F-825

IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 2017

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

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

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 fEs AT Wakkanai

SEP.2017

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

HD	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	24	24		23	G	24	40	163	40	50	48	41	45	44	35	45	40	56	31	25	G	G	27
2	G	G	24		26	64	59		112	44	86	110	64	63	46	36	38	37	37	24	24	G	G	G
3	G	112	34	56	70	59		73	95	127	70	49	41	56	100	69	69	58	49	92	69	58	55	58
4	125	G	G		G	G	114	60	72	94	61	55	46	44	G	43	46	136		58	46	115	38	59
5	61	34	32	27	G	33	49	47	51	54	80	53	57	59	40	G	G	49	26	26	35	38	40	40
6	28	28	26	G	G	27	33	36	38	38	G	46	105	44	38	38	26	38	40	G	35	G	25	G
7	G	G	G	G	G	G	38		39	G	34	42	41	43	40	35	39	24	G	G	G	G	G	27
8	G	G	G	G	G	G	24	39	45	G	G	G	38	G	36	G	G	39	35	38	35	40	G	G
9	26	G	G	G	G	28	24	48	90	46	41	40	35			G	40	76	49	34	34	34	45	32
10	26	G		G	G	27	40	36	43	50	108	G	41	G	G	G	G	23	35	28	33	34	G	24
11	G	136	G	G	G	G	25	42	43	33	46	45	94	G	G	G	G	G	G	G	52	52	126	84
12	27	71	58	39	34	38	40	51	50	42	G	50	48	45	G	G	27	G	G	28	G	G	G	G
13	G	G	G	G	G	G	C	C	37	C	G	50	34	G	43	G	G	24	G	G	G	G	G	G
14	G	G	G	G	G	G	G	G	39	G	39	40	47	46	34	G	106	23	27	40	G	G	G	G
15		33	24			32	G	57	90	42	40	87	57	36	75	G	G	40	G	G	38	G	G	G
16	G	G	34	48	32	95	59	56	48	42	74	G	36	36	G	48	37	55	60	93	58	38	24	38
17	G	26	38	33	45	58	72	59	58	38	39	47	61	44	35	58		38	34	50	37	G	G	G
18	G	27	40	30	34	G	G	46	61	41	42	46	36	43	57	40	38	42	58	59	G	G	G	G
19	G	G	33	G	24	103	115	58	47	72	68	46	44	43	43	56	36	23	48	34	G	38	G	37
20	40	26	G	G	29	32	35	161	42	128	62	46	94	51	46	63	114	93	34	35	41	70	69	59
21	27	58	33	49	38	59	32	40	G	57	93	130	102	144	46	72	103	G	G	G	G	G	24	24
22	25	23	G	G	G	G	G	56	G	G	40	39	57	38	77	35	27	G	G	G	G	G	G	G
23	30	33	32	34	33	G	33	34	33	43	39	39	113	G	52	G	33	31	G	28	33	G	84	G
24	G	G	G	G	G	G	30	175	42	114	33	37	147	36	38	39	77	34	G	G	G	23	G	G
25	G	G	G	G	G	G	G	32	28	34	43	43	43	42	34	40	36	29	G	G	G	G	G	G
26	G	G	G	G	G	G	41	32	35	89	44	42	50	103	45	32	48	34	58	32	G	G	G	G
27	G	G	G	G	G	G	G	33	109	30	144	55	41	50	35	59	34	39	32	30	G	24	G	G
28	G	G	G	G	G	G	30	93	56	50	58	53	44	40	38	G	31	G	G	G	G	G	G	G
29	28	32	G	G	G	G	34	48	71	113	65	64	64	40		114	92	56	49	46	40	45	55	71
30	71	85	44	40	G	G	G	178	41	58	48	40	48	66	64	29	24	G	G	50	41	46	54	111
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	29	26	29	30	28	27	30	29	30	30	30	29	28	30	29	30	29	30	30	30	30	30
MED	G	12	G	G	G	G	32	48	46	43	45	46	48	43	40	35	36	36	32	29	29	G	G	G
UQ	27	33	33	33	30	33	40	59	71	65	68	53	64	50	46	48	47	42	48	40	38	38	40	38
LQ	G	G	G	G	G	G	12	36	39	36	39	40	41	36	34	G	25	23	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

SEP. 2017

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	15	14	14		17	15	15	14	17	17	18	18	17	16	16	15	15	14	14	14	15	14	14	14
2	15	17	14		16	14	14		15	15	15	16	18	17	18	15	14	14	14	14	14	15	15	15
3	15	14	14	14	14	14		14	17	28	15	18	18	18	15	15	15	14	14	15	14	14	14	14
4	14	15	14		14	15	14	14	16	29	32	26	20	29	17	32	14	14		14	14	14	15	14
5	15	14	14	15	17	14	22	20	21	28	28	28	28	28	33	15	29	14	16	14	14	14	14	14
6	14	14	15	15	14	14	14	14	16	15	17	17	29	27	18	16	14	14	14	16	15	15	14	15
7	14	15	14	14	15	14	14		20	34	33	28	33	28	17	17	14	14	17	15	14	15	15	14
8	14	14	14	14	14	15	15	15	18	45	34	32	28	33	15	30	15	26	15	14	14	14	18	15
9	15	18	14	15	15	14	14	14	15	28	21	17	28			15	15	15	15	14	14	14	14	14
10	15	17		14	14	14	14	15	26	32	28	34	33	41	30	17	17	26	15	14	14	14	15	15
11	14	14	15	14	14	17	15	17	26	32	28	29	41	32	33	18	15	14	16	15	14	15	14	14
12	14	15	14	14	14	14	14	15	17	20	18	32	33	30	18	18	14	20	16	15	15	14	14	14
13	17	17	14	14	14	15	C	C	16	C	30	17	17	32	15	17	16	14	14	15	15	14	14	15
14	15	15	14	14	14	14	18	15	14	16	18	28	20	15	17	14	14	15	15	14	14	14	15	15
15		14	17			14	14	14	14	15	30	18	44	18	16	15	27	15	18	16	14	14	15	14
16	15	15	14	15	14	14	14	15	15	15	15	16	17	18	16	14	17	16	15	16	17	14	14	14
17	15	20	15	16	15	14	14	15	14	16	15	18	17	17	28	16		15	15	15	14	15	15	14
18	14	15	14	14	14	15	14	15	15	15	17	17	16	17	15	17	14	14	14	14	15	15	17	16
19	15	15	14	15	14	14	14	15	17	15	15	15	18	15	18	15	14	14	15	15	14	15	15	15
20	15	14	15	14	15	15	15	15	15	17	18	23	20	16	16	17	15	14	15	21	14	15	14	14
21	14	14	14	14	14	14	14	18	18	17	24	17	24	18	15	14	14	14	14	15	15	15	15	14
22	14	14	15	14	15	15	18	14	14	15	15	20	15	21	15	14	14	18	14	16	15	15	14	15
23	15	14	14	14	14	15	15	15	14	14	14	15	17	18	15	14	14	14	15	15	14	21	17	14
24	15	14	14	14	15	15	15	15	14	15	15	14	14	14	15	14	14	14	14	14	14	15	14	14
25	15	15	15	16	15	14	15	14	14	15	14	14	17	15	15	14	14	14	14	14	14	14	14	15
26	14	14	14	15	14	14	15	14	17	15	15	15	17	17	15	14	14	14	15	14	15	14	16	15
27	14	14	14	15	14	14	18	14	14	15	21	15	16	15	14	14	14	14	14	14	14	15	14	14
28	18	14	15	16	15	15	14	14	15	16	15	18	17	18	14	14	16	17	14	15	15	14	17	14
29	14	14	14	14	14	22	14	14	15	14	15	16	14	14		14	14	14	14	14	14	14	14	15
30	14	15	14	14	14	15	14	14	14	15	15	17	18	15	14	14	15	17	14	14	14	15	15	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	29	26	29	30	28	27	30	29	30	30	30	29	28	30	29	30	29	30	30	30	30	30
MED	15	14	14	14	14	14	14	15	15	16	18	18	18	18	16	15	14	14	15	14	14	14	14	14
U Q	15	15	15	15	15	15	15	15	17	28	28	26	28	28	18	17	15	15	15	15	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	15	15	16	17	15	15	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

SEP. 2017

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	39	36	37	38	32	28	43	52	59	56	A	139	50	48	52	54	59	72	58	77	71	54	52	45
2	45	39	39	37	34	34	45	66	72	56	A	A	57	A	A	A	A	110	A	52	A	A	36	35
3	28	27	28	30	31	48		A	A	48	A	A	A	86	52	49	51	A	52	52	A	48	47	A
4	37	34	32	32	25	34	42	45	A	54	A	A	A	51	A	A	78	56	62	55	51	A	48	A
5	A	41	A	A	39	37	51	66	77	72	74	65	70	63		66	66	67	65	55	A	43	45	42
6	43	42	42	39	39	36	45	53	53	66	71	61	65	64	64	68	58	62	66	55	55	54	51	53
7	42	42	27	39		37	57	59	67	92	52	62	60	62	65	58	59	62	79	81	71	52	52	52
8	52	51	50	47	42	31	58	66	74		82	102	111	113	95	81	A	A	65	51	A	A	48	A
9	43	36	34	27	27	32	42													A	A	40	39	42
10	39	41	37	37	26	23	46	52	48	59	56		66		54	55	50	52	62	65	54	49	38	37
11	A	34	32	26	25	32	47	52	59	62	56	56	66	78	71	59	57	62	69	75	53	A	A	36
12	38	34	36	38	34	30	51	63	63	62	66	58	64	62	65	58	58	56	58	54	49	48	47	47
13	47	47	43	35	34	30	49	67	65	67	76	72	77	87	75	59	55	58	71	77	65	A	36	36
14	36	37	34	31	34	32	54	69	57	58	56	57	64	75	74	72	67	62	56	51	52	47	41	42
15	42	36	32	26	32	31	51	42	55	71	75	A		81	90	62	52	52	59	66	50	52	45	A
16	34	34	35	38	31	A	27	52	62	78	58	A	56		59	58	54	72	84	65	A	A	A	A
17	36		36	A	A	A	44	A	59				58	55	A	56	58	A	A	A	42	A	A	A
18	36	32	34	34	28	A	51		51	61	69	67	58	58	61	64	62	58	A	52	49	39	A	31
19		32	31	A	A	A	39		51	55	51	A	53	51	58	56	58	63	65	48	A		28	A
20	A	A	27	C	C	C	C	C	C	C	C	A	63	63	68	56	52	55	62	52	38	38	38	38
21	38	N	36	34	31	32	46	49	54	58	60	65	66	62	61	56	58	64	72	54	52	44	32	34
22	34	28	32	37	N	26	43		65	67	61	71	69	62	65	54	59	63	63	54	36	36	34	34
23	34	31	58	31	32	28	41	49	64	62	68	61	65	61	58	65	65	59	65	52	A	31	36	A
24	34	37	36	35	27	26	45	63	74	78	65	65	70	66	65	71	68							
25												64	70	62	69	65	70	78	71	47	37	38	A	48
26	34	36	36	36	27	34	51	58	64	64	62	66	65	67	65	56	62	67	65	52	45	32	37	38
27	38	39	36	38	N	28	49	53	63	64	65	68	64	64	63	59	65	58	63	54	66	52	A	A
28	39	38	A	A	A	A	38	62	78	74	105	80	65	78	96	84	95	75	55	A	64	41	42	39
29	36	38	37	38	36	34	54	83	78	79	72	88	82	81	75	74	71	73	72	52		A	A	42
30	38	35	38	27	32	34	54	71	70	68	74	69	74	80	72	78	84	86	67	42	38	37	39	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	25	26	27	24	22	23	27	22	25	25	22	20	26	26	25	27	27	25	25	26	20	20	22	20
MED	38	36	36	36	32	32	46	58	63	64	66	66	65	64	65	59	59	62	65	54	52	44	40	38
U Q	42	39	37	38	34	34	51	66	71	71	74	71	70	78	73	68	67	72	70	65	59	50	47	43
L Q	35	34	32	31	27	28	43	52	56	58	58	61	60	62	60	56	57	58	60	52	43	38	36	36

HOURLY VALUES OF fEs AT Kokubunji

SEP. 2017

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	28	24	36	37	47	51	117	140	40	32	53	50	52	72	80	42	27	42	31	29
2	G	G	G	G	G	34	32	42	66	45	92	46	51	77	46	32	63	150	92	91	57	56	29	25
3	25	G	G	59	60	74		74	66	71	45	42	60	80	G	39	44	54	45	86	127	37	33	38
4	33	28	25	G	G	34	37	48	57	42	86	50	59	G	57	61	60	36	43	47	70	55	48	70
5	59	31	46	94	33	34	35	G	37	G	48	57	34	G		G	31	37	G	G	56	25	G	G
6	33	43	29	G	G	G	29	34	42	37	41	G	G	G	52	57	49	52	29	40	G	G	G	G
7	31	33	158	G		G	32	29	32	37	G	G	G	G	33	32	28	40	34	G	G	25	G	34
8	41	G	G	G	G	G	32	37	124		G	G	40	G	G	71	84	133	57	54	78	84	44	78
9	27	G	G	G	23	G	34													69	32	31	28	49
10	33	G	G	G	G	G	G	37	34	54	40	G	G		G	G	G	G	G	G	G	27	24	34
11	54	G	G	G	G	G	31	34	43	50	G	42	G	G	G	53	37	33	28	33	42	61	34	34
12	G	27	24	G	G	G	G	37	41	48	43	G	G	39	G	34	G	G	G	G	41	31	28	G
13	G	G	G	G	G	G	32	35	30	31	34	G	G	41	G	G	31	38	30	G	23	29	G	G
14	G	G	G	G	24	G	G	27	31	42	34	G	G	34	38	36	28	G	G	G	31	G	G	G
15	G	27	G	23	G	G	G	29	34	31	G	71		G	G	G	28	35	31	26	27	G	40	26
16	27	G	G	G	G	29	33	36	53	45	40	62	G	G	G	G	40	33	29	47	57	57	57	70
17	28		G	41	45	34	43	82	57				45	G	63	54	56	114	113	59	53	92	91	40
18	32	27	G	33	29	51	45		43	48	G	37	G	47	G	42	45	48	70	G	36	31	33	G
19		G	25	38	41	35	28		40	42	40	43	G	G	G	37	30	45	31	G	43		G	57
20	57	36	G	C	C	C	C	C	C	C	C	42	37	36	G	44	31	G	G	11	G	G	G	G
21	G	G	G	G	G	G	29	34	42	37	47	G	G	G	G	G	G	G	31	25	24	28	G	G
22	24	26	G	G	G	G	29		G	42	G	42	G	G	G	G	G	33	28	35	27	G	G	G
23	G	G	G	G	G	G	24	35	43	42	40	G	G	40	G	G	27	33	G	31	48	G	G	29
24	G	G	G	G	G	G	31	37	40	34	42	39	33	G	G	G	G							
25												37	G	G	39	42	39	34	G	G	G	G	28	G
26	G	G	G	G	G	G	43	33	37	35	33	35	G	32	39	46	39	38	G	G	G	G	G	G
27	G	G	G	G	11	G	29	42	29	44	38	G	G	39	35	43	34	37	42	G	G	11	87	49
28	28	G	54	53	40	35	28	42	44	46	72	43	52	31	47	55	59	49	36	55	33	28	26	40
29	G	25	G	G	G	G	G	29	34	42	57	G	G	G	G	42	28	31	33	26		53	46	29
30	30	28	G	G	24	G	121	123	39	31	53	G	G	G	31	42	G	35	47	G	G	32	33	23
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	29	28	27	28	27	24	27	25	26	28	28	28	28	29	29	28	28	29	28	28	29	29
MED	26	G	G	G	G	G	31	36	41	42	40	37	G	G	G	39	31	36	31	26	32	28	28	29
U Q	32	27	12	12	28	34	35	42	47	47	48	43	38	37	39	48	47	48	44	47	50	47	37	40
L Q	G	G	G	G	G	G	28	33	34	36	33	G	G	G	G	G	27	33	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

SEP. 2017

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	13	14	14	14	14	21	28	22	31	22	22	22	18	17	13	13	14	14	14	14	13
2	14	14	14	14	14	14	13	14	17	20	22	24	23	21	22	23	17	13	17	13	14	13	14	15
3	14	18	15	14	14	13		14	23	22	30	22	22	20	44	22	18	15	13	14	13	14	14	14
4	14	14	14	15	14	14	17	17	22	30	22	25	33	21	33	31	20	13	13	13	14	14	14	14
5	13	15	14	14	14	13	15	42	29	46	26	28	25	48		25	21	17	18	21	13	14	14	14
6	15	14	14	13	14	14	14	14	21	18	20	48	48	48	35	20	30	18	13	14	18	13	13	14
7	13	13	15	14		14	13	14	21	25	43	48	45	44	21	21	18	17	13	14	13	14	18	14
8	14	14	15	14	20	21	15	17	18		44	47	44	50	37	30	22	23	14	14	14	14	13	14
9	14	14	14	21	17	17	14													13	14	14	14	13
10	14	14	14	14	13	17	21	17	28	37	30	46	46		44	18	14	23	18	14	14	14	14	13
11	14	15	13	13	14	14	15	22	29	29	45	45	48	46	23	20	13	14	14	15	14	14	14	14
12	14	13	14	13	14	20	22	13	22	25	26	44	46	18	31	18	17	22	18	14	14	13	13	14
13	21	13	14	14	14	14	14	22	21	21	23	44	43	22	44	22	14	13	14	15	14	13	18	18
14	20	14	14	14	18	14	20	18	18	20	24	46	46	26	21	17	14	20	14	14	14	13	14	14
15	14	13	15	15	15	17	17	14	20	21	21	20		40	22	33	30	15	14	13	13	14	13	13
16	14	21	14	14	14	13	14	13	18	21	31	17	47	41	21	15	14	15	13	14	14	13	13	13
17	14		13	14	13	13	13	15	21				20	43	21	15	14	14	14	13	13	13	14	14
18	13	13	14	14	14	14	13		22	21	42	43	43	29	44	20	14	13	14	14	14	14	14	14
19		13	14	13	14	13	13		18	21	20	21	44	39	41	15	14	14	17	21	14		17	15
20	13	13	23	C	C	C	C	C	C	C	C	23	21	21	43	17	14	20	13	13	13	13	14	14
21	13	14	13	13	13	14	13	13	18	22	22	44	40	41	21	14	14	20	13	13	13	13	17	14
22	17	13	14	14	14	14	14		15	20	21	22	38	44	23	30	17	14	14	14	14	13	17	15
23	14	17	15	14	14	17	14	15	14	22	22	45	44	33	38	20	17	17	14	14	14	18	14	14
24	15	13	15	14	20	14	14	14	14	20	18	20	20	21	18	15	13							
25												29	43	39	31	18	17	13	14	20	17	17	13	13
26	18	15	18	17	17	14	21	15	18	20	25	22	25	20	20	18	13	15	14	15	14	18	15	14
27	14	22	15	15	13	14	15	14	21	17	25	42	42	42	21	22	13	13	14	15	14	14	13	14
28	14	20	13	13	13	14	20	14	15	20	22	28	23	28	22	17	13	13	14	14	13	13	15	13
29	15	13	21	14	18	14	18	14	18	18	20	41	41	21	20	13	18	13	14	15		18	13	15
30	15	14	14	14	15	17	14	14	14	17	18	37	45	42	14	14	14	17	17	14	15	13	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	28	28	29	28	27	28	27	24	27	25	26	28	28	28	28	29	29	28	28	29	28	28	29	29
MED	14	14	14	14	14	14	14	14	20	21	22	34	42	36	22	18	14	15	14	14	14	14	14	14
U Q	15	15	15	14	15	15	17	17	22	25	30	44	45	42	37	22	18	17	14	15	14	14	14	14
L Q	14	13	14	13	14	14	14	14	18	20	21	22	24	21	21	16	14	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

SEP. 2017

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	34	28	34	38	37	A	38	28	52	A	66	A	59	A	58	64	57	58	73	87	77	A	A	44
2	43	40	40	37	36	34	37	67	54	64	A	58	54	50	49	56	68	90	67	54	A	A	A	A
3	A	30	30	A	A	29	54	65	65	54	A	A	62	60	58	58	58	59	57	52	52	43	37	46
4	48	44	A	37	34	32	40	46	54	58	58	54	67	67	74	74	65	A	A	86	A	A	A	42
5	A	A	A	A	A	31	38	52	A	78	A	73	80	81	B	75	74	85	82	A	A	42	26	42
6	28	42	40	41	36	31	42	54	54	65	58	68	76	68	68	67	65	63	63	75	74	54	42	43
7	43	41	40	37	34	36	37	60	82	88	58	67	72	75	75	58	63	74	90	86	54	44	B	40
8	42	40	A	35	31	34	44	71	72	67	81	91	108	106	104	106	80	75	75	54	A	A	47	44
9	42	42	38	34	37	A	A	44	A	A	60	64	55	57	A	54	A	A	109	50	A	A	41	A
10	A	41	37	33	32	29	36	52	54	61	60	60	69	68	62	60	55	53	75	80	51	41	37	37
11	34	32	33	34	32	34	40	51	60	65	58	58	67	86	91	82	72	82	80	78	51	34	A	A
12	36	34	34	34	28	A	36	54	65	61	56	62	68	77	65	65	58	51	55	52	52	43	39	48
13	47	48	41	34	33	32	42	58	66	72	61	75	81	90	86	69	53	54	78	83	N	34	30	33
14	34	34	32	32	32	34	42	52	66	58	47	66	70	80	87	80	71	72	32	51	52	42	38	40
15	42	37	34	32	31	29	38	44	66	85	68	44	74	98	86	77	57	55	67	74	54	40	32	34
16	34	31	40	N	A	N	31	54	75	81	64	62	71	67	74	80	66	A	90	A	A	42	40	A
17	36	34	34	37	28	29	31	53	52	65	A	67	65	64	62	59	65	74	A	47	A	A	A	34
18	A	34	31	32	30	25	35	74	47	58	65	72	60	61	64	64	66	69	54	52	52	A	A	A
19	A	32	34	33	34	29	35	47	53	51	53	56	54	58	69	66	44	66	71	45	A	A	A	32
20	A	32	A	28	26	26	34	55	55	51	55	67	69	66	76	67	65	63	71	54	40	34	34	32
21	50	36	49	N	N	26	35	54	52	51	57	62	68	76	77	67	64	67	80	80	52	A	A	31
22	B	30		59		B	139	53	64	60	56	60	70	86	82	66	63	54	A	54	26	A	34	34
23	34	32	30	32	29	26	30	54	66	64	58	61	65	71	67	70	78	64	58	52	48	A	34	34
24	34	34	35	32	49	B	34	50	66	75	68	64	72	76	75	77	72	77	70	51	29	A	32	30
25	A	31	28	31	28	B	34	50	64	79	64	56	66	70	65	68	78	78	75	51	43	40	38	40
26	A	36	36	37	36	32	40	65	54	64	60	57	71	70	72	65	68	66	72	67	37	34	35	35
27	33	37	38	41		26	35	50	65	71	72	65	64	71	74	72	75	66	71	54	52	53	B	33
28	34	34	36	40	26	31	34	63	78	88	84	71	70	90	107	100	95	84	86	54	54	A	38	B
29	38	40	40	40	36	36	42	66	78	84	70	78	105	94	95	86	90	86	86	54	A	41	40	42
30	41	41	38	43	32	34	42	61	74	77	70	69	82	90	87	85	88	90	86	51	A	A	36	34
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	29	25	26	24	23	29	30	28	28	26	28	30	29	28	30	29	27	27	28	19	16	20	24
MED	36	34	36	34	32	31	37	54	64	65	60	64	69	71	74	68	66	67	73	54	52	42	37	36
U Q	42	40	40	38	36	34	42	61	66	77	68	68	72	86	86	77	74	78	82	76	54	43	39	42
L Q	34	32	33	32	29	29	34	50	54	59	58	59	65	66	65	64	60	59	67	51	43	37	34	33

HOURLY VALUES OF fEs AT Yamagawa

SEP. 2017

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	23	G	27	G	41	49	61	51	62	48	73	48	32	42	55	58	32	53	80	50	43
2	32	31	25	G	G	G	25	36	35	33	70	43	46	44	48	44	93	45	58	33	71	85	69	56
3	42	26	26	32	28	G	G	36	54	69	83	76	56	51	36	38	34	37	35	G	G	28	27	33
4	44	33	32	32	24	G	31	39	57	56	48	46	50	47	48	60	47	58	110	159	92	84	58	34
5	57	56	106	73	71	33	G	34	79	46	73	51	36	G	B	43	51	64	50	69	45	27	27	G
6	G	G	G	G	G	27	26	50	43	44	46	43	35	36	51	56	58	58	48	34	G	21	29	30
7	28	G	G	G	G	G	29	34	42	43	51	43	G	38	49	46	44	49	57	44	39	27	B	G
8	G	26	34	G	G	G	G	36	109	G	92	38	G	G	38	38	44	56	60	50	91	110	33	48
9	G	G	G	G	32	36	34	35	57	59	48	40	49	50	94	70	92	77	133	150	70	69	59	110
10	89	33	G	G	G	31	G	34	41	48	50	50	G	G	G	32	35	31	32	G	11	G	G	G
11	26	G	G	G	G	G	G	34	32	41	54	44	G	43	50	45	32	32	G	30	50	32	49	41
12	G	G	G	G	24	28	33	34	32	109	43	38	50	42	32	34	32	G	28	G	41	27	29	28
13	G	G	G	G	G	G	32	38	42	44	34	47	G	G	33	31	G	28	33	32	48	26	G	G
14	G	G	G	G	G	G	G	31	36	34	48	41	G	G	47	47	39	36	39	G	G	G	G	G
15	G	G	G	G	G	G	G	36	38	45	32	32	38	G	32	38	35	30	34	38	22	G	G	G
16	G	G	G	G	28	G	G	33	35	58	52	46	44	45	41	46	34	86	45	81	49	32	G	40
17	G	G	G	G	27	24	28	41	58	70	54	50	51	57	48	47	43	47	93	54	69	55	88	32
18	36	G	26	G	G	27	32	41	52	69	58	55	46	48	47	44	34	35	34	34	70	78	43	28
19	32	28	G	G	G	32	44	55	42	45	38	G	47	41	G	G	31	34	31	27	31	48	43	33
20	55	27	24	G	G	G	G	26	32	45	46	48	47	G	41	35	38	32	G	11	G	G	G	G
21	G	G	G	G	G	G	11	32	38	46	44	45	48	40	38	32	36	31	G	36	26	29	31	G
22	B	G	G	G	G	B	G	29	34	43	39	48	49	42	35	34	44	60	88	53	32	37	27	30
23	27	G	G	G	G	G	G	29	40	47	48	39	50	46	G	46	44	45	35	31	24	32	G	G
24	26	G	G	G	G	B	G	33	33	38	38	40	38	N	37	36	34	34	28	24	26	41	G	24
25	29	G	G	G	G	B	G	32	44	46	58	50	33	34	G	31	40	39	35	21	30	G	G	G
26	29	24	G	G	G	G	G	32	42	47	50	50	49	49	46	37	34	35	41	24	22	28	G	G
27	G	G	G	G	G	G	G	34	33	41	46	51	50	49	45	35	41	32	28	32	28	23	B	G
28	G	G	G	G	G	G	G	31	43	46	64	46	46	40	46	42	45	44	43	28	29	33	33	B
29	G	28	G	G	G	G	24	34	38	40	42	41	42	N	44	34	G	31	31	32	50	33	29	G
30	33	29	G	G	G	26	G	28	38	40	42	46	46	47	G	37	42	50	34	30	37	48	32	28
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	27	30	30	30	30	30	30	30	28	29	30	30	30	30	30	30	30	28	29
MED	26	G	G	G	G	G	G	34	42	46	48	46	46	42	41	38	40	38	35	32	34	32	29	28
U Q	32	27	G	G	G	27	28	36	49	56	54	50	49	47	48	46	44	55	57	44	50	48	43	33
L Q	G	G	G	G	G	G	G	32	35	41	43	41	35	17	32	34	34	32	31	24	24	26	G	G

HOURLY VALUES OF fmin AT Yamagawa

SEP. 2017

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	18	14	14	15	15	18	14	15	20	21	20	27	22	23	20	15	15	15	14	15	15	14	14
2	14	14	16	16	15	15	16	14	16	21	20	22	27	27	23	21	18	15	15	15	15	15	14	14
3	14	15	15	14	15	15	15	15	15	16	21	20	20	22	20	17	20	18	15	14	17	14	15	14
4	14	14	15	15	15	15	15	14	18	21	26	32	30	26	33	35	21	16	15	16	14	14	14	14
5	14	14	14	16	14	15	17	17	21	22	26	27	23	50	B	22	20	17	15	16	14	17	14	15
6	15	23	15	18	16	14	15	15	17	22	23	36	28	23	22	23	20	16	15	14	15	14	16	14
7	14	27	15	14	14	15	14	17	18	23	23	23	51	27	17	20	18	20	14	14	14	15	B	18
8	26	15	14	18	15	24	15	15	18	50	24	32	55	42	27	24	17	32	15	14	15	14	15	14
9	14	15	15	15	15	14	14	15	18	29	26	28	28	30	26	22	21	15	15	14	16	14	15	14
10	15	15	16	16	15	15	15	15	21	29	27	35	46	47	37	21	18	15	14	15	15	14	14	15
11	15	15	16	14	15	15	15	15	21	27	26	28	48	21	20	18	16	20	15	15	15	15	14	14
12	15	20	14	15	14	14	14	14	15	21	15	15	37	23	22	21	18	15	18	15	14	16	15	15
13	14	15	17	15	15	15	14	15	23	20	21	22	21	41	23	15	20	22	18	14	14	15	15	16
14	17	15	15	15	16	15	15	15	14	17	17	23	23	35	22	21	17	16	14	15	15	15	15	16
15	15	14	15	17	15	17	14	15	15	17	18	24	42	23	21	20	14	14	15	14	14	15	20	14
16	18	17	14	14	14	16	14	15	15	20	21	23	23	20	18	18	16	15	15	15	15	15	15	23
17	18	15	21	14	14	15	14	14	15	16	21	22	23	22	20	22	17	15	16	14	14	15	14	15
18	14	14	14	14	14	15	14	14	15	18	20	23	22	27	22	20	15	15	14	15	14	14	15	14
19	14	14	14	15	14	14	14	15	14	16	18	20	20	34	43	20	17	16	14	15	18	15	14	14
20	15	18	17	14	14	15	15	14	15	17	20	20	21	34	20	21	18	15	16	14	18	15	16	16
21	15	15	15	15	17	17	15	15	15	18	20	22	28	24	23	22	17	14	16	14	15	15	15	14
22	B	15	15	14	66	B	18	14	23	21	20	21	20	22	18	15	14	15	14	14	15	14	15	14
23	14	15	14	14	15	15	15	14	15	17	22	22	22	21	21	20	16	15	14	14	14	14	21	15
24	14	14	15	15	14	B	14	15	16	17	20	27	18	21	22	20	15	14	14	14	14	14	15	14
25	16	14	23	18	15	B	15	15	16	21	17	26	22	22	34	22	17	15	14	15	14	15	16	16
26	14	20	14	14	14	15	14	14	16	21	20	24	26	18	22	18	17	14	14	14	14	15	15	17
27	15	16	22	15	66	17	14	15	15	18	21	18	21	21	22	20	17	14	14	15	14	14	B	14
28	17	17	14	15	17	15	15	15	15	20	21	22	22	23	22	17	15	14	14	15	14	14	14	B
29	15	14	17	15	14	15	14	15	15	20	20	23	23	22	16	18	17	15	14	14	15	16	15	14
30	15	17	15	14	15	15	14	15	14	18	20	22	35	34	34	20	18	15	14	14	15	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	29	30	30	30	30	27	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	28	29
MED	15	15	15	15	15	15	15	15	15	20	21	23	23	23	22	20	17	15	15	14	15	15	15	14
U Q	15	17	16	15	15	15	15	15	18	21	23	27	30	34	24	22	18	16	15	15	15	15	15	15
L Q	14	14	14	14	14	15	14	14	15	17	20	22	22	22	20	18	16	15	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

SEP.2017

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	32	26	34	35	40	34	34	54	50	68	74	53	60	66	61	63	60	75	96	106	72	A	A	A
2	41	42	A	38	34	59	34	67	71	61	58	62	60	64	62	72	78	107	78	58	51	42	44	37
3	A	35	34	A	A	31	35	61	64	64	A	56	72	72	68	68	69	71	75	70	49	52	47	50
4	48	39	38	35	34	34	34	50	60	A	64	64	74	86	91	91	89	A	80	71	43	A	42	42
5	42	41	41	41	34	29	32	54	70	75	61	80	98	105	110	101	106	117	A	56	A	A	A	44
6	44	44	47	34	26	31	34	54	60	63	59	60	78	82	78	A	70	71	105	86	71	23	A	42
7	42	42	41	34	31	31	26	66	88	77	71	92	111	126	117	107	97	91	111	A	A	A	A	A
8	42	28	37	29	28	31	41	77	71	68	85	96	111	120	127	137	108	102	87	67	A	A	32	43
9	42	42	42	38	42	30	A	A	49	63	74	90	96	92	91	78	71	71	67	A	A	A	A	A
10	38	A	A	32	A	A	30	B	B	B	60	72	86	101	110	106	B	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13	B	B	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	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	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	80	54	48	38	36	37
24	36	34	37	40	B		B	50	61	75	71	67	84	92	91	98	101	101	88	75	N	A	B	30
25	29	B	N	28	B	B	N	59	68	93	61	51	67	70	72	80	90	81	67	59	50	38	38	37
26	36	34	34	41	34	28	32	54	60	68	51	62	68	85	87	87	85	91	80	52	43	34	A	A
27	36	38	42	41	A	A	26	54	67	75	82	61	72	88	86	91	82	80	75	63	51	46	A	32
28	32	32	32	38	B	26	59	60	88	94	63	67	81	101	120	116	106	114	111	29	51	34	A	A
29	A	37	B	32	36	30	69	65	80	87	74	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	14	12	15	10	12	13	14	15	14	15	15	15	15	15	14	14	13	14	13	10	8	6	10
MED	40	38	38	35	34	31	34	56	67	72	64	64	78	88	91	91	87	91	80	63	50	38	40	40
U Q	42	42	41	40	36	32	38	65	71	77	74	80	96	101	110	106	101	104	96	73	51	44	44	43
L Q	36	34	34	32	31	29	31	54	60	64	60	60	68	72	72	78	71	73	75	55	48	34	36	37

HOURLY VALUES OF fEs AT Okinawa

SEP.2017

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

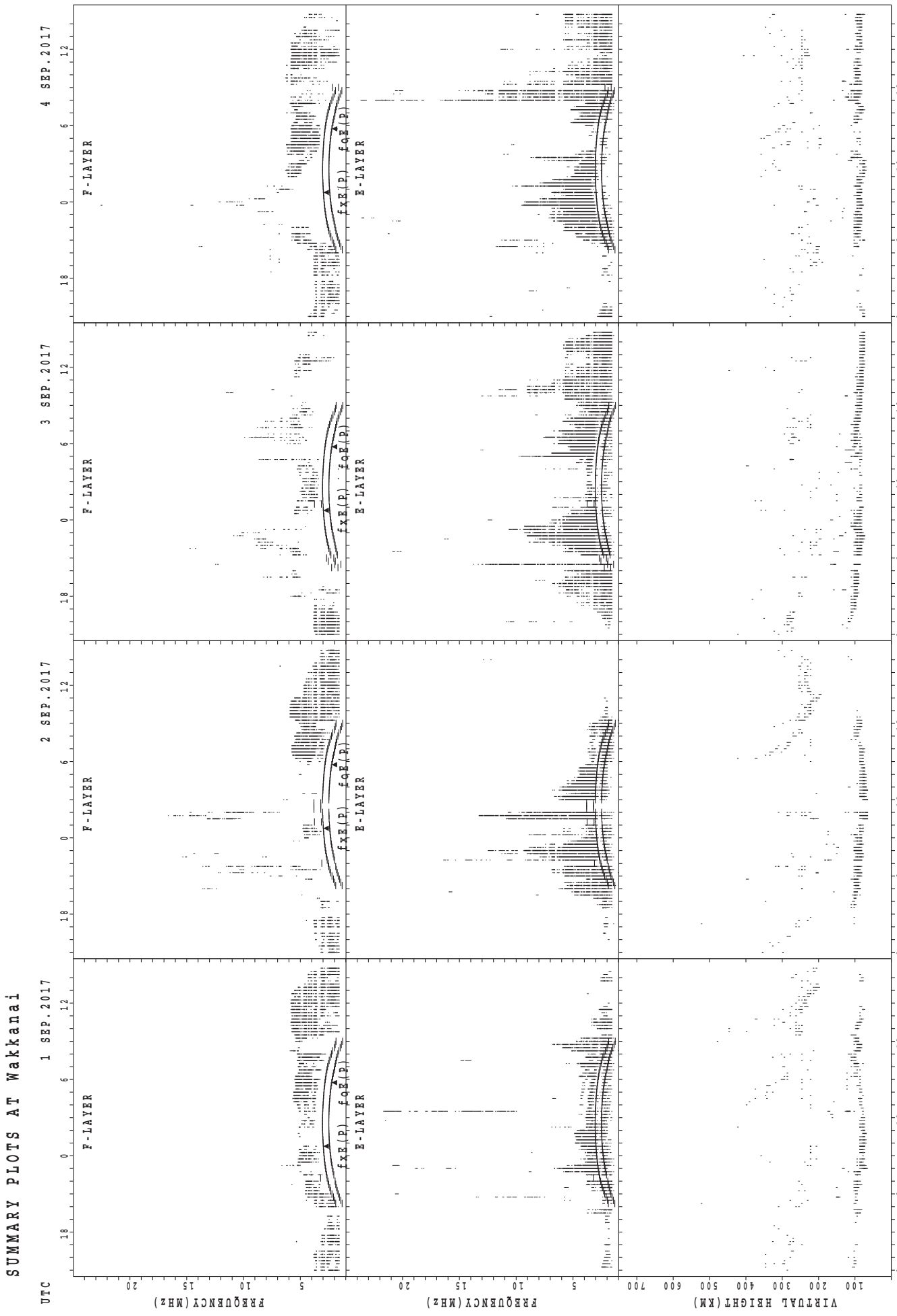
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	150	G	G	25	49	54	93	39	45	49	46	41	37	43	43	50	49	48	48	49	54
2	39	28	27	124	G	G	G	33	39	40	46	47	49	50	43	46	31	33	40	36	26	36	28	54
3	59	56	G	39	58	31	36	41	46	49	56	49	52	48	45	49	44	49	45	46	G	32	29	24
4	24	33	30	25	G	G	G	34	56	76	59	58	54	50	46	52	96	115	53	50	34	38	34	G
5	26	32	G	G	G	99	G	38	41	46	48	56	43	G	G	38	48	58	115	40	40	70	57	31
6	28	25	G	G	G	G	G	32	38	36	43	45	55	62	55	82	53	62	100	42	55	33	27	33
7	G	G	28	25	G	G	27	36	59	52	48	53	45	49	G	56	65	60	110	149	164	112	67	54
8	24	G	G	G	G	G	25	36	36	55	43	47	49	48	53	34	46	70	81	48	105	114	G	114
9	34	39	G	G	G	26	34	72	57	165	49	44	56	55	48	45	49	N	92	69	127	150	59	127
10	36	94	46	33	28	39	G	B	B	B	G	52	G	36	40	39	B	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13	B	B	B	B	B	B	B	B	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	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	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	53	55	34	26	34	G
24	G	G	G	G	B	G	B	40	36	G	47	G	G	38	36	36	33	37	30	27	22	24	B	G
25	G	B	G	G	B	B	G	32	36	43	44	52	G	G	47	38	45	36	27	29	G	24	24	G
26	G	G	G	G	G	G	G	35	38	36	33	40	50	49	49	39	48	32	39	50	26	33	28	33
27	27	26	G	26	26	27	G	32	36	37	G	G	G	42	44	35	49	43	39	39	48	39	28	G
28	24	24	G	G	B	G	G	32	36	44	46	52	48	62	47	50	52	36	37	29	G	G	35	37
29	25	G	B	G	G	G	G	25	39	39	51	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	15	15	16	13	15	15	16	16	15	16	15	15	15	15	15	14	13	15	15	15	15	14	15
MED	24	25	G	G	G	G	G	34	38	44	46	47	49	48	45	39	48	43	50	46	34	36	32	33
U Q	31	33	27	29	13	27	25	39	50	55	48	52	52	50	48	50	52	61	92	50	55	70	49	54
L Q	G	G	G	G	G	G	G	32	36	37	41	44	G	38	40	37	44	36	39	36	22	26	28	G

HOURLY VALUES OF fmin AT Okinawa

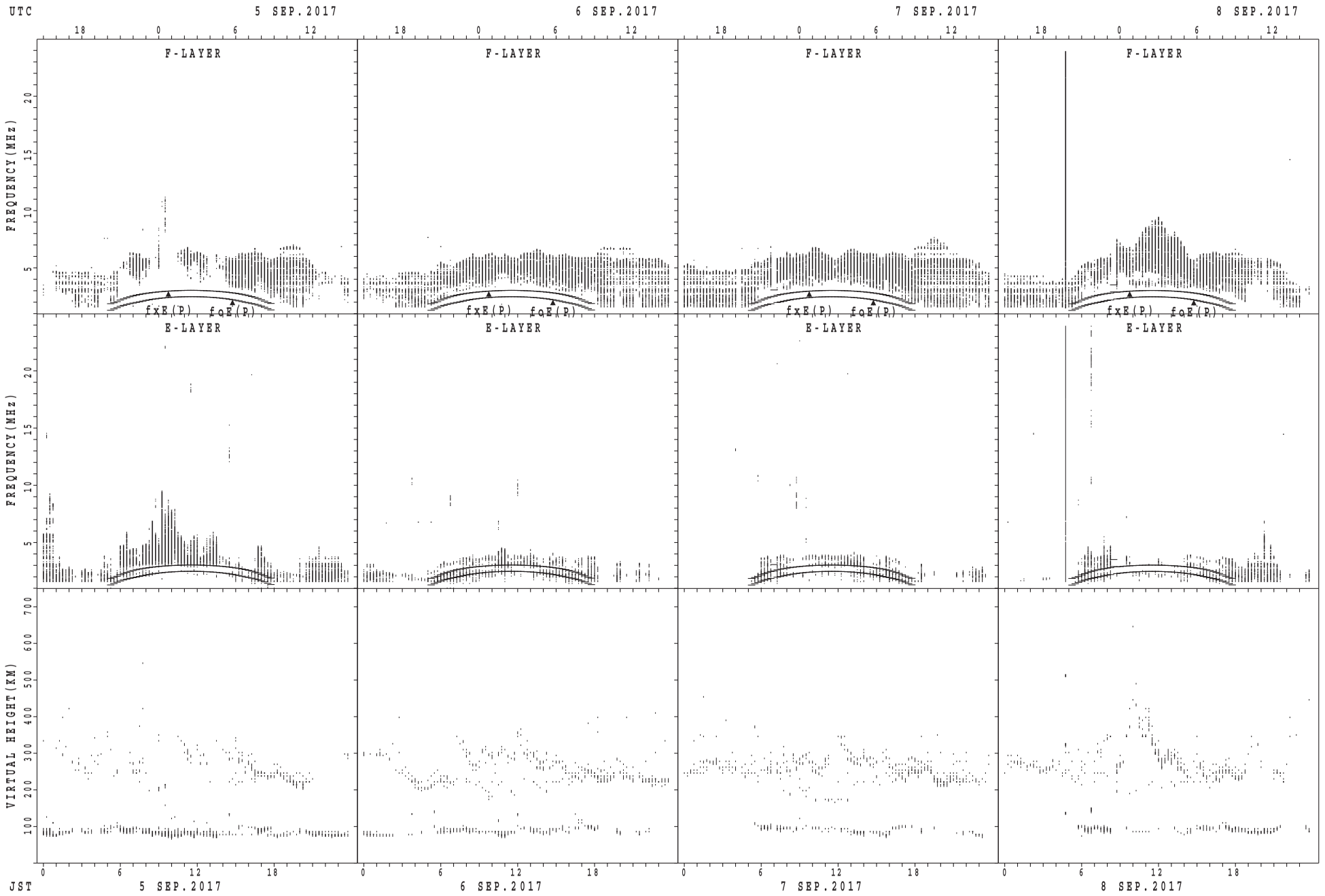
SEP. 2017

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

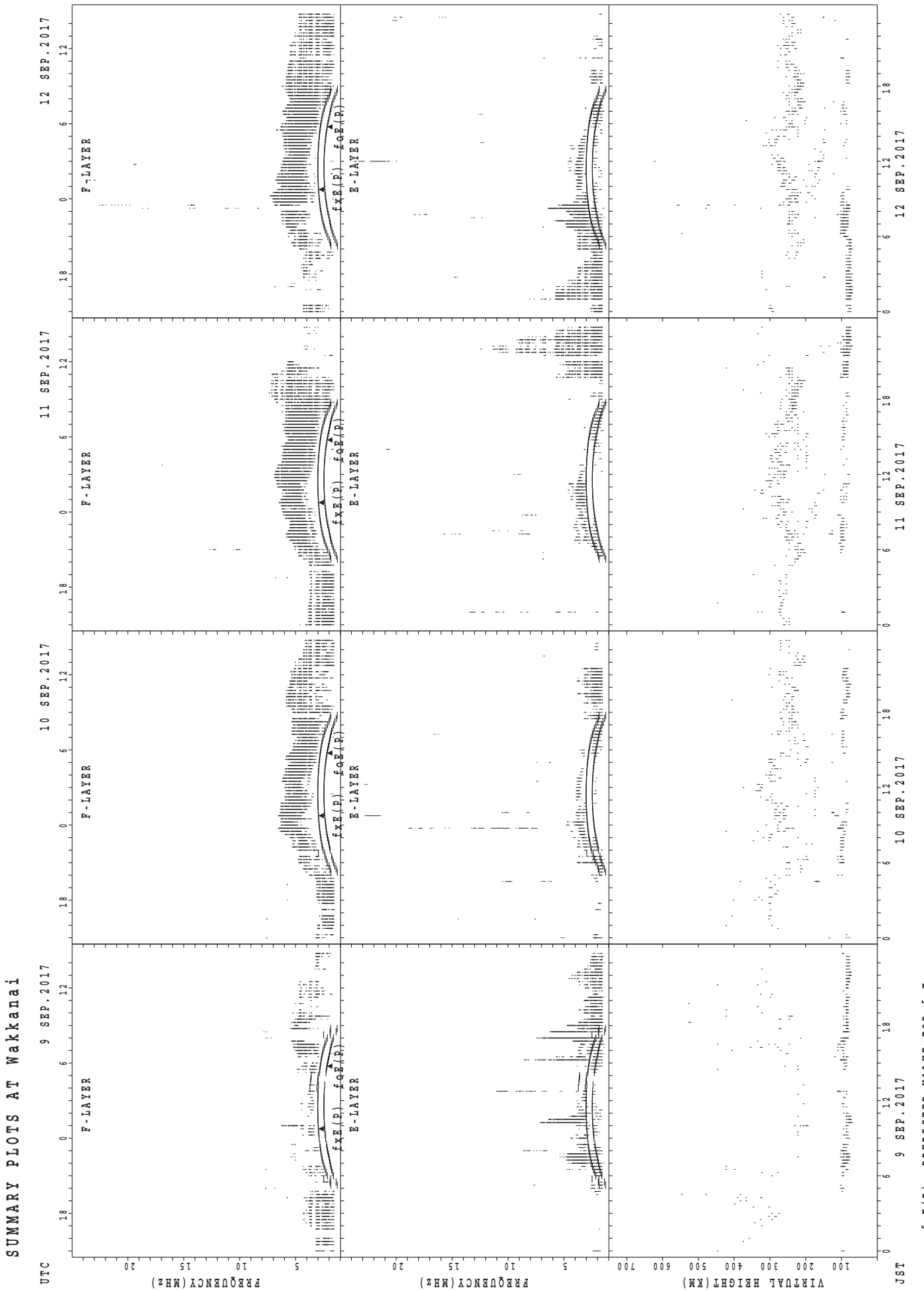
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	14	15	14	14	14	14	14	14	15	26	18	18	16	15	14	14	14	14	14	14	14	14
2	14	14	14	14	15	17	14	14	14	16	18	20	32	22	22	20	14	14	14	14	15	14	14	14
3	14	14	14	14	14	14	14	14	14	16	17	17	20	15	15	14	14	14	14	14	15	14	15	14
4	14	14	14	15	14	14	14	14	14	17	21	23	32	29	27	34	18	14	14	15	15	14	14	14
5	14	14	14	15	14	14	14	15	17	23	23	24	23	50	53	27	24	15	14	14	14	14	14	14
6	14	15	15	15	15	14	15	14	14	14	21	21	26	23	20	17	18	14	14	14	14	14	14	14
7	14	14	14	15	14	15	14	14	14	20	22	23	29	26	54	18	18	14	14	14	14	15	14	14
8	14	14	15	14	18	15	14	14	14	35	21	23	27	27	24	23	14	29	14	14	14	15	14	14
9	15	15	15	14	14	14	14	14	14	27	20	27	30	32	27	17	15	14	14	14	14	14	14	14
10	14	14	15	14	14	15	14	B	B	B	34	20	48	48	26	21	B	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	101	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13	B	B	B	B	B	B	B	B	111	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	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	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14	14	14	15	15	15
24	14	16	15	14	B	66	B	14	14	21	22	40	48	23	20	18	15	14	14	14	14	14	B	15
25	15	B	15	17	B	B	18	14	14	21	23	24	43	43	36	20	14	14	14	14	16	14	14	15
26	15	16	15	18	14	15	14	16	14	18	20	44	42	42	24	21	17	15	14	14	14	14	14	14
27	15	14	15	15	14	14	15	14	14	21	42	38	42	18	28	28	15	18	14	14	16	14	14	15
28	14	15	16	15	B	15	14	14	14	17	20	26	29	29	28	21	15	14	14	14	15	17	14	14
29	14	18	B	15	15	18	15	14	14	17	17	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	15	15	16	13	15	15	16	16	15	16	15	15	15	15	15	14	14	15	15	15	15	14	15
MED	14	14	15	15	14	15	14	14	14	18	21	24	30	27	26	20	15	14	14	14	14	14	14	14
U Q	15	15	15	15	15	15	15	14	14	21	22	27	42	42	28	23	18	15	14	14	15	15	14	15
L Q	14	14	14	14	14	14	14	14	14	16	19	21	26	22	20	17	14	14	14	14	14	14	14	14

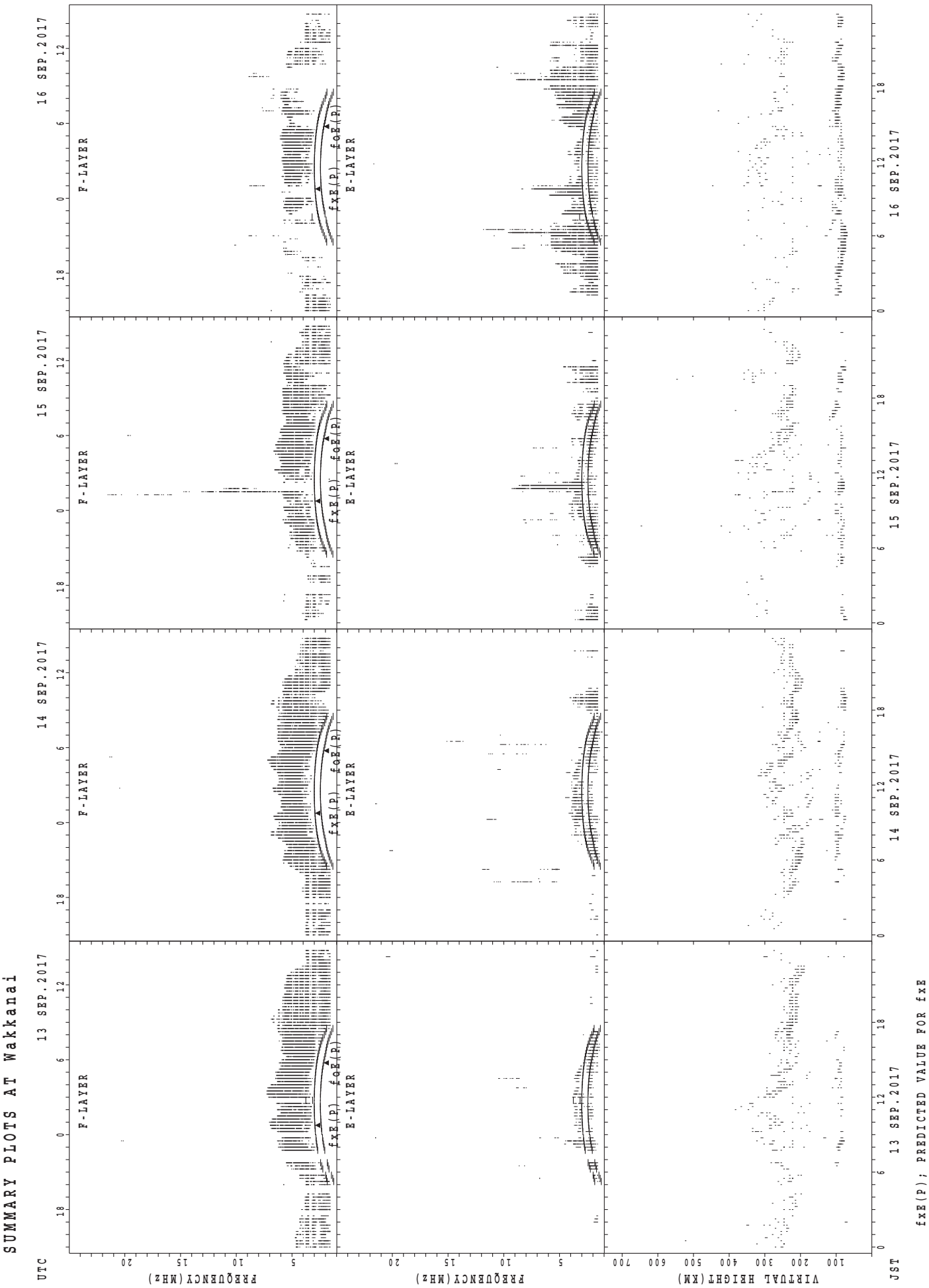

SUMMARY PLOTS AT Wakkanai
UTC
JST
1 SEP.2017
2 SEP.2017
3 SEP.2017
4 SEP.2017
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

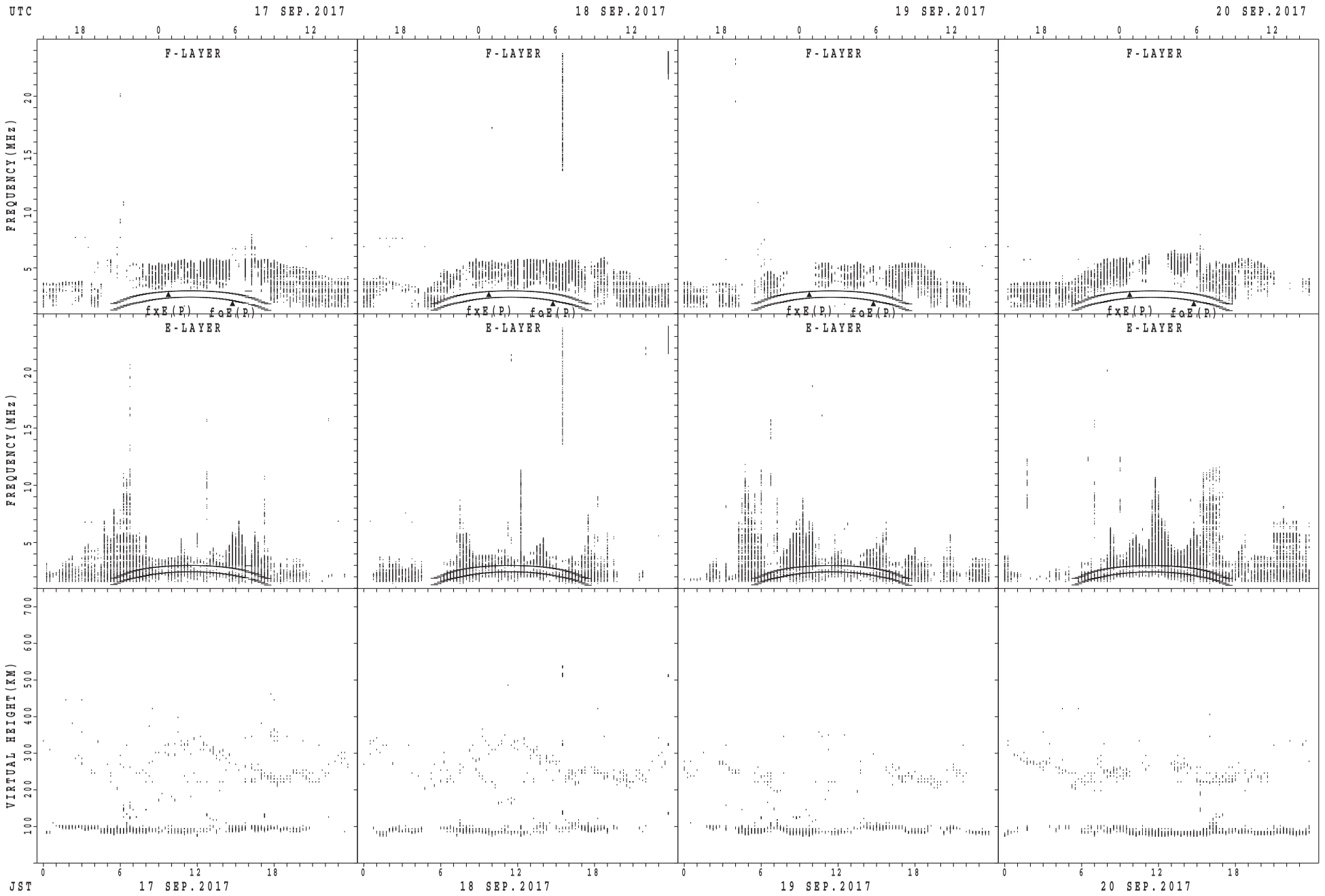


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
9 SEP.2017
10 SEP.2017
11 SEP.2017
12 SEP.2017
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

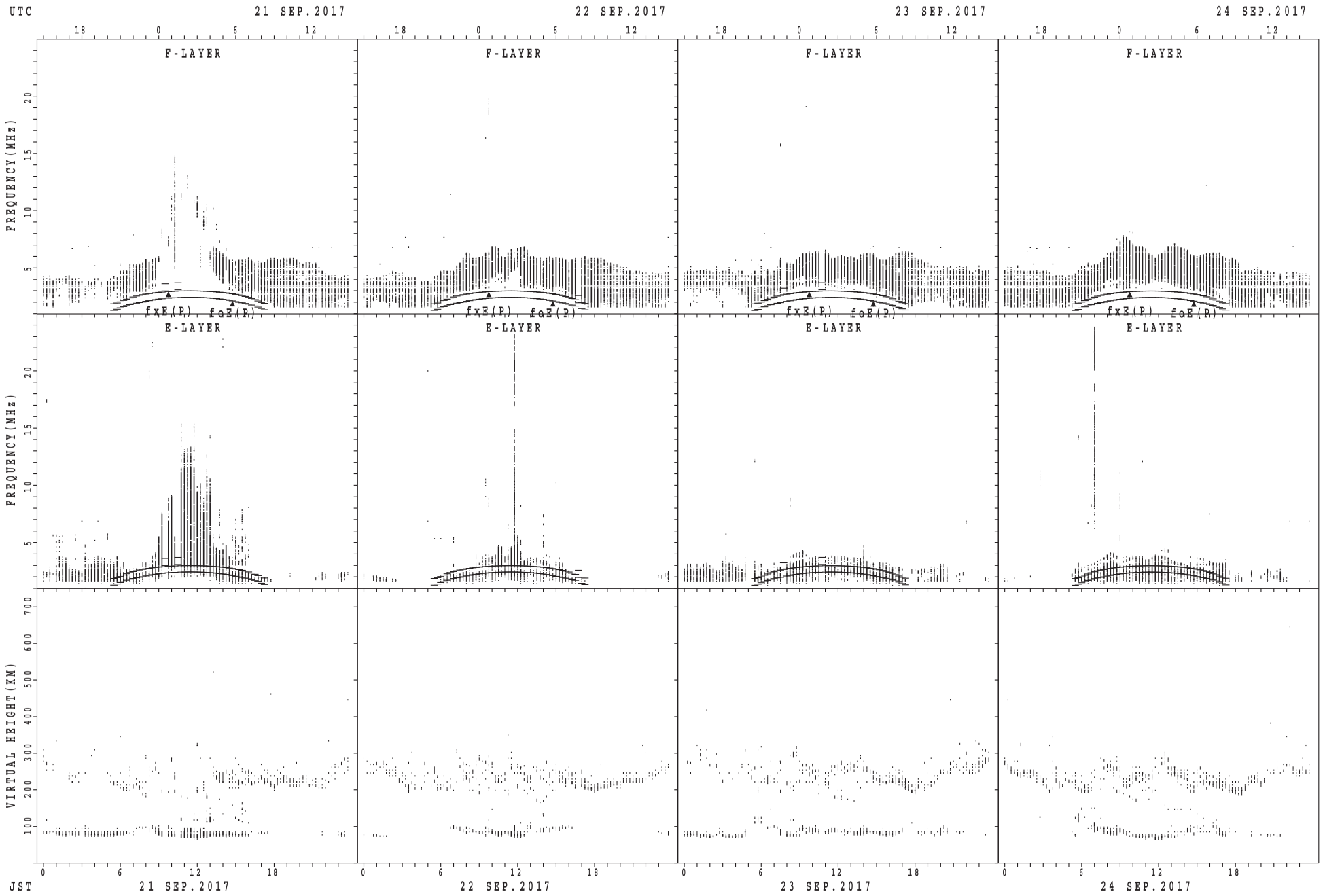

SUMMARY PLOTS AT Wakkanai
UTC
JST
13 SEP.2017
14 SEP.2017
15 SEP.2017
16 SEP.2017
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



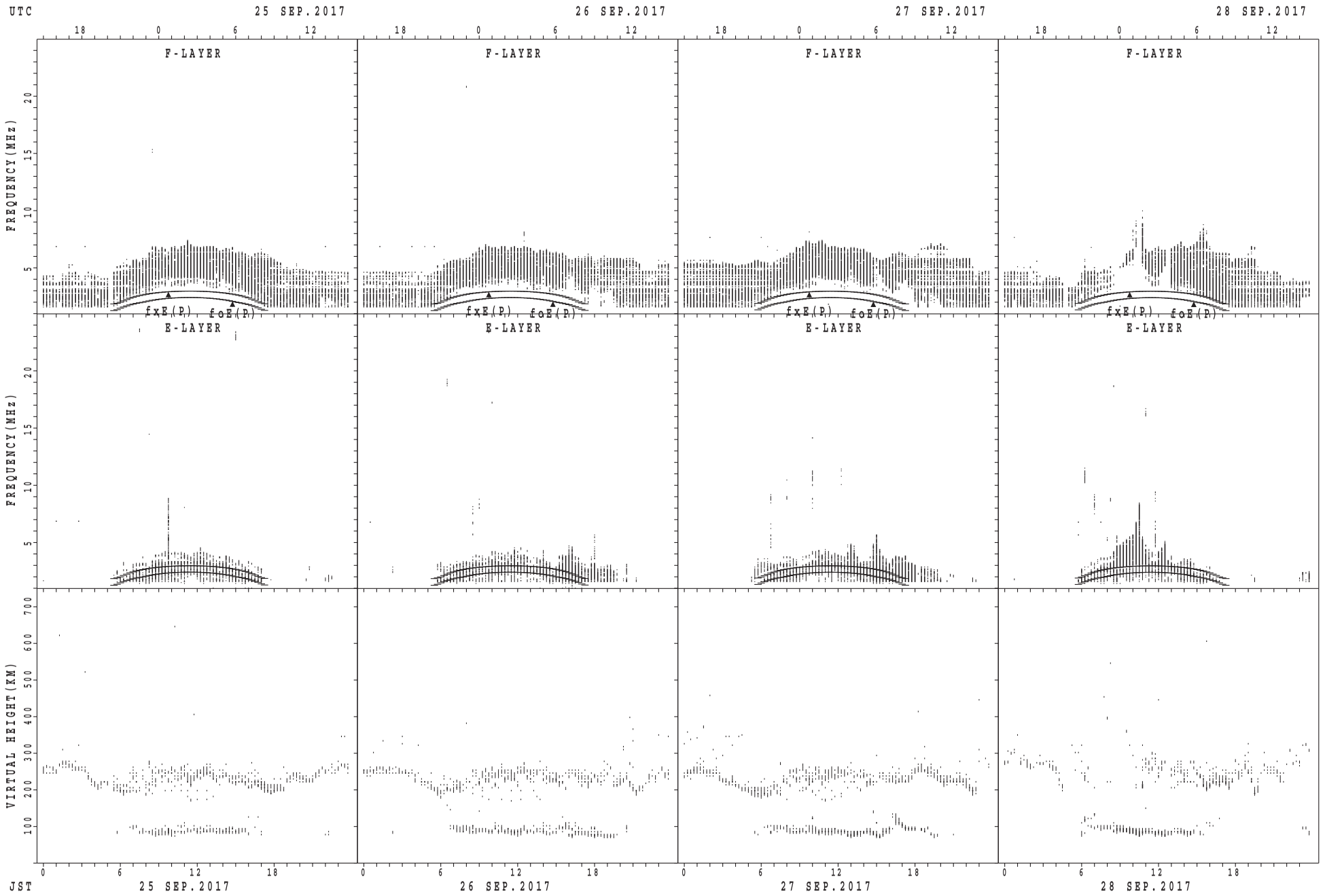
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



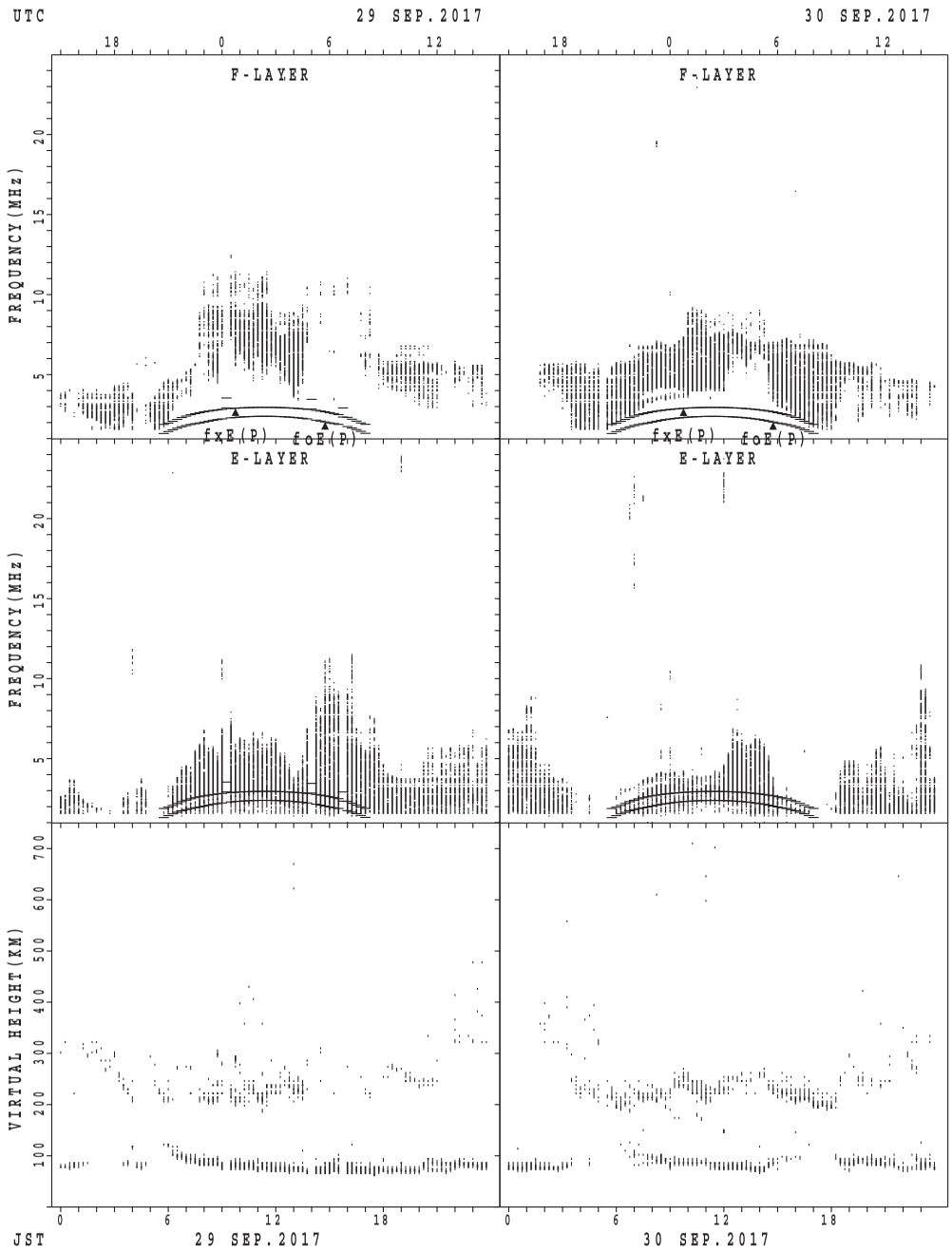
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



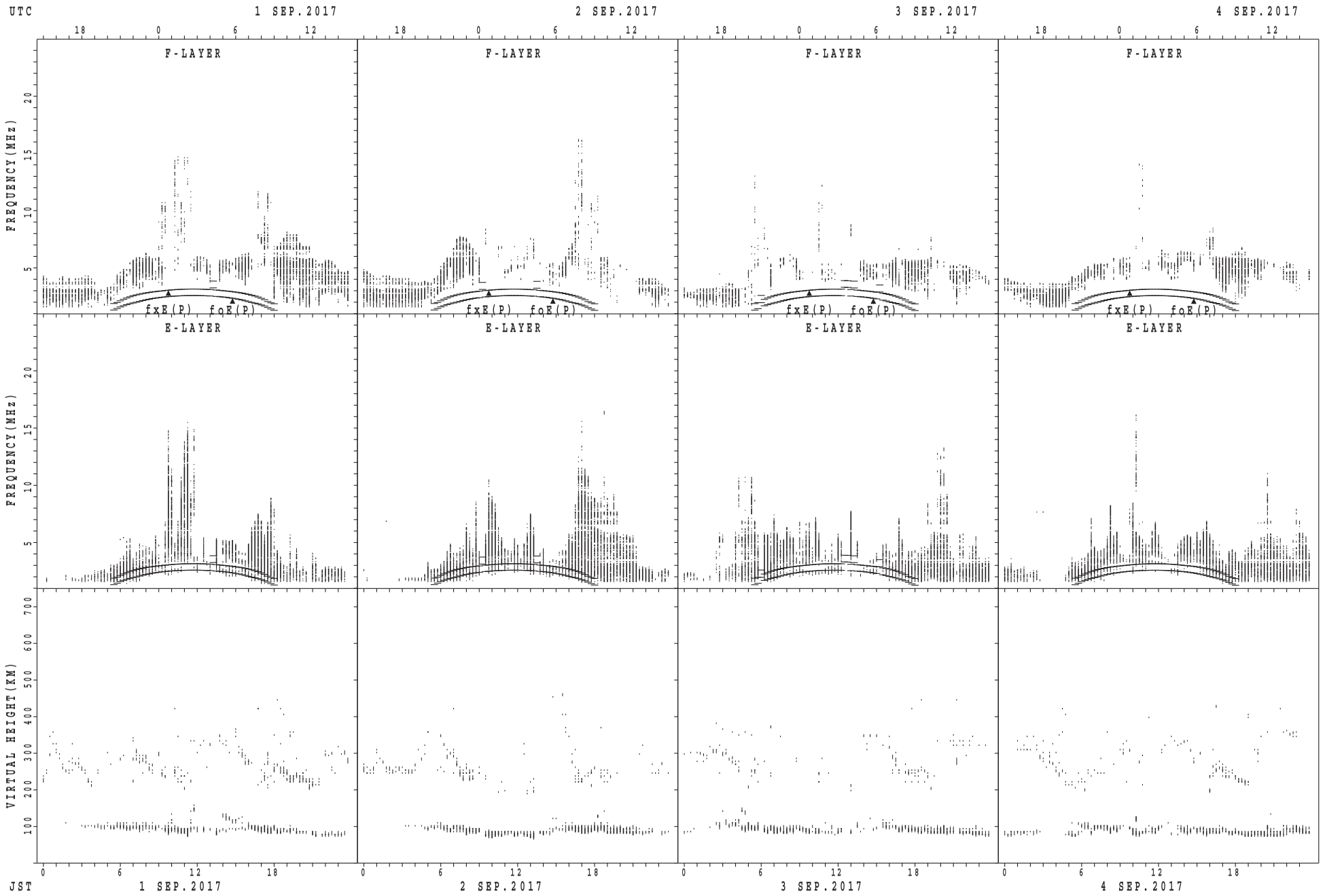
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



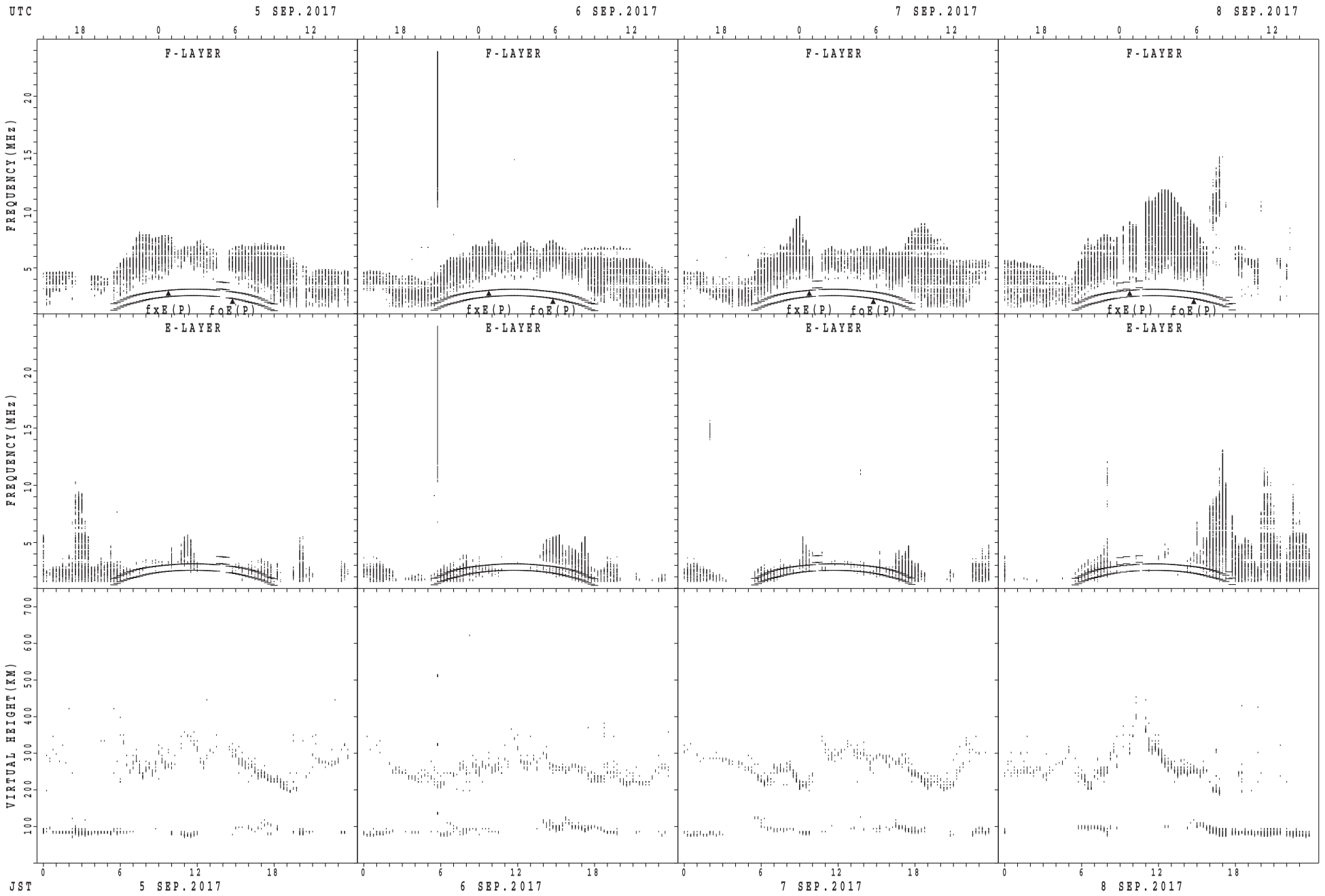
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



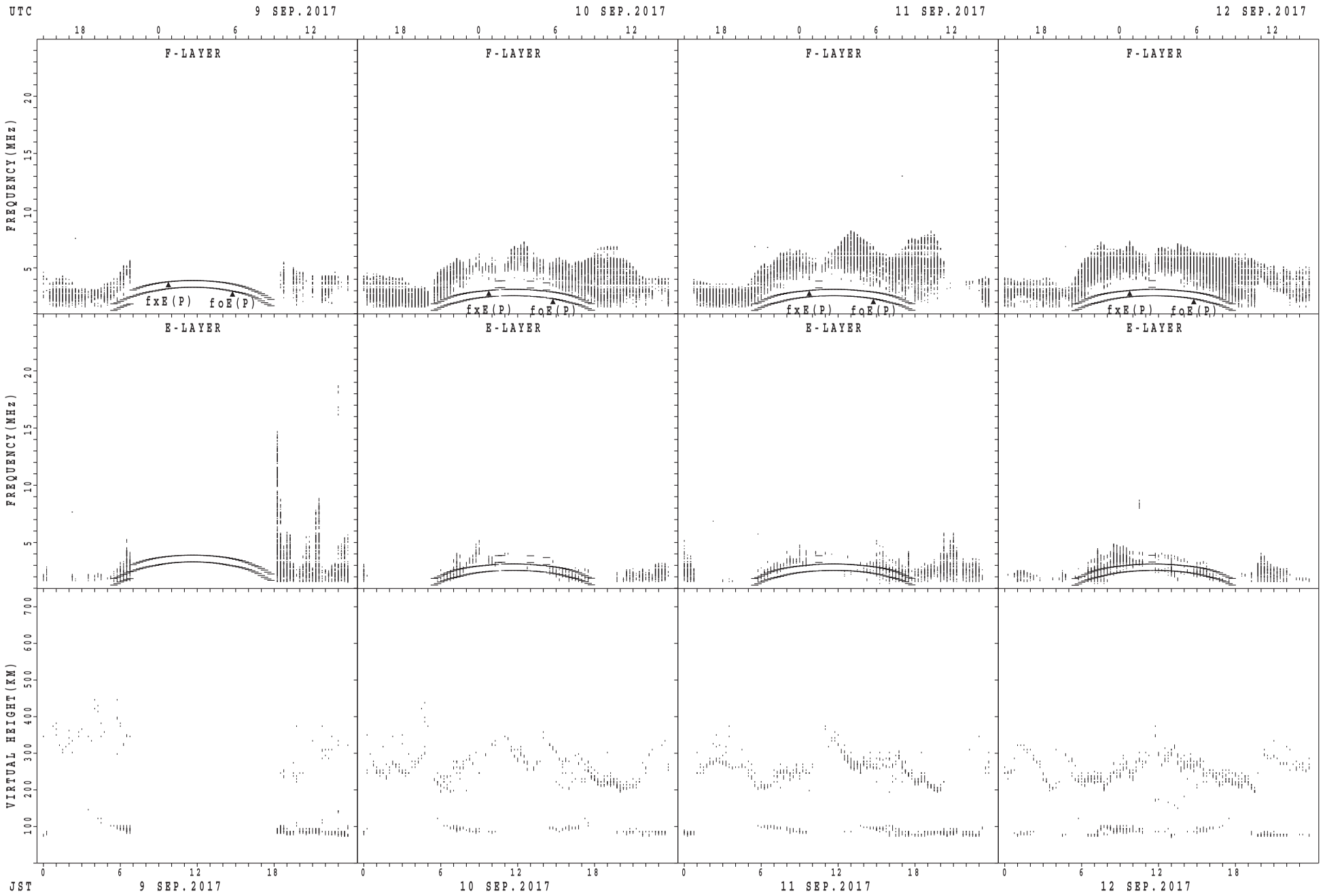
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



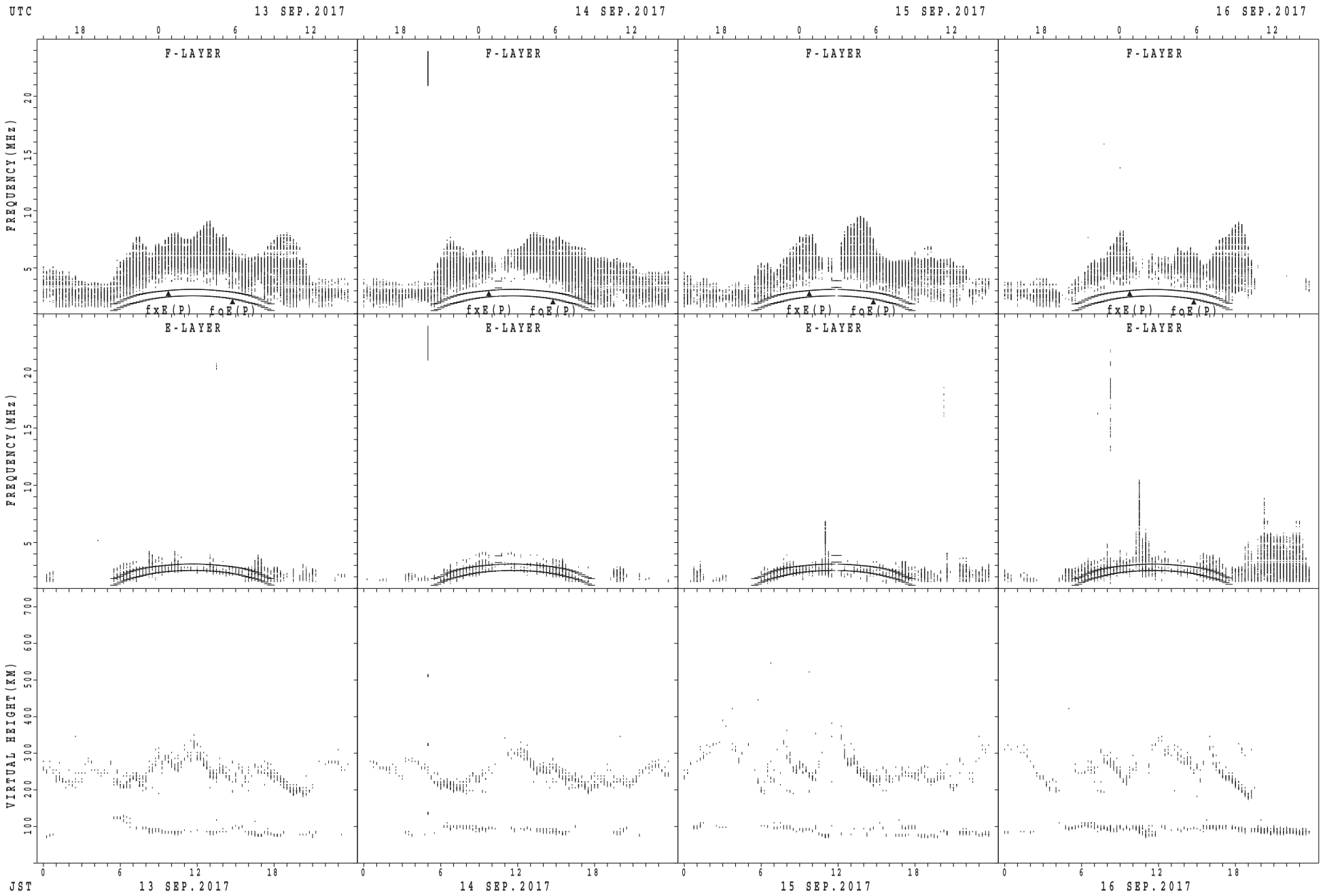
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



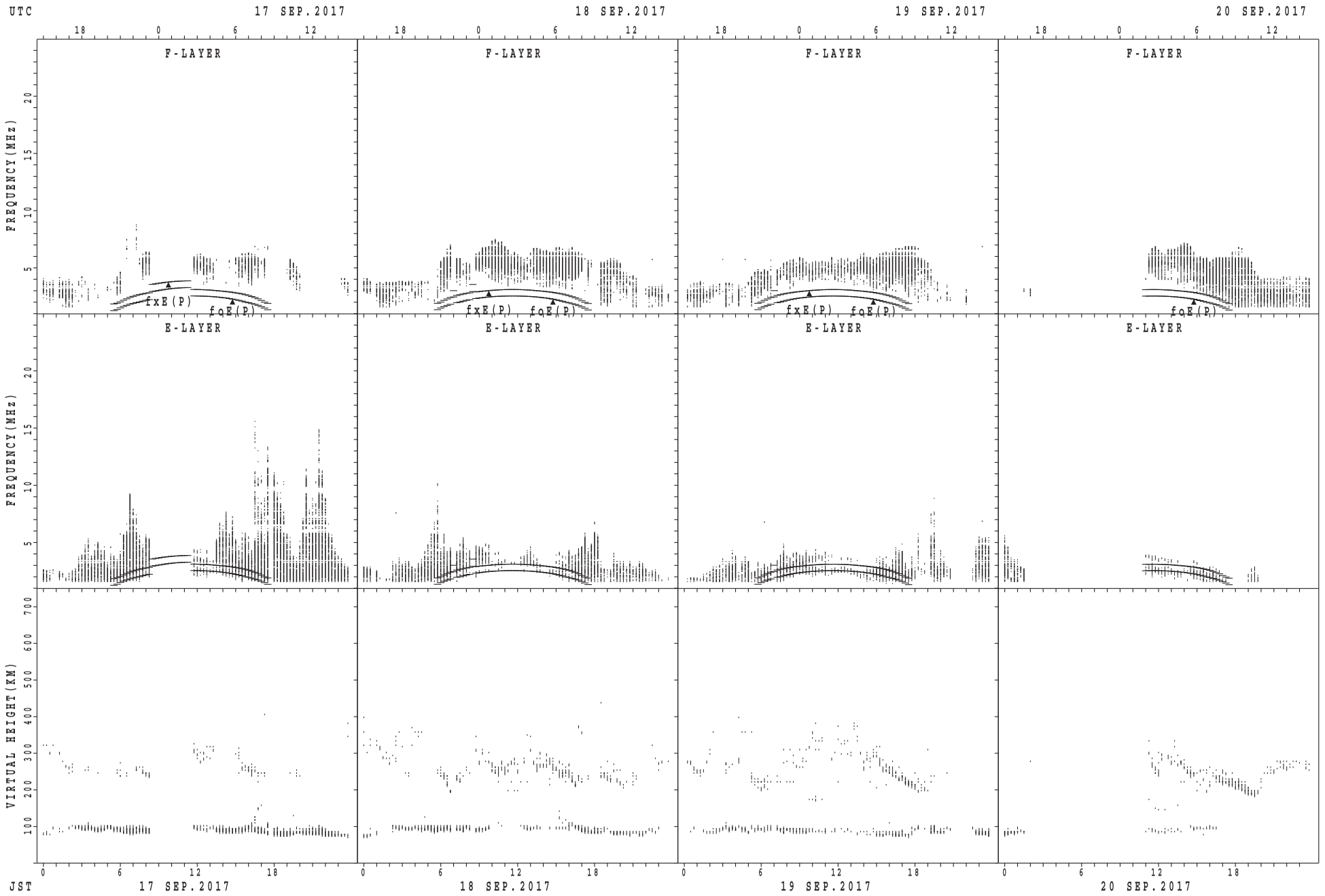
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

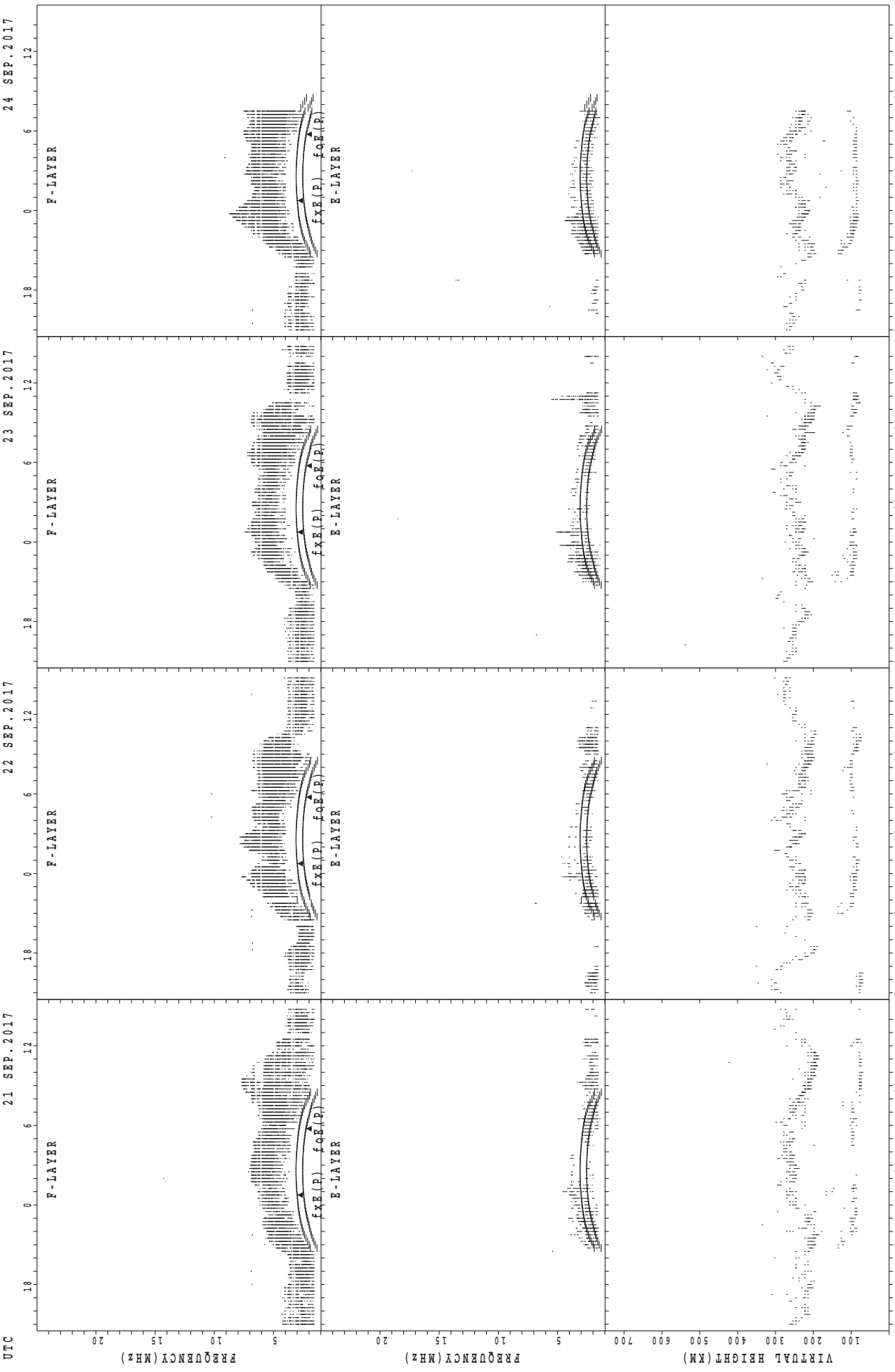


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

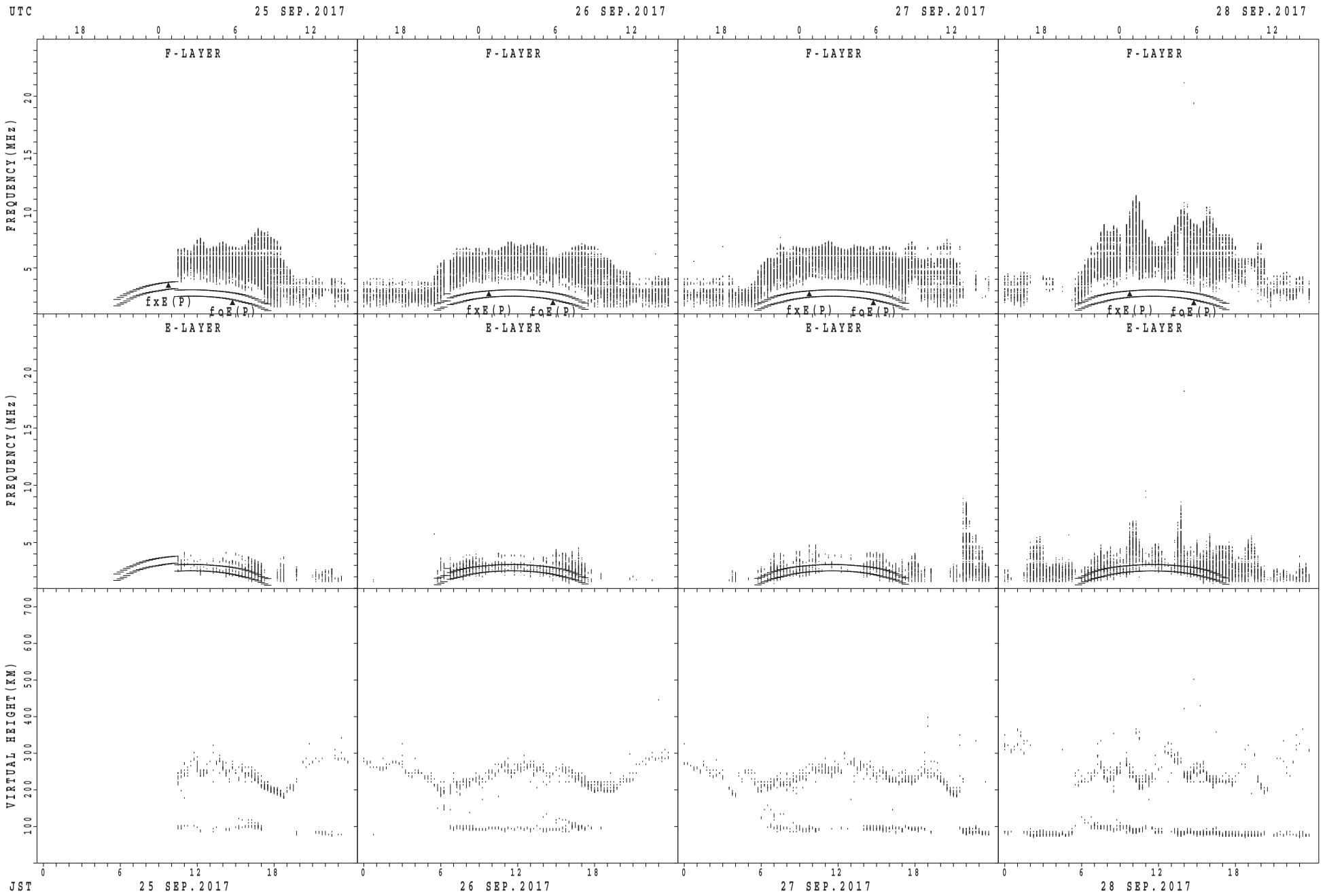
SUMMARY PLOTS AT Kokubunji



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

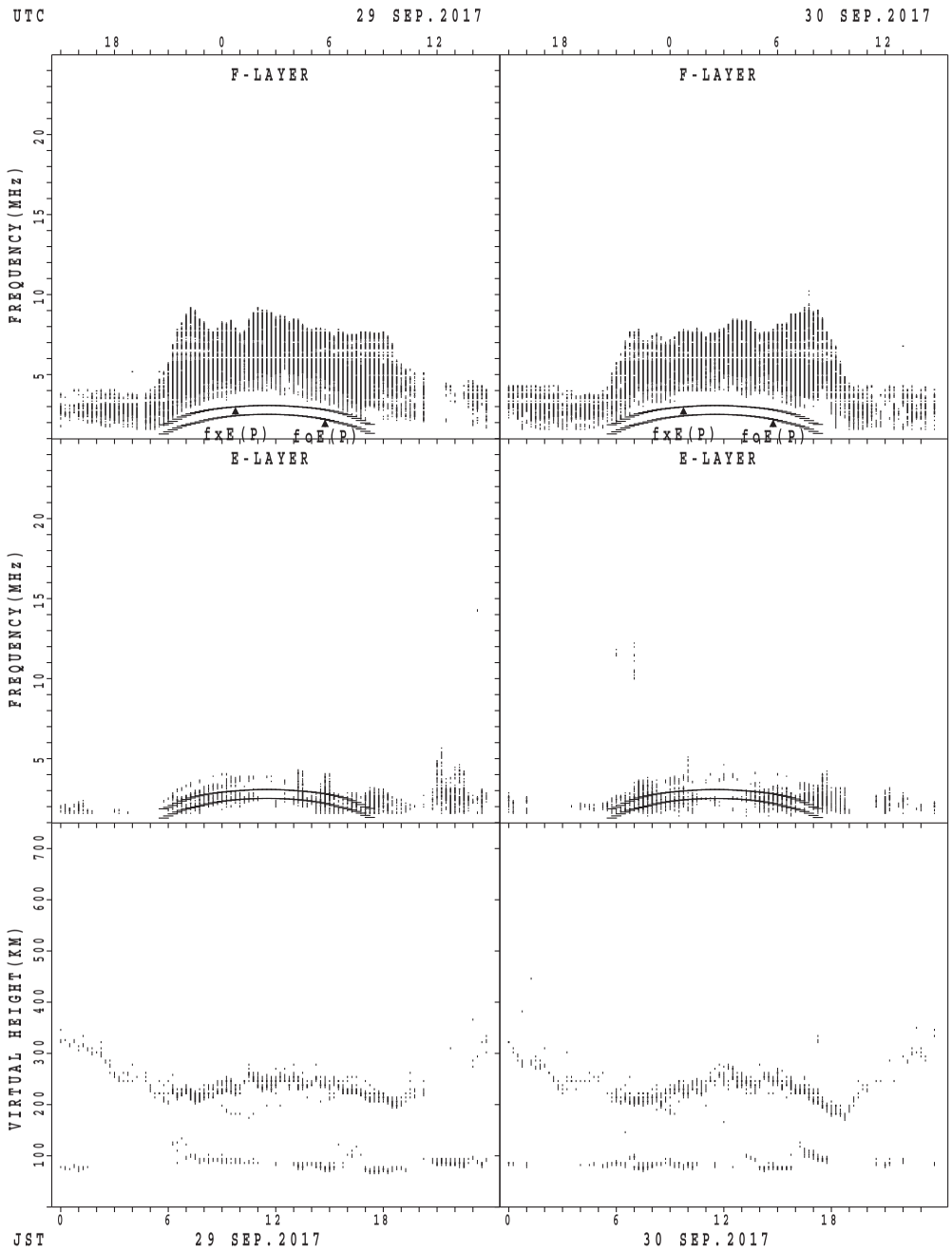

SUMMARY PLOTS AT Kokubunji
UTC
JST
21 SEP.2017
22 SEP.2017
23 SEP.2017
24 SEP.2017
F-LAYER
E-LAYER
fxE(P) foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

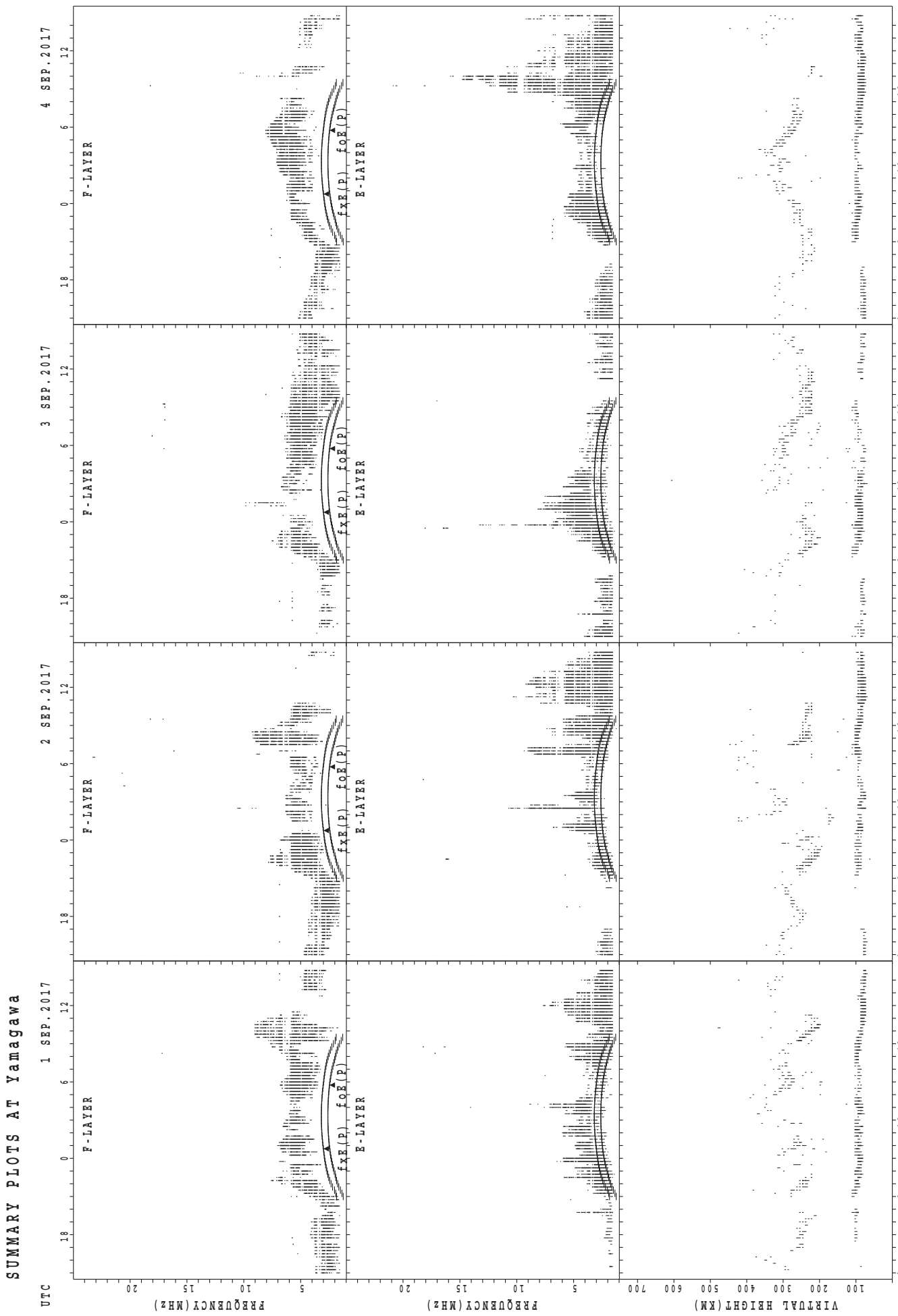


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

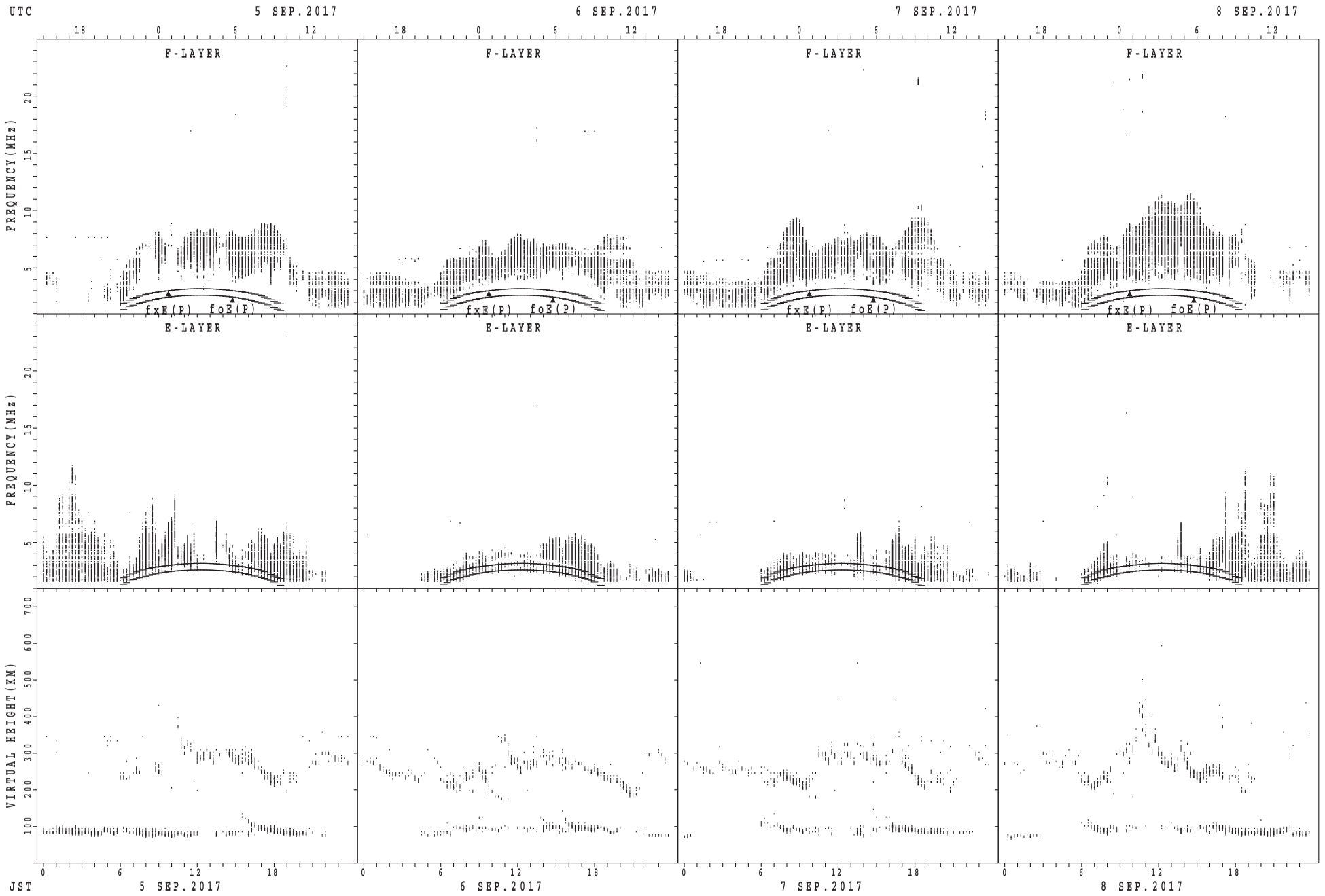
SUMMARY PLOTS AT Kokubunji



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

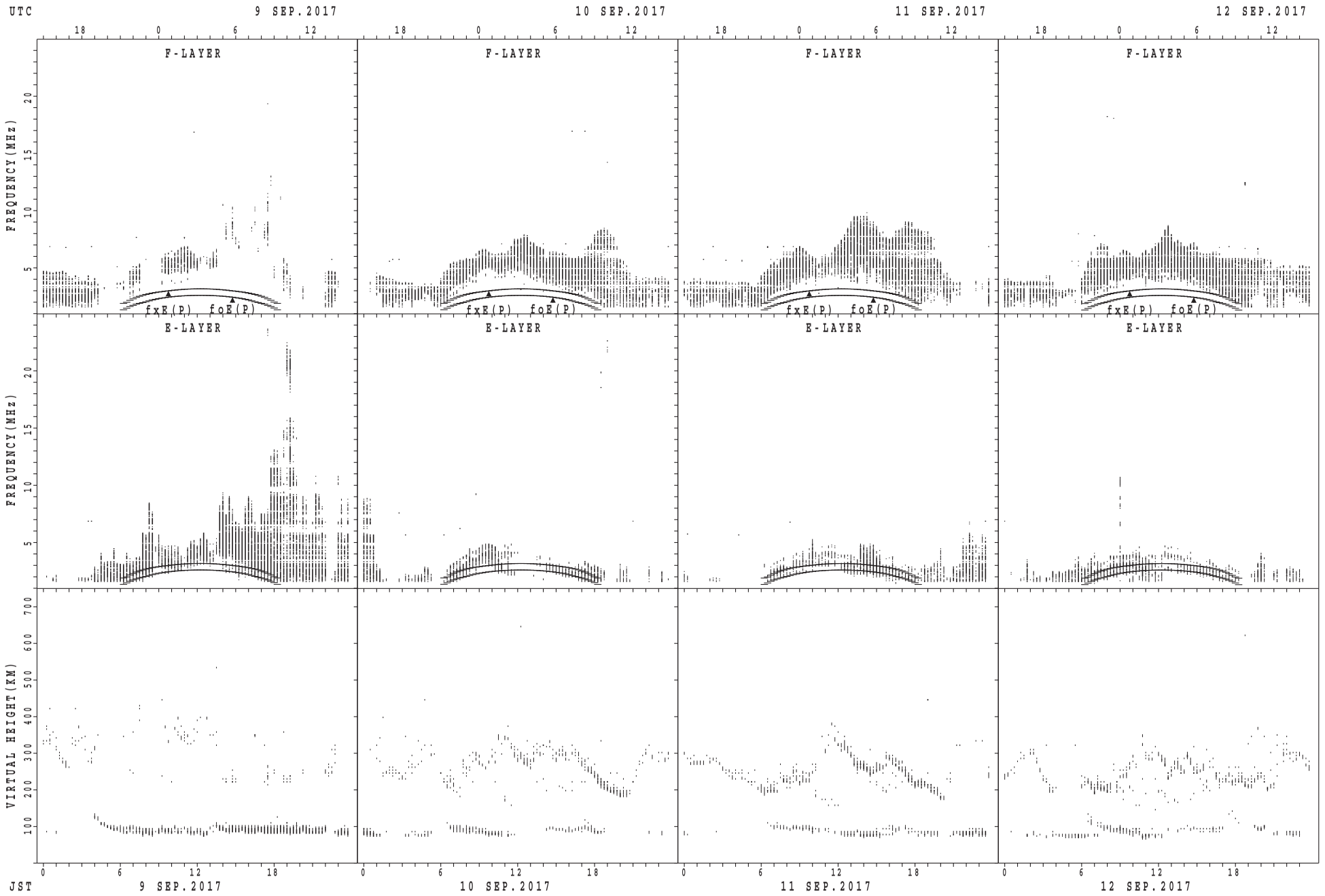

SUMMARY PLOTS AT Yamagawa
UTC
JST
1 SEP.2017
2 SEP.2017
3 SEP.2017
4 SEP.2017
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



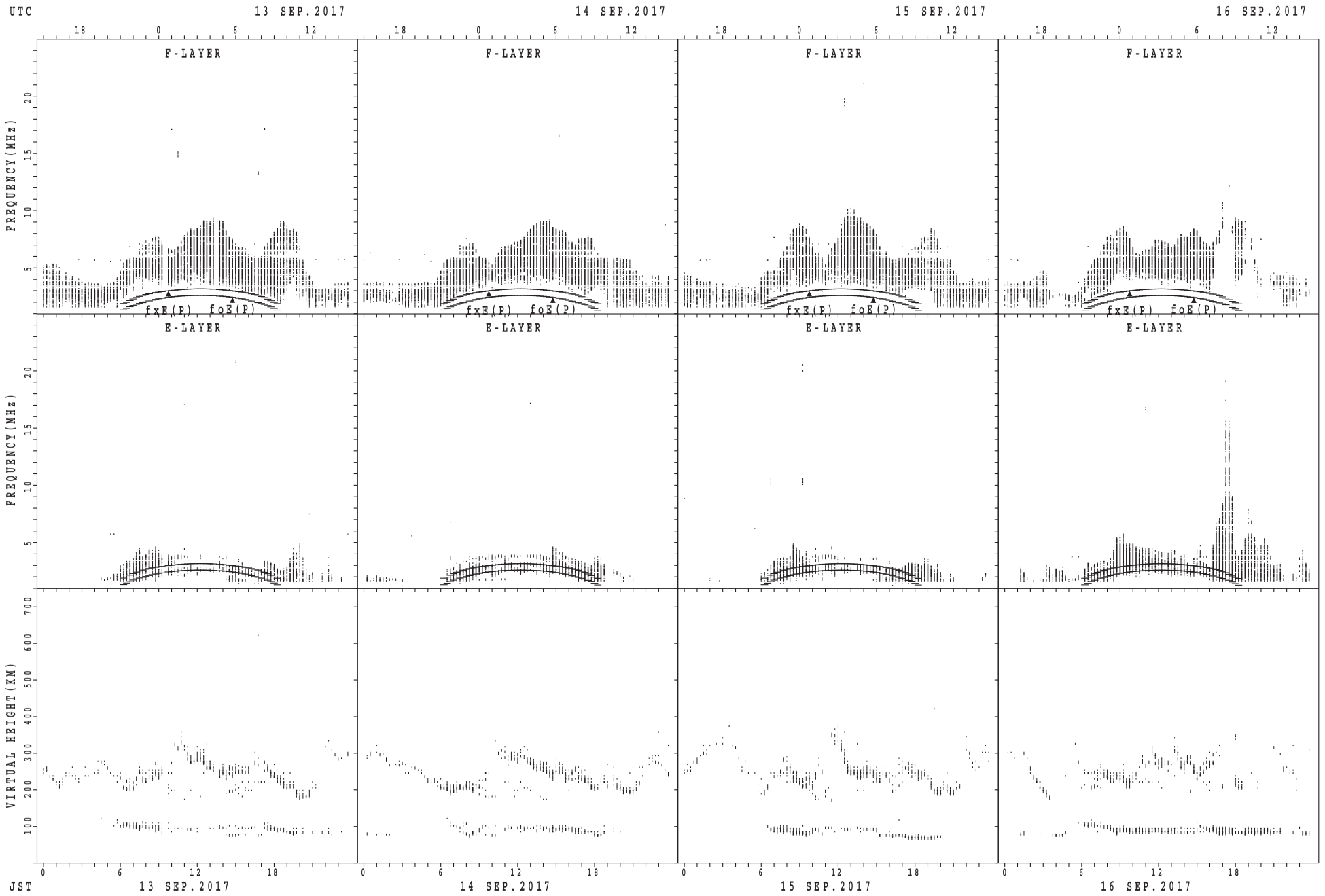
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



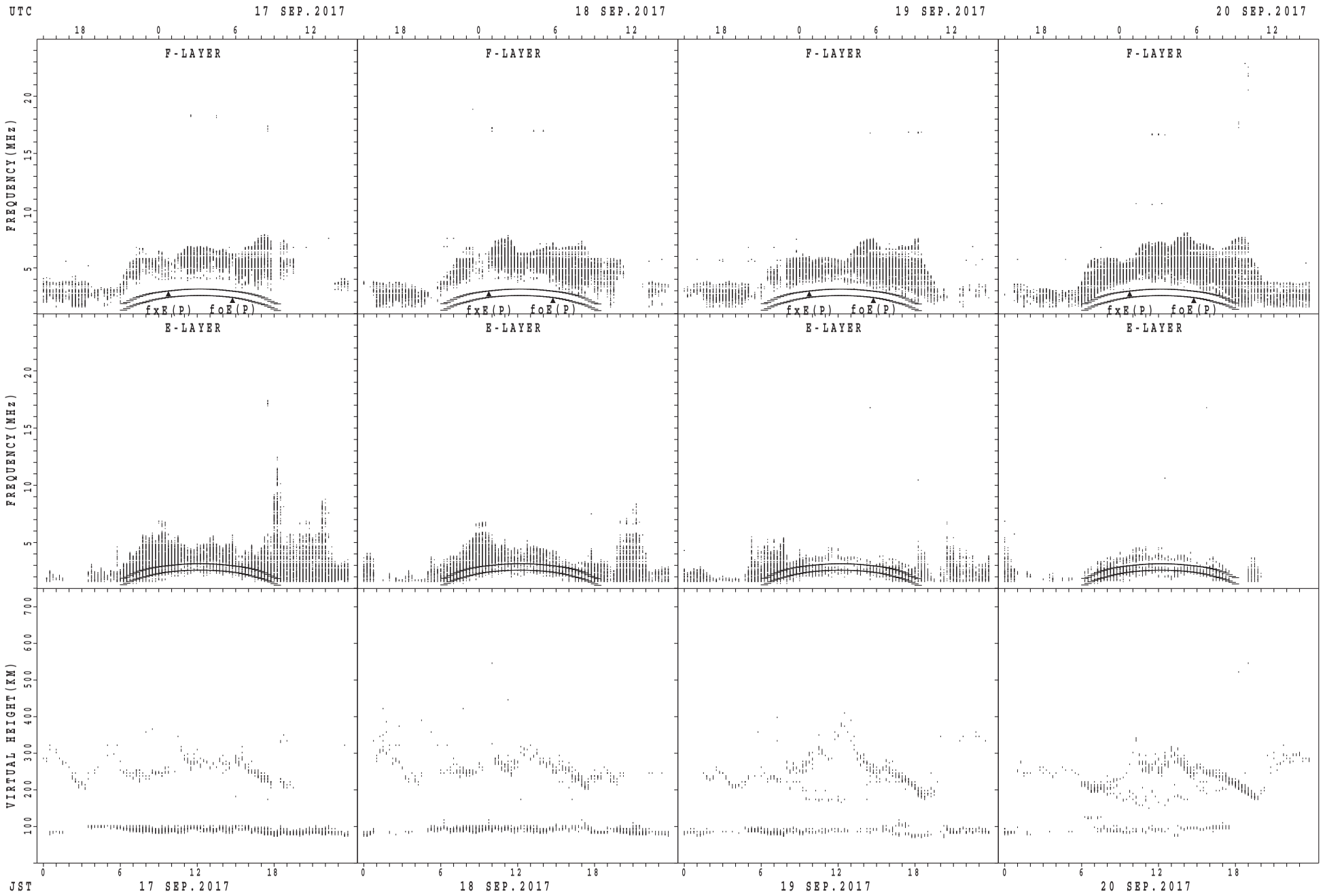
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



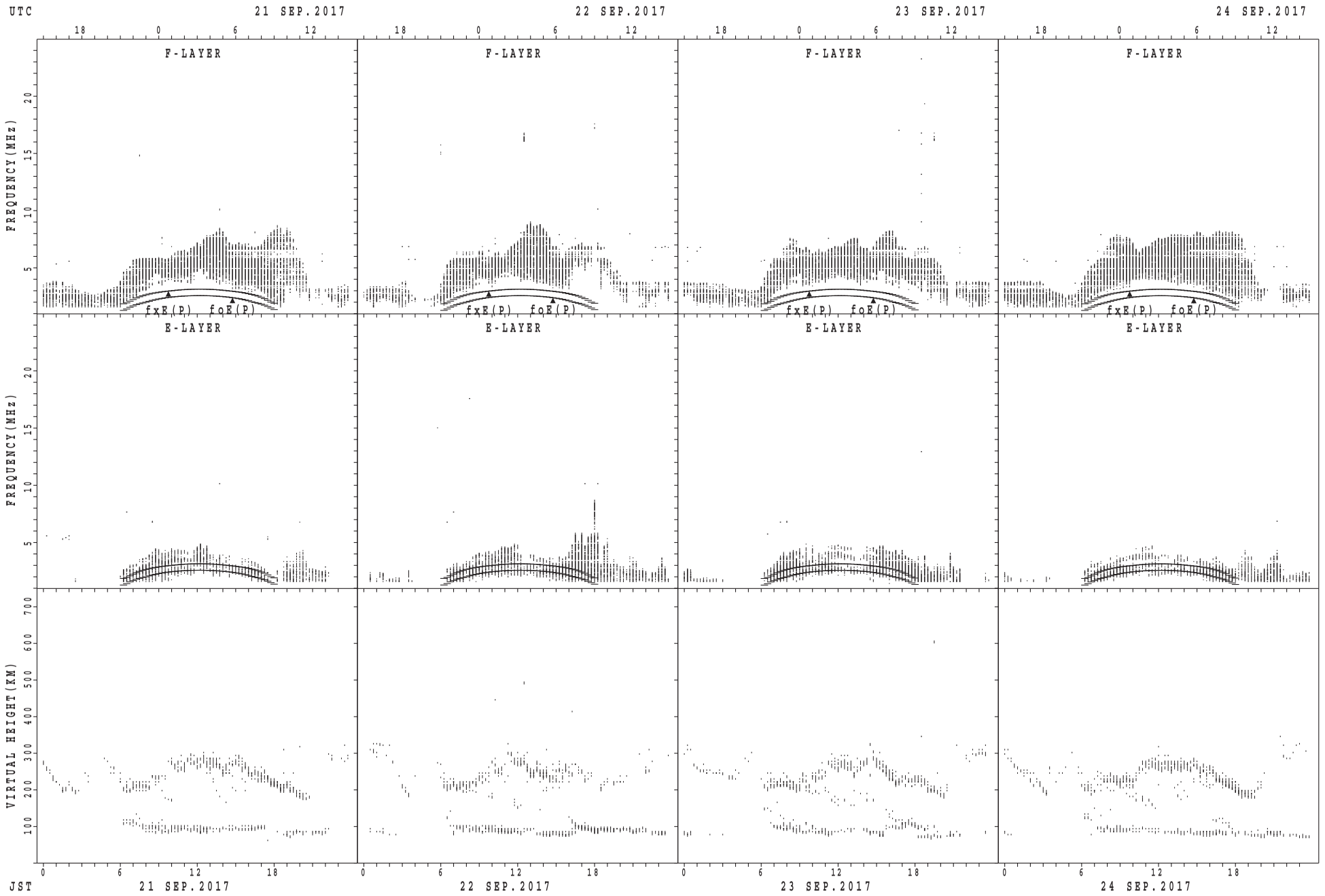
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



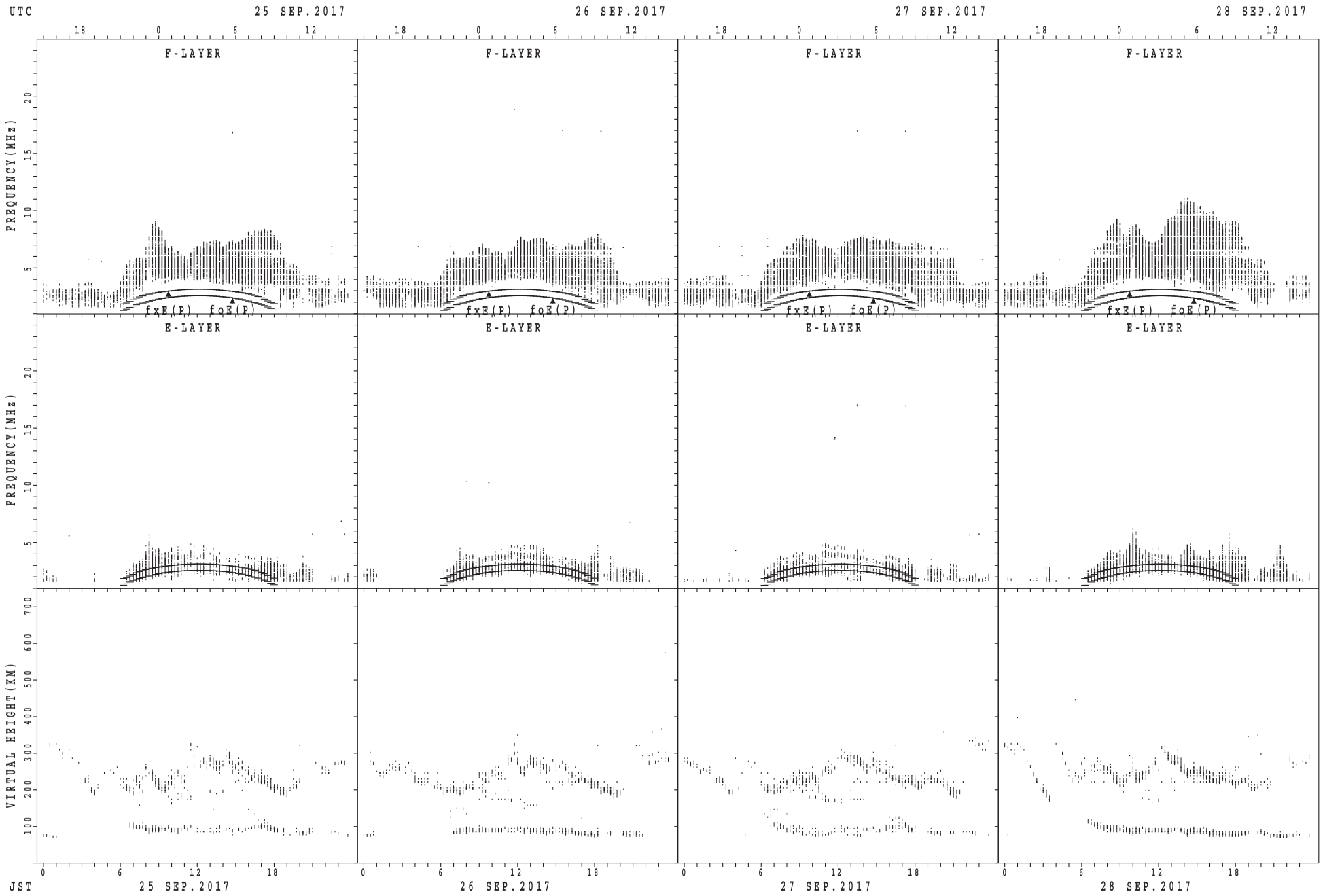
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

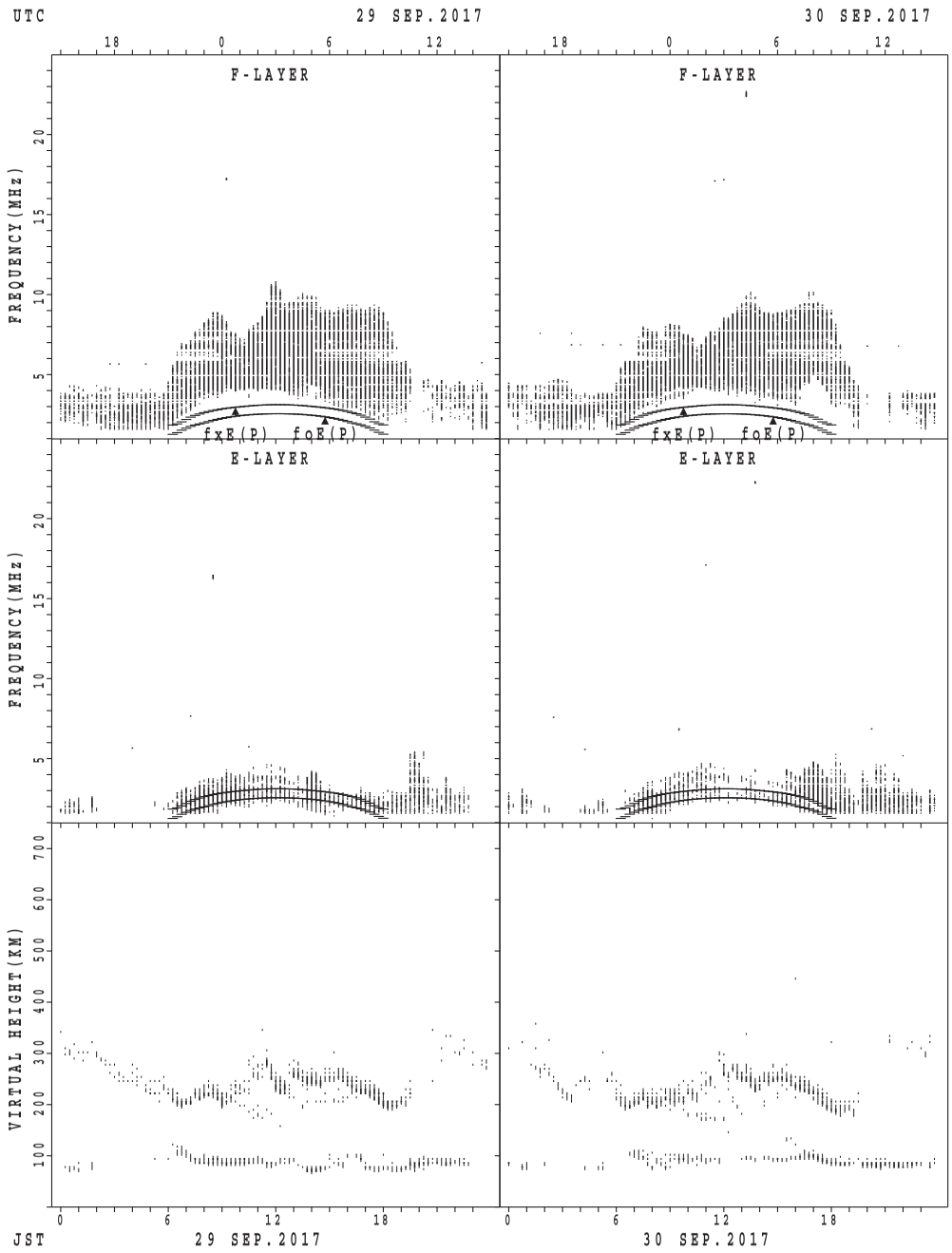


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

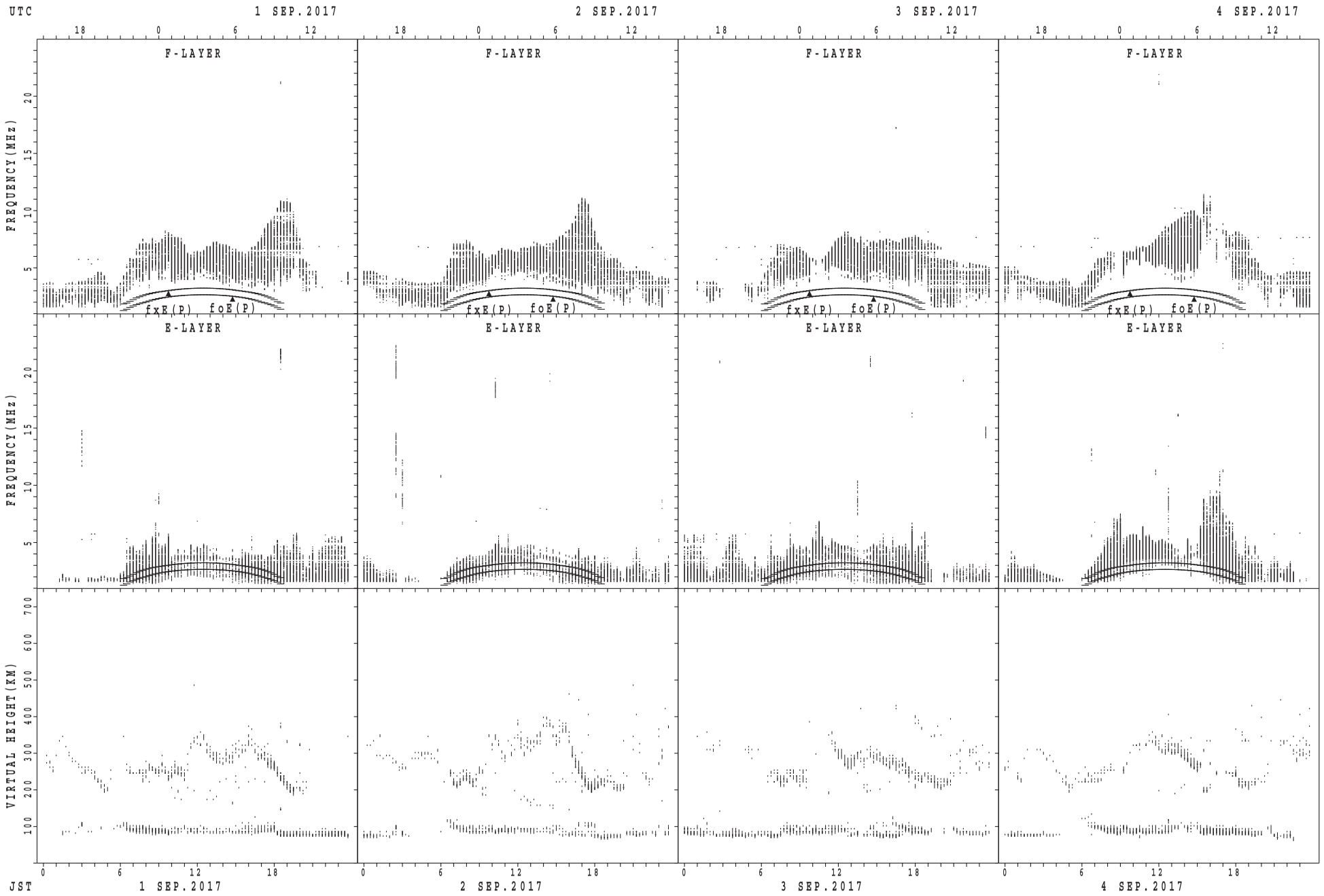
SUMMARY PLOTS AT Yamagawa



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

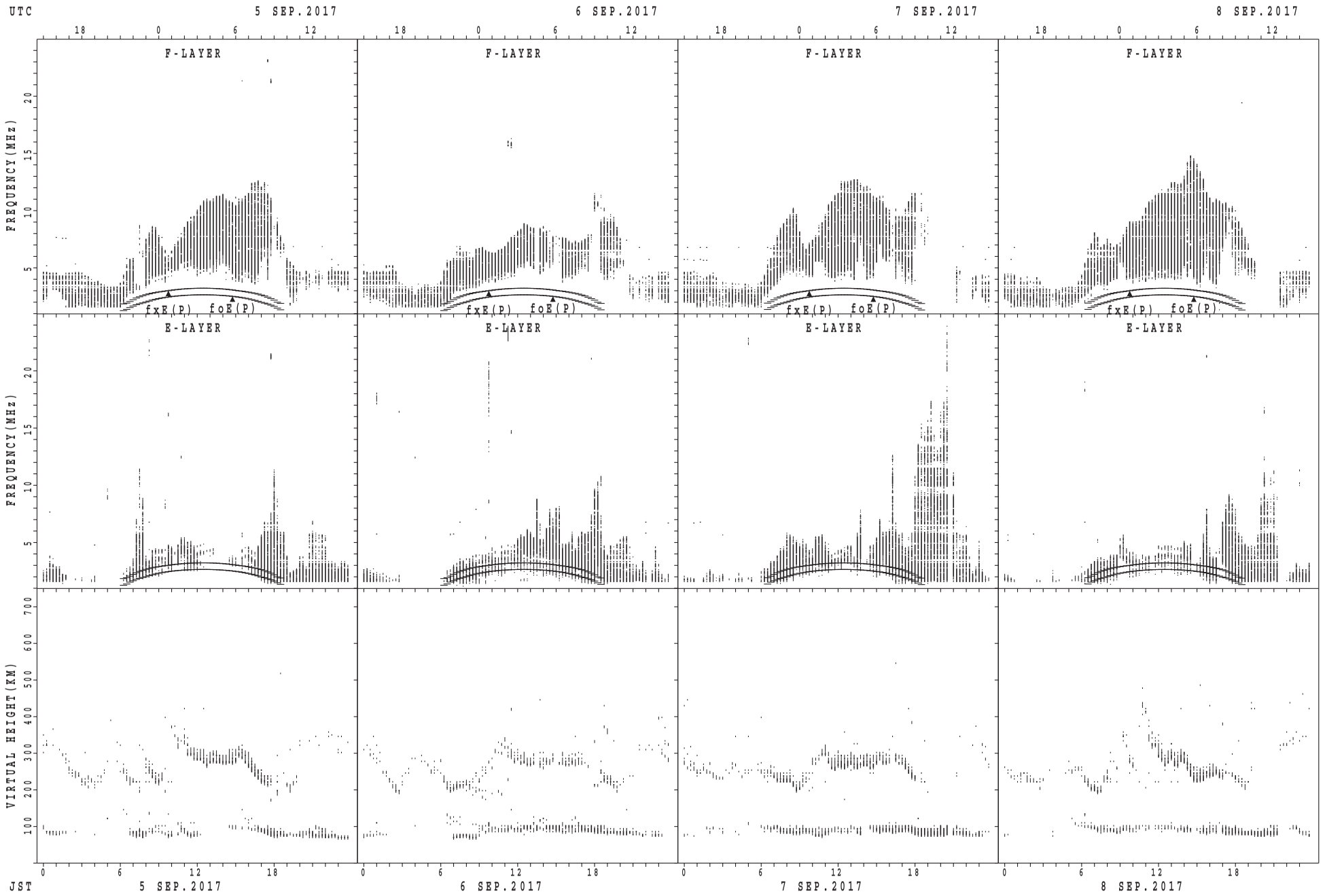

SUMMARY PLOTS AT Yamagawa
UTC
29 SEP.2017
30 SEP.2017
F-LAYER
F-LAYER
fxE(P) foE(P)
fxE(P) foE(P)
E-LAYER
E-LAYER
FREQUENCY(MHz)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
29 SEP.2017
30 SEP.2017
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



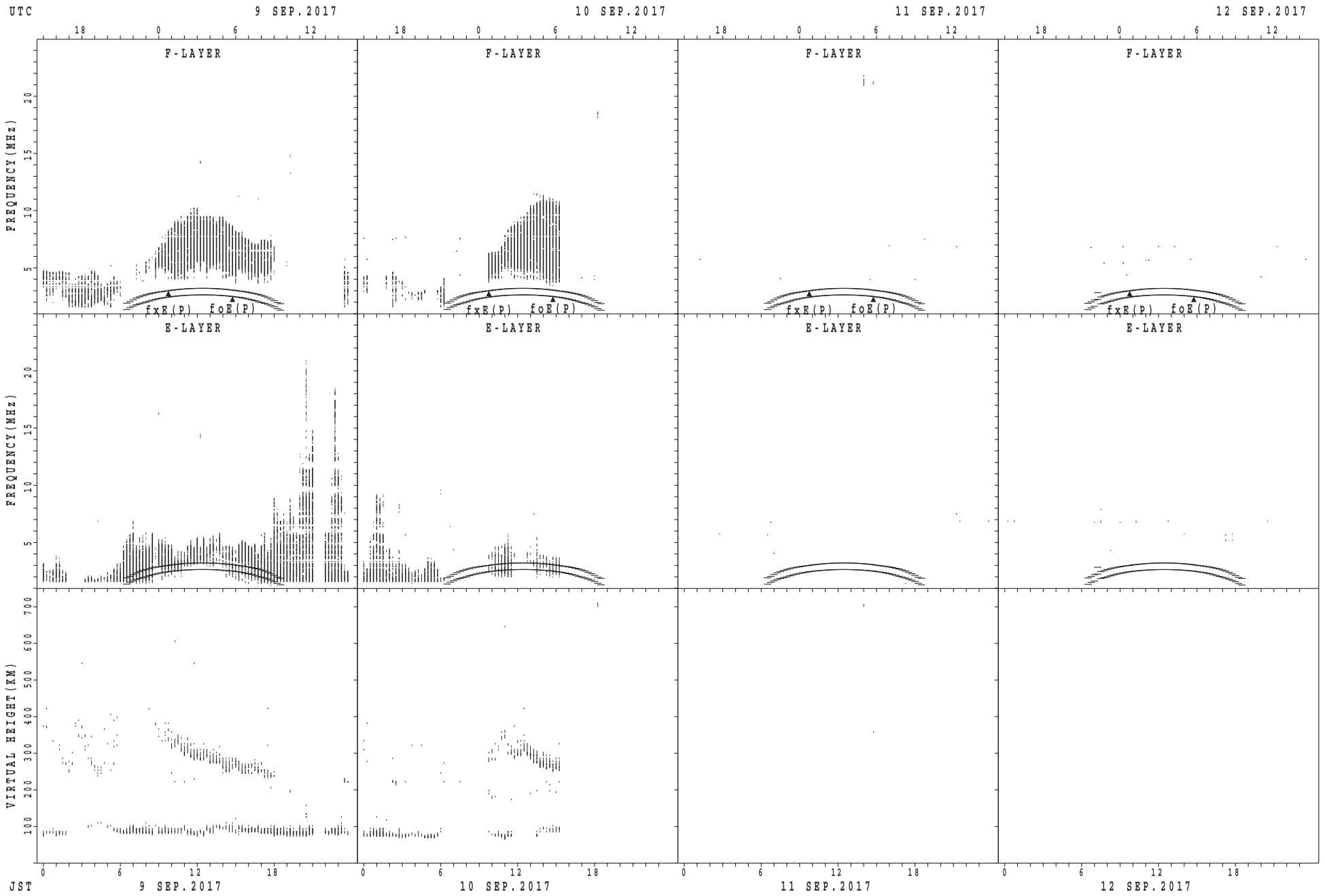
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



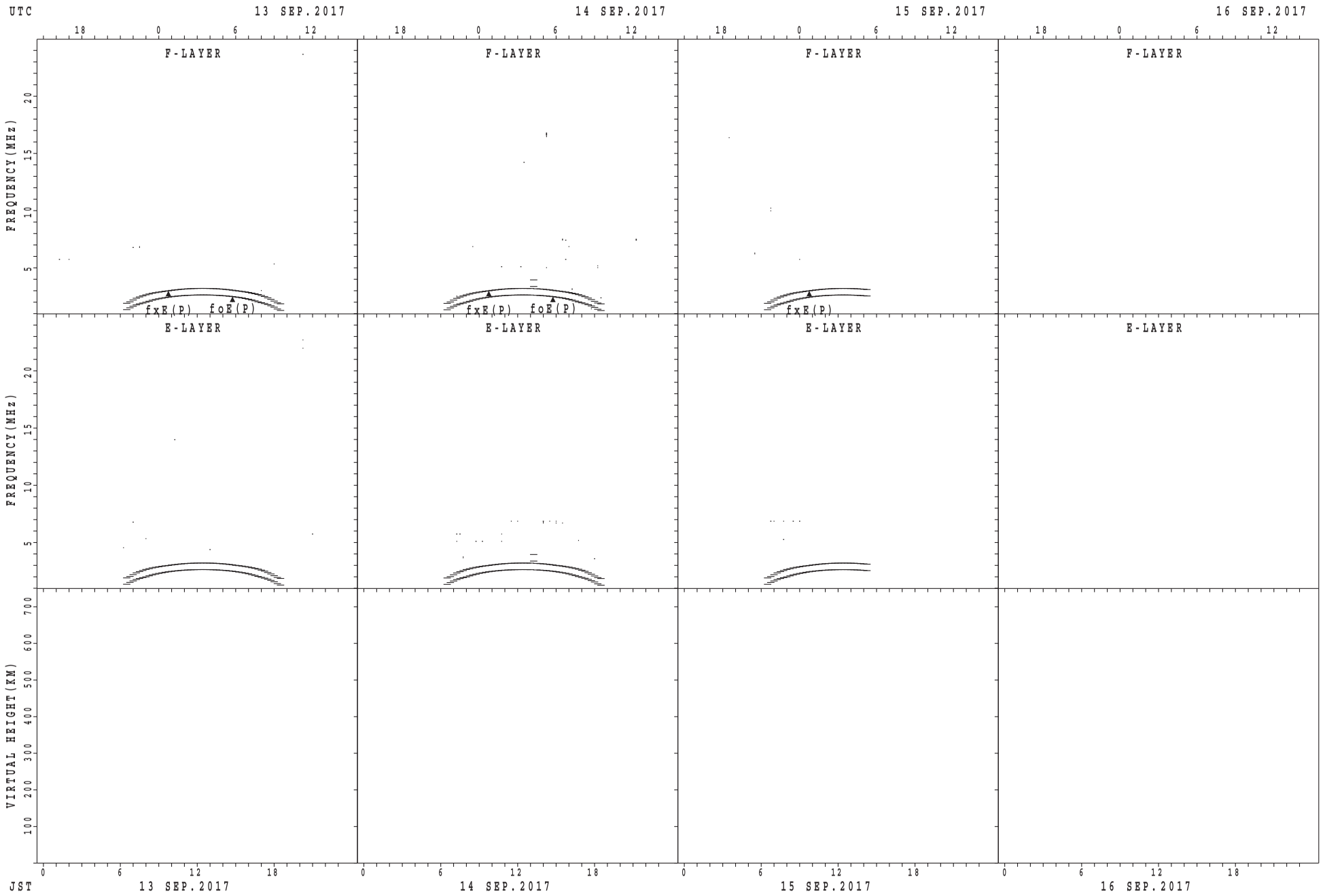
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



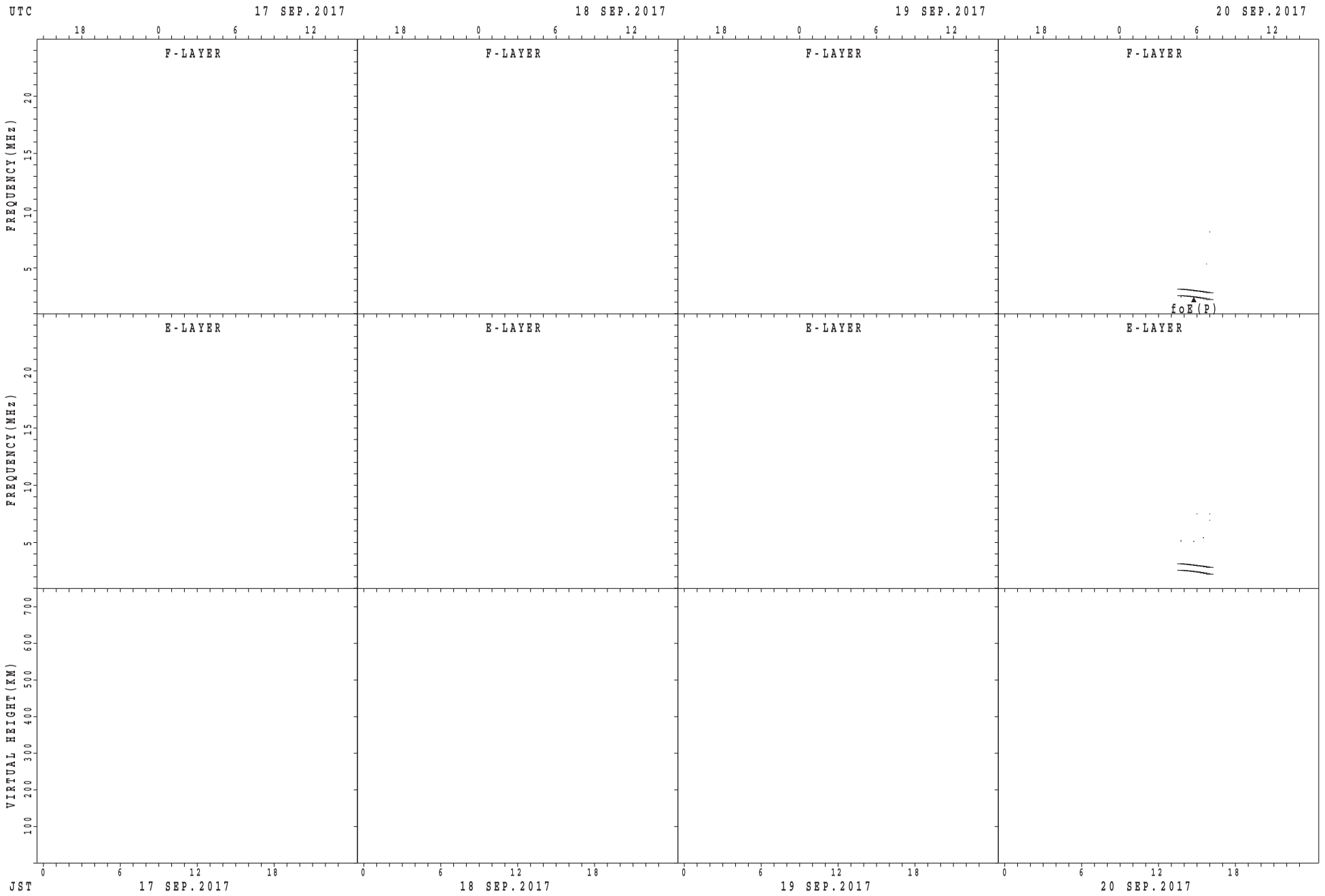
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



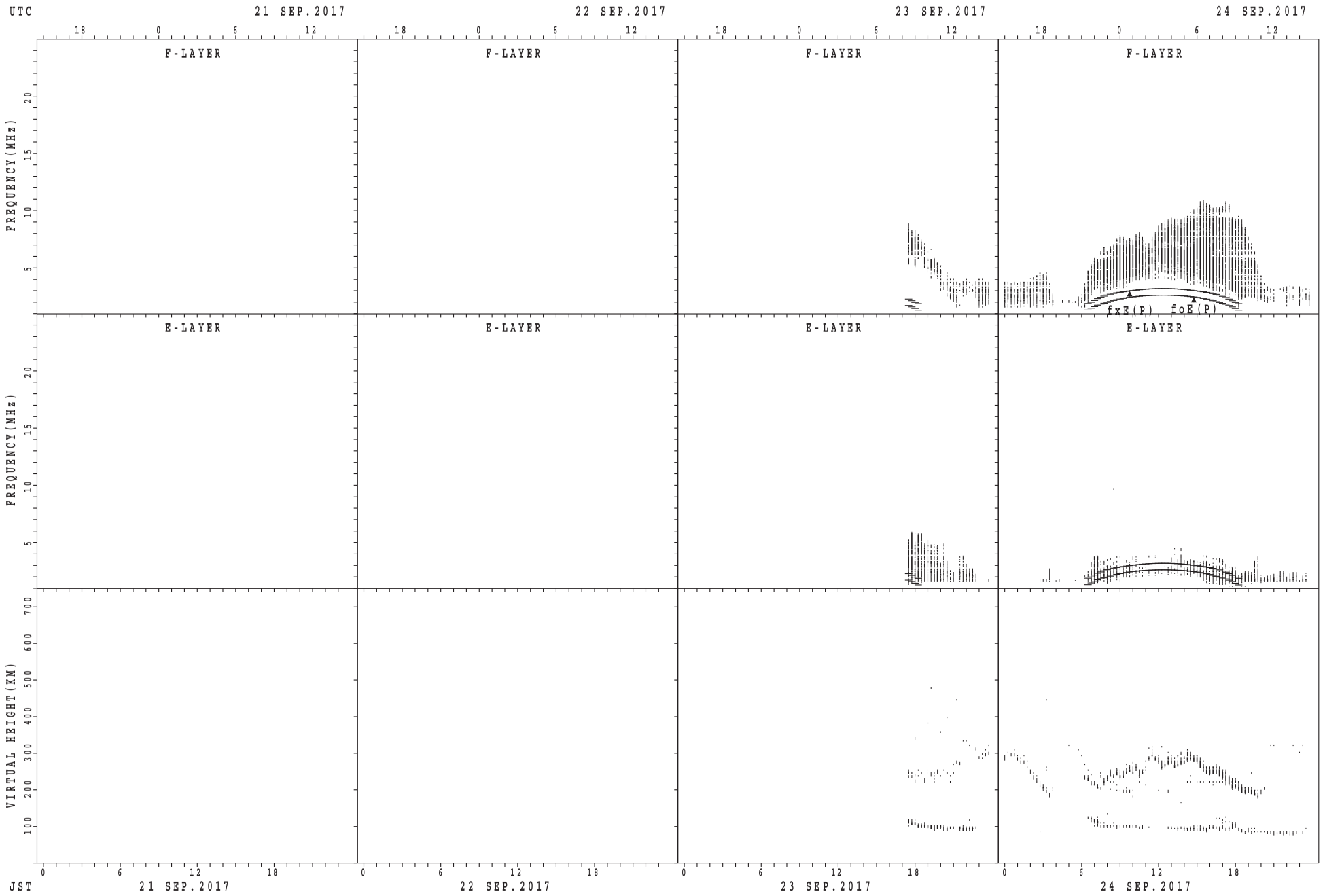
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



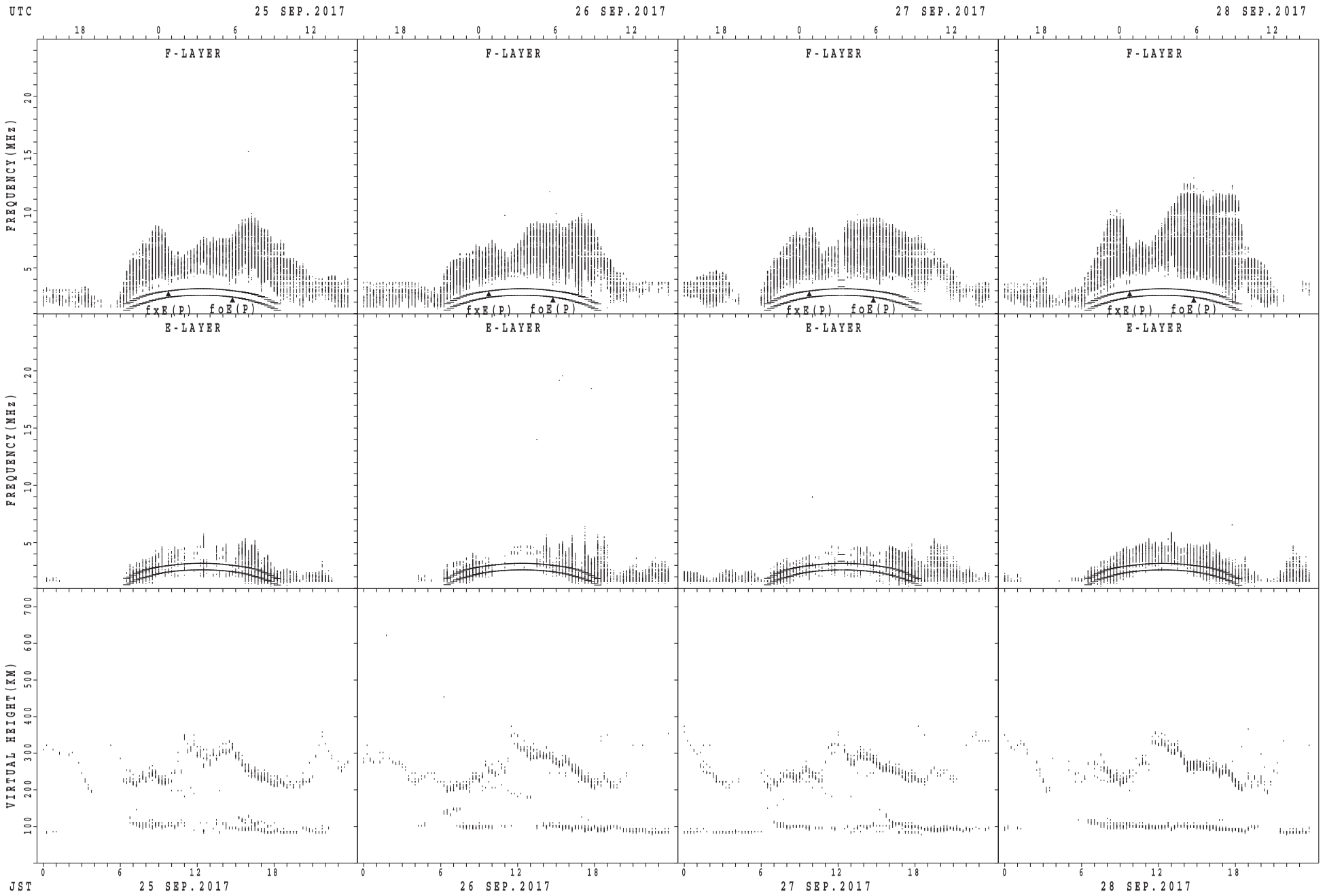
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



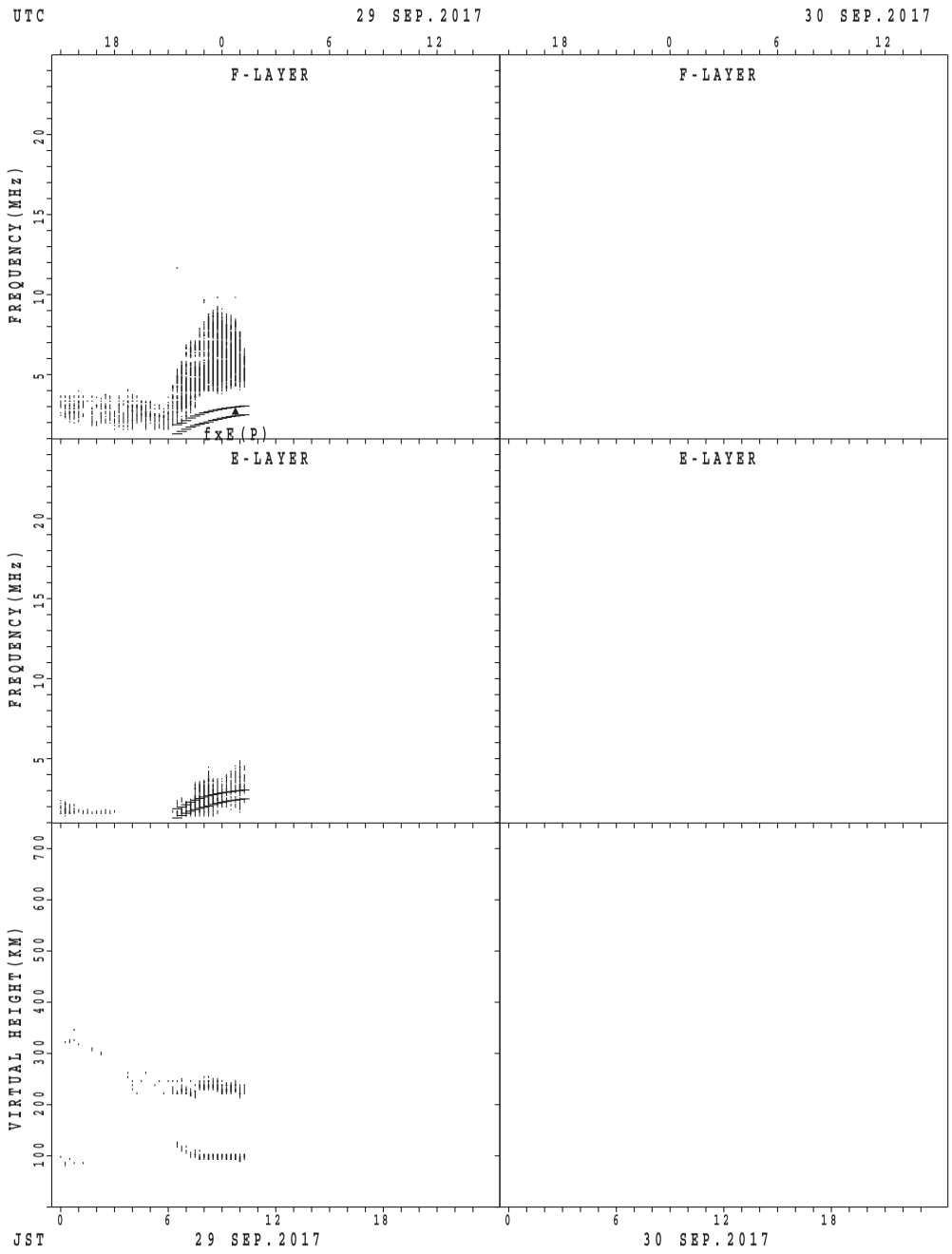
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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.2017 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	1	2	5							4	2	1		1	2			
MED						220	224	246	258							259	240	272		258	258			
U Q						110	112	280	270							270	256	136		129	268			
L Q						110	112	212	224							250	224	136		129	248			

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	15	14	9	11	13	21	26	28	25	26	27	29	24	23	19	23	24	17	20	17	14	12	14
MED	81	87	91	93	93	95	97	99	95	91	89	89	91	96	87	101	107	97	91	89	87	88	89	86
U Q	88	105	99	99	97	101	110	113	97	101	95	97	165	135	113	117	123	107	97	96	96	91	99	91
L Q	81	81	85	80	81	89	89	91	89	89	83	85	81	82	83	93	95	90	88	86	84	83	85	81

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	7							5	11	8	5	5	2			
MED								220	238							250	250	237	236	250	241			
U Q								241	264							258	258	241	269	267	256			
L Q								213	226							244	224	212	226	231	226			

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	11	7	7	10	10	22	23	26	24	19	16	10	12	11	20	23	23	20	16	20	19	18	18
MED	86	83	87	97	95	96	100	97	95	95	97	95	91	93	93	99	99	93	89	84	88	89	87	86
U Q	88	89	87	103	101	99	125	107	97	101	155	170	97	124	119	116	105	99	98	91	90	89	89	89
L Q	83	81	83	87	87	87	95	95	91	91	87	88	87	85	89	87	89	83	83	81	82	83	83	81

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	10								14	16	19	8	2			
MED								235	225								258	239	240	232	227			
U Q								251	240								268	253	248	244	242			
L Q								223	218								244	232	224	226	212			

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	11	7	4	7	10	11	30	30	29	30	29	24	20	23	28	28	29	27	25	25	25	18	16
MED	85	81	85	84	89	92	95	101	95	95	89	97	127	98	95	96	101	99	89	87	87	87	86	85
U Q	89	87	87	95	131	103	105	113	101	99	119	174	168	169	107	105	113	102	93	89	91	89	91	91
L Q	79	79	81	81	85	81	89	89	91	88	89	89	91	90	87	89	93	89	83	84	83	82	81	81

MONTHLY MEDIANS OF h'F AND h'Es

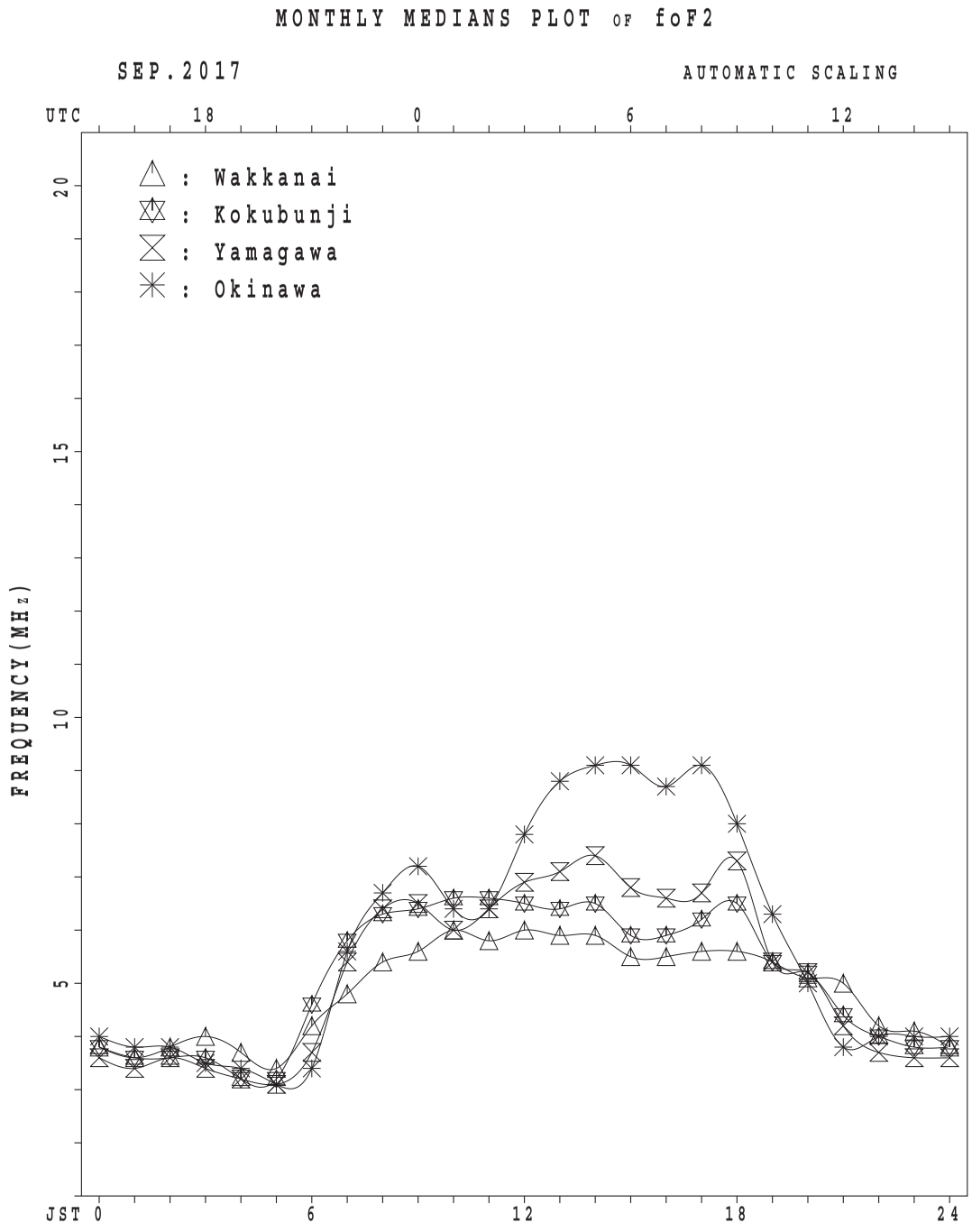
SEP.2017 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	14	5							5	13	13	4	1			
MED								212	241	230							254	238	214	216	208			
U Q								106	252	236							266	274	242	228	104			
L Q								106	232	218							249	232	207	212	104			

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	11	9	4	7	3	5	5	15	15	14	14	13	11	13	13	15	14	13	15	15	12	14	13	10
MED	83	85	82	83	89	87	103	101	101	101	91	95	95	99	107	99	98	103	95	85	89	89	85	87
U Q	97	93	86	89	177	112	106	119	107	107	101	101	101	108	144	107	107	107	97	95	95	95	91	95
L Q	81	81	80	81	89	77	84	95	89	95	87	89	89	91	98	95	95	95	91	83	83	83	82	81


MONTHLY MEDIANS PLOT OF foF2
SEP.2017
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.2017 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	X 37	X 39	37	32															X 53	X 61	X 62	X 61	X 58	X 46
2	X 43	X 37																	X 53	X 62	X 59	X 49	X 44	X 38
3	X 38	X 40																			X 53	X 54	X 50	X 48
4	X 45	X 38	X 38	X 39																	X 64	X 60	X 54	X 53
5	X 45	X 47	X 45	X 45																	X 69	X 54	X 49	X 45
6	X 45	X 45	X 44	X 45																	X 67	X 65	X 62	X 60
7	X 52	X 51	X 48	X 47																	X 77	X 66	X 61	X 56
8	X 45	X 46	X 45	X 45		X 41															X 66	X 60	X 46	X 37
9	X 35	X 35	X 39	X 45																	X 45	X 44	X 39	X 36
10	X 33	X 31	X 30	X 30																X 61	X 59	X 54	X 51	X 44
11	X 41	X 40	X 38	X 38	X 38															X 75	X 71	X 60	X 47	X 44
12	X 45	X 44	X 44	X 43	X 43															X 62	X 58	X 57		X 50
13	X 48	X 48	X 45	X 45	X 42		C	C		C										X 66	X 63	X 58	X 54	X 39
14	X 39	X 39	X 41	X 41	X 42															X 67	X 63	X 52	X 49	X 46
15	X 42	X 42	X 40	X 34	X 34															X 55	X 61	X 58	X 47	X 43
16	X 39	X 40	X 40	X 48	X 39															X 58	X 56	X 52	X 39	X 39
17	X 35	X 37	X 38	X 39	X 36															X 52	X 52	X 49	X 45	X 41
18	X 42	X 42	X 41	X 35	X 35															X 57	X 51	X 45	X 39	X 37
19	X 39	X 35	X 37	X 39	X 36															X 51	X 44	X 40	X 35	X 32
20	X 34	X 37	X 41	X 39	44															X 56	X 55	X 48	X 48	X 43
21	X 41	X 41	X 44	X 38	X 41							A								X 61	X 55	X 54	X 45	X 43
22	X 45	X 44	X 45	X 45	X 43															X 56	X 52	X 51	X 47	X 46
23	X 48	X 47	X 50	X 49	X 45															X 55	X 49	X 50	X 51	X 51
24	X 51	54	X 49	X 49	X 44															X 51		X 47	X 46	X 46
25	X 46	X 44	X 47	X 47	X 45															X 53	X 52	X 49	X 50	X 50
26	X 49	X 47	X 46	X 50	X 45	X 45														X 63	X 61	X 60	X 49	60
27	X 58	X 58	X 57	57	X 51															X 68	X 72	X 65	X 63	X 49
28	X 50	X 52	X 51	X 45	X 44															X 67	X 49	X 49	X 41	X 42
29	X 43	X 42	X 43	X 44	X 41															X 63	X 65	68	X 59	60
30	58	58	58	57	58	55														X 59	X 59	X 51	X 45	X 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	30	30	28	28	20	3													2	23	29	30	29	30
MED	X 44	X 42	X 44	X 45	X 42	X 45													X 53	X 61	X 59	X 54	X 48	X 45
U Q	X 48	X 47	X 46	X 47	X 44	55														X 63	X 64	X 60	X 52	X 50
L Q	X 39	X 39	X 40	X 39	X 38	X 41														X 55	X 52	X 49	X 45	X 41

SEP.2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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	31	33	F 23	F 18	22	27	40	39	A	46	A	A	E G 41	49	50	48	45	47	46	54	55	54	51	39
2	36	31	33	27	27	A	A	48	46	R 40	E G 42	A	A	A	46	46	51	49	46	55	52	42	37	31
3	31	33	31	32	A	A	A	43	50	48	48	45	E G 42	47	R 45	45	46	42	46	48	46	47	44	41
4	38	31	31	32	36	37	49	48	49	56	56	55	56	57	52	53	49	55	54	58	57	53	47	46
5	38	40	38	38	37	37	43	57	52	55	A	62	58	52	55	56	58	57	54	63	62	47	42	38
6	38	38	37	38	39	39	48	46	52	54	V 58	56	55	59	58	54	56	54	57	60	60	58	55	53
7	45	44	41	40	41	V 43	47	55	59	56	62	57	54	61	56	56	58	58	62	69	70	59	54	49
8	38	39	38	38	35	34	44	48	54	69	62	77	88	74	64	53	59	56	60	56	59	53	39	30
9	28	28	32	38	34	33	35	41	41	R	R	R	R	47	U R 48	42	44	46	43	42	38	37	32	29
10	26	24	23	23	24	31	40	45	51	55	60	54	54	56	51	48	46	47	47	54	52	47	44	37
11	34	33	31	31	31	34	43	52	50	55	58	60	64	57	54	52	56	57	64	68	64	53	40	37
12	38	37	37	36	36	40	47	56	55	64	59	58	57	57	56	57	57	50	57	55	51	50	48	43
13	41	41	38	38	35	32	C	C	58	C	65	56	66	64	59	52	54	56	61	59	56	52	47	32
14	32	32	34	34	35	38	52	47	63	58	52	53	58	58	66	52	57	59	58	60	56	45	42	39
15	35	35	33	27	27	29	38	49	51	52	52	47	57	55	61	54	50	54	53	48	F 48	51	40	36
16	32	33	33	41	32	A	A	41	48	52	48	52	53	53	55	48	54	55	54	51	49	45	32	32
17	28	30	31	32	29	30	A	47	46	48	49	52	48	53	51	49	46	51	51	45	45	42	38	34
18	35	35	34	28	28	27	40	41	48	51	51	48	52	53	52	50	52	46	46	50	44	38	32	30
19	32	28	30	32	29	32	43	40	E G 37	43	42	49	R 46	46	46	39	46	49	48	44	37	33	28	25
20	27	30	34	32	F 28	32	40	42	52	52	48	55	50	58	58	58	49	47	48	51	48	40	36	36
21	34	34	37	31	34	32	39	46	52	56	63	A	A	60	56	51	54	49	52	54	48	47	38	36
22	38	37	38	38	36	32	V 42	43	57	54	65	54	61	56	51	54	51	54	52	49	45	44	40	39
23	41	40	43	42	38	38	44	41	49	56	58	59	53	55	59	53	54	59	56	48	42	43	44	44
24	44	F 42	42	42	37	37	44	48	56	69	66	61	56	64	61	56	57	56	52	44	44	40	39	39
25	39	37	40	40	38	36	48	51	52	58	62	66	63	65	60	60	55	60	52	46	45	42	43	43
26	42	40	39	43	38	38	44	50	53	61	63	64	62	62	59	59	54	54	55	56	54	53	42	42
27	51	51	50	44	44	47	48	49	56	63	67	66	62	62	61	53	55	59	54	61	65	58	56	42
28	43	45	44	38	37	28	39	43	44	47	60	60	62	60	64	68	62	58	55	60	42	42	34	35
29	36	36	36	37	34	28	41	47	56	52	74	78	72	73	67	61	58	59	56	56	58	F 46	52	F 46
30	F 36	F 38	F 39	F 40	F 39	F 38	54	57	63	62	75	75	70	70	66	65	63	67	61	52	52	44	38	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	30	30	30	30	29	27	25	29	29	28	27	26	27	29	30	30	30	30	30	30	30	30	30	30
MED	36	36	36	38	35	34	43	47	52	55	59	56	57	57	56	53	54	54	54	54	52	46	41	38
U Q	39	40	39	40	38	38	48	50	56	58	63	62	62	62	61	56	57	58	57	59	57	53	47	42
L Q	32	32	32	32	29	31	40	42	48	52	51	53	53	53	51	49	49	49	48	48	45	42	38	34

SEP. 2017 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2017 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						B	L	A	A	L	A	A	L	L	L	416	424	340						
2			A			A	A	A	L	L	424	A	A	A	L	L	L	L						
3					A	A	A	A	L	408	L	420	424	416	L	L	L	L	L	A				
4					L	L	L	L	A	L	L	L	L	L	440	L	L	L	L					
5					L		L	A	A	L	A	L	L	L	U Y 484	424	L							
6							L	L	420	436	448	456	460	440	440	428	L							
7							L	380	400	456	448	448	468	440	L	L	392	L						
8							340	388	416		L	440	428	432	420	L	L							
9						L	L	A	360	404	L	L	404	L	396	L	368	A	A					
10							A	L	416	L	L	448	448	440	428	396	L							
11								392	408	424	432	L	L	L	L	L	L	L						
12										428	444	L	L	L	412	L	L	L						
13						L	C	C	L	C	436	L	L	L	408	L	L							
14									L	L	L	L	436	L	424	L	L							
15							L	L	L	L	L	A	436	L	408	L		L						
16						A	A	320	396		L	L	L	L	392	L	L							
17							A	360	364	L	400	L	L	416	L		L							
18							L	L	380	L	L	L	416	416	L	L	L							
19							380	384	372	392	364	L	L	L	L	392	L							
20								L	L	400	452	L	A	420	416	372								
21									L		A		A	A	L	L	A	L						
22							L	L	L	420	L	L	L	L	L	L	L							
23						L	L	L	L	L	L	436	L	L	L	L	344							
24								L	L	420	424	L	L	L	L	L	L							
25								L	L	L	L	L	L	L	L									
26							L	L	L	L	L	L	L	L	L	L	L							
27								332		L	L	L	L	L	L									
28							L	L	392		A	A	L	L	L	L	L							
29									A	A	A	A	A	L	L	A								
30								L	L	L	428	L	A	A	A									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	7	11	10	11	6	9	8	12	6	4	1						
MED							360	380	396	420	432	444	436	426	418	406	380	340						
U Q								388	416	428	448	448	454	440	434	424	408							
L Q								332	372	404	424	436	420	416	408	392	356							

SEP.2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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					UR 172	184	180	232	252	308	A	A	324	316	320	UR 304	260	212						
2			164	220	204	A	204	244	312	304	A	A	A	A	A	A	260	K 208						
3			A	A	A	A	200	256	276	352	348	316	332	332	UA 316	UR 308	260	208	160	A				
4					B	240	212	244	UA 292	UR 308	B	356	B	336	332	B	260	232	224	A				
5					220	A	240	UA 288	A	A 316	A	340	352	360	Y	244	232	208	UR 208	A				
6					B	B	A	220	292	316	340	A	360	336	324	UR 312	264	208	A	B				
7					B	176	208	276	316	B	340	336	A	344	A	308	288	204	168	B				
8					196		196	224	320	B	348	A	340	328	324	A	256	A	A	A				
9					UR 192	228	196	232	268	B	A	224	UA 308	320	A	UR 300	252	196	A	A				
10					B	A	204	252	292	B	352	B	B	328	312	316	256	204	A					
11						B	220	268	292	UR 316	328	A	328	B	316	A	256	A	A					
12						A	A	240	272	284	308	328	332	312	296	276	240	196	A				160	
13						B	C	C	A	C	B	320	320	320	A	260	240	200	B					
14						B	208	244	A	312	316	308	324	316	308	UR 280	236	188	176					
15						A	A	248	300	300	324	324	316	308	292	220	220	212	208					
16						A	A	228	260	292	308	316	312	312	A	268	228	B	A					
17						A	A	A	A	304	308	320	296	304	296	268	232	B	A					
18						B	A	236	A	308	A	308	A	312	292	276	224	200	212					
19						A	A	224	256	A	A	312	A	312	304	264	224	A	A					
20						A	A	240	268	A	284	A	A	A	A	A	232	232	228					
21						224	A	232	268	288	292		A	A	A	A	A	A	172					
22						B	184	244	284	A	316	A	A	308	284	276	224	200	B					
23						A	248	228	260	296	296	324	320	296	308	256	236	176	176					
24						A	220	244	280	264	308	320	320	308	284	264	232	A	A		A			
25						A	172	248	280	292	316	316	316	300	284	276	236	192	B					
26							192	248	280	292	312	312	320	296	320	268	236	A	A					
27						B	200	268	276	312	312	288	296	A	296	276	A	192	A					
28						B	188	232	268	288	300	300	288	304	288	256	236	B	B					
29						A	A 984	224	272	292	292	292	A	A	A	A	A	A	A					
30						B	164	236	272	292	304	A	244	A	A	276	224	B	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			1	1	5	5	20	28	25	22	22	20	20	23	20	23	27	19	10				1	
MED			164	220	196	224	202	242	276	302	312	316	320	312	306	276	236	204	192				160	
U Q					212	234	216	248	292	312	328	324	330	328	318	UR 300	256	208	212					
L Q					UR 182	180	190	232	268	292	304	308	310	308	292	264	232	196	172					

SEP. 2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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	22	24	23	23	24	24	23	J A 33	J A 60	40	50	47	39	36	37	35	36	J A 34	J A 49	28	25	23	E B 15	28
2	24	J A 18	J A 18	G 22	26	J A 57	J A 52	58	J A 119	36	J A 43	J A 108	63	J A 55	45	35	J A 31	J A 31	J A 31	26	26	21	E B 16	137
3	E B 16	J A 115	J A 31	J A 53	J A 64	J A 59	72	J A 69	J A 94	J A 64	J A 64	38	37	J A 81	J A 96	65	65	53	48	J A 127	J A 81	J A 51	J A 52	J A 61
4	30	24	J A 104	24	24	J A 111	J A 109	J A 52	J A 78	93	60	J A 52	46	J A 43	G	43	J A 51	J A 232	J A 156	J A 85	59	J A 108	J A 51	J A 52
5	J A 63	J A 42	32	26	J A 26	J A 26	48	J A 39	J A 51	76	80	J A 46	63	J A 53	G	38	G	J A 41	26	28	38	38	J A 38	J A 38
6	J A 33	J A 29	26	24	J A 18	J A 21	J A 26	J A 28	39	40	G	45	38	48	35	39	35	27	J A 41	E B 16	J A 28	E B 16	26	21
7	E B 16	E B 16	E B 16	20	E B 16	E B 15	J A 31	38	38	E B 35	G	39	36	44	39	33	J A 50	24	18	E B 16	E B 16	33	24	J A 26
8	J A 51	22	23	J A 124	G	E B 16	J A 42	J A 41	J A 45	E B 44	42	J A 65	G 38	40	40	40	29	31	J A 27	J A 31	35	40	26	E B 16
9	26	23	20	E B 16	J A 91	27	23	J A 42	J A 85	J A 39	41	J A 34	J A 37	G 36	J A 91	G	32	J A 71	49	34	34	J A 31	J A 38	J A 26
10	J A 51	22	23	20	E B 16	26	J A 33	29	J A 35	43	J A 101	E B 36	E B 35	G	J A 74	47	32	G	38	J A 62	36	J A 32	E B 16	25
11	J A 106	J A 183	E B 16	E B 16	24	E B 16	26	34	35	G	38	J A 41	37	E B 33	G	G	G	23	27	E B 16	59	51	J A 127	J A 84
12	36	72	53	J A 31	37	38	J A 42	J A 42	J A 57	35	G	G	G	G	34	G	28	G 22	26	27	24	26	J A 25	E B 16
13	E B 16	E B 16	21	E B 16	E B 16	E B 16	C	C	J A 30	C	E B 31	J A 53	40	G	57	35	G 18	J A 23	E B 16	E B 16	26	24	E B 16	24
14	19	E B 16	22	24	23	22	G	G	J A 38	G	J A 56	J A 46	38	38	34	37	26	22	27	J A 41	E B 16	E B 16	E B 16	J A 31
15	33	J A 49	24	E B 16	E B 16	32	J A 20	J A 52	38	36	39	J A 86	J A 76	36	J A 68	J A 30	27	J A 40	J A 33	24	37	23	E B 16	24
16	20	E B 16	34	48	37	J A 96	59	J A 50	J A 42	35	J A 41	42	39	36	36	48	J A 38	J A 49	J A 55	J A 89	60	38	26	47
17	38	25	37	39	45	J A 52	J A 74	59	J A 52	41	J A 36	J A 41	J A 58	37	35	J A 53	58	J A 51	37	J A 48	39	26	E B 16	E B 16
18	23	J A 105	38	30	36	24	21	36	J A 61	42	J A 43	48	J A 55	J A 51	J A 51	34	J A 32	J A 34	J A 61	72	J A 25	E B 16	25	E B 15
19	21	20	34	24	58	J A 99	72	27	J A 41	62	62	37	J A 39	32	35	J A 50	J A 32	J A 23	48	J A 48	J A 25	38	34	38
20	J A 32	25	22	24	31	36	34	J A 153	42	J A 121	J A 67	46	J A 88	J A 51	47	63	J A 117	J A 55	37	38	J A 37	J A 65	J A 78	J A 84
21	26	J A 51	J A 31	J A 51	J A 39	J A 51	J A 31	28	38	57	J A 85	J A 129	J A 108	J A 105	45	J A 64	J A 46	20	25	26	E B 16	22	24	24
22	25	23	19	E B 17	E B 15	E B 16	G	J A 51	G	26	36	39	64	40	40	G	26	G	E B 16	24	J A 25	E B 16	E B 16	23
23	33	J A 31	33	35	33	22	34	27	30	36	34	36	J A 120	34	54	30	26	22	20	28	J A 32	24	J A 107	25
24	24	E B 16	23	21	21	23	23	31	34	32	J A 55	35	36	36	32	32	27	35	24	E B 16	22	25	23	E B 16
25	E B 16	E B 16	E B 16	E B 16	27	20	20	G	G	34	35	J A 85	36	34	34	31	28	J A 22	E B 16	E B 16	E B 16	20	22	20
26	E B 16	E B 16	J A 33	E B 16	E B 15	E B 16	G	30	J A 28	35	36	34	43	J A 30	J A 37	32	J A 47	J A 27	J A 52	J A 32	28	E B 15	E B 16	E B 16
27	E B 15	E B 16	E B 16	20	E B 16	E B 16	26	G	J A 110	G	J A 116	J A 61	34	J A 43	36	J A 40	J A 27	J A 32	32	32	J A 25	26	E B 15	25
28	E B 16	E B 16	E B 16	19	E B 16	26	32	32	J A 49	J A 44	J A 51	J A 59	J A 36	J A 34	J A 33	30	J A 23	E B 18	E B 16	E B 16	E B 16	22	20	22
29	28	32	23	23	26	35	G 35	J A 41	71	J A 107	64	64	J A 56	41	J A 65	J A 106	J A 97	58	J A 51	J A 48	42	J A 46	J A 51	J A 64
30	71	J A 82	J A 50	58	30	E B 16	21	28	34	59	34	J A 36	46	J A 62	64	J A 50	J A 42	E B 17	32	J A 45	48	J A 46	J A 53	J A 107
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	29	29	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	26	24	23	24	25	25	34	36	J A 42	40	42	46	39	38	38	36	32	29	32	30	28	26	24	25
U Q	J A 33	J A 42	33	31	36	J A 38	45	J A 50	J A 60	58	J A 62	J A 59	J A 58	J A 48	J A 54	J A 48	J A 46	J A 41	J A 48	J A 48	38	J A 38	J A 38	J A 47
L Q	E B 19	E B 16	E B 20	E B 19	E B 16	E B 16	24	28	35	35	36	37	37	G	34	31	27	22	25	E B 24	E B 25	E B 22	E B 16	E B 21

SEP. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2017 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	E B 16	16	15	15	G 15	G 15	22	A 28	A A 60	33	A A 50	A A 47	33	34	35	32	34	26	25	22	16	16	E B 15	16
2	E B 16	E B 17	17	G 16	G 16	A A 57	A A 52	42	32	34	G 34	A A 108	A A 63	A A 55	33	29	27	26	20	E B 16	E B 16	E B 16	E B 16	16
3	E B 16	E B 16	17	19	A A 64	A A 59	A A 72	40	34	G 34	G 34	34	G 32	E A 37	E A 38	35	32	34	26	A 41	29	E A 27	20	28
4	21	16	E B 16	16	E B 16	G 16	30	G 14	A 28	38	A	43	38	34	G	32	31	G 22	G 21	22	16	16	18	18
5	16	20	18	18	G 16	23	34	37	41	40	A A 80	42	36	39	G	33	G	31	G 17	17	19	18	19	20
6	19	16	16	16	E B 17	E B 16	22	27	31	34	G	37	G 36	36	33	G 30	29	25	31	E B 16	21	E B 16	E B 16	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	26	31	33	E B 35	G	34	34	35	34	31	29	21	G 16	E B 16	E B 16	17	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	G	E B 16	G 18	30	G 32	E B 44	G 35	33	G 34	33	G 32	32	28	30	24	28	19	22	E B 17	E B 16
9	E B 17	E B 16	E B 16	E B 16	E B 16	G 18	21	A	28	35	33	34	34	G 32	33	G	29	35	30	E A 29	17	16	20	16
10	16	16	E B 16	E B 16	E B 16	17	A	27	34	40	38	E B 36	E B 35	G	G 31	G 31	31	G	19	19	20	18	E B 16	16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	30	32	G	36	37	36	E B 33	G	G	G	20	17	E B 16	21	21	20	E A 31
12	20	17	E B 16	19	22	16	21	34	40	33	G	G	G	G	33	G	26	G 19	E B 16	16	E B 16	E B 16	E B 16	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	C	C	30	C	E B 31	33	34	G	32	30	G 17	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	29	G	32	33	36	36	32	30	G 18	20	G 17	20	E B 16	E B 16	E B 16	E B 16
15	19	E B 16	E B 15	E B 16	E B 16	20	19	G 22	G 28	32	G 31	43	35	34	31	29	G 19	G 20	G 20	E B 16	E B 17	16	E B 16	E B 16
16	E B 16	E B 16	21	17	16	A A 96	A A 59	27	31	33	36	32	34	34	31	35	28	28	30	18	17	17	E B 16	E A 18
17	16	16	18	E B 16	E B 16	E A 20	A A 74	27	30	32	32	G 32	32	34	32	36	36	29	21	18	18	E B 16	E B 16	E B 16
18	16	17	17	18	16	E B 16	18	28	29	31	31	37	32	33	36	30	26	G 18	G 18	17	17	E B 16	17	E B 15
19	17	E B 16	19	E B 16	E B 16	17	19	24	32	32	32	G 31	34	G 31	32	31	28	20	22	16	16	18	17	17
20	17	E B 17	E B 15	16	E B 16	16	22	25	34	30	A	36	42	32	33	22	31	G 22	G 22	19	18	18	19	20
21	E B 16	16	16	E B 16	17	G 18	20	26	33	48	52	A A 129	A A 108	41	36	A 30	28	18	G 16	16	E B 16	E B 16	E B 16	E B 16
22	16	E B 16	E B 16	E B 17	E B 15	E B 16	G	29	G	U Y 25	34	34	34	33	30	G	G 20	G	E B 16	E B 17	E B 17	E B 16	E B 16	E B 16
23	17	16	21	E B 16	23	E B 16	G 23	26	28	34	H 33	34	35	33	33	27	24	22	G 16	16	21	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	G 20	27	31	30	35	33	34	34	32	29	25	22	16	E B 16	E B 16	E B 16	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	G	31	32	37	34	32	30	28	26	G 18	E B 16	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 15	E B 16	G	G 23	G 26	31	35	33	35	G 28	34	30	30	19	20	19	16	E B 15	E B 16	E B 16
27	E B 15	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	G	32	G	35	33	33	32	30	G 25	25	28	20	16	E B 16	E B 16	E B 15	E B 16
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	G 16	24	29	40	43	40	35	G 30	G 28	26	G 23	E B 18	E B 16	E B 16	E B 16	E B 16	16	E B 16
29	E B 18	20	17	16	E B 16	16	G 20	38	A	46	47	42	50	34	36	A	26	22	23	27	27	22	20	E B 16
30	22	27	22	20	16	E B 16	19	24	31	32	32	32	38	41	54	29	23	E B 17	16	29	29	22	17	17
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	28	28	29	29	28	30	30	30	30	29	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E 16	22	27	32	G	G	34	35	34	32	30	26	G	20	16	17	E 16	E B 16	E B 16
U Q	17	16	17	16	16	18	24	30	33	36	36	40	36	35	34	32	29	26	22	20	19	18	17	17
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G 24	29	32	32	33	34	G 32	32	29	G 23	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

SEP.2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2017 fmin (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	12	10	13	11	12	11	11	16	16	20	17	16	16	17	17	15	15	12	16	16	15	15	15
2	16	17	11	18	16	16	14	13	16	16	15	14	17	18	20	15	16	12	10	16	16	16	16	16
3	16	16	15	15	15	15	10	8	16	24	17	15	18	18	16	16	16	14	16	16	16	15	16	16
4	15	15	16	15	16	15	12	15	18	21	32	20	20	17	17	32	16	11	15	16	16	15	16	16
5	16	16	16	16	16	16	17	20	20	21	20	24	23	30	33	16	15	14	10	11	17	16	16	16
6	16	16	15	15	17	16	16	12	16	16	18	16	30	16	20	16	14	14	16	16	16	16	16	16
7	16	16	16	16	16	15	10	16	20	35	22	22	19	19	17	18	15	12	14	16	16	16	16	16
8	16	16	16	16	16	16	16	16	16	44	21	18	20	17	15	15	16	22	13	14	11	16	17	16
9	16	16	16	16	16	14	14	15	16	22	18	16	21	23	22	16	15	16	15	16	16	15	15	13
10	16	16	16	16	16	16	16	14	20	32	29	36	35	22	20	16	17	14	16	16	16	16	16	12
11	16	16	16	16	16	16	15	18	20	23	29	30	22	33	23	16	16	16	16	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	20	19	21	18	18	18	16	14	16	16	10	16	16	16	16
13	16	16	16	16	16	16	C	C	17	C	31	18	19	20	18	16	14	15	16	16	16	16	16	16
14	16	16	16	16	16	16	15	16	15	15	17	21	16	16	16	13	14	14	10	16	16	16	16	16
15	16	16	12	16	16	16	16	13	16	16	18	20	21	15	18	15	9	14	15	17	17	15	16	16
16	16	16	16	11	14	16	15	15	15	16	16	15	16	15	16	16	16	17	17	16	16	16	16	16
17	16	16	16	16	16	16	16	15	10	17	17	16	16	16	16	10	14	18	17	17	16	16	16	16
18	16	16	16	17	15	15	15	17	16	15	17	17	16	17	16	16	15	15	15	16	15	16	16	15
19	17	16	16	16	16	16	16	16	14	16	16	16	16	16	18	17	14	16	15	15	16	16	16	16
20	16	17	15	16	14	16	16	16	16	17	19	20	20	16	17	19	16	14	14	15	16	16	16	16
21	15	14	15	16	16	16	11	13	15	18	18	18	19	19	16	15	15	15	12	16	16	16	16	16
22	16	16	16	17	15	16	14	16	15	16	17	18	15	16	16	15	14	15	16	16	16	16	16	16
23	15	16	16	16	16	16	16	16	16	16	14	16	16	16	16	14	12	10	12	16	16	16	16	16
24	16	16	16	16	16	16	16	13	14	15	14	14	14	12	15	13	10	10	15	16	16	16	16	16
25	16	16	16	16	16	16	14	15	14	14	16	15	15	15	15	15	9	14	16	16	16	16	16	15
26	16	16	16	16	15	16	16	15	15	15	14	15	14	16	16	15	14	16	16	16	15	15	16	16
27	15	16	16	16	16	16	14	16	15	16	22	16	16	14	15	16	15	15	15	15	16	15	15	15
28	16	16	16	16	16	17	13	15	15	14	16	16	18	16	16	14	12	18	16	16	16	16	16	16
29	16	16	16	16	16	16	16	16	15	16	16	18	15	15	14	14	10	16	16	16	17	17	17	16
30	17	17	16	16	16	16	10	15	11	14	17	17	20	17	15	15	15	17	16	17	17	16	16	17
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	29	29	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	16	16	16	16	16	16	15	15	16	16	18	17	18	16	16	16	15	15	15	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	21	20	20	20	18	18	16	16	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	14	14	15	16	16	16	16	16	16	15	14	14	14	16	16	16	16	16

SEP.2017 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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	272	316	F 274	F 296	292	337	349	361	A	319	A	A	G	292	329	346	313	326	311	292	285	306	325	296
2	270	297	324	295	290	A	A	294	327	R 416	G	A	A	A	276	251	318	331	300	322	343	307	312	294
3	294	280	330	267	A	A	A	276	327	311	315	304	G	305	R 278	264	228	257	319	301	235	228	322	312
4	319	294	312	305	335	350	352	373	315	352	297	291	321	315	295	337	305	346	331	319	298	313	307	289
5	306	288	294	311	267	288	302	346	360	317	A	310	338	292	326	306	323	342	311	314	334	317	307	288
6	290	293	303	305	338	339	371	328	327	342	V 313	340	293	332	339	329	332	332	328	312	317	309	314	315
7	299	289	274	303	282	V 291	322	357	355	339	351	343	292	318	328	338	326	324	304	291	323	306	308	326
8	306	299	302	306	308	319	331	327	304	337	222	251	293	300	341	304	332	323	334	273	299	298	299	262
9	251	279	260	293	251	267	281	245	241	R	R	R	R	315	U R 292	257	275	294	313	295	308	303	285	298
10	287	309	301	297	306	331	246	330	324	317	339	324	322	332	320	345	305	333	317	314	328	295	339	293
11	316	308	307	285	318	336	371	363	350	359	350	323	335	336	329	323	326	320	319	313	330	317	283	302
12	292	265	301	311	311	337	347	363	336	364	346	349	341	308	342	344	359	334	342	334	303	318	315	309
13	315	302	325	330	339	295	C	C	348	C	331	278	314	347	355	330	342	333	319	326	333	323	341	292
14	315	315	301	320	336	332	369	389	362	305	366	336	347	329	349	348	334	343	322	334	340	310	320	318
15	299	303	292	262	296	316	337	338	342	334	318	250	312	287	329	341	332	344	318	301	F 265	329	332	288
16	286	295	316	307	316	A	A	287	316	334	306	324	322	314	347	309	335	330	332	326	297	321	313	299
17	305	288	306	316	318	285	A	330	349	351	321	320	321	328	321	345	344	342	350	319	311	318	307	298
18	292	289	305	328	319	325	344	317	315	320	315	299	322	333	319	332	351	344	313	332	300	314	337	298
19	312	327	295	302	327	329	296	316	E G 306	281	377	327	R 286	301	307	310	338	357	341	340	334	289	338	317
20	293	285	272	305	F 310	316	347	354	389	362	362	359	319	345	345	363	355	355	338	334	341	308	315	303
21	317	291	325	362	327	349	368	374	343	347	223	A	A	360	361	342	366	335	333	321	340	327	331	319
22	303	316	313	351	336	307	V 341	331	371	325	348	375	351	355	353	350	346	350	342	338	341	323	326	327
23	308	310	313	315	324	301	351	335	359	347	348	379	347	345	342	351	341	351	356	333	320	311	299	295
24	295	F 286	311	334	332	336	360	343	337	350	358	374	308	352	356	328	351	356	352	318	316	309	301	310
25	310	316	292	295	341	346	361	354	341	345	351	337	349	338	338	355	349	356	352	314	318	317	311	284
26	309	315	322	289	324	324	377	367	365	330	356	357	351	359	350	364	358	346	331	315	301	334	315	315
27	271	267	299	312	336	317	376	378	350	340	344	351	349	339	346	347	332	345	294	307	323	318	327	282
28	305	291	296	296	283	293	330	325	287	269	333	333	337	321	337	324	336	329	280	297	279	293	292	300
29	290	282	282	305	340	300	362	327	340	258	342	352	360	351	356	329	348	339	340	329	323	F 300	F 264	F 274
30	F 274	F 274	F 291	F 286	F 315	F 295	375	352	366	354	347	369	340	347	351	339	345	346	345	316	316	327	312	286
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	29	27	25	29	29	28	27	26	27	29	30	30	30	30	30	30	30	30	30	30
MED	299	294	302	305	318	319	349	338	341	338	342	334	322	332	338	338	336	340	330	317	318	312	314	298
U Q	309	309	313	315	336	336	368	362	357	350	351	352	347	346	349	346	348	346	341	329	333	318	326	312
L Q	290	286	292	295	301	295	330	326	320	318	315	310	308	311	321	323	326	330	313	307	300	306	307	289

SEP. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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						B	L	A	A	L	A	A	L	L	L	351	333	351						
2			A			A	A	A	L	L	401	A	A	A	L	L	L	L						
3					A	A	A	A	L	387	L	431	414	315	L	L	L	L	L	A				
4					L	L	L	L	A	L	L	L	L	L	377	L	L	L	L					
5					L		L	A	A	L	A	L	L	L	Y	364	L							
6							L	L	364	375	393	406	388	370	370	372	L							
7							L	380	387	389	384	399	380	369	L	L	367	L						
8							358	375	342		L	362	369	362	367	L	L							
9						L	L	A	421	363	L	L	385	L	381	L	364	A	A					
10							A	L	377	L	L	403	410	373	384	397	L							
11								374	393	377	415	L	L	L	L	L	L	L						
12										399	406	L	L	L	377	L	L	L						
13						L	C	C	L	C	369	L	L	L	386	L	L							
14									L	L	L	L	375	L	357	L	L							
15							L	L	L	L	L	A	358	L	357	L		L						
16						A	A	388	357	L	L	L	L	L	399	L	L							
17							A	349	406	L	418	L	L	382	L		L							
18							L	L	381	L	L	L	397	384	L	L	L							
19							389	364	389	392	444	L	L	L	L	379	L							
20								L	L	380	A	L	A	358	376	384								
21									L		A		A	A	L	L	A	L						
22							L	L	L	384	L	L	L	L	L	L	L							
23						L	L	L	L	L	L	375	L	L	L	L	380								
24								L	L	373	400	L	L	L	L	L	L							
25								L	L	L	L	L	L	L	L									
26							L	L	L	L	L	L	L	L	L	L	L							
27								422		L	L	L	L	L	L									
28							L	L	354	A	A	L	L	L	L	L	L							
29									A	A	A	A	A	L	L	A								
30								L	L	L	395	L	A	A	A									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	7	11	10	10	6	9	8	11	6	4	1						
MED							374	375	381	382	400	401	385	370	377	376	366	351						
U Q								388	393	389	415	406	404	378	384	384	374							
L Q								364	357	375	393	375	372	360	367	364	348							

SEP. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.2017 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						256	250	236	A	328	A	A	G	386	308	298	338	312						
2			256			A	A	E A 358	322	G 290	G	A	A	A	432	484	294	294						
3					A	A	A	E A 396	296	338	340	362	G	380	410	398	456	434	270	310				
4					240	240	254	252	E A 344	296	346	354	328	318	350	274	334	250	250					
5					318		420	270	256	340	A	314	298	390	304	324	290							
6							248	232	312	278	294	296	370	298	280	298	262							
7							266	252	266	284	276	284	362	298	302	272	284	258						
8							270	294	328		446	378	304	290	266	268	276							
9						420	302	500	526	R	R	R	R	344	360	452	392	A	252					
10							458	250	312	298	284	310	338	304	308	248	236							
11								258	280	258	272	310	280	298	296	304	282	272						
12										248	274	266	278	292	280	262	258	250						
13						308	C	C	250	C	272	338	298	244	262	262	264							
14									256	302	248	296	270	304	258	268	258							
15							296	252	298	290	324	508	344	374	286	264		258						
16						A	A	348	330	300	352	314	324	324	268	364	286							
17							A	286	288	288	334	326	330	306	308		290							
18							246	330	330	298	322	356	324	300	322	282	260							
19							382	364	G 316	312	242	320	400	378	378	364	282							
20								256	254	258	290	290	294	294	276	248								
21									284		A		A	260	238	264	248	256						
22							216	230	250	296	272	242	262	246	254	254	250							
23						304	258	252	260	276	268	242	268	276	272	250	268							
24								256	272	254	246	242	314	268	256	256	252							
25								252	250	258	264	264	254	266	266									
26							202	222	232	242	260	254	264	250	250	250	250							
27								222		244	244	252	262	264	264									
28							284	264	390	420	268	284	254	254	262	272	230							
29									266	A 422	262	238	230	244	248	A								
30								250	230	230	260	228	236	242	238									
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		2	5	15	25	27	26	26	26	27	29	30	25	24	9	3	1				
MED			256		279	304	266	254	282	290	273	296	298	298	278	272	272	258	252	310				
U Q						364	302	312	322	302	324	326	338	321	308	314	290	303	270					
L Q						248	248	250	256	258	262	254	264	262	262	259	255	253	250					

SEP.2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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	250	252	232	242	302	B 208		A	A 208		A	A	180	202	212	216	332	312	258	264	276	270	226	264
2	280	274	A 214	292	A	A	A	A 198	182	194	A	A	194	194	226	224	240	234	216	248	244	234		
3	268	Q 266	260	302	A	A	A	A 214	202	190	190	190	A	E A 240	A	238	212	A	A	A	228	A		
4	234	256	268	266	210	206	220	218	A 242	A	238	192	196	194	194	218	210	242	254	254	262	260		
5	280	268	280	280	250	276	276	A	A	A	A 218	194	196	Y 216	Y 222	244	246	246	222	232	E A 222	284		
6	278	284	282	268	234	222	210	202	202	202	196	188	194	194	202	196	212	232	248	240	254	240	234	234
7	252	264	284	270	246	236	224	214	194	198	190	190	190	190	198	212	232	232	266	270	226	240	240	234
8	234	294	272	264	268	252	208	214	196	280	200	204	218	218	218	202	202	268	248	304	272	244	270	E B 332
9	342	E B 310	314	244	354	A 194		A	198	190	196	196	196	206	216	200	222	A	A 258	258	278	A 208	276	
10	268	E B 256	E B 272	272	270	250	A	192	214	A	198	198	184	204	202	192	198	212	246	248	238	276	220	260
11	268	Q 280	258	252	252	230	230	212	196	186	190	190	218	196	214	196	196	202	256	236	226	226	234	A
12	286	288	288	246	240	234	212	232	242	184	188	190	180	166	212	210	206	206	232	232	266	252	252	238
13	260	274	264	240	232	246	C	C	194	C	194	194	198	198	188	196	196	262	240	230	230	236	208	256
14	256	248	256	256	234	262	220	218	196	196	196	192	216	216	224	200	202	232	232	238	216	226	244	244
15	272	272	276	E B	276	264	196	216	200	194	188	A	204	224	202	202	204	220	248	252	286	236	236	264
16	E B 292	266	A 282	240	240	A	A	218	A 242	190	190	198	192	192	200	236	236	222	226	216	244	212	258	276
17	276	284	262	238	238	A	A	220	192	192	198	196	196	200	218	210	242	232	222	222	254	254	260	260
18	272	282	276	254	218	250	208	200	208	208	196	212	192	208	250	212	222	230	256	232	248	228	228	262
19	266	244	A 310	282	256	234	208	208	210	202	170	190	192	192	206	218	218	254	222	224	224	244	240	232
20	276	284	280	250	Q 268	222	236	188	188	186	A	198	A	198	198	198	216	220	248	238	208	208	276	258
21	278	Q 266	234	232	252	242	204	224	200	250	A	A	A	A	210	180	A	202	222	240	226	226	226	260
22	274	260	254	238	204	224	190	192	204	200	190	190	190	196	180	192	214	232	218	234	234	230	246	260
23	260	262	262	242	238	238	196	196	194	214	200	200	196	190	198	212	224	242	208	222	246	276	272	Q 276
24	Q 276	Q 248	250	234	238	222	220	206	206	198	190	192	194	232	208	190	198	222	214	236	236	248	272	258
25	260	260	274	274	234	224	214	198	198	196	204	198	192	192	202	238	234	226	226	226	250	250	258	266
26	258	258	266	262	244	234	198	182	192	198	198	198	198	196	208	206	212	236	236	Q 246	Q 232	216	216	252
27	Q 234	Q 266	256	232	224	210	206	182	258	192	200	190	194	194	194	242	256	240	296	280	242	256	236	308
28	272	292	266	276	258	E B 258	240	208	204	A	A	A	204	202	192	214	214	244	268	254	238	270	266	254
29	268	298	310	300	212	248	234	256	A	A	A	A	A 188	194	A	212	194	208	228	238	252	Q 272	280	
30	A 280	E A 290	264	290	Q 234	228	210	200	200	192	182	182	A	A	A	226	224	214	216	234	260	226	274	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	30	30	29	29	29	24	24	24	26	25	23	23	25	26	27	29	28	29	29	29	29	29	30	28
MED	269	266	267	254	240	234	210	208	200	198	194	194	194	196	202	204	215	232	236	238	238	244	242	260
U Q	278	284	281	273	263	250	222	218	208	205	198	198	201	204	212	216	225	241	248	250	254	254	262	276
L Q	260	260	259	240	234	224	205	197	196	191	190	190	191	192	196	196	203	219	220	231	226	227	228	253

SEP. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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					108	108	98	98	98	98	A	A	98	102	104	102	114	114						
2			126	106	108	A	104	104	104	104	A	A	A	A	A	A	104	106						
3			A	A	A	A	106	104	104	112	112	112	112	112	108	104	104	114	A	116				
4					B	132	112	100	102	100	B	100	B	100	100	B	100	118	110	A				
5					104	A	104	106	A	100	A	104	104	96	104	96	100	100	88	A				
6					B	B	A	94	106	100	100	A	100	100	100	102	104	100	A	B				
7					B	G	94	102	102	B	102	104	A	104	A	96	100	108	114	B				
8					102		102	102	102	B	102	A	102	102	102	A	102	A	A	A				
9					130	116	116	108	108	B	A	96	96	98	A	104	108	108	A	A				
10					B	A	108	108	108	B	108	B	B	108	102	102	116	116	A					
11						B	116	102	102	102	102	A	102	B	108	A	108	A	A					
12						A	A	108	108	108	102	G	102	102	102	102	110	116	A					
13						B	C	C	A	C	B	110	104	104	A	104	100	100	B					
14						B	100	108	A	96	106	106	106	106	112	112	106	106	98					
15						A	A	106	106	106	106	100	114	106	106	106	98	120	110					
16						96	A	102	102	102	102	102	106	106	A	110	110	B	A					
17						A	A	A	A	110	100	104	104	104	104	104	104	B	A					
18						B	A	118	A	118	A	102	A	104	110	110	110	110	112					
19						A	A	118	102	A	A	102	A	102	118	118	116	A	A					
20						A	A	110	110	A	96	A	A	A	A	A	118	118	118			A		
21						106	A	106	106	98	98		A	A	A	A	A	A	106					
22						B	112	112	104	A	108	A	A	116	110	114	120	132	B					
23						A	132	116	108	102	102	102	104	104	112	112	104	110	102					
24						A	128	126	112	106	94	94	102	100	100	108	94	A	A					
25						A	108	108	108	100	100	100	106	106	106	112	112	108	B					
26							122	116	110	114	108	108	108	108	108	108	100	A	A					
27						B	110	110	110	104	104	104	104	A	100	102	A	120	A					
28						B	112	112	112	112	110	102	102	102	102	106	106	B	B					
29						A	A	102	106	106	106	94	A	A	A	A	A	A	A					
30						B	98	108	108	108	108	A	92		A	102	102	B	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			1	1	5	5	19	28	25	22	22	19	20	23	21	23	27	19	9	1				
MED			126	106	108	108	108	108	106	104	102	102	104	104	104	104	104	110	110	116				
U Q					119	124	116	111	108	108	108	104	106	106	109	110	110	118	113					
L Q					103	101	102	102	102	100	100	100	102	102	102	102	100	106	100					

SEP. 2017 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 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	124	112	106	106	100	100	100	100	90	110	88	88	110	148	128	120	114	114	108	108	102	96	B	94
2	94	98	114	110	110	104	104	100	104	90	96	100	88	88	88	94	94	104	104	104	104	104	B	110
3	B	128	114	114	112	116	102	102	102	98	84	144	108	110	112	110	110	104	100	122	92	92	92	92
4	92	96	96	90	94	100	86	110	106	100	100	100	86	108	G	122	96	120	134	104	110	108	104	104
5	100	94	94	96	148	98	100	100	100	100	90	98	100	96	G	84	G	100	80	88	94	94	90	90
6	90	90	90	88	88	94	102	96	102	196	G	88	104	104	120	198	G	116	104	B	96	B	96	96
7	B	B	B	92	B	B	100	104	104	B	G	104	102	98	94	128	94	110	106	B	B	98	90	90
8	120	96	92	92	G	B	80	104	104	B	196	100	94	112	90	90	126	114	106	96	96	102	110	B
9	100	96	118	B	112	100	100	100	100	96	96	96	100	98	120	G	112	98	98	98	98	98	92	92
10	130	102	120	118	B	116	112	112	106	100	130	B	B	G	88	106	120	G	106	106	94	104	B	94
11	94	98	B	B	92	B	108	100	100	G	100	102	138	B	G	G	G	100	90	B	106	96	112	98
12	98	98	98	90	98	90	106	104	106	102	G	G	G	G	140	G	140	110	92	92	96	102	102	B
13	B	B	88	B	B	B	C	C	98	C	B	98	104	G	90	106	86	104	B	B	84	84	B	90
14	84	B	84	92	92	92	G	G	100	G	104	104	162	162	162	152	152	118	82	92	B	B	B	92
15	92	98	98	B	B	98	98	112	128	104	110	98	104	122	82	106	210	114	120	102	102	84	B	96
16	88	B	98	108	96	96	90	120	110	110	100	110	180	126	102	114	120	108	108	102	116	110	102	102
17	110	110	110	110	110	104	104	104	102	102	102	104	84	120	120	106	112	112	106	106	98	104	B	B
18	104	116	106	104	104	104	104	98	102	102	92	102	88	110	114	114	120	108	108	96	118	B	112	B
19	126	116	110	118	118	106	98	98	98	98	98	98	96	138	116	110	110	102	102	98	98	112	98	98
20	94	102	112	Q 252	102	102	92	92	100	100	100	100	100	Q 100	100	92	114	116	100	100	100	108	108	110
21	96	102	100	104	100	98	98	156	96	96	96	96	96	130	92	84	104	90	96	104	B	98	98	98
22	88	88	88	B	B	B	G	104	G	100	146	96	86	106	106	G	164	G	B	88	88	B	B	100
23	96	96	90	90	86	98	130	138	130	98	106	162	118	160	104	152	138	124	108	96	104	94	94	94
24	90	B	90	96	100	100	130	104	98	98	84	162	162	136	154	128	120	98	96	B	86	84	94	B
25	B	B	B	B	96	96	142	G	G	102	102	112	102	102	102	150	126	90	B	B	B	88	92	94
26	B	B	94	B	B	B	G	102	102	110	98	98	98	100	110	134	112	104	102	90	92	B	B	B
27	B	B	B	92	B	B	98	G	106	G	124	96	96	96	96	90	104	114	106	106	90	90	B	98
28	B	B	B	98	B	106	88	112	104	108	104	94	94	94	94	98	122	B	B	B	B	106	102	104
29	94	94	100	100	100	88	118	110	104	90	96	94	94	84	88	94	96	92	96	88	88	96	102	100
30	98	92	96	102	108	B	122	110	110	92	102	94	94	94	94	94	84	B	84	104	104	104	114	92
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	25	23	21	22	26	26	28	24	26	28	28	26	27	26	27	26	26	23	25	25	20	24
MED	96	98	98	100	100	100	101	104	102	100	100	99	100	107	102	108	114	108	103	100	98	98	100	96
U Q	104	106	110	110	110	104	108	110	106	103	104	104	106	126	120	128	126	114	106	104	104	104	106	100
L Q	92	95	91	92	95	96	98	100	100	98	96	96	94	98	92	94	104	100	96	92	92	93	93	92

SEP. 2017 h'Es (KM)

IONOSPHERIC DATA STATION Wakkanai

SEP. 2017 TYPES OF Es 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	F1	F2	F2	F1	C2	C1	C2	C2	C3	C2	L3	L3	C1	H1	C1	C2	C2	F3	F4	F2	F2	F2		F3
2	F1	FF11	L2	L2	L2	L7	C3	C4	L3	C3	C1	L4	L3	L3	L3	L2	L2	F2	F5	F1	F1	F1		F1
3		F1	L4	L3	L5	L6	C5	C4	C2	C2	C1	HL11	C1	L1	C2	C2	C4	C4	L3	LL23	F5	F5	F3	F5
4	F5	F1	F1	F1	L1	C1	LC13	C3	C4	C3	C2	C3	L2	C1		C1	C2	C3	CC12	L5	F2	F3	F2	F3
5	F3	F3	F3	F2	C1	L2	C3	C2	L2	C3	L3	C2	C1	C2		C1		C3	C2	L2	F1	F4	F3	F4
6	F3	F2	F2	F1	L1	L1	L2	C2	C1	C1		L4	C1	C1	C2	C1	C1	C2	L2		L4		F1	F1
7				F1			C3	C1	C2			C2	C1	C2	C2	C1	LC11	CC21	L1			F1	F1	F2
8	F1	F1	F1	F1			LC11	CC11	C2		C1	C1	C1	C1	C1	C1	C1	C1	L3	L3	F7	F5	F1	
9	F1	F1	F1		L1	C2	C1	C3	C1	C2	L1	C1	C1	C1	L1		C1	C6	L3	L3	F3	F2	F3	F2
10	FF12	FF12	F1	F1		L2	C2	C1	C2	C2	C1				C1	C1	C2		L2	F2	F3	F3		F1
11	F1	F1			F1		C2	C1	C1		C1	C1	H1					L2	L1		F5	F6	F4	F3
12	F2	F3	F3	F4	F3	L3	L3	C3	C3	C1					H1		C1	C1	L1	F3	F1	F1	F1	
13			F2						L1			L1	C1		L1	C1	CL21	CL21			F1	F1		F1
14	F2		F1	F1	F1	L1			L1		C1	C1	HL11	HL11	HL11	HL11	HL11	C1	C2	C3				F1
15	F3	F2	F1			L3	L2	CL12	CL11	C1	C1	C5	CL11	CL11	CL11	CL11	C1	C2	C2	F1	F2	F1		F1
16	F1		F4	F7	F5	L9	L6	C1	C2	C2	C3	C1	C1	C1	L1	C3	C1	C3	L5	F5	F2	F3	F1	F2
17	F2	F1	F5	F7	F3	L6	L5	L2	LL11	L1	L1	L1	C1	C1	C1	C3	C5	C4	L3	F2	F1	F1		
18	F1	FF12	F3	F4	F3	L1	L1	C2	L2	L1	L2	C2	L1	C1	C3	C2	C2	C3	C2	F2	F1		F1	
19	F1	F1	F4	F1	F1	L4	L3	C2	C3	L2	L2	L1	L2	C1	C2	C1	C2	C2	L4	FF11	F1	F2	FF11	F2
20	F2	F2	F1	F1	F2	L1	L2	C1	C2	L1	C2	C2	L3	L1	L2	L3	C2	L2	C2	F3	F4	F3	F3	F5
21	FF21	FFF21	F2	F2	F3	L2	L2	HL11	L1	C3	C3	L4	L5	L3	L3	L2	LL12	L1	L1	F1		F1	F1	F1
22	F2	F2	F1					C1		L1	HL11	L1	L2	L1	C1		HL11			F1	F1			F1
23	F3	F3	F4	F2	F4	L1	C2	C1	CL12	C2	C2	C1	C1	C1	C1	HL12	CL11	CL11	C1	F1	F3	F1	F1	F1
24	F1		F1	F1	F1	L1	C1	CL12	C2	C1	LC11	CL12	HL11	HL12	HL11	CL11	CL11	L3	L1		F1	F2	F2	
25					F1	L1	C1			C2	C2	C1	C1	C2	C2	CL12	CL22	L2				F1	F1	F1
26			F1					L2	L2	L2	C2	C2	L2	L2	C2	CL22	CL22	L1	LL22	F3	F1			
27				F1			L1		LC11		LC12	C2	C2	F3	C2	CLQ21	L2	C3	L5	F1	F1	F1		F1
28				F1		L1	LC11	C1	C1	C2	C4	C2	C2	C2	C2	C1	C1					C1	F1	F1
29	F3	F5	F2	F1	F1	L1	L1	C3	C4	C4	C5	C4	L4	L2	L5	L5	L4	L4	L3	F2	F2	F2	F2	F2
30	F3	F4	F4	F3	F1		C1	C1	C3	C2	C2	L2	C2	L3	L3	C1	C1		L1	F4	F4	F3	FF12	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. 2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 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 45	X 42	X 43	X 44	X 42															X 82	X 76	X 68	X 58	X 52
2	X 51	X 45	X 46	X 44	X 40															X 66	X 53	X 45	X 42	X 41
3	X 35	X 35	X 36	38	39	38														X 59	X 58	56	X 53	X 48
4	X 42	X 40	X 38	X 37	41															X 63	61	56	57	54
5	54	X 48	X 48	X 44	X 45	X 43														X 67	X 55	X 50	X 51	X 50
6	X 49	X 48	X 47	X 46	X 45	X 41														X 70	X 69	X 68	X 58	X 52
7	X 51	X 49	X 46	X 44	X 45															X 87	X 76	X 62	X 60	X 60
8	X 63	X 57	X 55	X 52	X 48															X 64	X 59	X 59	X 53	A
9	X 48	X 42	X 40	X 37				C	C	C	C	C	C	C	C	C	C	C	C	X 56	X 49	48	X 45	X 45
10	50	48	43	44	38	35														X 70	X 67	X 55	X 44	X 43
11	X 43	X 40	X 37	39	38															X 81	X 68	A	X 42	X 42
12	X 44	X 41	X 41	X 43	X 40	X 37														X 66	X 55	X 54	X 53	X 52
13	X 53	X 52	X 48	X 40	X 39	X 38														X 82	X 70	X 42	X 43	X 43
14	X 42	X 44	X 42	X 41	X 40															X 64	X 58	X 53	X 49	X 48
15	X 49	X 44	X 41	X 34	X 39															X 70	X 62	X 57	X 50	X 43
16	X 40	X 40	X 42	X 44	X 39															X 72	X 47	A	X 46	X 44
17	X 43	X 41	X 43	X 44	A					C	C	C								X 60	X 45		A	44
18	X 40	X 38	X 39	X 39	X 38															X 59	X 56	X 44	X 37	X 38
19	X 38	X 40	X 37	X 39	X 37															X 56	X 40	X 34	X 33	A
20	A	X 34	X 34	C	C	C	C	C	C	C	C								X 66	X 65	X 44	X 44	X 44	X 44
21	X 44	X 43	X 42	X 38	X 35	39														X 72	X 66	X 48	X 40	X 40
22	X 40	X 40	X 39	X 41	X 31															X 60	X 42	X 42	X 39	X 41
23	X 41	X 41	X 42	X 42	X 38															X 65	X 45	X 41	X 41	X 43
24	X 44	X 45	X 41	X 39	X 34	X 34												C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C									X 53	X 42	X 44	X 44	X 42
26	X 42	X 41	X 42	X 41	X 40	X 39														X 64	X 52	X 45	X 43	X 43
27	X 44	X 45	X 44	X 44	X 37															X 70	X 72	X 65	A	X 46
28	X 46	X 46	X 48	X 43	X 41															X 63	X 75	X 47	X 48	X 44
29	X 42	X 44	X 45	X 44	X 42															X 60	X 54	X 47	X 44	X 46
30	X 43	X 45	X 44	X 43	X 40															X 48	X 45	X 45	X 44	X 44
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	28	26	9													1	29	29	26	27	27
MED	X 44	X 43	X 42	X 42	X 40	X 38													X 66	X 65	X 56	X 48	X 44	X 44
U Q	X 49	X 46	X 46	X 44	X 41	X 40														X 70	X 68	X 56	X 53	X 48
L Q	X 42	X 40	X 40	X 39	X 38	X 36														X 60	X 46	X 44	X 42	X 43

SEP. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	39	36	37	38	36	27	42	50	58	56	53	A	56	50	54	54	58	A	61	75	70	62	52	46
2	44	39	40	38	34	34	46	60	69	56	A	49	56	A	46	47	63	A	69	60	47	39	36	35
3	29	29	30	F	F	F	45	A	56	49	48	49	A	A	52	49	51	54	52	53	52	F	47	42
4	36	34	32	31	F	34	44	45	49	54	56	54	60	58	60	58	56	58	62	57	F	F	F	F
5	F	42	42	38	39	37	49	63	76	70	73	64	69	63	59	64	66	67	66	61	49	44	45	44
6	43	42	40	40	39	35	46	58	59	65	70	62	64	62	64	68	58	61	63	64	63	62	52	46
7	45	43	40	38	39	38	58	60	68	91	56	61	61	61	64	60	60	62	80	81	70	56	54	54
8	57	51	49	46	42	39	60	65	74	77	84	103	112	112	95	78	69	A	66	58	53	53	47	A
9	42	36	33	31	28	32	43	C	C	C	C	C	C	C	C	C	C	C	C	50	43	F	39	39
10	F	F	F	F	F	F	43	52	52	60	56	56	64	62	53	54	50	51	60	64	61	48	38	37
11	37	33	31	F	F	31	47	52	60	61	55	57	65	77	70	60	57	61	71	75	62	A	36	36
12	38	35	35	37	34	31	50	61	62	62	66	57	63	61	63	60	58	56	59	60	49	48	47	46
13	47	46	42	33	33	32	51	67	64	67	76	70	77	86	74	58	55	58	70	76	64	36	37	37
14	36	38	36	35	34	35	56	69	56	58	55	58	62	74	74	72	66	63	57	58	52	47	43	42
15	43	38	35	28	33	30	50	46	57	74	74	A	62	82	90	63	53	53	60	64	56	51	44	37
16	34	34	36	38	33	26	37	51	62	78	56	55	55	56	60	59	53	70	83	66	41	A	40	38
17	37	35	37	38	A	28	42	A	60	C	C	C	58	53	51	56	58	57	A	54	39	A	A	F
18	34	32	33	33	32	34	50	59	51	59	69	66	58	60	61	63	61	57	52	53	50	38	31	32
19	32	34	31	32	30	32	46	48	50	53	51	52	54	51	58	56	60	62	66	50	33	28	27	A
20	A	28	28	C	C	C	C	C	C	C	C	56	62	62	68	57	52	55	60	59	38	38	38	38
21	38	37	36	32	29	F	45	48	54	58	59	64	66	62	60	56	58	65	72	66	60	42	34	34
22	34	34	33	35	25	24	42	54	63	67	58	70	70	62	64	59	59	62	62	54	36	36	35	35
23	35	35	36	36	32	28	41	54	62	61	68	61	64	61	58	65	64	60	64	58	39	35	35	37
24	38	38	35	33	28	28	45	57	72	80	63	64	69	66	66	70	67	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	62	70	62	68	64	69	78	70	47	36	38	38	36
26	36	35	36	35	34	33	51	56	63	62	62	66	65	65	64	56	61	66	64	58	46	39	37	37
27	38	39	38	38	31	28	48	58	62	63	65	68	64	64	63	61	64	59	66	64	66	59	A	40
28	40	40	42	37	35	32	42	62	78	73	105	79	65	78	95	83	94	76	64	57	69	41	41	38
29	36	38	39	38	36	37	55	82	78	78	73	88	82	81	74	73	71	73	72	54	48	41	38	40
30	38	39	38	37	34	34	52	72	69	69	73	70	74	79	71	77	84	86	67	42	39	39	38	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	26	28	28	25	23	25	28	25	27	26	25	26	28	27	29	29	29	25	27	29	28	23	26	25
MED	38	36	36	37	34	32	46	58	62	62	63	62	64	62	64	60	60	61	64	58	50	41	38	38
U Q	42	39	40	38	36	34	50	62	69	73	73	68	69	77	70	66	66	66	70	64	62	51	45	42
L Q	36	34	33	33	31	28	43	52	56	58	56	56	60	61	58	56	56	57	60	54	40	38	36	36

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 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	364	UL408	UL440	UL460	A	UL448	UL452	A	A	A	A						
2							L	380	A	UL432	A	UL440	UL452	A	UL448	428	A	A	A					
3							A	A	A	UL436	UL436	UL444	A	A	440	UL420	UL408	A	A					
4									A	UL456	A	UL448	UL464	460	A	A	A	A						
5								L	L	468	L	A	480	EB	EB	432	L	A						
6								L	L	448	UL440	UL472	472	UL456	A	A	A	A						
7								L	UL452	452	UL460	UL464	UL464	UL460	UL452	L	L	A						
8							L	L	L	EB	UL476	UL456	464	L	L		A	A	A					
9							UL320	C	C	C	C	C	C	C	C	C	C	C	C					
10								L	420	A	UL456	464	468	456	UL460	UL428	L							
11								A	L	A	UL448	UL464	468	440	L	UL420	L	L						
12								L	A	UL424	UL432	UL432	UL456	452	UL412	L	L	L						
13								L	L	UL444	452	UL444	456	UL444	UL444	A	L	A						
14									L	L	UL440	464	448	UL448	424	416	L							
15								A	UL400	UL424	428	A	UL452	UL428	UL428	A	A							
16								L	376	UL412	UL428	A	UL440	UL496	UL420	UL392	UL380	A						
17								A	A	C	C	C	UL428	UL440	A	384	A		A			A		
18									L	A	420	436	UL432	440	UL428	A	A							
19								L	L	UL432	UL436	432	444	UL432	UL420	UL408	L	A						
20						C	C	C	C	C	C	UL440	UL424	UL440	L	L								
21								L	L	UL420	448	432	416	L	L	UL436	L	L						
22								L	L	UL424	UL448	UL432	UL452	UL464	UL424	L	L							
23									A	UL432	UL448	L	UL436	UL436	L	UL404	L							
24								L	L	L	L	464	UL452	UL460	UL448	L	L	C	C					
25							C	C	C	C	C	UL456	UL452	L	UL432	A	A							
26								L	L	L	UL444	UL452	L	L	L	A	L							
27									L	L	UL448	UL460	UL456	UL468	L	A	L							
28									A	L	A	L	UL464	L	A	A	A							
29									L	L	L	UL480	L	L	L	L								
30										L	L	L	UL472	UL464	A	A								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	2	5	15	19	21	26	20	14	11	2							
MED							UL320	372	UL408	UL432	UL448	UL452	UL452	UL452	UL430	UL420	UL394							
U Q									436	448	UL452	UL464	464	UL460	UL448	UL428								
L Q									388	UL424	UL436	438	UL444	UL440	UL424	UL404								

SEP. 2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	R	A	A	A	A	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
3						B	A	A	A	A	A	A	A	A	U A 332	A	A	A	B					
4						B	A	A	A	A	A	A	A	R	A	A	A	A	B					
5							A	A	A	R	A	A	R	B	B	U R 344	U R 312	A	B					
6							A	A	A	U R 336	R	R	R	A	A	A	A	A	B					
7						B	A	A	A	A	R	R	R	R	R	R	U A 284	A	B					
8						B	B	A	A	B	R	A	A	R	R	A	A	A	B					
9					B	B	A	C	C	C	C	C	C	C	C	C	C	C	C					
10						B	U R 212	A	A	A	A	R	R	A	R	R	U R 268	A	B					
11						B	A	A	A	A	R	R	R	R	R	A	A	A	A					
12							B	A	A	A	A	A	R	A	R	R	R	R	B					
13							A	A	R	A	R	R	R	A	R	A	A	A	B					
14						B	U R 200	A	A	A	R	R	R	A	A	A	256	A	B					
15						B	U R 196	A	A	R	R	A	R	R	R	A	U A 248	A	A					
16						B	A	A	A	A	A	A	R	R	R	R	A	A	B					
17						B	A	A	A	C	C	C	A	R	A	A	A	A	B			A		
18						B	A	A	A	A	A	A	R	A	A	A	A	A	B					
19						B	A	A	A	A	A	A	R	A	U R 340	A	A	A	B					
20						C	C	C	C	C	C	R	U R 320	324	R	R	A	U R 180						
21							B	A	A	A	A	A	R	R	U R 316	R	U R 248	A	B					
22						B	U R 208	A	A	A	R	R	R	R	R	U R 300	A	A	B					
23						B	A	A	A	A	A	348	R	R	R	R	U A 252	A	B					
24							A	A	A	A	R	R	R	R	R	U R 288	A	C	C					
25							C	C	C	C	C	A	A	R	U R 324	A	A	A	B					
26							B	U A 252	A	A	R	R	R	A	A	A	A	A	B					
27						B	U A 184	260	A	A	A	R	R	R	A	A	A	A	B					
28						B	B	A	A	A	A	A	A	R	A	A	A	A	B					
29						B	B	U A 228	A	A	A	R	R	R	R	A	A	A	B					
30						B	B	U A 244	A	A	A	R	R	R	U A 324	U R 288	U R 244	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							5	4		1		1	1	1	5	4	8	1						
MED							U R 200	U A 248		U R 336		348	U R 320	324	U R 324	U R 294	U 254	U R 180						
U Q							U R 210	256							U 336	U R 322	U R 276							
L Q							U 190	U A 236							U 320	U R 288	U R 248							

SEP. 2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 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	20	E B 15	19	21	J A 24	24	J A 34	31	J A 44	J A 47	J A 50	J A 138	J A 42	G	47	J A 45	J A 48	J A 67	J A 76	J A 44	J A 32	J A 41	J A 28	J A 27
2	J A 26	E B 16	E B 16	20	22	J A 28	J A 31	J A 40	J A 63	J A 50	J A 94	J A 44	J A 48	J A 72	J A 42	38	J A 63	J A 114	J A 96	J A 85	J A 54	J A 53	J A 25	J A 24
3	25	22	23	J A 21	J A 60	J A 68	J A 50	J A 70	J A 62	J A 68	J A 47	J A 48	J A 54	J A 77	39	40	J A 44	J A 49	J A 40	J A 52	J A 124	J A 46	J A 60	J A 45
4	J A 30	J A 28	J A 25	J A 23	E B 16	J A 37	J A 33	J A 45	J A 62	J A 45	J A 80	J A 47	J A 59	G	J A 53	J A 57	J A 57	J A 32	J A 40	J A 48	J A 78	J A 52	J A 46	J A 66
5	J A 53	J A 27	J A 42	J A 93	J A 31	J A 39	J A 38	35	38	G	J A 47	J A 52	G	E B 48	E B 50	G	G	31	J A 23	E B 15	J A 53	25	E B 15	E B 15
6	J A 36	J A 44	J A 33	23	24	20	J A 27	J A 34	36	G	G	G	G	41	44	J A 54	J A 45	J A 48	J A 28	J A 35	J A 32	E B 14	E B 15	21
7	J A 31	J A 32	J A 27	22	E B 16	E B 16	28	32	35	J A 43	G	G	G	G	G	G	32	J A 38	J A 33	21	20	24	E B 15	J A 39
8	J A 46	E B 16	20	E B 16	E B 15	E B 14	25	J A 37	J A 53	E B 33	G	40	41	G	G	J A 66	J A 78	J A 126	J A 53	J A 49	J A 74	J A 80	J A 46	J A 76
9	J A 27	E B 16	E B 16	18	J A 19	20	J A 37	C	C	C	C	C	C	C	C	C	C	C	C	J A 74	J A 28	J A 31	J A 22	J A 50
10	J A 30	E B 15	E B 16	E B 15	E B 16	E B 15	G	J A 33	35	J A 50	J A 41	G	G	38	G	G	G	24	J A 19	21	20	J A 28	J A 22	J A 40
11	J A 50	22	E B 15	20	22	E B 16	25	34	J A 40	J A 47	G	G	G	G	G	J A 50	J A 32	J A 33	J A 27	J A 31	J A 53	J A 66	J A 36	J A 34
12	E B 16	J A 22	23	23	22	23	25	34	35	J A 43	J A 39	37	G	38	G	G	G	G	J A 18	23	J A 40	J A 27	J A 26	21
13	J A 26	22	E B 15	E B 14	E B 16	E B 15	26	31	G	J A 35	G 33	G	G	J A 37	G	36	30	J A 32	J A 25	J A 24	23	J A 26	E B 16	23
14	23	23	20	20	25	23	G	31	32	37	G	G	G	35	34	J A 35	28	22	J A 21	24	J A 26	22	22	E B 15
15	E B 16	J A 22	E B 15	23	E B 16	E B 15	G	30	35	G	G	J A 65	G	G	G	35	29	J A 33	J A 28	J A 26	J A 23	E B 15	J A 39	J A 23
16	J A 28	22	23	E B 15	20	J A 25	J A 27	J A 32	J A 51	J A 40	38	J A 59	G	G	G	G	J A 36	J A 29	J A 24	24	J A 55	J A 64	J A 53	J A 65
17	J A 29	J A 23	J A 23	J A 36	J A 44	J A 36	J A 40	78	J A 55	C	C	C	40	G	J A 58	J A 49	J A 53	J A 71	J A 108	J A 54	J A 48	J A 100	J A 85	J A 41
18	J A 27	J A 24	21	J A 32	J A 26	J A 50	J A 52	84	J A 46	J A 46	35	J A 42	G	J A 44	35	36	J A 42	J A 43	J A 64	J A 28	J A 34	J A 32	J A 37	24
19	24	22	25	J A 32	J A 38	J A 37	J A 32	30	J A 38	J A 38	33	J A 40	G	37	G	J A 32	31	J A 46	J A 32	J A 42	J A 48	E B 17	E B 16	J A 52
20	J A 52	J A 34	J A 22	C	C	C	C	C	C	C	C	G	38	36	G	G	28	G	21	E B 15	E B 16	E B 15	E B 16	E B 16
21	E B 15	E B 15	E B 16	E B 15	E B 16	E B 15	24	28	36	35	36	38	G	G	G	G	G	23	J A 25	J A 23	24	J A 25	J A 21	23
22	J A 22	J A 27	21	E B 16	E B 15	E B 15	G	28	34	J A 41	G	G	G	G	G	G	29	26	J A 24	J A 32	J A 23	J A 24	J A 27	22
23	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	25	31	38	J A 40	37	G	G	G	G	G	29	28	J A 20	J A 26	J A 48	22	E B 15	J A 28
24	E B 15	23	J A 24	22	E B 15	E B 15	26	J A 32	J A 37	J A 40	G	G	G 30	G 30	G 29	G	27	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	37	J A 40	G	G	36	J A 34	J A 29	E B 15	E B 15	J A 23	22	J A 23	22
26	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14	24	29	38	36	G	G	G	36	39	J A 43	33	J A 40	J A 25	23	21	J A 21	E B 14	22
27	E B 15	E B 15	E B 15	J A 27	E B 15	24	26	36	33	J A 40	40	G	G	G	34	J A 38	28	J A 32	J A 40	J A 22	E B 15	22	J A 84	J A 45
28	J A 30	J A 25	J A 54	J A 53	J A 40	J A 34	21	J A 40	37	J A 44	J A 72	J A 51	J A 49	G 32	J A 46	J A 50	J A 55	J A 46	J A 43	J A 50	J A 32	J A 25	J A 24	J A 41
29	23	23	21	21	21	E B 15	22	30	33	37	37	G	G	G	G 26	J A 37	30	J A 28	J A 30	J A 28	24	J A 48	J A 42	J A 28
30	J A 28	J A 22	J A 18	J A 21	23	22	21	29	J A 34	35	J A 47	G	G	G	37	37	30	J A 32	E B 14	J A 24	J A 21	J A 32	J A 28	23
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	28	28	28	28	27	27	26	26	28	29	29	29	29	29	28	28	29	29	29	29	29
MED	J A 26	22	21	21	20	21	26	32	37	J A 40	36	G	G	G	G	36	31	J A 32	J A 28	J A 26	J A 32	J A 26	J A 25	J A 27
U Q	J A 30	J A 24	J A 24	J A 23	J A 24	J A 31	J A 32	J A 37	J A 46	J A 45	J A 47	J A 46	J A 40	38	40	J A 44	J A 44	J A 46	J A 40	J A 46	J A 50	J A 47	J A 40	J A 43
L Q	E B 18	E B 16	E B 16	E B 16	E B 16	E B 15	23	30	35	35	G	G	G	G	G	G	28	28	J A 22	23	23	22	E B 16	22

SEP. 2017 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP.2017 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 15	E B 15	E B 15	E B 15	16	18	24	28	33	36	40	A A 138	38	G	45	42	42	A A 67	23	19	17	19	20	18
2	E B 15	E B 16	E B 16	E B 15	E B 15	E B 16	21	27	56	37	A A 94	37	40	A A 72	38	34	40	A A 114	58	17	38	29	E B 16	E B 15
3	E B 15	E B 16	E B 16	16	E B 16	E B 15	37	A A 70	48	37	38	36	A A 54	A A 77	38	37	34	40	27	22	24	17	E B 16	23
4	19	E B 15	E B 15	E B 16	E B 16	18	26	34	44	38	40	40	41	G	42	51	54	28	32	24	29	24	23	22
5	30	E B 16	18	20	18	E B 15	24	32	34	G	39	46	G	E B 48	E B 50	G	G	27	18	E B 15	39	E B 16	E B 15	E B 15
6	E B 15	17	E B 16	E B 16	E B 16	E B 16	21	28	33	G	G	G	G	38	42	48	38	38	21	24	20	E B 14	E B 15	E B 15
7	E B 16	22	E B 16	E B 16	E B 16	E B 16	23	29	31	36	G	G	G	G	G	G	32	30	24	E B 15	E B 16	E B 16	E B 15	19
8	E B 16	E B 16	E B 15	E B 16	E B 15	E B 14	23	29	34	E B 33	G	37	37	G	G	34	53	A A 126	49	42	31	38	22	A A 76
9	21	E B 16	E B 16	E B 15	16	E B 16	24	C	C	C	C	C	C	C	C	C	C	C	C	24	19	18	E B 16	18
10	18	E B 15	E B 16	E B 15	E B 16	E B 15	G	28	33	44	38	G	G	36	G	G	G	24	16	E B 16	E B 16	E B 16	E B 15	E B 16
11	E B 16	E B 16	E B 15	E B 15	E B 16	E B 16	21	32	34	44	G	G	G	G	G	35	27	21	18	20	24	A A 66	19	21
12	E B 16	17	E B 15	E B 16	E B 17	E B 15	21	29	32	38	36	34	G	34	G	G	G	G	15	E B 16	29	21	18	E B 15
13	E B 16	E B 16	E B 15	E B 14	E B 16	E B 15	23	27	G	31	G 31	G	G	32	G	32	28	27	20	E B 16	E B 16	18	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	G	26	30	33	G	G	G	34	33	31	27	21	E B 15	E B 16	20	E B 16	E B 15	E B 15
15	E B 16	E B 16	E B 15	E B 16	E B 16	E B 15	G	27	33	G	G	A A 65	G	G	G	32	27	22	21	19	18	E B 15	23	E B 16
16	E B 15	E B 15	18	E B 15	E B 15	20	22	25	28	32	36	44	G	G	G	G	30	24	19	E B 15	28	A A 64	28	28
17	E B 16	E B 16	E B 15	21	A A 44	18	21	A A 78	38	C	C	C	37	G	44	34	32	34	A A 108	29	20	A A 100	A A 85	24
18	20	E B 15	E B 15	19	E B 15	E B 15	20	26	30	40	35	36	G	36	32	34	32	28	36	E B 15	21	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 15	20	22	20	18	28	28	33	31	35	G	34	G	28	29	34	22	22	21	E B 17	E B 16	A A 52
20	A A 52	23	16	C	C	C	C	C	C	C	C	G	36	36	G	G	26	G	E B 16	E B 15	E B 16	E B 15	E B 16	E B 16
21	E B 15	E B 15	E B 16	E B 15	E B 16	E B 15	20	26	33	33	34	36	G	G	G	G	G	20	19	E B 16	E B 16	E B 16	E B 17	E B 16
22	E B 16	19	E B 16	E B 16	E B 15	E B 15	G	25	29	34	G	G	G	G	G	G	27	21	18	21	18	E B 16	E B 16	E B 15
23	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	21	29	34	34	35	G	G	G	G	G	27	24	16	24	30	E B 15	E B 15	E B 15
24	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	23	26	28	34	G	G	G 28	G 29	G 28	G	26	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	36	35	G	G	34	30	22	E B 15	E B 15	E B 15	E B 16	20	E B 15
26	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14	20	27	35	33	G	G	G	34	36	38	30	26	16	15	E B 15	E B 15	E B 14	E B 15
27	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	23	34	32	34	37	G	G	G	33	34	27	20	32	E B 16	E B 15	E B 16	A A 84	22
28	18	E B 16	22	21	22	21	20	32	33	36	40	38	38	G 30	38	36	29	36	26	44	20	18	18	21
29	16	E B 16	E B 16	E B 15	E B 16	E B 15	19	27	31	35	34	G	G	G	G 23	32	27	19	22	23	22	22	25	E B 17
30	E B 16	17	E B 15	E B 16	E B 16	E B 16	18	27	30	32	34	G	G	G	35	35	27	27	E B 14	E B 15	E B 16	21	16	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	29	29	29	28	28	28	28	27	27	26	26	28	29	29	29	29	29	28	28	29	29	29	29	29
MED	E B 16	E B 16	E B 15	E B 16	E B 16	E B 15	21	28	33	34	34	G	G	G	G	32	28	26	20	17	20	E B 17	E B 16	E B 16
U Q	17	16	16	16	16	16	23	32	34	37	38	37	36	35	38	35	32	34	26	24	26	22	21	22
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	27	30	33	G	G	G	G	G	G	27	21	16	E B 15	E B 16	E B 16	E B 16	E B 15

SEP.2017 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP.2017 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	15	15	15	15	16	15	15	15	16	18	17	20	20	18	19	18	16	15	16	16	16	16	16	14
2	15	16	16	15	15	16	13	15	14	18	17	21	20	18	17	17	16	14	14	15	17	16	16	15
3	15	16	16	14	16	15	16	15	15	18	18	17	20	18	18	15	15	15	15	16	16	16	16	15
4	17	15	15	16	16	16	15	14	15	17	20	16	20	21	20	23	18	14	14	15	15	15	16	16
5	15	16	15	15	15	15	13	16	22	21	22	22	21	E 48	B E 50	B	20	20	15	15	15	15	16	15	15
6	15	16	16	16	16	16	15	15	15	16	16	19	20	19	19	16	15	13	16	16	15	14	15	15
7	16	16	16	16	16	16	14	15	17	20	20	22	23	22	18	18	18	13	15	15	16	16	15	16
8	16	16	15	16	15	14	15	16	16	33	21	24	23	26	19	21	18	20	14	16	16	16	15	15
9	16	16	16	15	15	16	14	C	C	C	C	C	C	C	C	C	C	C	C	15	16	15	16	16
10	16	15	16	15	16	15	14	16	18	23	23	23	24	20	21	17	14	14	12	16	16	16	16	16
11	16	16	15	15	16	16	14	18	19	18	21	18	21	20	19	13	12	13	14	15	16	16	14	15
12	16	14	16	16	17	15	16	13	14	21	20	23	21	16	16	19	14	14	15	16	15	15	15	15
13	16	16	15	14	16	15	14	14	16	16	18	18	21	19	22	16	15	15	14	16	16	14	16	16
14	16	16	16	16	16	16	15	16	14	16	20	23	20	17	18	14	15	14	15	16	16	16	15	15
15	16	16	15	16	16	15	15	15	16	20	18	18	23	19	18	17	16	13	16	15	16	15	15	16
16	15	15	15	15	15	15	15	12	14	14	16	16	14	19	17	15	15	15	15	15	15	15	15	15
17	16	16	15	15	16	15	16	15	16	C	C	C	16	17	19	16	16	16	16	16	16	15	16	15
18	14	15	15	15	15	15	14	14	14	17	19	18	16	17	18	14	15	14	14	15	15	16	16	16
19	16	16	16	15	15	16	15	15	15	19	18	21	18	20	18	14	13	14	14	15	15	17	16	15
20	15	16	16	C	C	C	C	C	C	C	C	20	21	14	19	16	14	15	16	15	16	15	16	16
21	15	15	16	15	16	15	14	16	16	16	17	16	22	22	18	16	15	15	14	16	16	16	17	16
22	16	15	16	16	15	15	14	14	14	14	14	16	18	17	17	16	14	12	16	16	15	16	16	15
23	15	15	15	15	15	15	16	16	14	14	17	20	21	21	19	16	14	14	14	15	15	15	15	15
24	15	15	15	15	15	15	14	16	13	14	15	16	17	17	16	14	12	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	22	22	22	20	17	15	14	15	15	15	16	16	15
26	15	16	15	15	15	14	15	13	18	18	16	19	19	17	17	14	14	14	13	15	16	15	14	15
27	15	15	15	15	15	16	13	14	15	18	20	20	18	21	16	14	12	12	15	16	15	16	16	16
28	15	16	16	16	14	14	15	16	15	16	19	18	19	20	16	16	16	15	16	15	15	15	16	15
29	16	16	16	16	16	15	14	15	14	14	16	20	19	18	16	14	14	13	14	14	14	16	16	17
30	16	15	15	16	16	16	14	15	15	16	16	16	16	20	16	14	16	12	14	15	16	14	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	29	29	29	28	28	28	28	27	27	26	26	28	29	29	29	29	29	28	28	29	29	29	29	29
MED	16	16	15	15	16	15	14	15	15	18	18	20	20	19	18	16	15	14	15	15	16	16	16	15
U Q	16	16	16	16	16	16	15	16	16	19	20	22	21	21	19	17	16	15	16	16	16	16	16	16
L Q	15	15	15	15	15	15	14	14	14	16	16	18	18	17	17	14	14	13	14	15	15	15	15	15

SEP.2017 fmin (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP.2017 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	326	287	302	315	297	329	330	326	344	336	266	A	329	323	324	310	344	A	311	324	335	350	297	293
2	325	295	309	316	314	295	295	323	369	363	A	283	334	A	296	252	316	A	345	350	323	298	299	326
3	317	303	298	F	F	F	338	A	353	353	284	293	A	A	309	311	322	354	333	331	314	F	304	314
4	316	325	291	299	F	351	377	358	334	332	347	312	306	302	322	336	331	340	354	343	F	F	F	F
5	F	299	312	277	308	291	304	336	335	308	326	302	319	322	321	328	338	349	349	349	313	297	292	296
6	294	308	303	321	323	328	349	345	344	355	356	338	333	339	328	339	347	339	344	314	323	326	321	305
7	296	300	300	300	305	311	366	349	345	393	388	338	324	304	330	325	334	309	328	339	329	303	282	303
8	295	310	307	308	307	292	347	346	337	292	258	269	287	310	316	355	355	A	338	326	290	309	325	A
9	256	260	272	271	262	275	289	C	C	C	C	C	C	C	C	C	C	C	C	324	327	F	292	293
10	F	F	F	F	F	F	371	356	350	368	331	317	332	342	315	325	334	322	329	339	360	335	298	279
11	312	329	300	F	F	326	391	356	338	386	357	302	309	335	334	347	329	342	337	348	380	A	305	293
12	334	286	309	334	350	328	359	373	360	365	360	344	324	325	340	334	354	352	342	346	318	304	306	307
13	317	331	340	328	303	325	372	355	368	326	329	308	309	347	357	388	352	322	327	355	371	333	300	319
14	312	302	302	308	307	330	366	392	377	375	371	318	323	334	342	349	355	350	349	322	341	331	311	310
15	323	300	288	263	299	286	373	366	323	343	364	A	284	320	351	368	367	336	326	342	306	336	314	278
16	299	296	304	338	366	318	349	353	332	357	364	346	321	280	340	344	312	346	352	387	283	A	314	300
17	288	305	308	342	A	286	347	A	368	C	C	C	339	337	332	347	355	364	A	348	333	A	A	F
18	284	290	305	304	284	306	360	378	336	336	358	350	362	327	336	351	363	379	331	313	354	343	301	311
19	315	327	311	337	312	319	388	397	354	342	321	339	314	334	366	335	358	361	362	374	327	318	313	A
20	A	337	319	C	C	C	C	C	C	C	C	321	353	354	347	353	344	362	349	373	311	305	315	311
21	313	347	337	376	340	F	393	334	396	362	356	366	364	345	351	340	342	343	359	358	371	341	310	320
22	306	304	304	366	319	322	379	360	365	374	369	355	364	337	358	334	359	368	352	370	339	312	305	312
23	322	324	320	346	327	316	368	350	383	364	381	352	365	360	345	358	369	358	346	370	347	302	295	303
24	316	310	307	352	319	339	376	354	342	360	353	345	344	333	332	363	356	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	361	344	334	345	346	343	366	376	346	305	306	306	300
26	308	330	312	312	314	333	387	360	391	380	379	349	344	348	349	349	344	359	356	362	327	325	296	301
27	305	325	333	333	366	339	376	379	374	375	346	354	346	326	326	350	361	347	352	311	347	367	A	297
28	298	280	292	333	304	336	333	330	357	316	339	357	336	306	341	322	356	344	319	301	370	293	314	294
29	285	286	287	315	305	334	331	369	377	369	336	350	334	338	335	344	352	363	358	363	342	308	299	309
30	283	305	315	332	319	320	360	393	387	375	372	344	343	343	340	349	352	353	369	329	304	314	308	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	26	28	28	25	23	25	28	25	27	26	25	26	28	27	29	29	29	25	27	29	28	23	26	25
MED	310	304	306	321	312	322	363	356	354	361	356	342	334	334	336	344	352	350	346	346	328	314	305	303
U Q	317	325	312	338	323	332	376	371	374	374	366	350	344	342	346	350	356	362	354	360	347	335	313	311
L Q	295	296	300	306	304	300	342	346	338	336	330	312	320	322	325	331	336	341	331	325	314	304	298	295

SEP.2017 M(3000)F2 (0.01)

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IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 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	388	U L 378	U L 399	U L 401	A	U L 424	U L 408	A	A	A	A						
2							L	364	A	U L 387	A	U L 427	U L 375	A	U L 370	372	A	A	A					
3							A	A	A	U L 403	U L 427	U L 414	A	A	384	U L 391	U L 371	A	A					
4									A	U L 405	A	U L 439	U L 372	378	A	A	A	A						
5								L	L	383	L	A	401	E B	E B	375	L	A						
6								L	L	399	U L 431	U L 407	401	U L 396	A	A	A	A						
7								L	U L 376	389	U L 428	U L 422	U L 407	U L 387	U L 397	L	L	A						
8							L	L	L	E B	U L 383	U L 378	366	L	L		A	A	A					
9							U L 321	C	C	C	C	C	C	C	C	C	C	C	C					
10								L	403	A	U L 422	418	403	391	U L 378	U L 369	L							
11								A	L	A	U L 428	U L 437	387	415	L	U L 397	L	L						
12								L	A	U L 406	U L 402	U L 429	U L 424	411	U L 421	L	L	L						
13								L	L	U L 403	403	U L 406	377	U L 390	U L 389	A	L	A						
14									L	L	U L 408	417	390	U L 380	408	379	L							
15								A	U L 416	U L 387	408	A	U L 373	U L 386	U L 374	A	A							
16								L	432	U L 401	U L 398	A	U L 401	U L 335	U L 385	U L 396	U L 368	A						
17								A	A	C	C	C	U L 410	U L 376	A	412	A		A		A			
18									L	A	427	392	U L 420	395	U L 380	A	A							
19								L	L	U L 400	U L 416	420	384	U L 407	U L 356	U L 381	L	A						
20						C	C	C	C	C	C	U L 425	U L 455	U L 389	L	L								
21								L	L	U L 418	442	422	454	L	L	U L 378	L	L						
22								L	L	U L 414	U L 396	U L 447	U L 400	U L 387	U L 388	L	L							
23									A	U L 418	U L 405	L	U L 437	U L 425	L	U L 392	L							
24								L	L	L	L	397	U L 413	U L 387	U L 379	L	L	C	C					
25							C	C	C	C	C	U L 441	U L 407	L	U L 415	A	A							
26								L	L	L	U L 419	U L 412	L	L	L	A	L							
27									L	L	U L 428	U L 428	U L 416	U L 402	L	A	L							
28									A	L	A	L	U L 395	L	A	A	A							
29									L	L	L	U L 374	L	L	L	L								
30										L	L	L	U L 408	U L 386	A	A								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	2	5	15	19	21	26	20	14	11	2							
MED							U L 321	376	U L 403	U L 401	U L 416	U L 420	U L 402	U L 390	U L 384	U L 381	U L 370							
U Q									424	U L 406	U L 428	U L 428	U L 416	U L 404	U L 397	U L 396								
L Q									U L 377	389	U L 402	U L 406	387	U L 386	U L 378	375								

SEP. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 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						E A 262	280	288	282	290	376	A	302	328	320	338	272	A						
2							350	298	256	258	A	434	304	A	420	538	304	A	E A 260					
3							E A 314	A	E A 276	284	446	376	A	A	344	350	324	E A 256	232					
4									E A 334	296	292	354	350	344	302	296	E A 342	258						
5								278	256	306	268	320	310	310	310	296	268	250						
6								244	270	250	250	286	316	274	304	252	250	250						
7								268	258	224	228	314	294	318	300	296	282	274						
8							254	256	252	298	348	366	302	270	256		254	A	E A 260					
9							380	C	C	C	C	C	C	C	C	C	C	C	C					
10								264	276	246	320	342	286	276	340	312	284							
11								246	262	232	262	360	324	266	276	262	284	268						
12								242	226	238	236	278	298	290	258	276	264	256						
13								252	242	294	268	312	288	248	252	230	264	254						
14									240	240	244	338	296	274	260	262	244							
15								246	294	260	238	A	374	276	240	230	230							
16								266	270	244	256	298	328	378	280	264	320	246						
17								A	242	C	C	C	292	292	E A 286	280	256		A			A		
18									274	280	260	246	256	308	270	258	246							
19								230	278	310	342	312	336	302	264	296	252	238						
20						C	C	C	C	C	C	290	248	260	260	246								
21								266	224	250	260	254	248	264	266	276	272	258						
22								256	260	236	246	268	224	284	252	274	252							
23									236	240	240	252	254	258	266	254	242							
24								252	260	226	238	270	258	270	274	246	254	C	C					
25							C	C	C	C	C	254	268	280	270	258	256							
26								246	234	230	242	266	260	270	264	254	264							
27									228	230	268	254	258	276	270	246	252							
28									236	252	248	238	270	310	250	258	234							
29									234	244	230	244	256	248	262	256								
30										222	230	244	258	250	246	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	5	17	26	26	25	26	28	27	29	28	26	11	3					
MED						E A 262	314	256	256	248	256	288	290	276	268	262	258	256	E A 260					
U Q							365	267	274	284	280	338	307	308	301	296	282	258	E A 260					
L Q							267	246	236	236	239	254	258	266	259	254	252	250	232					

SEP. 2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2017 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	214	E B 298	E B 242	E B 252	204	A	216	200	230	206	198	A	188	194	A	A	A	A	E A 254	232	222	208	E A 278	224
2	E B 254	E B 256	E B 250	E B 244	E B 248	E B 286	214	214	A	216	A	186	E A 244	A	228	218	A	A	A	198	E A 290	E A 292	E B 266	226
3	E B 252	E B 270	E B 286	E A 290	E B 260	E B 252	A	A	A	204	196	186	A	A	222	214	234	A	A	228	E A 254	E A 280	E B 246	E A 276
4	E A 260	E B 248	E B 282	E B 266	E B 240	210	210	218	A	210	A	198	E A 242	208	A	A	A	A	228	212	E A 254	E A 278	E A 298	E A 260
5	E A 308	E B 272	E A 246	E A 318	E A 262	E B 274	216	212	202	212	216	A	200	E B	E B	218	210	A	220	202	E A 280	E B 256	E B 262	E B 262
6	E B 284	E A 264	E B 256	E B 248	226	226	212	200	204	186	182	190	198	210	A	A	A	A	224	E A 240	234	212	210	E B 242
7	E B 248	E A 270	E B 264	E B 264	E B 262	E B 248	216	208	206	204	186	174	196	200	198	206	222	A	236	208	212	206	E B 264	E A 274
8	242	E B 232	E B 238	E B 234	E B 252	E B 266	210	202	196	E B 286	204	202	218	218	198	236	A	A	A	E A 260	E A 298	E A 296	230	A
9	E A 326	E B 332	E B 308	E B 310	E B 354	E B 314	E A 282	C	C	C	C	C	C	C	C	C	C	C	C	228	222	E A 286	E B 272	E A 286
10	E A 254	E B 240	E B 236	E B 238	E B 250	E B 268	198	190	196	A	190	184	184	184	190	190	202	214	230	212	204	208	232	E B 310
11	E B 250	E B 236	E B 240	E B 264	E B 246	236	208	A	204	A	194	174	204	186	200	204	196	204	216	210	194	A	E A 282	E A 286
12	E B 238	E B 288	E A 276	E B 232	E B 198	E B 252	222	206	A	200	194	186	180	178	166	204	204	210	218	210	E A 268	E A 270	E A 262	E B 254
13	E B 242	230	210	206	E B 244	228	214	204	196	186	186	184	212	192	182	A	198	A	226	210	194	202	E B 236	E B 248
14	E B 244	258	E B 246	230	E B 260	234	214	204	192	194	188	186	186	190	182	206	204	212	212	212	212	208	E B 244	E B 258
15	226	E B 268	E B 284	E B 368	E B 294	E B 290	204	A	206	190	192	A	218	210	206	A	A	224	232	220	218	204	230	E B 254
16	E B 284	E B 298	E A 274	226	190	E A 302	218	212	192	174	188	A	188	192	192	194	212	A	210	180	E A 328	A	E A 292	E A 302
17	E B 284	E B 274	E B 252	E A 250	A	E A 292	224	A	A	C	C	C	204	212	A	210	A	220	A	214	210	A	A	E A 342
18	E A 306	E B 286	E B 268	E B 286	E B 288	E B 250	228	204	194	A	178	202	192	186	182	A	A	212	230	228	206	212	E B 282	E B 252
19	E B 272	E B 242	E B 276	E B 252	E A 286	E A 248	206	202	186	184	172	184	194	178	E A 240	204	206	A	212	196	232	E B 232	E B 280	A
20	A	E A 288	E A 254	C	C	C	C	C	C	C	C	174	170	208	218	170	196	222	212	196	194	230	E B 246	E B 254
21	E B 254	214	212	204	202	204	206	188	192	168	176	180	180	200	176	196	210	218	216	200	192	208	226	E B 252
22	E B 260	E A 280	E B 272	206	206	E B 240	210	210	220	200	176	186	176	200	186	202	218	218	210	202	198	228	E B 250	E B 256
23	E B 250	E B 236	238	222	212	E B 260	212	222	A	182	182	176	184	180	202	208	212	220	216	196	210	E B 272	E B 280	268
24	E B 256	E B 238	E B 246	220	E B 242	E B 240	202	210	208	192	180	178	182	210	188	202	204	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	184	182	182	178	A	A	214	200	188	218	E B 256	E A 272	E B 268
26	E B 266	E B 246	E B 252	E B 256	E B 236	E B 224	196	196	192	188	188	186	184	182	204	A	206	220	202	198	202	220	E B 260	E B 274
27	E B 260	E B 244	E B 236	228	192	228	202	214	196	192	184	180	186	182	176	A	210	220	214	E B 236	220	192	A	E A 302
28	E A 306	E B 308	E A 300	E A 242	E A 258	E A 248	224	224	A	198	A	194	192	216	A	A	A	216	208	E A 302	208	E A 268	E A 246	E A 282
29	E A 290	E B 298	E B 286	E B 242	E B 236	224	208	216	198	188	180	186	202	180	206	206	222	220	208	196	220	E A 246	E A 276	E B 276
30	E B 292	E A 268	E B 260	220	E B 230	230	212	208	206	188	184	184	182	188	A	A	220	212	188	186	220	E A 266	E B 258	E B 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	28	29	29	28	27	27	27	23	20	23	23	24	28	26	22	18	19	17	24	29	29	26	27	27
MED	E B 258	E B 268	E B 254	E 243	E B 244	E B 248	212	208	197	192	186	185	188	192	193	205	210	218	216	206	212	231	E B 262	E B 268
U Q	E A 284	E B 287	E B 276	E B 264	E B 260	E B 268	216	214	206	204	194	186	203	208	206	210	218	220	227	228	E A 244	E A 270	E A 278	E A 282
L Q	E B 249	E B 241	E B 241	227	212	228	206	202	193	186	180	180	183	182	182	202	204	212	210	197	205	208	244	E B 254

SEP. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.2017 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	112	118	112	112	A	B					
2						B	112	A	A	A	A	A	A	A	A	110	A	A	B					
3						B	A	A	A	A	A	A	A	A	110	110	110	A	B					
4						B	110	A	A	A	A	A	A	114	A	A	A	A	B					
5							A	114	112	112	A	A	108	B	B	114	110	110	B					
6							A	A	A	106	108	106	114	114	114	A	114	A	B					
7						B	114	112	A	A	112	110	110	110	110	110	110	110	B					
8						B	B	A	A	B	110	112	A	108	110	A	A	A	B					
9					118	B	A	C	C	C	C	C	C	C	C	C	C	C	C					
10						B	110	A	A	A	A	110	110	A	112	112	112	112	B					
11						B	A	A	A	A	116	110	112	112	112	A	A	A	A					
12							B	A	A	A	A	A	108	A	110	110	110	114	B					
13							114	114	114	A	114	112	112	A	110	110	110	A	B					
14						B	110	A	A	A	110	110	110	A	A	A	110	110	B					
15						B	112	114	114	112	112	A	112	112	110	110	110	108	A					
16						B	A	A	A	A	A	A	108	108	106	108	A	A	B					
17						B	A	A	A	C	C	C	A	108	A	A	A	A	B			A		
18						B	A	A	A	A	A	A	108	A	A	112	112	A	B					
19						B	A	A	A	A	A	A	110	A	116	A	108	A	B					
20						C	C	C	C	C	C	108	106	112	110	110	110	108						
21							B	118	112	112	A	112	112	112	108	108	106	110	B					
22						B	118	118	112	A	108	108	108	110	110	110	110	A	B					
23						B	128	112	110	A	A	110	110	110	108	108	110	110	B					
24							118	118	A	A	112	112	112	114	112	112	110	C	C					
25							C	C	C	C	C	A	A	112	110	110	110	A	B					
26							B	114	112	A	114	114	108	A	112	112	110	A	B					
27						B	110	110	110	A	A	108	110	110	A	A	A	A	B					
28						B	B	112	A	A	A	A	A	112	A	A	A	A	B					
29						B	B	108	110	A	A	108	106	110	106	A	116	A	B					
30						B	B	112	A	A	A	112	112	112	110	102	108	108	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		11	13	9	4	10	16	21	19	21	19	21	10						
MED					118		112	114	112	112	112	110	110	112	110	110	110	110						
U Q							118	116	113	112	114	112	112	112	112	112	111	110						
L Q							110	112	110	109	110	108	108	110	110	110	110	108						

SEP.2017 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

SEP.2017 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	102	B	104	104	104	104	104	106	104	104	100	96	96	G	122	120	116	96	96	96	92	92	86	86
2	90	B	B	104	104	98	110	96	92	94	86	84	86	84	86	112	100	94	102	94	94	94	92	92
3	90	104	102	114	108	104	100	94	94	98	98	104	98	90	152	126	110	92	100	96	96	96	94	92
4	88	88	88	86	B	88	112	100	98	96	90	90	100	G	98	96	92	94	92	86	86	88	98	98
5	90	90	90	90	90	88	94	110	112	G	88	88	G	B	B	G	G	124	98	B	92	92	B	B
6	88	88	88	90	90	92	92	98	98	G	G	G	G	122	116	102	120	102	98	98	92	B	B	90
7	96	86	86	86	B	B	122	116	100	94	G	G	G	G	G	G	124	112	98	98	98	92	B	94
8	94	B	84	B	B	B	106	102	100	B	G	108	102	G	G	110	98	92	92	92	92	92	88	88
9	88	B	B	122	124	112	102	C	C	C	C	C	C	C	C	C	C	C	C	94	94	94	84	88
10	88	B	B	B	B	B	G	106	96	94	92	G	G	86	G	G	G	120	110	98	88	88	88	88
11	92	92	B	92	90	B	104	102	102	96	G	G	G	G	G	94	92	92	88	88	88	88	88	88
12	B	88	84	82	80	82	110	84	96	96	96	92	G	88	G	G	G	G	94	94	84	82	80	84
13	84	84	B	B	B	B	114	120	G	94	92	G	G	90	G	126	126	82	80	80	82	82	B	82
14	84	84	84	94	92	92	G	104	102	96	G	G	G	96	94	94	132	128	116	104	94	90	82	B
15	B	92	B	104	B	B	G	124	122	G	G	84	G	G	G	116	116	108	98	84	84	B	90	90
16	86	86	82	B	104	100	104	104	100	98	98	86	G	G	G	G	100	100	100	100	94	94	92	92
17	88	90	90	102	98	104	96	88	88	C	C	C	98	G	96	90	98	90	90	90	92	90	90	88
18	84	84	90	96	94	96	96	96	100	96	96	100	G	100	98	120	116	100	92	90	90	86	86	96
19	102	102	94	94	98	96	94	100	94	92	92	90	G	96	G	96	114	90	92	94	94	B	B	90
20	88	88	88	C	C	C	C	C	C	C	C	G	134	140	G	G	128	G	78	B	B	B	B	B
21	B	B	B	B	B	B	126	114	120	122	102	132	G	G	G	G	G	116	86	86	84	92	90	90
22	86	84	82	B	B	B	G	124	114	102	G	G	G	G	G	G	128	106	106	96	96	98	98	88
23	B	B	B	B	B	B	138	122	114	102	98	G	G	G	G	G	142	118	114	94	90	90	B	90
24	B	90	92	84	B	B	130	122	96	96	G	G	94	94	92	G	108	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	100	102	G	G	114	116	102	B	B	94	92	90	84
26	B	B	B	B	B	B	146	142	114	102	G	G	G	98	130	124	110	106	102	102	90	90	B	94
27	B	B	B	110	B	96	130	136	116	96	94	G	G	G	100	96	96	96	98	96	B	96	94	94
28	90	86	90	86	84	80	132	116	102	106	96	96	92	96	92	90	88	88	88	88	88	86	86	86
29	86	84	82	82	82	B	122	118	114	98	96	G	G	G	84	84	120	78	76	80	76	88	92	90
30	90	90	90	90	90	86	158	130	86	94	92	G	G	G	140	142	122	108	B	100	100	96	92	88
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	20	19	20	16	16	24	27	26	22	17	14	10	13	14	19	25	26	26	26	27	25	21	26
MED	88	88	88	93	93	96	110	106	100	96	96	94	98	96	98	110	116	100	97	94	92	92	90	90
U Q	90	90	90	104	104	102	128	122	114	102	98	100	102	99	122	120	123	108	100	98	94	94	92	92
L Q	86	85	84	86	90	88	101	100	96	94	92	88	94	89	92	94	99	92	90	88	88	88	86	88

SEP.2017 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

SEP.2017 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		F1	F3	F3	L3	L3	L2	L1	L2	L2	L3	L2		CL22	C2	C3	L5	L3	F3	F4	F3	F2	F2
2	F2			F1	F2	L2	C3	L3	L3	L2	L3	L2	L2	L4	L2	CL12	L2	L4	L6	F3	F5	F4	F2	F1
3	F2	F1	F2	F1	F3	L3	L3	L4	L3	L1	L2	L1	L2	L2	H1	C1	C2	L4	L4	F6	F5	F3	F3	F3
4	F3	F2	F2	F2		L3	CL32	L3	L3	L2	L2	L2	L2		L2	L2	L4	L3	L5	F6	F5	F5	F2	F7
5	F4	F3	F4	F4	F4	L2	L2	C1	C1		L2	L2						C2	L2		F5	F2		
6	F2	F2	F2	F1	F2	L1	L2	L2	L2					C1	C2	L3	C1	L3	L2	F4	F3			F2
7	F1	F2	F2	F2			C2	C2	L2	L2							C1	C4	L4	F1	F1	F2		F2
8	F2		F2				L3	L2	L2			C1	L1			L2	L3	L4	L4	F6	F6	F5	F6	F4
9	F2			F1	K2	C2	L2													F5	F2	F2	F2	F2
10	F4							L2	L1	L2	L1			L2				C2	C2	F1	F1	F2	F2	F2
11	F2	F1		F1	F1		L1	L1	L1	L2						L2	L1	L1	L2	F3	F3	F2	F2	F2
12		F2	F2	F1	F1	L1	C2	L2	L2	L3	L1	L1		L2					L2	F1	F6	F5	F2	F1
13	F2	F1					C2	C2		L2	L2			L2		C1	C2	L3	L3	F2	F2	F3		F1
14	F1	F1	F1	F1	F2	L2		L2	L1	L1				L1	L2	L3	HL12	C1	C1	F1	F2	F1	F1	
15		F3		F2				C3	C2			L3				C1	C1	CL12	L3	F3	F3		F5	F3
16	F2	F2	F2		F1	L3	L3	L1	L2	L2	L1	L2					L2	L3	L3	F3	F4	F4	F4	F4
17	F2	F2	F1	F4	F8	F4	L3	L5	L3				L2		L2	L2	L2	L3	L4	F3	F3	F4	F4	F4
18	F3	F2	F1	F3	F6	L3	L2	L2	L2	L2	L1	L1		L2	L1	C1	C2	L4	L3	F2	F5	F2	F2	F1
19	F2	F1	F2	F2	F4	L6	L2	L2	L2	L2	L2	L1		L1		L1	CL11	L2	L1	F1	F2			F3
20	F4	F2	F1										H1	H1			C1		F1					
21							C3	C2	C2	C1	L1	C1						CL22	L3	F3	F2	F1	F1	F1
22	F2	F2	F2					C2	C2	L2							C1	L2	L2	F2	F2	F1	F2	F1
23							C2	C2	C2	L2	L1						H1	C3	C2	F5	F4	F2		F2
24		F2	F2	F2			C2	C2	L2	L2			L1	L1	L1		C1							
25												L1	L1			C2	C2	L3			F1	F1	F4	F2
26							H2	H1	C2	L1				L1	H1	C2	C2	L2	L1	F1	F1	F1		F1
27				F1		L1	H2	H2	C2	L1	L1				L1	L2	L2	L2	L4	F3		F1	F5	F7
28	F2	F2	F4	F5	F2	L3	H3	C3	L1	L1	L2	L2	L2	L2	L3	L2	L2	L4	L4	F7	F3	F2	F2	F3
29	F2	F3	F2	F1	F1		C1	C2	C2	L1	L1				L2	L2	C2	L3	L4	F2	F2	F2	F2	F2
30	F2	F2	F2	F1	F1	L2	HL12	HL21	L2	L2	L2				HL11	HL12	CL12	C2		F1	F1	F4	F3	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.2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2017 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	X 39	X 37	X 42	X 44	X 44	X 33															X 81	A	X 47	X 51
2	X 48	X 44	X 44	X 44	X 41	X 40	X 42													X 65	X 54	A	A	47
3	X 38	X 36	X 36	X 36	X 36	38	X 43													X 64	X 65	X 56	X 56	X 54
4	X 53	X 50	X 44	X 42	X 39	X 38														X 76	X 55	56	X 53	55
5	X 49	X 46	X 45	X 44	A	X 37														X 70	X 49	X 50	X 49	X 49
6	X 47	X 47	X 47	X 45	X 42	X 37														X 82	X 82	X 62	X 50	X 50
7	X 51	X 48	X 47	X 44	X 42	X 42														X 94	X 76	X 50	X 47	X 48
8	X 50	X 48	X 44	X 41	X 42	X 41															A	X 48	X 53	X 52
9	X 49	X 49	X 44	X 41	46	X 37															A	A	54	54
10	A	X 45	X 42	X 40	X 37	X 37															O X 65	X 46	X 43	X 43
11	X 43	X 43	X 42	X 40	X 40	X 38															X 61	X 41	X 42	X 43
12	X 44	X 41	X 40	X 43	X 34	X 34															X 67	X 55	X 54	X 54
13	X 54	X 54	X 47	X 42	X 38	X 38															X 76	X 41	X 36	X 39
14	X 39	X 39	X 39	X 39	X 39	X 40															X 66	X 55	X 45	X 45
15	X 47	X 42	X 42	X 37	X 36	X 35														X 82	X 68	X 53	X 42	X 42
16	X 42	X 42	X 42	X 49	A	X 28	X 37													X 86	X 45	X 49	X 48	X 44
17	X 44	X 43	X 43	X 42	X 36	X 34														X 74	X 37	A	A	41
18	X 42	41	X 37	41	X 35	33														X 63	X 61	X 44	X 42	X 40
19	X 36	X 39	X 39	X 38	X 38	X 35														X 50	X 31	X 34	X 36	37
20	X 36	X 36	X 34	X 34	X 32	X 32														X 74	X 47	X 41	X 39	X 40
21	X 40	X 42	X 38	X 33	X 31	X 30														X 87	X 66	X 36	X 36	X 36
22	X 36	X 36	X 36	X 39	X 27	X 26														X 64	X 48	X 41	X 41	X 40
23	X 40	X 40	X 38	X 38	X 35	X 34														X 70	X 55	X 38	X 40	X 40
24	X 40	X 41	X 41	X 39	X 32	X 29															X 36	A	X 38	X 38
25	X 38	X 38	X 37	X 39	X 37	X 31															X 50	X 45	X 47	X 45
26	X 44	X 45	X 44	X 44	X 43	X 41														X 73	X 44	X 41	X 41	X 42
27	X 42	X 43	X 44	X 45	X 35	X 32														X 72	X 70	X 61	X 38	X 40
28	X 40	X 40	X 43	X 48	X 33	X 39														X 71	X 62	X 45	X 46	X 46
29	X 46	X 45	X 46	X 46	X 43	X 42															X 50	X 48	X 48	X 48
30	X 48	X 47	X 47	X 50	X 42	X 40															X 41	X 41	X 41	X 41
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	28	30	3													18	28	25	28	30
MED	X 43	X 42	X 42	X 42	X 38	X 37	X 42													X 72	X 58	X 46	X 44	X 44
U Q	X 48	X 46	X 44	X 44	X 42	X 39	X 43													X 82	X 66	X 54	X 48	X 49
L Q	X 40	X 40	X 39	X 39	X 35	X 33	X 37													X 65	X 48	X 41	X 40	X 40

SEP. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 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	33	31	36	38	38	27	37	63	51	55	64	60	59	57	59	62	57	58	72	91	75	A	41	45
2	42	38	38	38	35	34	36	67	66	64	50	57	60	55	51	57	66	88	66	59	48	A	A	F
3	32	30	30	30	30	F	37	65	63	56	A	56	61	56	58	58	58	60	58	58	60	50	50	47
4	47	44	38	36	33	32	39	45	56	58	58	56	66	66	74	74	64	62	67	70	48	F	47	F
5	43	40	39	38	A	31	38	58	66	76	64	70	79	81	75	75	74	84	83	64	43	44	43	43
6	41	41	41	39	36	31	42	57	58	64	60	62	76	69	68	66	66	64	64	76	76	55	44	44
7	45	42	40	38	36	36	41	60	82	89	58	67	72	73	74	74	63	73	96	88	70	44	41	42
8	44	42	38	37	36	35	41	69	72	72	84	98	109	108	104	107	80	75	75	60	A	42	47	46
9	43	43	38	35	F	31	32	46	54	44	59	64	56	58	62	59	A	A	59	50	A	A	F	F
10	A	39	36	34	31	31	36	51	54	60	60	60	70	69	62	61	55	59	74	82	59	40	37	37
11	37	37	36	34	34	32	40	51	60	64	57	57	68	87	92	83	72	82	81	77	55	35	36	37
12	38	35	34	37	28	28	37	64	66	60	58	61	68	75	66	65	60	58	56	62	61	49	48	48
13	48	48	41	36	32	32	43	58	66	71	61	74	82	90	86	68	59	60	78	84	70	35	30	33
14	33	33	33	33	33	34	45	61	67	58	54	64	69	81	87	81	71	71	64	58	60	49	39	39
15	41	36	35	31	30	29	38	44	66	84	67	52	73	98	86	74	56	56	66	76	62	47	36	36
16	36	36	36	42	A	22	31	54	74	81	64	62	70	64	73	78	66	83	90	79	39	43	42	38
17	38	37	37	36	30	28	33	53	61	59	52	62	64	64	62	60	65	74	A	68	31	A	A	F
18	36	F	31	F	29	F	34	50	63	58	63	72	59	60	63	63	65	68	56	57	55	37	36	34
19	30	33	33	32	32	29	35	48	56	59	54	55	53	58	70	67	63	66	70	44	25	28	30	F
20	30	30	28	28	26	26	35	56	54	52	54	68	69	68	76	66	64	61	71	68	41	34	33	34
21	34	36	32	27	25	24	34	52	58	55	58	61	67	74	77	66	66	66	81	81	60	30	30	30
22	30	30	30	33	21	20	31	59	61	59	57	60	70	86	81	65	63	68	A	58	41	35	35	34
23	34	34	32	32	29	28	31	54	66	61	59	59	65	71	63	69	77	64	60	64	49	32	34	34
24	34	35	35	33	26	23	34	49	66	74	67	64	72	75	74	76	72	76	76	59	30	A	32	32
25	32	32	31	33	31	25	35	49	64	81	63	57	64	70	66	67	77	79	74	52	44	38	41	39
26	38	39	38	38	37	34	40	61	60	65	60	58	70	70	72	64	68	66	70	67	38	35	35	36
27	36	37	38	39	29	26	34	55	63	70	71	65	64	70	73	71	71	66	69	66	63	55	32	34
28	34	34	37	42	27	32	35	61	79	86	86	70	70	92	107	99	95	84	85	65	56	39	40	40
29	40	39	40	40	37	36	42	65	78	83	70	78	105	93	95	85	90	88	85	62	44	42	42	42
30	42	41	41	44	36	34	42	62	74	78	71	69	82	90	88	84	89	97	86	52	35	35	35	35
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	29	27	28	30	30	30	30	29	30	30	30	30	30	29	29	28	30	28	24	27	25
MED	37	37	36	36	31	31	36	56	64	64	60	62	69	70	74	68	66	68	72	64	52	40	37	37
U Q	42	40	38	38	36	33	40	61	66	76	66	68	72	86	86	76	73	80	81	76	60	46	42	42
L Q	34	34	33	33	29	26	34	51	58	58	58	58	64	64	63	64	63	62	65	58	41	35	34	34

SEP.2017 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2017 foF1 (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								L		A	A	A	440	UL456	444	424	UL436	A	A					
2								L	L 432		UL448	456	452	452	444	432	A	UL380						
3								L	A	L	A	A	A	UL456	448	436	UL408	L	L					
4									A	L	UL468	UL484	476	472	460	A	UL420	A						
5									A	UL456	A	476	468	UL492	A	UL440	A	A						
6									L	L	L	UL484	UL464	464	UL468	A	A	A	A					
7									L	UL444	L	UL472	UL468	472	L	A	L	A						
8											UL488	UL560	UL476	UL468	UL472	A	A	A						
9							A	UL392	UL392	A	428	UL444	UL452	UL452	A	A	A	A						
10									UL396	424	452	456	452	460	460	UL444	L	L	L					
11									L	L	L	456	UL456	468	464	UL444	UL436	L						
12										L	UL456	456	468	440	UL432	UL428	412	L						
13										L	UL452	UL464	444	L	452	L	L							
14												UL456	UL464	UL444	416	UL444	L	L						
15									L		UL436		UL456	UL456	L	L	L	L						
16									L	A	L	UL452	UL452	UL452	L	UL424	L	A						
17										L	UL452	UL444	UL444	UL440	UL440	UL412	L		A					
18								L	L	L	UL448	UL440	UL448	448	A	UL432	L							
19							A		UL404	UL416	UL428	432	UL440	436	436	416	UL408	L						
20									L	UL408	UL444	UL428	424	448	UL420	L	L	L						
21								L		L	UL436	UL436	436	UL460	UL444	L	UL408	L						
22										L	UL476	UL472	UL436	432	444	UL428	L	A	A					
23											L	L	440	UL468	UL448	UL448	A							
24									L	L	UL444	UL472	460	UL460	UL456	UL456	L							
25									L		UL444	L	L	UL464	UL456	UL448	L							
26										L	L	L	464	UL472	UL456	L	L	L						
27									L	UL428	UL456	452	UL480	460	UL464	A	UL448							
28								L	L	L	UL476	UL472	UL468	UL464	L	L	L							
29											L	L	UL464	L	L	L	L							
30										L	L	L	UL512	L	452	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								1	3	7	18	22	28	27	22	16	8	1						
MED								UL392	UL396	UL428	UL450	UL456	UL456	UL460	450	UL434	UL416	UL380						
U Q									UL404	UL444	UL456	UL472	UL468	UL468	460	UL444	UL436							
L Q									UL392	UL416	UL444	UL444	444	448	444	UL426	UL408							

SEP. 2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 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							B	A	A	A	A	A	A	A	A	R	A	A	A	B				
2								A	A	A	A	U R 368	A	A	A	A	A	A	A					
3								A	A	A	A	A	A	A	A	A	A	A	B					
4							B	A	A	A	A	A	A	A	A	A	A	A	B					
5							B	B	A	A	A	A	A	R	A	A	A	A	B					
6							B	232	A	A	A	R	R	R	A	A	A	A	A					
7							B	U A 244	A	A	A	R	R	R	A	U A 332	A	A	B					
8							B	A	A	A	A	A	R	R	A	A	A	A	B	B				
9							B	A	A	A	A	A	A	A	A	A	A	A	B	B				
10							B	A	A	A	A	R	R	R	R	U R 328	R	U R 256	B	B				
11							B	A	A	A	A	A	A	A	A	A	U R 320	B	B	B				
12							B	U A 212	A	A	A	R	R	R	U R 336	U R 316	U R 292	U R 264	B	B				
13							B	A	A	A	A	A	R	R	U R 348	U R 320	R	U A 240	B	B				
14							B	A	R	A	R	A	R	R	R	A	A	A	A	B				
15							B	A	A	A	U R 332	R	R	R	R	A	U R 284	U A 228	A					
16								A	U R 280	A	A	A	A	A	U R 348	A	U R 292	A	B					
17							B	A	A	A	A	A	A	A	A	A	A	A	B					
18							B	A	A	A	A	A	A	A	A	A	U R 292	A	B					
19							B	A	A	A	U R 324	R	U R 328	R	U A 316	292	272	A	B					
20							B	A	A	R	R	R	R	R	320	304	A	A	B					
21							B	A	A	A	A	A	A	A	R	U R 312	R	R	U R 168					
22							B	A	A	R	A	A	A	U R 328	320	300	A	A	B					
23							B	U R 252	A	A	A	A	R	R	R	U A 312	284	A	B					
24							B	208	U A 268	R	R	R	A	A	U R 336	R	U A 268	A	B	B				
25							B	A	A	A	A	A	R	R	U R 348	U R 336	U A 280	A	B	B				
26							B	R	U A 268	R	U R 324	R	A	396	A	U R 320	R	U A 244	B					
27							B	204	U A 280	A	R	R	R	U R 368	R	336	U A 280	A	B					
28							B	A	A	A	A	A	A	U A 348	A	A	A	A	B					
29							B	A	A	A	A	U R 352	R	R	A	A	U R 268	A	A	B					
30							B	U A 224	A	A	A	A	A	R	R	U A 308	A	A	B	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								7	4		3	2	1	4	8	13	11	5	1					
MED								U 224	U A 274		U R 324	U R 360	U R 328	U R 358	U R 336	U 316	U R 284	U A 244	U R 168					
U Q								U 244	U 280		U R 332			382	U R 348	U 330	U R 292	U R 260					
L Q								208	U A 268		U R 324			U 338	320	306	U 272	U A 234					

SEP.2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 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	E B 16	E B 16	20	23	22	J A 22	J A 22	J A 35	J A 50	J A 54	J A 52	J A 57	J A 44	J A 76	38	G	35	J A 50	J A 55	J A 28	J A 54	J A 82	J A 47	J A 45
2	J A 32	J A 28	J A 26	J A 25	E B 16	22	22	J A 30	37	G	J A 65	G	J A 46	J A 41	42	42	J A 89	J A 44	J A 56	J A 28	J A 76	J A 87	J A 87	J A 54
3	53	J A 26	J A 33	J A 31	J A 32	E B 15	E B 15	J A 32	J A 51	J A 69	J A 78	J A 76	J A 52	J A 47	39	39	36	31	J A 29	E B 15	J A 24	J A 24	J A 24	J A 26
4	J A 48	J A 33	J A 27	J A 30	25	19	J A 27	32	J A 56	J A 53	J A 43	J A 40	J A 44	J A 43	J A 46	J A 55	J A 48	J A 54	J A 113	J A 153	J A 89	J A 86	J A 54	J A 44
5	J A 54	J A 51	J A 109	J A 66	J A 80	J A 33	J A 26	J A 35	J A 77	J A 43	J A 68	J A 46	38	G	52	J A 41	J A 44	J A 60	J A 50	J A 68	J A 49	J A 23	J A 26	23
6	E B 15	E B 16	E B 16	E B 15	E B 15	J A 22	J A 23	28	J A 38	37	40	G	G	G	46	J A 50	J A 54	J A 53	J A 42	J A 30	24	24	J A 22	J A 24
7	J A 24	21	E B 16	20	E B 14	E B 14	21	33	J A 38	J A 45	39	G	G	G	J A 51	42	40	J A 46	J A 57	J A 45	J A 43	J A 23	J A 24	E B 16
8	23	J A 22	J A 28	25	22	E B 16	J A 20	J A 30	J A 51	47	J A 38	40	G	G	41	40	38	J A 58	J A 56	J A 54	J A 53	J A 108	J A 34	J A 49
9	22	J A 24	E B 16	21	J A 26	J A 30	J A 30	J A 31	J A 51	J A 54	J A 47	J A 40	J A 44	43	J A 92	J A 66	J A 86	J A 72	J A 121	J A 90	J A 68	J A 55	J A 78	J A 52
10	J A 106	J A 45	24	22	22	J A 27	E B 15	J A 29	J A 38	J A 44	J A 45	G	G	G	G	G	G	G	J A 28	E B 15	E B 15	E B 15	E B 15	E B 15
11	J A 23	E B 15	20	E B 15	E B 16	E B 16	E B 15	29	35	37	J A 50	40	37	J A 40	J A 46	J A 46	G	28	J A 25	J A 26	J A 26	J A 27	J A 51	J A 52
12	E B 16	E B 16	J A 26	22	24	J A 24	J A 30	27	33	J A 41	J A 39	G	G	G	G	G	G	G	21	20	J A 38	J A 30	J A 30	J A 30
13	E B 16	E B 16	24	E B 16	E B 16	22	J A 28	J A 34	36	J A 41	38	38	G	G	G	G 26	G	28	J A 27	J A 27	24	25	E B 16	22
14	E B 15	22	22	20	20	E B 16	E B 15	25	G 22	J A 37	G 26	J A 43	G	G	G	J A 43	33	29	J A 35	J A 25	J A 25	J A E B 16	J A 26	J A 24
15	22	22	22	20	20	E B 16	E B 15	J A 30	J A 34	J A 40	G	G	G	G	G	J A 35	G	26	J A 31	J A 33	23	E B 15	E B 15	E B 16
16	23	E B 14	E B 14	20	J A 27	24	23	26	G	72	J A 50	J A 42	J A 40	J A 48	G	39	G	J A 80	J A 40	J A 82	J A 45	J A 41	22	J A 43
17	23	J A 21	E B 15	E B 16	J A 22	23	J A 26	J A 38	J A 54	J A 55	J A 50	52	J A 49	J A 54	J A 43	J A 51	J A 42	J A 44	J A 90	J A 52	J A 54	J A 54	J A 87	J A 35
18	J A 33	J A 25	J A 22	J A 22	19	J A 26	J A 28	J A 40	J A 49	J A 62	J A 61	J A 51	J A 45	J A 44	J A 43	J A 39	G	28	J A 28	J A 33	J A 84	J A 86	J A 48	J A 28
19	J A 30	J A 32	22	22	20	J A 29	J A 38	J A 48	J A 36	J A 41	G	G	G	G	39	34	31	26	J A 30	J A 24	J A 27	J A 53	J A 42	J A 37
20	J A 53	J A 26	24	J A 24	24	22	22	27	36	G	G	G	G	G	40	35	31	J A 30	E B 15	E B E B 15	E B 15	E B 15	E B 15	E B 16
21	E B 15	E B 15	E B 15	22	20	E B 15	22	27	32	38	38	40	J A 44	38	G	G	G	G	G	J A 35	J A 21	J A 25	J A 32	21
22	21	J A 25	20	E B 16	20	E B 16	E B 20	29	31	G	J A 41	J A 42	J A 42	G	38	37	J A 42	J A 55	J A 85	J A 53	J A 28	J A 41	J A 28	J A 29
23	J A 26	21	21	23	E B 14	E B 15	E B 16	G	35	J A 44	J A 53	38	G	G	G	40	40	39	J A 31	J A 30	24	J A 26	E B 15	E B 16
24	J A 24	22	22	E B 15	E B 16	E B 16	J A 19	26	31	G	G	G	41	38	G	G	32	29	J A 32	J A 26	J A 24	J A 40	J A 28	24
25	J A 30	21	E B 16	E B 16	E B 16	E B 16	E B 16	J A 29	J A 40	J A 44	35	37	G	G	G	G	34	J A 37	J A 31	22	J A 30	27	E B 16	24
26	J A 28	22	22	E B 15	E B 16	E B 16	E B 16	J A 30	34	G	G	G	J A 42	43	J A 45	G	G	27	J A 40	25	J A 26	J A 26	J A 26	21
27	24	E B 16	E B 19	21	E B 15	21	E B 16	28	34	36	G	G	G	G	G	36	35	29	J A 23	28	J A 25	24	20	20
28	20	E B 16	20	E B 16	20	21	21	27	J A 38	J A 41	J A 60	J A 42	38	38	J A 40	J A 42	J A 42	J A 45	J A 43	26	J A 23	28	J A 34	25
29	21	J A 25	23	21	E B 16	E B 16	J A 18	27	J A 36	J A 41	J A 42	G	G	G	J A 42	J A 37	G	J A 36	J A 33	J A 31	J A 51	J A 34	J A 28	E B 16
30	J A 38	J A 27	22	21	21	26	E B 16	30	33	J A 37	38	36	38	G	G	38	34	J A 45	J A 36	J A 28	J A 33	J A 42	J A 28	J A 28
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	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	24	22	22	21	20	21	21	30	J A 36	J A 41	J A 40	38	38	G	39	38	34	J A 36	J A 34	J A 28	J A 28	J A 28	J A 24	
U Q	J A 32	J A 26	J A 24	J A 23	J A 22	J A 24	J A 26	J A 32	J A 49	J A 47	J A 50	J A 42	J A 44	J A 43	J A 43	J A 42	J A 42	J A 50	J A 55	J A 45	J A 51	J A 53	J A 42	J A 37
L Q	E B 21	E B 16	E B 19	E B 16	E B 16	E B 16	E B 16	27	34	G 37	G 35	G	G	G	G	G	G	28	J A 28	25	24	24	E B 22	E B 21

SEP.2017 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

SEP. 2017 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	E B 16	E B 16	E B 15	E B 16	E B 16	20	20	24	36	46	45	52	39	40	37	G	34	35	50	22	42	A A 82	22	24
2	17	18	17	E B 15	E B 16	E B 14	16	24	28	G	35	G	34	36	39	35	40	30	32	20	32	A A 87	A A 87	21
3	19	E B 15	E B 16	20	20	E B 15	E B 15	24	36	35	A A 78	45	45	38	36	37	33	30	21	E B 15	E B 15	18	E B 15	21
4	30	20	20	E B 16	E B 15	E B 15	21	28	44	37	38	38	37	37	39	50	36	44	33	39	37	22	22	21
5	20	27	E B 16	23	A A 80	E B 16	17	27	54	37	53	42	36	G	50	34	38	45	41	55	20	E B 16	E B 16	E B 16
6	E B 15	E B 16	E B 16	E B 15	E B 15	E B 16	16	26	32	34	38	G	G	G	40	43	44	48	29	21	E B 16	E B 16	19	19
7	19	20	E B 16	E B 15	E B 14	E B 14	19	29	29	35	35	G	G	G	39	39	36	36	38	38	21	19	20	E B 16
8	E B 15	E B 15	21	17	E B 16	E B 16	E B 15	21	42	41	34	38	G	G	37	37	34	40	50	32	A A 53	22	22	22
9	E B 16	E B 16	E B 16	E B 16	20	27	24	26	31	36	36	38	38	40	56	52	A A 86	A A 72	29	21	A A 68	A A 55	E B 16	E B 16
10	A A 106	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	20	32	36	40	G	G	G	G	G	G	G	22	E B 15	E B 15	E B 15	E B 15	E B 15
11	19	E B 15	E B 15	E B 15	E B 16	E B 16	E B 15	26	32	36	36	36	35	36	36	36	G	27	21	21	20	22	22	21
12	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	30	32	32	G	G	G	G	G	G	G	20	16	33	20	E B 16	E B 16
13	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	23	26	33	34	33	37	G	G	G	G 23	G	26	24	21	E B 16	E B 16	E B 16	E B 16
14	E B 15	E B 16	E B 16	E B 15	E B 16	E B 16	E B 15	23	G 21	30	G 24	33	G	G	G	35	30	27	22	E B 15	E B 16	E B 16	E B 15	E B 15
15	E B 16	E B 16	E B 16	E B 16	16	E B 16	E B 15	23	27	31	G	G	G	G	G	31	G	24	24	26	16	E B 15	E B 15	E B 16
16	E B 16	E B 14	E B 14	E B 14	A A 27	E B 15	E B 15	24	G	34	34	34	34	34	G	34	G	74	34	60	22	19	E B 15	15
17	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	19	19	26	33	36	39	37	37	37	33	32	32	A A 90	32	22	A A 54	A A 87	E B 16
18	24	E B 15	E B 15	E B 15	E B 15	E B 15	21	22	30	34	37	37	37	37	41	33	G	27	24	E B 15	22	27	19	E B 16
19	E B 16	E B 16	E B 15	E B 15	E B 16	E B 16	23	25	28	32	G	G	G	G	35	32	29	26	20	18	18	25	E B 16	E B 16
20	20	20	E B 16	E B 16	E B 15	15	E B 15	24	30	G	G	G	G	G	39	34	30	22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16
21	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	23	30	32	34	37	39	35	G	G	G	G	G	20	E B 15	20	E B 16	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16	E B 20	24	29	G	35	38	34	G	35	34	31	48	A A 85	30	22	E B 16	E B 16	18
23	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	G	32	32	36	36	G	G	G	37	37	36	28	20	16	18	E B 15	E B 16
24	E B 16	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	24	29	G	G	G	39	36	G	G	28	25	19	E B 16	E B 16	A A 40	E B 16	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	23	34	34	34	34	G	G	G	G	32	28	24	E B 16	18	E B 16	E B 16	E B 16
26	E B 16	E B 16	E B 15	E B 15	E B 16	E B 16	E B 16	18	31	G	G	G	37	42	37	G	G	26	24	E B 16	E B 16	E B 16	E B 16	E B 16
27	E B 16	E B 16	E B 19	E B 16	E B 15	E B 15	E B 16	26	30	32	G	G	G	G	G	36	32	26	19	17	19	20	E B 16	E B 16
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	28	34	38	36	35	36	35	31	29	25	23	21	19	22	21	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	27	30	32	G	G	G	32	32	G	24	22	21	21	18	19	E B 16
30	19	19	E B 16	E B 16	E B 16	E B 16	E B 16	G 22	30	31	35	35	35	G	G	35	33	32	24	20	20	E B 16	20	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	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 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	35	34	34	G	35	34	30	28	24	20	20	19	E B 16	E B 16
U Q	19	16	E B 16	E B 16	16	E B 16	19	26	32	35	37	38	37	36	39	36	34	36	33	26	22	A A 22	20	18
L Q	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	23	28	G 31	G 32	G	G	G	G	G	G	25	21	E B 16	E B 16	E B 16	E B 16	E B 16

SEP. 2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 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	16	16	15	16	16	15	16	16	14	14	19	19	25	20	18	19	16	14	14	16	16	14	16	16
2	15	15	15	15	16	14	16	15	14	16	20	20	20	20	20	20	17	16	16	15	16	15	15	14
3	16	15	16	15	15	15	15	14	14	14	16	16	18	18	17	14	14	16	16	15	15	15	15	15
4	15	16	15	16	15	15	15	15	16	19	22	22	21	20	21	25	21	16	16	14	14	14	15	14
5	16	15	16	16	16	16	16	17	20	21	22	24	22	26	30	21	19	16	14	15	15	16	16	16
6	15	16	16	15	15	16	16	16	15	14	18	26	26	21	22	20	19	16	15	15	16	16	15	16
7	15	16	16	15	14	14	14	14	16	17	20	20	20	20	16	19	19	18	15	15	15	16	16	16
8	15	15	16	17	16	16	15	15	16	22	19	22	19	23	22	22	16	24	15	15	15	14	16	14
9	16	16	16	16	16	16	15	15	15	23	20	22	22	22	22	20	19	15	15	15	16	16	16	16
10	16	16	16	16	16	16	15	13	18	25	24	21	31	26	17	19	17	15	15	15	15	15	15	15
11	15	15	15	15	16	16	15	16	16	16	19	19	19	20	20	18	20	17	16	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	16	16	16	16	22	22	22	21	19	17	14	15	15	16	16
13	16	16	16	16	16	16	15	15	16	16	18	19	19	18	21	15	19	16	16	15	16	16	16	16
14	15	16	16	16	16	16	15	15	15	15	15	15	17	20	21	20	13	15	15	15	16	16	15	15
15	16	16	16	16	16	16	15	14	15	15	18	22	22	22	20	14	14	14	14	15	15	15	15	16
16	16	14	14	14	14	15	15	15	15	17	18	18	18	18	16	16	16	15	15	15	16	15	15	15
17	16	16	15	16	16	16	15	15	16	14	14	18	21	21	19	19	15	15	14	14	14	16	16	16
18	16	15	15	15	15	15	16	14	15	16	16	20	20	21	20	20	14	16	15	15	16	15	15	16
19	16	16	15	16	16	16	16	16	13	16	15	15	16	16	16	16	16	14	14	15	15	16	16	16
20	16	16	16	16	15	15	15	11	12	14	15	21	21	20	19	20	18	15	15	15	15	15	15	16
21	15	15	15	16	15	15	15	15	14	16	16	18	18	21	22	18	14	13	11	15	15	16	16	16
22	16	16	16	16	15	16	20	16	16	16	17	16	17	18	17	16	12	14	15	15	16	16	16	16
23	16	15	15	15	14	15	16	15	15	16	18	20	20	21	18	19	13	14	15	15	16	16	15	16
24	16	16	16	15	16	16	16	15	16	16	20	23	19	21	20	14	14	10	13	16	16	16	16	16
25	16	16	16	16	16	16	16	16	16	20	15	16	18	18	18	16	14	14	14	16	16	16	16	16
26	16	16	15	15	16	16	16	15	16	17	19	20	21	19	20	20	16	11	14	16	16	16	16	16
27	16	16	19	16	15	15	16	14	13	16	20	20	20	16	22	20	17	17	16	16	15	16	16	16
28	16	16	16	16	16	16	16	16	16	16	16	17	20	20	19	16	16	15	14	15	15	15	15	16
29	16	16	16	16	16	16	16	16	16	15	16	20	20	21	18	17	17	16	16	16	16	16	16	16
30	17	16	16	16	16	16	16	16	12	12	11	12	16	16	18	16	15	14	14	15	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	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	16	16	16	16	16	16	16	15	16	16	18	20	20	20	20	19	16	15	15	15	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	17	20	21	21	21	21	20	19	16	16	15	16	16	16	16
L Q	15	15	15	15	15	15	15	15	14	15	16	17	18	18	18	16	14	14	14	15	15	15	15	16

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 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	297	280	325	323	324	296	326	351	336	336	366	340	338	322	317	340	314	309	316	351	362	A	293	298
2	280	308	312	323	314	295	294	368	375	375	327	321	342	335	264	271	301	354	372	333	354	A	A	F
3	338	299	316	317	327	F	315	352	365	369	A	305	345	315	334	330	342	343	346	343	336	326	301	298
4	309	306	296	313	326	370	351	367	367	358	332	279	319	305	310	333	347	333	349	364	310	F	303	F
5	305	293	301	331	A	286	337	320	346	349	326	308	323	324	316	336	326	334	372	353	315	297	289	294
6	302	314	328	323	342	297	345	369	375	346	350	311	348	339	332	341	333	323	324	340	335	354	290	291
7	307	314	319	308	303	319	348	359	359	380	371	331	335	320	328	336	305	323	354	364	278	350	282	300
8	315	309	318	284	301	306	359	381	385	300	273	271	297	300	302	343	342	348	355	325	A	300	295	270
9	271	283	289	284	F	303	277	284	307	264	284	303	305	305	327	332	A	A	347	363	A	A	F	F
10	A	316	317	340	311	312	329	370	364	348	335	300	329	337	320	334	317	331	329	357	367	310	267	300
11	300	309	306	321	329	350	369	376	378	382	359	337	301	307	321	318	308	322	356	354	368	310	303	303
12	311	306	296	338	343	313	341	356	406	375	325	335	330	343	334	346	341	326	338	349	329	302	280	304
13	308	337	318	305	314	321	362	369	366	353	311	305	310	321	342	340	353	325	332	358	356	354	294	307
14	310	307	312	311	318	348	356	365	382	383	337	329	328	324	339	324	349	361	381	331	348	348	300	301
15	318	312	297	285	293	309	351	340	347	378	362	355	286	343	340	366	351	325	340	343	367	347	286	305
16	315	291	322	396	A	391	332	341	357	381	374	334	352	312	337	364	331	353	364	373	305	282	293	282
17	300	288	312	372	323	297	333	365	377	376	340	333	337	338	340	342	344	367	A	251	353	A	A	F
18	302	F	286	F	350	F	334	334	362	338	336	336	347	343	343	354	347	379	346	328	354	334	311	321
19	319	320	336	312	346	379	331	375	349	367	358	351	321	310	331	364	353	359	380	368	293	320	309	F
20	306	330	328	329	332	332	367	382	378	372	349	344	356	315	345	326	342	349	364	377	350	310	318	300
21	321	358	351	311	337	342	357	386	389	372	334	350	346	338	350	324	354	353	349	366	385	295	299	307
22	303	303	303	385	364	313	354	390	407	388	343	330	344	353	353	385	344	361	A	382	341	307	318	300
23	301	323	329	334	334	311	332	375	376	404	365	366	354	349	329	341	359	361	357	376	358	305	318	292
24	304	323	353	358	342	301	363	375	354	387	389	345	349	349	329	349	343	364	364	377	362	A	304	296
25	298	300	305	334	352	337	347	377	351	386	391	363	328	328	326	319	352	358	369	347	334	303	315	298
26	318	324	306	306	319	345	358	391	372	343	363	357	348	345	355	343	351	346	371	359	377	292	324	307
27	298	319	324	364	348	338	354	381	383	370	366	348	322	326	348	344	354	346	366	331	324	371	290	282
28	296	288	317	376	281	359	326	335	302	370	320	333	286	306	334	335	334	325	351	332	320	291	295	296
29	280	326	294	295	302	333	352	371	368	394	353	322	350	328	336	332	348	349	373	352	311	285	296	297
30	297	303	307	341	308	317	351	375	381	385	363	332	339	336	345	336	336	365	367	377	314	306	302	283
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	29	27	28	30	30	30	30	29	30	30	30	30	30	29	29	28	30	28	24	27	25
MED	304	309	314	323	326	318	348	369	368	372	349	333	336	327	334	338	343	348	356	354	344	308	299	298
U Q	313	322	324	340	342	344	356	376	378	382	364	345	347	339	342	344	351	360	368	366	360	340	309	304
L Q	298	300	303	310	311	304	332	352	354	349	330	311	321	315	326	332	332	326	346	340	318	298	290	293

SEP.2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 M(3000)F1 (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								L		A	A	A	450	UL377	406	396	UL359	A	A					
2								L	L 386		UL409	416	421	412	423	369	A	UL386						
3								L	A	L	A	A	A	UL394	426	416	UL401	L	L					
4									A	L	UL399	UL386	393	398	402	A	UL415	A						
5									A	UL382	A	402	410	UL385	A	UL403	A	A						
6									L	L	L	UL397	UL415	398	UL382	A	A	A	A					
7									L	UL406	L	UL405	UL409	396	L	A	L	A						
8											UL383	UL311	UL377	UL380	UL371	A	A	A						
9							A	UL300	UL359	A	396	UL375	UL380	UL371	A	A	A	A						
10									UL412	424	422	430	434	415	374	UL365	L	L	L					
11									L	L	L	421	UL428	386	356	UL388	UL364	L						
12										L	UL417	413	404	430	UL418	UL386	401	L						
13										L	UL404	UL410	397	L	399	L	L							
14												UL388	UL400	UL413	441	UL389	L	L						
15									L		UL413		UL389	UL381	L	L	L	L						
16									L	A	L	UL391	UL392	UL410	L	UL400	L	A						
17										L	UL375	UL394	UL394	UL400	UL400	UL410	L		A					
18								L	L	L	UL395	UL403	UL396	396	A	UL373	L							
19							A		UL368	UL397	UL406	431	UL404	408	376	367	UL372	L						
20									L	UL432	UL405	UL463	457	406	UL425	L	L	L						
21								L		L	UL422	UL422	422	UL408	UL390	L	UL375	L						
22										L	UL391	UL396	UL460	435	396	UL371	L	A	A					
23											L	L	469	UL413	UL420	UL363	A							
24									L	L	UL412	UL416	401	UL393	UL392	UL364	L							
25									L		UL427	L	L	UL408	UL389	UL369	L							
26										L	L	L	435	UL393	UL394	L	L	L						
27									L	UL403	UL400	447	UL403	409	UL396	A	UL368							
28								L	L	L	UL398	UL397	UL412	UL393	L	L	L							
29											L	L	UL415	L	L	L	L							
30										L	L	L	UL378	L	390	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								1	3	7	18	22	28	27	22	16	8	1						
MED								UL300	UL368	UL403	UL404	UL404	UL406	UL398	396	UL380	UL374	UL386						
U Q									UL412	424	UL413	421	425	410	418	UL398	UL401							
L Q									UL359	386	UL396	UL394	UL395	UL393	389	UL368	UL366							

SEP.2017 M(3000)F1 (0.01)

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SEP.2017 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								246		E A 252	252	E A 280	292	340	312	284	314	302	E A 286					
2								254	240	240	310	330	298	312	466	390	342	248						
3								244	228	246	A	362	286	318	320	302	280	280	258					
4									250	262	304	410	318	330	304	274	264	E A 264						
5									E A 246	246	E A 298	298	292	292	E A 284	284	276	256						
6									256	256	262	336	274	274	286	276	264	E A 268	260					
7									236	236	248	280	276	292	290	278	300	288						
8											306	350	308	274	288	246	254	240						
9							E A 332	378	328	E A 378	364	334	348	348	E A 332	E A 306	A	A						
10									246	278	288	342	286	268	296	278	290	286	254					
11									248	236	264	300	320	298	264	262	288	268						
12										260	280	288	298	252	252	252	262	268						
13										240	268	314	282	270	254	254	260							
14												286	286	278	260	260	242	240						
15									260		222		334	246	246	234	252	272						
16									256	232	232	270	270	276	274	232	272	E A 290						
17										254	288	288	286	268	276	282	266		A					
18								288	256	278	314	258	262	288	288	258	258							
19							E A 244		276	252	260	292	328	338	284	252	250	234						
20									246	258	288	262	252		258	268	256	256						
21								242		242	280	264	264	264	264	278	254	254						
22										242	284	284	272	240	240	240	268	244	A					
23											250	250	258	266	274	274	246							
24									262	222	222	276	264	264	264	264	256							
25									266		232	244	274	274	274	274	250							
26										248	248	232	266	276	266	266	266	254						
27									236	240	240	256	286	286	266	256	256							
28								280	278	232	258	254	274	274	254	252	252							
29											244	266	238	260	254	268	252							
30										222	230	252	266	262	242	262	262							
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	7	18	24	28	29	30	29	30	30	29	19	4					
MED							E A 288	254	253	244	262	284	284	274	270	266	262	260	258					
U Q								288	262	257	288	322	298	295	288	278	274	280	273					
L Q								244	246	238	246	260	266	265	258	254	253	248	256					

SEP.2017 h'F2 (KM)

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IONOSPHERIC DATA STATION Yamagawa

SEP. 2017 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	E B 260	E B 312	E B 248	E B 244	226	E A 312	E A 248	216	216	A	A	A	194	230	194	194	200	A	A	214	212	A	E A 328	E A 286
2	E A 258	E A 268	E B 268	230	E B 258	E B 260	228	226	198	204	192	174	172	184	192	192	A	210	218	218	E A 236	A	A	E A 280
3	E A 254	E B 254	E B 256	E A 290	E A 262	E B 282	E B 246	216	A	194	A	A	A	204	194	194	202	212	212	214	214	214	E B 240	E A 258
4	E A 292	E A 256	E B 280	E B 268	E B 248	218	216	208	A	208	208	198	198	198	198	A	198	A	232	224	E A 288	E A 304	E A 264	E A 292
5	E A 274	E A 314	E B 256	E A 256	A	E B 272	236	214	A	214	A	214	206	206	A	216	A	A	216	E A 250	210	E B 248	E B 262	E B 266
6	E B 266	E B 266	E B 228	226	220	E B 264	226	214	206	204	192	186	184	184	226	A	A	A	A	224	212	190	E A 284	E A 284
7	E A 268	260	E B 246	E B 246	E B 238	E B 236	224	218	218	198	188	188	172	192	206	A	216	A	228	218	214	214	E A 286	E B 274
8	E B 242	230	E A 250	E B 276	E B 256	E B 256	226	212	218	E A 298	192	192	200	206	206	A	A	A	226	226	A	E A 242	E A 306	E A 326
9	E B 320	E B 298	E B 250	E B 306	E A 298	E A 362	A	228	234	A	202	E A 236	230	230	A	A	A	A	230	212	A	A	E B 242	E B 274
10	A	E B 238	E B 244	222	232	E B 272	E B 240	206	202	200	200	180	178	180	180	204	204	204	206	206	198	202	E B 280	E B 272
11	E A 278	E B 264	E B 264	E B 256	E B 232	212	204	204	204	204	204	192	178	186	206	194	194	206	212	210	172	E A 244	E A 286	E A 286
12	226	E B 258	E B 274	228	204	E B 268	212	200	200	200	200	200	200	184	176	176	184	202	206	212	218	216	E B 286	E B 282
13	E B 248	216	226	E B 226	E B 242	E B 242	218	210	220	200	184	176	194	194	192	198	198	216	224	212	182	188	E B 298	E B 274
14	E B 282	E B 282	E B 244	E B 246	E B 246	222	204	204	204	200	196	196	194	194	192	192	196	196	200	210	212	202	E B 254	E B 262
15	232	E B 258	E B 270	E B 300	E B 298	232	184	208	208	222	192	192	176	192	196	202	202	202	232	226	194	194	E B 274	E B 258
16	E B 268	E B 298	E B 248	208	A	208	208	208	208	A	194	190	186	188	216	206	208	A	218	218	210	E A 258	E B 250	E B 258
17	E B 278	E B 278	E B 252	210	E B 226	E B 282	E A 244	220	220	210	204	212	204	202	202	196	224	230	A	E A 294	220	A	A	E B 254
18	E A 308	E B 272	E B 270	E B 254	220	E B 276	E A 234	204	216	194	192	190	190	196	A	196	210	220	218	230	206	E A 276	E A 266	E B 238
19	E B 248	E B 248	222	E B 238	208	208	A	220	198	198	186	186	186	184	184	212	196	196	210	184	E A 260	E A 322	E B 266	E B 298
20	E A 298	E A 254	E B 238	E B 242	E B 232	232	220	206	200	188	188	188	180	204	204	208	208	208	208	196	194	E B 244	E B 270	E B 276
21	E B 266	220	212	212	216	E B 244	220	204	204	188	188	186	192	178	220	200	198	210	214	204	186	E A 272	E B 248	E B 266
22	E B 266	E B 276	E B 266	208	222	E B 310	226	216	210	194	194	184	174	174	190	194	212	A	A	210	210	E B 250	E B 250	E A 268
23	E B 268	E B 250	240	240	E B 232	E B 258	222	210	212	212	198	196	176	168	186	218	A	218	218	204	192	E A 300	E B 274	E B 274
24	E B 282	E B 254	224	202	202	E B 266	208	198	206	182	182	174	192	190	198	200	200	218	204	194	194	A	E B 264	E B 290
25	E B 290	E B 290	E B 282	E B 240	192	E B 230	214	198	194	210	178	180	174	182	188	188	214	220	206	194	200	E B 256	E B 236	E B 264
26	E B 258	E B 246	E B 248	E B 248	224	E B 224	210	204	204	176	176	176	176	214	204	204	206	206	206	198	192	E B 256	E B 256	E B 256
27	E B 262	E B 256	E B 248	220	194	E B 232	216	200	200	190	184	178	178	178	176	A	206	218	218	218	218	194	E B 230	E B 298
28	E B 306	E B 304	E B 252	200	E B 298	226	228	220	214	202	188	180	178	202	200	200	210	228	214	212	212	E A 254	E A 282	E B 252
29	E B 268	E B 268	E B 284	E B 258	E B 244	220	218	210	208	208	178	178	178	190	190	202	202	218	210	204	216	E A 258	E A 272	E B 272
30	E A 278	E A 278	E B 258	224	E B 224	E B 246	218	206	206	194	188	178	178	186	196	206	214	214	200	188	220	E B 272	E A 284	E B 294
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	28	30	28	30	27	27	27	28	29	30	27	24	24	21	26	30	28	25	28	30
MED	E B 268	E B 262	E B 250	E 240	E 232	E B 245	218	209	206	200	192	186	184	191	196	200	203	212	214	212	210	E 248	E B 268	E B 274
U Q	E B 282	E B 278	E B 266	E B 256	E B 247	E B 272	E 228	216	216	208	198	194	194	202	204	205	210	218	218	218	217	E A 265	E A 284	E 286
L Q	E 258	E 254	244	222	220	226	213	204	202	194	186	179	177	184	190	194	198	205	206	204	194	208	E B 252	E B 262

SEP. 2017 h'F (KM)

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IONOSPHERIC DATA STATION Yamagawa

SEP.2017 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							B	A	A	A	A	A	A	A	A	108	108	A	A	B				
2								A	A	108	A	108	A	A	108	108	A	A	A					
3								116	A	A	A	A	A	A	114	110	110	110	B					
4							B	114	A	A	A	A	A	A	A	A	A	A	B					
5							B	B	A	A	A	A	A	114	A	A	114	A	B					
6							B	112	A	A	112	106	114	110	108	A	108	A	A					
7							B	112	A	A	A	110	110	108	A	110	110	A	B					
8							B	A	A	A	A	A	110	112	112	112	114	A	B	B				
9							B	A	A	A	A	A	A	A	A	A	A	A	B	B				
10							B	A	A	A	A	110	110	110	110	108	108	108	B	B				
11							B	A	A	A	A	A	A	A	A	A	108	B	B	B				
12							B	108	108	A	A	108	108	108	108	108	108	108	B	B				
13							B	A	110	A	110	110	110	110	110	110	110	110	B	B				
14							B	A	110	A	110	A	110	110	110	A	A	A	A	B				
15							B	A	A	A	106	106	106	106	106	A	106	112	A					
16								112	112	A	A	A	A	A	112	108	110	A	B					
17							B	A	A	A	A	A	A	A	A	A	A	A	B					
18							B	A	A	A	A	A	A	A	A	A	110	112	B					
19							B	A	A	A	108	108	112	116	110	110	110	110	B					
20							B	110	112	112	112	106	106	106	104	114	114	A	B					
21							B	118	118	108	108	112	A	A	112	112	112	112	112					
22							B	112	108	108	A	A	A	108	108	108	108	A	B					
23							B	112	112	A	A	A	112	106	106	108	108	108	B					
24							B	108	112	112	112	112	112	112	110	110	108	108	B	B				
25							B	A	A	A	A	A	108	108	108	108	108	A	B	B				
26							B	114	116	116	112	112	A	112	A	110	110	110	B					
27							B	110	110	110	110	106	106	106	110	112	112	112	B					
28							B	112	112	A	A	A	A	112	A	A	A	A	B					
29							B	112	A	A	A	110	110	110	A	A	110	A	A	B				
30							B	110	110	A	A	A	A	110	110	110	110	A	B	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								16	13	7	10	14	15	20	19	19	24	12	1					
MED								112	112	110	110	109	110	110	110	110	110	110	112					
U Q								113	112	112	112	110	112	112	110	110	110	112						
L Q								110	110	108	108	106	108	108	108	108	108	108						

SEP.2017 h'E (KM)

IONOSPHERIC DATA STATION Yamagawa

SEP.2017 h'Es (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	B	B	102	102	102	102	104	96	100	100	104	98	104	100	106	G	114	100	98	96	90	90	90	90
2	82	82	82	88	B	104	96	96	96	G	96	G	94	94	128	120	106	104	102	102	90	90	90	90
3	102	100	94	94	94	B	B	116	98	98	98	98	96	96	116	116	116	108	108	B	108	98	92	90
4	90	90	90	90	90	90	112	112	100	102	96	96	96	94	106	98	98	94	94	94	94	94	94	94
5	92	92	92	92	92	92	92	92	92	92	90	90	90	G	88	92	112	102	102	90	90	90	88	98
6	B	B	B	B	B	90	90	124	98	112	112	G	G	G	110	104	112	104	102	102	98	98	90	90
7	88	88	B	98	B	B	112	112	102	98	100	G	G	G	98	126	126	98	98	98	98	96	96	B
8	88	82	80	80	80	B	110	102	98	98	98	98	G	G	112	112	118	102	92	92	92	92	92	90
9	92	92	B	108	128	110	104	104	104	94	94	94	94	100	100	100	100	100	100	100	98	98	98	92
10	88	88	88	88	88	88	B	92	92	92	90	G	G	G	G	G	G	G	90	B	B	B	B	B
11	90	B	90	B	B	B	B	100	98	98	98	98	98	86	86	86	G	96	94	94	92	92	92	92
12	B	B	92	92	92	88	88	118	118	96	96	G	G	G	G	G	G	G	116	110	104	96	94	94
13	B	B	86	B	B	106	106	106	114	100	114	114	G	G	G	84	G	108	108	96	96	96	B	94
14	B	90	88	84	84	B	B	98	88	90	86	92	G	G	G	96	94	112	98	98	94	B	94	94
15	88	88	88	88	88	B	B	98	98	98	G	G	G	G	G	98	G	110	82	94	84	B	B	B
16	88	B	B	88	86	94	120	116	G	100	96	96	96	94	G	112	G	90	94	94	94	94	94	94
17	98	88	B	B	112	112	104	104	106	102	102	98	98	98	98	102	104	100	90	90	90	96	96	96
18	94	102	90	90	100	100	100	100	100	100	100	100	100	100	96	100	G	118	100	100	100	100	92	92
19	92	92	92	92	92	92	98	98	98	96	G	G	G	G	136	136	128	118	84	84	84	88	90	90
20	90	100	92	96	94	92	92	126	120	G	G	G	G	G	158	152	110	100	B	B	B	B	B	B
21	B	B	B	86	86	B	122	122	116	112	112	112	102	102	G	G	G	G	G	94	94	92	92	94
22	94	94	90	B	90	B	B	114	116	G	98	98	98	G	148	146	128	102	102	102	102	98	98	98
23	92	92	92	92	B	B	B	G	120	104	104	100	G	G	G	142	136	118	116	114	82	82	B	B
24	94	94	94	B	B	B	134	134	134	G	G	G	116	116	G	G	116	116	86	86	86	86	86	86
25	86	80	B	B	B	B	B	98	98	98	98	98	G	G	G	G	138	106	102	88	88	92	B	90
26	88	88	88	B	B	B	B	90	124	G	G	G	100	144	102	G	G	108	88	88	88	88	88	88
27	88	B	B	88	B	88	B	126	126	126	G	G	G	G	G	136	128	128	106	104	94	94	94	94
28	90	B	90	B	90	102	118	122	116	100	92	92	92	154	94	98	98	92	92	92	90	88	84	84
29	84	84	84	84	B	B	90	110	108	102	102	G	G	G	82	94	G	94	92	92	92	92	92	B
30	92	92	92	92	92	90	B	116	112	102	100	100	98	G	G	152	116	102	102	102	94	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	24	21	22	21	19	17	19	29	29	25	24	18	16	13	18	23	20	27	28	27	28	26	24	24
MED	90	90	90	90	92	92	104	106	102	100	98	98	98	100	104	104	115	102	98	94	93	93	92	92
U Q	92	93	92	93	94	103	112	117	116	102	102	100	100	109	116	136	127	110	102	102	97	96	94	94
L Q	88	88	88	88	88	90	92	98	98	97	96	96	95	94	96	98	105	100	92	92	90	90	90	90

SEP.2017 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2017 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			F1	F3	F1	F3	L3	L2	L3	L3	L2	L3	L2	L2	L2		C1	L3	L6	L4	F8	F9	F5	F6
2	F3	F4	F2	F1		F1	F2	L3	L2		L2		L2	L2	C1	C1	L3	L2	L4	L7	F6	F5	F6	F6
3	F3	F2	F2	F4	F3			C2	L2	L2	L4	L3	L2	L1	C2	C2	C2	C2	L3		F1	F3	F3	F4
4	F5	F4	F3	F3	F2	F2	C4	C3	L5	L2	L1	L1	L2	L2	L2	L2	L2	L5	L5	F9	F6	F5	F6	F4
5	F4	F8	F5	F4	F7	F3	L2	L2	L4	L2	L2	L2	L1		L1	L2	CL22	L2	L5	F9	F7	F2	F2	F1
6						F3	L2	C2	L3	CL12	C1				C2	L2	C4	L5	L7	F7	F1	F1	F4	F4
7	F4	F3		F2			C2	C2	L3	L2	L2				L2	C1	C2	L4	L4	F4	F5	F3	F2	
8	F2	F2	F3	F2	F2		C1	L3	L3	L1	L1	L1			C1	C1	C1	L1	L7	L7	F6	F5	F4	F4
9	F1	F2		F2	F5	F6	L5	L3	L3	L2	L2	L2	L2	L1	L3	L3	L4	L5	L6	L6	F8	F8	F4	F3
10	F6	F7	F1	F2	F2	F2		L3	L1	L1	L2								L3					
11	F3		F2					L2	L2	L2	L2	L2	L1	L1	L2	L2		L2	L2	L3	F4	F3	F2	F4
12			F2	F2	F2	F2	L2	CL32	C2	L2	L2								C1	C2	F8	F2	F2	F2
13			F1			F1	L4	L4	C3	L2	C1	C1				L1		C1	C2	L3	F2	F1		F1
14		F4	F2	F3	F1			L1	L2	L2	L2	L1				L2	L1	CL22	L3	L3	L1		L1	L1
15	F2	F2	F2	F2	F1			L5	L2	L3						L2		CL23	L5	FF25	F3			
16	F1			F3	F6	F2	F2	C2		L2	L2	L3	L3	L2		C1		L8	L7	F5	F5	F4	F1	F3
17	F2	F2			F2	F2	L4	L2	L3	L3	L2	L2	L2	L2	L2	L2	L3	L7	L7	F6	F6	F8	F5	F5
18	F6	F2	F2	F2	F1	F2	L6	L2	L2	L3	L2	L2	L2	L2	L2	L2		C3	L6	F3	F3	F6	F3	F3
19	F4	F4	F2	F3	F1	F6	L7	L6	L3	L2					H1	H1	C1	C2	L3	F2	F1	F4	F4	F2
20	F4	F2	F2	F2	F1	F2	L2	C4	C2						H1	H1	C1	L1						
21				F1	F1		C1	C2	C2	C2	C2	C2	L2	L2						F3	F2	F2	F2	F2
22	F2	F2	F2		F1			C1	C2		L2	L3	L2		H1	HL22	CL22	L6	L7	F4	F3	F3	F3	F3
23	F2	F2	F2	F2					C2	L2	L2	L2				H1	H2	C2	L5	FF43	F4	F4		
24	F2	F2	F1				H1	H3	H2				C2	C2			C2	C2	L2	L2	F3	F5	F2	F3
25	F2	F2						L2	L2	L2	L2	L2					H2	L2	L4	L1	F3	F2		F1
26	F2	F2	F2					L2	CL22				L2	HL12	L2			CL22	L5	F2	F1	F2	F2	F1
27	F1			F1		F2		C2	C2	C2						H2	C2	C2	L3	F3	F3	F3	F2	F2
28	F2		F2		F2	F1	C1	C2	C2	L2	L3	L2	L2	H1	L2	L3	L3	L4	L4	L4	F3	F7	F6	F2
29	F2	F2	F2	F2			L1	C3	L3	L2	L2				L2	L2		L3	L2	L2	F3	F2	F2	
30	F2	F3	F2	F1	F1	F2		C1	C2	L1	L1	L1	L2			H1	C2	L6	L4	L3	F5	F2	F6	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. 2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2017 fxI (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	X 39	X 35	X 40	X 41	X 44	X 38															X 78	X 52	X 46	X 48
2	X 48	X 48	X 45	X 43	X 40	X 39														X 64	X 57	48	X 49	45
3	47	X 39	X 39	X 37	O X 36	X 36															X 70	X 58	X 54	X 54
4	X 53	X 51	X 43	X 42	X 41	X 40															X 49	X 44	48	54
5	52	47	X 46	X 46	43	X 35															X 50	X 50	X 52	X 50
6	X 48	X 50	X 53	X 39	X 37	X 37															X 78	X 46	X 45	X 50
7	X 47	X 46	X 46	X 40	X 40	X 38															A	65	X 44	X 45
8	X 48	X 44	X 44	X 38	X 37	X 38															A	A	X 50	X 50
9	X 49	X 49	X 47	X 44	X 50	X 38	41														A	A	A	A
10	X 43	A	X 46	X 38	X 32	X 31		C	C	C							C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		X 67	X 54	X 44	X 43	X 43
24	X 42	X 41	X 43	X 45	X 23	X 25														X 80	X 46	X 34	X 36	X 36
25	X 35	X 36	X 35	X 36	X 28	X 24														X 67	X 57	X 44	X 43	X 44
26	X 42	X 41	X 42	X 43	X 41	X 35														X 64	X 49	X 40	X 41	X 40
27	42	X 42	X 45	X 46	X 34	O X 27														X 69	X 61	X 52	X 39	X 39
28	X 39	X 39	X 39	X 44	X 30	X 34														X 71	X 58	X 39	A	X 41
29	X 42	X 42	X 40	X 40	X 43	X 36						C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
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	16	15	16	16	16	16	1													7	12	13	13	14
MED	X 45	X 42	X 44	X 42	X 38	X 36	41													X 67	X 57	X 46	X 45	X 45
U Q	X 48	X 48	X 46	X 44	X 42	X 38														X 71	X 66	X 52	X 50	X 50
L Q	X 42	X 39	X 40	X 38	X 33	X 32														X 64	X 50	X 42	X 42	X 41

SEP.2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2017 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	33	29	34	35	38	32	33	59	V 70	68	74	66	60	65	66	62	60	74	95	105	72	47	40	42
2	42	42	39	37	34	33	34	67	70	60	57	61	60	64	66	72	79	107	77	58	51	F 42	43	F 36
3	F	34	33	31	30	30	34	59	62	61	53	56	72	72	67	68	68	71	73	68	64	52	48	48
4	47	45	37	36	35	34	32	50	60	64	60	63	74	84	93	91	85	78	77	70	43	38	F 42	F 44
5	F 44	F 39	40	40	F 35	29	32	56	71	74	61	82	98	104	109	104	113	116	95	59	44	44	46	44
6	43	44	47	33	31	31	36	58	61	64	58	65	78	81	77	73	69	69	A	92	72	40	39	44
7	41	40	40	34	34	32	35	65	89	78	70	95	114	125	R 118	108	98	92	113	73	A	F	38	39
8	42	38	38	32	31	32	40	76	70	71	87	98	112	121	127	136	108	102	95	60	A	A	44	44
9	44	43	41	38	44	32	32	46	52	64	79	88	V 98	91	90	78	70	70	69	A	A	A	A	A
10	37	A	40	32	26	25	29	C	C	C	59	71	85	101	108	R 105	C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	79	61	48	38	37	37
24	35	35	37	39	18	19	27	56	60	75	71	68	83	91	92	101	102	100	93	74	40	28	30	30
25	29	30	29	30	22	18	27	59	68	83	61	58	68	70	72	79	90	80	70	61	51	38	37	38
26	36	35	36	37	35	29	32	52	59	64	70	60	68	86	87	86	85	92	79	58	43	34	35	34
27	33	36	39	40	28	21	28	53	67	74	81	61	71	89	89	91	83	79	74	63	55	46	33	33
28	33	33	33	38	24	28	32	58	88	94	65	69	81	101	120	115	106	114	111	65	52	33	A	35
29	36	36	35	34	37	30	34	65	80	87	73	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	16	16	16	16	16	15	15	15	16	15	15	15	15	15	14	14	14	14	12	12	13	14
MED	37	36	38	36	32	30	32	58	68	71	68	66	78	89	90	91	85	86	79	64	51	39	39	38
U Q	43	42	40	38	35	32	34	65	71	78	74	82	98	101	109	105	102	102	95	73	60	45	44	44
L Q	33	34	34	32	27	26	30	53	60	64	60	61	68	72	72	73	70	74	74	60	44	36	36	35

IONOSPHERIC DATA STATION Okinawa

SEP.2017 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 436	L 456	460	488	L 456	456	468	444	L 404	L						
2									L 436	L 452	452	L 460	452	460	424	424	L 396	L						
3									L 432	L A	U L 480	460	L 464	476	452	L 424	L							
4									A	A	A	A	476	472	456	464	A	A	A					
5									L	L	U L 512	L 500	476	R 476	E B 540	L 472	U L 444	A						
6									L	L	U L 452	480	472	A	472	448	U L 440	A	A					
7								L	L	L	U L 492	L 508	L 492	U L 472	504	A	L 440	U L 408						
8								L	L	A	L	L	L 484	U L 504	U L 488	456	L	A						
9								L	U L 432	U L 456	456	472	472	A	464	452	U L 428	A		A				
10								C	C	C	448	U L 460	476	460	460	452	C	C	C	C				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23							C	C	C	C	C	C	C	C	C	C	C	C						
24									L 436	L 452	460	456	448	L	448	L 424	L							
25									L 436	L 452	488	440	L 452	U L 476	444	L 424	L							
26									L	L	L 460	L 464	L 476	L 456	U L 468	L 448	L 424	L						
27								U L 260	L	L	L 456	U L 480	U L 488	L 460	L 468	L 456	L 432							
28									L 436	L U 440	L 460	U L 476	A	U L 476	L 448	L	L							
29									L	L	L 444	C	C	C	C	C	C	C	C					
30																								
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	7	13	13	15	12	14	14	11	3						
MED								U L 260	U L 432	L 436	L 452	L 472	476	460	469	452	L 428	L 404						
U Q										L 436	L 458	L 484	L 484	472	476	456	U L 440	U L 408						
L Q										L 436	450	460	460	454	460	448	L 424	L 396						

SEP.2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2017 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	A	UA 280	312	A	340	UA 340	348	344	336	316	276	196	A				
2							B	216	A	A	A	A	A	A	348	336	300	256	A					
3							B	A	A	308	A	UA 348	356	340	352	340	324	288	A	A				
4							B	A	A	A	336	A	UA 344	A	356	A	UA 324	A	A	A				
5							B	252	308	328	A	360	A	420	B	A	332	UA 288	A	A				
6							B	A	276	312	332	A	376	372	368	340	352	A	A	A				
7							B	A	A	A	A	A	A	UA 372	B	364	UA 340	A	A	A				
8							A	A	A	B	A	A	UA 364	364	UA 344	340	A	B	A	A				
9							A	A	A	A	A	A	A	A	364	328	UA 308	260	A	A				
10							B	C	C	C	A	A	B	360	344	324	C	C	C	C				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23							C	C	C	C	C	C	C	C	C	C	C	C	164					
24							B	UA 192	256	296	R 328	A	344	340	UA 340	320	288	240	A					
25							B	220	A	A	A	A	Y	B	UA 344	328	300	236	A					
26							B	188	268	308	332	A	R	R	A	A	A	240	A					
27							B	200	A	316	A	R	R 348	A	A	A	292	A	A					
28							B	A	268	296	UA 328	A	A	A	A	A	A	A	A					
29							B	216	A	A	A	C	C	C	C	C	C	C	C					
30																								
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	6	8	5	3	7	8	10	10	11	8	2					
MED								216	272	310	332	348	348	362	346	336	316	258	180					
U Q								220	280	314	334	360	364	372	356	340	332	282						
L Q								192	268	302	328	340	344	344	344	328	300	240						

SEP.2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2017 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	E B 16	E B 16	J A 20	E B 16	20	20	J A 19	J A 42	J A 48	J A 61	38	40	J A 45	42	37	38	38	36	J A 50	J A 51	J A 48	J A 42	J A 52	J A 50
2	J A 32	J A 24	J A 25	19	20	18	E B 16	28	J A 33	33	39	J A 41	41	38	38	39	36	33	J A 34	J A 37	J A 30	J A 46	J A 26	J A 51
3	J A 47	J A 52	22	J A 36	J A 52	J A 32	J A 32	J A 38	J A 40	J A 44	J A 50	J A 50	J A 45	40	J A 52	J A 45	J A 52	J A 42	J A 56	35	E B 16	J A 38	J A 25	J A 25
4	J A 21	J A 28	J A 25	J A 18	23	18	J A 16	J A 36	J A 50	J A 71	J A 52	J A 52	J A 48	J A 44	39	J A 45	J A 90	J A 80	J A 46	J A 46	J A 40	J A 37	J A 48	J A 17
5	J A 32	J A 26	21	20	22	E B 16	19	J A 40	J A 35	40	J A 43	J A 50	J A 43	45	E B 54	39	42	J A 52	J A 109	J A 34	J A 39	J A 71	J A 53	J A 24
6	J A 28	J A 20	J A 18	E B 16	E B 16	E B 16	E B 16	J A 27	J A 53	34	36	40	J A 50	J A 60	J A 51	J A 75	J A 47	J A 62	J A 100	J A 36	J A 49	J A 31	J A 23	J A 28
7	J A 16	18	J A 22	J A 20	J A 17	21	J A 22	J A 28	J A 54	J A 42	J A 44	47	J A 39	J A 44	E B 48	J A 52	J A 66	J A 56	J A 107	J A 158	J A 169	J A 109	J A 66	J A 48
8	J A 17	18	E B 16	E B 16	J A 20	E B 16	J A 20	28	31	54	J A 37	J A 38	42	42	J A 49	36	J A 47	J A 71	J A 80	J A 42	J A 99	J A 118	18	J A 28
9	J A 34	J A 36	18	18	19	J A 20	J A 33	J A 65	J A 52	J A 49	J A 45	J A 38	J A 52	J A 49	43	40	J A 42	J A 52	J A 85	J A 63	J A 124	J A 145	J A 65	J A 137
10	J A 36	J A 87	J A 41	J A 28	J A 23	J A 32	J A 18	C	C	C	36	J A 54	40	G	G	G	C	C	C	C	C	C	C	C
11																								
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17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	J A 49	J A 50	J A 43	J A 22	J A 34	18
24	E B 13	E B 14	19	J A 16	20	18	19	J A 34	32	33	G	36	G 30	G 32	G 31	35	32	30	J A 24	J A 22	J A 20	J A 18	J A 20	J A 18
25	J A 19	J A 18	E B 14	E B 14	E B 14	E B 14	E B 14	J A 30	J A 32	J A 38	J A 39	J A 36	22	E B 41	J A 41	38	J A 38	30	J A 26	J A 24	J A 22	J A 21	J A 30	E B 14
26	E B 14	17	E B 14	E B 14	E B 14	19	E B 14	28	32	36	G 28	39	32	30	J A 43	36	J A 46	28	J A 42	J A 52	J A 20	J A 29	J A 23	J A 29
27	J A 21	J A 22	J A 16	J A 21	J A 21	J A 21	J A 16	27	31	35	J A 101	26	G	37	40	37	J A 44	J A 38	J A 33	J A 42	J A 48	J A 44	J A 28	J A 18
28	J A 20	J A 20	19	18	J A 15	20	J A 15	J A 25	32	J A 39	40	J A 47	J A 45	J A 55	J A 42	J A 43	J A 45	J A 31	J A 30	J A 29	20	20	J A 35	J A 34
29	J A 20	J A 19	J A 17	J A 17	E B 14	J A 31	18	G	J A 33	J A 35	J A 45	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
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	16	16	16	16	16	16	16	15	15	15	16	15	15	15	15	15	14	14	15	15	15	15	15	15
MED	J A 20	J A 20	19	18	20	20	J A 18	J A 28	J A 33	J A 39	J A 40	J A 40	J A 42	42	41	39	J A 44	J A 40	J A 49	J A 42	J A 40	J A 38	J A 30	J A 28
U Q	J A 32	J A 27	J A 22	J A 20	J A 22	J A 21	J A 20	J A 38	J A 50	J A 49	J A 45	J A 50	J A 45	J A 45	J A 49	J A 45	J A 47	J A 56	J A 85	J A 51	J A 49	J A 71	J A 52	J A 48
L Q	E B 16	18	E B 16	E B 16	E B 16	E B 17	E B 16	27	32	35	36	38	32	37	38	36	38	31	J A 33	J A 34	20	J A 22	J A 23	18

SEP.2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP.2017 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 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	31	35	G 22	36	37	40	40	36	36	34	32	28	29	27	31	20	36
2	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	29	33	37	37	40	37	38	36	33	28	25	20	E B 16	18	18	E B 16
3	24	E B 16	E B 16	E B 16	24	20	15	24	32	38	47	40	42	40	G 28	38	G 23	33	36	25	E B 16	E B 16	E B 16	E B 16
4	E B 16	E B 16	20	E B 16	E B 16	E B 16	E B 16	24	40	53	50	50	46	41	38	44	46	56	37	30	21	21	18	E B 16
5	E B 16	21	E B 16	E B 16	E B 15	E B 16	E B 16	G 23	G 26	38	41	48	42	45	E B 54	38	41	49	54	31	24	E B 16	20	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	G 19	34	35	39	44	51	44	42	37	44	A A 100	34	39	E B 16	19	17
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	27	36	36	37	38	38	42	E B 48	44	40	31	62	50	A A 169	41	33	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	17	28	30	54	36	38	40	39	44	36	31	60	28	40	A A 99	A A 118	E B 16	E B 16
9	19	24	E B 16	E B 16	E B 16	18	22	28	31	37	36	37	40	48	39	37	39	40	38	A A 63	A A 124	A A 145	A A 65	A A 137
10	21	A A 87	E B 16	21	E B 16	E B 16	E B 16	C	C	C	36	40	40	G	G	G	C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	30	48	16	17	20	E B 14
24	E B 13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	31	31	32	G	36	G 27	G 30	G 28	35	32	28	19	E B 13	E B 14	E B 14	E B 14	E B 14
25	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	29	33	36	36	U Y 22	E B 41	40	36	34	28	20	21	E B 14	E B 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	E B 14	26	30	34	G 27	38	U G 32	U G 30	40	34	33	27	28	E B 14	E B 14	18	20	21
27	E B 14	E B 14	E B 14	E B 14	17	17	E B 14	23	30	34	37	U G 26	G	36	40	36	40	35	20	22	35	17	17	E B 14
28	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	29	35	38	43	39	50	39	38	38	27	21	18	E B 14	E B 14	A A 35	22
29	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	28	32	36	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
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	16	16	16	16	16	16	16	15	15	15	16	15	15	15	15	15	14	14	15	15	15	15	15	15
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	36	38	40	40	38	36	36	32	28	29	21	17	19	E B 16
U Q	18	16	E B 16	E B 16	E B 16	16	E B 16	28	32	38	38	40	42	45	44	38	40	44	38	40	A A 39	31	20	21
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	29	33	36	37	G	G 36	G 36	36	33	28	21	20	E B 14	E B 16	E B 16	E B 14

SEP.2017 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

SEP.2017 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	16	16	16	16	16	16	16	14	16	15	14	20	20	18	17	17	14	14	16	16	15	16	16	16
2	14	16	16	16	16	16	16	15	14	17	21	22	26	22	22	18	14	13	14	16	16	16	16	16
3	16	16	16	16	16	14	14	14	14	18	17	18	20	16	16	14	14	15	15	15	16	16	16	16
4	16	16	16	16	16	16	16	16	15	17	21	26	26	28	21	31	19	14	12	14	16	16	16	16
5	16	16	16	16	15	16	16	16	18	21	25	24	24	35	54	29	25	15	13	14	16	16	16	16
6	16	16	16	16	16	16	16	14	14	14	22	23	25	24	21	17	19	14	14	12	15	16	16	16
7	16	16	16	16	16	16	16	16	15	21	21	24	28	25	48	19	20	14	14	14	14	16	16	16
8	16	16	16	16	16	16	16	16	14	36	20	22	27	26	19	25	14	31	14	16	16	16	16	16
9	16	16	16	16	16	16	16	16	14	28	16	29	31	30	25	18	15	14	14	15	16	16	16	16
10	16	16	16	16	16	16	16	C	C	C	22	21	39	33	26	21	C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14	14	14	14	14	14
24	13	14	14	14	14	14	14	14	15	15	21	22	20	22	19	18	14	13	14	13	14	14	14	14
25	14	14	14	14	14	14	14	14	14	20	19	19	20	41	19	17	14	13	12	14	14	14	14	14
26	14	14	14	14	14	14	14	14	14	17	17	23	26	28	22	19	15	16	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	14	20	21	17	21	17	14	15	13	14	14	14	14	14	14	14
28	14	14	14	14	14	14	14	14	14	17	18	21	22	27	25	19	14	14	14	14	14	14	14	13
29	14	14	14	14	14	14	14	14	14	16	15	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
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	16	16	16	16	16	16	16	15	15	15	16	15	15	15	15	15	14	14	15	15	15	15	15	15
MED	16	16	16	16	16	16	16	14	14	17	20	22	25	26	21	18	14	14	14	14	15	16	16	16
U Q	16	16	16	16	16	16	16	16	15	21	21	24	27	30	25	21	19	15	14	15	16	16	16	16
L Q	14	14	14	14	14	14	14	14	14	16	17	20	20	22	19	17	14	14	14	14	14	14	14	14

SEP.2017 fmin (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

SEP. 2017 M(3000)F2 (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	298	304	301	328	346	379	308	343	V 331	348	361	372	319	326	339	319	305	303	323	357	366	299	283	309
2	296	311	300	318	299	290	306	364	368	349	322	336	301	316	266	288	281	353	371	339	345	F 292	331	F 284
3	F	297	290	297	315	319	314	354	372	386	337	283	329	341	334	326	343	334	340	329	348	301	299	313
4	315	336	293	294	322	377	339	351	356	368	321	316	297	294	300	327	332	342	346	365	333	303	F 290	F 288
5	F 288	F 297	312	338	F 338	300	314	348	334	368	283	276	289	303	309	285	310	351	377	354	295	286	281	294
6	290	301	348	326	302	318	325	363	380	353	339	313	320	325	323	330	328	321	A	351	377	313	289	277
7	299	323	318	333	312	305	326	357	369	387	319	281	306	298	R 309	294	281	304	358	381	A	F	283	285
8	316	318	332	319	300	315	337	385	357	279	287	263	287	286	304	337	331	326	345	351	A	A	271	274
9	270	294	304	274	291	293	273	319	265	280	271	296	V 294	296	319	336	332	335	354	A	A	A	A	A
10	341	A	338	350	295	296	335	C	C	C	326	278	287	283	305	R 296	C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	342	349	329	315	295	306
24	304	306	328	374	371	327	316	374	367	371	353	326	328	325	300	317	334	344	357	373	367	284	291	305
25	310	301	304	333	330	307	320	373	362	384	385	310	323	331	312	319	340	353	346	357	346	324	299	315
26	302	306	306	328	351	335	339	378	385	381	368	354	312	307	304	329	326	354	379	353	325	312	296	298
27	286	307	329	355	344	299	321	371	363	368	366	317	302	318	310	325	337	351	348	336	342	343	295	284
28	283	287	300	364	290	320	334	325	338	378	313	317	284	300	323	328	318	315	360	333	323	326	A	294
29	286	294	300	291	337	335	310	369	359	365	383	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	16	16	16	16	16	15	15	15	16	15	15	15	15	15	14	14	14	14	12	12	13	14
MED	298	304	305	328	318	316	320	363	362	368	332	313	302	307	309	325	330	338	351	352	344	308	291	294
U Q	310	311	328	344	341	331	334	373	369	381	364	326	320	325	323	329	334	351	360	357	357	320	298	306
L Q	286	297	300	308	300	300	312	348	338	349	316	281	289	296	304	296	310	321	345	339	327	296	283	284

SEP. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2017 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 379	L 388	402	404	L 422	387	368	361	L 358	L						
2									L 383	L 405	399	L 436	450	402	399	382	L 370	L						
3									L 389	L A	U L 392	A 412	L 410	379	390	L 380	L							
4									A	A	A	A	A	414	416	A	A	A	A					
5									L	L	U L 366	A	395	R 372	B	L 350	A	A						
6									L	L	U L 412	404	A	A	A	A	U L 364	A	A					
7								L	L	L	U L 387	L 380	L 388	U L 379	B	A	A	U L 362						
8								L	L	A	L	L	L 380	U L 357	A	381	L	A						
9								L	U L 338	U L 339	375	372	A 372	A	376	381	A 373	A		A				
10								C	C	C	429	U L 420	409	418	399	372	C	C	C	C				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23							C	C	C	C	C	C	C	C	C	C	C	C						
24									L 383	L 395	389	413	420	L	364	L 369	L							
25									L 382	L 401	399	443	L 391	U L 353	376	L 374	L							
26									L	L 386	L 403	L 417	L 430	U L 362	L 361	L 357	L							
27								U L 433	L	L 400	L U 409	U L 399	L 418	L 362	L 347	A								
28									L	L 388	U L 403	A 392	U L 390	A	U L 357	L 364	L	L						
29									L	L	L 390	C	C	C	C	C	C	C	C					
30																								
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	7	13	12	13	12	10	12	8	3						
MED								U L 433	U L 338	L 383	L 395	399	L 404	416	378	370	L 371	L 362						
U Q										L 388	404	L 404	415	421	399	381	L 377	L 370						
L Q										L 379	L 386	390	L 389	L 385	U L 362	L 362	L 362	L 358						

SEP. 2017 M(3000)F1 (0.01)

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IONOSPHERIC DATA STATION Okinawa

SEP.2017 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									240	258	248	238	336	300	280	318	338	298	268					
2									238	258	322	292	350	316	388	336	346	244	214					
3									228	226	E 288	A 368	L 300	272	274	294	274	280						
4									254	248	304	312	322	316	298	268	264	264	252					
5									276	228	380	338	296	288	284	292	276	236						
6									226	236	274	330	296	278	270	292	278	282	A					
7								248	234	214	286	306	280	282	282	284	290	282						
8								216	244	A 336	278	428	302	298	290	244	250	238						
9								L 270	L 416	358	328	308	300	290	272	278	262	264		A				
10								C	C	C	298	354	306	302	280	272	C	C	C	C				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23							C	C	C	C	C	C	C	C	C	C	C	C						
24									240	240	252	260	284	282	282	288	252	240						
25									232	228	230	342	300	274	306	296	262	238						
26									222	228	250	256	318	292	292	280	276	238						
27								224	246	238	242	284	328	274	290	276	258							
28									256	220	250	274	328	306	278	262	266	252						
29									242	230	224	C	C	C	C	C	C	C	C					
30																								
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								4	15	15	16	15	15	15	15	15	14	13	3					
MED								236	240	236	270	308	302	290	282	284	270	252	252					
U Q								259	254	258	301	342	328	302	292	294	278	281	268					
L Q								220	232	228	249	274	296	278	278	272	262	238	214					

SEP.2017 h'F2 (KM)

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IONOSPHERIC DATA STATION Okinawa

SEP. 2017 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	284	274	278	248	238	202	248	226	226	206	202	180	190	186	192	230	210	228	A 252	210	196	A 268	322	E A 328
2	A 306	268	260	252	270	290	248	228	202	206	190	192	176	166	198	226	212	204	204	220	202	240	232	264
3	A 334	280	Q 278	278	E A 308	A 290	254	216	208	220	A	198	A 220	190	206	200	224	214	242	224	208	236	256	252
4	242	228	286	288	248	198	228	218	A	A	A	A	E A 292	194	188	A	A	A	A	208	200	A 284	306	Q 284
5	Q 290	A 296	256	216	210	266	260	228	232	220	210	A	210	272	B	H 224	A	A	214	212	A 254	274	A 304	280
6	288	268	228	218	262	256	240	212	202	198	166	186	E A 236	A	A	E A 276	A 220	A	A	230	202	206	300	294
7	262	242	252	226	256	244	248	234	A 224	206	190	188	194	252	B	A	A	220	230	212	A	E A 264	E A 390	304
8	248	228	226	218	244	250	242	214	206	A	190	H 186	A 216	212	A	216	212	A	232	214	A	A	322	328
9	332	302	254	332	264	282	A 320	E A 242	216	E A 248	214	208	A 230	A	218	208	E A 250	A	238	A	A	A	A	A
10	234	A	238	228	270	274	252	C	C	C	186	190	190	176	178	186	C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	224	A 242	202	240	300	280
24	280	274	244	204	250	296	252	220	208	200	186	204	182	174	256	216	220	222	218	196	184	270	302	294
25	296	282	280	242	234	328	250	224	H 202	200	188	180	174	E B 228	252	212	228	224	216	210	208	216	288	258
26	270	254	274	252	218	218	220	206	206	210	204	200	182	178	E A 244	214	218	234	212	212	204	A 276	A 290	E A 324
27	310	274	236	208	222	E A 318	236	202	224	220	206	194	184	H 182	236	224	A	242	232	220	238	210	280	310
28	318	290	272	216	292	248	218	242	224	206	202	E A 240	192	A	244	A 246	248	230	218	212	216	236	A	E A 316
29	298	294	290	274	228	234	232	228	224	216	204	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
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	16	15	16	16	16	16	16	15	14	13	14	13	15	12	11	13	10	9	13	14	12	13	13	14
MED	289	274	258	235	248	257	248	222	212	206	196	191	191	186	212	216	220	224	224	212	203	240	300	287
U Q	308	290	278	263	267	290	252	228	224	220	204	202	A 220	220	244	228	228	232	235	220	212	272	314	E A 316
L Q	266	254	241	217	231	239	234	214	206	203	188	186	182	177	192	210	212	217	215	210	201	226	284	280

SEP. 2017 h'F (KM)

IONOSPHERIC DATA STATION Okinawa

SEP. 2017 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	A	106	106	A	106	104	106	106	106	106	106	104	A				
2							B	104	A	A	A	A	A	A	108	108	108	106	A					
3							B	A	A	106	A	106	104	100	104	104	104	104	A	A				
4							B	A	A	A	104	A	104	A	106	A	106	A	A	A				
5							B	A 128	110	106	A	A	A	106	B	A	104	104	A	A				
6							B	A	102	102	104	A	A	106	106	110	110	A	A	A				
7							B	A	A	A	A	A	A	108	B	108	104	A	A	A				
8							A	A	A	B	A	A	104	104	104	104	A	B	A	A				
9							A	A	A	A	A	A	A	A	104	104	104	104	A	A				
10							B	C	C	C	A	A	B	108	104	104	C	C	C	C				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23							C	C	C	C	C	C	C	C	C	C	C	C	116					
24							B	116	110	110	110	A	112	114	114	110	110	110	A					
25							B	112	A	A	A	A	Y	B	112	112	110	A	A					
26							B	112	110	112	112	A	A	A	A	A	A	114	A					
27							B	110	A	114	A	A	108	A	A	A	112	A	A					
28							B	A	112	108	108	A	A	A	A	A	A	A	A					
29							B	112	A	A	A	C	C	C	C	C	C	C	C					
30																								
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	6	8	5	2	6	8	10	10	11	7	2					
MED								112	110	107	108	106	104	106	106	107	106	106	110					
U Q								116	110	111	111		108	108	108	110	110	110						
L Q								110	106	106	104		104	105	104	104	104	104						

SEP. 2017 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2017 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	B	B	98	B	94	104	112	104	102	92	102	110	102	112	154	162	132	118	108	90	92	92	90	90
2	88	88	86	84	84	86	B	108	110	106	102	104	100	100	180	134	132	122	108	84	84	92	92	104
3	98	98	92	92	92	90	90	90	106	104	104	104	104	104	86	116	84	110	100	98	B	98	92	90
4	90	90	88	88	92	92	124	106	102	100	100	100	100	100	108	104	100	96	98	94	98	94	90	88
5	104	94	102	90	86	B	92	92	92	104	90	104	104	172	B	106	118	106	92	90	90	90	88	82
6	84	88	88	B	B	B	B	122	92	114	108	104	118	114	124	108	116	110	104	98	96	94	92	88
7	86	104	98	94	90	104	110	110	100	96	92	92	96	104	B	104	106	106	98	94	96	94	92	90
8	90	94	B	B	80	B	112	104	104	96	100	112	108	108	102	124	112	104	100	94	90	96	104	94
9	94	94	94	136	126	110	100	104	116	98	98	98	94	116	114	114	106	102	98	94	100	96	100	100
10	90	92	90	88	88	86	94	C	C	C	88	86	160	G	G	G	C	C	C	C	C	C	C	C
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	116	106	106	98	98	98
24	B	B	94	94	94	96	96	124	128	124	G	104	102	102	100	150	134	116	108	98	94	92	90	90
25	94	94	B	B	B	B	B	136	114	110	110	112	100	B	114	150	128	118	112	92	92	92	92	B
26	B	100	B	B	B	112	B	144	138	128	102	102	104	104	104	174	100	122	110	100	100	98	98	90
27	96	94	92	92	94	92	98	154	150	160	104	98	G	104	108	154	124	112	110	98	98	98	98	98
28	98	98	94	94	94	122	128	116	116	112	108	106	104	104	104	104	102	102	98	98	104	102	92	92
29	114	104	92	90	B	90	92	G	110	110	102	C	C	C	C	C	C	C	C	C	C	C	C	C
30																								
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	14	13	11	12	12	12	14	15	15	15	15	14	13	12	14	14	14	15	15	14	15	15	14
MED	94	94	92	92	92	94	99	109	110	106	102	104	103	104	108	120	114	110	104	94	96	94	92	90
U Q	98	98	96	94	94	107	112	124	116	114	104	106	104	113	119	150	128	118	110	98	100	98	98	98
L Q	89	92	89	88	87	90	93	104	102	98	98	98	100	103	103	106	102	104	98	92	92	92	90	90

SEP. 2017 h'Es (KM)

IONOSPHERIC DATA STATION Okinawa

SEP. 2017 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			FQ 11		F 1	F 1	C 2	C 3	C 2	LC 12	C 1	C 1	C 1	C 1	HL 11	H 1	H 1	C 3	C 5	L 3	F 6	F 5	F 4	FQ 41
2	FQ 51	FQ 11	FQ 11	F 1	F 1	F 1		C 2	C 2	C 1	C 1	C 1	C 1	C 1	H 1	H 1	HL 11	CL 11	CL 41	L 2	F 1	F 4	F 3	F 1
3	FQ 41	FQ 31	FQ 11	FQ 31	FQ 51	F 5	L 3	L 3	C 2	C 2	C 2	C 2	C 1	C 1	L 1	CL 11	LC 11	CL 21	C 3	L 6		F 2	F 2	F 2
4	F 2	FQ 31	F 4	F 2	F 2	F 1	CL 11	C 1	C 3	C 3	C 2	C 2	C 1	L 1	C 1	C 1	C 2	L 5	L 5	L 5	F 2	F 2	FQ 21	F 1
5	F 2	F 9	F 1	F 1	F 2		L 1	LH 21	LH 21	C 1	LCH 11	CL 11	CL 11	H 1		CH 11	C 1	C 4	L 4	L 6	FQ 31	FF 23	FQ 41	FQ 41
6	FQ 21	FQ 11	F 1					CL 13	LC 31	C 1	C 1	C 1	C 1	C 3	C 2	C 2	C 2	C 3	C 8	L 6	F 9	F 4	F 3	F 4
7	F 2	F 1	F 2	F 2	F 1	F 1	C 2	CQ 11	CQ 31	LQ 21	L 1	L 1	L 1	C 1		C 2	C 2	C 2	L 7	L 6	FQ 61	FQ 21	F 3	FQ 41
8	F 2	FF 11			F 1		C 3	C 3	C 1	L 1	C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 7	L 4	F 8	F 7	F 1	F 2
9	F 5	F 3	F 1	F 1	F 1	F 4	LQ 61	CQ 41	CL 12	L 1	L 1	LH 11	L 2	CL 11	C 1	C 1	C 2	C 6	L 5	L 8	FQ 51	FQ 71	FQ 71	FQ 41
10	F 4	FQ 51	F 2	F 6	F 4	F 3	L 1				L 1	LH 31	H 1											
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																			C 5	F 8	F 2	F 3	F 3	F 1
24			F 1	F 2	F 1	F 1	L 1	C 3	C 1	C 1		L 1	L 1	L 1	L 1	H 1	HL 11	CL 11	C 3	F 3	F 1	F 4	F 2	F 1
25	F 1	F 2						H 1	C 1	C 1	C 1	C 1	L 1		CL 11	HL 11	CL 12	CL 12	CL 33	F 2	F 2	F 2	F 2	
26		F 1				F 1		H 2	H 1	C 1	L 1	L 1	L 1	L 1	L 1	HL 11	LC 11	CL 11	CL 51	F 2	F 2	FQ 31	FQ 41	FQ 51
27	FQ 31	F 2	F 2	FQ 41	F 2	F 4	L 2	H 2	HL 11	HL 11	L 1	L 1		C 1	C 1	HC 11	CL 11	CL 21	C 3	F 5	F 4	F 4	F 4	F 2
28	FQ 21	F 1	F 1	F 1	F 1	F 1	CL 11	C 2	C 1	C 1	C 1	C 1	L 1	L 2	L 1	L 1	L 2	L 2	L 4	F 3	F 1	F 1	F 7	FQ 61
29	FQ 21	FQ 11	FF 21	F 1		F 1	L 1		C 2	C 1	L 1													
30																								
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. 2017 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

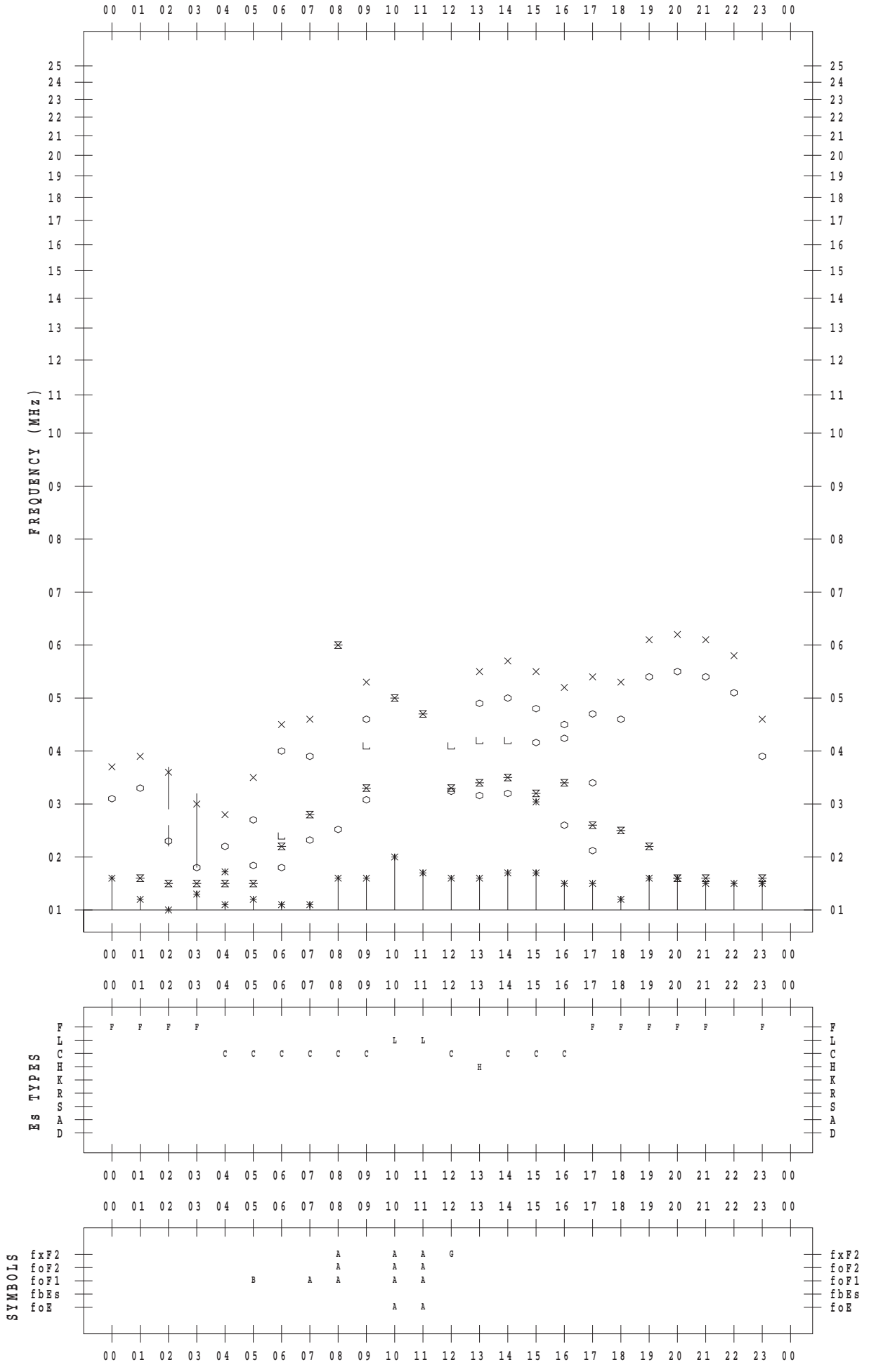
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 1

135 °E MEAN TIME



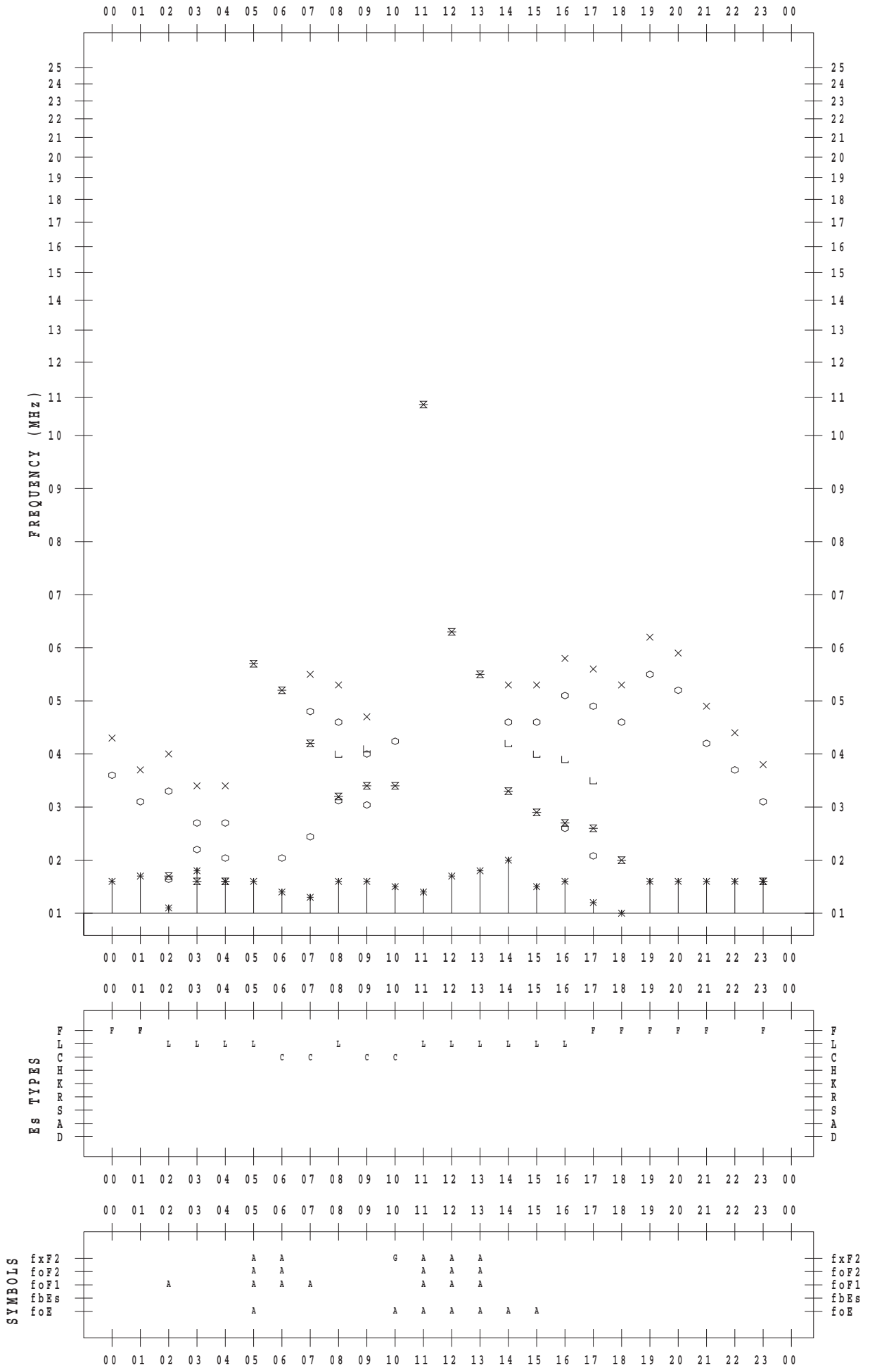
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 2

135 °E MEAN TIME



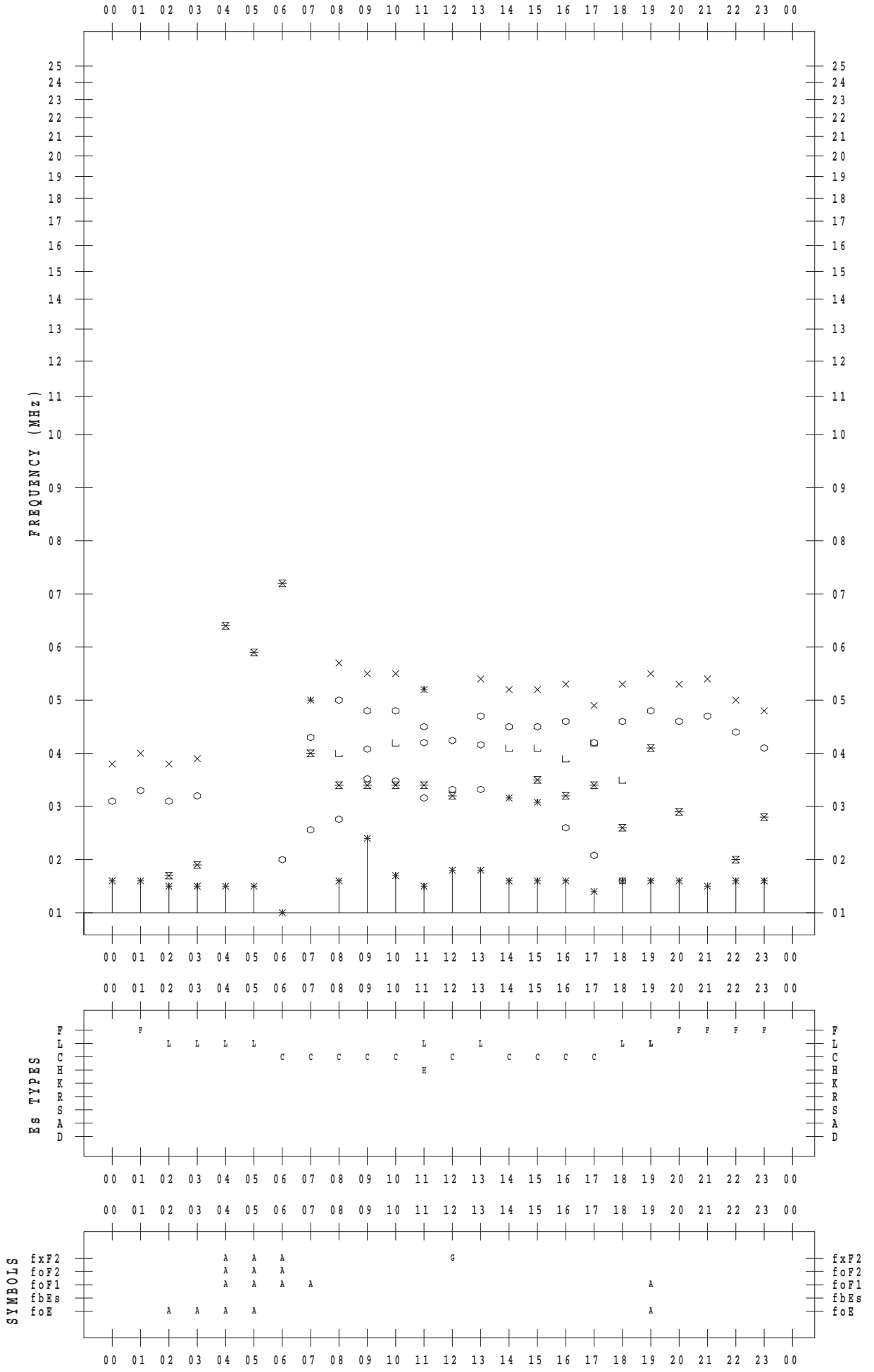
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 3

135 °E MEAN TIME



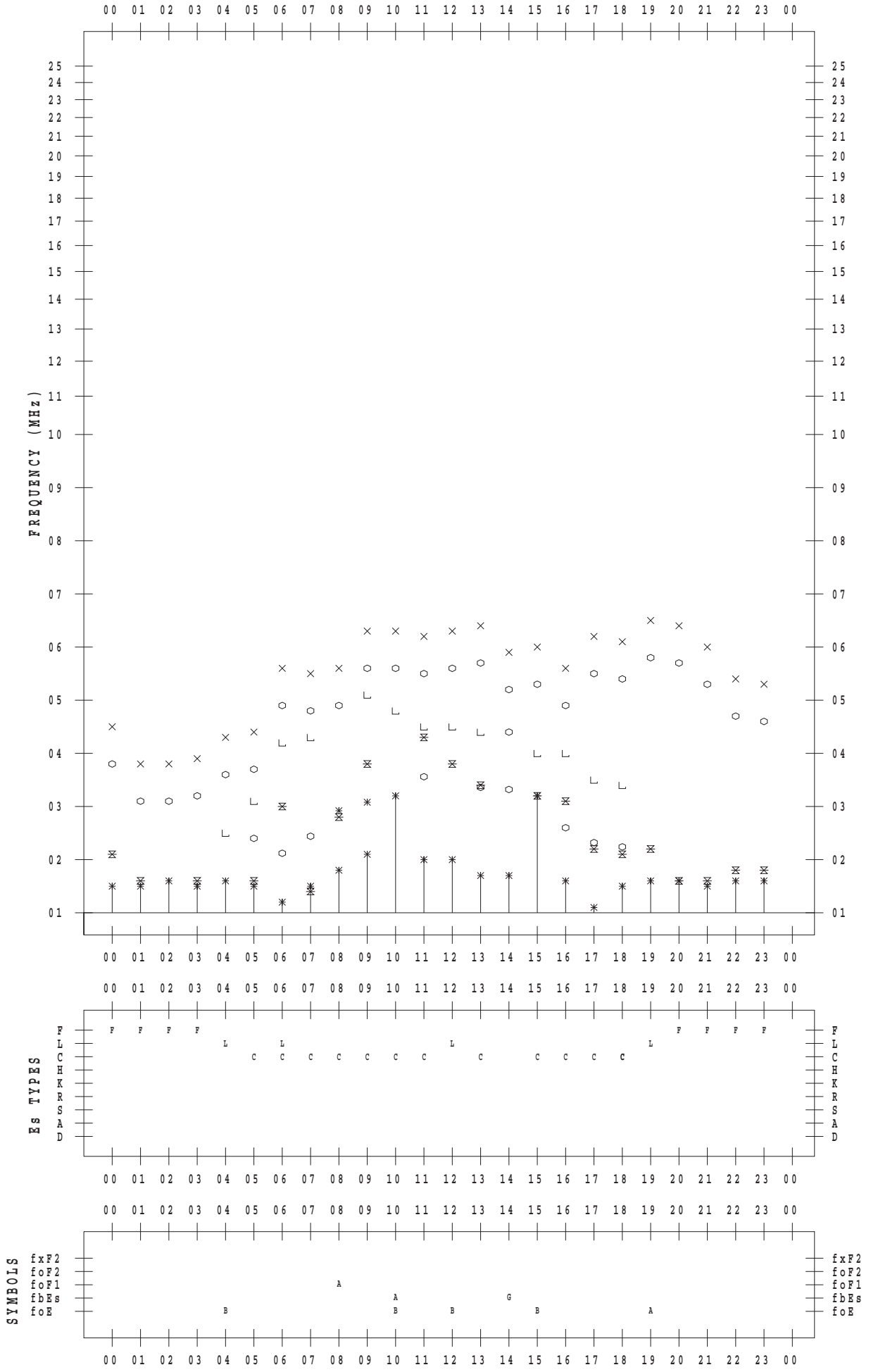
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 4

135 °E MEAN TIME



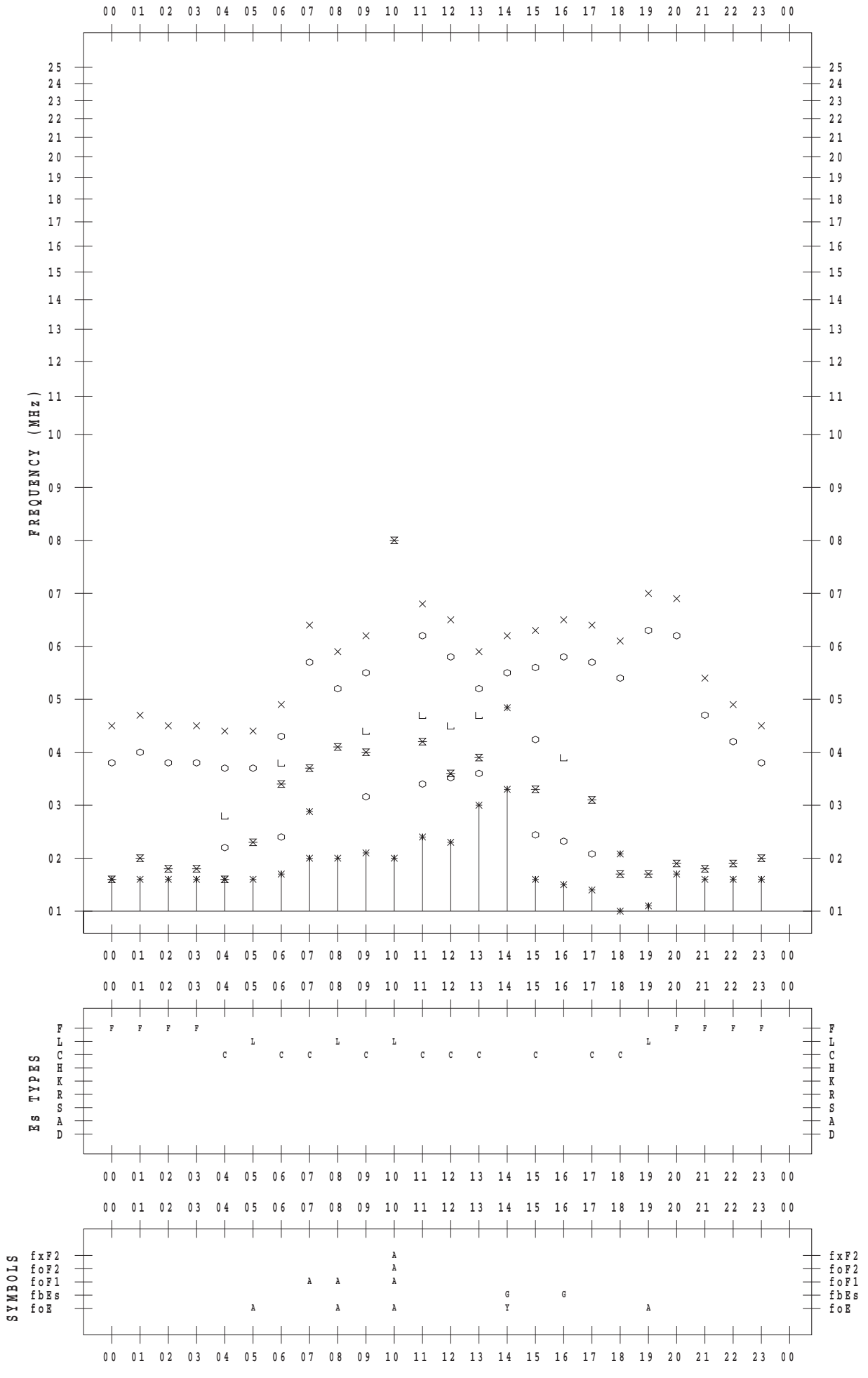
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 5

135 °E MEAN TIME



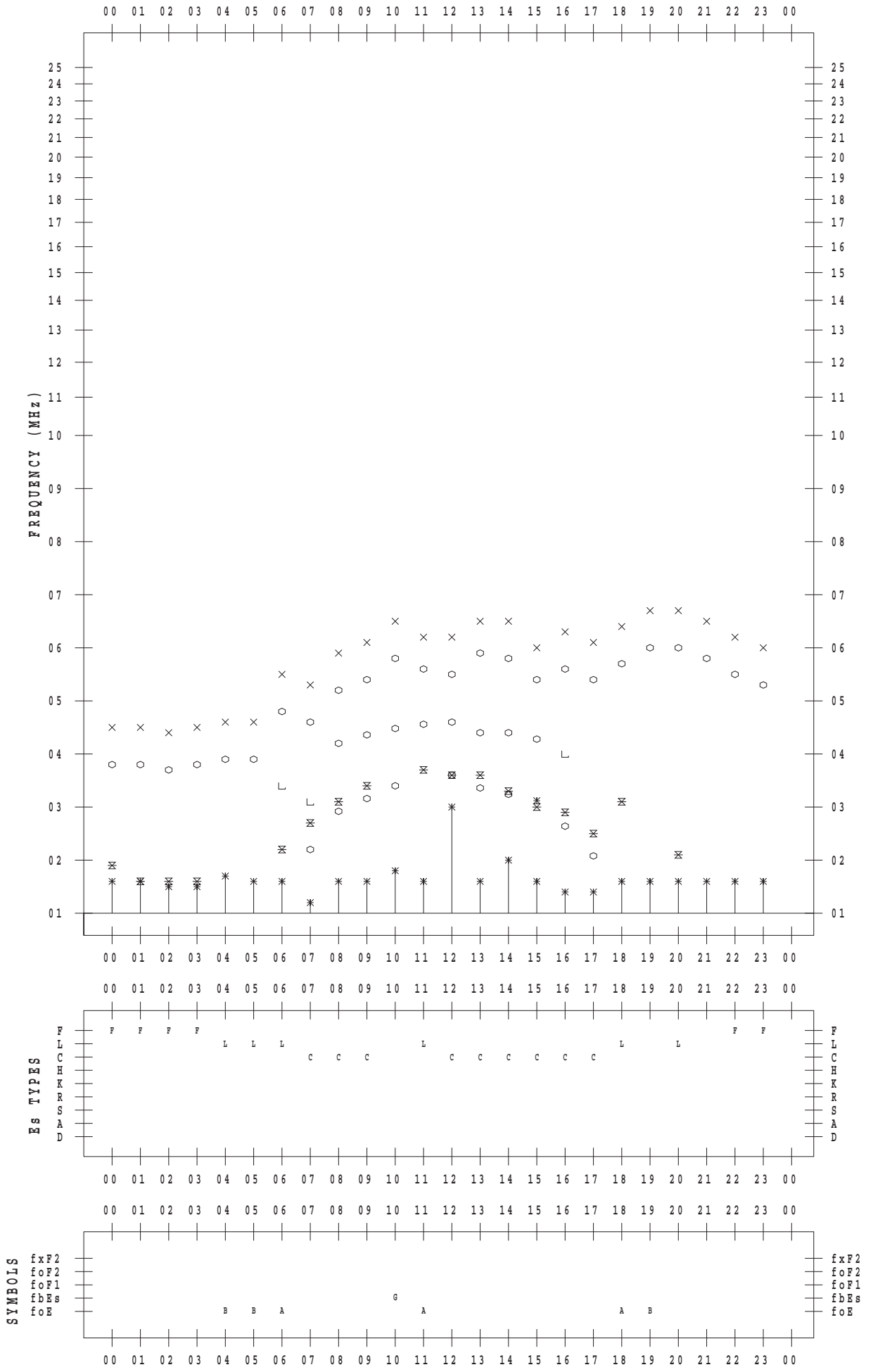
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 6

135 °E MEAN TIME



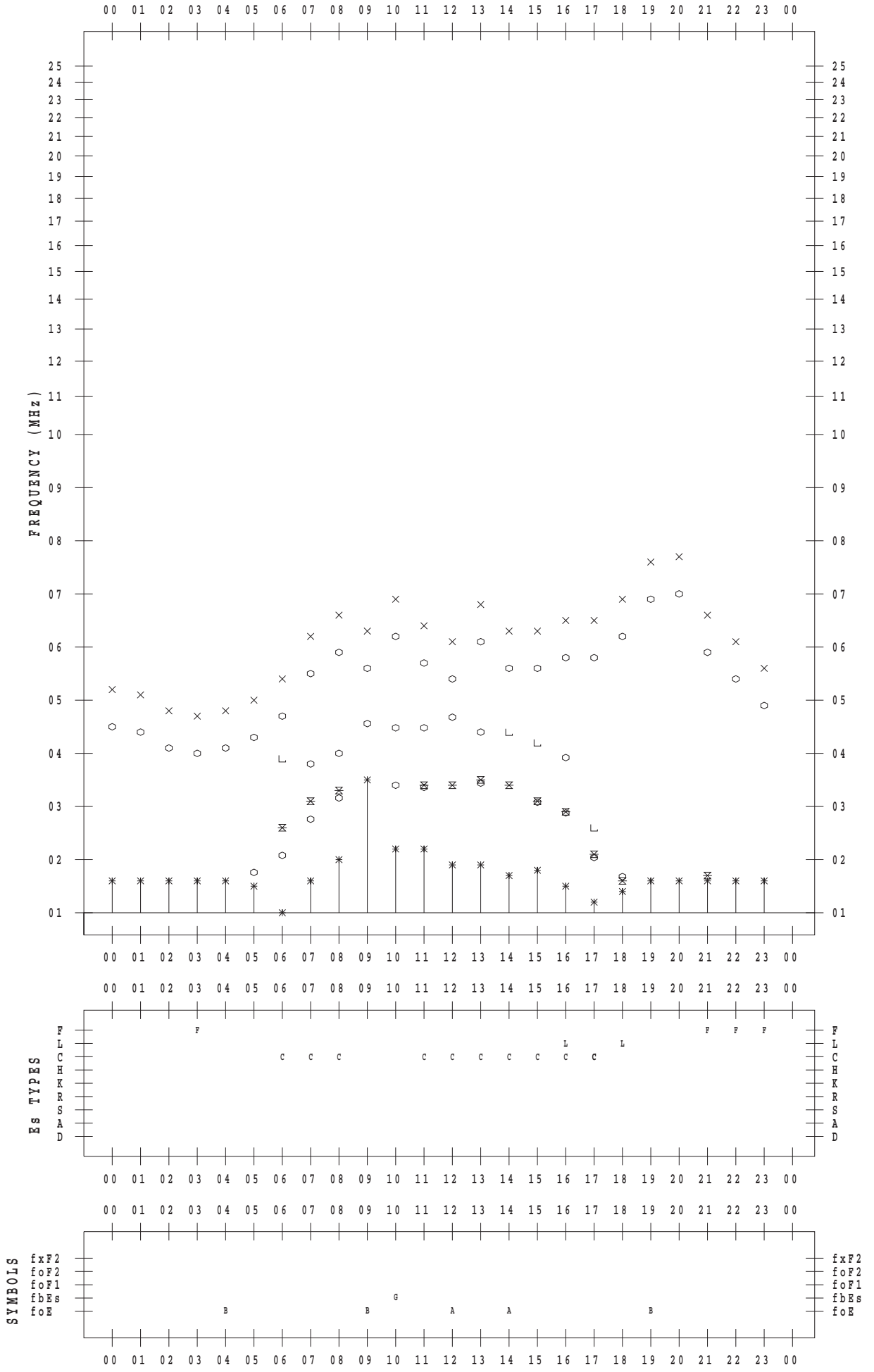
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 7

135 °E MEAN TIME



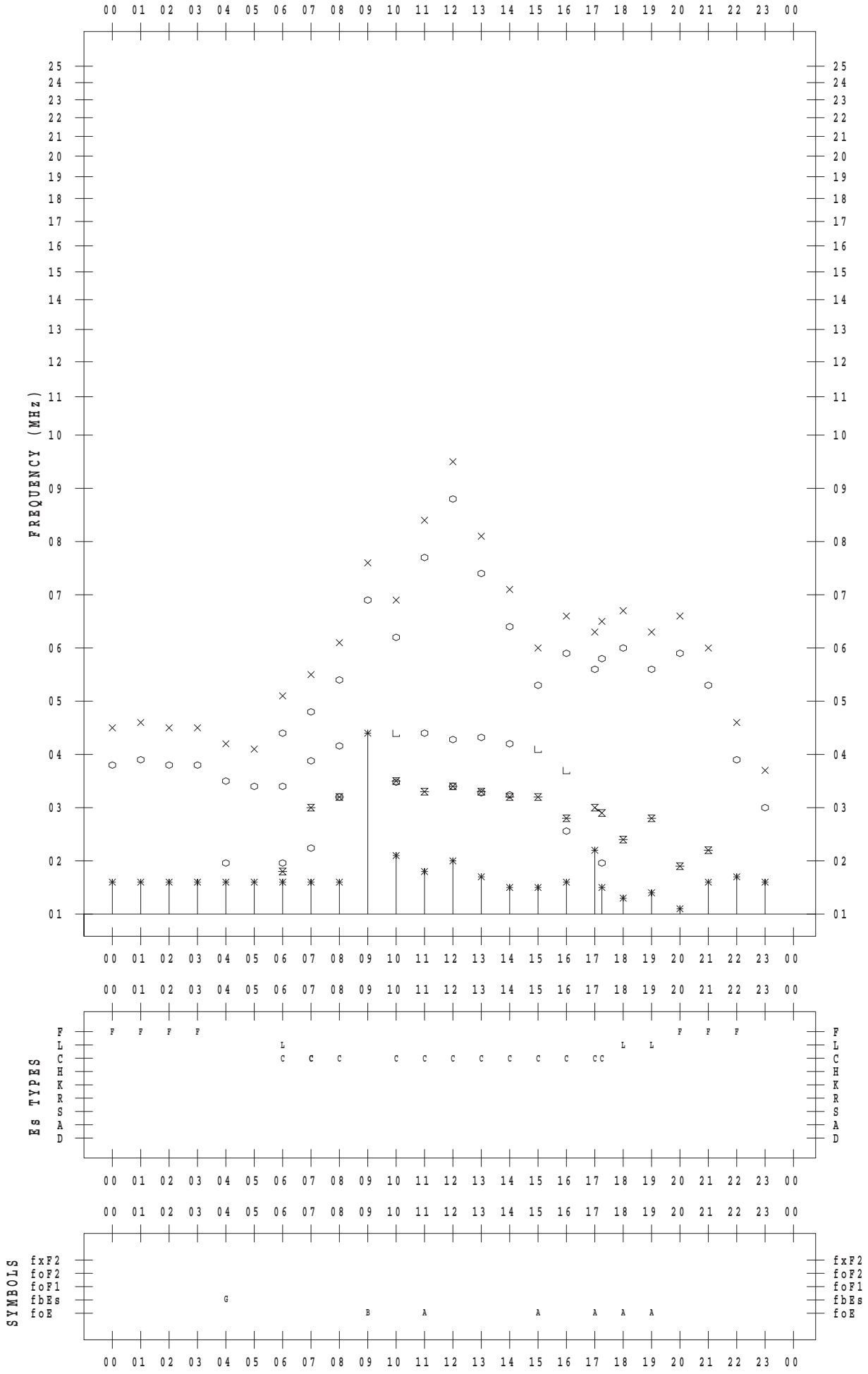
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 8

135 °E MEAN TIME



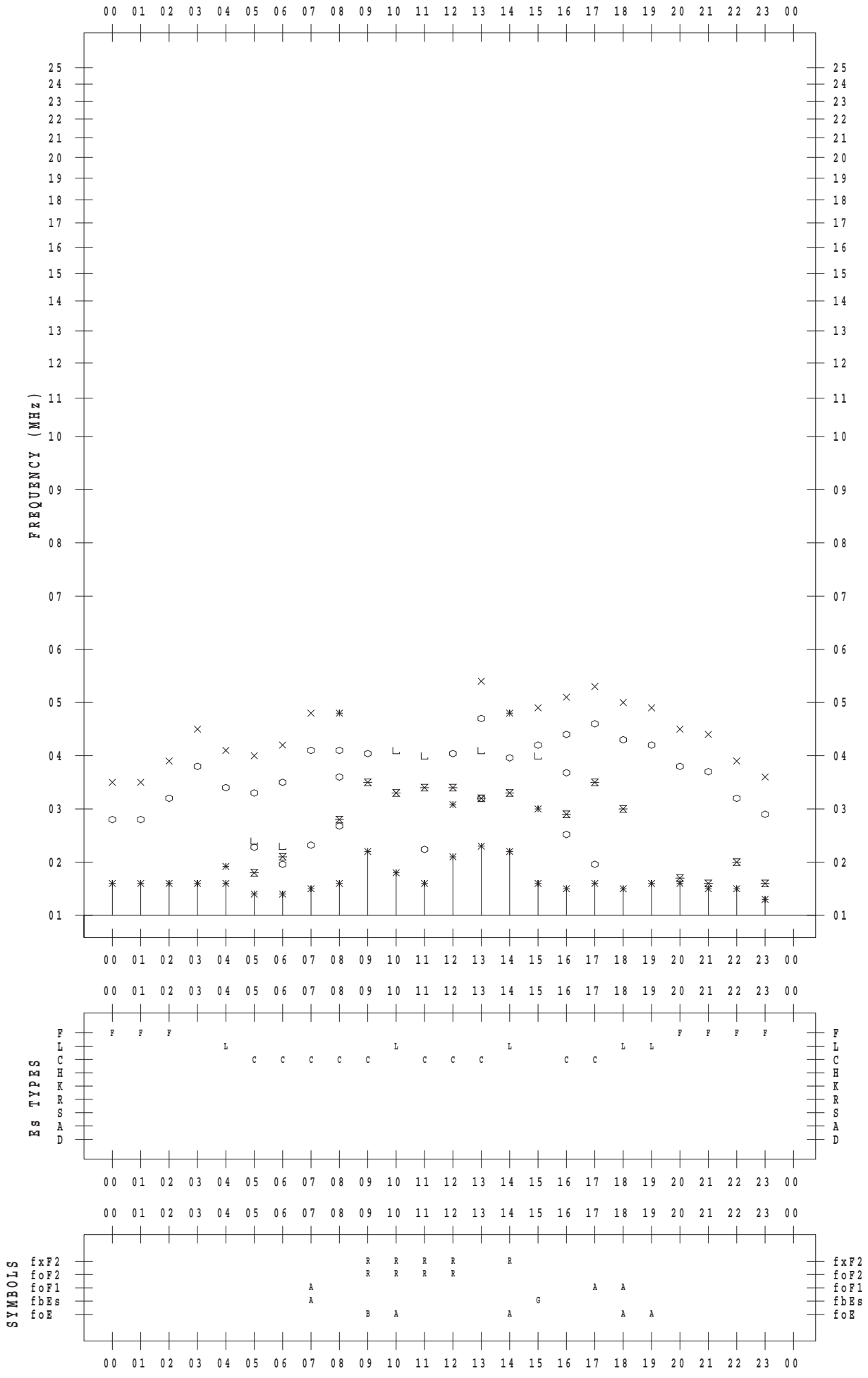
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/ 9

135 °E MEAN TIME



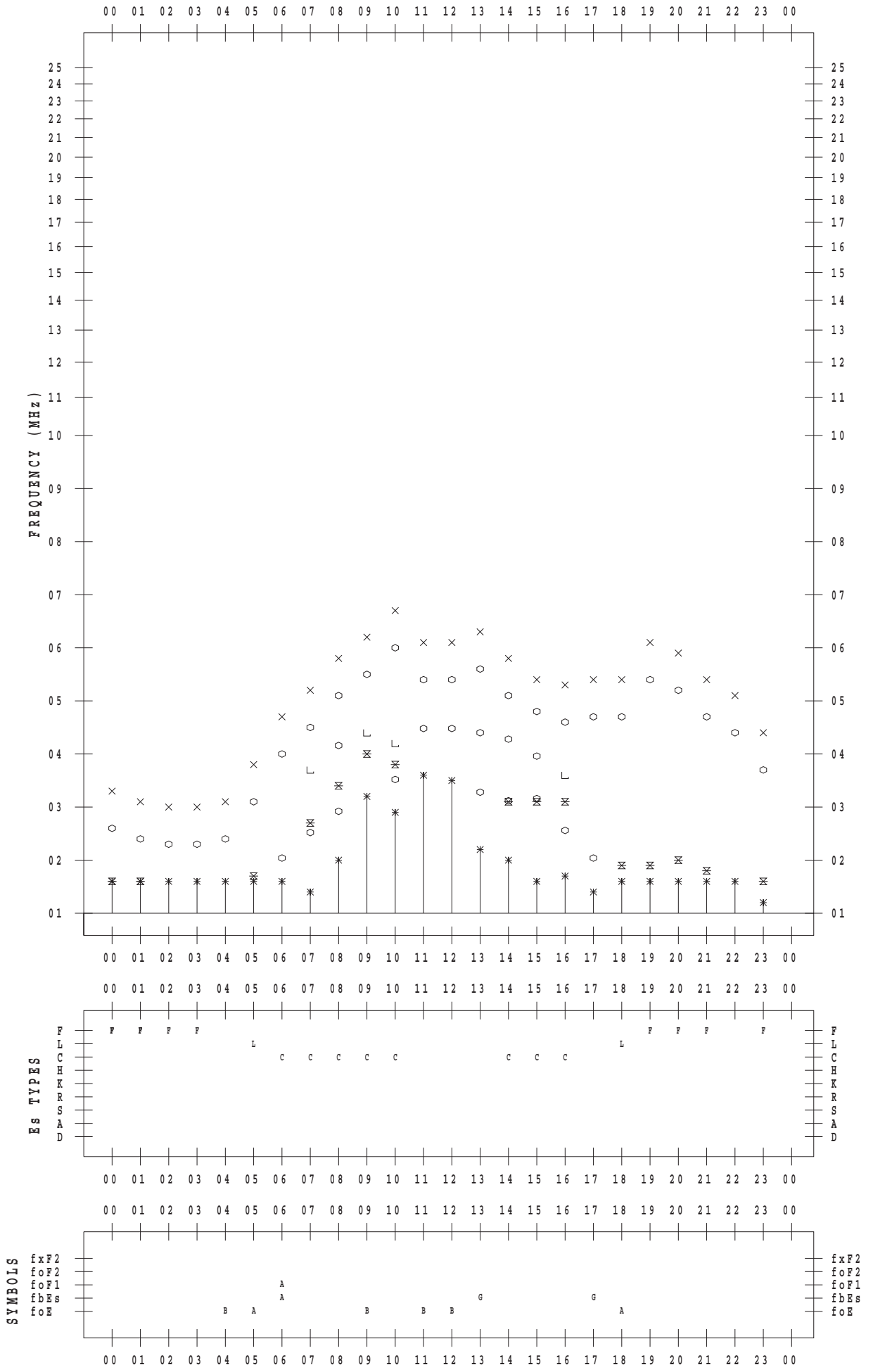
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/10

135 °E MEAN TIME



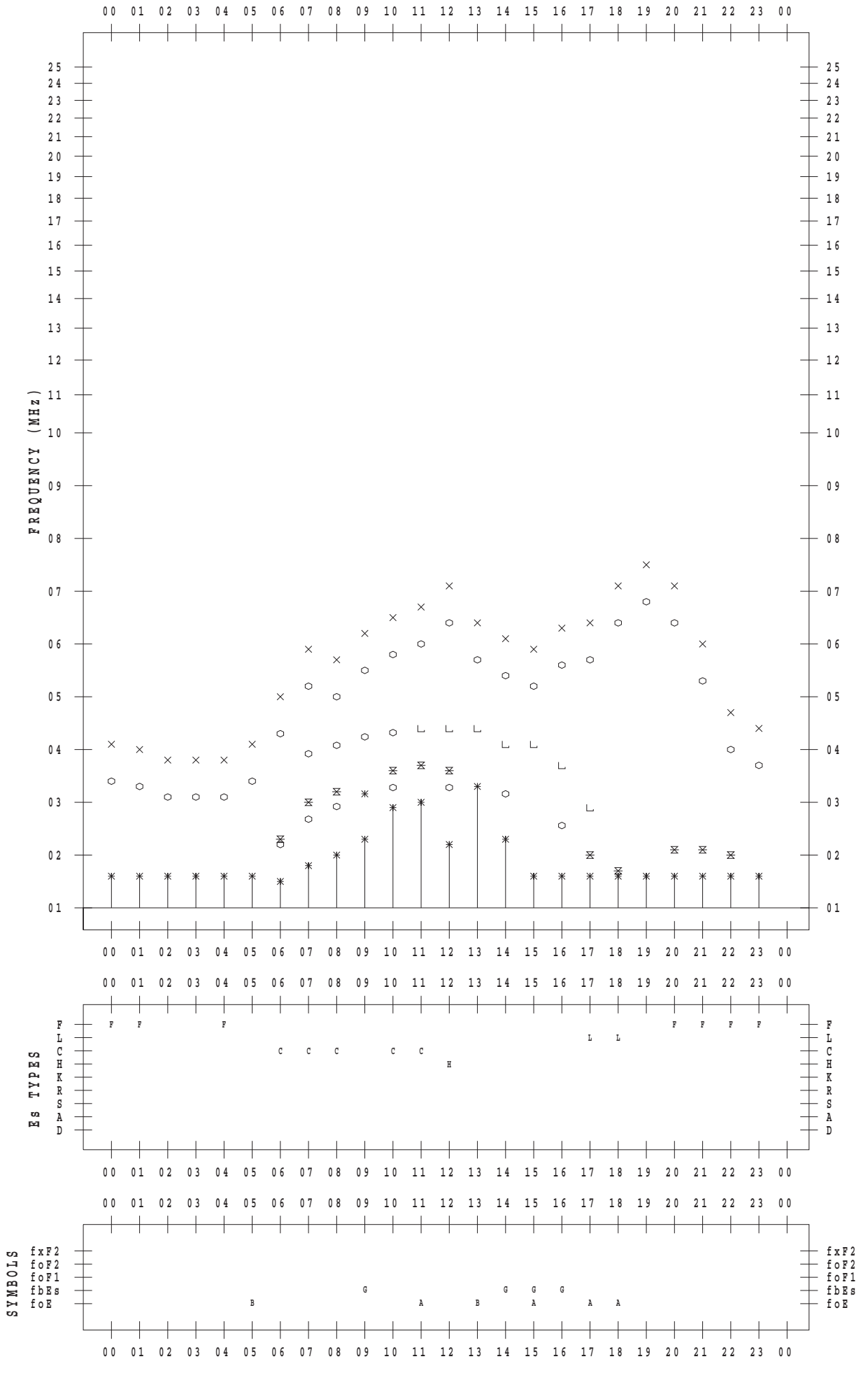
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/11

135 °E MEAN TIME



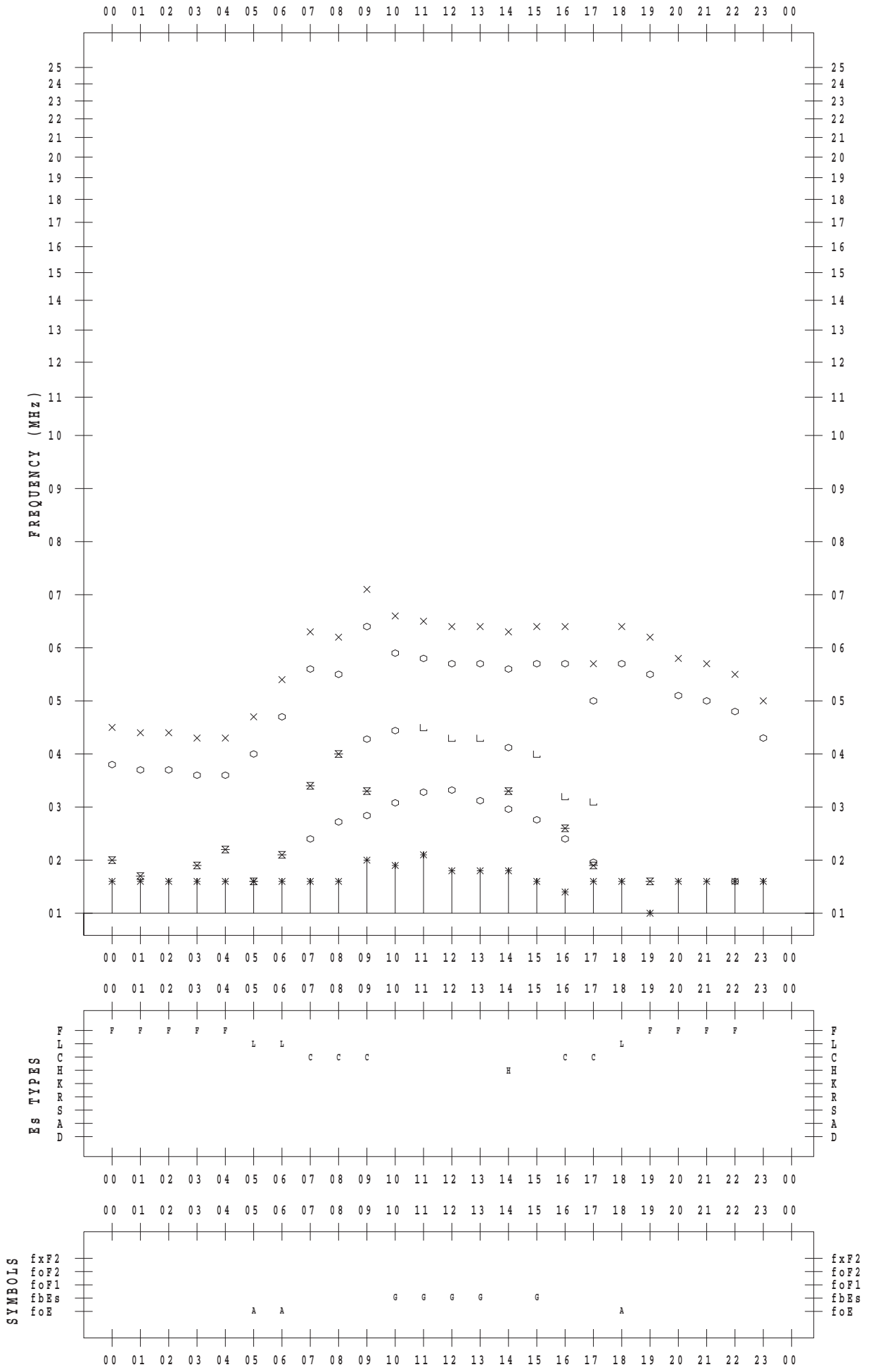
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/12

135 °E MEAN TIME



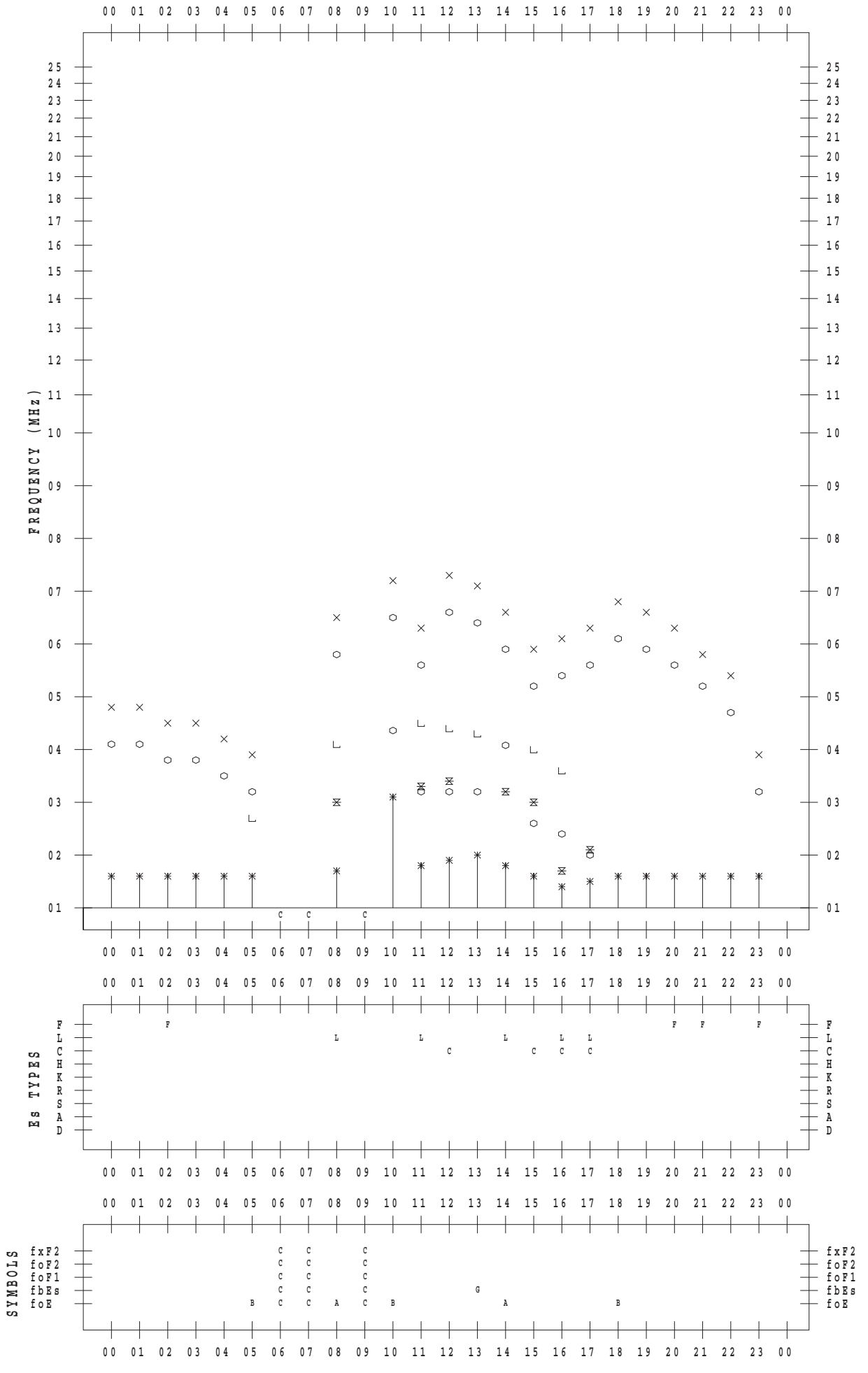
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/13

135 °E MEAN TIME



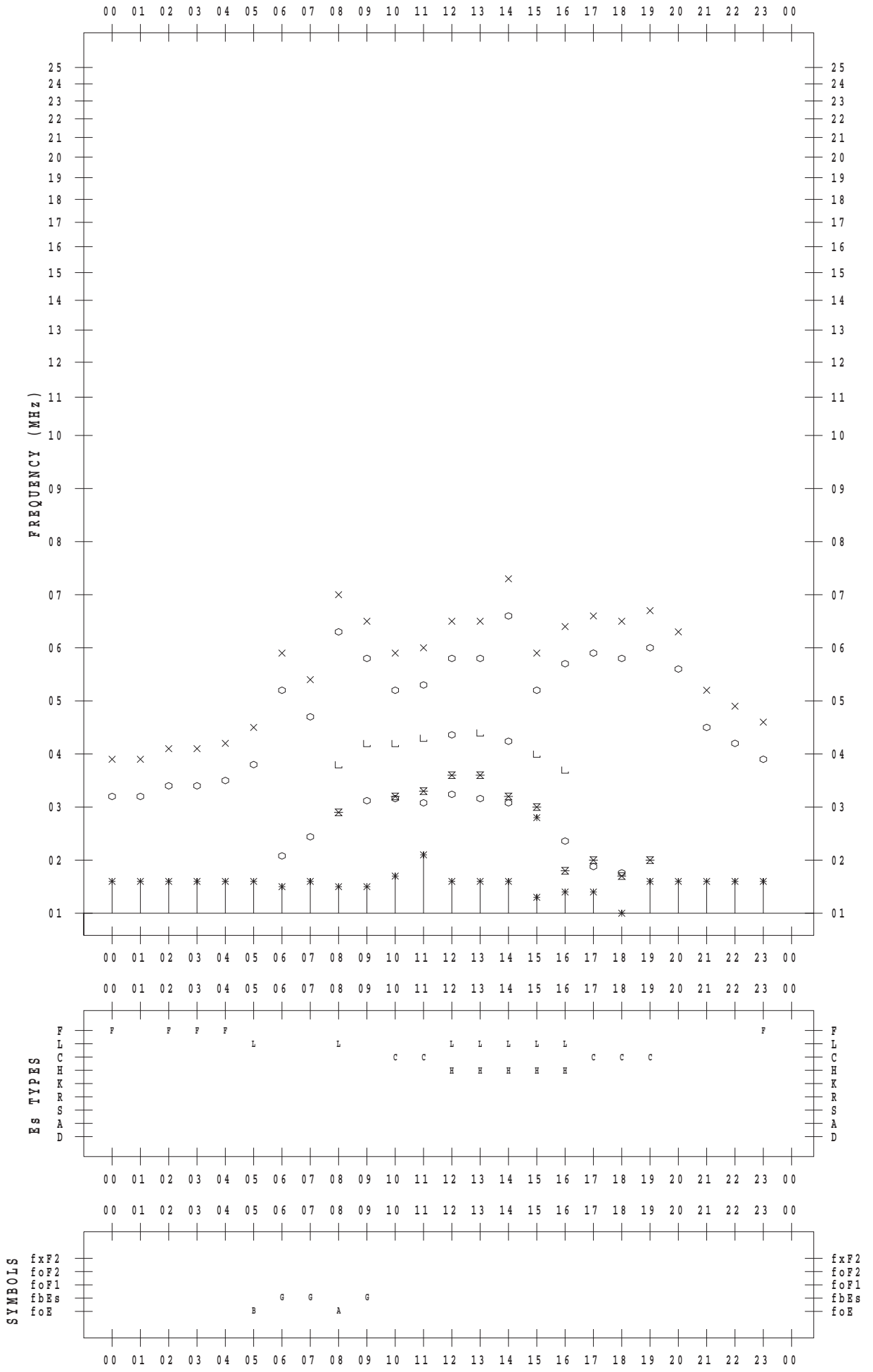
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/14

135 °E MEAN TIME



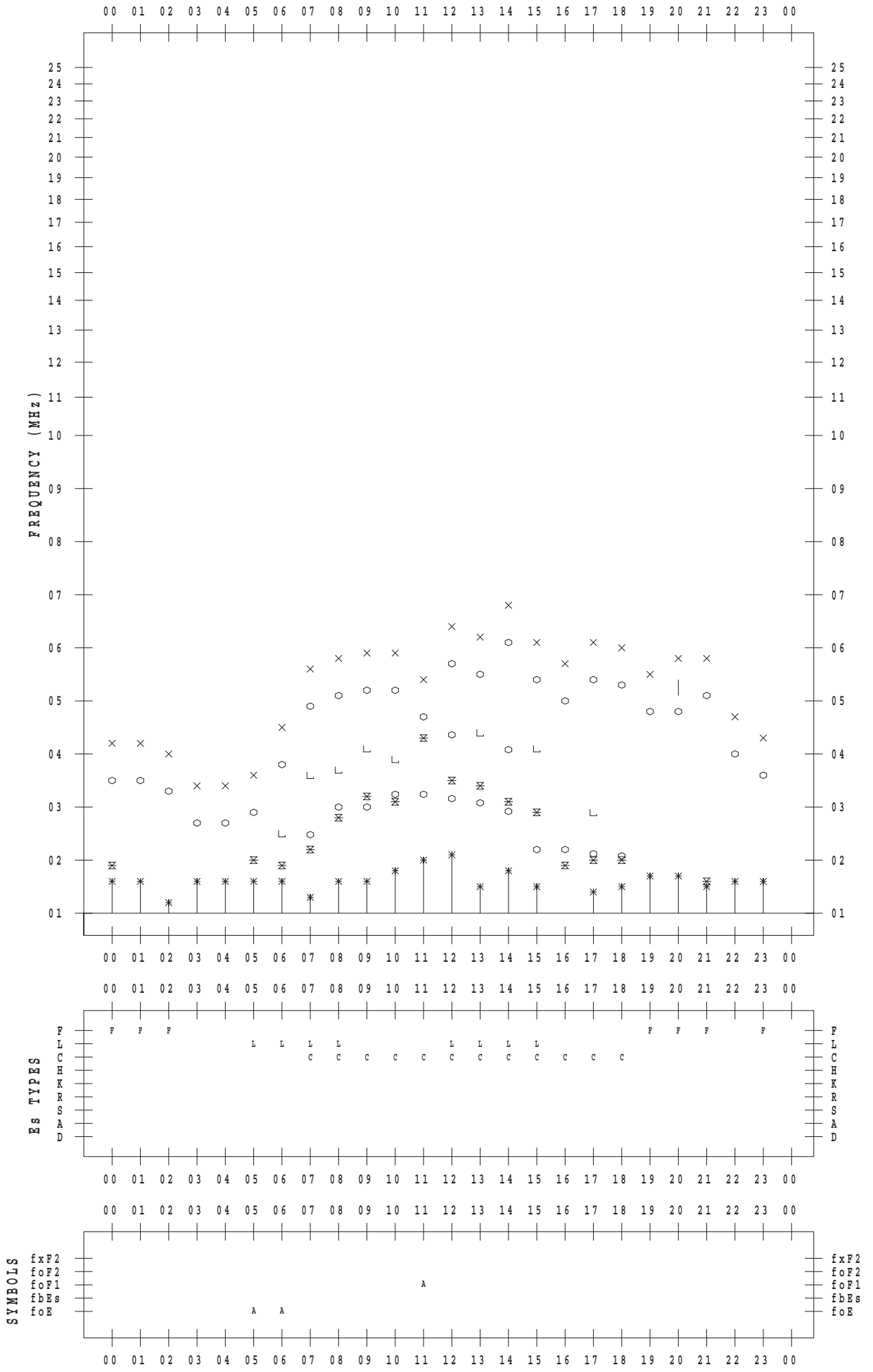
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/15

135 °E MEAN TIME



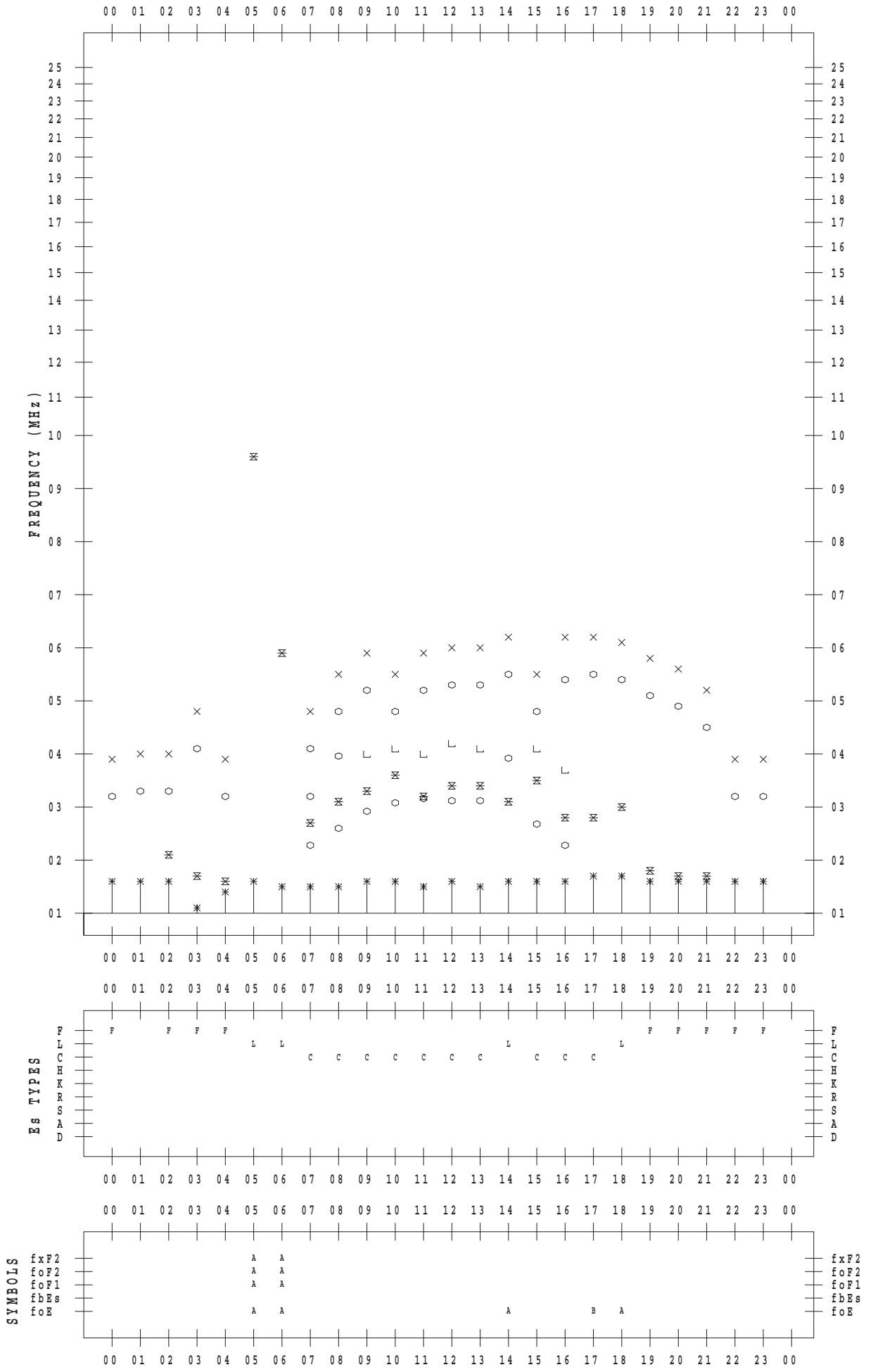
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/16

135 °E MEAN TIME



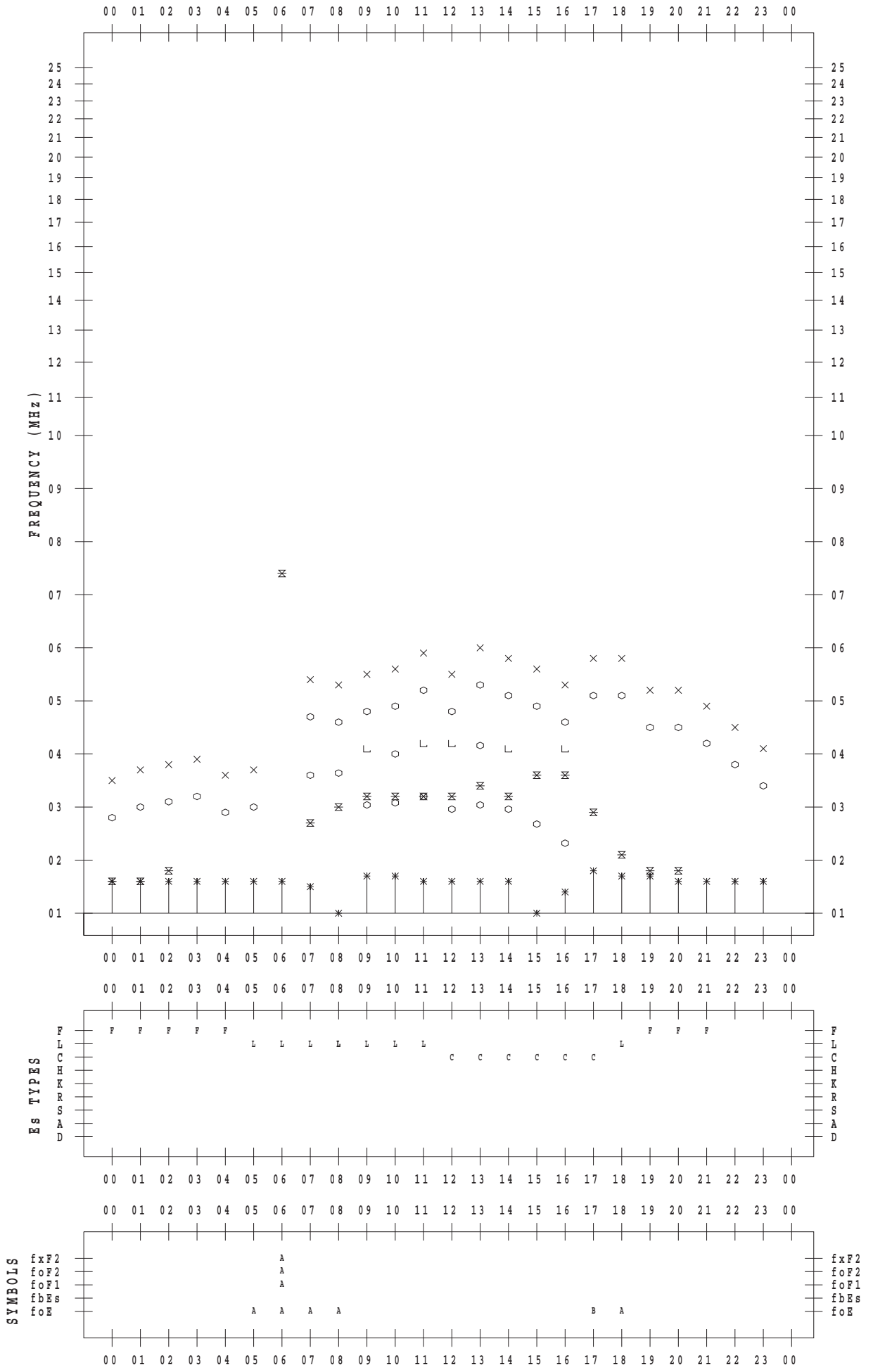
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/17

135 °E MEAN TIME



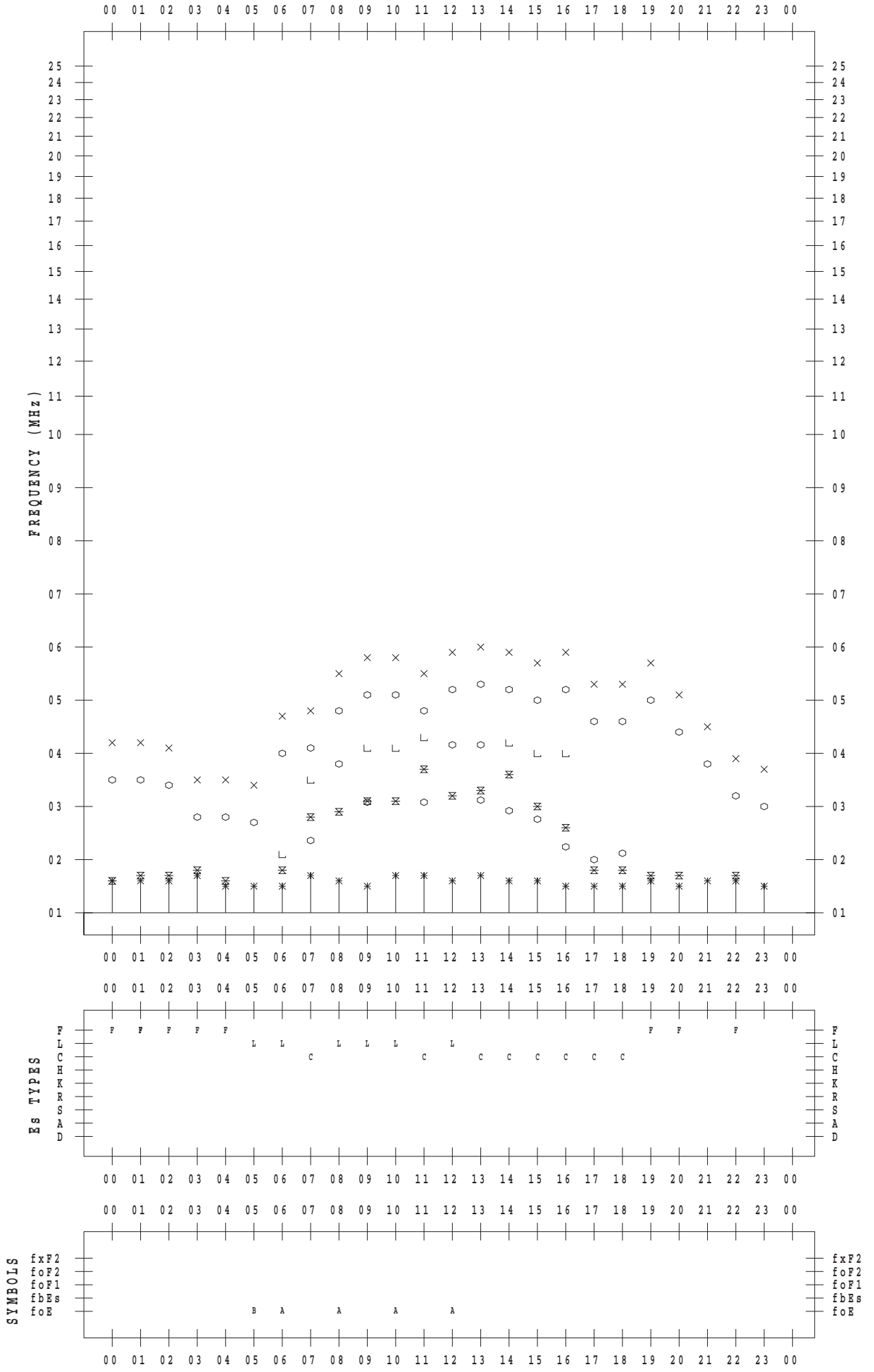
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/18

135 °E MEAN TIME



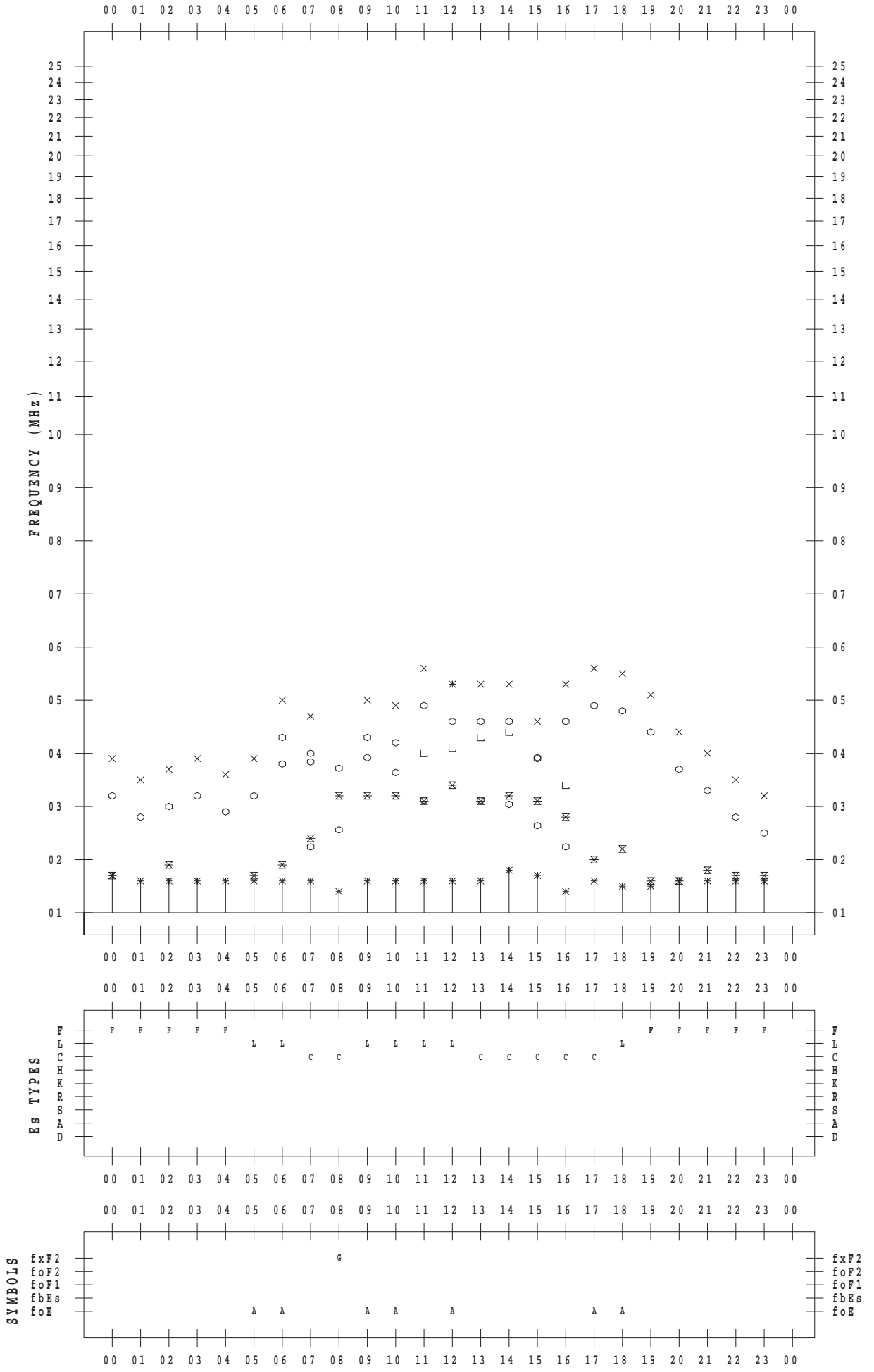
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/19

135 °E MEAN TIME



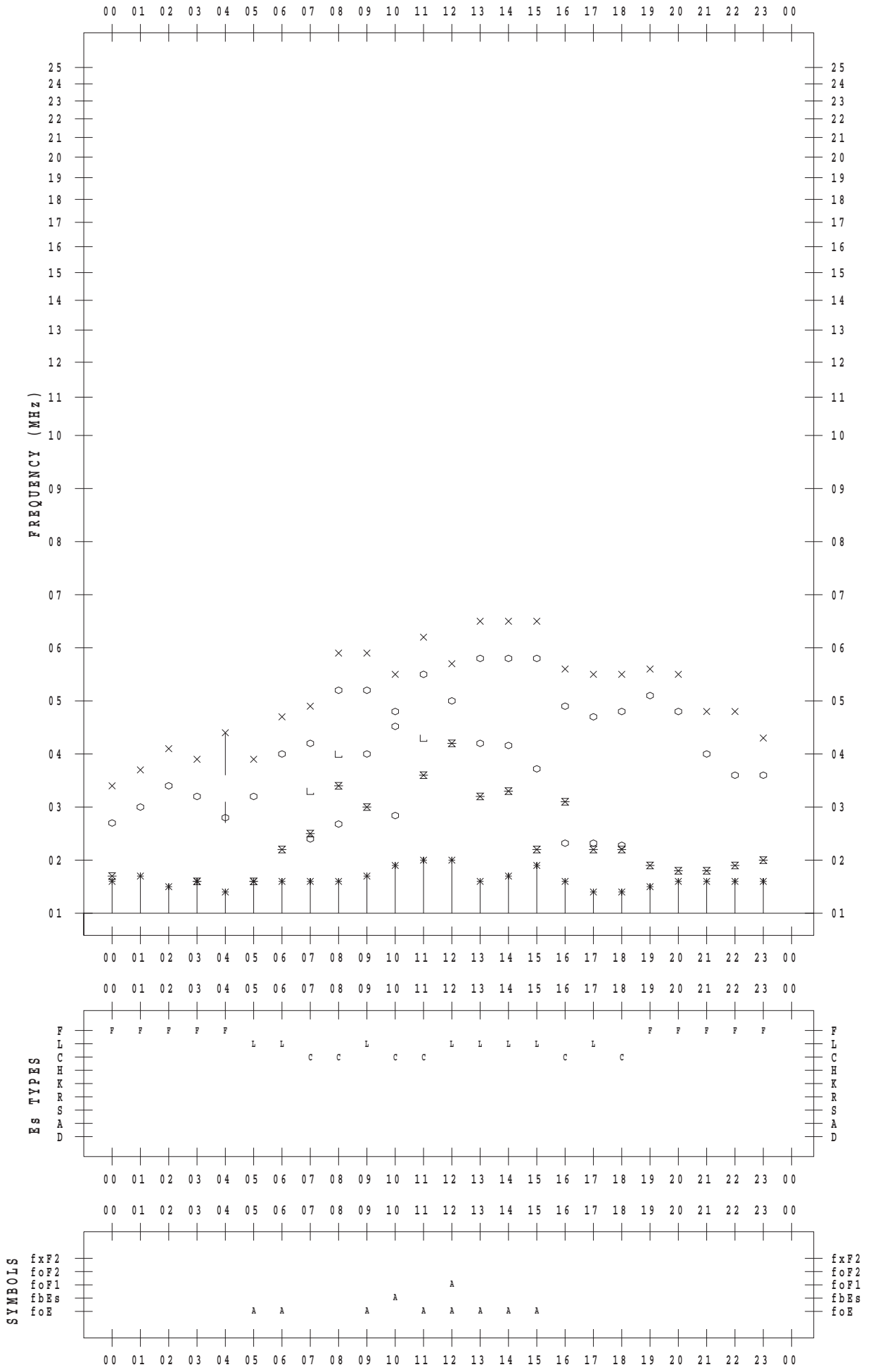
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/20

135 °E MEAN TIME



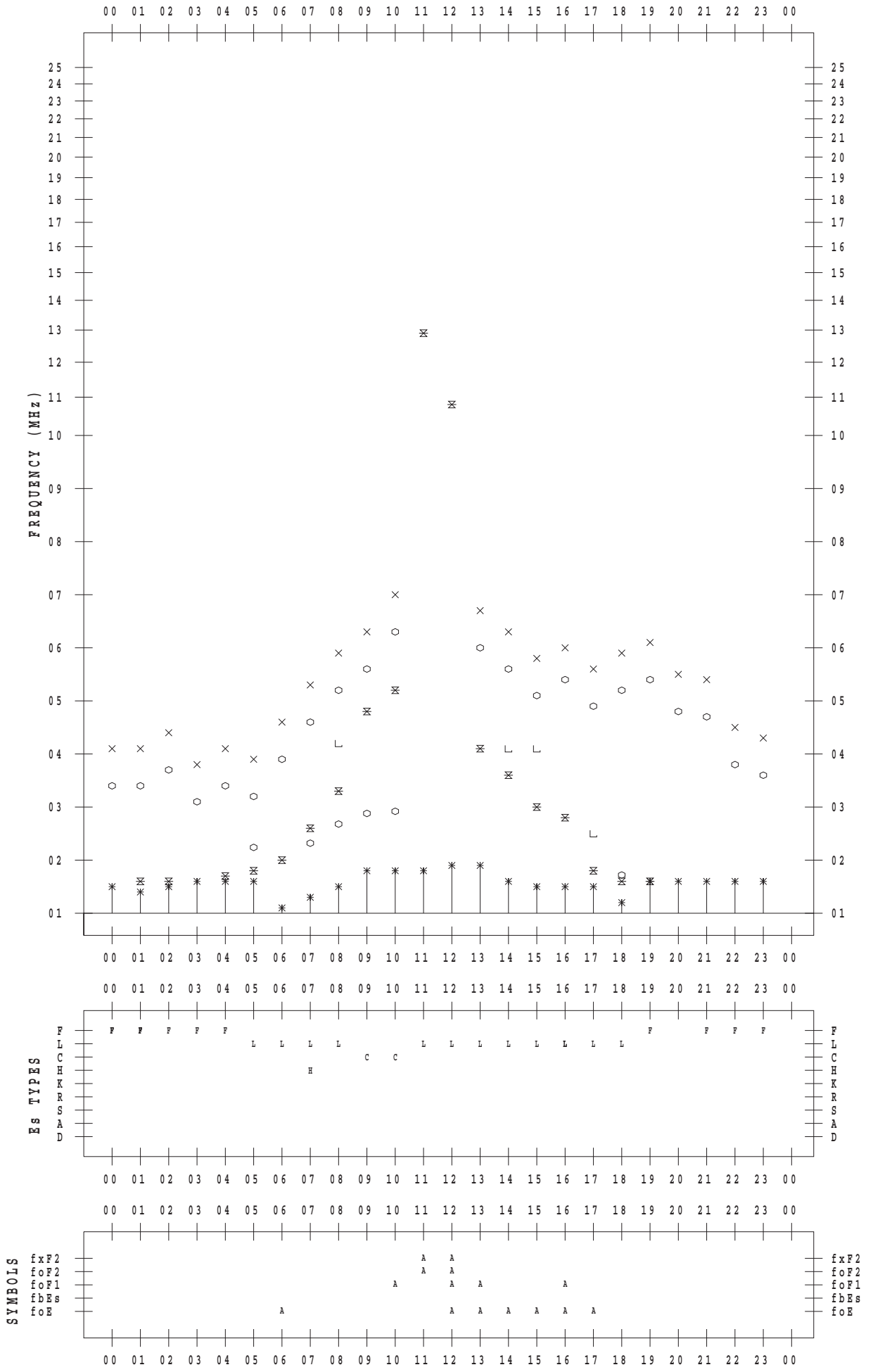
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/21

135 °E MEAN TIME



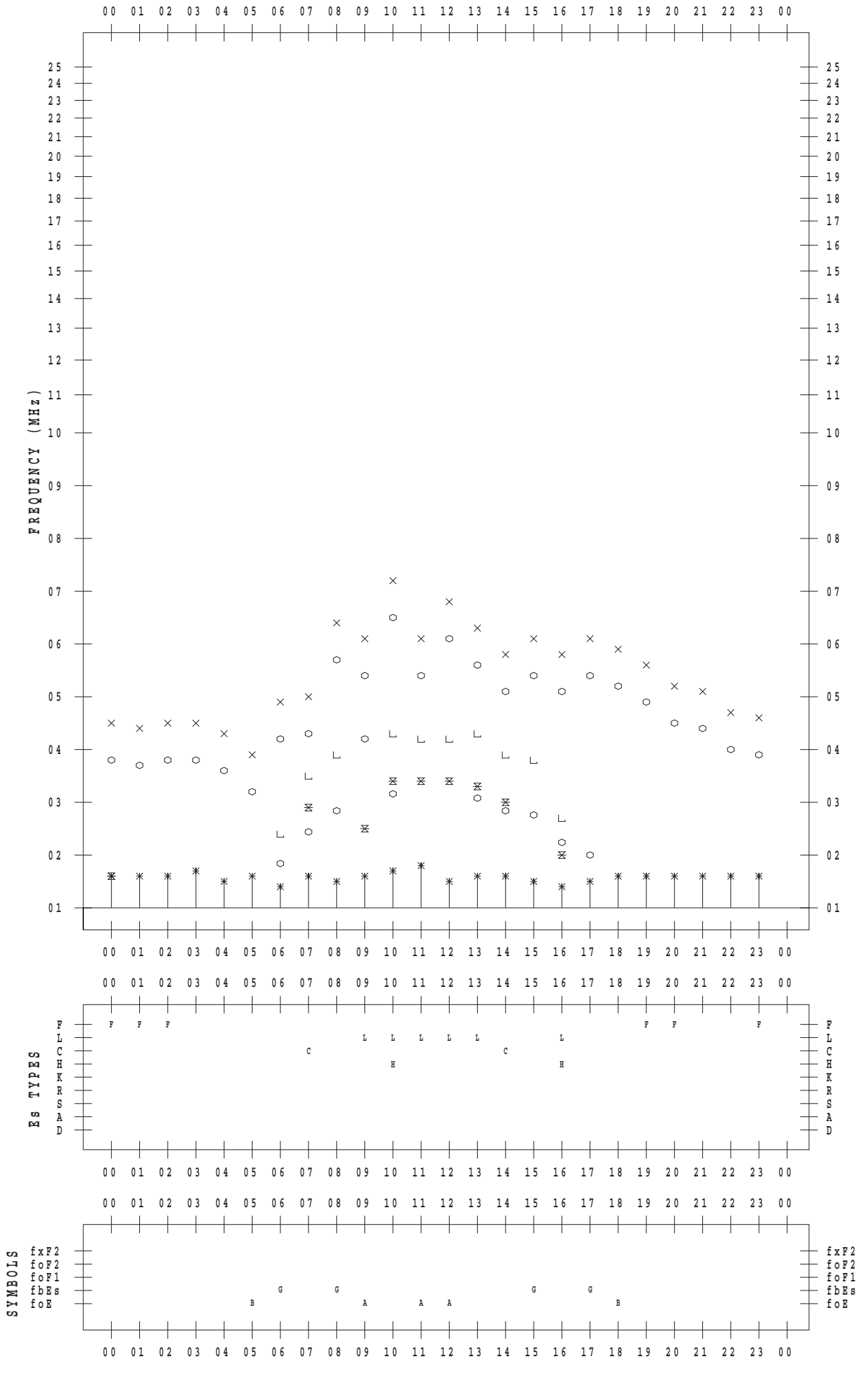
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/22

135 °E MEAN TIME



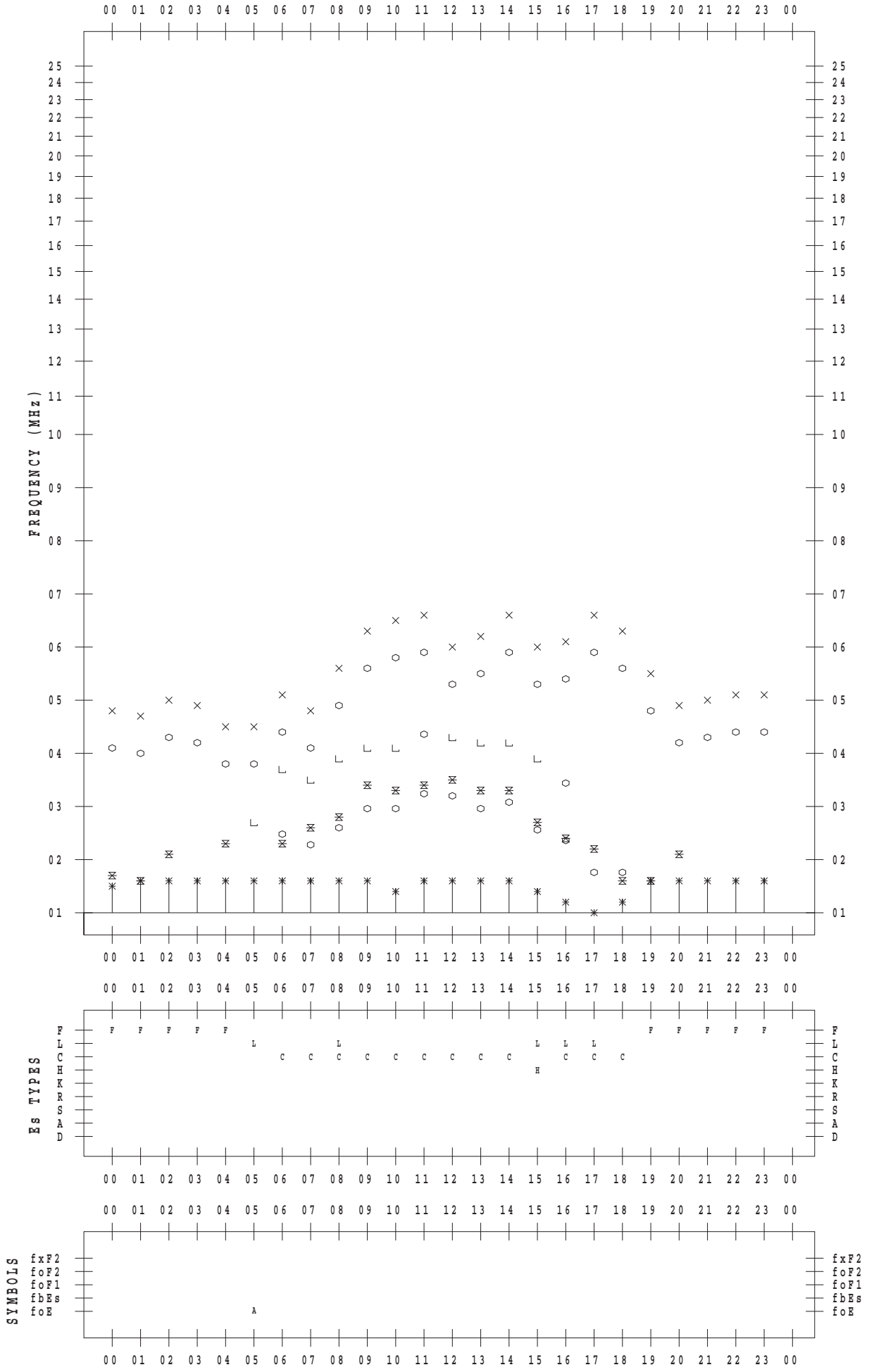
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/23

135 °E MEAN TIME



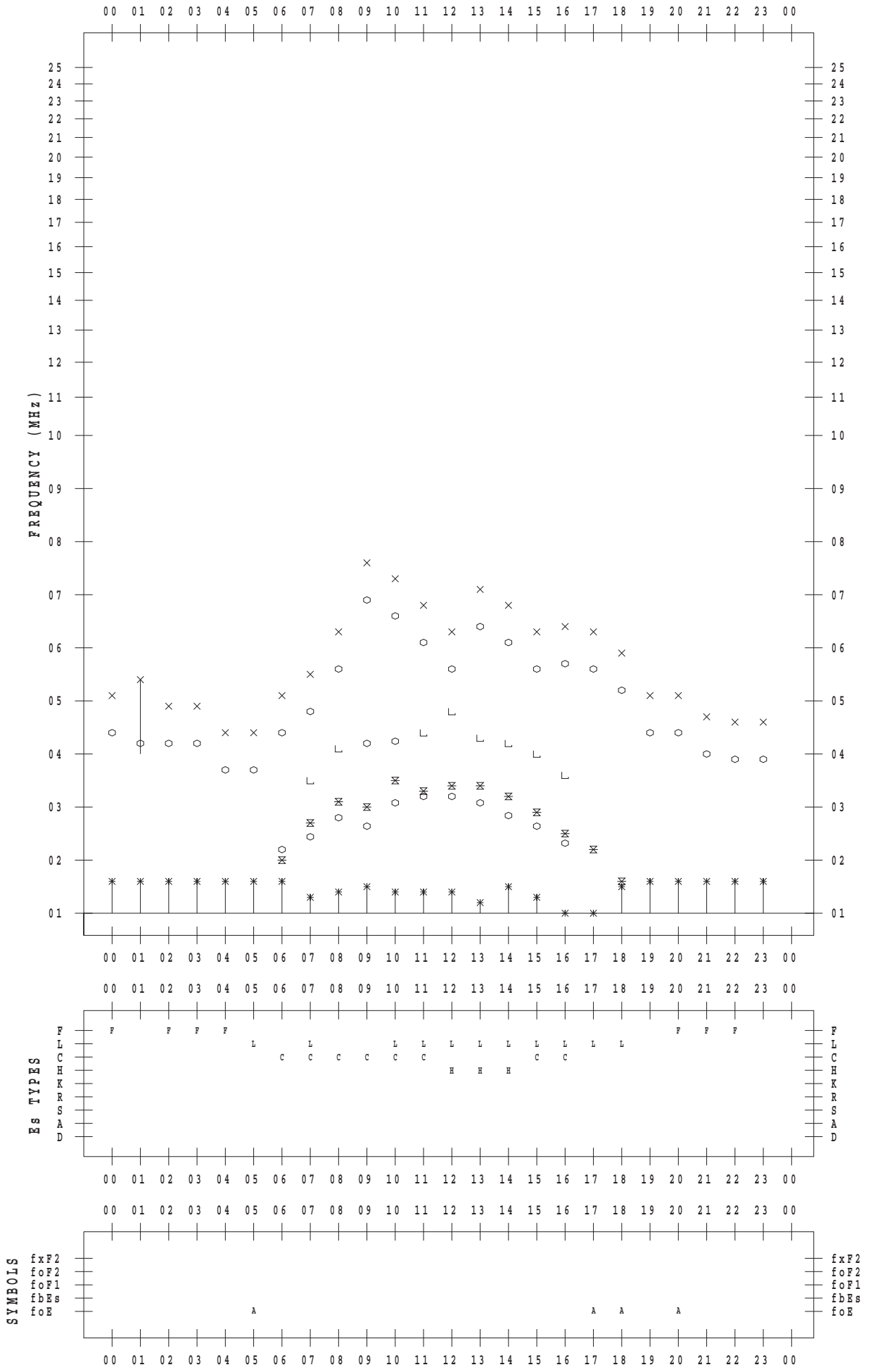
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/24

135 °E MEAN TIME



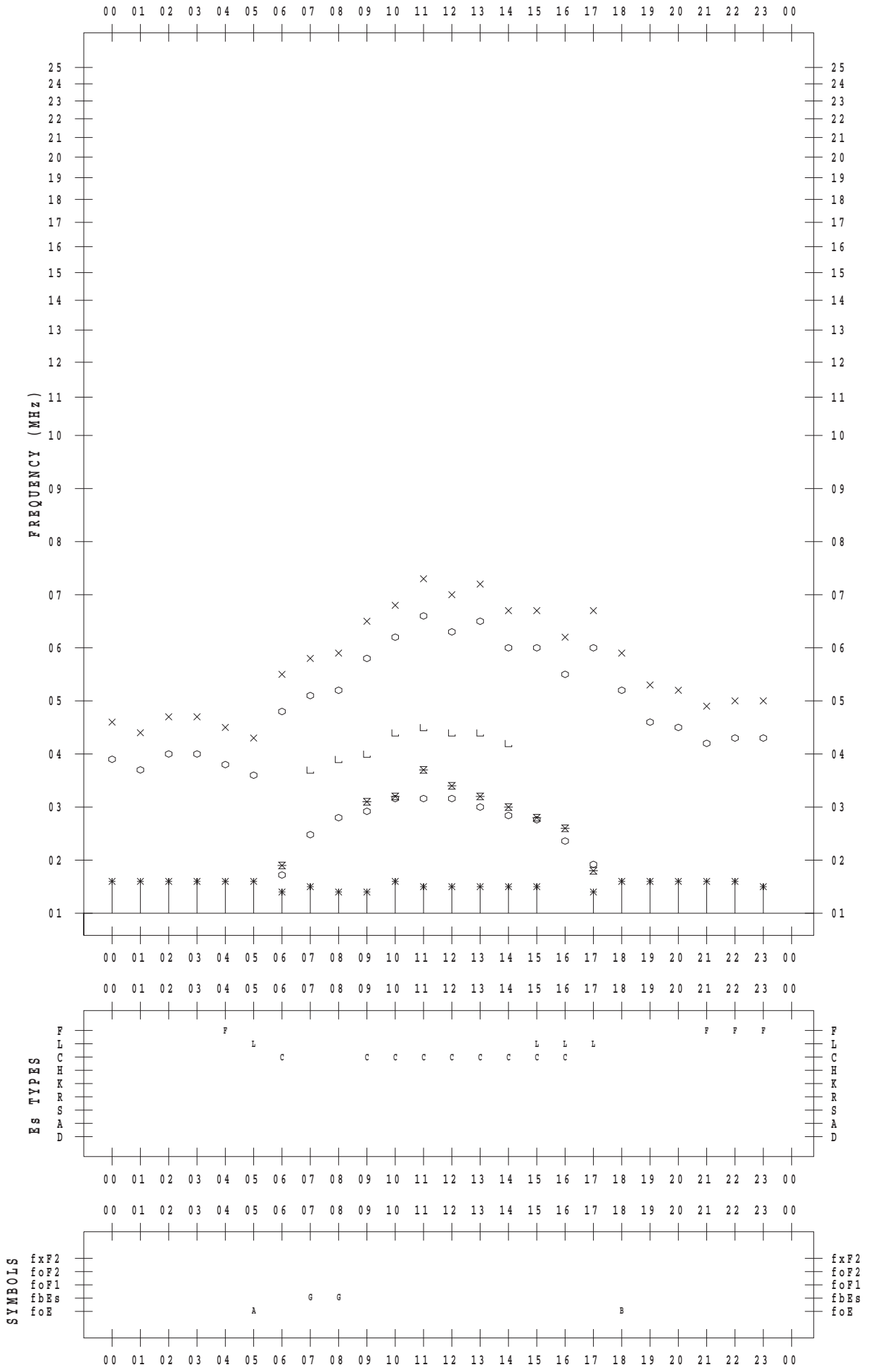
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/25

135 °E MEAN TIME



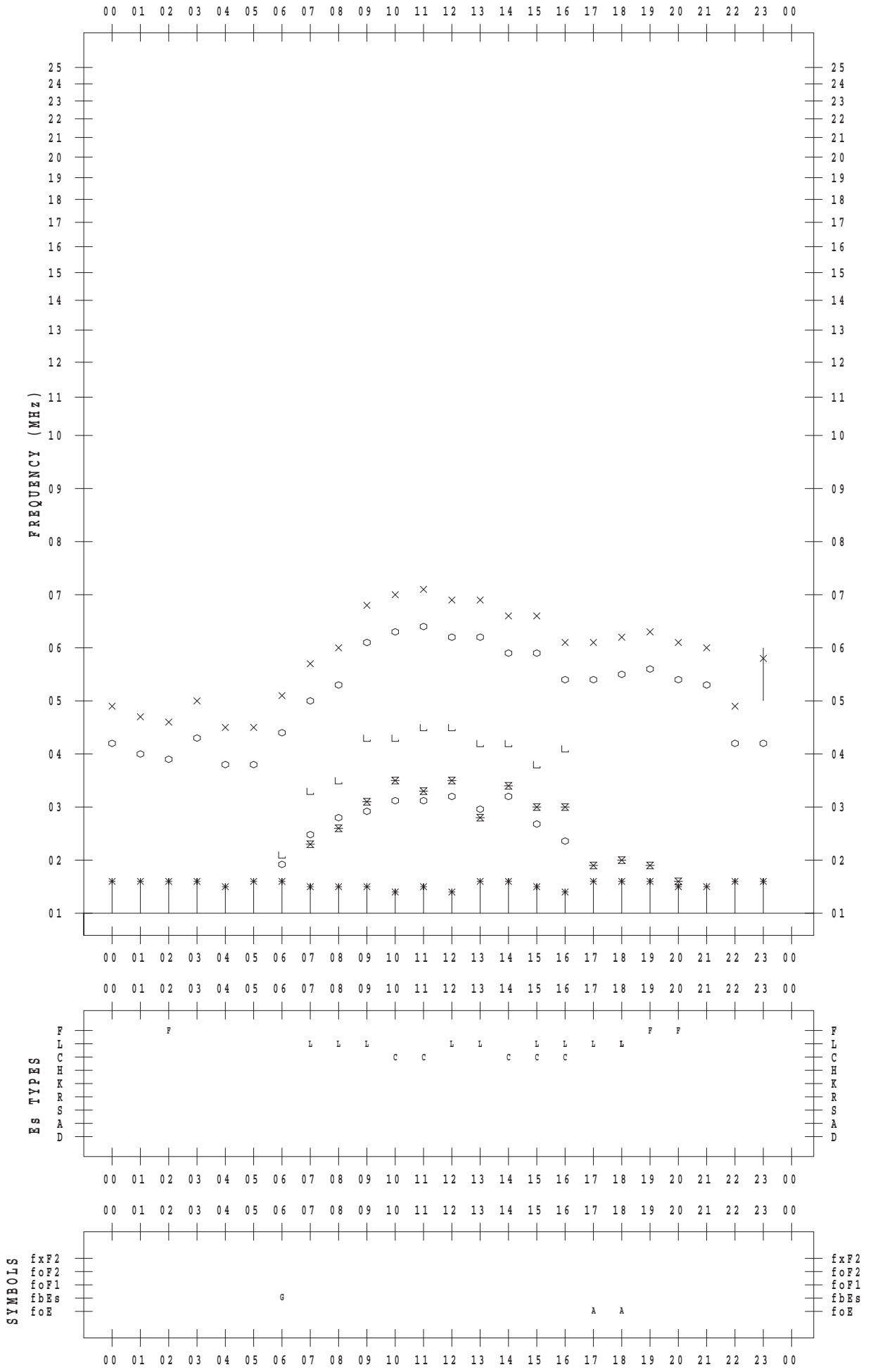
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/26

135 °E MEAN TIME



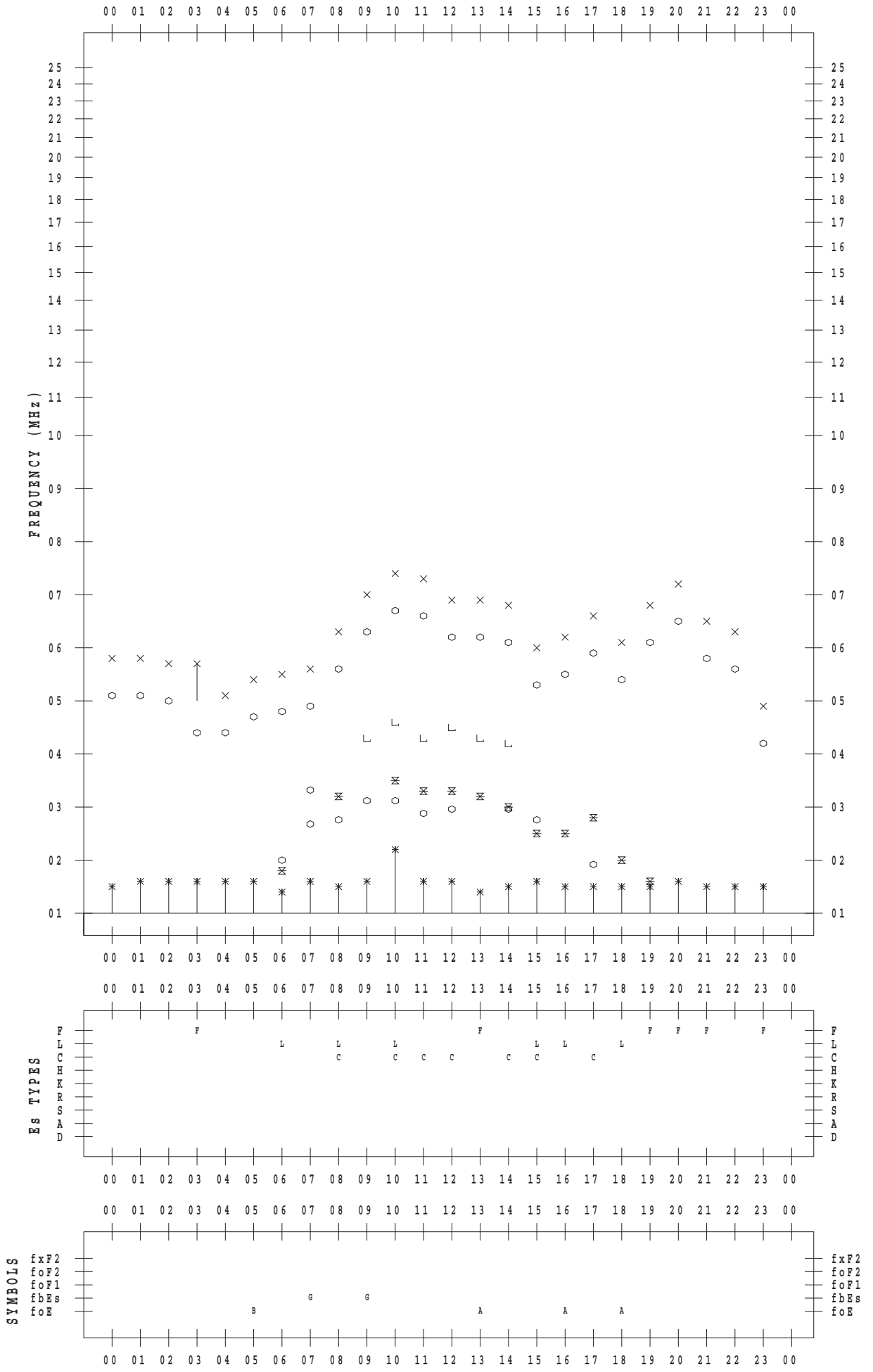
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/27

135 °E MEAN TIME



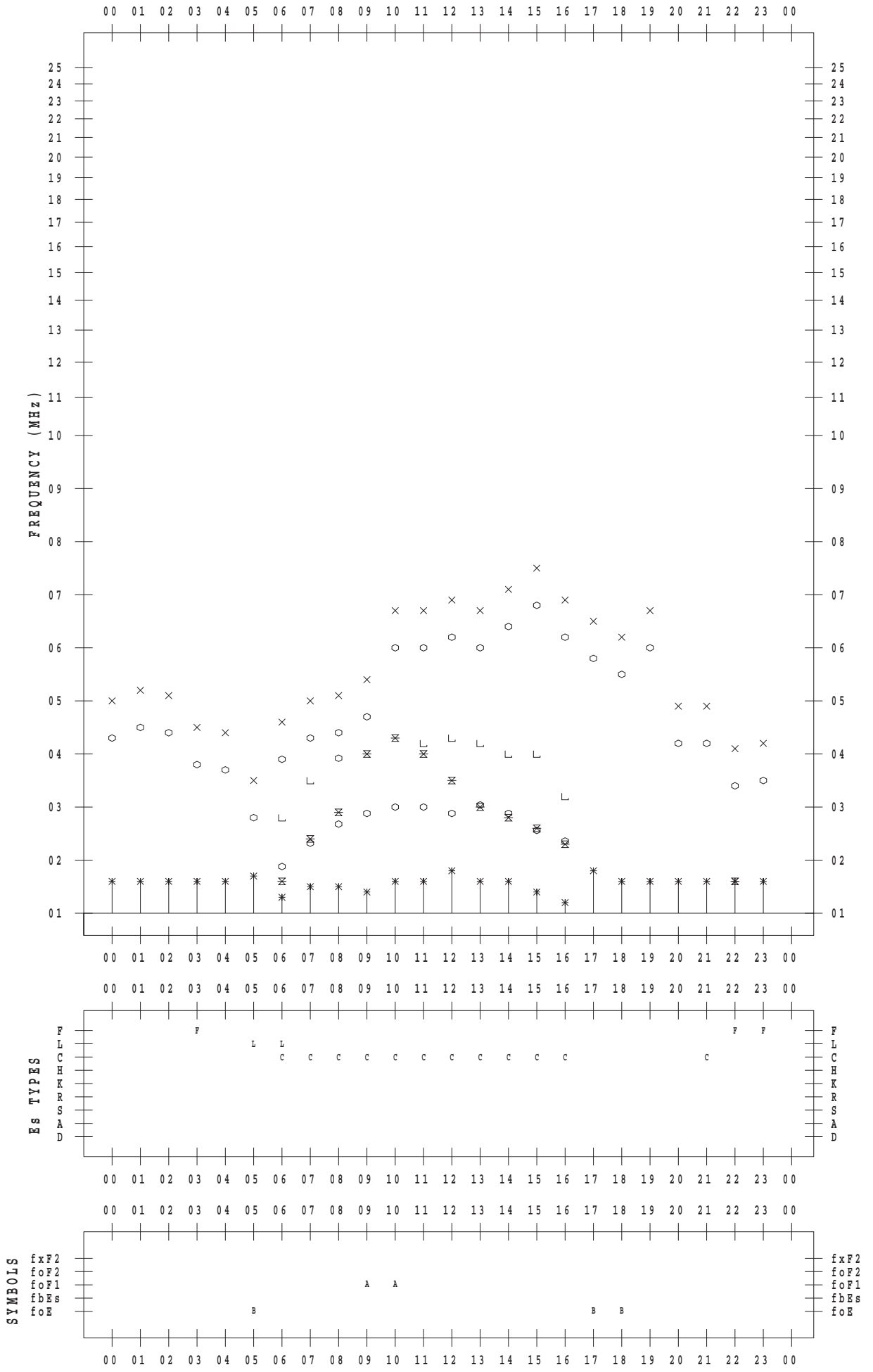
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/28

135 °E MEAN TIME



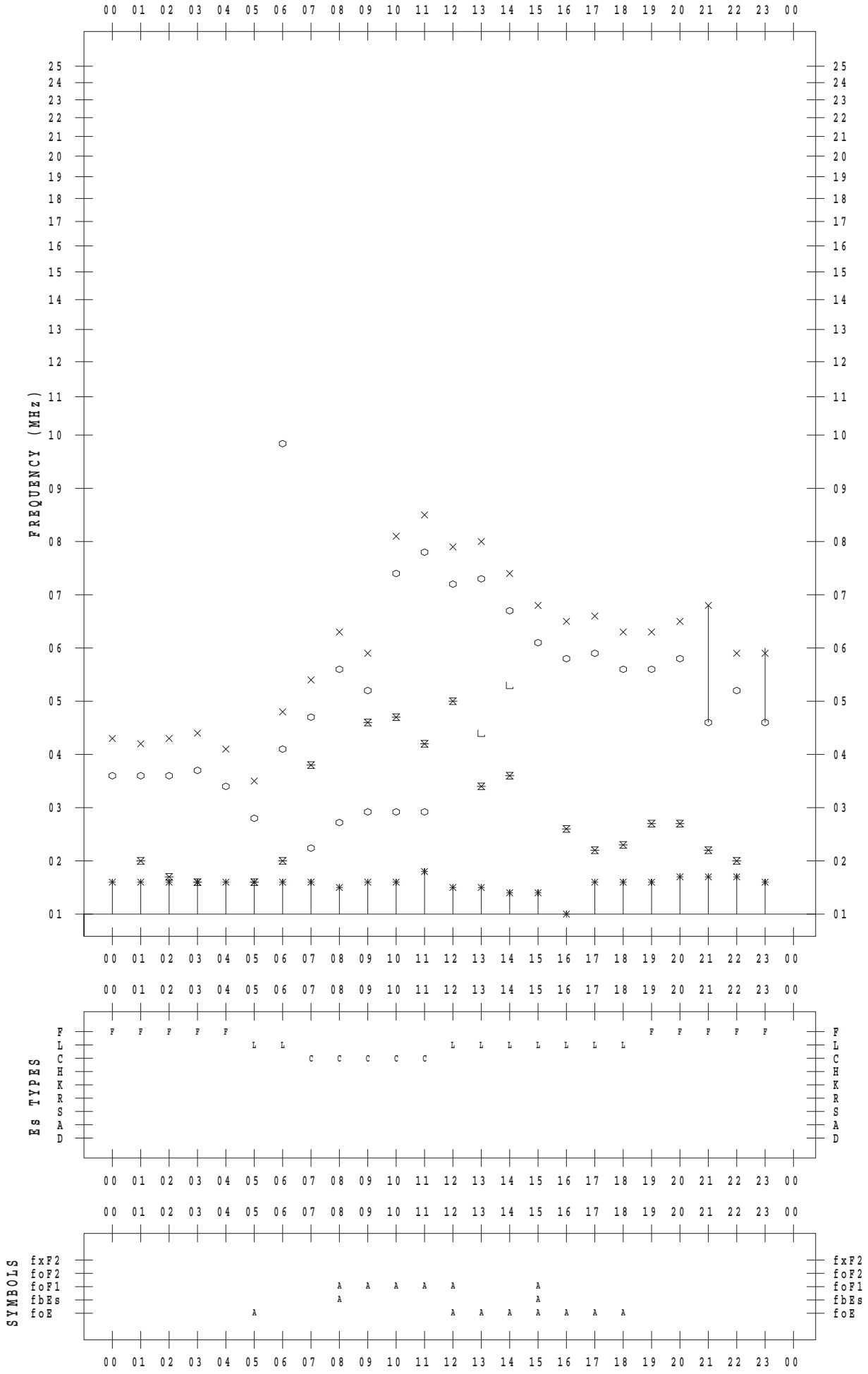
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/29

135 °E MEAN TIME



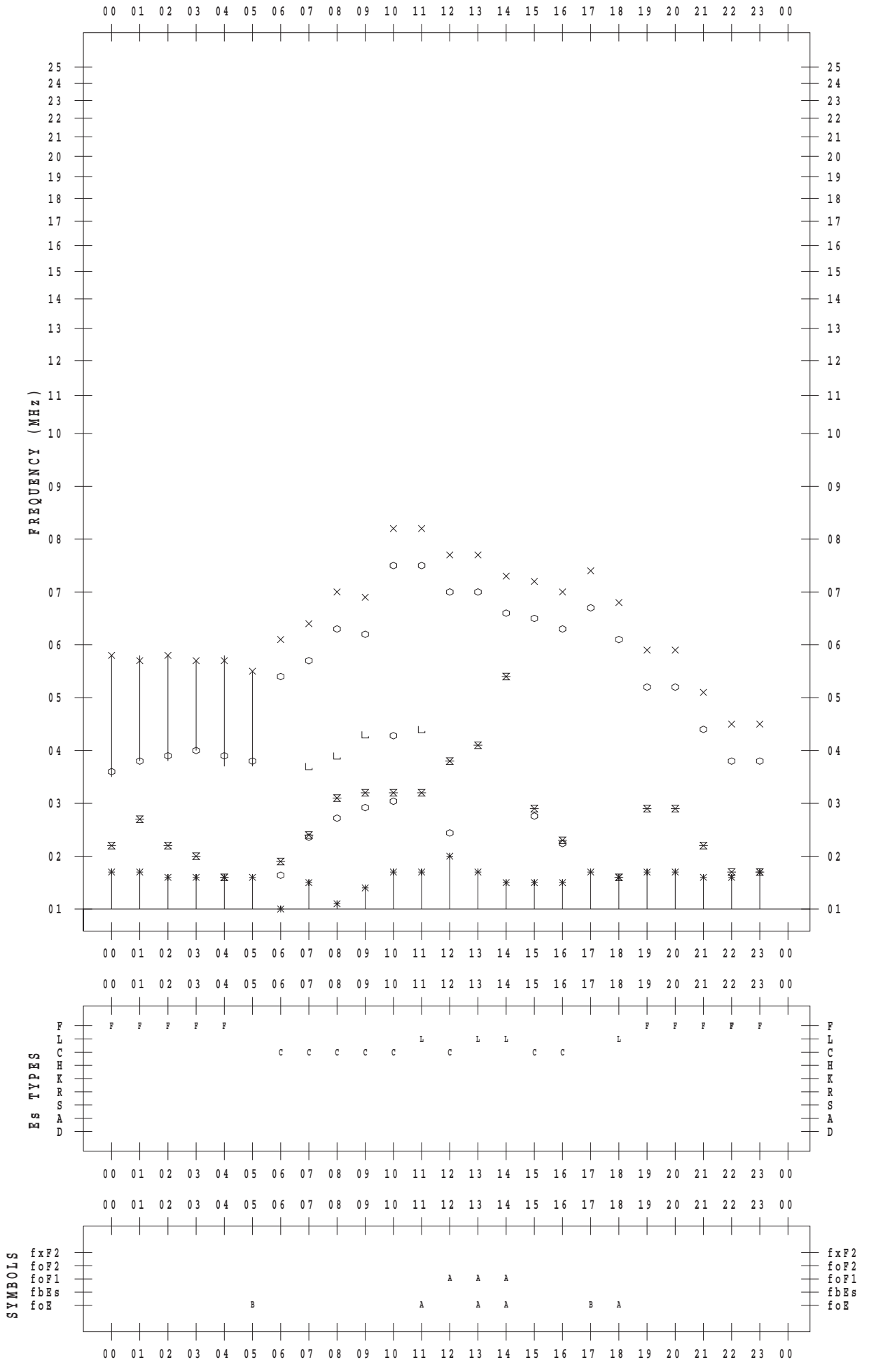
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 9/30

135 °E MEAN TIME



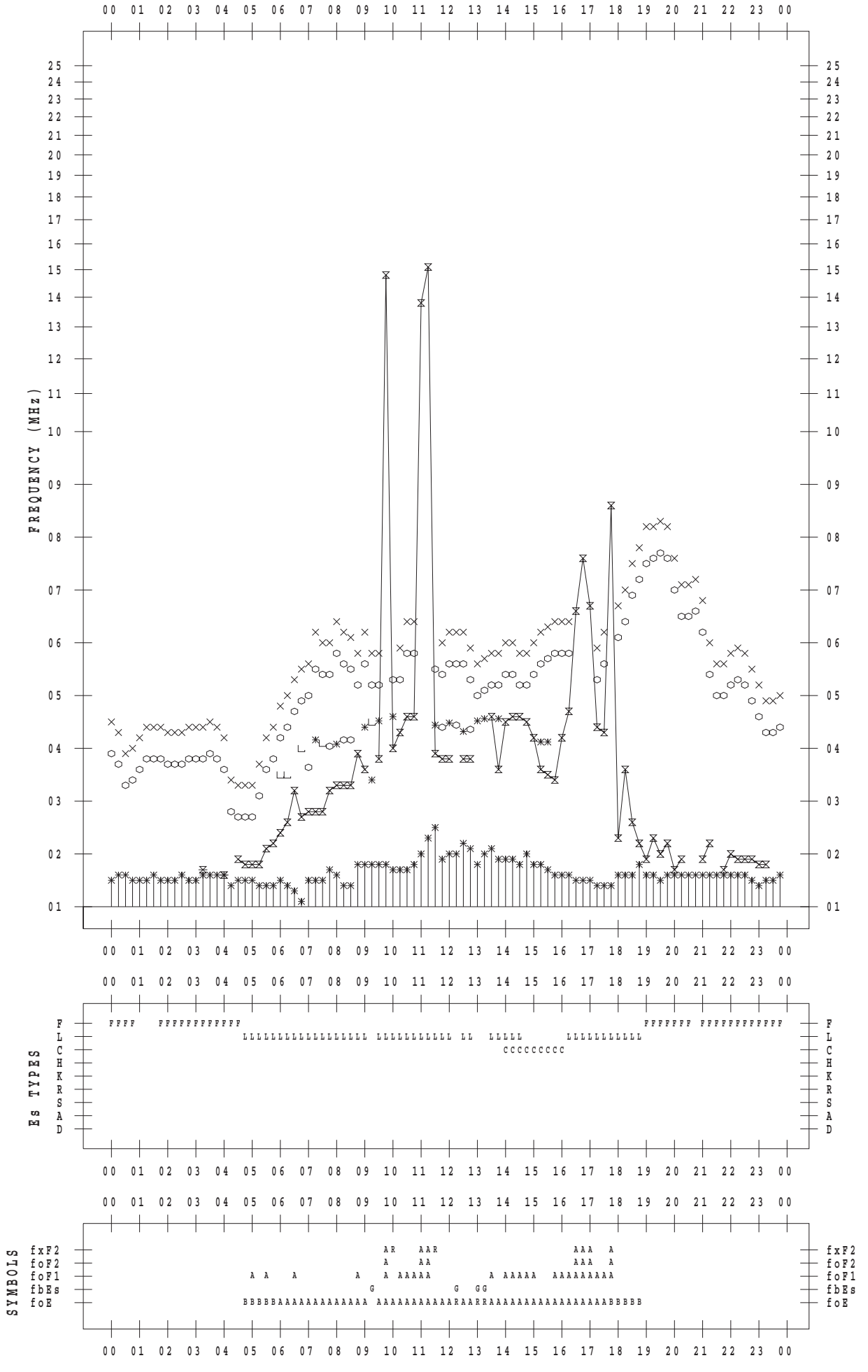
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 1

135 °E MEAN TIME



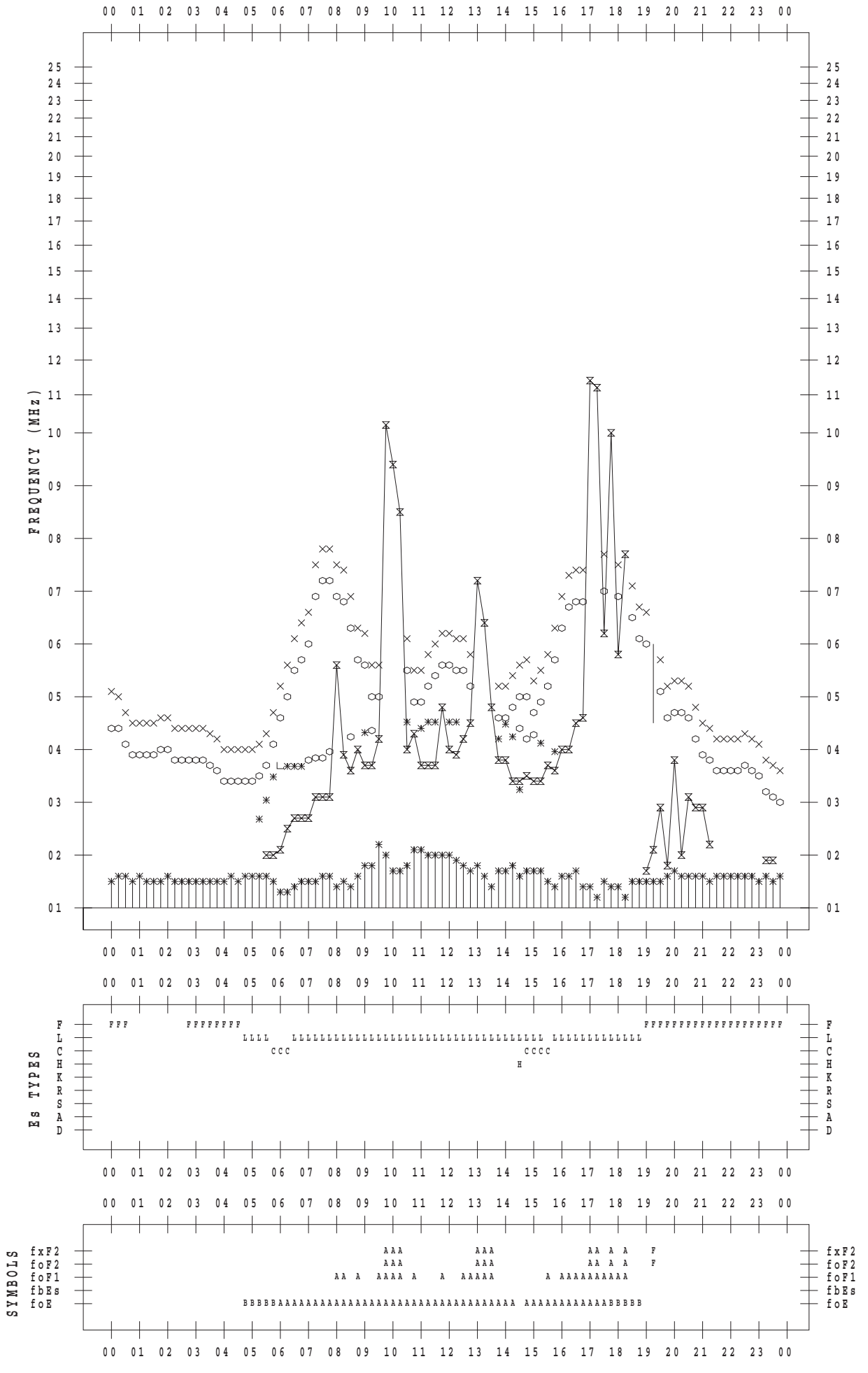
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 2

135 °E MEAN TIME



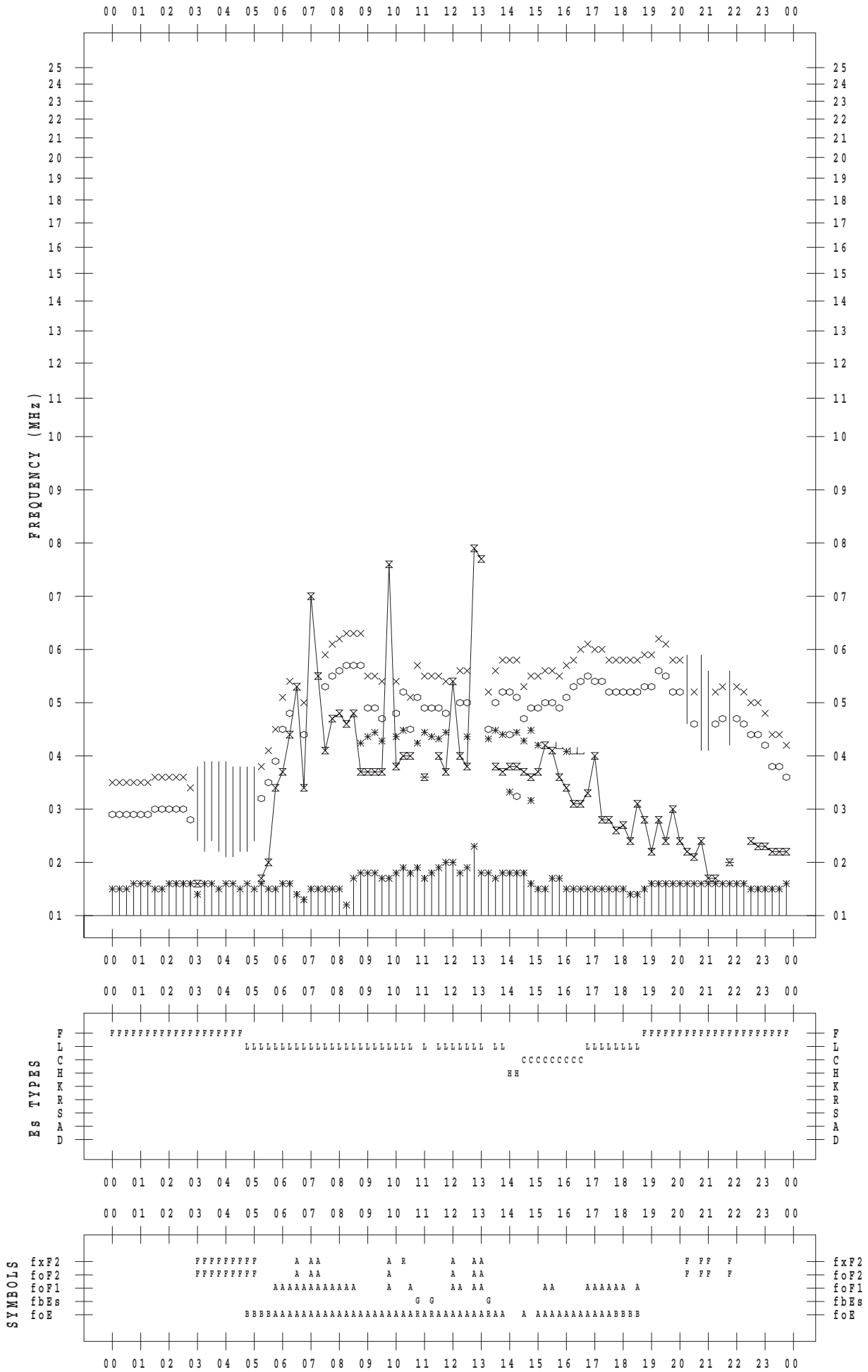
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 3

135 °E MEAN TIME



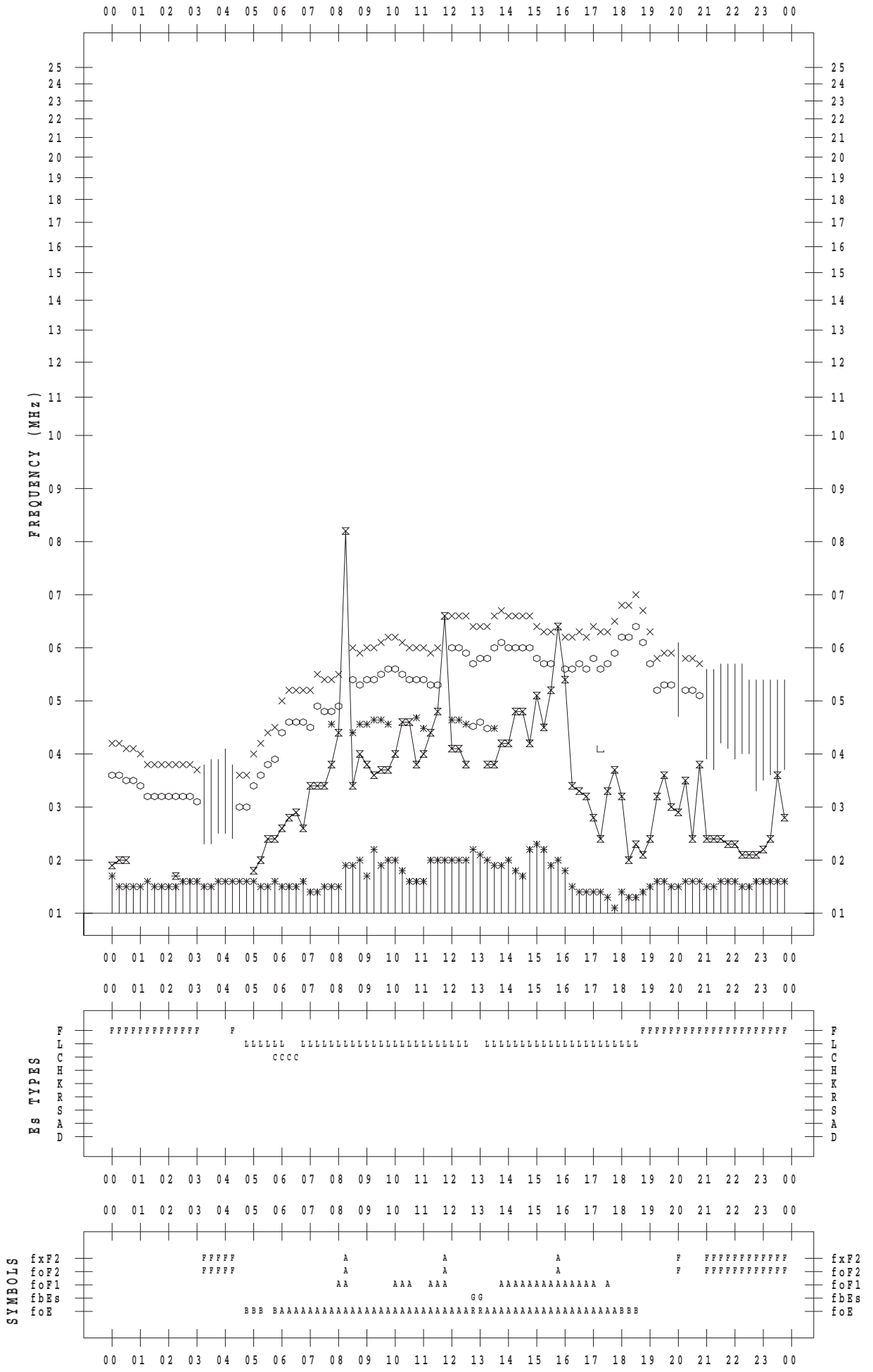
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 4

135 °E MEAN TIME



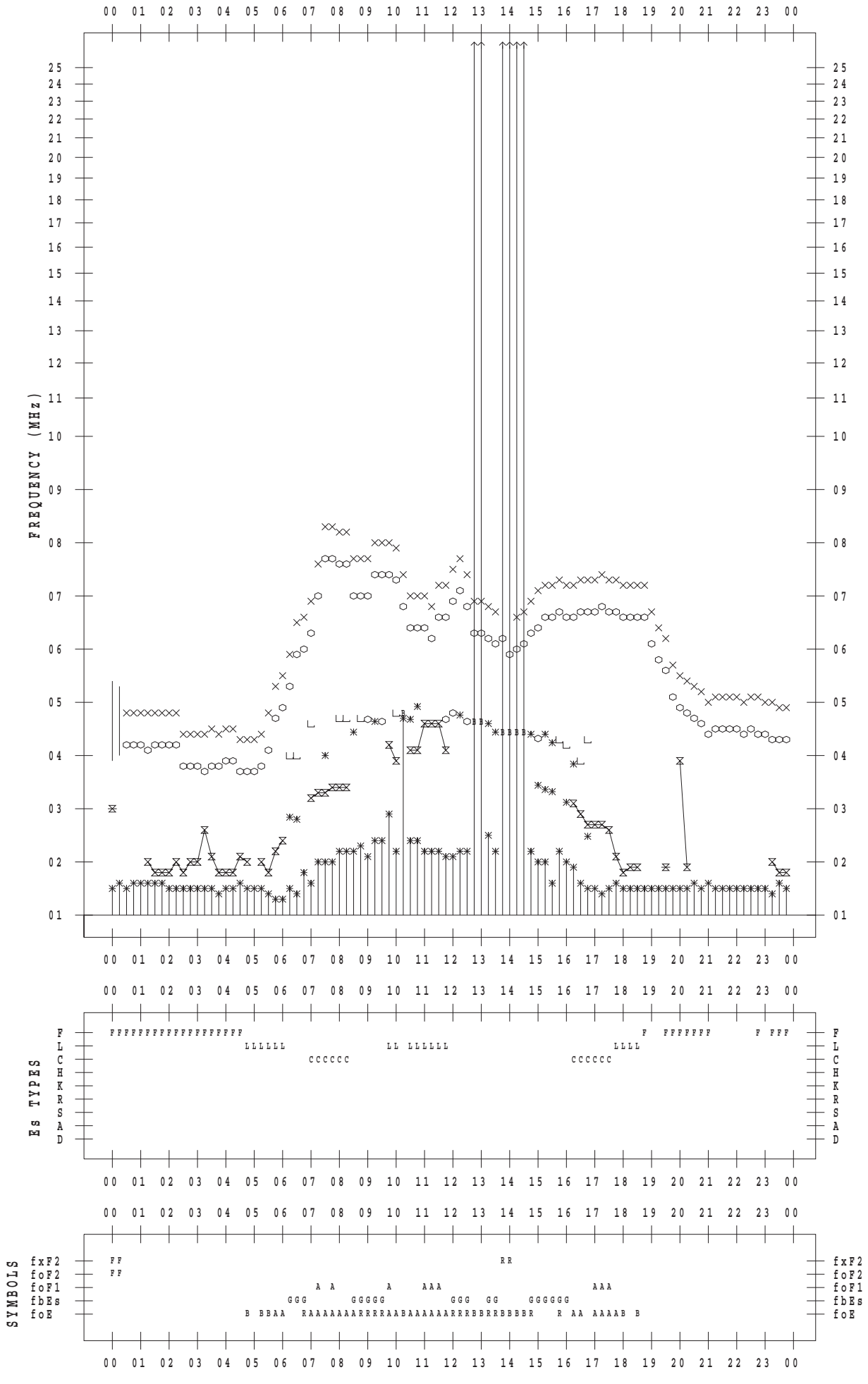
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 5

135 °E MEAN TIME



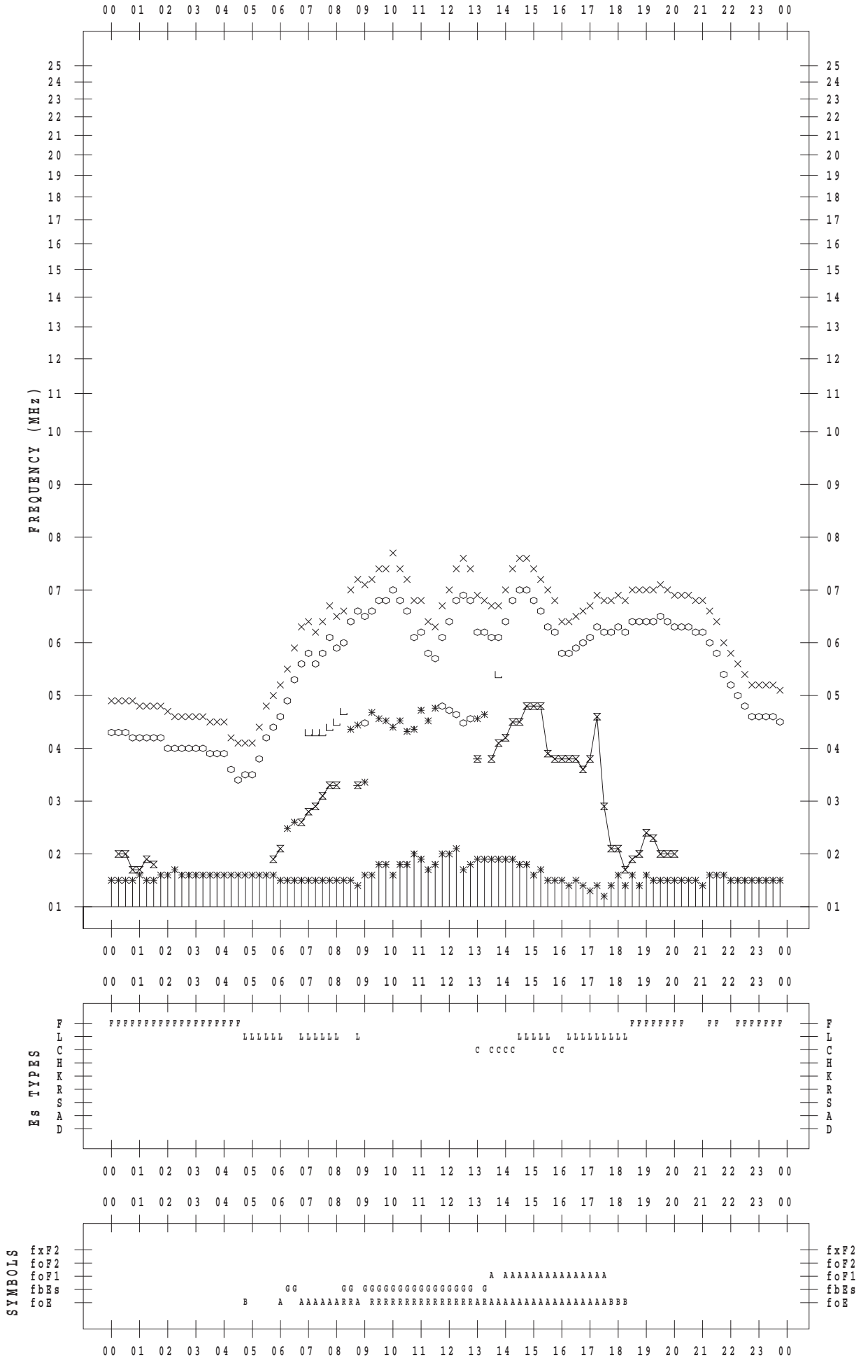
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 6

135 °E MEAN TIME



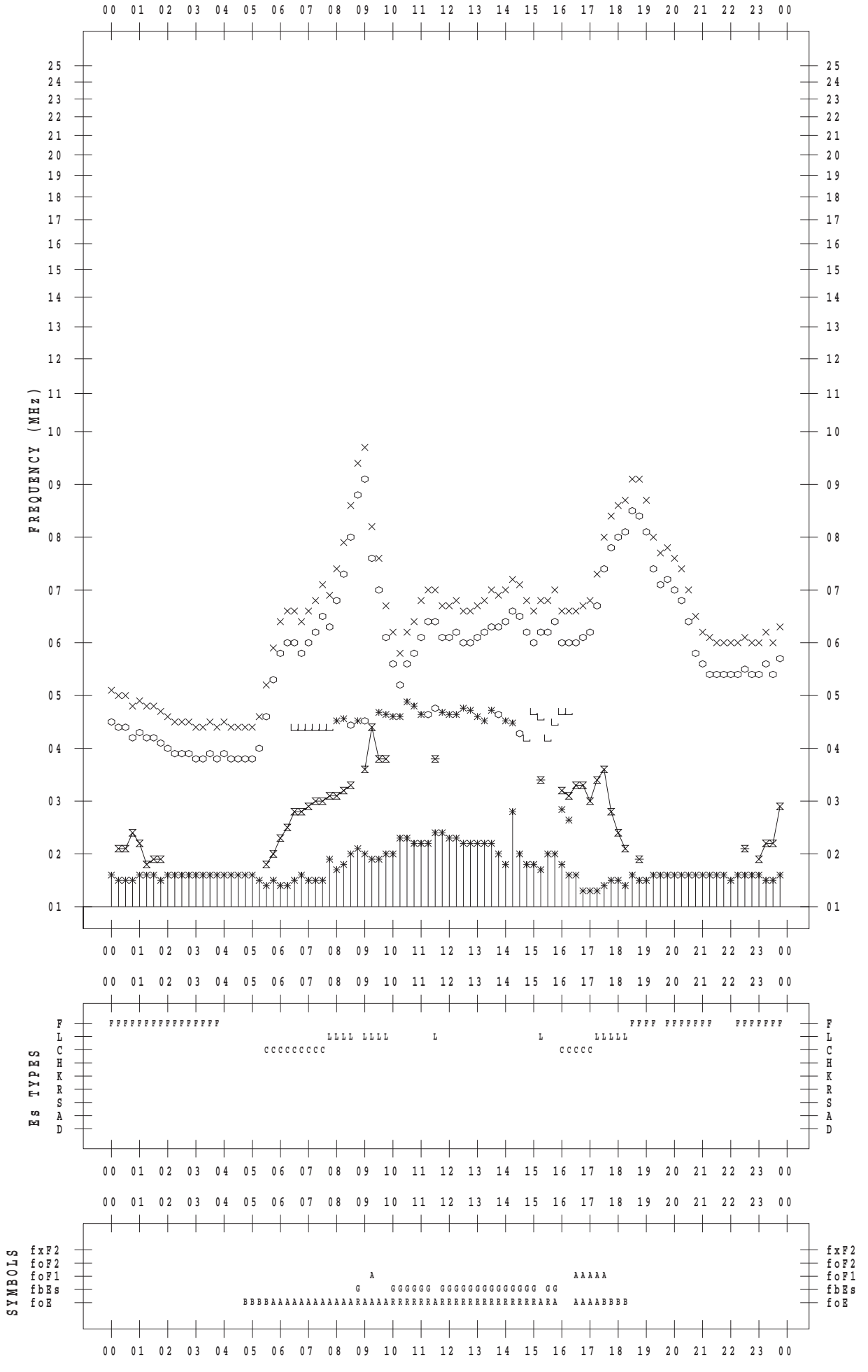
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 7

135 °E MEAN TIME



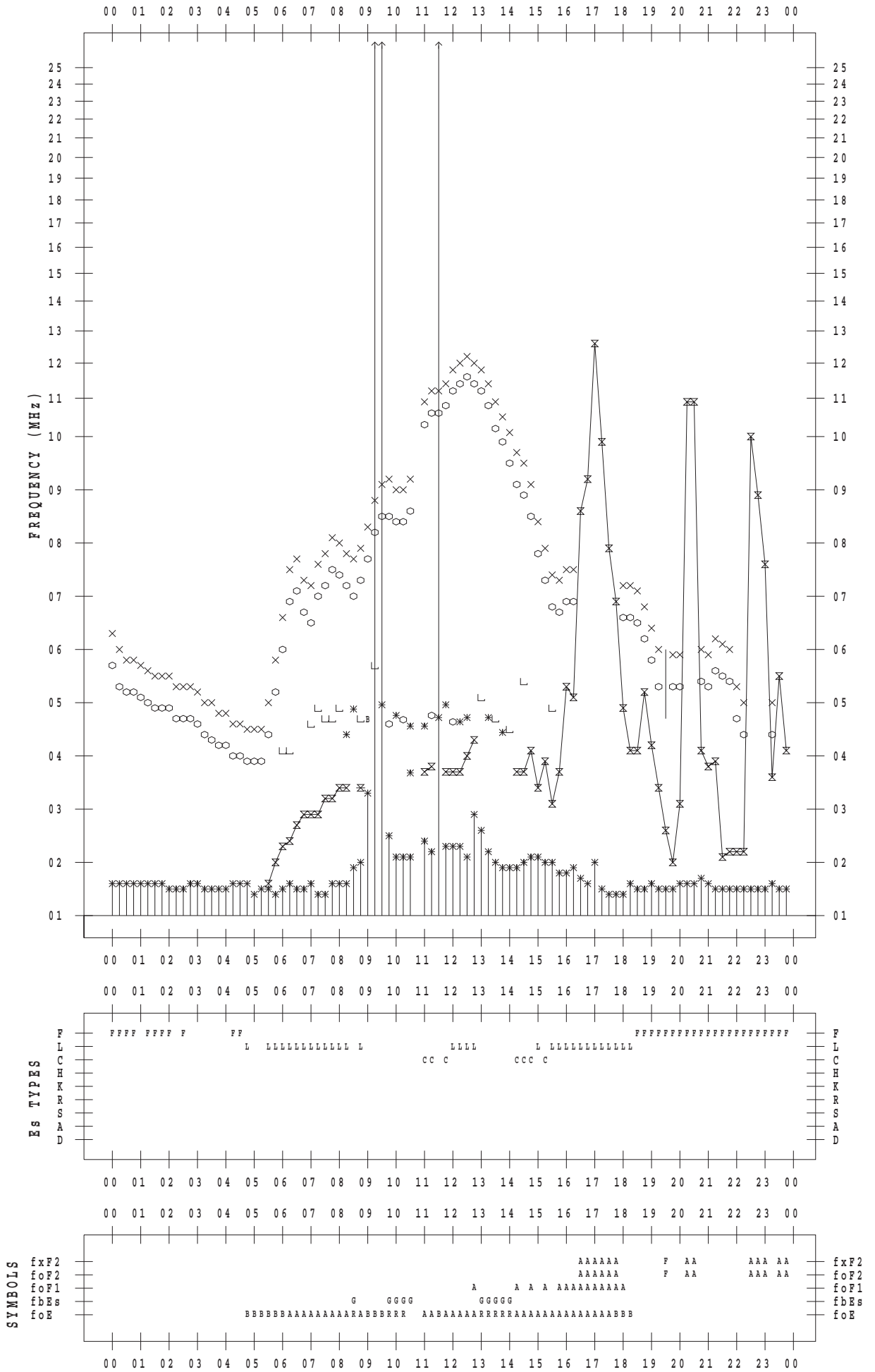
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 8

135 °E MEAN TIME



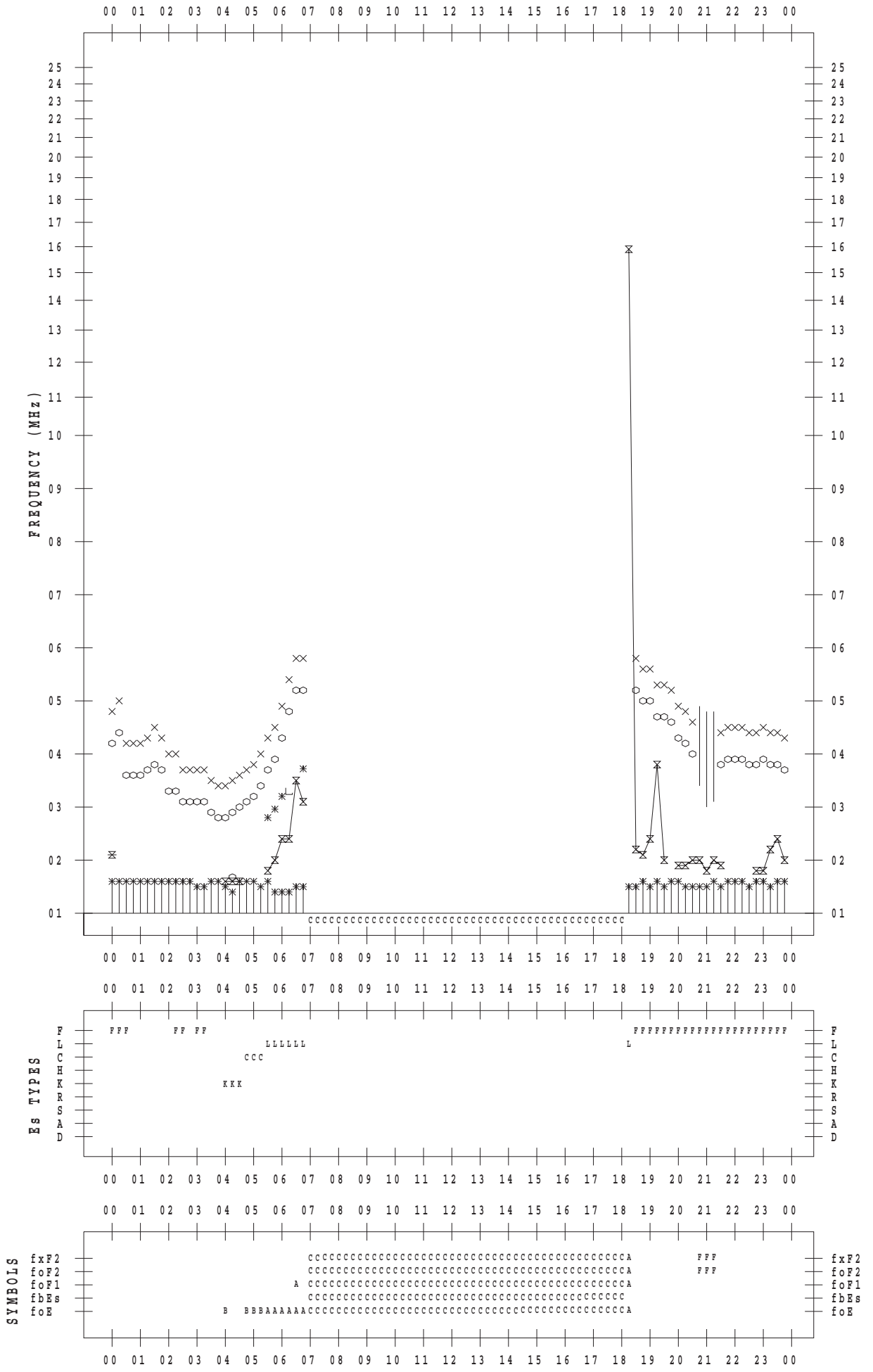
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/ 9

135 °E MEAN TIME



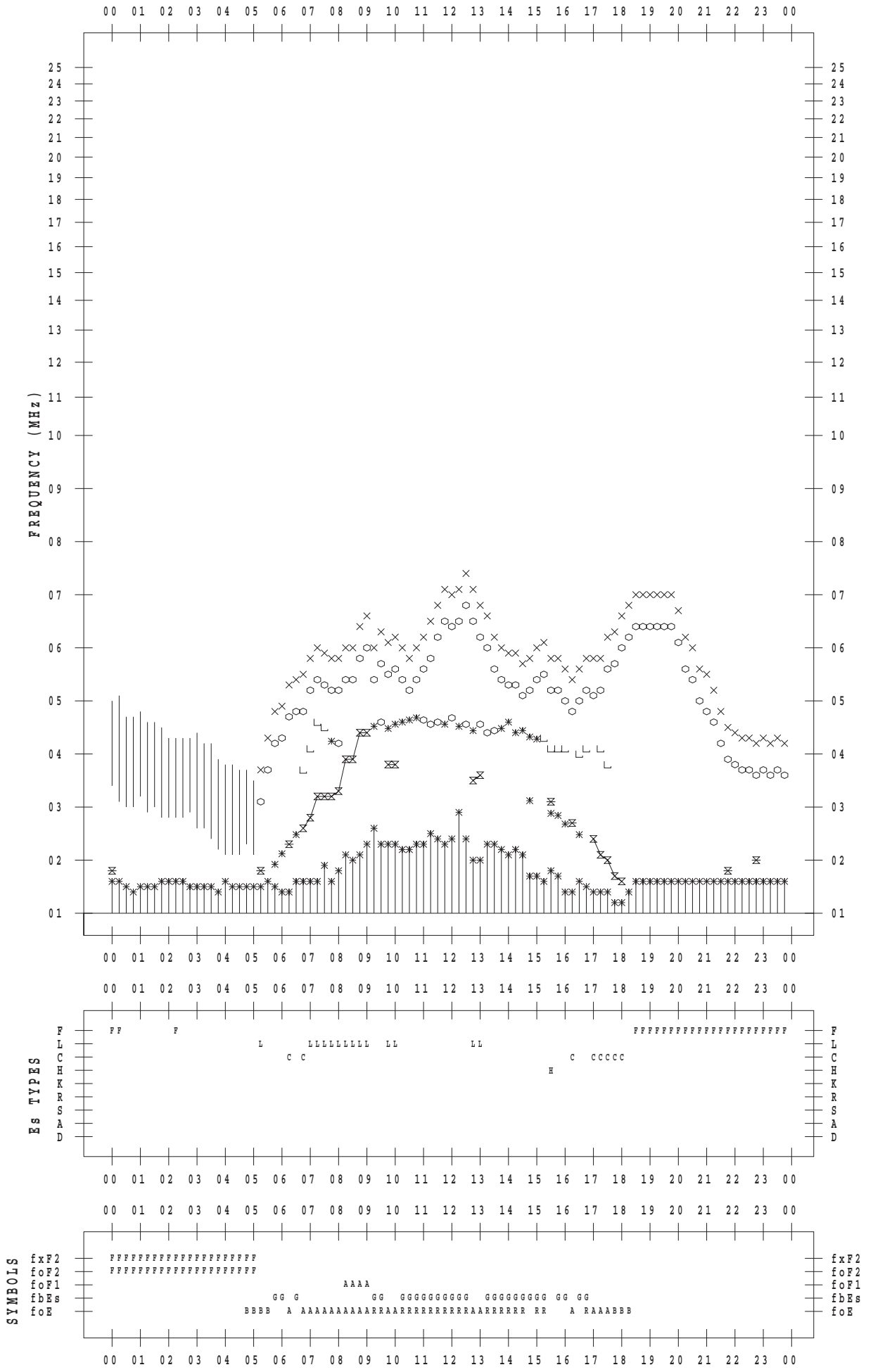
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/10

135 °E MEAN TIME



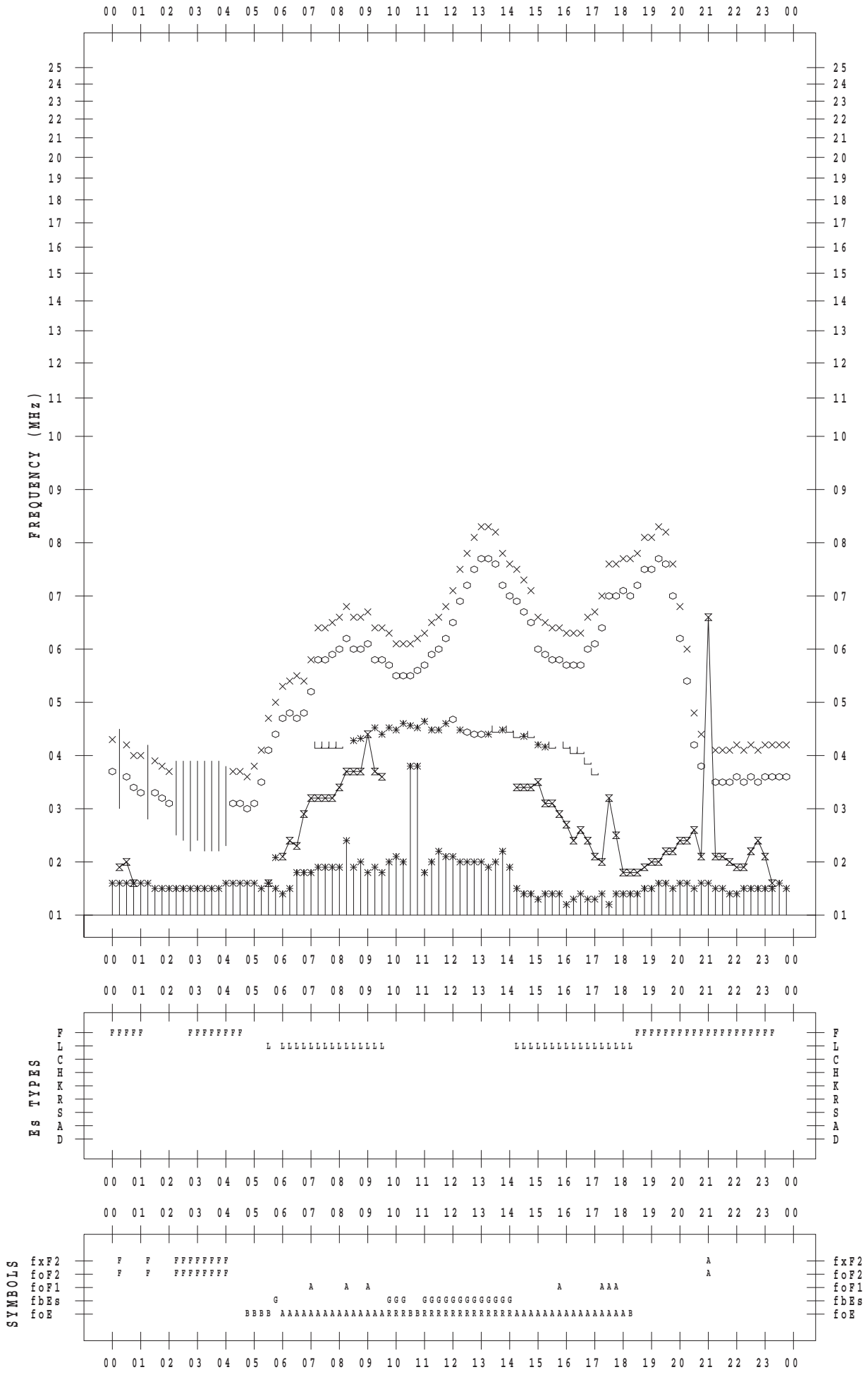
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/11

135 °E MEAN TIME



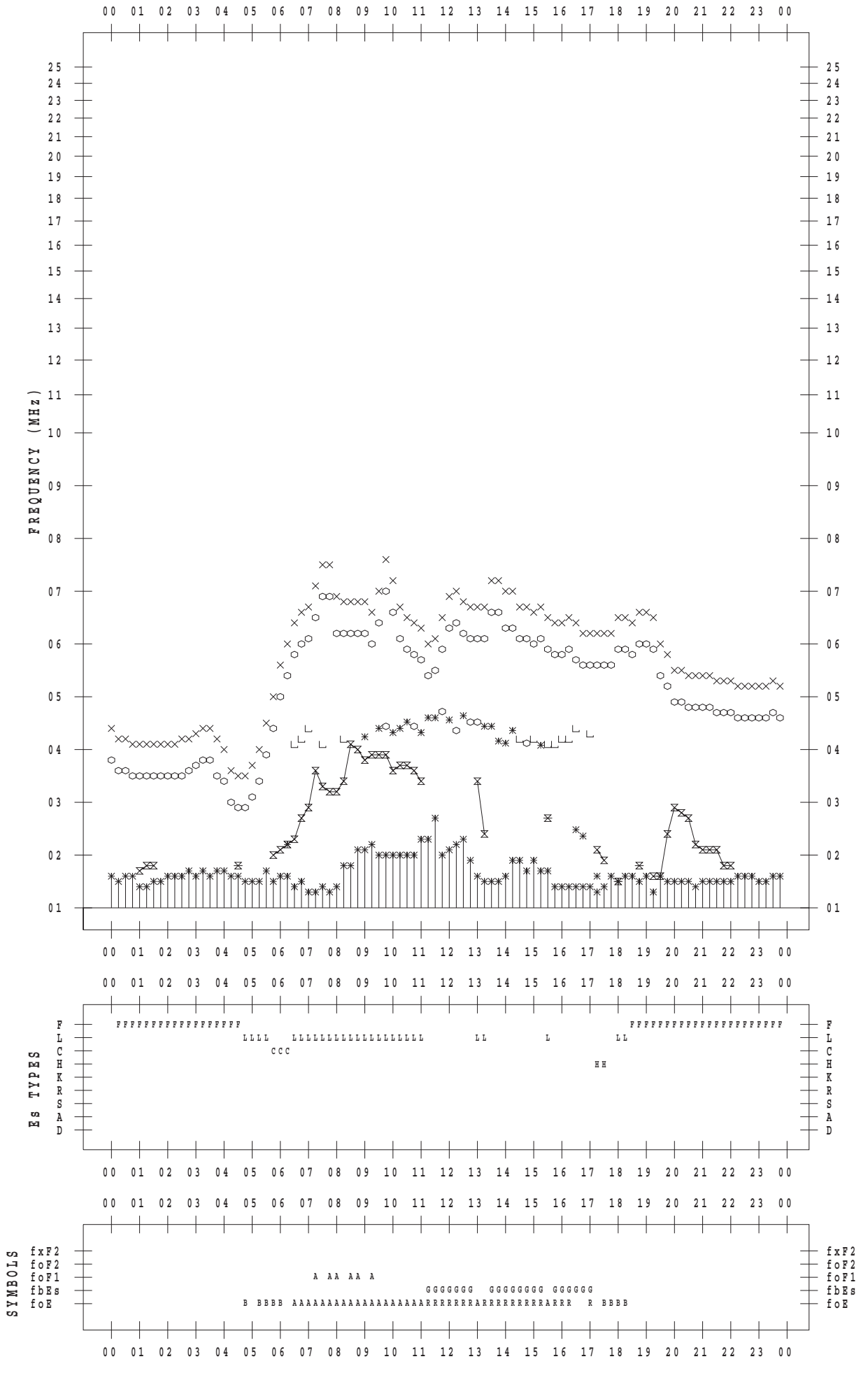
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/12

135 °E MEAN TIME



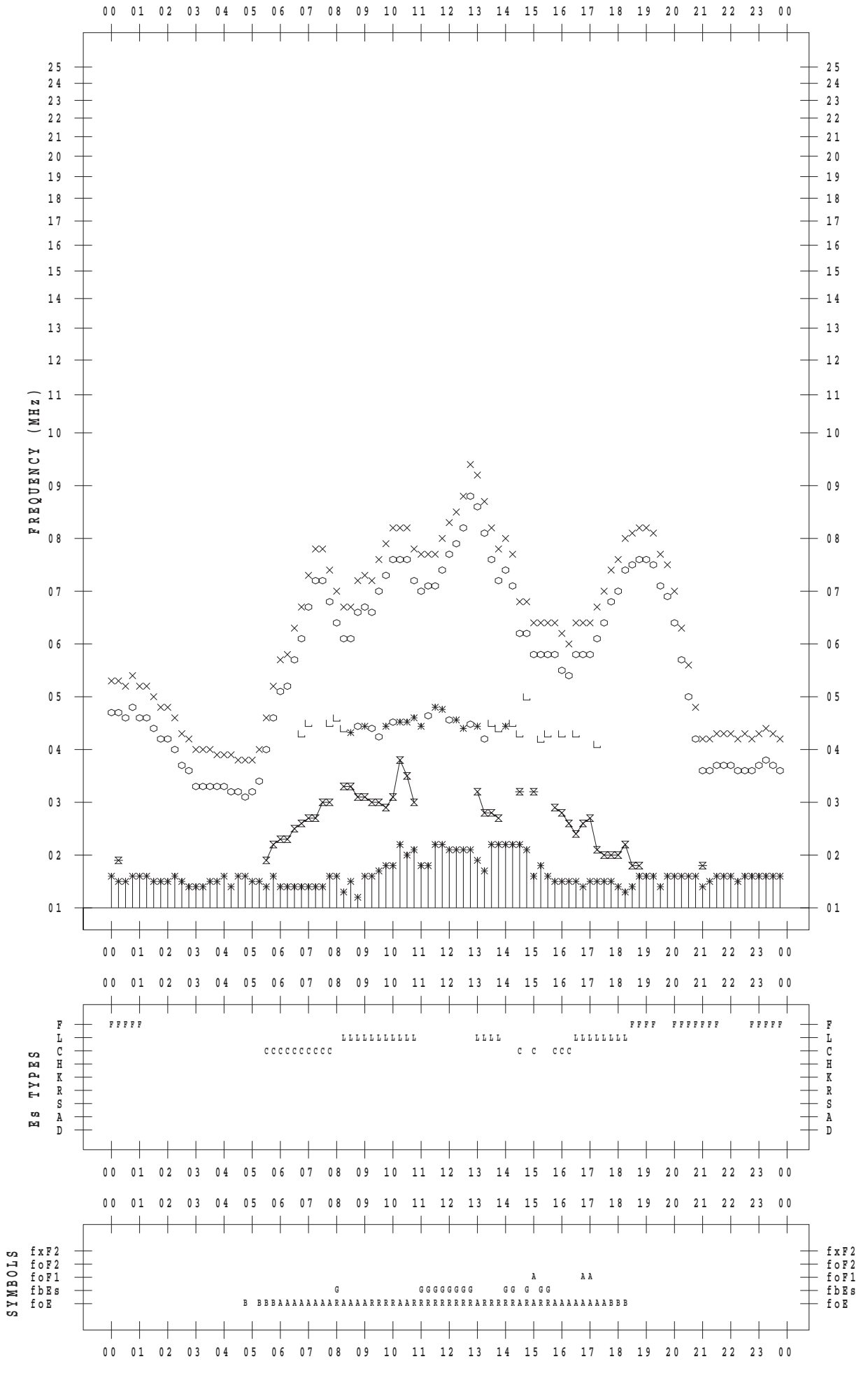
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/13

135 °E MEAN TIME



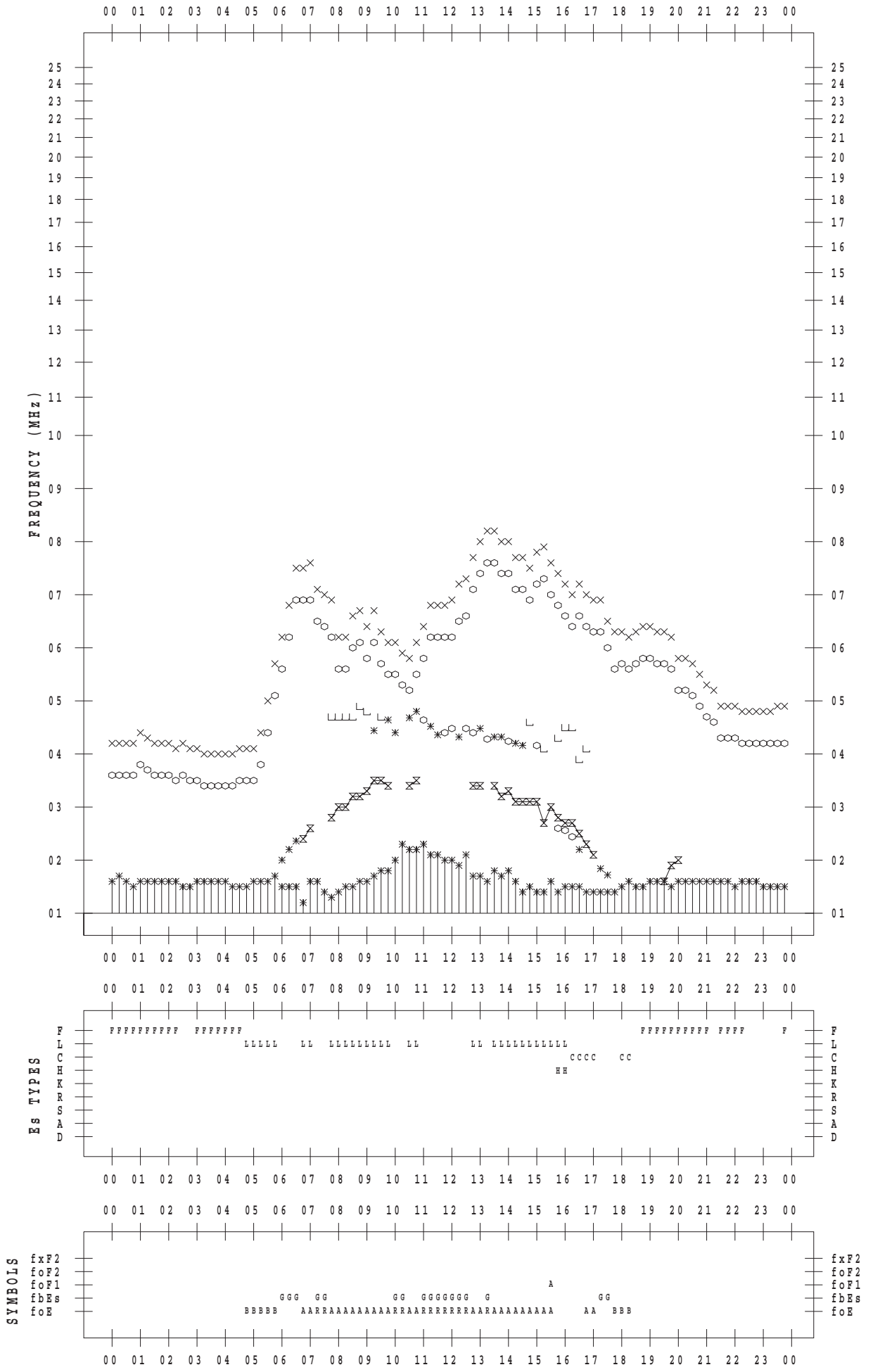
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/14

135 °E MEAN TIME



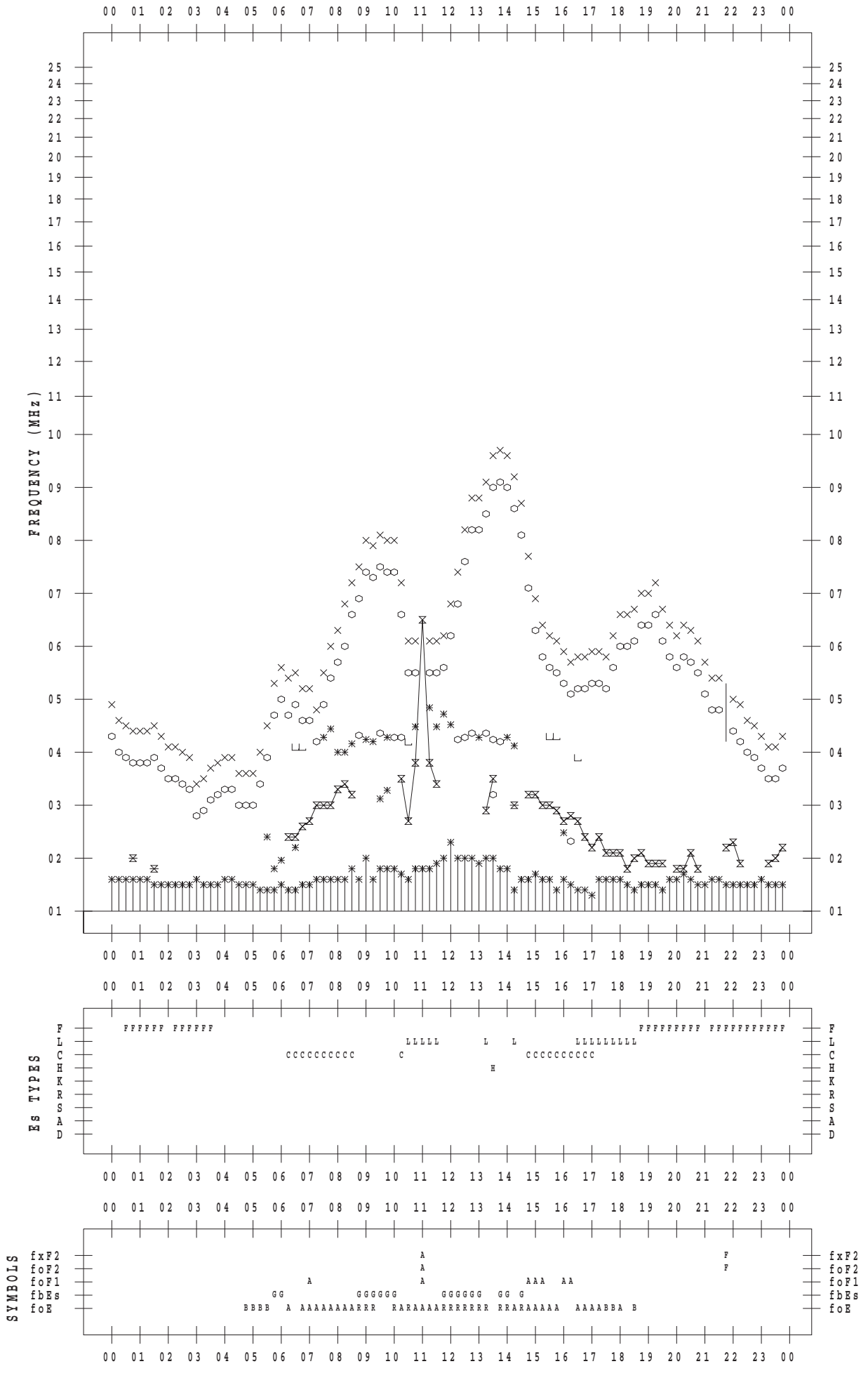
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/15

135 °E MEAN TIME



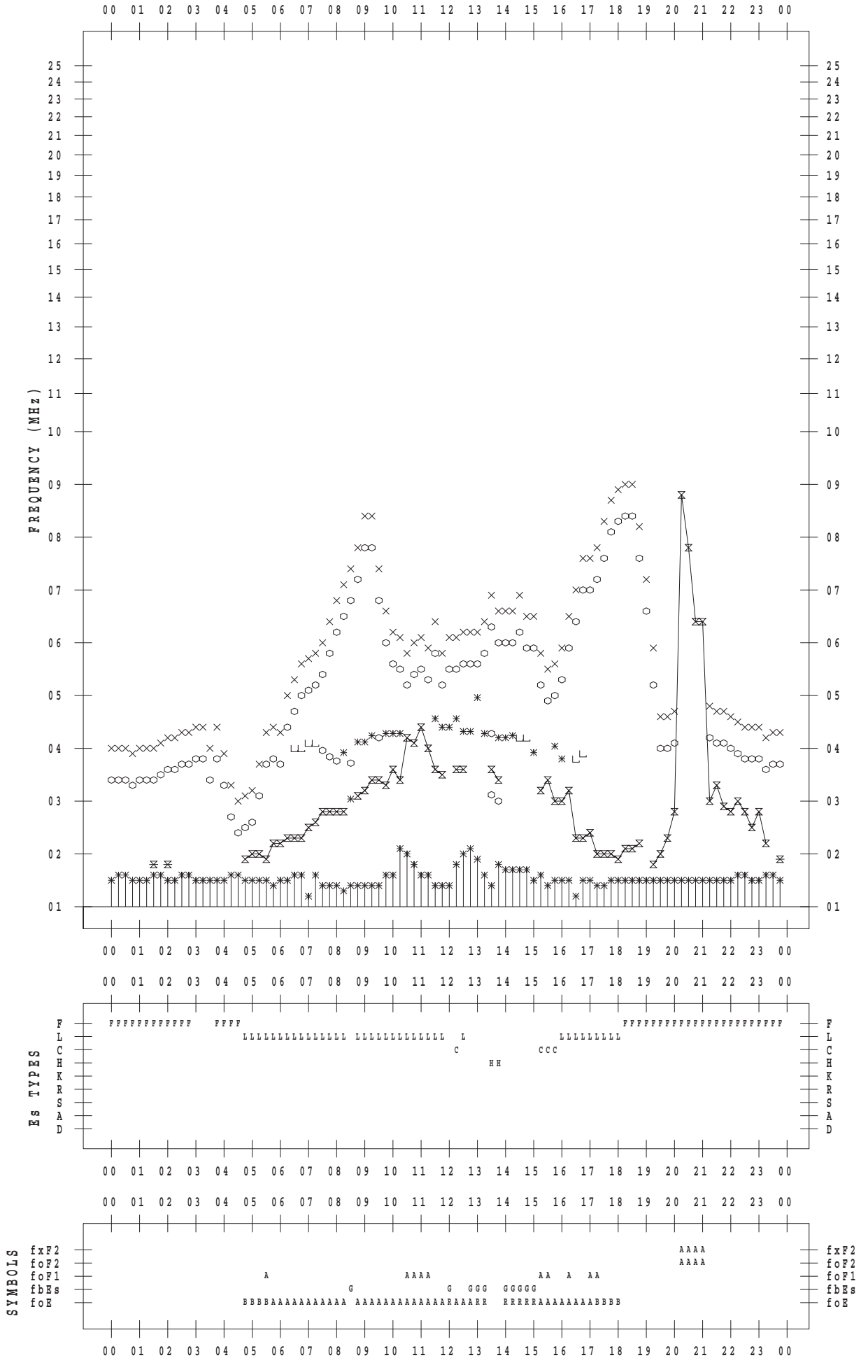
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/16

135 °E MEAN TIME



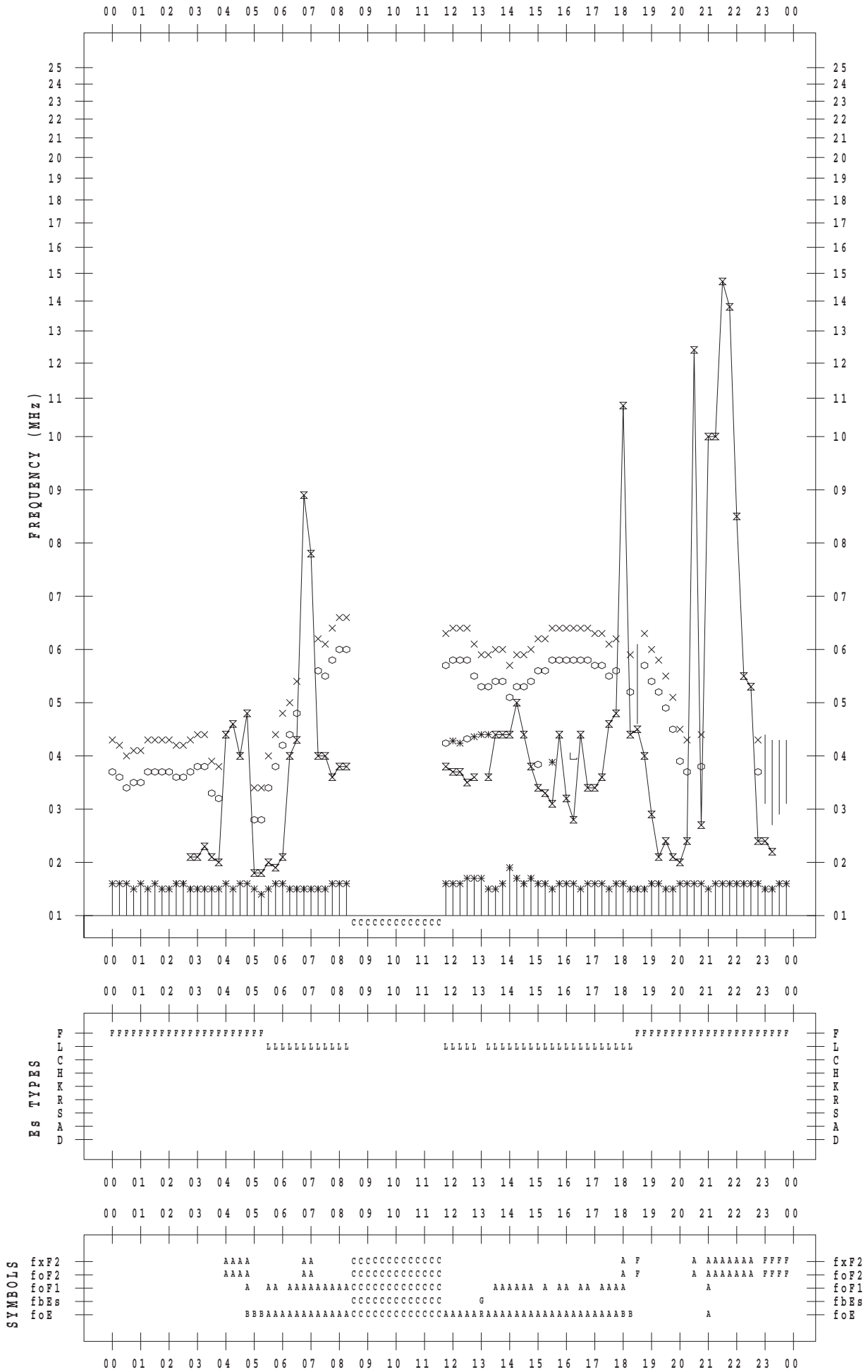
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/17

135 °E MEAN TIME



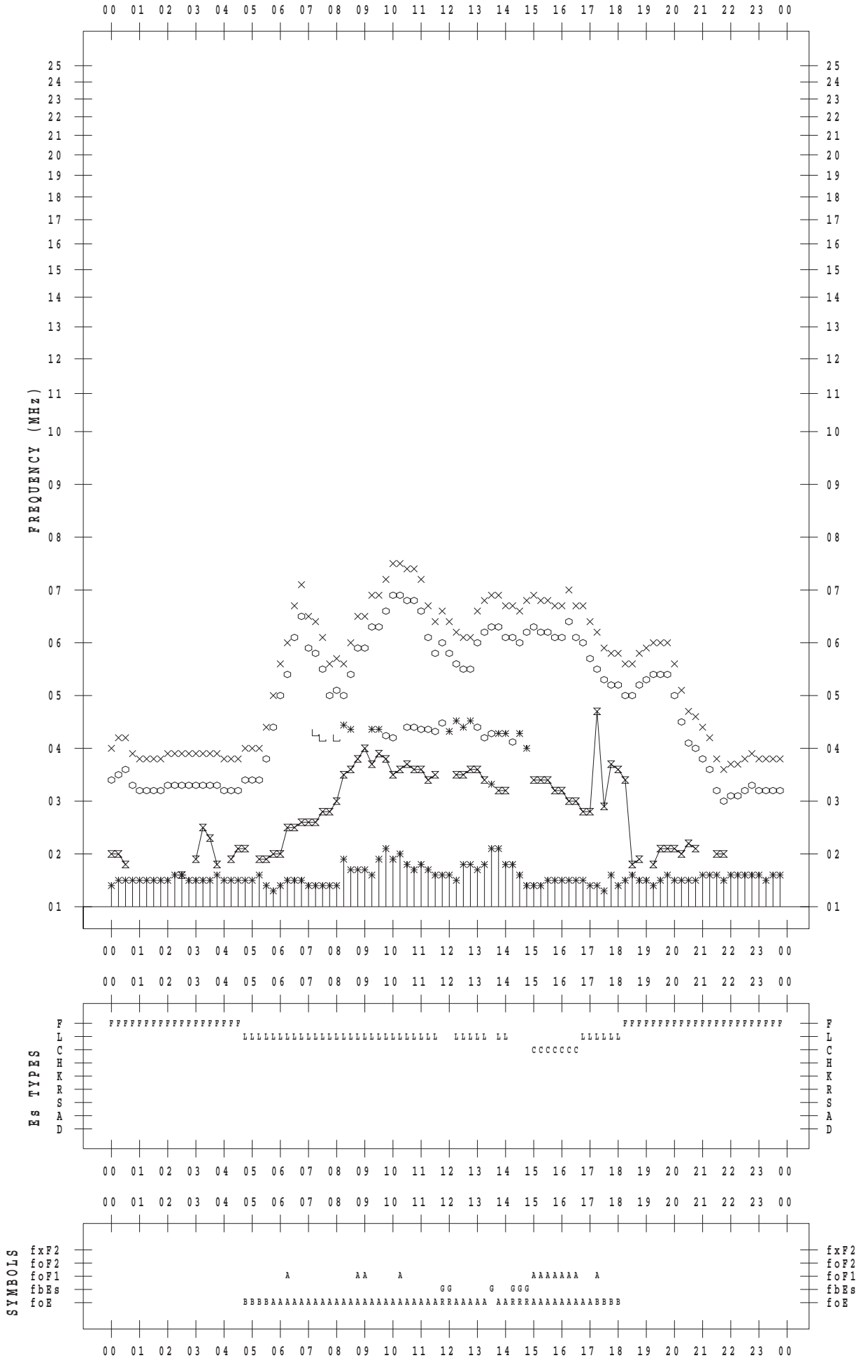
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/18

135 °E MEAN TIME



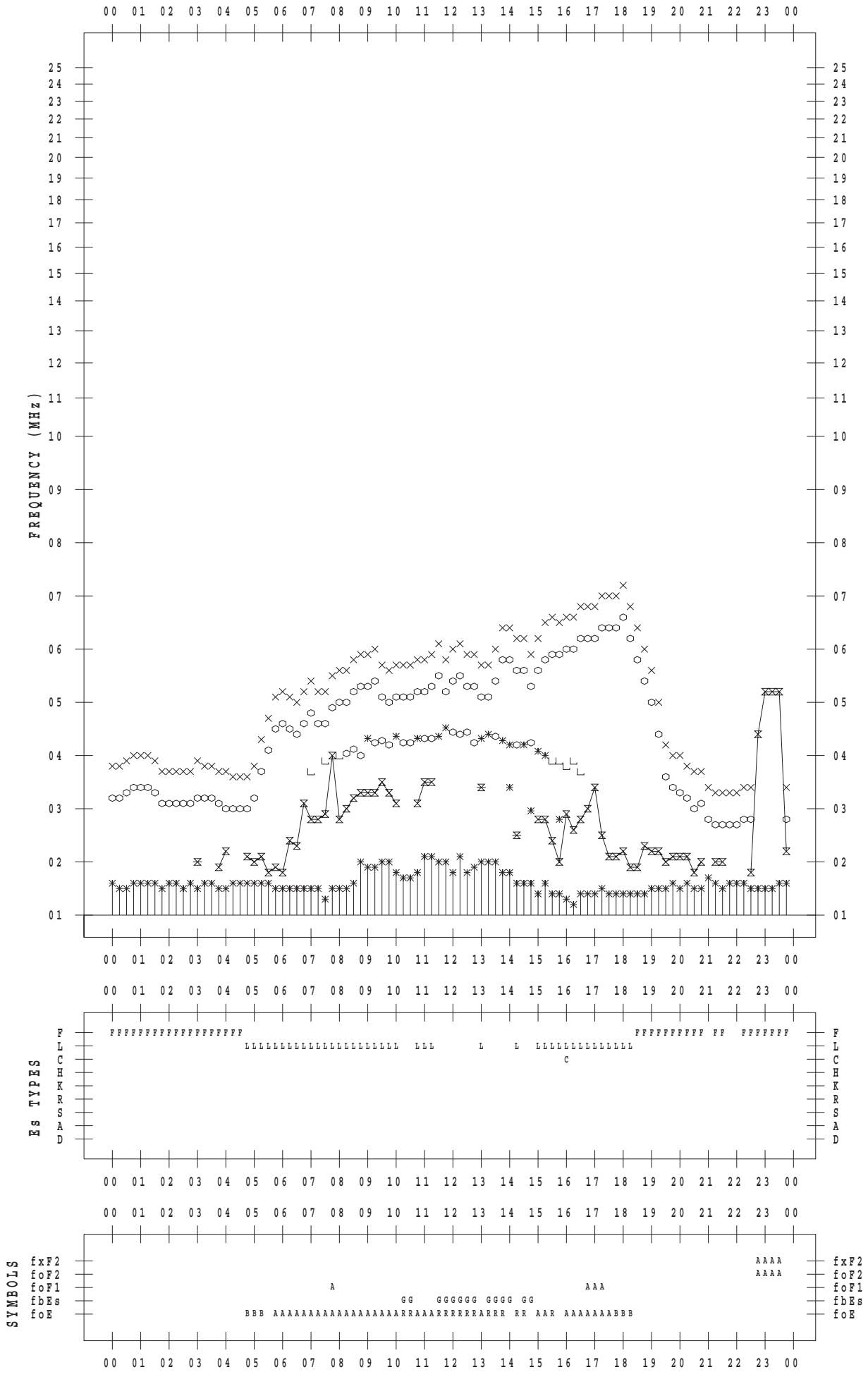
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/19

135 °E MEAN TIME



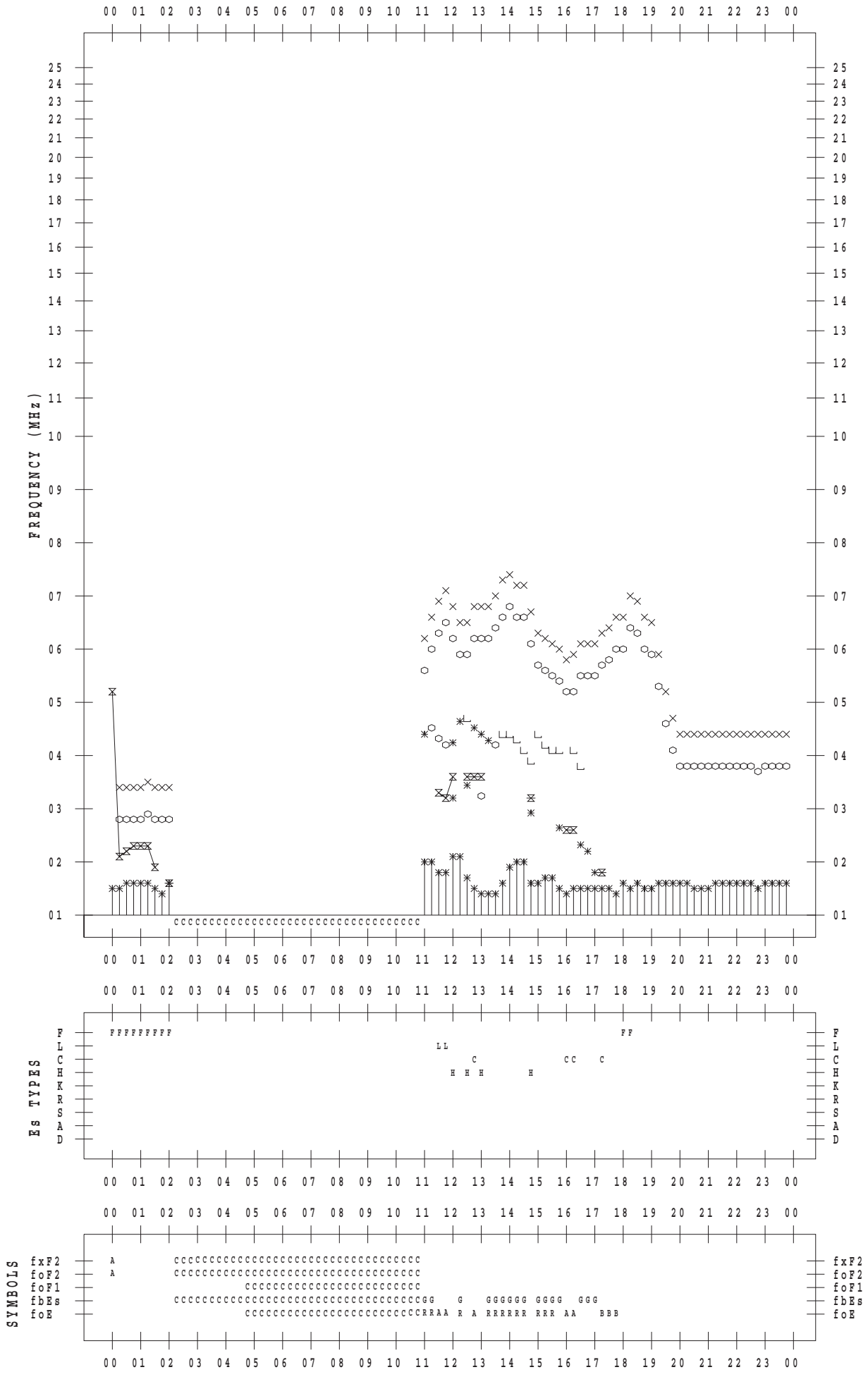
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/20

135 °E MEAN TIME



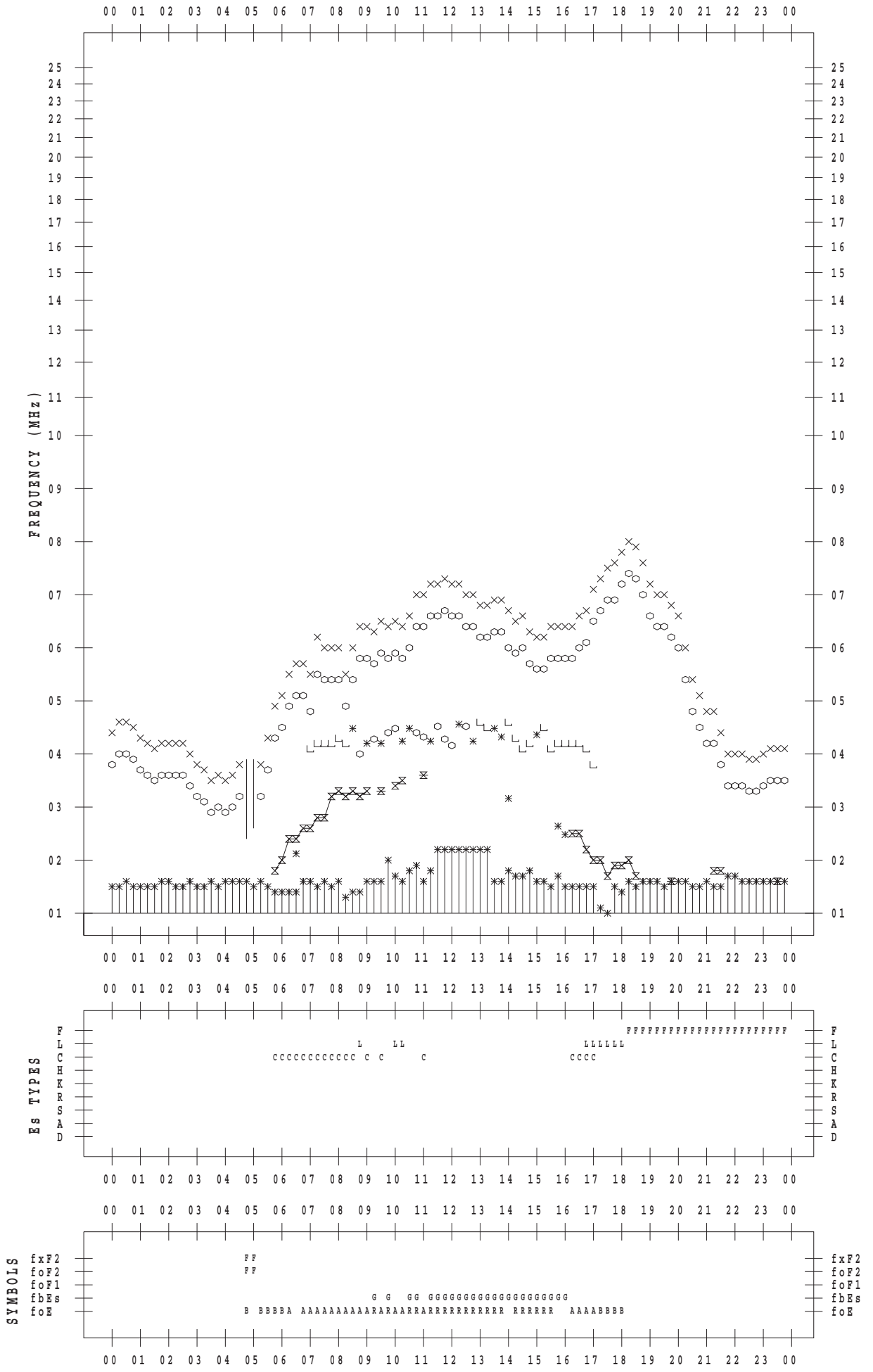
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/21

135 °E MEAN TIME



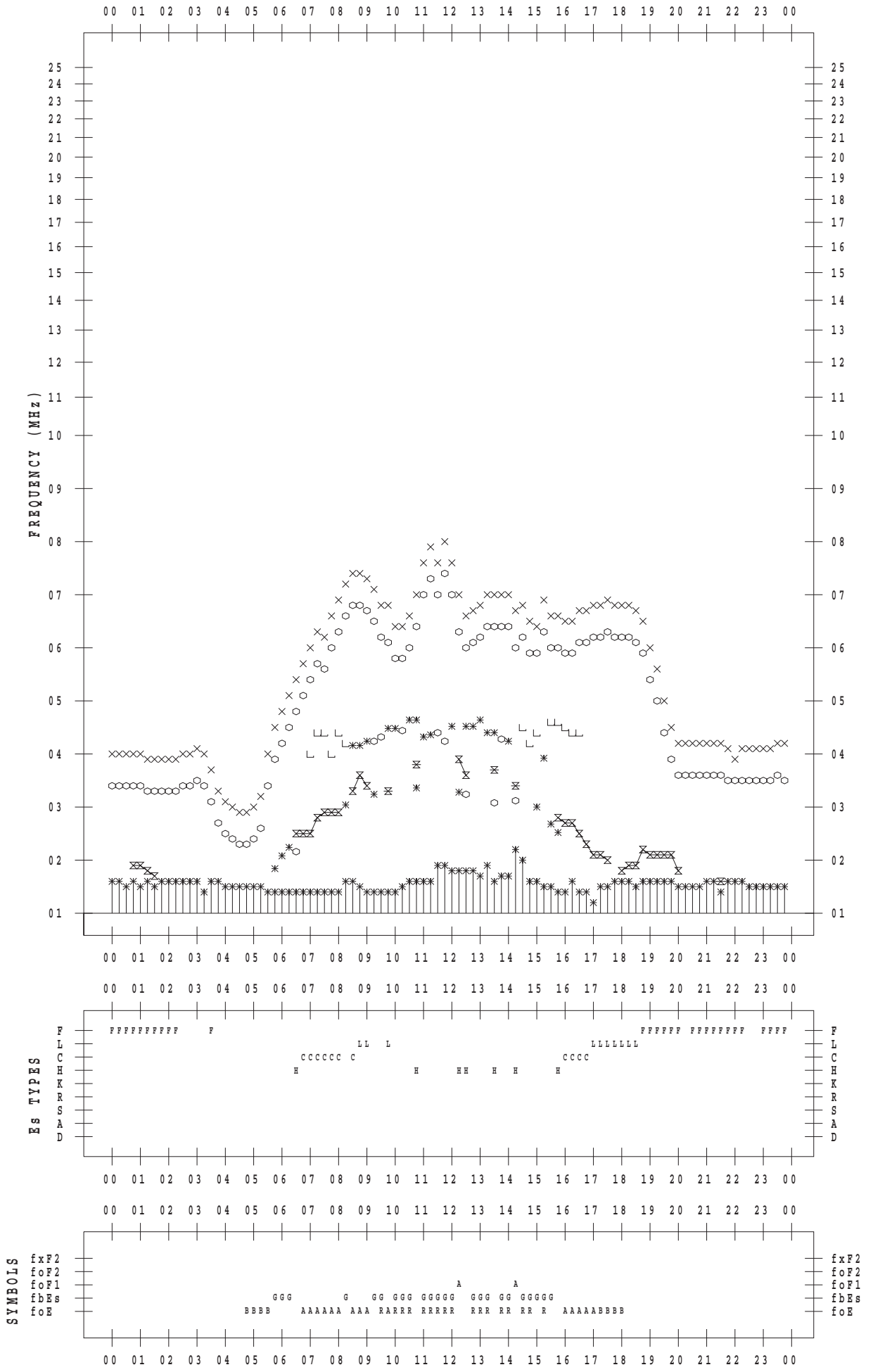
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/22

135 °E MEAN TIME



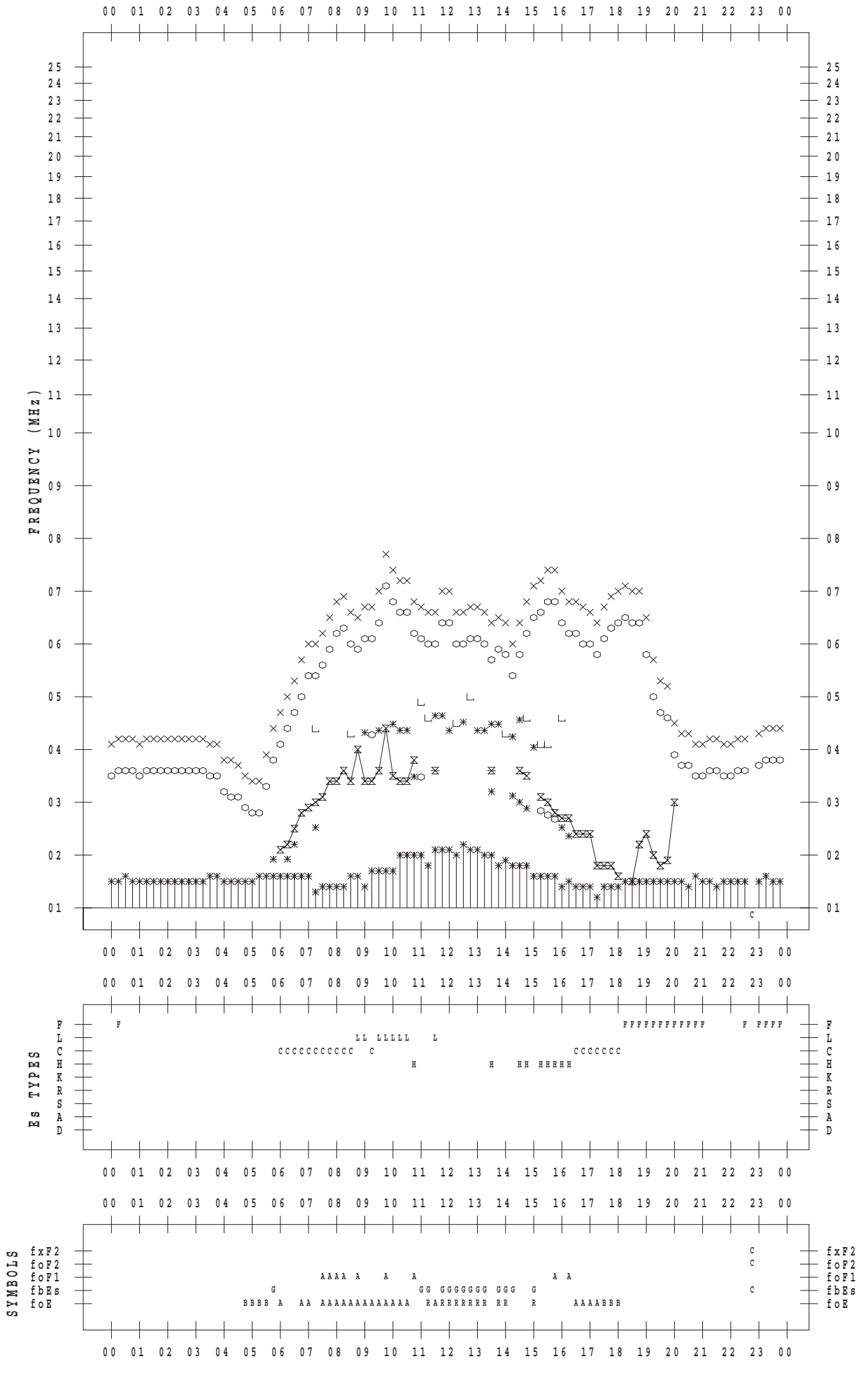
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/23

135 °E MEAN TIME



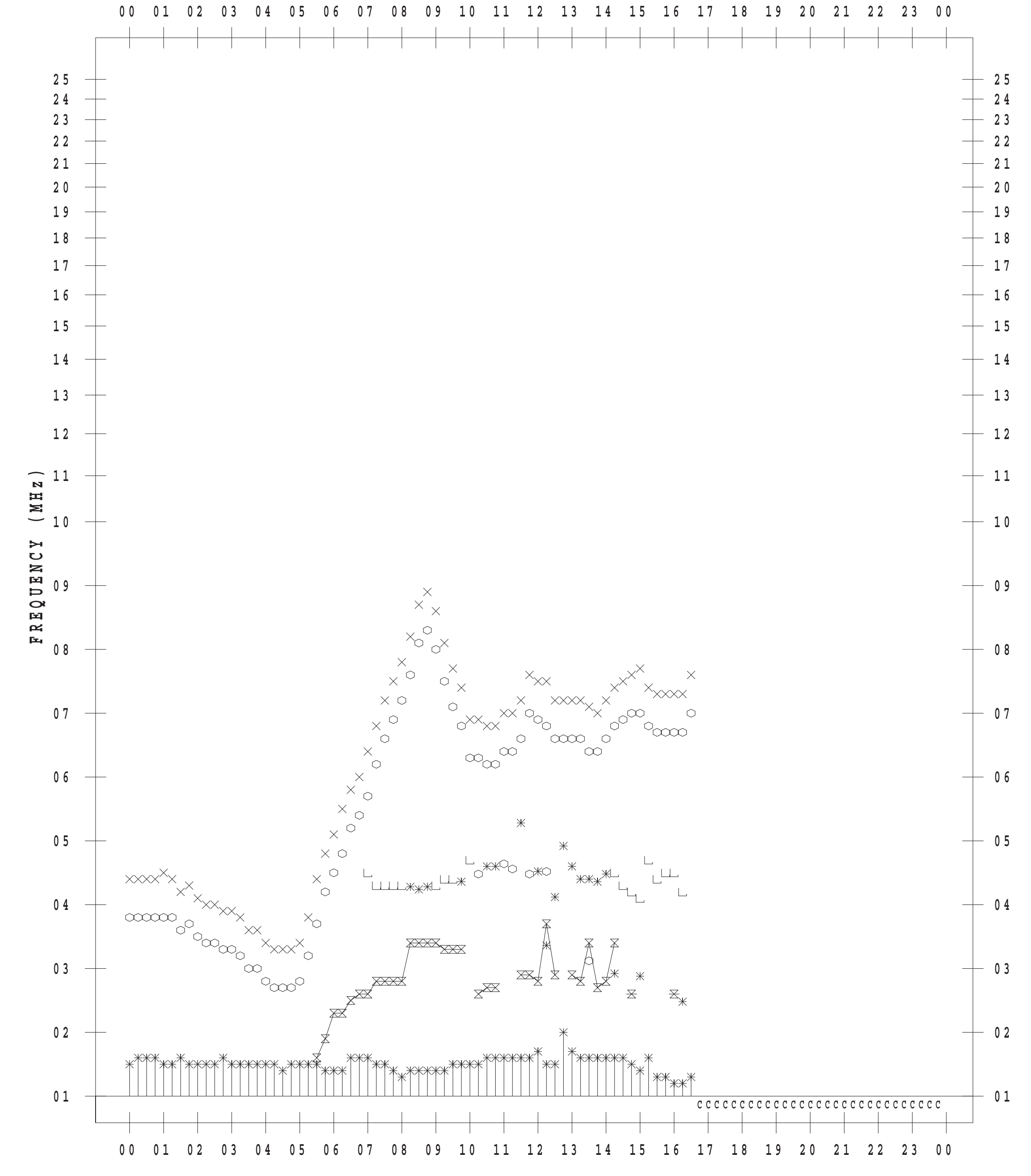
f-PLOT DATA

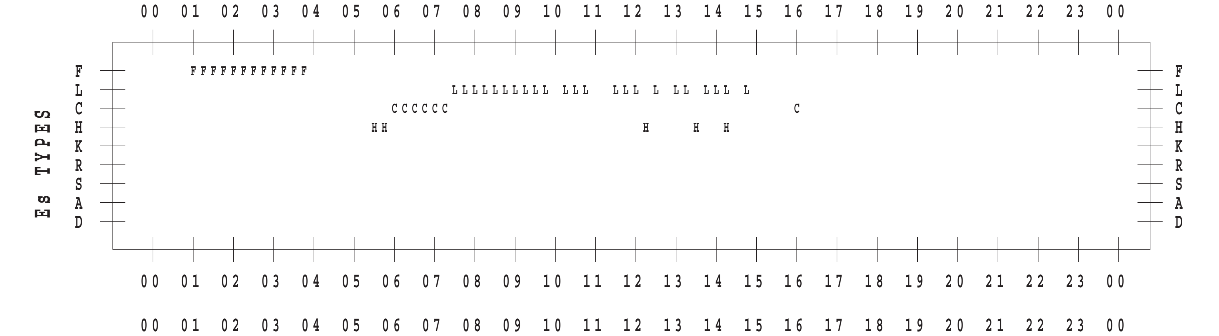
SCALER : I.NISHIMUTA

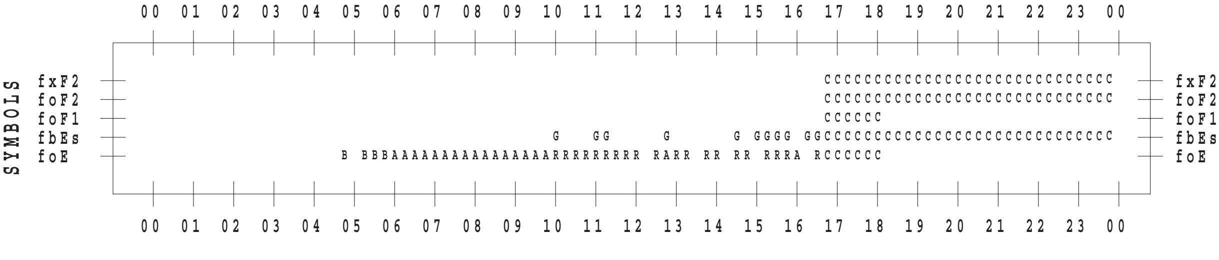
STATION : Kokubunji

DATE : 2017/ 9/24

135 °E MEAN TIME







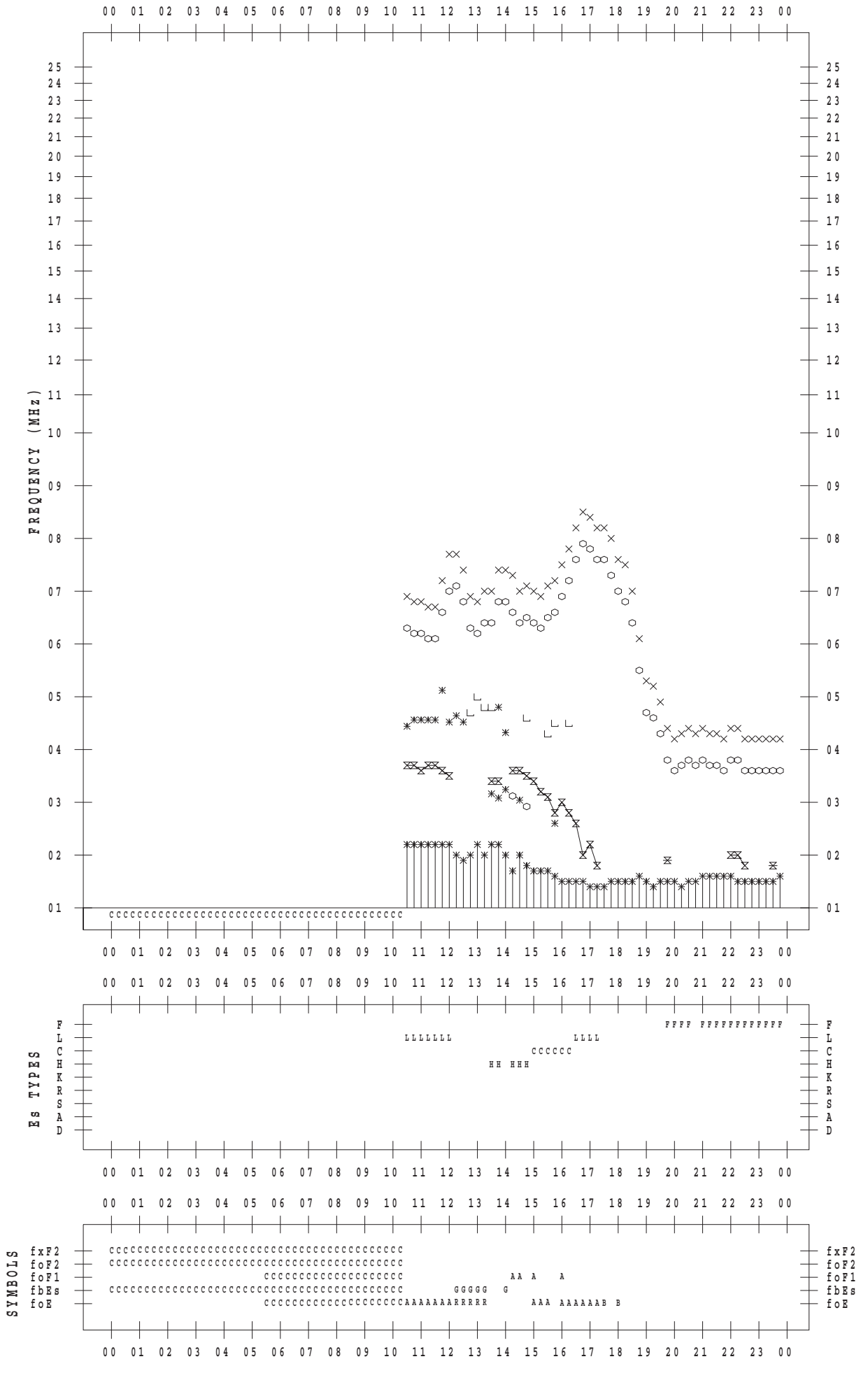
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/25

135 °E MEAN TIME



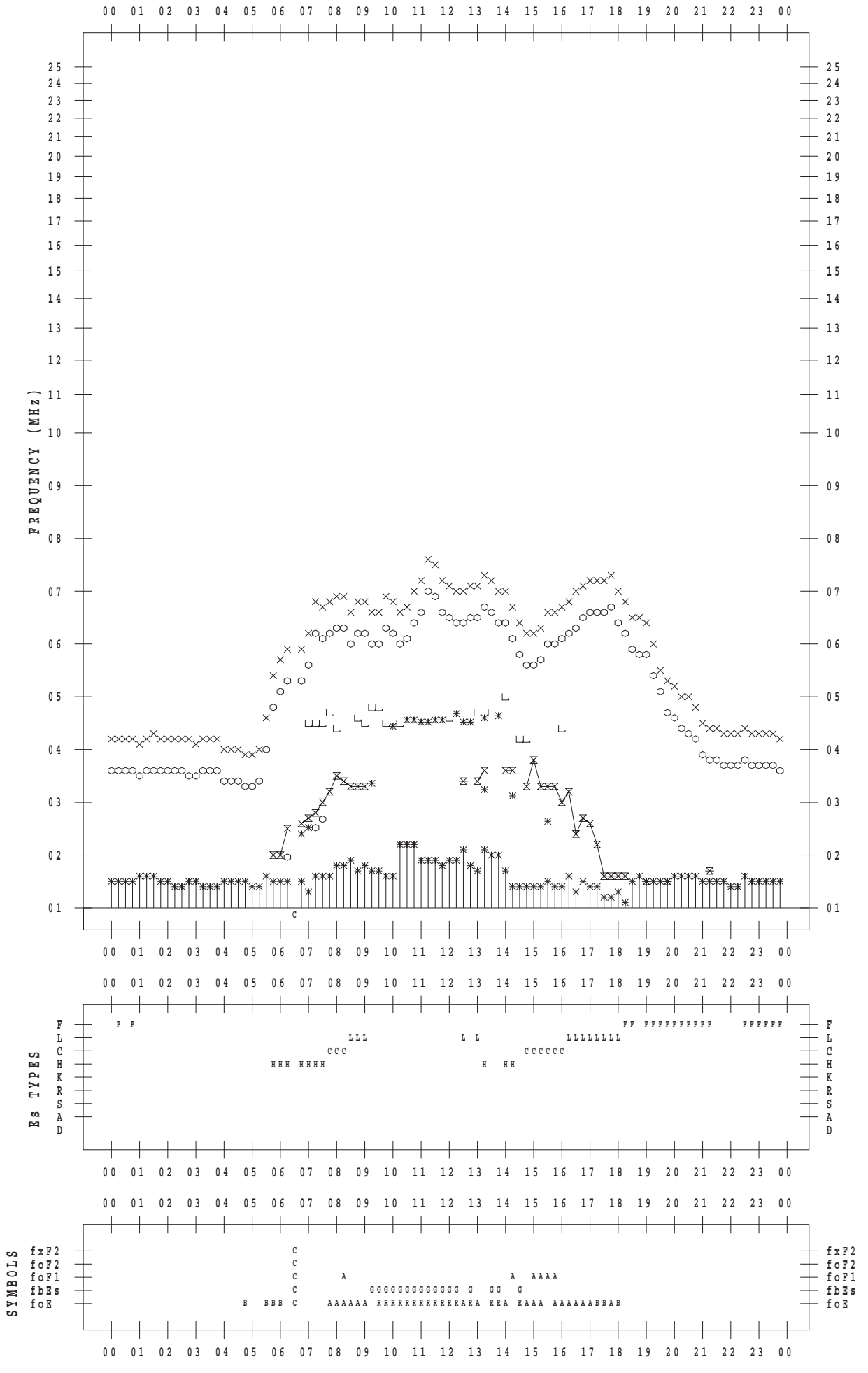
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/26

135 °E MEAN TIME



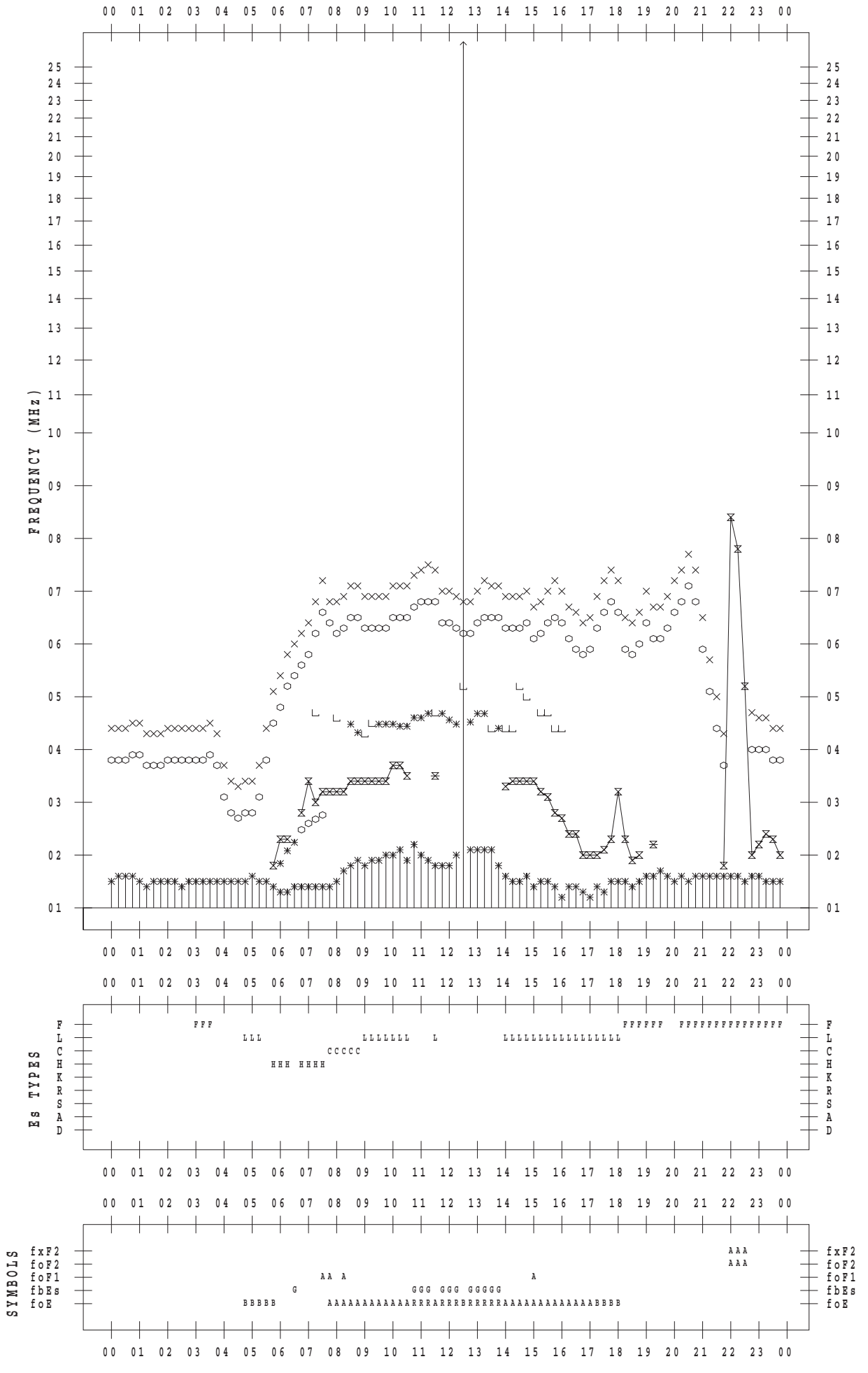
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/27

135 °E MEAN TIME



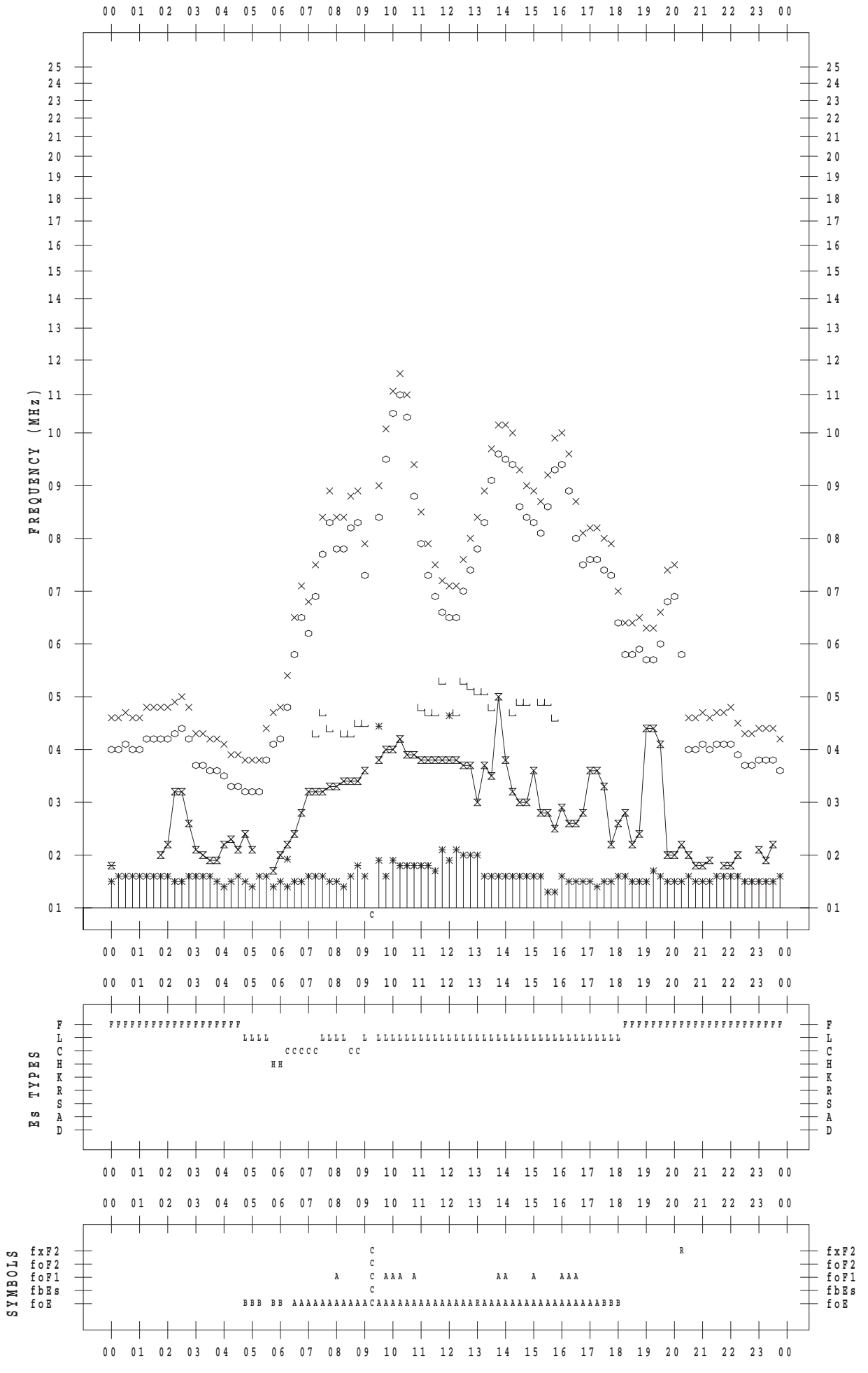
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/28

135 °E MEAN TIME



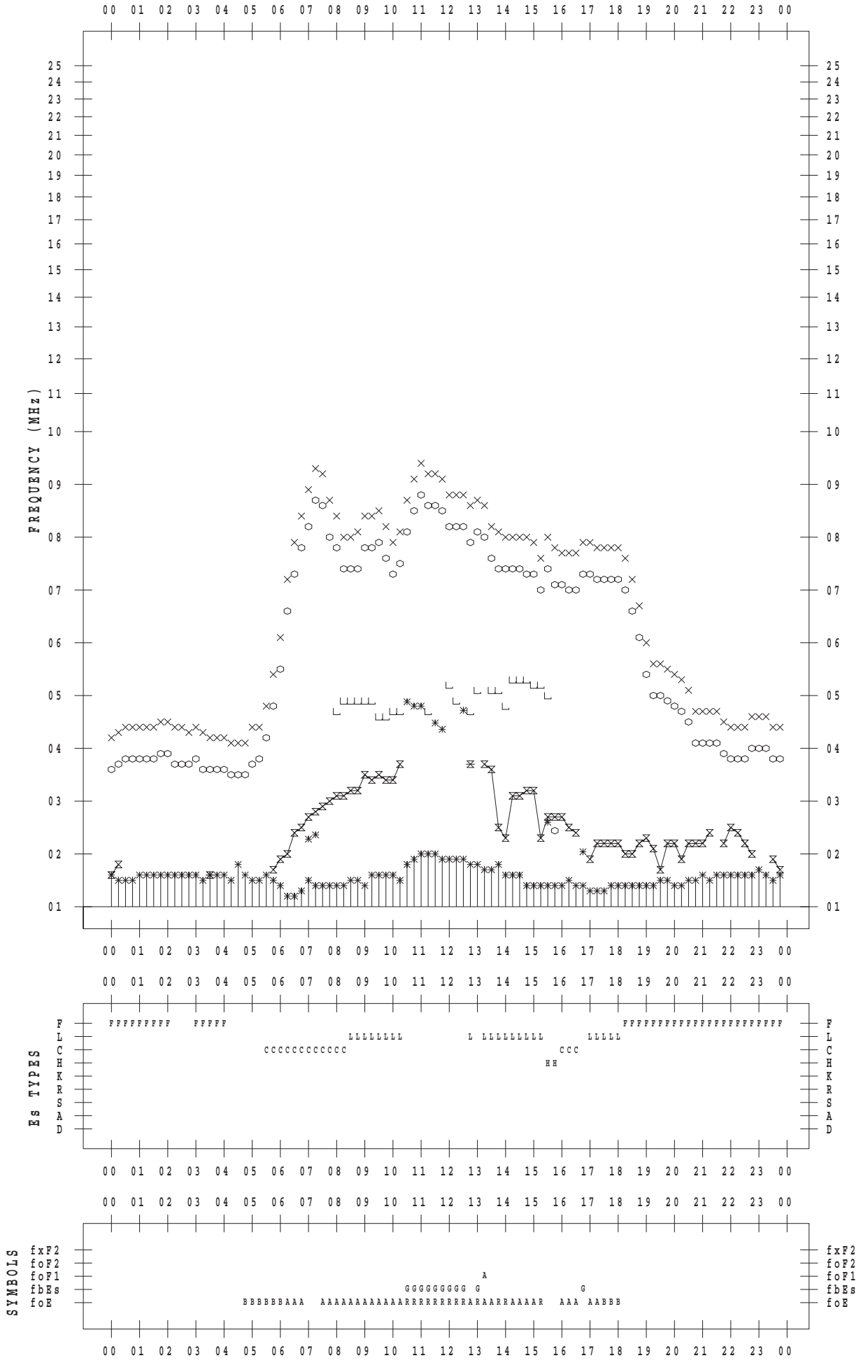
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/29

135 °E MEAN TIME



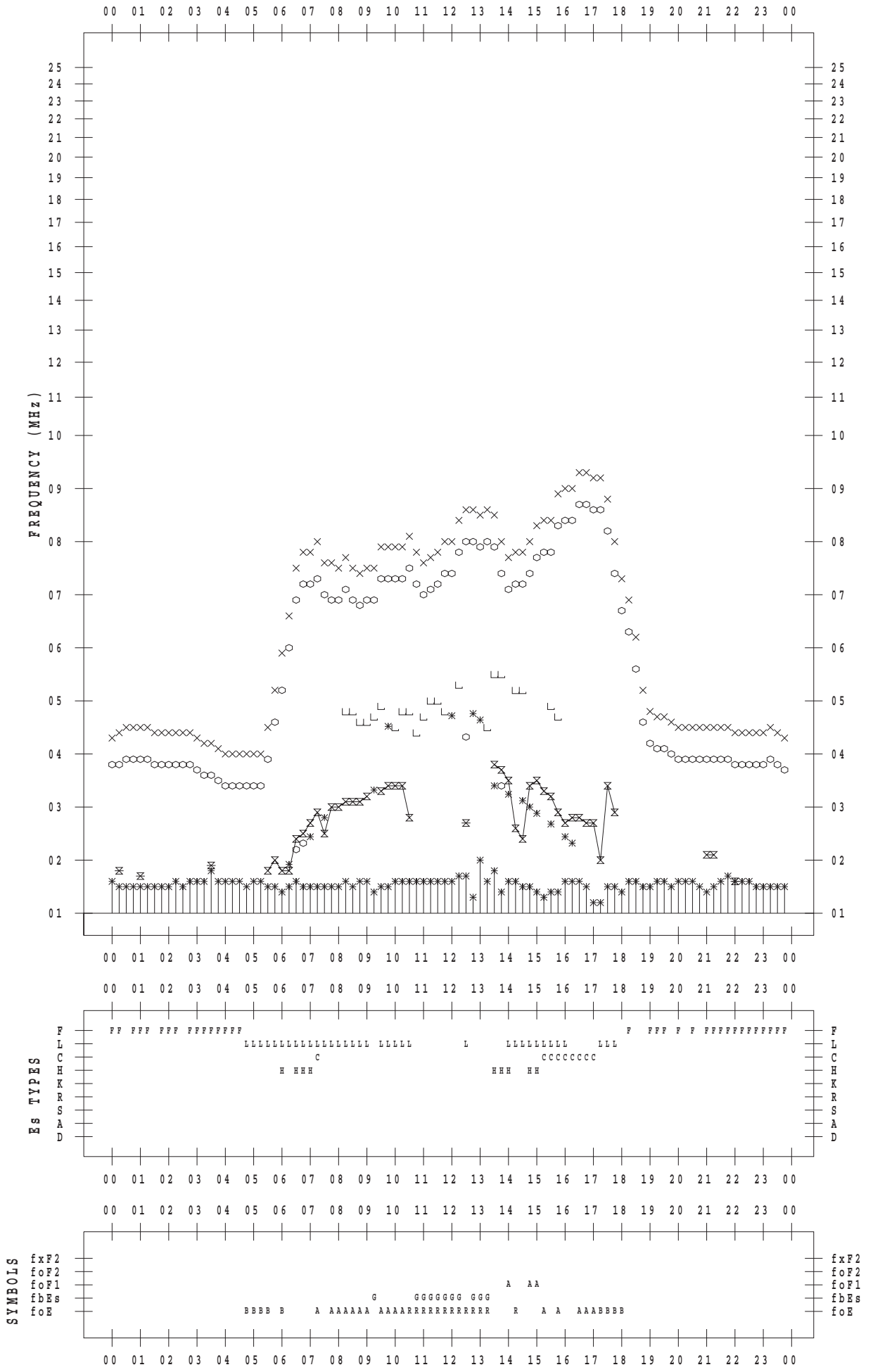
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 9/30

135 °E MEAN TIME



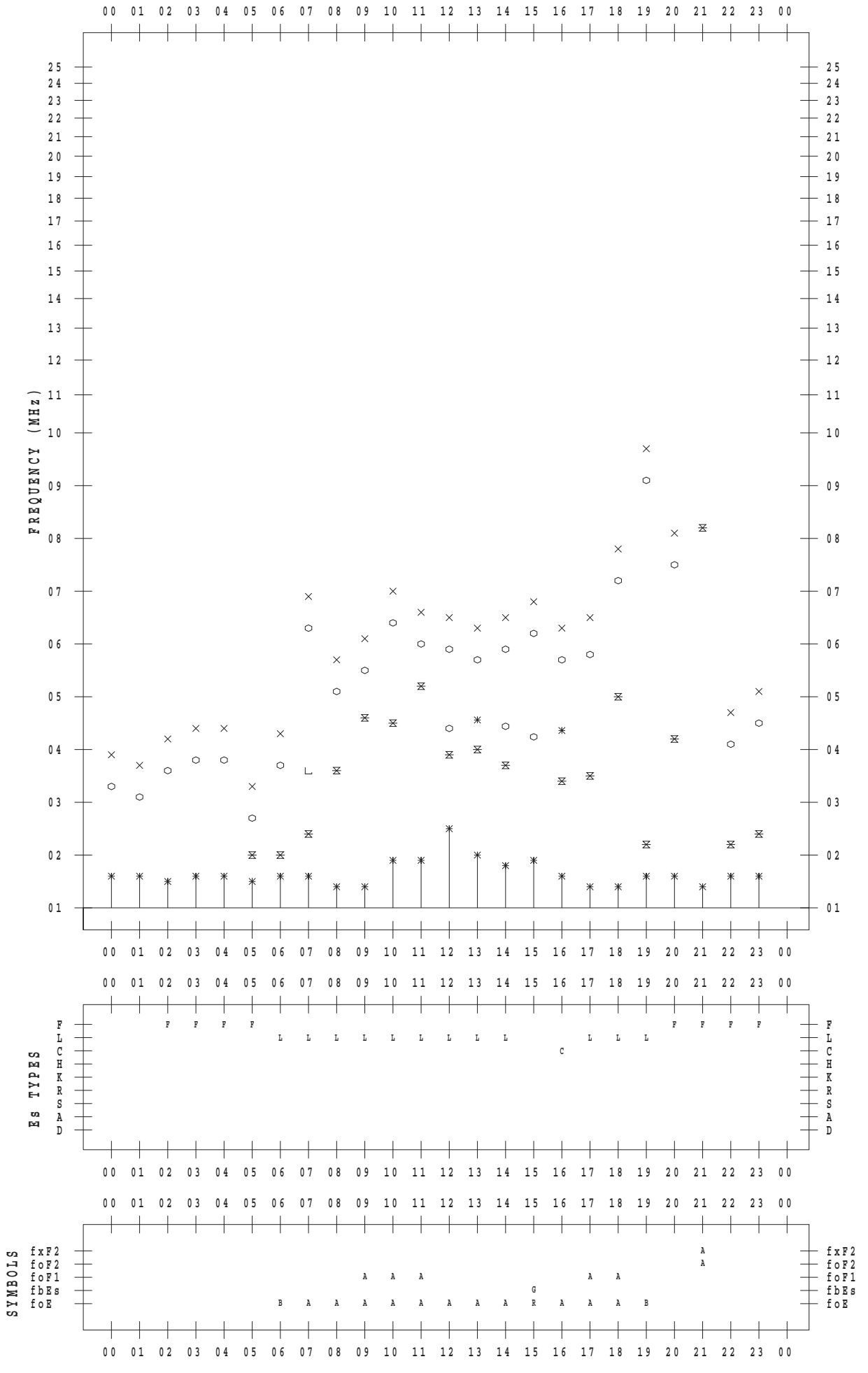
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 1

135 °E MEAN TIME



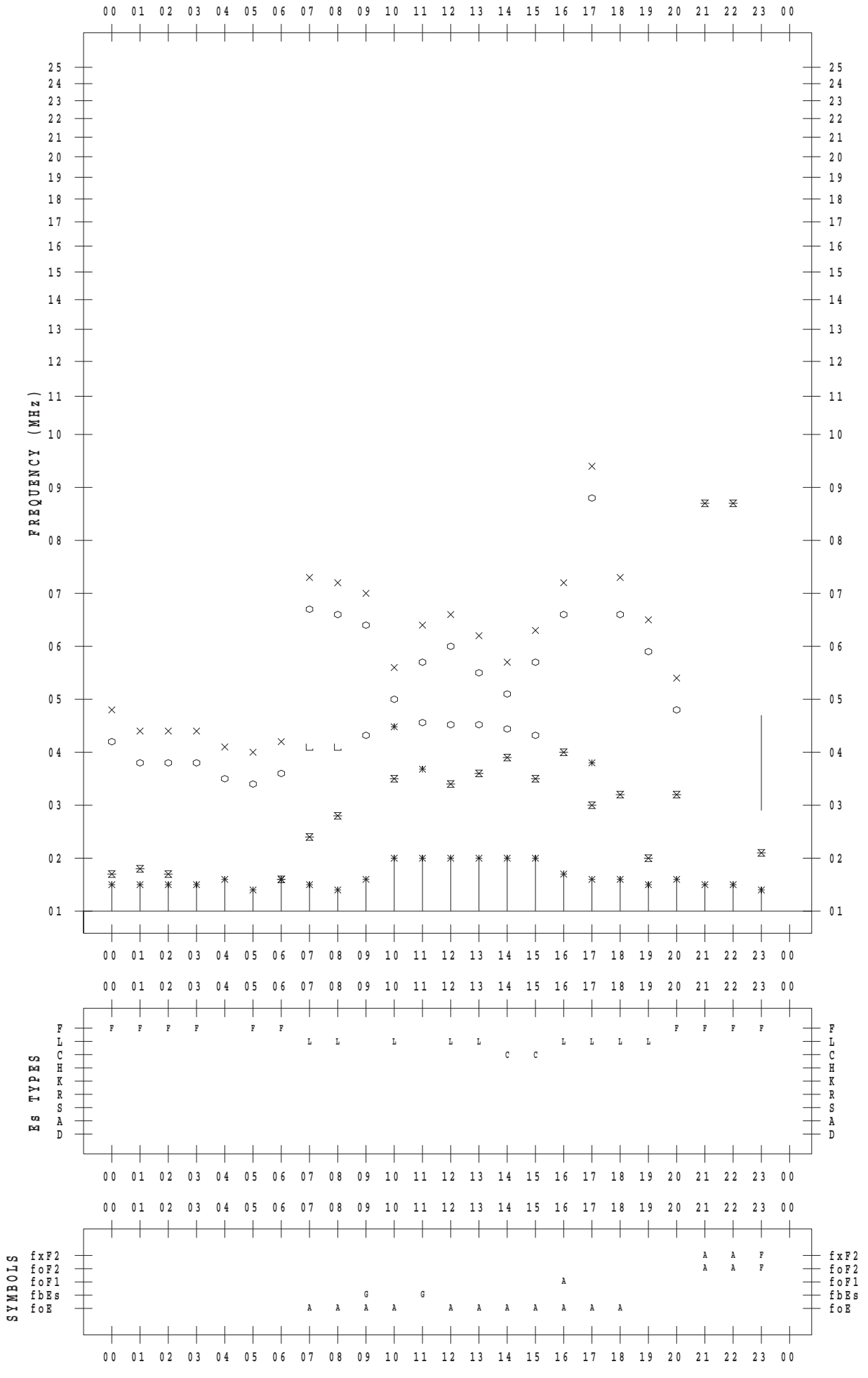
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 2

135 °E MEAN TIME



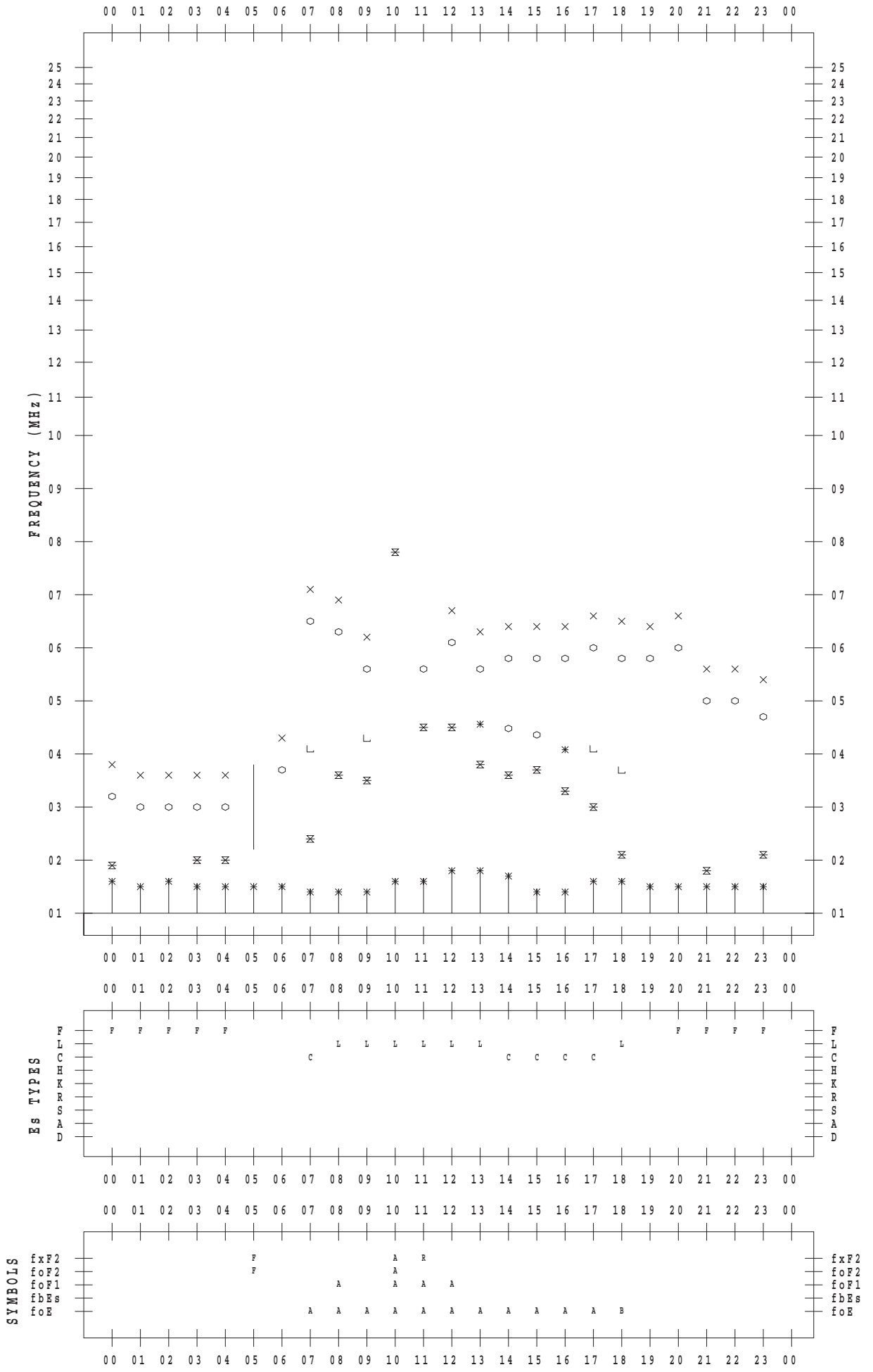
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 3

135 °E MEAN TIME



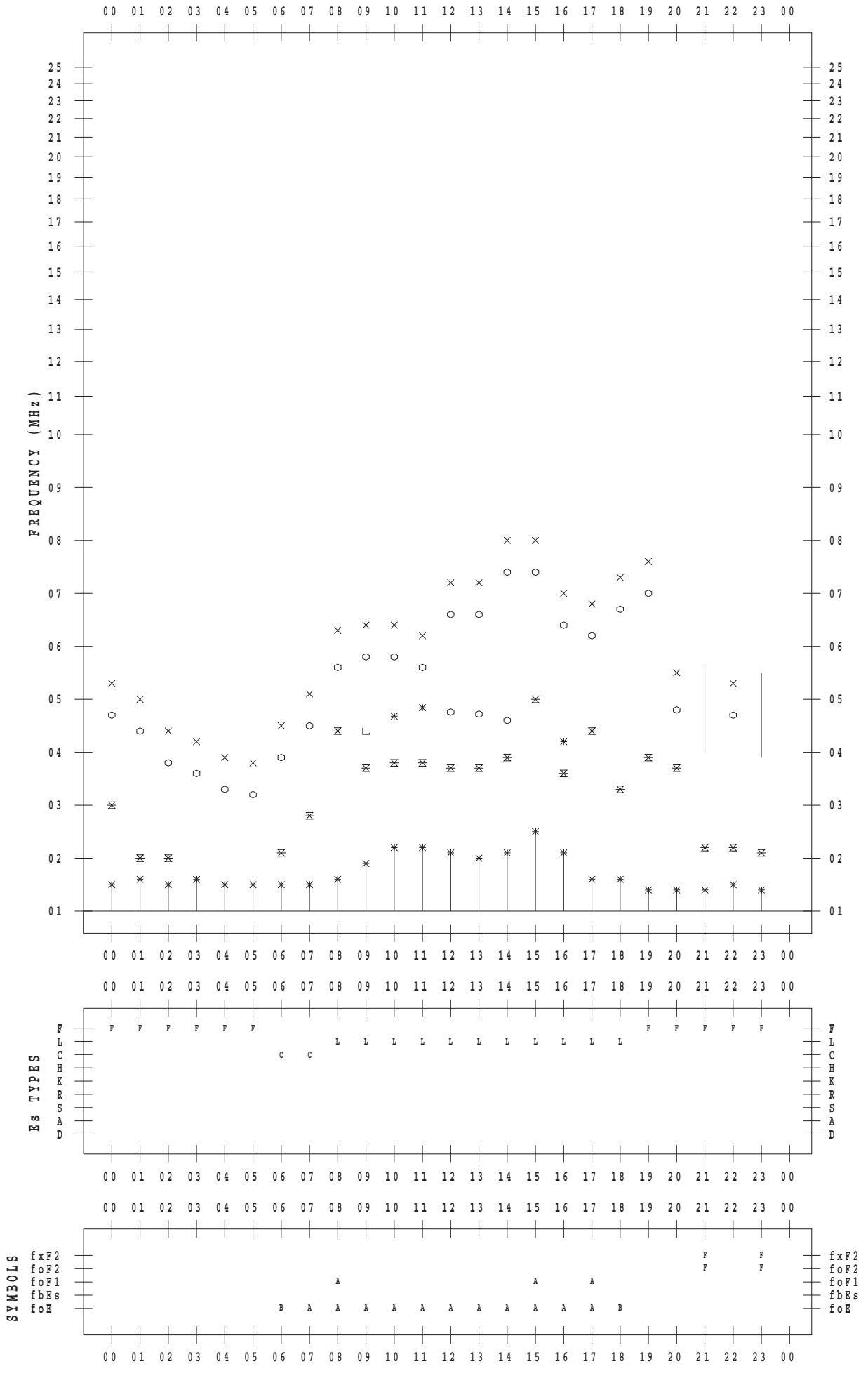
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 4

135 °E MEAN TIME



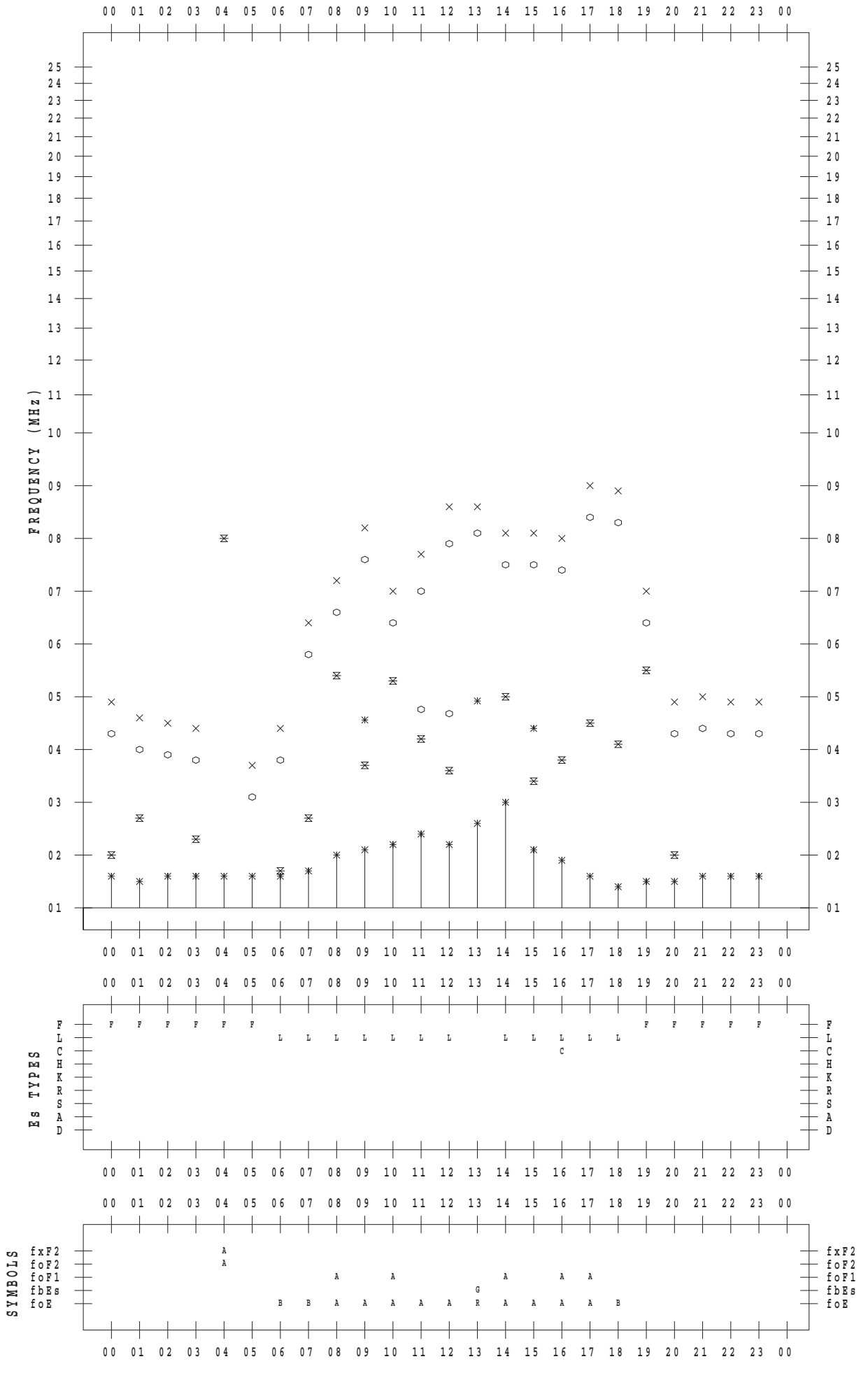
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 5

135 °E MEAN TIME



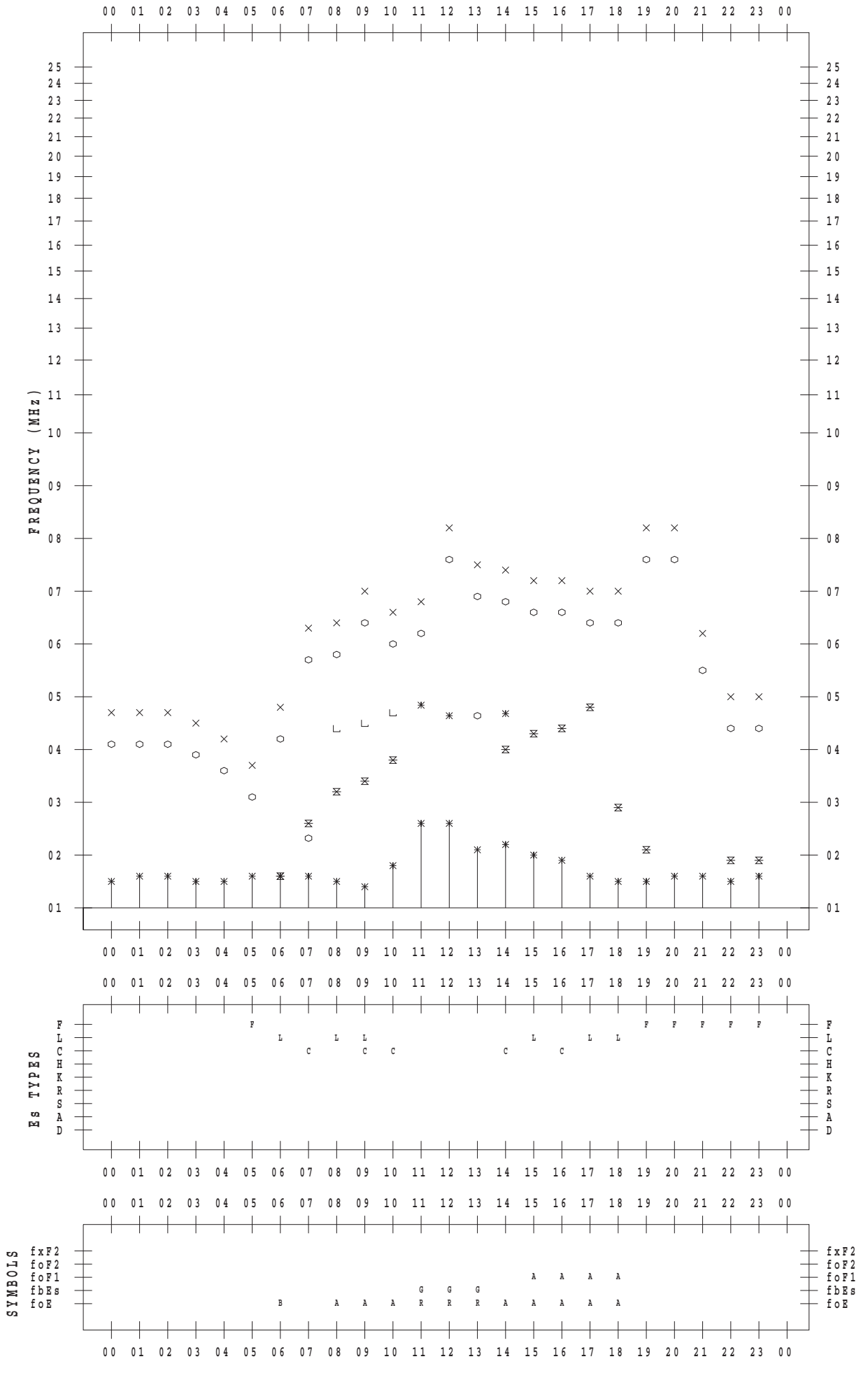
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 6

135 °E MEAN TIME



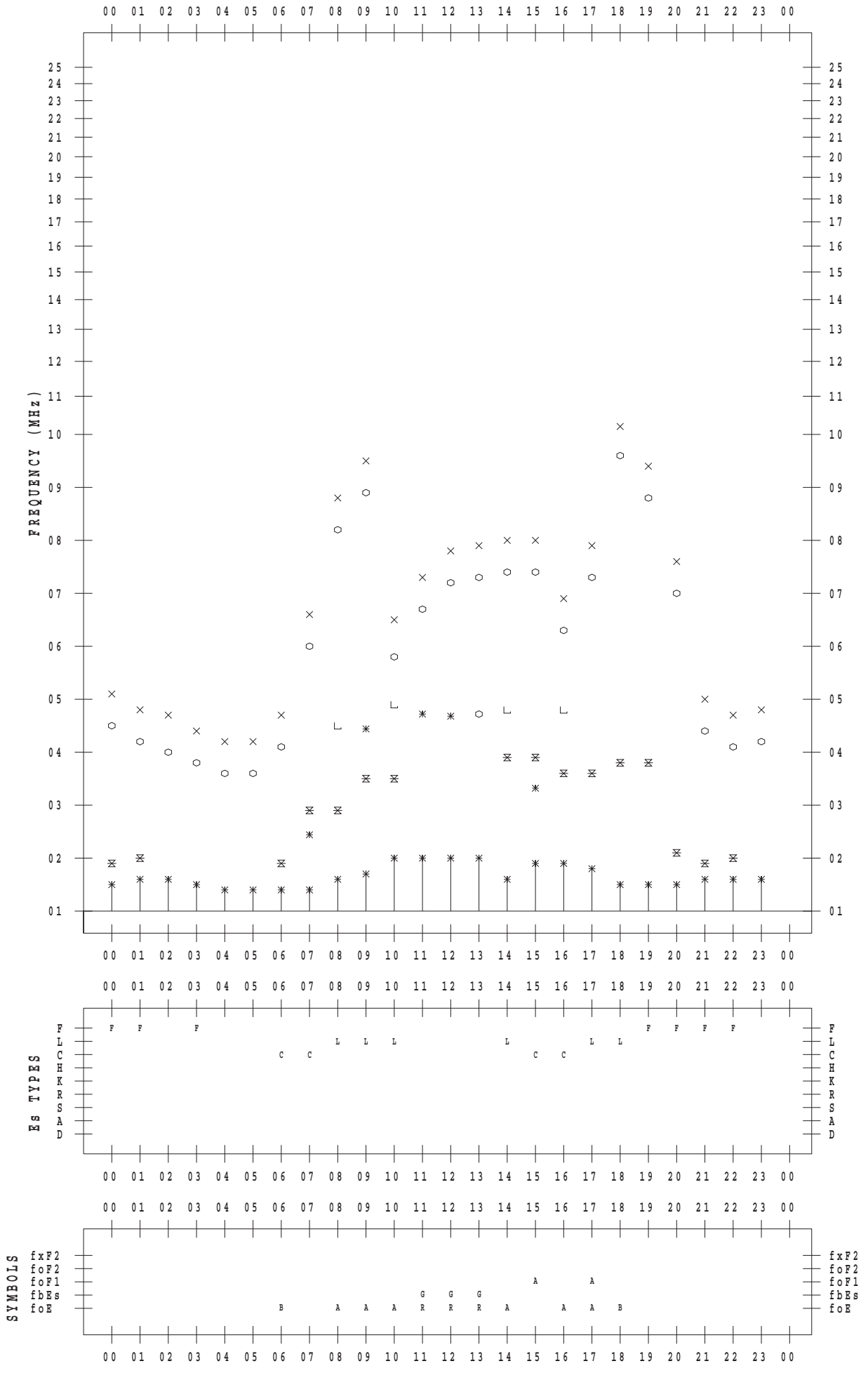
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 7

135 °E MEAN TIME



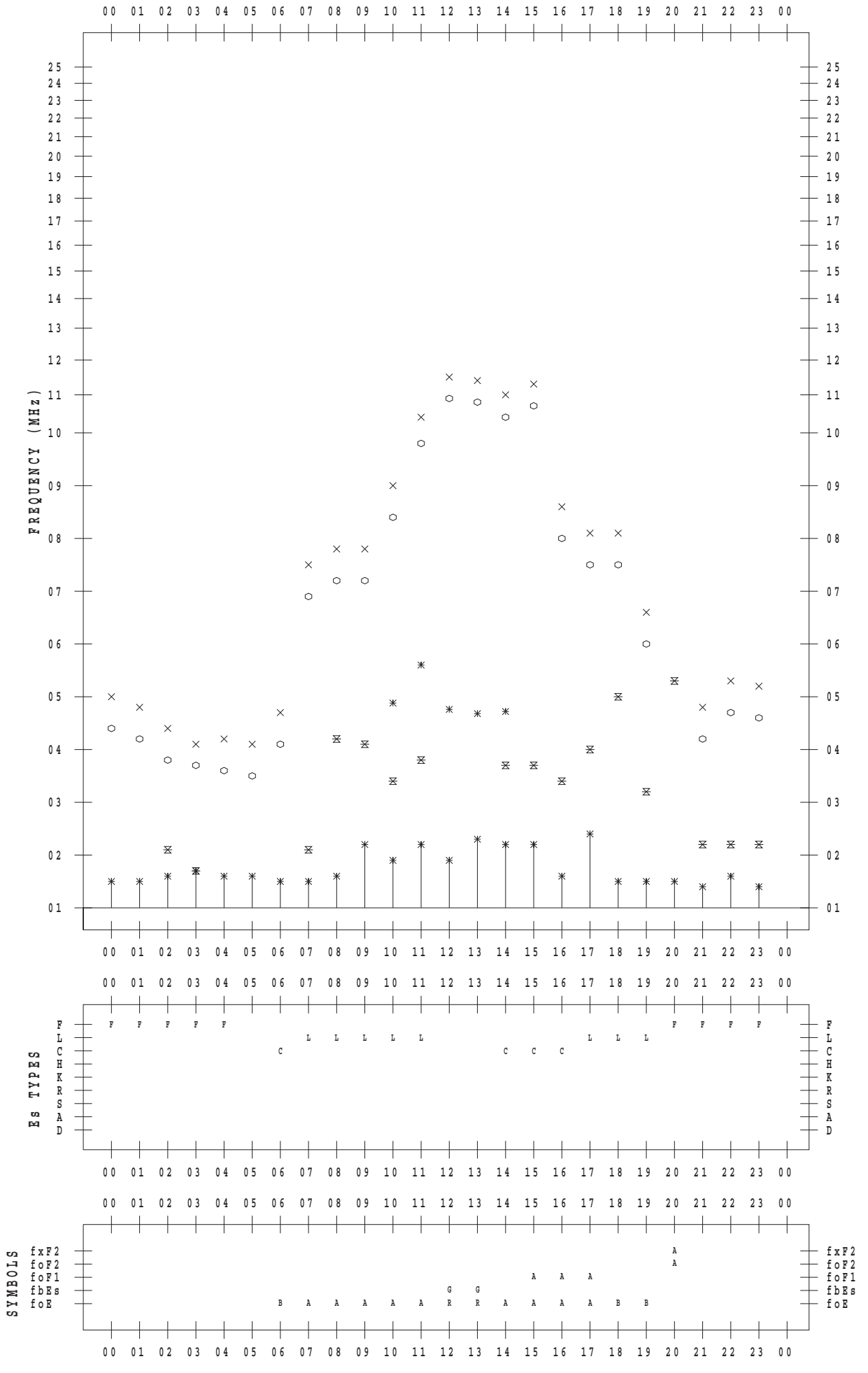
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 8

135 °E MEAN TIME



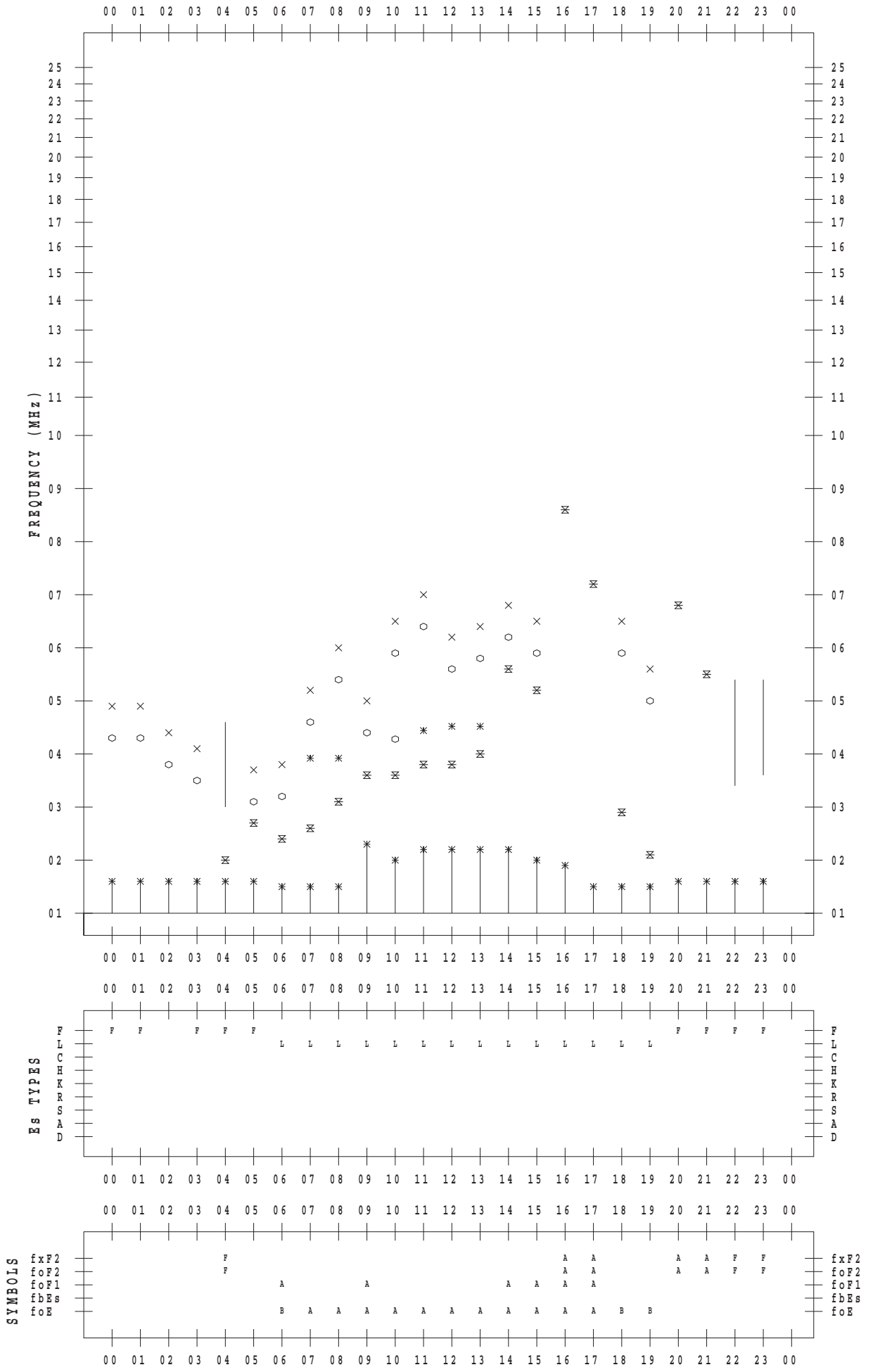
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/ 9

135 °E MEAN TIME



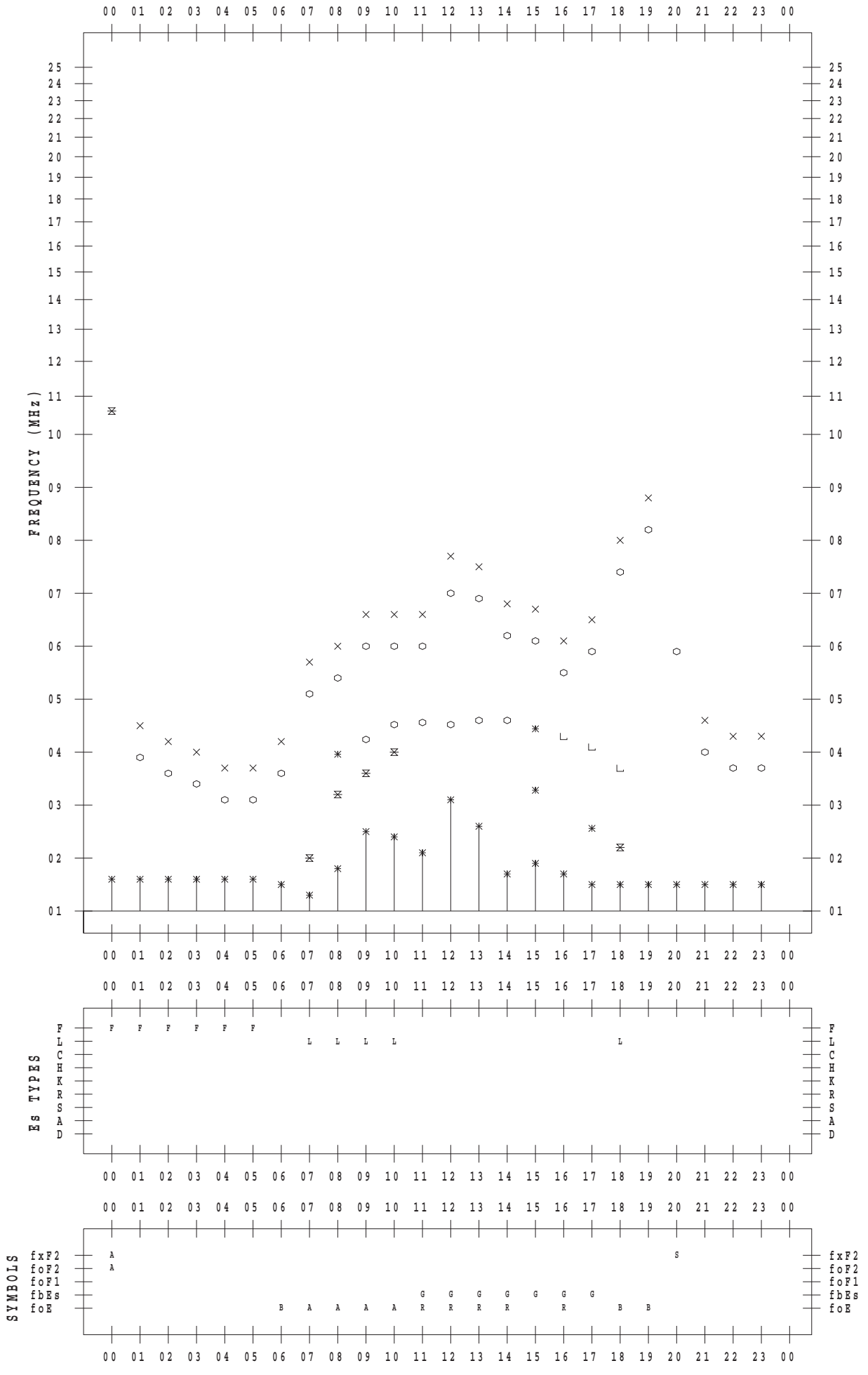
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/10

135 °E MEAN TIME



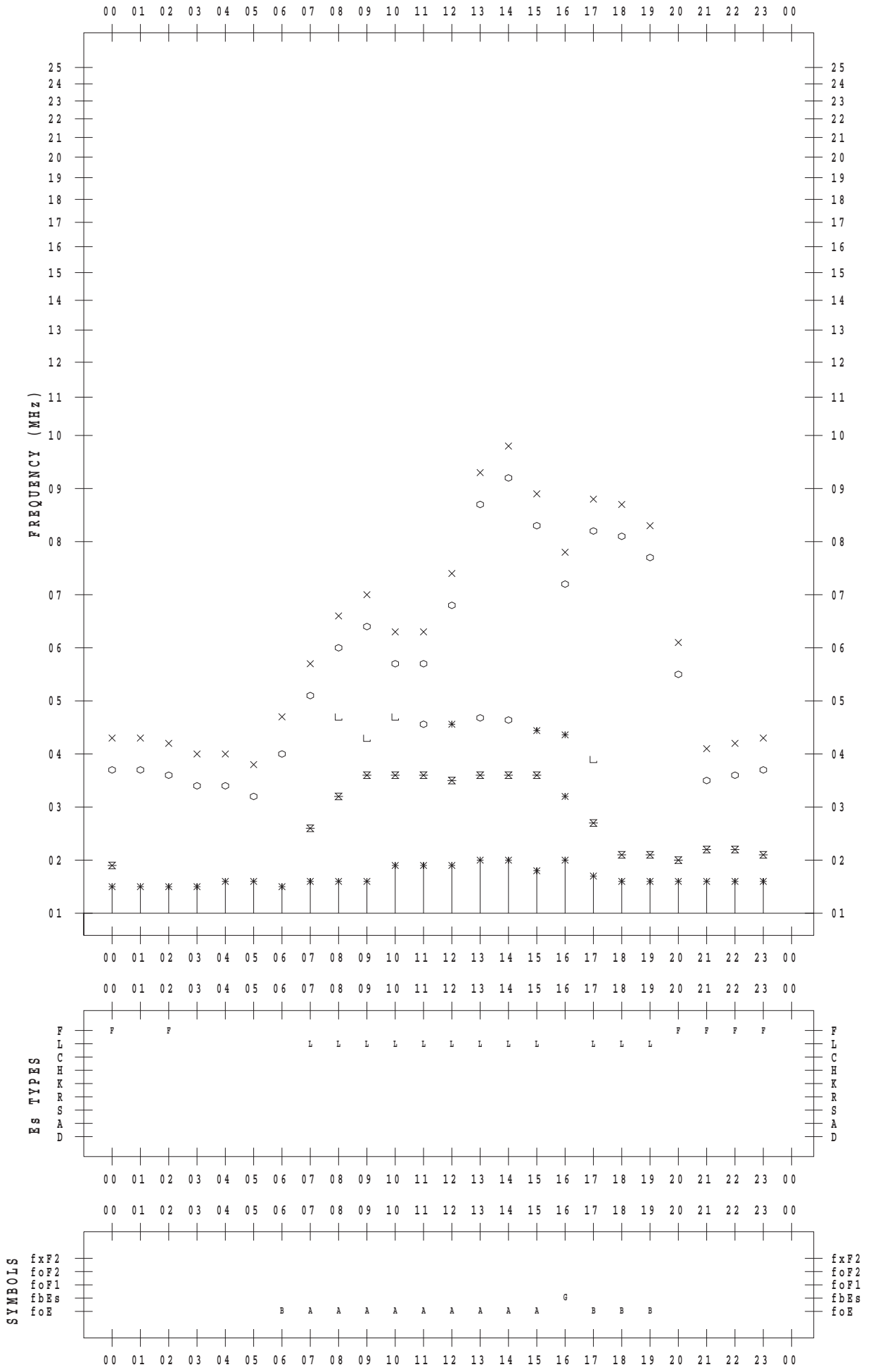
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/11

135 °E MEAN TIME



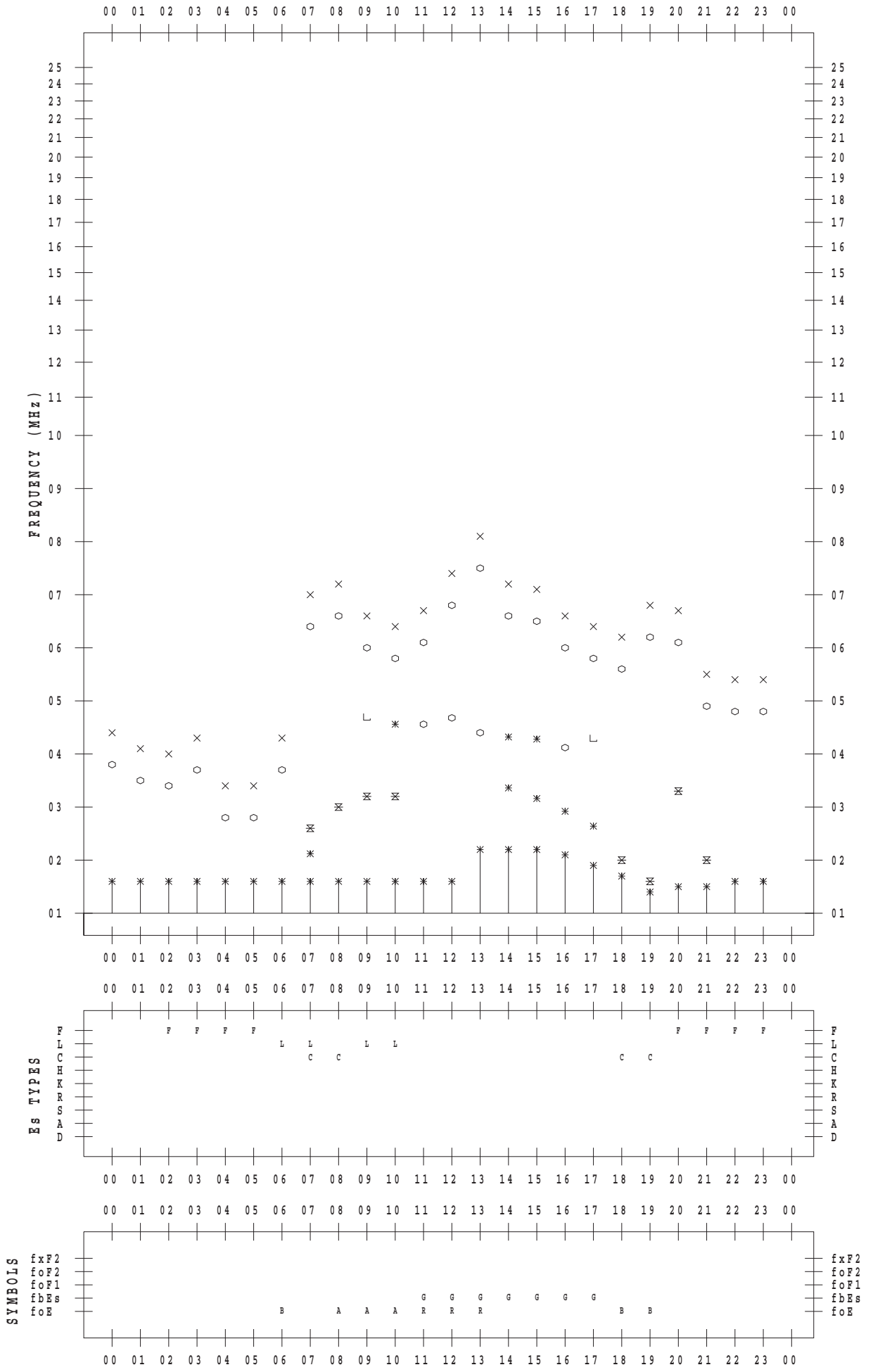
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/12

135 °E MEAN TIME



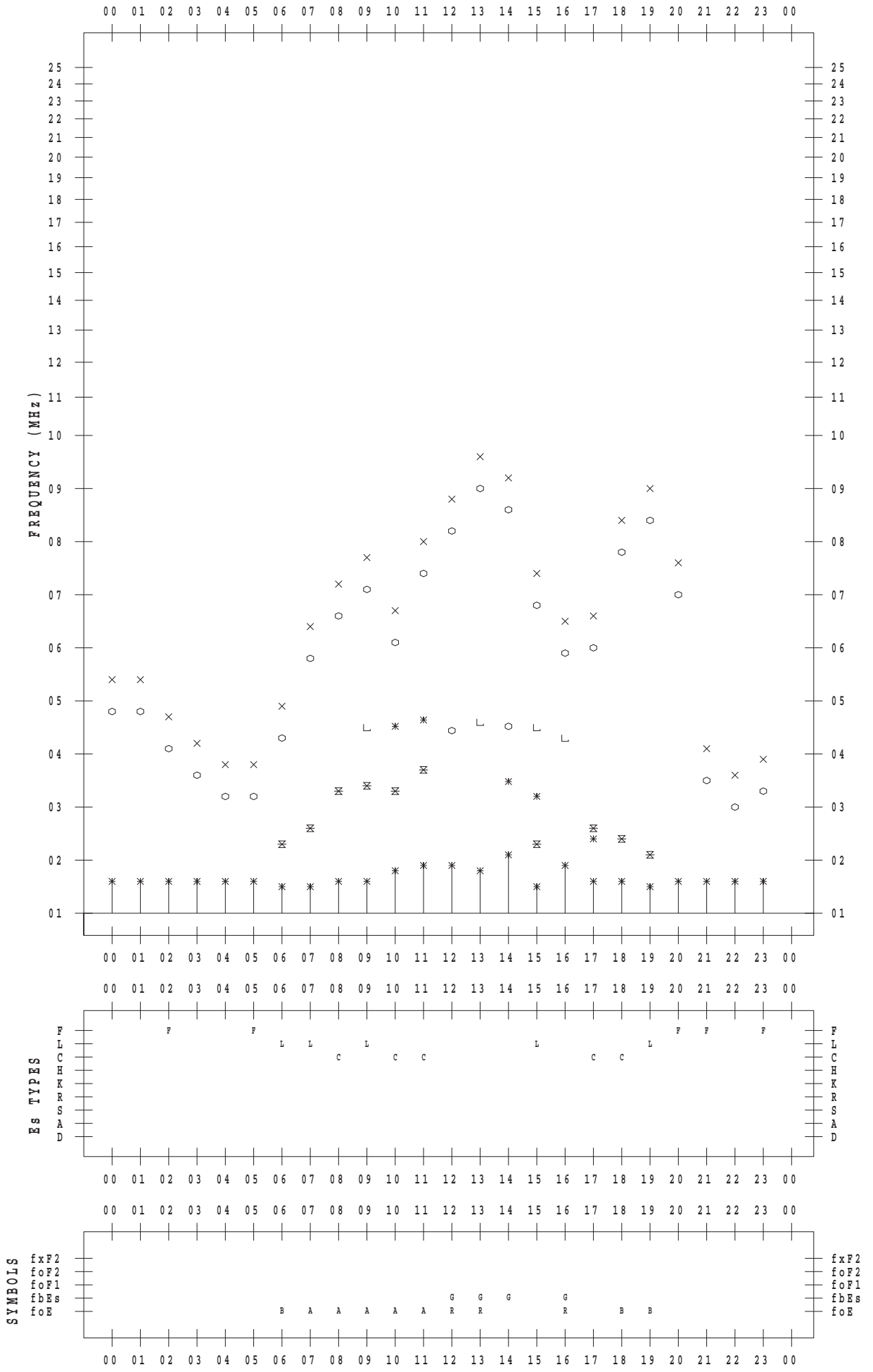
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/13

135 °E MEAN TIME



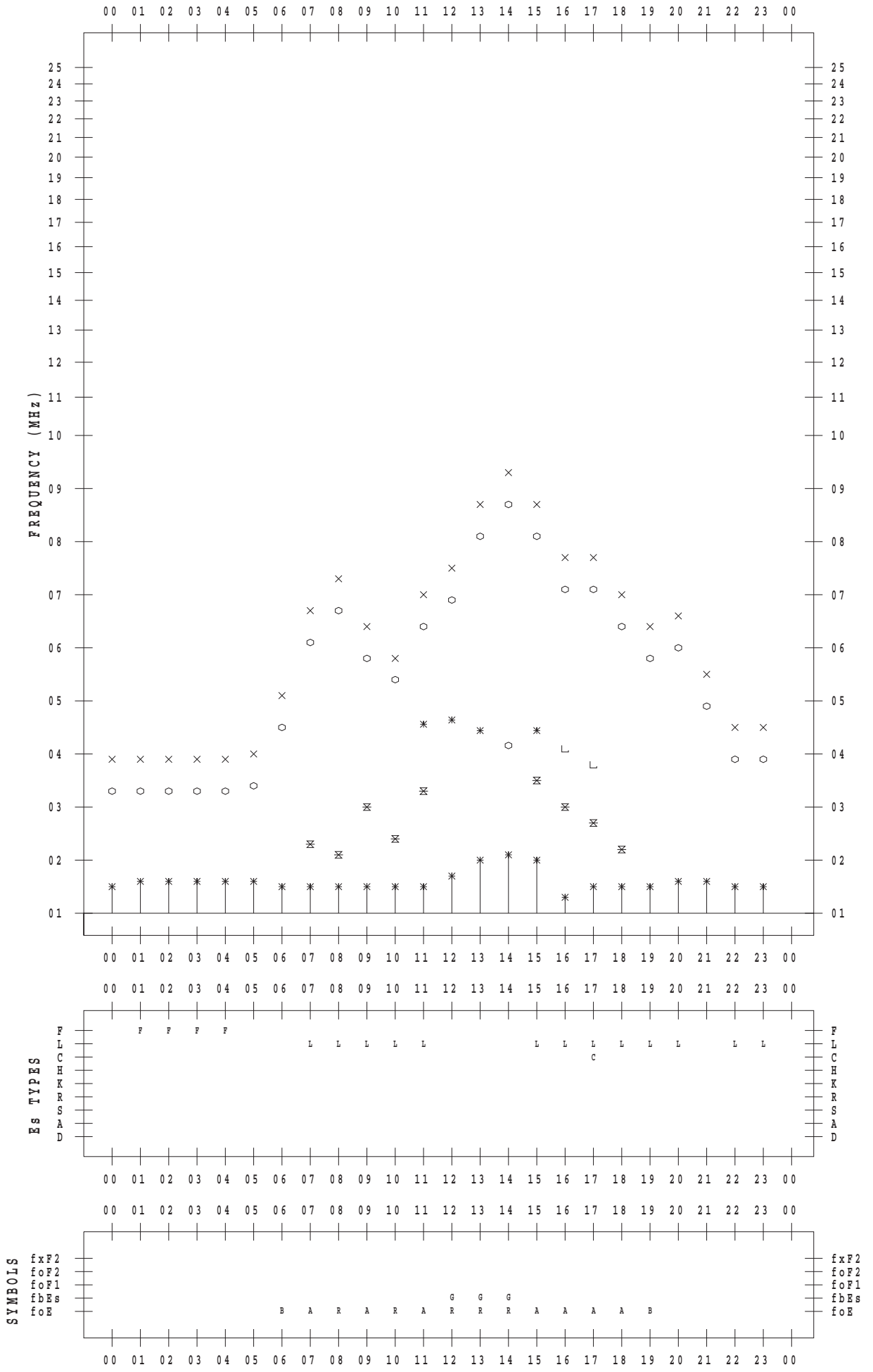
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/14

135 °E MEAN TIME



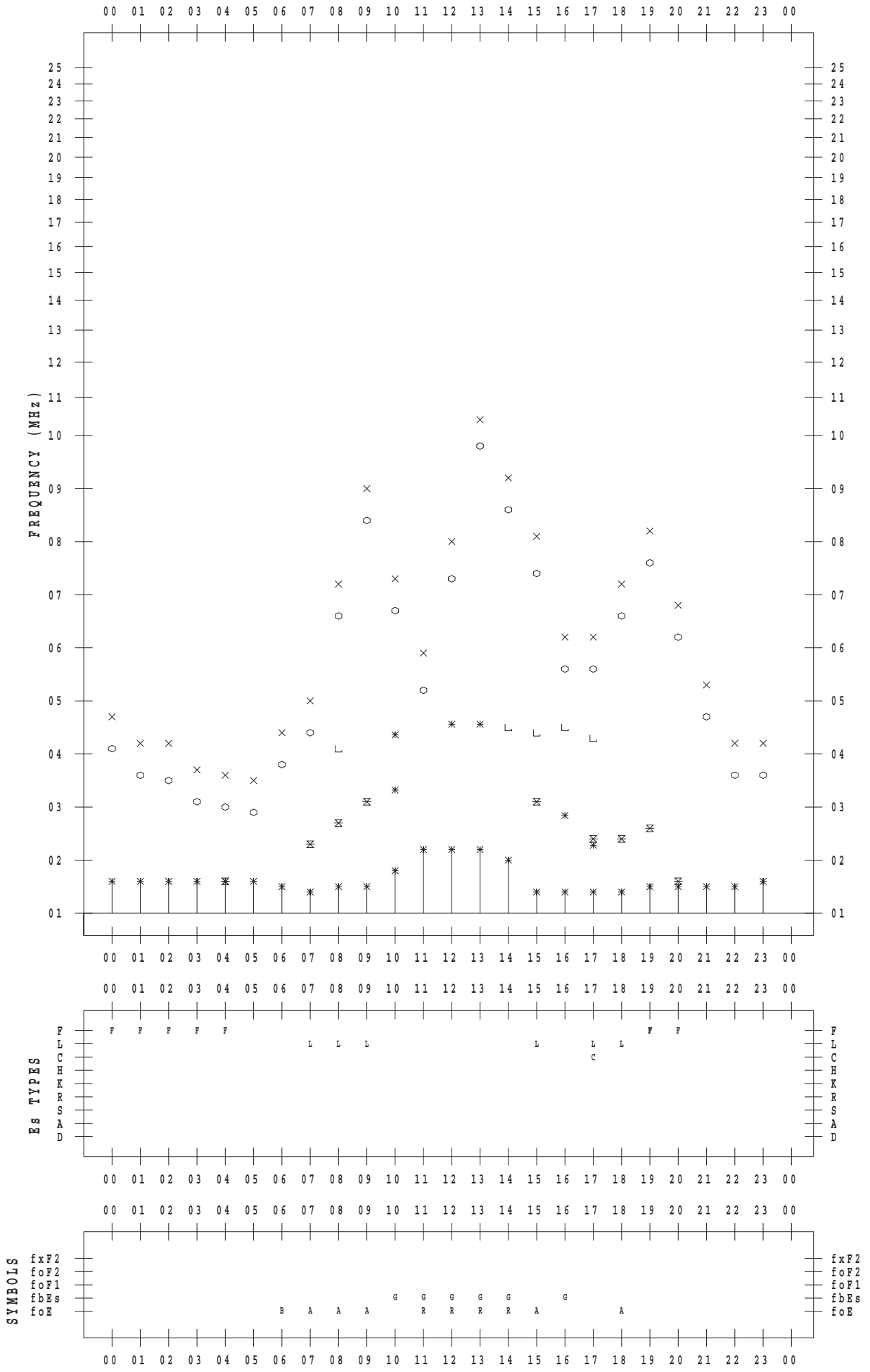
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/15

135 °E MEAN TIME



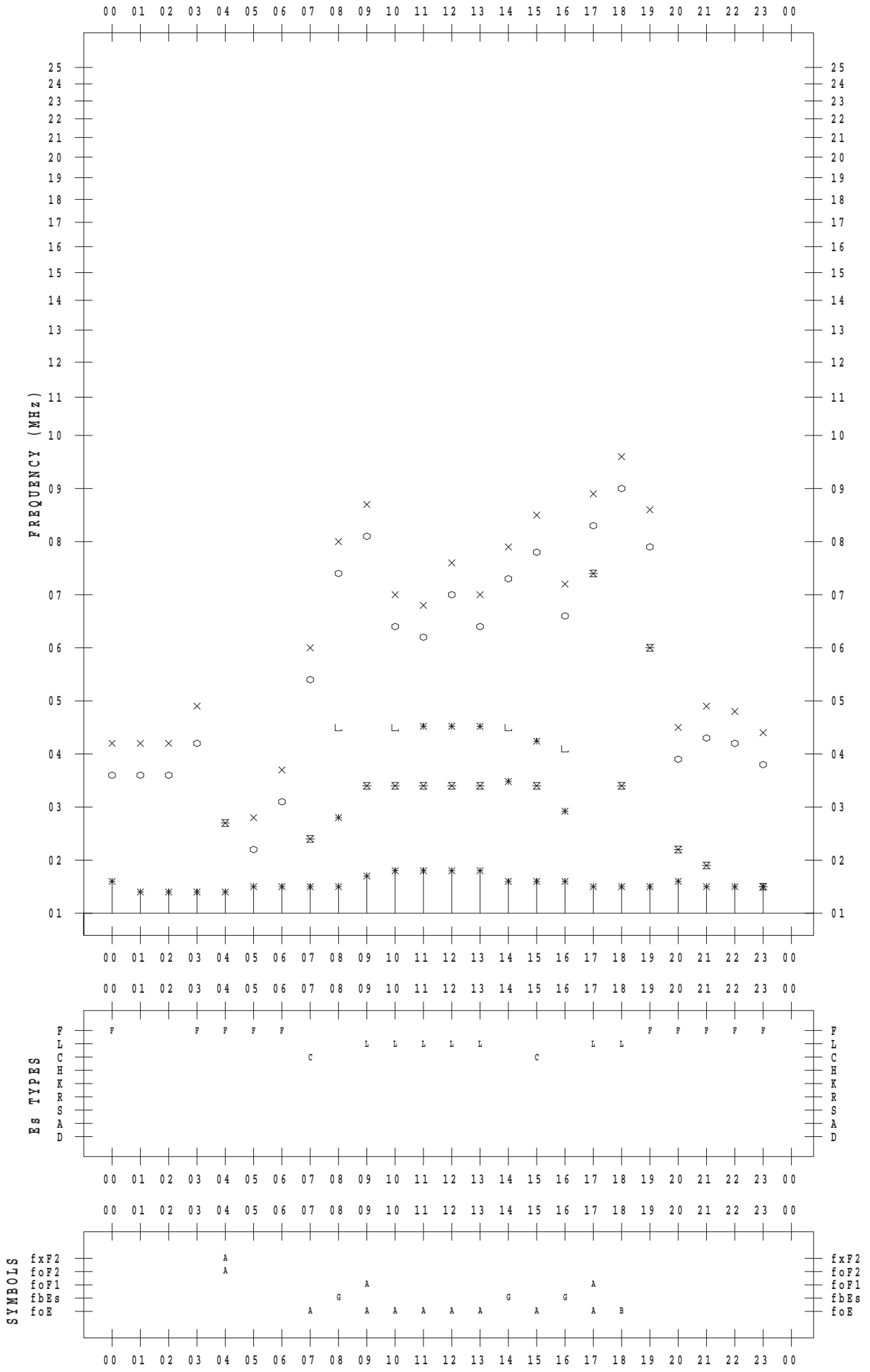
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/16

135 °E MEAN TIME



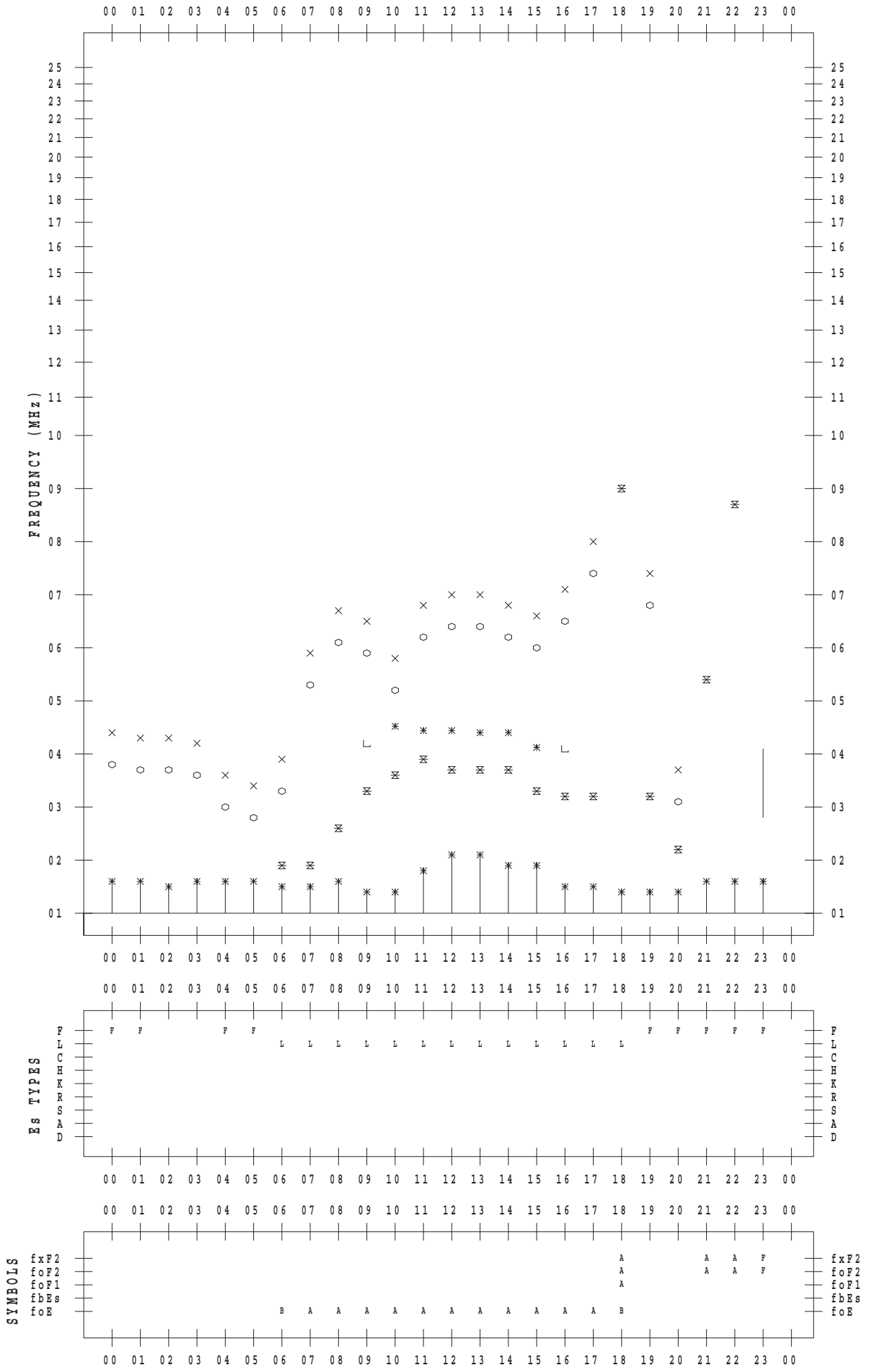
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/17

135 °E MEAN TIME



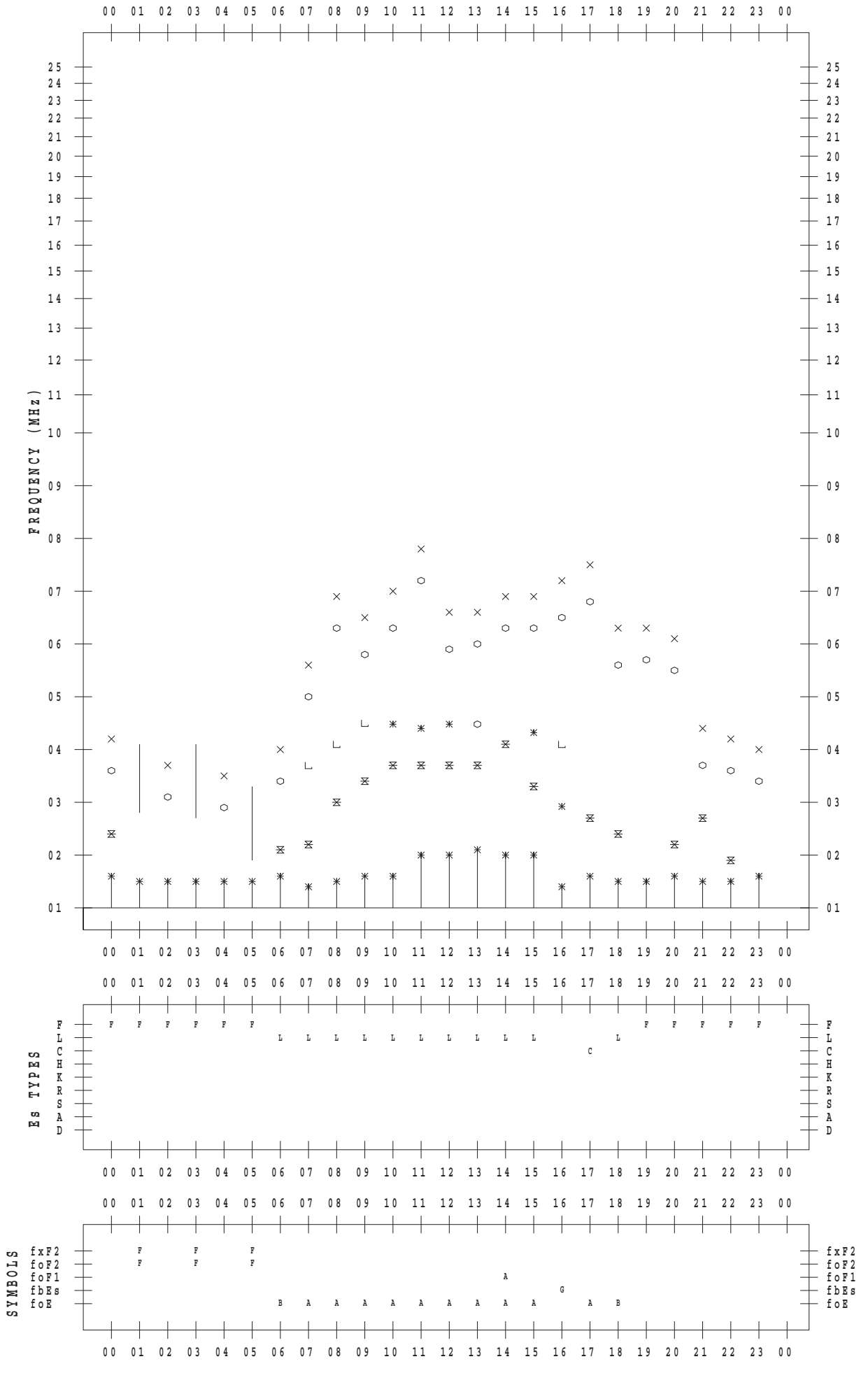
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/18

135 °E MEAN TIME



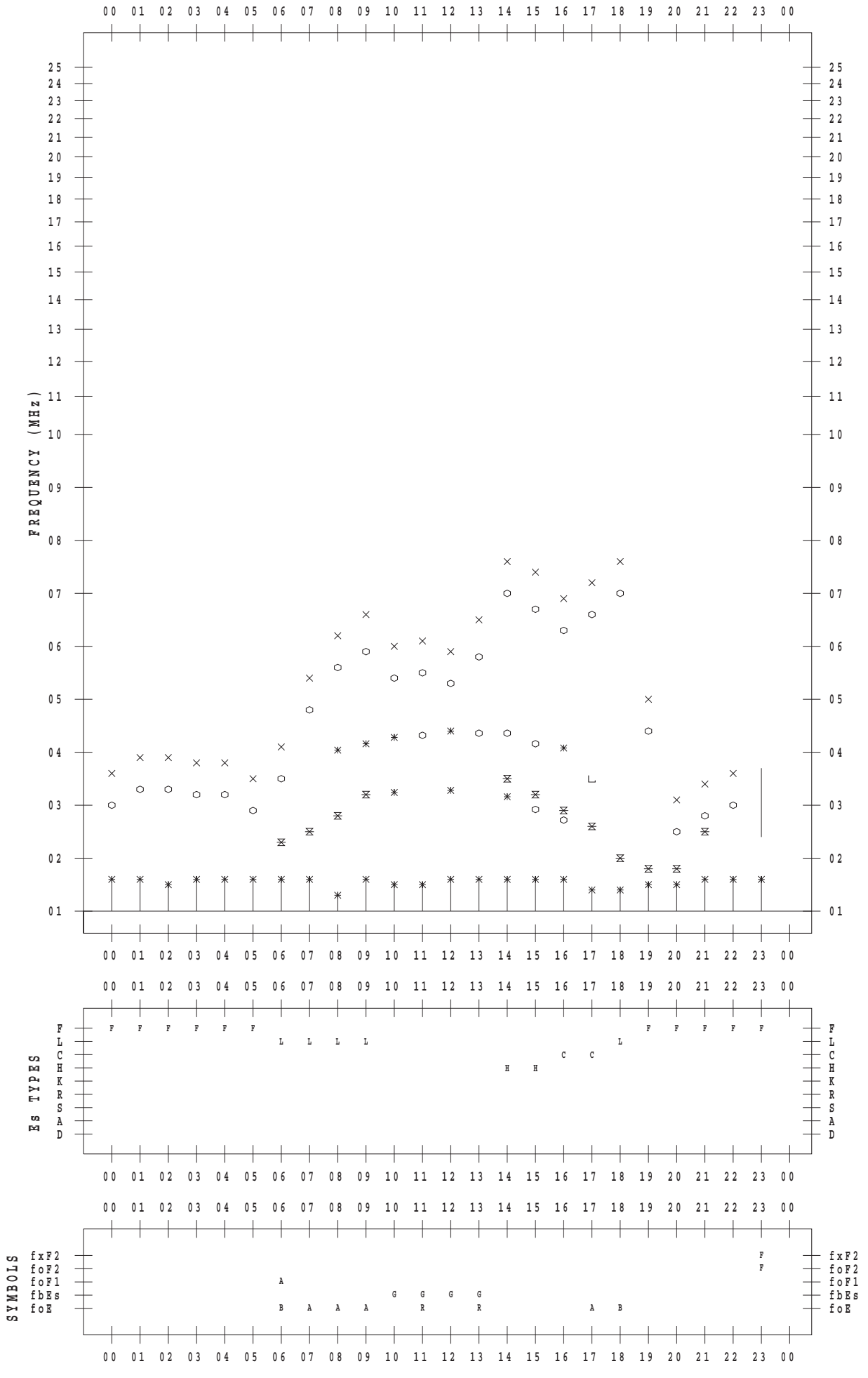
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/19

135 °E MEAN TIME



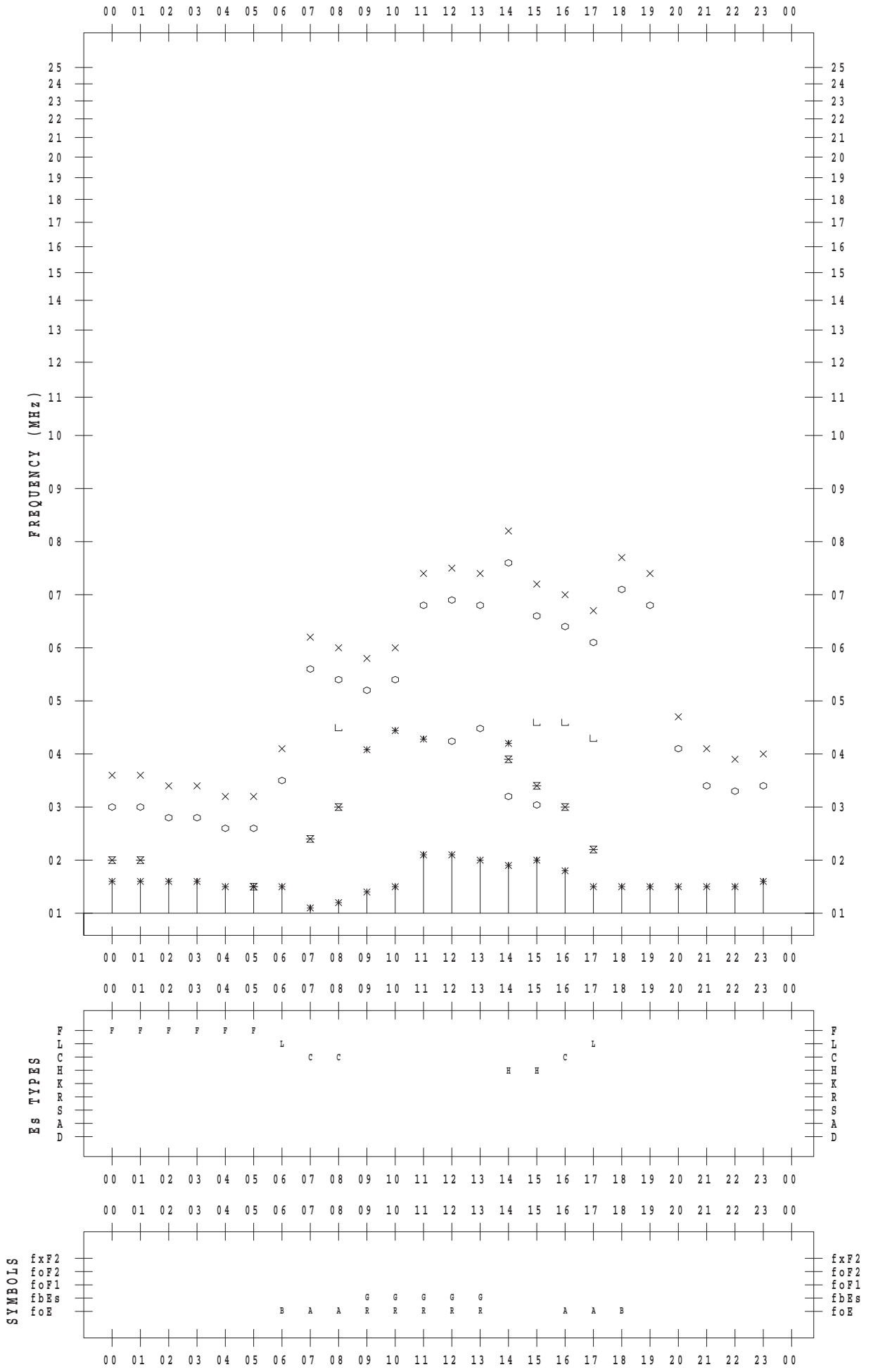
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/20

135 °E MEAN TIME



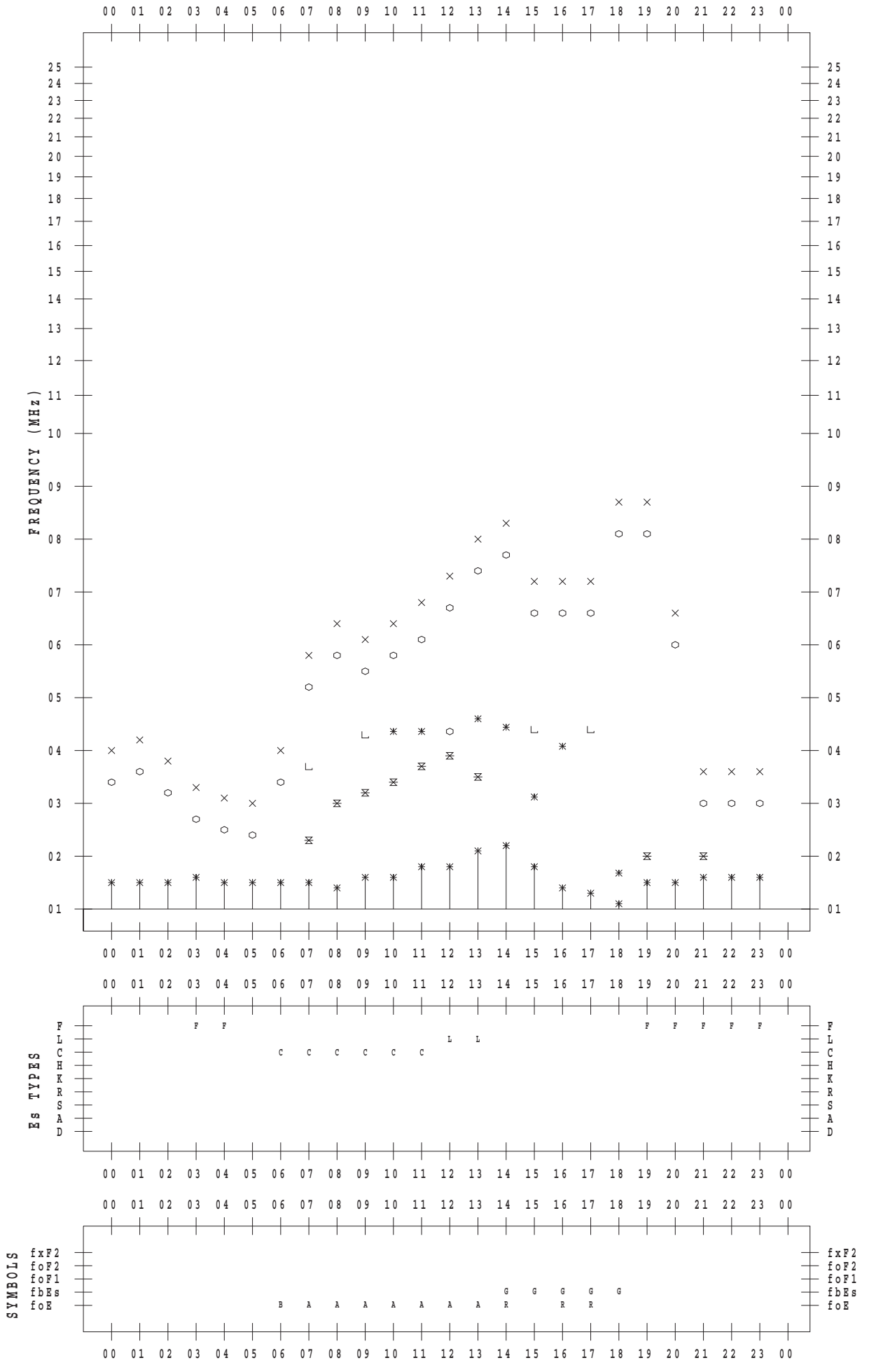
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/21

135 °E MEAN TIME



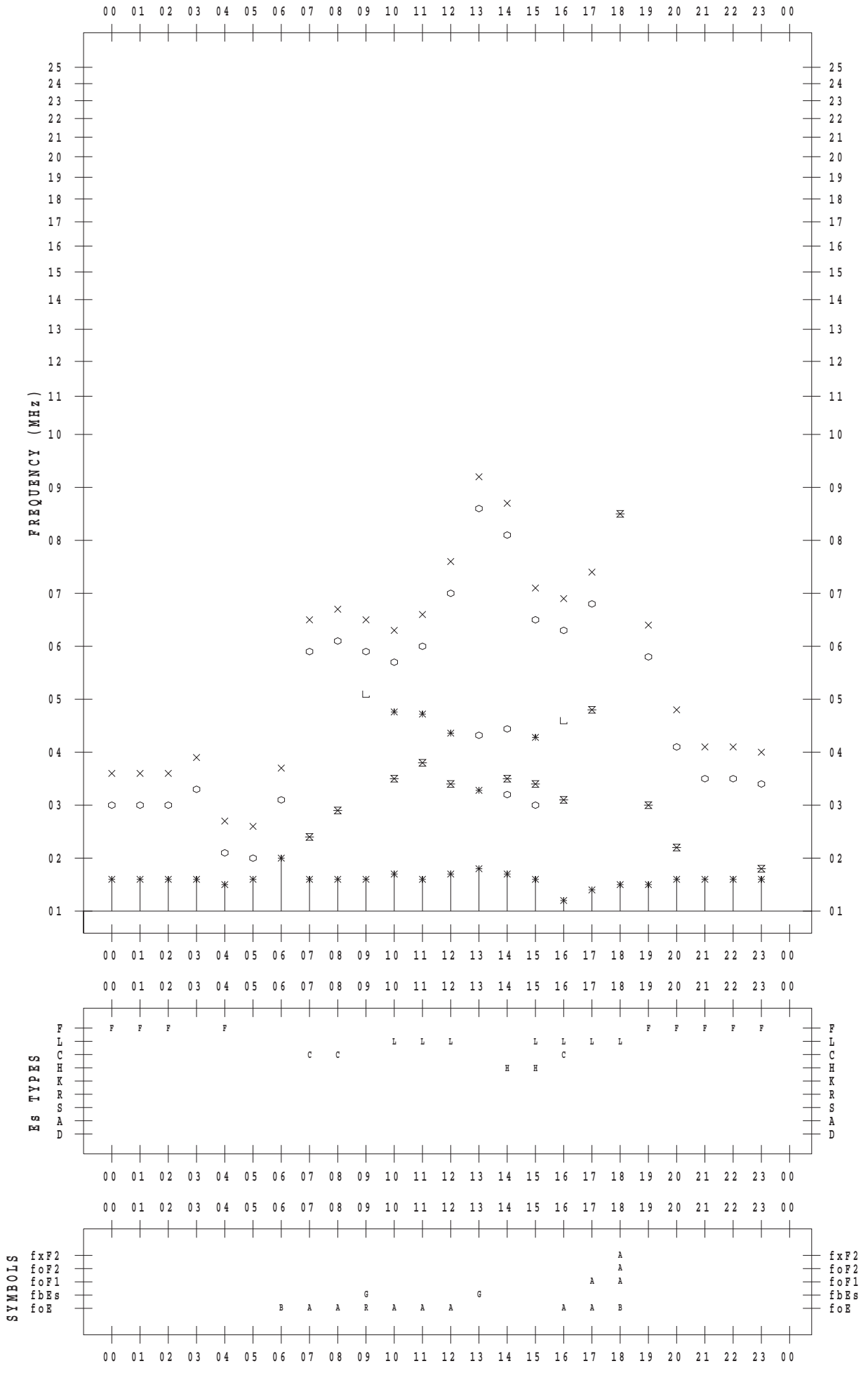
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/22

135 °E MEAN TIME



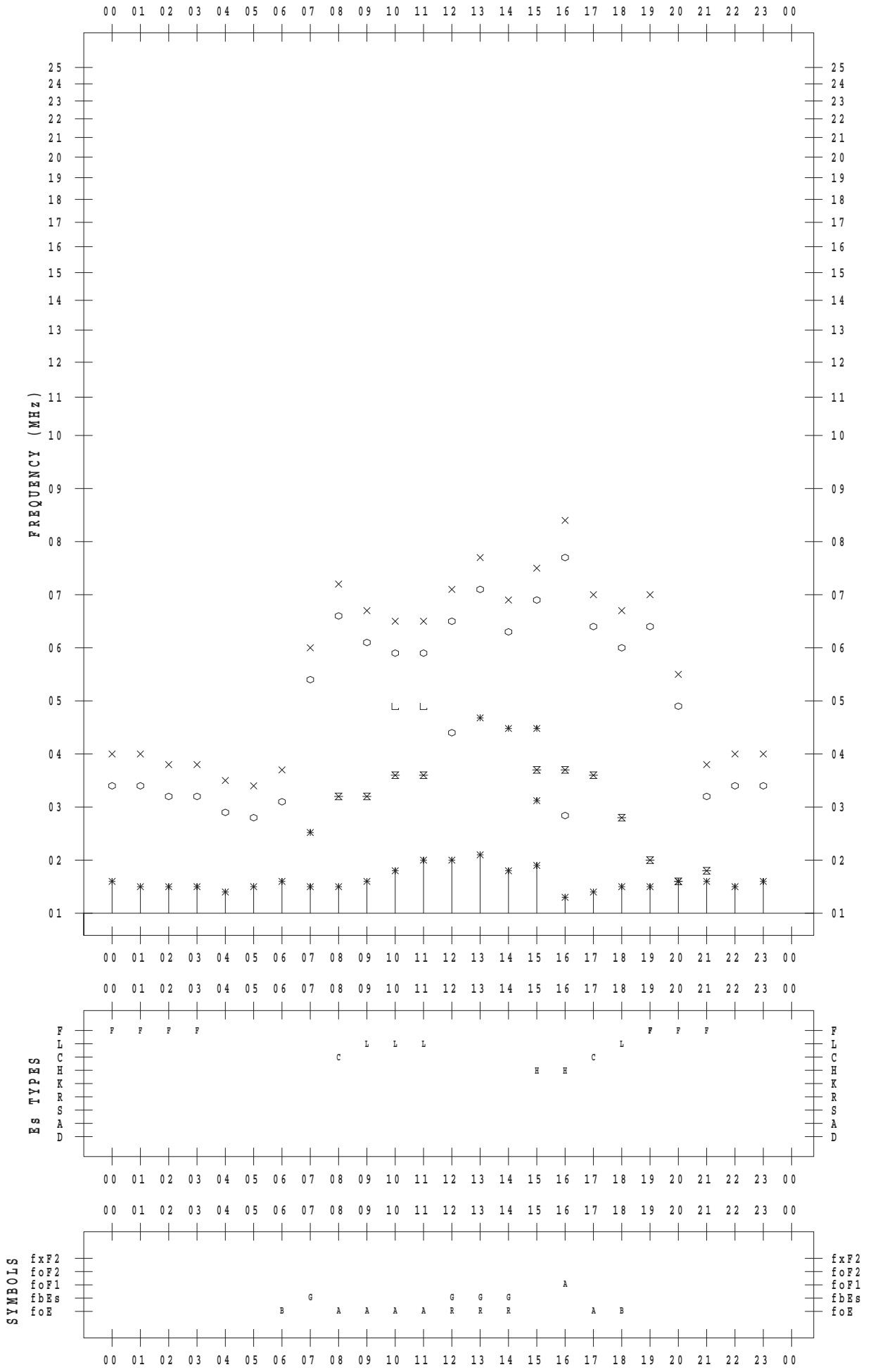
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/23

135 °E MEAN TIME



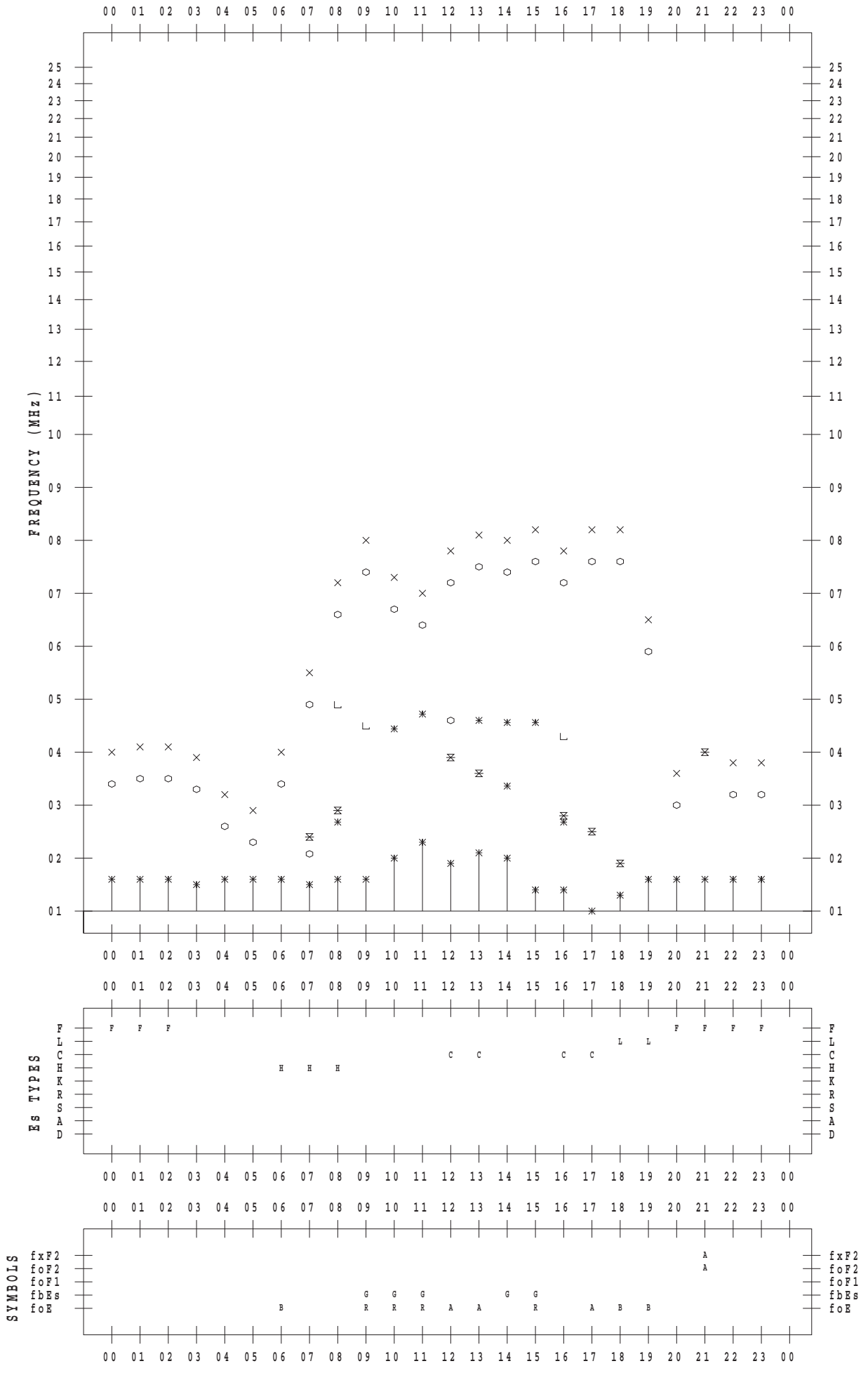
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/24

135 °E MEAN TIME



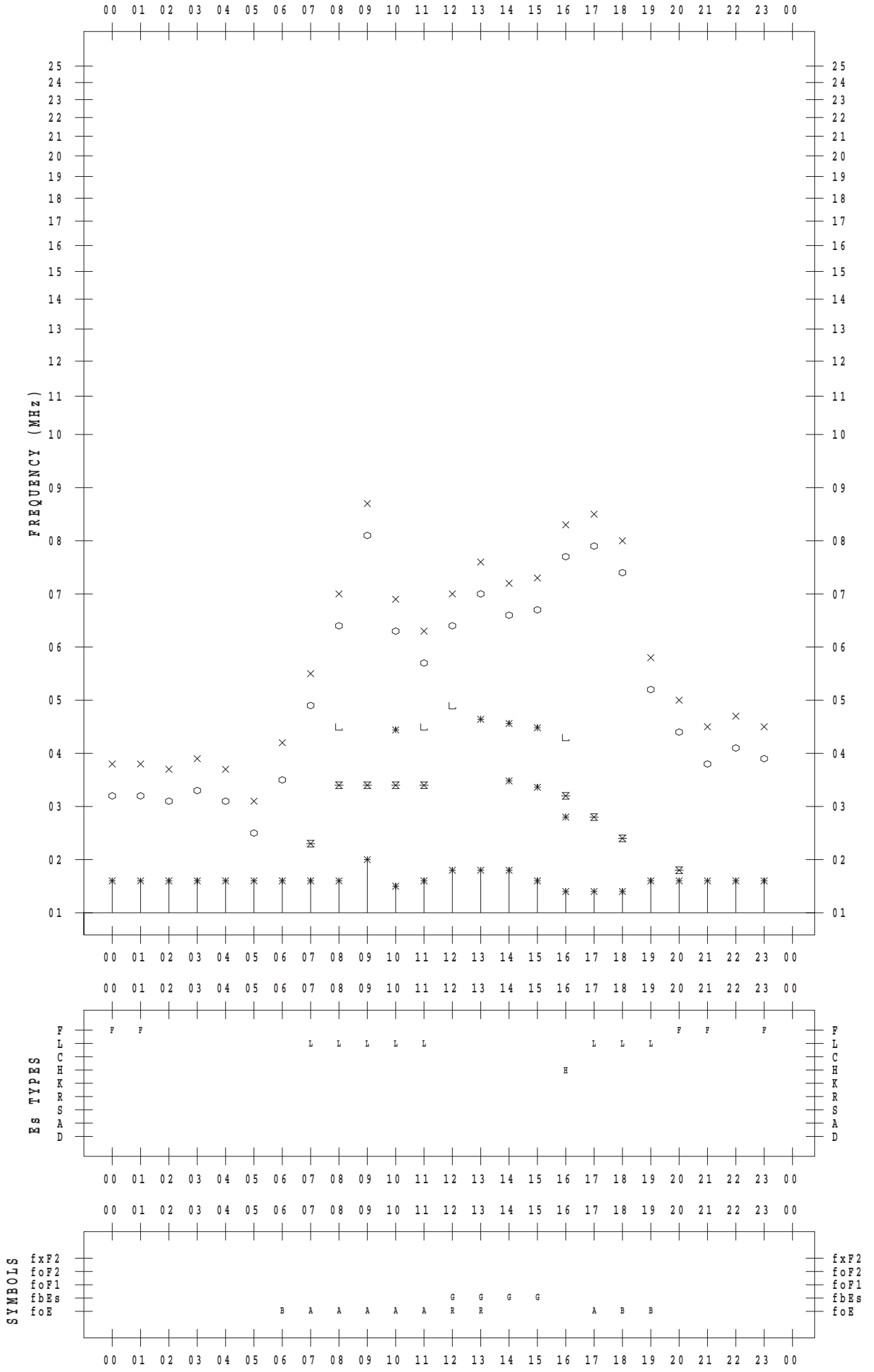
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/25

135 °E MEAN TIME



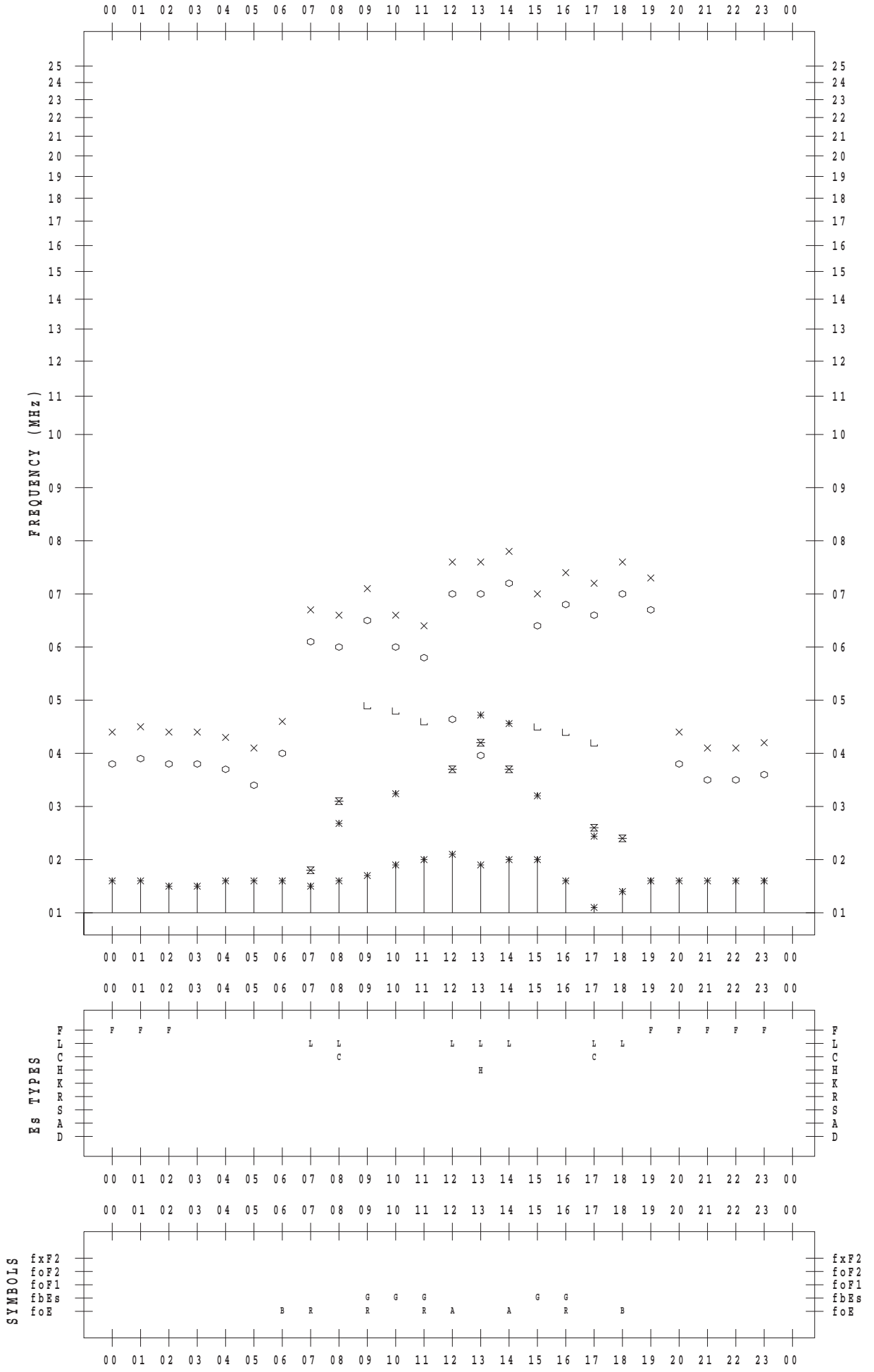
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/26

135 °E MEAN TIME



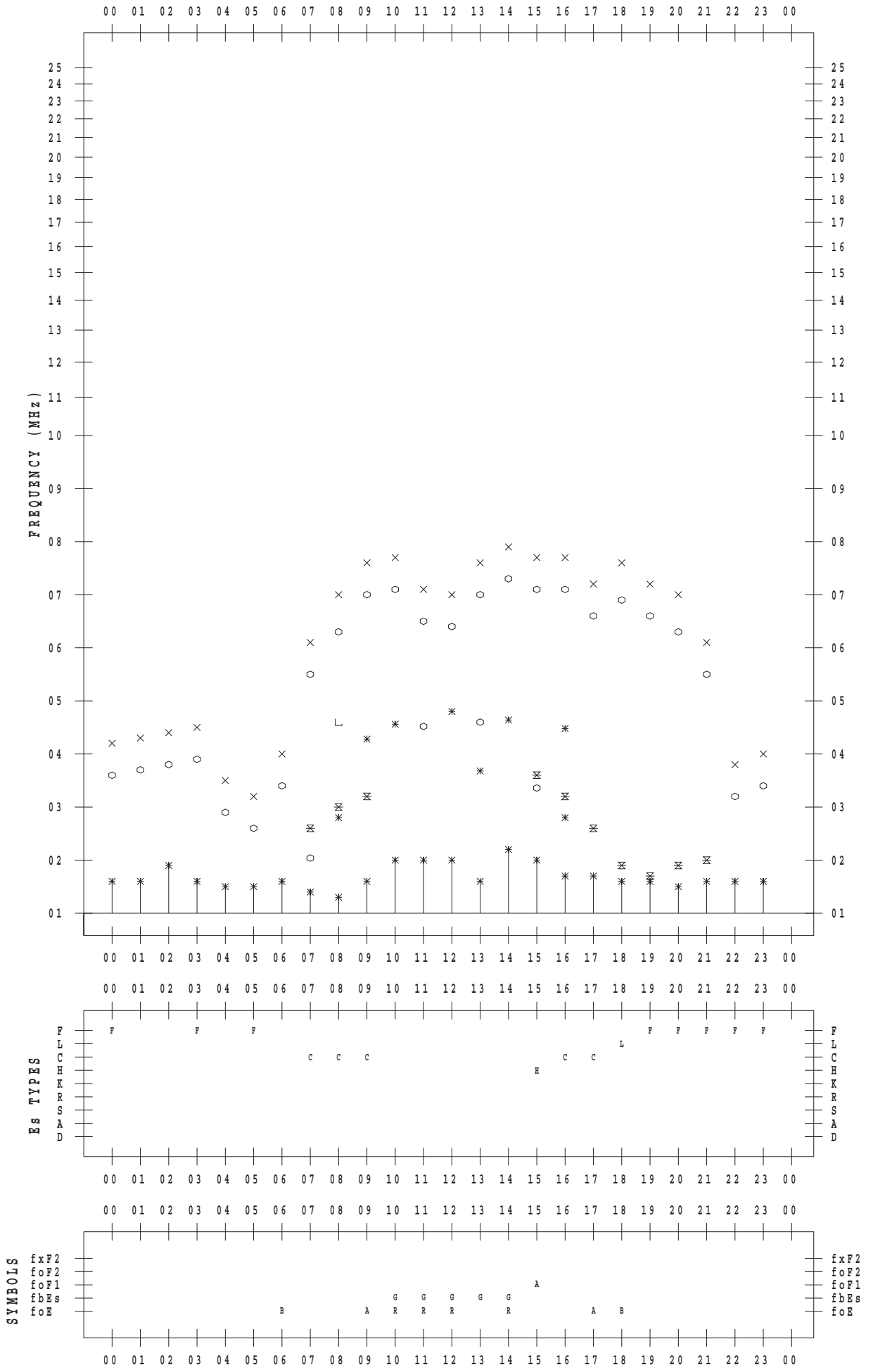
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/27

135 °E MEAN TIME



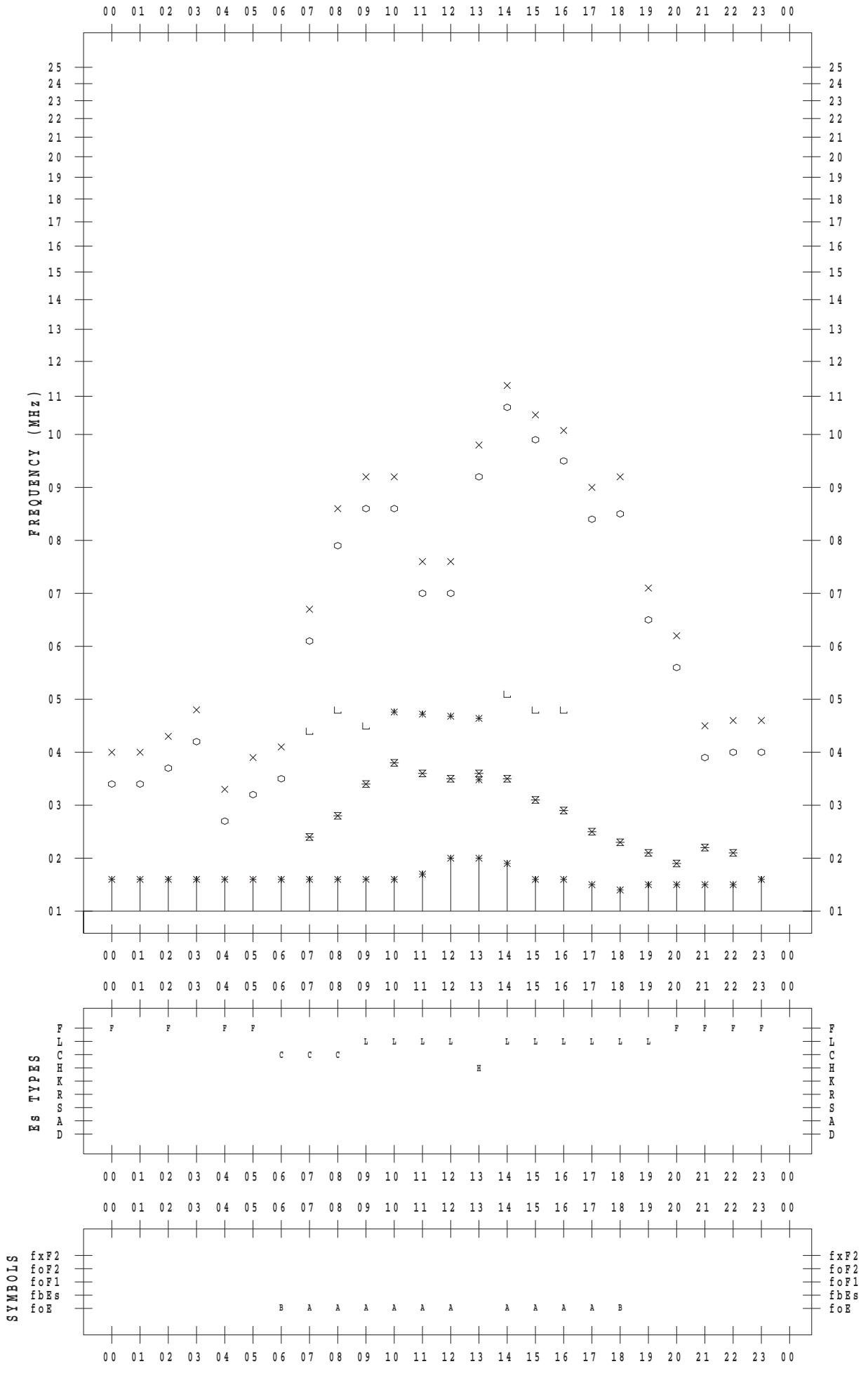
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/28

135 °E MEAN TIME



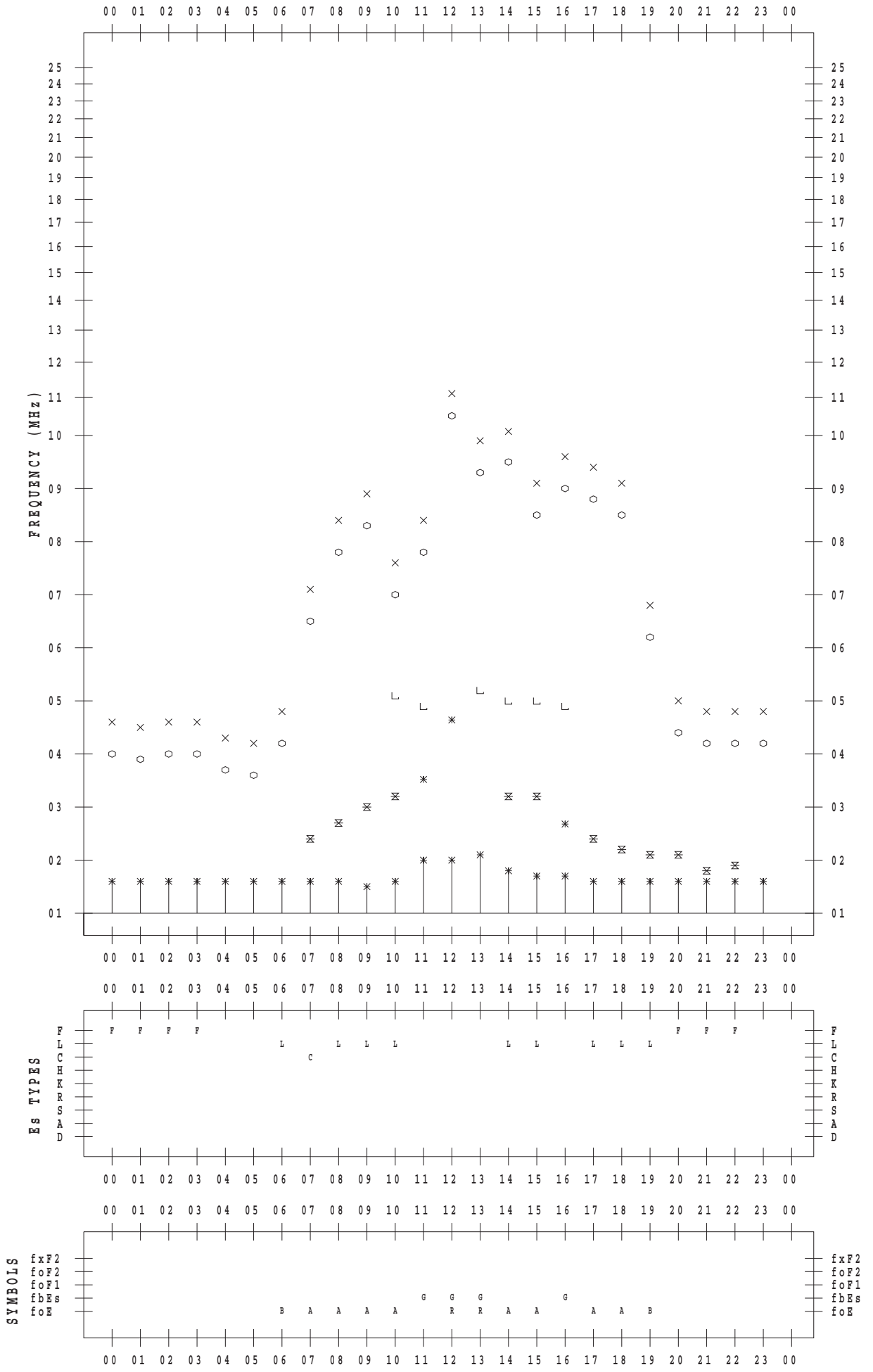
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/29

135 °E MEAN TIME



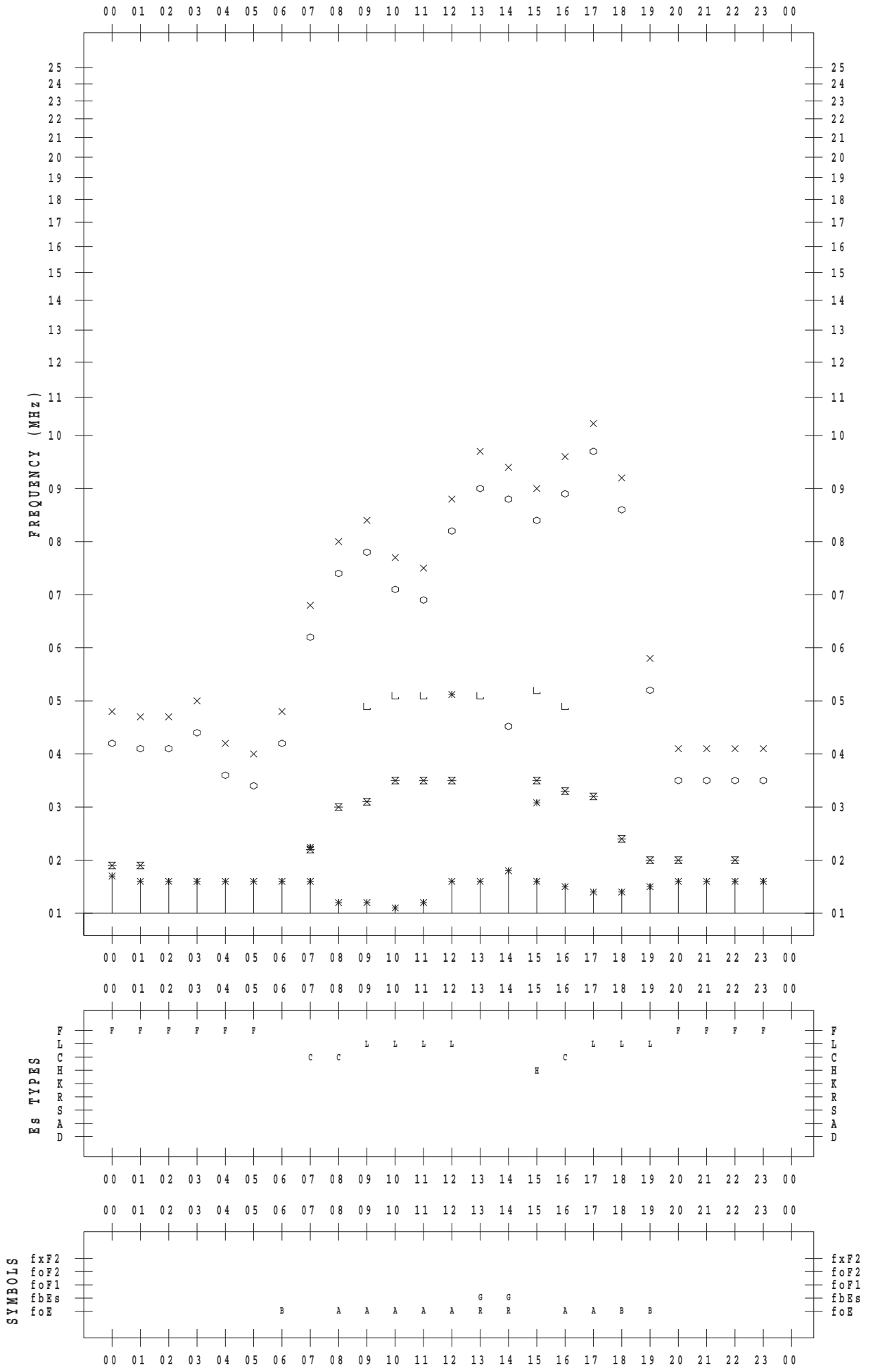
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 9/30

135 °E MEAN TIME



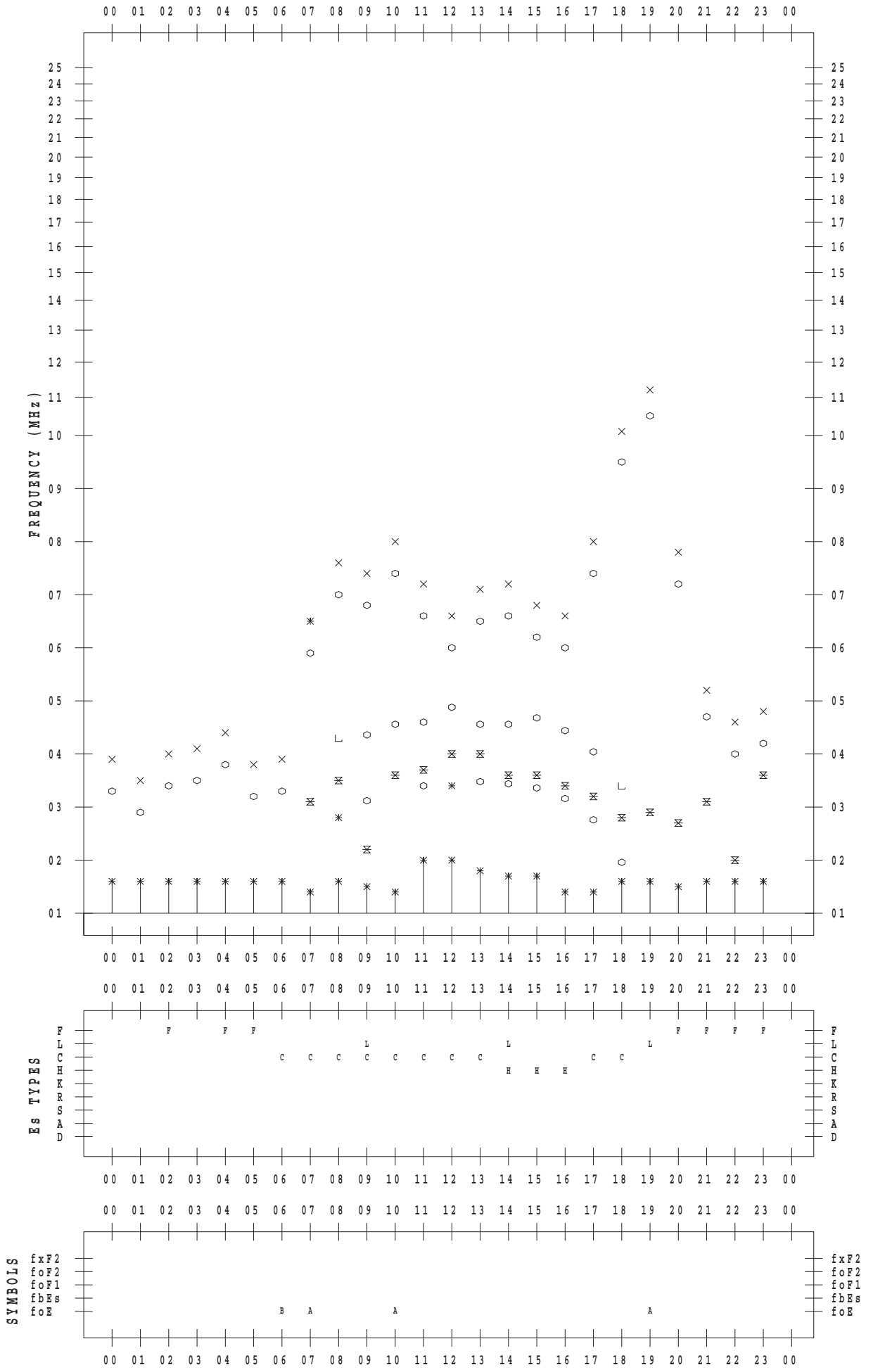
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 1

135 °E MEAN TIME



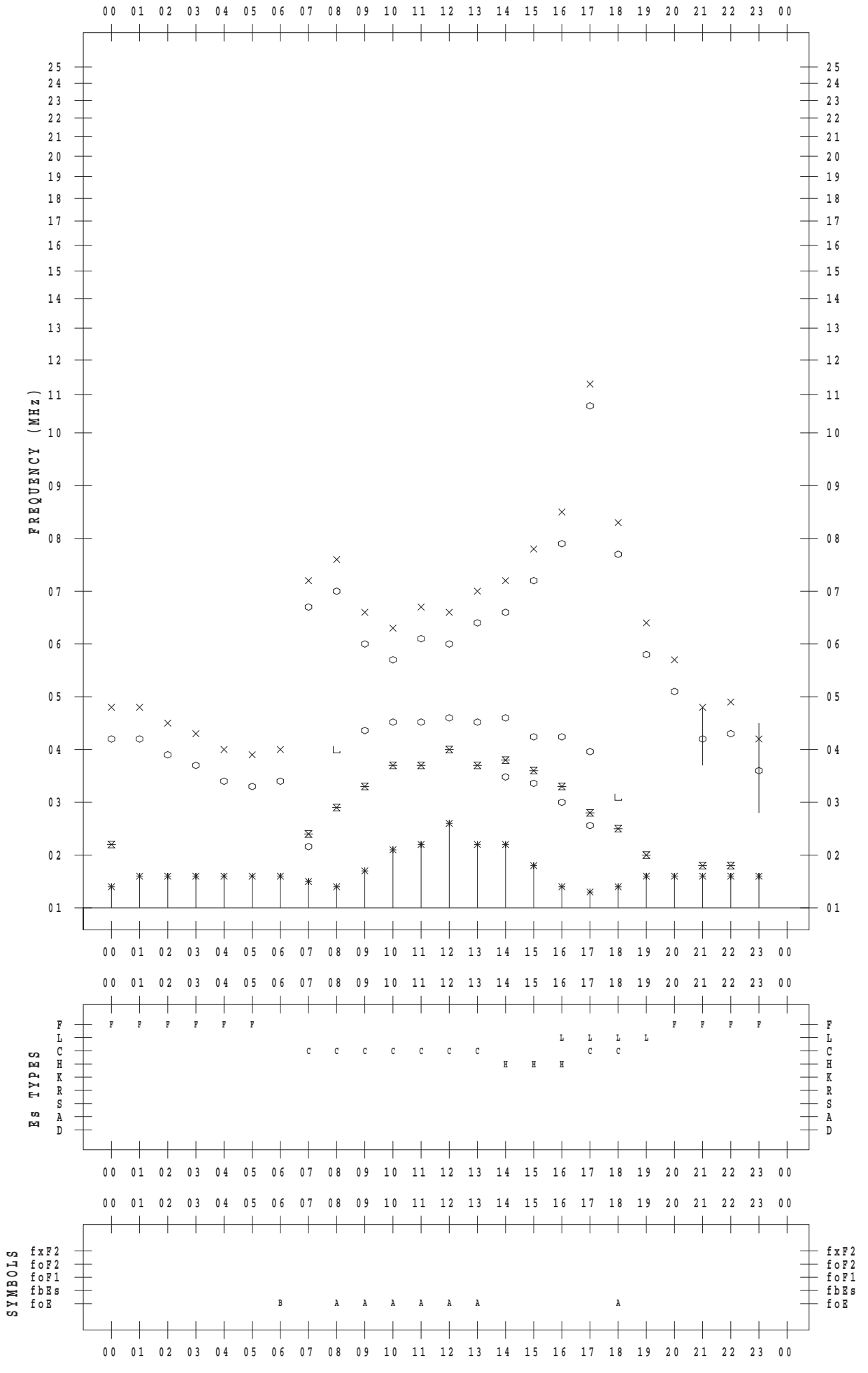
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 2

135 °E MEAN TIME



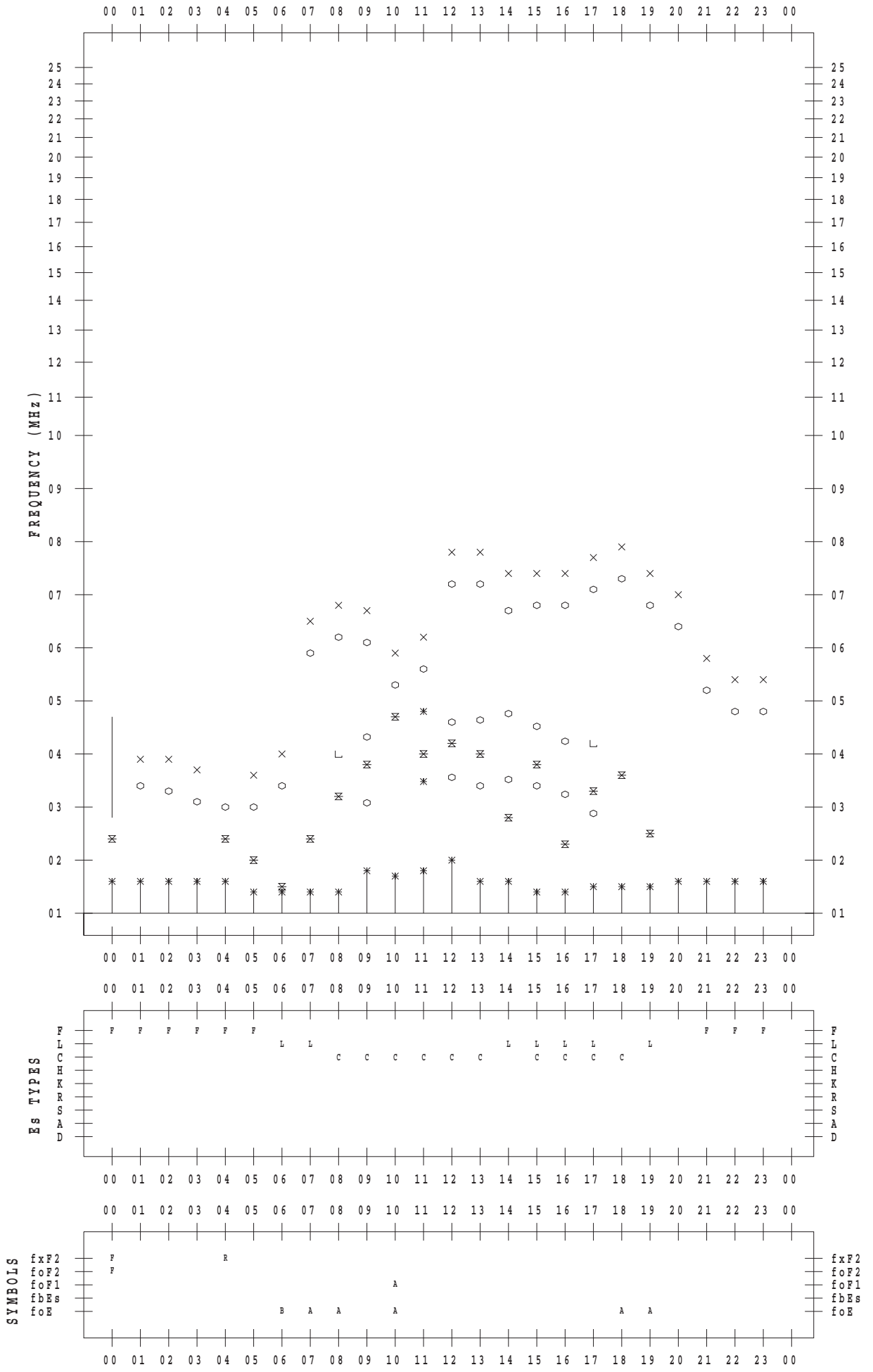
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 3

135 °E MEAN TIME



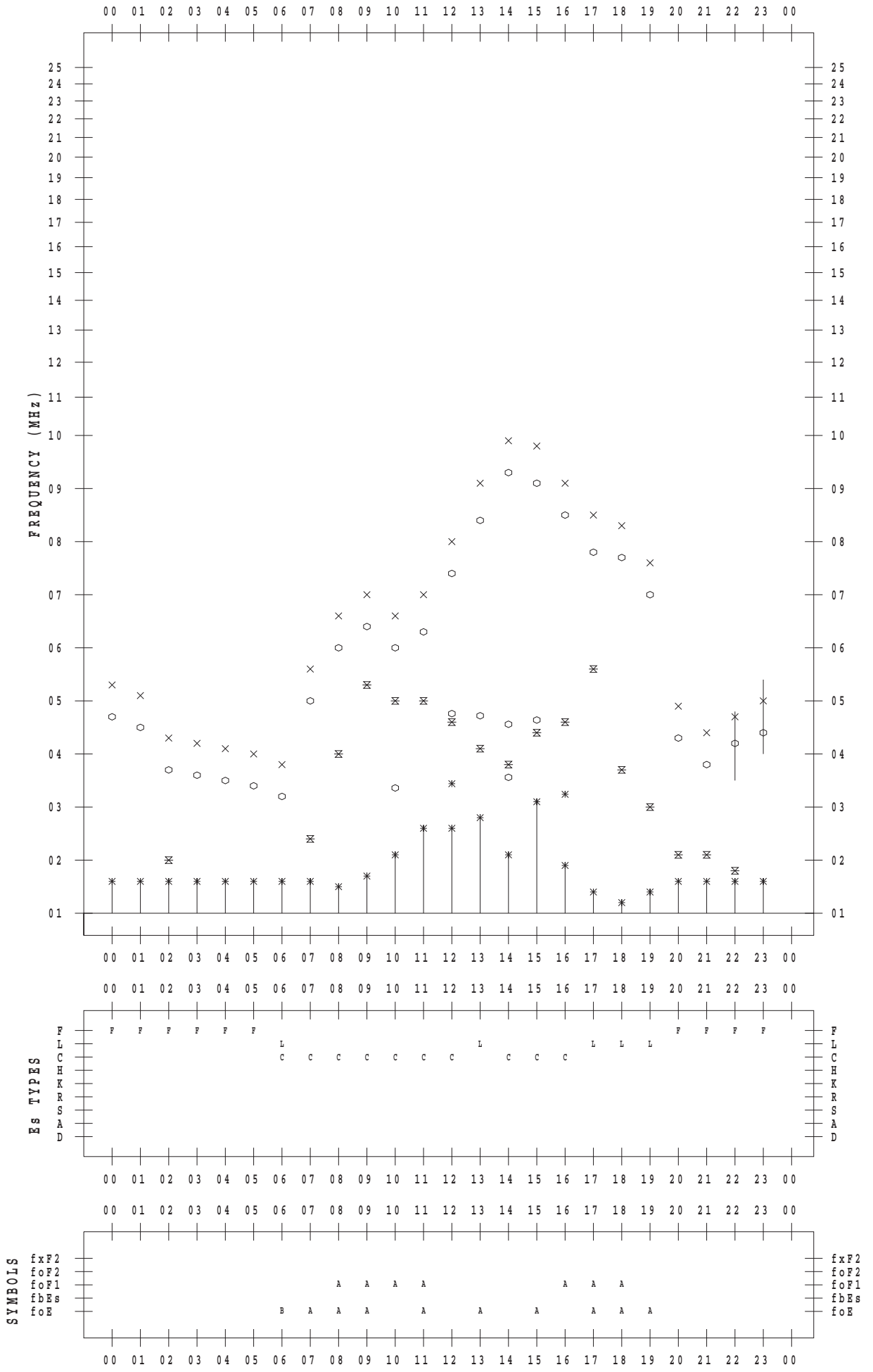
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 4

135 °E MEAN TIME



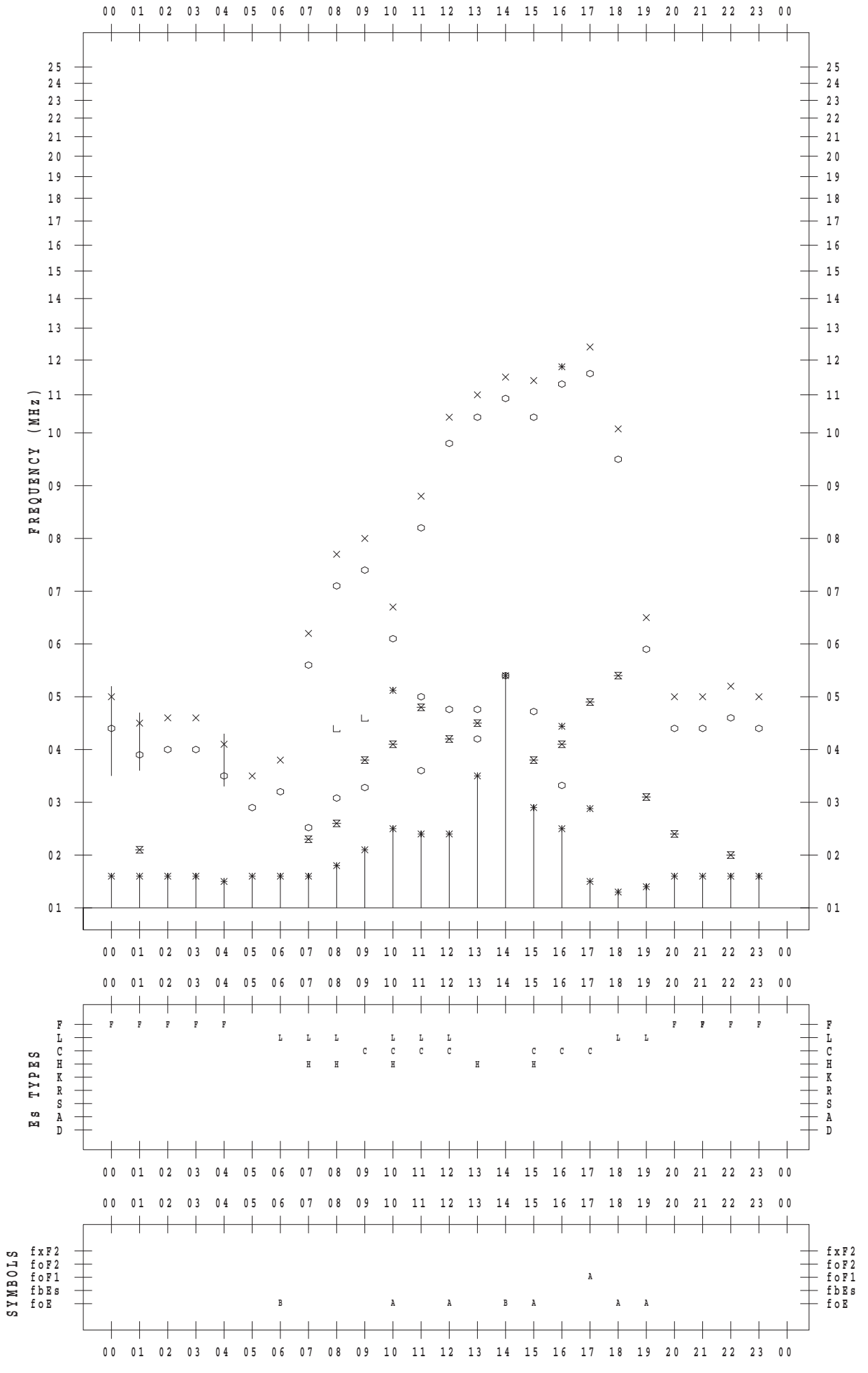
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 5

135 °E MEAN TIME



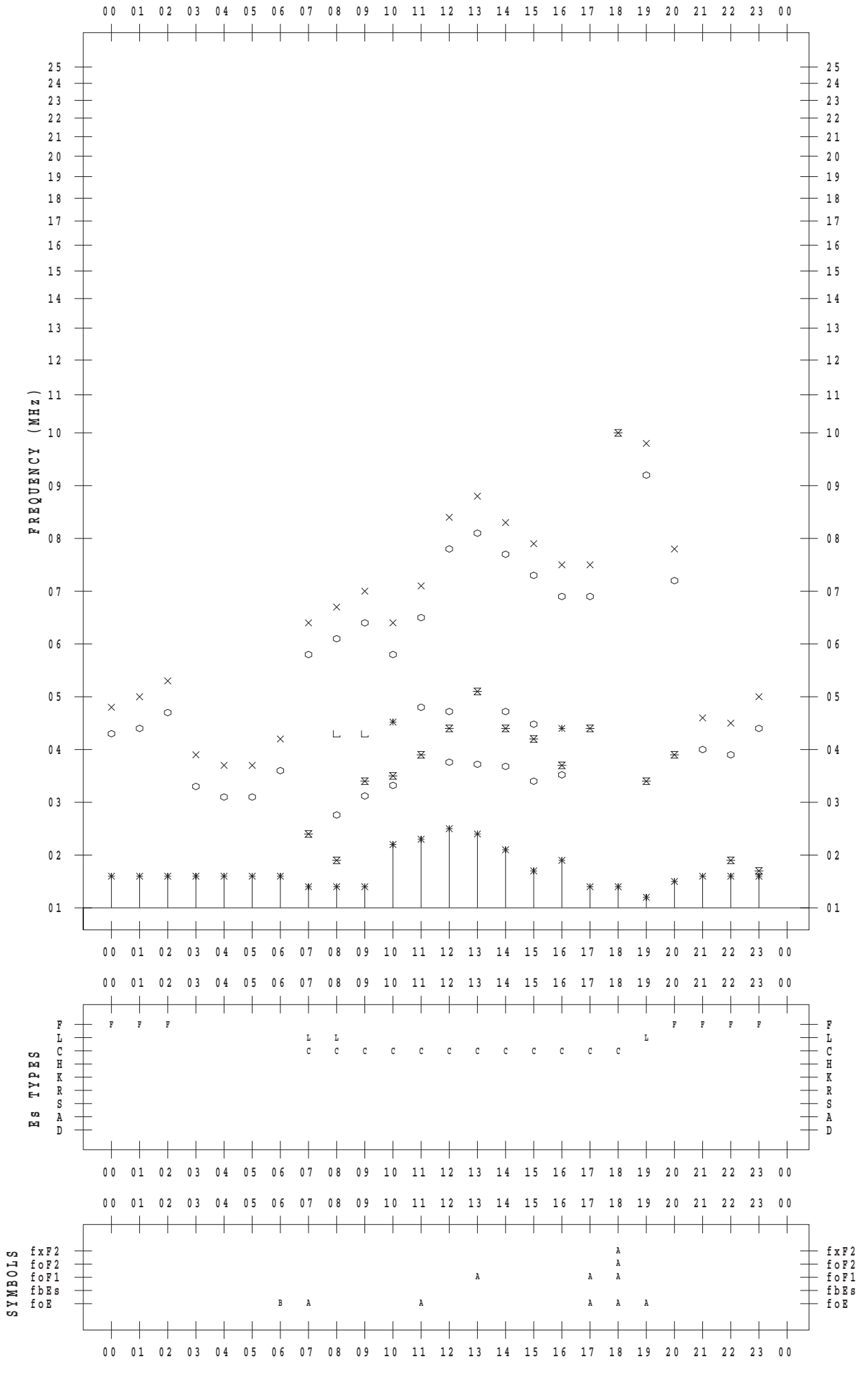
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 6

135 °E MEAN TIME



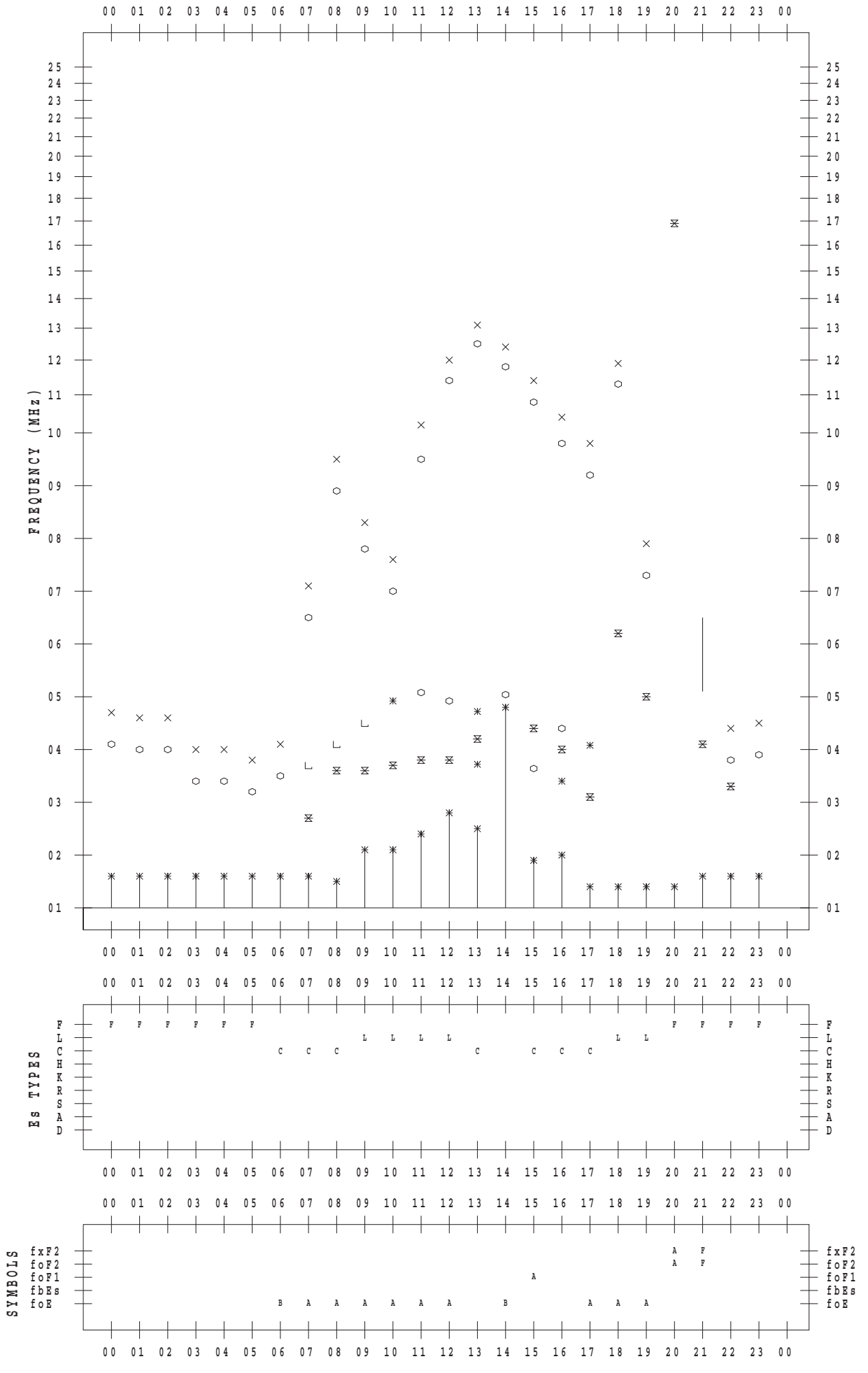
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 7

135 °E MEAN TIME



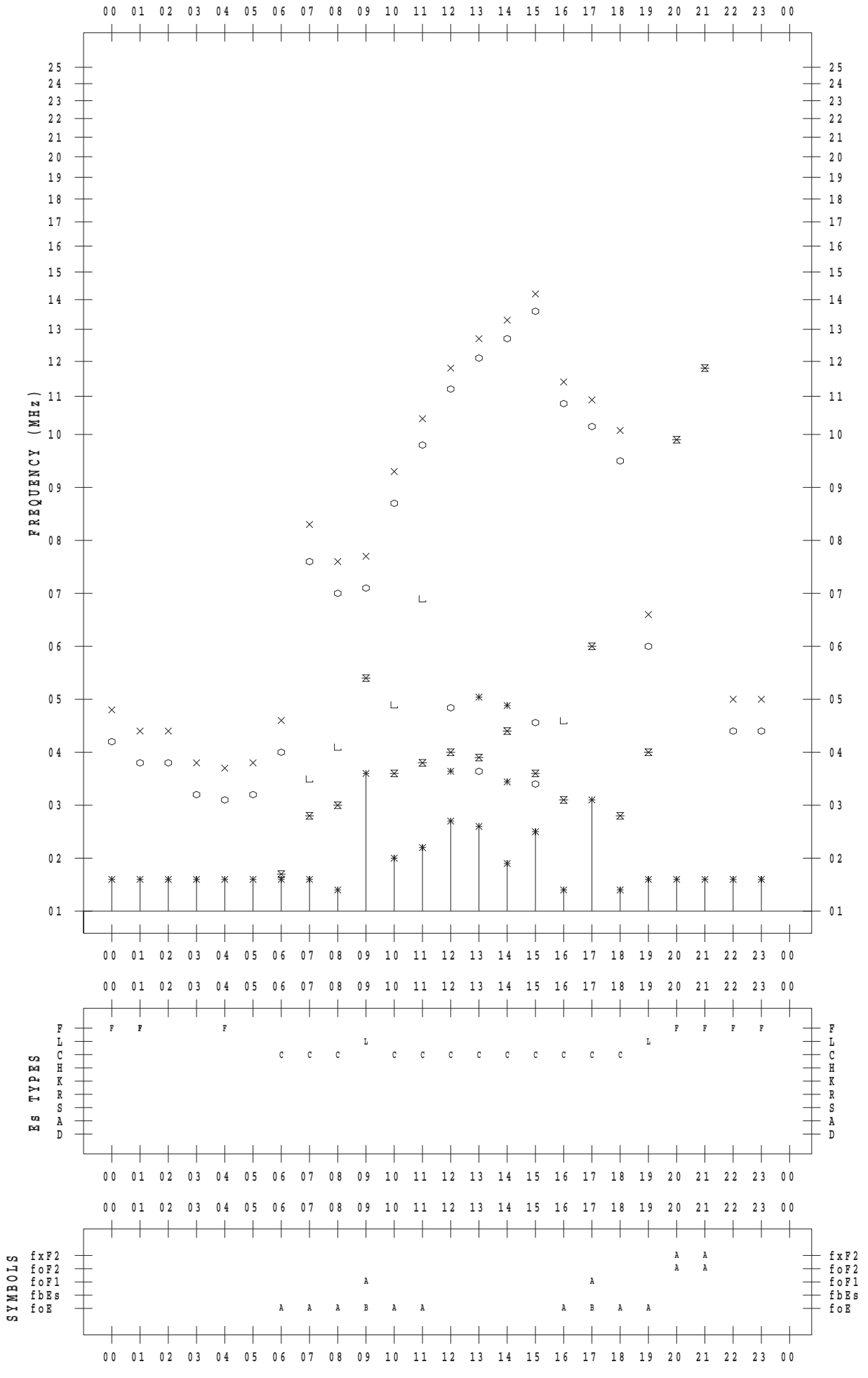
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 8

135 °E MEAN TIME



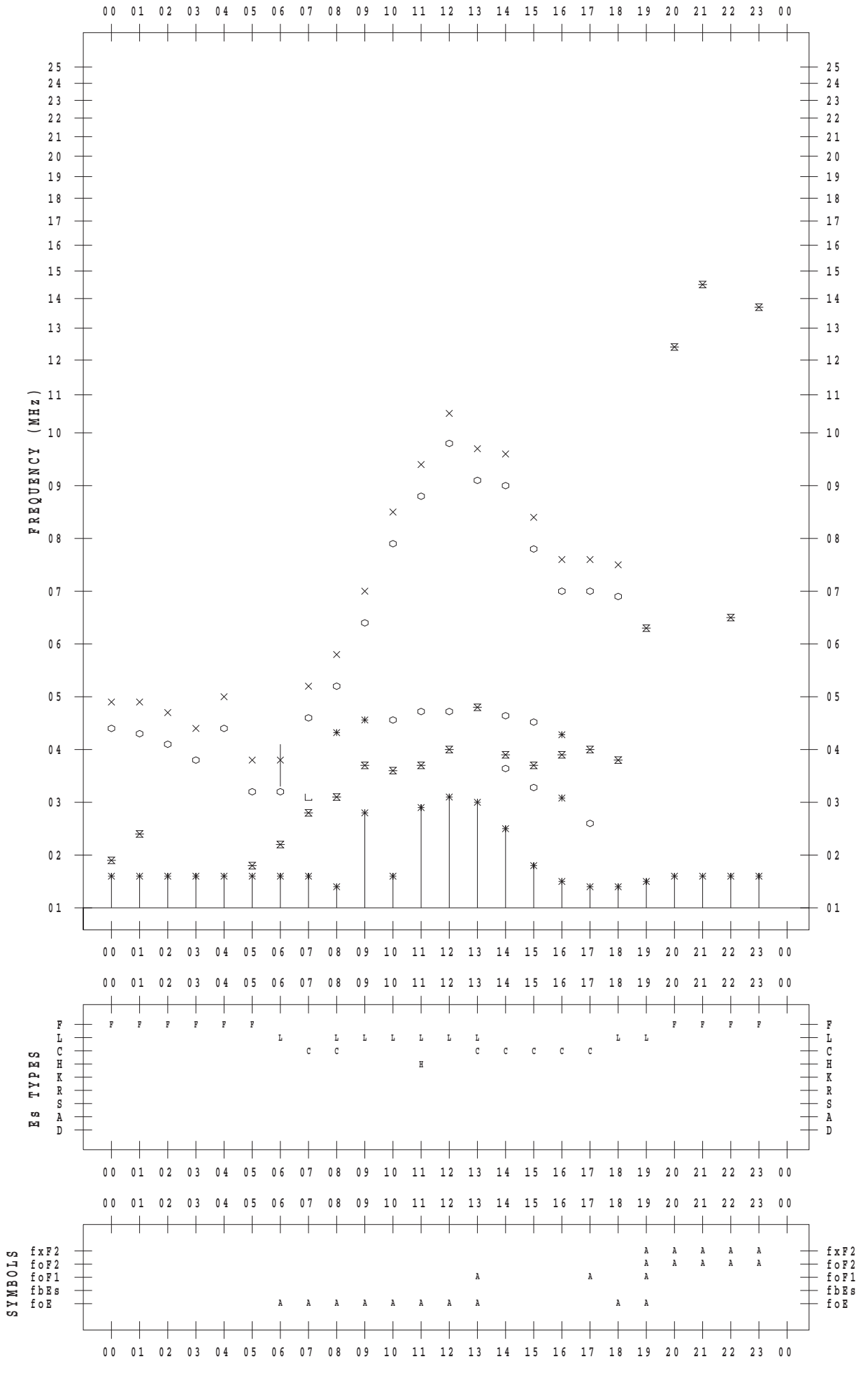
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/ 9

135 °E MEAN TIME



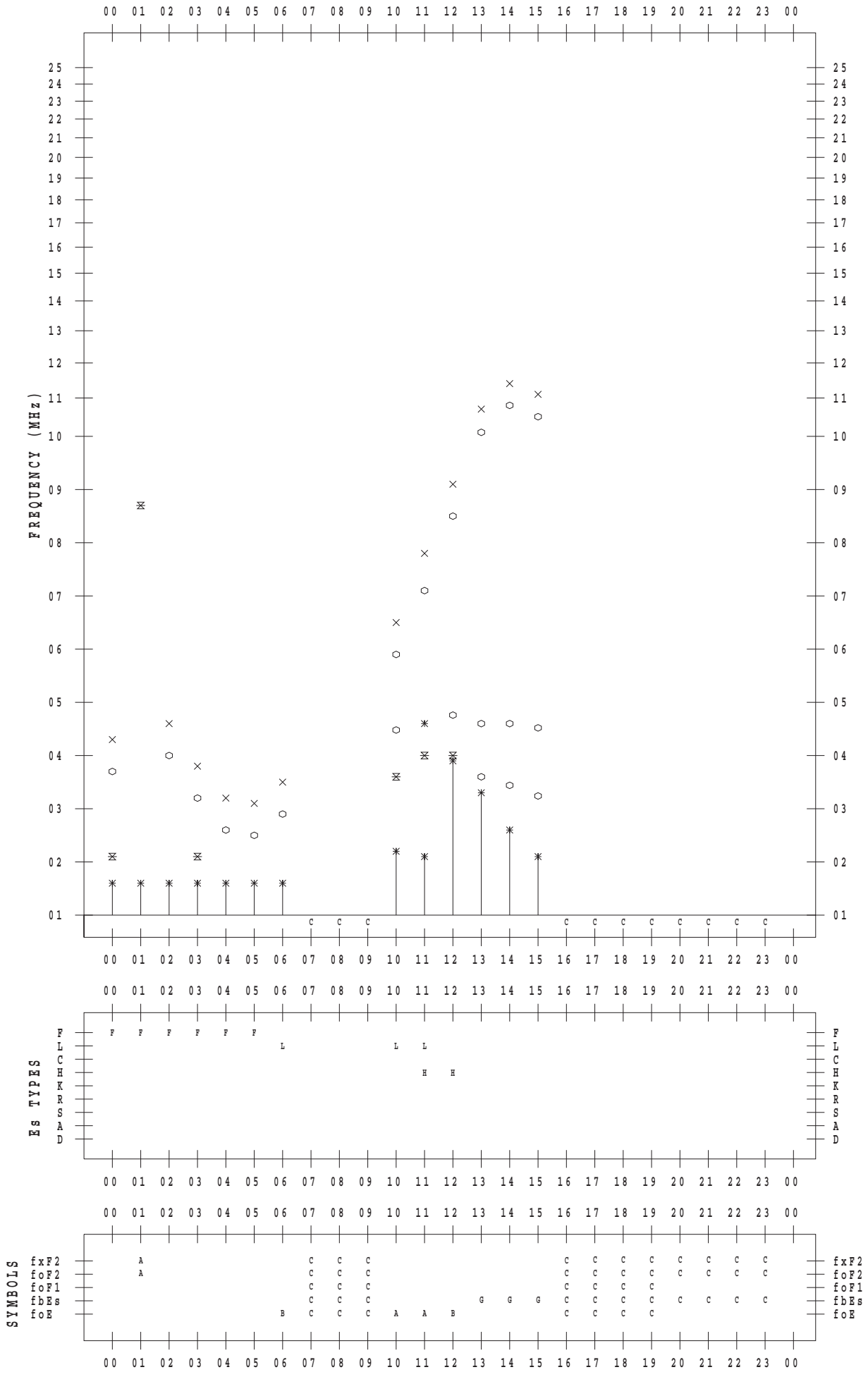
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/10

135 °E MEAN TIME



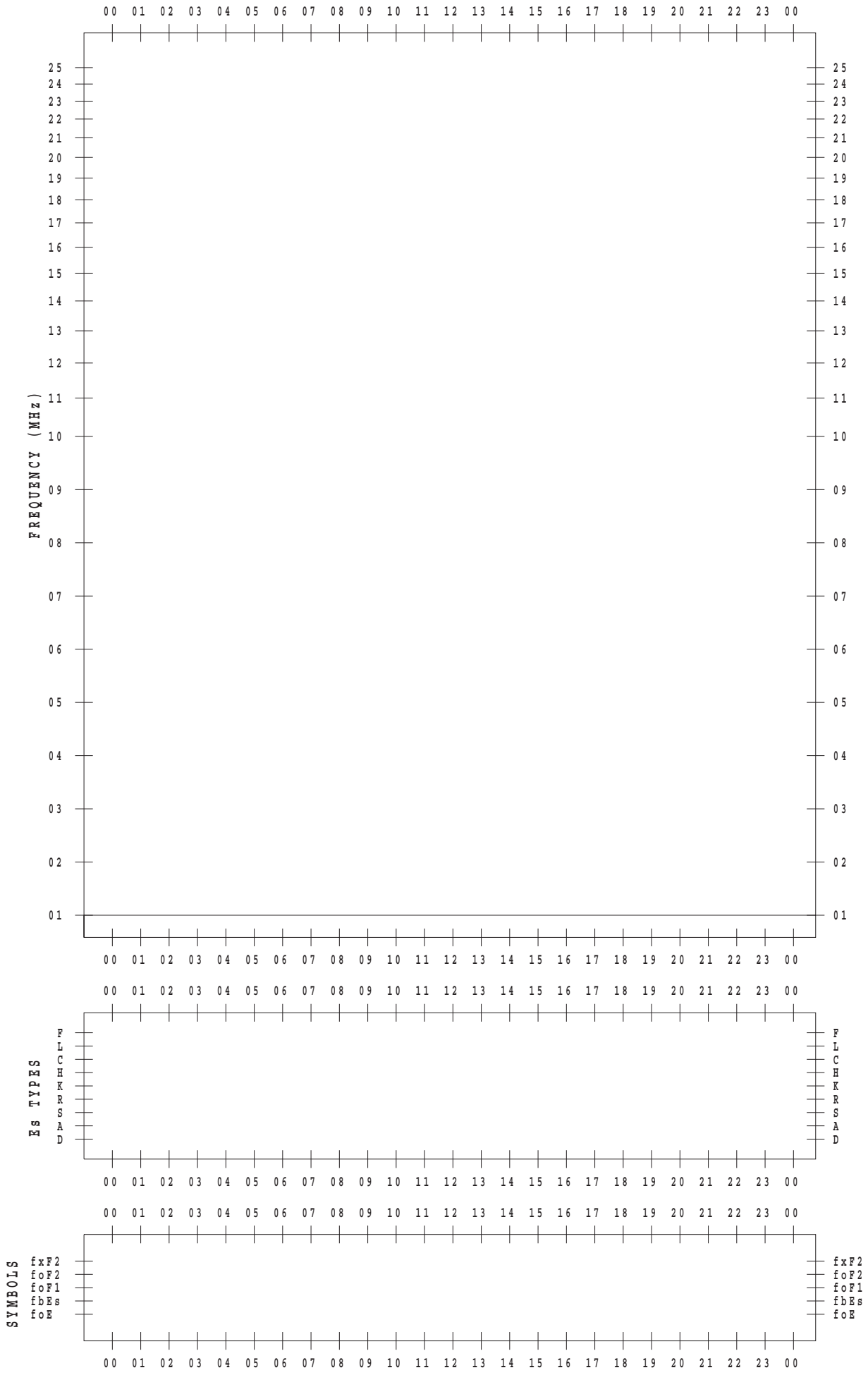
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/11

135 °E MEAN TIME



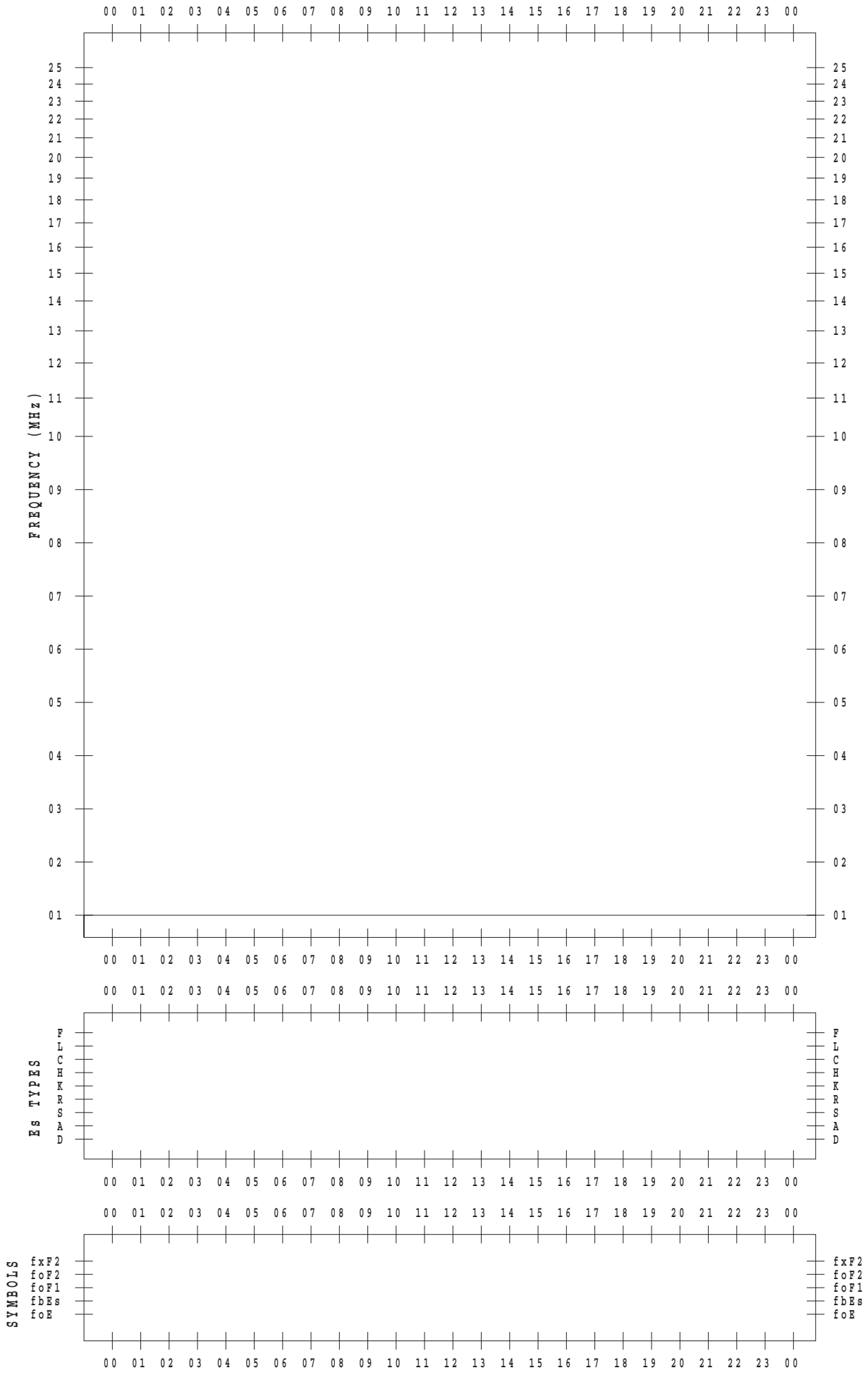
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/12

135 °E MEAN TIME



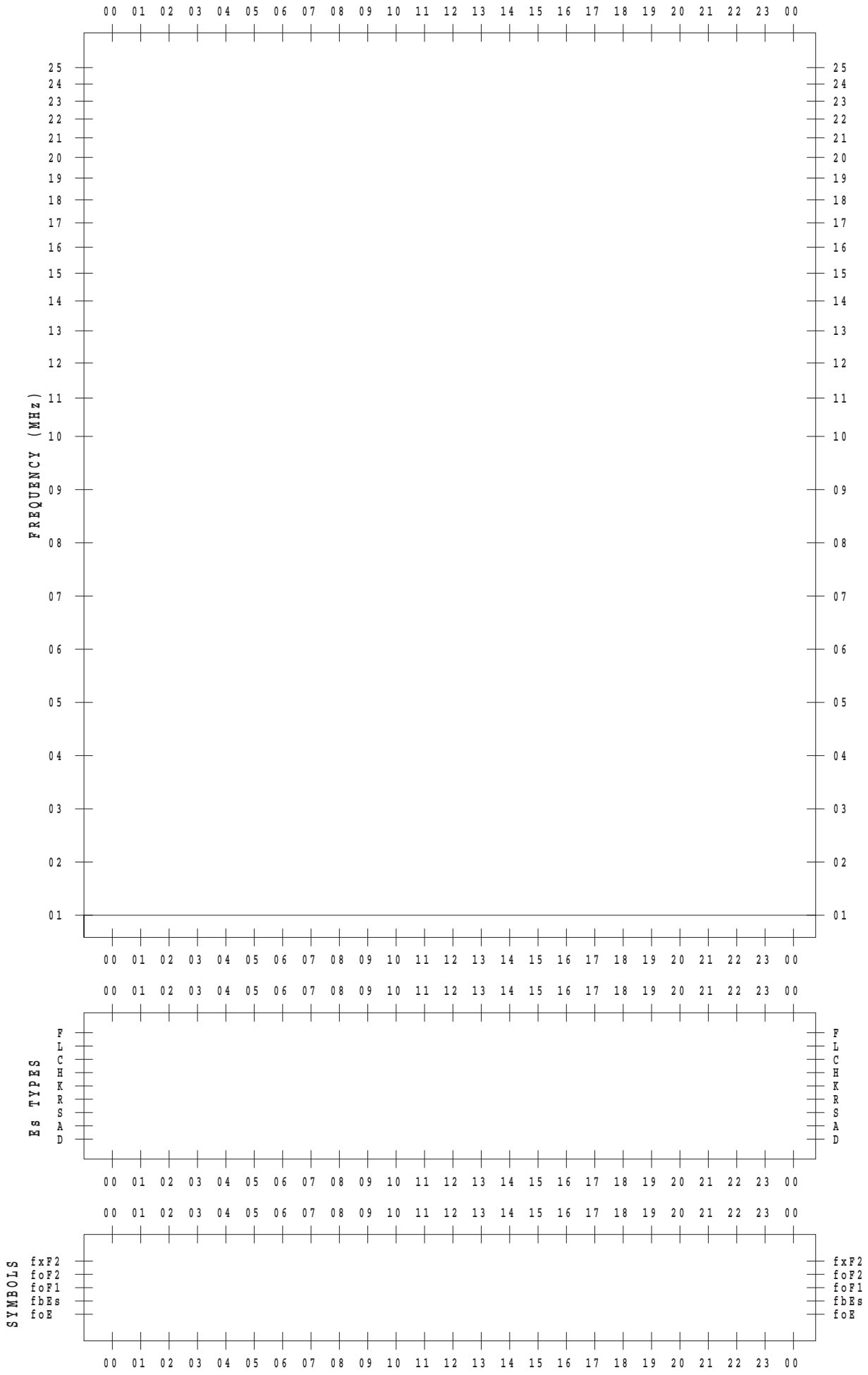
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/13

135 °E MEAN TIME



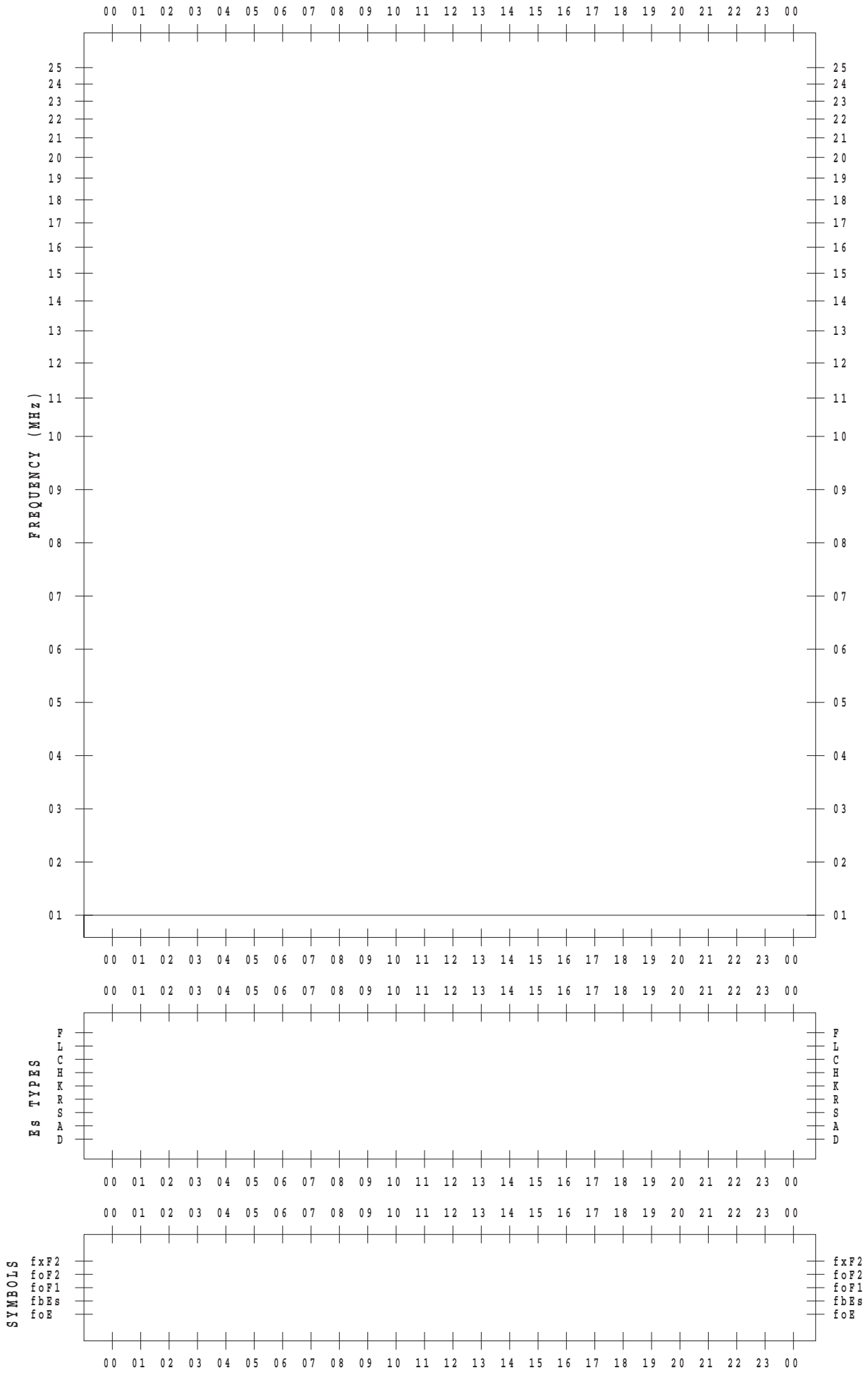
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/14

135 °E MEAN TIME



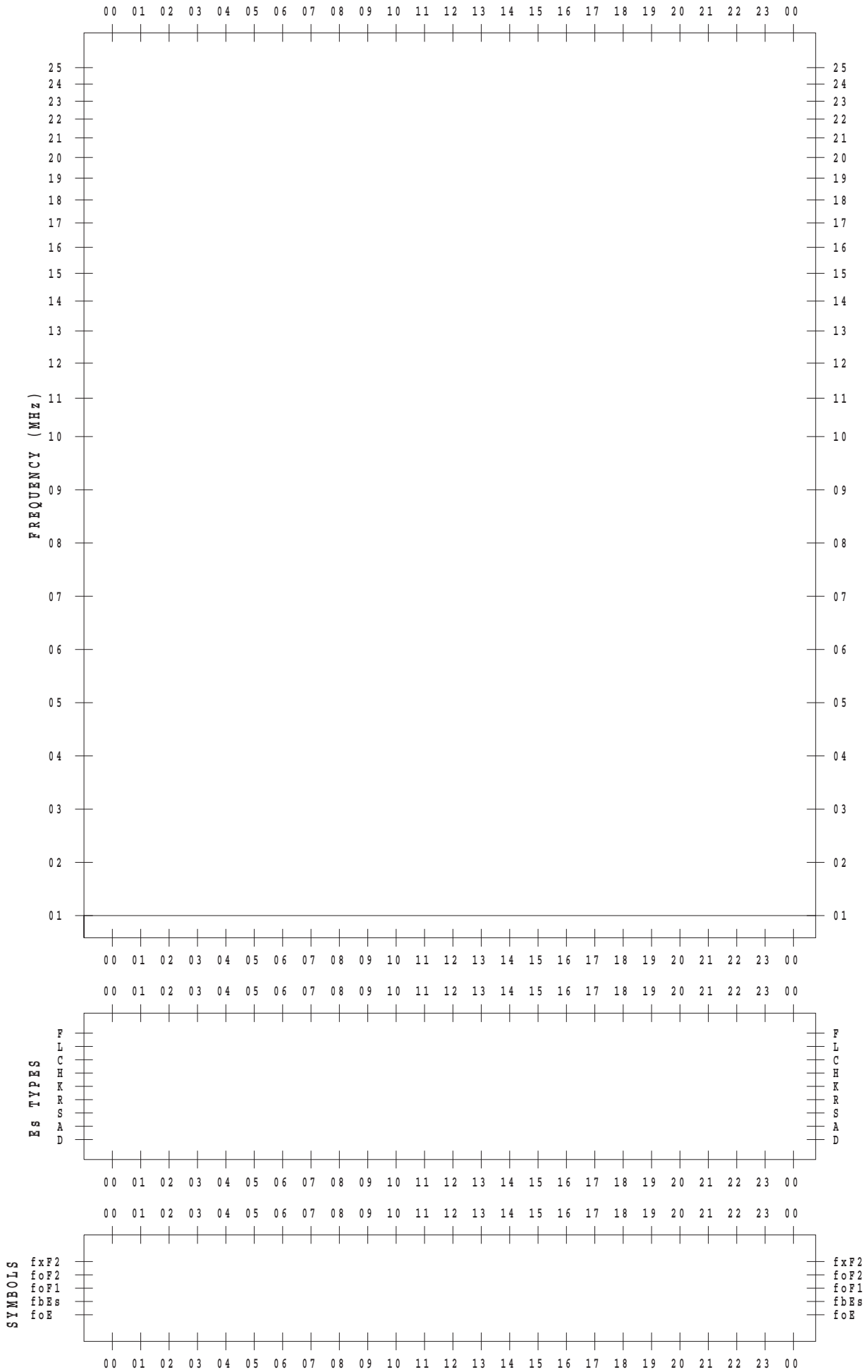
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/15

135 °E MEAN TIME



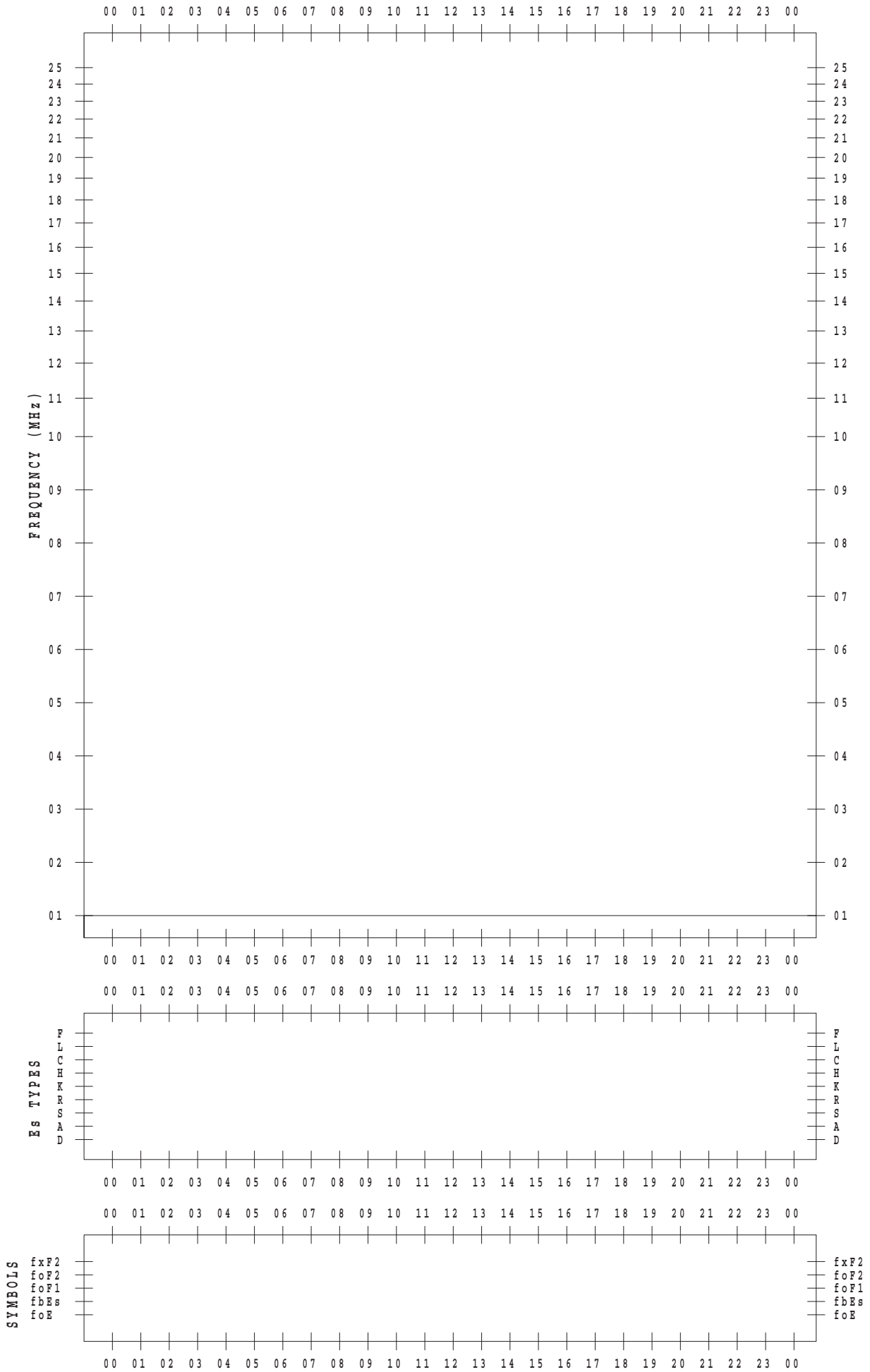
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/16

135 °E MEAN TIME



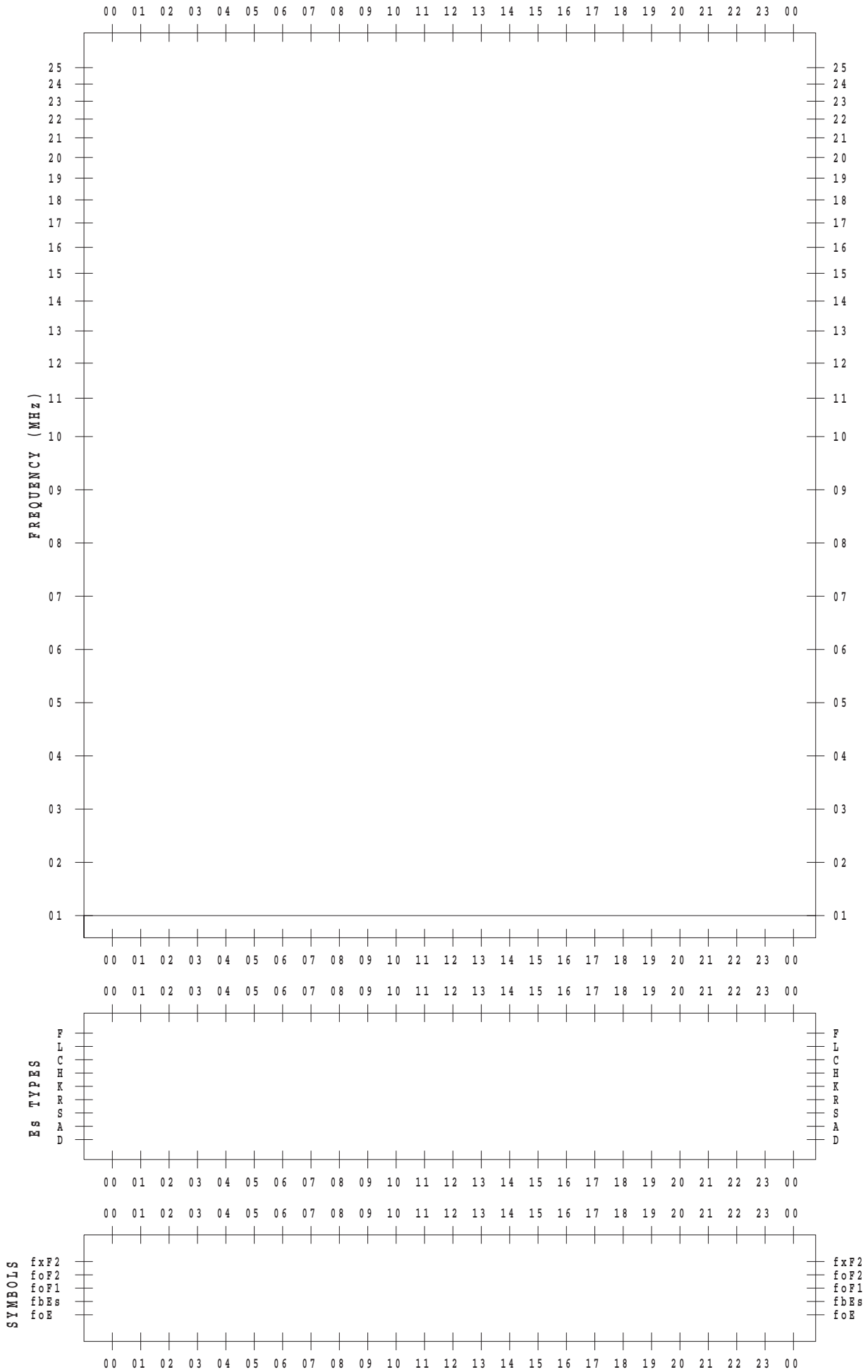
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/17

135 °E MEAN TIME



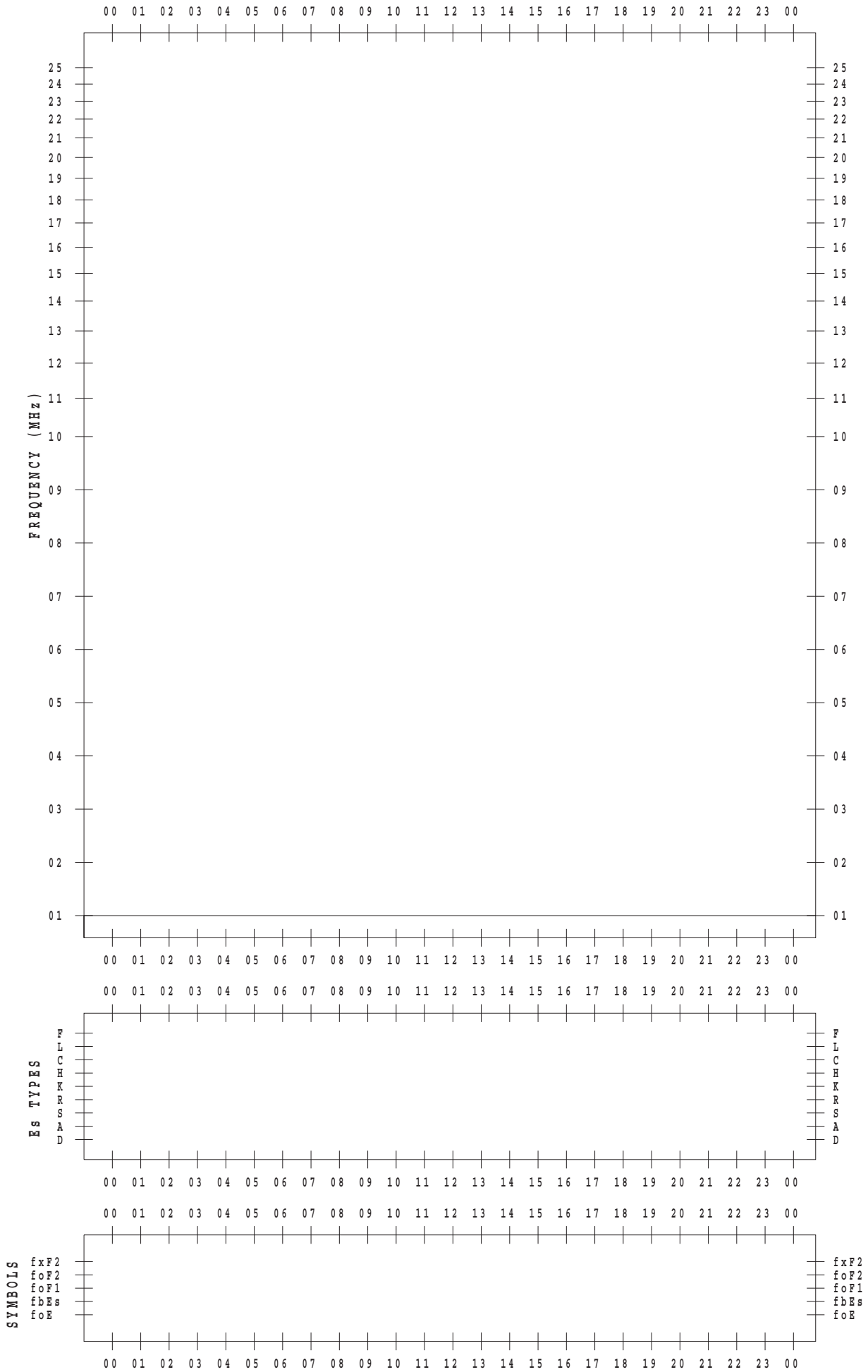
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/18

135 °E MEAN TIME



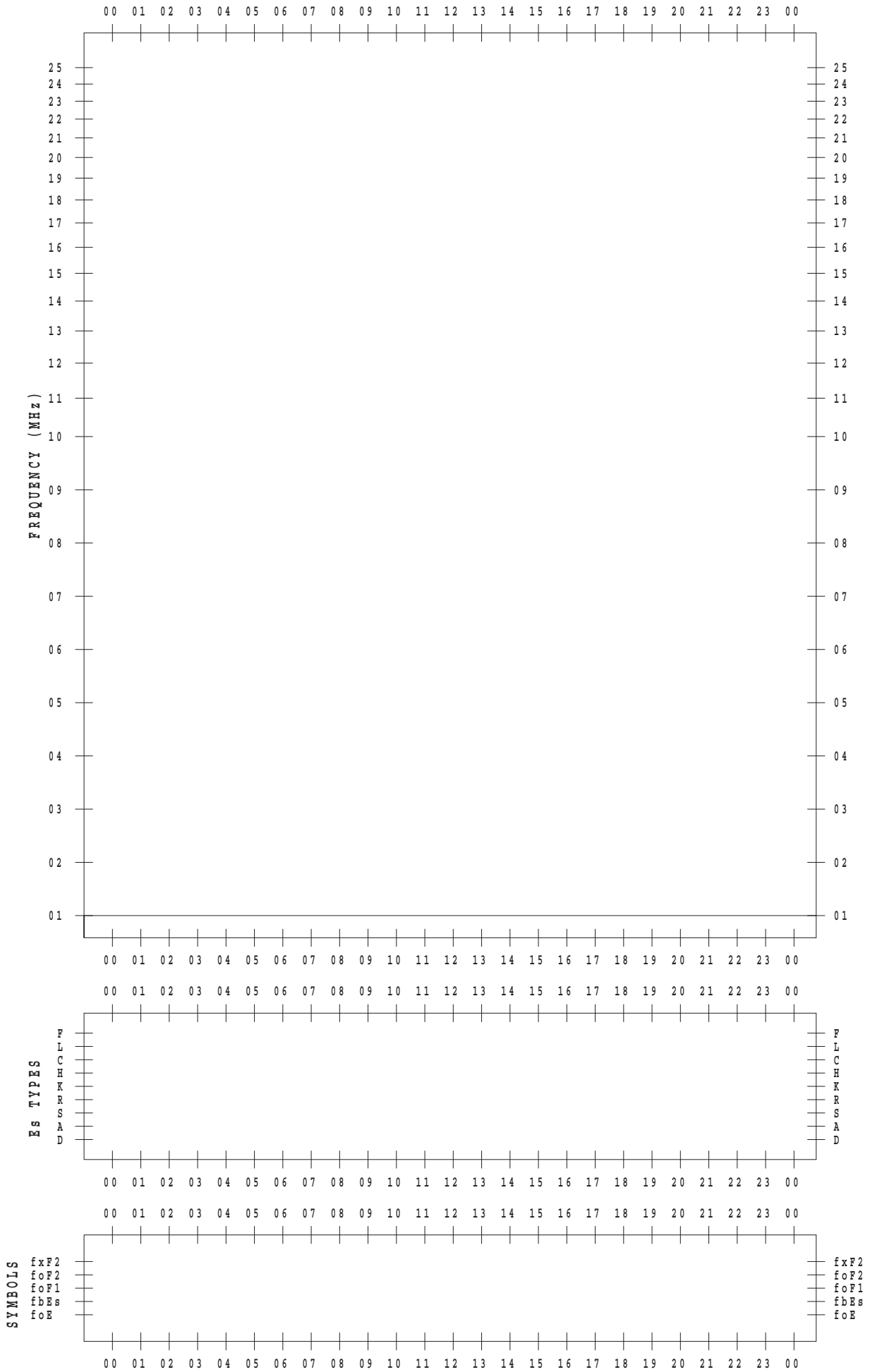
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/19

135 °E MEAN TIME



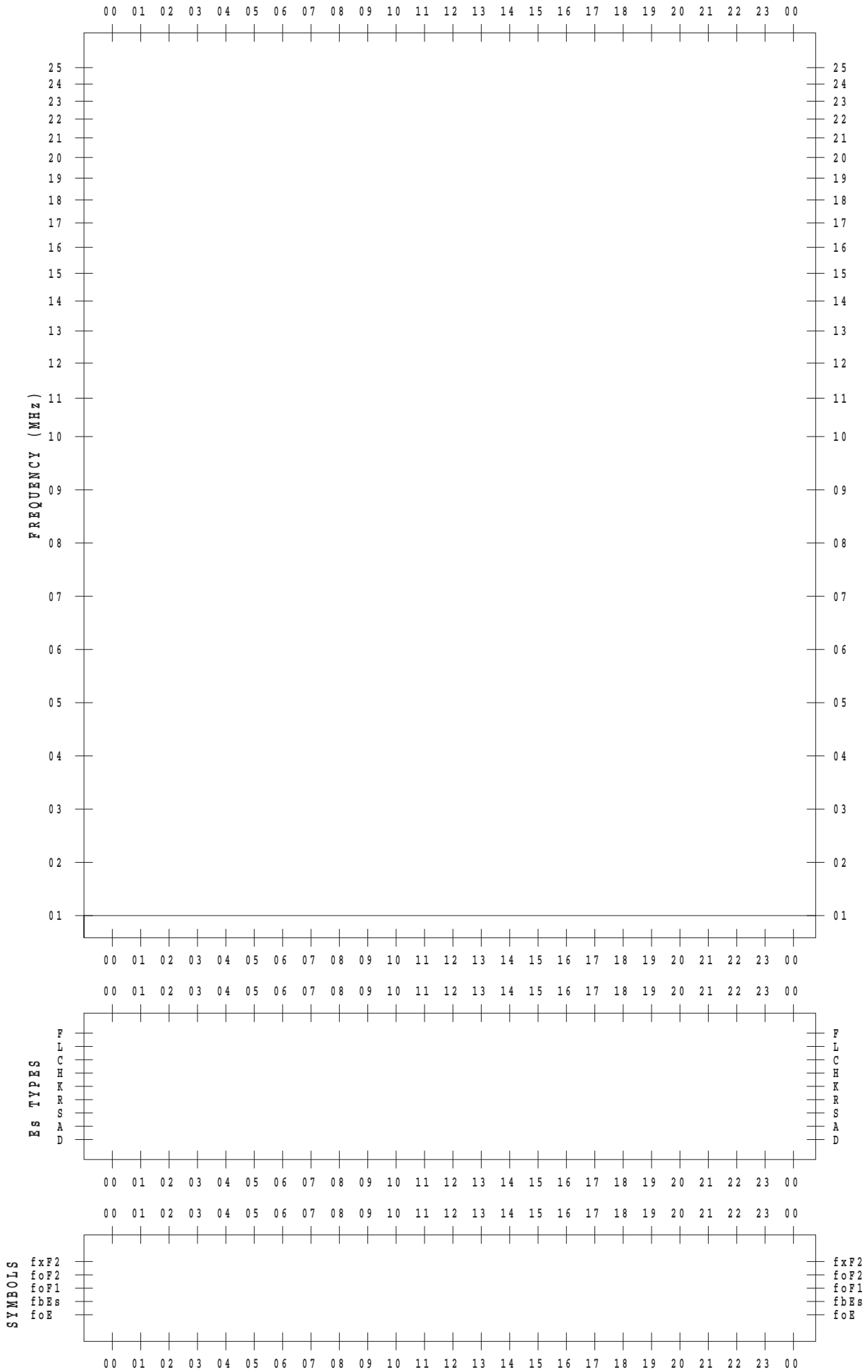
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/20

135 °E MEAN TIME



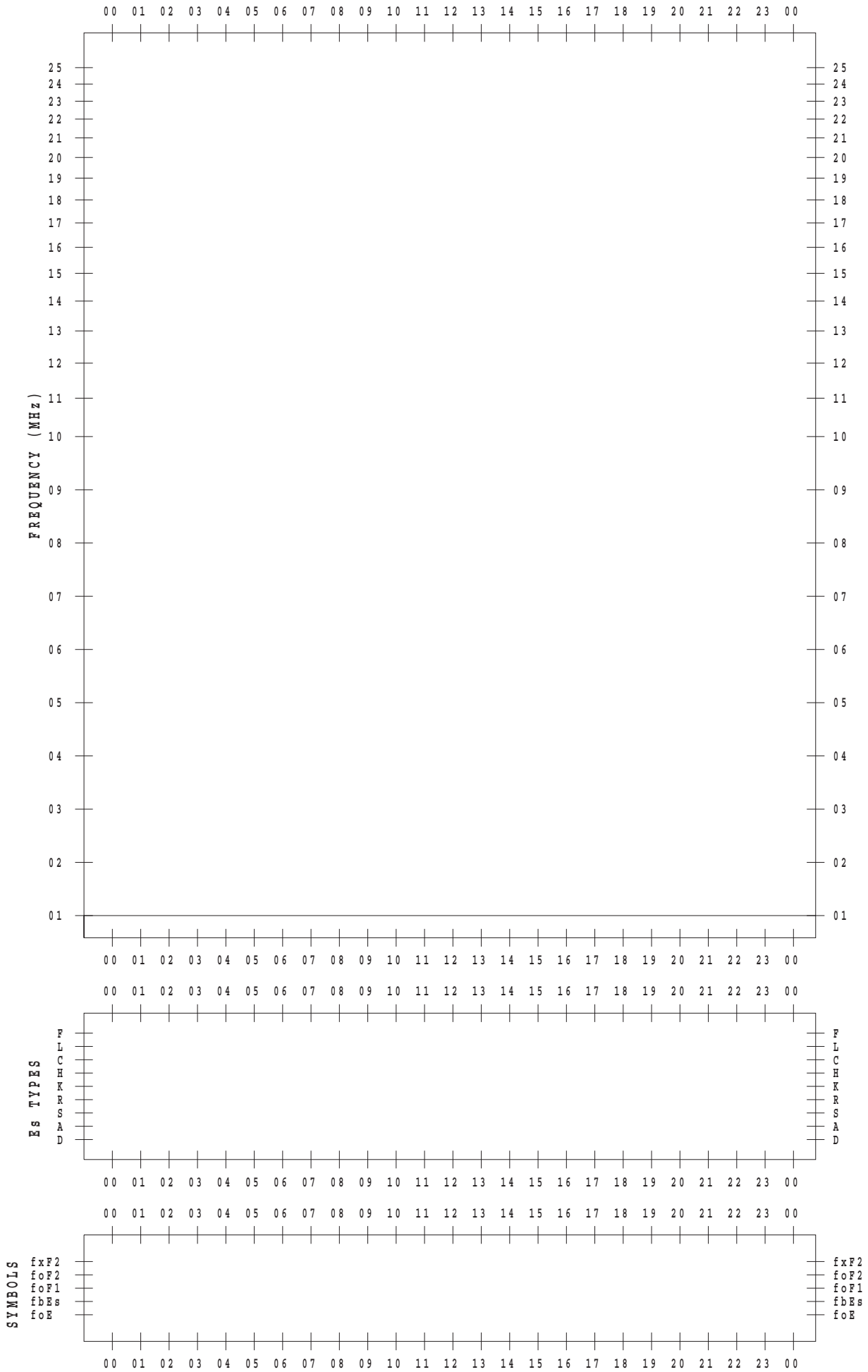
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/21

135 °E MEAN TIME



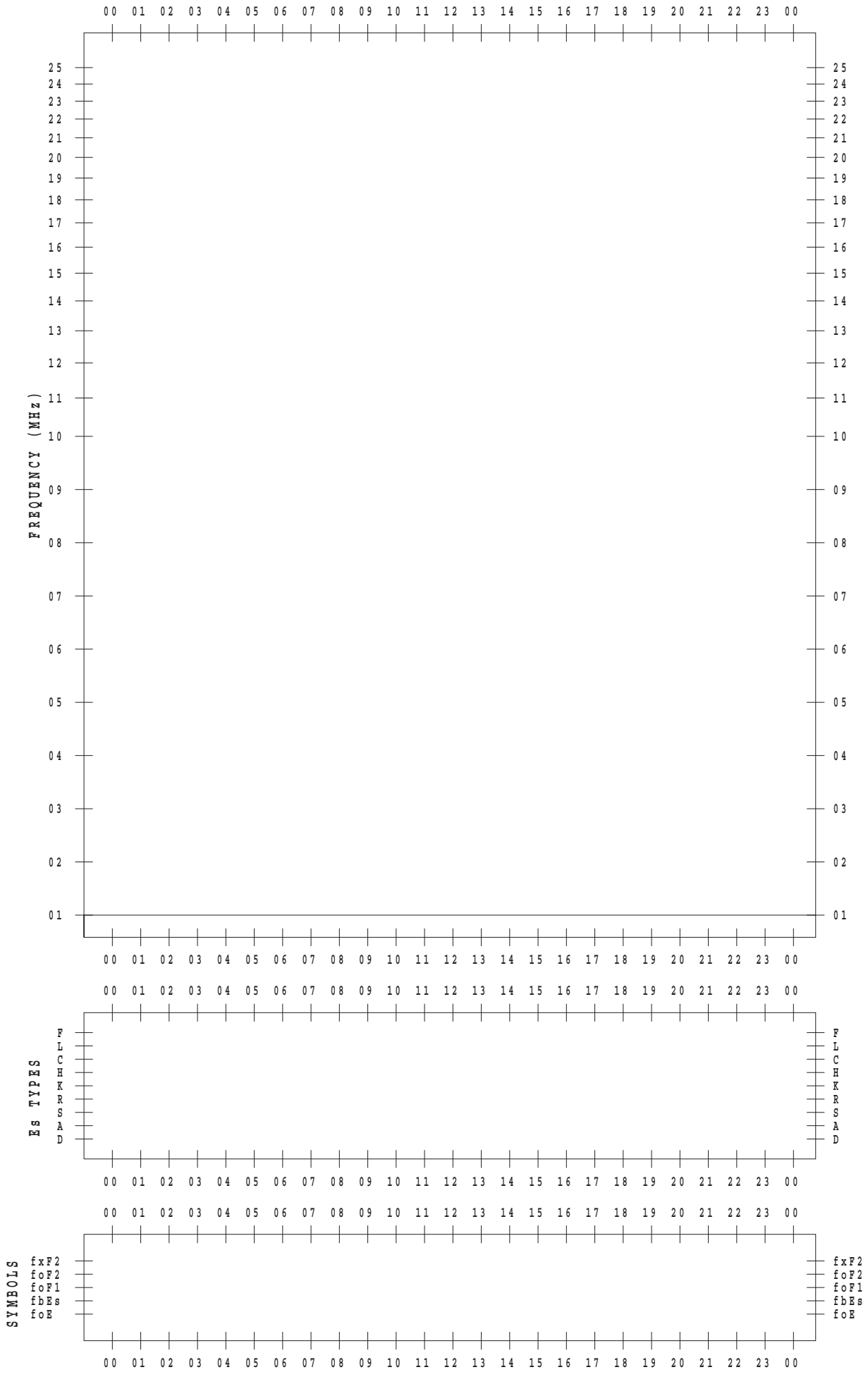
f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/22

135 °E MEAN TIME



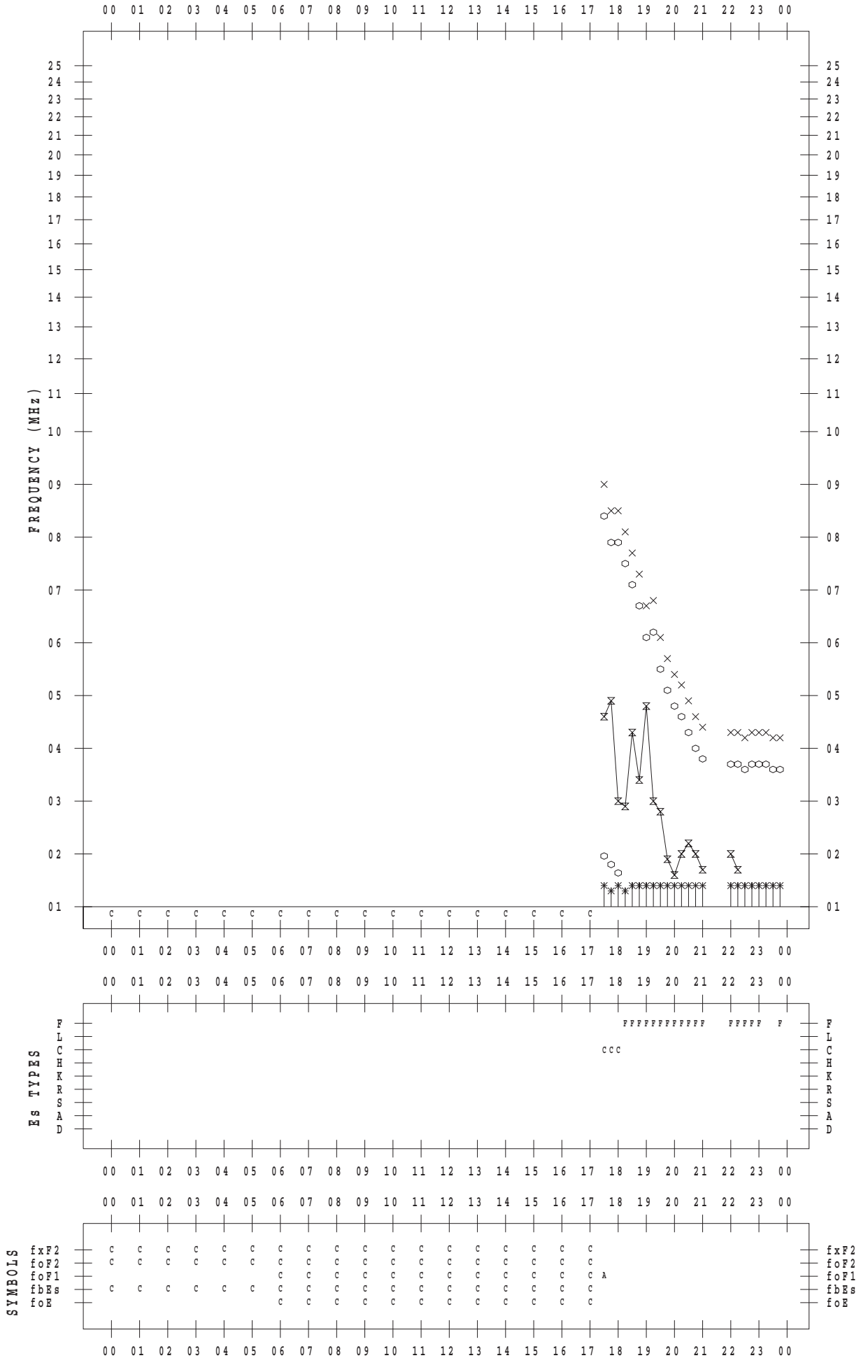
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/23

135 °E MEAN TIME



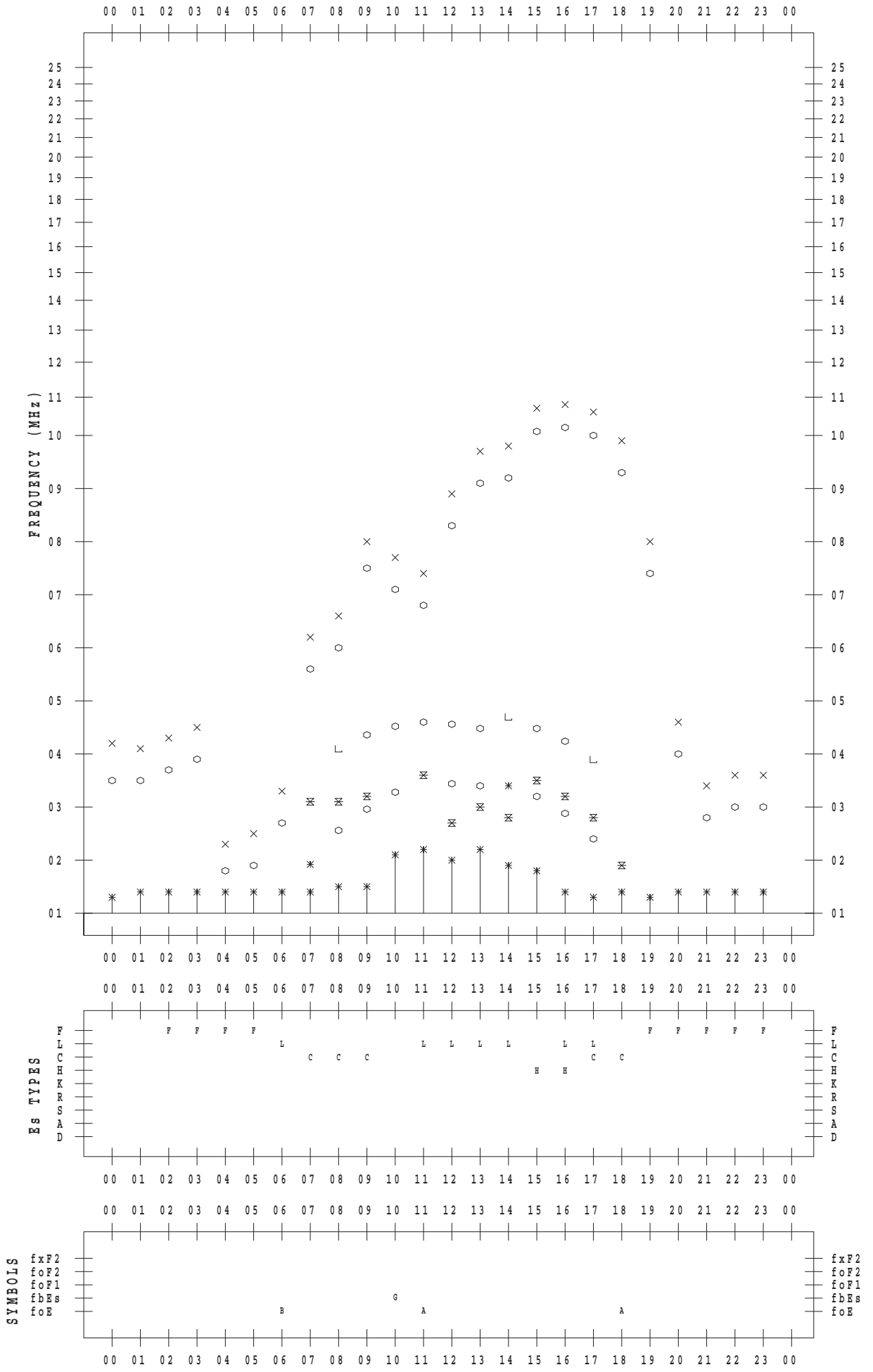
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/24

135 °E MEAN TIME



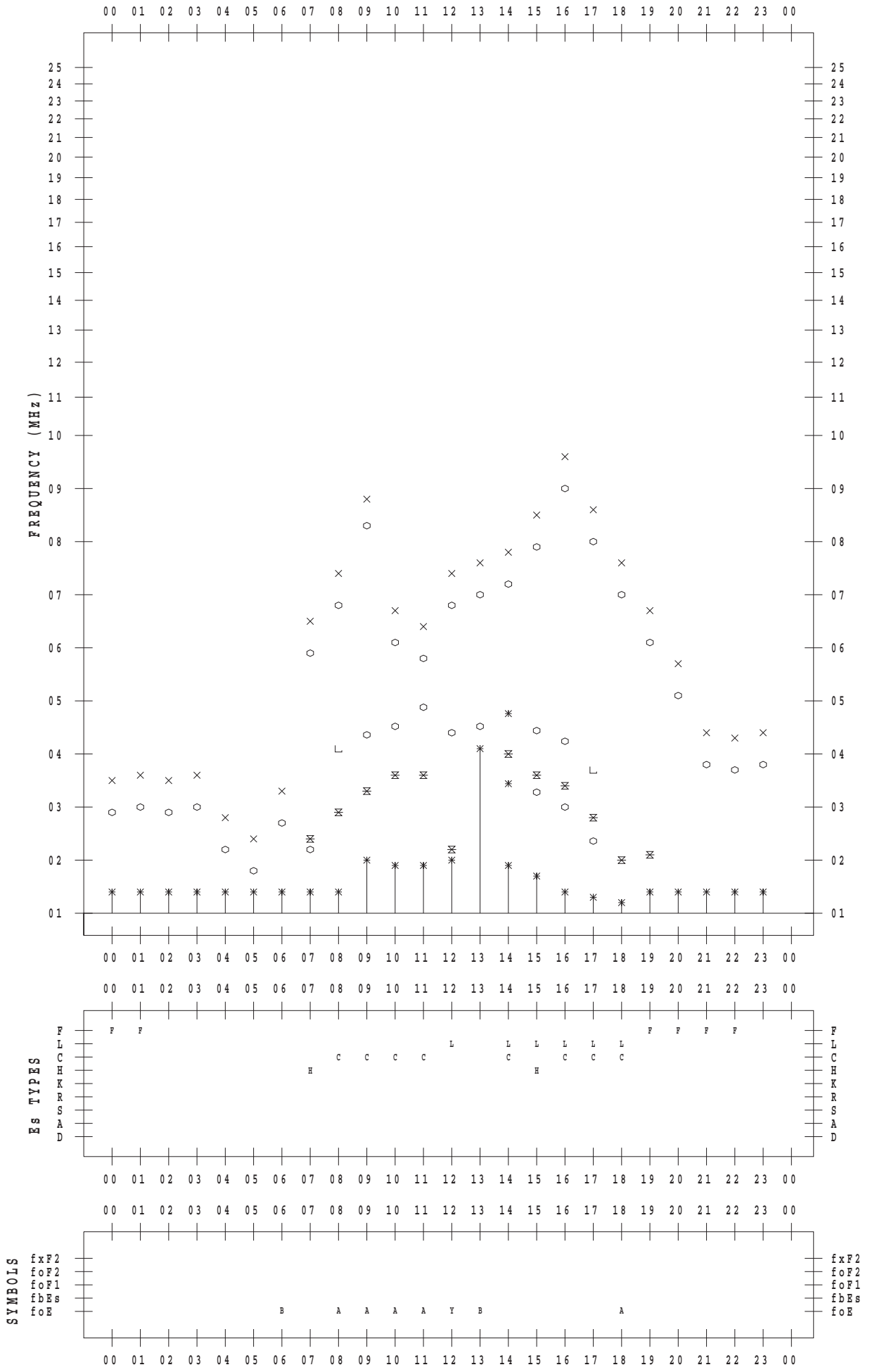
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/25

135 °E MEAN TIME



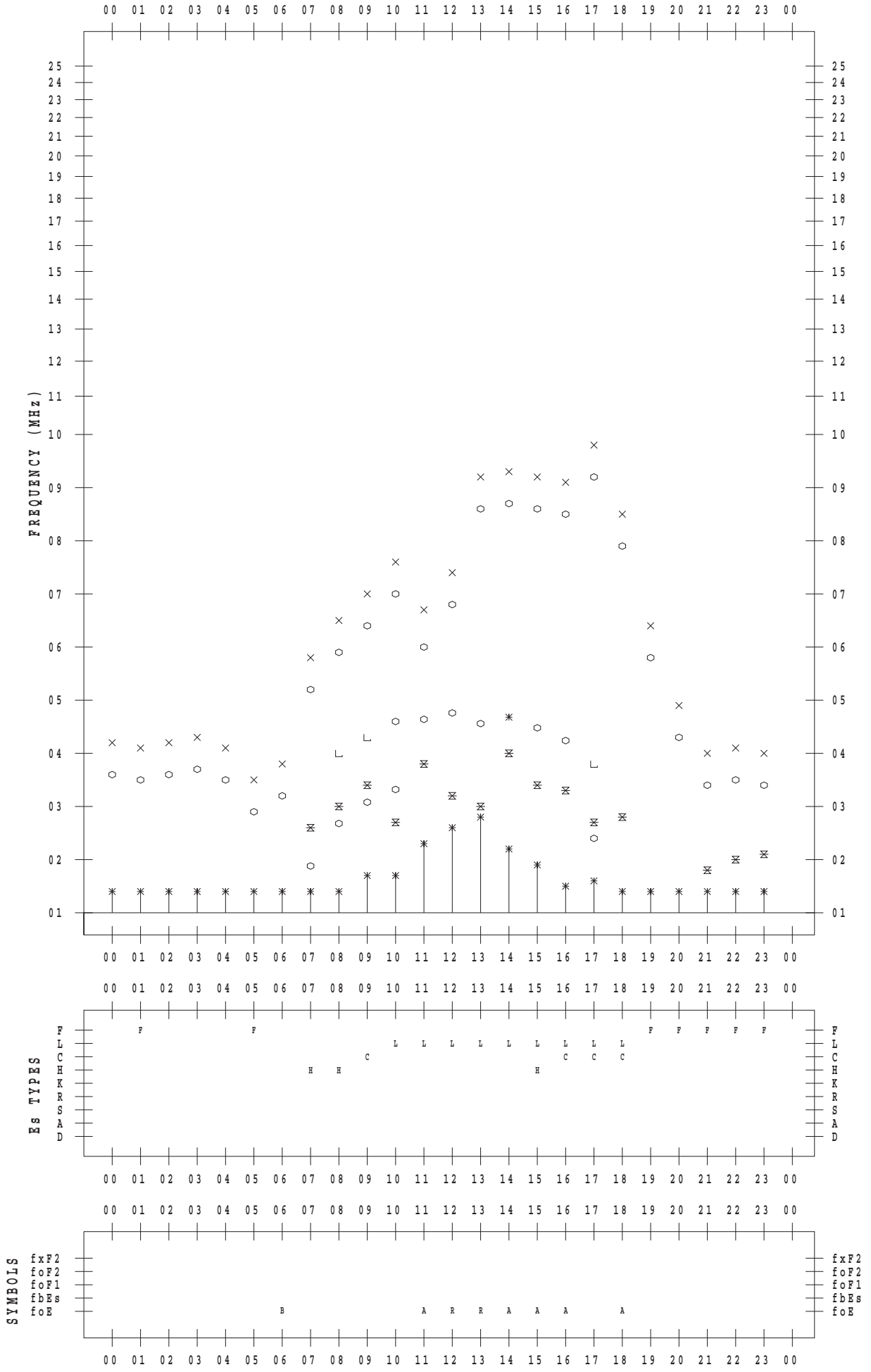
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/26

135 °E MEAN TIME



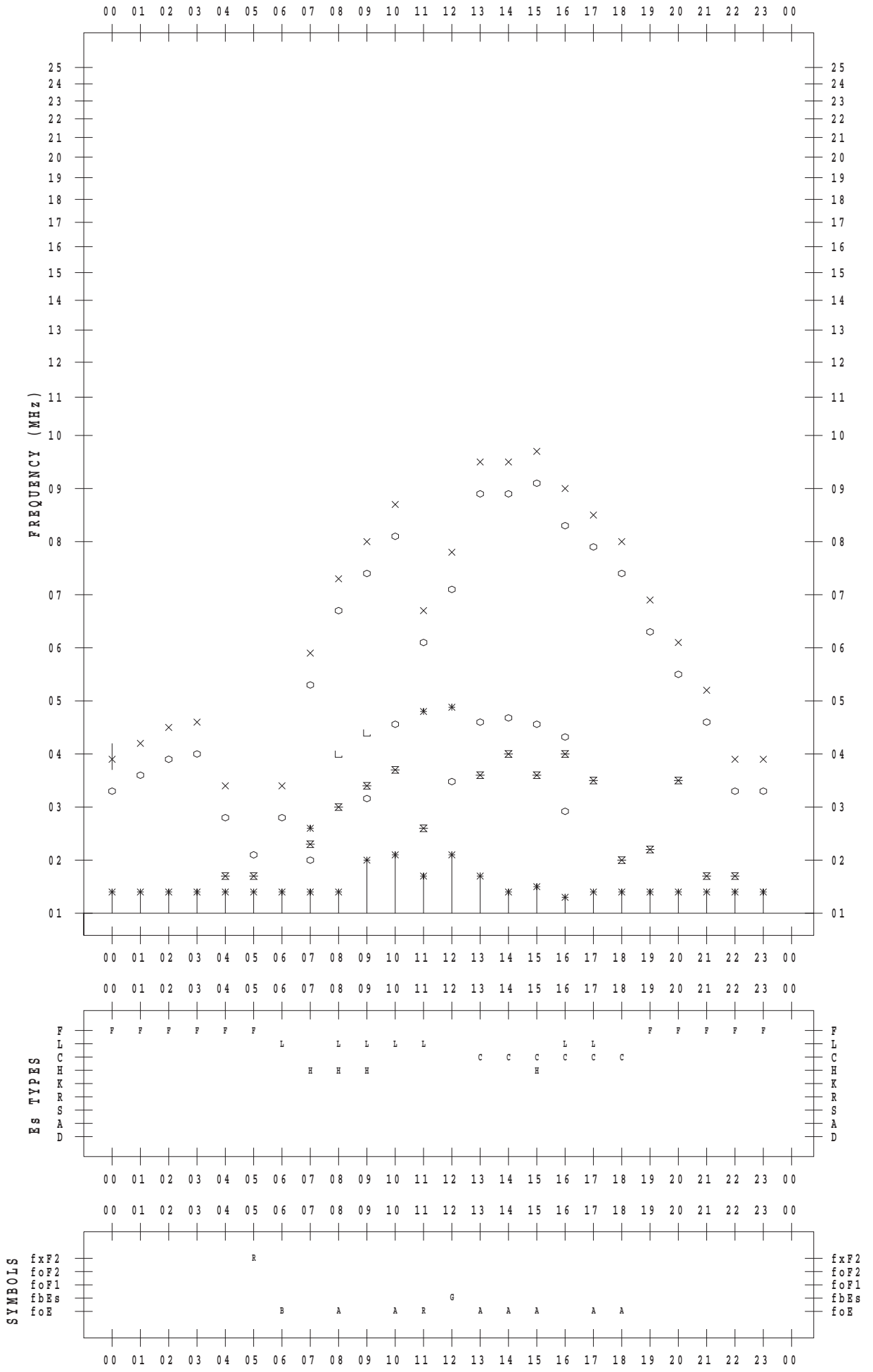
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/27

135 °E MEAN TIME



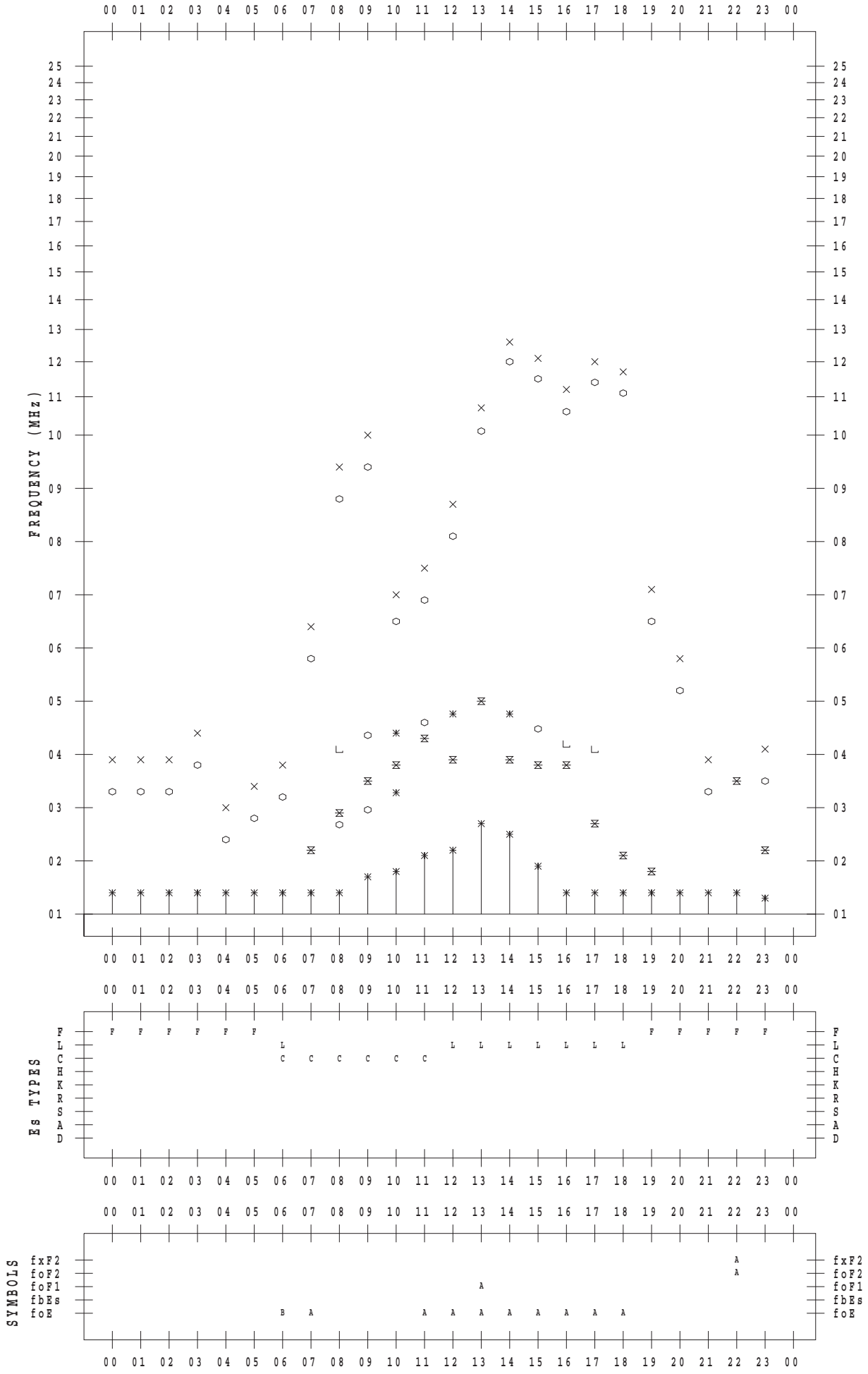
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/28

135 °E MEAN TIME



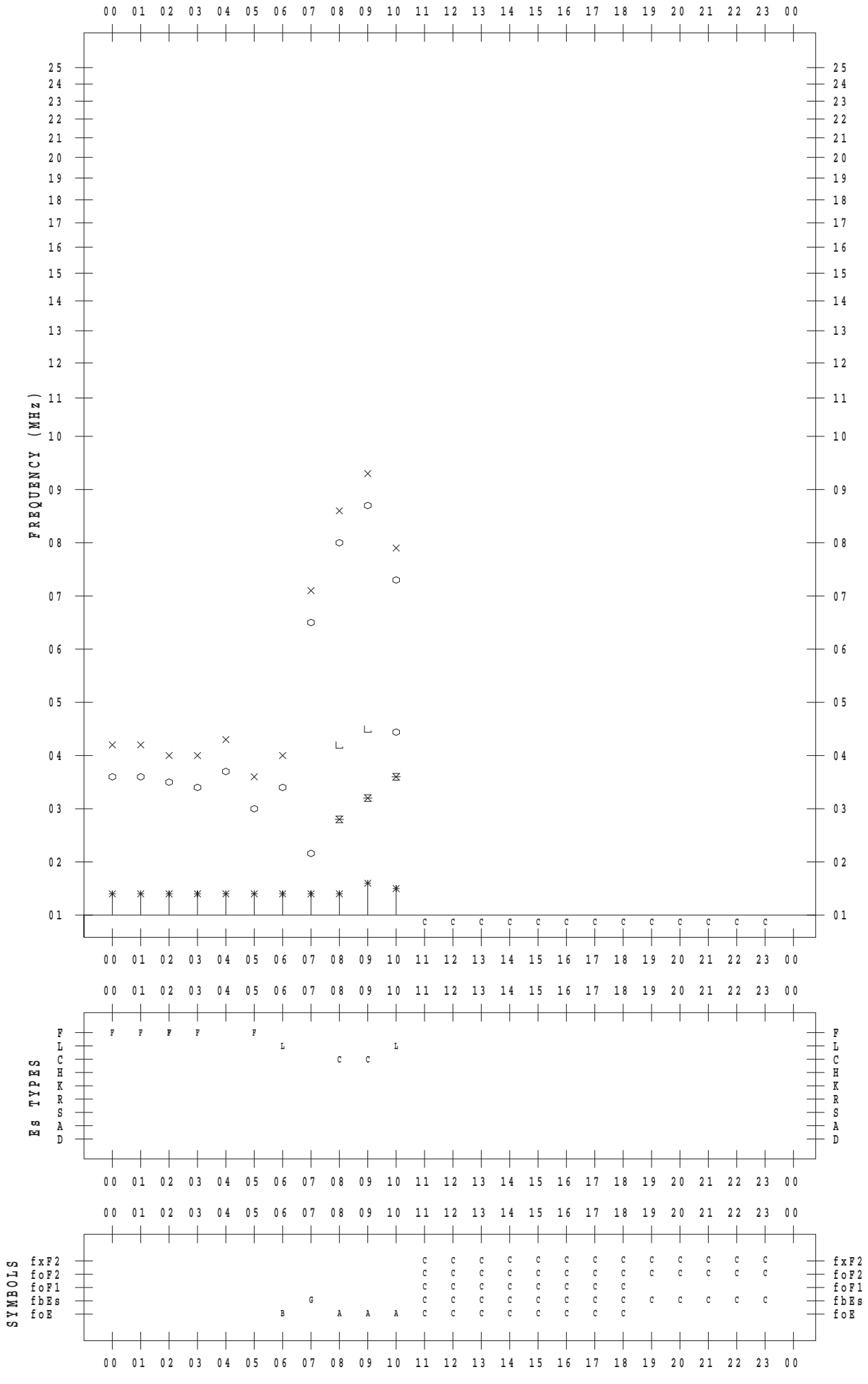
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 9/29

135 °E MEAN TIME



f-PLOT DATA

SCALER :

STATION : Okinawa

DATE : 2017/ 9/30

135 °E MEAN TIME