	E G 38	38	38	J A 38	J A 36	J A 32	J A 36	J A 36	J A 24	J A 21
U Q	J A 26	J A 24	J A 20	J A 20	J A 22	J A 20	J A 19	29	J A 38	J A 42	J A 44	J A 44	J A 45	J A 42	42	J A 43	J A 53	J A 47	J A 49	J A 58	J A 54	J A 51	J A 47	J A 44
L Q	E B 16	18	E B 15	E B 13	E B 13	E B 13	E B 13	25	32	34	G 37	G	G	G	G 29	G	34	30	26	J A 22	J A 21	20	20	18

SEP.2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E ;SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	26	34	40	47	39	40	40	42	45	52	59	55	63	A A 143	21	16	16
2	20	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	25	31	34	36	46	50	45	50	51	89	53	42	36	22	18	20	18
3	E B 13	E B 13	E B 13	25	18	23	18	25	32	34	39	42	40	42	40	39	33	G	23	19	33	27	19	20
4	33	20	16	E B 13	16	E B 13	E B 14	24	30	38	46	A A 86	41	56	64	52	55	37	38	39	31	42	A A 73	20
5	15	E B 13	E B 13	E B 13	20	19	18	26	29	34	40	40	47	46	37	G 30	G 22	29	24	20	18	E B 13	E B 13	E B 13
6	E B 13	E B 14	E B 13	21	20	E B 13	25	31	34	36	36	39	40	39	G 30	36	34	32	26	16	E B 13	E B 13	E B 13	19
7	E B 13	20	E B 13	E B 13	E B 13	E B 13	E B 14	24	29	32	37	G	40	40	39	40	35	44	74	49	30	32	E B 13	E B 13
8	20	E B 13	20	E B 13	18	E B 13	E B 14	24	40	34	36	G 30	41	39	G 27	38	32	27	31	33	E B 13	E B 13	E B 13	E B 13
9	E B 13	21	E B 13	E B 13	E B 13	E B 13	E B 14	24	29	33	34	38	39	G 25	G 25	36	G 18	30	28	18	22	E B 13	E B 13	E B 13
10	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	39	46	G	53	43	39	G 28	38	44	43	43	34	37	35	15	E B 13
11	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	31	39	40	40	39	41	G 27	G 28	G 19	G 16	20	18	20	E B 13	E B 13	20
12	21	18	18	E B 13	E B 13	E B 13	23	24	35	37	37	37	U Y 36	G	G 24	41	44	38	29	E B 13	E B 13	26	E B 13	E B 13
13	E B 13	E B 14	E B 14	E B 13	E B 13	E B 13	E B 13	24	G 24	34	44	G 29	G 29	G 30	G 32	G 28	36	30	39	29	30	35	E B 13	E B 13
14	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	30	35	36	38	G	36	36	38	67	57	55	47	31	A A 124	E B 13	E B 13
15	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	G 20	30	33	36	41	41	40	G 22	36	G	27	24	E B 14	16	E B 13	E B 13	E B 13
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	43	30	37	38	G	53	G 29	U Y 22	36	34	40	A A 99	53	28	31	A A 104	E B 13
17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	25	G 27	36	45	40	42	41	38	39	40	50	60	36	32	21	20	32
18	E B 13	18	21	19	20	E B 13	E B 14	24	31	G 26	40	G 31	G	G	40	G	39	45	44	20	E B 13	E B 13	E B 13	E B 13
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	34	34	40	48	42	44	39	36	G	31	28	45	16	16	E B 13	E B 13
20	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	25	31	34	G	36	G	G 30	E B 46	G	33	28	27	24	26	E B 13	19	16
21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	25	31	34	36	U Y 38	40	40	42	G	54	44	38	A A 94	E B 13	E B 13	28	22
22	18	19	21	22	E B 13	E B 13	E B 13	G	29	G 27	35	G 29	41	U G 30	40	63	58	55	43	48	18	17	19	E B 13
23	19	E B 13	22	E B 13	E B 13	E B 13	E B 14	26	32	34	38	38	41	E B 41	U G 22	43	36	32	20	E B 13	E B 13	E B 13	E B 13	E B 13
24	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	23	31	36	G	G	G	G	44	37	31	40	36	37	20	E B 13	E B 13	24
25	19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	26	32	36	37	G 26	G 27	G 26	G 24	37	32	27	25	E B 14	E B 13	29	E B 13	17
26	E B 13	E B 13	16	E B 13	E B 13	E B 13	E B 13	26	32	36	G 27	U G 27	G 29	40	G 21	G	54	33	19	20	19	E B 13	E B 13	20
27	19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	28	35	37	39	G	G 28	G 30	G	G	G 21	G 20	G 10	E B 13	E B 12	17	E B 13	E B 13
28	E B 13	E B 13	E B 14	E B 13	E B 13	E B 13	E B 14	26	31	G 23	G 26	G	G	E B 48	E B 41	G	33	G	20	14	17	21	24	19
29	E B 13	E B 13	E B 13	17	E B 13	E B 13	E B 14	27	32	G	G	G	G 26	E B 41	E B 43	47	36	30	21	17	16	E B 13	E B 13	E B 13
30	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	32	33	G	G 26	G 26	E B 43	G	E B 41	G	38	40	18	E B 13	E B 13	E B 13	18	E B 14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	25	31	34	36	38	40	39	U 34	36	36	32	28	22	18	16	E B 13	E B 13
U Q	18	14	14	13	13	E B 13	14	26	33	36	40	40	41	41	41	40	44	44	43	39	30	27	19	19
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	30	G 33	G 34	G	G	G	G 27	G	G 32	28	23	E B 16	E B 13	E B 13	E B 13	E B 13

SEP.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	13	13	13	13	13	13	14	14	16	19	24	25	29	30	24	22	19	15	13	12	13	13	13	13
2	13	13	13	13	13	13	13	14	15	16	18	20	24	29	20	20	17	13	13	13	13	13	13	13
3	13	13	13	13	13	13	13	14	14	18	22	22	21	29	21	21	17	14	14	13	13	13	13	13
4	13	13	13	13	13	13	14	14	14	17	20	20	22	21	22	20	16	13	12	13	13	13	13	13
5	13	13	13	13	13	13	13	14	14	16	20	20	22	23	23	19	14	14	12	13	13	13	13	13
6	13	14	13	13	13	13	13	13	16	20	20	26	22	24	25	20	16	16	14	12	13	13	13	13
7	13	13	13	13	13	13	14	14	14	16	17	21	24	22	19	18	20	14	14	12	13	13	13	13
8	13	13	13	13	13	13	14	14	15	16	20	21	21	22	21	20	16	14	12	12	13	13	13	13
9	13	13	13	13	13	13	14	13	13	15	20	22	23	21	19	23	15	13	13	14	14	13	13	13
10	13	13	13	13	13	13	14	14	14	16	20	24	29	25	23	20	17	14	14	12	13	13	13	13
11	13	13	13	13	13	13	14	14	14	16	20	20	23	21	21	17	14	12	12	13	13	13	13	13
12	13	13	13	13	13	13	14	14	15	17	20	30	26	22	20	17	14	13	13	13	13	13	13	13
13	13	14	14	13	13	13	13	14	14	17	20	25	22	24	21	20	17	13	14	14	13	13	13	13
14	14	13	13	13	13	13	13	14	15	18	21	21	27	22	22	21	14	14	12	13	13	13	13	13
15	13	13	13	13	13	13	13	14	14	15	18	24	21	19	18	16	14	14	14	14	13	13	13	13
16	13	13	13	13	13	13	13	13	13	16	23	24	22	20	20	17	19	15	14	14	13	13	13	13
17	13	13	13	13	13	13	13	15	16	20	23	28	30	23	23	20	17	14	13	13	13	13	13	13
18	13	13	13	13	13	13	14	14	18	18	21	22	21	25	30	22	19	14	14	13	13	13	13	13
19	13	13	13	13	13	13	14	13	14	15	20	21	21	20	20	22	16	14	14	14	13	13	13	13
20	13	13	13	13	13	13	13	14	14	17	22	21	30	20	46	24	17	13	13	13	13	13	13	13
21	13	13	13	13	13	13	13	14	12	18	22	21	22	30	22	21	20	14	14	14	13	13	13	13
22	13	13	13	13	13	13	13	14	14	17	17	21	22	22	23	17	14	13	13	13	13	13	13	13
23	13	13	13	13	13	13	14	14	14	16	18	17	17	41	14	16	23	14	13	13	13	13	13	13
24	13	13	13	13	13	13	13	14	14	16	20	31	24	29	27	20	16	12	14	14	13	13	13	13
25	13	13	13	13	13	13	14	16	16	20	23	22	22	21	20	17	14	12	14	14	13	13	13	13
26	13	13	13	13	13	13	13	14	15	18	21	23	22	20	18	15	14	12	14	14	13	13	13	13
27	13	13	13	13	13	13	13	14	14	16	24	21	24	22	22	19	14	14	14	13	12	13	13	13
28	13	13	14	13	13	13	14	14	15	18	20	20	29	48	41	22	21	14	13	13	13	13	13	13
29	13	13	13	13	13	13	14	16	17	19	23	29	21	41	43	37	33	20	13	13	13	13	13	13
30	13	13	13	13	13	13	13	14	17	18	20	20	43	29	41	32	21	15	14	13	13	13	13	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	13	13	13	13	13	13	13	14	14	17	20	22	22	22	22	20	16	14	14	13	13	13	13	13
U Q	13	13	13	13	13	13	14	14	15	18	22	24	26	29	24	22	19	14	14	14	13	13	13	13
L Q	13	13	13	13	13	13	13	14	14	16	20	21	22	21	20	17	14	13	13	13	13	13	13	13

SEP.2015 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E KSWEEP 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	286	289	298	333	360	296	335	384	382	335	334	306	318	320	294	292	280	293	318	335	A	297	288	270
2	F 279	289	309	327	290	298	318	376	378	353	341	300	300	286	287	317	J R 293	286	305	324	346	325	289	F 263
3	F 282	297	288	F 280	329	F 327	F 337	390	364	356	325	323	325	296	286	312	315	317	308	326	342	316	F 288	F 286
4	300	F 283	F 283	F 310	F 305	307	333	360	368	401	304	A	288	302	322	309	311	312	286	336	365	340	A	F 278
5	F 288	285	F 307	F 330	328	306	F 329	356	371	324	326	310	295	307	302	321	305	308	313	329	315	312	286	306
6	281	F 281	F 285	340	292	277	328	400	372	373	371	292	335	315	316	314	318	334	356	354	346	324	265	265
7	288	294	311	394	314	299	309	345	365	371	343	302	294	305	310	299	J R 283	303	324	H 300	328	326	257	F 257
8	F	F 272	F 282	F 271	F 290	F 254	269	354	381	360	235	317	316	320	312	322	317	331	321	321	329	284	282	289
9	280	277	285	288	307	386	314	338	338	352	306	306	306	333	309	301	321	323	332	302	276	309	328	277
10	304	279	287	279	311	303	321	367	361	266	282	341	334	330	329	289	306	337	327	318	343	339	F 275	F 283
11	F 295	F 298	F 287	317	339	322	331	370	349	353	345	320	320	289	296	304	314	317	342	325	298	311	290	322
12	281	277	274	323	359	354	327	349	337	365	280	297	333	322	312	311	306	320	348	340	363	333	286	295
13	293	295	306	341	320	319	337	385	371	322	321	301	321	306	316	318	308	339	354	368	U A 335	298	302	308
14	308	311	286	294	318	309	343	365	389	362	296	325	318	311	332	316	333	334	341	354	336	A	269	289
15	313	294	281	292	301	299	348	383	389	362	301	269	304	286	297	312	328	351	350	358	326	276	293	285
16	280	307	343	306	322	347	344	379	359	338	340	309	339	320	314	311	327	346	A	368	322	317	A	F 279
17	292	289	294	320	318	296	340	393	377	315	311	303	291	305	295	297	316	322	327	352	318	293	F 272	F 298
18	F 281	F 296	F 301	F 307	F 337	F 344	F 329	365	379	349	352	327	295	320	331	298	305	333	351	339	301	302	307	288
19	294	298	300	326	332	320	312	362	372	359	340	316	326	331	324	317	332	341	321	309	322	307	319	295
20	295	301	318	333	328	352	349	378	357	352	336	308	312	323	309	294	309	331	321	316	334	282	295	296
21	294	296	296	291	294	311	329	374	358	364	290	299	303	307	296	315	327	344	343	A	297	311	F 310	296
22	292	284	287	312	335	313	342	362	358	362	318	311	283	300	309	316	314	334	342	339	319	280	276	273
23	268	268	291	360	358	295	317	378	351	339	332	312	299	310	314	332	341	344	338	337	328	275	305	296
24	296	317	330	293	268	278	344	381	335	335	312	305	313	306	308	304	319	345	351	329	296	282	294	301
25	293	306	314	297	280	295	310	358	356	348	346	327	321	296	303	311	311	315	339	350	300	295	263	287
26	298	297	329	346	306	294	301	366	359	367	326	323	319	324	321	308	308	314	336	326	346	268	F 281	F 290
27	286	298	317	306	311	311	311	361	374	341	341	316	334	316	294	313	321	333	336	339	337	283	F 272	F 271
28	283	293	F 306	317	375	344	306	369	329	328	331	316	314	297	303	292	300	322	340	323	329	311	303	306
29	302	F 308	302	320	357	349	323	370	351	338	348	291	297	312	R 300	298	306	325	340	338	337	294	289	287
30	285	318	316	303	354	378	315	360	356	340	336	316	286	286	286	299	316	322	344	349	324	287	H 245	267
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	29	29	29	29	28	30
MED	292	294	299	314	319	310	328	368	362	352	328	310	314	308	309	311	314	328	338	336	328	302	288	288
U Q	296	298	311	330	337	344	337	379	374	362	341	318	321	320	316	316	321	337	344	350	340	316	298	296
L Q	282	284	287	294	305	296	314	360	356	338	306	302	297	300	296	299	306	317	321	324	316	284	274	277

SEP.2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E +SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	U L 395	402	372	384	L	A	A	A					
2									L 390	L 392	397	L	A	361	A	A	A	A						
3									L	L	396	L 420	L 363	373	375	L 365	L 356	L	L					
4								L	L	L 414	A	A	U L 392	A	A	A	A	L 365						
5								L	L		U L 397	L 378	A	A	373	370	L 360	L	L					
6									L 400	U L 410	L 438	L	411	L 377	375	381	349	L 364						
7								L	L	L 387	U L 388	U L 396	382	388	380	L 376	L 351	A						
8								L	A	L	360	U L 387	382	385	373	L 366	L 363	L	L					
9									U L 384	L 379	U L 364	U L 392	379	367	L 371	350	L 358	L						
10								L	L	A	L	A	A 374	391	366	338	A	A						
11										377	407	H 390	U L 414	L 377	358	373	360	L	L					
12									L	L 382	L 365	L 392	L 387	L 370	U L 363	L 363	L	A 360	A					
13								L	L	L	A	369	381	381	376	374	373	364						
14									L	L	L	384	375	377	385	L 369	A	A						
15									L	L	L	L 349	L 377	374	358	355	362	L	L					
16										L	U L 380	L	A	L 375	L 370	372	352	A	A					
17									L	U L 399	372	U L 381	373	L 350	363	357	A 344	A	A					
18									L	L	L 393	402	L	L 388	371	L 366	L 347	A	A					
19									L	L	U L 398	U L 342	L 385	371	L 369	U L 355	L 354	L						
20									L	L	L 375	L 398	389	A	L	L 360	U L 362	L						
21									L	L	364	Y 366	382	378	A 371	358	A			A				
22									L	L	L	U L 426	H 413	388	360	A	A	A						
23										U L 386	U L 382	L 384	390	372	369	L 363	371	L						
24										L	U L 386	L	413	L 376	A 356	354	357	A						
25									L	L	L 379	L 378	391	U L 372	L 357	U L 358	L	L						
26								L	L	U L 390	L	L 372	L 365	L 380	381	L	A	L						
27										L	U L 398	L 393	L 391	L 383	344	U L 358	L	L						
28									L	L	L	L 401	U L 403	L	L 354	L 355	L	L						
29										L	386	U L 380	L 378	U L 347	U L 349	L	L	L						
30										L	U L 372	U L 385	U L 384	U L 425	L 354	L 339	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									3	10	21	24	26	26	27	24	16	4						
MED									L 390	L 388	L 386	L 386	384	376	369	L 362	358	364						
U Q									L 400	U L 399	L 397	L 396	392	383	375	370	362	L 364						
L Q									U L 384	L 382	372	L 378	L 378	372	L 358	355	352	362						

SEP.2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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									212	L 278	274	308	296	286	324	316	340	318	274					
2									226	238	272	340	290	322	312	276	A 350	286						
3									226	250	292	304	272	332	354	304	284	282	268					
4								238	236	210	324	A	330	312	288	292	292	274						
5								232	212		294	296	338	308	314	288	286	286	258					
6									236	240	236	374	288	304	304	292	288	262						
7								256	240	232	258	314	308	292	270	276	294	274						
8								242	232	258	580	300	302	306	314	290	314	272	280					
9									278	258	328	300	284	262	284	310	280	250						
10								234	246	456	414	272	270	300	278	366	308	258						
11										260	270	312	288	316	314	304	280	276	238					
12									270	244	398	316	266	278	292	306	300	276	236					
13								210	228	242	268	320	282	290	282	274	296	256						
14									214	252	L 270	294	282	308	278	290	E A 330	A 276						
15									216	240	L 328	340	286	328	308	286	272	244	238					
16										244	274	L 288	278	282	312	296	274	252	A					
17									222	L 258	306	306	314	294	300	308	282	264	252					
18									224	258	260	282	328	276	262	292	296	262	230					
19									226	246	274	312	286	286	286	298	280	252						
20									228	258	268	296	302	274	270	292	290	250						
21									252	242	350	334	320	328	354	322	296			A				
22									244	246	300	320	318	300	294	280	278	256						
23										274	284	312	320	300	282	276	262	256						
24										272	264	300	290	292	282	286	268	240						
25									234	252	252	278	270	300	294	282	276	258						
26								222	234	234	270	282	288	276	278	L 272	288	260						
27										252	262	292	256	274	314	276	262	248						
28									228	282	254	262	274	282	284	294	282	266						
29										262	248	276	320	292	296	300	276	262						
30										266	268	272	286	300	306	304	272							
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								7	23	29	30	29	30	30	30	30	30	28	9					
MED								234	228	252	273	300	288	297	294	292	284	262	252					
U Q								242	240	261	306	315	314	308	312	304	296	275	271					
L Q								222	224	242	264	285	282	282	282	282	276	254	237					

SEP.2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	286	280	290	232	206	274	236	214	206	200	A	186	182	196	208	A	A	A	A	242	A	214	296	332
2	310	266	258	222	240	264	244	218	196	202	182	278	A	A 240	A	A	A	A	264	238	208	208	A 262	330
3	Q 274	260	258	E A 272		A 256	242	202	194	192	192	172	260	220	196	228	222	212	234	238	224	A 222	A 234	E A 288
4	A 304	A 316	296	256	230	254	250	228	206	190	E A 250	A	200	A	A	A	A	E A 268	286	234	214	E A 272	A	A 286
5	310	298	Q 266	228	A 252	258	258	220	198	182	188	194	E A 306	E A 284	204	196	216	220	238	236	212	216	252	246
6	262	Q 282	Q 284	232	E A 294	312	260	204	212	210	182	178	182	188	210	204	210	230	228	214	208	212	324	A 330
7	280	A 288	254	188	276	E B 296	270	232	216	194	190	178	196	204	204	214	230	A	258	238	196	210	300	Q 334
8	A 374	290	A 324	294	270	372	304	234	A	232	210	H 206	214	208	224	240	210	222	270	246	212	252	294	286
9	272	A 308	292	282	256	190	230	206	200	200	H 182	176	180	222	218	212	212	228	244	258	288	240	218	288
10	244	286	276	236	240	246	276	228	E A 248	A	H 184	A	E A 234	198	226	236	A	A	246	246	232	232	A 240	Q 308
11	Q 282	Q 282	296	262	224	218	232	210	196	E A 226	204	H 182	170	206	212	202	210	214	232	228	256	220	246	238
12	E A 290	E A 328	A 330	240	210	208	A 270	230	224	224	200	184	196	212	210	E A 244	A	A 266	A	226	210	A 216	264	270
13	272	302	262	222	224	242	236	206	186	188	A	218	202	204	214	220	214	234	232	204	226	E A 300	248	246
14	254	244	286	280	252	218	240	214	204	200	192	186	210	194	206	226	A	A	252	234	216	A	308	296
15	250	270	298	308	266	288	244	204	214	206	190	234	222	202	218	222	220	232	232	204	198	224	260	286
16	300	260	216	246	230	208	212	E A 236	212	202	190	186	A	220	206	216	230	A	A	226	218	E A 254	A	298
17	276	286	286	248	226	260	246	200	208	200	E A 234	180	H 182	A 232	216	224	E A 274	A	A	222	228	A 256	A 270	E A 316
18	308	306	298	256	222	Q 206	226	218	218	198	200	H 172	H 174	174	230	218	E A 264	A	A	204	224	250	248	276
19	268	262	270	230	210	232	254	226	220	202	202	E A 278	206	E A 234	220	202	216	236	252	A 270	234	228	218	234
20	266	260	242	226	222	220	212	206	208	202	196	192	182	E A 228	B	202	206	222	258	256	224	212	A 244	234
21	258	270	264	238	288	260	236	212	224	216	204	E Y 246	212	222	E A 260	220	A	258	246	A	232	244	268	A 264
22	280	298	A 312	A 274	226	246	226	214	202	196	190	166	H 168	206	228	A	A	A	238	228	212	200	272	276
23	318	292	A 282	214	222	294	256	216	216	200	202	192	200	216	240	E A 256	A 212	234	236	224	212	270	260	248
24	256	238	218	266	336	318	232	208	218	214	200	H 184	184	186	E A 244	222	212	A	224	216	224	238	266	274
25	278	242	224	234	280	280	256	224	214	206	196	210	196	198	190	210	218	234	238	210	198	A 264	278	294
26	260	268	232	218	256	292	264	222	210	200	190	190	194	194	200	198	A	236	244	214	222	216	Q 274	Q 284
27	284	262	238	248	230	240	260	216	222	214	202	190	190	176	186	222	224	224	242	210	208	230	248	Q 280
28	278	250	226	218	204	212	256	214	192	H 192	222	198	192	E B 258	B 230	220	228	240	238	228	218	210	254	248
29	230	Q 226	246	230	192	220	232	218	212	206	204	214	186	204	E B 230	E A 284	234	246	222	206	198	202	258	266
30	262	242	224	220	216	190	246	210	216	208	206	198	194	176	B 210	232	254	250	230	206	210	210	252	252
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	29	28	28	28	29	27	26	21	20	25	29	29	29	28	30
MED	276	272	268	236	230	248	245	214	211	201	196	188	194	204	212	218	217	234	238	228	216	220	260	279
U Q	290	292	292	262	256	280	258	224	217	209	204	208	208	A 222	228	228	230	243	252	238	225	A 251	273	296
L Q	262	260	242	226	222	218	232	208	201	197	190	181	182	195	206	210	212	223	232	212	209	212	248	252

SEP.2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2015 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E ▯SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	114	108	108	108	108	108	110	110	108	108	108	108	A				
2							B	108	A	A	A	A	A	A	A	A	A	108	108	A				
3							A	A	A	A	A	A	A	A	110	110	114	110	110	A				
4							B	106	A	106	106	106	106	A	A	A	A	A	A	A				
5							A	A	A	106	106	106	106	108	A	112	112	114	A	A				
6							B	114	108	A	A	A	A	A	108	A	112	108	A	A				
7							B	108	108	A	A	108	110	110	114	112	112	110	A	A				
8							B	116	A	A	A	122	112	108	108	110	110	108	108	A				
9							B	122	A	A	A	A	A	116	112	110	110	110	A	A				
10							B	112	108	108	108	108	112	108	114	108	108	108	A	A				
11							B	A	A	A	A	A	A	A	108	108	108	108	A	A				
12							A	110	110	A	110	114	A	106	110	110	110	106	110	B				
13							B	A	122	A	A	112	116	116	118	112	A	106	A	A				
14							B	120	110	108	108	A	108	A	A	A	116	116	A	A				
15							A	130	120	A	A	A	A	112	108	108	108	106	A	B				
16							B	A	A	A	A	106	A	116	A	110	110	110	A	A				
17							B	A	118	A	A	A	A	A	A	114	110	110	A	A				
18							B	110	110	110	A	106	106	108	112	110	110	106	A	A				
19							B	116	110	110	112	A	A	A	112	110	108	108	A	A				
20							B	114	110	110	110	106	106	114	B	112	108	108	A	A				
21							B	116	108	108	108	A	A	114	114	108	108	108	A	A				
22							B	108	108	116	A	116	114	A	A	114	112	108	A					
23							B	112	116	116	114	A	116	B	116	120	112	112	A					
24							B	112	112	112	112	108	108	110	110	A	A	110	A					
25							B	116	112	104	112	108	108	108	108	108	106	106	A					
26							B	110	A	A	110	A	112	112	108	108	A	A	A					
27							B	118	112	108	110	110	110	110	110	106	112	112	122					
28							B	114	A	112	110	106	110	B	B	108	108	108	A					
29							B	114	112	108	108	110	110	B	B	A	A	A	A					
30							B	110	110	110	110	110	B	112	B	114	114	110	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								24	20	17	17	18	18	18	19	24	24	27	6					
MED								114	110	108	110	108	110	110	110	110	110	108	109					
U Q								116	112	111	111	110	112	114	114	112	112	110	110					
L Q								110	108	108	108	106	108	108	108	108	108	108	108					

SEP.2015 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2015 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 26°41.0'N LON. 128°09.0'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	94	92	88	B	B	B	B	148	112	110	108	114	112	124	114	138	124	116	110	104	104	96	94	94
2	96	92	92	92	B	B	B	124	110	104	104	180	102	102	100	126	112	116	108	104	104	104	104	114
3	100	94	100	100	98	94	100	100	100	104	102	104	108	118	120	188	170	G	116	106	104	108	104	104
4	104	104	90	106	104	104	B	114	114	112	110	106	106	102	120	98	98	98	106	94	106	108	108	92
5	90	90	100	100	100	100	100	100	100	116	112	118	122	120	100	100	100	96	96	112	90	90	90	B
6	108	98	92	102	102	102	118	112	110	104	104	136	138	102	100	98	128	112	108	90	94	92	B	104
7	100	100	98	92	B	118	116	176	118	106	100	G	128	122	170	128	122	114	110	104	104	100	108	106
8	100	100	98	100	96	98	102	130	102	102	104	104	120	126	98	130	144	138	112	108	108	106	106	114
9	98	96	92	92	B	B	B	126	122	102	104	100	98	98	98	144	96	120	112	96	110	142	B	90
10	106	104	100	100	102	158	96	116	116	116	G	118	118	144	104	138	120	114	108	104	104	108	108	108
11	104	104	92	90	100	94	118	106	106	102	102	100	100	98	98	96	94	94	114	104	102	102	116	102
12	100	100	104	106	102	120	116	110	112	112	112	112	110	G	96	124	118	118	108	106	106	92	106	106
13	B	100	100	B	B	B	114	126	104	104	100	100	100	96	98	102	98	118	110	104	104	116	104	104
14	100	B	B	B	100	B	B	116	116	110	110	102	G	100	98	110	112	112	106	104	110	110	136	108
15	94	90	B	100	100	102	102	102	98	112	100	98	138	142	98	138	G	128	108	B	98	98	98	94
16	100	100	98	B	98	94	B	108	108	108	104	G	96	96	94	130	154	122	110	104	104	100	102	102
17	102	102	102	102	98	104	100	130	128	108	104	104	104	98	98	122	116	114	110	108	104	102	102	102
18	102	98	96	96	96	94	B	156	142	104	102	98	G	G	146	G	124	116	112	104	104	B	104	B
19	B	B	92	B	B	B	B	122	114	130	120	100	114	98	122	126	G	116	110	104	104	104	104	98
20	B	114	B	B	110	118	B	144	164	152	G	108	G	102	B	G	136	120	106	102	100	100	98	98
21	98	98	B	B	100	126	124	118	126	124	136	98	108	120	114	G	114	114	110	124	112	116	96	96
22	96	92	92	92	92	96	B	G	118	100	104	102	156	100	130	118	114	112	106	102	102	100	100	B
23	100	100	100	94	90	102	B	140	136	120	122	96	144	B	92	126	118	114	114	96	96	102	92	98
24	B	B	98	100	B	102	106	118	116	116	G	G	G	G	116	112	112	112	106	106	102	96	100	100
25	100	98	98	B	B	98	102	130	116	104	114	102	102	100	98	116	168	142	104	102	100	96	98	90
26	B	96	96	96	B	102	B	130	104	104	100	100	104	114	98	G	102	102	102	96	96	108	92	92
27	92	B	B	B	B	B	B	132	124	124	128	G	100	98	G	G	94	100	94	94	94	94	90	B
28	B	96	B	B	136	150	126	132	118	100	98	G	G	B	B	G	148	G	116	102	96	94	94	94
29	94	94	94	90	B	B	B	140	130	G	G	G	96	B	B	108	110	110	118	96	92	92	90	102
30	B	94	B	B	90	B	B	124	128	G	96	94	B	G	B	G	126	118	112	112	100	94	94	94
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	26	23	19	19	21	15	29	30	28	26	24	24	23	25	23	28	28	30	29	30	29	28	26
MED	100	98	98	100	100	102	106	124	116	108	104	102	108	102	100	124	117	114	110	104	104	100	101	101
U Q	102	100	100	100	102	118	118	132	124	116	112	110	121	120	118	130	127	118	112	106	104	108	105	104
L Q	96	94	92	92	96	97	100	113	108	104	102	100	101	98	98	108	106	112	106	99	98	95	94	94

IONOSPHERIC DATA STATION Okinawa

SEP. 2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	F4	F4	F1					H1	C1	C1	C2	C1	C1	C1	C1	HC21	C3	C8	C8	L8	F9	F6	F6	F5
2	F3	F2	F2	F1				C2	C1	LH11	L1	HL11	LC21	LQ21	LC21	CLQ22	CLQ23	CL41	C4	CL33	FF34	FF12	FF23	FF22
3	F2	F1	F2	F7	FQ61	F6	LQ31	LQ11	HL12	L1	L1	L1	C1	CL11	CL11	H1	HL11		C1	C4	F9	FQ51	F5	FQ51
4	F3	FF12	FQ31	FQ21	F5	FQ31		C1	C1	C1	C2	C4	C2	L2	CL22	LCH32	L5	LC32	CL24	L7	FF36	FF45	FFQ33	FQ51
5	F5	FQ21	F1	F2	F5	F5	L3	L4	L1	C1	C1	C1	C1	C1	L1	L1	L1	LH21	LC32	CL22	F5	F1	F2	
6	FQ31	F1	F1	F2	F7	F2	CL81	C2	C1	L1	L1	HL11	HL11	L1	L1	LC11	CL11	C1	C2	L1	F1	F1		FQ21
7	F1	F4	F3	F1		F2	C1	H2	C1	C1	L1		CL11	CL11	HL11	C1	C1	C2	C8	L9	FQ41	FQ51	FFF21	FQ21
8	FQ31	FQ41	FQ21	FQ21	F5	F3	L1	H1	L2	L1	L1	L1	CL11	CL11	L1	CL11	HL11	HL11	C3	CL72	FF32	FF21	FQ21	FQ11
9	FQ11	FQ11	F1	F1				CL11	CL11	L1	L1	L2	L1	L1	L1	H1	L1	CL11	CL31	L3	FF41	FF11		F1
10	F1	F1	F1	F1	F1	F1	LC11	C1	C2	C3		C2	C1	H1	L1	H1	C1	C2	C6	L6	FQ91	FQ51	FQ41	FQ21
11	FQ11	FF11	F1	F1	F1	F1	C1	C3	C2	L1	L1	L1	L1	L2	L1	L1	L2	L2	CL11	LH21	F6	F1	FF12	FQ31
12	F8	F7	F4	F2	F4	FF11	C7	C4	C2	C1	C1	C1	C1		L1	CL11	CL21	C3	C3	C6	F1	FQ31	F2	F1
13		F1	F1				C1	C1	L1	L2	L2	L1	L1	L1	L1	L1	L2	C1	C2	L6	FF41	FF43	F2	F1
14	F4				F1			C1	C1	C1	C1	L1		L1	L1	CL11	CL21	CL61	CL93	CL87	FF44	FQ51	FF22	F1
15	F2	F2		F6	F2	FQ31	L5	L2	LH11	CL11	L2	LH11	HL11	HL11	L1	H1		C1	C3		F3	FQ31	F1	F1
16	FQ21	F1	F1		F2	F1		C6	C1	C2	L2		L2	L1	L1	HL11	H1	C3	C6	L9	FQ41	F7	FQ41	FQ21
17	F1	FQ11	F1	F1	F1	F1	L1	HC11	CL11	CL11	L3	L1	L1	L1	L1	C1	CL31	CL52	CL81	CL92	FF92	F6	F4	FQ31
18	FQ21	F3	F4	F2	F1	F2		H1	H1	L1	L1	L1			H1		C1	C4	C4	L3	F1		F1	
19			F1					C3	C1	HL11	CL11	L2	CL11	L2	CL11	C1		C2	C3	L9	FQ41	FQ31	F1	F1
20		F1			F1	F1		H1	H1	HC11		C1		L1			H1	C2	C4	L9	F8	F4	F6	F3
21	F2	F1			F1	FF11	C1	C3	C1	C1	HCL11	L1	C1	C1	CL21		C2	C2	C4	CLQ26	FQ31	FF21	F6	FQ51
22	FQ31	FQ31	F4	F3	F1	F1			C1	L1	L1	L1	H1	L1	HL11	CL31	CL51	CL63	CL51	F9	F3	F4	F5	
23	F6	FQ11	F3	F1	F1	F1		CL21	HL22	CL11	CL11	L1	HL11		L1	CL11	C1	C1	C2	F1	F1	F1	F2	F1
24			F1	F1		F1	C1	C1	C1	C1					C1	C1	CL11	CL21	C6	FF41	F3	F1	F3	F3
25	F2	F2	F1			F1	L2	C2	C1	C1	CL11	L1	L1	L1	L1	C1	HL11	HL11	L3	FF32	FF11	F5	F3	F2
26		F1	F2	F3		F1		HC21	LH11	C1	L1	L1	L1	CL11	L1		L2	L4	L1	F4	F2	FF11	F1	FQ51
27	FQ21							H2	C2	CQ11	C1		L1	L1			L1	L1	L1	FQ21	F2	F2	FF12	
28		F1			FF11	F1	C1	H2	CL12	L1	L1						H1		C1	F4	FQ41	F3	F4	F4
29	F1	F1	F1	F1				H1	HC11				L1			C1	C1	C1	CL11	F3	F2	F1	F1	F1
30		F1			F1			C2	C1		L1	L1					C1	C2	C2	F1	FQ31	FQ21	F2	F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

SEP. 2015 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

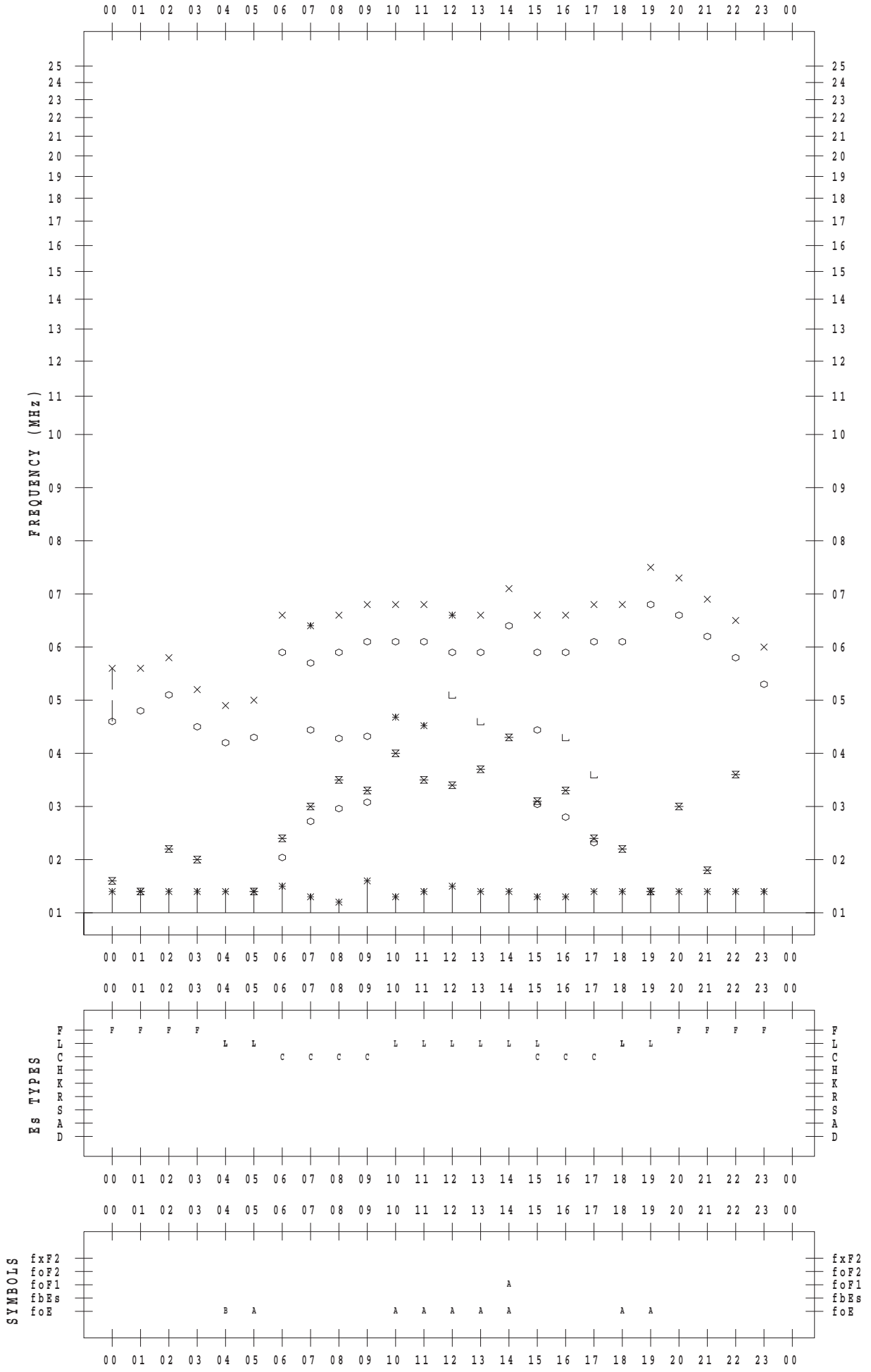
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 1

135 °E MEAN TIME



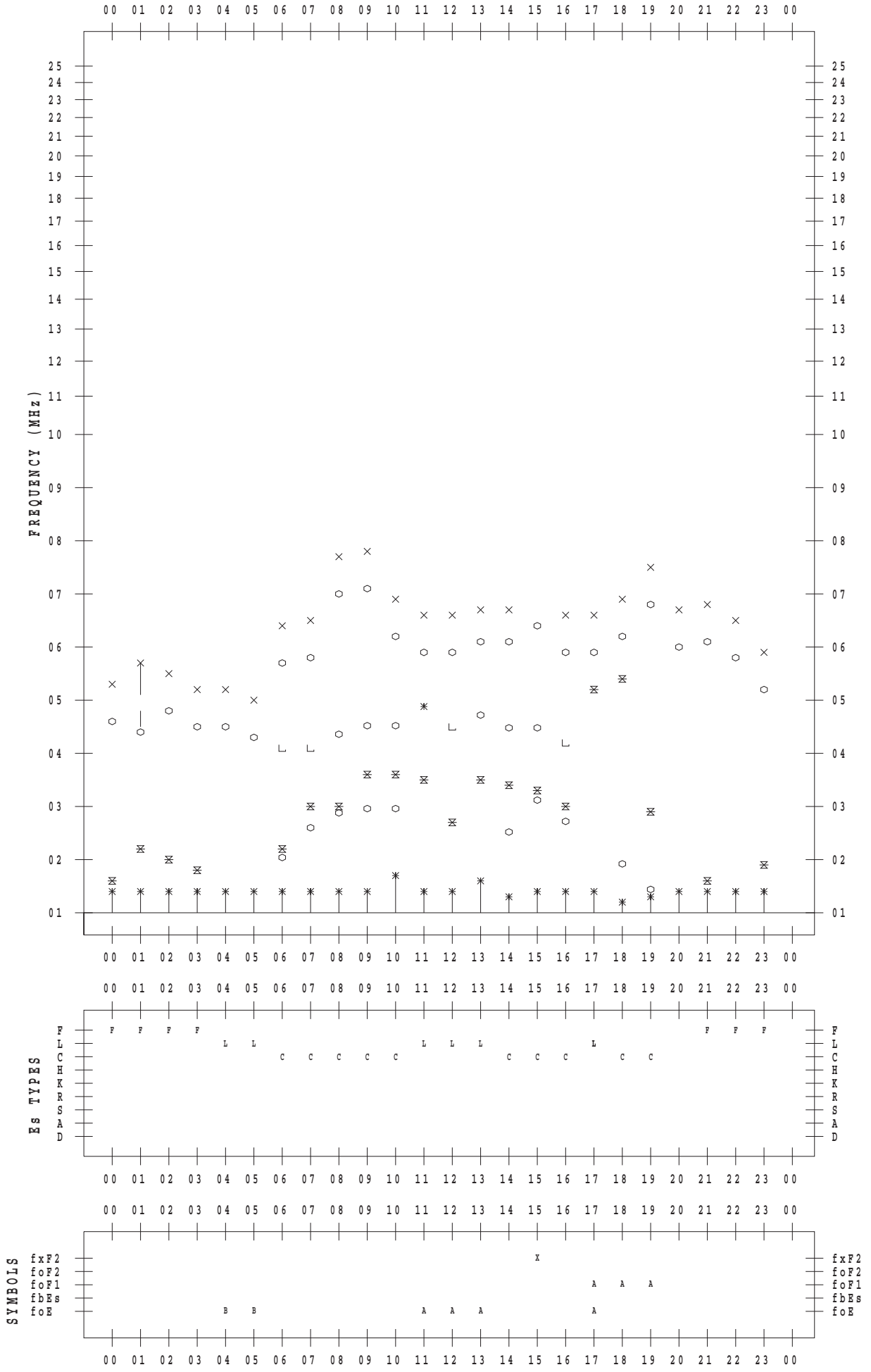
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 2

135 °E MEAN TIME



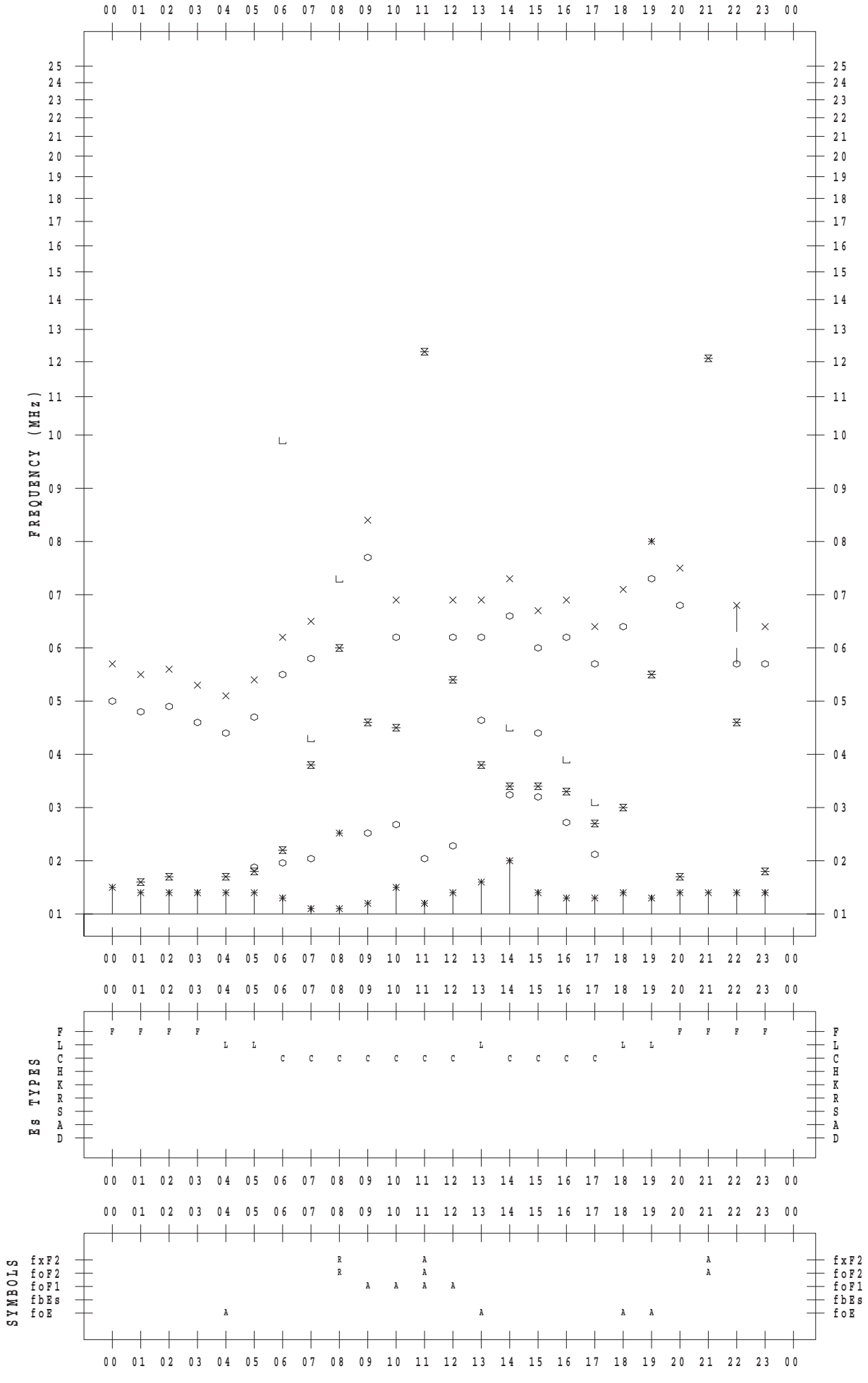
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 3

135 °E MEAN TIME



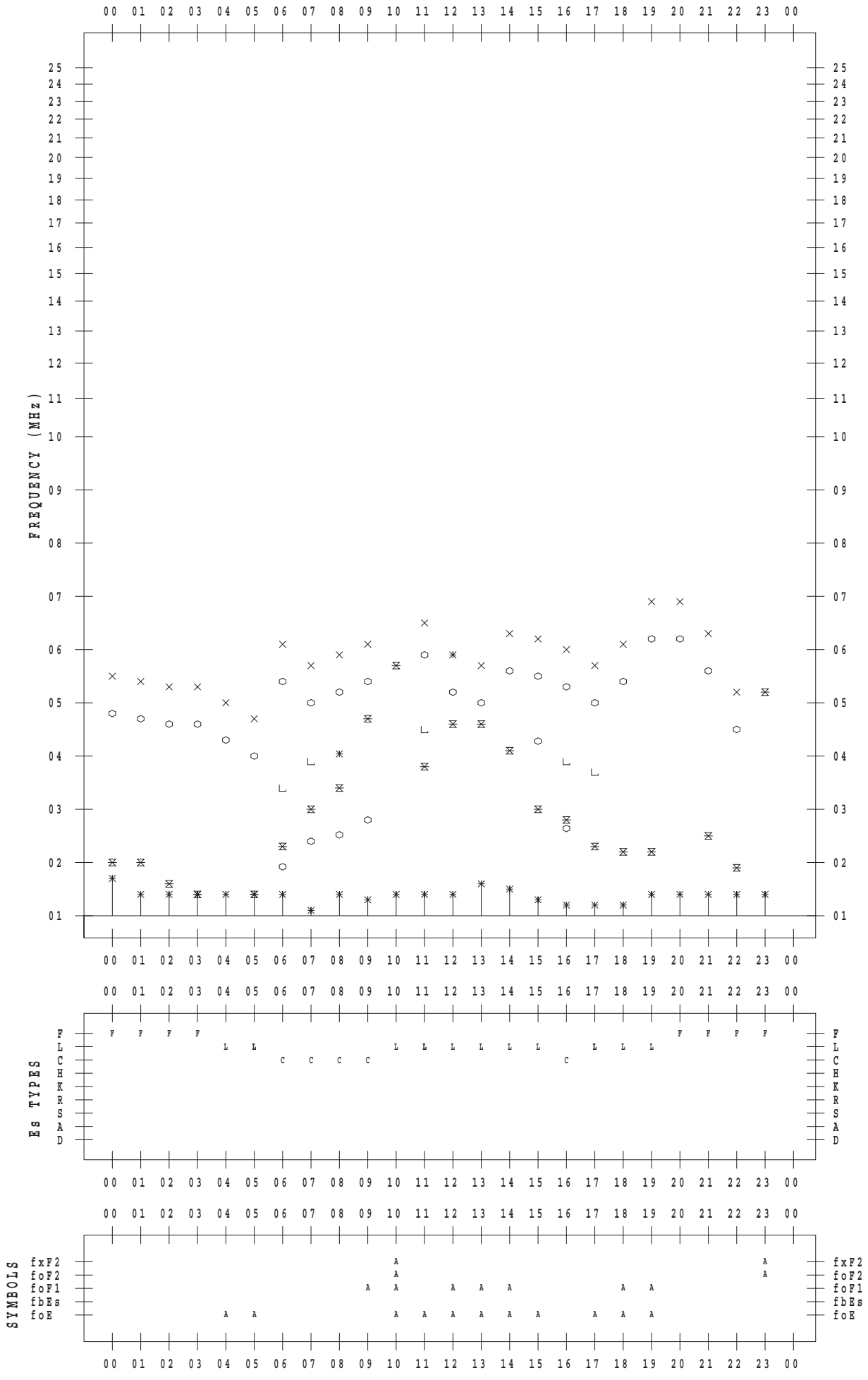
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 4

135 °E MEAN TIME



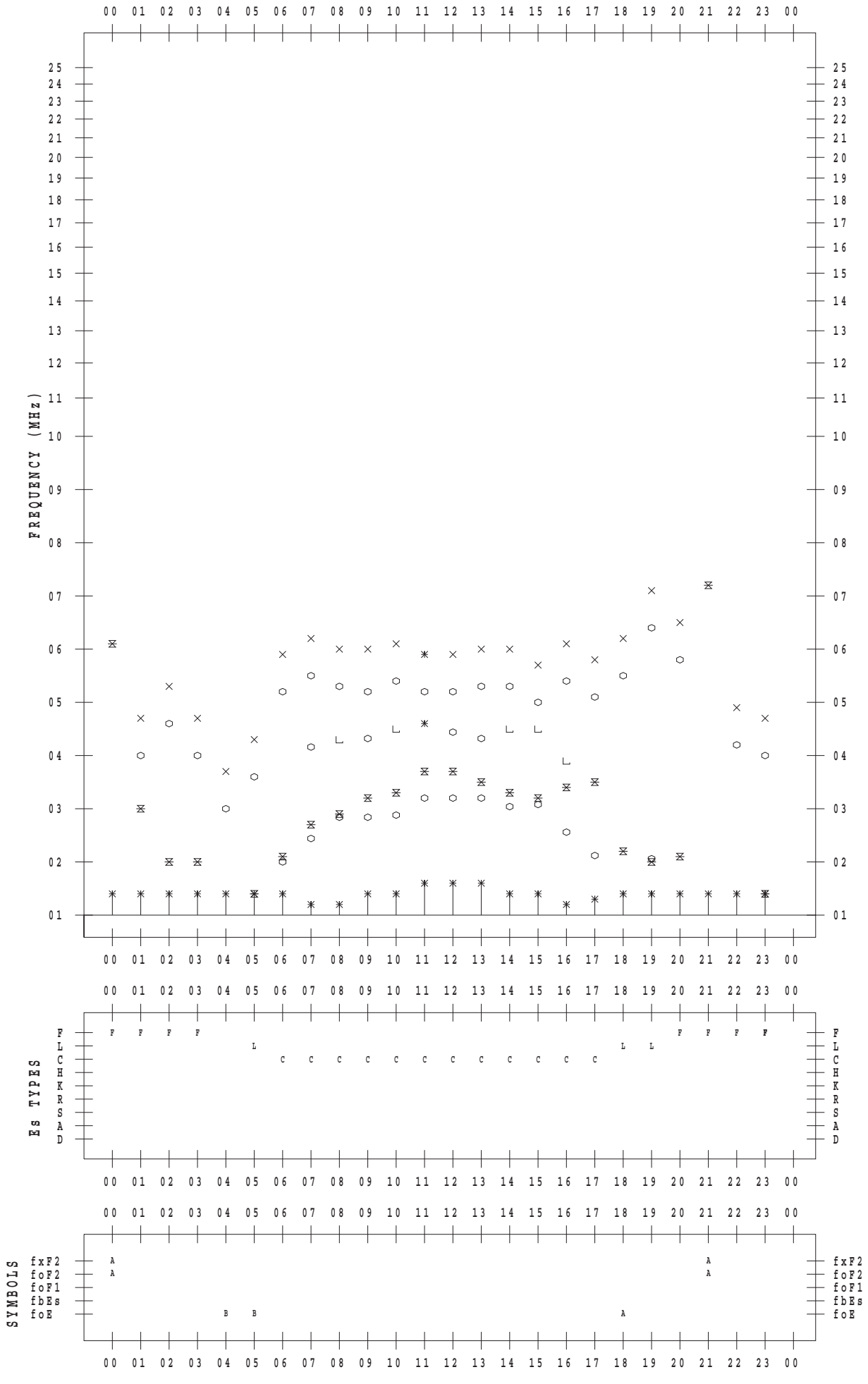
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 5

135 °E MEAN TIME



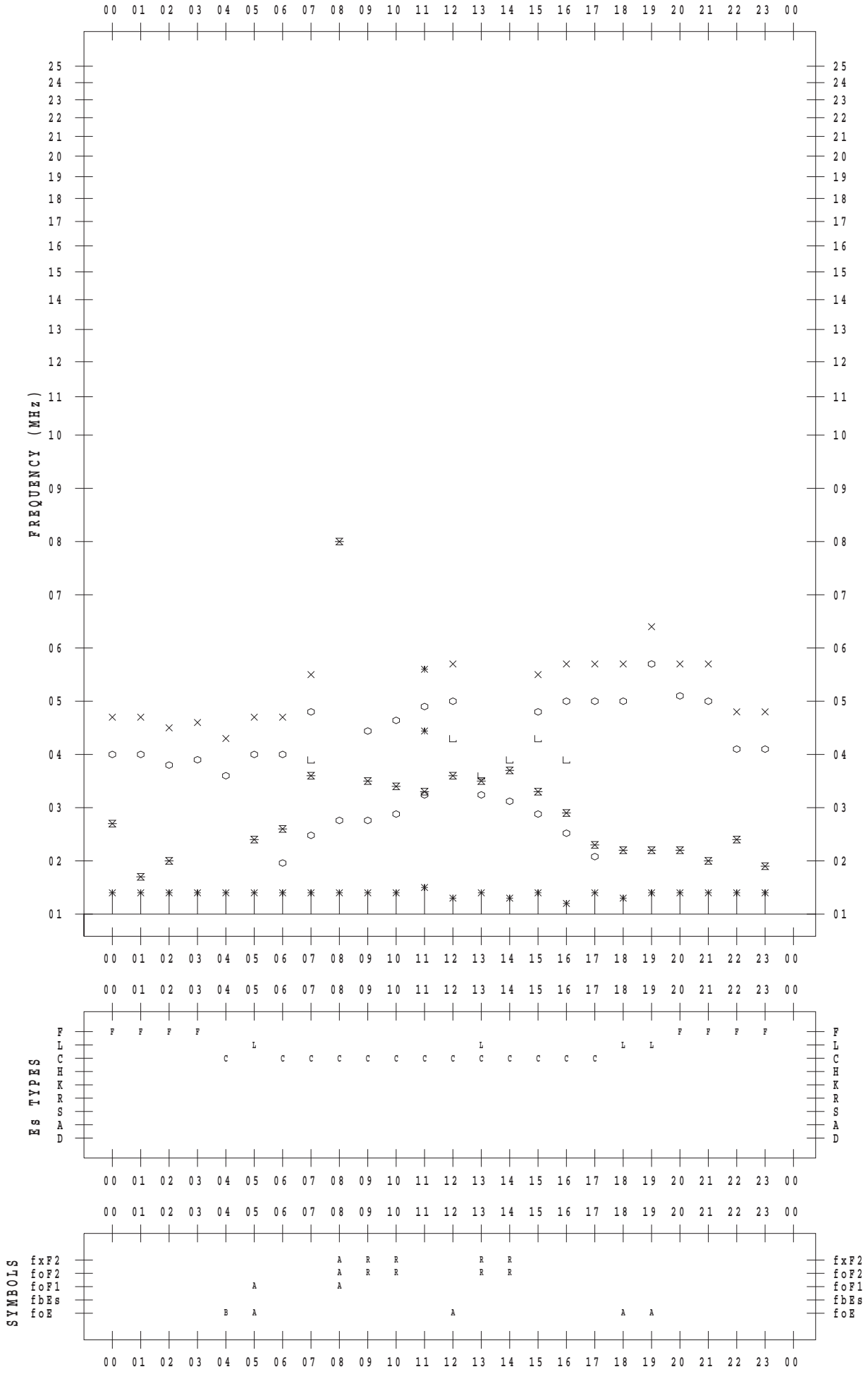
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 6

135 °E MEAN TIME



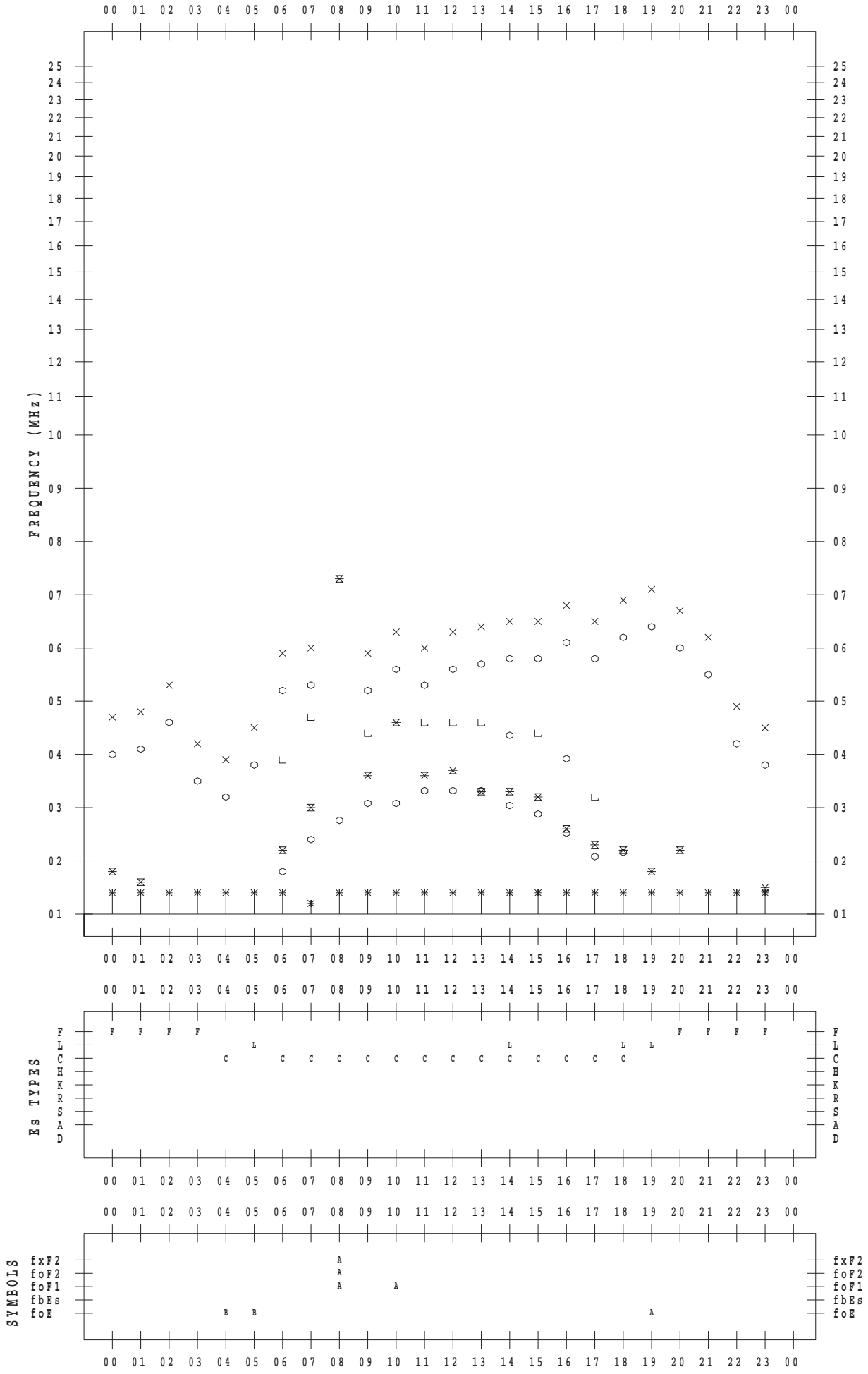
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 7

135 °E MEAN TIME



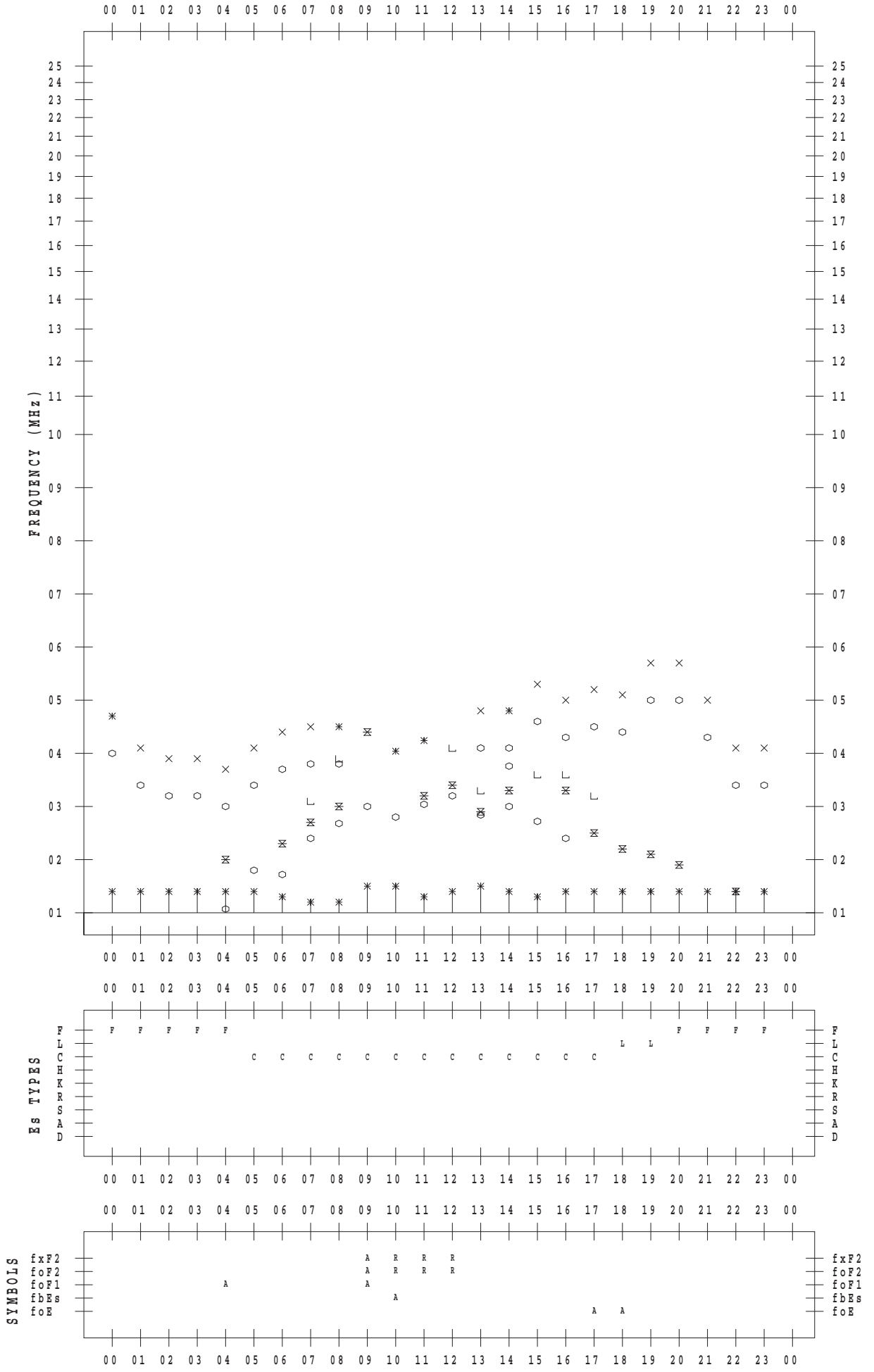
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 8

135 °E MEAN TIME



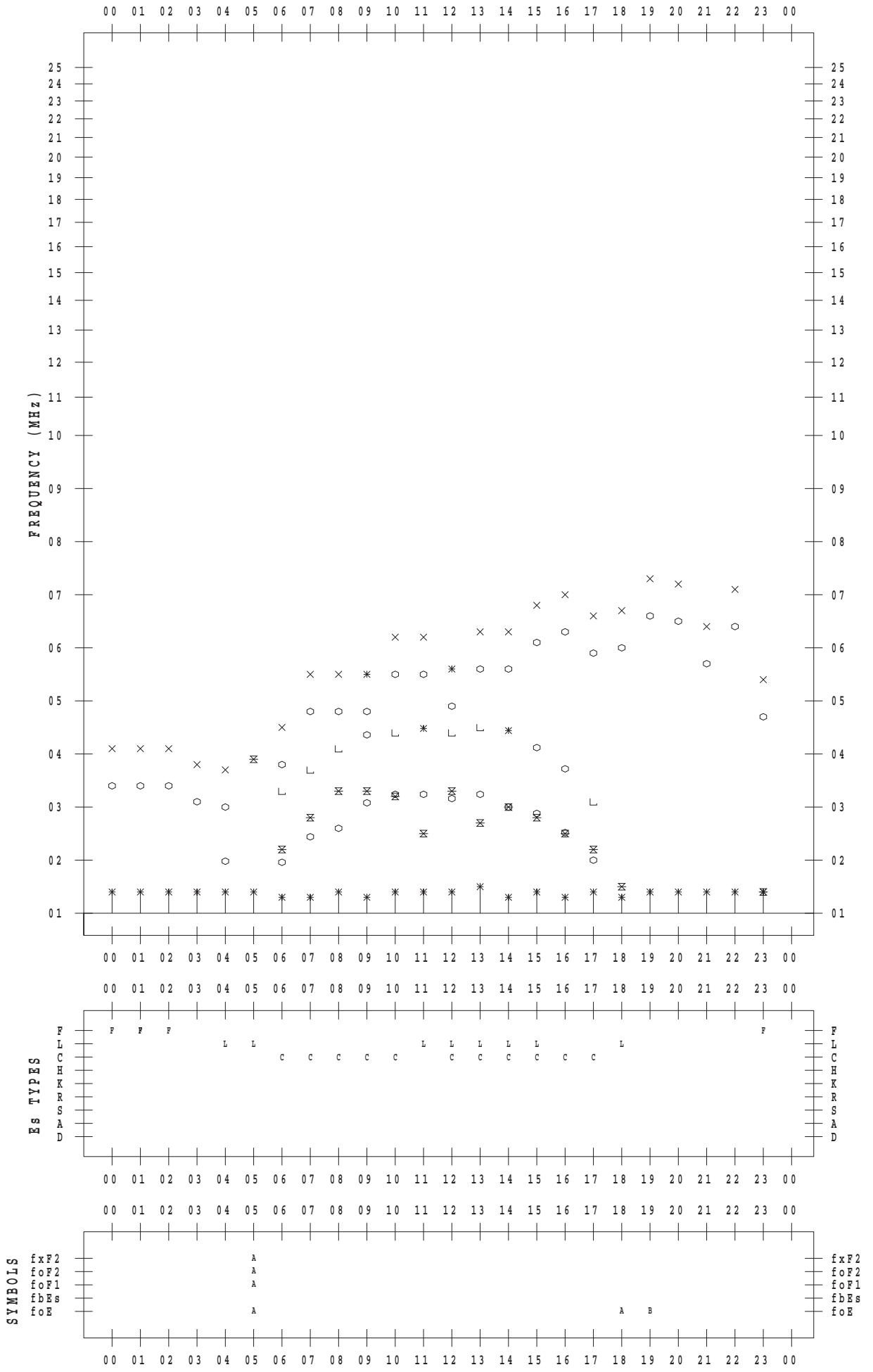
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/ 9

135 °E MEAN TIME



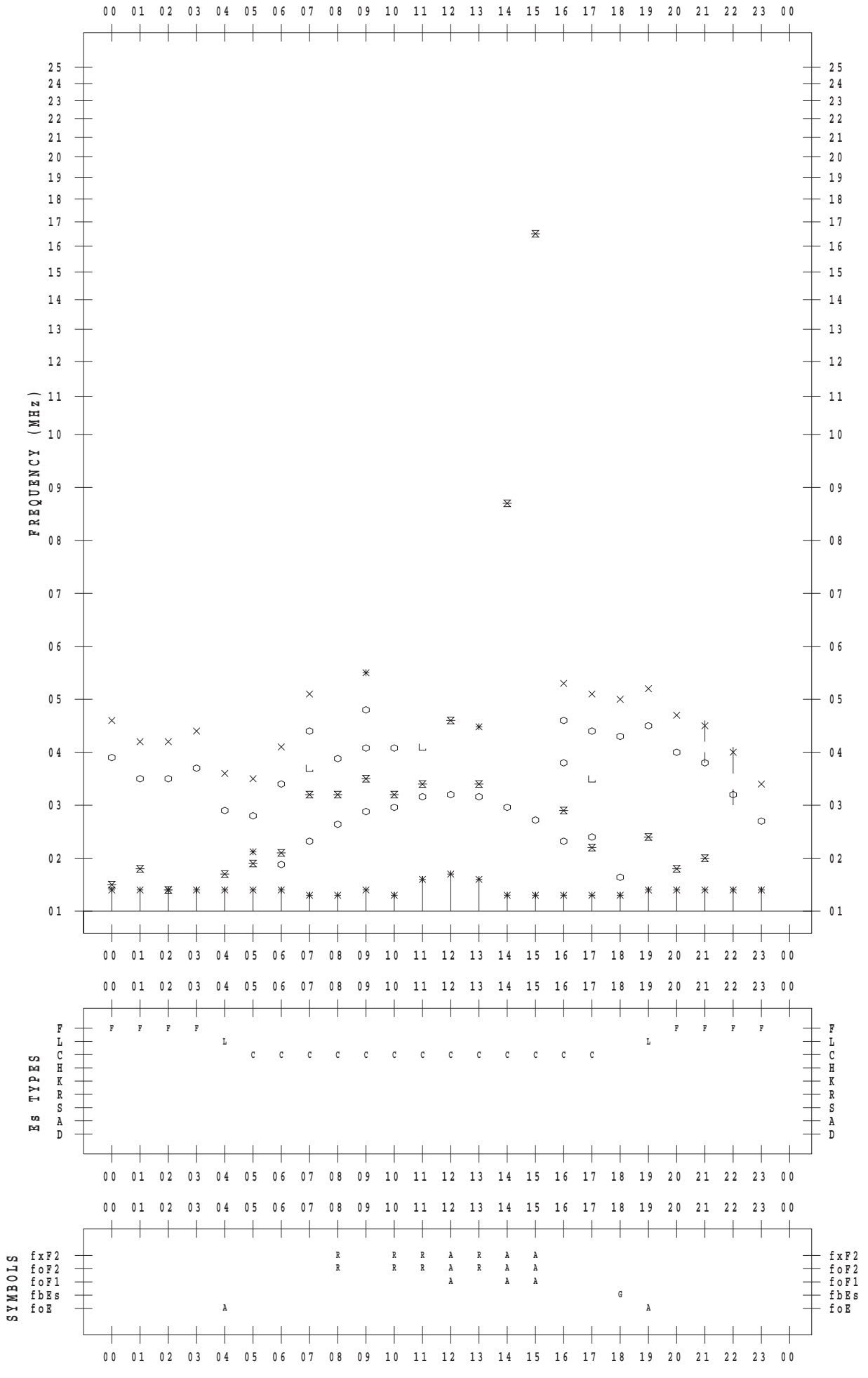
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/10

135 °E MEAN TIME



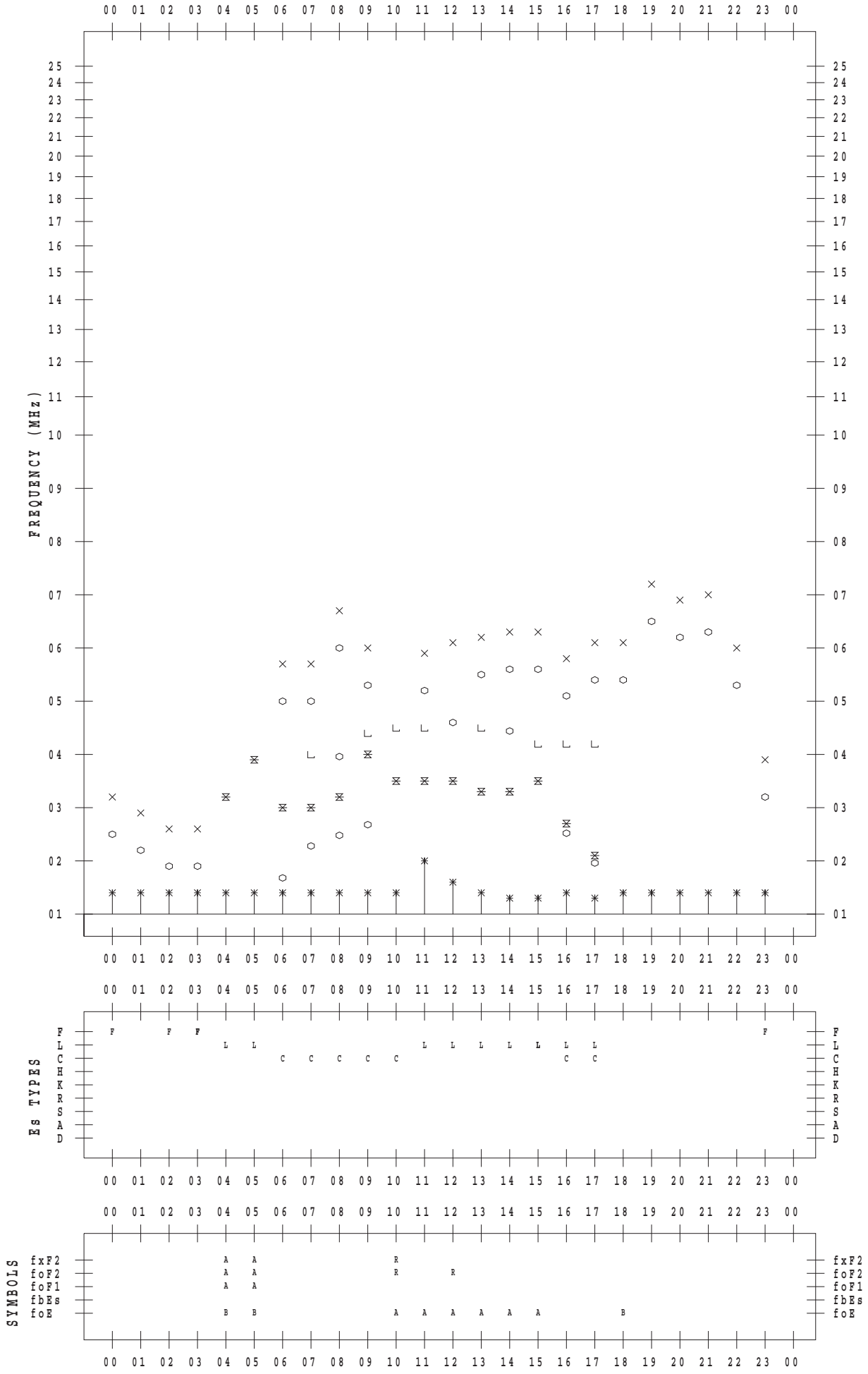
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/11

135 °E MEAN TIME



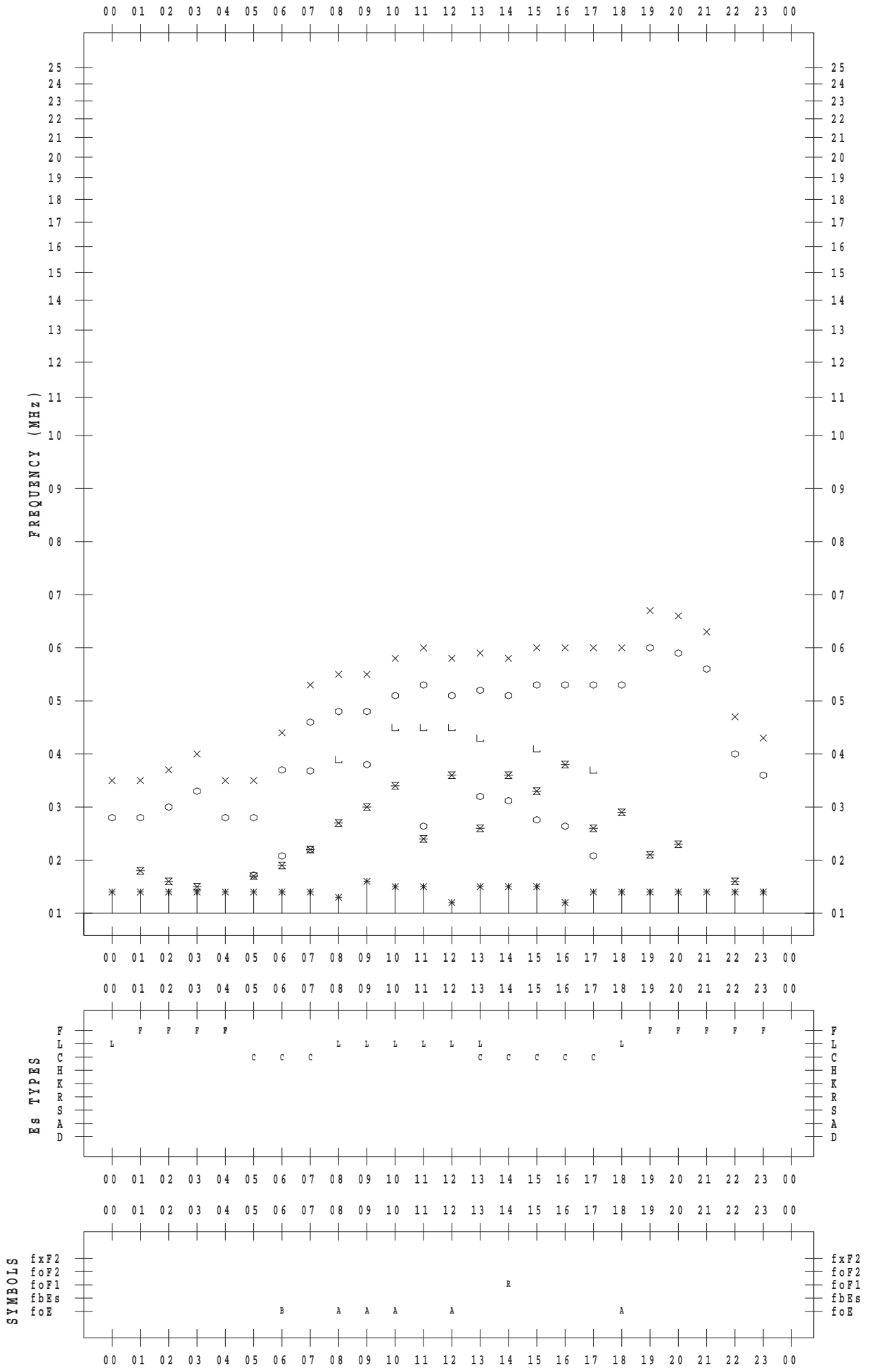
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/12

135 °E MEAN TIME



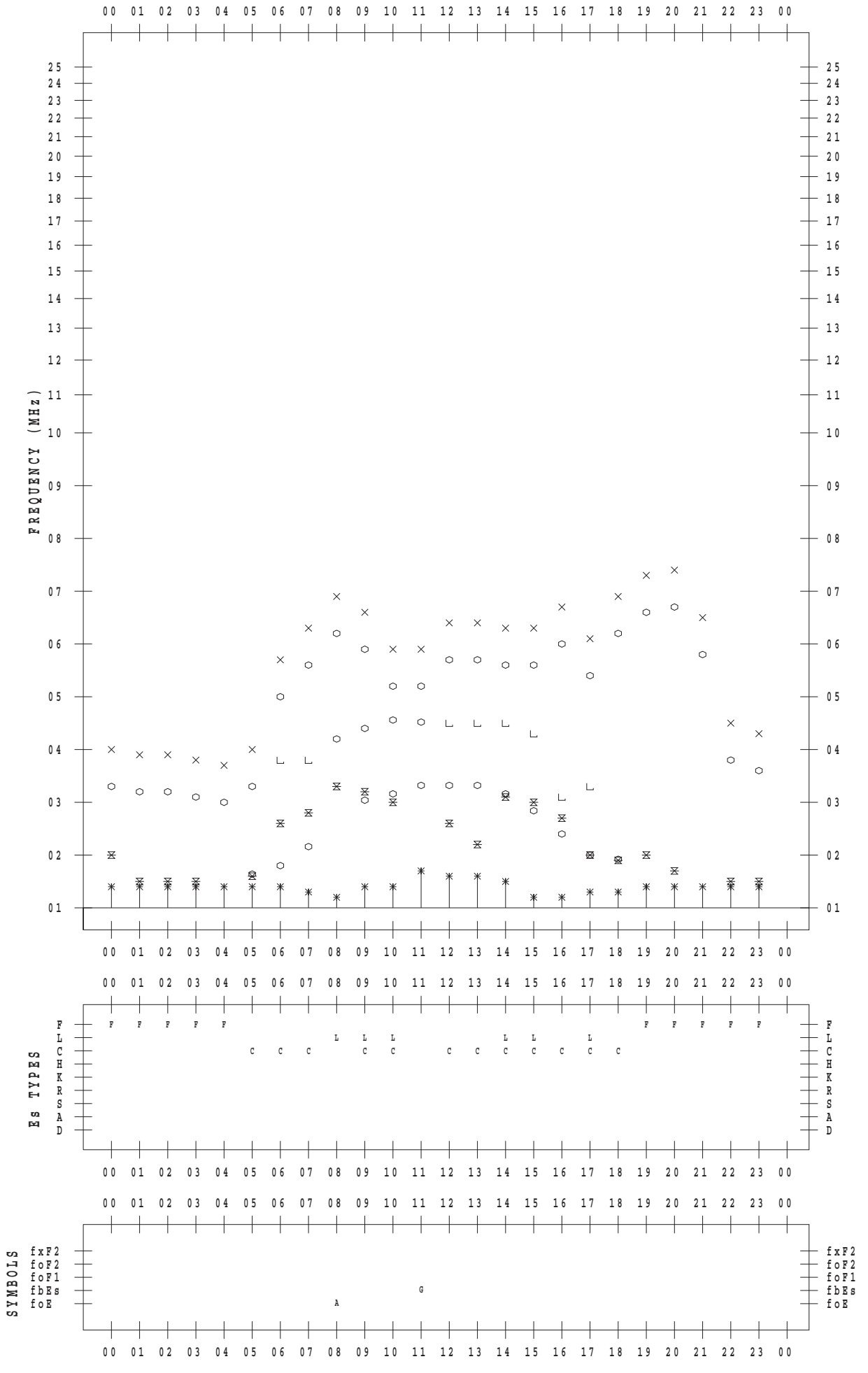
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/13

135 °E MEAN TIME



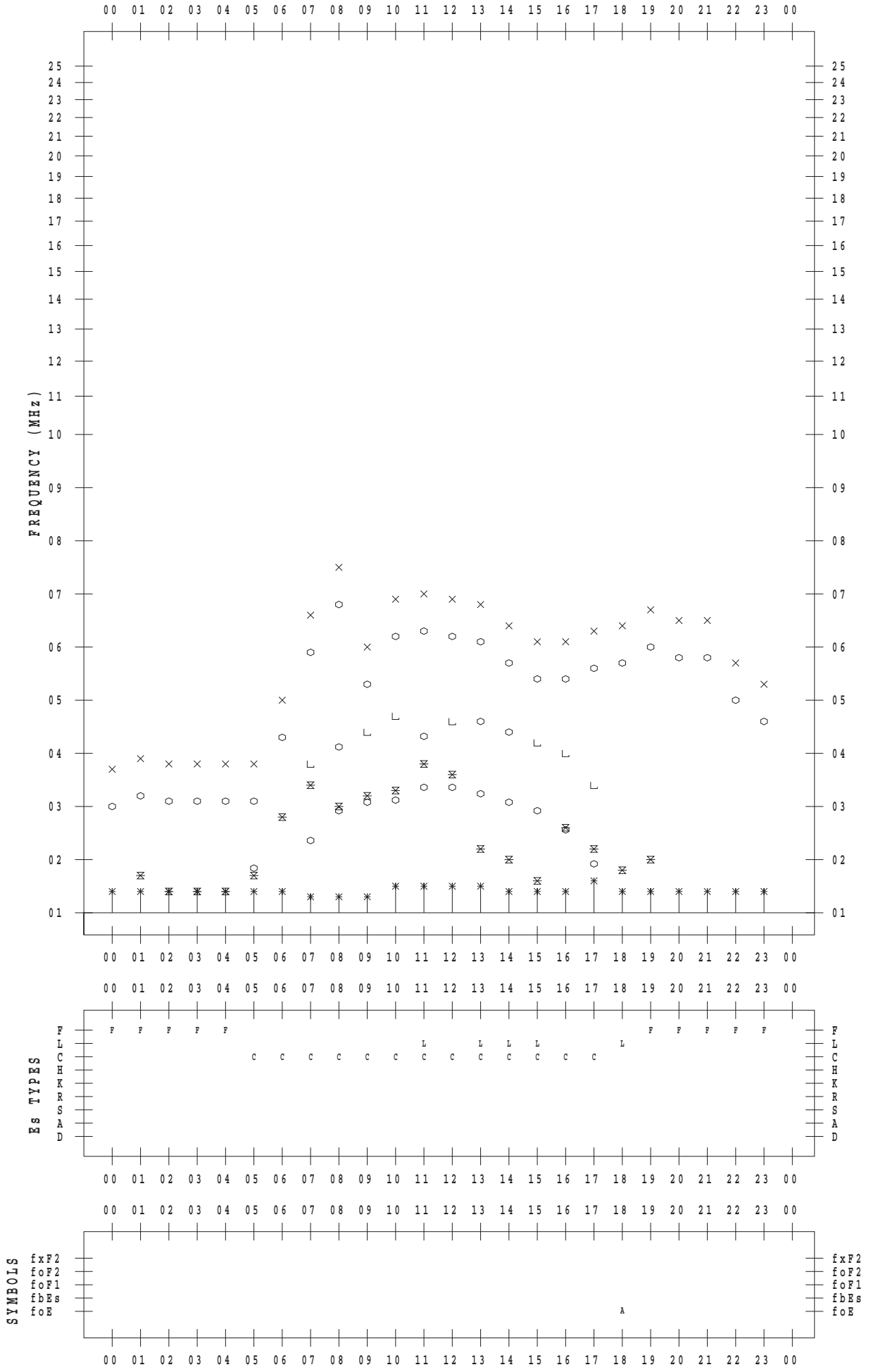
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/14

135 °E MEAN TIME



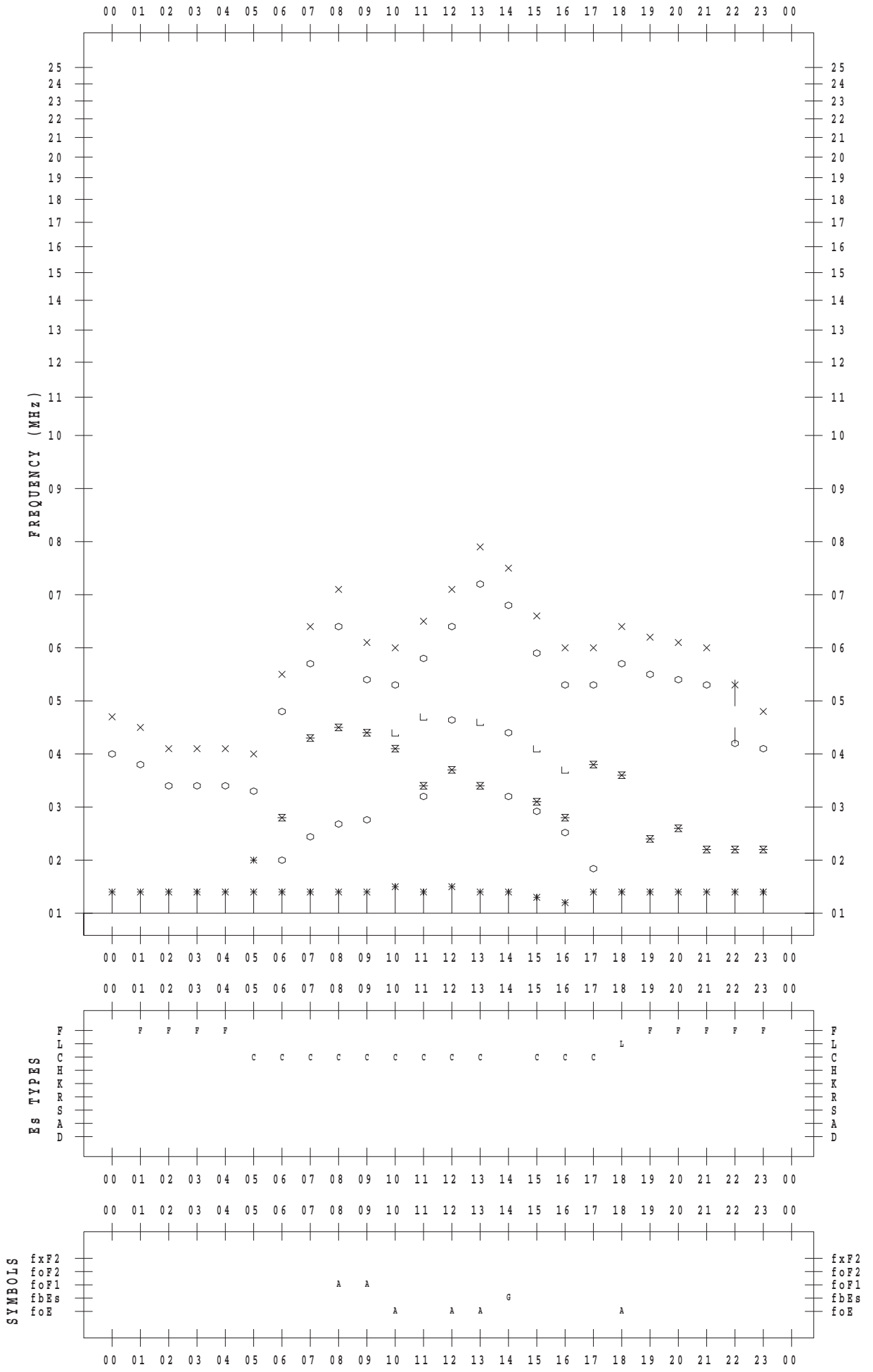
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/15

135 °E MEAN TIME



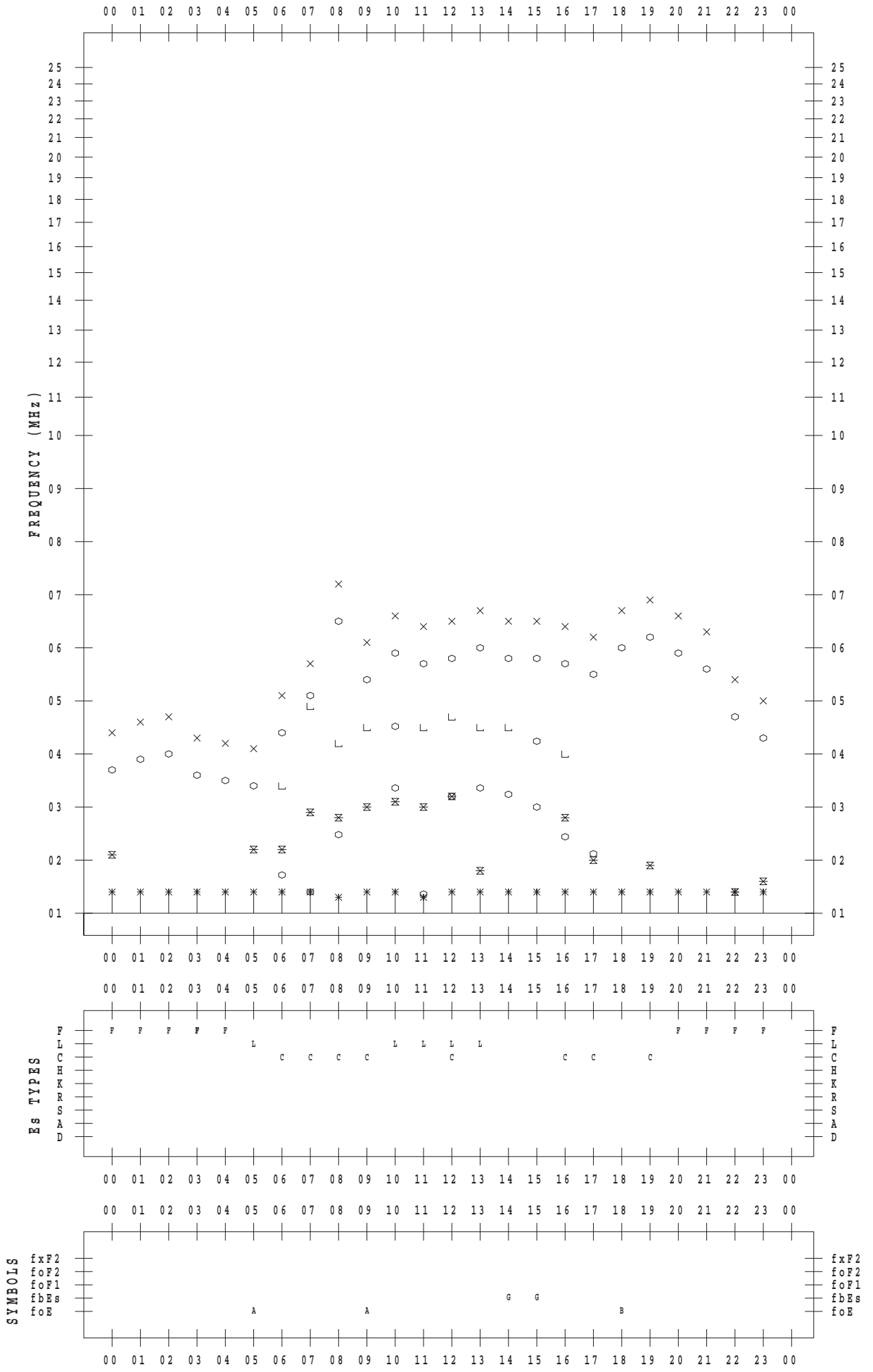
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/16

135 °E MEAN TIME



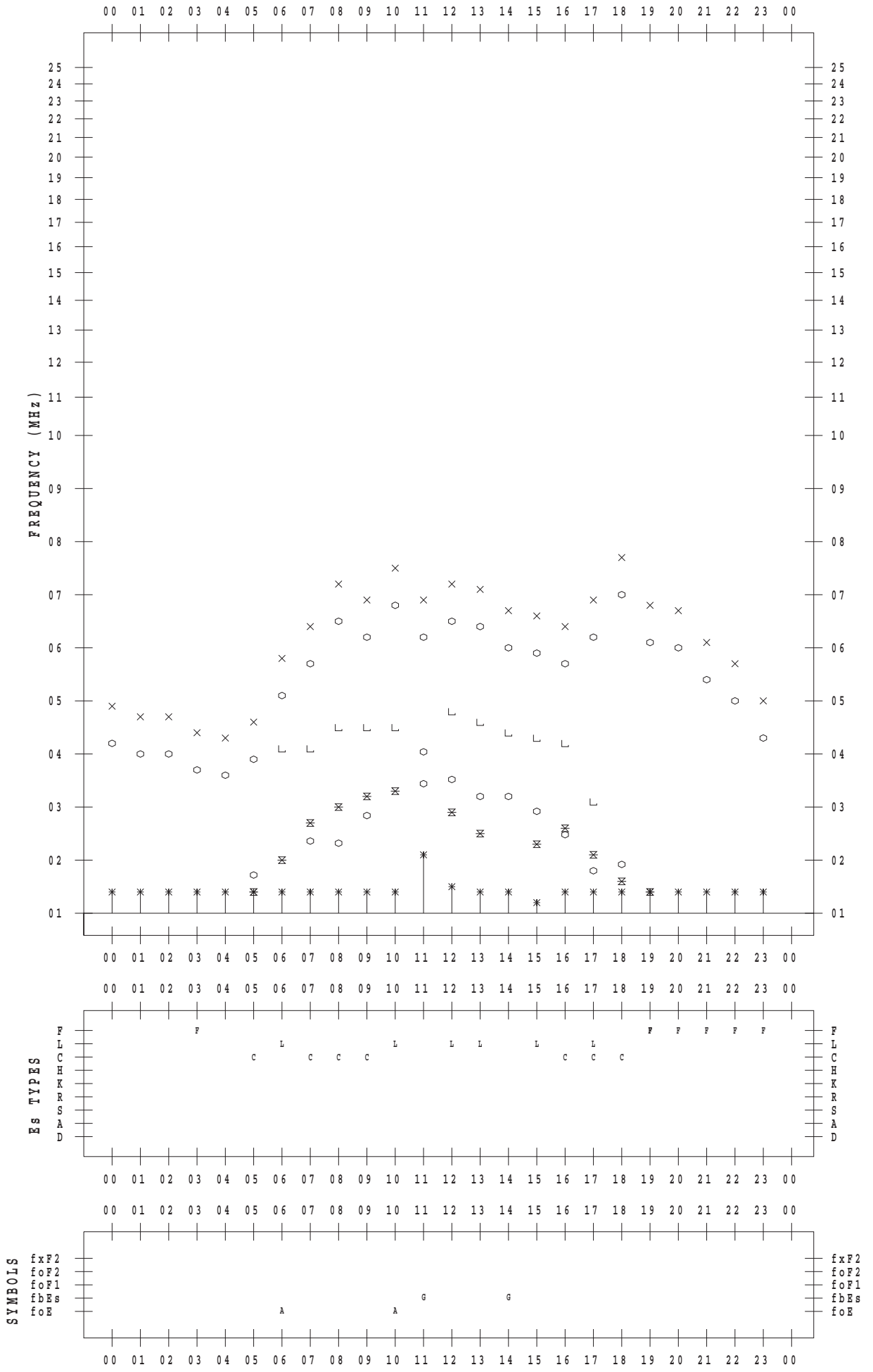
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/17

135 °E MEAN TIME



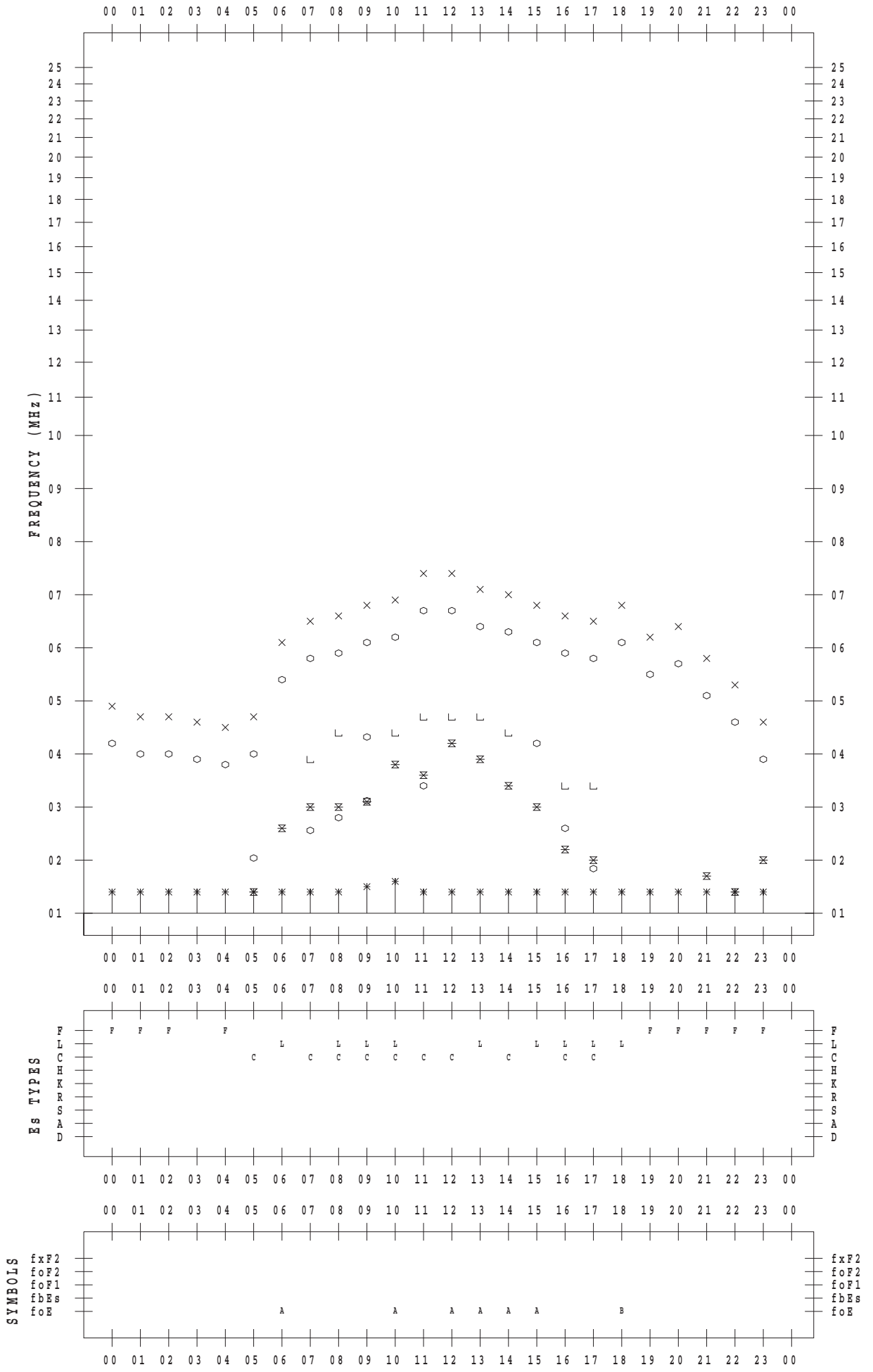
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/18

135 °E MEAN TIME



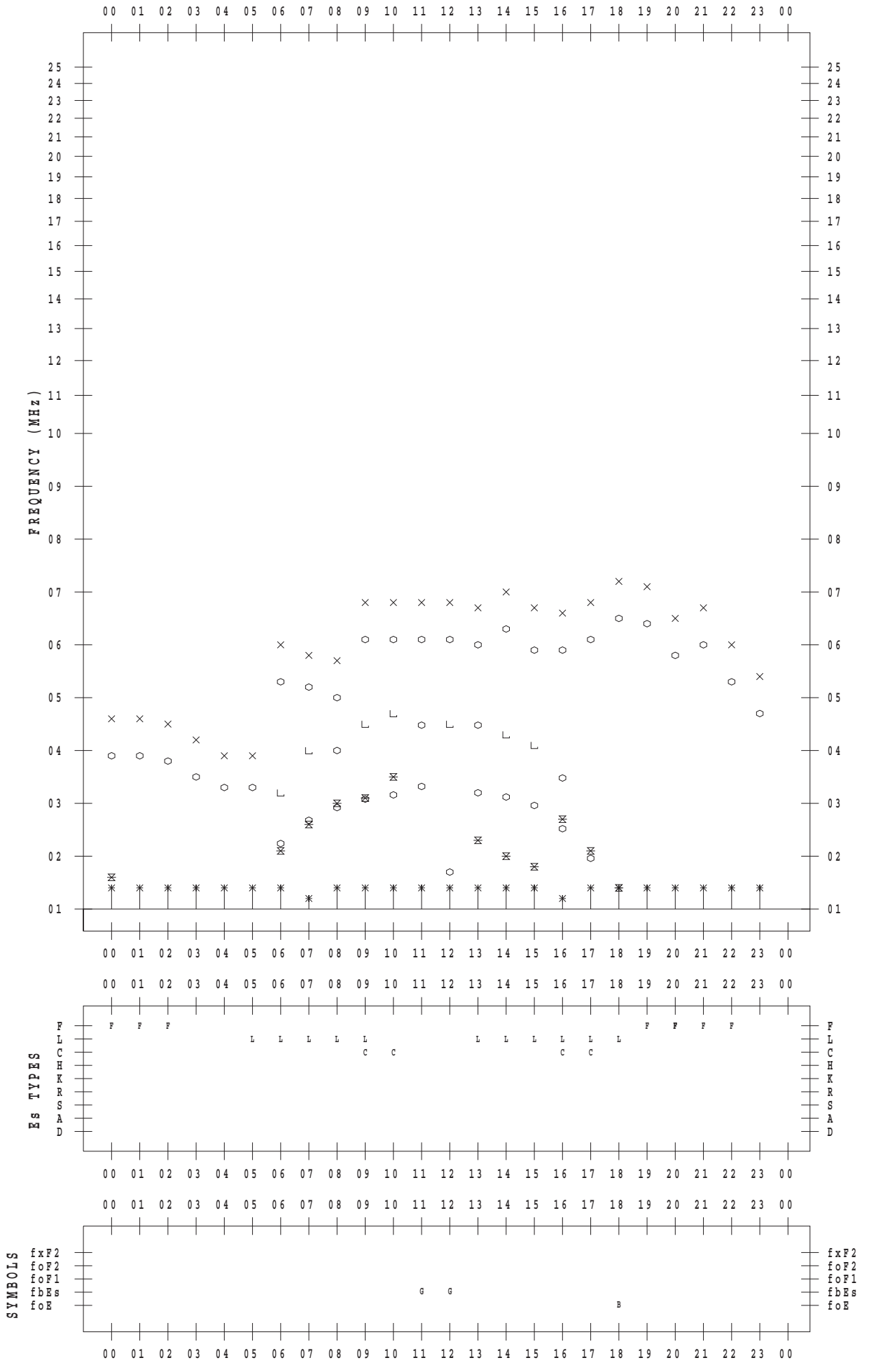
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/19

135 °E MEAN TIME



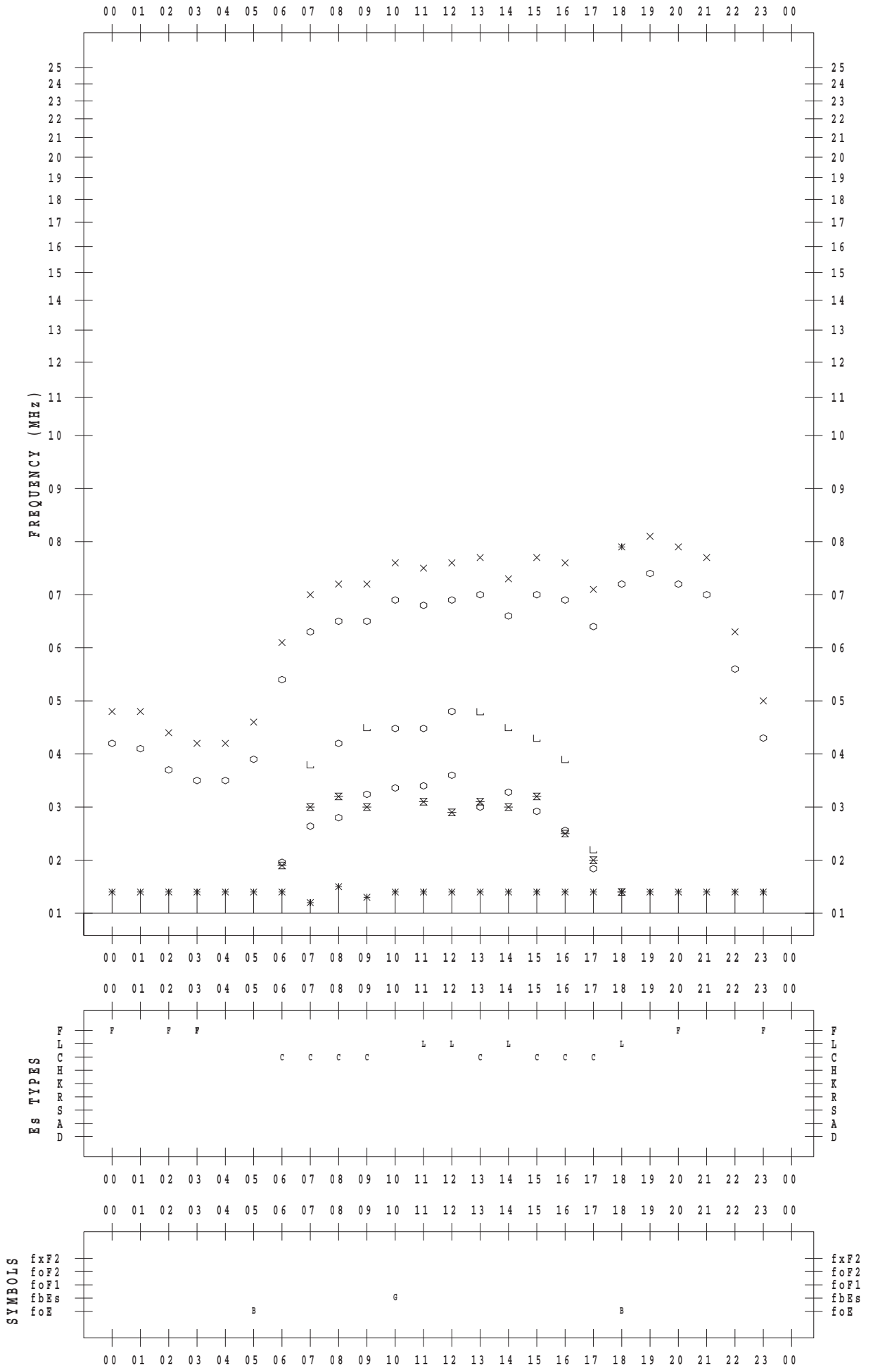
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/20

135 °E MEAN TIME



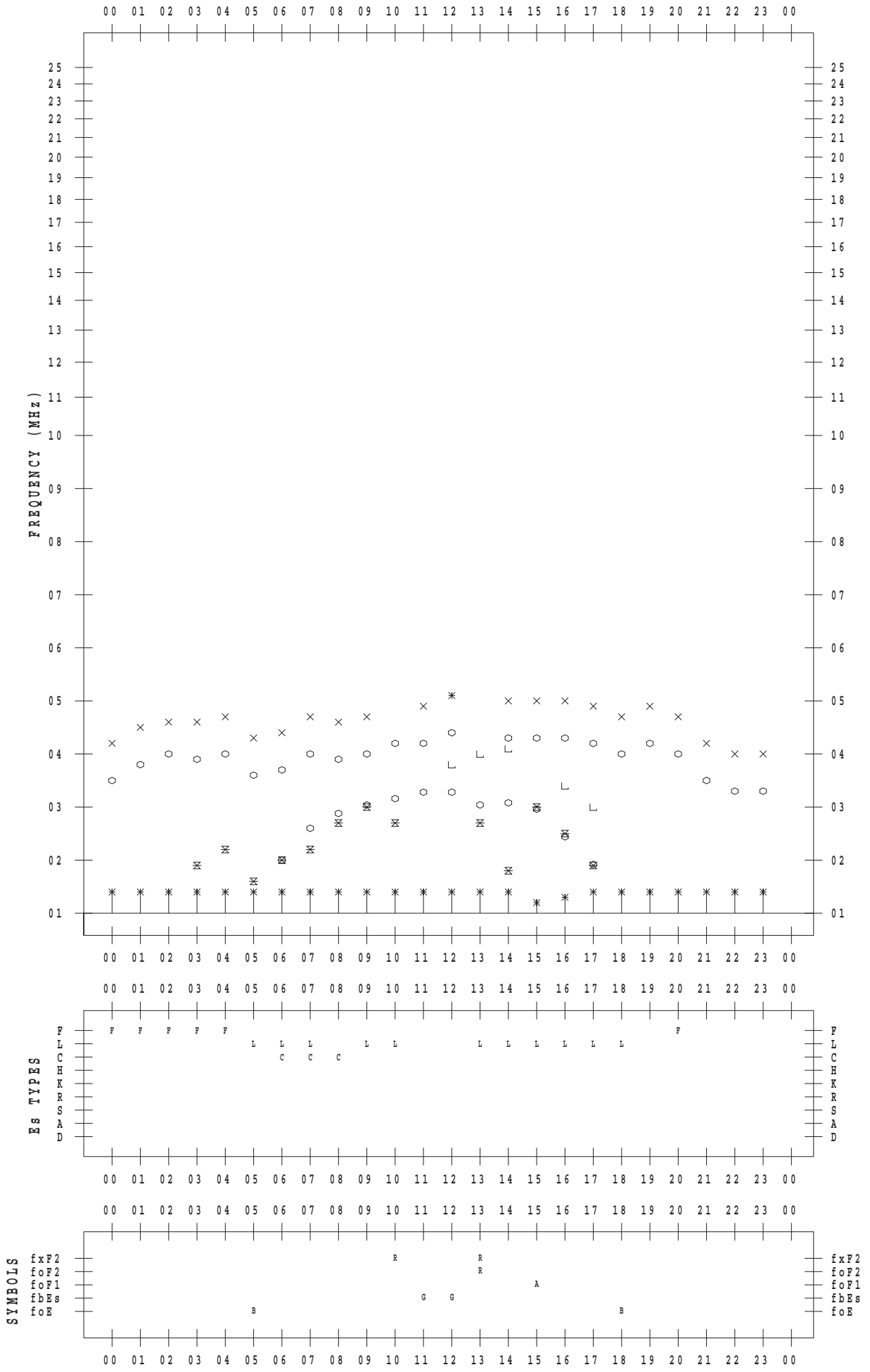
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/21

135 °E MEAN TIME



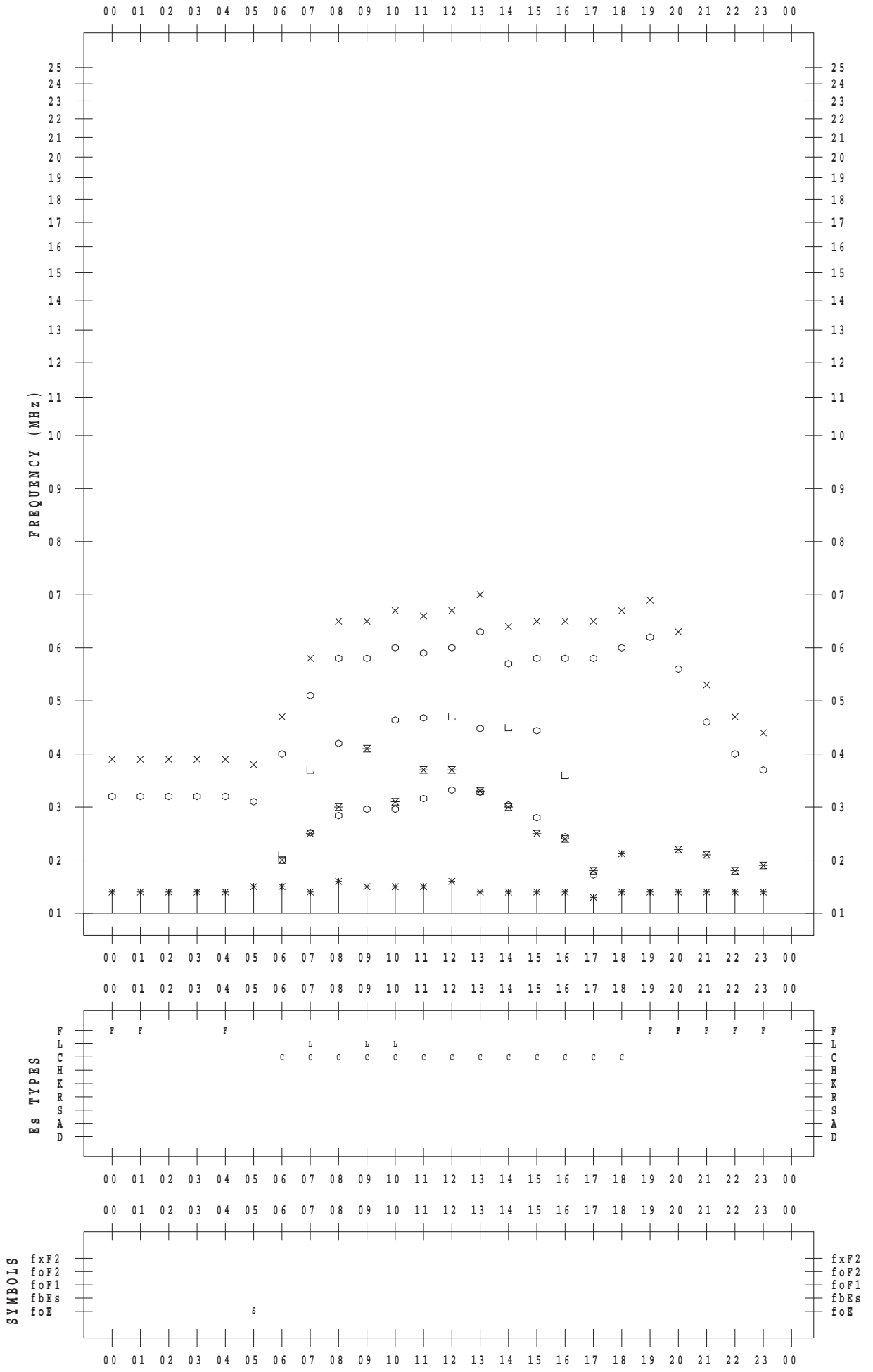
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/22

135 °E MEAN TIME



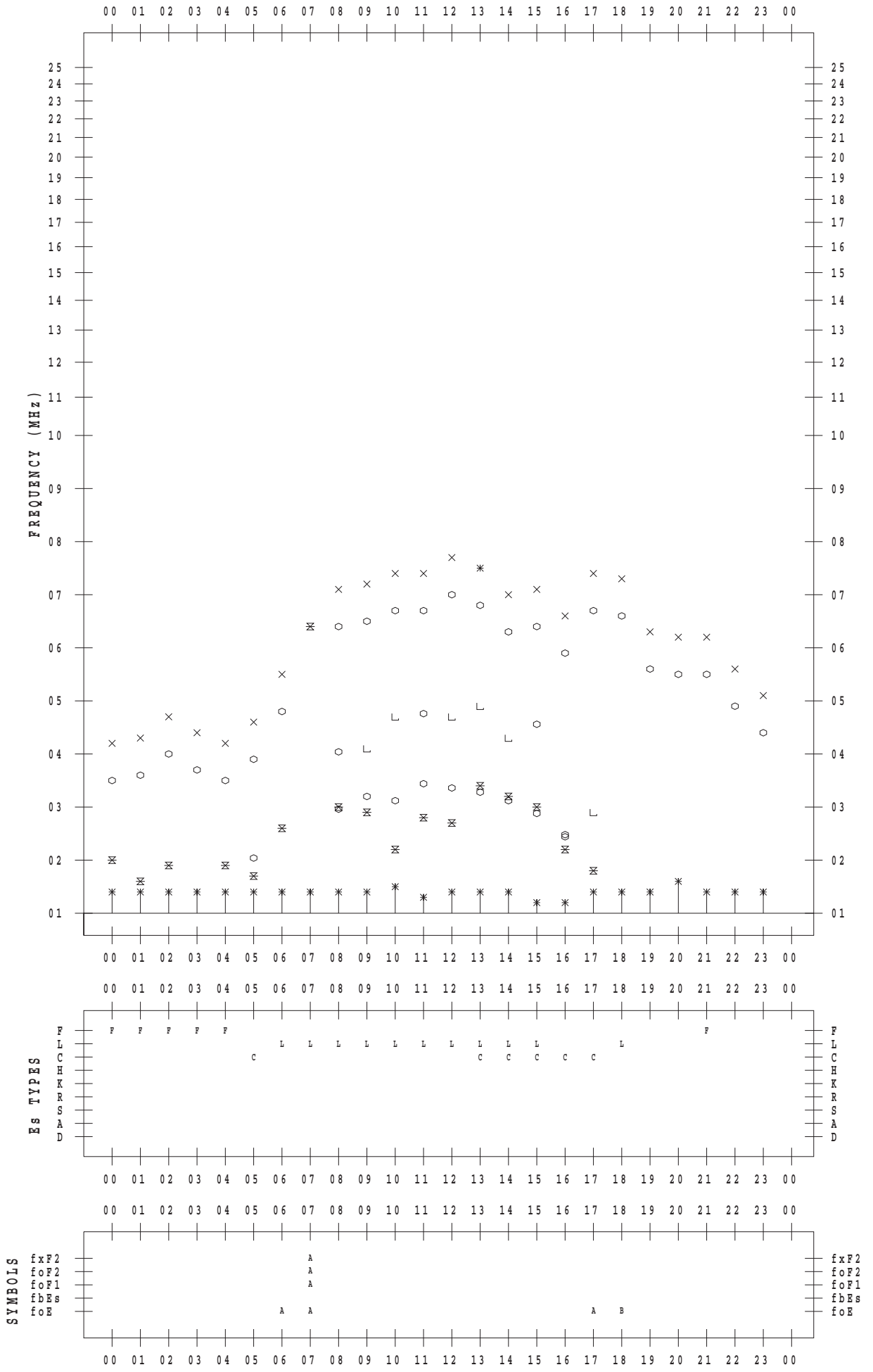
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/23

135 °E MEAN TIME



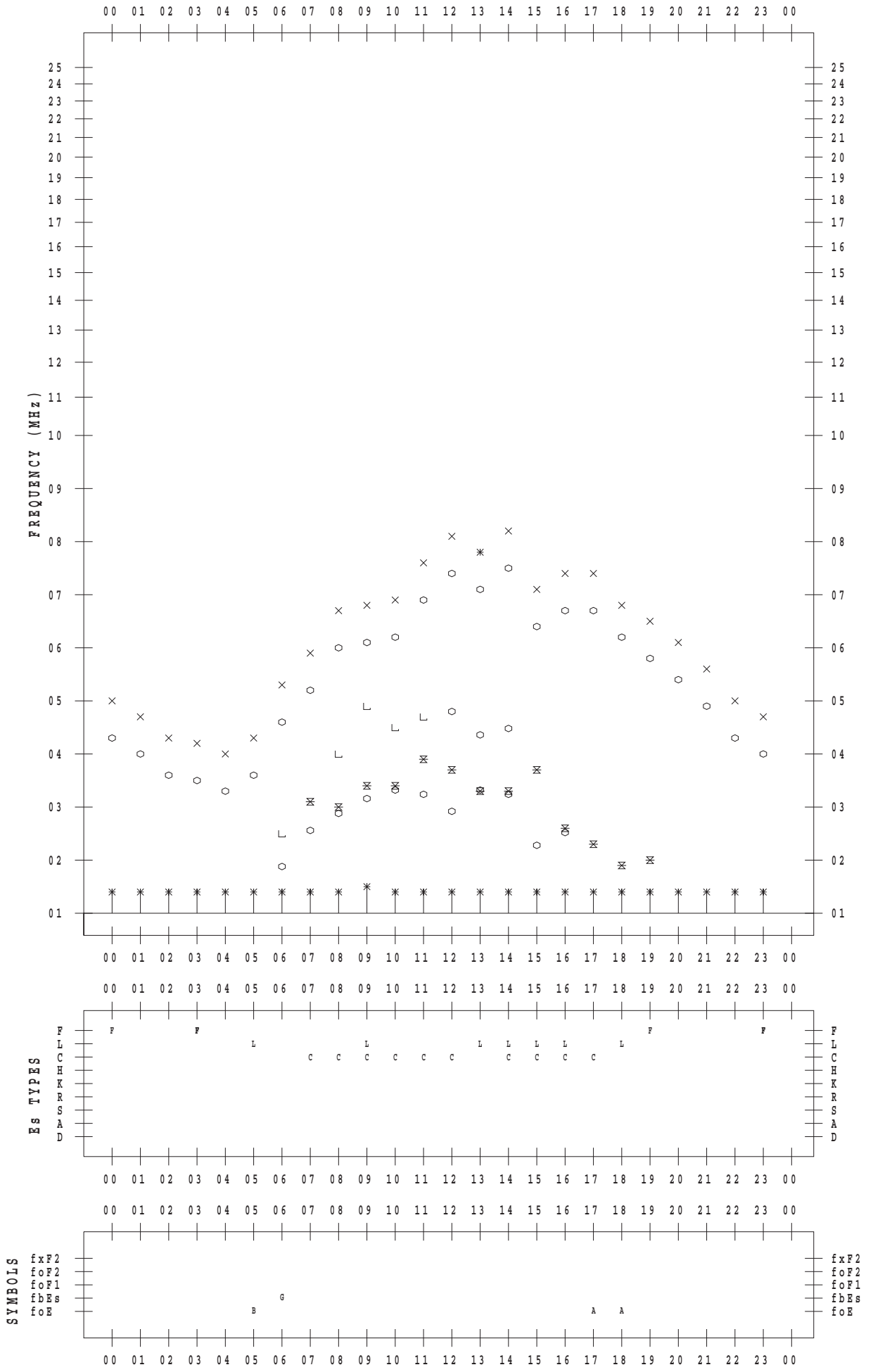
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/24

135 °E MEAN TIME



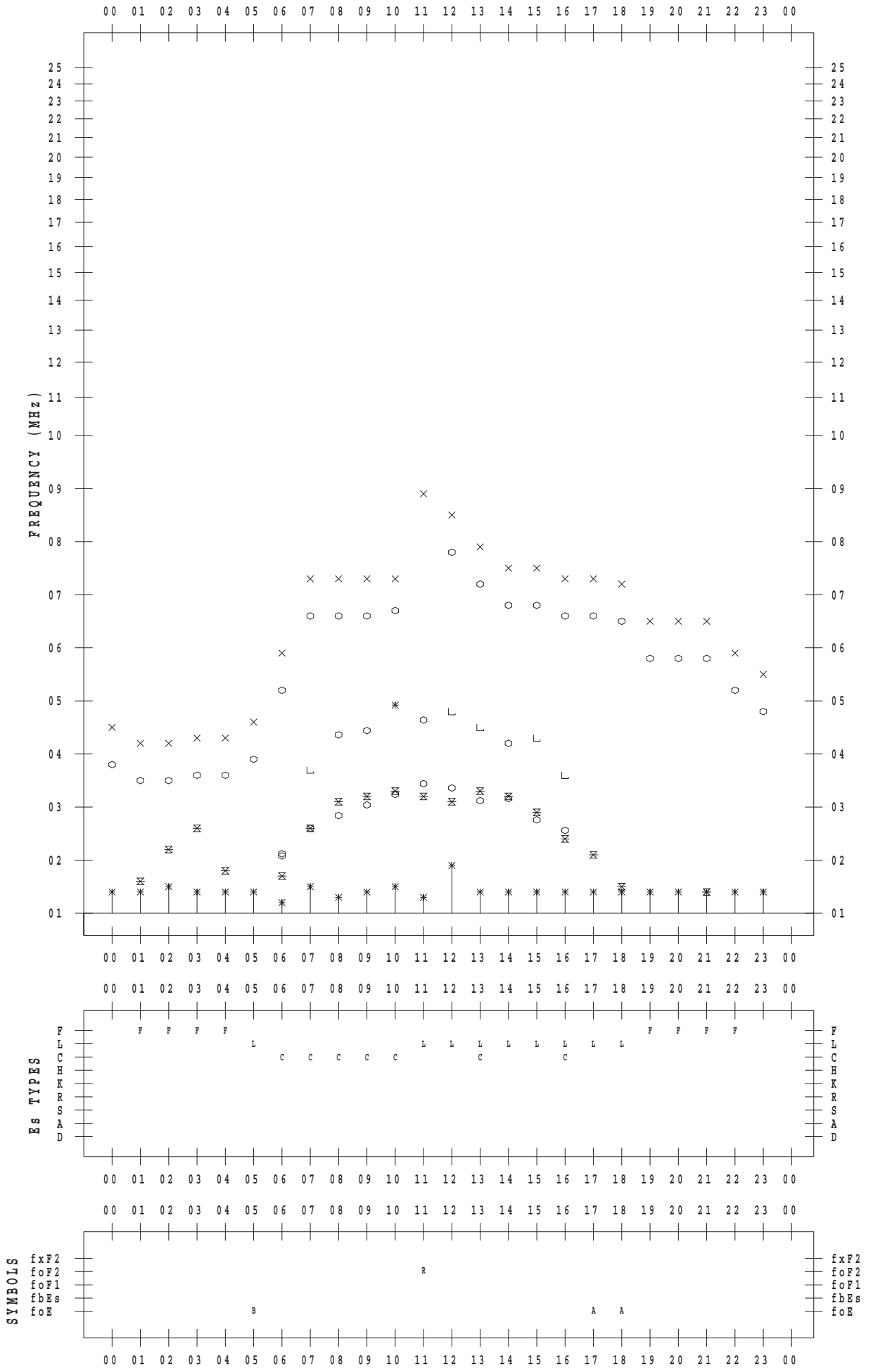
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/25

135 °E MEAN TIME



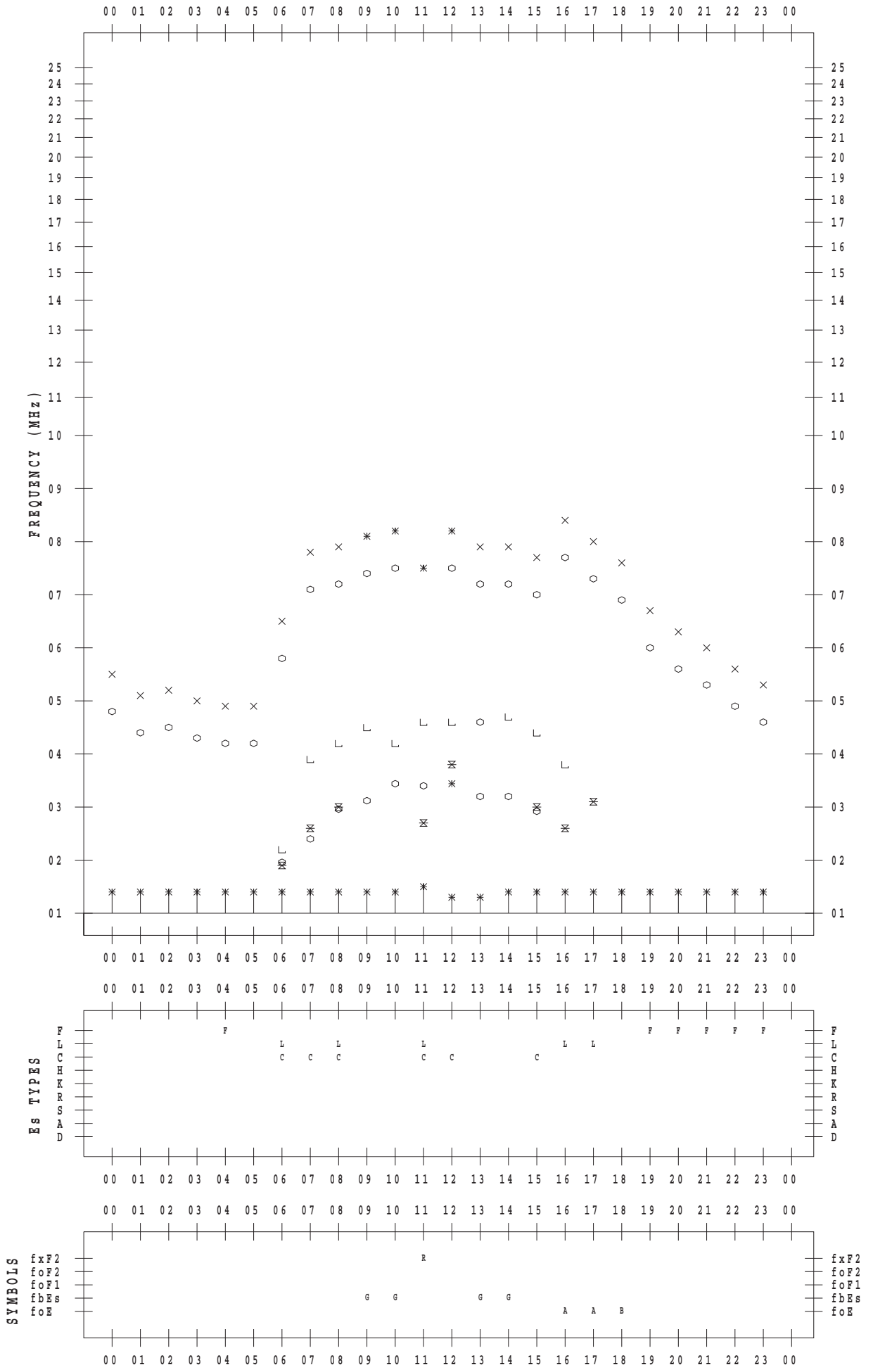
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/26

135 °E MEAN TIME



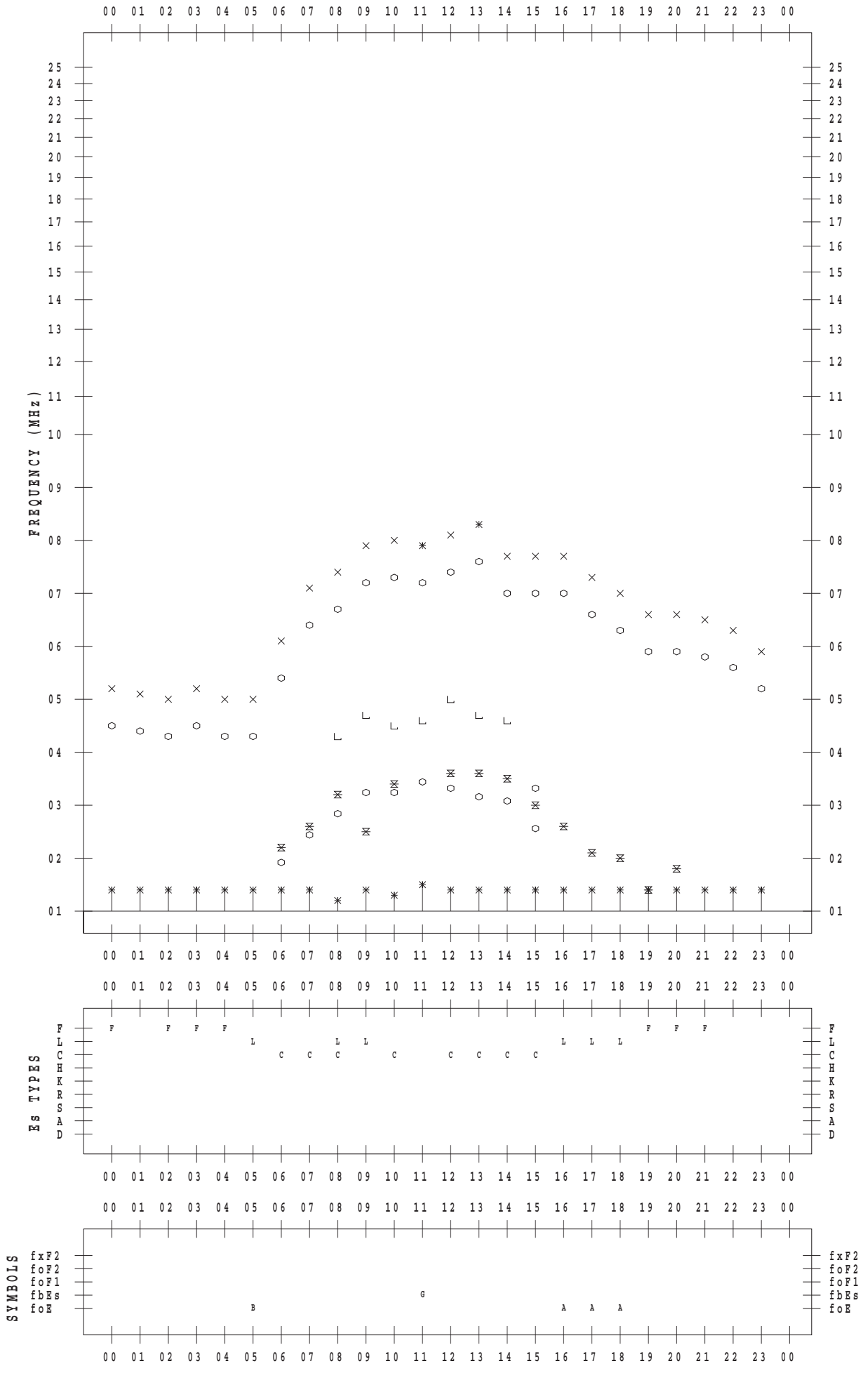
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/27

135 °E MEAN TIME



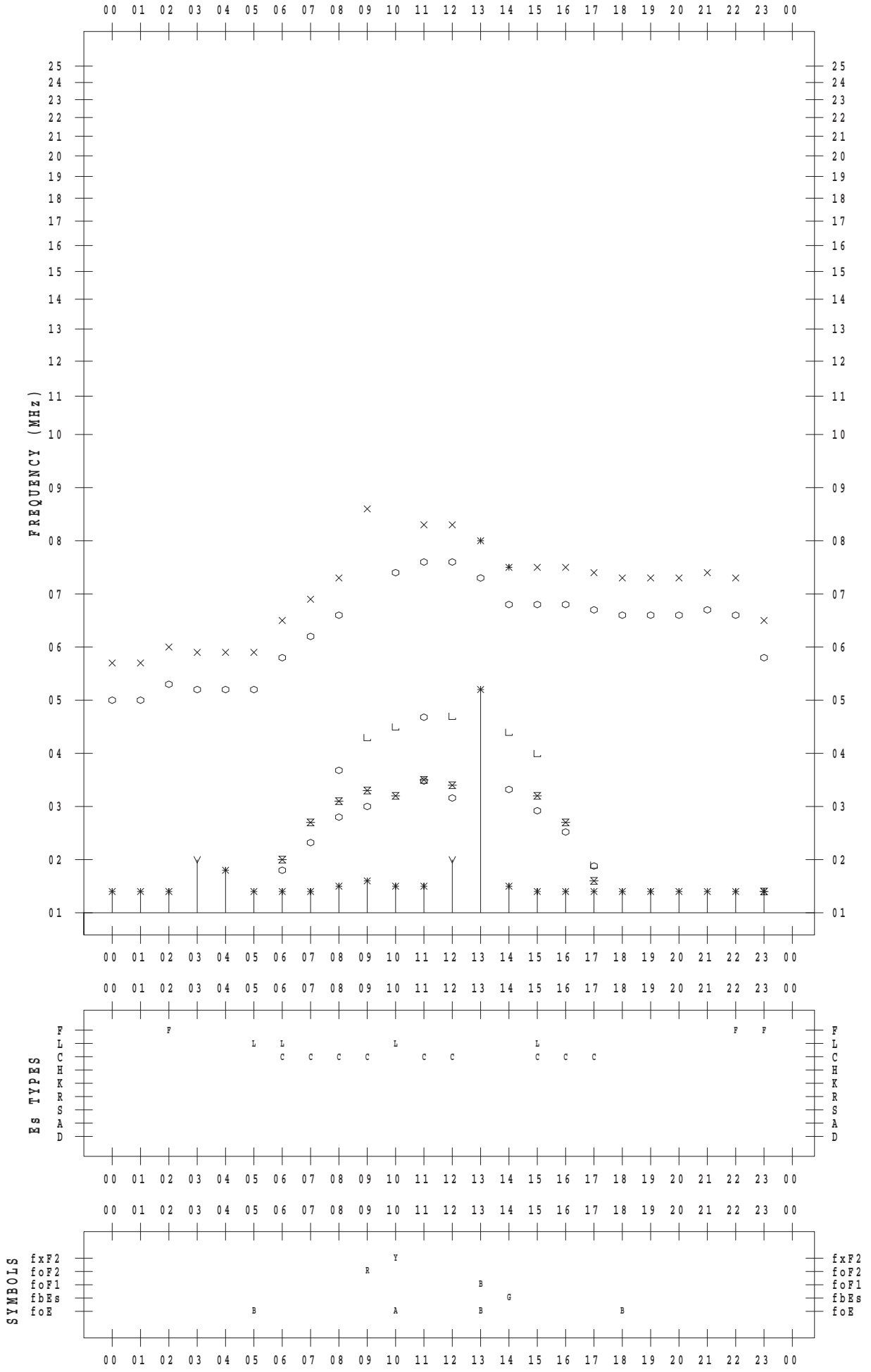
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/28

135 °E MEAN TIME



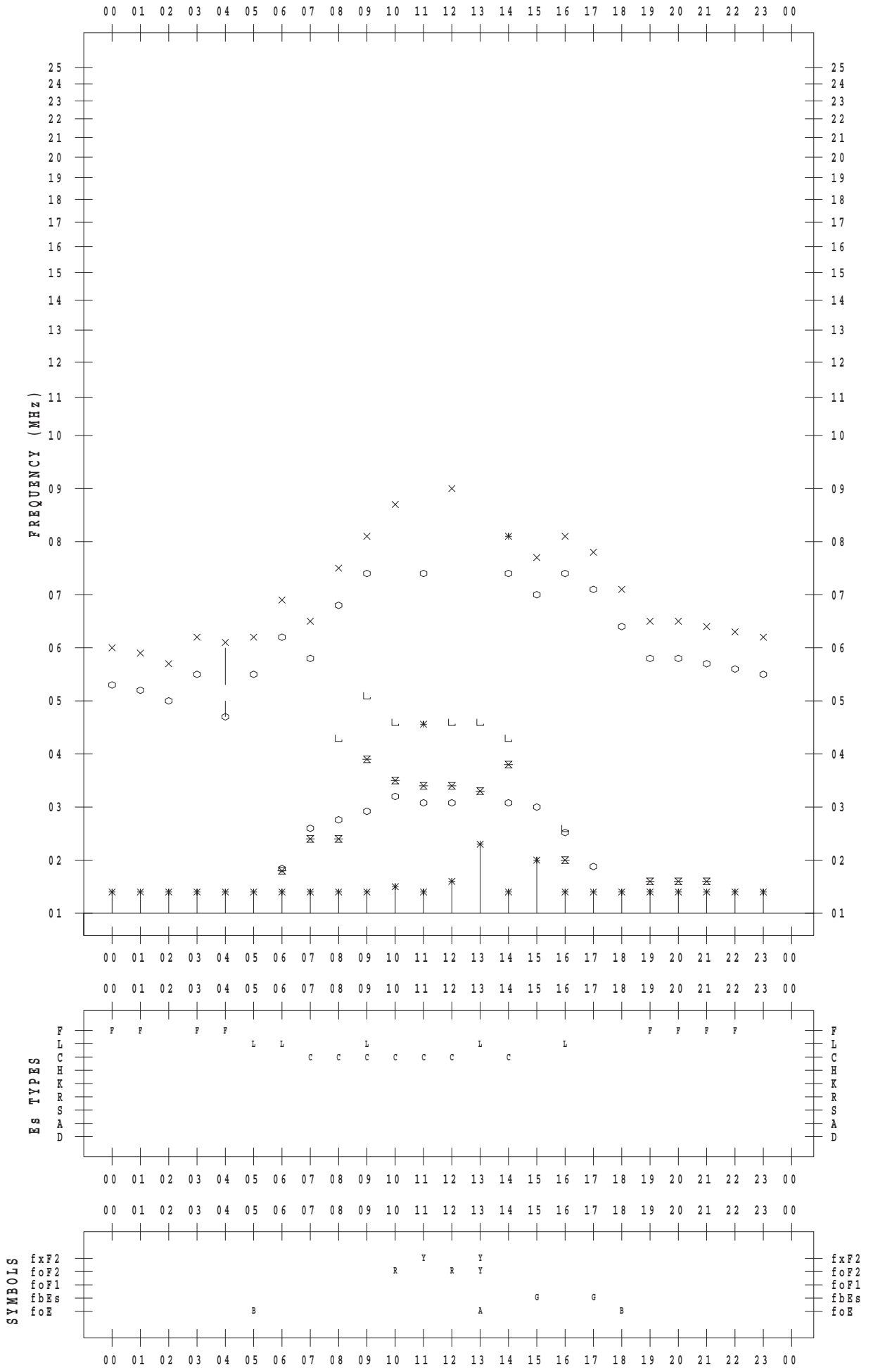
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/29

135 °E MEAN TIME



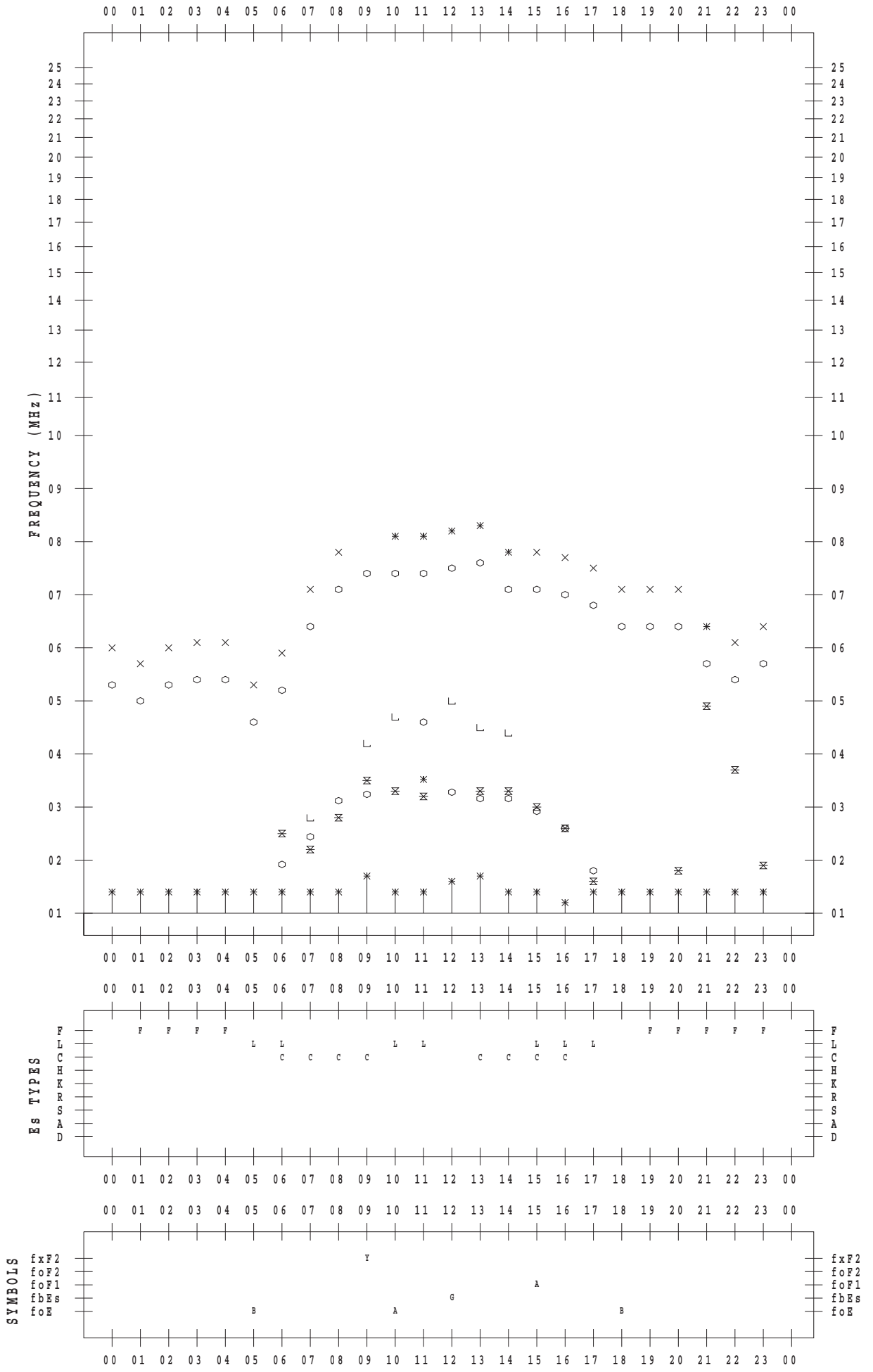
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 9/30

135 °E MEAN TIME



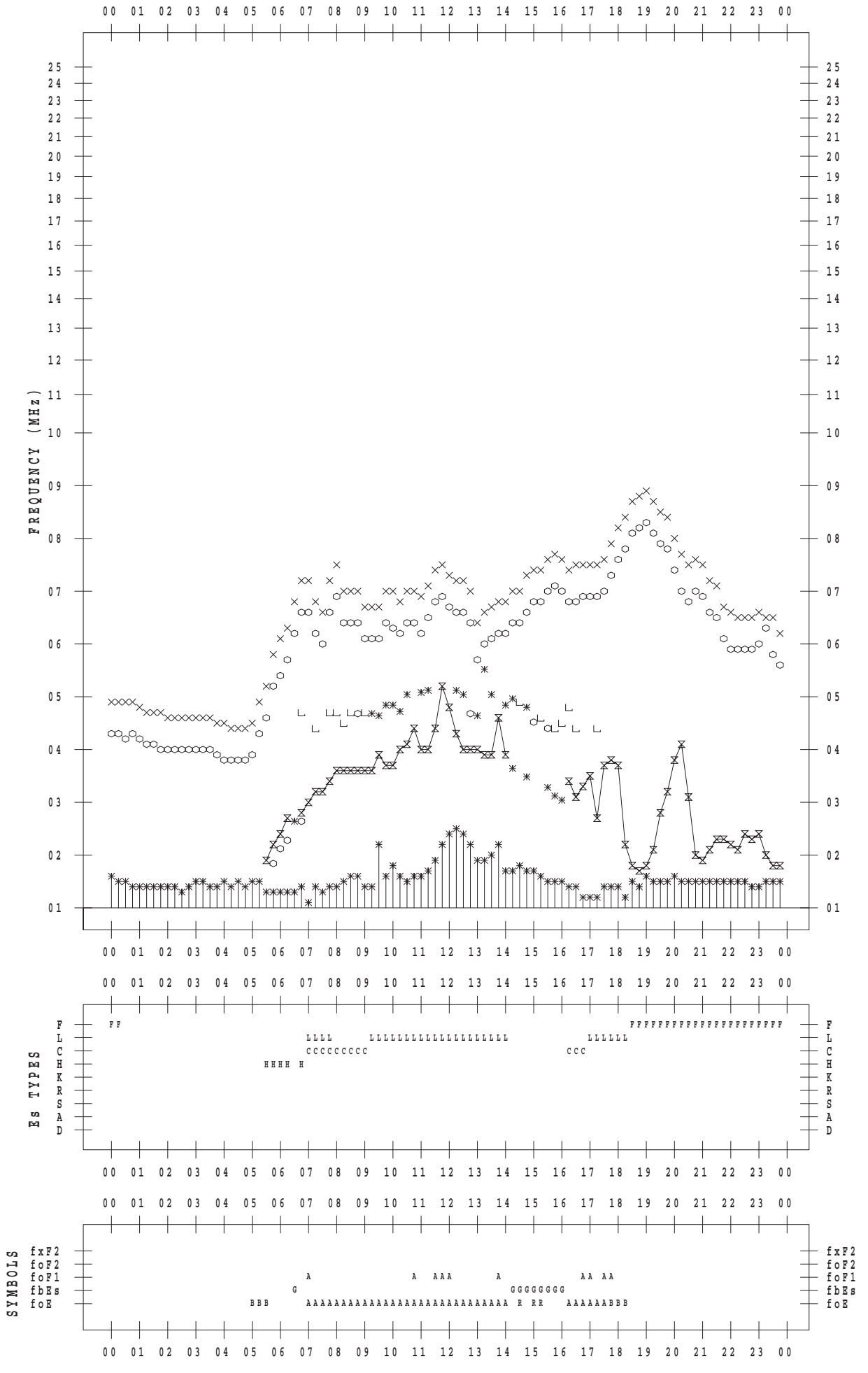
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 1

135 °E MEAN TIME



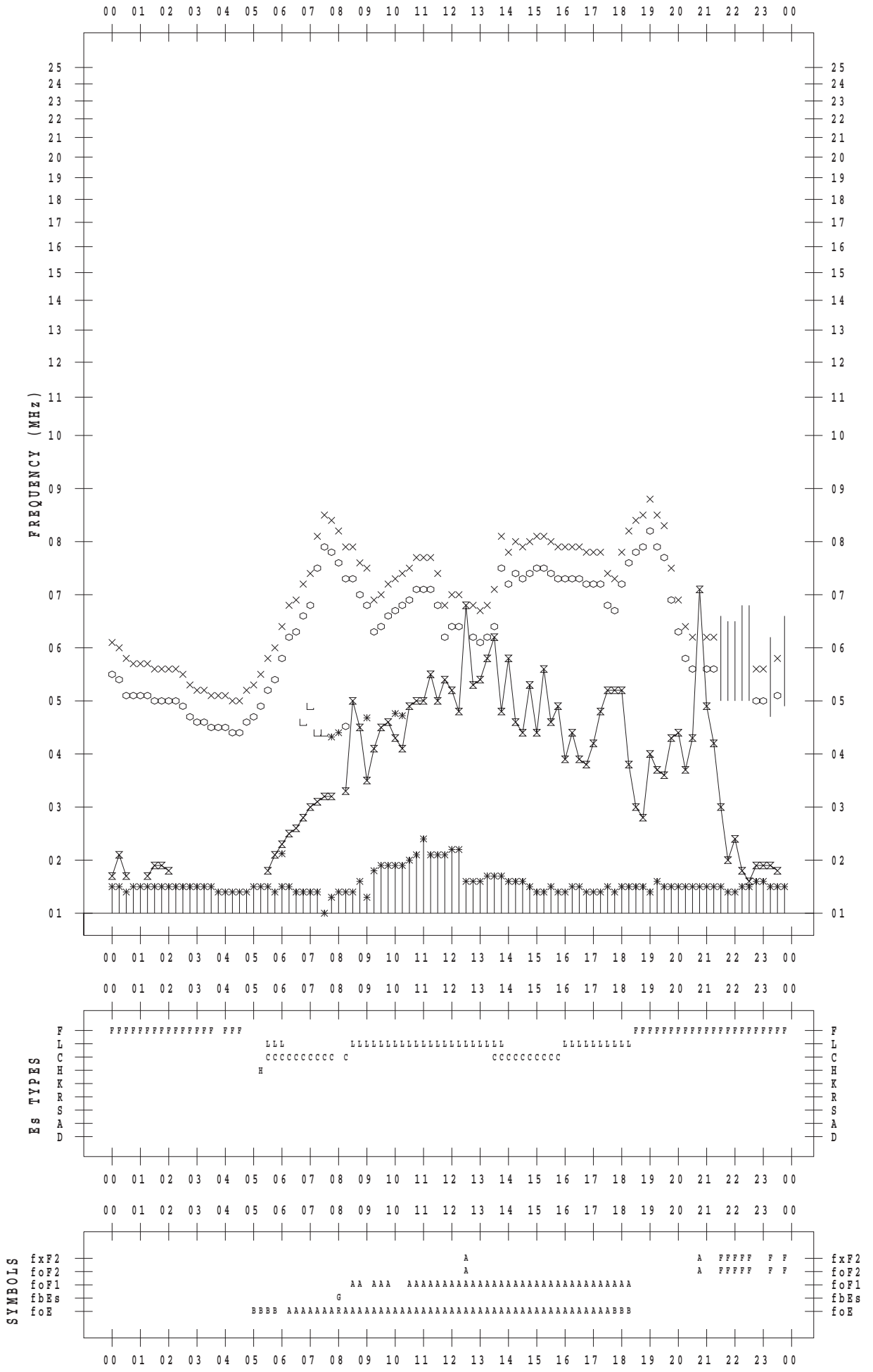
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 2

135 °E MEAN TIME



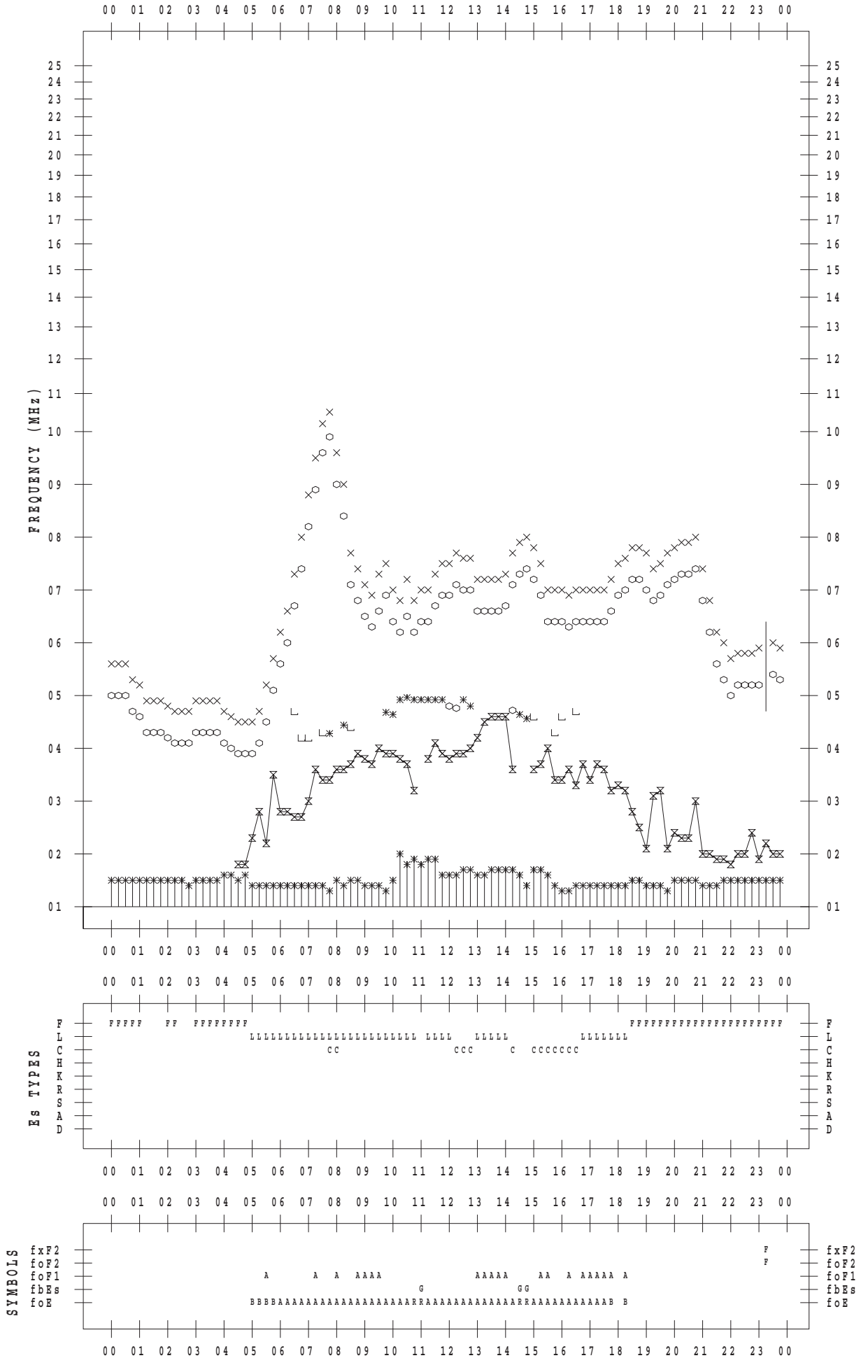
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 3

135 °E MEAN TIME



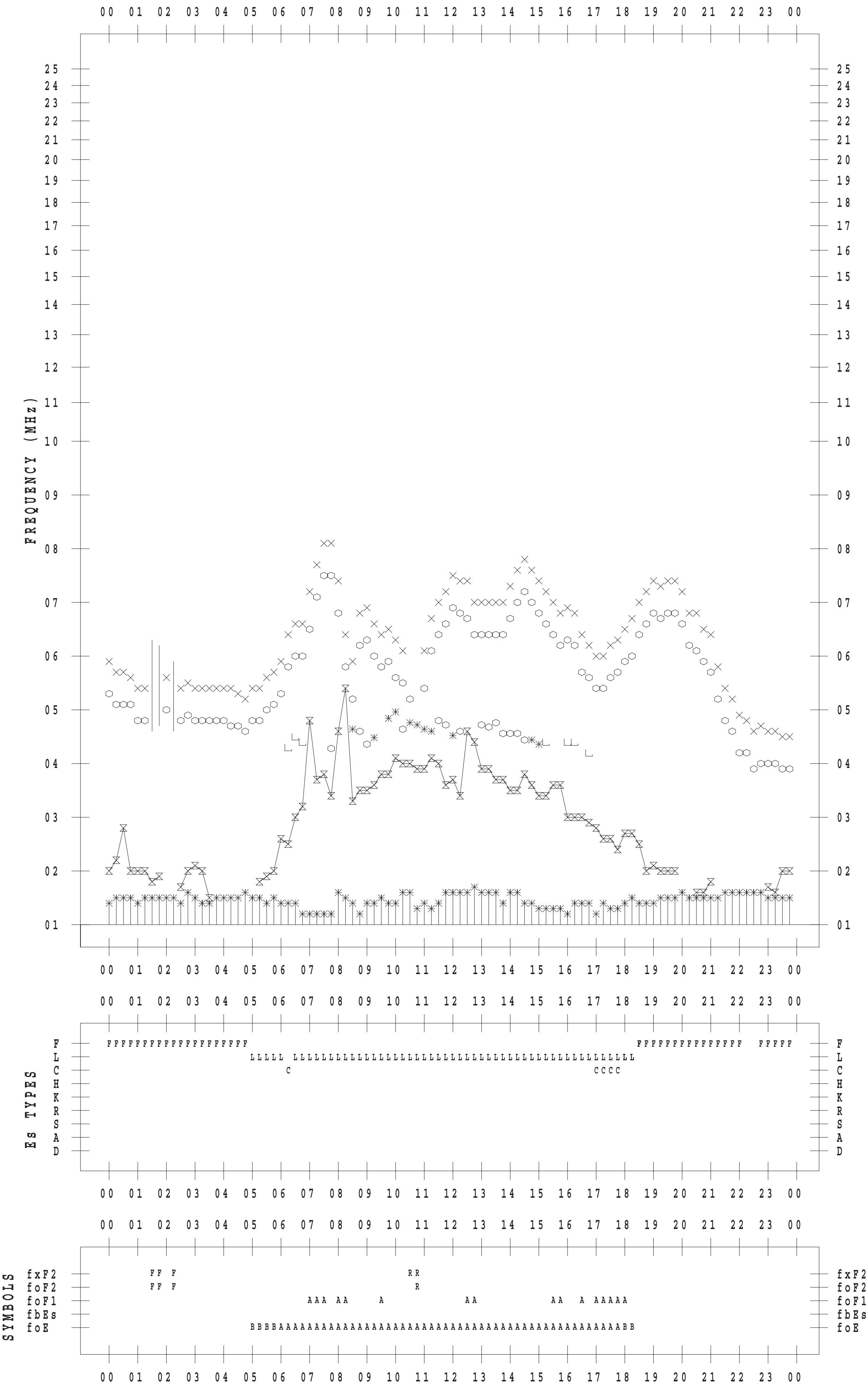
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 4

135 °E MEAN TIME



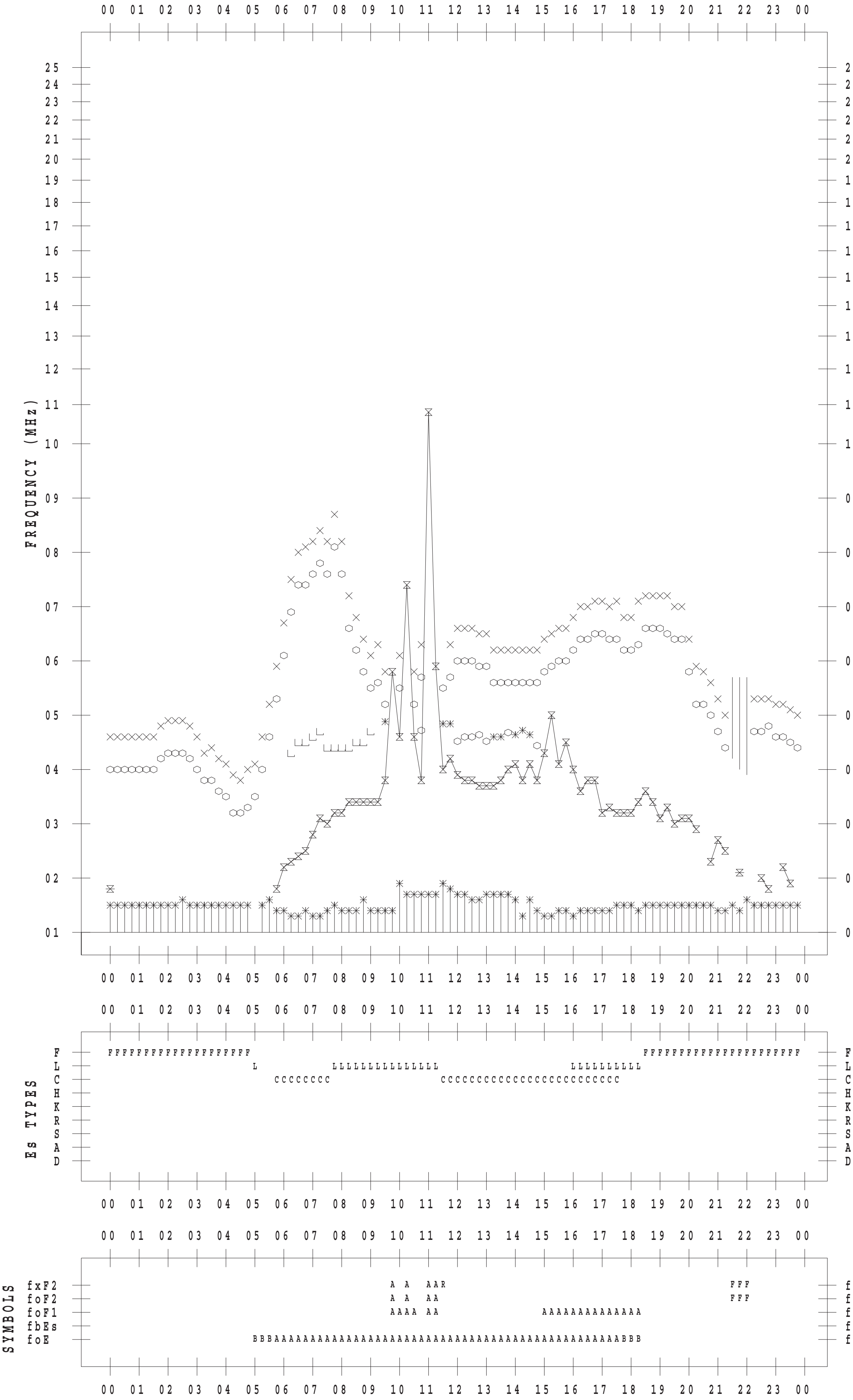
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 5

135 °E MEAN TIME



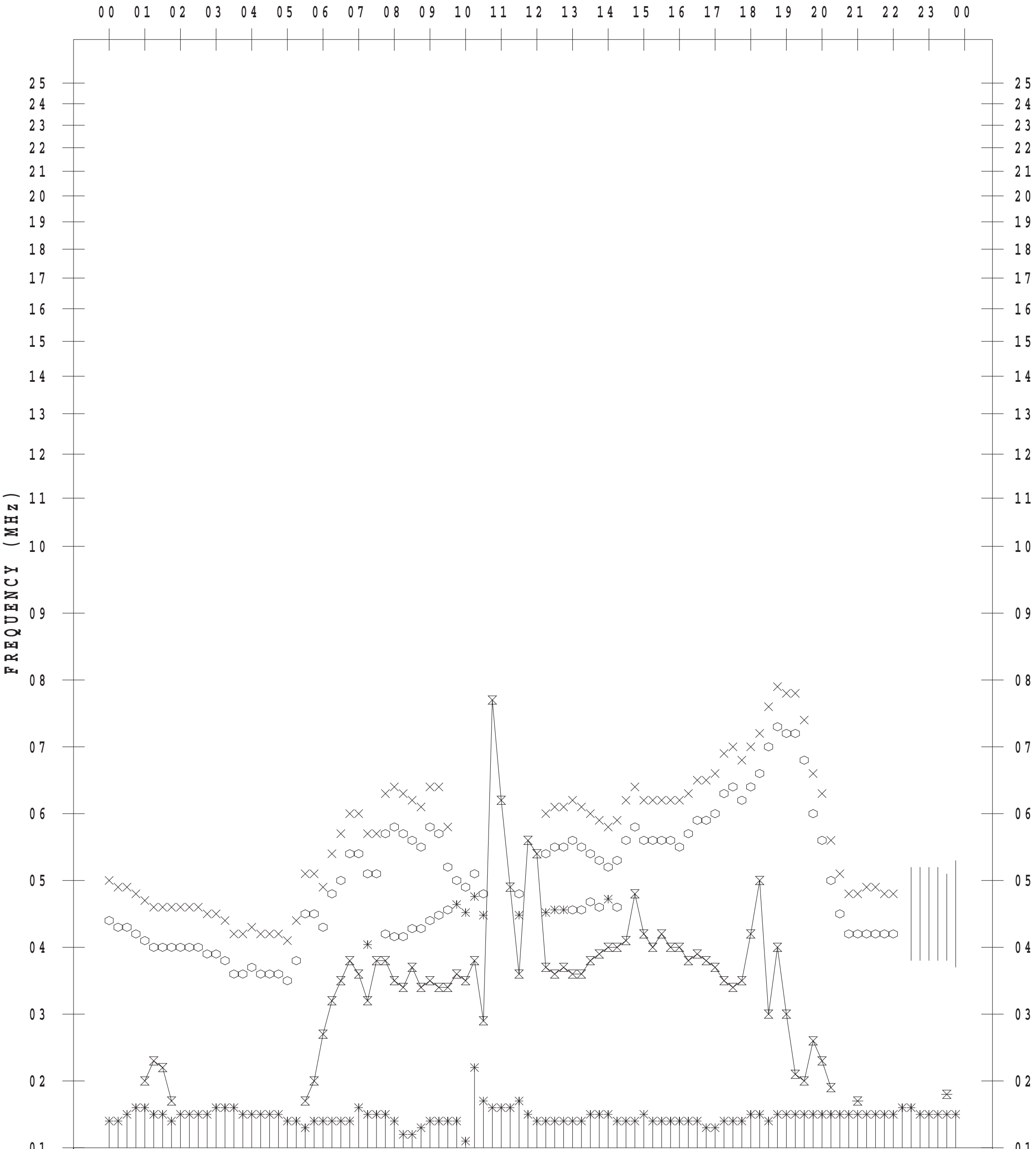
f-PLOT DATA

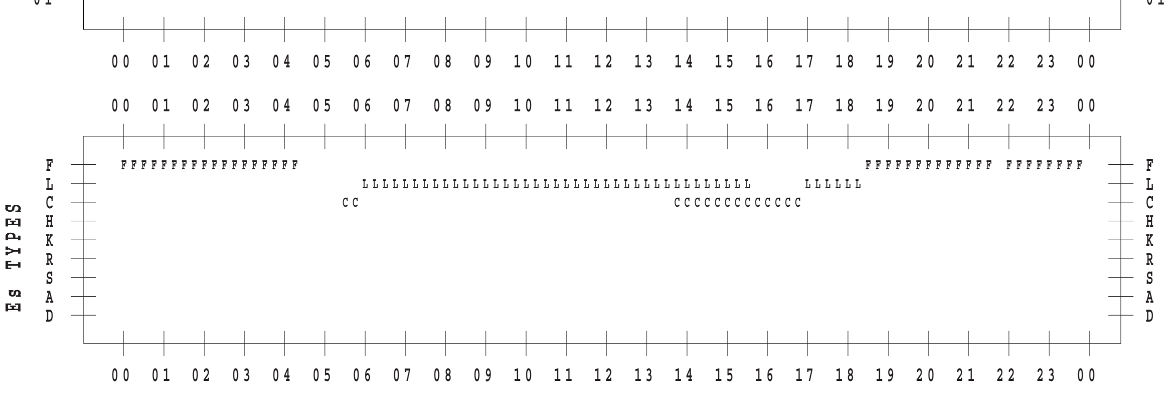
SCALER : I.NISHIMUTA

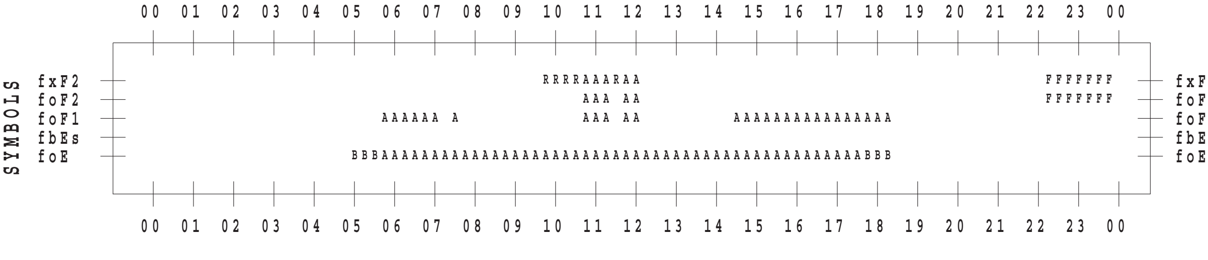
STATION : Kokubunji

DATE : 2015/ 9/ 6

135 °E MEAN TIME





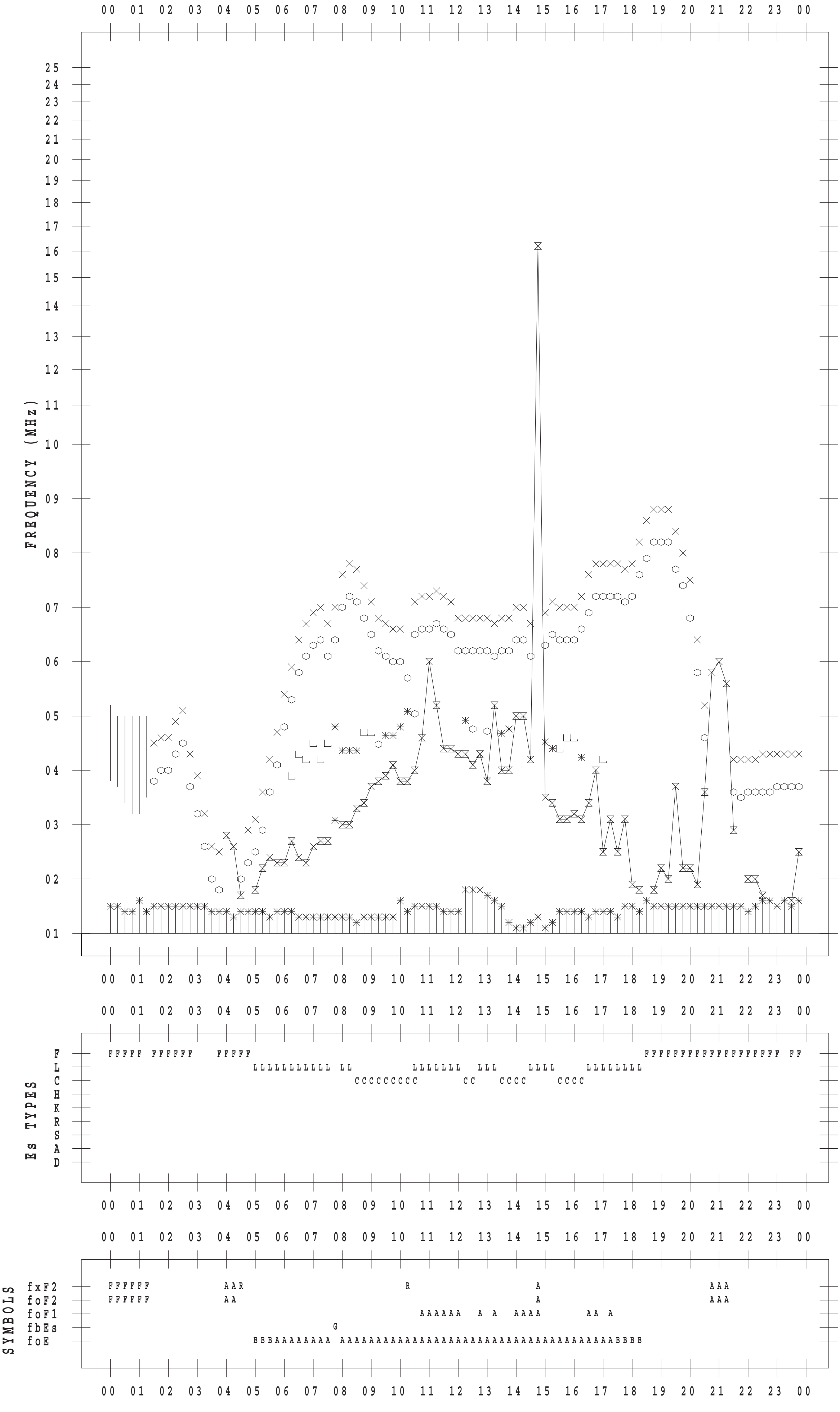


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2015/ 9/ 7

135 °E MEAN TIME



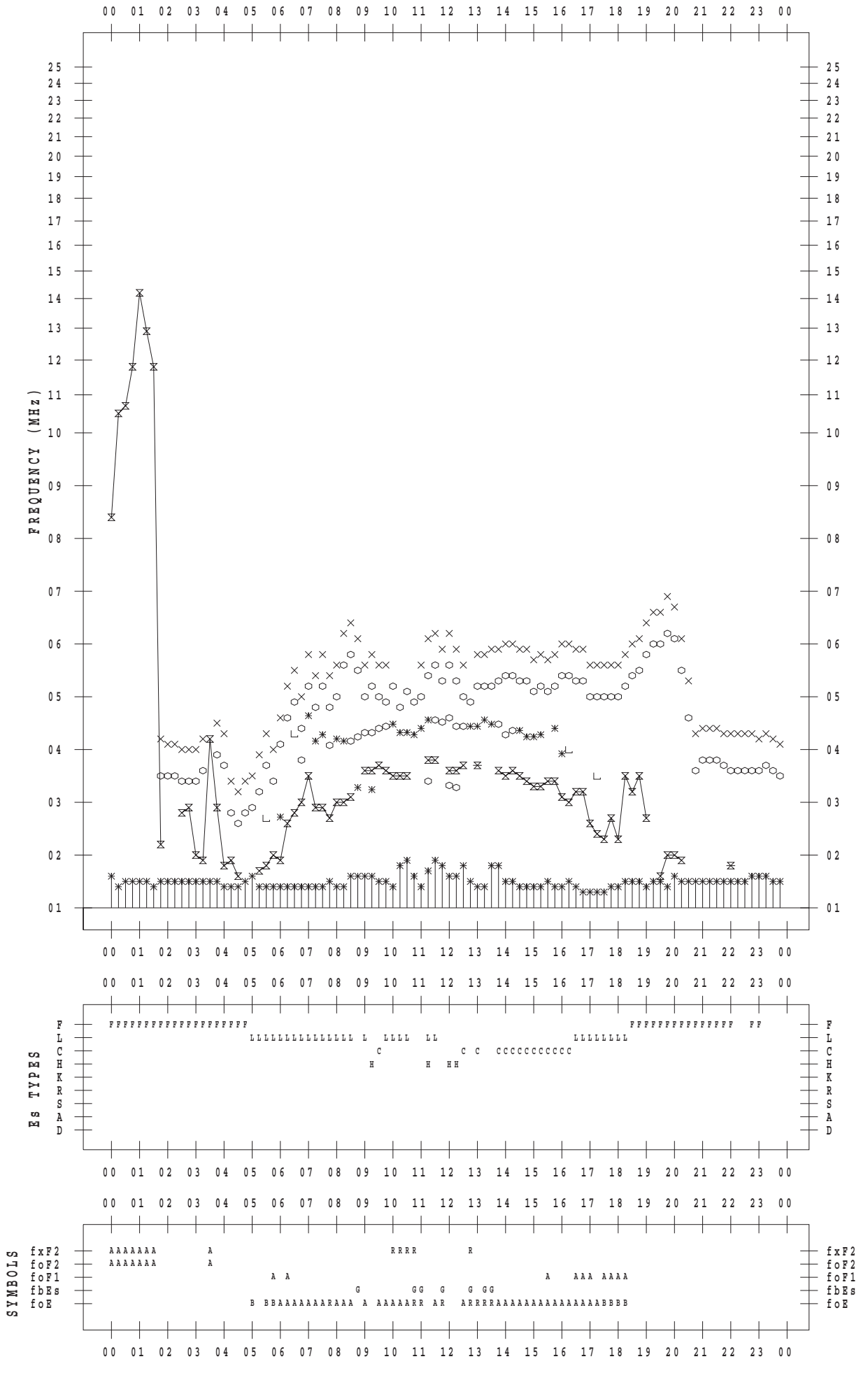
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 8

135 °E MEAN TIME



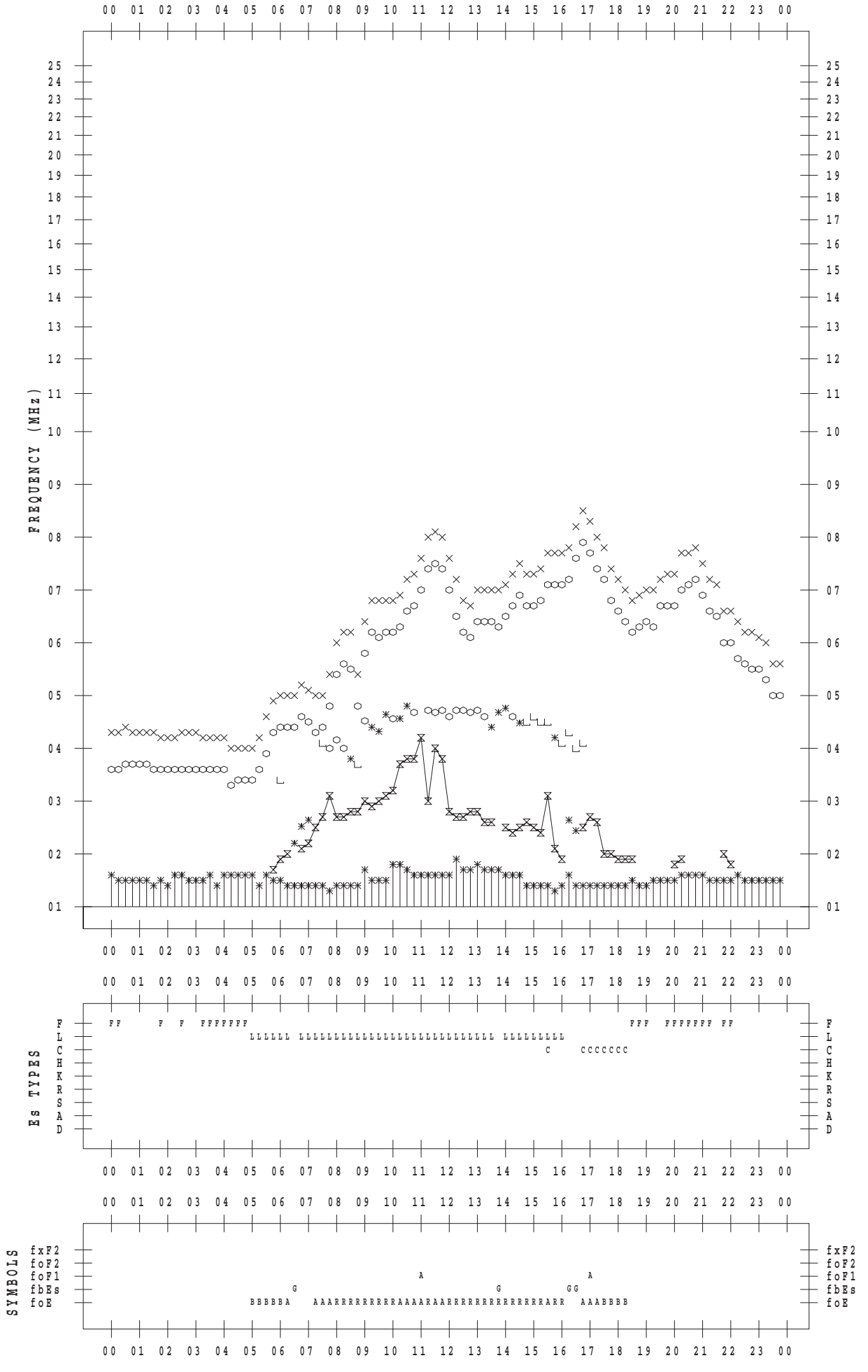
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/ 9

135 °E MEAN TIME



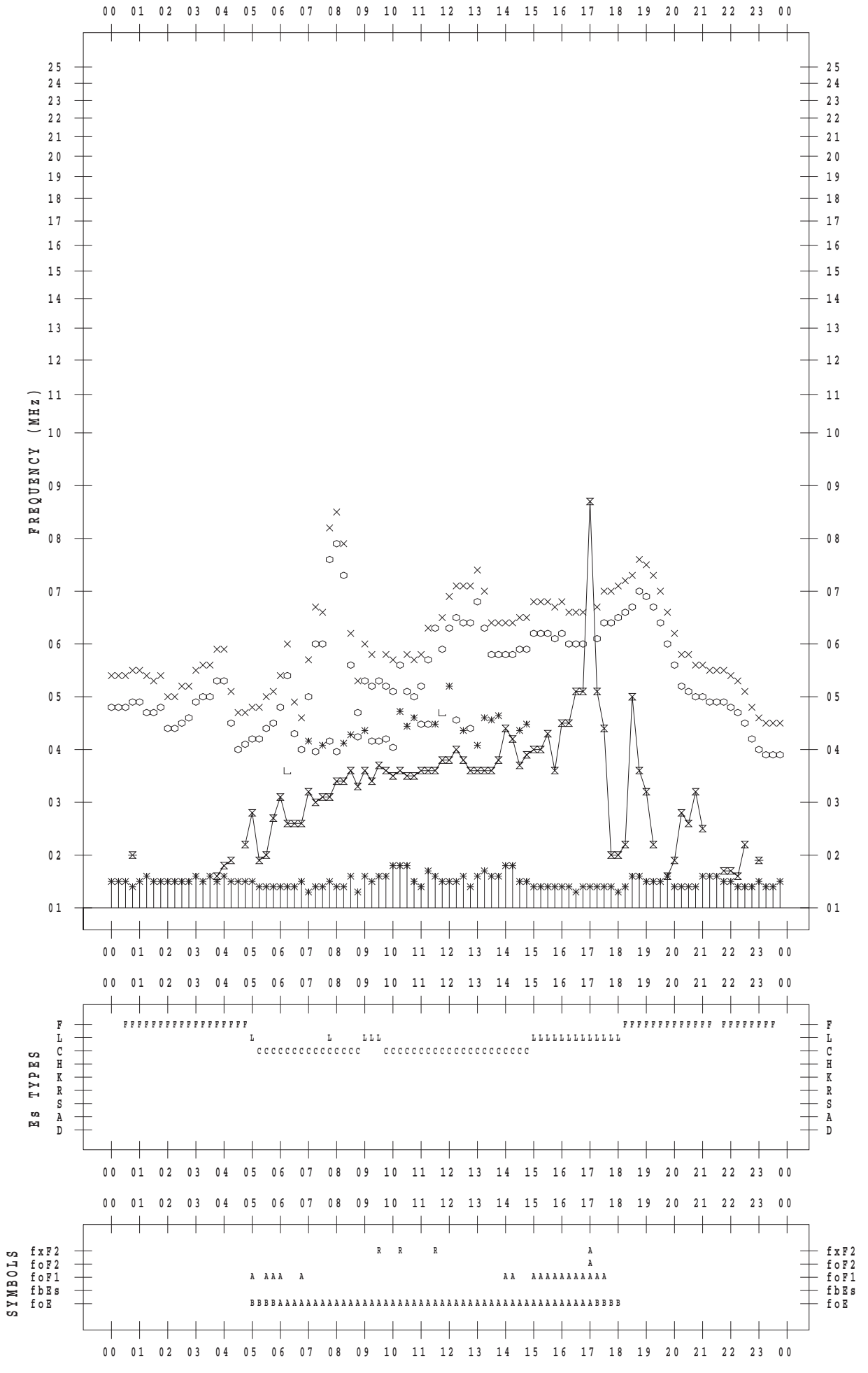
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/10

135 °E MEAN TIME



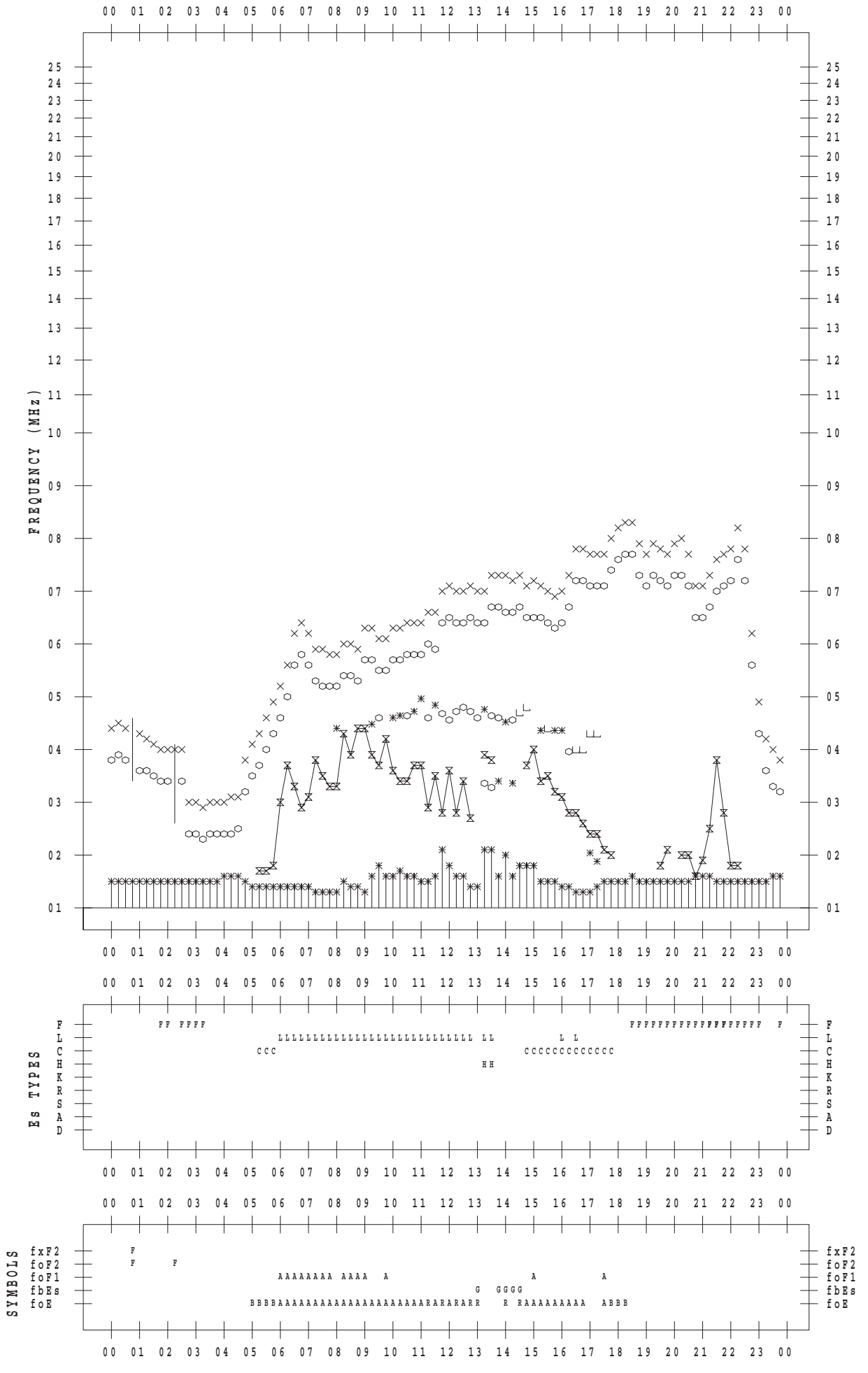
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/11

135 °E MEAN TIME



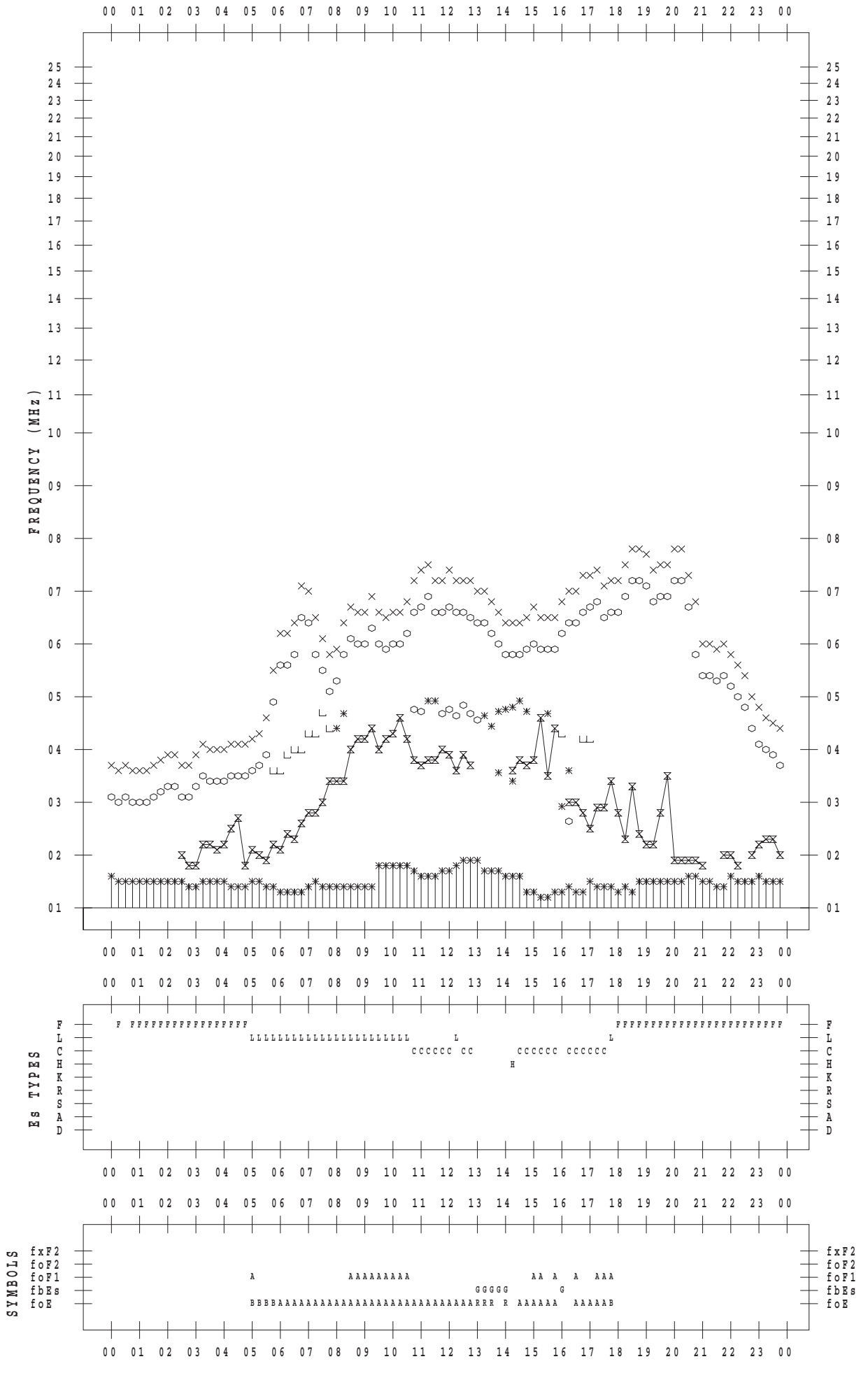
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/12

135 °E MEAN TIME



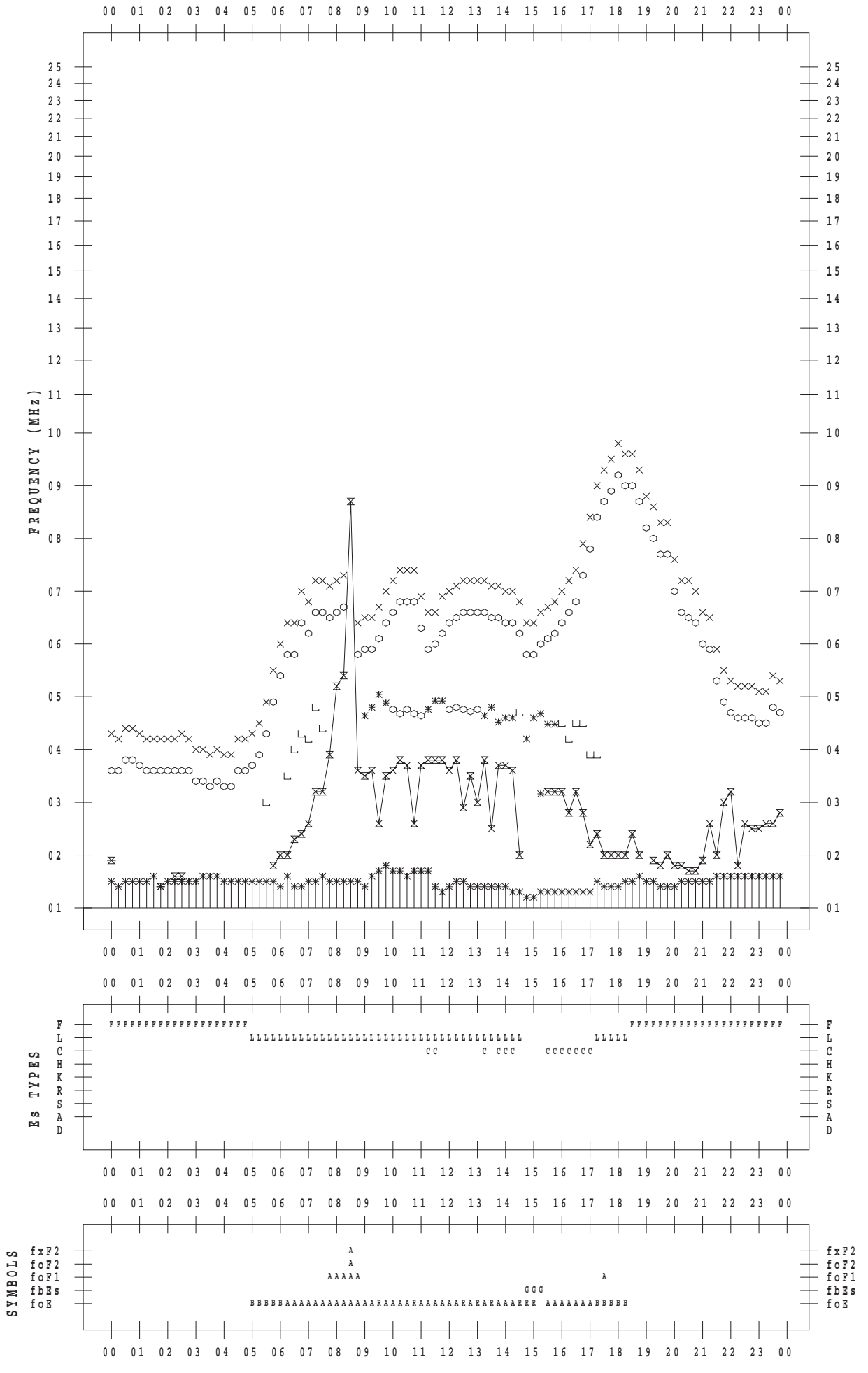
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/13

135 °E MEAN TIME



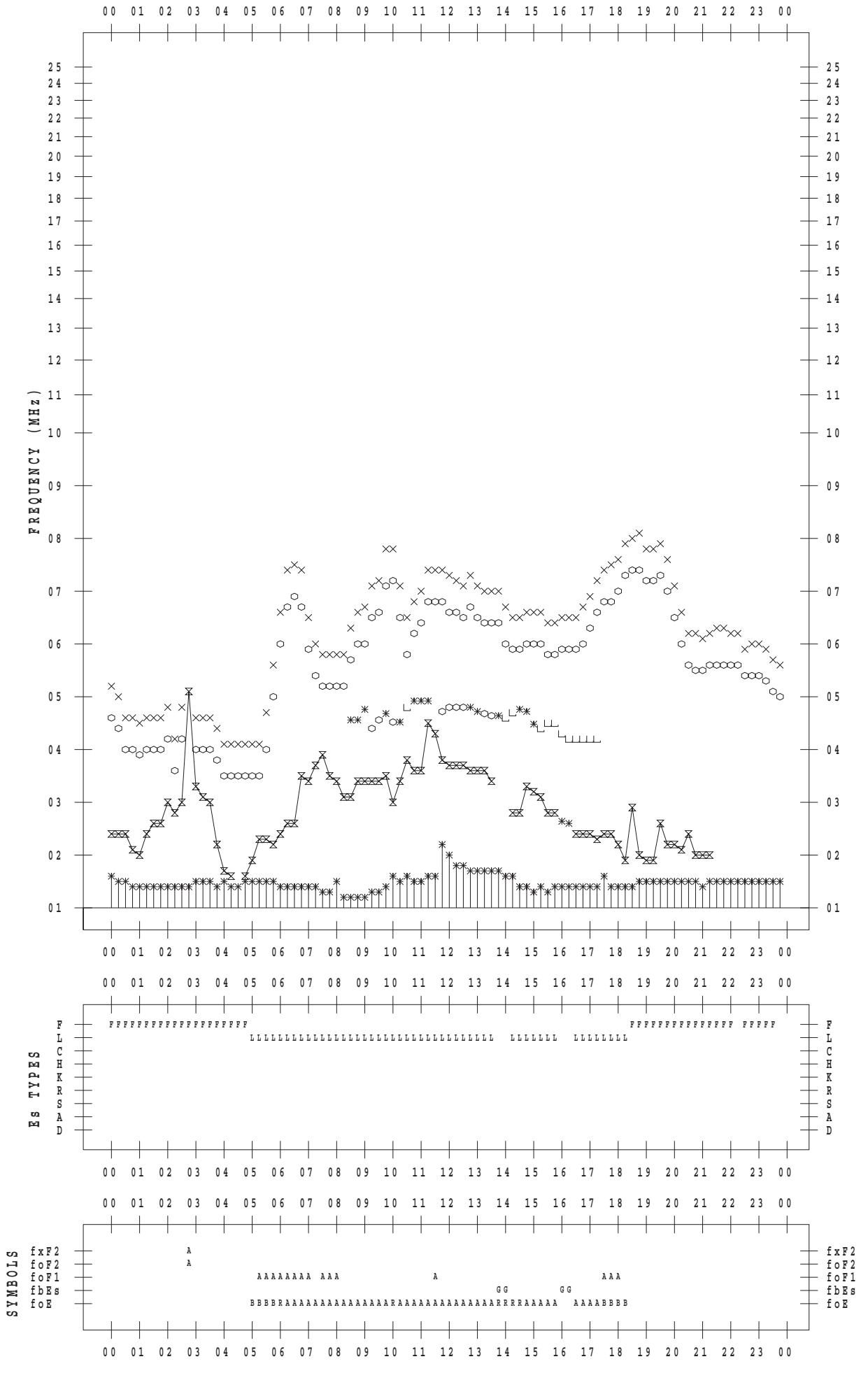
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/14

135 °E MEAN TIME



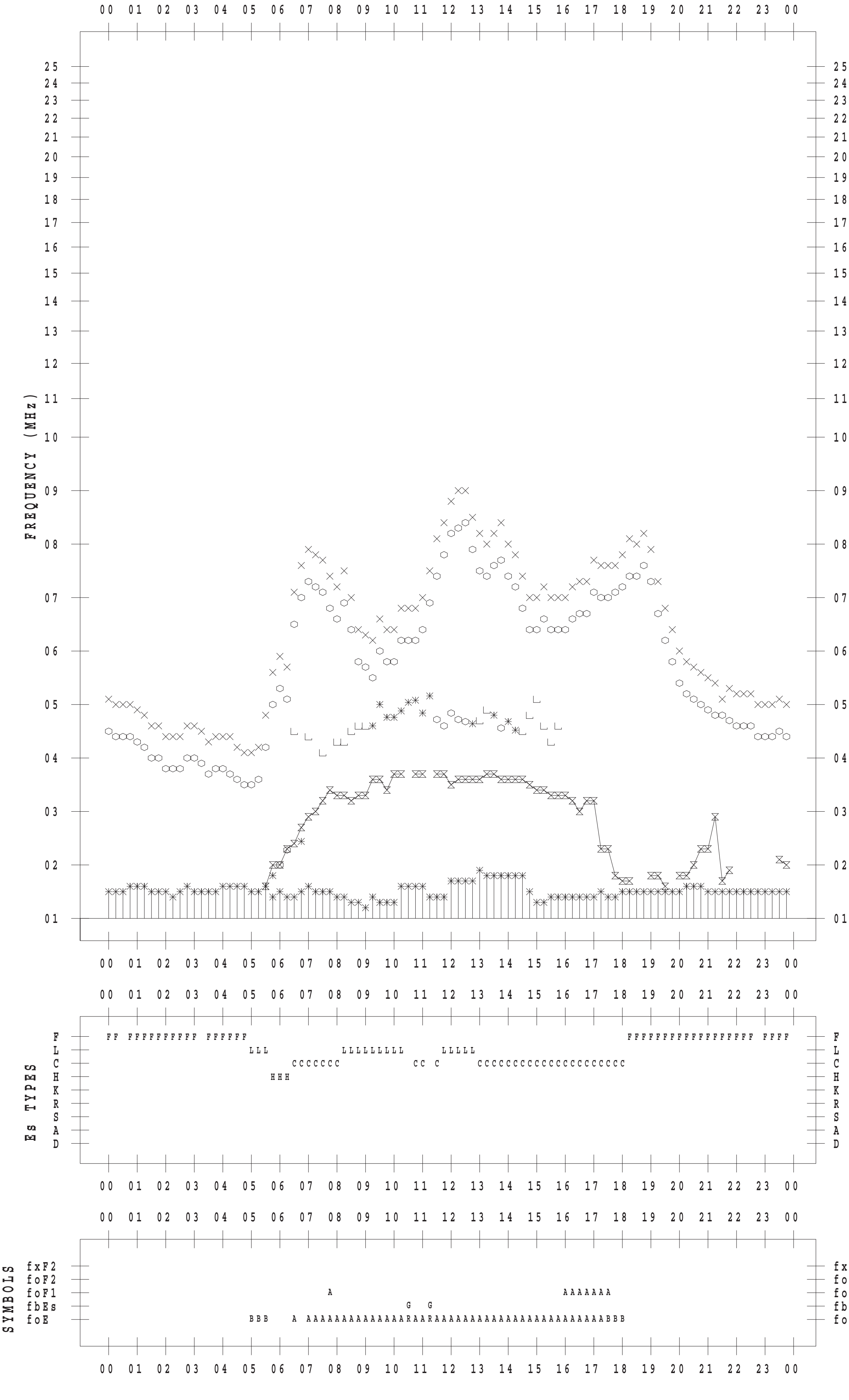
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/15

135 °E MEAN TIME



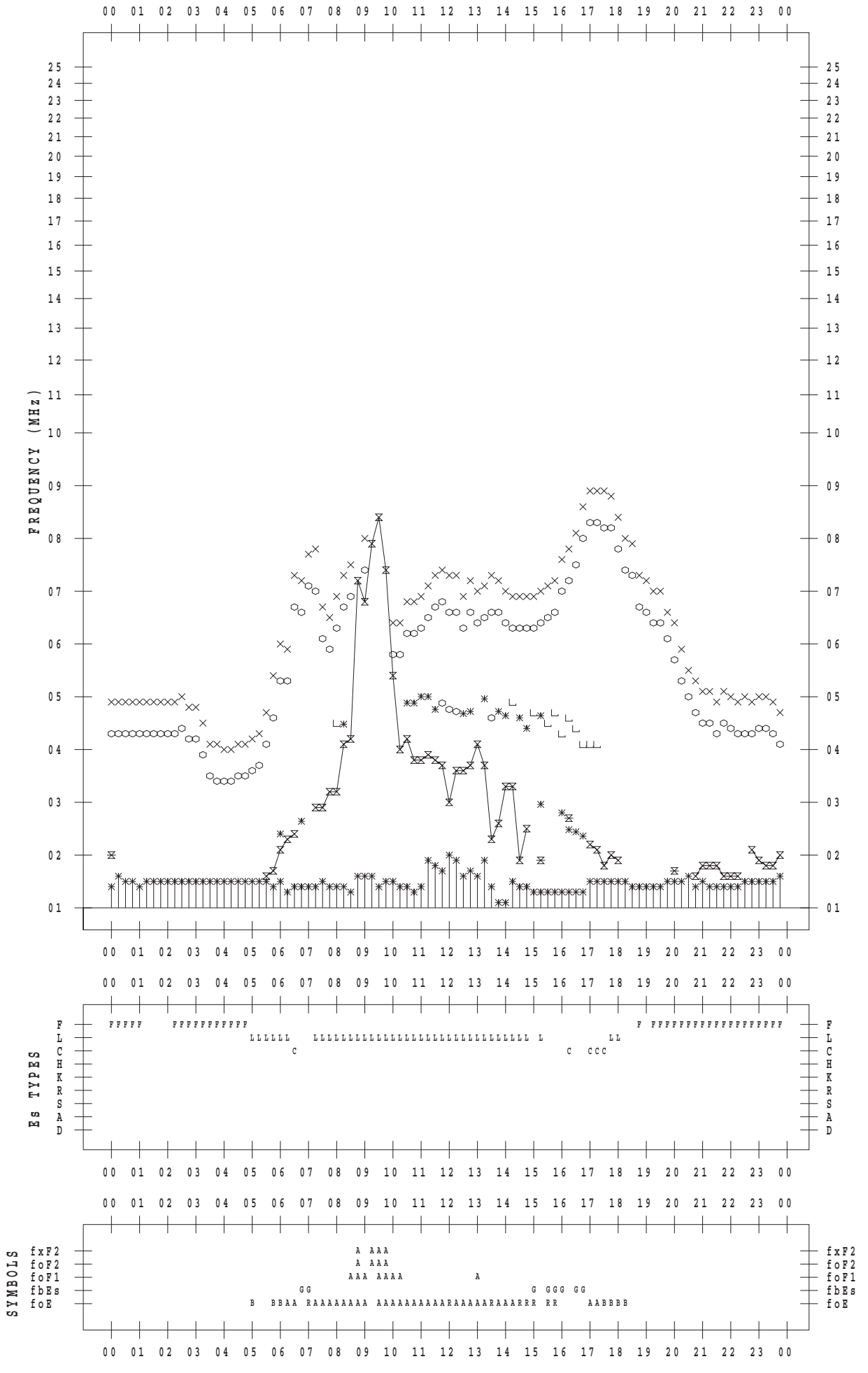
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/16

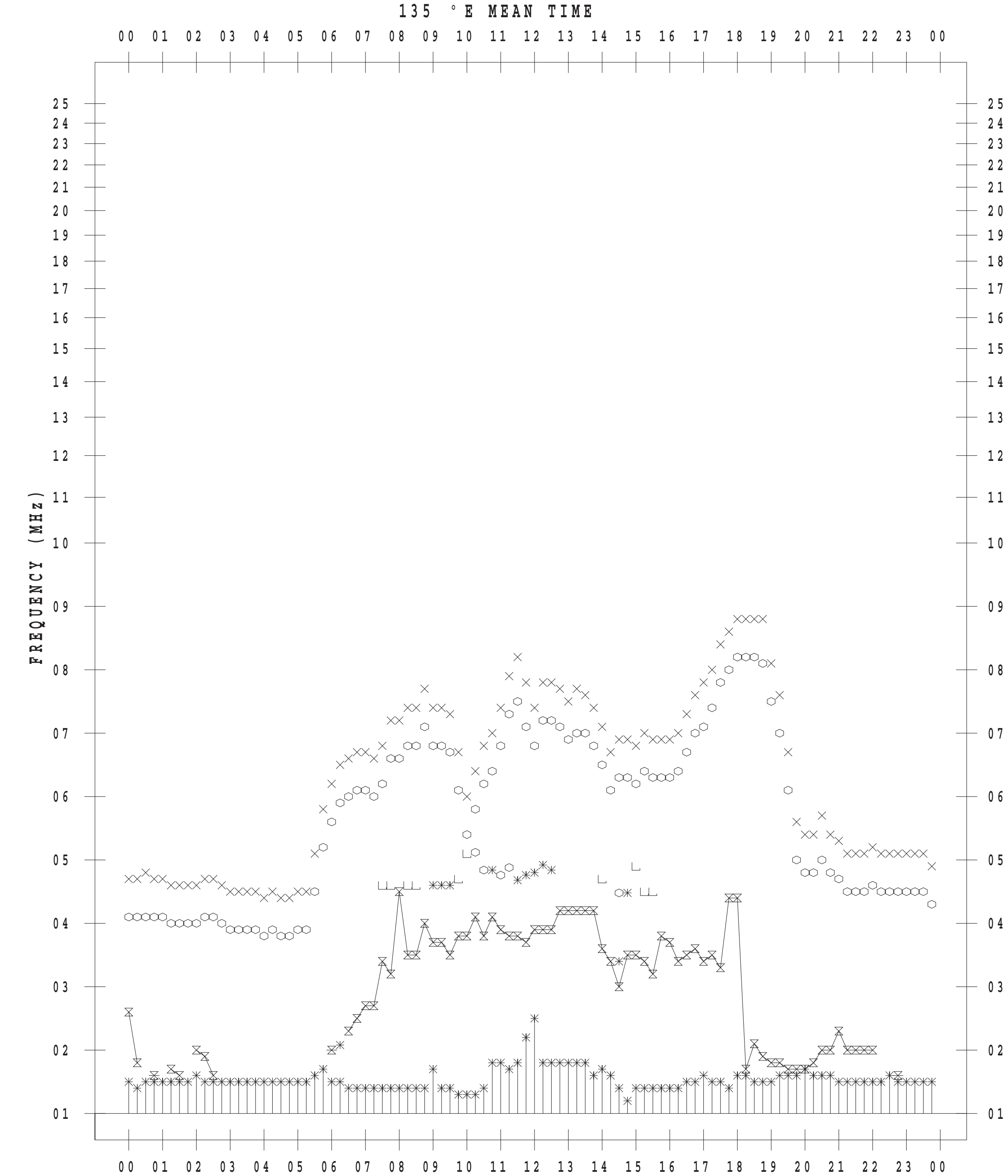
135 °E MEAN TIME

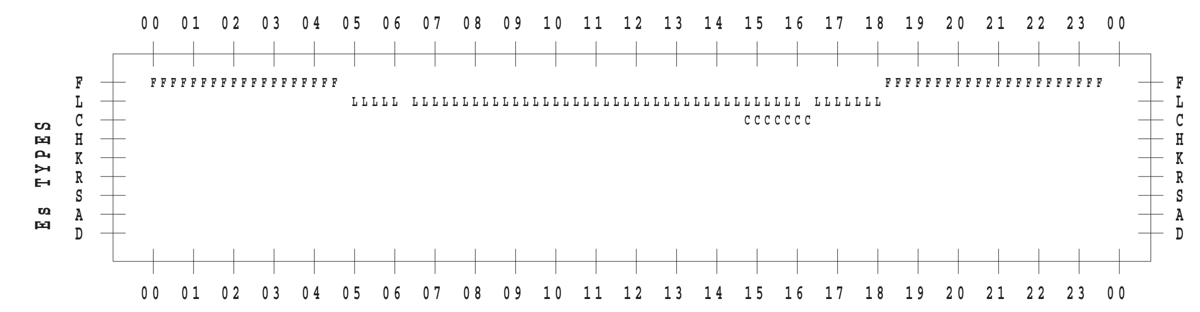


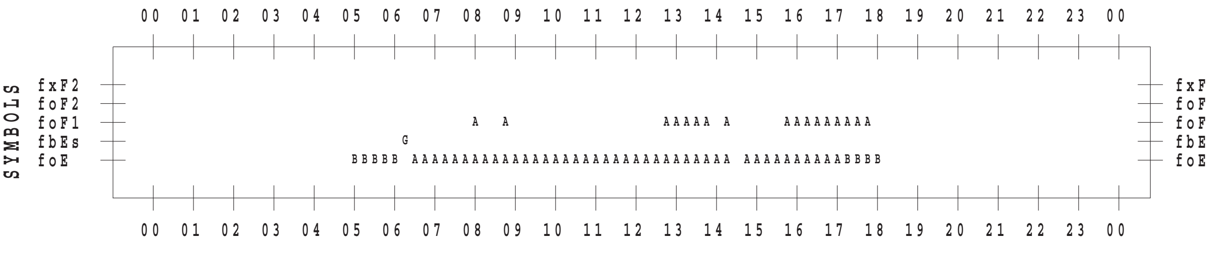
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2015/ 9/17







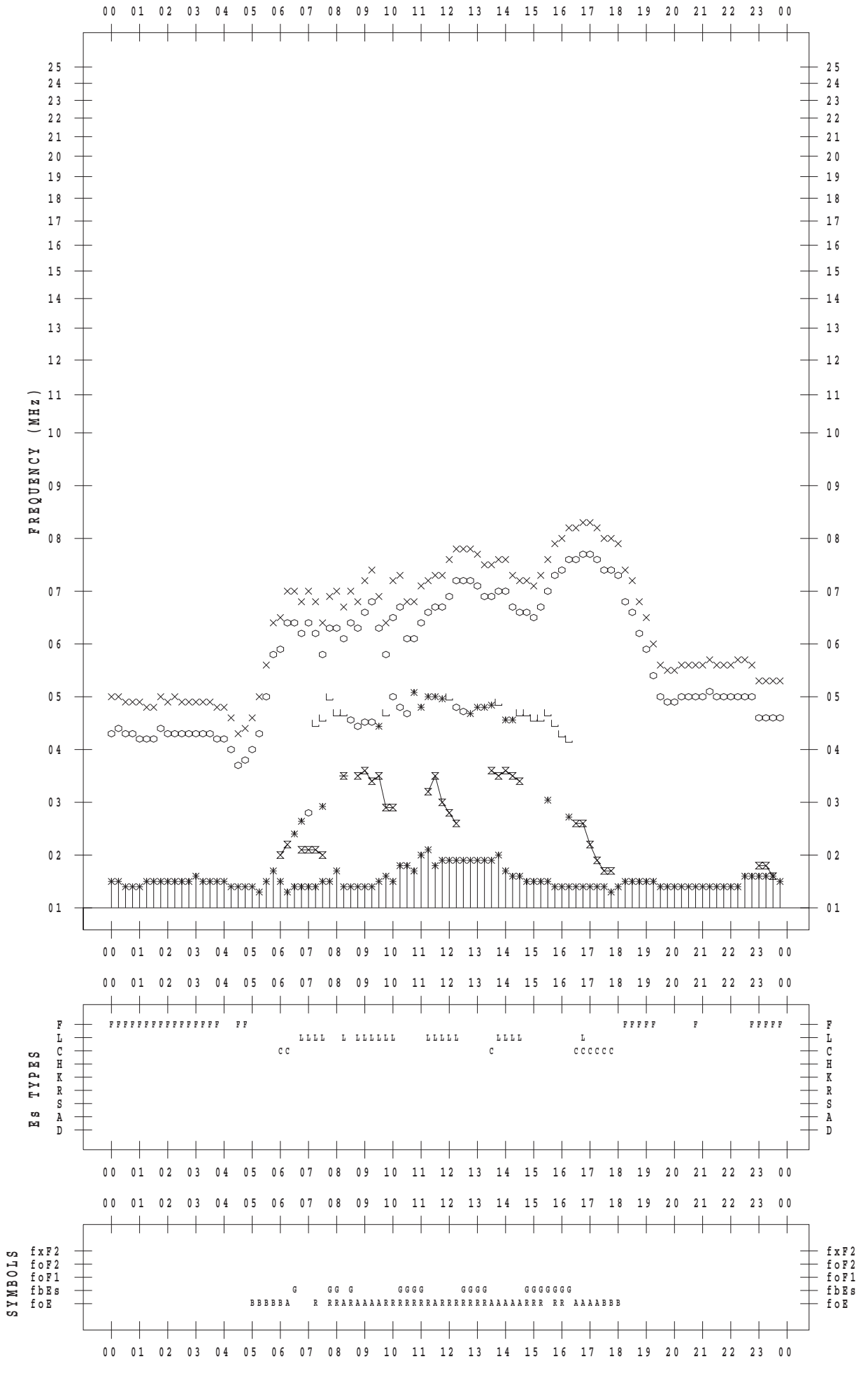
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/18

135 °E MEAN TIME



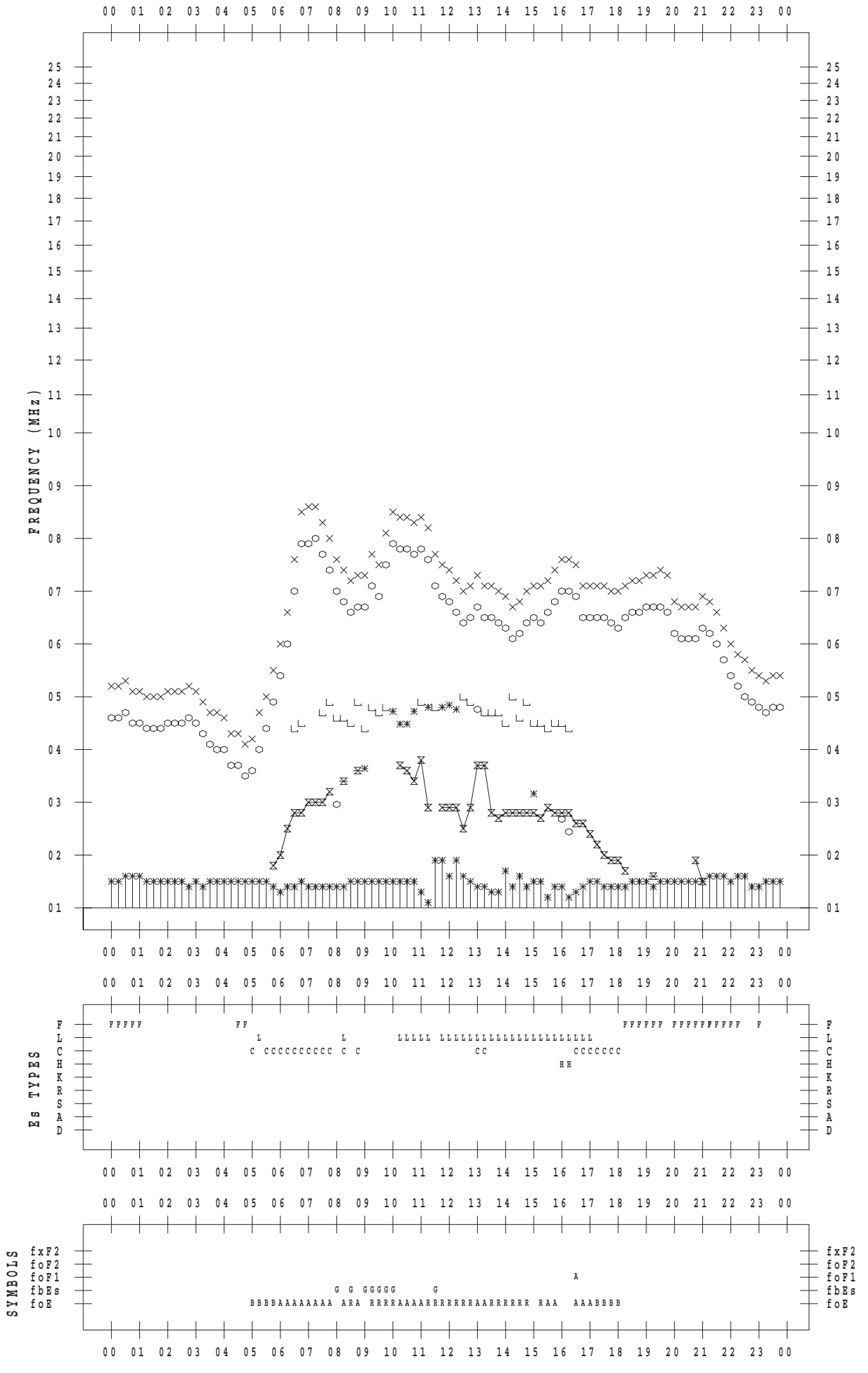
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/19

135 °E MEAN TIME



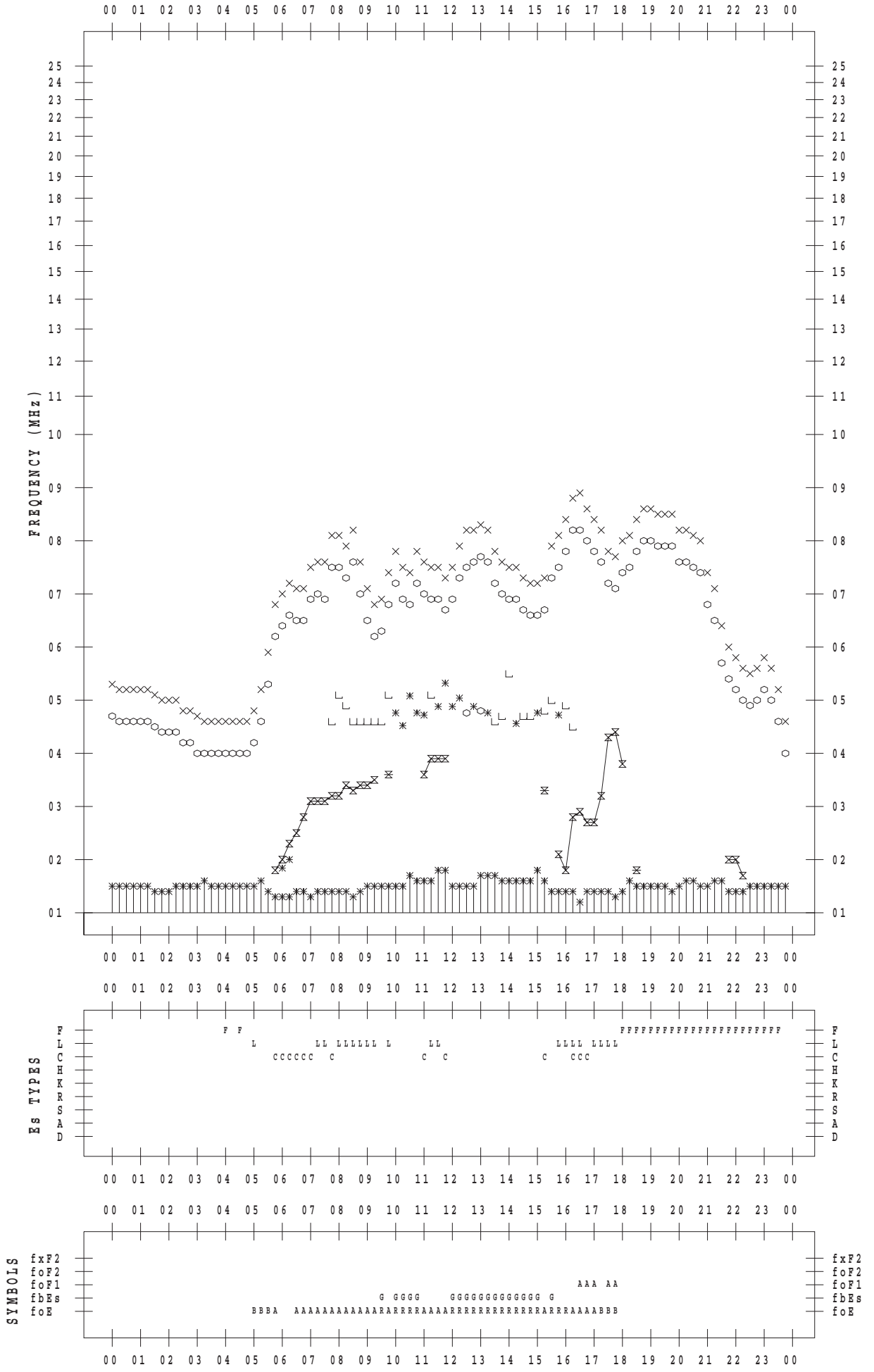
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/20

135 °E MEAN TIME



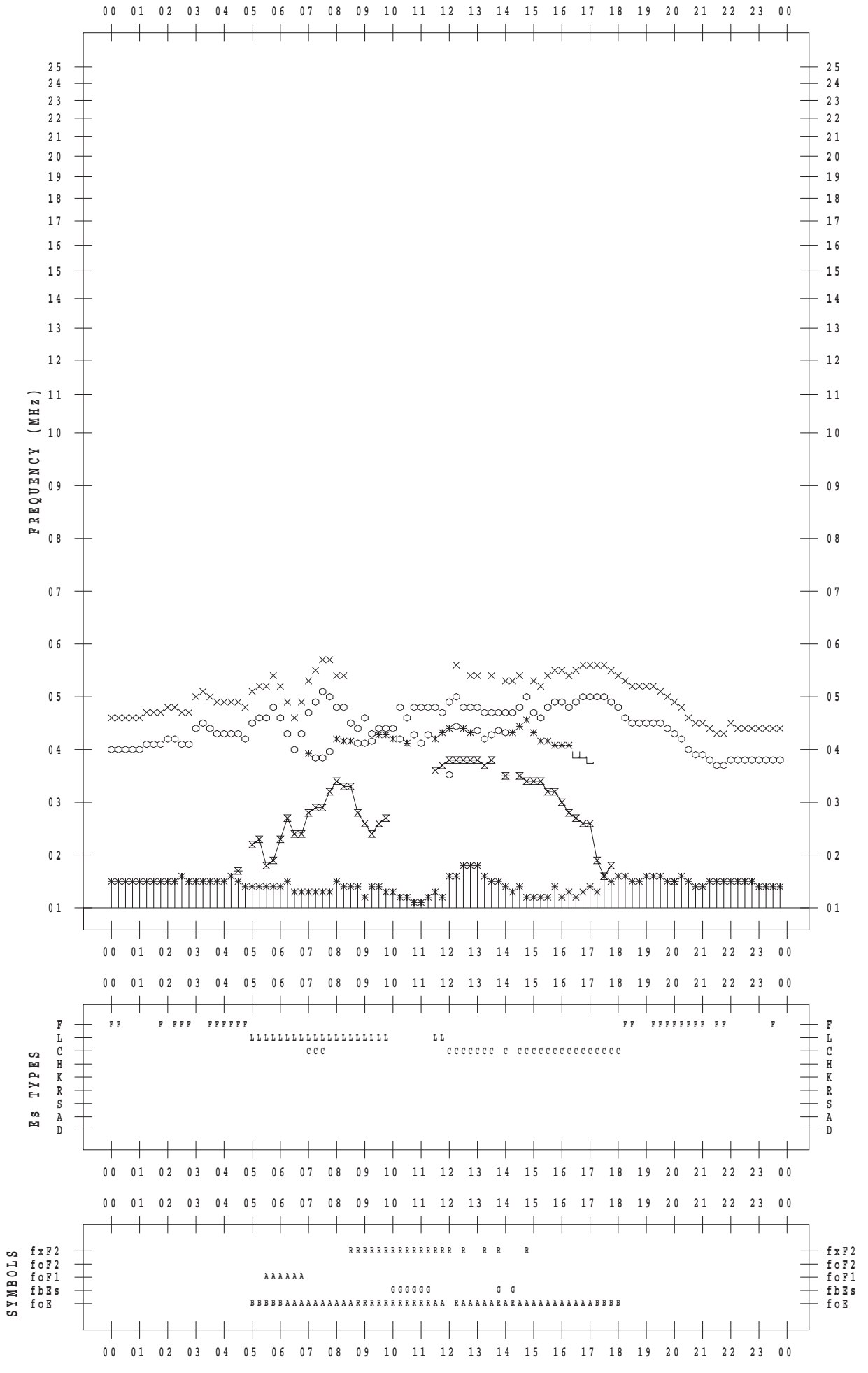
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/21

135 °E MEAN TIME



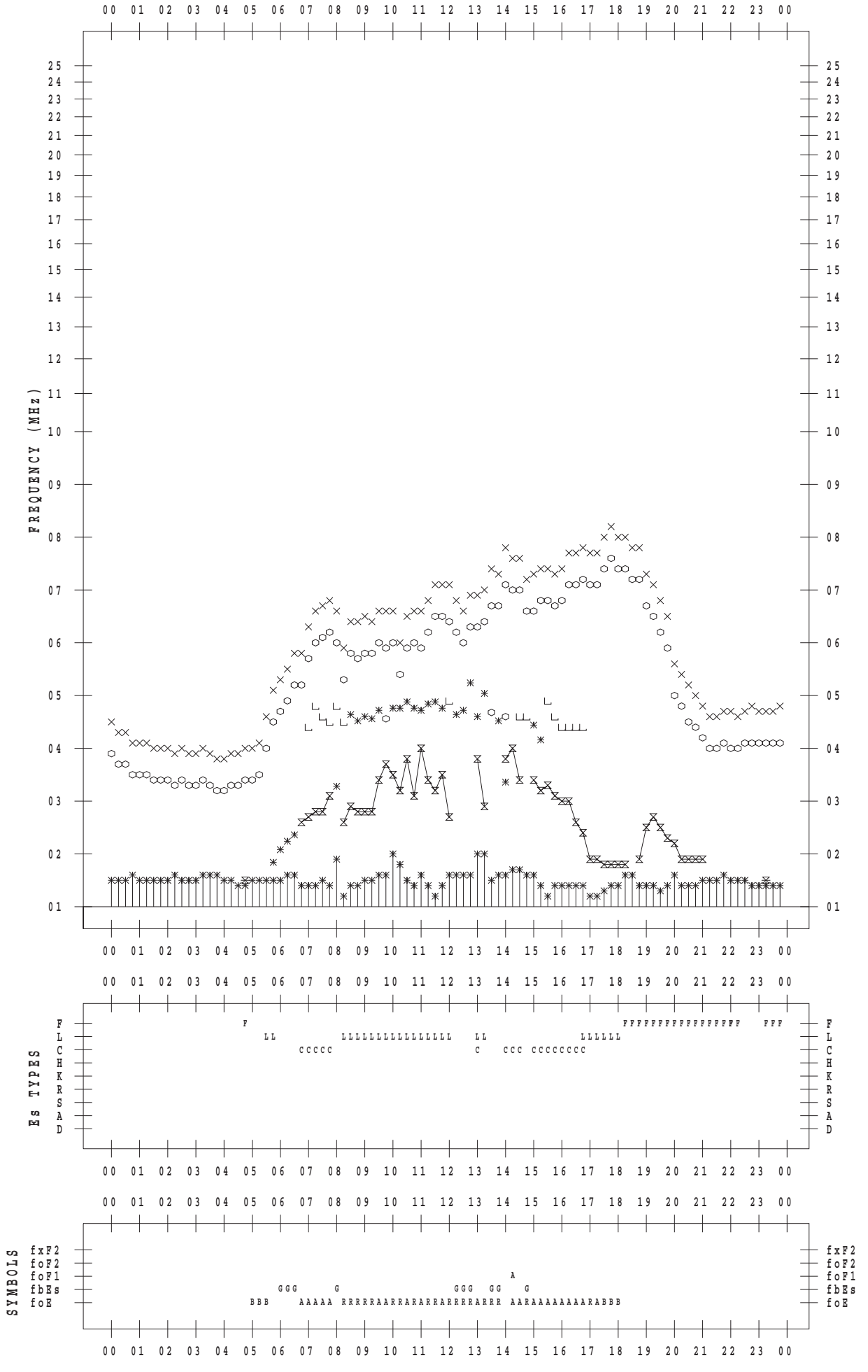
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/22

135 °E MEAN TIME



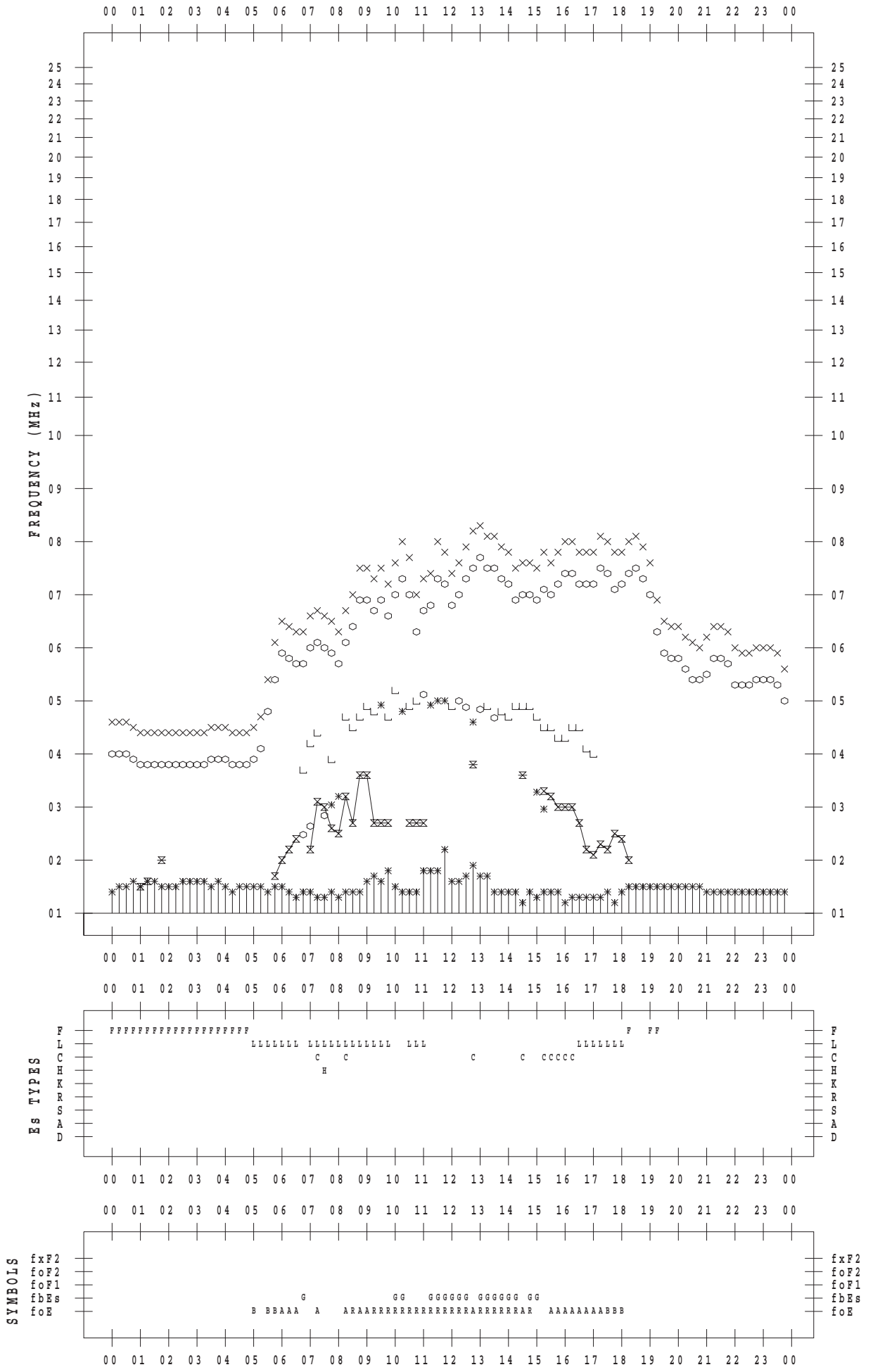
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/23

135 °E MEAN TIME



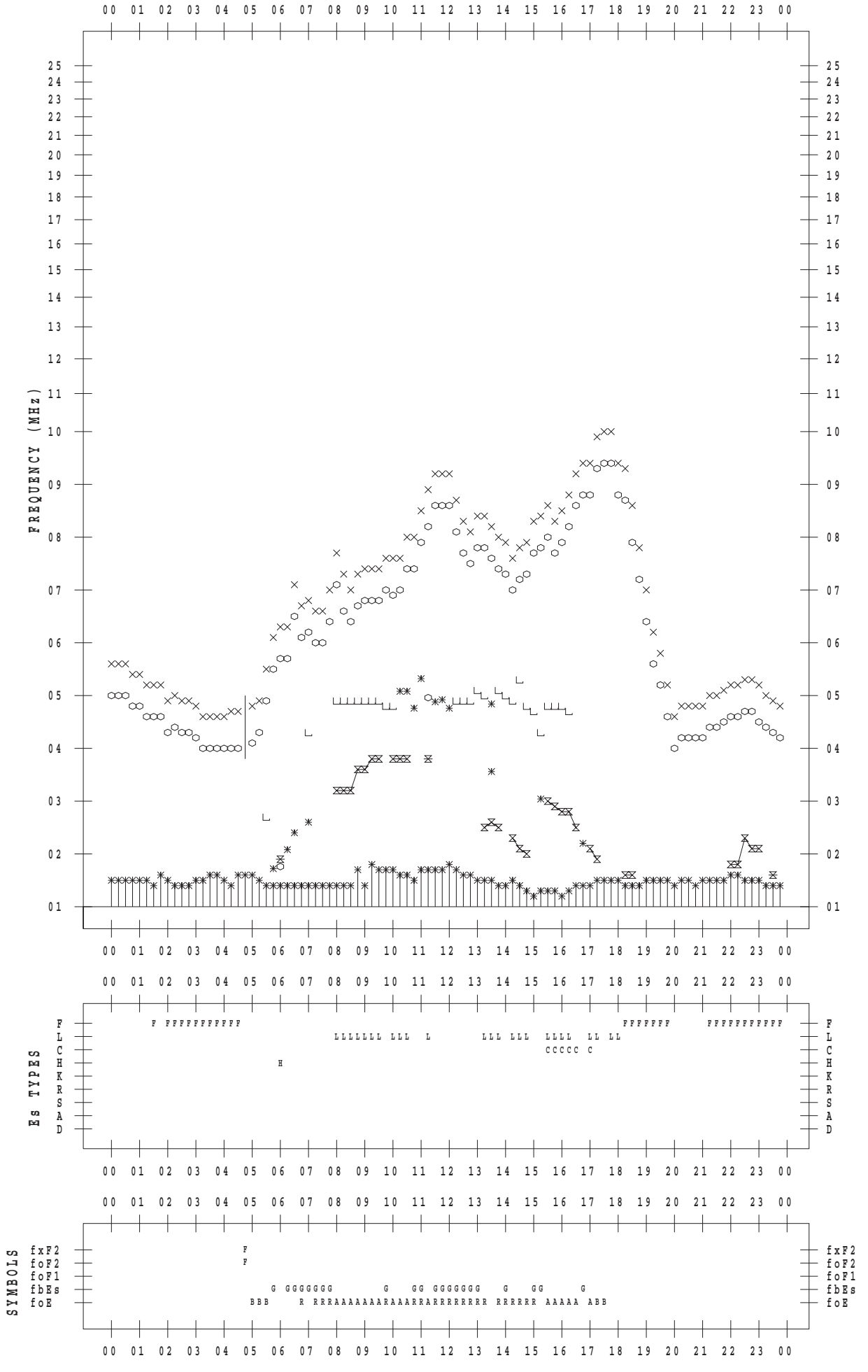
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/24

135 °E MEAN TIME



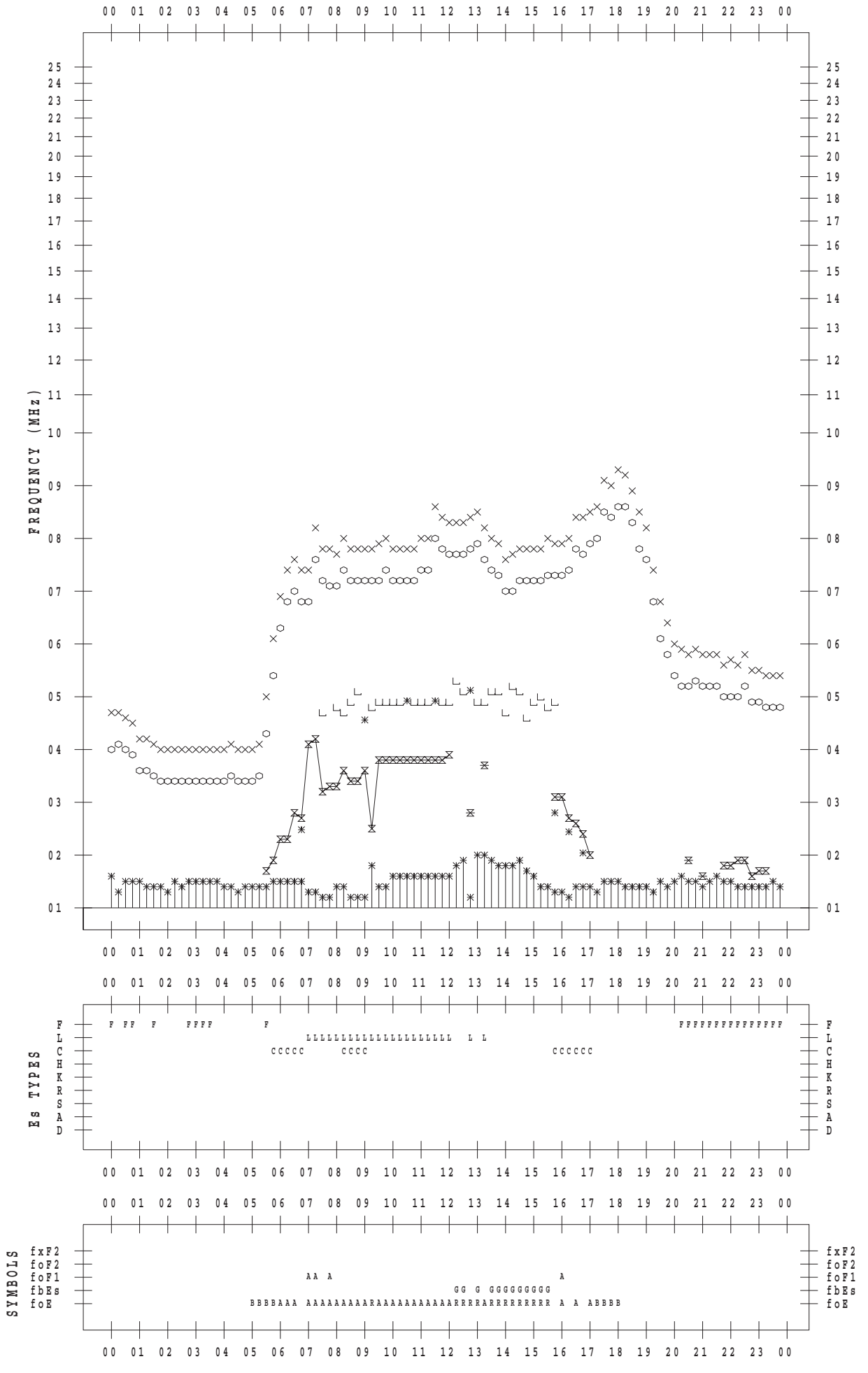
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/25

135 °E MEAN TIME



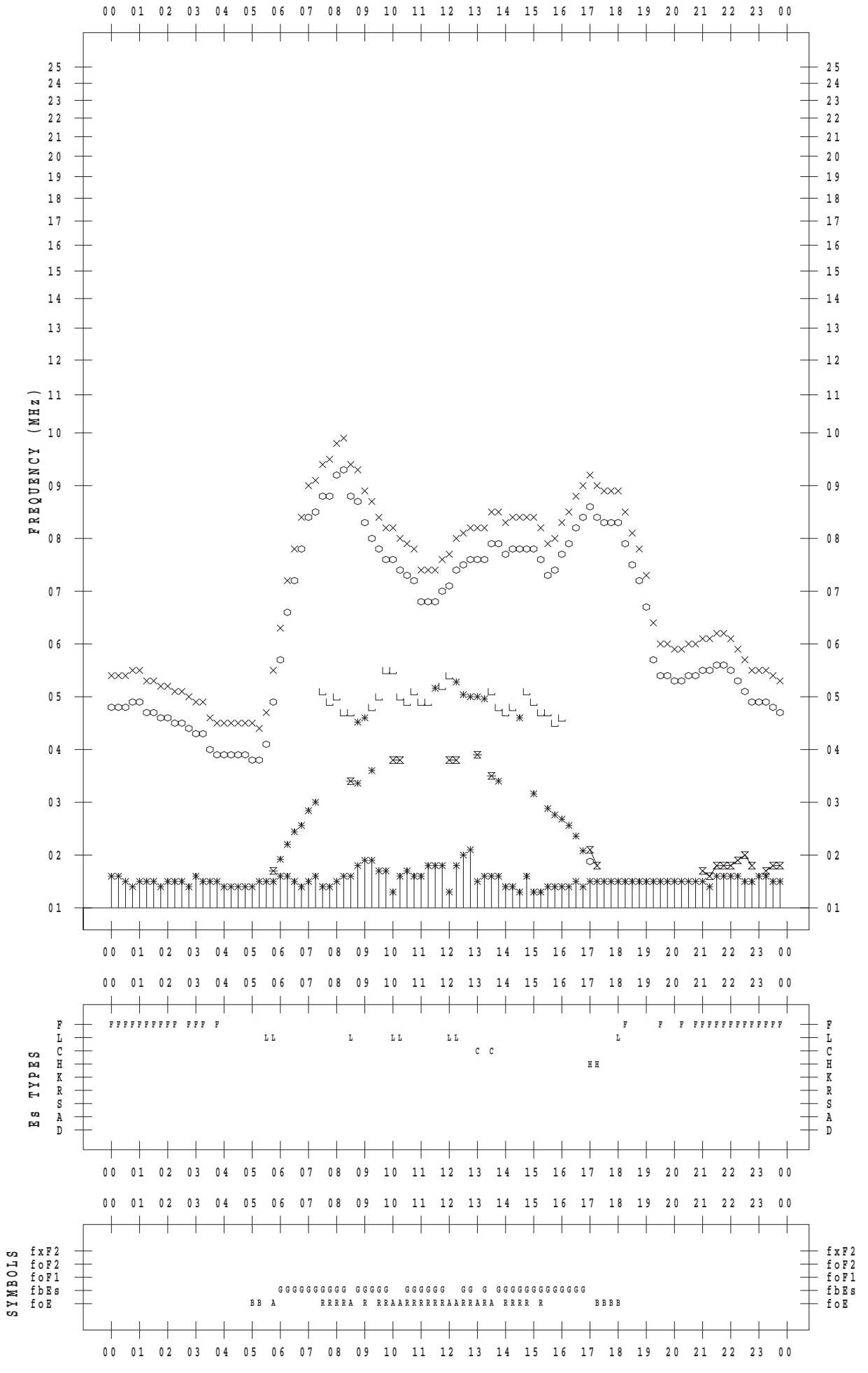
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/26

135 °E MEAN TIME



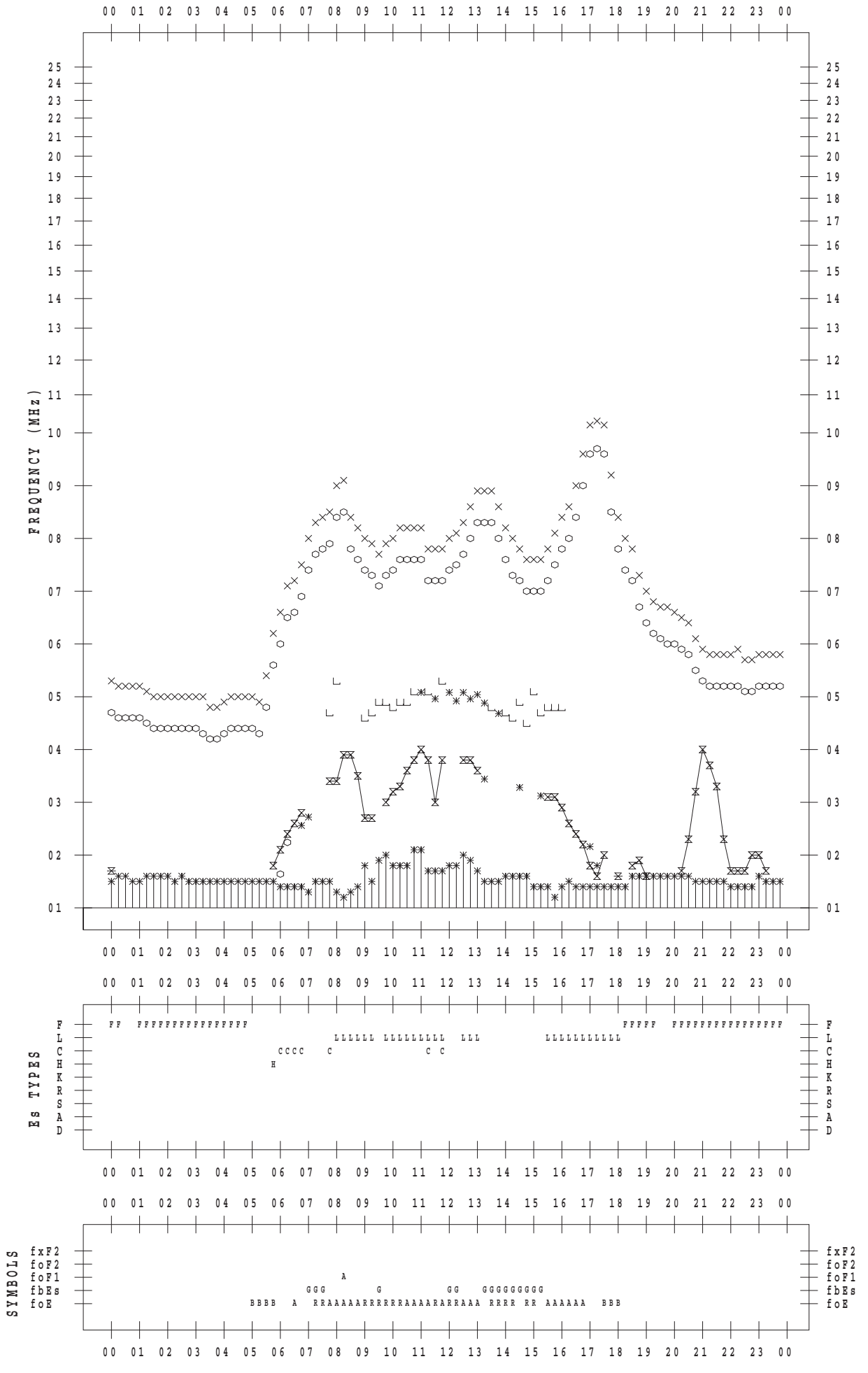
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/27

135 °E MEAN TIME



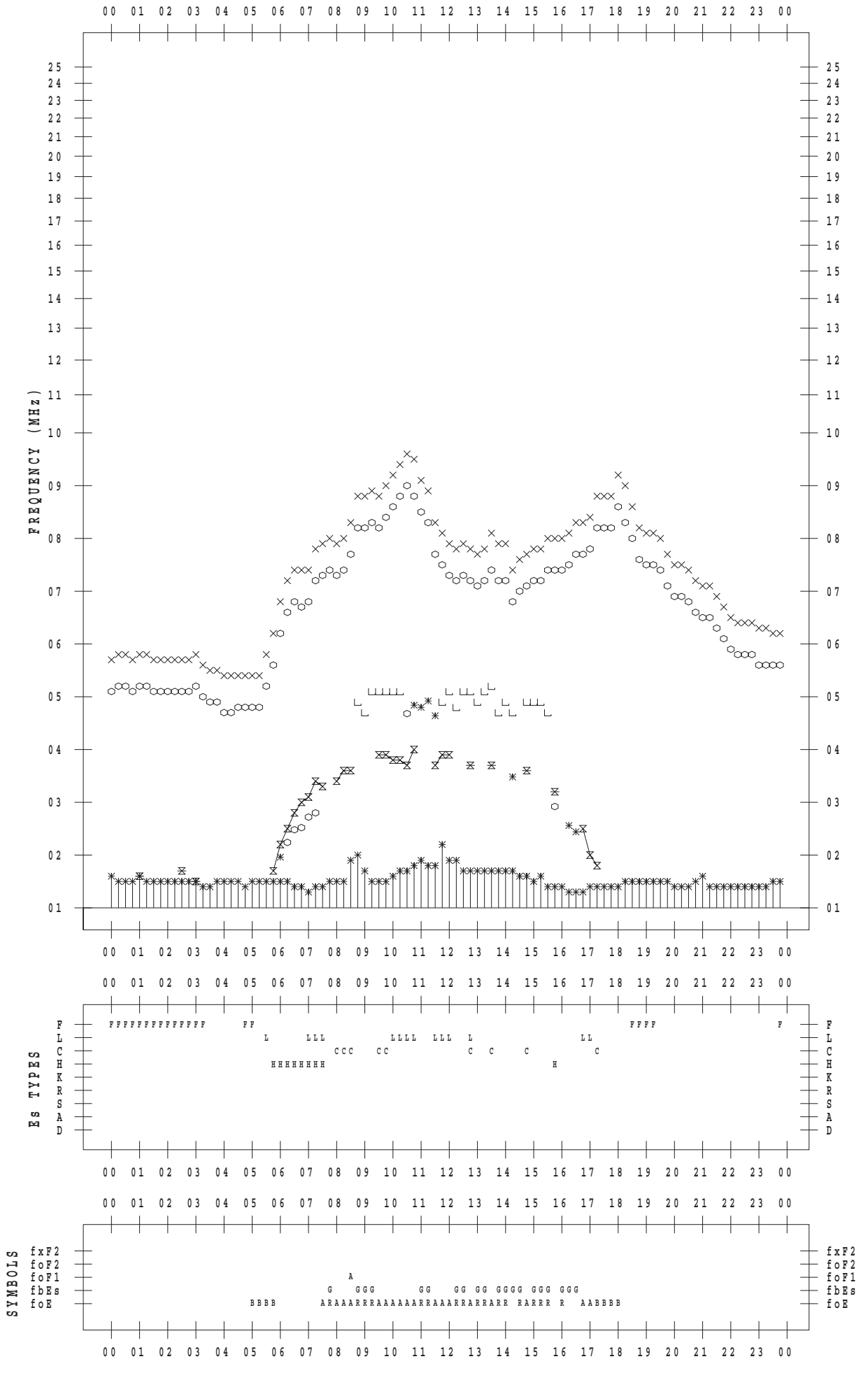
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/28

135 °E MEAN TIME



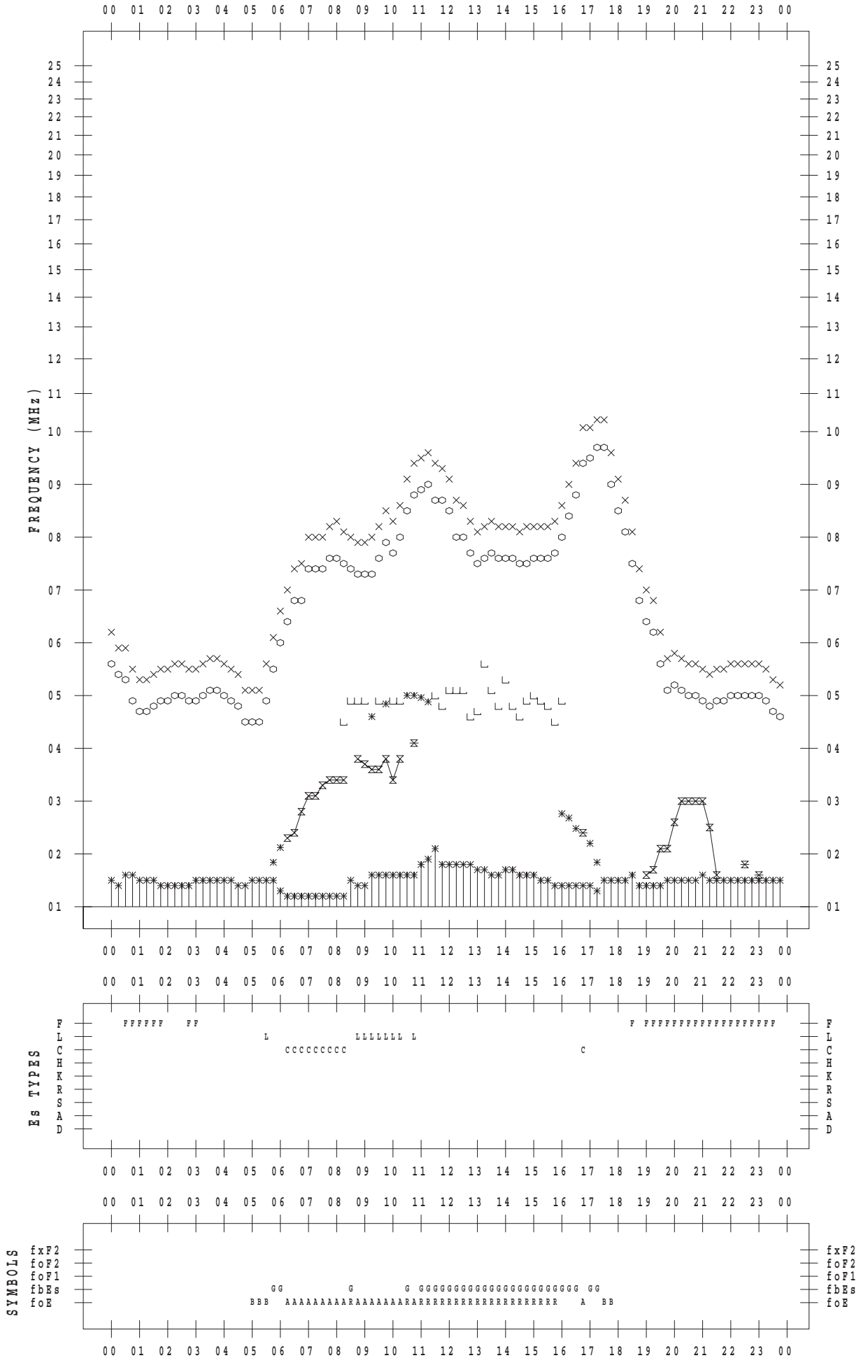
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/29

135 °E MEAN TIME



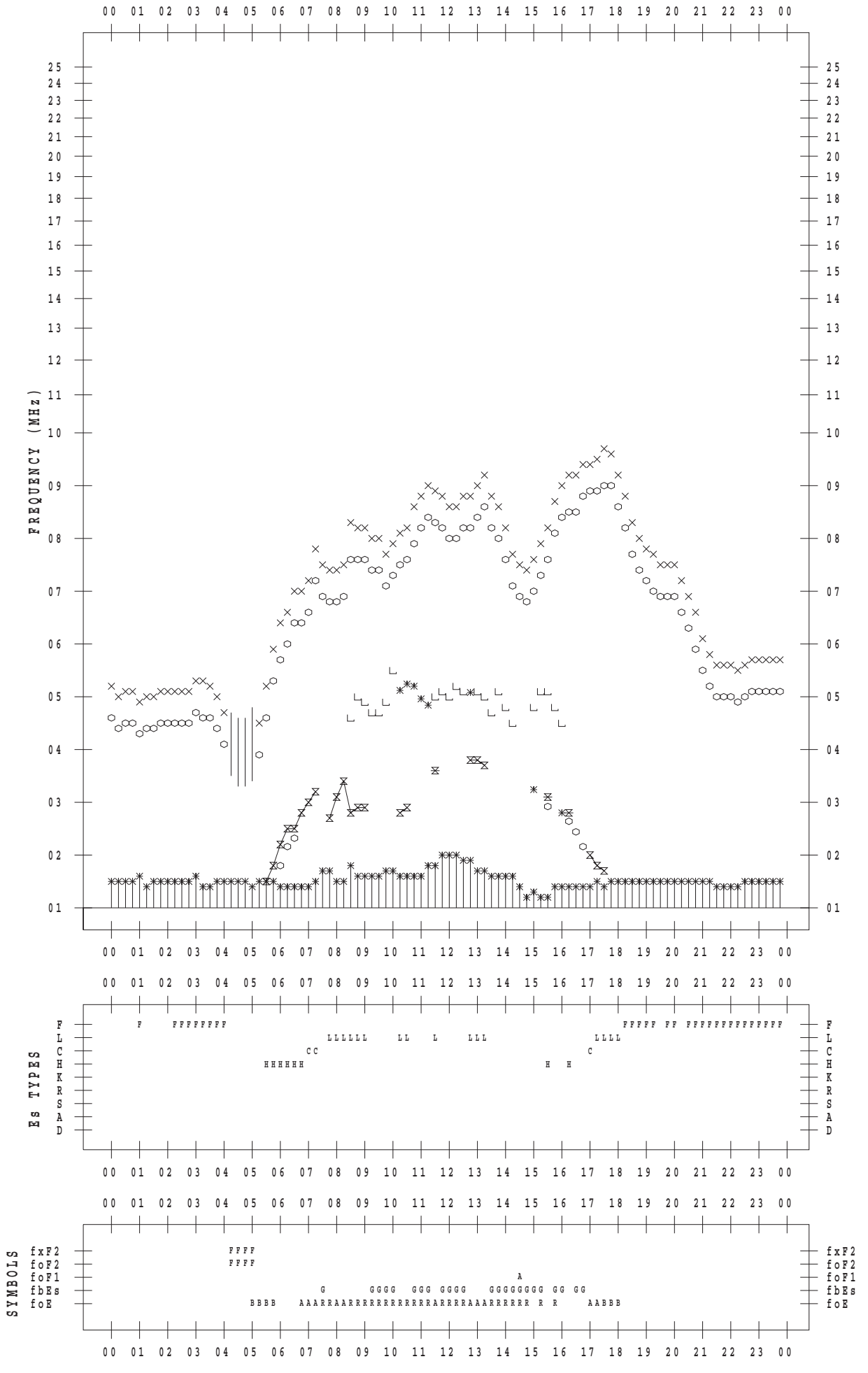
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 9/30

135 °E MEAN TIME



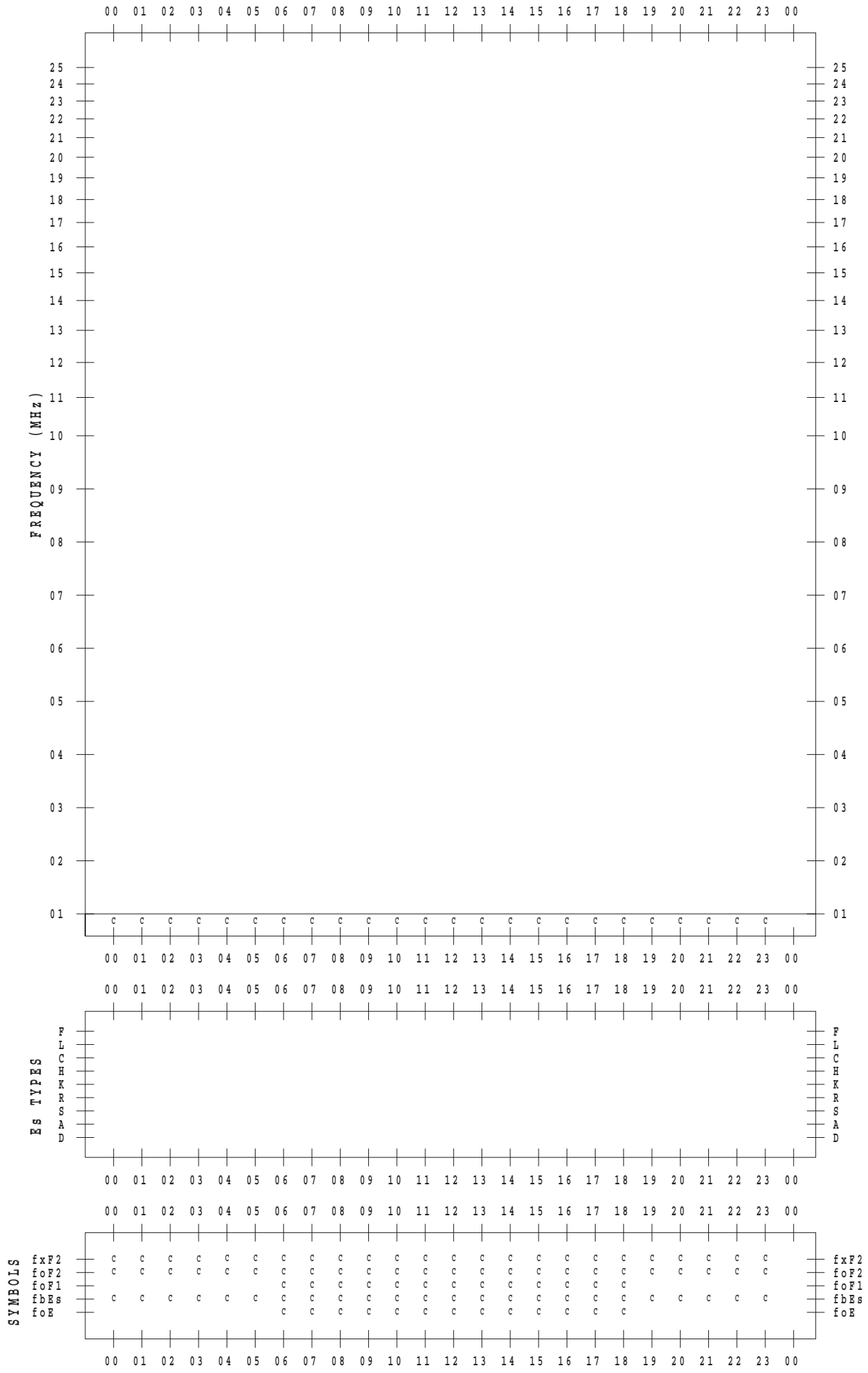
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 1

135 °E MEAN TIME



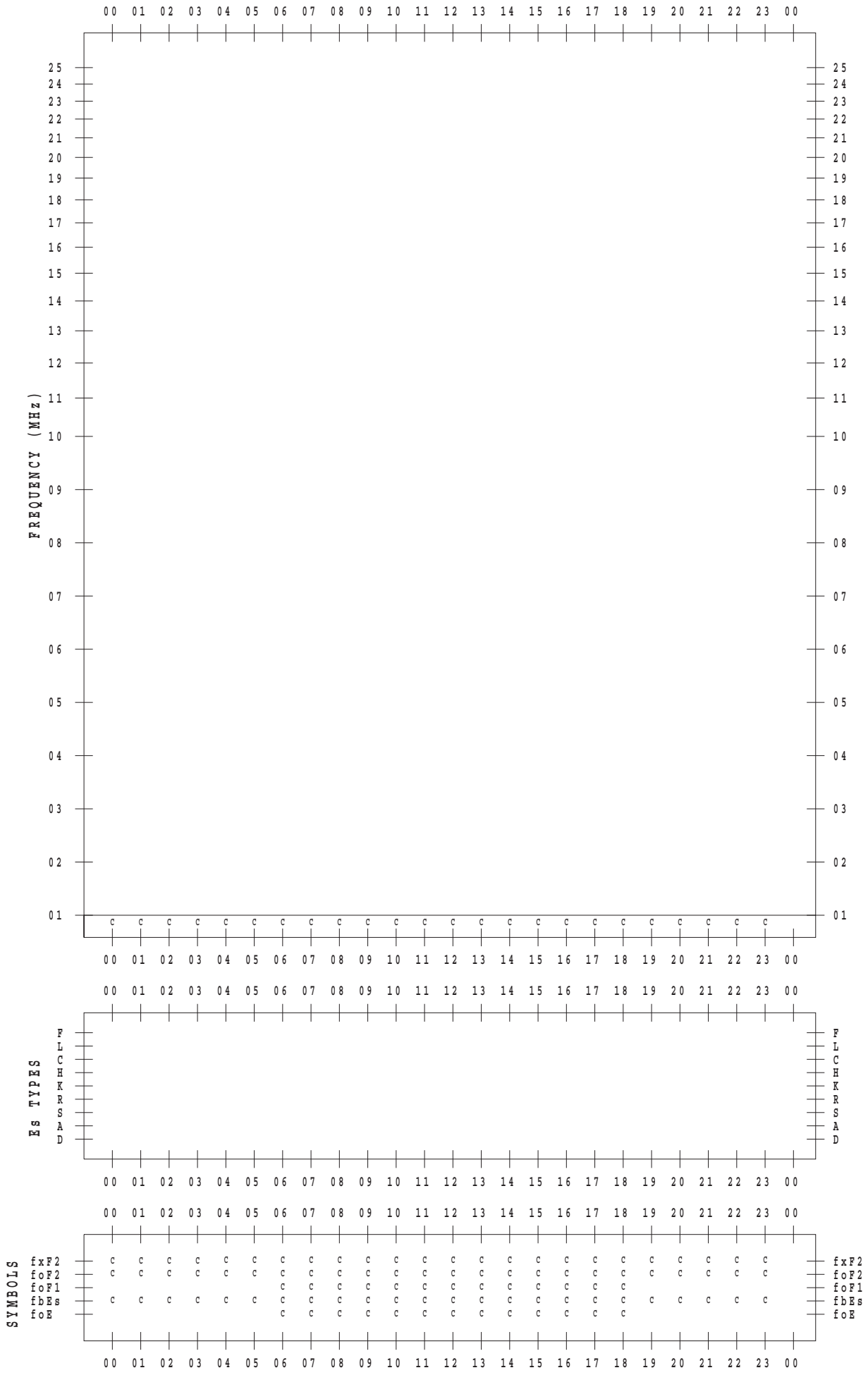
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 2

135 °E MEAN TIME



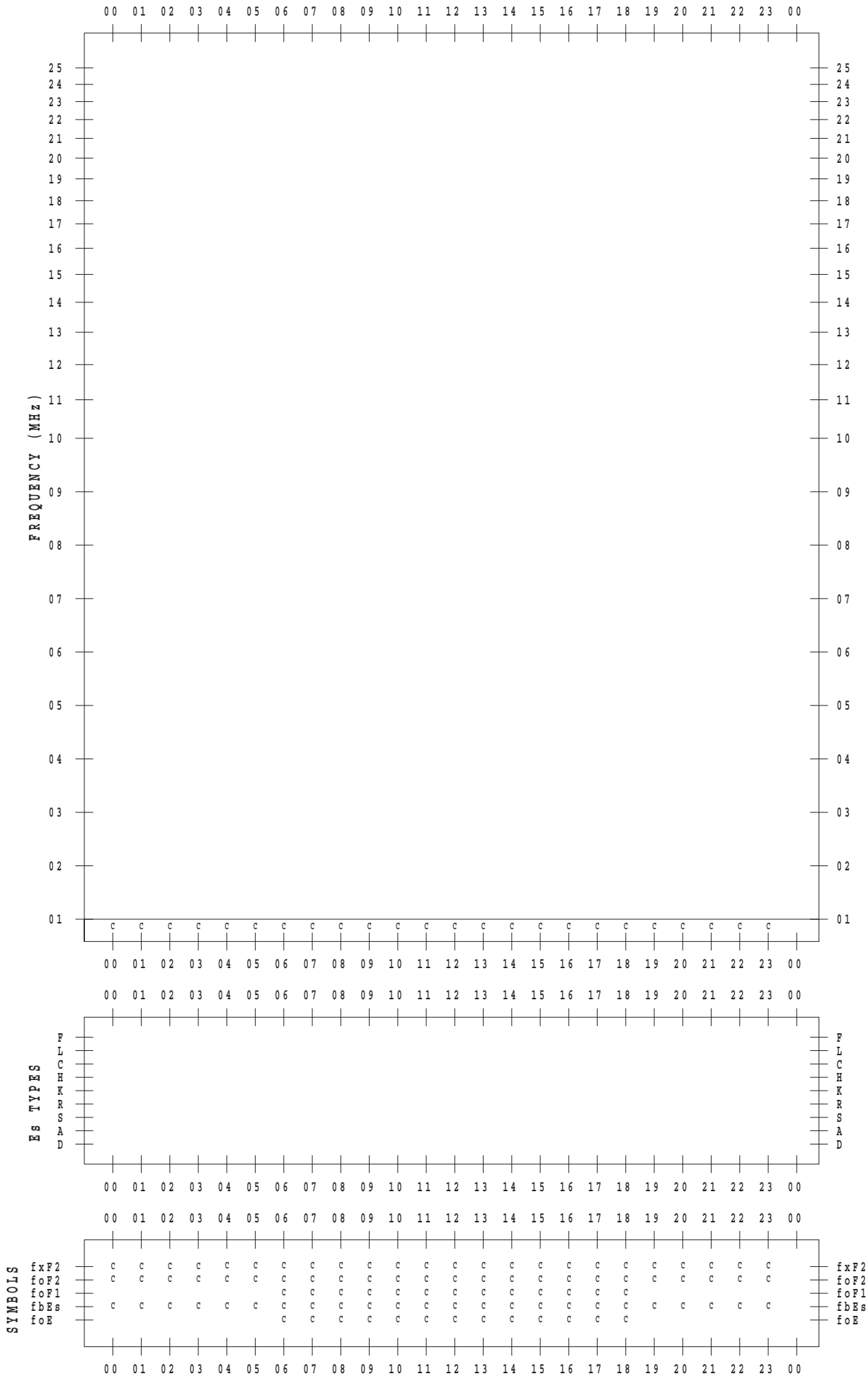
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 3

135 °E MEAN TIME



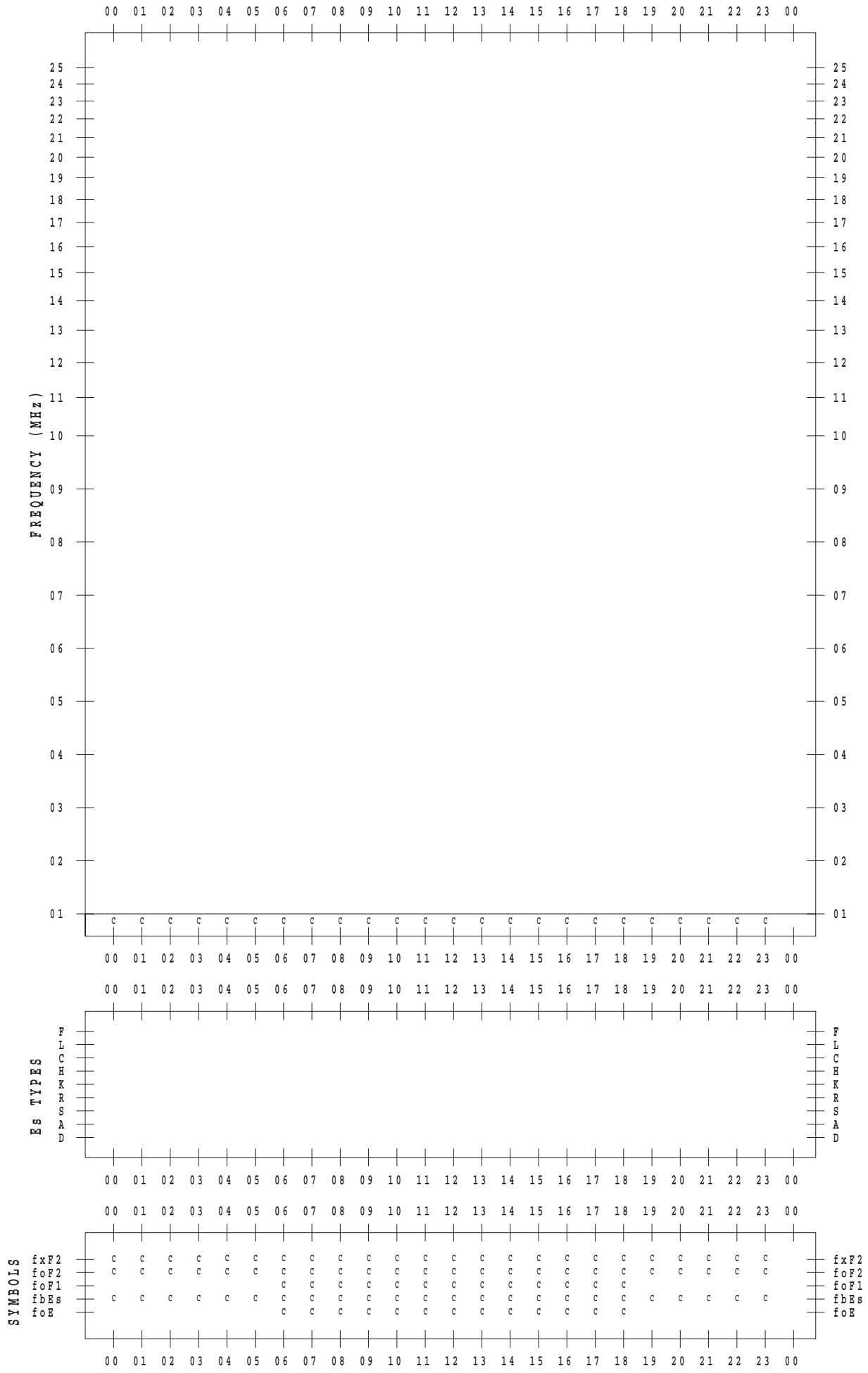
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 4

135 °E MEAN TIME



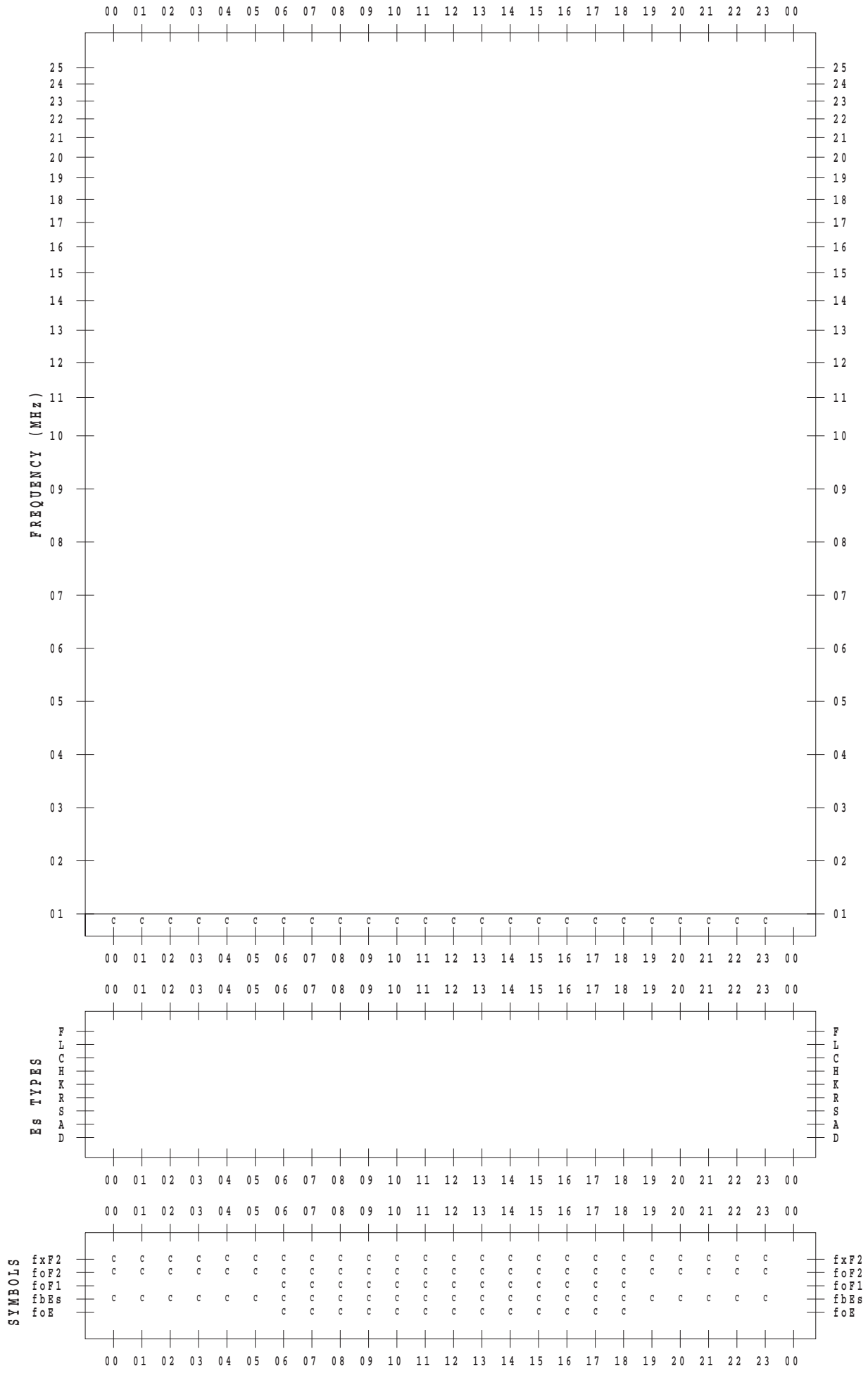
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 5

135 °E MEAN TIME



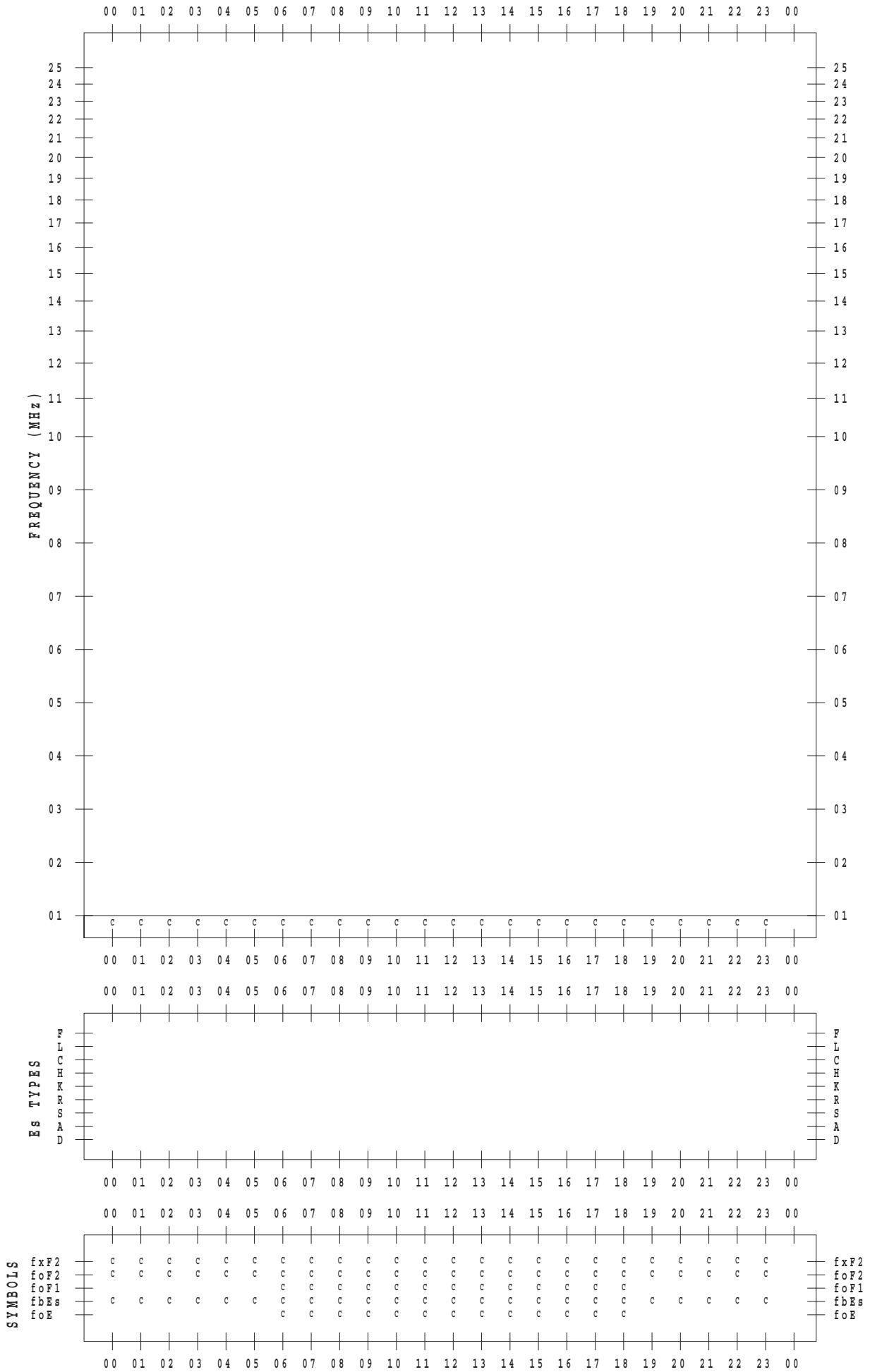
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 6

135 °E MEAN TIME



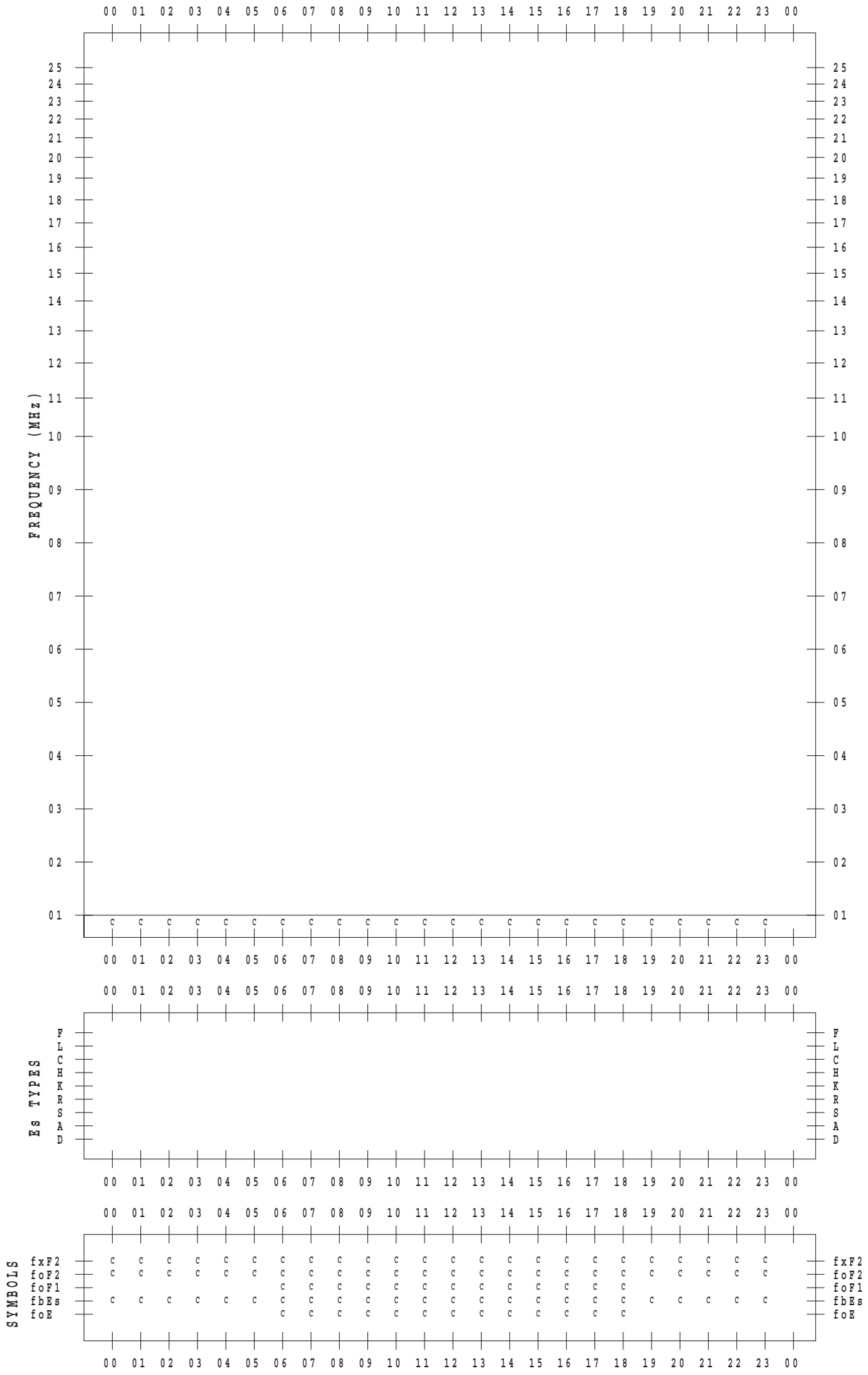
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 7

135 °E MEAN TIME



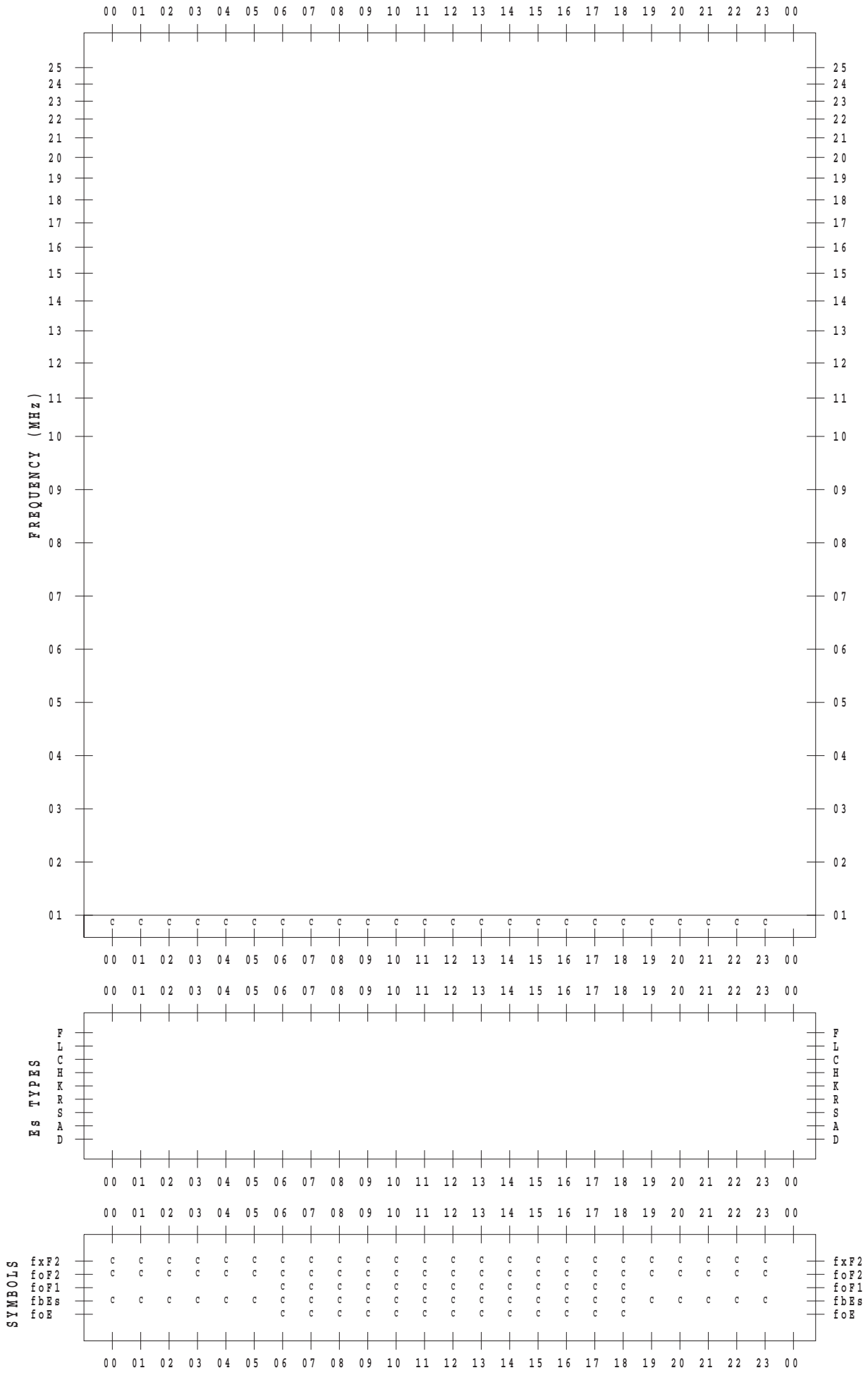
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 8

135 °E MEAN TIME



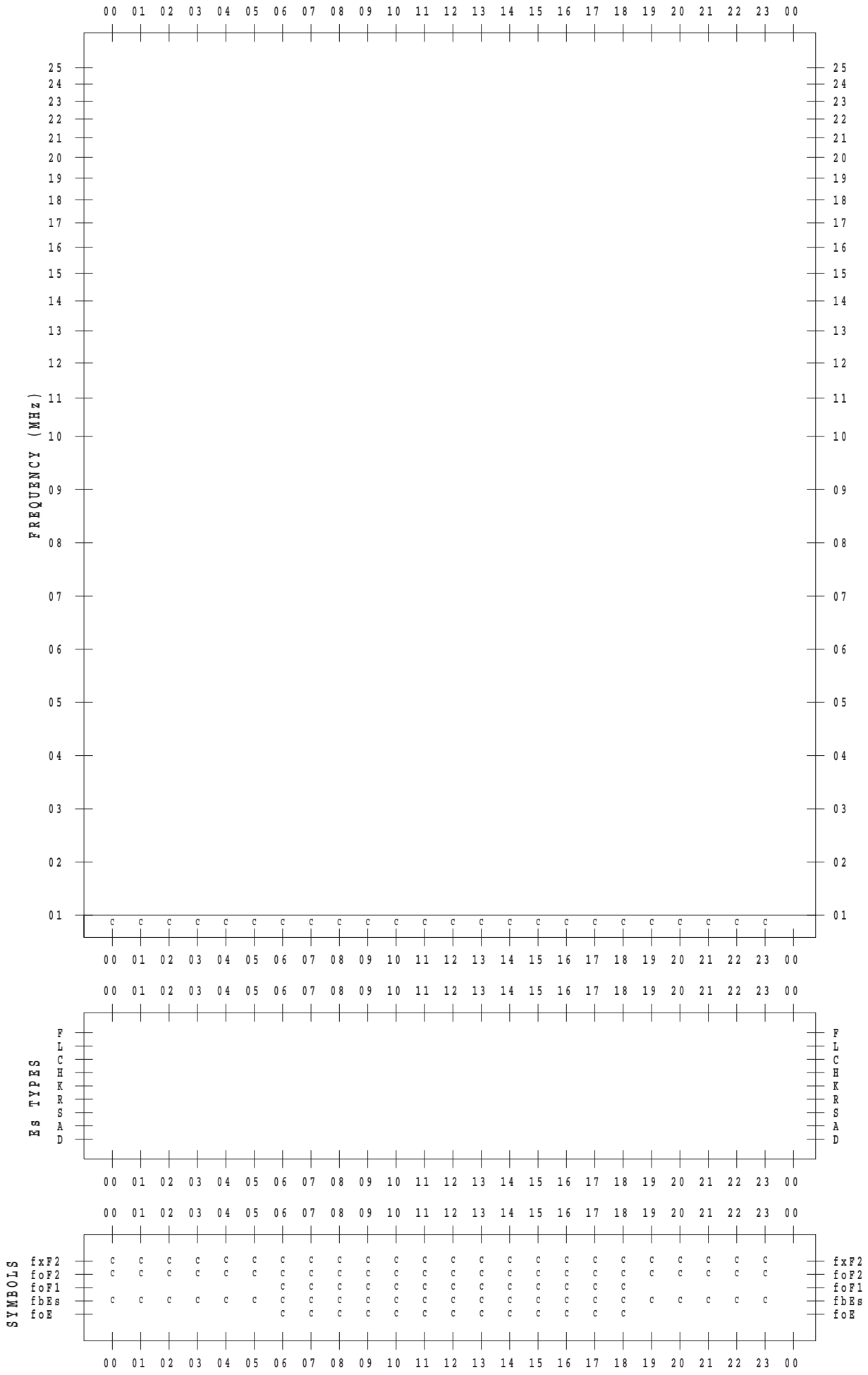
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/ 9

135 °E MEAN TIME



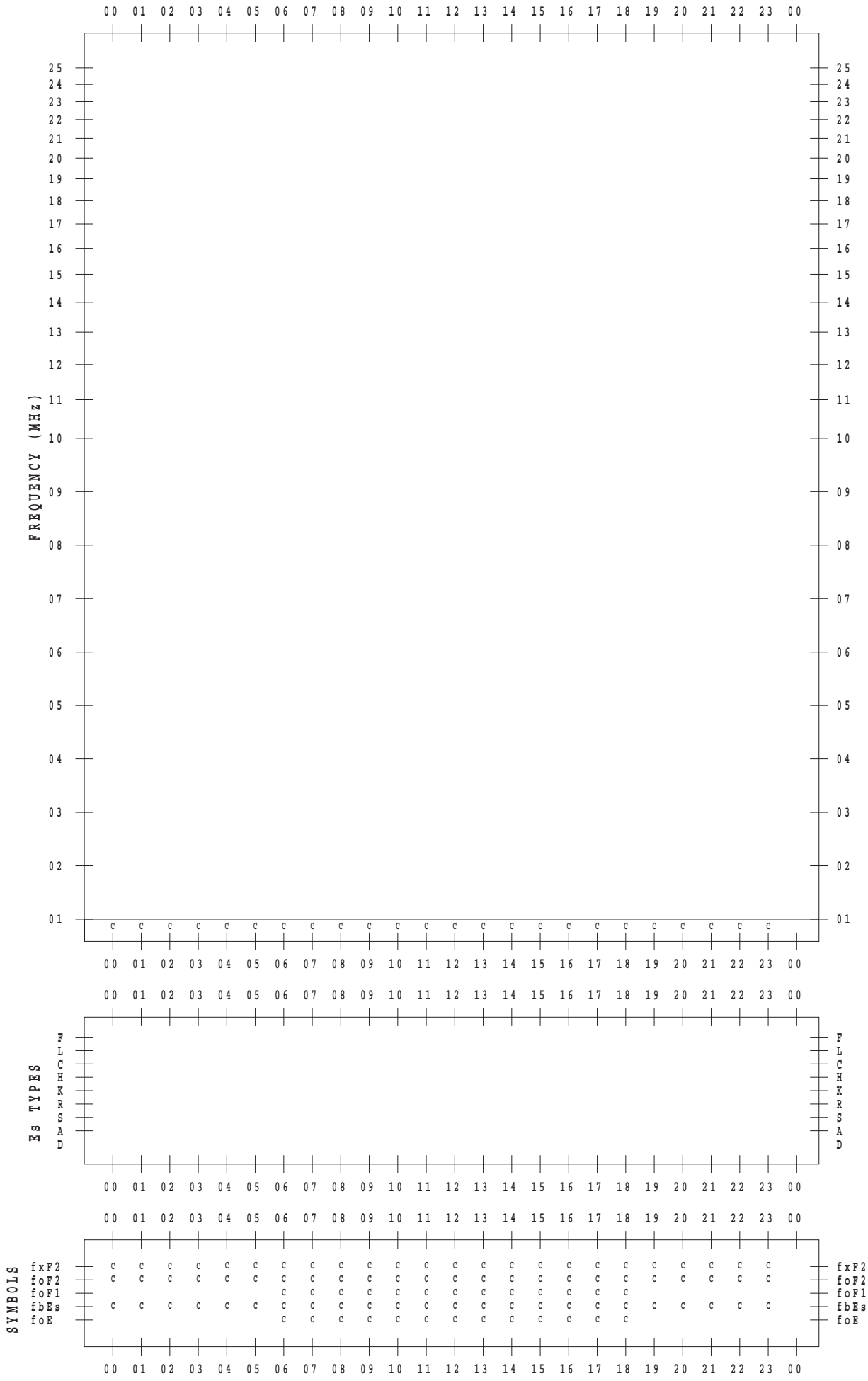
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/10

135 °E MEAN TIME



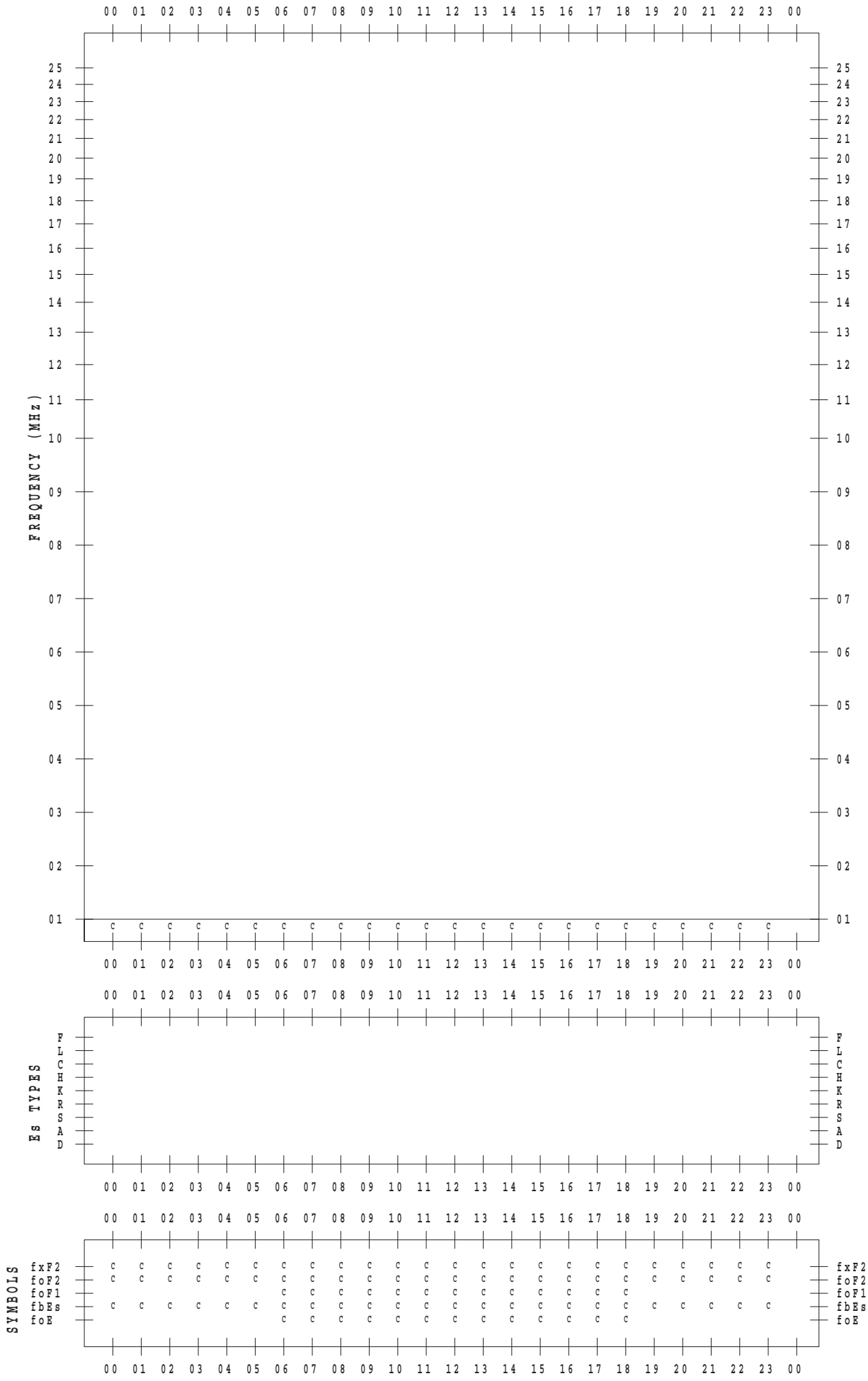
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/11

135 °E MEAN TIME



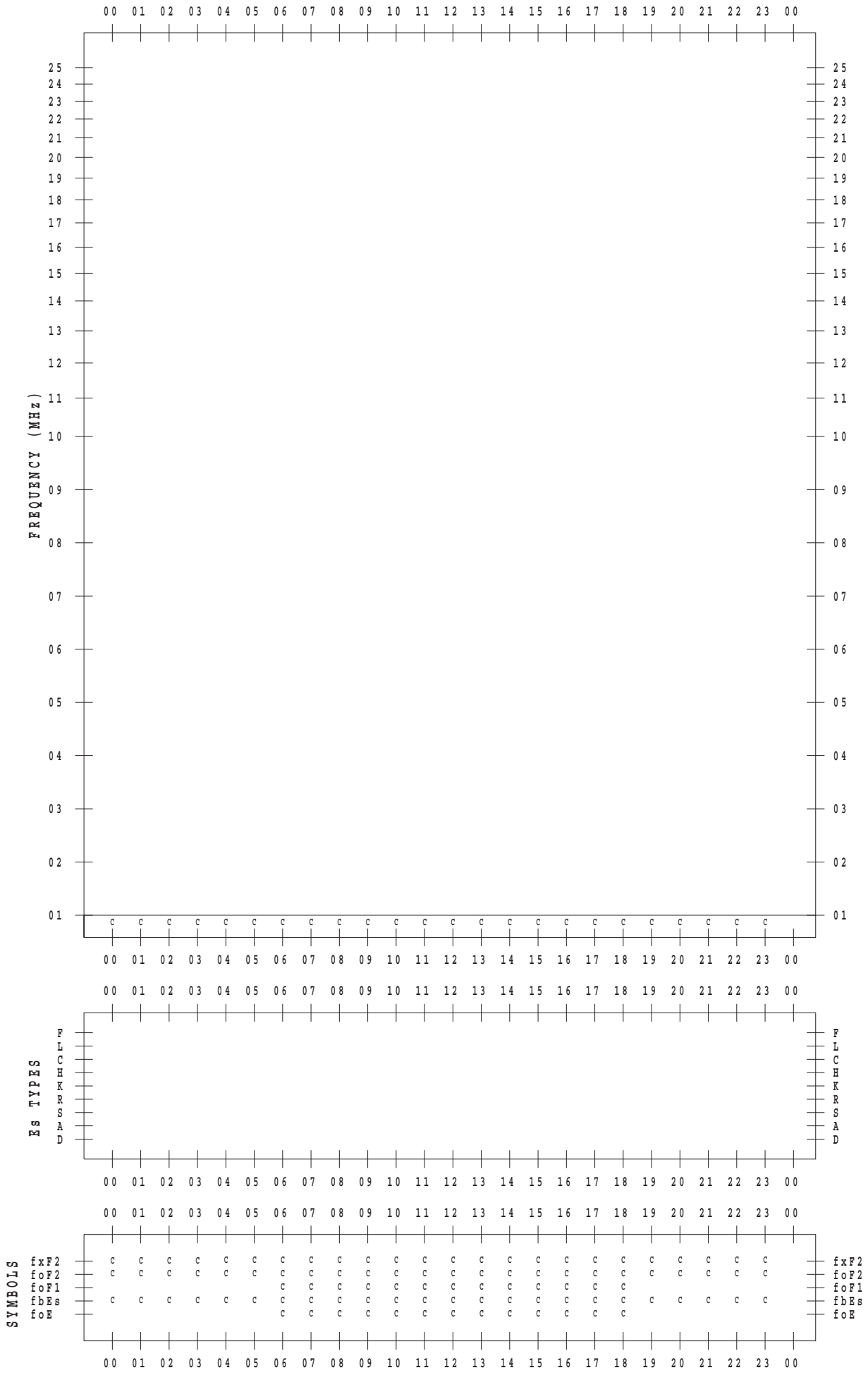
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/12

135 °E MEAN TIME



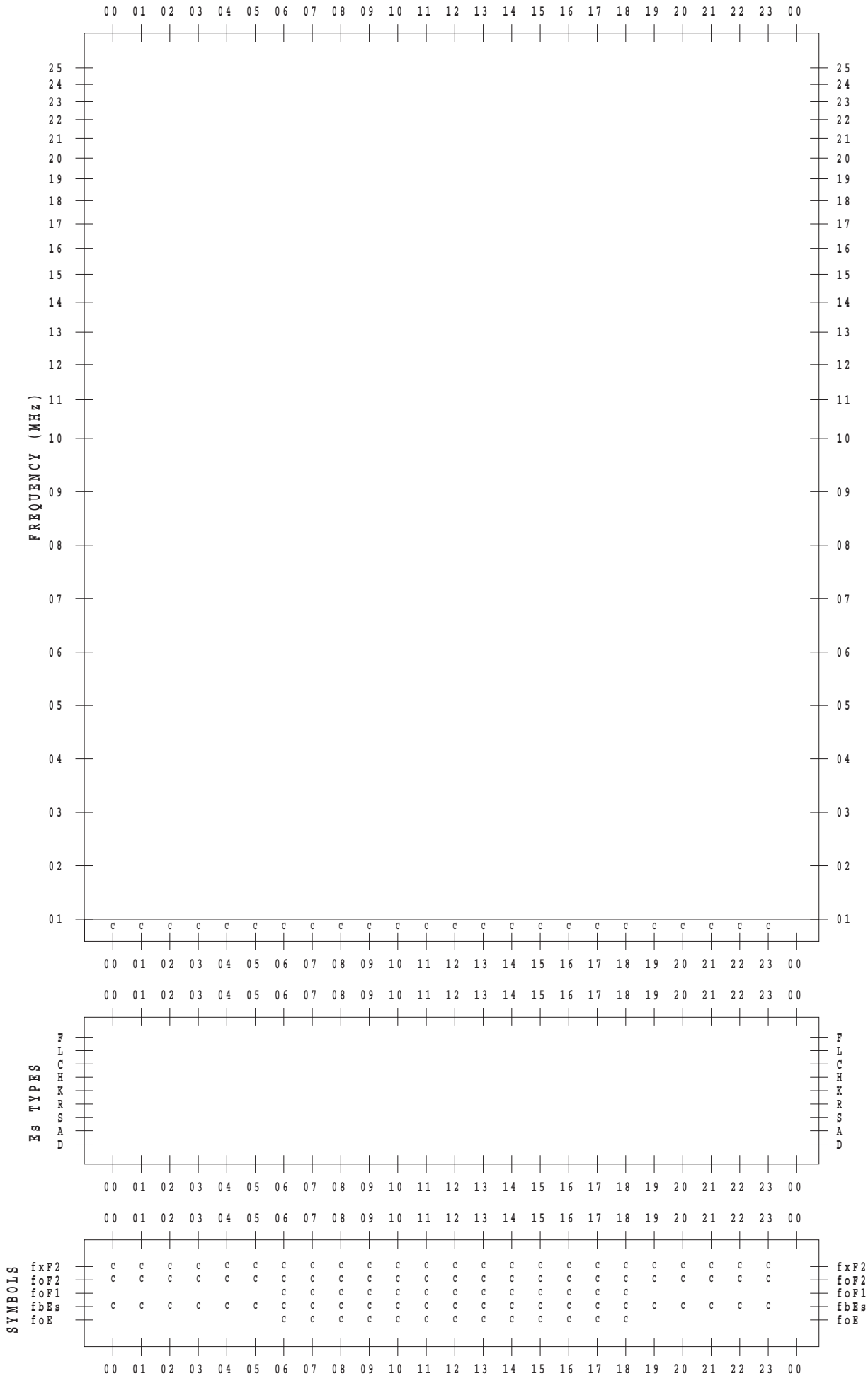
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/13

135 °E MEAN TIME



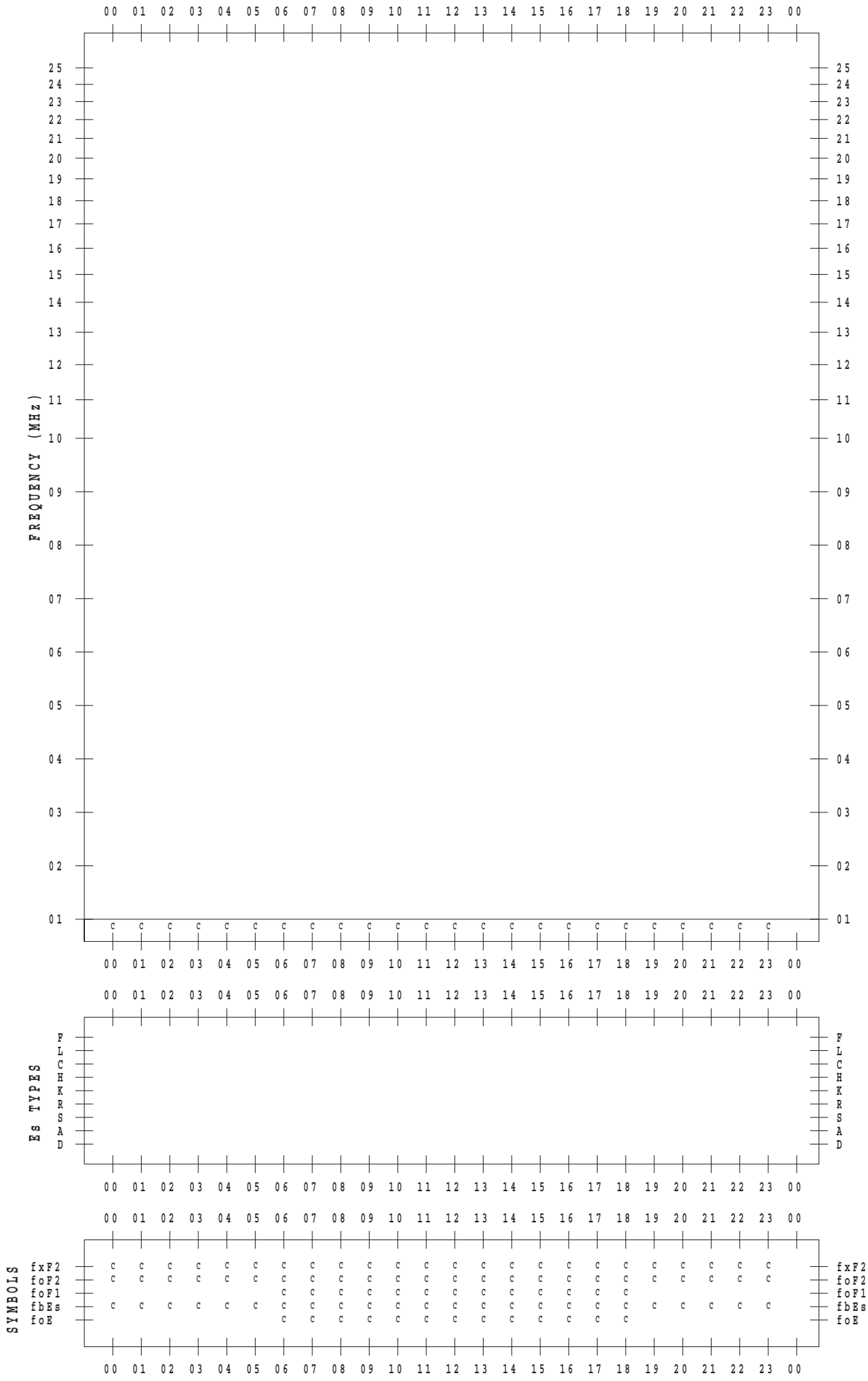
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/14

135 °E MEAN TIME



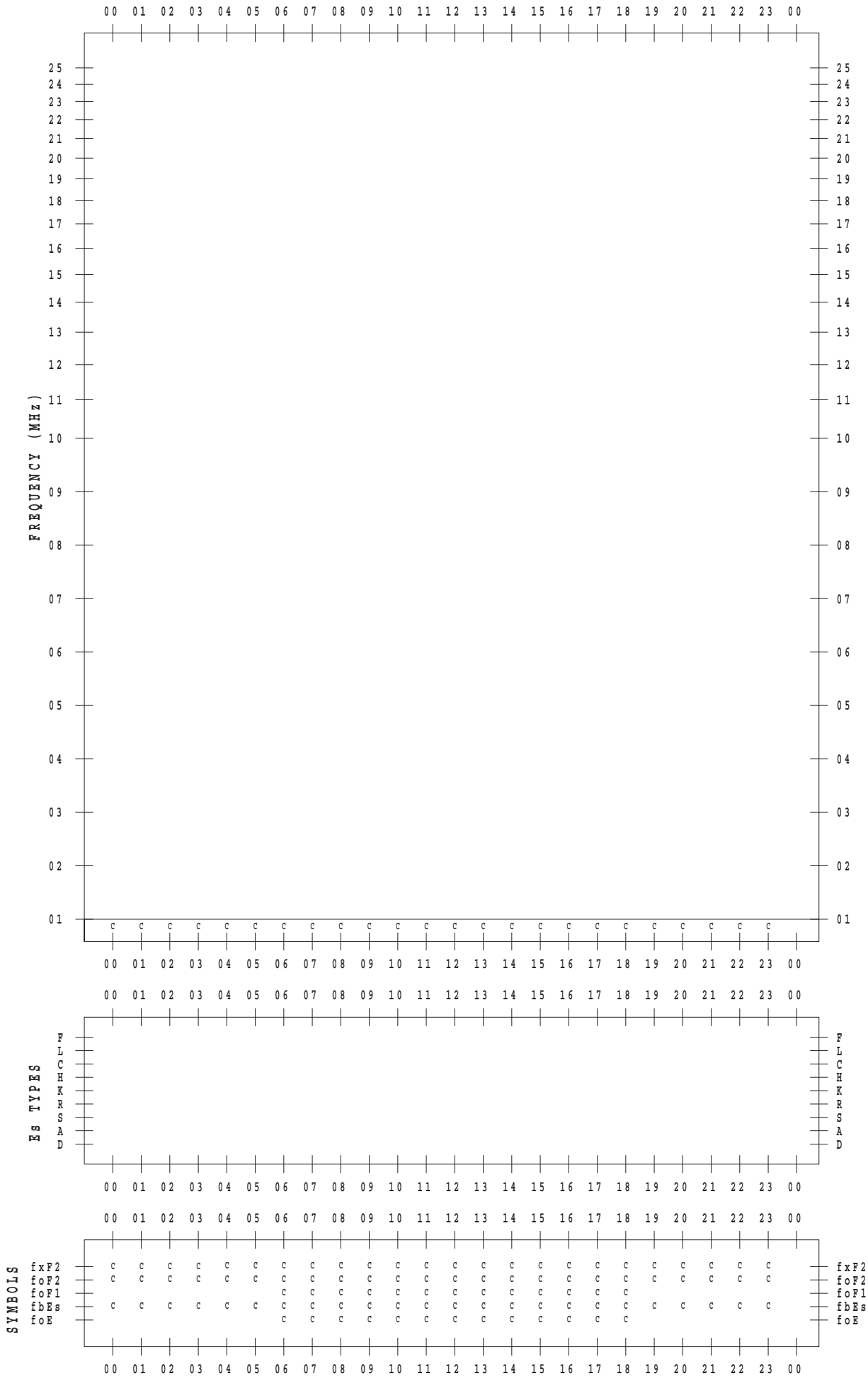
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/15

135 °E MEAN TIME



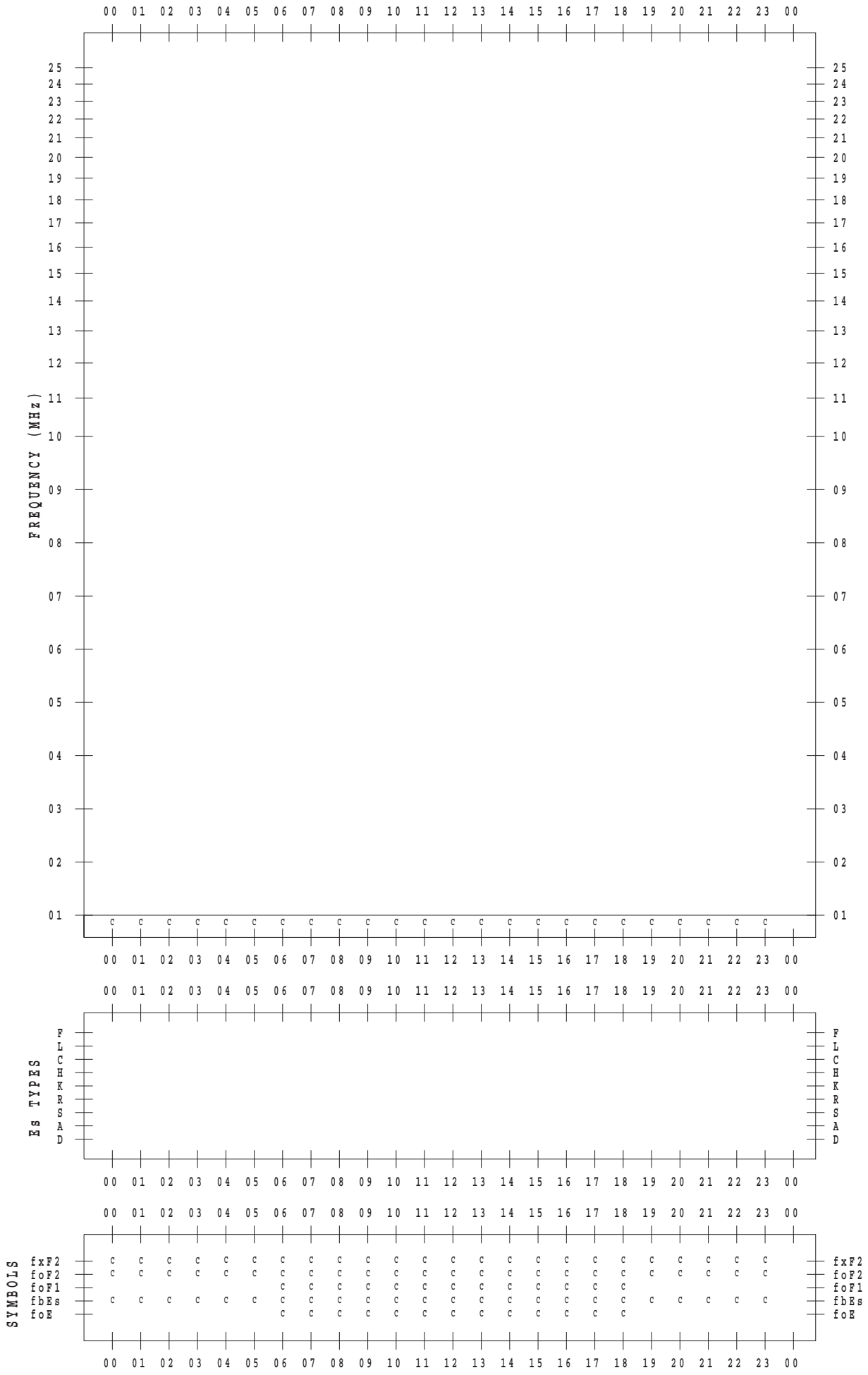
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/16

135 °E MEAN TIME



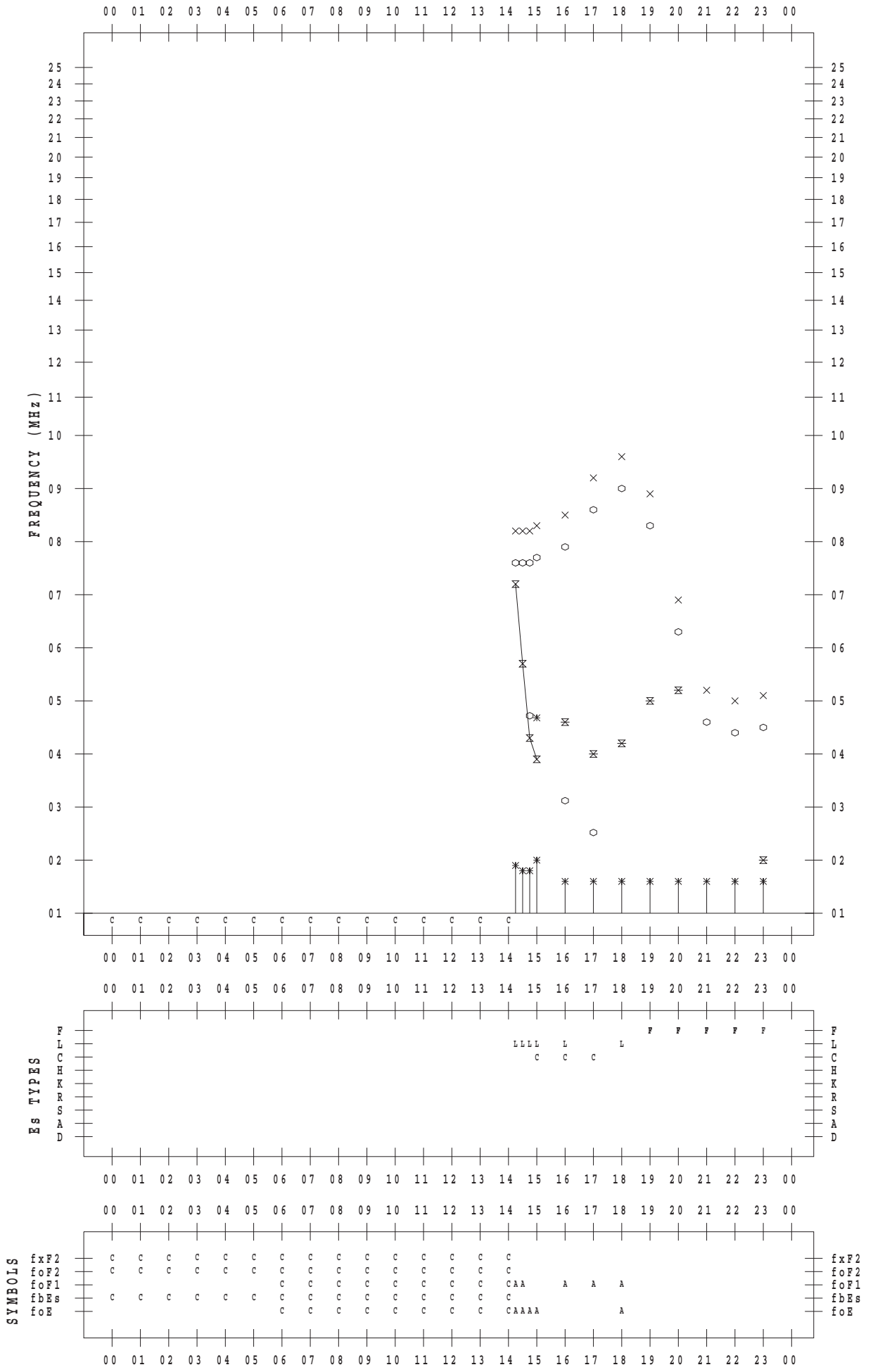
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/17

135 °E MEAN TIME



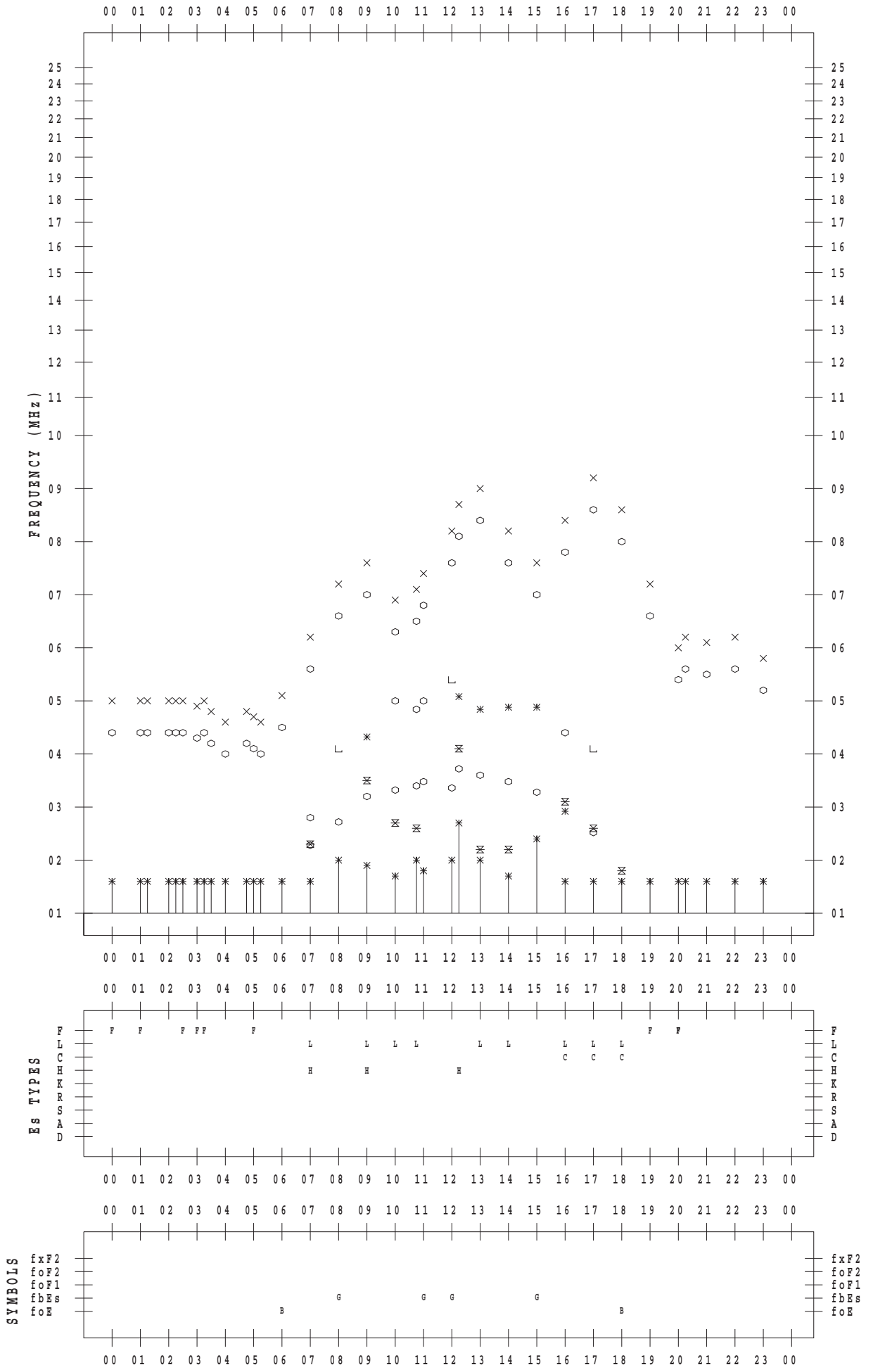
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/18

135 °E MEAN TIME



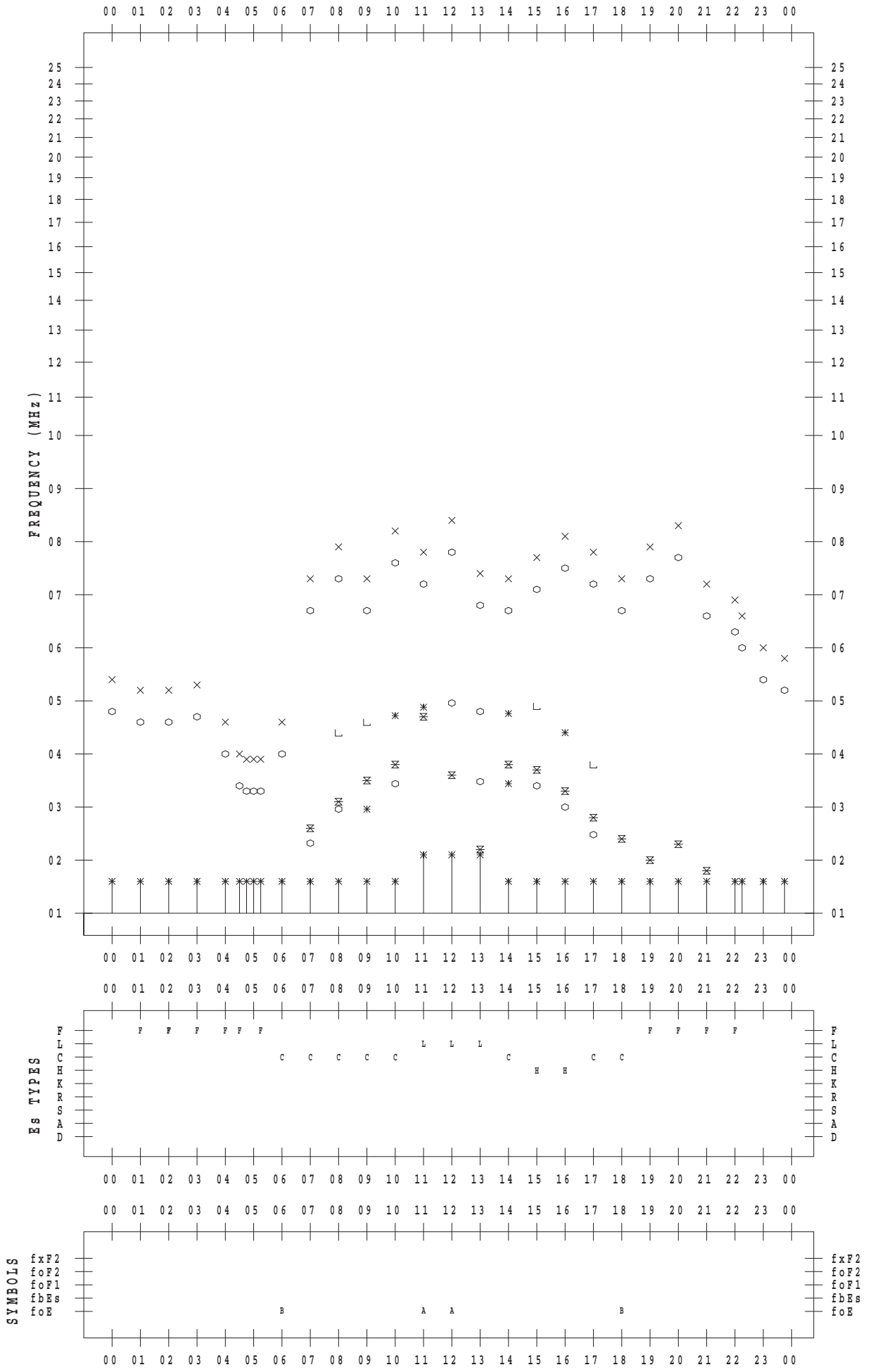
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/19

135 °E MEAN TIME



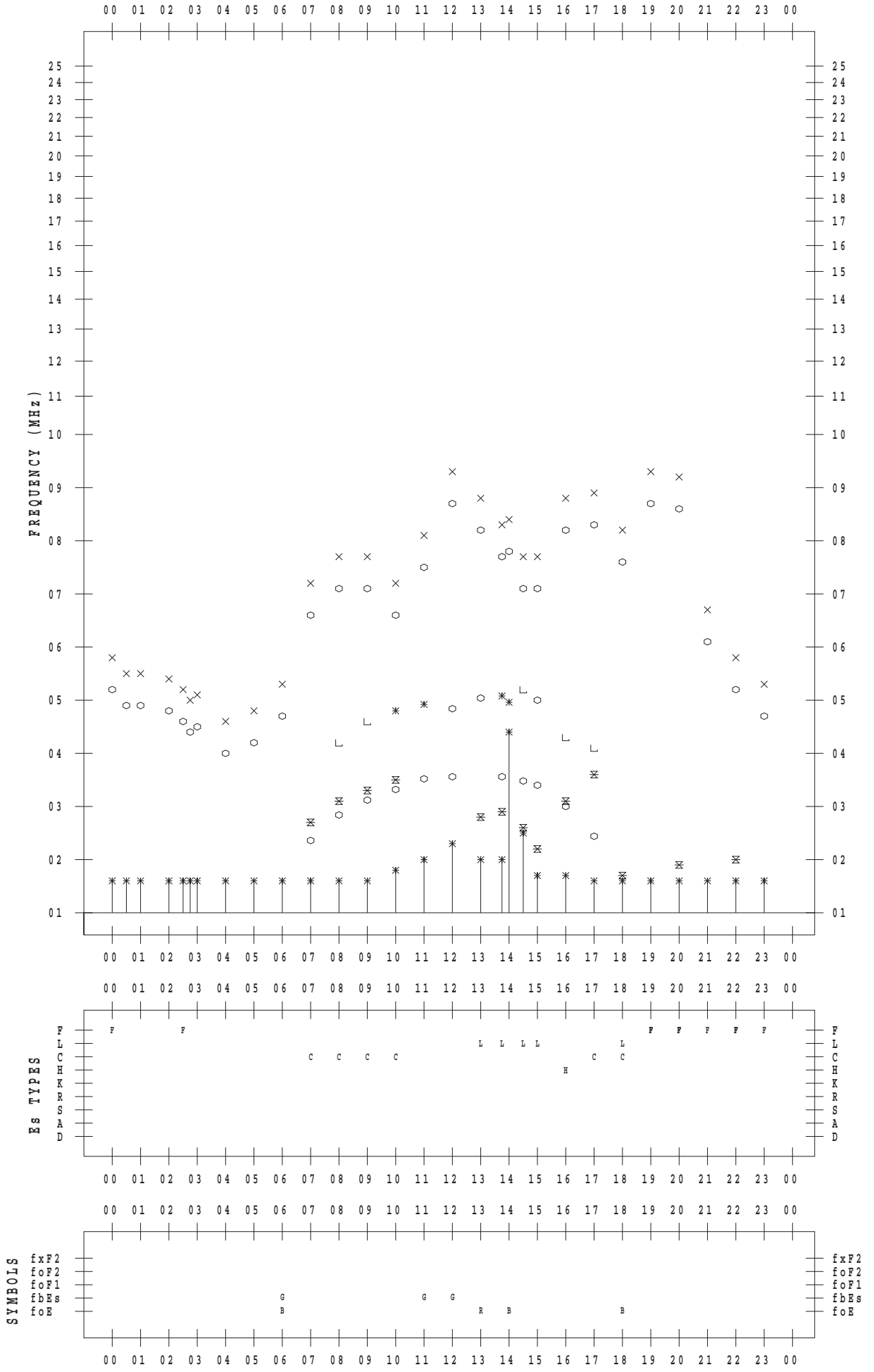
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/20

135 °E MEAN TIME



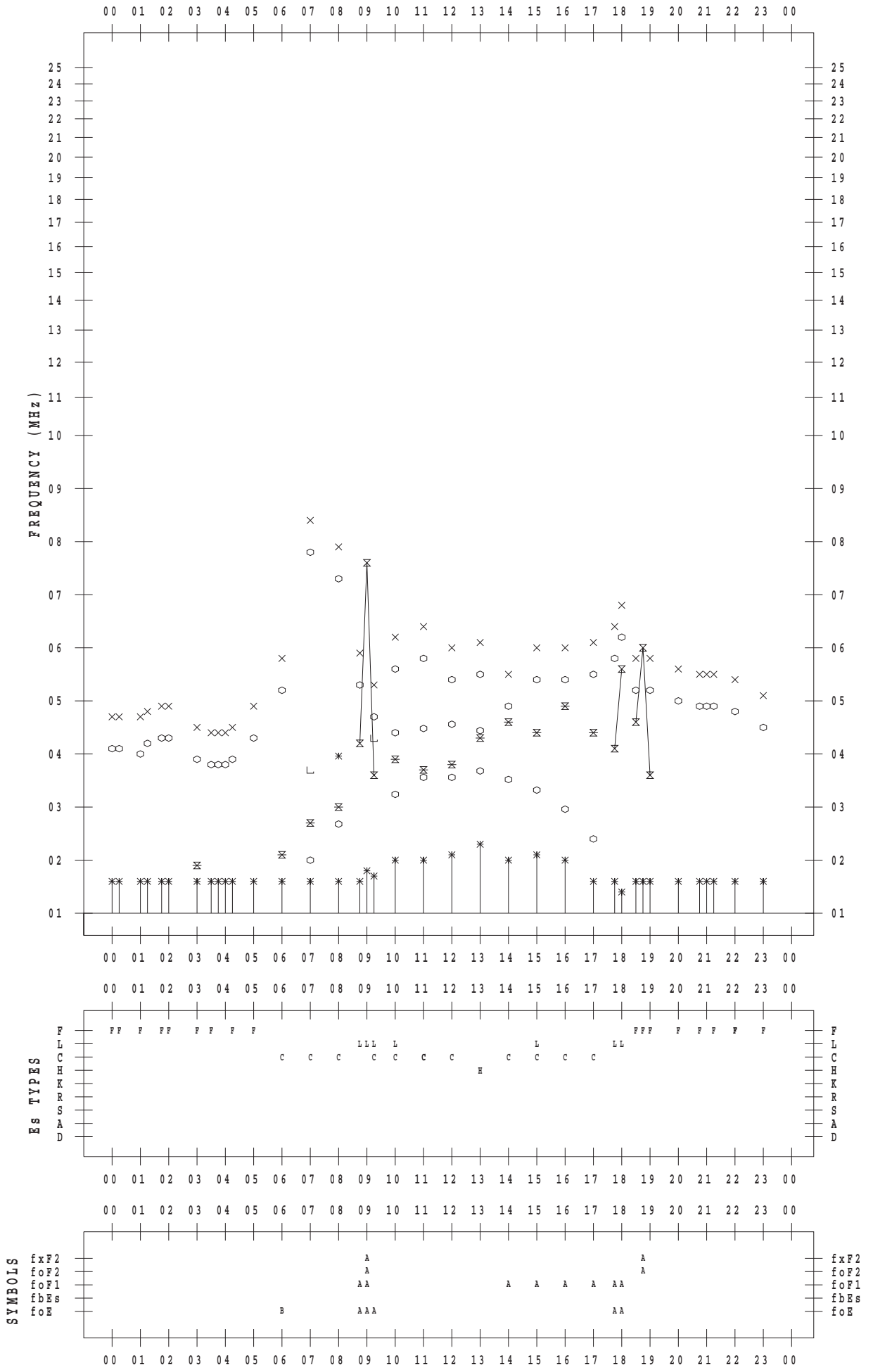
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/21

135 °E MEAN TIME



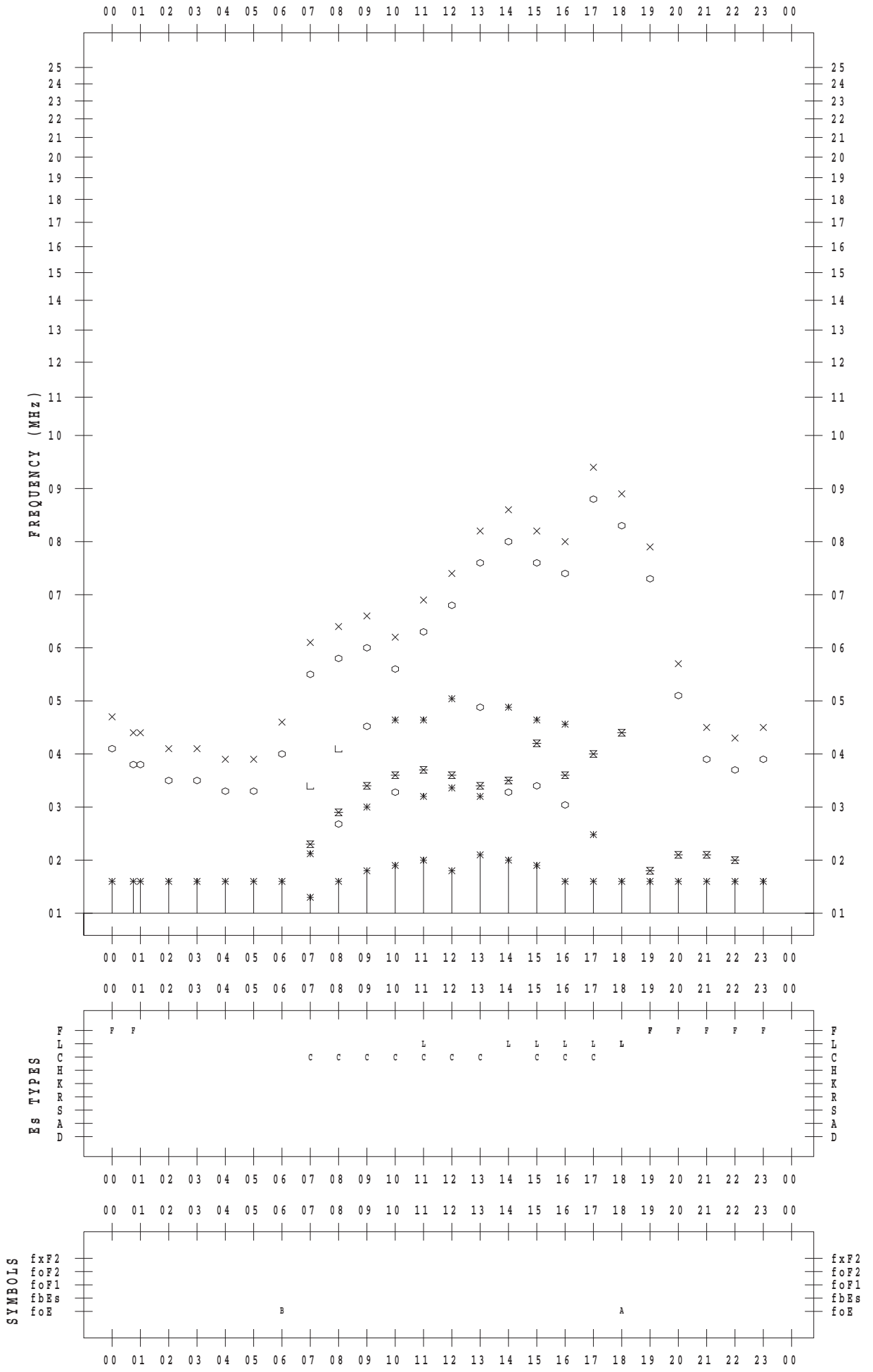
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/22

135 °E MEAN TIME



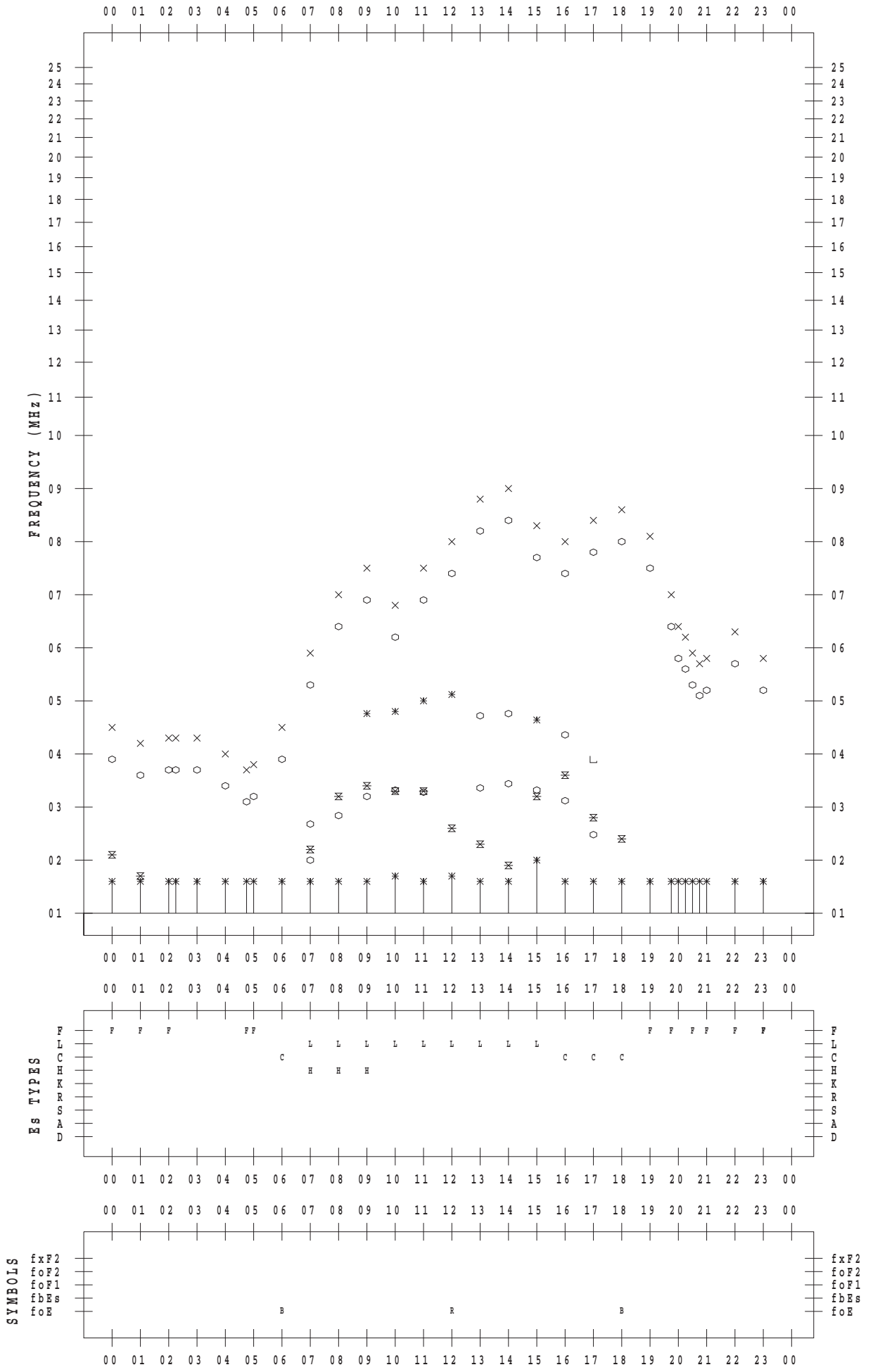
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/23

135 °E MEAN TIME



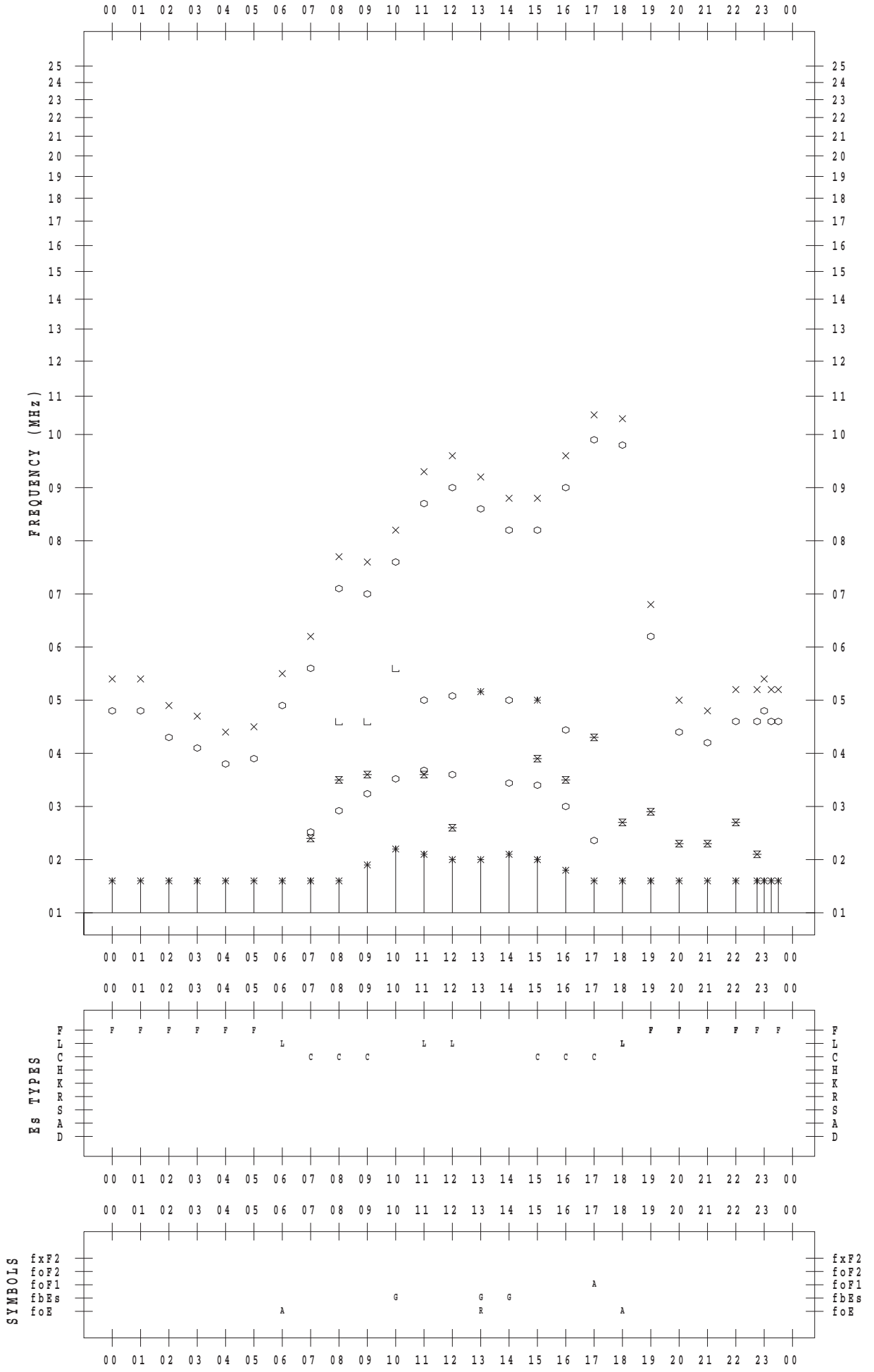
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/24

135 °E MEAN TIME



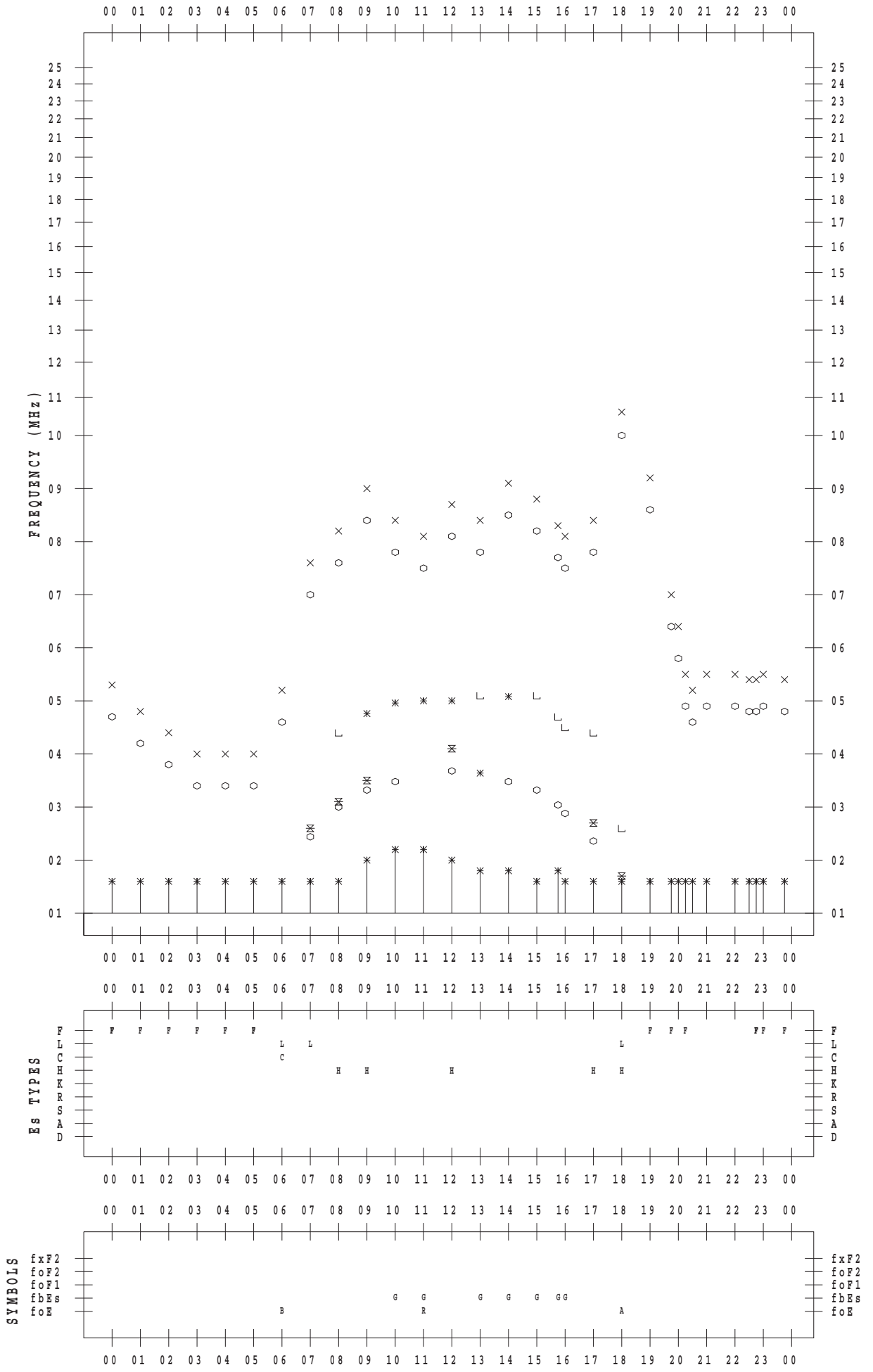
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/25

135 °E MEAN TIME



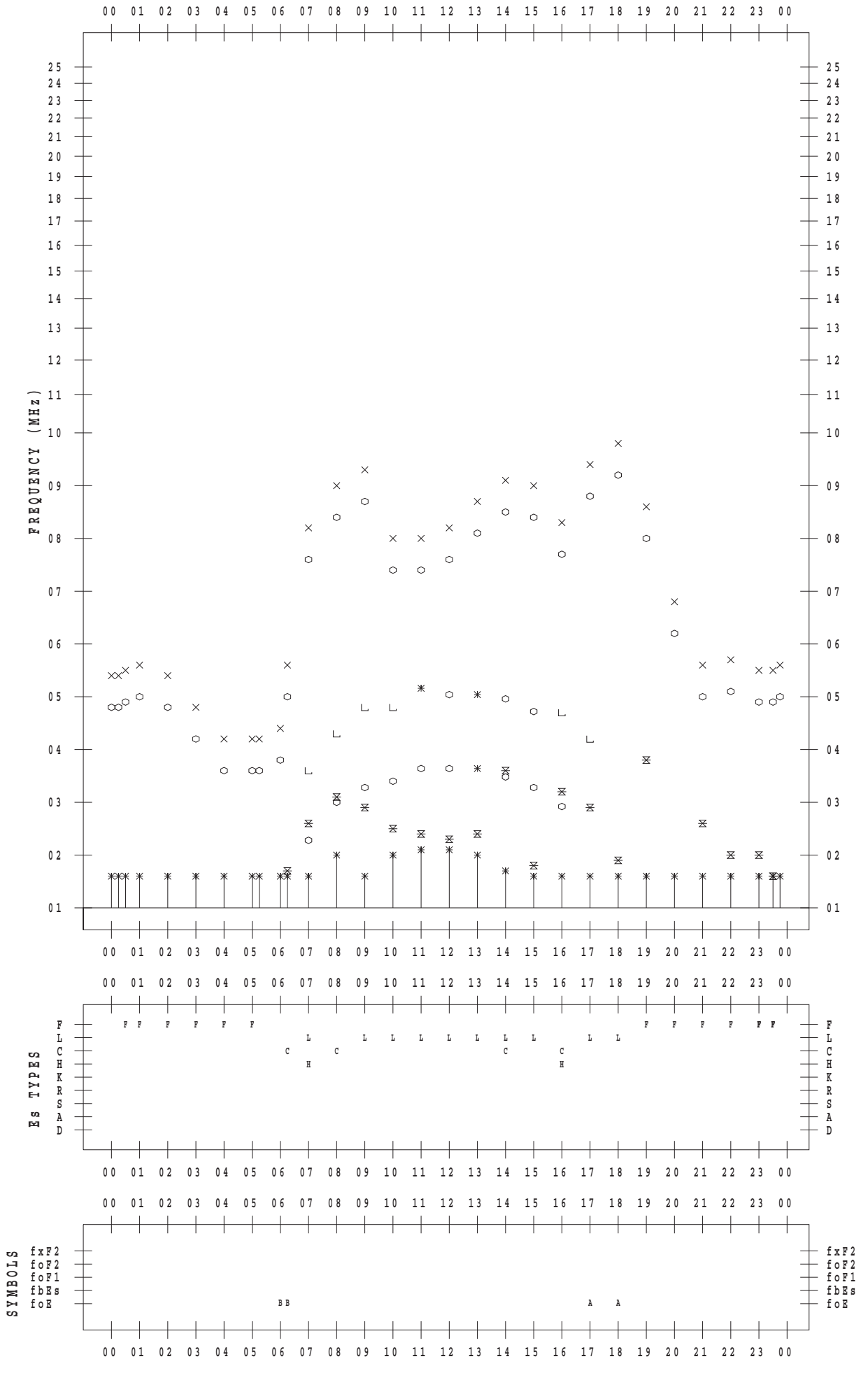
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/26

135 °E MEAN TIME



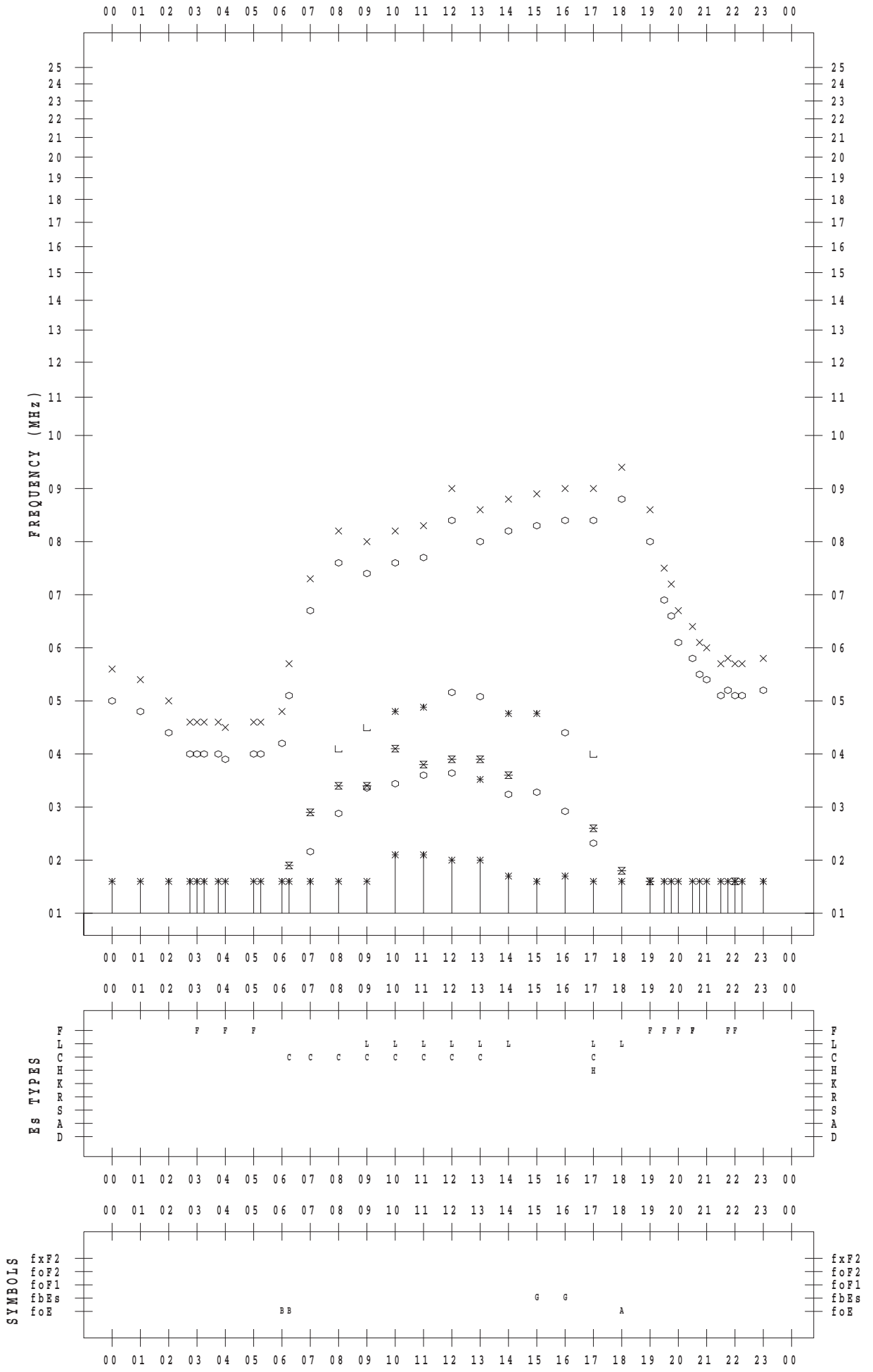
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/27

135 °E MEAN TIME



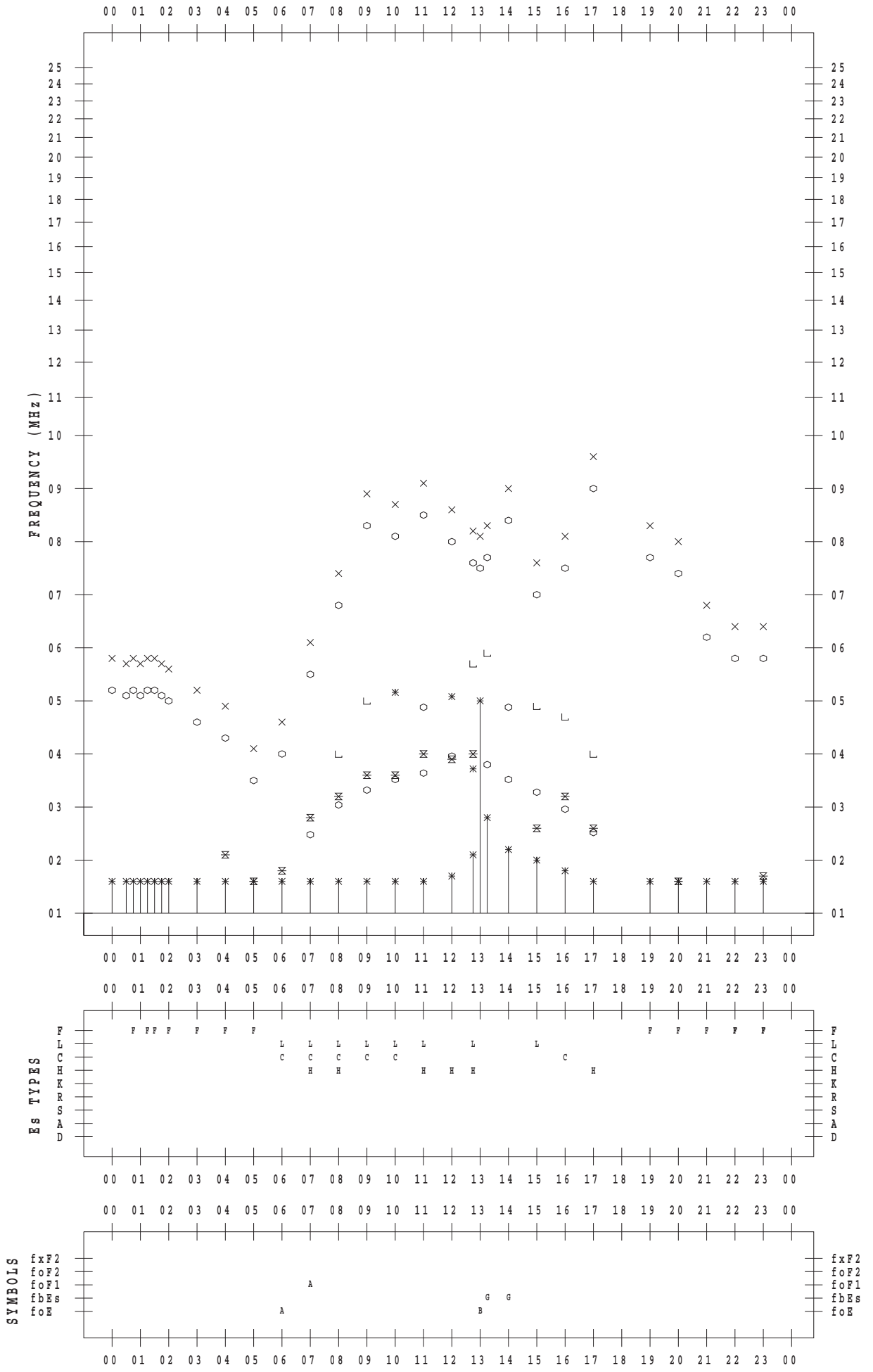
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/28

135 °E MEAN TIME



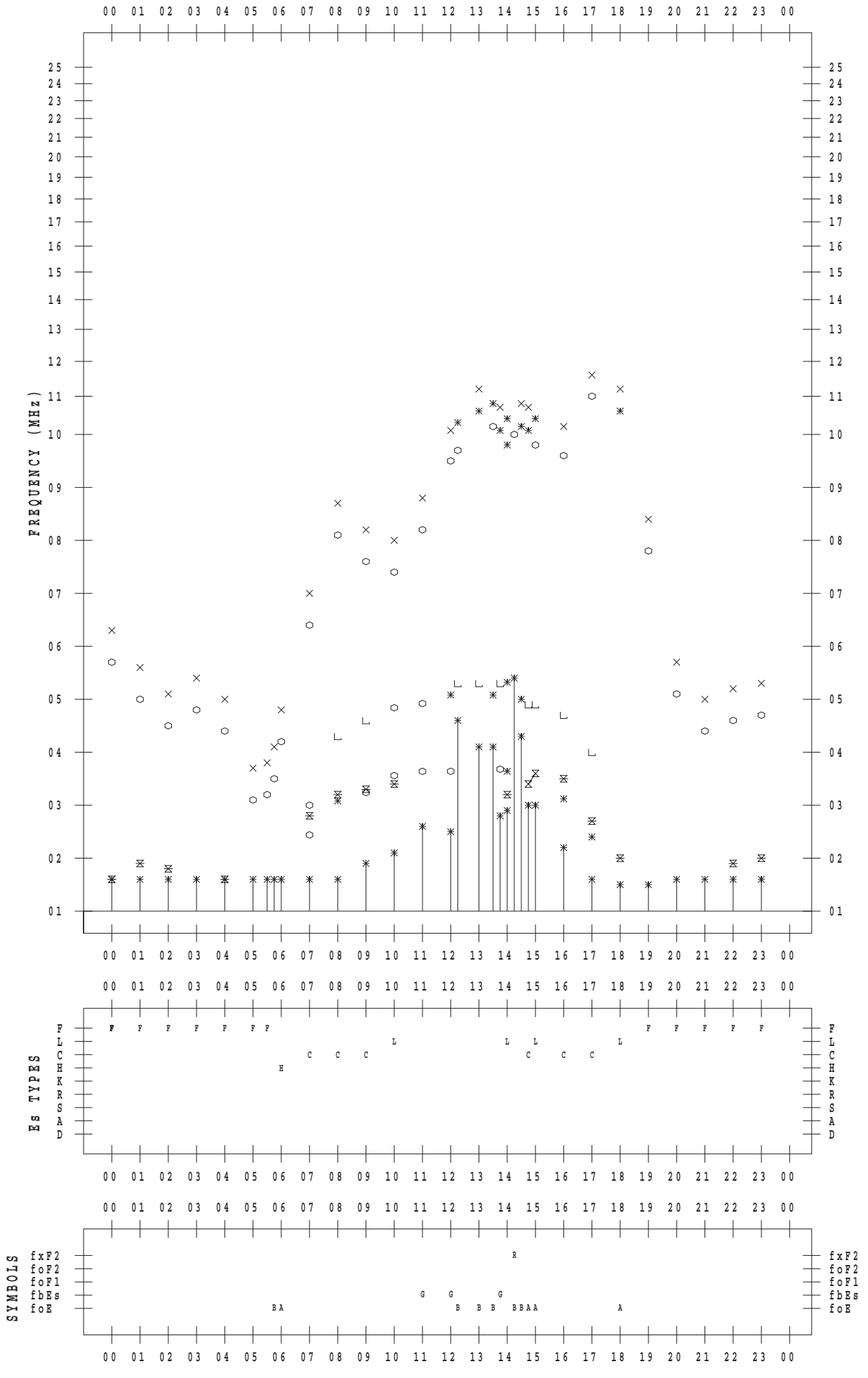
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/29

135 °E MEAN TIME



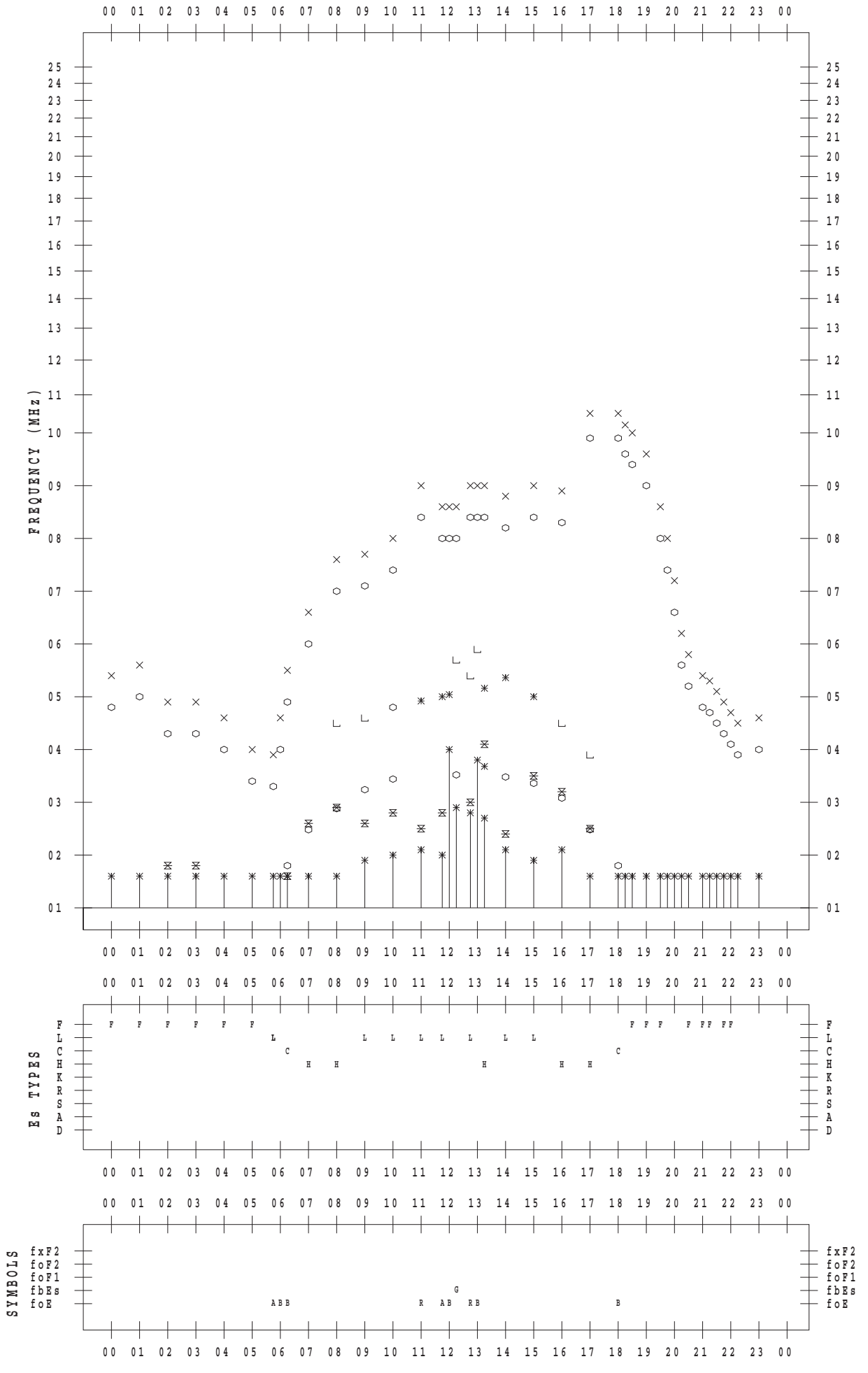
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 9/30

135 °E MEAN TIME



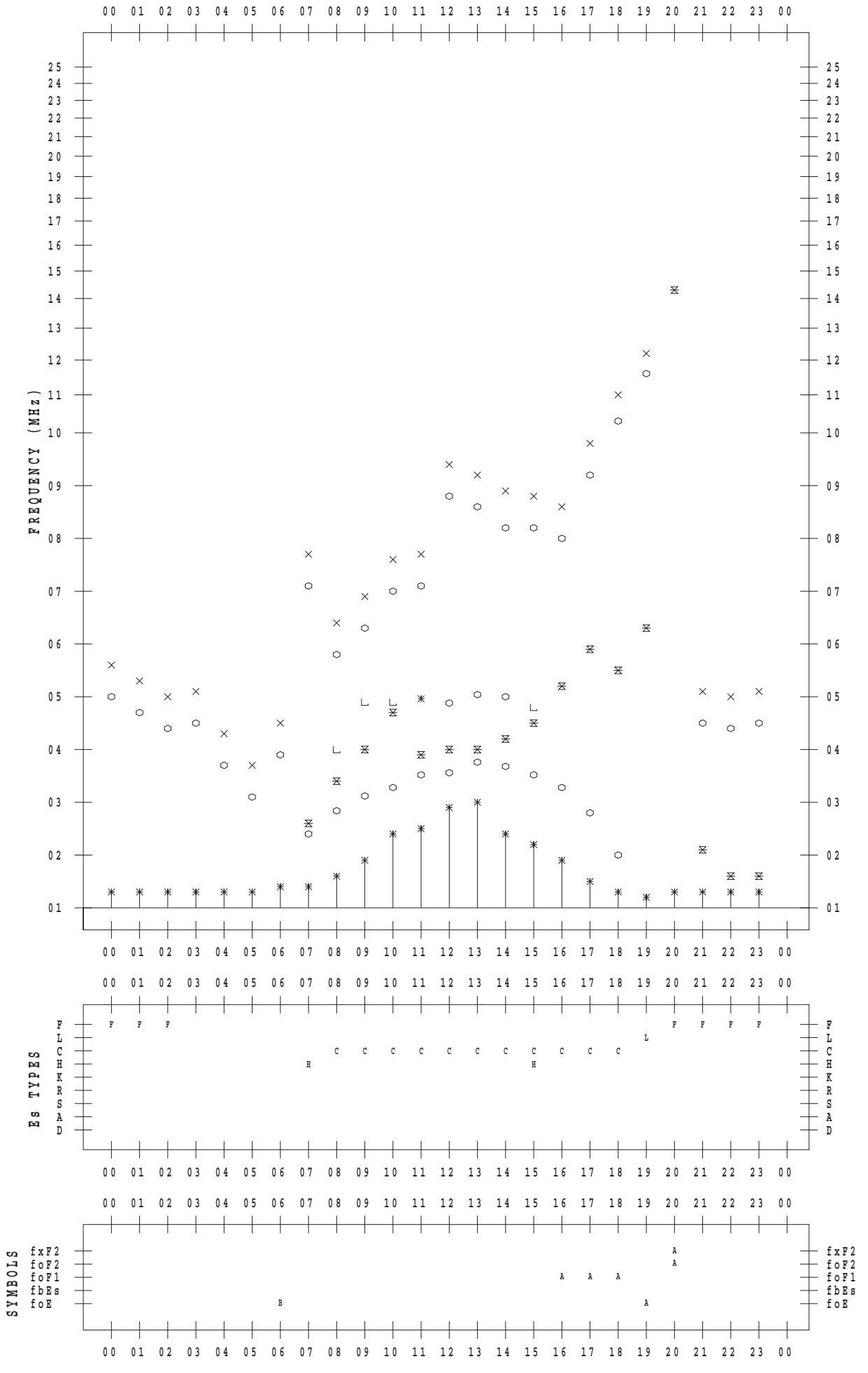
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 1

135 °E MEAN TIME



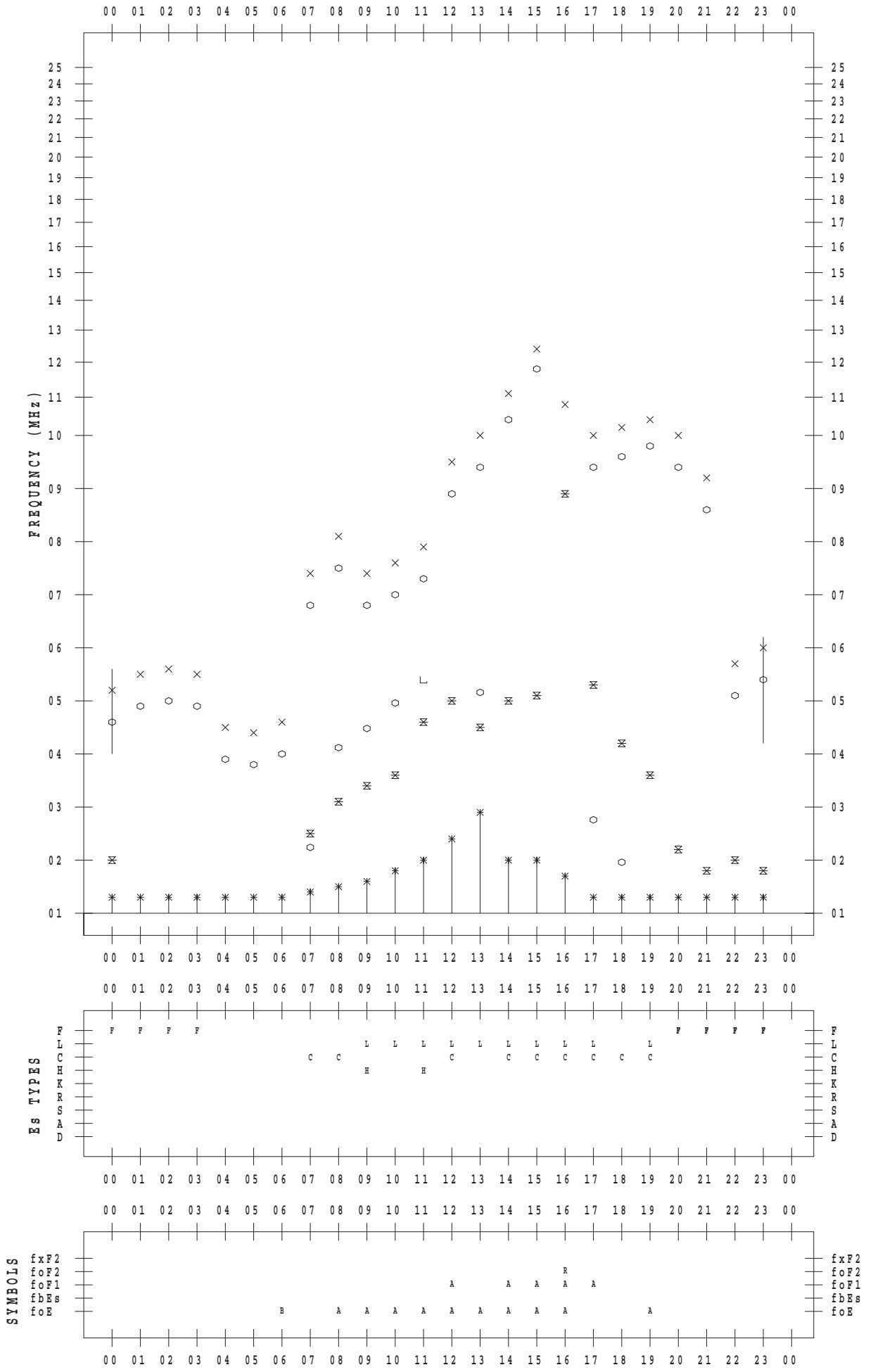
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 2

135 °E MEAN TIME



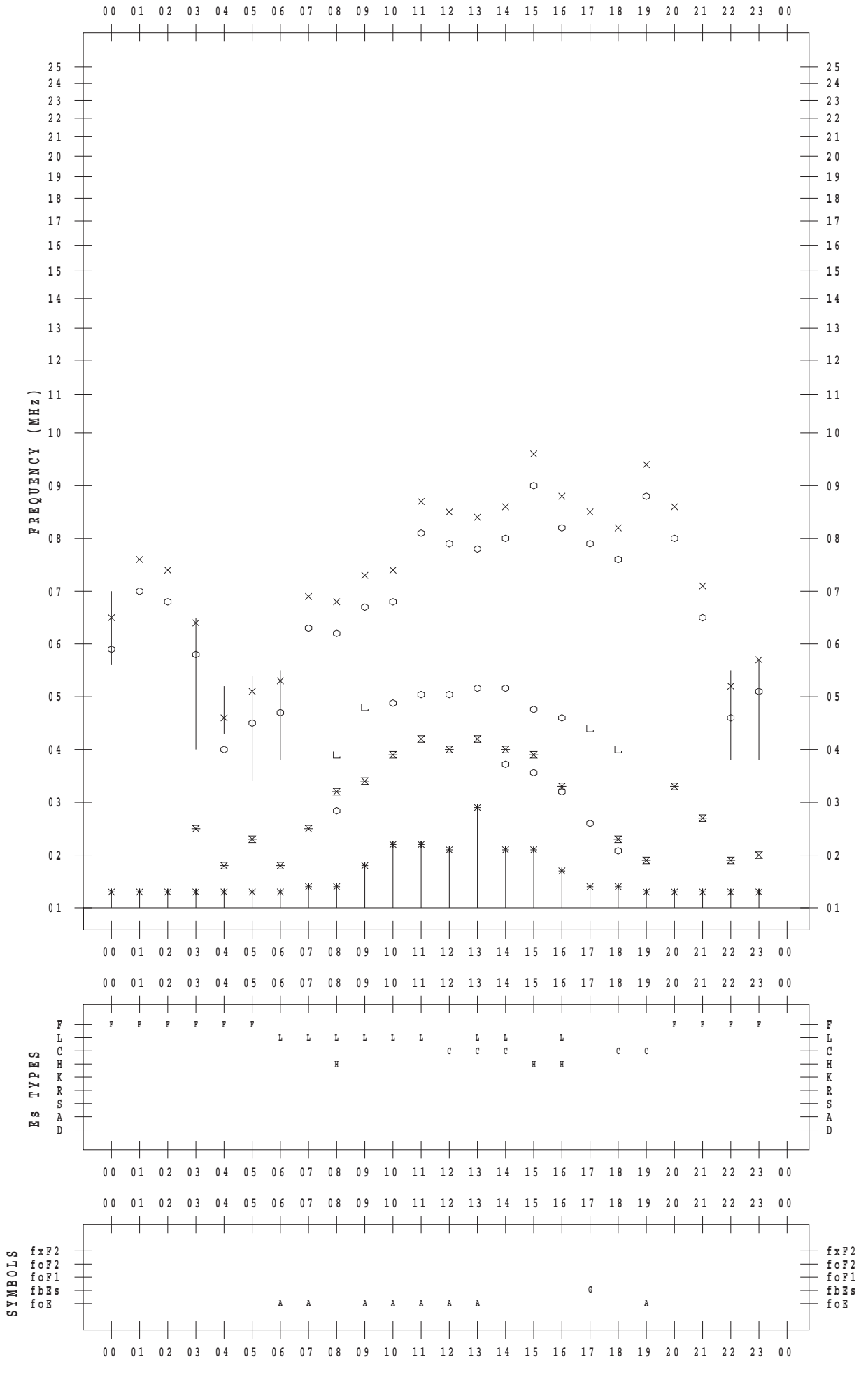
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 3

135 °E MEAN TIME



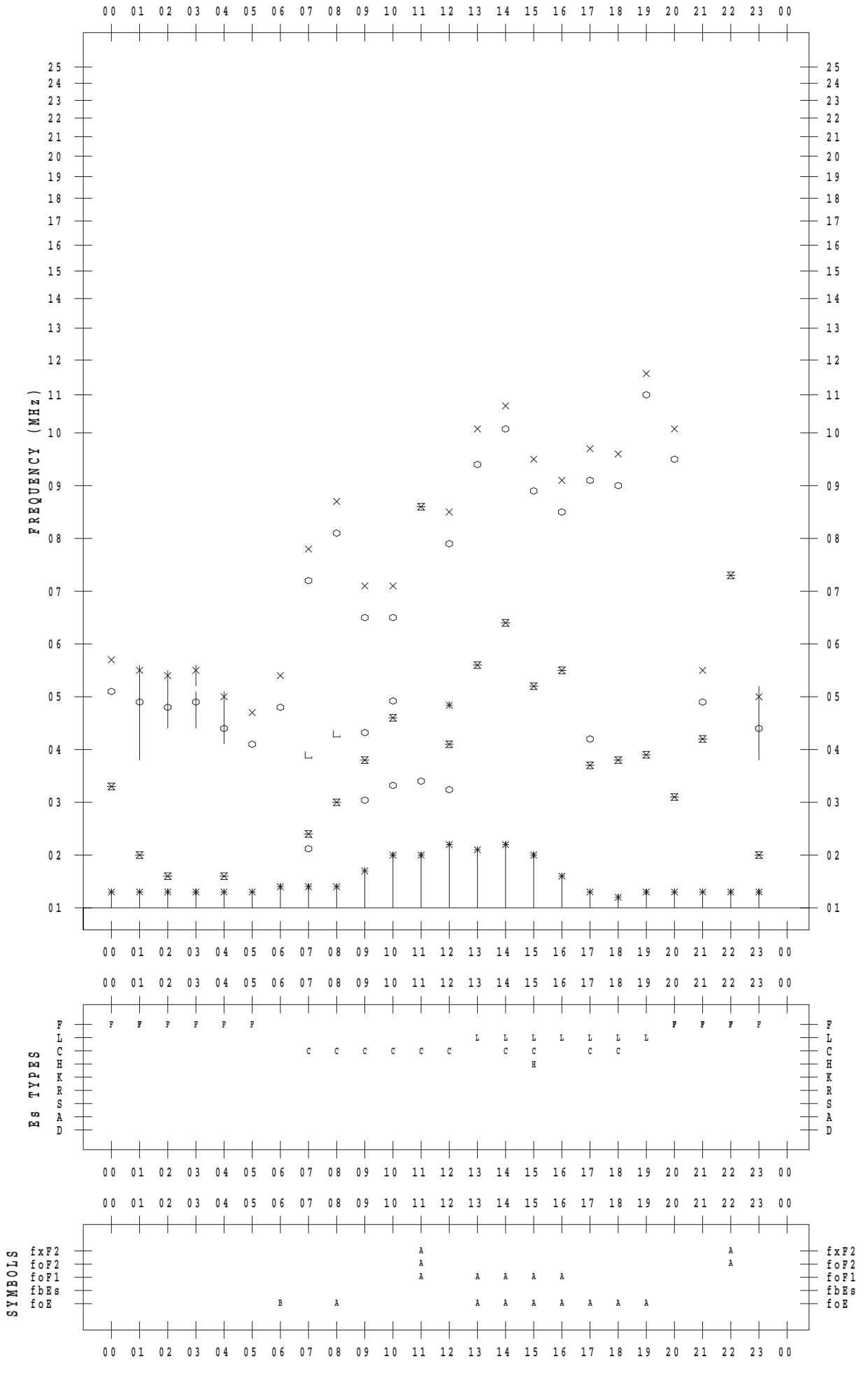
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 4

135 °E MEAN TIME



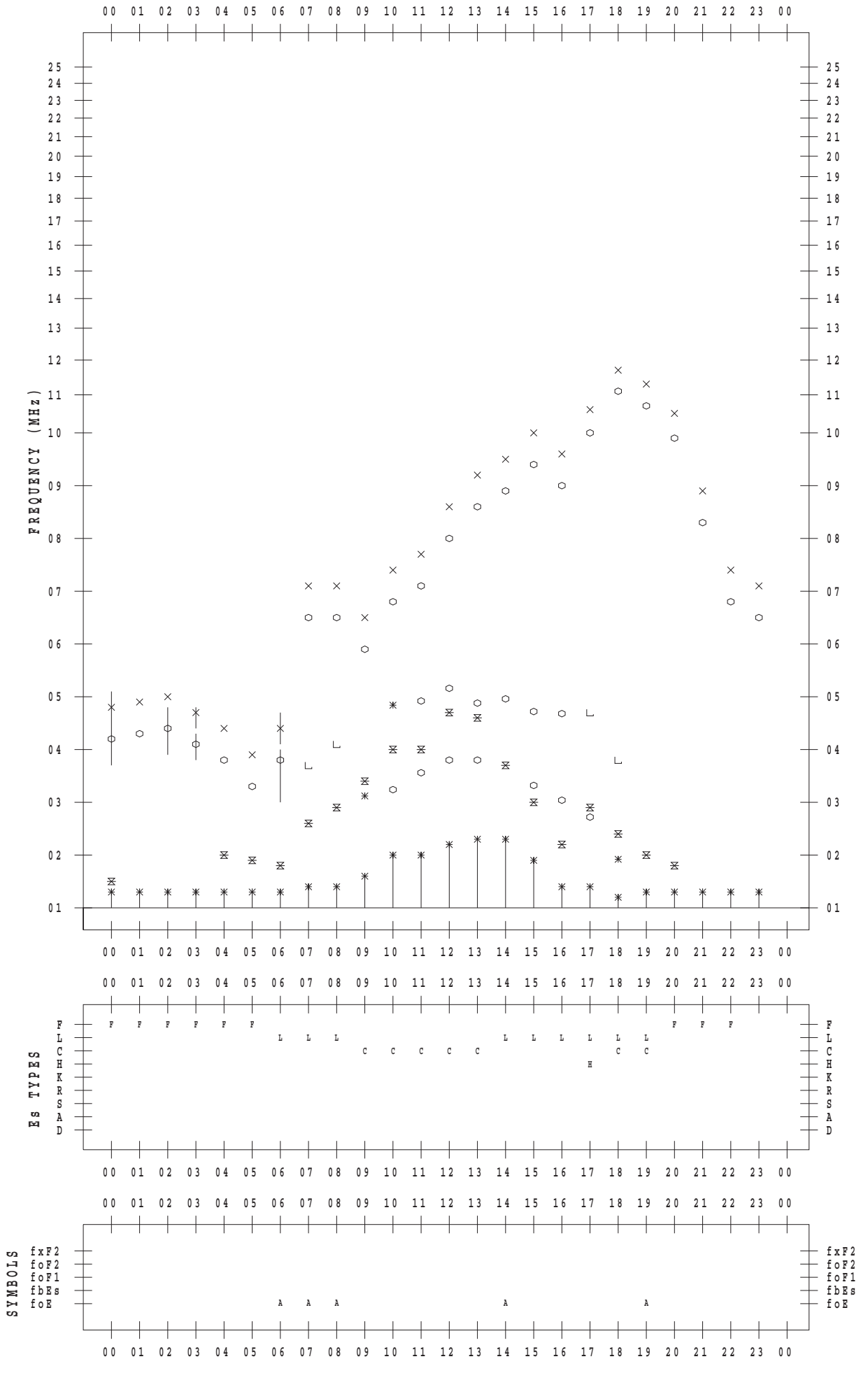
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 5

135 °E MEAN TIME



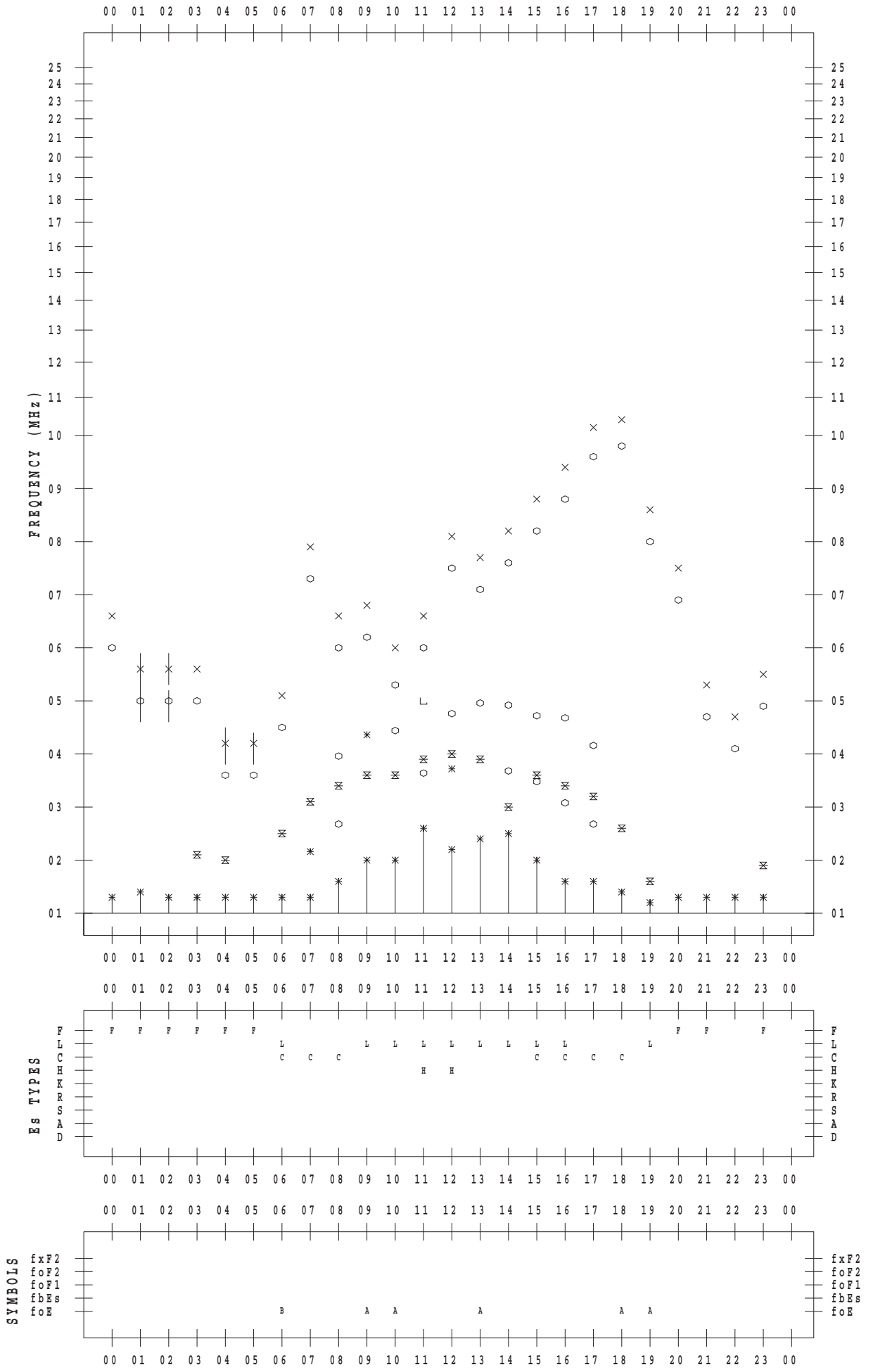
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 6

135 °E MEAN TIME



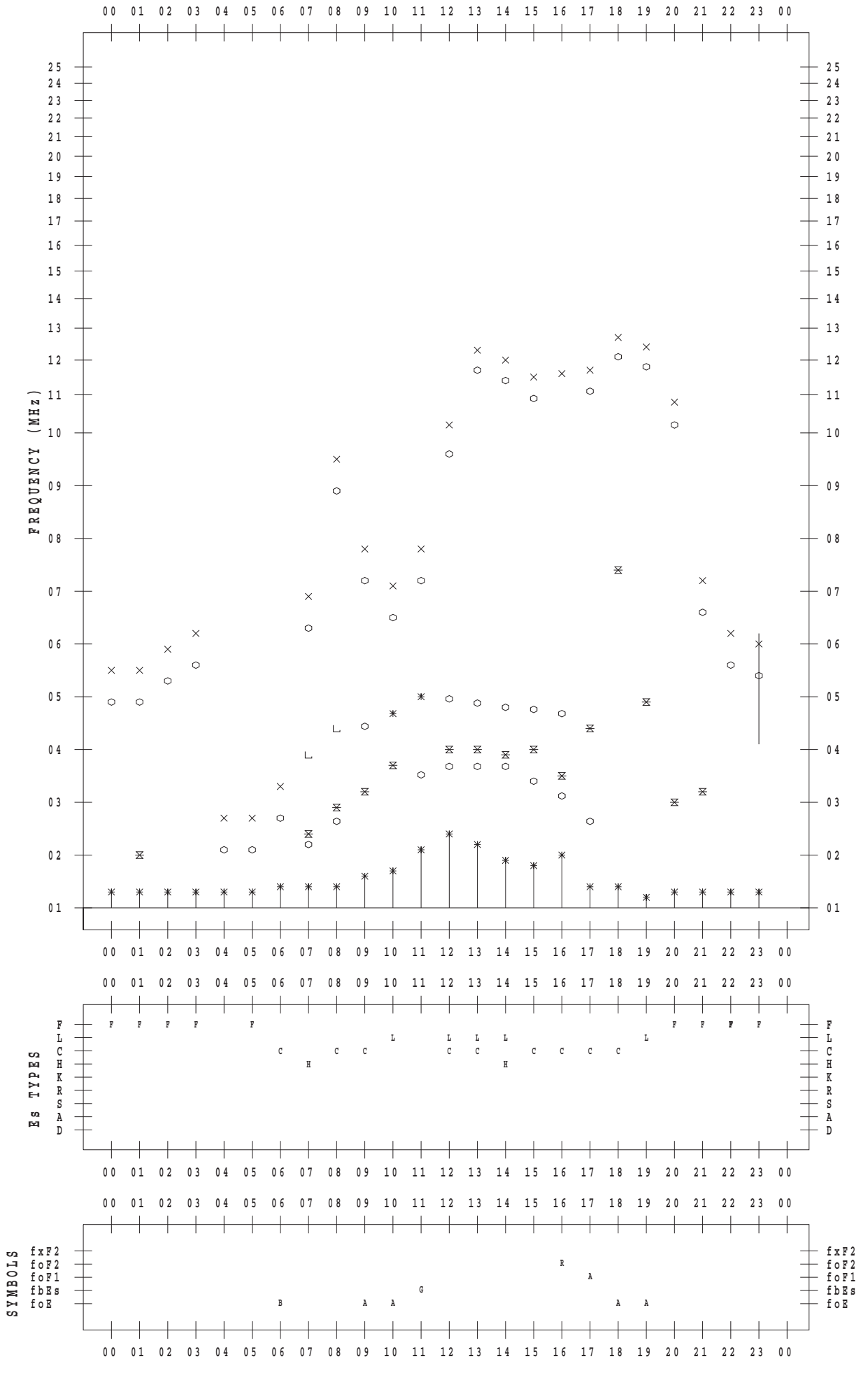
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 7

135 °E MEAN TIME



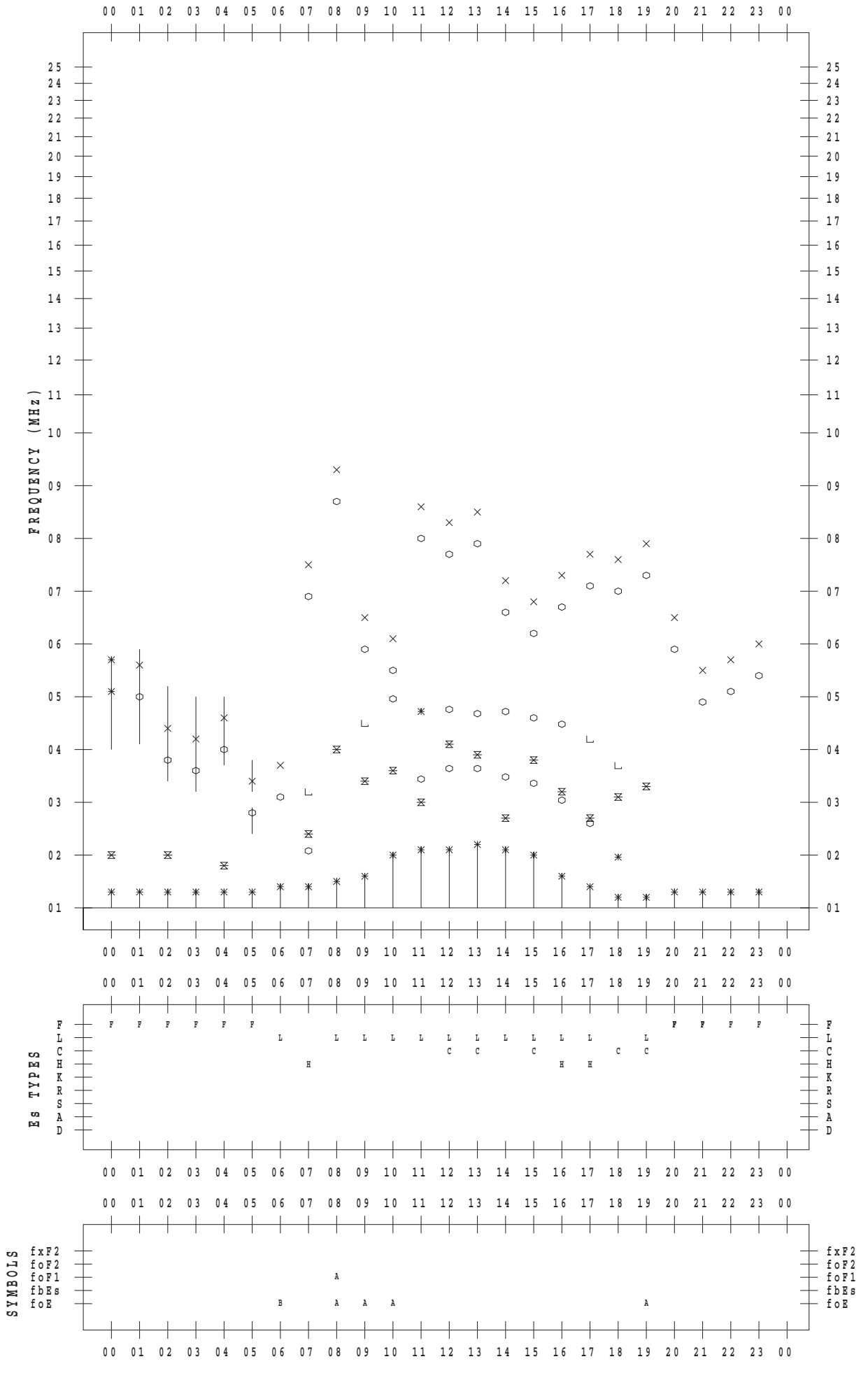
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 8

135 °E MEAN TIME



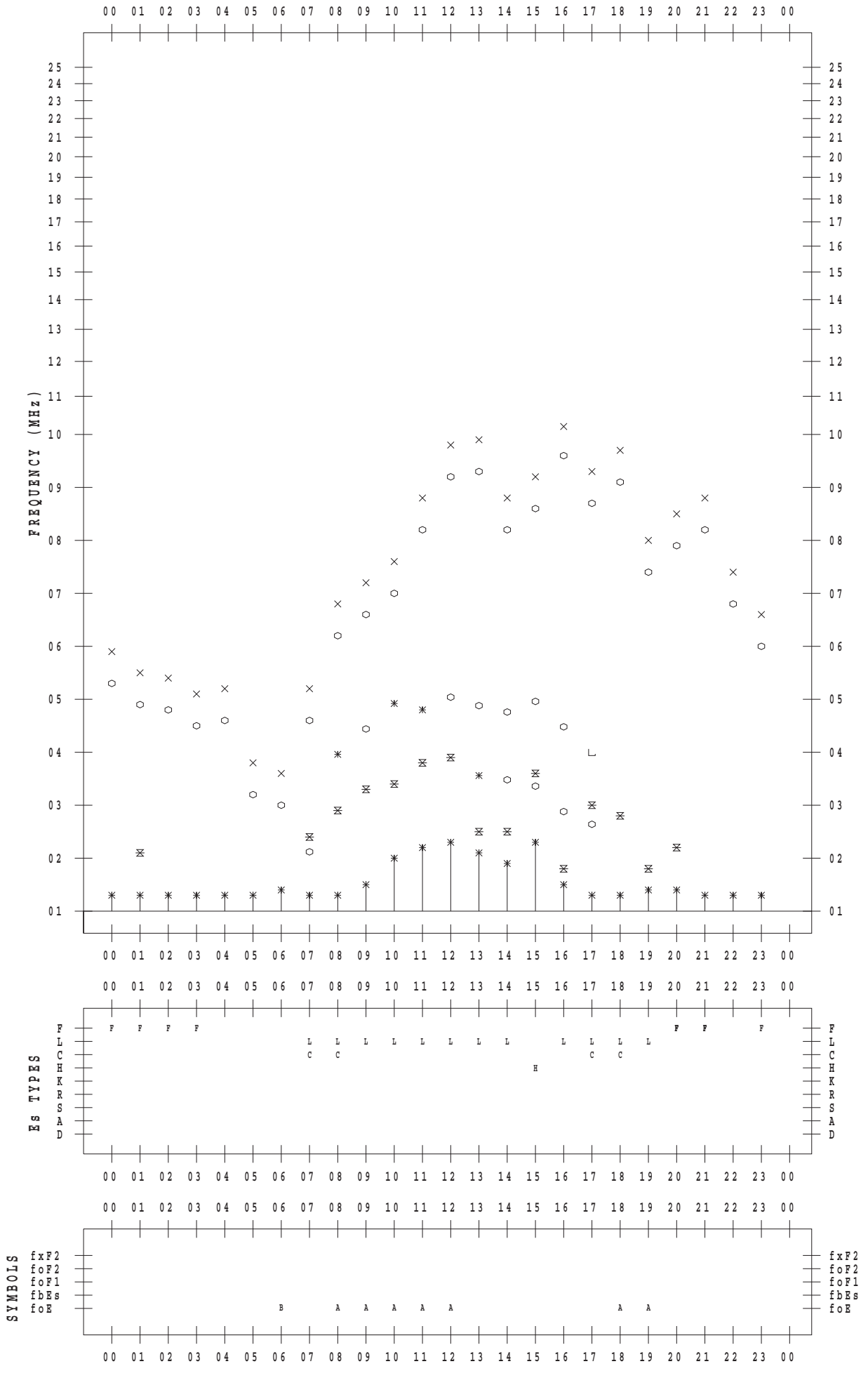
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/ 9

135 °E MEAN TIME



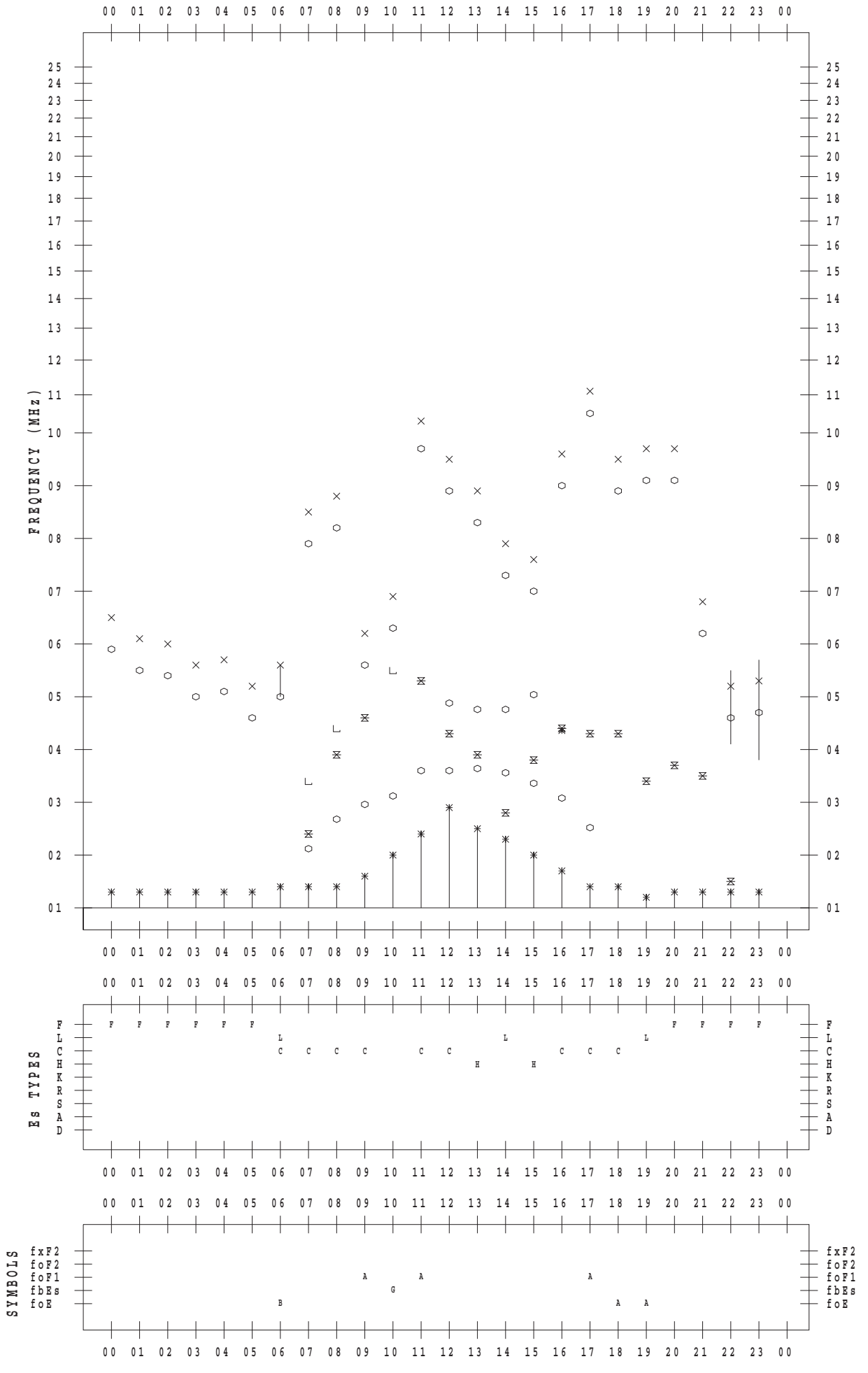
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/10

135 °E MEAN TIME



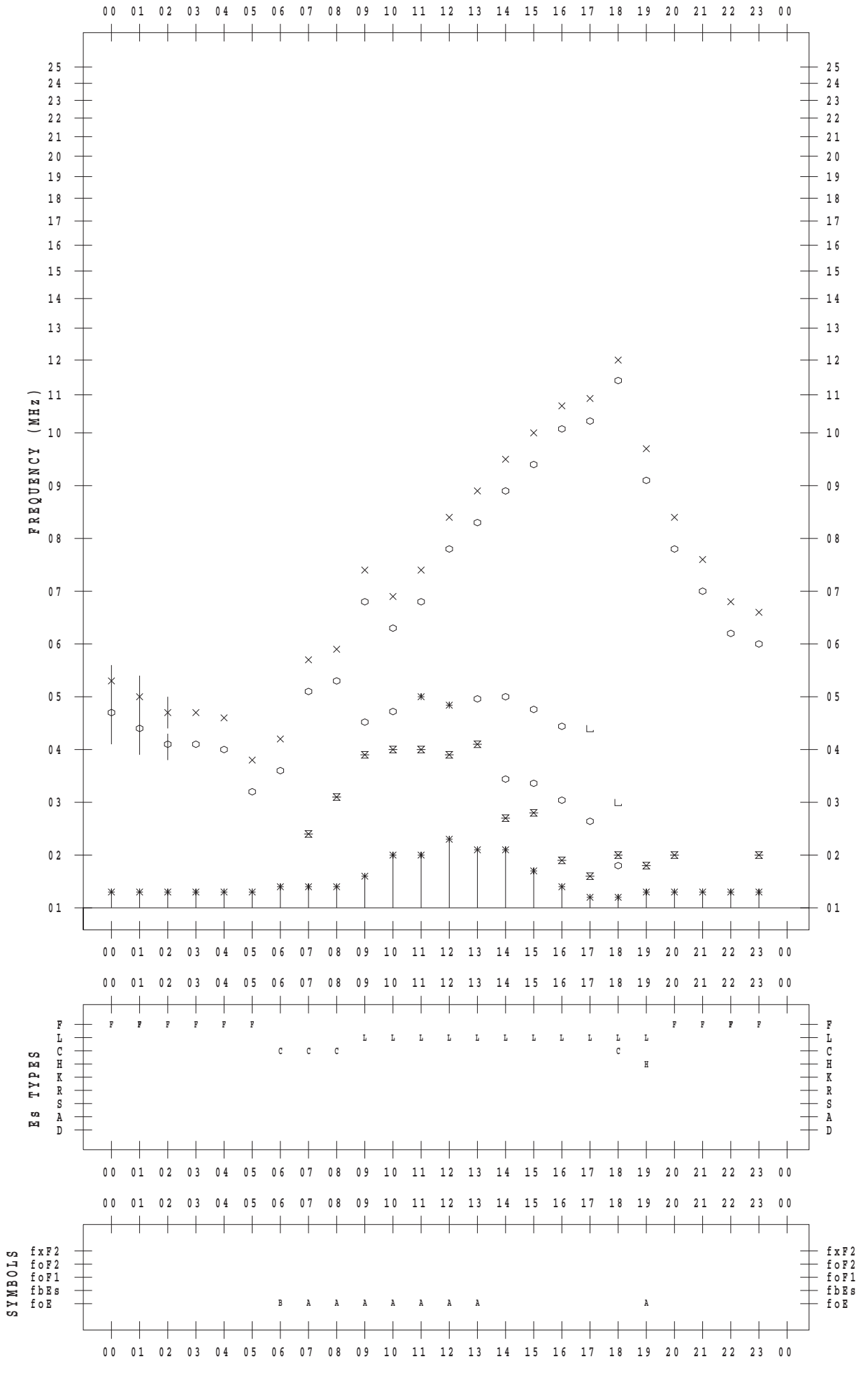
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/11

135 °E MEAN TIME



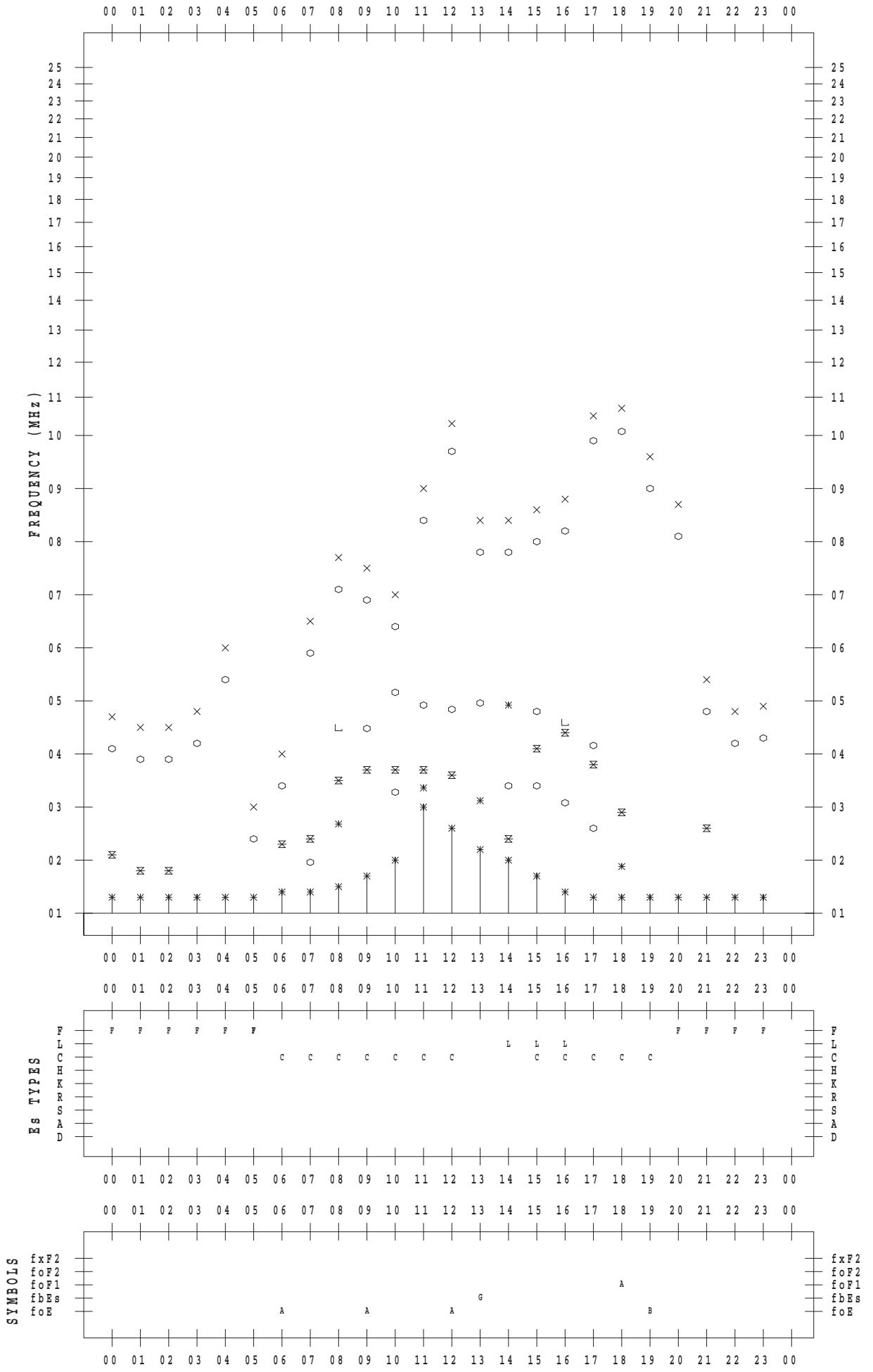
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/12

135 °E MEAN TIME



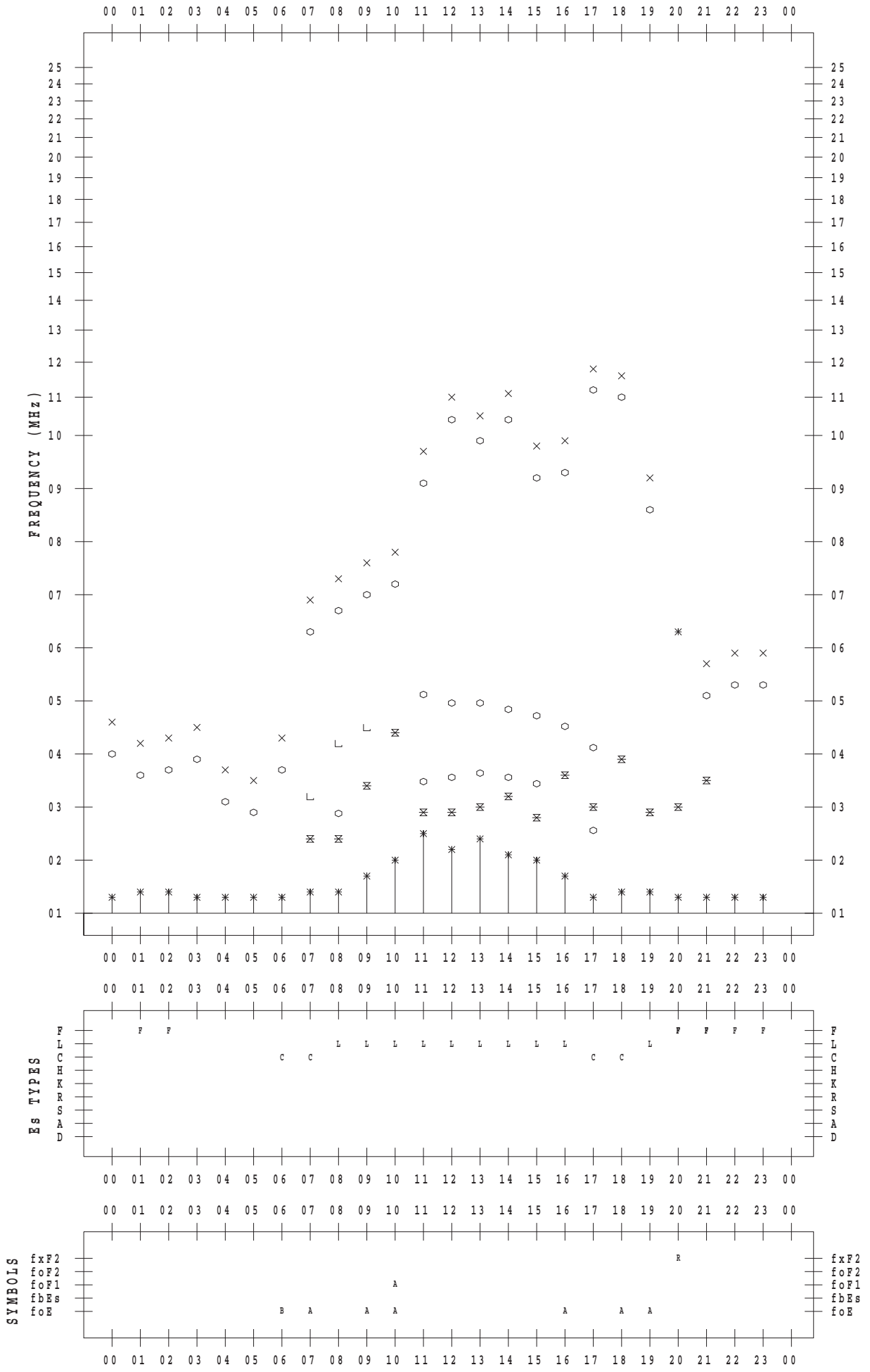
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/13

135 °E MEAN TIME



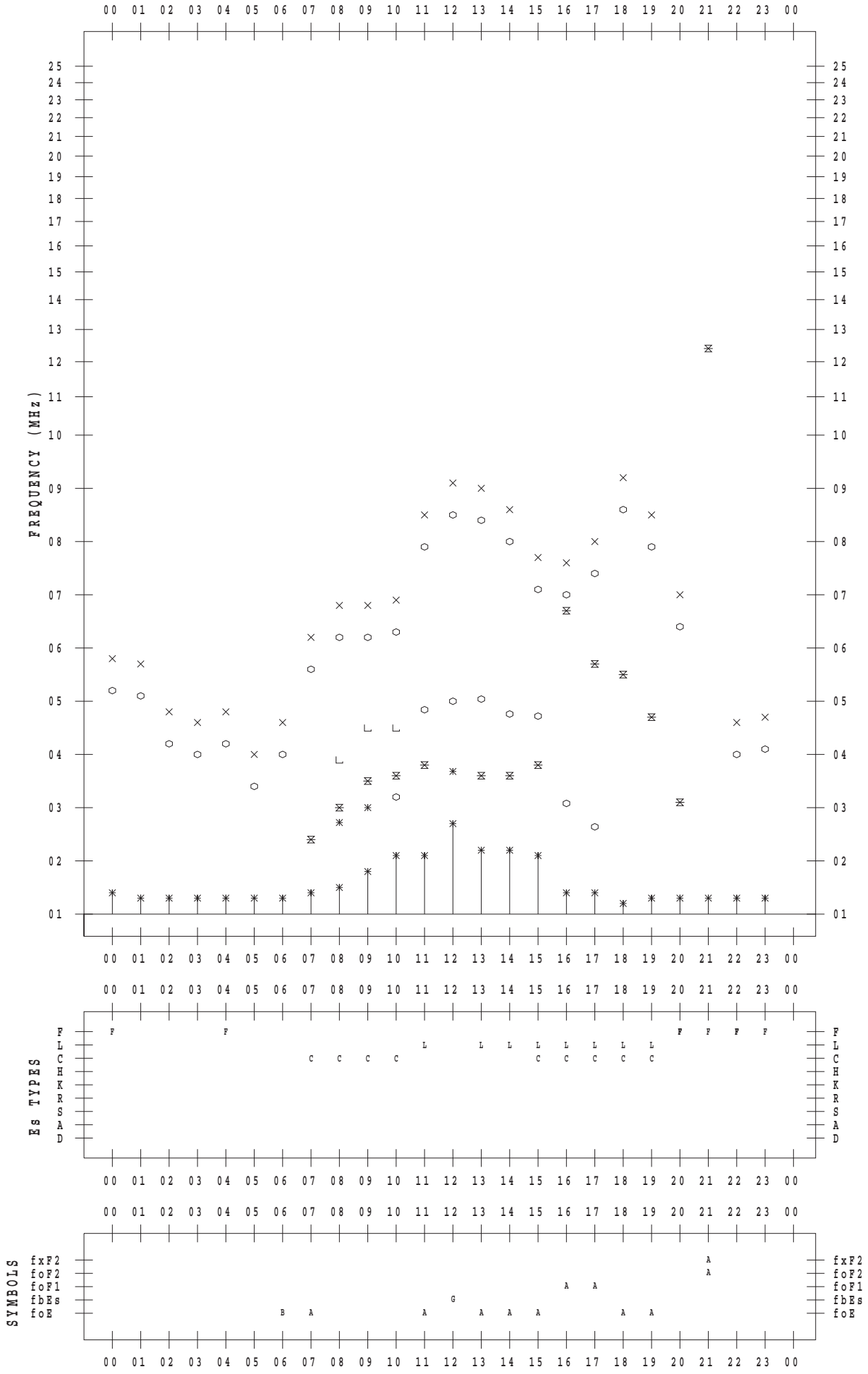
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/14

135 °E MEAN TIME



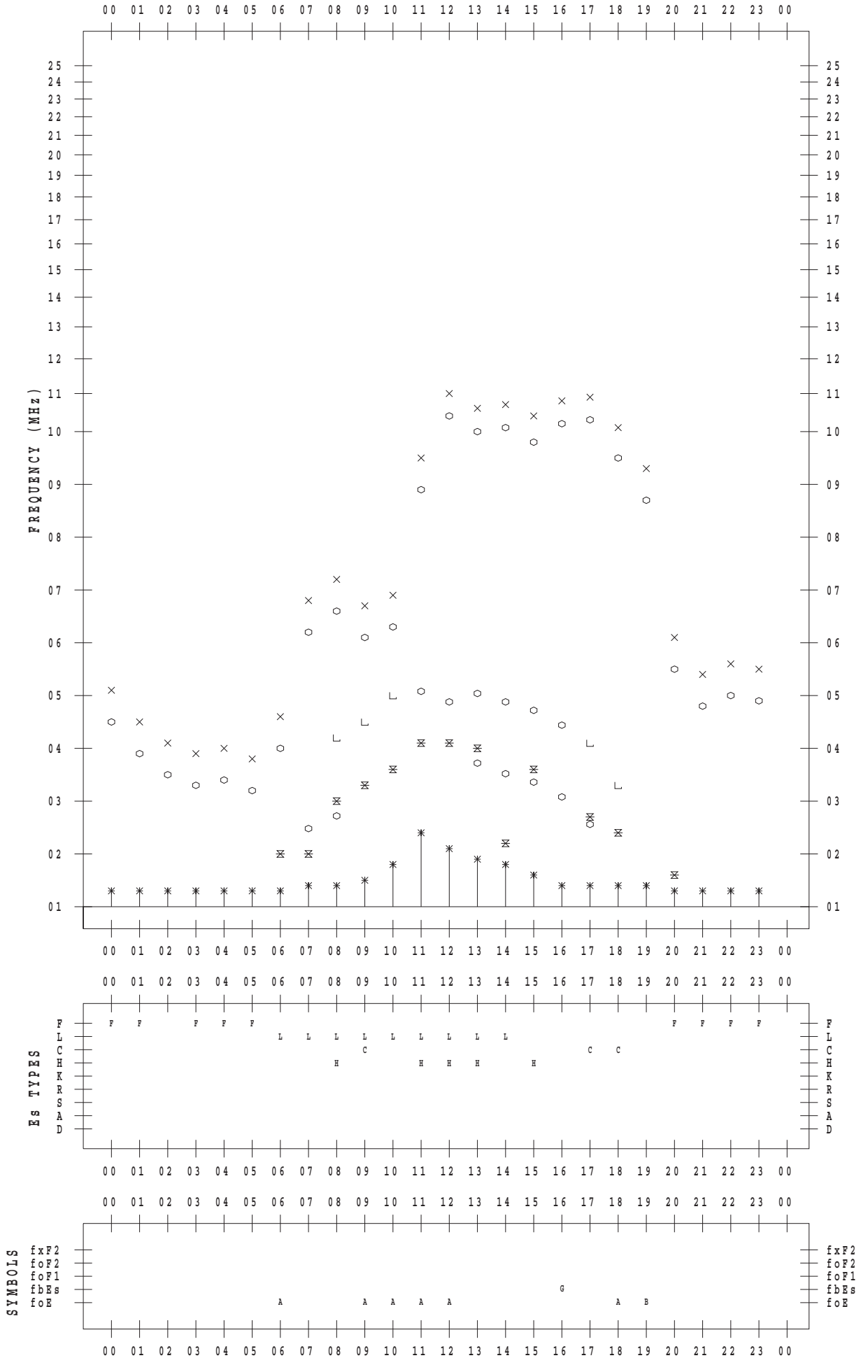
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/15

135 °E MEAN TIME



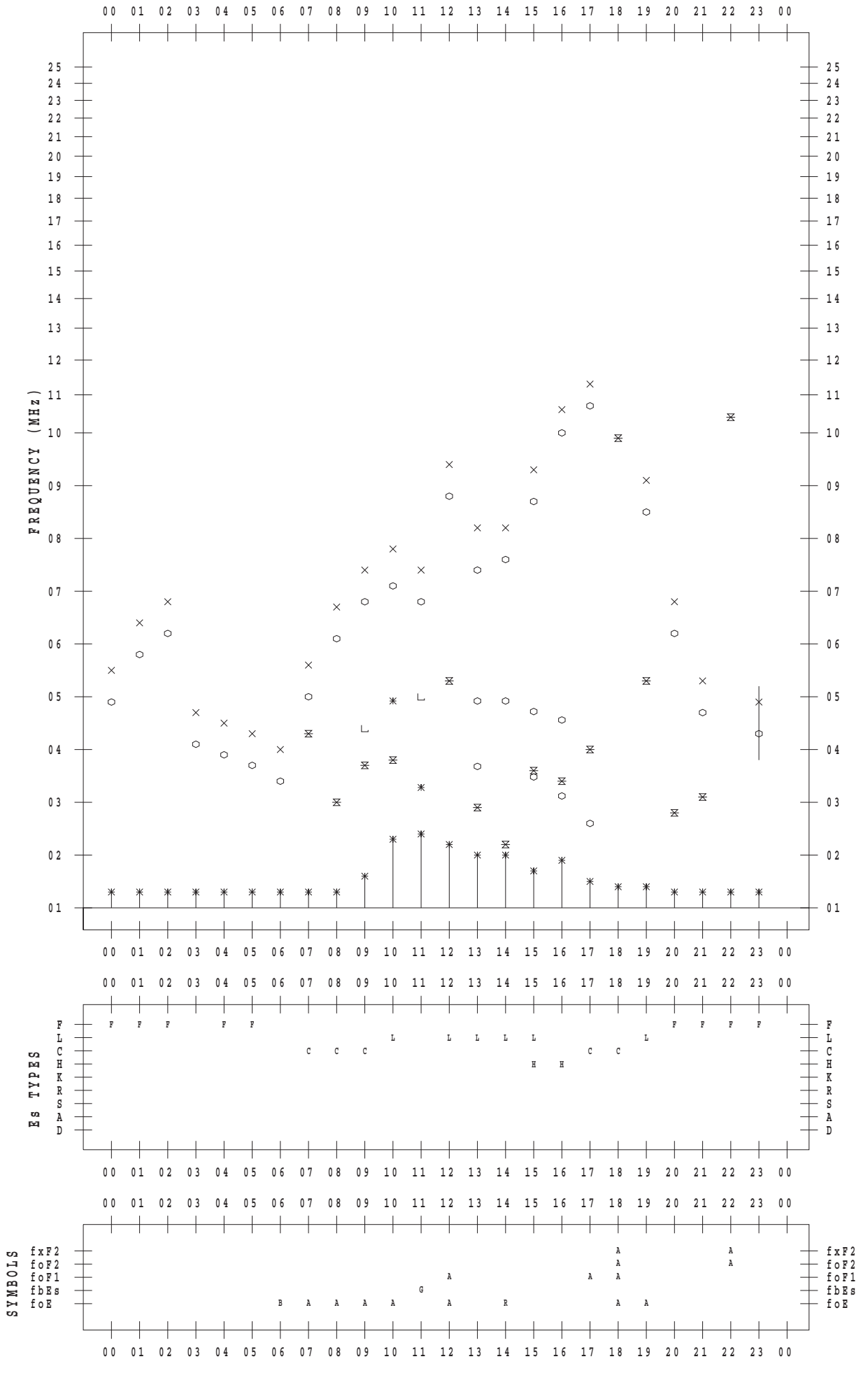
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/16

135 °E MEAN TIME



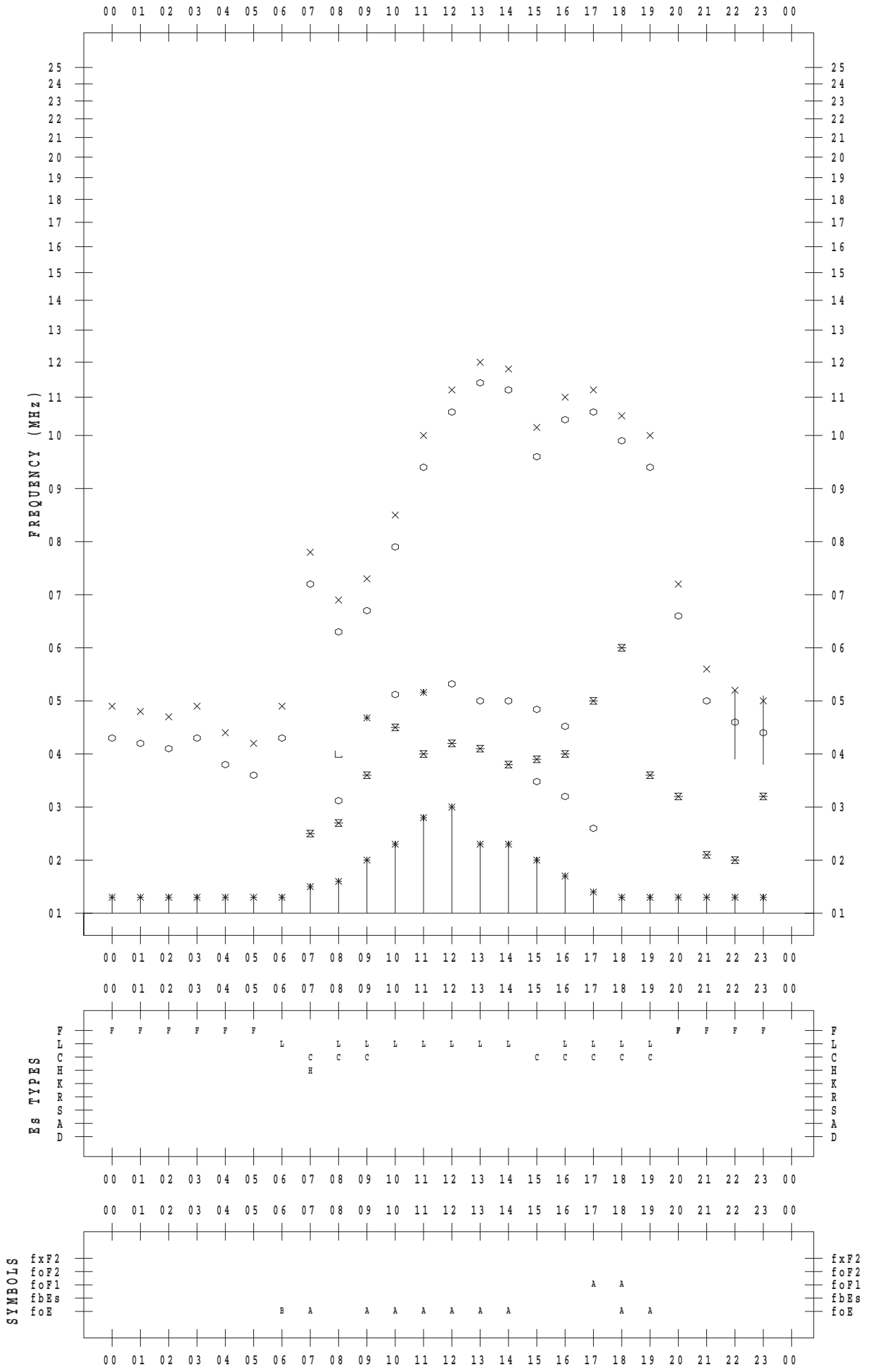
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/17

135 °E MEAN TIME



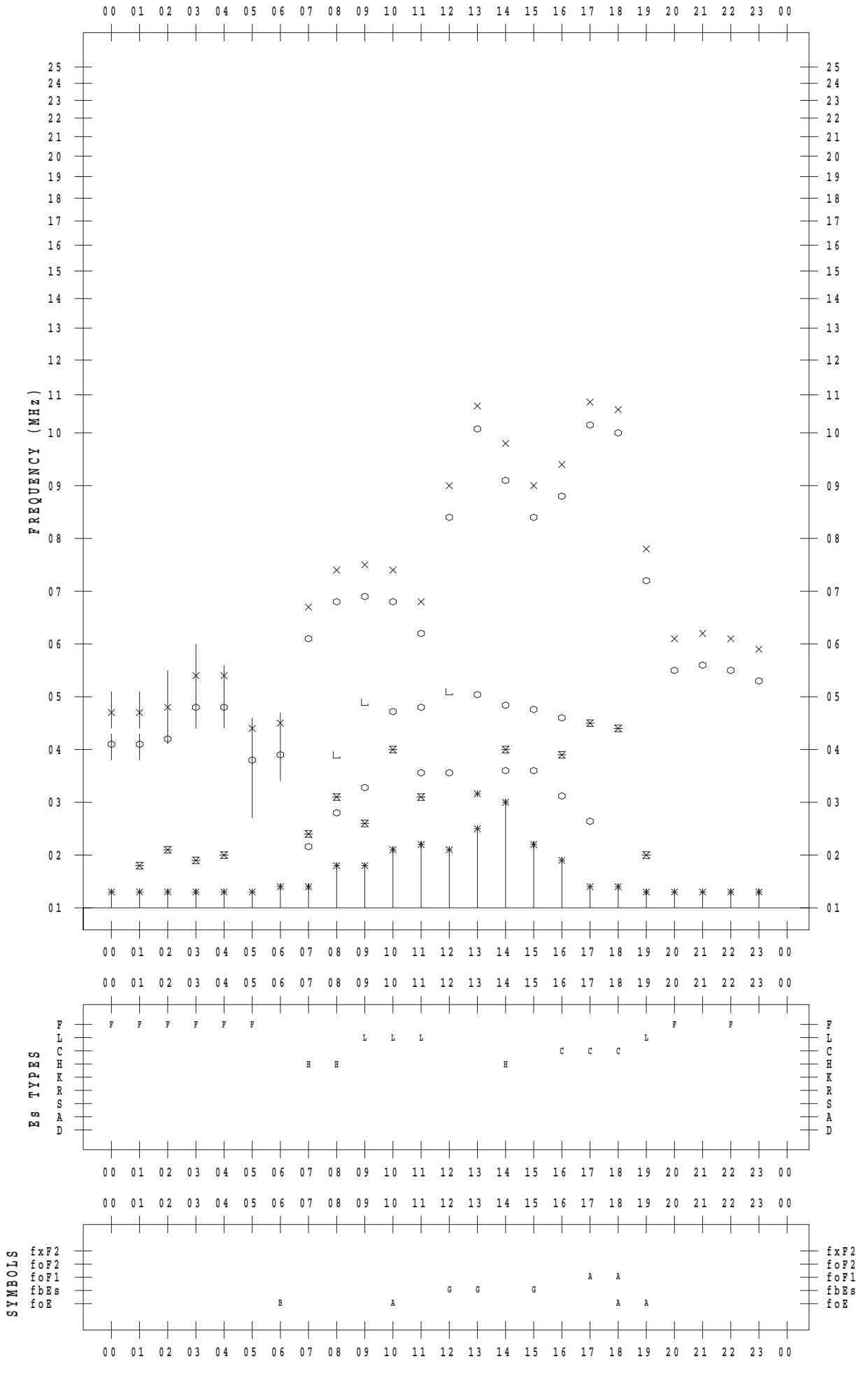
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/18

135 °E MEAN TIME



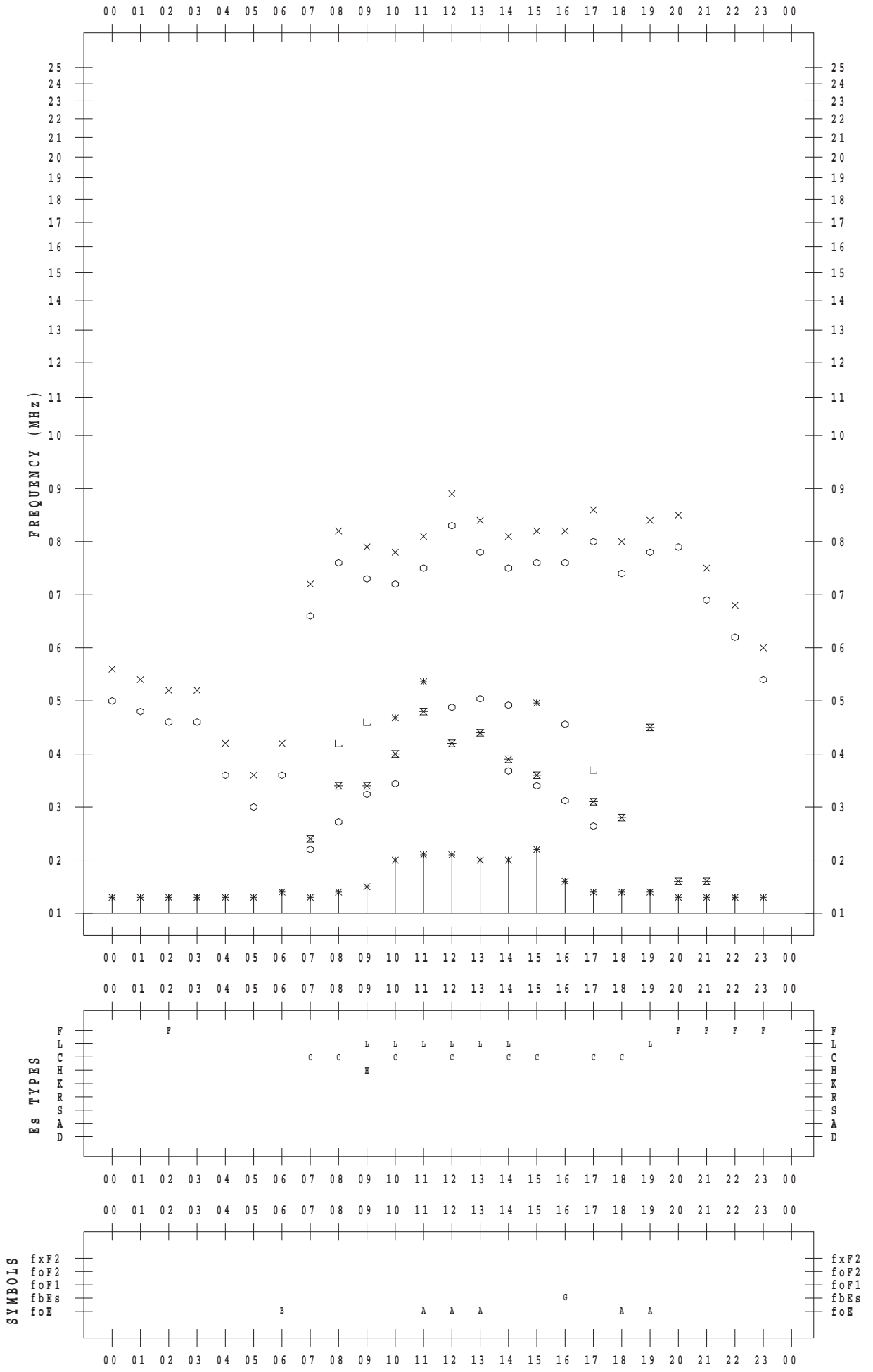
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/19

135 °E MEAN TIME



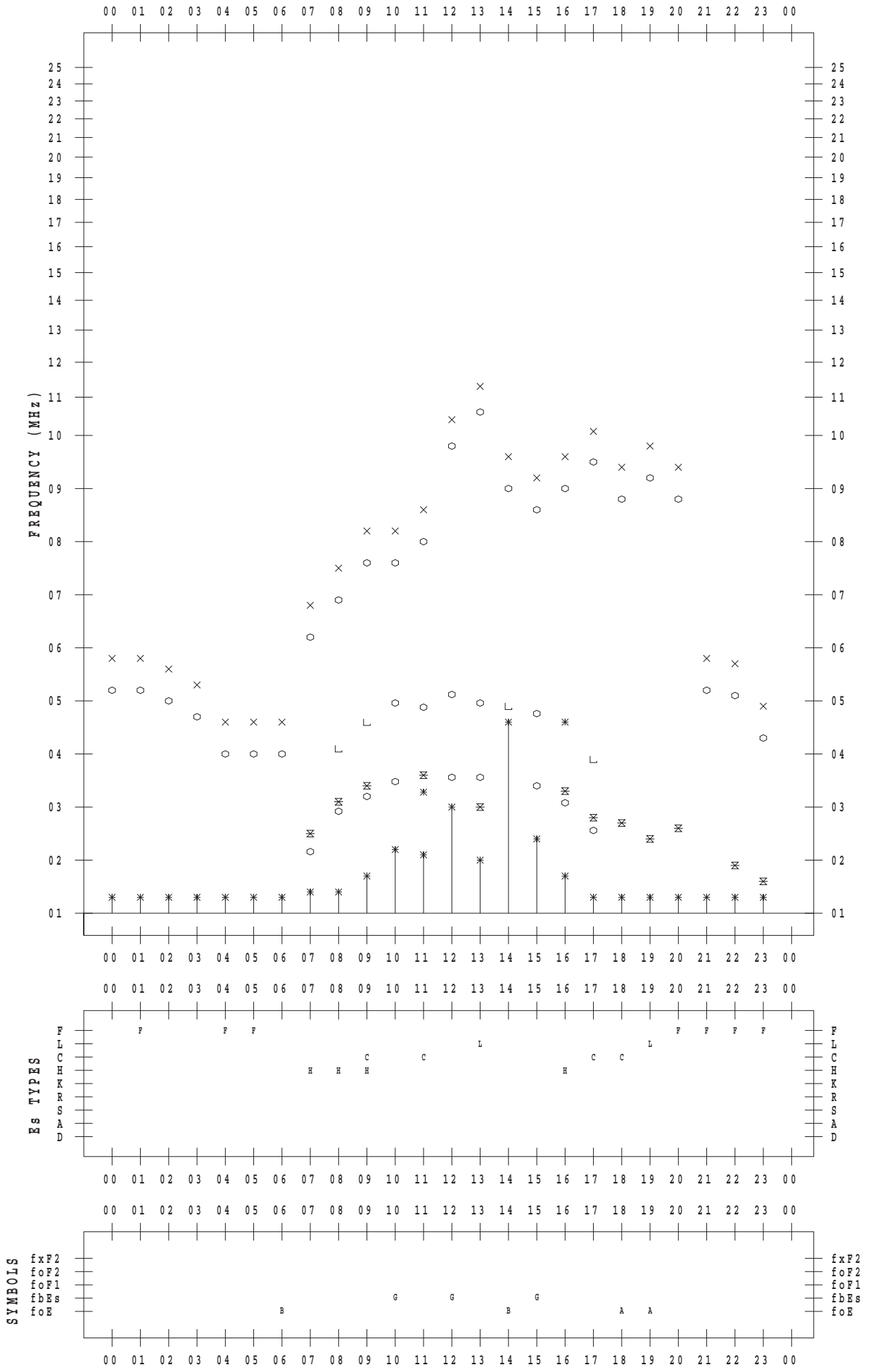
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/20

135 °E MEAN TIME



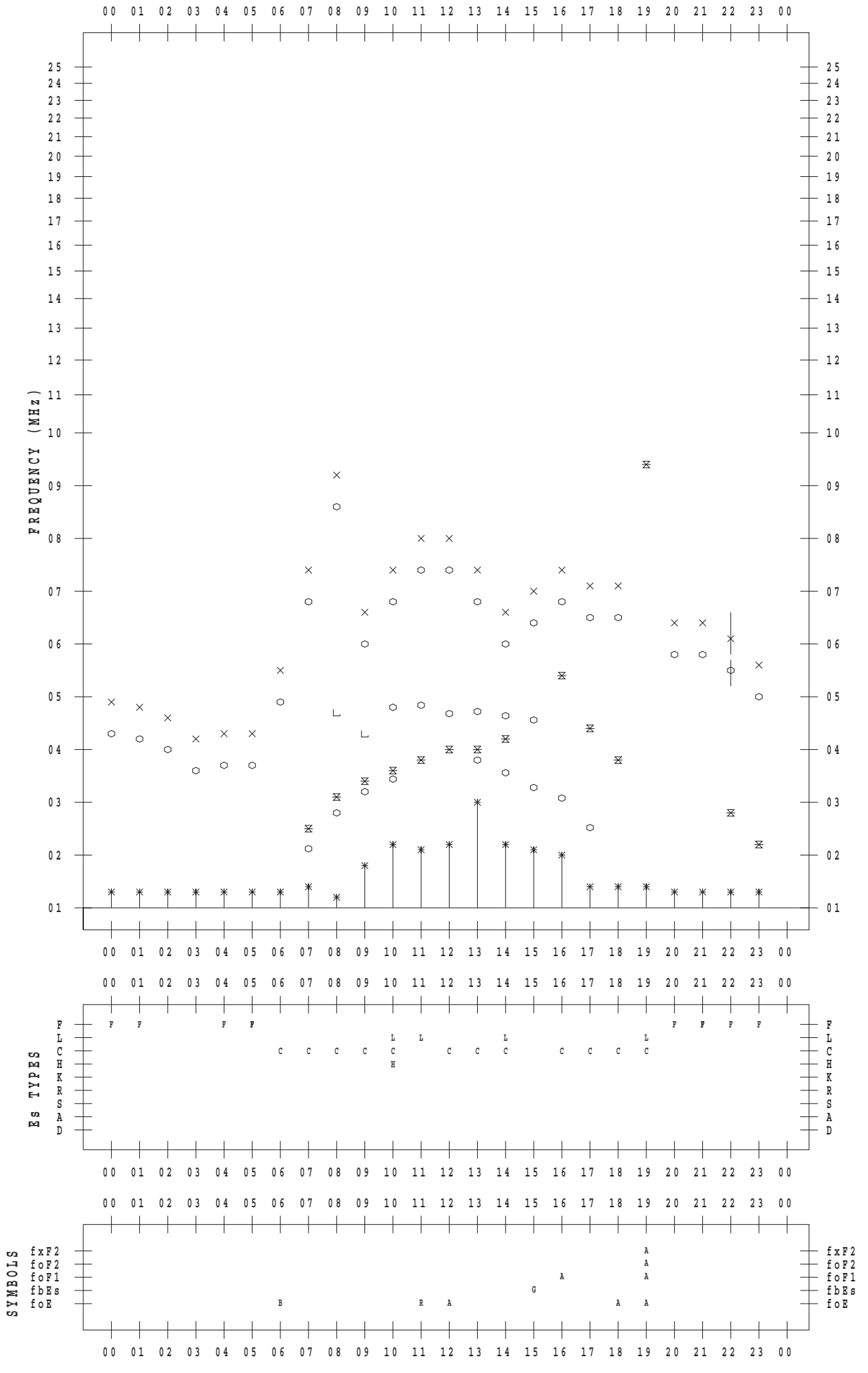
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/21

135 °E MEAN TIME



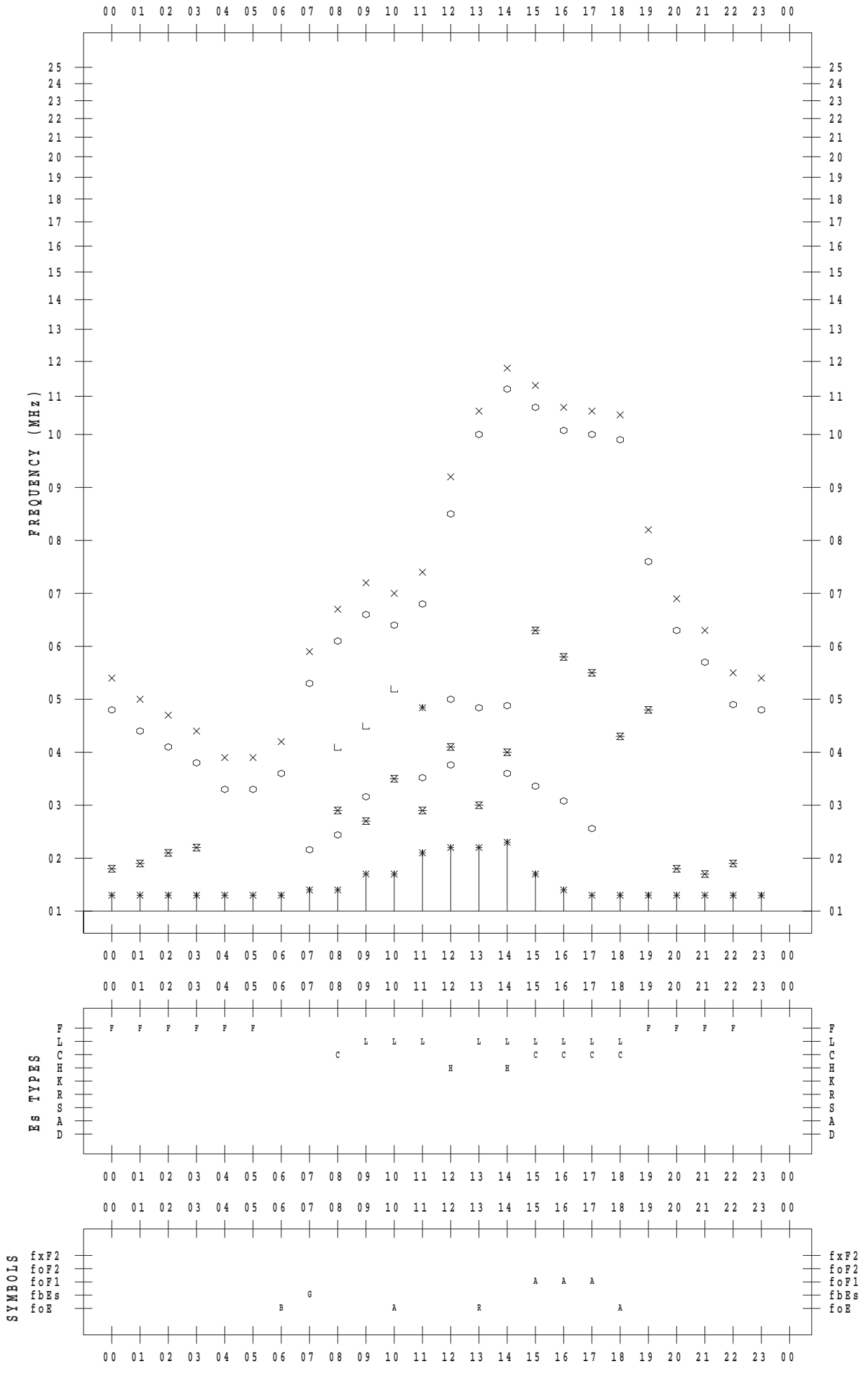
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/22

135 °E MEAN TIME



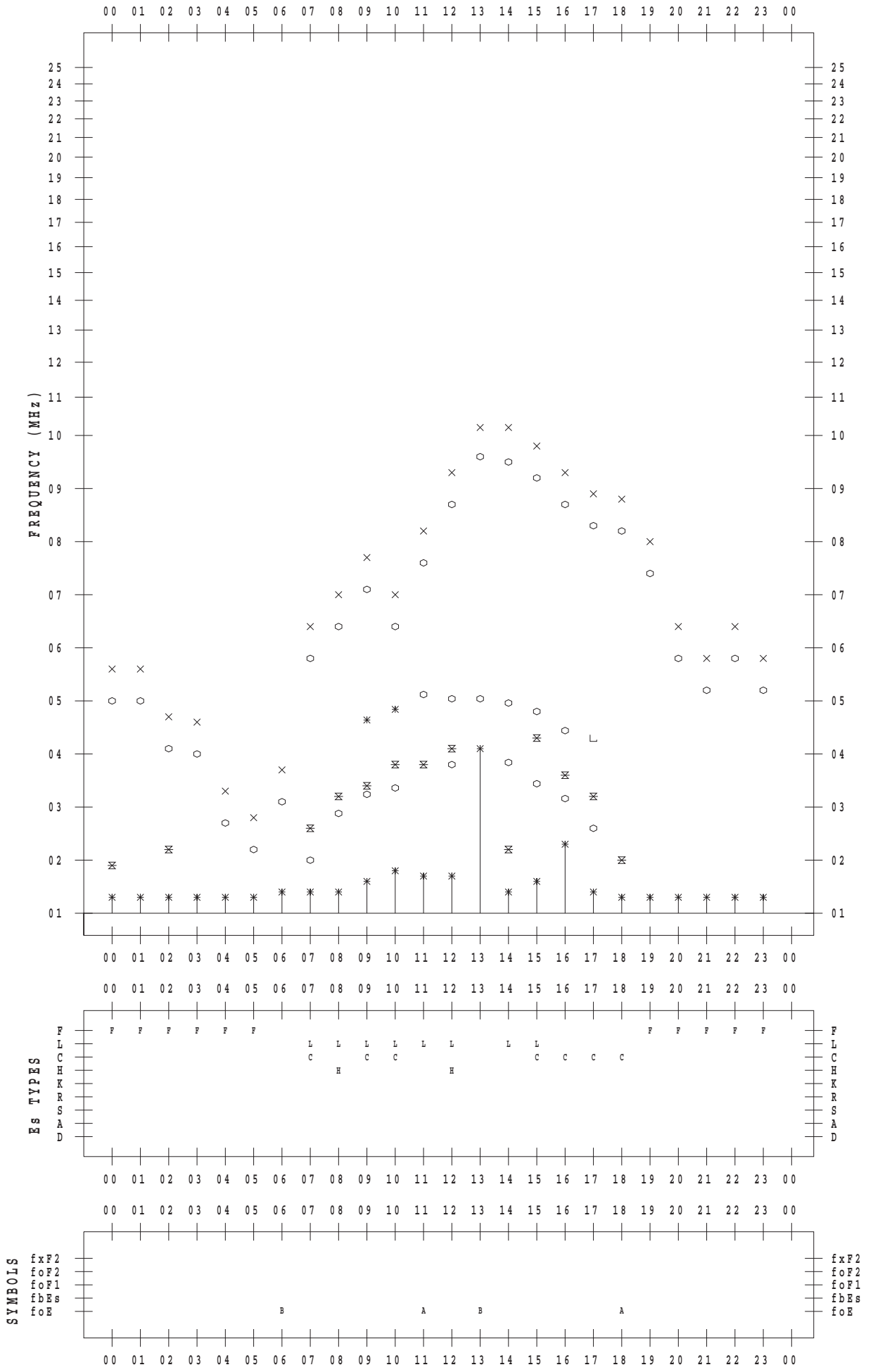
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/23

135 °E MEAN TIME



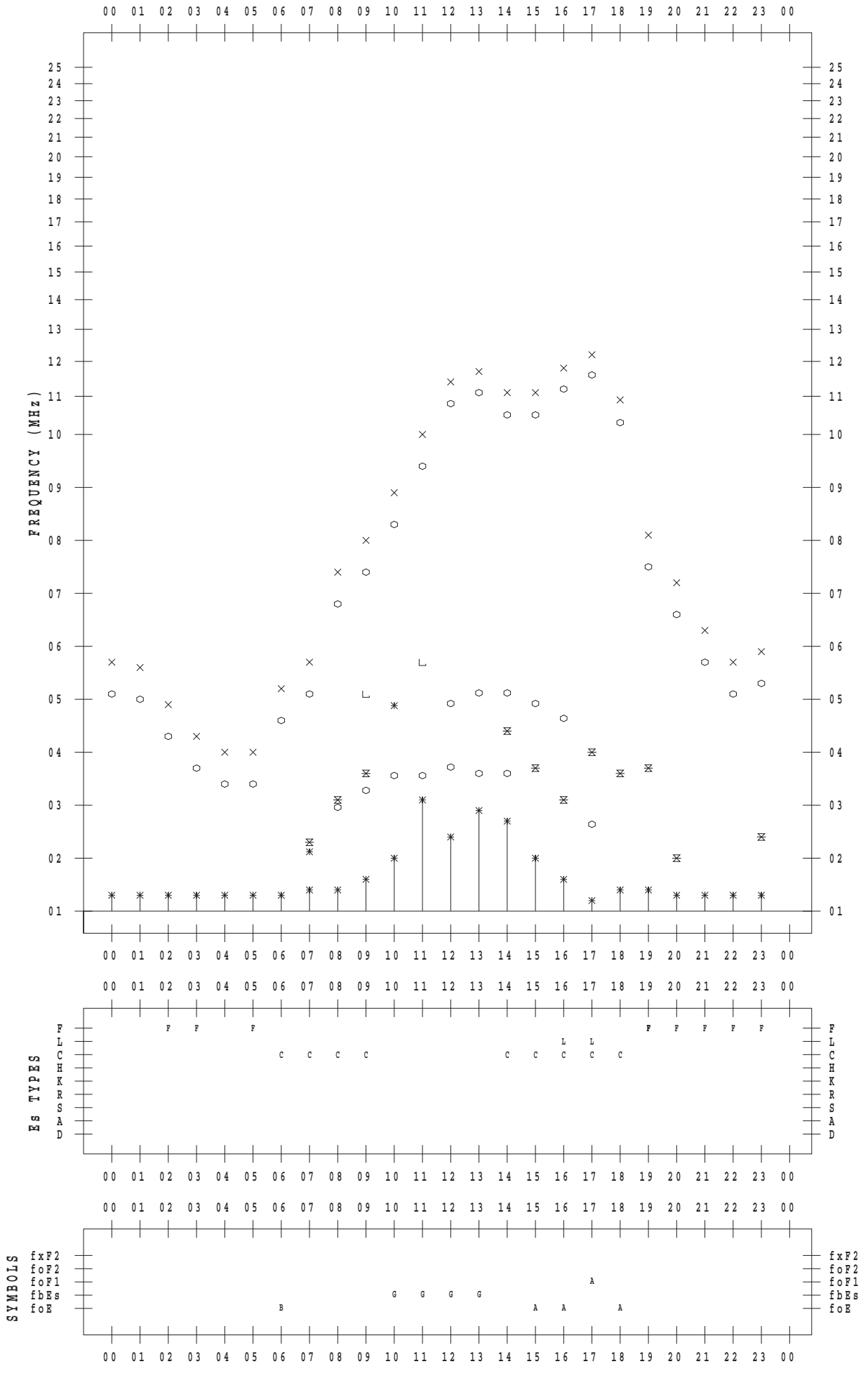
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/24

135 °E MEAN TIME



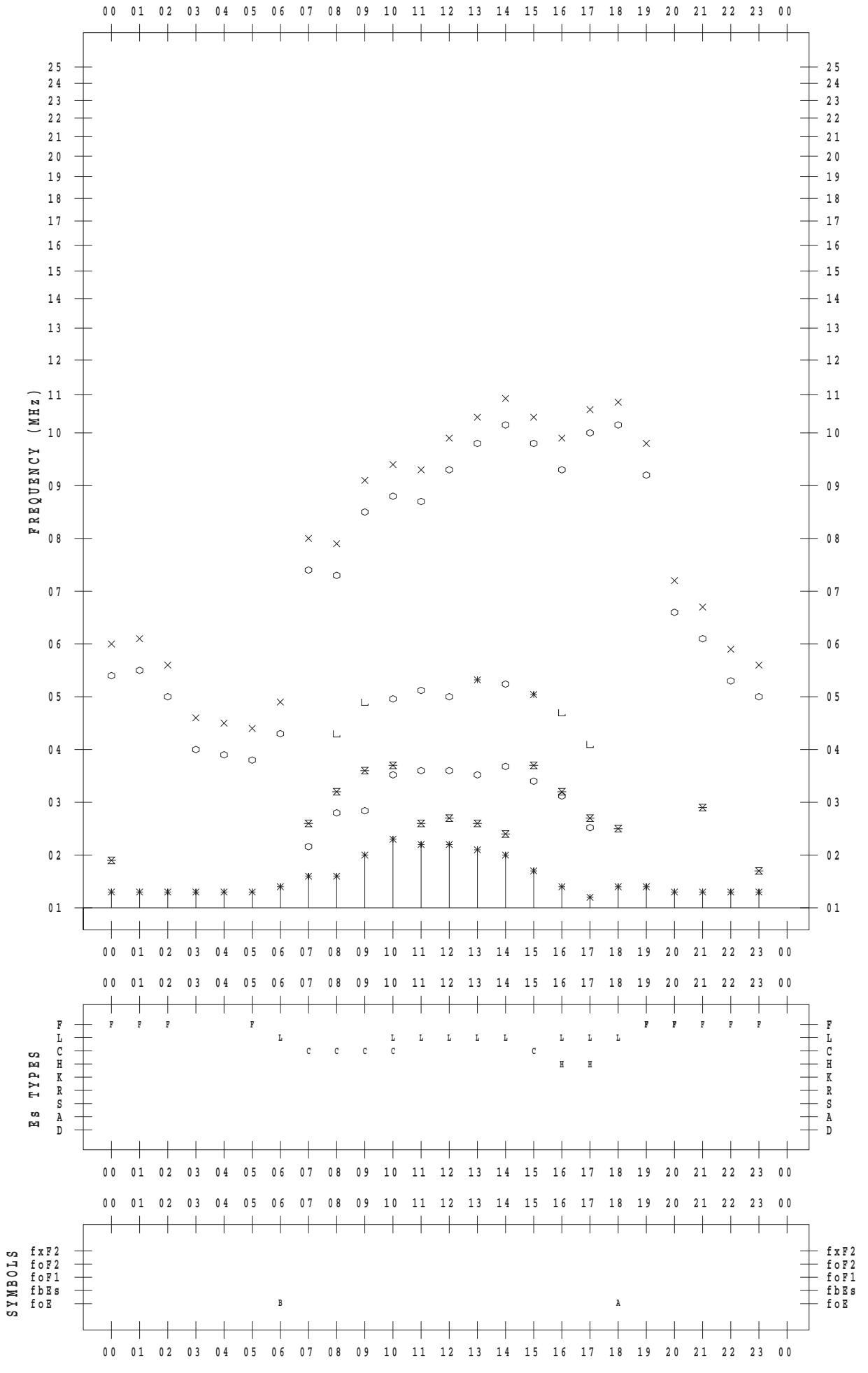
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/25

135 °E MEAN TIME



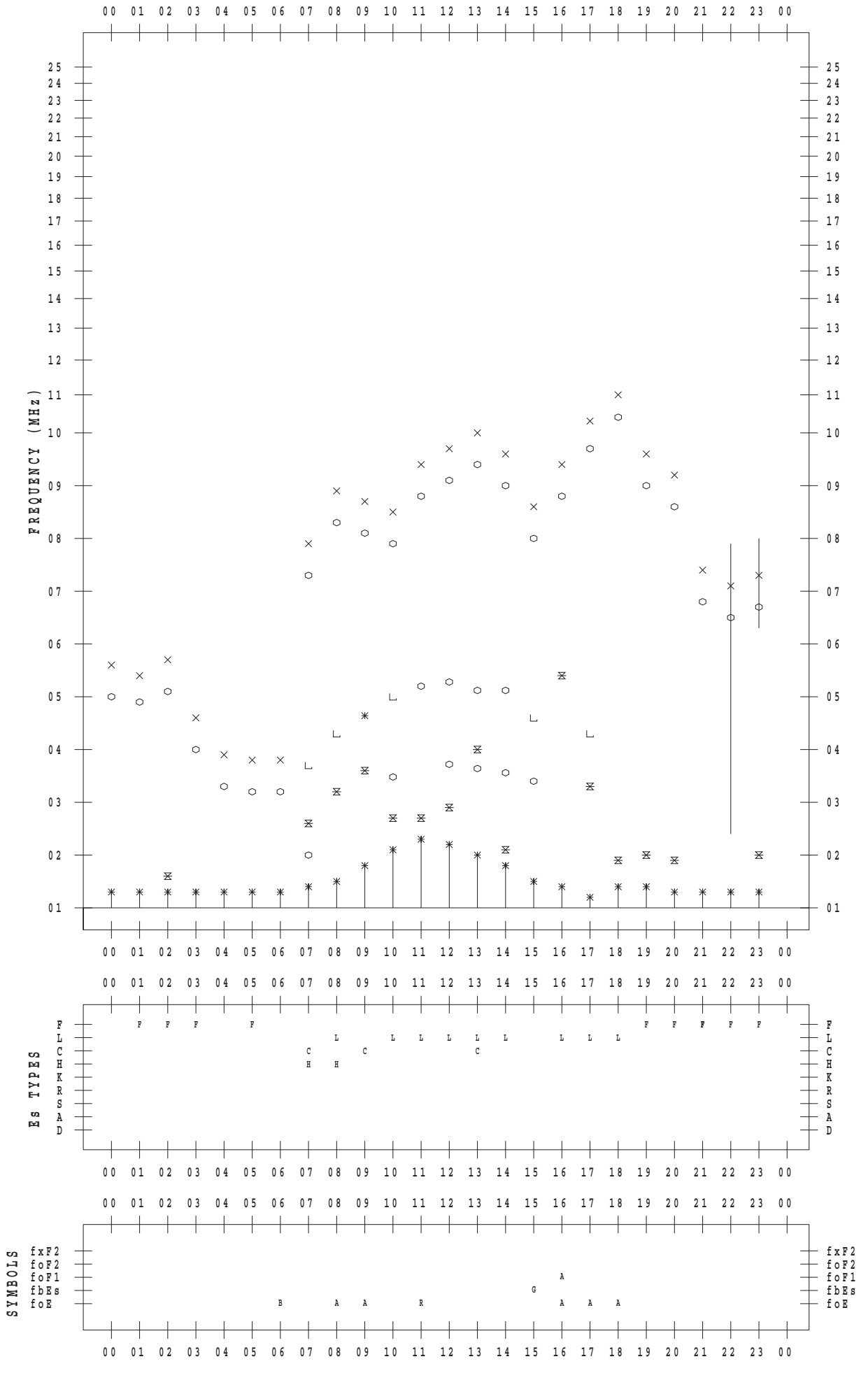
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/26

135 °E MEAN TIME



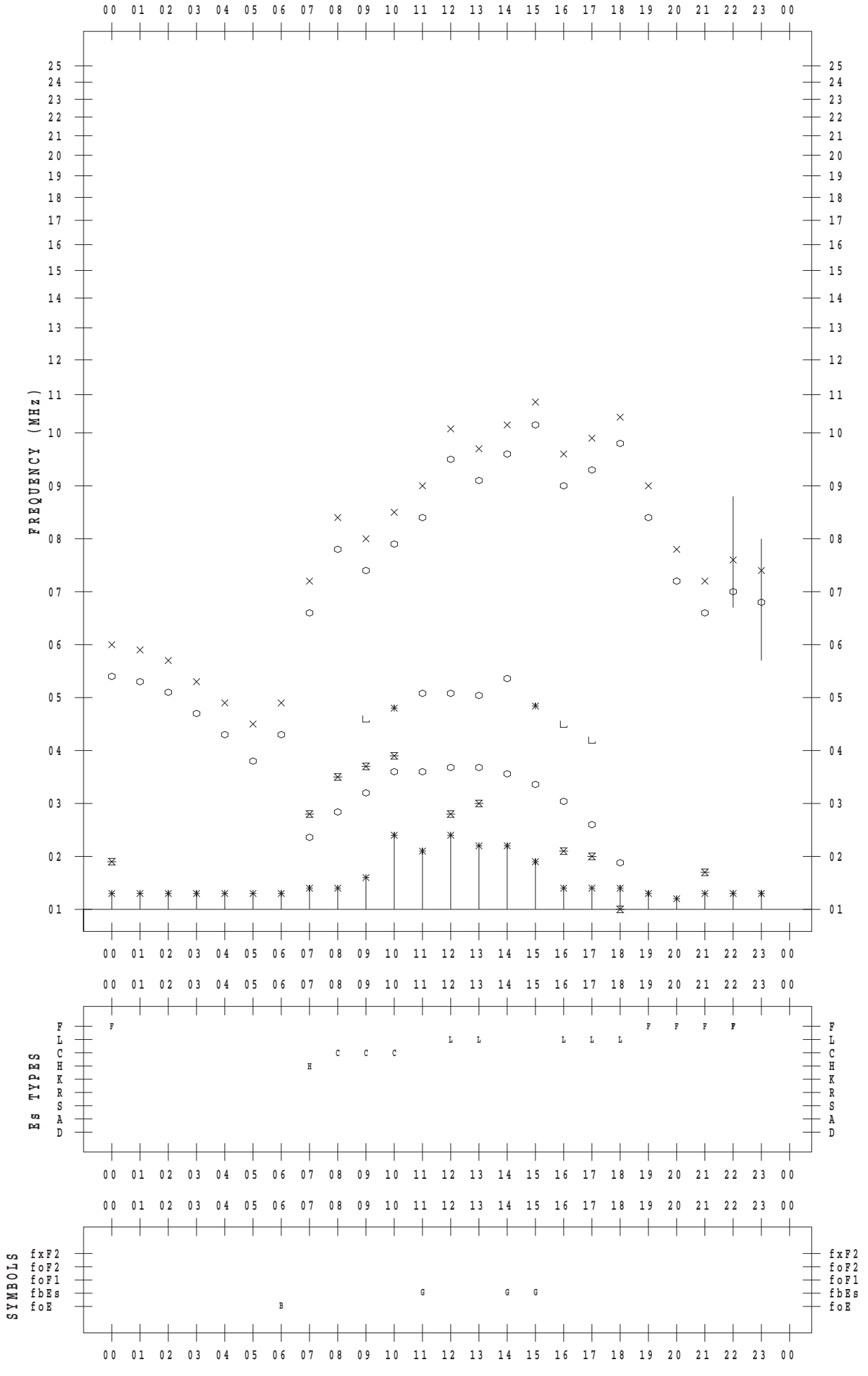
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/27

135 °E MEAN TIME



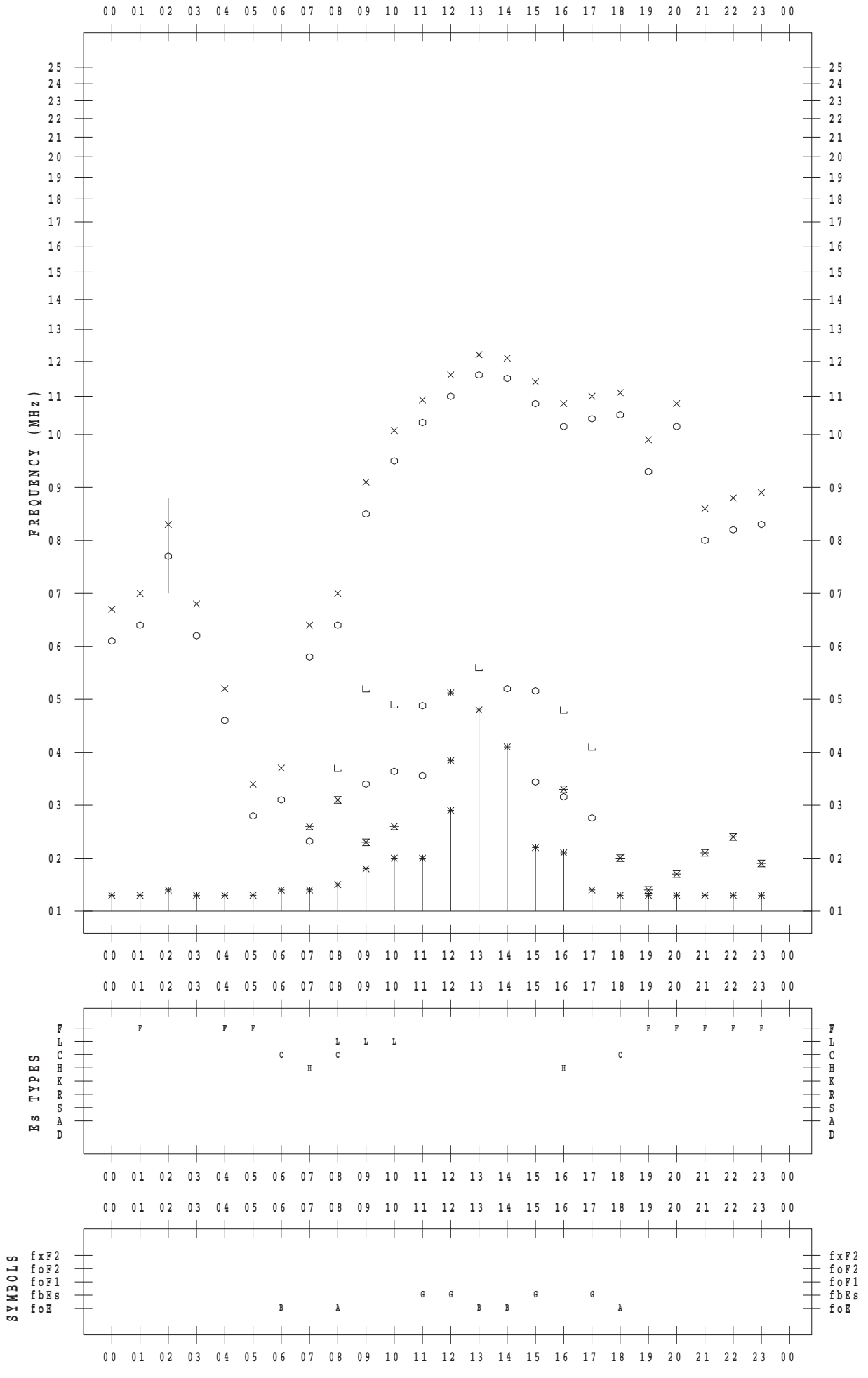
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/28

135 °E MEAN TIME



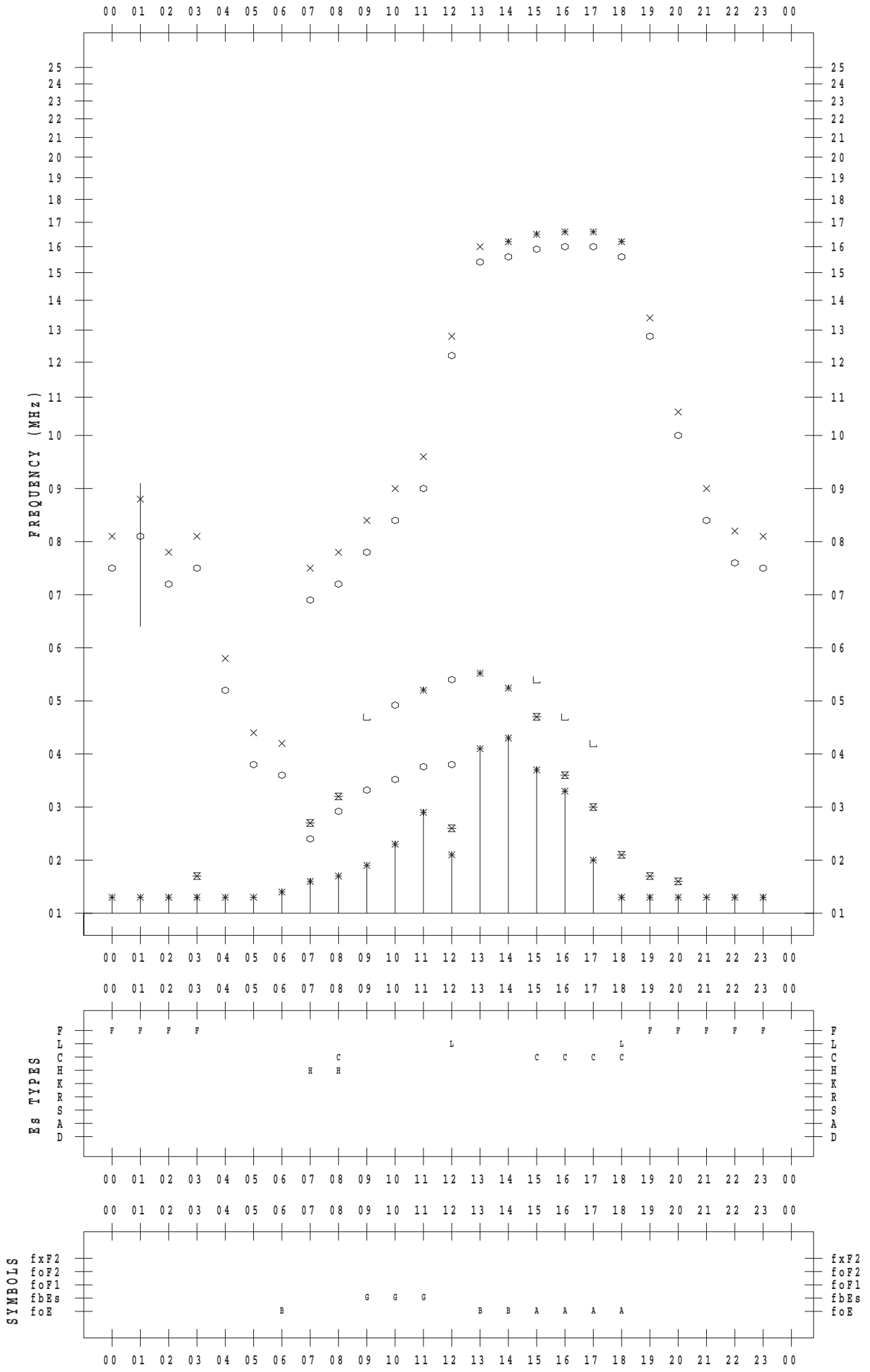
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/29

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 9/30

135 °E MEAN TIME