F-818

IONOSPHERIC DATA IN JAPAN

FOR FEBRUARY 2017

VOL. 69 NO. 2

CONTENTS

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

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

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

FEB. 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	G	G	23	G	G	G	G	28	120		33	39	173	37	40	40	67	G	32	32	41	34	G	60
2	26	G	G	G	24	26	32	31	66	39	38	28	40	48	48	46		44	27	59	G	28	25	31
3	G	G		G	G	G	G	G	G	26	46	43	62	55	38	40	35	28	61	26	34	26	G	G
4	G	G	G	G	G	G	G	28	34	39	41	42	43	54	46	26	28	29	30	24	24	G	G	25
5	24	G	26	G	G	G	25	32	54	55	40	40	43	40	44	70	38	35	46	G	24	G	G	24
6	G	28	27	G	26	38	32	45	35	38	48	41	53	40	39	56	59	66	114			70	G	59
7	37	29	G	67		59	93	86	26	33	53	37	G	37	38	36	26	25	G	G	G	G	G	G
8	G	G	G	26	G		32	G	79	38	39	43	40	46	45	42	32	38	60	G	25	G	G	G
9	G	G	G	G	G	G	G	G	48	35	40	32	32	32	30	26	G	26	G	G	28		25	40
10	24	27	25	24	G	G	36	118	48	49	G	36	G	G	40	44	39	38	35	53	58	28	G	32
11	G	G	G	G	G	G	G	G	G	G	52	G	64	49	87	G	32	27	G	G	G	G	25	26
12			24	G		G	G	G	48	44	44	36	39	39	39	39	23	19	G	G	28	68	G	G
13	28	24	G	26	G	G	30	58	40	49	57	46	34	33	G	G	33	26	61	25	24	35	57	32
14	25	26	G	G	25		G	27	34	117	59	77	39	38	34	34	38	33	60	26	32	G	26	G
15	G	G	G	G	G	G	G	48	32	36	36	37	37	34	35	G	48	11	21	G	G	G	G	G
16	G	G	G	G	G	G	G	49	25	35	34	G	40	G	36	G	39	11	G	G	G	G	G	G
17	G	G	G	26	G	38	G	G		G	43	34	G	58	34	38	51	54	40		G	G		G
18	24	G	24	G	G	G	G	24	52	40	G	G	G	G	34	34	48	25	G	G	G	G	G	G
19	26	G	G	G	G	G	G	G	G	G	45	40	35	G	G	G	23	G	G	48	G	G	G	G
20	G	G	G	G	G	G	G	G	G	G	50	34	37	G	G	40	48	G	G	G	G	G	G	G
21	G	G	G	G	G	G	G	25	26	46	36	38	46	G	32	34	48	G	26	G	G	G	G	G
22	G	G	G	G	G	G	G	G	31	56	50	43	46	95	G	G	G	G	27	G	G	24	G	G
23	G	G	G	G	G	G	33	G	G	43	38	36	41	G	G	G	G	G	24	G	G	G	G	G
24	G	G	G	G	G	G	G	G	G	G	G	G	52	34	35	34	32	G	G	G	G	G	G	G
25	G	G	G	G	G	G	G	23	28	32	G	50	46	G	35	32	25	20	G	G	G	G	G	G
26	G	G	G	G	G	G	G	83	G	40	39	G	48	34	37	34	24	G	G	G	G	G	G	G
27	112	G	G	G	G	11	G	41	46	35	35	40	38	40	38	34	G	G	G	G	G	G	G	G
28	G	G	G	G	G	G	G	G	53	35	38	38	38	G	29	34	G	69	11	G	G	G	G	G
29																								
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	27	27	27	28	26	26	28	28	27	27	28	28	28	28	28	28	27	28	28	26	27	27	27	28
MED	G	G	G	G	G	G	G	24	34	38	40	38	40	36	36	34	32	25	22	G	G	G	G	G
U Q	24	G	G	G	G	G	27	43	48	44	47	41	46	43	39	40	48	34	37	25	25	26	G	25
L Q	G	G	G	G	G	G	G	G	G	32	35	33	36	G	31	13	23	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

FEB. 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	14	14	14	14	14	14	14	14	14		14	14	14	15	14	14	14	14	14	14	14	14	20	14
2	14	14	15	14	14	14	14	14	14	14	14	14	14	14	15	14		14	14	14	14	14	14	14
3	14	17		14	15	14	14	15	14	14	14	16	14	15	14	14	15	17	14	14	15	15	15	14
4	15	15	15	15	15	14	15	14	15	14	14	14	14	14	14	14	14	14	15	15	20	15	17	15
5	14	15	15	14	14	14	17	14	14	14	14	14	14	14	14	14	14	14	14	15	15	14	15	14
6	14	15	15	14	14	14	14	14	15	14	14	14	14	14	14	14	14	15	14			14	14	15
7	15	14	14	14		14	14	14	14	14	14	14	14	14	17	14	14	14	14	14	14	14	15	14
8	14	14	14	14	14		14	16	14	14	14	15	15	14	14	14	14	14	14	15	14	14	15	14
9	14	14	15	15	15	14	14	15	14	15	18	18	17	28	18	17	22	14	14	17	14		14	14
10	15	14	15	14	15	14	14	17	26	29	32	15	30	28	20	15	15	16	15	14	15	14	14	15
11	14	14	15	14	14	14	15	17	24	15	14	18	17	15	15	14	14	16	15	14	14	15	15	14
12			14	14		14	14	15	14	14	14	14	14	14	14	14	14	16	14	15	14	14	14	14
13	14	14	14	15	14	14	15	17	14	14	14	14	14	15	15	14	14	14	14	15	14	14	14	14
14	14	15	14	14	14		15	14	14	15	14	14	15	14	14	14	14	14	14	14	15	14	15	14
15	14	14	15	14	14	14	15	18	14	14	14	16	16	15	14	14	15	15	14	16	14	14	14	15
16	15	15	14	14	14	14	15	16	14	14	15	15	20	15	15	15	14	14	15	15	14	15	15	14
17	14	15	14	14	17	14	14	18		15	18	17	17	15	15	14	14	14	17		20	15		15
18	14	15	14	14	15	14	14	15	14	14	15	14	16	14	16	14	15	15	14	14	15	14	14	15
19	16	14	14	14	17	14	17	18	14	15	18	18	28	16	28	17	14	14	14	14	14	14	15	14
20	14	14	14	14	14	14	14	14	26	27	28	18	14	29	17	17	15	16	17	14	14	14	14	14
21	14	15	14	14	14	15	14	14	15	16	18	16	18	21	14	14	21	17	15	14	14	14	14	17
22	15	15	14	14	14	16	14	16	14	15	14	16	17	17	16	15	14	16	14	14	15	17	14	14
23	14	14	14	14	14	14	14	26	14	15	16	20	18	16	28	15	14	17	14	14	14	15	14	14
24	15	14	14	14	15	15	14	15	15	14	15	16	17	15	16	15	14	15	14	18	14	14	14	14
25	14	15	14	14	14	15	14	15	14	17	16	15	15	17	15	14	14	16	14	14	14	14	14	14
26	14	14	14	14	14	14	14	15	14	14	14	14	14	15	15	17	14	17	14	14	15	16	14	15
27	14	14	15	14	14	14	15	18	14	14	17	15	18	16	17	14	14	17	14	14	14	15	14	14
28	14	14	14	15	15	14	14	17	14	14	14	15	15	17	14	14	14	15	14	14	14	15	15	14
29																								
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	27	27	27	28	26	26	28	28	27	27	28	28	28	28	28	28	27	28	28	26	27	27	27	28
MED	14	14	14	14	14	14	14	15	14	14	14	15	15	15	15	14	14	15	14	14	14	14	14	14
U Q	15	15	15	14	15	14	15	17	15	15	16	16	17	16	16	15	15	16	14	15	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

FEB. 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	32	34	34	30	31	30	30	42	55	65	74	72	75	69	69	59	51	45	39	42	36	34	32	32
2	32	37	32	34				36	52	80	88	96		52	61		51	45	32	A	A	34	36	31
3	34	36	34	31	32	31	30	54	53	66	70	64	64	68	55	58	58	48		34	39	36	34	31
4	30	30	30	31	28	26	N	44	48	64	96	102	75	60	64	52	54	41	A	A	27	34	36	32
5	20	34	32	A	A	27	27	41	51	56	57	61	A	74	74	A	A	45	A	A	32	A	A	A
6	A	30	28	36	27		N	42	49	66	67	78	A	68	70	66	52	44	31	A	N	26	31	28
7	A	30	A	A	A	31	28	45	51	60	59	89	67	60	60		58	40	35	31	32		34	34
8	31	31	37	36	28	N	N	48	54	56	61	67	69	75	66	60	57	42	31	36	38	38	34	32
9	28	28	30	27	30	27	26	52	59	53	56	62	77	77	70	66	55	45	A	A	30	A	32	34
10	36	36	A	36	39	23	27	48	56	54	61	68	68	A	64	70	54	48	28	34	31	27	28	30
11	30	A	28	32		N	N	48	66	57	76	78	77	72	68	57	58	47	34	26	A	36	34	34
12	34	34	28	24	34	32	31	51	54	58	56	61	76	75	69	65	61	49	A	27	31	28	26	31
13	28	26	26	26	30	N		44	48	52	59	66	78	80	60	56	54	47	42	36	27	30	32	27
14	31	31	30	30	28	28	27	44	52	56	62	68	62	75	61	58	64	48	37	27	27	A	A	32
15	32	34	34	34	38	32	31	49	57	63	66	66	59	62	68	62	55	46	45	36	34	28	27	32
16	32	32	31	32	38	37	34	52	55	61	56	61	54	74	81	71	62	58	39	34	39	A	A	A
17	32	34	32	34	30	N	N	50	56	66	76	81	84	79	72	67	57	51	48	36	32	34	33	34
18	36	34	32	34	34	31	31	59	67	69	87	78	72	66	71	66	58	54	48	49	34	36	37	32
19	41	39	41	42	42	36	42	58	64	74	71	65	77	78	64	66	72	59	39	42	32	27	34	32
20	32	32	34	34	38		27	44	58	59	63	69	66	80	84	69	66	54	43	46	32	32	58	34
21	34	34	34	34	34	32	34	48	62	59	62	77	77	74	67	71	59	58	38	N	28	N		26
22	27	32	32	34	42	31	28	50	54	56	58	78	76	84	67	69	58	54	51	37	32	30	31	27
23	32	32	34	34	34	34	32	54	59	64	68	66	64	69	72	70	64	62	A	34	27	31	34	32
24	32	34	32	30	32	28	34	44	59	68	76	92	85	69	75	67	58	55	46	42	36	38	39	42
25	39	32	32	30		N	28	53	65	71	81	84	80	74	67	66	59	52	42	34	N	37	35	34
26	A	A	39	34	32		30	50	62	76	77	80	84	72	68	65	61	56	43	37	32	32		34
27	34	35	36	36	58	N	58	51	51	56	68	76	76	69	65	68	68	51	39	36	30	A	A	A
28	32	30	34	30	31	N	31	52	63	68	74	80	81	87	85	77		52	N	36	38	A	34	34
29																								
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	25	26	26	26	23	17	21	28	28	28	28	28	25	27	28	25	26	28	21	22	24	20	22	25
MED	32	33	32	34	32	31	30	48	56	62	68	74	76	74	68	66	58	48	39	36	32	33	34	32
U Q	34	34	34	34	38	32	33	52	60	67	76	80	77	77	71	69	61	54	44	37	35	36	35	34
L Q	30	31	30	30	30	27	27	44	52	56	60	66	66	68	64	59	55	45	34	34	30	29	32	31

HOURLY VALUES OF fEs AT Kokubunji

FEB. 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	G	G	G	39	41	35	35	35	39	52	35	39	31	G	G	G	G	G	22	30
2	G	G	23	23	G	G	G	29	31	34	43	51		47	49		42	32	31	39	80	34	G	G
3	G	G	G	G	G	G	G	29	34	36	45	46	45	33	43	39	40	21		G	26	G	G	G
4	G	G	G	G	24	G	G	29	37	39	49	48	48	42	46	47	58	34	43	86	40	34	28	23
5	23	34	29	40	29	G	G	26	35	53	52	49	80	52	43	61	60	30	77	111	50	93	111	37
6	39	G	G	G	G		G	31	38	45	50	55	114	56	54	38	33	26	G	72	G	G	G	G
7	33	27	30	29	31	26	G	24	27	G	34	39	61	55	43		40	38	G	G	22		G	G
8	G	G	G	G	G	G	G	G	31	41	44	55	45	46	36	36	32	28	23	22	23	G	G	G
9	G	24	28	G	G	G	26	G	28	33	39	43	49	35	43	31	36	31	35	43	26	37	G	G
10	G	29	40	40	23	G	G	G	27	G	30	47	52	67	50	45	34	G	G	25	24	27	G	G
11	G	31	24	G		G	G	31	36	35	46	70	59	33	49	43	38	G	G	G	43	59	29	G
12	G	G	26	G	G	G	G	G	G	34	39	31	38	37	37	40	39	40	29	25	G	G	G	G
13	G	G	G	G	G	G		41	33	34	37	40	53	49	46	45	32	G	G	G	34	G	G	22
14	G	G	G	G	G	G	G	24	34	36	36	34	34	34	32	35	40	33	G	G	34	52	57	30
15	22	G	G	G	G	G	G	24	30	34	G	34	59	43	31	33	G	G	24	G	G	G	G	G
16	G	G	G	G	G	G	G	G	33	G	31	G	G	G	G	31	G	G	G	G	G	33	37	33
17	24	G	G	G	G	G	G	G	G	G	G	31	46	39	34	33	44	35	30	G	G	G	G	G
18	G	G	30	G	G	G	G	26	33	G	G	G	37	36	G	43	37	G	24	G	G	G	G	G
19	33	G	G	G	G	G	G	G	G	33	32	34	33	34	39	50	36	25	G	G	G	G	G	G
20	G	G	G	G	G		G	44	28	G	G	G	31	52	G	34	31	G	G	G	G	G	G	G
21	G	G	G	G	G	G	G	27	48	50	37	37	36	48	37	37	34	G	G	24	G	G		G
22	G	G	G	G	G	G	G	G	48	45	43	38	44	37	47	42	29	G	33	33	G	G	G	G
23	G	G	G	G	G	G	G	G	28	31	G	32	G	44	43	G	40	35	50	34	33	G	G	G
24	G	G	G	G	G	G	G	G	28	G	G	31	G	G	31	G	30	G	G	G	24	G	G	G
25	G	G	G	G		G	G	31	31	G	G	G	G	G	32	34	31	G	G	G	G	29	G	G
26	25	35	27	G	G		G	30	39	35	G	31	G	36	30	34	29	G	G	G	G	G	G	G
27	G	G	G	G	G	G	G	24	40	35	32	42	36	33	33	31	32	G	G	G	22	29	30	32
28	G	G	G	G	G	G	G	28	27	29	G	G	41	31	32	35		G	G	23	G	52	27	24
29																								
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	28	28	28	28	26	25	27	28	28	28	28	28	27	28	28	26	27	28	27	28	28	27	27	28
MED	G	G	G	G	G	G	G	25	32	34	34	36	41	38	37	36	34	G	G	G	12	G	G	G
U Q	11	G	25	G	G	G	G	29	36	36	43	46	52	48	44	43	40	31	30	29	29	34	27	22
L Q	G	G	G	G	G	G	G	G	28	G	G	31	33	33	32	33	31	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

FEB. 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	13	15	13	14	13	14	14	17	13	13	13	13	15	15	14	13	13	18	14	14	14	14	13	13
2	13	14	13	14	13	13	14	13	13	13	14	13		13	13		13	13	13	13	14	13	14	13
3	13	13	13	14	13	13	13	13	13	14	15	15	17	13	13	13	14	14		13	13	14	13	14
4	13	14	14	14	13	17	14	13	13	13	20	15	14	18	15	13	14	13	14	13	13	14	13	14
5	13	13	14	13	13	13	14	14	13	14	13	13	13	17	17	13	13	13	13	13	13	13	13	13
6	14	13	13	13	15		17	14	13	14	15	17	15	13	14	13	14	18	15	14	18	14	14	15
7	14	13	14	14	13	13	14	15	14	15	14	15	13	13	13		13	13	17	14	14		14	13
8	13	13	13	13	14	15	14	17	13	13	13	14	17	13	14	13	13	13	14	14	13	14	14	15
9	14	13	13	14	13	14	14	17	13	13	14	17	14	13	18	18	15	13	14	14	15	13	13	13
10	13	14	13	14	13	14	17	20	28	20	17	15	18	29	20	18	17	18	14	13	14	14	14	14
11	14	13	13	13		14	17	13	17	13	13	13	13	13	13	13	13	17	14	14	13	15	13	13
12	14	13	13	13	13	13	14	17	13	17	13	15	39	17	13	13	13	13	14	15	13	15	14	14
13	13	13	13	14	13	13		14	14	13	14	13	17	15	14	14	13	18	14	13	14	14	13	13
14	15	14	14	14	13	13	13	15	13	13	15	13	15	17	15	13	13	13	14	14	13	13	13	13
15	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	14	13	20	14	14	13	14	14	13
16	13	13	13	13	13	13	14	17	14	13	13	37	39	40	30	15	18	21	13	14	14	13	13	13
17	13	13	13	14	13	13	14	22	13	14	18	15	18	15	14	13	13	13	13	14	15	13	13	13
18	14	13	13	13	14	13	14	20	13	13	13	17	17	22	14	13	14	18	15	13	14	14	14	14
19	14	13	13	21	14	13	14	20	18	13	14	18	17	14	17	13	13	15	13	14	14	14	14	13
20	13	13	13	13	13		13	13	13	13	13	17	17	17	14	14	13	17	13	13	13	13	14	14
21	13	13	13	13	13	13	14	13	13	13	20	17	17	15	13	13	13	20	14	13	14	14		13
22	13	13	13	13	14	13	14	18	13	17	18	15	20	14	13	13	14	20	13	13	14	13	14	14
23	14	13	14	14	13	13	14	20	14	14	14	21	14	13	13	14	13	15	13	13	13	14	14	14
24	14	13	13	13	13	14	14	13	13	13	13	14	36	21	17	13	14	17	14	13	13	14	14	13
25	13	13	13	13		15	14	17	14	13	18	18	14	15	15	13	13	17	13	14	13	13	14	14
26	13	14	13	13	14		14	15	13	13	15	18	22	13	18	14	13	20	13	14	14	14	15	14
27	13	13	13	13	13	17	14	18	14	14	14	18	20	18	15	15	13	17	13	13	14	13	13	13
28	14	13	13	13	13	13	13	13	14	13	13	15	18	13	15	14		18	13	14	14	13	13	13
29																								
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	28	28	28	28	26	25	27	28	28	28	28	28	27	28	28	26	27	28	27	28	28	27	27	28
MED	13	13	13	13	13	13	14	15	13	13	14	15	17	15	14	13	13	17	14	14	14	14	14	13
U Q	14	13	13	14	13	14	14	17	14	14	15	17	18	17	16	14	14	18	14	14	14	14	14	14
L Q	13	13	13	13	13	13	14	13	13	13	13	13	14	13	13	13	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

FEB.2017

LAT.31°12.0'N LON.130°37.0'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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

HOURLY VALUES OF fEs AT Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

HOURLY VALUES OF fmin AT Yamagawa

FEB. 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

HOURLY VALUES OF foF2 AT Okinawa

FEB. 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	B	N	A	B	B	B	B	32	61	60	84	82	61	74	77	80	71	58	67	54	48	A	N	B
2	B		30	A		A	B	N	58	67	84	84	71	61	62	71	60	58	59	A	A	A	A	A
3	32	A	A	32	A	B		69	50	54	63	90	101	97	74	70	60	61	60	37	A	43	A	A
4	A	31			28	B	B	32	54	61	70	96	108	107	107	88	90	78	47			51		42
5	42		38	38	46	A	B	32	52	55	64	61	67	74	80	67	58	60	71	43	A	A	B	B
6		26	N	B	N	B	B	30	54	56	62	82	102	92	87	90	88	88	61	A	A	59	A	52
7	53	47	47	44	45	46	32	37	54	54	62	54	64	75	62	57	64	66	55	B	B	B	A	
8		B	B	40	B	B	B	26	50	57	59	67	72	88	91	81	67	A	46	46	A	A	26	B
9	B	B	B	A	49	A	B	30	51	62	48	62	61	88	81	82	66	59	56	40	B	28	B	B
10	B	A	A	A	B	B	B	B	49	63	82	72	72	72	72	85	67	54	48	37	40	34	A	B
11	B	A	40	41	30	B	B	30	60	67	92	96	77	78	80	62	60	60	54	41	32		32	B
12	B	B	A	28	N	39	B	30	49	58	67	81	72	61	77	82	81	75	52	N	B	B	B	B
13	N	B	26	29	25	B	B	28	42	50	62	87	103	87	83	87	81	85	51	53	47	37	B	A
14	B	A	B	B	B	B	B	A	47	52	61	80	90	90	110	110	83	81	58	40	29	30	B	B
15	B	A	B	B		N	B	35	54	52	64	70	68	68	87	107	118	109	79	A	43	44	30	B
16	B	A	B	29	37	N	B	33	50		C	C	C	C	C	C	C	C	C	C	C	A	A	A
17	A	34	A	A	A	A	B	B	54	67	88	88	90	92	127	123	97	81	63	62	28	46	48	B
18	B	B		36	36	A		37	60	78	89	76	72	78	77	66	63	67	67	54	43	B	30	34
19	38	B	B	B	B	B	B	36	71	61	67	71	91	92	89	97	90	90	86	52	51	B		30
20	32			32	43	B	B	37	56	62	62	80	84	78	88	85	72	68	54	49	56	34	32	B
21	B	B	32		B	B	B	36	60	65	75	82	87	102	112	101	90	92	77	52	54	58	B	B
22	B	B	34	38	38	34	B	38	60	58	72	87	97	118	121	85	82	87	77	53	53	47	36	
23	34				34	B	B	43	52	70	80	85	92	84	91	97	78	72	73	52	42	42	36	B
24	B	B	34	40		30	30	41	58	76	100	103	102	82	101	106	81	65	38	67	58	A	54	39
25	66	34	32	36	B	B	B	40	63	64	84	102	105	90	112	78	71	63	60	54	47	43	B	42
26	43		40	32	B	B	B	34	64	72	77	90	108	87	77	71	74	63	59	48	44	B	28	32
27	37	38	34		B	B	B	36	54	62	73	88	82	70	72	71	74	72	66	58	50	36	B	40
28	B	37	37	B	B	N	B	35	58	78	92	97	108	106	108	102	84	72	60	46			47	
29																								
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	9	7	12	14	11	4	2	24	28	27	27	27	27	27	27	27	27	26	27	21	17	15	11	8
MED	38	34	34	36	37	36	31	35	54	62	72	82	87	87	87	85	74	70	60	52	47	43	32	40
U Q	48	38	39	40	45	42	32	37	60	67	84	90	102	92	107	97	84	81	67	54	52	47	47	42
L Q	33	31	32	32	30	32	30	31	50	56	62	72	72	74	77	71	66	61	54	42	41	34	30	33

HOURLY VALUES OF fEs AT Okinawa

FEB. 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	B	40	29	B	B	B	B	G	G	G	32	36	G	G	G	39	34	G	G	G	28	44	G	B
2	B	G	G	24	G	33	B	G	29	38	44	G	63	G	45	48	34	30	35	26	53	40	54	45
3	G	34	58	G	24	B	G	G	G	30	44	45	51	48	49	53	42	26	46	G	27	G	34	32
4	35	G	G	G	G	B	B	G	40	39	47	69	57	45	45	54	39	37	25	G	G	G	G	G
5	G	G	G	29	G	26	B	G	32	42	59	65	86	45	46	38	52	45	39	35	40	32	B	B
6	G	G	G	B	G	B	B	G	G	G	G	G	60	50	64	58	36	52	50	65	66	53	56	G
7	G	33	45	26	26	24	G	G	G	39	41	34	48	47	47	G	36	41	27	B	B	B	25	G
8	G	B	B	G	B	B	B	G	G	31	36	48	55	68	50	52	45	54	45	35	36	27	G	B
9	B	B	B	24	26	31	B	28	24	G	G	G	G	46	58	47	50	27	G	G	B	G	B	B
10	B	33	38	24	B	B	B	B	33	32	G	G	50	48	55	61	49	40	37	G	G	G	33	B
11	B	24	39	27	26	B	B	G	34	40	45	50	52	62	56	51	67	33	35	G	G	G	G	B
12	B	B	27	G	G	G	B	G	33	40	46	50	52	53	56	50	61	44	G	G	B	B	B	B
13	G	B	G	G	G	B	B	G	42	42	50	54	75	62	84	76	64	47	46	46	41	29	B	24
14	B	26	B	B	B	B	B	24	30	31	49	50	52	52	G	30	37	38	53	G	G	G	B	B
15	B	40	B	B	G	G	B	G	25	35	G	G	G	G	G	34	38	32	G	38	G	69	G	B
16	B	44	B	G	G	G	B	G	24	G	C	C	C	C	C	C	C	C	C	C	C	45	28	39
17	29	G	28	40	34	30	B	B	G	32	G	G	G	G	G	44	29	G	G	G	G	G	G	B
18	B	B	G	G	G	32	G	G	25	G	G	G	42	G	G	G	40	32	G	G	G	B	G	G
19	G	B	B	B	B	B	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	B	G	G
20	G	G	G	G	G	B	B	G	G	G	G	G	G	G	48	42	44	G	G	G	27	G	G	B
21	B	B	G	G	B	B	B	G	G	32	G	G	G	50	32	G	G	G	G	G	G	G	B	B
22	B	B	G	G	G	G	B	G	44	32	G	G	G	48	G	G	G	26	G	11	G	G	G	G
23	G	G	G	G	G	B	B	G	G	G	G	G	49	G	48	G	G	33	31	29	33	34	G	B
24	B	B	G	G	G	G	G	G	26	G	44	G	G	G	G	G	46	40	27	G	24	33	G	G
25	28	G	G	G	B	B	B	G	G	G	G	G	44	47	46	G	37	32	G	G	33	27	B	G
26	G	G	G	G	B	B	B	G	G	G	G	G	G	G	G	38	30	33	G	G	G	B	G	G
27	G	G	G	G	B	B	B	G	36	G	30	G	G	G	G	44	G	G	G	G	G	G	B	G
28	B	G	G	B	B	G	B	G	35	G	45	48	51	60	58	52	33	40	G	G	G	G	G	G
29																								
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	14	19	22	22	18	12	4	26	28	28	27	27	27	27	27	27	27	27	27	26	24	23	20	15
MED	G	G	G	G	G	12	G	G	24	30	30	G	48	46	46	42	37	33	G	G	G	G	G	G
U Q	G	33	28	24	24	30	G	G	33	36	45	48	52	50	55	52	46	40	37	26	33	34	26	24
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	30	26	G	G	G	G	G	G

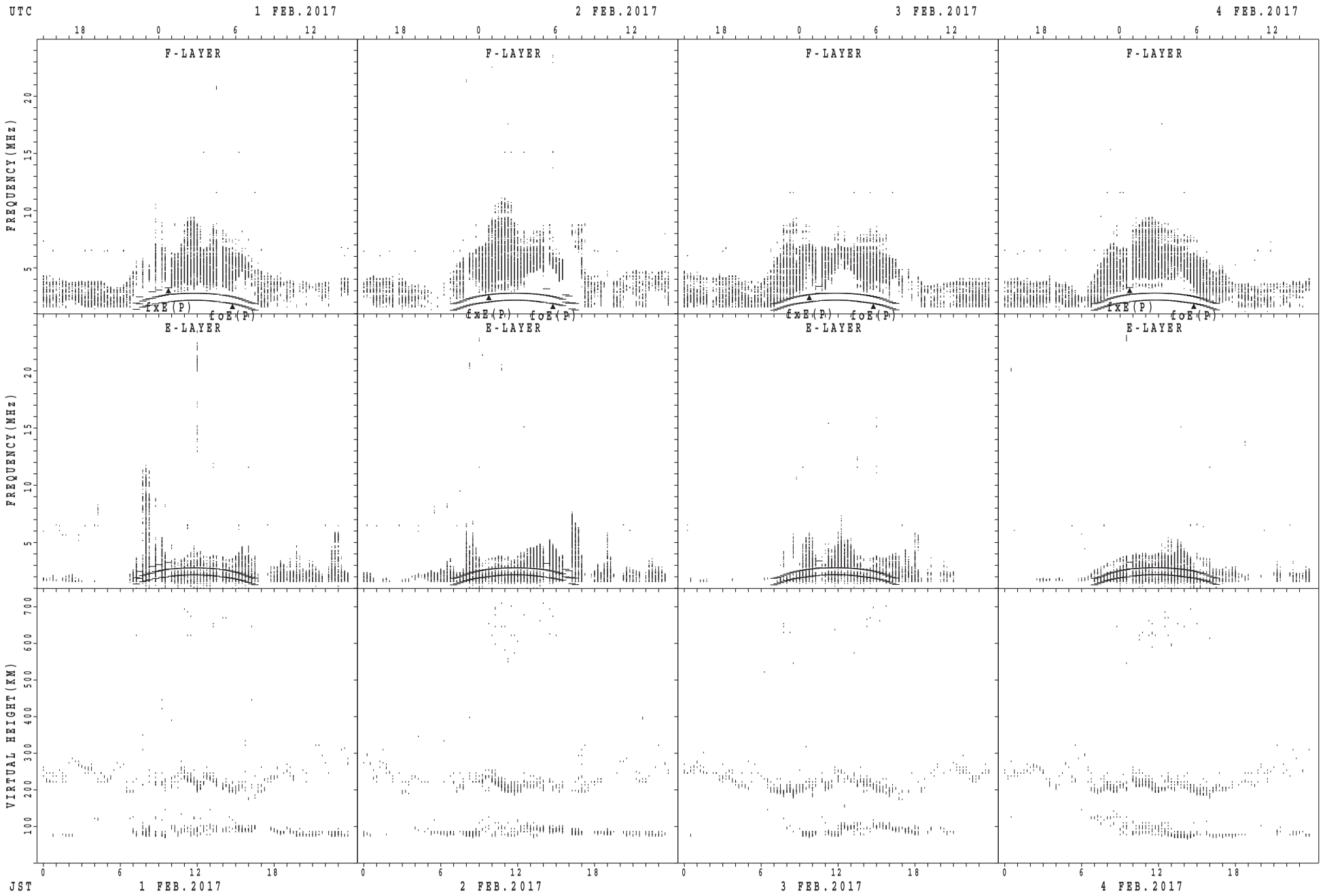
HOURLY VALUES OF fmin AT Okinawa

FEB. 2017

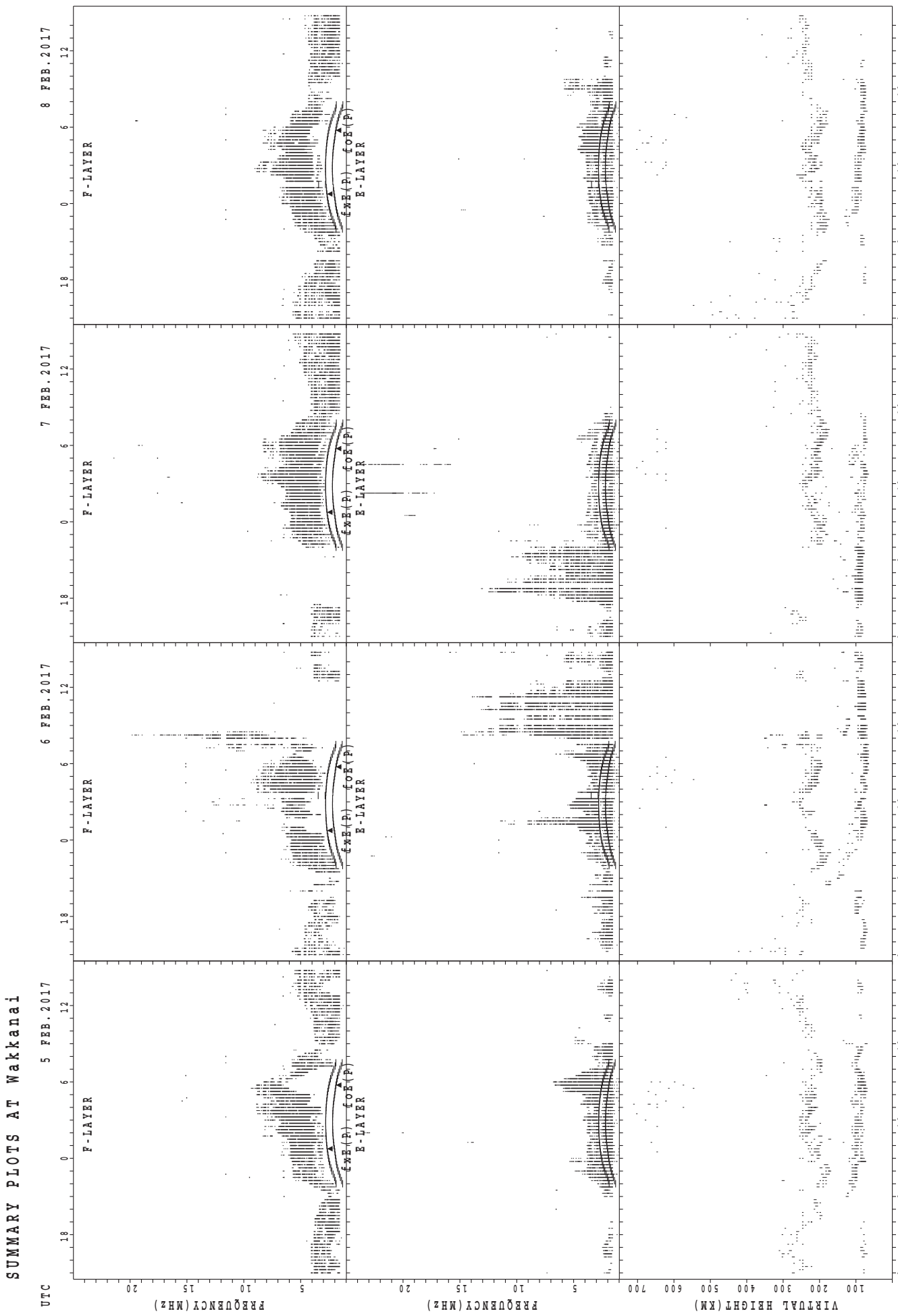
LAT. 26°41.0'N LON. 128°09.0'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

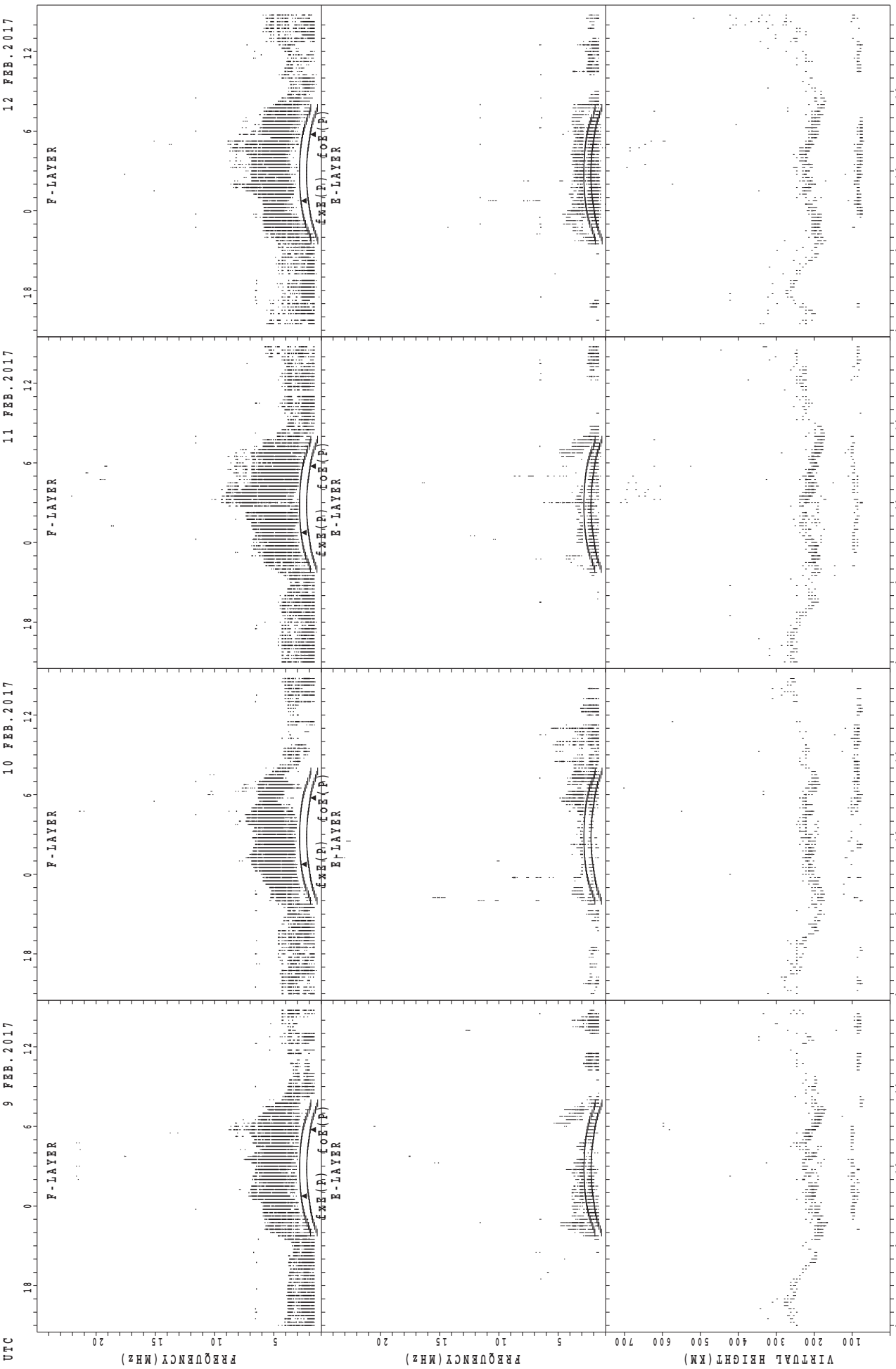
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	16	15	B	B	B	B	17	26	15	20	21	44	40	41	18	16	18	16	16	15	16	66	B
2	B	17	17	16	66	15	B	16	17	16	16	42	33	40	24	28	17	14	15	15	15	14	15	16
3	18	17	15	16	15	B	15	17	26	17	29	39	34	30	20	29	14	15	14	16	15	23	15	15
4	16	18	71	23	16	B	B	16	17	15	28	22	29	34	32	30	17	15	17	24	66	17	71	22
5	24	66	23	15	21	16	B	16	17	15	24	30	30	30	23	18	18	15	15	16	16	15	B	B
6	17	17	66	B	18	B	B	15	23	16	44	40	32	32	30	29	20	14	15	18	16	16	15	26
7	15	16	15	15	15	15	15	23	23	16	16	41	21	17	33	18	15	15	15	B	B	B	15	66
8	66	B	B	16	B	B	B	17	23	15	39	33	33	33	29	28	21	18	16	17	16	15	18	B
9	B	B	B	15	15	15	B	15	18	16	21	42	43	32	30	26	17	20	20	15	B	17	B	B
10	B	15	15	15	B	B	B	B	16	17	22	42	33	32	32	18	22	15	17	22	17	17	16	B
11	B	66	16	16	16	B	B	17	15	15	21	30	24	32	30	30	15	15	15	26	16	15	15	B
12	B	B	15	16	18	17	B	15	16	17	32	21	34	22	34	30	21	15	21	26	B	B	B	B
13	18	B	18	21	16	B	B	16	24	20	34	34	32	35	34	22	17	15	14	15	15	15	B	15
14	B	15	B	B	B	B	B	17	16	17	30	32	32	26	48	22	18	15	15	20	17	17	B	B
15	B	16	B	B	26	16	B	18	14	18	22	44	44	24	47	21	15	15	21	16	15	14	16	B
16	B	15	B	15	15	16	B	16	16	16	C	C	C	C	C	C	C	C	C	C	C	15	15	16
17	15	21	21	15	15	15	B	B	16	16	41	43	45	47	42	30	21	17	16	23	20	16	18	B
18	B	B	66	16	15	14	66	17	24	37	17	42	34	43	42	21	20	15	18	16	16	B	16	18
19	17	B	B	B	B	B	B	15	24	15	18	44	46	43	42	39	20	16	20	15	16	B	17	15
20	18	66	18	20	18	B	B	16	24	15	17	42	46	43	33	41	24	17	23	16	15	20	16	B
21	B	B	16	71	B	B	B	17	18	16	17	45	47	41	22	23	16	30	21	17	20	28	B	B
22	B	B	16	20	15	16	B	17	16	34	44	42	49	40	46	40	39	16	18	16	18	23	20	66
23	18	23	21	20	17	B	B	16	15	39	18	42	47	48	35	42	35	15	15	15	16	17	16	B
24	B	B	15	18	66	16	18	17	15	16	36	42	44	45	43	42	28	16	14	15	16	15	40	15
25	15	15	16	16	B	B	B	17	14	16	40	35	35	32	33	40	39	15	20	15	16	15	B	20
26	27	66	15	17	B	B	B	17	28	32	40	42	43	44	44	18	39	16	20	17	16	B	16	16
27	16	17	17	18	B	B	B	20	15	32	41	45	44	43	42	40	17	16	20	15	16	16	B	17
28	B	20	17	B	B	16	B	17	15	36	35	34	38	34	33	24	36	16	22	16	66	18	21	66
29																								
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	14	19	22	22	18	12	4	26	28	28	27	27	27	27	27	27	27	27	27	26	24	23	20	15
MED	18	17	16	16	16	16	16	17	17	16	28	42	35	34	33	28	20	15	17	16	16	16	16	17
U Q	18	23	21	20	18	16	42	17	23	19	39	42	44	43	42	39	24	16	20	18	17	17	19	26
L Q	16	16	15	15	15	15	15	16	15	15	18	33	32	32	30	21	17	15	15	15	15	15	15	15

SUMMARY PLOTS AT Wakkanai

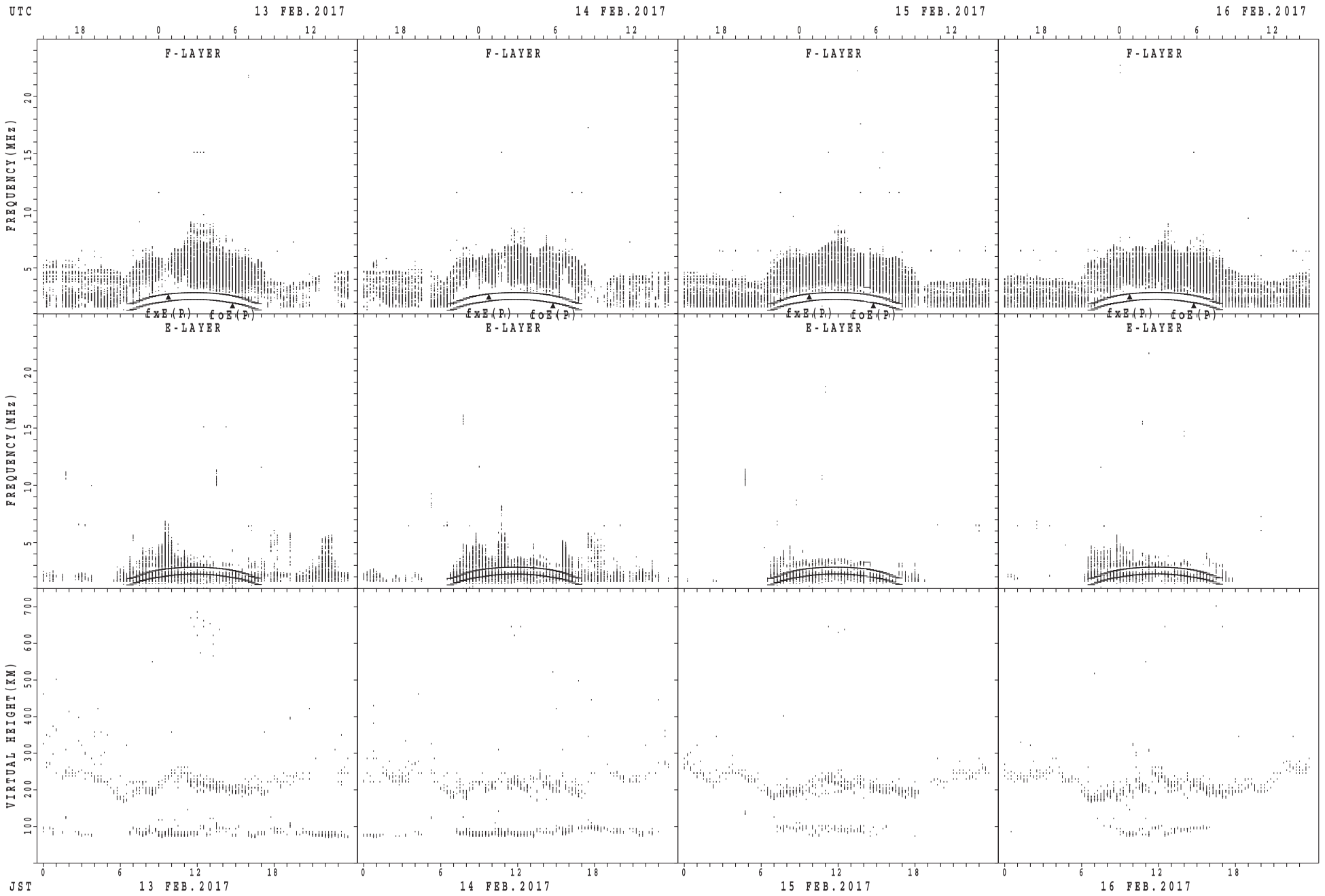


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

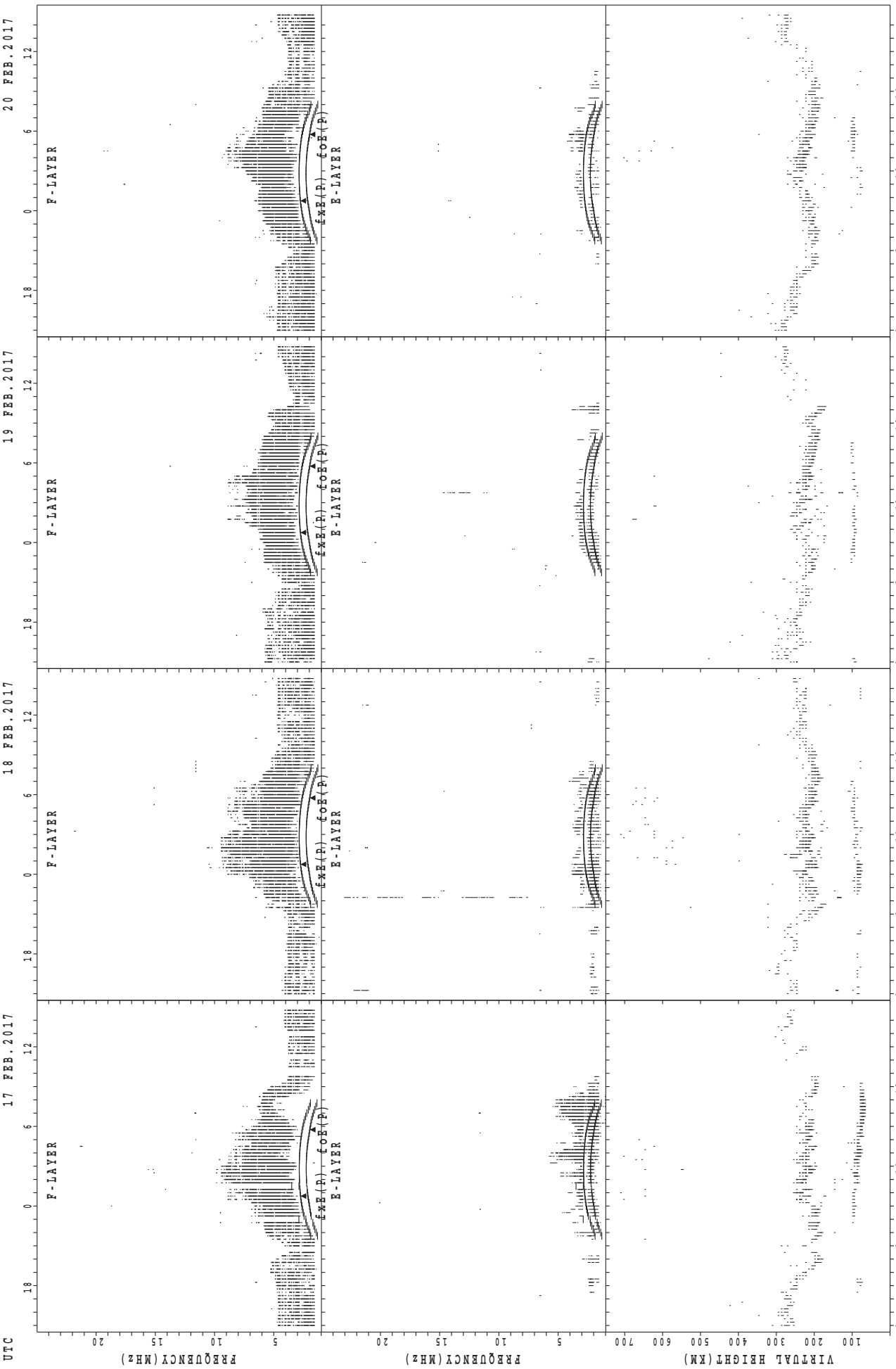

SUMMARY PLOTS AT Wakkanai
UTC
JST
5 FEB.2017
6 FEB.2017
7 FEB.2017
8 FEB.2017
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P), foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

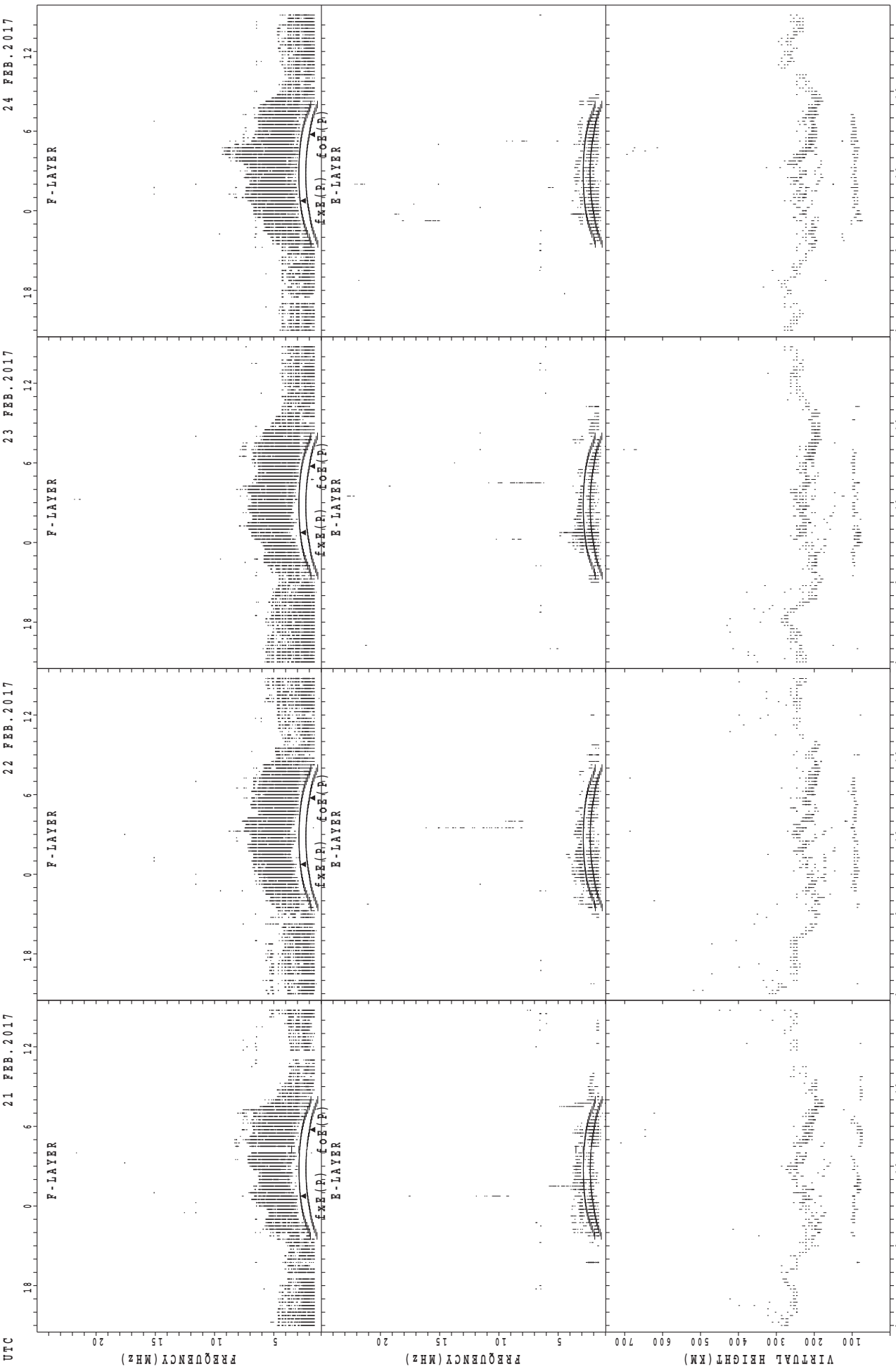

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 FEB.2017
10 FEB.2017
11 FEB.2017
12 FEB.2017
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P), foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

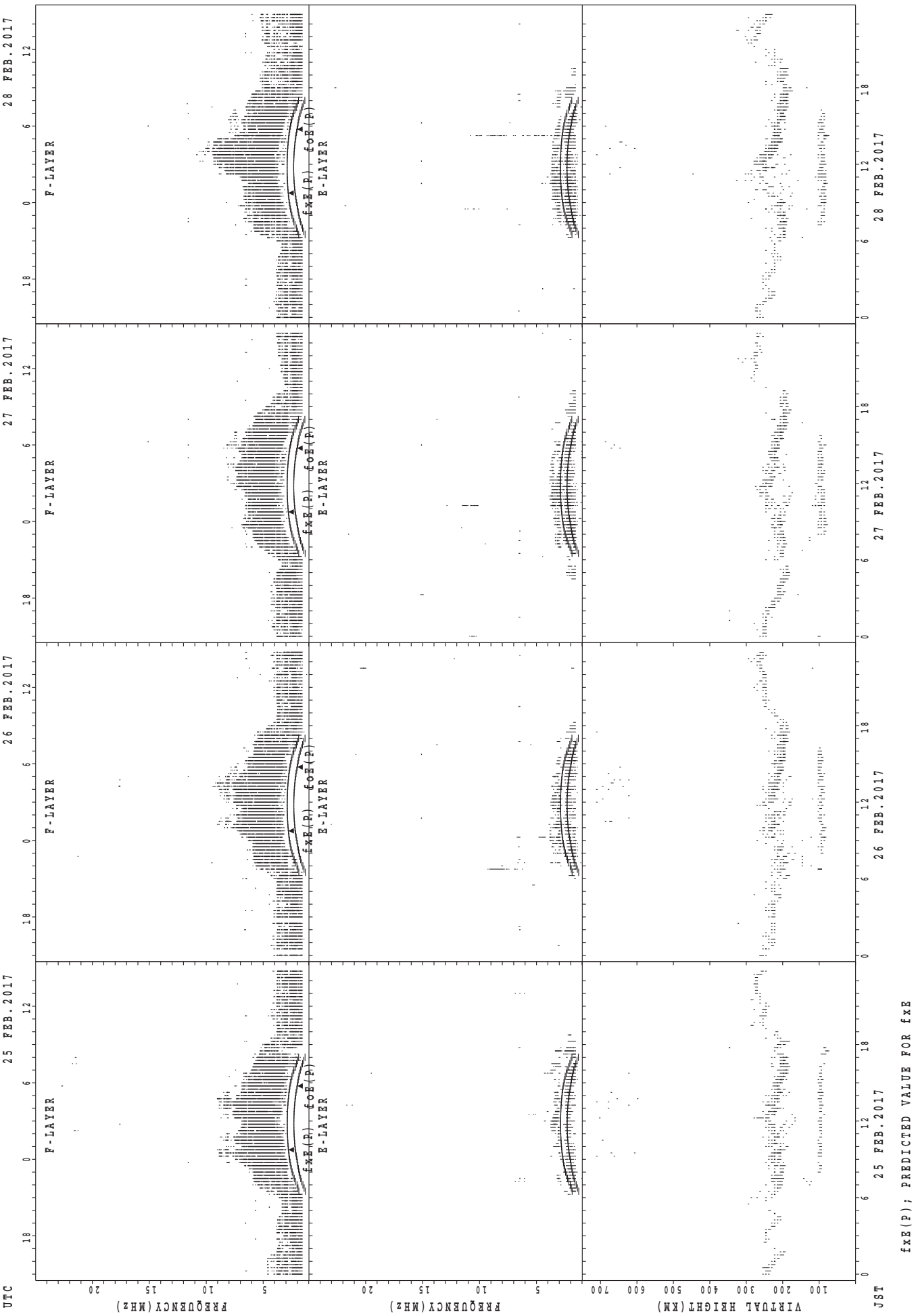
SUMMARY PLOTS AT Wakkanai



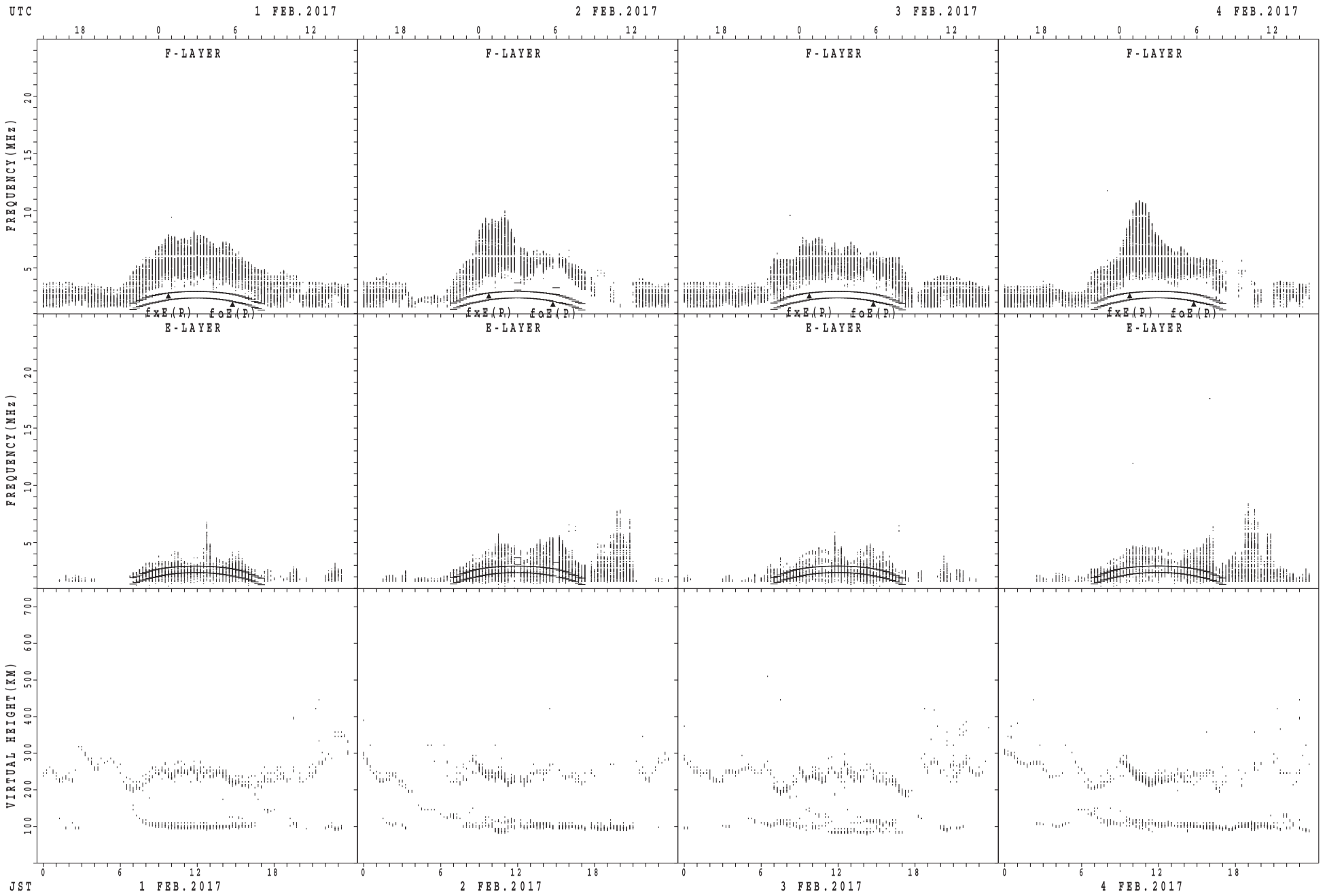
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
17 FEB.2017
18 FEB.2017
19 FEB.2017
20 FEB.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
21 FEB.2017
22 FEB.2017
23 FEB.2017
24 FEB.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

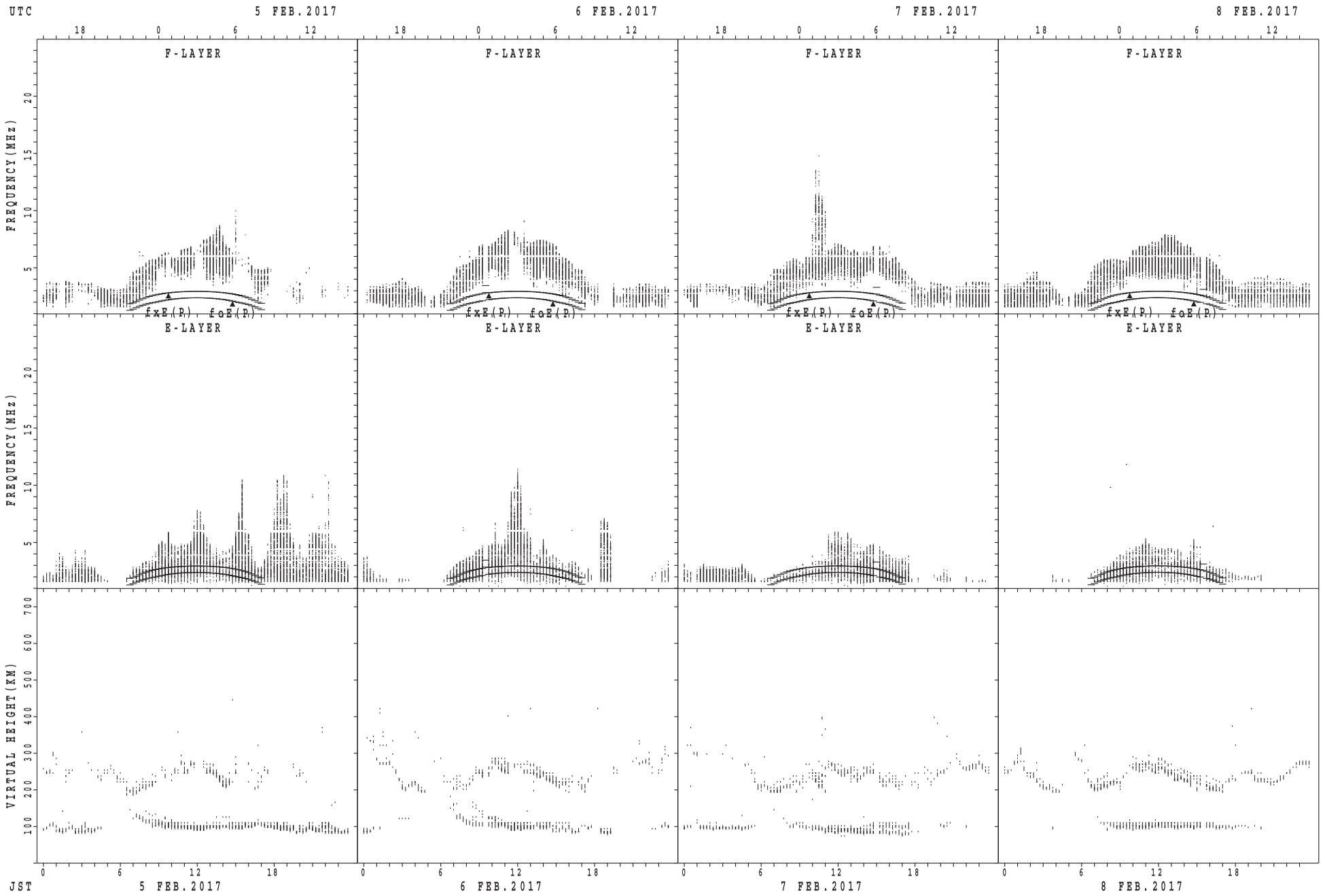

SUMMARY PLOTS AT Wakkanai
UTC
JST
25 FEB.2017
26 FEB.2017
27 FEB.2017
28 FEB.2017
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P), foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

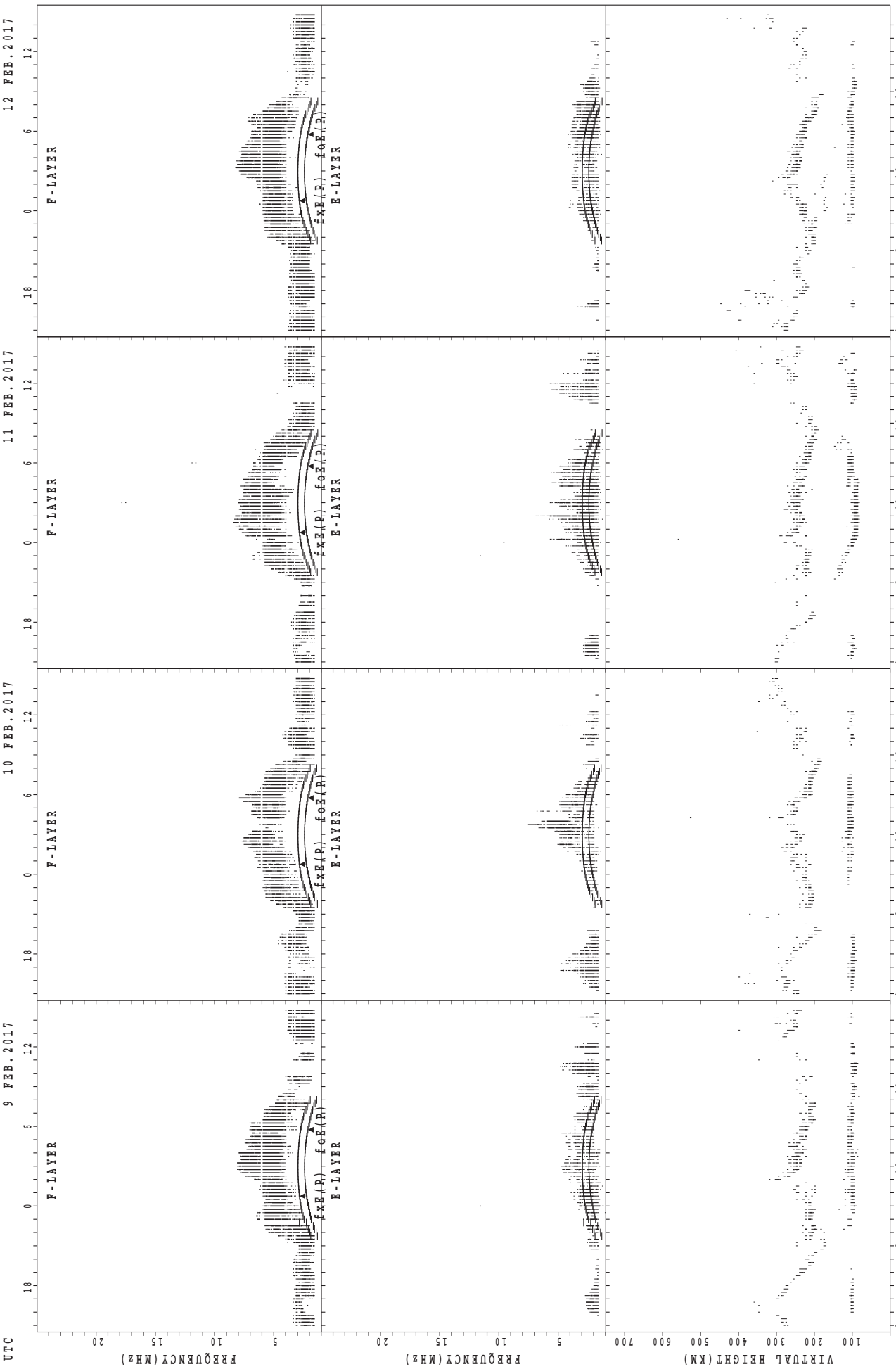


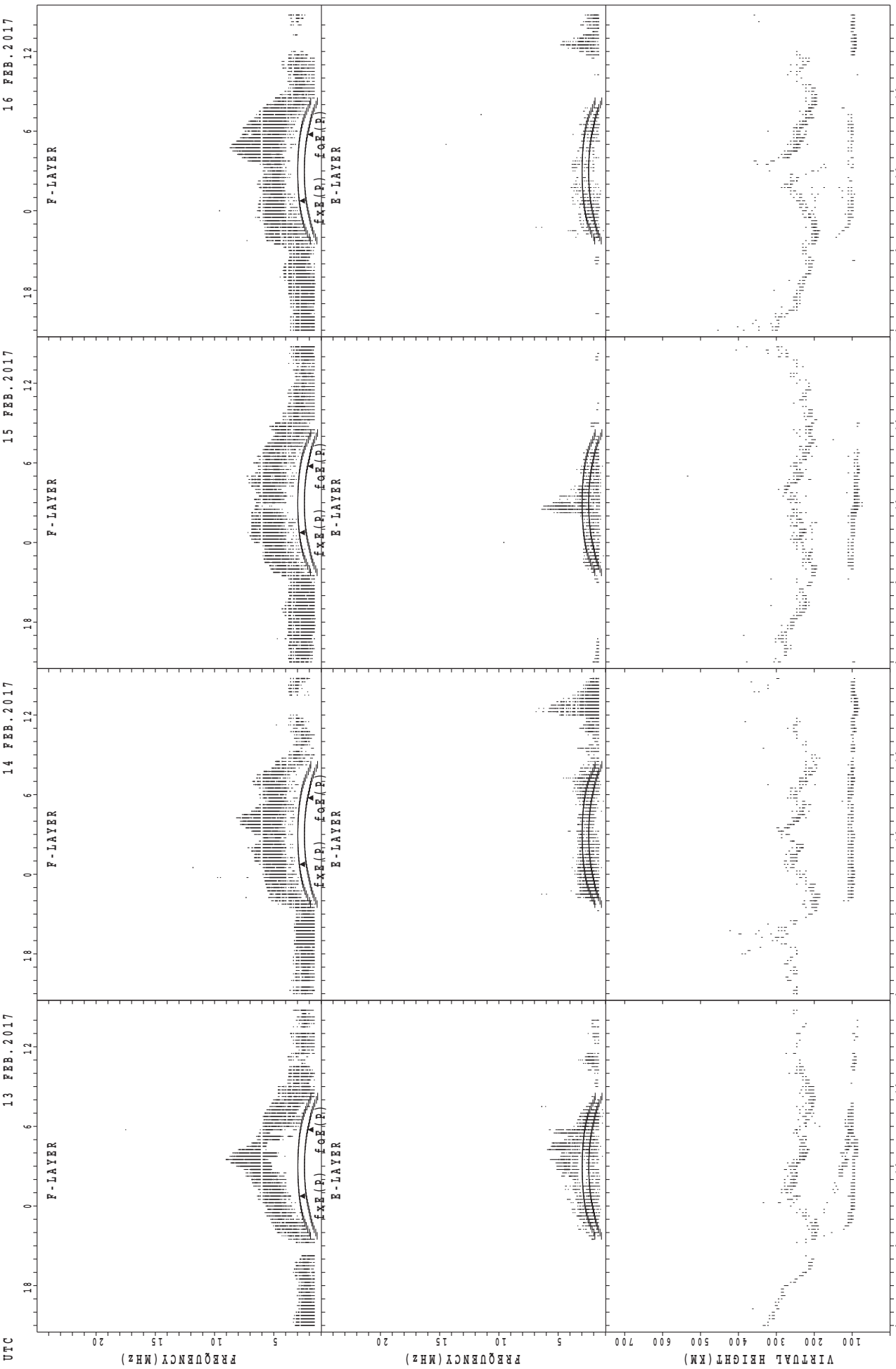
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

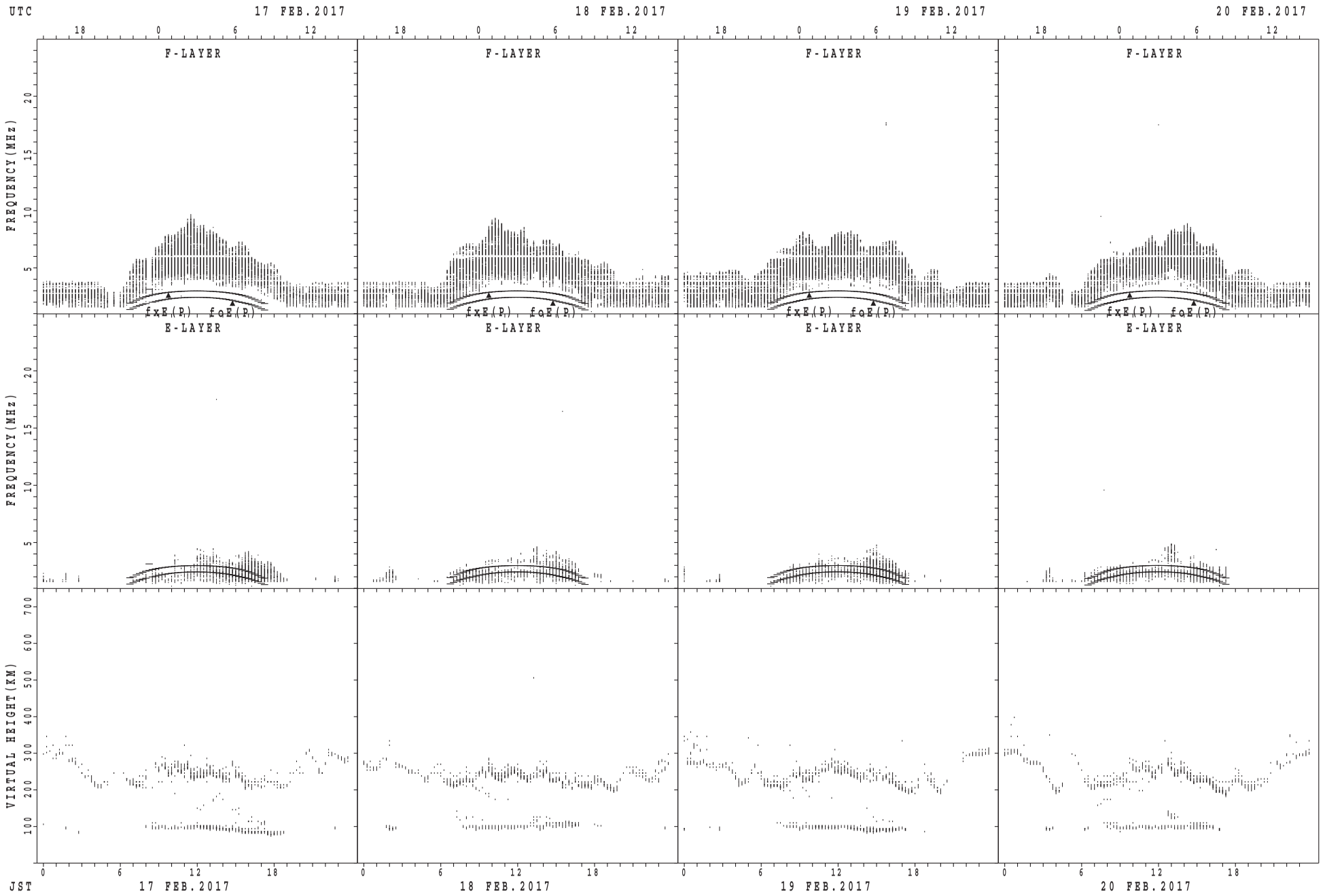


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
JST
9 FEB.2017
10 FEB.2017
11 FEB.2017
12 FEB.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

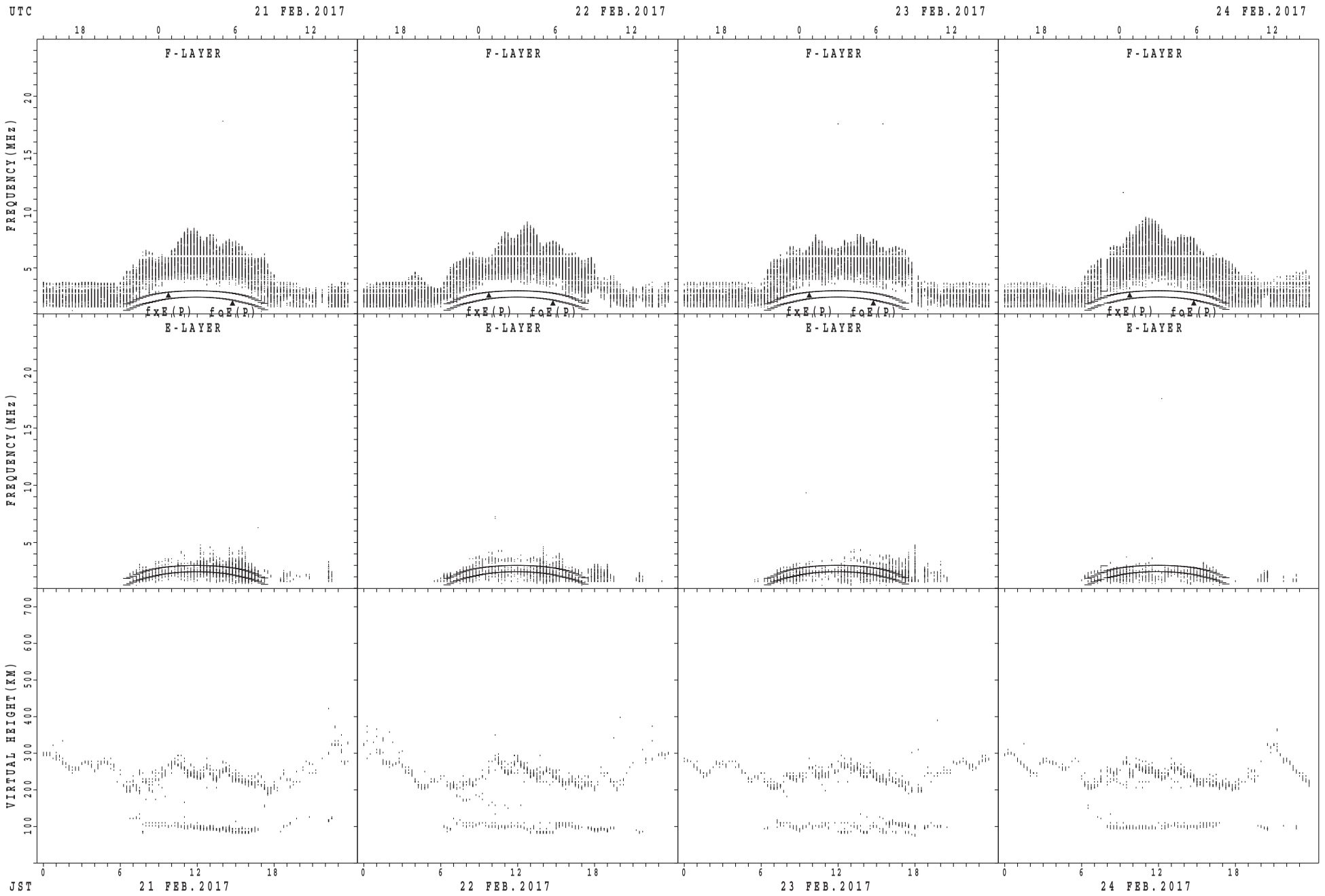

SUMMARY PLOTS AT Kokubunji
UTC
JST
13 FEB.2017
14 FEB.2017
15 FEB.2017
16 FEB.2017
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



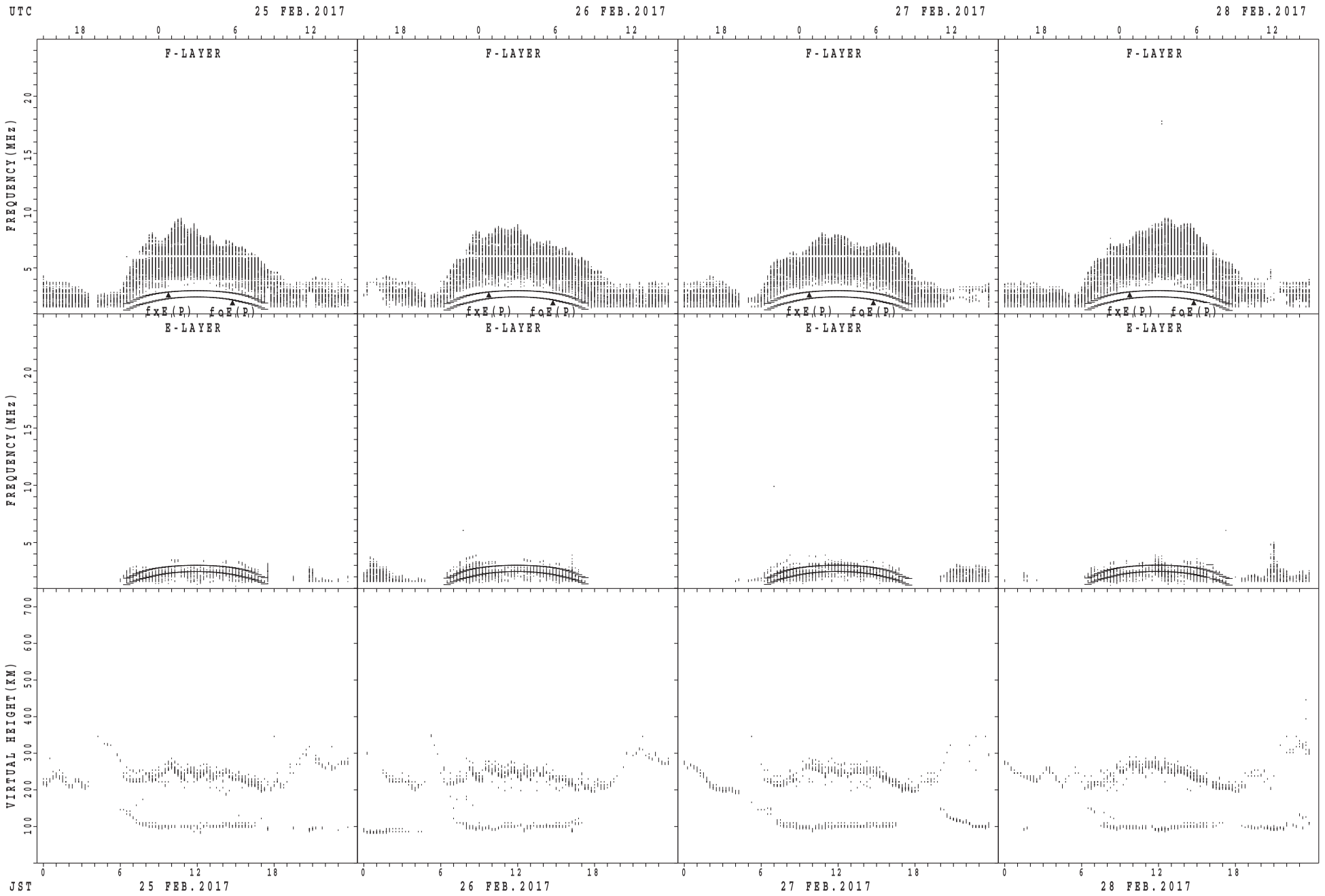
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



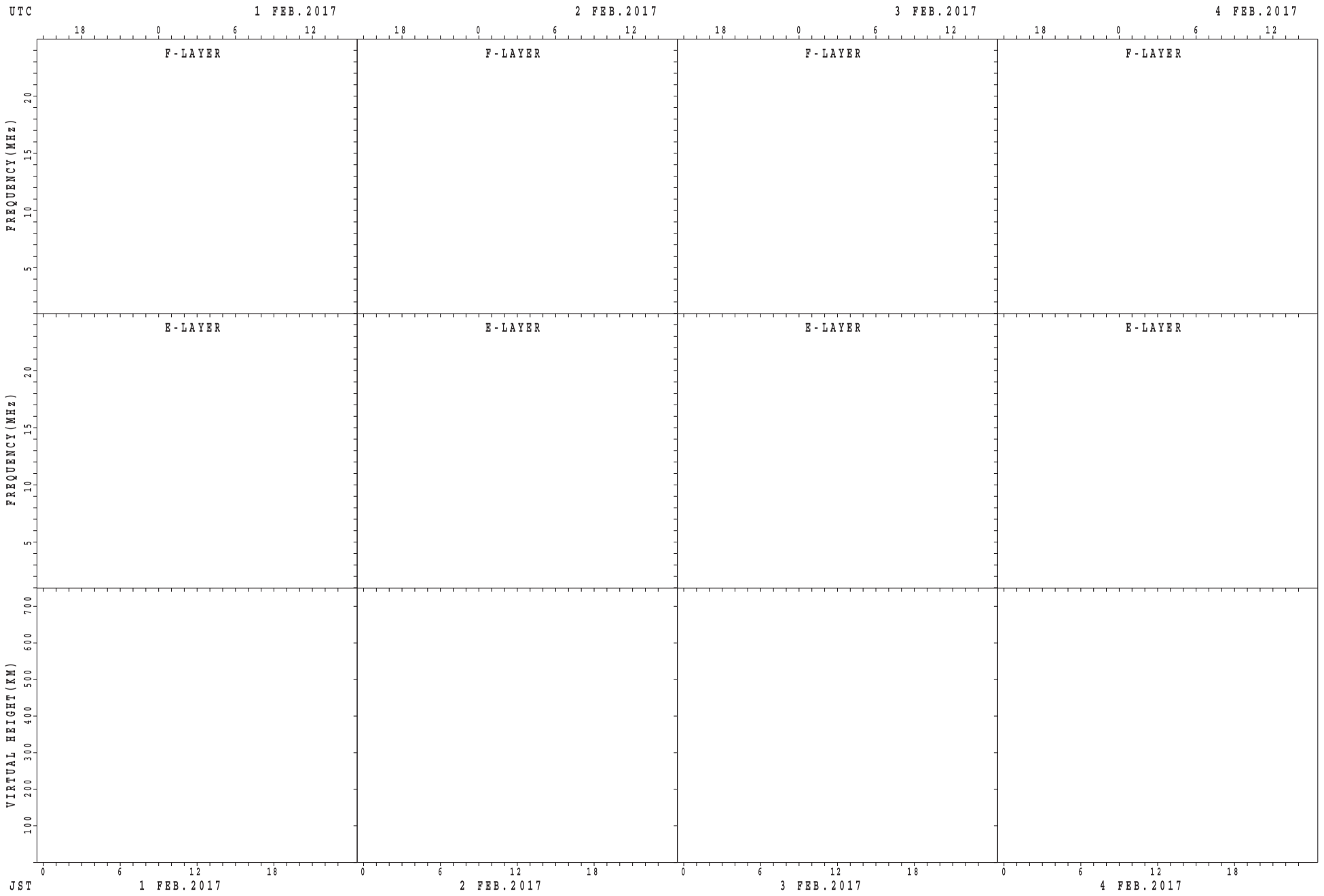
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



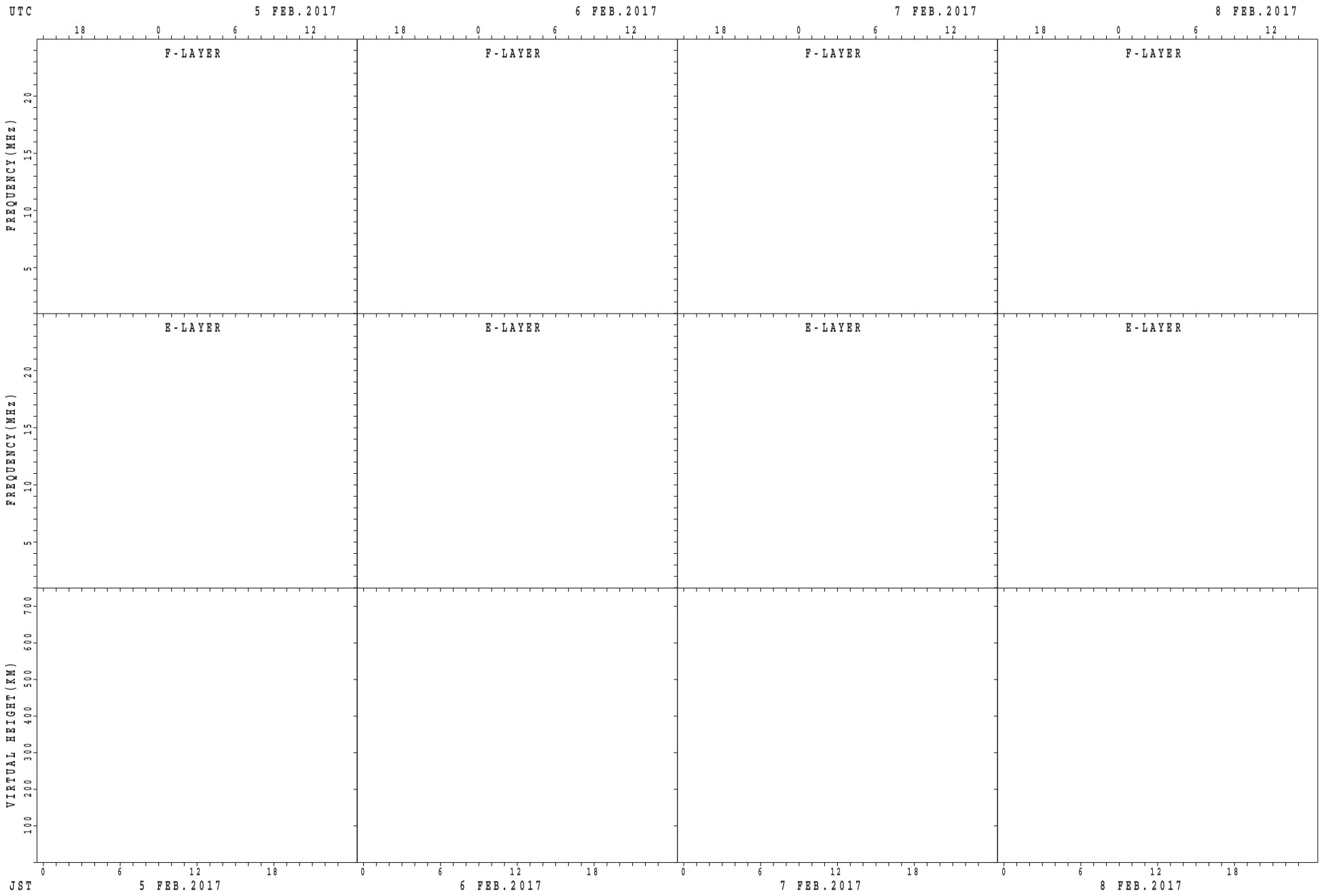
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



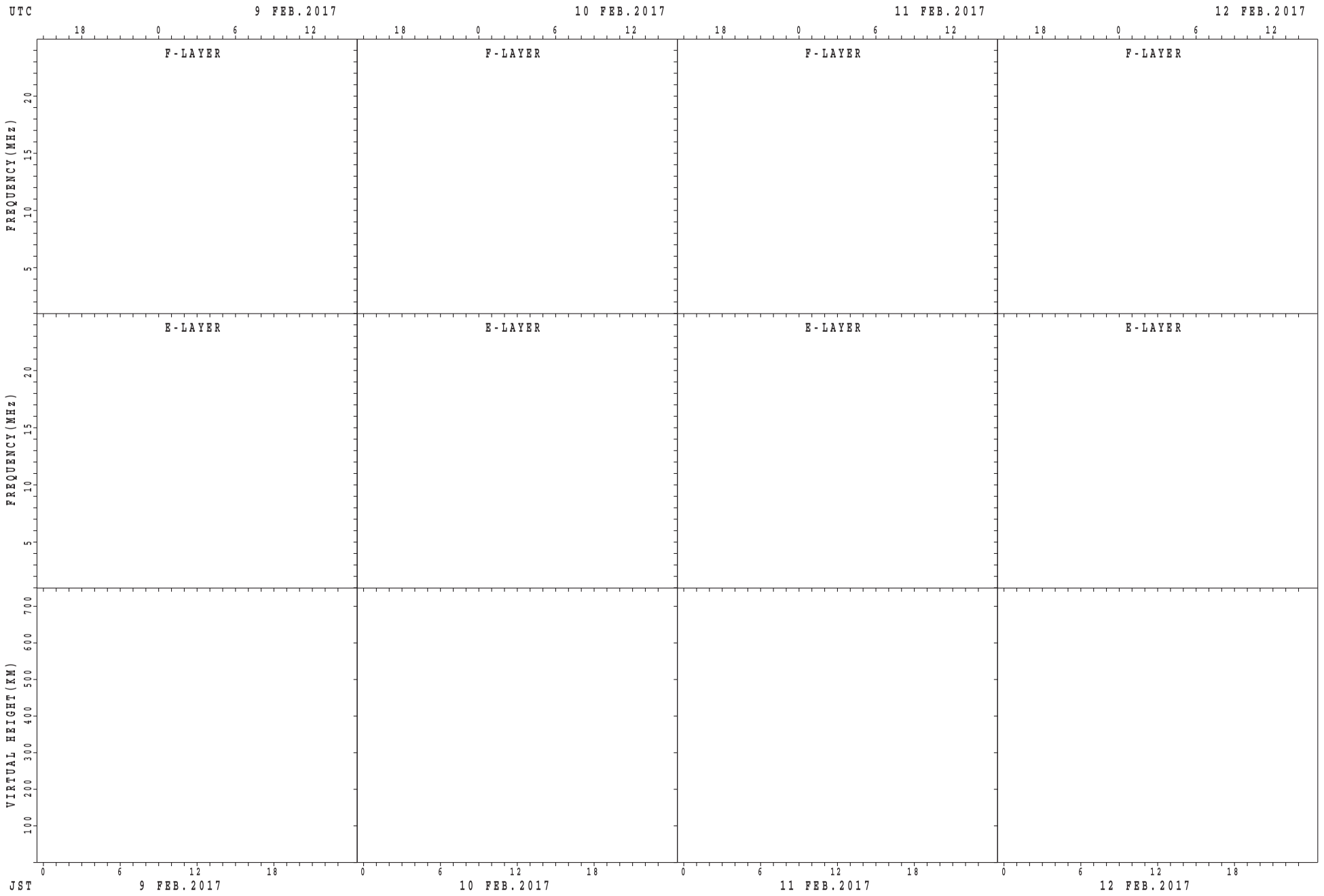
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



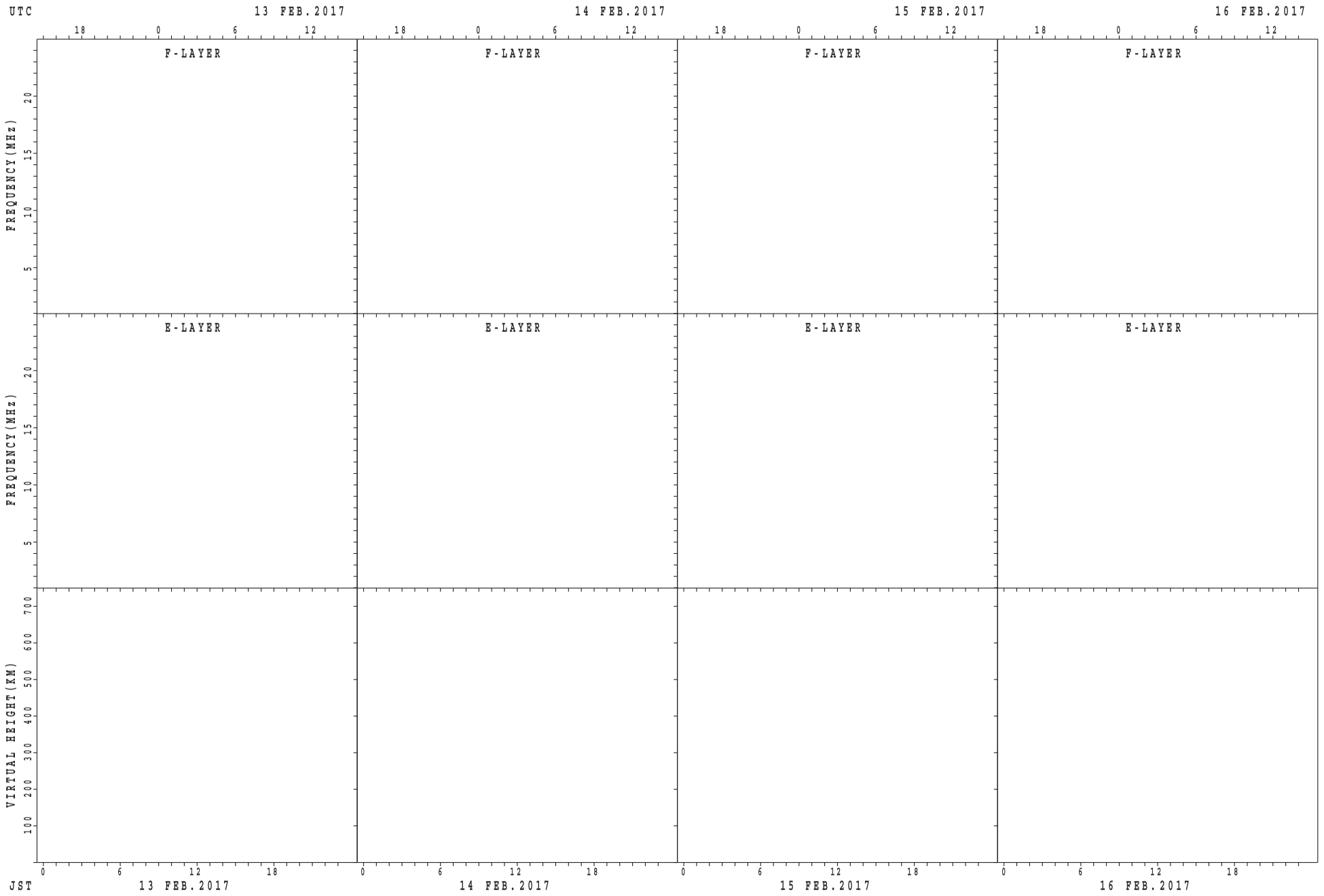
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



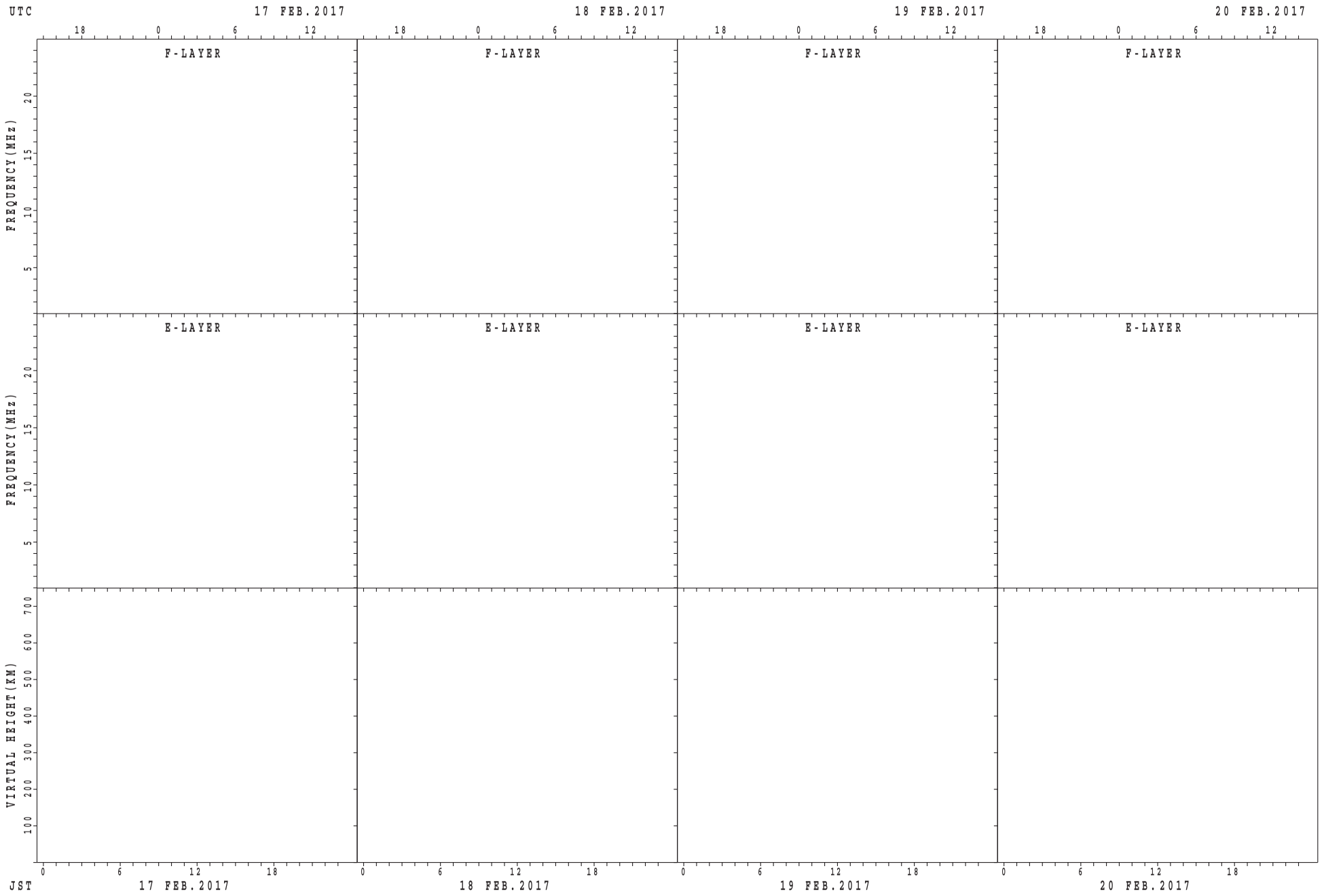
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



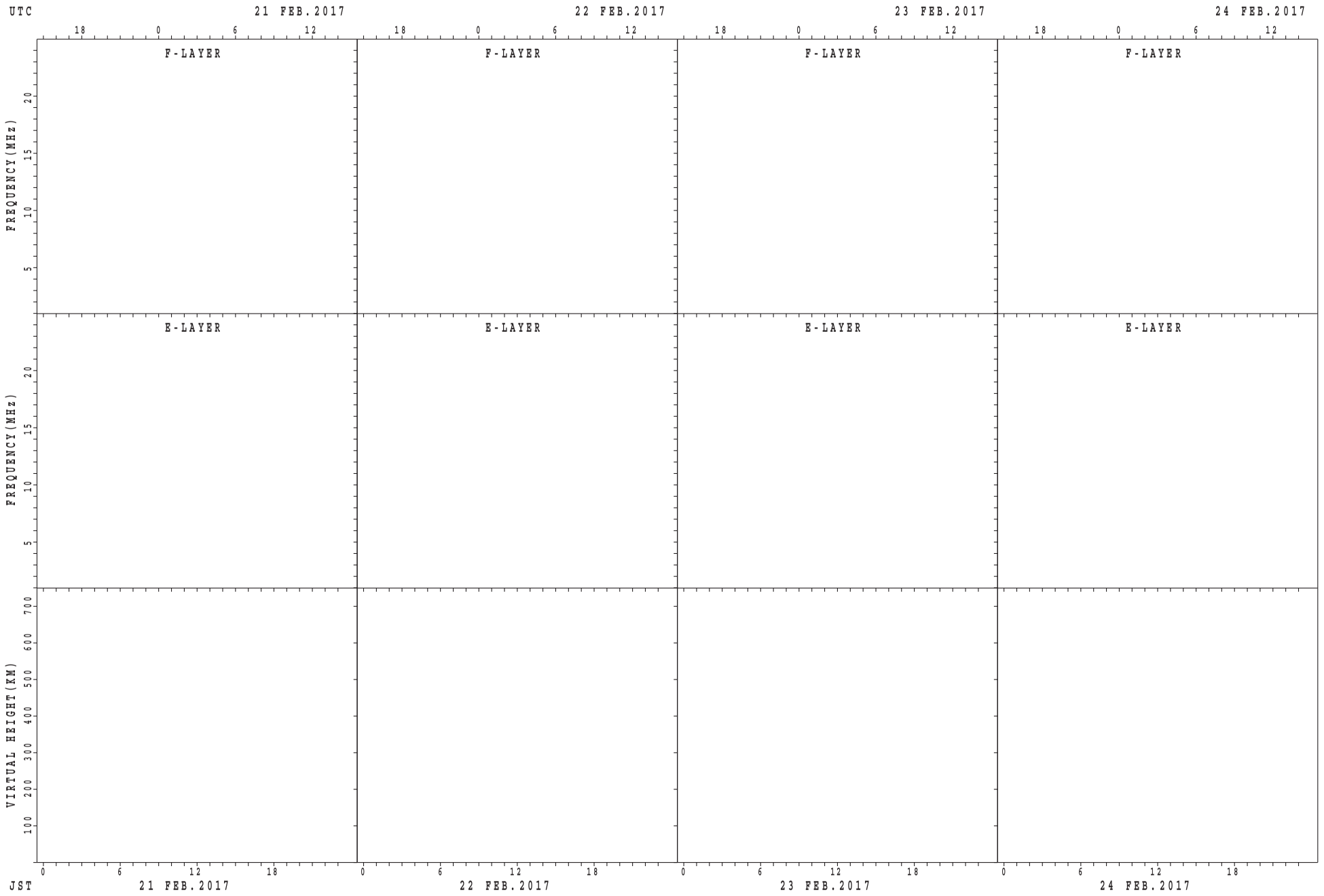
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



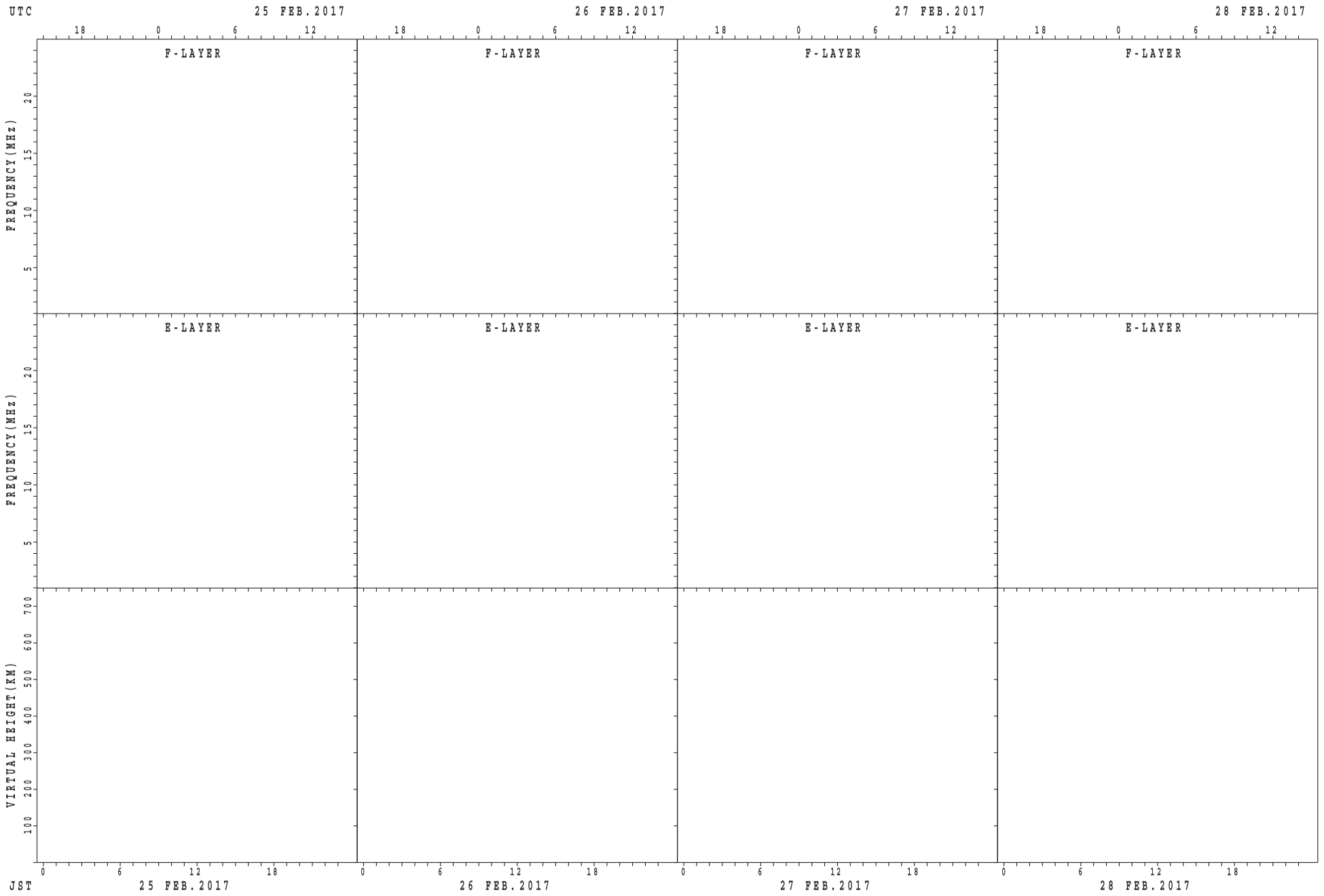
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



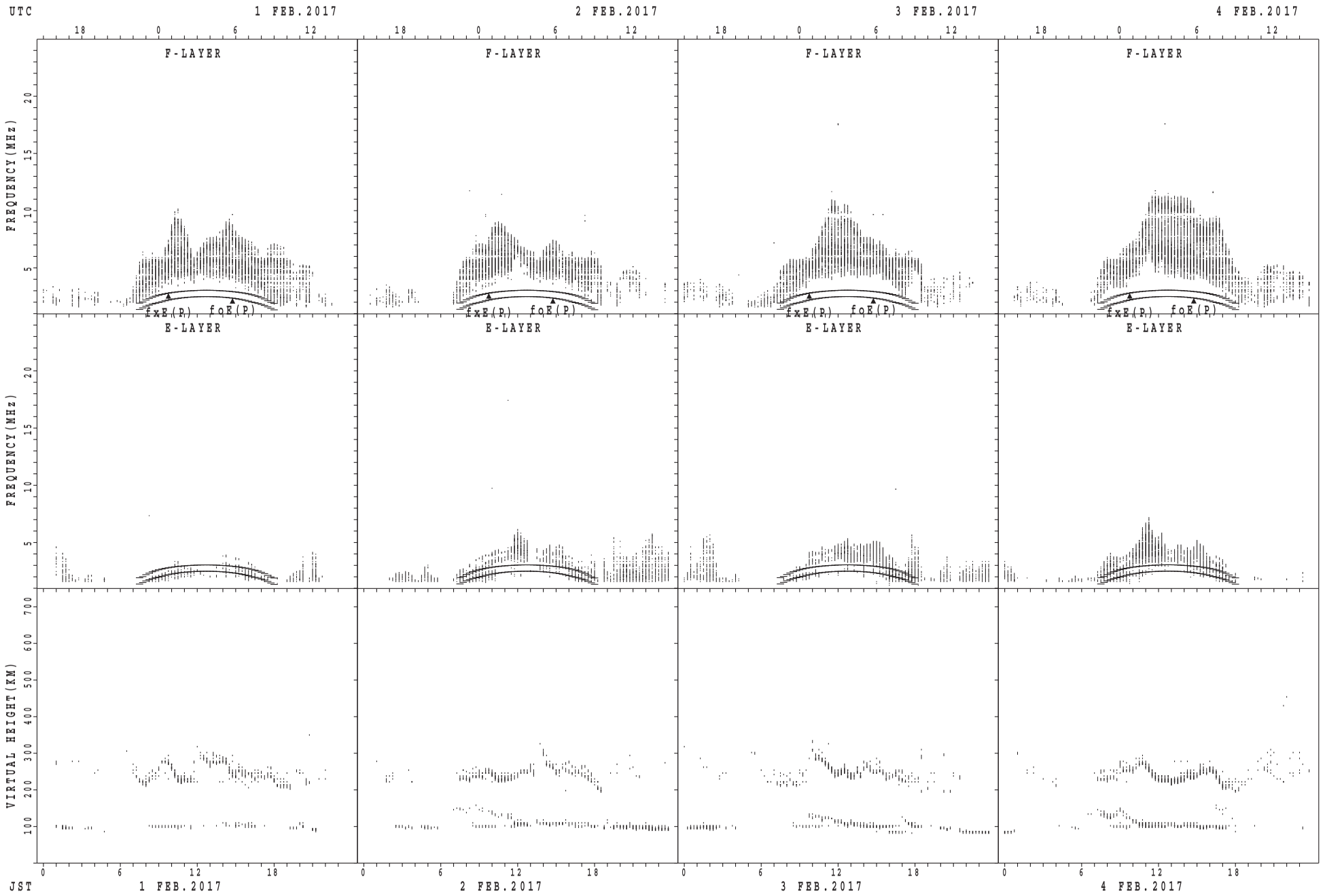
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



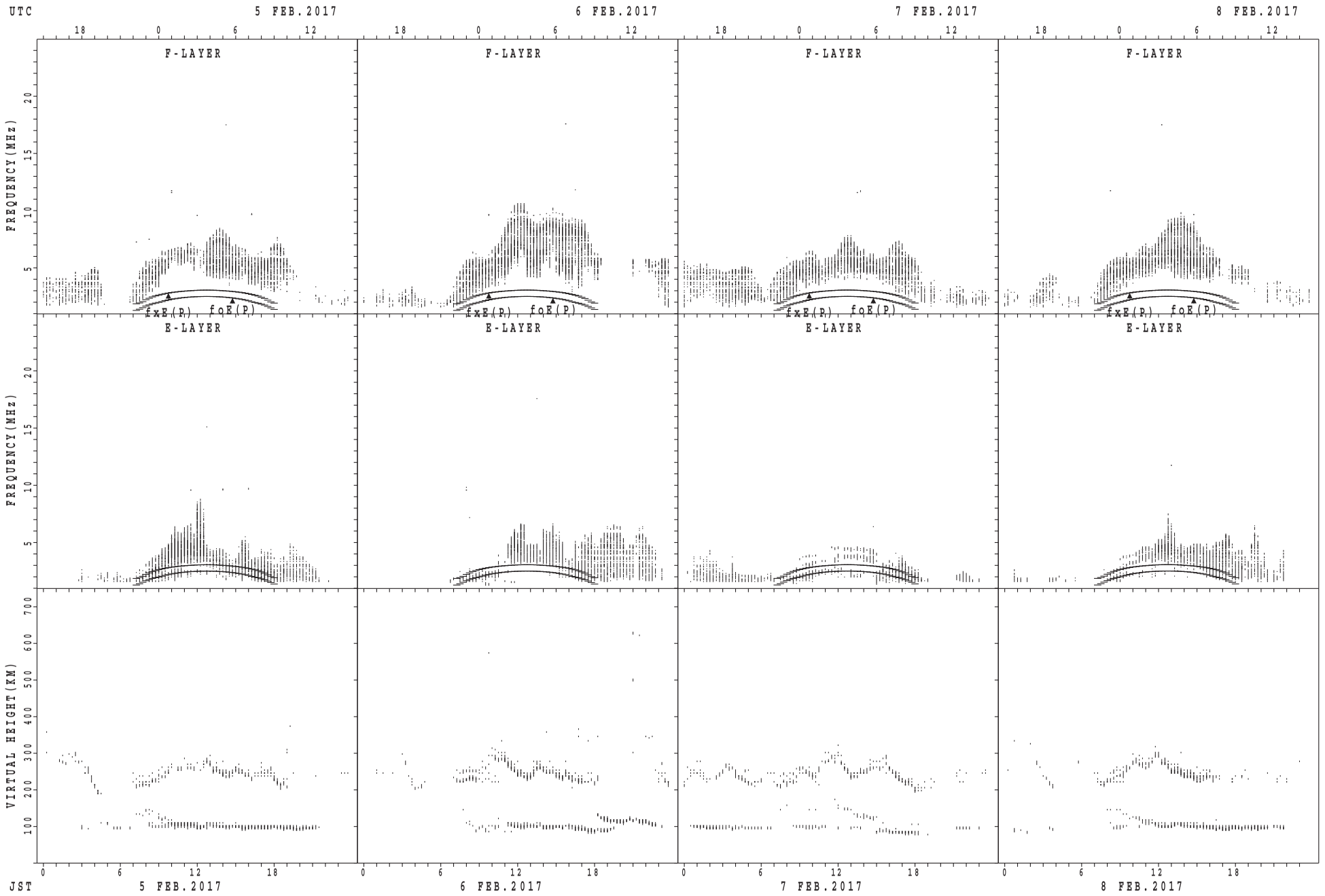
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



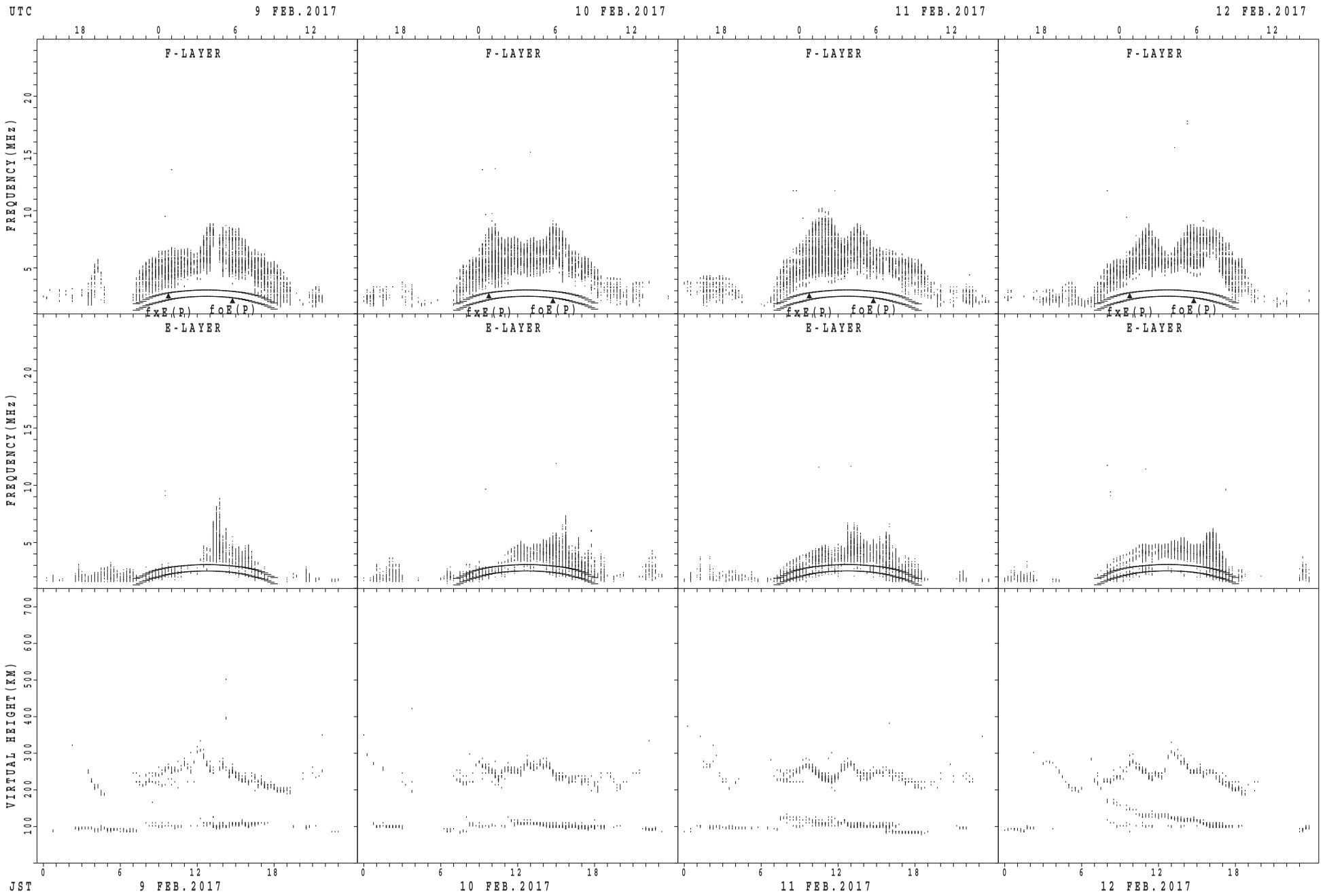
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



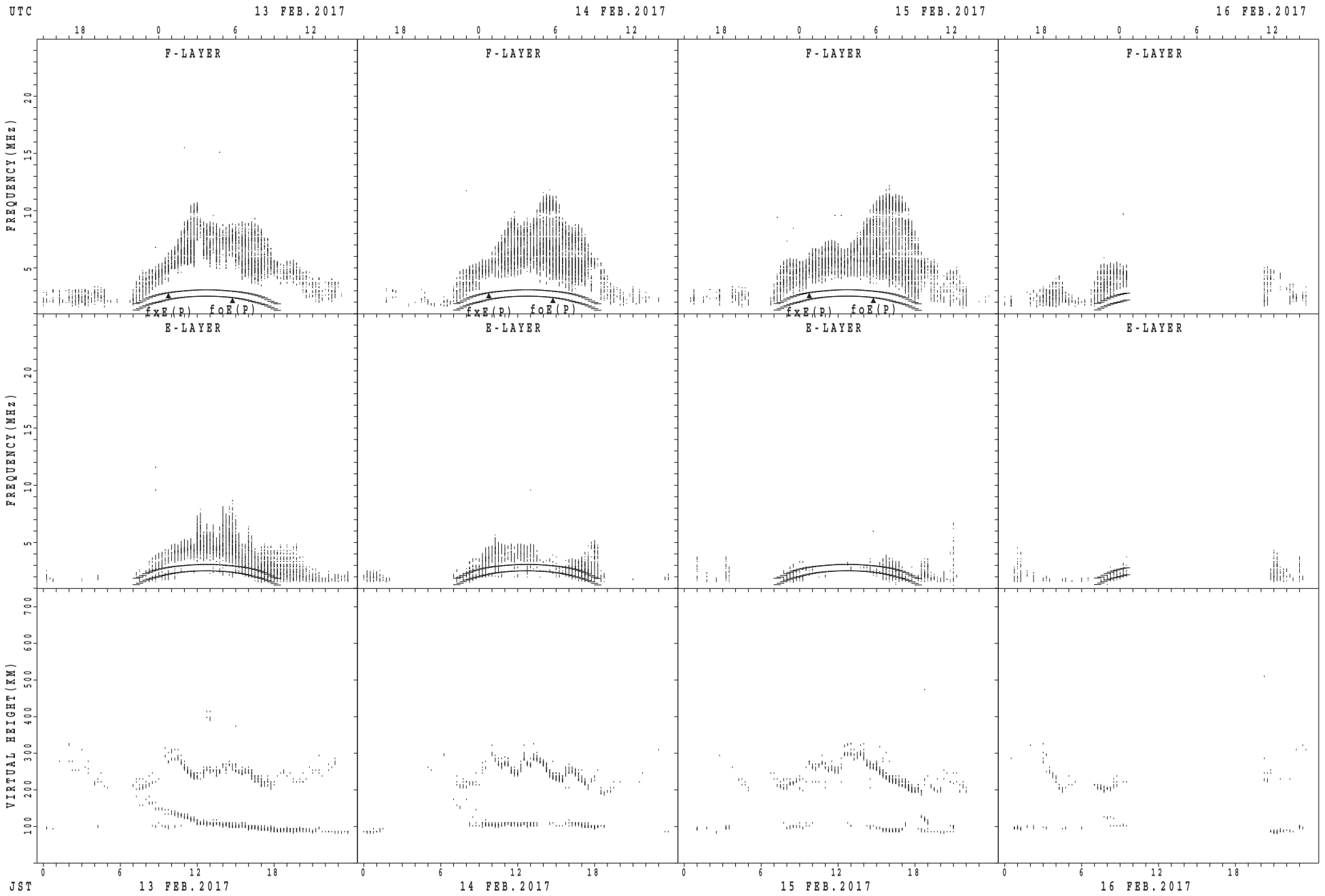
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



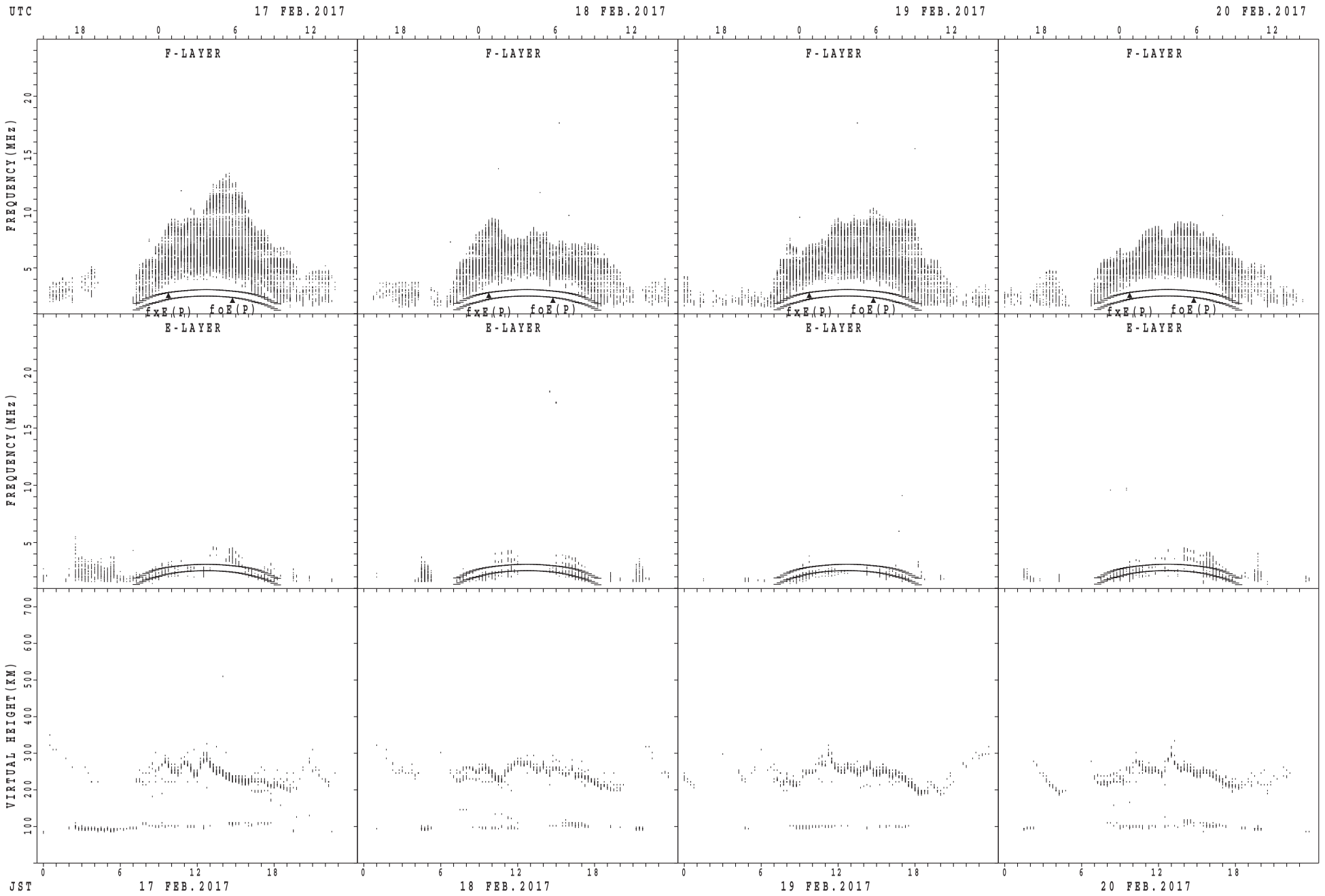
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



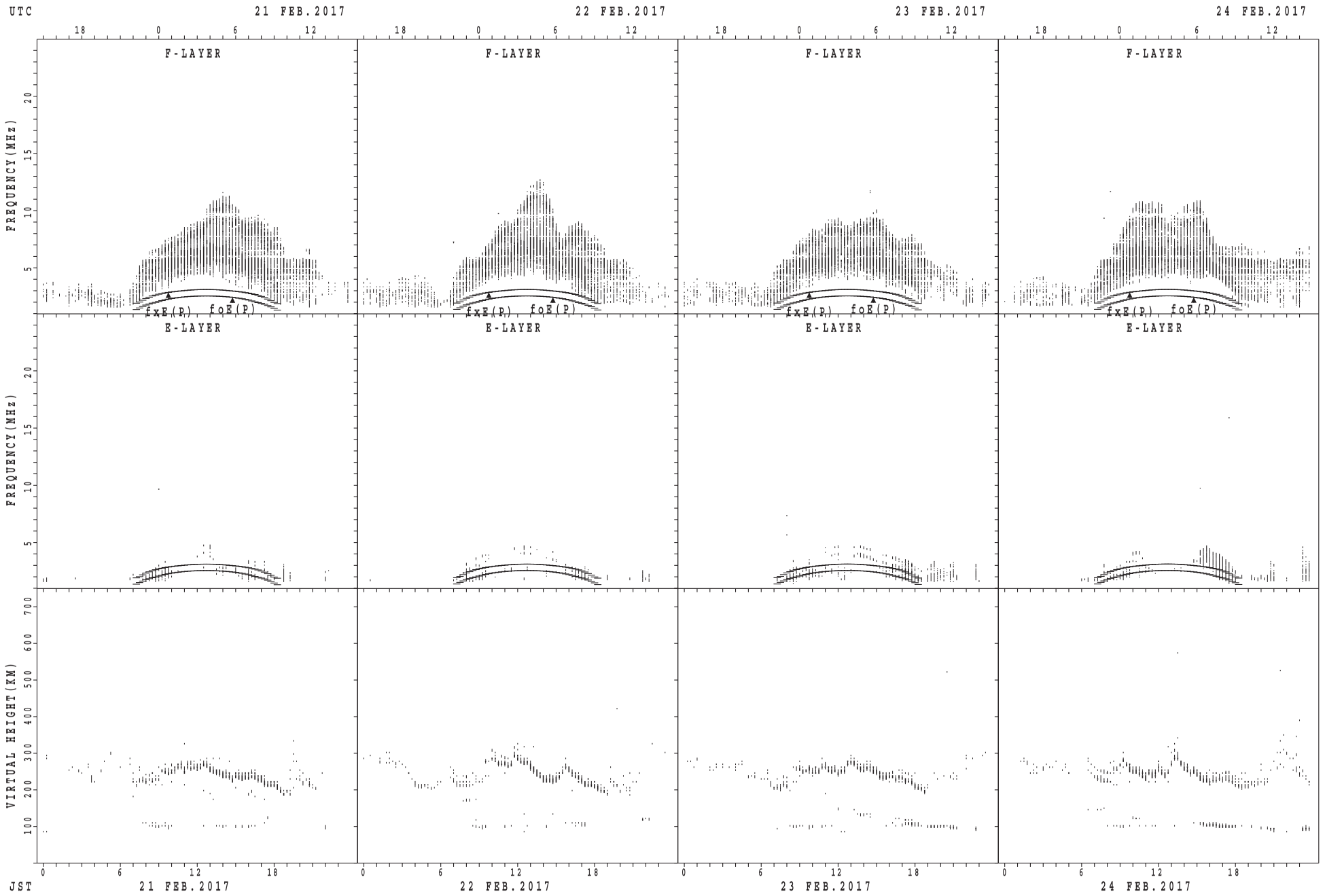
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



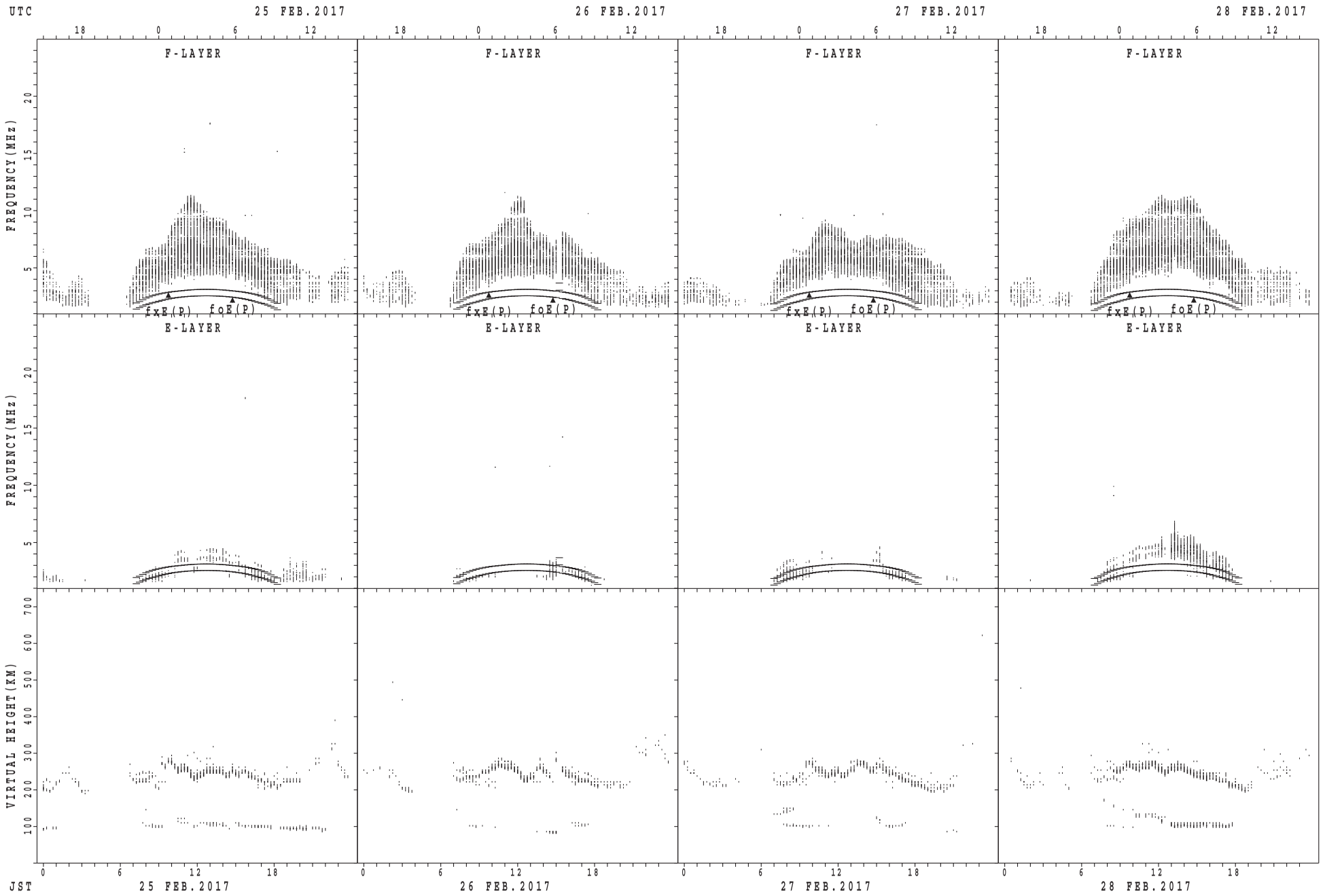
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

FEB.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									5	7	9	4	1	7	16	14	3	3						
MED									216	240	232	223	200	232	230	231	230	230						
U Q									218	250	244	232	100	240	234	236	240	234						
L Q									211	224	221	211	100	224	224	212	228	210						

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	9	5	6	5	3	4	8	16	20	21	24	23	24	19	23	21	22	16	15	8	10	8	5	9
MED	87	83	85	81	89	90	144	119	121	107	110	113	100	95	95	95	101	87	95	88	89	85	87	85
U Q	94	89	85	89	95	137	179	144	176	128	167	157	168	129	107	99	141	93	113	95	95	88	87	90
L Q	82	80	81	80	87	89	108	102	93	89	99	95	95	89	89	87	87	82	87	83	87	81	83	82

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									5	10	3				5	16	7							
MED									238	251	238				244	237	232							
U Q									254	256	244				249	247	232							
L Q									225	242	232				227	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	7	6	9	4	4	1	1	18	25	20	19	23	22	24	25	24	25	13	11	12	14	11	8	8
MED	97	99	101	98	97	101	169	143	121	110	113	107	104	105	105	103	103	99	99	101	102	99	105	100
U Q	99	105	104	103	100	50	84	155	159	131	125	115	113	115	112	106	107	103	101	104	105	103	116	105
L Q	91	93	95	93	95	50	84	127	107	101	101	101	97	97	101	99	101	90	95	95	99	97	97	93

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																								
MED																								
U Q																								
L Q																								

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																								
MED																								
U Q																								
L Q																								

MONTHLY MEDIANS OF h'F AND h'Es

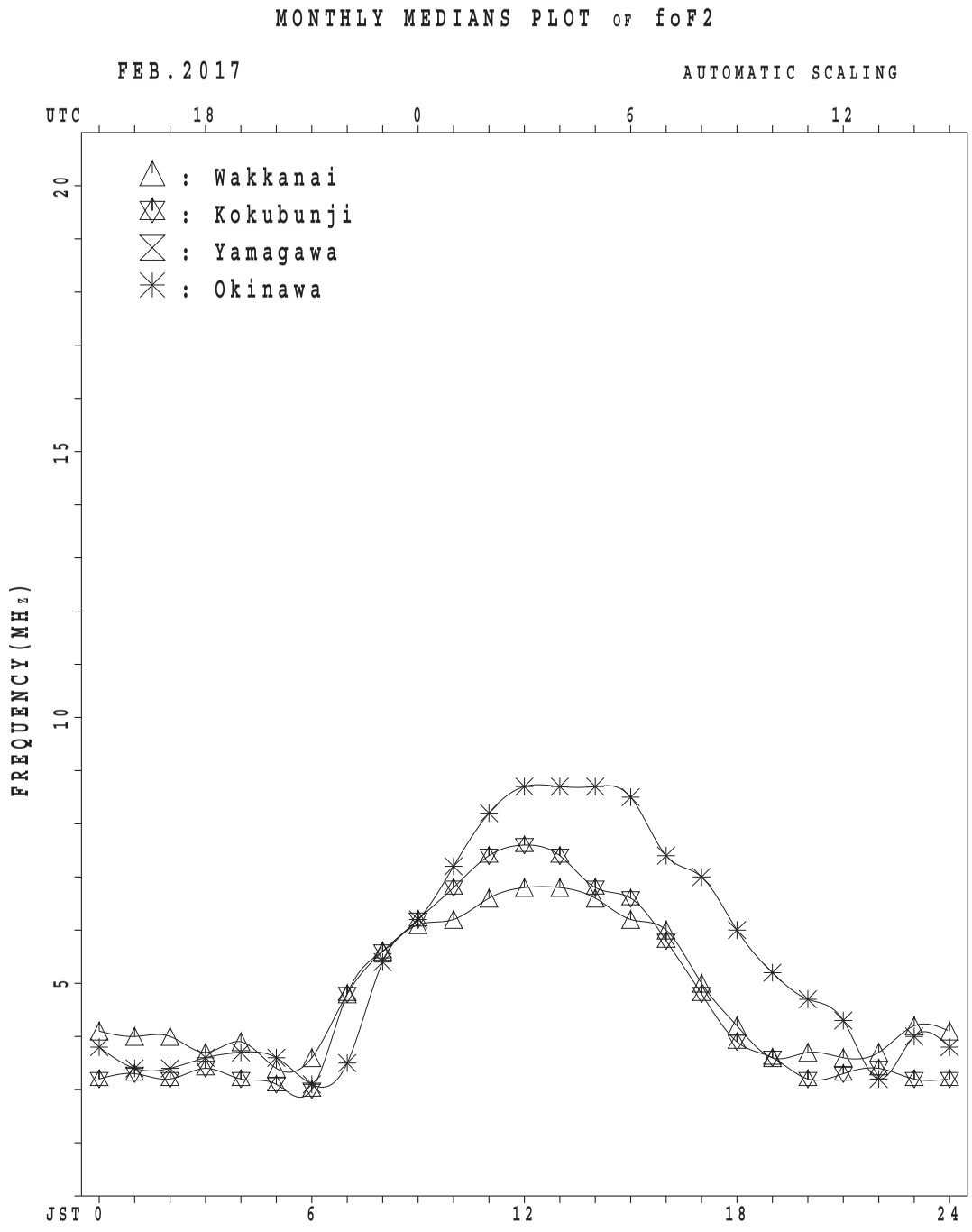
FEB.2017 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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									2	11	13						23	15	9					
MED									251	256	262						240	228	224					
U Q									256	266	302						252	240	244					
L Q									246	248	251						232	222	218					

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	8	7	7	5	6		2	16	14	14	11	16	16	17	19	22	21	13	7	11	11	6	4
MED	89	101	99	97	97	96		134	144	132	123	111	109	109	105	103	104	103	99	99	99	97	96	93
U Q	95	104	99	103	98	99		177	157	151	137	127	120	119	114	111	107	111	104	113	105	103	99	98
L Q	87	98	97	97	95	95		91	124	105	111	103	104	106	104	103	101	96	90	93	95	91	93	88


MONTHLY MEDIANS PLOT OF foF2
FEB.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

FEB. 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 44	X 42	X 37	X 39	X 40	X 35									C	C	C	C	C	C	C	C	C	C
2	C	C	C	X 42	X 34	X 32													X 47	A	X 42	X 48	X 51	X 48
3	X 47	X 47	X 41	X 42	X 44	X 37													X 47	X 34	X 37	X 41	X 43	X 41
4	X 42	X 42	X 40	X 40	X 39	X 36												X 49	X 38	X 37	X 37	X 37	X 39	X 40
5	X 42	X 42	X 42	X 38	X 38	X 34													X 34	X 41	X 43	X 48	55	55
6	55	51	51	40	X 41	57													A	A	A	A	X 40	X 39
7	X 41	X 44	X 44	A	A	A													X 39	X 42	X 43	X 48	X 48	X 45
8	58	63	63	56	X 40	39	37												X 43	X 43	X 43	X 43	X 45	X 45
9	X 41	X 42	X 40	X 40	X 37	X 37													X 41	X 35	X 37	X 43	X 41	X 45
10	X 45	X 46	X 46	X 48	X 47	X 47													X 44	X 41	X 45	X 41	X 42	X 42
11	X 43	57	57	X 40	X 45	X 39													X 41	X 41	X 46	X 43	X 42	57
12	58	X 60	X 52	60	X 37	52													X 38	X 43	X 40	X 43	57	61
13	X 51	61	58	48	53	53													X 41	X 36	X 37	X 39	X 39	X 46
14	X 47	X 55	53	X 48	X 50	58													X 37	X 39	X 45	X 45	X 43	X 50
15	57	X 48	X 50	X 43	X 41	X 42														X 36	X 39	X 37	X 41	X 42
16	X 42	X 43	X 42	X 43	X 40	X 37														X 45	X 44	X 39	X 44	X 46
17	X 47	X 46	X 46	X 49	X 54	X 48														X 33	X 37	X 37	X 39	X 42
18	X 42	X 43	X 43	X 42	X 41	X 40														X 43	X 48	X 47	X 48	X 49
19	58	69	64	51	58	X 45														X 52	X 35	X 39	X 41	X 45
20	X 45	58	X 47	X 47	X 47	X 44													X 55	X 42	X 41	X 40	X 44	58
21	X 47	X 47	X 45	X 41	X 43	X 39														X 38	X 37	X 38	X 39	X 39
22	58	50	56	56	X 43	X 43	48													X 41	X 46	X 46	58	58
23	58	58	58	55	56	52	50												X 53	X 47	X 44	X 45	X 45	O X 44
24	X 45	X 47	X 44	X 43	X 43	X 43												X 62	X 46	X 45	X 46	X 47	X 48	X 46
25	X 46	X 46	X 41	O X 40	X 40	X 35													X 51	X 41	X 45	X 43	X 43	X 43
26	X 45	X 44	X 43	X 43	X 43	X 41													X 46	X 40	X 41	X 43	X 45	X 45
27	X 45	X 45	X 45	X 47	X 45	X 41												X 59	X 51	X 39	X 34	X 37	X 38	X 40
28	X 42	X 42	X 41	X 41	X 40	X 37	X 41													X 54	X 51	X 47	X 52	X 52
29																								
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	27	27	27	27	27	27	4											3	18	25	26	26	27	27
MED	X 45	X 47	X 45	X 43	X 43	X 41	44											X 59	X 44	X 41	X 42	X 43	X 43	X 45
U Q	55	57	53	48	X 47	47	49											X 62	X 47	X 43	X 45	X 46	X 48	50
L Q	X 42	X 43	X 42	X 40	X 40	X 37	39											X 49	X 39	X 38	X 37	X 39	X 41	X 42

FEB. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 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	37	35	30	32	33	28	28	41	A	66	54	72	78	66	C	C	C	C	C	C	C	C	C	C
2	C	C	C	35	27	25	R 27	42	55	64	80	85	64	64	64	54	52	42	40	A	35	41	44	41
3	41	40	34	35	37	30	32	47	70	63	65	62	66	59	63	63	55	41	40	27	30	34	36	34
4	35	35	33	33	32	29	20	40	61	61	70	76	68	65	59	54	44	42	31	30	30	31	32	33
5	35	35	35	31	31	27	19	37	50	54	54	67	65	68	70	64	50	45	27	34	36	41	F 40	F 44
6	F 38	F 30	F 36	F 26	34	F 44	R 26	43	50	54	54	59	61	73	67	60	49	R 44	A	A	A	A	33	32
7	34	37	37	A	A	A	37	39	48	53	58	56	65	65	59	64	52	43	32	35	36	41	41	38
8	F 39	F 38	F 44	F 33	33	F 22	F 24	43	48	59	56	59	66	60	65	58	46	39	36	36	36	36	38	38
9	34	35	33	33	30	30	26	48	52	55	64	62	60	60	61	64	54	38	34	28	30	36	34	38
10	38	39	39	40	40	40	33	44	49	58	64	62	61	68	63	60	57	42	36	34	R 38	34	36	35
11	36	F 41	F 37	33	38	32	31	42	58	56	61	68	78	72	64	58	58	40	34	34	39	36	35	F 44
12	F 42	53	45	F 43	30	F 39	39	43	56	53	58	69	63	64	67	58	54	44	31	36	33	36	F 42	F 44
13	44	F 41	F 39	F 36	F 38	F 36	40	44	59	53	54	64	68	68	60	56	52	50	34	29	30	32	32	39
14	40	48	F 38	41	43	F 42	34	44	54	55	59	65	66	56	62	56	56	46	30	32	38	38	36	43
15	F 43	41	43	36	34	35	32	48	61	56	56	64	70	61	56	57	53	51	46	29	32	30	34	35
16	35	36	35	36	33	30	36	47	R 57	59	61	56	66	65	60	60	51	48	40	38	37	32	37	39
17	40	39	39	42	47	41	31	49	60	60	74	87	75	73	68	59	57	54	47	26	30	30	32	35
18	35	36	36	35	34	33	36	46	57	70	V 71	80	V 74	68	72	61	58	47	44	36	41	40	41	42
19	47	F 52	F 43	44	43	38	35	46	55	55	59	64	67	68	67	59	57	53	44	45	28	32	34	38
20	38	40	40	40	40	37	28	44	52	58	57	60	69	77	68	63	56	52	48	35	34	33	37	F 40
21	40	40	38	34	36	32	31	50	51	58	66	58	65	64	66	63	61	44	39	31	30	31	32	32
22	F 34	F 38	F 43	F 37	36	36	F 30	47	56	56	60	66	66	70	64	60	58	52	43	34	39	39	F 47	F 43
23	F 44	F 40	F 39	F 38	F 39	F 41	F 34	46	54	56	66	63	63	66	60	60	60	54	46	40	37	38	38	D R 37
24	38	40	37	36	36	36	36	47	51	61	71	65	66	76	68	60	61	55	39	38	39	40	41	39
25	39	39	34	33	33	28	32	50	57	69	67	65	65	70	68	63	56	51	44	34	38	36	36	36
26	38	37	36	36	36	34	35	50	56	61	73	70	71	71	66	61	54	50	39	33	34	36	38	38
27	38	38	38	40	38	34	32	47	54	U R 63	60	61	67	69	64	64	61	52	44	32	27	30	31	33
28	35	35	34	34	33	30	34	55	58	V 58	62	66	79	90	73	62	60	56	47	47	44	40	45	45
29																								
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	27	27	27	27	27	27	28	28	27	28	28	28	28	28	27	27	27	27	26	25	26	26	27	27
MED	38	39	37	36	36	34	32	46	55	58	61	64	66	68	64	60	56	47	40	34	36	36	36	38
U Q	40	F 40	F 39	40	38	F 38	35	48	58	61	66	68	70	70	68	63	58	52	44	36	38	39	41	F 42
L Q	35	36	35	33	33	30	28	43	51	55	58	62	65	64	61	58	52	42	34	30	30	32	34	35

IONOSPHERIC DATA STATION Wakkanai

FEB. 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									A	L		L		L	C	C	C	C						
2										L	400	404	L	L	L									
3											L	L		L	L									
4										L	L	L	412	L	L	L								
5												L	400	L	L									
6												L		L	L			A						
7							L			L		L	396	396	L	L	L							
8											L	412	L	L	L	L								
9											L	L	388	L	L	L								
10											L	L	392	L	L	L								
11							232				372	L	L	L	L	344								
12										L	392	L	L	L	372	L								
13											L	L	400	L	L	L								
14												408	408	408	L	L								
15									L	L	L	L	416	L	380	L			L					
16									292	L		L	L	L	L	L								
17										L	412	L	L	400	L	L								
18										L	L	416	416	384	372	L	L							
19									340	L	L	L	L	384	L	L	L							
20								L		L	L	420	L	L	L	L								
21									L		L	412	L	L	396	360	L							
22								L	L	L	L	L	L	L	L									
23								L			L	L	L	L	L	L	L							
24									L	L	L	428	L	L	L	L								
25										L	L	L	L	L	L									
26									L	L	412	L	L	L	L	360								
27										388	L	L	428	412	L	L								
28									L		L	L	L	L	404	368	L							
29																								
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		2	1	5	7	10	6	5	4								
MED							232		316	388	400	412	404	398	380	360								
U Q											412	420	416	408	400	364								
L Q											382	408	396	384	372	352								

FEB. 2017 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Wakkanai

FEB. 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							188	240	A	276	276	288	288	276	C	C	C	C						
2							A	A	A	244	280	292	288	292	260	228	A	A						
3							188	B	224	U R 248	A	292	292	292	272	232	A	A						
4							B	216	216	244	308	288	288	304	304	232	200							
5							168	A	212	228	256	288	304	284	276	224	B	B						
6							208	188	208	264	284	288	288	272	256	A	A	A						
7							152	A	208	252	280	280	284	284	260	232	164	A						
8								180	232	276	276	U R 276	276	288	276	216	A	A						
9							A	B	232	A	308	308	308	272	248	216	212	208						
10							B	B	224	284	284	U R 296	292	292	268	A	A	216						
11							B	176	236	264	288	R 272	296	280	260	248	208	A						
12							B	B	216	268	U R 280	296	300	296	272	A	212	A						
13							188	180	248	276	292	300	300	300	244	244	A	A						
14							A	196	240	316	288	312	A	292	292	264	180	A						
15							B	216	236	280	284	288	300	312	276	248	204	A	A					
16							B	176	244	264	U R 292	304	352	288	288	248	216	B	B					
17							B	192	232	U R 276	304	296	296	A	284	248	A	A	240					
18							B	172	228	A	284	284	284	292	264	256	200	176	B					
19							A	180	232	U R 268	276	284	U R 292	300	280	248	224	B	B					
20							A	B	228	264	R 256	280	A	300	284	300	216	176						
21							B	A	252	324	296	A	276	296	272	236	212	A	A					
22							B	176	236	272	296	296	292	292	292	268	212	U R 152	A					
23							A	188	232	296	300	292	292	292	292	260	220	176						
24							B	208	252	284	296	296	312	296	296	280	212							
25							B	228	228	300	R	300	300	300	300	284	208	A						
26							B	208	216	252	288	300	300	300	288	272	224	A						
27							B	188	244	256	296	304	316	316	300	264	216							
28							B	216	232	288	300	308	312	312	296	268	216	B	B					
29																								
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							6	19	26	26	26	27	26	27	27	24	19	6	1					
MED							188	188	232	270	288	292	294	292	276	248	212	176	240					
U Q							188	216	236	284	296	300	300	300	292	266	216	208						
L Q							168	180	224	256	280	288	288	288	264	232	204	176						

FEB. 2017 foE (0.01MHz)

IONOSPHERIC DATA STATION Wakkanai

FEB. 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	21	24	20	18	E B 14	32	30	J A 116	J A 65	J A 51	40	36	32	C	C	C	C	C	C	C	C	C	C
2	C	C	C	J A 104	23	25	J A 28	31	J A 61	J A 77	31	32	33	40	J A 40	J A 39	54	46	26	60	20	J A 21	28	32
3	E B 14	E B 17	E B 15	E B 16	20	20	G 19	E B 17	37	J A 40	J A 48	J A 51	J A 61	48	J A 31	J A 33	J A 30	J A 32	J A 65	J A 25	J A 29	27	E B 15	E B 15
4	E B 15	E B 15	E B 15	21	20	E B 15	20	28	26	31	42	35	35	J A 53	J A 43	32	J A 21	J A 22	J A 28	26	24	J A 23	E B 15	24
5	24	24	26	26	23	E B 15	J A 19	J A 25	28	J A 52	33	33	38	33	35	J A 62	J A 29	J A 28	53	E B 15	24	E B 14	26	26
6	E B 16	27	27	22	27	38	32	J A 63	26	32	J A 41	33	J A 49	34	J A 37	40	37	68	J A 85	J A 107	J A 141	59	25	63
7	J A 48	J A 25	24	69	119	58	74	J A 81	26	32	35	32	38	J A 35	31	27	25	25	25	E B 15	E B 15	E B 15	21	E B 16
8	E B 14	E B 14	20	30	24	21	36	26	26	39	33	36	33	J A 41	J A 38	J A 45	J A 27	J A 31	60	26	J A 126	25	23	23
9	E B 15	E B 15	E B 15	24	E B 15	E B 15	24	E B 16	G	36	41	41	41	32	32	26	J A 63	30	E B 16	24	J A 23	E B 15	26	40
10	24	27	26	25	20	22	E B 14	J A 112	25	37	32	32	32	38	35	J A 37	39	J A 32	36	J A 46	42	28	25	J A 27
11	22	E B 15	23	23	E B 15	E B 15	E B 15	G	G	32	G 24	G 24	J A 63	G 19	J A 81	G	23	J A 21	19	20	E B 16	E B 15	25	28
12	E B 15	19	26	24	E B 15	E B 15	E B 16	E B 16	G	J A 38	38	40	J A 43	J A 46	J A 52	J A 52	J A 56	19	25	28	J A 29	30	25	25
13	J A 24	22	25	J A 23	23	25	24	J A 52	40	J A 50	J A 59	J A 52	34	J A 40	J A 27	26	38	J A 31	60	J A 53	J A 27	J A 36	J A 54	36
14	26	27	19	24	24	E B 15	25	27	J A 33	53	32	J A 76	40	J A 48	33	27	J A 31	J A 27	J A 53	J A 53	J A 31	J A 41	28	25
15	24	23	19	E B 15	E B 15	60	E B 16	29	43	G	34	34	G 24	35	G	G	J A 33	22	G 20	J A 19	24	E B 15	E B 16	E B 15
16	E B 15	24	21	24	23	22	E B 15	J A 18	G	29	34	59	G 34	33	36	27	24	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16
17	E B 15	E B 16	E B 15	25	23	23	E B 15	J A 64	G	G	34	34	38	J A 52	38	J A 42	J A 49	J A 49	J A 40	J A 30	E B 16	E B 15	E B 15	21
18	25	23	24	24	22	26	E B 15	24	26	J A 33	40	G	32	G	G	G	J A 25	25	E B 15	E B 15	20	23	24	22
19	30	E B 15	19	22	E B 16	18	20	G	G	G 24	31	32	33	G	G	G 28	G 23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
20	E B 16	26	E B 16	E B 15	E B 15	E B 15	24	19	26	G	G	33	G 25	33	33	A 46	26	G	E B 16	24	21	E B 15	E B 15	E B 15
21	E B 16	E B 16	E B 16	E B 16	J A 150	E B 16	J A 111	J A 25	32	G	60	39	32	G	32	J A 37	G	25	25	23	23	23	23	J A 98
22	E B 15	26	23	E B 15	22	E B 15	E B 15	G	31	36	36	35	G	J A 100	38	G	G 23	G	27	E B 16	E B 15	25	23	E B 15
23	E B 15	J A 85	E B 16	E B 15	37	E B 15	22	G	27	J A 39	40	36	38	38	36	33	G	26	24	E B 15	E B 15	E B 15	E B 15	E B 15
24	E B 15	E B 15	25	E B 15	E B 15	E B 15	E B 16	G	G	37	J A 84	37	37	34	38	34	J A 26	E B 16	E B 15	E B 16	24	E B 15	E B 15	E B 15
25	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	J A 182	G	27	G	G	J A 71	33	34	G	G	26	25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
26	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	J A 51	27	33	33	34	J A 57	37	38	34	32	26	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
27	J A 105	23	E B 15	E B 15	E B 15	E B 15	22	25	28	35	34	38	38	39	44	34	26	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16	22
28	E B 14	E B 15	E B 15	E B 15	E B 15	20	E B 16	29	28	38	38	36	39	37	38	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
29																								
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	27	27	27	28	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27
MED	E B 16	21	19	22	20	E B 16	20	25	26	36	34	36	36	36	36	33	26	25	25	20	21	E B 16	21	22
U Q	24	25	24	24	23	22	26	J A 30	32	J A 39	J A 41	40	J A 40	J A 40	J A 38	J A 39	37	J A 31	J A 40	J A 28	J A 27	25	25	27
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G	G	G 30	32	33	33	33	G 31	G	G 23	G	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15

FEB. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB.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	16	E B 16	16	E B 16	E B 15	E B 14	E B 15	25	A A 116	28	28	G 28	34	30	C	C	C	C	C	C	C	C	C	C
2	C	C	C	E B 16	15	E B 15	16	16	30	31	30	32	32	35	35	37	43	28	18	A A 60	16	18	16	17
3	E B 14	E B 17	E B 15	E B 16	19	15	E B 15	E B 17	28	G 24	30	30	38	34	28	28	25	24	22	16	E B 15	E B 15	E B 15	E B 15
4	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 19	24	30	33	32	32	G 30	G 30	27	G 19	19	19	E B 15	E B 15	E B 15	E B 15	E B 15
5	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G 15	20	26	28	29	31	34	30	34	58	28	22	15	E B 15	E B 16	E B 14	E B 16	16
6	E B 16	15	15	E B 15	15	E B 15	23	20	25	30	36	31	40	31	29	29	29	28	30	A A 107	A A 141	A A 59	16	16
7	16	E B 16	E B 15	A A 69	A A 119	A A 58	16	17	23	28	30	29	29	G 28	29	24	19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16
8	E B 14	E B 14	E B 15	E B 15	E B 15	E B 15	15	G 16	G 22	29	29	34	31	37	34	29	24	22	16	16	E B 17	E B 15	E B 15	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G	30	33	32	31	30	28	24	23	G 20	E B 16	15	18	E B 15	E B 15	20
10	E B 15	16	16	15	E B 15	16	E B 14	17	25	30	30	30	30	30	32	29	29	27	E B 16	16	15	20	E B 15	E B 15
11	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G 25	G 23	G 22	G 29	G 17	G 25	G	G 19	17	E B 14	E B 14	E B 16	E B 15	E B 15	E B 16
12	E B 15	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	E B 16	G	28	G 28	31	32	31	31	26	28	16	16	E B 14	15	15	E B 15	E B 15
13	E B 15	E A 15	15	E B 16	E B 16	E B 16	G 15	20	27	28	G 28	35	32	30	26	G 23	21	17	16	16	16	17	A 29	17
14	E B 15	E B 15	15	15	15	E B 15	E B 15	G 20	28	32	G 29	33	31	30	32	G 25	28	18	E B 15	E B 14	15	E B 15	15	E B 15
15	E B 16	E B 15	15	E B 15	E B 15	E B 16	E B 16	G 20	G 24	G	30	30	G 23	G 31	G	G	27	16	E B 16	E B 15	E B 15	E B 15	E B 16	E B 15
16	E B 15	16	E B 16	E B 15	E B 16	E B 16	E B 15	G 16	G	27	31	33	G 33	30	G 29	26	G 20	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16
17	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	G 18	G	G	32	32	30	30	G 28	28	22	28	G 18	E B 16	E B 16	E B 15	E B 15	E B 15
18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	G 20	29	30	G	30	G	G	G	22	G 17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
19	15	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	G	G	G 23	G 26	30	32	G	G	G 26	G 21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15	18	24	G	G	32	G 23	G 30	30	G 28	23	G	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15
21	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16	E B 16	19	G 25	G	31	31	29	G	G 27	28	G	17	17	E B 16	E B 16	E B 16	E B 16	E B 16
22	E B 15	E B 16	E B 16	E B 15	15	E B 15	E B 15	G	G 23	28	G 28	34	G	34	G 28	G	G 20	G	16	E B 16	E B 15	E B 19	E B 16	E B 15
23	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	G	26	31	34	33	32	32	G 29	29	G	G 18	16	E B 15	E B 15	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	E B 16	G	G	29	31	31	32	31	G 29	G 28	G 21	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15
25	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	27	G	G	32	G 30	32	G	G	22	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
26	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	21	22	32	31	31	32	32	30	29	23	17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
27	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	26	29	G 30	31	G 31	G 31	31	28	22	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
28	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G 21	26	G 29	G 30	33	G 31	36	G 30	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
29																								
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	27	27	27	28	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G	G	30	31	32	G	30	G	22	18	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15
U Q	E B 15	E B 16	E B 16	E B 16	15	E B 15	16	G	26	30	31	32	32	32	31	29	27	22	16	16	16	16	E B 16	16
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	17	24	28	G 29	30	30	30	G 28	26	G 21	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

IONOSPHERIC DATA STATION Wakkanai

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

IONOSPHERIC DATA STATION Wakkanai

FEB. 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	320	327	318	319	321	356	325	382	A	370	343	344	374	345	C	C	C	C	C	C	C	C	C	C
2	C	C	C	355	338	355	R 225	351	353	347	349	369	387	365	371	371	356	361	344	A	303	313	313	282
3	314	286	337	322	344	298	306	345	348	347	400	375	358	372	363	371	376	328	324	318	311	309	313	327
4	318	322	318	318	344	302	297	358	372	354	348	362	376	382	378	385	388	371	331	340	323	306	328	317
5	312	313	303	331	331	362	370	385	406	361	361	340	345	364	356	384	353	354	316	332	318	304	F 292	F 271
6	F 300	F 308	F 292	F 310	346	F 324	R 289	370	374	367	349	356	344	345	358	383	367	R 211	A	A	A	A	316	304
7	306	317	301	A	A	A	337	387	394	372	366	363	343	358	348	373	385	363	326	347	330	324	325	337
8	F 276	F 279	F 290	F 326	330	F 294	F 288	377	392	366	367	337	361	351	361	387	378	341	333	338	326	325	312	300
9	313	306	308	309	322	356	325	384	382	375	382	359	349	349	357	382	370	365	345	322	345	327	339	310
10	294	295	323	319	330	333	382	365	365	351	361	367	339	365	363	344	372	361	328	352	R 318	304	310	314
11	300	F 296	F 302	333	327	355	292	366	379	362	352	359	353	359	377	371	381	376	321	316	326	305	313	F 270
12	F 257	287	228	F 267	315	F 307	306	362	397	363	333	368	351	357	370	379	387	385	368	339	353	307	F 299	F 266
13	283	F 287	F 298	F 318	F 321	F 323	342	365	378	374	334	336	359	372	378	370	371	386	351	333	329	326	327	311
14	291	301	F 322	297	283	F 269	324	377	396	377	389	353	352	351	344	352	357	369	334	303	322	322	322	279
15	F 288	302	291	283	296	321	351	374	380	384	370	353	352	364	364	359	367	370	260	327	337	345	319	312
16	312	317	332	309	302	330	358	407	R 390	391	321	380	359	369	336	352	362	362	367	339	347	337	290	275
17	320	297	297	320	321	367	305	364	360	336	360	360	349	359	352	376	355	359	383	272	299	330	299	315
18	320	306	296	307	305	303	348	363	384	345	V 300	357	V 306	315	352	362	383	358	339	350	327	334	325	312
19	322	F 276	F 303	297	320	312	315	373	363	344	340	350	347	348	369	352	365	372	327	399	326	322	300	286
20	283	295	289	301	307	373	333	365	354	360	351	342	348	346	363	357	374	360	349	346	332	322	291	F 271
21	284	290	306	321	278	317	385	382	374	345	373	337	344	366	355	357	332	361	348	341	330	317	304	304
22	F 257	F 291	F 281	F 292	302	374	F 353	376	373	361	343	360	336	379	344	365	350	366	341	354	311	311	F 293	F 293
23	F 300	F 310	F 316	F 276	F 296	F 334	F 343	358	386	344	357	343	340	359	362	356	360	356	353	333	321	312	312	D R 319
24	309	320	320	313	329	323	329	362	333	350	347	347	359	339	367	357	371	371	335	328	302	308	303	319
25	320	347	340	318	338	303	310	365	365	351	326	354	330	340	365	375	376	362	363	323	296	308	312	312
26	311	314	325	316	317	335	348	374	340	330	361	372	354	366	358	364	359	367	356	324	329	312	306	304
27	312	312	312	343	359	354	337	370	374	U R 352	359	350	348	362	353	353	353	349	340	371	306	302	299	297
28	313	313	325	325	337	369	322	364	382	V 350	355	314	328	350	366	361	372	370	358	345	317	322	285	303
29																								
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	27	27	27	27	27	27	28	28	27	28	28	28	28	28	27	27	27	27	26	25	26	26	27	27
MED	309	306	306	318	321	330	327	368	374	357	354	355	349	359	362	365	370	362	340	338	324	315	312	304
U Q	314	314	322	322	337	356	348	377	386	368	364	362	358	366	367	376	376	370	353	346	330	325	319	314
L Q	F 288	F 291	296	301	305	307	306	364	363	347	343	344	344	348	353	357	357	358	328	324	311	308	299	F 282

FEB. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 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									A	L		L		L	C	C	C	C						
2										L	366	396	L	L	L									
3											L	L		L	L									
4										L	L	L	398	L	L	L								
5												L	392	L	L									
6												L		L	L			A						
7							L			L		L	389	387	L	L	L							
8											L	391	L	L	L	L								
9											L	L	412	L	L	L								
10											L	L	413	L	L	L								
11							354				410	L	L	L	L	407								
12										L	397	L	L	L	409	L								
13											L	L	377	L	L	L								
14												410	399	413	L	L								
15									L	L	L	L	389	L	417	L			L					
16									431	L		L	L	L	L	L								
17										L	376	L	L	385	L	L								
18										L	L	368	401	428	401	L	L							
19									390	L	L	L	L	387	L	L	L							
20								L		L	L	385	L	L	L	L								
21									L		L	390	L	L	389	394	L							
22								L	L	L	L	L	L	L	L									
23								L			L	L	L	L	L	L	L							
24									L	L	L	386	L	L	L	L								
25										L	L	L	L	L	L									
26									L	L	381	L	L	L	L	398								
27										407	L	L	367	389	L	L								
28									L		L	L	L	L	396	398	L							
29																								
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		2	1	5	7	10	6	5	4								
MED							354		410	407	381	390	395	388	401	398								
U Q											404	396	401	413	413	402								
L Q											371	385	389	387	392	396								

FEB. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB.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									A	230		254		254	C	C	C	C						
2										248	240	222	210	238	224									
3											208	226		232	238									
4										238	244	238	218	224	224	224								
5												248	254	238	238									
6												252		250	226			242						
7							244			208		240	258	232	244	224	216							
8											234	276	240	254	234	204								
9											230	242	246	228	234	214								
10											244	230	244	244	244	230								
11							310				234	240	240	232	228	228								
12										218	252	216	232	240	232	220								
13											244	258	234	230	230	230								
14												264	244	244	244	238								
15									226	220	238	246	242	232	236	236			302					
16									222	212		222	248	236	236	248								
17										244	254	246	232	242	242	234								
18										250	230	234	234	258	238	228	214							
19									230	250	268	268	252	252	238	238	228							
20								222		248	248	276	260	256	244	230								
21									230		252	258	266	250	248	248	226							
22								226	226	226	250	242	262	236	270									
23								222			236	256	260	250	244	244	234							
24									234	246	246	252	246	250	230	230								
25										244	258	234	248	238	238									
26									238	272	258	234	246	240	240	234								
27										232	252	266	256	256	246	246								
28									222		274	276	274	242	236	236	236							
29																								
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							2	3	8	16	22	28	25	28	27	21	6	1	1					
MED							277	222	228	241	245	246	246	241	238	230	227	242	302					
U Q								226	232	248	252	258	257	250	244	238	234							
L Q								222	224	223	236	234	237	234	232	226	216							

FEB.2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 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	236	250	266	260	252	212	234	204	A	204	234	198	222	208	C	C	C	C	C	C	C	C	C	C
2	C	C	C	212	206	206	A	212	204	204	194	194	194	218	222	214	226	226	216	A	240	250	228	266
3	258	262	246	234	222	212	262	220	220	218	188	198	240	218	198	220	208	208	224	236	250	258	236	236
4	246	246	250	250	208	270	286	210	232	200	204	196	196	182	180	192	214	198	212	234	260	260	252	270
5	Q 266	266	280	264	222	206	E A 218	206	188	224	224	210	210	214	230	218	210	212	222	218	248	Q 264	276	270
6	Q 252	258	266	Q 206	220	222	318	206	194	218	236	202	266	222	188	194	206	A	A	A	A	A	234	234
7	264	264	264	A	A	A	208	202	208	180	234	202	176	188	202	194	186	198	216	232	236	234	212	216
8	Q 260	Q 266	Q 228	242	210	222	232	212	212	218	196	196	196	220	210	184	206	206	222	222	232	240	240	252
9	238	238	258	258	226	202	222	204	196	216	212	196	178	198	198	198	198	198	208	206	222	232	198	254
10	250	248	256	256	240	214	188	194	212	224	200	200	196	192	198	198	210	198	210	212	216	E A 236	268	272
11	250	250	264	256	216	216	192	202	210	218	182	206	182	206	218	196	202	202	202	224	Q 214	234	228	Q 240
12	Q 254	Q 202	Q 226	268	232	216	216	212	204	184	168	192	200	192	192	192	216	198	196	228	206	226	Q 254	Q 276
13	Q 276	Q 232	Q 232	Q 246	Q 230	Q 218	188	208	214	222	196	222	202	202	196	196	206	204	222	228	230	222	A	222
14	Q 222	226	Q 228	234	Q 244	Q 234	198	198	200	200	222	194	194	184	214	194	208	218	202	262	234	234	246	Q 250
15	Q 254	Q 240	222	232	232	228	208	200	200	194	196	188	200	200	188	196	224	210	196	236	242	230	230	242
16	Q 242	232	250	250	250	236	212	196	186	176	204	190	222	198	198	198	212	202	208	216	216	242	266	250
17	252	266	278	Q 240	226	190	210	200	214	194	198	208	202	198	206	192	198	212	226	226	236	204	288	280
18	270	270	286	240	252	252	200	212	222	212	196	196	196	182	192	204	188	212	222	232	238	246	246	246
19	252	Q 252	Q 252	268	234	220	218	218	192	192	198	198	174	200	200	208	208	214	230	198	222	222	264	264
20	264	276	264	238	226	206	196	178	228	198	192	206	196	196	196	196	218	218	218	218	218	200	266	Q 266
21	Q 266	Q 246	Q 248	256	Q 264	Q 226	214	198	198	210	198	190	180	198	204	198	194	210	210	210	210	232	252	252
22	290	252	252	252	238	200	198	198	190	190	182	226	196	220	192	220	220	214	226	202	226	270	260	266
23	250	262	246	262	254	200	200	188	214	216	200	220	204	204	198	212	198	214	214	204	220	240	248	248
24	266	256	268	280	256	256	230	226	196	196	200	200	198	198	200	192	222	210	198	222	284	268	248	248
25	256	232	232	238	218	218	230	230	222	206	196	196	184	202	192	226	214	210	210	216	256	244	256	280
26	260	230	236	236	244	232	218	218	198	198	198	198	190	212	190	196	228	220	208	224	256	256	256	272
27	258	260	250	216	216	200	212	212	228	198	198	192	192	198	198	194	230	208	208	208	260	260	270	282
28	268	272	244	262	230	230	202	216	196	220	188	214	198	242	194	194	194	210	198	206	224	228	Q 264	274
29																								
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	27	27	27	27	27	27	27	28	27	28	28	28	28	28	27	27	27	26	26	25	26	26	26	27
MED	256	252	250	250	230	218	212	206	204	204	198	198	196	200	198	196	208	210	211	222	233	238	252	254
U Q	266	264	264	260	244	230	230	212	214	218	204	206	202	213	204	208	218	214	222	230	248	256	264	272
L Q	250	238	Q 236	236	220	206	200	199	196	195	195	195	191	197	192	194	198	202	208	209	220	230	236	246

FEB. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 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							140	114	116	116	116	116	98	98	C	C	C	C						
2							A	A	A	106	102	102	102	100	108	106	A	A						
3							88	B	106	114	A	114	108	110	110	110	A	A						
4							B	134	130	108	108	108	100	100	100	100	100							
5							E A 228	A	112	102	102	102	102	110	106	102	B	B						
6							158	146	110	110	110	106	106	106	106	A	A	A						
7								A	106	110	110	100	100	100	100	102	86	A						
8								94	106	114	114	114	114	100	100	94	A	A						
9							A	B	116	A	116	116	116	104	104	104	102	102						
10							B	B	124	124	108	104	104	104	104	A	A	172						
11							B	136	104	108	108	102	102	100	108	108	108	A						
12							B	B	114	106	106	108	108	108	102	A	104	A						
13							90	A	106	106	108	108	108	108	108	106	A	A						
14							A	108	112	112	112	110	A	110	110	110	E B 94	A						
15							B	126	122	112	102	110	104	112	108	94	92	A	A					
16							B	E A 114	122	104	104	104	110	108	108	108	108	B	B					
17							B	134	92	106	106	106	106	A	106	106	A	A	108					
18							B	116	110	A	110	110	110	110	106	112	102	96	B					
19							A	114	114	114	114	114	112	106	106	112	112	B	B					
20							A	B	118	106	96	96	A	106	106	106	106	106						
21							B	A	112	112	104	A	90	94	94	94	94	A	A					
22							B	122	118	118	110	112	100	106	106	106	110	98	A					
23							A	98	104	104	106	100	104	104	110	110	110	126						
24							B	128	106	106	106	106	106	106	106	106	106							
25							B	140	140	114	102	110	110	110	110	110	112	A						
26							B	124	106	106	106	106	106	106	106	114	114	A						
27							B	114	104	104	112	112	112	112	108	108	108							
28							B	116	116	110	110	110	110	110	110	110	100	B	B					
29																								
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							5	18	27	26	27	27	26	27	27	24	19	6	1					
MED							U 115	119	112	109	108	108	106	106	106	106	106	104	108					
U Q							193	134	118	114	110	112	110	110	108	110	110	126						
L Q							89	114	106	106	104	104	102	100	104	103	100	98						

FEB. 2017 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

FEB.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	94	94	94	80	86	B	112	96	96	96	130	106	112	136	C	C	C	C	C	C	C	C	C	C
2	C	C	C	116	104	94	94	96	98	108	116	100	118	102	108	106	102	98	98	96	96	92	92	92
3	B	B	B	B	102	92	92	B	92	104	92	108	104	110	116	112	112	110	100	100	102	92	B	B
4	B	B	B	110	110	B	138	124	124	110	120	102	104	98	88	108	84	84	86	86	110	102	B	92
5	92	92	92	90	90	B	136	120	110	110	98	98	98	112	112	104	108	110	116	B	108	B	96	96
6	B	96	90	94	96	100	162	86	126	126	96	90	110	100	94	88	88	98	94	98	98	102	102	102
7	112	104	104	104	114	100	104	110	100	98	96	146	104	82	108	96	78	86	86	B	B	B	120	B
8	B	B	92	82	82	88	96	84	122	124	110	100	96	96	96	92	96	96	96	108	104	92	92	94
9	B	B	B	102	B	B	92	B	G	104	104	104	184	100	100	100	90	90	B	94	94	B	94	94
10	94	94	96	94	92	92	B	90	G	156	124	110	108	114	96	96	96	96	96	96	96	96	114	98
11	88	B	100	94	B	B	B	G	G	96	100	90	86	92	114	G	104	104	92	92	B	B	98	100
12	B	94	96	96	B	B	B	B	G	86	94	94	94	90	118	92	96	102	102	90	96	96	112	98
13	102	94	92	92	92	92	92	106	98	98	100	84	128	84	104	84	84	90	112	112	94	94	94	94
14	82	80	86	86	86	B	116	130	94	94	158	118	96	100	106	112	100	100	100	112	106	102	Q 92	92
15	90	90	88	B	B	96	B	104	90	G	166	166	96	96	G	G	88	88	88	96	96	B	B	B
16	B	94	98	98	98	98	B	118	G	118	152	120	146	146	92	112	140	B	B	B	B	B	B	B
17	B	B	B	88	88	94	B	94	G	G	148	138	118	92	92	92	88	88	114	108	B	B	B	108
18	98	98	92	92	92	92	B	112	150	96	96	G	136	G	G	G	110	82	B	B	82	82	82	82
19	90	B	90	106	B	92	92	G	G	104	106	162	156	G	G	130	106	B	B	B	B	B	B	B
20	B	102	B	B	B	B	96	156	142	G	G	200	88	128	120	106	160	G	B	88	88	B	B	B
21	B	B	B	B	112	B	94	114	108	G	90	90	104	G	148	88	G	88	88	88	88	88	88	120
22	B	94	94	B	94	B	B	G	104	104	104	152	G	124	108	G	108	G	100	B	B	90	90	B
23	B	96	B	B	96	B	96	G	174	88	94	152	114	116	116	98	G	124	106	B	B	B	B	B
24	B	B	84	B	B	B	B	G	G	98	98	104	104	168	110	100	100	B	B	B	102	B	B	B
25	B	B	B	B	B	B	166	G	144	G	G	120	120	142	G	G	136	96	B	B	B	B	B	B
26	B	B	B	B	B	B	B	96	128	134	128	128	108	108	108	108	118	120	B	B	B	B	B	B
27	104	120	B	B	B	B	160	138	144	110	102	108	108	106	100	100	146	B	B	B	B	B	B	92
28	B	B	B	B	B	122	B	148	148	156	100	144	196	178	104	G	G	B	B	B	B	B	B	B
29																								
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	11	15	16	17	17	13	17	19	20	23	26	27	27	25	23	21	24	20	17	15	16	12	14	15
MED	94	94	92	94	94	94	96	110	116	104	103	108	108	106	108	100	101	96	98	96	96	93	94	94
U Q	102	98	96	103	103	99	137	124	143	118	124	144	120	126	114	108	111	103	104	108	103	99	102	100
L Q	90	94	90	89	89	92	93	96	98	96	96	100	98	96	96	92	89	88	90	90	94	91	92	92

IONOSPHERIC DATA STATION Wakkanai

FEB. 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	F2	F1	F2	F1	F1		L2	L2	L3	L2	C2	C1	C2	C2										
2				F1	F1	F2	L3	L2	L5	C2	C2	C2	C2	L2	L3	L3	L3	L3	F2	F5	F1	F2	F2	F2
3					F2	F1	F1		L1	C1	L2	C1	CL21	CL21	C1	C1	C1	L1	F6	F2	F2	F2		
4				F2	F1		C1	C2	C2	C2	CL21	C2	C2	CL22	L3	CL11	LL21	L2	F2	F1	F1	F1		F2
5	F2	F1	F2	F1	F1		C1	L3	C2	C2	C1	C1	C2	C1	C2	C6	C2	L1	FF12		F2		F3	F3
6		F2	F2	F1	F1	F1	C2	L1	CL21	C1	LC21	LC22	C4	CL22	C2	L3	L2	LL42	FF32	FQ32	FQ42	FQ31	F1	F2
7	F2	F2	F1	F4	F4	F5	LL31	LL21	C2	C1	C2	C1	CL12	LC21	C1	C1	C2	L1	F1				F1	
8			F1	F2	F2	F1	L2	L1	C2	C2	C2	C2	C1	C2	L3	L2	L2	L3	F2	F1	F1	F1	F1	F1
9				F1			L1			L1	L1	C1	C1	C1	C1	C1	LC11	LC21		F1	F2		F2	F2
10	F1	F2	F2	F2	F1	F1		L1	CL11	C1	C1	C1	C1	C1	C1	L1	L2	L2	F1	F2	F2	F2	F1	F2
11	F1		F1	F1						C1	L1	L1	C1	L1	CL11		C2	L2	F1	F1			F1	F1
12		F1	F1	F1						L2	L1	L1	L1	L2	C1	L2	CL21	C2	F1	F1	F2	F2	FQ11	FQ11
13	F2	F2	F1	F2	F1	F1	L1	C2	L1	L1	L1	L1	CL11	LC11	L1	L1	L1	L1	FF11	FF11	F2	F3	F4	F2
14	F2	F2	F1	F2	F2		L1	CL21	C3	L3	CL12	CL21	L2	C2	CL21	C2	C5	L3	L1	FF11	F2	F2	FF21	F1
15	FF11	F1	F1			F1		LC11	LC11		CL11	C1	L1	L1			L1	L1	L1	F1	F1			
16		F1	F1	F1	F1	F1		C1		CL11	CL11	CL11	CL11	CL11	CL21	CL11	CL11							
17				F2	F1	F1		L1			C1	C1	C1	L2	C2	C2	L3	L4	CL11	FL11				F1
18	F2	F1	F1	F1	F1	F1		L1	HL11	L2	C1		C1				C1	C2			F1	F1	F1	F1
19	F1		F1	F1		F1	L1			L1	L1	HL11	HL11			C1	L1							
20		F1					L1	H1	H1			HL11	L1	C1	C1	L1	H1			F1	F1			
21					F1		L1	L1	L1		L1	L1	C1		CL11	CL11		L1	L1	F1	F1	F1	F2	FF21
22		F1	F1		F1				L1	L1	C1	C1		C1	L1		C1		L1			F2	F1	
23		F1			F1		L1		H1	L1	L1	H1	C1	C1	C1	C1		C1	L1					
24			F1							L1	L1	C1	C1	H1	C1	C1	C1				F1			
25							F1		H1			C1	C1	H1			C1	L1						
26								LC11	CC11	C1	C1	C1	C1	LC11	C1	C1	C2	L1						
27	F1	F1					H1	H1	C2	C1	L1	L1	LC11	LC11	LC11	LC11	H1							F1
28						F1		C2	H1	HL11	CL11	CL11	C1	H1	C1									
29																								
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																								

FEB. 2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 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 39	X 40	X 40	X 36	X 38	X 35													X 47	X 48	X 44	X 39	X 38	X 38
2	47	X 42	X 39	X 40	X 27	X 27													X 40	X 39	X 39	X 39	X 41	X 37
3	X 40	X 40	X 42	X 40	X 39	X 38														42	X 44	48	44	X 37
4	X 35	X 35	X 36	X 37	X 35	X 32														A	X 36	X 38	X 41	X 37
5	X 39	X 39	X 40	X 38	X 37	X 32														X 39	X 38	X 40	X 37	X 41
6	44	X 36	X 35	X 40	X 34	X 24	X 28													A	X 35	X 36	X 36	X 35
7	X 35	X 36	X 37	X 36	X 35	X 36													X 40	X 40	X 37	X 36	X 38	43
8	X 38	X 37	X 40	X 40	X 34	X 27													X 38	X 42	X 45	X 43	X 41	X 39
9	X 38	X 37	X 35	X 35	X 36	X 35													X 39	X 41	X 36	A	X 39	X 40
10	X 42	X 42	X 40	X 40	X 45	X 34	X 31												X 36	X 41	X 38	X 35	X 36	X 36
11	X 35	X 37	X 35	X 38	X 30	X 28													X 43	X 38	A	X 40	X 40	X 42
12	42	X 39	41	X 40	X 39	X 38													X 34	X 33	X 36	X 35	X 37	X 35
13	39	36	X 31	X 31	X 36	X 29	X 26												X 48	X 42	X 40	X 40	X 39	X 35
14	X 38	X 36	X 35	X 36	X 33	X 34													X 42	X 35	X 41	X 42	X 36	45
15	X 38	X 39	48	49	X 39	45													X 51	X 42	X 41	X 37	X 35	X 37
16	41	42	40	X 40	X 42	X 43													X 44	X 42	X 47	X 40	A	X 38
17	X 39	X 39	X 39	X 40	X 40	X 32													X 55	X 42	X 39	X 40	X 39	X 41
18	X 42	X 42	X 39	X 42	X 42	X 40													X 55	X 56	X 40	X 44	X 46	X 46
19	49	X 48	X 46	51	X 48	X 41													X 46	X 48	X 41	X 35	X 39	X 40
20	X 39	X 38	X 40	X 40	X 43	X 32	X 32												X 47	X 51	X 41	X 38	X 40	X 40
21	X 40	X 40	X 40	X 39	X 39	X 38	X 39												X 46	X 42	X 38	X 36	X 37	X 36
22	42	X 38	X 38	X 39	X 46	X 37	X 34												X 56	X 45	X 40	X 36	X 39	X 40
23	X 40	X 42	X 40	X 41	X 40	X 42	X 37												X 52	X 42	X 40	X 40	X 40	X 40
24	X 39	X 40	X 41	X 40	X 39	X 37	X 40												X 53	X 48	X 41	X 44	X 46	X 49
25	X 46	X 42	X 40	X 36	X 29	X 31	X 34												X 48	X 42	X 41	X 43	X 43	X 42
26	X 42	X 44	X 44	X 41	X 40	X 30	X 35												X 49	X 44	X 38	X 40	X 40	X 40
27	X 40	X 41	X 45	X 42	X 34	X 27	X 33												X 46	X 42	X 37	X 35	X 37	X 37
28	X 39	X 39	X 39	X 36	X 37	X 32	X 37												X 51	X 43	X 44	A	X 41	X 41
29																								
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	28	28	28	28	28	28	12												24	26	27	26	27	28
MED	X 40	X 39	X 40	X 40	X 38	X 34	X 34												X 46	X 42	X 40	X 40	X 39	X 40
U Q	42	X 42	X 40	X 40	X 40	X 38	X 37												X 51	X 44	X 41	X 40	X 41	X 41
L Q	X 38	X 37	X 38	X 36	X 34	X 30	X 32												X 41	X 41	X 38	X 36	X 37	X 37

FEB. 2017 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 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	33	35	33	30	32	29	29	41	54	64	72	71	73	68	67	58	51	44	41	42	38	33	32	32
2	F	36	33	34	21	21	20	37	52	79	88	97	71	V 55	61	58	50	45	33	33	33	32	35	31
3	34	34	36	34	33	32	29	54	56	66	70	62	63	68	55	60	55	48	27	F	38	F	F	31
4	29	29	30	31	29	26	25	42	48	64	97	102	75	62	62	54	53	39	35	A	30	32	35	31
5	33	33	34	32	31	26	26	43	50	54	56	62	61	72	74	60	50	43	A	33	32	34	30	35
6	F	30	29	34	28	18	22	41	48	64	66	78	76	68	71	64	52	43	33	A	29	29	31	29
7	29	30	31	30	29	30	27	45	50	52	59	58	66	60	60	65	52	44	34	34	31	30	32	F
8	32	31	34	34	28	21	24	47	53	52	62	65	69	74	66	56	54	41	32	36	39	37	35	33
9	32	31	29	29	30	29	24	51	60	55	55	63	77	76	70	65	54	44	33	35	30	A	33	34
10	36	36	34	34	39	28	25	48	54	54	60	67	68	54	62	69	54	49	30	35	32	29	30	29
11	29	31	29	32	24	22	23	48	63	58	74	76	76	72	68	64	55	48	36	32	A	34	34	36
12	F	33	F	34	33	32	30	50	54	58	56	60	76	74	68	64	66	50	28	27	30	29	31	29
13	F	F	25	24	29	23	20	43	49	53	58	66	76	81	60	54	54	46	42	36	34	34	33	29
14	32	30	29	30	27	28	27	48	52	54	62	67	62	74	62	58	64	47	36	29	35	36	30	F
15	32	33	F	F	33	F	29	49	59	60	65	64	62	62	66	62	55	46	45	36	35	31	29	31
16	F	F	F	34	36	37	32	55	54	61	57	60	56	73	80	70	62	52	38	36	41	33	A	32
17	33	33	33	34	34	26	24	50	56	66	74	81	83	79	70	67	62	51	49	36	33	34	33	34
18	36	36	34	36	36	34	34	58	69	68	87	77	76	66	71	65	58	53	49	50	34	37	40	39
19	F	42	40	F	42	35	42	58	61	73	71	64	76	78	64	65	70	60	40	43	35	29	33	34
20	33	32	34	34	37	26	26	46	54	60	62	69	65	80	84	68	64	53	41	45	35	32	34	34
21	34	34	34	33	33	32	33	48	62	56	61	78	78	76	68	70	59	60	40	36	32	30	31	30
22	F	32	32	33	40	31	28	50	58	55	59	78	75	83	66	69	58	52	50	39	34	30	33	34
23	E 34	36	34	35	33	36	31	54	60	63	69	66	62	68	72	70	62	62	46	36	34	33	34	34
24	33	34	35	34	33	30	34	48	59	66	77	92	85	70	74	67	58	56	47	42	35	38	40	43
25	40	36	34	30	23	25	28	54	69	70	81	84	79	74	67	65	59	53	42	36	35	37	37	36
26	36	38	38	34	34	24	29	50	62	77	76	79	84	71	68	64	62	55	43	38	32	34	34	34
27	34	35	39	36	28	21	27	50	56	57	68	75	75	69	64	67	67	55	40	36	31	29	31	31
28	33	33	33	30	31	25	31	52	62	66	73	78	86	87	84	76	64	52	45	36	38	A	35	35
29																								
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	21	26	25	26	28	27	28	28	28	28	28	28	28	28	28	28	28	28	27	25	27	25	26	26
MED	33	33	34	34	32	28	28	48	56	60	67	70	75	72	68	65	58	50	40	36	34	33	33	34
U Q	34	36	34	34	34	32	30	52	60	66	74	78	76	76	71	68	62	53	45	38	35	34	35	34
L Q	32	31	30	30	28	24	24	46	52	55	60	64	66	68	63	60	54	44	33	34	32	30	31	31

IONOSPHERIC DATA STATION Kokubunji

FEB. 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										L	L	L	U L 424	A	L									
2											A	A				A								
3											A	A	A	U L 416	A	A	A		U L 220					
4										L	A	A	A	L		A								
5										A	A	L	A	A		A	A		A					
6											A	A	A	A	A									
7										L	L	L	L	L	A	A	A							
8											L	A	U L 444	U L 424	L	L								
9											L	U L 460	A	L	A	L								
10											L	A	A	A	L	A								
11										L	A	U L 428	U L 428	L	A									
12										A	L	A	A	A	A	A								
13											L	A		A		L								
14										L	L	L	U L 440	U L 436	L	L								
15										L	L	L	L	A	L	L	L							
16										L	L	U L 428	U L 480	A	428	L								
17										L	L	L	A	U L 432	A	L								
18									L	L	U L 432	L	A	A	L									
19									L	L	L	L	U L 424	U L 424	L									
20										L	L	U L 440	L	A	U L 428	L	L							
21									L	L	U L 440	L	L	U L 440	U L 404	L								
22								L		L	U L 456	U L 452	L	A	L	A								
23									L	U L 436	L	L	U L 456	U L 444	A	A								
24										L	L	448	U L 456	L	L	L								
25									L	L	U L 444	L	U L 432	U L 432	L									
26											L	U L 440	448	U L 436	U L 432	L								
27										L	U L 456	U L 448	U L 448	L	L	L	L							
28									L	L	L	L	440	U L 452	U L 428	L								
29																								
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	5	8	12	10	5				1					
MED										U L 436	U L 444	U L 444	U L 442	U L 434	U L 428				U L 220					
U Q											U L 456	U L 450	U L 452	U L 440	U L 430									
L Q											U L 436	U L 434	U L 430	U L 424	416									

FEB. 2017 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 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 176	U R 272	284	A	312	A	A 460	A	A	U A 216	B						
2								B B	248	U A 272	A	A	U A 300	U A 304	A	A	A	B						
3								B B	A	U A 296	300	A	A	U A 300	A	A	A	A	B					
4								B U A 188	U R 260	A	A	A	A	A	A	A	A	A	B					
5								B B	A	A	A	A	A	A	A	A	A	B	B					
6								188	244	A	A	A	A	A	A	A	A	A	B					
7								B B	U R 232	R	292	A	A	A	A	A	A	A						
8								B B	U R 252	A	A	A	A	A	A	A	U A 228	B						
9								B B	U R 244	R	A	U A 308	A	A	A	A	A	B						
10								B	240	284	A	A	A	A	A	A	A	B						
11								B 200	A	U A 292	A	A	A	A	A	A	216	B						
12								B U R 184	U R 236	280	312	324	A	312	A	U A 272	A	B						
13								B	A	A	328	344	A	A	A	A	A	B						
14								B U R 180	R	R	A	A	R	A	U R 316	A	A	B						
15								B U R 180	R	U R 280	R	A	A	A	U R 328	A	U R 236	U R 188						
16								B B	U R 256	R	A	A	R	332	A	A	A	B						
17								B U R 184	U R 252	R	320	R	U R 324	A	296	U A 272	A	B						
18								B U R 196	A	U R 288	R	R	328	A	A	A	A	B						
19								B 164	U R 244	A	A	A	R	A	A	A	A	B						
20								B	240	U R 280	312	R	A	U A 320	A	A	A	U R 172						
21								B	U R 256	R	R	R	A	A	A	A	A	U R 172						
22								U R 172	U R 248	R	U R 324	U R 328	360	320	A	A	U R 252	B						
23								R 176	U R 252	U R 296	U R 332	R	R	324	A	A	A	B						
24								U R 208	U R 276	R	R	A	A	R	R	R	R	B						
25								184	248	R	R	R	R	R	A	R	A	U R 184						
26								184	252	296	320	R	R	R	U R 320	U R 288	U R 248	U R 188						
27								200	264	U R 308	A	A	A	U R 336	A	R	U R 264	168						
28								B	A	R	R	R	A	R	R	U A 288	R	U R 168						
29																								
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	20	12	9	5	4	9	4	4	7	7						
MED								184	U R 250	U 286	320	324	326	320	U R 318	U A 280	U R 236	U R 172						
U Q								U 192	U R 256	U 296	U R 326	336	344	334	U R 324	U 288	U R 252	U R 188						
L Q								R 178	244	U 280	306	310	U 312	U A 308	306	U A 272	216	168						

FEB. 2017 foE (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

FEB. 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	E B 15	18	20	21	21	E B 14	E B 14	G	G	33	35	36	34	J A 47	J A 34	34	27	22	20	21	22	E B 15	21	J A 31
2	E B 14	E B 15	22	J A 20	E B 15	20	J A 17	J A 22	28	34	37	J A 48	J A 43	39	J A 46	J A 53	J A 37	J A 27	J A 30	J A 42	J A 80	J A 41	E B 16	21
3	19	E B 14	E B 15	19	E B 15	20	21	J A 26	J A 31	34	38	39	J A 41	34	37	33	J A 36	J A 22	J A 18	20	J A 34	E B 15	J A 18	E B 15
4	E B 16	E B 15	19	21	J A 20	J A 20	20	22	G 22	33	J A 44	J A 41	J A 42	36	J A 41	J A 42	J A 55	J A 29	J A 39	J A 83	J A 38	J A 42	J A 24	21
5	J A 20	J A 36	J A 30	J A 36	J A 30	20	E B 15	19	29	J A 48	J A 49	J A 42	J A 76	J A 46	38	J A 56	J A 53	J A 27	J A 80	J A 129	J A 44	J A 92	J A 113	J A 36
6	J A 37	21	E B 14	20	19	19	20	24	32	39	J A 46	J A 51	J A 113	J A 52	J A 49	J A 34	J A 30	J A 22	E B 15	J A 68	21	E B 15	E B 15	J A 20
7	J A 31	J A 24	J A 29	J A 26	J A 26	J A 24	18	J A 20	G	G	35	J A 37	J A 56	J A 54	38	J A 46	J A 38	J A 34	22	E B 15	21	19	21	E B 16
8	E B 15	E B 15	E B 15	E B 15	20	20	E B 15	20	G	34	38	J A 50	J A 41	J A 41	J A 36	J A 44	G	J A 22	22	22	22	E B 15	20	E B 15
9	E B 15	J A 21	J A 24	J A 19	18	19	E B 15	E B 15	G	G 22	34	38	J A 43	36	J A 40	32	J A 32	J A 28	J A 32	J A 36	J A 37	J A 33	J A 20	19
10	E B 15	J A 26	J A 42	J A 40	J A 20	E B 14	E B 15	21	28	33	35	42	J A 46	J A 67	J A 49	J A 40	28	E B 16	E B 15	J A 24	J A 37	J A 26	20	E B 15
11	E B 15	J A 27	J A 22	20	E B 14	20	21	25	31	J G 30	J A 42	J A 65	J A 56	34	J A 46	J A 43	32	22	E B 16	E B 15	J A 40	J A 54	J A 24	19
12	E B 15	20	J A 33	E B 15	E B 15	22	E B 15	G	G	36	36	40	39	37	37	35	32	J A 35	J A 28	J A 20	21	E B 15	E B 16	E B 14
13	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	28	J A 33	37	40	J A 49	J A 44	J A 42	J A 47	J A 27	E B 16	18	J A 19	J A 35	18	J A 22	22
14	20	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	G	37	37	G 26	36	G	34	J A 35	31	J A 26	21	J A 31	J A 52	J A 58	J A 24
15	23	22	22	E B 14	E B 14	E B 14	20	G	G	G	G 24	36	J A 52	44	G	33	G 20	G	J A 21	20	E B 15	E B 15	E B 14	20
16	E B 15	E B 14	E B 14	E B 14	E B 14	20	E B 15	20	G	G	36	39	G	39	34	32	30	E B 16	E B 14	E B 14	E B 14	J A 29	J A 37	J A 28
17	J A 22	19	E B 15	19	E B 15	E B 14	E B 14	G	G	G	36	G	40	40	34	34	J A 40	J A 29	J A 26	23	E B 15	E B 14	E B 14	21
18	E B 15	18	J A 28	19	J A 17	19	E B 15	G	30	G	G	G	38	38	35	J A 38	J A 32	22	J A 19	20	E B 15	20	E B 15	E B 15
19	J A 28	E B 14	20	20	E B 14	E B 14	E B 14	20	G	30	34	37	J G 28	35	J A 38	J A 45	J A 34	J A 20	E B 15	22	E B 15	E B 14	E B 15	E B 15
20	E B 15	E B 15	E B 15	18	E B 15	20	18	E B 15	G	G	34	G	37	45	36	31	G 22	G	E B 15	E B 15	E B 15	22	E B 15	E B 15
21	E B 15	E B 14	14	E B 15	E B 14	E B 15	14	21	G	G	G	G	37	J A 42	33	J A 34	J A 30	G	21	J A 21	J A 18	20	J A 21	E B 14
22	E B 14	E B 14	E B 14	E B 14	19	E B 15	21	G	G	G	G	40	40	38	J A 44	36	G 23	18	J A 28	J A 27	E B 14	E B 14	19	E B 14
23	E B 14	E B 16	E B 14	E B 13	E B 13	E B 15	E B 15	22	G	G 26	G	G	G 22	38	37	35	J A 37	J A 32	J A 44	J A 30	J A 31	E B 16	E B 14	E B 14
24	E B 16	E B 14	E B 15	E B 15	19	E B 15	E B 16	G	G	G 22	G 24	35	36	G	G	G	G	E B 16	20	E B 15	22	E B 15	E B 16	E B 16
25	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	20	24	29	G	G	G	G	G	33	G	25	G	E B 15	E B 15	E B 15	E B 26	20	20
26	J A 22	J A 34	J A 24	21	19	20	E B 14	24	34	36	36	G	G	G	G	G	G	G	E B 15	E B 14	E B 14	E B 14	E B 15	E B 14
27	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15	20	24	28	G	35	J A 37	38	G	35	G	G	21	E B 15	E B 14	22	J A 24	J A 26	J A 26
28	20	E B 14	E B 14	E B 14	E B 14	E B 16	E B 15	23	28	G	G	G	J A 37	G 23	G	32	G	G	22	21	22	J A 52	J A 21	23
29																								
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	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	E B 15	E B 15	E B 15	18	E B 15	18	E B 15	20	G	G	35	37	40	38	36	34	30	22	20	21	22	20	20	19
U Q	J A 20	J A 21	J A 23	20	19	20	20	22	28	34	37	J A 40	J A 44	J A 44	J A 40	J A 42	J A 36	J A 28	J A 27	J A 26	J A 34	J A 31	J A 22	J A 22
L Q	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	E B 15	G	G	G	G	G	G 35	G 34	G 34	32	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

FEB. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 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 14	E B 15	E B 14	E B 15	E B 14	E B 14	G	G	30	32	33	32	G 37	30	28	26	18	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
2	E B 14	E B 15	E B 14	16	E B 15	E B 15	E B 15	20	26	33	35	40	38	38	38	49	32	22	19	24	E B 15	16	E B 16	E B 16
3	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	20	23	32	36	36	37	34	36	32	29	18	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15
4	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 20	32	38	39	40	35	35	36	32	26	20	A A 83	E B 15	E B 15	E B 15	E B 16
5	E B 14	E B 15	E B 15	20	18	E B 14	E B 15	17	27	40	40	34	43	38	35	51	43	22	A A 80	E B 15	E B 15	21	E B 14	20
6	18	E B 15	E B 14	E B 14	E B 14	E B 15	E B 15	22	29	35	37	38	41	38	43	30	23	18	E B 15	A A 68	E B 15	E B 15	E B 15	18
7	18	E B 15	E B 15	17	18	E B 15	E B 15	E B 15	G	G	33	31	34	36	34	36	31	26	E B 15	E B 15	E B 15	E B 16	E B 15	E B 16
8	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	G	30	35	38	34	34	30	28	G	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
9	E B 15	16	E B 15	16	E B 16	E B 15	E B 15	E B 15	G	G 20	32	35	40	35	36	30	30	22	25	27	E B 15	A A 33	E B 14	E B 15
10	E B 15	E B 15	E B 15	18	E B 15	E B 14	E B 15	18	26	31	33	39	40	51	30	36	26	E B 16	E B 15	E B 15	E B 14	E B 15	15	E B 15
11	E B 15	18	E B 15	E B 15	E B 14	E B 15	E B 16	23	29	G 27	37	34	33	32	36	36	30	18	E B 16	E B 15	A A 40	16	E B 15	E B 15
12	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	34	34	38	37	36	35	33	29	E B 30	E B 15	16	E B 15	E B 15	E B 16	E B 14
13	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	25	30	35	39	45	39	37	30	26	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14
14	17	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	G	32	34	G 26	34	G	30	29	28	E B 15	E B 15	20	E B 16	16	16
15	E B 16	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	G	G 24	34	35	40	G	28	G 15	G	16	E B 14	E B 15	E B 15	E B 14	E B 14
16	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	E B 15	19	G	G	34	36	G	37	32	30	26	E B 16	E B 14	E B 14	E B 14	24	A A E B 37	15
17	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	G	G	G	35	G	38	34	32	32	34	26	21	E B 15	E B 15	E B 14	E B 14	E B 15
18	E B 15	E B 15	18	E B 14	E B 16	E B 15	E B 15	G	25	G	G	G	37	36	33	34	32	20	17	15	E B 15	E B 14	E B 15	E B 15
19	E B 15	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	18	G	28	31	35	G 25	33	33	36	30	18	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15
20	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	34	G	35	42	36	30	G 21	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
21	E B 15	E B 14	E B 14	E B 15	E B 14	E B 15	E B 14	19	G	G	G	G	35	34	32	28	27	G	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 15	G	G	G	G	38	37	37	32	34	G 22	18	22	25	E B 14	E B 14	E B 14	E B 14
23	E B 14	E B 16	E B 14	E B 13	E B 13	E B 15	E B 15	20	G	G 20	G	G	G 21	36	36	33	32	27	39	16	E B 15	E B 16	E B 14	E B 14
24	E B 16	E B 14	E B 15	E B 15	E B 14	E B 15	E B 16	G	G	G 21	G 23	34	33	G	G	G	G	E B 16	E B 14	E B 15	E B 16	E B 15	E B 16	E B 16
25	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	E B 16	23	27	G	G	G	G	G	32	G	24	G	E B 15	E B 15	E B 15	17	E B 15	E B 15
26	E B 15	17	E B 15	E B 14	E B 14	E B 16	E B 14	23	31	34	34	G	G	G	G	G	G	G	E B 15	E B 14	E B 14	E B 14	E B 15	E B 14
27	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	23	28	G	34	34	37	G	33	G	G	19	E B 15	E B 14	E B 16	21	20	17
28	E B 14	E B 14	E B 14	E B 14	E B 14	E B 16	E B 15	22	26	G	G	G	34	G 19	G	31	G	G	E B 15	E B 15	16	A A 52	E B 15	E B 15
29																								
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	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	G	G	34	34	35	36	33	30	26	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 16	E B 15	E B 15	15	E B 15	E B 15	E B 15	20	26	32	35	38	38	38	36	35	30	22	18	16	E B 15	16	15	16
L Q	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	G	G	G	G 32	34	G 30	28	G	G	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14

FEB. 2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

FEB.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	334	366	302	316	319	345	396	360	355	360	341	354	368	360	371	376	357	325	345	343	319	288	283
2	F	358	350	384	294	325	337	353	340	350	365	375	381	V 377	373	359	363	358	352	336	324	303	361	314
3	300	325	333	323	319	316	328	367	410	343	359	359	365	377	354	374	360	381	304	F	325	F	F	331
4	297	314	322	321	349	308	356	380	356	334	353	371	377	378	376	351	368	384	333	A	311	298	319	321
5	322	319	340	323	341	332	344	396	364	358	379	367	339	347	387	354	382	339	A	348	330	310	287	297
6	F	282	299	376	370	378	340	375	374	361	345	345	362	363	358	383	374	380	335	A	321	324	314	334
7	298	288	321	321	321	337	390	385	382	381	366	343	363	361	353	376	363	374	349	339	321	302	308	F
8	319	304	322	368	389	295	326	389	374	375	350	353	346	351	373	385	386	384	338	333	340	348	324	305
9	314	305	298	320	340	372	353	380	384	394	356	331	352	367	367	373	370	368	334	366	352	A	305	300
10	312	317	314	338	361	372	320	372	394	372	361	363	369	356	346	378	375	386	311	337	316	330	295	309
11	296	314	332	353	345	363	329	361	387	348	354	360	353	354	377	372	377	371	341	335	A	328	302	327
12	F	318	F	334	322	331	364	385	370	375	364	354	350	360	365	371	389	405	356	359	338	322	328	305
13	F	F	328	353	372	383	344	396	386	347	350	349	360	384	376	368	359	370	360	342	340	320	336	315
14	339	311	330	342	298	302	367	389	383	369	365	373	341	359	375	351	380	383	373	327	323	357	335	F
15	316	308	F	F	344	F	342	385	378	367	371	361	348	351	367	360	375	352	366	359	336	351	333	295
16	F	F	F	333	338	356	341	387	381	369	368	354	325	342	354	330	384	390	344	321	332	339	A	295
17	298	296	300	322	365	357	341	359	359	344	327	324	347	359	353	367	376	368	347	339	328	303	301	302
18	306	323	304	316	328	305	335	367	374	357	353	347	348	352	356	373	367	339	348	363	320	318	333	333
19	F	298	306	F	341	304	333	360	365	361	366	349	345	353	361	352	364	376	330	324	364	306	290	293
20	297	292	307	326	382	287	346	381	374	374	353	352	342	344	351	372	370	384	340	348	354	304	280	304
21	283	281	318	297	307	310	335	385	358	348	352	354	355	355	357	369	351	349	359	349	323	325	310	281
22	F	290	306	306	347	348	320	382	367	356	325	347	327	357	357	362	355	363	383	331	346	311	297	298
23	E 303	323	311	316	318	339	333	396	368	359	338	358	334	357	359	354	355	374	367	338	302	308	314	310
24	289	312	316	313	307	307	334	371	349	342	324	345	358	337	353	365	364	350	343	318	304	282	298	308
25	336	327	356	353	280	291	324	353	343	358	333	358	366	359	340	371	370	354	334	321	300	299	310	316
26	304	312	348	336	364	288	332	358	332	362	350	357	362	362	351	366	367	372	331	351	316	297	296	308
27	308	319	368	368	393	294	331	374	349	356	357	362	359	356	359	360	367	379	362	336	307	298	293	306
28	318	339	335	325	332	334	342	362	358	352	337	322	335	350	348	359	375	373	369	323	312	A	291	288
29																								
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	21	26	25	26	28	27	28	28	28	28	28	28	28	28	28	28	28	28	27	25	27	25	26	26
MED	306	313	322	326	340	325	338	380	369	358	354	354	352	357	358	368	370	372	344	338	324	311	306	306
U Q	318	323	338	353	362	356	344	386	382	369	364	360	362	362	370	372	376	382	360	348	340	326	324	315
L Q	298	298	306	320	318	304	332	364	358	349	348	346	344	352	353	359	364	358	334	329	316	302	295	297

IONOSPHERIC DATA STATION Kokubunji

FEB. 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										L	L	L	U L 389	A	L									
2											A	A				A								
3											A	A	A	U L 383	A	A	A		U L 320					
4										L	A	A	A	L		A								
5										A	A	L	A	A		A	A		A					
6											A	A	A	A	A									
7										L	L	L	L	L	A	A	A							
8											L	A	U L 377	U L 394	L	L								
9											L	U L 373	A	L	A	L								
10											L	A	A	A	L	A								
11										L	A	U L 398	U L 390	L	A									
12										A	L	A	A	A	A	A								
13											L	A		A		L								
14										L	L	L	U L 391	U L 374	L	L								
15										L	L	L	L	A	L	L	L							
16										L	L	U L 405	U L 387	A	375	L								
17										L	L	L	A	U L 415	A	L								
18									L	L	U L 383	L	A	A	L									
19									L	L	L	L	U L 413	U L 395	L									
20										L	L	U L 403	L	A	U L 379	L	L							
21									L	L	U L 383	L	L	U L 393	U L 428	L								
22								L		L	U L 404	U L 374	L	A	L	A								
23									L	U L 358	L	L	U L 378	U L 378	A	A								
24										L	L	401	U L 373	L	L	L								
25									L	L	U L 384	L	U L 400	U L 403	L									
26											L	U L 406	396	U L 381	U L 383	L								
27										L	U L 373	U L 386	U L 386	L	L	L	L							
28									L	L	L	L	406	U L 362	U L 386	L								
29																								
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	5	8	12	10	5				1					
MED										U L 358	U L 383	U L 400	U L 390	U L 388	U L 383				U L 320					
U Q											U L 394	U L 404	398	U L 395	U L 407									
L Q											U L 378	U L 380	U L 382	U L 378	377									

FEB. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB.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										264	244	250	238	238	260									
2											242	236				258								
3											242	226	238	244	236	230	226		344					
4										286	248	228	228	228		222								
5										E A 248	246	252	272	252		E A 260	E A 248		A					
6											260	252	236	250	242									
7										234	268	264	250	246	246	226	220							
8											268	262	266	246	234	228								
9											256	294	246	242	236	236								
10											258	264	234	E A 292	254	220								
11										256	248	236	246	250	230									
12										234	258	260	250	238	236	230								
13											270	258		226		238								
14										244	254	244	274	246	234	256								
15										258	232	252	258	270	242	246	234							
16										232	244	262	312	270	252	250								
17										264	254	262	240	246	242	246								
18									248	248	246	242	248	238	250									
19									238	244	232	256	256	252	242									
20										252	268	262	266	270	248	238	234							
21									248	238	270	268	248	254	252	238								
22								226		240	284	260	284	246	244	240								
23									244	242	264	240	260	262	246	236								
24										262	248	260	244	264	246	230								
25									262	250	260	236	236	240	248									
26											258	242	242	232	250	236								
27										256	266	244	244	248	254	256	238							
28									252	270	268	268	266	254	252	236								
29																								
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	6	20	28	28	26	27	24	22	6		1					
MED								226	248	249	257	254	248	246	246	236	232		344					
U Q									252	260	267	262	266	254	251	246	238							
L Q									244	241	246	242	240	240	239	230	226							

FEB.2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 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	224	226	214	E B 278	E B 252	E B 260	E B 234	200	214	226	214	216	196	A	220	200	210	208	222	212	216	E B 222	E B 258	E B 298
2	E B 280	E B 228	218	208	186	E B 284	E B 242	224	222	E A 254	A	A	224	224	228	A	208	208	214	E A 248	E B 254	E A 256	220	E B 260
3	E B 276	E B 248	E B 232	218	E B 236	E B 240	230	210	196	230	A	A	A	198	A	A	A	196	228	E B 248	E B 242	E B 230	E B 266	230
4	E B 292	E B 262	E B 260	E B 252	214	E B 290	228	204	218	230	A	A	A	196	220	A	224	204	E A 234	A	E B 250	E B 272	E B 236	228
5	E B 244	E B 264	E B 236	E A 282	222	E B 236	214	190	206	A	A	220	A	A	212	A	A	216	A	218	222	E A 268	E B 292	E A 296
6	E A 324	E B 276	E B 264	202	208	196	E B 236	206	204	E A 250	A	A	A	A	A	218	200	210	208	A	E B 230	E B 244	E B 254	E A 238
7	E A 314	E B 296	E B 278	E A 272	E A 262	E B 244	204	196	200	198	192	188	208	208	A	A	A	204	210	220	220	E B 258	E B 254	E B 254
8	E B 244	E B 272	E B 244	208	196	E B 302	E B 250	210	206	206	216	A	216	208	206	196	206	200	208	E B 236	222	214	230	E B 258
9	E B 260	E A 296	E B 294	E A 264	E B 230	204	220	204	212	202	192	208	A	206	A	196	212	208	E A 256	E A 238	216	A	E B 268	E B 244
10	E B 236	E B 256	E B 268	E A 248	210	188	E B 254	204	216	216	214	A	A	A	224	A	212	198	202	222	204	E B 240	E A 276	E B 274
11	E B 284	E A 278	E B 248	216	204	212	E B 266	218	218	196	A	198	186	194	A	220	210	202	208	208	A	E A 256	E B 250	E B 240
12	E B 258	E B 246	E B 302	218	E B 234	E B 234	208	204	202	A	210	A	A	A	A	A	210	194	184	218	228	214	222	E B 260
13	E B 320	E B 308	E B 282	E B 266	218	202	190	192	194	204	222	A	248	A	224	190	214	208	202	218	216	E B 228	232	210
14	E A 242	E B 254	E B 246	E B 248	E B 294	E B 274	204	204	H 184	198	204	206	190	198	206	210	218	212	198	210	E A 240	226	226	E A 290
15	E B 278	E B 260	E B 264	E B 254	224	220	214	204	210	202	200	202	212	A	204	198	184	204	200	204	218	202	E B 228	E B 262
16	E B 294	E B 278	E B 236	226	220	208	208	196	200	202	196	192	194	A	216	204	210	200	E B 198	226	218	E A 240	A	E B 282
17	E B 286	E B 282	E B 278	E B 248	214	204	E B 244	222	212	212	216	234	A	188	A	206	210	210	214	210	234	E B 274	E B 252	E B 284
18	E B 268	E B 254	E A 290	E B 252	E B 240	220	E B 236	216	210	194	188	200	A	A	206	224	216	212	210	208	E B 204	E B 238	E B 230	E B 224
19	E B 266	E B 266	E B 258	E B 250	232	216	222	212	200	178	190	192	196	196	196	234	224	206	E B 196	232	196	E B 256	E B 264	E B 278
20	E B 292	E B 294	E B 272	E B 248	196	E B 248	E B 236	H 158	H 172	208	202	198	198	A	212	204	202	198	222	202	204	E B 250	E B 260	E B 274
21	E B 292	E B 280	E B 260	E B 254	E B 262	E B 266	222	194	H 182	188	188	226	220	192	190	184	206	218	202	214	214	E B 244	E B 244	E B 310
22	E B 270	E B 284	E B 262	E B 266	226	212	212	198	H 172	178	172	220	232	A	210	A	210	206	202	E A 234	206	E B 244	E B 268	E B 278
23	E B 278	E B 250	E B 236	E B 256	E B 260	216	224	204	200	182	208	198	204	204	A	A	228	214	E A 230	234	E B 238	E B 242	E B 260	E B 258
24	E B 280	E B 276	E B 242	E B 266	E B 258	E B 250	230	208	214	220	204	202	196	204	202	206	210	216	206	216	E B 244	E B 304	E B 278	E B 238
25	216	226	212	208	202	E B 290	E B 250	224	222	206	196	190	196	200	202	214	216	204	208	206	E B 262	E A 294	E B 260	E B 256
26	E B 272	E A 260	220	214	200	206	E B 242	218	230	228	214	204	198	178	190	204	212	216	202	206	E B 240	E B 272	E B 294	E B 280
27	E B 266	E B 252	210	204	196	E B 296	E B 228	214	214	198	214	206	202	202	208	202	210	204	202	214	226	E A 330	E A 316	E A 296
28	E B 268	E B 242	E B 226	E B 236	E B 228	216	224	218	204	212	204	204	204	220	198	208	214	210	198	218	228	A	E B 292	E B 294
29																								
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	28	28	28	28	28	28	28	28	28	26	22	20	19	17	20	19	25	28	27	26	27	26	27	28
MED	E B 274	E B 263	E B 253	E B 248	U 210	227	U 217	204	206	204	204	203	202	200	207	204	210	207	205	214	214	E B 244	E B 258	E B 261
U Q	E B 289	E B 279	E B 270	E B 260	E B 238	E B 263	E B 239	215	214	220	214	212	216	207	218	214	215	211	214	E 232	E B 240	E B 268	E B 268	E B 283
L Q	E B 259	E B 251	234	217	206	210	214	199	200	198	192	198	196	195	202	198	209	203	202	210	216	230	232	E 242

FEB. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 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	116	116	110	A	114	A	A	A	116	124	B						
2							B	B 120	120	120	122	112	114	118	A	A	A	B						
3							B	B	A 114	114	112	A	112	108	108	108	A	B						
4							B	122	124	118	118	114	A	A	A	A	A	A	B					
5							B	B 114	114	114	A	A	A	A	A	A	B	B						
6								112	116	120	116	A	A	A	A	A	A	A	B					
7							B	B 118	114	106	A	A	A	114	112	112	A							
8							B	B 114	116	116	A	A	A	A	A	118	B							
9							B	B 114	114	106	110	108	110	A	A	A	B							
10								B 112	116	112	110	116	A	A	A	A	B							
11							B	122	122	118	A	A	A	A	108	A	108	B						
12							B	120	114	108	108	108	112	110	A	112	116	B						
13								B	A	A	110	112	118	110	112	A	A	B						
14							B	108	110	114	A	A	120	A	112	A	A	B						
15							B	112	116	112	116	A	A	A	112	A	112	110						
16							B	B 116	118	112	112	114	112	A	A	118	B							
17							B	126	114	112	112	112	114	A	114	114	114	B						
18							B	114	116	116	112	112	108	112	112	112	112	B						
19							B	112	110	A	A	A	116	A	A	A	116	B						
20								B 116	110	112	112	112	112	112	112	A	A	120						
21								B 116	114	114	112	A	A	A	A	A	124							
22								120	114	118	118	110	110	110	A	110	116	B						
23								110	116	116	112	110	112	112	110	110	A	B						
24								116	114	116	118	114	110	110	108	110	110	B						
25								120	116	110	110	110	112	112	A	114	A	114						
26								114	112	112	112	114	110	112	112	112	112	110						
27								130	110	108	108	A	A	110	A	112	112	114						
28								B 112	112	110	110	A	110	110	110	110	110	110						
29																								
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	26	26	24	19	16	15	13	13	16	7						
MED								116	115	114	112	112	112	112	112	112	112	114						
U Q								121	116	116	116	112	115	112	112	113	116	120						
L Q								112	114	112	110	110	110	110	109	110	111	110						

FEB. 2017 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB.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	B	128	100	104	98	B	B	G	G	146	108	170	102	100	102	124	176	160	140	108	104	B	98	102
2	B	B	110	110	B	144	132	136	138	136	126	118	122	114	102	100	98	106	104	94	98	106	B	102
3	100	B	B	102	B	122	112	112	104	148	144	120	92	130	116	118	114	92	140	112	104	B	112	B
4	B	B	116	112	110	110	142	140	106	134	120	118	108	102	102	102	102	102	96	106	104	104	130	100
5	96	100	98	96	94	96	B	126	124	120	118	104	102	102	122	106	106	106	106	102	96	98	98	96
6	92	96	B	118	118	98	96	140	140	128	126	106	100	102	102	102	102	102	B	92	96	B	B	96
7	106	108	100	100	100	100	106	148	G	G	140	96	94	94	118	114	112	94	94	B	110	144	108	B
8	B	B	B	B	100	100	B	140	G	118	116	106	108	104	104	104	G	104	104	104	104	B	98	B
9	B	104	104	104	104	104	B	B	G	100	112	116	112	114	106	106	98	100	102	102	100	100	134	114
10	B	106	102	102	94	B	B	144	148	144	126	118	110	102	106	106	106	B	B	112	106	106	106	B
11	B	98	100	100	B	100	152	136	122	102	96	94	92	94	112	106	136	122	B	B	98	98	102	122
12	B	102	102	B	B	102	B	G	G	160	154	168	160	160	142	128	122	110	104	96	100	B	B	B
13	B	B	B	B	B	B	B	B	106	104	150	136	124	120	112	110	108	B	102	102	100	94	96	98
14	100	B	B	B	B	B	B	G	G	G	106	104	104	108	G	106	104	102	110	104	104	98	96	96
15	102	102	102	B	B	B	110	G	G	G	104	104	94	92	G	92	92	G	90	90	B	B	B	96
16	B	B	B	B	B	98	B	136	G	G	122	122	G	158	108	106	126	B	B	B	B	102	102	102
17	102	102	B	96	B	B	B	G	G	G	162	G	138	100	168	132	118	120	86	88	B	B	B	106
18	B	106	102	102	102	102	B	G	128	G	G	G	136	126	122	122	120	102	104	94	B	100	B	B
19	100	B	100	102	B	B	B	142	G	104	104	104	104	104	96	98	116	100	B	96	B	B	B	B
20	B	B	B	100	B	98	98	B	G	G	138	G	122	126	126	106	106	G	B	B	B	96	B	B
21	B	B	B	B	B	B	B	120	G	G	G	G	106	102	102	96	96	G	90	106	128	130	130	B
22	B	B	B	B	106	B	100	G	G	G	G	152	152	138	92	114	112	106	98	96	B	B	92	B
23	B	B	B	B	B	B	B	154	G	94	G	G	86	146	128	126	106	106	104	104	104	B	B	B
24	B	B	B	B	98	B	B	G	G	98	100	112	122	G	G	G	G	B	94	B	100	B	B	B
25	B	B	B	B	B	B	142	140	152	G	G	G	G	G	102	G	108	G	B	B	B	96	94	94
26	92	92	90	92	92	92	B	152	158	148	154	G	G	G	G	G	G	G	B	B	B	B	B	B
27	B	B	B	B	B	B	142	144	154	G	116	108	108	G	106	G	G	134	B	B	144	132	120	106
28	106	B	B	B	B	B	B	142	126	G	G	G	98	98	G	118	G	G	108	108	104	96	110	122
29																								
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	10	12	13	15	12	14	11	17	13	16	22	20	25	24	23	24	23	18	19	20	19	16	17	15
MED	100	102	102	102	100	100	112	140	128	124	121	114	108	104	106	106	108	105	104	102	104	100	102	102
U Q	102	106	103	104	105	104	142	144	150	145	140	121	122	126	122	118	118	110	106	106	104	106	116	106
L Q	96	99	100	100	96	98	100	136	114	103	108	104	99	101	102	103	102	102	94	95	100	97	97	96

IONOSPHERIC DATA STATION Kokubunji

FEB. 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	F1	F1					H1	L2	H1	L2	L2	L2	CL12	HL12	H2	H2	F2	F2		F1	F1
2			F1	F1		F1	C1	C3	H2	CL22	CL22	CL22	C2	CL22	L2	L4	L2	L4	F3	F5	F5	F3		F1
3	F2			F1		F1	C2	C3	L2	HL12	H2	C1	L3	HL12	CL22	CL22	CL32	L3	H1	F1	F2		F2	
4			F1	F3	F3	F2	H1	H2	L2	HL12	C3	C2	L2	L2	L3	L3	L3	L3	L3	F4	F2	F2	F1	F2
5	F2	F2	F2	F4	F2	F2		C2	C2	C2	C3	L2	L2	L2	CL12	L3	L4	L4	L5	F3	F3	F4	F4	F3
6	F3	F2		F2	F3	F1	L2	H2	H2	C2	C2	L2	L3	L2	L3	L2	L3	L3		F4	F1			F2
7	F5	F2	F3	F2	F3	F2	L1	H1			HL22	L2	L2	L2	CL22	CL22	CL32	L3	F1		F2	F1	F2	
8					F2	F2		H2		C1	C2	L2	L2	L2	L2	L2		L3	F1	F2	F3		F1	
9		F3	F3	F3	F1	F1				L3	C2	C2	C2	C2	L2	L2	L2	L2	F2	F4	F3	F5	F1	F1
10		F3	F3	F5	F1			H2	H1	H1	C1	C2	C2	L2	L2	L3	L2			F1	F1	F2	F1	
11		F3	F1	F1		F1	H1	H2	C2	L2	L3	L2	L3	L2	CL22	L3	H2	C2			F5	F3	F2	F1
12		F1	F2			F2				H2	H1	H1	HC11	H1	HL21	CL22	CL33	L4	F2	F3	F2			
13									L2	L2	H1	H1	CL22	CL12	CL32	L2	L2		F1	F1	F2	F1	F2	F1
14	F1										L2	L2	L2	L1		L2	L3	L2	F1	F1	F3	F2	F3	F2
15	F1	F1	F1				C1				L2	L2	L2	L2		L2	L2		F3	F1				F1
16						F1		H2			C1	C1		H1	L2	L2	C1					F3	F4	F4
17	F2	F1		F1							H1		HL12	L1	HL12	CL12	CL23	CL32	F3	F2				F2
18		F1	F3	F1	F1	F1			C2				H1	C1	C1	C2	C3	L2	F2	F1		F1		
19	F2		F1	F2				H1		L2	L1	L2	L1	L2	L2	LC21	CL23	L2		F1				
20				F2		F2	F2				HL12		CL11	C2	C1	L2	L2					F1		
21								C3					L1	L1	L2	L3	L2		F2	F1	F1	F1	F1	
22					F1		F2					H1	H1	HL12	L2	C1	L1	L2	F3	F5			F1	
23								H2		L2			L1	HL12	CL12	CL12	L2	L3	FF22	F2	F2			
24					F1					L2	L2	C1	C1						F1		F2			
25							F1	H2	H2						L1		L2					F3	F2	F2
26	F2	F4	F2	F2	F1	F1		H2	H1	H2	HL12													
27							F1	H1	H2		CL11	L2	L2		L2			H2			F2	F4	F7	F5
28	F2							H2	C1				L2	L2		C1			F1	F2	F3	F6	F2	F2
29																								
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																								

FEB. 2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

FEB.2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

FEB.2017 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								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					
19								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					
21								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					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29																								
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																								

FEB.2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								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					
19								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					
21								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					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29																								
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																								

FEB.2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

FEB.2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

FEB.2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

IONOSPHERIC DATA STATION Yamagawa

FEB.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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								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					
19								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					
21								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					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29																								
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																								

IONOSPHERIC DATA STATION Yamagawa

FEB.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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								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					
19								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					
21								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					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29																								
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																								

FEB.2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

FEB.2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								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					
19								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					
21								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					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29																								
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																								

FEB.2017 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	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	C	C	C	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	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29																								
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																								

FEB.2017 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB.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																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
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																								

IONOSPHERIC DATA STATION Okinawa

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

FEB. 2017 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

FEB. 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	31	30	31	30	28	25	25	33	56	58	84	82	61	73	80	79	70	59	69	61	48	45	30	29
2	28	29	30	26	28	A	J R 15	27	57	69	82	84	70	61	63	71	59	57	60	39	F 41	F 47	F 36	35
3	33	F 36	36	31	26	24	26	30	50	55	63	92	100	96	73	68	60	61	60	37	37	46	42	34
4	31	F 31	32	31	29	17	20	31	55	59	70	95	114	108	108	93	90	79	47	40	44	50	46	40
5	F 42	F 36	F 40	F 40	F 46	F 25	19	33	52	57	62	62	67	74	80	66	58	60	71	58	36	32	24	26
6	26	28	26	26	31	21	F 20	31	53	55	61	83	103	92	93	95	96	90	64	A	A	52	56	57
7	53	50	46	43	44	J F 46	F 32	37	48	52	61	56	64	74	62	57	63	66	55	35	28	30	V 32	27
8	R 30	F 26	F 28	J F 36	R 37	22	20	29	50	57	58	67	73	92	93	80	65	52	46	46	34	37	34	28
9	30	31	30	30	50	A	U R 20	30	51	60	64	62	61	88	82	81	66	59	52	39	28	29	F 28	F 26
10	F 29	F 30	F 30	34	29	21	F 21	30	49	63	82	71	73	73	72	86	67	56	48	38	40	33	35	F 31
11	F 35	F 38	F 38	40	30	20	20	30	57	67	88	95	76	78	79	64	62	60	54	41	34	35	34	26
12	27	28	28	28	30	37	21	30	50	54	64	81	71	60	77	82	80	73	57	38	25	26	26	27
13	27	F 28	F 28	28	F 34	26	18	30	43	50	62	87	103	88	83	87	86	84	53	52	46	38	36	F 32
14	F 32	F 32	28	26	27	26	F 23	30	47	52	60	80	86	92	109	110	84	80	57	40	30	31	30	V 28
15	28	27	28	28	30	27	20	33	54	52	64	69	68	68	86	108	R 122	111	79	56	43	45	32	24
16	25	26	26	F 30	F 36	26	20	35	50	51	C	C	C	C	C	C	C	C	C	C	C	46	35	F 30
17	F 32	35	40	42	44	24	A	30	55	69	92	89	92	114	128	124	97	82	64	64	44	46	48	31
18	33	34	35	35	35	30	27	38	60	78	94	76	73	79	77	66	64	66	68	57	42	31	33	J R 35
19	38	28	24	27	30	29	27	38	66	59	68	70	91	91	90	98	92	89	86	52	51	32	32	32
20	31	33	34	J R 41	43	16	20	37	57	64	61	79	83	79	86	85	73	68	56	49	50	39	34	31
21	35	36	34	33	30	26	24	36	57	63	75	82	88	102	112	U R 103	J R 103	93	84	60	58	58	37	38
22	37	36	35	38	41	35	25	38	55	59	74	89	98	118	123	85	82	86	77	57	54	53	34	35
23	36	37	39	38	35	33	30	42	53	70	78	84	90	85	91	97	78	72	72	55	48	46	J R 37	36
24	36	36	39	40	37	34	32	41	60	76	100	103	103	90	R 101	106	80	64	66	66	63	60	61	64
25	64	35	33	38	19	21	21	40	62	65	84	101	104	96	91	78	70	64	60	54	J R 48	J R 42	U R 40	F 46
26	42	R 39	39	43	27	18	20	35	64	71	77	92	110	86	77	71	74	62	58	50	46	30	F 32	F 32
27	J F 37	38	35	31	25	19	20	35	55	61	74	88	81	70	72	71	73	72	64	59	51	38	32	33
28	32	J R 38	39	26	25	26	J B 16	36	59	79	92	98	110	106	109	104	82	72	60	47	47	50	49	44
29																								
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	28	28	28	28	28	26	27	28	28	28	27	27	27	27	27	27	27	27	27	26	26	28	28	28
MED	32	34	34	32	30	26	20	33	55	60	74	83	86	88	86	85	74	68	60	51	44	40	34	32
U Q	36	36	38	39	37	29	25	37	57	68	84	92	103	96	101	98	86	82	69	57	48	46	38	36
L Q	30	28	28	28	28	21	20	30	50	55	62	71	71	74	77	71	65	60	55	40	36	32	32	28

IONOSPHERIC DATA STATION Okinawa

FEB.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 424	L 432	L	L 440		L 436	L 424	L	L						
2										L 420	L 416	L A	444		U L 428	L 412	L							
3									U L 260		U L 436	L 444	L 444	U A 436	436	A								
4										L 428	A	A	L 444		436	A								
5											A	A	A	L 448	L 432	U L 416	U L 368	L						
6										L	U L 432	436	A	436	A	A	U L 388							
7											L 416	U L 432	L 444	432	L 428	U L 408	U L 388							
8										L	U L 428	L 432	A	A	L 436	L 416	L							
9										L	L 428	L 440	U L 436	U L 432	452	420	A	L						
10										L	L 436	444	440	436	A	A	L	L						
11										L	432	440	444	A	A	L	L	L						
12											L 428	L 440	A	A	A	A	A							
13											A	A	A	A	A	A	U L 400							
14											L 424	L 448	448	448	444	432	L 408	L						
15										L	U L 432	444	448	L 448	440	420	L 412	L						
16											C	C	C	C	C	C	C	C	C					
17									U L 260	L	L 428	U L 472	444	444	448	428	L	L 352						
18										L	L 432	L 444	L 444	U L 456	U L 448	U L 424	L	L						
19									L		L	U L 460	L 456	460	U L 460	L 440	L	L						
20										L	L	L 456	452	L 472	L 456	L 444	U L 420	L						
21									268		L 436	452	464	L	L 452	452	L							
22									L	U L 340	U L 464	L 460	468	456	L 452	L 436	U L 432	L						
23									L	L	L 444	L 456	L 456	456	464	L 448	L	L						
24										L	L	L 460	U L 464	U L 468	L 456	448	L 408							
25										L	U L 452	U L 460	L 460	L 460	L 448	L 444	L	L						
26										L	U L 440	L 464	L 460	L 464	L 452	U L 468	U L 416	L						
27										L	L 452	L 448	L 468	L 460	U L 460	U L 452	L	L						
28										L	L	460	L 468	L 464	L 452	L 440	U L 416	L	L					
29																								
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									3	1	21	24	19	22	22	20	11	1						
MED									U L 260	U L 340	L 432	L 446	L 452	L 448	L 448	L 434	U L 408	L 352						
U Q									268		U L 438	L 460	L 464	L 460	L 452	L 446	U L 416							
L Q									U L 260		L 428	L 440	444	440	L 436	L 420	U L 388							

FEB.2017 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Okinawa

FEB. 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	196	252	296	324	U R 328	U R 332	300	A	A	220	B					
2								B	180	248	288	324	320	320	320	U A 304	280	248	A					
3								B	188	240	296	304	332	324	316	296	A	216	A					
4								B	256	256	292	U A 316	U A 324	A	A	U A 312	A	A	A					
5								B	200	268	292	316	328	A	A	A	A	A	A					
6								B	196	256	316	312	320	316	304	A	A	A	A					
7								B	208	256	292	332	332	340	328	304	292	A	A					
8								B	180	272	288	312	320	U A 324	A	A	A	A	A					
9								A	204	264	284	320	332	328	U A 316	A	A	A	B					
10								B	200	284	308	320	328	332	320	U A 308	A	A	A					
11								B	220	284	312	U A 328	340	U A 336	A	A	A	A	A					
12								B	208	264	308	332	340	344	332	312	280	A	A					
13								B	208	260	320	336	A	340	A	U A 312	A	A	A					
14								A	U A 200	276	296	316	332	324	328	308	300	A	A					
15								B	A	A	300	336	R 340	A	A	312	A	240	A					
16								B	U A 200	296	C	C	C	C	C	C	C	C	C					
17								B	228	268	304	R 340	U R 336	U R 348	A	296	296	240	B					
18								B	188	256	304	324	A	A	R 324	U A 308	284	A	B					
19								B	208	248	312	U R 332	U R 340	R 336	U R 332	316	U R 308	236	B					
20								B	212	276	316	340	344	348	332	296	A	A	B					
21								B	232	284	320	U R 336	352	U R 360	U R 348	U A 300	A	U R 264	168					
22								B	228	280	332	340	R 356	U R 336	U R 344	324	288	U A 244	B					
23								B	216	276	312	348	348	348	R 344	328	300	264	A					
24								A	224	288	312	R 336	R	B	R 316	316	288	A	A	B				
25								B	212	272	R 308	328	332	324	312	288	A	A	A	A				
26								180	232	288	308	R	R	B	R 332	A	300	A	B	B				
27								188	232	296	328	348	R 360	B	U R 336	R 328	296	244	B	B				
28								176	224	280	320	340	352	U A 340	U A 336	A	A	A	B	B				
29																								
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								3	27	27	27	26	23	20	20	19	12	10	1					
MED								180	208	272	308	330	332	336	328	308	294	242	168					
U Q								188	224	284	316	336	344	342	U R 334	316	300	248						
L Q								176	200	256	296	320	328	324	316	300	286	236						

IONOSPHERIC DATA STATION Okinawa

FEB. 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	21	J A 48	J A 31	J A 17	18	17	E B 14	E B 15	23	29	G	G	G	G	36	32	29	G	22	19	J A 22	J A 42	J A 20	18
2	J A 19	18	J A 15	J A 23	20	J A 29	J A 16	J A 13	25	31	37	39	J A 56	36	38	J A 44	33	29	J A 30	J A 32	J A 54	J A 40	J A 53	J A 51
3	J A 28	J A 36	J A 53	J A 16	J A 18	18	E B 14	E B 14	G	31	37	40	J A 45	44	J A 42	J A 47	J A 34	26	J A 53	J A 16	J A 22	J A 20	J A 32	J A 30
4	J A 30	J A 18	J A 18	18	20	18	19	J A 16	32	32	J A 41	J A 63	J A 51	J A 42	39	J A 49	36	30	J A 24	E B 14	J A 14	20	J A 15	J A 20
5	E B 14	J A 16	E B 14	J A 38	J A 21	J A 28	J A 23	J A 14	26	35	J A 53	J A 59	J A 80	J A 41	J A 41	J A 32	J A 52	J A 37	J A 32	J A 52	J A 40	J A 39	19	E B 15
6	19	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14	J A 14	23	27	G	35	J A 54	J A 45	J A 58	J A 56	32	J A 46	J A 64	J A 61	J A 61	J A 60	J A 53	J A 35
7	J A 18	J A 30	J A 46	J A 26	J A 25	J A 21	J A 20	J A 16	23	31	36	37	41	40	41	37	J A 32	J A 42	J A 28	22	E B 14	J A 16	J A 19	20
8	E B 15	J A 24	J A 18	18	J A 16	J A 24	18	J A 16	23	30	35	42	J A 49	J A 63	J A 46	J A 47	J A 42	J A 54	J A 47	J A 37	J A 45	J A 25	J A 20	E B 14
9	J A 20	J A 24	19	J A 24	J A 20	J A 27	J A 26	J A 27	24	29	G	34	37	40	J A 54	J A 42	J A 45	26	E B 18	E B 14	J A 16	17	20	21
10	J A 17	J A 30	J A 38	J A 22	J A 17	J A 17	J A 18	J A 22	26	G	G	37	J A 44	J A 43	J A 48	J A 54	J A 51	J A 39	J A 43	J A 26	J A 22	J A 16	J A 32	J A 32
11	23	J A 35	J A 36	J A 26	J A 26	J A 21	18	20	27	33	J A 38	J A 43	J A 45	J A 60	J A 52	J A 45	J A 67	J A 31	J A 34	J A 18	E B 14	J A 16	J A 16	18
12	J A 19	J A 18	J A 28	J A 16	J A 20	E B 14	E B 14	J A 16	27	33	39	44	45	47	J A 50	J A 44	J A 55	J A 38	J A 20	J A 20	J A 19	E B 14	E B 14	J A 35
13	J A 24	19	E B 14	J A 16	J A 18	J A 15	E B 14	18	26	36	43	48	J A 70	J A 65	J A 78	J A 71	J A 60	J A 46	J A 43	J A 48	J A 46	J A 24	J A 20	J A 20
14	J A 20	J A 25	J A 21	J A 18	20	E B 14	E B 14	17	26	32	J A 43	J A 44	J A 45	J A 46	35	34	G	J A 34	J A 48	J A 21	J A 16	J A 16	E B 14	J A 19
15	J A 17	J A 38	J A 22	J A 24	J A 22	E B 14	E B 14	J A 14	26	29	G 24	G	G	38	36	G 29	J A 34	J A 26	J A 24	J A 34	J A 24	J A 74	E B 14	E B 14
16	E B 14	J A 49	E B 14	J A 16	E B 14	20	J A 15	E B 14	23	32	C	C	C	C	C	C	C	C	C	C	C	J A 45	J A 24	J A 41
17	J A 24	J A 16	J A 26	J A 44	J A 34	J A 30	J A 22	59	G	G	G	G	G	40	36	38	G	G	24	19	J A 26	E B 14	E B 14	J A 19
18	19	J A 25	J A 53	E B 14	J A 17	J A 34	E B 14	J A 16	G	30	34	38	J A 41	36	G	35	34	26	E B 18	18	20	J A 18	J A 22	E B 14
19	20	E B 14	E B 14	E B 14	E B 14	J A 16	19	E B 14	G	G	36	G	37	G	G	G	G	G 22	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
20	E B 14	J A 15	J A 18	E B 14	E B 14	E B 14	E B 14	E B 14	25	G	35	38	39	39	41	36	37	25	G	J A 20	J A 22	19	E B 14	E B 14
21	J A 19	20	E B 14	21	E B 14	E B 14	E B 14	17	G	G	37	G	40	G	G	36	30	30	21	18	J A 18	E B 14	J A 24	24
22	J A 15	18	E B 14	J A 16	E B 14	E B 14	E B 14	J A 13	G	G	38	40	42	42	40	37	33	26	E B 17	E B 14	E B 14	E B 14	20	E B 14
23	18	E B 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	38	41	42	39	41	37	35	31	24	J A 30	J A 33	J A 31	E B 14	18
24	E B 14	18	E B 14	E B 14	E B 14	E B 14	E B 14	20	26	32	37	G	26	E B 40	G	38	40	32	J A 22	J A 16	J A 17	J A 34	J A 20	J A 17
25	J A 22	J A 17	E B 14	E B 14	E B 14	18	E B 14	E B 16	25	G	G	38	40	41	40	36	33	26	J A 20	J A 22	J A 38	J A 24	J A 25	J A 20
26	E B 14	18	E B 14	E B 14	E B 14	E B 14	E B 14	25	26	32	G	22	22	E B 40	G J A 24	34	G	28	19	20	E B 14	E B 14	E B 14	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	29	32	36	40	37	E B 38	G	37	G	27	E B 18	E B 14	E B 14	20	E B 14	E B 14
28	E B 14	19	J A 16	E B 14	E B 14	E B 14	E B 20	G	28	34	39	42	45	J A 58	J A 52	J A 47	J A 34	J A 36	G	E B 14	20	E B 14	E B 14	E B 14
29																								
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	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	28	28	28
MED	19	J A 18	J A 17	J A 16	17	16	E B 14	16	25	30	36	38	42	40	40	37	34	30	J A 24	J A 20	J A 20	J A 20	J A 20	18
U Q	J A 20	J A 28	J A 27	J A 22	J A 20	J A 21	J A 18	18	26	32	J A 38	J A 42	J A 45	J A 45	J A 48	J A 47	J A 42	J A 37	J A 34	J A 30	J A 33	J A 32	J A 23	J A 22
L Q	E B 14	16	E B 14	E B 14	E B 14	E B 14	E B 14	14	G	G	G	G 22	37	38	G 35	35	G 30	26	G	E B 16	E B 14	E B 15	E B 14	E B 14

FEB. 2017 foEs (0.1MHz)

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FEB. 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 14	E B 14	17	16	E B 14	E B 14	E B 14	E B 15	23	29	G	G	G	G	35	31	28	G	18	E B 14	20	34	E B 14	16
2	18	E B 14	E B 14	19	E B 14	A A 29	E B 15	E B 14	24	31	34	38	48	36	36	35	32	28	28	16	E B 14	18	17	19
3	E B 14	24	20	E B 14	E B 14	E B 14	E B 14	E B 14	G	30	36	39	43	44	40	44	32	25	38	E B 14	19	18	27	24
4	25	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	31	29	37	55	44	36	36	43	36	29	17	E B 14	E B 14	18	E B 14	E B 14
5	E B 14	E B 14	E B 14	20	17	E B 14	E B 14	E B 14	26	33	42	54	48	37	36	31	29	19	18	27	30	19	E B 14	E B 15
6	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	23	27	G	34	52	42	54	46	32	29	38	A A 61	A A 61	41	42	17
7	E B 14	E B 14	18	E B 14	E B 14	E B 14	E B 14	E B 14	23	30	35	36	40	40	39	35	G 18	29	22	19	E B 14	E B 14	16	E B 14
8	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	30	34	39	47	48	39	40	32	30	30	26	24	23	E B 14	E B 14
9	E B 14	E B 14	E B 14	16	16	A A 27	E B 14	17	24	29	G	33	36	39	40	35	38	26	E B 18	E B 14	E B 14	E B 14	E B 14	18
10	E B 14	21	18	16	E B 14	E B 14	E B 14	E B 14	22	G	G	35	42	40	46	50	29	28	18	E B 14	E B 14	E B 14	22	23
11	18	20	19	16	E B 14	E B 14	E B 14	E B 14	26	32	35	37	38	46	43	39	34	25	26	17	E B 14	E B 14	E B 14	E B 14
12	E B 14	E B 14	18	E B 14	E B 14	E B 14	E B 14	E B 14	27	32	38	42	44	46	48	42	53	33	18	E B 14	E B 14	E B 14	E B 14	18
13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	26	34	42	46	49	51	49	48	37	29	29	18	18	18	E B 14	E B 14
14	18	18	16	E B 14	E B 14	E B 14	E B 14	17	25	31	41	38	43	39	U Y 35	34	G	26	18	16	E B 14	E B 14	E B 14	18
15	16	20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	26	29	G 23	G	G	37	34	G 26	30	G 19	20	32	16	18	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	31	C	C	C	C	C	C	C	C	C	C	C	37	21	E B 14
17	20	E B 14	22	23	24	18	A A 22	E B 14	G	G	G	G	G	40	36	36	G	G	23	E B 14	E B 14	E B 14	E B 14	18
18	18	20	E B 14	E B 14	E B 14	20	E B 14	E B 14	G	29	33	37	37	36	G	34	34	24	E B 18	E B 14	E B 14	E B 14	E B 14	E B 14
19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	35	G	36	G	G	G	G	G 19	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	25	G	35	38	39	38	40	35	36	24	G	E B 14	E B 14	E B 14	E B 14	E B 14
21	17	14	E B 14	E B 14	E B 14	E B 14	E B 14	17	G	G	36	G	40	G	G	34	29	29	21	E B 14	E B 14	E B 14	19	20
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	38	39	42	42	40	36	32	26	E B 17	E B 14	E B 14	E B 14	E B 14	E B 14
23	E B 14	E B 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	37	40	41	38	40	37	33	28	23	22	20	20	E B 14	E B 14
24	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	18	26	32	36	G	U Y 26	E B 40	G	37	38	31	19	E B 14	E B 14	25	20	E B 14
25	16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 16	25	G	G	37	39	41	40	36	33	26	19	16	E B 14	E B 14	21	E B 14
26	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	18	26	31	G	U Y 22	U Y 22	E B 40	G 22	34	G	27	19	E B 14	E B 14	E B 14	E B 14	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	29	32	36	39	U Y 37	E B 38	G	36	G	27	E B 18	E B 14	E B 14	E B 14	E B 14	E B 14
28	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 20	G	28	33	38	41	42	44	42	40	32	30	G	E B 14	E B 14	E B 14	E B 14	E B 14
29																								
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	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	28	28	28
MED	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	30	35	37	40	40	39	36	32	27	19	E B 14	E B 14	E B 14	E B 14	E B 14
U Q	16	16	16	15	E B 14	14	E B 14	G	26	32	37	39	44	42	40	40	34	29	23	18	18	18	18	18
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	36	37	G 34	34	G 28	G 24	E B 18	E B 14	E B 14	E B 14	E B 14	E B 14

FEB. 2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 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	14	14	14	14	14	14	14	15	17	15	14	16	18	16	17	17	16	16	17	14	14	14	14	14
2	14	14	14	14	14	14	15	14	15	15	15	20	18	19	23	18	17	15	15	14	14	14	14	14
3	14	14	14	14	14	14	14	14	16	16	16	14	20	20	19	13	13	13	14	14	14	14	14	14
4	14	14	14	14	14	15	14	14	15	15	16	15	23	30	18	18	16	15	14	14	14	16	14	14
5	14	14	14	14	14	14	14	14	15	15	14	20	19	22	18	16	16	14	14	14	14	14	14	15
6	14	14	14	14	14	15	14	14	15	16	18	13	13	20	19	17	18	15	14	14	14	14	14	15
7	14	14	14	14	14	14	14	14	14	14	16	19	19	18	18	13	14	16	15	14	14	14	14	14
8	15	14	14	14	14	14	14	14	15	15	14	17	18	20	24	20	18	16	15	14	14	14	14	14
9	14	14	14	14	14	14	14	14	14	16	17	20	22	24	20	20	14	18	18	14	14	14	14	14
10	14	14	14	14	14	14	14	14	15	16	16	16	20	24	21	18	18	16	14	14	14	14	14	14
11	14	14	14	14	14	14	14	14	14	14	17	18	20	19	30	20	15	15	15	14	14	14	14	14
12	14	14	14	14	14	14	14	14	15	16	17	20	21	20	18	18	18	16	16	14	14	14	14	14
13	14	14	14	14	14	14	14	15	16	15	20	20	25	22	19	17	16	14	14	14	14	14	14	14
14	14	14	14	14	14	14	14	15	16	19	19	24	18	24	19	20	17	15	15	14	14	14	14	14
15	14	14	14	14	14	14	14	14	14	16	16	18	26	19	22	20	16	15	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	15	14	C	C	C	C	C	C	C	C	C	C	C	14	14	14
17	14	14	14	14	14	14	14	14	16	16	17	20	18	22	33	20	18	16	15	14	14	14	14	14
18	14	14	14	14	14	14	14	14	15	17	17	20	18	23	19	14	17	15	18	14	14	14	14	14
19	14	14	14	14	14	14	14	14	15	14	15	18	18	19	24	20	17	14	15	14	14	14	14	14
20	14	14	14	14	14	14	14	14	15	16	14	20	23	22	19	16	19	14	16	14	14	14	14	14
21	14	14	14	14	14	14	14	14	15	16	17	20	22	24	18	16	16	18	15	14	14	14	14	14
22	14	14	14	14	14	14	14	15	16	16	18	18	19	22	20	20	18	16	17	14	14	14	14	14
23	14	16	14	14	14	14	14	14	15	16	14	19	20	17	20	20	15	15	15	14	14	14	14	14
24	14	14	14	14	14	14	14	15	15	16	18	21	22	40	23	20	19	15	14	14	14	14	14	14
25	14	14	14	14	14	14	14	16	15	16	18	23	21	24	20	19	19	16	15	14	14	14	14	14
26	14	15	14	14	14	14	14	15	16	17	20	20	20	40	18	18	20	17	16	14	14	14	14	14
27	14	14	14	14	14	14	14	15	15	19	21	20	26	38	26	20	17	16	18	14	14	14	14	14
28	14	14	14	14	14	14	20	15	15	16	18	20	21	22	20	19	16	16	18	14	14	14	14	14
29																								
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	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	28	28	28
MED	14	14	14	14	14	14	14	14	15	16	17	20	20	22	20	18	17	15	15	14	14	14	14	14
U Q	14	14	14	14	14	14	14	15	16	16	18	20	22	24	23	20	18	16	16	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	15	15	15	18	18	19	18	17	16	15	14	14	14	14	14	14

IONOSPHERIC DATA STATION Okinawa

FEB. 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	326	314	322	321	333	307	336	332	385	351	340	373	321	340	318	341	345	338	343	348	328	369	332	310
2	296	310	357	328	403	A	S	342	370	365	359	377	382	356	328	339	335	338	364	342	F 297	F 340	F 326	325
3	294	F 309	347	344	321	311	341	337	366	358	316	335	360	358	338	333	344	356	367	336	316	319	359	340
4	321	F 313	346	350	361	284	290	347	376	343	351	340	371	363	341	330	332	374	359	343	307	335	340	336
5	F 318	F 311	F 302	F 324	F 371	F 360	333	360	376	360	362	344	352	338	355	350	357	340	349	375	357	343	320	323
6	349	342	353	309	396	339	F 297	337	362	359	324	325	350	342	338	350	340	347	351	A	A	323	303	344
7	337	320	346	326	331	F	F 325	361	377	357	375	341	331	372	370	352	343	375	391	355	311	325	V 315	330
8	R 317	F 267	F 280	J F 353	R 388	348	329	339	357	363	343	347	323	347	360	374	349	378	364	369	327	357	361	319
9	310	305	298	314	391	A	U R 308	339	363	363	359	344	311	345	341	364	380	378	374	374	338	337	F 330	F 314
10	F 288	F 334	F 342	368	405	317	F 307	347	353	339	356	344	352	351	336	367	388	383	378	336	367	334	337	F 316
11	F 300	F 319	F 327	339	379	311	314	342	367	353	350	371	359	336	359	353	358	363	372	360	319	349	353	330
12	324	337	318	323	336	385	387	363	371	366	342	354	365	326	330	343	356	361	369	368	319	322	333	302
13	328	F 307	F 321	335	F 372	376	348	372	386	342	334	343	372	354	339	325	340	355	367	345	362	338	327	F 303
14	F 316	F 337	331	321	328	337	F 329	359	384	356	340	331	349	314	333	349	327	354	375	384	363	344	331	V 316
15	309	319	315	311	343	393	324	354	372	371	356	357	354	321	318	326	R 338	345	358	338	319	350	384	310
16	305	313	297	F 316	F 360	356	341	357	382	351	C	C	C	C	C	C	C	C	C	C	C	344	344	F 302
17	F 297	293	308	329	392	370	A	332	351	327	346	328	332	335	345	360	361	343	350	324	308	300	350	316
18	304	303	315	321	330	307	307	339	353	347	359	350	335	335	347	344	350	358	366	373	373	320	292	J R 323
19	351	312	332	313	321	350	317	331	368	366	354	333	349	343	335	337	355	340	382	313	339	328	324	300
20	308	299	311	J R 336	397	B	303	354	378	377	346	347	355	322	340	358	363	376	369	335	345	321	335	301
21	308	326	319	339	353	320	323	356	367	349	354	350	343	337	334	U R 341	J R 314	347	348	347	328	343	317	318
22	307	307	311	318	365	385	345	359	370	336	319	318	316	340	366	365	339	358	347	315	331	291	309	300
23	306	322	324	324	323	333	348	375	366	350	356	337	353	328	340	351	360	360	379	358	319	352	J R 319	304
24	304	308	326	336	320	310	306	333	354	330	340	341	335	311	R 330	349	375	345	348	321	326	302	292	315
25	370	370	327	398	286	305	326	354	365	328	328	346	351	342	354	356	363	348	358	335	J R 311	J R 307	U R 317	F 329
26	342	R 333	338	374	384	300	301	342	363	358	337	336	353	358	347	331	364	366	370	354	350	313	F 294	F 289
27	F	346	370	374	364	318	317	362	359	369	344	360	360	352	344	350	356	351	360	360	344	337	305	299
28	307	J R 342	369	361	341	380	B	332	333	344	342	333	337	335	339	356	352	353	364	341	307	306	323	296
29																								
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	27	28	28	28	28	24	25	28	28	28	27	27	27	27	27	27	27	27	27	26	26	28	28	28
MED	309	314	325	328	360	335	324	347	367	354	346	344	351	340	340	350	352	355	364	346	328	334	326	316
U Q	326	334	344	347	386	365	338	359	376	363	356	350	359	352	347	356	361	366	372	360	345	344	338	324
L Q	304	308	313	321	330	310	307	338	360	344	340	335	335	335	334	339	340	345	351	336	316	320	316	302

FEB. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 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	L 367	L 379	L	385	L 385	L 389	L	L						
2										L	L 380	L 398	A	389	U L 411	L 389	L							
3									U L 406		U L 358	L 353	A	A	A 384	A								
4										L	380	A	A	L 380	387	A								
5											A	A	A	L 384	L 390	U L 385	U L 395	L						
6										L	U L 365	367	A	A	A	A	U L 391							
7											L 389	U L 399	A 376	A	A 386	U L 397	U L 380							
8										L	U L 366	A 381	A	A	L 375	A	L							
9										L	L 380	L 380	U L 416	U L 421	373	383	A	L						
10										L	L 373	382	A 384	412	A	A	L	L						
11										L	374	383	410	A	A	L	L	L						
12											L 377	A	A	A	A	A	A							
13											A	A	A	A	A	A	A 384							
14											A	L 378	A	393	378	371	L 384	L						
15										L	U L 374	386	383	L 402	388	404	L 378	L						
16											C	C	C	C	C	C	C	C	C					
17									U L 436	L	L 383	U L 370	393	382	369	382	L	L 385						
18										L	L 382	L 401	L 413	U L 369	U L 377	U L 380	L	L						
19									L		L	U L 387	L 379	377	U L 382	L 379	L	L						
20										L	L	L 369	387	L 389	L 365	L 372	U L 379	L						
21									457		L 380	391	389	L	L 395	401	L							
22									L	U L 456	U L 359	L 371	A 365	A	A 373	L 396	U L 382	L						
23									L	L	L 382	L 380	L 380	403	367	L 378	L	L						
24										L	L	L 389	Y 383	U L 394	L 372	378	A							
25										L	U L 367	U L 386	L 387	A	L 378	L 379	L	L						
26									L	L	U L 388	L 394	L 365	L 385	L 384	U L 372	U L 380	L						
27										L	L 365	L 386	L 381	L 391	U L 373	U L 377	L	L						
28										L	L	382	A 365	A	A	A 377	U L 390	L	L					
29																								
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									3	1	20	23	17	16	21	19	10	1						
MED									U L 436	U L 456	L 376	L 382	383	L 389	L 378	L 380	U L 383	L 385						
U Q									457		L 381	L 389	391	L 398	386	L 389	U L 390							
L Q									U L 406		U L 366	L 378	A 378	L 383	373	L 377	U L 380							

FEB. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB.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										260	264	230	L 300	266	282	242	250	242						
2										242	242	234	226	256	300	246	254							
3									214		310	272	242	238	260	252								
4										272	254	270	232	222	230	242								
5											248	E A 276	266	272	246	256	246	256						
6										250	292	288	248	240	260	242	238							
7											238	278	298	240	246	268	264							
8										246	278	264	296	254	242	226	248							
9										246	250	268	308	256	268	240	220	220						
10										278	250	258	248	262	264	234	220	216						
11										256	258	230	238	272	236	246	246	234						
12											278	248	242	308	278	248	246							
13											282	262	238	256	260	256	248							
14											296	272	246	272	272	234	248	226						
15										234	262	264	254	298	290	264	230	218						
16											C	C	C	C	C	C	C	C	C					
17									218	266	252	272	244	266	246	228	220	228						
18										252	242	242	278	266	264	264	246	240						
19									238		250	270	256	256	256	246	242	234						
20										234	270	256	250	294	258	242	244	222						
21									224		248	252	260	260	240	238	236							
22									218	222	292	272	286	262	228	228	256	226						
23									216	262	248	264	246	276	254	248	240	236						
24										274	252	234	258	272	262	244	222							
25										L 284	276	260	234	252	248	244	240	228						
26									242	242	260	262	252	236	254	286	244	226						
27										242	266	244	250	258	268	264	246	236						
28										254	262	264	258	260	258	242	236	226	214					
29																								
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	19	27	27	27	27	27	27	25	17	1					
MED									218	252	260	263	250	260	258	244	244	228	214					
U Q									238	266	278	272	266	272	268	256	248	236						
L Q									216	242	250	248	242	254	246	240	236	224						

FEB.2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 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	238	258	258	248	236	272	248	242	216	220	210	216	206	H 194	212	222	H 204	208	228	204	248	E A 234	224	272
2	292	266	214	A 278	192	A	B	248	236	238	222	E A 226	A	204	190	A 218	A 230	240	212	226	264	Q 224	242	E A 250
3	282	E A 290	A 242	232	258	298	248	220	164	212	A 226	E A 262	A	A	E A 252	A	A 220	228	226	200	E A 244	228	240	E A 252
4	E A 298	272	232	224	208	B	336	232	232	228	238	A	A	202	216	A	254	212	200	222	250	230	214	232
5	254	272	Q 256	Q 260	204	Q 220	318	218	218	220	A	A	A	206	198	190	190	210	230	206	E A 262	E A 238	248	260
6	222	230	226	288	202	240	Q 308	236	234	H 210	216	210	A	A	A	A	216	220	216	A	A	E A 284	E A 320	222
7	212	234	220	240	242	Q 214	210	220	220	230	222	206	E A 246	A	A	204	180	226	202	214	222	246	226	252
8	246	Q 348	Q 316	Q 232	190	252	258	242	220	224	216	E A 240	A	A	E A 236	A	216	212	A 216	214	E A 258	A 236	210	242
9	282	276	290	270	202	A	320	236	220	218	212	204	198	200	E A 246	A 226	A	210	208	190	224	Q 244	Q 226	Q 294
10	286	E A 286	252	216	188	272	304	234	216	214	218	210	A	210	A	A	218	212	202	228	208	240	A 258	E A 308
11	Q 288	A 270	258	220	202	308	308	234	222	218	214	214	200	A	A	A	A 220	208	208	198	220	222	218	246
12	262	258	E A 278	258	258	206	202	228	226	238	234	A	A	A	A	A	A	220	206	182	208	264	238	Q 280
13	244	242	Q 256	248	206	200	B	210	212	230	A	A	A	A	A	A	A	216	202	214	212	236	228	246
14	A 244	238	250	262	258	246	264	230	214	214	E A 284	228	A	210	E Y 238	224	206	222	210	192	204	240	236	E A 284
15	A 284	E A 286	264	272	236	194	288	226	204	204	180	204	194	182	186	192	210	206	198	224	196	208	198	270
16	274	296	Q 310	Q 270	Q 222	204	242	214	206	204	C	C	C	C	C	C	C	C	C	C	C	E A 258	A 230	Q 302
17	E A 308	284	A 276	A 254	202	222	A	244	188	188	206	204	202	230	220	A 220	206	196	214	196	214	248	218	234
18	A 294	A 290	252	248	224	E A 278	264	234	234	226	216	208	192	188	216	210	224	222	222	202	198	230	284	250
19	226	230	282	294	262	216	262	224	192	200	220	212	204	204	210	198	218	210	204	190	188	214	246	286
20	298	290	268	236	200	B	328	230	216	222	218	236	216	192	E A 244	214	A 236	210	212	210	204	208	230	278
21	274	250	246	228	218	276	262	224	182	224	222	208	212	184	184	H 206	H 190	228	216	194	220	202	256	276
22	278	276	260	246	214	206	222	226	170	162	228	218	E A 268	A	A	200	194	204	212	188	192	194	244	276
23	272	260	242	246	252	226	220	206	208	216	226	230	242	208	236	208	216	214	210	198	226	220	248	276
24	288	276	244	242	258	234	256	236	222	216	232	216	E Y 248	198	218	224	A	226	218	210	216	254	270	238
25	202	206	240	194	384	326	300	228	222	208	204	192	214	A	E A 236	208	212	208	220	220	210	252	276	260
26	220	238	234	202	196	354	330	240	224	216	202	182	250	212	198	192	202	212	216	206	206	218	Q 270	Q 312
27	Q 258	226	206	206	218	304	304	228	220	216	220	220	Y 220	196	202	210	210	206	212	202	202	206	276	294
28	284	242	206	210	234	204	B	234	230	224	252	226	A	A	A	A	204	222	212	198	240	222	238	266
29																								
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	28	28	28	28	28	24	24	28	28	28	25	23	16	17	19	18	23	27	27	26	26	28	28	28
MED	270	263	252	246	218	234	264	230	219	217	219	212	208	202	207	209	212	212	212	203	212	228	238	264
U Q	287	285	266	261	247	277	308	236	223	224	227	226	E 244	209	E A 236	220	A 220	222	216	214	240	245	257	282
L Q	244	240	237	226	202	210	248	224	207	211	213	206	201	193	198	200	204	208	206	196	204	219	226	248

FEB. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 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	134	108	108	108	108	108	108	A	A	108	B					
2								B	110	110	108	108	108	108	110	110	110	110	A					
3								B	112	108	108	108	108	108	108	108	A	108	A					
4								B	132	114	110	110	110	A	A	110	A	A	A					
5								B	110	110	110	110	110	A	A	A	A	A	A					
6								B	114	112	110	108	108	108	108	A	A	A	A					
7								B	110	108	110	108	108	108	110	114	110	A	A					
8								B	110	108	108	108	108	110	A	A	A	A	A					
9								A	112	110	110	110	110	110	110	A	A	A	B					
10								B	116	110	110	108	108	108	108	108	A	A	A					
11								B	114	110	110	110	110	110	A	A	A	A	A					
12								B	114	110	110	110	110	108	108	108	108	A	A					
13								B	114	108	108	110	A	108	A	108	A	A	A					
14								A	112	110	110	110	110	110	110	110	110	A	A					
15								B	A	A	110	108	108	A	A	116	A	116	A					
16								B	114	110	C	C	C	C	C	C	C	C	C					
17								B	110	110	108	108	108	108	A	110	110	110	B					
18								B	110	110	110	106	A	A	114	112	110	A	B					
19								B	110	108	108	108	108	108	108	108	108	110	B					
20								B	110	108	108	108	108	108	106	106	A	A	B					
21								B	110	110	110	110	110	108	108	108	A	108	122					
22								B	116	108	108	108	108	108	108	108	112	112	B					
23								B	110	110	110	108	108	108	108	108	108	110	A					
24								A	110	108	110	110	A	B	106	106	110	A	A	B				
25								B	110	110	110	110	110	110	108	108	A	A	A	A				
26								144	110	108	108	A	A	B	106	A	110	A	B	B				
27								136	114	110	110	110	110	B	110	110	110	110	B	B				
28								160	108	108	108	108	108	108	108	A	A	A	B	B				
29																								
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								3	27	27	27	26	23	20	20	19	12	10	1					
MED								144	110	110	110	108	108	108	108	108	110	110	122					
U Q								160	114	110	110	110	110	109	110	110	110	110						
L Q								136	110	108	108	108	108	108	108	108	109	108						

FEB. 2017 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 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	96	106	100	100	98	98	B	B	178	172	G	G	G	G	110	108	108	G	102	98	112	100	96	88
2	94	94	104	108	102	102	112	B	160	148	138	128	114	116	114	114	174	158	102	106	106	106	102	102
3	102	102	102	102	104	106	B	B	G	176	124	124	116	112	108	108	108	126	108	108	98	98	92	92
4	92	94	102	106	106	106	102	138	128	144	120	110	110	110	110	106	176	140	108	B	108	104	104	98
5	B	102	B	102	106	108	100	140	144	124	114	114	108	110	102	104	104	104	104	104	102	102	102	B
6	96	B	B	B	B	B	B	B	150	136	G	128	108	108	108	108	104	102	94	126	120	122	118	122
7	102	108	104	100	100	100	100	100	162	162	138	160	148	138	128	122	92	92	90	86	B	102	98	98
8	B	98	96	100	98	104	96	98	140	138	122	114	112	106	110	106	106	104	104	112	112	106	106	B
9	98	98	98	98	98	94	94	94	156	172	G	154	124	112	112	112	112	112	B	B	102	106	96	90
10	100	108	108	98	100	110	94	96	118	G	G	116	114	114	110	108	108	104	124	106	106	104	100	100
11	92	106	102	102	102	100	106	98	122	118	118	116	116	110	110	110	106	94	90	92	B	110	100	100
12	94	94	98	100	100	B	B	B	172	150	138	130	128	124	122	122	112	110	108	108	102	B	B	104
13	102	92	B	100	102	102	B	102	178	144	136	124	118	116	112	110	104	104	98	98	98	94	94	92
14	92	96	96	96	96	B	B	170	172	150	112	112	112	112	118	154	G	110	106	106	104	90	B	90
15	92	100	102	102	102	B	B	B	102	108	102	G	G	110	102	98	98	98	100	116	96	106	B	B
16	B	100	B	100	B	100	98	B	128	184	C	C	C	C	C	C	C	C	C	C	C	94	94	108
17	92	96	98	102	98	98	96	96	G	G	G	G	G	176	122	112	G	G	170	98	94	B	B	94
18	94	94	94	B	98	98	B	160	G	176	140	124	112	112	G	118	114	108	B	106	106	104	100	B
19	100	B	B	B	B	100	108	B	G	G	162	G	168	G	G	G	G	100	B	B	B	B	B	B
20	B	100	96	B	B	B	B	B	164	G	150	138	130	124	114	112	108	104	G	104	98	94	B	B
21	90	90	B	102	B	B	B	168	G	G	180	G	180	G	G	110	106	176	148	90	110	B	102	90
22	100	100	B	100	B	B	B	B	G	G	172	156	146	136	138	126	124	112	B	B	B	B	128	B
23	96	B	B	B	B	B	B	B	G	G	192	178	144	152	130	130	124	130	112	106	104	104	B	102
24	B	96	B	B	B	B	B	136	152	152	122	G	104	B	G	112	110	106	106	106	100	94	92	98
25	98	98	B	B	B	106	B	B	164	G	G	116	114	110	106	108	108	104	102	100	102	96	96	106
26	B	92	B	B	B	B	B	156	158	174	G	100	100	B	94	94	G	112	160	88	B	B	B	B
27	B	B	B	B	B	B	B	G	140	160	150	136	142	B	G	122	G	128	B	B	B	94	B	B
28	B	98	94	B	B	B	B	G	162	148	138	128	122	114	112	112	112	108	G	B	90	B	B	B
29																								
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	20	24	16	18	16	16	11	14	21	20	20	21	24	21	22	26	22	25	20	21	21	21	18	18
MED	96	98	99	100	100	101	100	119	156	150	138	124	116	112	111	111	108	108	105	106	102	102	100	98
U Q	100	101	102	102	102	106	106	156	164	172	150	137	136	124	118	118	112	119	110	107	107	106	102	102
L Q	92	94	96	100	98	99	96	98	134	141	121	115	112	110	108	108	106	104	101	98	98	94	96	92

IONOSPHERIC DATA STATION Okinawa

FEB. 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 2	FQ 31	F 2	F 1	F 1			H 1	H 1					C 1	C 1	C 1		L 1	F 1	FF 21	F 7	F 1	F 1
2	F 1	F 1	F 1	F 4	F 1	F 6	FF 11	H 1	H 2	H 2	H 1	C 1	C 3	C 1	C 1	C 1	HC 11	H 1	L 1	FQ 11	FQ 21	FQ 21	FQ 31	FQ 31
3	F 2	F 4	FQ 51	F 3	F 3	F 1				H 1	C 1	C 1	C 1	C 1	C 1	CL 21	CL 21	CL 11	C 4	F 1	F 6	FQ 21	F 4	FQ 41
4	F 4	FQ 21	F 1	F 1	F 1	F 1	F 2	H 1	CL 11	HL 11	C 1	C 3	C 2	C 1	C 1	C 2	HL 11	HL 22	CL 12		F 1	F 1	F 1	F 1
5		F 1		F 3	F 2	F 1	F 2	HL 11	H 1	C 1	C 4	C 3	C 3	C 1	LQ 11	L 1	LQ 11	LQ 11	LQ 21	FQ 71	F 7	F 4	F 1	
6	F 1							HL 11	H 1	HL 11		CL 11	CL 11	C 1	C 2	C 2	L 2	L 2	L 3	FF 53	F 8	FF 61	F 4	FF 11
7	F 1	F 2	FQ 31	F 3	FQ 21	FQ 31	F 2	LH 11	H 1	H 1	HL 11	H 1	H 1	H 1	CL 11	CL 11	L 1	L 2	LC 31	FF 21		F 1	F 3	F 1
8		F 2	F 2	F 1	F 1	F 1	F 1	LH 11	H 1	H 1	C 1	C 1	C 2	C 2	C 1	C 2	C 2	L 4	L 3	FF 14	FF 14	F 2	F 1	
9	FQ 21	F 2	F 1	F 3	F 2	F 6	F 4	L 3	H 1	H 1		H 1	C 1	C 1	C 1	C 1	C 2	C 1			F 1	F 1	F 1	F 1
10	F 1	F 3	F 4	F 4	F 1	F 1	F 2	LQ 11	CL 11			C 1	C 1	C 1	C 1	C 2	CQ 11	LQ 21	CL 11	FQ 11	F 3	F 2	F 2	F 1
11	F 2	F 2	F 2	F 1	F 2	F 2	F 1	L 2	C 2	C 2	C 1	C 1	C 1	C 2	C 1	C 2	CL 21	L 2	L 3	F 1		F 1	F 1	F 1
12	F 4	FQ 21	FQ 21	F 1	FQ 21			H 1	H 2	H 1	H 1	H 1	C 1	C 1	C 1	C 1	C 2	C 3	C 1	F 1	F 1			FF 12
13	F 1	F 1		F 1	F 1	F 1		L 1	H 1	H 1	H 1	C 2	C 2	C 3	C 2	C 3	L 2	L 2	LQ 21	FQ 31	FQ 31	FQ 41	F 4	F 4
14	F 3	FQ 21	FQ 21	FQ 11	F 1			H 1	HC 11	HC 11	C 1	C 1	C 1	C 1	C 1	HC 11		CQ 21	C 2	F 1	F 1	F 1		F 1
15	F 1	F 2	F 1	F 1	F 1			L 1	L 1	C 1	L 1			C 1	L 1	L 1	L 1	L 1	LH 11	FF 32	F 2	F 2		
16		F 2		FQ 21		F 1	F 2		C 1	H 1												F 5	F 5	FF 12
17	F 2	F 1	F 1	F 2	F 5	F 2	F 2	L 1						H 1	C 1	C 1			H 1	F 1	F 2			F 1
18	F 1	F 1	F 1		FQ 21	FQ 21		H 1		H 1	HL 11	CL 11	CQ 11	C 1		C 1	C 1	C 1		F 1	F 1	F 3	F 2	
19	F 1					F 2	F 1				H 1		H 1					L 1						
20		F 1	F 2						H 1		H 1	H 1	H 1	C 1	C 1	C 1	C 1	L 1		F 1	F 2	F 1		
21	F 2	F 1		F 1				H 1			HL 11		H 1			C 1	C 1	H 1	H 1	F 1	FF 12		F 2	F 1
22	F 1	F 1		F 1				L 1			H 1	H 1	HL 11	H 1	H 1	C 1	C 1	C 1					F 1	
23	F 1										H 1	H 1	H 1	H 1	H 1	H 1	C 1	C 1	C 1	FF 41	F 2	F 2		F 1
24		F 1						H 1	H 1	H 1	C 1		L 1			C 1	C 1	C 1	C 1	C 1	F 1	F 3	F 2	F 1
25	F 3	F 3				F 1			H 1			C 1	C 1	C 1	C 1	C 1	C 1	L 1	L 1	L 2	F 2	F 2	F 2	F 1
26		F 1						H 1	H 1	H 1		L 1	L 1		L 1	L 1		C 1	H 1	L 1				
27									H 1	H 1	H 1	H 1	H 1			C 1		C 1				F 1		
28		F 1	F 1						H 1	H 1	H 1	C 1	C 1	C 2	C 2	C 1	C 1	C 1			F 1			
29																								
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																								

FEB. 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

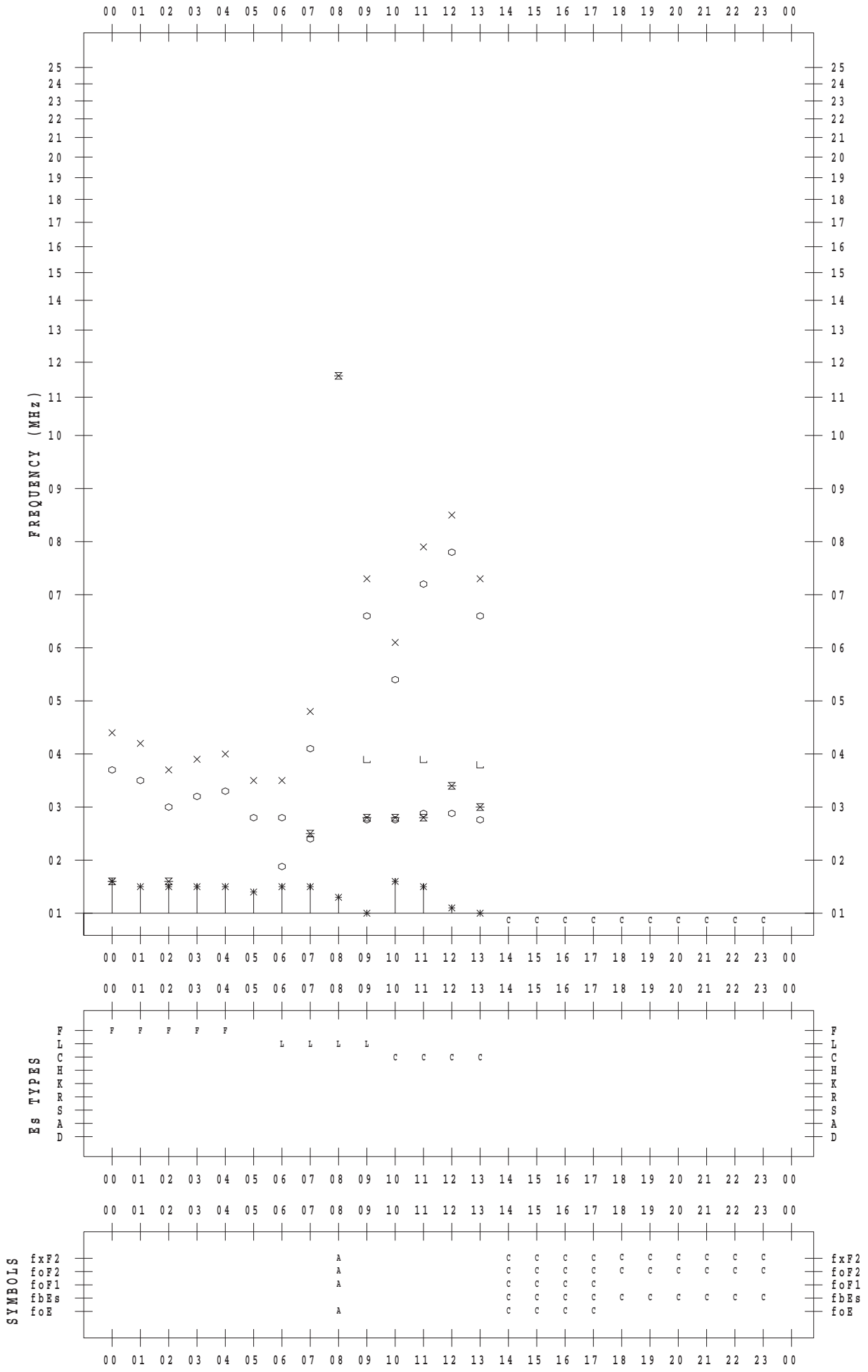
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 1

135 °E MEAN TIME



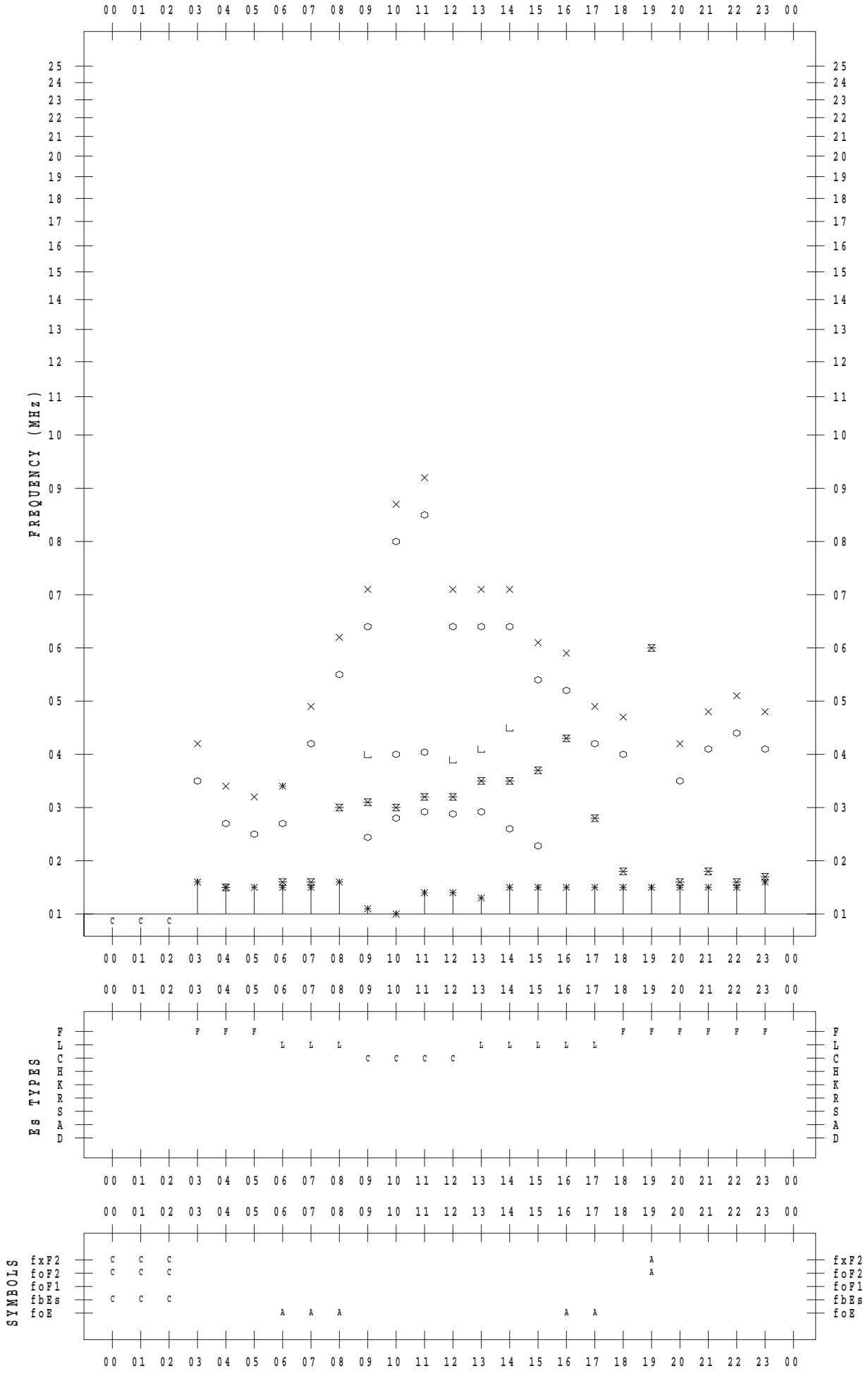
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 2

135 °E MEAN TIME



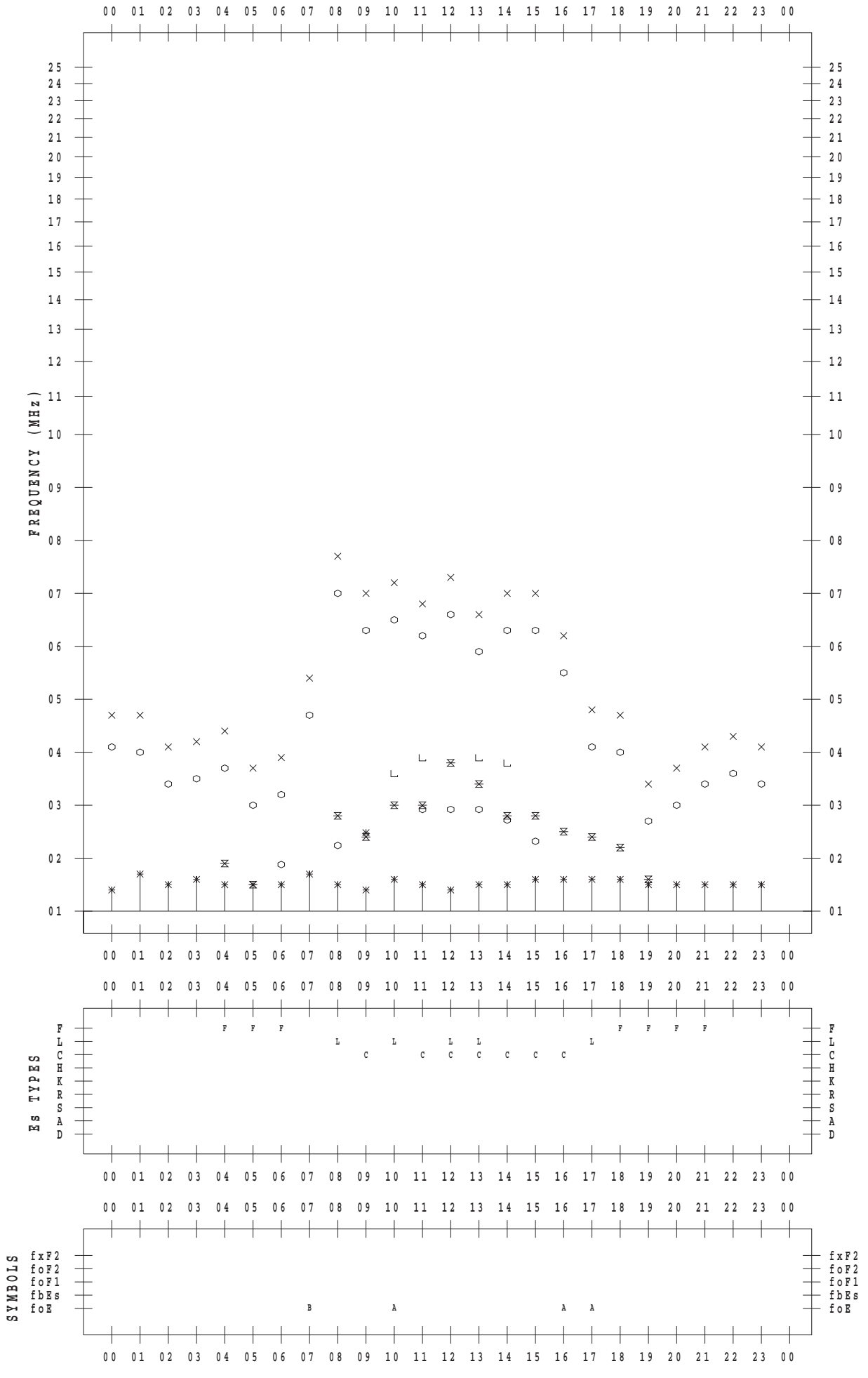
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 3

135 °E MEAN TIME



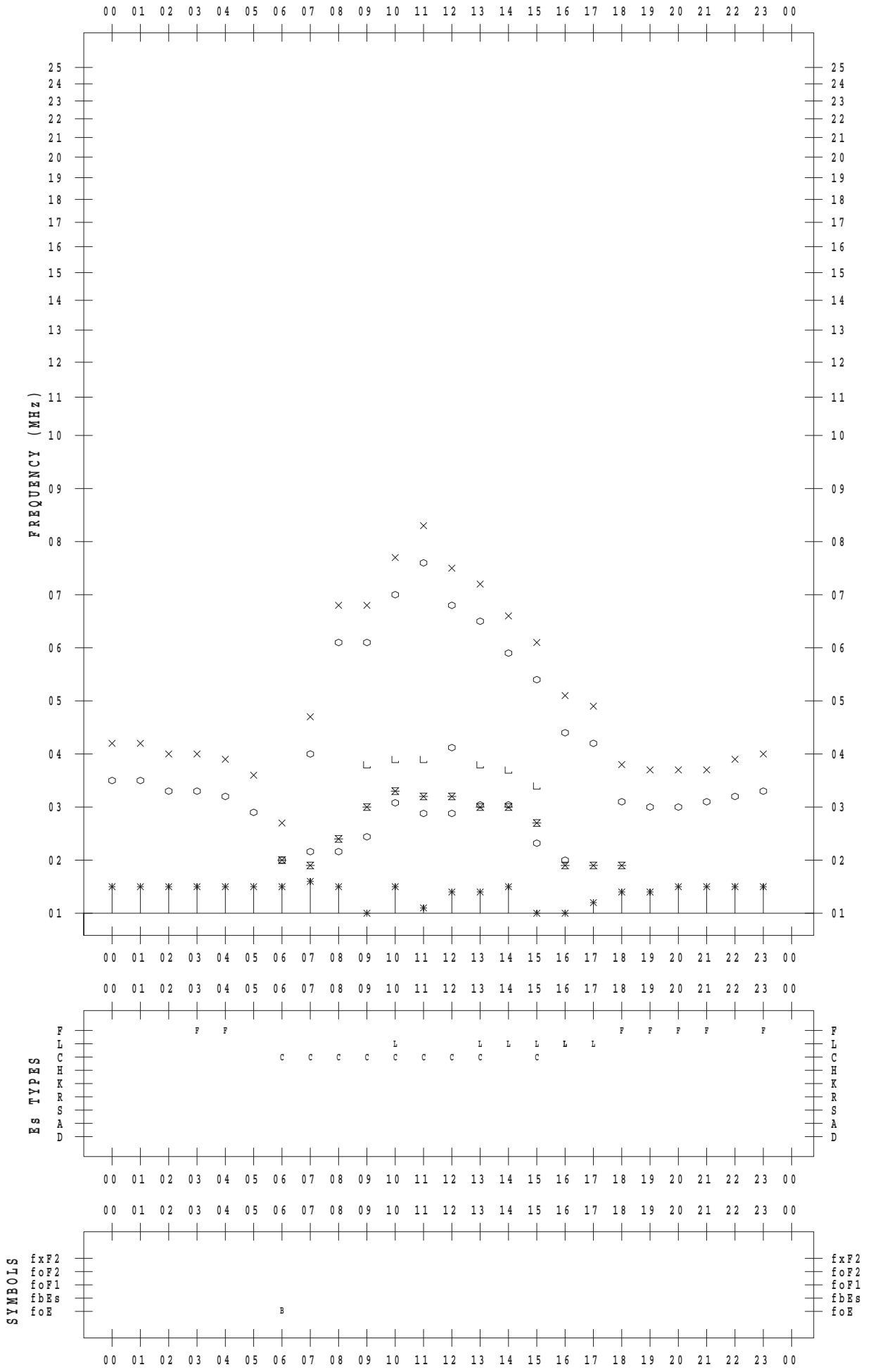
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 4

135 °E MEAN TIME



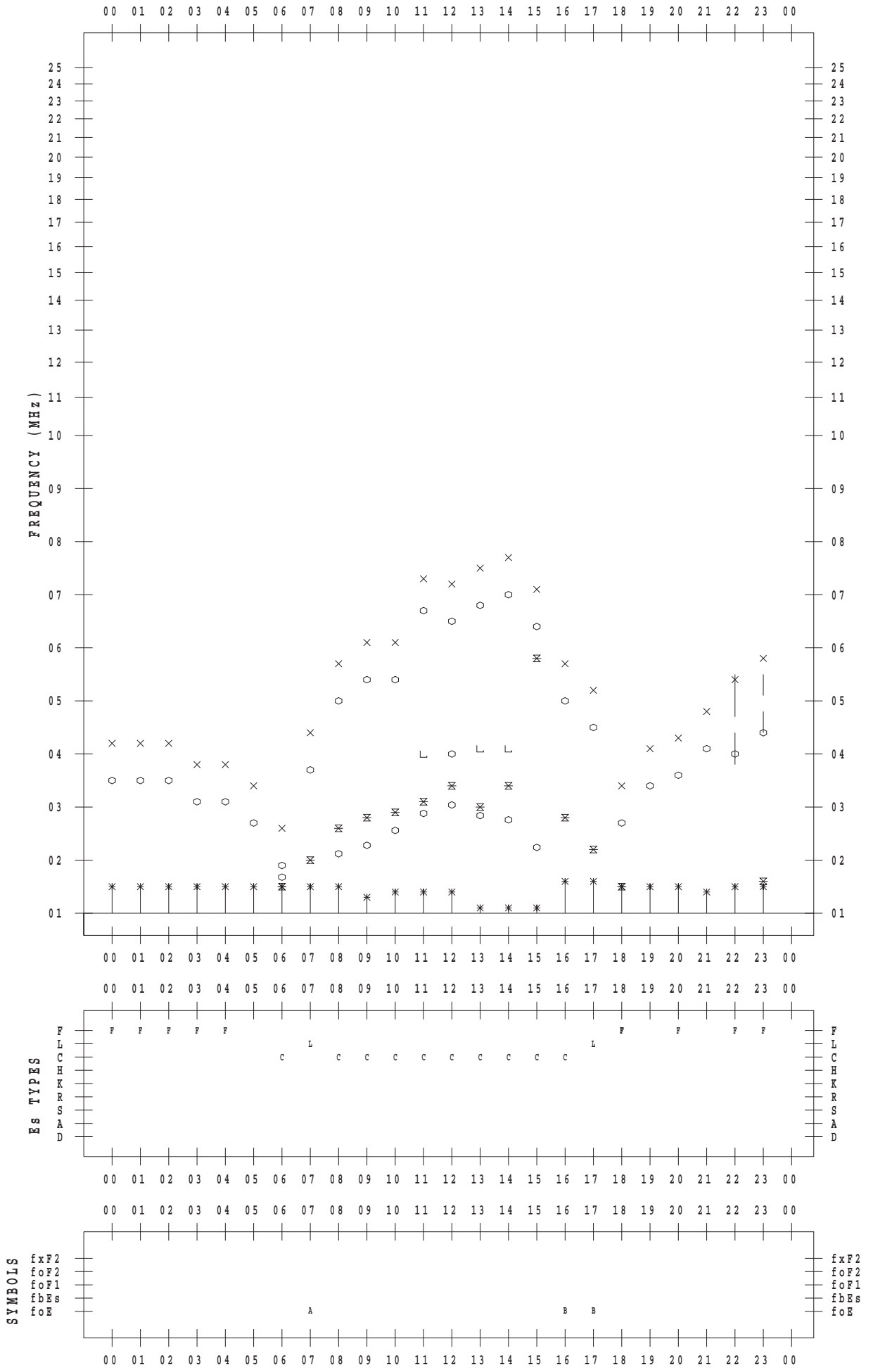
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 5

135 °E MEAN TIME



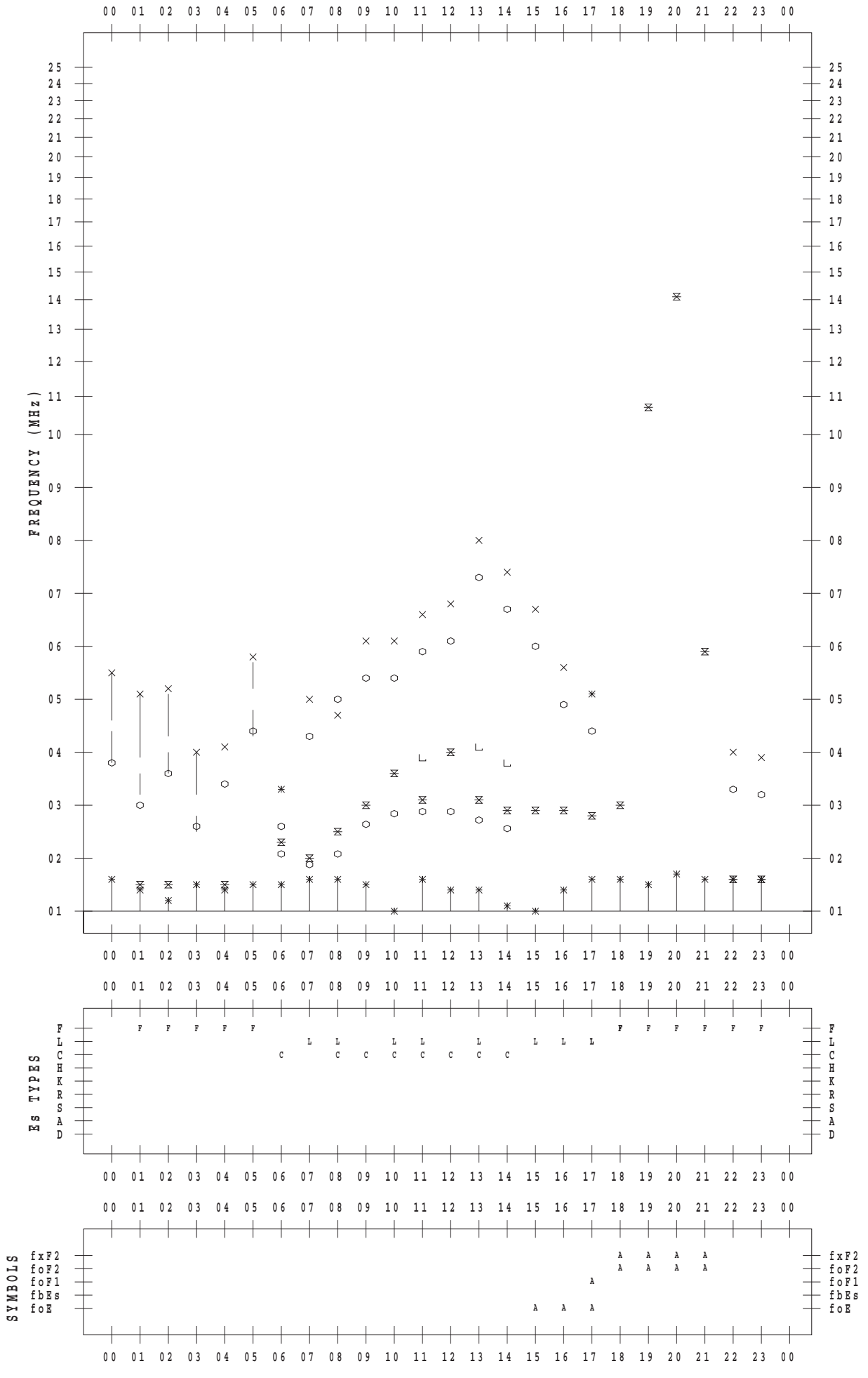
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 6

135 °E MEAN TIME



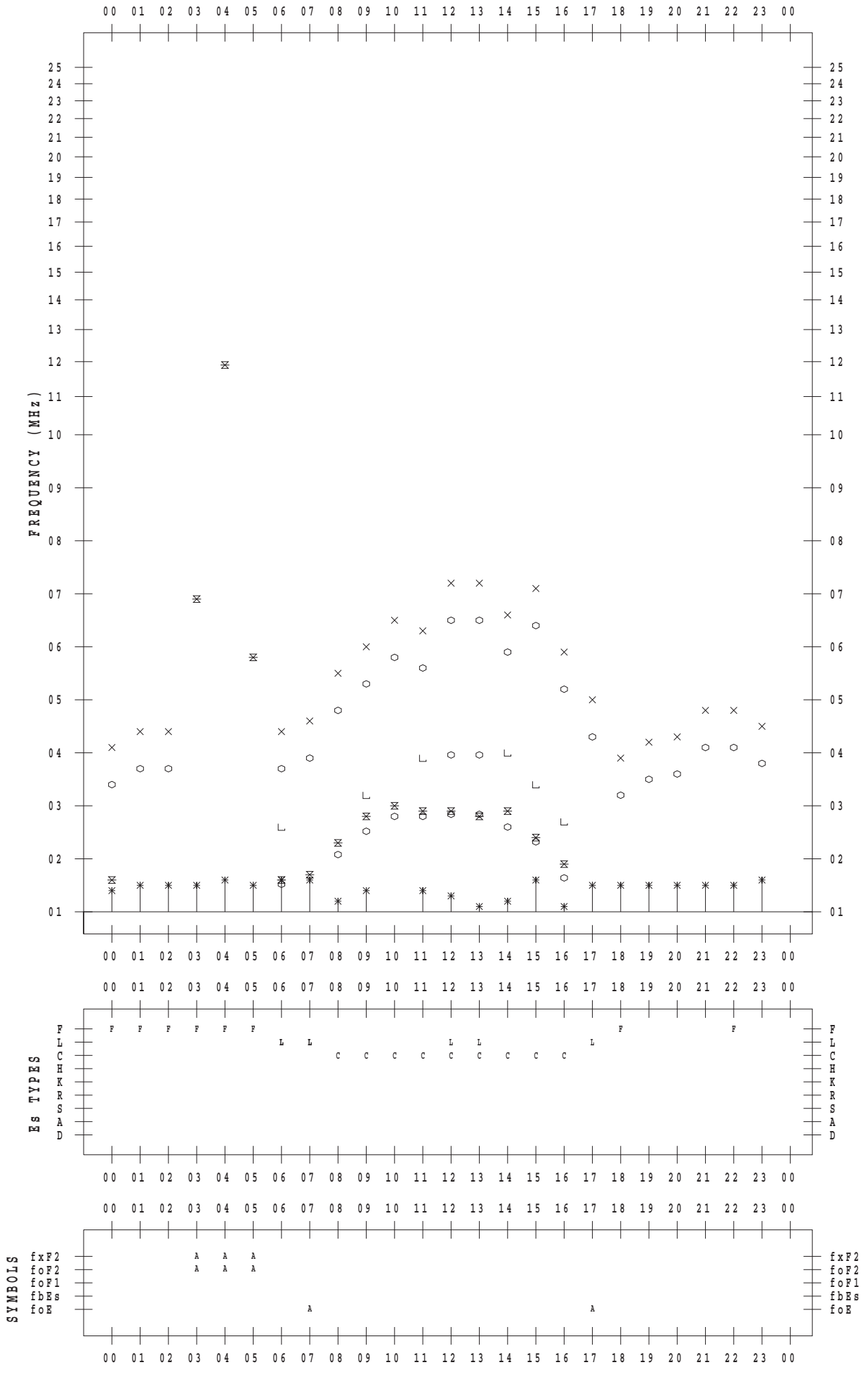
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 7

135 °E MEAN TIME



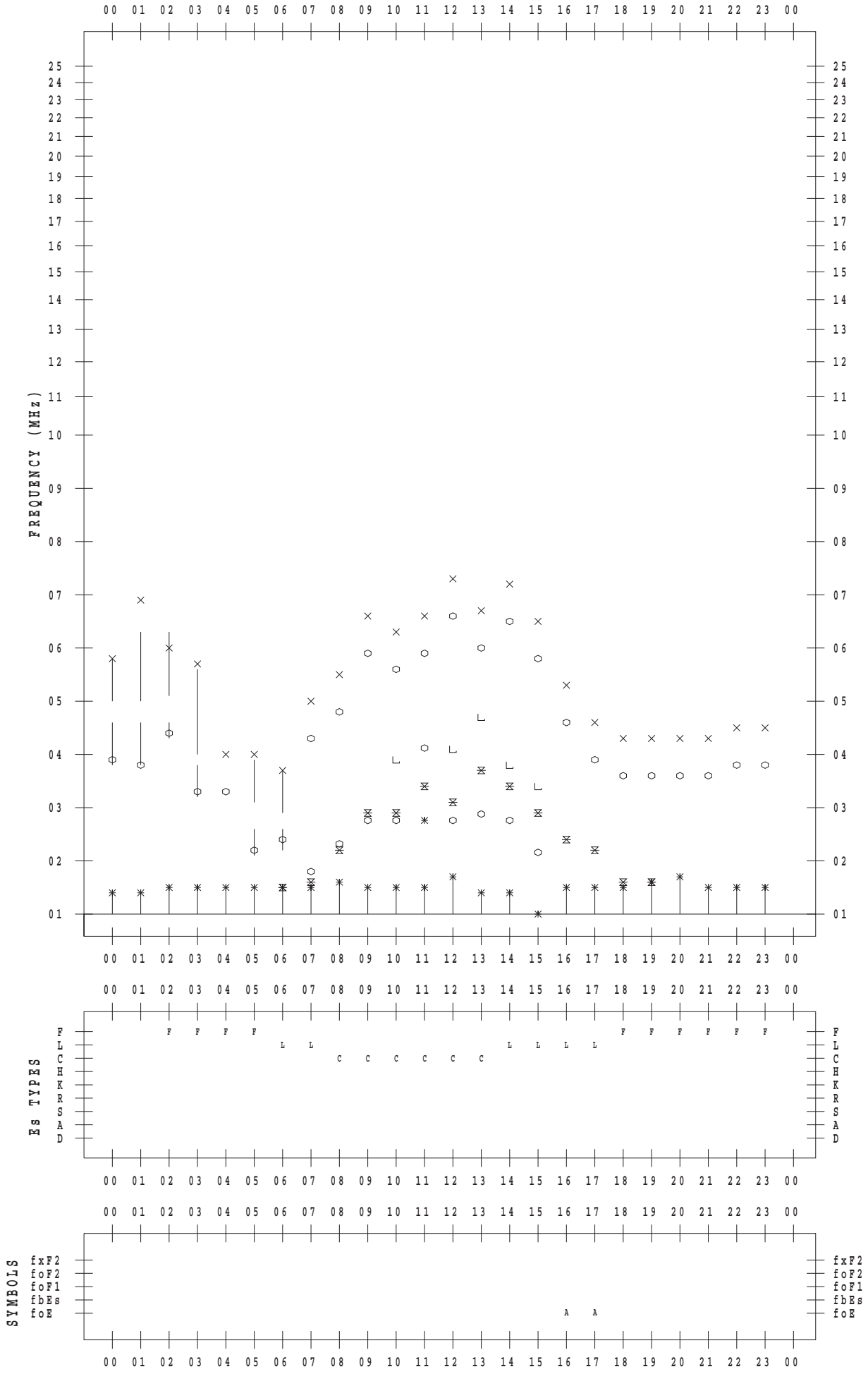
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 8

135 °E MEAN TIME



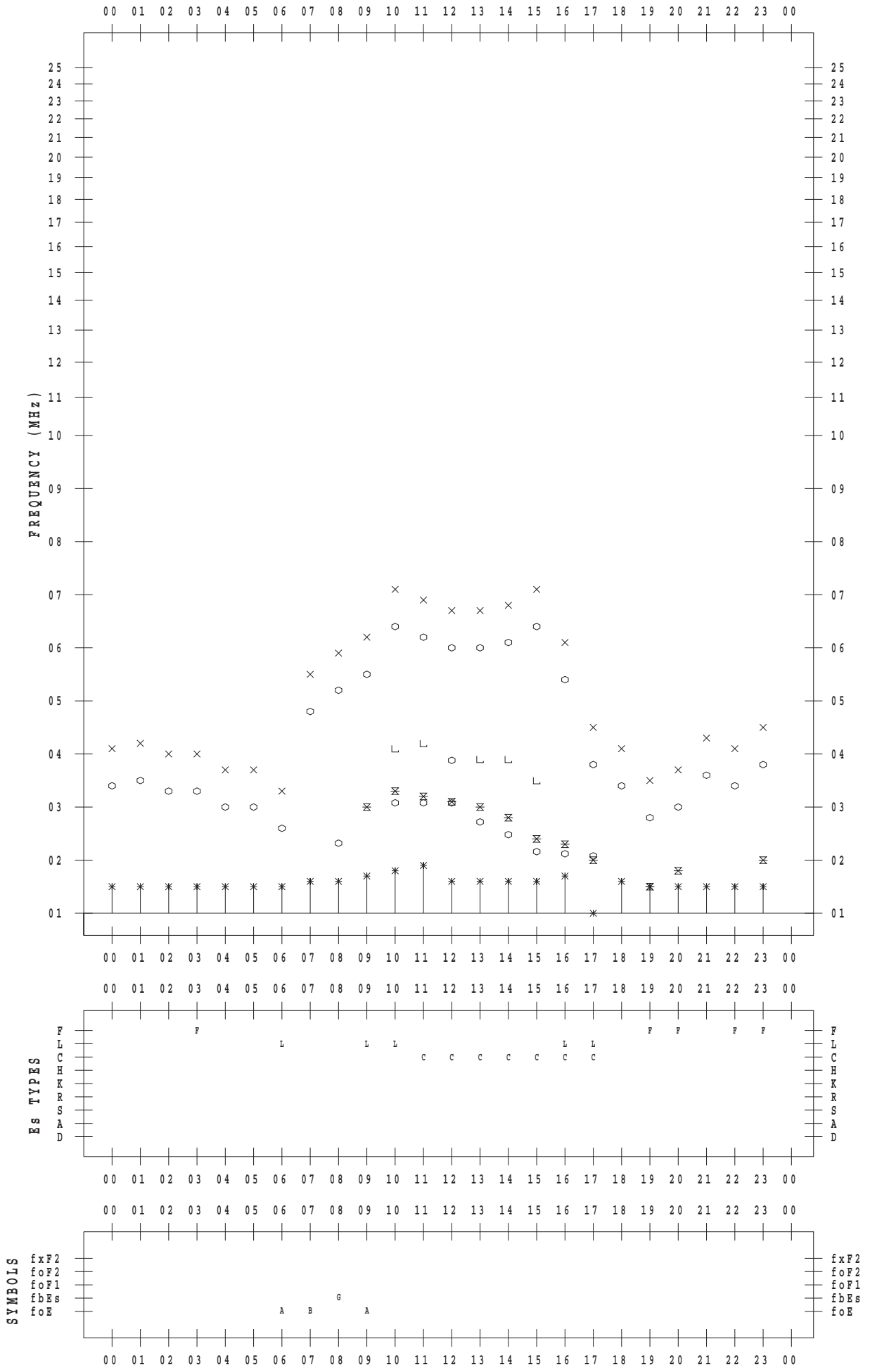
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/ 9

135 °E MEAN TIME



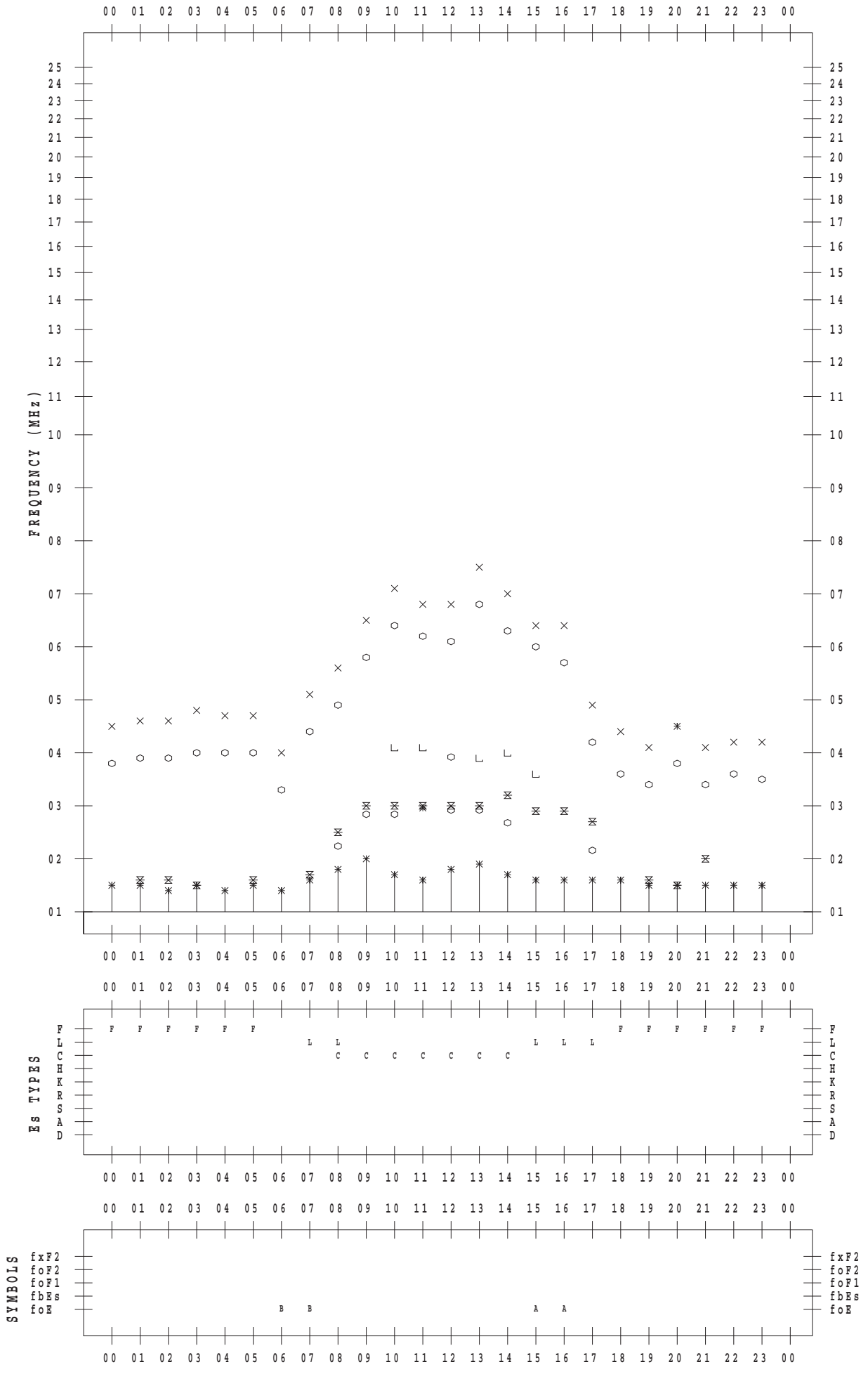
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/10

135 °E MEAN TIME



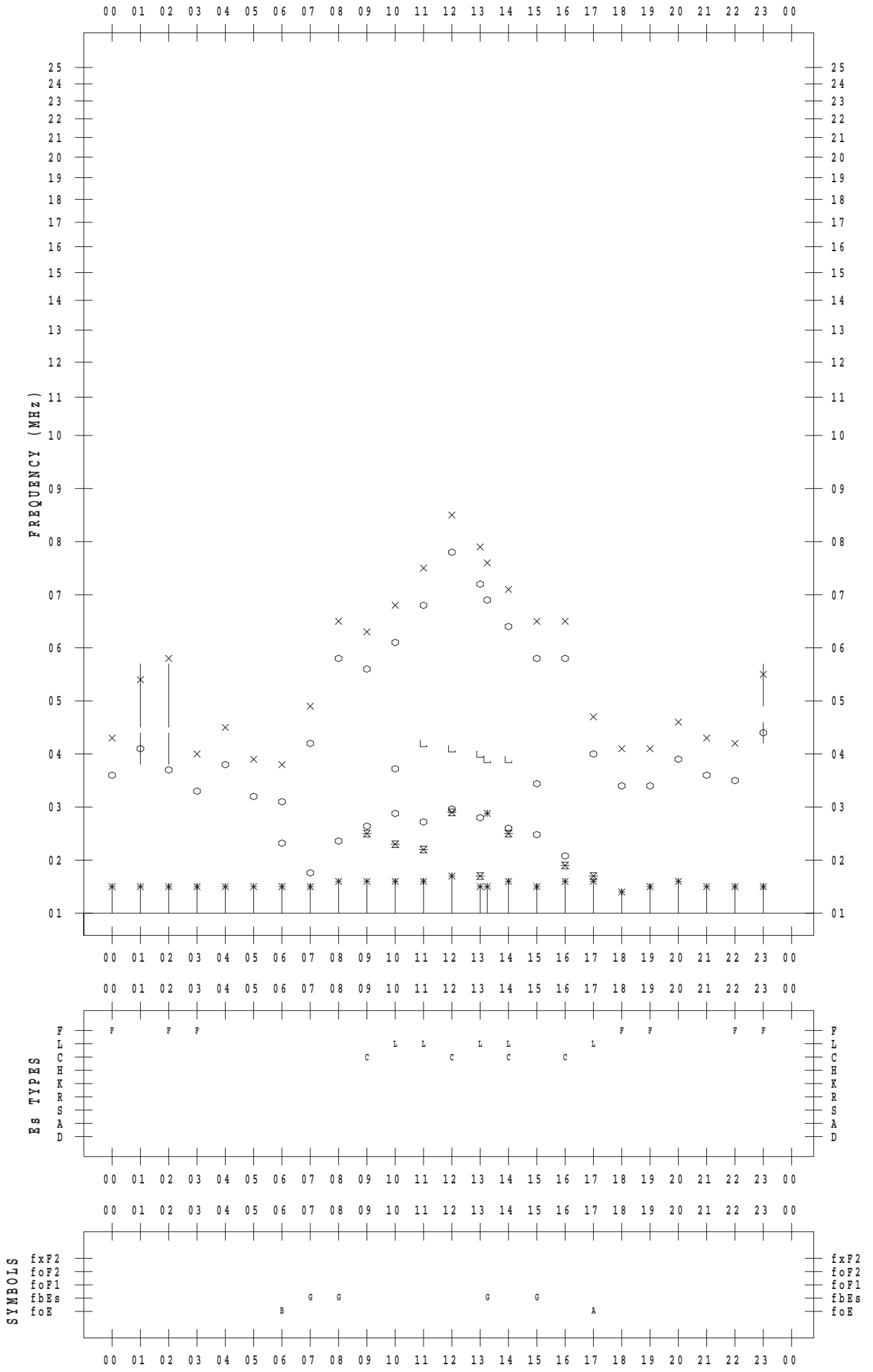
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/11

135 °E MEAN TIME



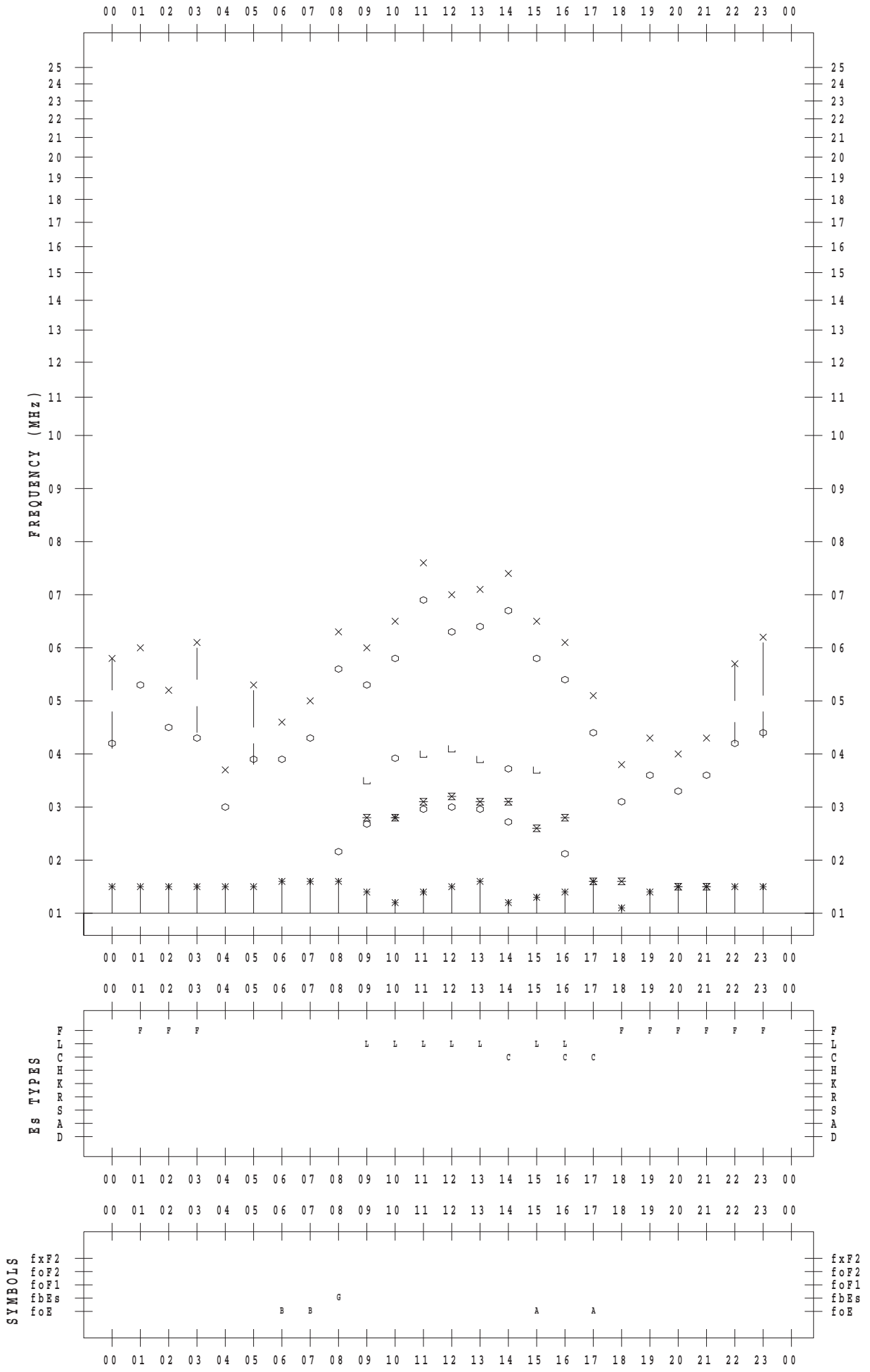
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/12

135 °E MEAN TIME



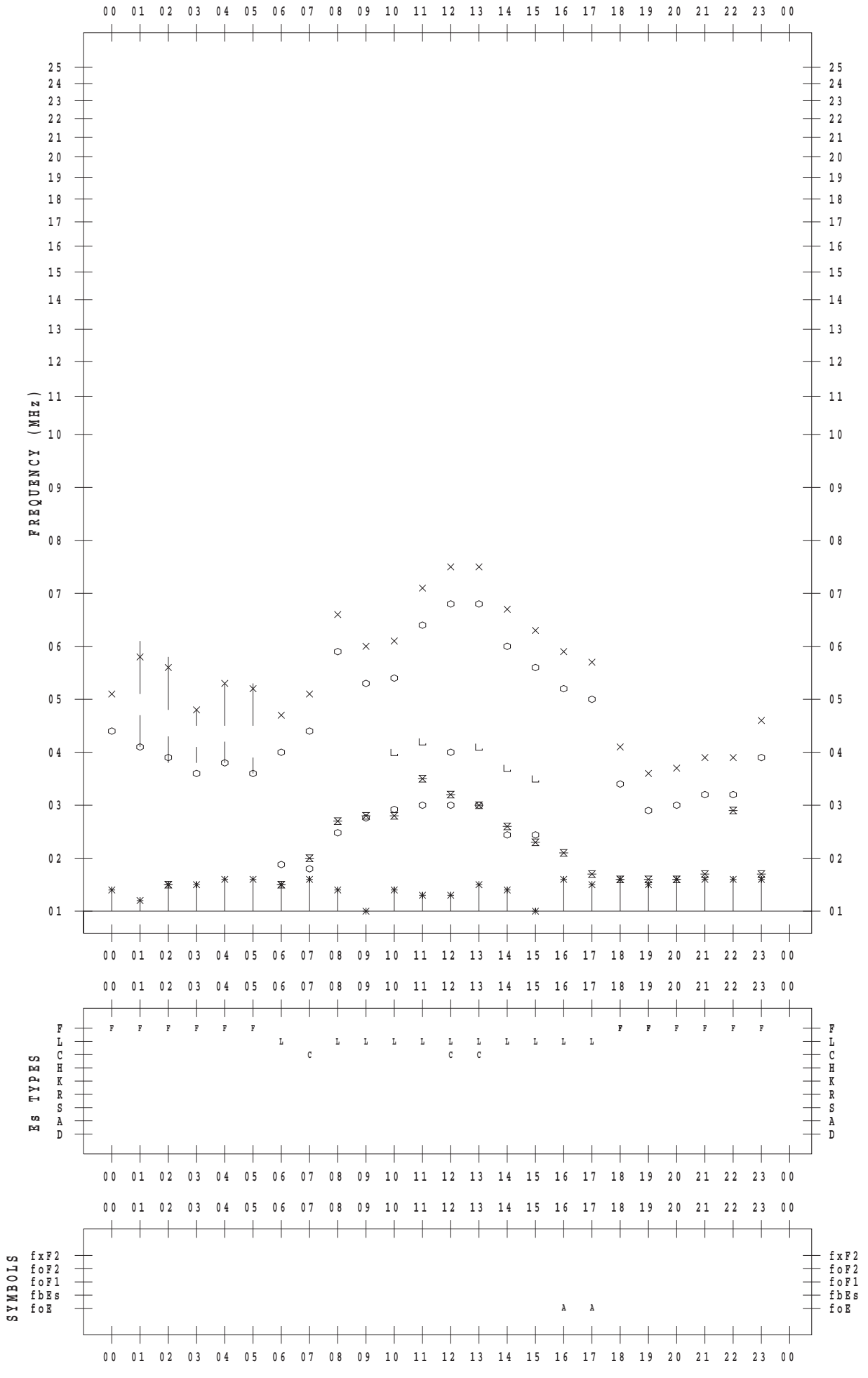
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/13

135 °E MEAN TIME



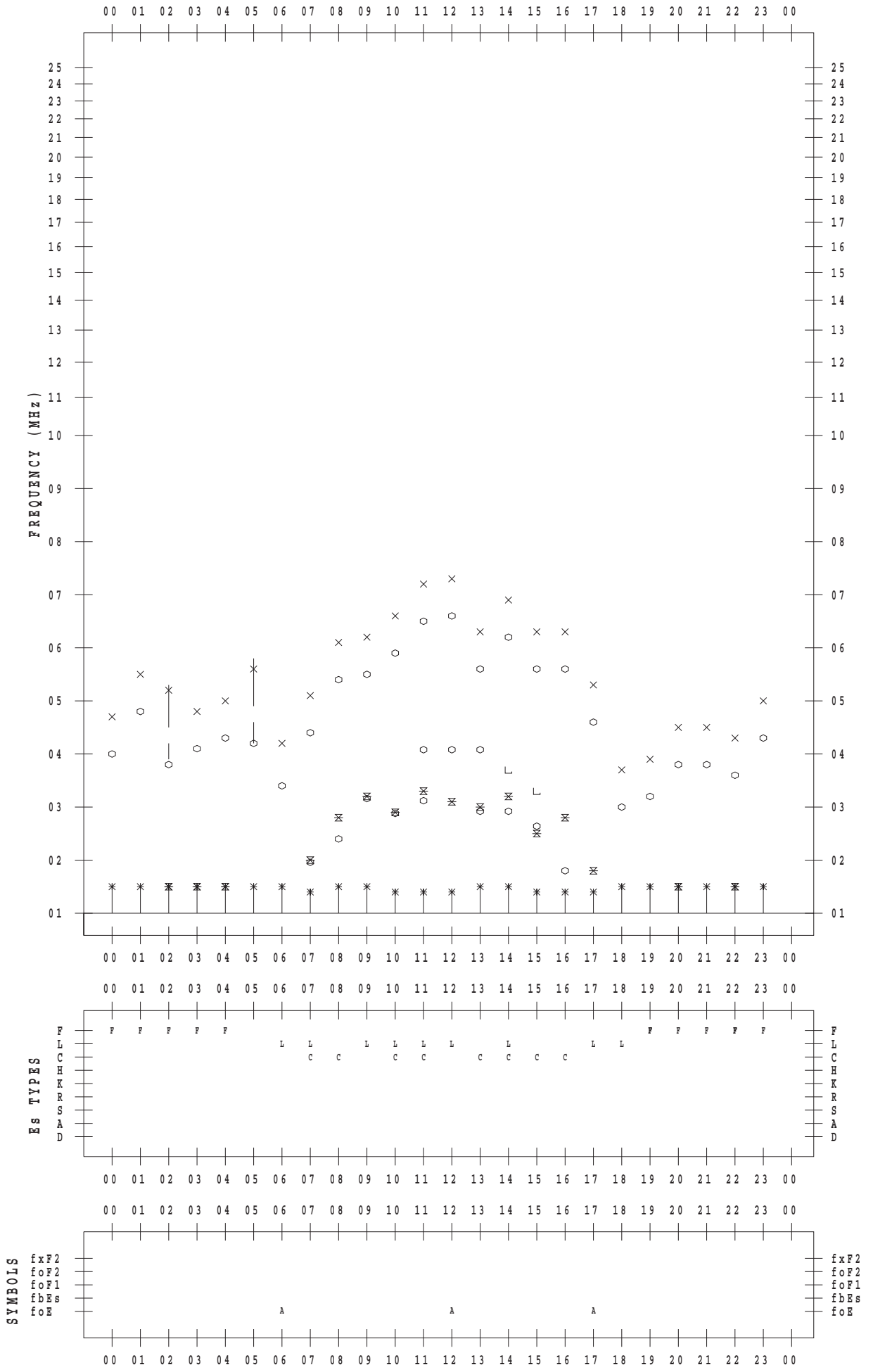
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/14

135 °E MEAN TIME



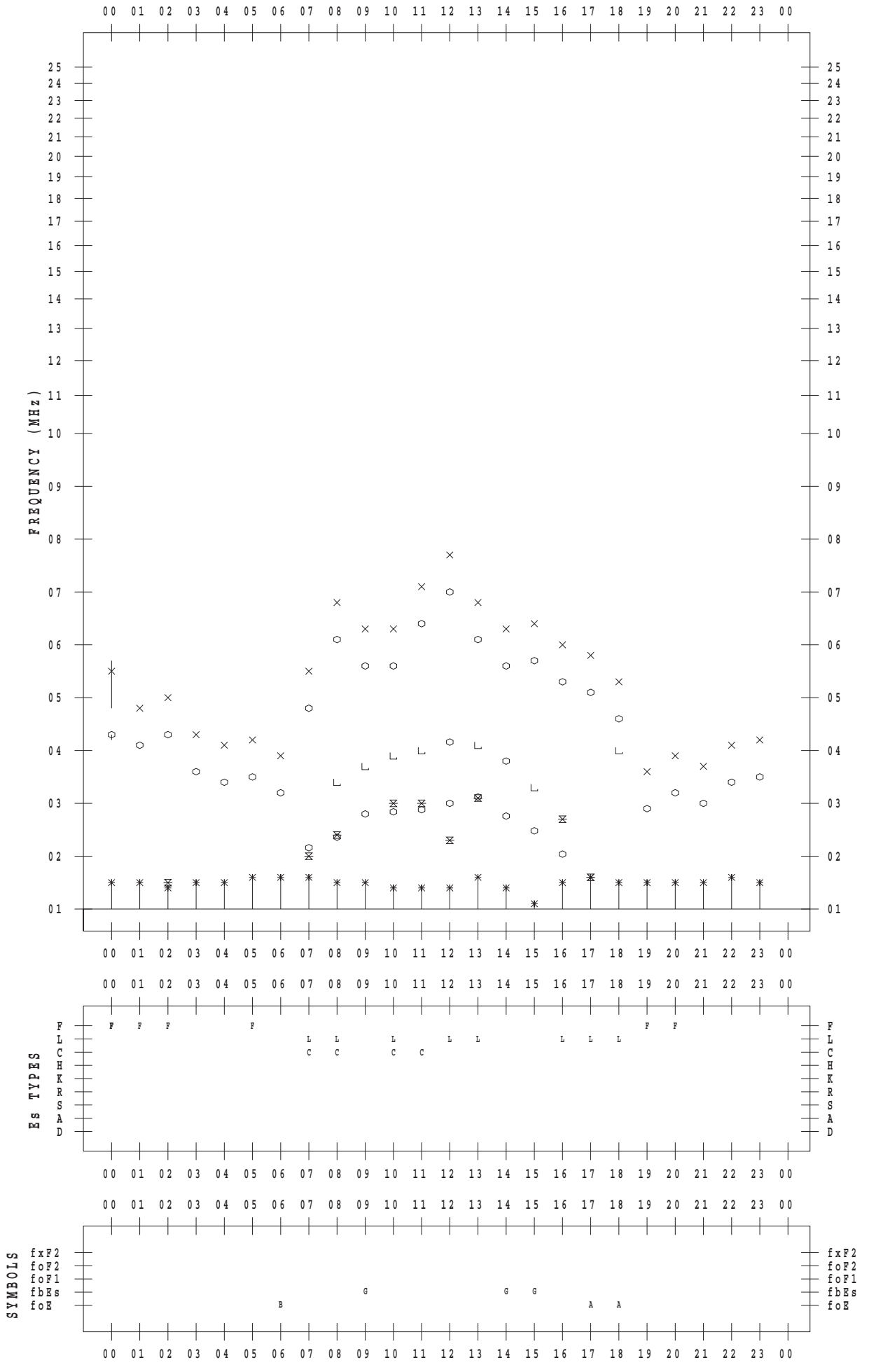
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/15

135 °E MEAN TIME



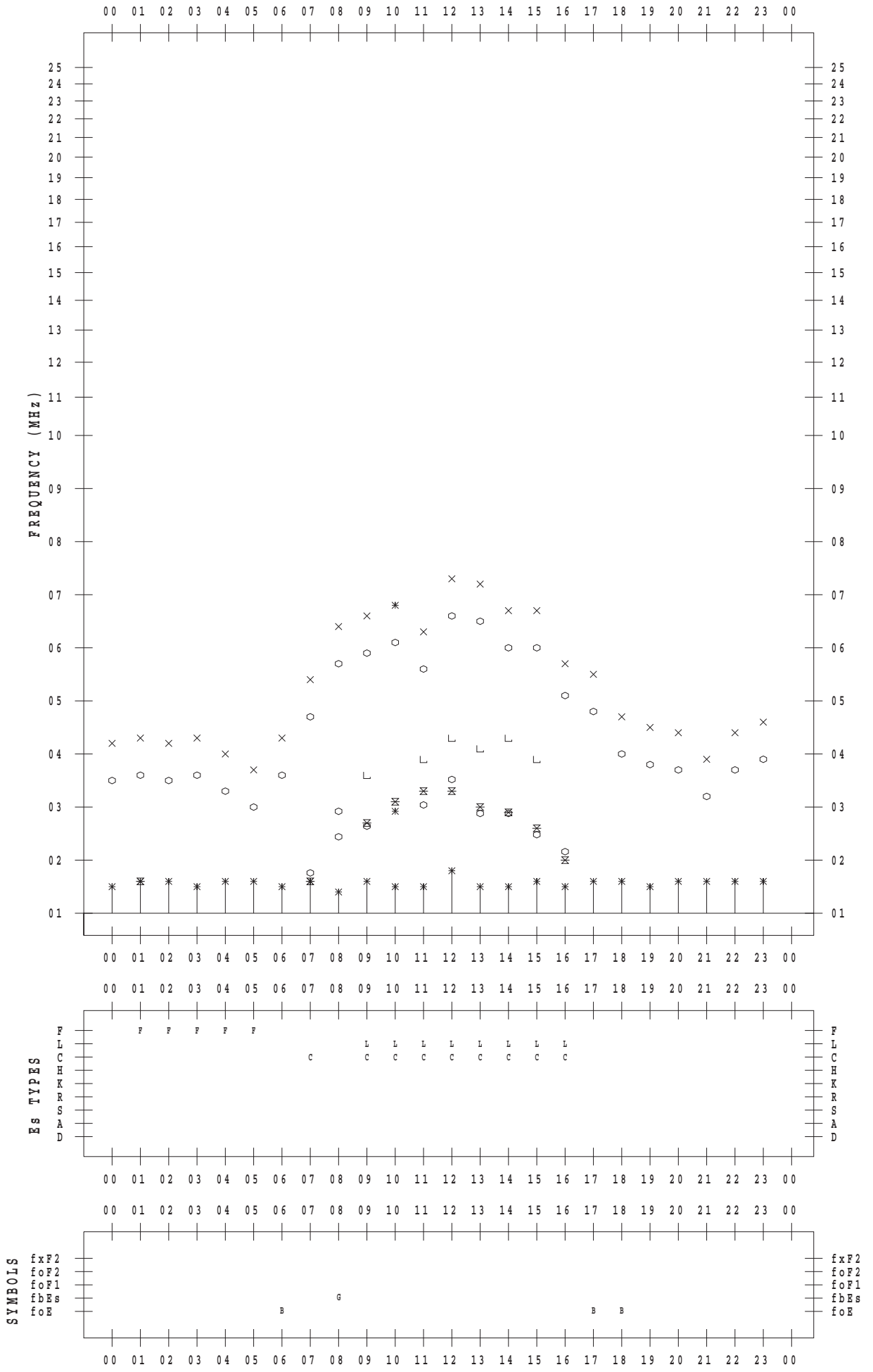
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/16

135 °E MEAN TIME



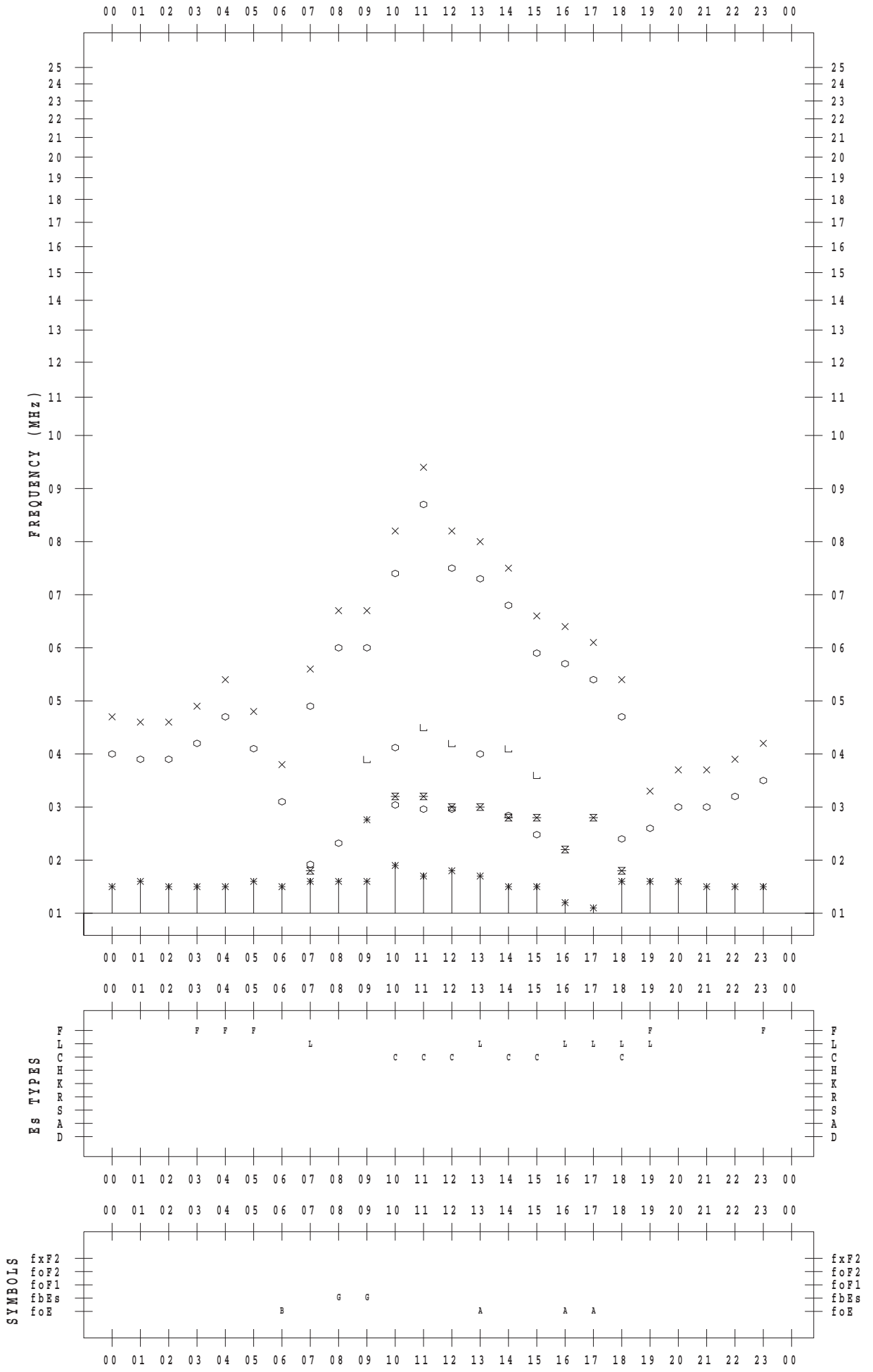
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/17

135 °E MEAN TIME



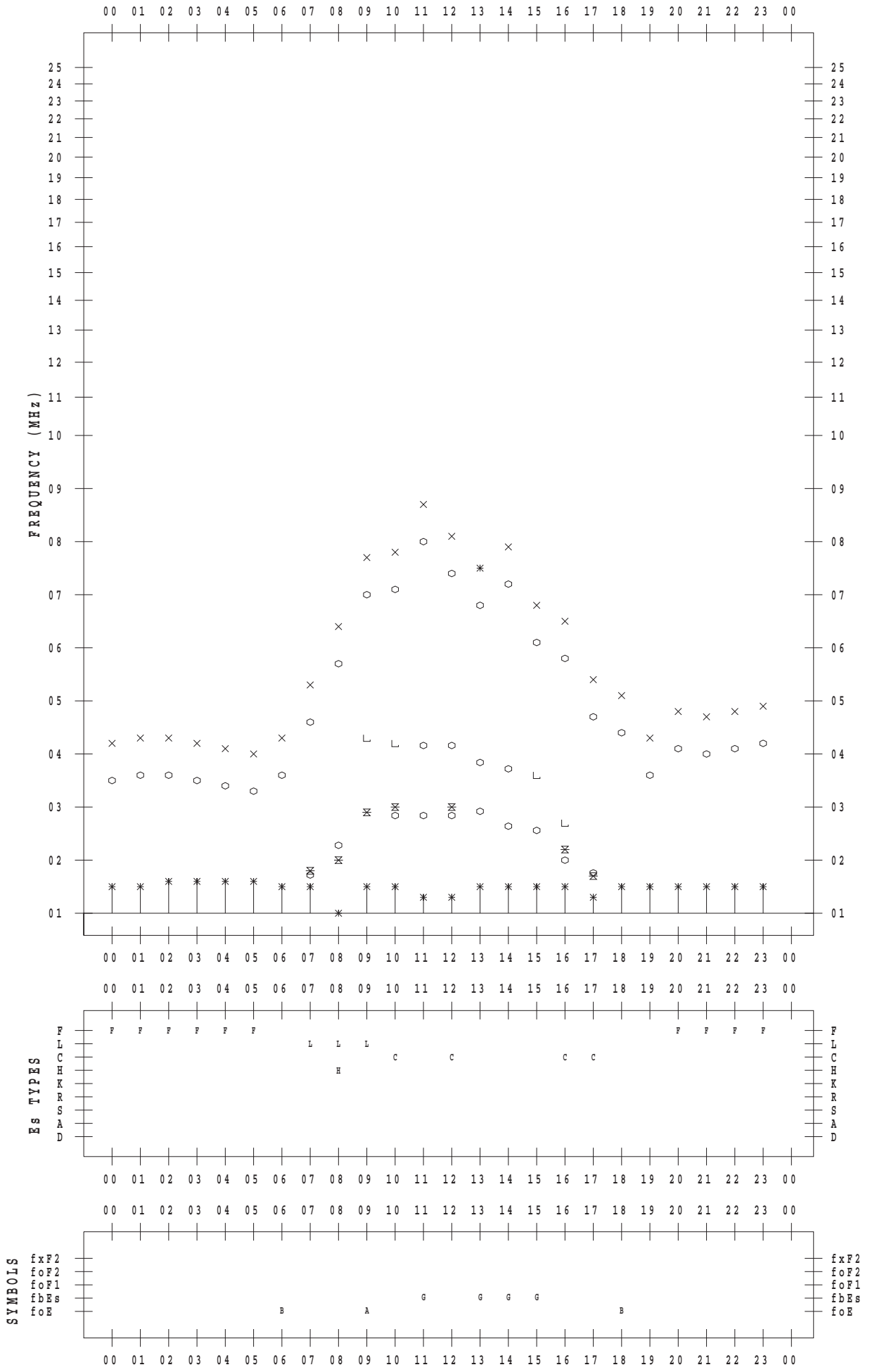
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/18

135 °E MEAN TIME



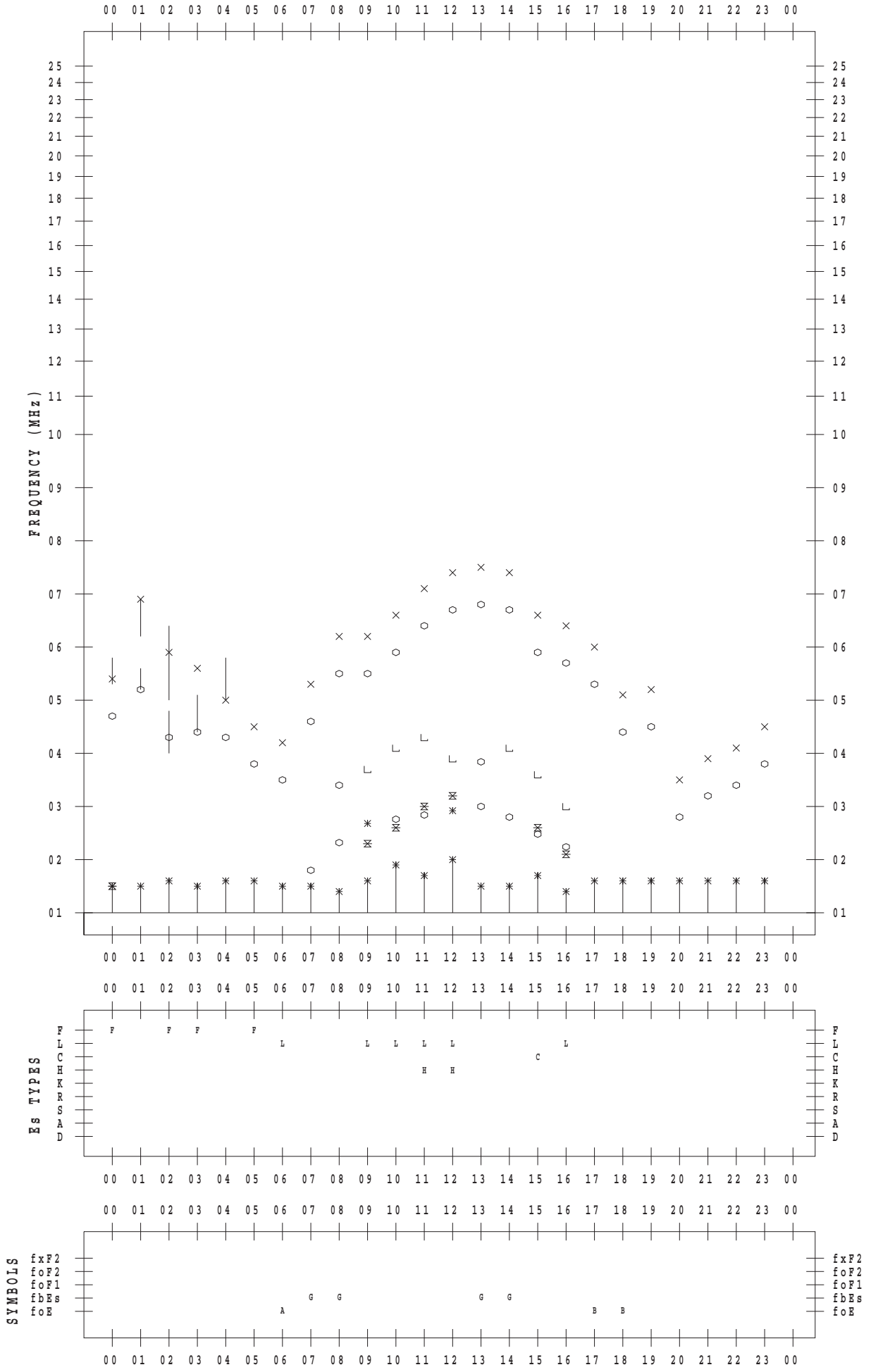
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/19

135 °E MEAN TIME



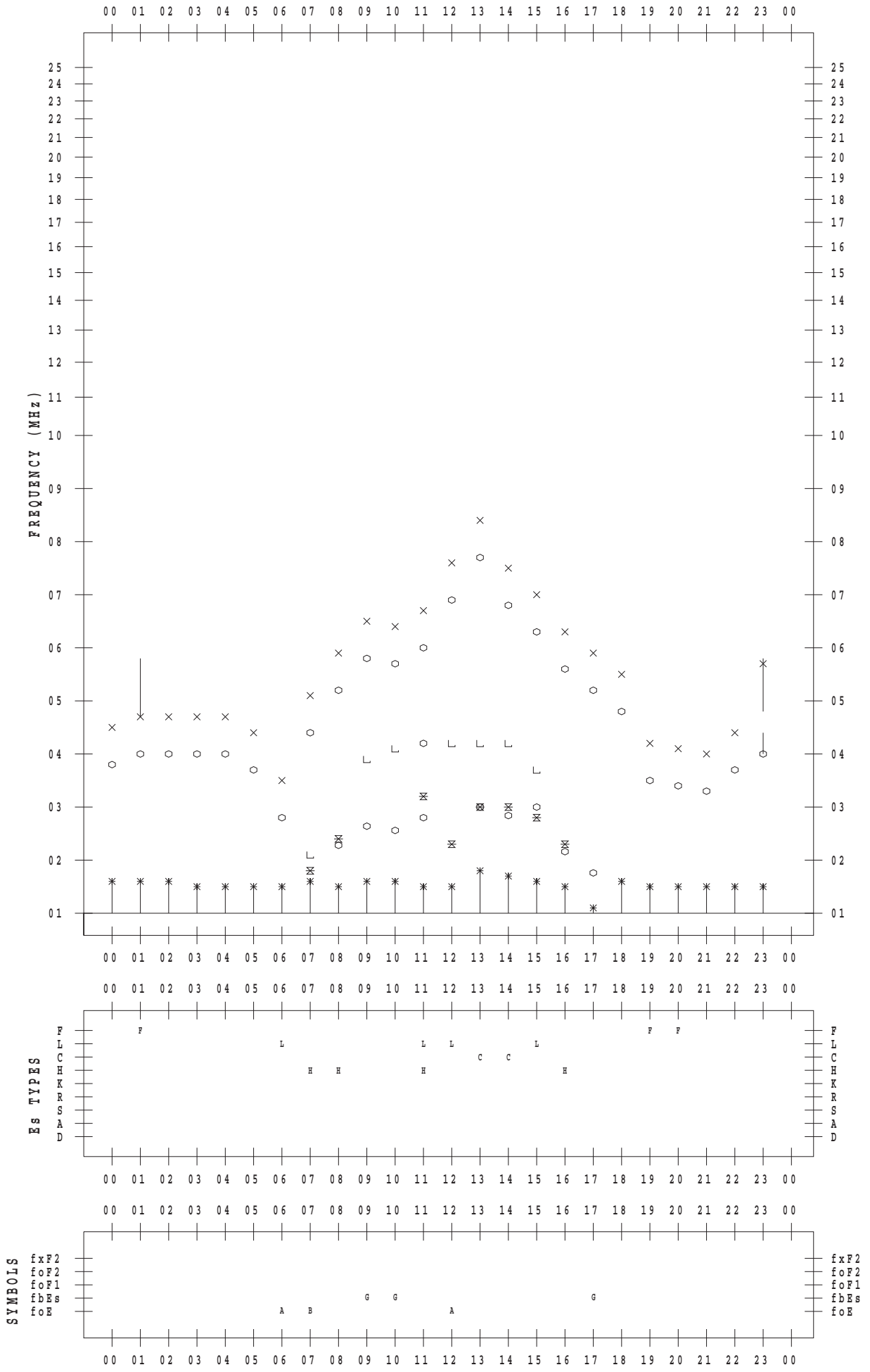
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/20

135 °E MEAN TIME



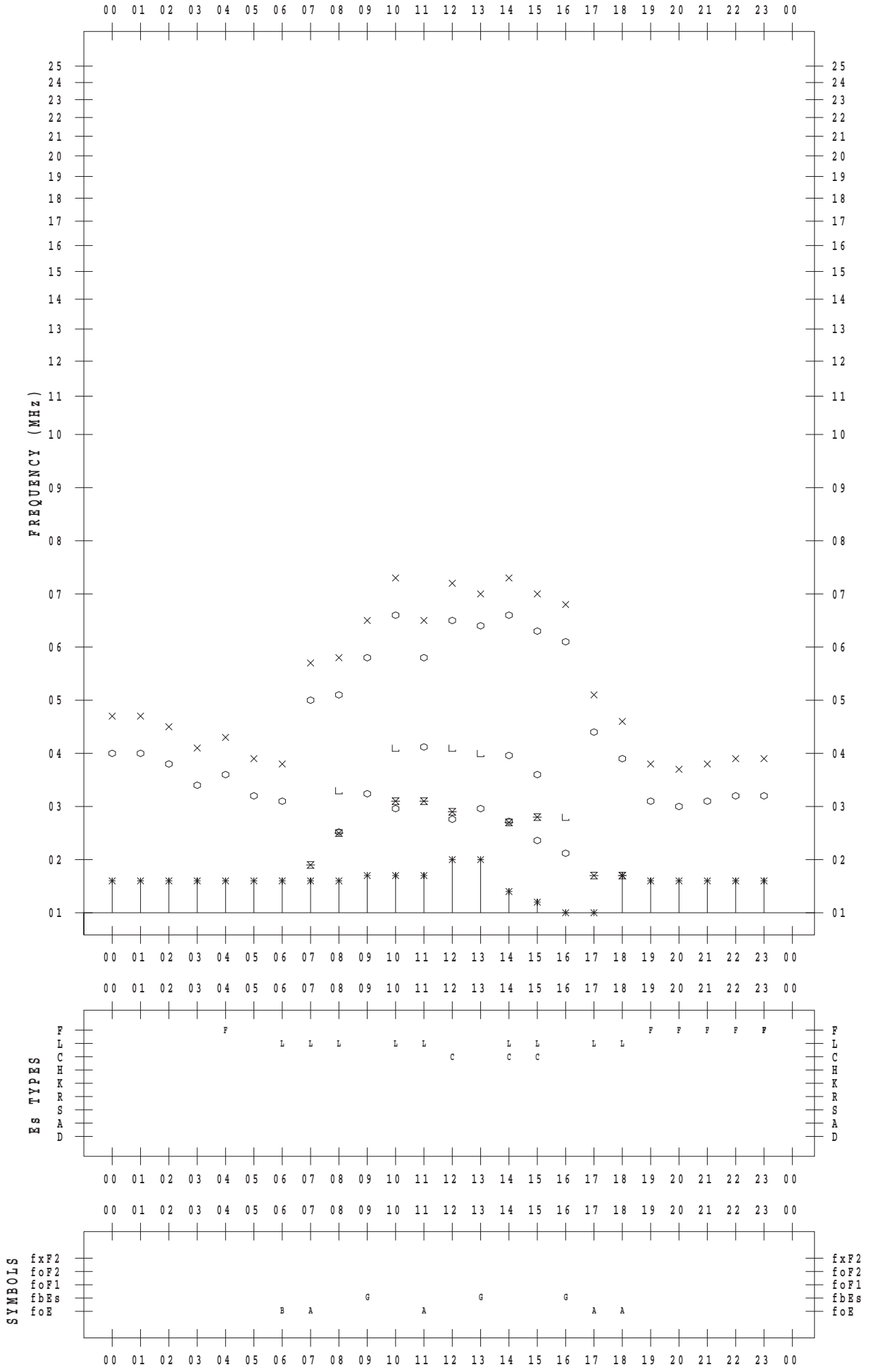
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/21

135 °E MEAN TIME



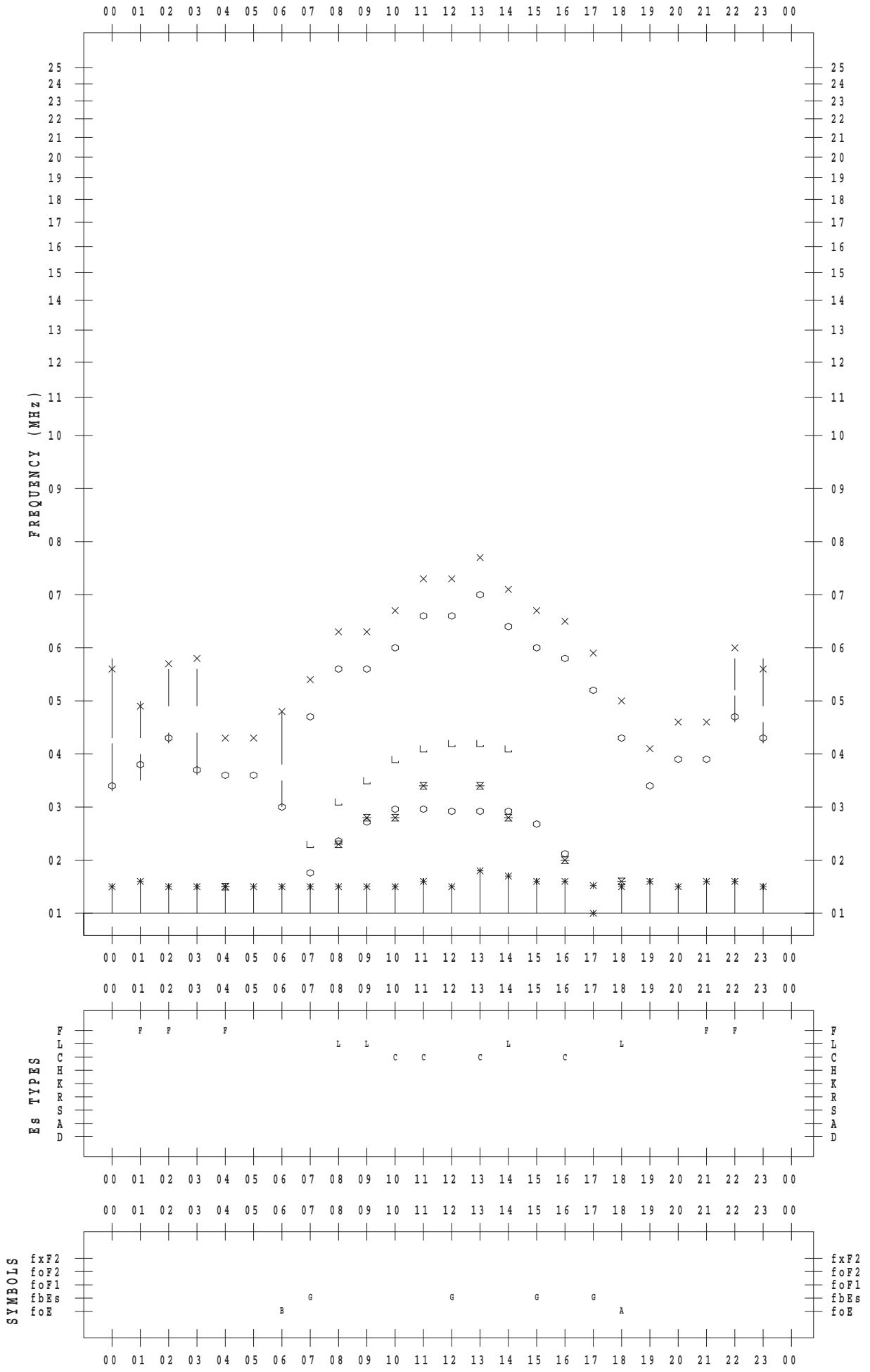
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/22

135 °E MEAN TIME



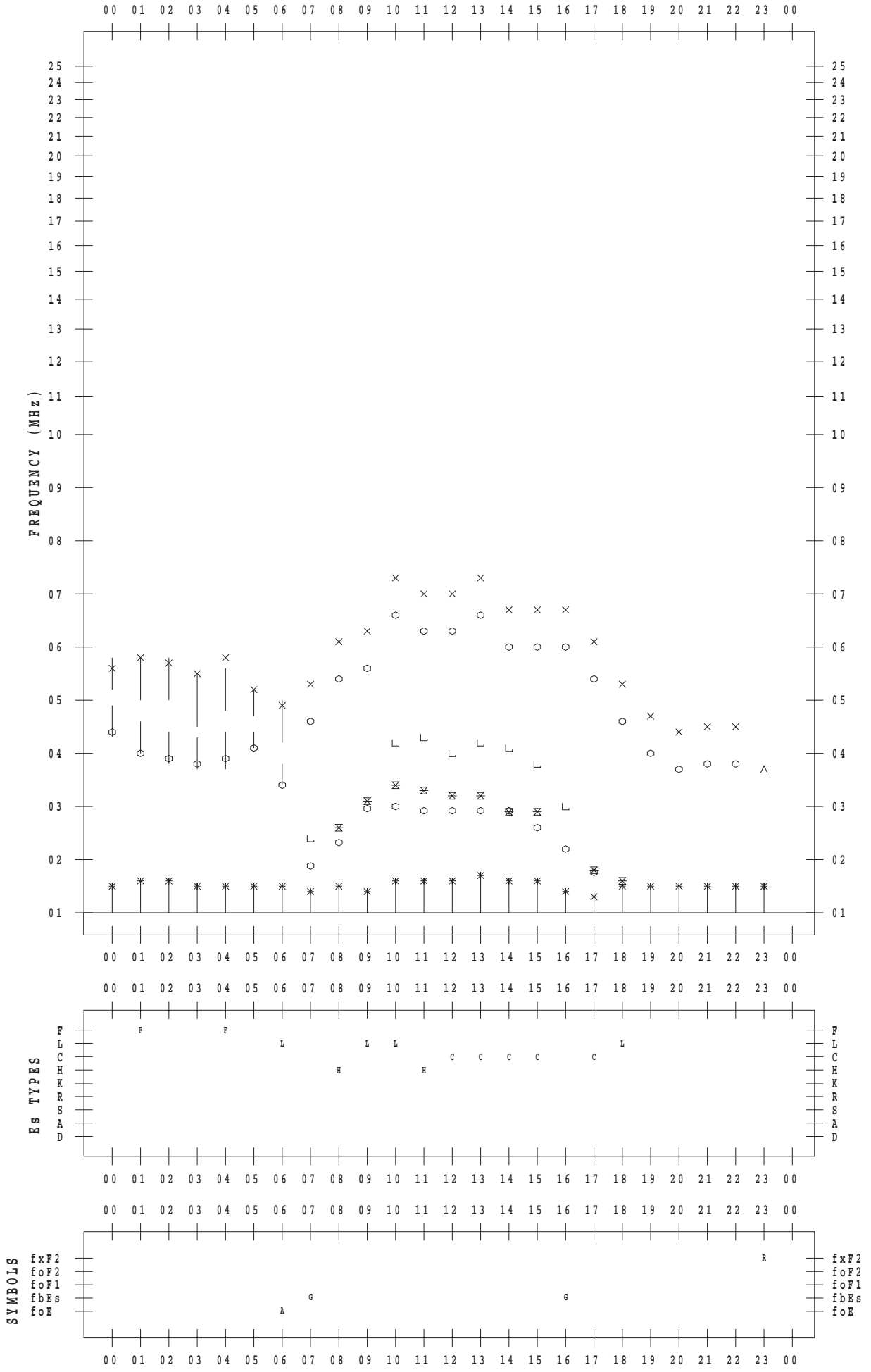
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/23

135 °E MEAN TIME



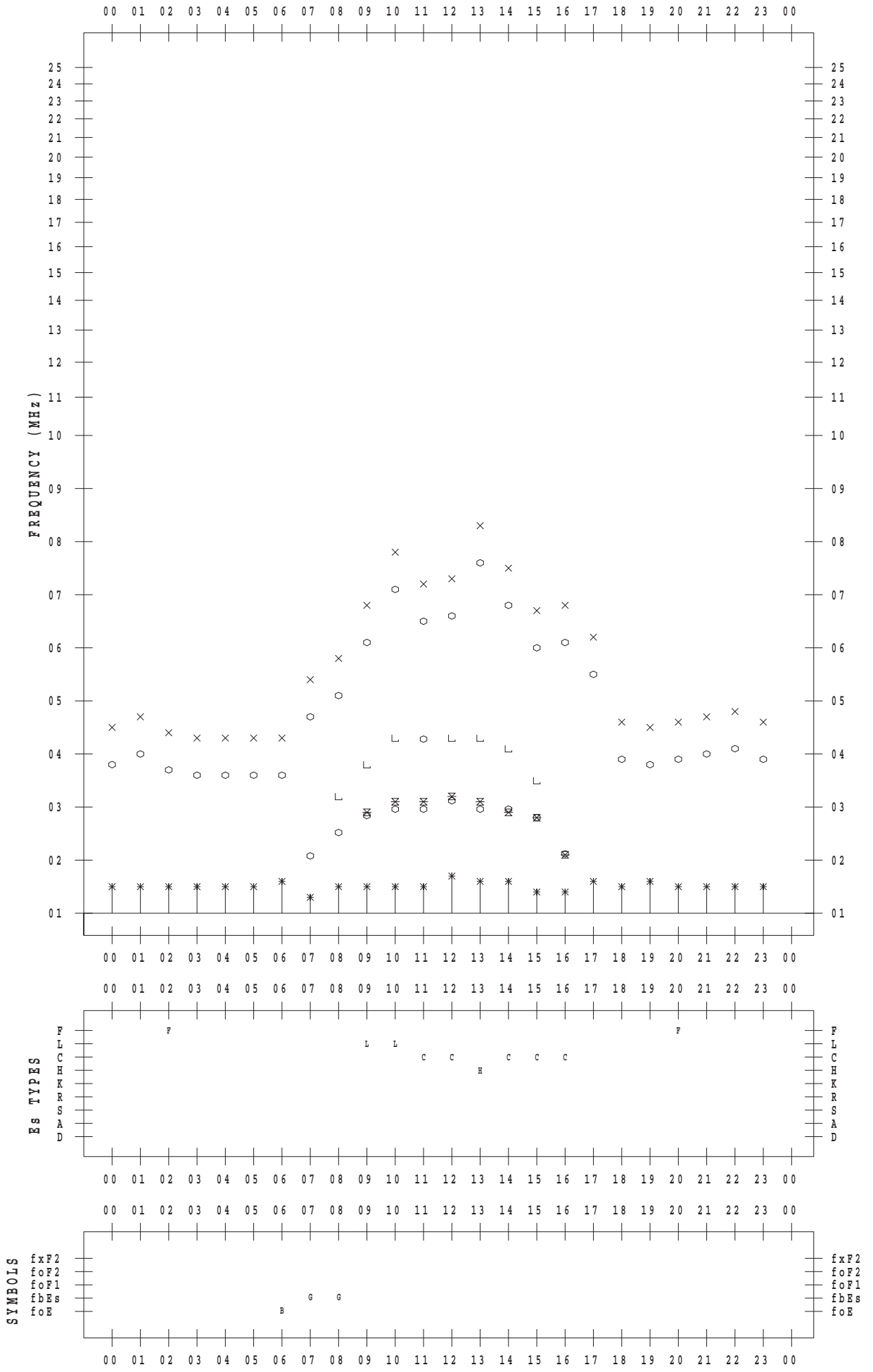
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/24

135 °E MEAN TIME



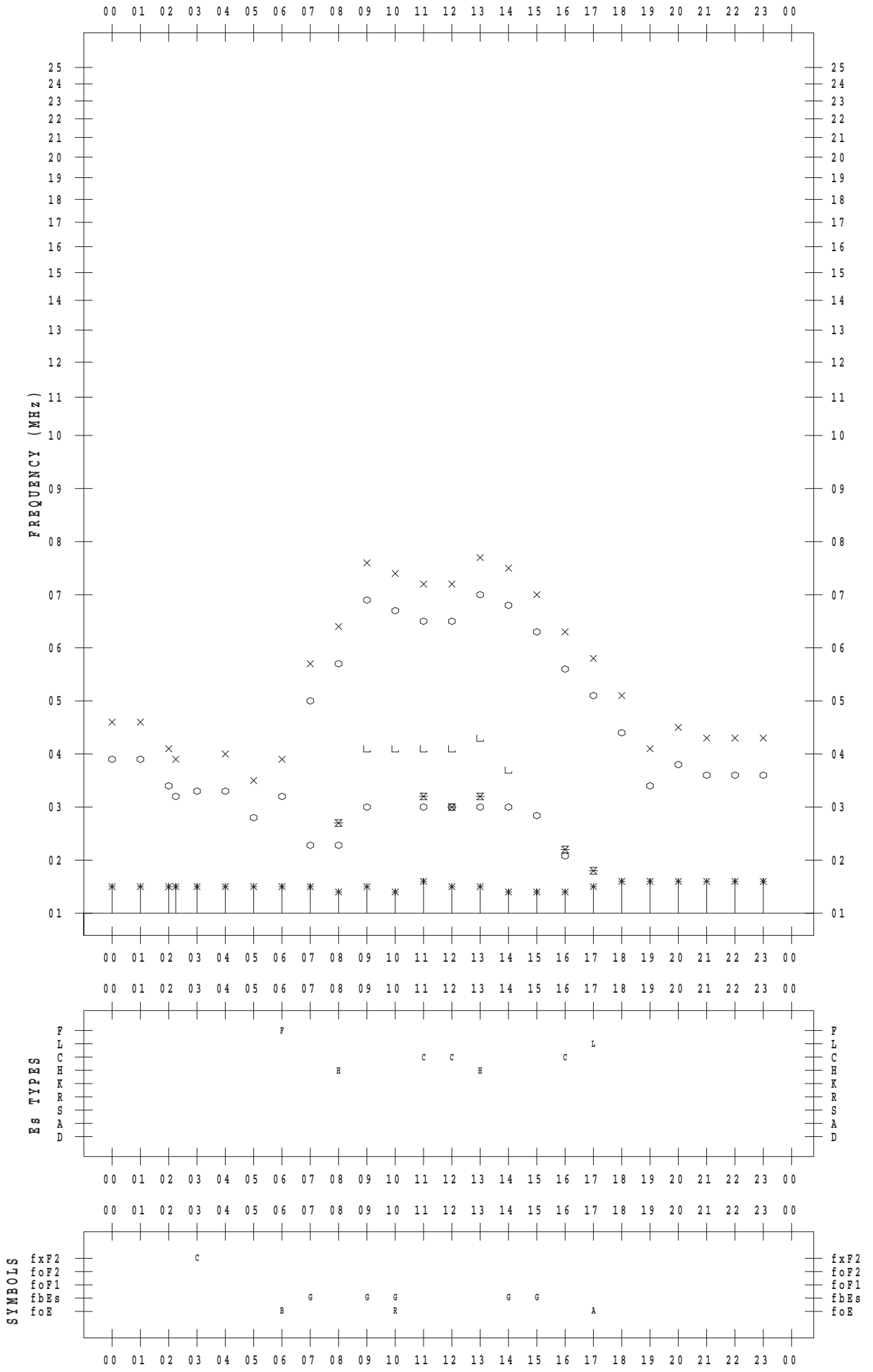
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/25

135 °E MEAN TIME



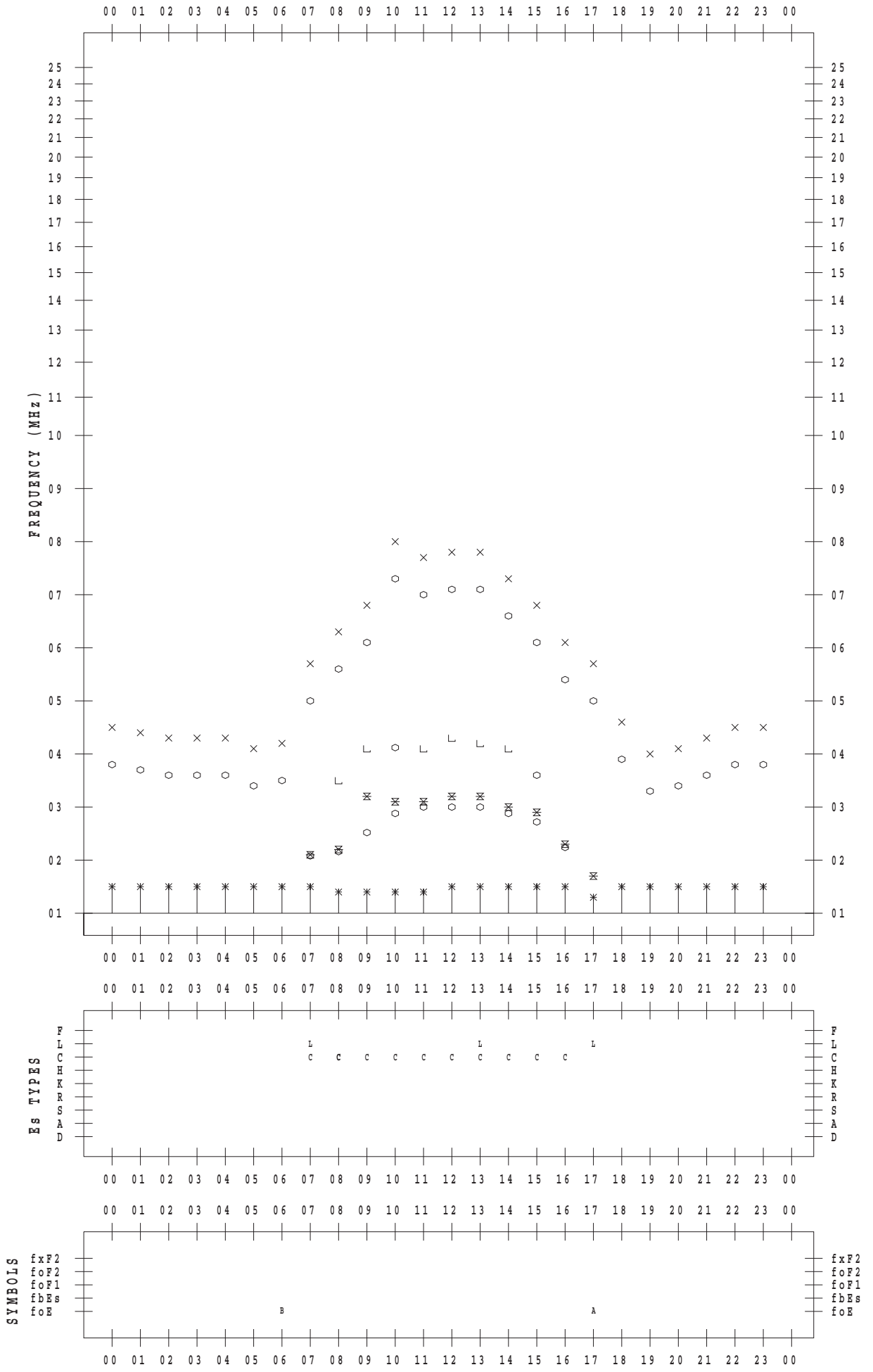
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/26

135 °E MEAN TIME



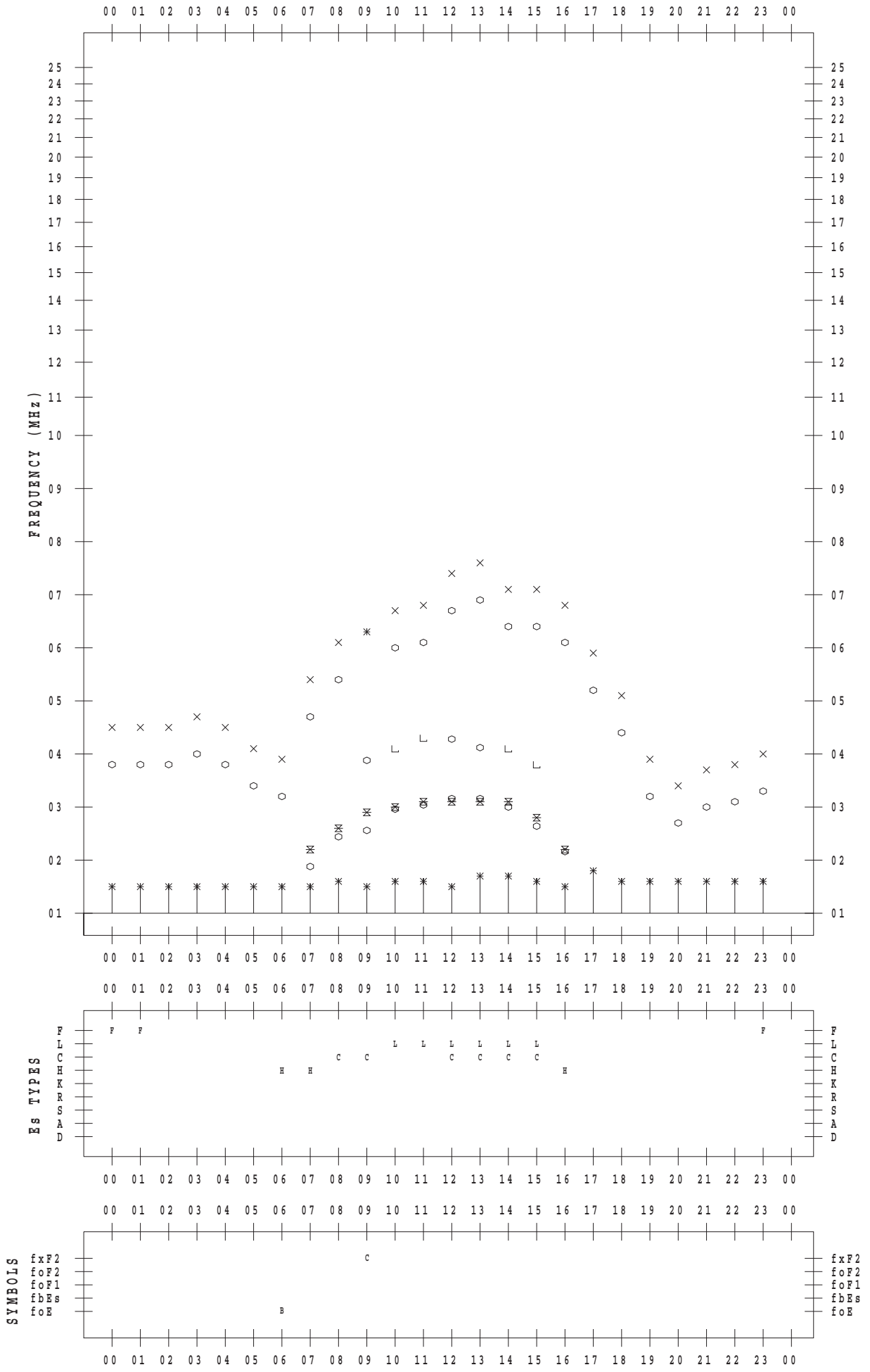
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/27

135 °E MEAN TIME



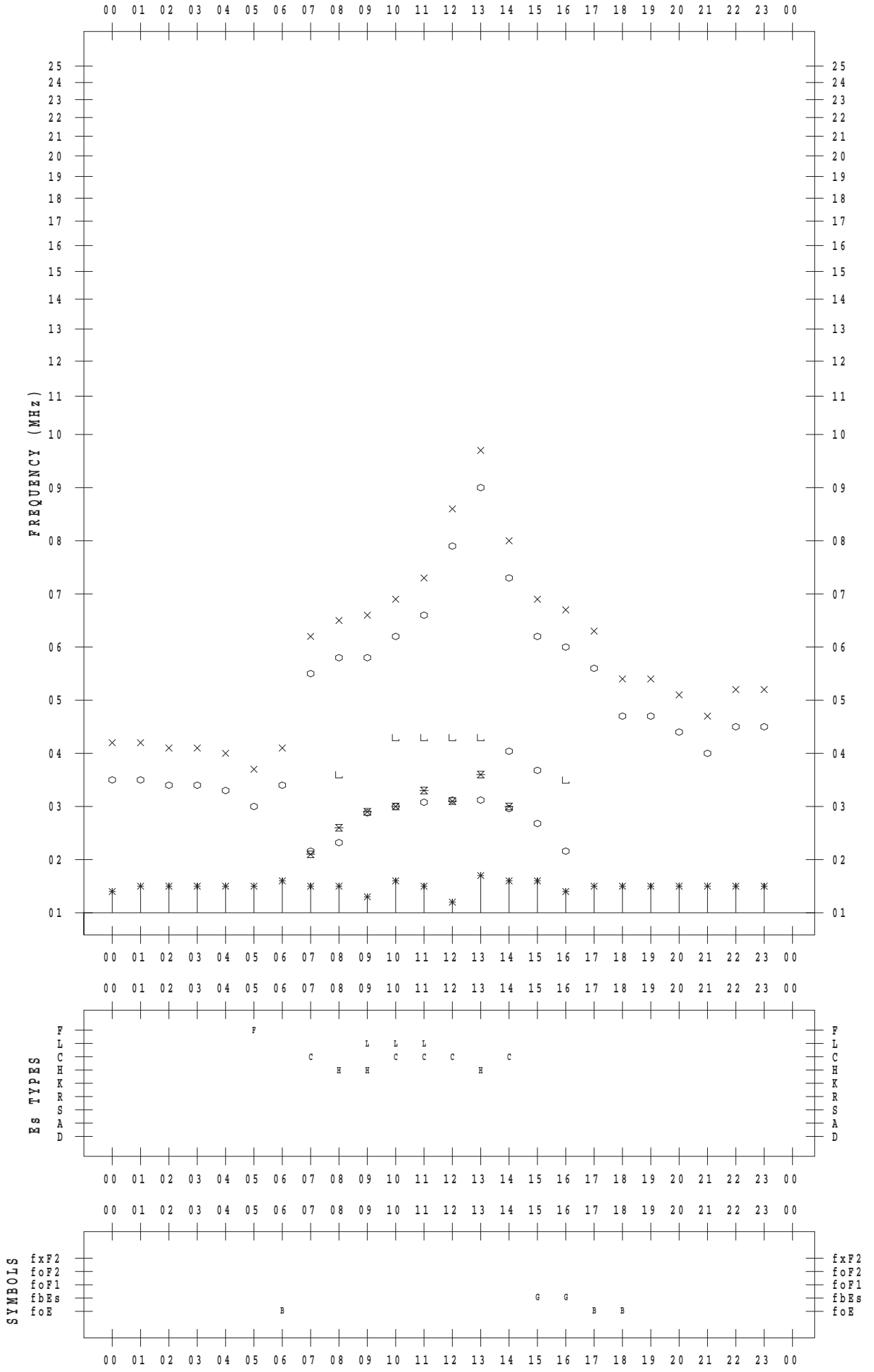
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 2/28

135 °E MEAN TIME



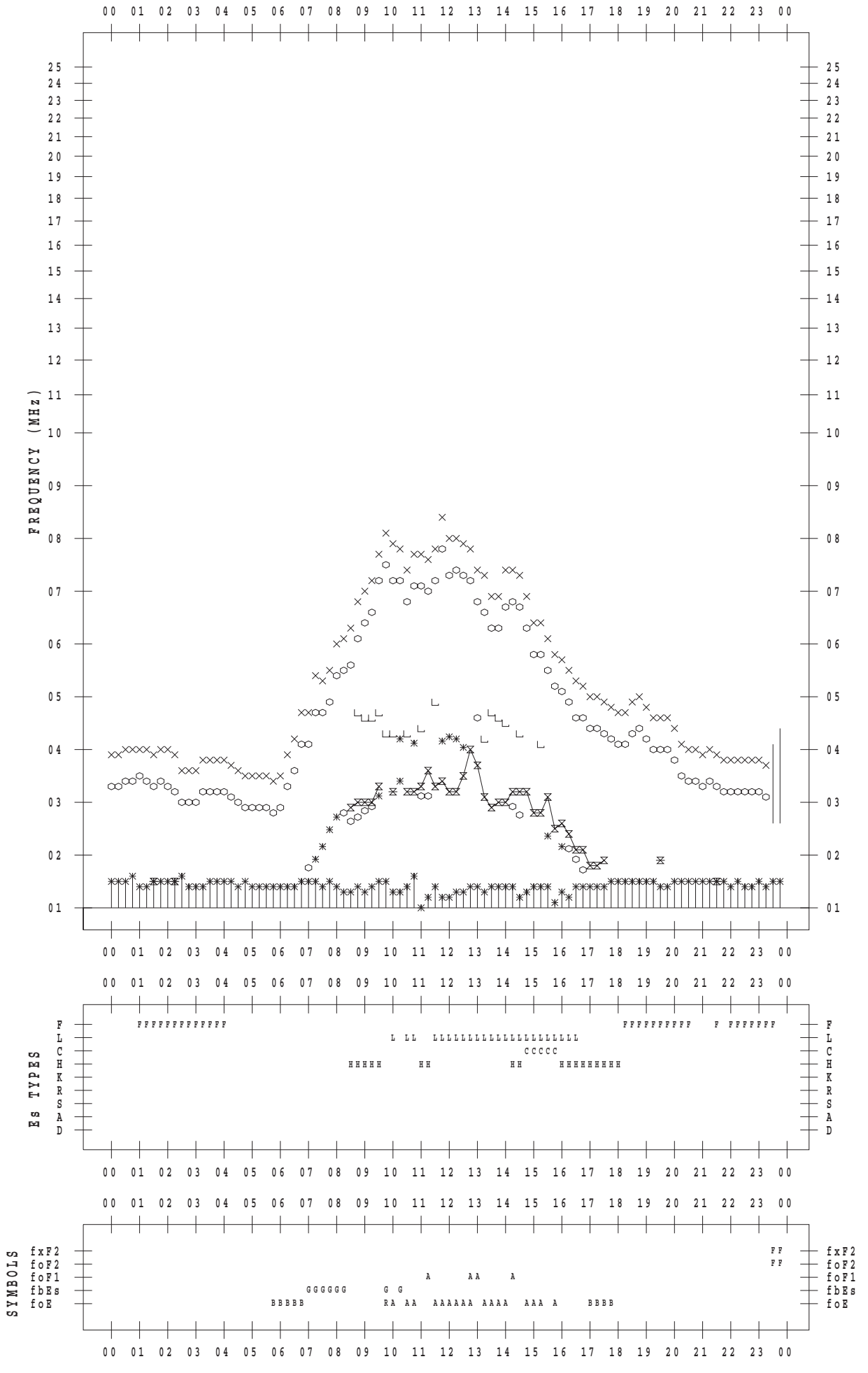
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 1

135 °E MEAN TIME



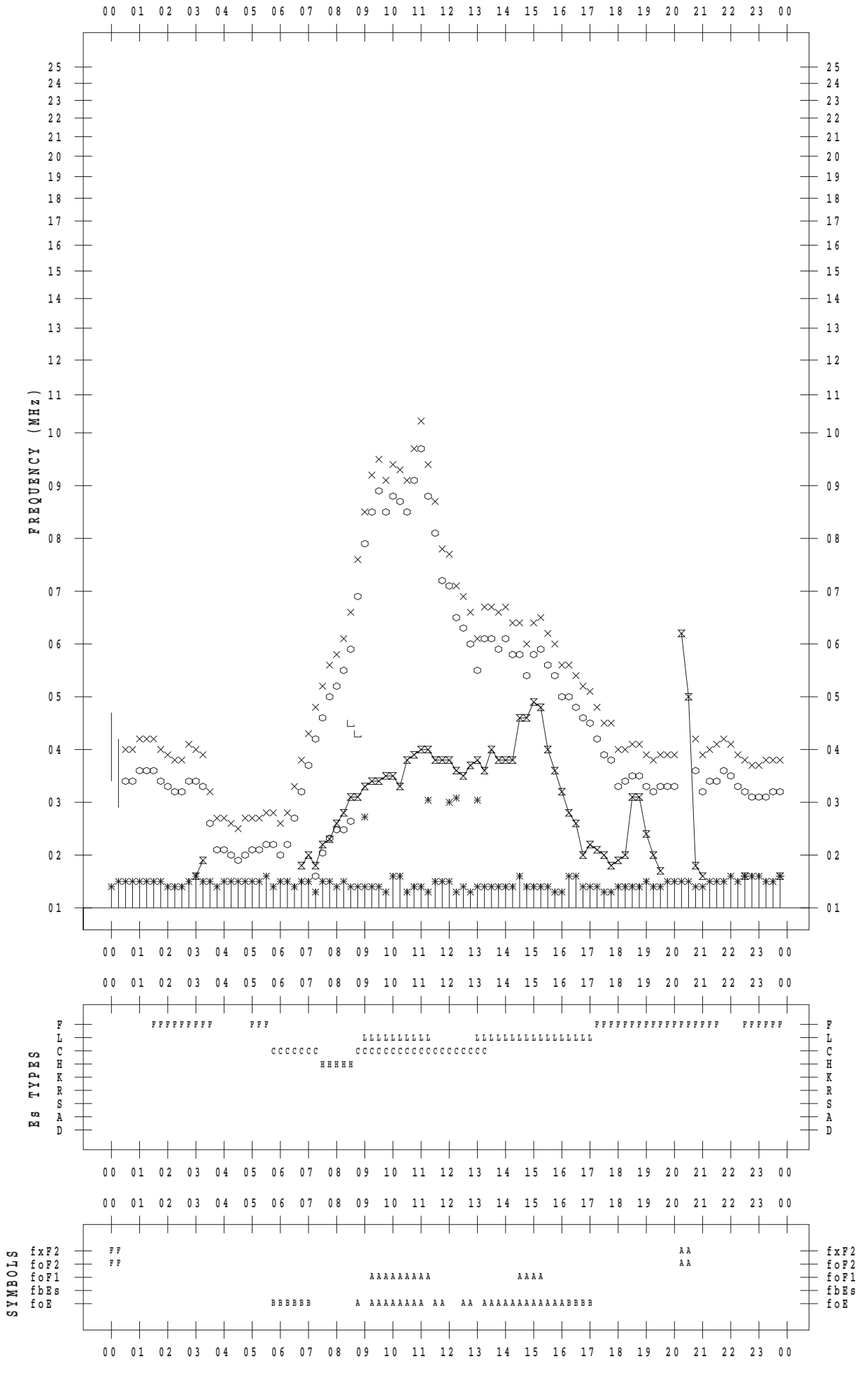
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 2

135 °E MEAN TIME



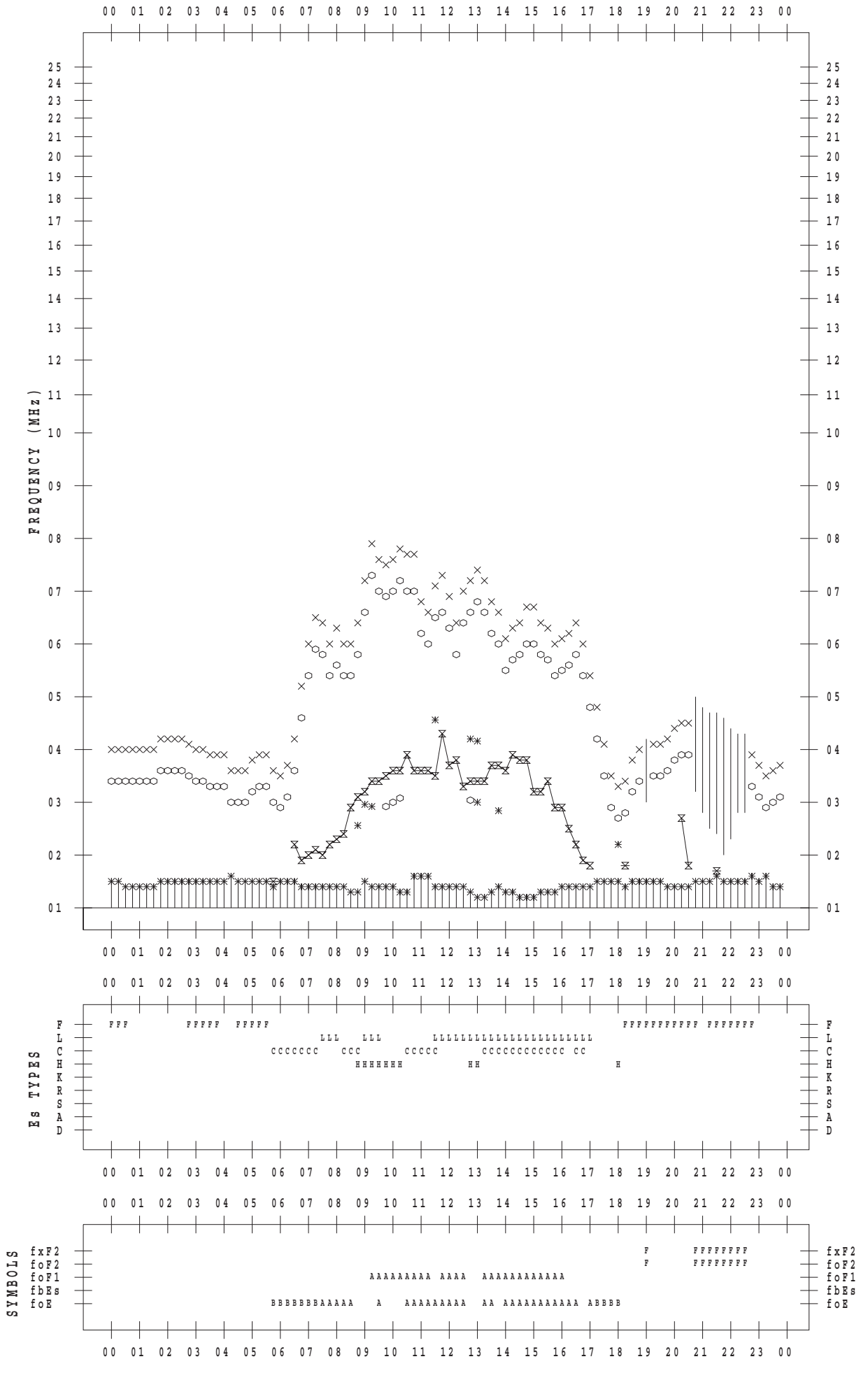
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 3

135 °E MEAN TIME



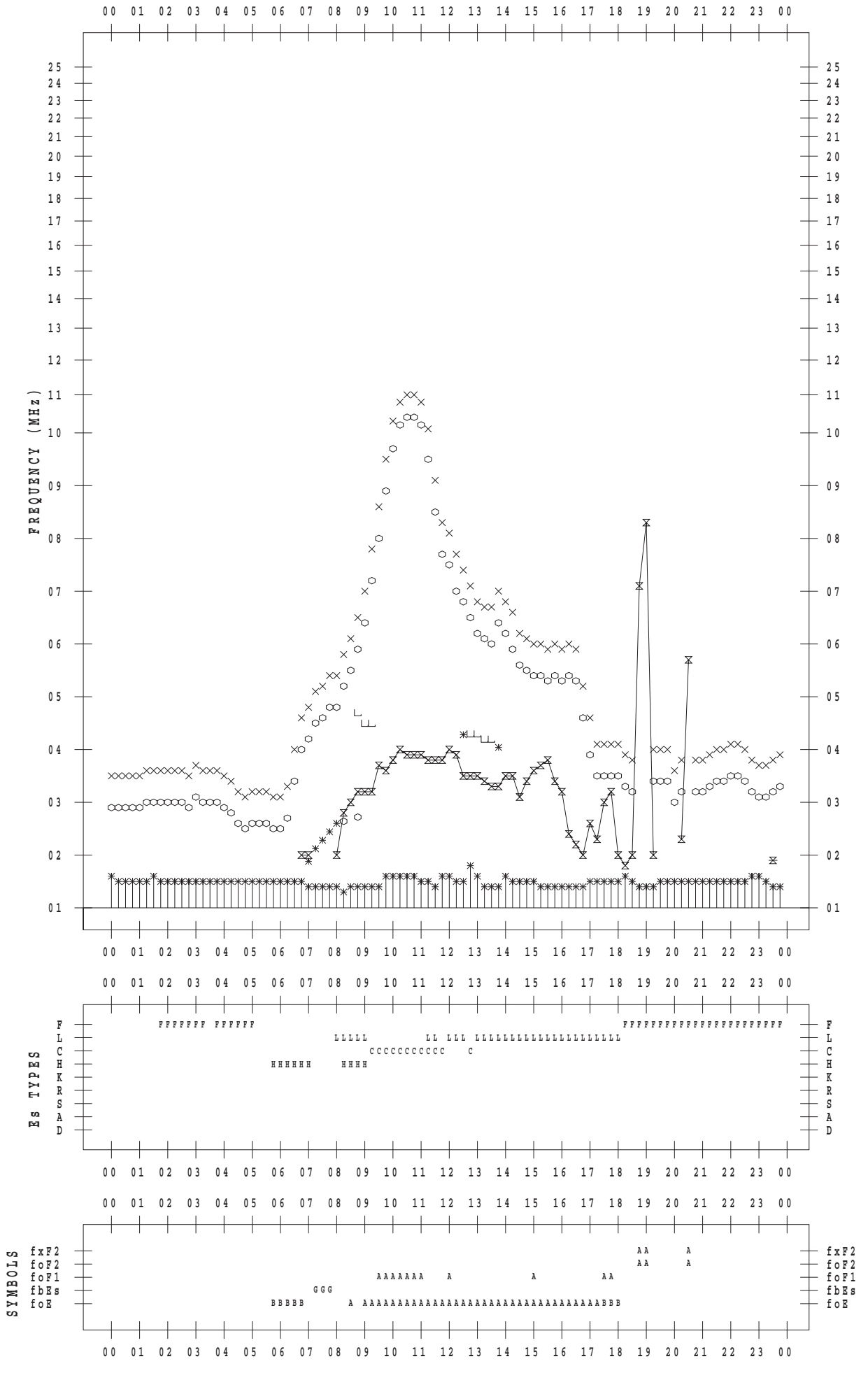
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 4

135 °E MEAN TIME



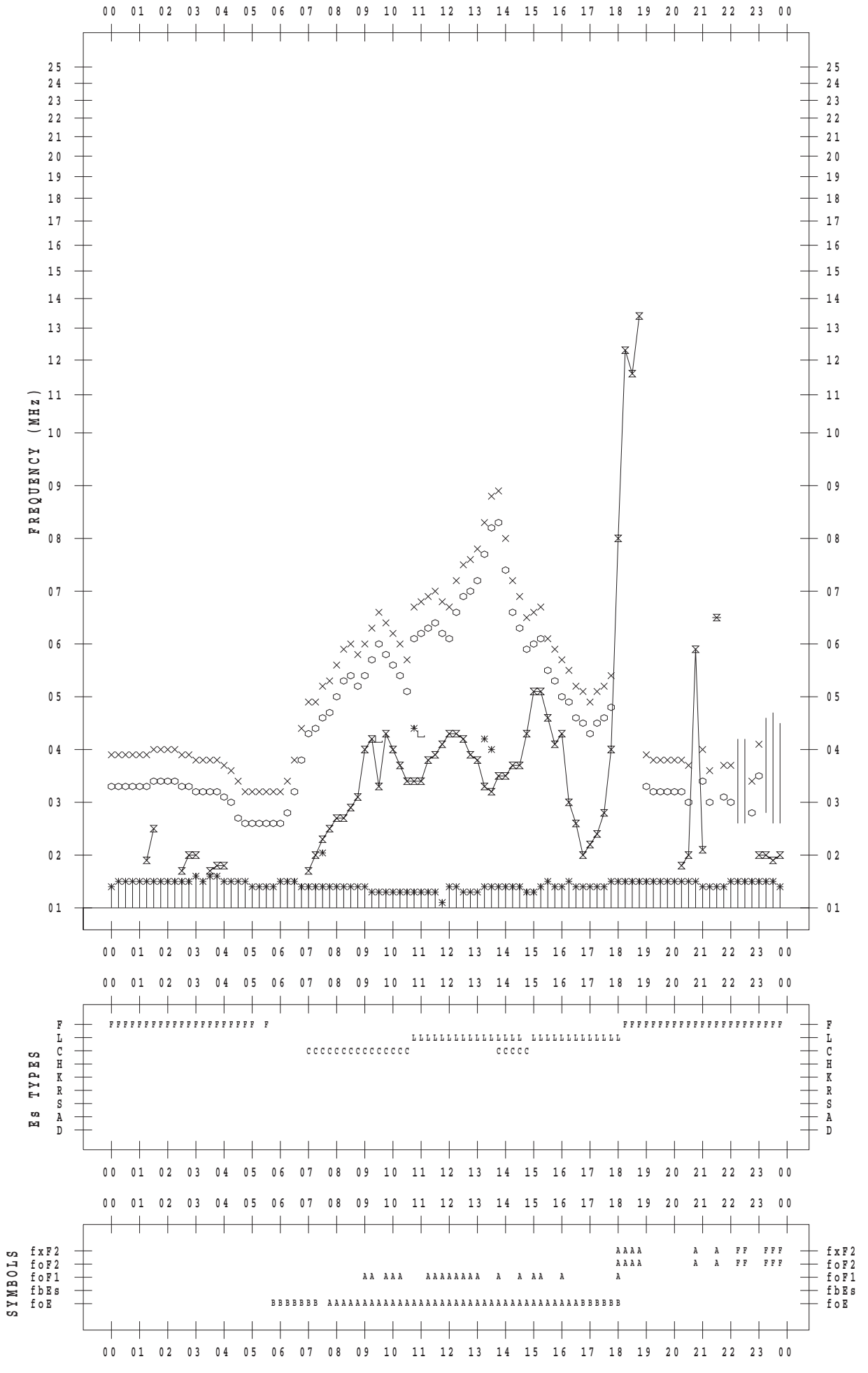
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 5

135 °E MEAN TIME



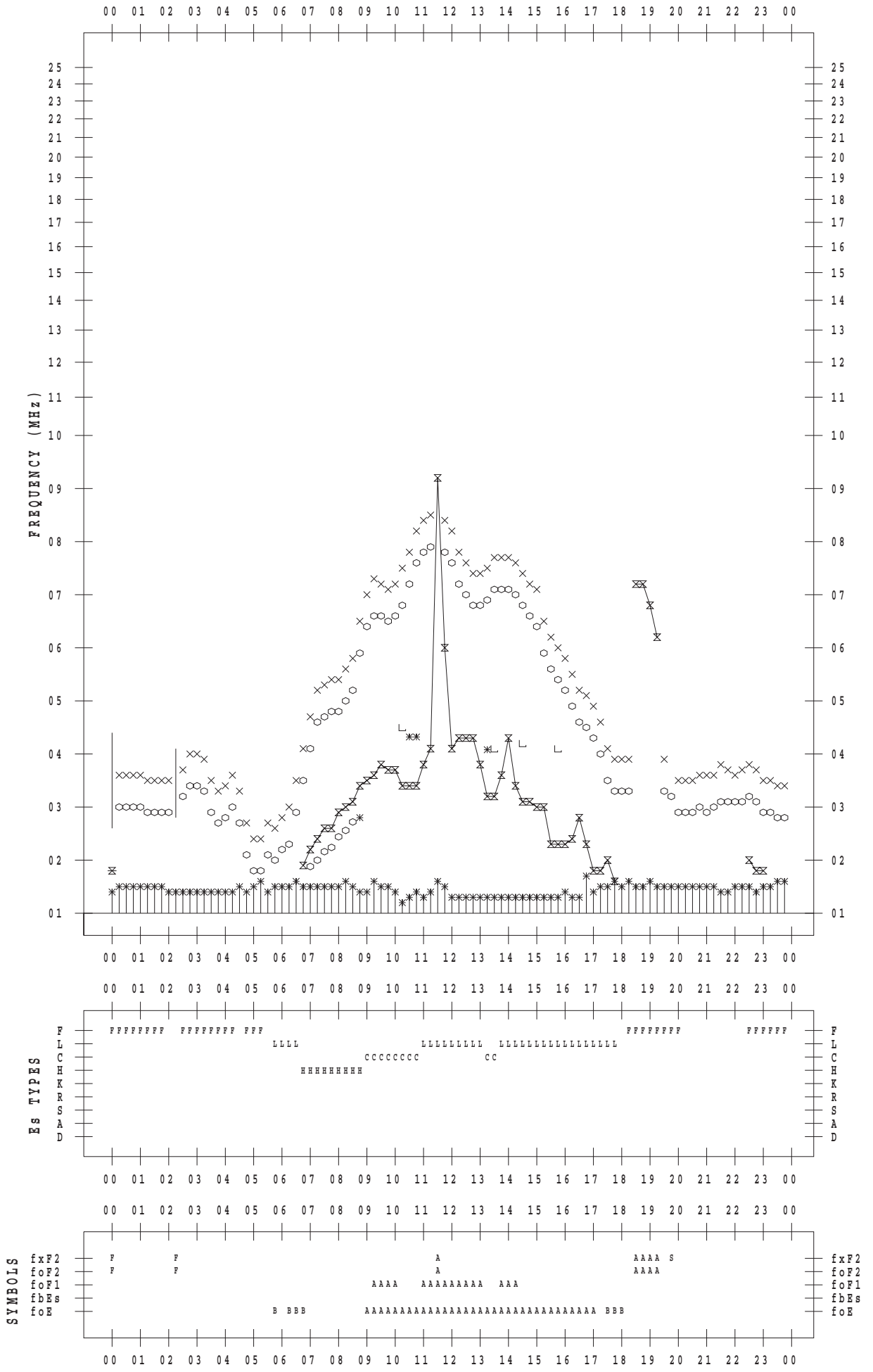
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 6

135 °E MEAN TIME



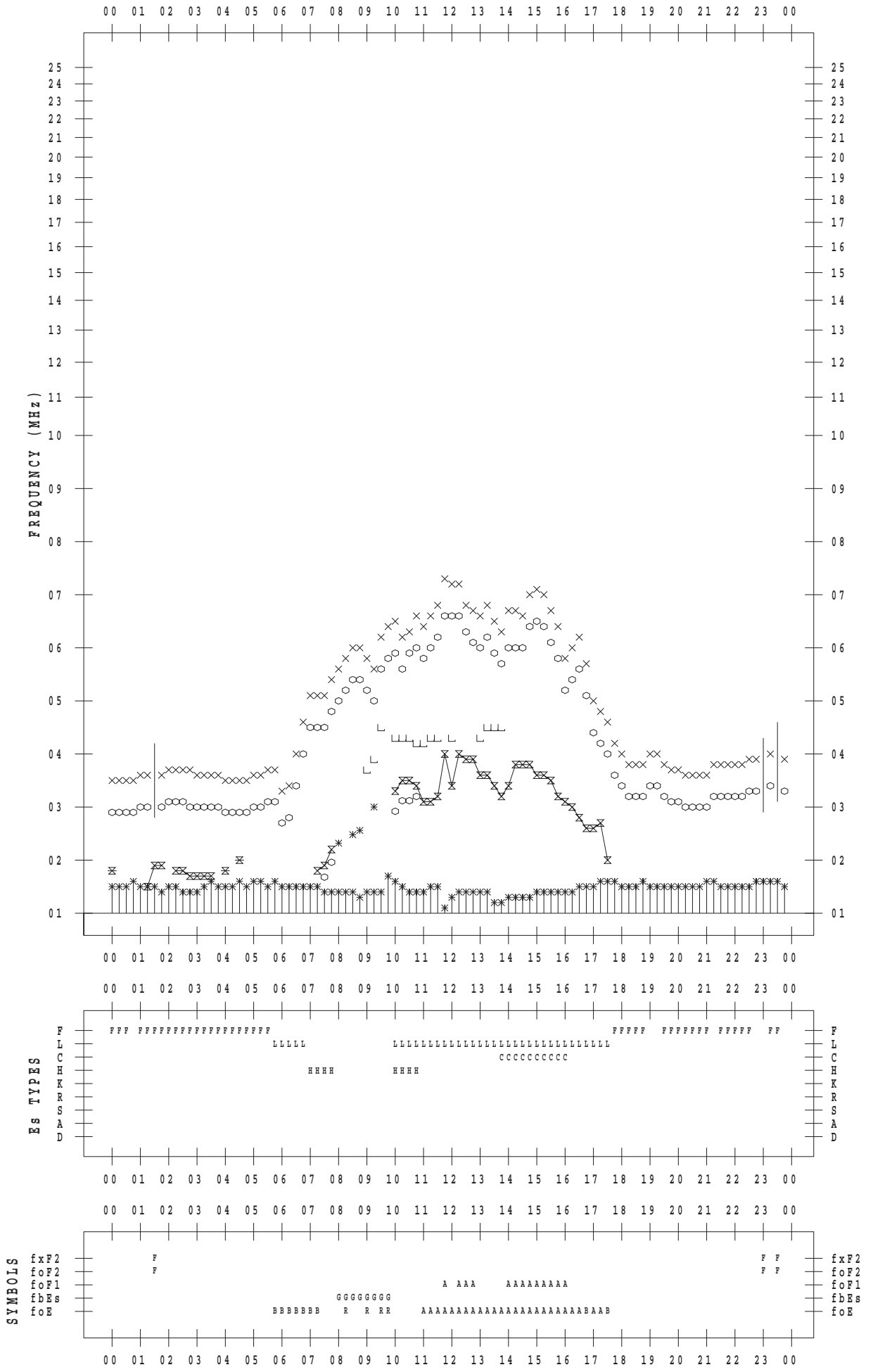
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 7

135 °E MEAN TIME



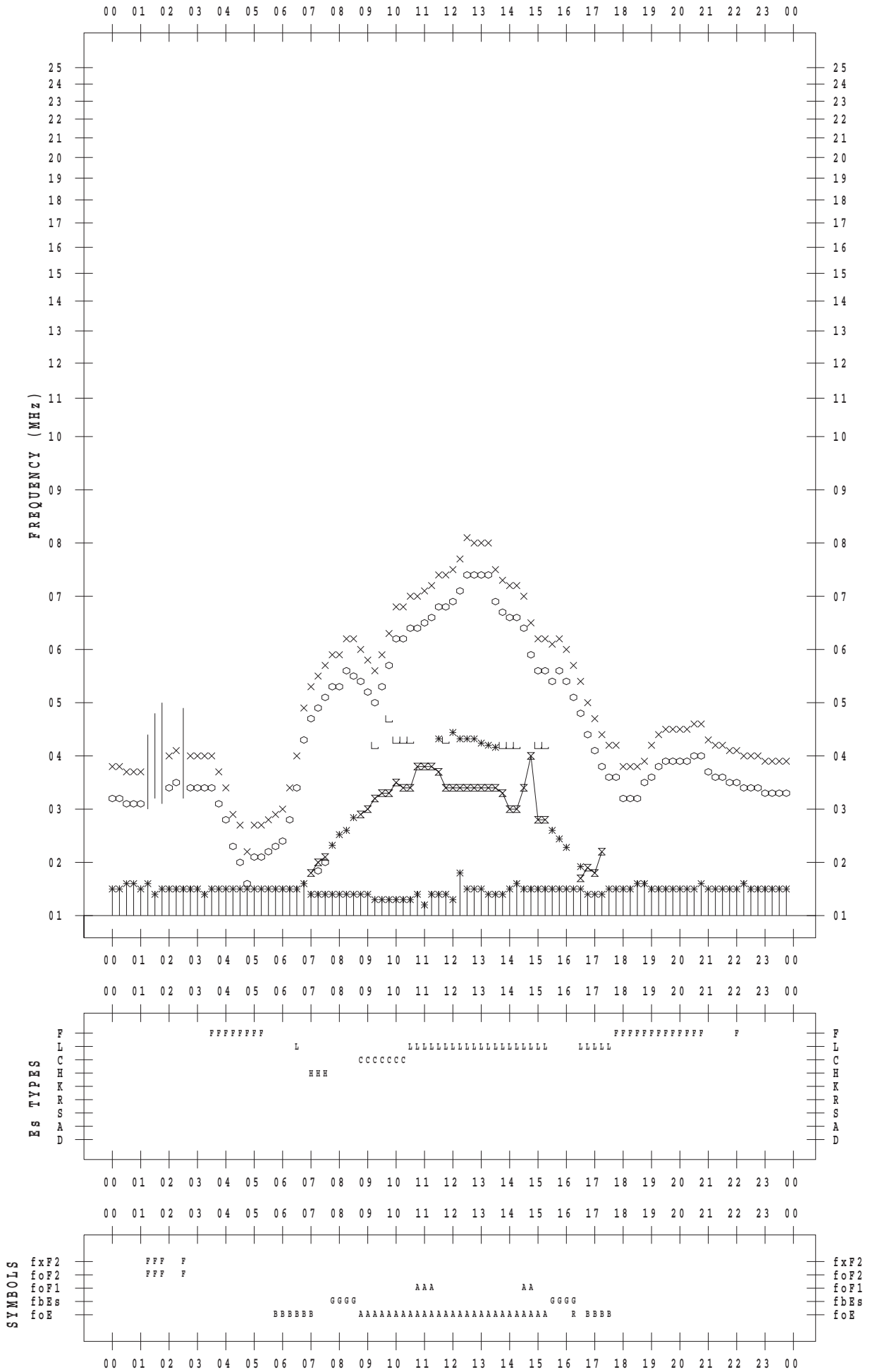
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 8

135 °E MEAN TIME



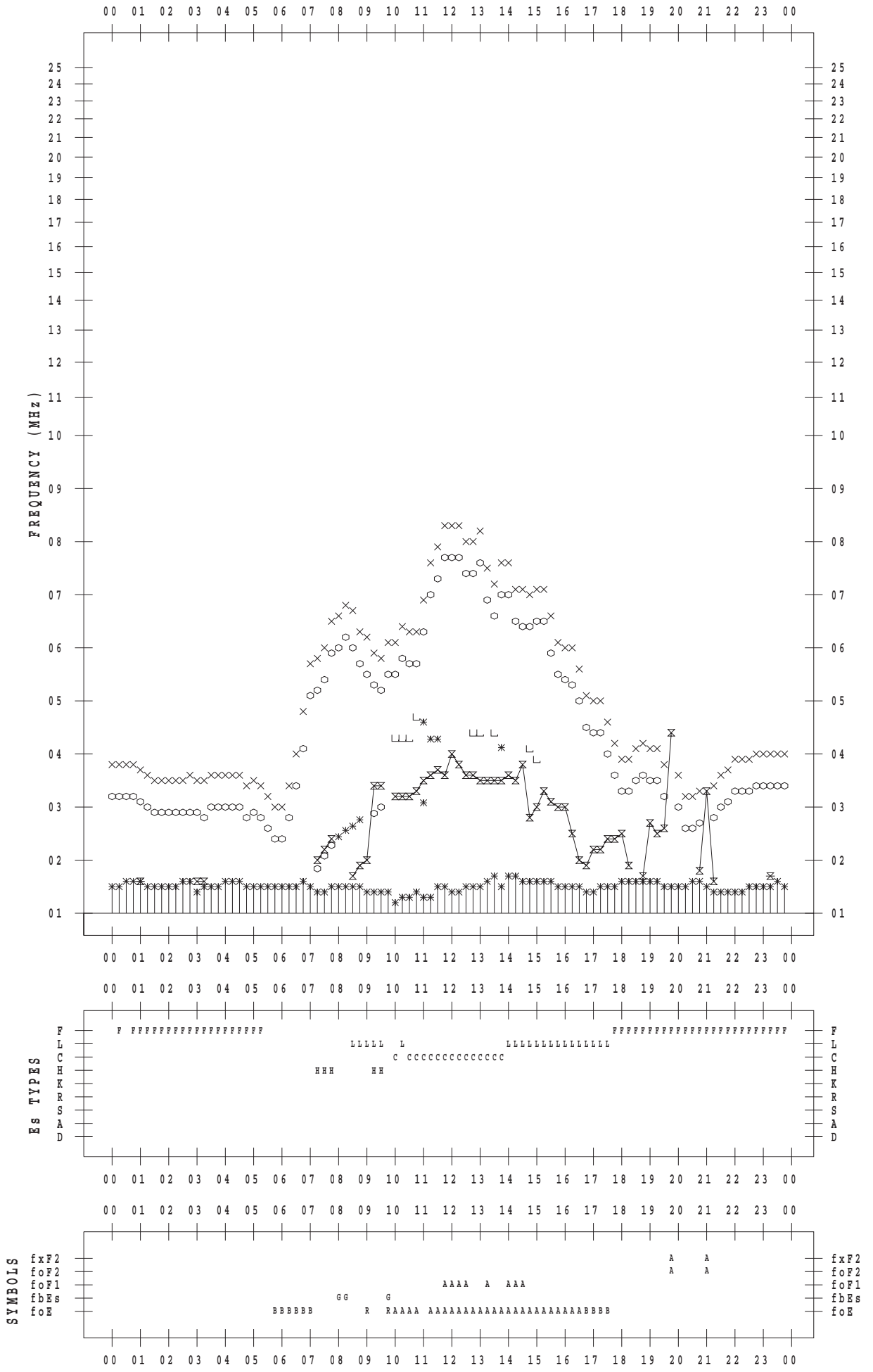
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/ 9

135 °E MEAN TIME



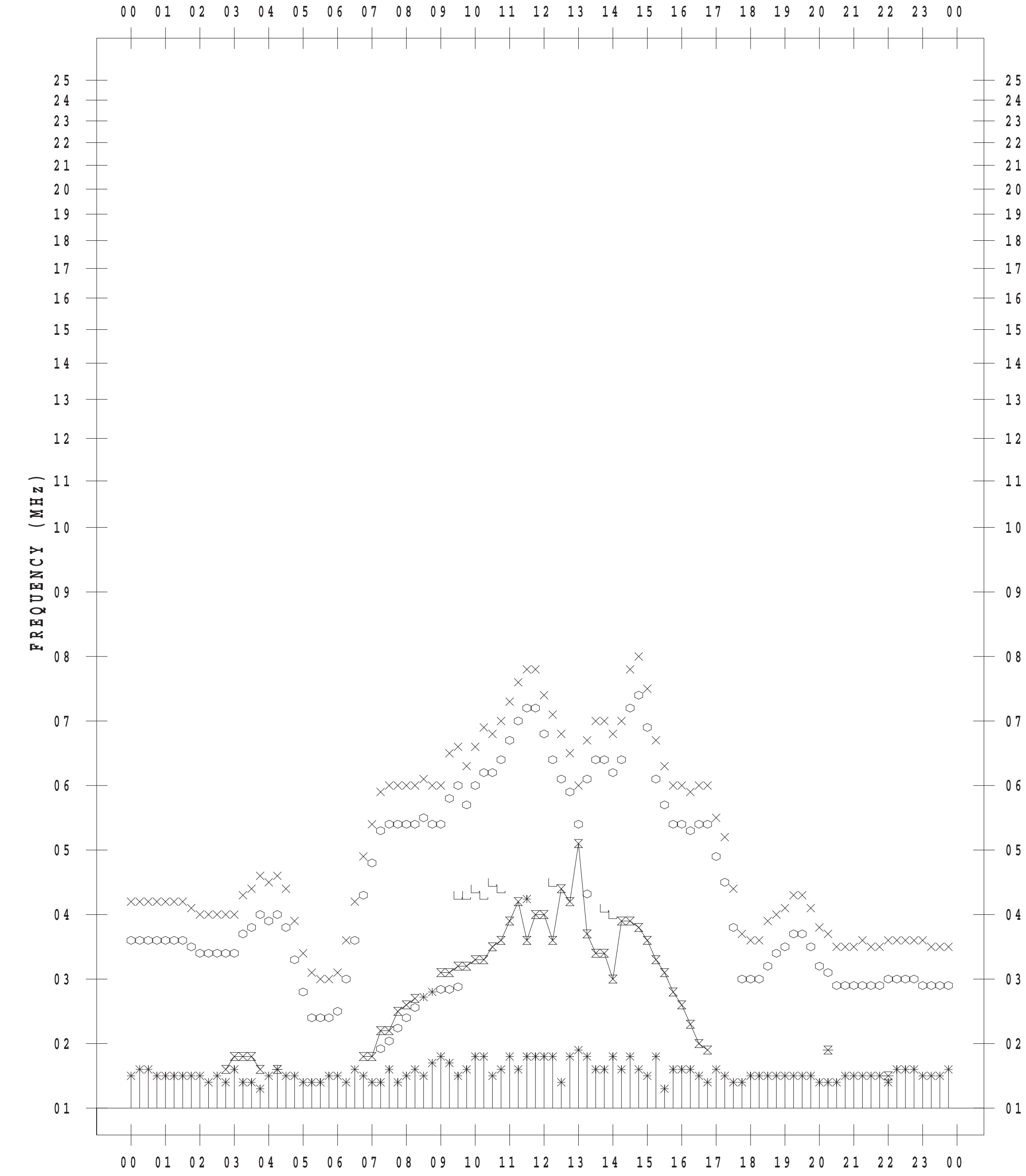
f-PLOT DATA

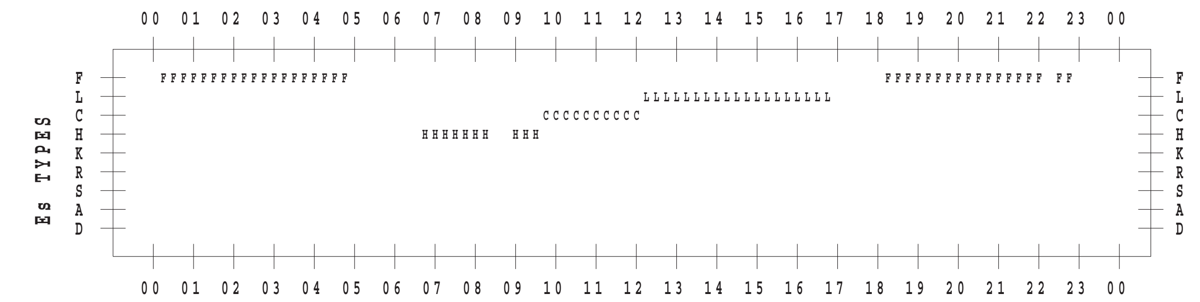
SCALER : I.NISHIMUTA

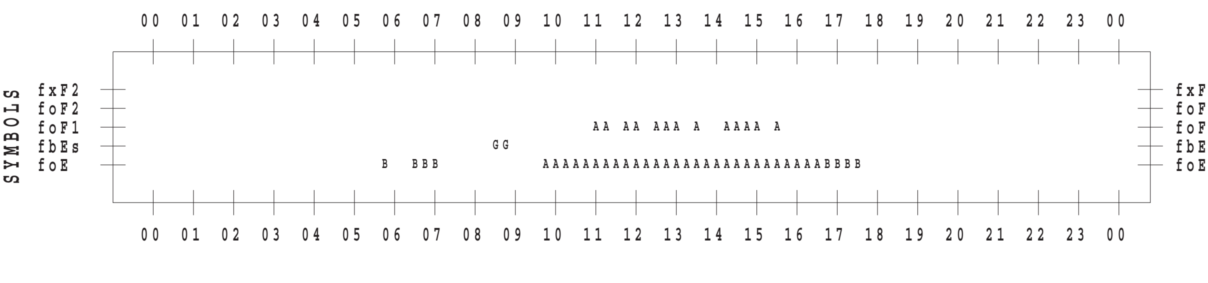
STATION : Kokubunji

DATE : 2017/ 2/10

135 °E MEAN TIME







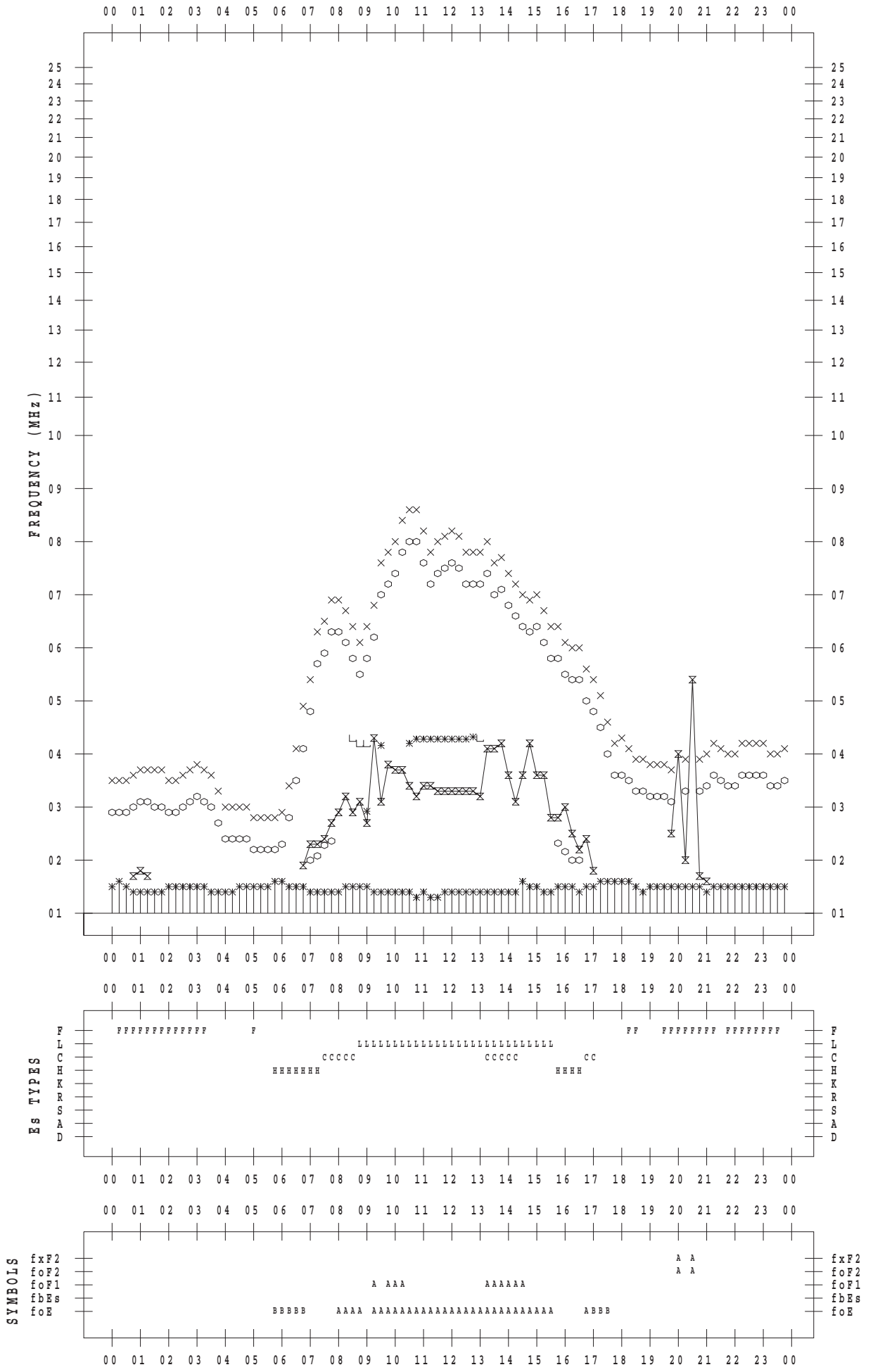
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/11

135 °E MEAN TIME



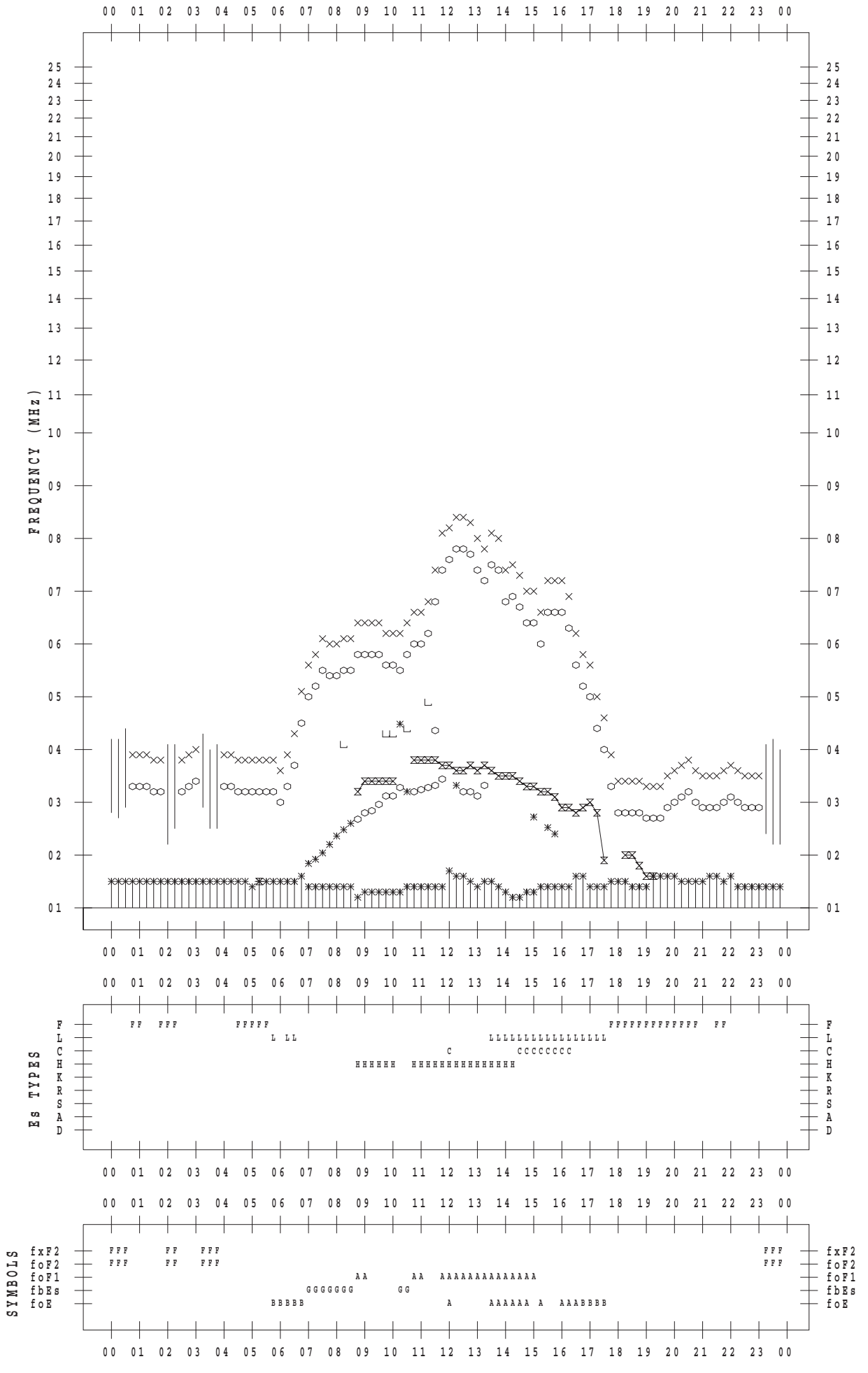
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/12

135 °E MEAN TIME



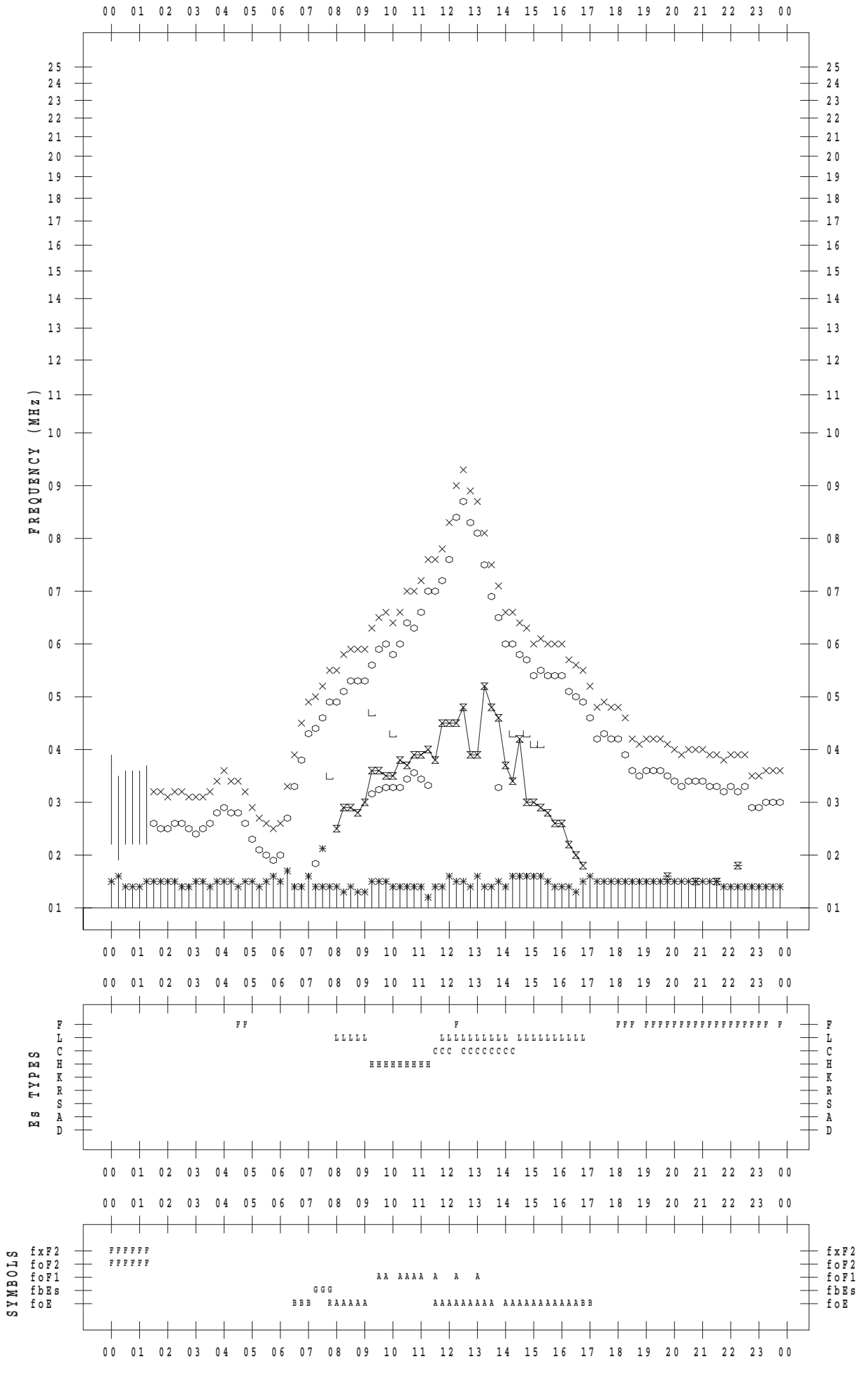
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/13

135 °E MEAN TIME



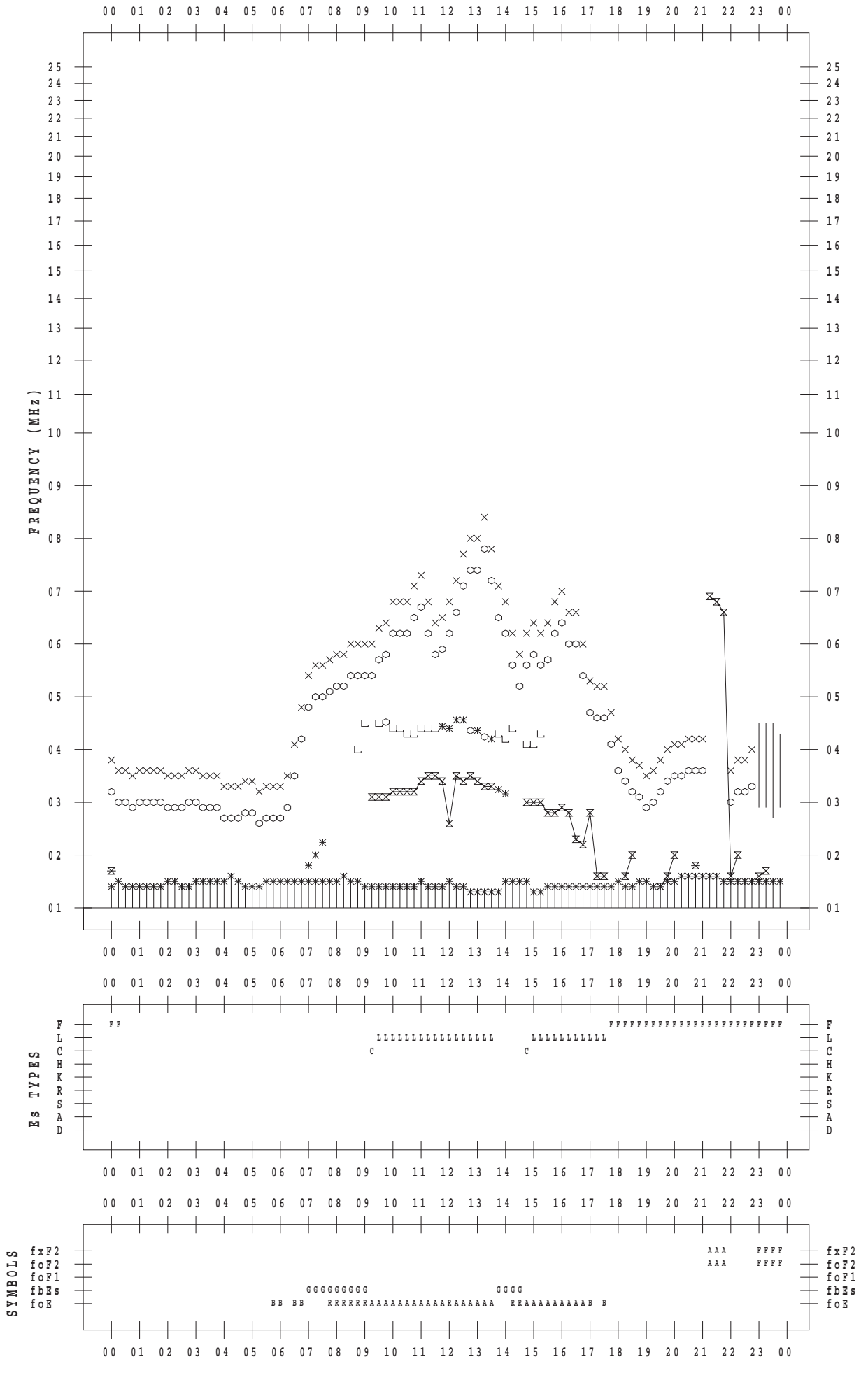
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/14

135 °E MEAN TIME



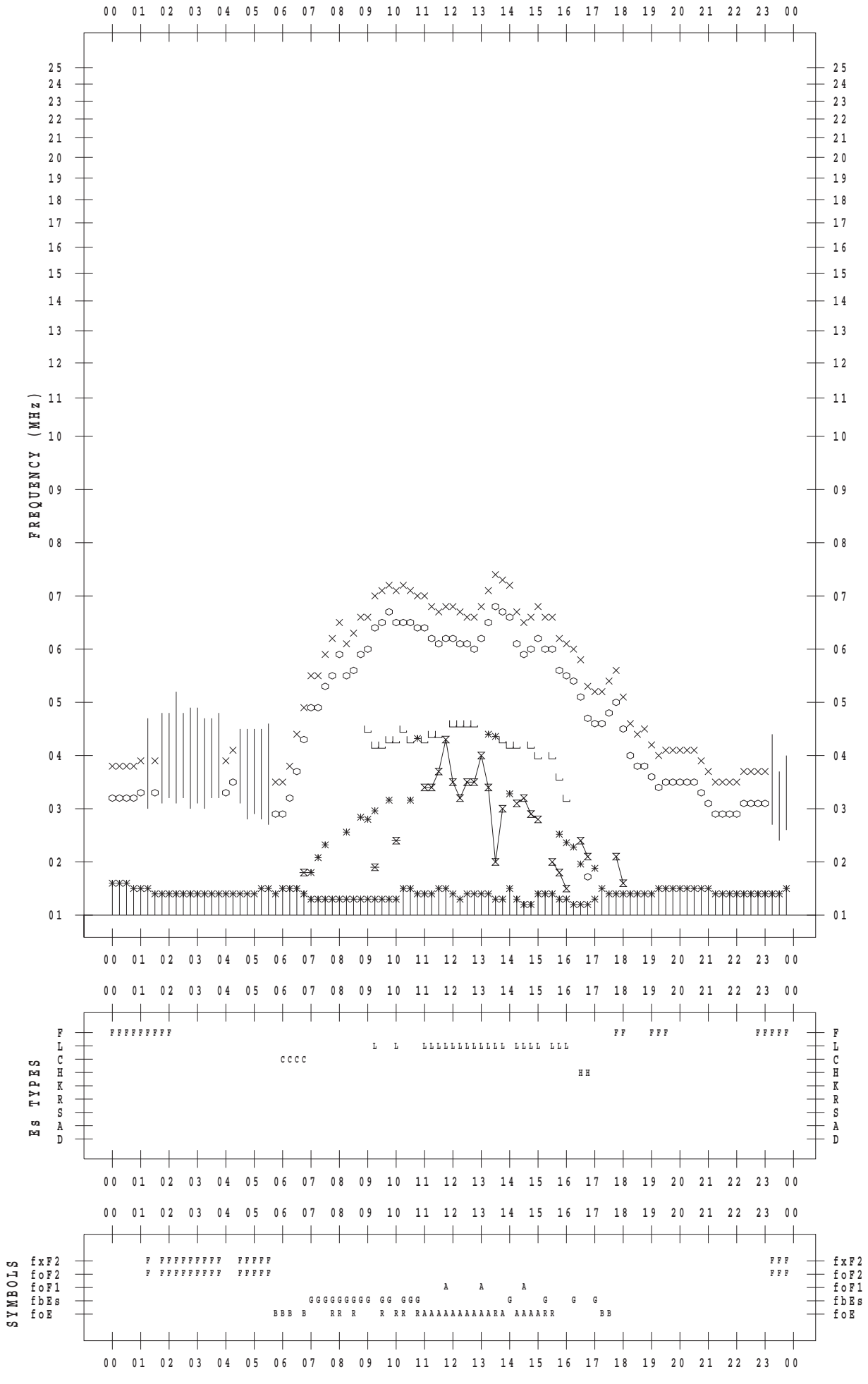
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/15

135 °E MEAN TIME



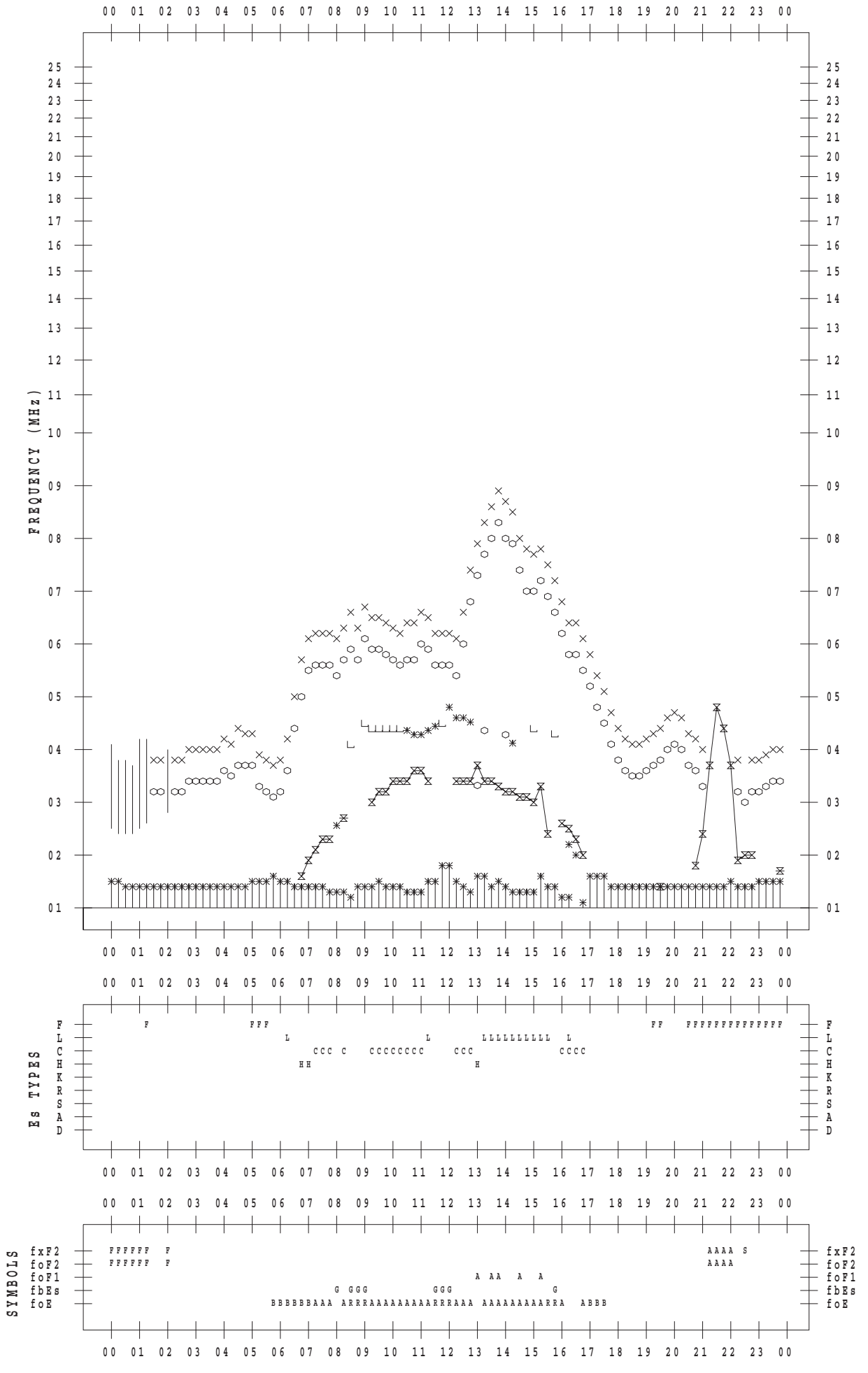
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/16

135 °E MEAN TIME



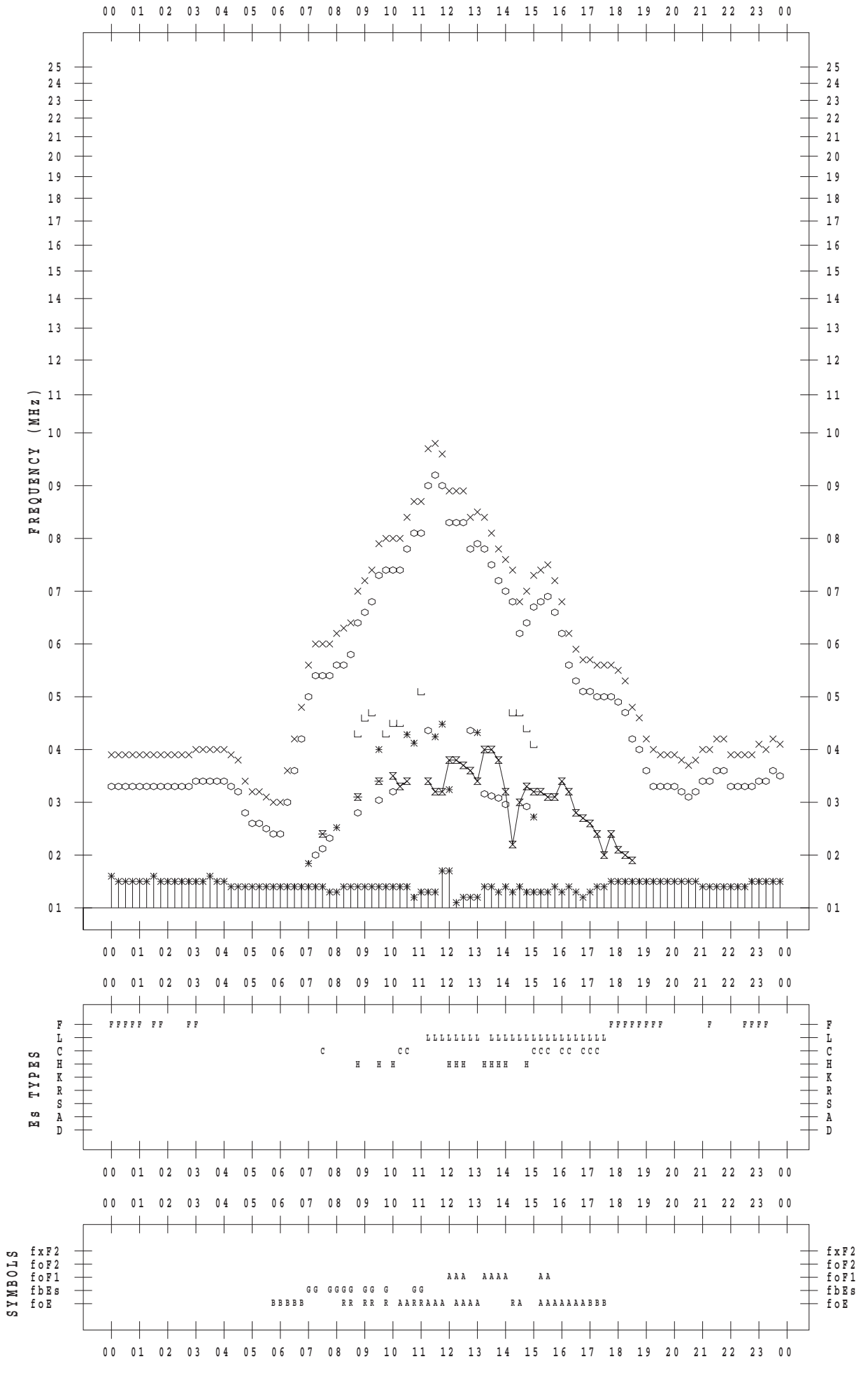
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/17

135 °E MEAN TIME



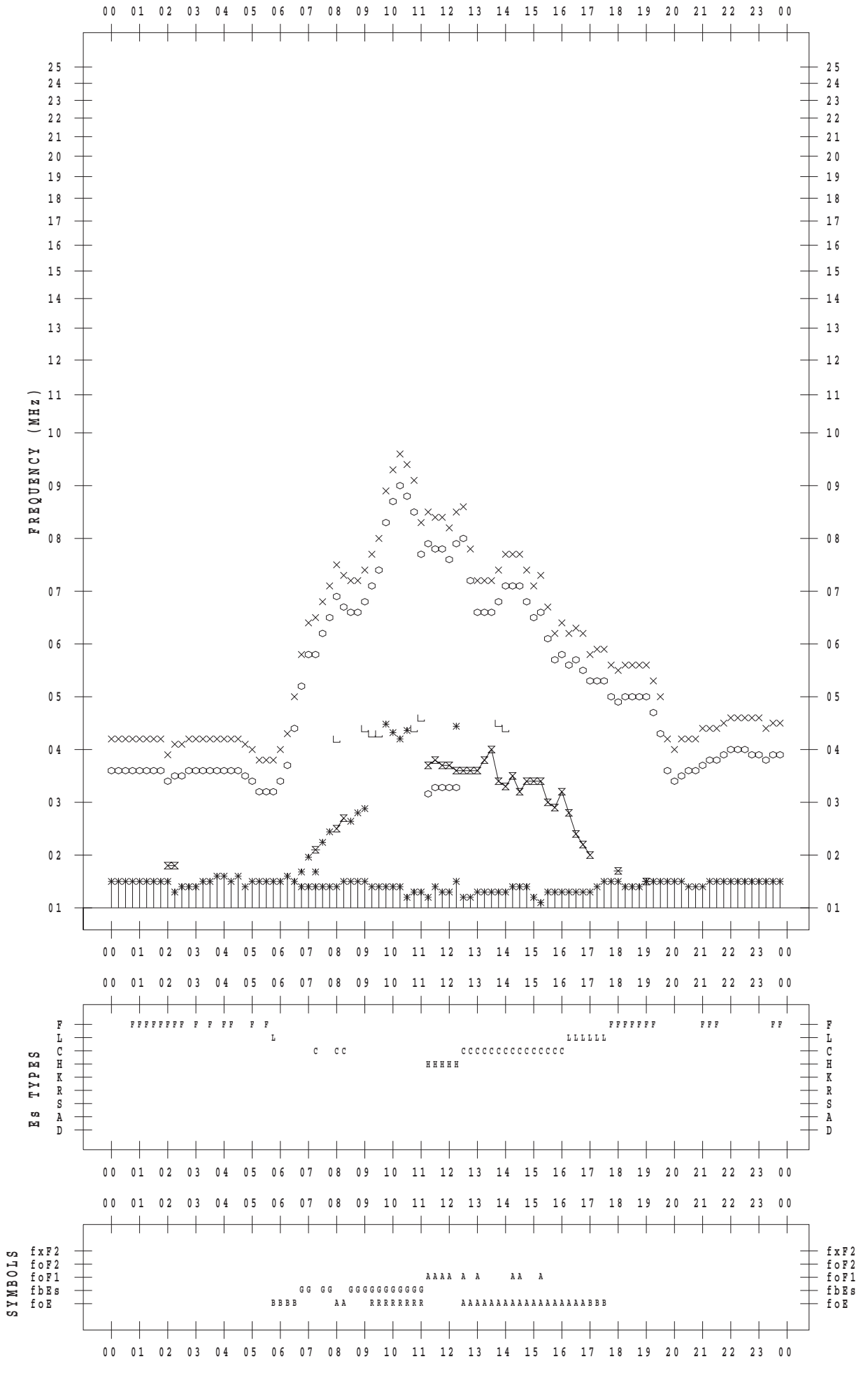
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/18

135 °E MEAN TIME



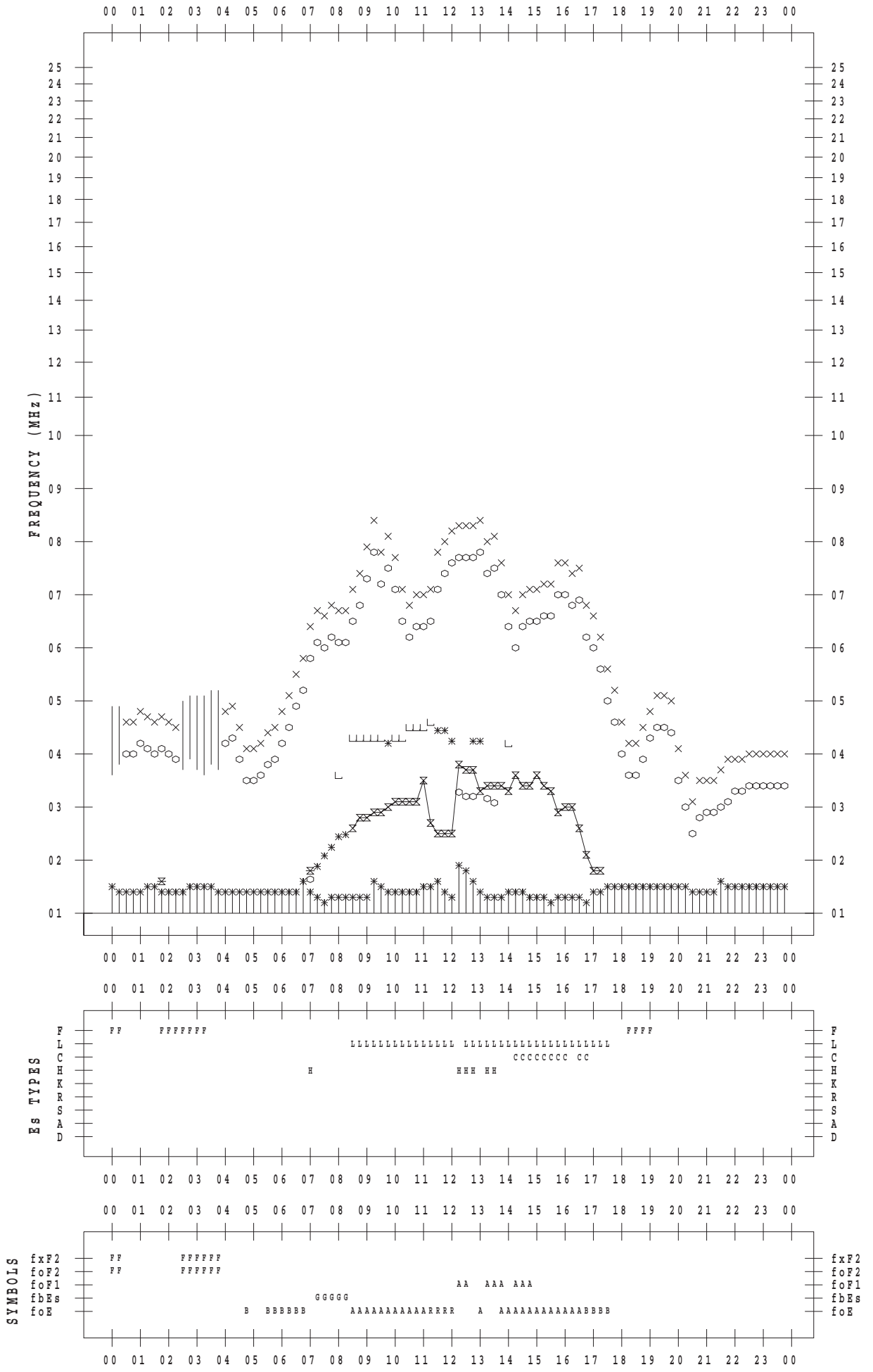
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/19

135 °E MEAN TIME



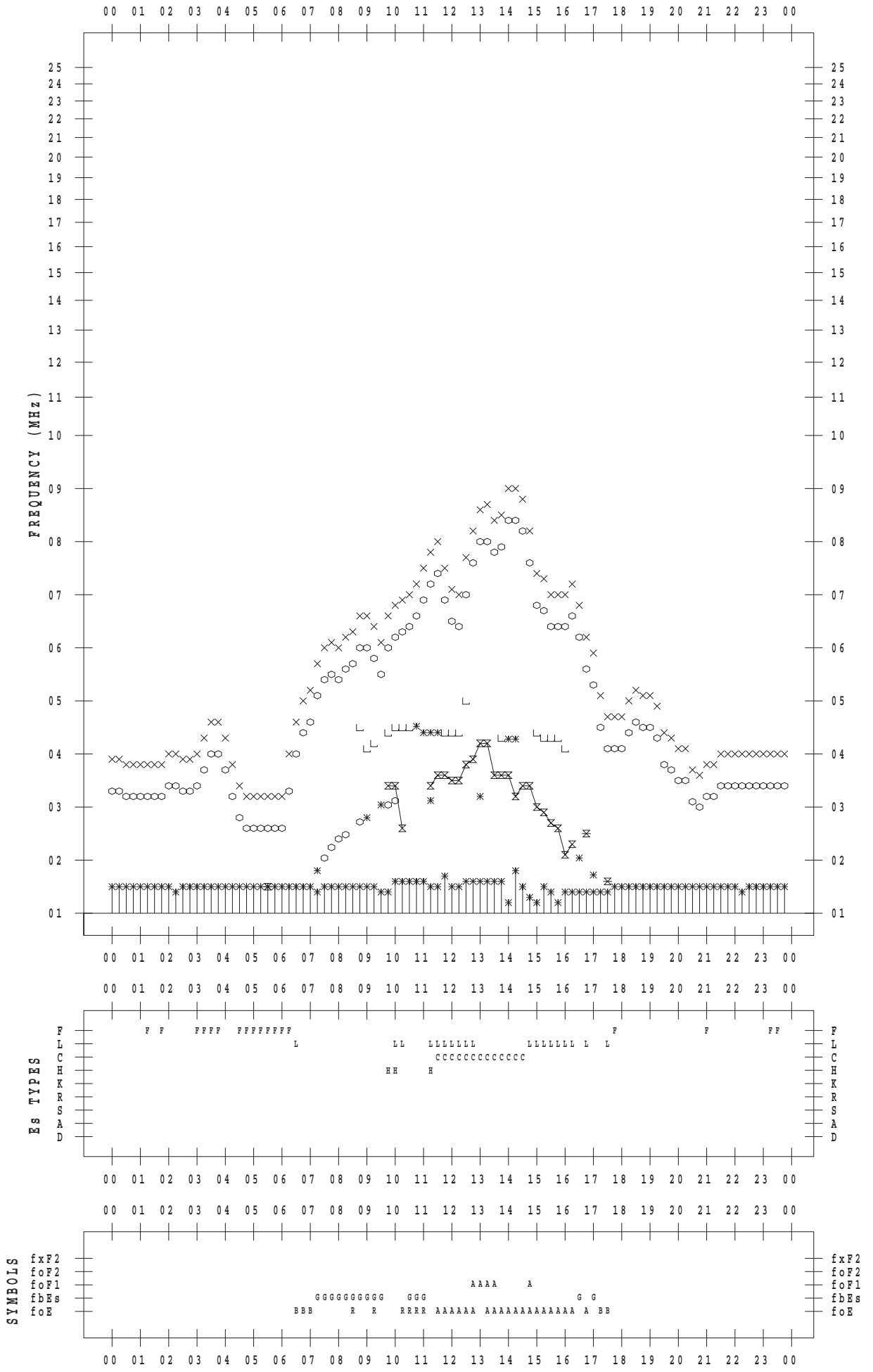
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/20

135 °E MEAN TIME



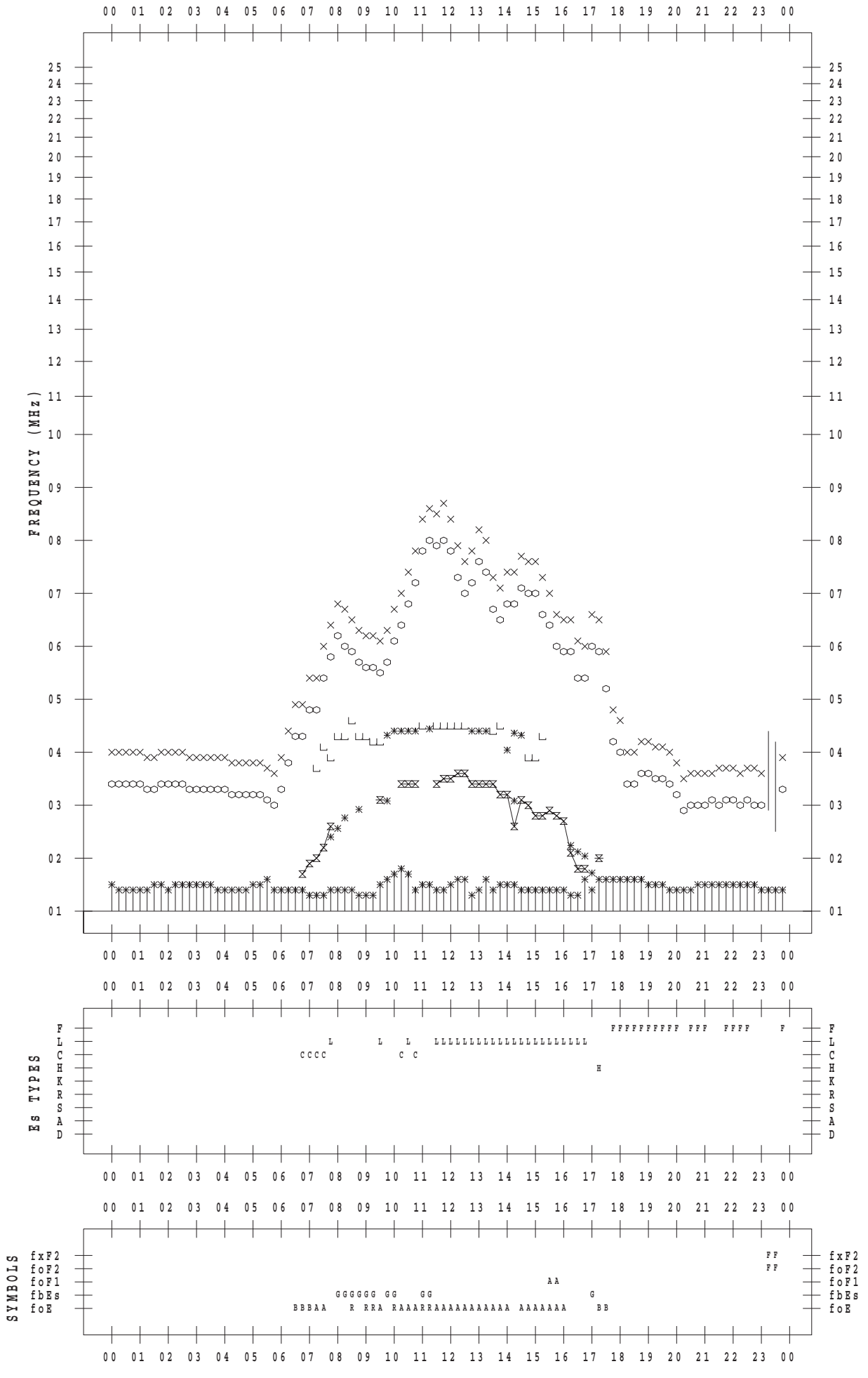
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/21

135 °E MEAN TIME



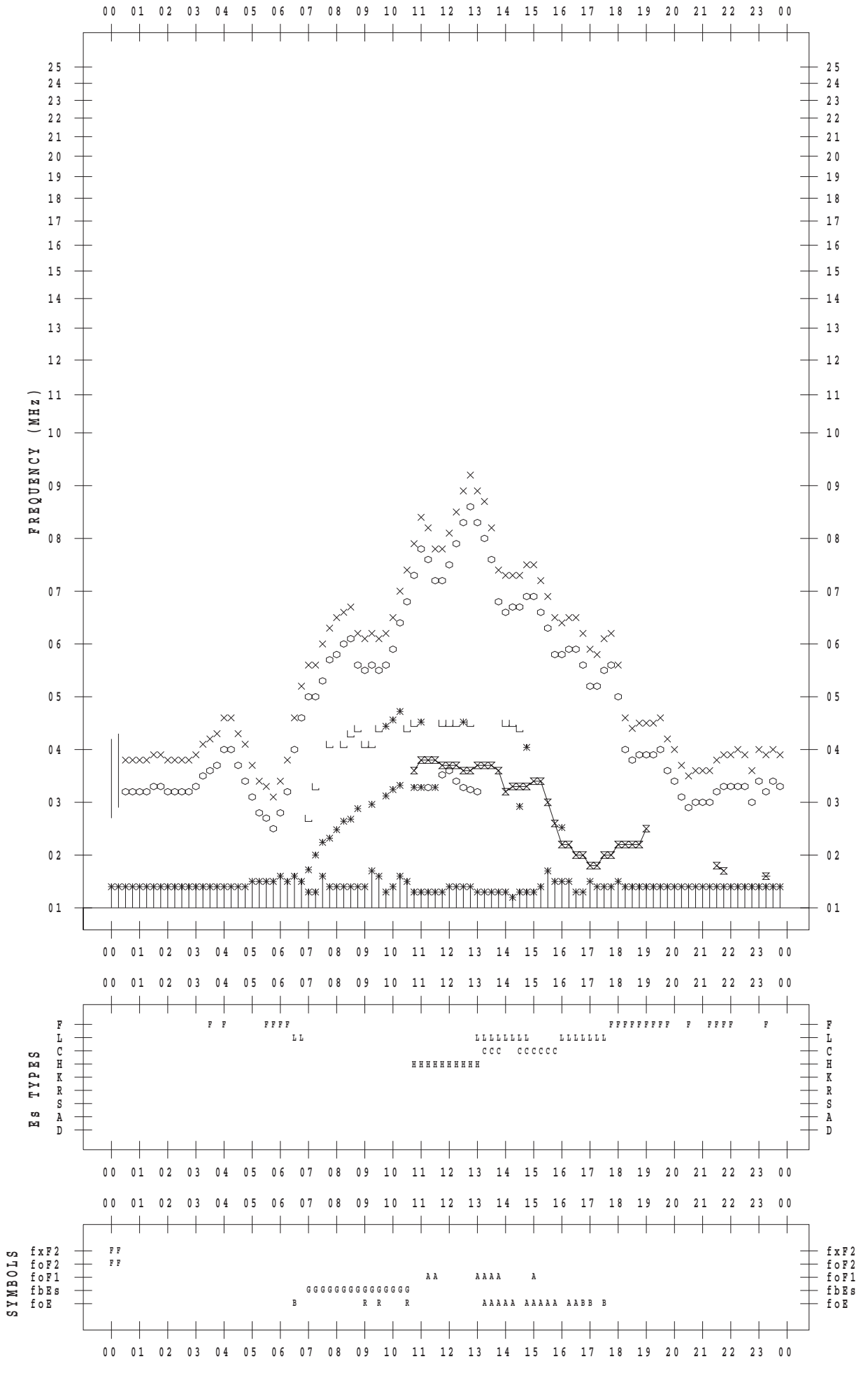
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/22

135 °E MEAN TIME



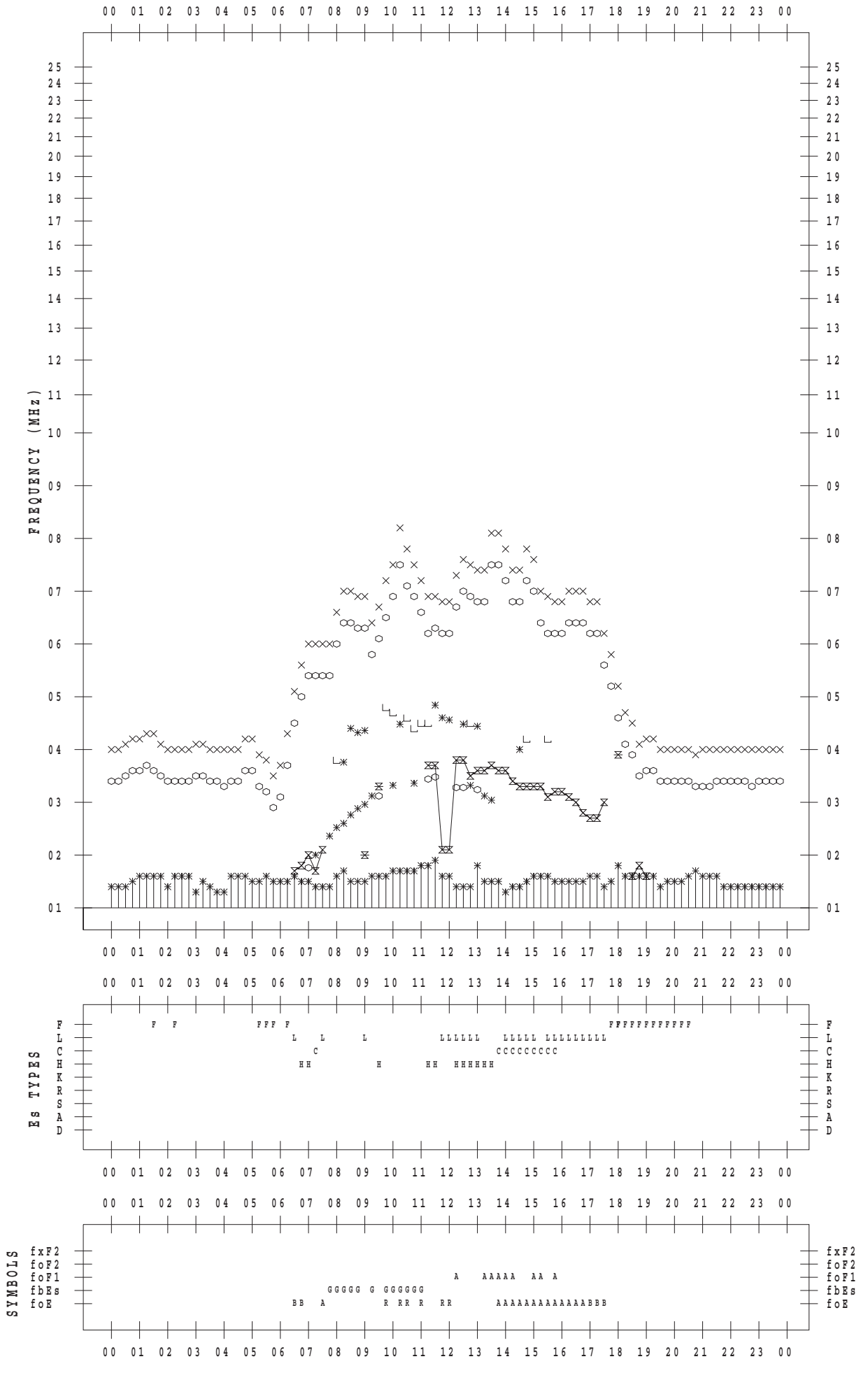
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/23

135 °E MEAN TIME



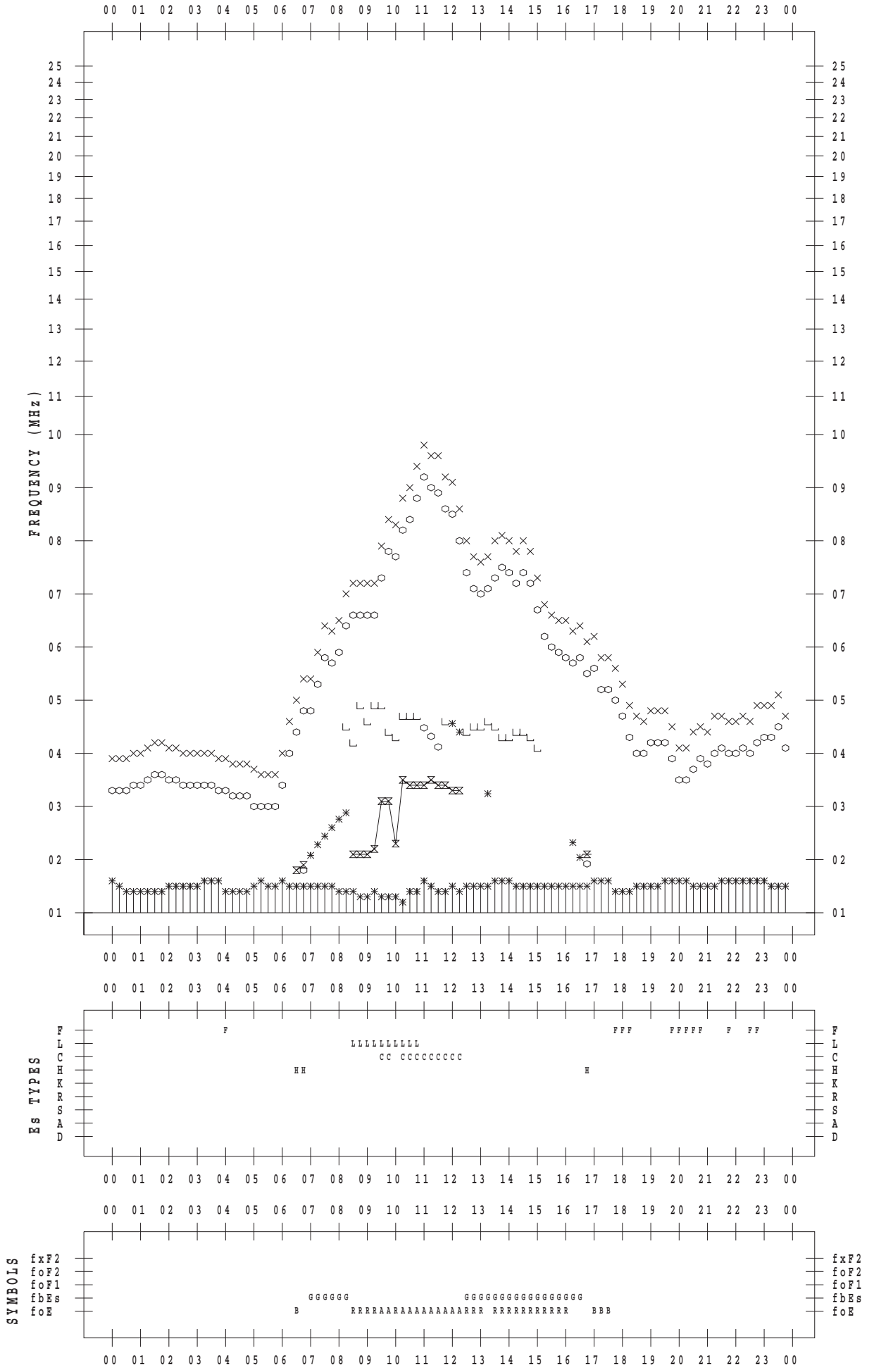
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/24

135 °E MEAN TIME



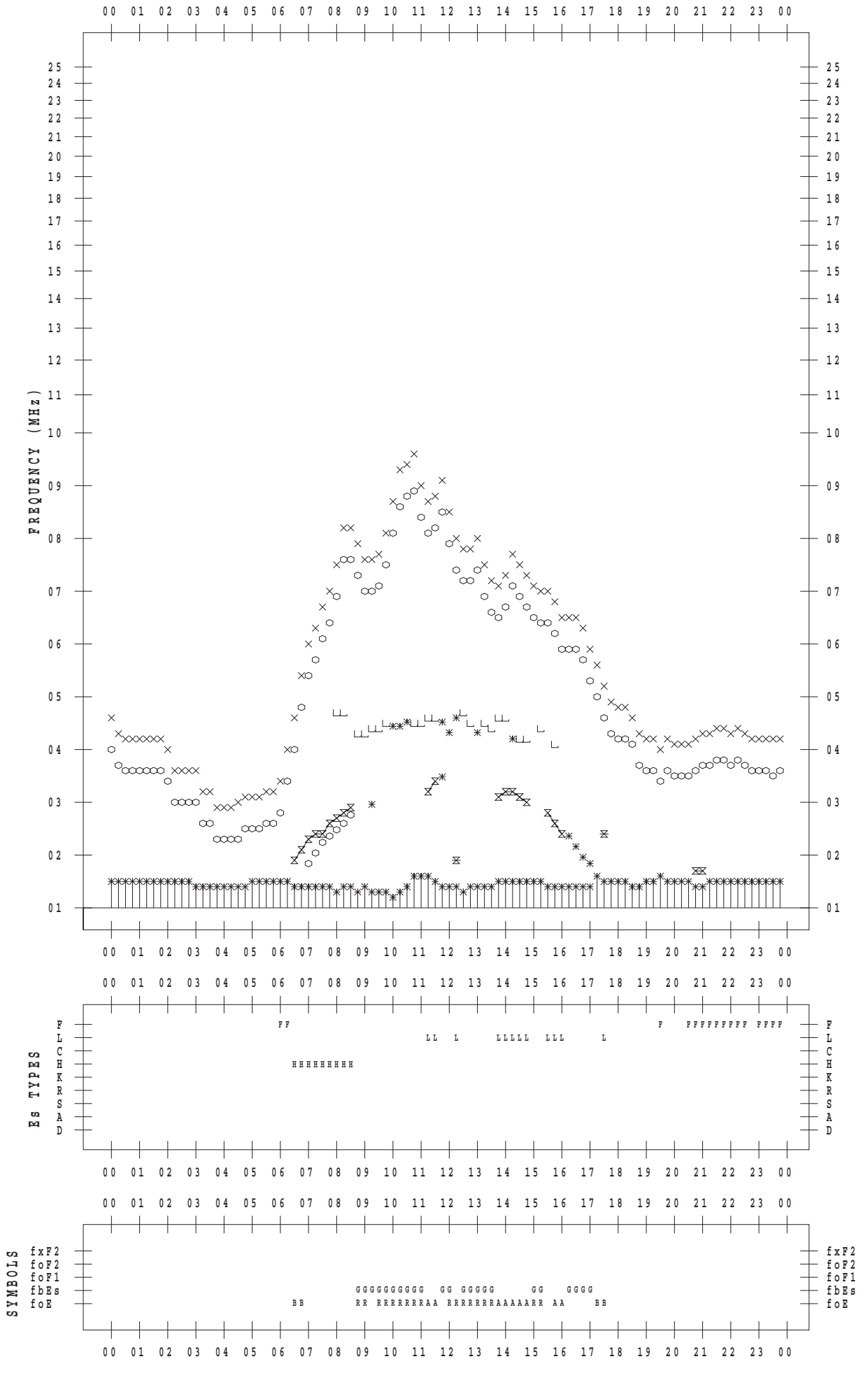
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/25

135 °E MEAN TIME



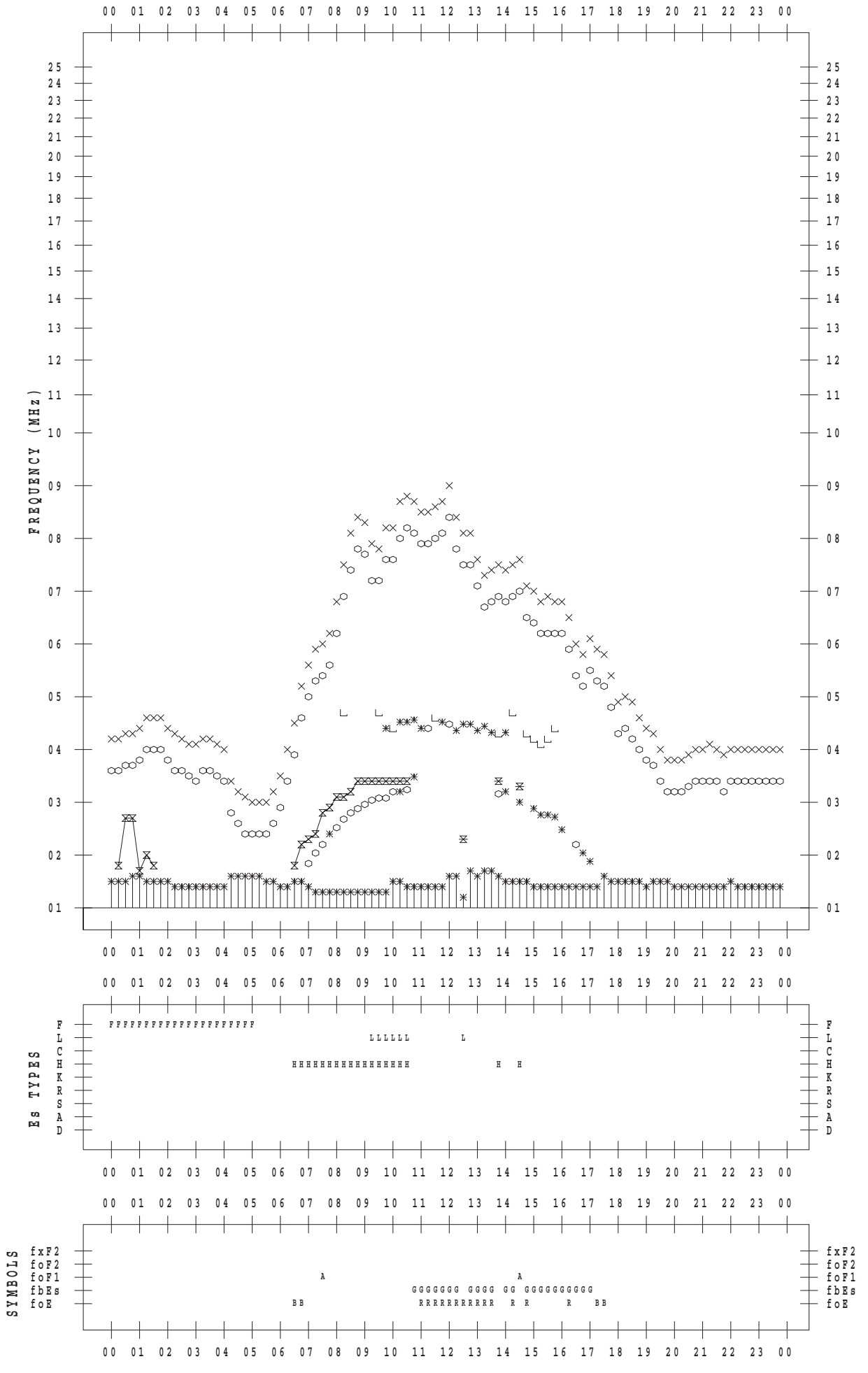
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/26

135 °E MEAN TIME



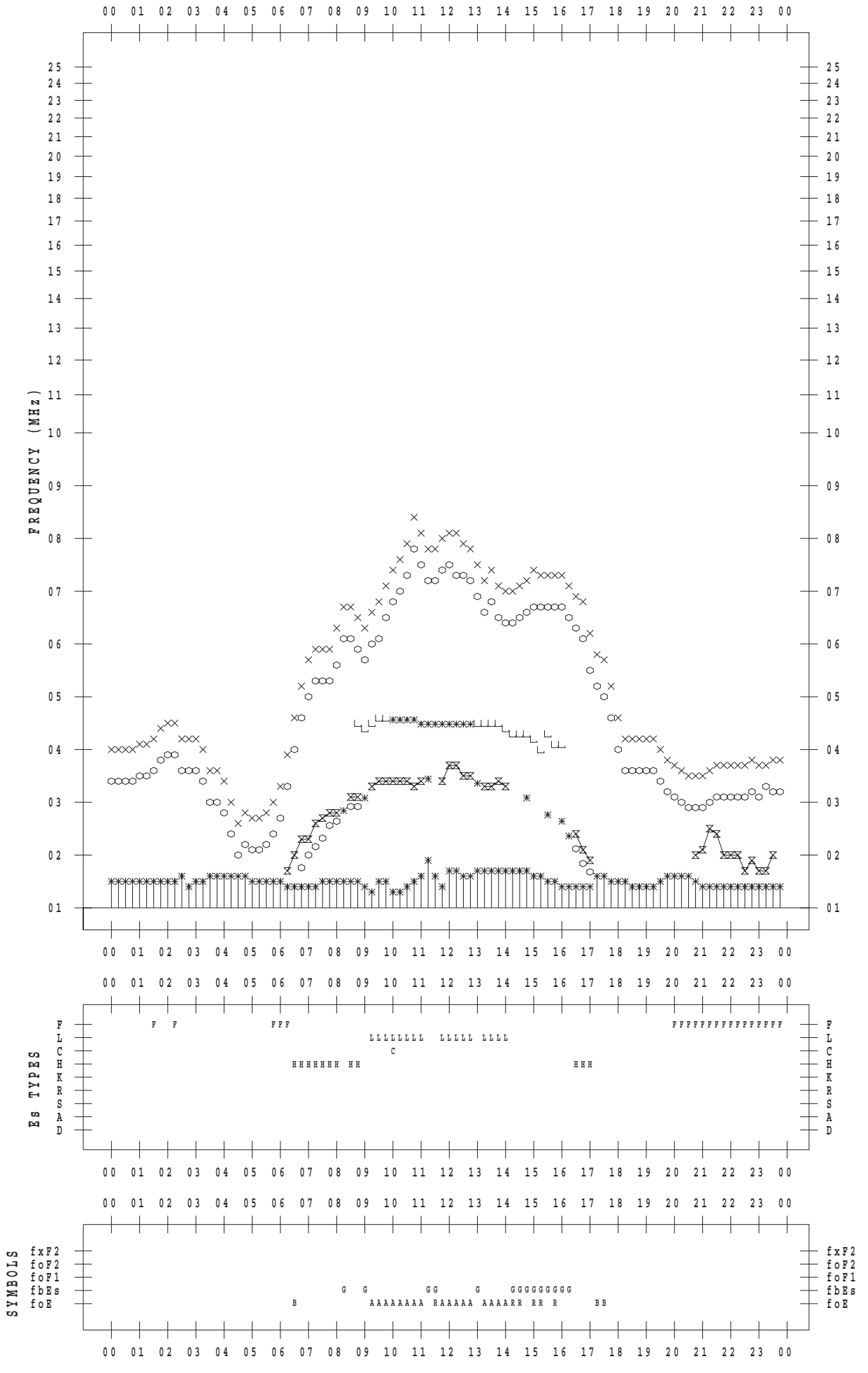
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/27

135 °E MEAN TIME



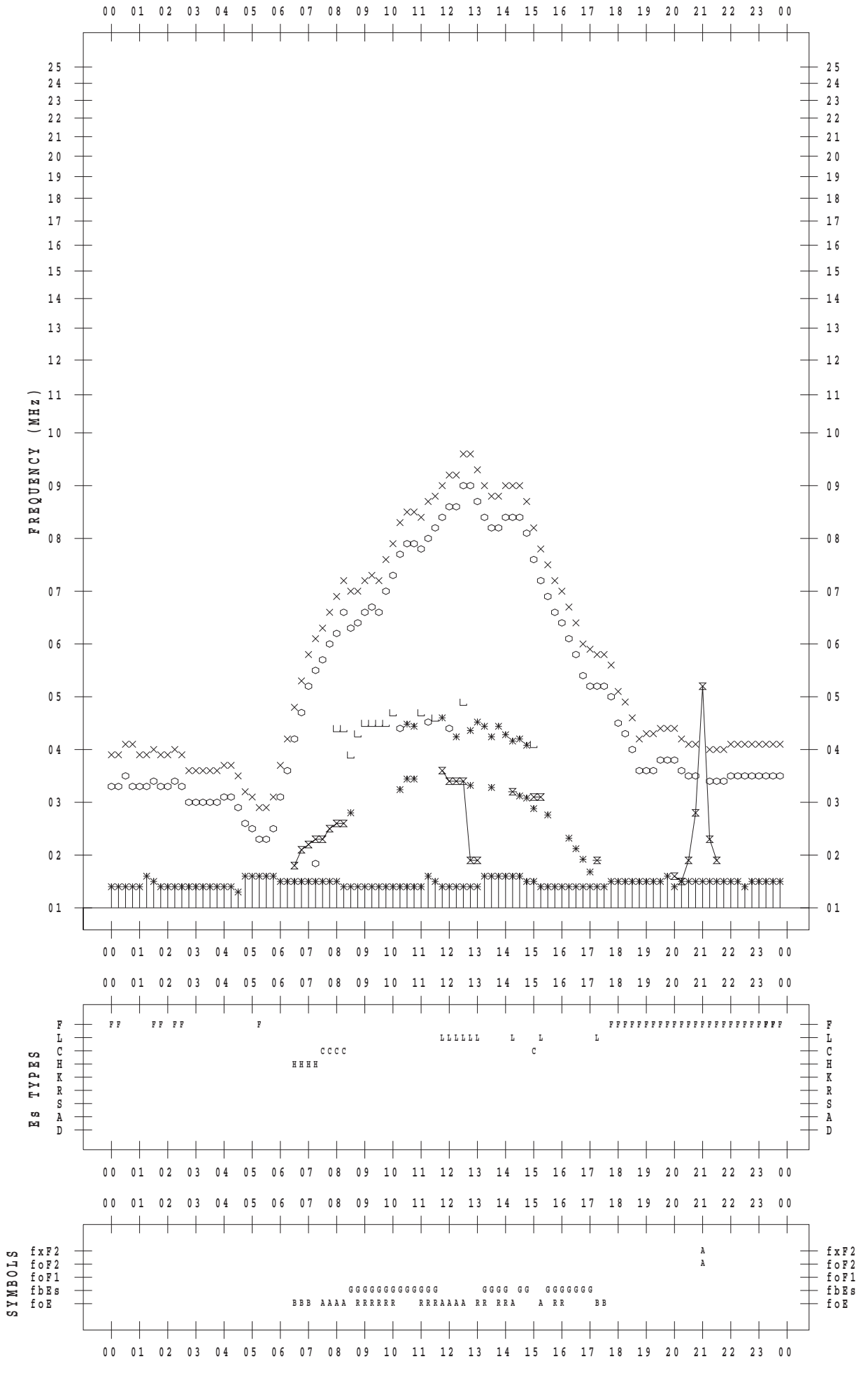
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 2/28

135 °E MEAN TIME



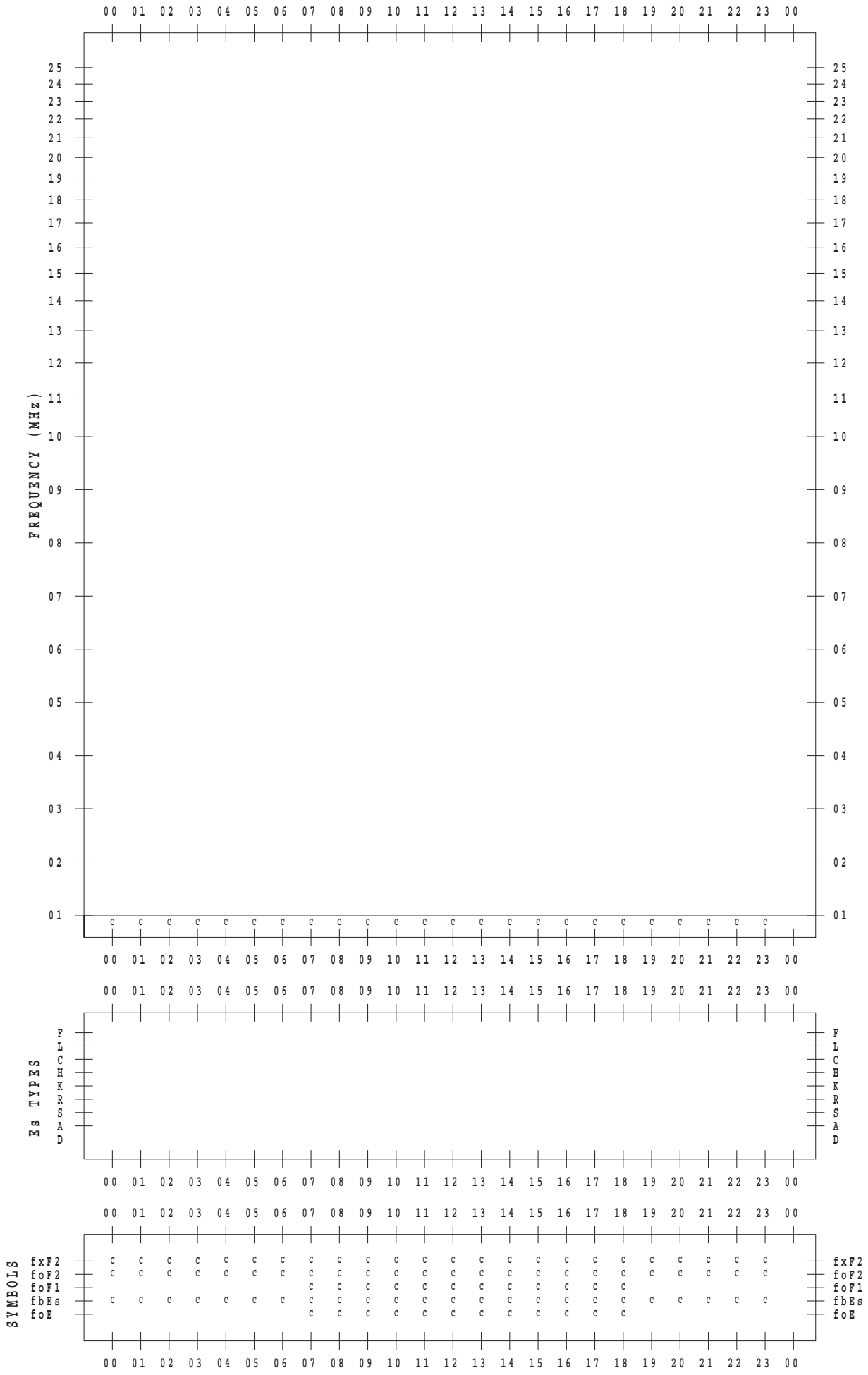
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 1

135 °E MEAN TIME



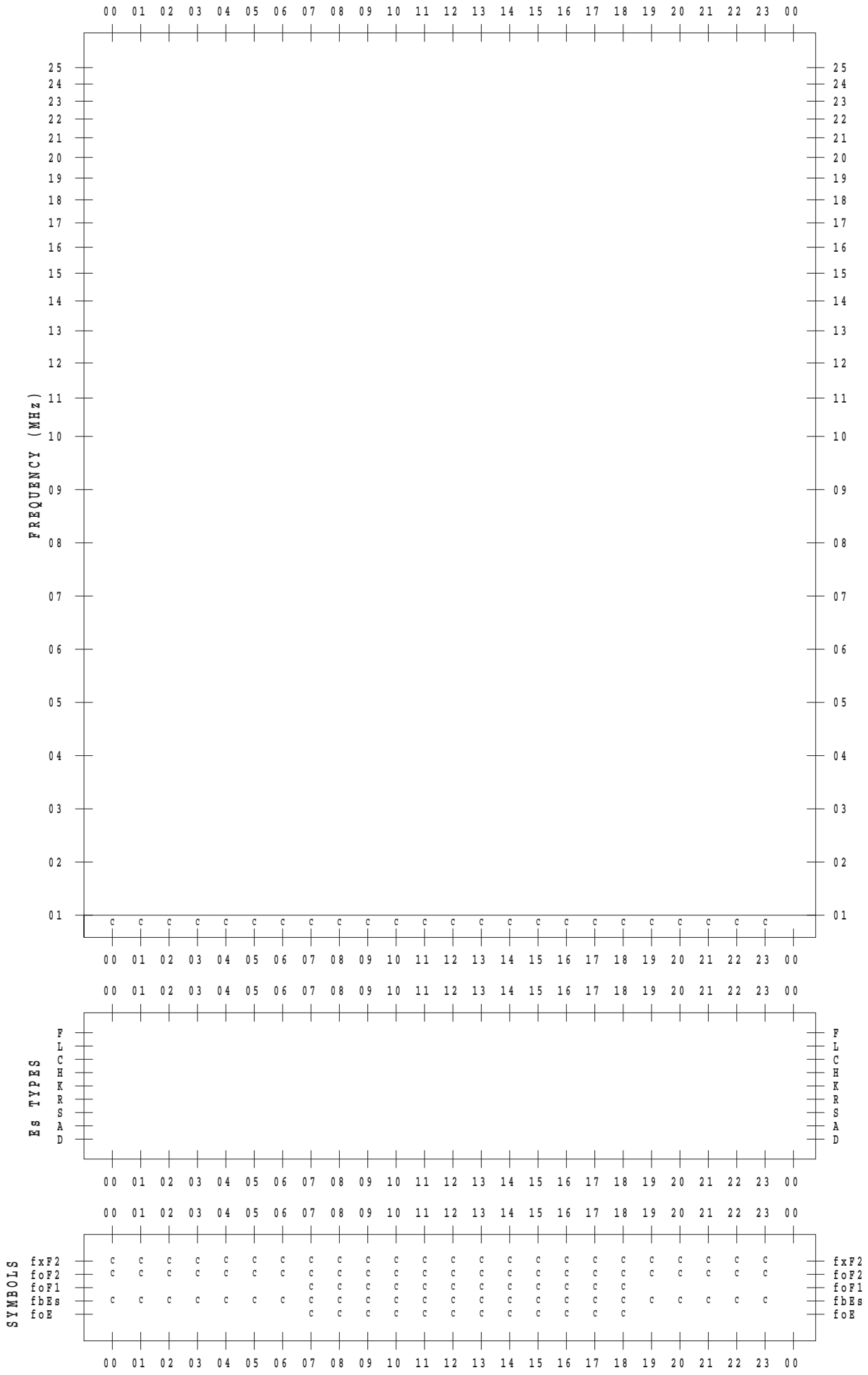
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 2

135 °E MEAN TIME



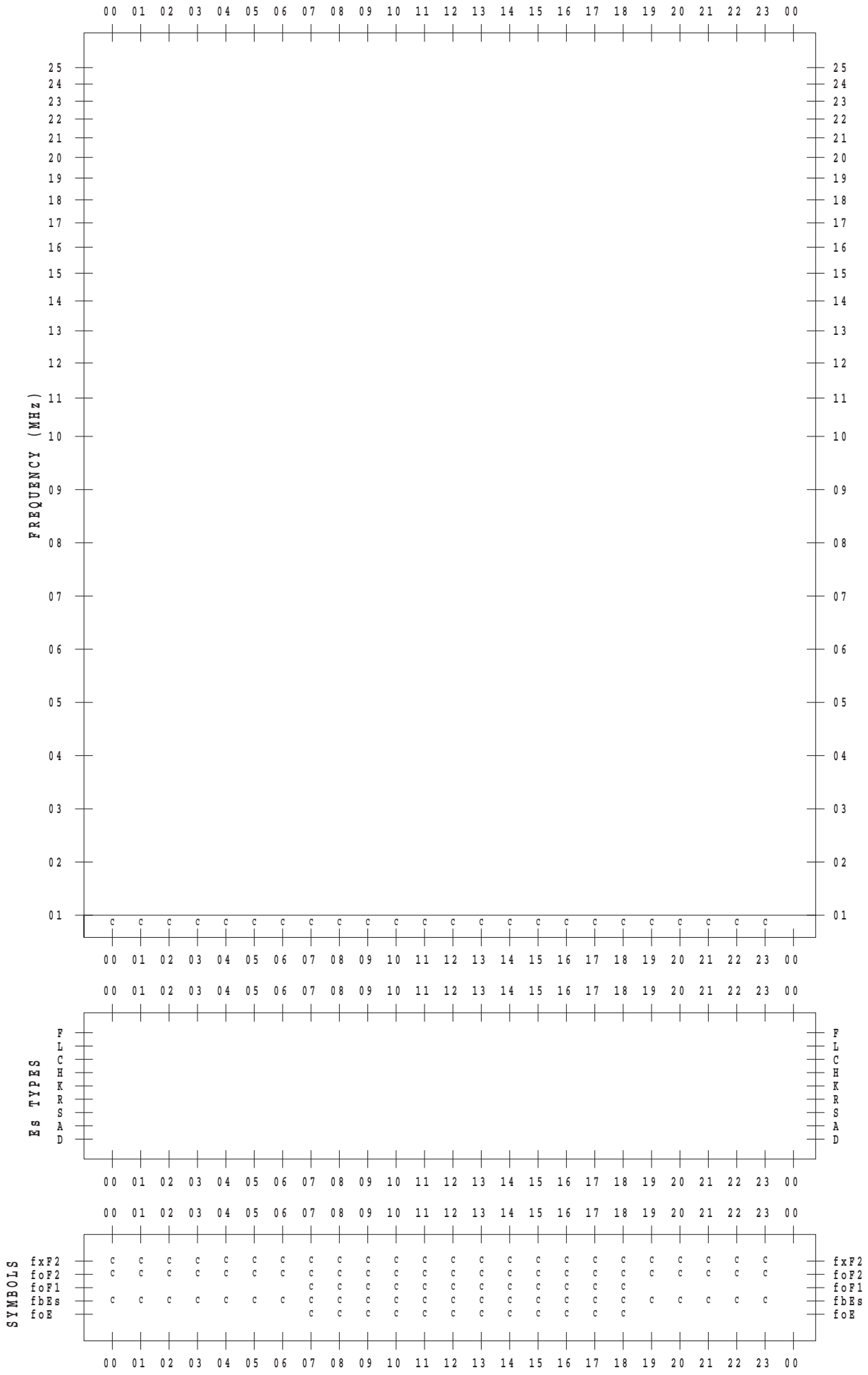
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 3

135 °E MEAN TIME



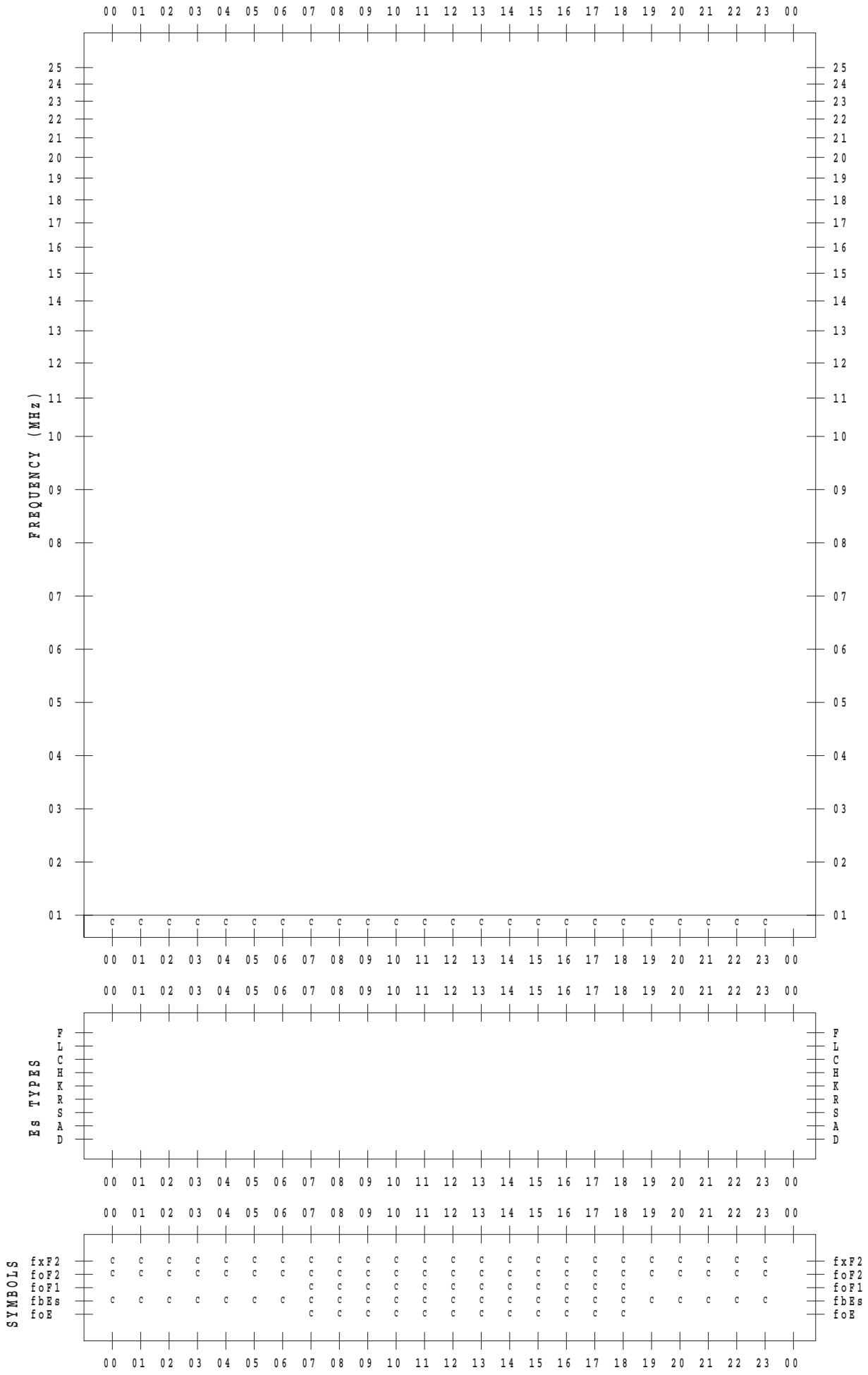
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 4

135 °E MEAN TIME



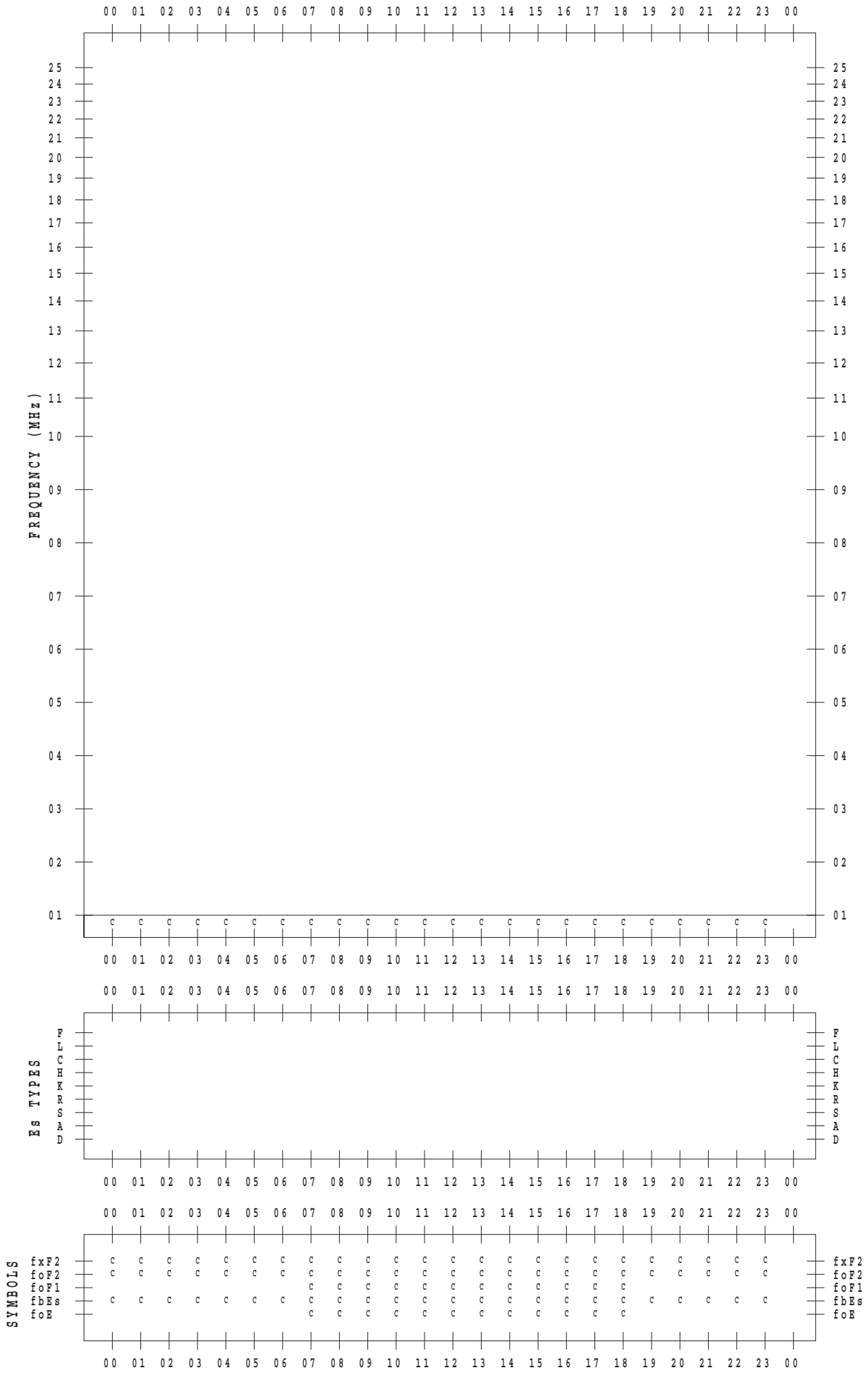
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 5

135 °E MEAN TIME



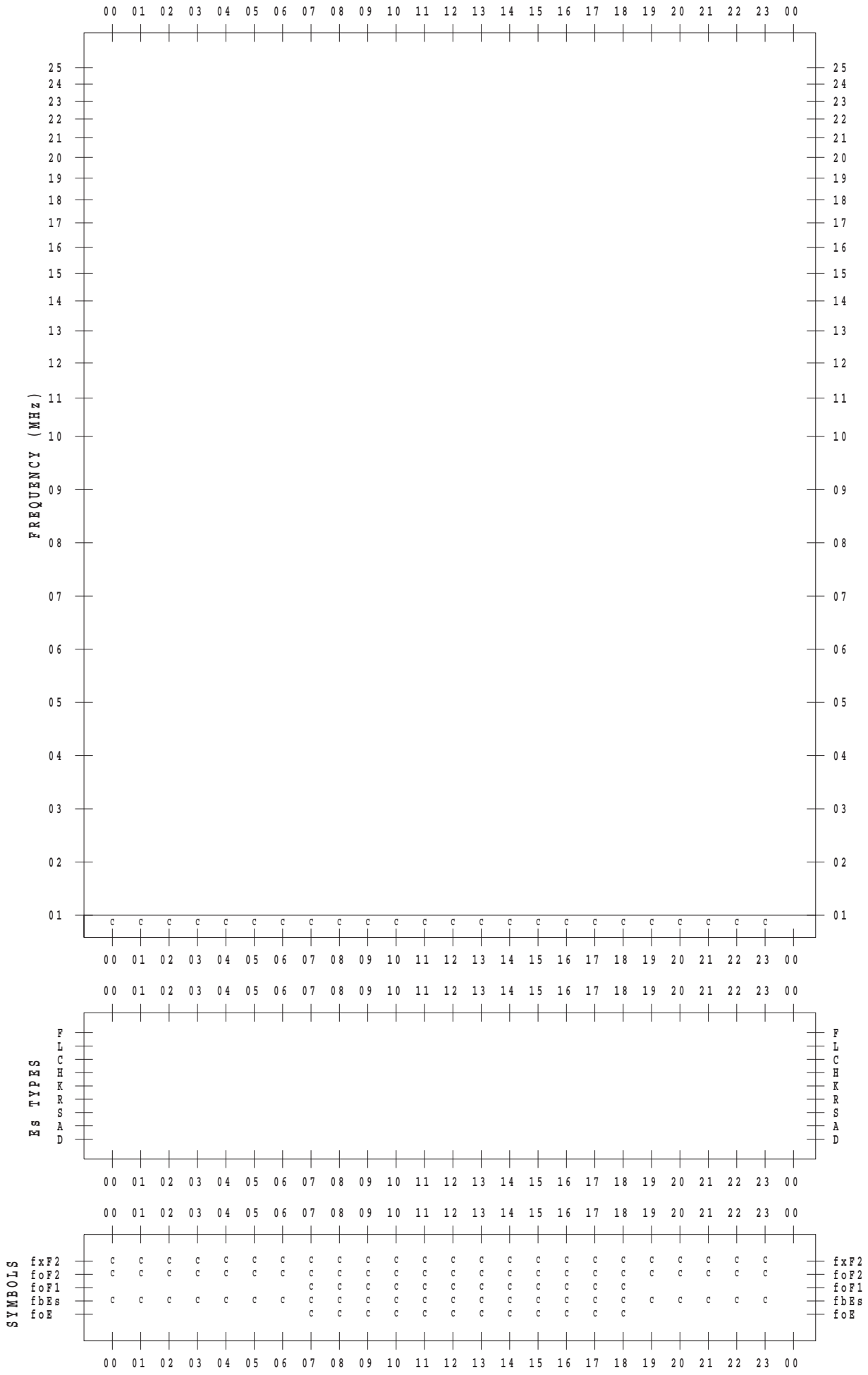
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 6

135 °E MEAN TIME



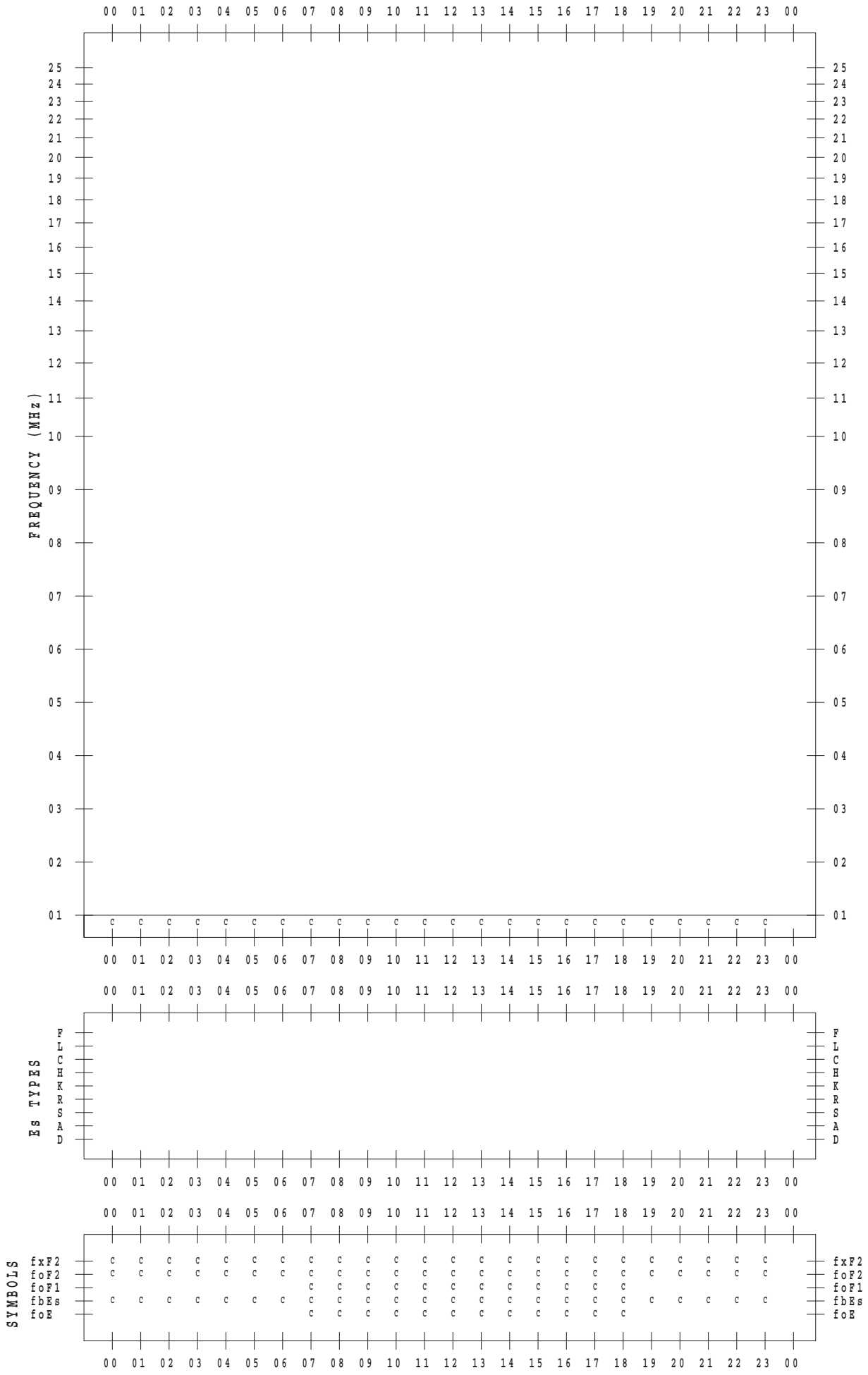
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 7

135 °E MEAN TIME



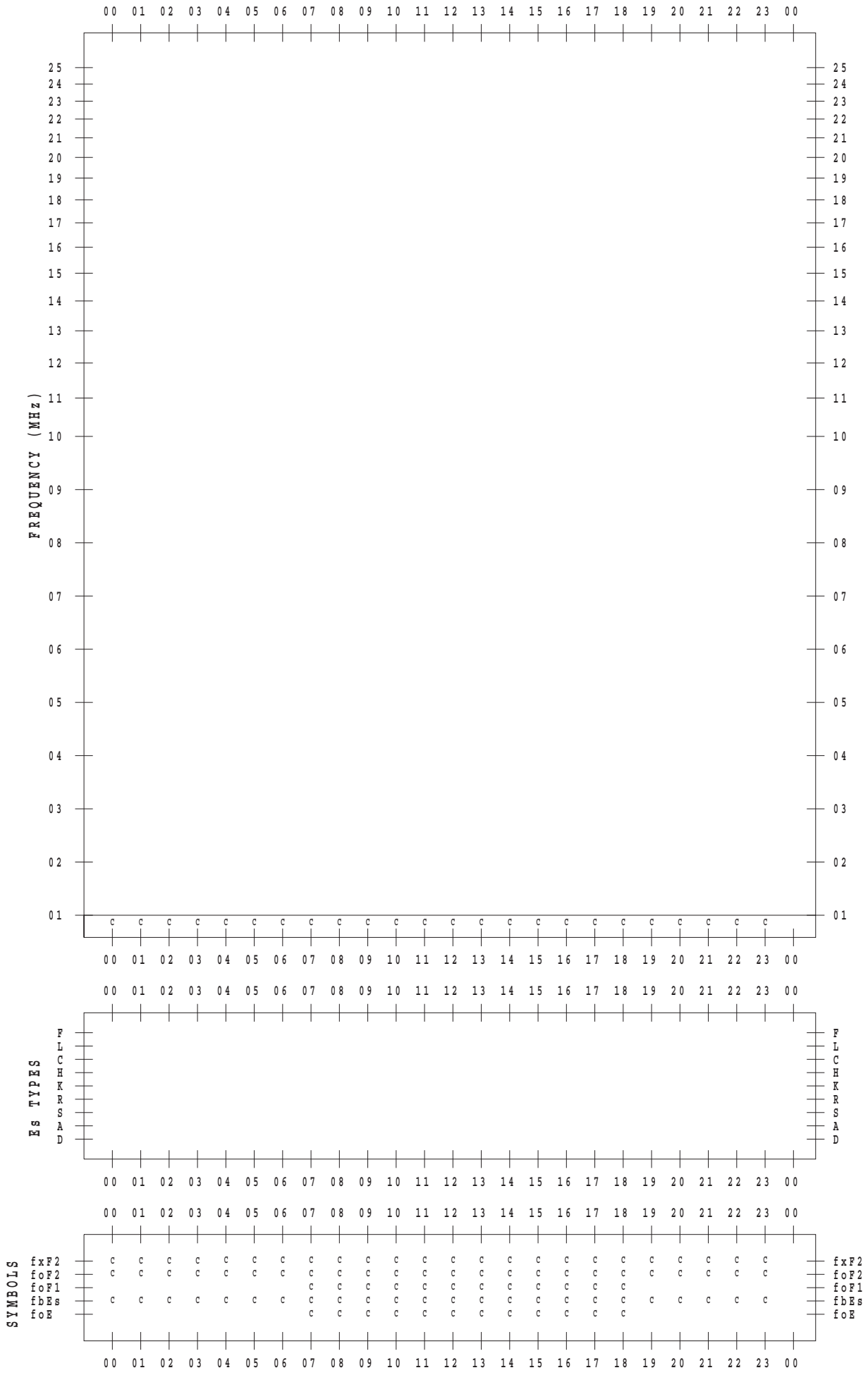
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 8

135 °E MEAN TIME



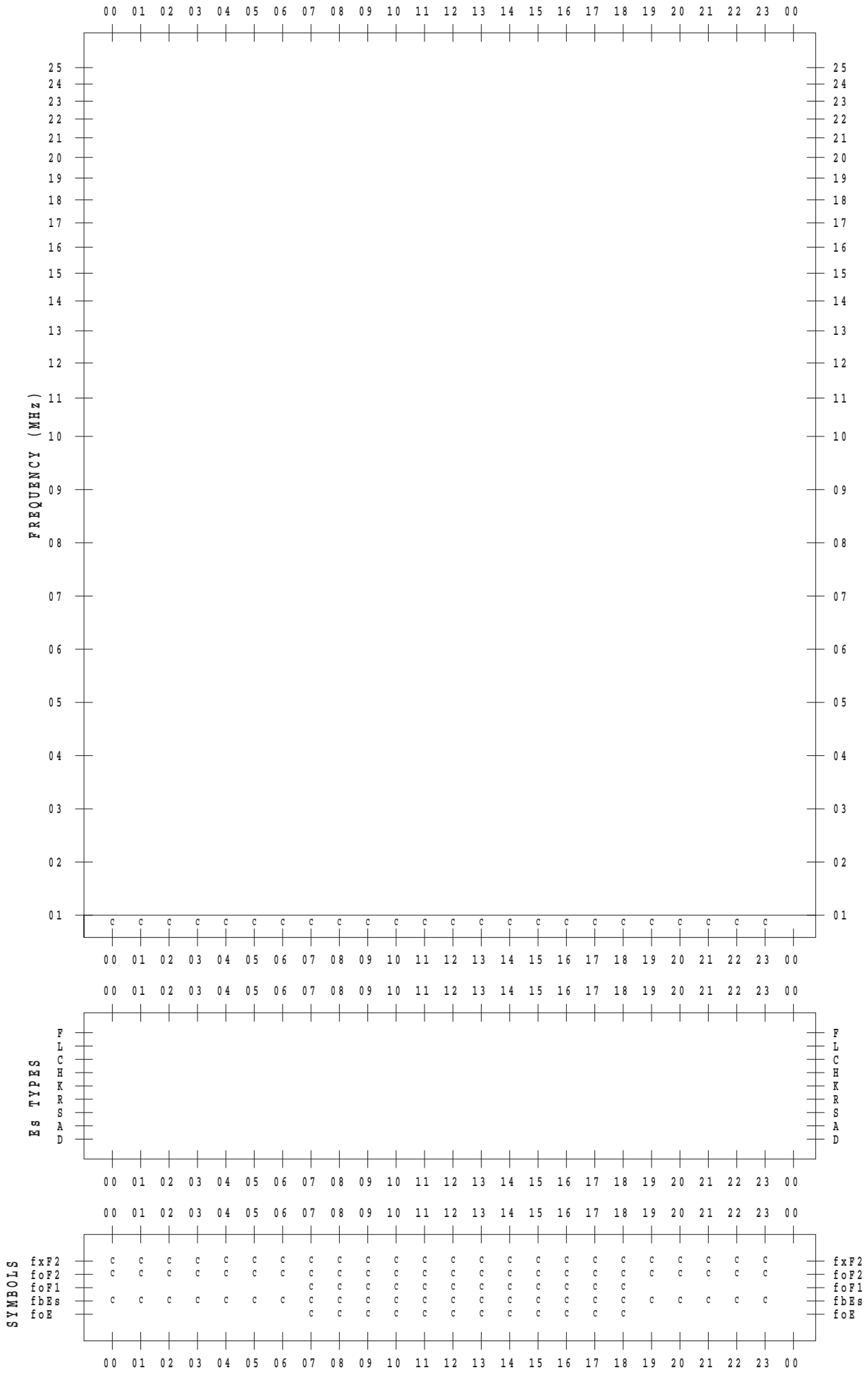
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/ 9

135 °E MEAN TIME



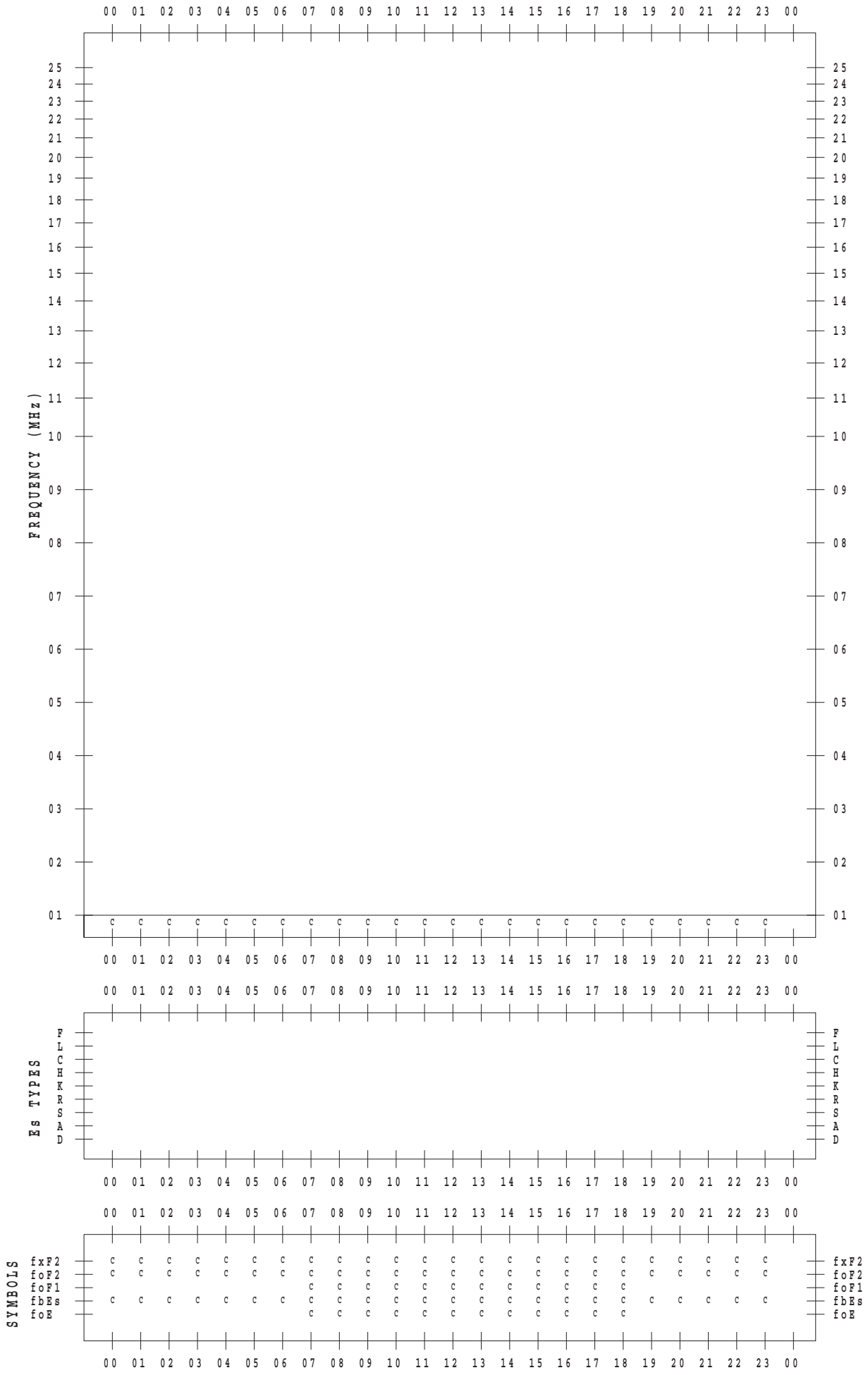
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/10

135 °E MEAN TIME



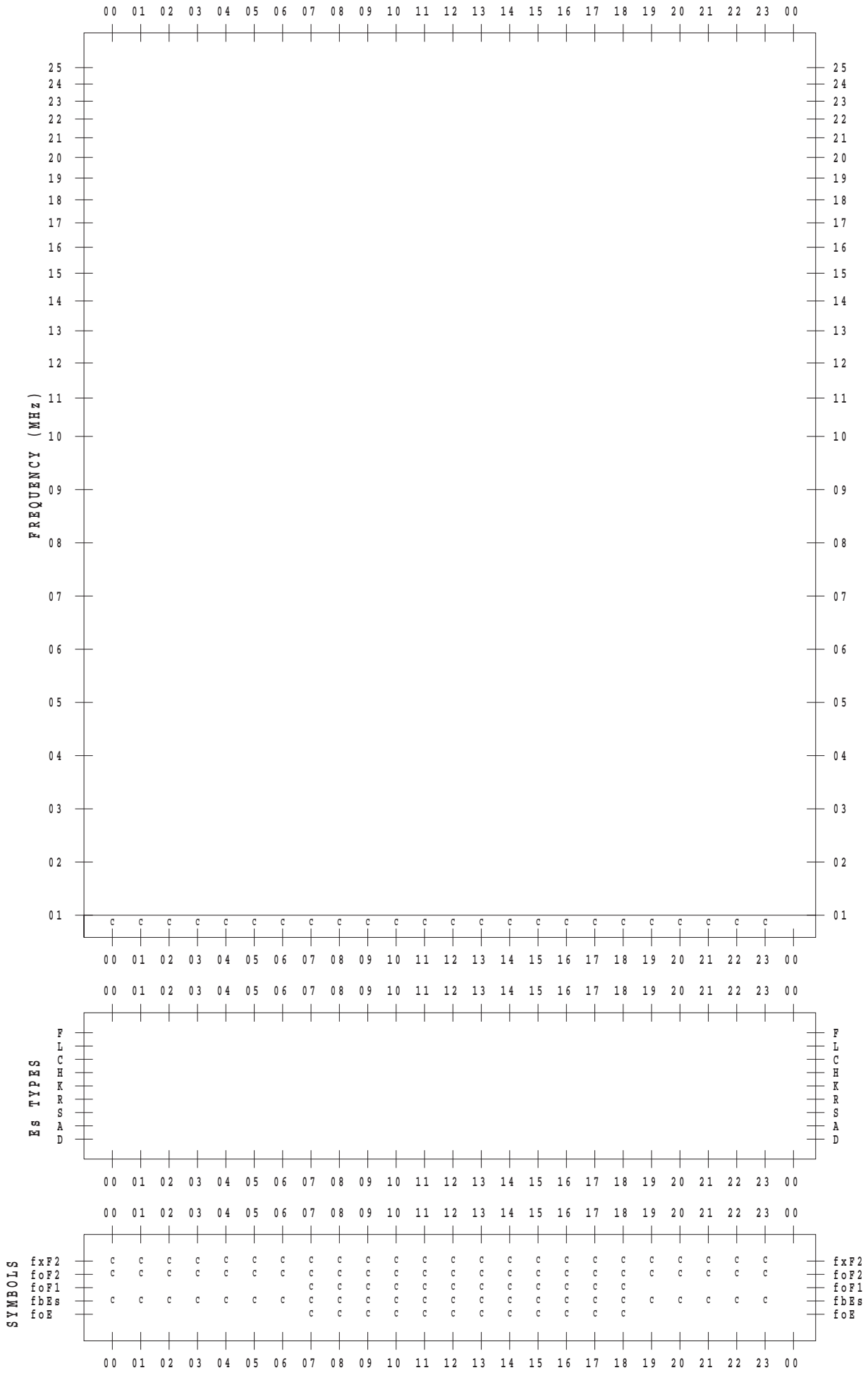
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/11

135 °E MEAN TIME



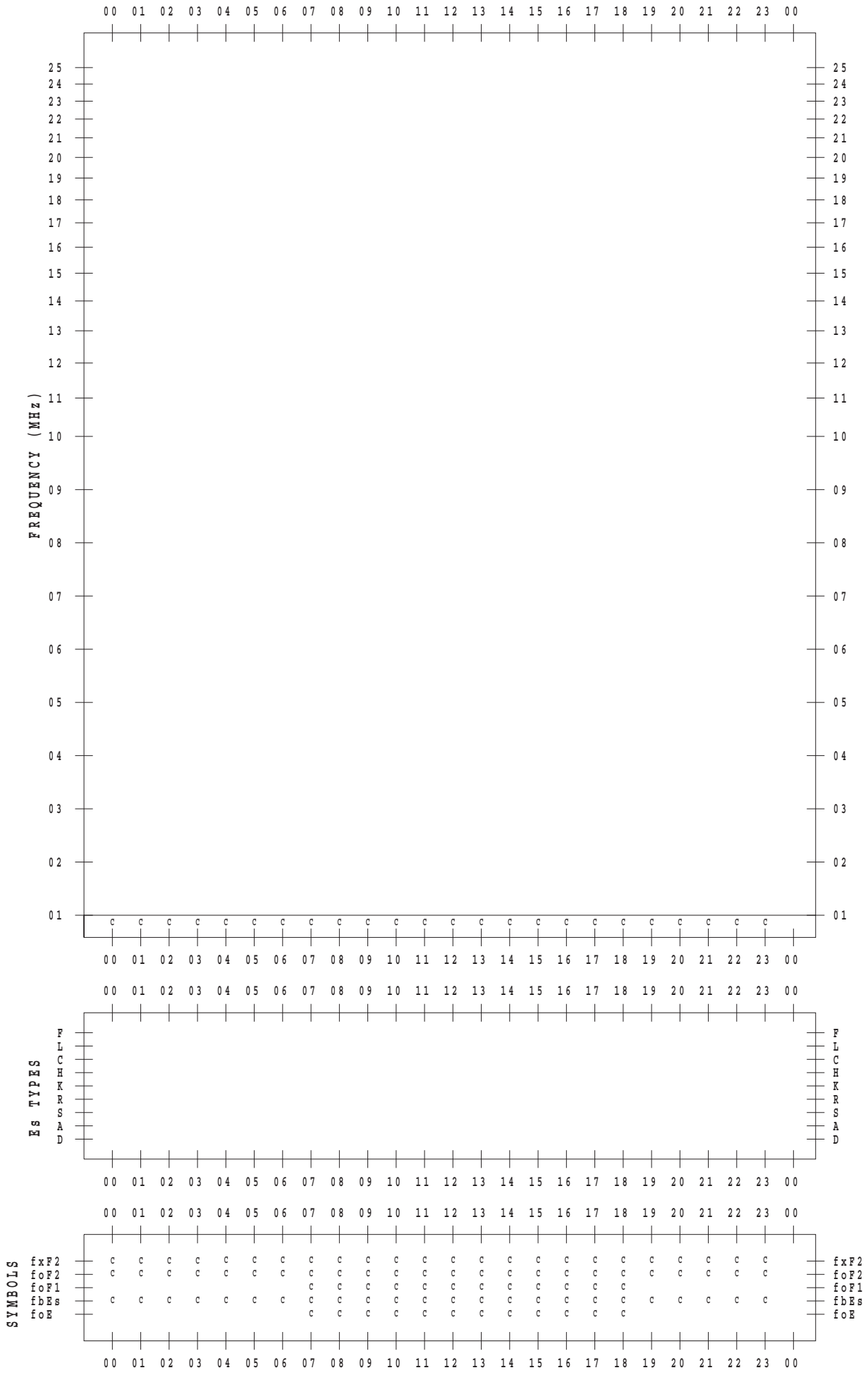
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/12

135 °E MEAN TIME



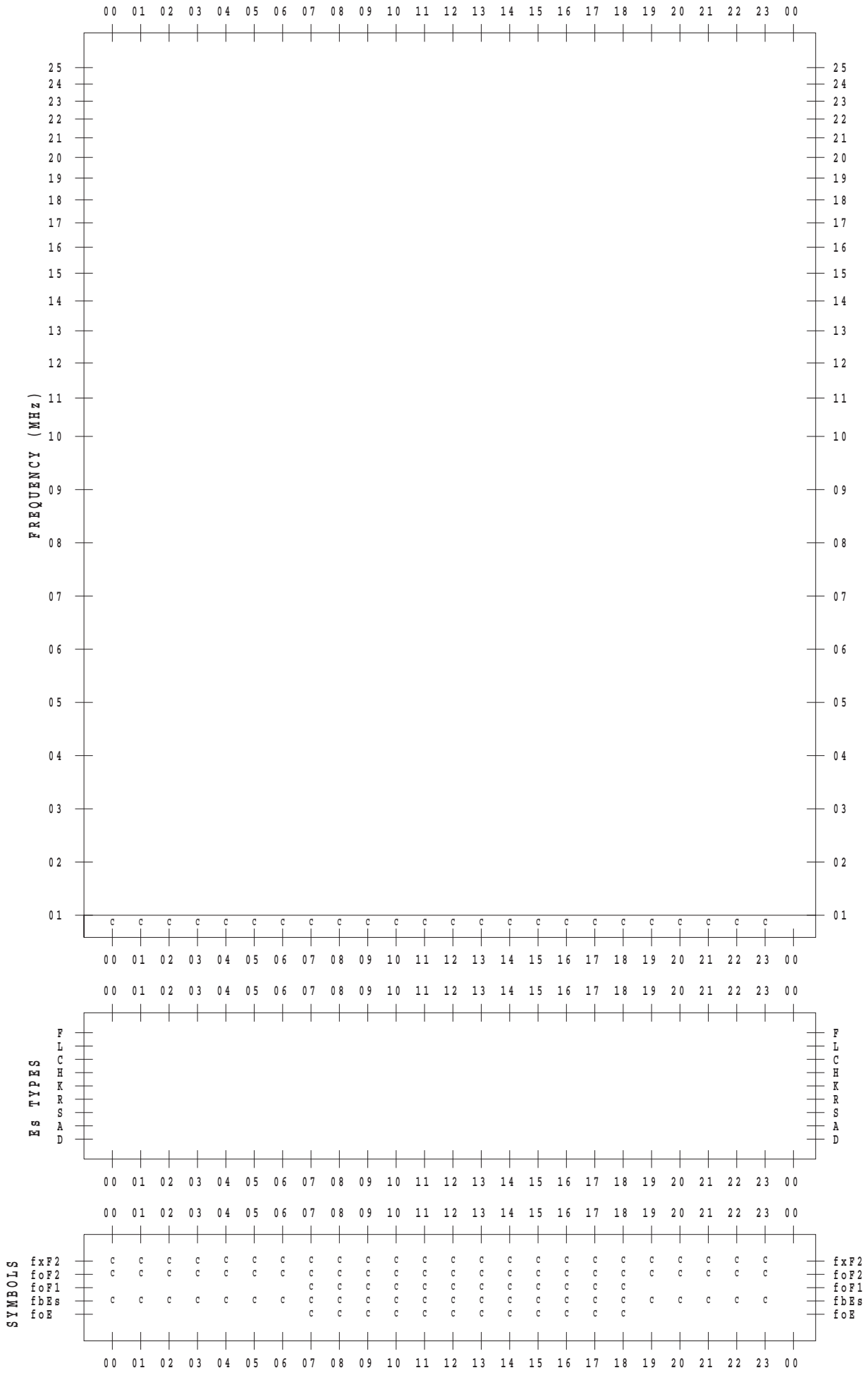
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/13

135 °E MEAN TIME



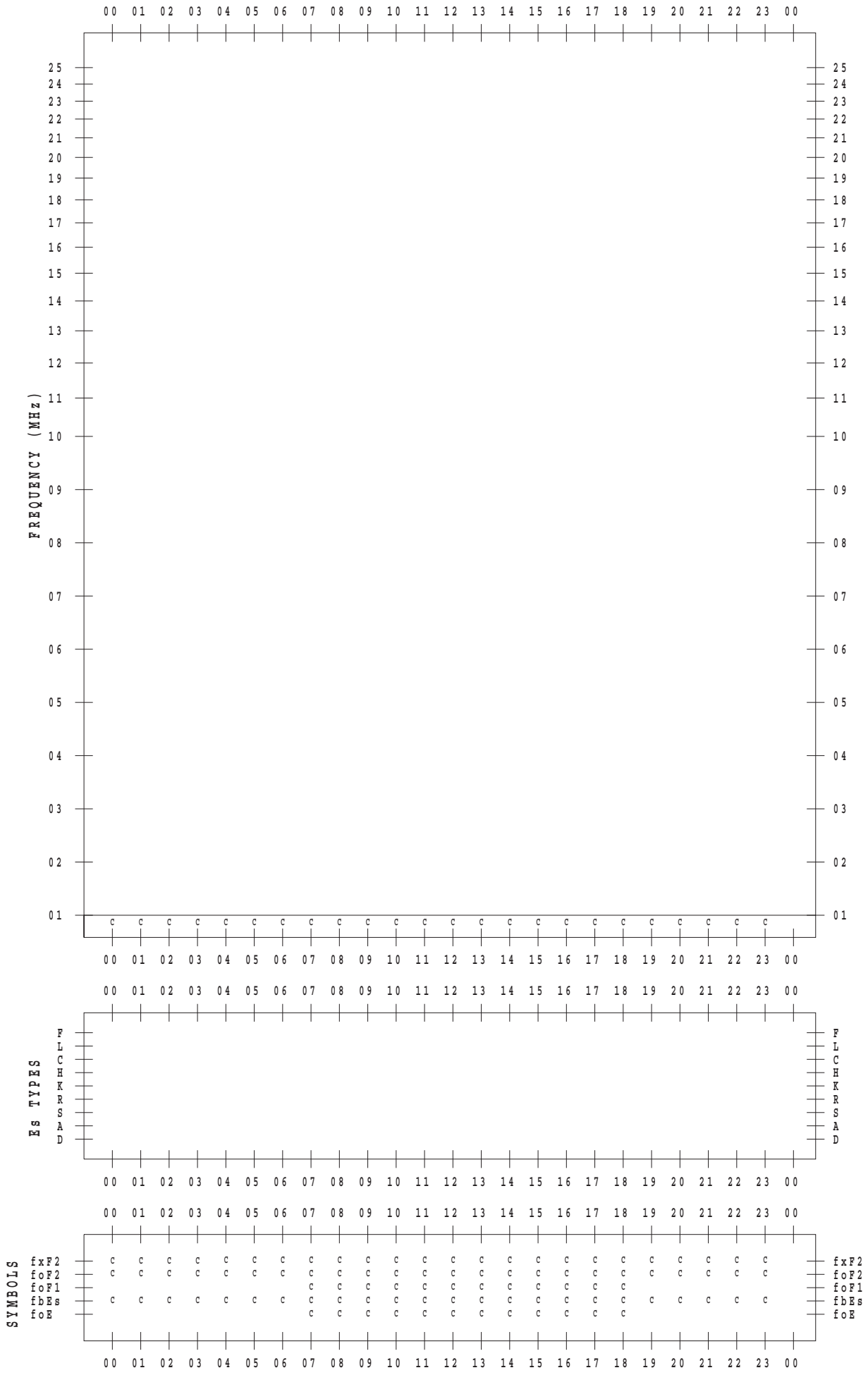
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/14

135 °E MEAN TIME



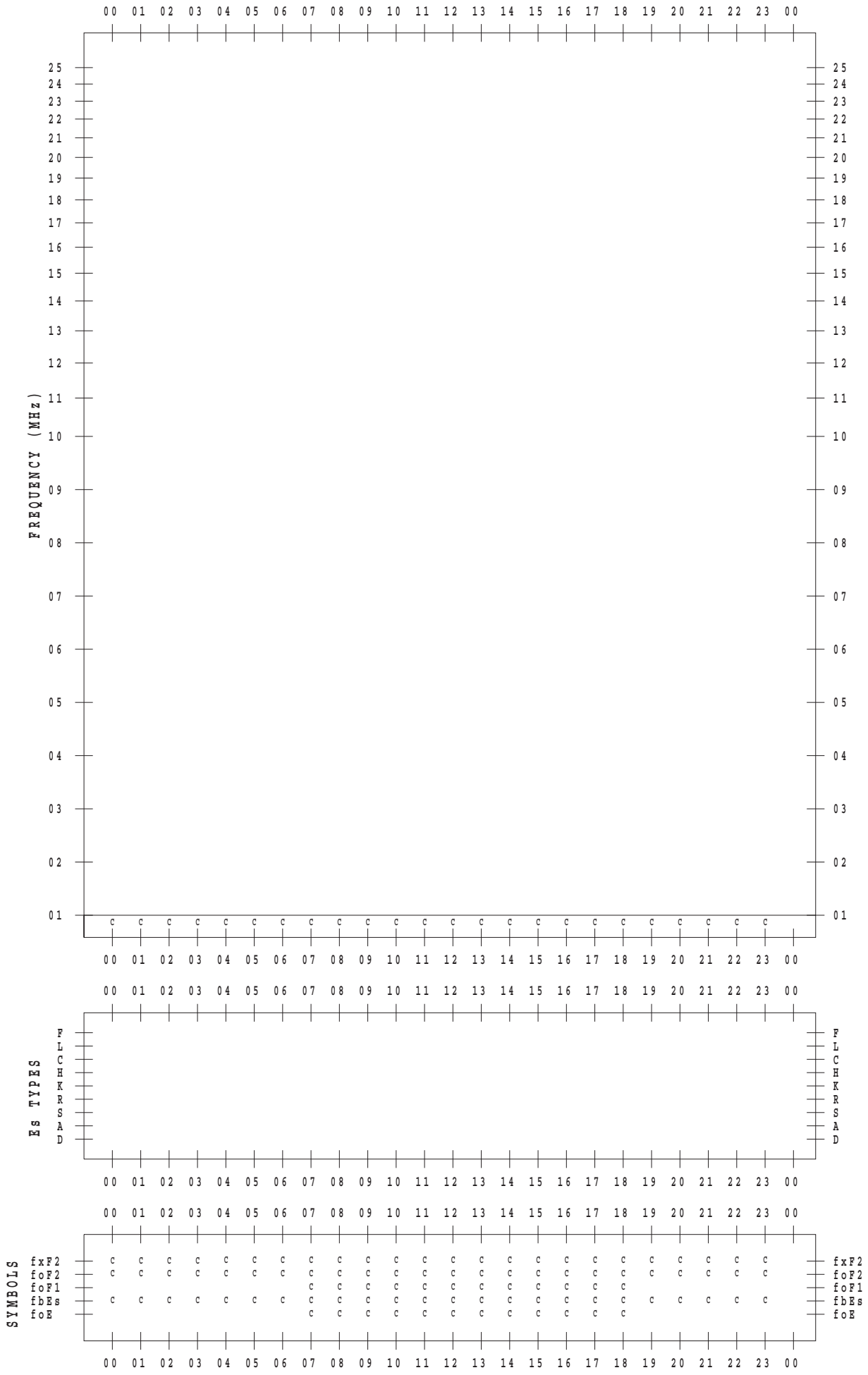
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/15

135 °E MEAN TIME



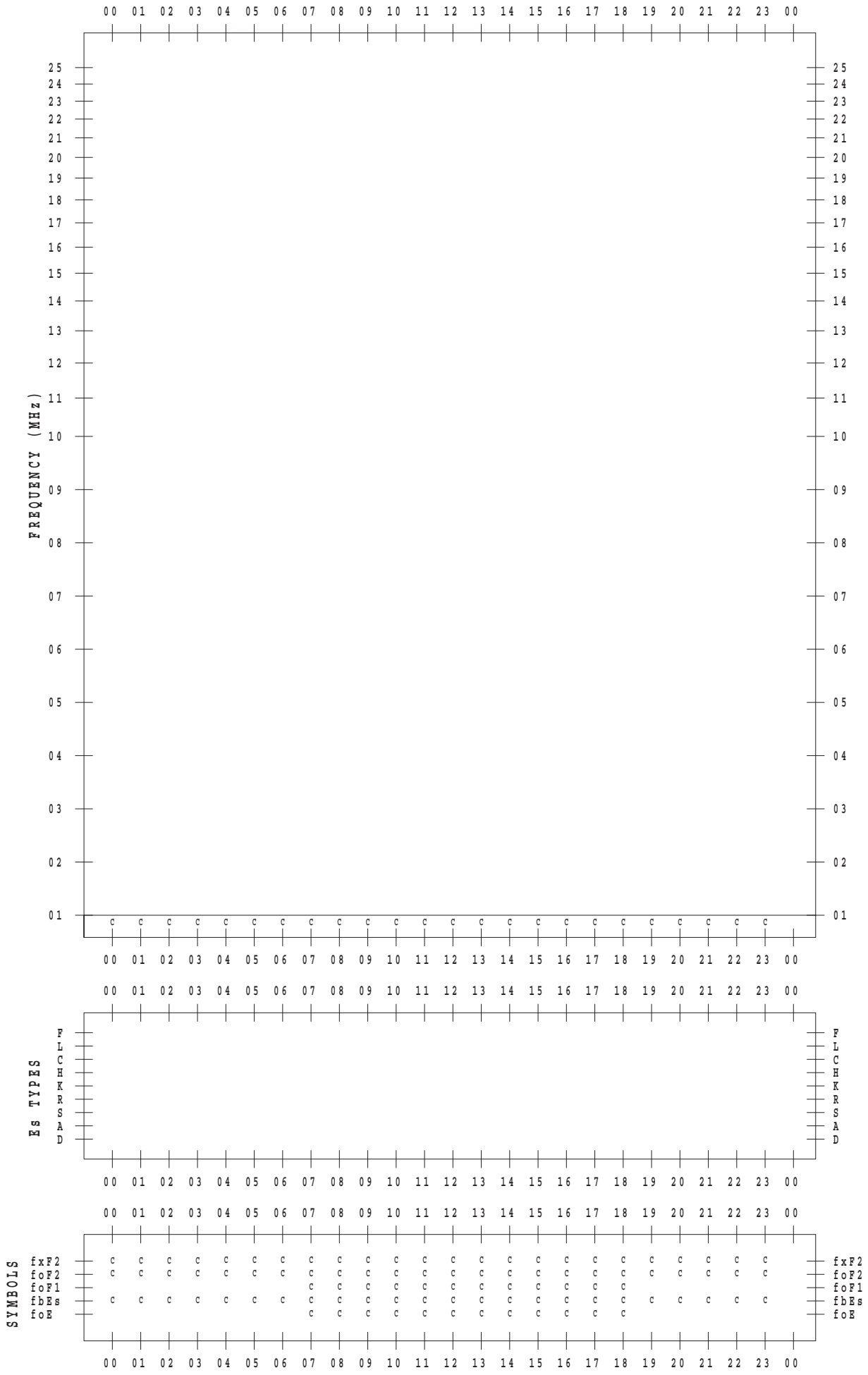
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/16

135 °E MEAN TIME



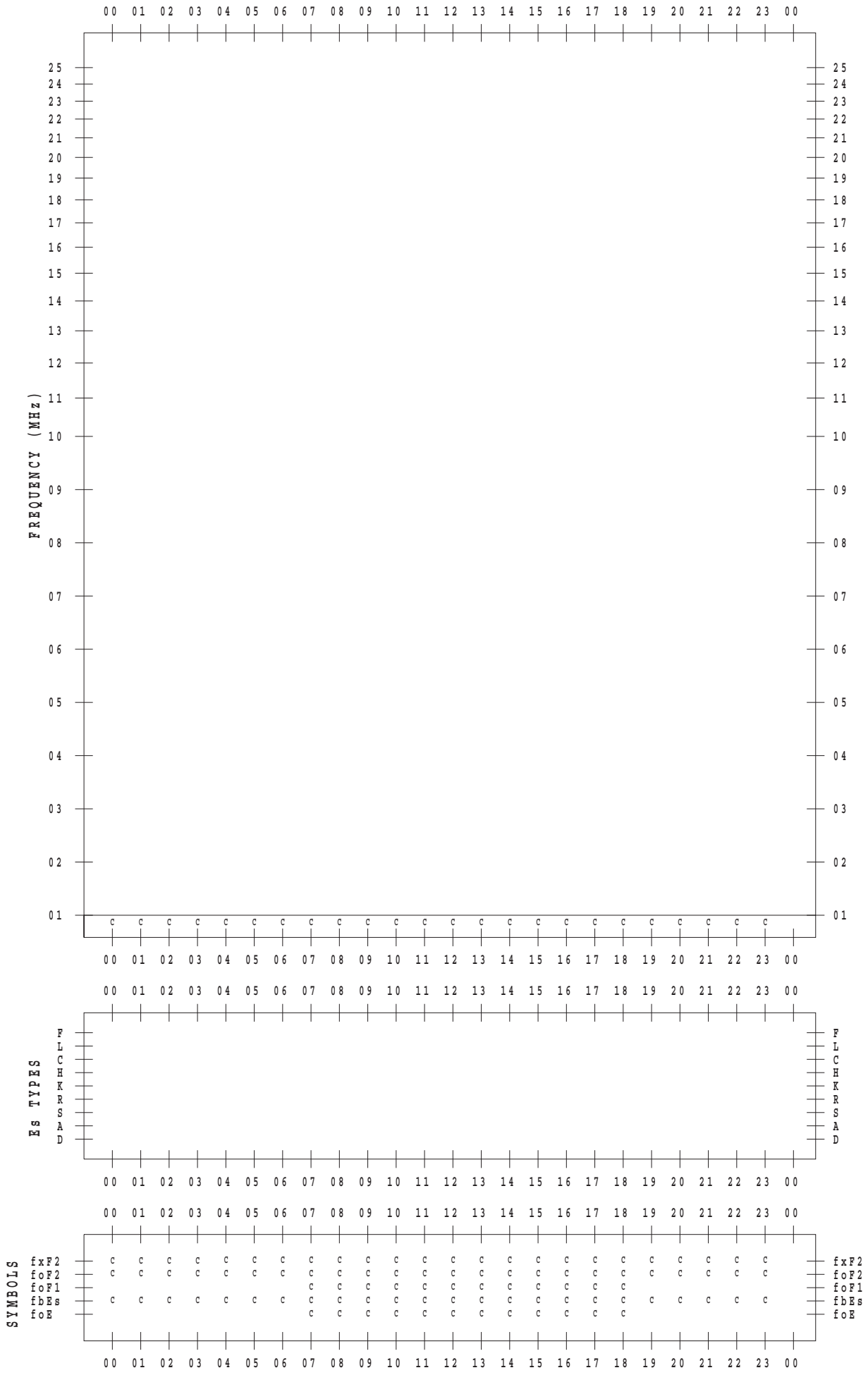
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/17

135 °E MEAN TIME



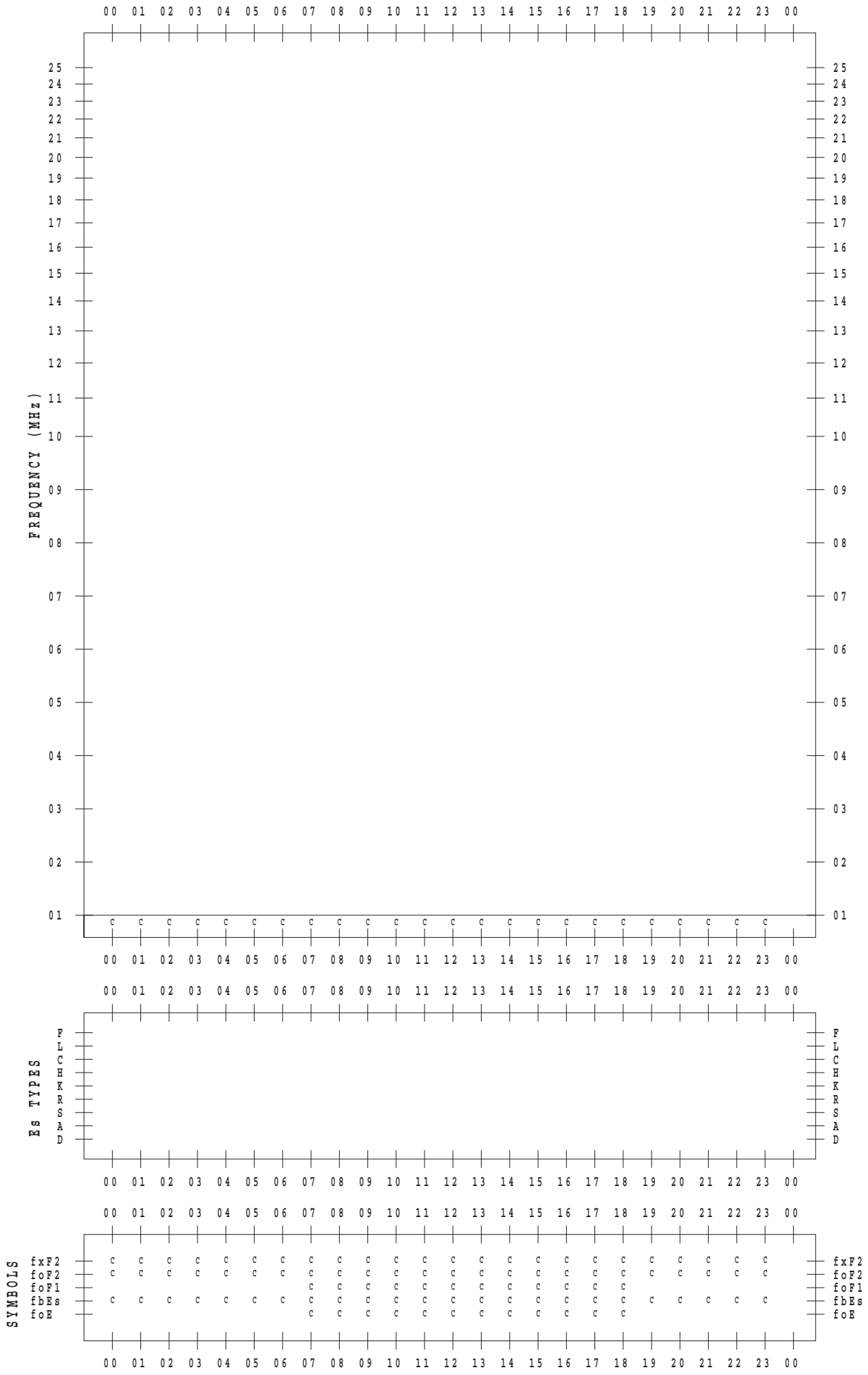
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/18

135 °E MEAN TIME



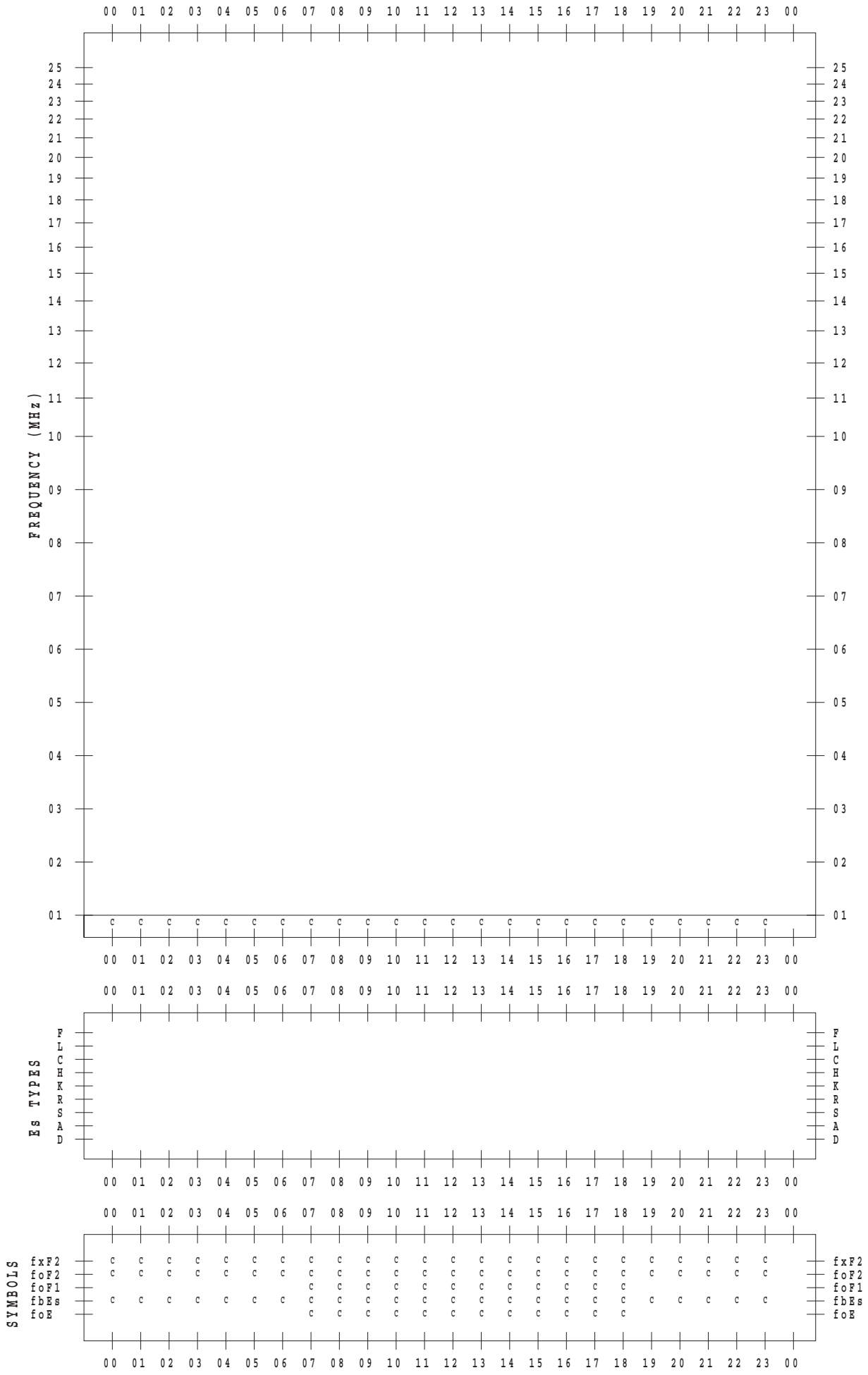
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/19

135 °E MEAN TIME



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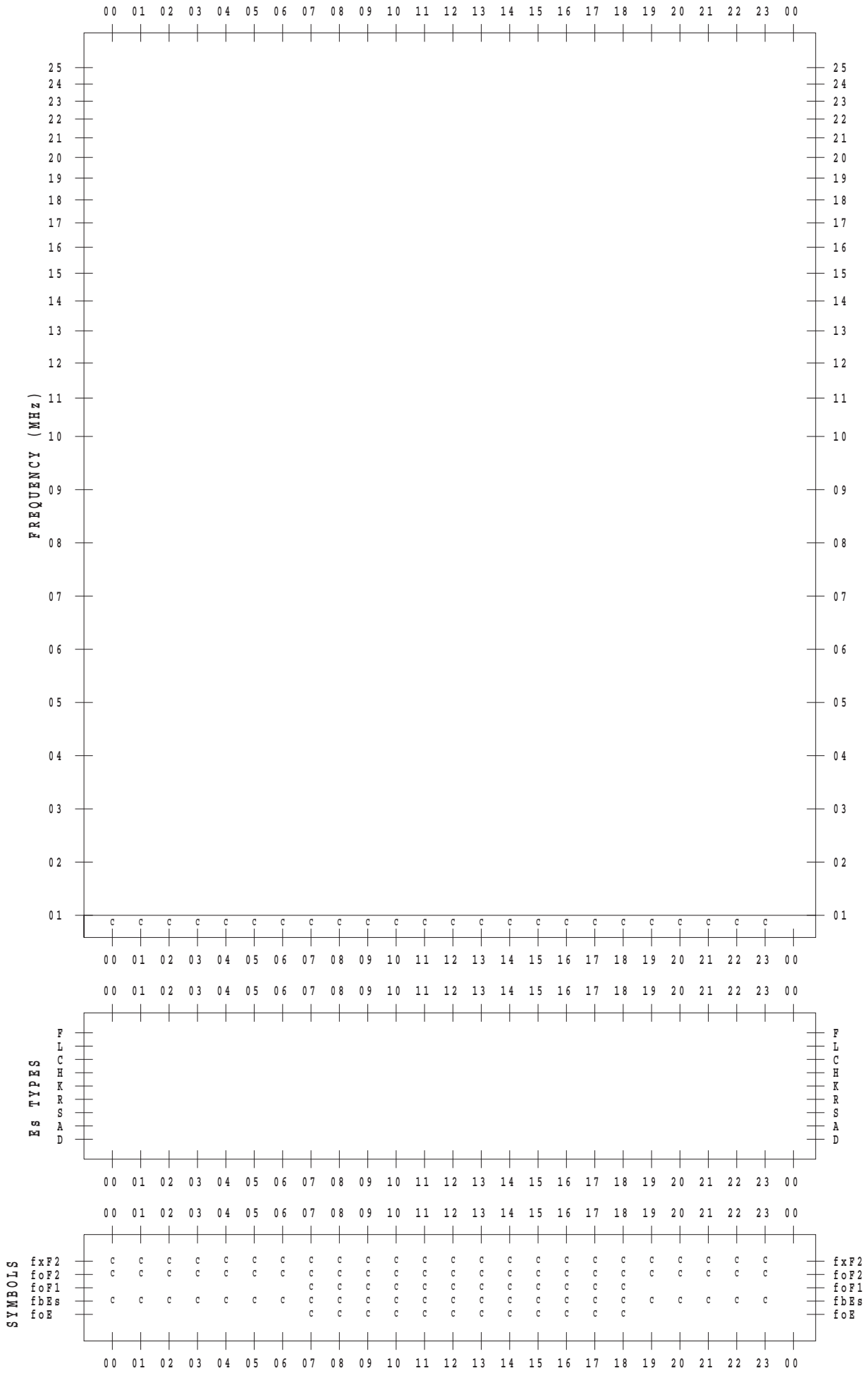
SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/20

135 °E MEAN TIME



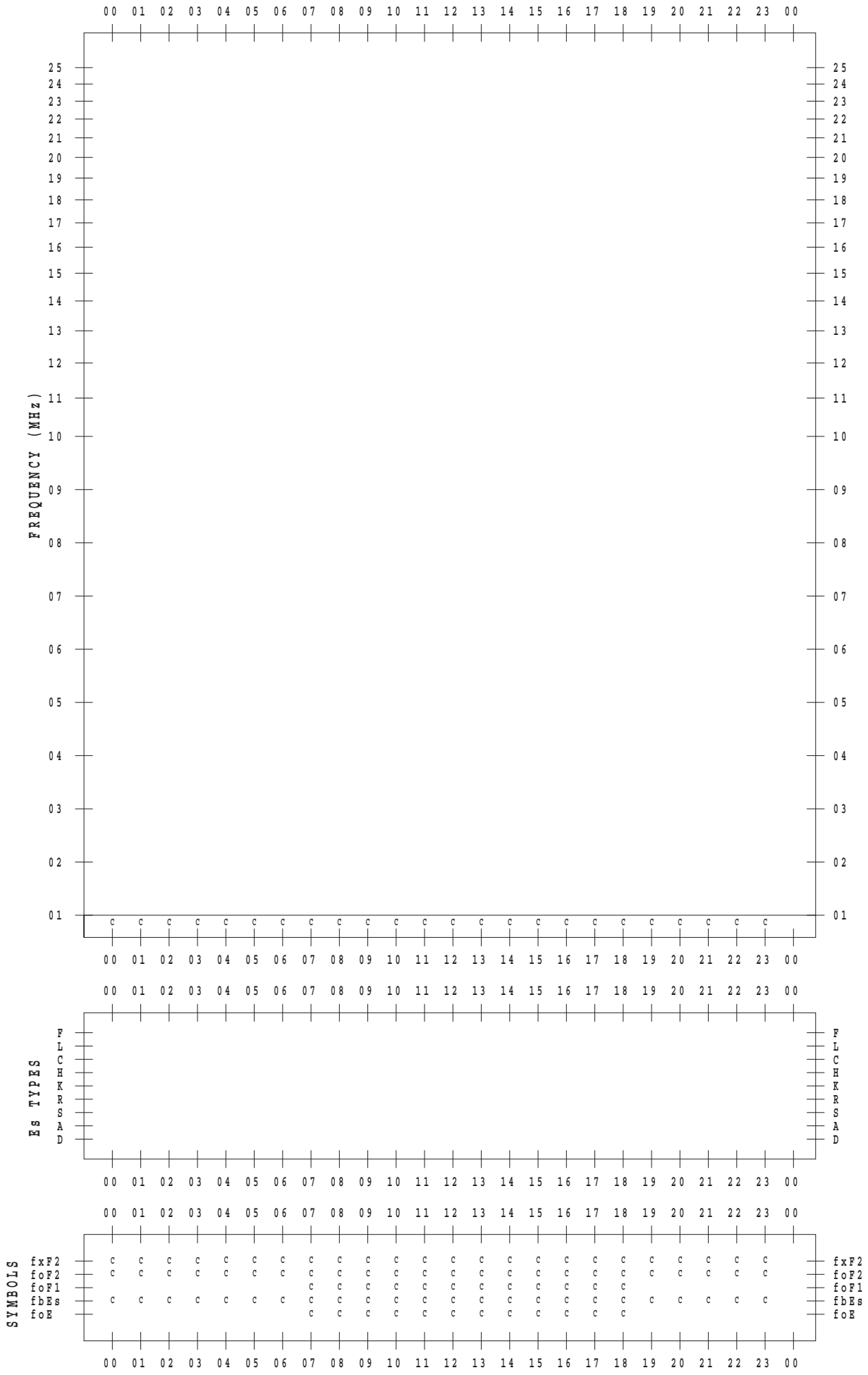
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/21

135 °E MEAN TIME



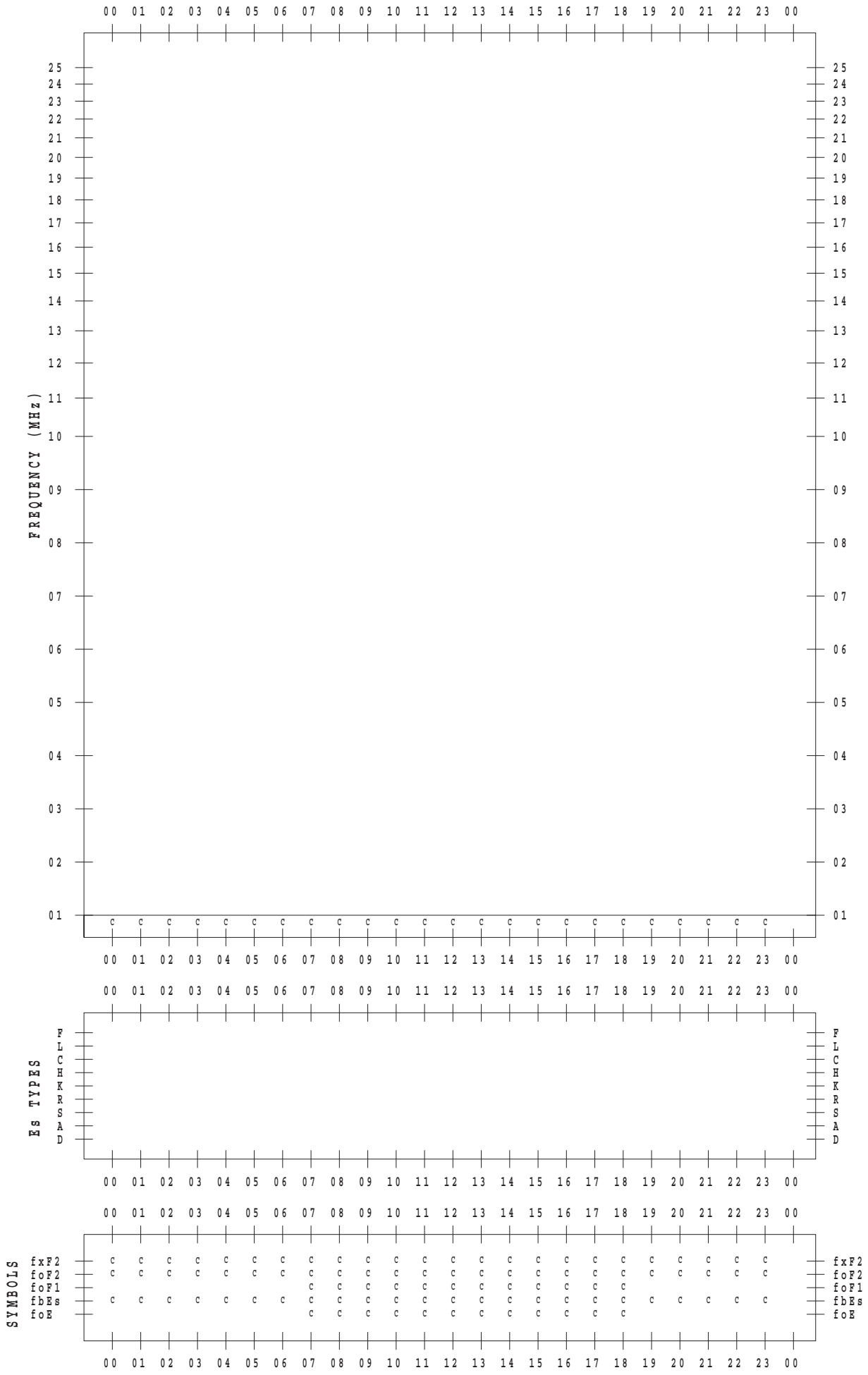
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/22

135 °E MEAN TIME



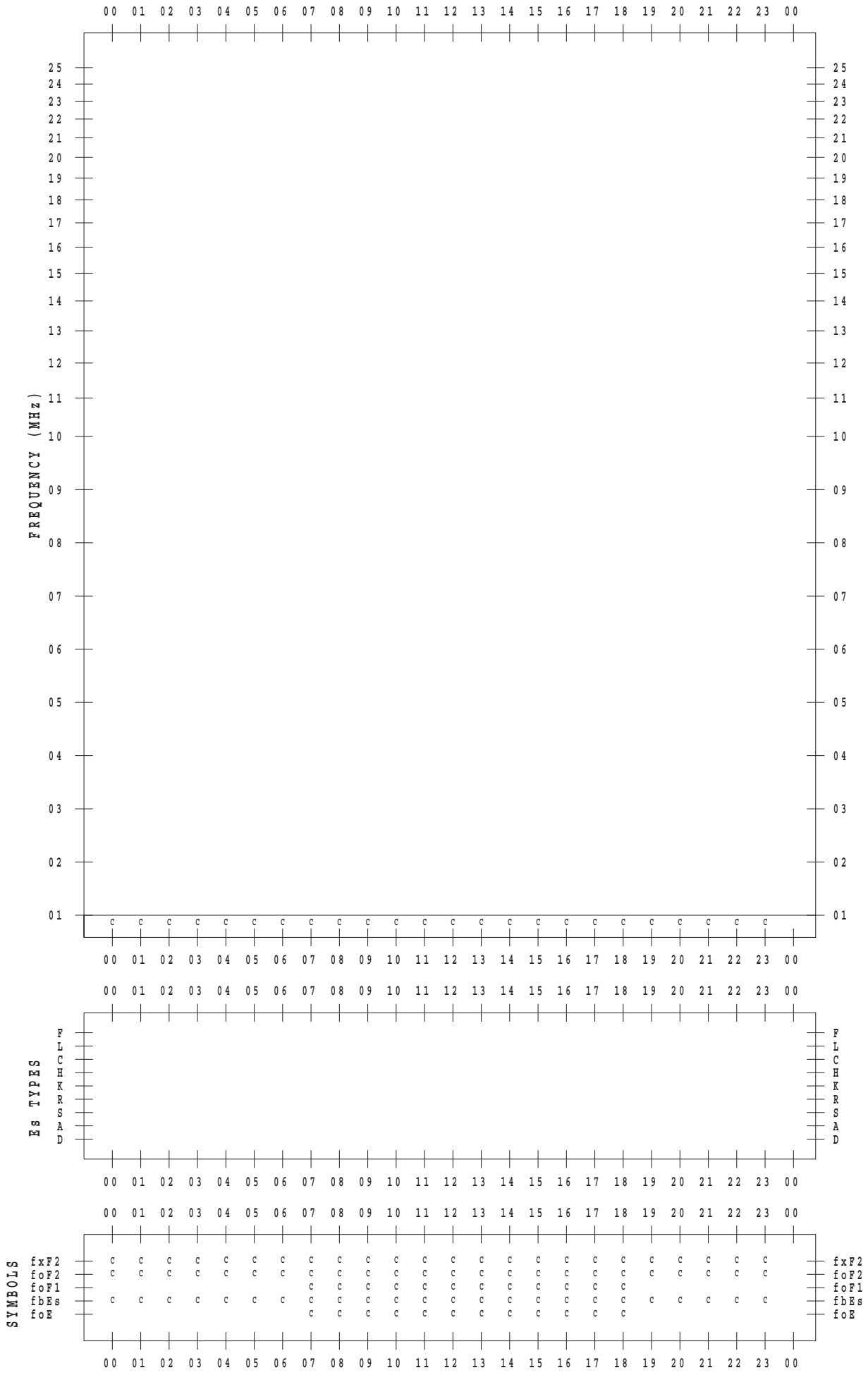
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/23

135 °E MEAN TIME



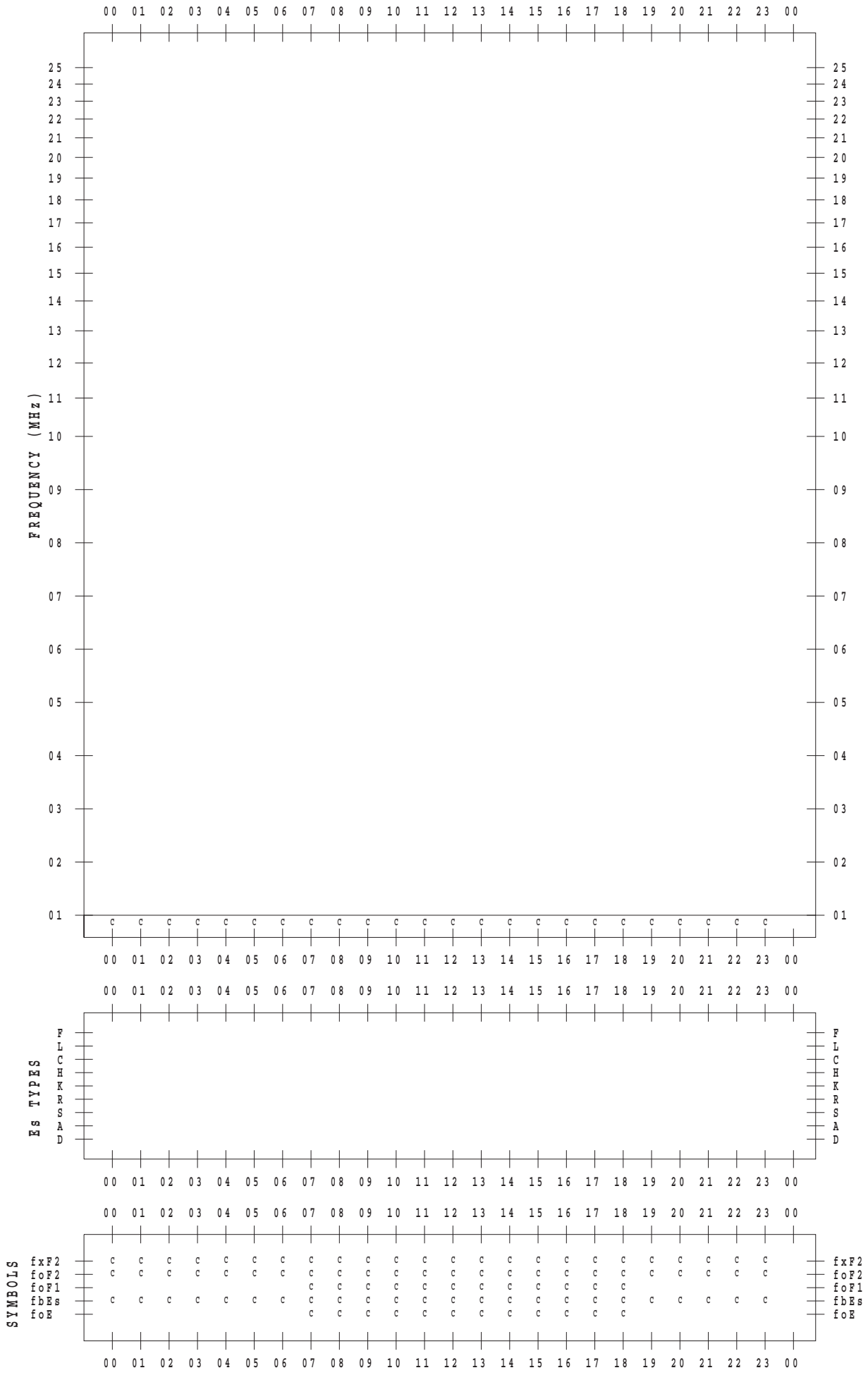
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/24

135 °E MEAN TIME



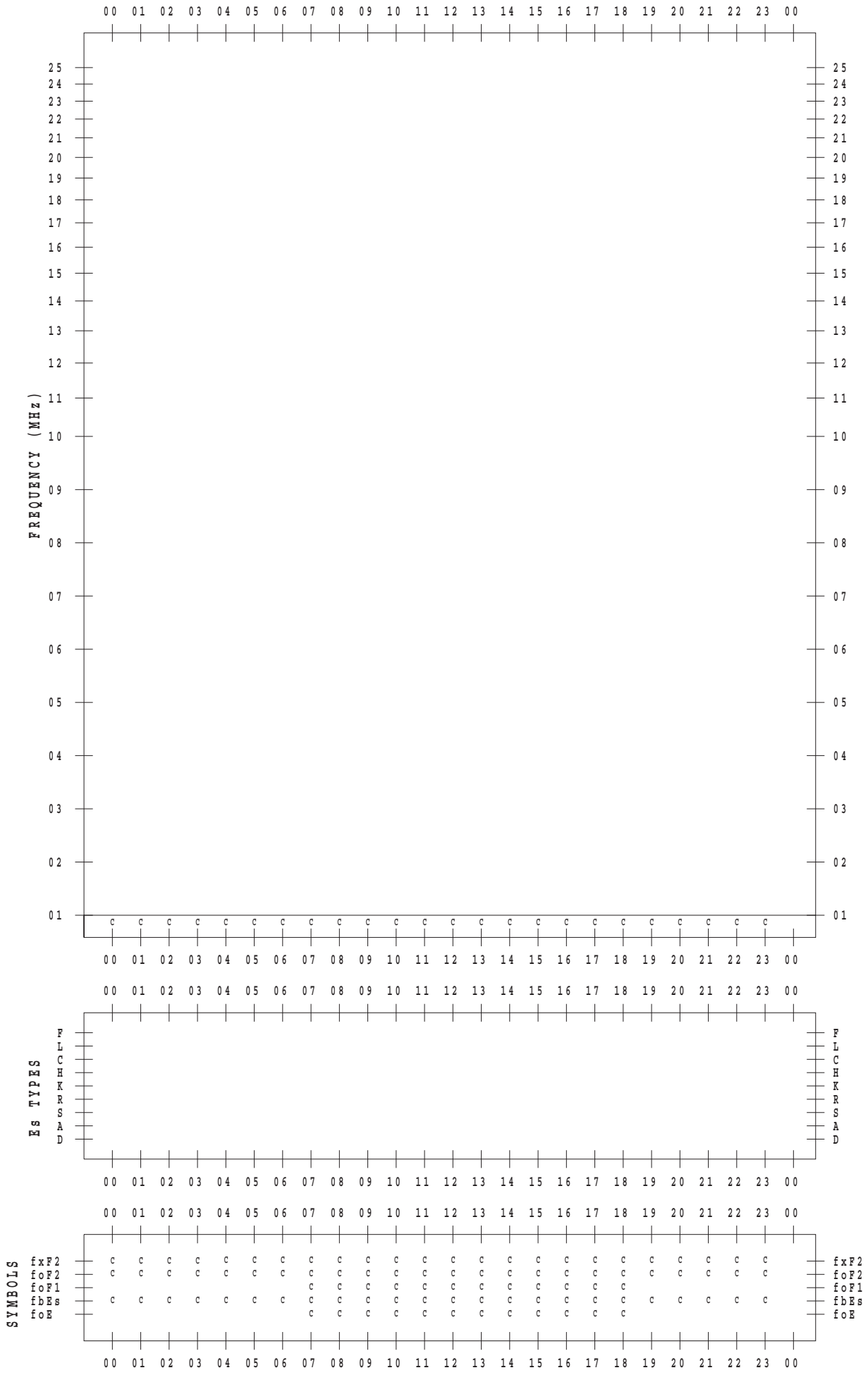
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/25

135 °E MEAN TIME



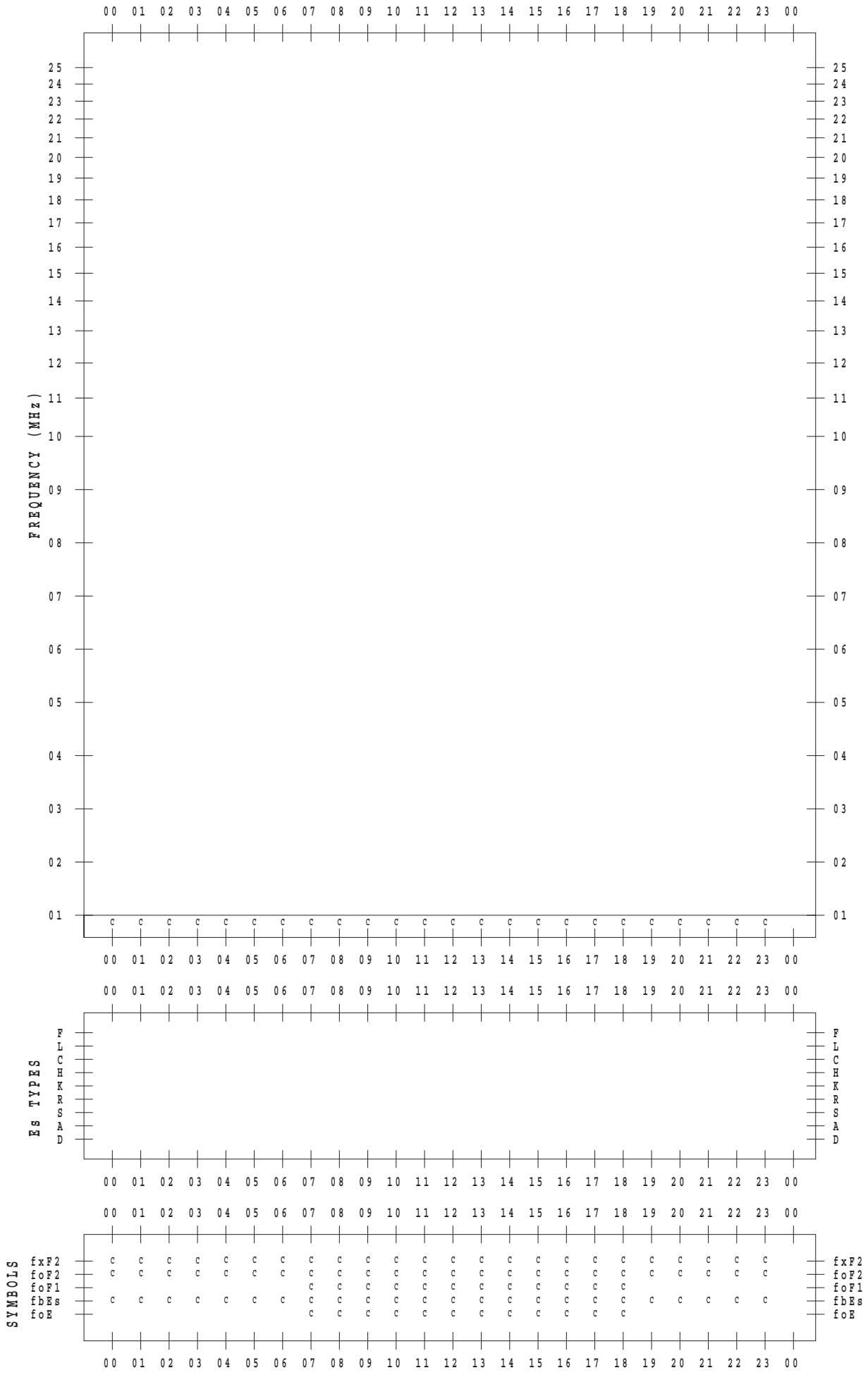
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/26

135 °E MEAN TIME



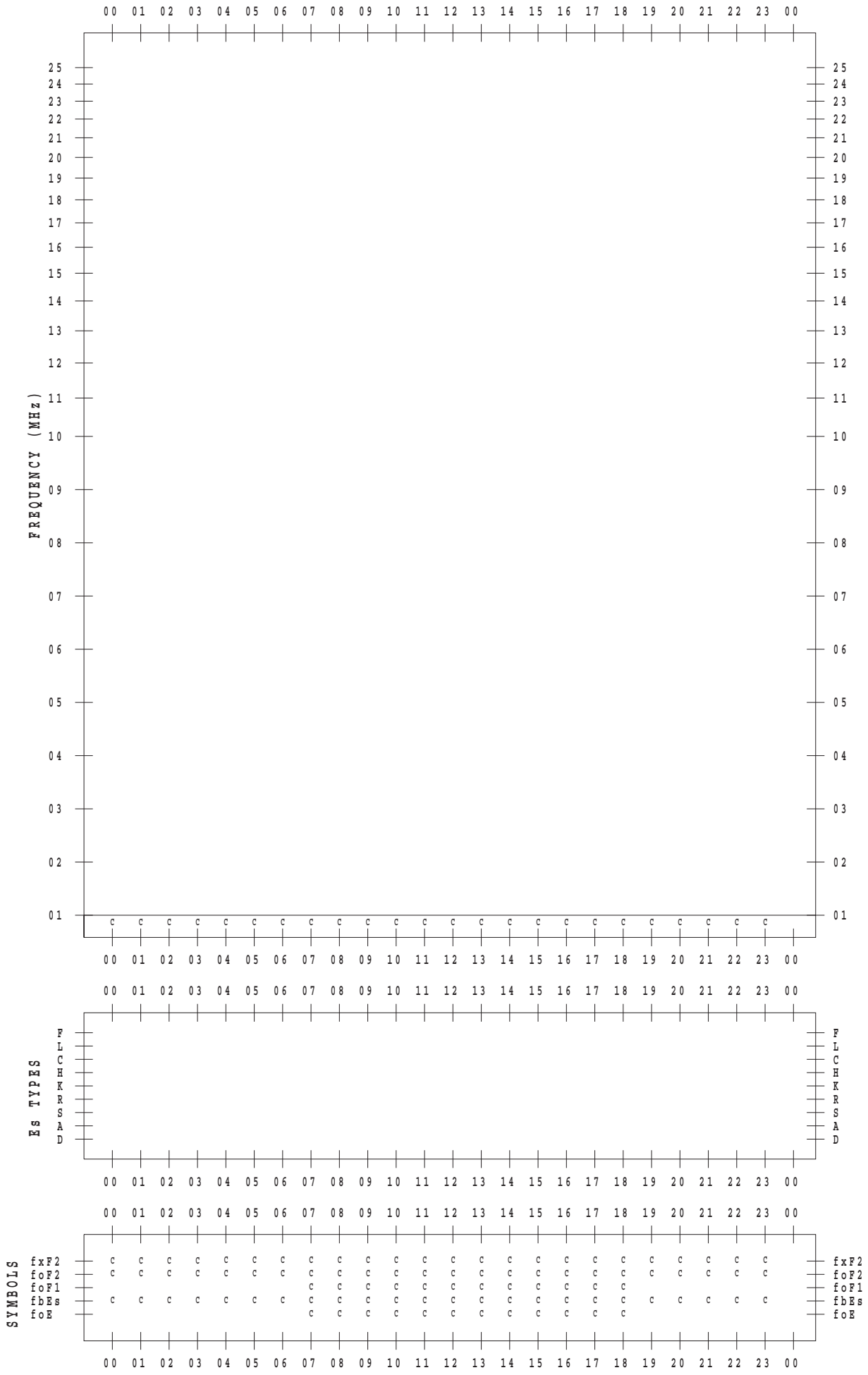
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/27

135 °E MEAN TIME



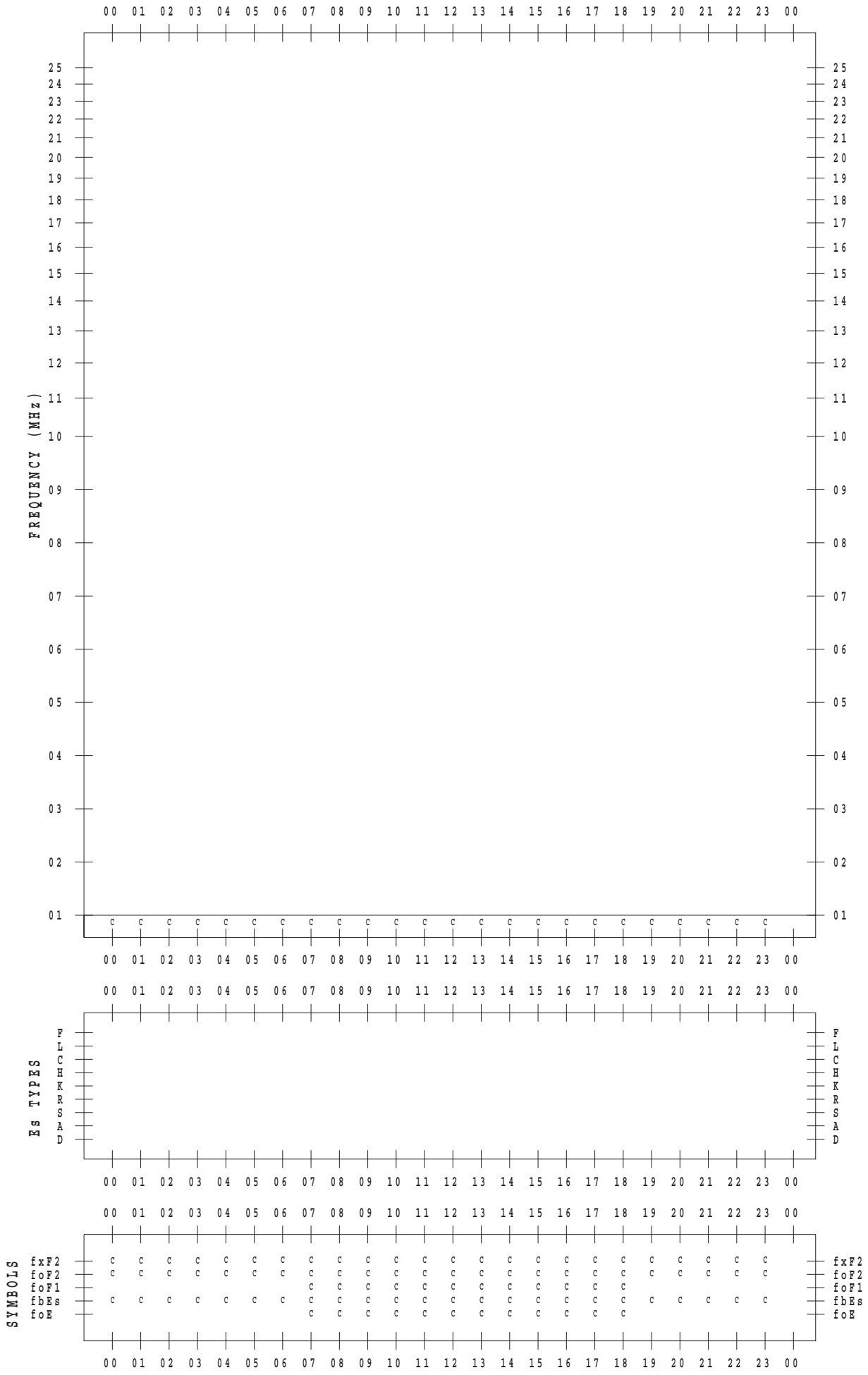
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 2/28

135 °E MEAN TIME



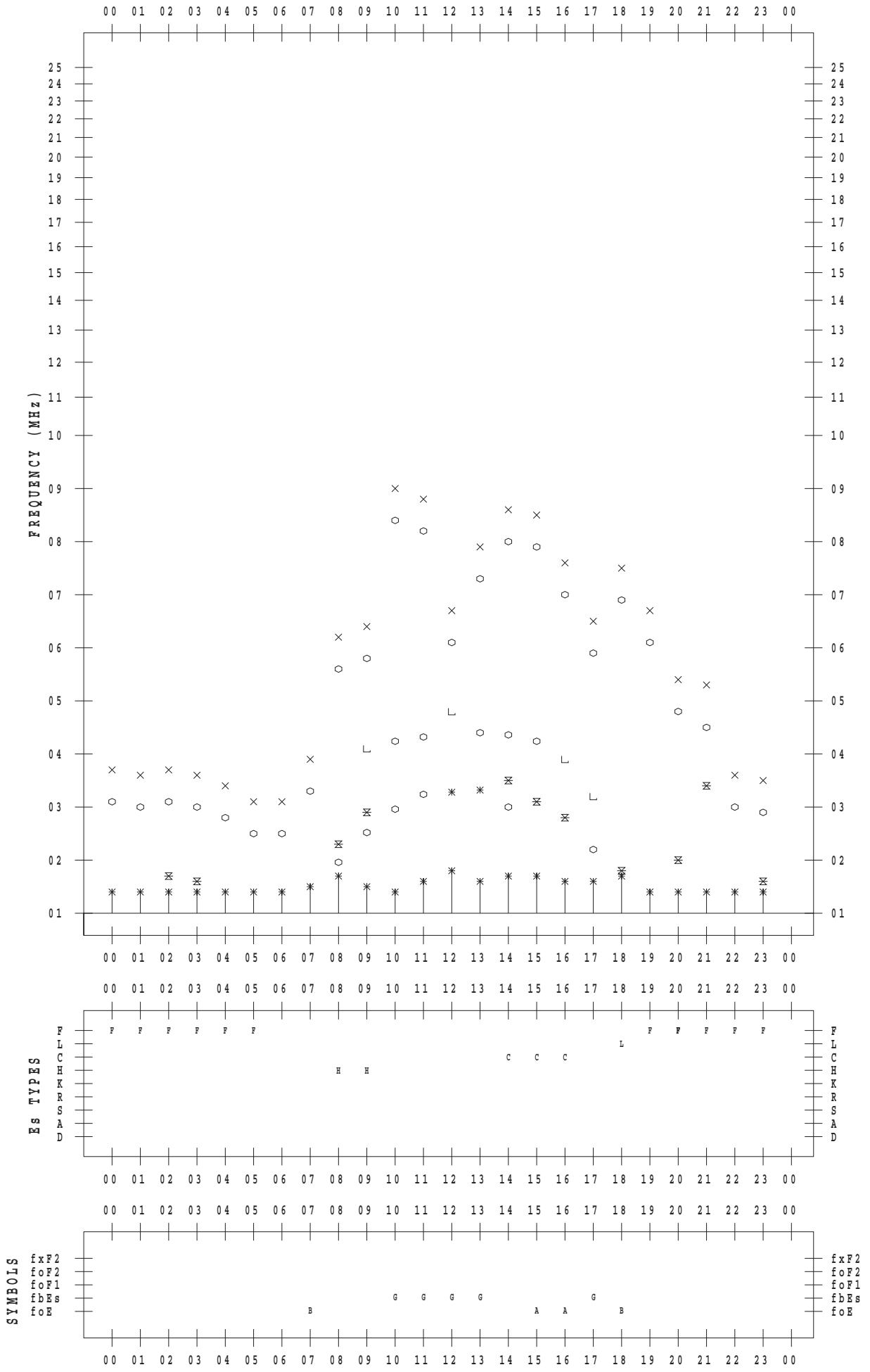
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 1

135 °E MEAN TIME



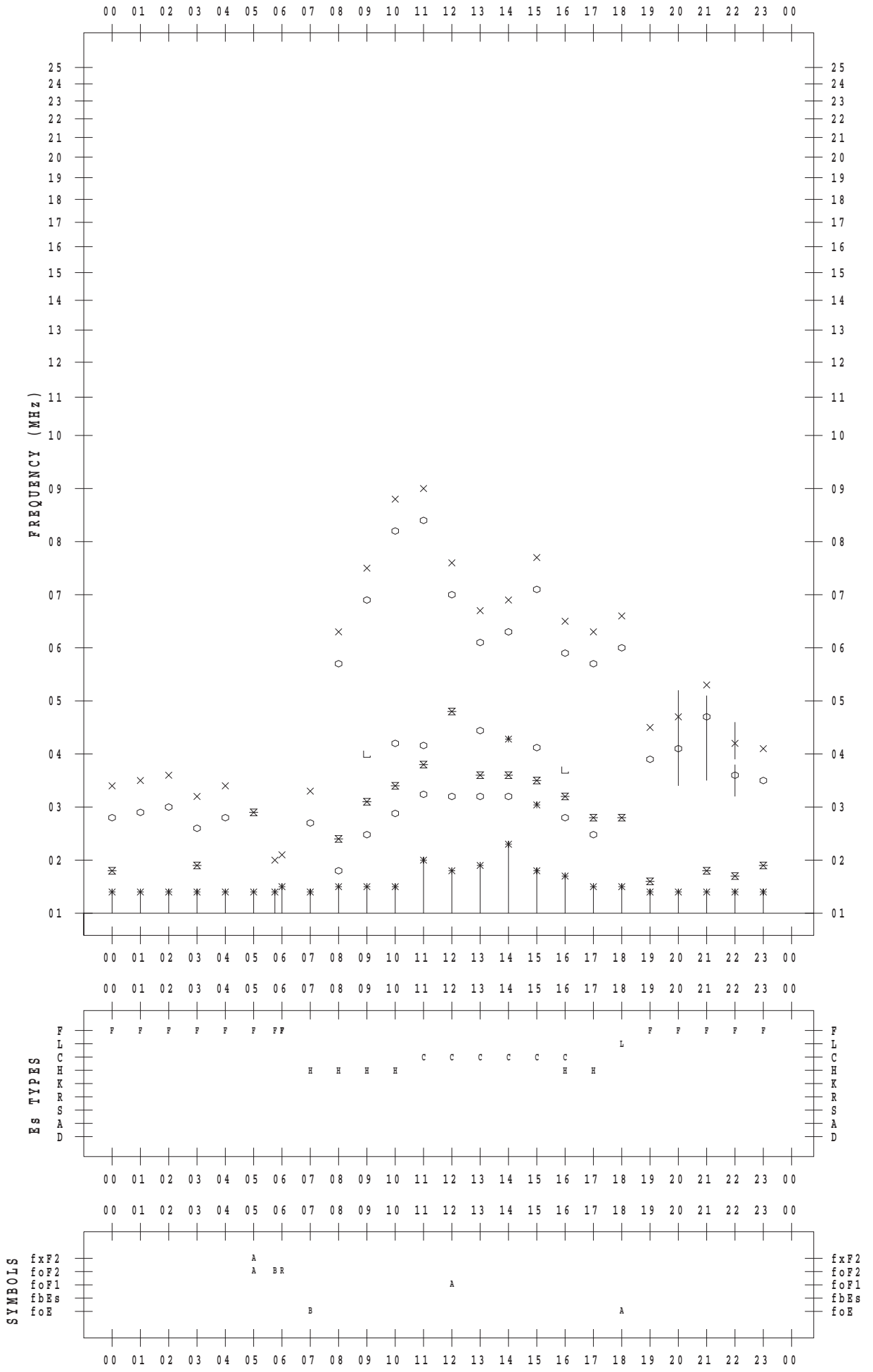
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 2

135 °E MEAN TIME



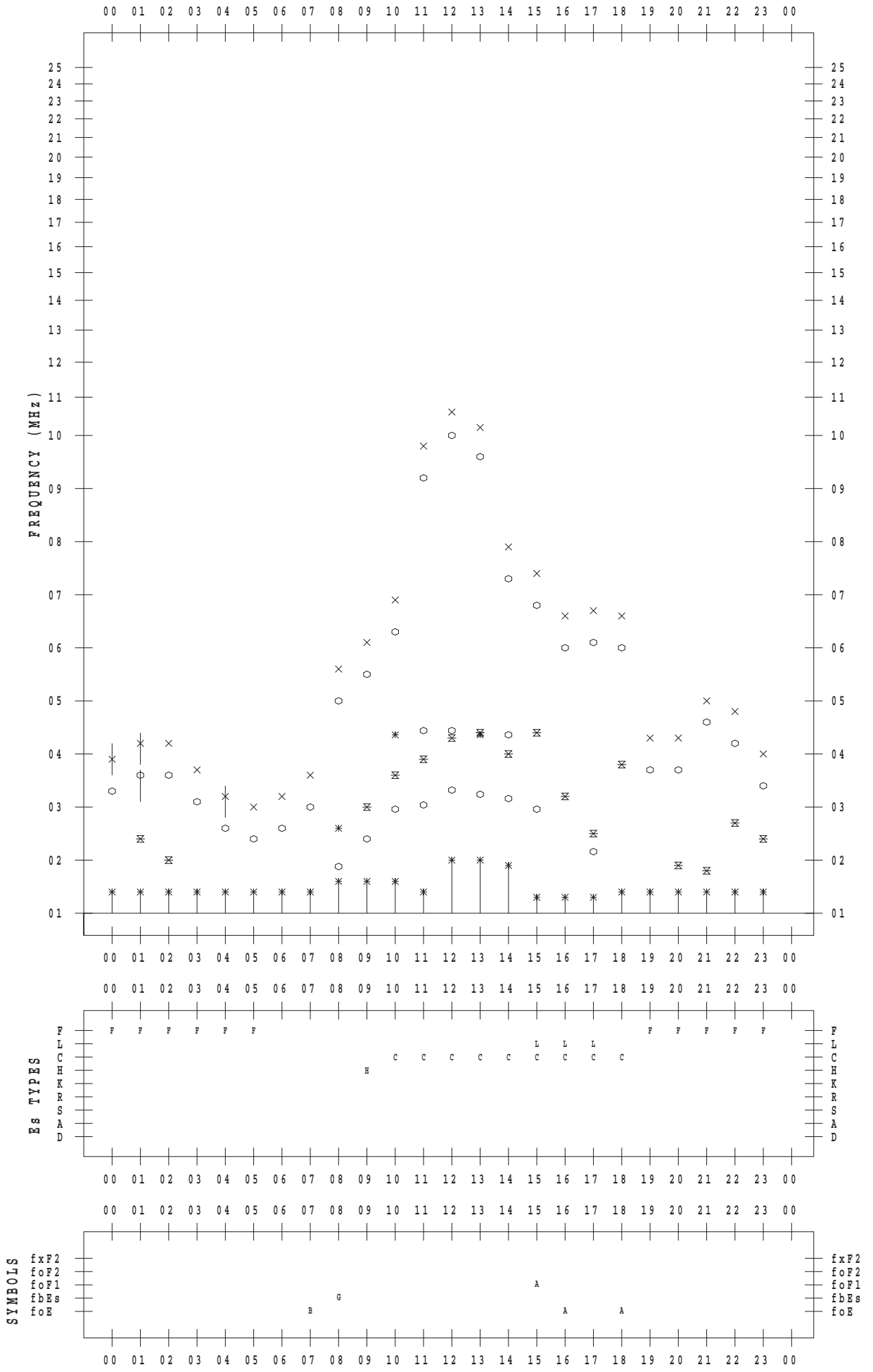
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 3

135 °E MEAN TIME



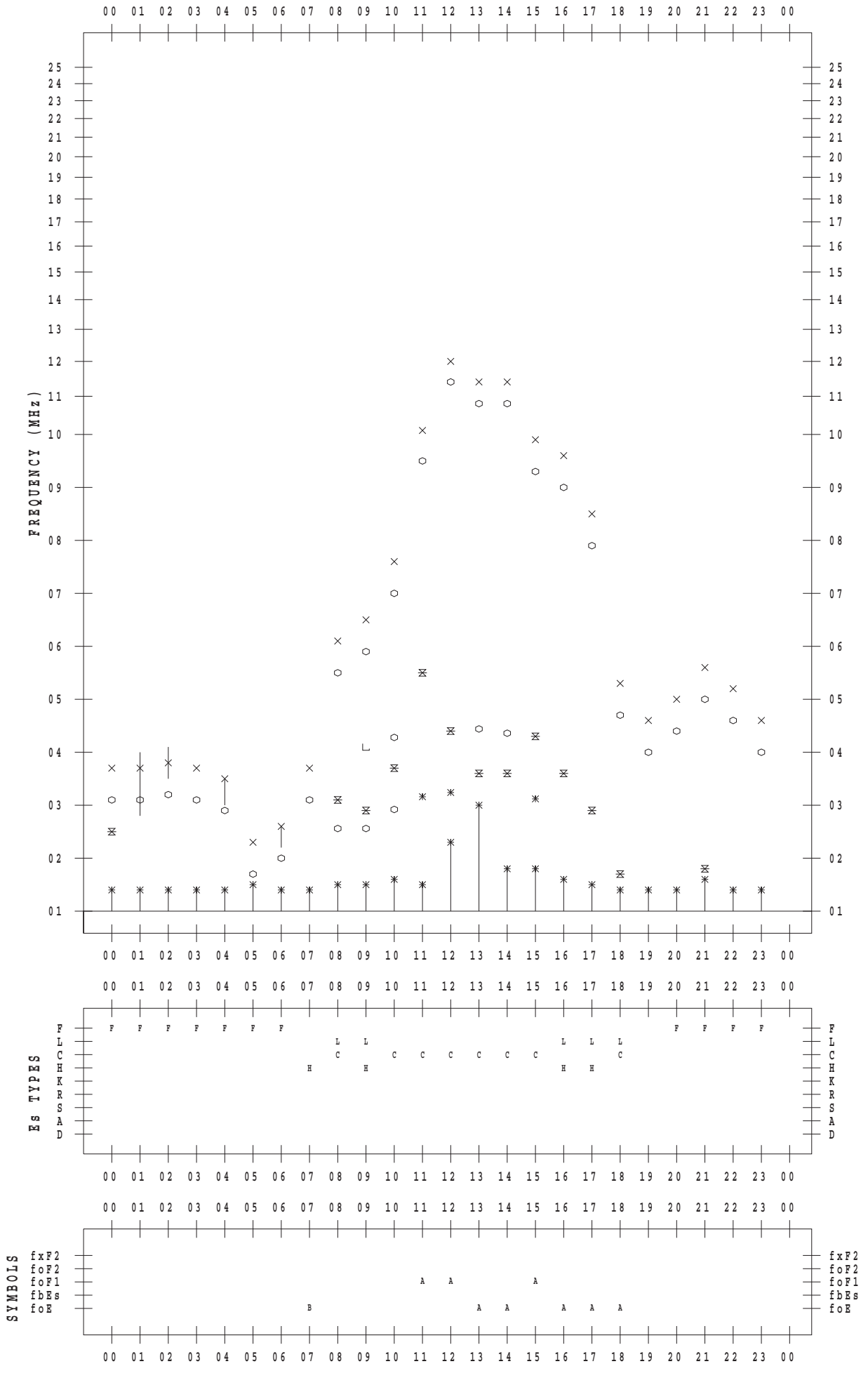
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 4

135 °E MEAN TIME



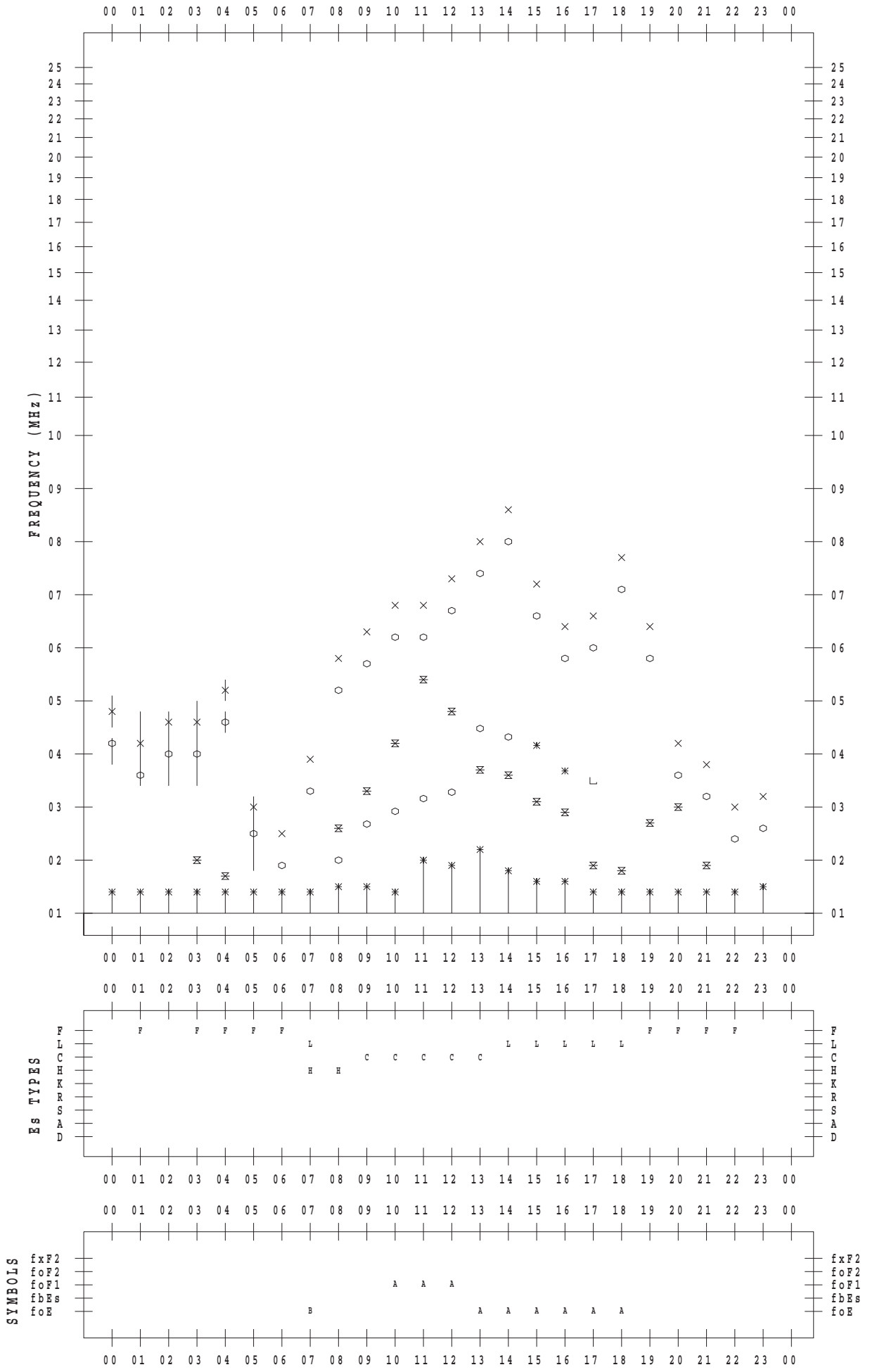
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 5

135 °E MEAN TIME



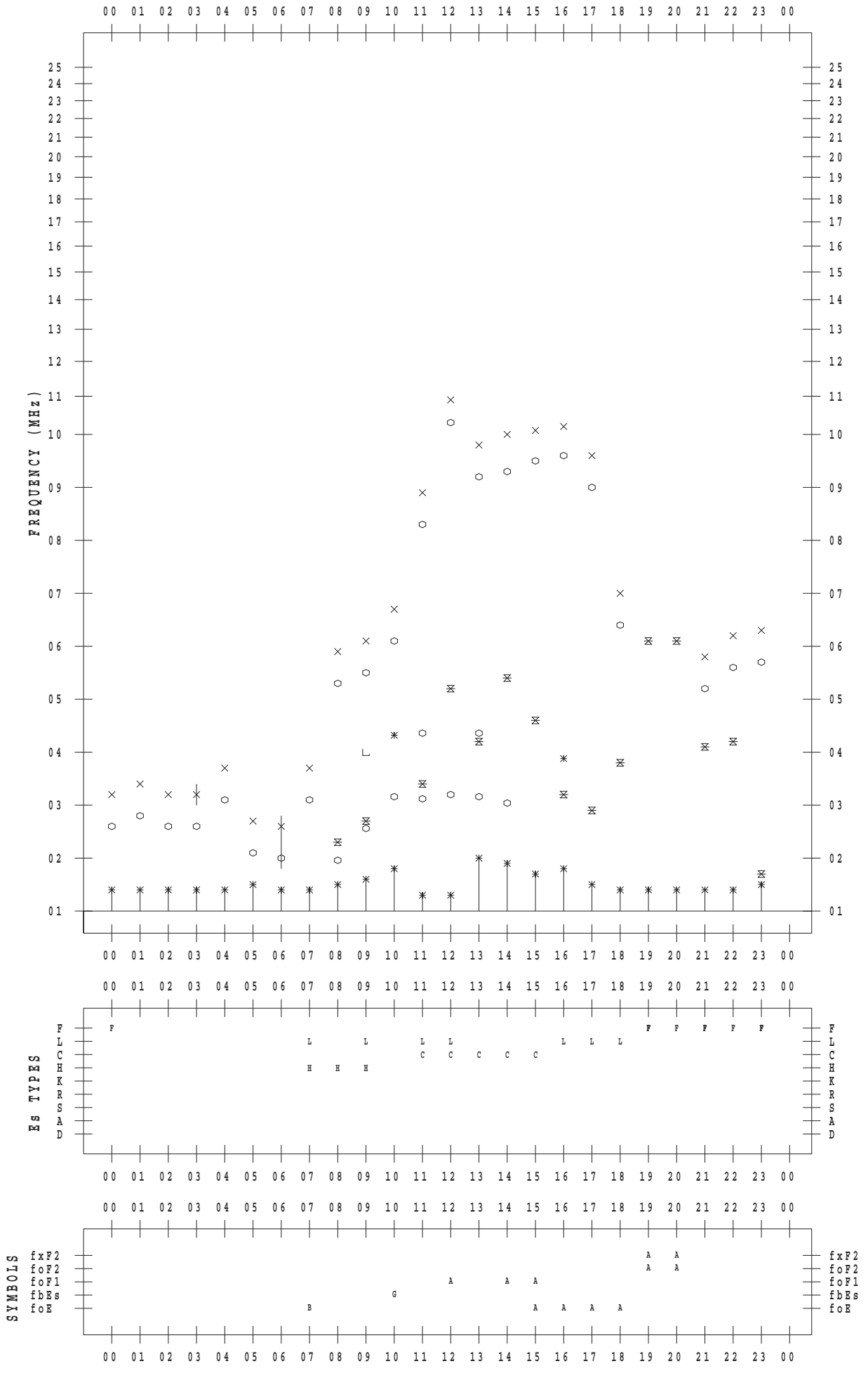
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 6

135 °E MEAN TIME



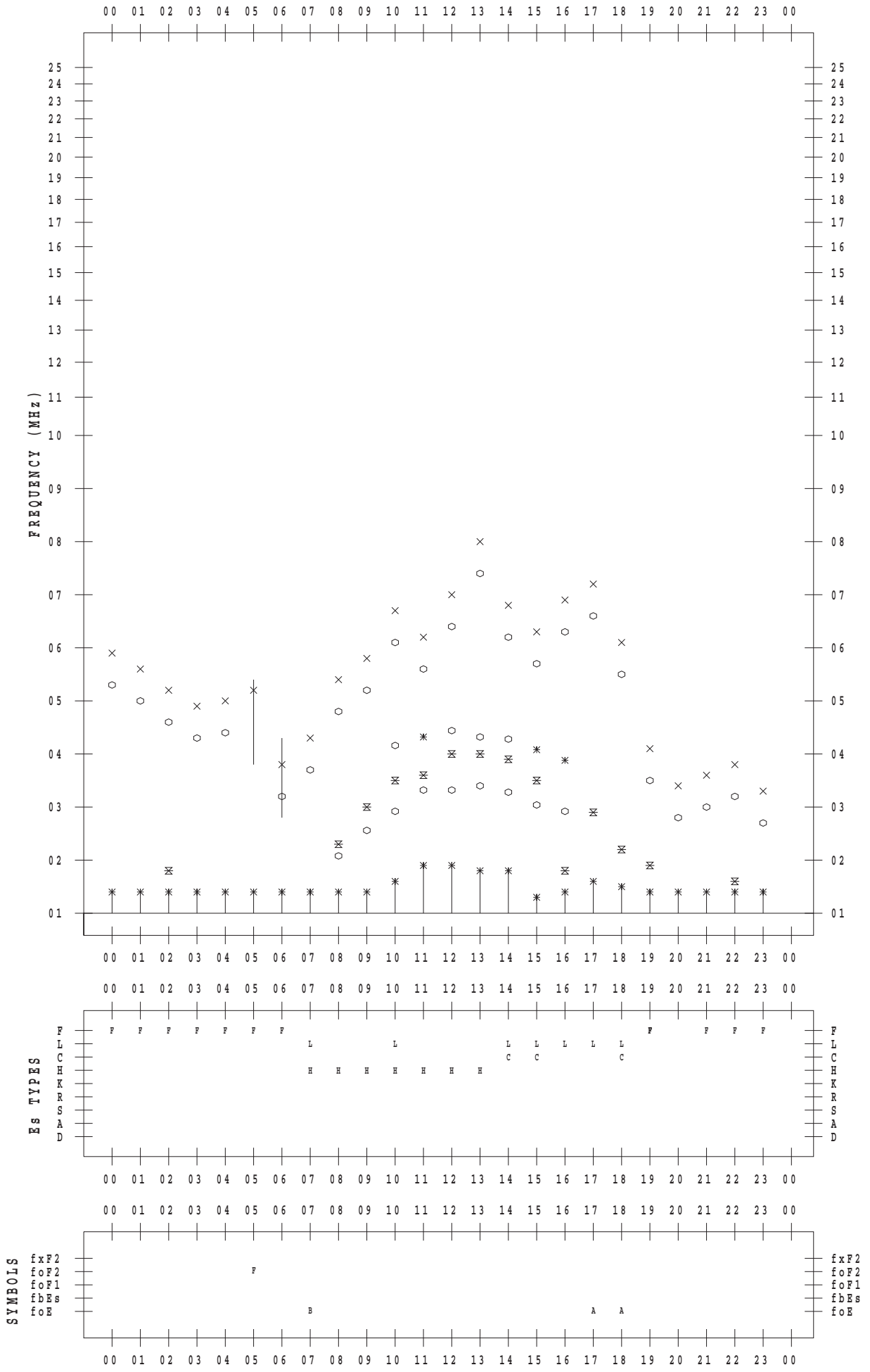
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 7

135 °E MEAN TIME



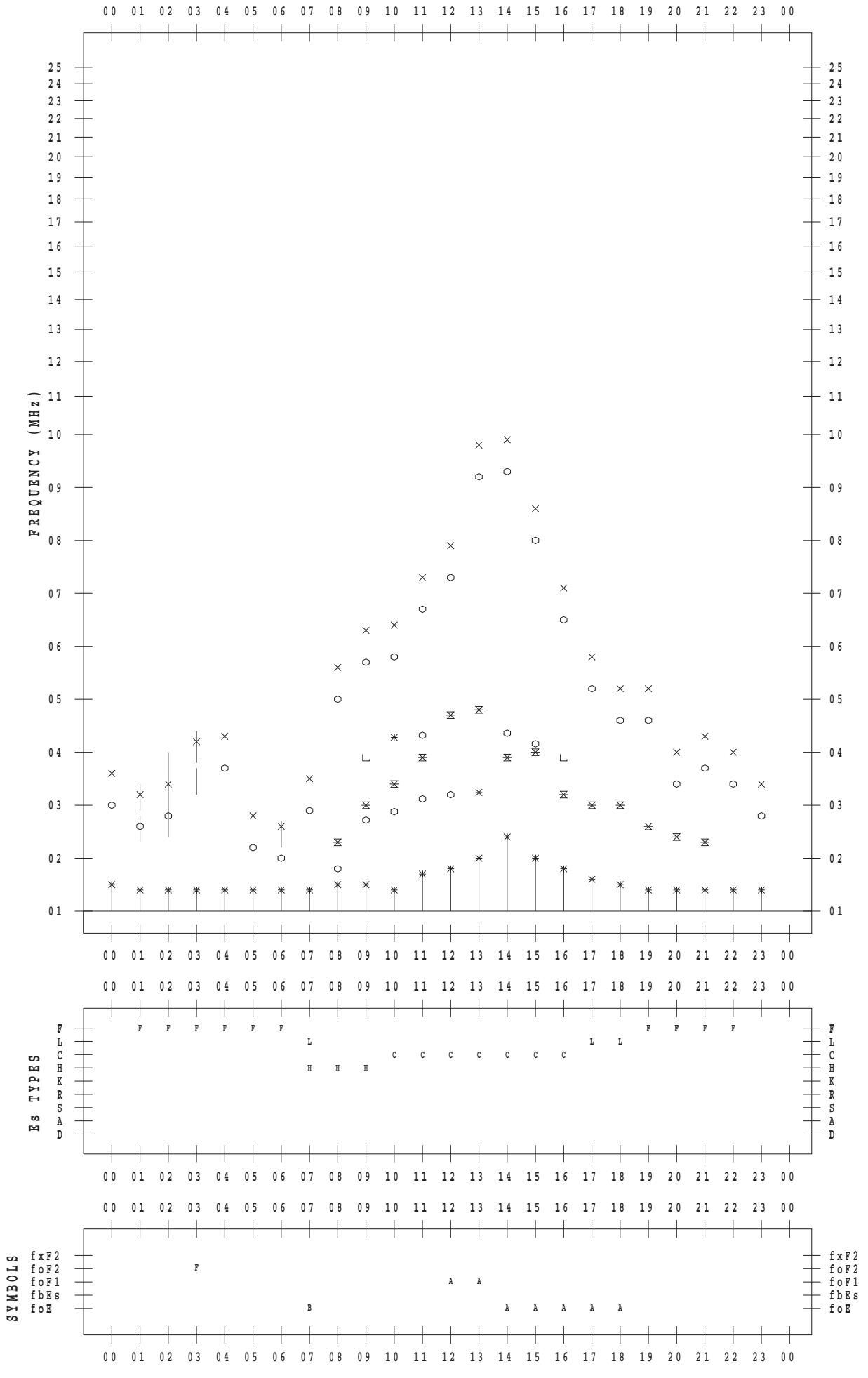
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 8

135 °E MEAN TIME



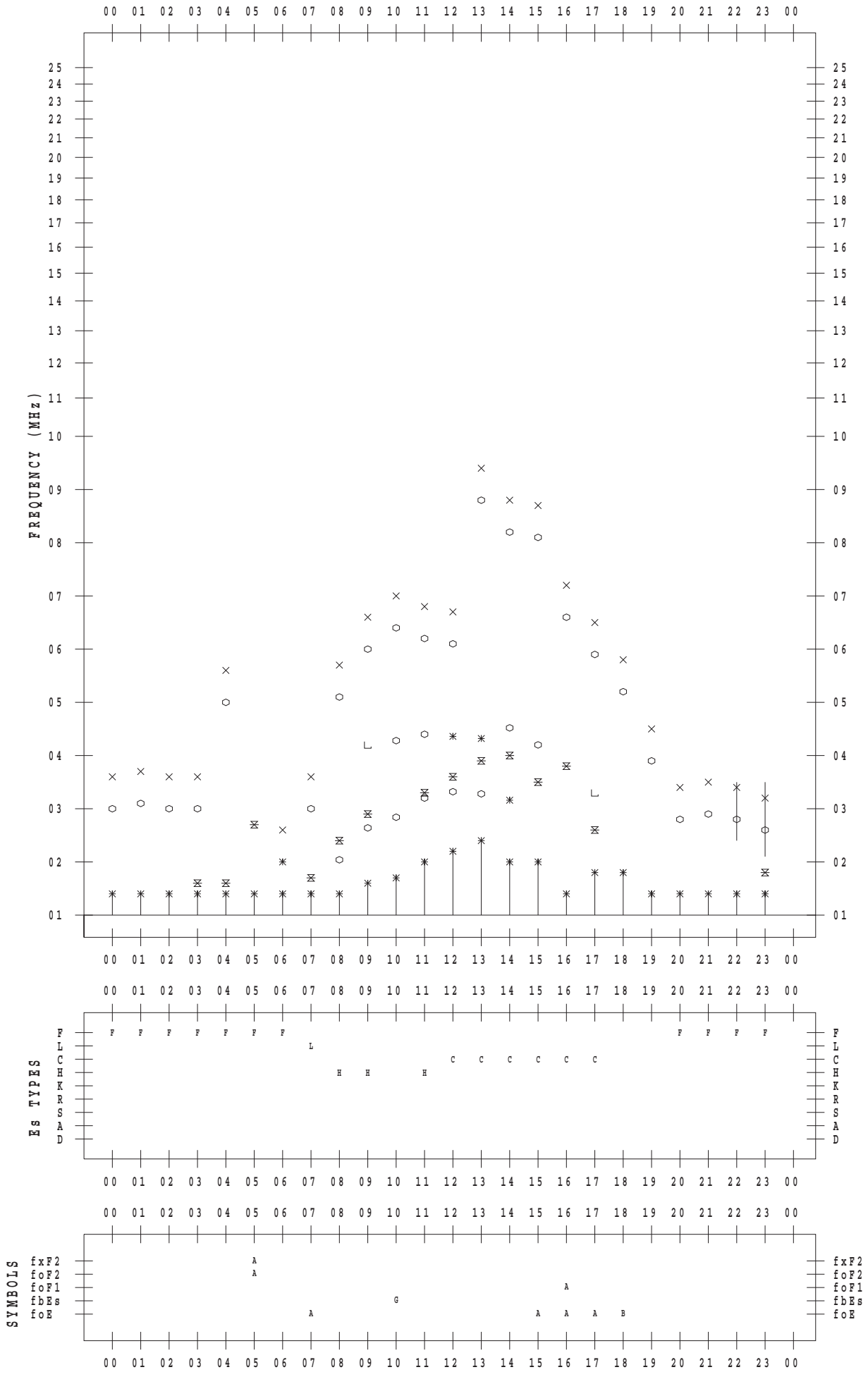
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/ 9

135 °E MEAN TIME



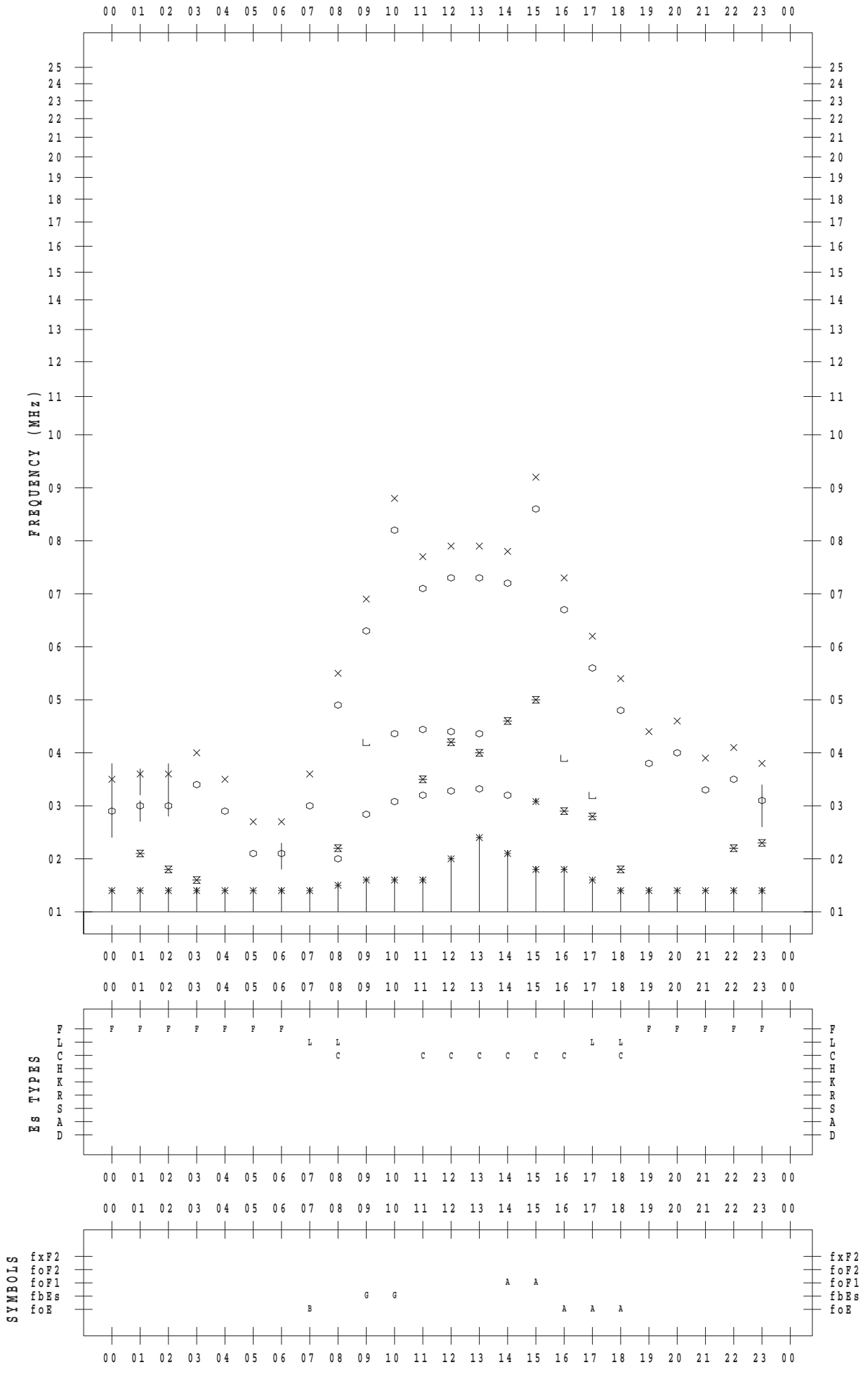
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/10

135 °E MEAN TIME



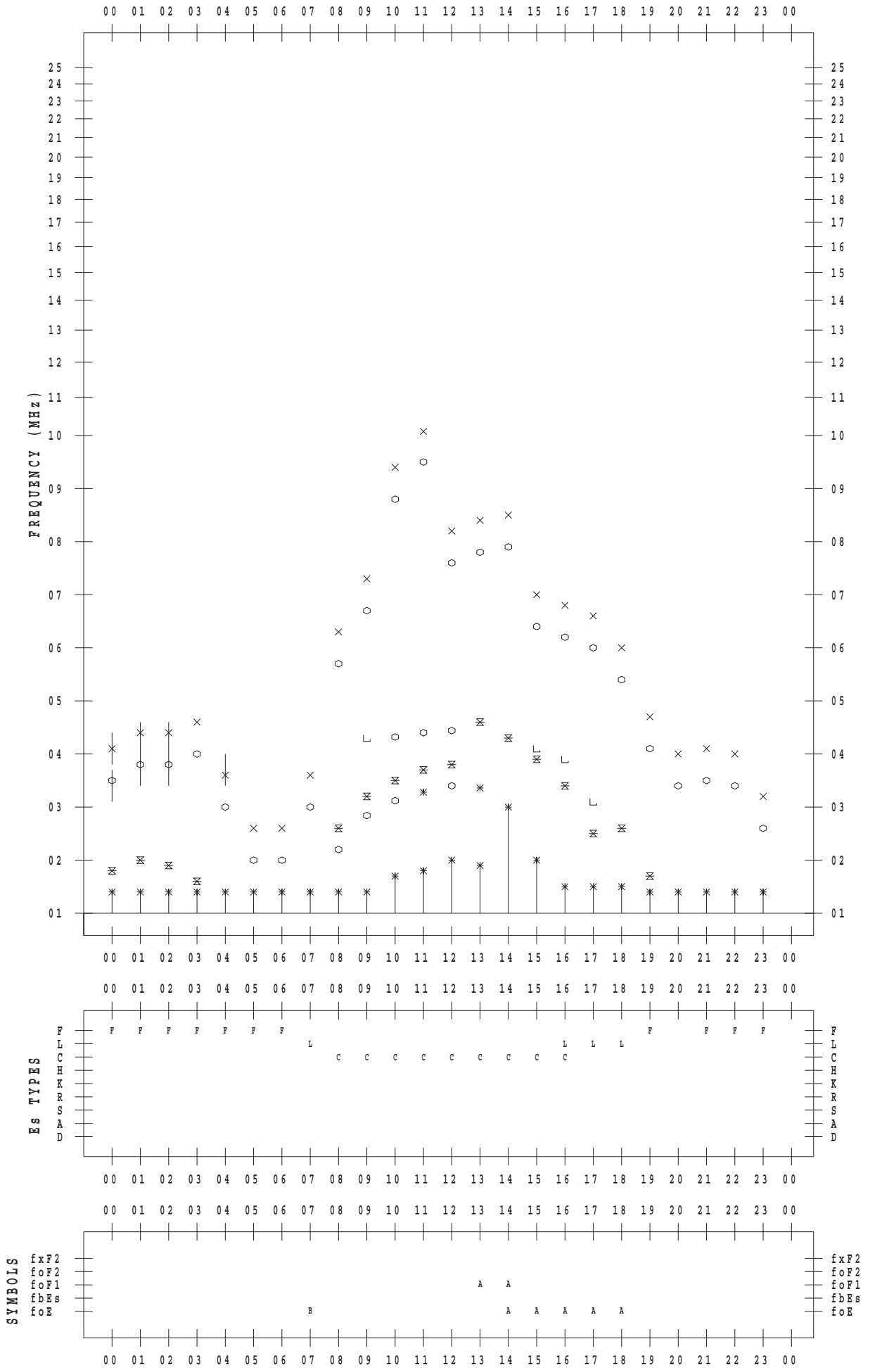
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/11

135 °E MEAN TIME



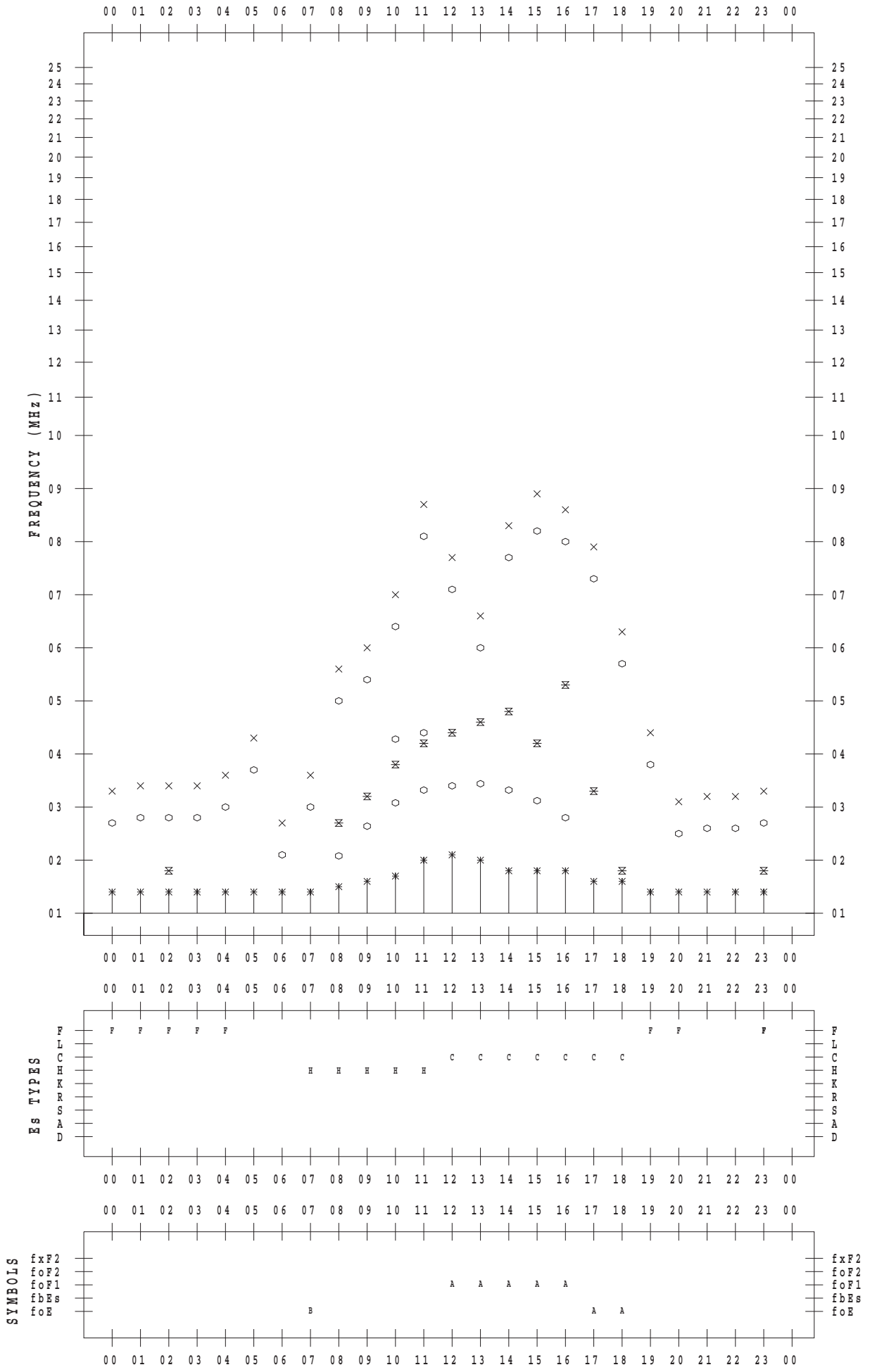
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/12

135 °E MEAN TIME



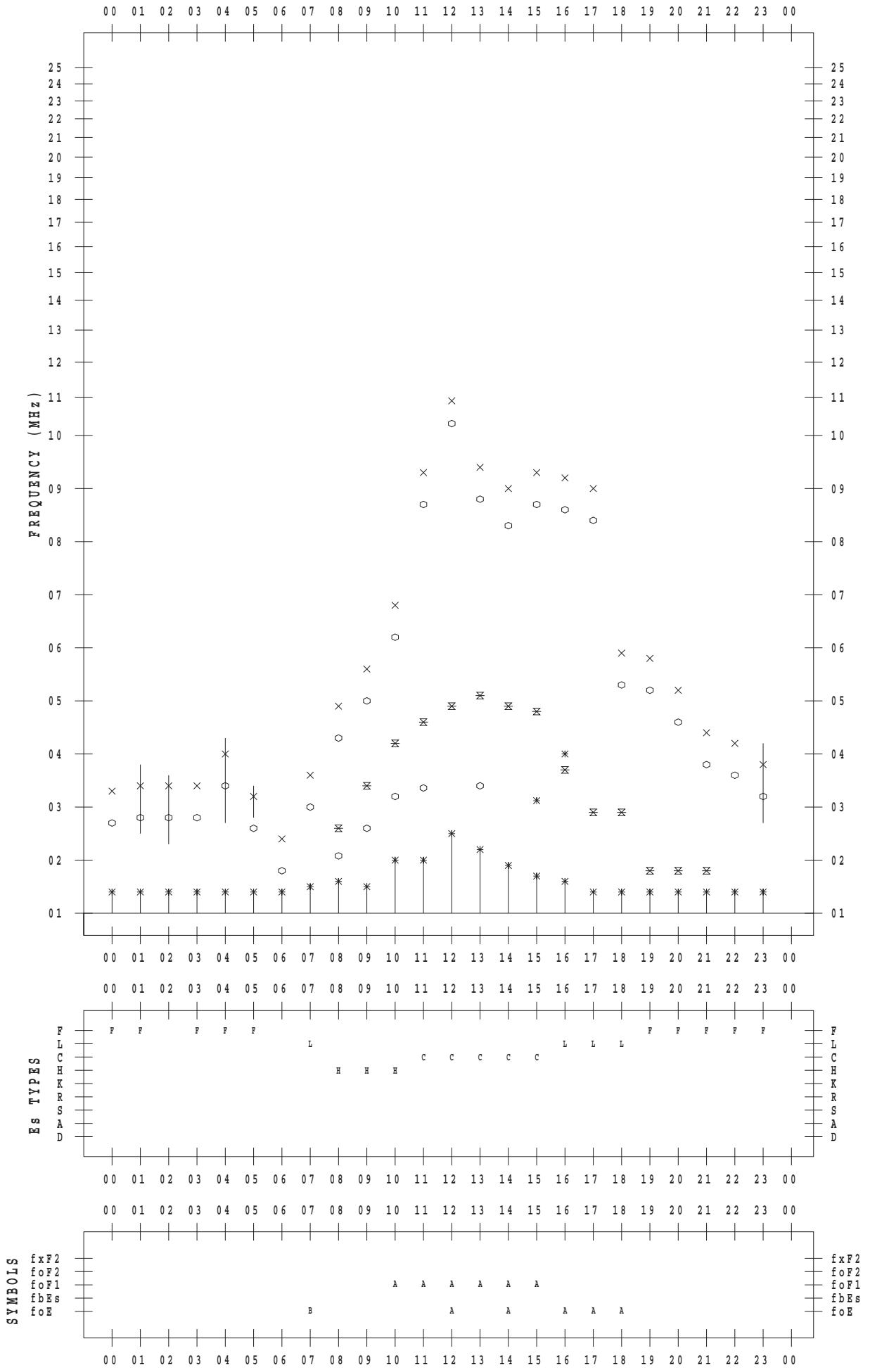
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/13

135 °E MEAN TIME



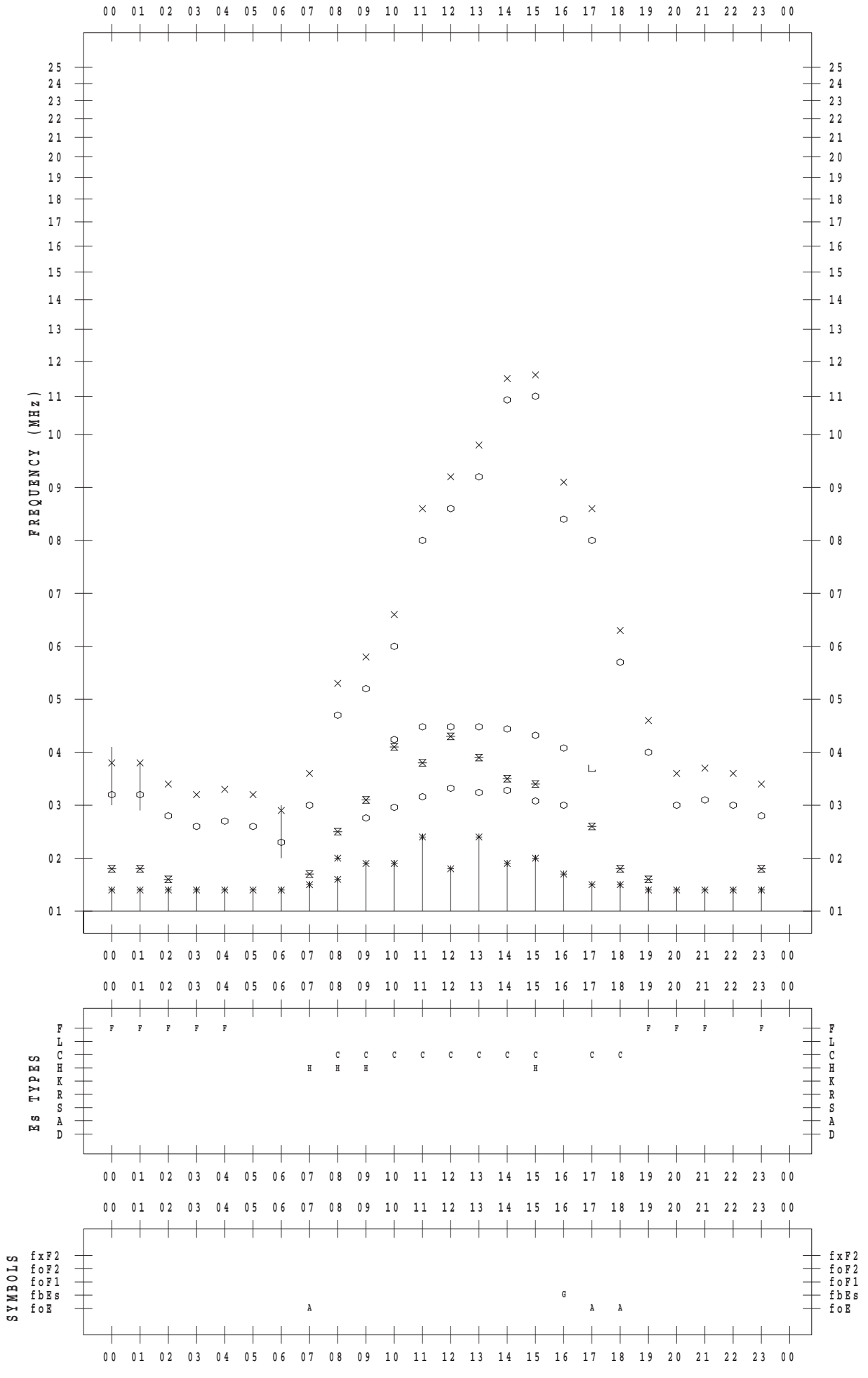
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/14

135 °E MEAN TIME



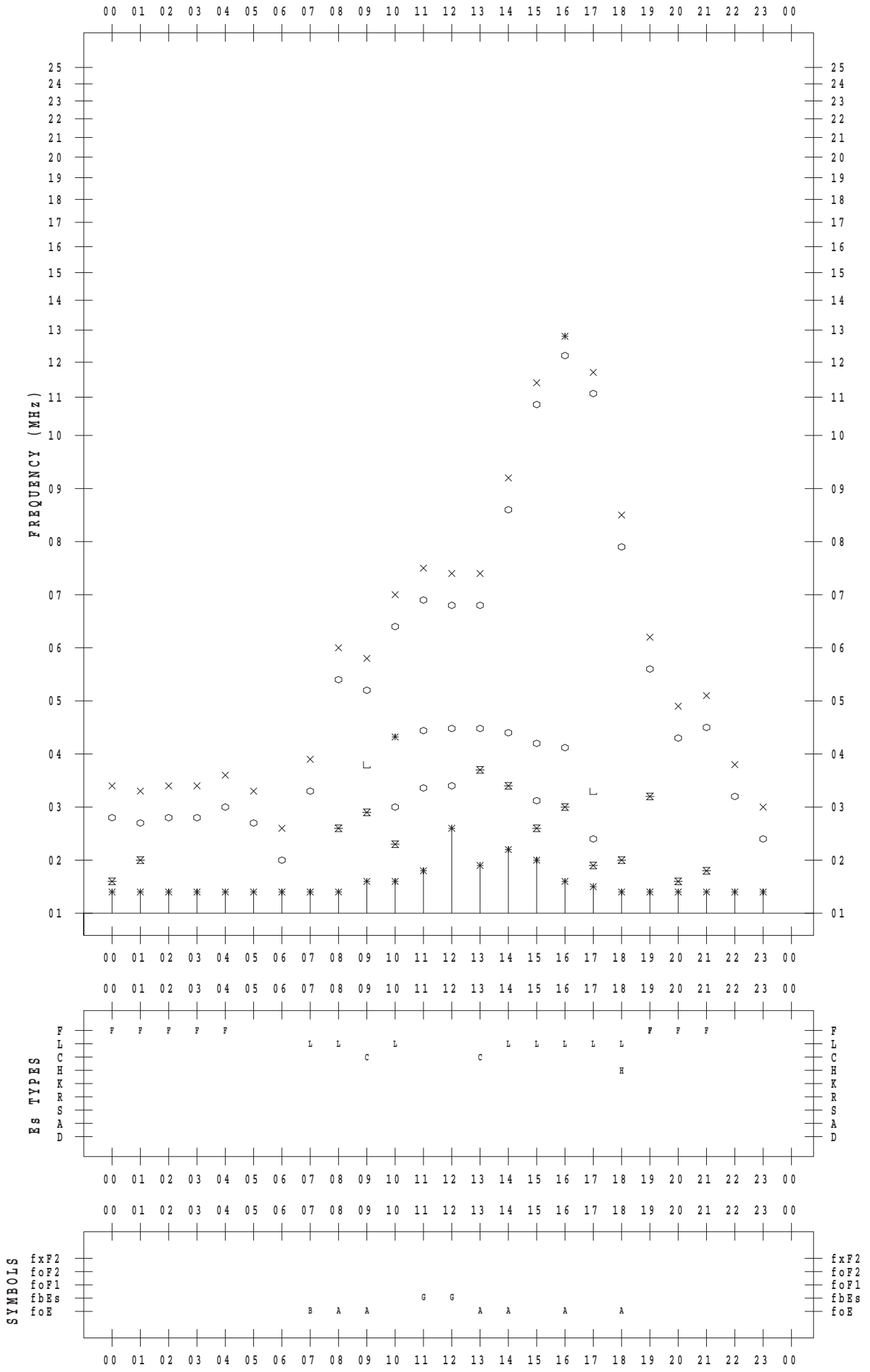
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/15

135 °E MEAN TIME



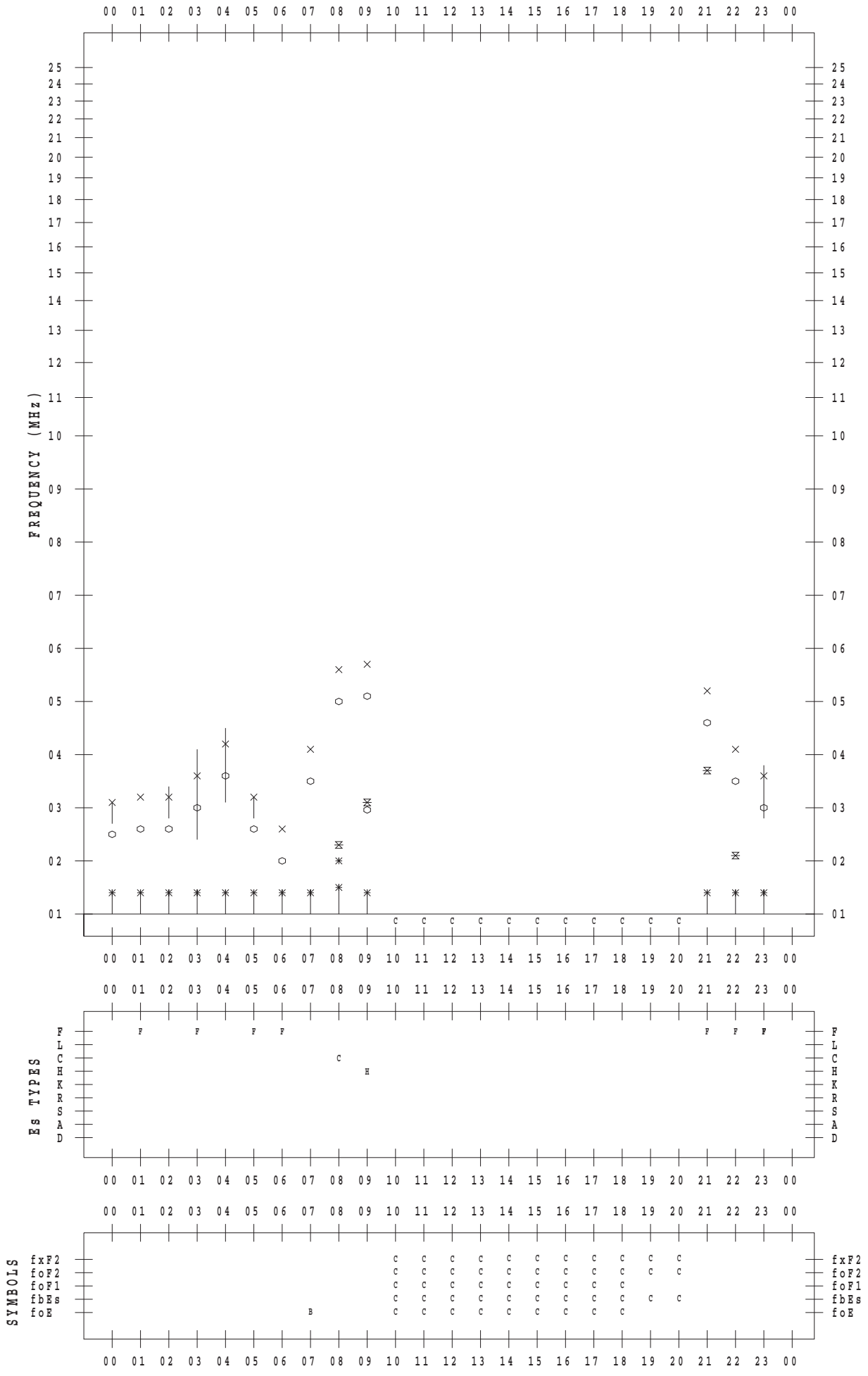
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/16

135 °E MEAN TIME



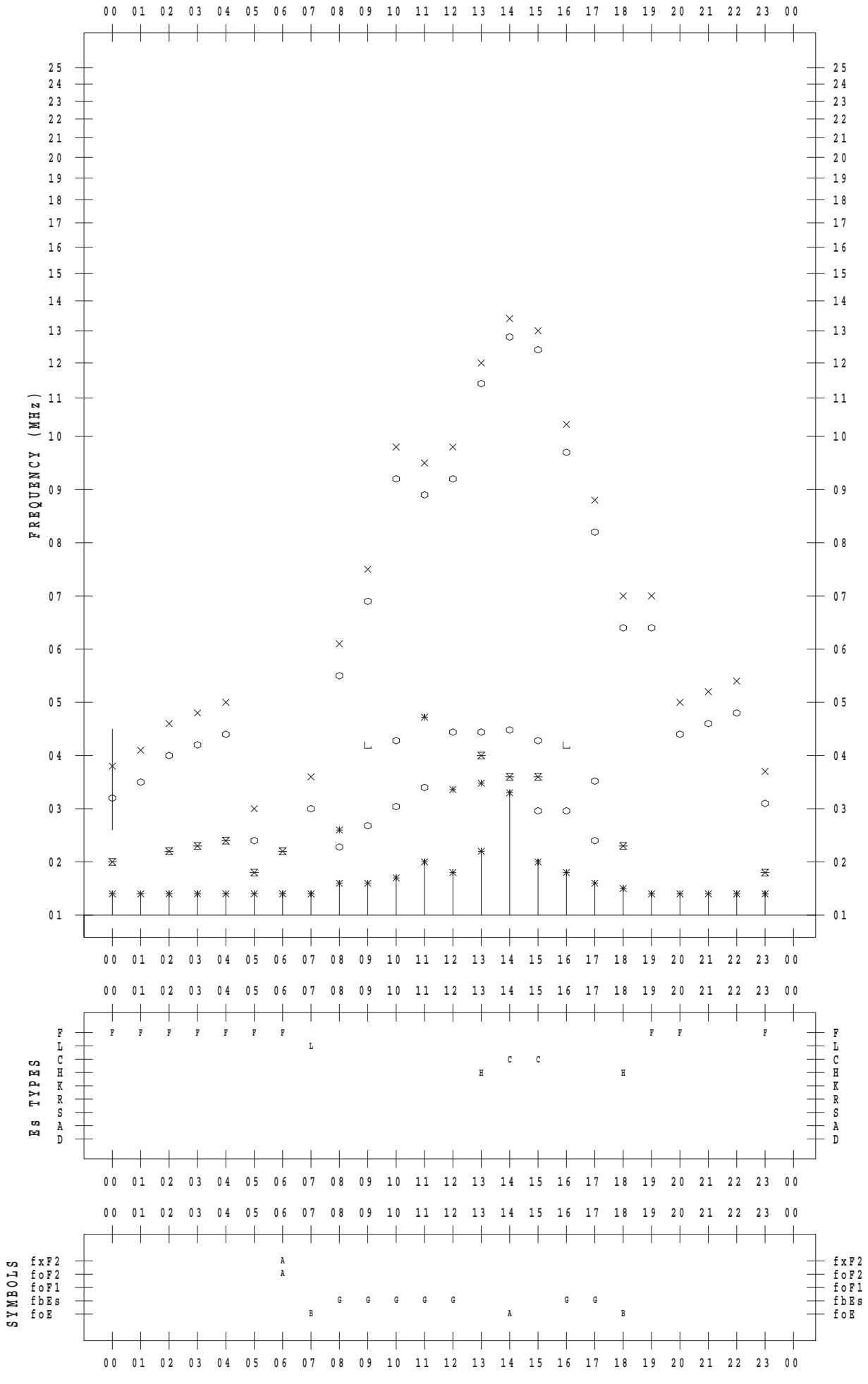
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/17

135 °E MEAN TIME



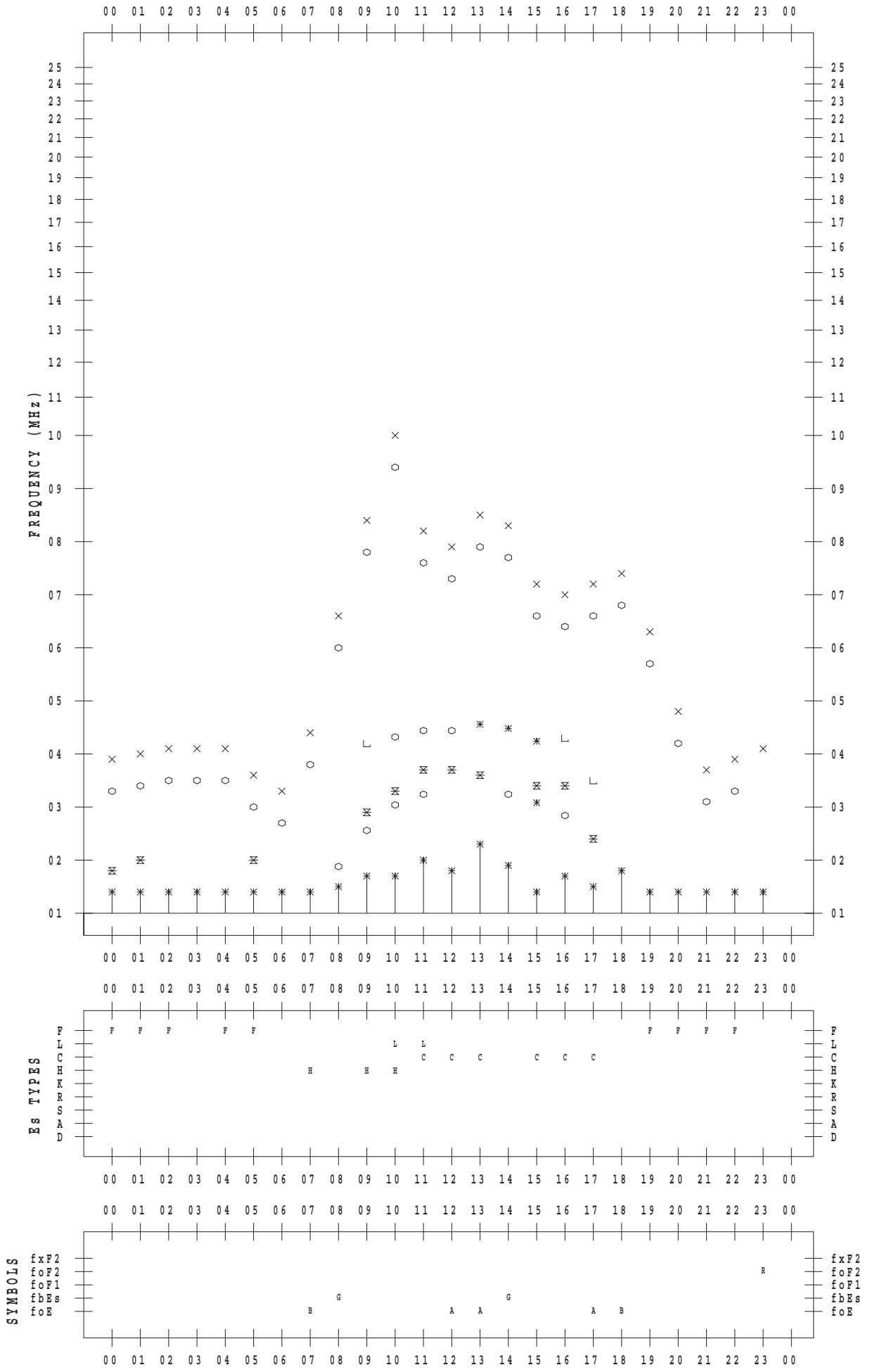
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/18

135 °E MEAN TIME



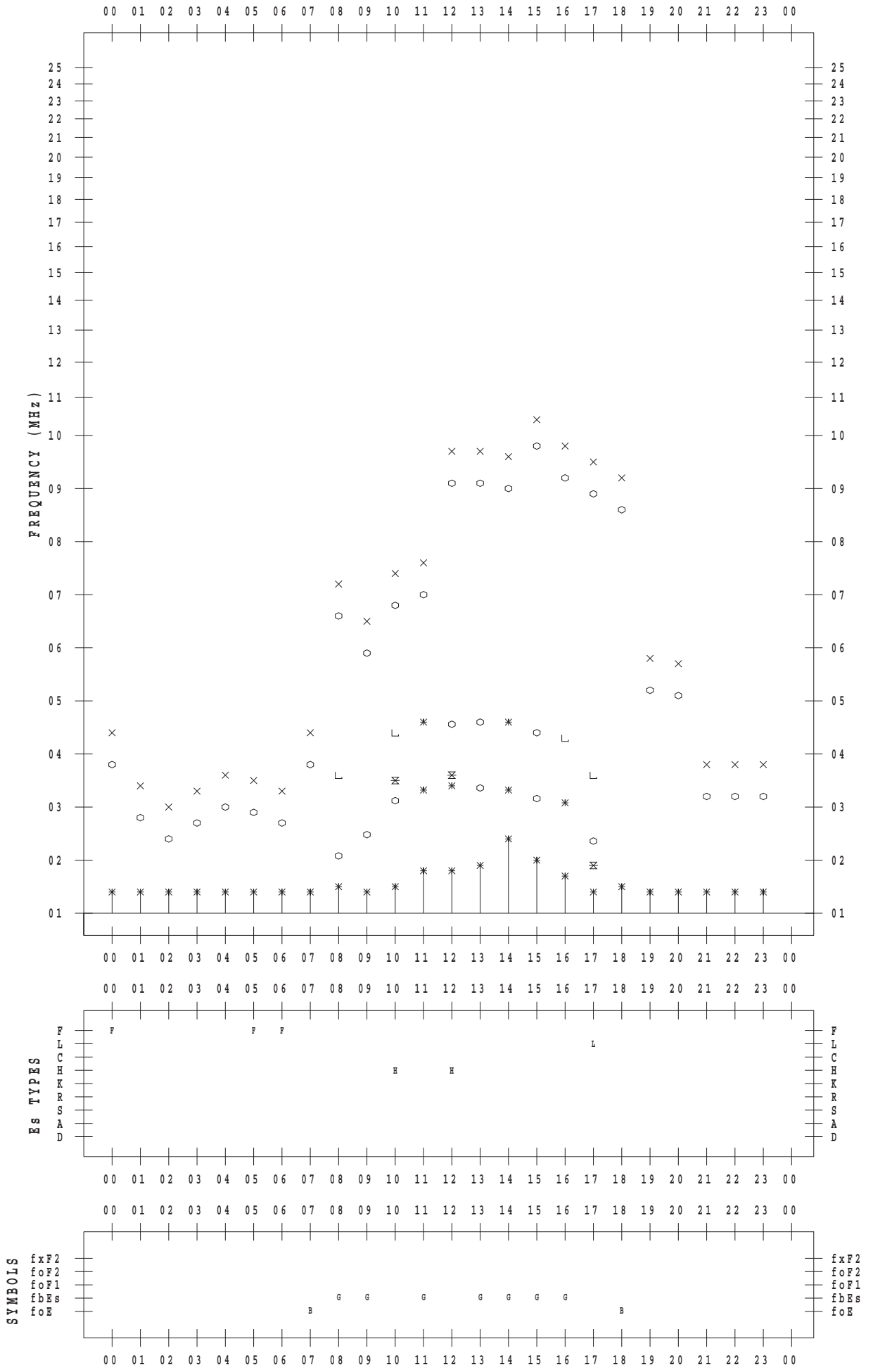
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/19

135 °E MEAN TIME



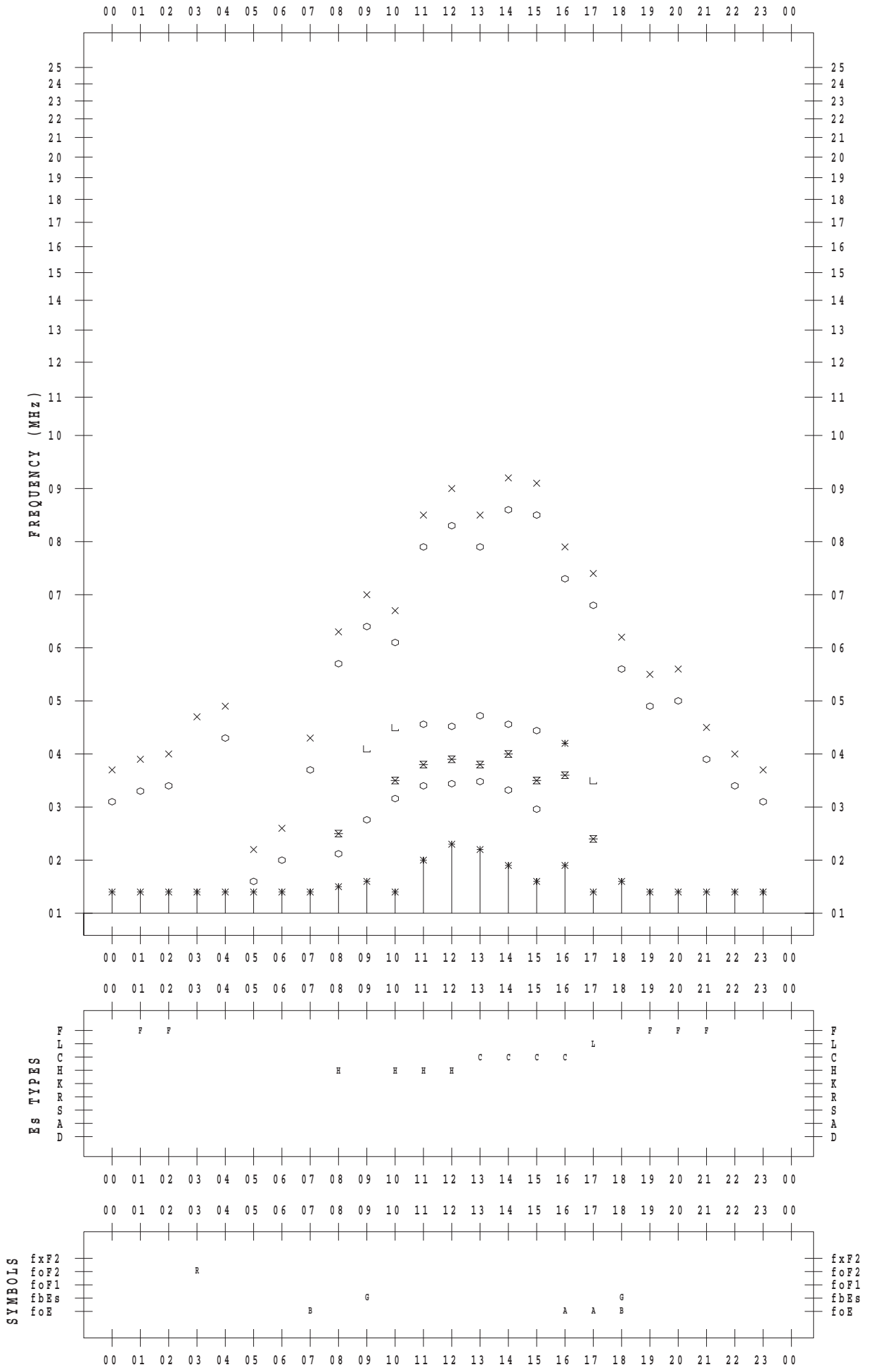
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/20

135 °E MEAN TIME



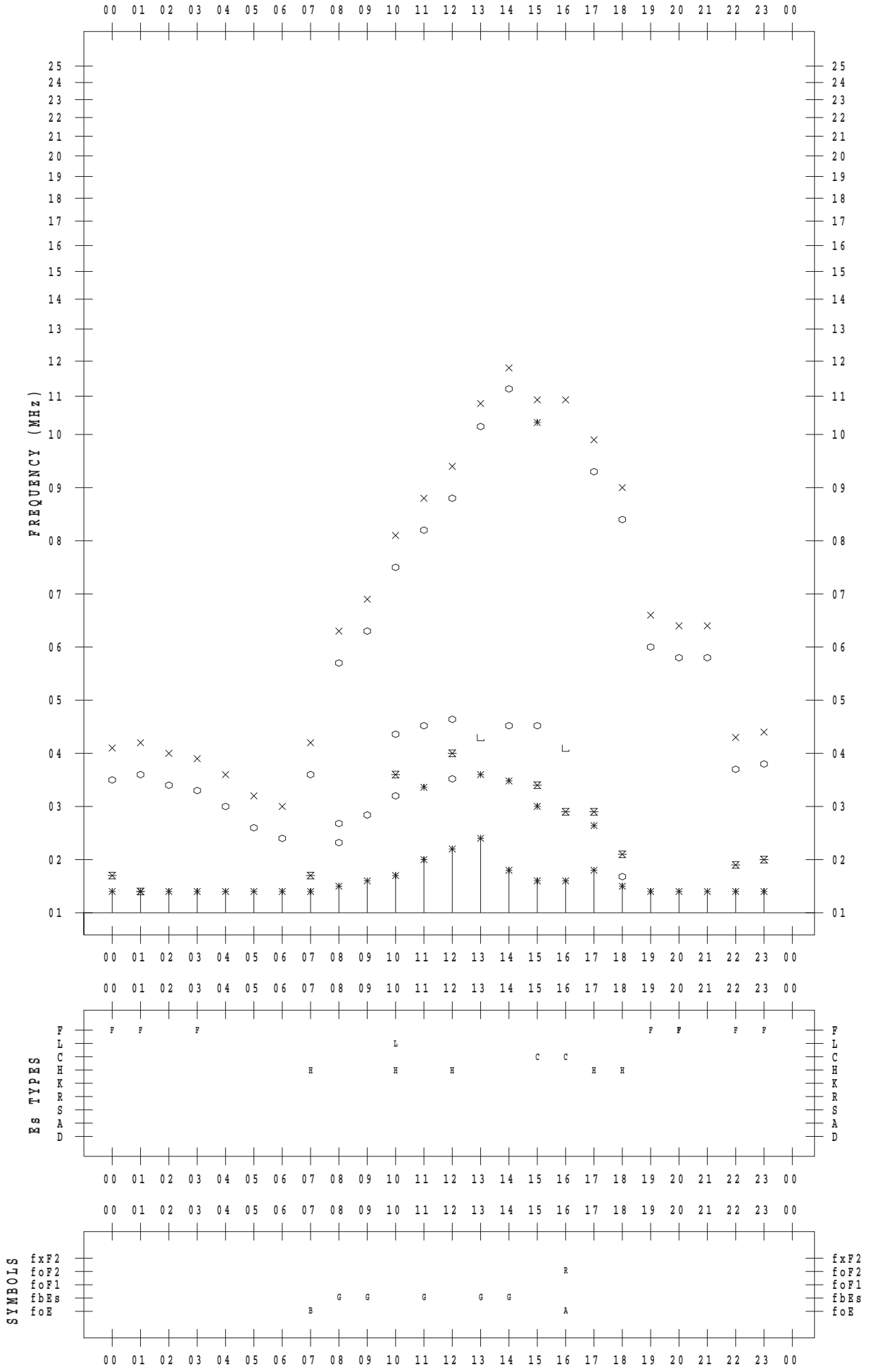
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/21

135 °E MEAN TIME



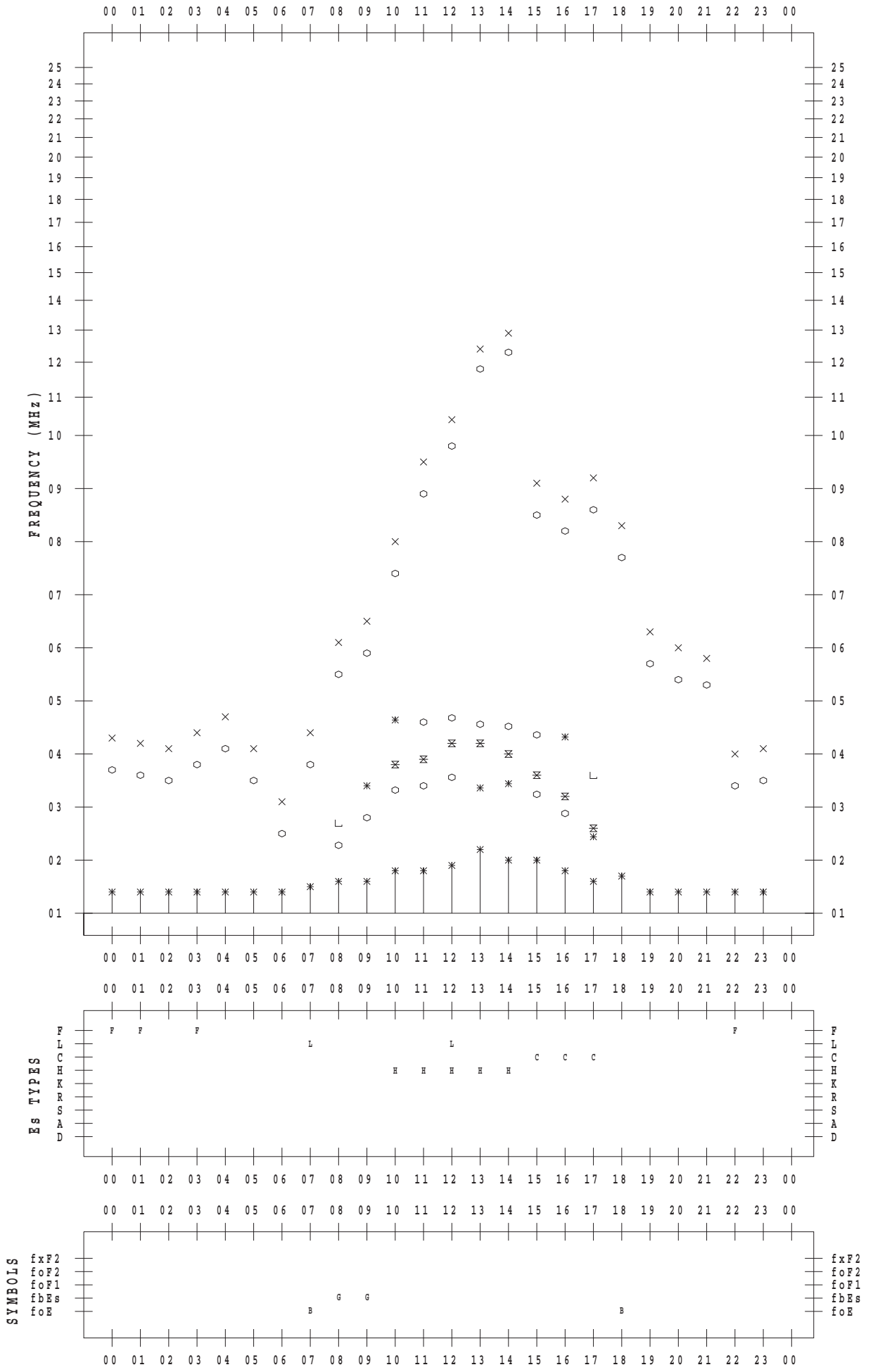
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/22

135 °E MEAN TIME



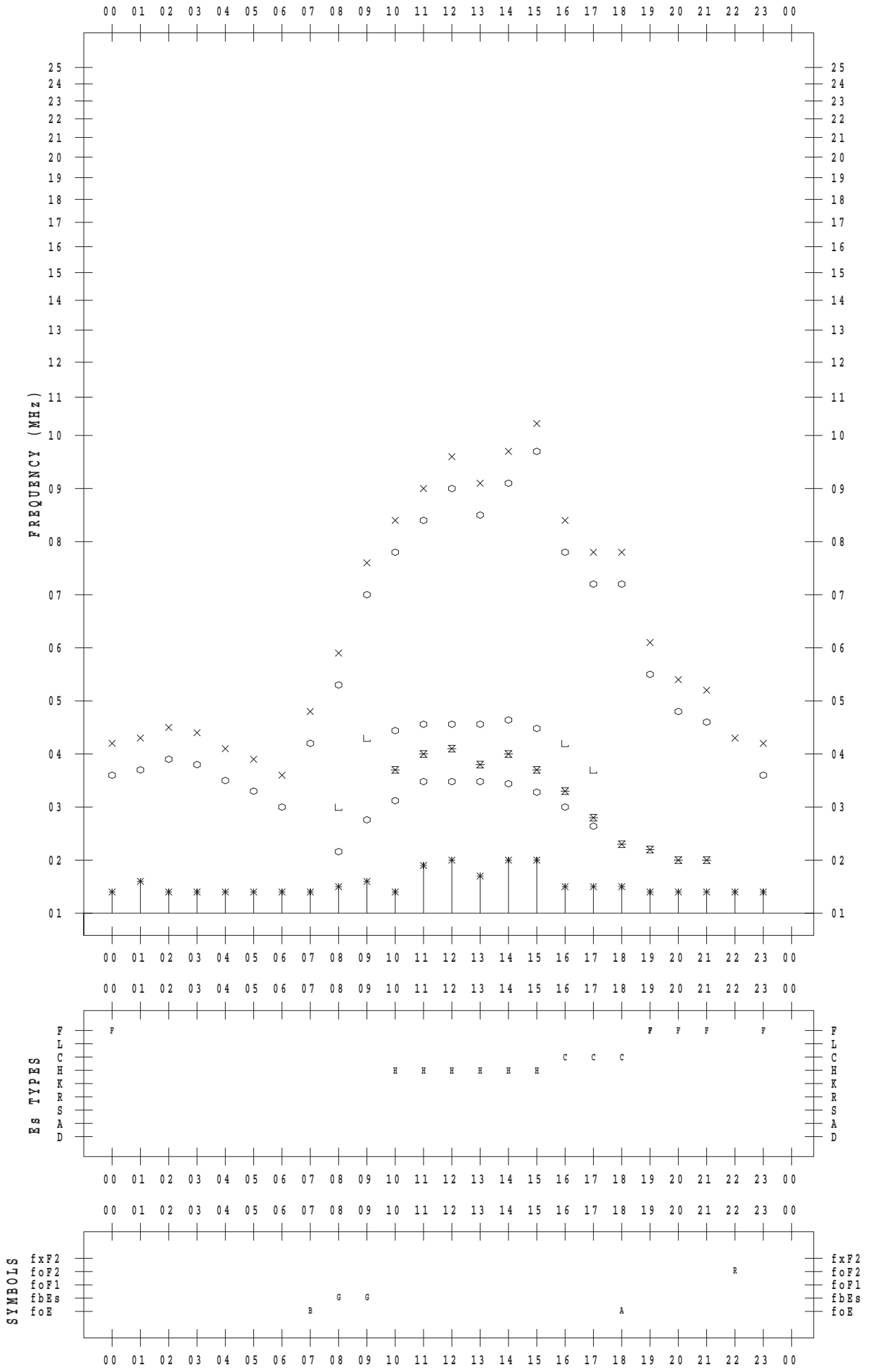
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/23

135 °E MEAN TIME



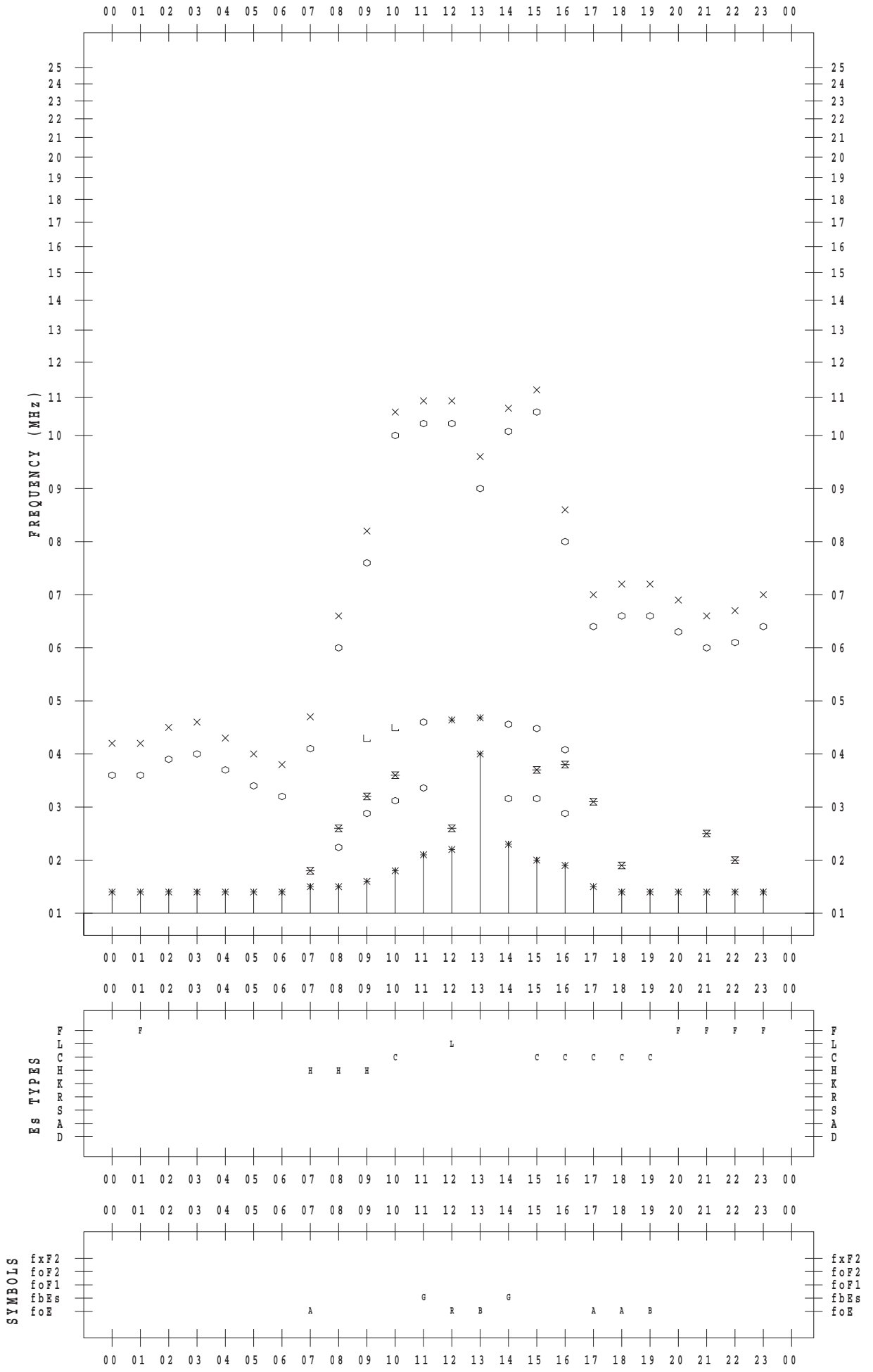
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/24

135 °E MEAN TIME



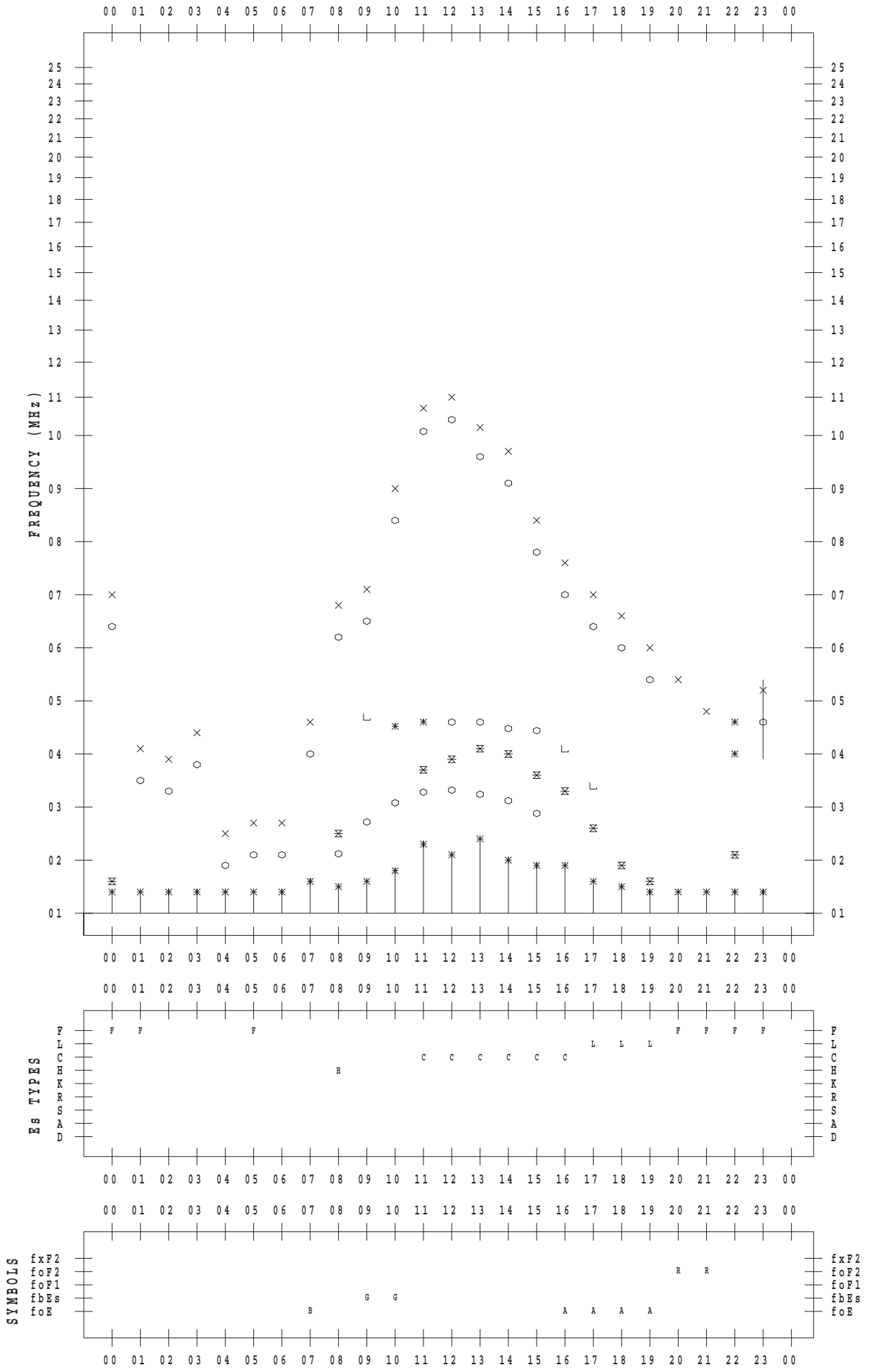
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/25

135 °E MEAN TIME



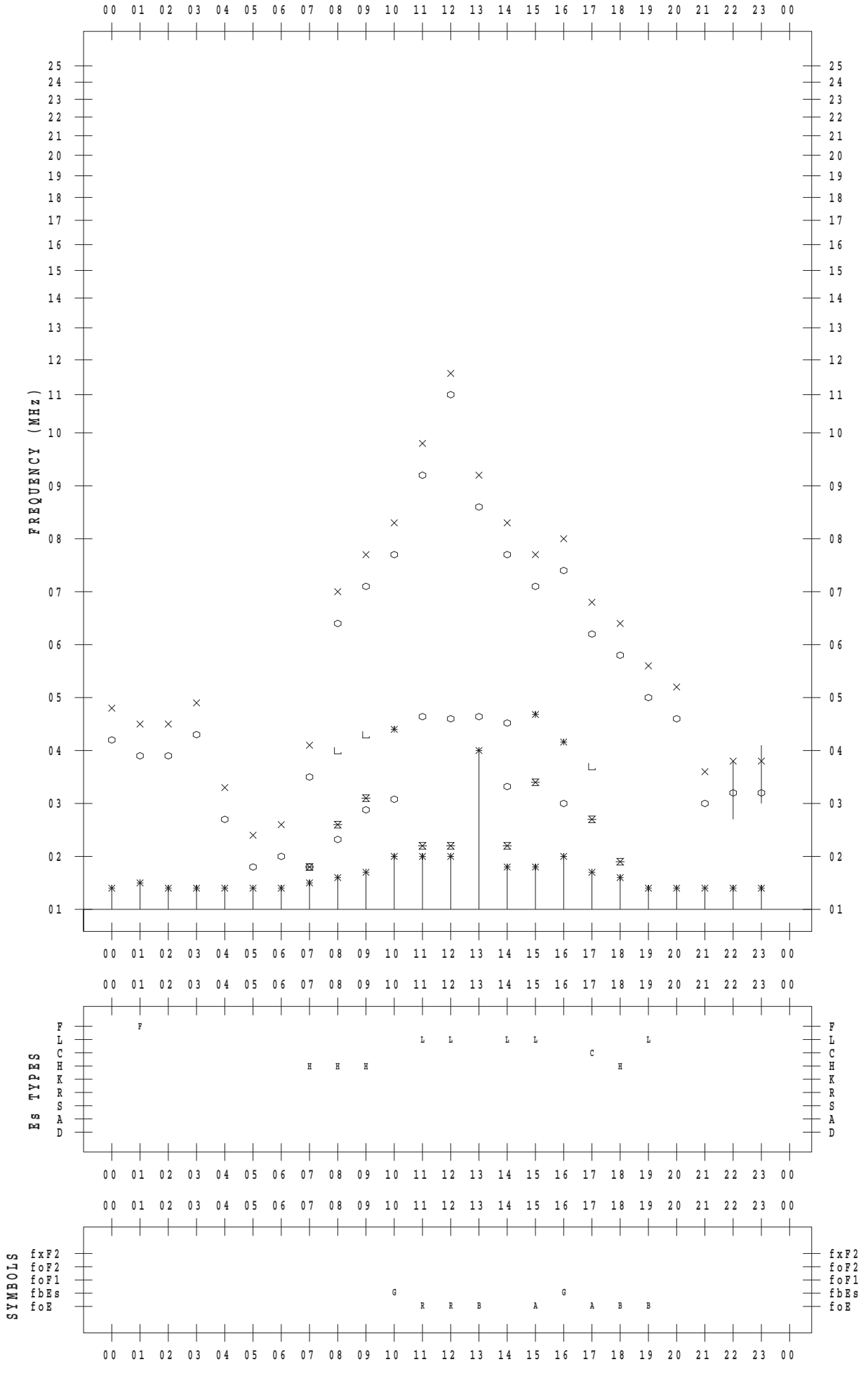
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/26

135 °E MEAN TIME



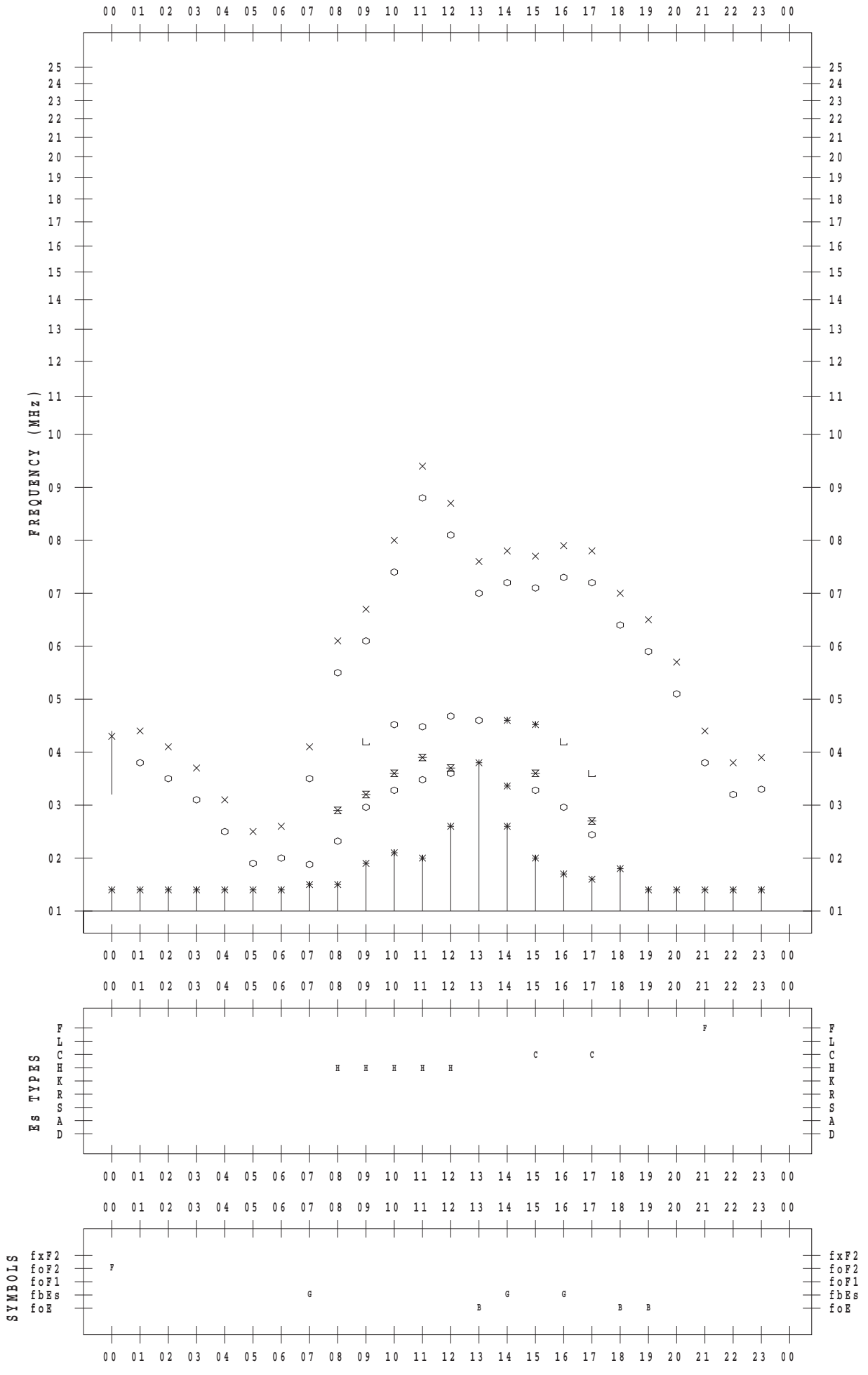
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/27

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 2/28

135 °E MEAN TIME