F-815

IONOSPHERIC DATA IN JAPAN

FOR NOVEMBER 2016

VOL. 68 NO. 11

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

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *Es*.

B Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced by, or impossible because the ionization density of the layer is too small to enable it to be made accurately.

H Measurement influenced by, or impossible because of, the presence of a stratification.

K Presence of particle *E* layer.

L Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbations of the observed parameter; or spur type spread *F* present.

Q Range spread present.

R Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

A Less than. Used only when *fbEs* is deduced from *foEs* because total blanketing of higher layer is present.

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristics only.)

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

f An *Es* trace which shows no appreciable increase of height with frequency.

l A flat *Es* trace at or below the normal *E* layer minimum virtual height or below the part *E* layer minimum virtual height.

c An *Es* trace showing a relatively symmetrical cusp at or below *foE*. (Usually a daytime type.)

h An *Es* trace showing a discontinuity in height with the normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normal *E* trace. (Usually a daytime type.)

q An *Es* trace which is diffuse and non-blanketing over a wide frequency range.

r An *Es* trace showing an increase in virtual height at the high frequency end similar to group retardation.

a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.

s A diffuse *Es* trace which rises steadily with frequency and usually emerges from another type *Es* trace.

d A weak diffuse trace at heights below 95 km as-sociated with high absorption and large *fmin.*

n The designation 'n' is used to denote an *Es* trace which cannot be classified into one of the standard types.

k The designation 'k' is used to show the presence of particle *E*. When *foEs* > *foE* (particle *E*) the *Es* type precedes k.

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

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

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

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

HOURLY VALUES OF fEs AT Wakkanai

NOV. 2016

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	G	36	30		34		160	68	176	113	62	G	G	G	G	26	G	25	25	G	G	57
2	40	56	40	33	26	24	26	G	126	38	50	53	G	G	G	G	G	G	G	G	G	26	G	36
3	27	G	G	G	G	G	24	G	40	60	63	38	38	56	G	G	41	29	56	60	107	92	33	30
4	33	27	33	26	24	26	84	84	41	43		G	N	G	G	G	G	G	56	G	26	49	56	39
5	43	58	65	59	56	57	35	59	46	70	57	127	49	G	39	G	26	70	44	74	59	34	34	25
6	27	25	26	G	G	G	G	G	G	G	190	G	G	G	G	G	G	G		G	G	G	26	G
7	G	G	G	G	G	G	G	G	85	G	G	46	G	G	G	G	G	24	26	G	G	G	G	26
8	G	G	41	31	33	24	G	50	G	G	38	50	G	41	53	49	52	33	39	53	30	37	41	40
9	38	44	34	40	31	G	G	G	40	40	38	39	62	41	G	G	G	28	60	56	41	40	44	39
10	36	31	G	G	G	G	G	32	G	38	G	G	G	G	G	G	G	116	109	59	56	28	40	G
11	G	29	G	G	G	28	50	33	54	40	G	38	G	G	G	G		126	110		31	44	32	G
12	G	G	G		G	G	94	40	117	39	50	G	G	G	G	G	G	24	38	31	25	G	34	32
13	28	41	26	26	G	31	113	48	91	72	41	38	37	39		38	G	34	G	G	33	G	63	G
14	G	G	G	G	G	G	G	G	34	G	90	54	G	45	G	G	G	43	G	G	25	54	43	40
15	40	32	26	G	G	11		G	G	G	52	G	G	G	G	G	11	38	32	37	55	24	25	G
16	G	G	24	G	G	28	34	44	G	G	49	40	60	G	G	67	19	38	31	G	26		28	28
17	G	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	26	61	26	53	G
18	G	G	26	G	G	23	25	39	39	C	C	C	C	C	33	35	38	26	G	G	26	38	32	26
19	41	27	G	G	G	G	25	26	34	35	35	43	106	50	35	G	11		G	24	G	G		G
20	G	G	G	G	G	G	G	G	50	38	G	96	41	116	48	45	11	G	G	30	24	G		G
21	G	G	26	G	G	G	G	33	35	105	58	G	36	35	49	60	32	26	G	24	G	G	G	25
22	G	G	G		G	G	G	34	31	36	41	37	G	G	G	G	28	26	20	26	G	G	G	G
23	26	G	G	C	G		G	28	G	38	42	113		36	36	37	37	34	28	G	G	G	G	G
24	G	G	90	G	G	49	G	28	53	34	G	G	G	G	49	48	11	41	40	25	25	33	33	26
25	G	G	G	G	64	73	G	G	32	34	37	G	G	36	39	44	26	34	58	33	25	G	G	G
26	G	G	G	G		40	34	G	32	34		37	38	39	36	40	44	48	37	24	G	34	29	G
27	G	G	G	G	G	G	11	40	43	37	44	G		G	G	G			59	26	G	G		G
28	G	G	32	G	G	57	50	50	40	48	G	G	G	116	G	45	34	G	G	25	59	G	G	G
29	G	94	G	G	G	29	32	G	G	G	G	G	G	G	G	G	40	G	G	G	54	27	G	G
30	G	G		G	G	24	156	G	48	32	G	53	54	39	34	G	20	55	82	60	31	34	56	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	27	29	28	29	29	30	28	26	28	25	28	28	29	27	27	28	29	30	29	27	30
MED	G	G	G	G	G	17	24	28	40	38	41	38	G	G	G	G	11	29	32	25	26	26	32	G
U Q	28	29	29	26	12	28	34	40	50	41	52	51	45	40	36	42	34	41	56	35	41	35	41	30
L Q	G	G	G	G	G	G	G	G	G	16	G	G	G	G	G	G	G	24	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

NOV. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14	14	14	14		15		15	15	18	15	16	28	28	18	18	14	15	16	14	14	14	14
2	14	14	14	14	14	14	15	14	14	18	20	28	28	30	27	27	14	14	14	15	14	15	15	14
3	14	15	15	15	14	14	15	15	17	20	23	26	27	21	27	27	14	14	15	14	14	14	14	15
4	14	15	14	14	15	15	14	14	14	16		15	18	17	15	15	14	14	15	14	14	14	14	14
5	14	15	14	14	14	14	14	14	14	15	15	14	15	15	15	14	15	15	14	14	14	15	14	14
6	15	15	14	14	15	20	18	24	28	28	35	36	33	30	28	26	15	14		14	15	14	15	14
7	14	14	15	14	15	15	15	20	27	27	28	20	32	30	27	26	18	14	14	15	14	14	14	14
8	14	14	14	15	15	14	14	15	15	18	18	16	17	16	15	14	14	14	15	14	14	14	14	14
9	14	14	14	14	14	14	14	14	14	15	14	16	15	14	14	14	16	14	14	14	15	14	14	14
10	14	14	14	15	14	15	14	17	15	14	17	15	18	16	27	16	16	14	14	15	14	14	14	15
11	14	14	14	15	15	14	14	14	14	15	15	30	27	27	27	17		14	14		14	14	14	15
12	14	14	15		14	15	14	15	14	14	15	17	20	18	17	23	17	14	14	15	14	14	14	14
13	17	15	14	15	15	14	14	14	15	14	14	14	14	14		15	14	14	14	14	14	14	15	14
14	14	15	14	14	14	14	14	17	15	17	15	15	15	16	15	22	14	14	15	18	15	14	15	14
15	14	14	14	14	14	14		15	20	27	30	28	27	28	15	24	16	14	14	14	14	14	15	14
16	14	15	14	14	15	14	14	17	15	15	16	16	18	15	18	21	17	14	15	14	15		14	14
17	14	14	14	14	14	14	14	18	14	C	C	C	C	C	C	C	C	C	C	18	14	15	14	14
18	14	14	14	14	14	14	16	15	14	C	C	C	C	C	14	14	14	15	15	14	15	14	14	14
19	14	14	14	15	14	14	14	15	14	14	14	14	14	14	14	20	14		17	15	14	15		16
20	14	15	17	15	17	14	16	16	14	14	15	14	15	14	14	21	14	15	14	14	17	14		14
21	15	15	14	14	14	15	14	14	14	14	14	14	14	14	14	14	14	15	15	14	15	14	14	14
22	14	14	14		14	15	15	15	14	14	14	14	14	14	14	15	14	15	14	14	14	15	14	14
23	14	14	14	C	15		14	14	14	14	14	14		14	14	14	14	14	14	14	14	14	15	14
24	15	17	14	15	15	15	14	14	14	14	14	14	14	14	14	21	15	14	14	16	15	14	14	14
25	14	14	14	16	15	14	14	16	14	14	14	15	14	14	15	14	14	14	14	14	14	14	14	14
26	14	14	14	14		14	14	17	17	14		14	14	15	18	16	14	14	14	14	15	15	14	15
27	15	15	15	14	14	15	15	14	15	16	18	17		16	18	15			14	14	14	14		14
28	14	14	14	14	14	14	14	14	15	15	15	27	28	16	15	15	14	14	15	14	14	14	14	14
29	14	14	14	14	14	15	14	16	23	27	29	28	28	28	27	27	15	15	15	15	14	14	14	14
30	15	14		14	14	14	14	17	18	20	16	15	14	15	14	15	14	14	14	14	15	14	14	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	27	29	28	29	29	30	28	26	28	26	28	28	29	27	27	28	29	30	29	27	30
MED	14	14	14	14	14	14	14	15	14	15	15	15	16	16	15	16	14	14	14	14	14	14	14	14
U Q	14	15	14	15	15	15	15	17	15	18	18	23	27	24	27	22	16	14	15	15	15	14	14	14
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

NOV. 2016

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	32	N	34	32		37	54	66	91	95	84	84	62	67	65	54	46	36	34	30	28	27	30
2	32	30	34	31	34	27	39	61	69	80	82	77	77	68	65	54	59	65	65	47	A	27	28	A
3	N	A	A	30	32	32	36	52	78	A	90	90	74	67	58	58	78	67	A	36	32	A	A	A
4	36	36	32	30	31	30	39	59	82	98	97	76	62	71	71	62	68	64	A	38	42	42	40	A
5	A	A	A	33	35	28	36	50	47	72	74	72	61	64	62	63	64	45	27	A	A	28	27	A
6	A	A	28	26	30	N	36	52	61	62	59	65	68	61	68	62	54	54	36	A	A	31	A	A
7	32	34	32	34	31	30	36	39	66	61	73	74	A	59	75	74	58	A	34	A	A	A	A	A
8	30	32	32	32	32	30	34	55	60	61	74	75	64	66	71	67	61		34	34	34	28	28	A
9	34	A	A	A	A	31	34	51	66	66	66	71	A	N	67	62	59	41	34	A	A	A	32	32
10	A	37	32	A	31	30	36	62	82	63	66	63	69	70	66	59	54	A	A	34	A	A	A	A
11	34	32	34	34	28	32	34	54	72	80	97	99	88	76	64	61	A	A	44	A	42	34	A	32
12	A	34	34	36	32	27	41	41	66	64	C	C	C	C	C	C	C	C	C	C	N	A	28	31
13	34	38	34	30		N	36	58	73	70	76	92	85	68	73	61	59	45	A	30	39	A	34	34
14	37	34	32	32	28	28	32	54	84	80	69	68	65	70	69	72	72	44	A	34	A	27	58	30
15	30	28	31	31	31	A	A	52	67	69	80	84	75	70	66	56	59	49	28	31	A	N	28	30
16	A	A	30	28	32	24	28	A	64	60	69	74	66	72	66	58	48	36	45	44	28	A	27	
17	A	30	28	N	30	27	34	66	69	51	66	66	59	71	78	57	54	46	31	30	30	37	40	41
18	39	42	32	34	39	36	45	64	73	61	74	76	67	70	67	59	59	36	35	34	34	39	32	34
19	34	34	32	32	31	30	34	54	61	64	62	72	61	78	58	56	51	44	30	A	31	31	32	32
20	31	31	32	32	30	27	31	51	N	58	58	67	64	70	64	54	47	30	32	38	23	A		28
21	28	31	30	28	30	26		48	54	56	66	65	76	72	61	55	54	39	N		A	A	A	32
22	32	34	31	32	34	27	30	49	58	58	66	61	73	65	67	58	51	44	A	34	30	30	30	27
23	30	31	31	34	31	30	32	49	54	71	86	87	82	67	72	71	41	38	A	34	A	39	A	30
24	32	31		A	36	34	37	58	62	82	84	81	80	69	66	70	58	46	A	37	36	32	38	38
25	38	36	42	39	36	31	28	52	72	85	87	91	76	70	66	66	58	51	44	45	A	N	31	36
26	37	32	31	32	32	26	30	N	68		84	78	82	86	80	70	57	A	32	34	36		34	38
27	34	36	32	30	28	30	31	53	65	63	68	82	88	74	80	67	55	30	30	30	27	27	28	30
28	28	27	30	27	34	37		52	61	62	75	95	78	69	67	54	59	36	30	39	36	26	N	
29	A	A	A	34	34	31	36	58	64	66	75	72	69	64	59	54	57	A	21	40	A	A	A	A
30	30	30	30	30	30	28	31	62	52	63	76	81	72	65	62	57	59	34	34	A	34	A	32	28
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	24	24	26	28	26	27	28	29	28	29	29	27	28	29	29	28	23	20	21	17	16	20	19
MED	32	32	32	32	32	30	34	54	66	64	74	76	73	70	67	61	58	44	34	34	34	30	32	32
U Q	34	35	32	34	34	31	36	58	72	76	84	84	80	71	71	66	59	49	36	38	36	35	34	34
L Q	30	31	30	30	30	27	31	51	61	61	66	69	65	65	64	56	54	36	30	34	30	27	28	30

HOURLY VALUES OF fEs AT Kokubunji

NOV. 2016

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	30	G	37	50	G	G	G	G	40	62	35	27	G	G	G	G	G
2	G	29	G	G	23	G	G	G	43	45	40	41	50	G	G	33	37	G	28	41	27	G	G	38
3	G	32	30	G	G	G	G	G	34	95	G	54	G	50	G	G	32	60	68	G	G	50	50	35
4	23	30	G	28	G	G	30	67	60	79	82	60	47	54	43	G	38	78	104	50	34	52	48	48
5	38	40	33	31	26	G	G	30	95	61	44	G	G	G	G	G	39	34	31	37	50	32	31	33
6	30	28	G	G	25	G	29	48	G	G	45	44	G	G	46	G	G	25	30	94	51	26	34	33
7	23	26	25	G	G	G	G	30	G	G	G	62	122	60	42	46	34	61	48	96	81	46	68	37
8	30	G	G	G	G	G	G	G	G	G	49	57	G	54	G	33	28		G	G	G	G	23	53
9	30	59	41	33	32	G	G	29	40	52	50	G	76	G	G	60	53	G	28	72	80	46	34	27
10	32	G	28	31	G	G	23	35	36	G	43	G	68	G	G	53	42	45	60	50	59	57	53	36
11	23	G	26	G	26	G	G	35	50	43	50	G	G	47	51	G	129	154	78	79	41	24	34	23
12	29	G	G	G	G	G	G	32	G	G	C	C	C	C	C	C	C	C	C	C	29	29	24	G
13	24	G	28	G		G	G	31	G	37	G	G	G	G	G	G	G	32	28	43	27	37	26	34
14	29	29	G	25	G	23	G	G	34	36	53	G	43	G	36	33	G	29	24	33	37	G	24	24
15	29	23	22	G	24	33	27	43	G	G	G	G	G	G	54	G	G	11	G	33	31	28	G	G
16	28	30	27	G	G	G	G	50	51	51	G	G	G	41	G	G	G	G	G	33	G	28	G	
17	33	23	G	G	G	G	G	G	37	G	G	G	38	G	42	38	30	11	G	G	92	31	34	G
18	G	G	G	G	G	G	G	29	33	G	G	G	G	42	48	32	34	23	G	G	G	24	29	G
19	G	G	24	G	29	G	G	G	35	39	38	40	39	G	40	43	49	33	29	50	32	29	25	G
20	25	G	G	G	G	G	G	30	G	43	42	G	G	G	36	44	35	24	G	30	29	27		G
21	23	24	25	G	G	G		29	34	35	G	G	48	53	G	G	31	58	G		49	33	28	G
22	24	G	G	23	G	G	G	G	G	G	47	78	G	G	G	G	27	36	38	27	G	G	G	G
23	G	G	26	34	G	G	G	45	G	G	G	G	G	45	G	51	47	25	40	28	34	24	30	G
24	G	G		40	G	G	G	30	G	G	G	52	G	G	37	34	46	34	32	23	24	G	31	24
25	G	G	G	G	G	G	G	28	32	G	G	G	G	G	G	38	G	G	23	G	26	G	G	G
26	G	G	G	G	G	G	G	G	G	52	53	75	43	40	47	29	43	28	23	G		G	G	
27	G	30	G	G	G	G	G	G	G	45	G	43	42	38	G	G	26	26	G	G	G	26	26	G
28	22	G	G	G	G	G		37	59	G	43	78	45	G	38	G	43	25	G	G	34	28	G	
29	39	36	34	30	34	G	24	34	36	40	G	G	G	37	G	35	29	28	34	29	58	46	52	29
30	G	G	31	G	G	G	G	G	G	G	G	G	G	G	G	37	29	31	G	25	109	57	34	33
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	29	29	28	30	30	29	29	29	29	29	29	29	29	28	29	28	30	29	29	28
MED	23	G	G	G	G	G	G	30	32	35	38	G	G	G	G	33	32	30	28	30	32	28	28	24
U Q	29	29	27	25	23	G	G	35	37	44	48	52	46	44	41	41	42	39	36	46	50	41	34	33
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	26	23	G	G	G	12	G	G

HOURLY VALUES OF fmin AT Kokubunji

NOV. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	14	17	14	13		14	17	13	14	20	15	31	15	14	13	13	13	13	14	13	13	13	13
2	13	14	14	14	13	13	14	13	14	18	17	25	18	21	15	13	20	13	13	13	13	17	13	13
3	14	13	13	13	14	15	13	13	14	15	21	21	20	14	14	14	14	13	13	14	13	13	14	13
4	14	13	13	13	13	13	13	13	13	13	14	13	13	13	13	13	13	13	13	13	13	13	13	13
5	14	13	13	13	13	20	13	17	13	13	13	17	13	37	13	14	13	14	14	13	13	14	14	13
6	13	13	13	14	14	13	14	13	13	18	18	20	20	15	14	15	13	14	13	13	13	14	13	13
7	13	13	14	13	13	14	13	13	17	18	39	22	22	18	15	14	13	13	13	13	13	13	14	13
8	13	13	13	13	13	14	14	20	13	18	18	17	15	13	13	13	13		14	15	13	14	14	13
9	13	13	13	13	13	14	13	13	13	13	15	15	14	14	13	13	13	15	14	13	13	13	14	13
10	13	13	13	13	13	13	13	13	14	13	13	14	13	13	13	13	14	14	13	13	13	13	13	13
11	13	14	13	13	13	17	13	13	13	13	13	14	14	13	14	13	14	13	13	13	13	14	13	13
12	14	13	14	13	13	15	13	13	13	15	C	C	C	C	C	C	C	C	C	C	14	13	13	15
13	13	14	13	14		13	14	13	13	13	14	17	17	13	13	13	13	13	13	13	13	14	14	13
14	13	13	13	13	13	13	14	14	13	14	13	14	15	15	13	13	13	14	17	13	13	14	14	13
15	13	13	13	13	14	13	13	17	14	14	15	14	20	13	14	13	18	14	14	13	13	13	17	13
16	13	13	13	13	13	14	14	13	13	13	13	13	13	13	13	13	20	14	14	13	14	17	13	
17	13	14	13	14	14	14	13	20	13	13	13	14	13	13	13	14	13	13	14	14	14	13	13	13
18	13	13	13	13	13	13	14	13	13	13	14	14	17	13	13	13	13	13	13	14	14	13	14	13
19	14	14	13	13	13	13	14	13	13	13	13	14	17	15	13	13	13	13	14	13	14	14	13	13
20	14	13	13	15	13	13	15	13	13	13	13	17	14	14	13	13	13	17	14	14	13	13		13
21	14	13	13	13	13	14		13	13	13	13	14	13	13	13	13	13	14	14		14	13	13	13
22	14	14	13	13	14	14	14	20	13	13	13	17	14	15	13	13	13	14	13	13	15	15	13	13
23	13	13	13	13	14	13	13	14	13	14	14	15	15	18	13	13	13	14	13	13	13	14	13	13
24	14	14		13	13	14	13	14	13	13	13	13	13	13	13	13	13	14	13	14	14	14	13	15
25	14	15	14	14	14	13	13	13	13	13	13	13	13	13	13	13	13	14	14	13	14	13	14	13
26	13	13	13	13	13	13	13	20	13		18	13	13	13	13	13	13	14	13	14	14		13	13
27	14	13	13	13	13	14	14	21	17	17	18	26	17	13	13	14	13	13	14	14	15	13	13	13
28	14	17	14	13	13	14		14	13	13	13	18	17	13	13	14	14	13	14	14	13	13	15	
29	13	13	13	13	13	14	13	13	13	13	14	14	13	13	13	13	13	14	13	13	13	13	13	13
30	13	13	13	13	13	14	13	20	14	17	17	18	17	14	13	13	14	13	13	13	13	13	13	13
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	29	29	28	30	30	29	29	29	29	29	29	29	29	28	29	28	30	29	29	28
MED	13	13	13	13	13	14	13	13	13	13	14	15	15	13	13	13	13	14	13	13	13	13	13	13
U Q	14	14	13	13	13	14	14	17	13	15	17	17	17	15	13	13	14	14	14	14	14	14	14	13
L Q	13	13	13	13	13	13	13	13	13	13	13	14	13	13	13	13	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

NOV. 2016

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

HOURLY VALUES OF fEs AT Yamagawa

NOV. 2016

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

HOURLY VALUES OF fmin AT Yamagawa

NOV. 2016

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

HOURLY VALUES OF foF2 AT Okinawa

NOV. 2016

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

HOURLY VALUES OF fEs AT Okinawa

NOV. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	G	G	G	G	G	G	42	G	G	41	32	30	G	G	G	B	G
2	G	49	G	G	G	G	29	34	G	40	45	G	G	51	58	84	125	55	53	57	34	51	28	G
3	33	G	28	27	G	G	28	G	G	G	47	42	43	G	G	G	G	G	G	26	G	G	G	G
4	G	B	40	33	25	G	G	G	G	G	G	G	G	G	40	39	35	G	G	G	G	34	34	32
5	26	25	B	B	B	B	B	G	G	G	G	G	46	48	84	41	44	G	G	G	33	36	34	27
6	25	G	G	G	G	G	G	G	G	36	39	42	43	45	44	46	51	45	49	49	52	B	B	B
7	G	B	G	G	G	G	G	35	36	43	G	G	46	64	61	50	62	49	30	G	G	26	G	G
8	G	G	G	G	G	G	G	27	G	G	50	50	G	42	43	51	50	45	58	45	25	G	G	G
9	G	33	G	26	34	33	25	G	G	44	61	51	56	48	G	41	34	G	26	34	G	G	G	24
10	G	G	39	38	B	G	29	G	G	39	43	66	48	62	56	50	39	52	54	30	G	79	50	G
11	58	58	G	29	25	G	G	G	G	45	53	50	70	49	42	G	36	G	33	34	G	G	G	83
12	58	34	34	34	33	G	G	G	G	42	42	G	52	48	52	50	39	G	23	G	G	G	G	49
13	26	G	G	G	G	B	B	G	G	G	47	49	G	43	44	86	33	38	26	G	26	26	B	B
14	33	25	29	26	B	B	B	29	40	41	39	G	41	G	G	G	G	G	G	G	G	G	G	G
15	G	G	G	G	G	G	G	28	32	44	39	G	G	G	G	39	G	G	11	B	G	G	G	B
16	B	G	G	G	G	B	B	G	37	39	G	G	G	48	47	38	G	G	11	26	57	G	B	B
17	B	G	G	G	G	G	G	G	G	G	47	46	40	50	G	G	G	37	36	G	B	G	G	G
18	B	G	G	G	G	B	B	27	G	G	G	G	40	G	G	G	34	G	35	26	34	G	26	G
19	G	G	G	G	G	G	G	G	40	G	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	54	52	G	G	G	163	35	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	17	18	18	16	14	14	19	19	19	18	18	19	19	19	19	19	19	19	17	17	17	14	14
MED	G	G	G	G	G	G	G	G	G	36	40	G	41	48	42	39	35	G	30	26	G	G	G	G
U Q	29	29	28	27	13	G	25	27	32	42	47	49	48	50	52	50	44	45	36	34	33	30	28	27
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	11	G	G	G	G	G

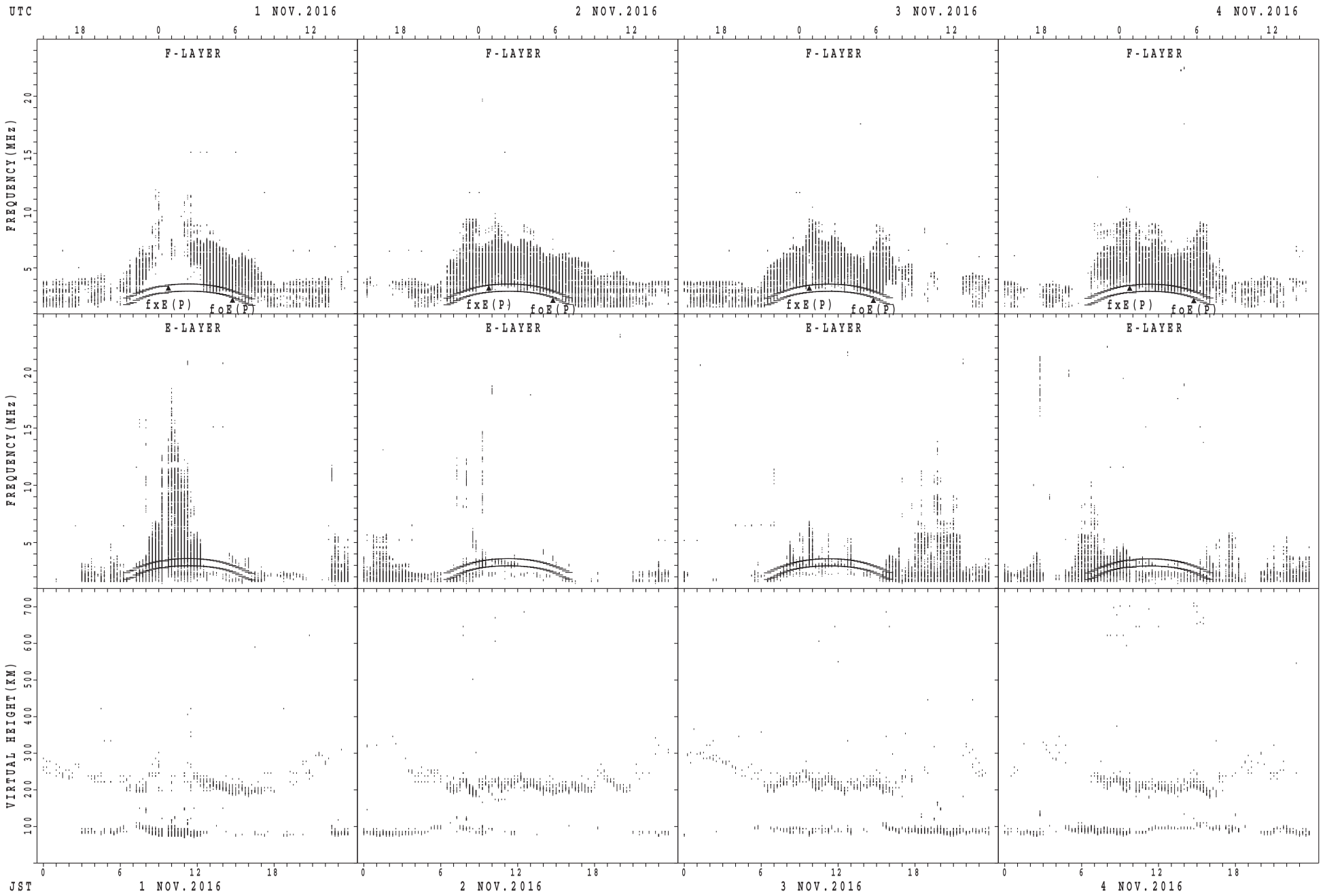
HOURLY VALUES OF fmin AT Okinawa

NOV. 2016

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

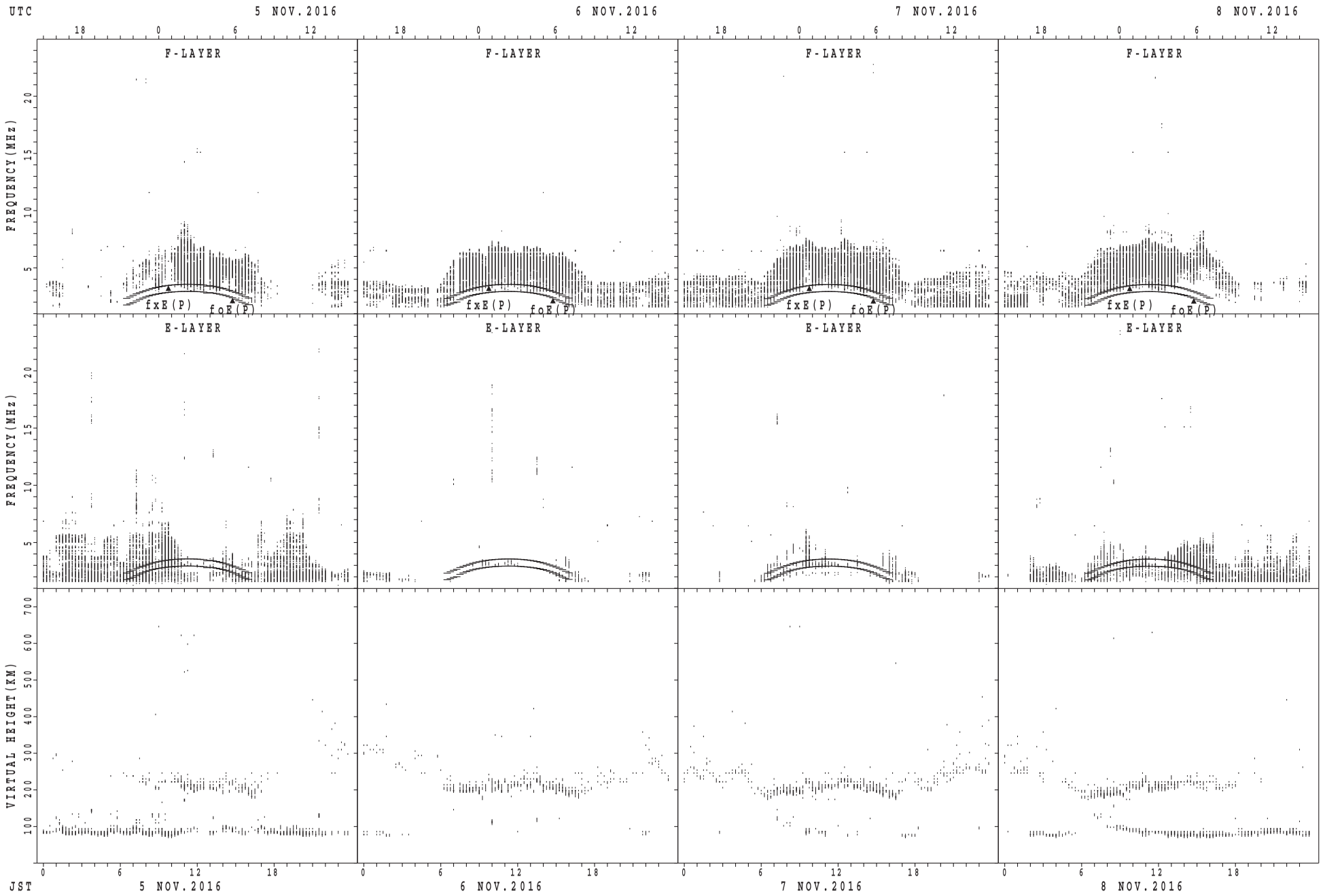
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	15	17	17	16	17	20	15	17	21	34	35	21	18	14	15	14	14	17	17	18	B	14
2	16	17	16	20	15	14	14	15	26	16	20	38	42	22	21	22	15	15	14	15	15	15	14	15
3	15	15	17	16	15	14	14	21	14	15	17	27	36	40	33	20	16	21	15	15	16	17	15	15
4	18	B	15	16	17	15	18	20	14	16	17	18	24	27	22	24	20	21	23	17	21	14	14	14
5	15	15	B	B	B	B	B	20	14	14	33	34	23	22	23	18	17	22	16	15	14	14	14	14
6	16	17	20	18	20	17	16	17	15	17	20	21	22	30	22	20	15	14	14	14	14	B	B	B
7	66	B	15	15	15	18	66	15	15	18	21	36	22	29	26	17	17	16	14	16	15	16	15	15
8	16	17	17	16	14	14	16	14	15	18	27	22	22	21	22	18	14	14	15	14	14	17	17	14
9	20	14	16	15	14	15	14	20	14	14	16	17	20	20	21	20	16	21	14	15	15	30	17	15
10	15	15	16	15	B	17	14	16	14	16	18	20	28	23	17	18	17	15	17	15	15	14	14	21
11	14	15	66	14	14	17	18	17	14	14	15	18	23	26	21	18	16	21	14	14	17	15	15	17
12	14	14	14	14	14	15	14	17	14	18	28	21	30	29	26	20	14	14	15	15	20	21	15	15
13	15	15	20	17	18	B	B	18	14	15	26	18	23	21	20	16	15	14	16	15	15	17	B	B
14	14	15	14	15	B	B	B	14	15	14	14	20	26	24	32	16	15	21	16	17	16	15	15	14
15	16	15	17	14	15	14	15	14	14	15	18	33	40	20	20	14	15	21	16	B	18	17	15	B
16	B	15	17	15	14	B	B	17	15	17	18	20	20	21	17	18	15	21	15	20	15	16	B	B
17	B	17	15	17	15	14	15	16	14	15	18	18	38	36	39	34	16	15	17	15	B	16	20	15
18	B	66	14	14	15	B	B	18	14	16	21	20	20	39	20	20	16	14	14	17	15	15	14	16
19	17	16	15	15	15	14	16	15	14	15	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	15	14	14	14	14	14	14	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	17	18	18	16	14	14	19	19	19	18	18	19	19	19	19	19	19	19	17	17	17	14	14
MED	16	15	16	15	15	15	16	17	14	16	19	20	23	23	21	18	15	15	15	15	15	16	15	15
U Q	16	17	17	17	16	17	17	20	15	17	21	33	35	29	26	20	16	21	16	17	17	17	15	15
L Q	15	15	15	15	14	14	14	15	14	15	17	18	22	21	20	16	15	14	14	15	15	15	14	14

SUMMARY PLOTS AT Wakkanai

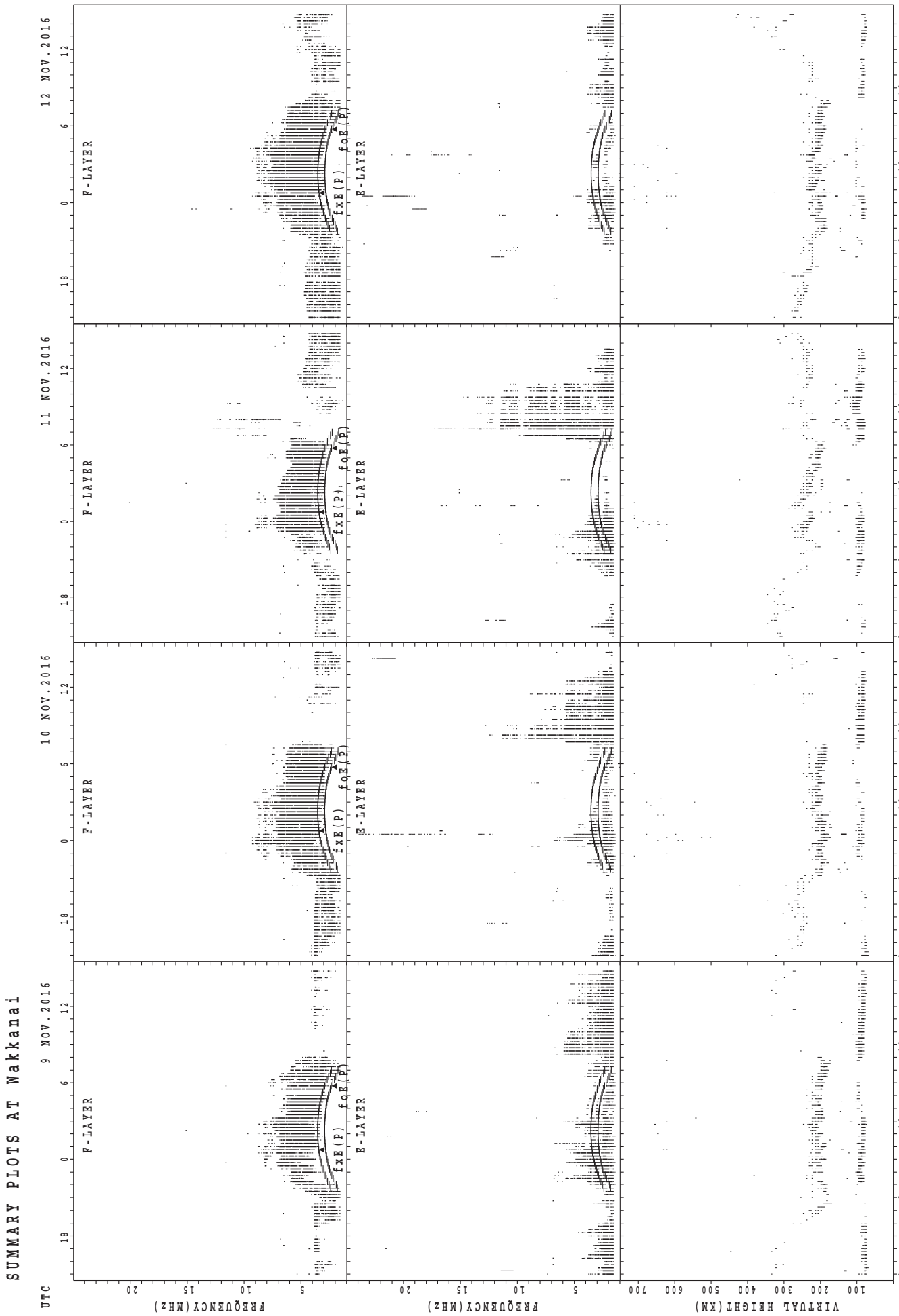


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

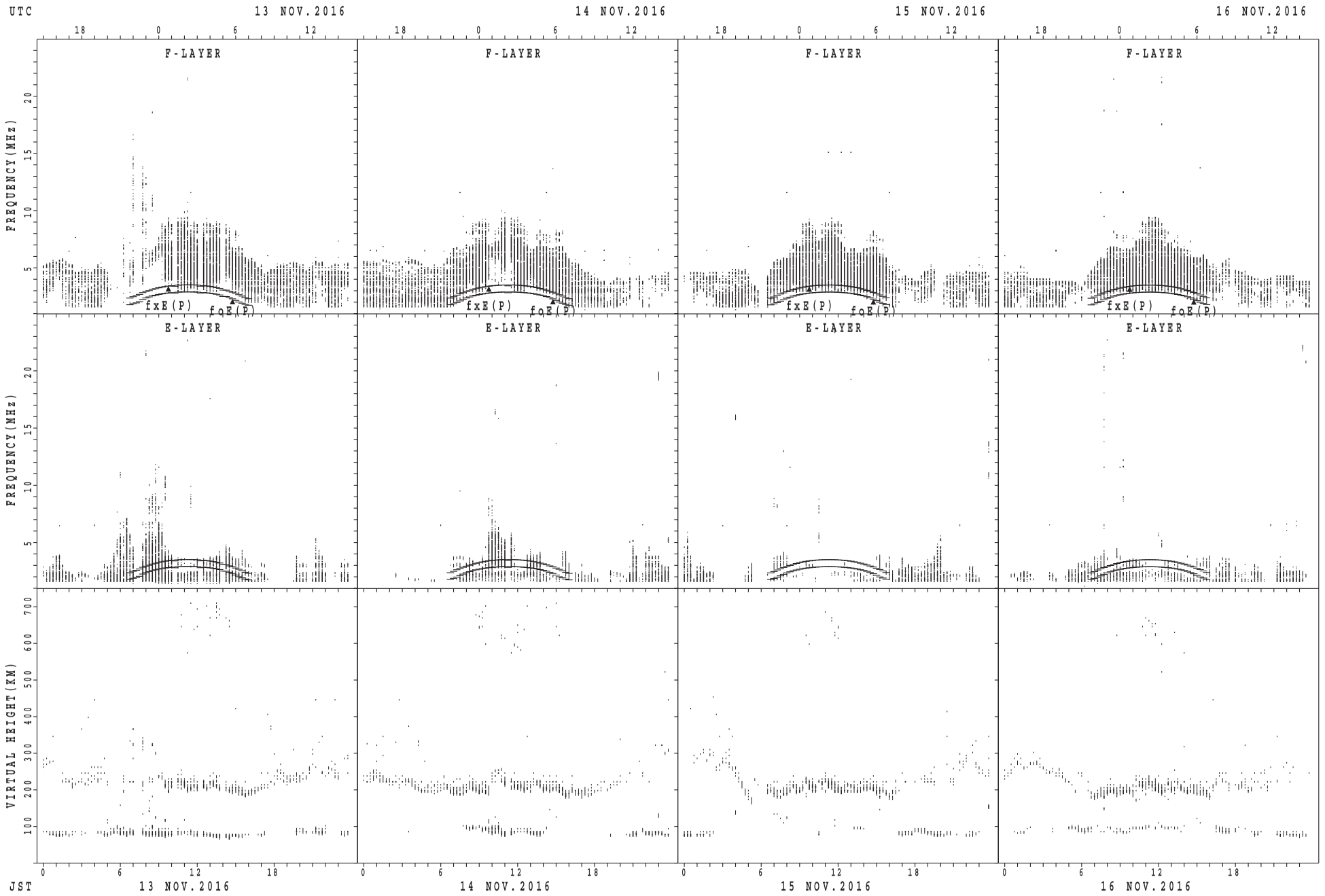
SUMMARY PLOTS AT Wakkanai



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

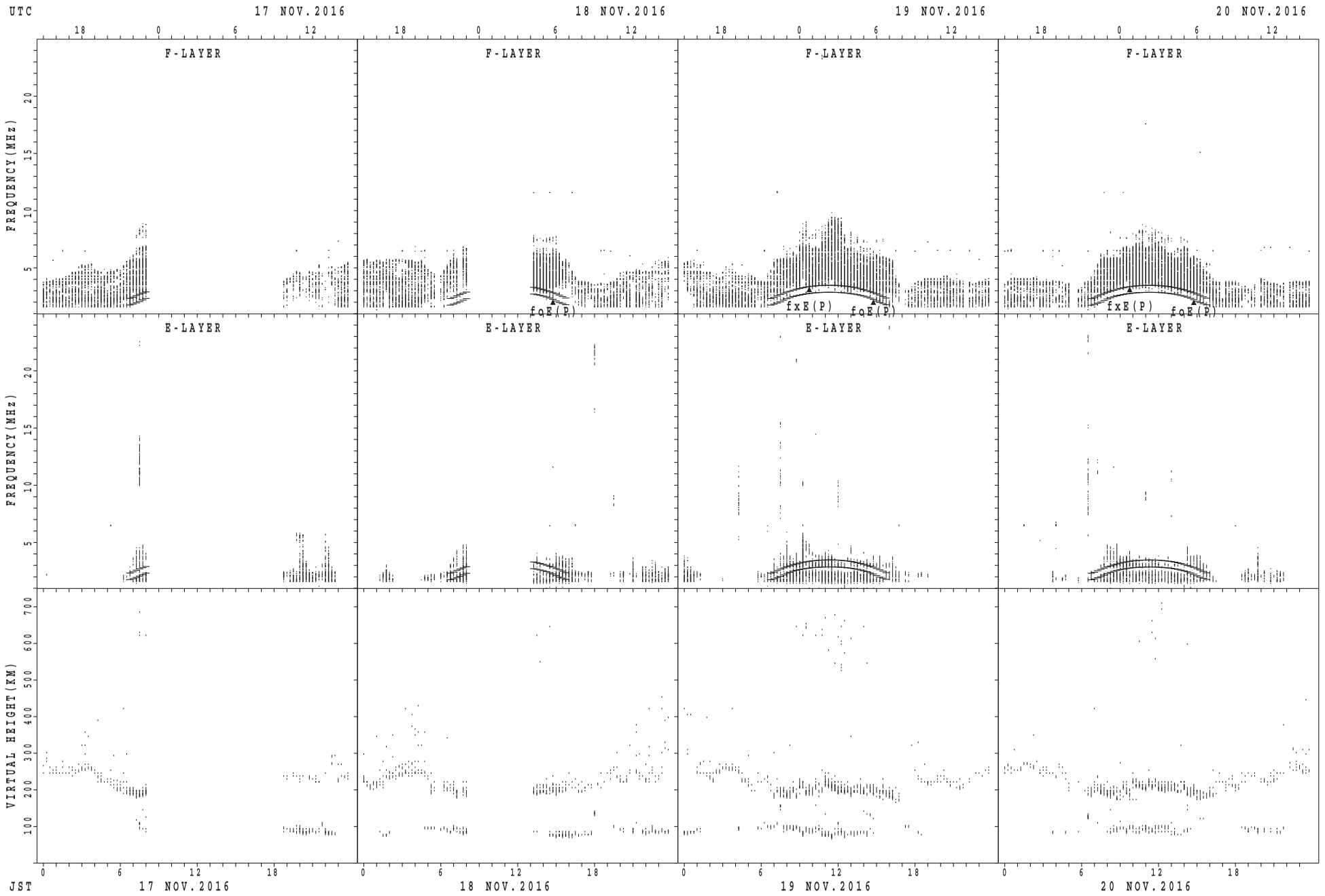

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 NOV.2016
10 NOV.2016
11 NOV.2016
12 NOV.2016
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



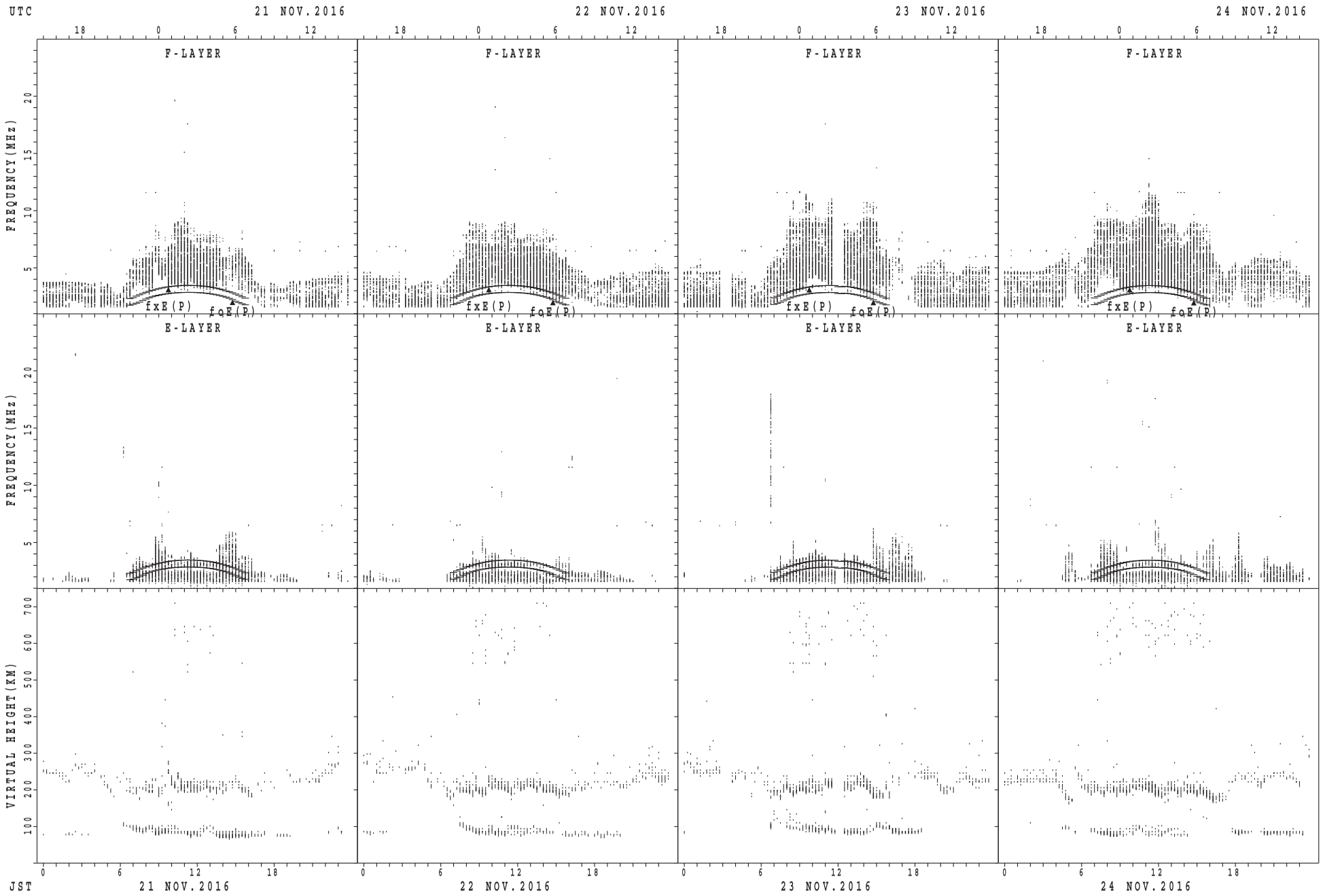
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

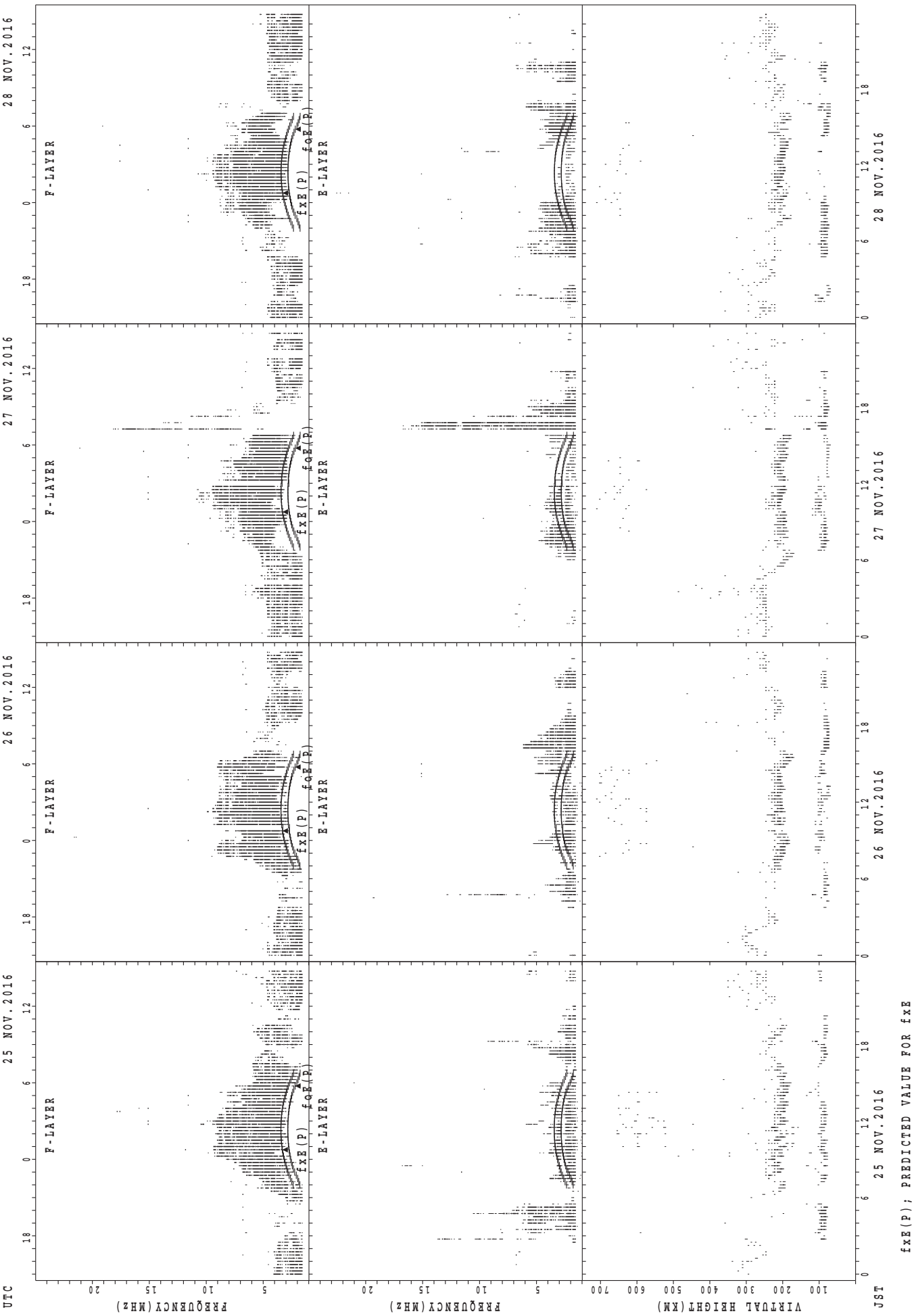


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

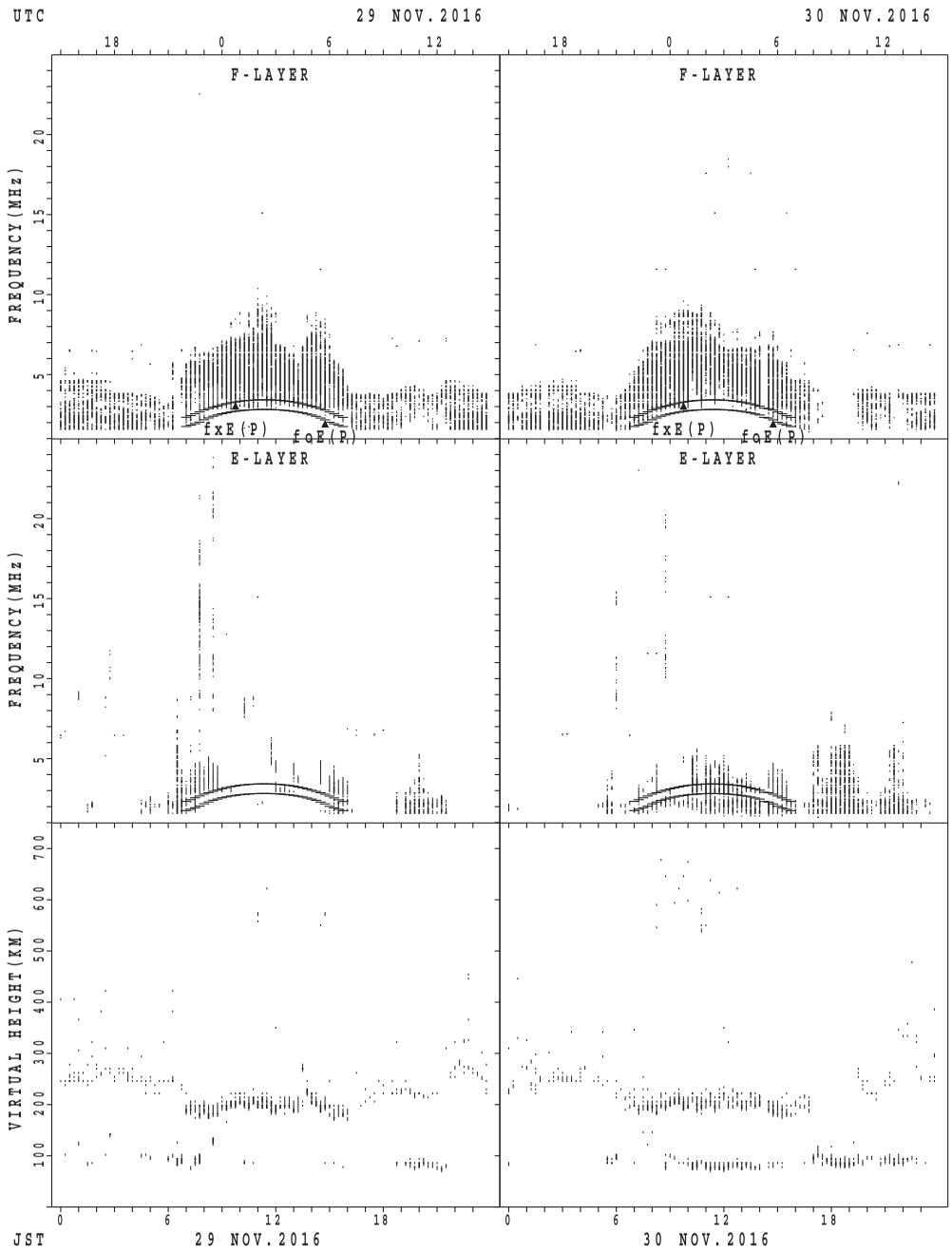
SUMMARY PLOTS AT Wakkanai



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

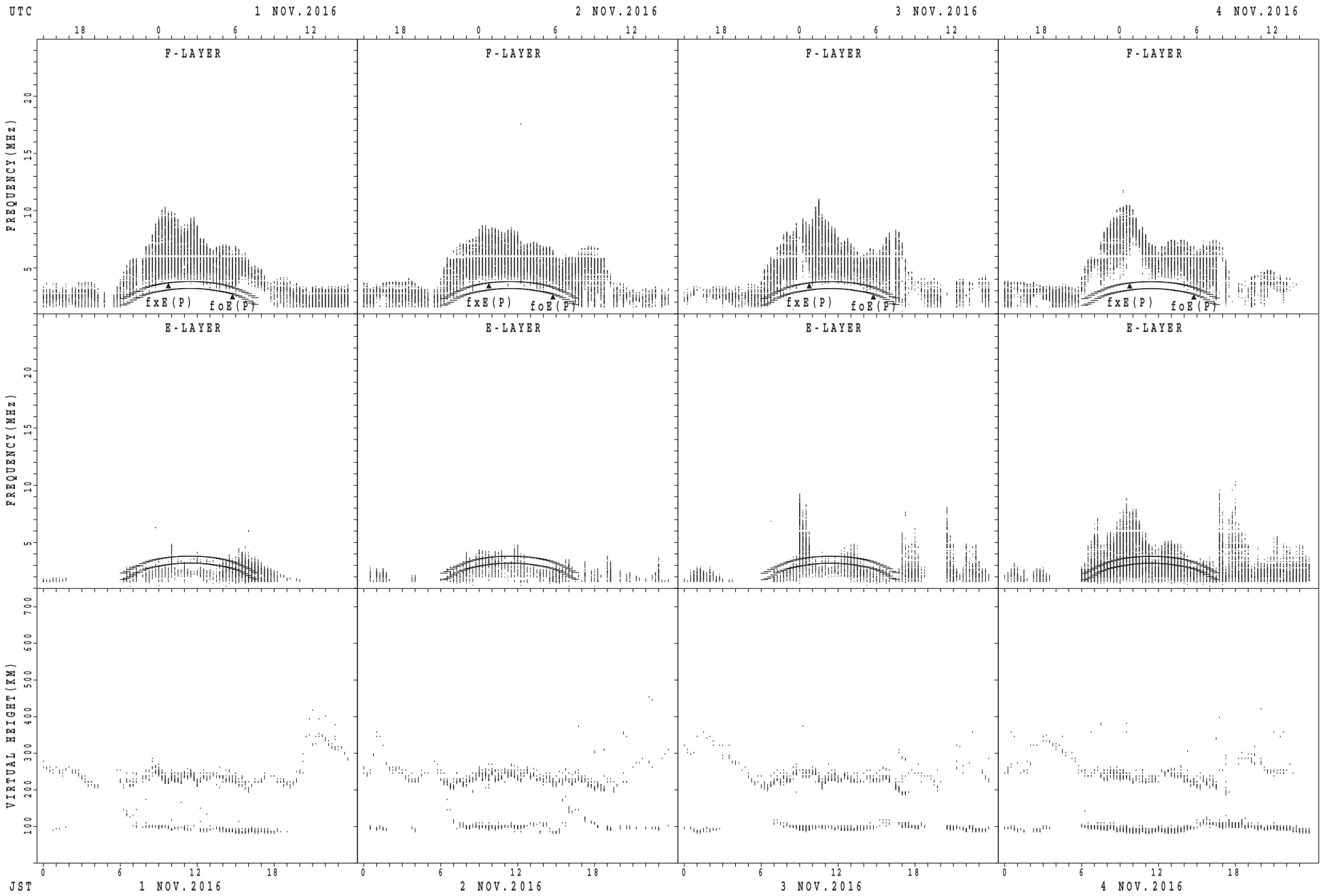

SUMMARY PLOTS AT Wakkanai
UTC
JST
25 NOV.2016
26 NOV.2016
27 NOV.2016
28 NOV.2016
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



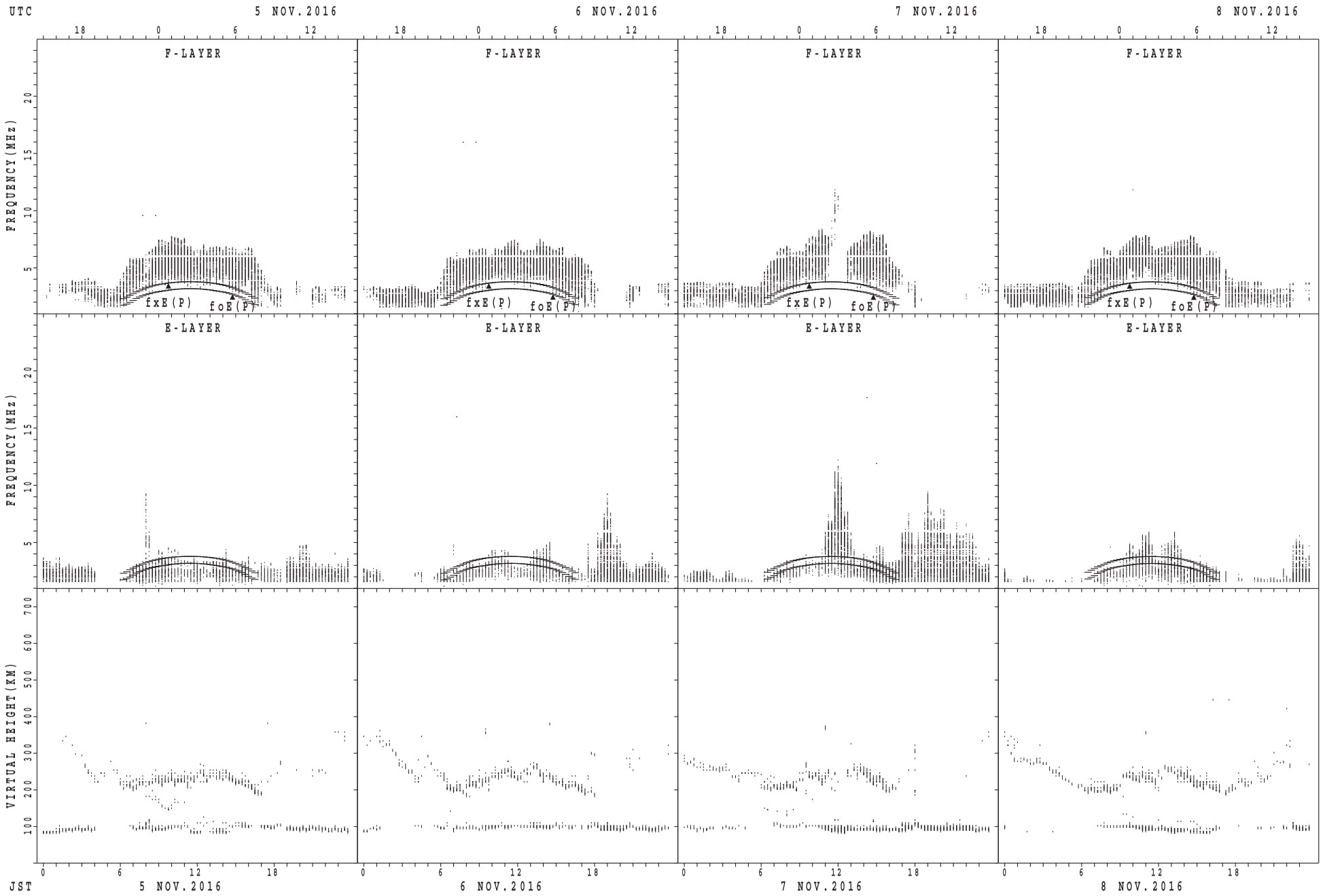
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



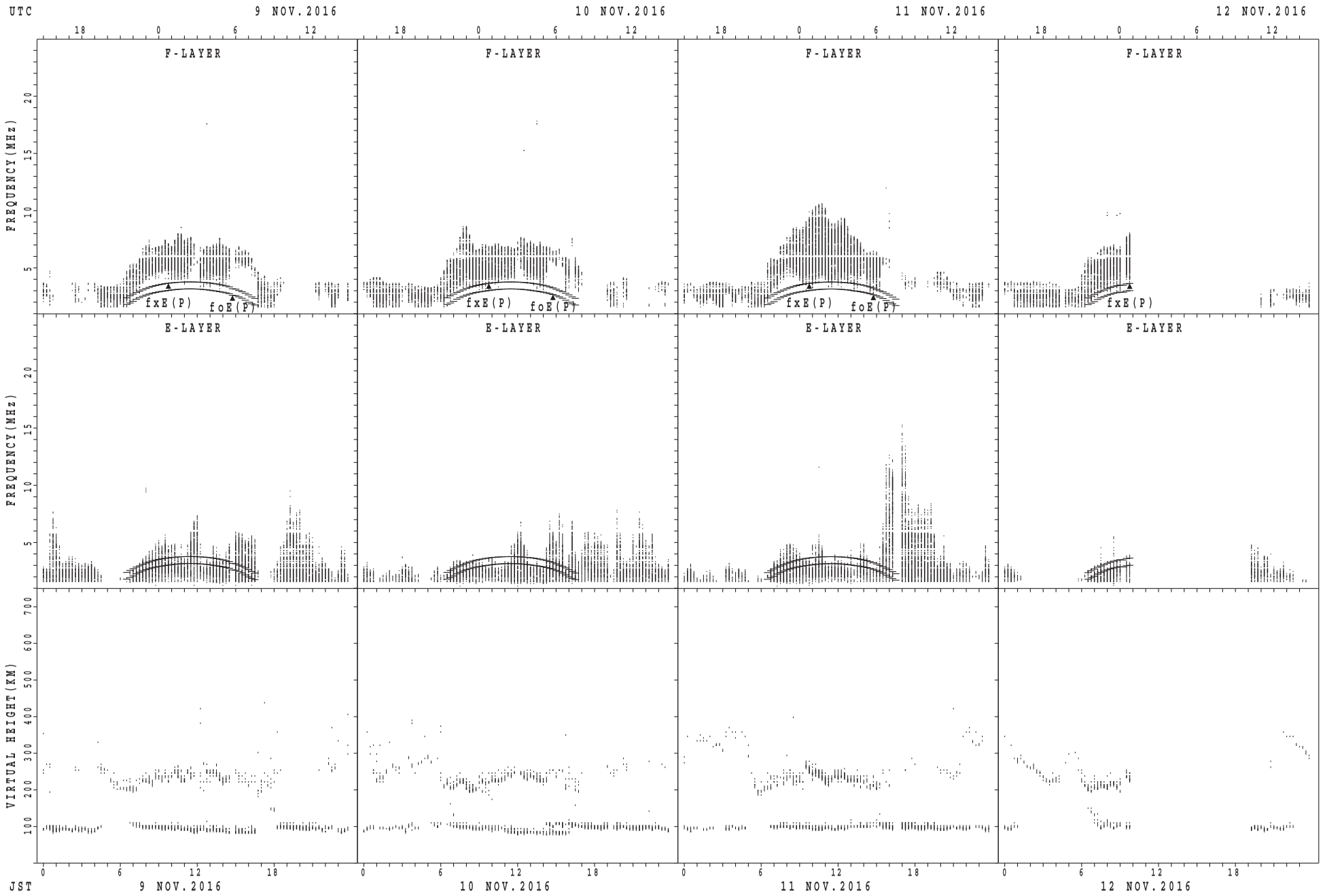
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



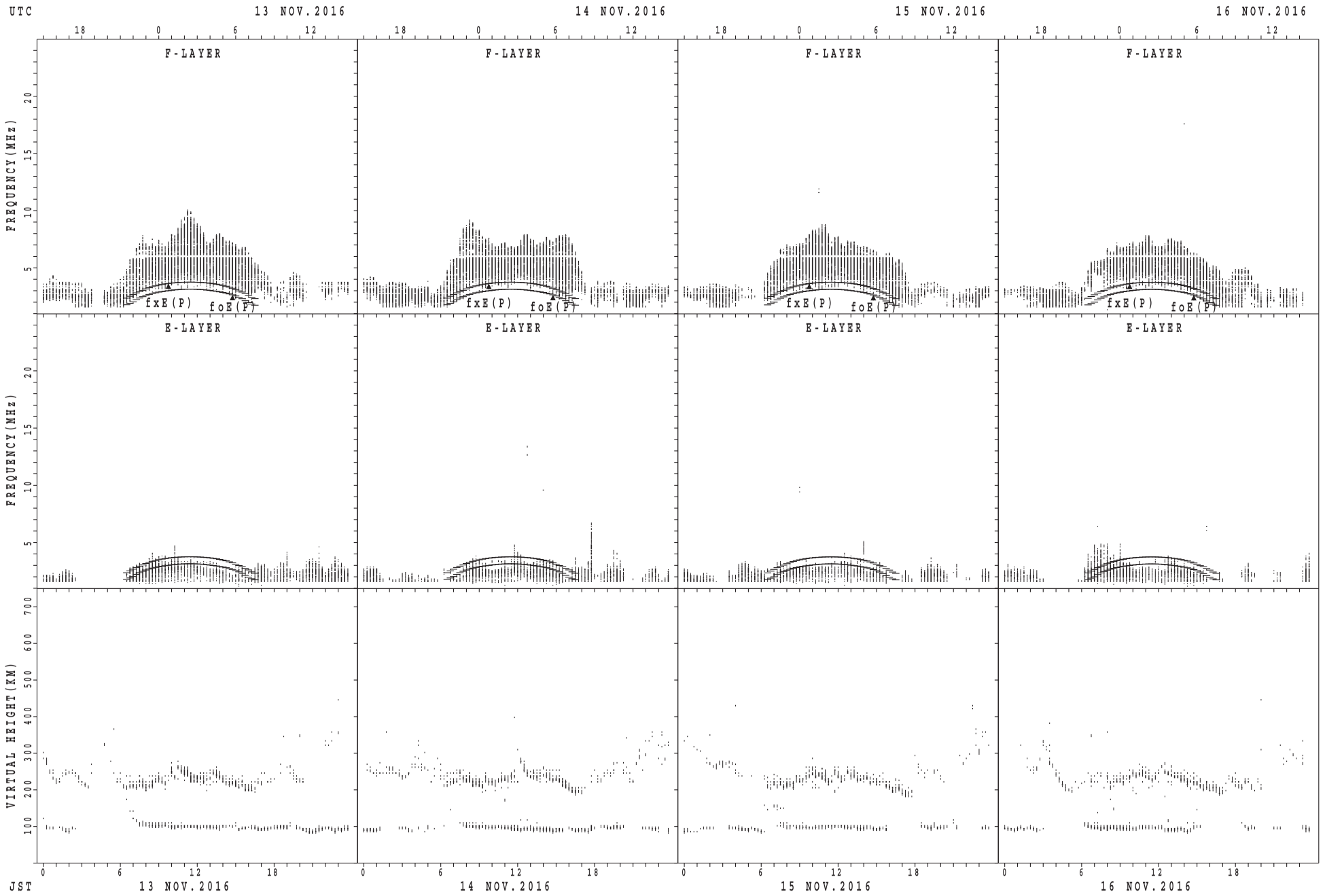
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



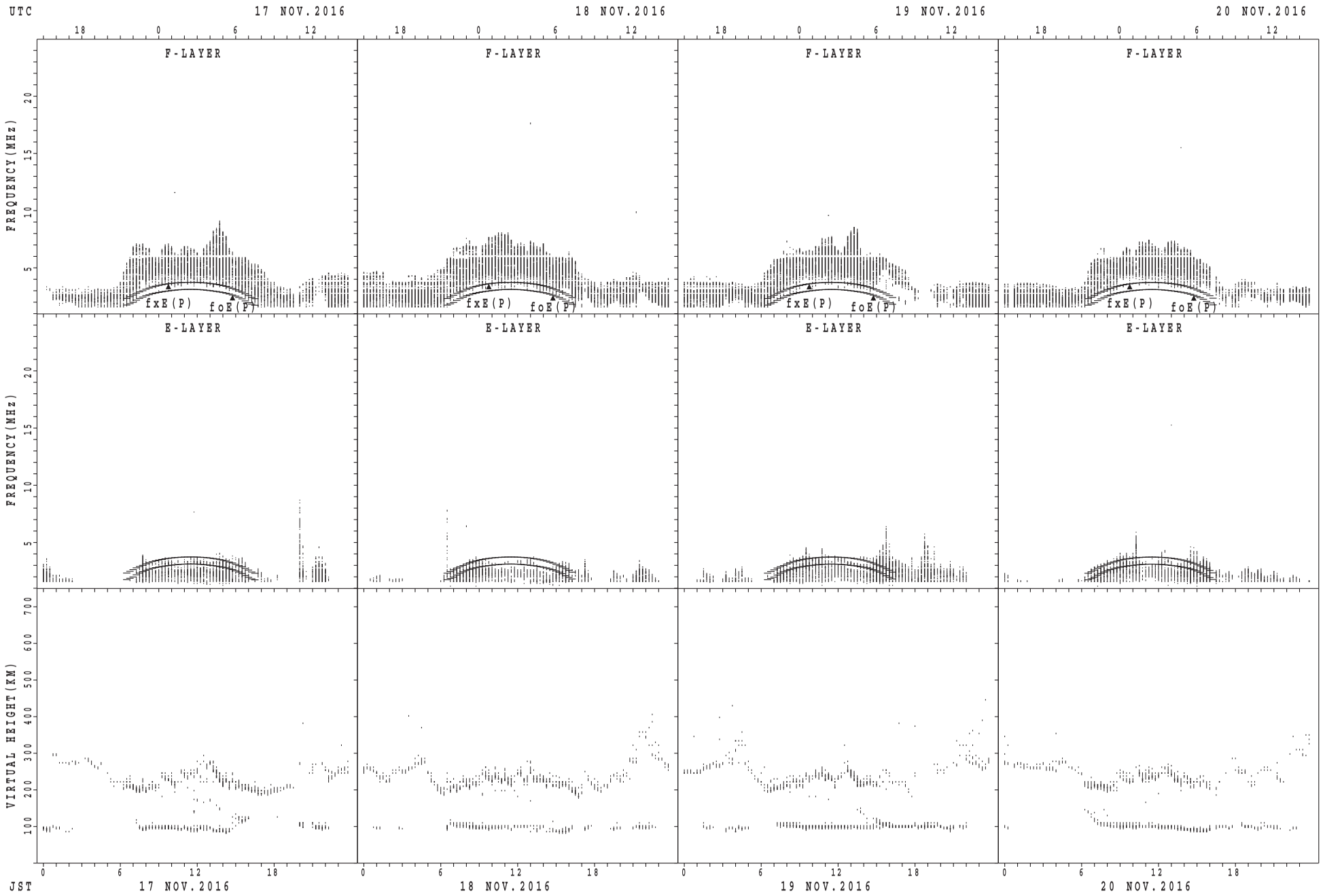
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



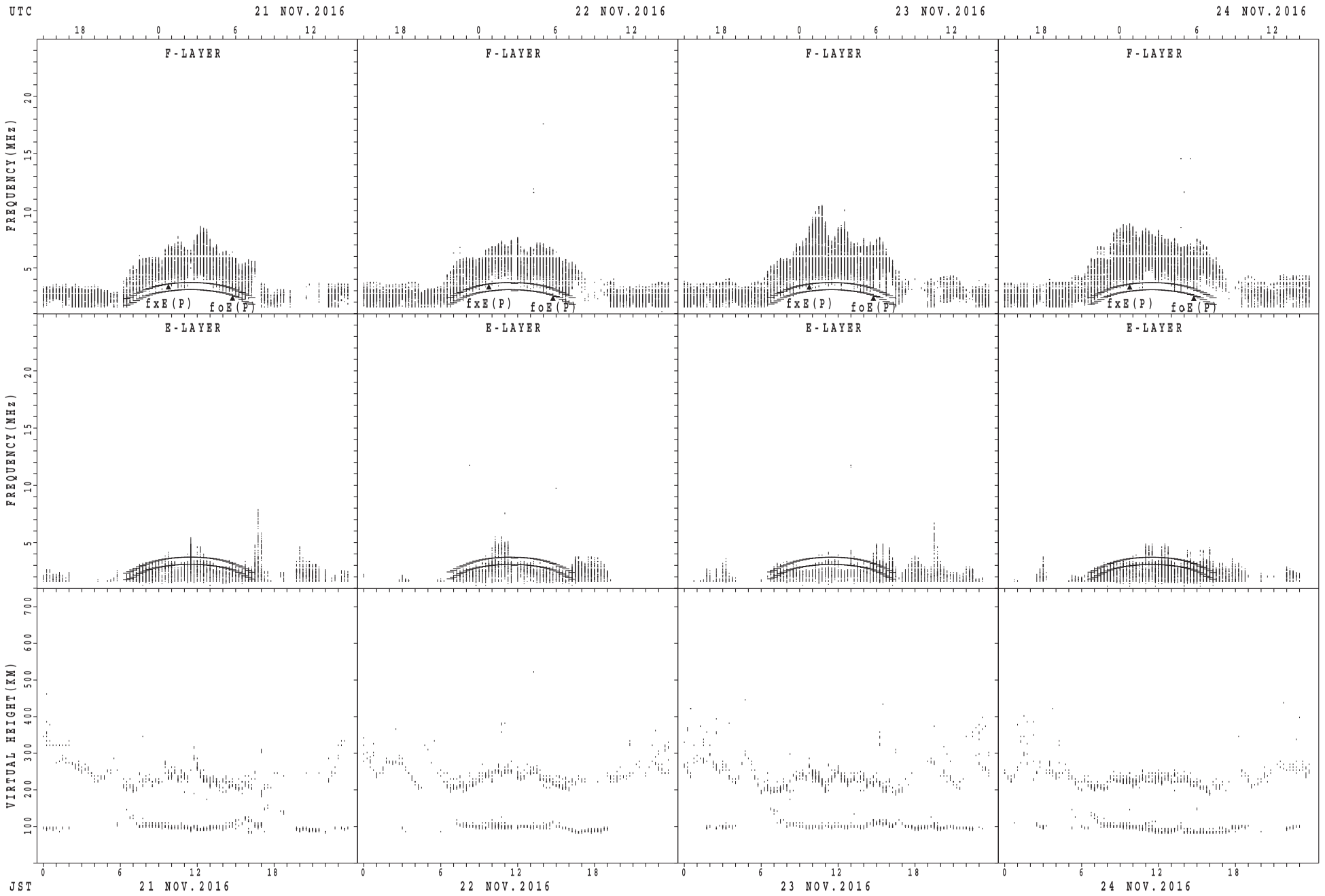
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

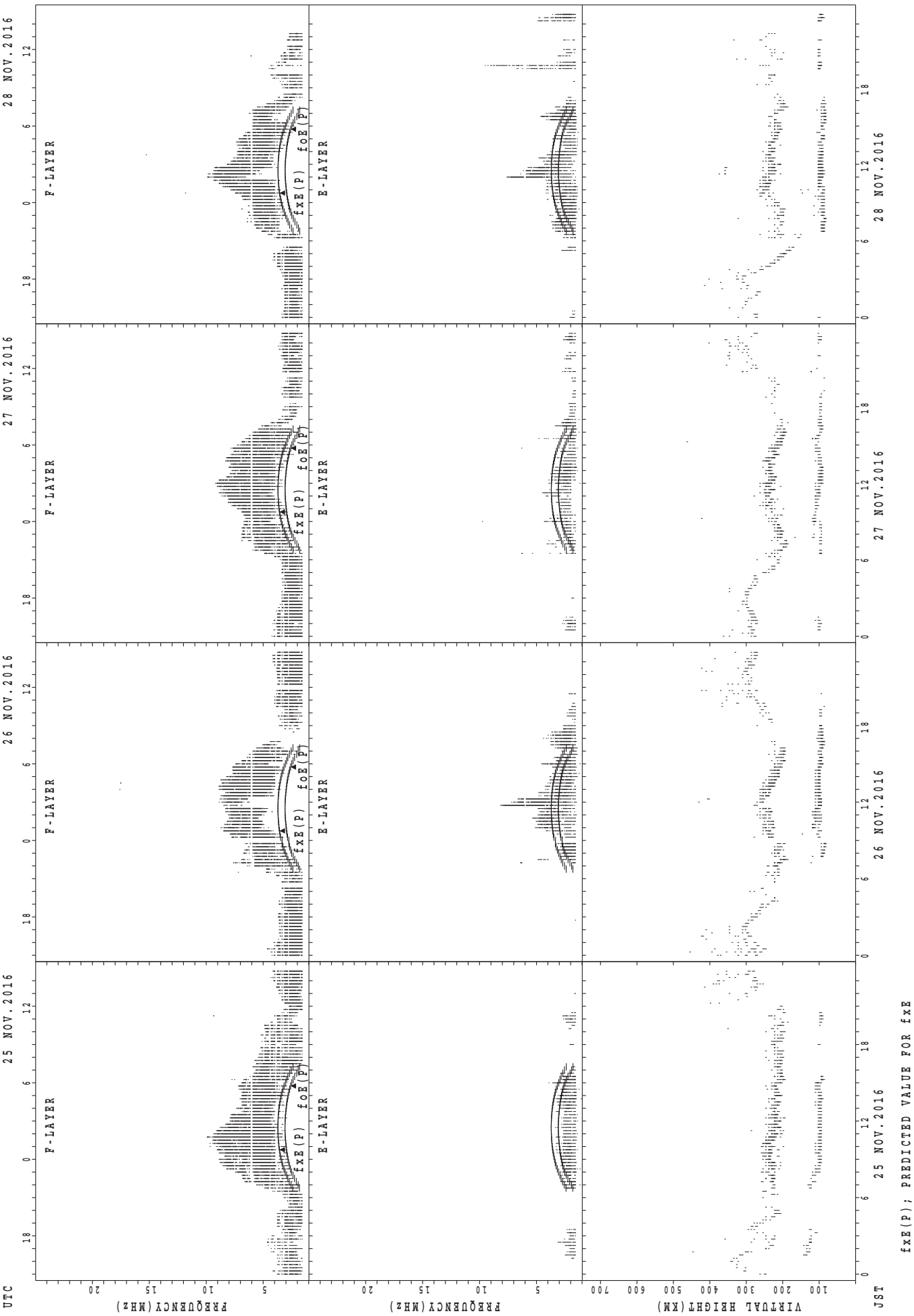


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

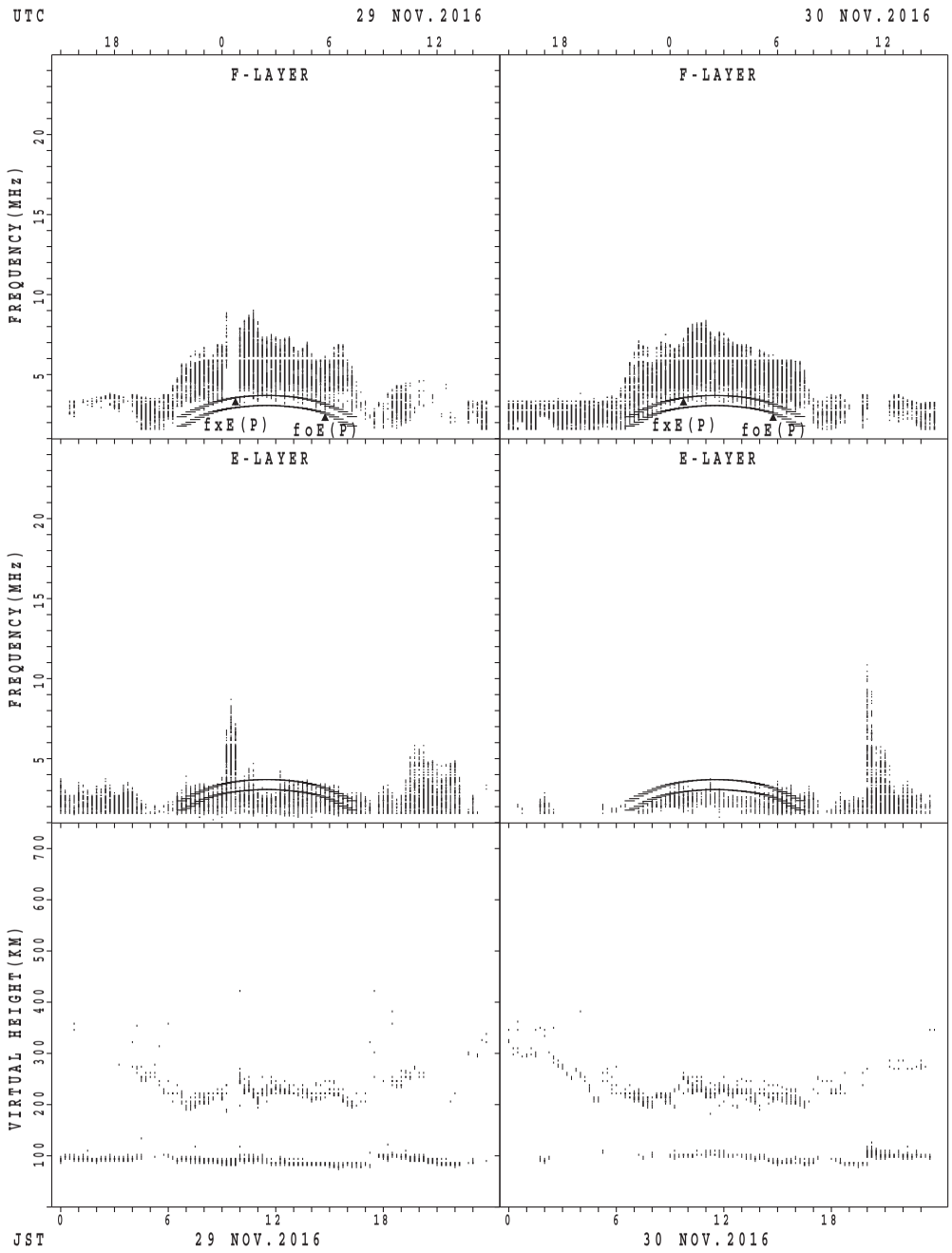
SUMMARY PLOTS AT Kokubunji



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

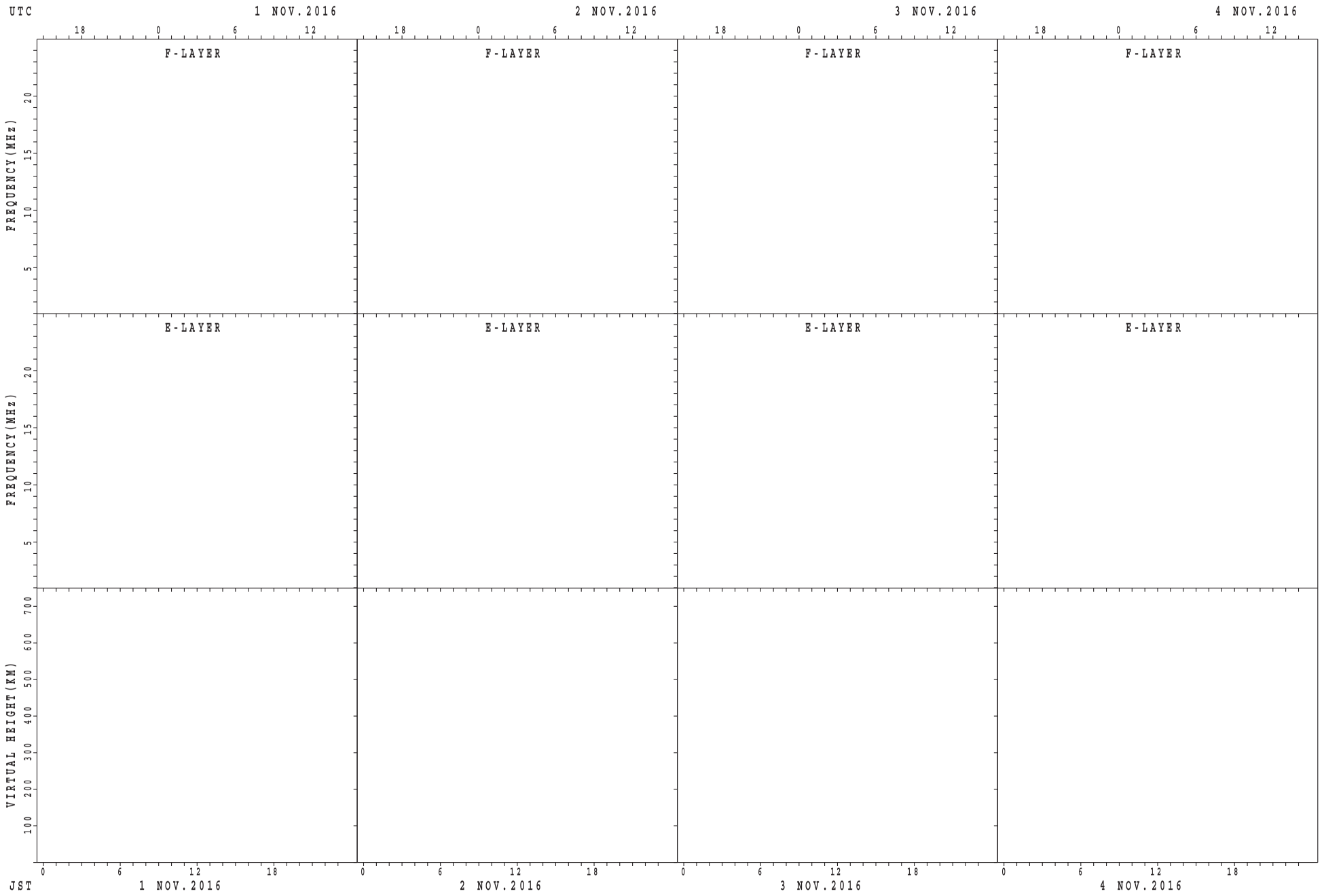

SUMMARY PLOTS AT Kokubunji
UTC
JST
25 NOV.2016
26 NOV.2016
27 NOV.2016
28 NOV.2016
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



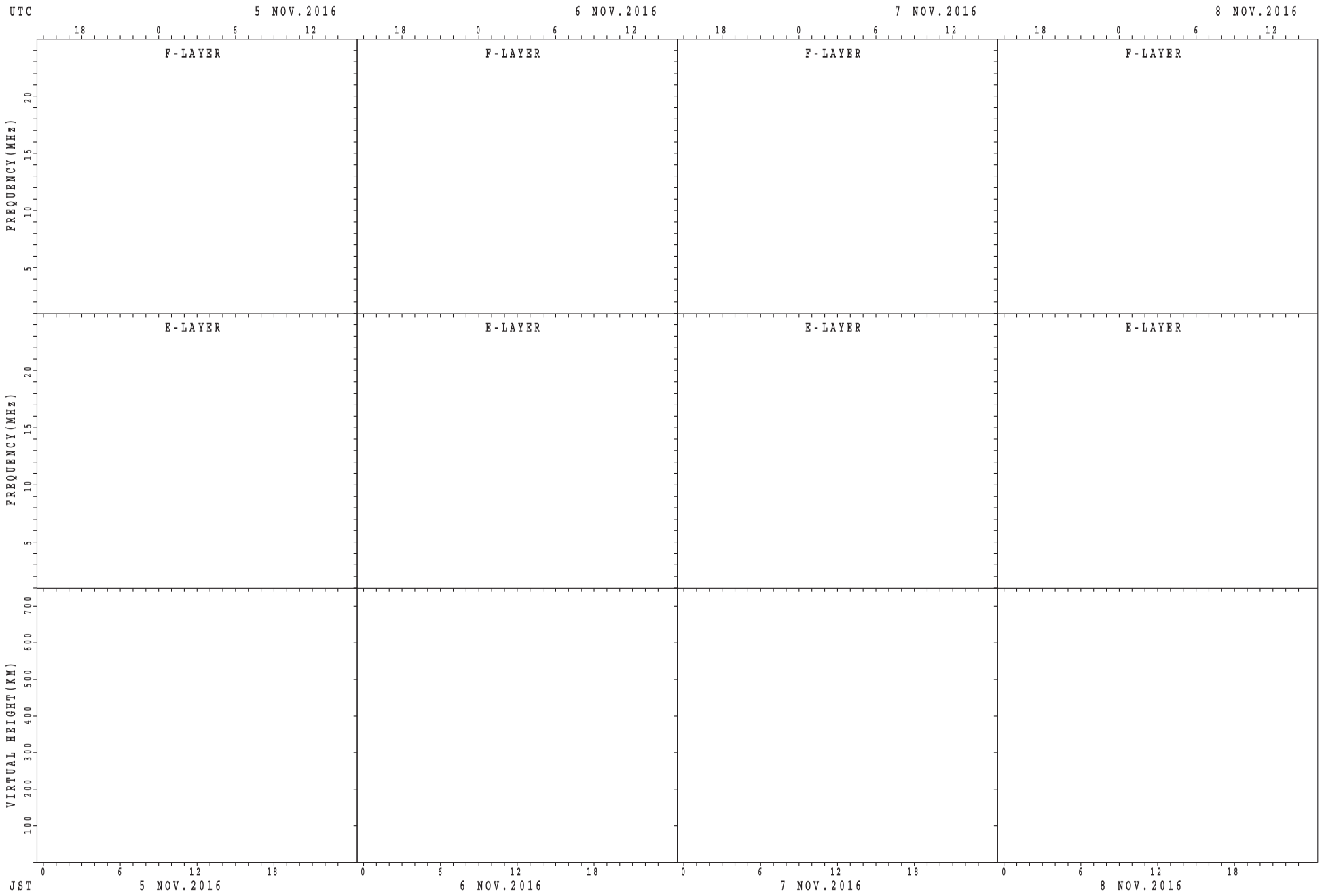
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



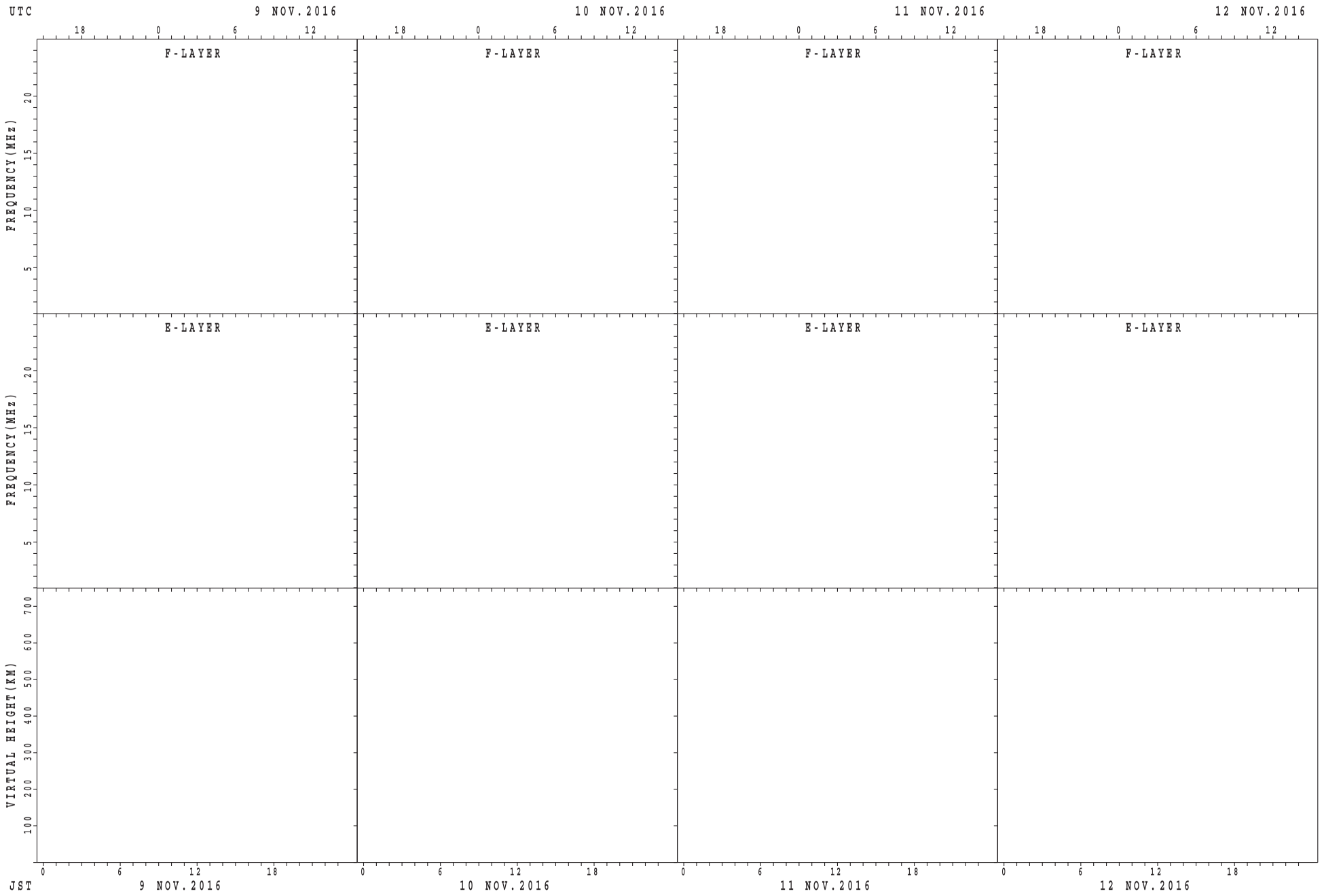
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



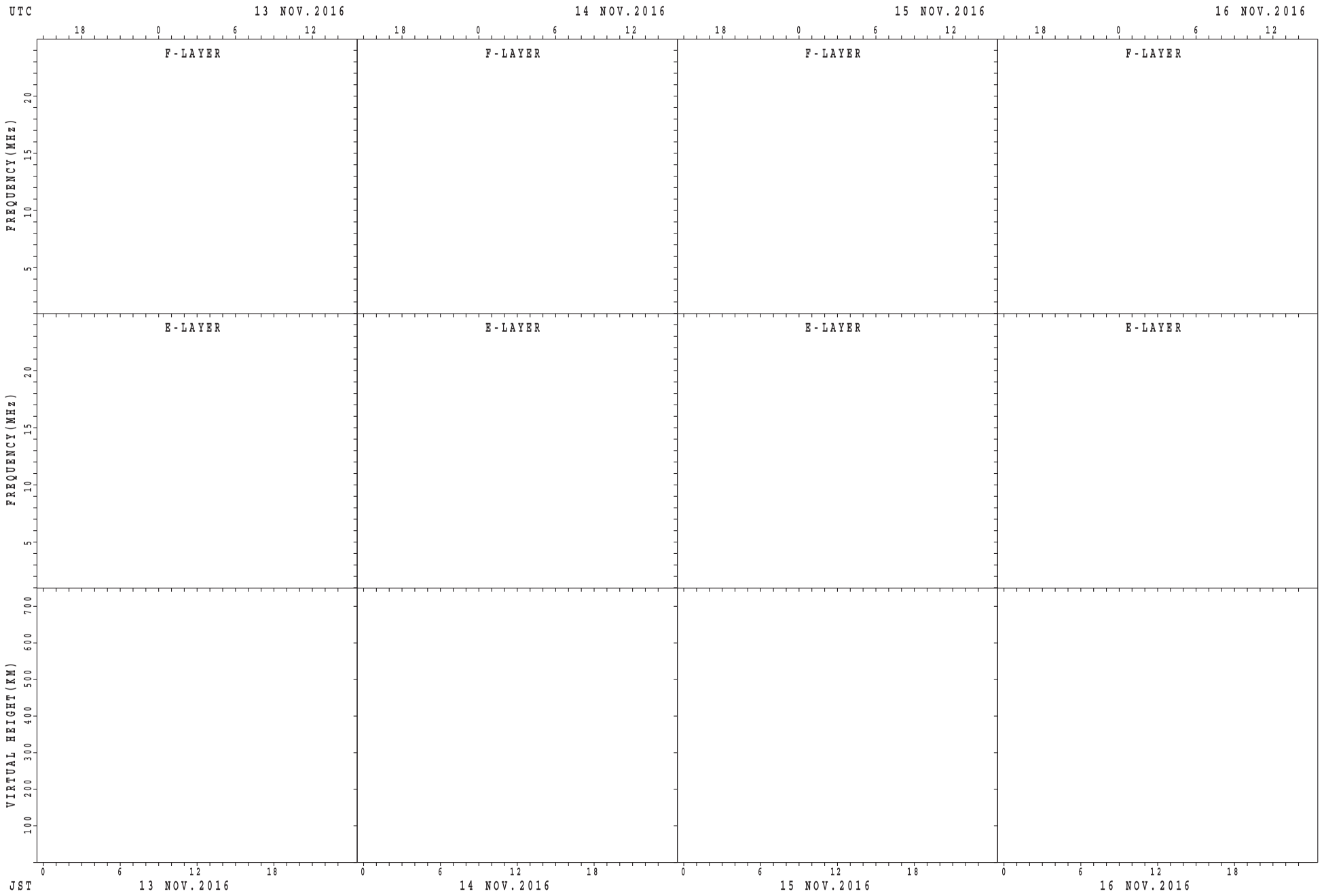
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



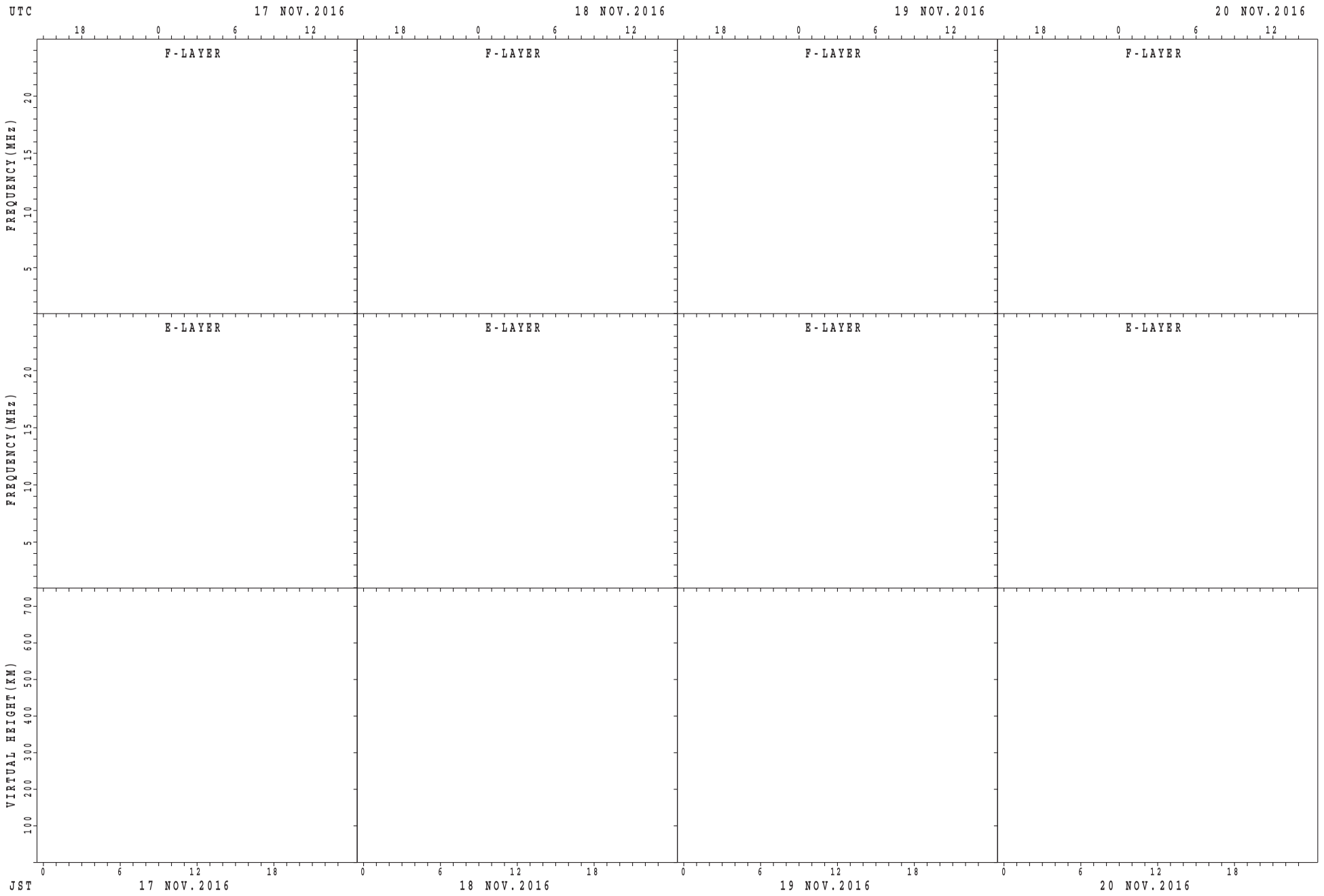
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



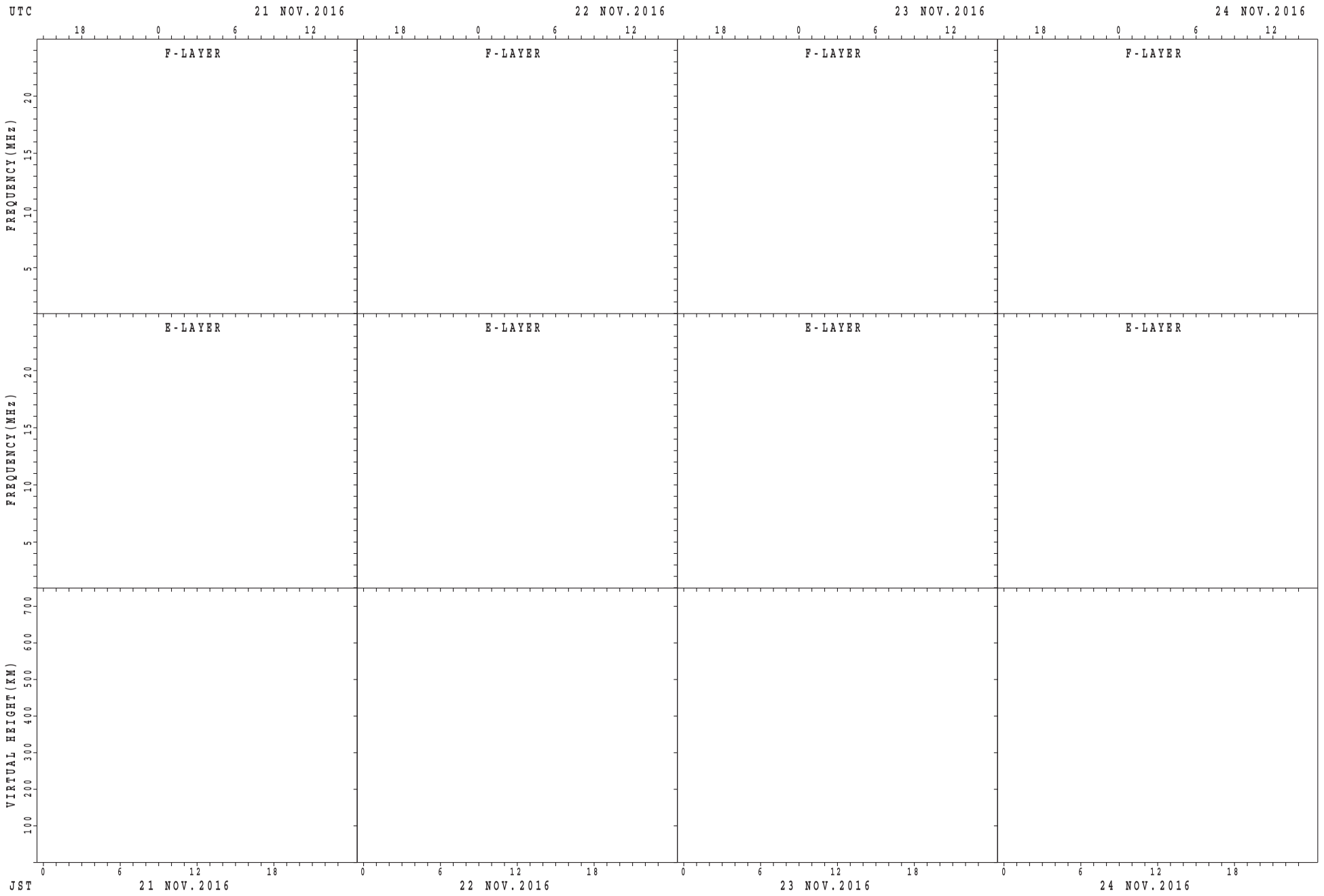
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



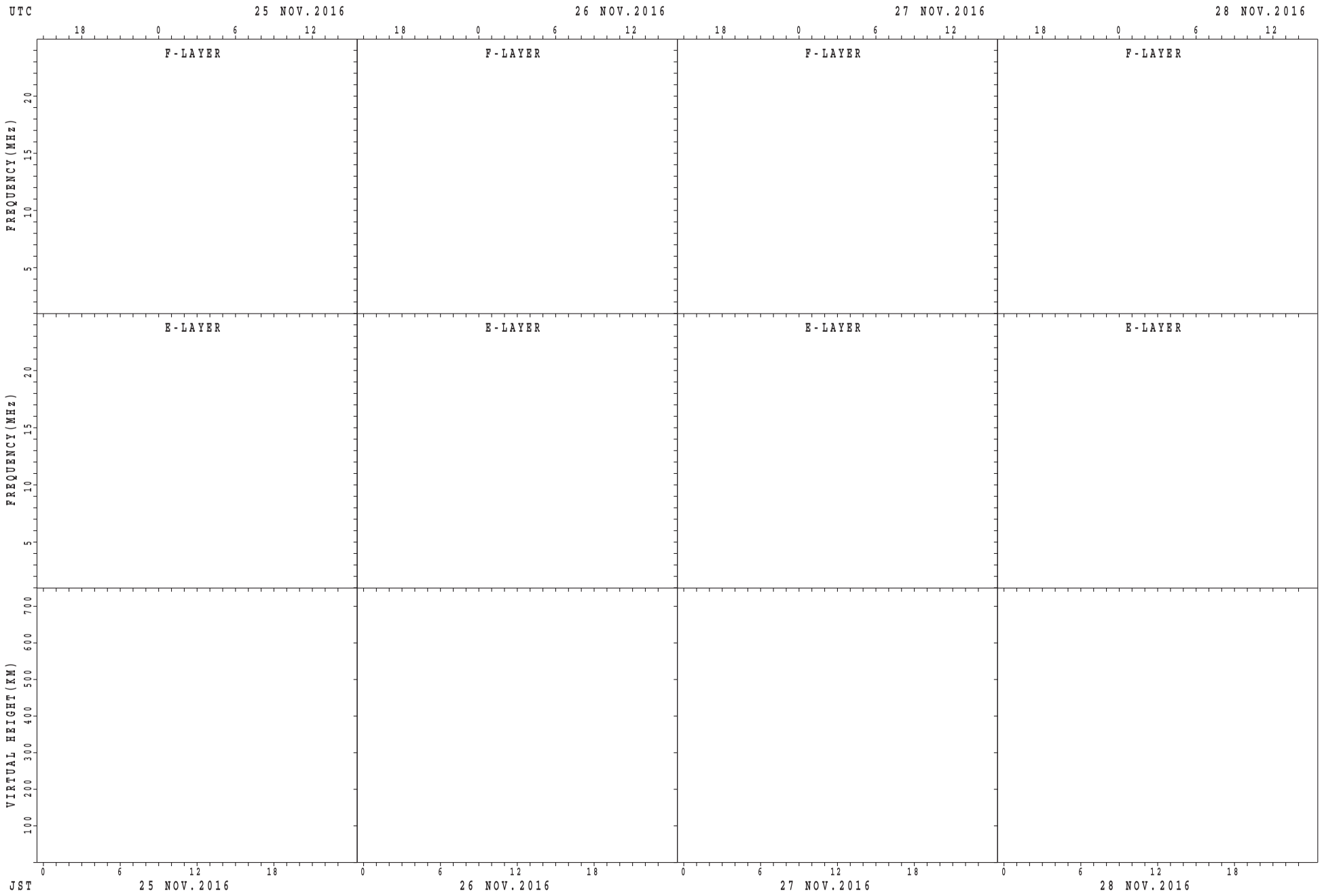
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



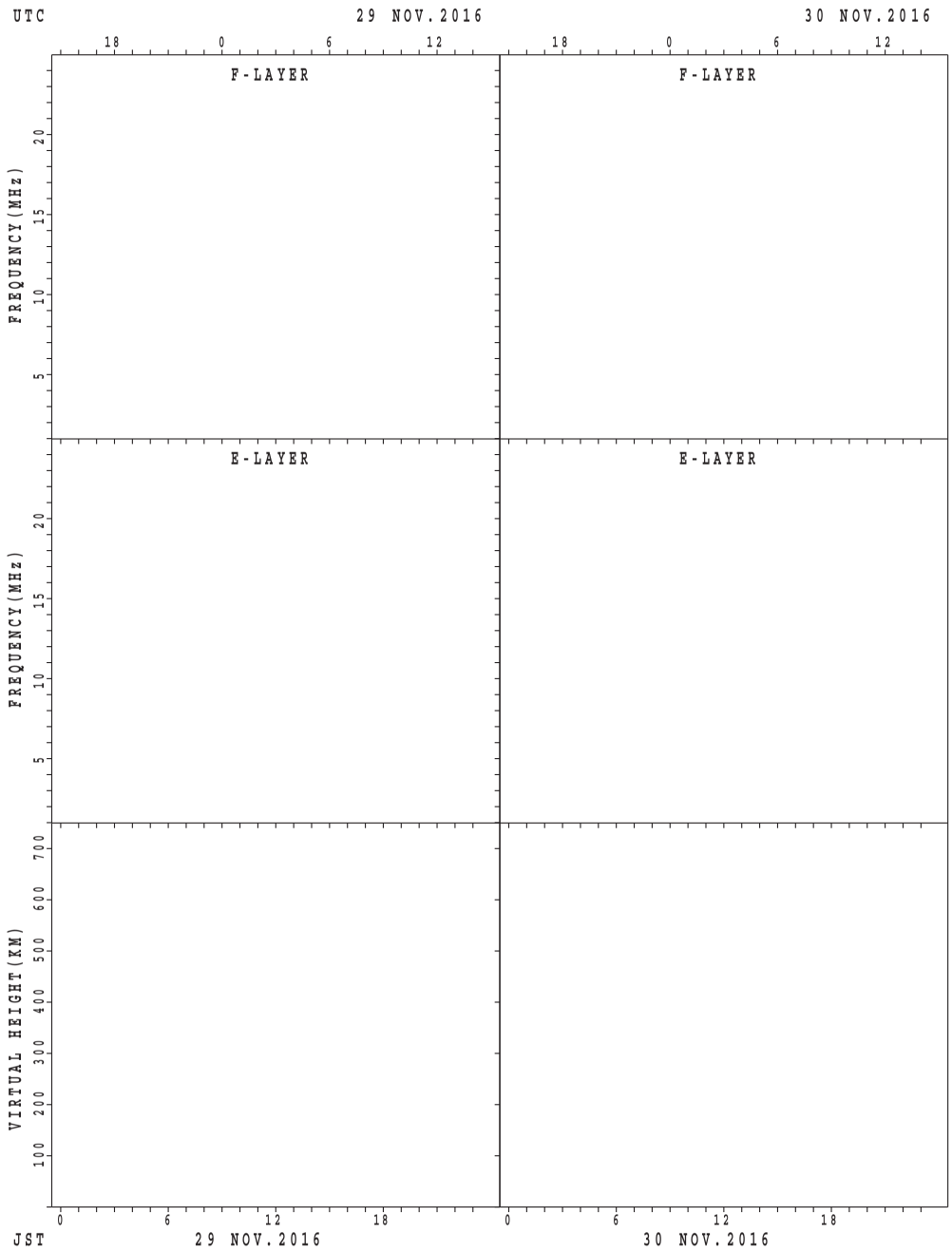
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



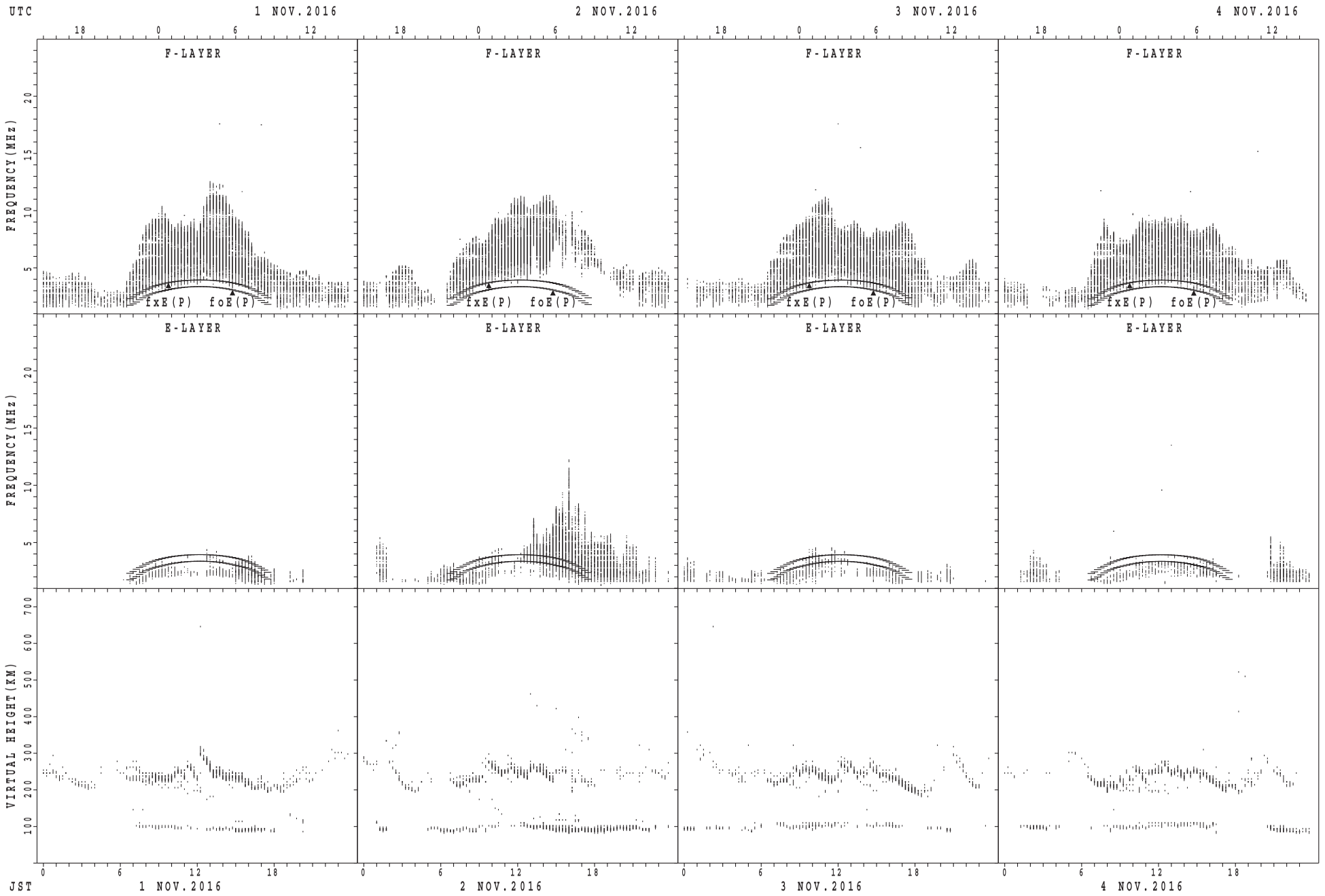
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



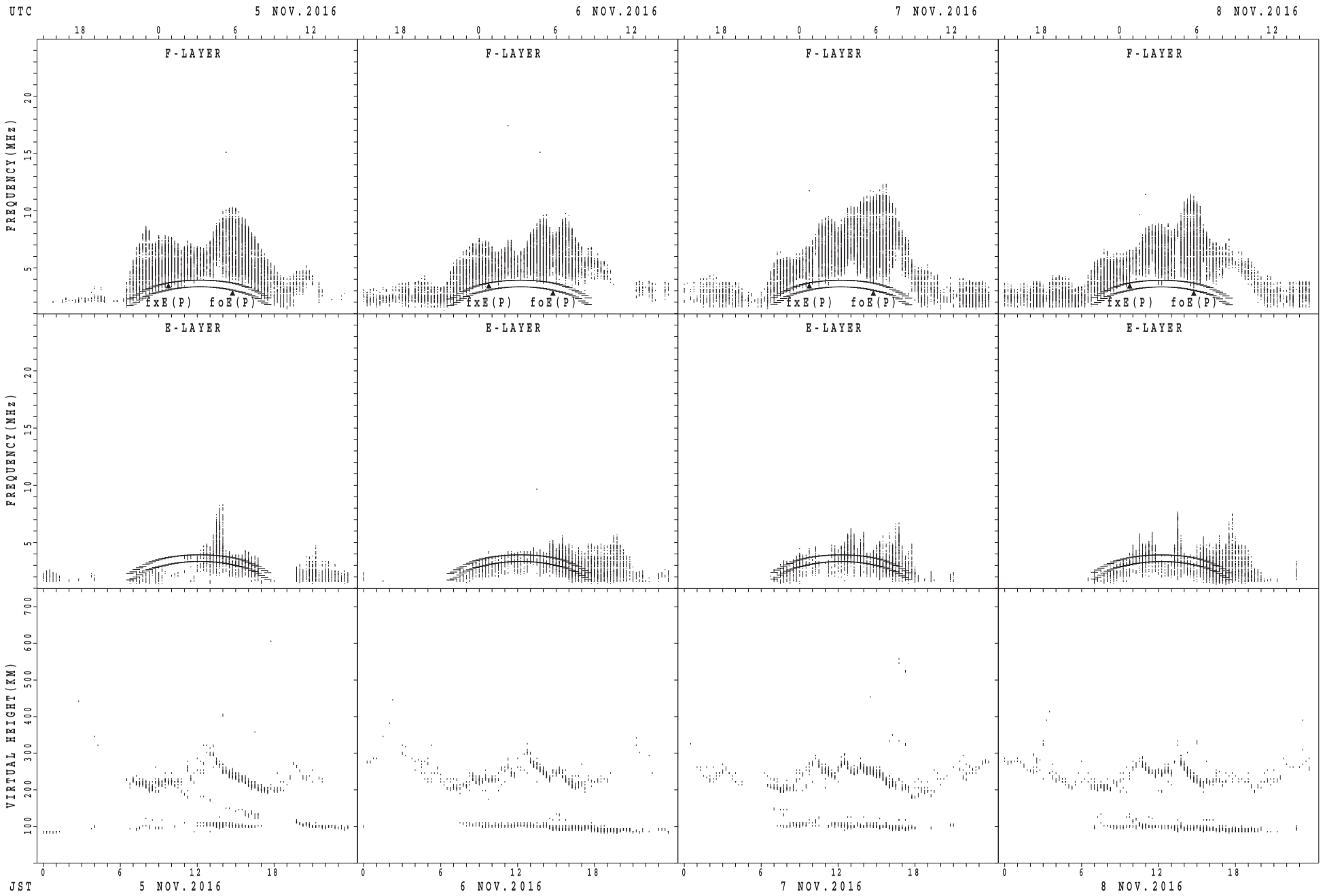
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



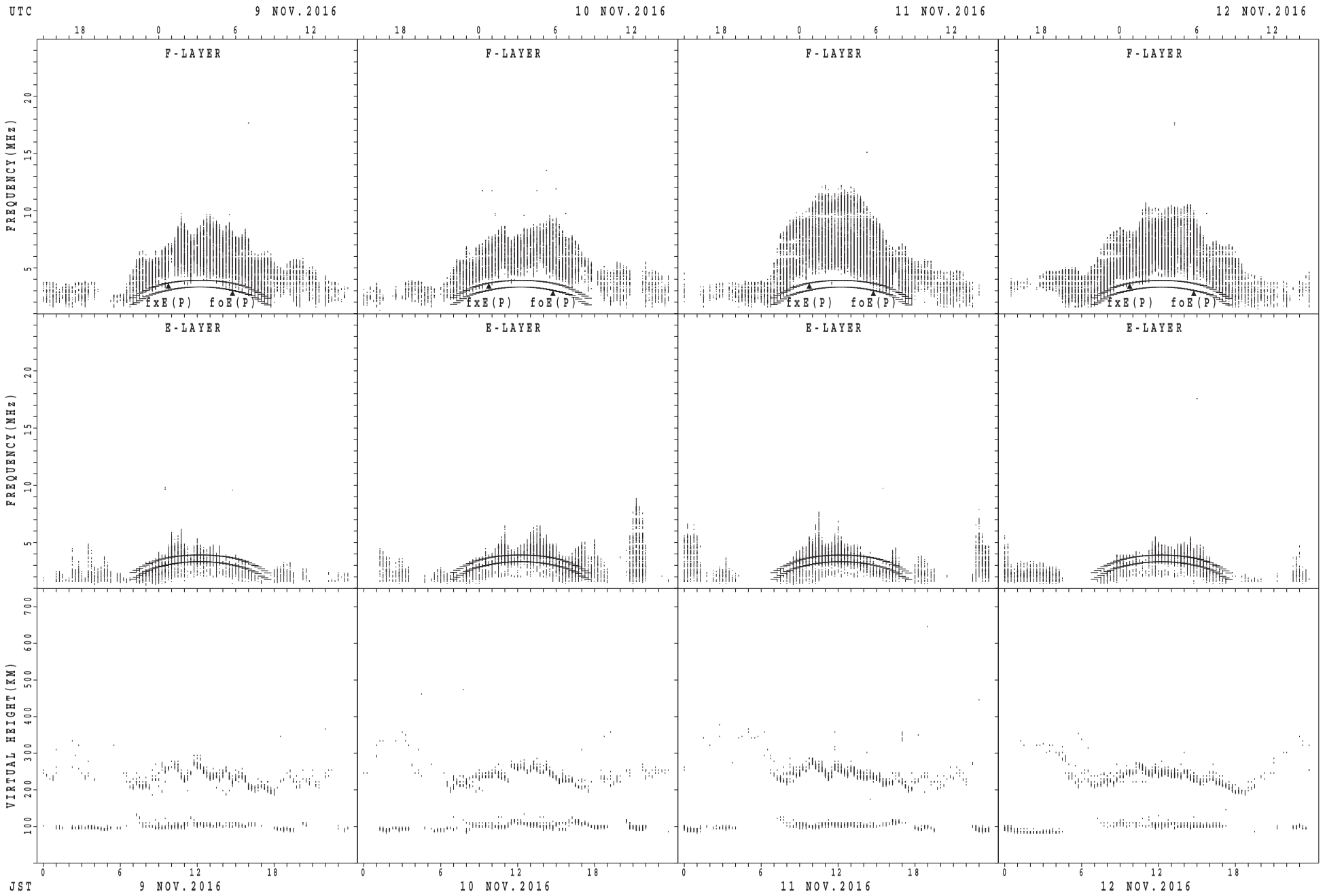
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



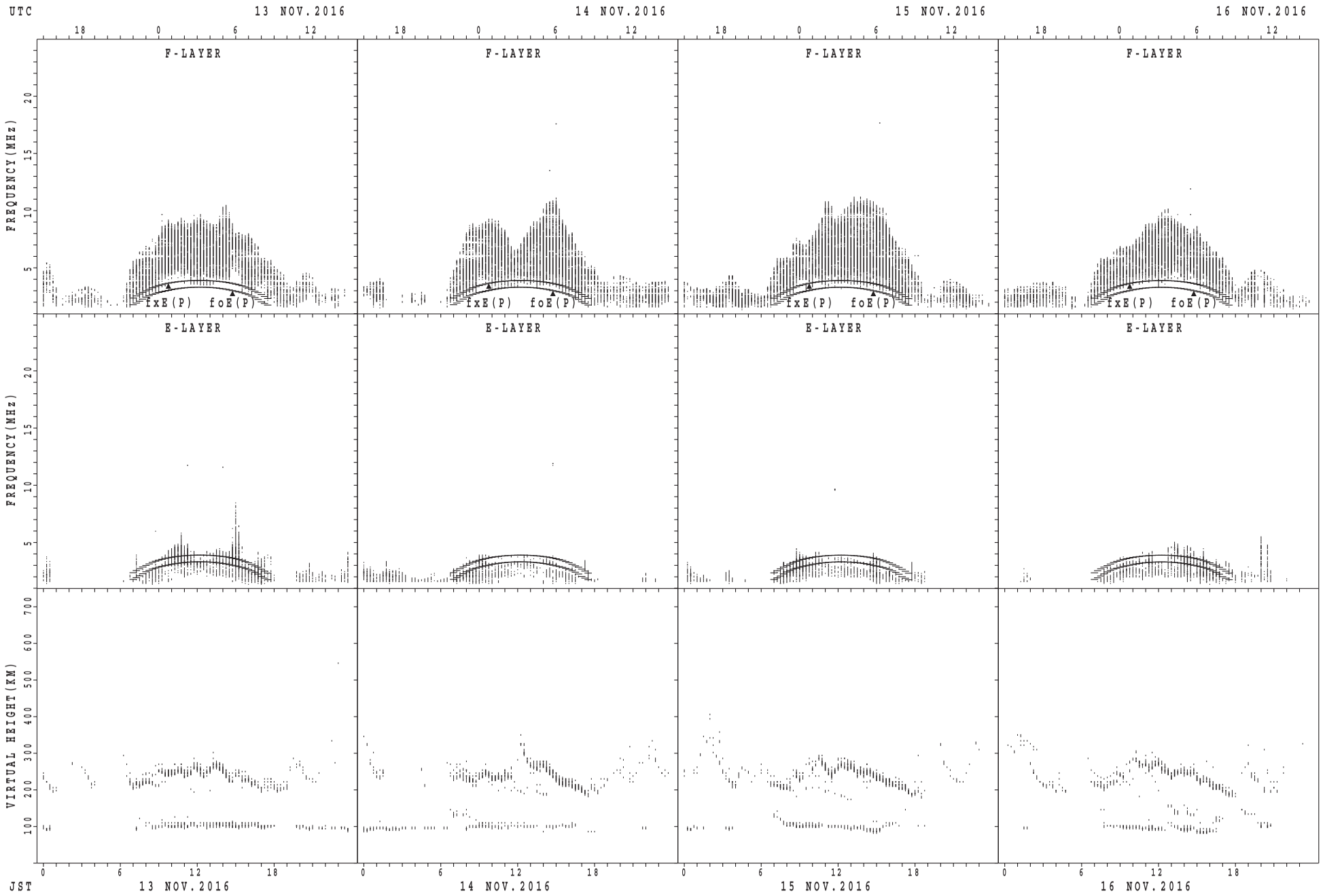
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



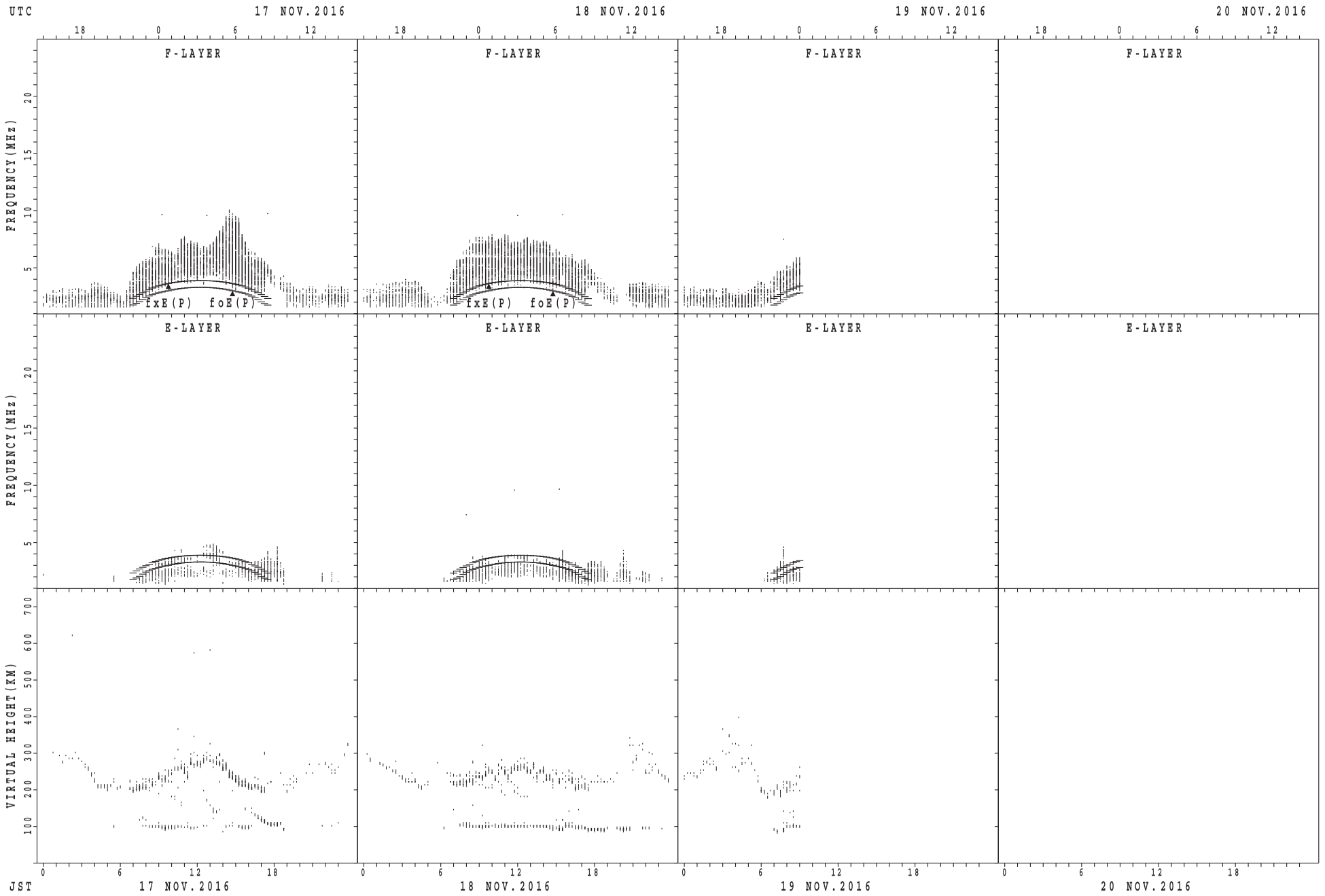
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



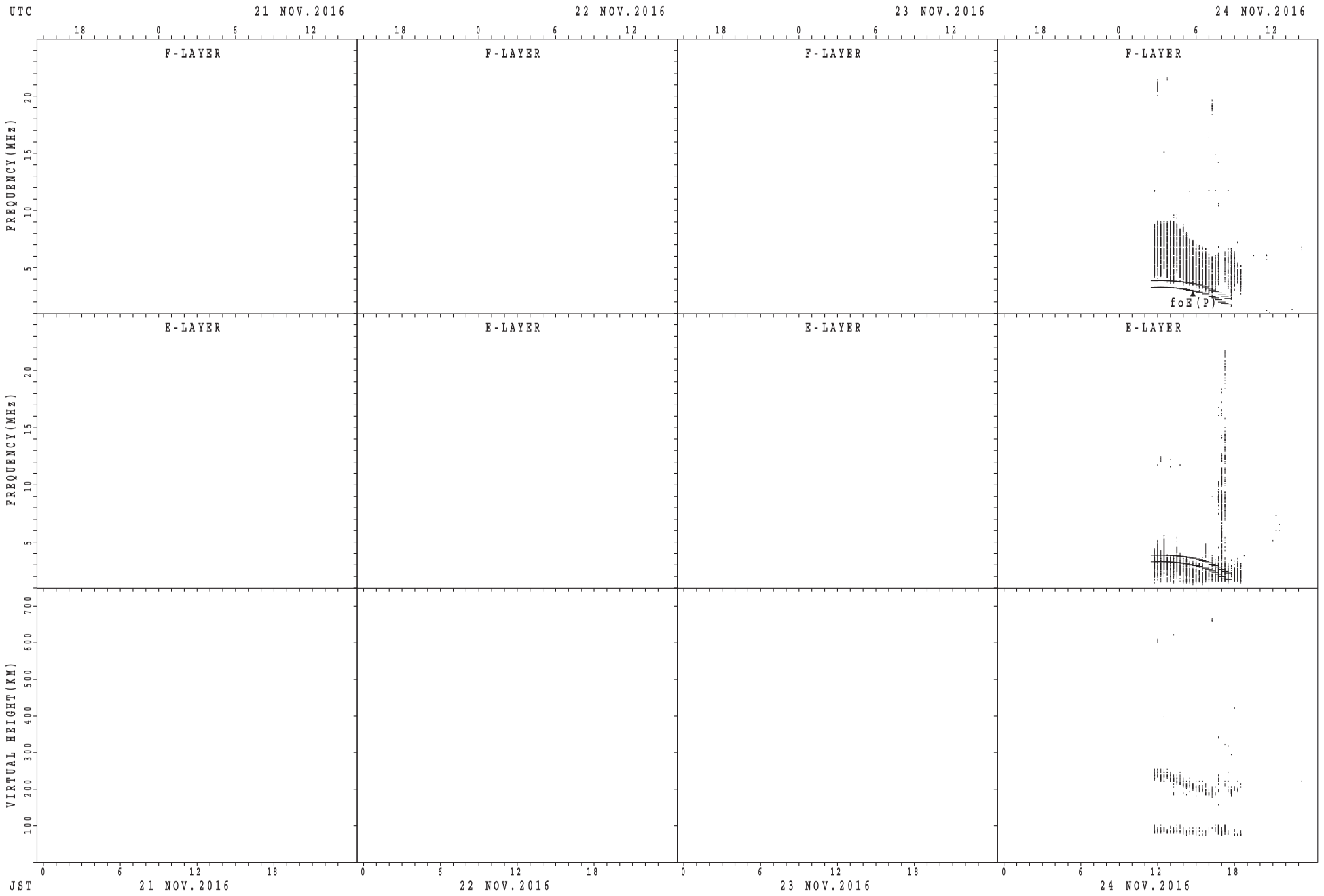
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



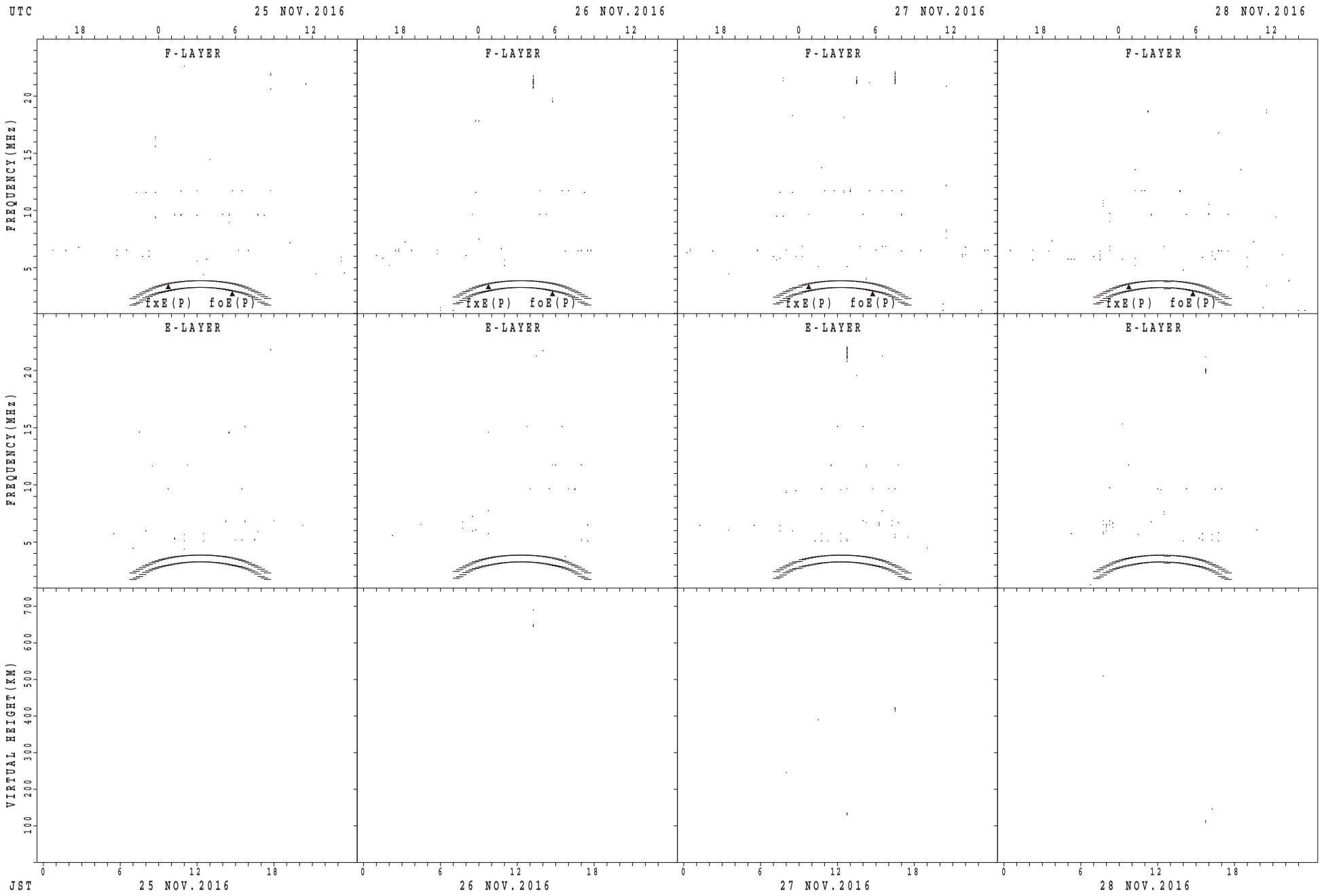
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



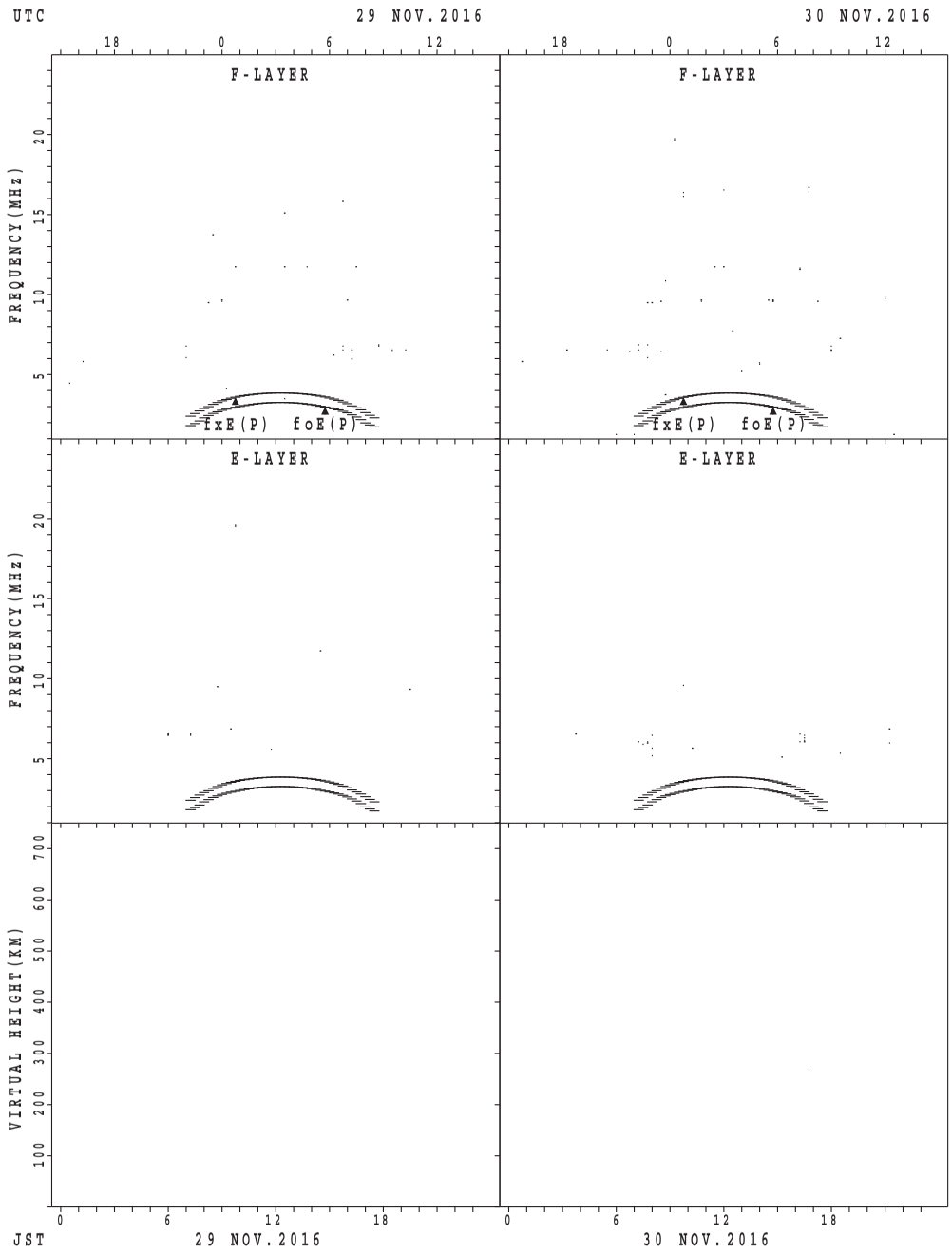
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

NOV.2016 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								3	16	22	24	23	23	24	13	9	3	1						
MED								248	217	216	224	218	216	223	222	226	218	224						
U Q								330	224	232	231	228	226	233	237	246	226	112						
L Q								224	208	208	216	210	204	212	217	210	208	112						

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	11	13	7	7	14	15	16	22	21	18	17	11	13	11	11	12	21	18	19	21	16	18	14
MED	85	85	83	83	89	93	95	97	98	91	103	95	97	89	103	95	88	87	93	89	89	88	85	86
U Q	89	101	88	87	91	97	111	135	121	106	161	150	113	106	137	147	105	101	121	91	96	90	89	89
L Q	81	81	79	83	81	87	91	89	89	84	93	82	89	83	79	79	78	81	89	83	86	85	83	81

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	17	16	14	6	7	19	25	15	4	2	1					
MED								223	224	233	246	229	230	244	236	228	226	246	242					
U Q								230	232	241	248	242	234	246	245	240	233	256	121					
L Q								216	215	228	232	218	214	238	229	224	217	236	121					

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	14	14	9	8	2	5	20	16	15	15	12	12	12	13	17	23	22	19	20	22	22	21	15
MED	97	95	95	95	95	94	103	114	103	101	105	103	96	96	97	95	97	101	101	99	97	99	97	95
U Q	103	95	95	99	97	95	109	132	105	103	147	111	101	113	117	105	105	105	111	105	101	105	99	101
L Q	93	93	93	93	92	93	94	99	98	97	99	96	95	93	95	88	91	91	97	97	97	97	95	91

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
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

NOV.2016 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	11	16	12				1	19	15	7	4					
MED								242	238	237	246				212	230	222	224	224					
U Q								121	250	243	276				106	238	232	240	230					
L Q								121	214	230	234				106	228	216	216	218					

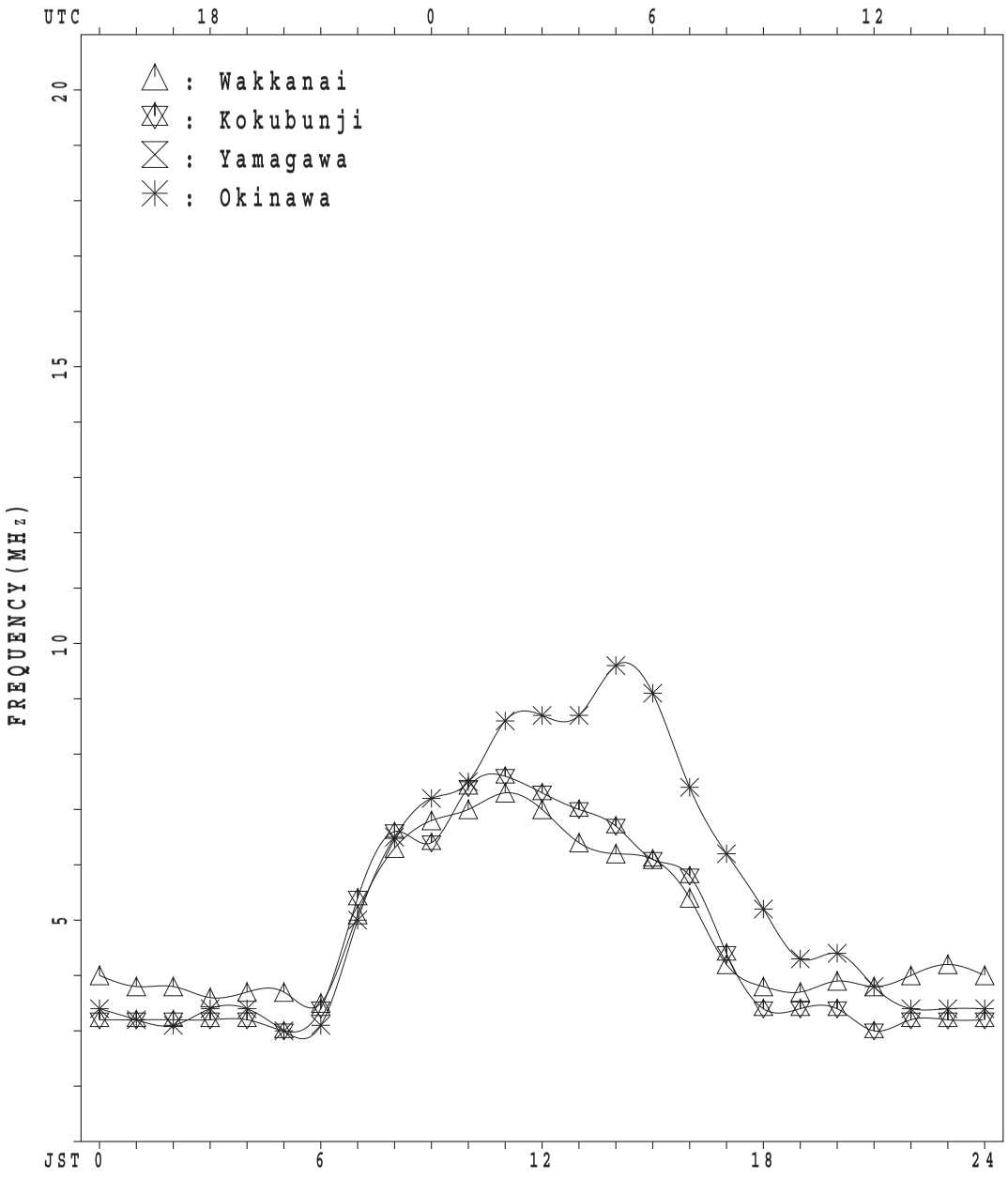
h'Es

	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	7	6	5	7	4	1	4	6	5	10	12	8	12	14	11	12	13	9	13	9	7	6	5	5
MED	99	93	95	95	97	97	95	132	137	107	105	108	108	107	103	104	103	97	97	97	99	103	97	95
U Q	99	99	97	99	99	48	101	149	161	109	111	109	112	155	107	106	111	108	102	101	105	105	100	103
L Q	93	89	90	95	92	48	93	97	104	105	103	104	105	105	99	97	99	95	92	93	93	99	93	92

MONTHLY MEDIANS PLOT OF foF2

NOV.2016

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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 41	X 41	X 43	X 43	X 45	X 40													X 38	X 38	X 40	X 41	X 44	A
2	X 43	X 46	X 40	X 40	X 41	X 37													X 45	X 46	X 48	X 37	X 38	X 38
3	X 42	X 39	X 39	X 40	X 40	X 35													X 52	X 48	X 45	X 45	X 45	X 46
4	X 40	X 36	X 36	X 37	X 36	X 35													X 40	X 41	X 43	X 43	X 42	X 39
5	X 39	X 39	X 39	X 35	X 36	X 34													X 41	X 41	X 37	X 35	X 42	58
6	X 39	X 37	X 39	X 35	X 33	X 32													X 36	X 39	X 37	X 38	X 39	47
7	X 41	X 45	X 43	X 40	X 43	X 43	X 41												X 39	X 43	X 41	X 46	58	55
8	51	47	X 44	45	X 41	X 44	X 40												X 41	X 37		X 37	X 45	X 43
9	X 38	X 39	X 37	X 37	X 39	X 42													X 37	X 40	X 39	X 42	X 41	41
10	X 42	X 38	X 41	X 41	X 37	X 36													X 41	X 42	X 45	X 37	X 37	X 40
11	X 39	X 39	X 39	X 37	X 36	X 39													X 42	X 47	X 52	X 48	X 45	X 45
12	X 44	X 46	X 48	X 45	X 46	X 44													X 37	X 43	X 40	54	54	57
13	58	58	X 53	X 50	X 51	X 47													X 48	X 53	X 53	X 54	X 53	X 53
14	X 58	X 59	X 54	X 54	X 54	X 54													X 44	X 43	X 44	X 45	X 45	X 44
15	X 47	X 46	X 45	X 48	52	X 46													X 39	X 48	X 41	X 44	52	55
16	48	53	X 41	X 43	X 39	X 42													X 49	X 46	X 38	X 41	X 45	X 38
17	X 37	X 41	X 44	53	53	53	50			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	58	58	58				C	C	C	C	C					X 37	X 37	X 42	X 49	X 48	58
19	58	X 54	X 46	X 43	X 45	X 44													X 37	X 42	X 43	X 41	X 37	X 40
20	X 42	X 42	X 42	X 41	X 38	X 39													X 40	X 34	X 43	X 36	S	X 41
21	X 41	X 41	X 37	X 39	X 37	X 37													X 35	X 35	X 38	X 41	X 41	X 45
22	X 46	X 42	58	X 45	X 36	40	38												X 38	X 41	X 47	X 46	X 47	56
23	X 48	X 49	X 49	C	X 44	X 40													X 49	X 54	X 57	X 47	X 51	X 49
24	X 50	X 47	X 47	X 49	X 55	X 64													X 56	X 56	X 63			X 43
25	X 41	X 45	X 37	X 37	X 41	X 31												X 59	X 48	X 57	X 33	X 41	X 48	X 47
26	X 54	47	X 40	X 37	S	X 53													46	53	X 49	X 45	X 45	X 47
27	X 46	X 45	X 48	X 47	53	53													A	X 37	X 39	49	49	X 39
28	46	X 46	X 40	X 45	X 43	X 53											X 54		X 45	X 45	X 47	X 46	X 46	X 46
29	X 48	X 50	46	X 39	X 40	X 37													X 37	X 41	X 44	X 38	46	X 41
30	X 37	X 45	52	52	X 46	X 35													X 33	X 38	X 41	X 41		X 42
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	30	4										1	1	28	29	28	28	26	28
MED	X 43	X 45	X 43	X 43	X 41	X 41	40										X 54	X 59	X 40	X 42	X 43	X 42	X 45	X 45
U Q	X 48	X 47	X 48	X 48	48	X 47	46												X 46	X 48	X 47	X 46	48	51
L Q	X 40	X 40	X 39	X 38	X 38	X 37	39												X 37	X 38	X 40	X 40	X 42	X 41

NOV. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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	34	34	36	36	38	33	33	52	58	68	80	88	71	69	62	51	53	40	31	31	33	34	37	A
2	36	39	33	33	34	30	33	54	80	64	72	67	63	68	56	56	55	51	38	39	41	30	31	31
3	35	32	32	33	33	28	31	50	58	61	83	69	68	56	55	67	63	45	45	41	38	38	38	39
4	33	29	29	30	29	28	31	52	62	75	72	64	71	56	57	68	56	40	33	34	36	36	35	32
5	32	32	32	28	29	27	27	44	51	56	58	70	61	60	54	52	56	38	34	34	30	28	35	F 46
6	32	30	32	28	26	25	29	52	58	62	68	64	58	59	59	55	50	41	29	32	30	31	32	F 34
7	34	38	36	33	36	36	34	49	60	64	67	63	61	67	63	60	56	35	32	36	34	39	F 40	F 40
8	F 39	F 33	37	F 31	34	37	33	52	62	66	64	70	65	62	56	66	57	47	34	30	30	30	38	36
9	31	32	30	30	32	35	28	49	59	62	65	64	68	61	59	57	54	40	30	33	32	35	33	F 30
10	35	31	34	34	30	29	31	56	62	80	68	66	69	65	58	60	58	A	34	35	38	30	30	33
11	32	32	32	30	29	32	A	48	56	72	63	69	62	57	60	52	49	47	35	40	45	41	38	38
12	37	39	41	38	39	36	36	56	63	66	72	75	68	75	65	57	56	43	30	36	33	F 38	F 39	F 41
13	F 46	F 44	46	43	44	40	35	53	57	72	70	82	72	72	69	62	V 51	V 44	41	46	46	47	46	46
14	51	52	47	47	47	47	46	60	64	70	64	82	72	58		64	52	43	37	R 36	37	38	38	37
15	40	39	38	41	F 43	39	28	50	54	64	73	74	72	62	61	63	48	38	32	41	34	37	F 39	F 44
16	F 38	F 38	34	36	32	35	26	47	61	61	61	70	78	67	V 58	54	45	52	42	39	31	34	38	31
17	31	34	37	F 37	F 38	F 36	F 40	55	62	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	F 48	F 43	F 41	34	57	60	C	C	C	C	C	58	59	48	32	30	30	35	42	41	F 41
19	F 45	47	39	36	38	37	30	47	57	69	54	73	74	60	57	57	52	30	30	35	36	34	30	33
20	35	35	35	34	32	32	26	42	58	60	64	63	69	59	65	48	39	S	33	27	36	29	S	34
21	34	34	30	32	30	30	24	45	56	62	68	72	62	62	55	57	50	27	28	28	31	34	34	38
22	39	35	F 38	38	29	29	F 24	42	66	71	67	67	70	64	64	59	46	40	31	34	40	39	40	F 42
23	41	42	42	C	37	33	30	50	70	73	80	77	78	68	79	65	56	30	42	47	50	40	44	42
24	43	41	40	42	48	57	52	72	76	71	74	88	77	65	66	68	66	42	49	49	56	52	52	36
25	34	38	30	30	34	24	24	47	62	79	76	72	70	68	64	52	54	52	42	50	26	34	41	40
26	47	F 36	33	30	S	R 46	25	46	70	62	72	81	74	68	69	73	49	A	F 34	F 40	42	38	38	40
27	39	38	41	R 40	F 38	F 38	45	51	59	67	75	88	70	68	62	59	48	A	A	30	32	F 36	F 36	32
28	F 32	39	33	38	36	46	39	54	59	68	73	79	73	70	56	54	47	37	38	38	40	39	39	39
29	41	43	F 35	32	33	30	26	51	60	66	70	71	63	57	70	59	39	31	30	34	37	31	F 34	34
30	30	38	F 39	F 36	39	28	32	46	67	68	72	65	61	61	60	55	42	R 36	26	31	34	34	32	R 35
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	30	29	30	30	28	28	28	28	28	28	29	29	25	28	29	29	29	28	28
MED	35	38	35	34	34	34	31	50	60	66	70	70	70	63	60	59	52	40	34	35	36	36	38	38
U Q	40	39	39	38	38	38	34	54	63	71	73	78	72	68	64	64	56	44	38	40	40	39	40	F 40
L Q	32	32	32	30	31	29	26	47	58	62	64	66	63	60	57	54	48	36	30	32	32	32	34	34

NOV. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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		416		L										
2							L	L	L	384	L	L	400											
3									L	L	388	412	388	372										
4									L	384	L	L	L	L	356									
5										L	L	L	L	L	L									
6										368	388	L		L										
7										L	388	L	L		L									
8										L	L	L	L	L										
9										L			L	L	L									
10										L	372	L	L					A						
11							A			L	384	L	L	L	L									
12										L	352	L	L	L										
13							A			416	L	L	L	364										
14									L	360	372	L	L	L										
15										L	L	384	L	L	L									
16												L	L	352										
17										C	C	C	C	C	C	C	C	C						
18										C	C	C	C	C										
19										L	L	L	L	L				L						
20								L		L	L	L	360					S						
21											340	400	404	L										
22										L	L	L	L	L	L									
23							L				L	404	L	L										
24										L	L	380	L		L									
25									L		360	L	L											
26							B					L	L	L	L			A						
27										L		L	L	L				A						
28											L	L	L	L										
29											L	L	L	L				L						
30										L	L	L	L	L		L								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										5	9	6	4	3	1									
MED										384	372	402	394	364	356									
U Q										400	388	412	402	372										
L Q										364	356	384	374	352										

NOV. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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							200	200	240	248	A	A	A	264	244	228	216	192						
2							R 180	196	A	A	276	R 288	B	B	B	B	204	B						
3							B	A	A	A 940	A	308	A	A	A	272	A	A						
4							A	A	A	A	152	296	284	Y	252	208	A	A						
5							A	U R	A	U R 276	A	288	280	164	236	192	232	A						
6							B	B	B	B	B	B	316	B	A	216	184	176						
7								204	228	B	300	U R 316	304	304	B	244	184	A						
8								232	236	R 256	A	A	A	A	A	A	A	A			152			
9							188	196	A	232	U R 288	U R 296	308	284	268	208	B	A						
10							A	176	228	A	292	284	284	284	252	232	A	A						
11							228	212	236	152	244	B	B	B	244	204	A	A						
12							208	B	0 220	A	268	244	268	U R 292	248	220	B	B						
13							A	A	A	A	292	288	A	A	296	272	180	A						
14							B	B	212	276	280	A	R 244	A		208	B	192						
15							B	192	A	240	280	288	A	272	248	200	B	A						
16							A	172	228	260	268	268	280	304	232	212	184	A						
17							A	180	232	C	C	C	C	C	C	C	C	C						
18							A	A	228	C	C	C	C	C	248	A	A	A						
19							B	176	240	268	244	232	284	272	236	200	180	B						
20							A	164	208	260	288	A	288	240	240	220	168	B						
21							B	A	192	A	284	284	280	R 272	252	256	224	A						
22							B	172	232	A	272	280	280	272	232	224	A	A						
23							B	200	232	260	272	A	272	280	A	200	A	A						
24							B	8 116	A	A	260	284	260	264	228	204	B	B				232	232	
25							A	A	180	240	236	244	200	196	232	224	224							
26							B	180	196	248	248	252	244	228	236	A	A	A						
27							B	A	A	248	264	280	284	236	Y	Y	A	A						
28							B	A	A	A	260	264	264	264	268	208		A						
29							B	B	216	B	B	B	B	B	B	Y	A	A						
30							A	A	212	A	A	A	A	A	A	212	188	A					156	
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	16	19	15	21	19	19	18	19	23	12	3			1	1	2	
MED							200	186	228	256	272	284	280	272	244	212	186	192			152	232	194	
U Q							218	200	232	268	286	R 288	284	284	252	228	220	192						
L Q							184	174	212	240	254	264	264	240	236	204	182	176						

NOV. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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	J A 52	J A 20	E B 15	J A 33	J A 26	J A 51	J A 30	22	J A 47	J A 66	J A 64	J A 107	J A 64	34	G 21	G 21	G	J A 27	25	J A 34	24	24	J A 17	J A 46
2	39	J A 52	J A 40	J A 33	J A 26	24	J A 19	J A 50	J A 118	J A 31	J A 49	33	E B 28	E B 33	E B 29	E B 30	21	E B 15	E B 15	E B 15	E B 15	J A 26	25	37
3	26	19	E B 15	E B 15	E B 15	22	J A 29	J A 131	J A 33	J A 57	J A 61	38	37	J A 48	G 26	G	J A 39	J A 37	J A 60	J A 58	J A 64	J A 85	40	J A 121
4	J A 30	25	32	25	25	26	J A 78	J A 77	42	43	J A 30	J A 34	31	G	28	J A 27	20	32	J A 34	E B 15	J A 25	J A 45	J A 51	40
5	J A 39	J A 29	J A 63	J A 50	J A 33	J A 51	35	J A 51	J A 47	J A 65	J A 53	J A 56	32	J A 33	J A 40	J A 30	J A 28	J A 68	J A 39	J A 72	J A 70	38	J A 31	J A 27
6	J A 25	25	28	21	24	E B 15	E B 15	22	E B 29	E B 29	E B 32	E B 30	G 34	E B 30	J A 102	25	22	J A 49	25	E B 16	E B 16	J A 25	26	21
7	21	26	23	26	25	25	E B 15	J A 65	J A 83	E B 29	G 35	J A 44	33	G	E B 28	G 25	G	26	26	E B 15	E B 15	E B 15	E B 15	26
8	25	E B 15	J A 39	J A 35	J A 61	24	24	31	26	J A 30	J A 31	J A 44	36	41	J A 52	50	J A 51	33	J A 25	J A 49	J A 35	39	J A 45	40
9	J A 40	47	36	J A 33	J A 33	25	25	32	J A 47	43	35	35	63	33	J A 48	25	E B 16	J A 21	J A 63	J A 60	J A 47	J A 33	J A 41	J A 40
10	36	38	J A 20	21	25	J A 22	J A 109	25	29	40	38	36	G	G 30	G	G 24	19	J A 104	J A 89	J A 51	J A 44	28	J A 33	E B 15
11	19	J A 30	21	E B 15	E B 15	J A 21	50	J A 35	J A 52	J A 37	G 26	31	E B 29	E B 29	G	G 24	J A 120	J A 63	J A 123	J A 63	J A 32	J A 41	36	24
12	22	22	E B 15	E B 15	E B 15	E B 15	J A 26	23	J A 30	J A 38	G 21	G 28	G	G	G	G 18	E B 16	24	J A 37	32	J A 26	23	J A 41	J A 30
13	J A 31	41	J A 26	20	26	31	J A 64	J A 61	J A 62	J A 70	52	J A 48	J A 48	40	J A 49	40	20	J A 27	20	E B 15	J A 35	34	J A 33	J A 26
14	J A 24	26	E B 15	E B 15	22	24	E B 15	E B 16	J A 26	33	J A 84	J A 56	34	J A 47		G	E B 16	E B 16	20	21	26	J A 50	J A 41	38
15	J A 47	J A 25	J A 21	21	E B 15	E B 15	E B 15	G	27	G 23	32	E B 21	G 26	G	G 22	G 18	E B 16	38	J A 32	37	54	24	26	32
16	E B 15	21	25	21	23	J A 22	J A 29	J A 23	G 24	J A 30	32	32	J A 60	G 25	G 19	G	G	J A 33	31	25	J A 28	J A 28	J A 23	J A 26
17	25	25	E B 15	E B 15	E B 15	22	24	G 25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	E B 15	E B 15	24	24	J A 38	J A 38	C	C	C	C	C	G 19	J A 27	J A 36	26	25	25	27	J A 39	38	J A 31
19	J A 51	J A 21	E B 15	23	E B 15	E B 16	25	J A 25	38	35	38	J A 47	J A 99	37	32	22	G	E B 16	25	24	21	E B 15	E B 15	E B 15
20	E B 15	J A 83	22	E B 15	22	24	J A 24	19	28	33	34	J A 31	J A 49	J A 109	32	23	21	E B 15	E B 15	J A 25	26	24	S 22	E B 15
21	20	20	24	25	18	E B 15	E B 15	J A 29	J A 29	J A 97	36	33	38	36	J A 53	J A 55	38	J A 18	22	23	20	J A 153	22	J A 19
22	J A 19	18	20	24	E B 15	E B 15	E B 16	J A 20	30	J A 31	J A 44	J A 52	34	G	30	G	27	25	25	26	21	J A 19	E B 15	20
23	25	E B 15	18	C	E B 15	E B 15	20	27	29	30	J A 38	J A 32	J A 36	J A 31	J A 29	J A 31	41	35	38	25	E B 16	E B 16	E B 16	112
24	J A 18	19	24	E B 15	20	23	22	G 27	J A 51	34	G 17	33	G 19	G 24	24	27	E B 15	22	J A 41	27	25	E B 14	32	25
25	19	E B 15	E B 15	24	J A 57	J A 75	21	27	J A 25	J A 27	J A 30	37	J A 26	J A 31	31	J A 50	26	J A 33	J A 55	32	J A 29	J A 21	E B 15	J A 63
26	J A 53	E B 15	24	E B 15	S 21	40	J A 27	J A 25	25	J A 30	J A 29	30	J A 32	J A 32	27	J A 33	J A 41	J A 41	38	24	24	J A 29	J A 27	22
27	24	J A 26	J A 17	E B 15	E B 16	E B 16	E B 16	J A 35	J A 37	37	J A 43	34	32	J A 57	Y	Y	J A 54	J A 128	J A 54	J A 26	J A 25	27	E B 16	E B 15
28	24	J A 27	J A 32	25	E B 15	J A 50	J A 45	J A 43	J A 40	J A 44	G 23	G	G	G 25	34	46	J A 31	24	25	32	J A 51	20	20	J A 18
29	E B 15	21	24	J A 99	E B 15	J A 28	J A 29	21	G	E B 29	E B 30	E B 29	E B 29	E B 29	E B 28	G	25	J A 19	E B 16	24	J A 53	38	E B 15	E B 15
30	22	E B 15	21	20	E B 15	22	J A 151	24	24	J A 29	31	J A 40	42	J A 32	J A 26	J A 26	J A 22	J A 49	J A 79	J A 85	J A 26	J A 35	J A 49	25
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	30	30	30	30	30	28	28	28	28	28	27	28	29	29	29	29	29	29	29	29
MED	25	25	22	21	20	24	24	G	J A 30	J A 34	34	34	G	32	28	E G 25	22	J A 27	31	26	J A 26	28	26	26
U Q	J A 38	J A 28	J A 27	J A 26	J A 25	J A 26	J A 30	J A 38	J A 47	J A 43	J A 44	J A 44	J A 40	36	J A 34	J A 30	J A 37	J A 40	J A 48	J A 43	J A 40	J A 38	J A 39	39
L Q	20	E B 19	E B 16	E B 15	E B 15	E B 16	E B 19	23	26	30	30	31	32	G	G	G 24	G	22	25	E B 24	22	22	E B 16	E B 20

NOV. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	E B 15	E B 15	16	E B 15	E B 15	G 18	G 20	29	E A 56	31	30	37	29	G 20	G 20	G	G 18	E B 15	E B 15	E B 15	E B 15	E B 15	A A 46
2	26	E A 17	A 17	E B 15	E B 15	E B 15	E B 15	E B 15	29	28	28	30	E B 28	E B 33	E B 29	E B 30	G 18	E B 15	E B 15	E B 15	E B 15	16	E B 15	28
3	17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	30	G 31	29	G 30	29	29	G 23	G	31	15	19	18	E A	20	E B 15	E B 15
4	16	16	18	15	E B 15	E B 15	17	18	28	29	29	G 29	G 28	G	26	23	20	15	E B 16	E B 15	19	17	17	17
5	17	16	A 23	20	17	16	16	22	29	30	30	30	31	26	29	23	G 19	18	21	26	16	16	19	15
6	15	E B 15	E B 15	E B 15	15	E B 15	E B 15	20	E B 29	E B 29	E B 32	E B 30	G 31	E B 30	29	23	G 17	G 15	E B 15	E B 16	E B 16	E B 15	E B 15	E B 15
7	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	24	29	E B 29	G 29	G 30	31	G	E B 28	G 22	G	16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
8	E B 15	E B 15	15	16	19	15	E B 15	29	25	29	29	33	31	32	30	31	28	28	19	22	21	17	18	16
9	19	E B 15	22	16	E B 15	E B 15	E B 15	24	30	28	34	34	32	32	27	23	E B 16	19	17	20	17	E B 16	E B 16	E B 15
10	A 26	15	E B 15	E B 15	E B 15	E B 15	E B 15	22	23	29	G 28	29	G	G 28	G	G 22	17	A A 104	19	21	20	15	E B 15	E B 15
11	E B 15	16	15	E B 15	E B 15	16	A A 50	29	28	30	G 23	31	E B 29	E B 29	G	G 22	34	42	16	18	16	17	16	E B 15
12	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G 24	28	G 19	G 27	G	G	G	G 17	E B 16	E B 15	19	20	E B 15	E B 15	16	18
13	16	E A 30	E B 14	16	E B 15	20	22	25	28	28	G 29	30	28	29	G 30	28	G 18	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16
14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	22	28	29	29	28	28		G	E B 16	E B 16	E B 16	E B 15	E B 15	29	20	A
15	18	20	19	E B 15	E B 15	E B 15	E B 15	G	23	G 23	G 27	E B 21	G 24	G	G 20	G 18	E B 16	E A 25	15	18	18	E B 15	E B 15	E B 15
16	E B 15	E B 15	E B 15	E B 15	E B 15	18	18	G 17	G 20	28	28	29	30	G 24	G 18	G	G	20	21	21	16	E B 16	E B 16	E B 16
17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	E B 15	E B 15	E B 15	E B 15	18	28	C	C	C	C	C	G 18	25	21	E B 16	E B 16	E B 15	E B 16	16	E B 16	E B 15
19	20	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15	G 16	G 20	28	29	33	31	28	28	G 19	G	E B 16	15	E B 15	E B 15	E B 15	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	18	24	29	29	30	G 29	29	26	G 21	G 16	E B 15	E B 15	17	E B 18	E B 15	E B 15	E B 15
21	E B 15	E B 16	E B 16	E B 16	E B 16	E B 15	E B 15	24	22	31	G 28	30	G 28	G 27	28	28	G 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G 17	27	26	29	31	G 28	G	27	G	19	19	15	15	E B 15	E B 15	E B 15	E B 15
23	E B 15	E B 15	E B 15	C	E B 15	E B 15	E B 15	G 20	24	28	28	28	30	G 27	26	26	20	16	16	16	E B 16	E B 16	E B 16	E B 16
24	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G 21	28	28	G 15	G 28	G 18	G 22	G 22	G 20	E B 15	E B 15	27	16	E B 16	E B 14	G 16	E B 15
25	E B 15	E B 15	E B 15	E B 15	15	20	E B 16	18	20	G 24	G 24	28	23	22	28	G 20	G 21	21	16	18	E B 15	E B 15	E B 15	E B 15
26	E B 16	E B 15	E B 15	E B 15	E B 15	21	E B 17	G 18	22	27	27	28	27	28	26	29	28	A A 41	17	E B 15	E B 15	E B 15	18	E B 15
27	E B 15	E B 15	E B 15	E B 15	E B 16	E B 16	E B 16	21	27	28	29	29	29	28	Y	Y	28	A A 128	A A 54	16	E B 15	15	E B 16	E B 15
28	E B 15	E B 15	E B 15	E B 15	E B 15	16	20	28	28	28	G 19	G	G	G 22	28	28	28	15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
29	E B 15	E B 15	E B 15	E B 15	E B 15	15	16	17	G	E B 29	E B 30	E B 29	E B 29	E B 29	E B 28	G	20	17	E B 16	E B 16	E B 16	16	E B 15	E B 15
30	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	22	27	27	33	34	28	24	G 21	G 16	20	19	20	E B 16	E B 16	18	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	30	30	30	30	30	28	28	28	28	28	27	28	29	29	29	29	28	29	29	28
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	25	28	28	30	29	E G 28	28	G	20	16	16	16	E B 16	E B 15	E B 15	E B 15
U Q	16	16	15	15	15	16	16	22	28	29	29	30	G	29	G 29	26	G	20	19	19	16	16	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	18	23	28	G 27	29	G 28	G 28	G 24	G 21	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

NOV. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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	15	15	15	15	15	15	15	15	15	16	19	16	16	18	17	16	15	16	15	15	15	15	15	15
2	15	15	15	15	15	15	15	15	16	18	18	19	28	33	29	30	14	15	15	15	15	15	15	15
3	15	15	15	15	15	15	15	15	19	19	22	22	26	19	20	17	16	14	15	15	15	15	14	15
4	15	15	15	15	15	15	15	15	16	16	17	15	18	18	15	16	16	15	16	15	15	15	15	15
5	15	15	16	16	15	15	15	15	15	15	16	15	15	17	15	14	16	15	15	16	16	15	15	15
6	15	15	15	15	15	15	15	19	29	29	32	30	26	30	21	18	16	16	16	16	16	15	15	15
7	15	15	15	15	15	15	15	17	17	29	23	20	22	22	28	19	13	13	15	15	15	15	15	15
8	15	15	15	15	15	15	15	17	17	17	17	16	16	16	16	14	16	16	16	15	15	15	15	15
9	15	15	15	15	15	15	15	15	14	16	16	16	16	16	16	15	16	14	15	16	16	16	16	15
10	15	15	15	15	15	15	15	15	15	14	16	17	18	16	16	16	16	16	16	15	15	15	15	15
11	15	15	15	15	15	15	15	15	15	15	15	29	29	29	20	16	16	15	15	15	15	15	15	15
12	15	15	15	15	15	15	15	15	15	16	14	16	20	20	17	16	16	15	16	16	15	15	15	15
13	16	16	14	13	14	14	15	15	16	15	15	15	15	14	15	16	15	16	15	15	15	15	16	16
14	15	15	15	15	15	15	15	16	16	16	15	16	16	17		16	16	16	16	15	15	15	15	15
15	15	15	15	16	15	15	15	15	20	19	18	21	19	19	16	15	16	16	15	15	15	15	15	15
16	15	15	16	15	15	15	15	12	15	16	16	16	17	16	16	16	12	15	16	16	16	16	16	16
17	15	15	15	15	15	15	15	15	16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	15	15	15	15	15	14	C	C	C	C	C		15	11	11	16	16	15	16	15	15
19	15	15	15	15	15	16	16	15	15	15	15	11	15	12	13	16	16	16	15	15	15	15	15	15
20	15	16	15	15	15	15	15	15	16	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
21	15	16	16	16	15	15	15	14	16	15	14	14	11	16	14	16	16	15	15	15	15	15	16	15
22	15	15	15	15	15	15	16	16	15	15	14	15	13	15	11	14	15	15	15	15	15	15	15	15
23	15	15	15	C	15	15	15	15	17	14	15	16	16	16	15	15	15	15	15	15	16	16	16	16
24	15	15	15	15	16	15	15	15	15	11	11	15	14	14	14	13	15	15	16	16	16	14	16	16
25	15	15	15	16	15	15	16	17	16	15	11	16	15	11	16	14	16	15	16	16	15	15	15	15
26	16	15	15	15	15	16	15	15	16	15	16	12	14	15	19	16	16	15	16	15	15	15	15	15
27	15	16	15	15	16	16	16	16	16	17	17	16	14	17	16	15	15	16	15	15	15	15	16	15
28	15	15	15	15	15	15	15	16	15	15	16	20	17	16	15	15	15	15	15	15	15	15	15	15
29	15	15	15	16	15	15	15	16	16	29	30	29	29	29	28	16	16	16	16	16	16	15	15	15
30	15	15	15	15	15	15	15	15	17	20	15	16	15	15	15	15	15	15	15	16	16	16	15	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	30	30	30	30	30	28	28	28	28	28	28	29	29	29	29	29	29	29	29	29
MED	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16	16	16	15	15	15	15	15	15	15
U Q	15	15	15	15	15	15	15	16	16	18	18	20	20	19	18	16	16	16	16	16	16	15	16	15
L Q	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

NOV. 2016 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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	301	309	327	307	308	349	345	378	360	281	354	362	355	354	369	373	362	378	349	336	316	305	296	A
2	301	317	298	323	336	336	349	363	367	351	323	361	343	366	398	357	344	341	332	338	361	336	319	321
3	301	294	294	304	304	320	341	367	361	352	365	352	373	375	357	358	369	331	345	323	295	298	293	315
4	313	318	318	279	308	313	307	358	361	361	367	368	366	358	351	355	374	343	315	314	297	322	305	337
5	290	290	302	290	314	332	332	368	383	379	357	361	347	372	378	368	374	358	333	334	361	306	285	F 282
6	288	307	290	293	305	320	334	377	373	376	387	364	368	356	374	354	368	356	344	340	333	288	297	F 304
7	328	300	306	343	311	320	339	378	373	375	377	353	358	344	363	373	365	340	334	342	309	281	F 273	F 273
8	F 266	F 309	304	F 333	303	345	382	371	377	365	367	355	364	348	358	358	370	366	374	347	370	284	323	310
9	331	311	329	335	338	364	338	387	370	384	376	347	374	358	357	359	367	381	335	325	330	322	316	F 303
10	316	343	311	318	333	330	335	378	377	392	375	353	363	364	349	363	372	A	325	301	346	342	325	317
11	301	285	303	279	294	338	A	381	329	350	309	338	360	373	351	372	292	230	310	336	335	342	329	300
12	302	311	314	311	344	320	343	377	356	373	344	354	359	362	369	352	353	336	336	346	331	F 286	F 283	F 291
13	F 306	F 302	340	339	284	354	332	346	359	367	347	361	341	342	366	350	V 339	V 329	311	313	322	289	294	300
14	287	300	321	324	342	325	328	374	352	364	364	355	353	384		348	352	366	350	R 352	333	291	350	270
15	298	314	320	293	F 299	376	323	371	380	342	374	357	377	363	352	368	333	353	355	342	347	320	F 273	F 292
16	F 293	F 287	321	297	336	358	373	379	373	374	360	344	362	366	V 355	365	385	335	368	363	332	339	307	333
17	298	302	301	F 302	F 301	F 315	F 307	380	382	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	F 298	F 305	F 329	336	368	374	C	C	C	C	C	374	371	369	365	345	315	338	302	309	F 327
19	F 297	286	317	320	300	341	365	377	400	380	367	360	365	376	387	363	375	306	318	343	314	344	335	303
20	301	301	301	312	336	346	339	370	392	341	372	367	369	357	383	386	364	S	356	333	335	326	S	296
21	304	323	320	304	325	360	335	376	372	386	357	364	376	371	377	351	392	378	362	345	351	319	320	286
22	277	309	F 295	295	284	332	F 300	364	379	356	351	370	342	363	382	376	360	375	324	332	329	307	322	F 319
23	301	322	296	C	303	340	336	376	362	364	351	336	382	351	359	382	380	348	305	318	345	340	304	317
24	321	324	334	318	316	399	338	340	368	368	354	358	389	356	343	364	386	375	342	302	332	322	314	353
25	282	284	316	281	348	280	317	357	358	337	352	318	378	349	376	373	339	341	308	340	372	335	274	295
26	291	F 257	313	342	S	R 391	300	343	375	374	358	359	357	366	349	376	371	A	F 315	F 328	326	328	294	289
27	290	302	315	R 313	F 307	F 313	355	355	373	374	334	353	364	353	377	356	375	A	A	345	320	F 288	F 289	351
28	F 301	304	269	308	294	330	370	369	372	361	345	373	346	374	363	354	389	339	354	324	347	309	310	339
29	319	286	F 309	325	313	335	318	374	383	344	363	370	370	399	367	368	365	360	328	337	356	326	F 300	299
30	331	273	F 300	F 306	281	304	317	359	367	361	363	358	368	382	371	381	349	R	299	332	328	329	312	R 314
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	30	29	30	30	28	28	28	28	28	28	29	29	24	28	29	29	29	28	28
MED	301	302	311	308	308	334	336	371	372	364	359	358	364	363	366	364	368	350	334	336	333	320	306	304
U Q	310	312	320	324	334	349	344	377	377	374	367	363	372	372	376	373	374	366	350	342	347	332	320	320
L Q	290	288	300	296	300	320	320	363	361	352	351	353	356	355	356	356	352	338	316	324	324	294	294	294

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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		384		L										
2							L	L	L	427	L	L	386											
3									L	L	389	388	400	414										
4									L	387	L	L	L	L	405									
5										L	L	L	L	L	L									
6										420	396	L		L										
7										L	405	L	L		L									
8										L	L	L	L	L										
9										L			L	L	L									
10										L	419	L	L					A						
11							A			L	404	L	L	L	L									
12										L	406	L	L	L										
13							A			380	L	L	L	401										
14									L	431	414	L	L	L										
15										L	L	390	L	L	L									
16												L	L	376										
17										C	C	C	C	C	C	C	C	C						
18										C	C	C	C	C										
19										L	L	L	L	L				L						
20								L		L	L	L	407					S						
21											405	401	384	L										
22										L	L	L	L	L	L									
23							L				L	389	L	L										
24										L	L	408	L		L									
25									L		412	L	L											
26							B					L	L	L	L			A						
27										L		L	L	L				A						
28											L	L	L	L										
29											L	L	L	L				L						
30										L	L	L	L	L		L								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										5	9	6	4	3	1									
MED										420	405	390	393	401	405									
U Q										429	413	401	404	414										
L Q										384	400	388	385	376										

NOV. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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										E A 346		220		230										
2							234	214	228	236	234	228	238											
3									240	256	234	234	224	232										
4									218	232	230	226	226	226	232									
5										216	230	230	230	230	220									
6										212	222	236		248										
7										206	218	222	232		246									
8										214	224	236	228	236										
9										210			220	260	240									
10										204	206	216	226					A						
11							A			248	288	254	250	238	232									
12										220	254	248	234	232										
13							254			236	242	234	236	236										
14									228	212	218	230	226	226										
15										224	218	244	216	238	238									
16												238	220	226										
17										C	C	C	C	C	C	C	C	C						
18										C	C	C	C	C										
19										228	212	238	210	220				268						
20								220		280	238	220	228					S						
21											234	222	222	222										
22										222	234	234	234	234	218									
23							294				240	240	216	242										
24										232	236	234	208		238									
25									234		220	210	220											
26							286					242	228	222	230			A						
27										210		232	216	228				A						
28											238	218	230	220										
29											220	212	212	212				230						
30										230	218	218	224	220		210								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	2	5	21	23	27	26	22	9	1		2						
MED							270	217	228	223	230	232	226	230	232	210		249						
U Q							290		237	236	238	238	230	236	239									
L Q							244		223	212	218	220	220	222	225									

NOV. 2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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	252	262	240	260	240	182	232	218	218	A	226	186	230	200	220	220	200	200	224	236	236	256	268	A
2	A	E A 232	E A 256	254	236	236	208	206	214	178	182	180	188	232	206	214	206	220	222	236	212	212	238	A
3	272	288	276	270	258	234	252	218	218	200	192	198	198	194	234	238	214	216	234	248	A	A 304	284	238
4	230	248	262	310	288	268	240	218	208	194	194	188	198	198	192	226	202	220	226	238	274	258	294	258
5	298	294	E A 220	E A 286	258	222	208	206	206	196	196	206	196	196	198	216	208	224	212	E A 246	204	242	260	Q 274
6	268	298	278	264	244	220	204	216	216	188	188	194	232	210	216	216	200	232	212	198	214	240	290	Q 272
7	230	250	258	234	256	242	204	218	208	200	184	184	214	244	206	214	198	204	248	216	254	Q 254	Q 268	Q 268
8	238	Q 250	270	234	248	214	200	200	210	190	184	202	202	198	222	228	204	204	214	E A 248	230	270	222	232
9	246	260	E A 268	244	256	216	226	200	218	194	212	222	222	196	196	226	198	202	238	264	246	248	266	282
10	E A 288	230	240	250	262	248	236	202	212	198	180	182	182	228	226	212	206	A	212	290	238	252	274	248
11	304	332	308	308	318	270	A	216	236	224	186	220	196	198	208	220	E A 324	A	236	226	242	214	236	246
12	280	272	242	242	226	246	224	200	224	196	176	186	186	216	218	210	228	204	E A 228	210	236	302	286	Q 286
13	264	262	228	230	250	218	A	190	222	242	204	204	194	184	214	218	218	218	234	234	234	272	256	256
14	246	258	228	240	218	228	222	212	212	194	180	224	206	202		222	198	198	202	224	230	A 296	260	A
15	280	280	290	290	262	198	230	206	210	182	184	200	210	196	196	212	196	224	206	218	204	238	274	264
16	248	288	274	268	250	212	194	200	212	212	218	194	194	194	224	212	194	244	222	212	212	220	246	236
17	264	264	268	268	268	240	228	210	210		C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	246	250	232	216	210	198		C	C	C	C	220	214	214	214	214	252	244	274	240	254
19	284	262	248	280	270	226	226	206	206	188	180	210	206	186	210	198	212	212	258	228	244	232	208	268
20	268	272	274	262	254	228	228	190	200	186	174	198	190	232	224	198	200	218	214	232	230	Q 230	Q 262	Q 262
21	Q 252	242	230	262	252	222	208	208	222	206	A 204	208	194	194	218	224	194	218	232	240	240	240	270	270
22	Q 270	272	282	266	266	242	Q 252	212	216	194	188	188	188	188	200	218	204	216	232	232	232	244	Q 248	248
23	Q 254	Q 254	254	C	244	206	246	216	238	236	204	194	182	198	242	218	208	218	258	258	214	214	248	232
24	232	230	242	242	242	188	234	226	218	186	186	186	200	212	190	216	208	194	208	244	226	236	234	212
25	316	304	250	294	232	A	278	220	220	248	172	172	186	218	218	214	246	198	248	222	204	270	Q 248	Q 260
26	Q 246	Q 308	278	228	228	214	B	230	220	210	228	200	192	206	206	206	200	A	210	228	228	212	254	260
27	Q 250	250	266	274	Q 242	232	206	230	216	200	236	204	190	190	212	218	212	A	A	212	232	Q 256	Q 280	206
28	264	Q 226	Q 244	244	244	218	204	202	202	218	190	190	190	190	208	216	202	230	216	216	216	242	Q 242	234
29	242	Q 254	Q 254	254	Q 240	230	240	208	200	206	206	196	184	188	226	200	188	202	214	226	206	244	Q 262	Q 262
30	232	Q 266	Q 244	Q 244	244	252	230	220	220	190	190	190	190	200	224	192	212	218	A	A	228	228	274	Q 252
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	29	30	29	27	30	30	27	28	28	28	28	28	29	29	25	27	28	28	29	29	26
MED	256	262	255	257	250	228	226	210	215	196	189	195	194	198	215	216	204	216	222	230	230	244	260	257
U Q	276	284	274	272	258	241	236	218	220	210	204	204	204	211	223	220	212	220	234	245	239	264	274	Q 268
L Q	246	250	242	243	242	215	208	202	208	190	183	187	189	194	206	212	199	203	212	220	214	231	244	238

NOV. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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							106	116	116	100	A	A	A	100	106	100	100	100						
2							110	112	A	A	108	98	B	B	B	B	116	B						
3							B	A	A	A	A	106	A	A	A	122	A	A						
4							A	A		A	A	110	116	106	112	112	A	A						
5							A	114	A	114	A	114	110	A	94	94	104	A						
6							B	B	B	B	B	B	A	B	A	118	94	98						
7								102	116	B	116	108	114	114	B	136	100	A						
8								138	110	112	A	A	A	A	A	A	A	A						
9							92	112	A	112	118	110	110	110	114	114	B	A						
10							A	112	112	A	116	108	108	108	106	140	116	A						
11							116	116	124	124	114	B	B	B	120	110	A	A						
12							106	B	A	A	104	112	112	108	108	108	B	B						
13							A	A	A	A	108	108	A	A	94	96	102	A						
14							B	B	104	118	118	A	112	A		132	B	G						
15							B	132	A	G	96	122	A	116	116	114	B	A						
16							A	114	114	114	114	114	114	114	102	138	134	A						
17							A	142	126	C	C	C	C	C	C	C	C	C						
18							A	A	116	C	C	C	C	C	110	A	A	A						
19							B	118	118	118	106	96	114	108	102	120	132	B						
20							AE	B 158	112	116	116	A	106	106	106	126	98	B						
21							B	A	108	A	108	108	108	108	108	108	110	A						
22							B	B	118	A	112	112	112	112	112	114	A	A						
23							B	140	126	112	112	A	112	106	A	106	A	A						
24							B	A	A	A	106	106	102	106	106	120	B	B				120	120	
25							A	A	104	118	118	118	98	98	102	124	124							
26							B	108	106	106	112	102	102	102	108	A	A	A						
27							B	A	A	108	120	104	88	94	98	94	A	A						
28							B	A	A	A	110	106	106	106	102	96		A						
29							B	B	108	B	B	B	B	B	B	94	A	A						
30							A	A	108	A	A	A	A	A	A	108	98	A						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	15	18	13	20	19	18	18	20	25	13	2				1	1	
MED							106	115	113	114	112	108	110	107	106	114	104	99				120	120	
U Q							113	138	118	118	116	112	112	110	111	123	120							
L Q							99	112	108	110	108	106	106	106	102	103	99							

NOV. 2016 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 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	92	92	B	100	100	100	100	154	102	102	98	94	94	152	88	88	G	88	92	92	94	94	92	92
2	92	92	94	94	94	94	106	92	120	92	84	94	B	B	B	B	112	B	B	B	B	96	96	94
3	92	90	B	B	B	102	106	96	96	100	98	98	96	96	96	G	102	104	104	100	100	100	94	102
4	102	102	94	94	106	106	112	100	100	100	96	96	154	G	132	116	110	104	104	B	94	100	100	90
5	96	96	98	102	100	94	96	100	100	132	94	86	146	90	104	108	98	110	96	104	104	96	96	96
6	96	96	88	88	88	B	B	136	B	B	B	B	96	B	102	124	G 98	90	98	B	B	106	94	94
7	94	94	90	104	104	104	B	104	116	B	96	96	G 152	G	B	164	G	86	86	B	B	B	B	98
8	104	B	94	94	94	94	94	148	114	106	98	98	98	94	88	88	92	92	92	92	98	98	98	98
9	98	98	98	98	98	88	112	106	106	100	160	160	122	130	90	136	B	104	102	102	102	98	90	90
10	90	90	98	98	94	94	124	132	110	110	102	102	G	154	G	118	102	112	112	104	98	98	98	B
11	98	98	98	B	B	106	100	100	100	100	98	168	B	B	G	106	104	102	116	106	106	100	98	98
12	98	88	B	B	B	B	96	134	96	100	90	118	G	G	G	92	B	104	94	94	94	94	90	90
13	96	90	90	92	94	88	96	98	102	96	90	116	90	90	90	90	90	90	90	B	106	90	102	102
14	98	98	B	B	98	88	B	B	108	114	100	100	156	108		G	B	B	82	84	88	98	98	98
15	86	94	94	94	B	B	B	G	122	G	166	B	106	G	100	98	B	96	100	96	96	96	92	92
16	B	92	106	96	86	102	102	102	94	94	148	148	114	102	90	G	G	96	96	96	96	96	96	92
17	92	92	B	B	B	102	102	G	102	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	B	B	102	102	102	100	C	C	C	C	C	90	90	90	90	90	100	100	100	100	100
19	100	100	B	100	B	B	108	108	108	108	102	88	110	92	112	112	G	B	100	94	94	B	B	B
20	B	102	102	B	96	96	90	160	110	112	112	108	98	108	108	140	158	B	B	98	98	98	98	B
21	88	88	88	88	98	B	B	110	102	102	114	144	94	96	96	96	92	92	86	86	86	112	106	106
22	102	96	96	106	B	B	B	142	112	100	126	102	102	G	102	G	96	96	96	96	86	86	B	92
23	92	B	92	C	B	B	140	140	112	110	110	110	96	96	96	112	112	98	98	112	B	B	B	122
24	90	90	94	B	94	100	100	100	100	98	88	92	86	86	86	118	B	102	102	102	102	B	96	96
25	82	B	B	92	96	102	102	110	110	98	110	112	102	102	120	88	120	100	96	96	96	108	B	108
26	106	B	102	B	92	94	94	98	112	104	110	102	102	102	100	100	100	100	100	92	92	92	98	92
27	92	92	92	B	B	B	B	102	102	94	102	102	110	110	Y	Y	108	108	102	102	102	98	B	B
28	94	114	78	94	B	94	102	102	102	102	86	G	G	108	84	92	92	100	86	100	114	82	82	88
29	B	88	90	134	B	104	104	104	G	B	B	B	B	B	B	G	88	88	B	102	102	90	B	B
30	90	B	90	90	B	96	104	104	142	106	96	96	94	94	94	94	96	106	112	98	98	100	100	108
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	24	22	19	17	22	23	27	28	24	26	24	22	19	21	22	20	25	26	24	25	25	22	24
MED	94	93	94	94	96	98	102	104	104	101	99	102	102	102	96	103	99	100	97	98	98	98	97	96
U Q	98	98	98	100	99	102	106	134	112	107	110	114	114	108	103	118	109	104	102	102	102	100	98	101
L Q	92	90	90	92	94	94	96	100	100	99	96	96	96	94	90	92	92	91	92	94	94	94	94	92

NOV. 2016 h'Es (KM)

IONOSPHERIC DATA STATION Wakkanai

NOV. 2016 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F1	F1		F3	F2	F4	C4	C1	C1	C4	L3	L2	L2	H1	L1	L1		L1	FF11	F1	F1	F1	F1	F6
2	FF51	FF31	F2	F2	FQ11	FQ11	L1	LC11	CL11	L1	C1	L1					L1					F1	FF11	F4
3	F2	F1				F1	L1	L1	L1	L1	L1	L1	L1	L1	L1		L3	L2	F2	F4	FF41	F4	FF31	FF21
4	F2	F2	F3	F2	FF11	F1	LL31	L3	L2	L1	L1	L1	H1		C1	C1	L2	LL11	FF21		F3	F4	F3	F3
5	F4	FFQ11	FQ51	FQ31	FFQ31	F3	LL21	L3	L3	CL21	L2	LC11	C1	L1	C1	C1	C1	L2	F2	F4	F2	FQ21	FQ21	FQ11
6	F1	F1	F1	F1	F1			C1					L1		L1	C1	C1	LC11	F1			F1	F1	F1
7	F1	F1	F1	F1	F1	F1		C1	C1		L1	L1	C1			C1		L1	F1					F1
8	F1		F2	F2	F2	F1	L1	L1	C1	C1	C1	C2	LL11	LL31	LL21	L4	LQ21	LL21	FF21	FF21	F3	F2	F5	F3
9	F3	F2	F4	F3	F2	F2	C1	C2	L2	CL11	CL31	CL11	CL12	C1	C1	C1		L2	FQ21	FQ21	FQ31	FQ21	FQ21	FQ31
10	F3	F3	F1	F1	F1	F1	L1	C1	C1	L1	LC11	C2		C1		C1	L1	LL51	FQ21	F3	F3	F2	F2	
11	F1	F3	F2			F5	L6	LC32	LC12	C1	C1	H1				C1	LLQ32	LLL41	FF21	FFQ51	F2	F3	F3	F1
12	F1	F1					F1	C2	L2	LL21	L1	C1				L1		L1	F3	F3	F2	F1	FQ31	FQ21
13	F1	F5	F3	F4	F4	FF21	L4	L3	L3	LLQ31	LLQ11	C1	L1	L1	L2	L2	L1	L2	F1		F1	F2	F1	F1
14	F1	F1			F1	F1			C2	C1	L1	L1	C1	L2					L1	F1	F2	F3	F2	F4
15	F3	F3	F4	F1					L1	C1	C1		L1		L1	L1		L2	F2	F3	F3	F1	F2	F1
16		F2	F1	F1	F1	F3	L3	C3	C1	CL11	HL11	H1	C1	L1	L1			L2	F4	F2	F1	F2	F2	F2
17	F1	F1				F1	L1		LC11															
18						F1	L1	L1	L3						L1	L2	L3	L1	F1	F2	F2	F2	F3	F3
19	F3	F1		F1			L1	L1	L2	L2	LC21	LC21	LC21	LC11	CL11	CL11			F1	F1	F1			
20		F1	F1		F1	F1	F1	H1	C2	C1	C1	L1	LC11	C2	C2	H1	H1			F3	F2	F2	F1	
21	F1	F1	F2	F2	F1			L3	LC21	L3	C2	C1	C1	CL11	CL21	L2	LL11	L2	F2	F2	F1	F1	F1	FF11
22	F2	F1	F1	F1				H1	C2	L3	CL11	CL12	C2		LC11		L2	L2	F2	F1	F2	F1		F1
23	F1		F1				F1	C1	LC21	C2	C2	L2	LC21	LC21	L3	C2	L3	L4	F3	F1				F1
24	F1	F2	FF11		F1	F2	L1	L2	L3	L2	L2	L2	L2	L2	CL11	L1		L1	F4	F2	F1		F2	FF11
25	F2			F2	F3	F4	L1	L2	C2	LC21	CL11	C2	C2	C2	C1	C1	C3	L5	F2	F1	F2	FF11		F1
26	F2		F1		F2	F3	L3	L2	C2	C1	C1	C1	C1	C1	C1	L2	L4	L6	F3	F2	F1	F2	F4	F1
27	F1	F1	F1					L1	L3	L2	C1	C1	C1	C1	L1	L1	L2	L5	F5	F1	F1	F2		
28	F2	F1	F2	F1		F3	L5	L3	L3	L1	L1			C1	L1	L2	L2	L1	F1	F1	FF12	F1	F1	F1
29		F1	F1	F1		F2	L2	L1									L2	L1		F1	F2	F3		
30	F2		F1	F1		F1	L1	L1	C1	L1	L1	L2	LL21	L2	L2	L2	C1	L3	FQ31	FQ21	F1	FQ11	F2	F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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 39	X 38	X 42	X 40	X 31													X 42	X 46	41	37	42	X 35
2	X 39	X 35	X 39	X 40	X 38	X 34													X 70	X 54	X 41	X 34	X 35	X 36
3	X 35	X 36	X 37	X 38	X 38	X 39												X 73	X 46	X 45	X 38	X 41	X 40	X 42
4	X 40	X 41	X 38	X 36	X 36													X 70	X 42	X 43	X 46	X 48	X 46	X 41
5	X 37	X 38	X 40	X 40	X 40	X 34												X 52	X 35	X 41	X 41	X 35	X 34	X 35
6	X 37	X 35	X 34	X 35	X 35	X 31												X 61	X 40	A	X 35	X 36	X 34	X 38
7	X 38	X 39	X 40	X 39	X 36	X 36													X 39	A	A	X 37	A	X 40
8	43	X 37	X 39	X 37	X 38	X 36												X 60	X 42	X 40	X 40	X 36	X 38	A
9	X 38	X 35	X 37	X 37	X 38	X 37												X 46	X 41	X 41	X 41	42	44	X 39
10	42	45	X 37	X 37	X 37	X 35												X 48	X 44	X 40	X 42	X 38	X 35	X 38
11	X 38	X 37	X 39	X 39	X 35	X 37												X 52	X 51	X 49	X 48	X 39	X 36	X 38
12	X 39	X 40	X 40	X 42	X 38	X 33					C	C	C	C	C	C	C	C	C	C	X 34	X 34	X 36	X 38
13	X 39	X 43	X 40	X 40	X 34	X 36												X 50	X 40	X 43	X 46	A	43	X 39
14	X 40	X 39	X 38	X 38	38	X 35												X 48	X 40	X 40	45	X 32	X 36	42
15	X 36	X 36	X 38	X 38	X 36	X 36												X 56	X 36	X 40	X 39	X 32	X 34	X 36
16	X 34	X 34	X 36	X 34	X 39	X 35												X 42	X 51	X 50	X 33	X 33	X 34	X 35
17	X 36	X 36	X 37	X 37	X 37	X 36												X 52	X 41	X 37	X 36	X 42	50	X 45
18	X 45	X 46	X 40	X 40	X 44	X 41	X 49											X 45	X 43	X 42	X 41	50	51	46
19	X 41	X 40	46	44	46	X 36												X 50	X 35	X 36	X 37	X 36	X 38	42
20	40	39	X 38	X 38	X 36	X 34												X 37	X 40	X 44	X 34	X 36	X 33	X 34
21	X 35	38	X 36	X 35	X 36	X 31												X 46	X 33	X 37	A	X 39	X 40	X 38
22	X 39	X 39	X 37	X 37	X 40	X 32												X 49	X 40	X 40	X 39	X 35	X 36	X 39
23	44	X 37	X 38	X 38	43	X 34												X 45	X 32	X 39	X 42	X 46	X 33	39
24	X 40	X 36	42	39	46	45												X 52	X 38	X 46	X 42	X 39	X 47	48
25	X 44	X 44	X 49	X 44	X 40	X 38												X 58	X 54	X 51	X 40	X 29	44	46
26	58	48	40	X 38	X 38	X 32												X 40	X 38	X 40	X 40	43	43	X 42
27	47	X 40	44	42	X 34	X 34												X 39	X 36	X 36	X 32	X 32	X 34	44
28	40	X 34	X 35	X 34	X 39	X 42												X 42	X 38	X 46	X 42	X 33	X 31	X 29
29	A	X 35	X 36	X 39	X 40	X 35												X 38	X 37	X 44	X 47	A	A	X 35
30	X 35	X 35	X 35	X 36	X 36	X 35												X 40	X 41	X 34	X 41	X 42	X 38	X 34
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	29	1											26	29	27	28	28	28	29
MED	X 39	X 38	X 38	X 38	X 38	X 35	X 49											X 48	X 40	X 41	X 41	X 36	X 37	X 39
U Q	42	X 40	X 40	X 40	X 40	X 36												X 52	X 42	X 46	X 42	X 42	43	42
L Q	X 37	X 36	X 37	X 37	X 36	X 34												X 42	X 38	X 40	X 38	X 34	X 34	X 36

NOV. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	33	32	36	34	25	37	54	65	91	96	83	83	63	67	64	53	45	36	40	F	F	F	29
2	33	29	33	34	32	28	38	59	70	80	81	78	78	68	65	55	57	64	64	48	35	28	29	30
3	29	30	31	32	32	33	36	58	78	A	89	89	73	67	58	58	77	67	40	39	32	35	34	36
4	34	35	32	30	30	30	38	59	82	98	96	75	60	69	70	61	67	64	36	37	40	42	39	35
5	31	32	34	35	34	28	34	54	57	71	74	71	60	64	62	62	63	46	29	34	35	28	27	29
6	30	29	28	29	29	25	35	57	58	63	59	66	V 66	61	68	62	54	55	34	A	29	30	28	32
7	32	33	34	33	30	30	36	56	64	60	72	75	A	66	74	74	56	40	33	A	A	31	A	34
8	F	31	32	31	32	30	33	53	62	62	73	74	63	66	70	66	60	54	36	34	34	30	32	A
9	32	29	31	31	32	31	32	51	65	64	64	69	62	63	66	62	58	40	35	35	35	F	F	31
10	F	F	31	30	30	29	35	58	82	62	66	64	70	69	65	61	54	42	38	34	36	32	29	32
11	32	31	33	33	29	31	35	54	72	79	97	98	88	75	64	60	53	46	45	43	42	33	30	32
12	33	34	34	36	31	27	40	60	65	64	C	C	C	C	C	C	C	C	C	C	28	28	30	31
13	33	37	34	34	28	30	34	59	68	70	74	91	85	70	72	66	58	44	34	37	40	A	F	32
14	34	33	32	32	F	29	32	54	84	79	69	68	65	73	68	72	73	42	34	34	F	28	30	F
15	30	30	32	32	30	30	27	52	66	67	79	84	73	70	65	61	60	50	29	34	33	26	28	30
16	28	28	30	28	33	29	28	52	62	66	66	74	65	71	67	58	48	36	45	44	27	27	28	29
17	30	30	31	31	31	30	34	69	65	57	66	64	59	71	78	59	53	46	35	31	30	36	F	39
18	39	40	34	34	39	35	43	62	70	59	73	76	66	70	66	55	58	39	37	35	35	F	F	F
19	35	34	F	F	F	30	32	54	59	64	61	71	63	79	58	58	51	44	29	30	31	30	32	F
20	F	F	32	32	30	28	30	56	60	58	57	68	63	70	64	54	46	31	34	38	28	30	27	28
21	29	F	30	29	30	25	27	47	56	56	66	64	76	70	60	54	54	40	26	31	A	33	34	32
22	33	33	31	31	34	26	30	47	58	58	65	67	72	63	66	60	50	43	34	34	33	29	30	33
23	F	31	32	32	F	28	33	49	58	67	92	86	82	70	72	71	57	39	26	33	36	40	27	F
24	34	30	F	F	F	F	34	59	62	82	83	82	80	68	64	71	58	46	32	40	36	33	40	F
25	38	38	43	38	34	31	29	52	70	84	87	V 89	78	70	65	66	53	52	48	45	34	22	F	F
26	F	F	F	32	32	26	27	62	63	68	83	78	84	84	79	70	59	34	32	34	34	F	F	36
27	F	34	F	F	28	28	29	57	66	63	68	84	87	73	79	70	56	33	30	30	26	26	28	F
28	F	28	29	28	33	36	27	52	59	60	74	94	77	68	67	57	59	36	32	40	36	27	25	23
29	A	29	30	33	34	29	34	58	62	65	75	77	70	64	60	60	56	32	31	38	41	A	A	29
30	29	29	29	30	30	29	31	61	58	65	76	80	70	65	62	56	54	34	35	28	35	36	32	28
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	26	26	27	26	29	30	30	30	29	29	29	28	29	29	29	29	29	29	27	26	24	21	22
MED	32	31	32	32	32	29	34	56	64	65	74	76	71	69	66	61	56	43	34	35	34	30	30	32
U Q	34	34	33	34	33	30	35	59	70	75	83	84	79	70	70	66	59	48	36	40	36	33	32	33
L Q	30	29	31	30	30	28	30	52	59	61	66	68	64	66	64	58	53	38	32	34	31	28	28	29

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	A	L	A	L	L									
2										L	U L 432	L	U L 444		A	U L 332								
3										A	L	L	U L 416											
4									A				L	A										
5												L	L	U L 408	A									
6										L	L	A	U L 412	L	A									
7									A	L	U L 396	L	A	U L 528	L									
8									L	L	A		L	A	L									
9										U L 404	L	A	A	L		A								
10										L	U L 428	L	A	L	L		A							
11											L	L	L											
12											C	C	C	C	C	C	C							
13										L	L	L	L	L	L									
14										L	L	L	L	L	L									
15									A		L	L	U L 428	L	U L 360									
16									A		L	L	L	L	L									
17											L	L	U L 420	U L 452										
18											L	U L 424	L	U L 404	U L 360									
19										L	L	L	L											
20													L	L	L									
21										L	L	L	U L 420	U L 412	L									
22												A	L	L										
23										L	L		L	A	L									
24													L	U L 380	L									
25										L	U L 424	L		L										
26										L			A	L	L									
27											L	L	L	L										
28																								
29											L	L	L	L										
30									L		L	L	L	L										
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										1	4	1	6	6	2	1								
MED										U L 404	U L 426	U L 424	U L 420	U L 410	U L 360	U L 332								
U Q											U L 430		U L 428	U L 452										
L Q											U L 410		U L 416	U L 404										

NOV. 2016 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	200	272	R	A	A	A	A	A	A	A	B						
2							B	208	A	A	A	A	A	R	U R 292	A	200	B						
3							B	U R 216	A	A	A	A	A	A	A	A	A							
4						B	B	A	A	A	A	A	A	A	A	A	A							
5							B	A	268	324	324	A	U R 320	A	A	A	A							
6							B	A	U R 264	R	A	A	A	A	A	A	U R 200							
7							B	220	U A 268	R	A	A	A	A	A	A	A	A						
8							B	U R 196	252	A	A	A	A	A	U R 280	U R 256	A							
9							B	A	A	A	A	U A 348	A	U A 312	A	A	B							
10							B	A	A	A	A	A	A	A	A	A	A							
11							B	A	A	A	A	A	A	A	A	A	A							
12							B	184	A	A	C	C	C	C	C	C	C							
13							B	200	260	A	A	A	R	A	R	U R 236	B							
14							B	176	A	A	R	R	A	R	A	A	B							
15							B	196	U A 244	A	A	R	A	A	A	A	B							
16							B	A	A	A	U R 308	R	R	R	R	U A 216	B							
17							B	U R 188	A	A	A	R	A	R	U R 268	U A 236	A							
18								A	A	A	A	R	R	R	R	A	B							
19							B	U R 200	A	A	A	A	A	U A 296	U A 268	A	B							
20							B	184	A	A	A	332	A	A	A	A	B							
21							B	U A 176	U A 256	U R 304	304	A	A	U R 288	A	A	A							
22							B	176	248	284	A	A	A	U R 304	U R 280	U R 240	A							
23							B	208	252	284	A	A	A	280	U R 268	A	B							
24							B	B	A	A	A	A	A	A	U R 268	U R 268	B							
25							B	B	A	U R 288	R	R	A	R	268	A	B							
26							B	B	A	U R 248	A	A	A	A	A	A	B							
27							B	176	U R 244	A	A	A	A	A	R	U R 228	B							
28							B	A	240	U R 300	312	A	A	A	A	U R 240	B							
29							B	A	A	A	R	R	R	A	A	A	B							
30							B	B	U R 240	A	A	A	U R 316	A	U R 276	A	A							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								16	13	7	4	2	2	5	9	8	2							
MED								196	252	U R 288	310	340	U R 318	U 296	U R 268	U R 238	200							
U Q								204	266	304	318			U 308	U R 280	U R 248								
L Q								180	U 244	284	306			284	U 268	U A 232								

NOV. 2016 foE (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 20	21	20	E B 15	J A 22	18	E B 15	26	32	G	J A 47	34	40	37	34	J A 37	J A 40	J A 34	J A 26	22	19	E B 14	E B 14	E B 14
2	20	J A 26	20	E B 15	22	E B 15	20	26	J A 39	J A 40	J A 37	J A 38	J A 44	G	33	J A 32	31	J A 20	J A 24	J A 39	J A 21	E B 14	19	J A 33
3	21	J A 29	J A 25	20	20	E B 15	E B 15	G	28	J A 89	34	J A 38	35	J A 43	34	29	26	J A 60	J A 70	E B 15	E B 16	J A 52	J A 45	J A 30
4	J A 20	J A 29	21	J A 24	19	J A 24	J A 32	J A 62	J A 55	J A 78	J A 77	J A 58	J A 42	J A 50	37	32	J A 36	J A 84	J A 107	J A 50	J A 31	54	48	43
5	J A 34	J A 36	J A 28	J A 25	J A 22	E B 15	20	J A 26	32	40	40	37	J A 34	36	36	30	J A 35	J A 34	J A 37	J A 37	J A 47	30	29	31
6	J A 28	J A 25	21	E B 15	J A 21	E B 15	J A 24	24	G 21	G 27	J A 38	J A 42	34	34	J A 42	30	J A 21	J A 20	J A 44	J A 100	54	20	28	30
7	21	J A 24	J A 21	22	22	22	E B 15	26	36	G	34	J A 58	J A 119	J A 56	J A 40	J A 45	J A 31	J A 67	J A 45	J A 94	J A 98	J A 59	J A 64	J A 41
8	J A 30	E B 14	19	19	19	20	20	G	30	36	J A 44	J A 52	36	J A 50	G 24	G 21	J A 24	J A 21	E B 16	20	20	20	J A 24	J A 57
9	J A 28	J A 74	J A 36	J A 30	J A 29	19	21	J A 25	J A 38	J A 48	J A 45	39	J A 70	37	34	J A 56	J A 47	E B 16	J A 24	J A 75	J A 90	56	30	20
10	J A 26	19	J A 22	J A 27	J A 21	18	J A 23	29	J A 33	J A 33	34	J A 35	J A 64	J A 35	33	J A 48	J A 38	J A 45	J A 80	J A 52	J A 58	52	58	43
11	J A 19	22	J A 25	E B 15	J A 23	20	E B 15	J A 32	J A 44	J A 38	J A 45	J A 38	J A 38	J A 42	J A 45	30	J A 124	J A 158	J A 101	J A 81	J A 38	23	29	18
12	J A 30	22	E B 16	E B 16	E B 15	E B 15	B J A 16	26	28	G	C	C	C	C	C	C	C	C	C	C	J A 30	J A 52	J A 23	21
13	J A 22	21	J A 22	E B 15	E B 15	21	E B 16	25	31	36	J A 37	34	G	35	G 24	G	J A 23	J A 26	J A 24	J A 38	J A 25	34	J A 23	37
14	J A 25	J A 27	20	J A 19	21	J A 20	E B 15	21	J A 34	J A 34	G	G	J A 39	J G 26	J A 34	J A 30	J A 24	J A 26	J A 31	J A 27	J A 41	20	J A 19	J A 23
15	J A 30	21	J A 19	E B 15	J A 20	J A 31	J A 24	26	28	34	35	G	J A 34	J A 35	J A 47	J A 32	E B 18	E B 15	E B 14	J A 30	J A 30	J A 31	22	J A 22
16	J A 29	J A 29	J A 26	21	E B 15	E B 15	B J A 21	J A 43	J A 46	34	G 26	G 26	G J A 20	J A 38	J A 29	26	E B 16	E B 15	E B 14	B J A 40	E B 15	J A 22	E B 15	E B 15
17	J A 30	21	21	J A 19	E B 15	E B 15	E B 15	G	J A 34	J A 32	J A 32	G 24	J A 38	G	36	33	23	E B 15	E B 15	E B 15	J A 112	J A 36	J A 40	19
18	E B 14	21	20	20	20	E B 15	E B 15	J A 24	J A 28	J A 31	35	G	G	G	G	J A 28	J A 30	23	E B 16	E B 15	22	J A 23	J A 22	18
19	E B 16	18	J A 20	21	J A 24	20	18	G	J A 30	J A 34	J A 35	J A 37	34	35	33	J A 40	J A 56	J A 29	28	J A 60	J A 27	J A 22	J A 22	E B 15
20	J A 22	20	E B 15	E B 15	19	E B 15	19	24	29	J A 39	35	37	35	35	J A 33	J A 39	J A 30	J A 22	20	J A 24	J A 25	J A 23	20	20
21	21	J A 19	J A 20	E B 15	18	18	J A 22	24	29	G	35	35	J A 41	J G 28	31	29	23	J A 65	20	22	J A 44	J A 29	J A 23	22
22	J A 24	E B 15	E B 15	22	19	E B 14	21	20	G	31	J A 43	J A 46	J A 34	G 28	G 21	G	J A 22	J A 30	J A 34	22	20	E B 14	E B 15	E B 14
23	E B 16	E B 15	J A 23	J A 45	22	E B 16	E B 16	28	30	31	34	37	35	38	G J A 22	46	J A 42	J A 18	J A 35	J A 25	J A 32	J A 22	J A 24	21
24	19	20	E B 15	J A 39	E B 15	J A 22	J A 21	23	J A 26	34	34	J A 46	J A 33	J A 35	J A 27	J A 30	J A 32	J A 32	J A 28	J A 19	J A 21	J A 19	J A 26	J A 19
25	E B 15	E B 15	21	21	E B 15	E B 14	E B 15	20	J A 27	G	G	G	J A 32	G	J 32	J A 32	22	E B 15	B J A 18	E B 14	J A 23	E B 15	E B 15	E B 15
26	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 17	J A 26	32	J A 48	J A 47	J A 71	J A 39	J A 36	J A 41	J A 23	J A 44	J A 22	J A 20	20	20	E B 15	E B 15
27	E B 15	J A 24	20	19	E B 15	E B 14	E B 15	20	G	36	32	J A 40	J A 37	J A 34	G	G	J A 23	J A 20	22	20	19	J A 26	J A 22	22
28	22	20	E B 14	E B 15	E B 15	E B 15	J A 20	J A 32	33	34	36	J A 72	J A 39	J A 35	J A 33	J A 25	J A 40	J A 22	20	E B 14	J A 30	J A 26	E B 15	21
29	J A 36	J A 32	J A 29	J A 25	J A 31	22	J A 22	J A 29	J A 31	J A 36	J G 27	J A 34	J G 28	J A 36	J A 34	J A 34	J A 26	J A 24	J A 42	J A 24	J A 58	J A 47	J A 48	J A 24
30	J A 19	20	J A 28	E B 15	E B 15	E B 15	20	E B 17	G	J A 32	34	34	G	34	G 22	J A 34	J A 24	J A 26	20	J A 22	J A 112	J A 56	J A 31	J A 35
31																								

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	30	30	30	30
MED	J A 22	21	20	19	20	E B 16	20	24	30	34	35	J A 37	J A 35	J 35	33	J A 32	J A 26	J A 26	J A 24	J A 24	J A 30	J A 24	J A 23	J A 22
U Q	J A 28	J A 26	J A 23	J A 22	J A 22	20	J A 21	26	J A 34	J A 36	J A 42	J A 44	J A 40	J A 38	J A 36	J A 38	J A 37	J A 39	J A 40	J A 45	J A 47	47	J A 30	J A 31
L Q	E B 19	E B 19	E B 19	E B 15	E B 15	E B 15	E B 15	20	28	G 31	34	G 34	G 34	G	G	28	23	E B 20	E B 20	E B 20	21	20	E B 19	E B 18

NOV. 2016 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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 16	E B 15	E B 15	E B 15	E B 14	E B 15	24	30	G	39	32	37	33	32	29	25	20	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14
2	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	23	34	34	34	34	36	G	32	27	29	16	E B 15	32	17	E B 14	E B 15	23
3	E B 16	E B 15	E B 16	E B 15	E B 16	E B 15	E B 15	G	26	A A 89	32	32	33	32	31	28	22	E B 16	20	E B 15	E B E B 16	20	E B 15	23
4	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	18	30	32	38	46	41	32	38	32	28	26	25	18	E B 15	E B 15	17	18	20
5	26	20	19	19	16	E B 15	E B 15	23	30	38	38	34	G 22	32	32	28	30	15	E B 14	24	19	E B 15	E B E B 14	E B 16
6	19	E B 15	E B 15	E B 15	E B 15	E B 15	18	21	G 20	G 24	34	37	33	34	38	27	G 17	16	E B 15	A A 100	20	E B 15	19	19
7	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	25	32	G	31	35	A A 119	36	31	30	22	24	E B 15	A A 94	A A 98	21	A A 64	16
8	E B 15	E B 14	E B 14	E B 14	E B 15	E B 15	E B 16	G	28	34	38	43	34	36	G 20	G 19	18	E B 15	E B 16	E B 14	E B 15	E B 16	16	A A 57
9	E B 15	E B 15	18	20	20	E B 15	E B 15	20	30	32	32	36	46	34	32	39	38	E B 16	17	20	E B 16	21	E B 15	E B 16
10	20	E B 15	15	19	E B 15	E B 15	E B 15	24	26	29	30	32	44	31	31	41	32	30	26	E B 15	27	18	E B 15	E B 15
11	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	26	34	30	32	32	32	34	32	28	34	25	27	21	20	E B 14	E B 15	E B 15
12	E B 15	E B 15	E B 16	E B 16	E B 15	E B 15	E B 15	23	26	G	C	C	C	C	C	C	C	C	C	C	E B 15	E B 15	E B 15	E B 15
13	E B 16	E B 15	16	E B 15	E B 15	E B 14	E B 16	23	27	32	31	33	G	32	G 23	G	19	20	20	E B 15	18	A A 34	E B 15	E B 15
14	17	E B 15	E B 15	E B 15	E B 16	E B 16	E B 15	20	28	28	G	G	35	G 24	28	25	20	19	E B 15	22	22	E B 14	E B 14	E B 16
15	E B 16	E B 15	E B 15	E B 15	E B 15	19	19	23	27	30	32	G	32	31	27	24	E B 18	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	E B 15
16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	24	29	31	G 24	G 24	G 19	24	18	25	E B 16	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15
17	19	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15	G	30	29	30	G 23	31	G	34	29	21	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	E B 16
18	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	20	24	28	34	G	G	G	G	25	20	E B 14	E B 16	E B 15	E B 16	E B 15	E B 16	E B 15
19	E B 16	E B 16	E B 15	E B 15	E B 14	16	E B 15	G	26	29	32	34	32	34	32	29	34	25	17	20	19	E B 16	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	15	23	27	32	33	36	31	32	29	28	21	E B 15	E B 16	18	E B 15	18	E B 15	E B 15
21	E B 15	15	E B 15	E B 15	E B 15	E B 15	E B 15	19	28	G	34	32	36	G 25	30	26	21	E B 15	E B 16	E B 15	A A 44	22	19	E B 15
22	E B 16	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	20	G	30	32	38	30	G 22	G 20	G	18	25	26	18	E B 15	E B 14	E B 15	E B 14
23	E B 16	E B 15	E B 15	E B 15	E B 16	E B 16	E B 16	23	27	31	33	35	34	36	G 20	42	34	18	19	E B 15	25	18	18	E B 15
24	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	24	32	32	38	31	30	G 20	G 23	26	20	18	E B 14	E B E B 15	E B 15	18	E B 15
25	E B 15	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	20	24	G	G	G	30	G	30	24	20	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15
26	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 17	22	31	41	39	59	31	30	37	20	23	17	E B 15	E B 14	E B 16	E B 15	E B 15
27	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14	E B 15	19	G	35	30	34	33	31	G	G	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
28	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	28	32	33	34	59	38	33	28	G 19	22	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15
29	A A 36	25	20	17	18	E B 15	15	24	27	31	G 25	20	G 20	32	30	26	23	19	E B E B 15	E B 15	20	A A 47	A A 48	18
30	E B 14	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 17	G	30	30	31	G	32	G 21	28	19	20	E B 16	18	E B 16	22	16	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	30	30	30	30
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	27	30	32	34	32	32	30	27	21	16	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15
U Q	16	E B 15	16	15	E B 15	E B 15	15	24	30	32	34	36	36	34	32	29	28	22	18	20	20	18	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	19	24	G 28	30	G	G 30	G	G	G 24	19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

NOV. 2016 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	16	15	15	15	14	15	13	13	13	18	15	14	13	13	13	13	15	15	14	15	14	14	14
2	15	16	15	15	15	15	15	12	14	15	16	16	15	14	14	15	15	15	15	15	15	14	15	14
3	16	15	16	15	16	15	15	14	13	13	14	18	18	14	14	14	13	16	15	15	16	15	15	14
4	15	14	15	15	15	15	15	16	14	12	15	14	12	14	14	16	14	16	16	15	15	16	15	14
5	14	14	15	15	15	15	15	14	15	13	13	14	13	13	15	14	12	15	14	15	15	14	14	16
6	15	15	15	15	15	15	15	14	14	16	18	15	16	14	14	14	13	15	15	15	15	15	15	15
7	15	15	15	15	16	14	15	14	14	14	17	18	20	18	13	15	14	14	15	15	15	14	14	16
8	15	14	14	14	15	16	16	15	13	15	14	14	15	15	13	14	14	15	16	14	15	16	14	14
9	15	15	15	15	15	15	15	14	14	14	14	16	15	13	13	14	15	16	14	15	16	15	15	16
10	15	15	15	15	15	15	15	14	13	14	12	16	14	12	12	15	12	14	15	15	15	15	15	15
11	15	15	16	15	15	14	15	15	14	13	13	13	15	14	14	14	15	16	16	16	16	14	15	15
12	15	15	16	16	15	15	15	14	14	14	C	C	C	C	C	C	C	C	C	C	15	15	15	15
13	16	15	15	15	15	14	16	14	14	14	14	14	15	14	15	13	13	15	15	15	15	15	15	15
14	15	15	15	16	16	16	15	14	12	12	14	14	13	17	13	14	15	14	15	15	15	14	14	16
15	16	15	15	15	15	15	14	14	15	15	14	13	19	14	14	13	18	15	14	15	15	14	15	15
16	15	15	15	15	15	15	15	15	16	14	15	13	15	15	13	15	16	15	14	15	15	16	15	15
17	16	16	16	15	15	15	15	14	14	14	13	14	14	14	14	14	14	15	15	15	14	15	16	16
18	14	15	15	15	14	15	15	15	14	14	15	14	15	15	16	12	14	14	16	15	16	15	16	16
19	16	16	15	15	14	16	15	14	14	15	14	14	14	15	18	15	14	15	13	14	15	16	15	15
20	15	15	15	15	15	15	15	14	15	14	13	14	14	14	16	14	14	15	16	15	15	15	15	15
21	15	14	15	15	15	15	15	15	15	14	14	14	14	14	12	13	16	15	16	15	14	14	14	15
22	16	15	15	14	14	14	15	14	14	13	13	15	14	14	14	14	14	15	14	14	15	14	15	14
23	16	15	15	15	16	16	16	15	15	15	14	15	15	14	14	14	14	14	14	15	15	16	15	15
24	16	15	15	15	15	15	16	15	15	12	13	13	14	14	15	13	15	15	15	14	15	15	16	15
25	15	15	14	15	15	14	15	14	14	15	14	14	13	15	14	14	13	15	15	14	15	15	15	15
26	15	15	14	15	15	15	15	17	13	14	18	14	14	14	14	14	14	14	15	15	14	16	15	15
27	15	15	16	14	15	14	15	15	15	14	18	18	16	14	14	14	15	15	15	16	15	15	15	15
28	15	15	14	15	15	15	15	16	14	14	13	14	15	14	14	14	14	14	15	14	15	15	15	15
29	15	15	15	16	15	15	14	14	14	15	14	14	14	12	13	13	15	14	15	15	16	15	15	15
30	14	15	14	15	15	15	15	17	15	12	14	15	16	14	15	14	14	14	16	15	16	15	15	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	30	30	30	30
MED	15	15	15	15	15	15	15	14	14	14	14	14	15	14	14	14	14	15	15	15	15	15	15	15
U Q	16	15	15	15	15	15	15	15	15	15	15	15	15	14	14	14	15	15	16	15	15	15	15	15
L Q	15	15	15	15	15	15	15	14	14	13	13	14	14	14	13	14	14	14	14	14	15	14	15	15

NOV. 2016 fmin (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	318	321	333	347	358	314	349	363	339	354	357	356	376	352	352	370	400	367	336	361	F	F	F	305
2	308	286	347	320	343	329	349	373	366	352	356	347	363	359	360	372	358	354	351	381	350	313	309	312
3	296	299	290	307	307	329	355	355	366	A	328	344	367	371	351	352	357	380	345	317	314	312	293	321
4	319	309	308	292	288	292	344	366	352	359	376	386	352	359	378	363	357	359	311	314	323	356	329	307
5	322	297	298	315	345	307	354	390	376	372	376	379	337	352	355	368	366	364	313	331	345	331	344	312
6	306	302	294	315	340	313	345	379	357	366	352	345	V 357	336	363	362	360	367	367	A	295	298	317	300
7	300	324	318	321	340	325	348	381	385	369	354	348	A	329	356	350	389	358	390	A	A	309	A	322
8	F	287	290	319	324	351	344	389	397	353	371	377	324	351	366	380	347	369	340	345	351	311	309	A
9	350	301	316	339	331	323	360	382	379	361	346	362	365	365	374	363	391	338	334	319	309	F	F	297
10	F	F	297	324	317	312	352	371	390	365	369	344	341	367	373	374	356	357	334	337	312	331	306	304
11	302	283	290	299	292	311	359	360	334	346	341	363	345	359	388	378	380	337	332	328	342	313	288	279
12	293	306	317	339	342	303	340	380	384	319	C	C	C	C	C	C	C	C	C	C	320	297	284	295
13	312	365	343	352	281	304	339	365	383	363	352	352	365	341	367	379	359	357	345	328	348	A	F	292
14	315	349	314	333	F	331	339	345	363	379	363	365	319	348	343	359	380	404	330	339	F	320	295	F
15	305	298	318	314	328	350	313	373	382	372	349	359	367	348	363	369	374	389	303	350	355	314	309	289
16	299	305	322	284	327	375	342	393	374	365	362	362	362	358	376	380	378	379	359	362	381	297	311	308
17	318	311	310	309	313	323	345	377	382	368	367	362	340	324	377	379	384	361	359	341	311	330	F	300
18	308	331	330	315	282	315	363	376	376	360	363	360	357	356	381	376	374	371	366	316	319	F	F	F
19	318	317	F	F	F	311	342	380	384	378	345	361	355	360	379	359	377	368	339	334	335	325	302	F
20	F	F	312	304	311	312	357	382	394	359	374	357	370	363	354	366	388	329	318	365	337	365	307	296
21	309	F	309	313	346	340	327	400	356	369	355	363	346	394	366	394	358	386	305	344	A	325	357	301
22	292	344	308	308	370	296	339	380	383	340	364	350	360	359	358	372	368	353	340	342	332	329	318	301
23	F	290	301	317	F	329	359	387	393	329	356	393	353	374	366	370	392	354	310	311	316	362	333	F
24	317	325	F	F	F	F	350	376	361	361	380	379	364	362	365	380	393	371	309	354	319	291	312	F
25	293	276	335	341	339	354	335	344	327	350	349	V 350	357	381	379	388	342	333	349	348	360	397	F	F
26	F	F	F	310	323	317	366	359	364	344	362	355	357	355	369	378	385	375	318	318	299	F	F	286
27	F	302	F	F	304	348	342	388	389	370	344	332	358	351	371	369	386	390	348	337	336	305	293	F
28	F	309	326	281	335	386	336	377	393	360	341	361	362	359	366	369	367	375	316	344	377	332	344	308
29	A	326	313	314	310	329	338	381	379	374	356	376	359	349	382	348	388	366	322	323	359	A	A	312
30	281	288	292	295	310	329	322	383	367	380	353	369	368	371	339	367	375	341	349	316	324	282	318	310
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	26	26	27	26	29	30	30	30	29	29	29	28	29	29	29	29	29	29	27	26	24	21	22
MED	308	306	312	315	326	323	344	378	378	361	356	361	358	359	366	370	375	366	336	337	334	317	309	302
U Q	318	324	322	324	340	336	354	382	384	370	366	367	364	364	376	378	387	375	349	348	350	331	324	310
L Q	299	297	298	307	310	312	339	366	363	352	349	350	349	350	357	363	358	354	317	319	316	307	298	296

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	A	L	A	L	L									
2										L	U L 389	L	U L 383		A	U L 453								
3										A	L	L	U L 408											
4									A				L	A										
5												L	L	U L 409	A									
6										L	L	A	U L 422	L	A									
7									A	L	U L 445	L	A	U L 354	L									
8									L	L	A		L	A	L									
9										U L 381	L	A	A	L		A								
10										L	U L 410	L	A	L	L		A							
11											L	L	L											
12											C	C	C	C	C	C	C							
13										L	L	L	L	L	L									
14										L	L	L	L	L	L									
15									A		L	L	U L 391	L	U L 402									
16									A		L	L	L	L	L									
17											L	L	U L 429	U L 362										
18											L	U L 414	L	U L 422	U L 395									
19										L	L	L	L											
20													L	L	L									
21										L	L	L	U L 414	U L 393	L									
22												A	L	L										
23										L	L		L	A	L									
24													L	U L 412	L									
25										L	U L 399	L		L										
26										L			A	L	L									
27											L	L	L	L										
28																								
29											L	L	L	L										
30									L		L	L	L	L										
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										1	4	1	6	6	2	1								
MED										U L 381	U L 404	U L 414	U L 411	U L 401	U L 398	U L 453								
U Q											U L 428		U L 422	U L 412										
L Q											U L 394		U L 391	U L 362										

NOV. 2016 M(3000)F1 (0.01)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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										252	236	240	226	244	248									
2										244	246	252	236		234	228								
3										A	264	230	232											
4									230				238	256										
5												230	252	242	234									
6										234	244	244	238	260	232									
7									220	246	244	238	A	300	246									
8									222	254	242		254	262	248									
9										240	240	230	E A 240	250		224								
10										242	236	256	262	242	238		224							
11											260	236	238											
12											C	C	C	C	C	C	C							
13										246	256	254	236	246	236									
14										226	236	248	304	244	258									
15									220		256	238	242	250	240									
16									224		254	246	250	250	236									
17											224	254	252	276										
18											242	236	246	250	232									
19										220	236	238	242											
20													238	250	246									
21										232	250	238	258	218	234									
22												244	242	258										
23										246	248		250	234	238									
24													238	238	236									
25										246	236	234		228										
26										264			254	246	238									
27											248	248	242	248										
28																								
29											252	228	238	236										
30									218		252	226	236	236										
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	14	22	22	26	24	17	2	1							
MED									221	245	245	238	242	247	238	226	224							
U Q									224	246	252	248	252	253	246									
L Q									220	234	236	234	238	240	234									

NOV. 2016 h'F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 258	E B 248	E B 242	226	206	E B 248	220	216	228	206	A	178	A	200	198	230	202	202	224	210	232	E B 300	E B 332	E B 300
2	E B 256	E B 294	E B 258	E B 244	220	230	228	210	218	200	184	202	202	234	A	186	228	218	206	210	218	232	E B 250	E A 306
3	E B 288	E B 274	E B 312	E B 276	E B 268	232	210	214	226	A	182	180	172	224	210	224	228	198	222	218	204	E A 282	E B 262	E A 266
4	228	E B 254	E B 262	E B 280	E B 298	E B 278	230	212	A	230	218	222	198	A	222	212	214	204	224	E B 248	E B 262	210	224	E A 242
5	E A 308	E A 310	E A 294	E A 266	218	E B 244	214	208	214	228	230	206	200	192	A	222	212	194	210	E A 254	228	220	230	E B 278
6	E A 292	E B 302	E B 300	254	224	E B 258	222	200	190	204	196	A	188	200	A	212	210	202	188	A	E A 320	232	E A 284	E A 298
7	E B 278	E B 262	E B 250	E B 244	224	228	208	212	A	192	180	192	A	216	216	218	200	208	198	A	A	E A 312	A	E A 266
8	E B 306	E B 276	E B 270	E B 264	E B 238	218	200	192	186	190	A	222	200	A	212	216	214	190	E B 196	206	222	E B 242	E A 248	A
9	226	E B 294	E A 276	E A 254	E A 264	E B 226	194	200	218	182	188	A	A	212	228	A	208	194	212	232	E B 256	E A 296	E B 282	E B 272
10	E A 292	216	E A 250	E A 270	E B 240	E B 266	218	204	212	196	176	192	A	208	208	232	A	230	E A 258	224	E A 296	226	E B 276	E B 288
11	E B 266	E B 306	E B 312	E B 294	E B 318	E B 268	192	212	220	202	208	208	198	228	212	208	216	224	E A 252	226	222	210	E B 282	E B 310
12	E B 296	E B 274	E B 254	E B 228	214	E B 250	224	206	212	202	C	C	C	C	C	C	C	C	C	C	E B 246	E B 256	E B 318	E B 308
13	E B 278	214	230	E B 216	E B 240	E B 274	210	210	202	204	182	212	208	196	208	210	204	204	224	E B 246	212	A	E B 280	E B 308
14	E A 272	220	E B 242	228	E B 246	222	226	220	220	202	186	172	200	200	210	230	204	190	224	222	E A 312	214	E B 264	E B 270
15	E B 292	E B 288	E B 262	E B 254	E B 244	222	E A 288	216	A	212	206	194	198	178	178	214	212	194	E B 252	224	208	E B 252	E B 246	E B 288
16	E B 276	E B 284	E B 256	E B 284	E B 240	198	204	194	A	218	200	212	210	200	H 182	216	206	192	216	208	204	E B 252	E B 252	E B 262
17	E A 302	E B 274	E B 262	E B 262	E B 256	E B 238	214	208	198	194	180	192	174	174	220	208	200	194	194	194	E B 242	E B 238	E B 236	E B 236
18	E B 246	E B 238	216	E B 238	E B 248	228	198	208	210	206	204	198	186	182	174	210	208	184	206	202	218	E B 238	E B 304	E B 284
19	E B 246	E B 236	E B 254	E B 260	E B 258	E B 246	212	202	210	198	186	192	200	238	214	214	206	206	204	E A 264	E A 234	E B 244	E B 266	E B 266
20	E B 266	E B 262	E B 254	E B 254	E B 254	E B 260	224	212	204	208	214	222	186	212	190	216	202	210	E B 248	220	208	E A 238	210	E B 300
21	E B 282	E A 266	E B 270	E B 254	222	228	218	204	220	192	216	198	188	166	192	214	208	190	232	216	A	E A 272	218	E B 268
22	E B 272	228	E B 268	E B 264	216	E B 274	230	206	206	214	220	A	190	202	216	212	206	214	E A 250	222	220	224	230	E B 248
23	E B 252	E B 266	E B 286	242	212	E B 272	192	200	202	198	210	198	204	A	198	218	202	196	E A 294	E B 274	E A 298	214	224	E B 262
24	E B 236	E B 236	E B 242	E B 238	230	E B 232	200	204	208	226	214	222	200	180	182	218	196	196	E A 274	222	222	E B 244	E A 250	E B 242
25	E B 240	E B 312	E B 236	218	E B 256	212	E B 234	218	226	206	200	202	212	204	210	212	206	204	210	204	196	198	E B 268	E B 262
26	E B 278	E B 264	E B 288	E B 272	E B 234	E B 238	208	216	196	210	230	E A 240	A	212	206	208	198	206	E A 236	232	E B 264	E B 272	E B 284	E B 282
27	E B 272	E B 270	E B 280	E B 286	E B 264	E B 238	206	196	204	218	196	214	200	192	226	212	202	196	216	222	206	E B 272	E B 282	E B 288
28	E B 260	E B 274	E B 262	E B 306	E B 236	198	216	204	206	214	228	230	216	228	216	214	210	190	E B 240	222	198	200	E B 230	E B 280
29	A	E A 322	E A 296	E A 264	E A 266	E B 242	208	198	204	212	208	194	190	196	210	216	200	200	E B 234	210	226	A	A	E A 280
30	E B 298	E B 278	E B 280	E B 268	E B 248	210	218	218	194	210	186	204	194	192	198	218	206	218	218	E A 248	224	E A 332	E A 232	E B 250
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	30	30	30	26	29	27	26	24	26	26	28	28	29	29	27	28	28	28	29
MED	E B 272	E B 272	E B 262	E B 257	E B 240	E B 238	212	208	209	206	200	201	199	200	210	214	206	200	214	216	214	E 240	E B 257	E B 278
U Q	E 292	E B 288	E B 280	E B 270	E B 256	E B 258	224	212	218	213	214	214	201	212	216	218	211	207	E A 244	E 232	E 251	E A 272	E B 282	E B 293
L Q	E B 254	248	E B 250	242	224	226	206	202	202	198	186	192	189	192	198	212	202	194	208	210	210	222	231	E B 262

NOV. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 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	114	112	A	A	108	112	112	A	A	B						
2							B	112	A	A	A	A	A	112	112	A	110	B						
3							B	110	A	A	A	A	A	A	A	114	114							
4						B	B	A	A	A	A	A	A	A	A	120	116							
5							B	A	114	112	112	110	106	110	108	122	A							
6							B	116	116	118	A	A	A	A	A	114	118							
7							B	118	118	114	A	A	A	A	A	A	A	A						
8							B	124	112	112	116	A	112	A	110	112	A							
9							B	A	A	A	A	126	A	112	112	A	B							
10							B	116	A	A	A	A	A	A	114	114	110							
11							B	A	A	A	A	A	A	A	A	114	A							
12							B	114	118	118	C	C	C	C	C	C	C							
13							B	114	116	110	A	A	110	A	114	112	B							
14							B	112	A	A	116	114	A	114	A	A	B							
15							B	116	118	118	A	114	A	A	A	A	B							
16							B	A	A	124	116	112	110	114	112	114	B							
17							B	110	A	A	A	110	A	110	110	112	114							
18								A	A	A	A	112	112	112	112	A	B							
19							B	110	A	A	A	A	A	112	112	112	B							
20							B	112	126	A	A	114	A	A	A	A	B							
21							B	118	118	114	114	A	A	114	110	110	116							
22							B	116	116	108	114	A	A	114	114	114	A							
23							B	122	118	112	112	114	110	110	114	112	B							
24							B	B	118	120	120	114	A	A	118	130	B							
25							B	B	118	112	110	112	A	112	116	A	B							
26							B	B	A	122	114	108	A	A	A	A	B							
27							B	126	126	122	120	A	A	A	114	114	B							
28							B	A	114	114	114	A	A	A	A	114	B							
29							B	A	A	A	116	112	112	A	A	A	B							
30							B	B	112	A	A	A	112	112	110	A	A							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								18	17	17	13	13	9	14	18	17	7							
MED								116	118	114	114	112	110	112	112	114	114							
U Q								118	118	119	116	114	112	114	114	114	116							
L Q								112	114	112	113	111	109	112	110	112	110							

NOV. 2016 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	102	100	100	B	90	90	B	130	148	G	102	98	122	126	126	94	92	94	94	94	94	B	B	B
2	104	100	98	B	98	B	102	144	104	104	102	102	104	G	144	92	142	138	112	100	102	B	102	102
3	102	96	92	96	96	B	B	G	108	98	98	104	104	100	98	122	114	108	108	B	B	100	98	92
4	96	98	94	100	100	106	108	106	100	100	94	92	98	98	98	122	118	104	110	108	106	102	96	90
5	90	94	92	100	102	B	104	104	166	156	146	108	92	118	116	110	106	106	104	96	92	96	98	96
6	92	94	102	B	104	B	106	120	100	100	100	106	106	106	106	114	104	108	106	100	100	100	100	96
7	96	98	98	98	98	100	B	150	136	G	106	104	98	96	98	102	98	98	108	100	98	98	98	96
8	98	B	98	98	98	98	96	G	140	130	122	100	116	96	94	94	92	94	B	98	98	98	98	102
9	96	94	100	96	94	96	96	108	106	106	106	150	94	148	126	94	96	B	146	106	106	100	100	100
10	92	106	96	104	100	112	106	122	106	100	96	96	90	88	114	112	114	112	102	102	100	102	98	100
11	100	100	100	B	100	100	B	106	106	106	100	100	100	106	102	120	102	100	102	102	100	102	100	104
12	96	102	B	B	B	B	144	140	128	G	C	C	C	C	C	C	C	C	C	C	102	106	102	104
13	116	106	94	B	B	92	B	154	146	116	102	102	G	102	106	G	102	100	96	100	104	90	98	94
14	94	94	100	100	96	98	B	158	106	104	G	G	102	98	100	90	92	92	94	102	102	104	100	100
15	92	92	94	B	102	100	100	154	134	126	108	G	104	104	98	98	B	B	B	106	102	112	104	102
16	96	96	98	98	B	B	116	104	104	128	100	100	96	98	96	136	B	B	B	106	B	100	B	B
17	100	96	96	96	B	B	B	G	98	98	100	100	98	G	130	122	118	B	B	B	106	110	102	104
18	B	100	108	102	98	B	B	110	106	102	102	G	G	G	G	96	94	98	B	B	98	98	102	98
19	B	98	104	104	98	98	114	G	106	104	104	102	100	148	138	122	106	106	106	102	104	104	104	B
20	106	98	B	B	108	B	144	134	128	104	102	144	102	100	98	96	96	102	112	104	102	102	100	100
21	100	100	98	B	98	110	108	124	162	G	152	104	100	100	140	120	120	108	146	144	94	94	94	100
22	98	B	B	98	108	B	98	156	G	154	118	102	104	104	104	G	102	94	94	94	106	B	B	B
23	B	B	102	102	104	B	B	140	150	154	130	124	116	114	104	116	106	110	102	102	98	104	98	100
24	102	110	B	104	B	114	100	120	116	126	124	118	96	98	96	96	94	96	100	100	100	110	100	102
25	B	B	134	120	B	B	B	134	120	G	G	G	106	G	134	104	128	B	100	B	100	B	B	B
26	B	B	B	B	B	B	B	B	96	156	124	122	100	106	104	104	102	102	102	98	98	98	B	B
27	B	104	104	104	B	B	B	170	G	114	120	104	106	102	G	G	102	102	98	98	98	116	112	110
28	106	104	B	B	B	B	168	96	164	160	146	100	100	100	96	94	94	94	94	B	102	102	B	100
29	100	100	100	98	98	106	104	104	100	94	96	96	90	88	86	88	86	90	100	104	98	98	90	92
30	104	98	98	B	B	B	100	B	G	108	108	108	G	122	100	94	92	92	92	92	110	110	110	110
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	25	24	18	20	14	18	24	27	25	27	25	26	25	27	26	27	24	24	24	28	26	24	24
MED	99	98	98	100	98	100	105	127	108	106	104	102	100	102	104	103	102	101	102	101	100	102	100	100
U Q	102	101	101	104	102	106	114	147	140	129	122	108	104	110	126	120	114	107	108	104	103	104	102	102
L Q	96	96	96	98	98	98	100	107	104	101	100	100	98	98	98	94	94	94	97	98	98	98	98	96

NOV. 2016 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

NOV. 2016 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2	F2	F1		F1	F1		H2	H2		L2	L2	CL11	CL11	CL11	L3	L3	L2	F2	F1	F2			
2	F1	F2	F1		F2		L1	H2	L2	L2	L2	L2	L2		H1	L2	H2	H2	F1	F2	F2		F1	F4
3	F2	F3	F3	F1	F2				L2	L3	L2	L1	L1	L2	L1	C1	C2	F3	F2			F4	F2	F3
4	F2	F2	F2	F2	F2	L1	L2	L2	L3	L2	L3	L2	L2	L2	L2	CL12	C2	F2	F2	F2	F2	F2	F3	F3
5	F3	F3	F2	F2	F2		L1	L2	HL22	HL22	HL22	CL12	L2	CL12	CL12	CL12	L2	F2	F2	F3	F3	F2	F2	F2
6	F3	F1	F1		F1		L4	C1	L1	L2	L2	L2	L2	L2	L2	C1	L2	F3	F1	F4	F3	F1	F3	F2
7	F1	F2	F2	F2	F1	F2		H2	H1		L1	L2	L3	L2	L2	L2	L2	L3	F3	F4	F4	F3	F5	F4
8	F2		F2	F1	F1	F1	L2		H1	C1	CL12	L2	CL11	L2	L2	L2	L2	F1		F1	F2	F1	F2	F4
9	F2	F3	F3	F3	F2	F1	L1	L2	L2	L2	L2	HL12	L3	HL12	CL12	L2	L3		F2	F3	F3	F3	F2	F2
10	F4	F1	F3	F4	F2	F1	L1	C2	L2	L2	L2	L2	L2	L1	CL11	CL22	CL22	F3	F3	F2	F3	F3	F3	F2
11	F2	F2	F2		F2	F2		L3	L2	L2	L1	L2	L2	L2	L2	C2	L3	F3	F3	F3	F3	F2	F3	F1
12	F2	F1					H1	H2	C1												F2	F2	F1	F1
13	F1	F2	F3			F1		H2	H2	C2	L2	L2		L1	L2		L2	F4	F2	F2	F2	F5	F2	F3
14	F4	F3	F2	F3	F2	F2		H1	L2	L2			L2	L2	L2	L3	L3	F2	F2	F4	F4	F2	F2	F2
15	F2	F2	F2		F2	F4	L4	H2	HL22	CL12	L2		L2	L3	L2	L2				F2	F2	F1	F1	F1
16	F2	F2	F2	F1			C1	L3	L3	CL12	L1	L1	L1	L2	L2	H1				F1		F2		
17	F3	F2	F2	F1					L3	L2	L2	L2	L2		HL12	C2	C2				F2	F1	F2	F1
18		F1	F1	F2	F1			L3	L2	L2	L2					L2	L3	F1			F2	F2	F2	F2
19		F2	F2	F2	F2	F2	C1		L2	L2	L2	L2	L2	H1	HL12	CL22	L4	F3	F2	F3	F3	F2	F2	
20	F2	F2			F1		H1	H3	CL22	L2	L2	HL11	L1	L2	L2	L3	L2	F1	F1	F3	F2	F3	F2	F2
21	F2	F2	F2		F1	F1	L1	C2	HL22		HL12	L2	L3	L2	H1	C2	CL22	F2	F1	F2	F4	F8	F2	F2
22	F1			F2	F1		L2	H1		H1	C1	L2	L2	L2	L2		L3	F6	F4	F4	F1			
23			F2	F2	F2			H2	H2	H1	C1	C2	C2	C2	L2	C3	L3	F2	F5	F4	F5	F3	F4	F2
24	F1	F1		F6		F2	L2	CL21	C2	C2	CL12	CL32	L2	L2	L2	L3	L3	F4	F2	F1	F1	F1	F3	F1
25			F1	F2				C2	C2				L2		HL12	L3	C1		F1		F1			
26									L3	HL12	C3	C2	L3	L2	L2	L3	L3	F4	F2	F2	F2	F1		
27		F2	F1	F1				HL11		C2	C1	L1	L2	L2			L2	F1	F2	F2	F2	F1	F1	F1
28	F1	F1					H1	L3	HL23	HL13	HL13	L3	L2	L2	L3	L3	L3	F3	F1		F2	F1		F1
29	F4	F4	F5	F3	F2	F1	L1	L3	L3	L3	L2	L2	L2	L2	L3	L2	L2	F2	F3	F2	F5	F4	F5	F3
30	F1	F1	F2				L2			L1	L1	L1		C1	L2	L2	L3	F3	F1	F2	F2	F3	F2	F2
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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																								

NOV. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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																								

NOV. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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																								

NOV. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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																								

NOV. 2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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																								

NOV. 2016 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2016 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2016 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV.2016 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																								
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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																								

NOV.2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 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 49	X 46	X 50	X 47	X 34	X 34	X 33													X 49	X 48	X 45	X 42	X 40
2	X 40	X 42	47	X 55	44	X 33	X 28													X 55	X 53	X 52	X 53	X 52
3	X 46	X 42	X 43	X 44	X 45	X 40	X 39													X 56	X 47	X 46	X 57	X 43
4	X 44	X 40	X 37	X 38	X 33	X 34	X 36													X 63	X 52	X 55	X 59	40
5	X 31	X 31	X 31	X 31	36	36	33													X 47	X 53	X 46	X 30	X 31
6	X 34	X 37	X 35	X 39	X 45	50	38													X 57	A	X 38	X 41	X 41
7	X 41	X 42	X 46	X 40	X 40	X 32	X 32													X 55	X 44	X 44	43	40
8	X 40	X 38	X 41	X 38	48	44	38													X 60	X 46	X 44	X 39	X 40
9	X 41	X 38	X 38	40	X 39	X 30	X 30													X 57	X 60	X 54	X 46	X 38
10	X 37	39	X 34	39	43	X 37	X 36													X 54	X 57	X 59	X 58	X 51
11	X 48	A	X 38	X 39	X 38	44	46													X 58	X 51	X 50	X 44	X 42
12	X 44	X 42	X 43	50	52	54	46													X 47	X 45	X 41	X 40	X 41
13	X 52	X 36	X 31	X 33	X 34		X 26													X 40	X 44	X 44	X 32	X 35
14	X 36	X 42	X 30	X 31	X 30	X 25	X 24													X 40	X 45	X 40	X 38	X 40
15	X 40	X 35	37	41	42	34	X 26													X 34	X 39	X 42	X 33	X 31
16	X 33	X 36	X 36	X 40	X 37	X 30	O X 24													X 45	X 52	X 42	X 32	X 31
17	X 33	X 34	X 34	X 35	X 40	X 35	X 29													X 41	X 35	X 37	X 36	X 37
18	X 37	X 38	X 39	X 41	X 41	X 30	X 29													X 38	X 36	40	42	X 39
19	X 37	X 35	X 35	37	38	36	43				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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	18	19	19	19	18	19													18	17	18	18	18
MED	X 40	X 38	X 37	X 39	X 40	X 34	X 33													X 52	X 47	X 44	X 42	X 40
U Q	X 44	X 42	X 43	X 41	44	40	38													X 57	X 52	X 50	X 46	X 41
L Q	X 36	X 36	X 34	X 37	X 36	X 32	X 28													X 41	X 44	X 41	X 36	X 37

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 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	43	40	44	41	28	28	27	50	83	95	84	84	86	121	121	94	77	58	50	43	42	39	36	34
2	34	36	F 37	49	F 36	27	22	50	67	69	85	92	107	98	112	100	A	79	65	49	47	46	47	46
3	40	36	37	38	39	34	33	58	74	85	99	109	82	84	78	80	78	87	67	50	41	40	51	37
4	38	34	31	32	27	28	30	60	84	71	75	87	86	90	87	81	83	68	64	57	46	49	53	32
5	25	25	25	25	F 29	F	F 24	53	82	75	73	66	65	71	96	98	82	62	48	40	47	40	24	25
6	28	31	29	33	39	F 40	F 29	50	61	72	65	66	60	77	90	78	87	64	62	51	A	32	35	35
7	35	36	40	34	34	26	26	50	57	59	70	90	82	100	108	114	109	78	52	49	R 38	38	F 35	F 34
8	34	32	35	32	F 36	F 35	F 30	50	61	58	61	80	84	78	104	102	70	65	60	54	40	38	33	34
9	35	32	32	34	33	24	24	46	58	58	69	86	81	92	80	73	72	60	52	51	54	48	40	32
10	31	F 32	R 28	F 33	F 37	31	30	46	64	67	74	82	75	82	85	90	72	61	A	48	51	53	52	45
11	42	A	32	33	32	F 33	F 34	50	83	94	106	121	114	115	102	90	66	68	55	52	45	44	38	36
12	38	36	37	F 40	F 40	F 46	F 38	49	73	79	77	103	98	100	100	90	66	66	60	41	V 38	35	34	35
13	46	30	25	27	28	18	20	52	64	74	86	87	93	85	99	75	75	57	49	34	38	38	26	29
14	30	36	24	25	24	19	18	45	76	84	90	79	63	83	97	107	74	62	47	34	39	34	32	34
15	34	29	F 29	F 33	F 35	F 26	20	46	54	69	74	104	92	103	107	101	80	63	42	28	33	36	27	25
16	27	30	30	34	31	24	18	42	57	64	67	84	91	93	81	81	64	55	32	39	46	36	26	25
17	27	28	28	29	34	29	23	41	54	67	61	72	69	67	83	92	62	58	39	35	29	31	30	31
18	31	32	33	35	35	24	23	46	62	73	76	75	70	68	70	62	56	53	41	32	30	F 32	F 35	33
19	31	29	29	F 28	F 28	F 26	F 35	40	48	56	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	18	19	19	19	18	19	19	19	19	18	18	18	18	18	18	17	18	17	18	17	18	18	18
MED	34	32	31	33	34	28	26	50	64	71	74	85	83	88	96	90	74	62	52	46	41	38	35	34
U Q	38	36	37	35	F 36	F 33	F 30	50	76	79	85	92	92	100	104	100	81	68	61	51	46	44	40	35
L Q	30	30	28	29	28	24	22	46	57	64	69	79	70	78	83	80	66	58	44	35	38	35	30	31

NOV. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	440	460	U L 444	L	L	L							
2								A	L	L	L 440	L 456	L 436	A	464	A	A	A						
3									L	L	L 452	432	L 448	L 464	L 436	U L 404	L							
4										L		L	U L 452	L	L	L	L							
5								U L 216	L	L	L	L	L	U L 476	L 452	L								
6									L	L	L	U L 444	U L 460	452	L 432	L								
7										L	U L 428	U L 456	L	A	A	L	L							
8										U L 392	A	L	L 460	440	L 444	420	L							
9											A	432	L 444	L 456	L 440	L 420	L	232						
10									L	L 396	L 420	U L 460	L 452	L	A	L			A					
11										L	L	U L 444	L 476	U L 476	U L 420	L								
12									L	L	L	L 464	L	L 444	L	A	L							
13										L	L	L 444	U L 460	L 464	L	L	L							
14									L	L	L 432	L 448	U L 468	U L 452	448	L 424	L							
15										L	U L 432	U L 420	U L 448	U L 472	L 440	L 408	L							
16									L	L	L	L 464	L 464	L 444	L 444	L	L							
17										L	L	436	448	L		L	L							
18										L	L 440	L	468	L	L	U L 408	L 320							
19								184	L 320	L	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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	1	2	7	14	15	12	10	6	1	1						
MED								200	L 320	L 394	L 432	L 444	L 460	L 454	L 442	L 414	L 320	232						
U Q											L 440	L 456	L 464	U L 468	448	L 420								
L Q											L 428	436	L 448	L 444	L 436	L 408								

NOV. 2016 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Okinawa

NOV. 2016 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								200	236	288	316	320	R 328	U R 340	U R 312	A	A	A	A					
2								A 228	284	316	316	324	316		A	A	A	A	A					
3								A 236	284	A	A	U A 324	320	320	296		A	A	B					
4								180	244	280	304	328	332	344	A	A	A	A	B					
5								A 244	276	284	296	324	U A 348	A	A		A 204		A					
6								B 240	A	A	A	A	A	A	A	A	A	A	A					
7								A	A	A 328	324	U A 320	320	312	A		A	A	A					
8								A 248	288	304	A	308	A	A	A		A	A	A					
9								180	256	284	U A 304	A	A	A	A		A	A	A					
10								188	240	U A 276	U A 300	A	U A 328	A	U A 316	A	268	A	A					
11								168	252	U A 284	U A 292	A	A	A	A	288	256	A	A					
12								A 244	276	300	324	320	324		A	A	A	A	B					
13						J K 116		184	236	272	A	A	332	A	A	A	A	A	B					
14								A	A	A	U A 280	A	A	A	304	280	236	A	B					
15								A 252		A	A	A	A	308	308	A	256	176	B					
16								172	228	288	304	316	328	336	A	308	240	200	B					
17								A 200	276	A	328	320	U R 344	332	296	240	A	A	A					
18								192	236	284	324	A	A	A	A	280	A	A	A					
19								A 216	252	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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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		8	17	15	13	8	12	10	7	6	6	3						
MED						J K 116		182	240	284	304	322	324	330	312	292	248	200						
U Q								190	246	284	316	326	328	U 344	320	296	256	204						
L Q								176	232	276	296	316	320	320	308	280	240	176						

NOV. 2016 foE (0.01MHz)

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IONOSPHERIC DATA STATION Okinawa

NOV. 2016 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	E B 13	E B 13	E B 13	18	18	E B 13	G	27	32	34	36	G 25	41	37	36	J A 37	J A 28	J A 28	J A 20	J A 19	18	E B 13	E B 13
2	E B 13	J A 55	J A 18	J A 22	J A 14	J A 21	J A 26	J A 29	25	35	37	37	36	J A 45	J A 53	J A 77	J A 120	J A 76	J A 53	J A 60	J A 34	J A 53	J A 36	J A 32
3	J A 30	J A 18	J A 31	J A 22	J A 15	J A 19	J A 22	20	G	G	J A 44	J A 40	37	35	34	G	29	20	E B 14	J A 21	J A 20	J A 19	E B 13	J A 20
4	E B 13	J A 20	J A 38	J A 28	J A 28	E B 13	E B 13	J A 19	G	G 24	G 26	G	G	38	35	J A 34	28	22	E B 18	E B 13	E B 13	J A 37	J A 38	J A 32
5	J A 23	J A 19	J A 21	J A 20	J A 32	18	E B 13	J A 20	27	30	33	G	42	42	J A 85	36	37	24	18	E B 13	J A 28	J A 45	J A 32	J A 24
6	J A 22	J A 26	26	J A 16	18	E B 13	E B 13	E B 16	E B 14	33	35	38	39	J A 41	37	J A 44	J A 48	J A 39	J A 50	J A 48	J A 49	J A 32	J A 21	J A 28
7	J A 21	J A 16	E B 13	E B 13	E B 13	E B 13	18	21	28	J A 42	36	36	40	J A 58	J A 54	J A 44	J A 63	J A 45	J A 33	J A 28	J A 18	J A 20	E B 13	E B 13
8	E B 13	E B 13	E B 13	E B 13	18	19	18	J A 21	G 23	32	45	J A 45	37	J A 38	J A 37	J A 72	J A 40	J A 42	J A 62	J A 50	J A 20	16	E B 13	J A 22
9	J A 18	J A 32	J A 20	J A 27	J A 38	J A 30	J A 20	23	G	38	J A 57	J A 46	J A 50	J A 42	36	34	J A 29	19	J A 20	J A 32	E B 13	J A 19	J A 22	J A 20
10	J A 20	J A 20	J A 34	J A 35	J A 17	J A 20	J A 27	J A 20	28	33	37	J A 78	41	J A 59	J A 50	J A 45	34	J A 47	J A 50	J A 48	J A 53	J A 88	J A 66	J A 20
11	J A 60	J A 60	J A 22	J A 26	J A 22	E B 13	E B 13	G	G	39	J A 47	J A 45	J A 65	J A 44	41	G	35	J A 29	J A 29	J A 44	J A 21	J A 17	E B 13	J A 88
12	J A 53	J A 34	J A 38	J A 44	J A 34	18	E B 13	J A 43	G	35	36	37	J A 47	J A 42	J A 48	J A 42	J A 34	22	J A 20	J A 20	J A 34	J A 20	E B 13	J A 52
13	J A 29	E B 13	E B 13	E B 13	E B 13	J K 12	E B 14	G	G	30	J A 41	J A 44	G	37	37	J A 81	J A 28	J A 38	J A 27	E B 13	J A 28	J A 28	J A 21	J A 19
14	J A 32	J A 23	J A 28	J A 23	J A 16	J A 16	J A 43	22	J A 43	J A 36	33	34	36	J A 36	G 20	G	26	23	J A 17	20	E B 13	E B 13	J A 23	20
15	J A 20	J A 21	20	J A 16	J A 15	18	E B 13	21	G	J A 42	34	34	35	G 28	G 28	J A 37	G	21	J A 19	E B 13	E B 13	E B 13	E B 13	E B 13
16	E B 13	E B 13	J A 18	E B 13	E B 13	E B 14	E B 15	G	25	32	34	35	J A 29	42	J A 42	34	30	G 18	18	J A 25	J A 52	J A 16	J A 15	J A 17
17	J A 19	J A 18	E B 13	E B 13	E B 13	E B 13	19	17	25	33	38	38	40	42	38	32	28	29	J A 29	J A 57	E B 13	E B 13	J A 16	J A 21
18	E B 13	E B 13	J A 20	E B 13	18	E B 13	E B 13	22	27	32	G 30	34	35	33	35	31	28	20	J A 29	J A 28	J A 40	J A 20	J A 20	J A 16
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	J A 42	J A 17	26	30	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	19	19	19	19	19	19	19	19	19	18	18	18	18	18	18	18	18	18	18	18	18	18	18
MED	J A 20	J A 19	J A 20	J A 16	J A 17	16	E B 15	20	25	33	36	37	37	42	37	36	32	26	J A 28	J A 26	J A 20	J A 20	J A 18	J A 20
U Q	J A 29	J A 26	J A 28	J A 26	J A 22	J A 19	J A 22	22	27	J A 36	J A 41	J A 44	J A 41	J A 42	48	J A 44	J A 37	J A 39	J A 33	J A 48	J A 34	J A 32	J A 23	J A 28
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	30	34	34	G 35	37	35	G 32	28	21	18	E B 20	E B 13	E B 16	E B 13	E B 17

NOV. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	27	31	34	36	G 25	40	36	32	26	25	20	17	E B 13	E B 13	E B 13	E B 13
2	E B 13	E B 13	E B 13	16	E B 13	E B 13	18	22	24	34	37	37	35	44	42	68	A A 120	36	30	29	16	23	20	E B 13
3	24	E B 14	17	E B 13	E B 13	E B 13	19	19	G	G	33	35	36	34	34	G	27	20	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
4	E B 13	E B 13	17	22	E B 13	E B 13	E B 13	E B 14	G	G 20	G 25	G	G	37	33	31	28	21	E B 18	E B 13	E B 13	20	19	21
5	20	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	26	30	32	G	34	40	38	35	34	23	17	E B 13	20	19	E B 13	E B 13
6	E B 13	E B 13	17	E B 13	E B 13	E B 13	E B 13	E B 16	E B 14	33	34	37	39	37	35	36	31	26	21	28	A A 49	24	18	20
7	19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	27	30	36	36	38	56	48	35	32	29	20	E B 13	E B 13	E B 13	E B 13	E B 13
8	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	19	G 20	31	44	40	36	36	33	32	29	25	34	21	E B 13	E B 13	E B 13	E B 13
9	E B 13	E B 13	E B 13	E B 13	E B 13	18	E B 13	19	G	35	52	36	42	38	34	31	26	18	18	27	E B 13	E B 13	16	E B 13
10	E B 13	E B 13	20	22	16	E B 13	19	G 14	26	32	34	36	38	40	45	31	31	37	A A 50	E B 13	E B 13	30	E B 13	16
11	E B 13	A A 60	E B 13	20	E B 13	E B 13	E B 13	G	G	37	43	35	38	35	36	G	27	20	20	E B 14	E B 13	E B 13	E B 13	E B 13
12	26	21	23	20	21	E B 13	E B 13	E B 15	G	34	35	36	43	38	35	38	28	20	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
13	E B 13	E B 13	E B 13	E B 13	E B 13	J K 12	E B 14	G	G	30	38	34	G	34	35	33	22	20	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
14	E B 13	E B 13	16	E B 13	E B 13	E B 13	E B 13	21	26	32	32	33	34	33	G 18	G	25	E B 14	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
15	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	G	30	33	33	33	G 24	G 23	30	G	20	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 15	G	24	32	33	34	G 24	40	37	33	28	E B 14	E B 14	23	20	E B 13	E B 13	E B 13
17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	16	24	32	37	38	39	42	38	31	28	27	24	E B 13	E B 13	E B 13	E B 13	E B 13
18	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G 14	27	32	G 24	34	34	33	34	30	26	19	24	15	21	E B 13	E B 13	E B 13
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	15	25	30	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	19	19	19	19	19	19	19	19	19	18	18	18	18	18	18	18	18	18	18	18	18	18	18
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	16	24	32	34	36	36	38	35	32	28	20	19	E B 13	E B 13	E B 13	E B 13	E B 13
U Q	13	E B 13	17	16	E B 13	E B 13	14	19	26	33	37	36	38	40	38	35	31	26	24	21	16	19	13	13
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	30	33	34	G 33	34	34	G 30	26	20	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13

NOV. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 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	322	339	331	365	363	319	321	337	356	355	364	347	317	340	327	340	374	369	349	343	306	324	306	290
2	300	310	F 309	361	F 395	359	315	368	365	372	337	337	348	327	337	338	A	372	385	344	332	344	289	325
3	307	306	309	324	336	332	332	363	359	347	333	351	335	337	349	361	348	370	374	338	302	302	337	379
4	319	318	319	333	296	316	314	375	409	372	332	365	341	336	348	341	361	381	361	330	316	345	370	343
5	288	304	302	289	F 316	F	F 337	370	395	388	369	344	340	316	341	357	379	383	365	316	321	361	373	317
6	314	289	321	301	331	F 350	F 345	370	379	375	378	331	338	335	360	337	378	371	368	368	A	274	338	306
7	309	331	356	324	362	317	335	378	384	346	333	350	338	346	342	340	366	382	319	368	R 334	318	F 336	F 307
8	309	312	325	341	F 347	F 362	F 334	374	394	377	356	349	354	347	340	370	365	368	362	364	344	326	323	305
9	342	341	317	345	371	317	322	367	385	371	352	375	344	367	337	364	389	366	367	318	338	342	339	321
10	332	F 298	R 331	F 286	F 330	332	315	365	389	364	361	377	344	341	341	372	353	379	A	342	316	305	322	329
11	324	A	289	312	297	F 266	F 293	331	337	341	325	350	330	332	355	362	354	366	351	326	339	319	337	295
12	318	303	333	F 313	F 332	F 319	F 321	352	357	352	347	352	342	341	342	345	349	358	360	350	V 309	307	298	291
13	323	386	323	336	371	276	315	378	372	349	357	350	342	334	354	351	369	385	359	373	323	351	287	322
14	309	351	333	290	317	379	342	342	351	349	361	365	314	320	334	371	369	393	366	343	315	333	294	321
15	330	311	F 278	F 337	F 387	F 325	357	370	385	375	334	346	326	330	342	352	362	371	395	320	307	350	310	308
16	302	321	345	369	378	393	359	369	365	367	324	340	333	360	349	368	388	405	344	323	357	377	316	296
17	313	312	316	312	363	397	379	383	363	381	357	360	335	341	337	377	388	393	357	386	305	316	322	318
18	295	302	314	350	359	351	309	361	364	366	362	364	354	354	356	367	368	362	385	347	305	F 305	F 313	329
19	334	337	305	F 310	F 324	F 310	F 400	390	380	371	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	18	19	19	19	18	19	19	19	19	18	18	18	18	18	18	17	18	17	18	17	18	18	18
MED	314	312	319	324	347	328	332	369	372	367	354	350	339	338	342	359	368	372	362	343	316	325	322	318
U Q	324	337	331	345	371	359	345	375	385	375	361	364	344	346	349	368	378	383	371	364	336	345	337	325
L Q	307	304	309	310	324	317	315	361	359	349	333	346	333	332	337	341	358	368	354	326	306	307	306	305

NOV. 2016 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	403	H 411	A 358	L	L	L							
2								A	L	L	L 373	L 377	L 394	A	A 381	A	A	A						
3									L	L	L 386	405	L 406	L 371	L 393	U L 381	L							
4										L		L	U L 401	L	L	L	L							
5								U L 433	L	L	L	L	L	U L 368	L 366	L								
6									L	L	L	U L 398	U L 393	376	L 361	L								
7										L	U L 396	U L 380	L	A	A	L	L							
8										U L 419	A	L	L 385	401	L 365	386	L							
9											A	396	A	L 366	L 396	L 399	L	438						
10									L	L 400	L 401	U L 382	L 382	L	A	L			A					
11										L	L	U L 389	L 371	U L 369	U L 397	L								
12									L	L	L	L 368	L	L 383	L	A	L							
13										L	L	L 386	U L 376	L 375	L	L	L							
14									L	L	L 391	L 385	U L 378	U L 370	374	L 373	L							
15										L	U L 386	U L 405	U L 389	U L 358	L 381	L 367	L							
16									L	L	L	L 367	L 369	L 371	L 375	L	L							
17										L	L	388	388	L		L	L							
18										L	L 385	L	388	L	L	U L 393	L 431							
19								455	L 437	L	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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	1	2	7	14	14	12	10	6	1	1						
MED								444	L 437	L 410	L 386	L 387	L 388	L 370	L 378	L 384	L 431	438						
U Q											L 396	398	L 394	376	L 393	L 393								
L Q											L 385	L 380	L 378	L 367	L 366	L 373								

NOV. 2016 M(3000)F1 (0.01)

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NOV. 2016 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									242	236	230	236	232	258	240	236	220							
2								222	232	230	266	250	244	260	246	242	A	224						
3									236	244	254	230	240	268	242	250	234							
4										228		224	248	246	238	252	228							
5								228	218	220	226	262 L	262 L	296	252	240								
6									216	236	228	258	270	278	246	244								
7										226	270	250	258	250	254	244	216							
8										228	258	262	248	246	260	226	220							
9											268	226	264	232	238	230	210	212						
10									222	234	240	234	258	258	248	230			A					
11										248	276	244	258	260	232	230								
12									234	240	248	250	242	240	248	226	232							
13										254	246	238	262	254	254	230	230							
14									246	236	230	244	288	270	270	232	218							
15										232	258	266	260	264	244	232	218							
16									212	244	280 L	270	274	238	244	232	216							
17										238	248	252	268	280		228	210							
18										240	246	244	258	250	252	250	232							
19								192	212	238	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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	10	18	17	18	18	18	17	18	13	2						
MED								222	227	236	248	247	258	258	246	232	220	218						
U Q								228	236	240	267	258	264	268	253	244	231							
L Q								192	216	230	235	236	248	246	241	230	216							

NOV. 2016 h'F2 (KM)

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NOV. 2016 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	236	236	226	210	198	242	234	232	220	216	206	202	H 196	A	234	214	198	216	198	206	224	214	240	276
2	270	248	Q 270	218	194	226	E A 322	A	206	224	226	224	184	A	A	A	A	A	202	222	212	232	A 258	242
3	A 280	278	274	242	234	224	254	218	218	208	204	194	192	196	216	198	218	218	200	180	250	276	234	206
4	236	230	258	A 256	280	266	268	222	204	196	200	200	190	226	210	208	218	206	208	216	238	246	214	E A 244
5	E A 342	296	306	316	282	Q 218	240	202	218	192	198	192	190	240	246	236	218	202	196	208	232	200	202	258
6	270	268	284	266	244	216	Q 218	206	194	220	210	202	212	212	232	232	220	210	204	210	A	E A 356	A 240	A 278
7	A 268	250	220	240	208	254	240	206	202	190	222	210	214	A	A	A	216	206	184	194	206	238	Q 222	Q 244
8	272	272	246	218	220	Q 208	Q 216	208	204	192	A	250	198	190	200	218	214	212	212	204	184	218	244	250
9	242	Q 228	256	226	212	A 314	256	206	212	212	A	204	A	A	200	208	210	188	190	A 238	202	216	234	252
10	238	Q 268	E A 276	E A 350	240	234	E A 272	206	200	206	204	206	216	A 236	A	226	220	208	A	212	218	E A 262	234	246
11	240	A	300	E A 294	274	332	292	242	222	232	A 272	202	220	200	214	214	222	224	210	208	202	228	210	288
12	A 286	A 282	A 256	A 278	276	Q 230	Q 208	212	216	226	222	216	A	214	222	A	204	214	196	196	204	240	280	300
13	232	192	260	248	204	404	296	208	224	212	230	204	200	192	236	226	220	202	202	200	256	206	302	264
14	292	226	264	304	256	220	314	228	226	212	212	208	198	184	190	224	204	202	200	200	226	214	282	252
15	230	238	Q 314	Q 244	208	Q 238	242	216	208	H 192	204	198	190	174	H 170	212	214	204	188	190	256	220	226	282
16	296	272	260	210	190	196	260	216	190	218	208	H 180	196	A	A 226	H 188	210	196	184	E A 258	216	204	238	288
17	292	266	276	266	222	198	202	198	208	H 214	218	222	232	A	258	H 186	206	202	204	194	220	234	240	244
18	286	270	244	232	218	214	264	220	218	216	208	H 188	190	H 176	216	192	186	210	198	194	E A 290	Q 260	Q 236	242
19	222	222	252	Q 264	Q 248	Q 268	194	186	194	202	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	18	19	19	19	19	19	18	19	19	16	18	16	12	15	15	17	17	17	18	17	18	18	18
MED	269	258	260	245	222	230	247	210	208	212	209	203	197	198	216	214	214	206	200	204	219	224	237	252
U Q	286	272	276	A 278	256	266	272	220	218	218	222	210	213	220	234	226	219	213	204	212	244	246	244	278
L Q	236	230	252	226	208	216	Q 218	206	202	196	204	198	190	187	200	198	205	202	193	194	205	214	226	244

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NOV. 2016 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								144	108	108	110	108	110	112	114	A	A	A	A					
2								A	110	106	110	110	110	108	A	A	A	A	A					
3								A	108	108	A	A	110	110	110	110	A	A	B					
4								138	110	110	120	108	110	112	A	A	A	A	B					
5								A	110	106	106	106	106	108	A	A	A	A 132	A					
6								B 112		A	A	A	A	A	A	A	A	A	A					
7								A	A	A	110	110	108	110	110	A	A	A	A					
8								A	122	118	110	A	108	A	A	A	A	A	A					
9								132	112	112	108	A	A	A	A	A	A	A	A					
10								122	108	108	110	A	110	A	110	A	110	A	A					
11								B	112	110	106	A	A	A	A	108	116	A	A					
12								A	108	108	108	108	108	108	A	A	A	A	B					
13						B		140	110	108	A	A	108	A	A	A	A	A	B					
14								A	A	A	106	A	A	A	106	106	108	A	B					
15								A 110		A	A	A	A	110	110	A	110	124	B					
16								150	110	122	112	112	114	110	A	110	110	116	B					
17								A	108	112	A	108	110	108	114	118	116	A	A					
18								146	114	110	110	A	A	A	A	112	A	A	A					
19								A	110	110	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								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
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	17	15	13	8	12	10	7	6	6	3						
MED								140	110	110	110	108	110	110	110	110	110	124						
U Q								146	112	112	110	110	110	110	114	112	116	A 132						
L Q								132	108	108	107	108	108	108	110	108	110	116						

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NOV. 2016 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	108	108	B	G	198	142	138	144	102	178	172	96	96	96	96	96	130	92	B	B
2	B	116	112	96	100	98	98	98	150	176	150	166	112	108	108	100	100	98	98	102	102	104	108	108
3	100	100	98	98	98	96	108	152	G	G	110	112	112	118	154	G	110	110	B	100	100	100	B	94
4	B	104	104	104	104	B	B	102	G	102	102	G	G	182	112	112	104	168	B	B	B	96	96	94
5	94	94	94	94	102	94	B	98	184	120	116	G	116	158	106	144	136	140	148	B	112	112	104	104
6	104	104	102	88	90	B	B	B	B	172	168	176	180	108	106	104	100	100	98	98	96	96	96	96
7	94	96	B	B	B	B	96	148	142	106	170	120	108	106	106	106	106	102	116	126	104	108	B	B
8	B	B	B	B	108	106	108	100	104	130	118	110	110	104	100	104	100	100	98	98	96	94	B	104
9	104	100	100	100	100	100	100	124	G	112	108	108	112	108	110	106	110	106	100	98	B	100	102	100
10	94	112	96	98	102	102	98	94	114	110	106	106	110	110	110	110	132	116	104	114	114	106	106	100
11	100	94	106	102	100	B	B	G	G	110	110	110	110	108	170	G	128	116	100	100	100	98	B	98
12	98	94	92	92	92	96	B	102	G	110	112	132	112	112	108	108	106	168	104	104	112	102	B	106
13	102	B	B	B	B	B	B	G	G	120	108	108	G	108	108	108	110	106	100	B	102	102	100	100
14	98	98	98	98	98	98	100	132	96	110	112	110	106	106	94	G	152	94	92	92	B	B	100	100
15	108	102	98	106	100	100	B	134	G	108	108	110	110	102	102	96	G	166	114	B	B	B	B	B
16	B	B	100	B	B	B	B	G	158	160	164	124	100	150	98	140	136	96	94	138	108	112	108	96
17	106	110	B	B	B	B	98	138	126	184	176	152	176	152	144	158	142	118	110	128	B	B	108	108
18	B	B	108	B	102	B	B	98	176	148	108	108	106	104	186	148	128	132	102	102	114	100	98	100
19	B	B	B	B	B	B	104	96	150	182	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	13	13	11	14	10	9	14	11	18	18	16	16	18	18	15	17	18	16	14	13	15	11	15
MED	100	100	100	98	100	99	100	102	150	120	112	111	110	108	108	108	110	108	100	101	104	100	102	100
U Q	104	107	105	102	102	102	106	134	176	160	150	138	112	150	144	140	134	132	107	114	113	106	108	104
L Q	96	95	97	94	98	96	98	98	114	110	108	109	107	106	106	104	102	100	98	98	100	96	98	96

NOV. 2016 h'Es (KM)

IONOSPHERIC DATA STATION Okinawa

NOV. 2016 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					F1	F1			HH11	HL11	HL11	H1	L1	HL11	HL11	L1	L2	LH21	L2	FF21	FF11	F1		
2		F2	F1	F2	F1	F3	F4	L3	H1	HL11	H1	HC11	C1	C1	C2	L4	L6	LQ51	LQ61	FQ31	FQ21	FQ21	FF22	F1
3	F3	F1	F2	F2	F2	F5	F4	H1			CL11	C1	C1	C1	H1		C1	C1		F3	F2	F1		F1
4		F1	FQ31	FQ41	F2			L1		L1	L1			H1	C1	CL11	L1	HC11				FQ21	FQ21	FQ31
5	FQ31	FQ21	FQ11	F1	F1	F1		L1	H1	C1	C1		C1	HCL11	LH11	HC11	HL21	HL11	H1		F4	FQ21	F3	F2
6	FQ11	F1	F1	F1	F1					HC11	HL11	HL11	HC11	C1	C1	LCH21	L2	L2	LQ21	FQ31	FQ41	F2	F1	F2
7	F2	F1					F1	H1	HCL11	C1	H1	C1	C2	C3	C2	CQ11	C2	LQ31	CL12	FF21	F1	FF11		
8					F1	F1	F1	LC11	L1	HL11	CL11	CL21	C1	L1	L1	LC21	LQ31	LQ21	LQ61	FQ31	FQ21	F2		F1
9	F1	FQ11	FQ11	F2	F3	F5	F2	CL11		CL22	C3	C1	C1	C1	C1	C1	C1	C1	L1	F8		F1	F1	F2
10	F1	FF11	F2	F3	F1	F1	F3	L1	CL11	C2	C1	CQ21	C2	C2	CL21	CQ11	H1	C5	L5	FF23	F1	FQ31	FQ21	F1
11	F3	F4	FQ11	FQ31	F2					C2	C3	CQ11	CQ11	CQ11	HC11		C1	C1	L3	F3	F1	F1		FQ41
12	FQ21	FQ21	FQ31	FQ21	FQ21	F1		L1		C2	C1	H1	C2	C1	C2	C2	C2	HL11	L3	F1	FF21	F1		FQ21
13	F3					K1				C1	C1	C1		C1	C1	C2	C1	C1	L1		F2	F3	FQ21	F1
14	F3	FQ21	FQ31	FQ31	F2	F2	F3	H2	LHC12	C1	C1	C1	C1	CL11	L1		H1	L1	L1	F1			F2	F1
15	F1	F2	F2	F2	F1	F1		H1		C2	C2	C1	C1	L1	L1	L2		HH11	C1					
16			F1						H1	HL11	HL11	CL11	L1	H1	LH11	HL12	HL11	L1	L1	F3	F4	F1	FF11	F1
17	F2	F1					F1	H1	C1	HL11	HL11	H1	H1	H1	HL11	HL11	HL11	C3	C2	FF12			F1	F1
18			F1		F1			L1	HH11	H1	C1	C1	C1	L1	HHL11	HL11	CL12	HL12	L9	FQ21	FF25	F2	F2	F1
19							F1	L1	H1	HC11														
20																								
21																								
22																								
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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																								

NOV. 2016 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

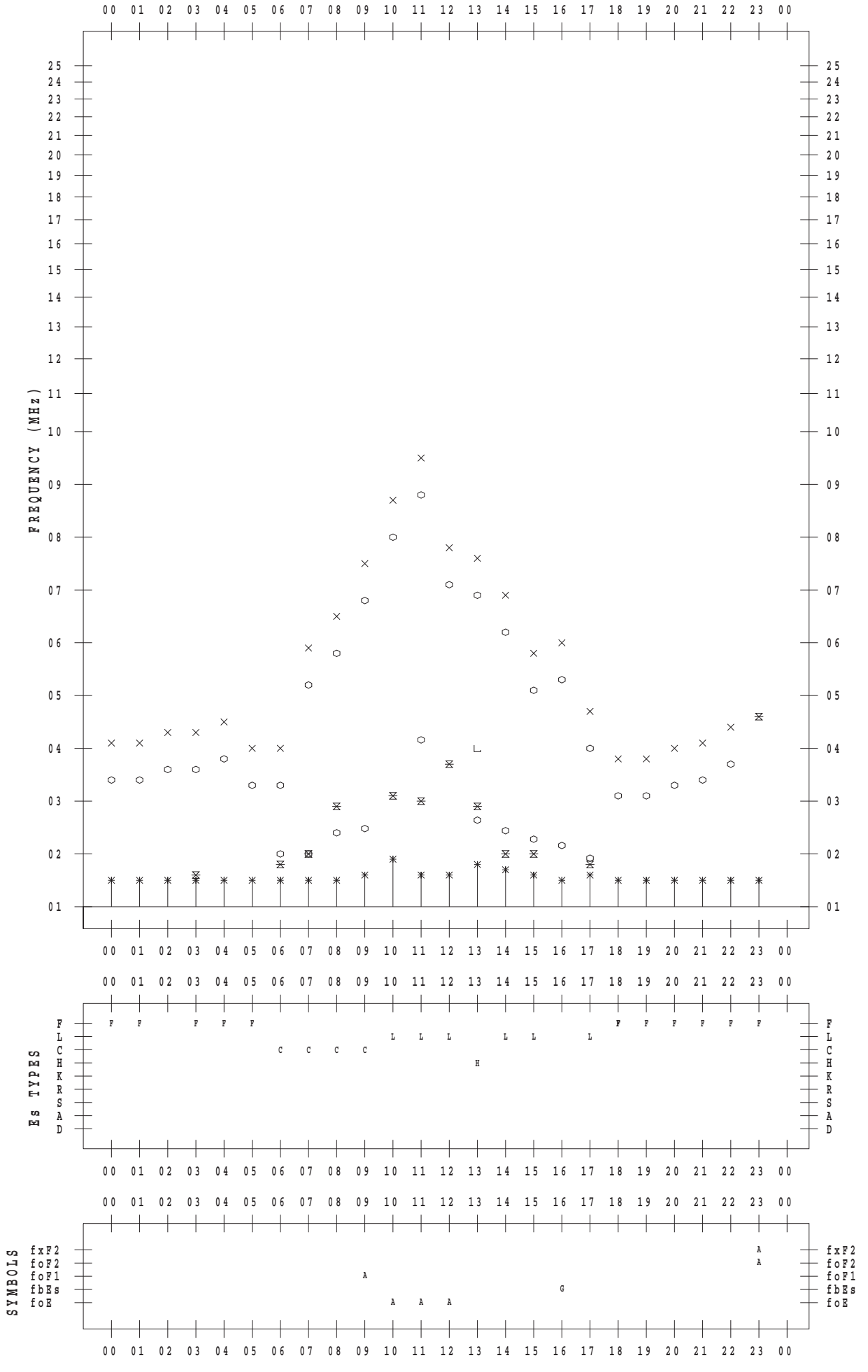
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 1

135 °E MEAN TIME



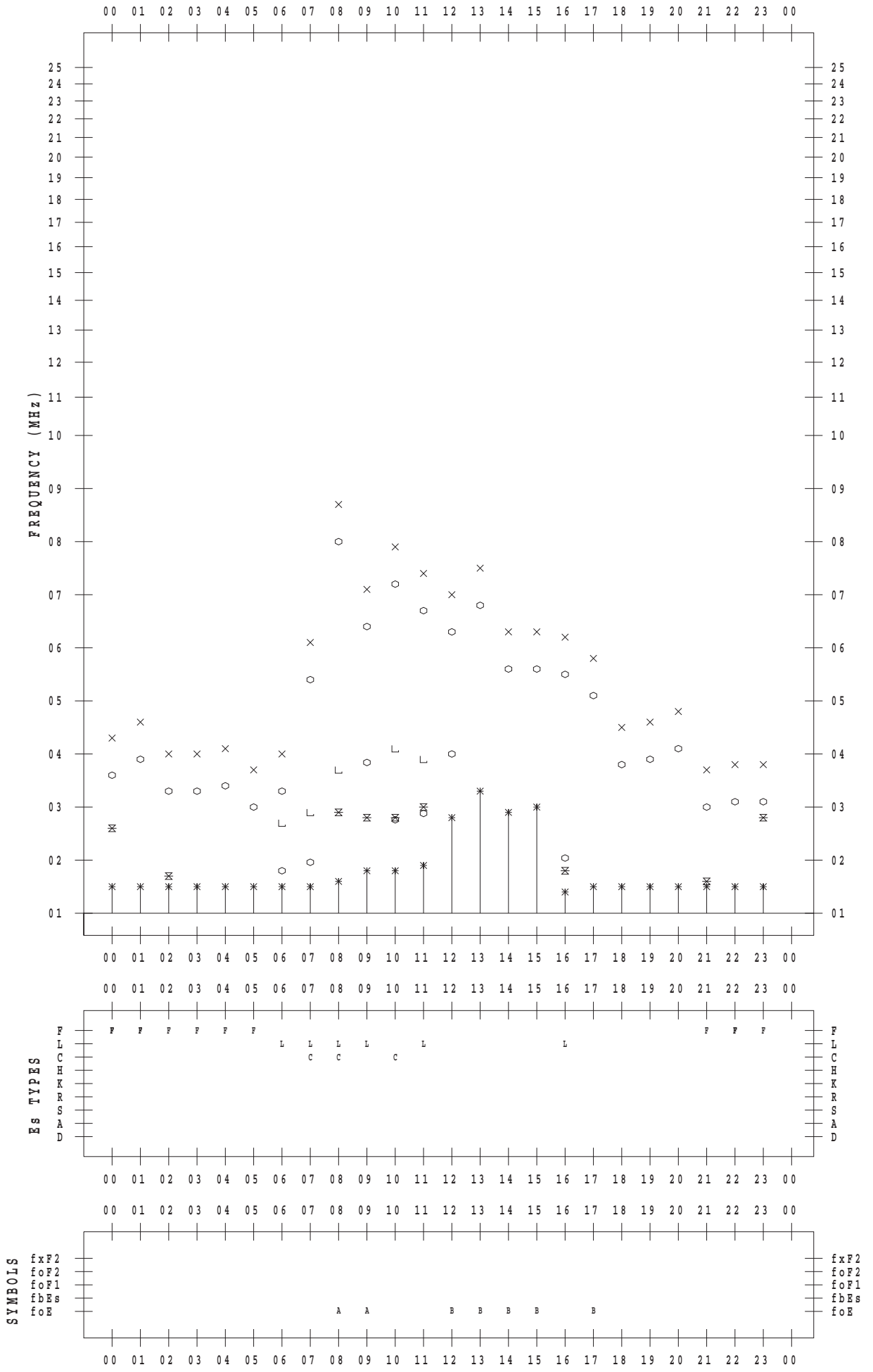
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 2

135 °E MEAN TIME



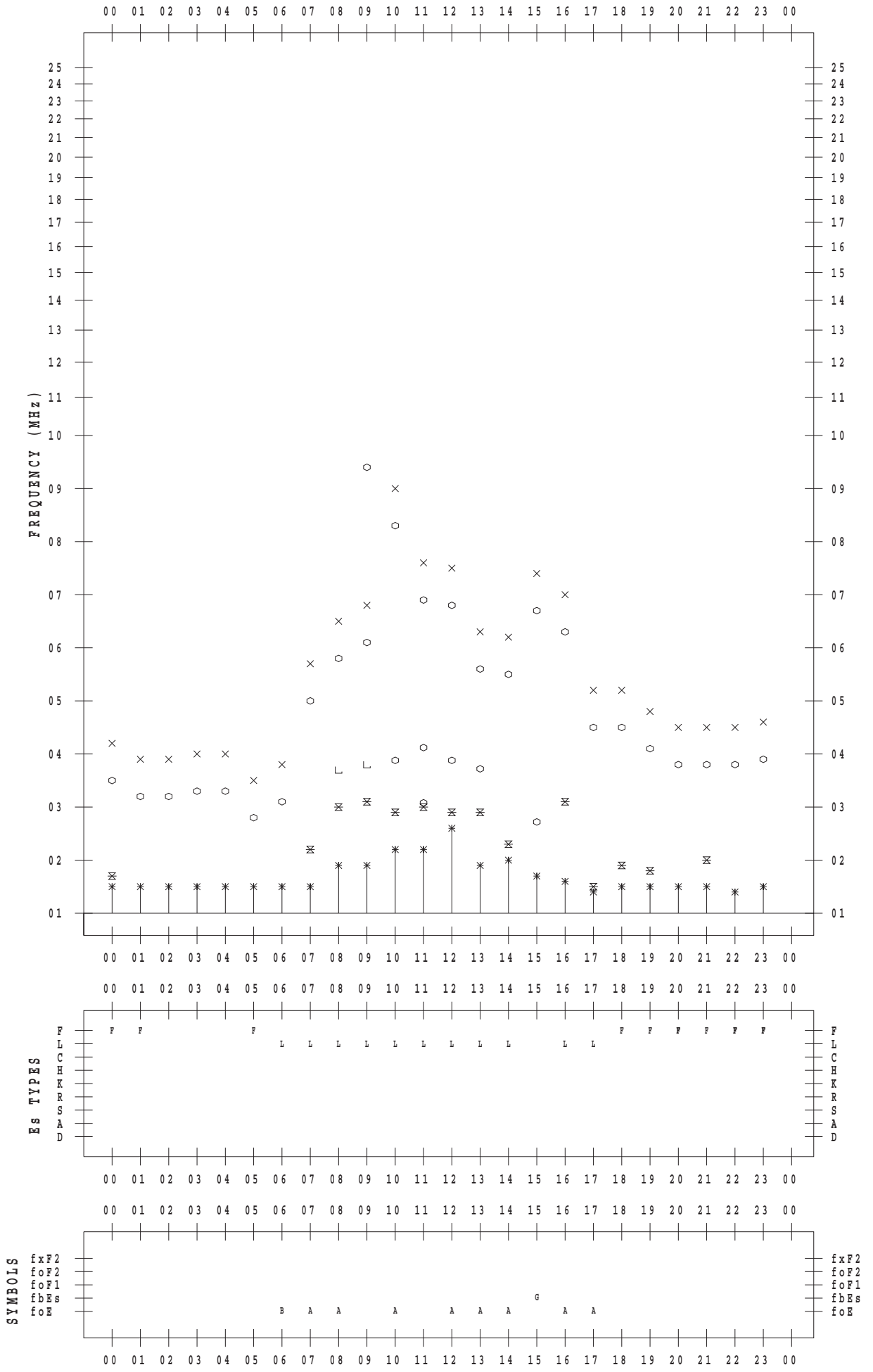
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 3

135 °E MEAN TIME



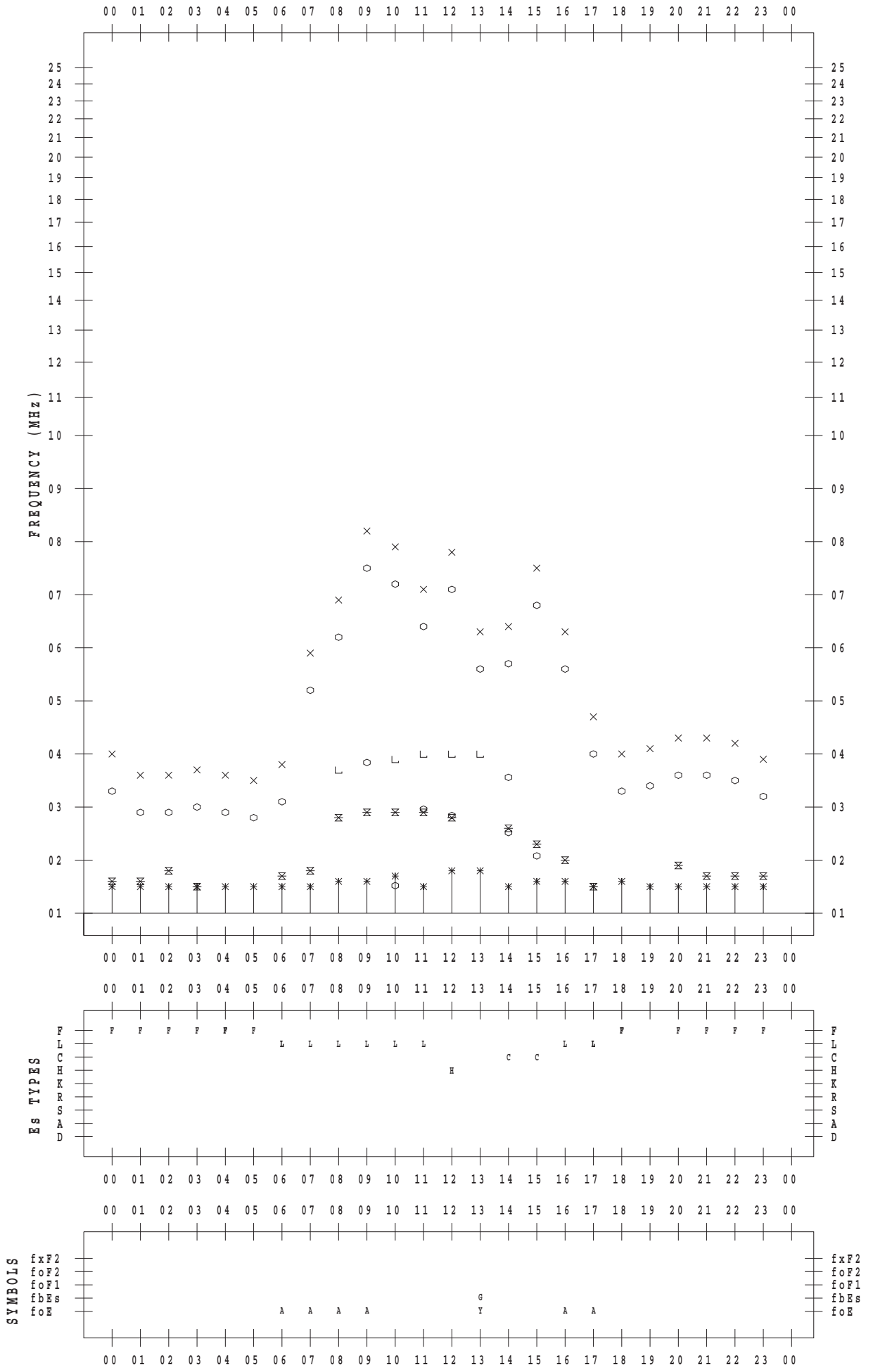
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 4

135 °E MEAN TIME



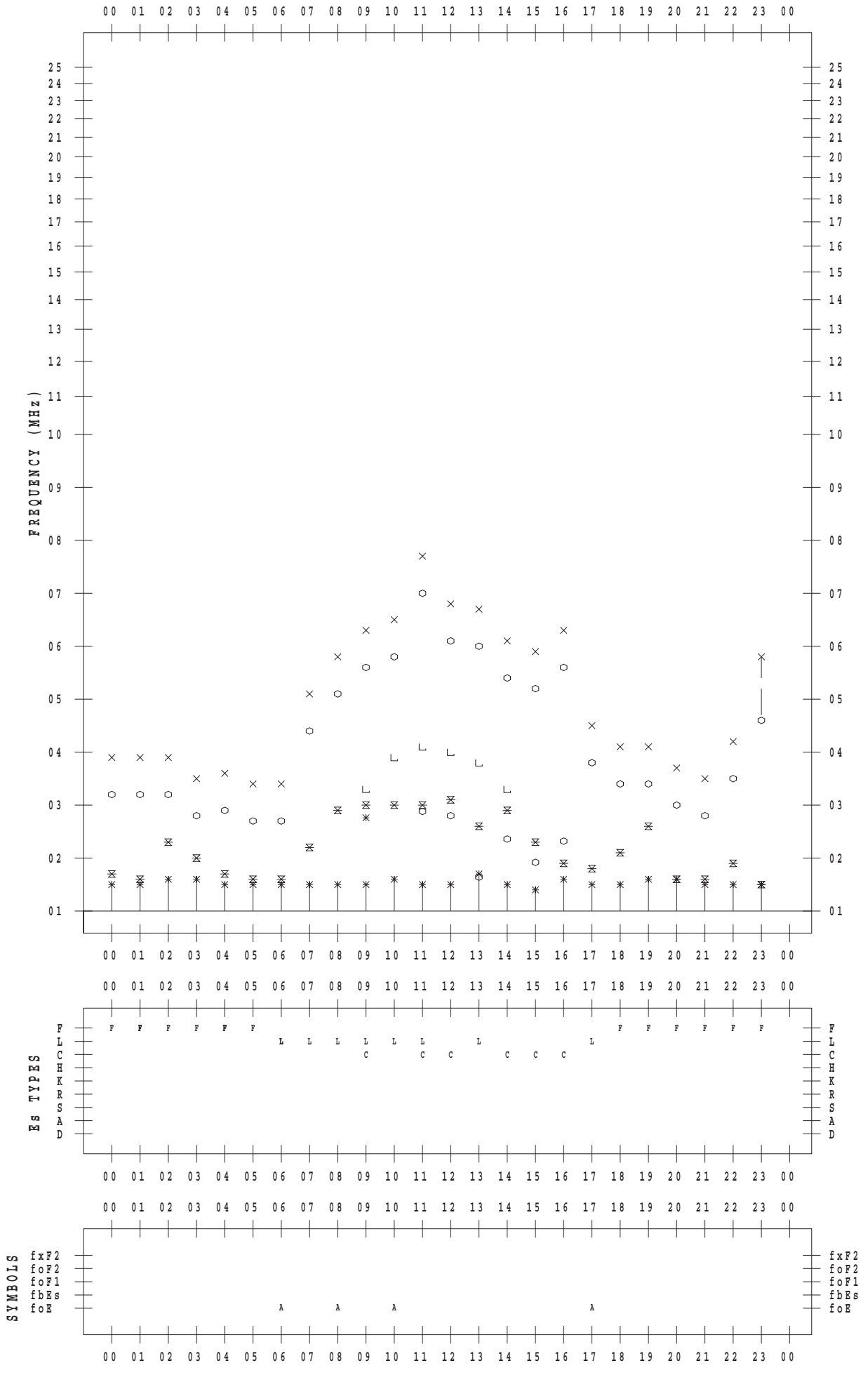
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 5

135 °E MEAN TIME



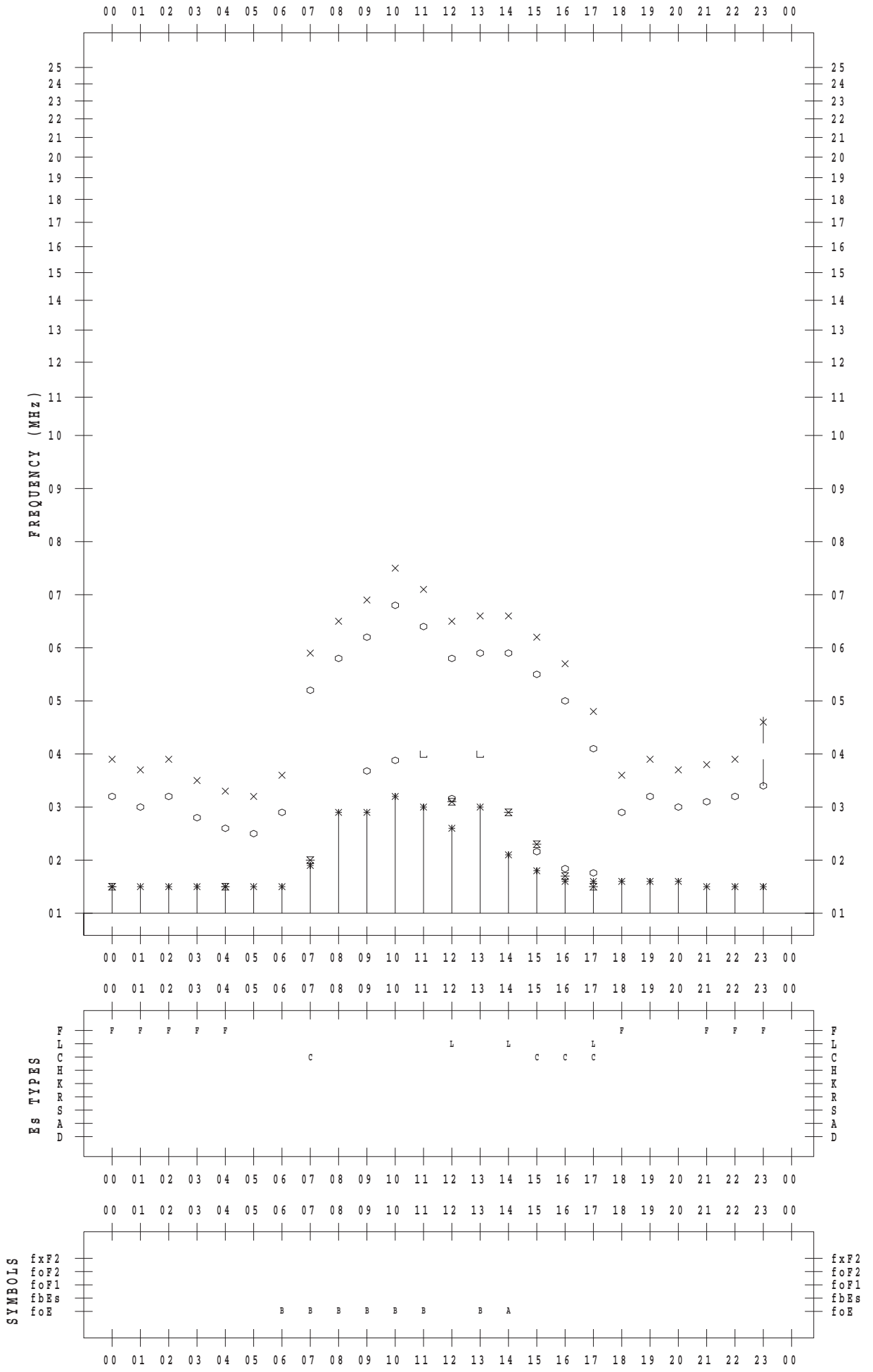
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 6

135 °E MEAN TIME



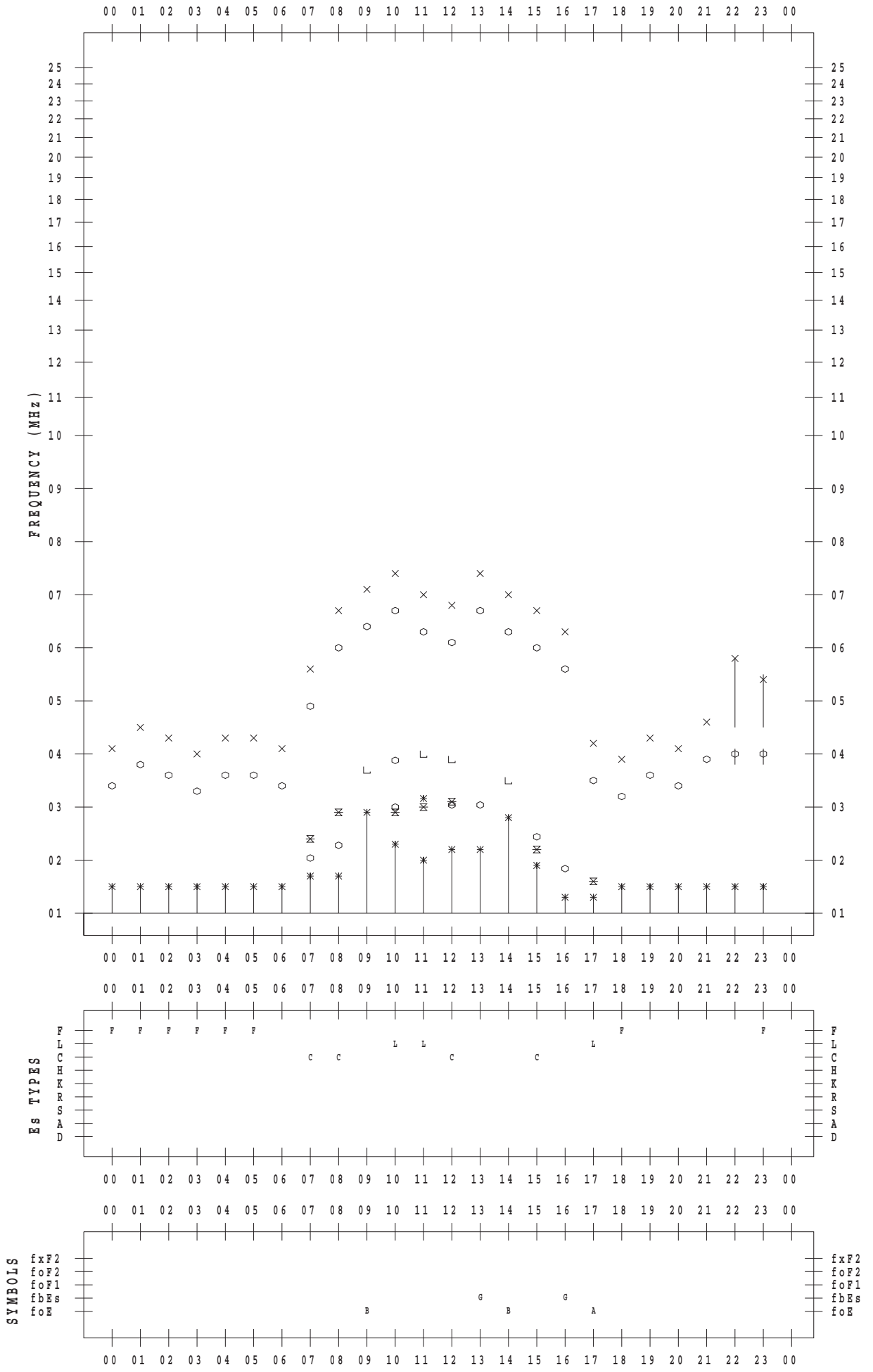
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 7

135 °E MEAN TIME



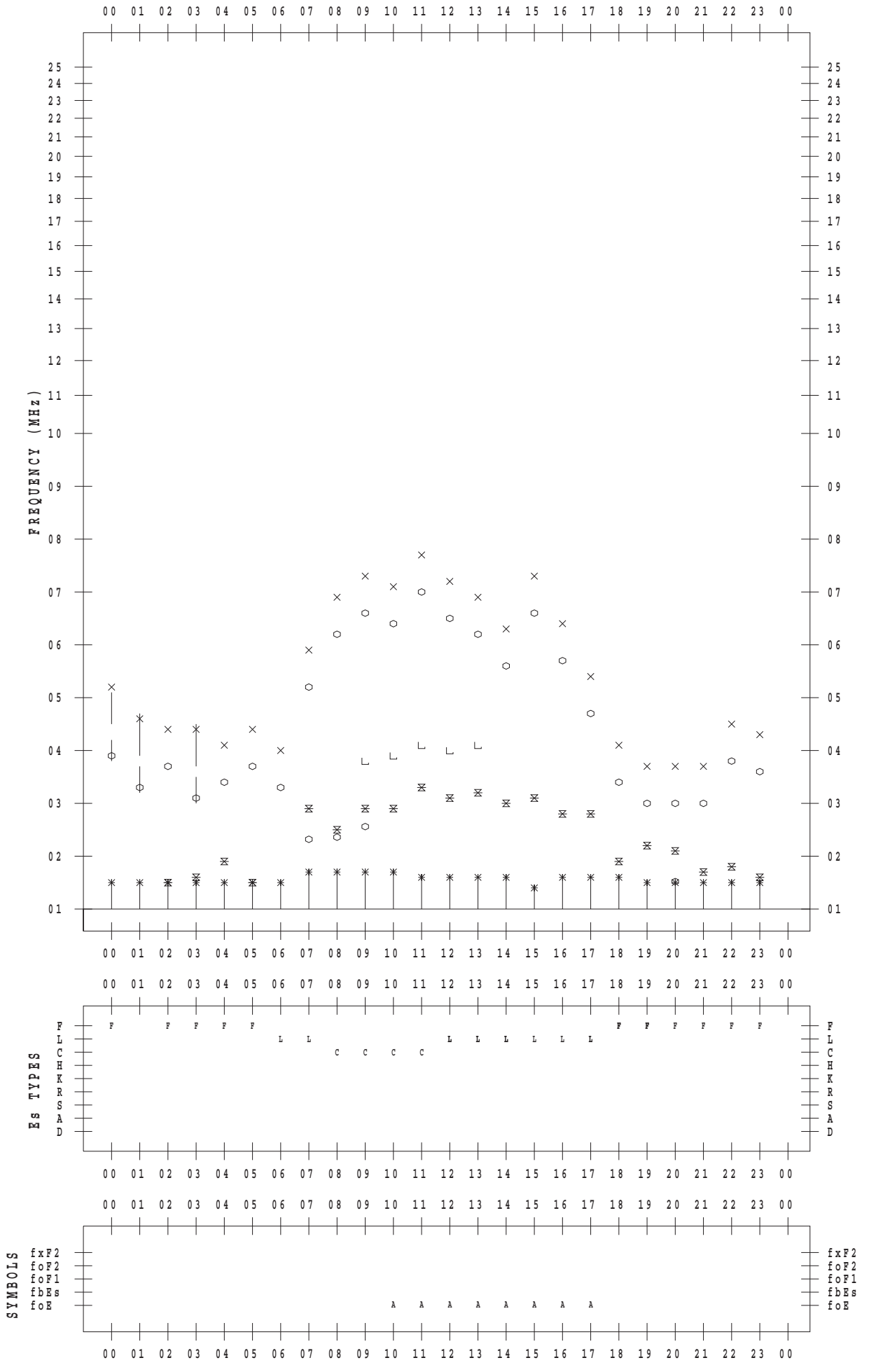
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 8

135 °E MEAN TIME



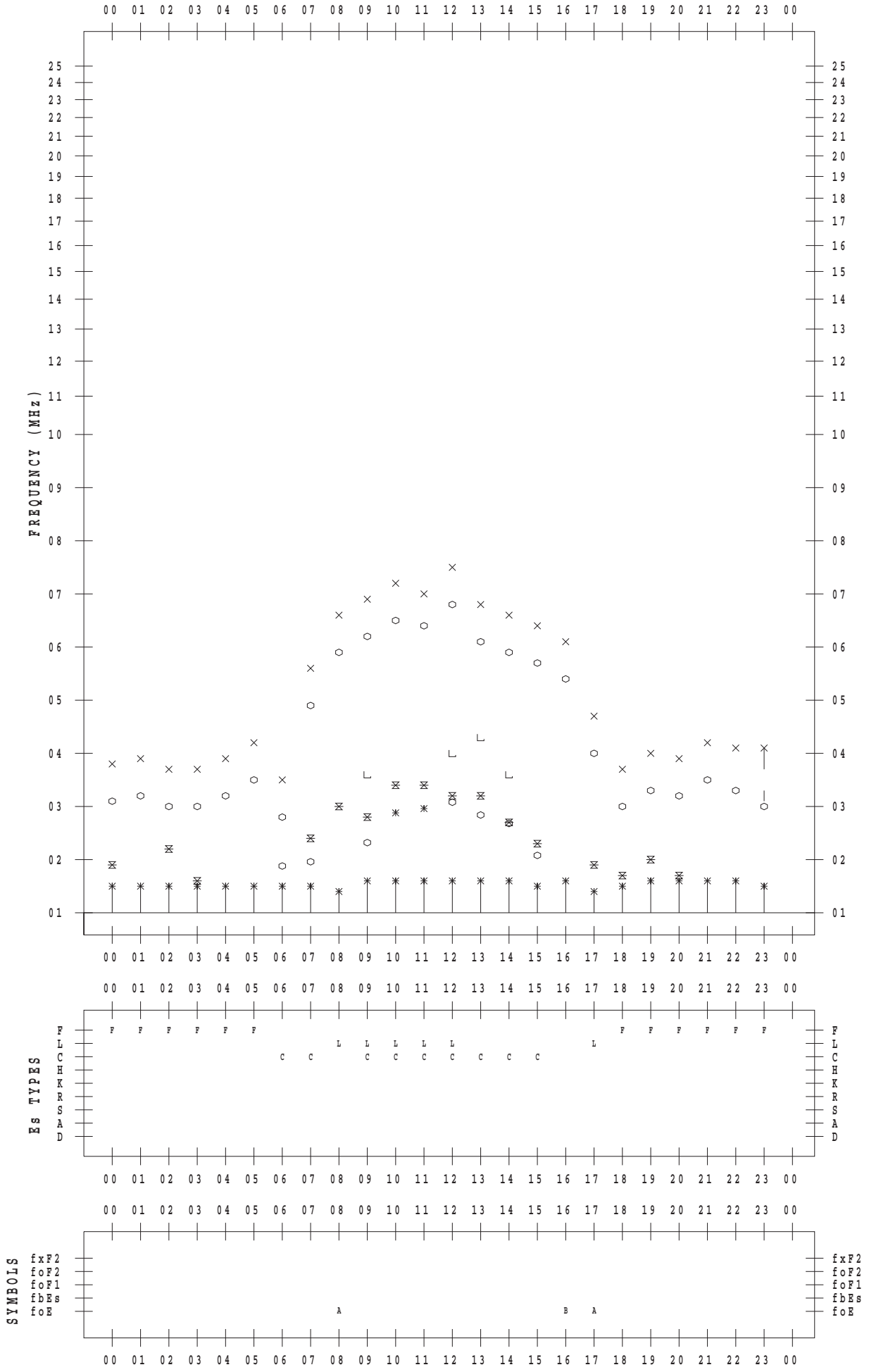
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/ 9

135 °E MEAN TIME



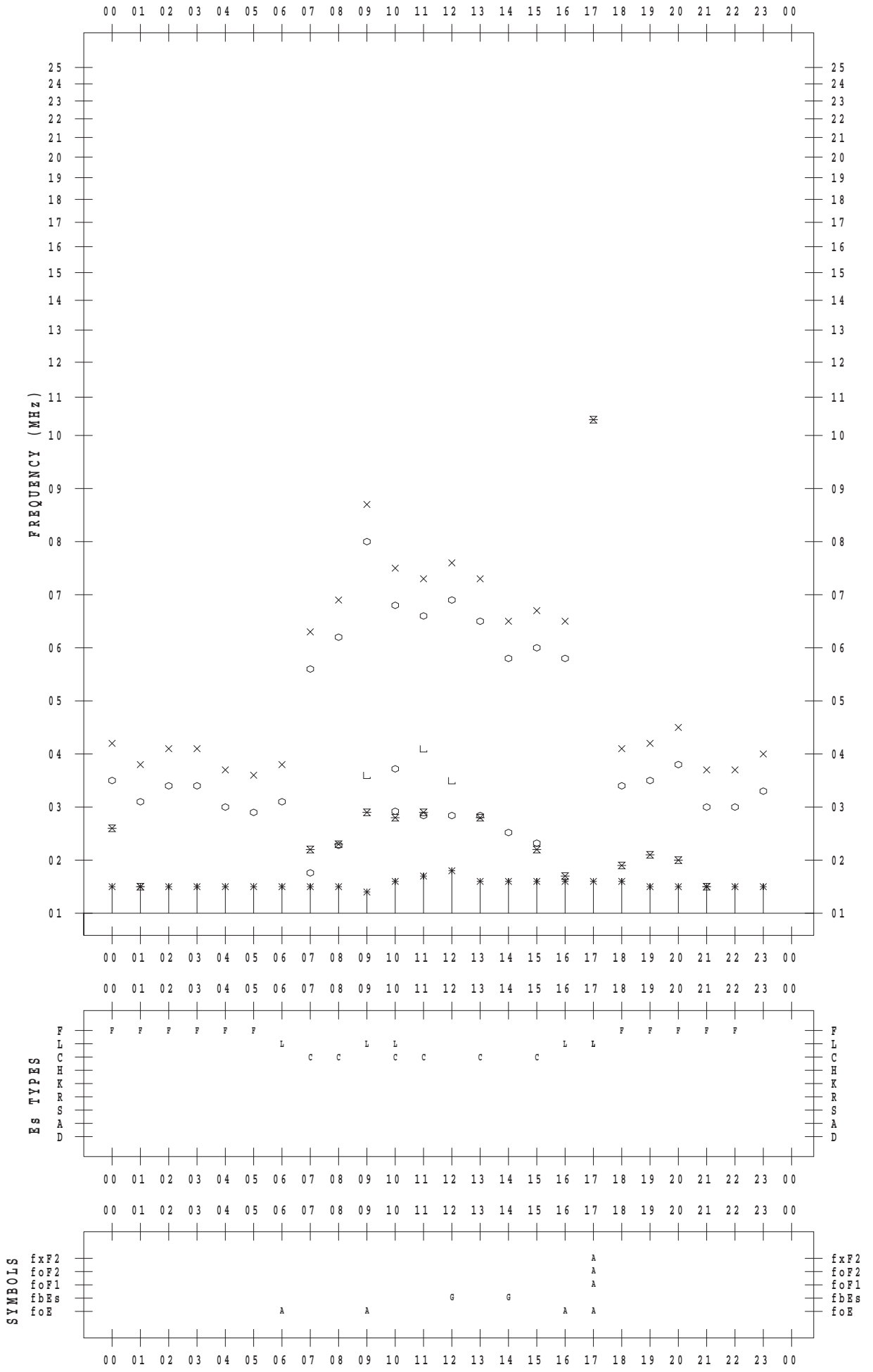
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/10

135 °E MEAN TIME



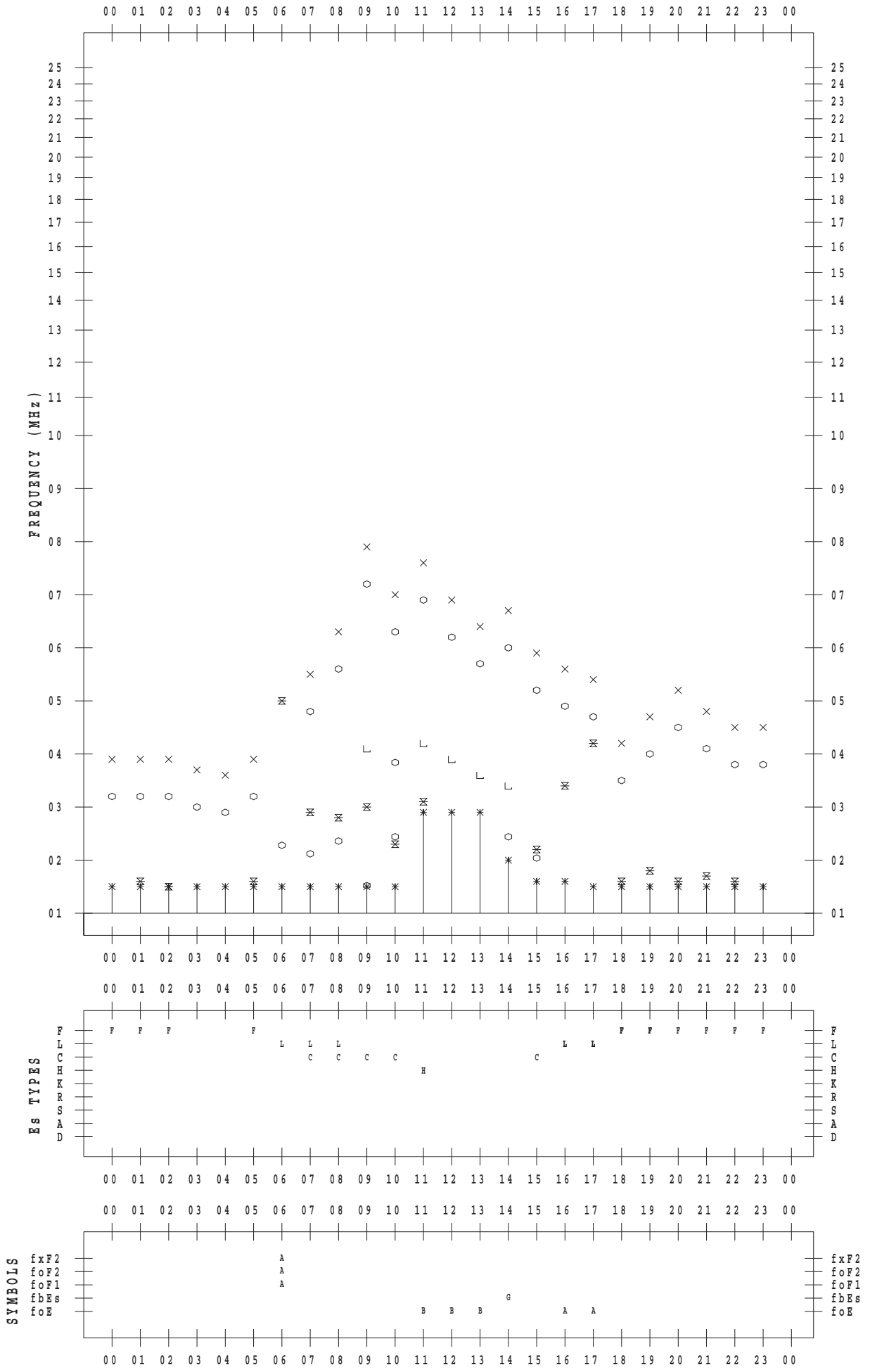
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/11

135 °E MEAN TIME



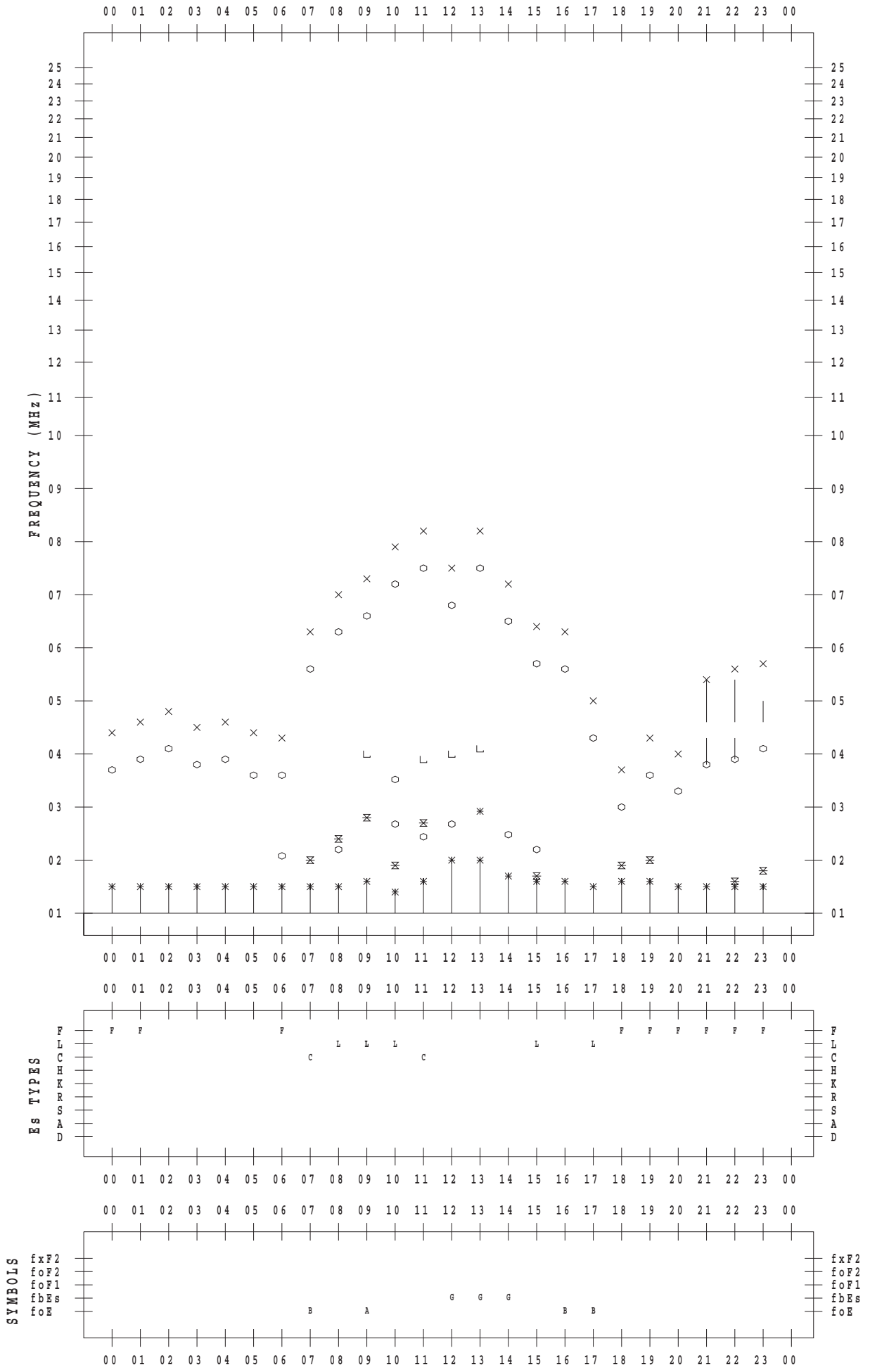
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/12

135 °E MEAN TIME



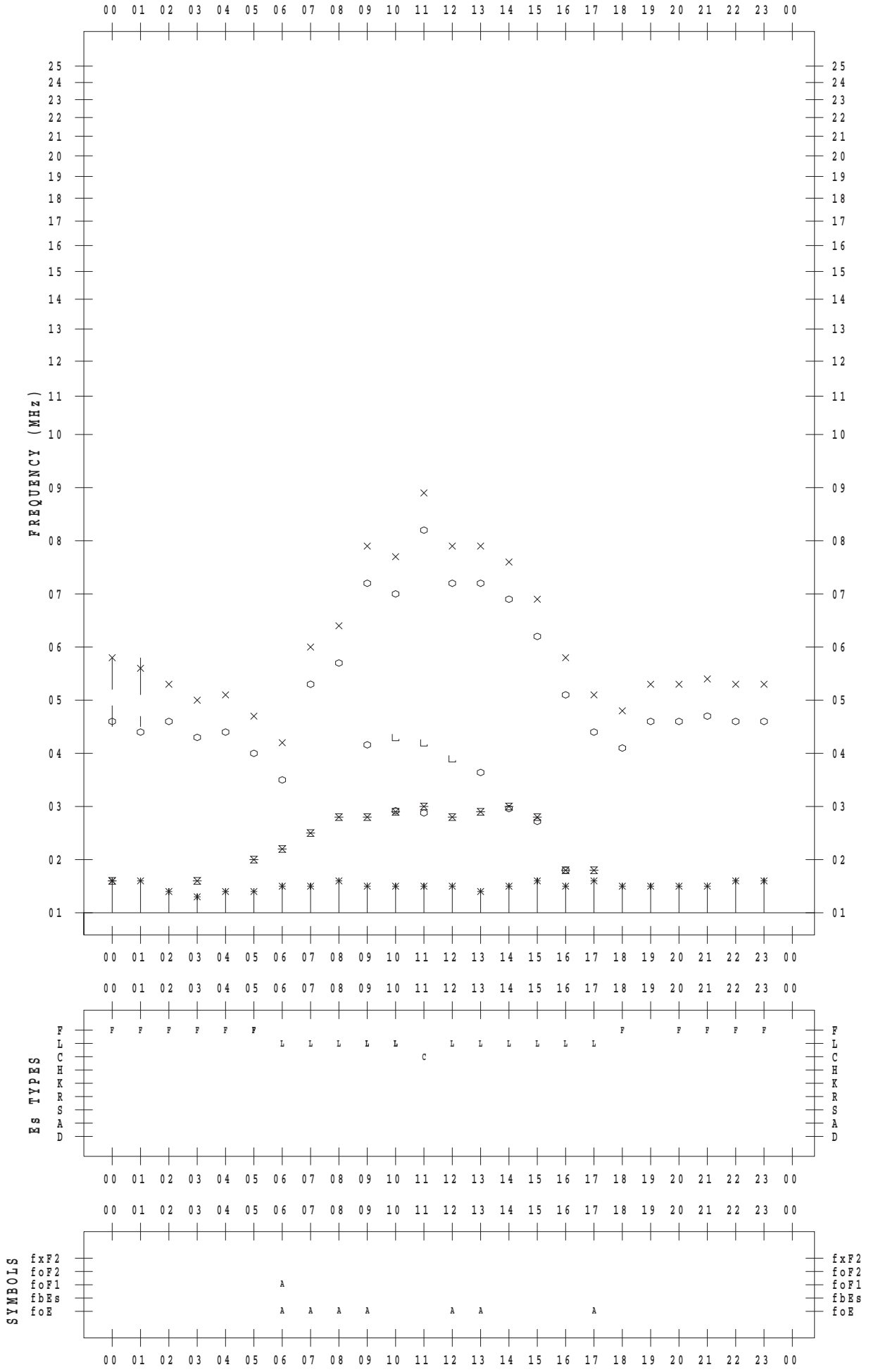
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/13

135 °E MEAN TIME



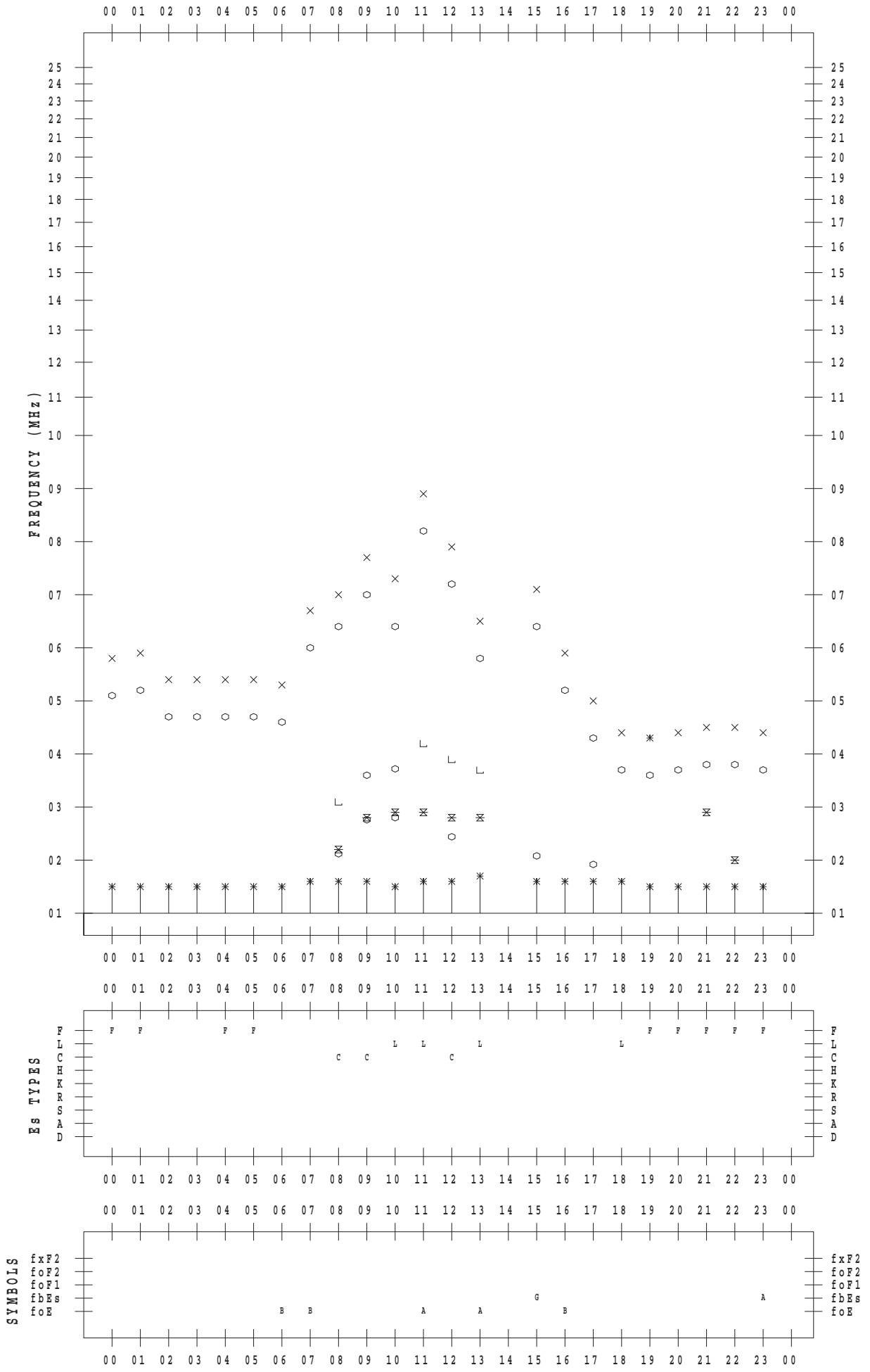
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/14

135 °E MEAN TIME



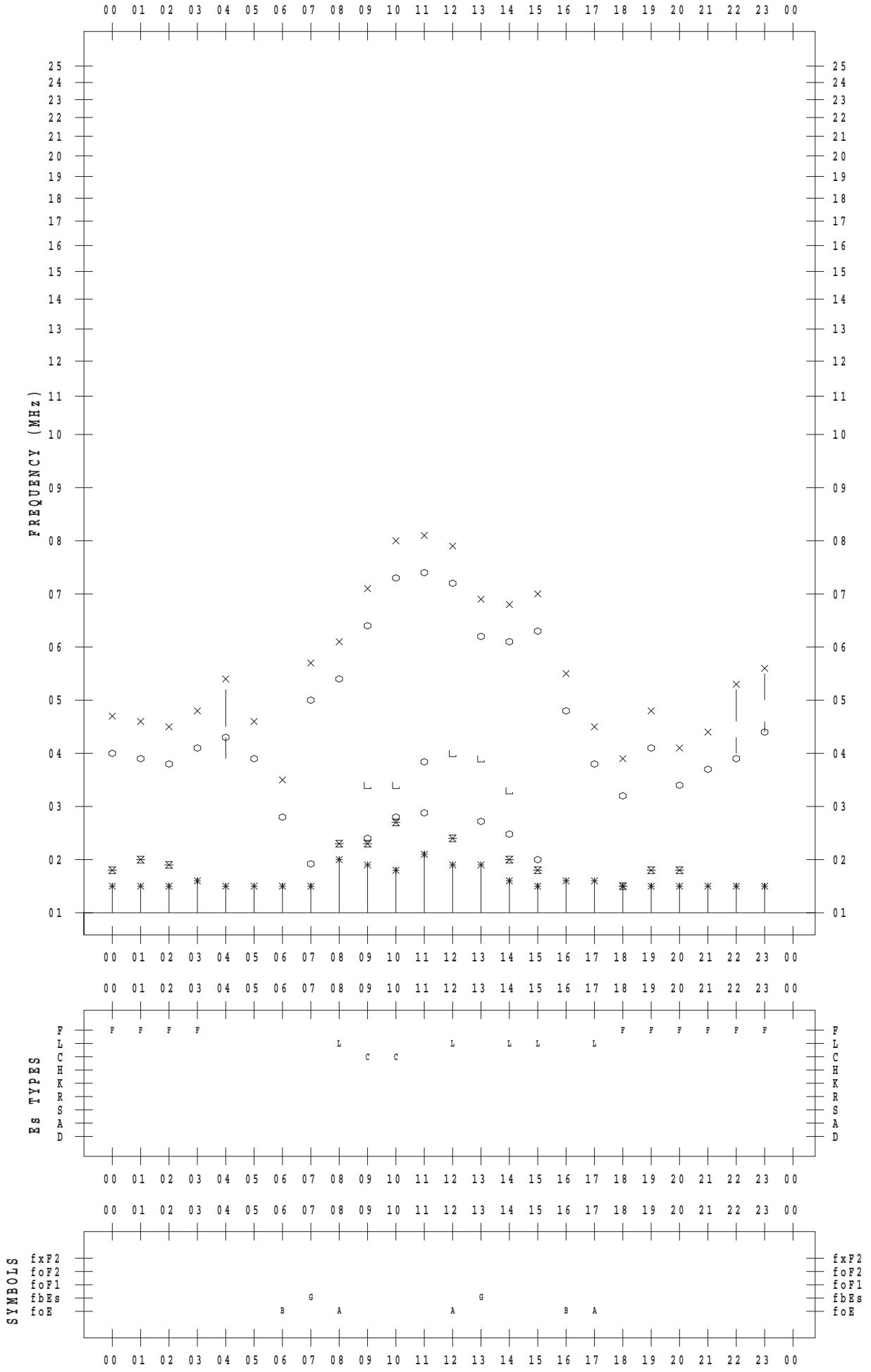
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/15

135 °E MEAN TIME



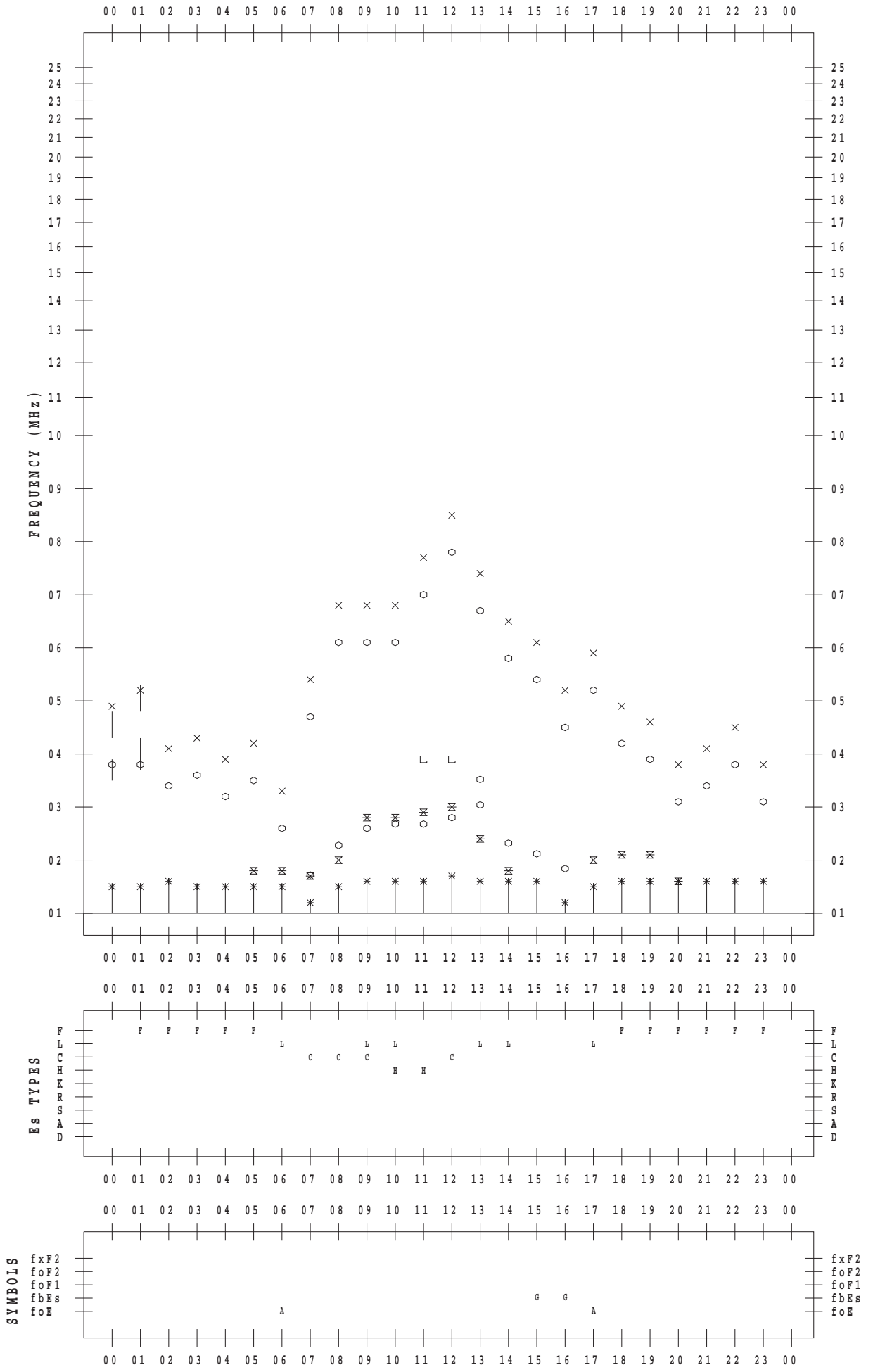
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/16

135 °E MEAN TIME



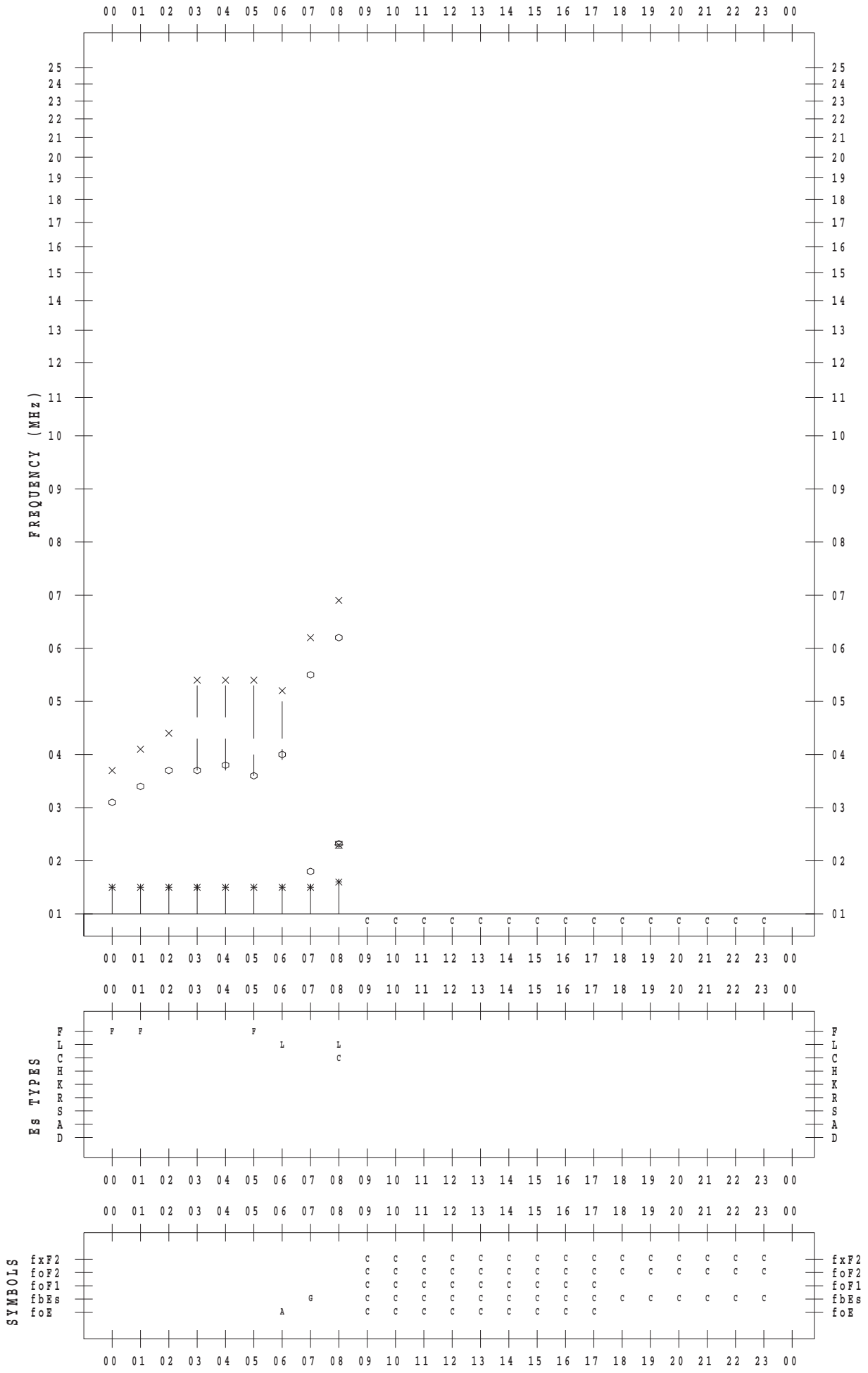
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/17

135 °E MEAN TIME



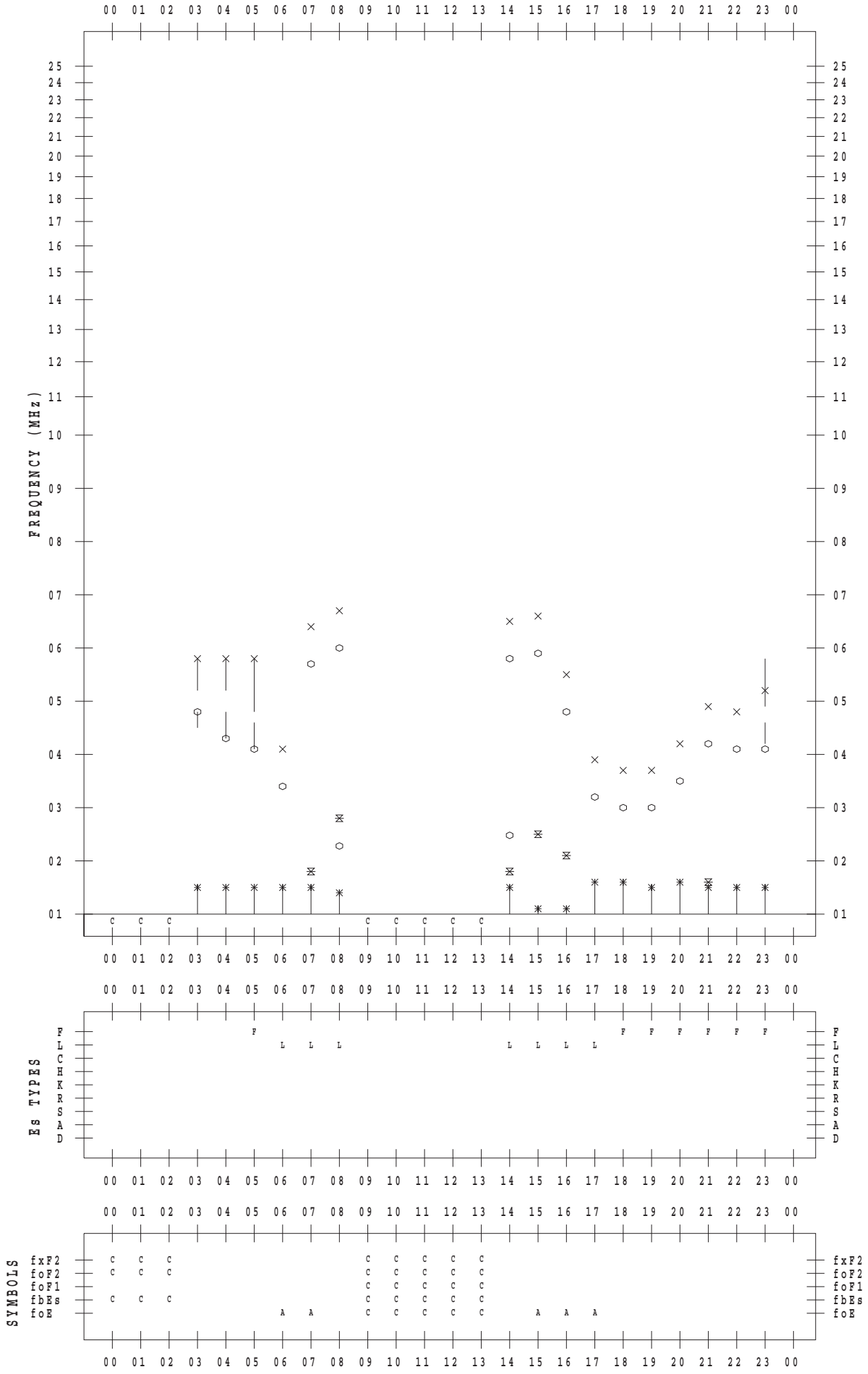
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/18

135 °E MEAN TIME



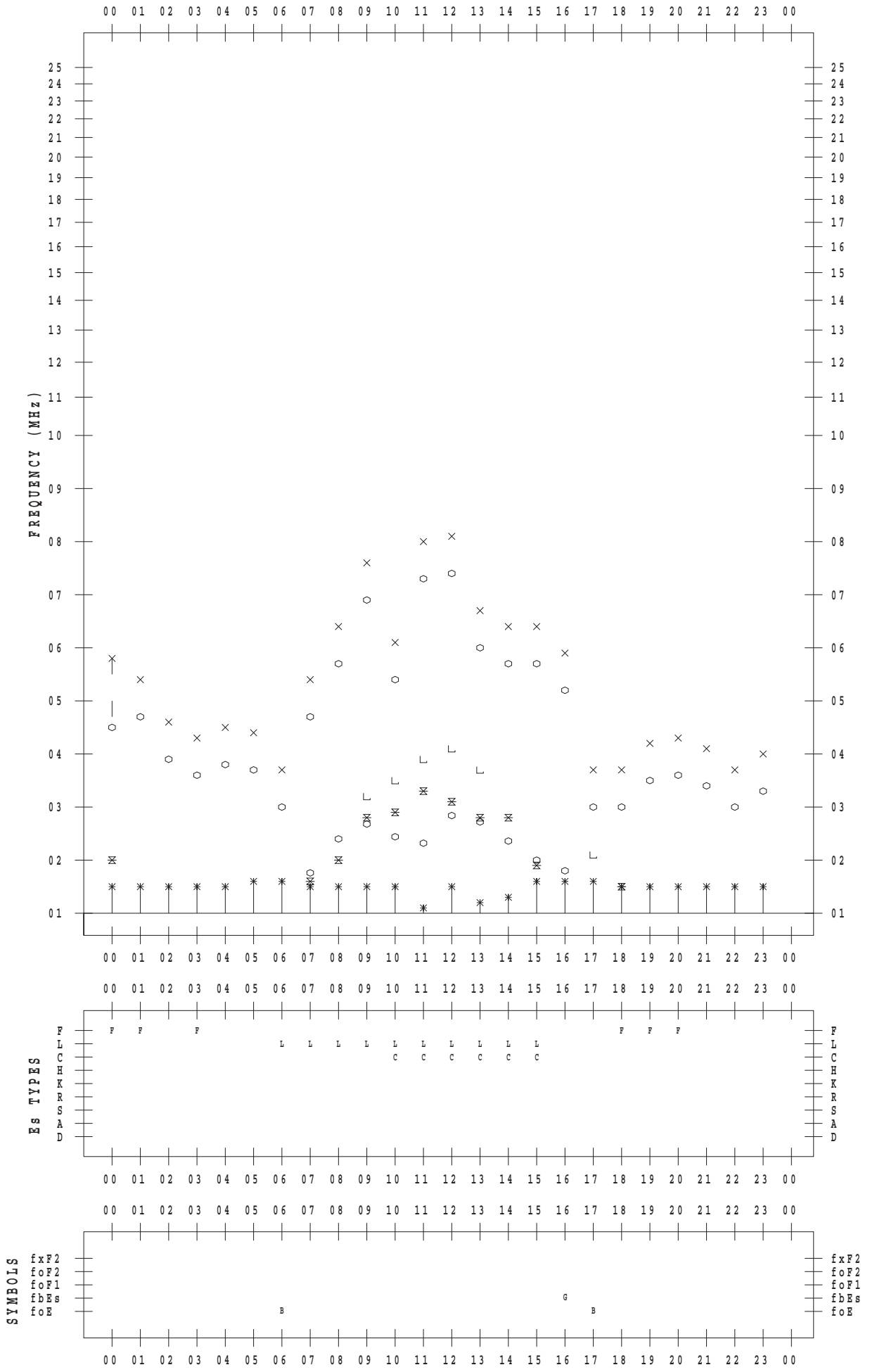
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/19

135 °E MEAN TIME



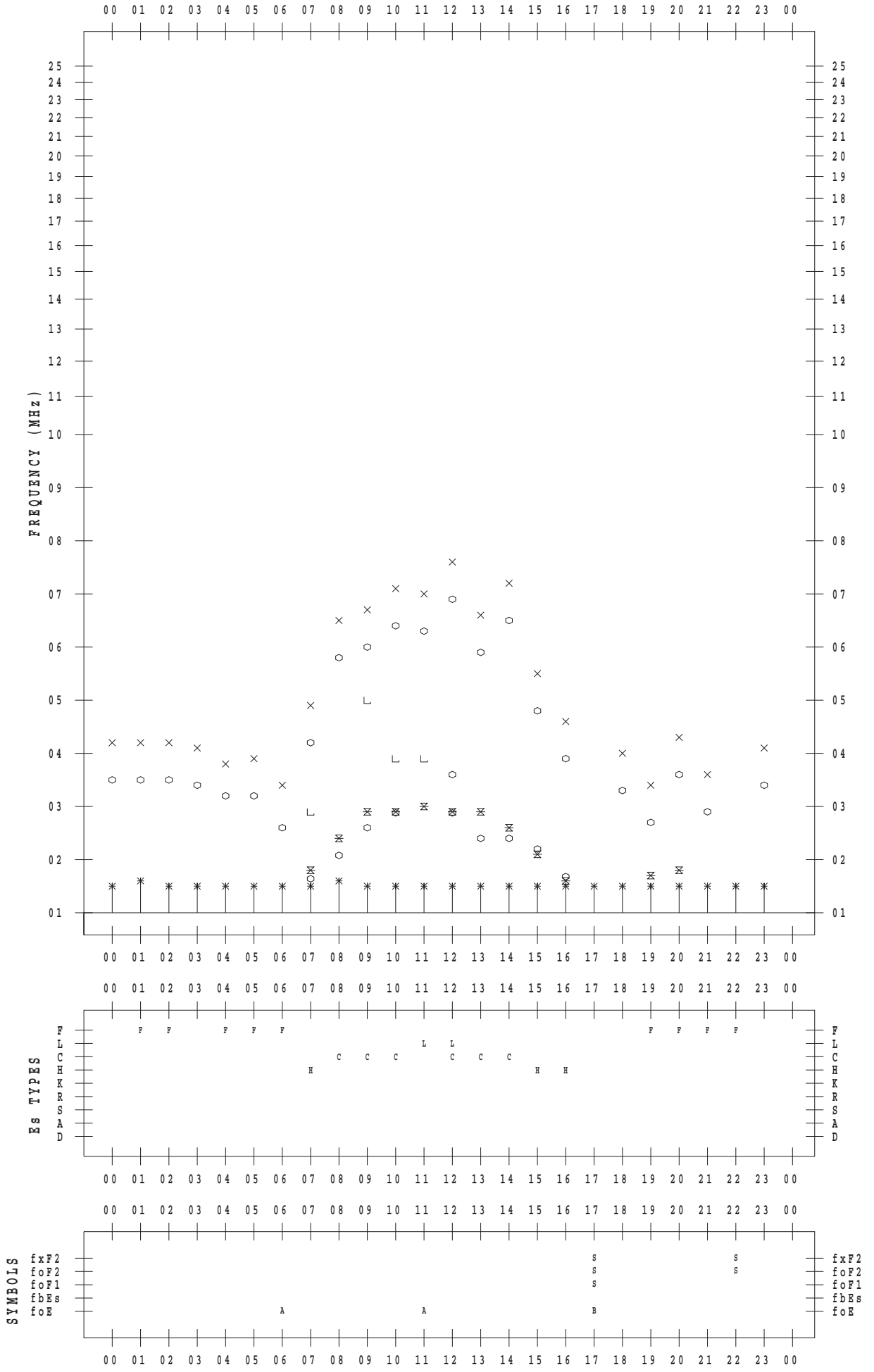
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/20

135 °E MEAN TIME



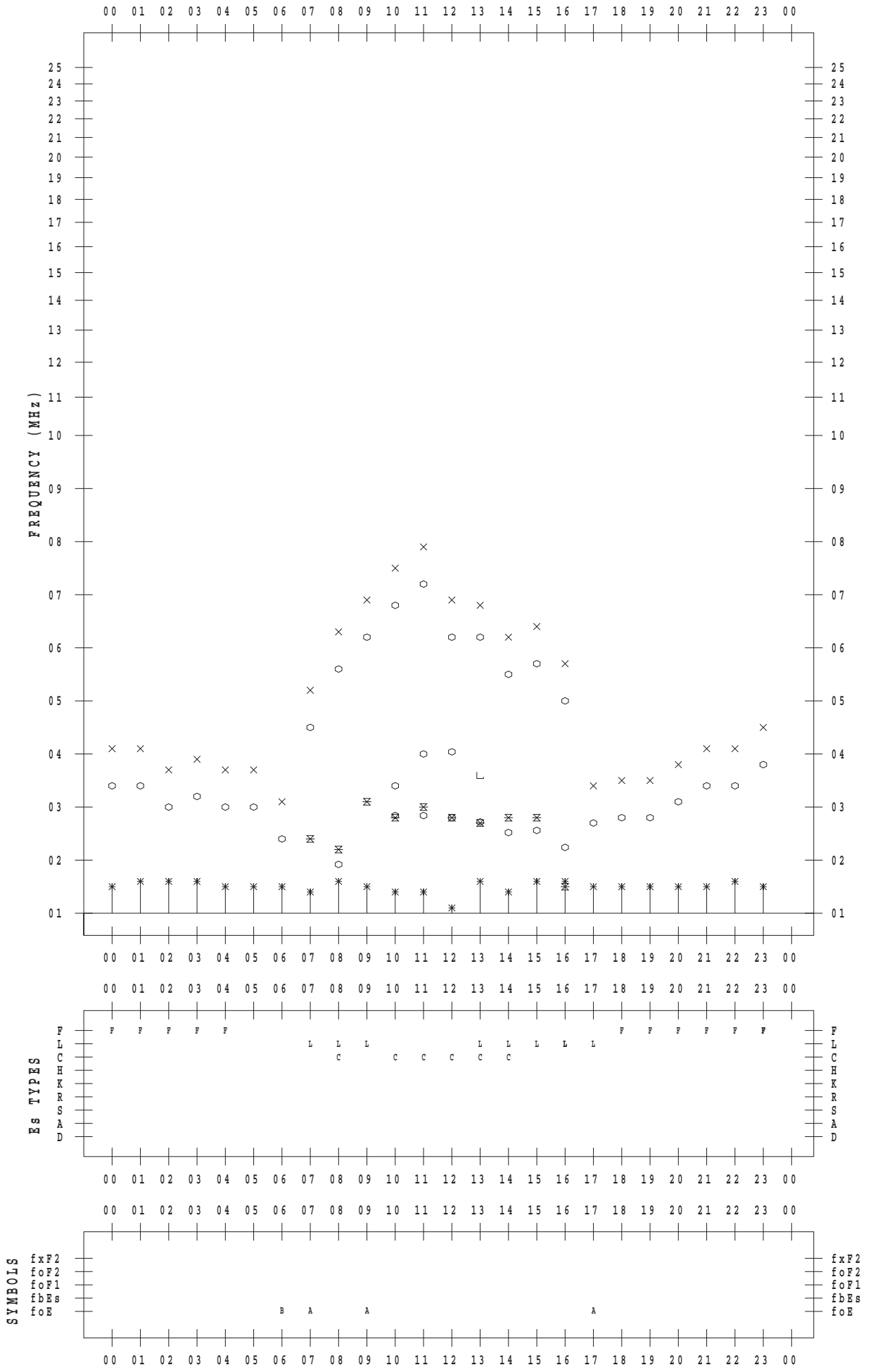
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/21

135 °E MEAN TIME



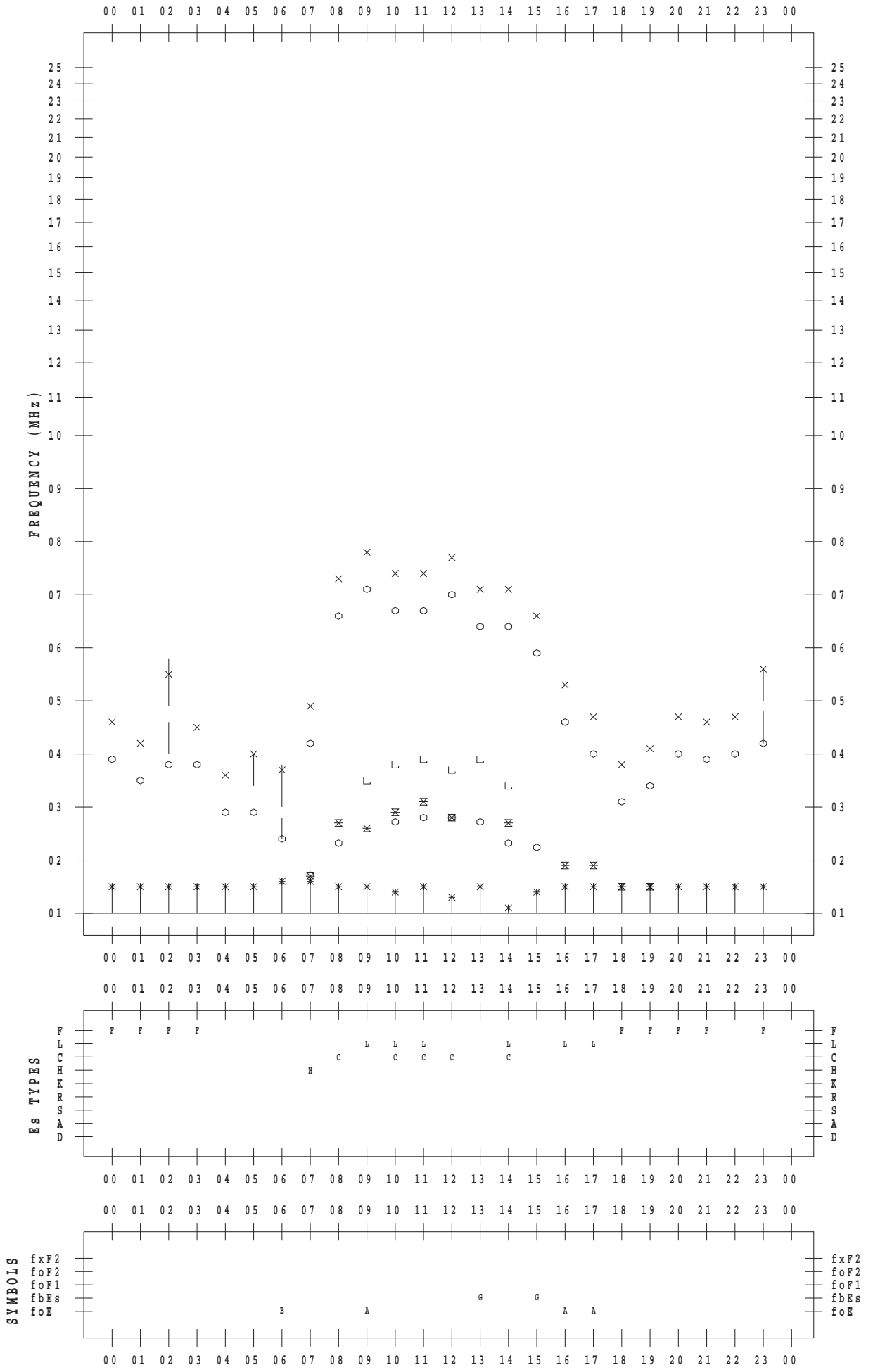
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/22

135 °E MEAN TIME



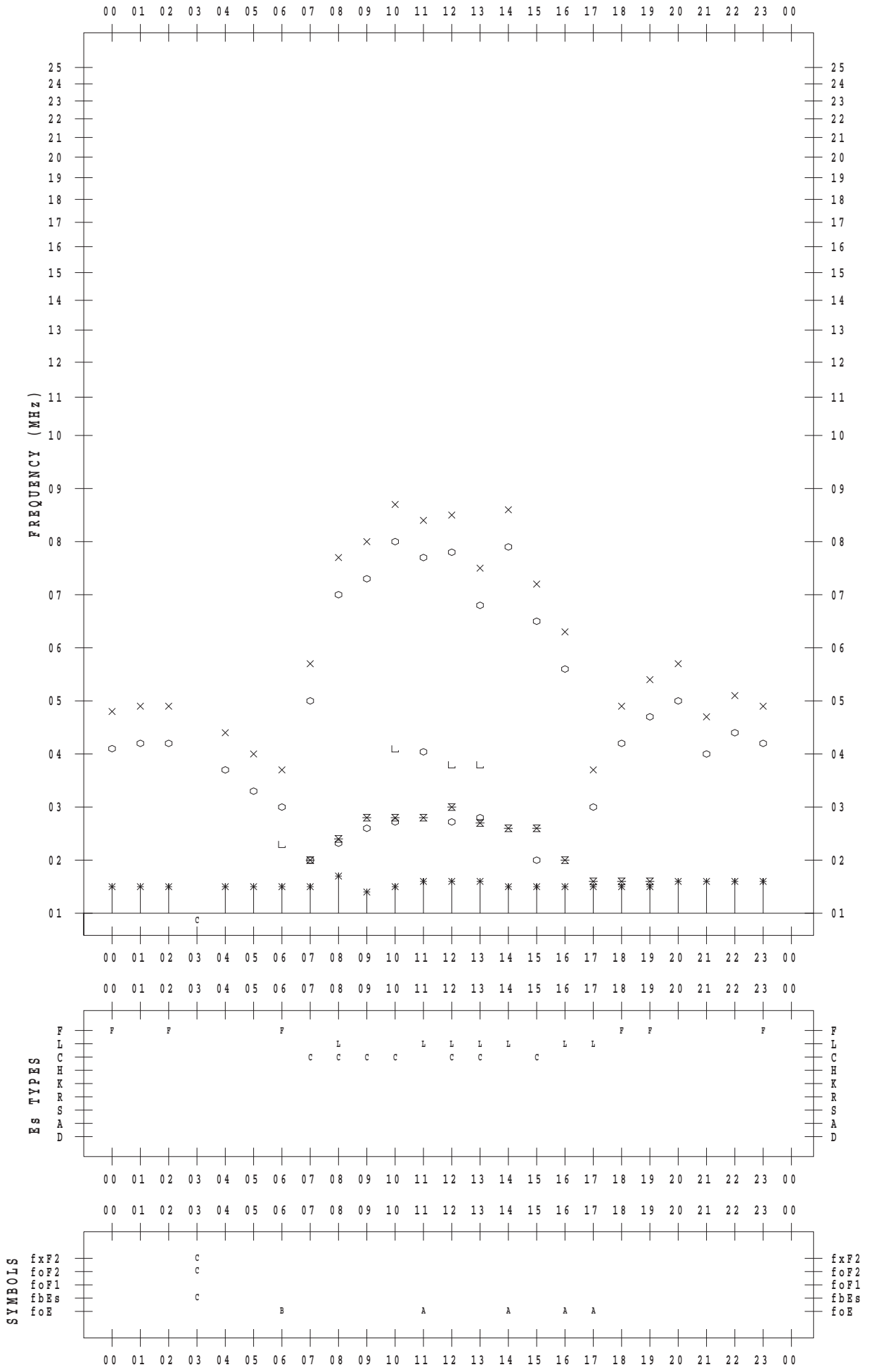
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/23

135 °E MEAN TIME



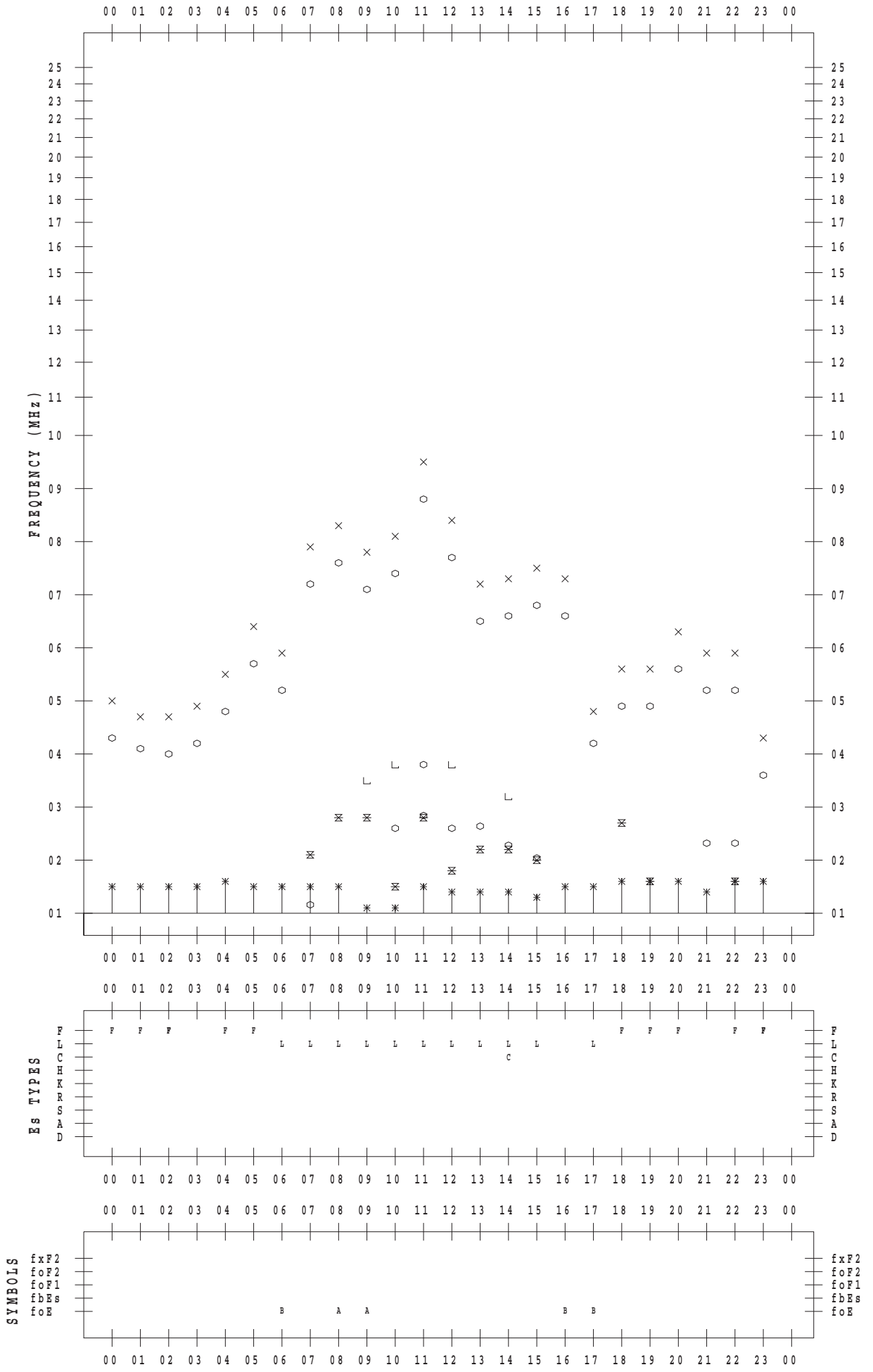
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/24

135 °E MEAN TIME



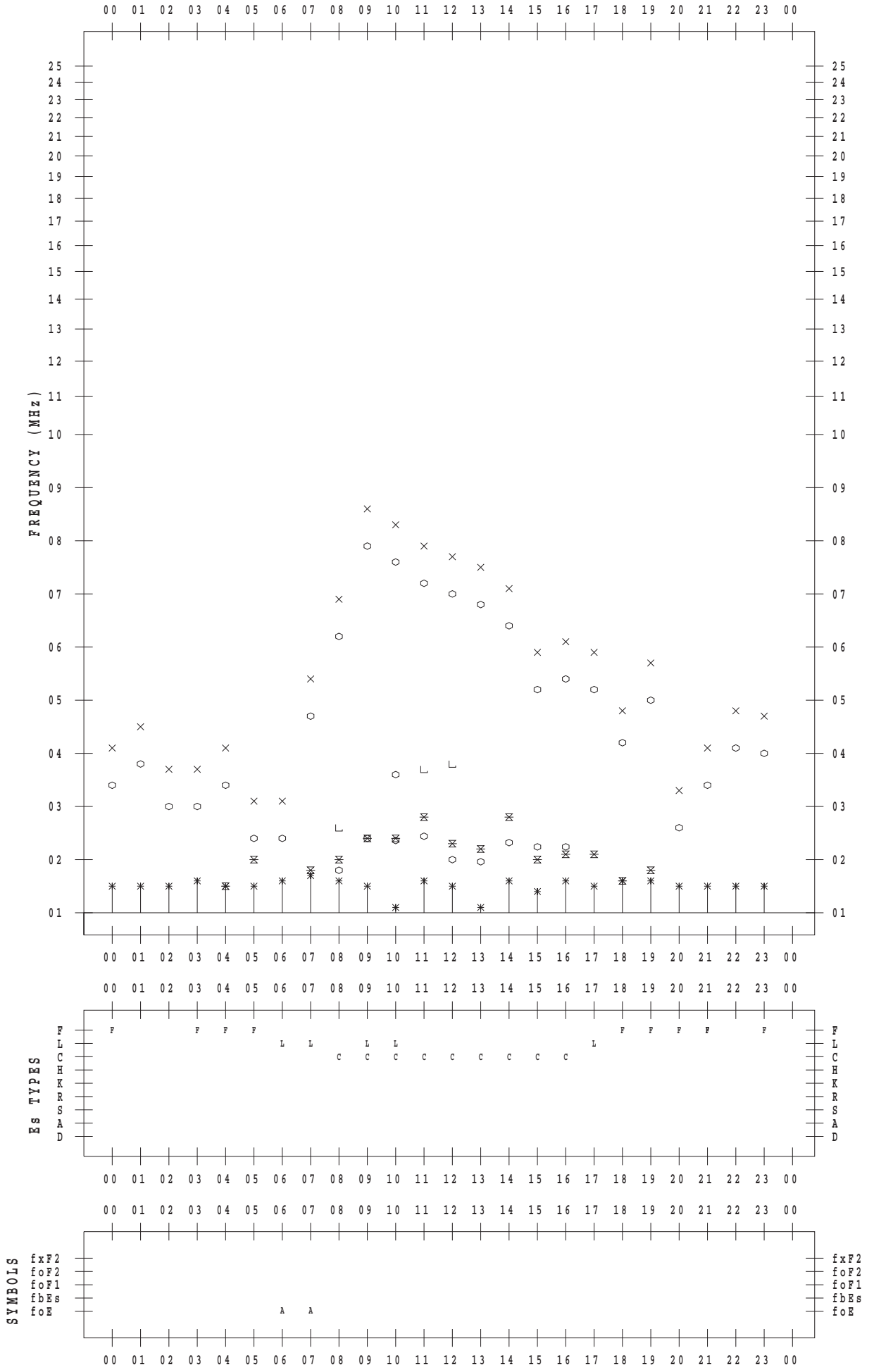
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/25

135 °E MEAN TIME



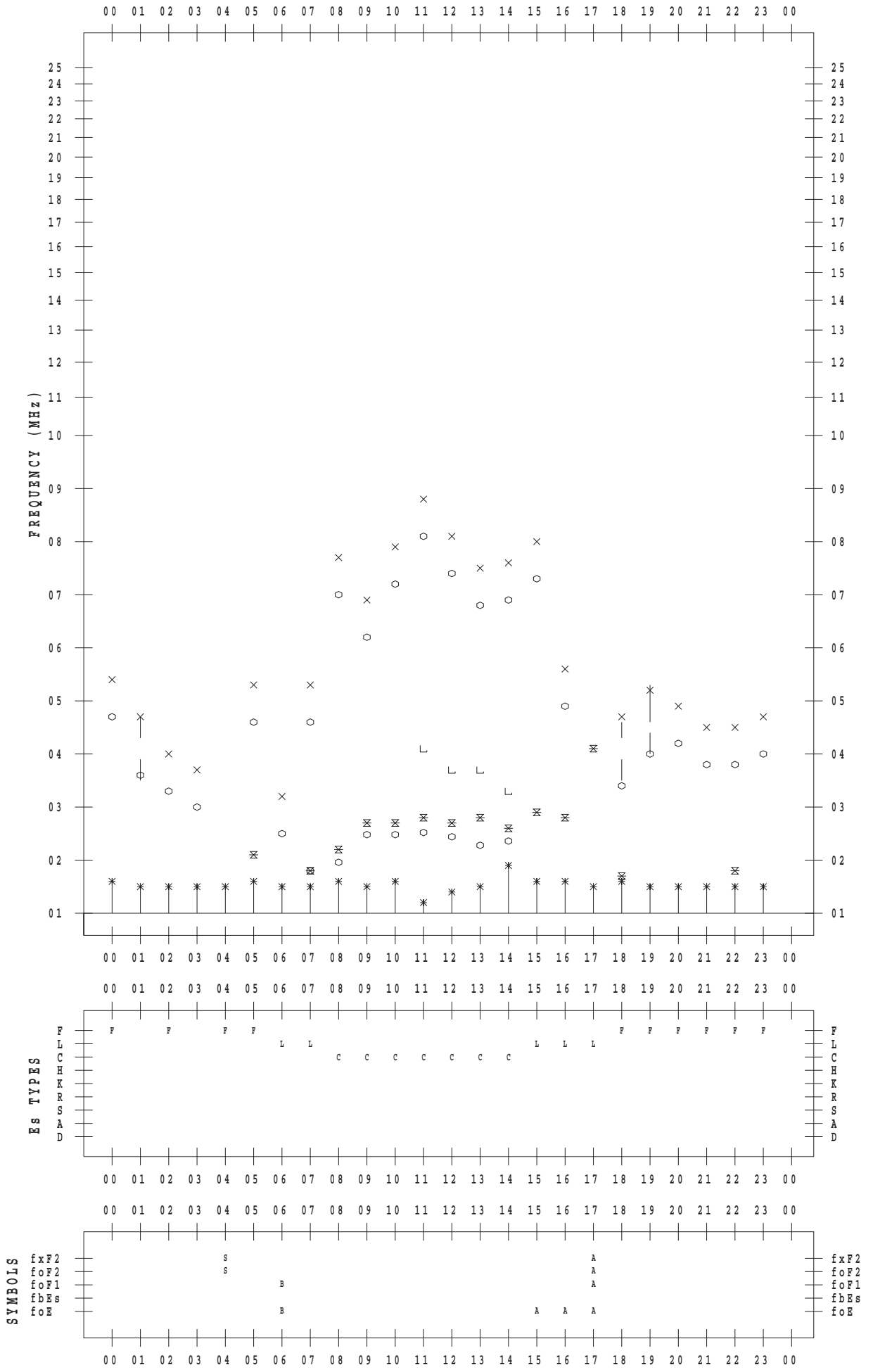
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/26

135 °E MEAN TIME



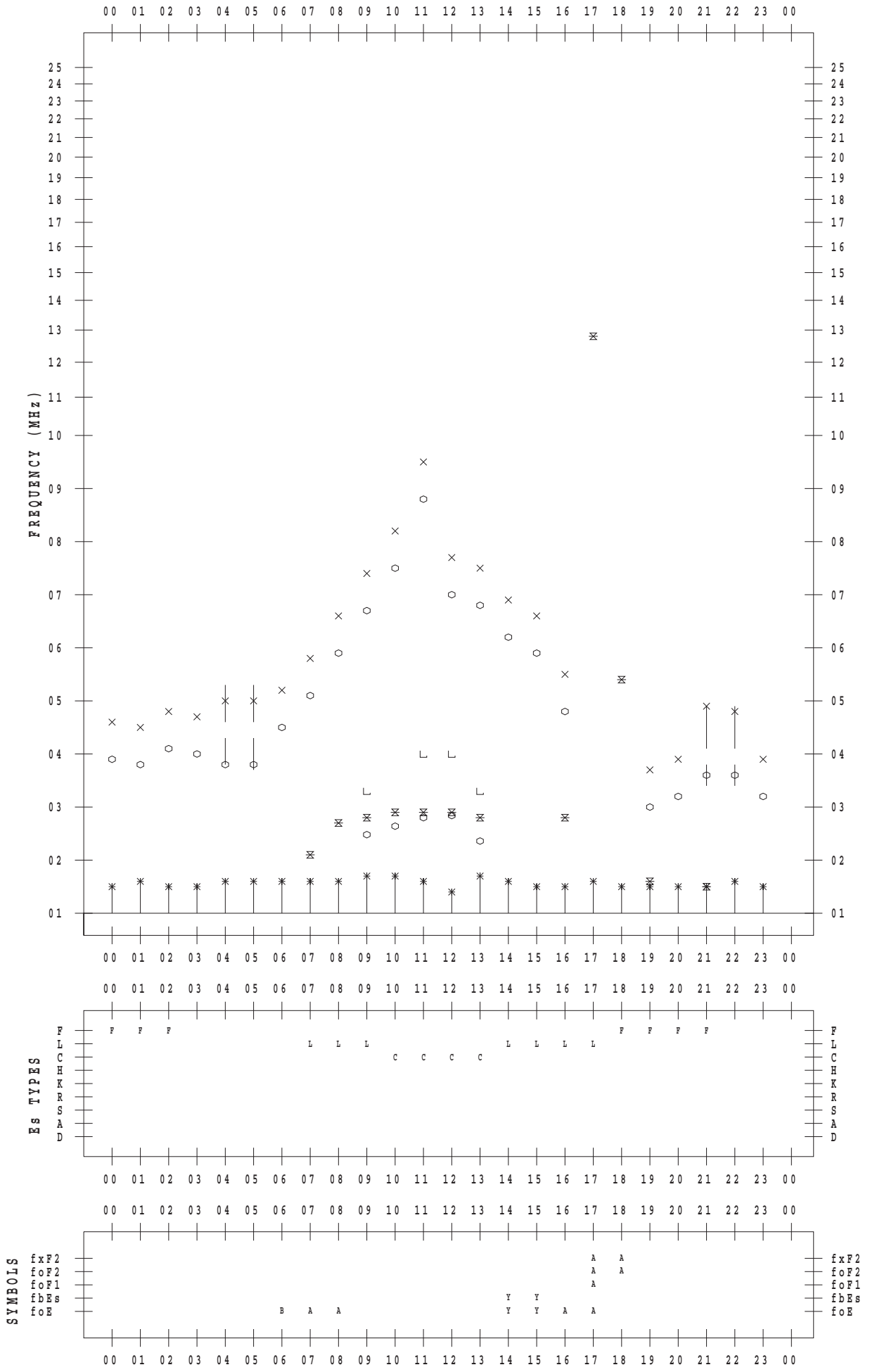
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/27

135 °E MEAN TIME



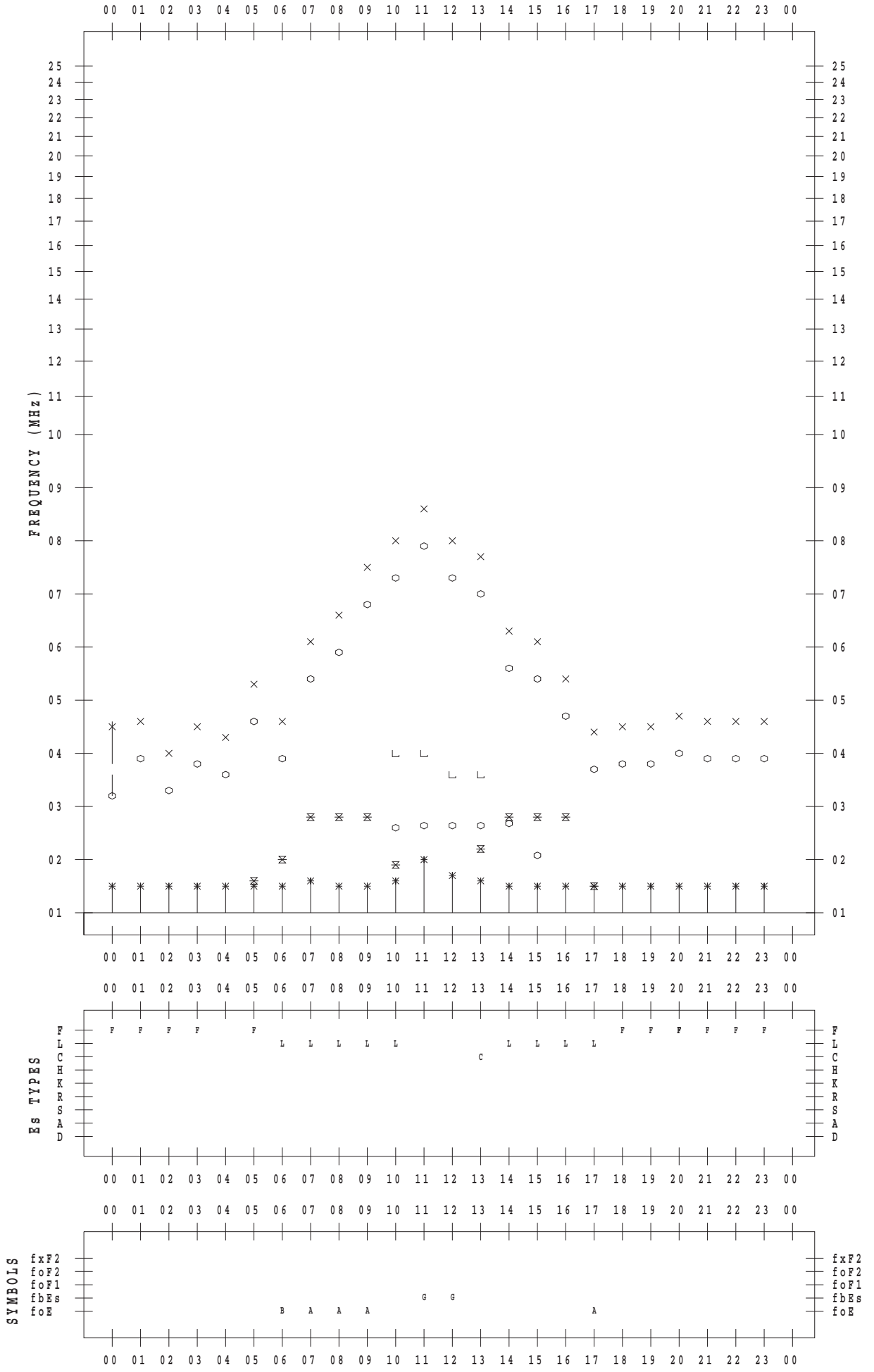
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/28

135 °E MEAN TIME



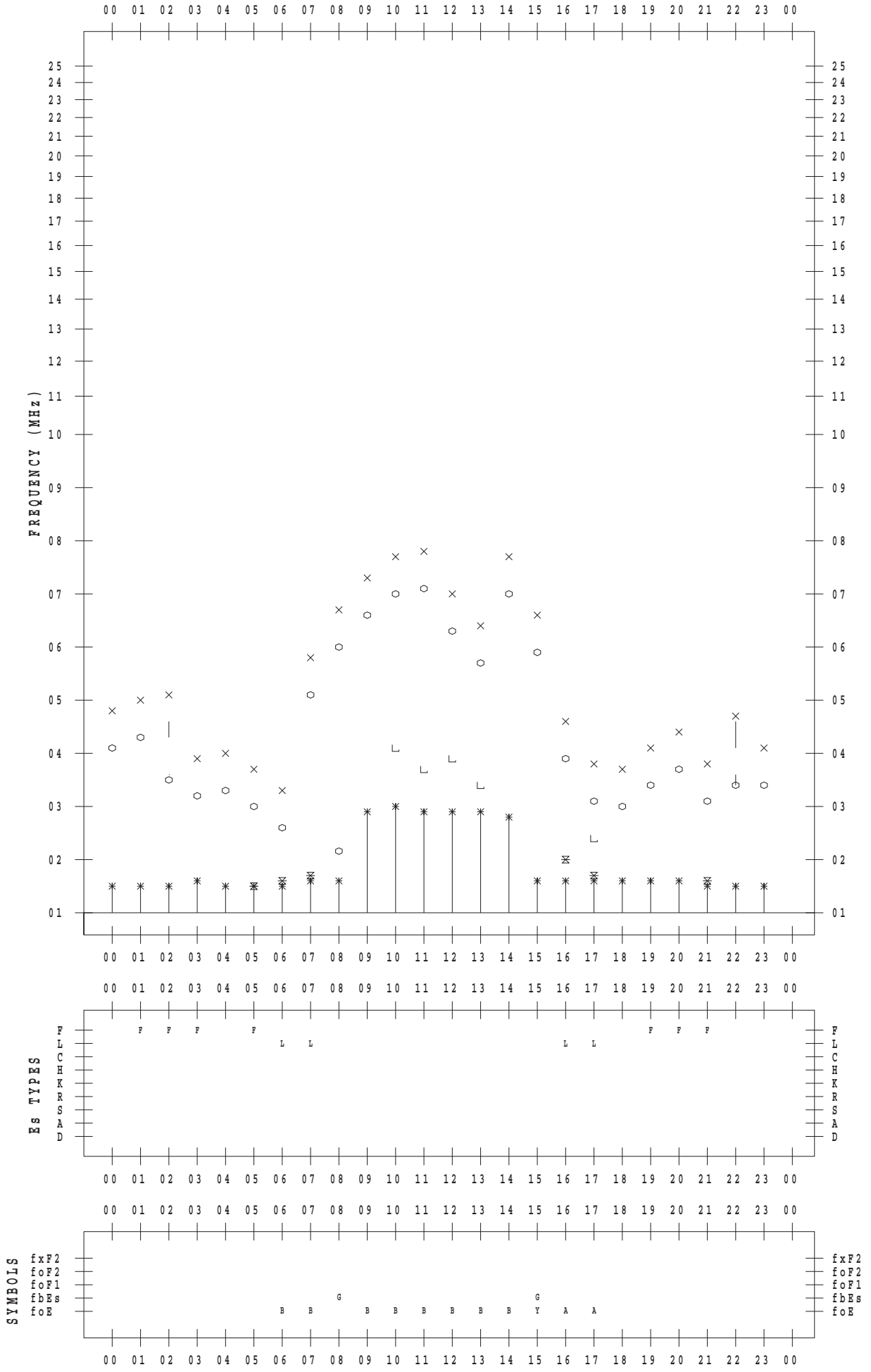
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/29

135 °E MEAN TIME



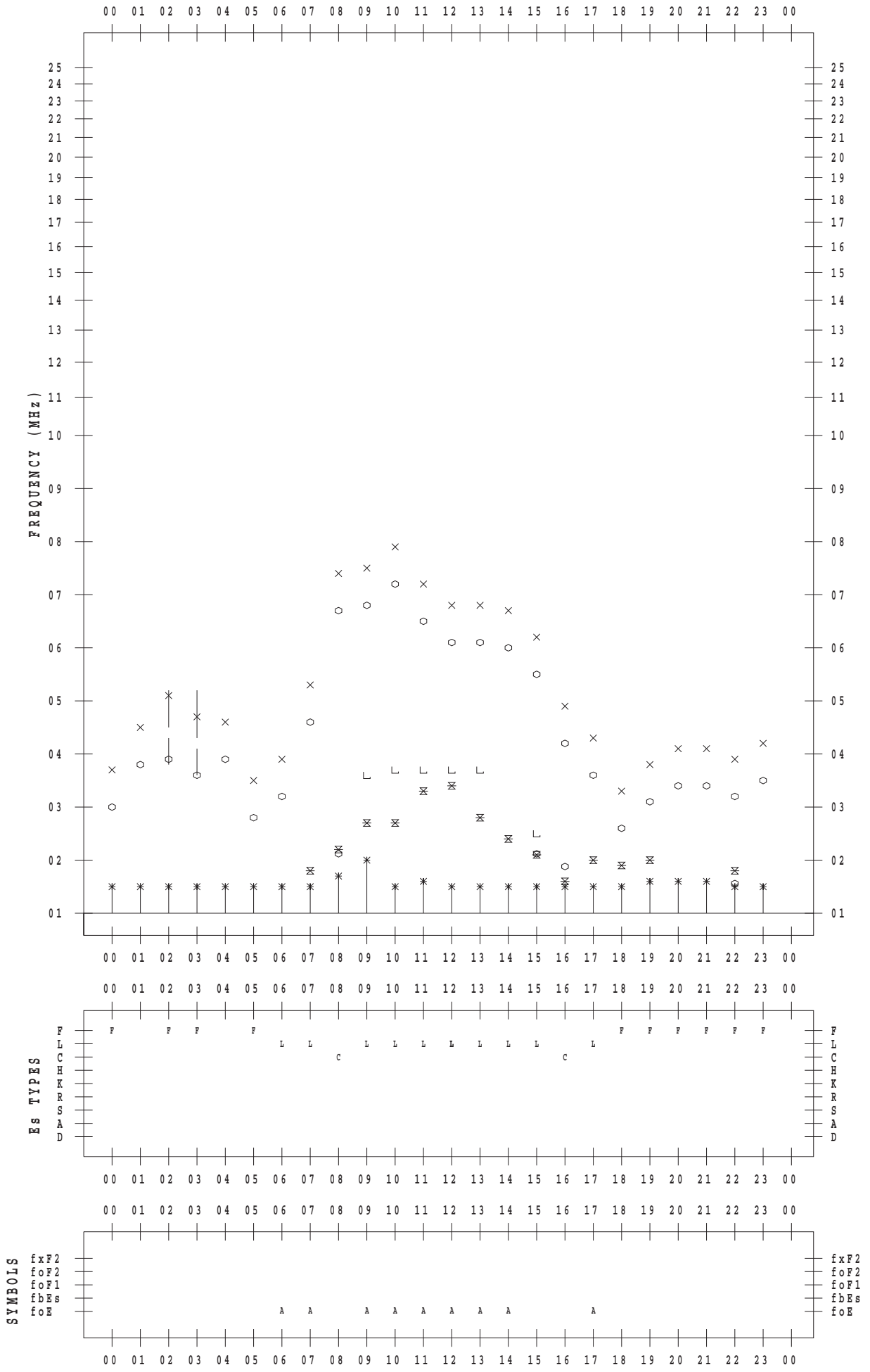
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/11/30

135 °E MEAN TIME



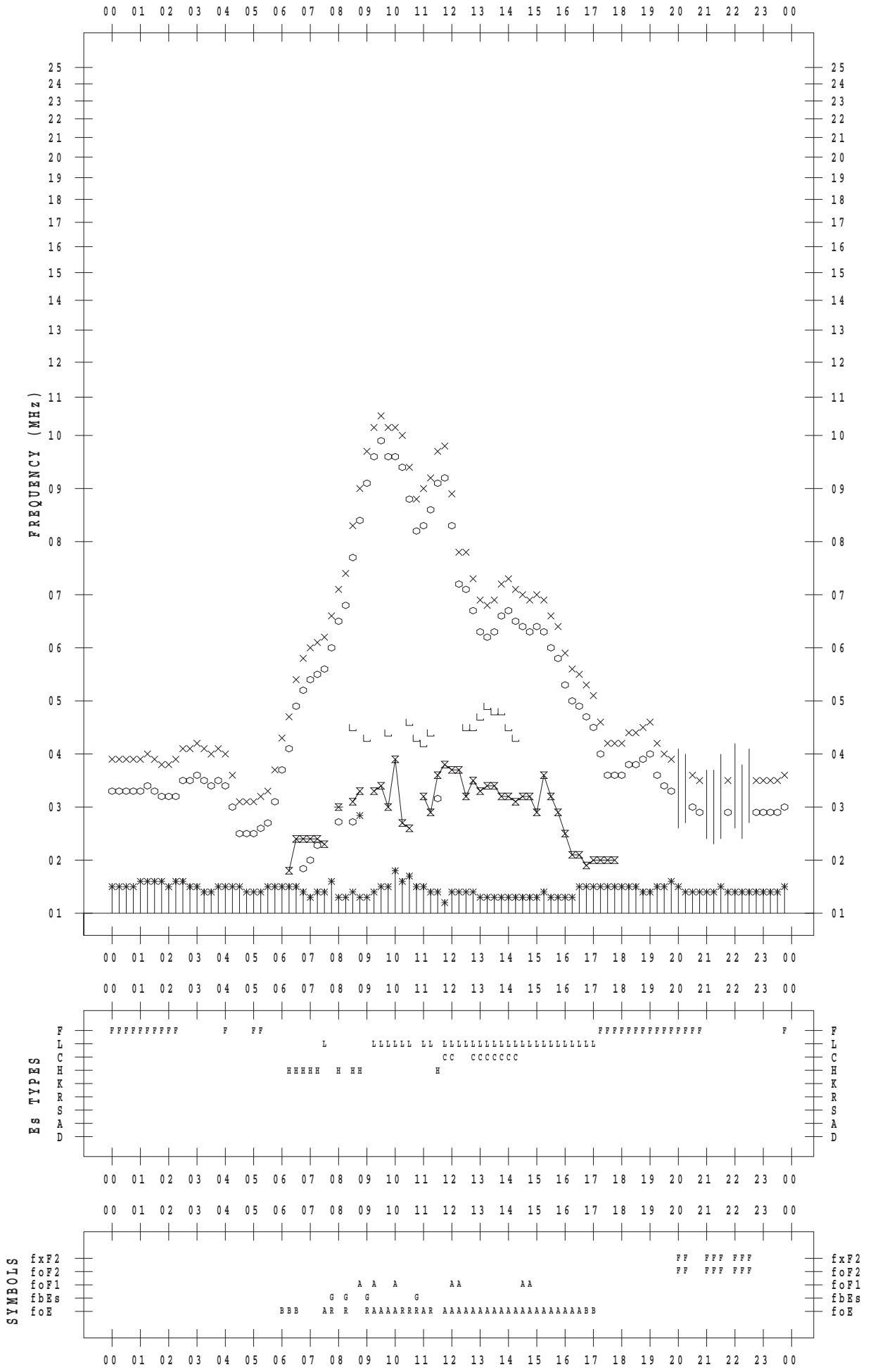
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 1

135 °E MEAN TIME



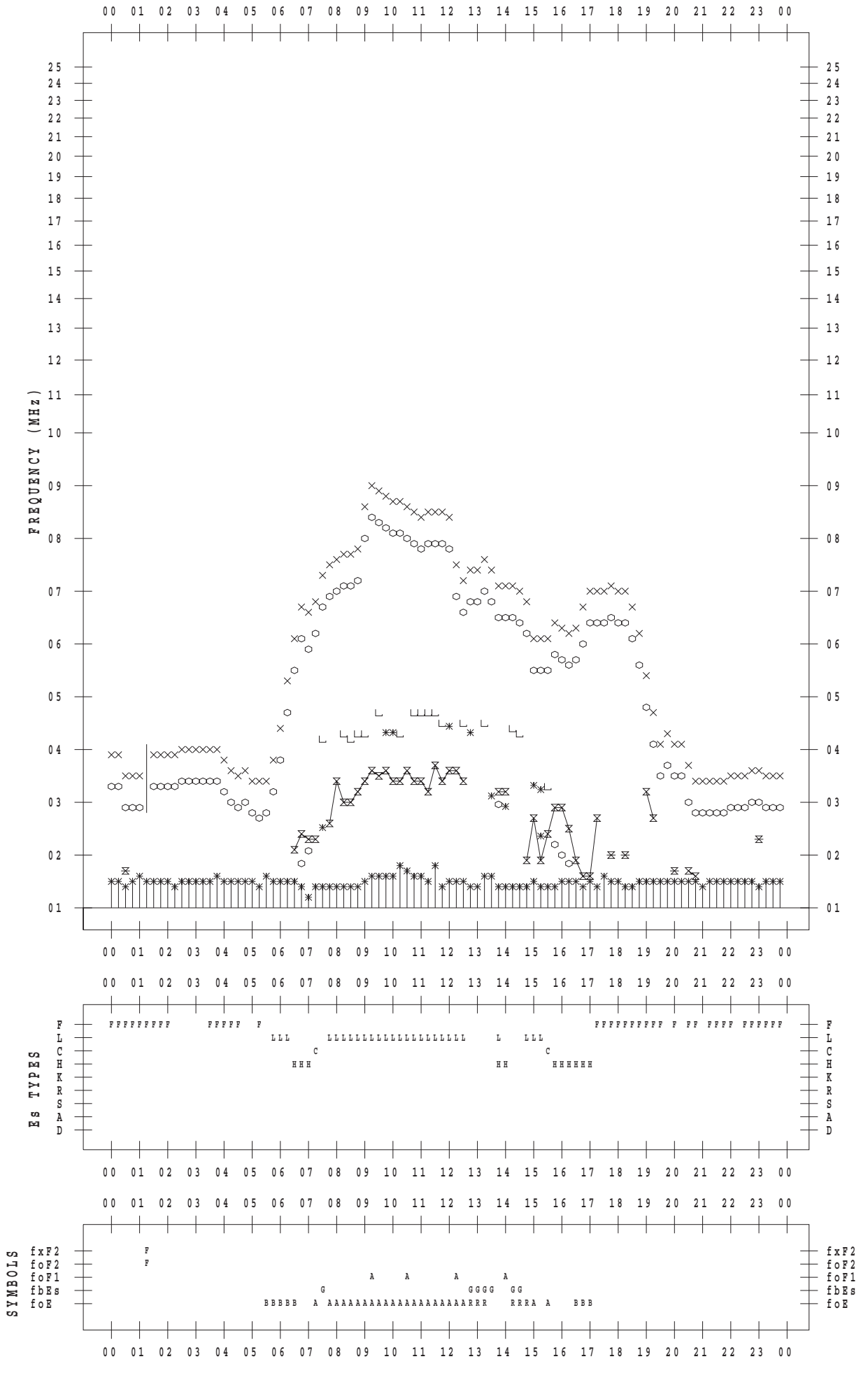
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 2

135 °E MEAN TIME



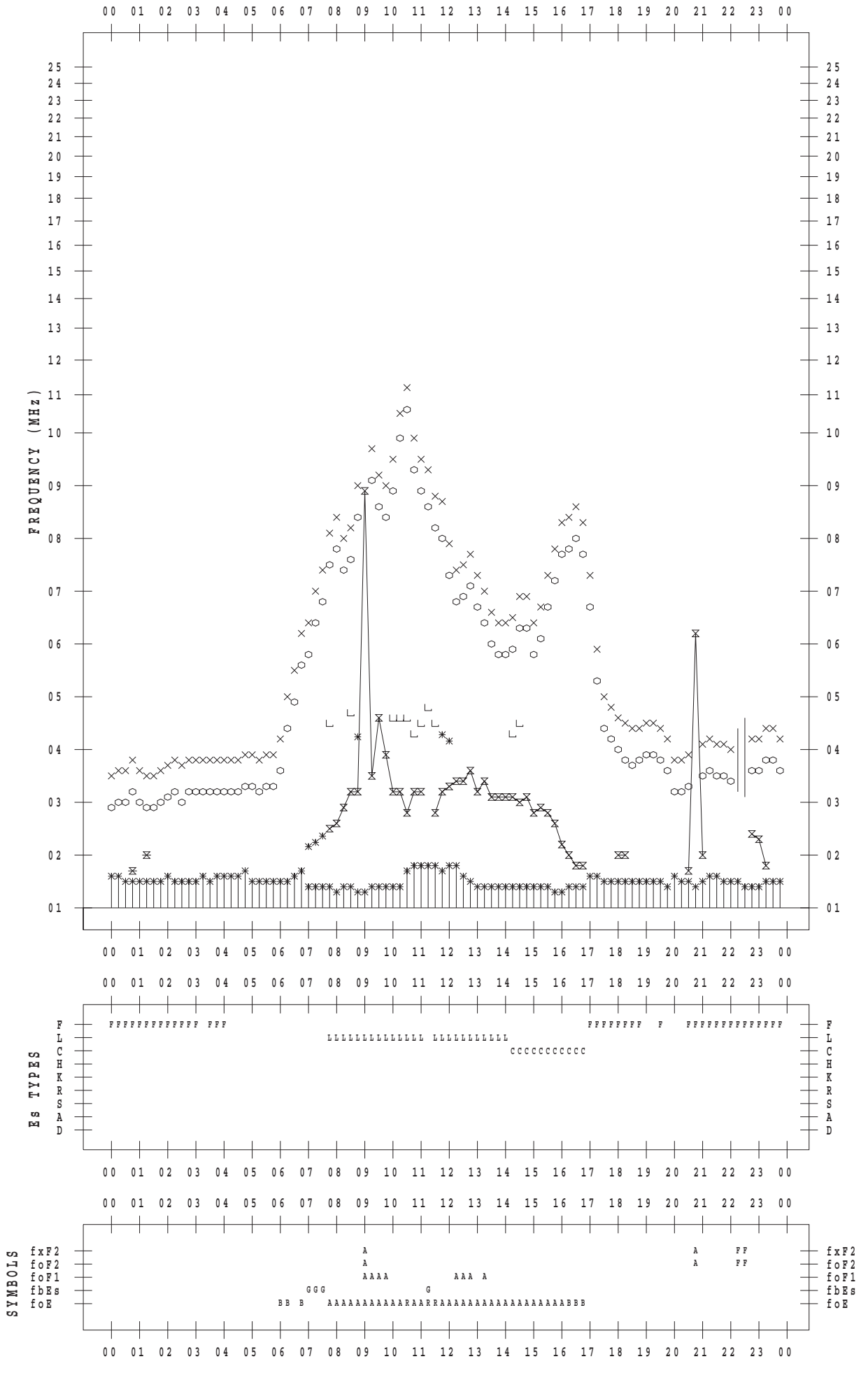
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 3

135 °E MEAN TIME



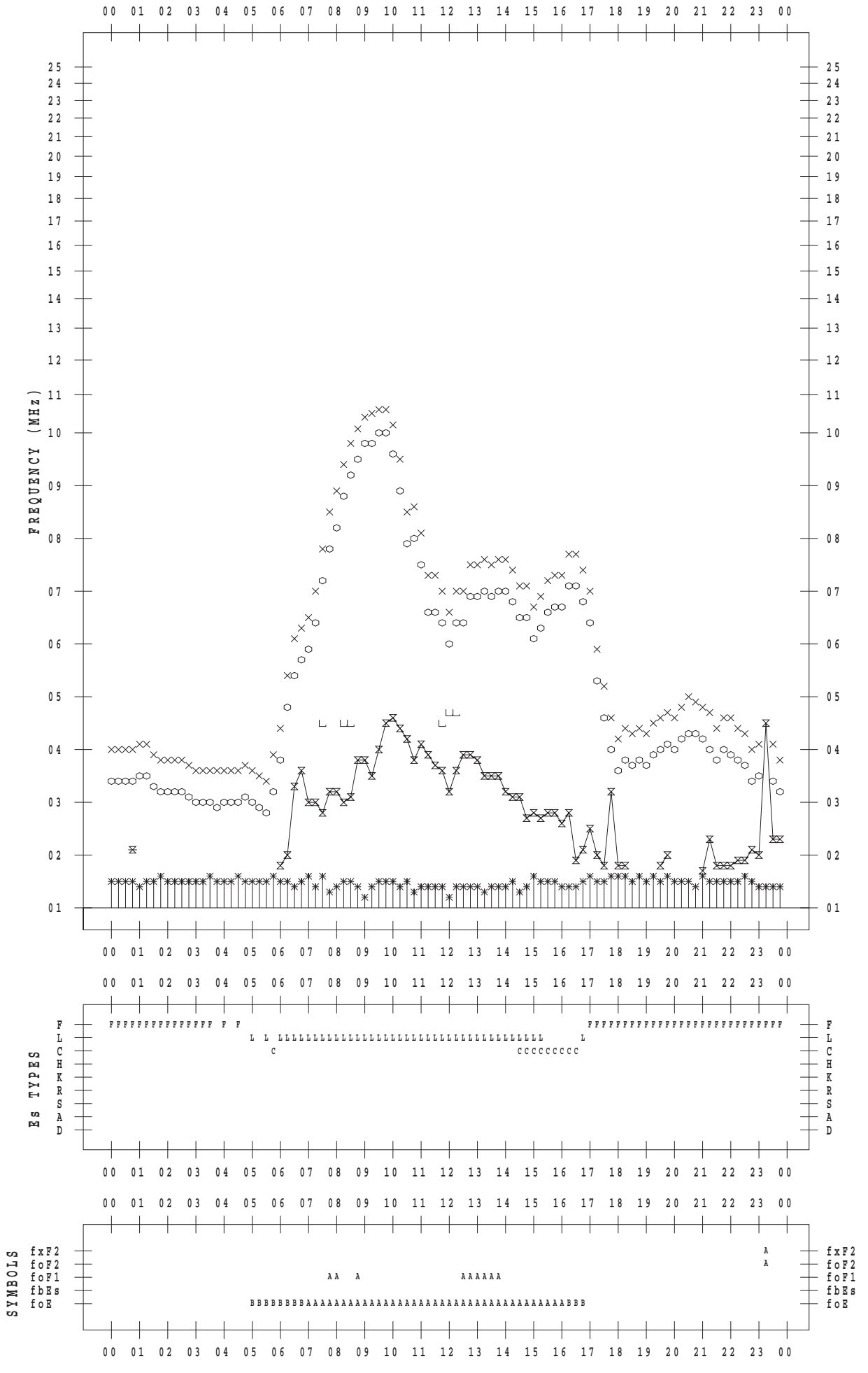
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 4

135 °E MEAN TIME



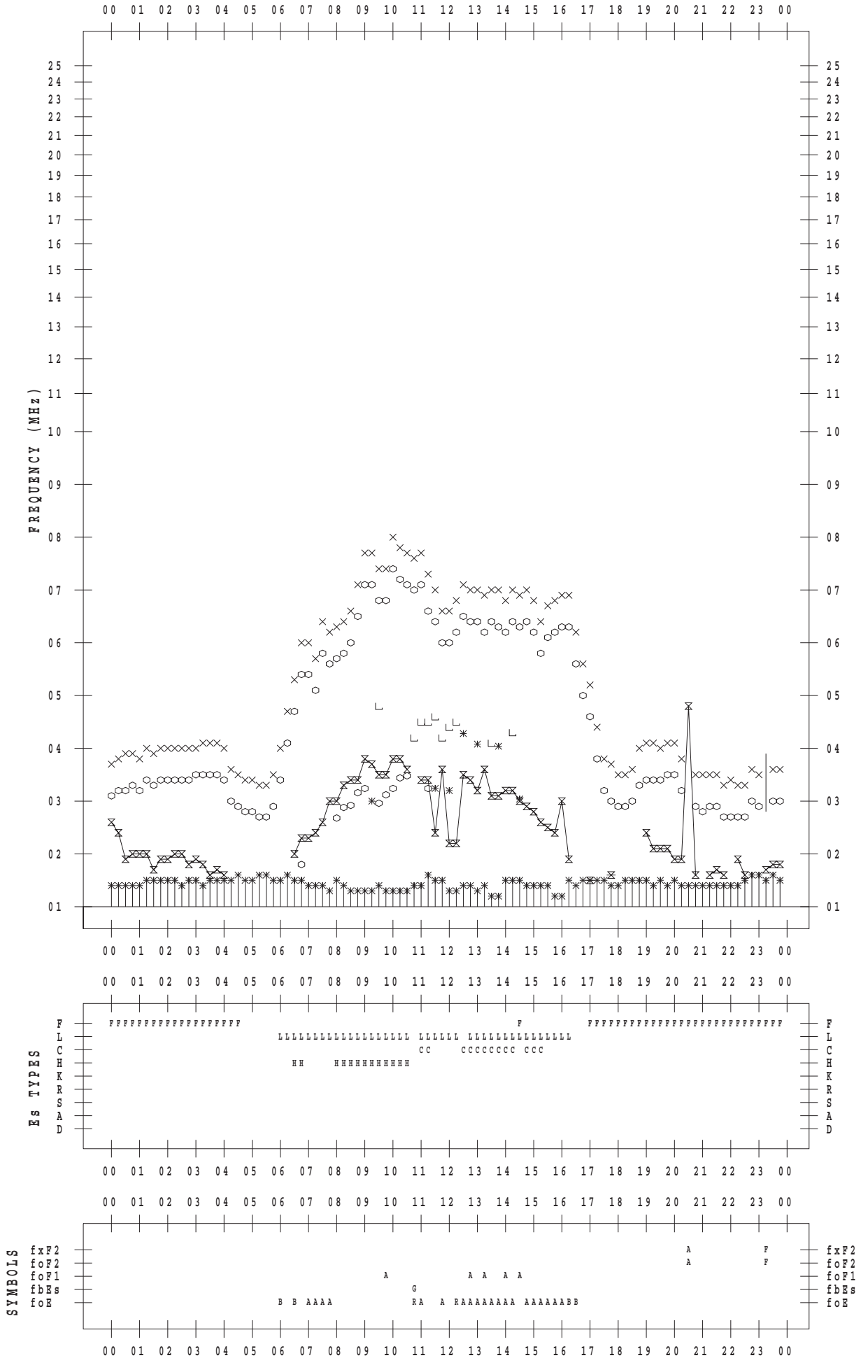
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 5

135 °E MEAN TIME



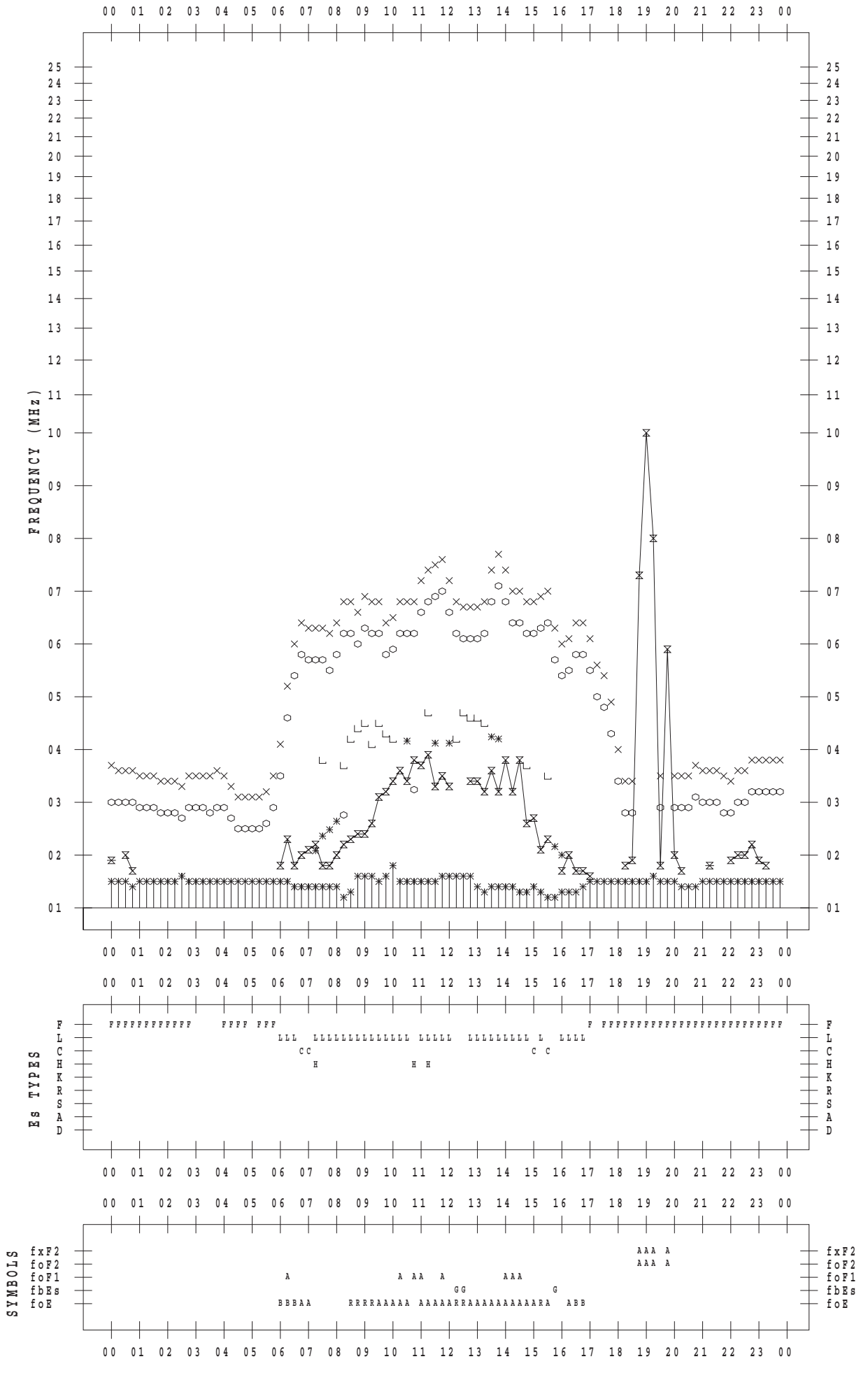
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 6

135 °E MEAN TIME



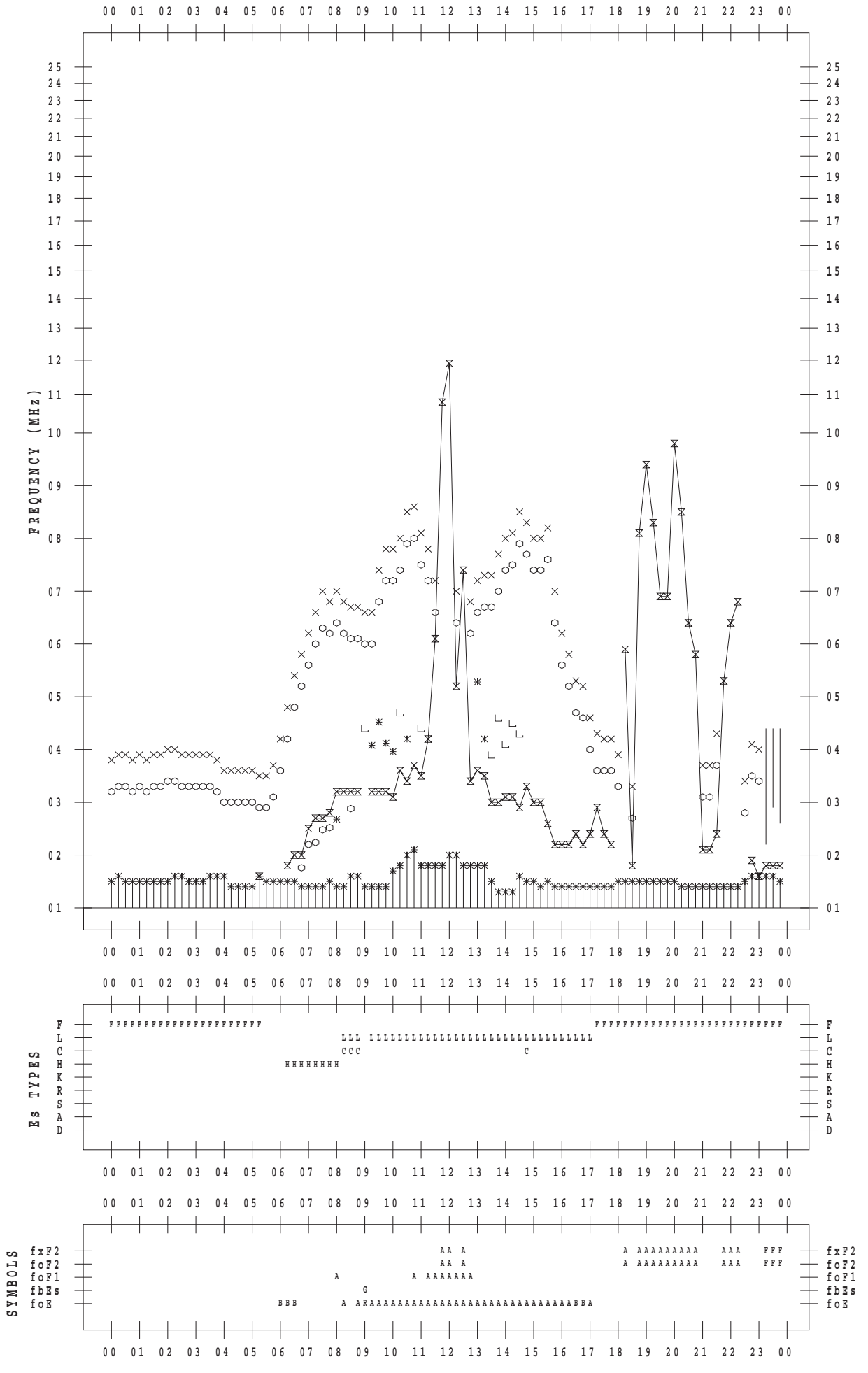
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 7

135 °E MEAN TIME



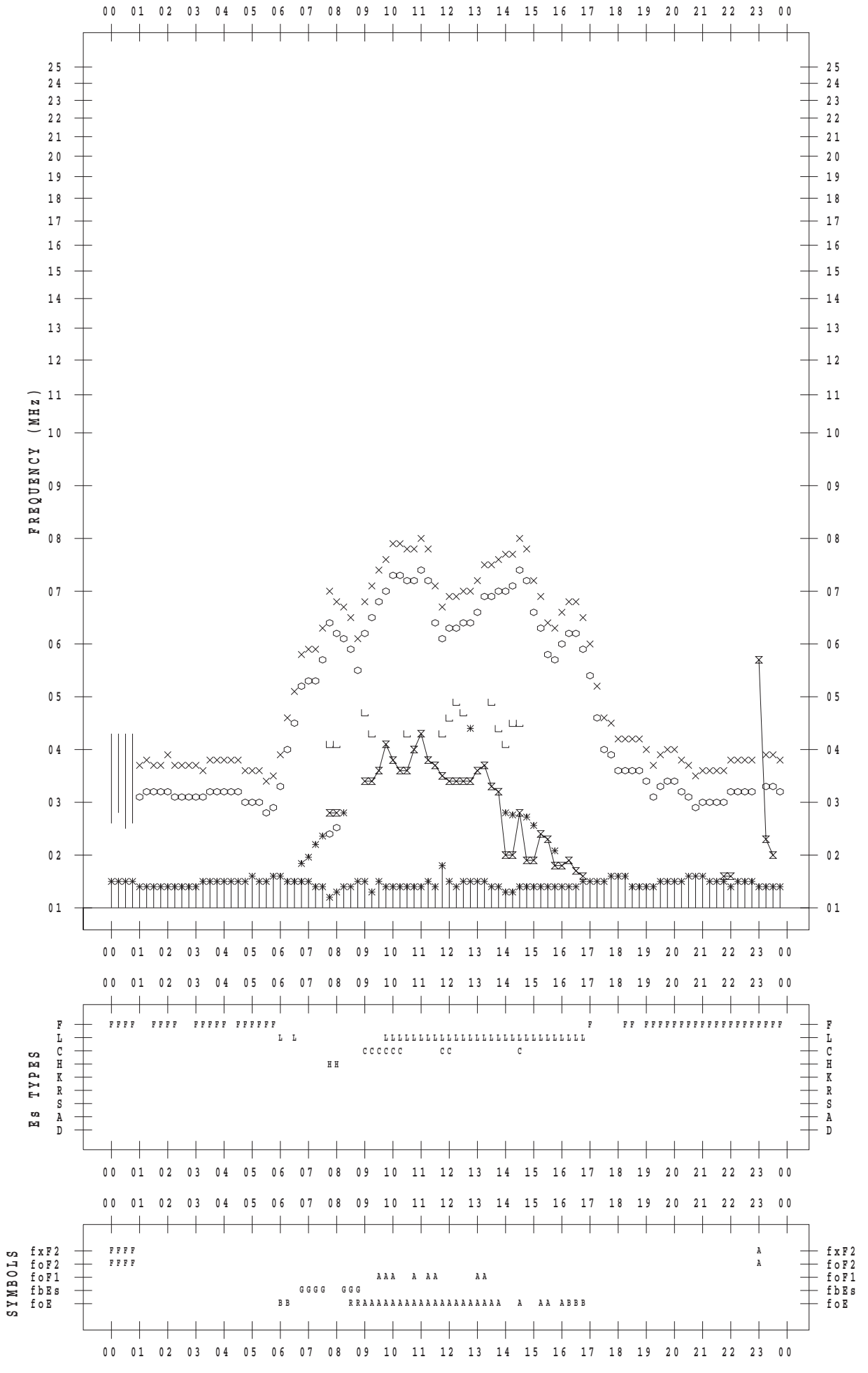
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 8

135 °E MEAN TIME



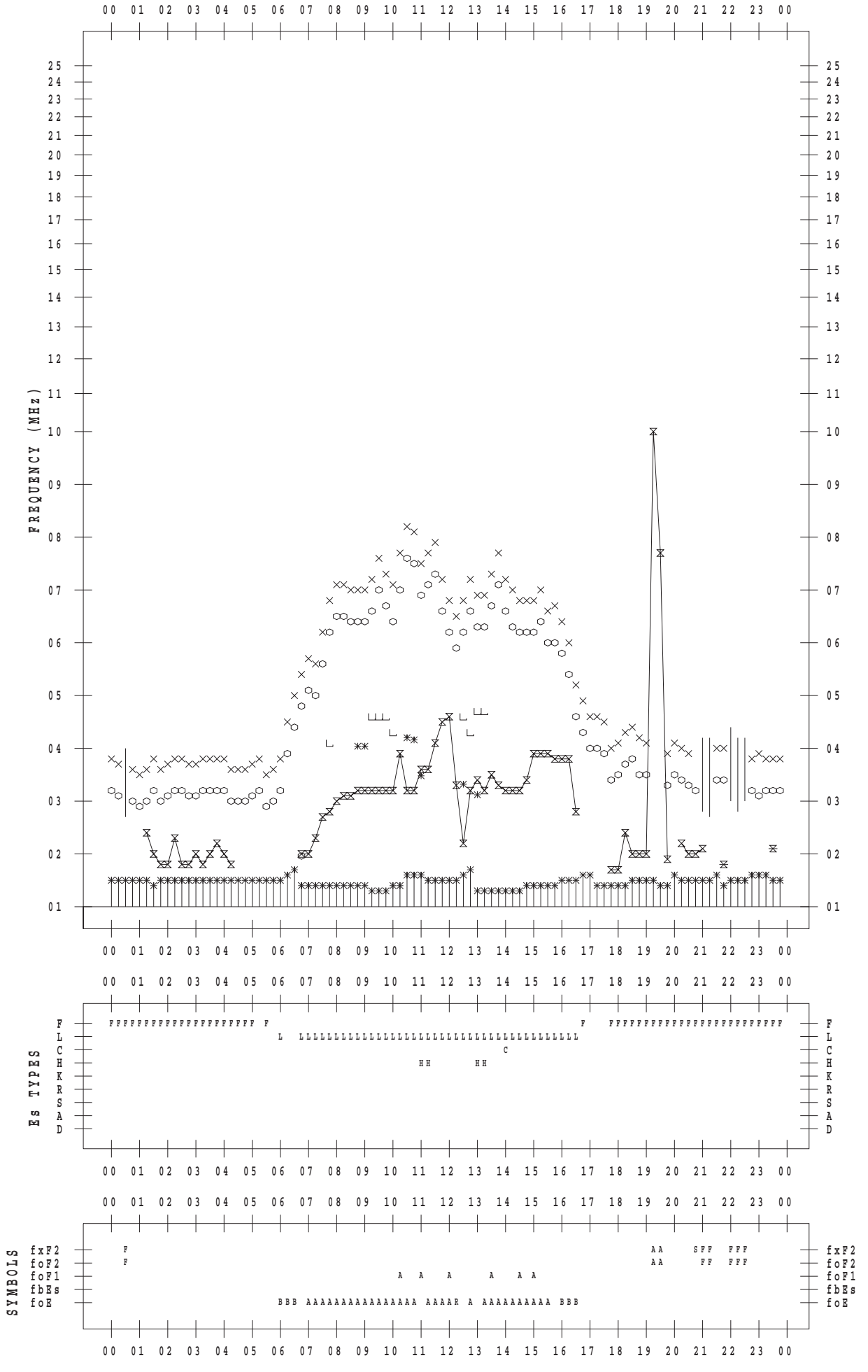
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/ 9

135 °E MEAN TIME



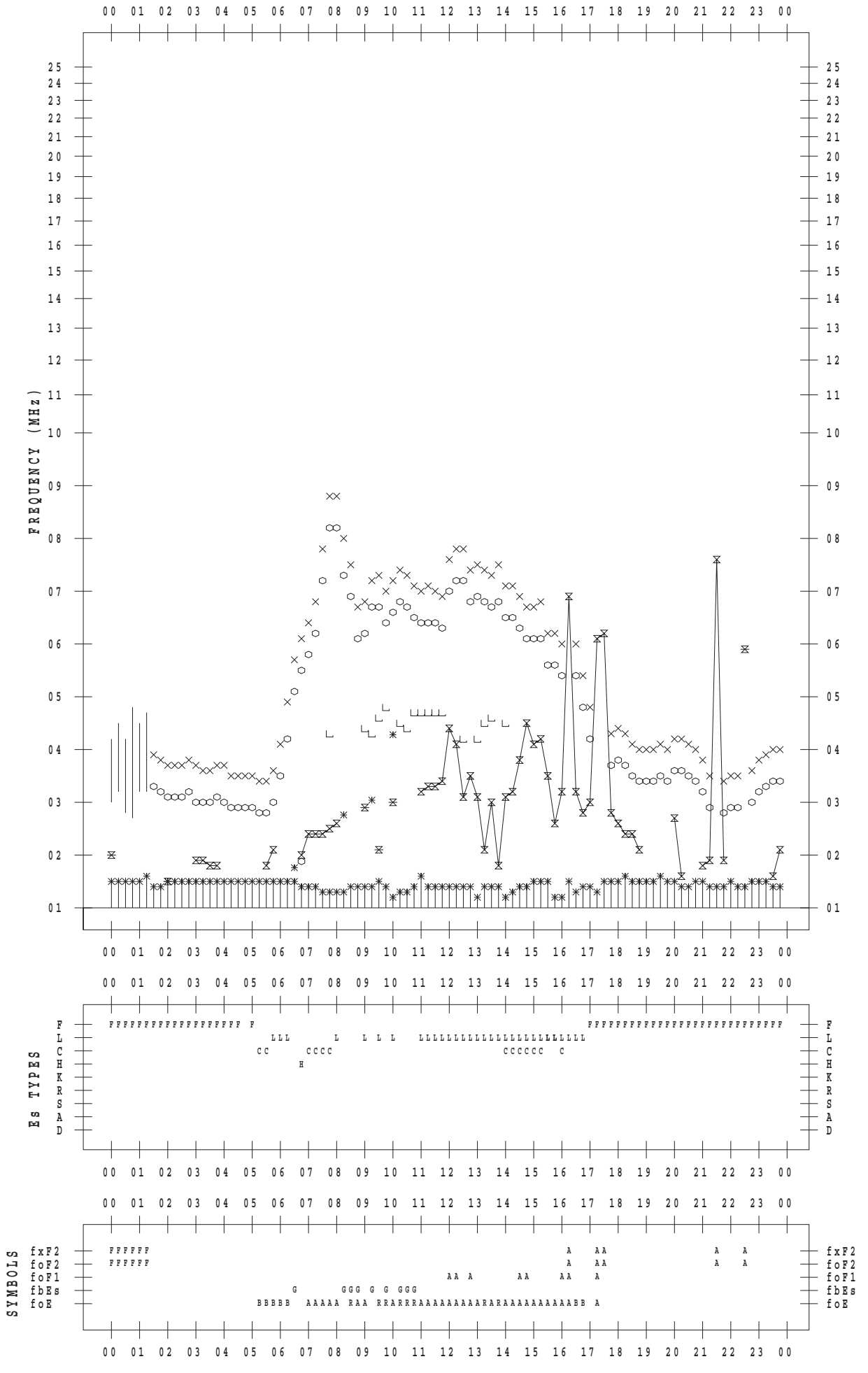
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/10

135 °E MEAN TIME



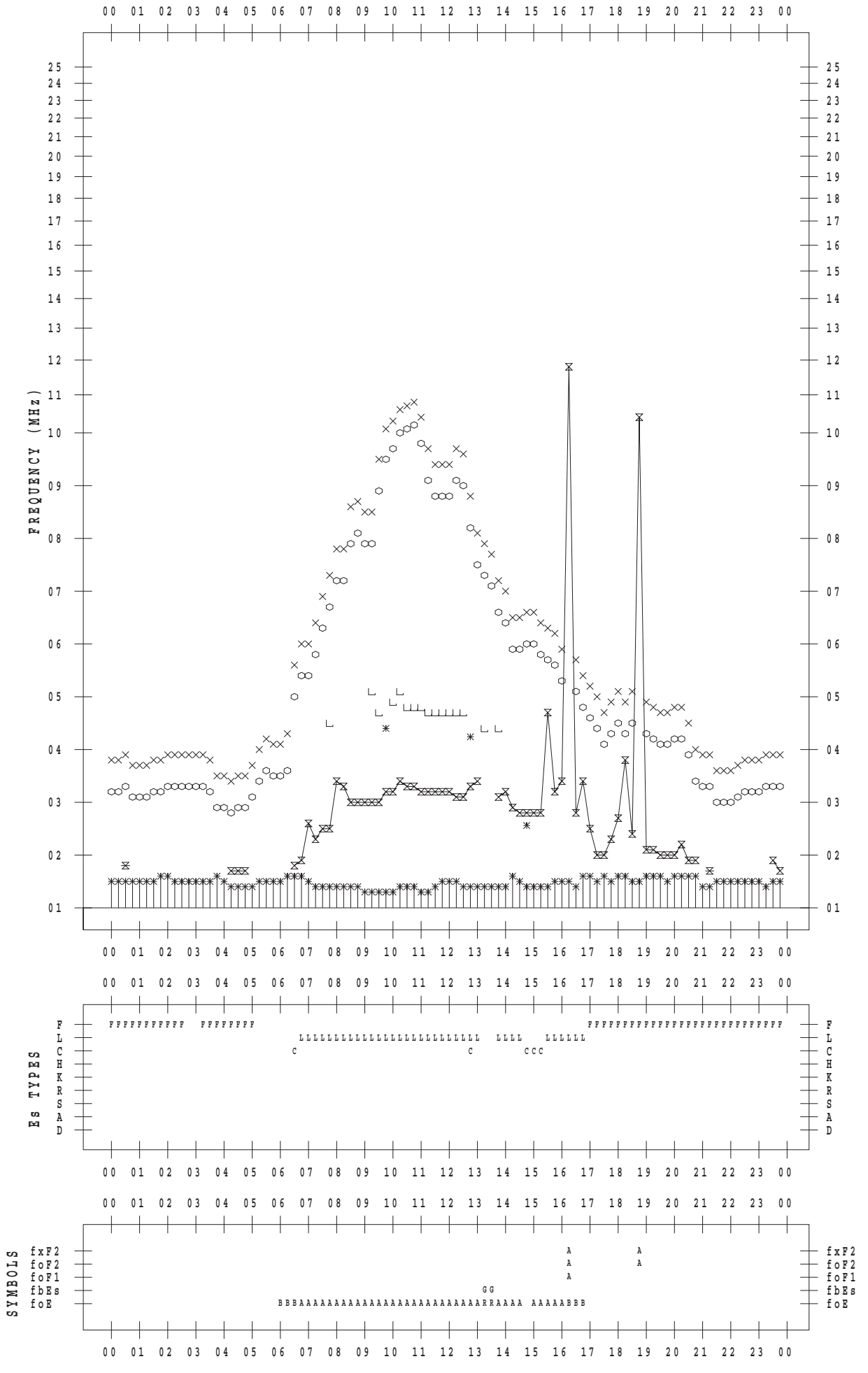
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/11

135 °E MEAN TIME



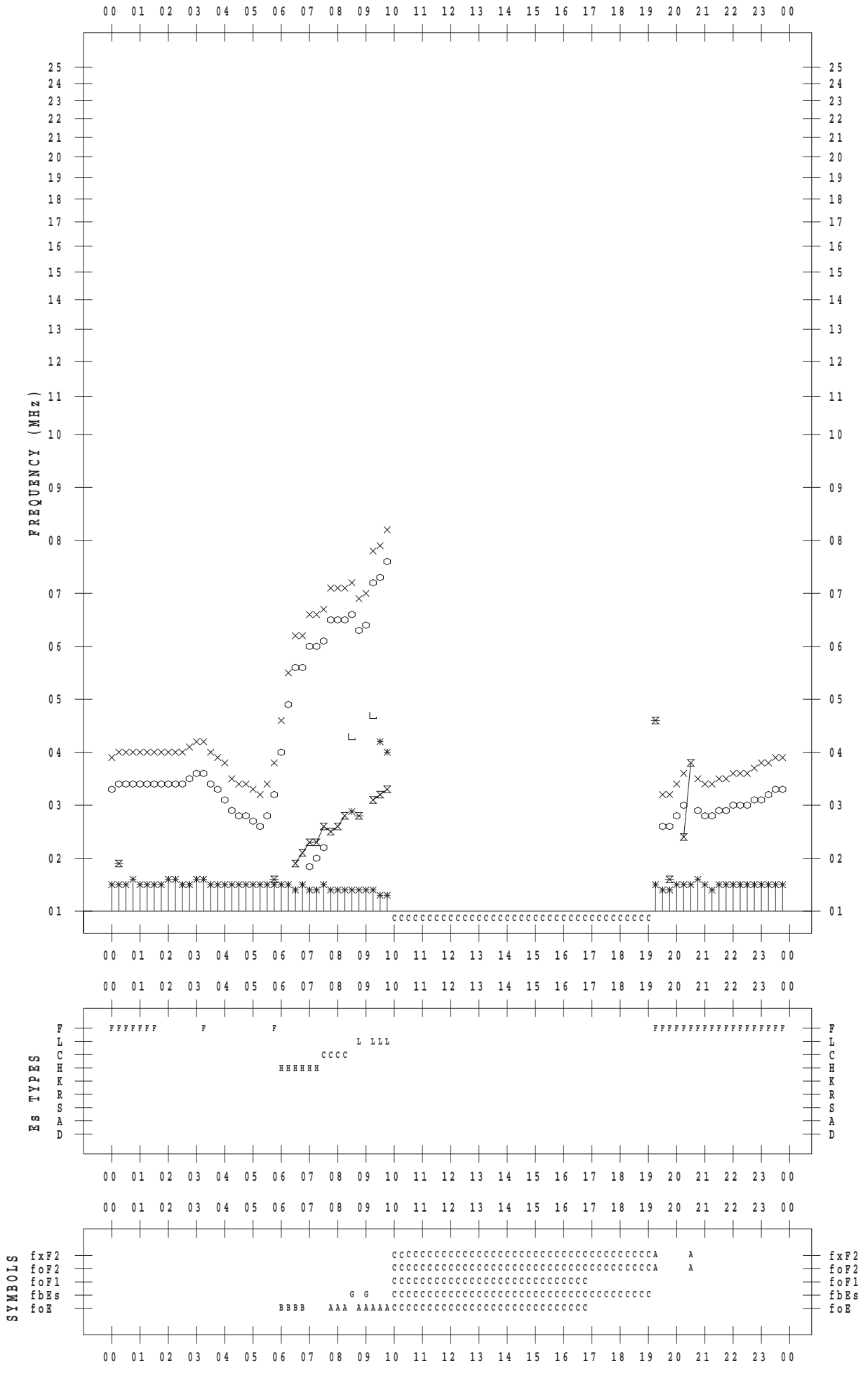
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/12

135 °E MEAN TIME



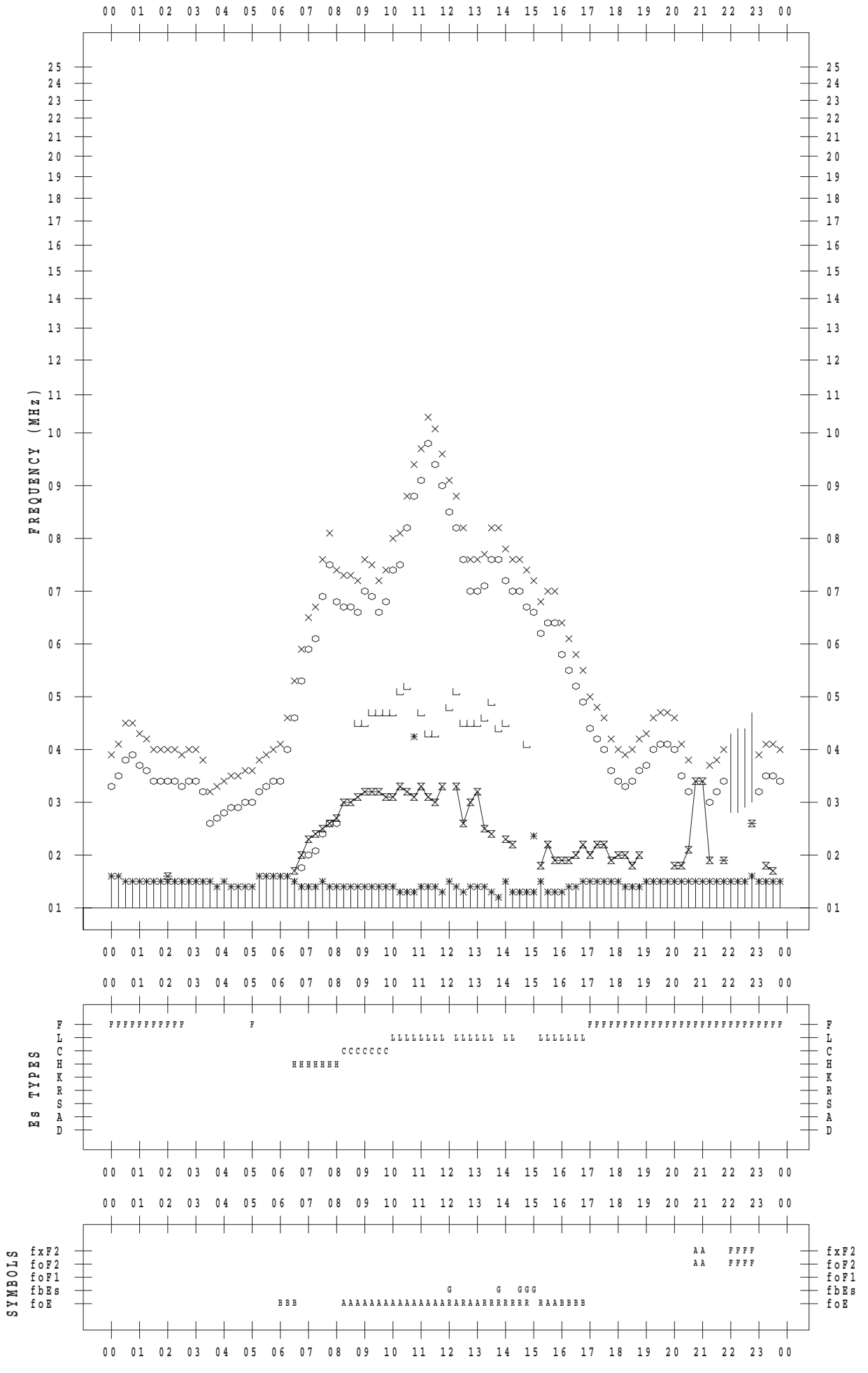
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/13

135 °E MEAN TIME



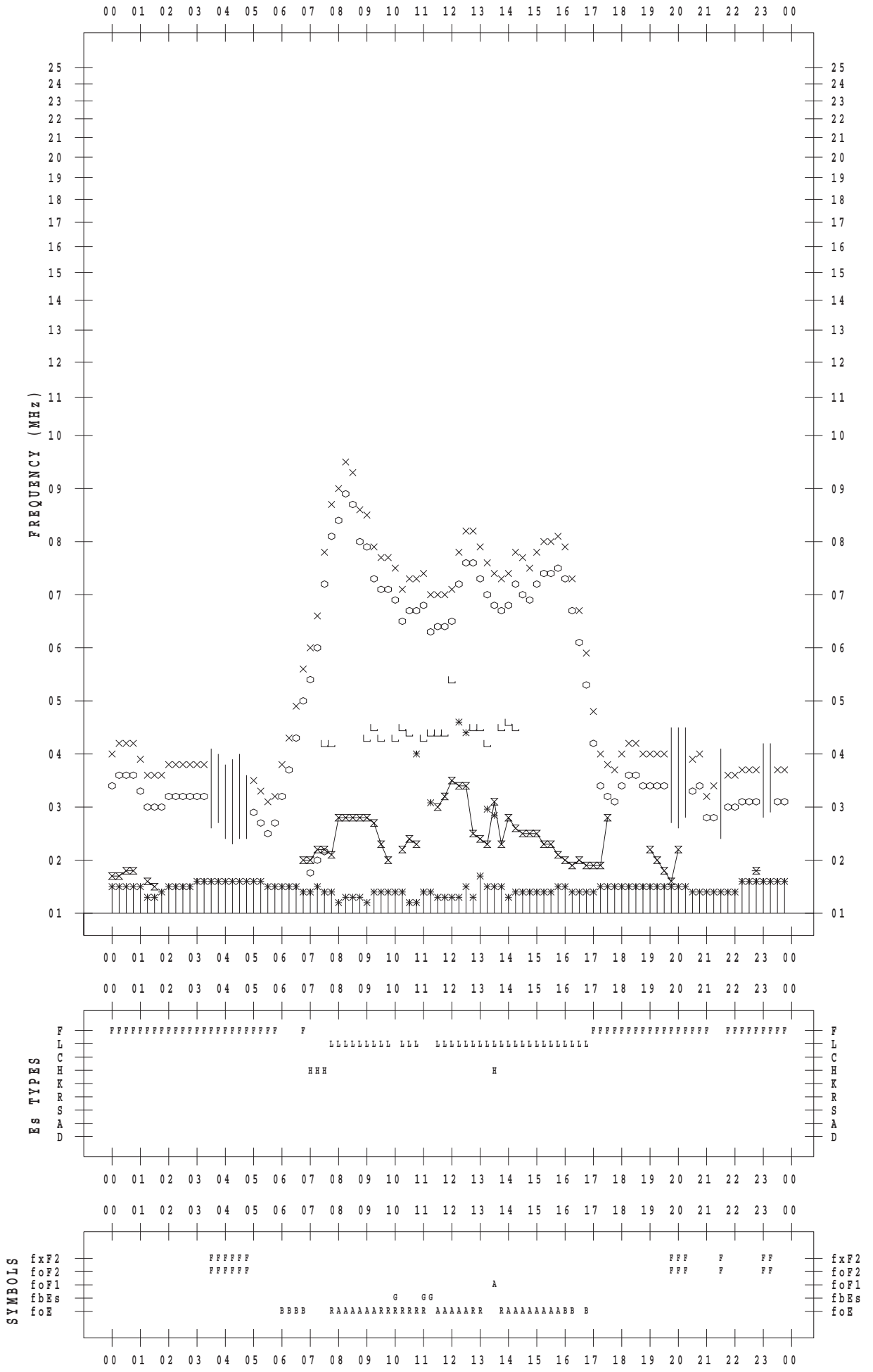
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/14

135 °E MEAN TIME



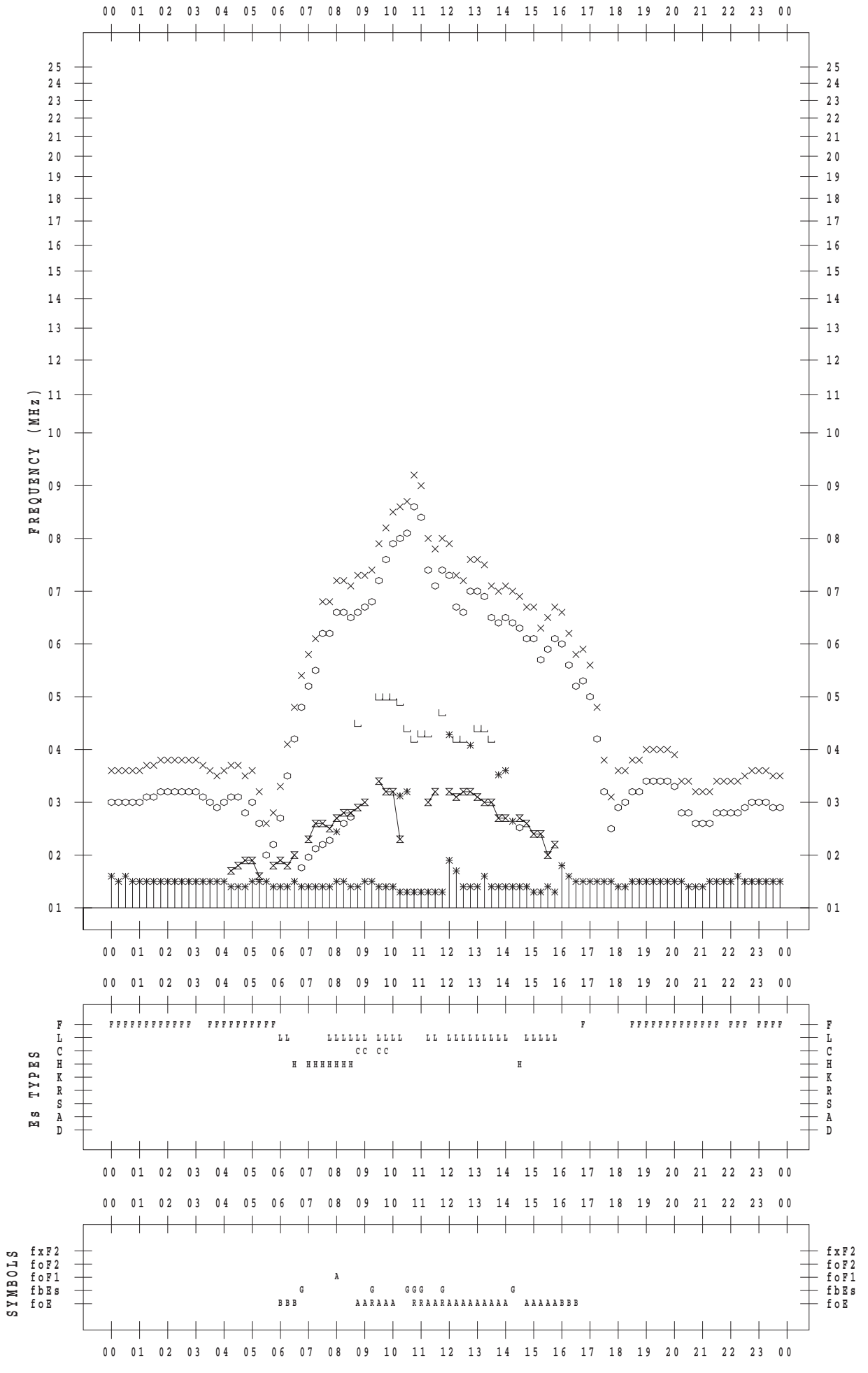
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/15

135 °E MEAN TIME



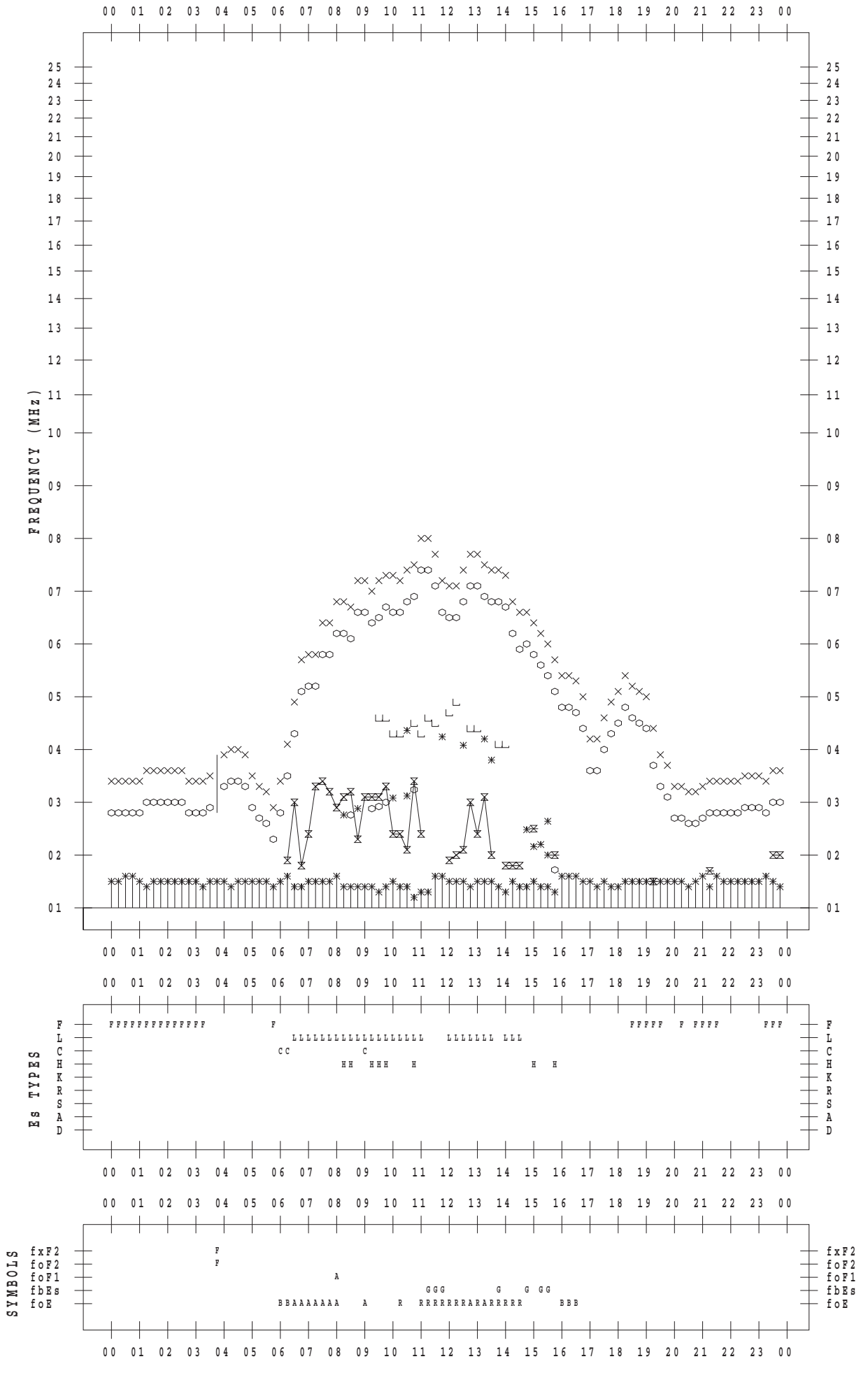
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/16

135 °E MEAN TIME



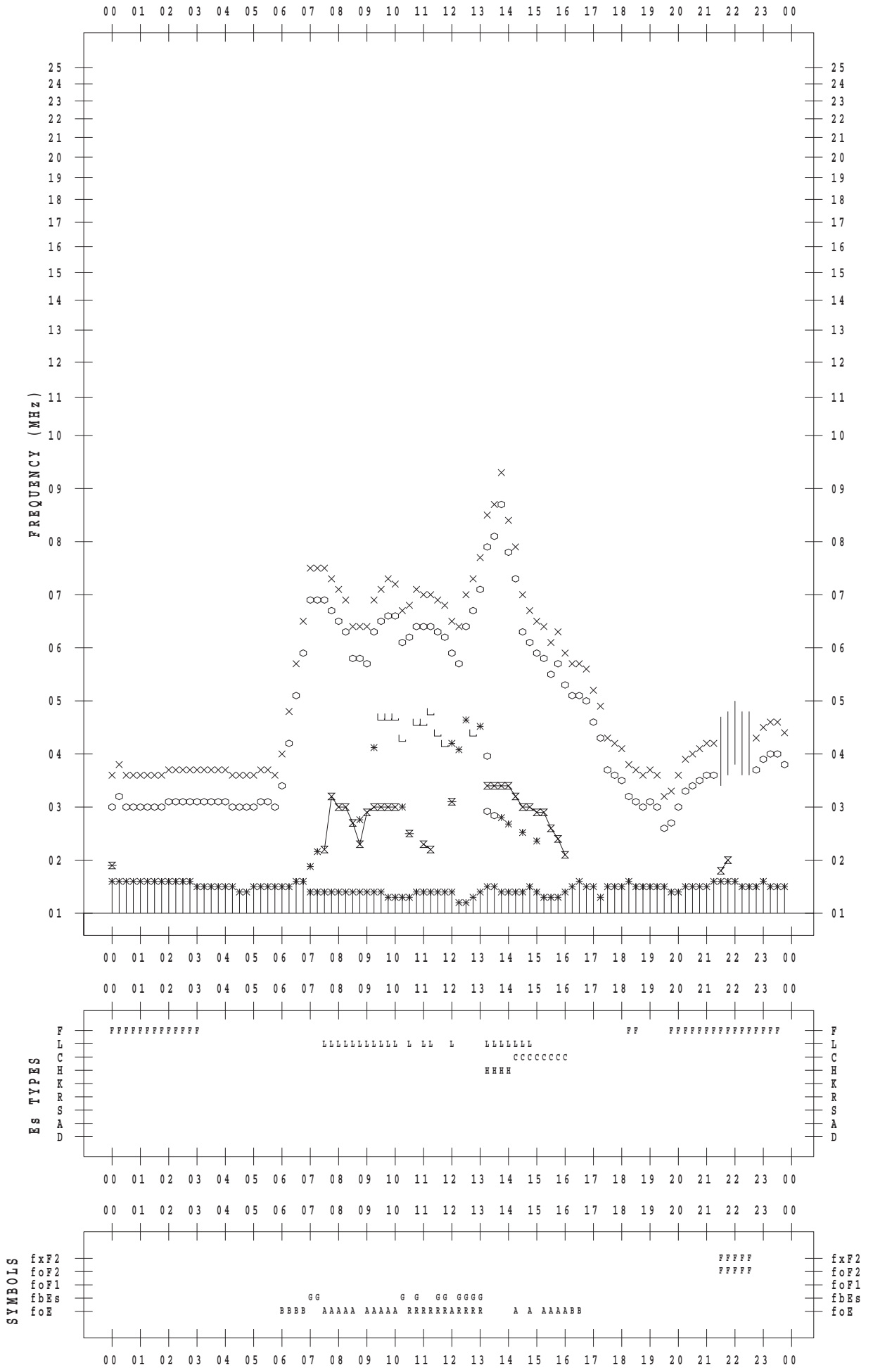
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/17

135 °E MEAN TIME



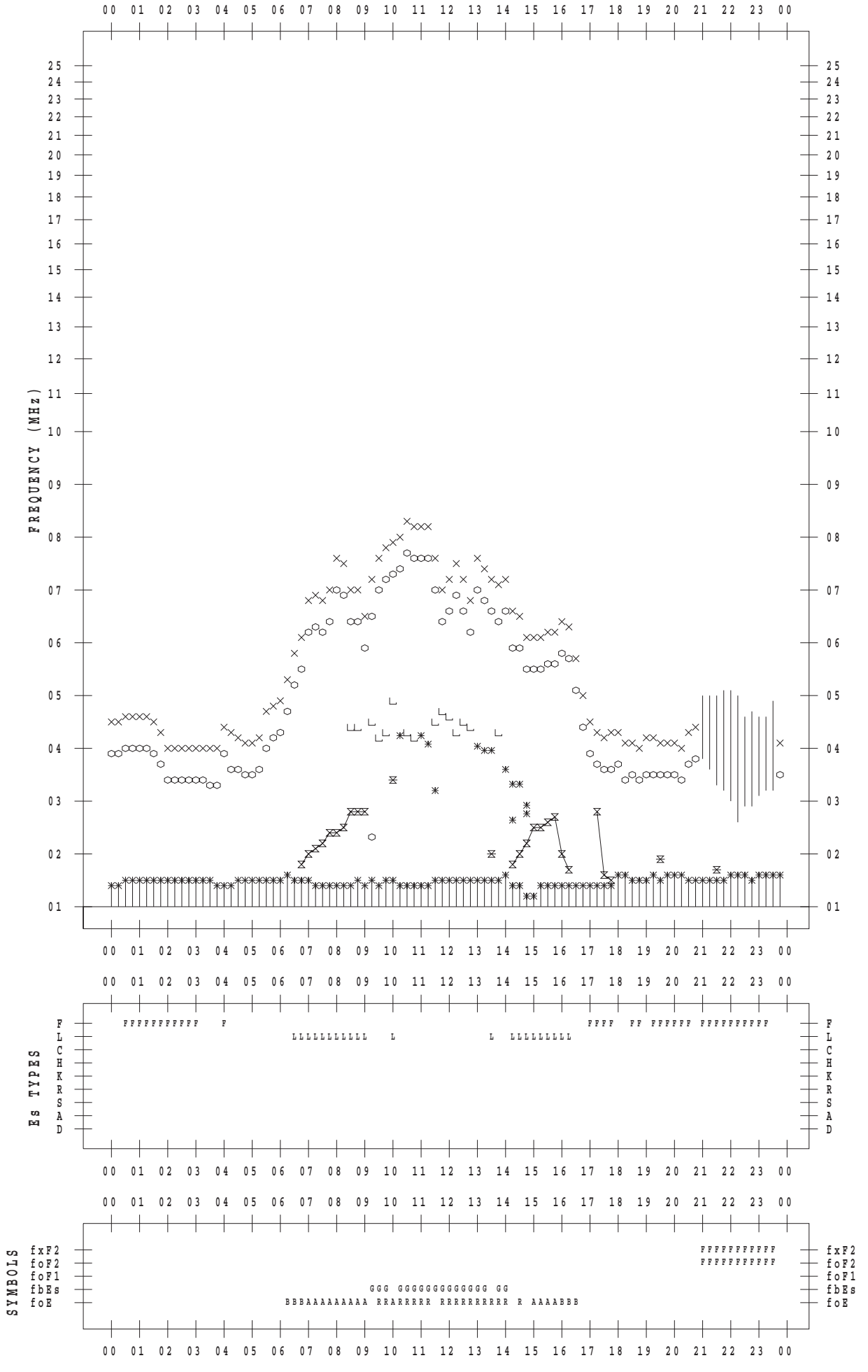
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/18

135 °E MEAN TIME



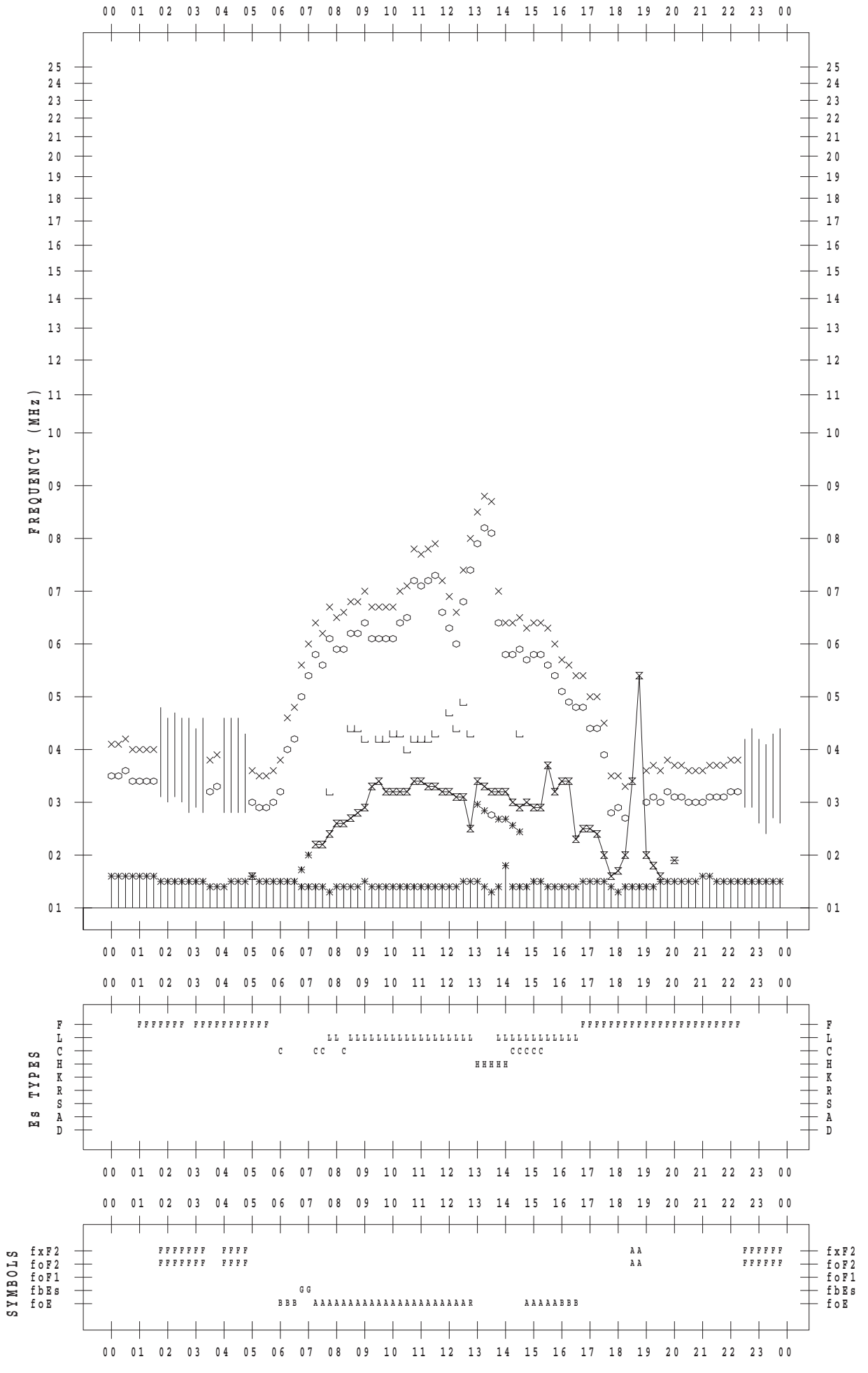
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/19

135 °E MEAN TIME



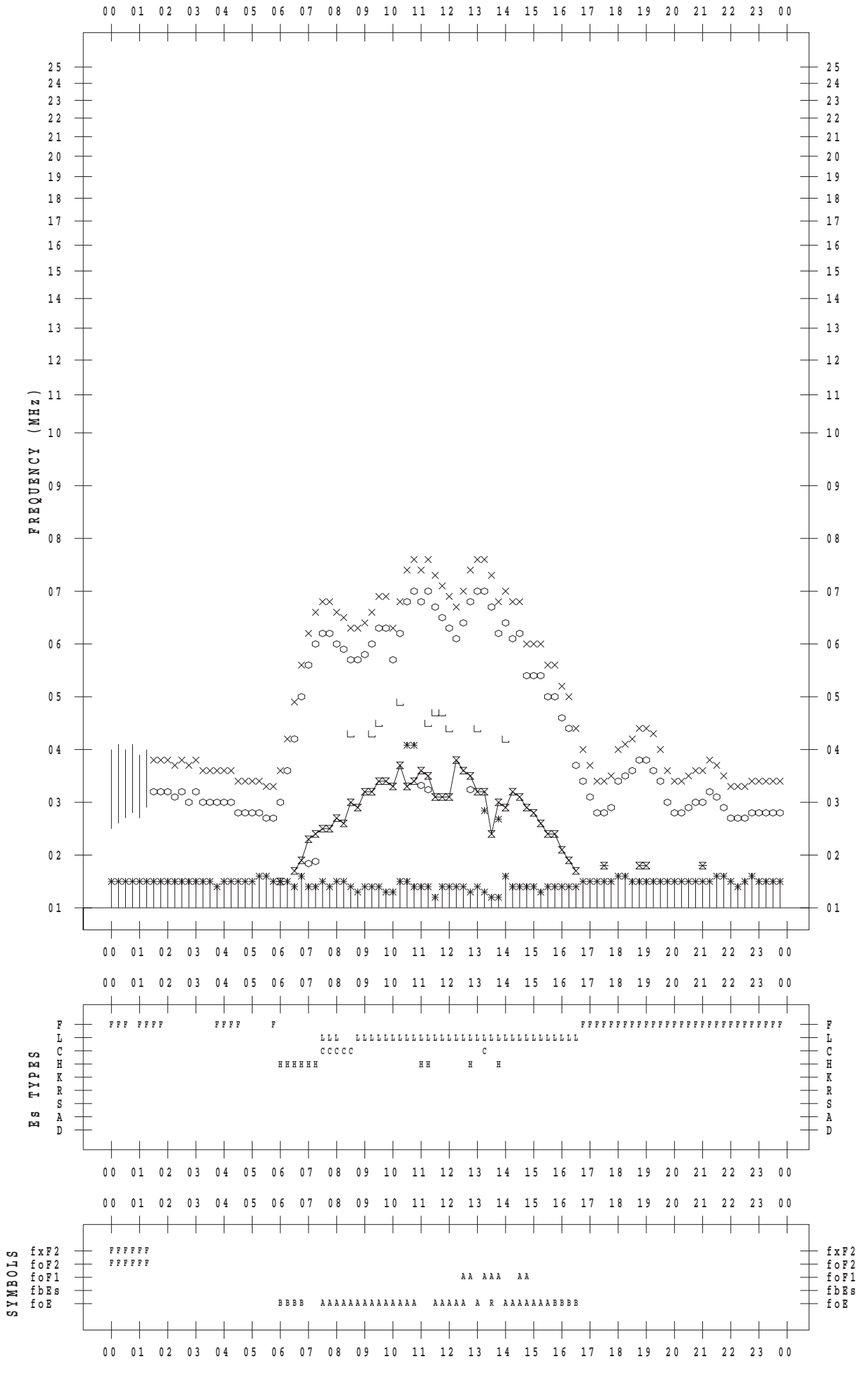
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/20

135 °E MEAN TIME



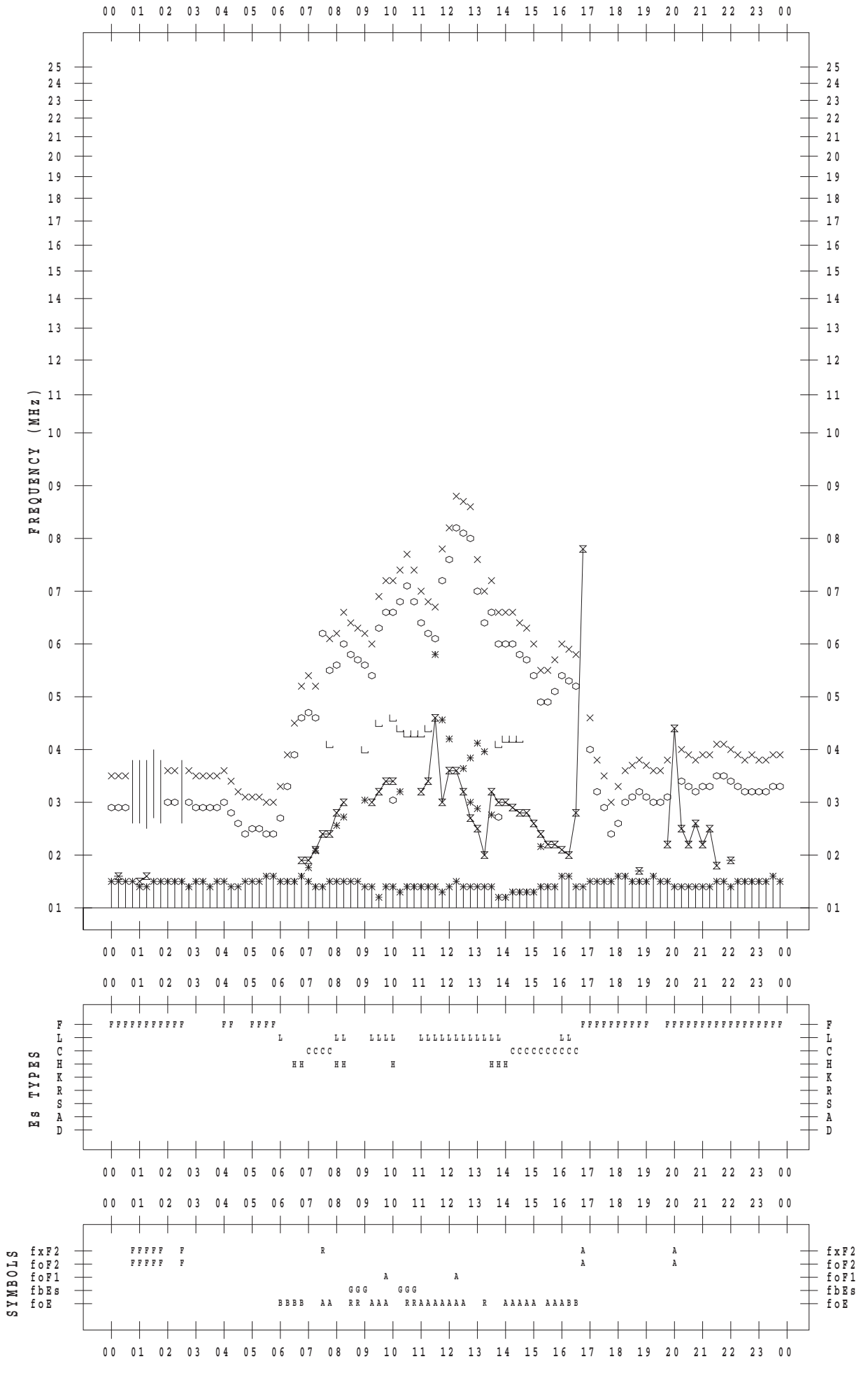
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/21

135 °E MEAN TIME



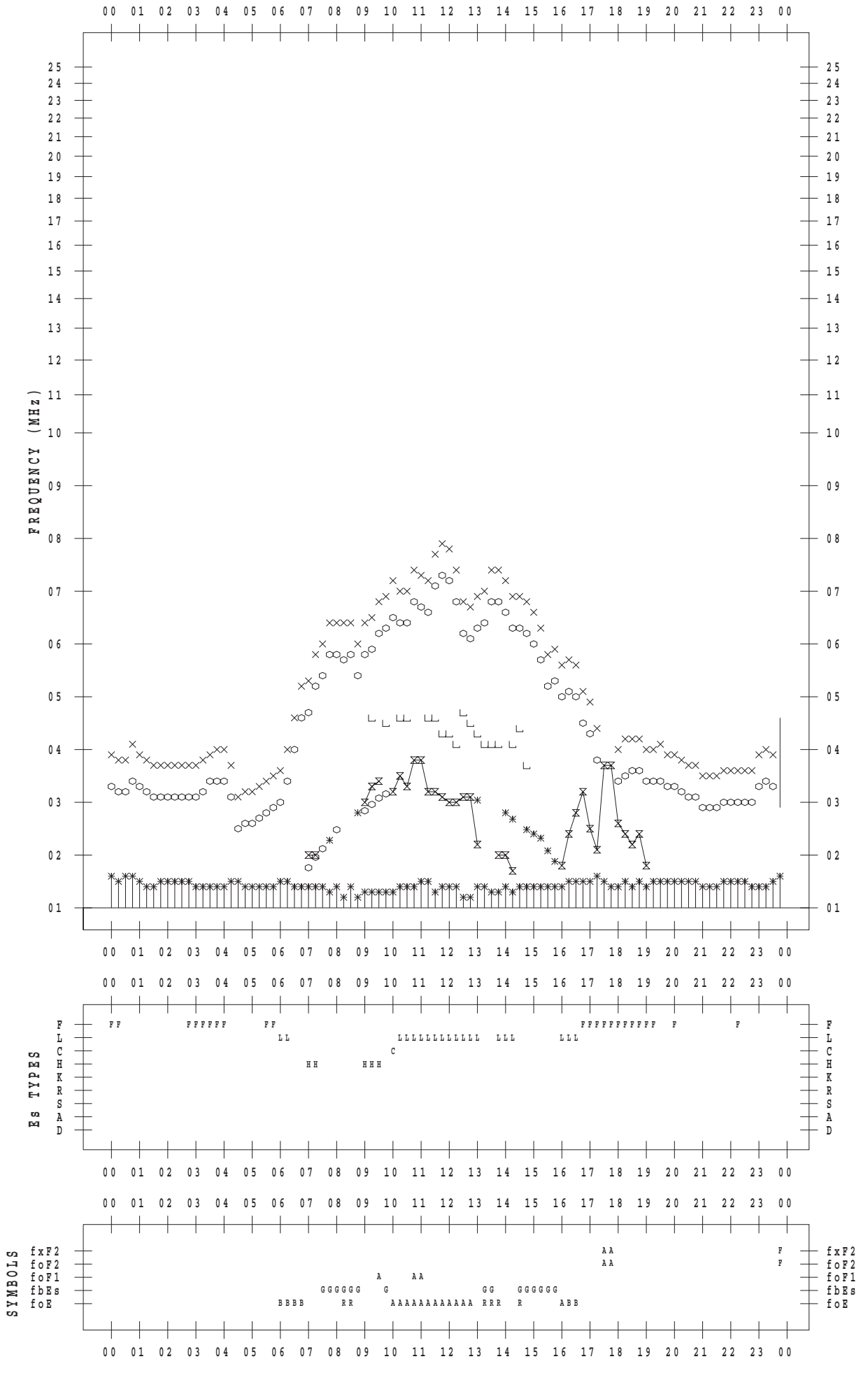
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/22

135 °E MEAN TIME



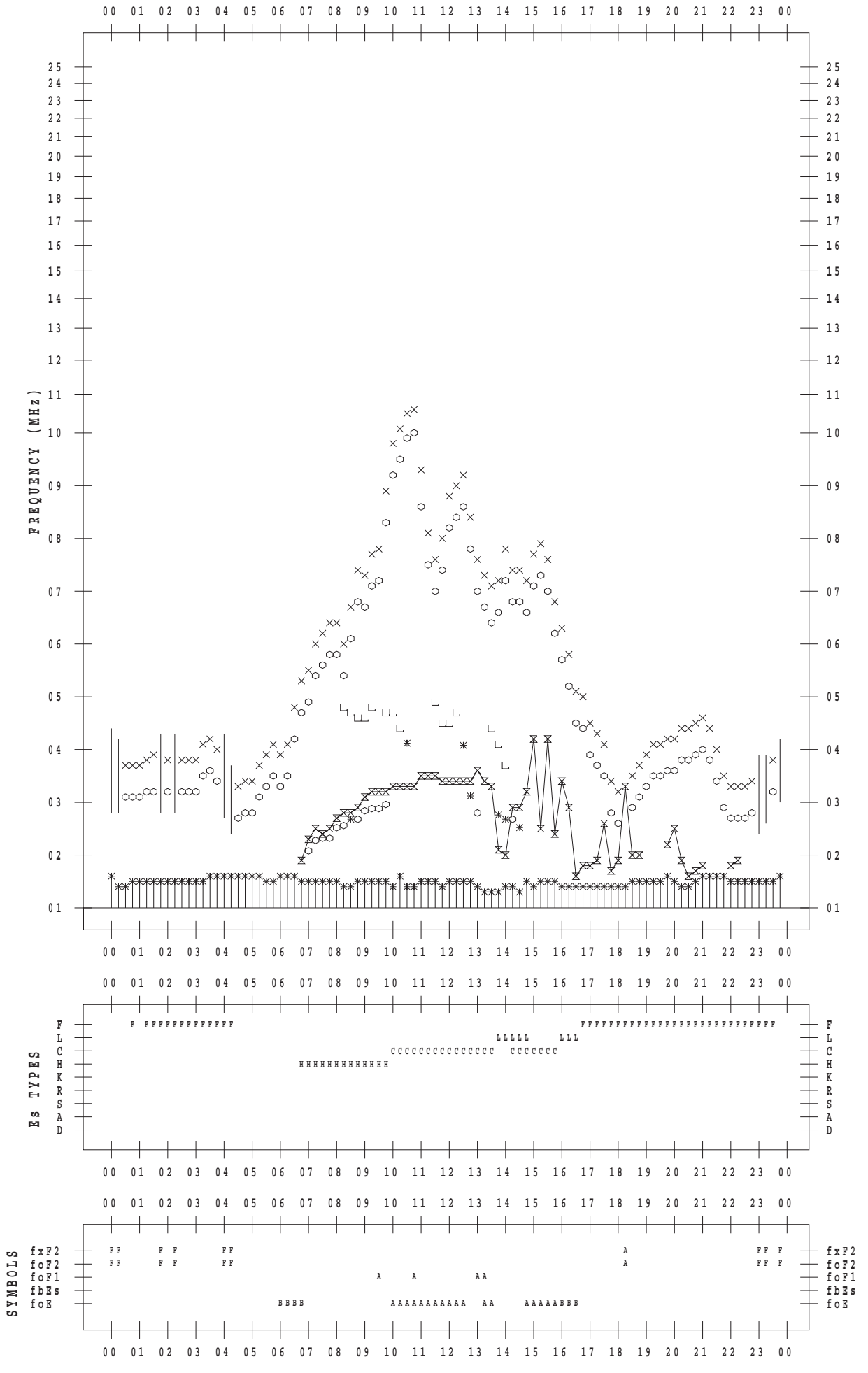
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/23

135 °E MEAN TIME



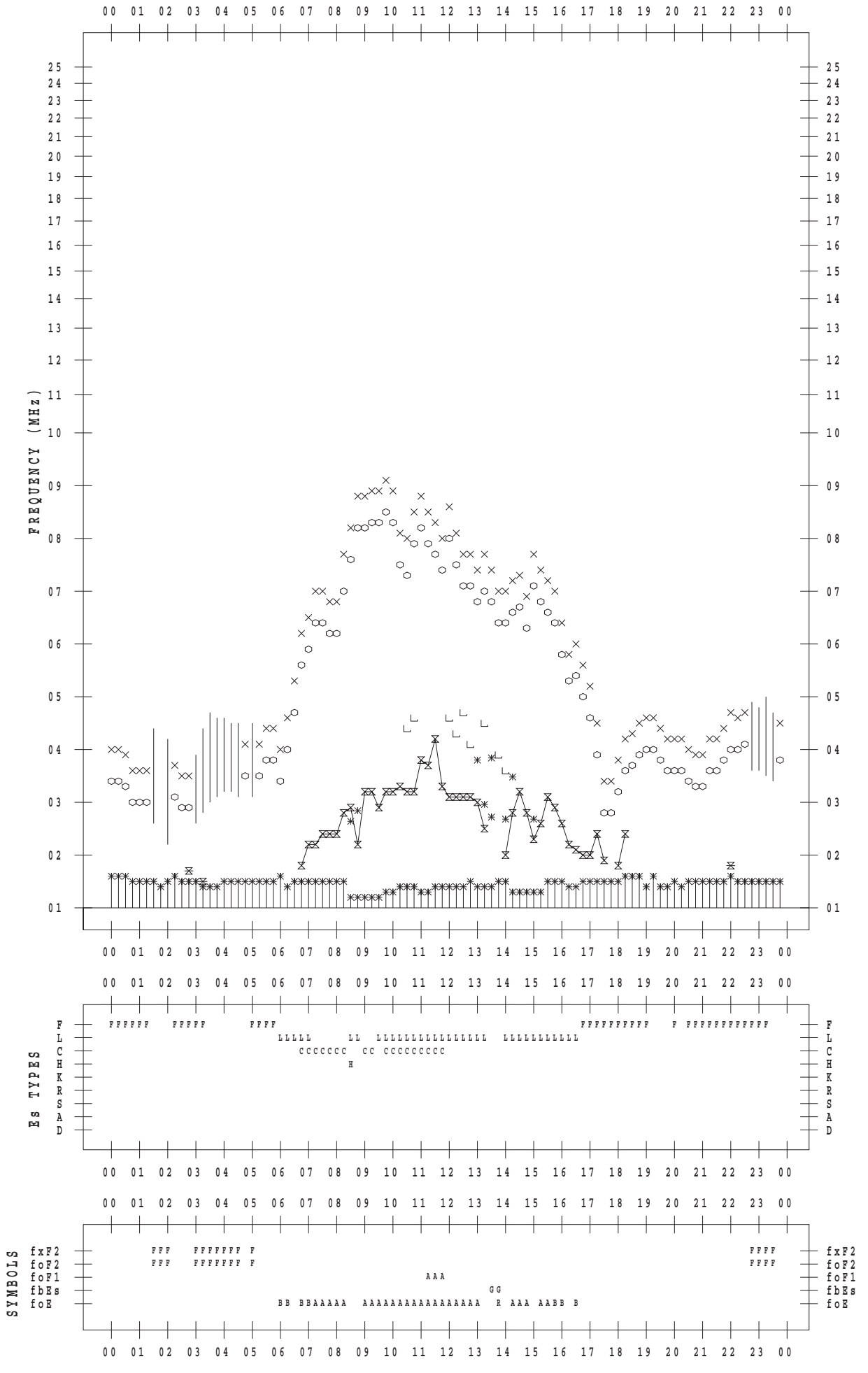
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/24

135 °E MEAN TIME



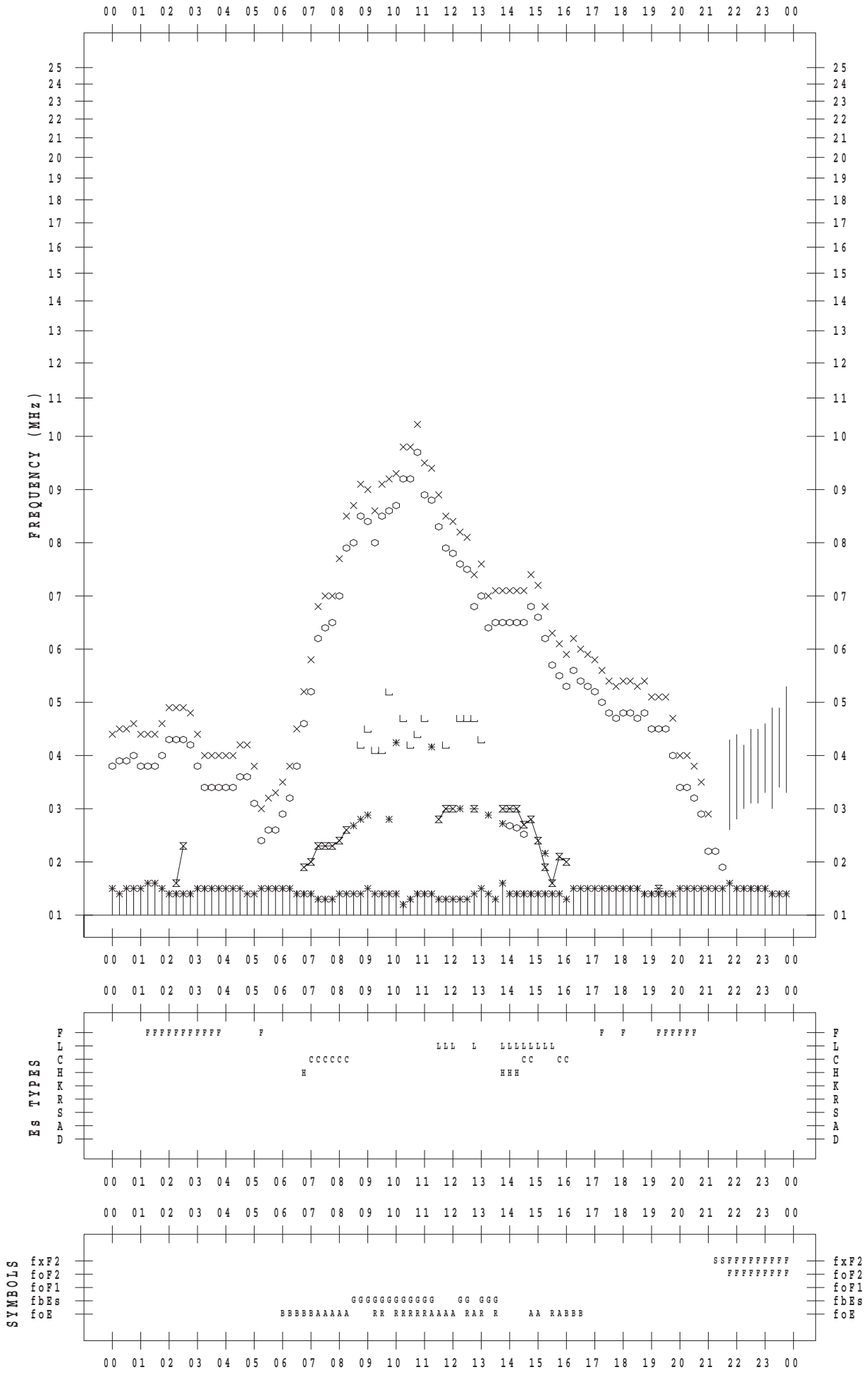
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/25

135 °E MEAN TIME



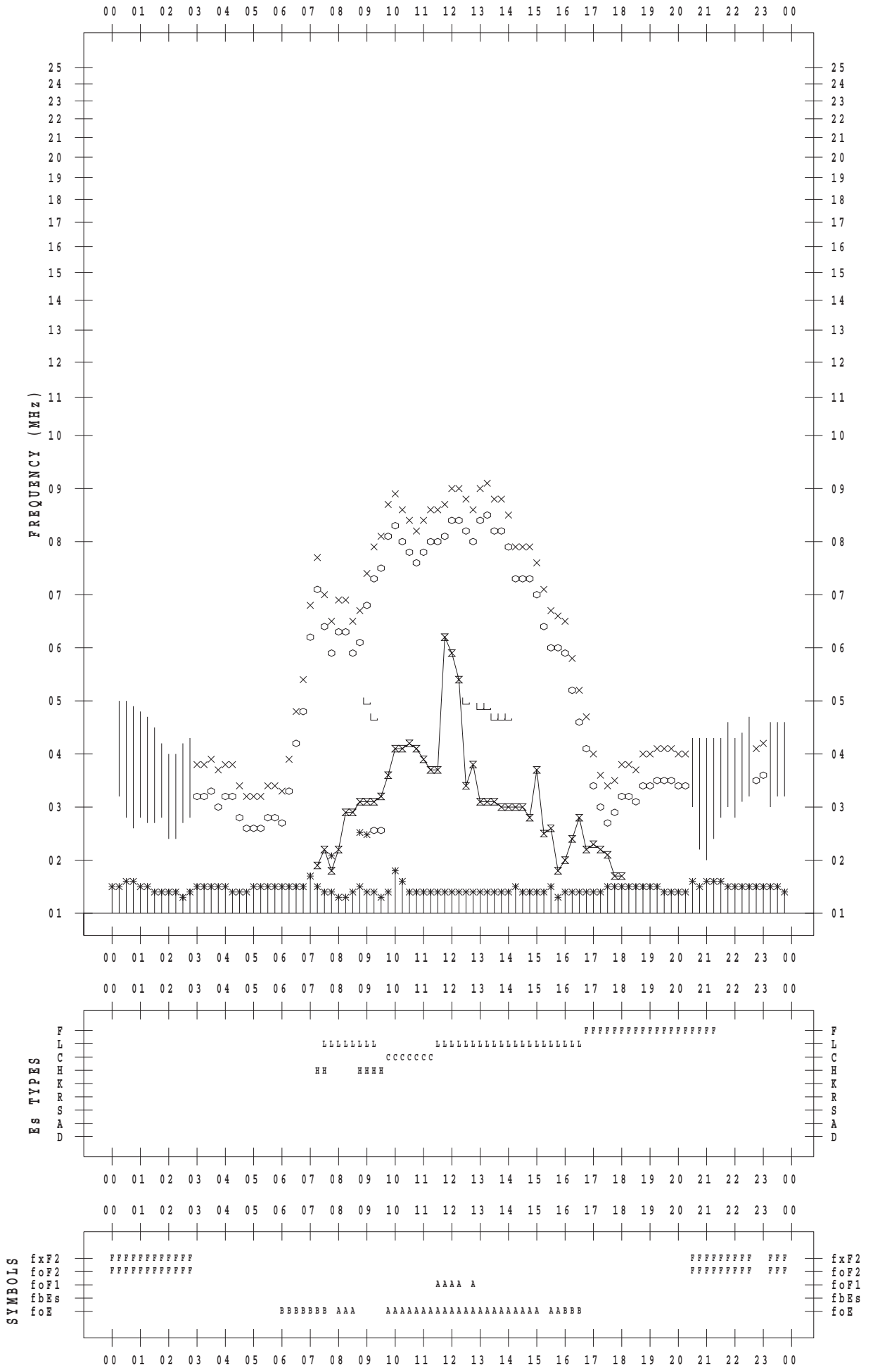
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/26

135 °E MEAN TIME



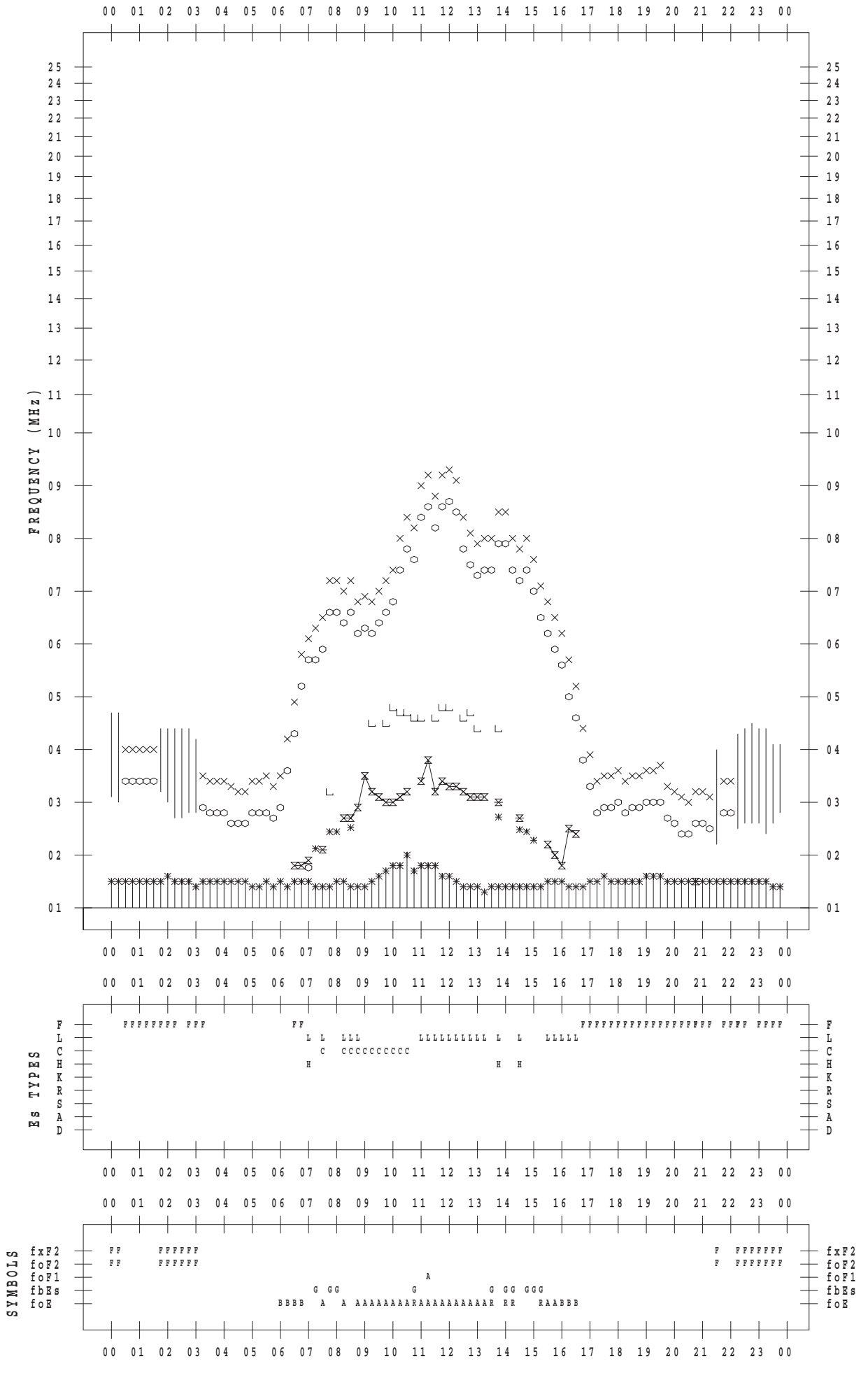
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/27

135 °E MEAN TIME



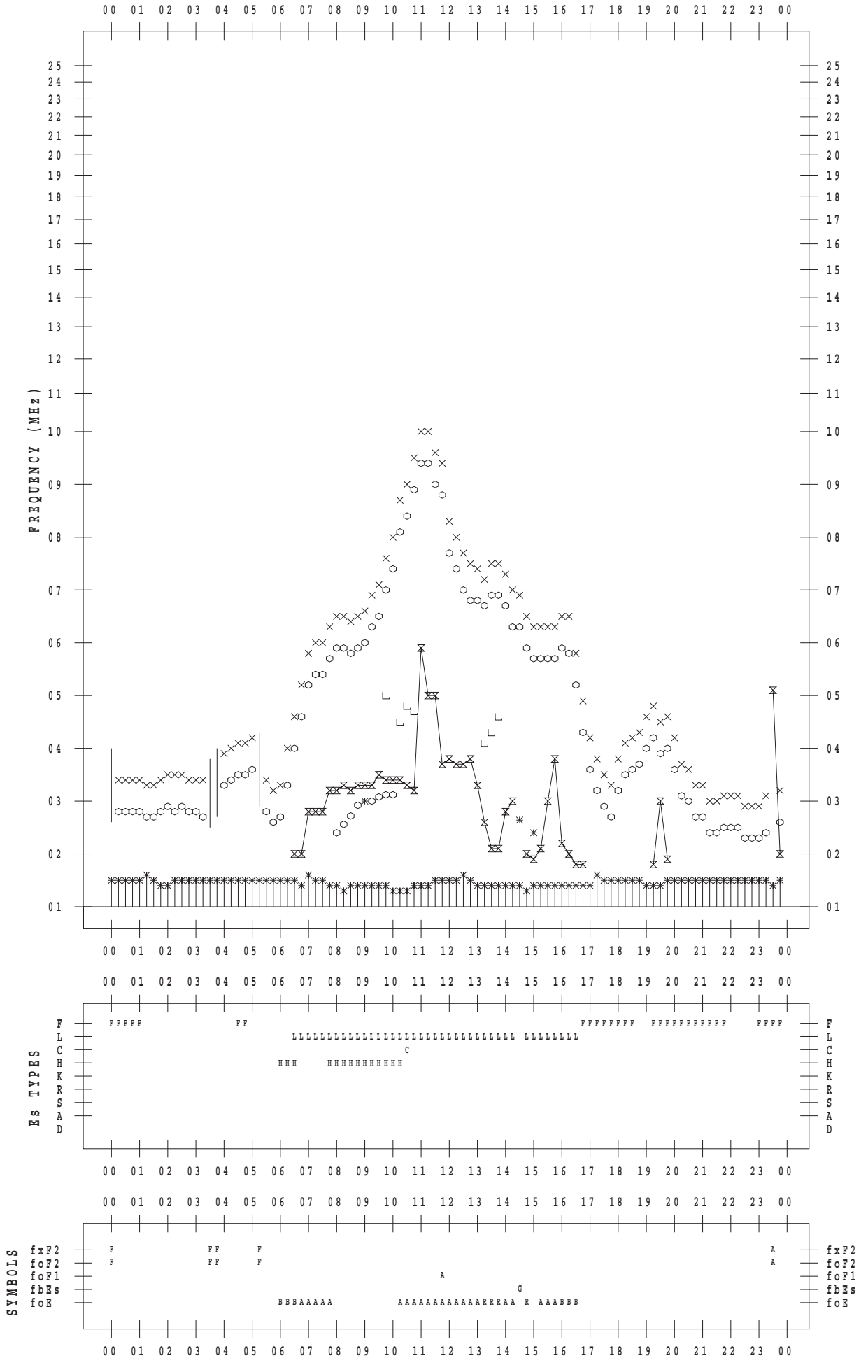
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/28

135 °E MEAN TIME



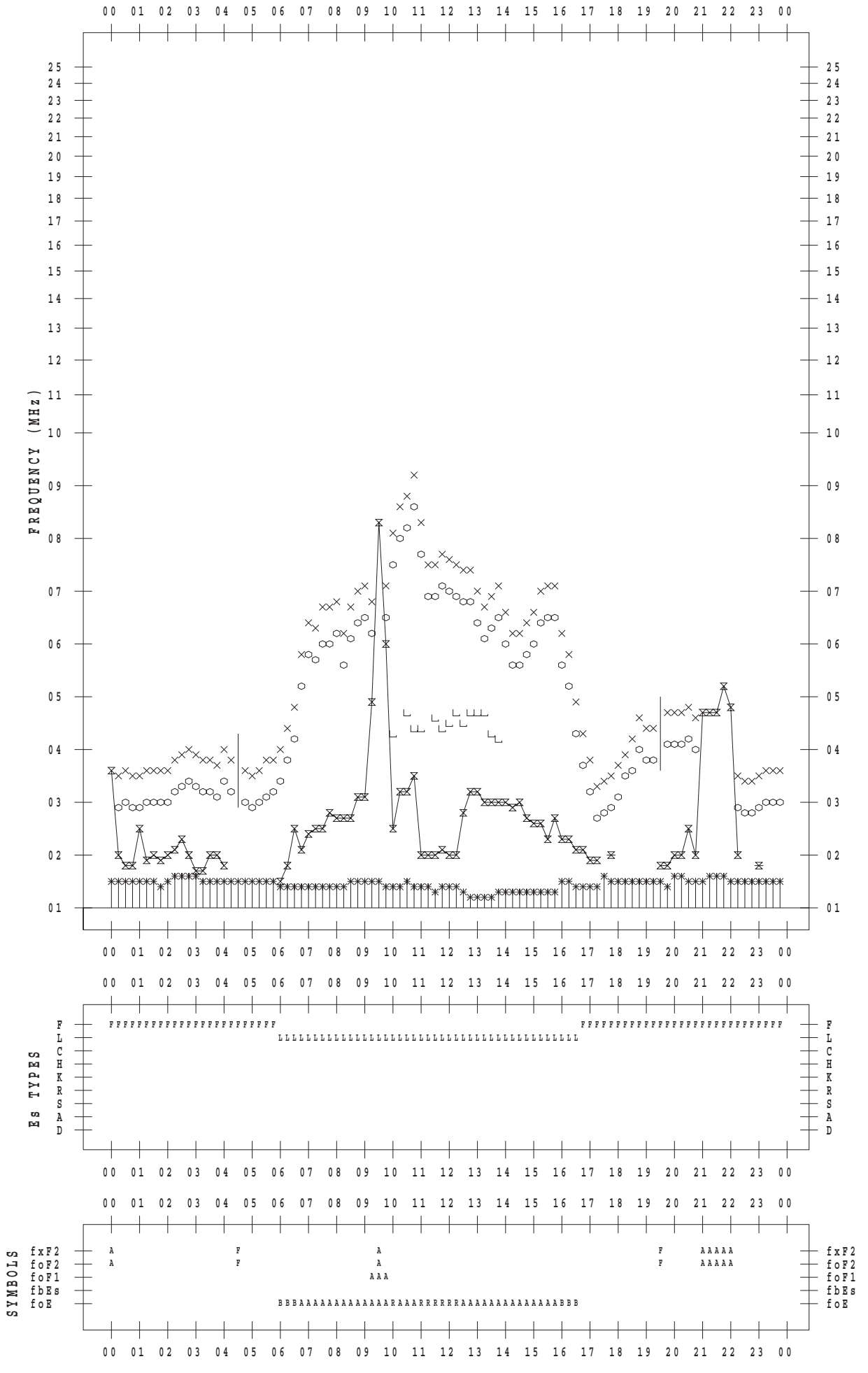
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/29

135 °E MEAN TIME



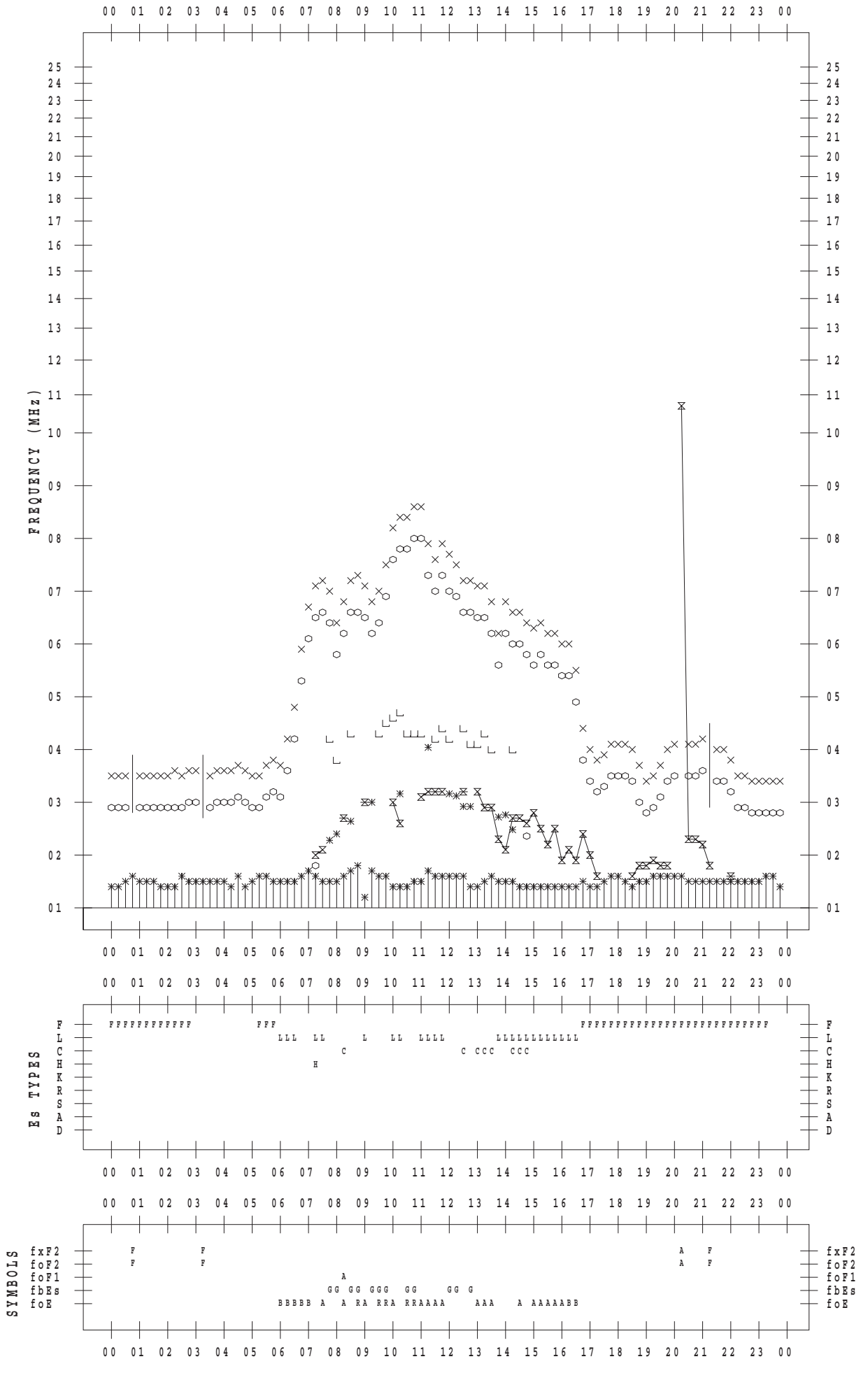
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/11/30

135 °E MEAN TIME



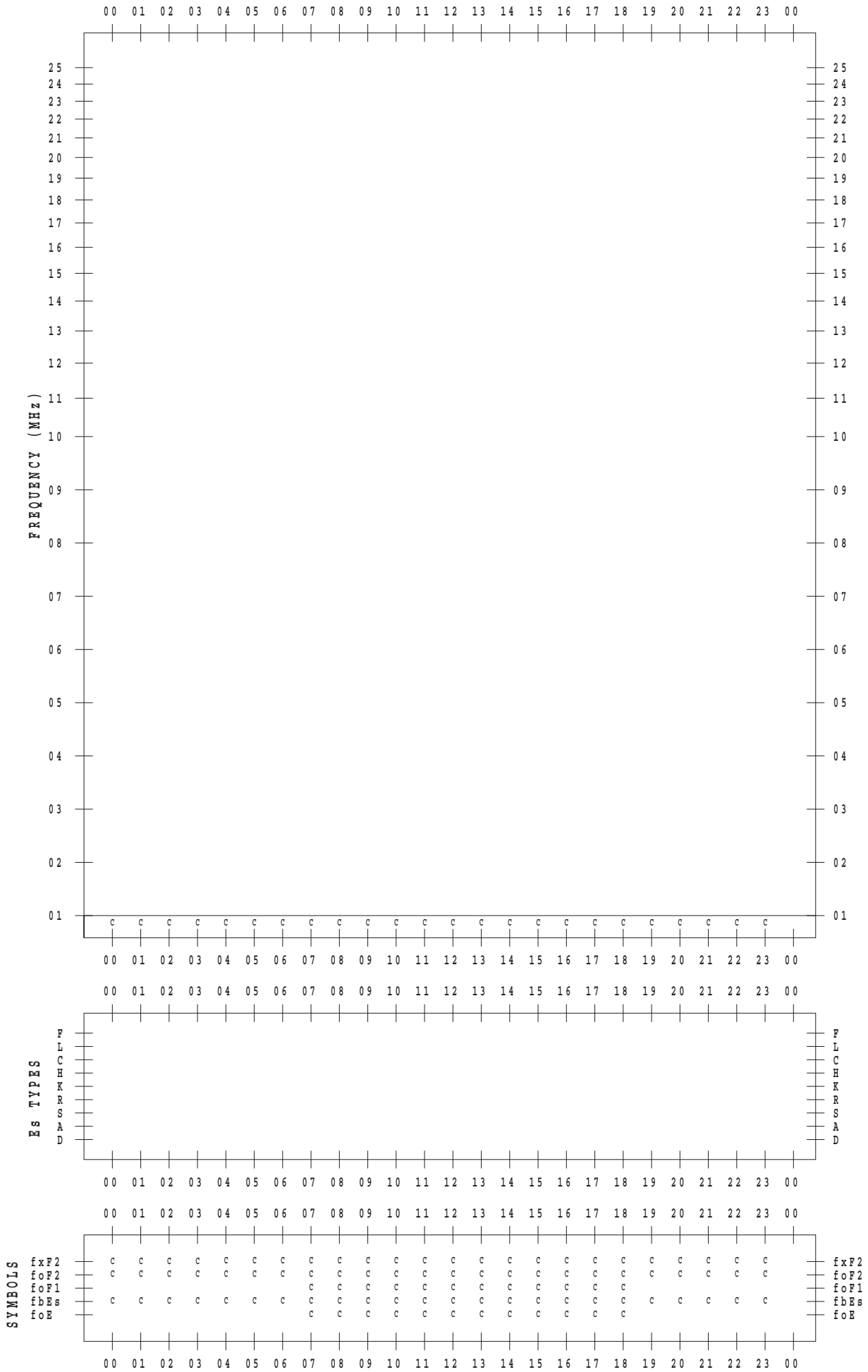
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 1

135 °E MEAN TIME



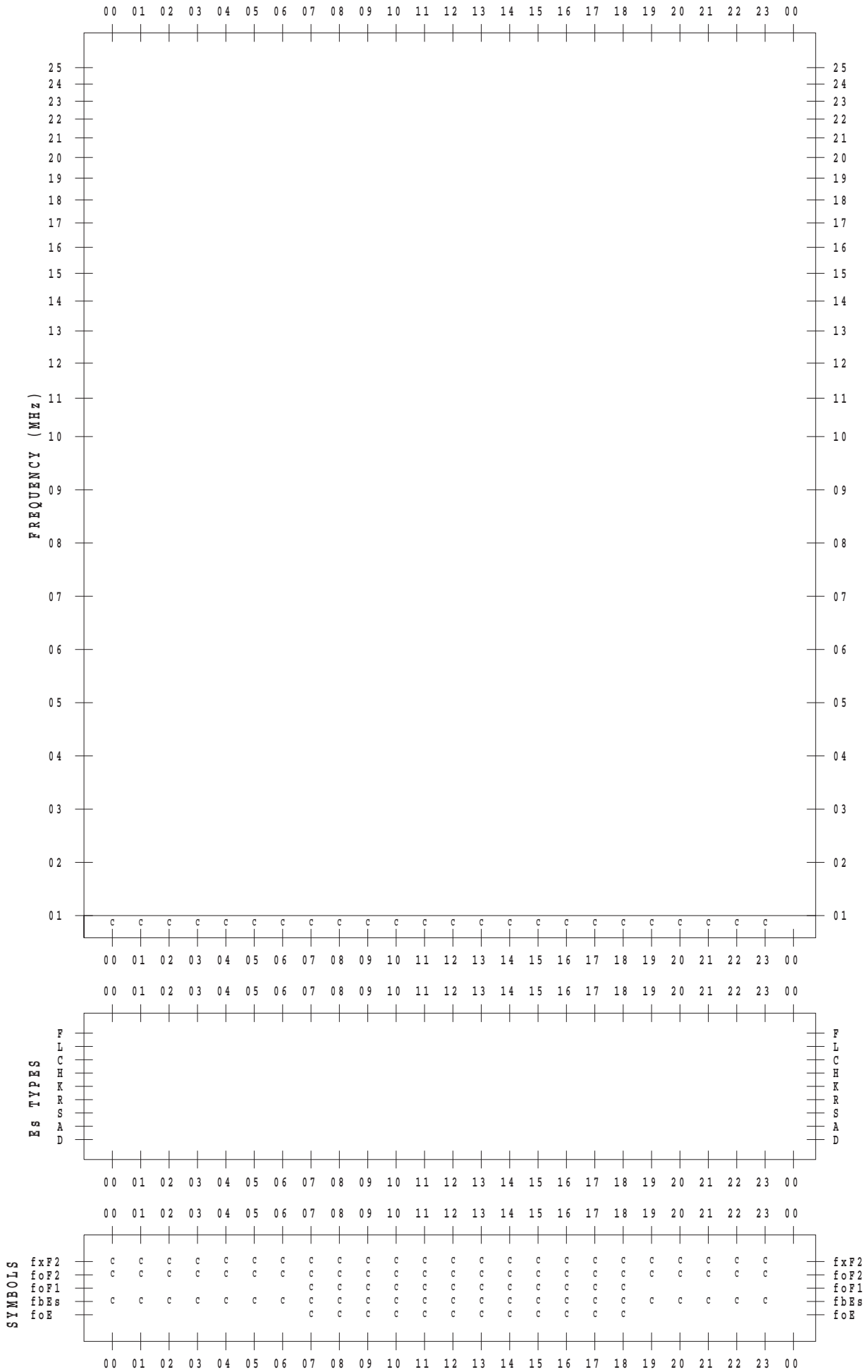
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 2

135 °E MEAN TIME



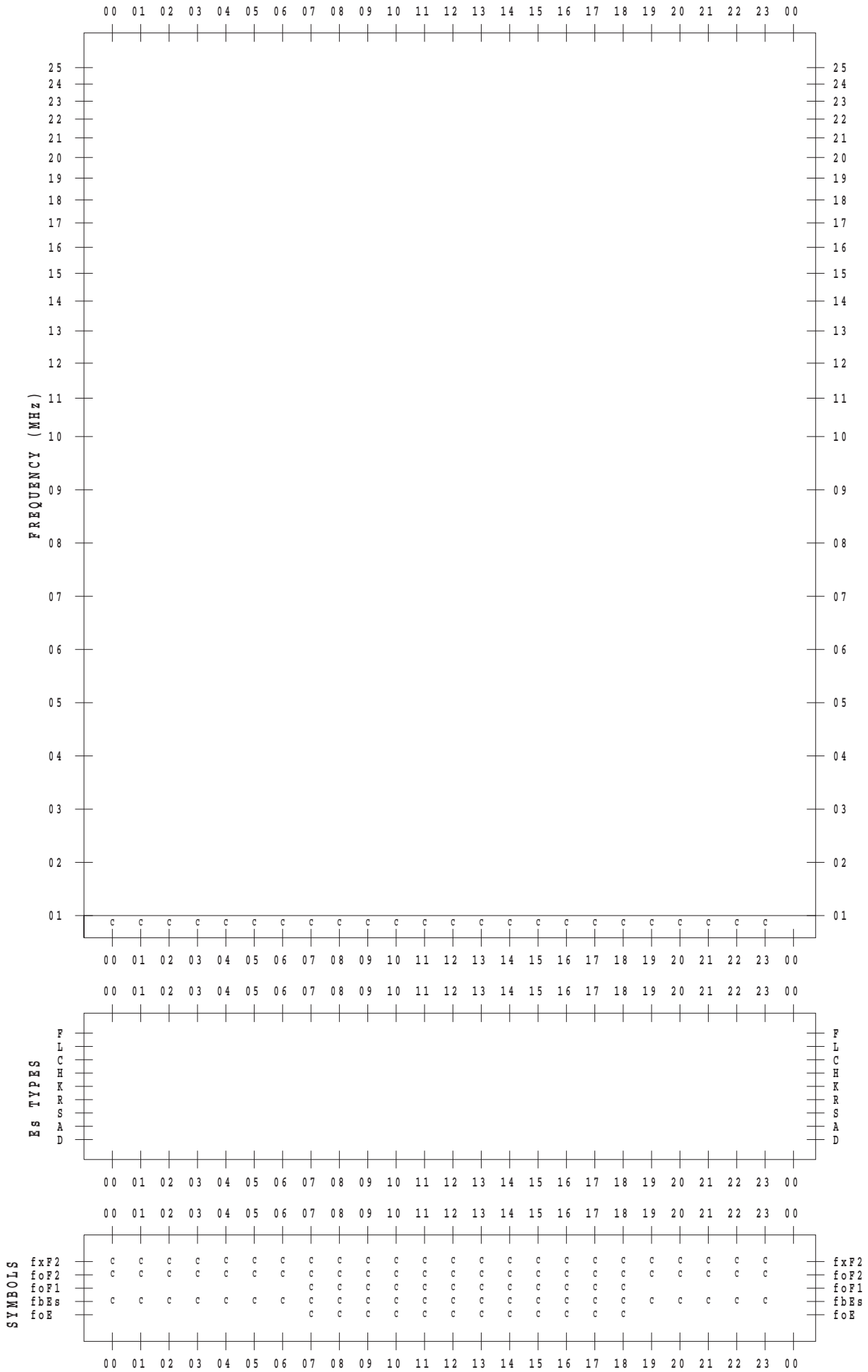
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 3

135 °E MEAN TIME



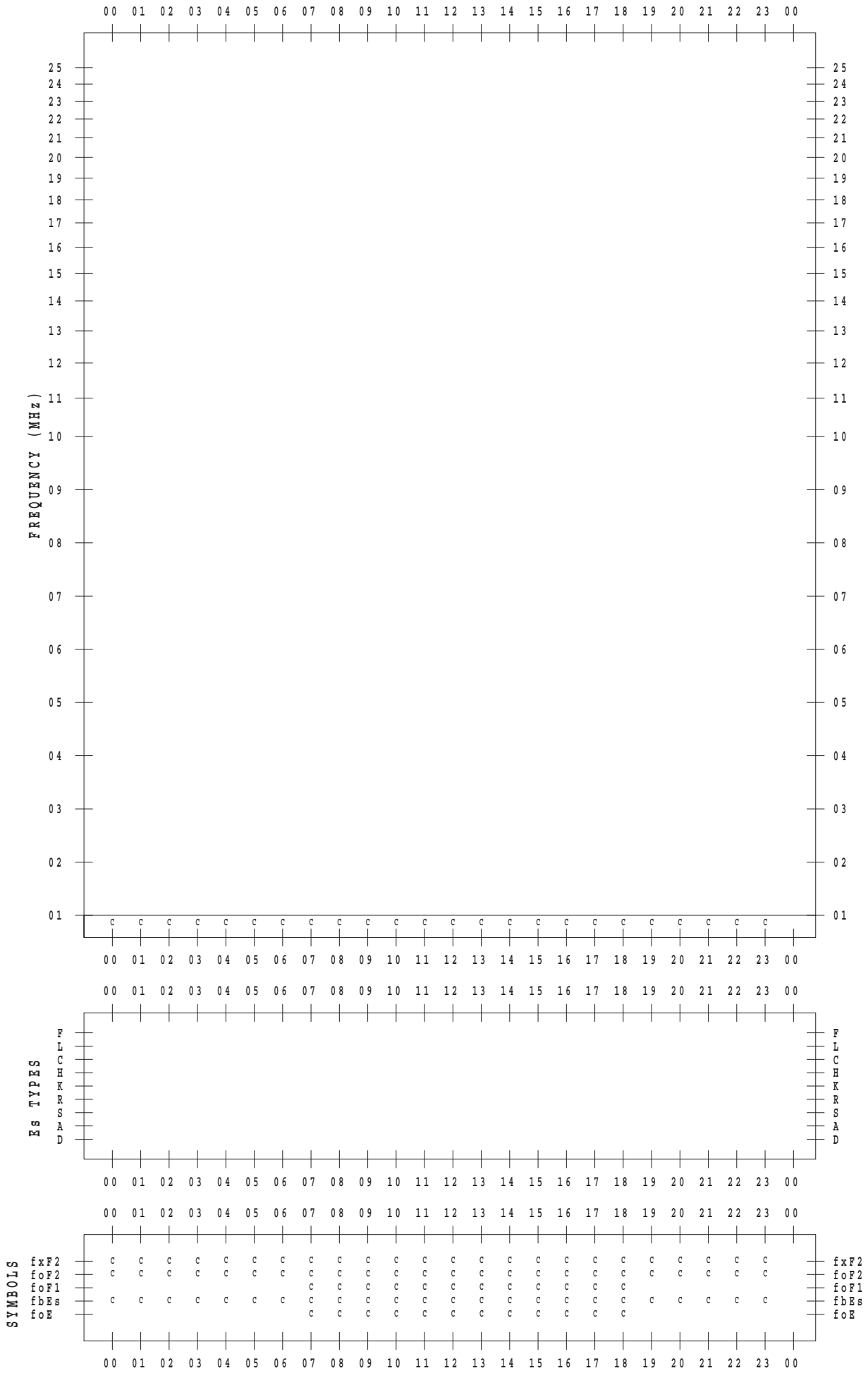
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 4

135 °E MEAN TIME



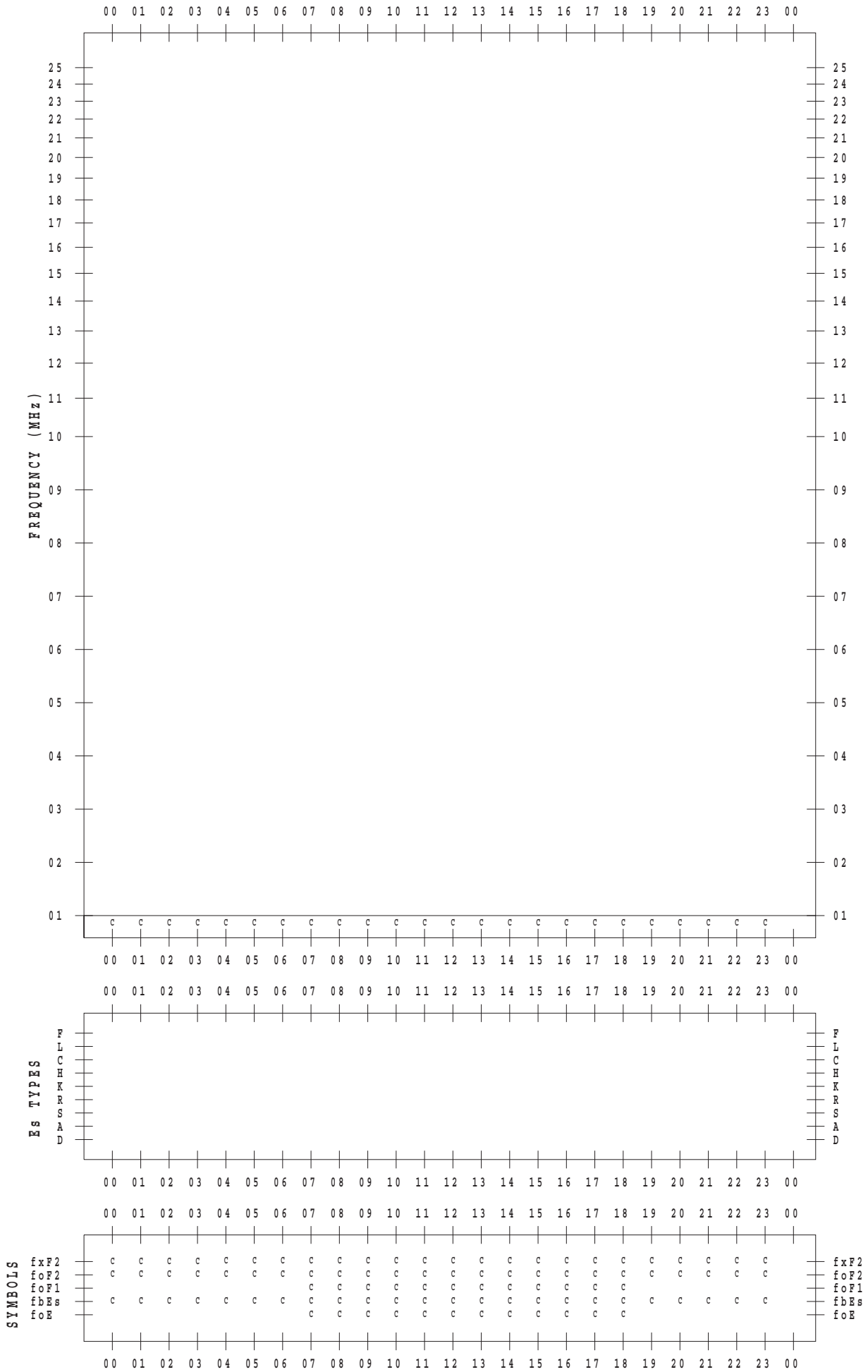
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 5

135 °E MEAN TIME



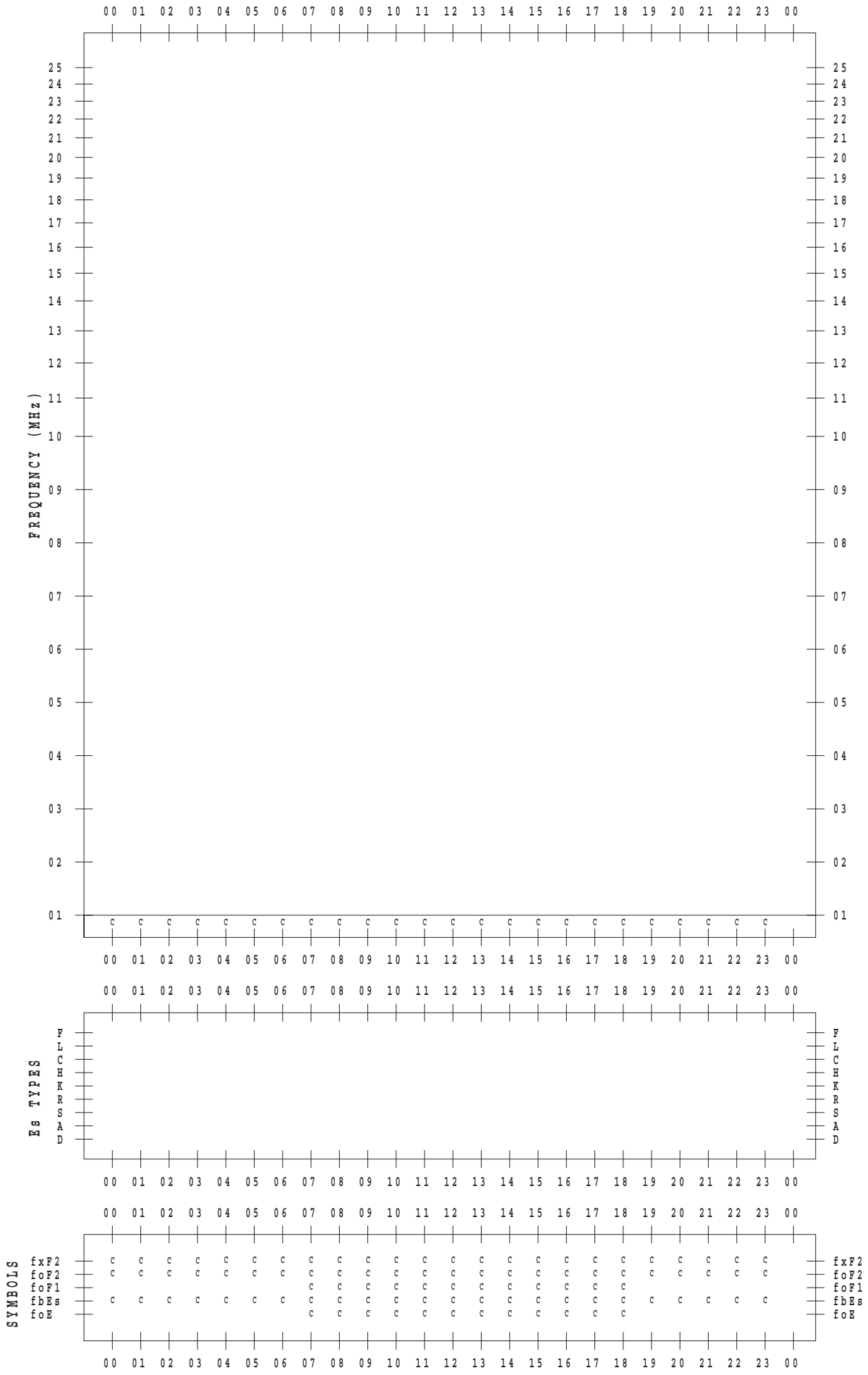
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 6

135 °E MEAN TIME



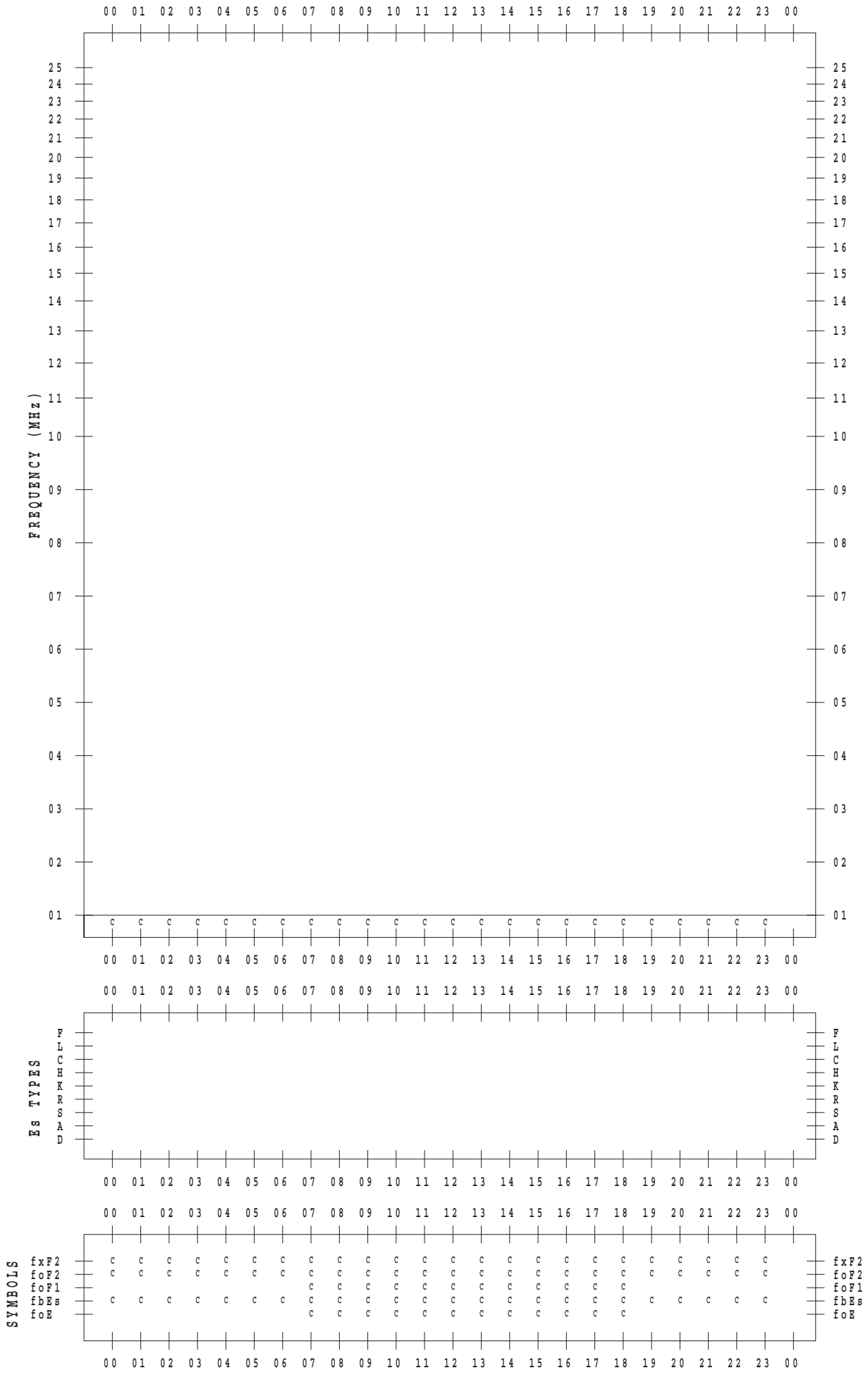
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 7

135 °E MEAN TIME



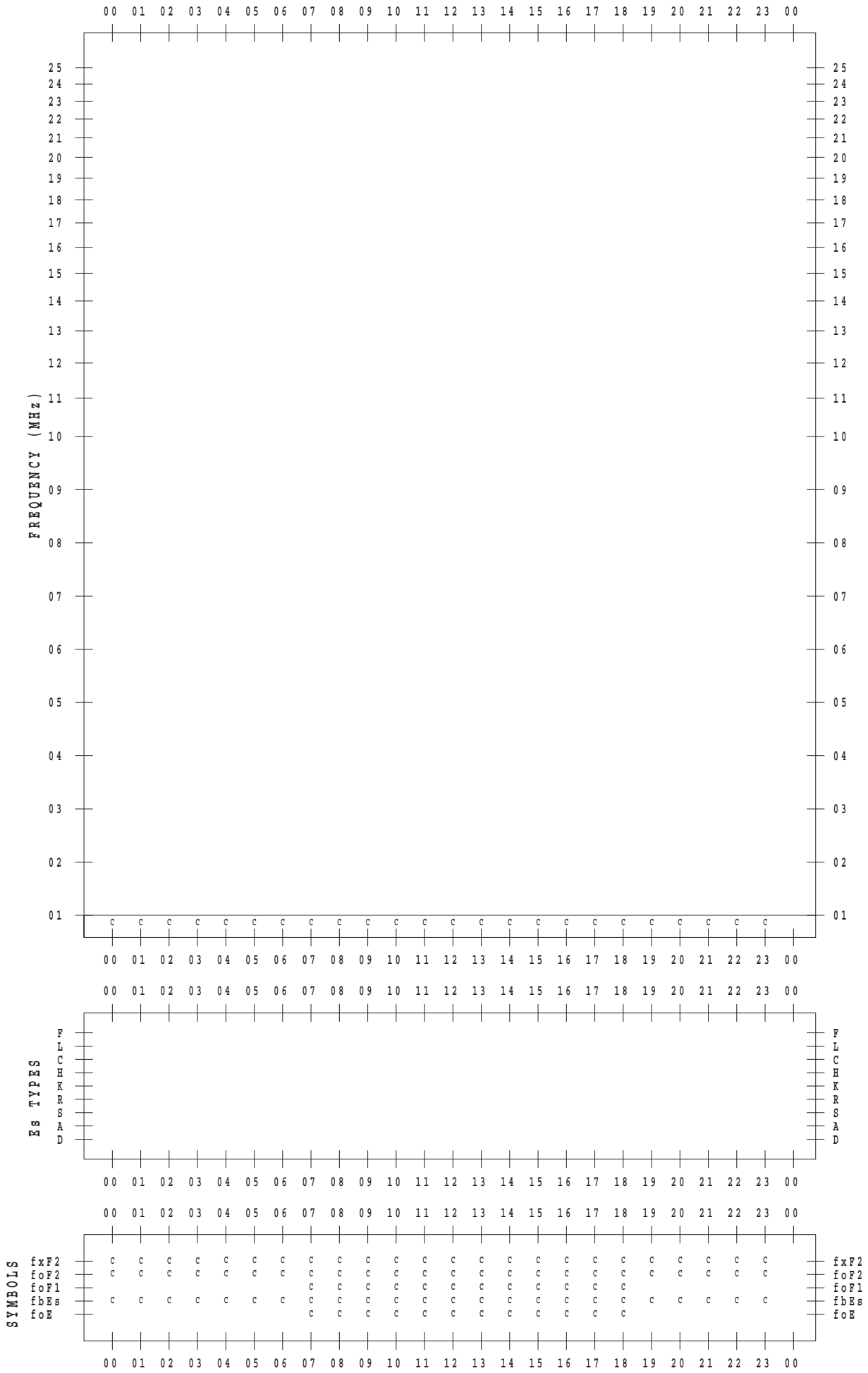
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 8

135 °E MEAN TIME



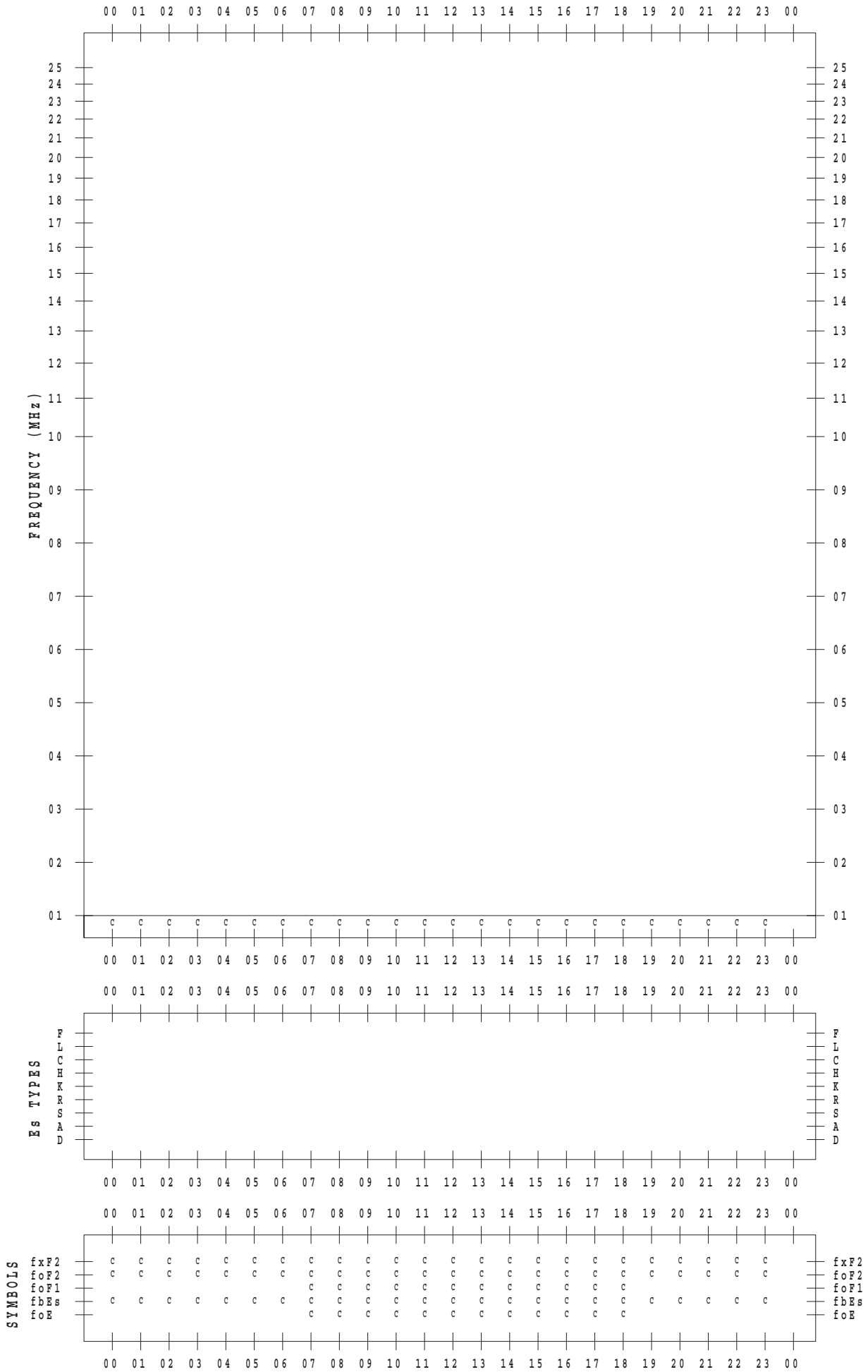
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/ 9

135 °E MEAN TIME



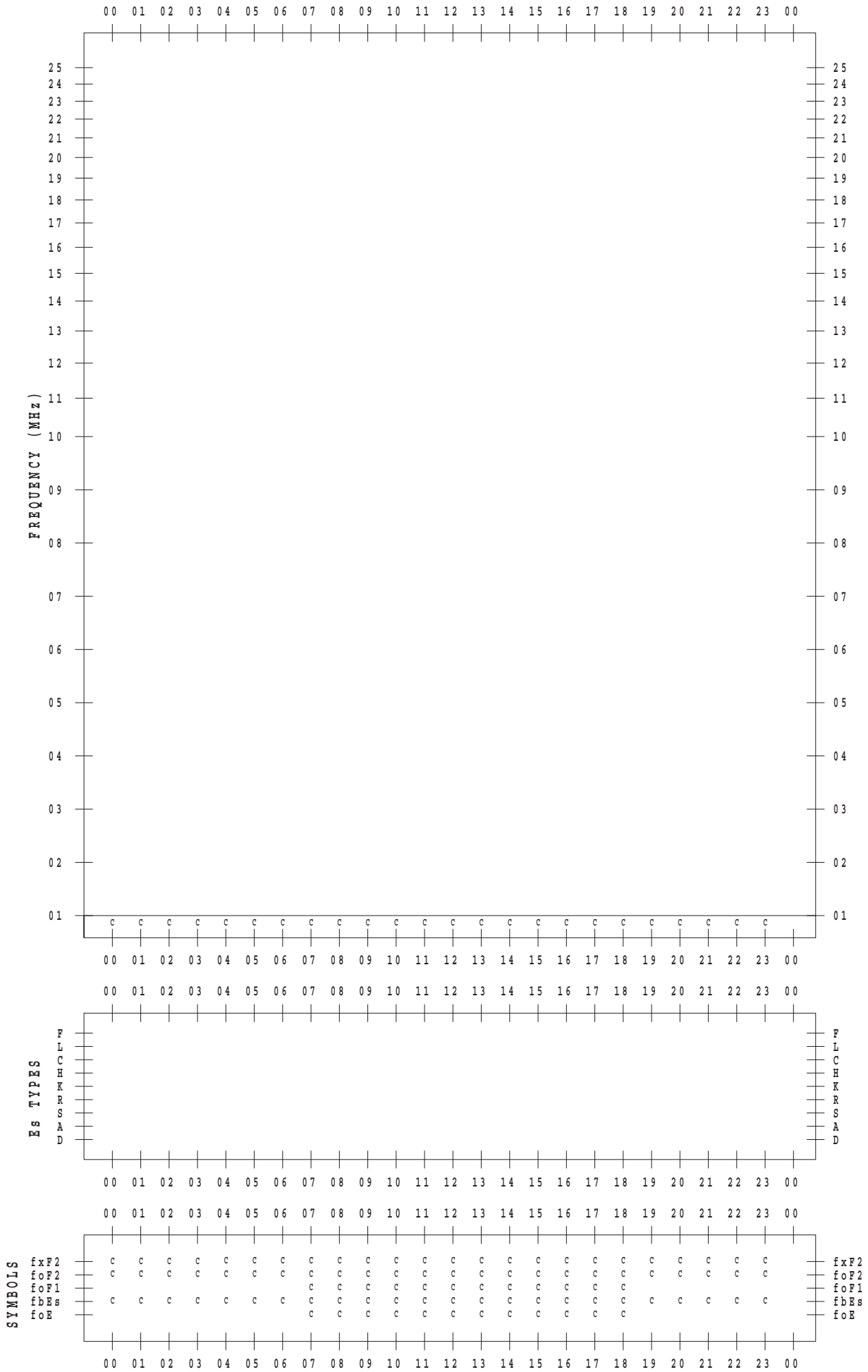
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/10

135 °E MEAN TIME



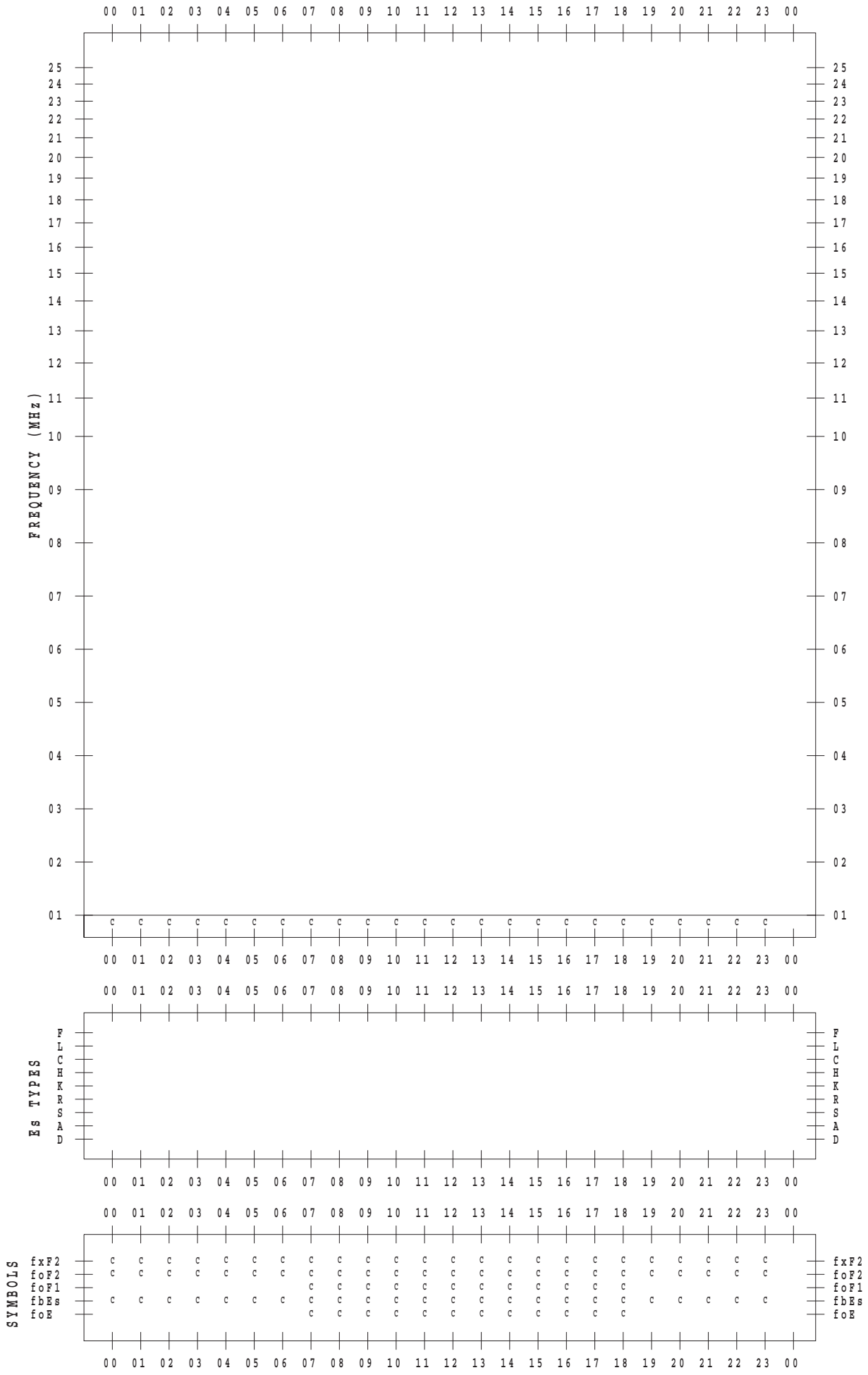
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/11

135 °E MEAN TIME



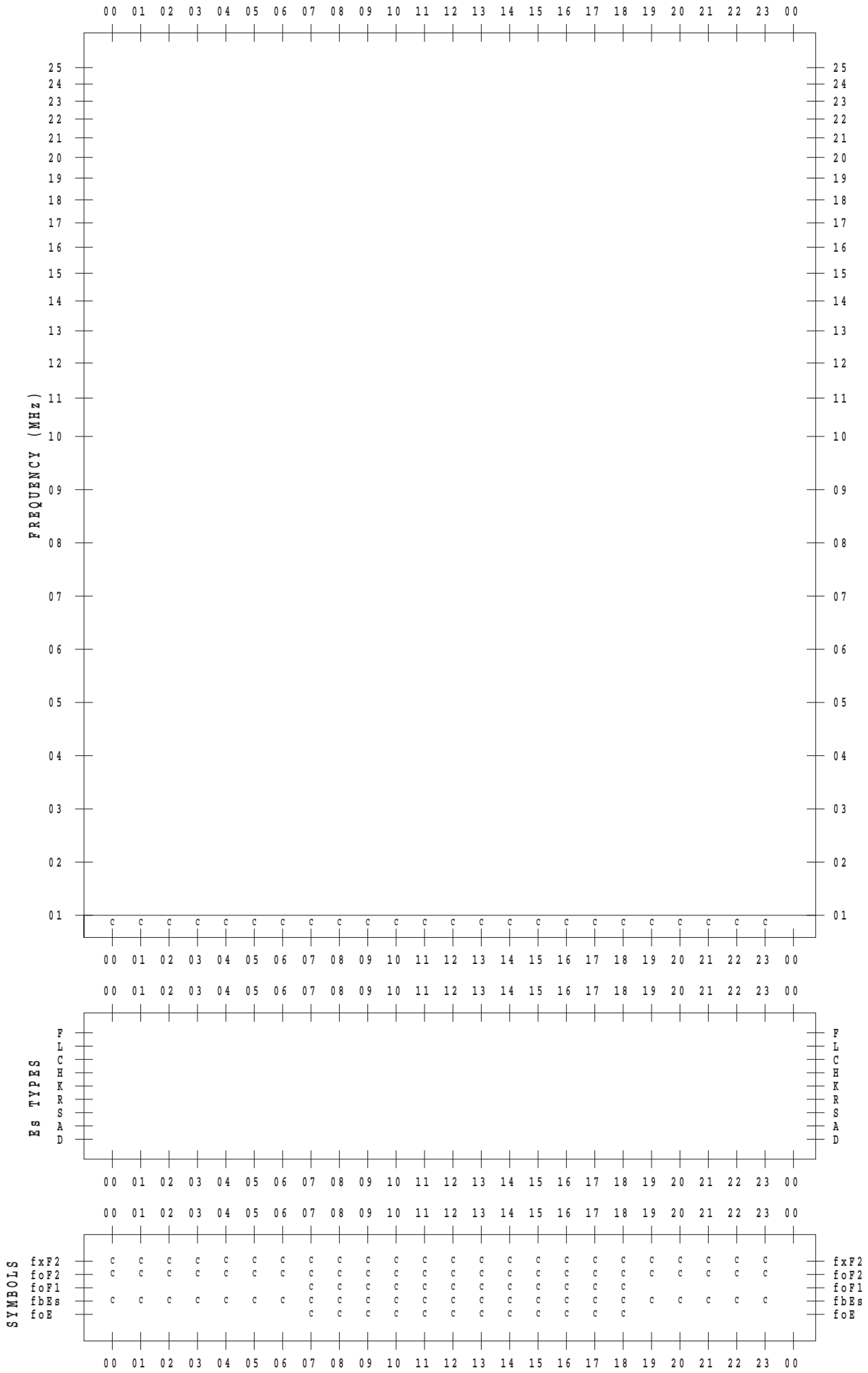
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/12

135 °E MEAN TIME



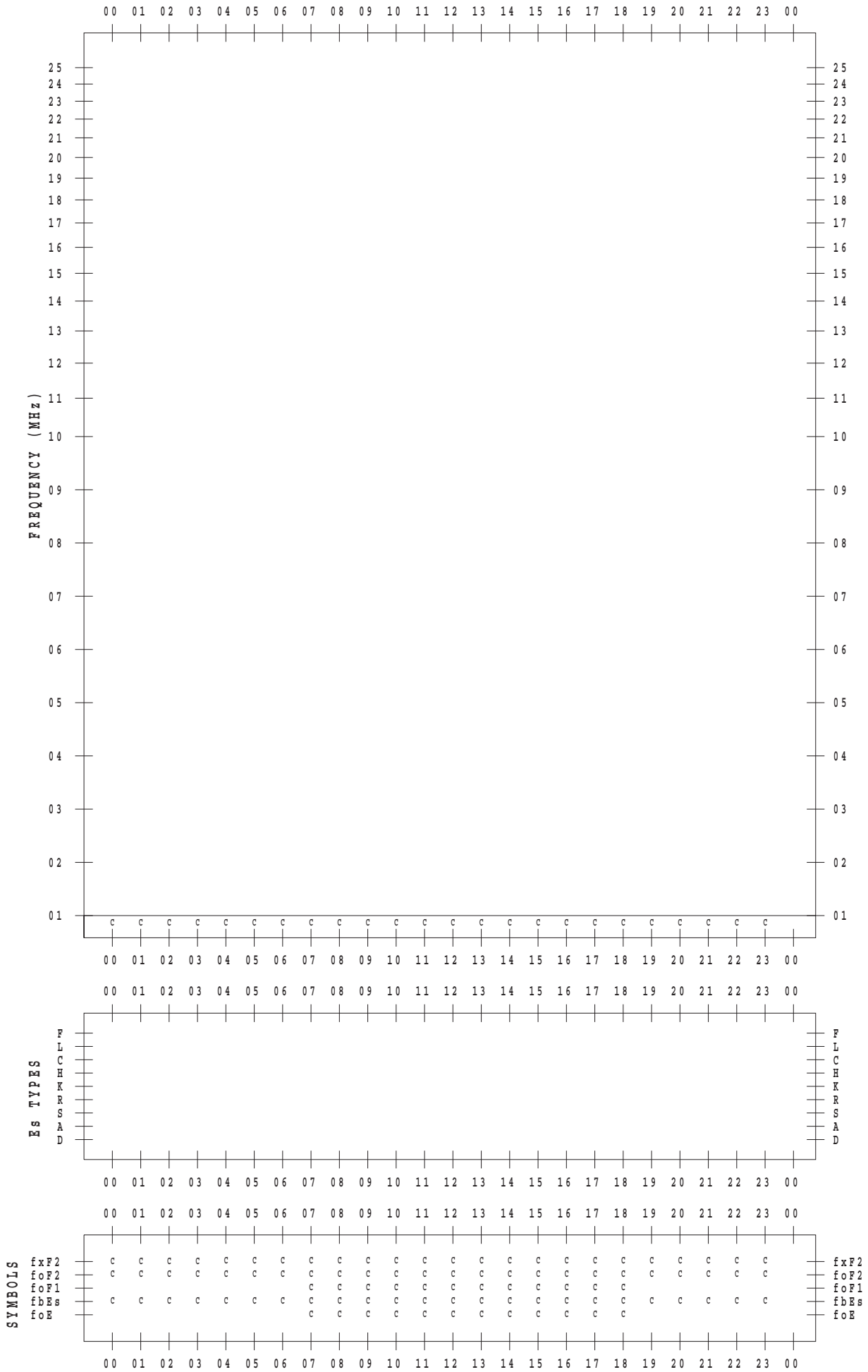
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/13

135 °E MEAN TIME



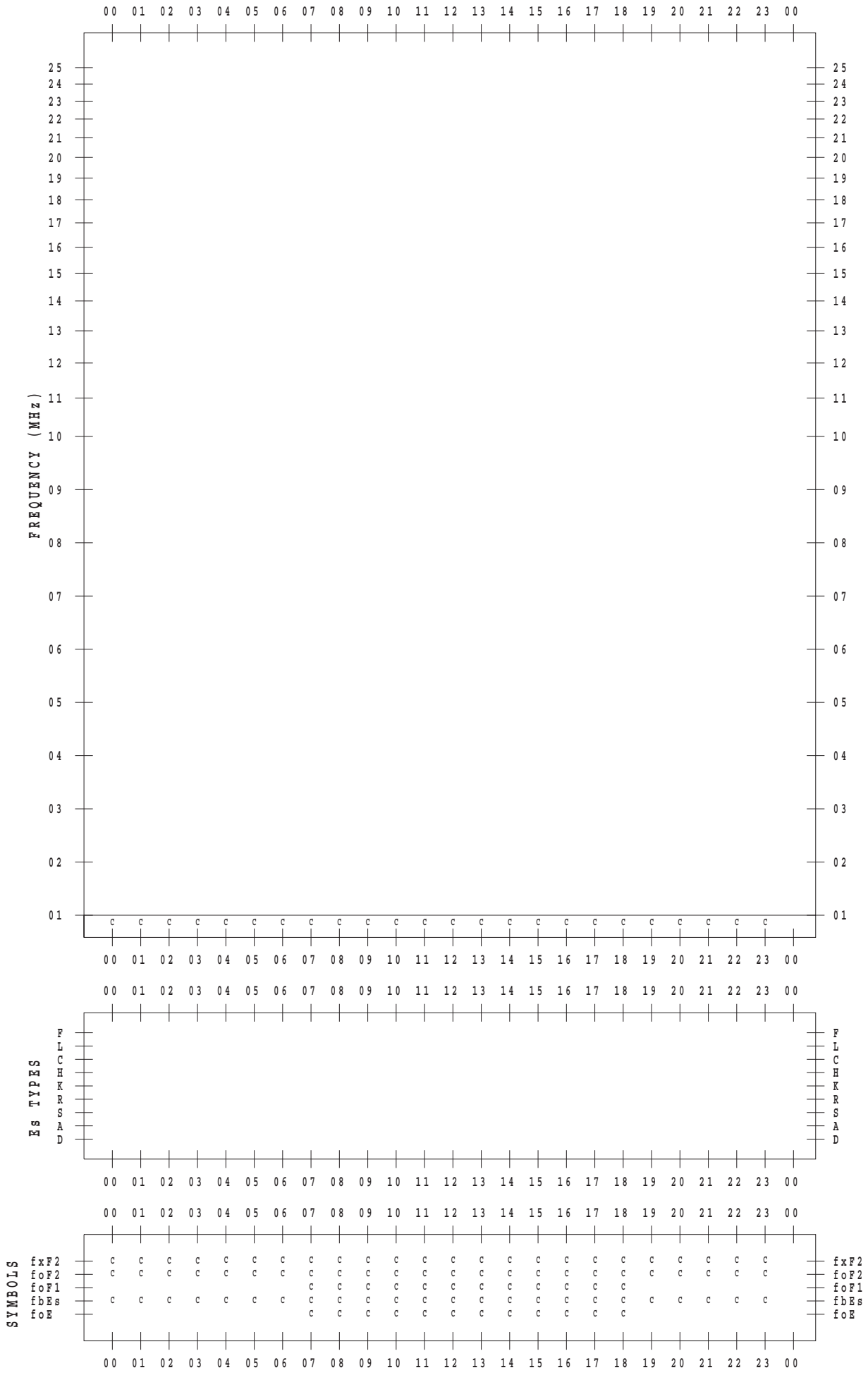
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/14

135 °E MEAN TIME



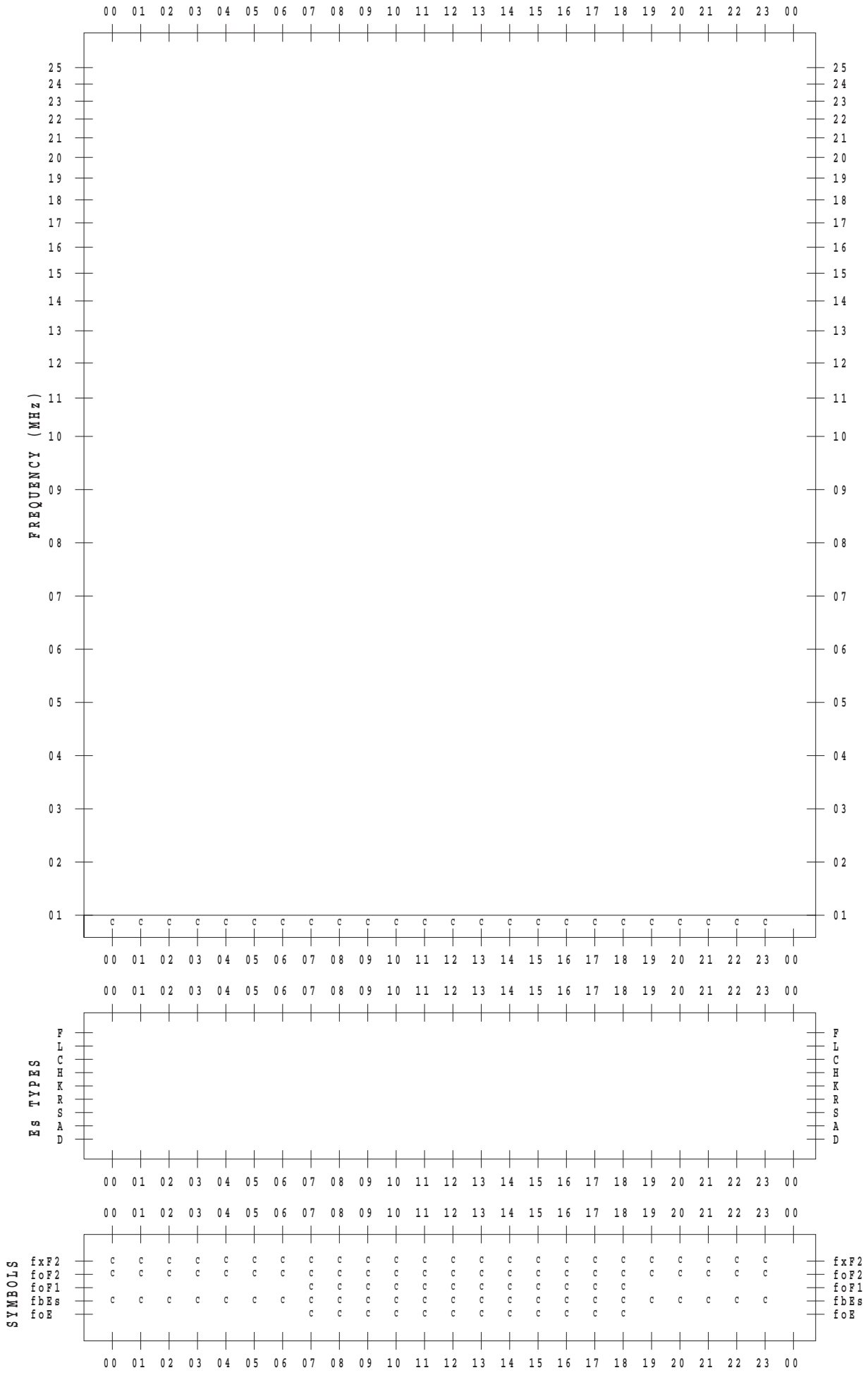
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/15

135 °E MEAN TIME



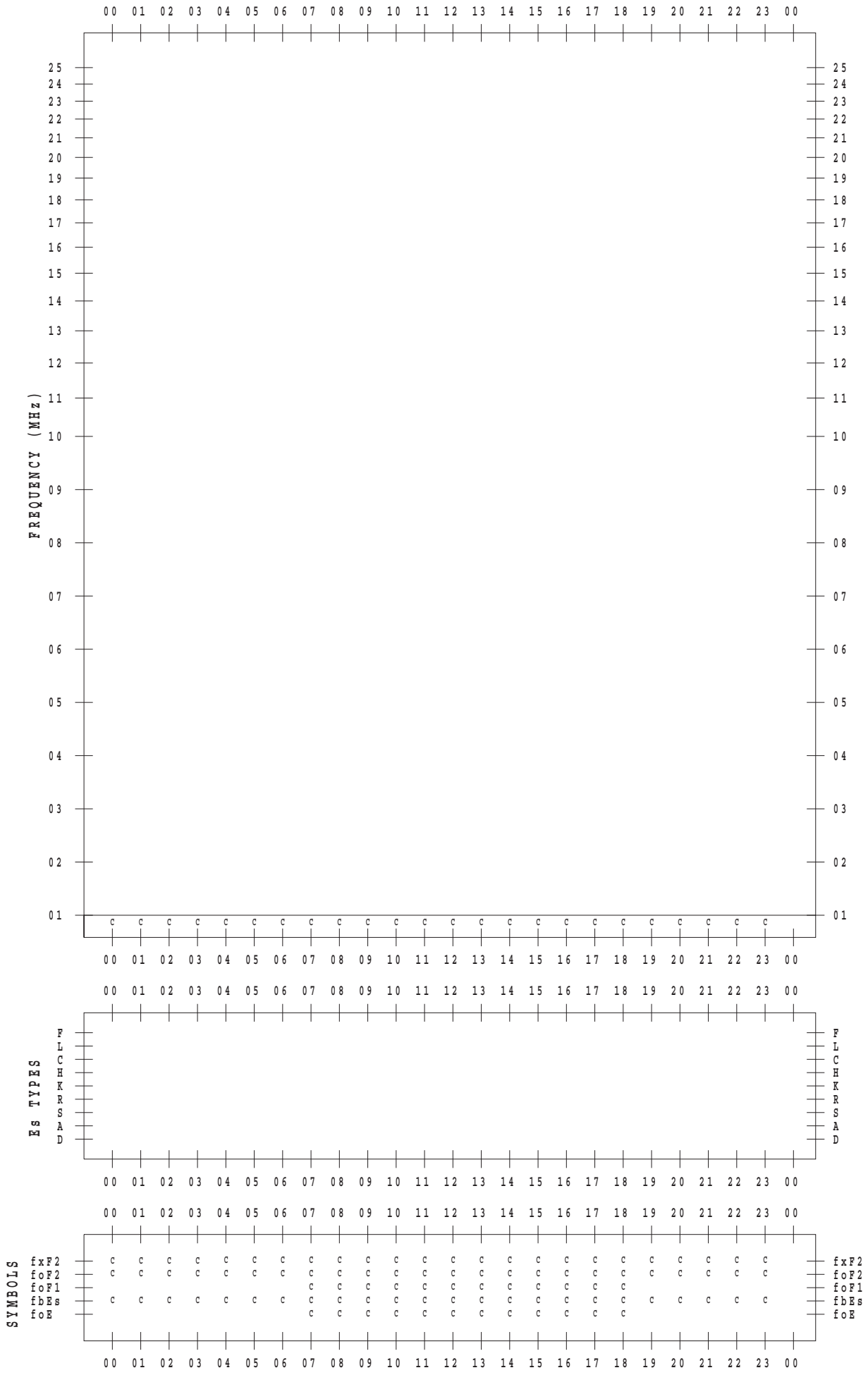
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/16

135 °E MEAN TIME



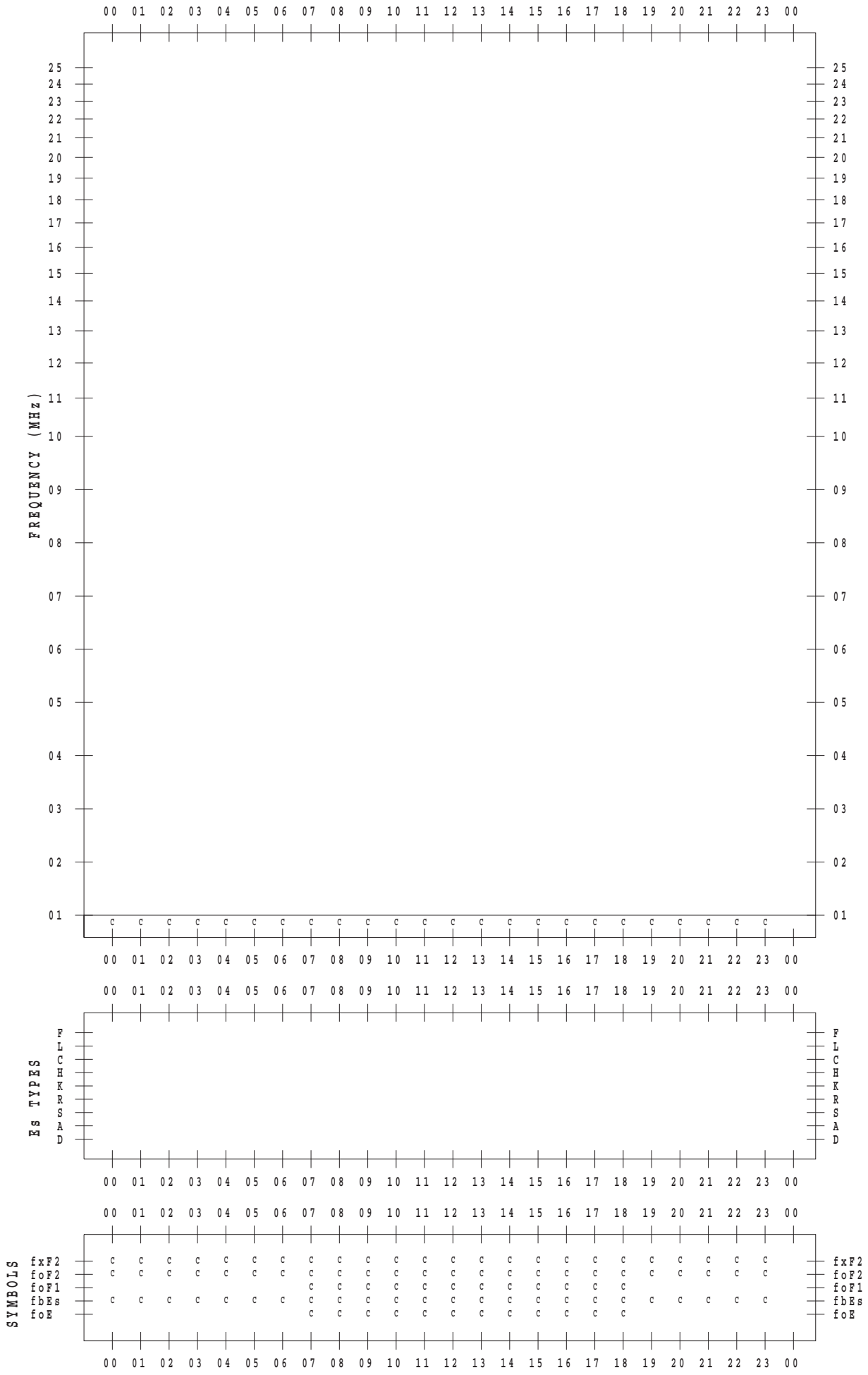
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/17

135 °E MEAN TIME



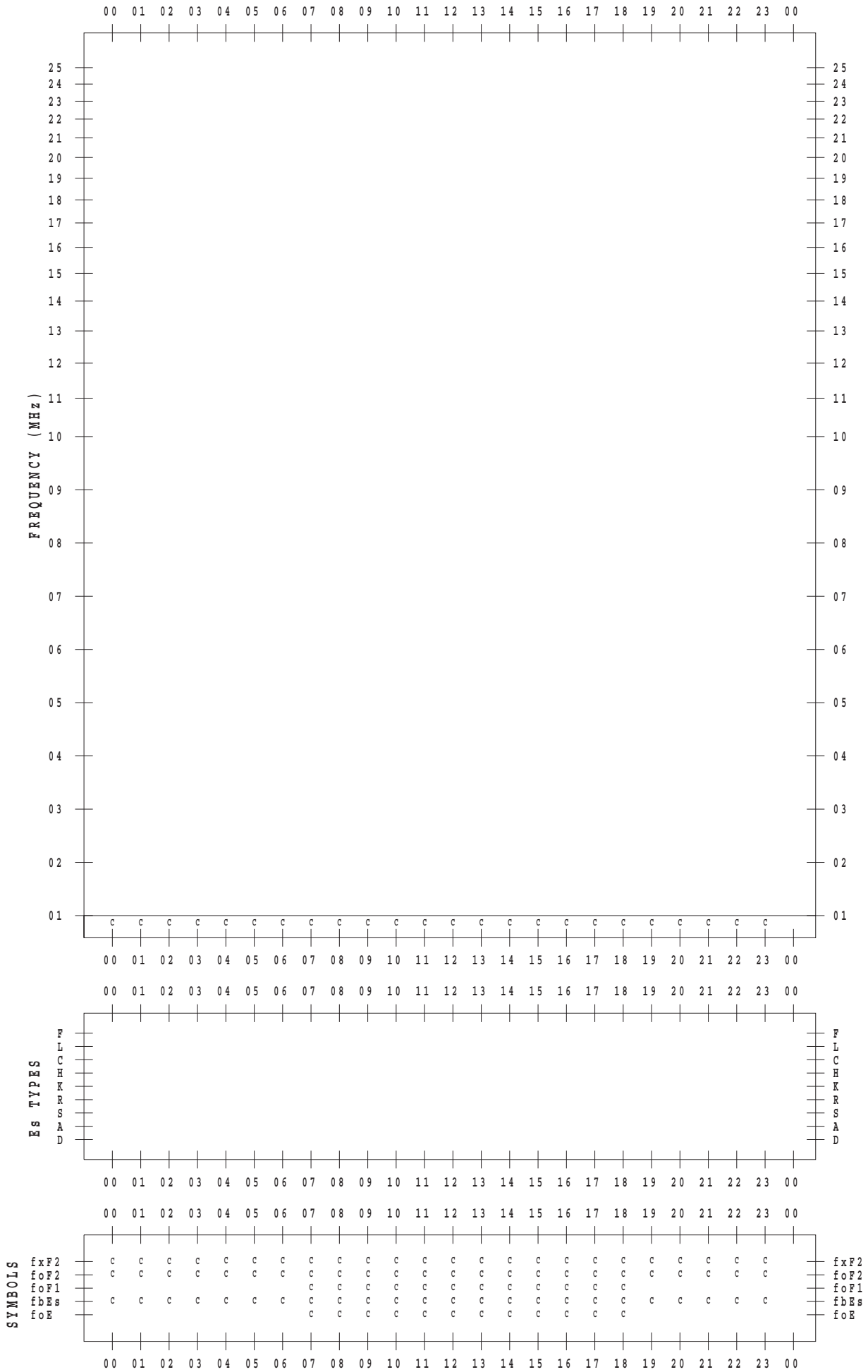
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/18

135 °E MEAN TIME



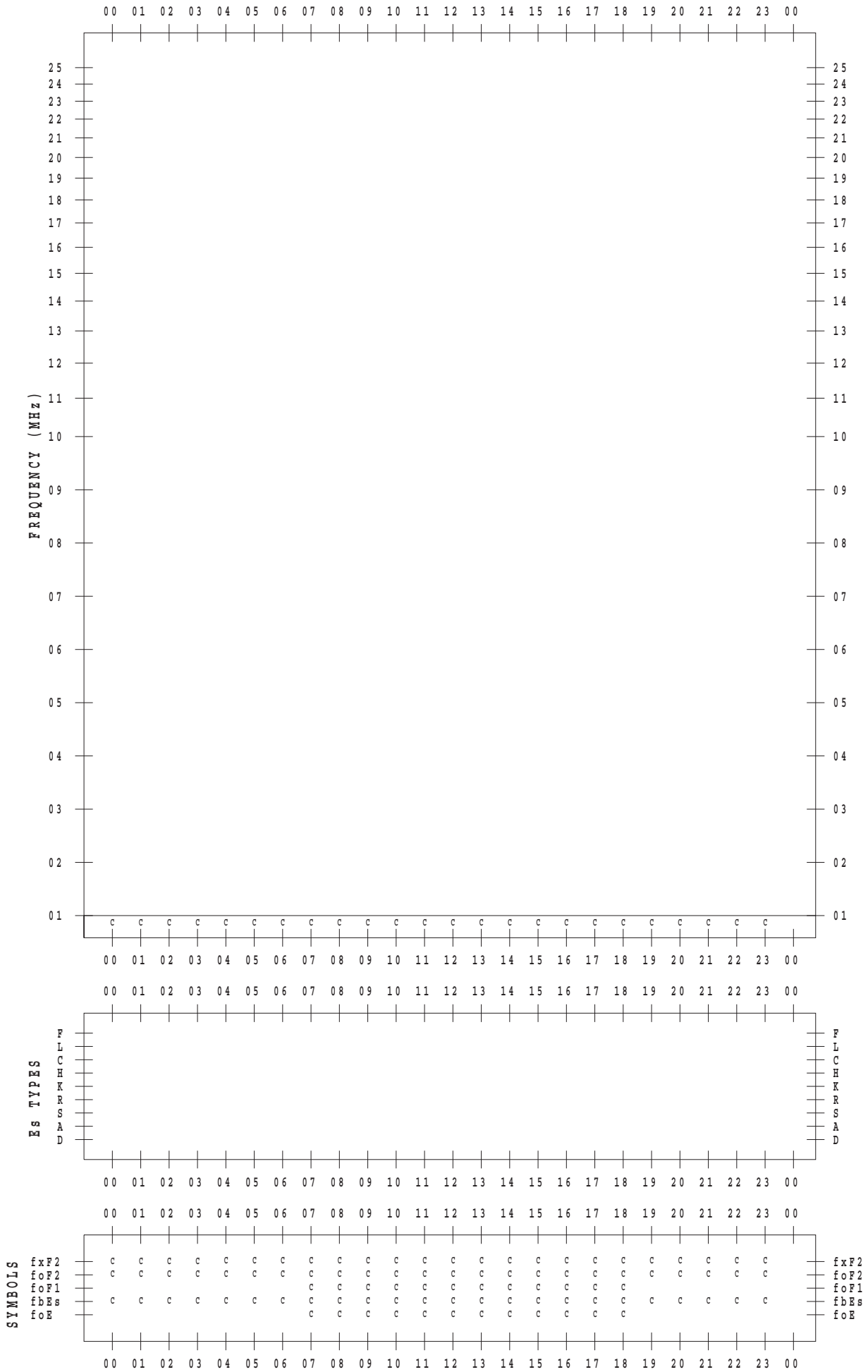
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/19

135 °E MEAN TIME



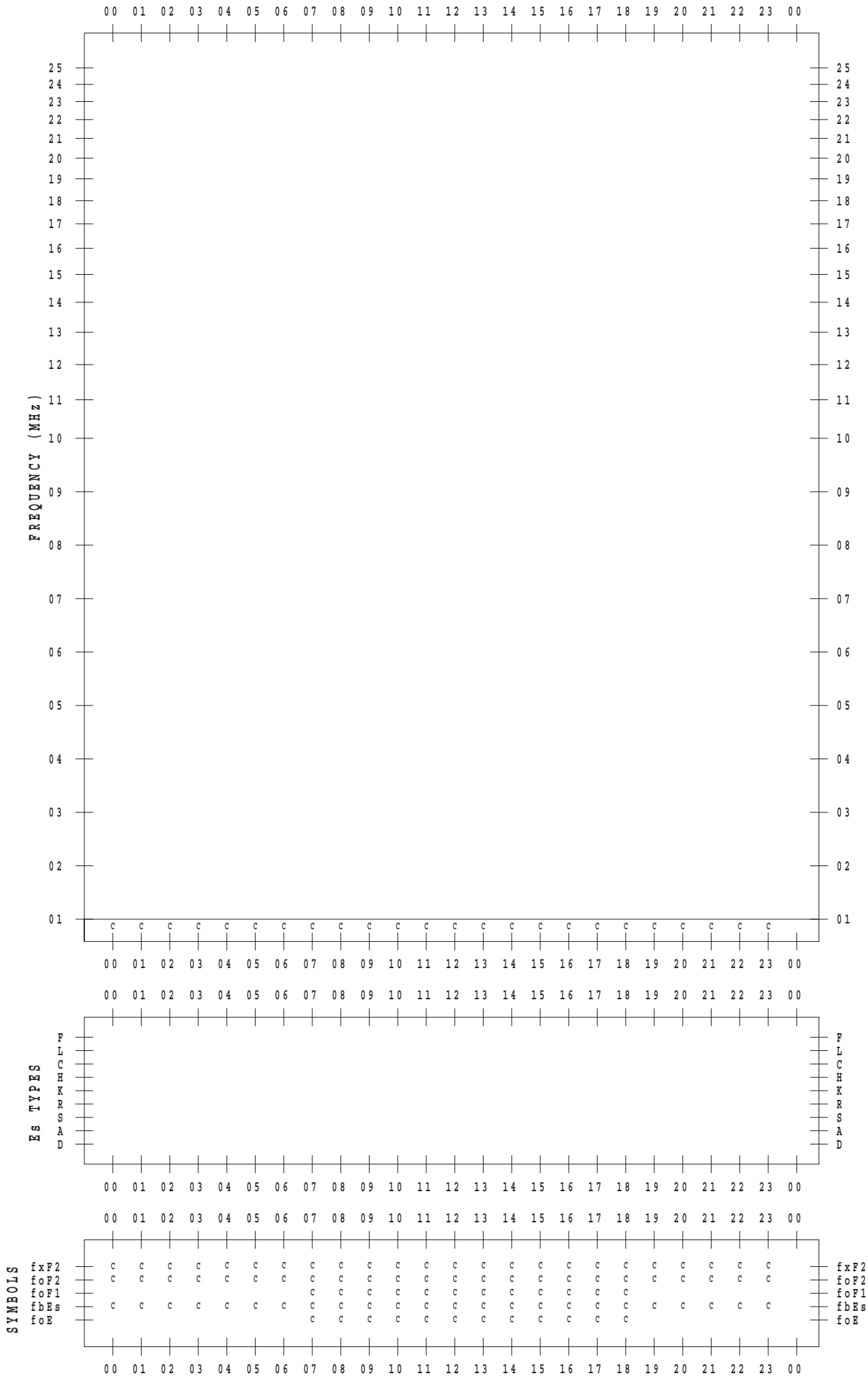
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/20

135 °E MEAN TIME



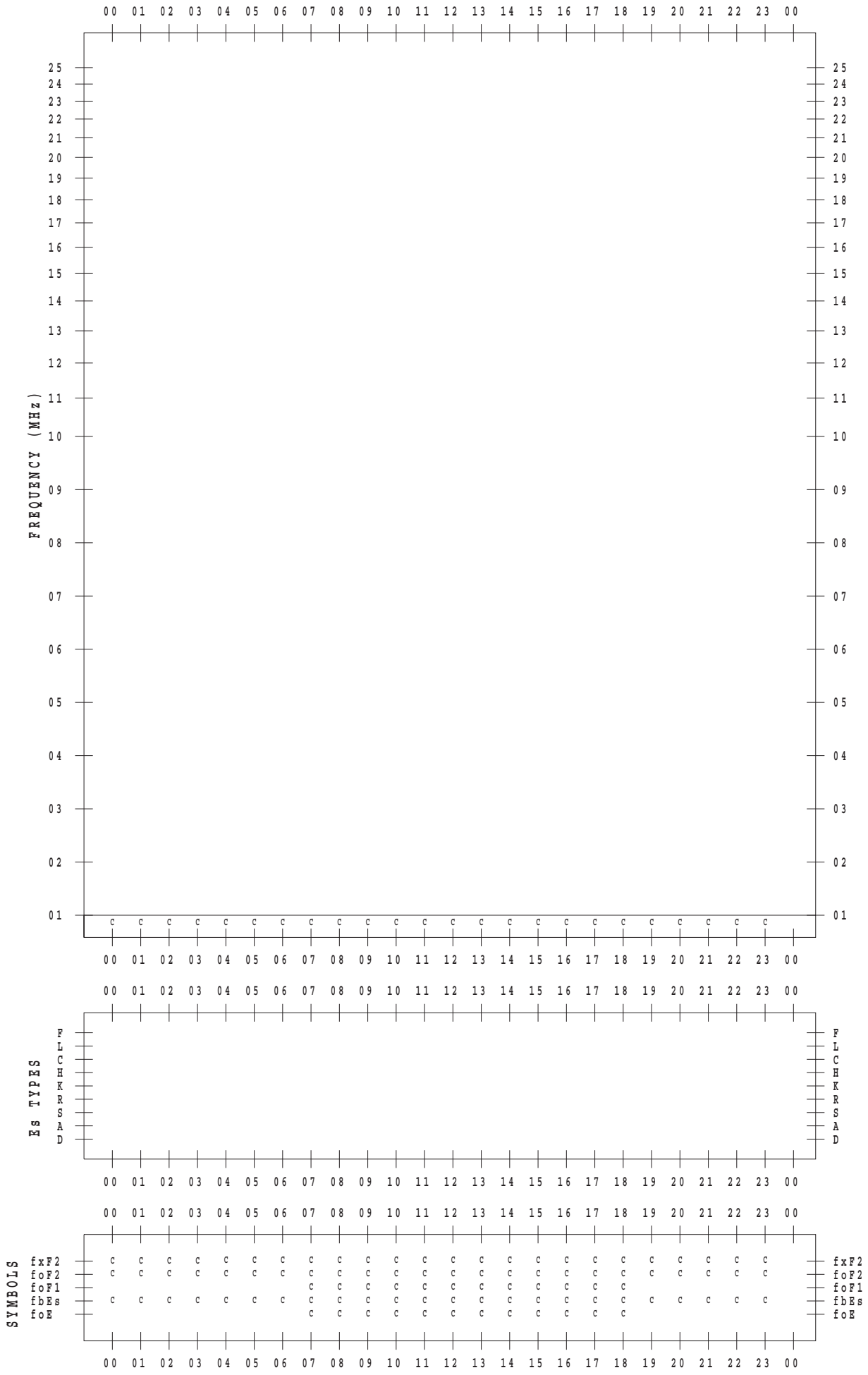
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/21

135 °E MEAN TIME



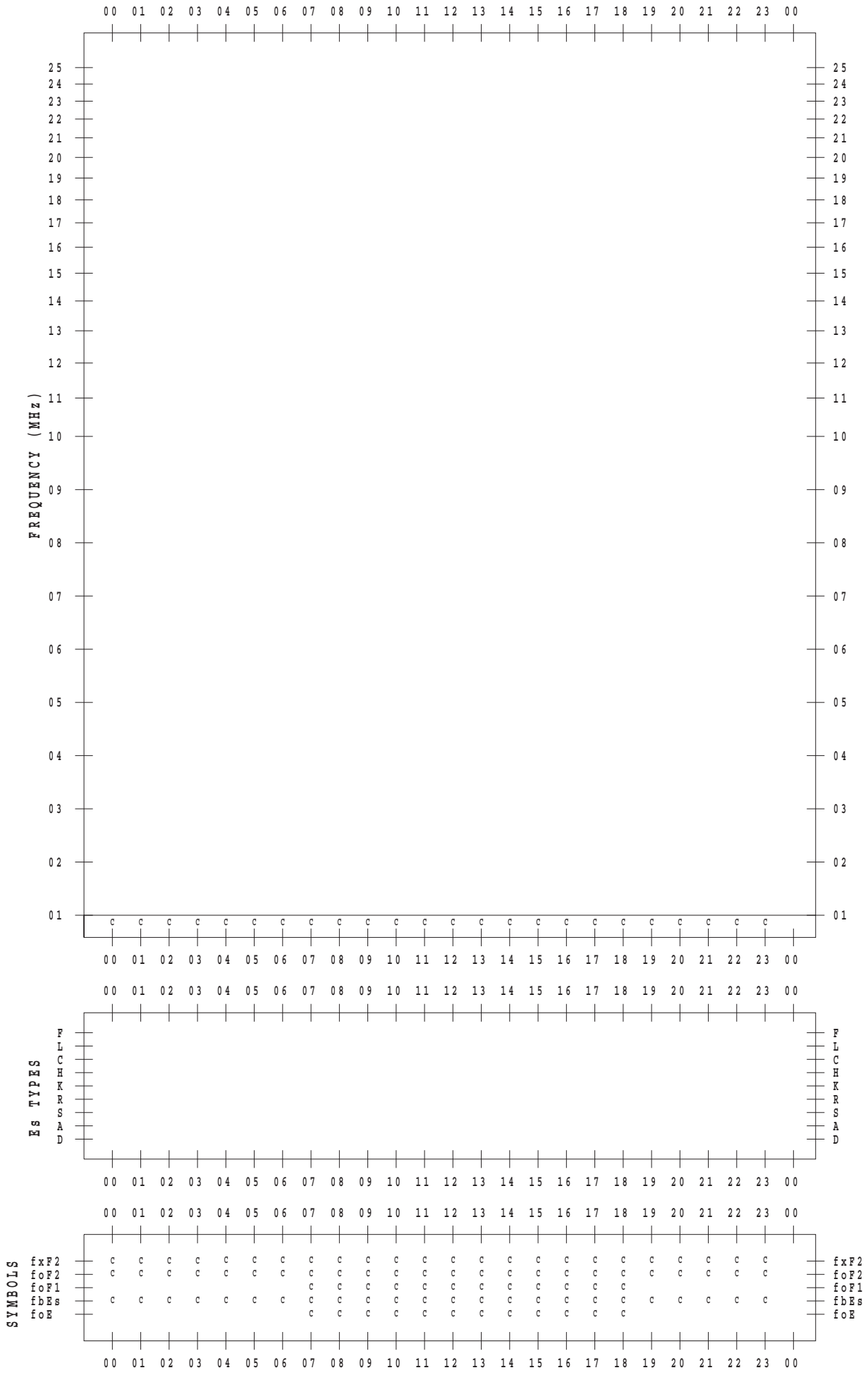
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/22

135 °E MEAN TIME



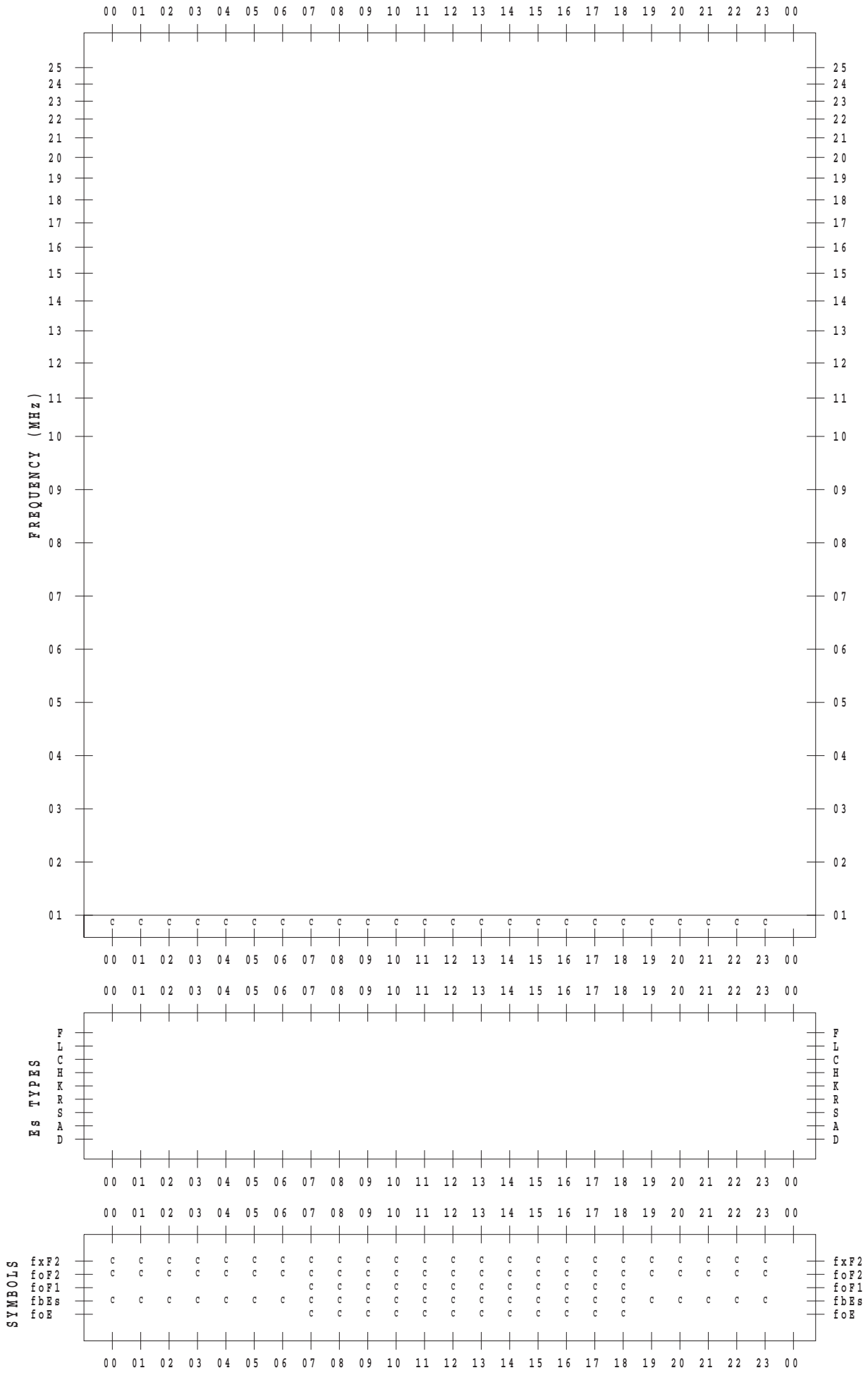
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/23

135 °E MEAN TIME



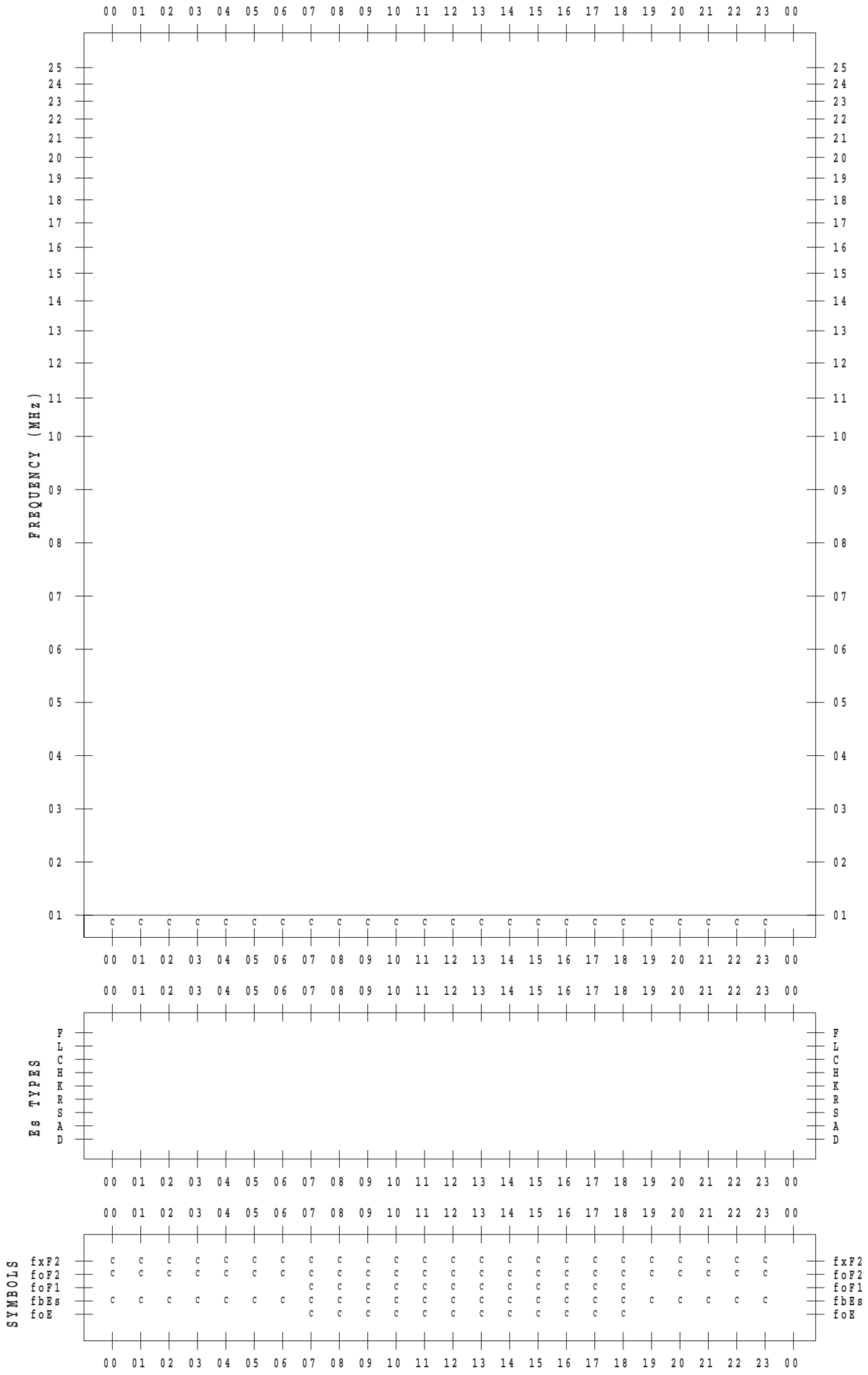
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/24

135 °E MEAN TIME



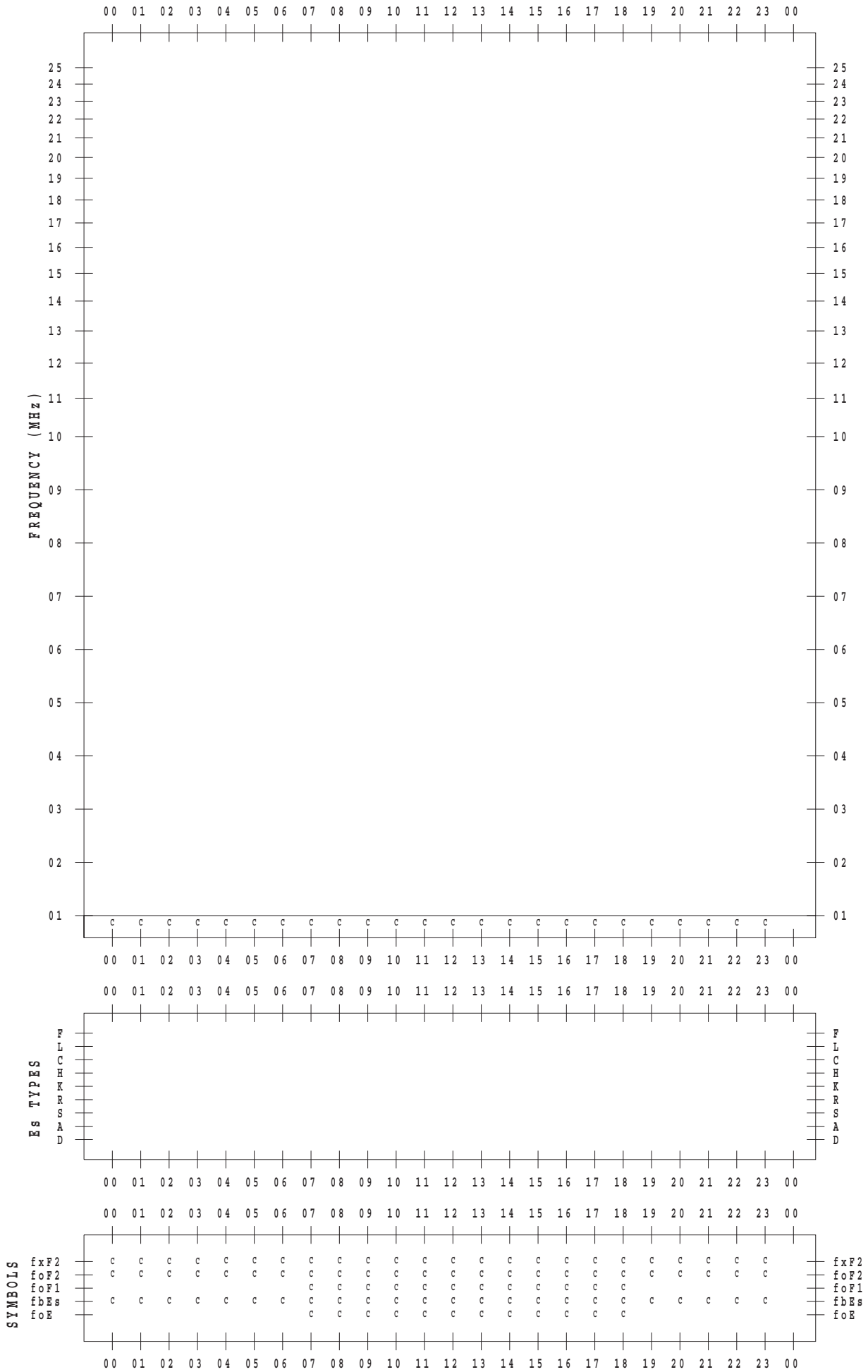
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/25

135 °E MEAN TIME



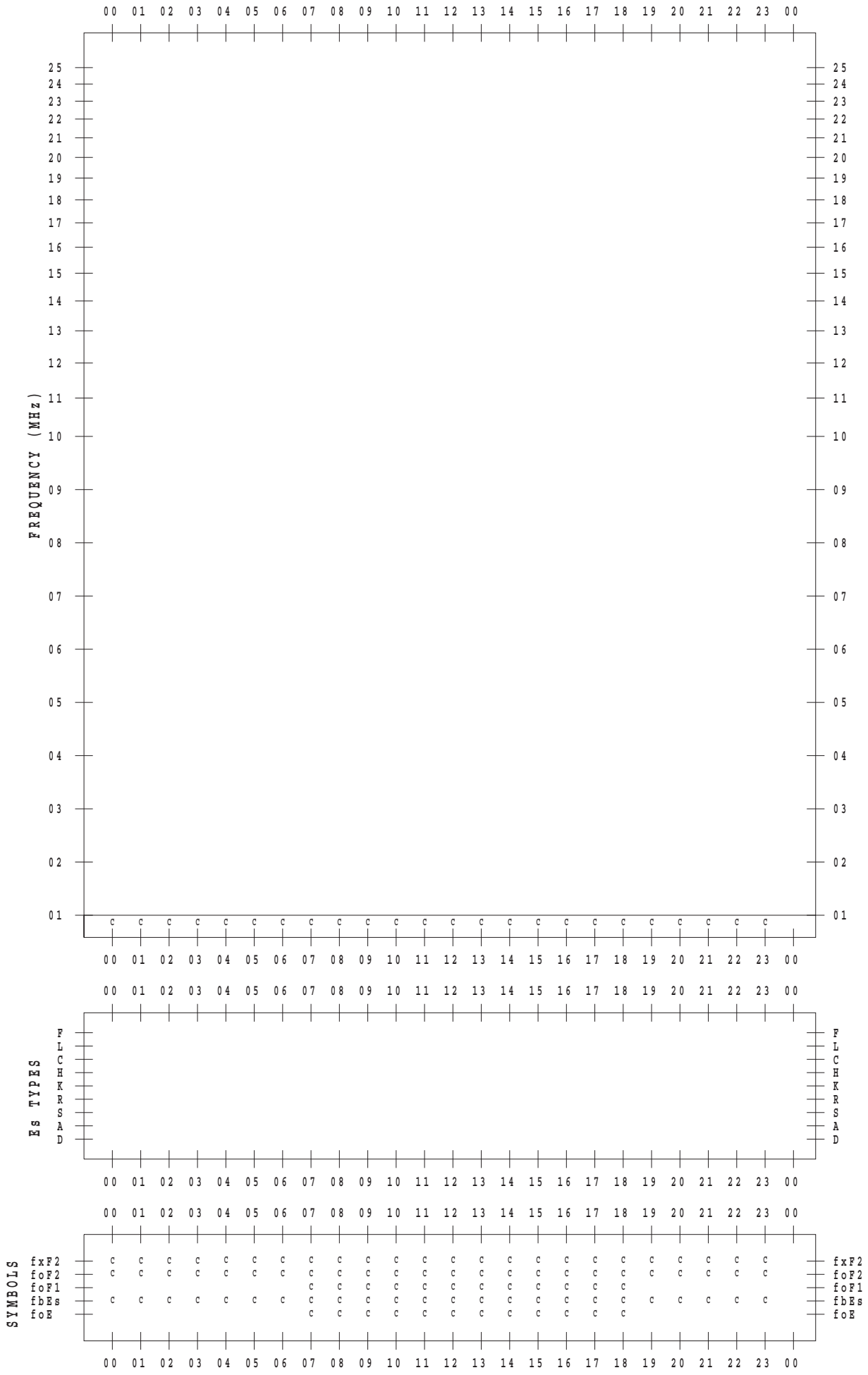
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/26

135 °E MEAN TIME



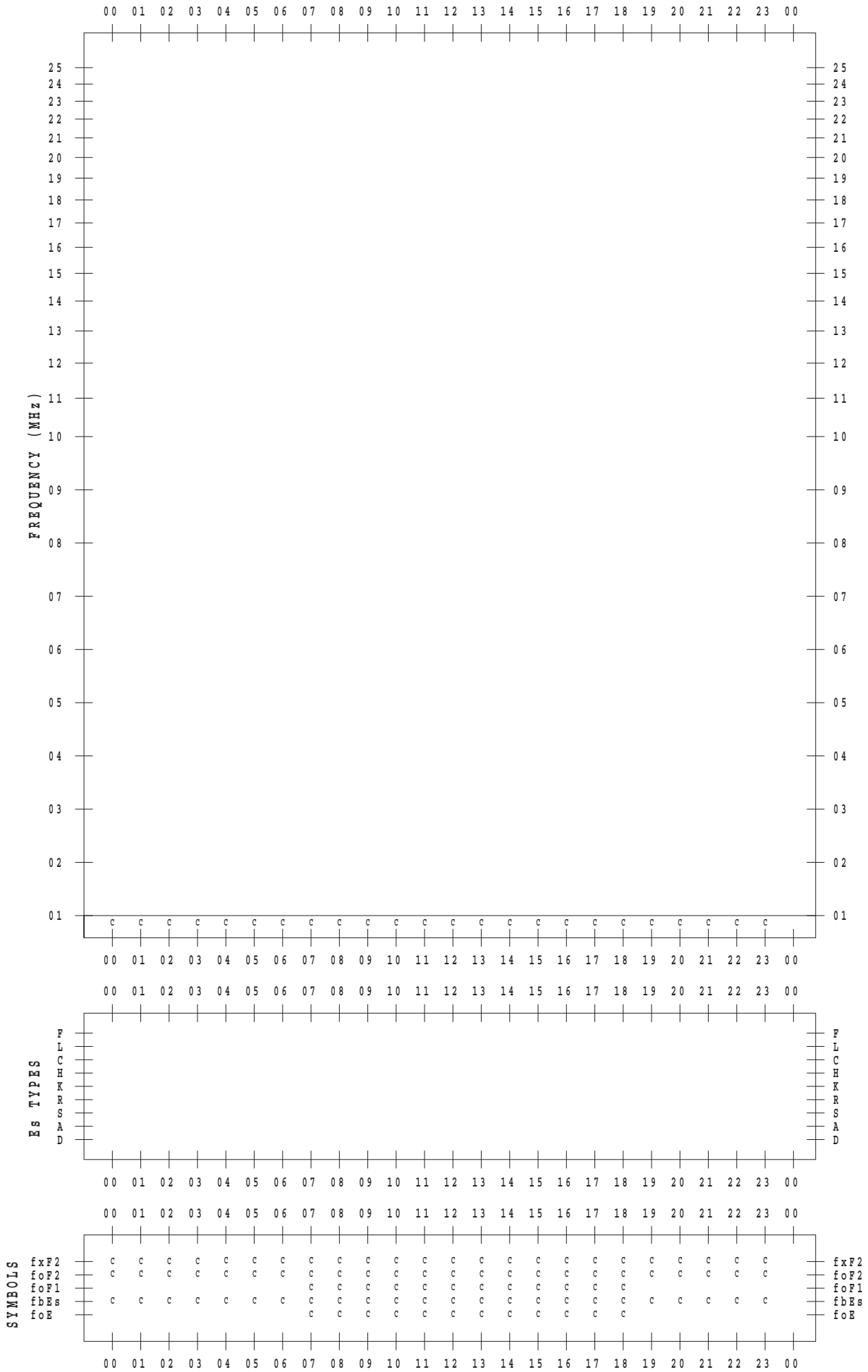
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/27

135 °E MEAN TIME



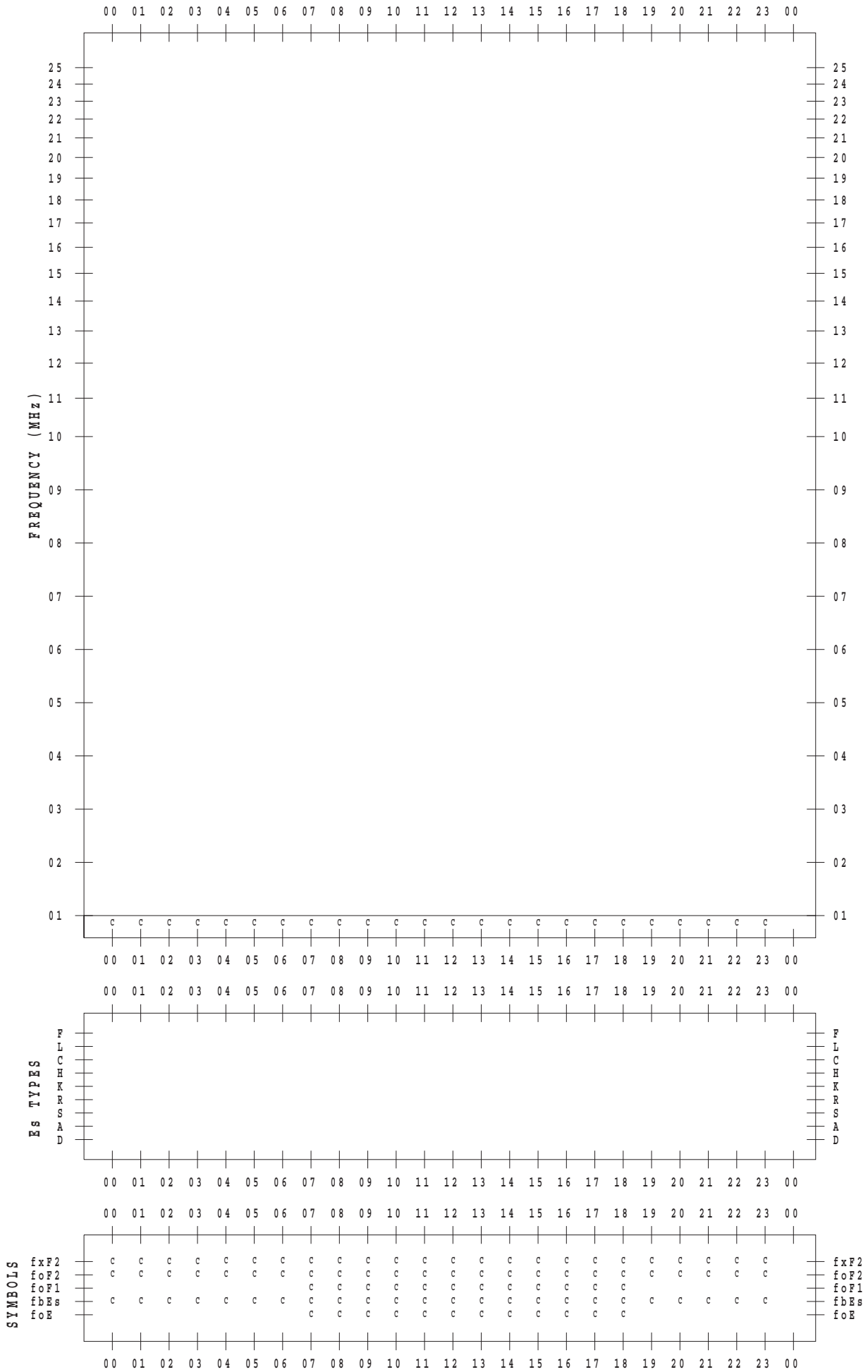
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/28

135 °E MEAN TIME



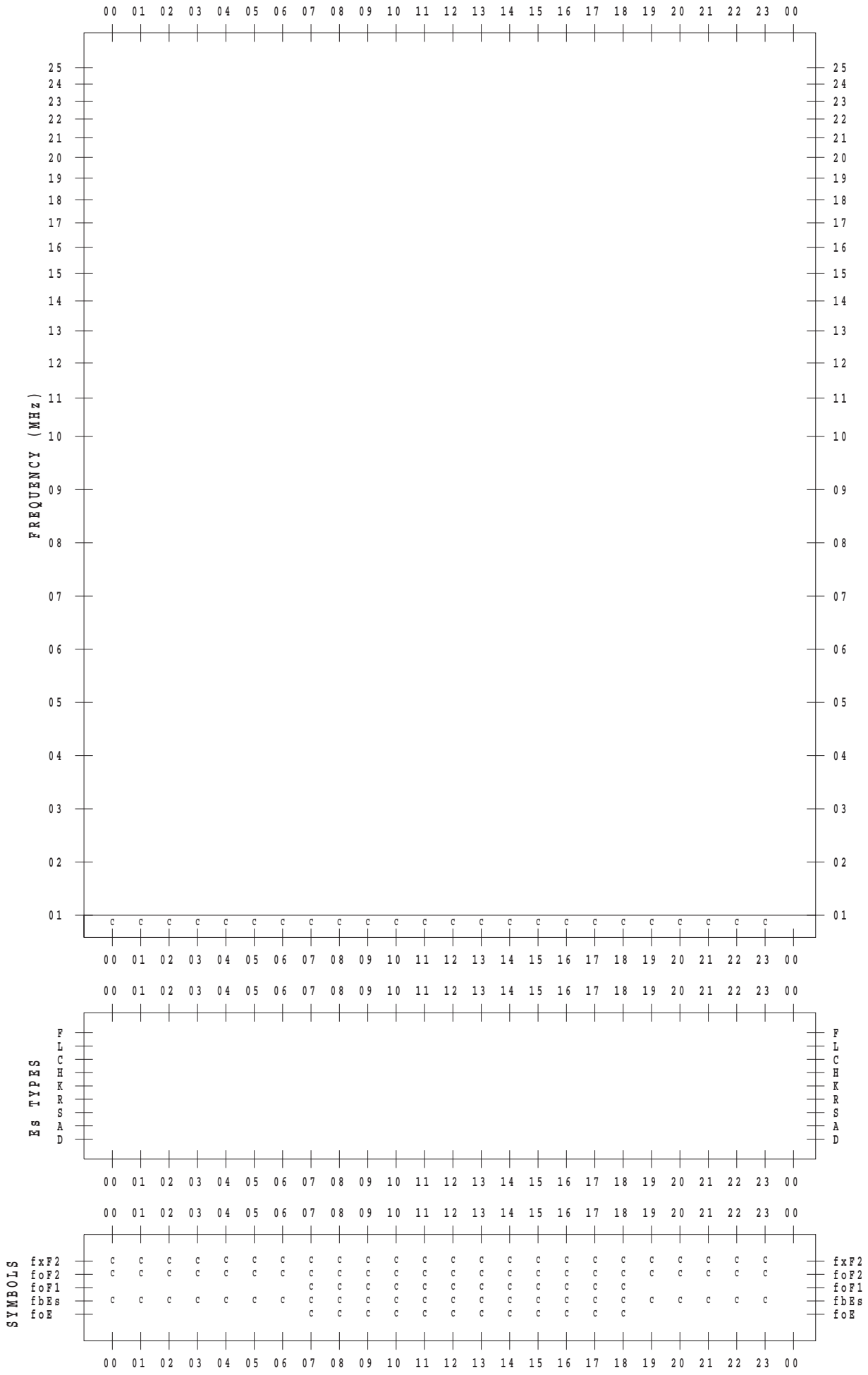
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/29

135 °E MEAN TIME



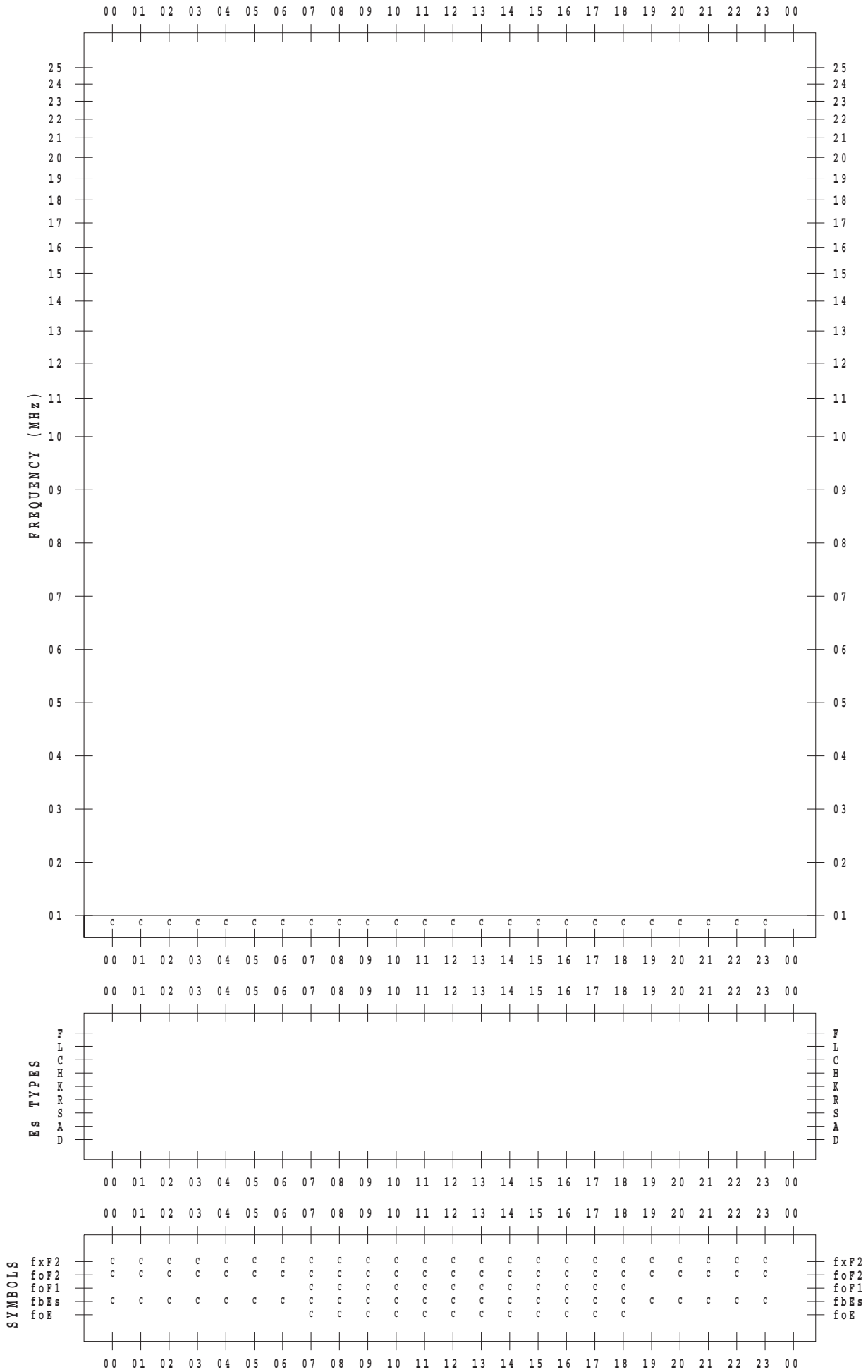
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2016/11/30

135 °E MEAN TIME



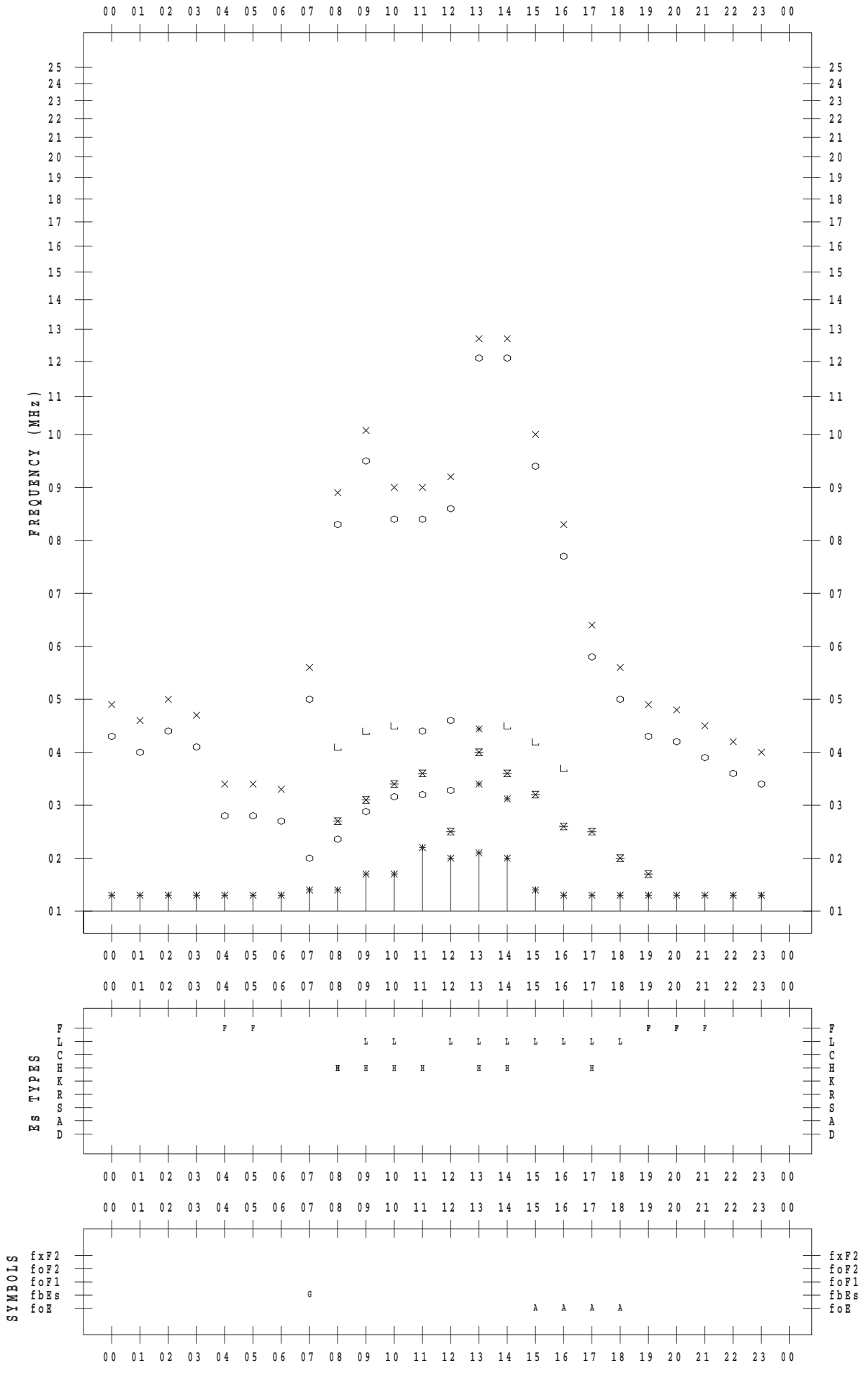
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 1

135 °E MEAN TIME



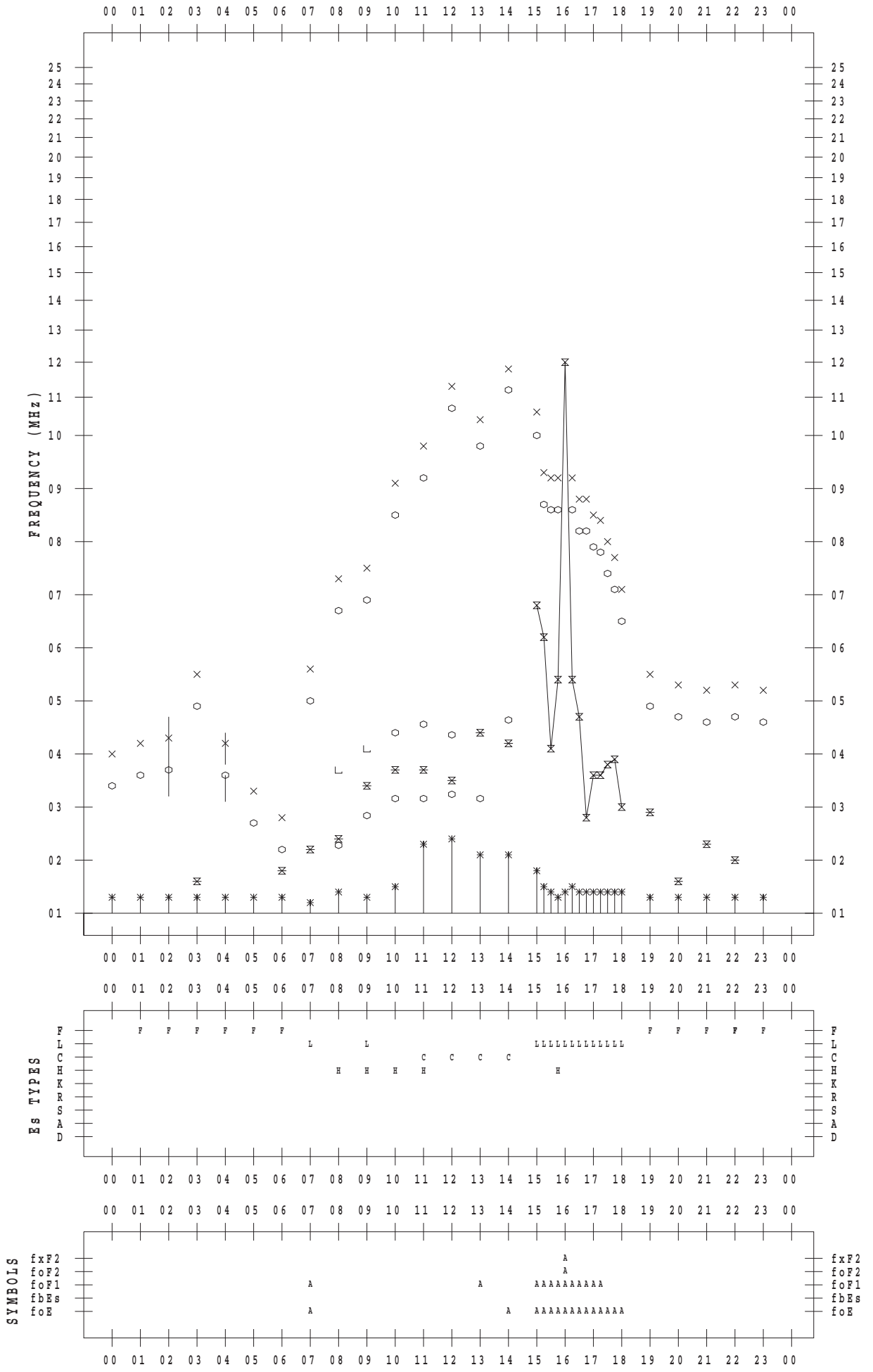
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 2

135 °E MEAN TIME



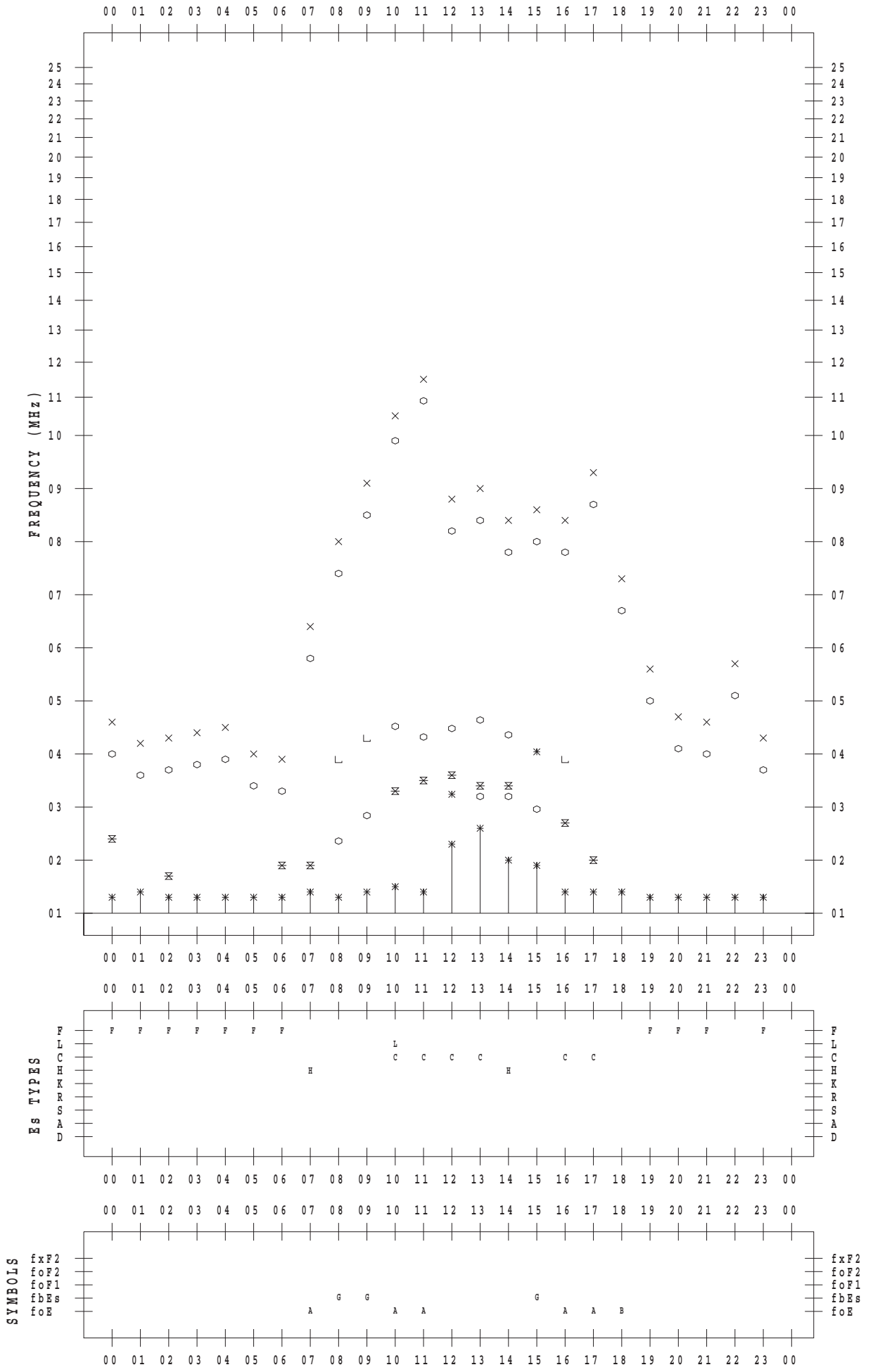
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 3

135 °E MEAN TIME



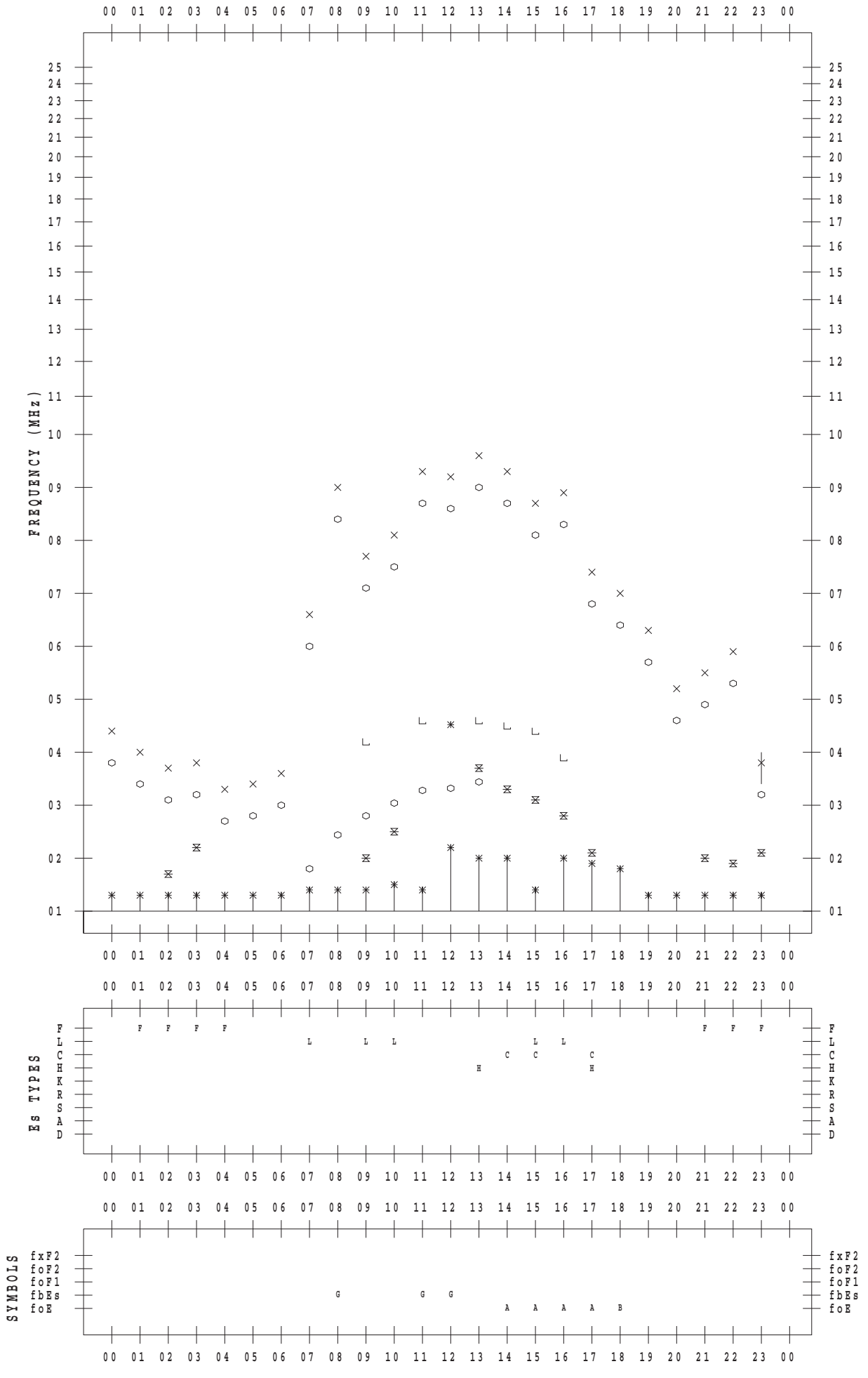
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 4

135 °E MEAN TIME



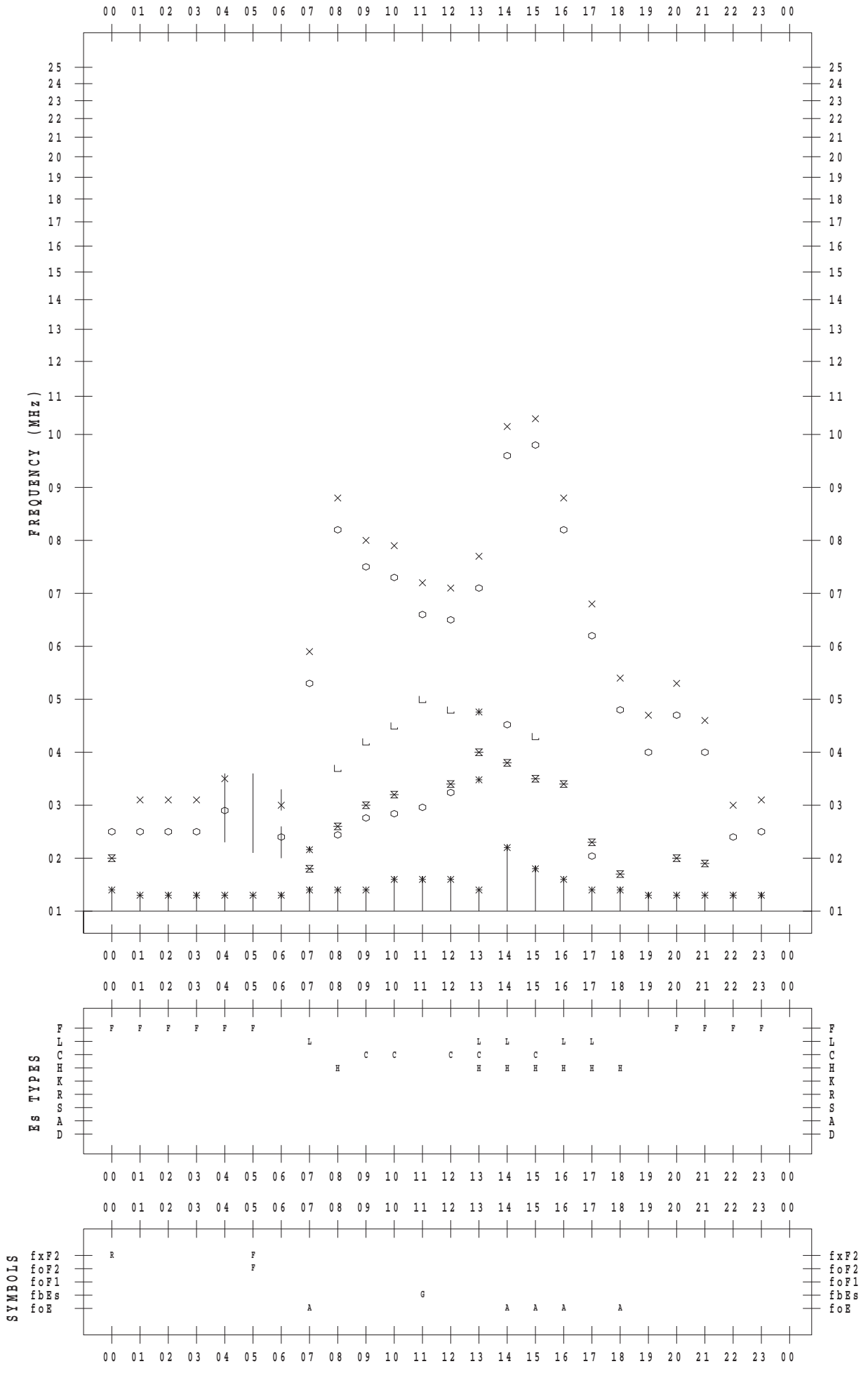
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 5

135 °E MEAN TIME



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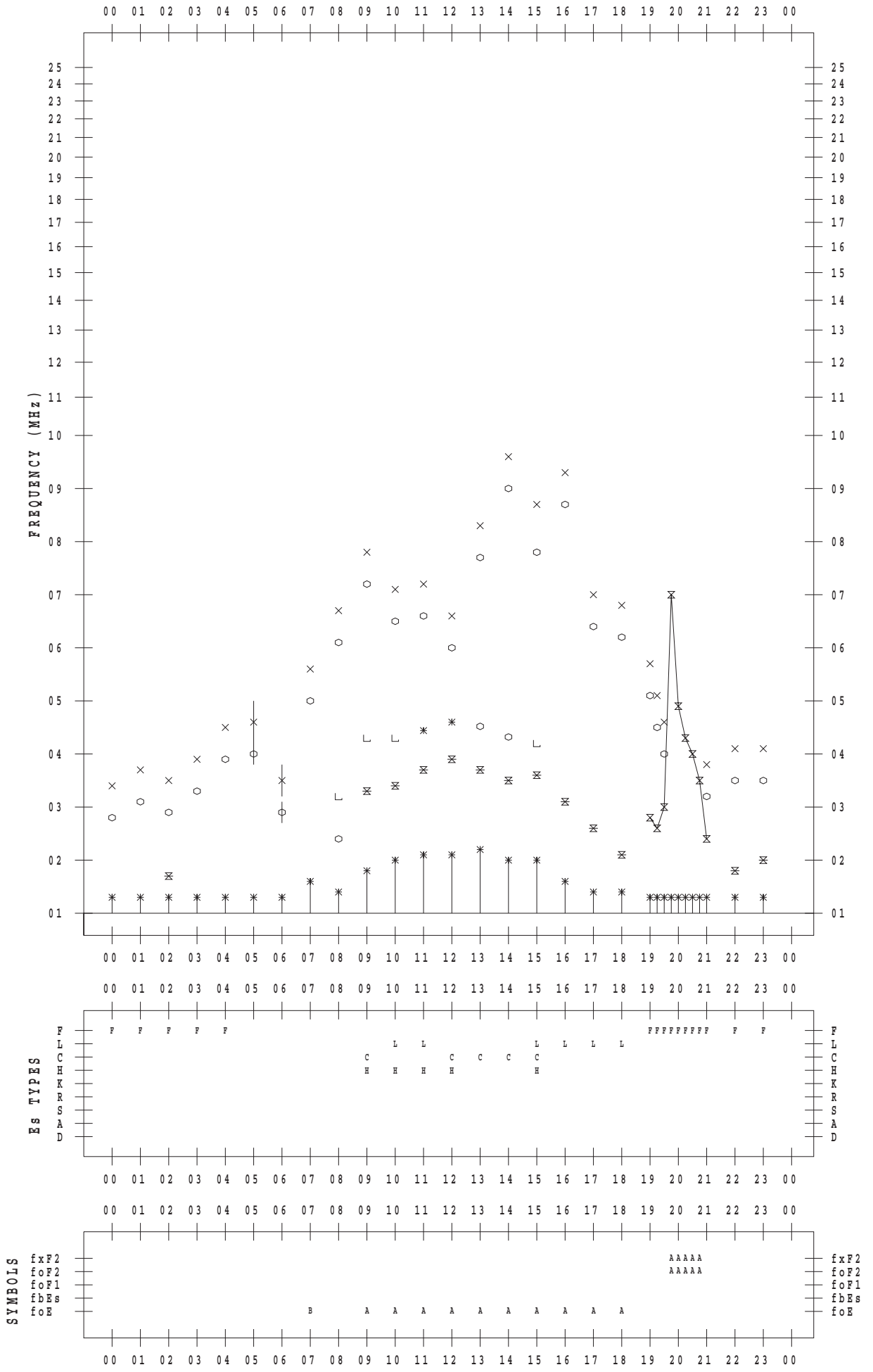
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 6

135 °E MEAN TIME



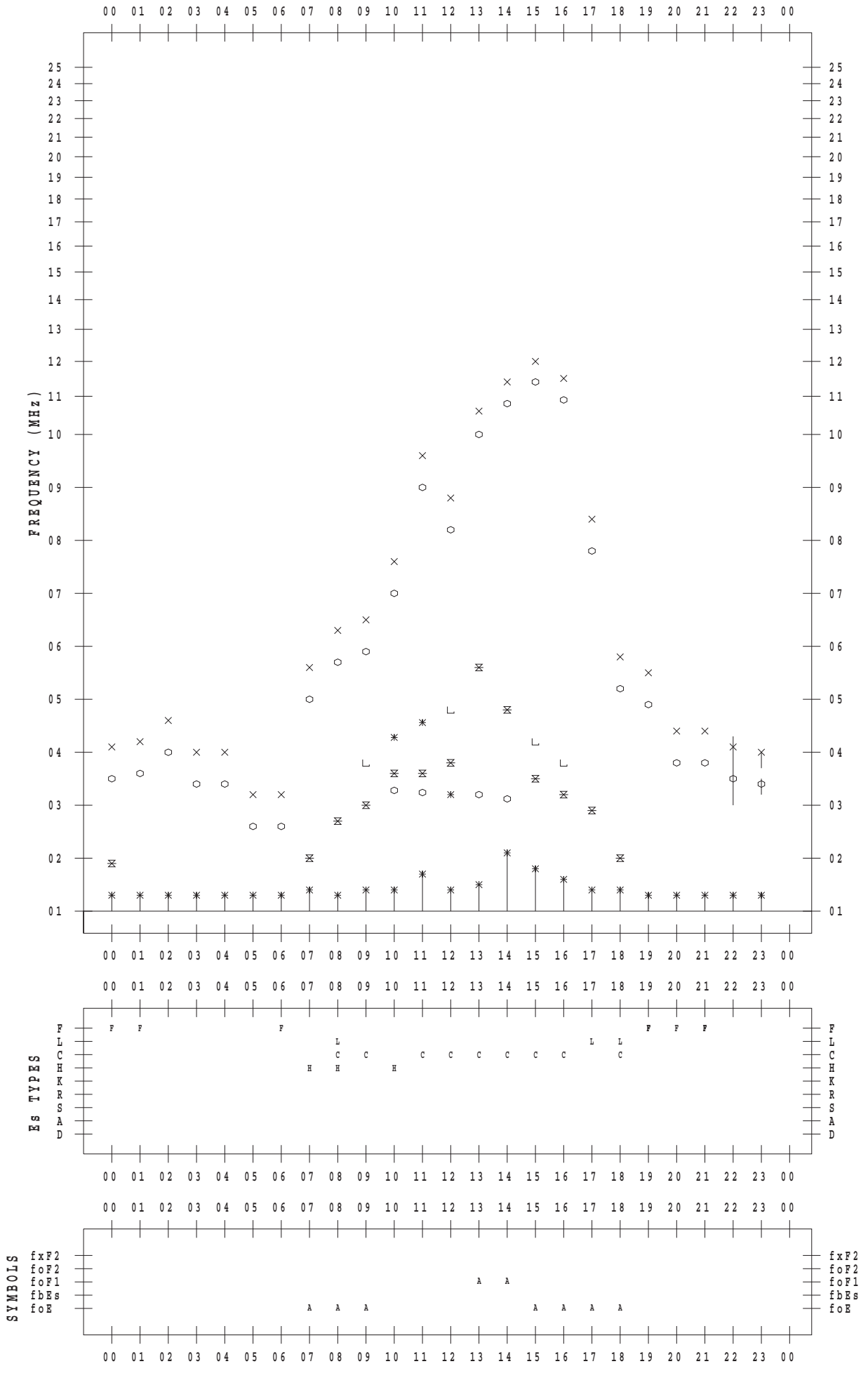
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 7

135 °E MEAN TIME



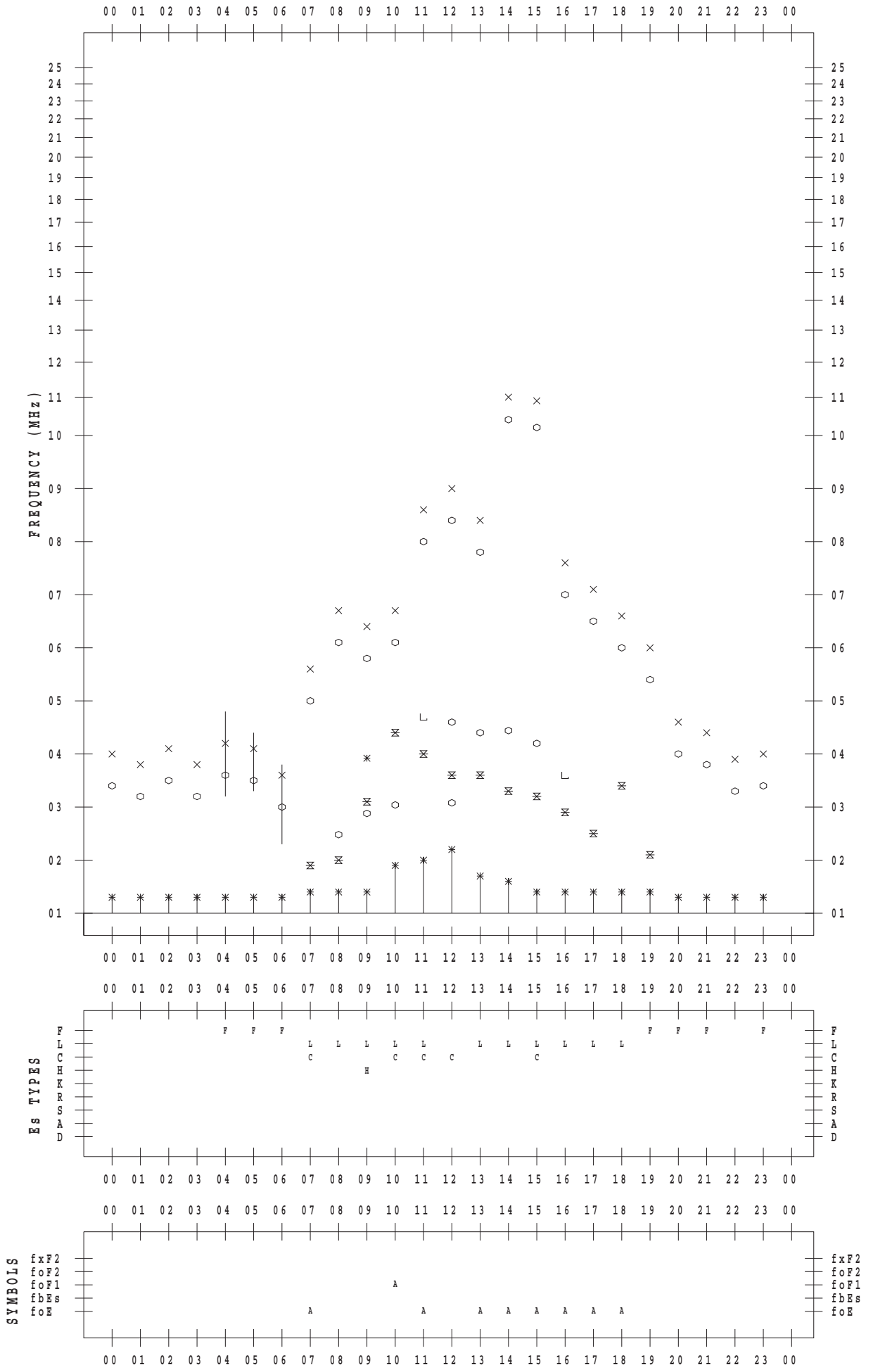
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 8

135 °E MEAN TIME



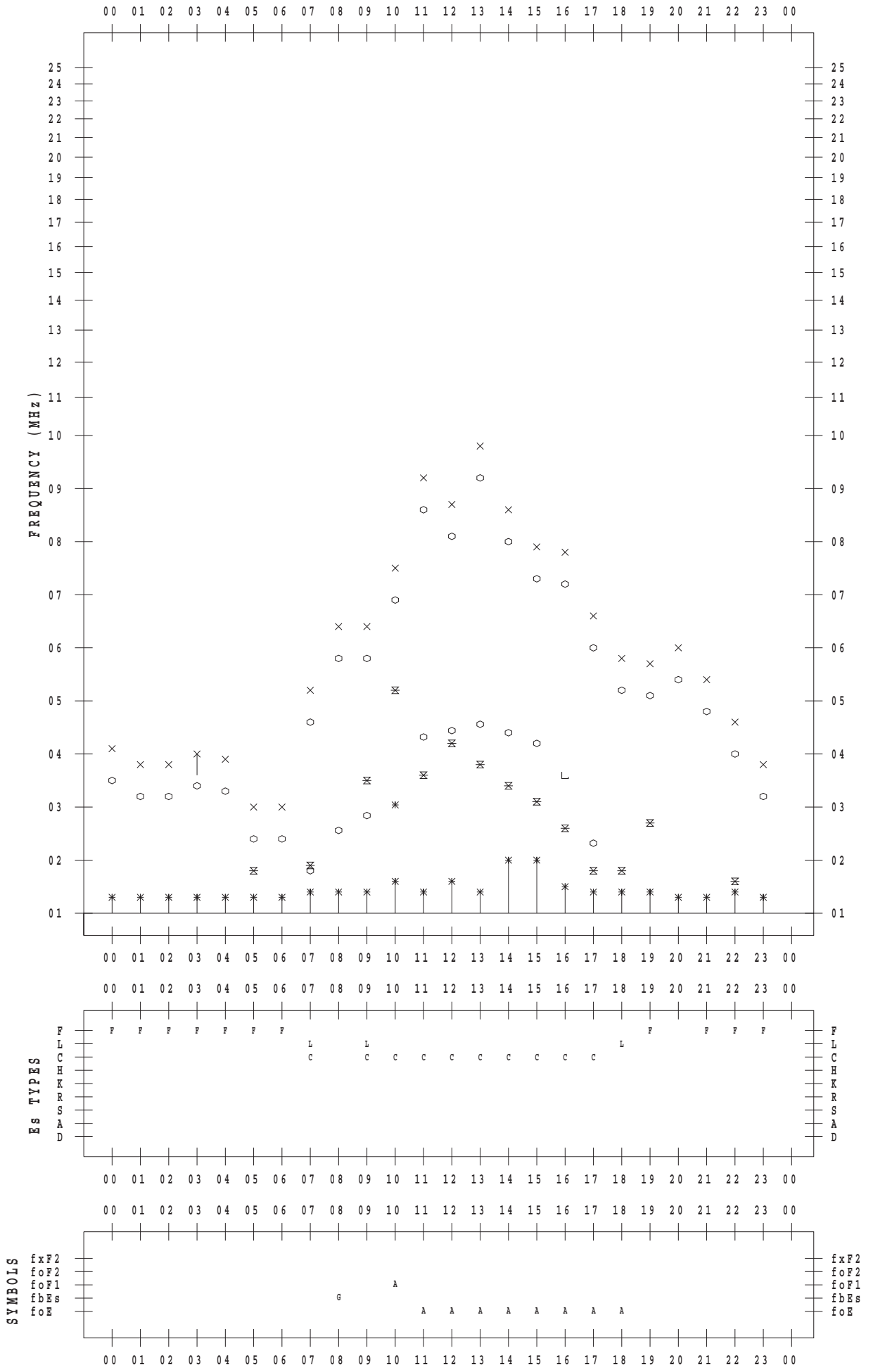
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/ 9

135 °E MEAN TIME



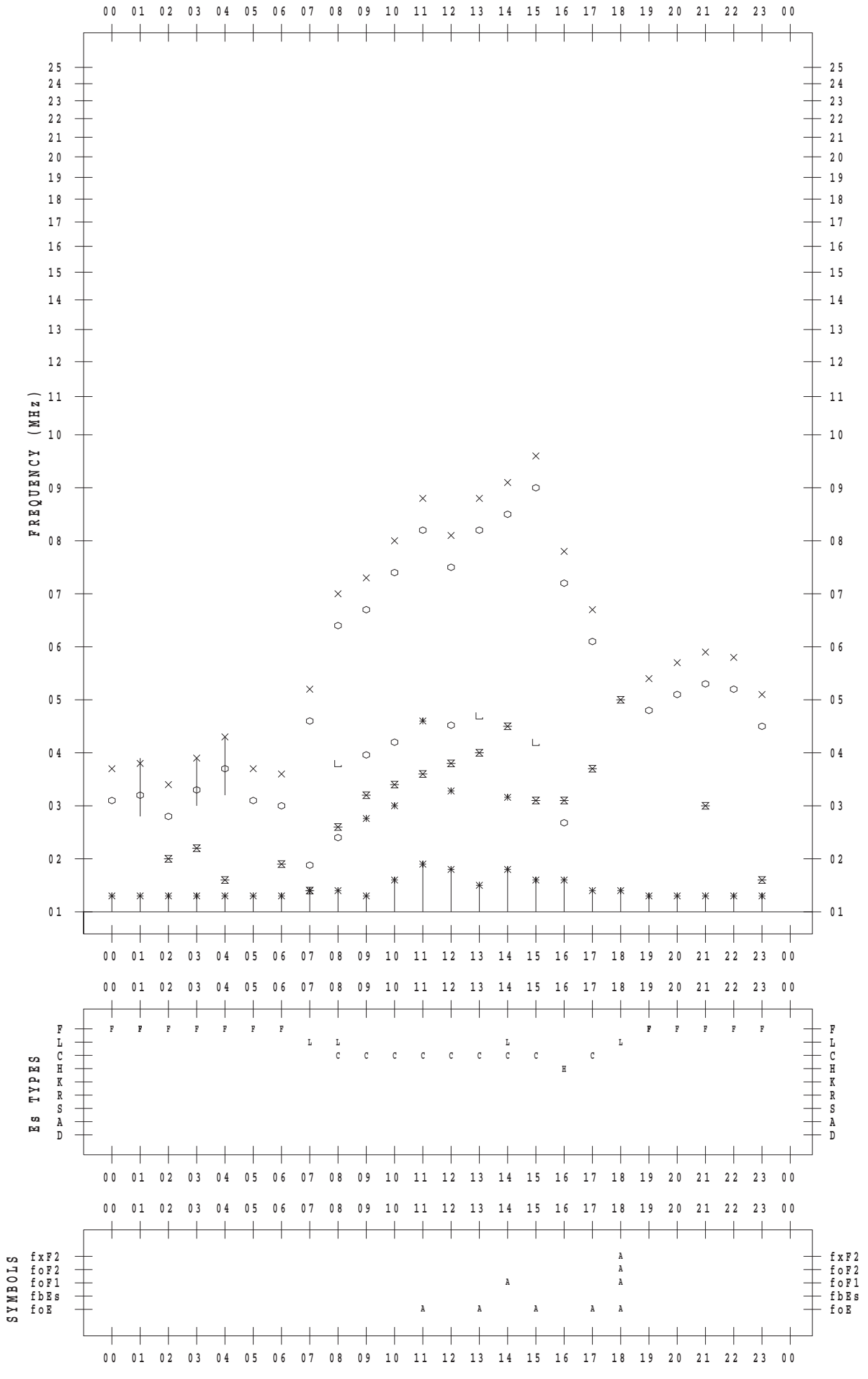
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/10

135 °E MEAN TIME



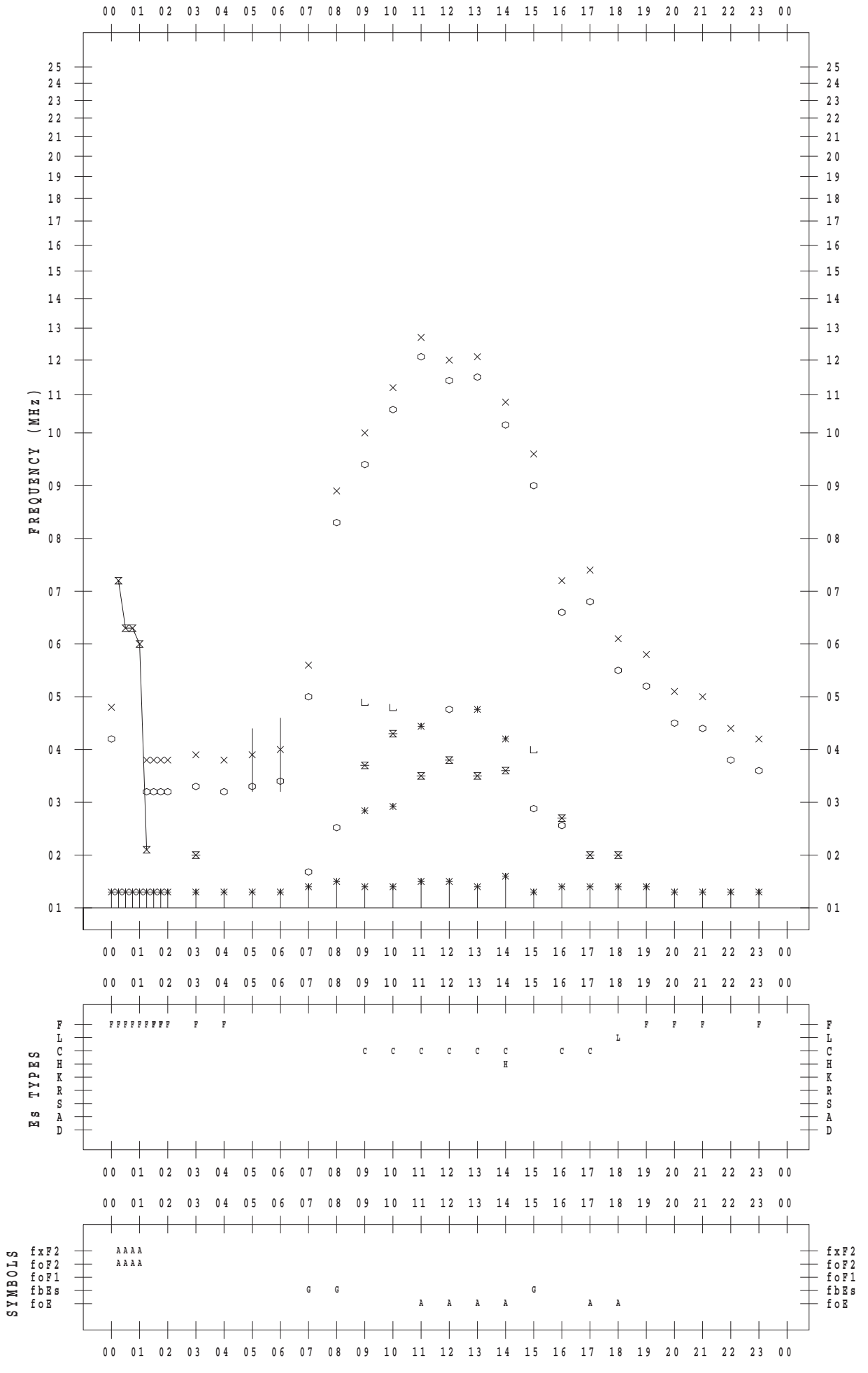
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/11

135 °E MEAN TIME



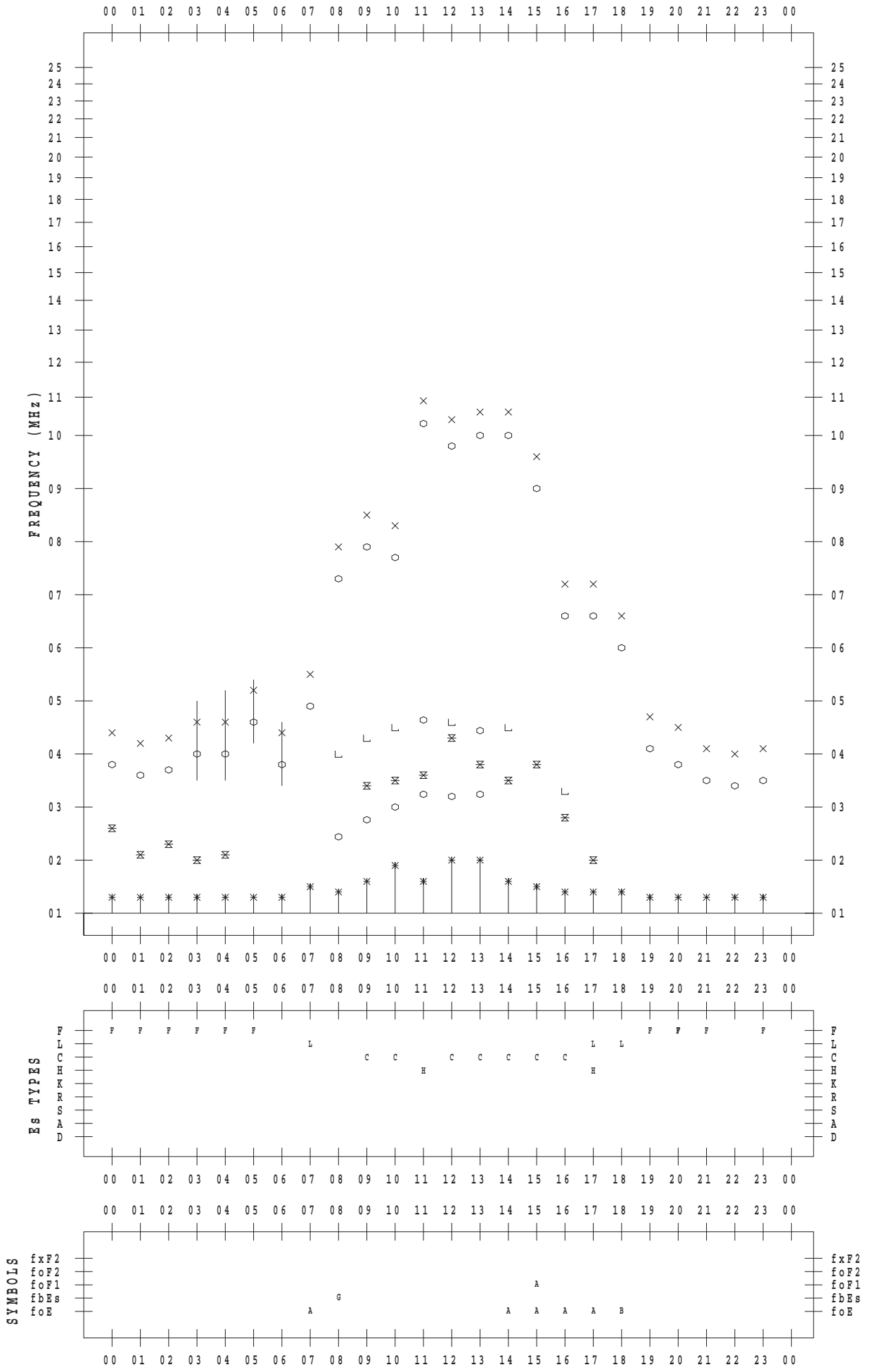
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/12

135 °E MEAN TIME



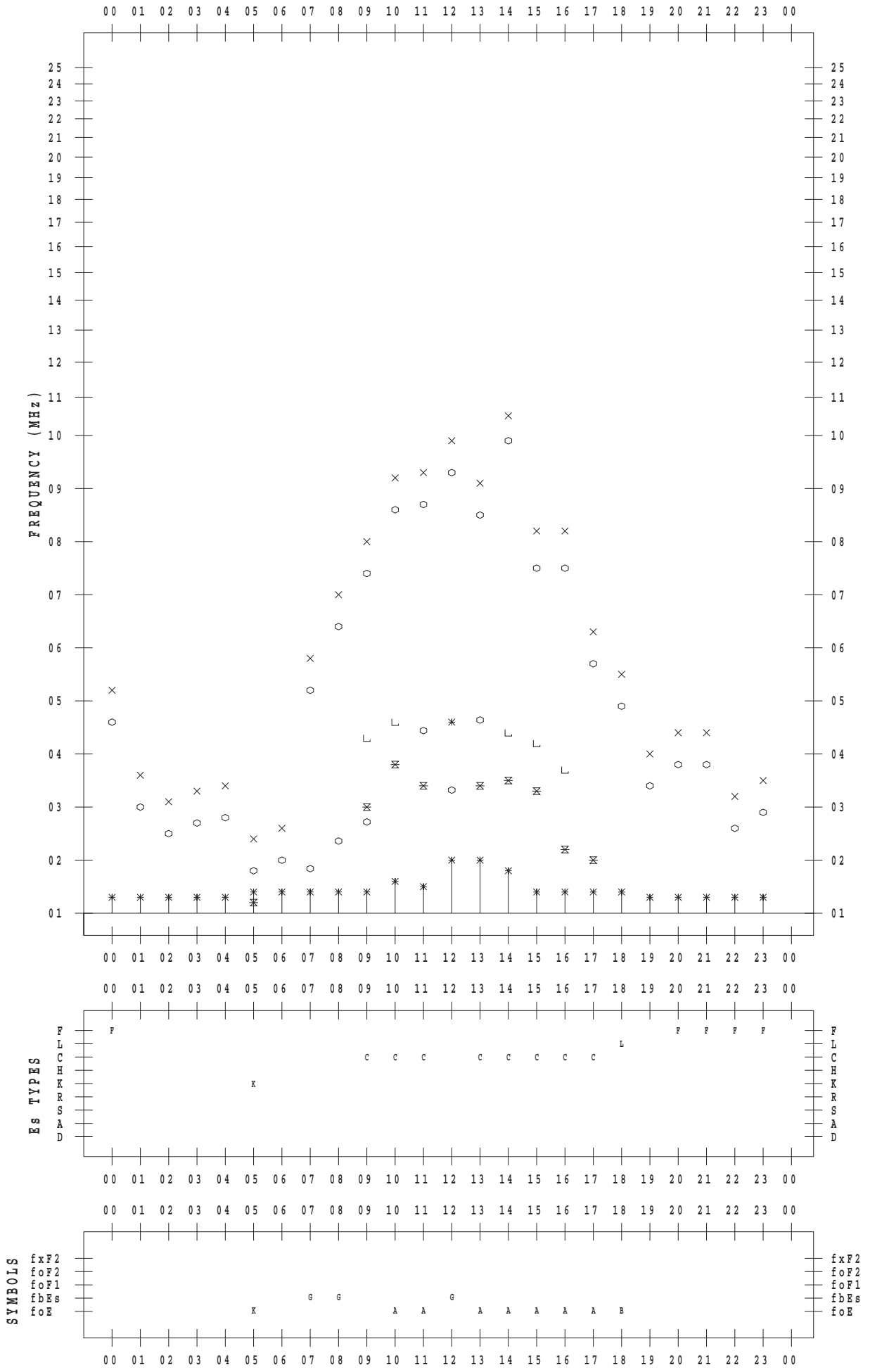
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/13

135 °E MEAN TIME



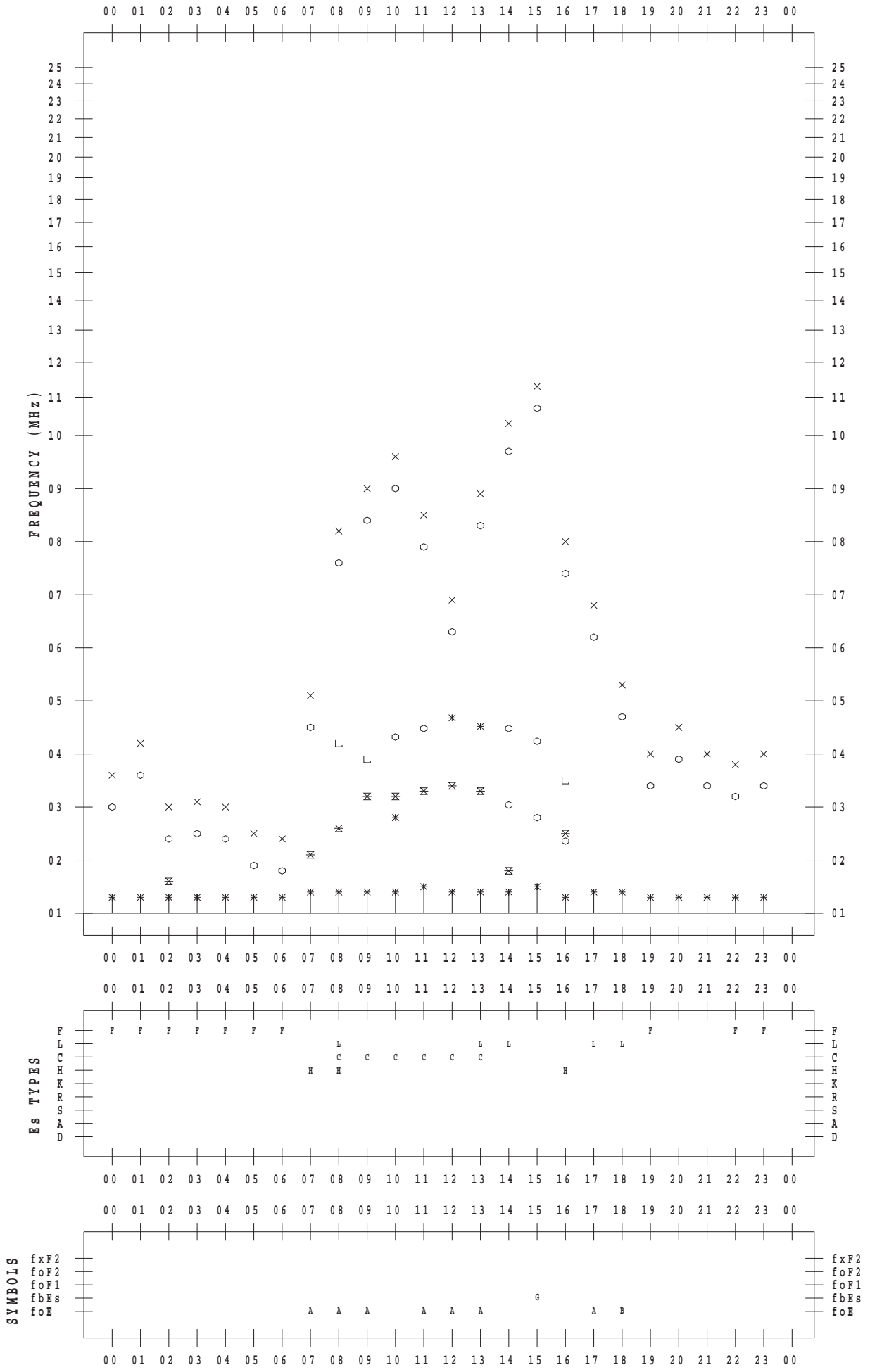
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/14

135 °E MEAN TIME



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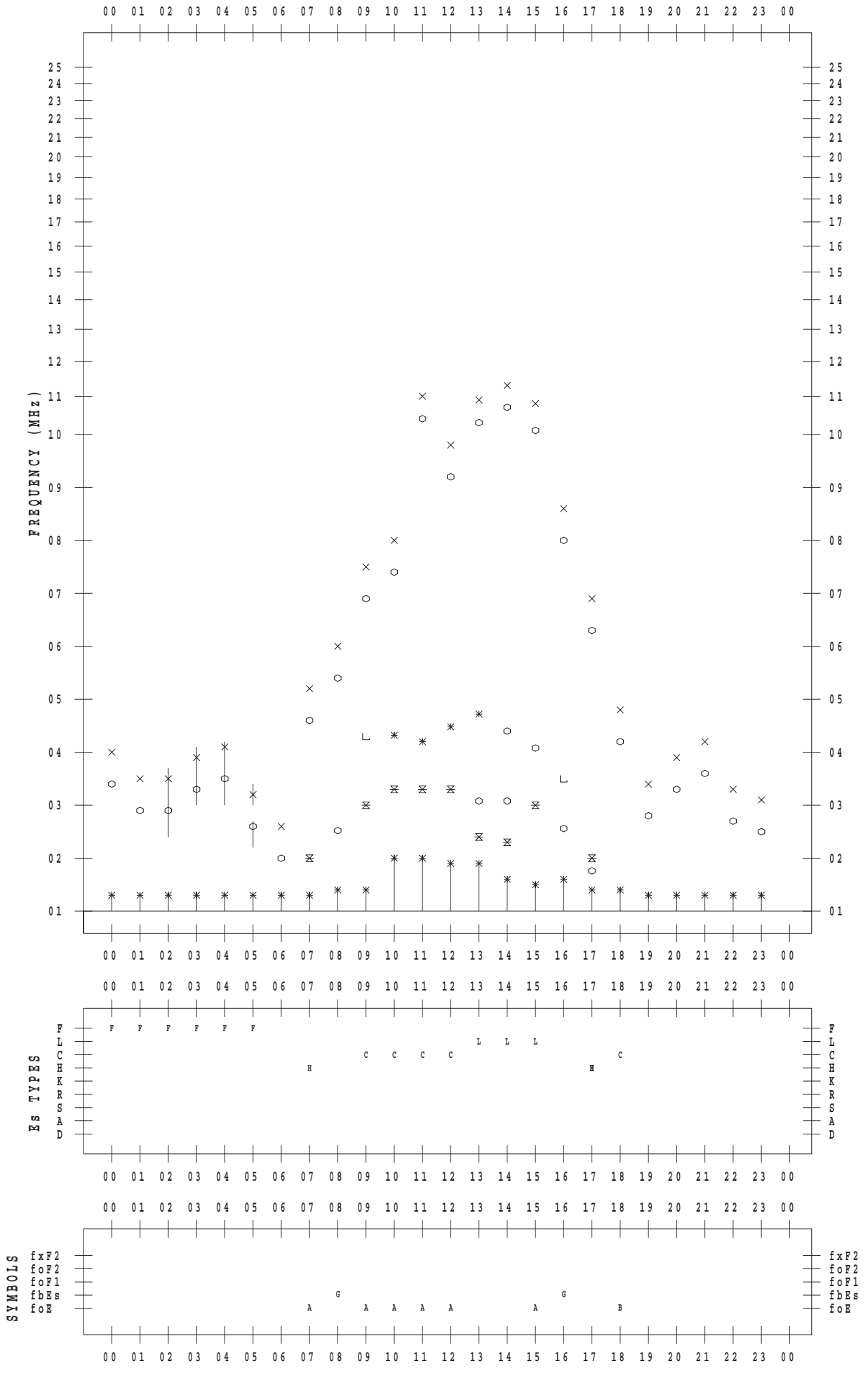
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/15

135 °E MEAN TIME



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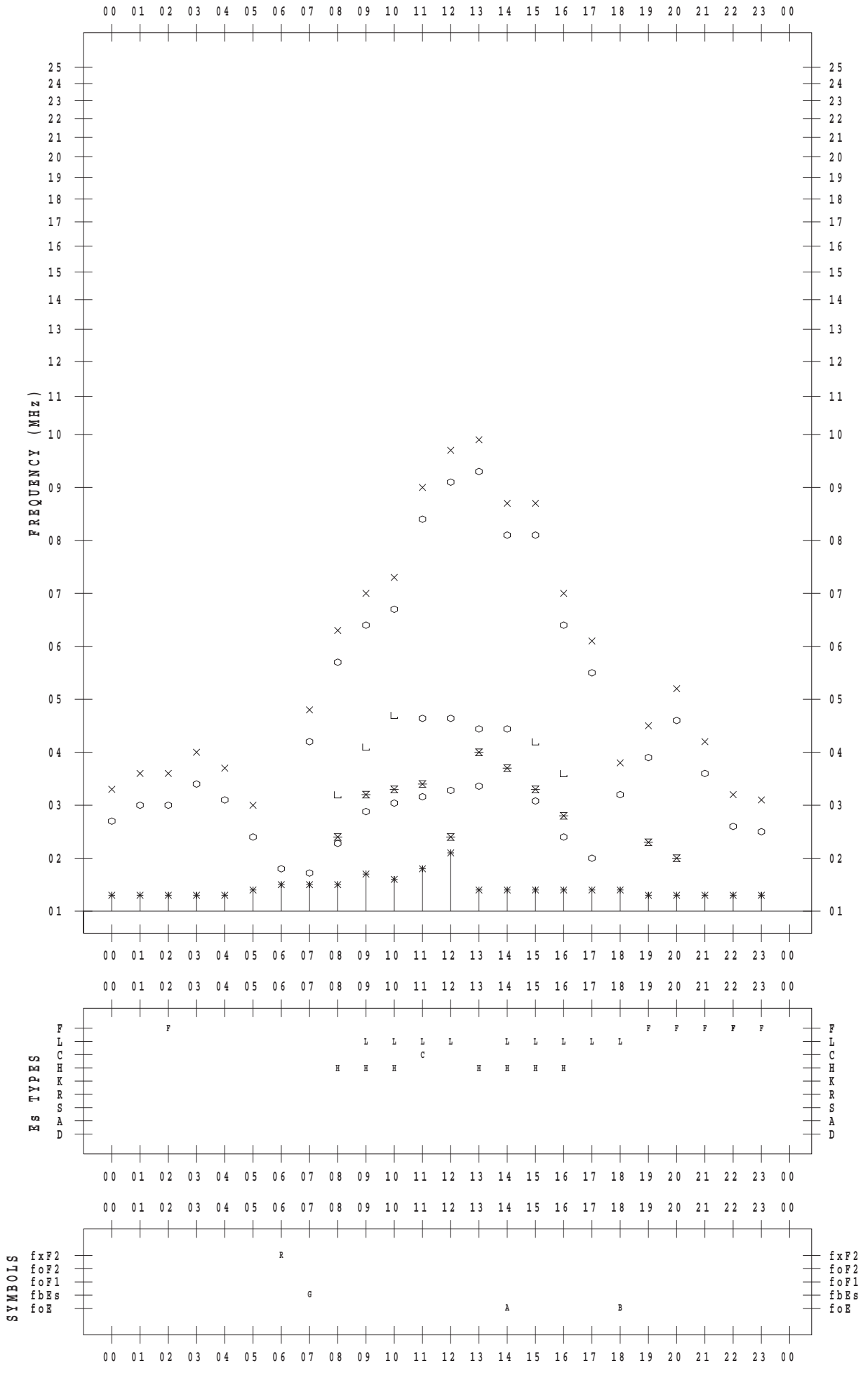
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/16

135 °E MEAN TIME



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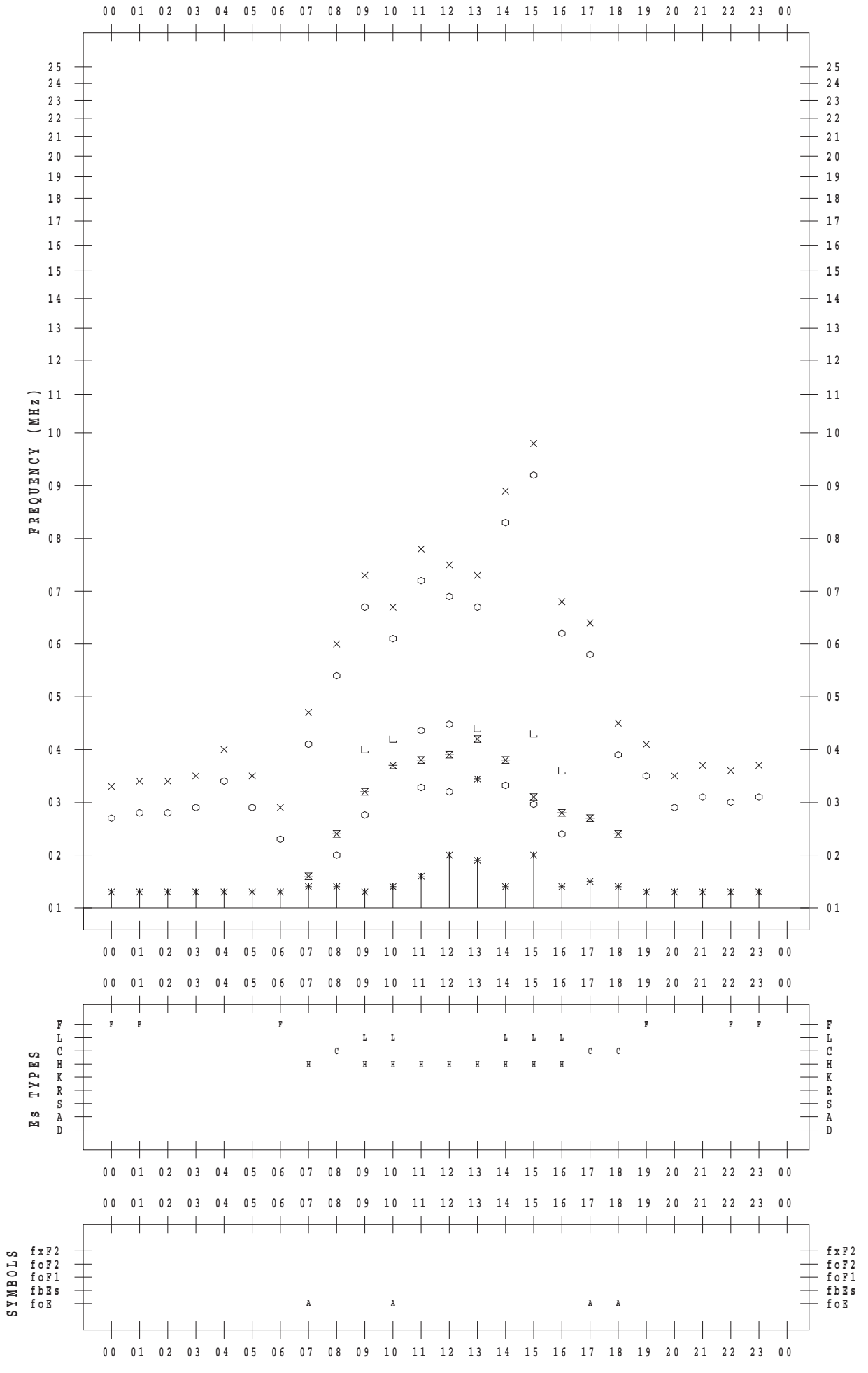
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/17

135 °E MEAN TIME



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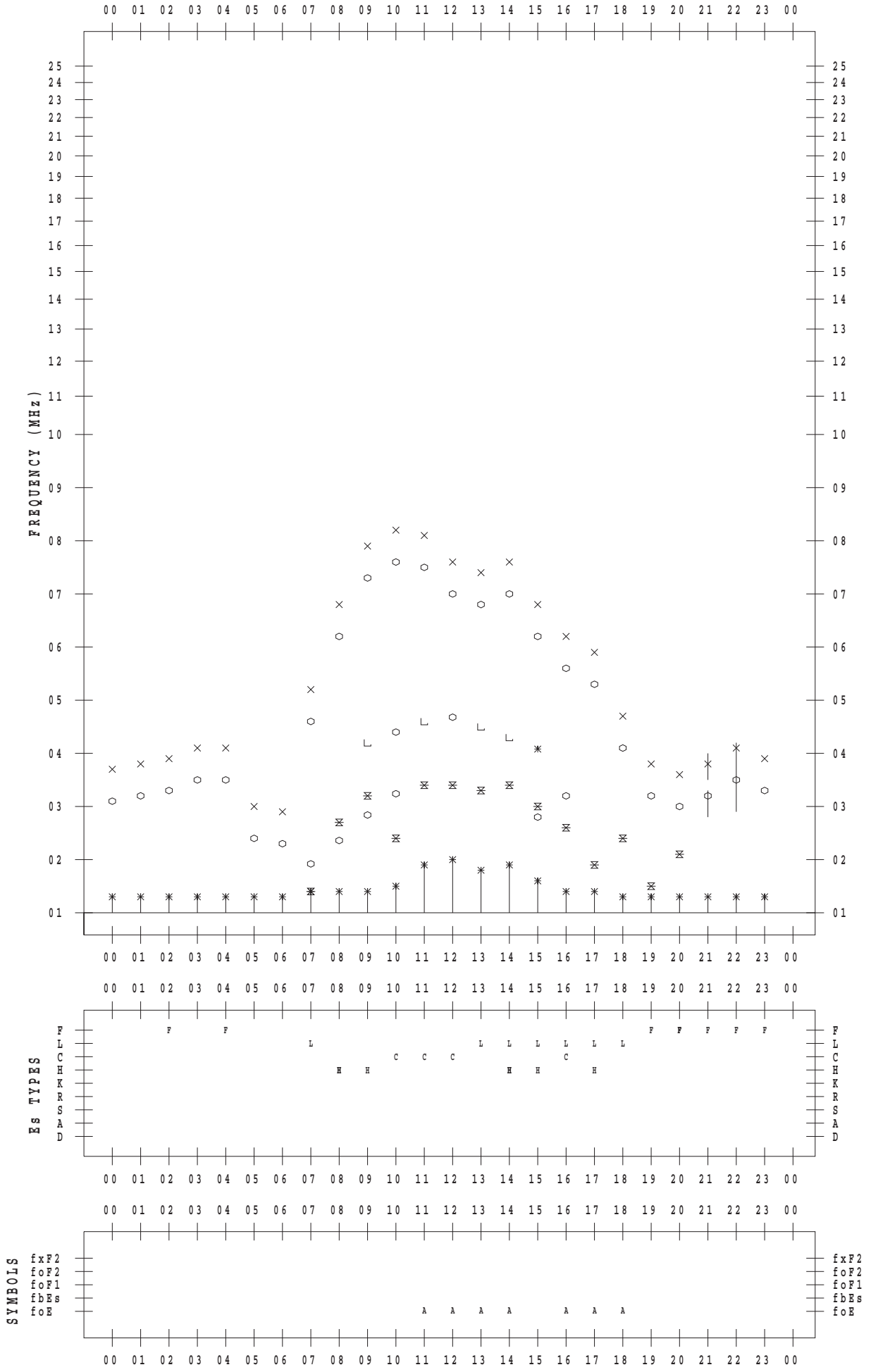
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/18

135 °E MEAN TIME



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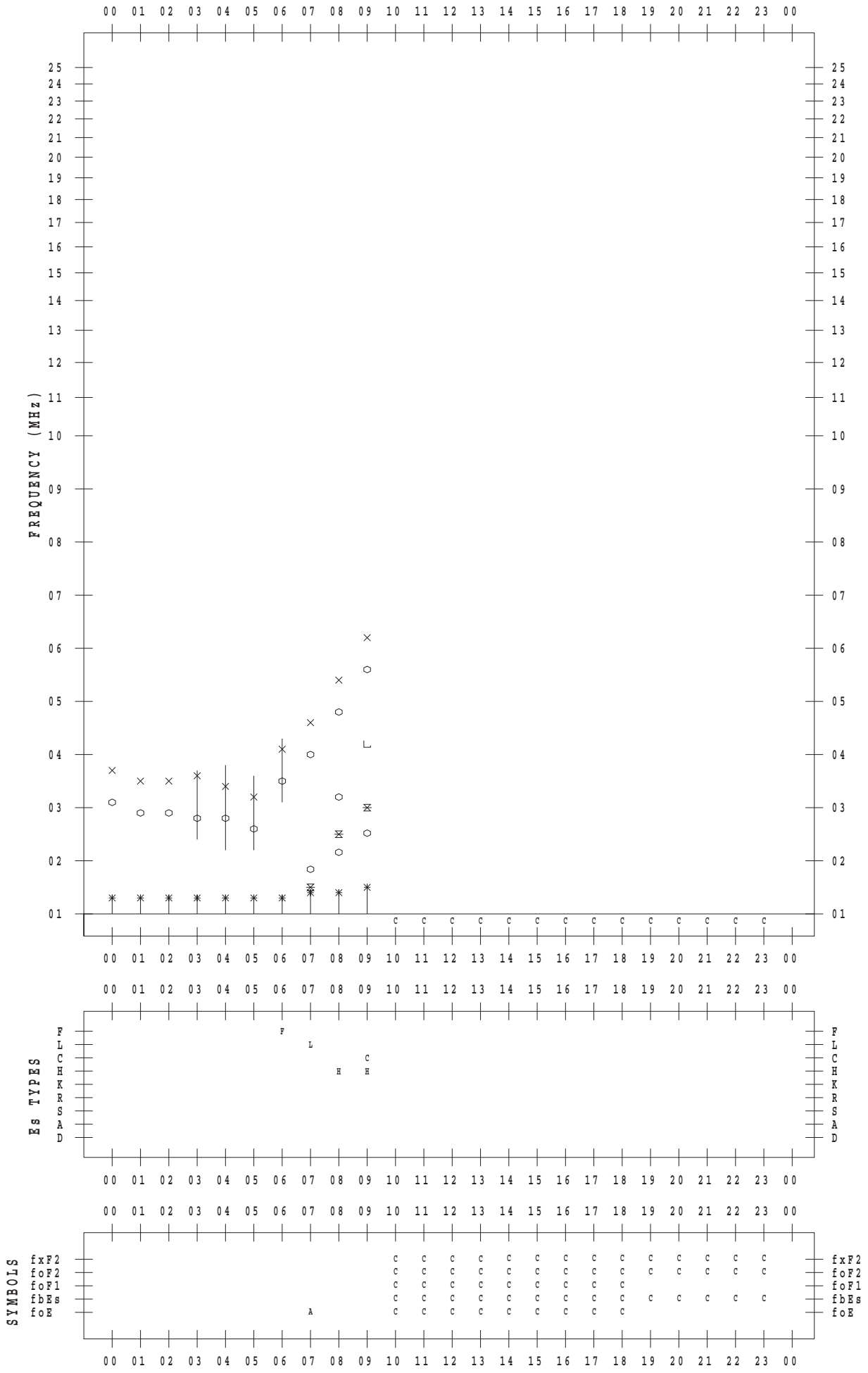
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/19

135 °E MEAN TIME



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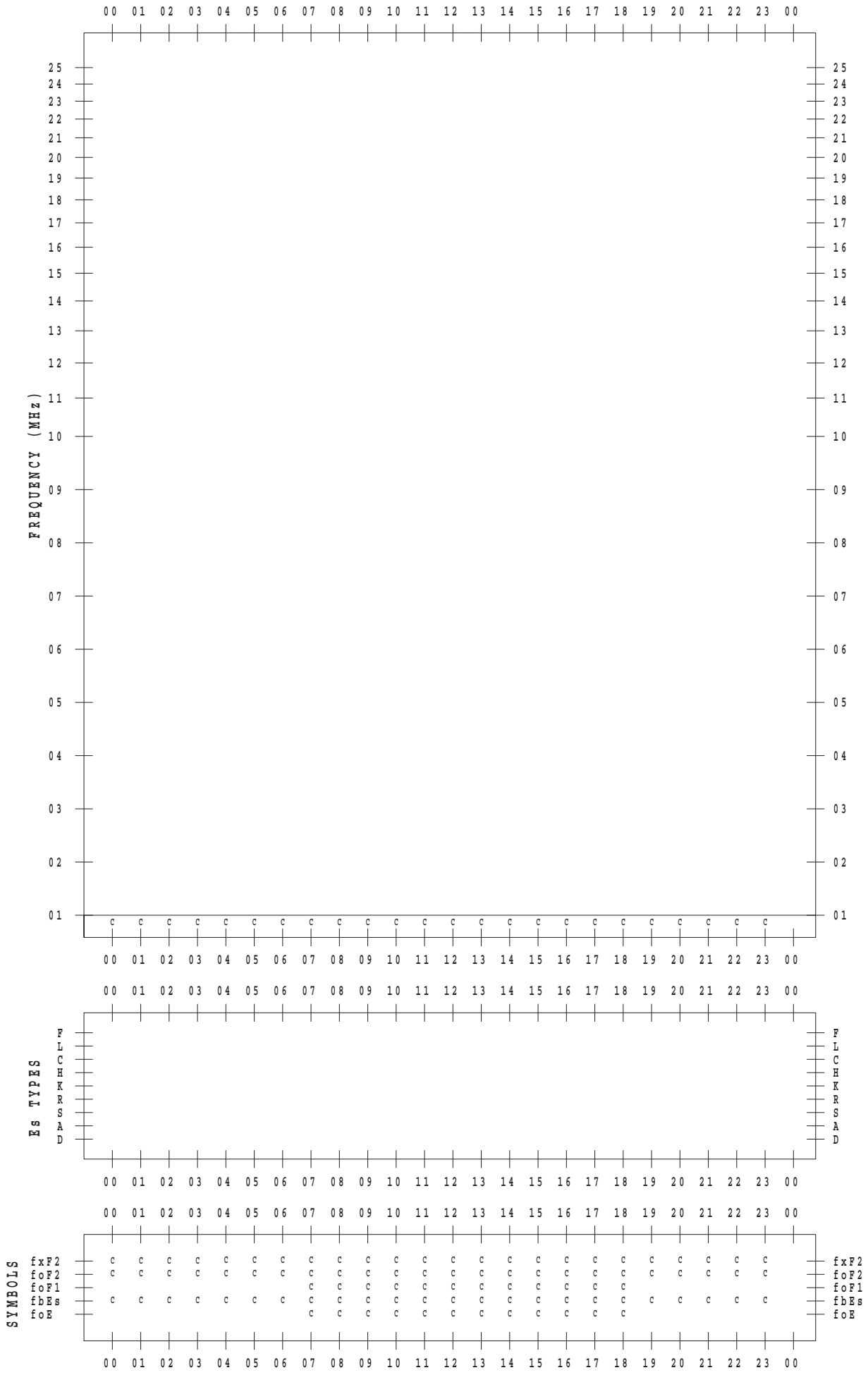
STATION : Okinawa

DATE : 2016/11/20

135 °E MEAN TIME



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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/21

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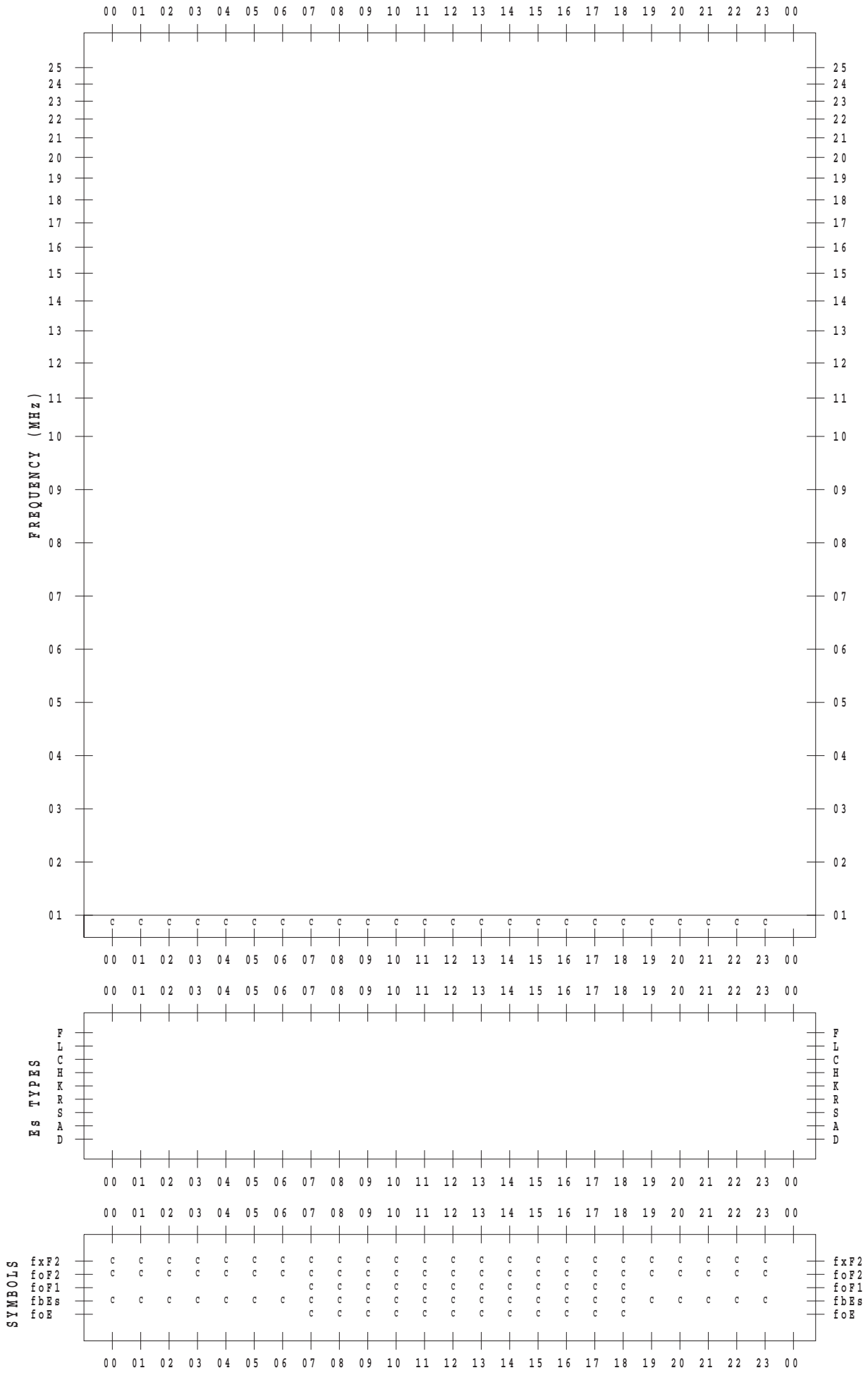


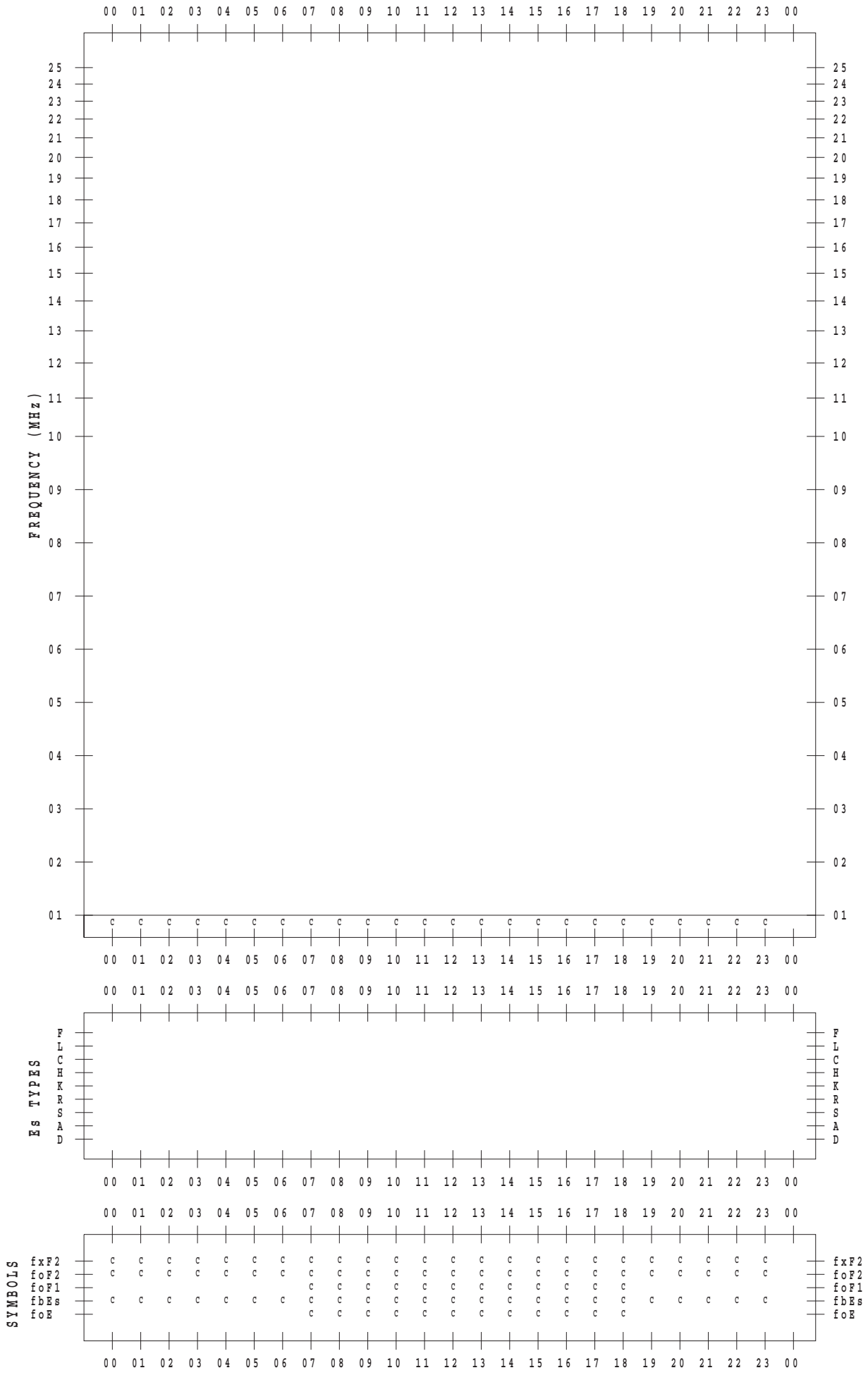
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/22

135 °E MEAN TIME



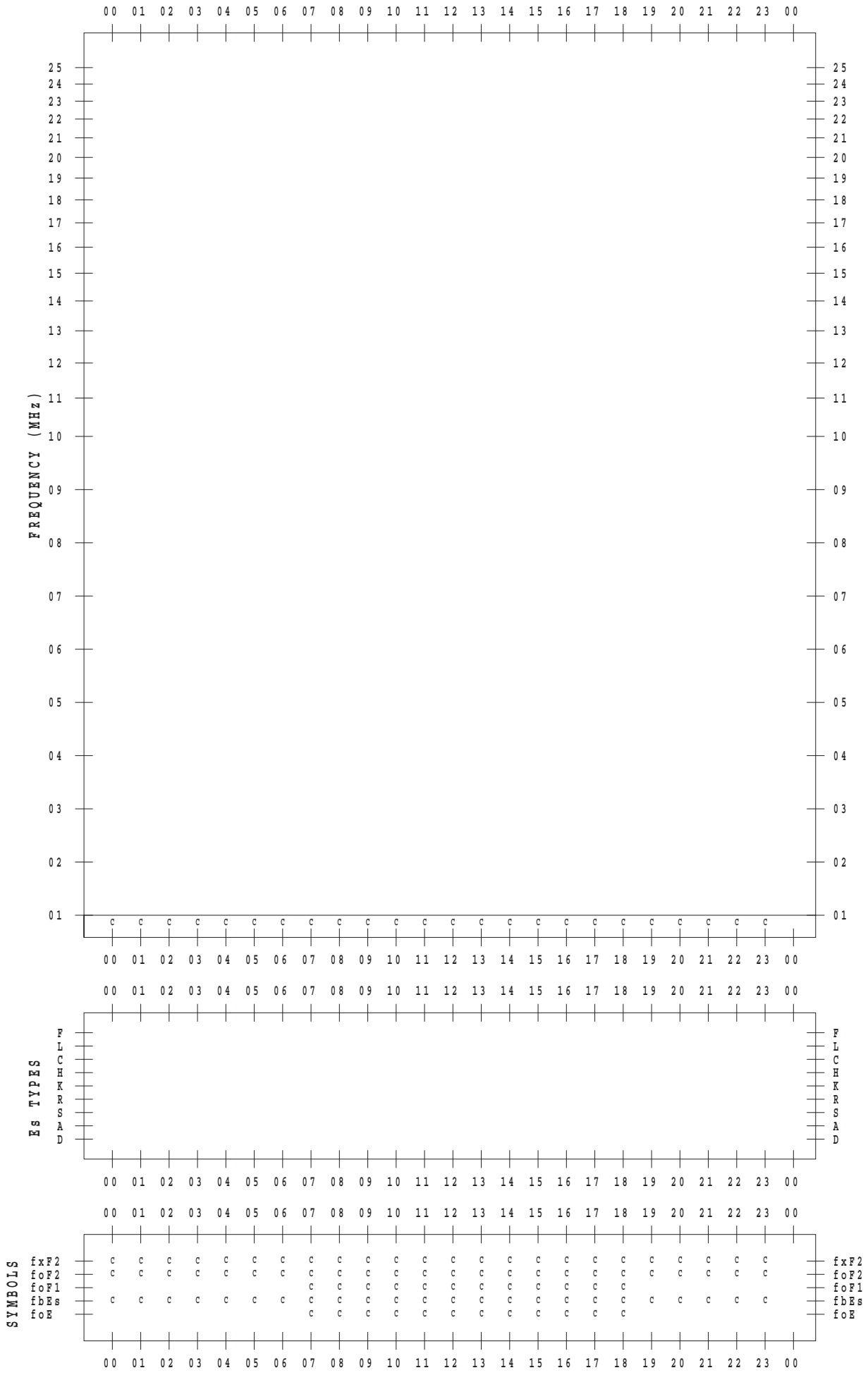
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/23

135 °E MEAN TIME



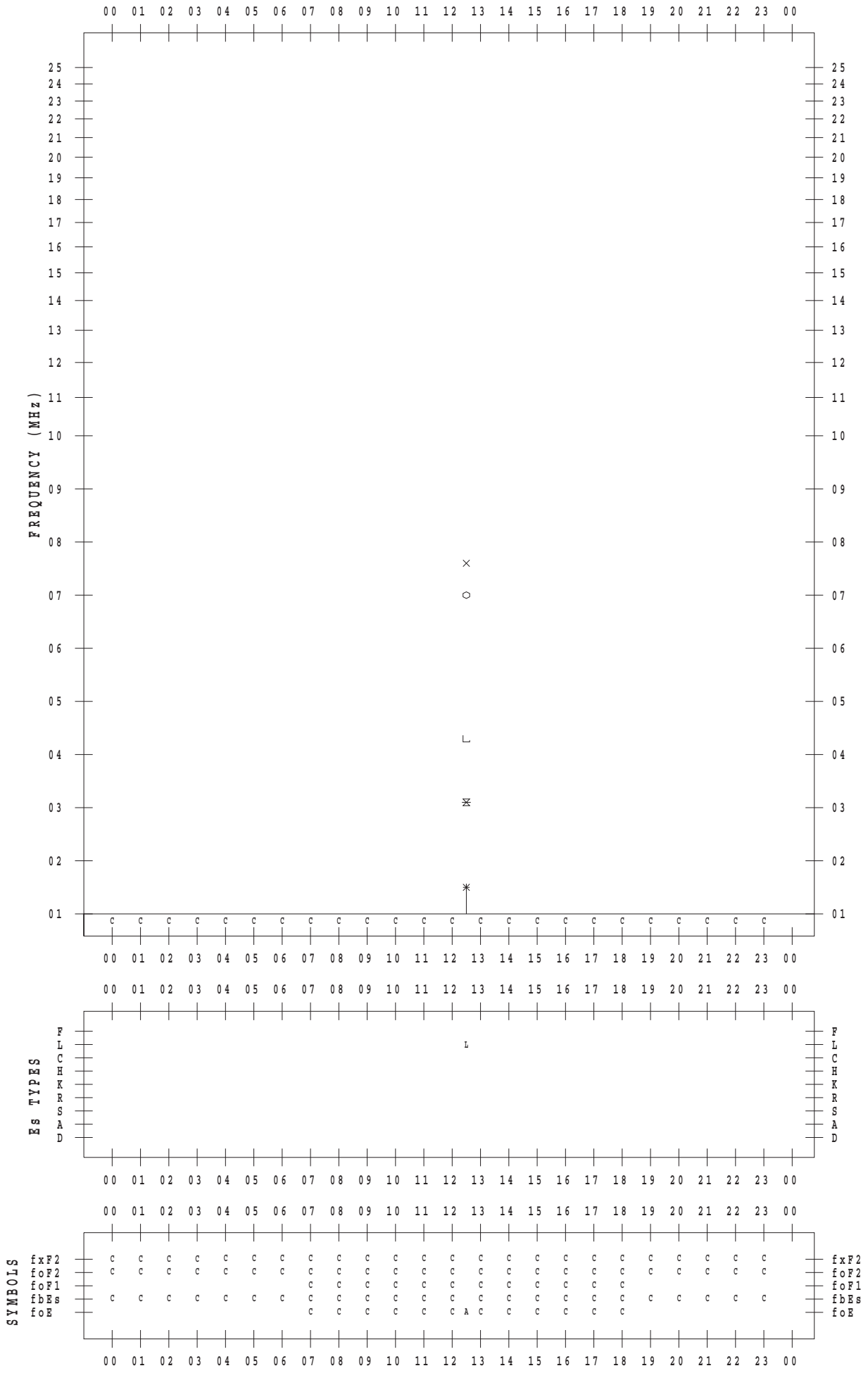
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/24

135 °E MEAN TIME



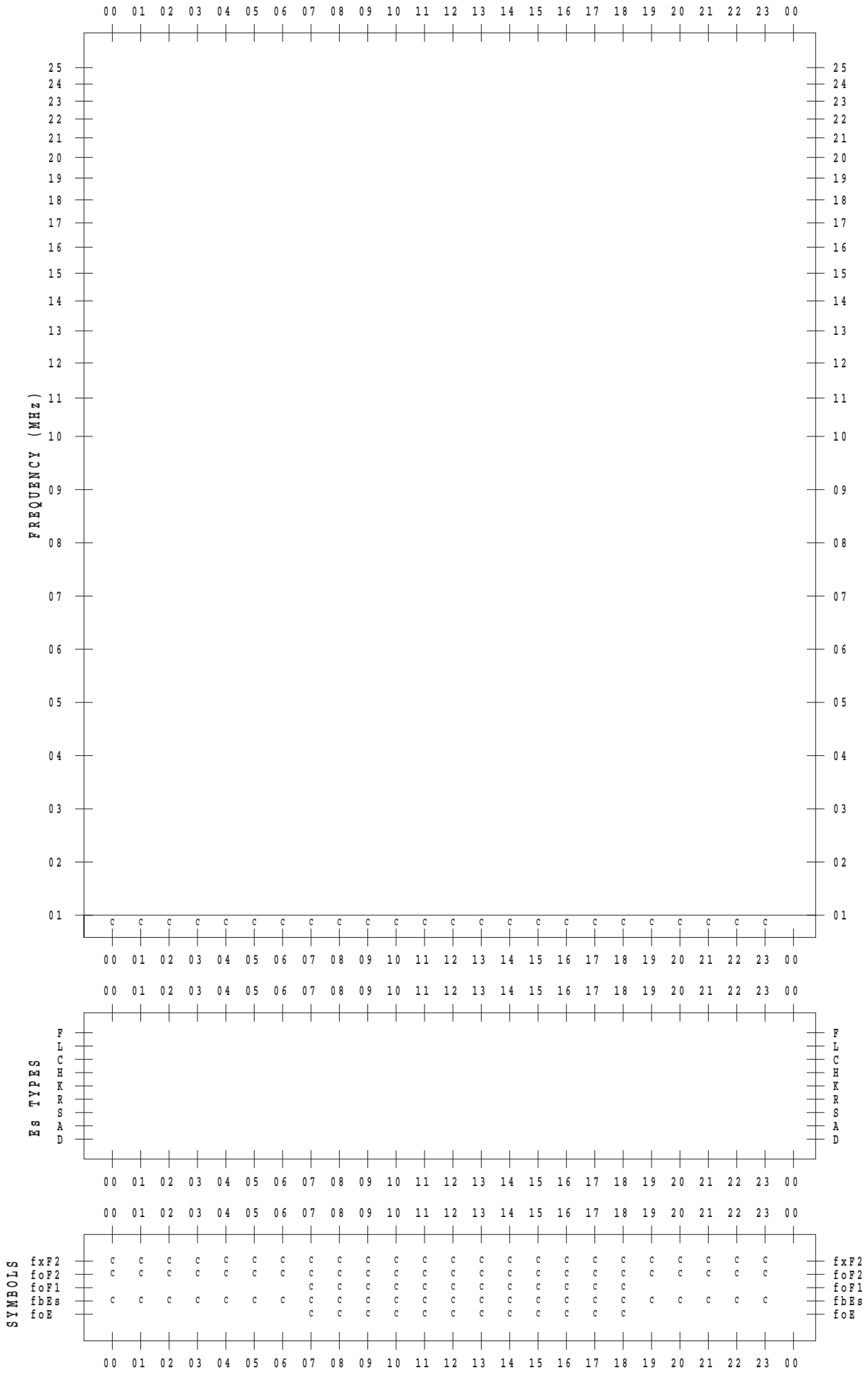
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/25

135 °E MEAN TIME



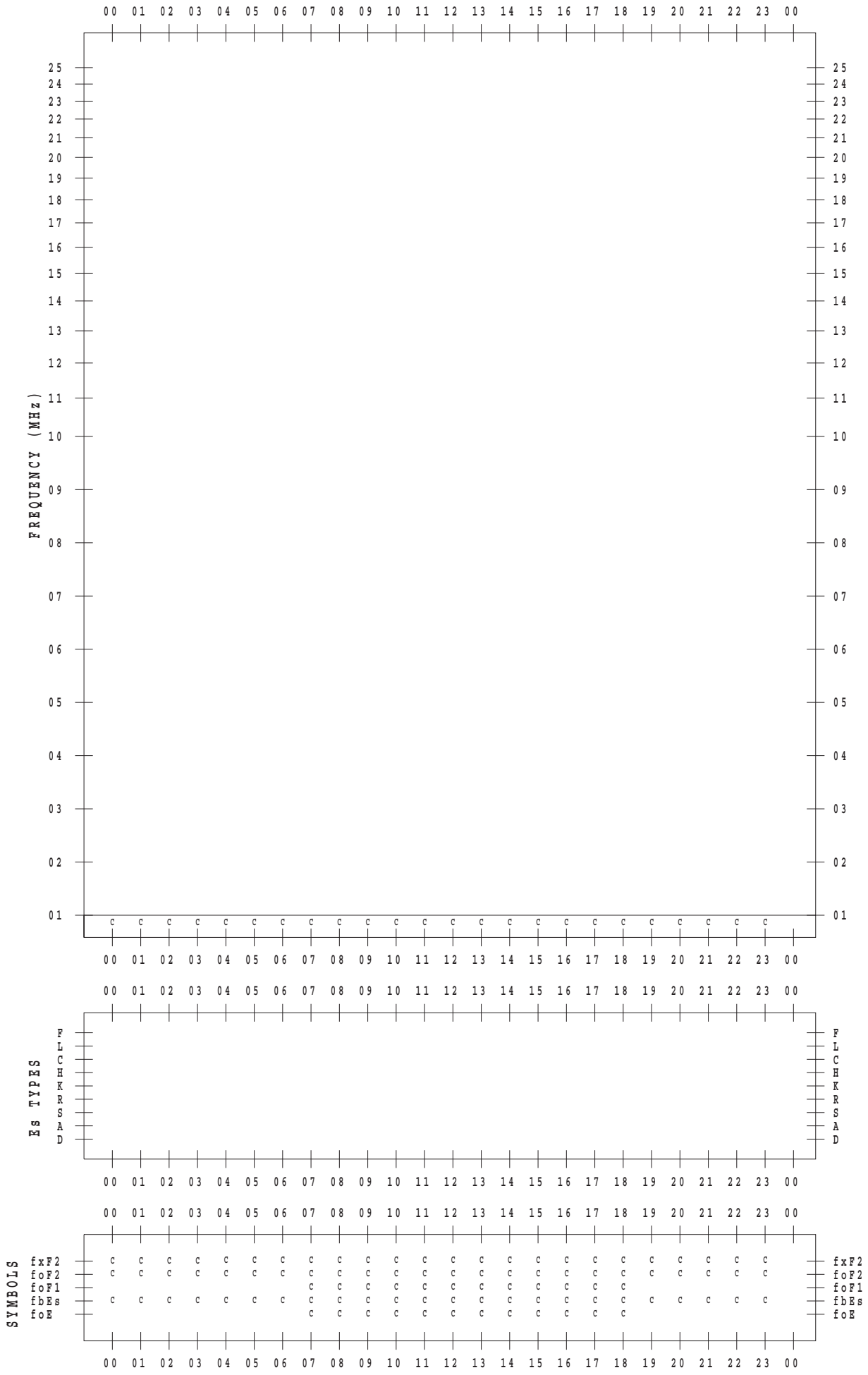
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/26

135 °E MEAN TIME



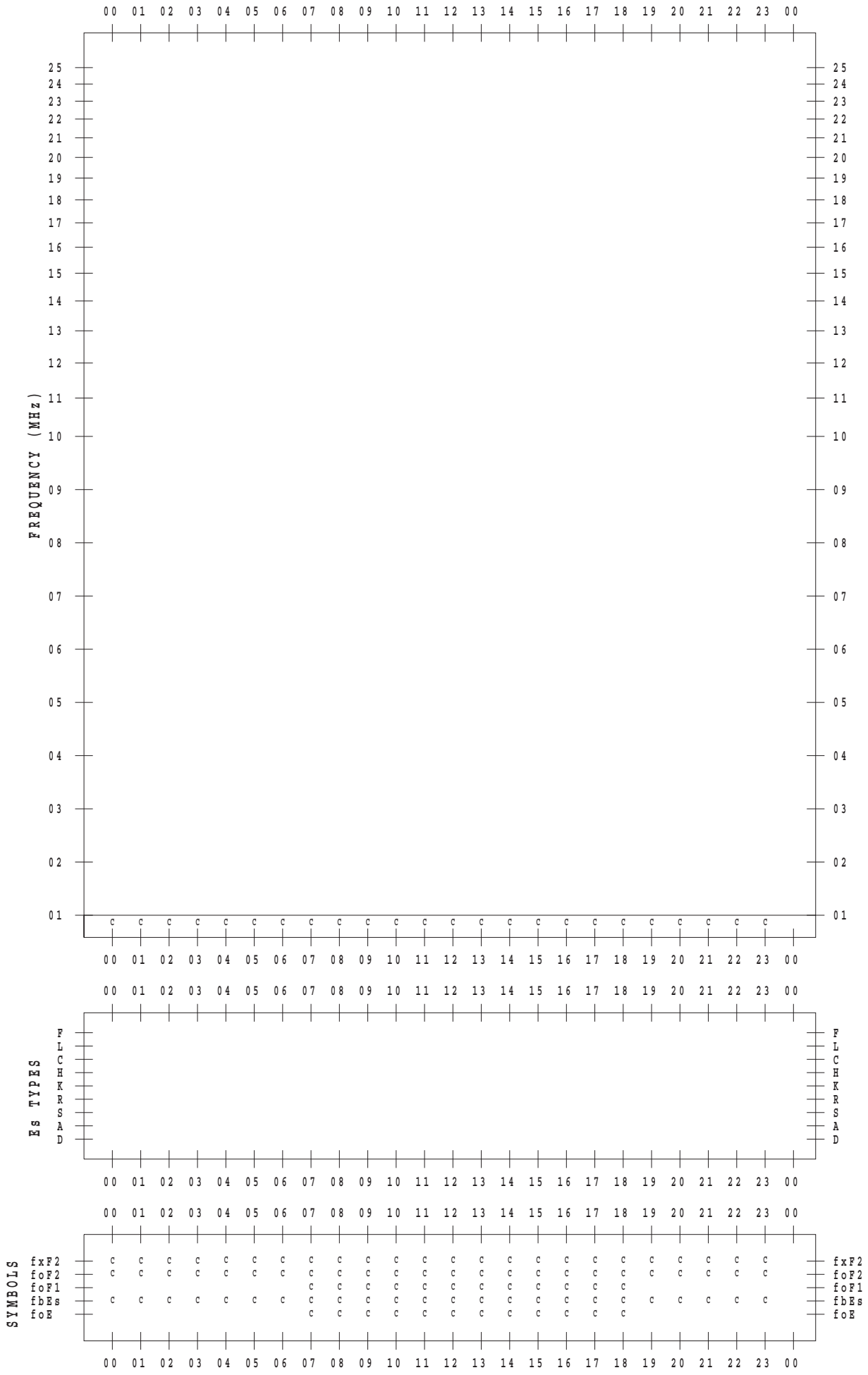
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/27

135 °E MEAN TIME



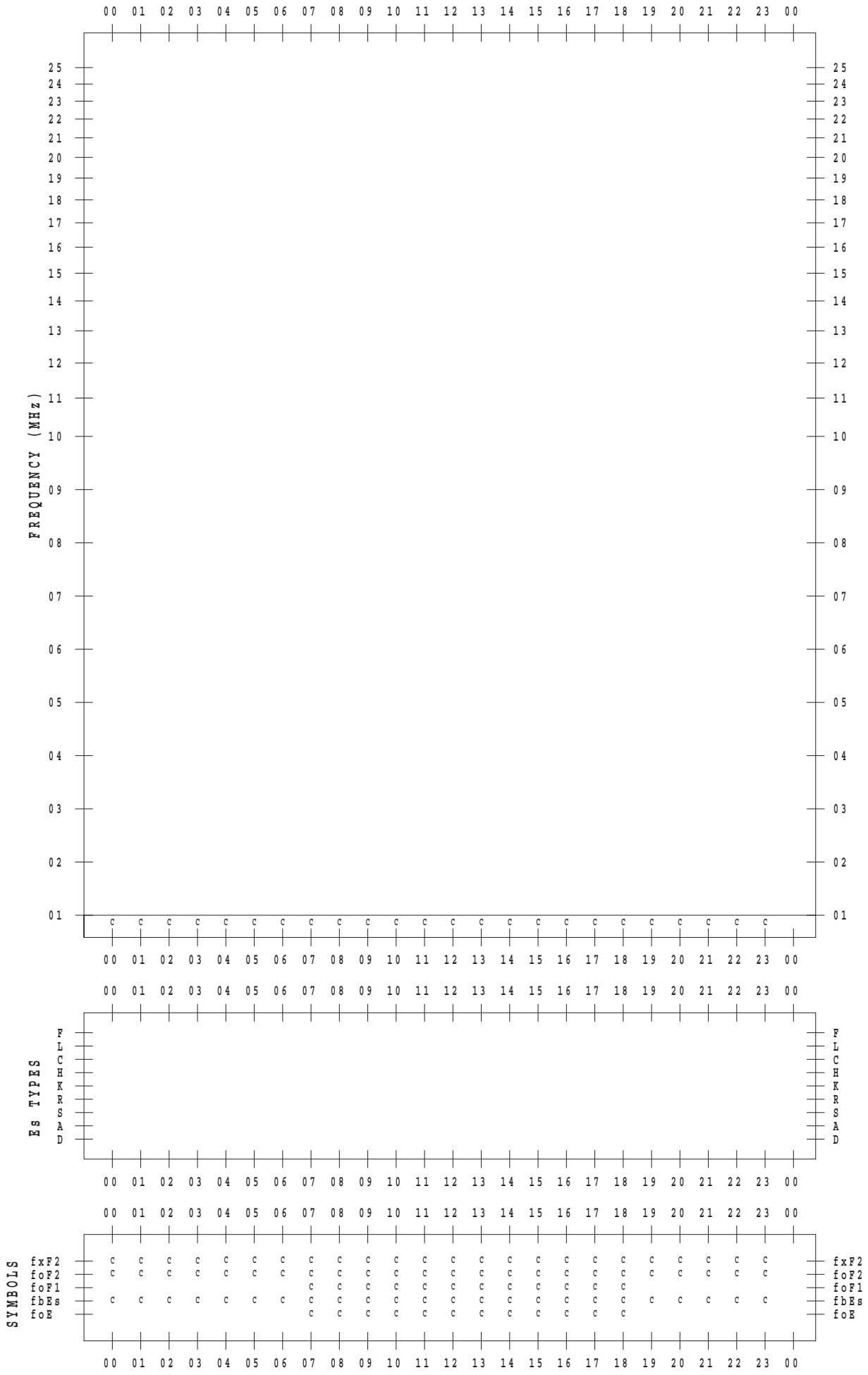
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/28

135 °E MEAN TIME



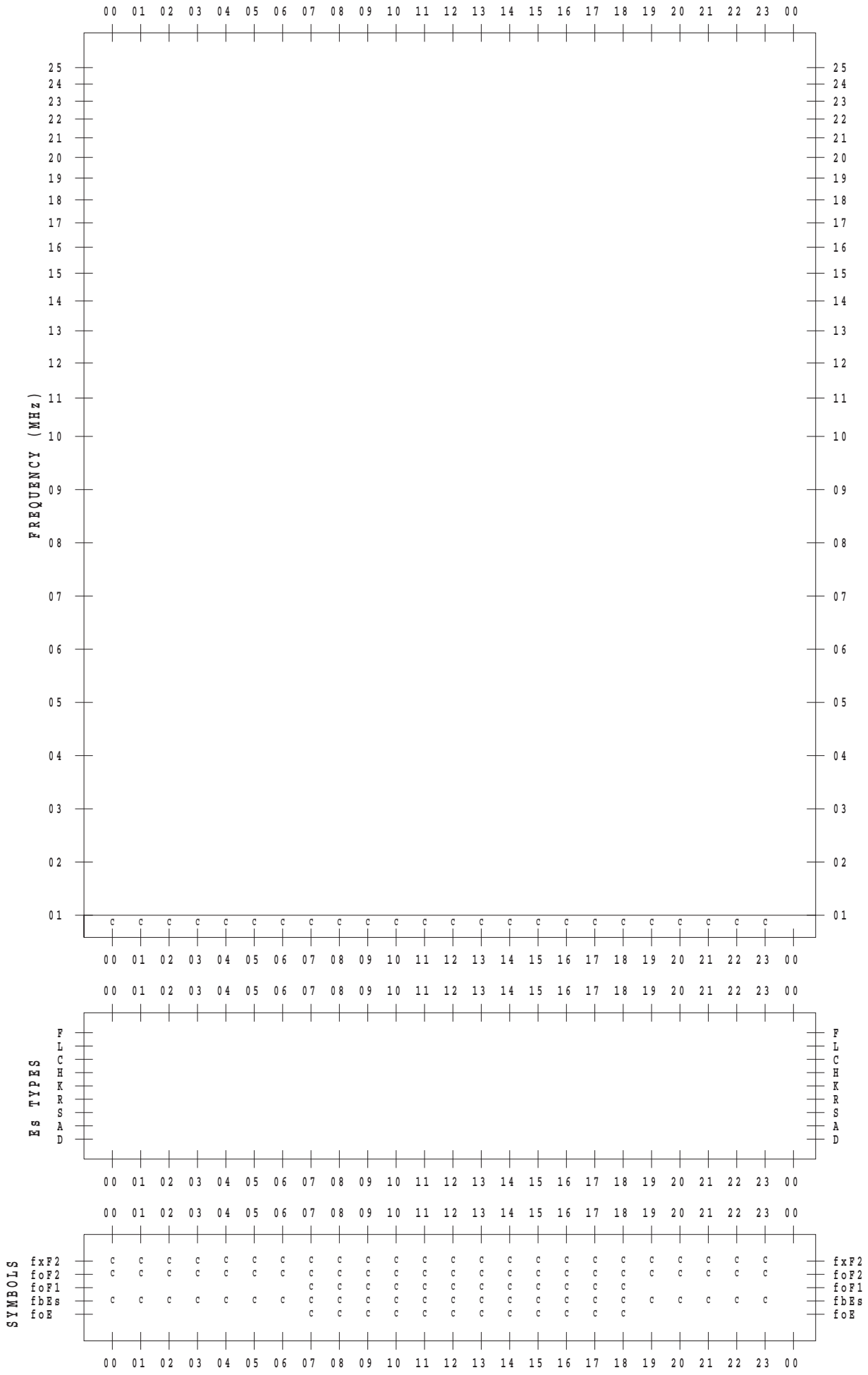
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/29

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/11/30

135 °E MEAN TIME