F-796

IONOSPHERIC DATA IN JAPAN

FOR APRIL 2015

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NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	67	64	66	54	62	63	64	73	103	96	109	97	75	94	64	93	91	91	72	66	65	65	67	54
2	54	63	53	58	61	63	67	68	68	94	99	120	122	118	107	96	93	90	72	67	67	64	66	54
3	64	52	64	54	53	50	52	60	65		68	70	70	70	72	80	N	71	70	66	63	A	A	54
4	54	38	54	53	48	57	58	67	74	70	74	90	93	73	81	71	71	87	73	67	64	67	66	63
5	62	64	52	62	65	62	67	74	48	92	68	53	91	91	88	87	82	74	69	67	66	65	66	67
6	62	52	34	63	61	66	67	88	92	80	91	91	92	59	80	83	79	80	70	67	67	67	67	66
7	64	67	63	58	57	64	72	75	79	93	92	90	85	91	91	64	80	86	70	67	66	64	65	62
8	67	63	66	63	54	60	67	67	71	86	93	92	92	93	92	90	88	74	70	65	66	67	66	54
9	52	54	63	52	57	58	67	68	72	74	73	80	71		96	92	80	91	69	66	66	66	54	54
10	52	60	62	62	51	37	56	55	63	A	68	N	71	69	90	74	C	72	65	67	64	54	53	54
11	49	52	43	37	44	48	54	61	59	66	67	73	N	78	88	85	92	84	70	65	55	53	61	52
12	53	41	46		42	A	A	60	62	75	68	68	72	60	69	68	68	70	67	67	66	67	61	52
13	58	54	53	53	52	51	63	71	68	59	72	70	77	N		87		71	67	67	67	64	67	64
14	54	63	61	52	59	66	74	68	70	72	94	70	N			74	71	71	70	70	67	66	67	54
15	53	60	45	53	53	57	60	65	66	70	82	69	69	59	87	84	68	71	70	70	67	66	67	66
16	54	66	65	52	37	48	58	67	87	88	70	62	71	92	92	90	91	92		70	67	66	66	67
17	54	62	64	61	57	60	67	67	69	69	A	N	72	N	62	90	86	93	70	71	65	64	54	53
18	51	58	54	51	44	46	58	62	68	67	55	71	71	70	85	74	87	77	68	66	67	67	65	66
19	63	60	53	63	60	64	65	68	68		59	89	60	71	95	91	80	85	70	66	67	67	66	67
20	54	66	66	54	66	67	88	72	90		69	68	91			91	91	72	84	68	66	66	66	67
21	67	52	54	64	61	72	72	80	87	72		58	71	92		91	89	74	72	67	67	66	66	66
22	67	67	54	66	62	67	67	69	A	N	67	68	72	59	N	72	74	83	75	67	66	67	67	64
23	A	52	54	61	60	61	67	74		70	A	91	A	61	72	63	86	71	70	65	66	66	66	65
24	65	64	66	64	66	67	67	68	72	72	90	89	71	87	92	91	94	87	82	70	67	66	66	67
25	54	66	63	54	66	67	71	88	92	N	90	91	68	91	91	92	88	74	72	70	67	66	67	64
26	65	67	66	66	67	66	66	80	86	90	92	92	71	71	92	87	92	75	70	60	66	66	66	67
27	54	63	54	54	63	68	74	84	87	74	90	75	73	68	92	92	81	73	70	N	67	67	67	66
28	66	66	64	66	64	66	67	67	67	68	69	68	68	N	N	N	72	74	70	67	66	66	65	67
29	66	64	66	62	63	67	65	66	66	N	71	64	70	70	62	80	69	90	68	67	62	62	52	67
30	66	66	61	54	63	61	62	66	72	91	87	70	70	52	71	74		71	71	66	67	67	64	63
31																								
	00	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	29	30	29	29	30	28	23	27	28	27	24	24	29	26	30	29	29	30	29	29	30
MED	58	63	61	58	60	63	67	68	70	74	73	72	71	71	88	87	84	74	70	67	66	66	66	64
U Q	65	66	64	63	63	66	67	74	86	90	91	90	85	91	92	91	91	87	72	67	67	67	67	67
L Q	54	54	53	53	53	57	61	66	66	70	68	68	70	64	72	74	74	72	69	66	66	64	64	54

HOURLY VALUES OF fEs AT Wakkanai

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	30	35	G	G	G	G	G	G	G	G	43	40	34	40	28	G	32	G
2	G	G	34	G	G	G	50	G	G	55	G	G	G	G	58	G	G	32	G	G	G	G	23	G
3	G	G	G	25	G	G	G	G	47	G	G	G	G	60	G	G	G	G	G	33	28	84	68	30
4	27	24	G	G	G	G	G	G	G	G	G	G	51	43	42	G	G	G	G	G	G	40	G	G
5	G	24	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	34	52	G	G	G	G	G	G	G	G	38	31	G	25	G	G	G	G
7	G	G	G	G	G	G	32	G	39	G	G	G	G	G	G	G	G	G	G	25	G	G	G	G
8	G	30	G	G	G	G	49	40	G	G	G	G	G	G	G	G	G	32	28	G	G	G	G	G
9	G	G	G	G	G	G	34	G	G	G	G	G	G		G	G	G	G	37	31	24	23	G	36
10	23	G	G	G	G	G	G	G	G	63	53	G	G	G	G	40	C	G	26	33	32	30	30	23
11	G	G	G	G	G	G	G	G	G	G	G	G	G	66	G	42	G	50	37	32	39	26	32	G
12	G	G	31		32	40	58	49	47	51	60	G	G	G	G	G	G	32	30	31	31	28	23	G
13	G	28	30	G	G	G	G	G	46	G	G	G	G	G		43		35	31	29	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	G	30	G	G	G	G	G
15	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G	35	G	G	G
16	G	G	G	G	G	G	G	G	G	51	63	58	G	G	G	G	G	39		G	G	27	G	G
17	G	G	G	G	G	G	G	G	G	G	71	G	G	G	G	G	38	48	42	28	G	G	G	G
18	G	25	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	32	25	G	G
19	G	G	G	G	G	G	G	G	G		49	G	51	G	G	G	G	33	G	G	G	G	G	G
20	G	G	G	G	G	G	38	G	G		G	G	G			G	38	44	40	38	38	28	G	G
21	G	G	G	G	G	G	G	G	G	50		G	G	G		G	G	33	32	34	45	33	24	33
22	48	32	G	G	G	32	45	52	68	52	G	G	G	G	G	G	G	40	G	36	42	50	57	24
23	58	30	G	G	G	G	G	46		69	75	84	85	G	G	G	38	38	37	G	26	32	29	59
24	27	30	29	G	29	34	34	G	G	G	G	G	G	G	G	52	G	G	G	26	G	G	G	24
25	27	37	32	34	27	37	34	G	G	G	G	G	G	G	G	G	G	G	31	G	G	24	G	G
26	G	26	G	G	G	G	35	G	G	G	G	G	G	G	G	G	G	G	28	27	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	40	32	G	34	G	G	G
29	G	G	24	28	36	29	G	G	G	G	G	53	G	52	58	G	G	G	G	G	G	44	G	G
30	G	G	G	28	33	G	34	G	G	G	G	G	48	G	G	G		38	34	50	30	24	24	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	30	29	30	30	30	30	29	28	29	30	30	27	26	30	27	30	29	30	30	30	30	30
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	28	26	G	12	G	G
U Q	G	25	G	G	G	G	34	G	G	25	G	G	G	G	G	G	G	38	33	32	32	28	24	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

APR. 2015

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

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

HOURLY VALUES OF foF2 AT Kokubunji

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	65	64	67	58	57	57	77	93	102	116	114	118	116	115	114	105	101	103	108	87	64	67	71	64
2	64	66	66	54	56	53	78	96	100	107	116	125	133	140	128	116	112	108	107	84	77	67	67	67
3	63	52	63	67	54	47	66	84	88	115	128	126	122	120	104	105	106	98	98	77	54	52	52	52
4	52	52	52	54	47	47	65	80	87	94	105	108	114	114	107	98	96	102	102	87	78	61	54	52
5	58	52	54	54	54	58	76	84	86	94	100	100	98	104	105	101	95	92	91	86	80	73	67	64
6	67	54	52	54	58	56	95	100	105	104	101	100	105	100	101	100	102	100	94	87	82	80	78	78
7	72	64	64	52	55	57	81	90	102	112	106	98	101	108	110	102	101	102	100	80	67	72	72	73
8	67	65	64	52	49	47	66	80	96	91	96	104	112	115	116	114	108	102	95	77	67	64	73	67
9	62	67	72	61	52	53	76	75	90	92	91	98	112	117	122	120	110	102	101	83	67	65	72	68
10	66	67	67	56	52	48	75	86	94	97	102	105	106	126	120	115	110	107	85	78	77	66	52	54
11	59	63	53	49	50	52	75	81	81	83	106	100	110	107	103	107	97	96	78	66	54	54	54	65
12	54	63	54	49	44	49	62	77	87	91	104	111	106	100	88	90	80	81	86	82	72	67	54	54
13	54	54	53	54	49	53	77	87	97	91	98	107	110	112	112	107	104	91	93	86	71	67	55	54
14	54	54	54	52	56	53	86	86	91	97	97	104	106	116	110	101	91	96	105	90	86	74	73	73
15	73	66	54	52	59		84	75	77	76	94	111	111	112	111	110	96	92	101	102	78	70	73	71
16	67	67	88	54	27	38	72	98	101	85	88	102	114	110	121	122	107	101	108	97	A	73	74	76
17	72	71	72	54	58	59	86	98	104	102	111	117	115	124	120	112	117	106	116	112	85	66	67	64
18	54	54	67	54	49	49	62	81	100	101	105	105	111	112	111	102	102	107	104	85	73	74	64	74
19	72	67	63	61	59	61	80	85	94	95	100	116	117	112	113	115	104	102	110	104	87	84	80	76
20	73	64	67	64	64	72	93	86	107	107	115	121	124	130	128	128	122	121	117	105	86	85	77	75
21	77	74	65	64	66	66	85	88	97	97	104	108	111	125	122	121	114	115	113	114	88	73	52	80
22	81	76	71	66	67	74	98	94	92	96	105	112	112	108	A	N	111	105	101	96	88	A	83	72
23	67	52	62	57	63	71	86	82	85	93	96	106	112	121	121	115	116	107	98	83	81	81	78	76
24	76	72	65	54	63	68	91	86	92	108	105	111	115	117	124	122	124	122	120	103	90	90	83	78
25	80	85	81	72	68	80	94	87	87	96	98	103	112	114	111	107	102	101	105	108	100	86	80	65
26	74	73	74	64	66	73	96	96	87	87	101	95	104	112	115	122	120	114	116	110	107	86	76	74
27	75	72	72	66	67	73	93	81	78	91	101	101	103	108	115	115	115	112	111	102	88	78	81	76
28	76	76	74	77	57	67	78	87	82	81	85	91	102	111	111	107	97	92	93	96	78	A	66	67
29	64		54	66	62	68	81	77	72	78	82	96	100	100	111	122	121	114	110	86	72	67	67	66
30	67	67	54	61	62	66	72	81	84	81	83	96	97	95	106	115	111	107	106	104	83	64	54	54
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	29	30	30	30	30	30	30	30	30	29	29	30	30	30	30	29	28	30	30
MED	67	66	64	55	57	57	79	86	92	94	101	105	111	112	112	112	106	102	103	87	78	71	72	68
U Q	73	71	71	64	63	68	86	90	100	102	105	111	114	117	120	118	114	107	110	103	86	79	77	75
L Q	62	54	54	54	52	50	75	81	86	91	96	100	105	108	108	103	101	98	95	83	71	66	55	64

HOURLY VALUES OF fEs AT Kokubunji

APR. 2015

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

DAY \ HOUR	00	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	46	51	G	G	G	G	G	G	51	64	28	40	26	23	G	G
2	G	G	G	G	G	G	G	G	48	54	60	51	54	G	G	47	43	G	38	41	G	G	G	G
3	G	33	40	29	24	23	G	G	G	G	G	51	46	G	G	G	G	G	28	26	G	G	G	G
4	50	39	30	36	29	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
5	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	44	G	37	41	22	G	G	G
7	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	G	G	31	24	G	G	G	G
8	G	G	G	G	G	G	31	49	G	50	52	55	52	53	G	47	G	G	G	39	36	G	G	G
9	G	G	G	G	G	G	31	G	G	G	51	51	G	G	G	61	65	49	52	36	G	G	29	G
10	33	G	G	G	G	G	G	G	43	51	50	53	51	G	G	43	G	G	29	31	27	G	22	G
11	G	G	26	G	G	G	G	G	48	68	62	55	G	50	G	47	45	45	29	G	G	22	24	41
12	G	G	G	G	G	G	G	G	G	48	67	65	54	48	G	G	G	G	38	39	40	27	G	G
13	32	26	G	G	G	G	33	42	50	51	G	50	49	52	52	52	G	50	55	51	40	40	34	G
14	G	G	G	G	G	25	G	G	G	G	46	G	72	G	G	G	G	G	45	75	54	48	53	G
15	24	G	G	G	G		G	G	G	50	49	G	G	G	G	G	G	G	28	27	32	G	70	49
16	58	23	G	11	G	G	G	G	G	49	G	G	G	G	G	49	45	61	34	115	94	30	23	27
17	G	G	G	G	G	G	G	G	46	48	G	G	G	G	G	G	G	41	33	91	45	27	48	G
18	G	G	G	G	G	25	G	G	45	G	51	G	G	G	G	G	G	35	28	26	G	28	31	40
19	G	G	31	44	28	G	G	G	G	G	G	G	G	G	G	G	G	40	37	34	32	39	31	G
20	G	G	G	G	G	25	35	G	41	G	G	G	52	G	G	G	G	G	40	29	32	38	34	33
21	53	31	G	G	G	G	G	37	50	58	79	53	57	61	65	51	G	G	38	60	45	27	29	78
22	79	78	28	27	34	G	37	49	49	53	46	70	49	62	126	126	77	36	53	87	77	113	39	53
23	28	38	29	35	27	G	54	45	54	58	160	46	G	G	49	50	41	36	31	64	39	51	39	G
24	25	G	G	26	25	G	G	G	G	G	G	G	G	52	49	48	47	G	31	33	G	27	28	G
25	G	G	G	G	G	G	34	G	G	G	G	51	G	G	G	G	G	G	G	31	31	28	25	G
26	G	G	G	G	G	G	G	G	G	43	G	G	G	G	G	G	G	46	43	37	71	50	34	G
27	G	G	G	G	G	G	G	G	G	G	G	53	52	48	G	44	65	37	39	50	G	G	G	G
28	G	G	G	G	G	G	33	G	47	50	G	G	G	52	51	G	G	47	44	32	50	78	33	33
29	G		G	G	G	G	G	G	G	52	61	51	54	83	84	56	G	35	33	30	29	34	G	59
30	43	G	G	G	G	G	G	G	G	47	G	G	G	G	G	50	50	48	54	53	29	43	38	52
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	18	34	36	30	27	26	G
U Q	28	12	G	G	G	G	32	G	46	51	51	51	52	50	G	49	45	45	40	51	40	39	34	33
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	28	29	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	13	13	14	13	13	13	15	14	21	20	36	45	42	41	20	14	13	13	13	13	14	14	14
2	13	13	13	13	14	13	15	14	15	22	26	37	36	39	47	22	17	13	13	13	13	17	13	13
3	15	13	13	13	13	14	21	13	15	23	23	23	29	23	24	20	14	13	13	13	14	14	14	15
4	13	13	13	13	13	14	22	14	14	18	43	40	39	40	42	18	17	18	18	13	13	14	13	14
5	14	13	13	13	13	13	17	13	15	40	39	43	44	45	40	36	17	13	18	14	13	13	13	13
6	14	14	14	13	13	14	13	13	15	15	18	20	39	42	17	38	14	13	13	13	13	14	13	13
7	13	14	13	13	13	13	13	13	15	20	20	44	44	40	39	21	14	13	13	13	13	14	14	14
8	13	13	13	13	13	13	17	13	14	17	22	37	36	34	43	20	18	14	18	13	13	15	13	15
9	18	13	13	13	13	13	15	13	14	18	38	18	47	40	43	34	18	14	13	13	13	14	13	13
10	13	13	13	13	13	18	14	13	15	36	25	18	34	38	40	30	13	13	13	13	13	14	14	13
11	14	14	13	13	15	13	13	13	14	21	36	35	40	39	20	17	13	13	13	14	14	14	13	14
12	17	14	14	13	15	13	13	13	15	39	21	21	31	37	47	21	14	15	13	13	13	13	13	14
13	14	14	14	14	14	13	14	14	15	38	39	36	37	37	24	31	13	13	13	13	13	13	13	14
14	13	14	13	13	14	13	13	34	21	39	20	40	36	40	43	40	18	15	14	14	14	13	13	14
15	14	14	14	14	17		14	14	21	36	36	48	36	39	40	28	18	13	13	13	13	14	13	13
16	13	14	13	13	17	14	14	14	20	39	42	53	45	46	39	35	18	14	13	13	15	13	13	14
17	13	14	14	14	14	15	17	17	18	33	38	40	45	40	39	20	17	13	13	13	13	13	14	15
18	14	13	14	13	14	13	13	14	20	39	37	40	40	41	37	37	17	14	14	14	13	13	13	13
19	14	14	13	13	13	14	13	14	21	42	29	47	54	42	42	24	18	13	13	13	14	13	13	15
20	13	14	15	13	13	15	14	14	20	22	41	44	38	47	37	21	17	13	13	13	13	13	14	14
21	13	14	14	13	13	15	14	17	18	18	20	39	39	38	37	34	18	20	13	14	13	13	13	14
22	13	14	13	13	13	15	14	21	21	38	38	38	38	38	38	21	18	14	14	13	14	13	13	13
23	13	13	13	13	13	17	15	17	20	38	38	52	49	40	39	30	18	14	13	13	14	14	13	14
24	13	13	14	14	13	15	13	18	22	45	42	49	42	30	35	22	18	15	14	13	13	13	13	14
25	13	13	13	13	13	17	14	13	22	40	43	37	49	49	24	17	17	17	17	13	13	13	14	14
26	14	14	13	14	13	17	13	17	20	25	45	45	39	45	45	38	17	14	13	14	14	13	13	14
27	14	14	13	13	14	18	14	14	20	18	43	38	36	34	31	26	17	13	13	13	14	15	14	14
28	14	14	14	13	13	18	13	14	17	23	39	38	42	33	34	45	22	14	15	15	14	13	13	13
29	13		17	17	13	17	14	20	24	34	36	36	36	35	31	30	18	14	14	14	14	13	14	14
30	14	13	13	13	13	15	15	17	15	26	23	44	38	47	39	20	14	15	13	17	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	29	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	14	14	13	13	13	14	14	14	18	30	36	38	39	40	39	25	17	14	13	13	13	13	13	14
U Q	14	14	14	13	14	16	15	17	20	39	39	44	44	42	42	34	18	14	14	14	14	14	14	14
L Q	13	13	13	13	13	13	13	13	15	21	23	36	36	37	34	20	14	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	97	116	89	83	77	74	77
16	76	72	86	72	B	29	54	88	80	82	85	98	79	98	79	143	113	114	116	88	76	72	74	78
17	73	66	62	62	52	52	79	89	88	81	97	110	111	109	119	111	102	111	117	111	87	54	66	77
18	75	71	73	67	54	46	54	87	96	96	96	100	114	79	112	79	112	110	107	89	78	54	54	54
19	67	67	72	71	57	44	65	80	85	97	92	97	97	79	100	110	113	114	110	109	87	84	74	67
20	78	72	74	64	56	60	67	91	99	90	97	98	97	98	N	109	143	111	111	89	89	87	64	76
21	78	N	78	74	70	52	74	89	93	86	96	95	100	98	100	105	111	116	112	N	93	79	81	81
22	87	80	80	73	78	74	91	101	88	90	110	114	114	115	109	111	111	113	111	73	88	88	78	72
23	77	76	72	63	62	58	77	87	92	97	97	98	109	114	97	110	138	112	110	95	87	83	86	86
24	88	81	77	73	62	70	77	87	89	97	98	97	97	N	113	109	110	111	111	110	87	80	80	81
25	88	86	88	82	75	72	N	86	83	90	93	94	110	98	101	72	110	111	115	79	79	86	83	81
26	82	77	80	74	67	67	90	86	84	85	84	94	95	100	114	122	109	119	116	94	102	88	86	77
27	84	72	72	77	72	67	78	77	76	88	92	96	98	107	111	79	109	116	112	89	85	77	87	56
28	82	76	77	80	52	65	92	85	80	76	86	86	108	110	108	98	110	111	110	102	86	54	54	76
29	77	76	67	66	66	54	77	71	74	76	76	88	96	98	113	115	114	116	117	117	84	74	74	73
30	64	54	54	52	61	N	73	74	78	72	76	90	101	96	98	108	111	111	111	97	88	77	74	78
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	14	15	15	14	14	14	15	15	15	15	15	15	14	14	15	15	16	16	15	16	16	16	16
MED	78	74	74	72	62	59	77	87	85	88	93	97	100	98	108	109	111	112	112	94	87	78	74	77
U Q	84	77	80	74	70	67	79	89	92	96	97	98	110	109	113	111	113	115	116	109	88	85	82	79
L Q	75	71	72	64	56	52	67	80	80	81	85	94	97	98	100	98	110	111	110	89	83	73	70	72

HOURLY VALUES OF fEs AT Yamagawa

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	47	43	32	33	G	G	28
16	36	25	28	G	B	G	G	G	G	G	G	G	48	48	G	G	G	55	G	56	68	28	36	29
17	G	G	24	G	G	G	G	36	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
18	G	G	G	G	G	G	30	39	G	47	52	G	G	G	G	G	G	G	36	G	25	G	G	33
19	40	G	24	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	38	29	G	G	28	34
20	40	37	33	33	32	26	G	40	52	G	56	G	G	G	G	G	G	49	60	40	33	56	33	50
21	G	G	G	G	G	G	29	G	49	56	62	64	70	48	55	G	G	44	38	37	44	59	77	33
22	33	53	53	31	G	G	G	G	45	56	73	75	152	46	G	G	G	G	G	33	36	70	50	60
23	58	33	36	41	45	40	34	G	47	61	75	78	68	79	67	81	82	54	48	28	40	27	41	33
24	57	G	27	G	G	G	G	37	G	52	G	53	55	56	60	G	G	G	G	27	27	30	G	G
25	G	G	G	G	G	G	G	G	G	G	G	G	51	G	G	G	G	G	35	40	41	46	39	27
26	G	G	G	G	G	29	G	G	G	G	G	G	G	G	G	G	60	42	50	69	33	30	25	G
27	34	30	G	G	G	G	G	G	G	54	57	63	66	G	62	G	65	66	40	29	25	40	49	34
28	G	G	G	G	G	G	G	G	G	48	73	G	55	49	G	G	G	G	35	31	39	30	31	42
29	34	G	24	G	G	G	G	38	46	47	G	58	64	52	59	52	46	41	G	G	34	G	33	G
30	38	48	40	G	G	G	G	G	G	G	G	G	G	G	G	G	G	44	35	32	24	G	50	50
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	14	15	15	15	15	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16
MED	34	G	24	G	G	G	G	G	G	47	G	G	51	G	G	G	G	42	36	32	33	29	33	33
U Q	40	33	33	G	G	G	G	37	46	54	62	63	66	49	59	G	46	48	41	38	39	43	45	38
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	27	25	G	13	14

HOURLY VALUES OF fmin AT Yamagawa

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	18	16	15	14	15	15	15
16	16	16	15	17	B	66	18	17	18	30	40	53	34	56	56	46	38	26	15	14	15	14	16	14
17	15	15	17	14	17	15	15	15	18	34	54	48	29	49	49	39	33	30	15	15	16	15	15	15
18	15	15	15	15	15	14	16	14	21	23	35	50	49	52	47	62	45	21	16	16	16	15	15	14
19	15	15	17	16	16	14	21	15	20	23	30	53	48	54	50	48	35	29	15	14	15	15	15	14
20	14	15	15	14	14	16	14	17	22	35	38	56	52	53	40	48	26	18	15	14	15	15	15	14
21	17	14	16	15	14	18	21	30	21	28	38	41	41	40	38	50	24	20	22	14	15	17	15	14
22	16	15	14	14	18	17	22	21	22	32	29	38	40	34	50	48	24	23	27	15	14	15	14	15
23	15	15	15	14	14	15	14	17	18	33	30	39	39	38	38	30	24	22	18	14	15	15	14	14
24	15	17	16	17	18	17	16	18	21	24	28	38	36	34	32	28	28	30	15	15	15	14	15	16
25	15	15	15	15	16	15	22	17	34	45	46	52	39	34	35	27	38	20	18	14	14	16	15	17
26	16	16	15	15	16	14	22	17	20	24	45	36	54	50	60	49	36	24	16	14	14	15	15	18
27	16	16	15	16	16	15	22	16	20	22	36	38	38	36	34	50	29	21	15	15	15	15	14	15
28	18	15	16	15	15	14	17	28	22	24	29	48	34	33	49	48	39	29	20	15	15	15	15	15
29	14	15	15	16	16	14	21	17	20	22	28	38	36	37	37	35	34	23	23	14	15	15	15	17
30	16	15	14	16	15	17	23	16	20	27	56	48	53	49	50	46	22	21	17	14	17	15	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	15	15	15	15	14	15	15	15	15	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16
MED	15	15	15	15	16	15	21	17	20	27	36	48	39	40	47	48	33	22	16	14	15	15	15	15
U Q	16	16	16	16	16	17	22	18	22	33	45	52	49	52	50	49	38	27	19	15	15	15	15	15
L Q	15	15	15	14	15	14	16	16	20	23	29	38	36	34	37	35	24	20	15	14	14	15	14	14

HOURLY VALUES OF foF2 AT Okinawa

APR. 2015

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	64	79	76	50	B	B		83	108	107	106	108	121	110	109	130	132	131	90	118	86	67		
2	53	83	78	N		46	B	80	88	101	107	108	109	N	131	129	138	133	131	106	54	A	49	59
3		B	B	72	62	A	40	74	87	102	110	109	112	129	N	133	144	N	133	108	89	87	84	
4	84	69	72	71	61	A	A	71	84	104	106	108	108	132	110	130	N	131	133	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	3	3	3	3	2	1	1	4	4	4	4	4	4	3	3	4	3	3	4	3	3	2	2	1
MED	64	79	76	71	62	46	40	77	88	103	106	108	110	129	110	130	138	131	132	108	86	77	66	59
UQ	84	83	78	72	62	23	20	81	98	105	108	108	116	132	131	131	144	133	133	118	89	87	84	29
LQ	53	69	72	50	61	23	20	72	85	101	106	108	108	110	109	129	132	131	110	106	54	67	49	29

HOURLY VALUES OF fEs AT Okinawa

APR. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	G	G	G	B	B	G	35	G	G	G	G	G	G	G	58	G	G	G	29	G	26	G	G
2	G	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	G	36	34	26	G	G
3	G	B	B	G	28	35	33	G	G	G	G	G	G	G	G	G	G	G	36	G	G	G	G	G
4	24	30	G	30	26	28	27	G	G	G	G	G	G	G	G	G	G	G	G	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	4	3	3	4	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3
MED	12	G	G	G	26	28	27	G	G	G	G	G	G	G	G	G	G	G	G	29	G	26	G	G
U Q	25	30	G	15	28	35	33	18	G	G	G	G	G	G	G	29	G	G	18	36	34	26	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

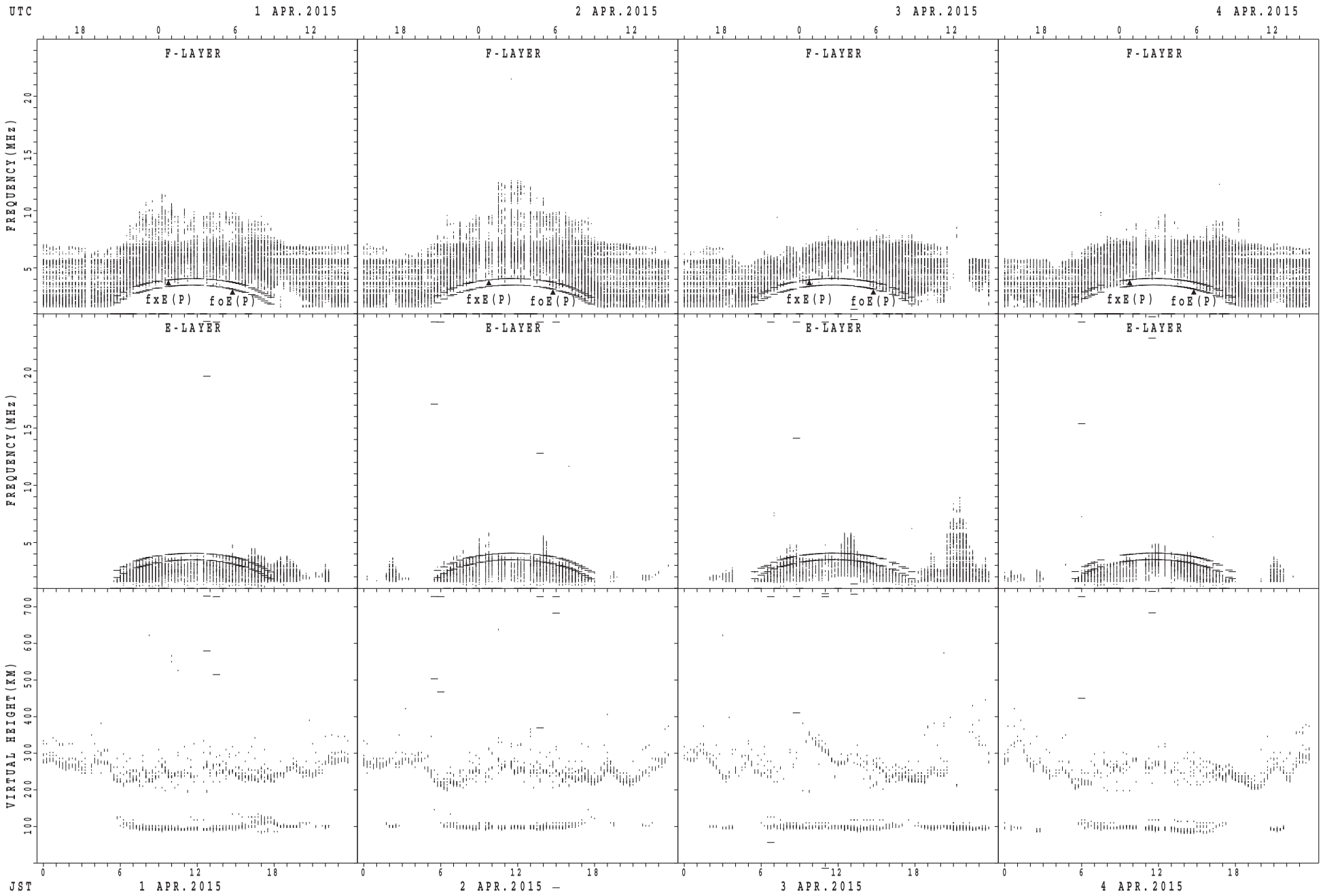
HOURLY VALUES OF fmin AT Okinawa

APR. 2015

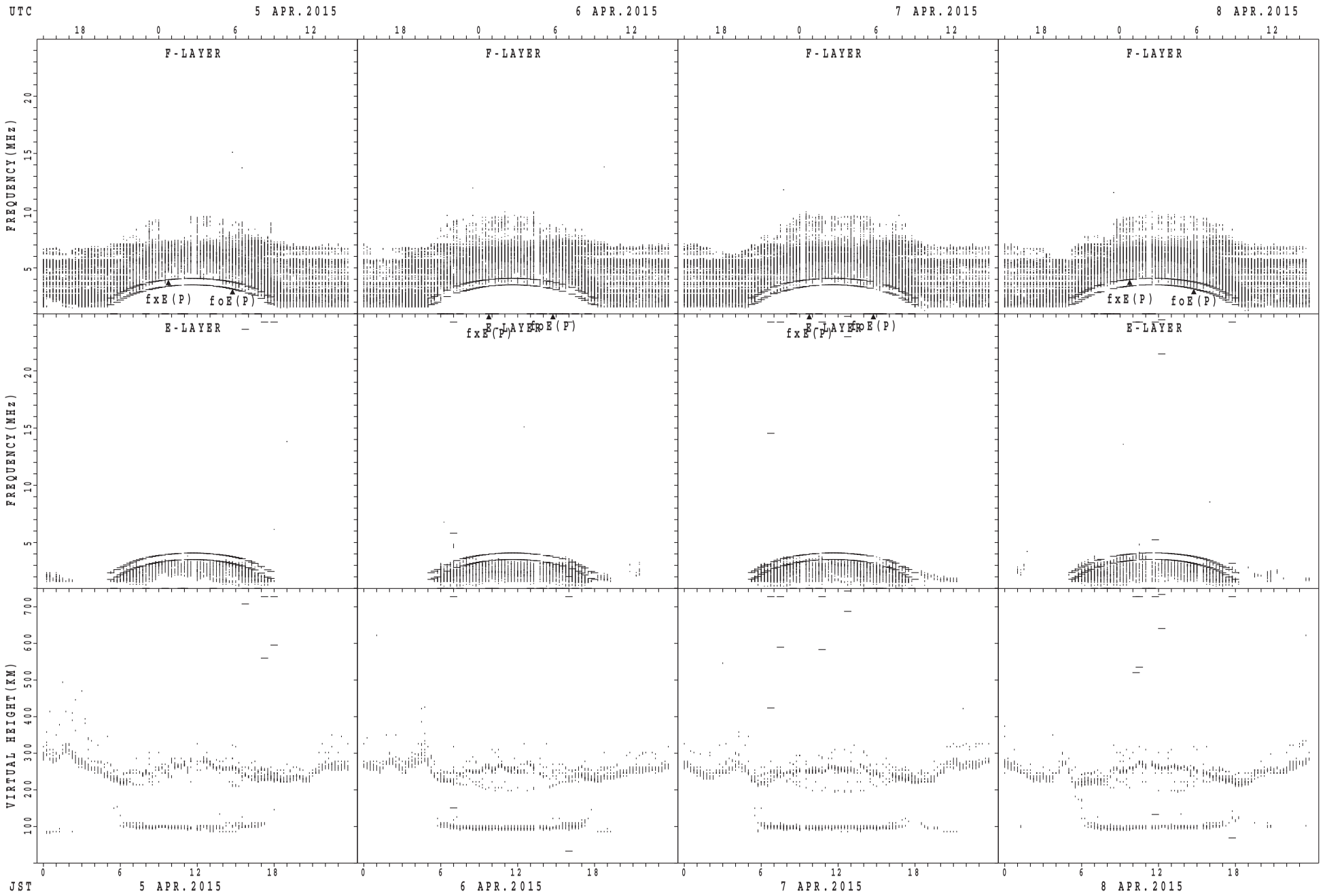
LAT. 26°41.0'N LON. 128°09.0'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

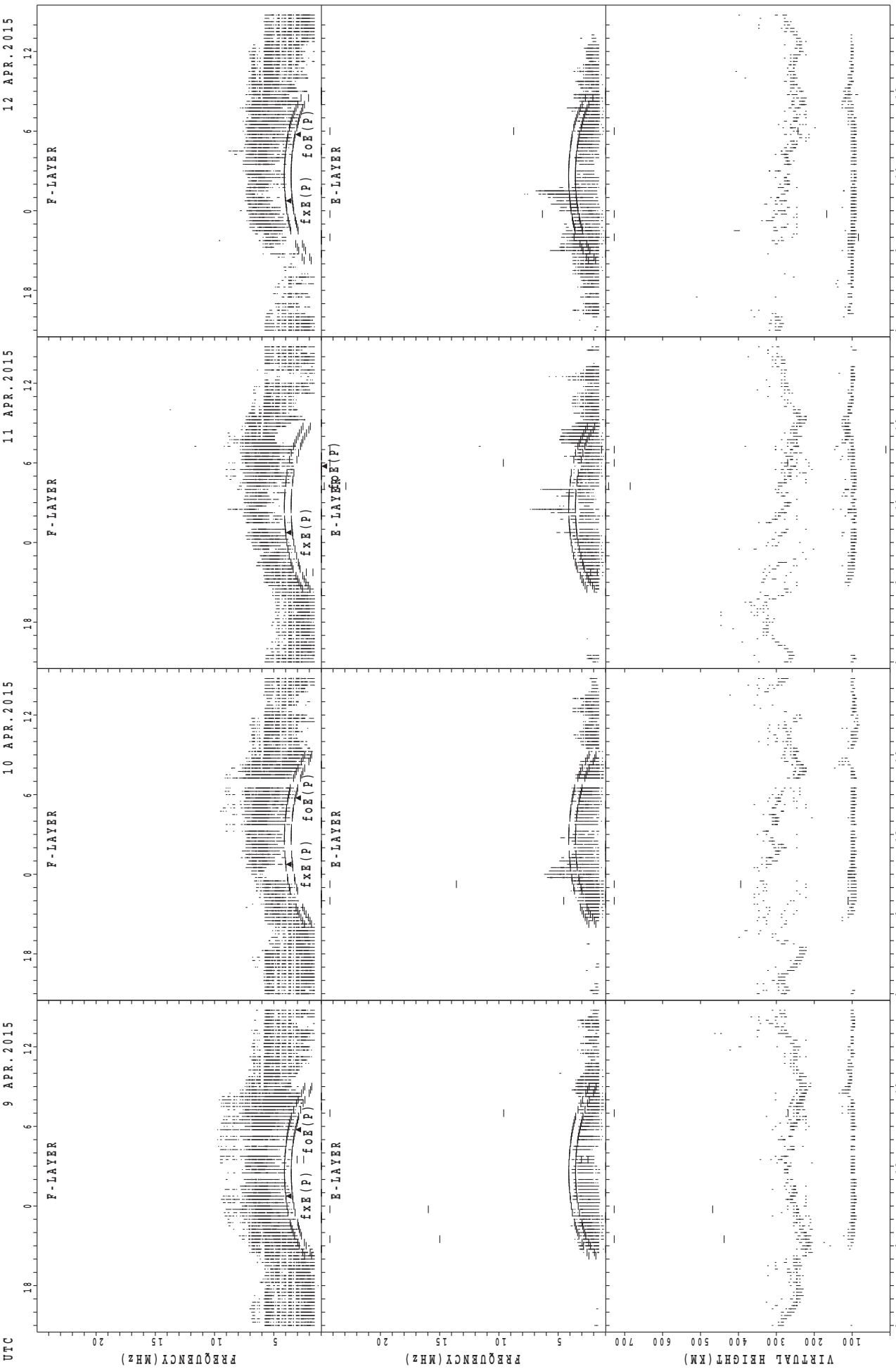
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	17	16	18	B	B	66	22	18	40	54	49	70	N	60	40	42	40	40	15	42	15	21	43
2	18	32	20	20	66	42	B	27	20	42	52	53	60	66	52	55	46	40	38	15	15	17	43	91
3	45	B	B	43	43	17	15	30	20	41	46	64	N	63	59	63	42	40	42	22	17	20	47	71
4	16	15	20	15	16	15	17	18	39	43	47	54	55	54	62	47	48	21	35	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	4	3	3	4	3	3	3	4	4	4	4	4	3	3	4	4	4	4	4	3	3	3	3	3
MED	17	17	20	19	43	17	17	24	20	42	50	54	60	63	60	51	44	40	39	15	17	17	43	71
U Q	31	32	20	31	66	42	66	28	29	42	53	59	70	66	61	59	47	40	41	22	42	20	47	91
L Q	15	15	16	16	16	15	15	20	19	40	46	51	55	54	55	43	42	30	36	15	15	15	21	43

SUMMARY PLOTS AT Wakkanai

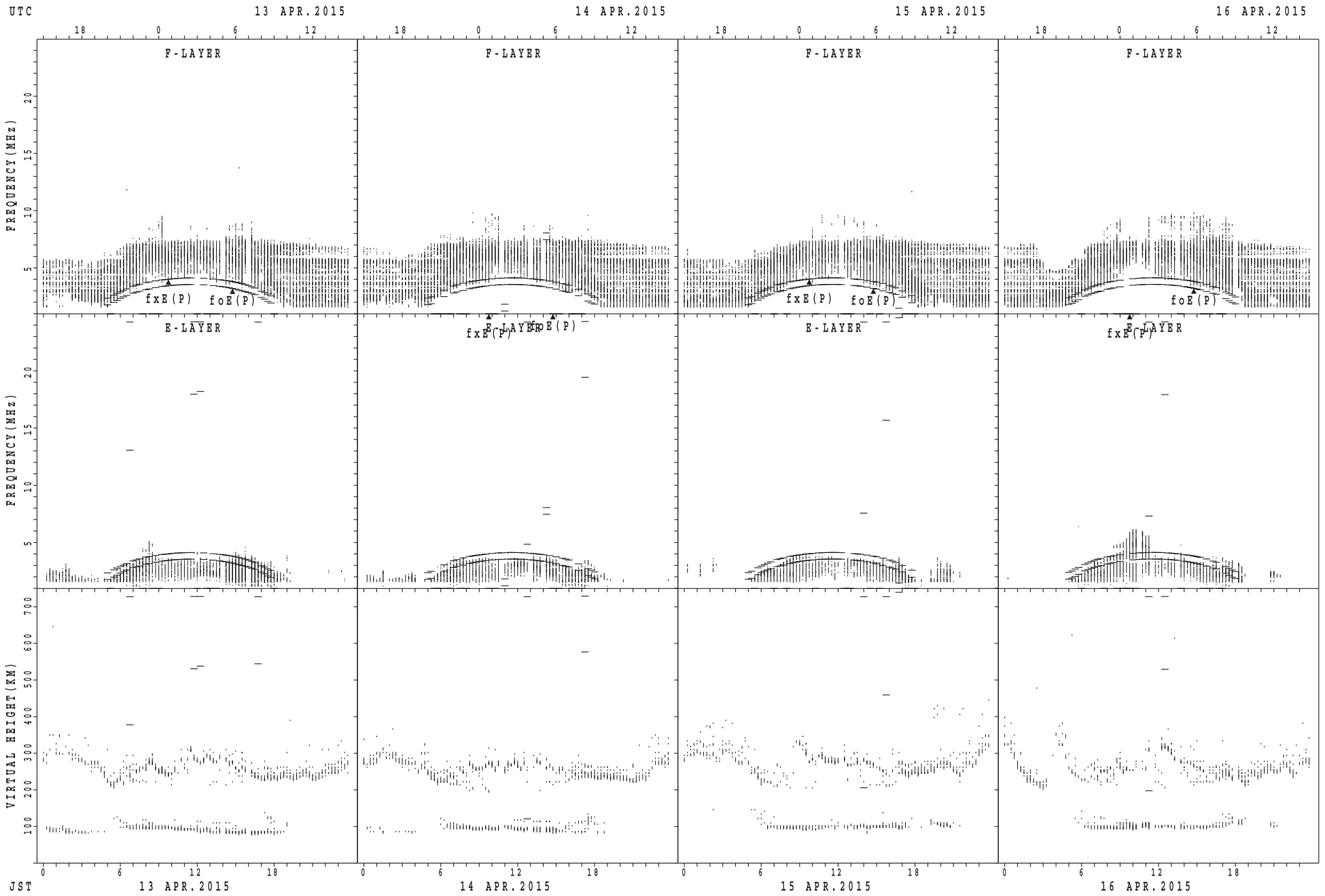


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


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

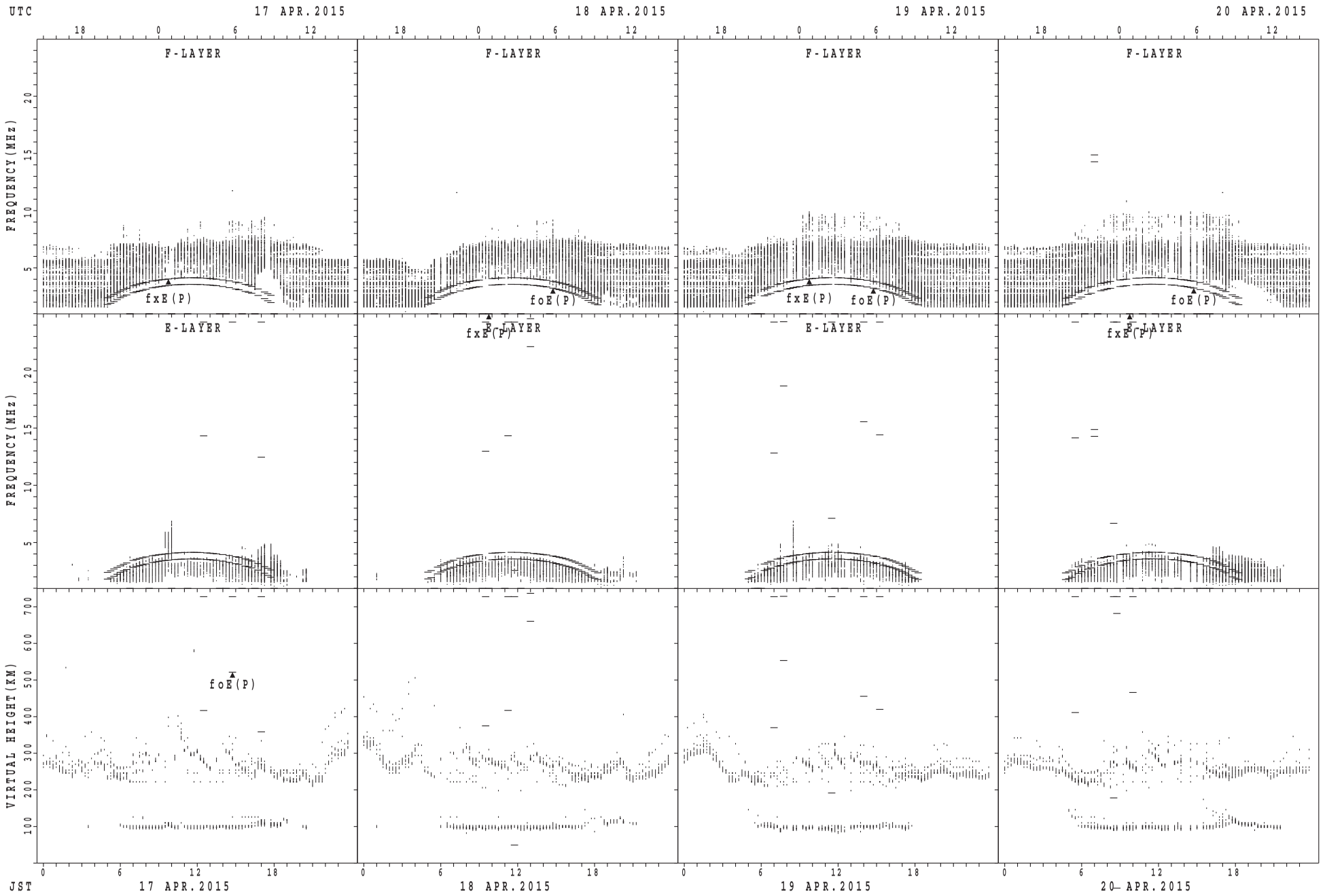

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 APR.2015
10 APR.2015
11 APR.2015
12 APR.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

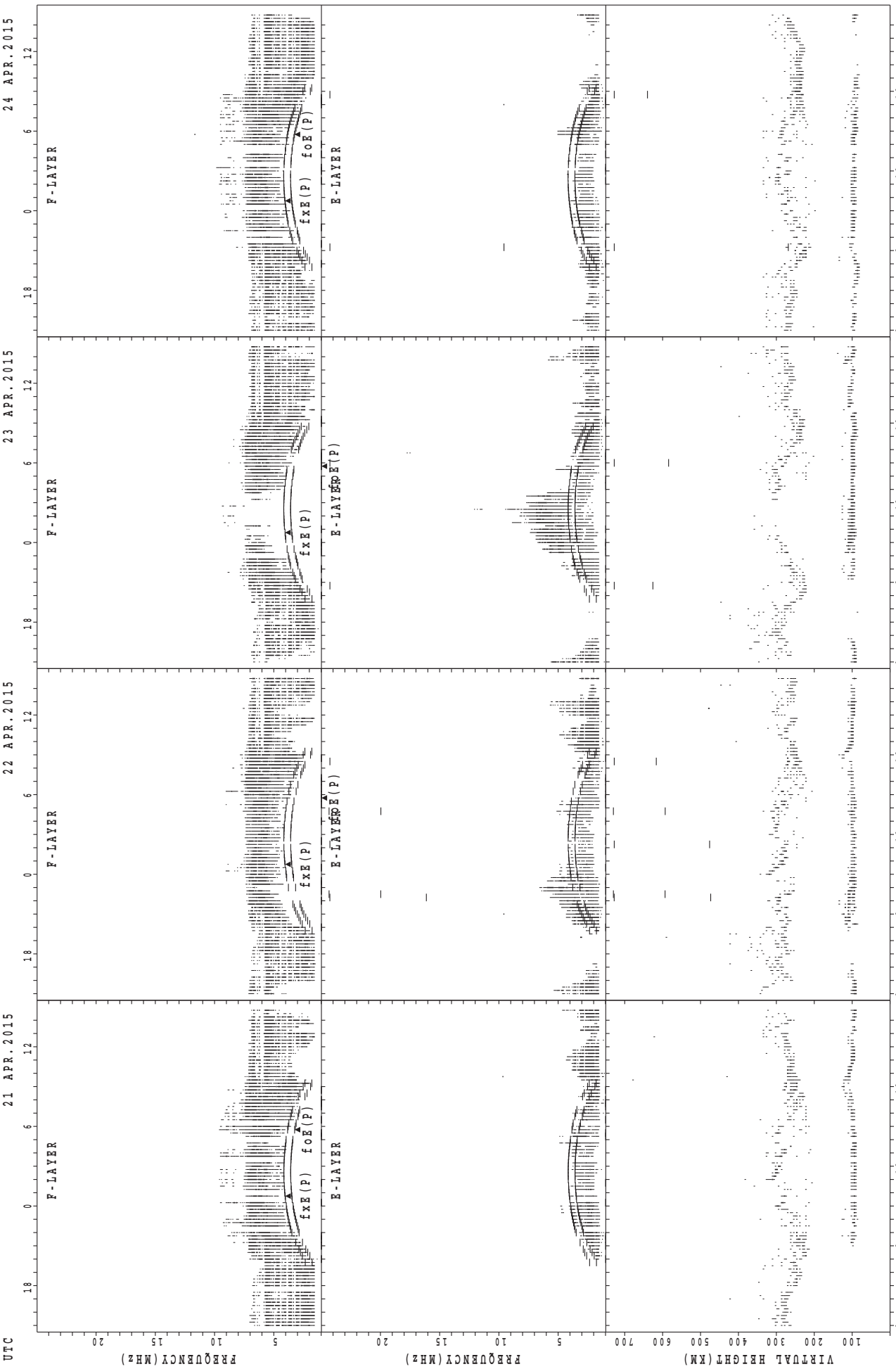


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

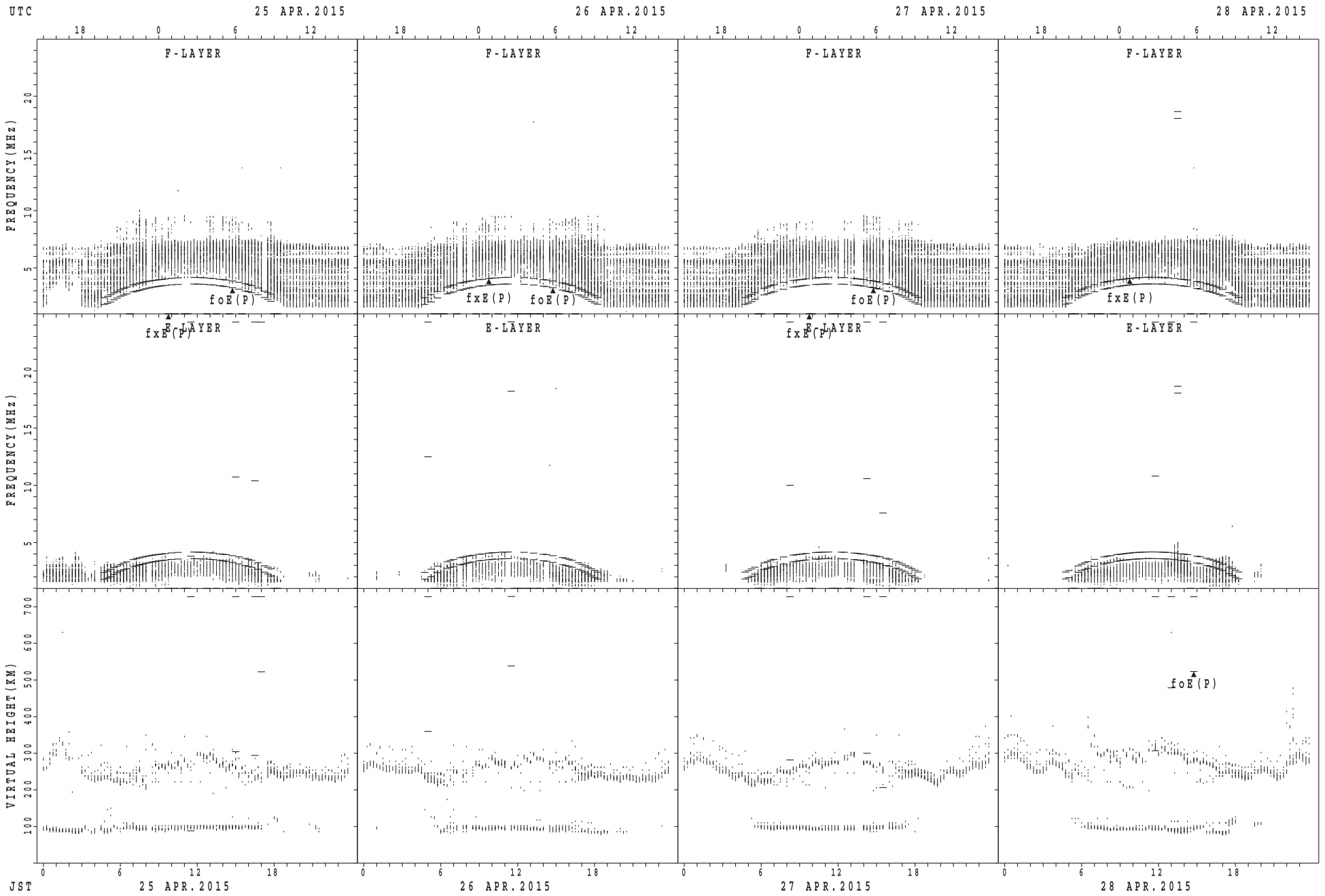
SUMMARY PLOTS AT Wakkanai



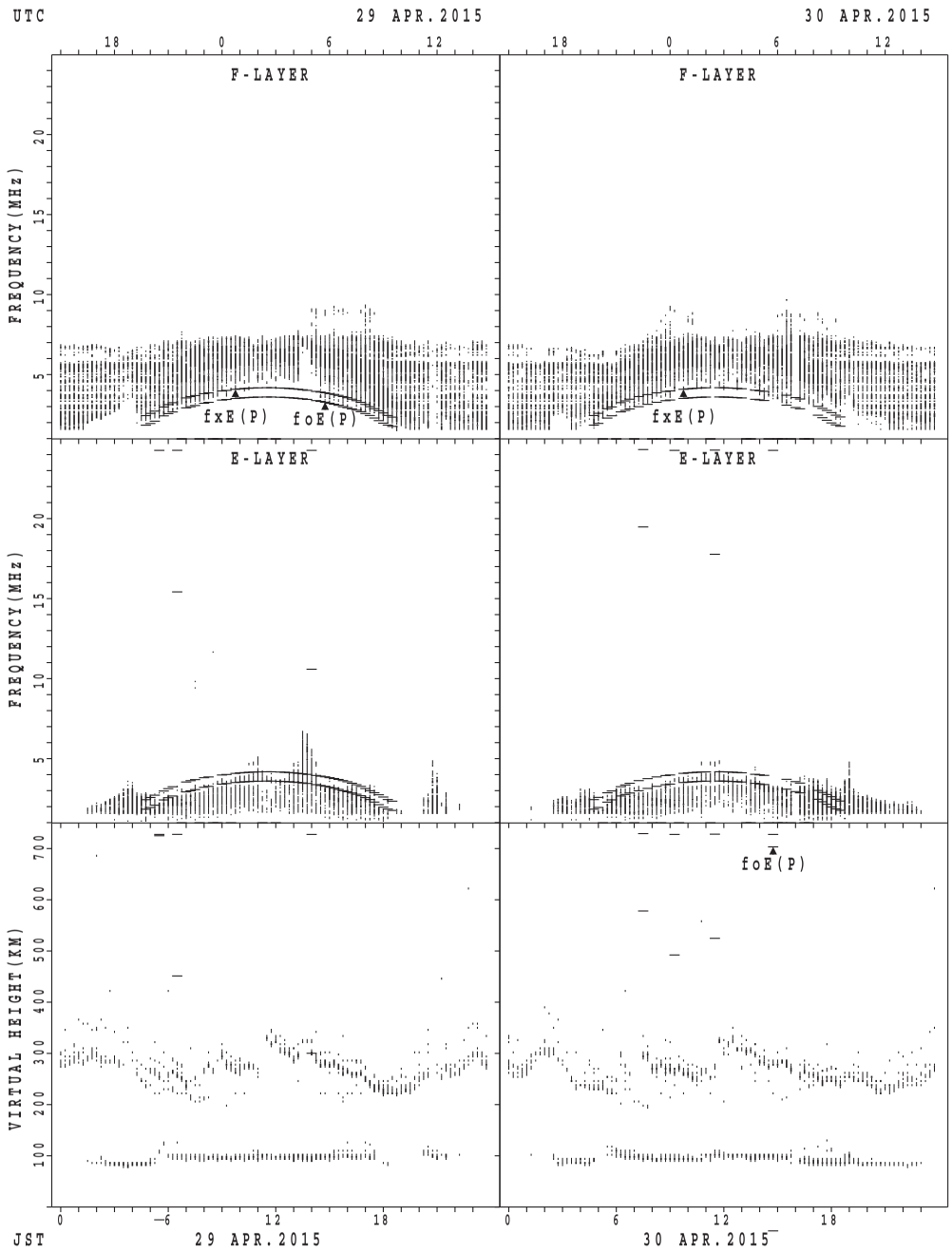
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
21 APR.2015
22 APR.2015
23 APR.2015
24 APR.2015
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

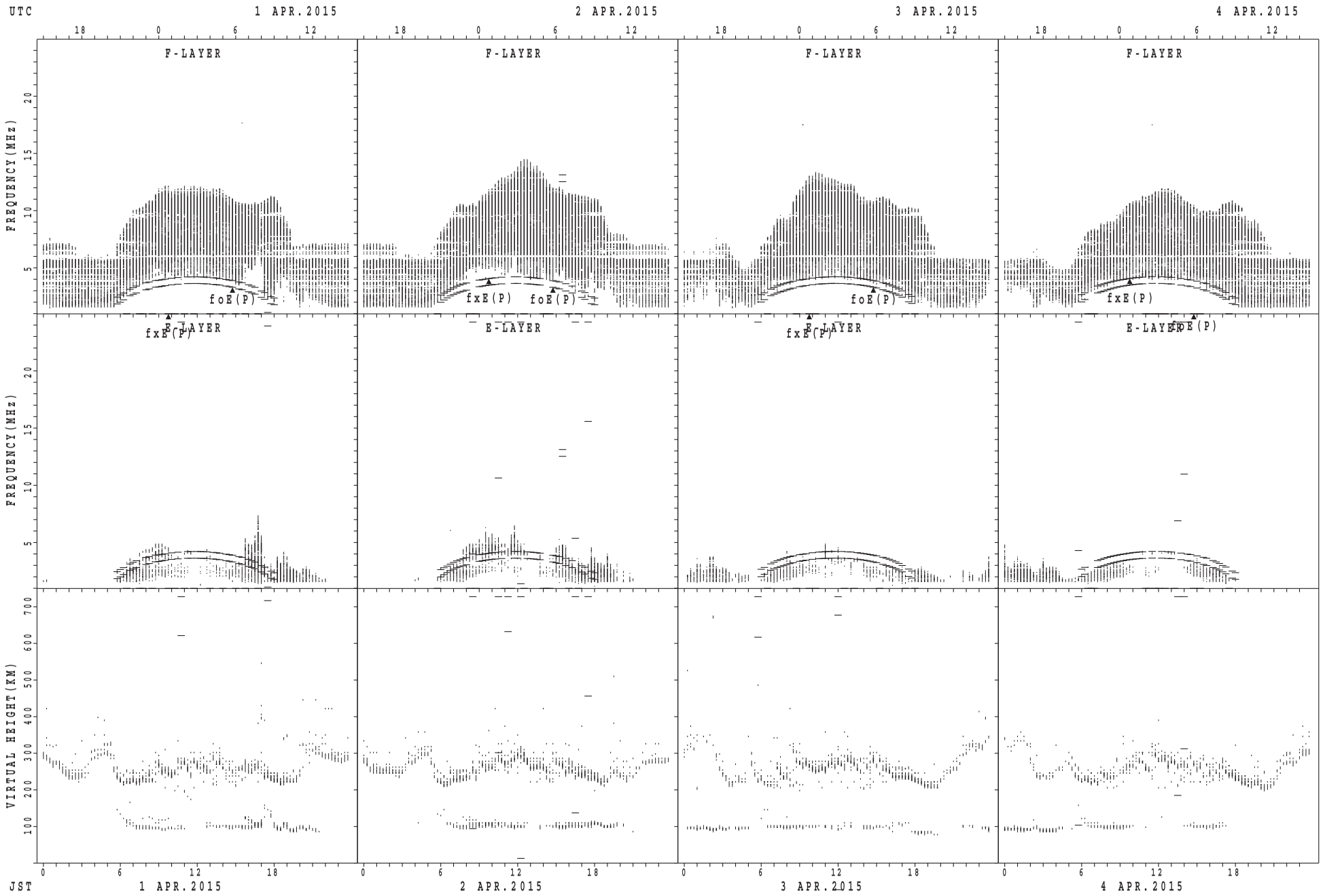
SUMMARY PLOTS AT Wakkanai



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

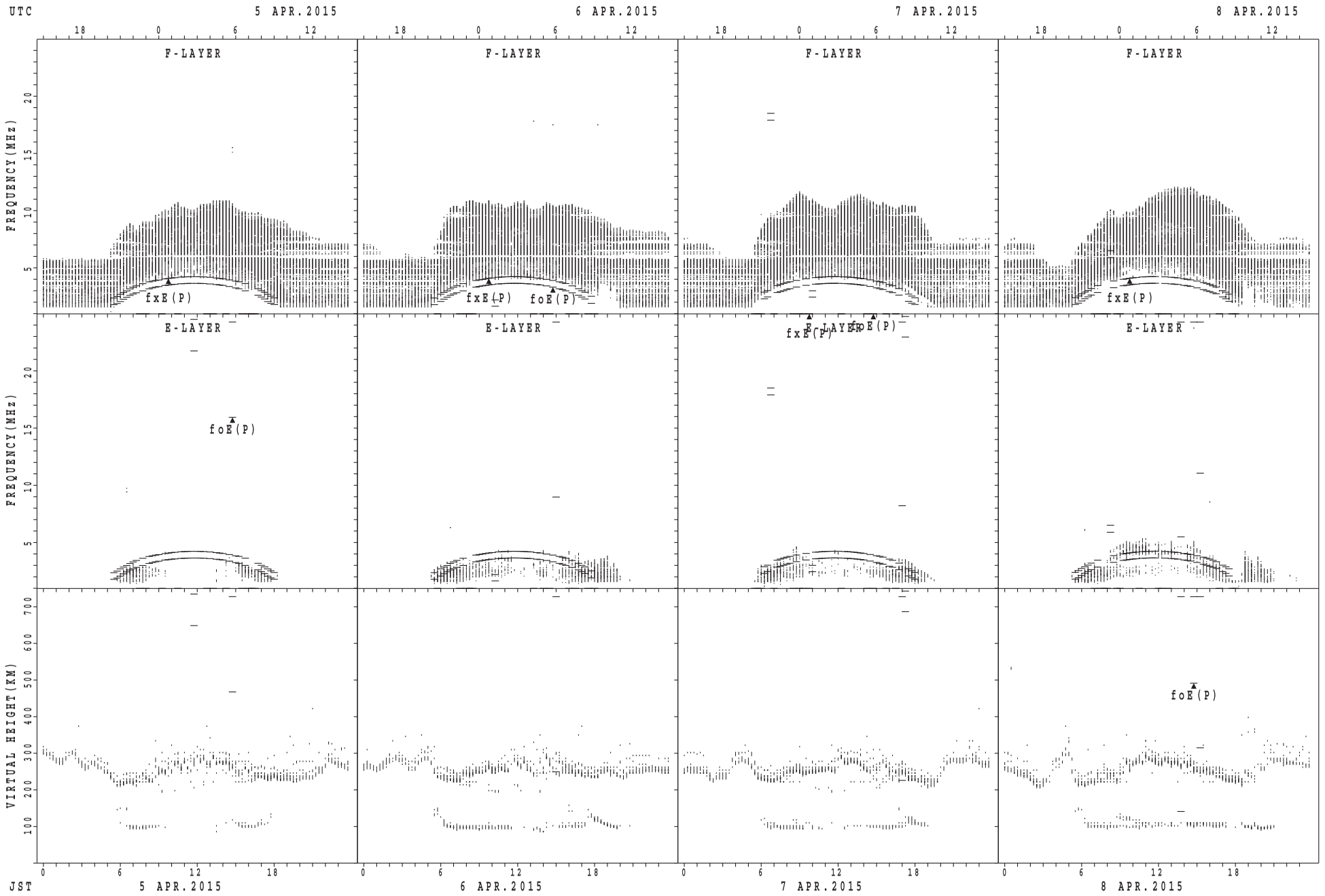

SUMMARY PLOTS AT Wakkanai
UTC
29 APR.2015
30 APR.2015
18
0
6
12
F-LAYER
FREQUENCY(MHz)
fxE(P)
foE(P)
E-LAYER
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

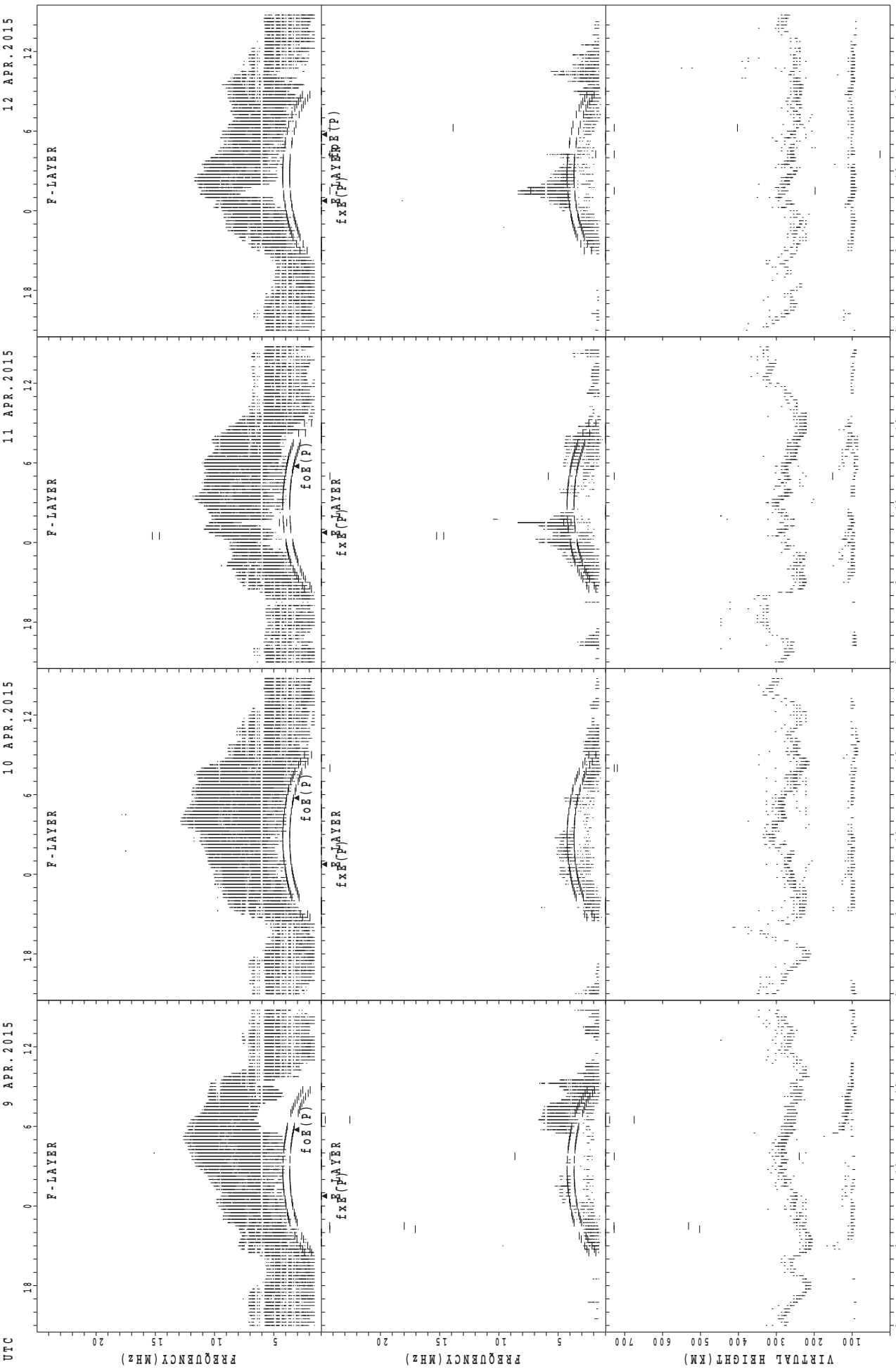


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

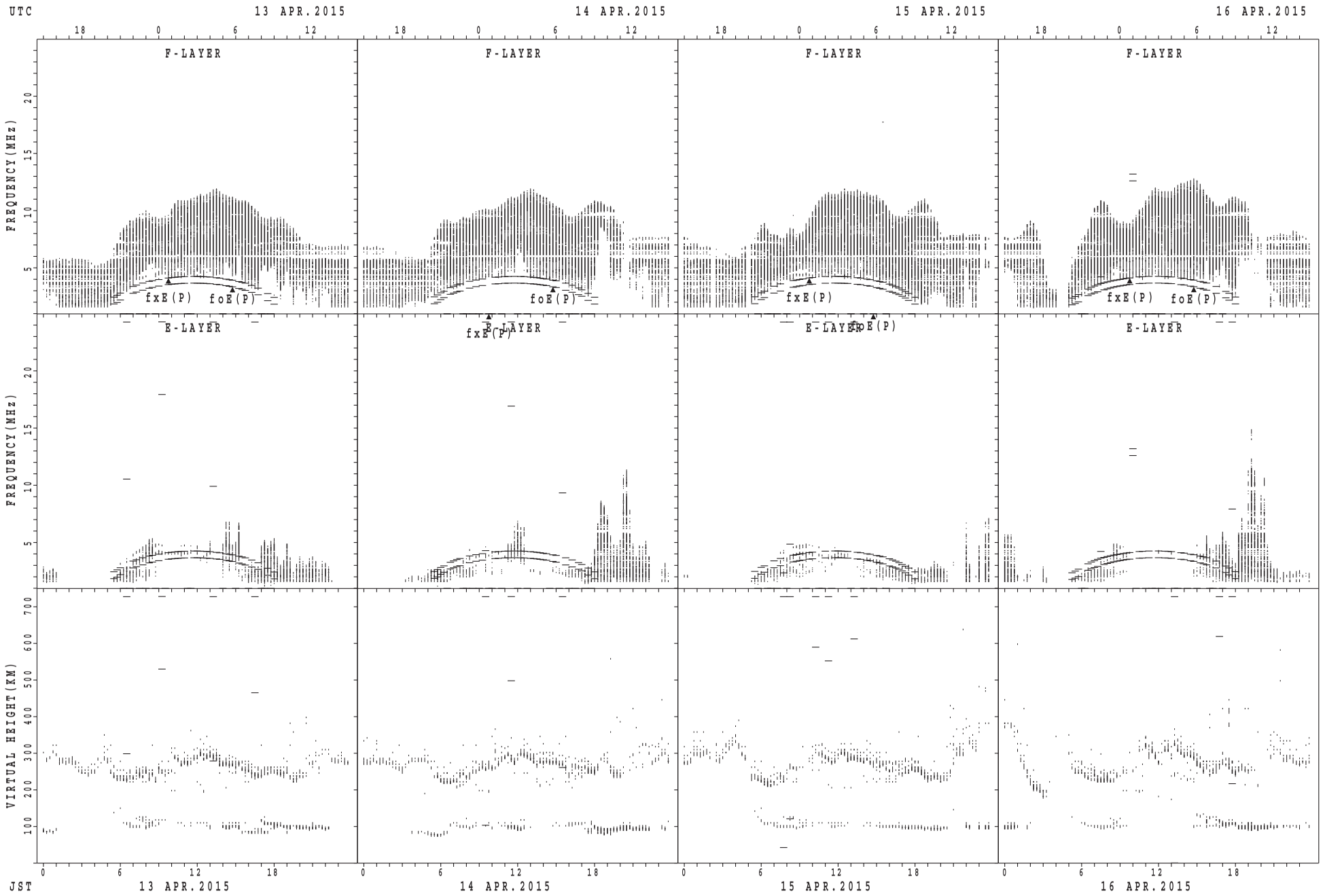
SUMMARY PLOTS AT Kokubunji



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

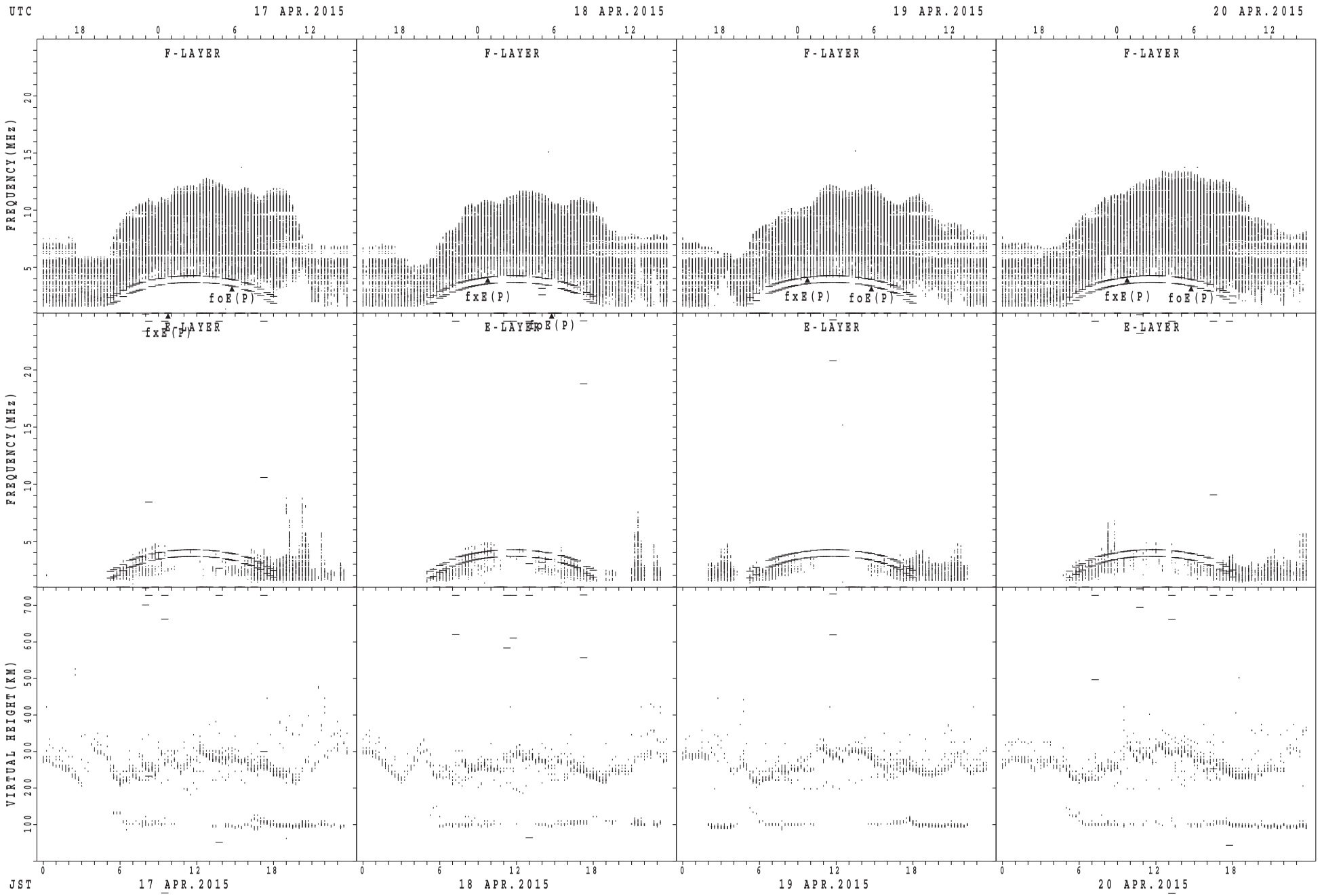

SUMMARY PLOTS AT Kokubunji
UTC
JST
9 APR.2015
10 APR.2015
11 APR.2015
12 APR.2015
F-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
foE(P)
fxE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



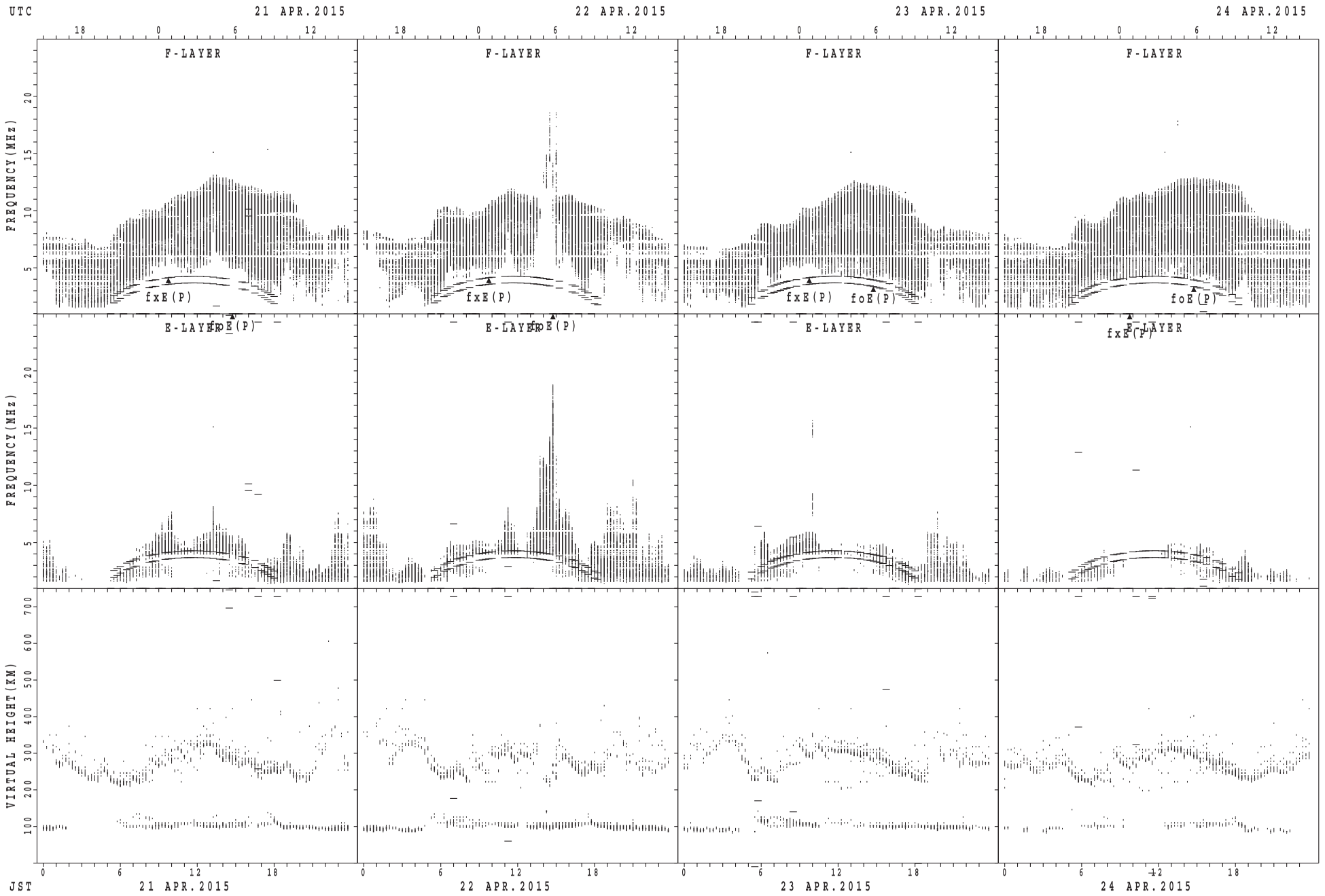
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



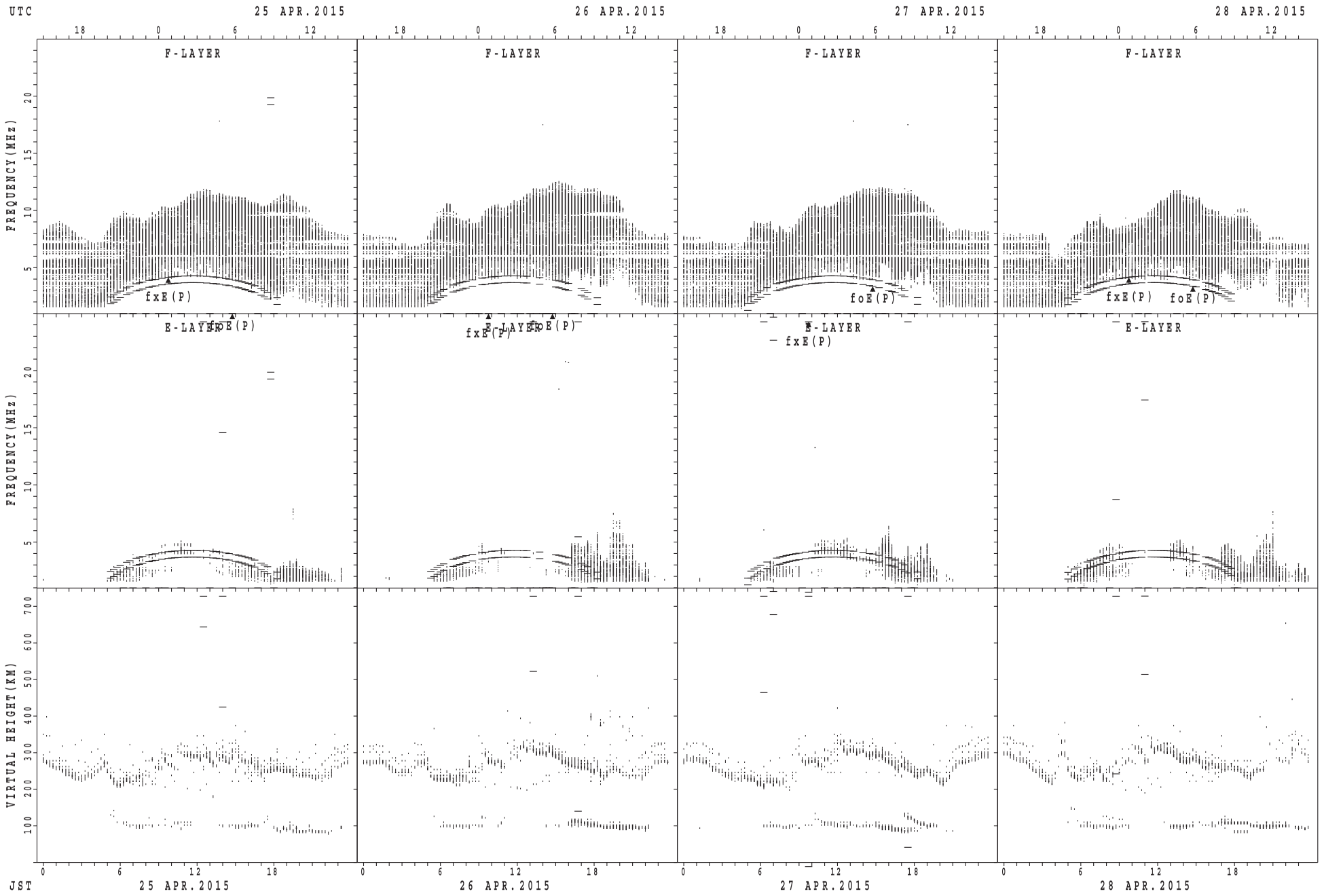
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



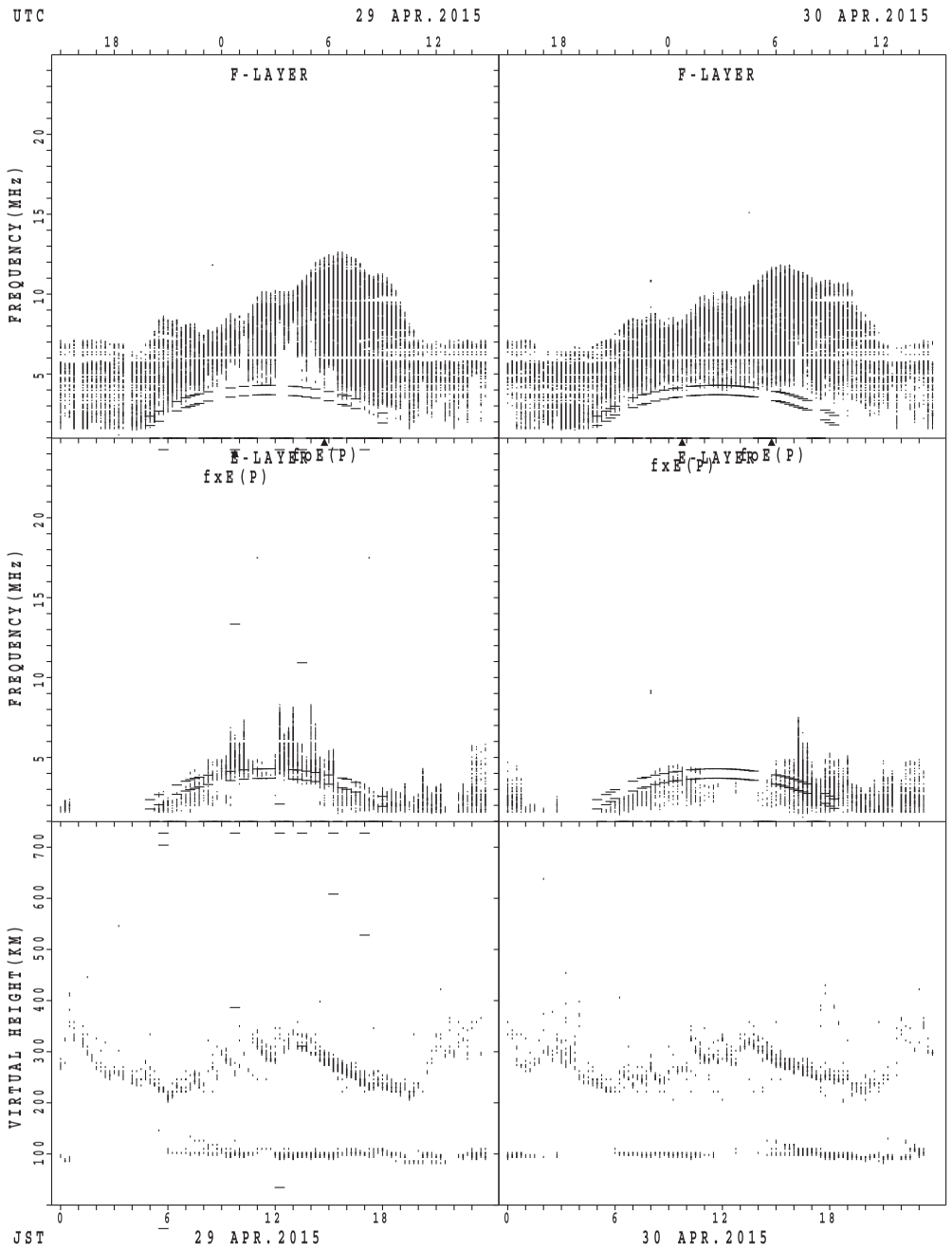
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



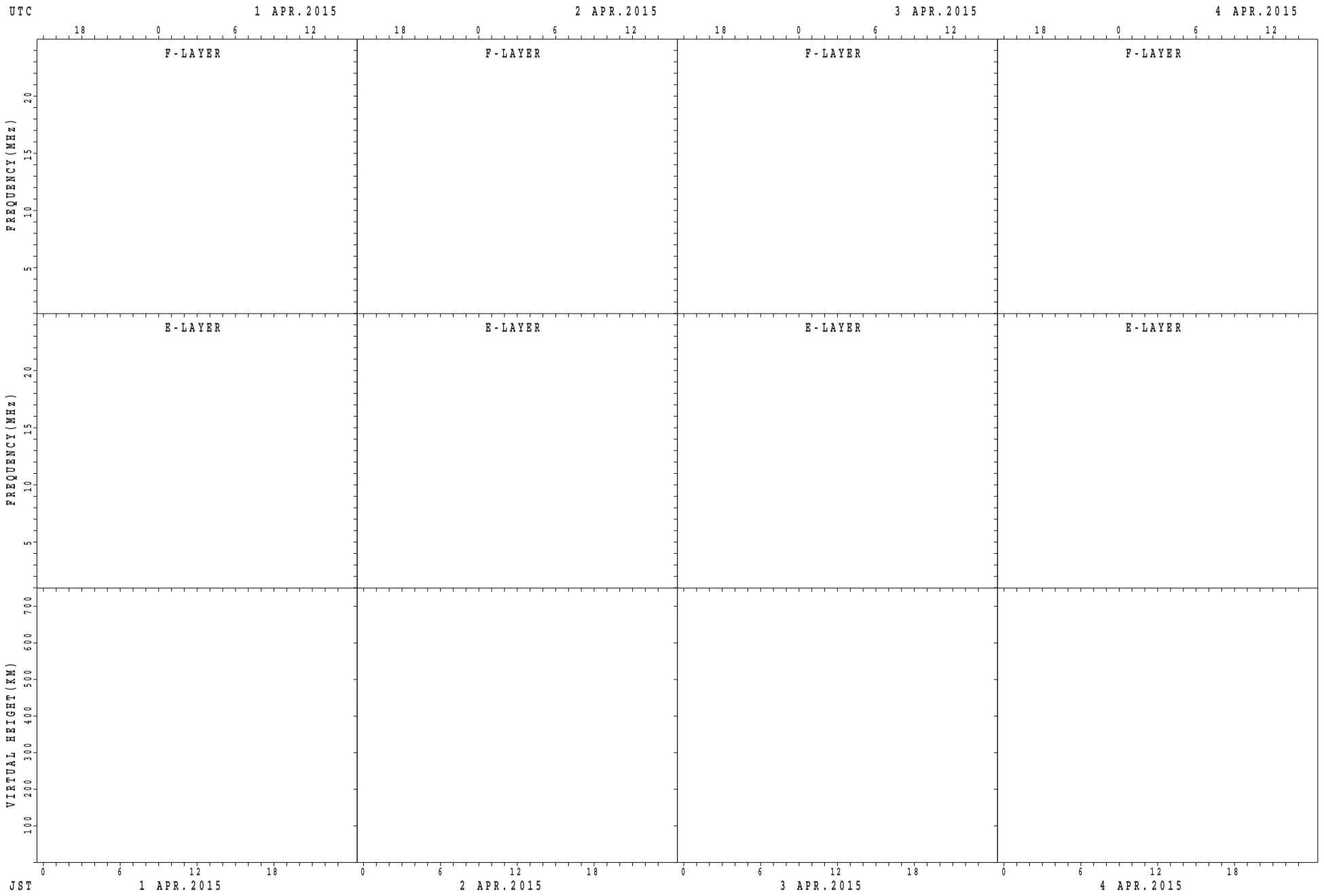
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



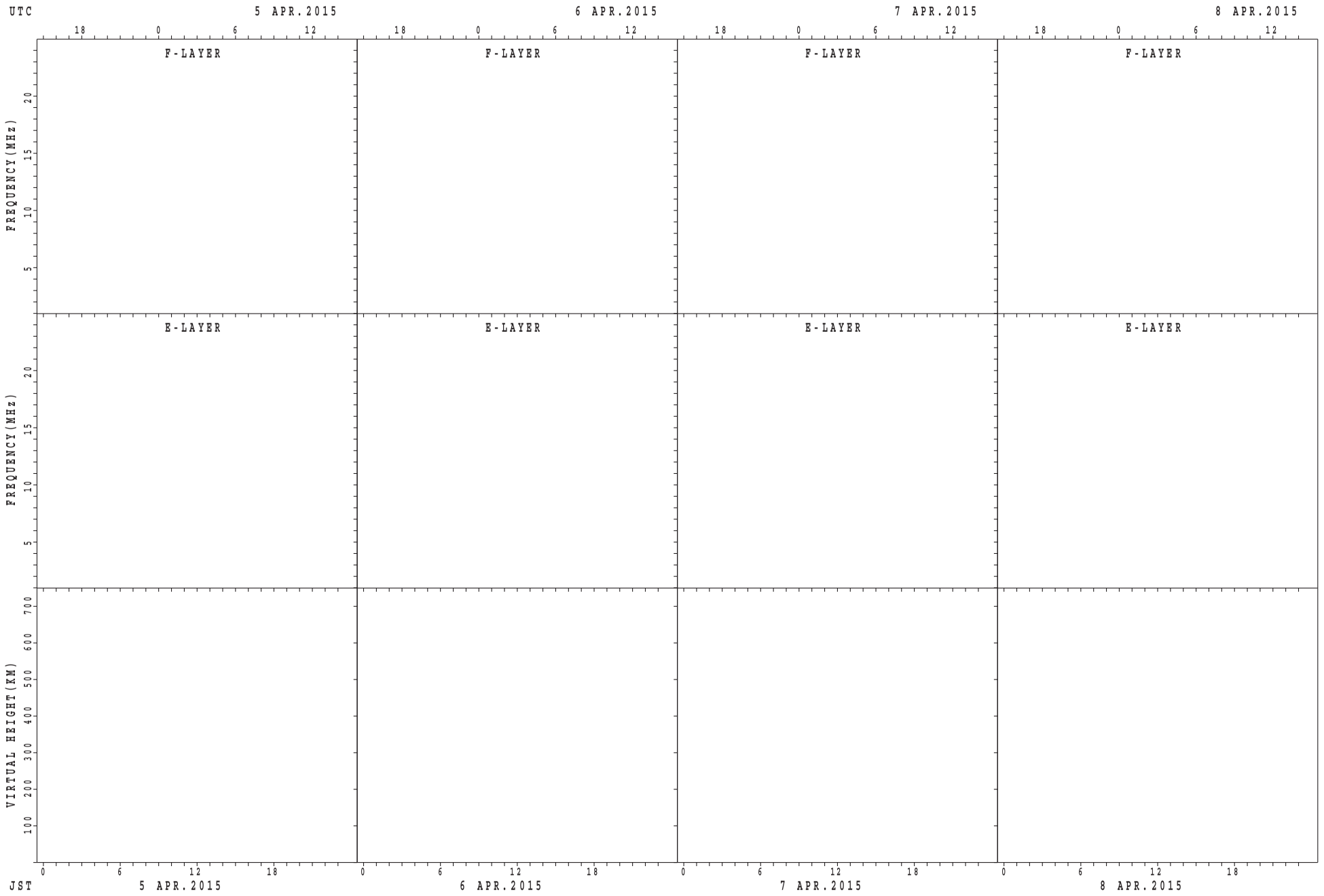
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



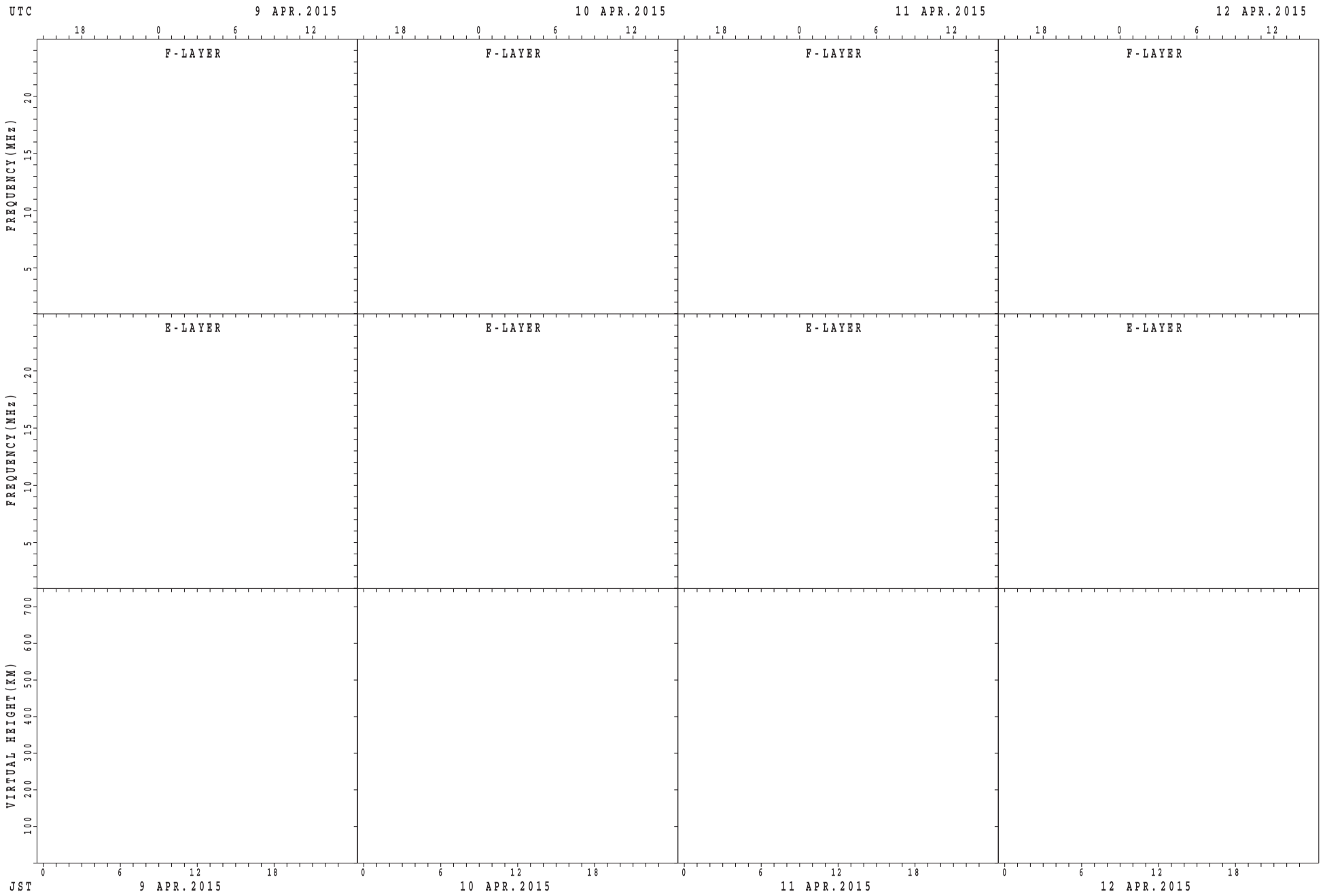
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



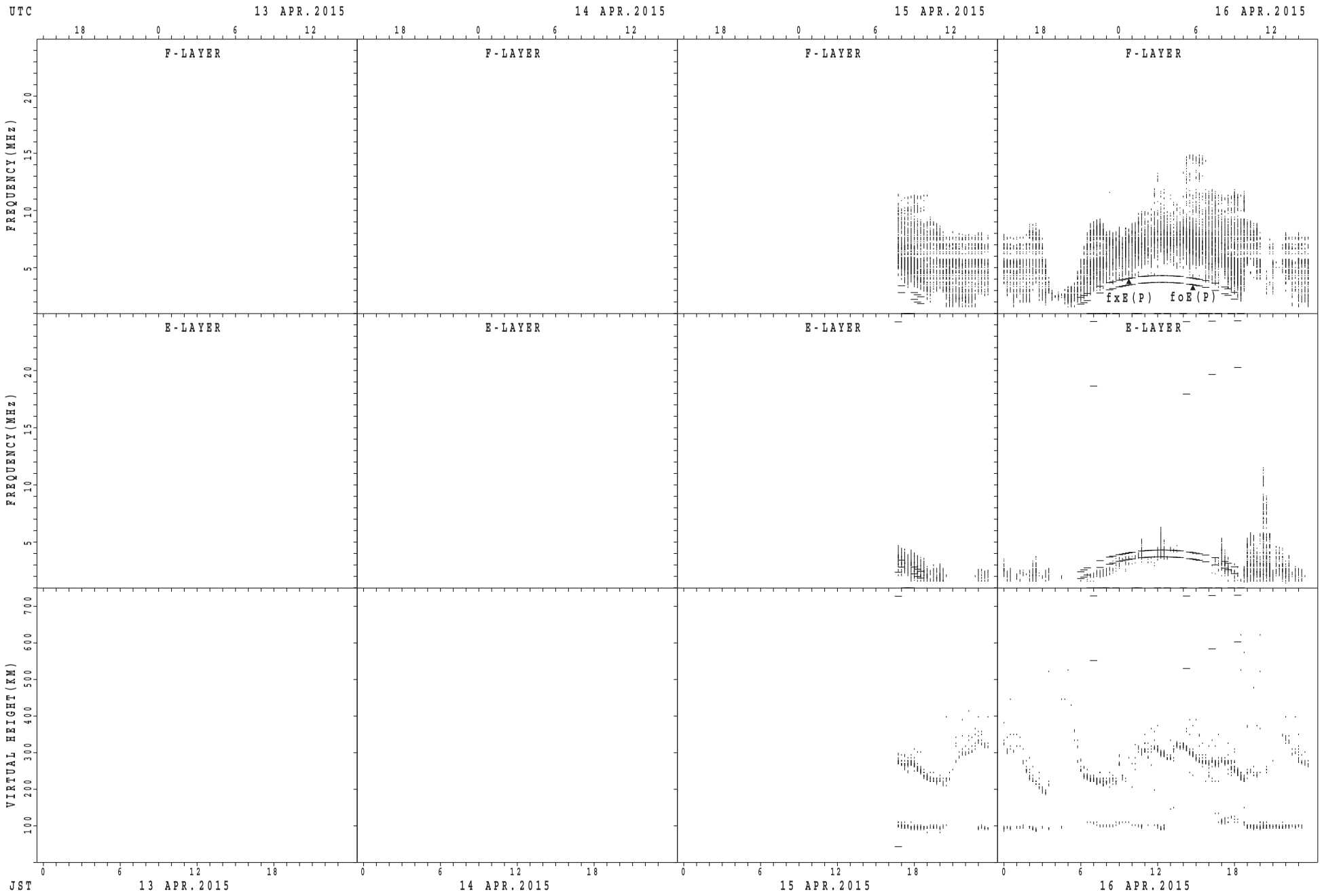
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



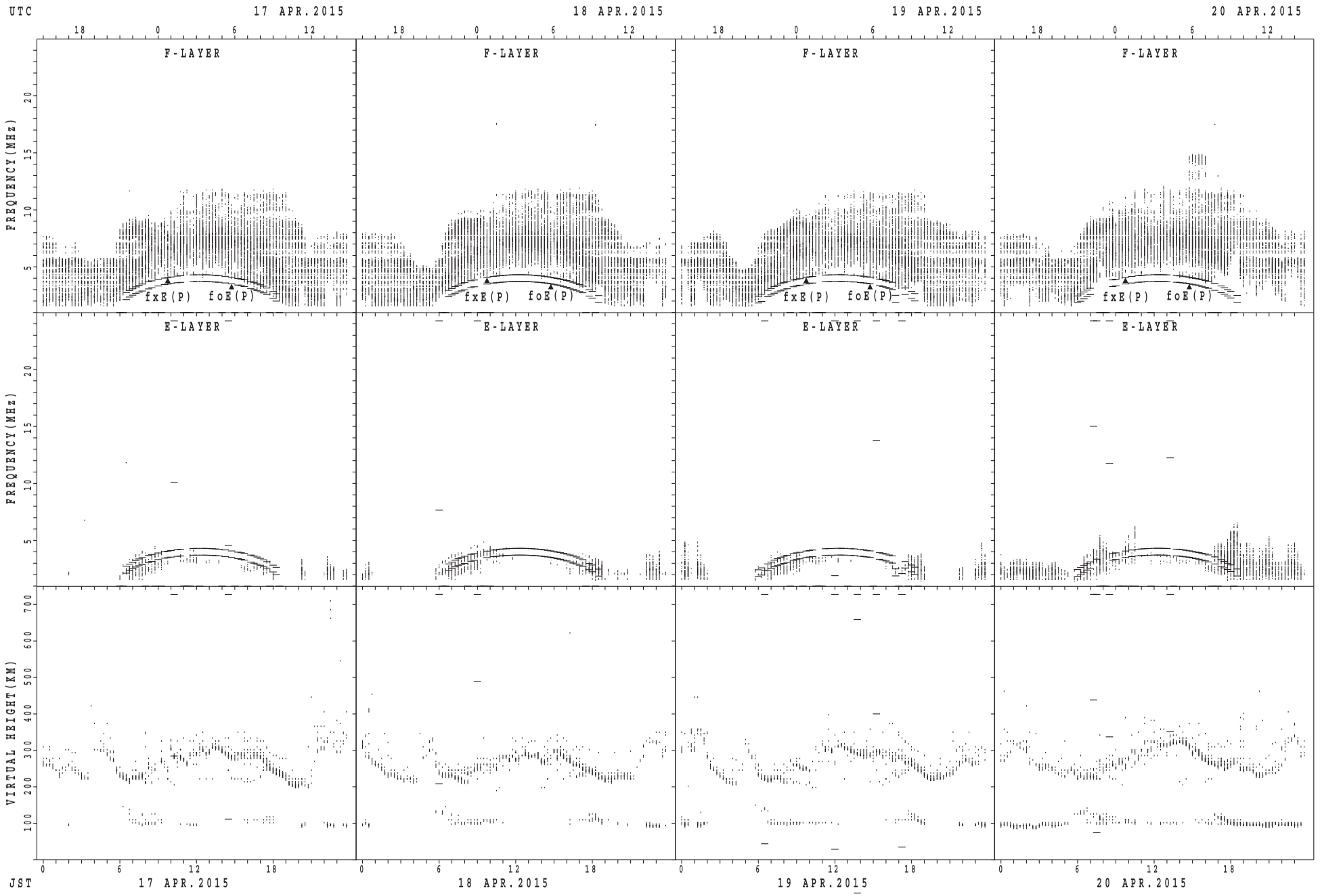
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



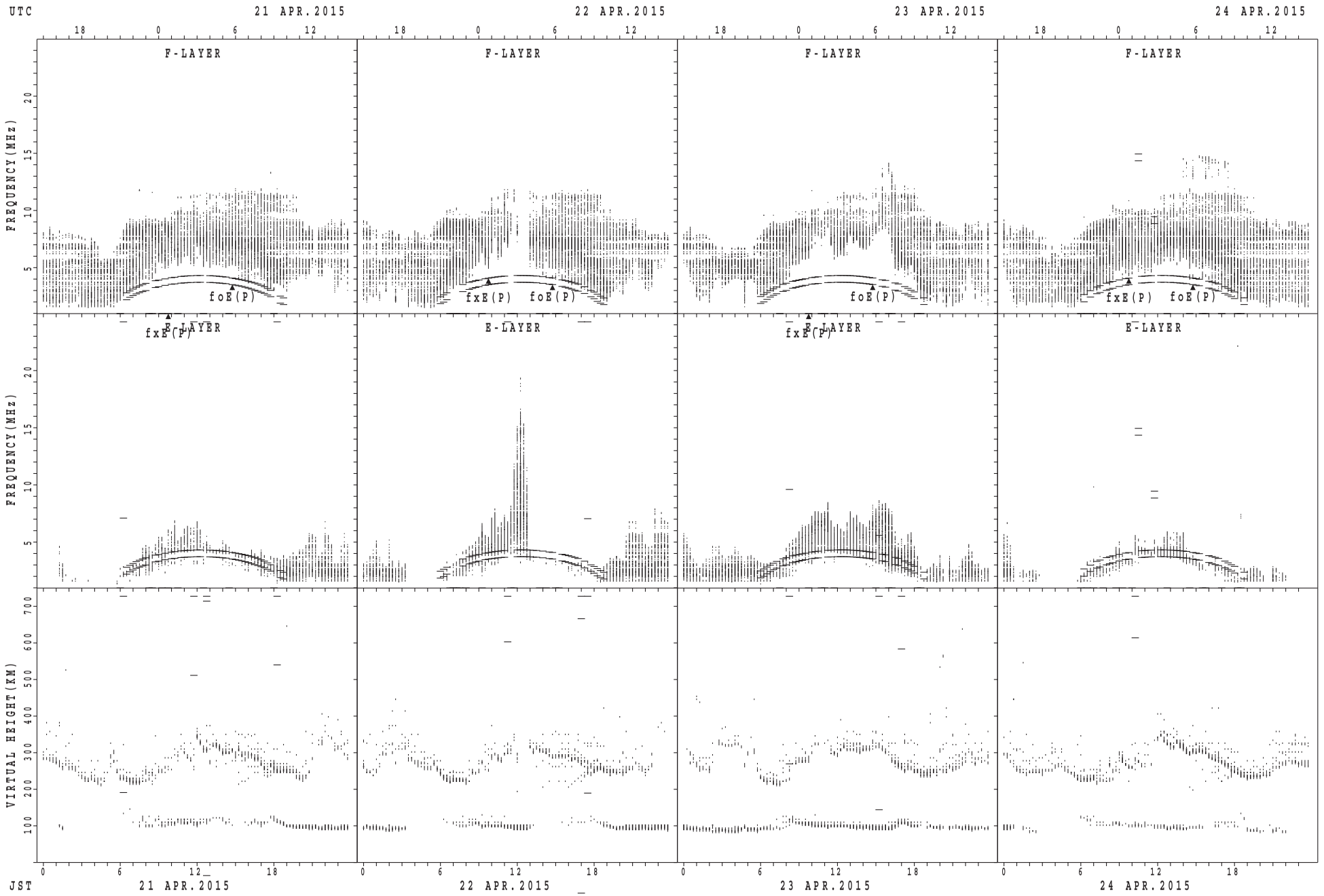
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



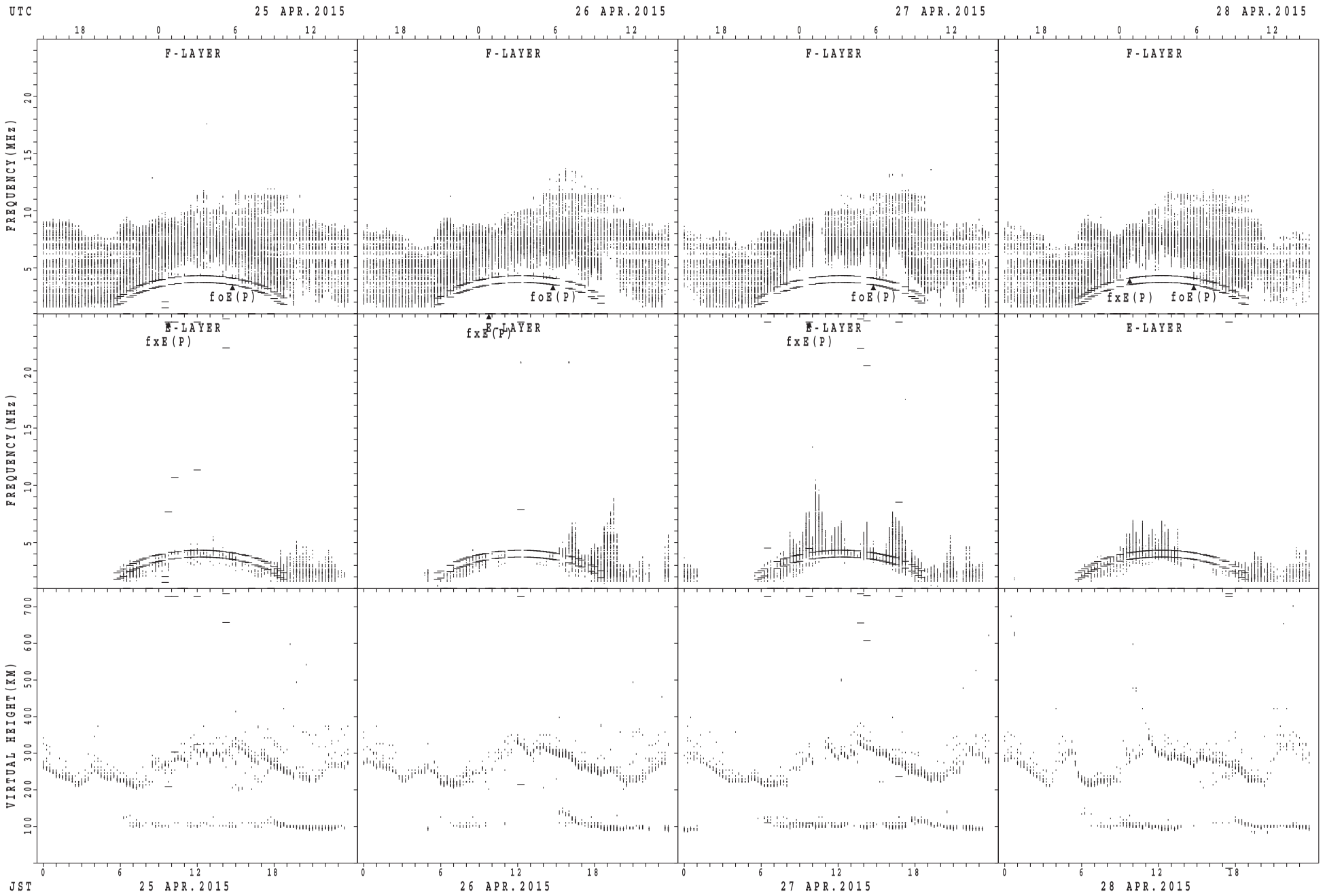
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

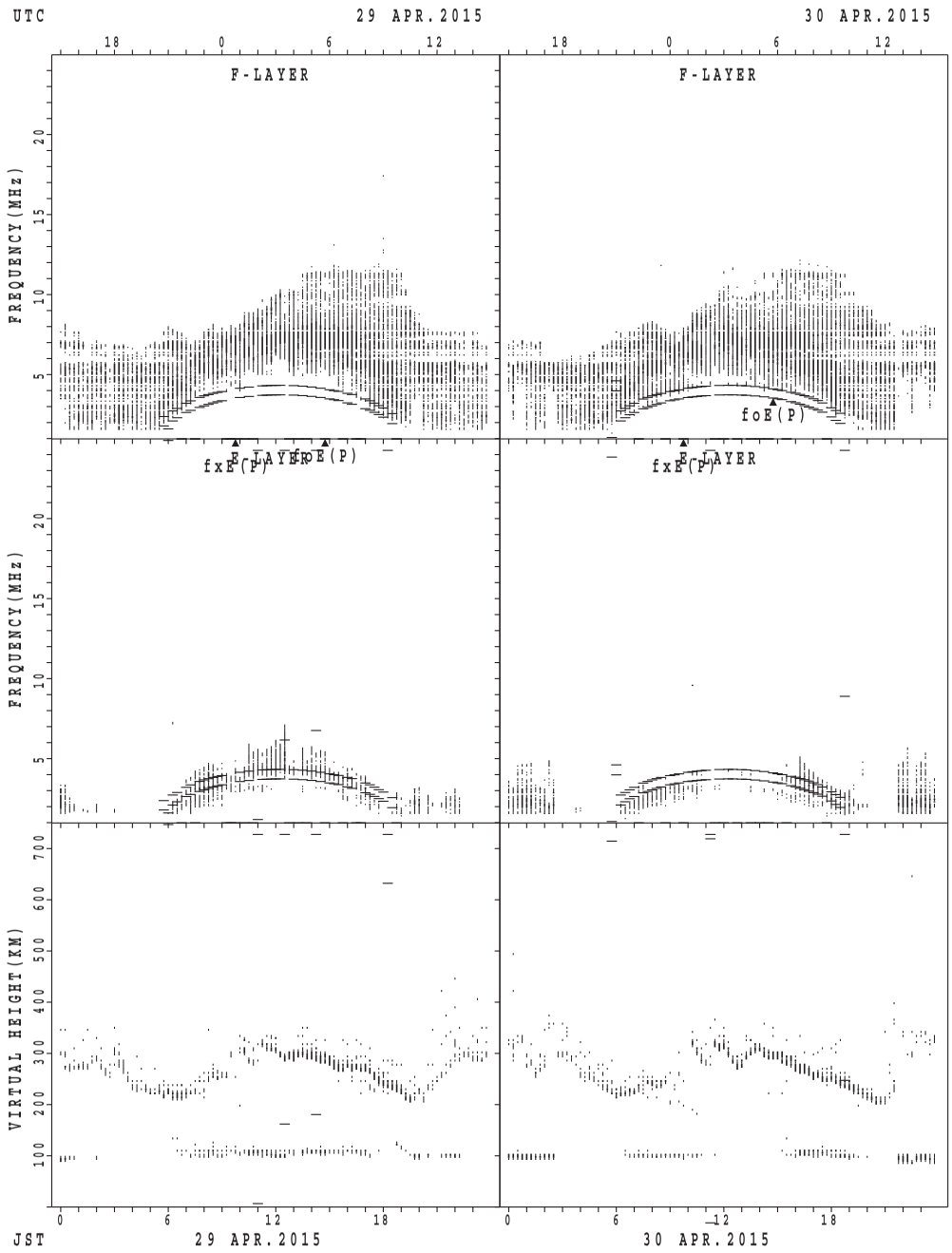


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

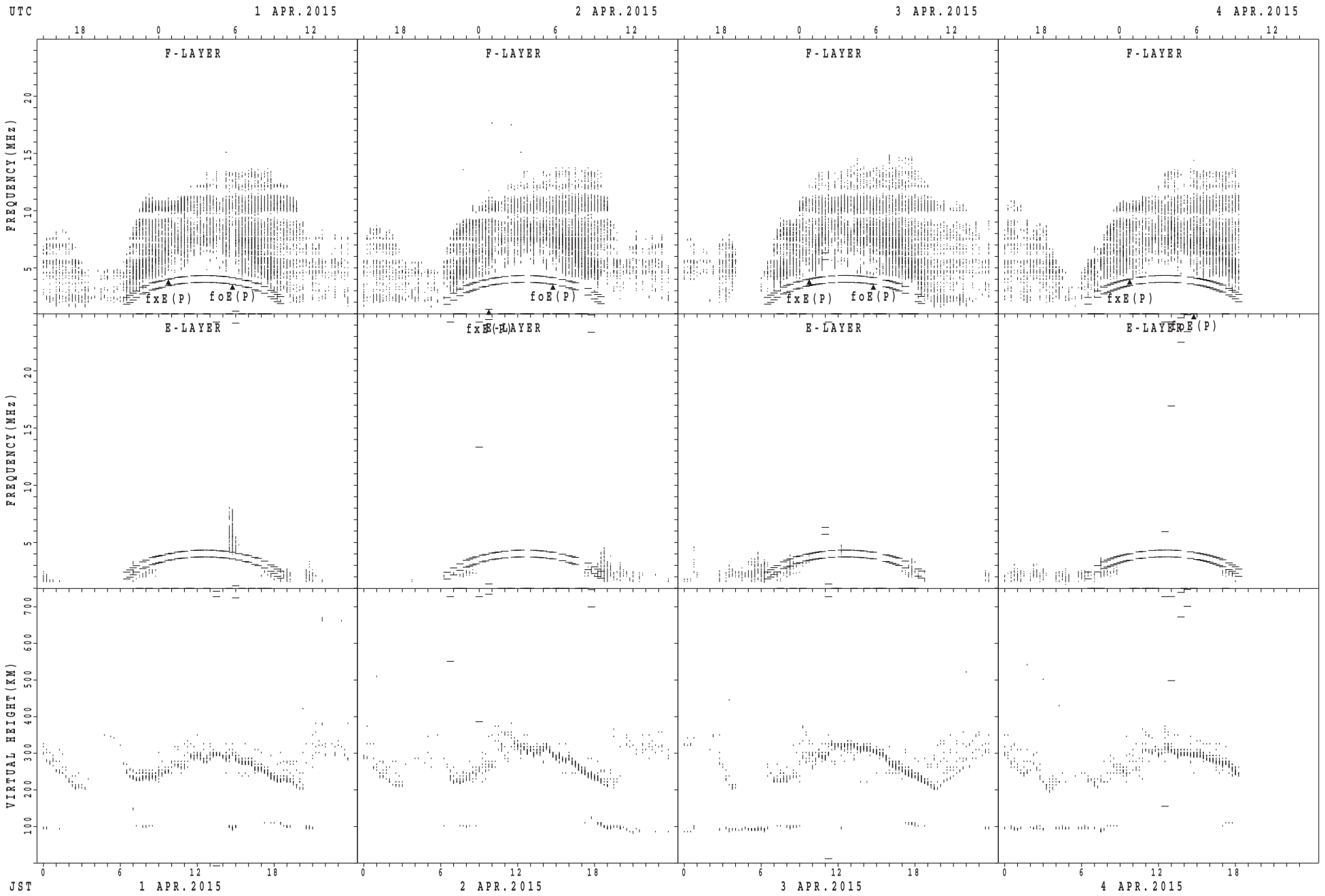
SUMMARY PLOTS AT Yamagawa



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

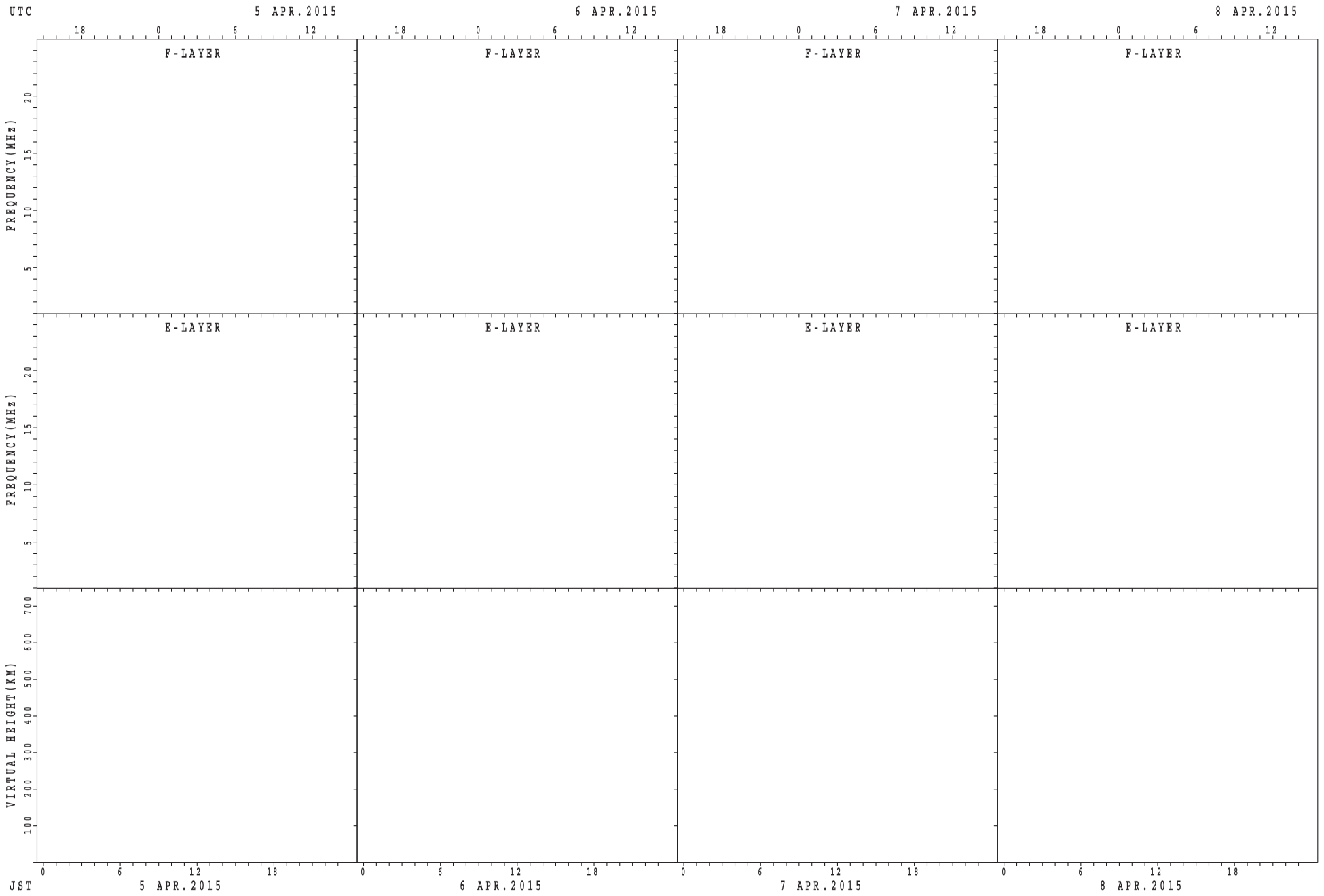

SUMMARY PLOTS AT Yamagawa
UTC
29 APR.2015
30 APR.2015
F-LAYER
FREQUENCY(MHz)
foE(P)
fxE(P)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



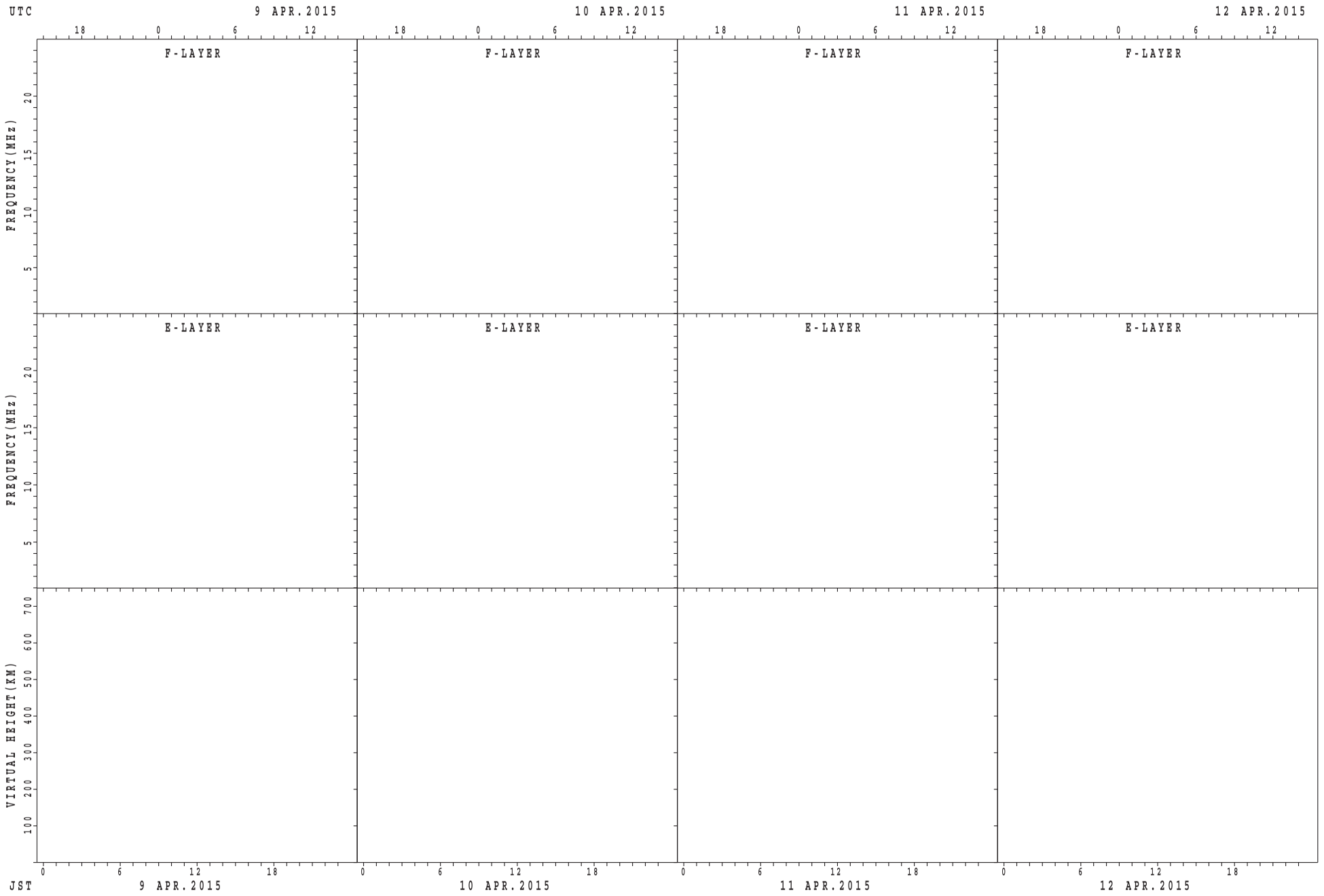
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



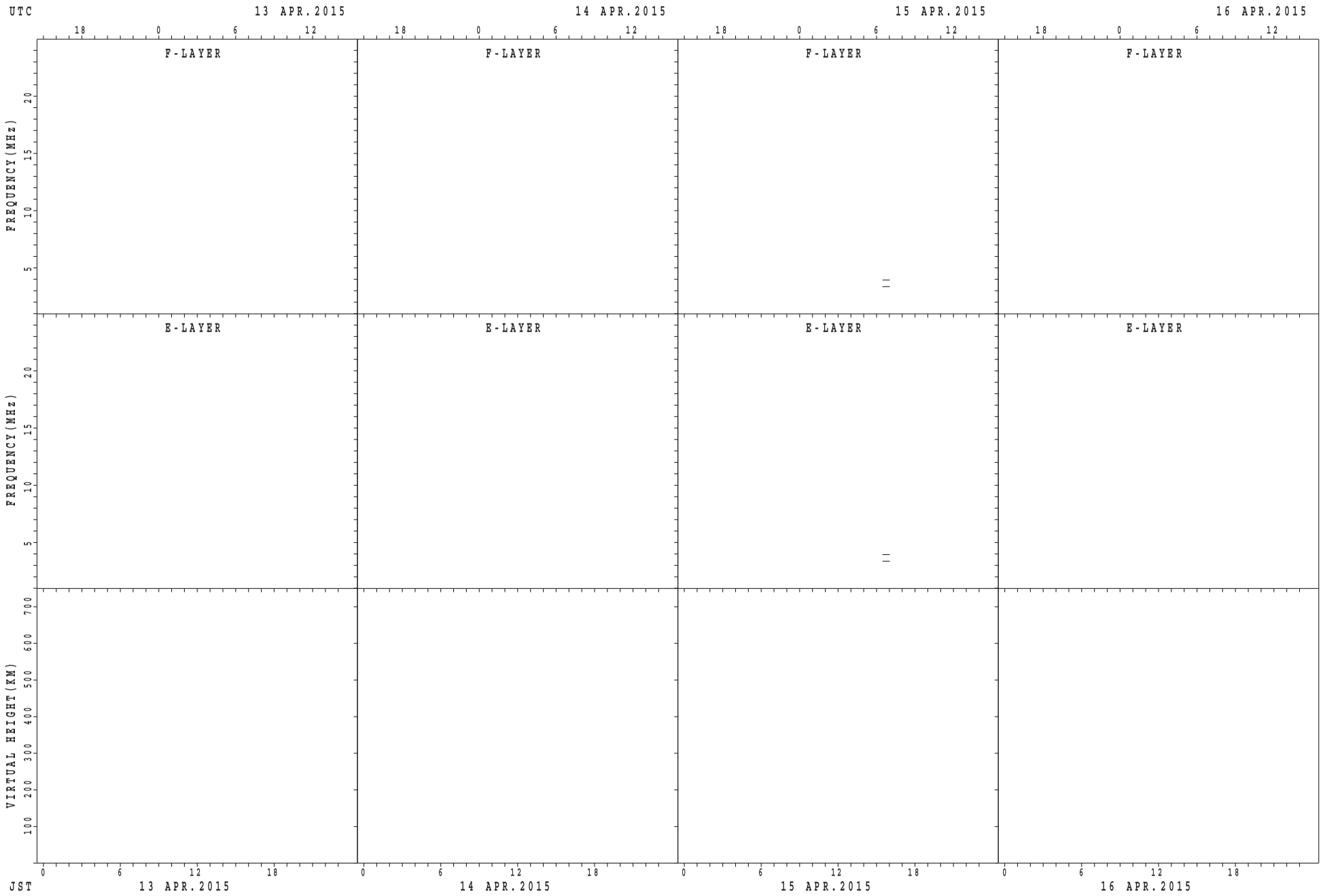
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



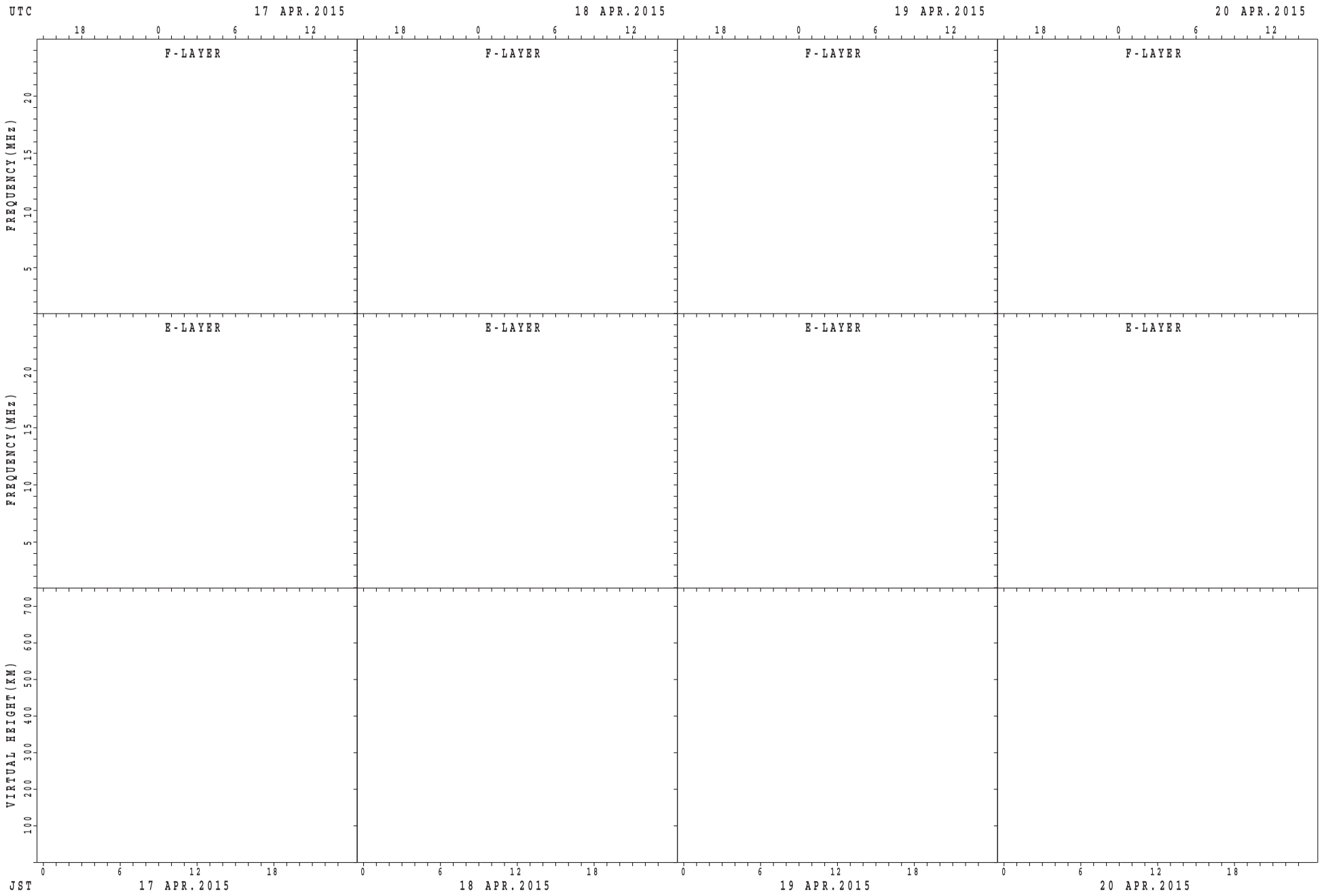
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



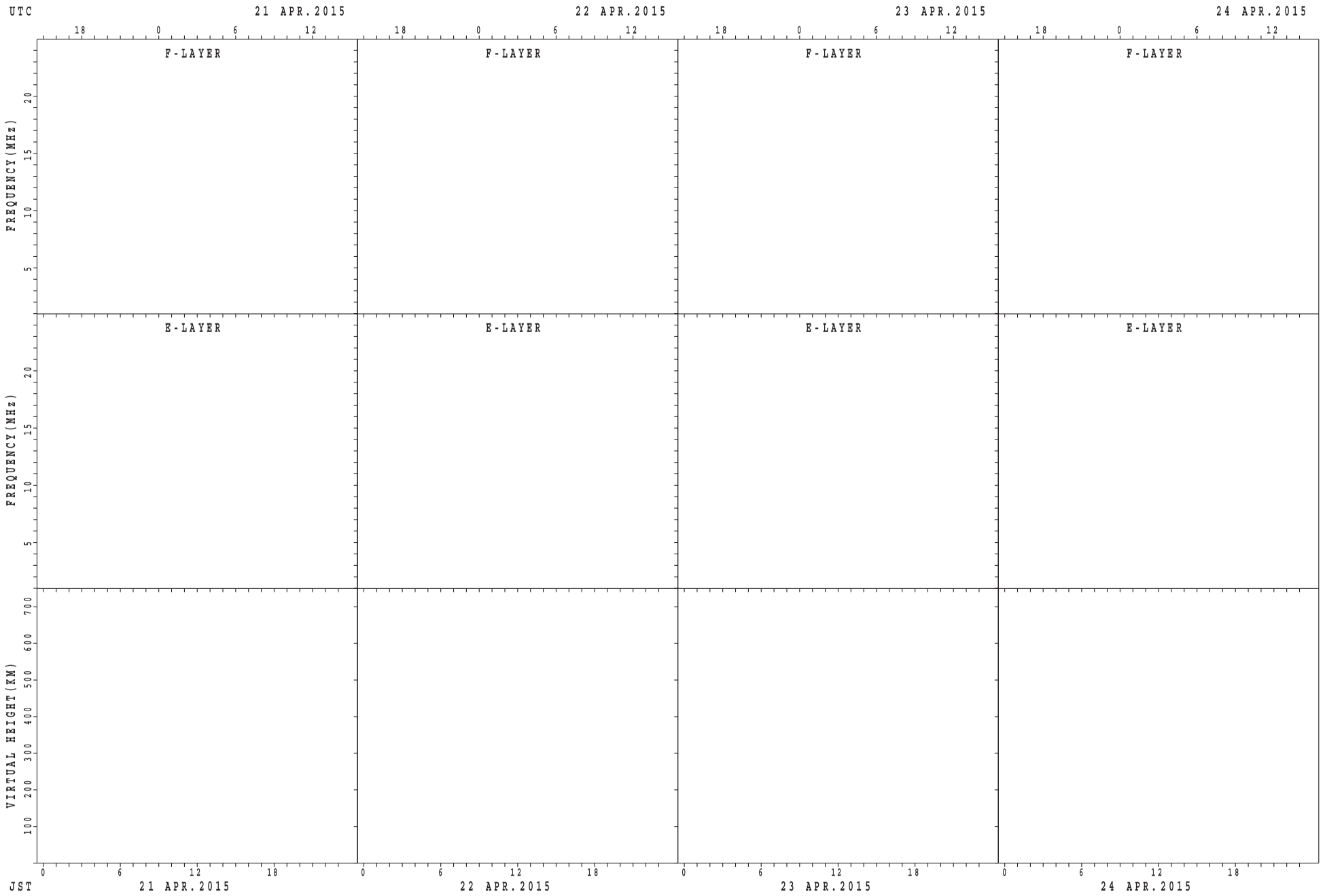
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



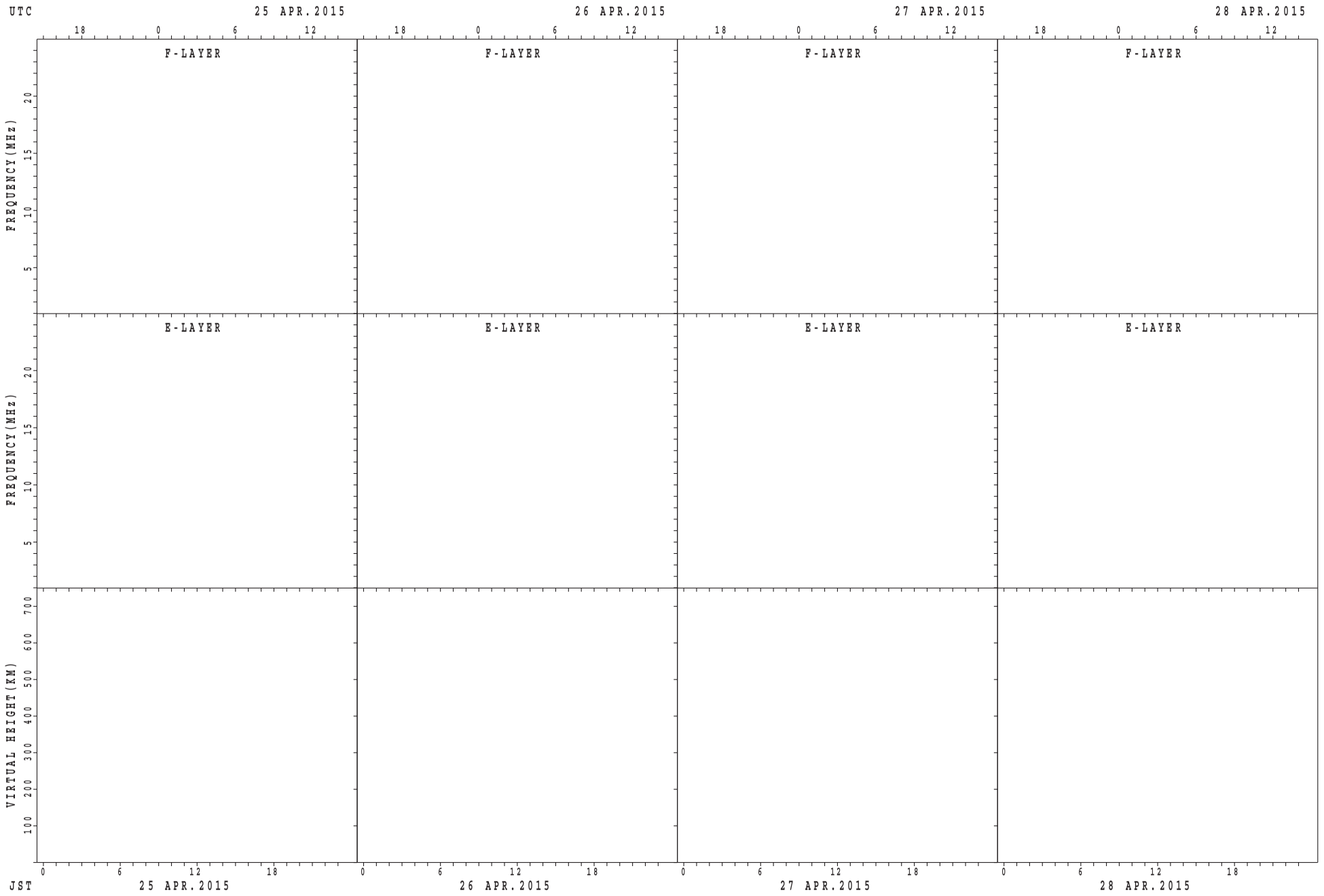
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



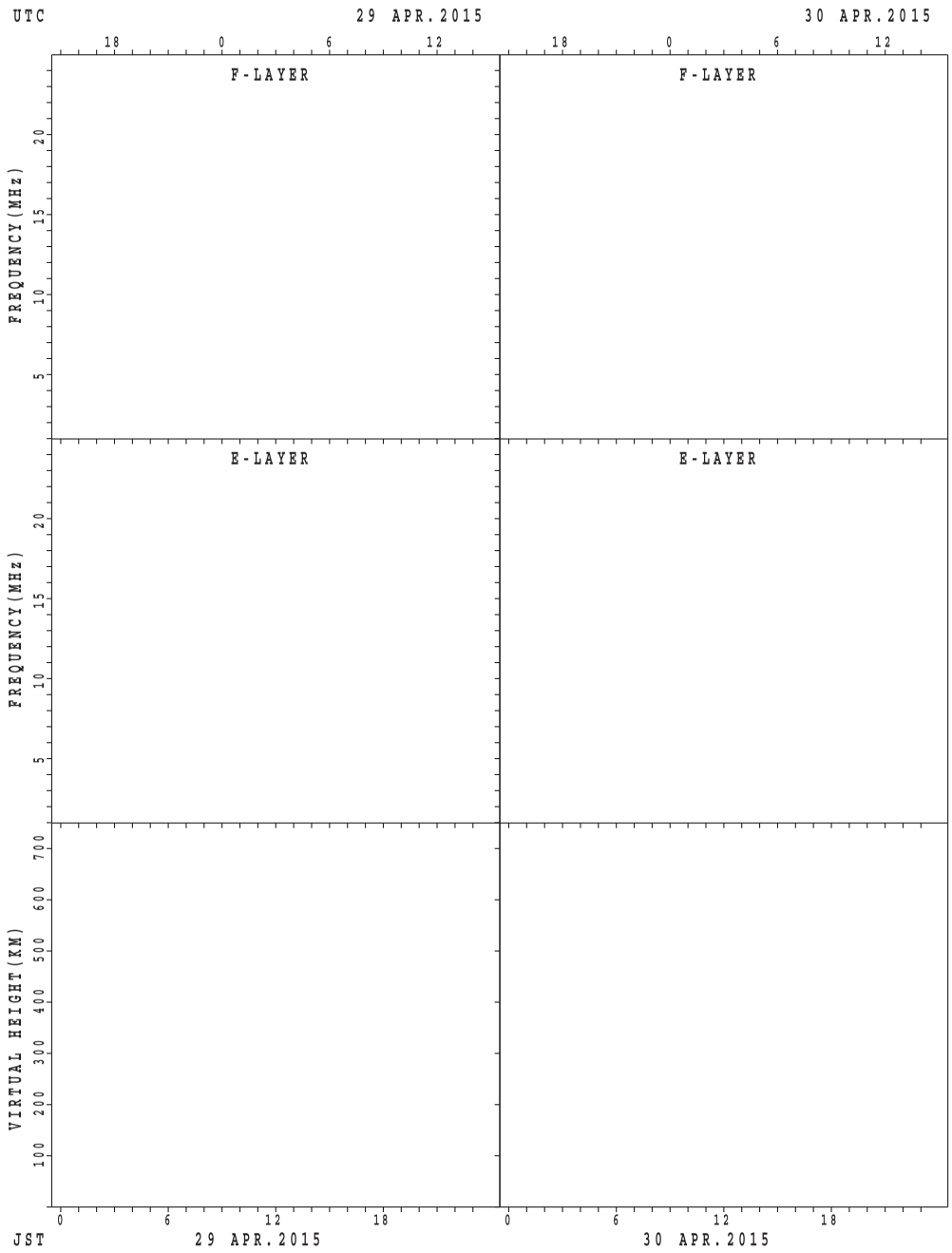
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1	2			6	17	24	9							6	27	30	29	19	18	10	10	1
MED	334	354	291			313	244	254	252							258	264	261	262	272	277	289	308	332
U Q	167	177	322			330	267	275	262							268	272	270	268	278	290	300	328	166
L Q	167	177	260			292	238	248	247							254	254	252	246	264	270	270	286	166

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	6	10	6	4	5	5	13	6	5	7	6	3	4	4	3	4	5	17	16	17	14	15	10	7
MED	98	96	93	90	89	89	125	115	105	111	104	105	101	99	97	96	119	113	112	103	104	103	100	99
U Q	101	103	105	94	97	108	155	121	110	111	105	105	103	109	103	132	125	119	117	108	111	105	103	103
L Q	97	95	89	88	87	88	105	103	102	105	103	101	97	94	89	92	103	101	106	96	103	97	97	97

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	7	3	4	2		4	28	29	24							2	30	30	30	26	15	6	7	3
MED	328	330	282	308		310	248	246	246							266	261	254	251	254	256	298	324	326
U Q	336	334	293	342		340	265	256	252							276	270	266	264	272	280	306	330	344
L Q	316	300	264	274		273	234	233	238							256	254	246	240	246	248	256	304	212

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	7	6	6	6	4	10	5	12	17	13	14	12	10	7	14	11	15	26	27	20	19	19	10
MED	97	97	95	92	96	114	143	119	113	111	107	105	104	103	103	109	115	111	105	101	98	99	97	99
U Q	99	101	97	95	97	138	149	156	117	113	115	111	107	107	107	119	119	113	111	103	99	105	103	103
L Q	97	93	95	91	91	91	131	117	111	108	105	105	100	99	101	103	103	103	101	95	95	95	95	97

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	10	3	6	3	2		8	14	15								15	16	16	16	14	6	5	4
MED	338	306	317	260	319		239	233	246								286	270	254	248	245	270	326	325
U Q	346	346	340	278	322		252	240	266								294	278	262	253	262	288	341	333
L Q	310	262	256	224	316		232	224	240								272	260	246	240	238	256	307	313

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	6	9	3	2	3	3	5	5	8	7	6	9	7	5	2	4	9	11	13	14	10	12	12
MED	97	96	97	95	92	95	133	125	113	110	107	104	103	99	103	103	107	109	113	101	98	97	99	97
U Q	99	101	101	97	97	103	151	131	117	112	107	109	106	119	114	111	124	112	119	104	103	101	102	101
L Q	94	93	93	89	87	91	95	119	110	107	103	103	101	97	96	95	98	104	103	96	95	97	97	95

MONTHLY MEDIANS OF h'F AND h'Es

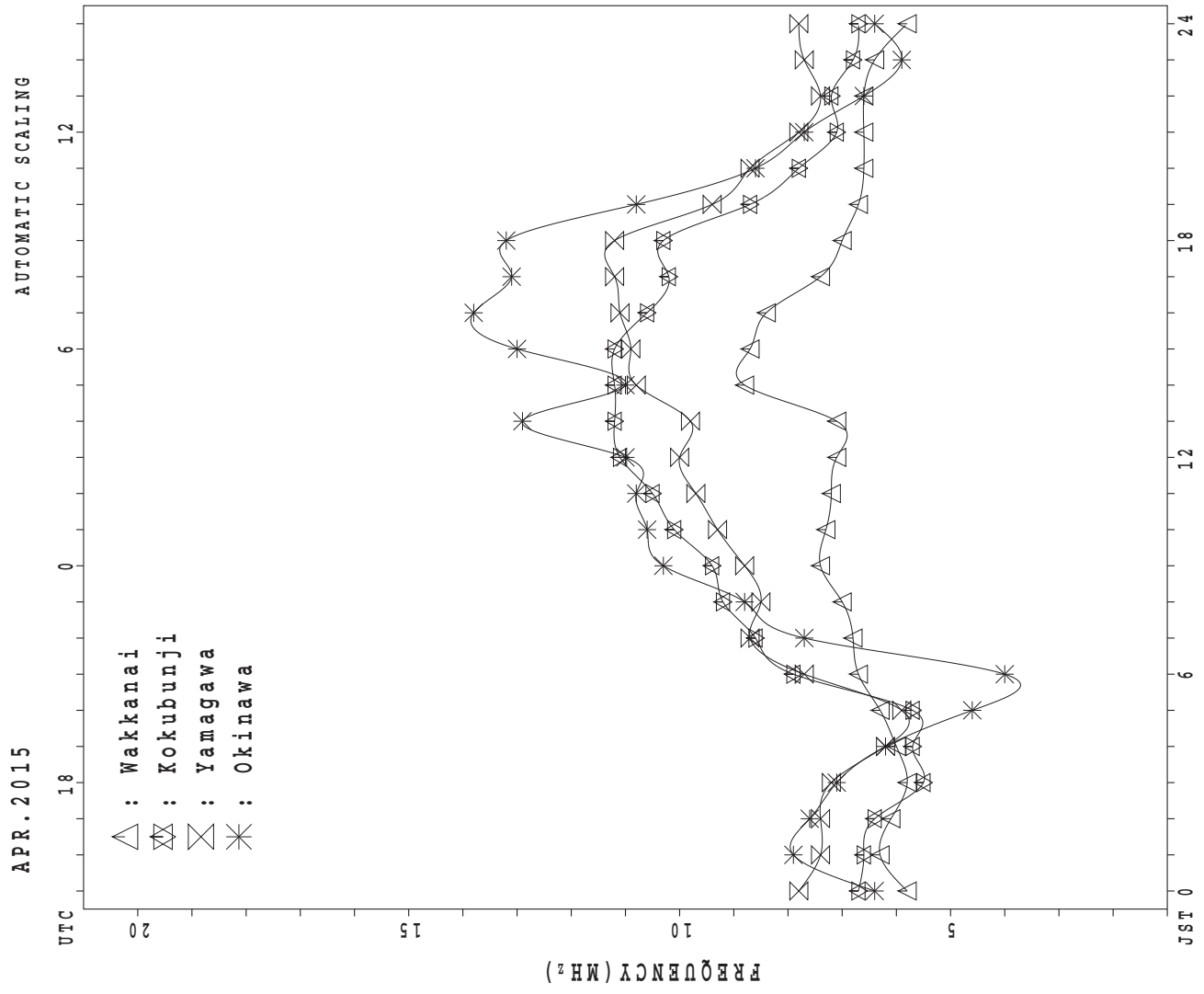
APR.2015 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		2	1	1				3	4	4							4	4	4	3	2	2	1	
MED		282	286	252				248	240	256							276	256	235	226	255	314	322	
U Q		292	143	126				248	277	268							284	264	242	242	274	348	161	
L Q		272	143	126				242	239	251							270	251	232	220	236	280	161	

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	2	1		1	2	2	2	1								1			1	2	1	2		
MED	98	95		97	95	96	96	143								105			111	101	97	93		
U Q	99	47		48	95	97	97	71								52			55	103	48	97		
L Q	97	47		48	95	95	95	71								52			55	99	48	89		


MONTHLY MEDIANS PLOT OF foF2
APR.2015
AUTOMATIC SCALING
: Wakkanai
: Kokubunji
: Yamagawa
: Okinawa
FREQUENCY(MHz)
UTC
JST
0
6
12
18
24
5
10
15
20

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 78	X 77	X 74	X 70	X 67															X 84	X 83	X 77	X 74	X 73
2	X 75	X 72	X 70	X 67	X 68																X 92	X 80	X 75	X 73
3	X 70	X 66	X 70	X 69	X 62																X 75	X 61	X 63	X 65
4	X 63	X 58	X 63	X 60	X 57																X 79	X 77	X 77	X 69
5	X 70	X 69	X 69	69	X 70																X 80	X 77	X 77	X 77
6	X 75	X 72	X 68	X 72																	X 83	X 81	X 78	X 77
7	X 75	X 73	X 68	X 64																	X 77	X 77	X 77	X 76
8	X 76	X 75	X 72	X 67																	X 76	X 76	X 74	X 72
9	X 70	X 72	X 73	X 67																	X 78	X 74	X 67	X 67
10	X 67	X 67	X 69	X 67													C				X 76	X 71	X 59	X 64
11	X 64	X 58	X 56	X 56																	X 71	X 68	X 67	X 65
12	X 62	X 59	X 56	X 52																	X 79	X 76	X 66	X 64
13	X 63	X 61	X 61	X 60																	X 79	X 77	X 76	X 71
14	X 69	X 69	X 67	X 65																	X 87	X 79	X 75	X 73
15	X 70	X 66	X 60	X 59																	X 86	X 83	X 77	X 77
16	X 74	X 81	X 79	X 59																	X 85	X 78	X 80	X 76
17	X 74	X 76	X 74	X 66																	X 86	X 75	X 65	66
18	65	64	62	57	52																X 85	X 81	X 79	X 70
19	71	68	69	X 68																	Y	Y	X 85	X 81
20	X 73	X 73	X 73	X 69																	X 90	X 79	X 79	X 77
21	X 73	X 73	X 69	X 69																	Y	X 80	X 80	X 79
22	X 79	X 75	X 67	X 70																	O X 83	X 82	X 80	X 77
23	X 75	X 71	X 67	X 68																	X 81	X 79	X 78	X 78
24	X 78	X 76	X 76	X 72																	X 88	82	X 79	X 80
25	X 77	X 77	X 75	X 73																	X 93	X 93	X 86	X 79
26	X 77	X 77	X 75	X 74																	X 92	X 85	X 80	X 76
27	X 73	X 73	X 71	X 70																	X 87	X 81	X 79	X 78
28	X 79	X 77	X 78	X 71																	X 81	X 79	X 76	X 76
29	X 74	X 70	X 71	X 67																	X 77	X 77	X 75	X 73
30	X 74	X 71	X 66	X 69																	Y	X 78	X 77	X 73
31																								
	00	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	6															1	27	29	30	30
MED	X 74	X 72	X 69	X 68	X 64															X 84	X 83	X 78	X 77	X 74
U Q	X 75	X 75	X 73	X 70	X 68																X 87	X 81	X 79	X 77
L Q	X 70	X 67	X 67	X 64	57																X 78	X 76	X 74	X 70

APR. 2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	71	70	67	63	60	62	70	J R 83	103	J R 103	J R 111	D R 102	R 99	101	R 98	98	88	88	86	77	76	70	67	66
2	68	65	63	60	61	62	Y 75	86	Y 75	103	114	126	126	117	R 105	102	91	87	88	86	J R 85	73	68	66
3	R 96	60	64	62	55	50	54	57	62	62	71	76	R 78	76	R 78	80	74	77	79	72	R 68	54	56	58
4	56	52	56	53	50	57	58	68	R 78	Y 76	R 89	90	R 95	J R 90	R 81	R 78	84	87	89	J R 84	72	70	70	62
5	64	F 59	F 58	F 59	64	66	Y 73	R 78	J R 86	92	92	R 94	90	94	R 89	U R 90	R 82	83	85	78	73	70	70	70
6	68	66	62	65	62	64	78	86	91	Y 86	91	99	J R 93	R 95	87	J R 83	79	80	J R 78	76	J R 76	74	71	70
7	68	66	V 61	57	V 56	61	71	J R 75	Y 95	Y 97	Y 97	J R 91	R 96	93	95	J R 88	86	84	82	R 73	70	70	70	69
8	69	68	65	60	54	58	R 72	77	R 79	R 92	93	R 99	R 98	U R 97	U R 93	92	R 88	J R 85	78	69	69	69	67	66
9	64	65	66	60	56	58	73	R 75	J R 85	J R 85	J R 90	J R 87	J R 89	96	R 95	R 96	86	92	84	71	71	67	60	60
10	60	60	62	60	50	48	54	56	61	65	73	J R 88	78	J R 87	88	88	C	78	69	73	69	64	52	57
11	57	51	49	49	46	48	54	60	57	66	70	Y	Y	J R 83	J R 87	J R 85	J R 89	83	R 85	70	64	61	60	58
12	55	52	49	45	40	41	52	57	68	76	R 76	Y	Y	Y	77	75	74	72	71	74	72	69	59	57
13	56	54	54	53	50	56	62	73	Y	92	80	80	J R 86	R 91	J R 83	87	J R 85	77	74	78	72	70	69	64
14	62	62	60	58	58	63	76	Y	78	J R 85	R 95	Y	Y 76	R 82	J R 84	80	78	77	79	84	J R 80	73	69	66
15	63	59	54	53	54	55	58	64	65	77	88	91	92	Y 74	85	83	74	Y 77	78	J R 83	79	76	70	70
16	67	74	72	52	43	45	58	Y 74	J R 85	J R 89	D R 75	J R 85	J R 89	Y	J R 89	J R 89	J R 89	J R 89	J R 88	78	78	R 71	73	69
17	67	69	67	59	58	62	76	74	Y 74	71	70	Y	Y	R 87	R 88	91	J R 86	92	93	88	79	68	58	F 51
18	F 50	F 53	F 48	F 42	F 35	42	56	59	68	74	80	80	R 81	Y	J R 88	R 84	J R 85	81	J R 78	80	78	74	72	63
19	F 60	F 60	F 59	61	58	65	70	R 76	75	J R 91	Y 96	R 98	92	J R 91	R 96	J R 94	87	J R 84	J R 84	84	Y	Y 74	78	74
20	66	66	66	62	64	73	88	U R 88	91	R 94	98	Y	Y	Y	R 98	R 98	98	90	J R 89	J R 87	83	R 72	72	70
21	66	66	62	62	60	67	Y	85	85	Y	92	J R 97	Y	R 98	R 92	96	88	R 84	84	91	Y	73	73	72
22	72	68	61	63	61	68	72	76	71	Y	J R 89	Y	Y	Y	J R 90	Y	J R 79	83	J R 81	79	76	75	73	R 70
23	68	64	60	61	62	68	Y 73	J R 84	J R 84	Y	Y	91	A	Y	Y	J R 85	J R 85	R 78	73	72	74	72	71	71
24	71	69	69	65	65	72	Y	J R 87	J R 84	R 88	U R 92	U S 97	R 98	R 96	97	96	96	88	88	88	81	R 75	72	73
25	70	70	68	66	66	68	78	88	92	91	91	J R 90	J R 90	98	98	93	J R 86	J R 83	J R 87	87	86	86	79	72
26	70	70	68	68	67	72	73	89	89	90	U R 96	96	Y	J R 88	R 90	J R 89	J R 89	89	89	J R 69	J R 85	J R 78	73	69
27	66	66	64	X R 63	62	68	R 83	R 82	86	86	J R 90	Y	Y	92	Y	91	J R 86	J R 86	86	91	80	74	73	71
28	72	70	71	64	64	66	64	69	76	R 76	Y	75	75	Y 76	Y 76	R 82	R 81	77	77	75	74	72	69	69
29	67	63	64	60	63	65	71	72	72	Y	78	71	Y 74	J R 80	J R 88	88	J R 88	92	R 79	74	70	70	68	67
30	67	64	59	62	61	57	60	65	80	J R 88	J R 88	Y	74	Y	R 82	J R 83	J R 87	Y 76	79	J R 80	Y	71	70	66
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	28	29	29	26	28	22	21	23	28	29	29	30	30	30	27	30	30	30
MED	67	65	62	60	59	62	71	75	79	87	90	91	R 90	R 91	R 88	88	R 86	84	83	78	76	72	70	68
U Q	69	68	66	63	62	67	74	84	86	92	94	R 97	R 96	96	R 95	94	R 88	88	87	84	80	74	72	70
L Q	62	60	59	57	54	56	58	66	72	76	79	85	78	83	R 84	83	82	78	78	73	71	70	67	63

APR. 2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	412	L	L								
2									L			L	L	L	L	L	L							
3								L	L	496	540	L	L	A	L	452	352	356						
4								L	L	464	L 500	L 524	L	472		L 388	L							
5								L	L	L	L 612	500	L	L	L	440	L							
6									L	L	L	L	L	L 484	L	L								
7								L	L	L	L 504	L	L 488	L 488	L 488	436	L							
8									L	L	L	524	516	L	456	416	L							
9								L	L	L	468	L	500	500	L	L	L							
10						276	L	432	472	A	484	496	L	L	496	L	C							
11							364	L	L	472	L	U L 512	L	L	L	L	424							
12						A	A	L		L	A	L	L	L	L	L	L							
13								L	472	L	L	L	L	528	504	L	L							
14								L	L	U L 504	516	L	L	524	504	L	340							
15						192	L	L	L	520	L	U Y 408	L	L	L	L	L	L						
16								L	L	476	A	L	L	528	L	L	L							
17						L		L	480	L	A	L	L	L	L	L		A						
18							L	L	L	L	524	L	L	L	L		L							
19								L	L	L	L	L	L	L	520	L								
20								L	L	L	L	L	L	L	L	L	L							
21						L			L	L	L	L	L	L	L	L	L	L						
22									A	528	512	L	L	L	524	448								
23							L	L	L	A	A	A	A	536	L	L	L							
24							L	L	L	L	L	516	L	520	520	L	L							
25									L	L	L	L	548	L	L	L								
26								L	L	L	L	L	L	L	L	L	L	L						
27								L	L	L	L	L	L	L	504	452		L						
28							L	L	464	480	508	508	508	528	496	480	L	L						
29						L	L	L	U L 472	484	488	U L 508	L	L	L	L	L	L						
30							L	L	468	L 480	L	L	516	520	U L 508	L	L	L						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	1	1	6	10	11	9	6	12	11	8	3	1						
MED						234	364	432	472	482	508	508	512	520	504	444	352	356						
U Q									472	504	524	520	516	528	520	452	424							
L Q									468	476	488	498	500	486	496	426	340							

APR. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B 216	268		308	332	340	336	372	356	352	316	276	228	B					
2						B 204	268		304	332	344	360	360	348	332	328	276	220	168	B				
3						B 220	280		K 296	296	324	340	R 348	R 308	336	320	284	232	B	A				
4						B 208	280		292	316	360	A 308	A	A	344	324	U R 284	228	U R 168	B				
5						B 240	280		U R 328	336	U R 736	376	U R 268	U R 368	R 348	316	292	232	172	B				
6					B	B 220	288		312	344	344	360	360	4 U 272	324	324	284	224	A	B				
7					B	B 224	280		308	328	348	360	U A 336	356	348	312	256	232	B	B				
8					B	B 212	268		304	332	348	356	U A 344	A	A	320	292	228	B	B				
9					B	B 212	272		300	332	344	348	348	356	348	316	284	252	152	A				
10					B	B 216	252		316	340	356	356	356	340	304	268	C	220	A	A				
11					B	A 232	280		320	336	U R 348	U A 356	R	352	344	312	280	232	2 149	B				
12					A	A 208	264		304	328	312	R 368	U A 360	U R 364	U R 344	320	288	220	B	A				
13					B	B 240	272		320	340	352	U A 324	A 316	A 140	344	A	A	A	220	A				
14					U A 184	B 228	288		320	340	340	A	A	368	352	340	300	252	A	A				
15					B	B 244	276		324	336	336	U Y 332	356	R 380	368	340	300	244	B	A				
16					B	184	248	284	324	344	U A 352	356	368	A	336	324	304	252	B	B				
17					B	176	248	288	320	336	352	388	A	336	356	328	296	244	B	A				
18					B	172	232	292	320	344	U A 360	368	A	356	352	A	284	260	200	A				
19					B	172	244	280	316	356	356	328	U A 352	352	U A 324	308	R 304	256	180	B				
20					B	180	244	292	328	356	368	368	368	340	A	340	304	248	176	A				
21					B	184	252	300	332	352	U R 372	R 976	368	340	A	R 328	304	264	196	A				
22					B	4 212	260	308	324	352	364	364	364	364	344	344	R 312	260	196	A				
23					B	184	256	300	340	332	U R 368	U R 380	364	U R 364	R 336	284	A	A	A	R				
24					B	212	268	300	R 344	352	364	A	A	348	A 304	264	300	256	208	A				
25					208	208	260	296	332	360	392	364	R	348	304	A	308	264	200	A				
26					B	200	256	300	324	368	364	364	364	364	348	316	296	248	180	A				
27					B	188	260	308	332	A	U R 356	356	0 U 206	348	348	A	296	256	212	B				
28					B	196	252	280	U R 316	344	352	U R 364	352	A	336	320	292	A	180	B				
29					A	212	256	292	320	344	352	340	340	U R 336	296	332	296	252	168	168				
30					A	192	256	296	320	340	348	352	348	348	304	A	288	252	A	A				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					2	15	30	30	30	29	30	28	23	26	27	25	27	27	17	1				
MED					196	188	242	282	320	340	352	358	356	350	344	320	292	248	180	168				
U Q						208	256	296	324	348	364	366	364	R 364	348	328	300	256	200					
L Q						180	220	276	308	332	344	344	344	340	324	314	284	228	168					

APR. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 14	J A 18	J A 21	E B 14	E B 14	30	G 20	34	36	38	36	G 33	G	39	40	37	33	J A 26	J A 33	J A 21	23	J A 27	E B 14
2	E B 14	18	J A 29	22	E B 14	E B 15	24	32	38	48	40	G 40	38	39	J A 50	35	34	24	J A 19	J A 15	J A 15	E B 14	23	E B 15
3	E B 14	19	22	25	20	E B 14	G	G	38	38	38	41	G 38	J A 52	G 33	G 24	G 19	G	19	J A 27	20	J A 95	J A 76	J A 25
4	J A 26	24	E B 14	21	E B 14	E B 14	29	38	32	36	G 32	J A 38	J A 43	J A 36	J A 34	G 22	G 22	G	G	19	26	36	25	18
5	E B 14	26	21	E B 14	E B 14	E B 14	G 20	G 22	G 24	34	G 34	41	G 28	G 23	G 21	G 17	G	G	G	E B 14	E B 14	J A 14	E B 14	E B 14
6	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	33	J A 45	G 22	J A 30	37	G 36	G 34	G 28	G 28	G 20	G	G	J A 22	J A 25	22	E B 14	E B 14	E B 14
7	E B 14	E B 14	E B 14	E B 14	E B 14	22	25	J A 27	J A 32	36	38	G 23	36	G 32	G 28	J A 31	32	G 19	E B 14	J A 24	22	22	E B 14	E B 14
8	E B 14	E B 14	E B 14	E B 14	E B 14	23	26	32	36	40	40	40	38	35	34	G 22	G	25	20	E B 13	22	E B 14	20	E B 14
9	20	E B 14	E B 14	E B 14	21	E B 14	26	31	33	37	39	39	38	39	G 25	G 23	J A 25	G 18	28	31	24	22	19	J A 28
10	23	18	20	20	E B 14	E B 14	30	G 20	G 30	J A 57	51	39	39	37	42	J A 33	C	25	J A 20	J A 27	31	J A 23	30	22
11	23	E B 14	E B 14	19	26	20	G	31	36	36	44	42	G 33	J A 59	G 33	35	34	J A 42	J A 29	28	J A 31	J A 28	J A 27	E B 14
12	21	23	31	35	32	J A 33	J A 50	41	38	43	J A 53	G	38	G 28	39	36	34	26	23	J A 25	J A 25	J A 21	J A 16	E B 14
13	E B 14	J A 21	30	21	23	20	24	33	39	39	G 26	G 28	34	37	G 30	37	J A 35	J A 29	26	20	E B 14	20	E B 14	20
14	20	19	22	20	J A 18	19	26	32	37	37	38	G 32	J A 37	J A 34	G 32	G 30	G 18	28	22	J A 18	20	E B 14	E B 14	E B 14
15	E B 14	E B 14	E B 14	E B 14	22	E B 14	G	30	36	39	G	G	37	G 34	G	G	G 24	J A 25	20	19	J A 28	25	E B 14	E B 14
16	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	34	37	43	J A 56	J A 49	G 39	38	39	35	33	31	27	22	E B 14	J A 19	22	22
17	E B 14	E B 14	J A 18	27	20	E B 14	32	33	37	38	J A 63	G 25	38	37	38	37	35	J A 41	J A 34	J A 20	22	18	E B 14	E B 14
18	22	24	20	23	E B 14	G	30	35	36	40	40	40	38	39	39	34	36	28	J A 27	J A 24	J A 26	24	21	E B 14
19	E B 14	E B 14	E B 14	E B 14	E B 13	20	28	32	G 33	39	41	39	45	39	39	G	G J 30	A 27	21	J A 17	E B 14	E B 14	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	E B 14	22	30	34	37	40	43	43	43	41	37	G	37	36	J A 32	J A 32	J A 30	J A 21	J A 21	E B 14
21	E B 14	E B 14	E B 14	E B 14	21	G	G	34	38	42	42	G 35	40	40	J A 59	G 36	G 36	G	J A 27	34	J A 37	J A 27	24	J A 26
22	48	J A 28	21	22	19	G 25	37	45	J A 62	44	40	45	G 40	40	40	G	G	35	25	J A 29	J A 35	J A 46	J A 60	J A 17
23	58	29	E B 14	E B 14	E B 14	J A 21	28	38	49	J A 61	J A 67	J A 76	J A 77	42	38	35	J A 31	J A 30	J A 30	J A 18	J A 18	J A 27	J A 23	J A 59
24	J A 25	30	J A 21	20	J A 21	J A 29	28	34	G	G	G	34	34	G 28	32	J A 44	J A 31	G	26	J A 20	20	30	E B 14	23
25	J A 20	39	J A 26	J A 29	J A 21	J A 33	28	33	G 30	G 30	G	G	G	38	36	33	J A 29	J A 25	26	J A 26	E B 14	E B J A 17	E B 14	19
26	21	22	18	E B 14	E B 13	G	35	35	38	G	41	43	39	G	G 26	G	G	28	28	J A 23	J A 25	J A 18	E B 14	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	G	28	J A 29	G	J A 28	39	40	G 38	G	G 25	G	J A 29	J A 27	26	22	E B 14	E B 14	E B 14	20
28	E B 14	E B 14	E B 14	E B 14	E B 14	G	G 18	G	37	37	G	38	G	35	G 33	G 19	G 19	J A 32	24	E B 14	24	E B 14	E B 14	E B 14
29	E B 14	E B 14	J A 17	28	J A 32	J A 22	30	32	35	39	41	46	38	45	J A 50	38	J A 31	J A 26	J A 20	J A 22	20	J A 41	E B 13	E B 13
30	E B 14	E B 14	E B 14	28	J A 28	G	J A 29	34	34	37	40	42	42	38	38	34	33	J A 31	J A 28	J A 42	J A 27	28	22	20
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30
MED	E B 14	E B 14	16	20	E B 14	22	28	32	36	38	40	G	38	37	35	35	33	26	26	J A 22	22	22	18	E B 14
U Q	21	23	21	22	21	G	30	34	38	40	42	42	G	39	39	G	G	31	J A 27	J A 27	J A 26	J A 27	J A 23	20
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 24	G 30	G	36	G 37	G 36	37	G	G 32	G 30	G 29	G	20	19	E B 18	E B 14	E B 14	E B 14

APR. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 20	G 19	32	36	36	34	G 31	G	38	38	35	31	24	22	16	16	E B 14	E B 14
2	E B 14	E B 14	25	E B 15	E B 14	E B 15	22	29	34	45	39	G 38	37	38	42	33	32	22	G 16	E B 14	E B 14	E B 14	E B 14	E B 15
3	E B 14			E B 14	E B 14	E B 14	G	G	37	36	36	G 31	G 36	50	G 31	G 23	G 18	G	17	16	17	E A 34	E A 36	E B 14
4	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	31	32	34	G 31	36	43	35	G 34	G 20	G 18	G	G	14	E B 14	16	E B 14	E B 14
5	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 19	G 20	G 19	G 32	G 33	39	G 25	G 22	G 20	G 16	G	G	G	E B 14	E B 14	E B 14	E B 14	E B 14
6	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 20	G 25	G 19	G 28	G 25	G 35	G 31	G 26	G 26	G 19	G	G	S	E B 15	E B 14	E B 14	E B 14	E B 14
7	E B 14	E B 14	E B 14	E B 14	E B 14	14	G 22	G 26	G 29	34	36	G 23	34	G 32	G 27	G 30	27	G 17	E B 14	19	E B 14	E B 14	E B 14	E B 14
8	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	30	33	37	38	38	36	34	32	G 21	G	G 22	18	E B 13	E B 14	E B 14	E B 14	E B 14
9	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	25	30	33	34	36	37	36	36	G 23	G 21	G 22	G 14	27	E B 14	E B 14	E B 14	E B 16	20
10	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	G 18	G 28	G 34	G 34	G 34	38	G 33	33	32	C	G 22	16	18	19	19	16	E B 14
11	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	29	34	34	39	40	G 32	E A 54	G 32	34	32	G 22	G 22	E B 14	30	16	E B 14	E B 14
12	E B 14	E B 14	20	26	E B 14	E B 14	E B 14	38	E A 37	40	41	G	G 36	G 27	36	34	32	23	E B 14	20	19	E B 14	E B 14	E B 14
13	E B 14	17	16	E B 14	E B 14	E B 14	G 24	30	36	35	G 26	G 26	G 22	35	G 27	34	30	28	G 22	18	E B 14	E B 14	E B 14	E B 14
14	14	E B 14	E B 14	E B 14	E B 14	E B 14	24	30	34	35	U Y 37	U Y 32	34	G 33	G 31	G 27	G 16	26	20	E B 14	E B 14	E B 14	E B 14	E B 14
15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	28	34	38	G	G	37	G 33	G	G	G 21	G 21	14	E B 14	E B 14	E B 14	E B 14	E B 14
16	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	32	35	41	E A 52	47	G 36	35	36	33	31	29	26	E B 14	E B 14	E B 14	E B 14	E B 14
17	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	27	31	35	36	E A 43	G 24	36	36	38	37	34	39	20	15	E B 14	E B 14	E B 14	E B 14
18	E B 14	E B 14	E B 14	E B 14	E B 14	G	28	G 28	34	37	37	39	36	36	36	32	31	G 22	G 18	21	E B 14	E B 14	E B 14	E B 14
19	E B 14	E B 14	E B 14	E B 14	E B 13	19	25	31	G 31	37	41	37	42	36	37	G	G 30	G 25	19	E B 14	E B 14	E B 14	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	E B 14	19	27	32	35	37	42	42	40	38	36	G	36	34	21	26	30	20	E B 14	E B 14
21	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	30	36	40	40	U Y 35	39	38	42	G 35	G 30	G	21	22	35	22	E B 14	17
22	34	16	E B 14	E B 14	E B 14	G 23	33	39	58	42	U Y 39	42	U Y 39	U Y 39	37	G	G	30	21	27	35	27	19	E B 14
23	E B 14	E B 14	E B 14	E B 14	E B 14	20	27	36	E A 47	E A 56	U A 63	U A 73	A A 77	E A 40	36	33	30	E A 28	27	E B 14	E B 14	E B 15	20	19
24	E B 14	20	16	E B 14	E B 14	G 20	G 26	32	G	G	G	U Y 34	U Y 33	G 26	G 30	42	G 30	G	G 21	16	E B 14	E B 14	E B 14	E B 14
25	E B 14	21	21	16	E B 14	G 20	G 24	31	G 29	G 29	G	G	G	36	35	31	G 29	G 24	G 18	E B 12	E B 14	E B 14	E B 14	E B 14
26	E B 14	E B 14	E B 14	E B 14	E B 13	G	G 22	32	G 30	G	39	42	37	G	G 26	G	G	G 22	G 16	14	E B 14	E B 14	E B 14	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	G	27	G 26	G	26	37	37	G 36	G	G 23	G	G 24	G 23	G 18	E B 14	E B 14	E B 14	E B 14	E B 14
28	E B 14	E B 14	E B 14	E B 14	E B 14	G	G 16	G	35	36	G	37	G	32	G 31	G 18	G 18	27	21	E B 14	E B 14	E B 14	E B 14	E B 14
29	E B 14	E B 14	E B 14	E B 14	22	G 17	26	G 29	34	38	40	44	38	41	E A 45	34	30	G 24	G 17	E B 14	E B 14	17	E B 13	E B 13
30	E B 14	E B 14	E B 14	E B 14	E B 14	G	G 24	G 29	G 32	35	39	U A 41	38	U Y 36	36	31	31	26	26	27	E B 14	E B 14	E B 14	E B 14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	29	30	30	30	30	30
MED	E B 14	E B 14	E B 14	E B 14	E B 14	14	24	30	34	36	36	38	36	34	G	G 33	G	G	20	14	E B 14	E B 14	E B 14	E B 14
U Q	E B 14	14	14	E B 14	E B 14	G 23	G	31	35	38	40	40	38	38	36	G	31	27	G	19	16	16	E 14	E B 14
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 22	G 28	G 32	G 34	G	G 34	G 34	G 33	G 30	G 27	G 26	G 22	17	E B 14	E B 14	E B 14	E B 14	E B 14

APR. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	277	279	271	285	273	278	291	R	348	R	R	R	311	315	R 313	314	332	328	318	306	309	298	274	278
2	275	281	282	269	268	282	Y	333	Y	305	290	301	303	296	R 316	317	317	320	308	290	R	290	279	270
3	R	272	282	292	287	270	304	301	284	276	288	313	R 332	321	R 312	328	320	328	327	312	R 306	294	257	259
4	279	263	289	294	285	299	330	321	R 314	Y	R 291	323	R 314	R	R 318	R 321	311	306	321	R	290	292	289	266
5	258	F 279	F 245	F 266	285	290	Y	R 316	R	315	315	R 329	309	318	R 318	U R 321	R 324	319	313	307	324	292	278	287
6	282	284	282	270	261	265	317	312	314	Y	339	326	R	R 322	316	R	328	321	J R 321	304	J R 298	296	301	297
7	288	295	V 310	281	V 289	300	330	R	Y	Y	Y	R	R 326	317	325	J R 301	313	318	323	R 319	288	280	280	286
8	293	300	311	315	281	297	R 342	339	R	R 333	323	R 316	R U 319	R 315	R	319	R 320	R	328	317	307	296	291	287
9	271	286	305	290	290	303	345	R 347	J R 379	R	R	J R 367	R	310	R 314	R 312	316	322	333	306	295	291	287	287
10	290	278	297	325	275	261	285	281	292	290	306	R	289	R	296	291	C	321	314	287	272	281	263	268
11	276	276	264	258	260	280	298	300	317	302	298	Y	Y	R	R	R	R	329	R 329	305	276	280	275	266
12	274	276	265	289	301	282	219	319	286	323	R 323	Y	Y	Y	329	314	321	326	317	306	302	307	295	286
13	282	282	280	281	293	324	323	321	Y	332	328	298	J R 332	R	R	320	R	330	321	313	316	305	288	283
14	288	281	280	287	290	307	328	Y	320	R	R 327	Y	Y	R 324	R	307	315	330	316	306	J R 302	316	288	278
15	275	264	265	270	268	267	321	311	295	295	307	311	309	Y	324	315	310	Y	309	R	290	293	278	254
16	250	292	343	315	245	288	282	Y	J R 370	J R 404	D R 332	R	R	Y	R	R	R	J R 280	R	300	293	R 312	308	267
17	270	284	289	290	272	280	310	316	Y	300	303	Y	Y	R	R 305	301	J R 294	299	316	303	309	308	266	F 262
18	F 238	F 274	F 306	F 280	F 266	288	309	317	305	299	330	320	R 323	Y	J R 351	R 320	R	305	R 285	290	298	313	288	288
19	F 273	F 253	F 260	290	290	313	330	R 321	320	R	Y	R 301	317	R	R 311	R	313	R	R	298	Y	Y	293	303
20	282	276	276	274	279	307	324	U R 329	303	R	336	Y	Y	Y	R 315	R 312	301	317	J R 311	R	307	R 300	297	283
21	275	277	286	298	288	291	Y	323	319	Y	300	R	Y	R 312	R 290	294	299	R 312	307	298	Y	292	278	283
22	272	284	279	290	272	271	293	313	331	Y	R	Y	Y	Y	R	Y	R	300	R	305	297	288	297	R 286
23	281	258	266	265	278	282	Y	R	R	Y	Y	301	A	Y	Y	R	R	R 314	309	281	286	308	295	288
24	280	291	283	272	277	314	Y	R	R	R 317	U R 310	U S 305	R	R 302	297	297	298	306	314	303	305	R 315	297	286
25	297	280	283	305	285	317	323	323	311	320	320	R	R	298	316	316	J R 288	R	R	303	305	303	321	309
26	294	291	293	287	288	324	363	321	322	318	U R 302	320	Y	J R 273	R	R	R	314	302	R	J R 302	R	315	292
27	281	276	285	X R 291	292	328	R 337	R 318	329	323	R	Y	Y	296	Y	300	R	J R 300	322	326	306	316	295	296
28	274	278	287	290	284	309	310	297	297	308	Y	295	295	Y	Y	R 311	R 317	309	309	326	295	319	264	264
29	271	268	269	289	280	310	315	332	320	Y	329	312	Y	R	R	314	J R 314	321	R 328	312	288	286	277	260
30	277	283	265	286	296	320	300	304	324	R	R	Y	297	Y	R 316	R	R	Y	321	R	Y	306	286	279
31																								
	00	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	25	24	22	17	21	16	14	14	19	22	20	25	26	25	26	28	30	30
MED	277	279	282	288	282	294	317	318	318	315	315	312	312	314	R 316	314	314	318	316	305	300	297	288	283
U Q	282	284	289	291	289	310	330	323	324	323	328	322	R 323	318	318	319	320	324	322	312	306	308	295	287
L Q	272	276	269	274	272	280	299	312	303	300	301	301	303	298	R 311	301	306	306	309	299	290	292	278	267

APR. 2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	432	L	L								
2									L			L	L	L	L	L	L							
3								L	L	362	335	L	L	A	L	376	405	357						
4								L	L	372	L 367	L 359	L	391	L	L 400	L							
5								L	L	L	L 369	373	L	L	L	370	L							
6									L	L	L	L	L	L 387	L	L								
7								L	L	L	L 366	L	L 378	L 368	L 356	374	L							
8									L	L	L	355	361	L	380	382	L							
9								L	L	L	367	L	367	368	L	L	L							
10						321	L	323	337	A	326	359	L	L	347	L	C							
11							326	L	L	361	L	U L 362	L	L	L	L	353							
12						A	A	L		L	A	L	L	L	L	L	L							
13								L	365	L	L	L	L	349	365	L	L							
14								L	L	U L 359	361	L	L	356	348	L	422							
15						380	L	L	L	348	L	U Y 464	L	L	L	L	L	L						
16								L	L	385	A	L	L	347	L	L	L							
17						L		L	342	L	A	L	L	L	L	L		A						
18							L	L	L	L	361	L	L	L	L		L							
19								L	L	L	L	L	L	L	360	L								
20								L	L	L	L	L	L	L	L	L	L							
21						L			L	L	L	L	L	L	L	L	L	L						
22									A	355	359	L	L	L	351	378								
23							L	L	L	A	A	A	A	354	L	L	L							
24							L	L	L	L	L	368	L	365	352	L	L							
25									L	L	L	L	349	L	L	L								
26								L	L	L	L	L	L	L	L	L	L	L						
27								L	L	L	L	L	L	L	353	373		L						
28							L	L	355	373	360	360	360	341	348	346	L	L						
29						L	L	L	U L 366	377	374	U L 359	L	L	L	L	L	L						
30							L	L	348	L 364	L	L	367	358	U L 351	L	L	L						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	1	1	6	10	11	9	6	12	11	8	3	1						
MED						350	326	323	352	363	361	360	364	362	352	375	405	357						
U Q									365	373	L 367	370	367	378	360	380	422							
L Q									342	359	359	359	360	352	348	372	353							

APR. 2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									246	256	246	276	260	260	266	254								
2									240			274	288	278	272	266	250							
3								274	384	348	356	308	284	284	284	276	264	250						
4								256	286	276	296	280	292	262	280	268	270							
5								266	256	270	292	274	288	294	272	268	250							
6									268	268	274	274	268	276	242	248								
7								260	260	262	262	256	262	268	268	256	258							
8									244	254	270	280	272	272	276	264	260							
9								238	238	250	254	270	272	280	286	268	250							
10						356	340	348	356		308	290	336	312	314	304	C							
11							340	324	324	306	282	300	272	304	272	272	272							
12						346	A	300		292	302	278	298	282	254	260	260							
13								294	268	258	252	276	282	294	292	270	262							
14								248	256	260	266	260	272	278	278	278	268							
15						278	238	290	276	330	288	282	282	274	288	266	250	258						
16								270	264	272	244	316	262	310	274	274	266							
17						342		286	308	302	292	314	314	268	314	290		268						
18							298	312	336	288	280	274	290	292	274		258							
19								256	256	280	268	288	290	300	278	274								
20								254	254	260	282	286	302	304	290	290	264							
21						286			286	304	272	314	302	300	312	306	280	256						
22									284	330	296	296	322	322	308	278								
23							282	270	290	290	E A 326	A 330	A	308	312	316	292							
24							248	260	272	272	280	304	274	288	290	290	270							
25									306	274	274	284	302	302	284	274								
26								266	260	278	294	274	274	292	292	286	284	260						
27								258	258	266	276	276	276	308	280	278		264						
28							268	340	326	272	292	286	304	316	294	294	284	268						
29						280	270	246	280	300	280	280	330	298	298	290	272	256						
30							238	266	278	278	272	268	304	316	288	290	280	266						
31																								
	00	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	9	23	29	28	29	30	29	30	30	29	22	9						
MED						314	270	266	272	275	280	280	288	293	284	274	265	260						
U Q						346	319	294	298	296	293	296	302	304	292	290	272	267						
L Q						280	243	256	256	264	269	274	272	278	274	267	258	256						

APR. 2015 h'F2 (KM)

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IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	288	278	278	256	276	274	228	228	220	206	216	208	200	188	238	222	242	240	232	246	246	242	266	284
2	266	268	278	282	280	266	226	226	212	252	262	196	206	218	236	220	214	246	228	264	228	228	242	270
3	288	282	278	264	270	296	236	226	238	212	194	214	198	A	198	216	216	244	238	238	240	292	336	310
4	282	324	266	260	256	252	238	208	208	208	206	E A 228	234	206	206	206	224	242	240	238	216	258	242	290
5	Q 290	Q 282	Q 298	Q 270	256	262	234	212	212	Y 212	212	206	190	232	198	212	212	248	244	236	236	250	264	264
6	264	264	274	262	Q 268	294	244	238	212	212	200	206	206	206	198	208	230	242	244	248	246	258	258	262
7	262	250	240	248	282	264	228	228	220	220	200	200	200	200	200	214	214	240	236	246	252	268	268	268
8	268	256	236	244	246	270	224	232	216	A 216	216	212	200	196	202	202	216	242	230	228	260	254	254	280
9	298	272	250	250	258	264	232	214	214	226	202	208	196	210	210	214	214	238	226	226	250	250	280	296
10	282	292	266	236	284	290	254	232	224	A	A	224	E A 224	212	212	224	C	230	258	272	254	238	278	308
11	276	274	318	322	338	324	240	246	224	210	210	234	E Y 222	E A 272	200	212	220	250	238	238	278	282	290	300
12	300	292	306	308	266	A	A	A 274	240	A	A	216	216	192	220	206	226	242	248	250	250	236	244	266
13	276	298	288	270	266	234	238	228	228	204	204	192	180	216	216	226	226	242	242	250	250	240	250	262
14	284	288	296	276	270	266	240	224	206	210	Y	E Y 208	192	204	204	210	202	252	252	252	254	230	238	274
15	292	314	302	310	298	244	226	208	216	212	212	Y 200	196	E Y 224	226	216	216	206	262	262	268	266	280	314
16	334	272	230	216	294	264	236	236	230	A 220	A	244	E A 214	200	228	222	218	252	250	236	250	242	280	280
17	270	270	260	260	294	244	244	232	228	212	A	282	206	224	216	242	258	A	236	244	244	222	238	Q 284
18	Q 324	Q 302	Q 248	Q 248	Q 274	268	A 236	222	220	212	204	194	202	202	202	238	210	248	252	262	272	238	246	250
19	Q 276	Q 290	Q 296	248	248	256	238	206	206	198	198	198	204	204	214	214	240	246	248	248	260	244	244	244
20	256	284	284	278	258	258	244	220	204	204	E A 218	212	194	220	216	204	230	264	252	252	262	236	258	270
21	270	276	290	272	272	244	244	254	218	214	214	216	216	216	216	216	226	232	268	268	268	268	286	274
22	306	272	308	286	300	302	256	294	A	212	Y	212	216	218	196	210	228	254	262	266	268	276	272	272
23	E A 322	282	Q 282	288	292	250	240	224	E A 266	A	A	A	A	222	224	206	218	244	244	264	284	272	274	278
24	278	276	276	270	272	258	228	210	210	210	208	200	H 200	226	206	E A 240	228	232	248	248	246	246	258	272
25	270	282	282	256	244	242	234	232	210	206	200	200	200	200	200	210	244	232	260	246	246	246	246	246
26	270	276	272	266	274	238	230	218	218	214	214	214	206	194	208	214	214	230	250	248	244	244	244	244
27	274	290	290	272	248	234	236	214	214	214	210	210	198	198	198	206	238	236	262	246	244	252	254	278
28	290	298	280	266	278	266	214	226	226	224	206	206	206	192	198	214	228	228	250	244	256	250	Q 252	Q 284
29	284	302	288	276	272	230	230	224	212	204	212	214	194	220	A	220	220	218	240	248	254	266	266	296
30	288	276	306	280	252	250	218	212	H 194	222	E A 224	E A 242	218	260	230	216	220	230	254	254	254	230	250	260
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	29	30	29	27	23	29	29	29	29	30	29	29	30	30	30	30	30	30
MED	281	282	281	268	272	262	236	226	216	212	208	209	201	208	208	214	220	242	248	248	251	248	258	274
U Q	290	292	296	278	282	269	240	232	225	216	214	216	215	221	218	220	229	247	252	254	260	266	274	284
L Q	270	272	266	256	258	244	228	214	211	208	202	200	197	200	200	210	215	232	238	244	246	238	246	264

APR. 2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	112	110	108	108	108	108	110	114	114	126	116	116	B					
2						B	116	118	118	108	108	108	108	108	108	114	126	126	136	B				
3						B	114	114	116	110	110	110	112	112	112	110	110	122	B	A				
4						B	116	116	108	108	114	114	A	A	114	112	110	114	130	B				
5						B	144	130	118	114	114	114	108	108	108	108	122	112	126	B				
6					B	B	126	120	112	112	112	110	112	112	112	106	114	114	A	B				
7					B	B	130	120	120	114	114	114	108	118	118	118	108	134	B	B				
8					B	B	120	114	114	116	110	110	110	A	A	112	112	122	B	B				
9					B	B	120	120	120	108	108	108	108	108	112	112	118	118	118	A				
10					B	B	118	118	120	120	114	108	108	108	112	112	C	112	A	A				
11					B	A	126	124	122	118	110	108	A	106	112	112	118	118	A	B				
12					A	A	120	118	118	118	108	108	112	112	112	112	112	112	B	A				
13					B	B	118	114	114	114	114	106	106	R 128	112	108	A	A	122	A				
14					100	B	142	124	116	116	112	108	A	108	114	114	110	110	A	A				
15					B	B	116	116	114	114	114	110	110	116	116	116	116	116	B	A				
16					B	148	114	114	116	116	114	112	116	A	116	116	116	122	B	B				
17					B	B	128	126	112	112	112	112	110	110	118	118	118	124	B	A				
18					B	124	116	116	116	110	112	112	A	112	112	A	112	116	114	A				
19					B	138	128	124	120	118	114	108	108	108	108	116	116	114	114	B				
20					B	144	122	114	114	114	114	114	114	110	A	108	114	122	122	A				
21					B	134	114	114	114	114	114	108	108	104	A	110	112	124	132	A				
22					B	122	118	118	116	116	116	116	116	116	116	116	116	124	124	124				
23					B	130	122	122	108	114	114	114	114	110	110	110	A	A	A	120				
24					B	120	116	114	110	110	110	A	A	110	104	104	114	116	116	A				
25					148	142	130	118	118	116	116	110	110	110	110	A	120	116	132	A				
26					B	132	108	108	120	120	108	108	108	108	108	116	122	112	112	A				
27					B	120	120	120	114	A	114	114	114	108	108	A	108	114	116	B				
28					B	122	122	116	116	116	106	106	106	A	106	110	110	A 110	124	B				
29					A	A	124	116	116	108	108	108	108	108	106	120	120	120	126	120				
30					A	116	122	108	110	110	110	110	110	110	110	A	110	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					2	13	30	30	30	29	30	29	25	26	27	26	27	28	16	3				
MED					124	130	120	117	116	114	112	110	110	110	112	112	114	116	123	120				
U Q						140	126	120	118	116	114	113	112	112	114	116	118	122	128	124				
L Q						121	116	114	114	110	110	108	108	108	108	110	110	113	116	120				

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	108	104	B	B	140	104	140	118	114	114	100	G	152	138	130	120	120	112	112	112	112	B
2	B	128	110	110	B	B	144	142	114	114	114	110	114	110	110	138	110	124	124	116	116	B	116	B
3	B			102	108	B	G	G	108	108	108	108	108	102	102	102	102	G	110	108	110	110	112	112
4	116	106	B	100	B	B	122	116	202	110	104	104	104	104	100	100	88	G	G	96	96	104	106	100
5	B	100	100	B	B	B	114	110	108	108	104	182	98	98	98	96	G	G	G	B	B	96	B	B
6	B	B	B	B	B	B	112	118	100	106	104	102	104	104	104	100	G	G	96	96	96	B	B	B
7	B	B	B	B	B	124	162	112	112	106	102	102	104	104	104	106	108	108	B	104	102	98	B	B
8	B	B	B	B	B	186	166	144	140	130	130	120	120	110	110	106	G	118	126	B	118	B	118	B
9	112	B	B	B	112	B	152	146	152	202	118	110	106	188	102	102	108	108	122	118	118	118	118	112
10	106	110	100	102	B	B	G	104	112	112	112	108	108	112	112	108	C	140	120	106	98	104	104	104
11	104	B	B	104	112	102	G	154	144	146	126	120	108	118	100	162	150	124	124	118	118	110	110	B
12	128	128	120	120	110	110	110	116	116	110	108	G	116	102	194	138	172	134	124	118	116	110	110	B
13	B	98	98	92	92	92	162	124	124	114	100	100	106	96	96	96	96	96	94	114	B	114	B	106
14	102	102	102	102	106	96	142	136	126	118	112	102	102	100	100	100	100	146	120	92	92	B	B	B
15	B	B	B	B	106	B	G	142	134	120	G	G	120	108	G	G	110	110	126	126	118	118	B	B
16	B	B	B	B	B	G	G	130	122	118	118	118	120	112	112	132	172	132	126	124	B	114	114	136
17	B	B	106	106	106	B	160	138	126	126	110	98	100	112	150	144	136	122	118	126	118	118	B	B
18	112	112	136	136	B	G	132	118	118	122	122	118	116	106	116	108	108	108	94	118	132	118	118	B
19	B	B	B	B	B	180	172	160	110	126	118	102	102	102	106	G	106	106	156	118	B	B	B	B
20	B	B	B	B	B	140	138	130	130	122	122	112	112	112	120	G	142	128	126	114	114	114	104	B
21	B	B	B	B	104	G	G	110	130	124	116	106	106	102	102	128	116	G	136	130	116	116	108	108
22	108	108	108	116	110	112	118	118	112	112	112	112	112	112	112	G	G	134	134	120	118	118	110	110
23	110	106	B	B	B	96	164	128	122	118	114	110	104	110	110	108	108	104	104	120	122	110	110	116
24	108	108	108	106	98	98	132	120	G	G	G	104	104	100	106	98	98	G	98	98	92	102	B	102
25	102	102	102	102	100	96	102	156	104	104	G	G	G	104	104	104	104	98	94	94	B	110	B	94
26	94	102	102	B	B	G	92	148	130	G	120	120	104	G	96	G	G	94	94	94	94	114	B	B
27	B	B	B	B	B	G	170	110	G	110	110	108	102	G	102	G	112	116	92	92	B	B	B	108
28	B	B	B	B	B	G	108	G	126	126	G	118	G	102	96	96	96	96	108	B	114	B	B	B
29	B	B	98	98	98	98	152	116	134	120	120	110	110	112	106	106	116	116	100	98	94	110	B	B
30	B	B	B	100	100	G	124	112	104	126	116	116	110	110	110	110	148	96	114	114	100	100	92	98
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	13	14	16	14	13	24	28	28	28	26	27	28	27	29	24	24	24	27	27	24	23	16	13
MED	108	106	104	103	106	102	139	122	123	118	114	110	106	106	106	106	109	116	120	114	114	110	110	108
U Q	112	111	108	108	110	132	161	142	132	125	118	118	112	112	112	130	133	126	126	118	118	116	115	112
L Q	103	102	100	101	100	96	116	114	112	110	108	104	104	102	101	100	103	105	98	98	97	104	107	101

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1			FF 11	FF 11			HL 11	CL 11	HL 11	CL 11	CL 11	CL 11	CL 12		HL 11	CL 11	CL 21	CL 61	L 4	F 5	F 4	F 2	FQ 21	
2		F 1	F 5	F 1			HL 11	H 2	C 2	C 2	C 1	C 2	C 1	C 1	C 2	H 2	C 2	C 1	L 1	L 1	F 1		F 2	
3				F 1	F 1				F 2	C 2	C 2	C 1	C 1	L 3	L 2	L 2	L 1		L 2	L 4	F 3	F 3	F 4	F 4
4	FQ 21	F 1		F 1			C 1	CL 21	C 2	C 1	L 1	L 2	L 2	L 2	L 2	L 2	L 2			L 1	F 1	F 3	F 1	F 1
5		F 1	F 1				L 2	L 2	L 2	L 1	L 1	H 1	L 2	L 1	L 1	L 1						F 1		
6							CL 21	CL 21	CL 21	CL 11	CL 11	L 1	L 1	L 1	L 1	L 1			L 1	L 1	F 1			
7						L 1	HL 11	L 2	L 1	CL 11	C 2	L 1	L 1	L 1	L 1	L 2	C 2	L 2		L 1	F 2	F 2		
8						H 1	HL 21	HL 21	HL 11	H 1	H 1	H 1	H 1	L 1	L 1	L 1		CL 21	C 2		F 1		F 1	
9	F 2				L 1		H 2	H 2	H 2	H 2	H 2	L 1	L 1	H 2	L 1	L 1	L 1	L 2	C 6	L 3	F 2	F 1	FF 11	F 4
10	F 2	F 1	F 1	F 1			L 1	L 2	CL 21	C 1	C 1	C 2	C 1	C 1	L 1	C 2		H 2	CL 21	L 4	F 5	FF 32	F 4	F 2
11	F 2			F 1	L 1	L 1		H 2	H 2	H 1	H 1	C 1	L 1	L 1	L 1	H 1	H 1	CL 12	C 3	L 5	F 4	F 2	F 2	
12	F 1	F 1	F 3	F 4	L 3	L 3	C 2	C 3	C 2	C 2	C 2		C 1	L 1	H 1	H 1	H 1	H 1	C 3	L 4	F 6	F 1	F 1	
13		F 3	F 3	F 2	L 1	L 1	H 2	C 2	C 2	C 1	L 1	L 1	L 2	L 2	L 2	LL 21	L 2	L 2	L 2	LL 12		F 1		F 1
14	FF 11	F 2	F 2	F 2	LQ 11	L 1	H 1	H 2	HL 21	C 2	C 1	L 1	L 1	L 2	L 2	L 2	L 2	HL 22	L 2	L 1	L 1			
15					L 1			HL 11	H 1	C 1			C 1	L 1			L 1	L 1	L 1	L 1	L 2	L 2		
16								HL 21	C 1	C 1	C 2	C 2	C 1	C 1	C 1	C 1	C 1	C 2	C 5	L 1		F 3	F 1	F 1
17			FF 11	F 1	L 1		HL 11	H 1	H 1	C 1	C 2	C 1	L 1	C 1	H 1	H 2	H 2	C 2	L 8	L 3	F 1	F 1		
18	F 1	F 2	F 1	F 1			HL 21	HL 21	C 1	C 1	C 1	C 1	C 1	C 1	L 1	L 1	C 1	L 2	L 1	L 4	L 1	F 1	F 1	
19						H 1	H 1	HL 21	L 1	C 2	C 1	L 1	L 1	L 1	L 1		L 1	LC 12	HL 11	L 1				
20						HL 21	H 2	C 2	C 1	C 1	C 1	C 1	C 1	C 1	C 1		H 2	C 3	C 5	L 5	F 6	F 4	F 1	
21					F 1			L 1	C 1	C 1	C 1	L 1	C 1	L 1	L 1	C 1	L 2		C 1	L 1	F 6	F 6	F 2	F 3
22	F 6	F 3	F 1	F 1	L 1	L 2	C 2	C 1	C 2	C 1	C 1	C 1	C 1	C 1	C 1			H 2	H 2	L 3	F 6	F 4	F 3	F 2
23	F 5	F 5				L 1	H 1	C 2	C 2	C 2	C 2	C 3	C 2	C 1	C 1	C 2	L 2	L 3	L 3	C 1	F 1	F 3	F 3	F 3
24	F 3	F 4	F 2	F 1	L 2	L 2	C 2	C 2				L 1	L 1	CL 11	C 1	L 2	L 3		L 1	L 2	F 1	F 1		F 2
25	F 3	F 5	F 3	F 3	L 1	L 2	CL 21	HL 11	C 1	C 1				C 1	C 1	L 1	L 2	L 2	L 1	L 1		F 1		F 1
26	F 1	F 2	F 1				CL 21	HL 21	CL 11		C 1	C 1	C 1		CL 11			CL 11	CL 11	L 1	F 1	F 1		
27							HL 11	CL 11		L 1	C 1	C 1	C 1		C 1		C 1	C 2	CL 21	L 1				F 1
28							L 1		C 1	C 1		C 1		L 2	L 2	L 1	L 2	L 3	C 2		F 1			
29			F 3	F 5	L 3	L 3	H 2	C 1	C 1	C 1	C 1	C 2	C 1	C 1	C 2	L 2	L 2	L 2	LC 11	CL 11	L 1	F 3		
30				FQ 21	L 2		C 2	C 2	L 1	C 1	C 1	C 1	C 1	C 1	C 1	L 1	C 1	L 2	LL 22	LQ 31	L 2	L 1	L 2	F 1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

APR. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 77	X 76	X 75	X 67	X 65	X 66														X 93	X 73	X 75	X 77	X 77
2	X 76	X 76	X 72	X 66	X 65	X 66														X 91	X 84	X 74	X 74	X 74
3	X 69	X 69	X 68	X 73	X 60	X 55														X 84	X 66	X 66	X 65	X 64
4	X 66	X 64	X 64	X 62	X 54	X 53														X 95	X 85	X 68	X 67	X 65
5	X 64	X 65	X 61	X 63	X 61	X 64														X 92	X 87	X 80	X 76	X 77
6	X 73	X 70	X 66	X 66	X 64	X 65														X 95	X 89	X 86	X 85	X 85
7	X 78	X 75	X 71	X 65	X 61	X 63														X 87	X 75	X 78	X 78	X 79
8	X 77	X 76	X 76	X 62	X 57	X 55														X 84	X 75	X 76	X 80	X 78
9	X 76	X 75	X 78	X 67	X 60	X 60														X 90	X 74	X 78	X 78	X 73
10	X 72	X 73	X 74	X 66	X 58	X 56														X 85	X 84	X 78	X 65	X 67
11	X 68	X 68	X 60	X 59	X 60	X 61														X 74	X 71	X 70	X 71	X 71
12	X 68	X 69	X 63	X 57	X 52	X 51														X 89	X 80	X 73	X 68	X 66
13	X 66	X 64	X 62	X 61	X 57	X 59														X 92	X 81	X 74	X 72	X 73
14	X 72	X 71	X 68	X 65	X 64	X 68														X 107	X 92	X 80	X 81	X 80
15	X 81	X 74	X 70	X 68	X 67	X 71														X 108	X 86	X 81	X 82	X 80
16	X 79	X 78	X 92	X 60	X 38	X 44														X 104	X 81	X 82	X 83	X 83
17	X 78	X 77	X 78	X 68	X 66	X 66														X 120	X 92	X 74	X 73	X 72
18	X 72	X 71	X 73	X 63	X 56															X 91	X 82	X 81	X 77	82
19	X 77	X 73	X 69	X 66	X 60															X 109	X 95	X 92	X 88	X 85
20	X 80	X 76	X 74	X 70	X 70	X 78														X 111	X 99	X 92	X 84	X 83
21	X 84	X 81	X 77	X 77	X 71	X 72														X 119	X 101	X 84	X 84	X 88
22	X 86	X 82	X 77	X 75	X 77	X 82														X 104	X 97	X 95	X 90	X 78
23	X 75	X 72	X 69	X 66	X 71	X 75														X 90	X 88	X 88	X 86	X 84
24	X 83	X 78	X 77	X 72	X 69															X 109	X 99	X 96	X 93	X 85
25	X 88	X 92	X 89	X 80	X 75															X 116	X 106	X 97	X 88	X 84
26	X 82	X 80	X 80	X 77	X 72															X 116	X 112	X 93	X 83	X 82
27	X 82	X 79	X 77	X 75	X 74															X 108	X 96	X 86	X 87	X 84
28	X 84	X 83	X 82	X 82	X 64															X 102	X 86	X 79	X 78	X 76
29	X 76	76	X 74	X 72	X 67															X 100	X 78	X 73	X 74	X 74
30	X 73	X 74	X 66	X 66	X 67															X 110	X 90	X 76	X 71	X 74
31																								
	00	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	21														30	30	30	30	30
MED	X 76	X 75	X 74	X 66	X 64	X 64														X 98	X 86	X 80	X 78	X 78
U Q	X 81	X 78	X 77	X 72	X 69	X 70														X 109	X 95	X 86	X 84	X 83
L Q	X 72	X 71	X 68	X 63	X 60	X 56														X 90	X 80	X 74	X 73	X 73

IONOSPHERIC DATA STATION Kokubunji

APR. 2015 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	71	70	68	61	59	60	77	96	103	116	113	119	116	114	114	104	101	102	109	87	67	69	71	71
2	70	70	66	60	59	60	79	95	99	106	117	126	135	139	129	115	112	108	107	85	78	68	68	68
3	63	63	62	67	54	50	66	83	88	115	127	126	122	119	106V	107	106	98	98	78	60	60	58	58
4	60	58	58	56	48	47	68	79	87	94	103	107	114	114	106	100	96	102	102	89	79	62	60	59
5	58	59	55	57	54	58	76	84	86	93	100	99	100	103	104	100	95	92	90	86	81	74	70	71
6	67	64	60	60	58	59	79	100	103	104	102	99	104	99	101	99	101	98	94	89	83	80	79	79
7	72	69	65	59	55	57	80	92	100	112	106	98	101	108	108	102	100	101	100	81	69	72	72	73
8	71	70	70	56	51	49	70	80	95	92	96	103	112	114	116	112	108	102	94	78	69	70	74	72
9	70	69	72	61	54	54	75	74	88	93	90	100	112	117	122	120	109	101	101	83	68	72	72	67
10	66	67	68	60	52	50	73	87	95	96	102	104	108	125	120	115	111	106	84	79	78	72	59	61
11	62	62	54	53	54	55	75	81	80	83	105	98	110	106	102	106	97	96	79	68	65	64	65	65
12	62	63	57	51	46	45	62	75	86	90	104	111	105	99	87	89	80	82	85	83	74	67	62	60
13	60	58	56	55	51	53	76	87	97	90	97	106	108	112	111	106	103	92	88	86	74	68	66	67
14	66	65	62	59	58	62	87	86	91	96	97	103	108	114	108	100	92	95	104	101	86	74	75	74
15	75	68	64	62	61	65	82	74	77	77	97	111	111	113	112	108	96	92	101	102	80	75	76	74
16	73	72	86	54	32	38	71	98	102	86	90	104	114	113	121	123	107	99	109	98	75	76	77	77
17	72	71	72	62	60	60	85	97	103	104	110	117	118	124	118	113	116	106	116	114	86	68	67	66
18	66	65	67	57	50	51	68	78	98	100	104	104	110	112	110	101	101	106	104	85	76	75	70	F
19	70	67	63	60	54	60	78	81	92	94	101	115	118	112	116	115	105	101	108	103	89	86	82	79
20	74	70	68	64	64	72	89	92	106	109	116	121	125	130	131	128	121	121	117	105	93	86	78	77
21	78	75	71	71	65	66	85	92	96	96	107	111	115	124	125	122	118	114	113	113	95	78	78	82
22	80	76	71	69	71	76	98	97	91	94	105	111	112	110	106	108	110	104	101	98	91	89	84	72
23	69	65	63	60	64	69	84	83	84	94	98	104	113	120	120	118	116	108	98	84	82	82	80	78
24	76	72	71	66	63	70	92	86	91	107	107	111	114	120	124	124	124	121	120	103	93	90	87	79
25	82	86	83	74	69	80	92	93	88	96	99	105	112	114	112	109	104	101	104	110	100	91	82	78
26	76	74	74	71	66	74	94	97	87	87	99	98	105	113	114	121	119	114	115	110	106	87	77	76
27	76	73	71	69	68	74	87	81	78	90	100	100	103	110	115	115	114	112	111	102	89	80	80	78
28	78	77	76	76	58	65	77	85	81	83	85	90	102	112	111	106	97	93	93	96	80	73	72	70
29	70	F	68	66	61	68	81	77	71	79	81	95	98	98	110	122	120	112	109	93	72	67	68	68
30	67	68	60	60	61	64	71	80	84	80	84	95	96	94	104	114	112	106	105	104	84	70	65	68
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29
MED	70	69	68	60	58	60	78	86	91	94	102	104	112	113	112	110	106	102	103	91	80	74	72	72
U Q	75	72	71	66	63	68	85	93	98	104	106	111	114	119	120	118	114	108	109	103	89	80	78	78
L Q	66	64	62	57	54	53	73	80	86	90	97	99	105	110	106	104	100	98	94	84	74	68	67	67

APR. 2015 foF2 (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	U L 564	L	L	L	A	A						
2										L	A	L	L	L	L	L	L							
3									A	U L 540	U L 536	L	L	L	L	L								
4									L	L	L	U L 536	L	L	L	L	L	L						
5									L	L	L	L	L	L	L	L								
6									L	L	U L 512	L	L	L	L	L								
7										L	L	L	L	L	L	L	L							
8										A	L	U L 592	A	L	L	L	L							
9									L	L	A	L	L	U L 536	U L 528	A	A							
10									L	L	L	L	L	U L 524	L	L	L							
11									A	A	A	A	U L 560	L	L	A	A							
12								L	L	L	A	A	A	L	U L 476	U L 480								
13									L	L	L	U L 540	L	U L 548	A	A	L	A	A					
14									L	L	U L 496	L	A	L	U L 544	L			A					
15									L	A	U L 576	L	L	512	L	L	L							
16									L	L	L	U L 588	U L 576	U L 516	L	A	A	A						
17								L	L		L	L	L	L	L	L		L						
18									L	L	A	L	L	L	L	L	L							
19									L	L	L	L	U L 572	L	L	L	A		A					
20									A	L	L	L	L	L	L	L		L						
21										A	A	U L 568	L	A	A	L	L							
22										L	L	A	L	L	A	A	A		A					
23										L	A	L	L	L	L	L	L							
24									L	U L 556	L	L	L	L	U L 580	L	A							
25									L	L	L	L	U L 564	U L 516	U L 568	L	L							
26											U L 524	L	L	L	U L 540	L	L	A	A					
27										L	L	L	U L 540	U L 560	L	L	A	L						
28									A	A	L	U L 520	L	U L 540	A	488	L	A						
29										L	A	544	A	A	496	A	L	L						
30									492	L	U L 516	U L 488	L	L	U L 516	L	A	L	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1	2	6	8	6	8	8	2								
MED									492	U L 548	U L 520	U L 542	U L 564	U L 530	U L 534	484								
U Q											U L 536	U L 578	U L 572	U L 544	U L 556									
L Q											U L 512	U L 528	U L 560	U L 516	U L 506									

APR. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	300	A	A	A	A	A	A	R	A	A	A	B					
2							176	272	A	A	A	A	A	R	A	A	A	A	204					
3							188	R	A	A	R	A	A	A	R	R	R	U R 248	B					
4							196	U R 288	R	A	R	R	A	A	R	A	R	U R 240	180					
5							188	292	R	R	R	R	R	A	R	R	U R 320	248	B					
6							212	U R 292	R	R	A	A	A	U R 384	R	R	308	U A 244	B					
7							216	A	A	A	A	R	A	R	R	R	R	U A 244	B					
8							196	280	A	A	A	A	A	A	A	A	A	A	B					
9							196	280	332	A	A	A	A	R	A	A	A	A	B					
10							220	A	A	A	A	A	A	A	A	A	R	R	B					
11							216	U A 284	A	A	A	A	R	A	352	A	A	A	B					
12							220	R	A	A	A	A	A	A	R	R	A	U R 260	B					
13							232	292	A	A	A	A	A	A	A	A	R	A	B					
14							A	A	A	A	A	A	A	A	R	A	U R 328	260	B					
15							232	296	A	A	A	A	A	A	A	A	R	R	B					
16							224	A	A	A	R	A	A	A	A	A	A	A	B					
17							236	A	A	A	A	R	R	A	R	R	A	A	B					
18						B	A	U A 288	A	A	A	R	R	R	U R 392	A	A	A	U A 172					
19						B	232	R	A	A	A	A	R	R	R	R	A	A	B					
20							U A 228	A	A	A	A	A	A	A	R	R	U R 316	U R 272	B					
21							240	300	A	A	A	A	A	A	A	A	A	U R 296	U A 176					
22							252	A	A	A	A	A	A	A	A	A	A	A	A					
23							U A 244	A	A	A	A	A	A	A	A	A	A	A	B					
24						B	U A 252	A	A	R	R	A	R	A	A	A	A	A	B					
25						B	U A 236	A	A	A	A	A	A	A	A	R	A	U R 276	U R 192					
26						B	A	A	R	A	A	A	A	R	R	R	R	A	B					
27						B	248	A	R	R	A	A	A	A	A	A	A	A	B					
28						B	240	A	A	A	A	A	A	A	A	A	U R 316	A	A					
29						B	U R 248	A	A	A	A	A	A	A	A	A	A	A	A					
30						B	U R 248	R	A	A	A	R	A	R	U A 368	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							26	12	1					1	3		5	10	5					
MED							230	290	332					U R 384	U 368		U R 316	U R 254	U 180					
U Q							U 240	294							U R 392		U R 324	U R 272	198					
L Q							212	282							352		312	U A 244	U A 174					

APR. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	19	E B 16	E B 14	E B 15	E B 15	E B 14	22	34	41	46	42	44	41	40	G 32	41	J A 45	J A 66	22	J A 37	J A 29	21	19	E B 15
2	E B 15	E B 15	E B 15	E B 15	20	E B 14	23	32	42	J A 50	J A 55	45	J A 48	G	42	J A 42	J A 39	28	27	42	J A 18	21	E B 14	E B 15
3	22	J A 35	J A 38	J A 24	J A 18	J A 18	22	G 25	39	40	G	J A 47	J A 43	40	G 33	G	G 21	G 24	J A 21	J A 23	J A 22	21	J A 26	20
4	J A 44	J A 37	J A 29	J A 32	J A 25	20	22	G 22	G 28	39	G 32	G 30	44	42	G	41	G	G	G	E B 15	E B 15	E B 14	E B 14	E B 15
5	E B 14	E B 16	E B 15	E B 14	E B 16	E B 14	26	G 25	G 28	G 30	G	G	G	39	G	G	G	30	20	19	E B 15	E B 14	E B 14	E B 14
6	E B 16	E B 15	E B 15	E B 14	E B 15	E B 15	26	G	G 29	G 29	39	40	41	G	G 27	G	38	30	J A 32	J A 38	J A 17	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 14	27	31	38	42	41	G	J A 40	G	G 32	G	G 24	32	24	J A 19	E B 14	E B 14	E B 15	E B 14
8	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	25	32	38	44	J A 48	J A 50	J A 48	J A 47	J A 42	J A 42	33	28	20	J A 34	J A 33	J A 23	21	J A 17
9	J A 18	E B 15	22	18	E B 15	E B 15	24	31	36	40	46	45	41	G	42	J A 57	J A 60	J A 44	J A 46	J A 31	J A 21	20	J A 24	21
10	J A 35	20	20	E B 15	E B 16	E B 15	27	31	37	44	42	J A 48	J A 47	40	39	38	G	G	22	J A 24	J A 20	21	21	20
11	E B 15	19	J A 24	E B 14	19	18	G	33	41	J A 65	J A 59	J A 50	G	J A 46	42	41	38	J A 39	22	J A 18	20	22	22	J A 42
12	J A 31	18	20	21	E B 15	E B 14	25	G	J A 36	42	J A 61	J A 63	55	J A 51	G	G	35	G	37	J A 45	J A 35	J A 21	19	20
13	J A 26	J A 20	E B 14	E B 15	E B 15	E B 14	28	35	43	45	42	44	J A 44	J A 48	J A 46	J A 46	G 26	J A 44	J A 50	J A 46	J A 36	J A 39	J A 29	E B 14
14	E B 15	E B 15	19	20	21	J A 24	29	34	38	42	J A 44	42	J A 70	40	G	40	G	33	J A 40	J A 70	J A 53	J A 42	J A 48	E B 14
15	J A 23	E B 15	20	19	22	E B 14	28	36	39	43	44	43	44	41	42	39	G 27	G 25	J A 24	J A 22	J A 29	E B 15	J A 74	J A 43
16	J A 62	23	J A 29	E B 15	E B 15	E B 15	26	34	38	42	G	42	40	40	39	42	J A 42	J A 59	J A 30	J A 124	J A 113	J A 29	J A 20	J A 23
17	J A 16	E B 15	E B 14	E B 14	E B 14	E B 15	28	34	40	42	40	G	G	44	G	G 29	36	34	J A 29	J A 38	J A 45	J A 22	J A 44	E B 16
18	E B 15	E B 14	J A 19	E B 14	E B 14	18	27	34	39	42	J A 48	G	G 37	G	G 36	J A 40	35	28	22	J A 21	J A 16	J A 22	J A 27	J A 36
19	E B 15	E B 14	J A 31	J A 39	J A 28	18	29	G	40	43	41	41	G	G	G	G	36	34	J A 34	J A 27	J A 28	J A 33	J A 26	22
20	E B 15	E B 15	E B 15	E B 16	E B 15	17	30	36	42	43	42	44	45	44	G	G 32	G 27	G	J A 34	J A 25	J A 26	J A 33	J A 32	J A 27
21	J A 52	J A 29	J A 20	19	E B 14	E B 16	29	37	44	J A 52	J A 72	48	50	J A 56	J A 62	45	37	G	J A 35	J A 57	J A 45	J A 23	J A 23	J A 74
22	J A 73	J A 74	J A 39	J A 21	J A 29	E B 15	30	41	43	47	46	J A 69	J A 47	J A 57	J A 120	J A 142	J A 71	31	J A 48	J A 100	J A 76	J A 140	J A 42	J A 48
23	J A 23	J A 42	J A 25	J A 35	J A 23	E B 17	J A 49	39	46	52	J A 58	44	46	43	44	J A 45	J A 42	J A 36	J A 25	J A 65	J A 32	J A 46	J A 40	20
24	J A 23	E B 14	J A 23	J A 25	J A 21	E B 16	28	34	41	G	G	42	G	47	43	J A 44	J A 42	34	25	J A 27	21	J A 24	J A 21	20
25	19	E B 15	E B 15	E B 15	E B 16	18	28	35	39	41	42	44	44	43	41	G	34	G	J A 25	J A 32	J A 32	J A 28	22	21
26	20	E B 16	20	20	E B 14	E B 16	26	36	G 28	44	41	44	41	G	G	G	G	J A 40	J A 41	J A 32	J A 73	J A 49	J A 30	E B 15
27	E B 15	20	E B 14	E B 14	E B 14	E B 16	27	36	G 29	G 30	42	J A 48	J A 47	J A 45	40	38	J A 51	J A 36	J A 34	J A 46	E B 15	21	E B 15	E B 15
28	E B 15	E B 14	E B 14	E B 14	E B 15	18	28	34	42	44	42	41	42	J A 47	J A 46	41	G	J A 41	J A 39	J A 29	J A 45	J A 78	J A 31	J A 28
29	21	20	E B 15	E B 15	E B 13	E B 15	G	36	40	J A 46	J A 58	J A 47	J A 50	J A 79	J A 79	J A 51	36	J A 30	J A 27	J A 25	J A 31	J A 28	J A 18	J A 52
30	J A 43	21	20	E B 14	E B 14	E B 14	G	G 28	39	J A 41	41	G	41	G	42	43	J A 46	J A 45	J A 48	J A 47	J A 26	J A 48	J A 35	J A 50
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	19	E B 16	20	E B 15	E B 15	E B 15	27	34	39	42	42	44	44	42	40	40	36	32	J A 28	J A 32	J A 28	J A 22	J A 22	20
U Q	J A 26	J A 20	J A 23	J A 20	J A 20	18	28	36	41	45	J A 48	J A 47	J A 47	J A 47	J A 42	J A 43	J A 42	J A 39	J A 37	J A 46	J A 36	J A 33	J A 31	J A 28
L Q	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14	24	G 31	G 37	41	G 41	G 41	G 40	G	G	G	G	G	J A 22	J A 24	E B 20	E B 21	E B 19	E B 15

APR. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	E B 16	E B 14	E B 15	E B 15	E B 14	21	32	38	43	40	42	41	39	G 32	37	34	54	20	29	17	E B 15	E B 15	E B 15
2	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	22	30	39	46	50	42	45	G	38	38	34	26	25	33	E B 15	E B 15	E B 14	E B 15
3	E B 16	23	27	19	E B 16	E B 15	21	G 24	37	38	G	42	40	38	G 33	G	G 20	G 22	18	E B 15	E B 16	E B 15	E B 15	E B 16
4	29	20	16	22	E B 15	15	22	G 21	G 28	36	G 28	G 26	40	40	G	37	G	G	G	E B 15	E B 15	E B 14	E B 14	E B 15
5	E B 14	E B 16	E B 15	E B 14	E B 16	E B 14	24	G 24	G 26	G 29	G	G	G	39	G	G	G	28	18	E B 15	E B 15	E B 14	E B 14	E B 14
6	E B 16	E B 15	E B 15	E B 14	E B 15	E B 15	23	G	G 28	G 28	38	38	39	G	G 26	G	36	28	29	32	E B 15	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 14	24	30	35	38	39	G	37	G	G 31	G	G 22	29	22	E B 16	E B 14	E B 14	E B 15	E B 14
8	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	24	31	36	42	41	46	45	40	39	39	32	26	17	29	23	E B 15	E B 15	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	24	30	34	38	43	42	39	G	39	50	55	40	40	29	E B 15	E B 15	20	E B 15
10	19	E B 15	E B 15	E B 15	E B 16	E B 15	25	30	35	42	40	45	42	38	37	35	G	G	20	20	18	E B 14	E B 15	E B 16
11	E B 15	E B 15	16	E B 14	E B 15	E B 15	G	30	38	58	52	47	G	40	39	40	36	36	20	E B 15	E B 15	E B 15	E B 15	E B 15
12	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14	23	G	33	39	51	53	52	41	G	G	34	G	29	30	28	17	E B 15	E B 15
13	20	E B 16	E B 14	E B 15	E B 15	E B 14	26	33	40	42	41	42	41	42	43	43	G 21	37	44	42	26	19	24	E B 14
14	E B 15	E B 15	E B 15	E B 15	E B 15	20	26	32	36	40	39	40	52	39	G	38	G	31	36	63	40	28	31	E B 14
15	E B 15	E B 15	E B 15	E B 14	E B 16	E B 14	26	34	37	42	42	41	42	40	40	37	G 27	G 22	20	17	18	E B 15	18	28
16	31	20	E B 15	E B 15	E B 15	E B 15	24	32	37	40	G	40	40	39	38	42	37	34	25	57	48	18	E B 15	17
17	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	26	33	38	40	39	G	G	42	G	G 28	35	31	23	33	35	18	E B 15	E B 16
18	E B 15	E B 14	E B 15	E B 14	E B 14	16	26	32	37	40	44	G	G 35	G	G 32	36	33	28	22	E B 15	E B 15	17	E B 16	16
19	E B 15	E B 14	E B 15	30	16	15	26	G	38	40	40	40	G	G	G	G	36	32	30	23	23	E B 15	21	E B 16
20	E B 15	E B 15	E B 15	E B 16	E B 15	17	28	33	40	40	41	42	44	42	G	G 31	G 26	G	31	20	22	27	E B 15	23
21	36	18	E B 15	E B 14	E B 14	E B 16	27	37	42	49	53	46	48	54	56	43	36	G	28	55	34	18	21	30
22	47	20	E B 15	17	25	E B 15	30	41	40	45	44	55	42	42	90	51	49	28	45	47	34	56	22	22
23	18	24	18	19	E B 15	E B 17	44	37	45	49	54	43	44	42	42	39	34	28	22	30	32	38	25	E B 14
24	18	E B 14	E B 15	E B 15	E B 15	E B 16	27	34	38	G	G	41	G	45	42	40	38	32	23	24	E B 15	19	18	E B 16
25	E B 15	E B 15	E B 15	E B 15	E B 16	17	26	33	38	40	40	43	41	42	39	G	32	G	E B 16	18	21	18	18	E B 15
26	E B 15	E B 16	E B 15	E B 15	E B 14	E B 16	25	33	G 27	41	39	41	39	G	G	G	G	37	37	30	19	29	19	E B 15
27	E B 15	E B 16	E B 14	E B 14	E B 14	E B 16	26	34	G 28	G 29	39	43	46	42	37	36	48	30	30	41	E B 15	E B 15	E B 15	E B 15
28	E B 15	E B 14	E B 14	E B 14	E B 15	16	26	33	39	41	41	40	41	44	44	38	G	37	35	24	38	29	E B 15	24
29	E B 16	E B 16	E B 15	E B 15	E B 13	E B 15	G	32	38	40	54	44	42	76	43	46	35	28	23	19	19	24	E B 14	33
30	18	E B 15	18	E B 14	E B 14	E B 14	G	G 27	36	37	39	G	40	G	40	40	36	29	38	34	19	28	28	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	25	32	37	40	40	42	41	40	38	37	34	28	24	29	19	17	E B 15	E B 15
U Q	18	16	15	15	E B 15	16	26	33	38	42	44	43	44	42	40	40	36	32	31	33	28	24	20	16
L Q	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	23	G 30	G 35	38	G 39	G 40	G 39	G	G	G	G	G	E B 20	E B 18	E B 15	E B 15	E B 15	E B 15

APR. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

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

APR. 2015 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	274	281	306	278	280	278	322	342	321	322	316	310	307	295	307	302	308	313	334	340	271	271	280	277
2	282	299	297	288	275	275	321	330	329	300	295	296	294	301	298	297	307	320	327	323	292	286	280	283
3	270	266	279	320	327	274	319	305	308	304	313	302	304	306	294V	296	327	318	326	328	280	282	272	270
4	275	264	299	327	290	293	337	361	330	301	314	303	298	302	308	298	305	310	324	306	320	287	278	276
5	277	287	269	288	293	308	343	354	356	316	312	321	294	296	313	311	311	323	316	309	296	290	280	290
6	289	299	274	285	284	278	311	335	329	331	327	316	310	312	295	302	304	316	315	310	297	291	294	303
7	297	290	303	300	281	291	335	338	325	332	321	310	301	303	311	296	311	318	332	315	279	279	283	296
8	301	308	324	317	289	278	353	331	325	324	306	302	306	305	305	312	316	319	325	319	293	283	293	298
9	290	291	318	323	294	307	365	351	356	328	310	310	303	303	308	315	312	311	319	323	276	285	300	284
10	289	284	309	320	276	258	320	316	328	323	304	297	285	301	299	299	303	326	299	299	292	289	273	265
11	283	304	276	258	262	273	326	334	323	300	321	301	308	308	306	327	326	332	332	290	282	270	271	273
12	260	287	292	287	291	276	323	326	337	312	309	323	324	333	323	335	322	320	328	318	304	293	284	291
13	289	287	285	296	291	285	335	348	337	324	298	302	300	301	306	306	322	328	326	326	321	281	274	279
14	279	289	284	285	278	290	341	340	337	318	301	294	290	302	306	309	305	305	320	312	331	292	285	275
15	284	276	278	269	256	274	334	343	315	292	277	295	292	301	299	309	311	303	306	321	309	265	256	256
16	262	271	341	368	264	269	325	343	339	316	296	287	294	279	288	300	303	292	311	326	273	265	274	292
17	273	282	301	278	270	276	317	321	309	283	293	296	289	303	304	297	302	295	310	327	338	273	276	270
18	271	281	300	292	277	291	322	317	329	319	323	303	300	308	313	302	309	313	327	312	296	284	273	F
19	276	270	267	292	285	295	332	333	329	316	285	295	298	290	288	296	298	296	307	316	301	284	289	290
20	288	280	275	283	281	299	313	314	308	298	288	288	283	291	289	295	295	306	319	311	298	287	276	275
21	281	287	291	295	306	303	330	334	312	298	284	274	276	283	286	290	288	297	304	313	319	263	264	264
22	285	276	274	267	262	276	316	310	300	307	292	292	292	294	283	296	303	295	307	292	285	300	292	285
23	286	281	268	265	263	297	322	320	308	289	290	287	296	288	292	289	301	298	309	287	276	283	281	280
24	289	282	286	283	279	298	340	317	306	311	296	291	285	285	284	289	295	300	308	302	289	286	281	279
25	283	295	305	287	291	304	329	333	317	300	301	291	297	298	294	288	290	291	296	308	308	310	292	283
26	286	283	294	291	282	301	337	340	318	303	311	290	283	287	295	296	303	296	314	310	329	299	285	283
27	286	284	300	303	311	319	351	348	313	305	310	301	279	283	292	294	300	305	326	310	317	280	290	277
28	272	277	291	316	275	290	315	324	322	302	296	297	292	298	313	305	307	314	301	320	307	275	278	273
29	291	F	287	285	301	313	341	338	330	312	293	303	296	294	298	306	319	326	315	322	301	277	272	281
30	275	291	276	262	302	329	333	330	342	316	284	308	300	288	296	306	308	315	318	317	309	291	270	271
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29
MED	283	284	291	288	282	290	330	334	325	312	301	299	296	300	298	300	306	312	317	314	298	284	280	279
U Q	289	290	301	303	291	301	337	342	330	319	312	303	301	303	307	306	311	319	326	322	309	290	285	288
L Q	275	278	276	283	275	276	321	321	313	300	293	292	290	290	292	296	302	298	308	309	285	277	273	273

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	U L 361	L	L	L	A	A						
2										L	A	L	L	L	L	L	L							
3									A	U L 362	U L 383	L	L	L	L	L								
4									L	L	L	U L 375	L	L	L	L	L	L						
5									L	L	L	L	L	L	L	L								
6									L	L	U L 381	L	L	L	L	L								
7										L	L	L	L	L	L	L	L							
8										A	L	U L 342	A	L	L	L	L							
9									L	L	A	L	L	U L 357	U L 377	A	A							
10									L	L	L	L	L	U L 367	L	L	L							
11									A	A	A	A	U L 352	L	L	A	A							
12								L	L	L	A	A	A	L	U L 423	U L 380								
13									L	L	L	U L 379	L	U L 365	A	A	L	A	A					
14									L	L	U L 418	L	A	L	U L 352	L			A					
15									L	A	U L 346	L	L	385	L	L	L							
16									L	L	L	U L 348	U L 355	U L 391	L	A	A	A						
17								L	L		L	L	L	L	L	L		L						
18									L	L	A	L	L	L	L	L	L							
19									L	L	L	L	U L 356	L	L	L	A		A					
20									A	L	L	L	L	L	L	L		L						
21										A	A	U L 366	L	A	A	L	L							
22										L	L	A	L	L	A	A	A		A					
23										L	A	L	L	L	L	L	L							
24									L	U L 338	L	L	L	L	U L 337	L	A							
25									L	L	L	L	U L 365	U L 412	U L 350	L	L							
26											U L 370	L	L	L	U L 352	L	L	A	A					
27										L	L	L	U L 376	U L 353	L	L	A	L						
28									A	A	L	U L 387	L	U L 363	A	368	L	A						
29										L	A	367	A	A	373	A	L	L						
30									380	L	U L 386	U L 409	L	L	U L 356	L	A	L	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1	2	6	8	6	8	8	2								
MED									380	U L 350	U L 382	U L 371	U L 358	U L 366	U L 354	374								
U Q											U L 386	U L 383	U L 365	U L 388	U L 375									
L Q											U L 370	U L 357	U L 355	U L 360	U L 351									

APR. 2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										268	242	276	262	260	266	264	248	256						
2										284	268	278	302	266	268	276	268							
3									240	284	264	260	280	280	284	278								
4									252	264	268	266	290	280	286	264	276	276						
5									236	256	268	278	298	278	280	266								
6									260	248	260	262	280	262	302	300								
7										256	256	256	292	278	260	270	268							
8										252	278	298	274	272	274	260	256							
9									256	254	254	284	288	282	280	264	244							
10									262	264	272	294	314	288	286	278	266							
11									240	E A 266	276	268	300	266	276	272	246							
12								274	244	264	294	270	252	264	264	258								
13									254	264	296	280	290	290	278	270	266	246	246					
14									246	260	260	290	282	294	286	280			250					
15									266	270	304	290	292	288	278	284	266							
16									250	262	284	320	282	294	306	286	246	262						
17								258	262		278	254	282	288	286	286		282						
18									270	254	254	288	296	286	280	278	282							
19									252	260	266	314	292	304	304	272	264		256					
20									256	264	314	290	310	304	294	278		270						
21										274	278	294	324	326	284	282	286							
22										270	302	300	290	300	E A 366	284	280		E A 252					
23										326	286	302	312	310	300	296	284							
24									262	278	274	290	308	314	296	300	280							
25									260	268	274	308	298	282	290	290	280							
26											276	268	294	314	296	290	276	262	248					
27										294	276	296	306	308	308	294	276	274						
28									234	250	284	286	318	306	282	284	270	258						
29										296	E A 264	320	284	E A 326	306	288	260	252						
30									270	266	270	290	330	316	310	278	266	268	248					
31																								
	00	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	20	28	30	30	30	30	30	30	23	11	6					
MED								266	255	264	274	289	292	288	286	278	268	262	248					
U Q									262	272	284	296	306	306	300	286	280	274	252					
L Q									245	258	264	270	282	278	278	270	260	256	248					

APR. 2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 278	E B 268	234	232	E B 276	E B 290	218	226	222	214	198	194	192	190	202	208	A	A	226	222	230	E B 286	E B 280	E B 274
2	E B 268	E B 246	E B 244	E B 242	E B 272	E B 282	220	220	220	232	A	204	E A 234	218	212	218	226	234	224	216	230	228	E B 266	E B 268
3	E B 280	E A 314	E A 318	E A 244	212	E B 242	224	208	A	198	190	208	202	198	206	206	236	232	226	208	E B 212	E B 244	E B 290	E B 298
4	E A 306	E A 306	E A 274	232	226	E B 258	222	218	196	194	198	180	208	182	212	206	216	226	228	212	206	206	E B 256	E B 278
5	E B 296	E B 274	E B 276	E B 260	E B 264	E B 248	214	218	204	200	196	186	216	196	202	214	228	232	236	222	220	228	E B 250	E B 260
6	E B 256	E B 256	E B 264	E B 276	E B 254	E B 282	228	222	210	204	200	182	206	204	H 194	228	E A 240	E A 238	232	E A 246	232	E B 240	E B 246	E B 246
7	E B 246	E B 244	E B 230	E B 228	E B 262	E B 270	230	222	218	212	206	200	186	210	194	206	222	E A 250	232	208	228	E B 270	E B 276	E B 270
8	E B 260	E B 238	224	208	E B 250	E B 288	218	218	216	A	210	220	A	216	208	222	216	230	220	228	E A 254	E B 276	E B 272	E B 264
9	E B 264	E B 268	E B 240	212	E B 250	E B 250	210	216	216	210	A	208	204	218	186	A	A	228	228	220	E B 234	E B 258	E A 258	E B 272
10	E A 294	E B 276	E B 250	208	E B 266	E B 312	228	218	204	220	204	222	220	204	210	220	220	226	E A 240	E A 238	E A 242	226	E B 246	E B 308
11	E B 286	E B 256	E A 272	E B 322	E B 316	E B 306	226	232	A	A	A	A	206	216	222	A	A	234	222	232	E B 250	E B 280	E B 300	E B 300
12	E B 318	E B 278	E B 252	E B 252	E B 262	E B 274	232	214	210	206	A	A	A	206	186	192	206	228	234	E A 238	E A 240	230	E B 234	E B 270
13	E A 274	E B 278	E B 270	E B 248	E B 242	E B 276	228	228	220	214	194	196	206	208	A	A	214	A	A	E A 248	218	E A 260	E A 292	E B 274
14	E B 272	E B 270	E B 268	E B 252	E B 262	E A 274	228	218	206	196	194	194	A	206	208	212	218	234	A	E A 272	230	E A 248	E A 276	E B 274
15	E B 272	E B 294	E B 282	E B 276	E B 318	E B 258	224	214	202	A	196	200	202	206	230	222	216	234	E A 252	224	222	E B 260	E A 298	E A 334
16	E A 330	E A 308	218	186	E B 286	E B 296	E A 246	230	206	204	186	194	188	180	228	A	A	A	E A 240	E A 246	E B 306	E B 282	E A 278	E B A 272
17	E B 264	E B 256	E B 246	206	E B 288	E B 276	208	212	218	210	202	202	202	210	224	220	230	232	232	224	216	E A 238	E B 284	E B 296
18	E B 286	E B 280	E B 244	216	E B 248	E A 266	228	214	210	204	A	202	194	200	208	214	220	228	228	216	E B 236	E A 236	E B 268	E B A 294
19	E B 280	E B 280	E B 278	E A 286	226	E B 246	216	218	214	204	192	182	202	202	202	204	A	236	A	232	232	E B 246	E A 260	E B 240
20	E B 254	E B 266	E B 262	E B 254	E B 248	E A 248	216	224	A	208	204	204	206	208	208	212	232	222	232	226	226	E A 246	E B 244	E B A 292
21	E A 310	E A 264	E B 264	E B 236	222	E B 242	218	226	222	A	A	214	224	A	A	230	228	230	E A 254	E A 262	224	222	E A 298	E A 338
22	E A 310	E A 284	E B 268	E B A 294	E A 304	E B 276	236	230	226	224	214	A	210	204	A	A	A	238	A	E A 272	E A 286	E A 284	E A 248	E A 254
23	E A 254	E A 304	E A 284	E A 316	E B 302	240	232	222	232	E A 252	A	214	208	194	212	206	220	226	228	E A 260	E A 292	E A 296	E A 276	E B 262
24	E A 264	E B 258	E B 256	E B 250	E B 262	252	228	216	206	204	206	188	208	228	206	222	A	E A 246	E A 240	216	236	E A 252	E A 248	E B 270
25	E B 274	E B 256	E B 236	216	E B 238	240	206	214	206	200	202	194	200	198	194	H 192	216	236	E B 252	E B 244	232	230	228	E B 250
26	E B 272	E B 262	E B 254	E B 238	E B 256	E B 252	226	218	224	218	200	208	204	194	212	226	226	A	A	E A 238	222	222	E A 234	E A B 264
27	E B 270	E B 274	E B 264	E B 244	220	228	212	212	212	198	196	222	212	210	198	210	A	234	236	E A 242	216	E B 242	E B 264	E B 280
28	E B 284	E B 282	E B 258	E B 234	228	E A 252	224	226	A	A	196	190	220	228	A	210	212	A	E A 252	230	E A 244	E A 284	E B 274	E B A 310
29	E B 266	E B 304	E B 264	E B 250	E B 232	E B 240	212	216	208	216	A	214	A	A	232	A	222	218	234	214	214	E A 284	E B 284	E B A 320
30	E A 290	E B 266	E A 280	E B 278	E B 252	232	214	222	204	198	192	182	210	210	E A 238	218	A	234	A	E A 240	216	216	E A 304	E B 298
31																								
	00	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	26	25	22	27	26	28	26	24	21	25	24	30	30	30	30	30
MED	E B 274	E B 272	E B 263	E B 244	E B 255	E B 258	224	218	211	205	198	200	206	206	208	213	220	231	230	U 220	223	E 246	E B 270	E B 274
U Q	E A 290	E A 282	E A 272	E A 260	E B 272	E B 276	228	224	220	215	204	208	210	210	212	221	228	235	E A 240	E A 244	E A 240	E A 276	E 284	E 298
L Q	E B 264	E B 258	E B 244	228	238	246	216	216	206	200	194	190	202	198	202	206	216	228	228	220	220	230	E 248	E B 264

APR. 2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	126	122	112	112	112	110	A	120	110	114	A	B					
2							114	112	108	A	A	A	A	114	114	A	A	114	136					
3							120	116	122	120	118	A	A	A	120	116	114	122	B					
4							120	114	118	A	108	110	112	112	110	110	114	112	122					
5							118	114	112	114	116	110	110	A	120	116	114	110	B					
6							120	114	118	118	A	A	A	112	112	112	112	116	B					
7							118	114	110	110	A	110	A	116	116	112	114	114	B					
8							116	116	110	112	112	A	A	A	112	A	A	A	B					
9							112	112	112	112	112	112	A	114	114	116	116	114	B					
10							112	114	116	118	A	A	A	110	A	A	112	114	B					
11							114	112	112	A	A	A	112	A	112	114	112	A	B					
12							120	116	A	114	A	A	A	A	112	112	A	112	B					
13							118	110	110	A	108	A	A	A	A	A	112	110	B					
14							A	112	110	110	A	A	A	A	112	A	114	114	B					
15							118	114	110	108	108	114	A	A	112	A	120	116	B					
16							114	112	104	A	112	A	A	A	A	112	114	A	B					
17							114	114	110	A	110	116	116	A	114	114	114	116	B					
18						B	114	114	112	114	A	114	114	116	112	A	A	A	118					
19						B	116	110	110	112	A	A	116	114	114	112	112	114	B					
20							120	114	112	112	A	A	A	116	114	118	116	112	B					
21							122	102	106	108	A	A	A	A	A	108	112	114	116					
22							114	A	A	A	A	A	A	A	A	A	A	A	A					
23							122	108	110	A	A	A	110	A	A	A	A	A	B					
24						B	110	110	A	112	110	A	120	A	A	A	A	116	B					
25						B	114	112	110	108	108	A	A	118	A	110	A	112	116					
26						B	114	112	110	116	A	114	A	112	112	116	114	A	B					
27						B	114	110	110	110	A	A	A	A	A	A	A	A	B					
28						B	112	112	112	112	114	A	A	A	A	A	116	116	A					
29						B	114	114	114	A	A	A	A	A	A	A	A	A	A					
30						B	112	116	A	A	A	112	A	112	114	114	114	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							28	29	26	20	13	10	9	12	19	17	20	19	5					
MED							114	114	110	112	112	112	112	114	114	112	114	114	118					
U Q							119	114	112	114	113	114	116	116	114	116	114	116	129					
L Q							114	112	110	110	108	110	110	112	112	111	112	112	116					

APR. 2015 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	90	B	B	B	B	B	136	124	122	112	112	106	110	106	106	118	120	106	106	106	92	98	92	B
2	B	B	B	B	110	B	128	144	124	104	104	104	102	G	114	108	102	112	176	104	104	96	B	B
3	104	102	98	98	96	92	150	102	116	118	G	104	98	100	98	G	100	108	92	90	90	100	114	104
4	96	96	90	88	92	98	162	102	100	102	96	98	122	122	G	118	G	G	G	B	B	B	B	B
5	B	B	B	B	B	B	150	98	100	100	G	G	G	106	G	G	G	154	124	94	B	B	B	B
6	B	B	B	B	B	B	140	G	104	100	98	100	100	G	94	G	138	136	120	110	102	B	B	B
7	B	B	B	B	B	B	142	138	120	114	108	G	106	G	104	G	106	124	114	106	B	B	B	B
8	B	B	B	B	B	B	144	152	130	120	120	102	106	104	120	104	106	104	106	106	102	100	104	94
9	98	B	96	98	B	B	144	150	146	128	120	112	106	G	120	128	124	122	106	106	104	104	102	102
10	100	100	100	B	B	B	150	128	128	116	110	104	102	114	108	102	G	G	116	90	102	108	106	106
11	B	100	98	B	98	98	G	150	128	108	106	102	G	104	134	120	118	106	110	110	104	104	102	100
12	106	116	116	102	B	B	164	G	106	122	104	100	98	104	G	G	104	G	104	100	100	98	98	98
13	98	92	B	B	B	B	142	118	116	108	106	106	104	104	102	102	92	126	112	106	106	102	102	B
14	B	B	96	96	92	90	84	126	120	116	104	104	102	102	G	104	G	154	106	96	96	100	98	B
15	102	B	94	90	98	B	152	144	122	114	114	114	102	106	116	106	102	100	102	94	98	B	102	102
16	98	98	108	B	B	B	148	128	112	106	G	106	106	106	104	128	122	106	106	100	100	108	106	106
17	104	B	B	B	B	B	136	126	118	106	114	G	G	106	G	102	126	118	106	100	98	96	102	B
18	B	B	94	B	B	124	136	126	120	118	104	G	102	G	106	106	106	106	128	114	112	112	106	104
19	B	B	100	98	102	146	132	G	136	126	108	108	G	G	G	G	122	128	114	98	96	98	96	94
20	B	B	B	B	B	130	126	120	118	120	104	104	106	120	G	104	104	G	100	98	96	100	102	94
21	98	100	94	98	B	B	158	130	124	110	104	106	106	106	106	112	122	G	120	102	102	100	96	98
22	92	94	102	92	96	B	126	110	108	106	102	102	102	100	96	104	104	110	108	98	98	98	96	96
23	94	98	94	92	90	B	120	118	116	104	100	106	114	104	104	104	106	102	102	100	98	100	100	102
24	102	B	100	90	96	B	128	128	106	G	G	106	G	102	104	102	106	124	124	98	96	94	92	96
25	92	B	B	B	B	126	130	118	116	120	120	104	106	114	108	G	106	G	98	92	90	88	90	96
26	104	B	100	98	B	B	138	136	102	126	104	112	104	G	G	G	G	110	104	94	98	94	96	B
27	B	102	B	B	B	B	154	124	98	102	104	108	102	104	104	104	94	86	120	102	B	94	B	B
28	B	B	B	B	B	152	142	126	120	116	122	100	106	104	102	104	G	124	108	108	102	102	102	100
29	98	94	B	B	B	B	G	132	122	106	106	104	104	102	102	102	106	106	106	106	88	100	98	98
30	98	100	100	B	B	B	G	102	102	102	102	G	102	G	132	122	122	106	104	104	100	100	100	112
31																								
	00	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	13	17	12	10	9	27	27	30	29	26	25	25	22	22	22	24	24	29	29	26	25	24	19
MED	98	100	98	97	96	124	142	126	118	112	105	104	104	104	105	104	106	110	106	100	99	100	101	100
U Q	102	101	100	98	98	138	150	136	122	119	112	106	106	106	114	118	122	124	118	106	102	102	102	104
L Q	96	95	94	91	92	95	130	118	106	105	104	102	102	104	102	104	104	106	104	97	96	97	96	96

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2						H2	CL22	CL22	CL22	CL22	CL22	C2	L2	L1	C1	CL32	L3	C4	F5	F3	F2	F2	
2					F1		H2	H1	C1	L2	L2	L2	L2		C1	L1	L2	C1	HL13	F4	F2	F1		
3	F2	F4	F4	F3	F3	F2	H1	L2	C2	CL11		L2	L2	L2	L2		L2	L2	L3	F2	F2	F1	F1	F1
4	F3	F3	F3	F5	F3	F1	H2	L2	L1	L1	L1	L2	CL12	CL12		C1								
5							H2	L2	L2	L1				L2				H1	C2	F1				
6							H2		L1	L1	L2	L1	L2		L2		H1	H1	C3	F6	F1			
7							H2	C1	C1	C2	L1		L2		L2		L2	C2	C3	F2				
8							H2	H1	C1	C1	C2	L2	L2	L2	C2	L1	L1	L2	L1	F6	F4	F3	F1	F1
9	F2		F1	F1			H2	H1	H2	C1	C2	C2	L1		C1	C2	C4	C3	L4	F3	F3	F1	F4	F2
10	F4	F2	F2				H2	CL12	CL12	CL22	L2	L2	L2	C1	L1	L2			CL23	F3	F4	F1	F2	F2
11		F2	F2		F2	F1		H1	C1	L2	L2	L2		L2	HL12	CL22	CL22	L2	C3	F1	F1	F2	F2	F2
12	F3	F2	F1	F1			H1		L1	CL12	L2	L2	L2	L2			L1		L3	F5	F6	F5	F3	F2
13	F3	F2					H2	C1	C2	L2	L2	L1	L2	L2	L1	L2	L2	CL22	CL51	F4	F2	F4	F3	
14			F1	F1	F1	F2	L3	C1	C1	C1	L2	L2	L2	L2		L1		H1	L3	FF33	F4	F4	F6	
15	F1		F1	F1	F1		H1	H1	C1	C1	C1	C1	L2	L2	C1	L3	L2	L2	L2	F3	F3		F2	F4
16	F3	F3	F1				H1	C2	C1	L2		L2	L2	L1	L2	C2	C2	L2	L3	F5	F5	F4	F2	F2
17	F1						H2	C1	C1	L1	C2			L2		L1	C1	CL12	L3	F3	F4	F3	F2	
18			F1			C2	C2	C2	C2	C2	L2		L2		L2	L2	L1	L2	C1	F2	F2	F3	F2	F3
19			F2	F4	F3	H1	H2		HL22	C1	L2	L2					C1	C1	C3	F4	F3	F3	F3	F1
20						F2	C2	C1	C2	C1	L1	L1	L1	C1		L2	L2		L3	F3	F4	F3	F2	F4
21	F4	F2	F2	F1			H1	H1	CL11	C2	L2	L2	L2	L2	L2	CL12	C2		C2	F4	F5	F3	F4	F4
22	F5	F5	F2	F2	F4		C1	L1	L1	L1	L2	L2	L2	L2	L3	L2	L3	L1	L3	F4	F5	F6	F4	F5
23	F3	F3	F2	F3	F2		C2	C2	C2	L2	L2	L2	C1	L1	L1	L2	L2	L2	L2	F6	F4	F3	F4	F2
24	F3		F2	F2	F2		C1	C1	L2			L1		L1	L1	L1	L2	C1	C3	F6	F2	F4	F2	F1
25	F1					C1	C2	C1	C1	C1	C1	L1	L2	C1	L1		L2		L1	F2	F3	F2	F3	F1
26	F1		F1	F1			C1	C1	L1	CL11	L1	C1	L2					L2	L3	F4	F3	F3	F2	
27		F1					H2	CL11	L1	L1	L1	L1	L1	L2	L2	L1	L2	L2	CL33	F3		F2		
28						H2	H1	C2	C1	C2	C2	L2	L2	L2	L2	L2		C2	L4	FF32	F3	F3	F2	F4
29	F2	F1						C1	C1	L1	L3	L2	L2	L2	L2	L3	L1	L2	L2	F3	F2	F6	F2	F4
30	F3	F2	F2					L1	L1	L2	L1		L1		CL11	C1	C2	L3	L4	F4	F4	F5	F4	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																								

APR. 2015 TYPES OF Es

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IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			X 124	X 92	X 85	X 86	X 84
16	X 83	X 79	X 94	X 77	X 37	X 36														X 118	X 88	X 78	X 83	X 86
17	X 81	X 78	X 74	X 68	X 61	X 63														X 131	X 100	X 76	X 82	X 84
18	X 82	X 83	X 80	X 73	X 59	X 53														X 107	X 86	X 73	X 71	X 72
19	X 76	X 76	X 80	X 80	X 64	X 50														X 129	X 110	X 92	X 87	X 86
20	X 84	X 81	X 80	X 76	X 70	X 65														X 124	X 120	X 97	X 83	X 87
21	X 86	X 88	X 86	X 80	X 76	X 64														X 135	X 116	X 94	X 94	X 98
22	X 100	X 90	X 86	X 82	X 85	X 84														X 124	X 110	X 101	X 86	X 83
23	X 87	X 86	X 77	X 70	X 69	X 67														X 121	X 111	X 99	X 100	X 96
24	X 96	X 95	X 88	X 78	X 76	X 74														X 124	X 113	X 100	X 100	O X 103
25	X 105	X 108	X 111	X 86	X 82	X 78														X 132	X 122	X 100	X 93	X 95
26	X 90	X 89	X 89	X 81	X 74	X 72														X 134	X 122	X 109	X 98	X 96
27	X 91	X 85	X 84	X 84	X 76	X 72														X 123	X 101	X 98	X 99	X 100
28	X 95	X 92	X 90	X 86	X 72	X 69														X 122	X 93	X 77	X 83	X 84
29	X 84	X 81	X 75	X 71	X 73	X 72														X 129	X 92	X 80	X 80	X 79
30	X 75	X 74	X 69	X 64	X 66	X 67														X 118	X 104	X 88	X 82	X 82
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15														16	16	16	16	16
MED	X 86	X 85	X 84	X 78	X 72	X 67														X 124	X 107	X 93	X 86	X 86
U Q	X 95	X 90	X 89	X 82	X 76	X 72														X 130	X 114	X 100	X 96	X 96
L Q	X 82	X 79	X 77	X 71	X 64	X 63														X 122	X 92	X 79	X 82	X 84

APR. 2015 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E [SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	113	118	118	86	79	80	78
16	77	73	88	71	31	30	55	90	81	82	87	111	R 136	J R 132	145	149	R 138	119	U R 124	112	82	72	77	80
17	75	72	68	62	55	57	79	91	88	90	R 109	118	118	R	132	J R 127	J R 125	R	130	125	94	70	76	78
18	76	77	74	67	53	47	58	88	96	100	109	118	J R 128	133	R 132	J R 124	R	R 120	116	101	80	67	U R 65	66
19	70	70	74	74	58	44	64	79	85	101	99	110	J R 116	J R 124	124	R 117	116	R 118	J R 126	J R 123	104	86	81	80
20	78	75	74	70	64	59	70	89	99	104	R 110	U R 114	U R 127	U R 129	U R 140	144	143	132	121	118	114	92	77	81
21	80	82	80	74	70	58	75	90	96	92	102	114	R 118	R 129	134	J R 130	131	131	129	129	R 110	R 88	R 88	92
22	94	84	80	76	79	78	94	101	97	96	113	118	R 122	R 120	R 119	J R 126	R 132	J R 120	120	118	104	95	80	77
23	81	80	71	64	63	61	76	86	90	103	105	111	118	J R 125	J R 128	U R 138	138	J R 129	118	115	U R 105	93	94	90
24	90	89	82	R 72	70	68	76	88	96	107	108	108	U R 114	J R 130	R 144	U R 144	U R 144	U R 140	R 134	118	107	94	94	97
25	99	102	R 105	80	76	72	84	86	83	95	96	103	110	111	R 110	R 110	116	116	118	R 126	116	94	87	89
26	84	83	83	75	68	66	90	85	84	84	91	96	108	R 113	R 113	131	R 141	133	R 133	J R 128	116	103	92	R 90
27	85	79	78	78	V 70	66	78	78	76	89	94	R 105	112	115	J R 118	R 128	136	134	J R 125	117	95	92	93	94
28	89	R 86	84	80	66	63	86	86	80	77	87	94	116	118	J R 123	115	116	113	114	116	87	71	77	78
29	78	75	69	65	67	66	77	70	73	77	82	90	107	113	J R 124	J R 132	R 128	129	132	R 123	R 86	74	74	73
30	69	68	63	58	60	61	72	74	81	73	81	95	113	109	R 114	120	R 127	118	118	112	98	82	76	76
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	14	15	16	16	16	16	16	16
MED	80	79	78	72	66	61	76	86	85	92	99	110	116	R 122	R 124	R 128	132	120	122	118	101	87	80	80
U Q	89	84	83	76	70	66	84	90	96	101	109	114	R 122	R 129	134	138	R 138	132	130	R 124	108	94	90	90
L Q	76	73	71	65	58	57	70	79	81	82	87	96	112	113	R 118	120	125	118	118	116	86	73	76	78

APR. 2015 foF2 (0.1MHz)

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

LAT.31°12.0'N LON.130°37.0'E KSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	L	L					
16								L	L	U L 508	L	U L 576	L	L	L	L	L		L					
17								L	L	L	588	L	L	L	L	L	L	L	L					
18									L	L	L	L	L	L	L	U L 592	U L 468	L	L					
19										L	L	L	L	L	L	L	L	L	L					
20										L	L	L	L	L	L	L	L	L						
21									L	L	A	L	U L 648	L	L	L	L	L	L					
22										L	A	A	A	L	L	L	L	L	L					
23										L	A	A	A	A	L	A	A							
24							216		L	L	L	L	L	L	L	L	L	U L 448	L					
25									L	L	L	U L 548	L	L 532	L	L	L	L	L					
26									L	L	L	L	L 580	U L 548	L 584	U L 540	A	L						
27									L	L	U L 508	L	A	U L 568	L	U L 548	A	A	L					
28									L	L	A	L	L	L 536	L 528	U L 512	L	L	L					
29									L	480	L	L	A	U L 532	L	L	L	L	L					
30									L	U L 468	L	U L 508	L 556	U L 524	U L 536	L	U L 468	L	L					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1			3	2	3	3	6	3	4	2	1						
MED							216			U L 480	548	U L 548	L 580	U L 534	L 536	U L 544	U L 468	U L 448						
U Q										U L 508		U L 576	U L 648	U L 548	L 584	U L 570								
L Q										U L 468		U L 508	L 556	L 532	L 528	U L 526								

APR. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	U A 272	A					
16							200	256	324	344	U A 360	A	A	412	U R 388	R 372	R 340	A 304	U A 236					
17							172	260	312	R 344	R	R	A	U R 392	U R 364	B	328	R 300	A					
18							B	256	312	R 344	364	A	R 392	R 392	A	R 352	340	300	A 296					
19							220	276	320	352	372	R 396	R	A	B	R 364	336	304	228					
20							A 188	272	320	R 352	384	U A 388	A	A	R 380	R 368	R	304	220					
21							188	A 276	328	A 368	376	396	U R 404	400	392	368	344	U A 304	A 236					
22							180	A 276	320	360	R 372	A	A	A	A	R 364	R 348	328	U A 228					
23							A	284	340	372	392	400	396	A	A	A	A	U A 324	U A 220					
24							B	A 276	328	372	380	384	R 364	A	A	A	A	312	248					
25							188	276	328	352	376	380	R 380	A 352	U A 364	A 340	328	296	A 224					
26							212	276	312	360	372	368	R	R 372	R 384	R 364	348	A 300	U A 264					
27							180	272	312	348	364	376	372	368	U R 344	U R 348	328	U A 280	236					
28							172	256	312	356	360	A	A	A	A	332	332	288	236					
29							208	U R 264	312	360	364	376	376	372	372	352	328	U A 284	232					
30							188	R 268	R 312	R 340	348	R	400	400	R	364	328	A 284	A 204					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							12	15	15	15	14	9	8	9	8	12	12	16	14					
MED							188	272	320	352	372	384	386	392	R 376	R 364	334	300	A 234					
U Q							204	A 276	328	360	376	396	398	400	R 386	R 366	342	A 304	A 236					
L Q							180	260	312	R 344	364	376	374	370	U R 364	350	328	U A 286	A 224					

APR. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E [SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	J A 40	J A 39	J A 25	J A 26	18	E B 16	J A 22
16	J A 31	25	J A 21	J A 16	J A 18	E B 16	G	28	G	38	39	J A 44	J A 60	47	44	40	G	54	29	J A 49	J A 67	J A 25	J A 34	J A 23
17	20	E B 16	J A 18	E B 16	E B 16	E B 16	21	30	35	40	G	G	37	42	G	E B 40	G	G	J A 24	E B 16	18	J A 20	J A 18	20
18	22	E B 16	E B 16	E B 16	19	E B 16	24	32	37	42	J A 46	40	G	G	33	G	G	32	36	J A 22	J A 20	E B 16	20	J A 27
19	J A 72	E B 16	J A 23	E B 16	E B 16	E B 16	G	32	37	39	40	G	G	37	E B 40	G	G	G	32	J A 23	E B 16	E B 16	J A 22	J A 29
20	J A 37	J A 33	J A 32	J A 28	J A 29	J A 19	22	33	J A 45	40	J A 49	42	40	38	G	G	G	J A 43	J A 54	J A 34	J A 26	J A 57	J A 30	J A 50
21	21	20	E B 16	20	22	E B 16	22	32	J A 44	J A 51	J A 57	J A 58	J A 65	49	J A 48	42	41	J A 38	32	J A 31	J A 39	J A 53	J A 74	J A 28
22	J A 27	J A 54	J A 56	J A 30	E B 20	E B 16	21	33	44	J A 49	J A 66	J A 69	J A 152	J A 55	34	G	G	G	26	J A 28	J A 32	J A 66	J A 52	J A 74
23	J A 61	J A 28	J A 32	J A 37	J A 42	J A 40	J A 28	32	40	J A 55	J A 68	J A 72	J A 61	J A 72	J A 61	J A 75	J A 77	J A 48	J A 42	J A 22	J A 33	J A 27	J A 46	J A 32
24	J A 66	J A 20	J A 20	J A 19	E B 17	E B 16	J A 22	30	34	J A 46	42	46	J A 48	J A 50	J A 54	42	40	G	G	J A 21	J A 21	J A 25	J A 17	E B 16
25	20	E B 16	E B 16	E B 16	E B 16	E B 16	23	30	34	39	43	41	J A 50	43	42	39	G	G	28	J A 34	J A 44	J A 42	J A 34	J A 21
26	J A 20	E B 16	E B 16	E B 16	E B 16	J A 23	G	30	36	39	42	43	G	G	40	39	J A 53	34	J A 44	J A 62	J A 29	J A 26	J A 18	E B 16
27	J A 35	J A 30	20	E B 16	E B 16	E B 16	22	29	36	J A 48	J A 58	J A 59	J A 59	43	J A 56	40	J A 58	J A 60	J A 34	J A 22	J A 19	J A 39	J A 52	J A 30
28	19	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	41	J A 71	J A 50	J A 48	J A 44	32	G	G	G	28	J A 25	J A 33	J A 25	J A 24	J A 42
29	J A 30	E B 16	J A 17	20	E B 16	E B 16	G	32	39	42	39	51	J A 57	J A 49	J A 52	52	48	34	G	J A 21	J A 28	E B 16	J A 27	21
30	J A 32	J A 44	J A 42	18	21	E B 16	21	G	G	G	G	G	43	44	G	41	40	36	27	J A 25	J A 17	E B 16	J A 51	J A 52
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16
MED	J A 30	20	J A 20	16	E B 17	E B 16	22	30	36	41	43	44	J A 48	44	40	40	G	34	30	J A 25	J A 27	J A 25	J A 28	J A 28
U Q	J A 37	J A 30	J A 32	J A 20	21	J A 16	23	32	40	J A 48	J A 58	J A 58	J A 60	J A 49	J A 52	42	J A 48	J A 42	J A 38	J A 32	J A 33	J A 40	J A 48	J A 37
L Q	20	E B 16	E B 16	E B 16	E B 16	E B 16	G	30	34	39	39	G 40	G 37	38	G 32	G	G	G	26	J A 22	J A 20	E B 17	J A 19	21

APR. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	38	34	22	24	E B 16	E B 16	21
16	27	20	18	E B 16	E B 16	E B 16	G	27	G	37	39	41	44	47	44	40	G	47	G 23	42	24	20	27	E B 16
17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	29	34	U Y 40	G	G	U Y 37	42	G	E B 40	G	G	23	E B 16	E B 16	E B 16	E B 16	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	30	36	40	45	U Y 40	G	G	U Y 33	G	G	31	G 27	18	16	E B 16	E B 16	27
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	32	36	38	39	G	G	U Y 37	E B 40	G	G	G	31	18	E B 16	E B 16	19	16
20	18	20	20	18	20	16	21	31	37	39	48	42	U Y 40	U Y 38	G	G	G	32	48	32	24	24	18	23
21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	32	39	42	49	58	57	49	44	41	37	36	30	30	35	45	36	27
22	21	24	23	20	E B 20	E B 16	20	32	36	48	62	63	70	46	U Y 34	G	G	G	26	20	27	35	21	36
23	32	24	17	23	28	23	26	30	38	53	66	70	59	71	59	68	67	44	39	21	28	E B 16	24	21
24	28	E B 16	17	19	E B 17	E B 16	19	30	U Y 34	44	42	42	48	48	52	39	36	G	G	18	18	20	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	28	34	39	43	41	45	43	42	38	G	G	26	30	21	38	24	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	20	G	30	36	38	41	43	G	G	U Y 40	39	52	U Y 34	43	60	22	20	17	E B 16
27	26	16	E B 16	E B 16	E B 16	E B 16	22	28	35	44	42	54	58	42	52	38	56	57	31	20	17	26	18	19
28	16	E B 16	E B 16	E B 16	E B 16	E B 16	23	30	34	40	59	41	45	44	U Y 32	G	G	G	26	22	18	20	E B 16	18
29	24	E B 16	E B 16	E B 16	E B 16	E B 16	G	30	36	41	39	46	55	44	50	46	44	33	G	19	27	E B 16	17	E B 16
30	19	E B 16	E B 16	E B 16	E B 16	E B 16	21	G	G	G	G	G	43	43	G	40	39	35	25	23	16	E B 16	22	23
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16
MED	18	E B 16	E B 16	E B 16	E B 16	E B 16	21	30	36	40	42	42	45	43	G	38	G	32	G	22	22	20	18	18
U Q	26	20	17	18	17	16	22	31	36	44	49	54	57	47	50	40	44	37	32	30	26	25	23	23
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	28	34	38	39	G	G	G	U Y 40	G	G	G	26	18	16	E B 16	E B 16	E B 16

APR. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E ;SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	16	16	16	16	16	16	16
16	16	16	16	16	16	16	16	16	20	19	29	28	28	41	29	27	27	20	16	16	16	16	16	16
17	16	16	16	16	16	16	14	16	16	21	27	29	27	29	28	40	23	21	16	16	16	16	16	16
18	16	16	16	16	16	16	16	16	20	18	28	28	31	28	29	28	21	20	16	16	16	16	16	16
19	16	16	16	16	16	16	16	16	20	20	28	28	32	32	40	28	20	16	16	14	16	16	16	16
20	16	16	16	16	16	16	14	16	16	22	24	29	36	29	28	27	22	16	16	16	16	16	16	16
21	16	16	16	16	16	16	16	16	20	23	30	30	27	27	30	24	20	19	16	16	16	16	16	16
22	16	16	16	15	20	16	16	20	20	27	27	30	30	29	28	20	20	18	18	16	16	16	16	16
23	16	16	16	16	16	16	16	20	20	23	21	27	29	27	28	25	20	20	16	14	16	16	16	16
24	16	16	16	16	17	16	16	16	20	24	28	28	29	36	32	20	24	20	16	16	16	16	16	16
25	16	16	16	16	16	16	16	18	20	27	28	28	28	33	28	26	21	18	16	16	16	16	16	16
26	16	16	16	16	16	16	16	19	20	24	30	26	30	26	30	29	20	23	16	16	16	16	16	16
27	16	16	16	16	16	16	16	16	20	20	25	28	28	29	24	29	23	19	16	16	16	16	16	16
28	16	16	16	16	16	16	16	19	20	24	24	28	32	28	29	28	23	20	16	16	16	16	16	16
29	16	16	16	16	16	16	16	19	20	18	20	20	28	33	29	29	20	20	16	15	16	16	16	16
30	16	16	16	16	16	16	16	16	17	23	28	30	29	27	28	24	21	18	16	16	16	16	16	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	16	16	16	16	16	16	16
MED	16	16	16	16	16	16	16	16	20	23	28	28	29	29	29	27	21	20	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	19	20	24	28	29	31	33	30	29	23	20	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	20	20	24	28	28	27	28	24	20	18	16	16	16	16	16	16

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E KSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	304	325	336	329	270	277	266
16	274	267	330	362	H 254	258	324	361	348	345	297	294	R 296	R	287	296	R 288	301	U R 323	315	312	273	270	290
17	286	300	294	314	275	277	335	350	H 323	309	R 296	312	305	R	302	R	R	R	322	332	342	261	269	277
18	273	296	301	329	321	280	322	348	345	320	304	309	R	309	R 305	R	R	R 325	334	332	316	282	U R 279	292
19	284	274	F 291	315	327	270	334	351	323	322	294	292	R	R	U R 302	R 306	294	R 300	R	R	326	295	282	295
20	288	282	286	293	312	308	308	333	311	306	R 293	U R 288	U R 281	U R 286	U R 280	289	302	300	312	321	326	304	288	278
21	284	295	302	308	321	291	315	353	327	307	282	288	R 284	R 282	286	R	287	307	304	308	R 323	R 287	R 279	276
22	305	293	278	270	285	291	316	336	305	312	297	293	R 300	R 294	R 305	R	R	R	309	319	314	306	297	267
23	292	302	298	F 281	F 290	290	320	330	309	304	291	285	289	R	R	U R 281	291	R	304	301	U R 290	291	284	288
24	286	311	306	R 302	290	307	314	328	307	308	301	295	U R 278	R	R 287	U R 284	U R 289	U R 295	R 304	319	305	300	297	294
25	301	311	R 314	310	302	315	333	353	319	324	308	313	294	301	R 287	R 291	298	296	318	R 315	331	307	289	293
26	292	298	307	315	304	301	353	370	348	329	301	293	287	R 296	R 297	295	R 299	309	R	R	334	318	289	R 285
27	299	292	303	313	V 322	321	352	351	329	310	309	R 286	295	292	R	R 304	302	309	R	326	331	294	283	288
28	292	R 301	307	324	281	276	339	343	343	316	313	284	298	314	R	302	302	304	309	337	344	265	277	275
29	294	288	282	273	302	322	360	362	340	332	298	294	299	304	R	R	R 304	305	315	R 338	R 316	285	279	284
30	285	298	284	282	295	324	350	337	349	328	292	294	299	305	R 299	308	R 312	328	323	329	322	298	264	279
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15	15	15	15	15	15	15	13	10	11	10	12	13	13	14	16	16	16	16
MED	288	296	301	310	302	291	333	350	327	316	297	293	295	298	R 297	296	298	304	315	324	324	292	280	284
U Q	294	301	307	315	321	315	350	353	345	328	304	295	299	305	R 302	R 304	302	309	323	332	331	302	288	291
L Q	284	288	286	282	285	277	316	336	311	308	293	288	R 286	R 292	287	U R 289	290	300	306	315	315	278	277	276

APR.2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E KSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	L	L					
16								L	L	U L 378	L	U L 349	L	L	L	L	L		L					
17								L	L	L	353	L	L	L	L	L	L	L	L					
18									L	L	L	L	L	L	L	U L 353	U L 379	L	L					
19										L	L	L	L	L	L	L	L	L	L					
20										L	L	L	L	L	L	L	L	L						
21									L	L	A	L	U L 337	L	L	L	L	L	L					
22										L	A	A	A	L	L	L	L	L	L					
23										L	A	A	A	A	L	A	A							
24							A		L	L	L	L	L	L	L	L	L	U L 371	L					
25									L	L	L	U L 375	L	L 382	L	L	L	L	L					
26									L	L	L	L	L 354	U L 362	L 339	U L 350	A	L						
27									L	L	U L 374	L	A	U L 348	L	U L 335	A	A	L					
28									L	L	A	L	L	L 366	L 364	U L 369	L	L	L					
29									L	386	L	L	A	U L 370	L	L	L	L	L					
30									L	U L 405	L	U L 379	L 347	U L 358	U L 351	L	U L 371	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										3	2	3	3	6	3	4	2	1						
MED										U L 386	364	U L 375	L 347	U L 364	L 351	U L 352	U L 375	U L 371						
U Q										U L 405		U L 379	L 354	L 370	L 364	U L 361								
L Q										U L 378		U L 349	U L 337	U L 358	L 339	U L 342								

APR. 2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E ;SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	270	264					
16								224	220	268	278	304	310	288	314	286	268		252					
17								226	H 218	244	304	276	292	294	298	286	268	280	242					
18									240	254	256	276	274	282	270	298	278	256	240					
19										262	246	316	316	304	290	282	292	280	264					
20										250	278	300	324	316	324	294	274	260						
21									250	242	250	304	344	312	304	290	292	270	256					
22										256	286	294	274	316	304	294	294	276	254					
23										284	296	314	290	306	308	308	286							
24							226		240	292	262	274	340	326	312	304	290	276	250					
25									234	260	248	280	308	278	280	320	292	292	268					
26									242	248	260	332	328	296	316	298	290	258						
27									232	258	274	332	284	304	318	298	286	266	248					
28									228	248	296	310	294	284	280	280	288	276	260					
29									H 230	256	308	286	308	288	294	280	274	270	244					
30									240	244	332	282	312	278	308	292	270	256	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							1	2	11	15	15	15	15	15	15	15	15	14	13					
MED							226	225	234	256	278	300	308	296	304	294	286	270	252					
U Q									240	262	296	314	324	312	314	298	292	276	262					
L Q									228	248	256	280	290	284	290	286	274	260	246					

APR.2015 h'F2 (KM)

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	248	264	228	216	248	292	316
16	308	310	228	190	238	390	252	224	216	194	202	188	254	242	H 224	238	234	272	248	228	228	260	318	272
17	260	240	252	222	300	284	230	222	210	220	210	190	242	218	230	224	214	226	236	222	202	202	302	290
18	308	262	226	218	212	284	240	232	212	210	224	186	180	208	200	210	188	232	238	218	226	220	278	300
19	294	302	280	226	206	282	234	218	214	212	210	206	H 200	210	200	196	218	226	250	232	222	230	266	258
20	270	286	278	250	242	228	224	226	236	216	234	212	H 204	246	206	210	214	238	256	242	228	228	256	300
21	282	268	256	230	222	236	230	218	218	234	A	296	A 284	274	230	218	224	244	248	248	228	272	328	306
22	262	246	294	282	268	254	242	224	216	236	A	A	A	214	202	204	204	H 220	244	244	234	246	232	330
23	288	262	246	292	304	262	234	218	224	268	A	A	A	A	A	A	A	258	244	238	250	250	274	270
24	286	248	242	240	258	248	A	228	218	222	212	216	226	258	A 304	H 198	212	220	240	232	232	248	262	264
25	260	238	228	212	250	228	224	210	212	198	222	188	H 198	200	202	H 202	H 208	H 224	252	242	228	238	246	260
26	268	258	254	222	238	258	220	210	216	208	204	H 210	192	190	206	228	A	236	256	248	220	220	232	260
27	274	280	262	236	222	222	218	216	212	240	212	286	A	198	314	202	A	A	240	230	220	240	280	282
28	278	268	250	222	244	296	226	216	212	212	A	196	248	228	216	204	202	236	244	226	210	282	300	298
29	278	270	278	292	230	220	224	214	216	222	194	224	A	216	A	276	258	218	H 228	222	212	240	286	284
30	292	270	278	290	248	236	218	220	206	202	196	174	218	238	210	224	224	236	236	234	212	204	274	296
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	15	15	15	15	15	14	15	15	15	11	13	11	14	13	14	12	15	16	16	16	16	16	16
MED	278	268	254	230	242	254	228	218	216	216	210	206	218	217	210	210	214	236	244	232	224	240	276	287
U Q	292	280	278	282	258	284	234	224	218	234	222	220	248	242	230	224	224	244	251	242	228	249	296	300
L Q	268	248	242	222	222	228	224	216	212	208	202	188	198	208	202	202	206	224	239	227	214	224	259	267

APR. 2015 h'F (KM)

IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E +SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	C	C	C	C	C	C	C	C	C					
2							C	C	C	C	C	C	C	C	C	C	C	C	C					
3							C	C	C	C	C	C	C	C	C	C	C	C	C					
4							C	C	C	C	C	C	C	C	C	C	C	C	C					
5							C	C	C	C	C	C	C	C	C	C	C	C	C					
6							C	C	C	C	C	C	C	C	C	C	C	C	C					
7							C	C	C	C	C	C	C	C	C	C	C	C	C					
8							C	C	C	C	C	C	C	C	C	C	C	C	C					
9							C	C	C	C	C	C	C	C	C	C	C	C	C					
10							C	C	C	C	C	C	C	C	C	C	C	C	C					
11							C	C	C	C	C	C	C	C	C	C	C	C	C					
12							C	C	C	C	C	C	C	C	C	C	C	C	C					
13							C	C	C	C	C	C	C	C	C	C	C	C	C					
14							C	C	C	C	C	C	C	C	C	C	C	C	C					
15							C	C	C	C	C	C	C	C	C	C	C	102	A					
16							136	108	98	104	104	A	A	B	104	108	118	110	112					
17							136	104	94	102	100	100	A	100	96	B	108	108	A					
18							B	102	100	100	104	A	104	100	A	104	102	110	108					
19							142	H 102	100	98	102	102	102	A	B	106	100	104	108					
20							124	H 104	100	100	102	104	A	A	102	100	102	102	104					
21							132	104	104	104	102	102	100	100	100	108	102	102	112					
22							116	104	100	102	98	A	A	A	A	102	104	110	110					
23							A	116	110	110	104	102	102	A	A	A	A	106	106					
24							B	104	102	102	102	98	100	A	A	A	A	106	106					
25							130	112	106	106	106	104	102	102	102	102	104	100	106					
26							128	104	100	100	104	98	104	102	104	106	104	108	A					
27							126	116	100	100	102	100	104	104	94	110	104	104	106					
28							B	106	100	104	102	102	A	A	A	108	108	108	114					
29							124	104	104	100	100	98	102	104	104	100	106	106	112					
30							140	102	100	100	100	102	104	104	104	104	102	102	106					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							11	15	15	15	15	12	10	8	9	12	13	16	13					
MED							130	104	100	102	102	102	102	102	102	105	104	106	108					
U Q							136	108	104	104	104	102	104	104	104	108	107	108	112					
L Q							124	104	100	100	100	99	102	100	98	102	102	102	106					

APR. 2015 h'E (KM)

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IONOSPHERIC DATA STATION Yamagawa

APR.2015 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	100	98	98	96	86	B	96
16	90	98	96	96	96	B	G	152	G	108	106	102	98	140	148	160	G	112	120	98	98	98	98	98
17	100	B	94	B	B	B	136	120	116	116	G	G	96	168	G	B	G	G	102	B	88	104	102	102
18	94	B	B	B	92	B	130	120	120	112	108	100	G	G	100	G	G	160	124	112	100	B	102	94
19	112	B	98	B	B	B	G	130	128	122	126	G	G	98	B	G	G	G	118	102	B	B	96	96
20	96	92	92	94	94	98	134	126	112	118	108	114	102	102	G	G	G	116	104	100	98	98	98	96
21	98	110	B	90	90	B	144	130	116	116	114	110	108	110	114	116	118	108	122	104	98	98	96	94
22	96	96	94	94	B	B	126	120	118	108	102	98	98	94	102	G	G	G	110	102	100	96	96	96
23	96	92	92	90	90	90	90	94	118	110	106	104	102	98	96	96	96	108	104	106	94	114	96	96
24	94	94	88	100	B	B	118	116	136	108	108	104	102	96	96	96	98	G	G	90	86	86	86	B
25	88	B	B	B	B	B	134	138	152	124	114	114	104	106	102	102	G	G	110	102	100	94	96	98
26	106	B	B	B	B	94	G	150	130	118	108	108	G	G	130	126	130	110	112	96	96	96	96	B
27	94	92	92	B	B	B	130	134	118	112	108	104	102	108	100	108	102	102	118	112	106	96	96	94
28	90	B	B	B	B	B	134	134	126	112	102	104	98	96	104	G	G	G	120	106	98	102	102	98
29	94	B	94	94	B	B	G	124	116	112	116	108	102	108	110	110	110	104	G	114	100	B	102	102
30	98	98	98	104	98	B	134	G	G	G	G	G	158	144	G	132	112	104	102	100	98	B	94	94
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	8	10	8	6	3	11	14	13	14	13	12	12	13	11	9	7	10	14	15	15	12	15	14
MED	96	95	94	94	93	94	134	128	118	112	108	104	102	106	102	110	110	108	111	102	98	97	96	96
U Q	98	98	96	98	96	98	134	134	129	118	114	109	103	125	114	129	118	112	120	106	100	100	102	98
L Q	94	92	92	92	90	90	126	120	116	110	106	103	98	97	100	99	98	104	104	98	96	95	96	94

APR.2015 h'Es (KM)

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IONOSPHERIC DATA STATION Yamagawa

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

LAT.31°12.0'N LON.130°37.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																		C2	L4	FF31	FF31	F1		F3
16	F3	F2	F3	F1	F1			H1		C1	C1	L1	L1	H1	H1	H1		C2	C1	F4	F7	F3	F3	F3
17	F1		F1				H1	C1	C1	C1			L1	H1					L1		F1	F1	F1	F1
18	F1				F1		H1	C1	C1	C1	C1	L1			L1			H1	C1	F1	F2		F1	FF42
19	FF22		F1					H1	C1	C1	C1			L1					C2	F2			F2	F2
20	F4	F2	F3	F2	F2	F1	H1	C2	C1	C1	C1	C1	L1	L1				C1	C3	F2	F3	F2	F3	F3
21	F1	F1		F1	F1		H1	H1	C1	C1	C2	C1	C2	C1	C1	C1	C1	C1	C1	F3	F5	F5	F7	F4
22	F3	F4	F3	F2			C1	C1	C1	C1	C2	L2	L3	L1	L1				C1	F2	F6	F3	F3	F3
23	F4	F4	F3	F3	F3	F2	L2	L1	CL11	C1	C2	C2	C2	L2	L2	L3	L3	C2	C3	FF21	F3	FF12	FF31	F3
24	F3	F1	F2	F1			C1	C1	H1	C1	C1	C1	C1	L2	L2	L1	L1			F2	F3	F2	F2	
25	F1						H1	H1	H1	C1	C1	C1	C1	C1	C1	C1			C2	F3	F3	F6	F6	F2
26	F1					F2		H1	H1	C1	C1	C1			C1	C1	C2	C1	CL52	F8	F4	F4	F4	
27	F4	F1	F1				C1	HL11	C1	C1	C2	C1	C1	C1	C2	C1	C3	C4	C3	F3	F3	F5	F5	F2
28	F1						H1	H1	C1	C1	C3	C1	L2	L1	L1				C2	F2	F1	FF21	F2	F2
29	F3		F1	F1				C1	C1	C1	C1	C1	C2	C1	C2	C1	C1	C1		F2	F5		F3	F1
30	F2	F2	F2	F1	F1		H1						H1	H1		H1	C2	C2	C3	F2	F1		F4	F3
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

APR.2015 TYPES OF Es

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IONOSPHERIC DATA STATION Okinawa

APR.2015 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 82	X 87	X 85	X 60	X 53	X 54															X 116	X 112	X 102	X 83
2	O X 90	X 94	X 88	X 66	X 58	X 58															X 88	X 84	X 84	X 80
3	X 84	X 78	X 74	X 86	X 70	X 44															X 128	X 124	X 122	X 112
4	X 108	X 123	X 103	X 96	X 64	X 46														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	4	4	4	4	4	4															3	3	3	3
MED	X 87	X 90	X 86	X 76	X 61	X 50															X 116	X 112	X 102	X 83
U Q	X 99	X 108	X 96	X 91	X 67	X 56															X 128	X 124	X 122	X 112
L Q	X 83	X 82	X 80	X 63	X 56	X 45															X 88	X 84	X 84	X 80

APR.2015 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	76	81	79	54	47	48	47	83	108	107	110	116	R 129	R 136	R 144	J R 146	R 150	R 144	R 137	133	110	R 106	R 96	77
2	U R 84	88	82	60	52	52	53	80	96	102	111	125	U R 146	Y	U R 154	R 153	D R 148	R 152	143	114	R 82	R 78	78	R 75
3	78	72	68	80	64	38	40	74	90	105	135	140	Y	U R 158	D R 159	D R 158	D R 157	D R 156	U R 159	147	122	118	116	R 106
4	R 102	117	97	90	58	40	42	67	84	105	106	120	132	R 144	R 147	J R 148	144	J R 149	148	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	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	3	3	3	3	3
MED	81	84	80	70	55	44	44	77	93	105	110	122	R 132	R 144	R 150	R 150	U 152	R 150	146	133	110	R 106	96	R 77
U Q	R 93	102	90	85	61	50	50	82	102	106	123	132	U R 146	U R 158	R 156	R 156	R 154	R 154	154	147	122	118	116	R 106
L Q	77	76	74	57	50	39	41	70	87	104	108	118	R 129	R 136	R 146	J R 147	146	R 146	140	114	R 82	R 78	78	R 75

APR. 2015 foF2 (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	L	L	L	L	L						
2										L	L	L	L	L	L	UL 540	L	L						
3											L	L	L	L	L	L	L	L						
4									L	L	L	L	UL 556	UL 600	L	L	L	L		C				
5							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				
7							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				
9							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				
11							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				
13							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				
15							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				
17							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				
19							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				
21							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				
23							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				
25							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				
27							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				
29							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				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT													1	1		1								
MED													UL 556	UL 600		UL 540								
U Q																								
L Q																								

APR. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

H / D	00	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	220	292	R 344	376	R	B	B	B	A	344	284	208	A				
2							B	216	300	320	R	B	B	B	B	R	R	U R 308	U A 240	A				
3							A	220	A	336	A	B	A	B	B	B	B	292	A	B				
4							B	240	280	320	R 360	R	B	B	B	B	B	292	228	C				
5							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				
7							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				
9							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				
11							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				
13							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				
15							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				
17							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				
19							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				
21							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				
23							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				
25							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				
27							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				
29							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				
31																								
	00	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	3	4	2						1	4	3					
MED								220	292	328	368						344	292	228					
U Q								230	300	340								300	U A 240					
L Q								218	280	320								288	208					

APR. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 21	J A 18	E B 13	E B 13	E B 13	E B 13	E B 14	28	G 26	G	G	G	E B 45	E B 50	E B 50	J A 53	G 30	G	26	J A 24	E B 13	J A 29	J A 19	J A 20
2	E B 13	E B 13	E B 13	E B 13	J A 18	19	J A 19	25	34	G	G	E B 45	E B 46	E B 44	E B 45	40	G 28	G	J A 30	J A 32	J A 31	J A 20	25	23
3	J A 16	J A 27	J A 21	J A 21	J A 29	J A 30	J A 32	25	36	39	42	E B 45	47	E B 56	E B 44	E B 42	E B 41	G	J A 30	J A 18	19	21	J A 17	E B 13
4	J A 28	J A 33	J A 28	J A 29	J A 22	J A 22	J A 25	J A 28	G	G	G	G 26	E B 46	E B 44	E B 45	E B 42	E B 38	G	J A 20	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3
MED	J A 18	J A 22	17	17	J A 20	20	J A 22	26	G	G	G	G	E B 46	E B 47	E B 45	42	34	G	J A 28	J A 24	19	J A 21	J A 19	20
U Q	J A 24	J A 30	J A 24	J A 25	J A 26	J A 26	J A 28	28	35	G	G	E B 45	46	E B 53	E B 48	48	E B 40	G	J A 30	J A 32	J A 31	J A 29	25	23
L Q	14	16	E B 13	E B 13	16	16	16	25	G	G	G	G	E B 46	E B 44	E B 44	41	G 29	G	23	J A 18	E B 13	J A 20	J A 17	E B 13

APR. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	27	G 22	G	G	G	E B 45	E B 50	E B 50	45	G 27	G	25	21	E B 13	20	18	19
2	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	25	33	G	G	E B 45	E B 46	E B 44	E B 45	40	U G 28	G	28	23	20	18	20	20
3	E B 13	20	20	18	20	26	23	25	34	39	41	E B 45	45	E B 56	E B 44	E B 42	E B 41	G	28	E B 14	E B 13	E B 13	E B 13	E B 13
4	18	23	E B 13	19	19	18	E B 14	G 20	G	G	G	G 26	E B 46	E B 44	E B 45	E B 42	E B 38	G	G 18	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3
MED	16	16	E B 13	16	16	16	E B 14	25	G	G	G	G	E B 46	E B 47	E B 45	42	33	G	26	21	E B 13	18	18	19
U Q	18	22	16	18	20	22	18	26	34	G	G	E B 45	E B 46	E B 53	E B 48	44	E B 40	G	28	23	20	20	20	20
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	22	G	G	G	G	45	E B 44	E B 44	41	G 28	G	22	E B 14	E B 13	E B 13	E B 13	E B 13

APR. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	13	13	13	13	13	14	14	19	21	26	25	45	50	50	36	21	20	16	14	13	13	13	13
2	13	13	13	13	13	13	14	14	16	25	30	45	46	44	45	32	25	22	18	14	13	13	13	13
3	13	13	13	13	13	13	14	15	16	21	30	45	31	56	44	42	41	21	16	14	13	13	13	13
4	13	13	13	13	13	13	14	14	16	23	31	24	46	44	45	42	38	21	14	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3
MED	13	13	13	13	13	13	14	14	16	22	30	35	46	47	45	39	32	21	16	14	13	13	13	13
U Q	13	13	13	13	13	13	14	14	18	24	30	45	46	53	48	42	40	22	17	14	13	13	13	13
L Q	13	13	13	13	13	13	14	14	16	21	28	24	38	44	44	34	23	20	15	14	13	13	13	13

IONOSPHERIC DATA STATION Okinawa

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

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

H / D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	285	312	346	330	263	260	275	342	351	330	315	302	R 305	R 301	R 312	J R 319	R 308	R 329	R 338	328	302	R 257	R 263	292
2	U R 294	312	341	337	286	277	289	341	334	314	292	291	U R 301	Y	U R 311	R 323	R	R 338	335	344	R 268	R 284	294	R 302
3	285	275	273	319	384	301	293	333	322	283	304	314	Y	U R 318	R	R	R	R	U R 328	319	297	284	285	R 277
4	R 278	315	307	342	353	322	317	349	315	320	294	292	297	R 304	R 307	J R 310	318	J R 309	339	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	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	2	3	4	3	3	3	3	3
MED	285	312	324	334	320	289	291	342	328	317	299	297	R 301	R 304	R 311	J R 319	313	R 329	336	328	297	R 284	285	R 292
U Q	290	314	344	340	368	312	305	346	342	325	310	308	R 305	U R 318	R 312	R 323		R 338	338	344	302	R 284	294	R 302
L Q	282	294	290	324	274	268	282	337	318	298	293	292	297	R 301	R 307	J R 310		J R 309	332	319	R 268	R 257	R 263	R 277

APR.2015 M(3000)F2 (0.01)

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IONOSPHERIC DATA STATION Okinawa

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

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

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

APR.2015 M(3000)F1 (0.01)

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IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									242	250	252	270	292	290	294	288	278	264						
2										258	270	296	322	314	318	290	294	252						
3											296	290	328	326	320	308	280	262						
4									222	268	280L	312L	300	310	302	298	288	274		C				
5							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				
7							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				
9							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				
11							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				
13							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				
15							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				
17							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				
19							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				
21							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				
23							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				
25							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				
27							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				
29							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				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									2	3	4	4	4	4	4	4	4	4						
MED									232	258	275	293	311	312	310	294	284	263						
U Q										268	288	304	325	320	319	303	291	269						
L Q										250	261	280	296	300	298	289	279	257						

APR. 2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	294	256	222	204	288	330	304	234	226	216	212	230	208	E B 256	B 262	A 242	236	230	234	224	202	264	292	298
2	284	248	222	208	276	254	256	220	226	216	222	218	248	H 210	H 222	230	238	232	234	214	228	280	286	290
3	290	300	310	248	190	E A 298	E A 308	226	228	220	208	230	230	E B 288	212	228	240	230	240	218	210	232	260	288
4	296	248	254	220	206	A 228	232	212	206	228	196	H 198	B 232	216	226	220	216	230	244	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	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3
MED	292	252	238	214	241	U 258	U 262	223	226	218	210	224	231	236	224	229	237	230	237	218	210	264	286	290
U Q	295	278	282	234	282	314	306	230	227	224	217	230	240	E B 272	244	236	239	231	242	224	228	280	292	298
L Q	287	248	222	206	198	241	244	216	216	216	202	208	219	213	217	224	226	230	234	214	202	232	260	288

APR. 2015 h'F (KM)

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	110	112	108	108	108	B	B	B	A	112	110	112	A				
2							B	116	110	110	110	B	B	B	B	A	A	112	120	A				
3							A	118	A	A	A	B	A	B	B	B	B	110	A	B				
4							B	142	108	108	108	108	B	B	B	B	B	108	116	C				
5							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				
7							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				
9							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				
11							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				
13							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				
15							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				
17							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				
19							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				
21							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				
23							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				
25							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				
27							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				
29							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				
31																								
	00	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	3	3	3	2					1	4	3					
MED								117	110	108	108	108					112	110	116					
U Q								130	112	110	110							111	120					
L Q								113	108	108	108							109	112					

APR. 2015 h'E (KM)

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IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	98	98	B	B	B	B	B	138	104	G	G	G	B	B	B	106	104	G	124	104	B	98	92	98
2	B	B	B	B	104	104	100	158	144	G	G	B	B	B	B	102	104	G	118	104	102	94	94	90
3	90	98	98	98	98	98	98	154	106	116	114	B	104	B	B	B	B	G	108	108	96	104	104	B
4	104	100	102	96	96	96	100	98	G	G	G	98	B	B	B	B	B	G	92	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	3	3	2	2	3	3	3	4	3	1	1	1	1			2	2		4	3	2	3	3	2
MED	98	98	100	97	98	98	100	146	106	116	114	98	104			104	104		113	104	99	98	94	94
U Q	104	100			104	104	100	156	144										121	108		104	104	
L Q	90	98			96	96	98	118	104										100	104		94	92	

APR.2015 h'Es (KM)

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 2	F 2						H 1	L 1							C 1	L 1		C 1	L 1		F 1	F 1	F 2
2					F 1	F 1	L 1	H 1	HL 11							L 1	L 1		C 1	L 1	F 1	F 1	F 1	F 1
3	F 1	F 1	F 1	F 2	F 4	F 3	L 7	HL 21	L 1	CL 11	CL 11		L 1						C 2	CL 11	F 1	F 1	F 1	
4	F 1	F 3	F 1	F 2	F 1	F 2	L 1	L 1				L 1							L 1					
5																								
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31																								
	00	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																								

APR.2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

KEY OF f-PLOT	
	SPREAD
	foF2,foF1,foE
	fxF2
	DOUBTFUL foF2,foF1,foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

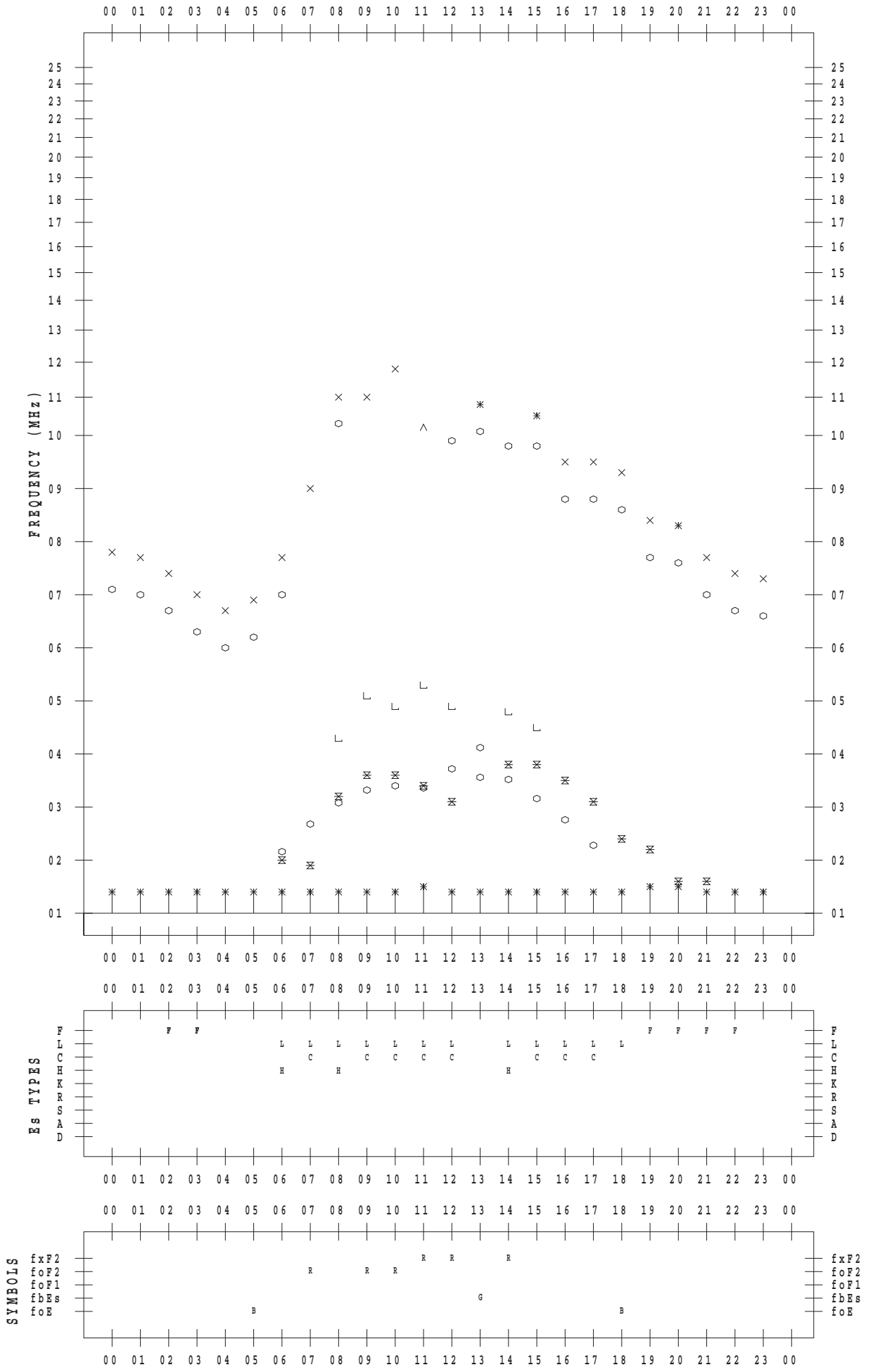
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 1

135 °E MEAN TIME



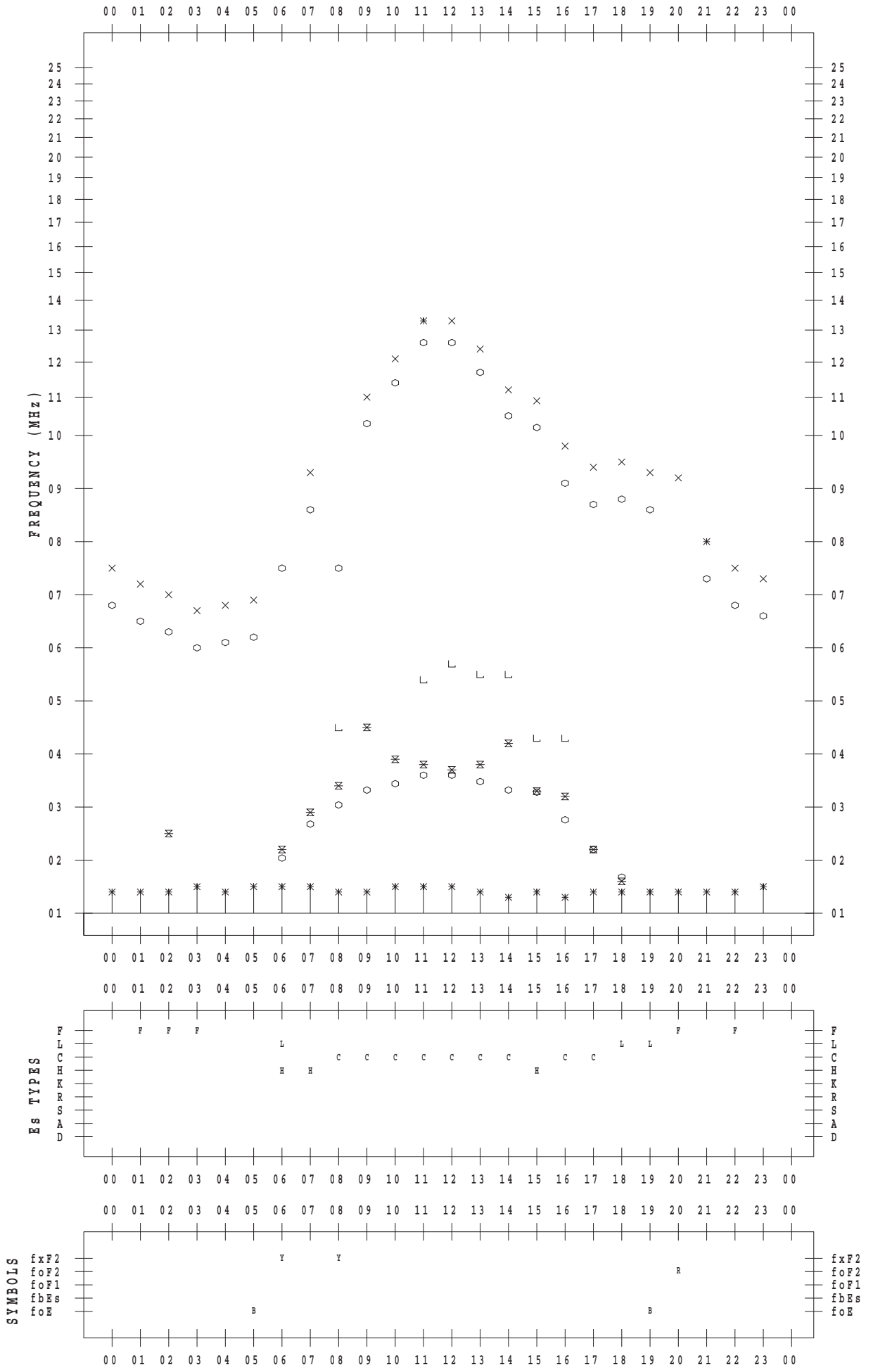
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 2

135 °E MEAN TIME



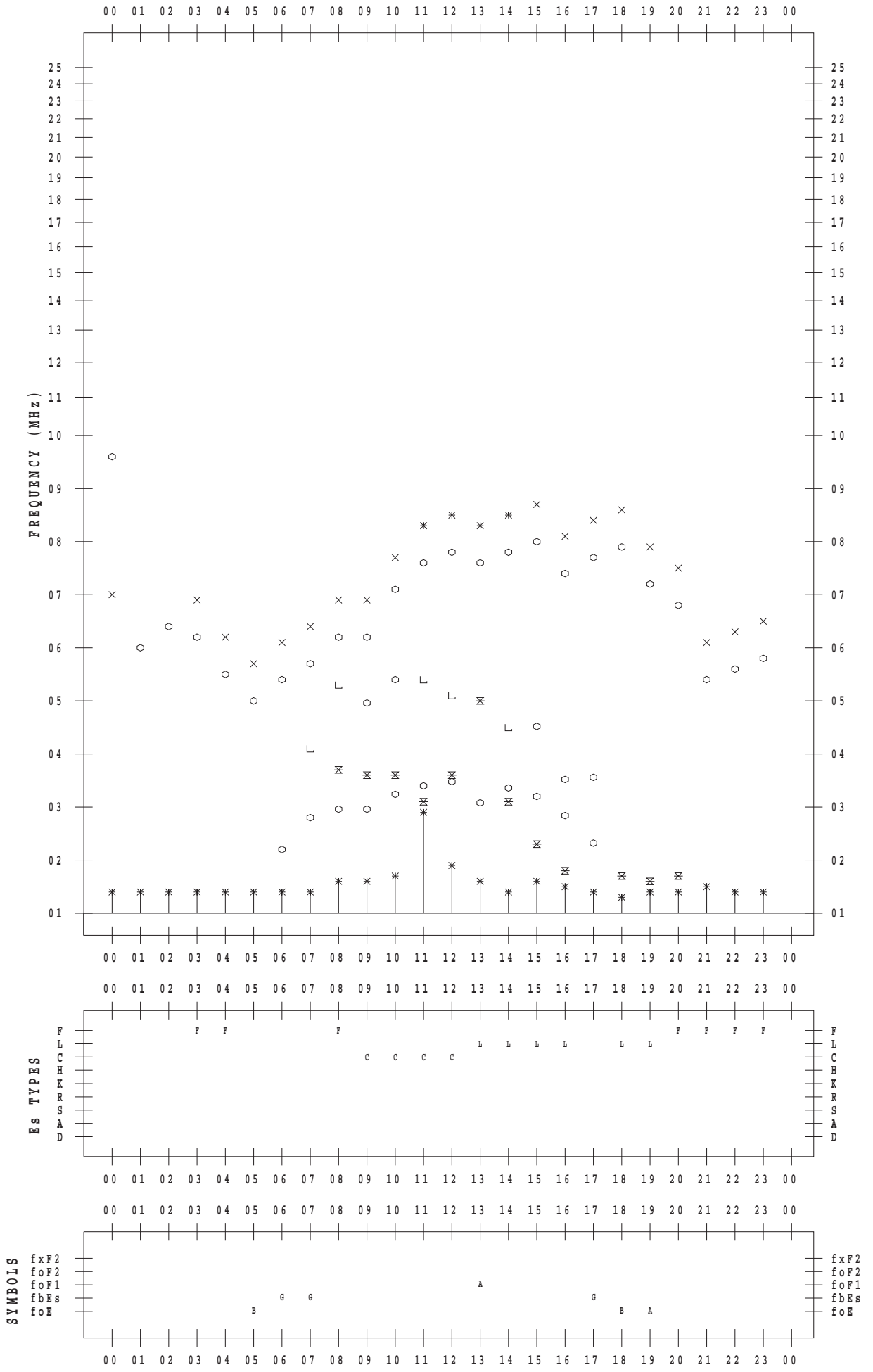
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 3

135 °E MEAN TIME



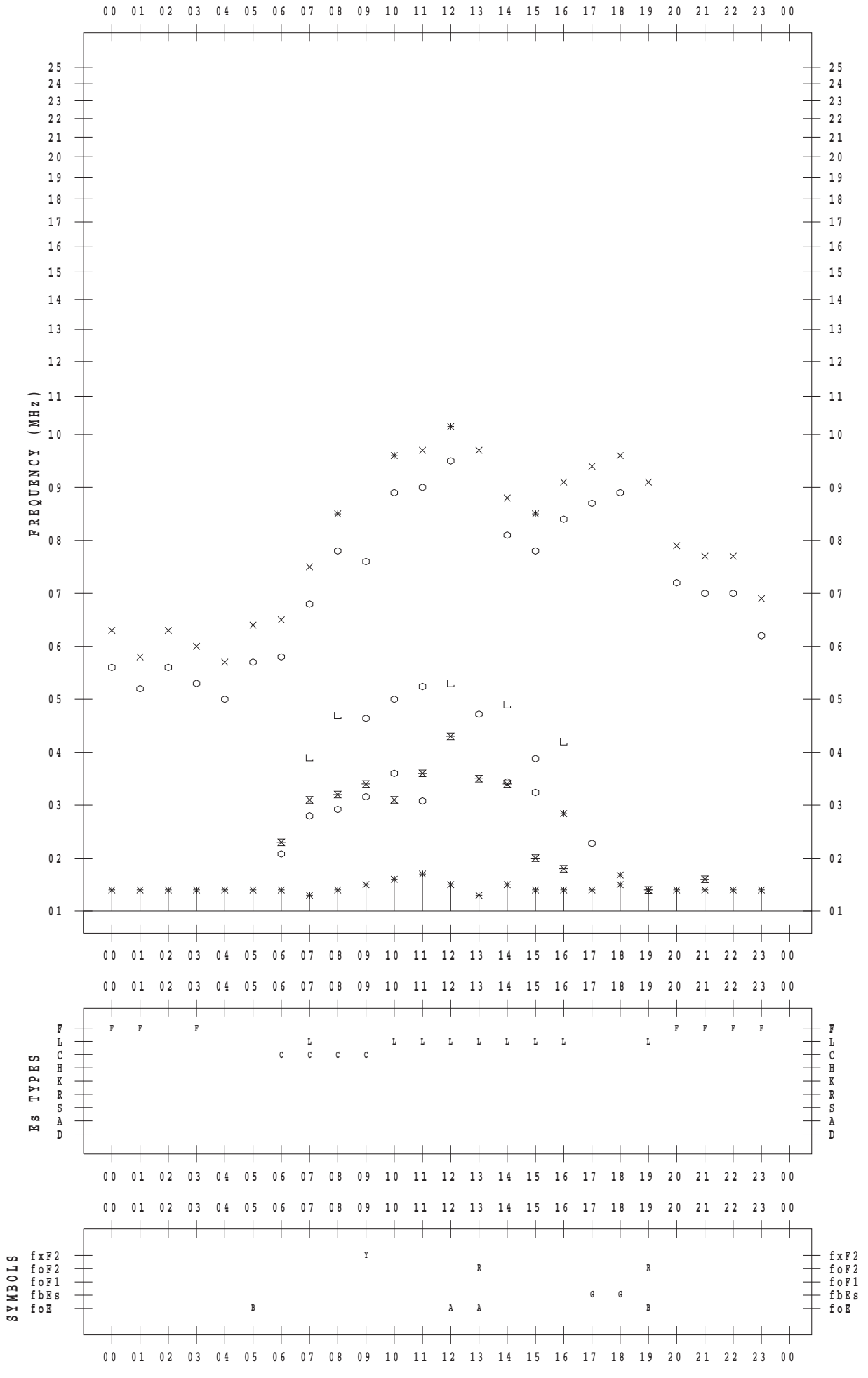
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 4

135 °E MEAN TIME



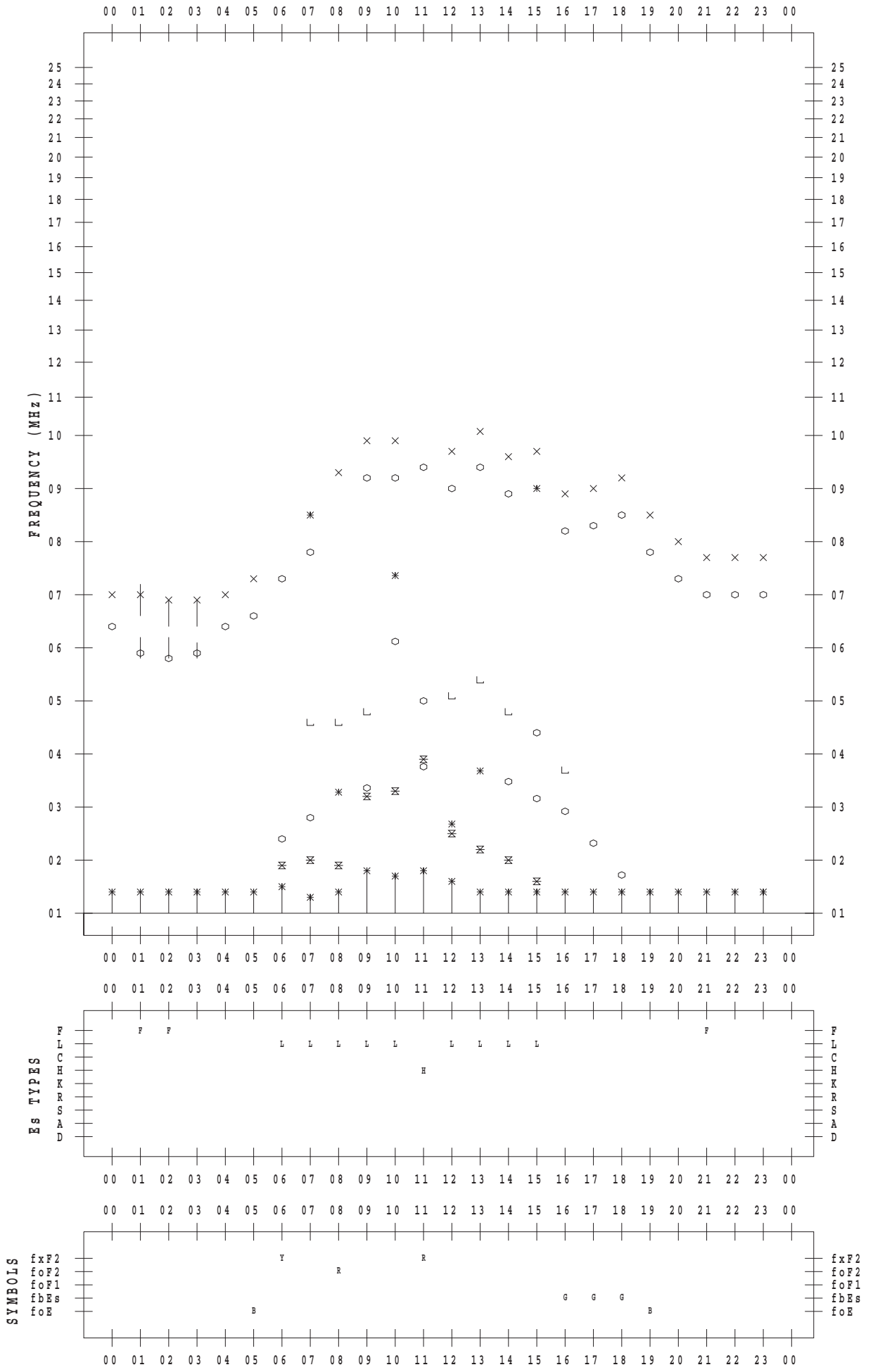
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 5

135 °E MEAN TIME



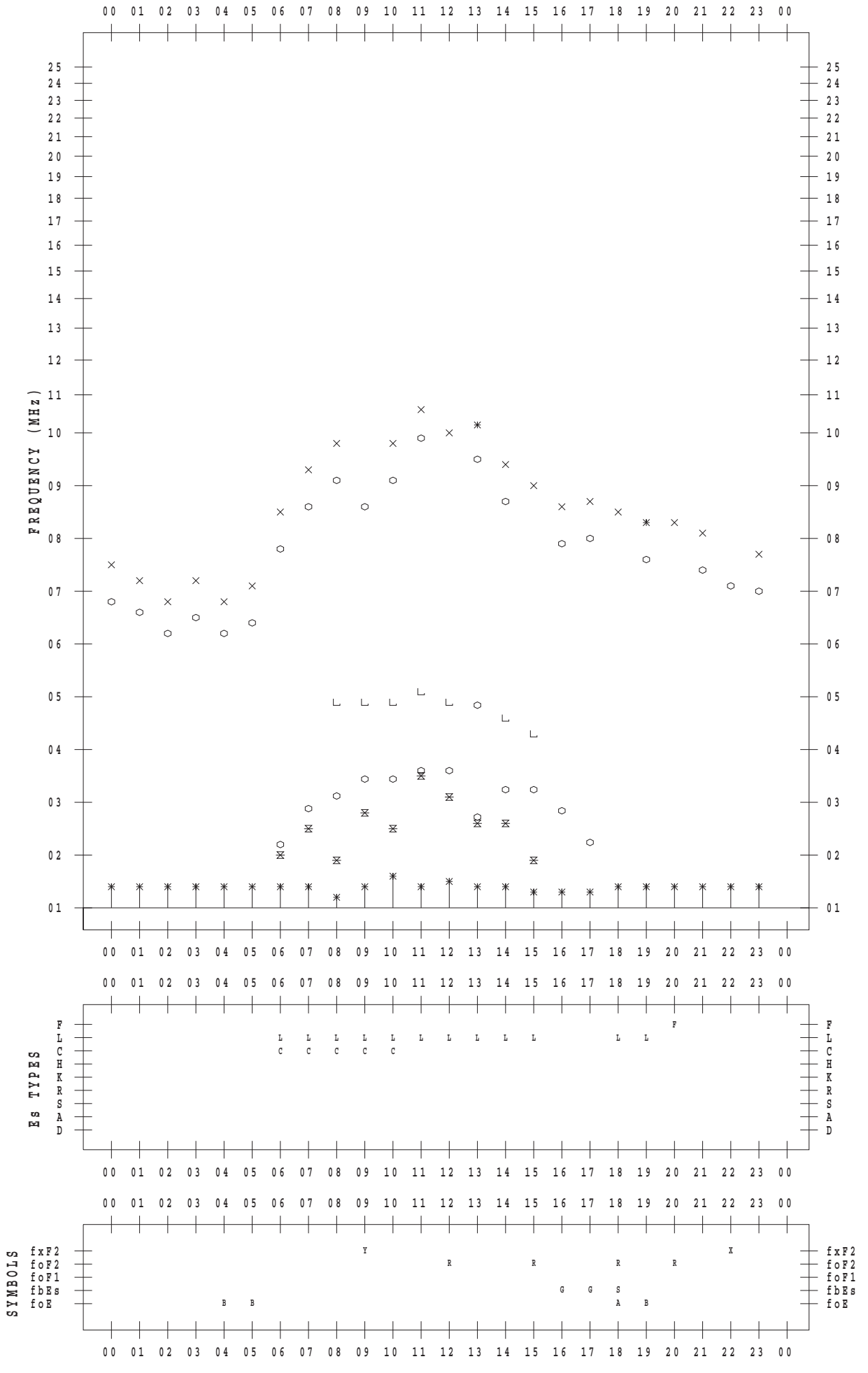
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 6

135 °E MEAN TIME



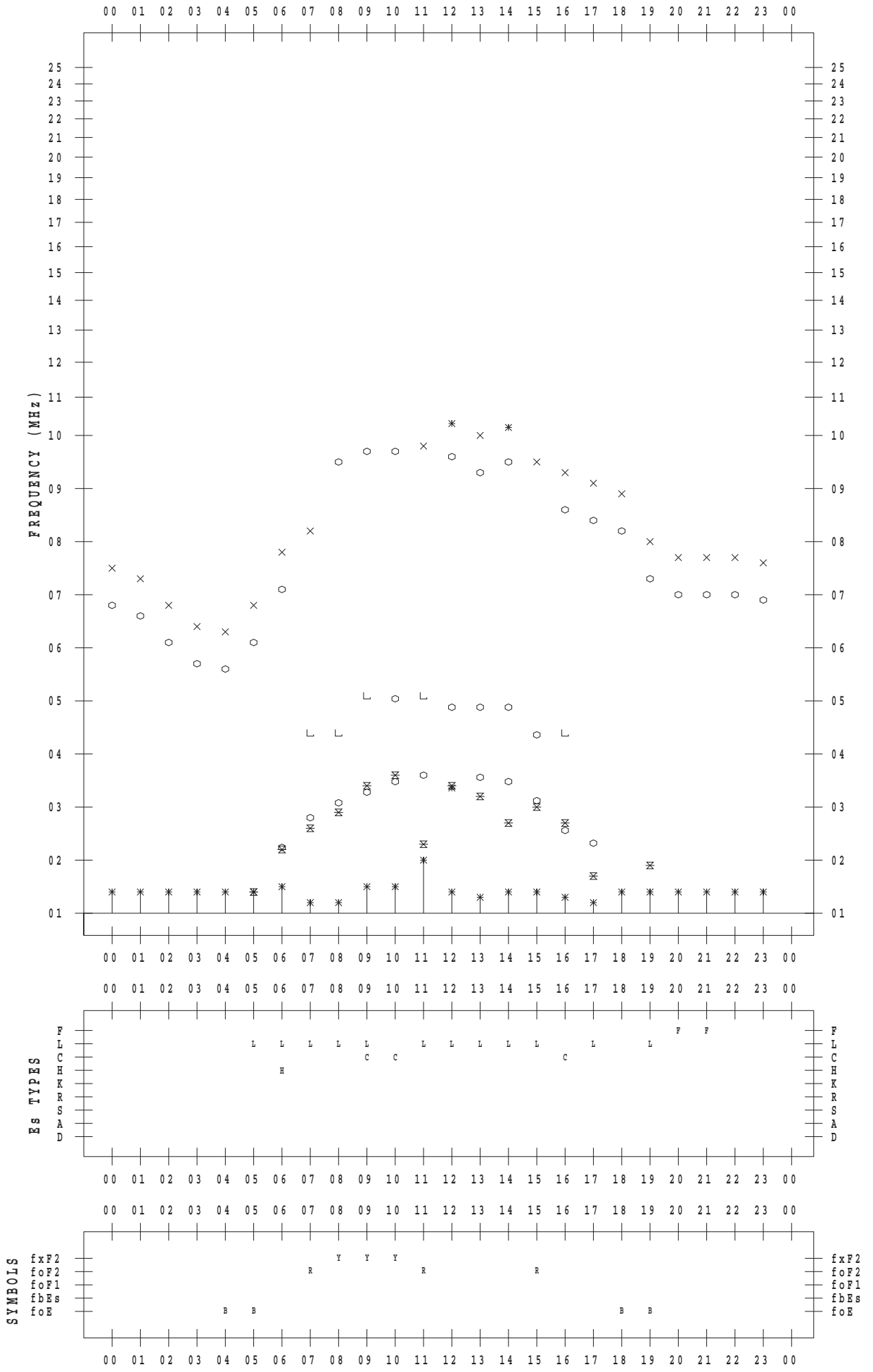
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 7

135 °E MEAN TIME



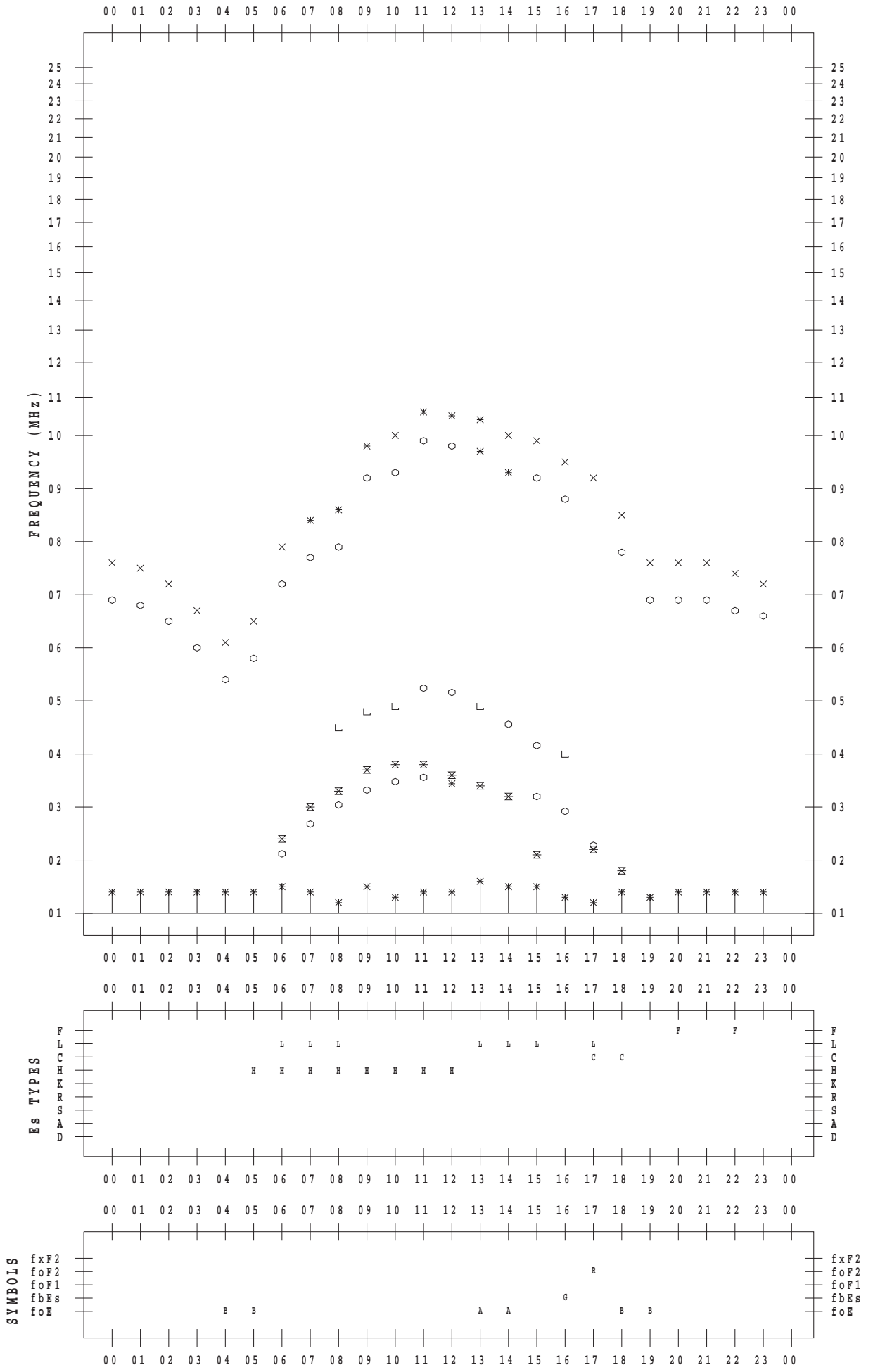
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 8

135 °E MEAN TIME



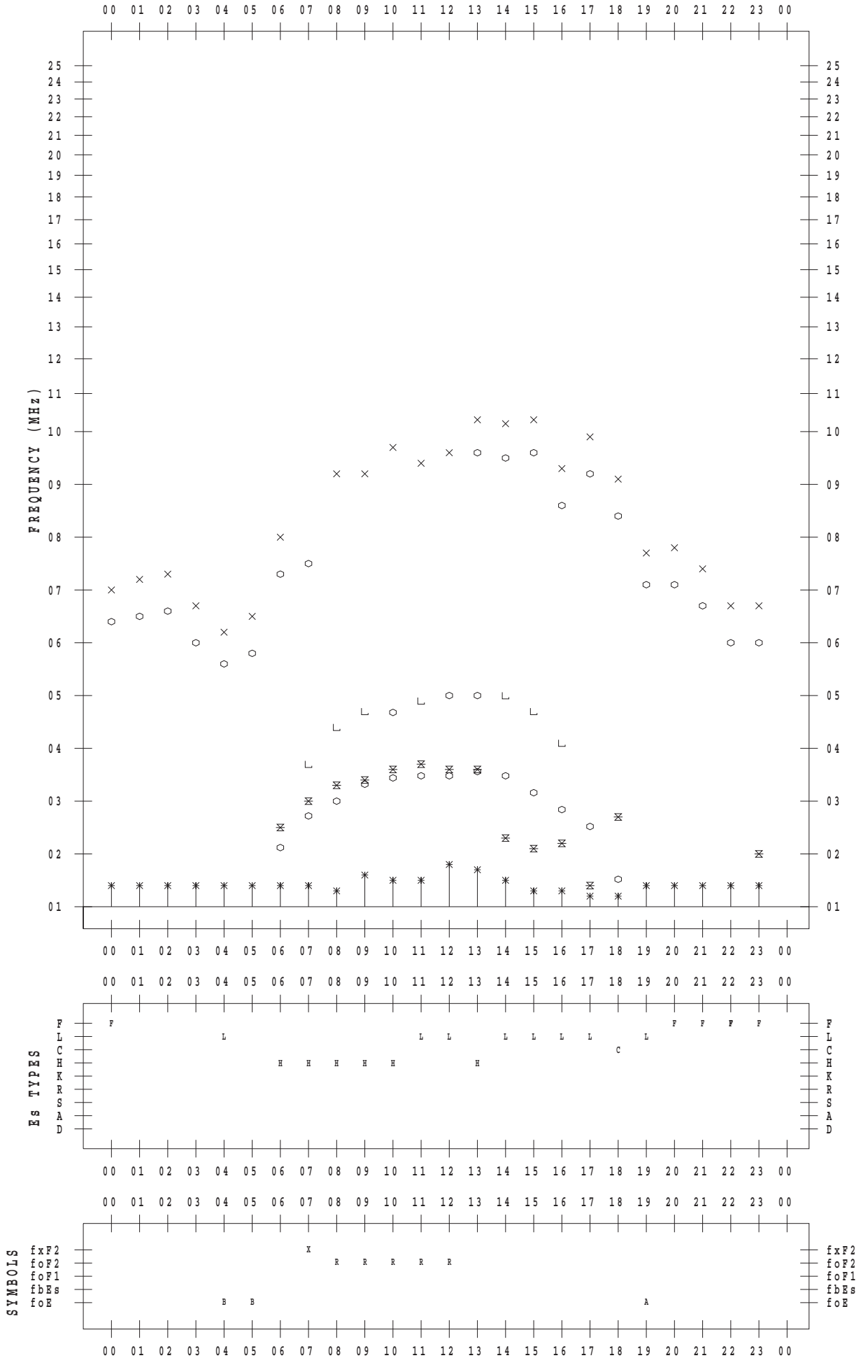
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/ 9

135 °E MEAN TIME



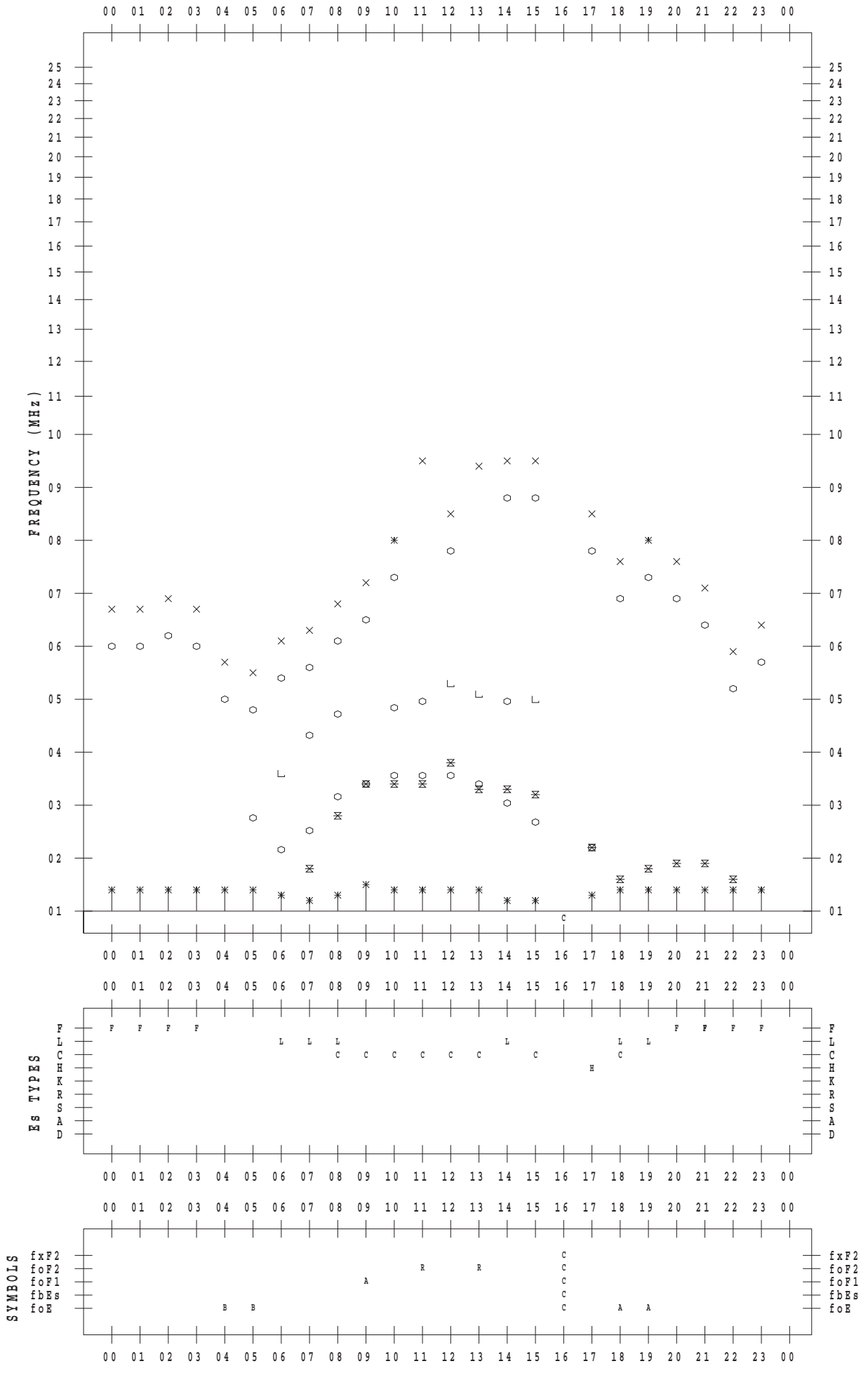
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/10

135 °E MEAN TIME



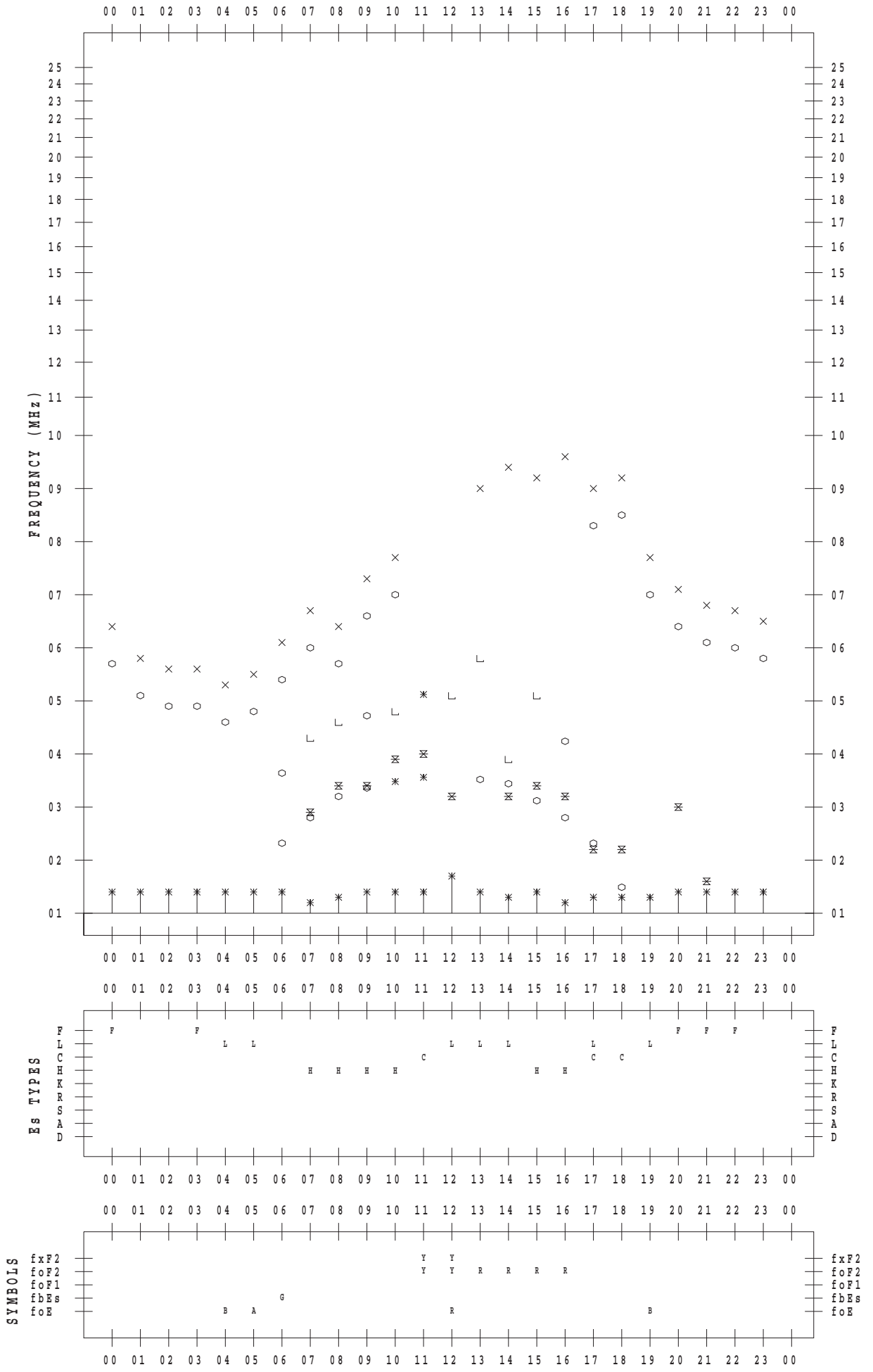
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/11

135 °E MEAN TIME



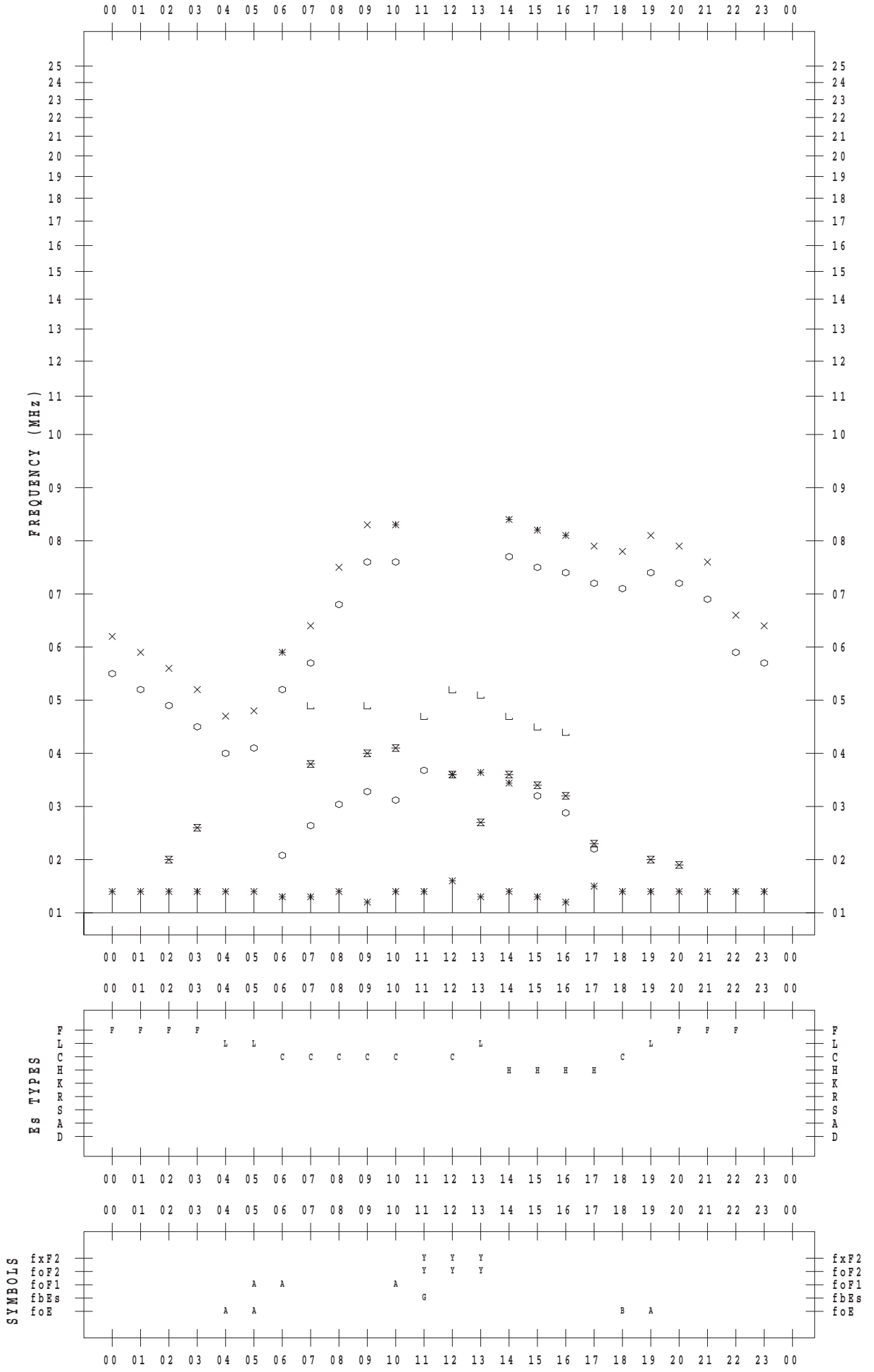
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/12

135 °E MEAN TIME



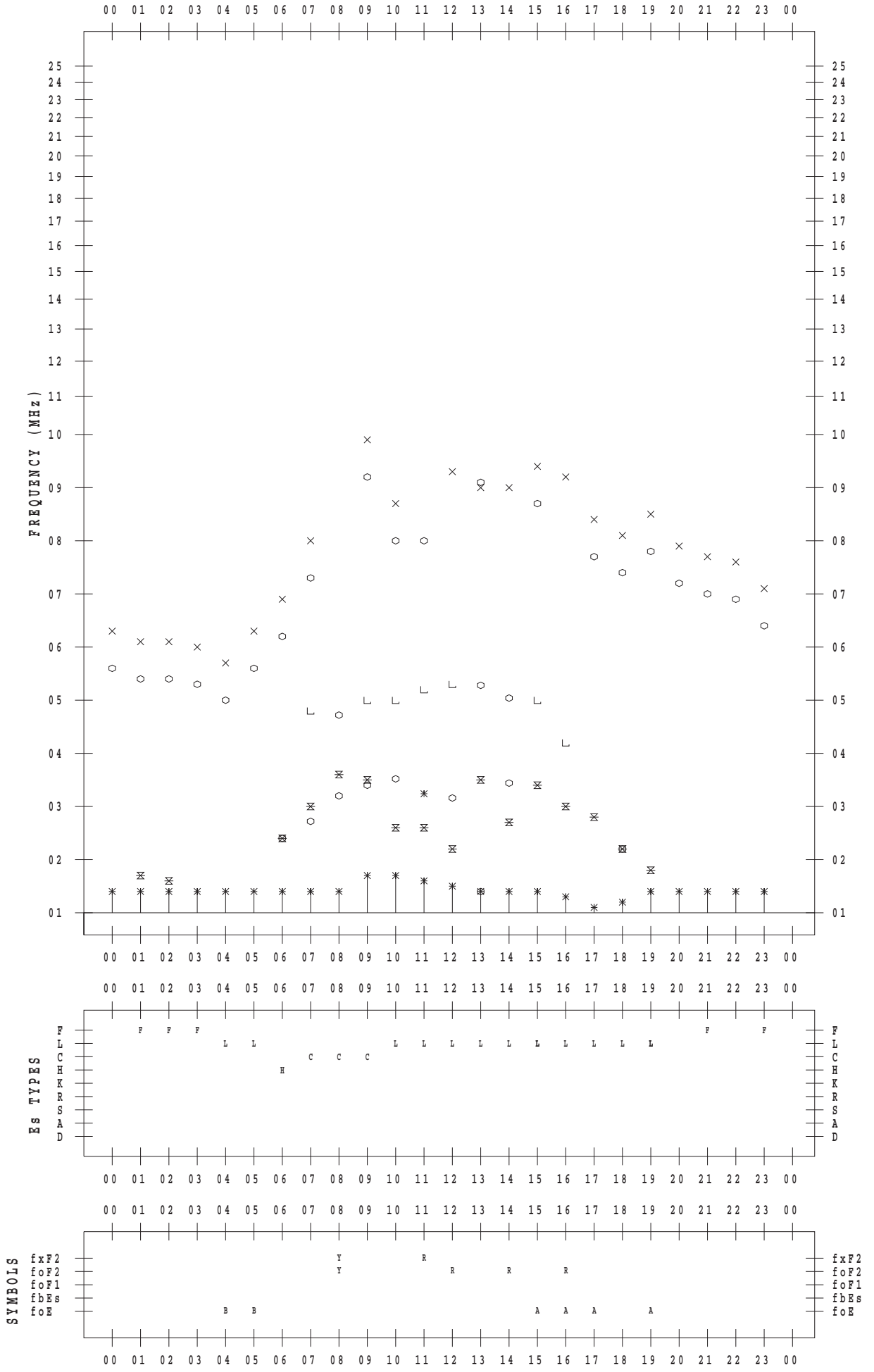
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/13

135 °E MEAN TIME



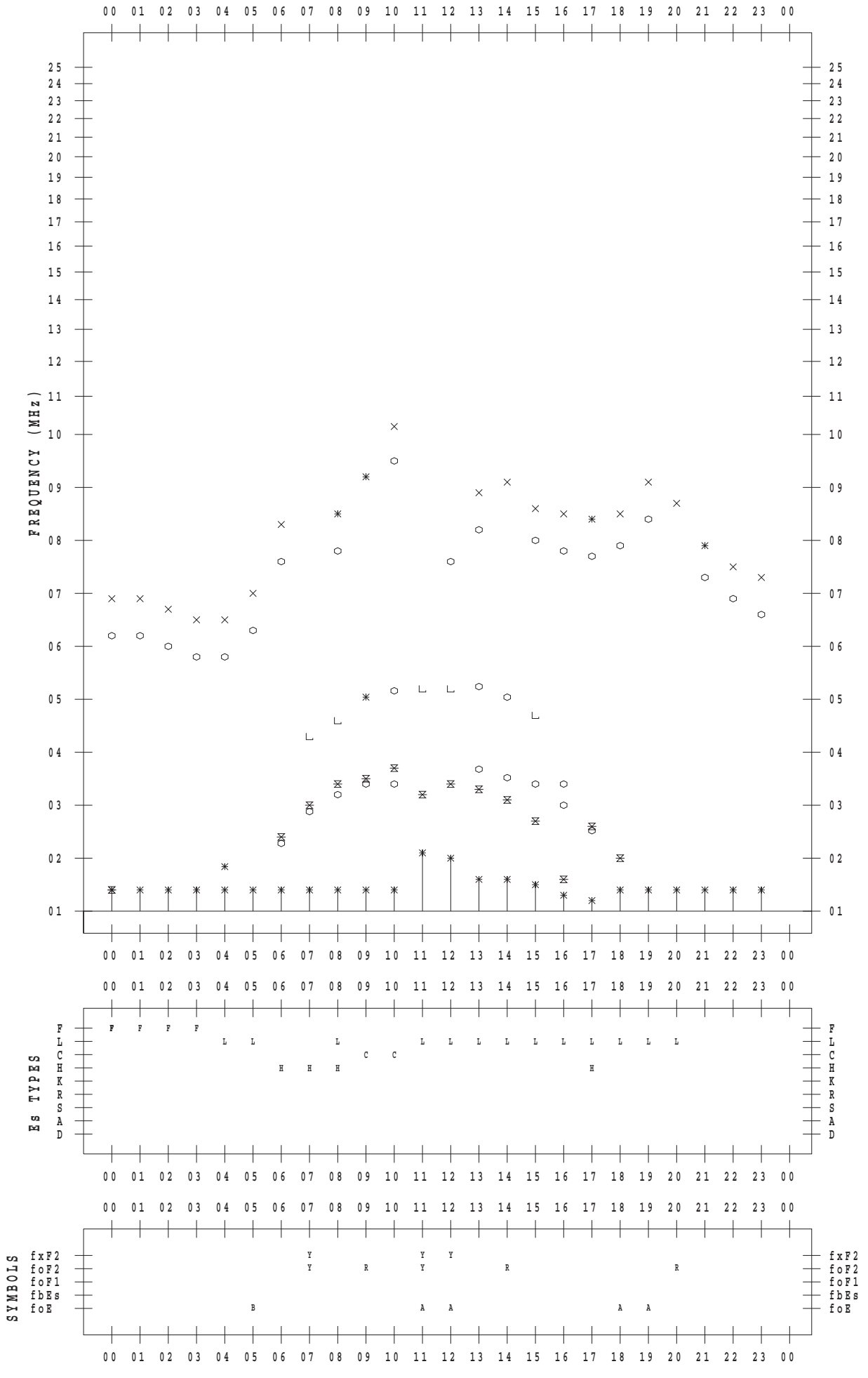
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/14

135 °E MEAN TIME



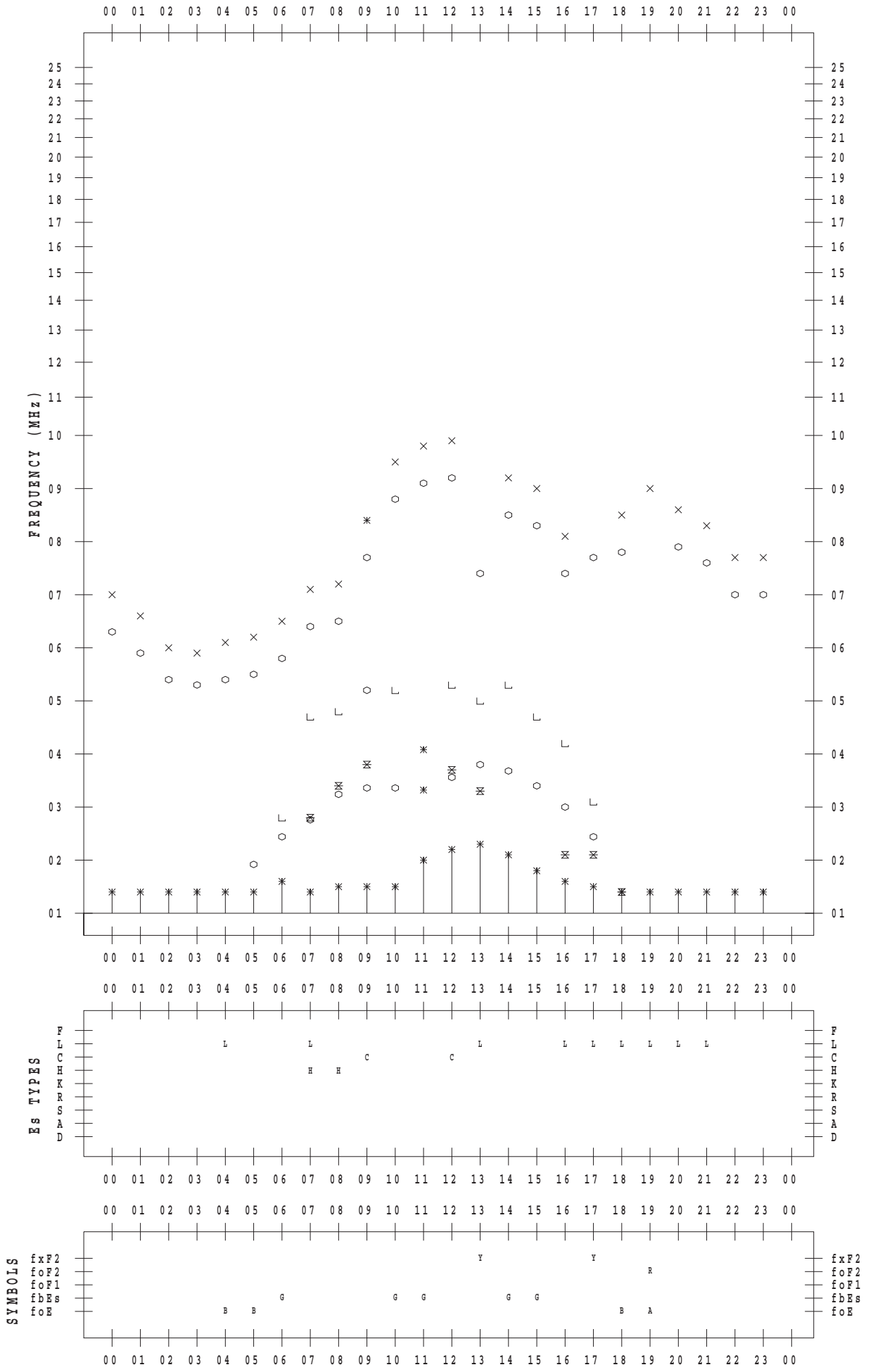
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/15

135 °E MEAN TIME



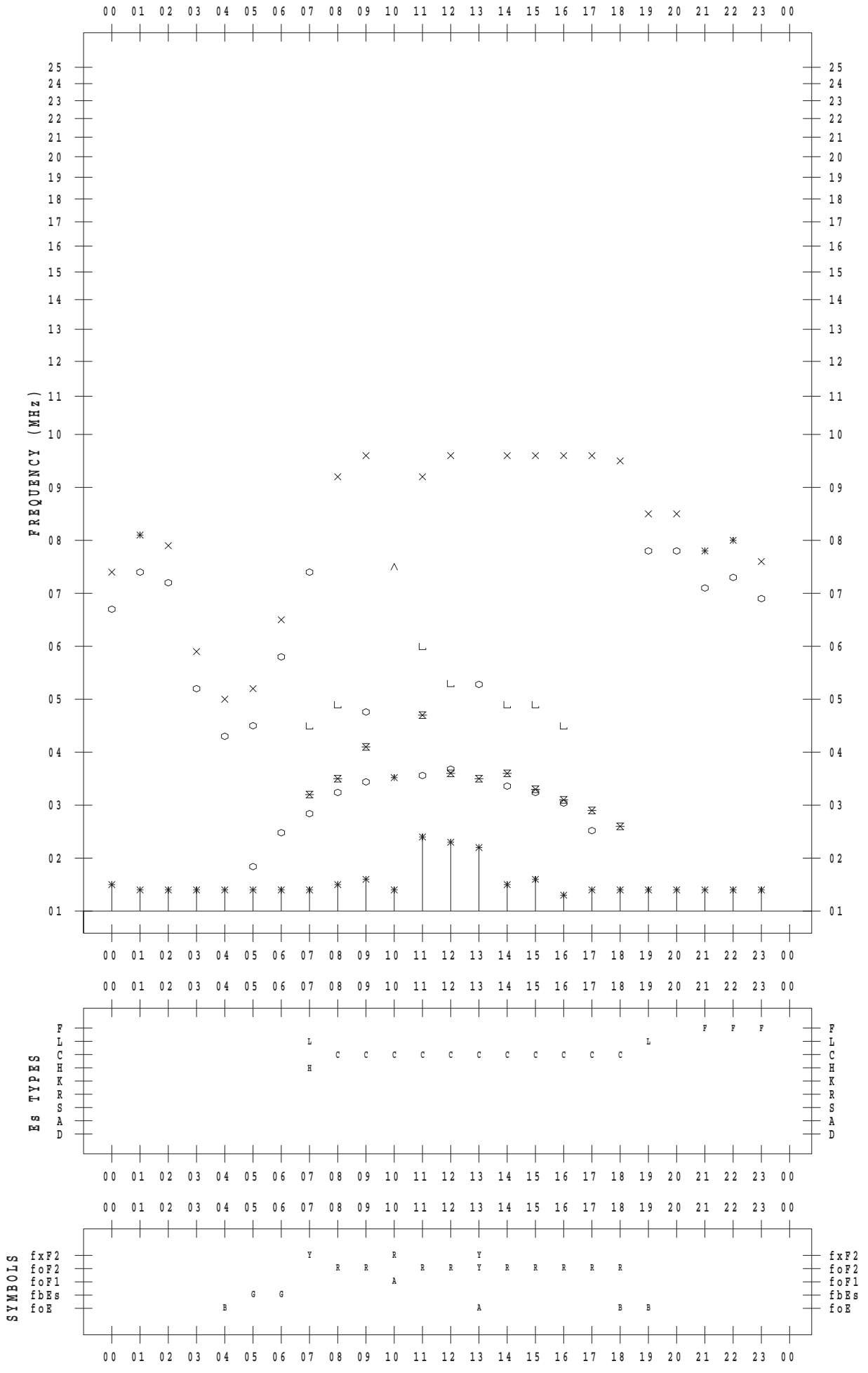
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/16

135 °E MEAN TIME



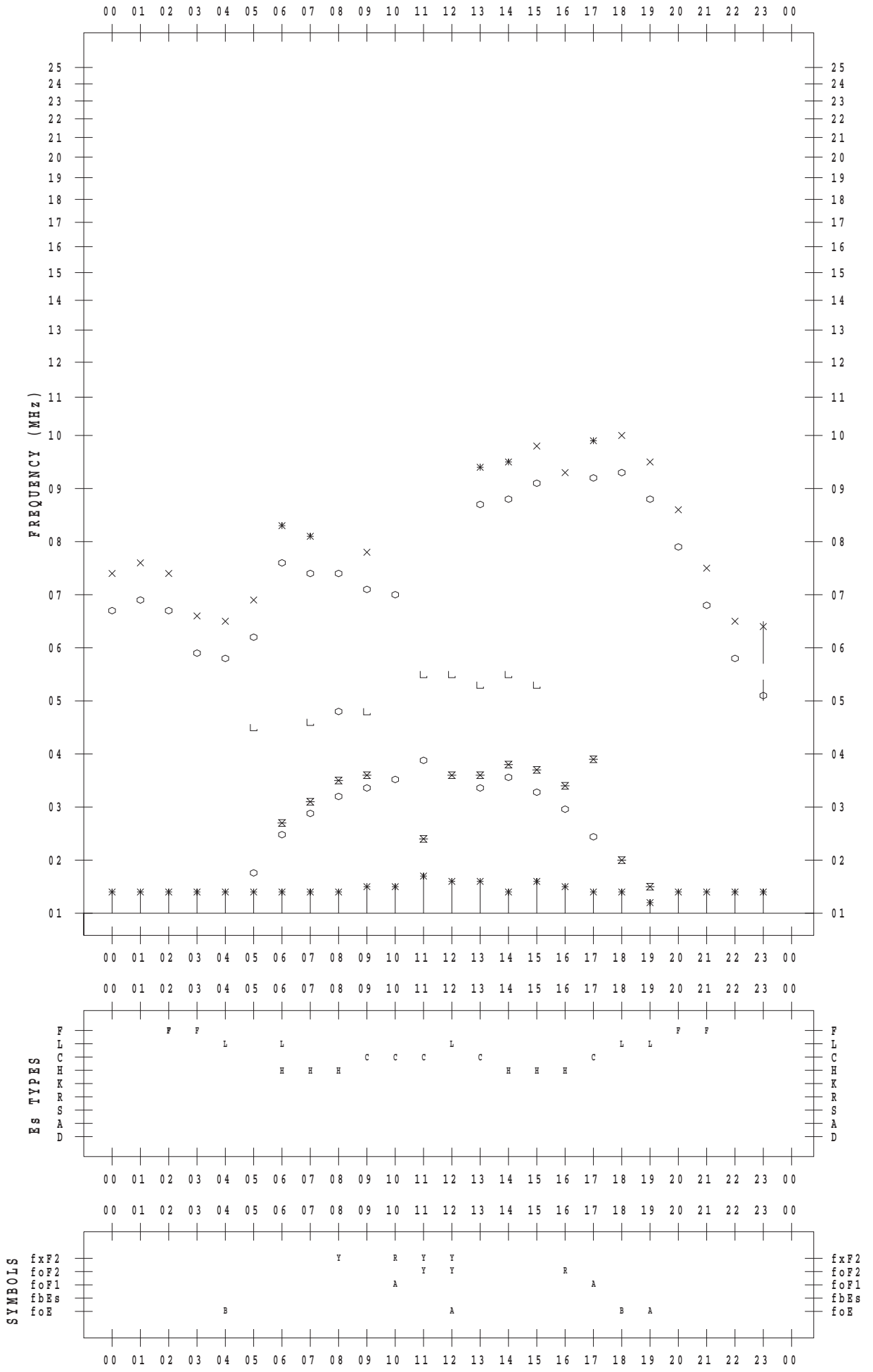
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/17

135 °E MEAN TIME



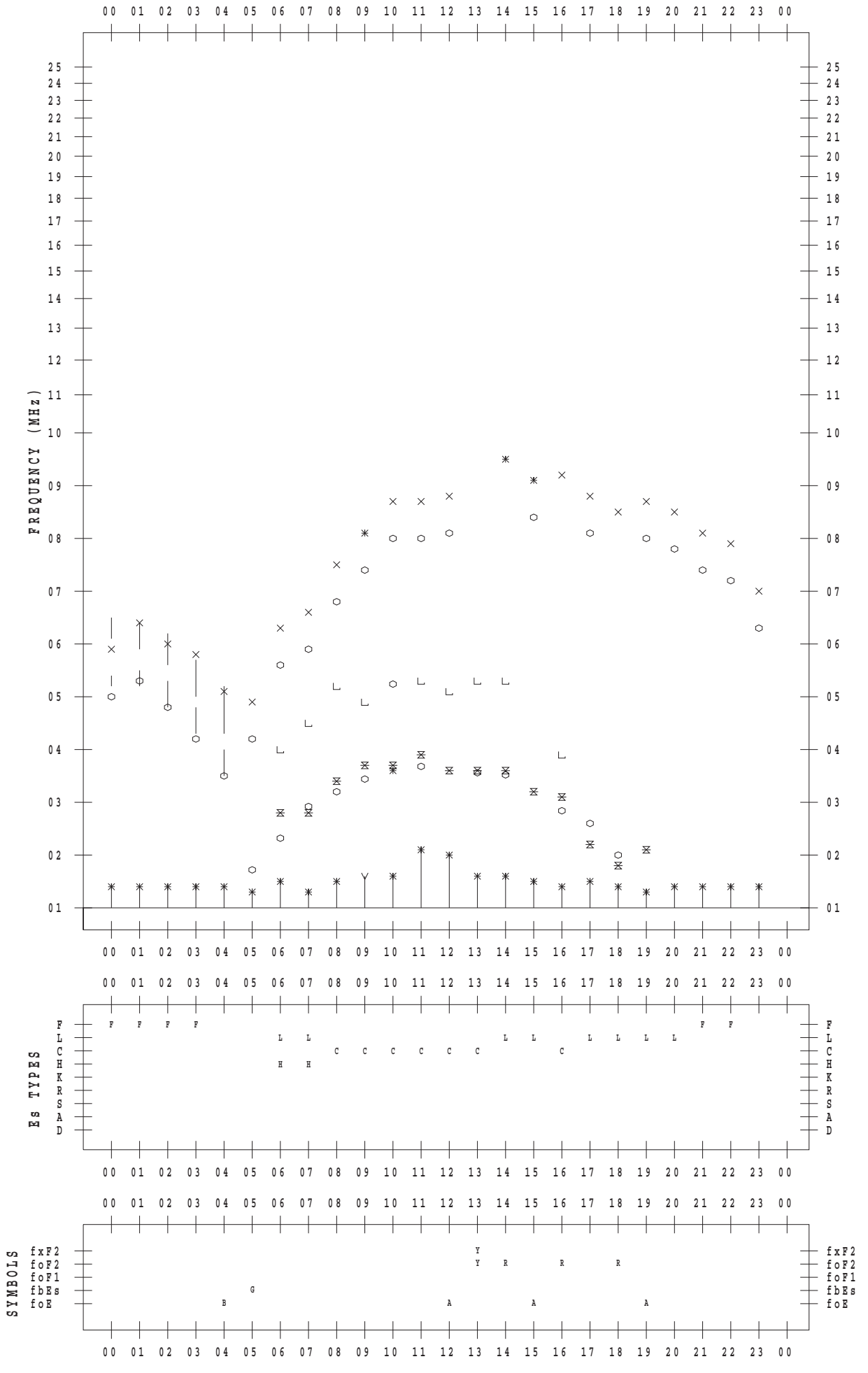
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/18

135 °E MEAN TIME



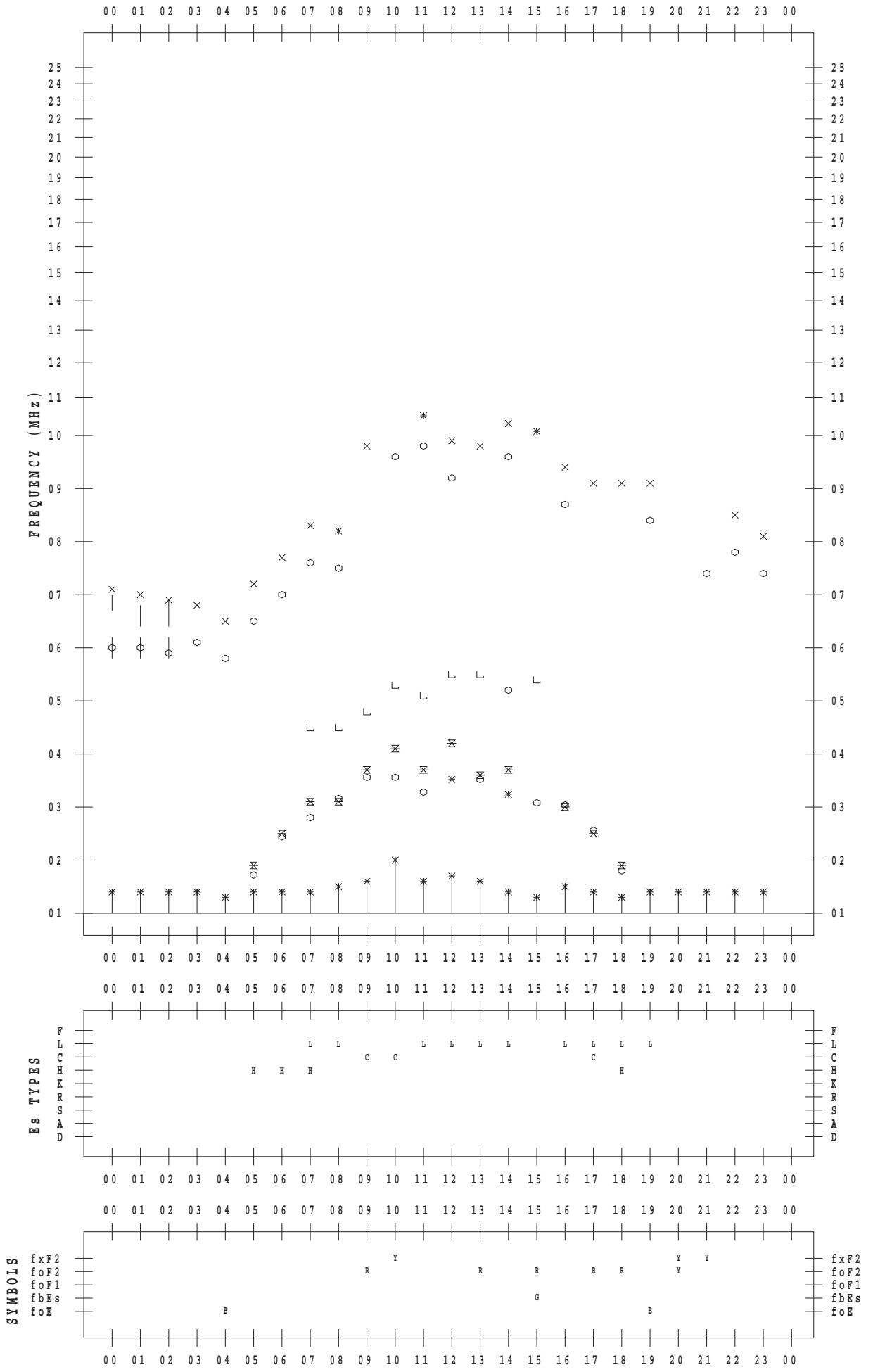
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/19

135 °E MEAN TIME



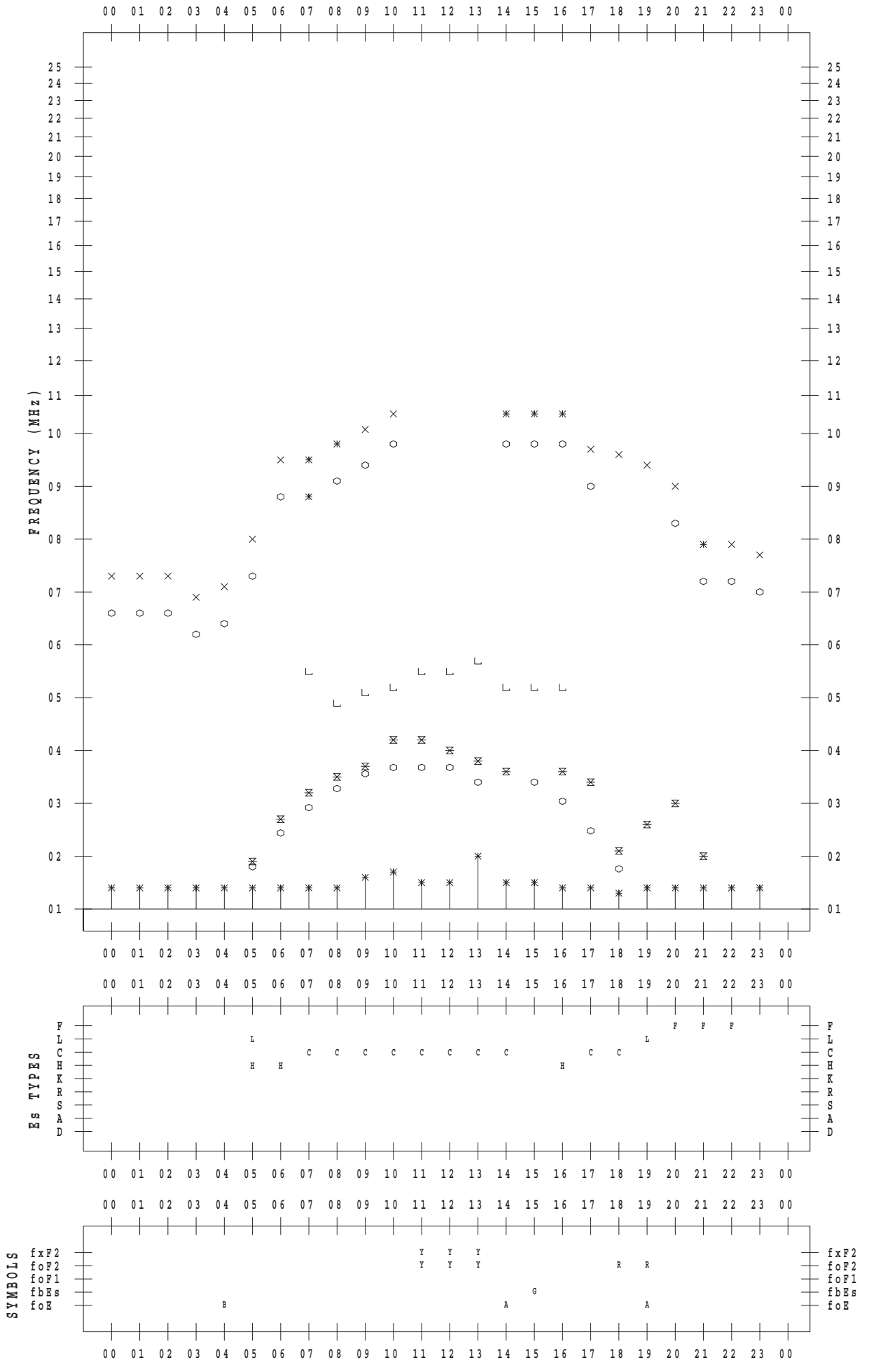
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/20

135 °E MEAN TIME



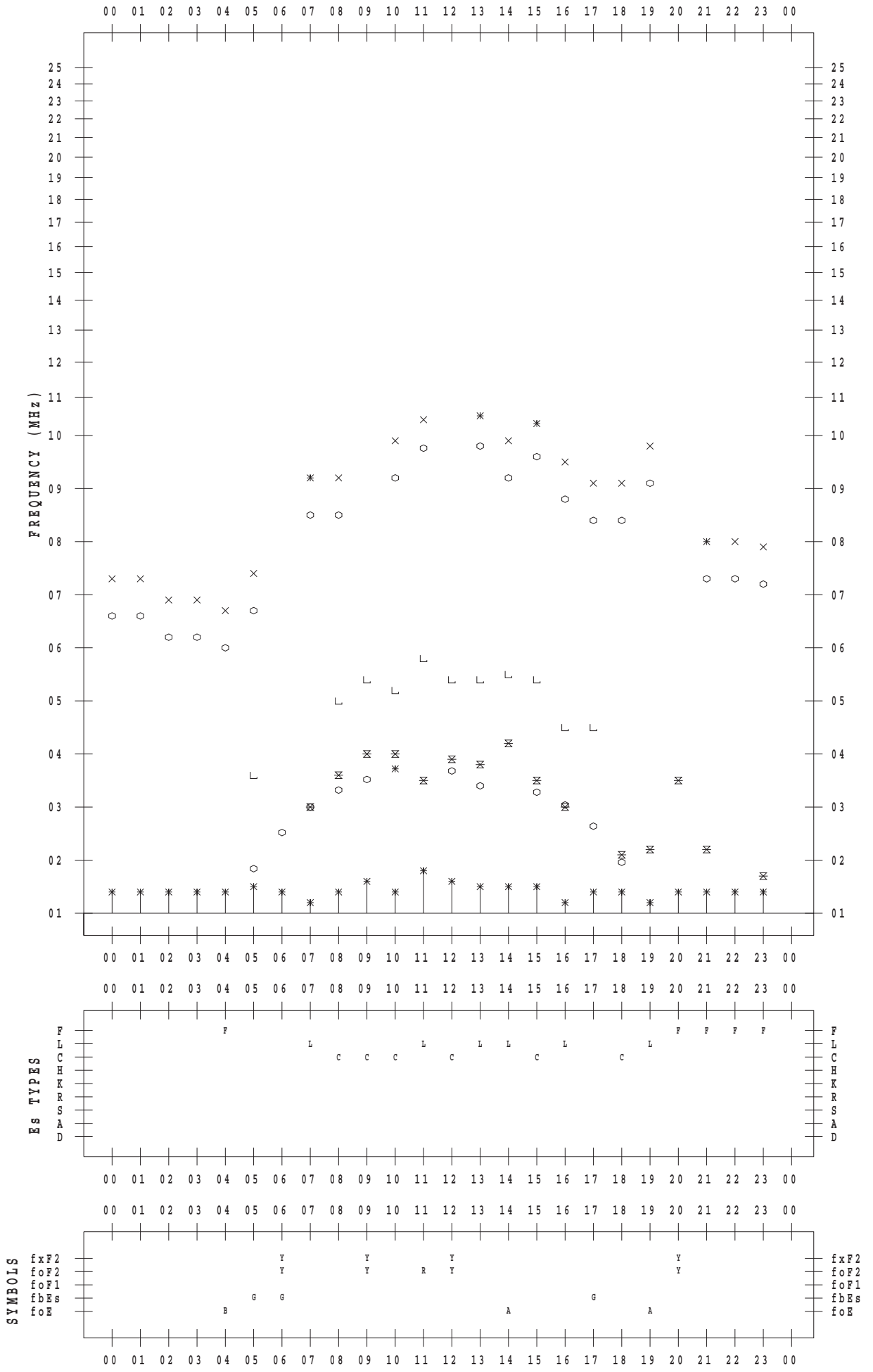
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/21

135 °E MEAN TIME



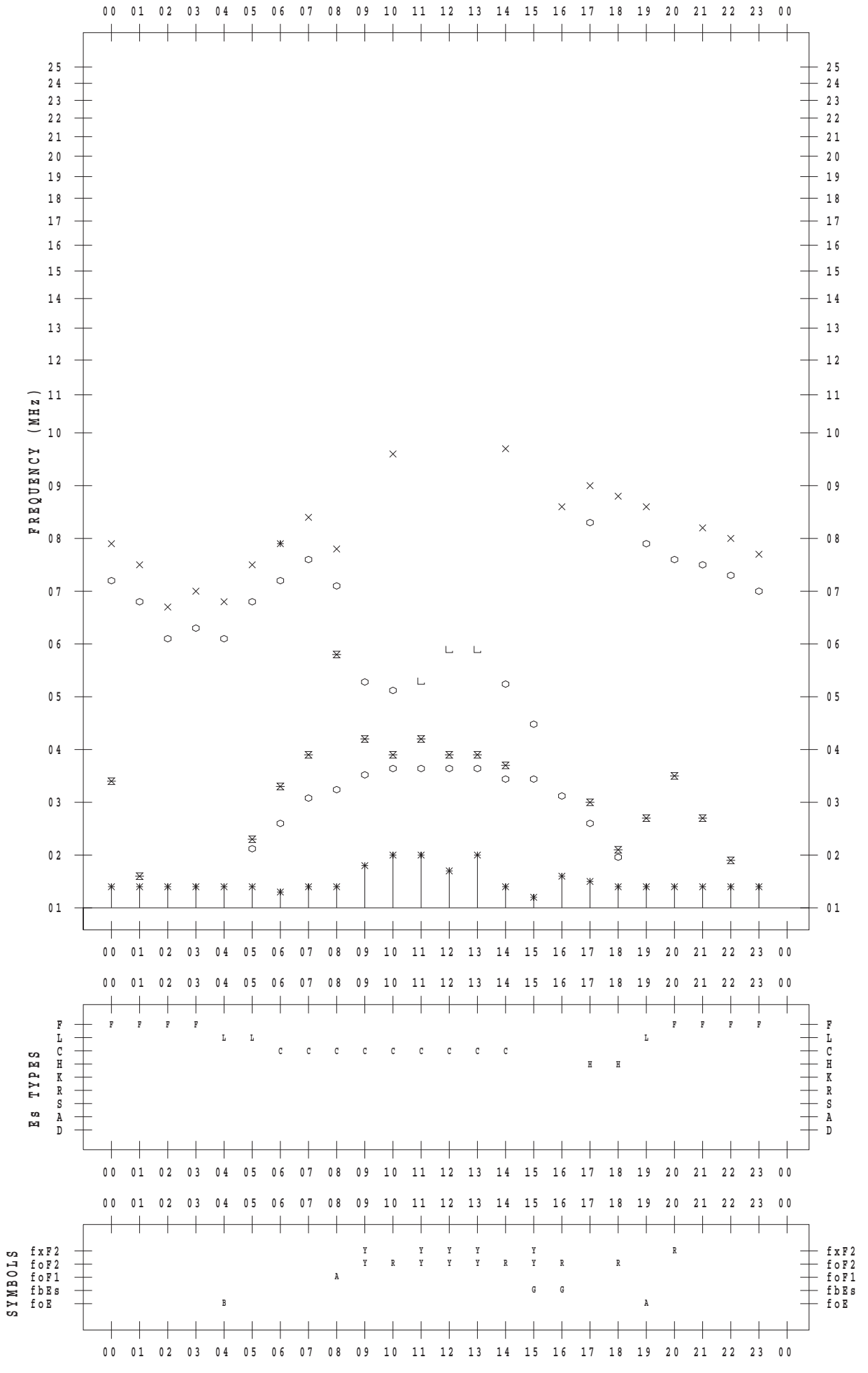
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/22

135 °E MEAN TIME



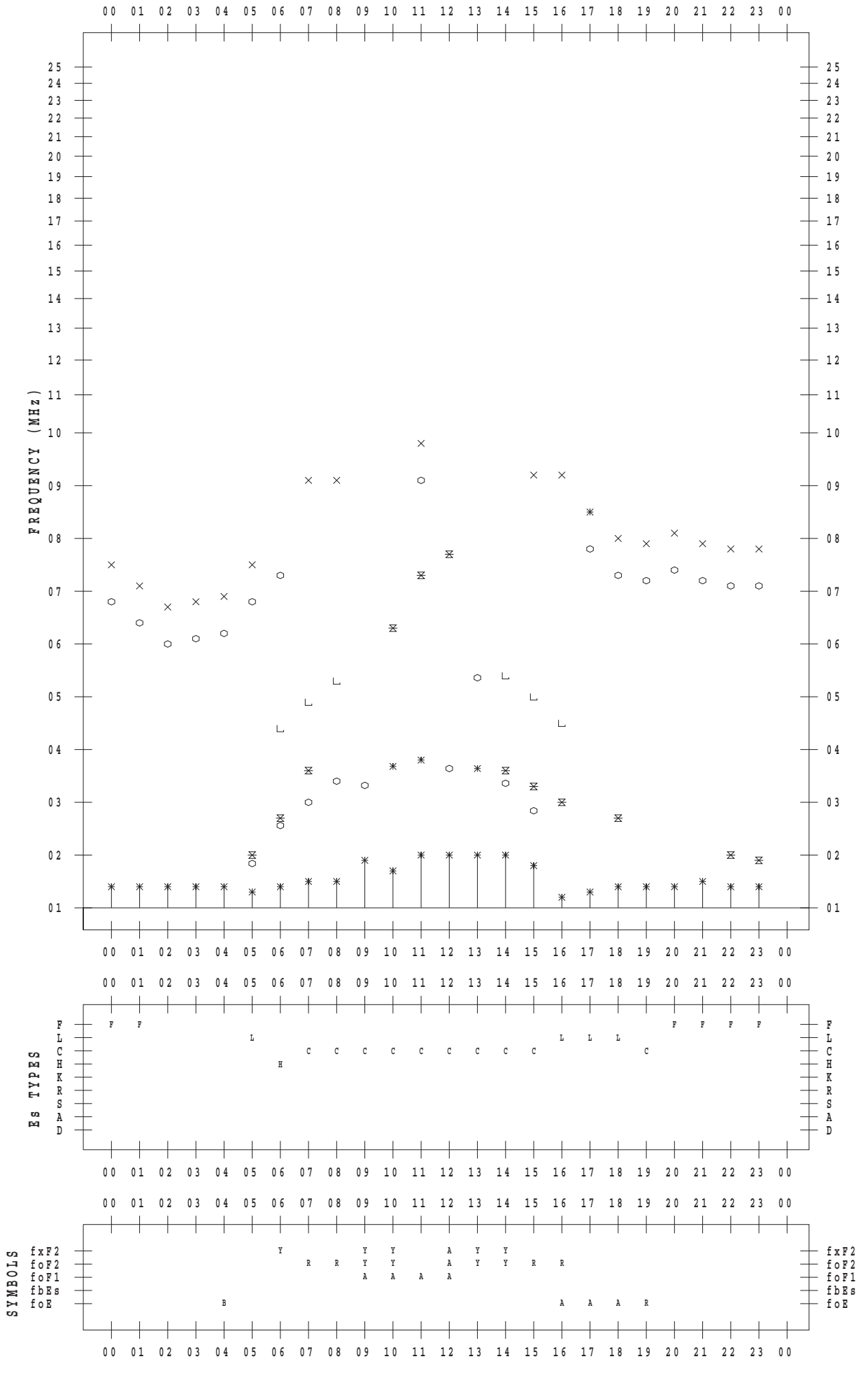
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/23

135 °E MEAN TIME



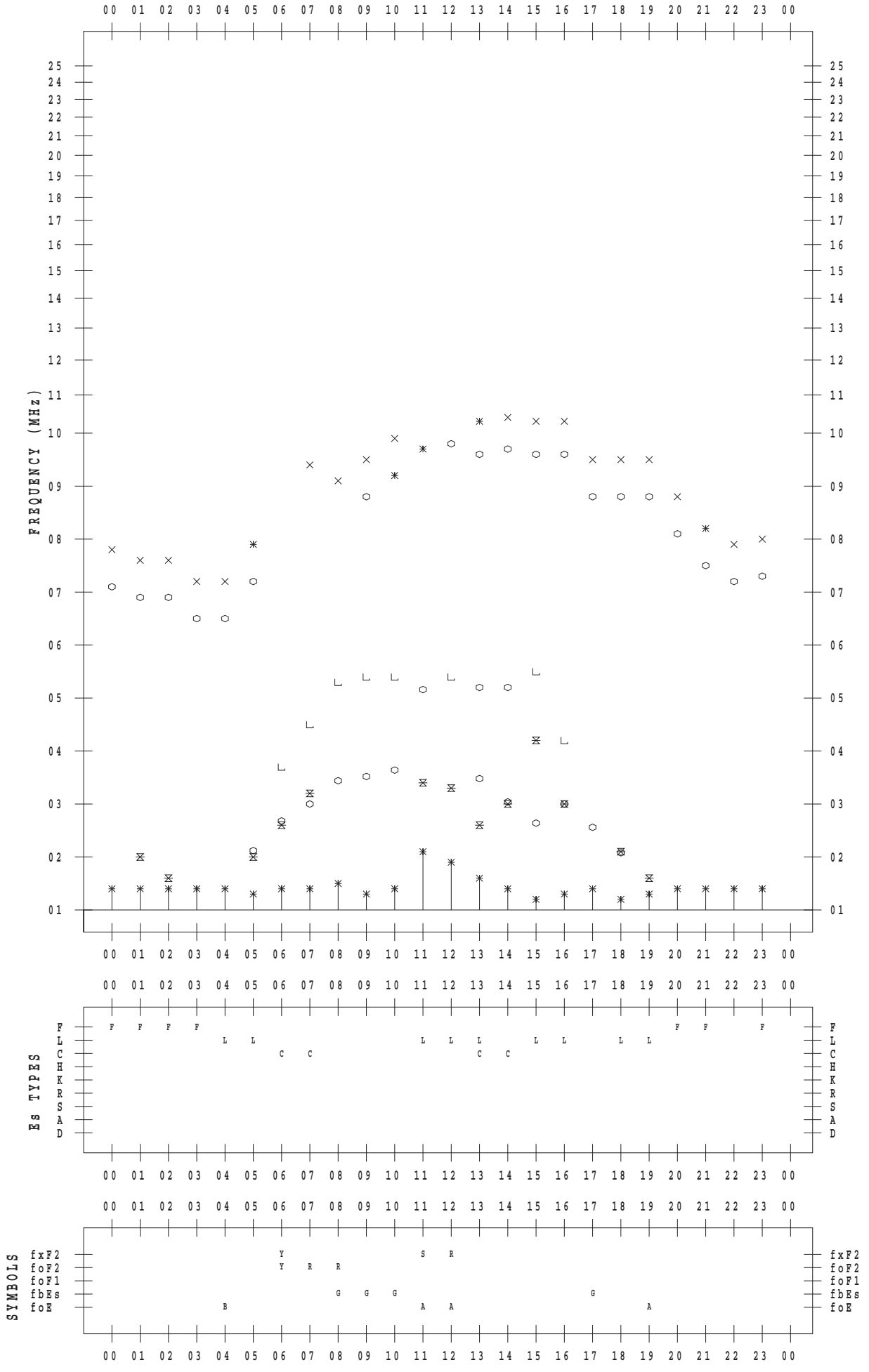
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/24

135 °E MEAN TIME



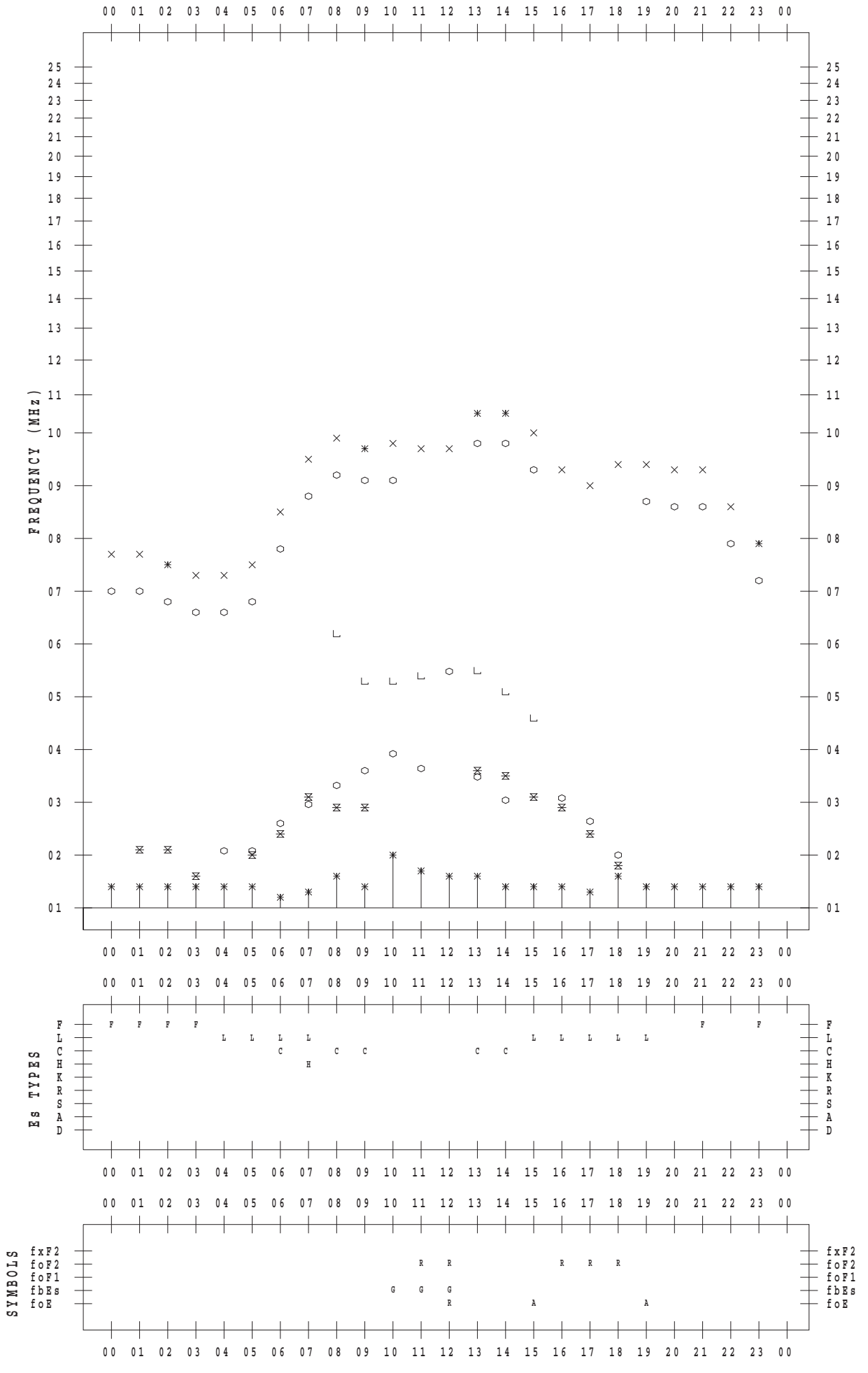
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/25

135 °E MEAN TIME



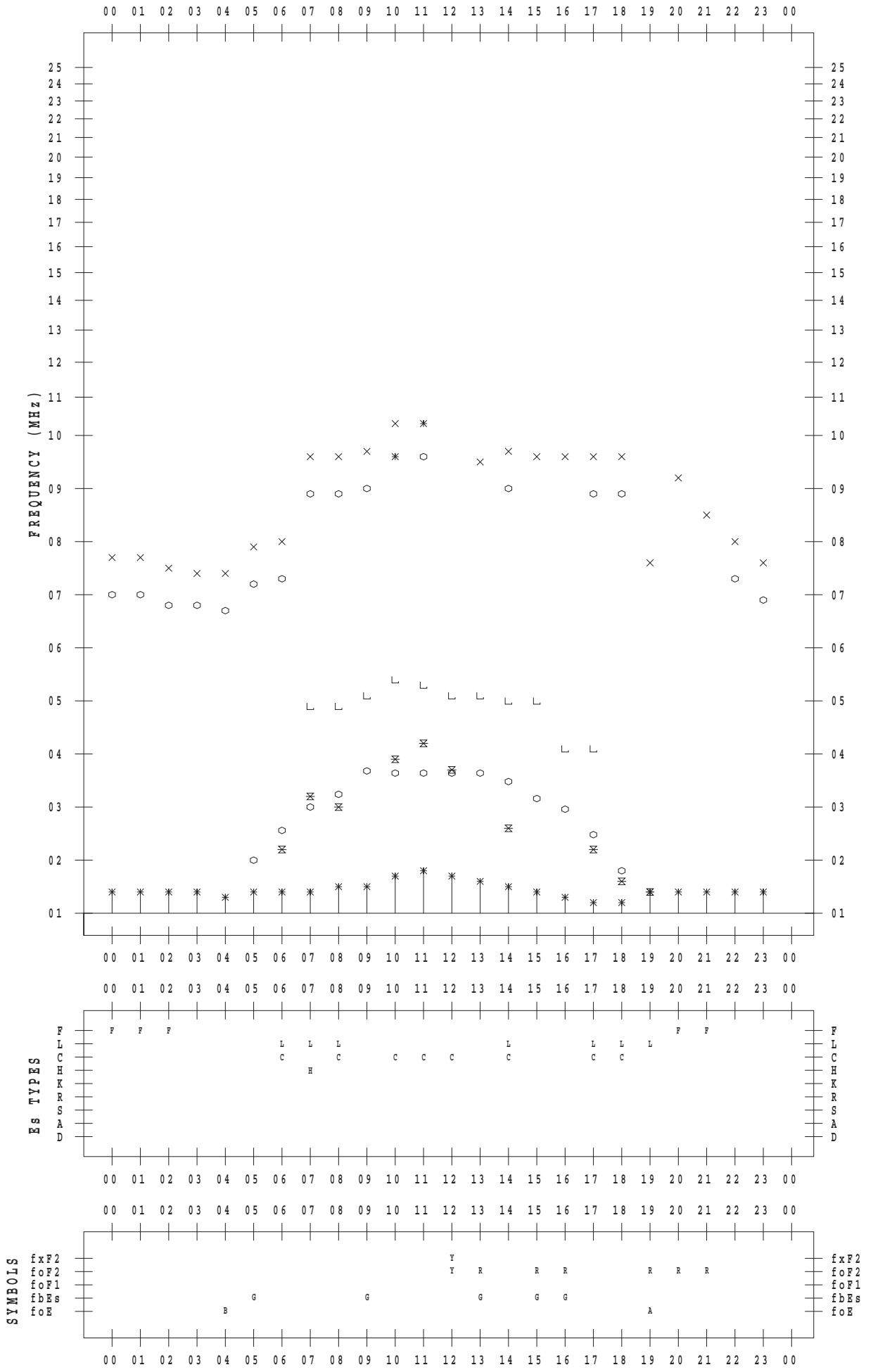
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/26

135 °E MEAN TIME



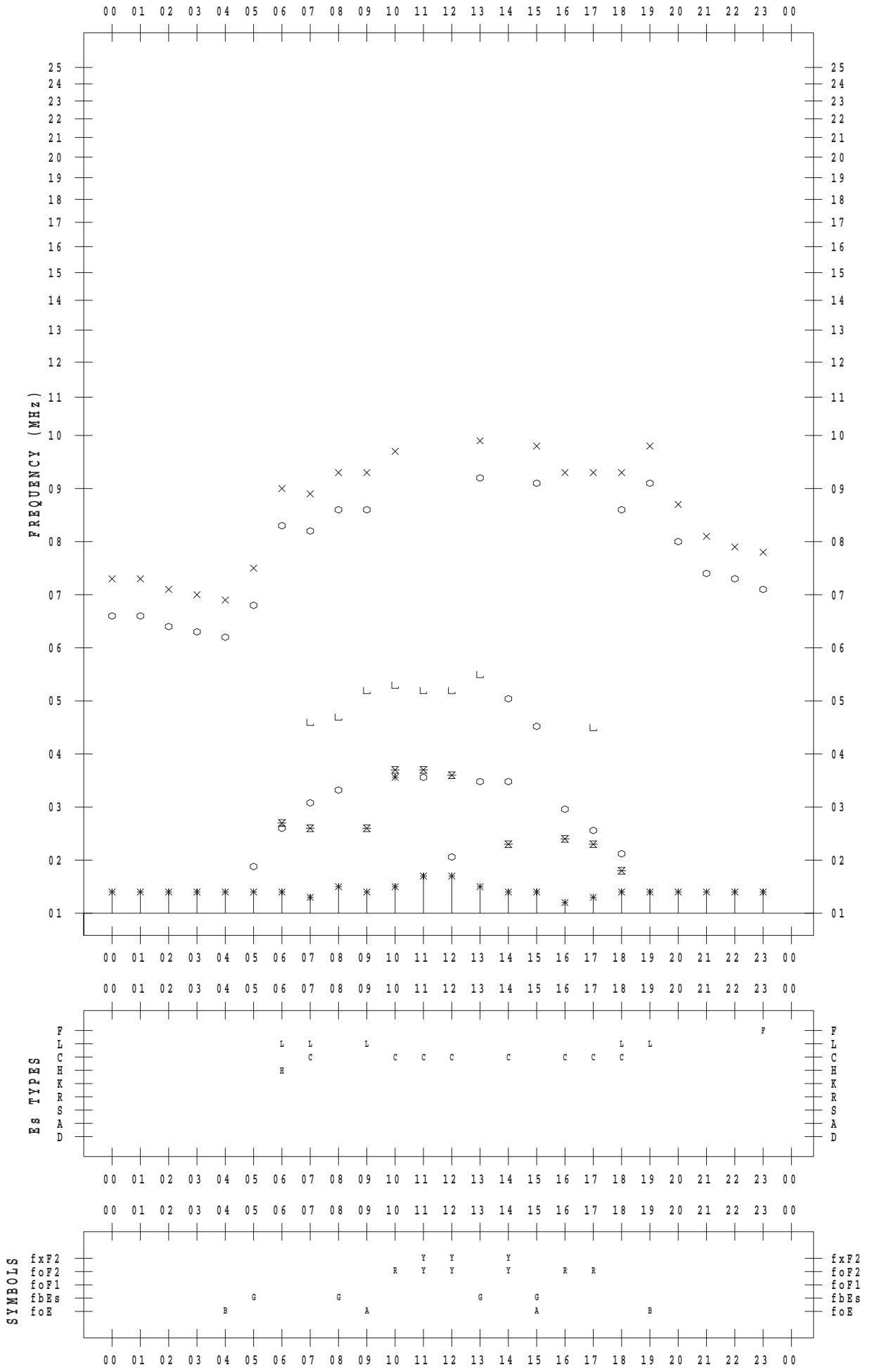
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/27

135 °E MEAN TIME



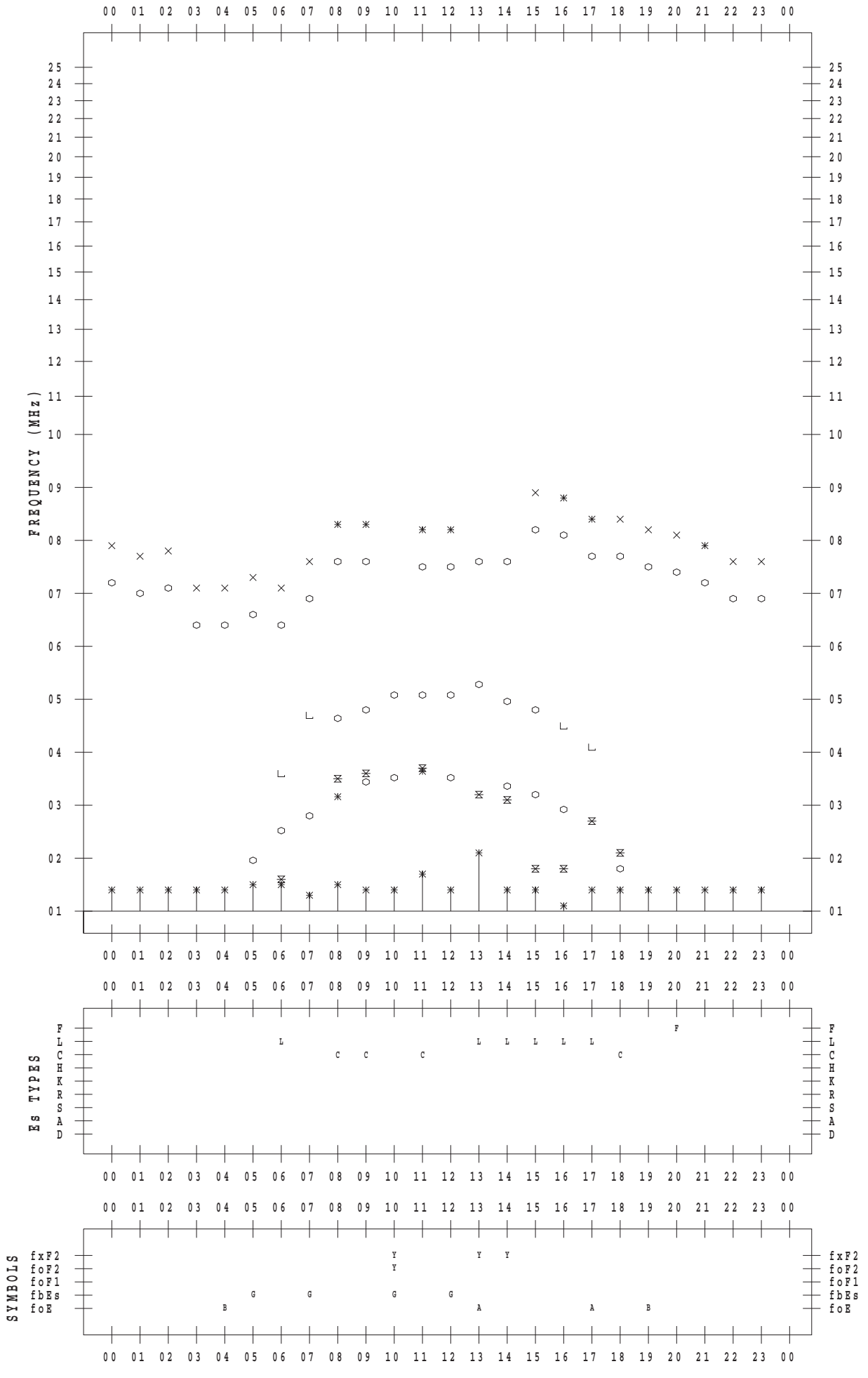
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/28

135 °E MEAN TIME



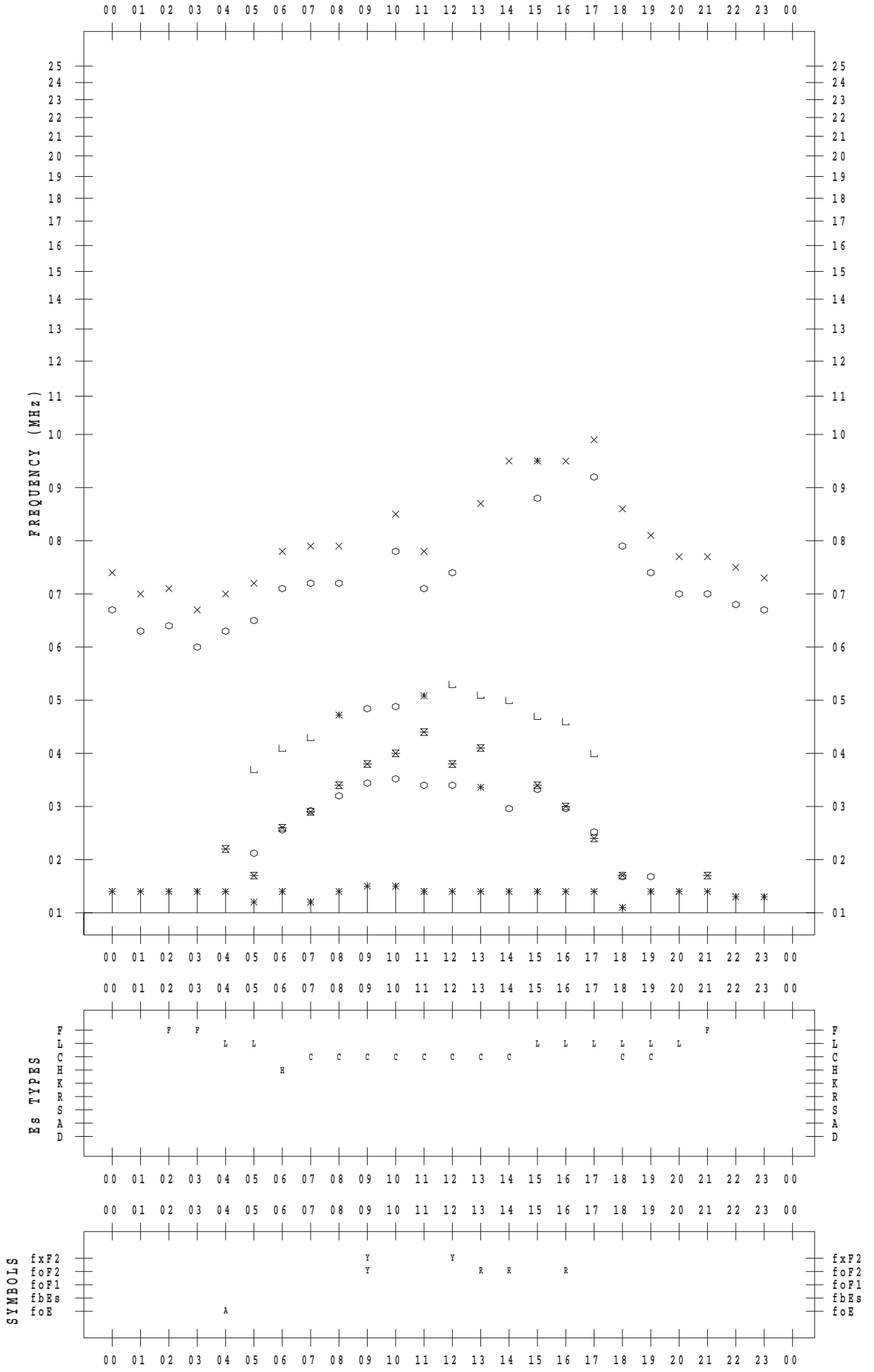
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/29

135 °E MEAN TIME



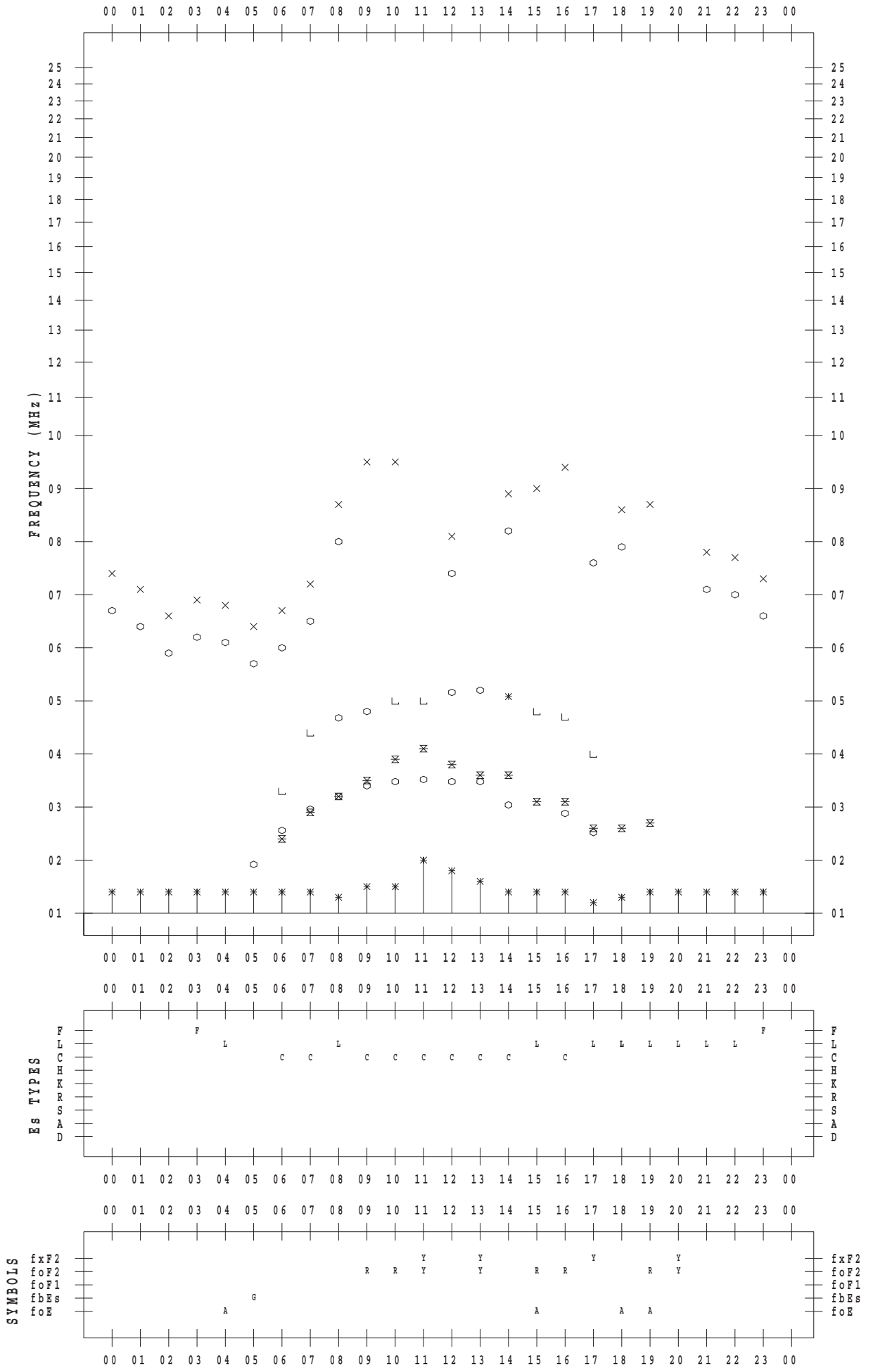
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 4/30

135 °E MEAN TIME



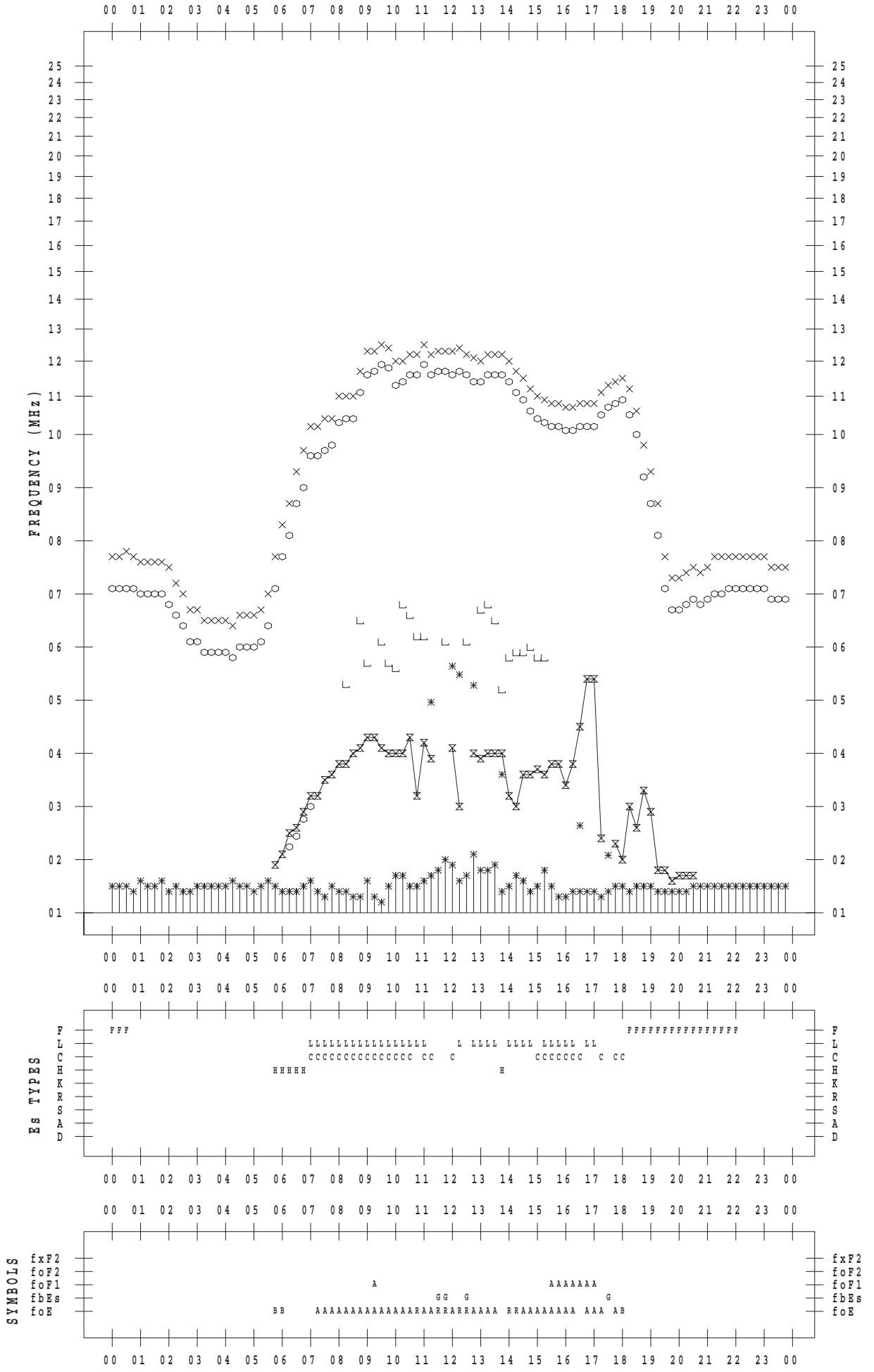
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 1

135 °E MEAN TIME



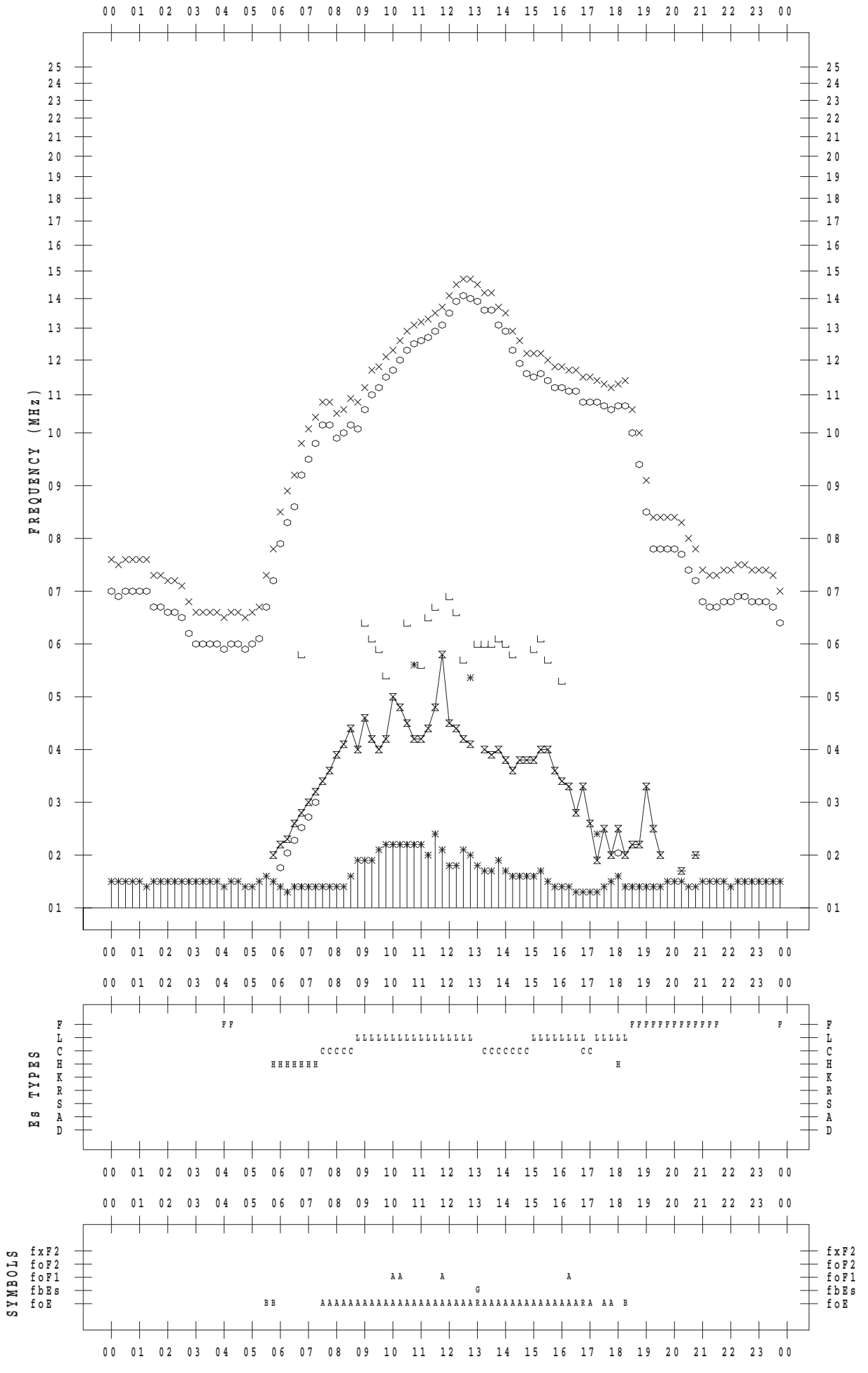
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 2

135 °E MEAN TIME



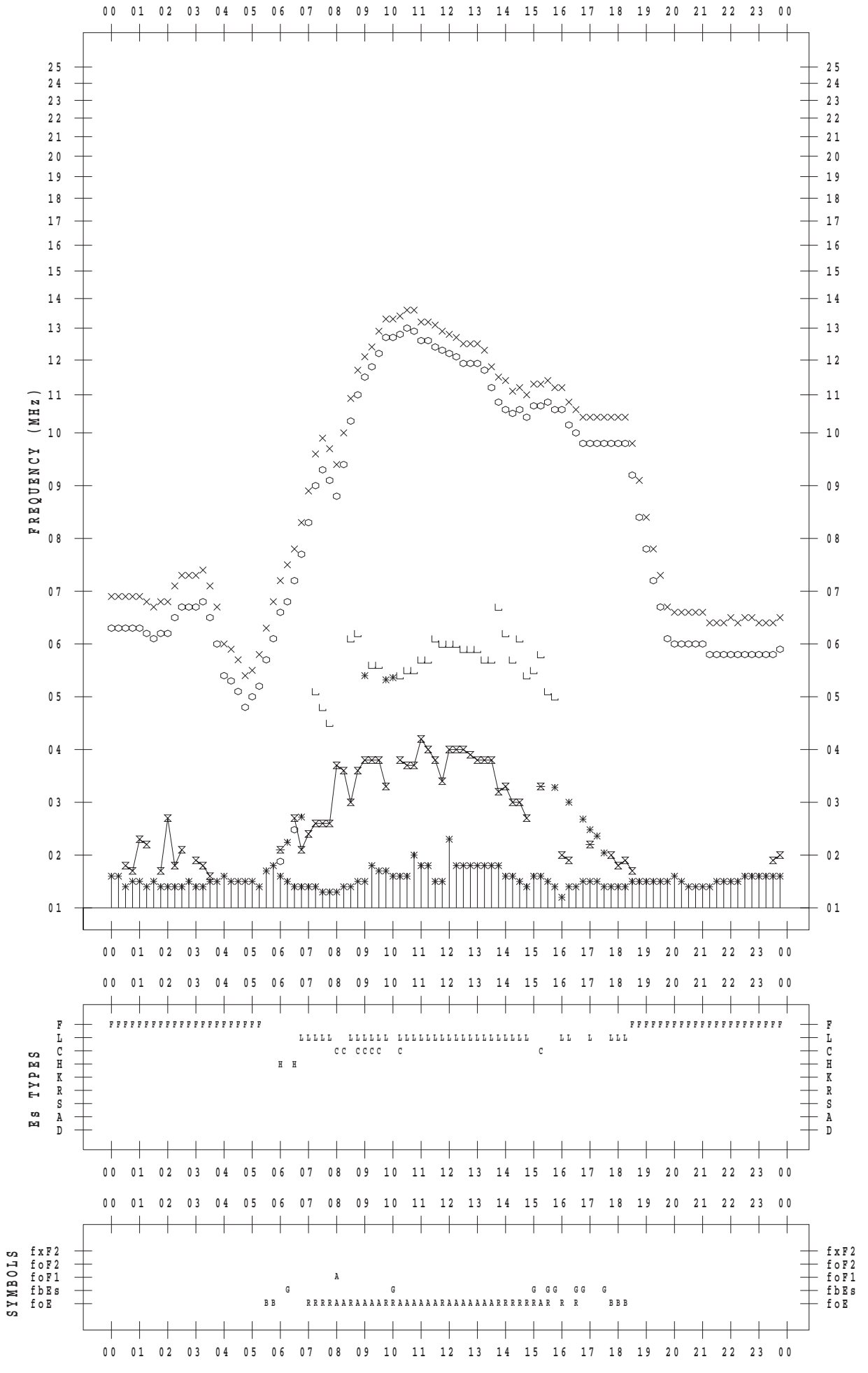
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 3

135 °E MEAN TIME



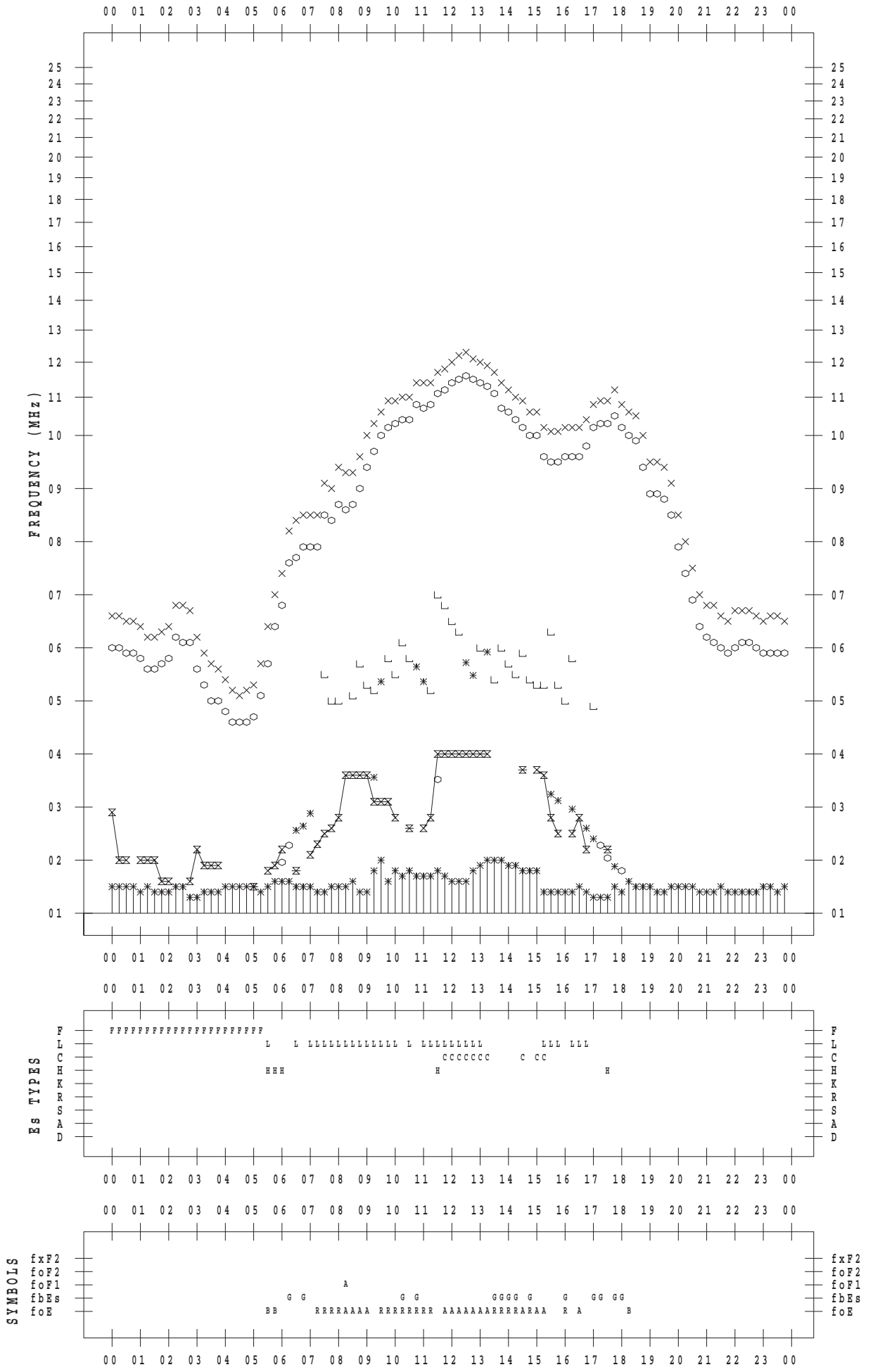
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 4

135 °E MEAN TIME



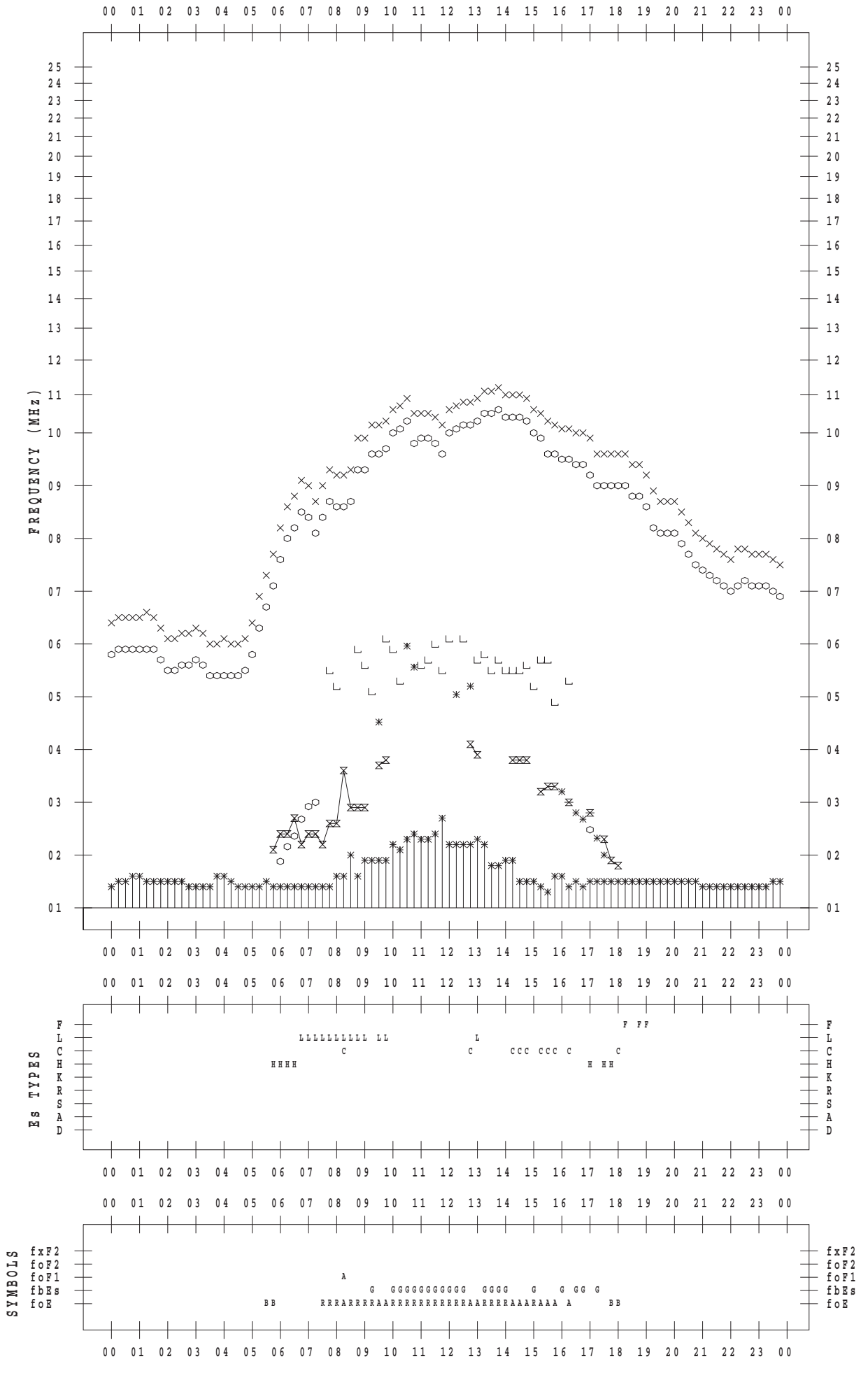
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 5

135 °E MEAN TIME



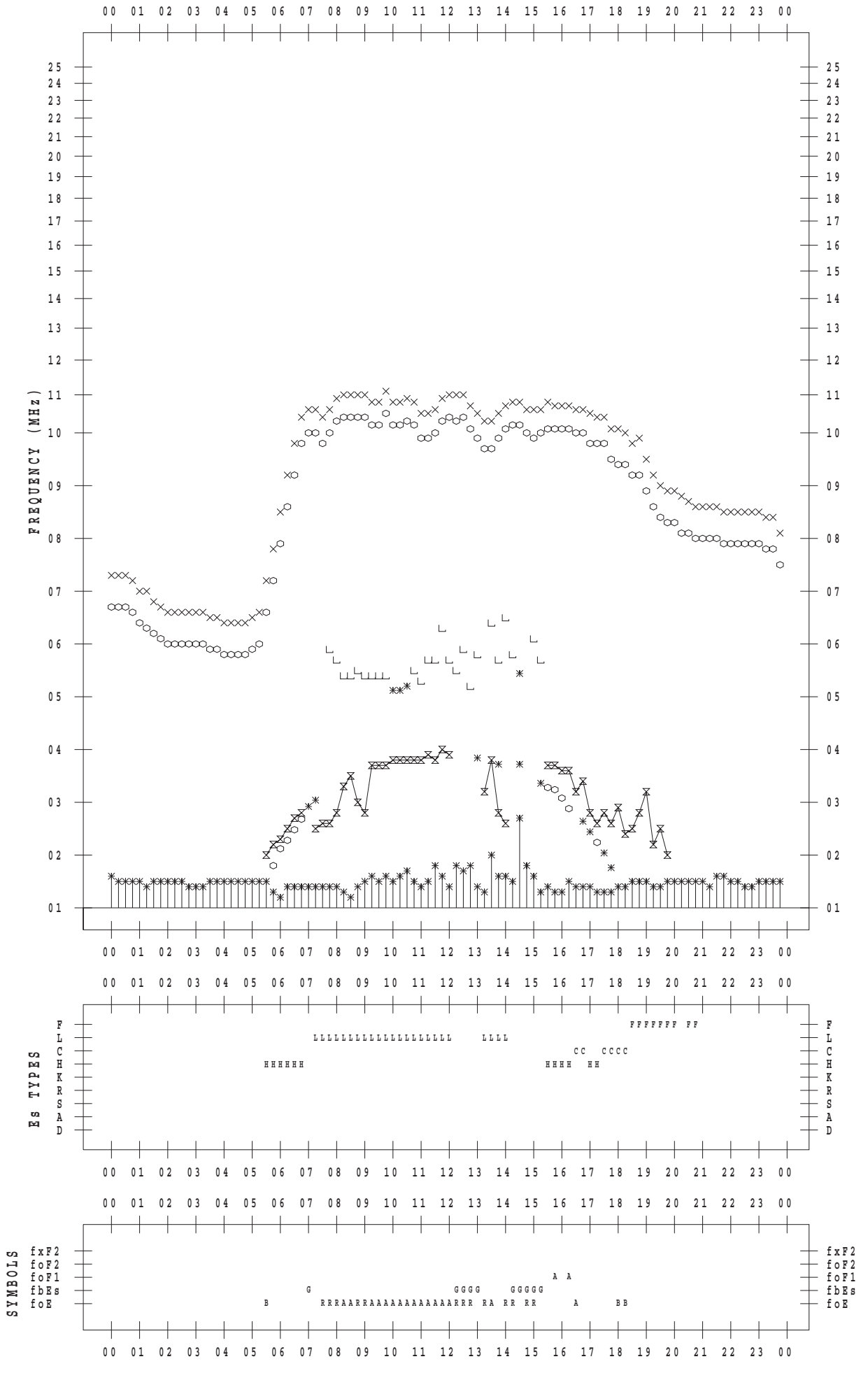
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 6

135 °E MEAN TIME



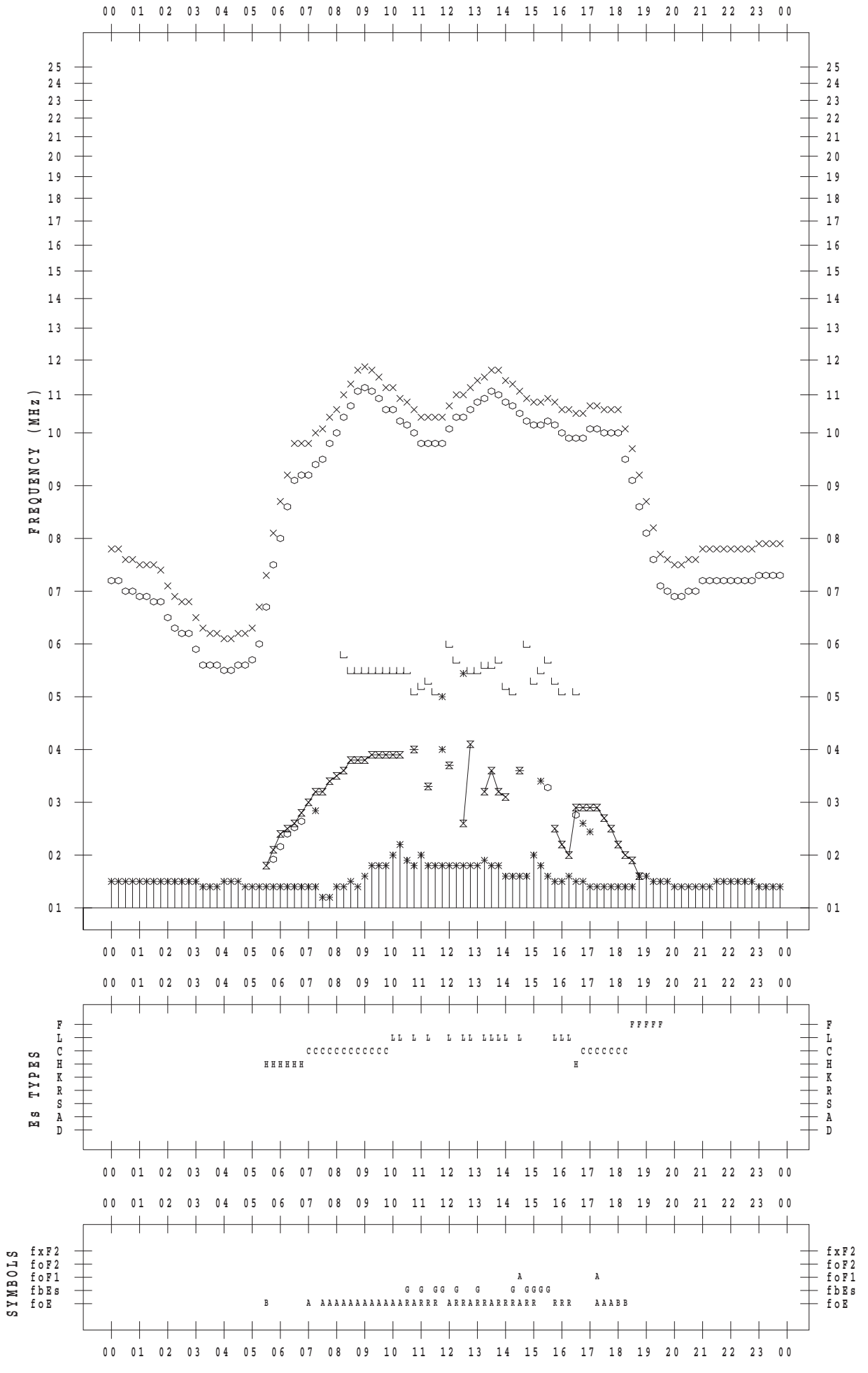
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 7

135 °E MEAN TIME



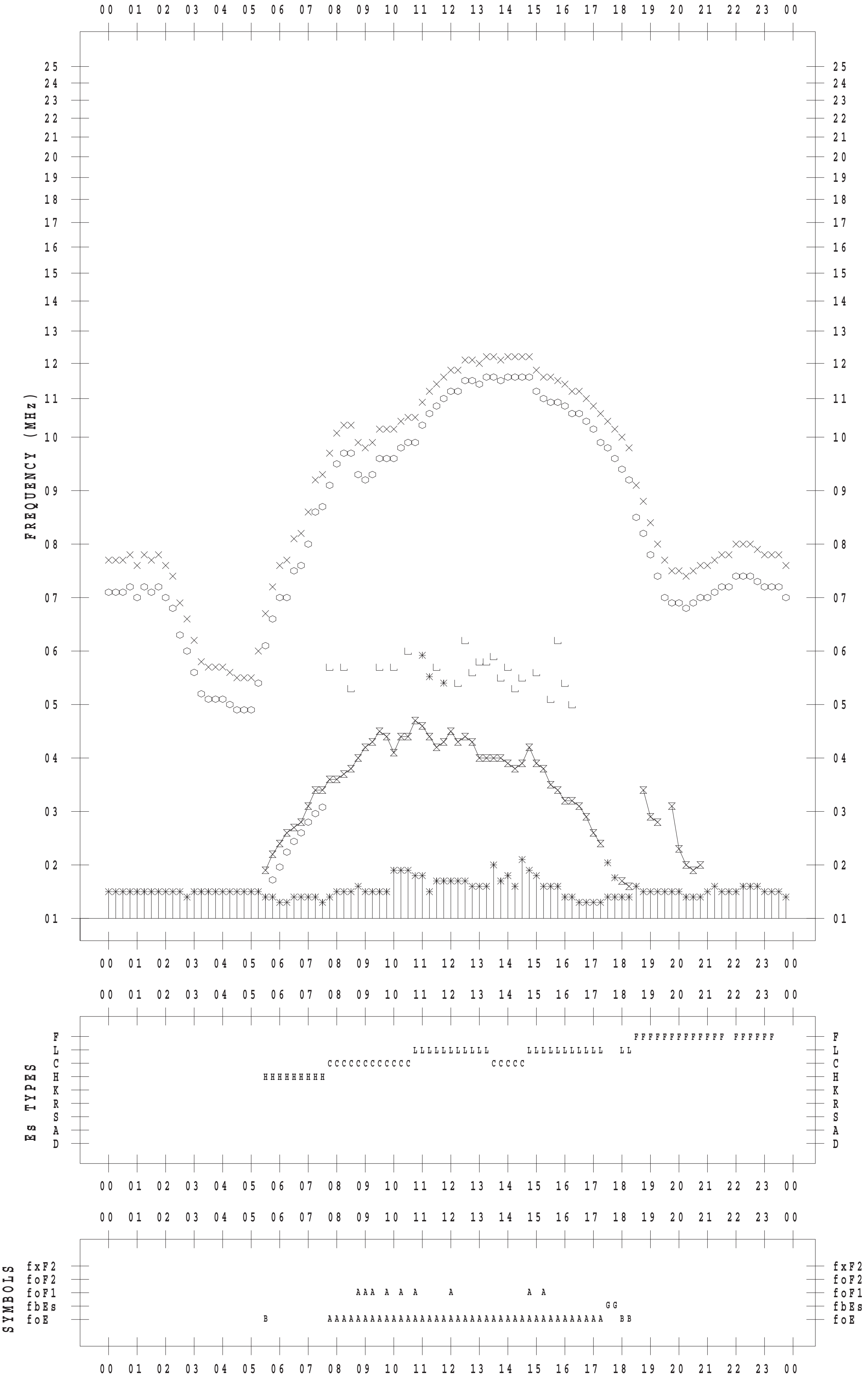
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 8

135 °E MEAN TIME



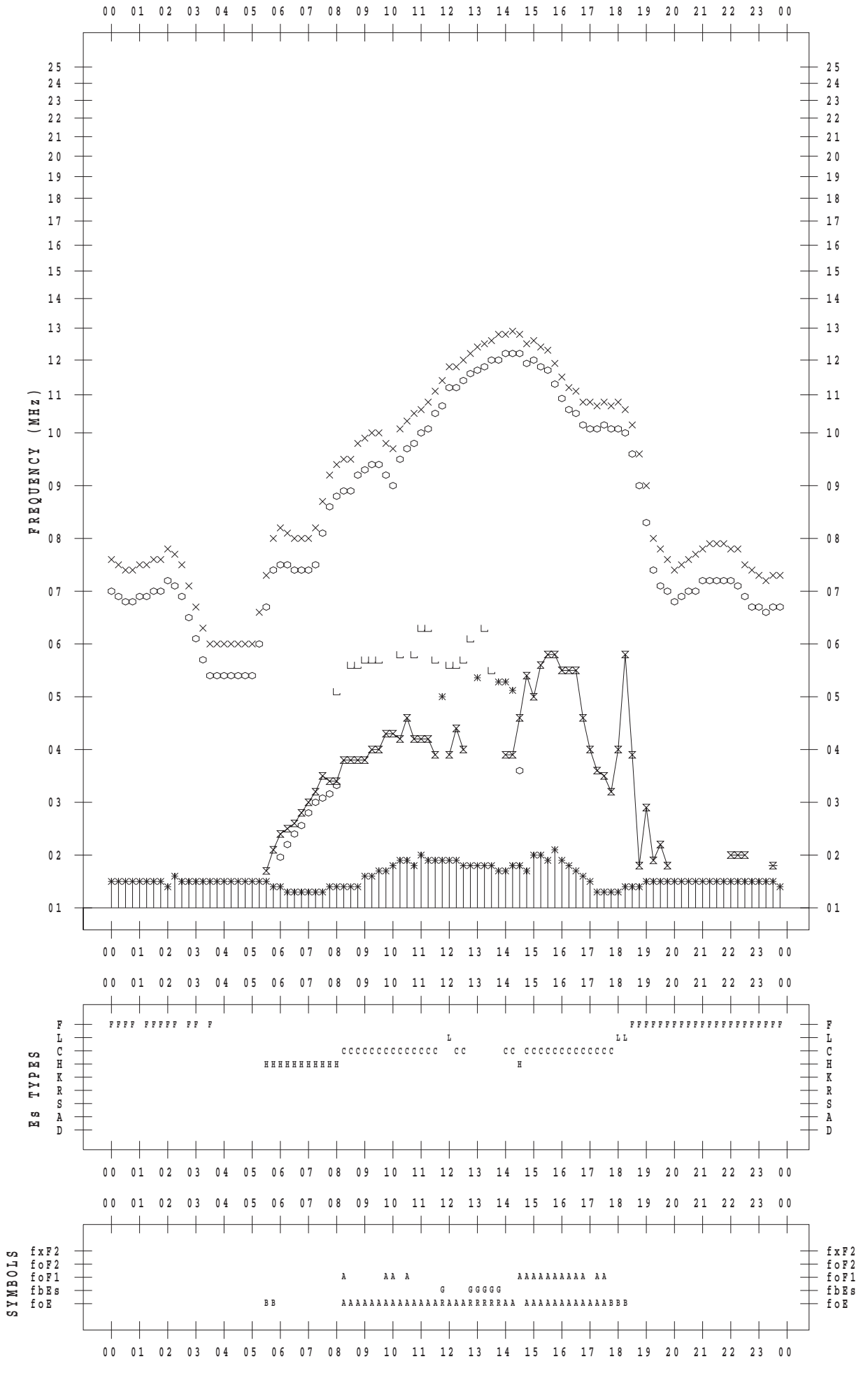
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/ 9

135 °E MEAN TIME



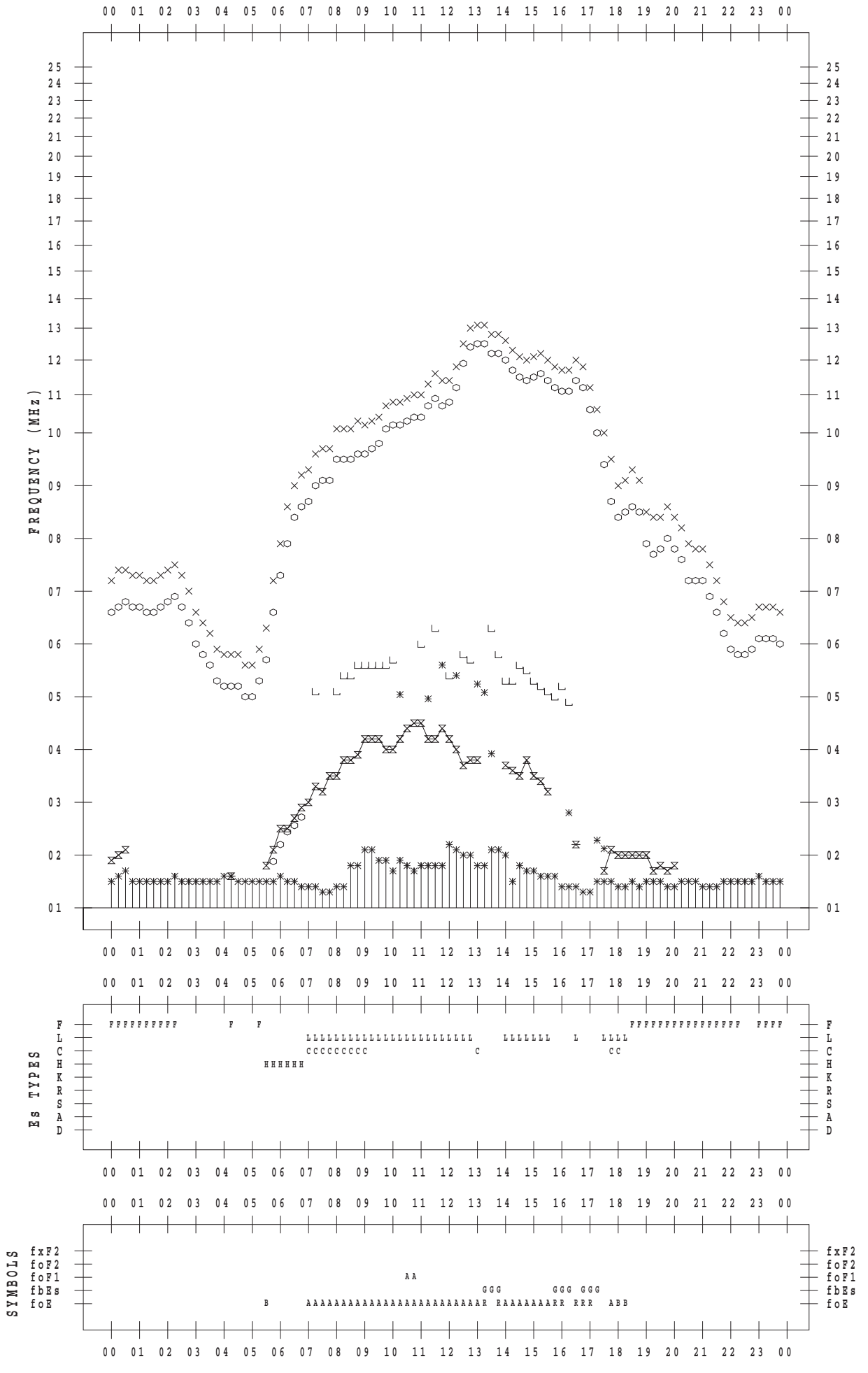
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/10

135 °E MEAN TIME



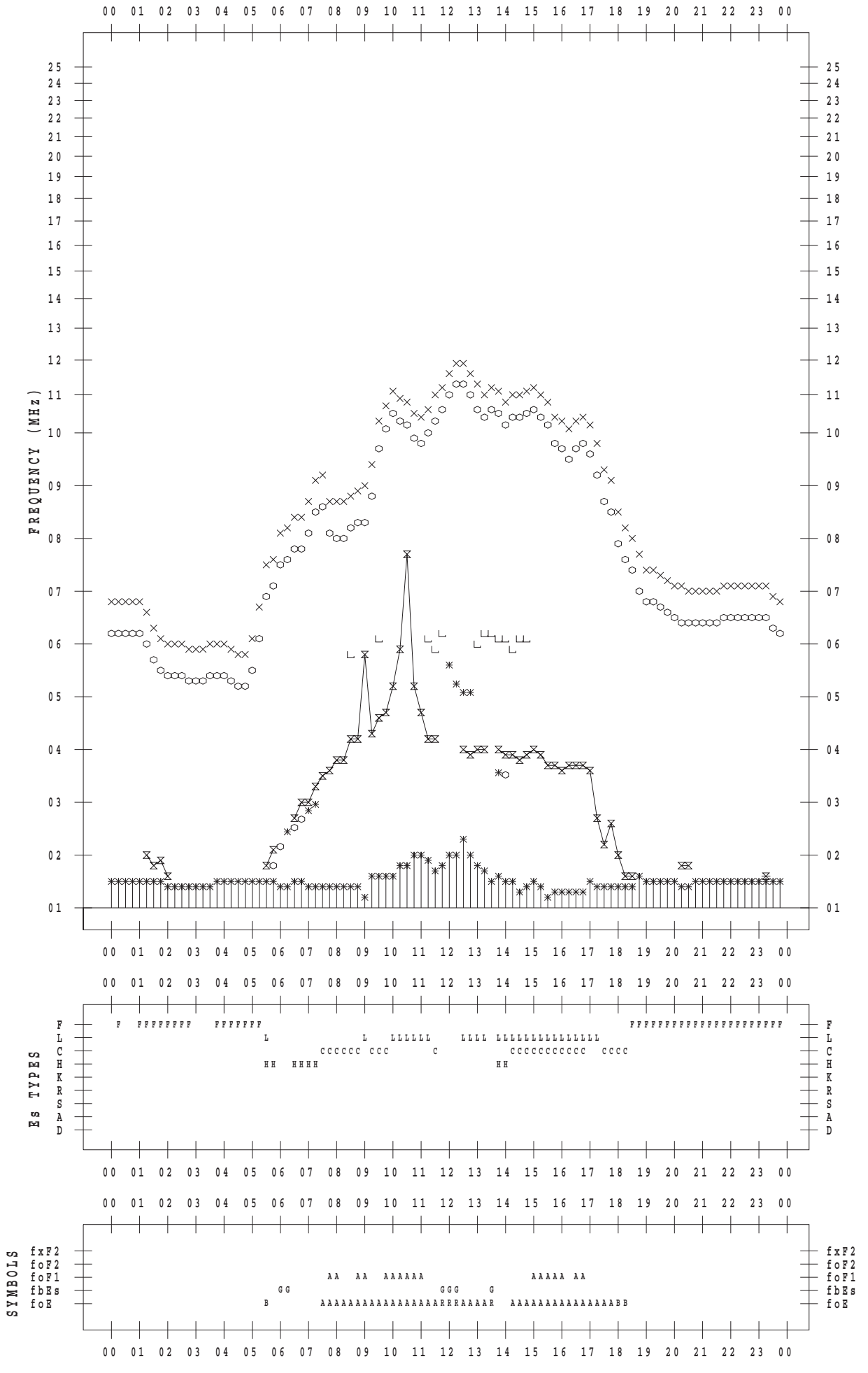
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/11

135 °E MEAN TIME



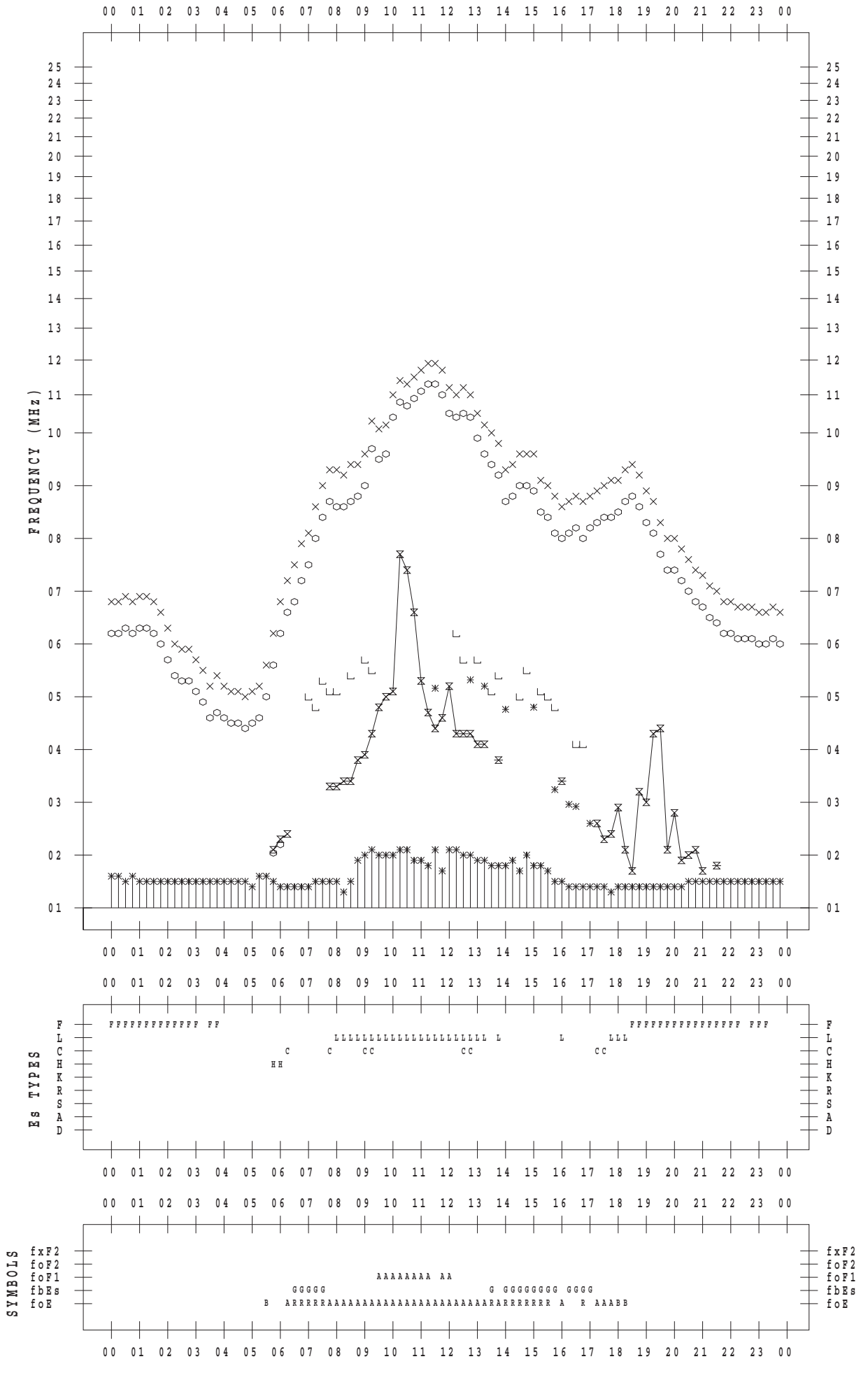
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/12

135 °E MEAN TIME



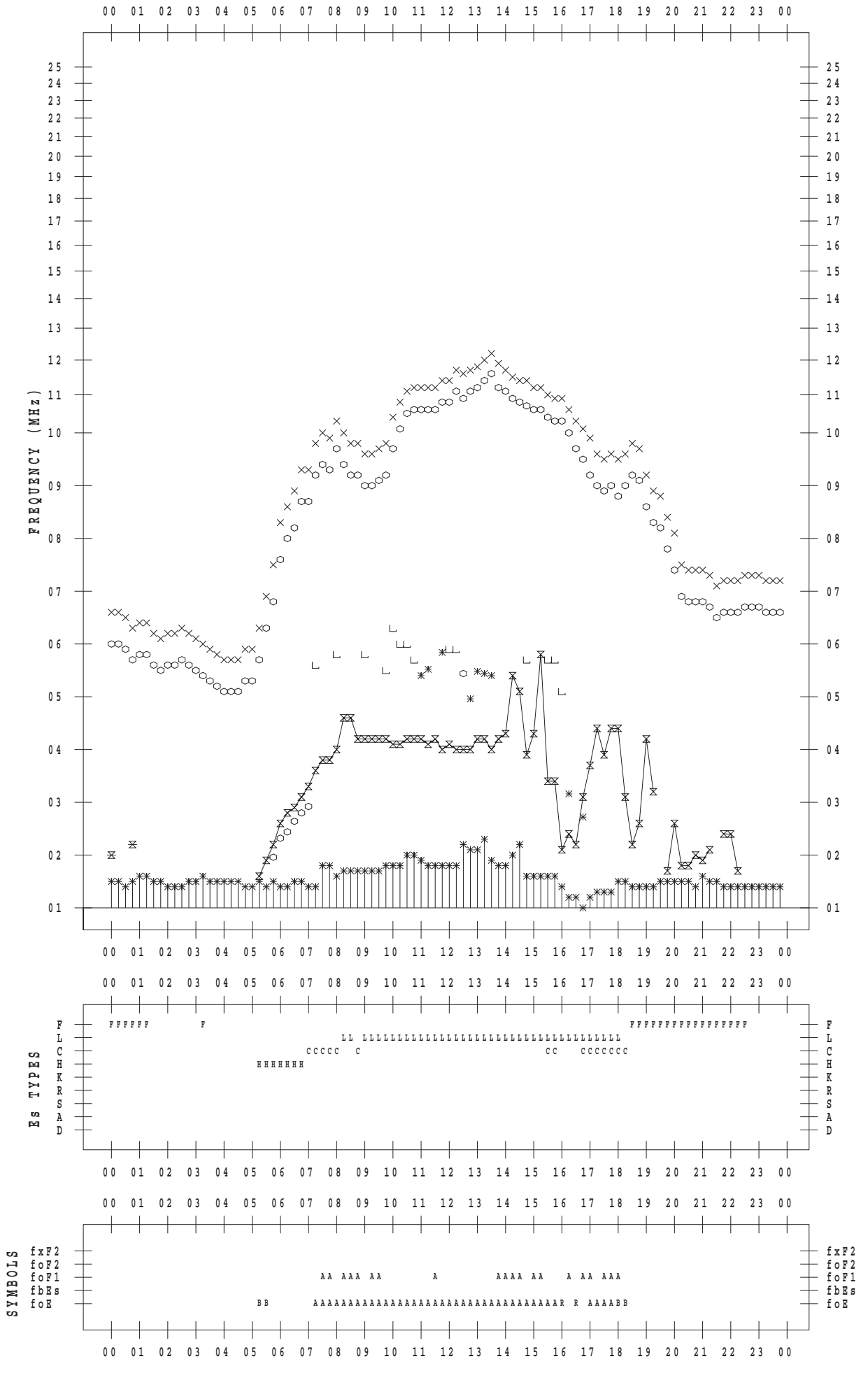
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/13

135 °E MEAN TIME



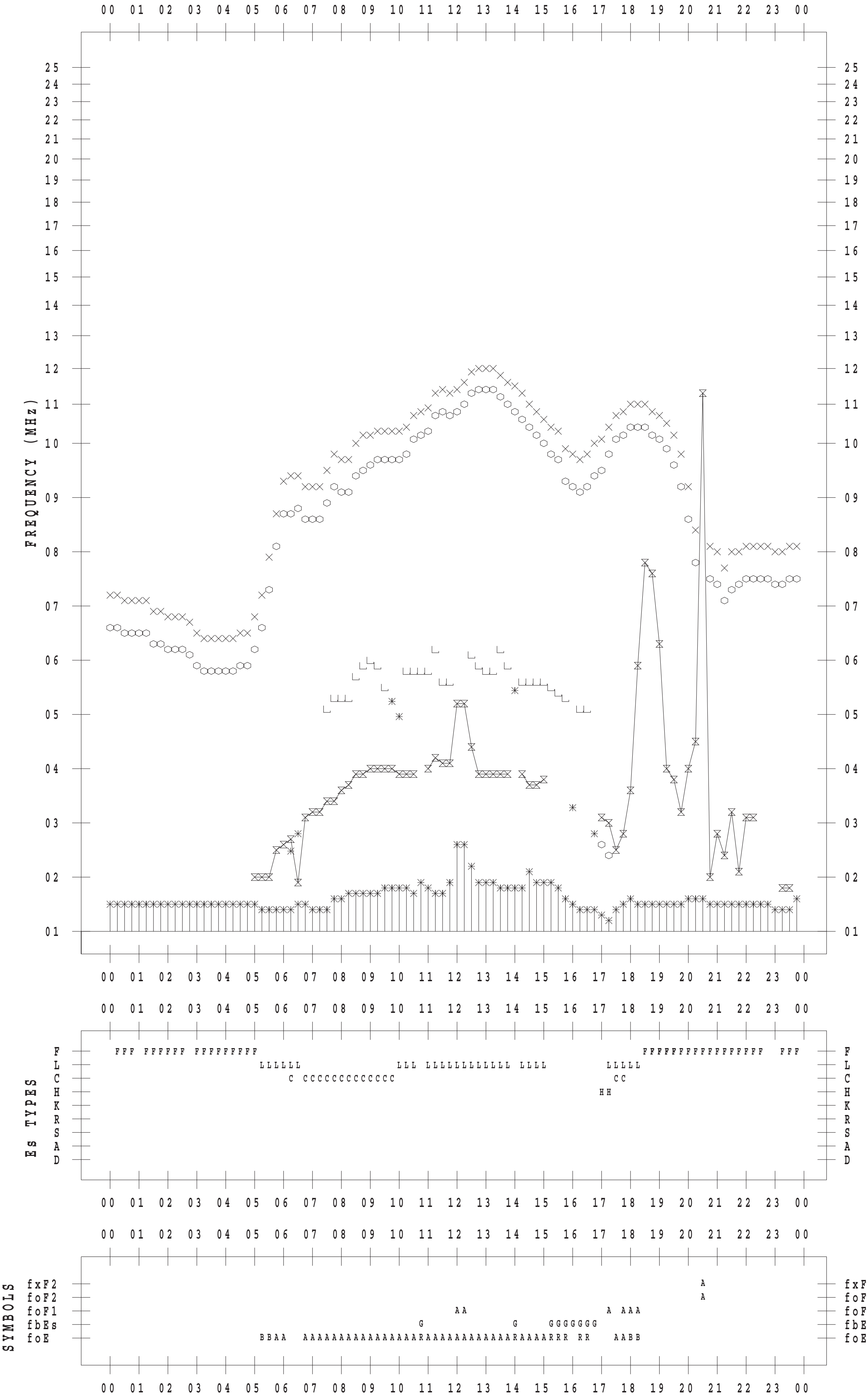
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/14

135 °E MEAN TIME



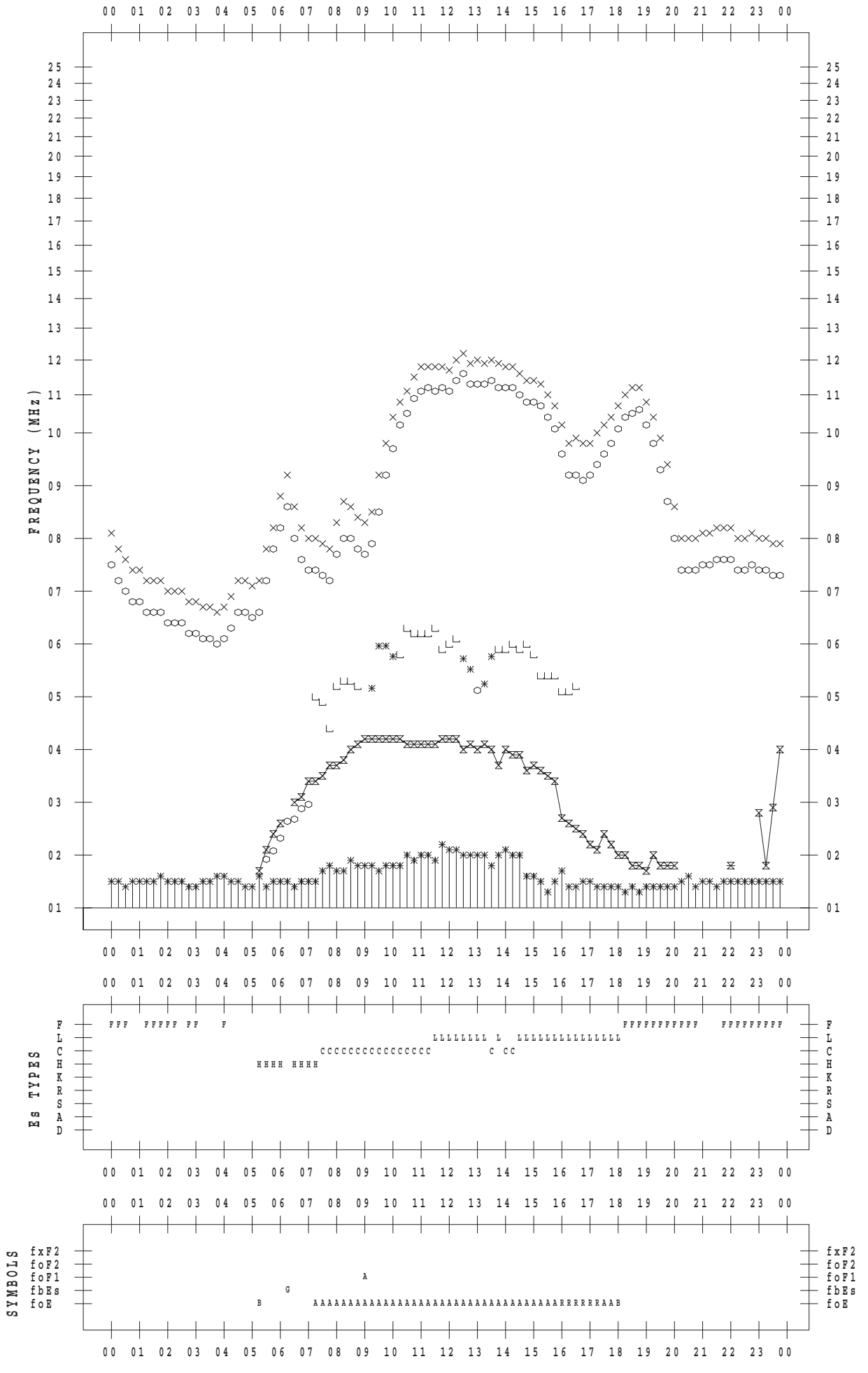
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/15

135 °E MEAN TIME



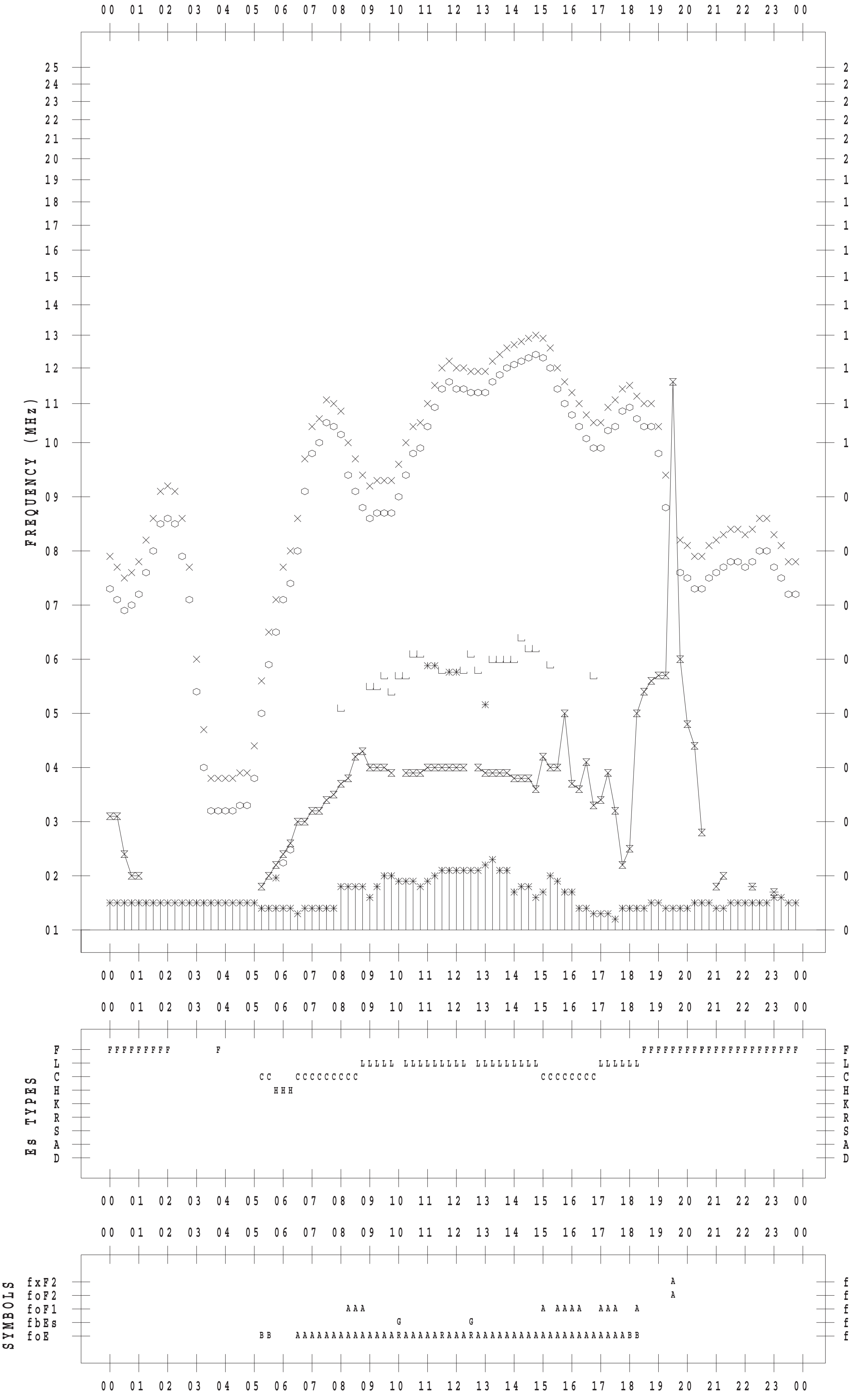
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/16

135 °E MEAN TIME



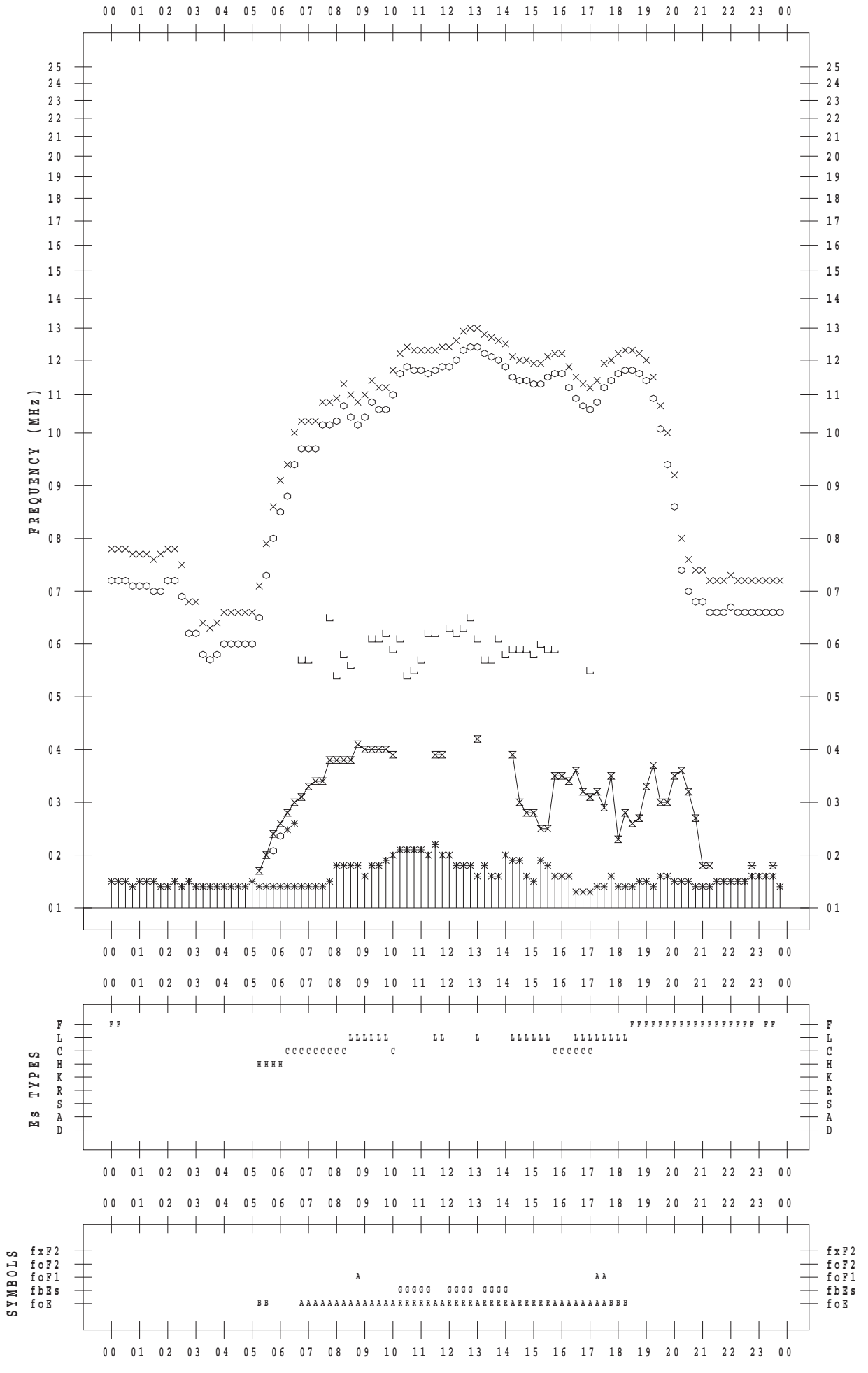
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/17

135 °E MEAN TIME



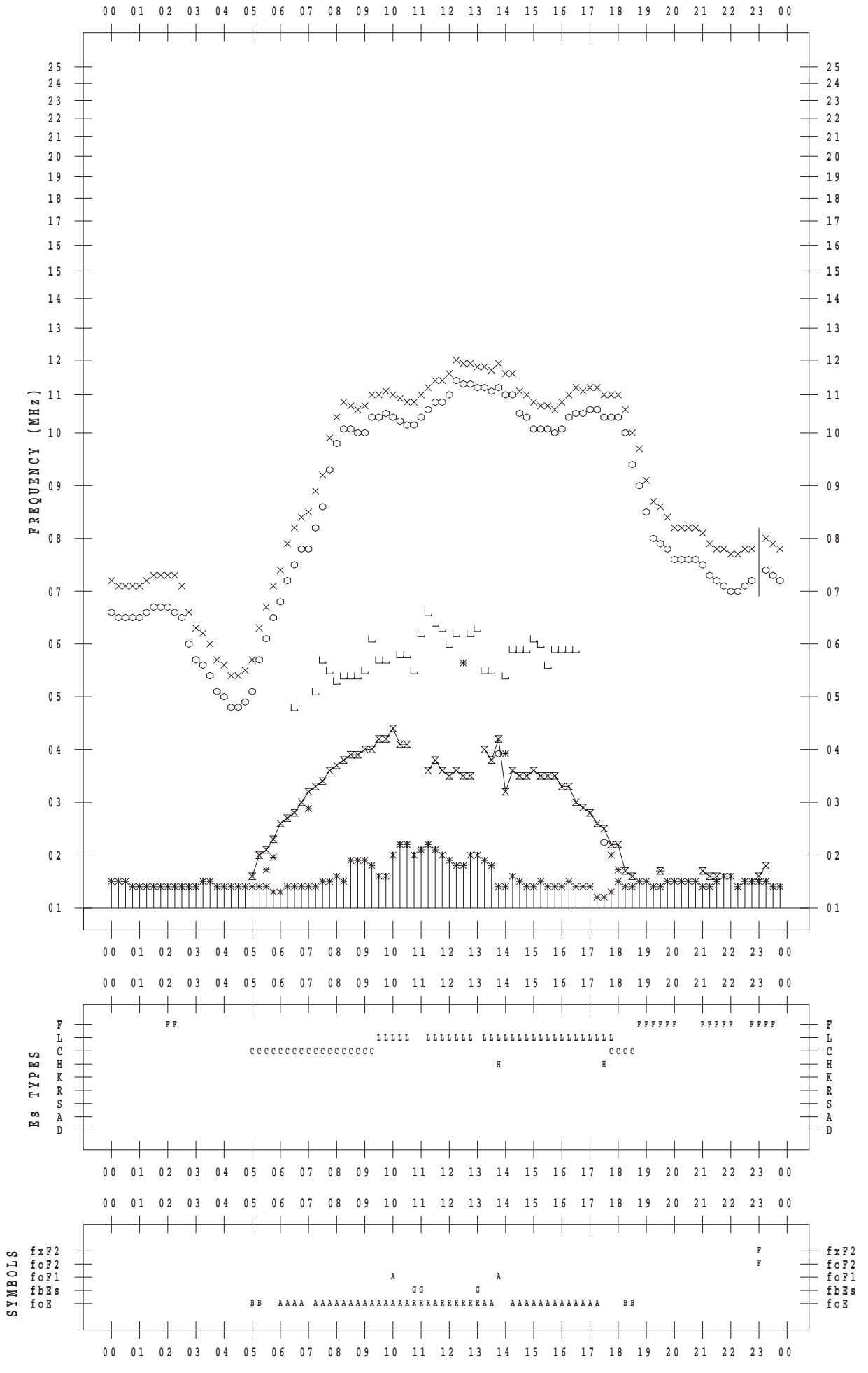
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/18

135 °E MEAN TIME



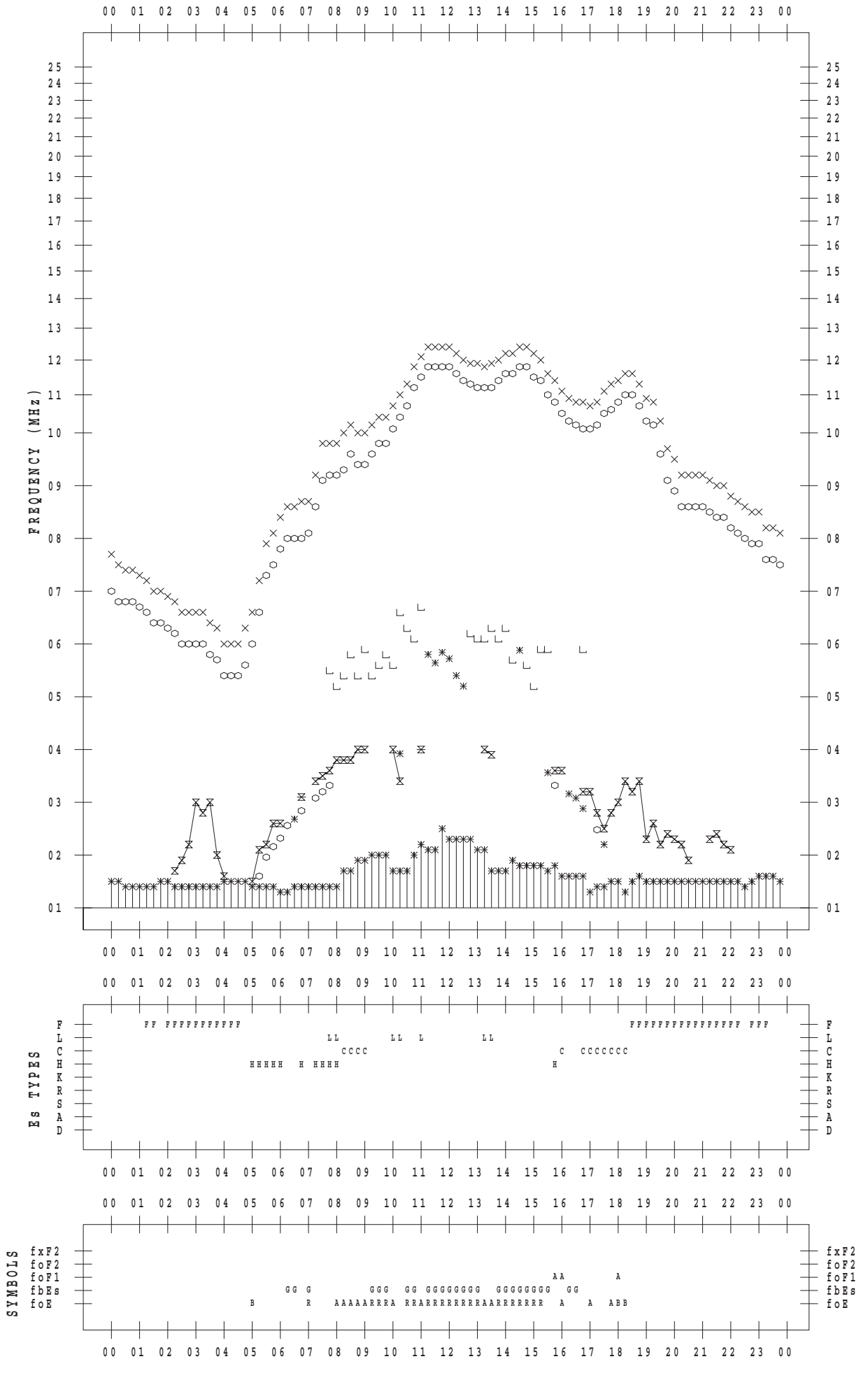
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/19

135 °E MEAN TIME



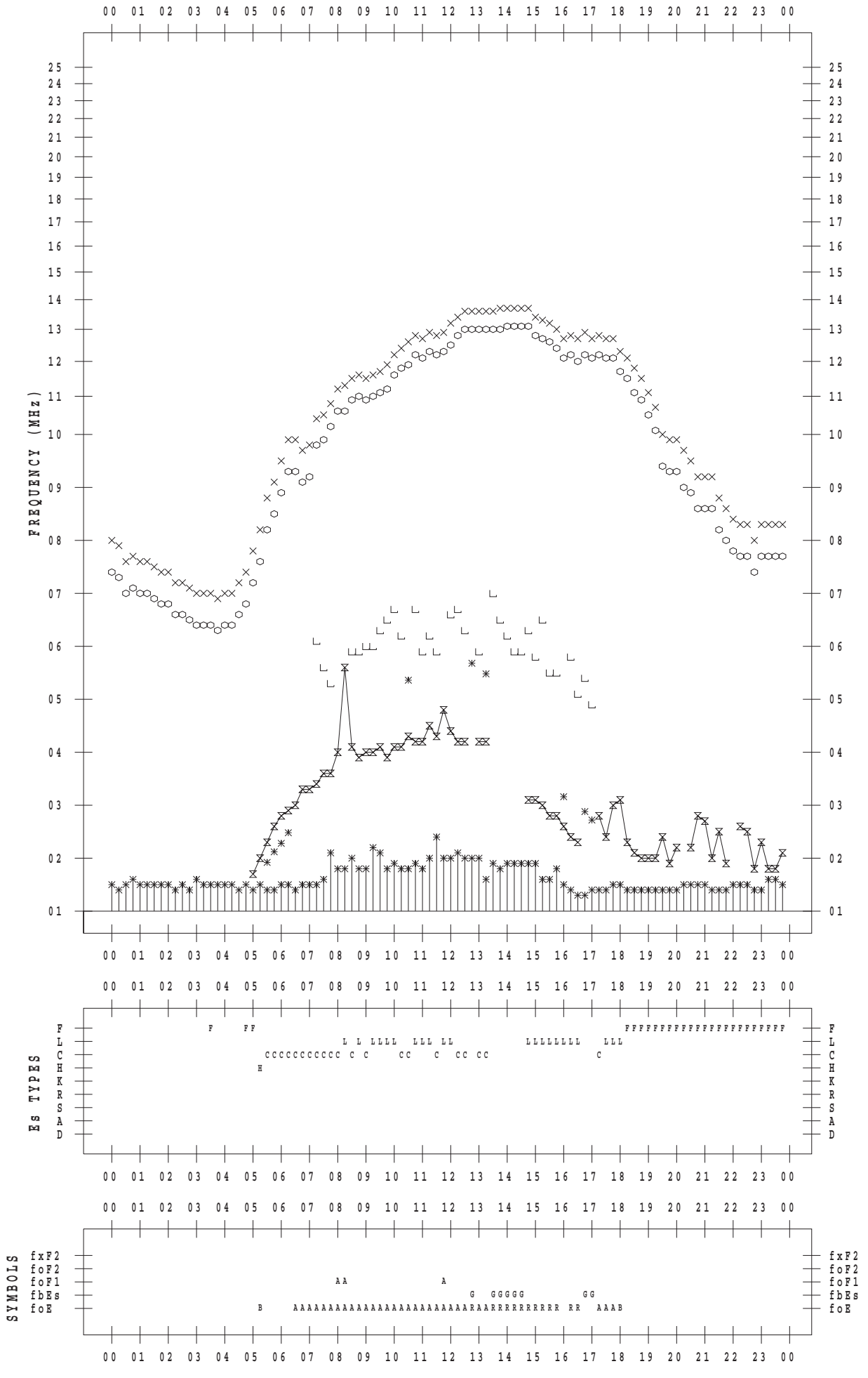
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/20

135 °E MEAN TIME



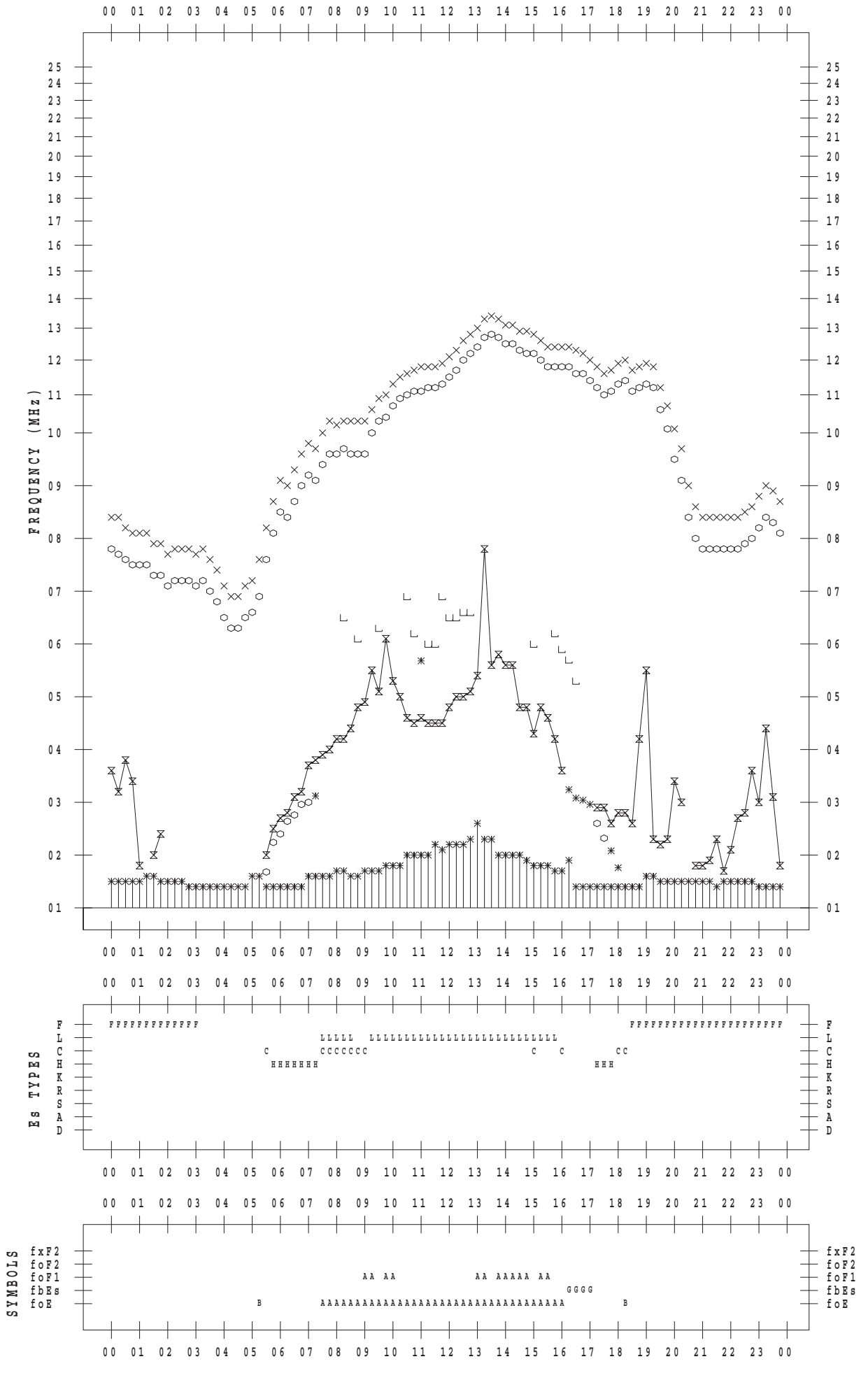
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/21

135 °E MEAN TIME



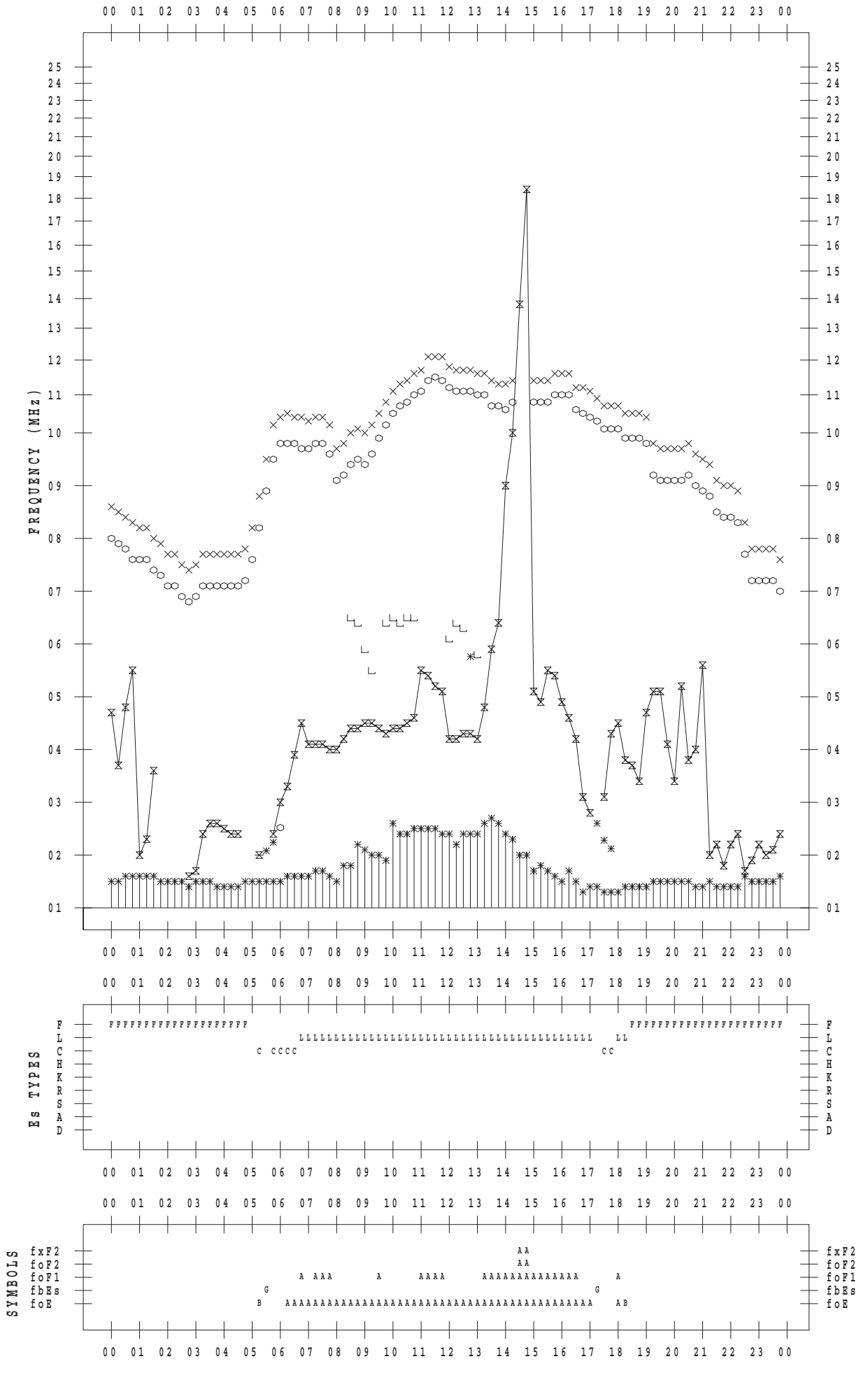
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/22

135 °E MEAN TIME



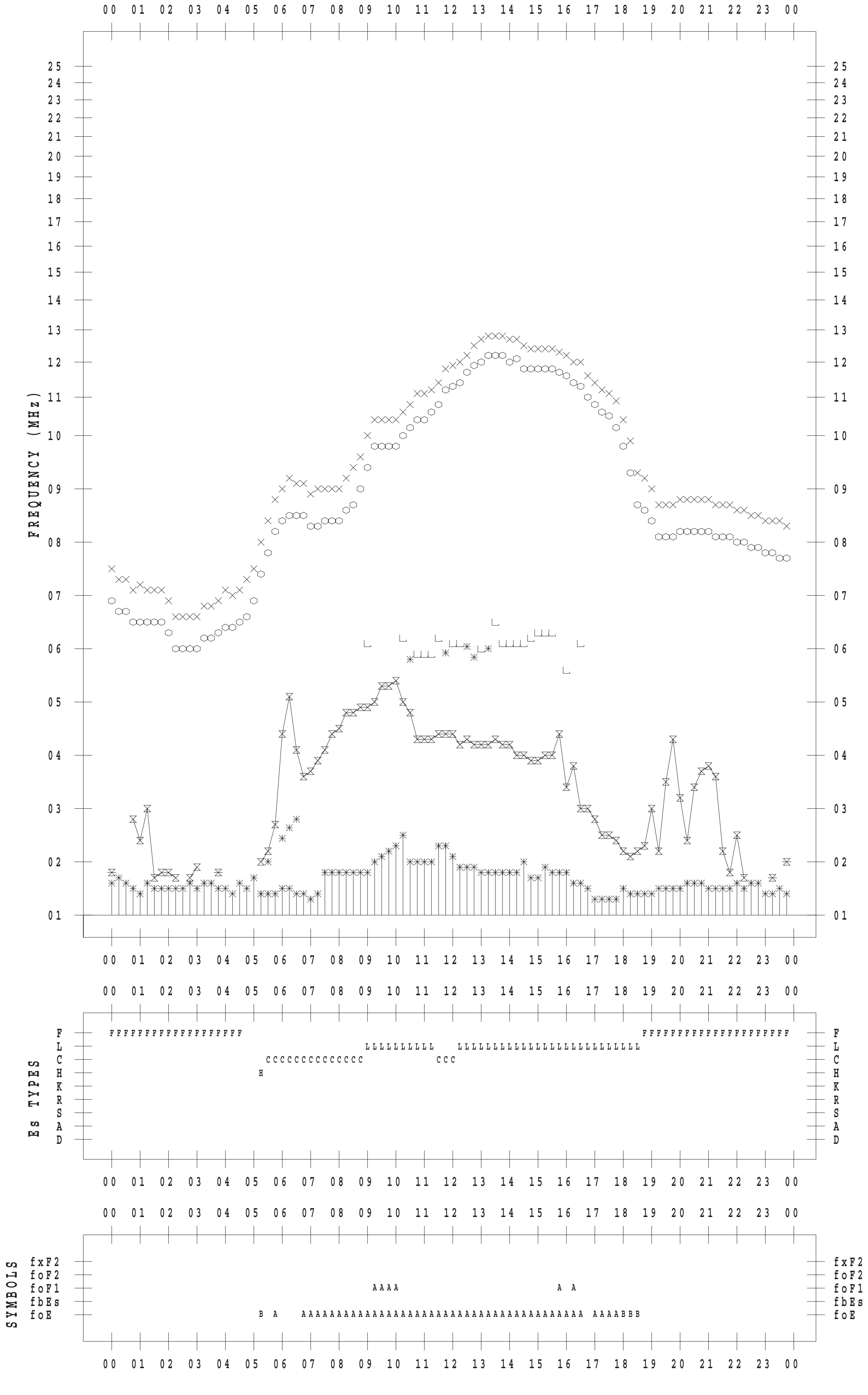
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/23

135 °E MEAN TIME



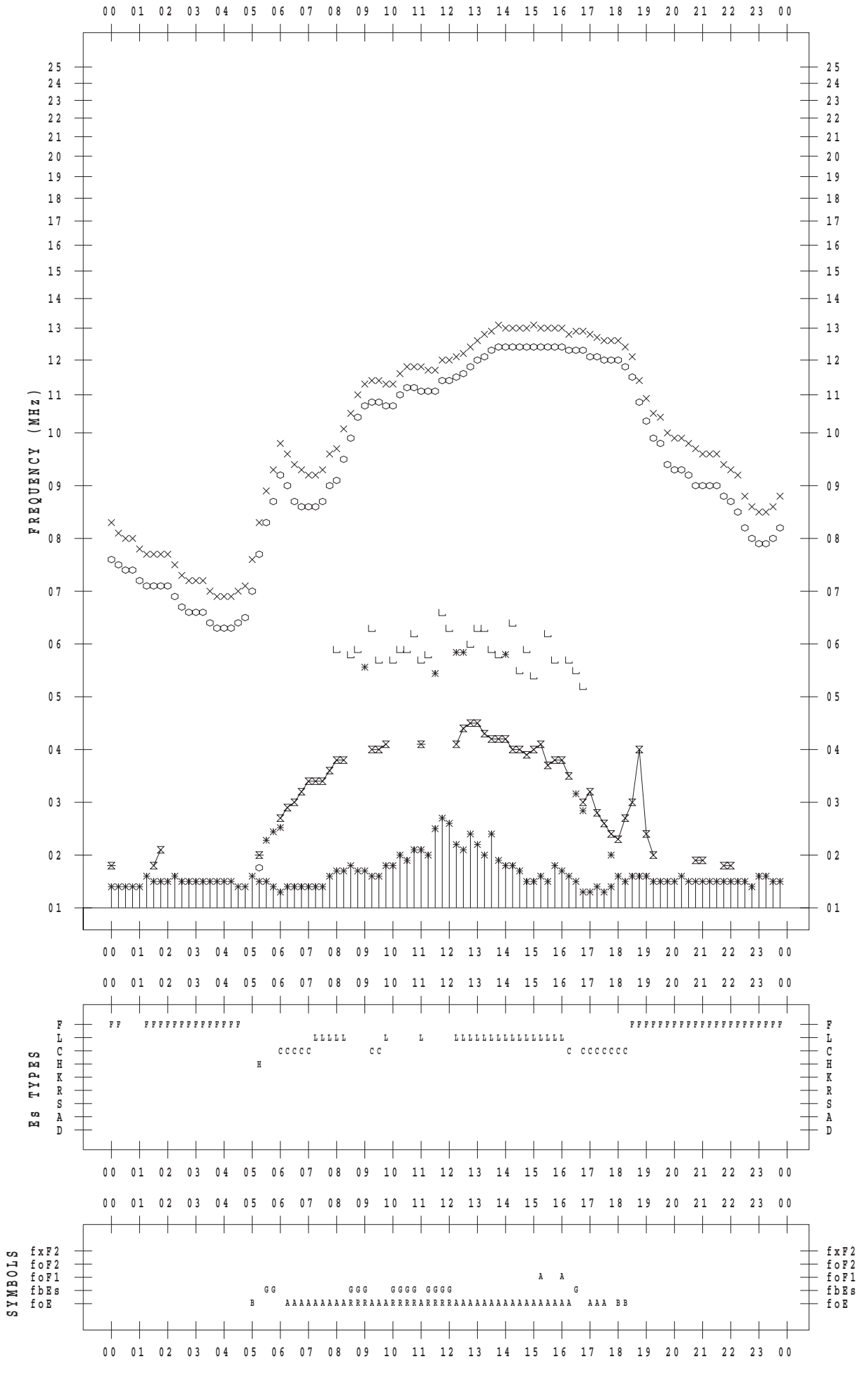
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/24

135 °E MEAN TIME



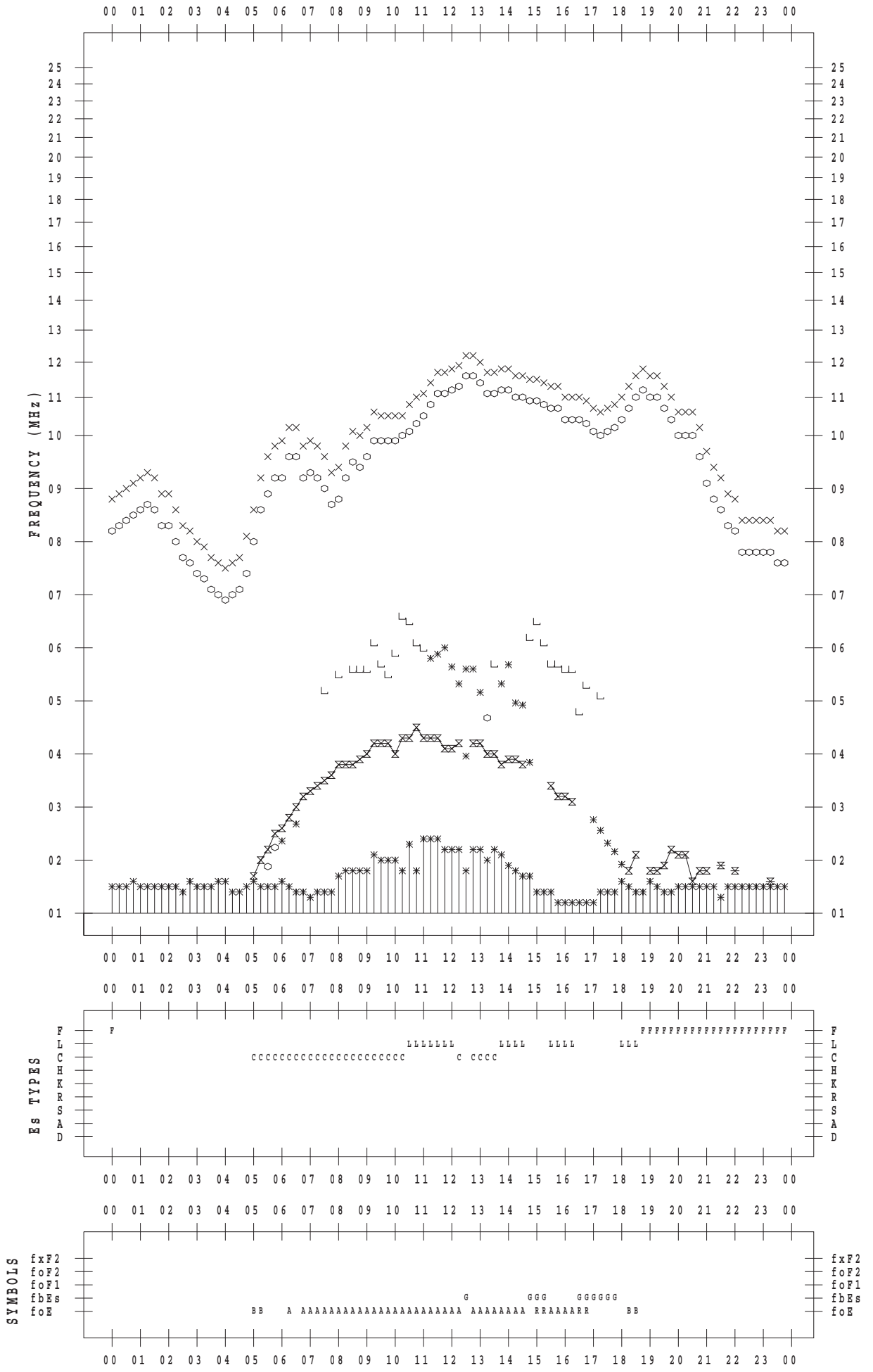
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/25

135 °E MEAN TIME



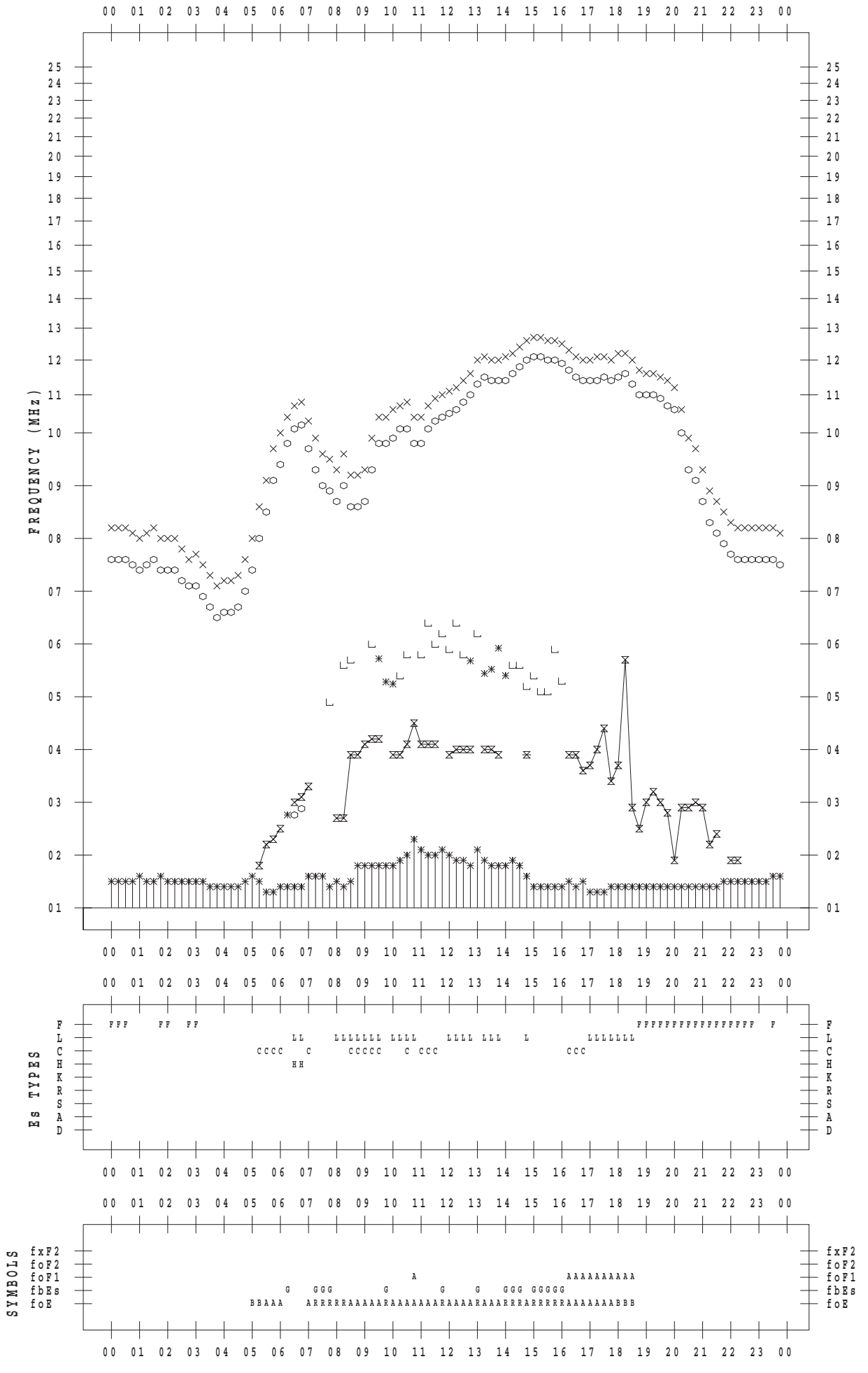
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/26

135 °E MEAN TIME

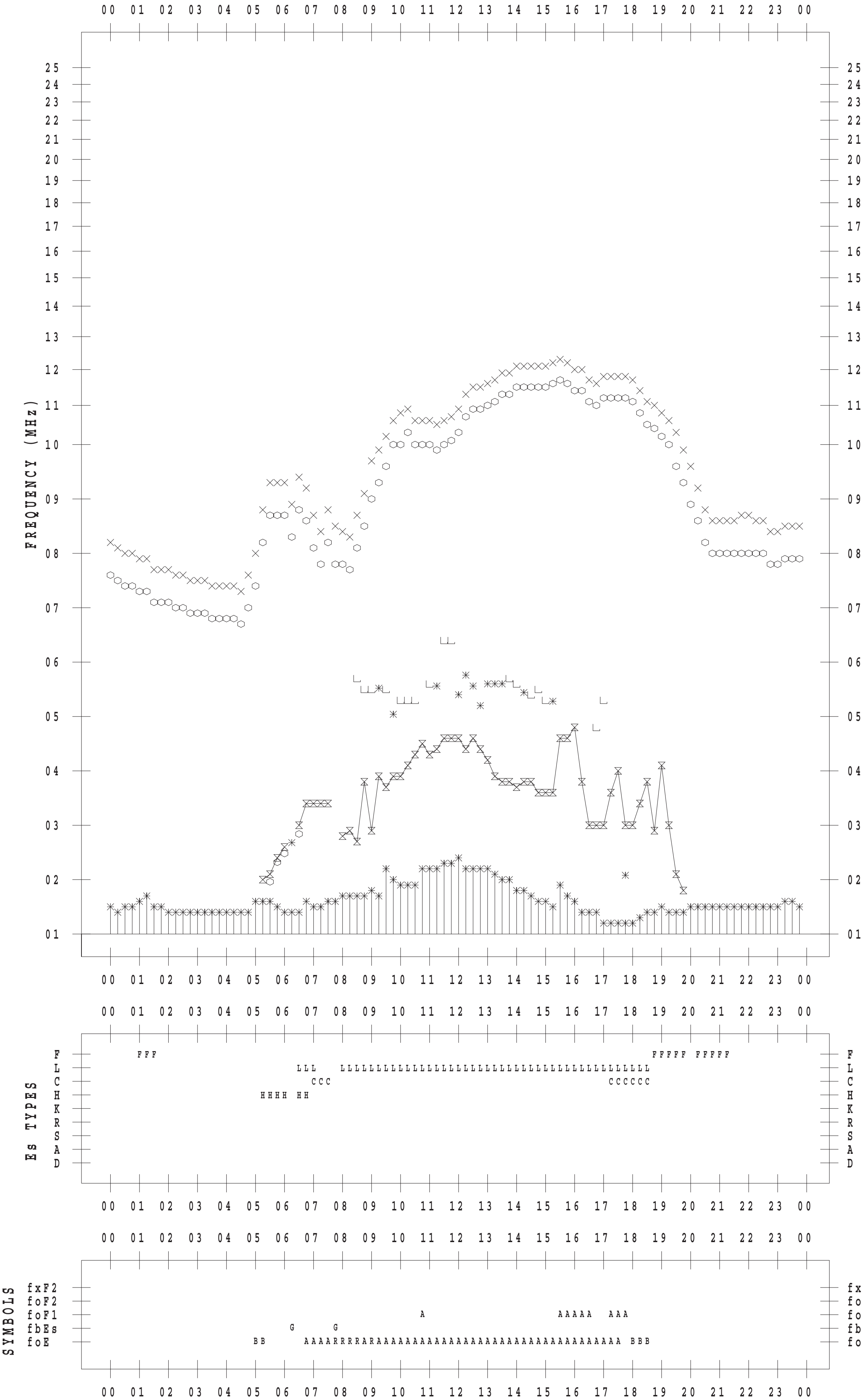


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2015/ 4/27

135 °E MEAN TIME



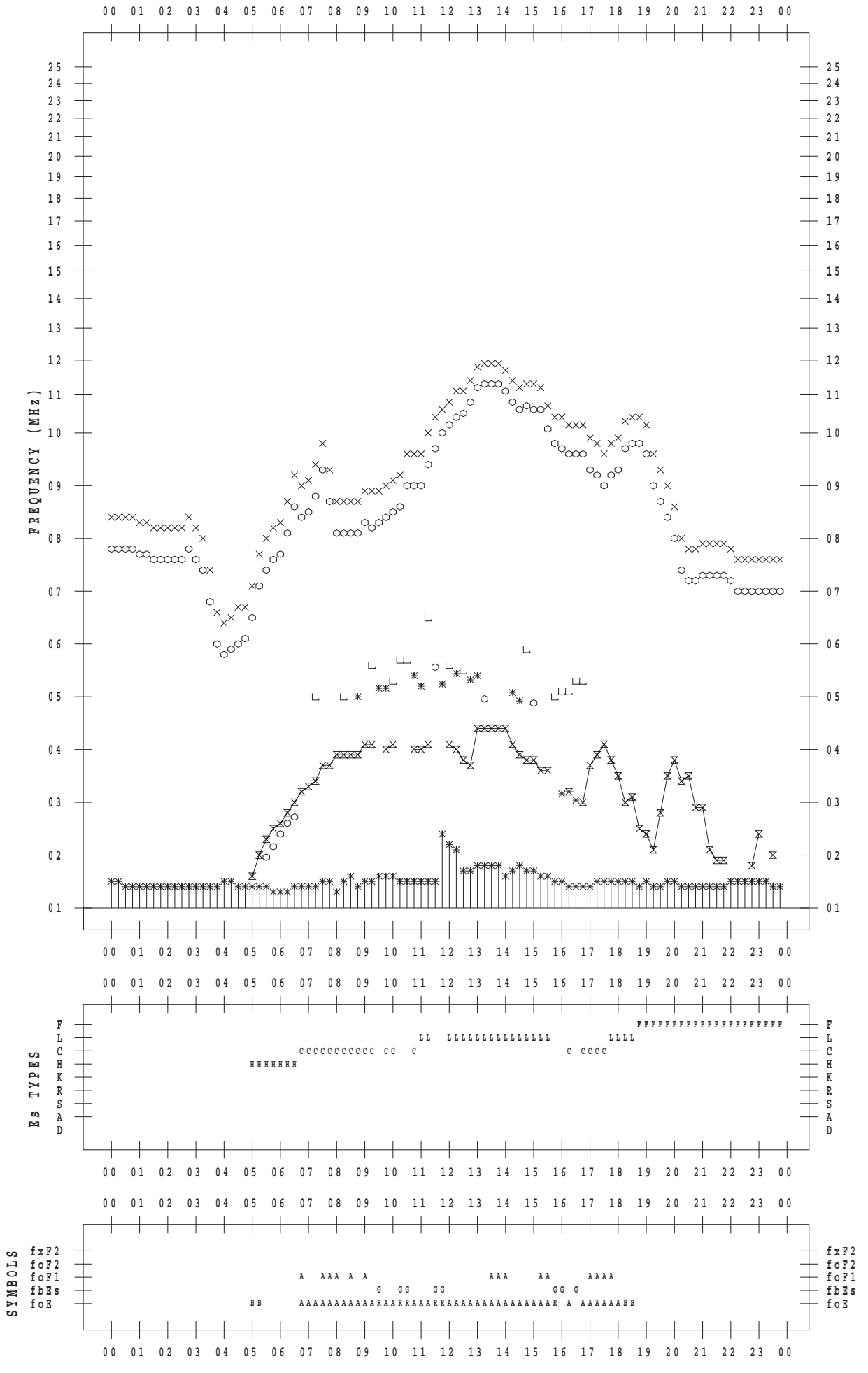
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/28

135 °E MEAN TIME



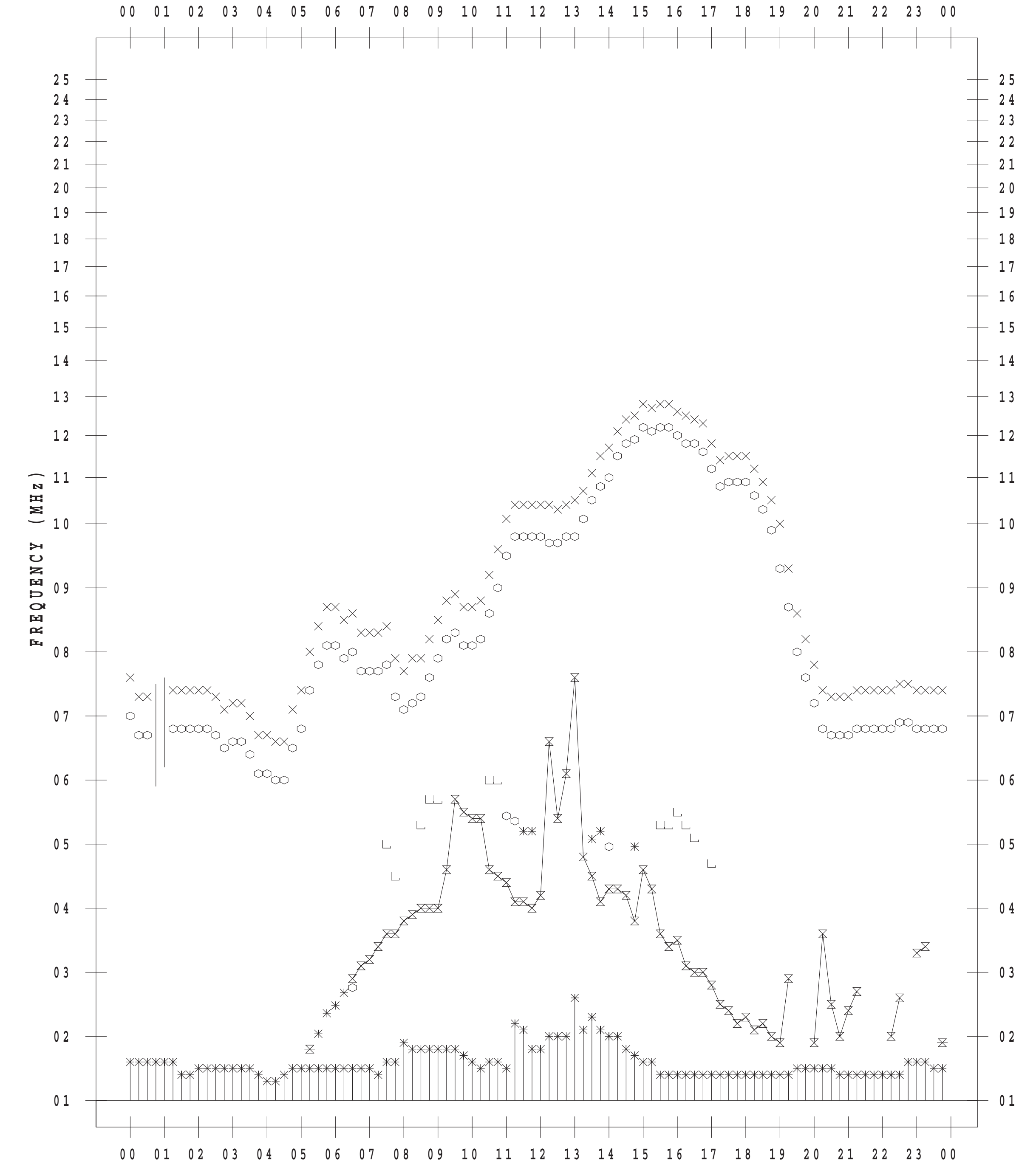
f-PLOT DATA

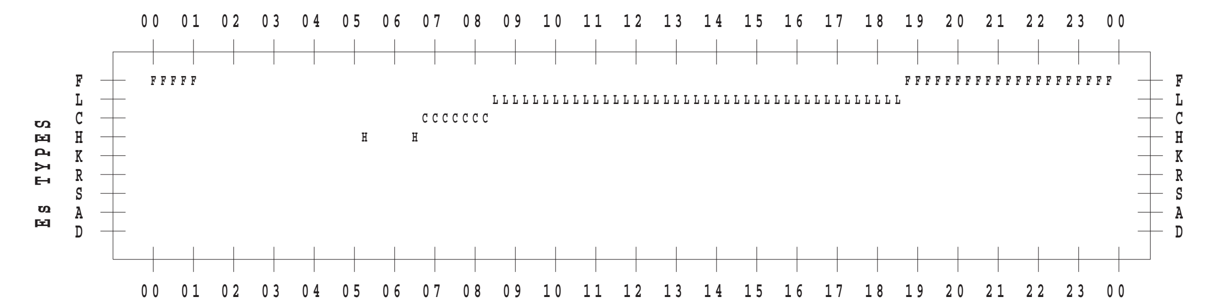
SCALER : I.NISHIMUTA

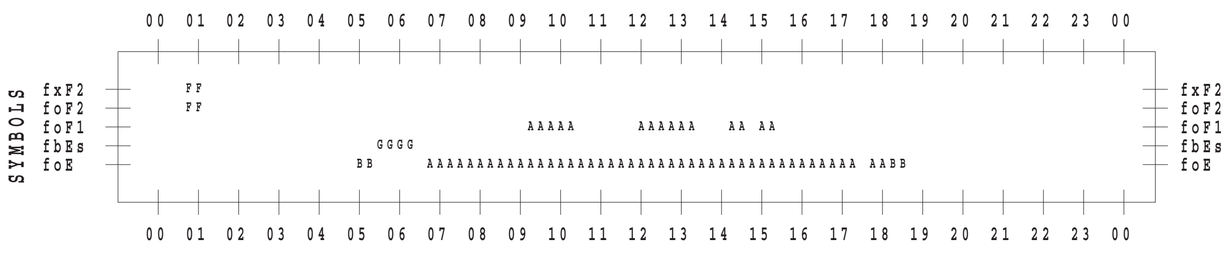
STATION : Kokubunji

DATE : 2015/ 4/29

135 °E MEAN TIME







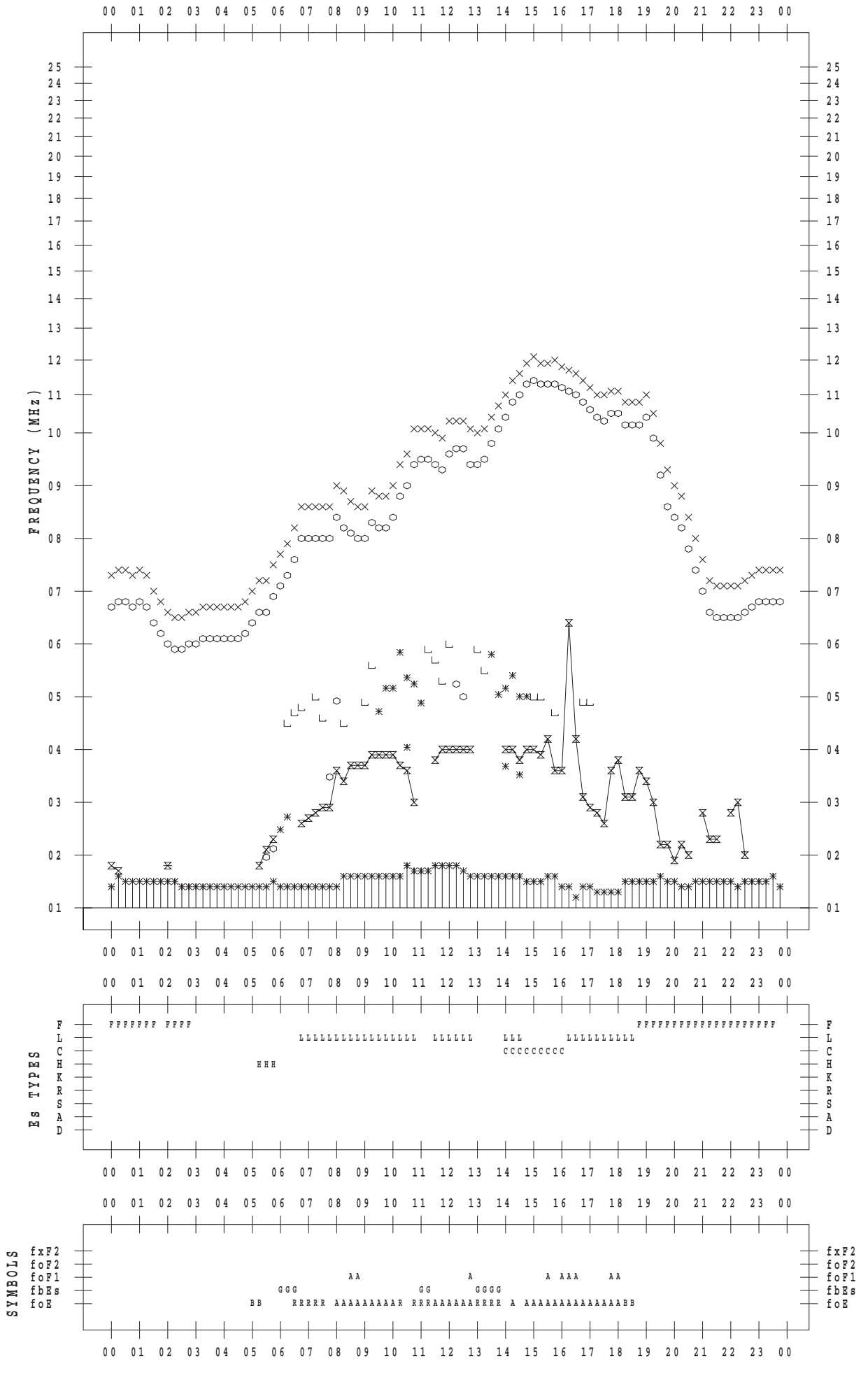
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 4/30

135 °E MEAN TIME



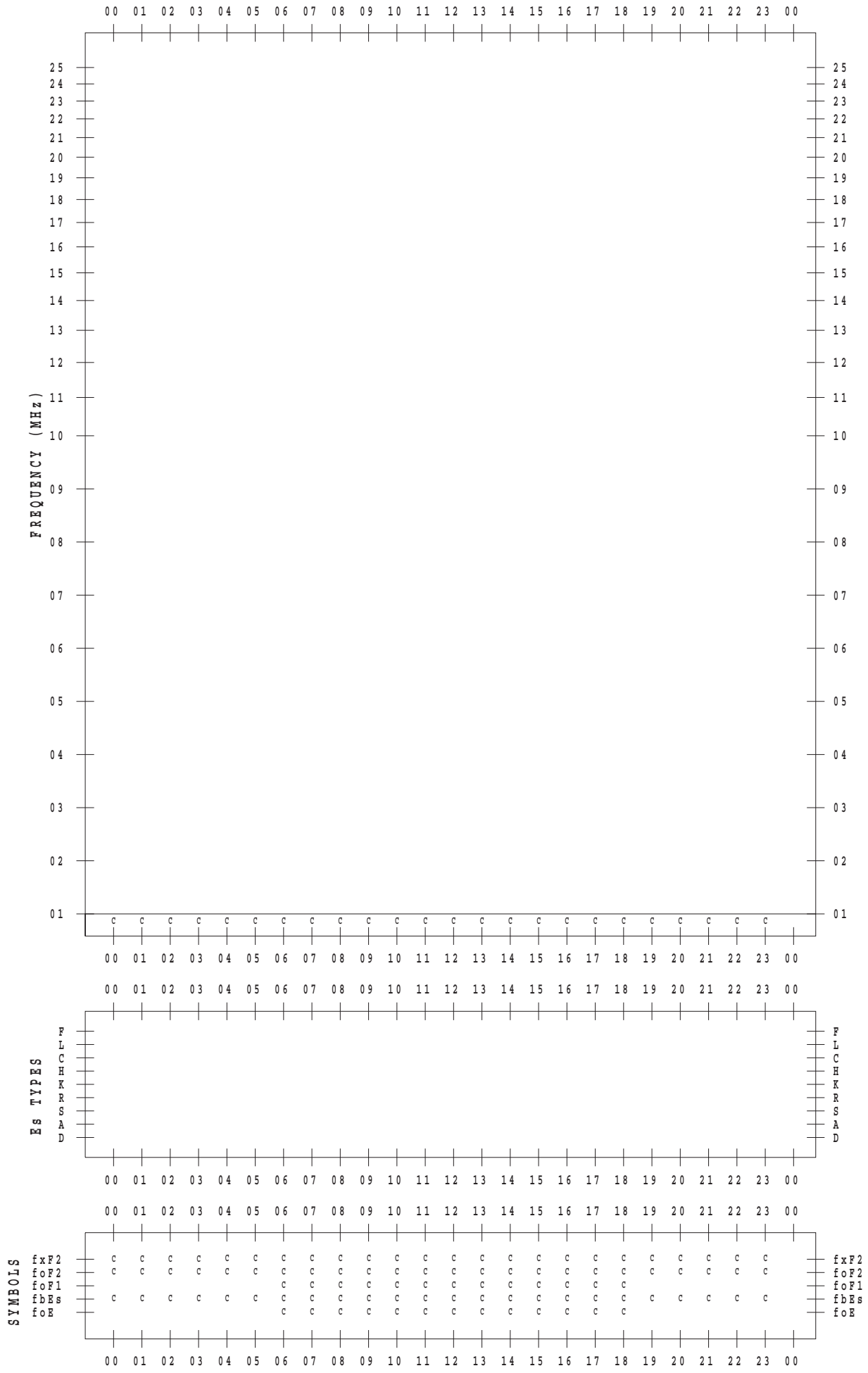
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 1

135 °E MEAN TIME



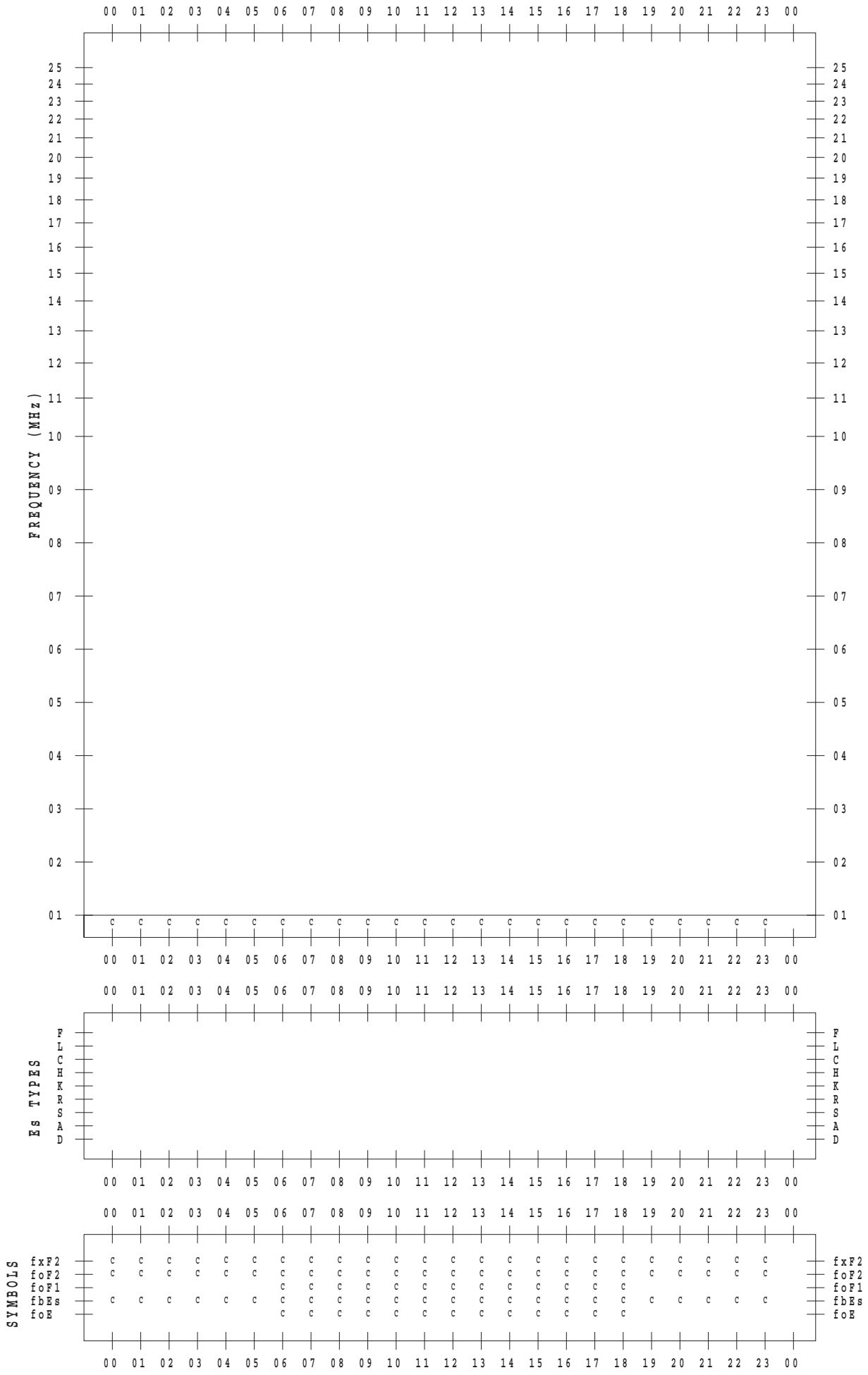
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 2

135 °E MEAN TIME



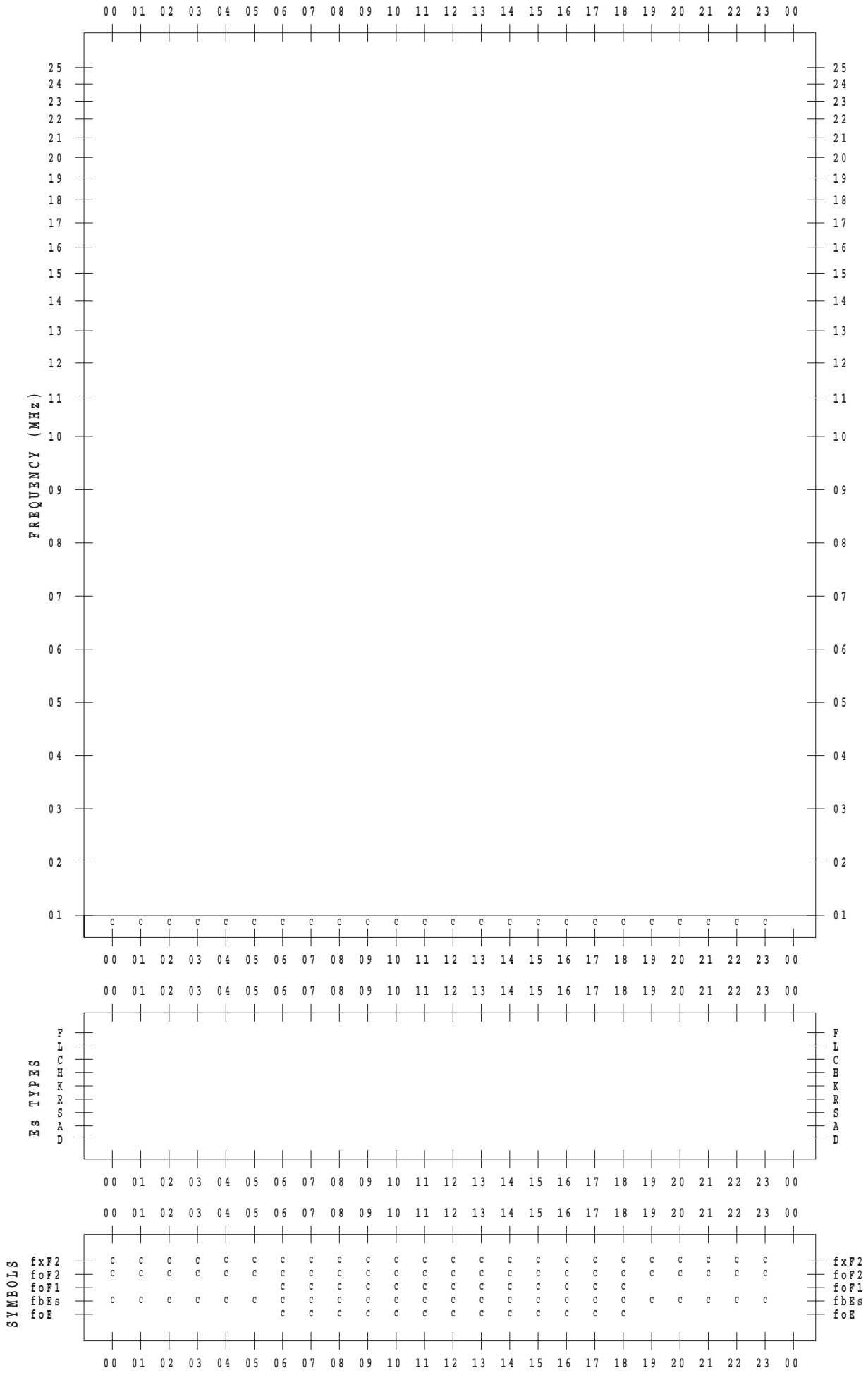
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 3

135 °E MEAN TIME



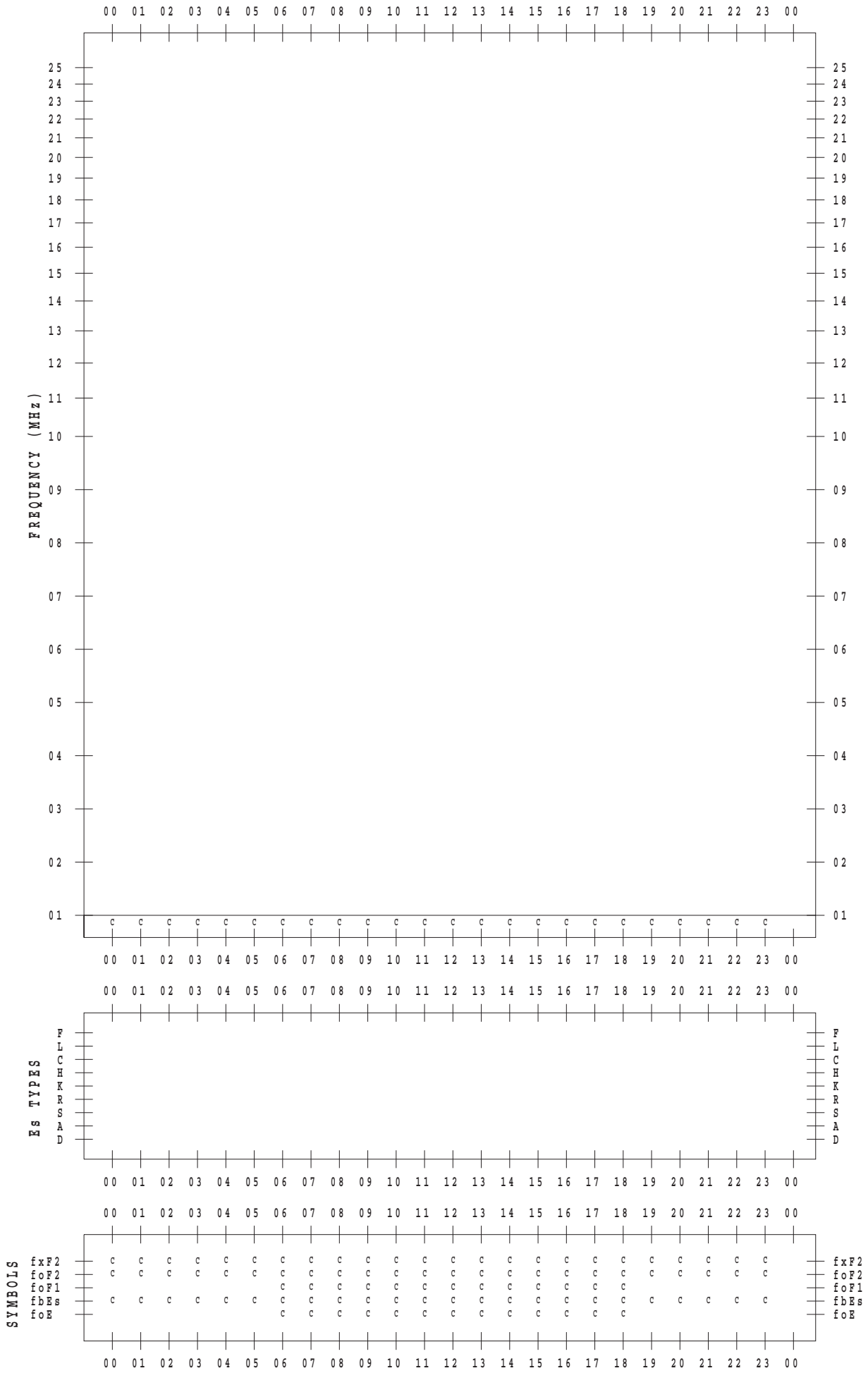
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 4

135 °E MEAN TIME



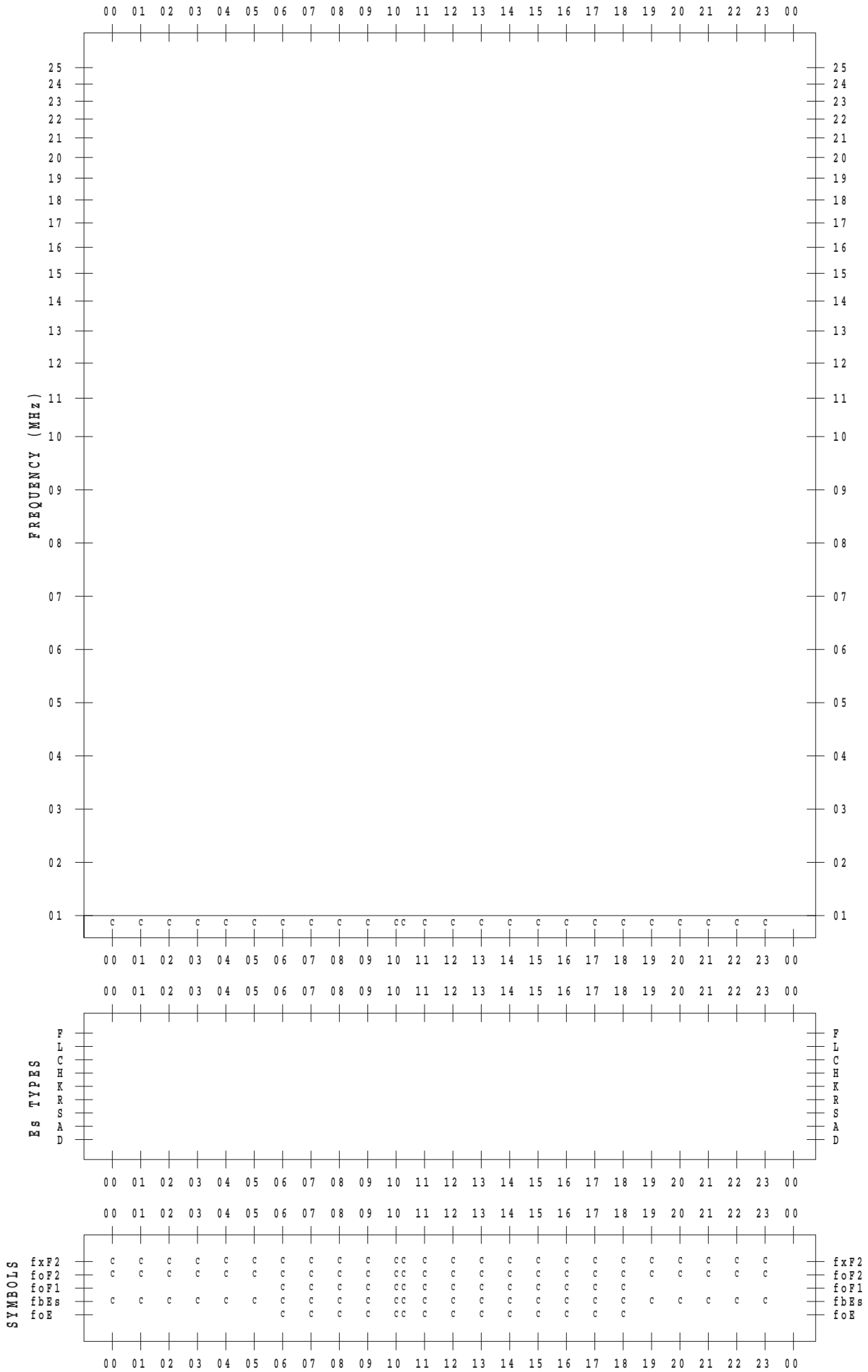
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 5

135 °E MEAN TIME



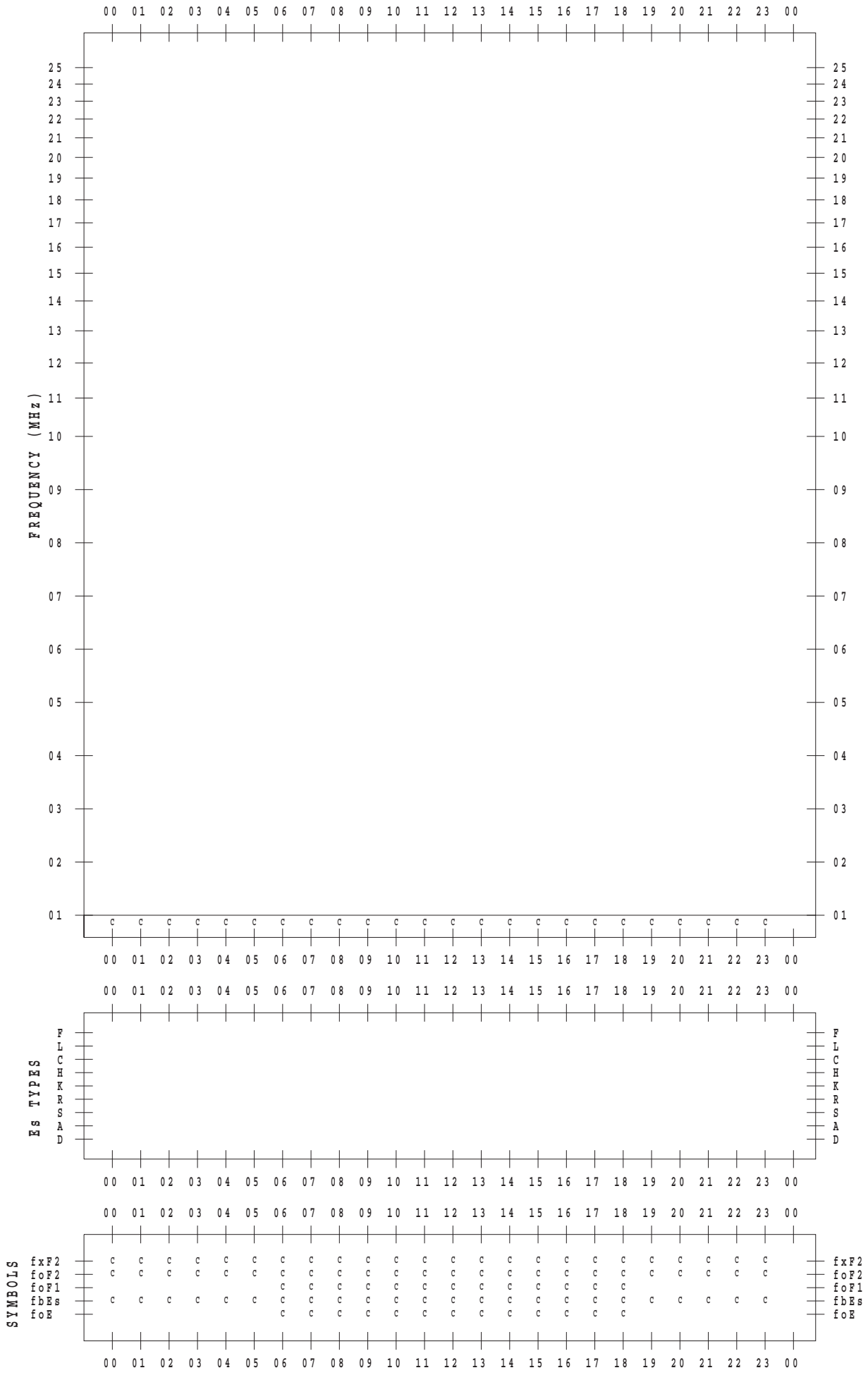
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 6

135 °E MEAN TIME



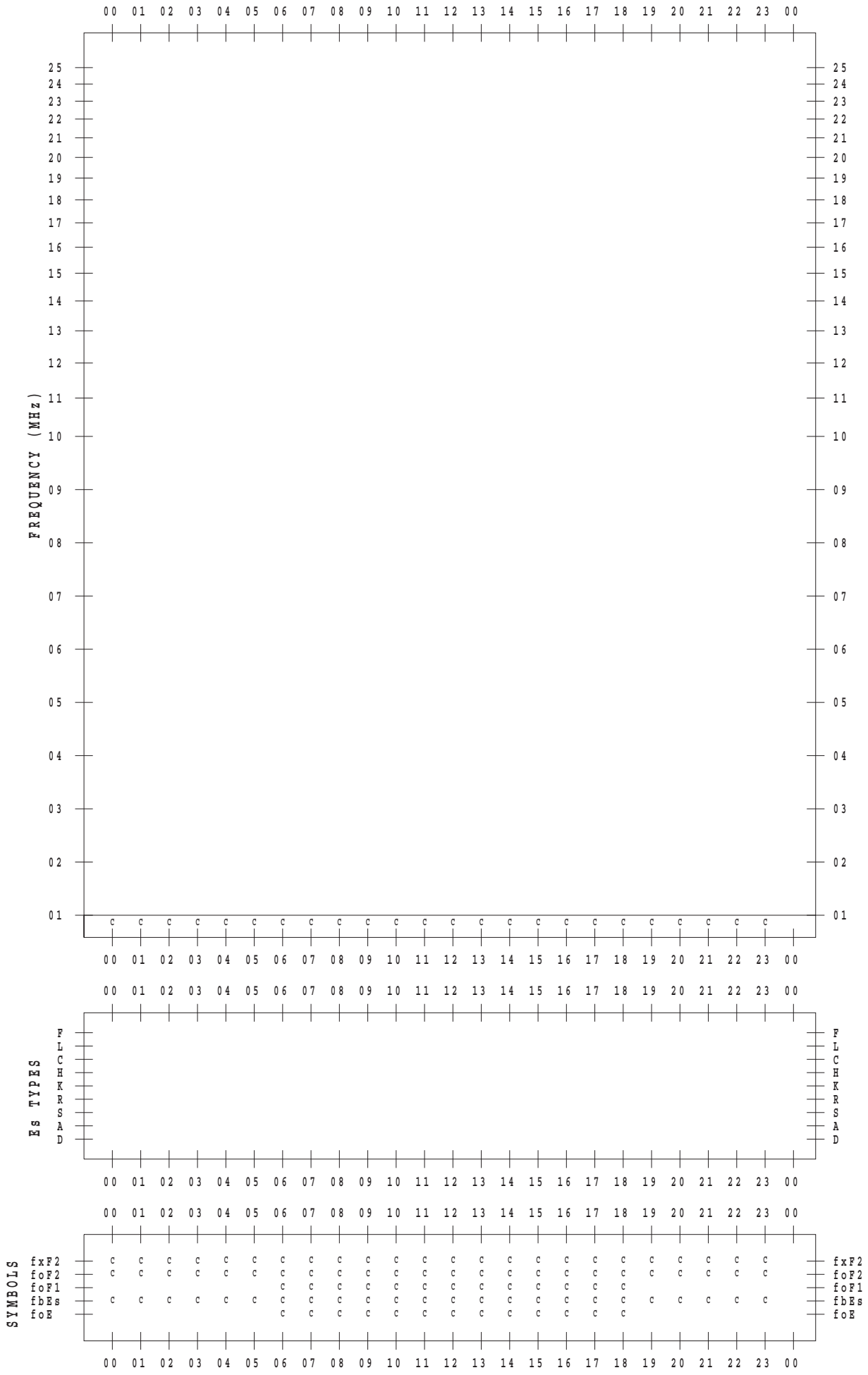
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 7

135 °E MEAN TIME



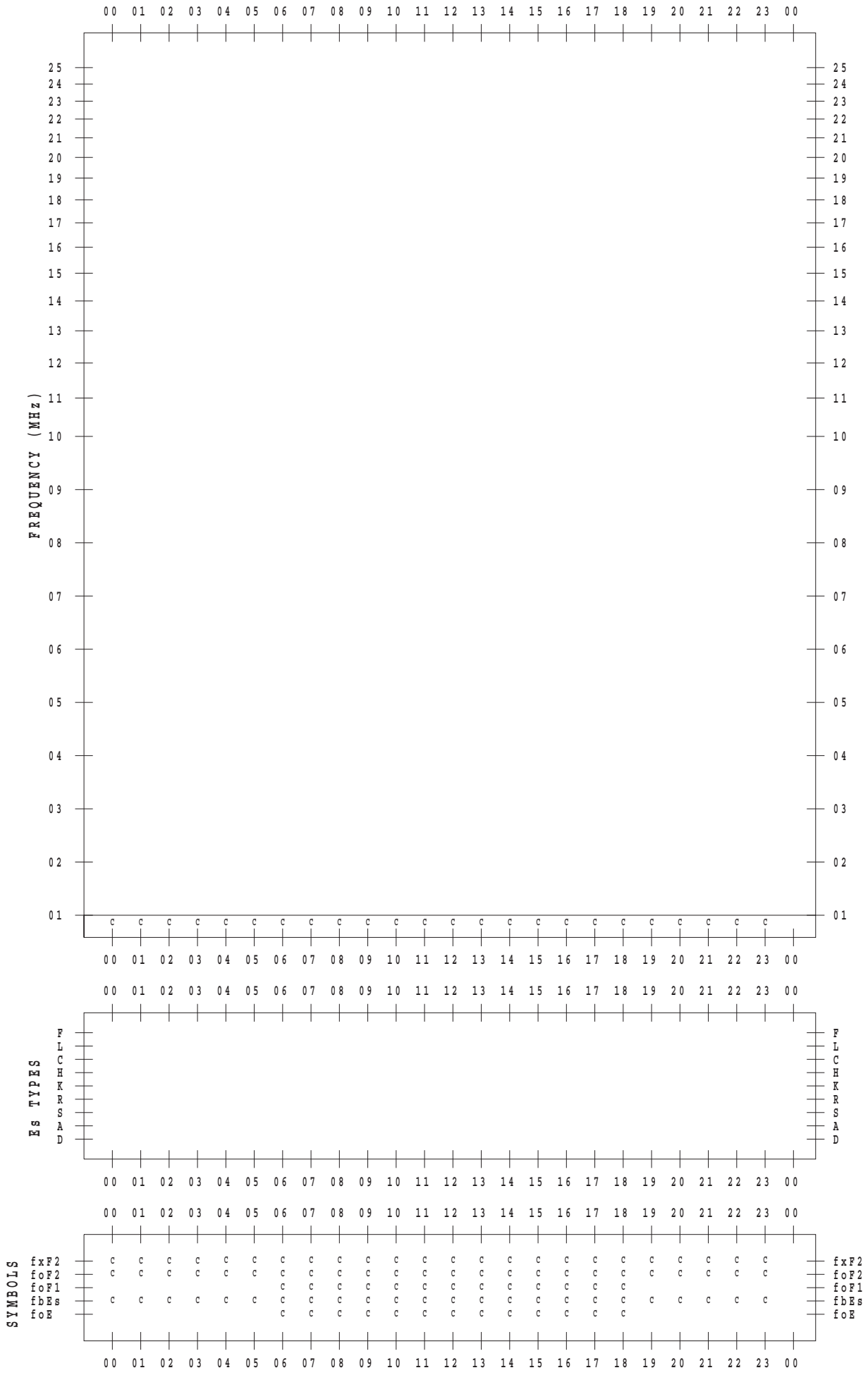
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 8

135 °E MEAN TIME



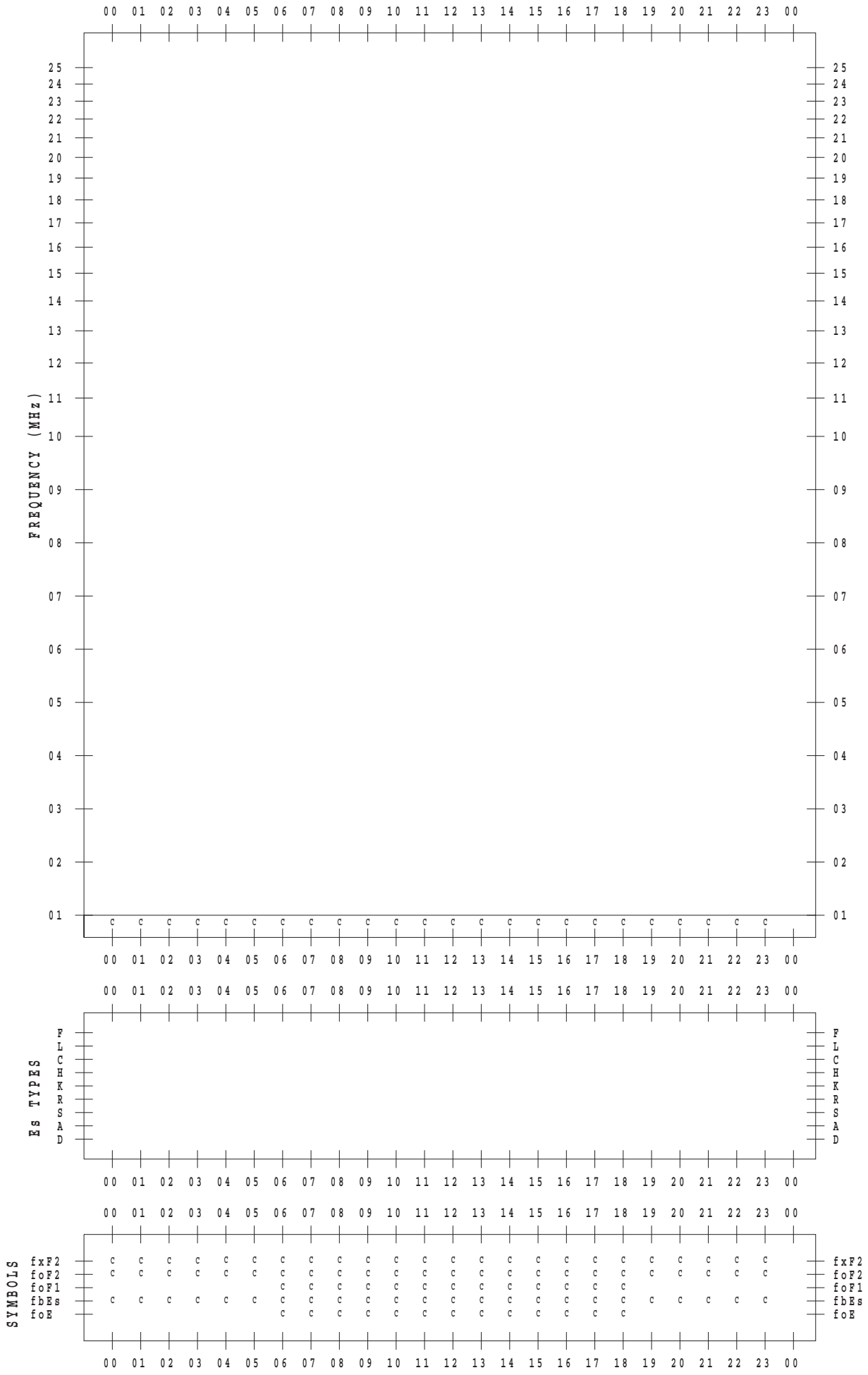
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/ 9

135 °E MEAN TIME



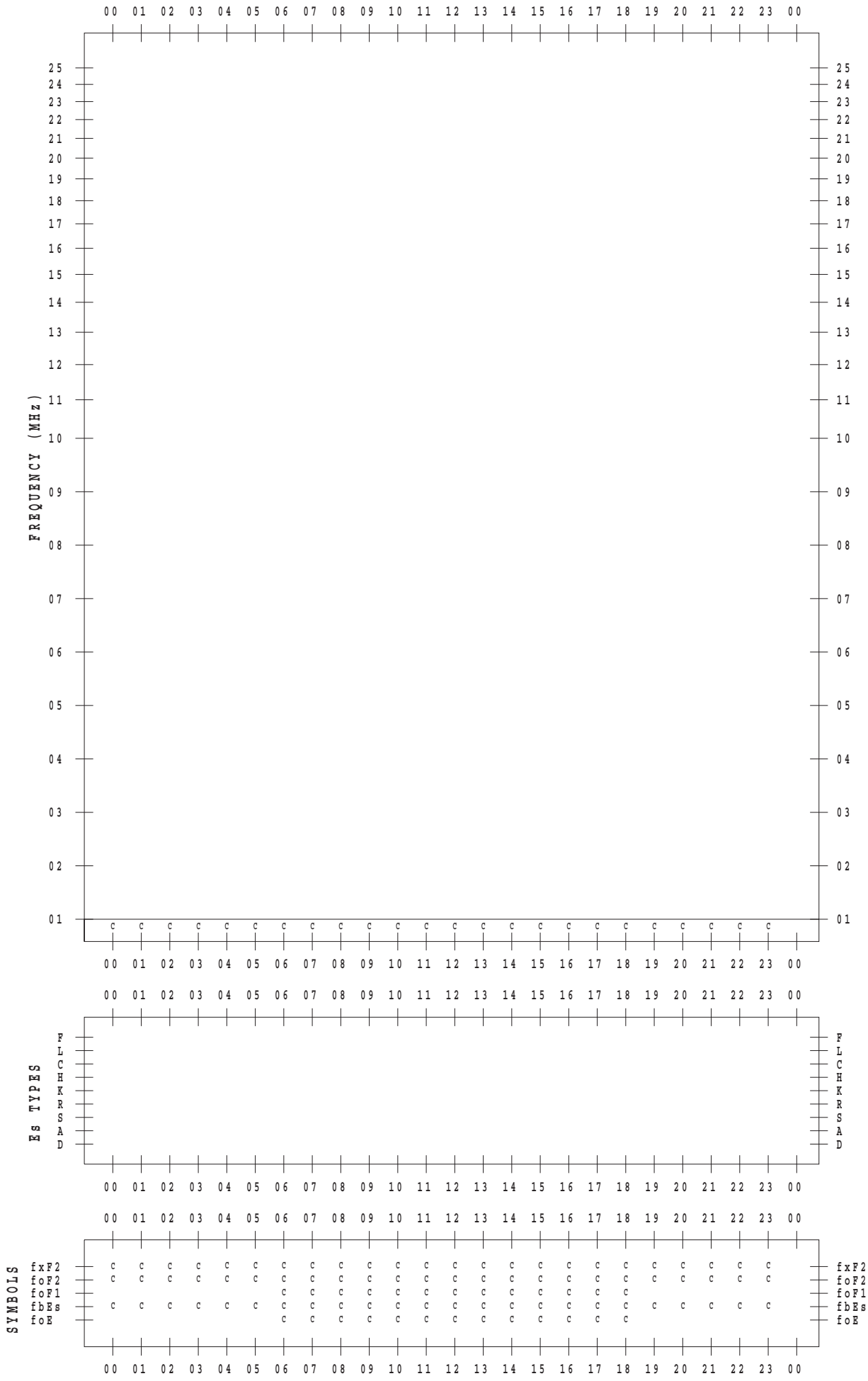
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/10

135 °E MEAN TIME



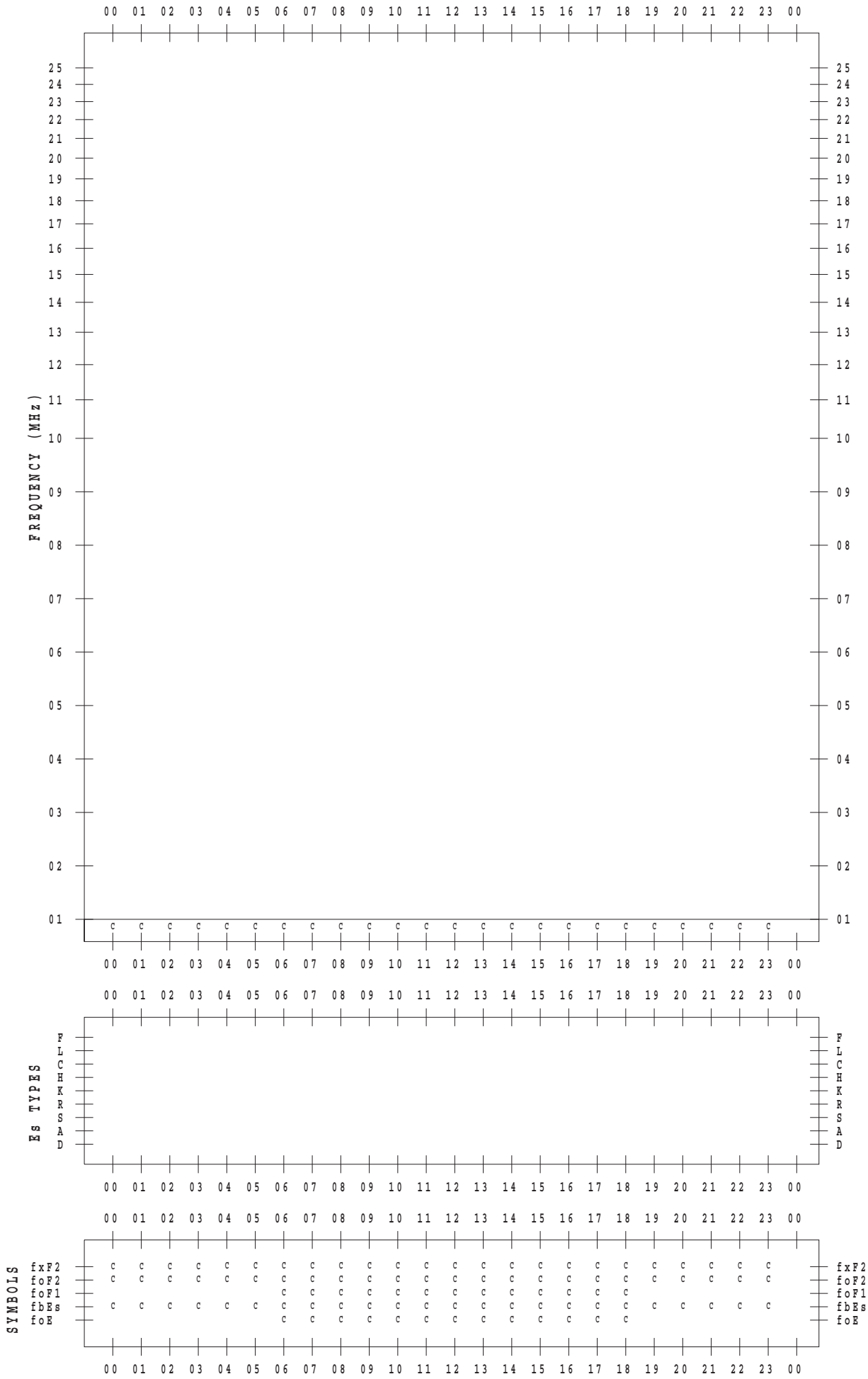
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/11

135 °E MEAN TIME



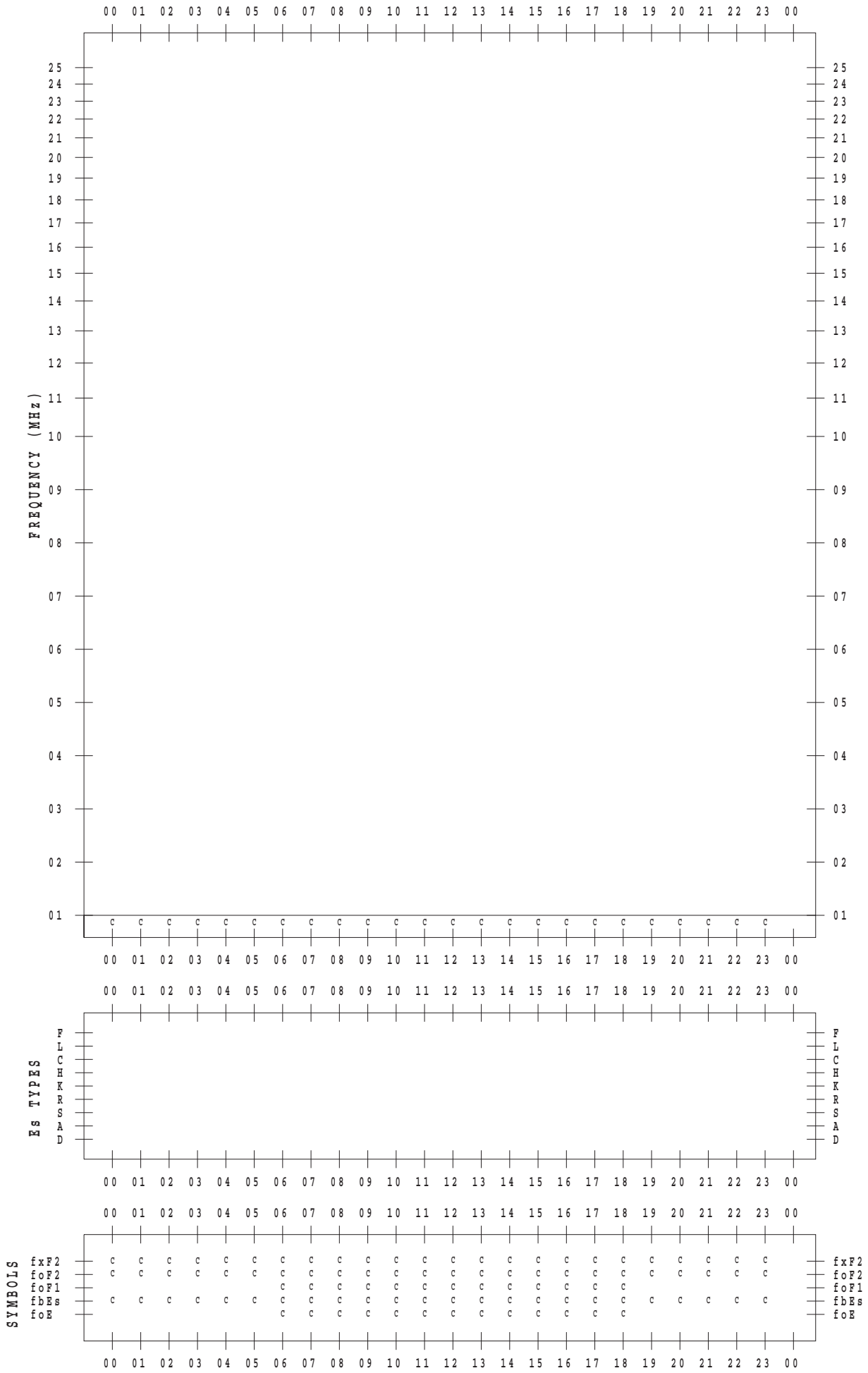
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/12

135 °E MEAN TIME



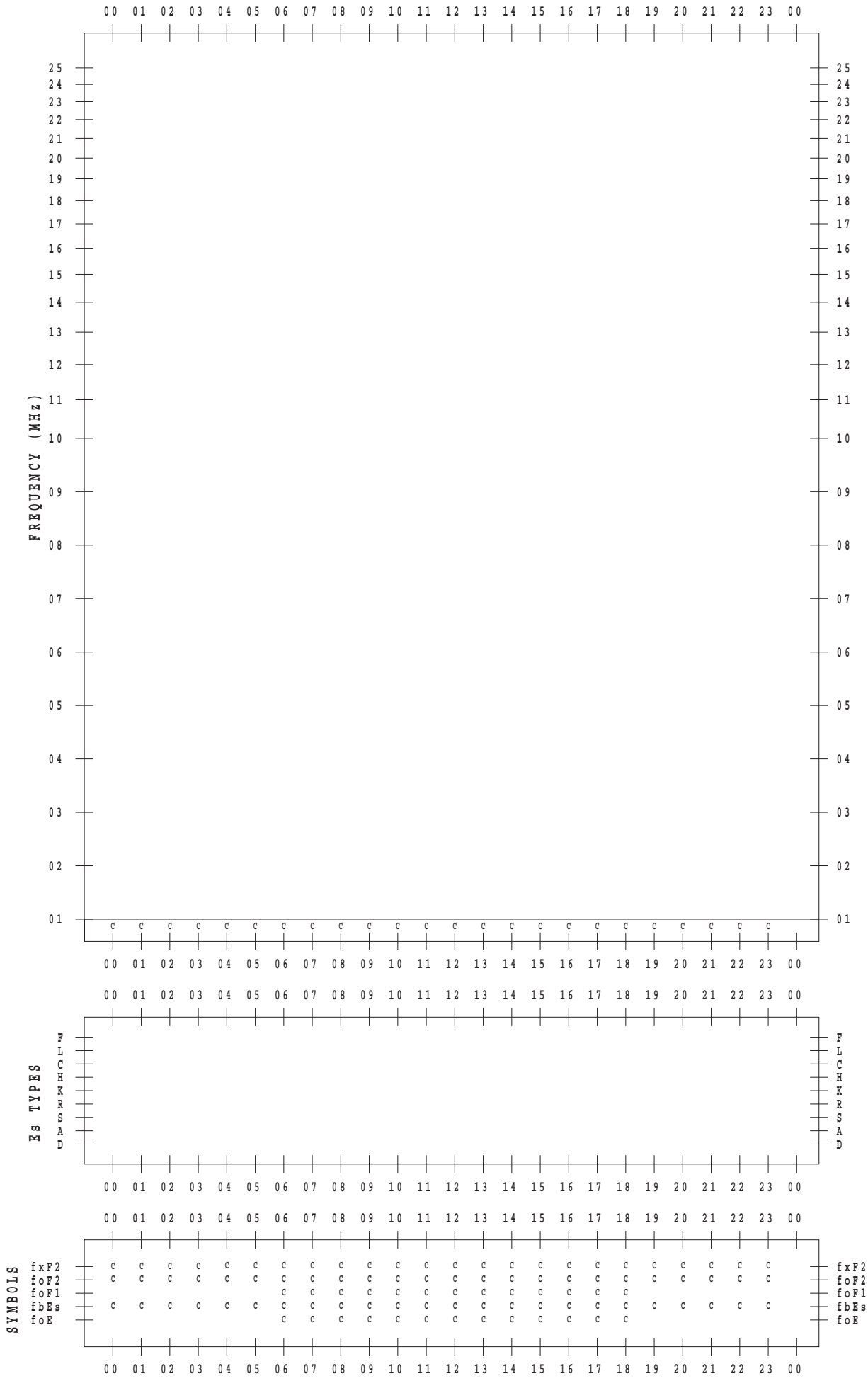
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/13

135 °E MEAN TIME



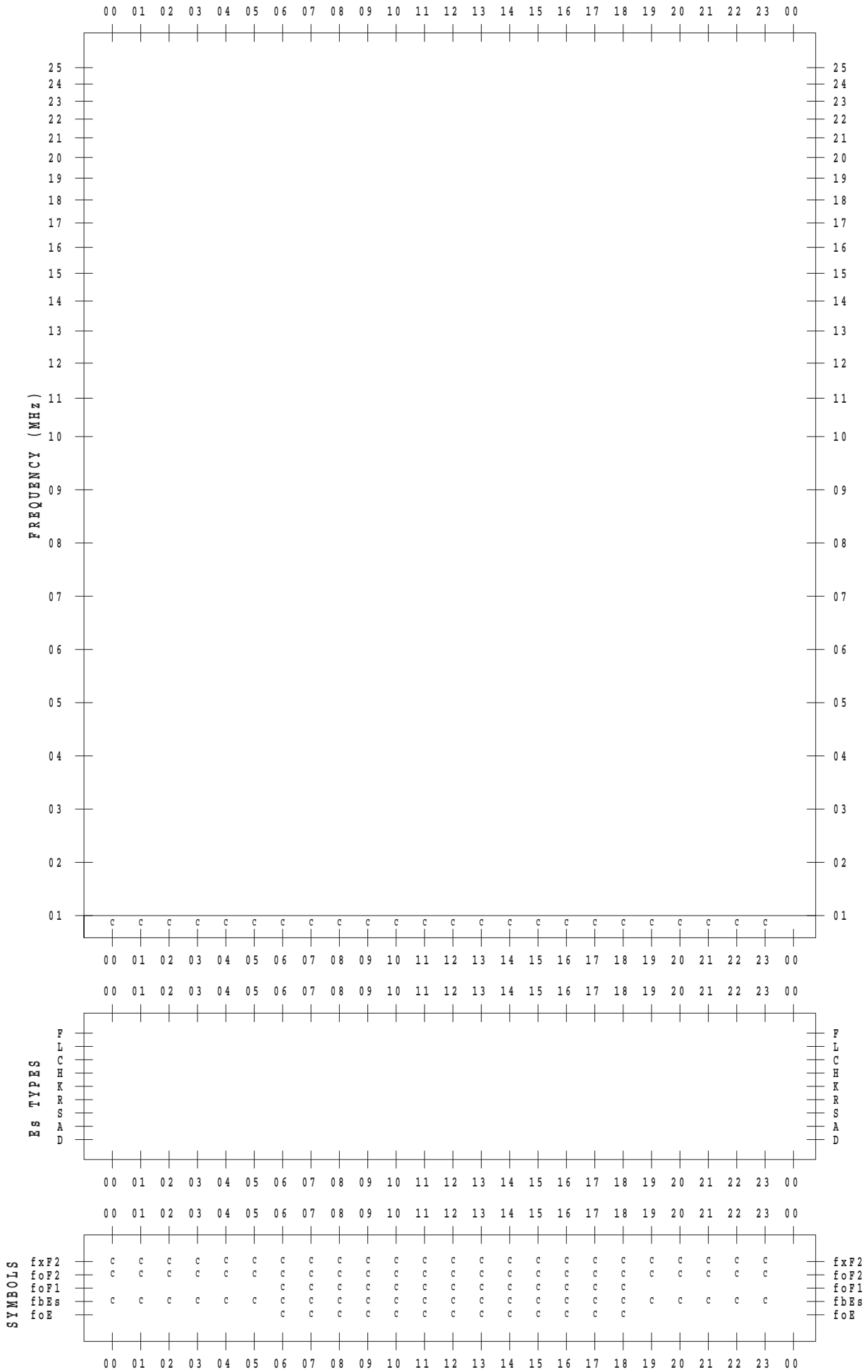
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/14

135 °E MEAN TIME



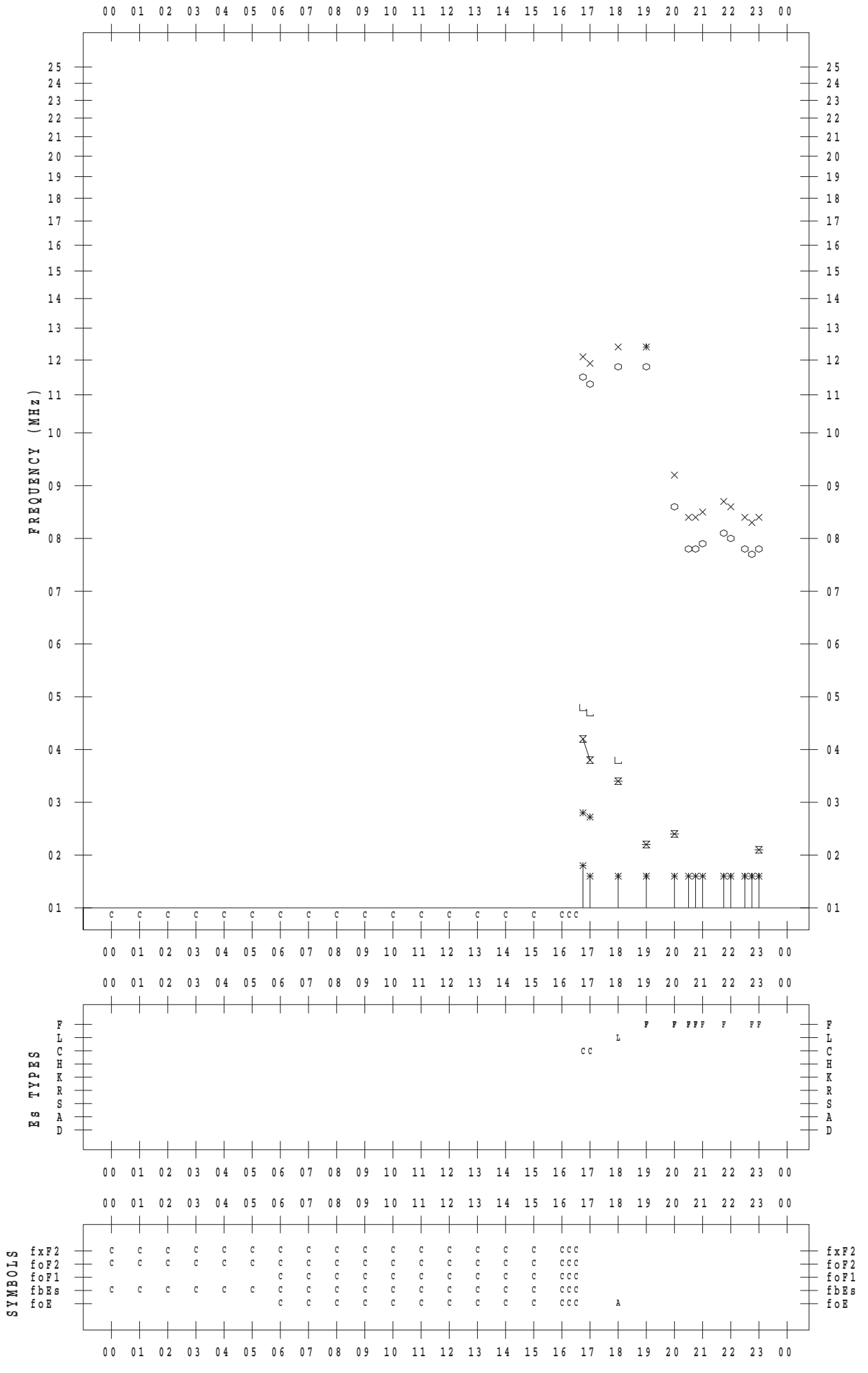
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/15

135 °E MEAN TIME



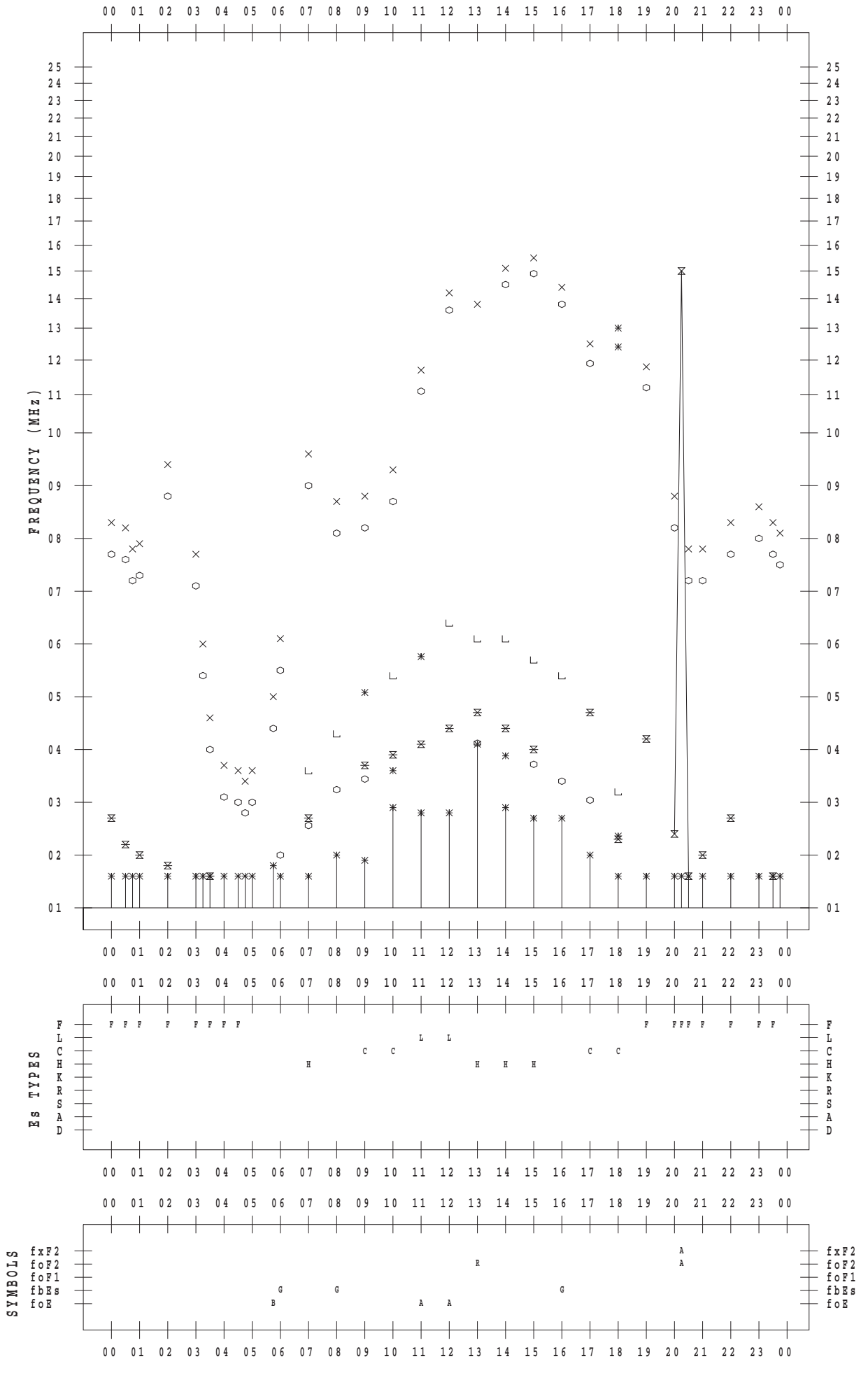
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/16

135 °E MEAN TIME



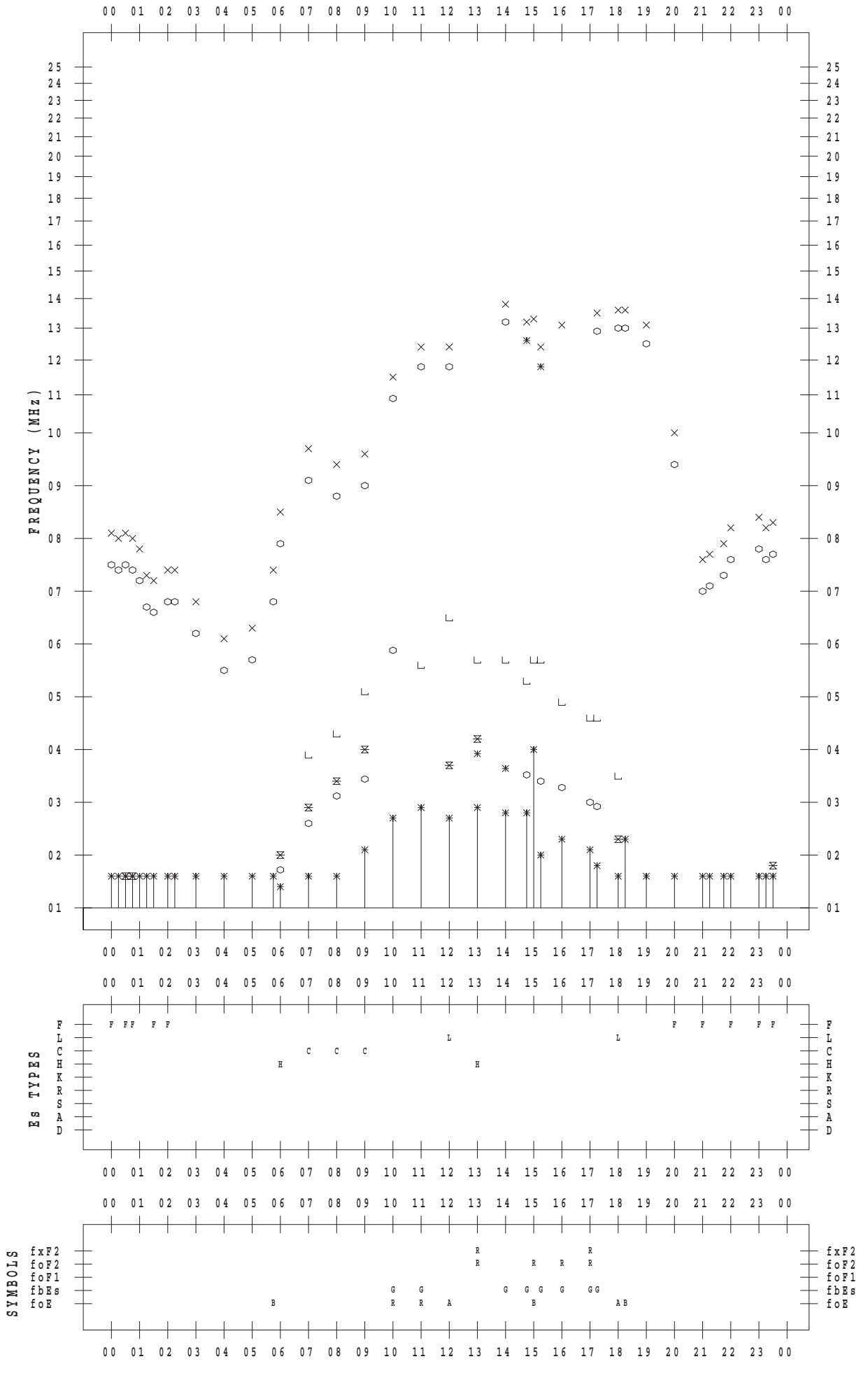
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/17

135 °E MEAN TIME



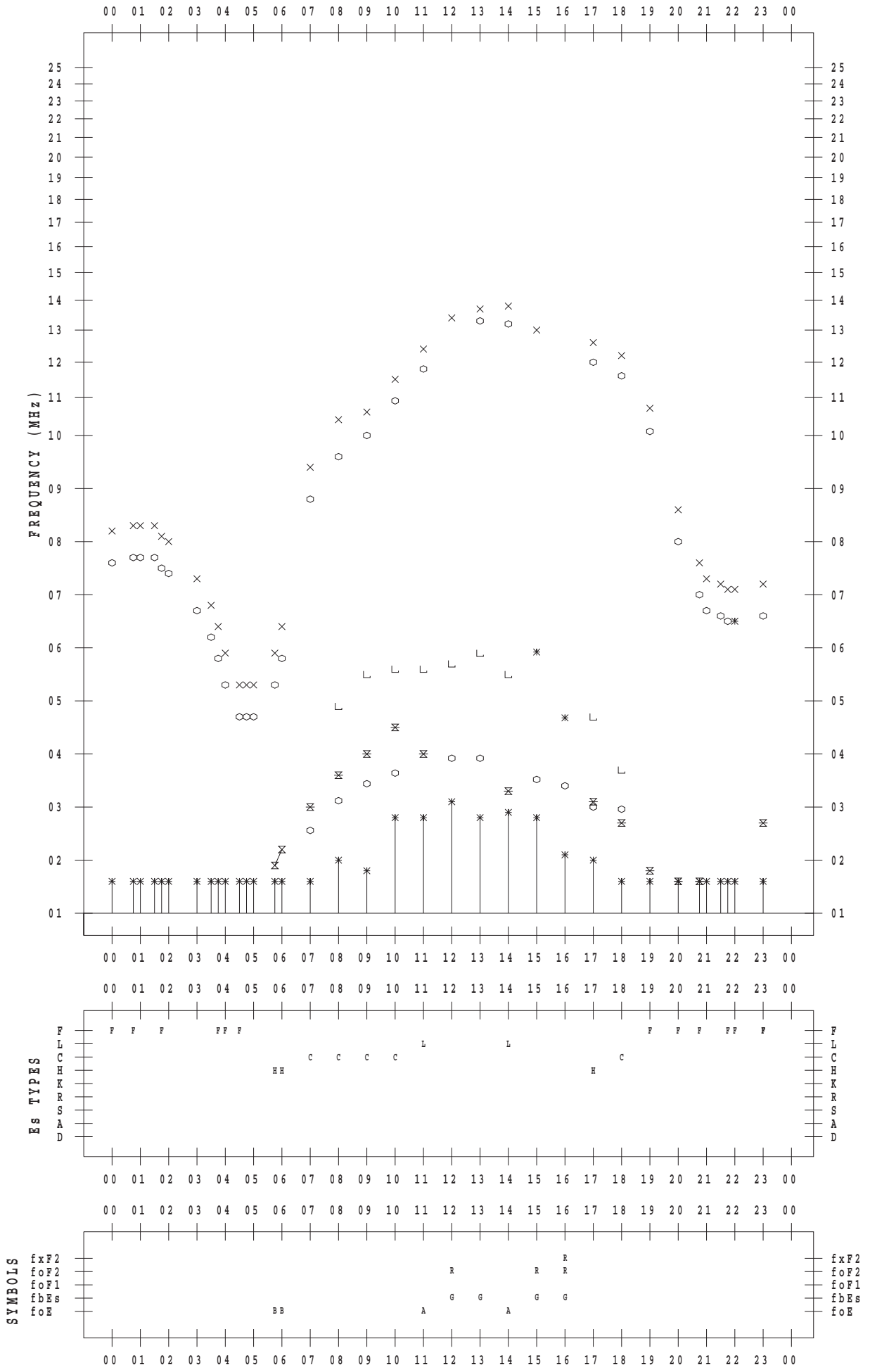
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/18

135 °E MEAN TIME



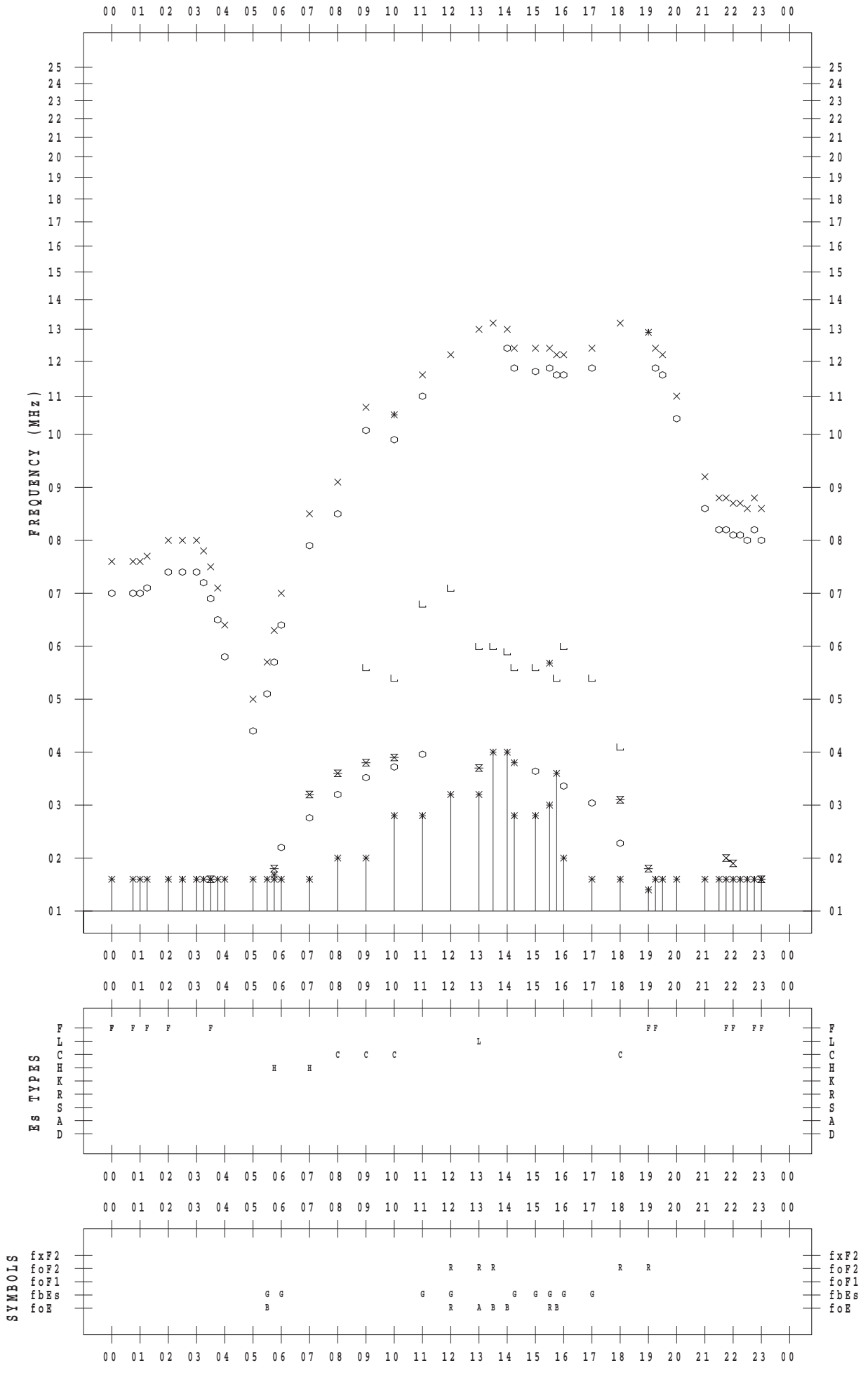
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/19

135 °E MEAN TIME



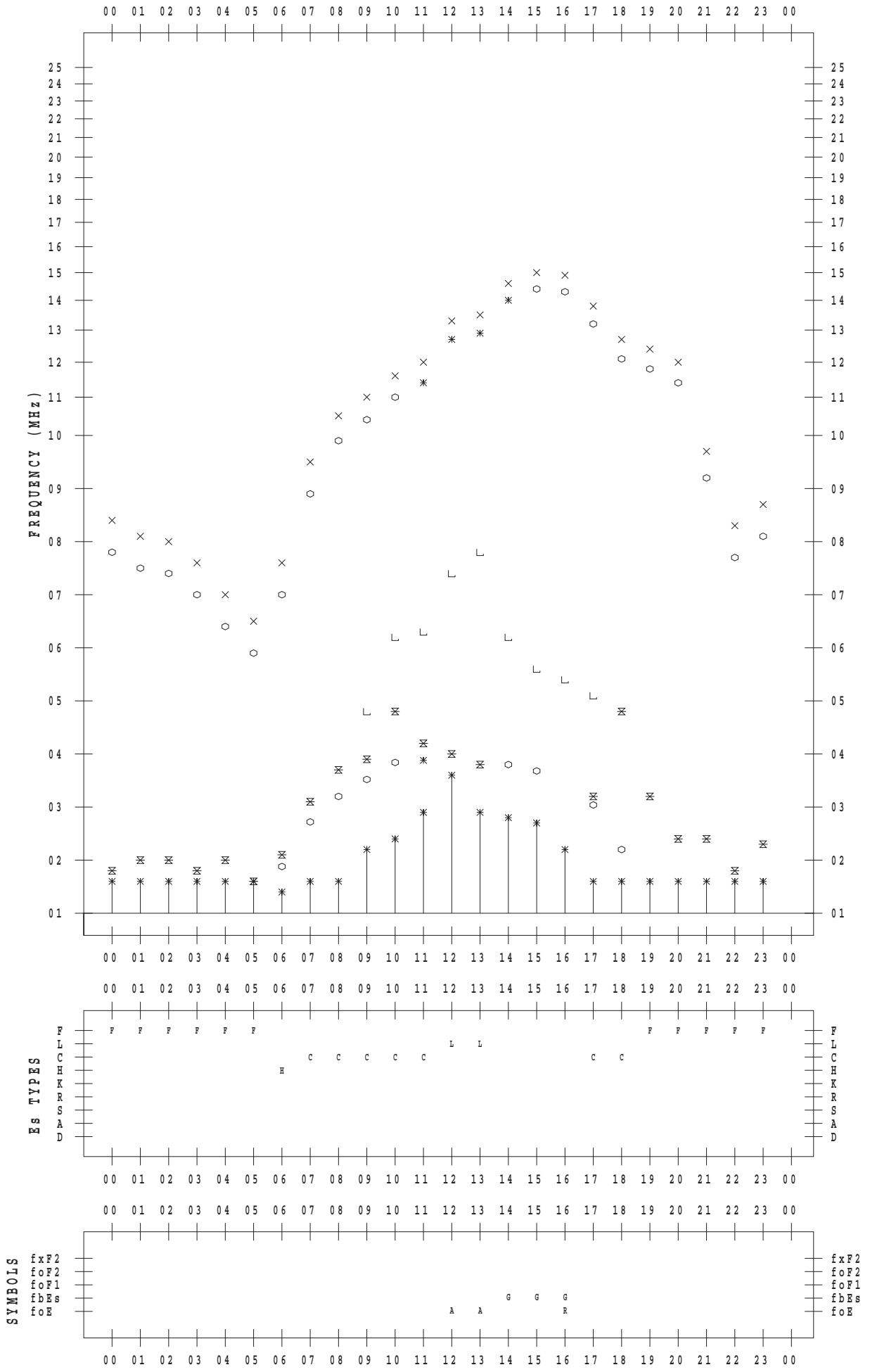
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/20

135 °E MEAN TIME



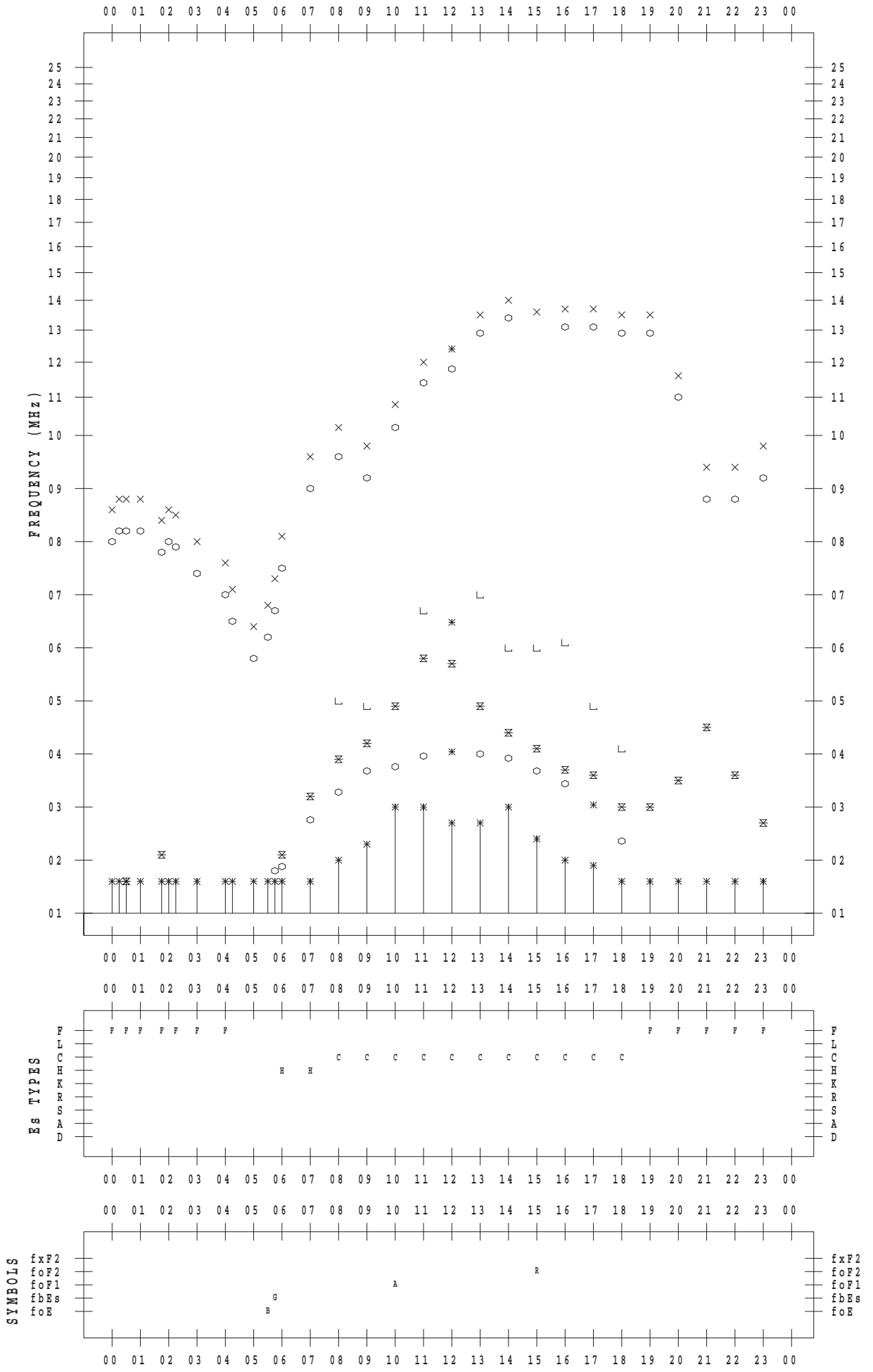
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/21

135 °E MEAN TIME



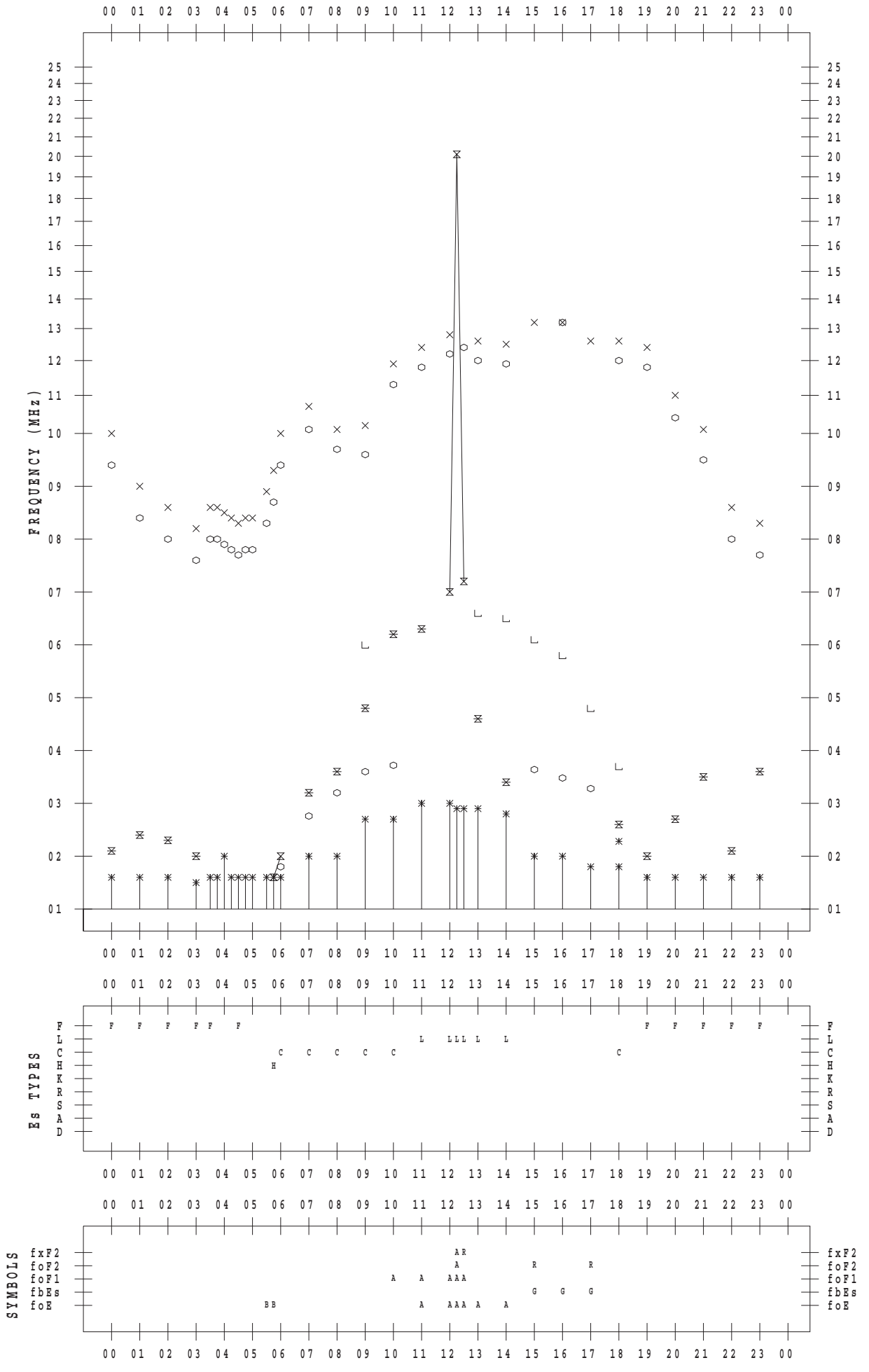
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/22

135 °E MEAN TIME



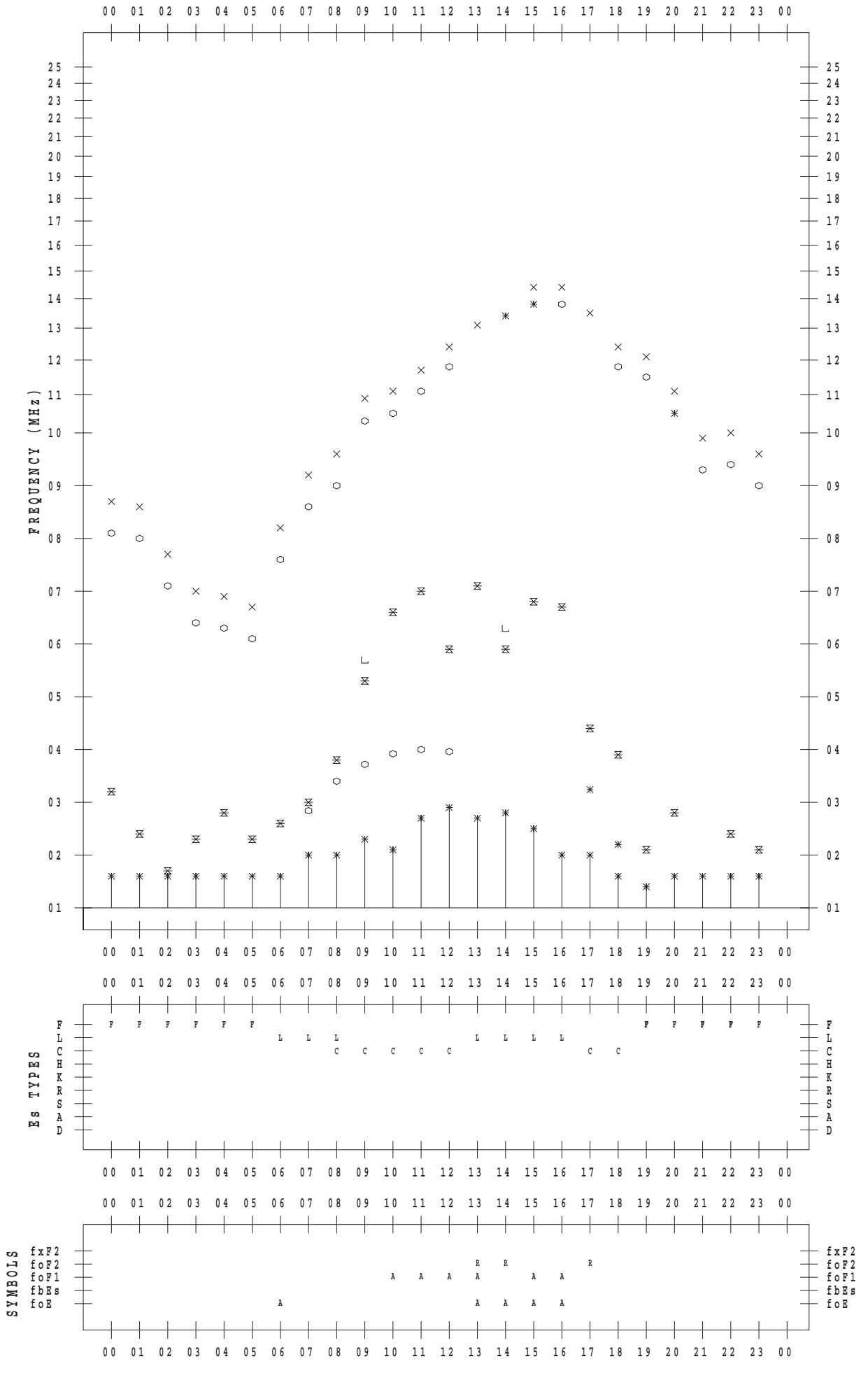
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/23

135 °E MEAN TIME



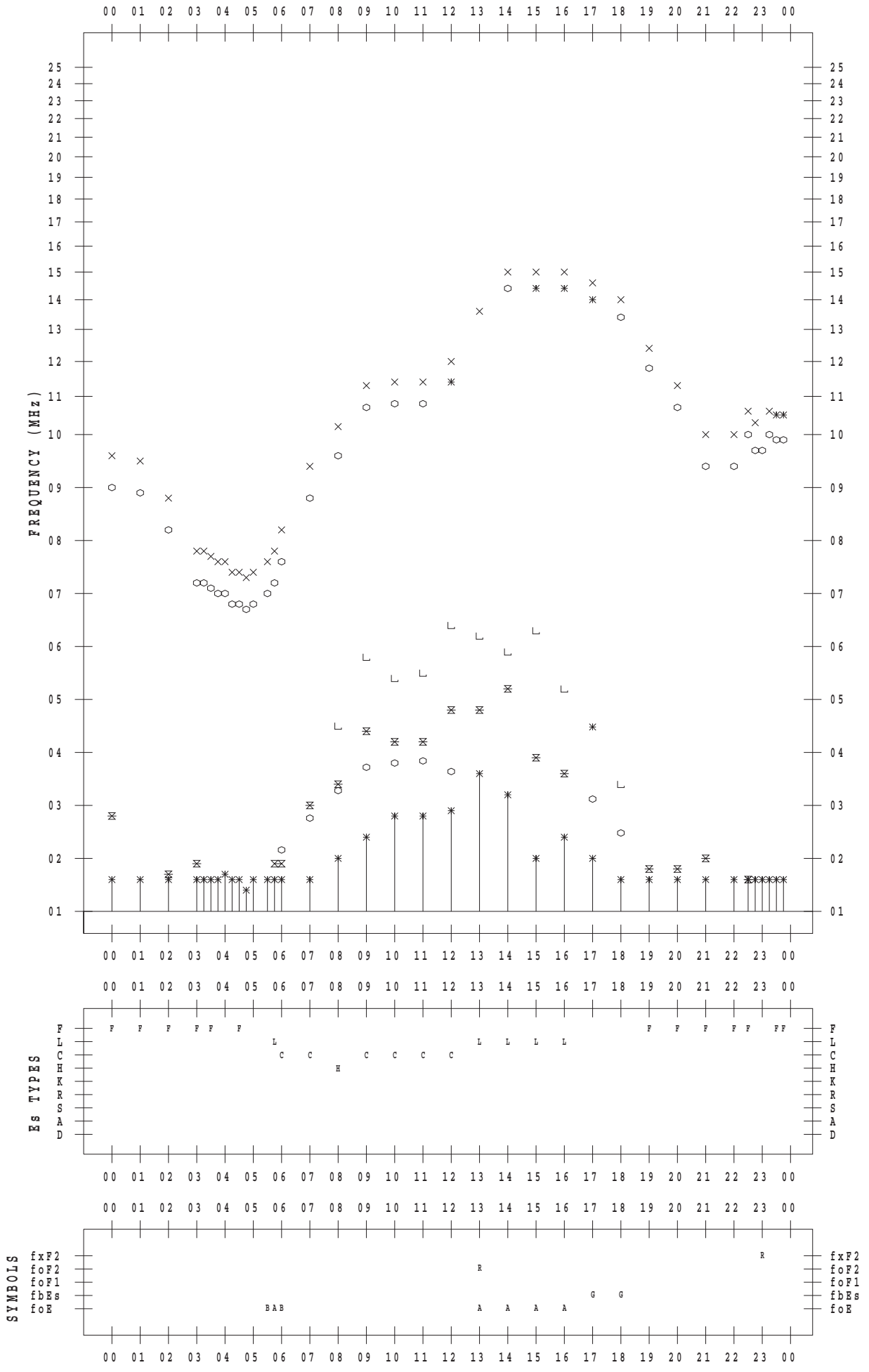
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/24

135 °E MEAN TIME



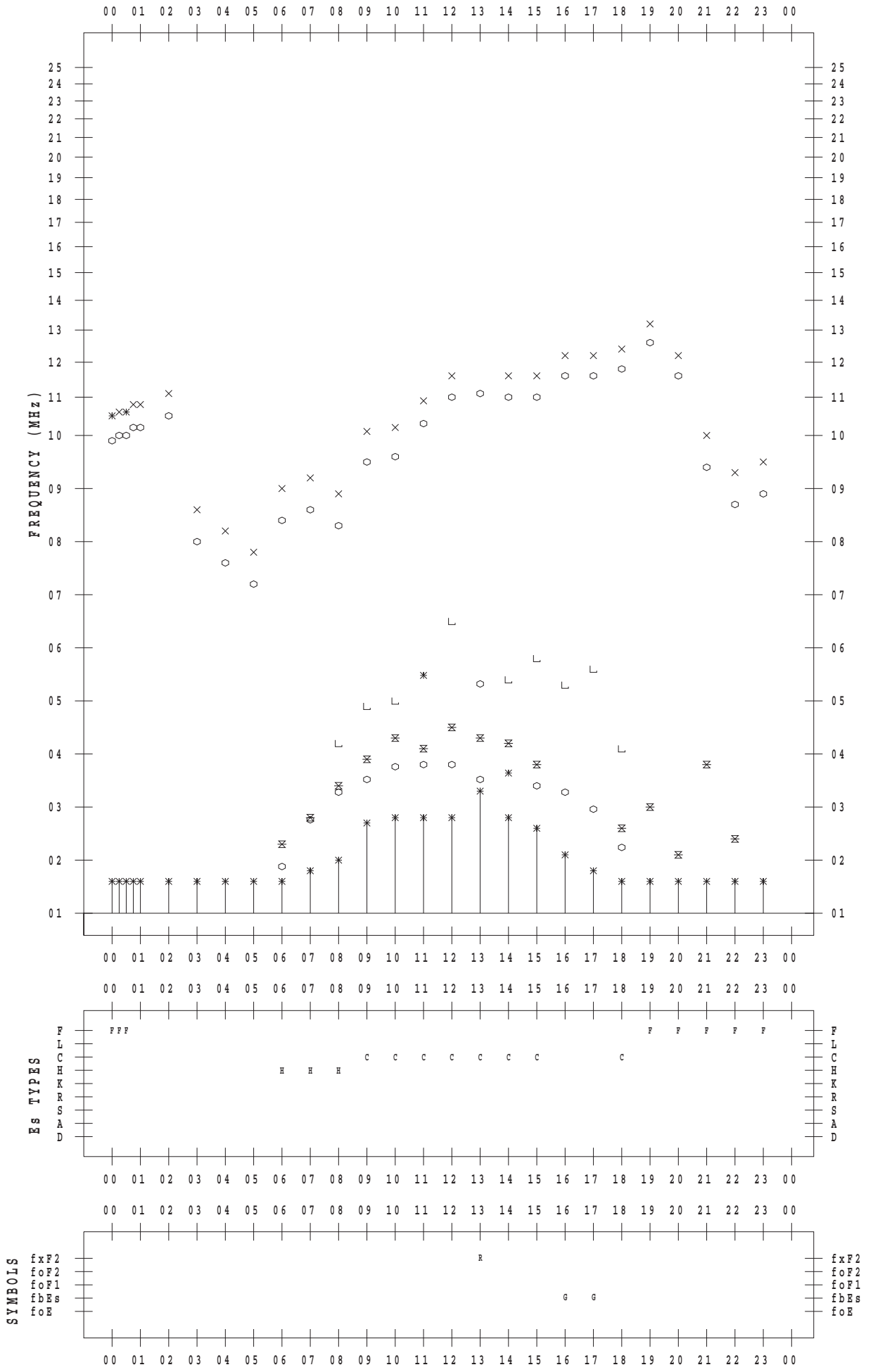
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/25

135 °E MEAN TIME



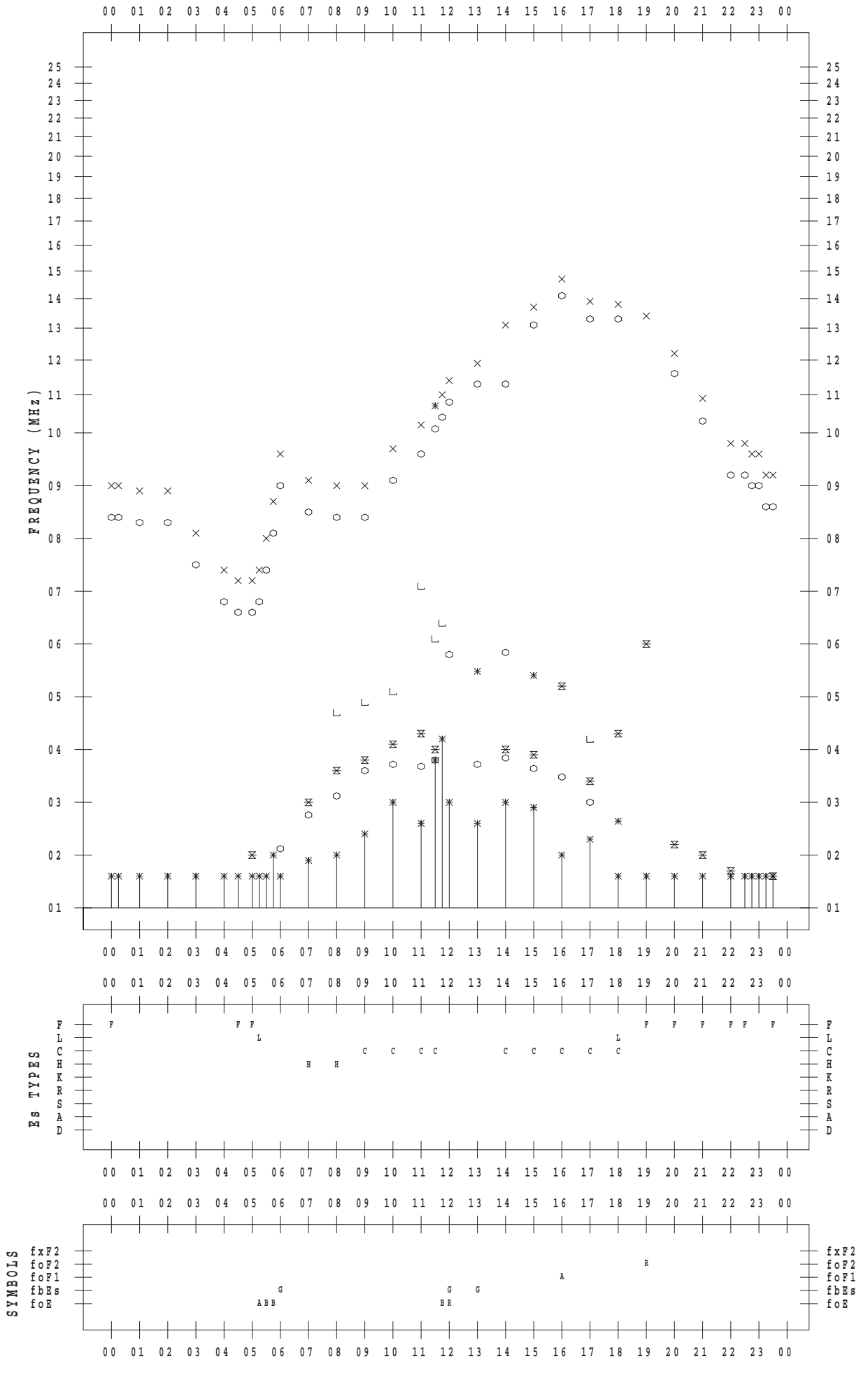
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/26

135 °E MEAN TIME



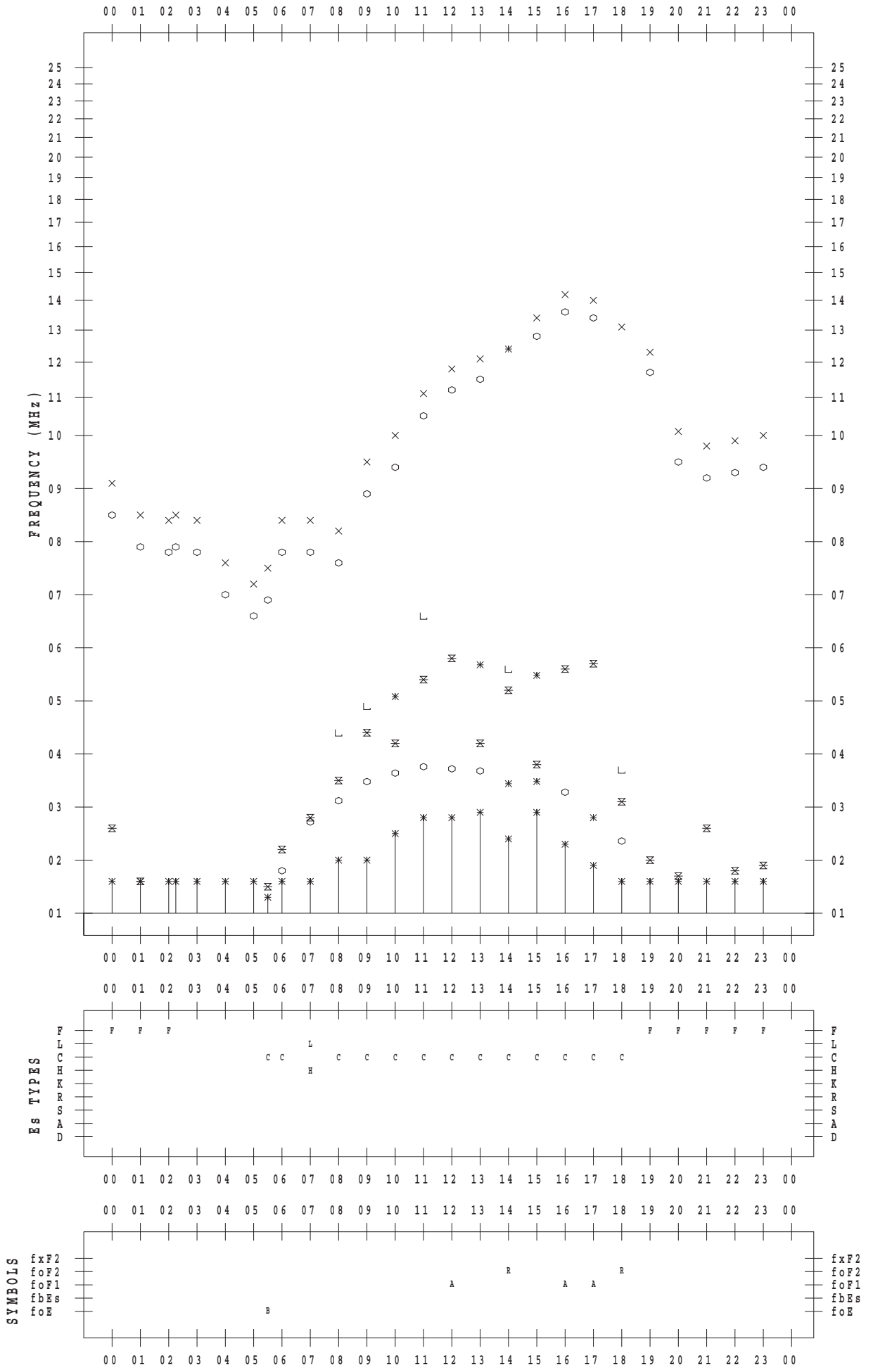
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/27

135 °E MEAN TIME



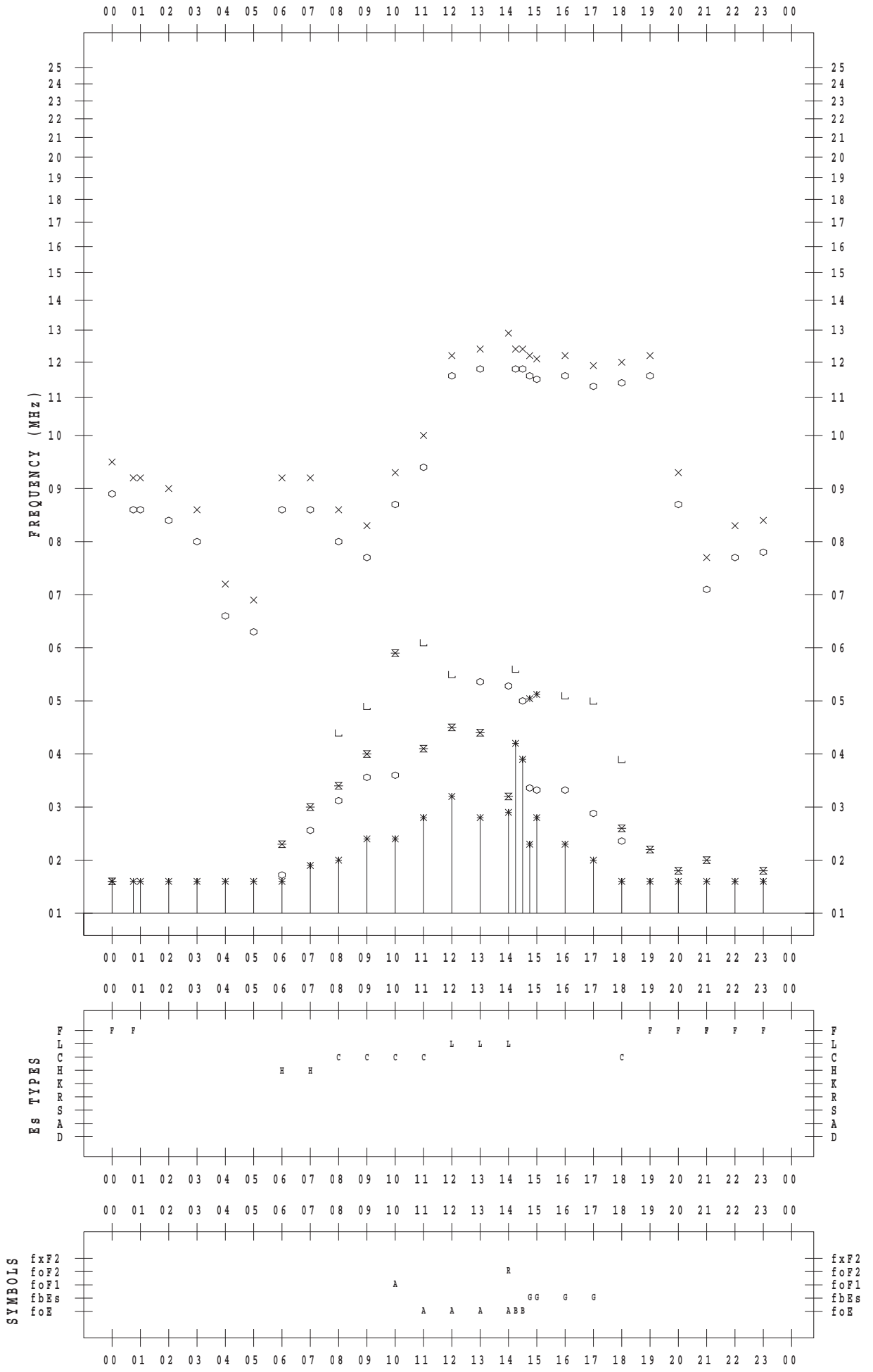
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/28

135 °E MEAN TIME



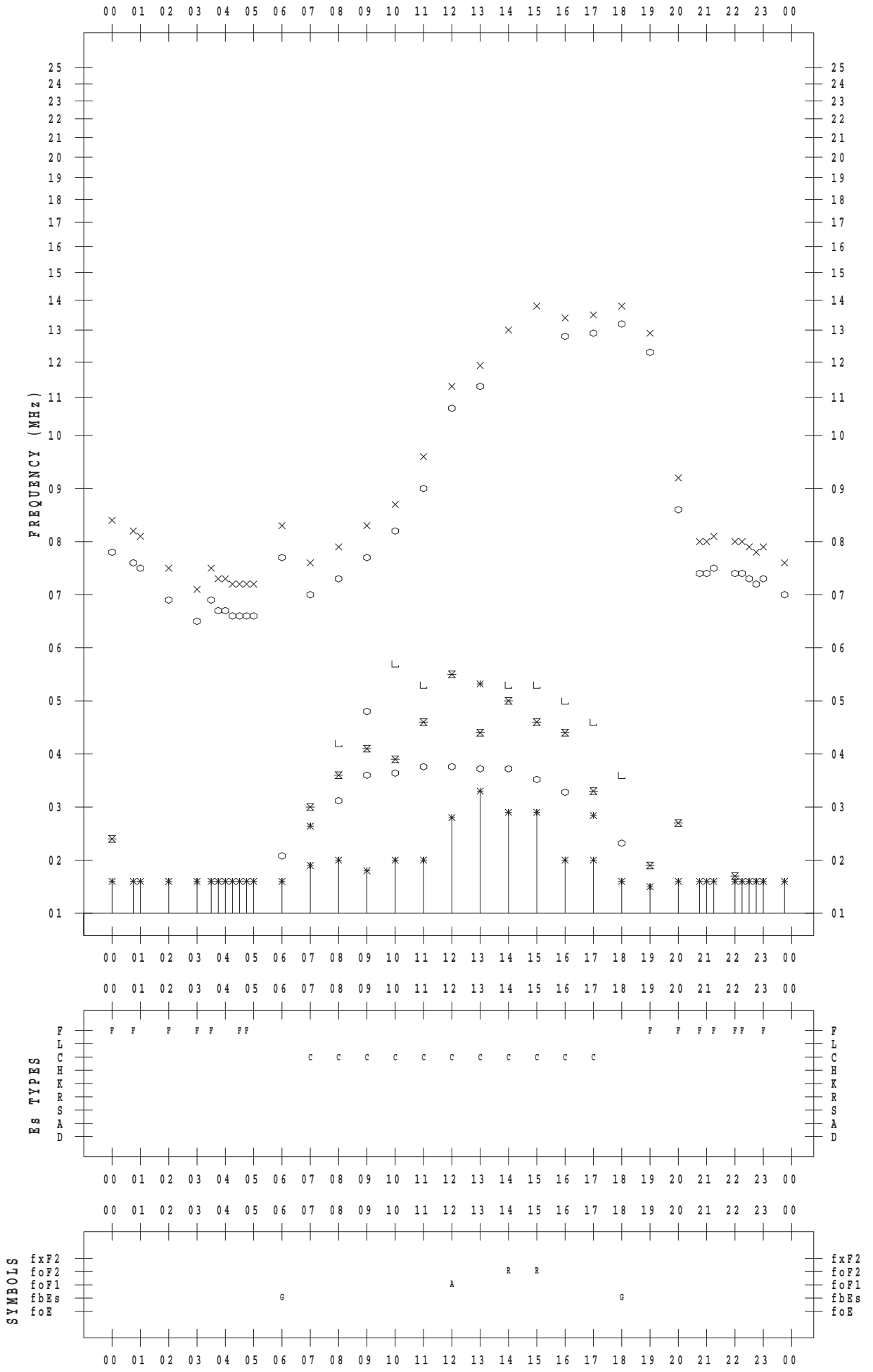
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/29

135 °E MEAN TIME



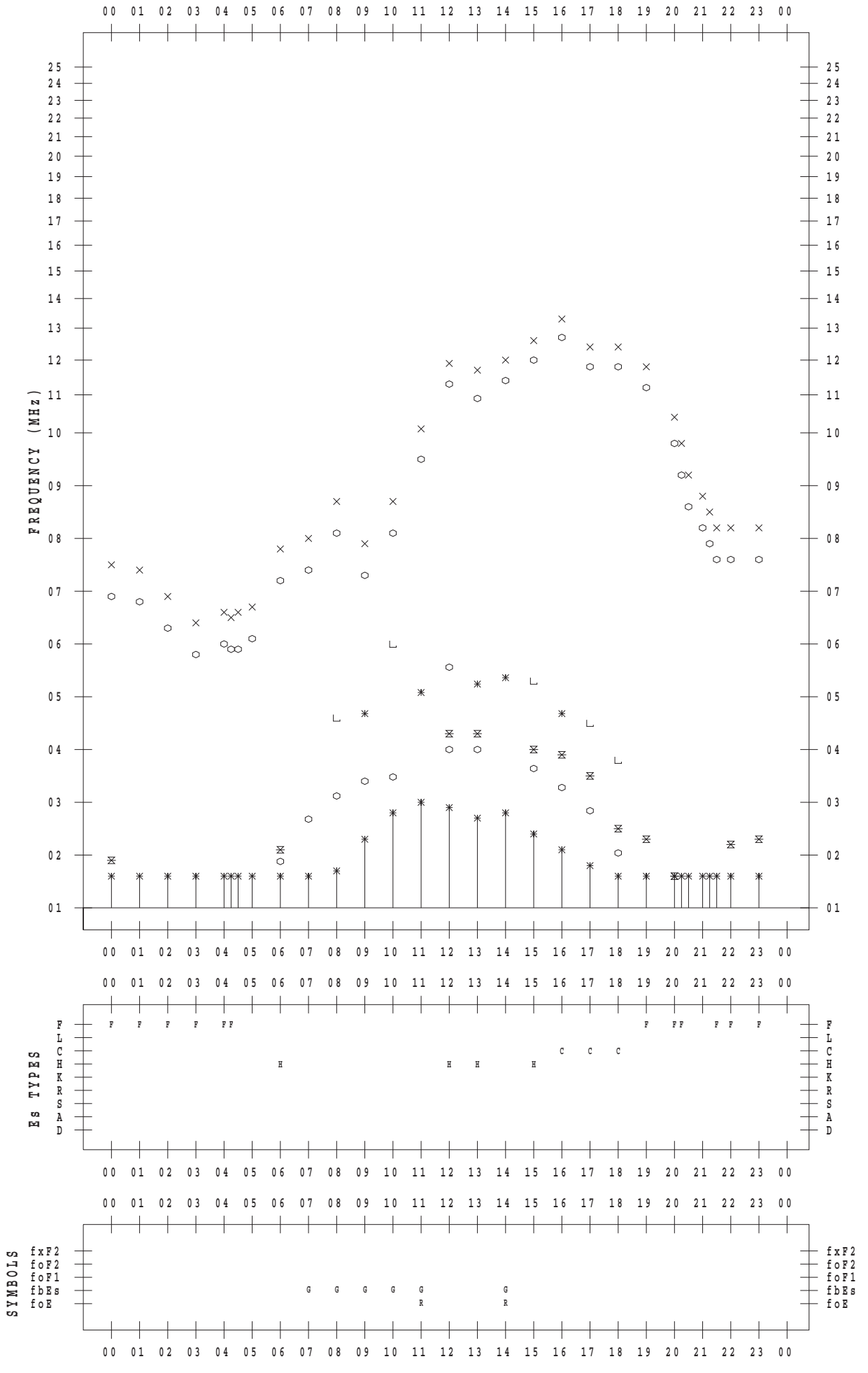
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 4/30

135 °E MEAN TIME



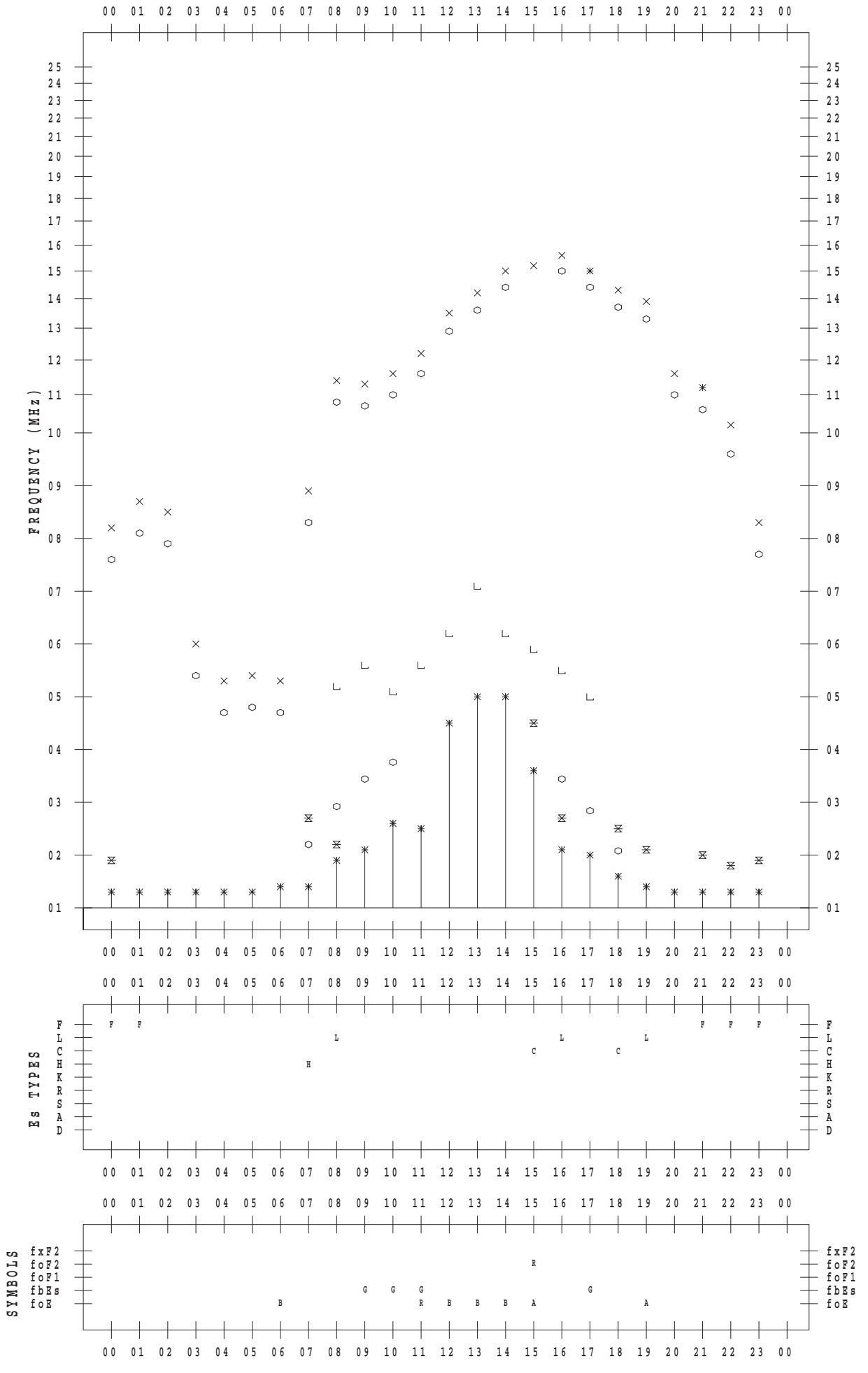
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 1

135 °E MEAN TIME



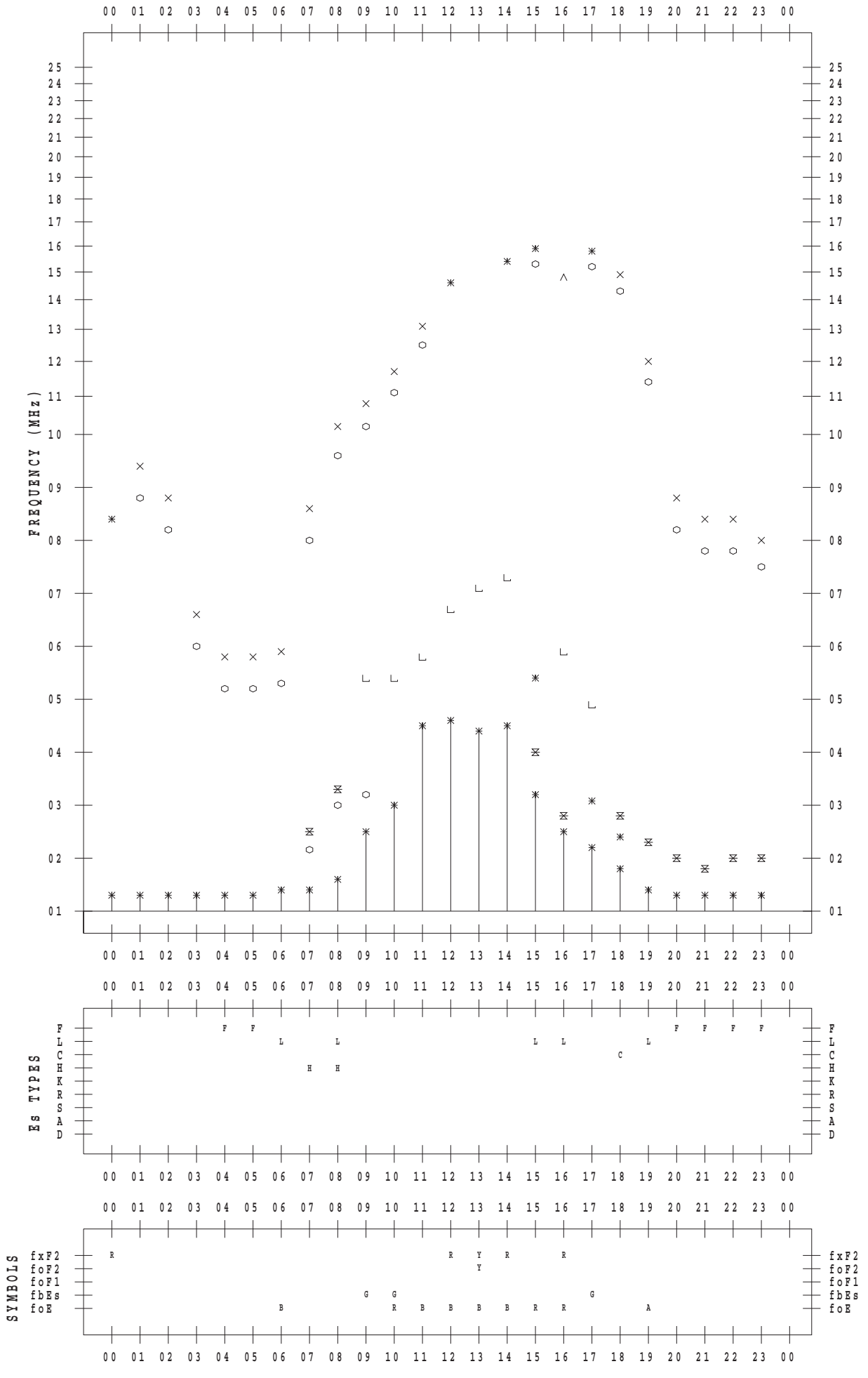
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 2

135 °E MEAN TIME



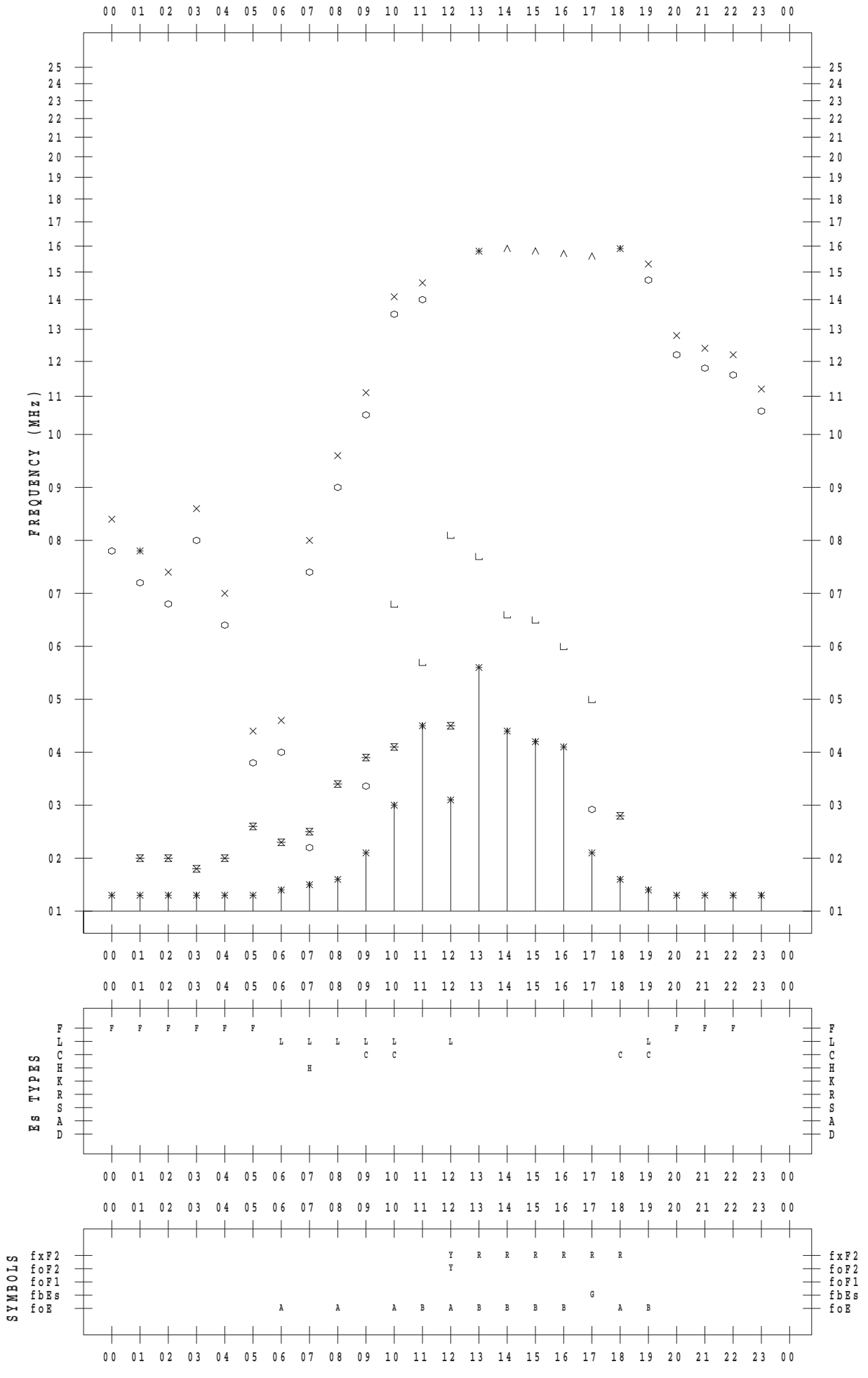
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 3

135 °E MEAN TIME



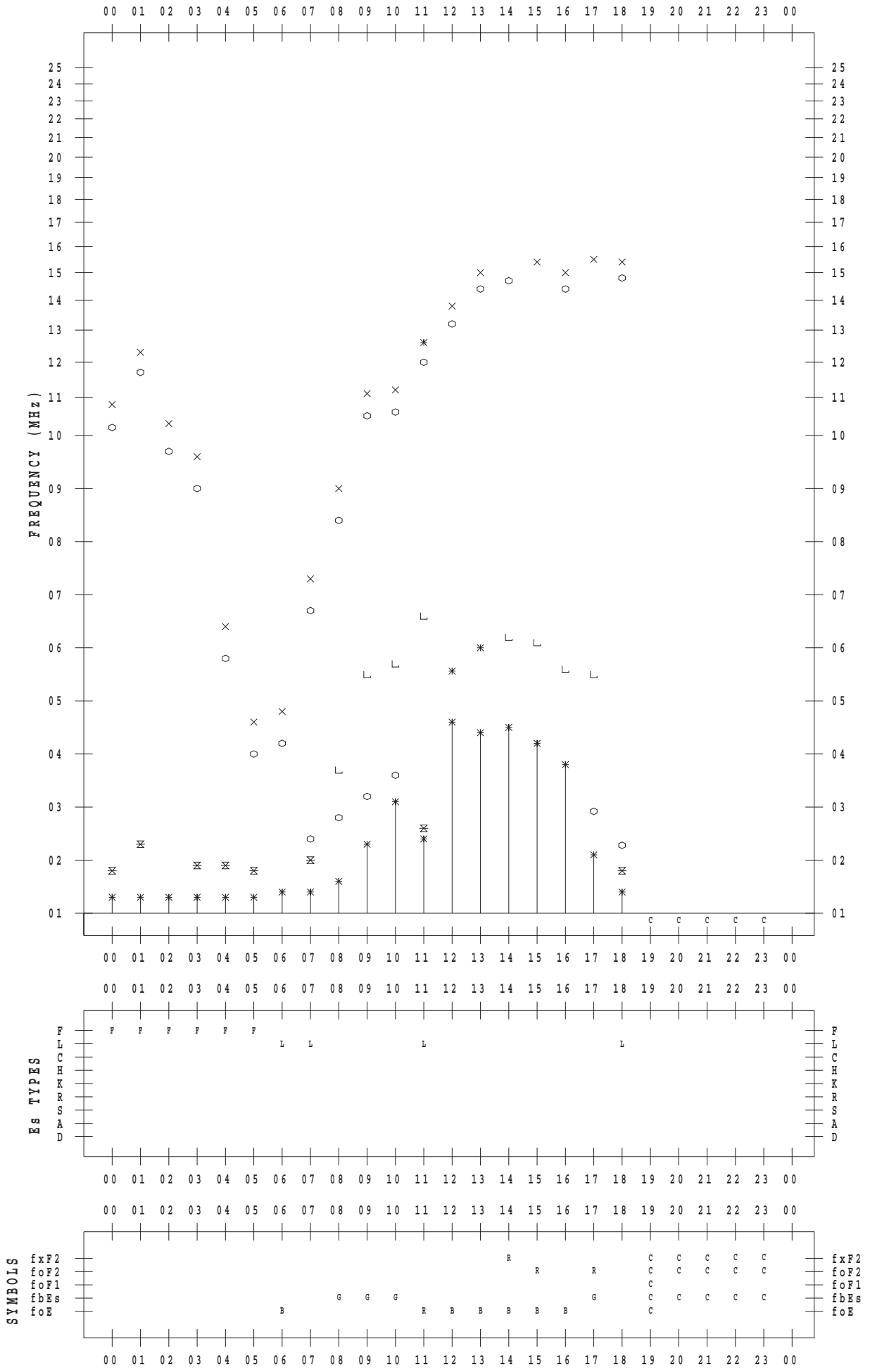
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 4

135 °E MEAN TIME



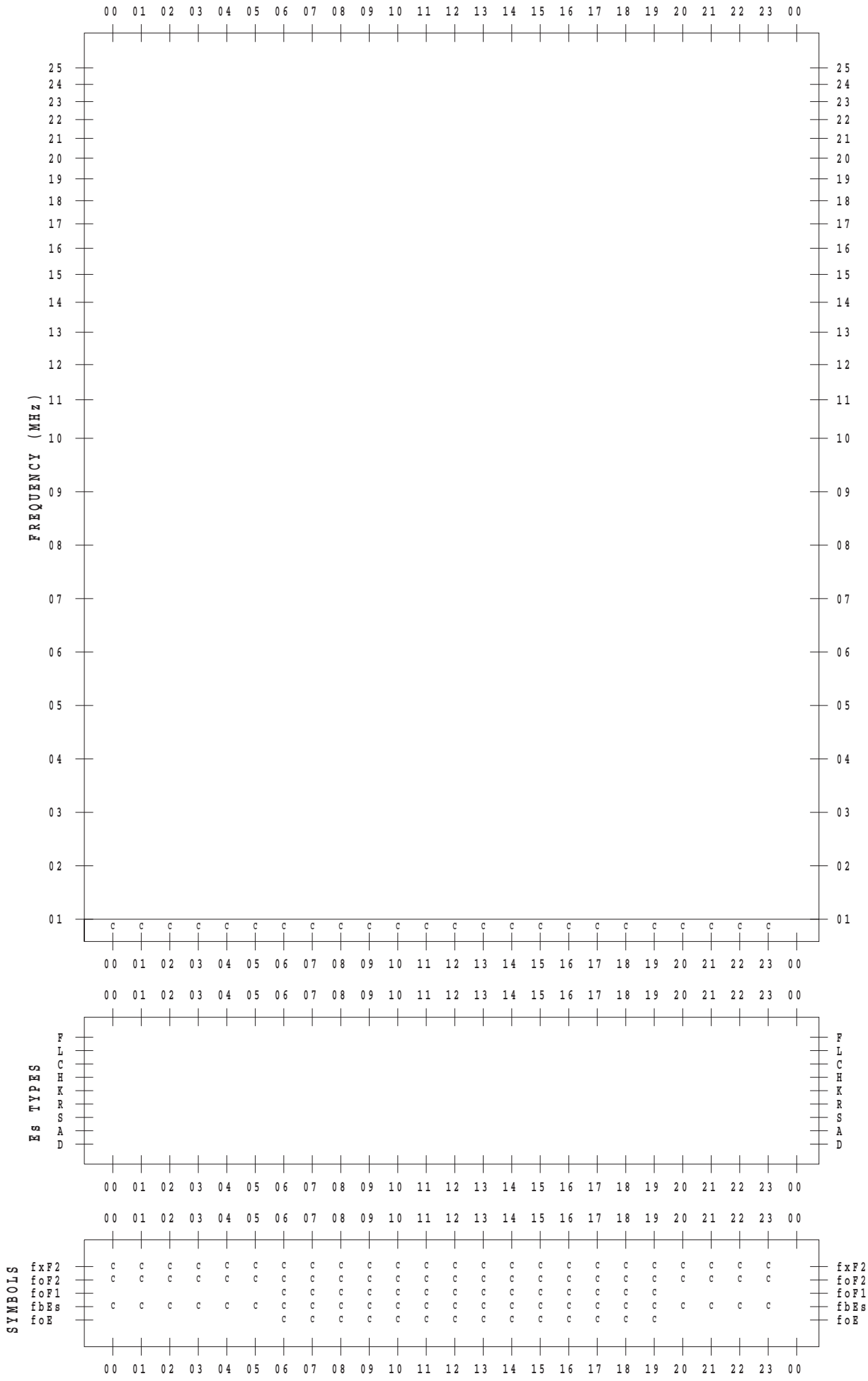
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 5

135 °E MEAN TIME



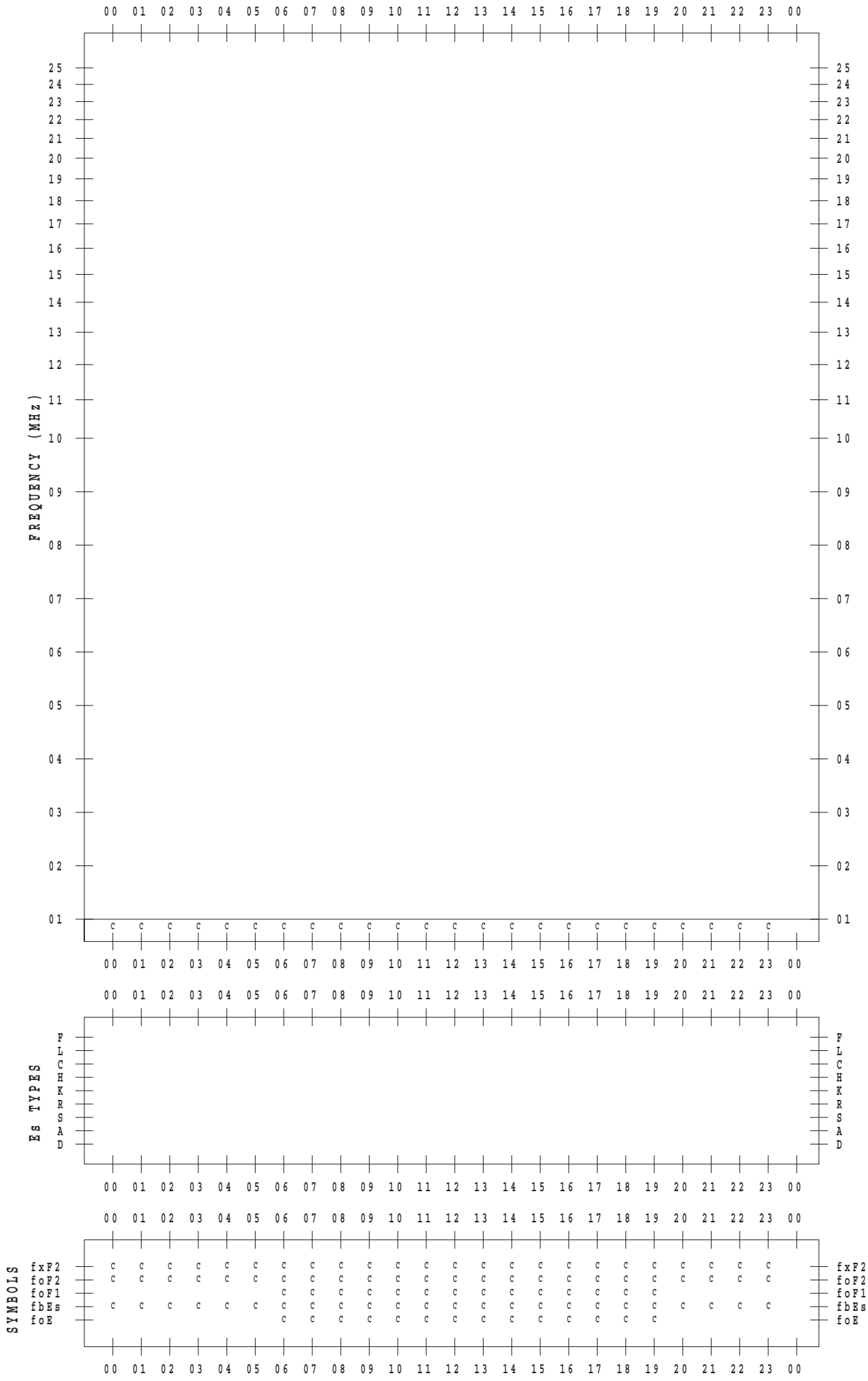
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 6

135 °E MEAN TIME



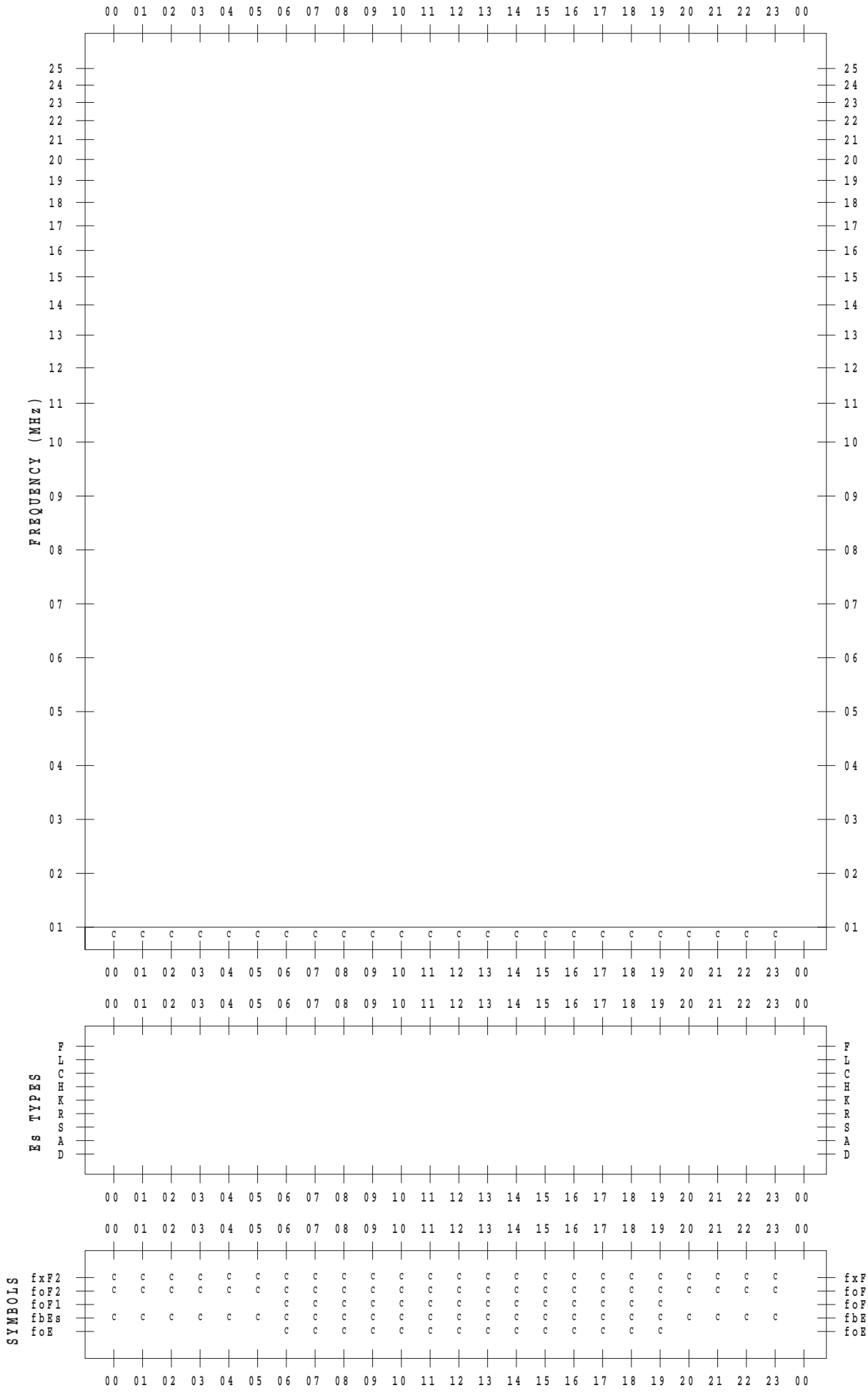
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 7

135 °E MEAN TIME



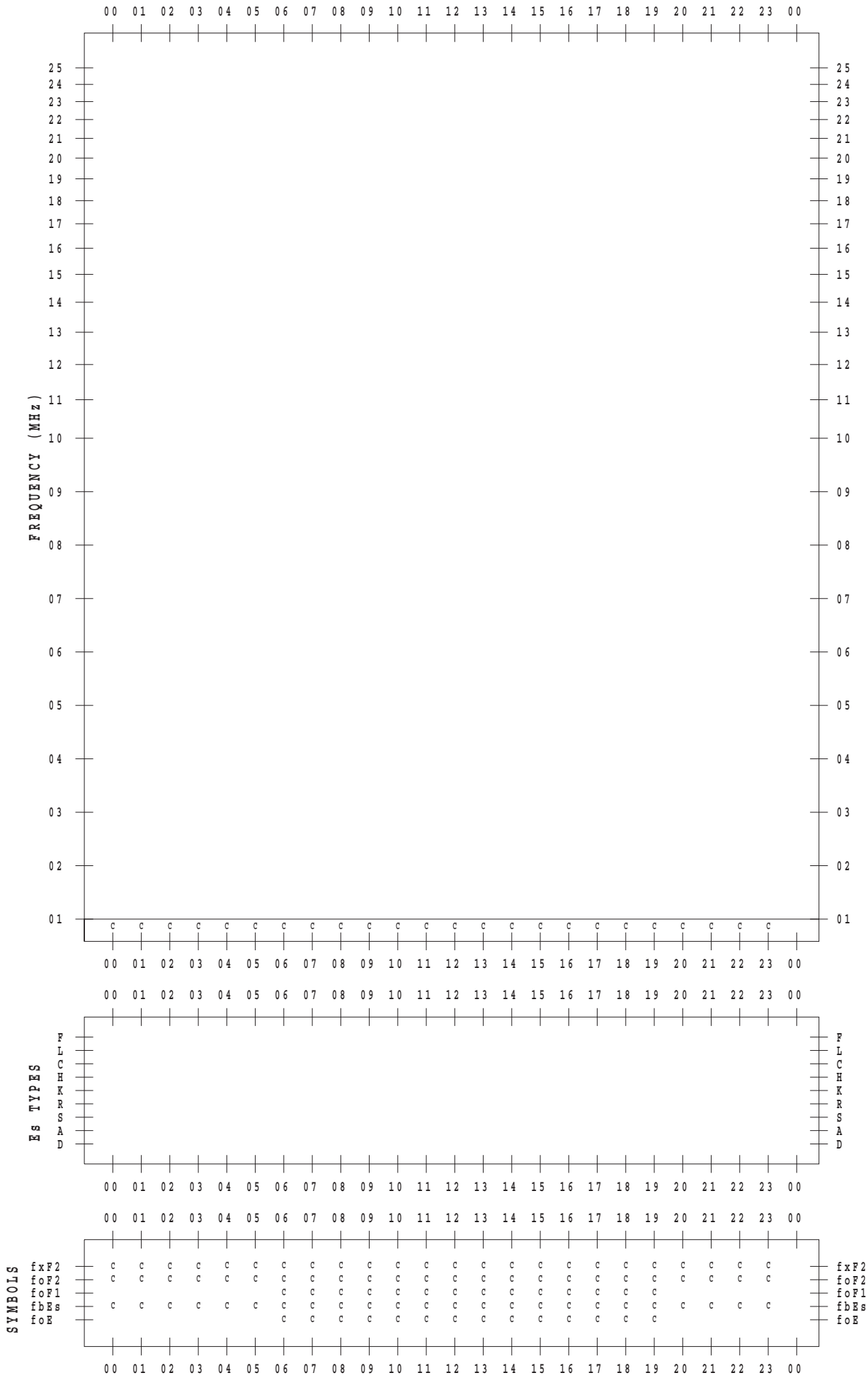
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 8

135 °E MEAN TIME



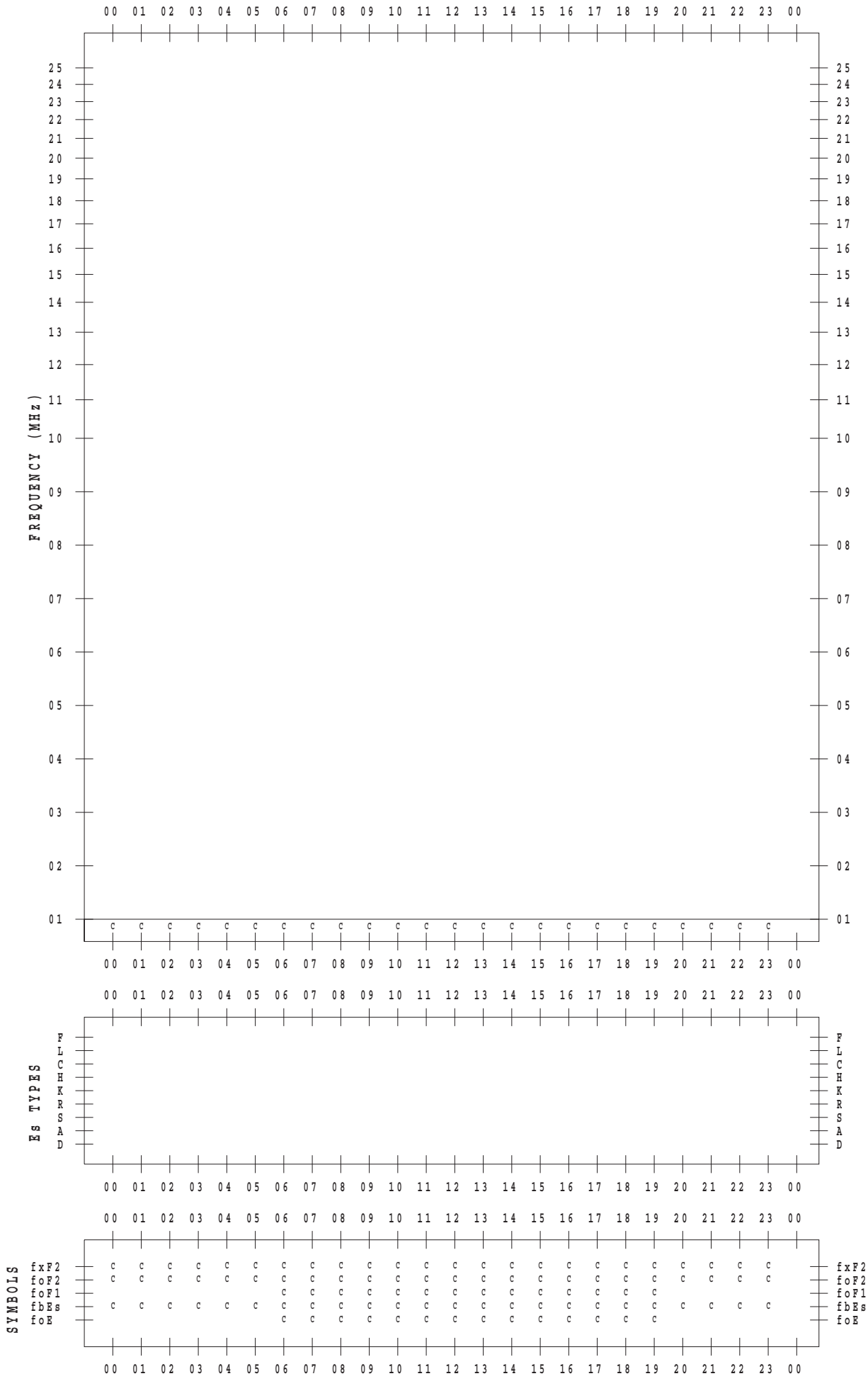
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/ 9

135 °E MEAN TIME



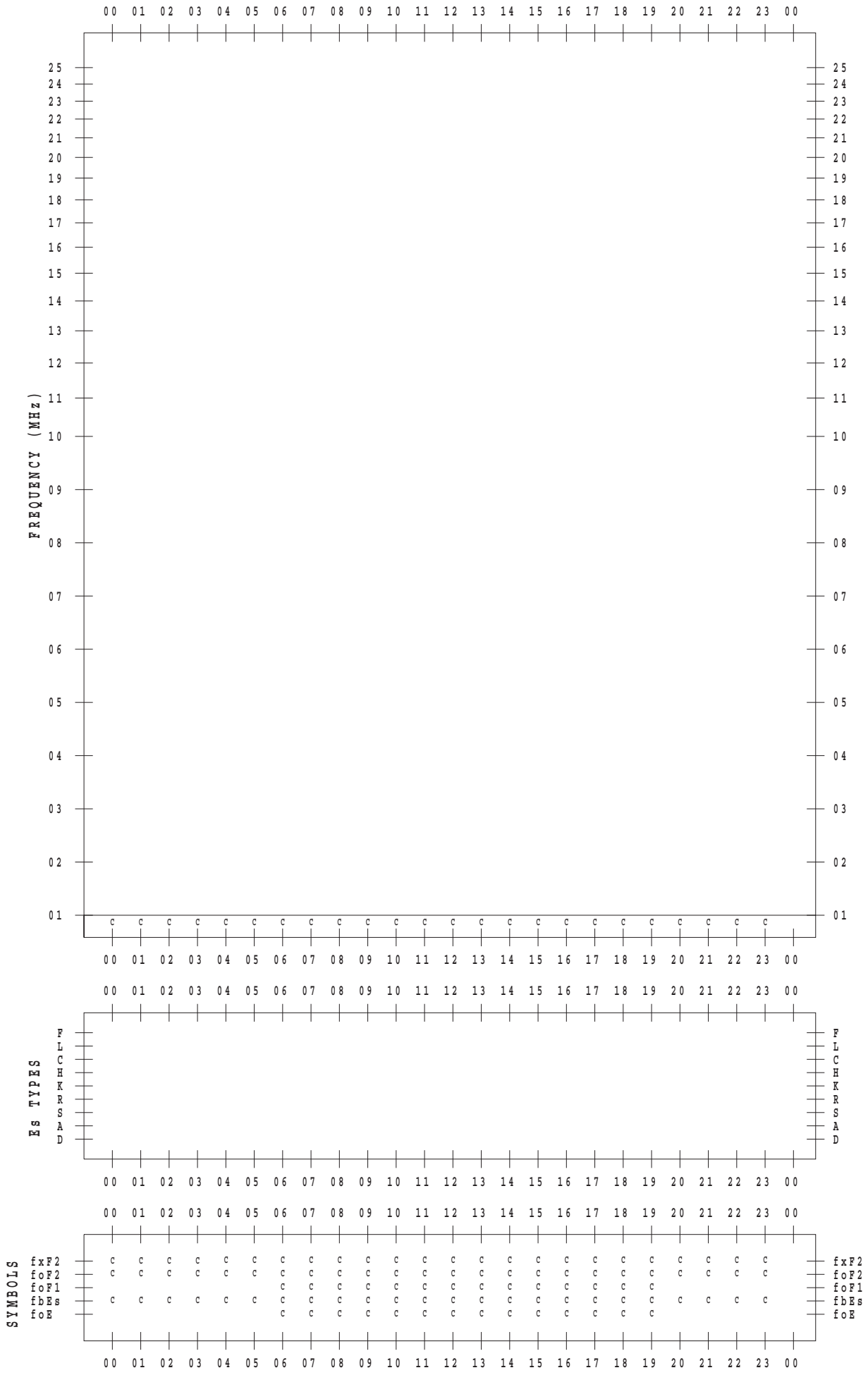
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/10

135 °E MEAN TIME



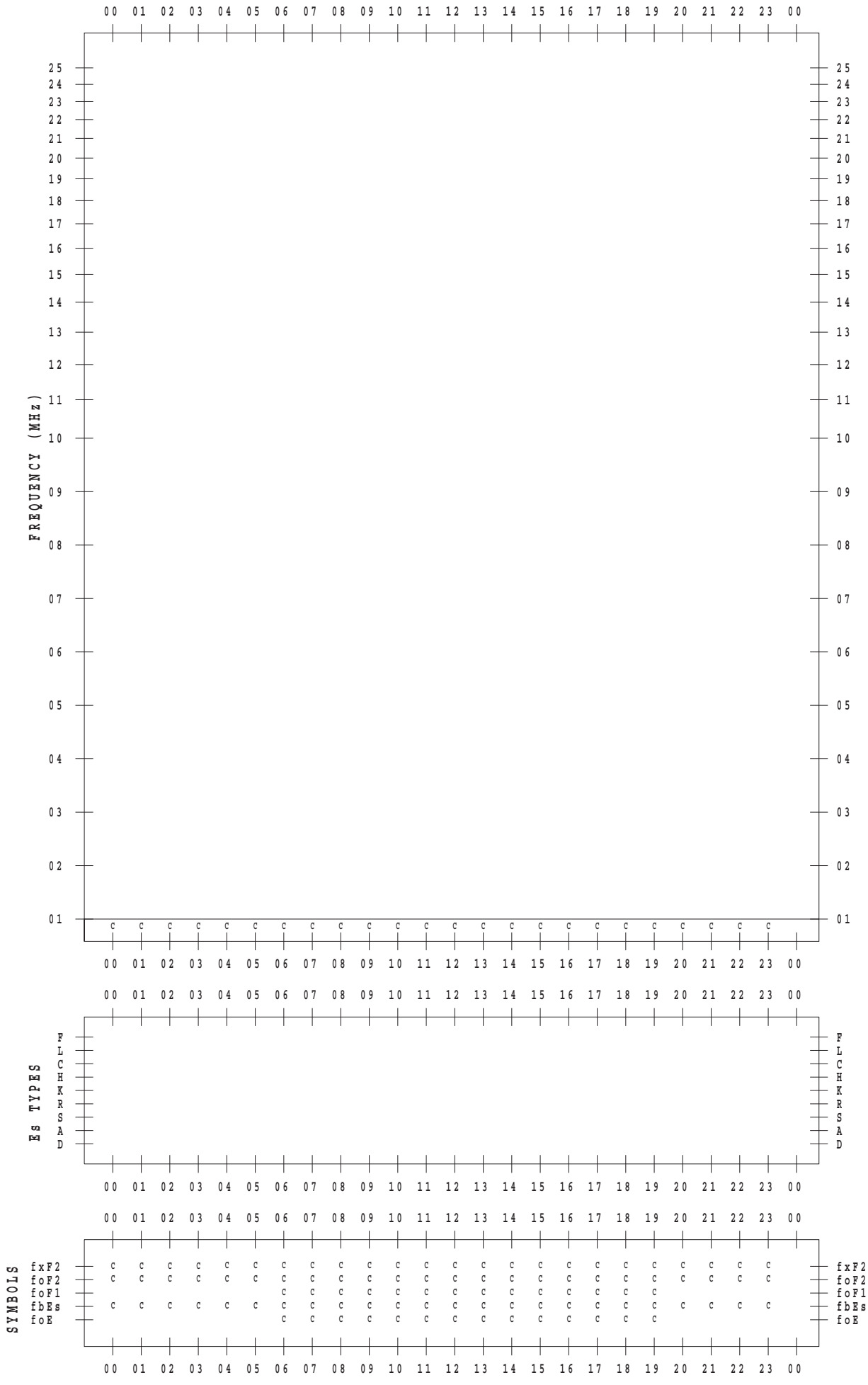
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/11

135 °E MEAN TIME



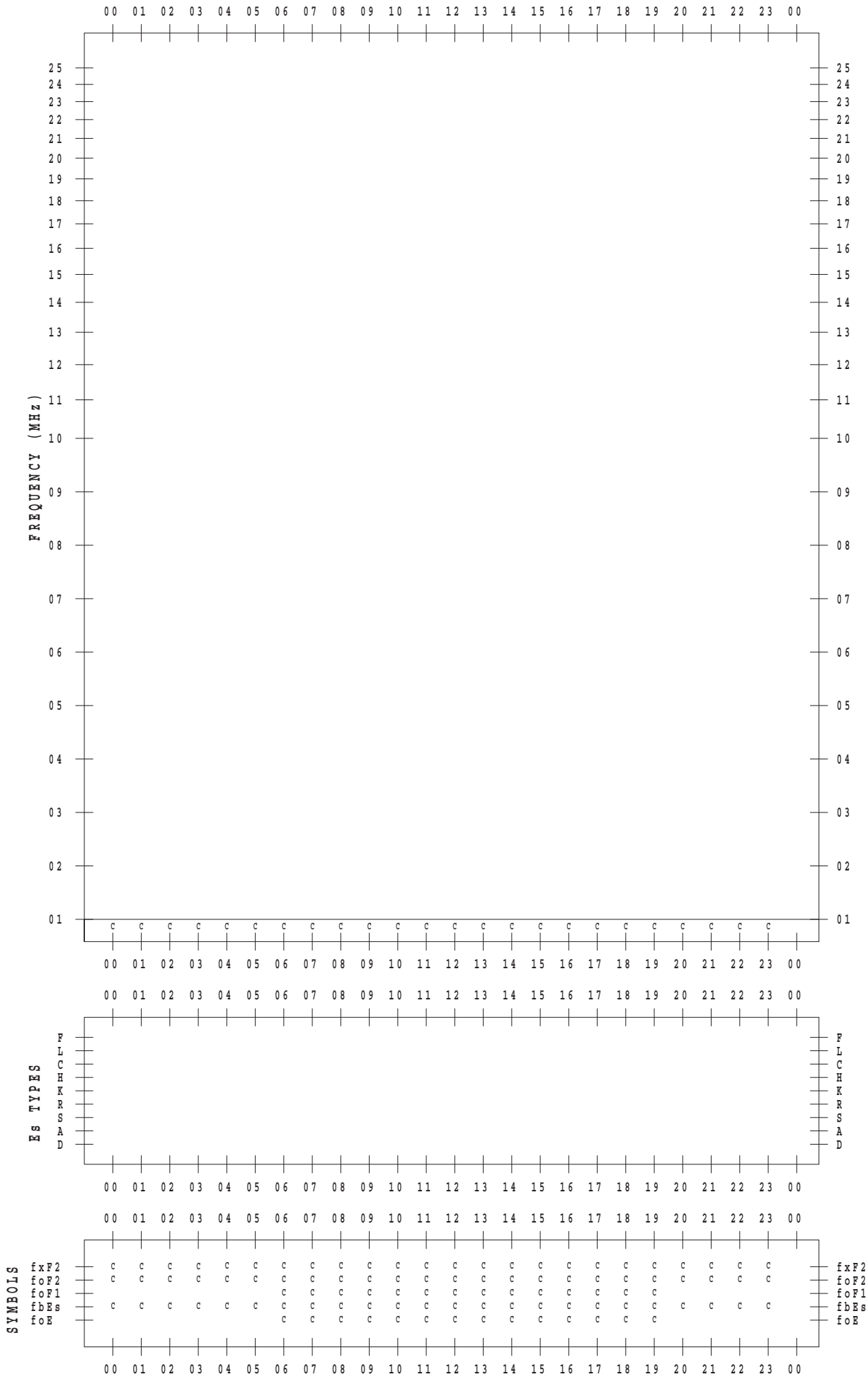
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/12

135 °E MEAN TIME



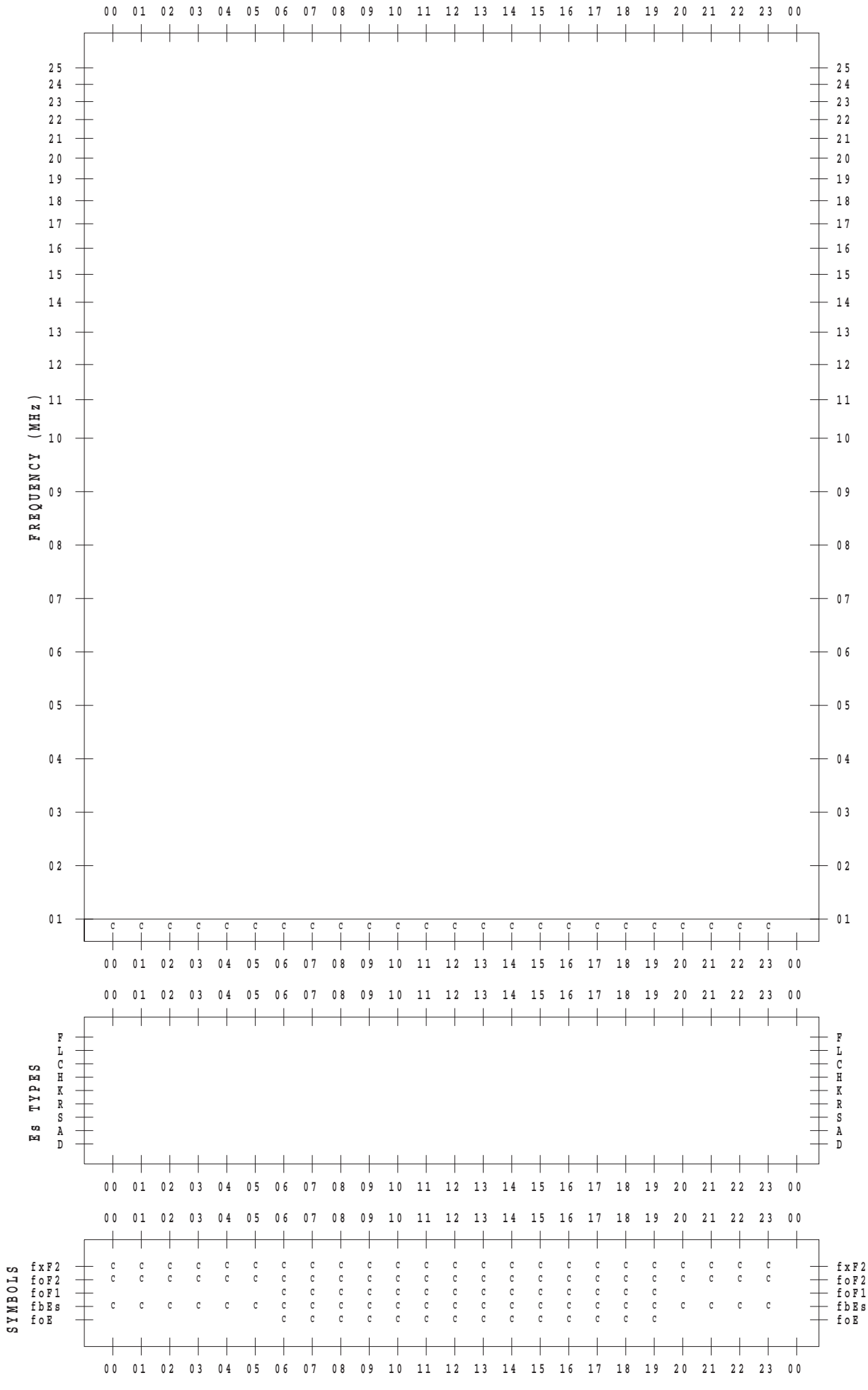
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/13

135 °E MEAN TIME



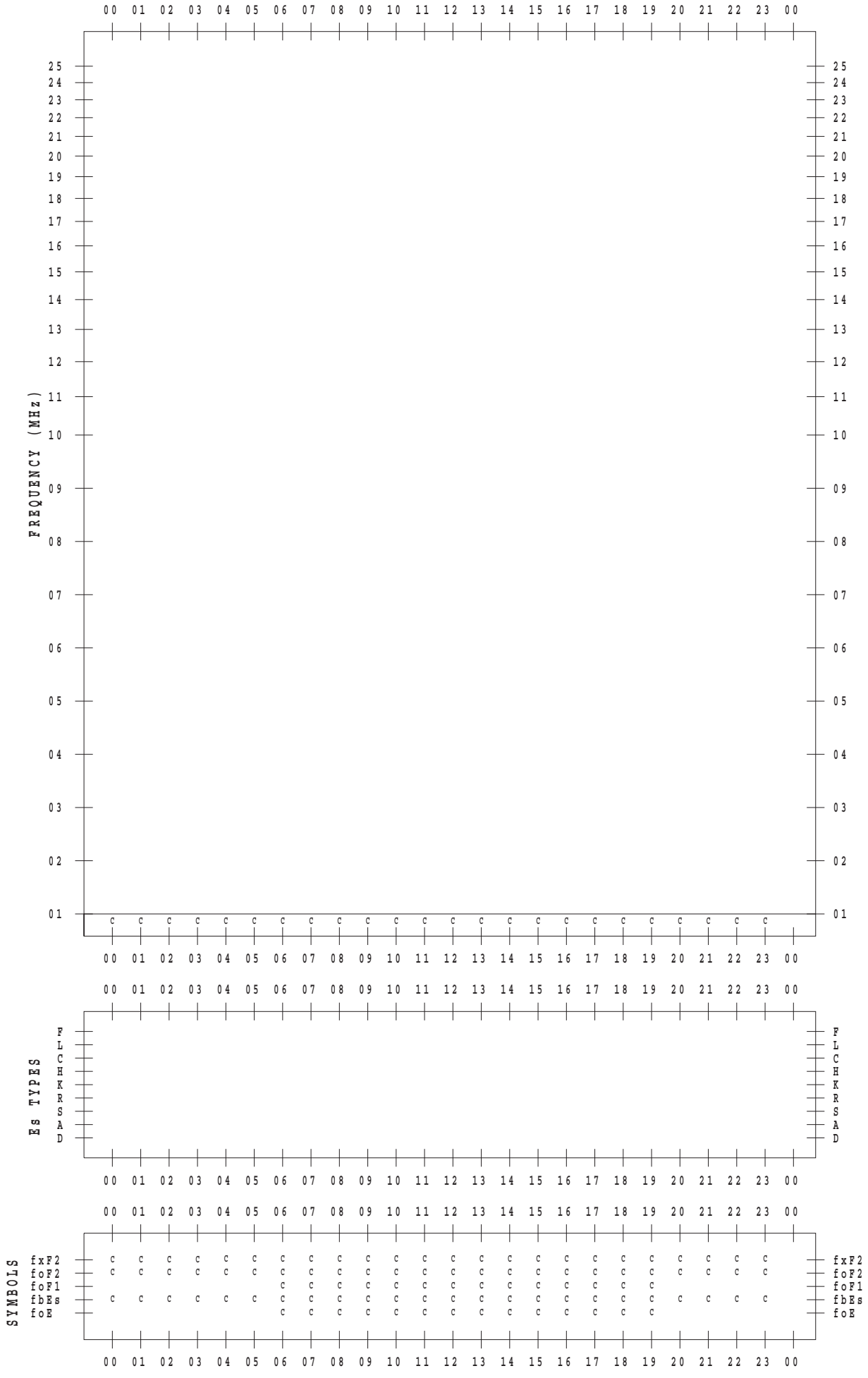
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/14

135 °E MEAN TIME



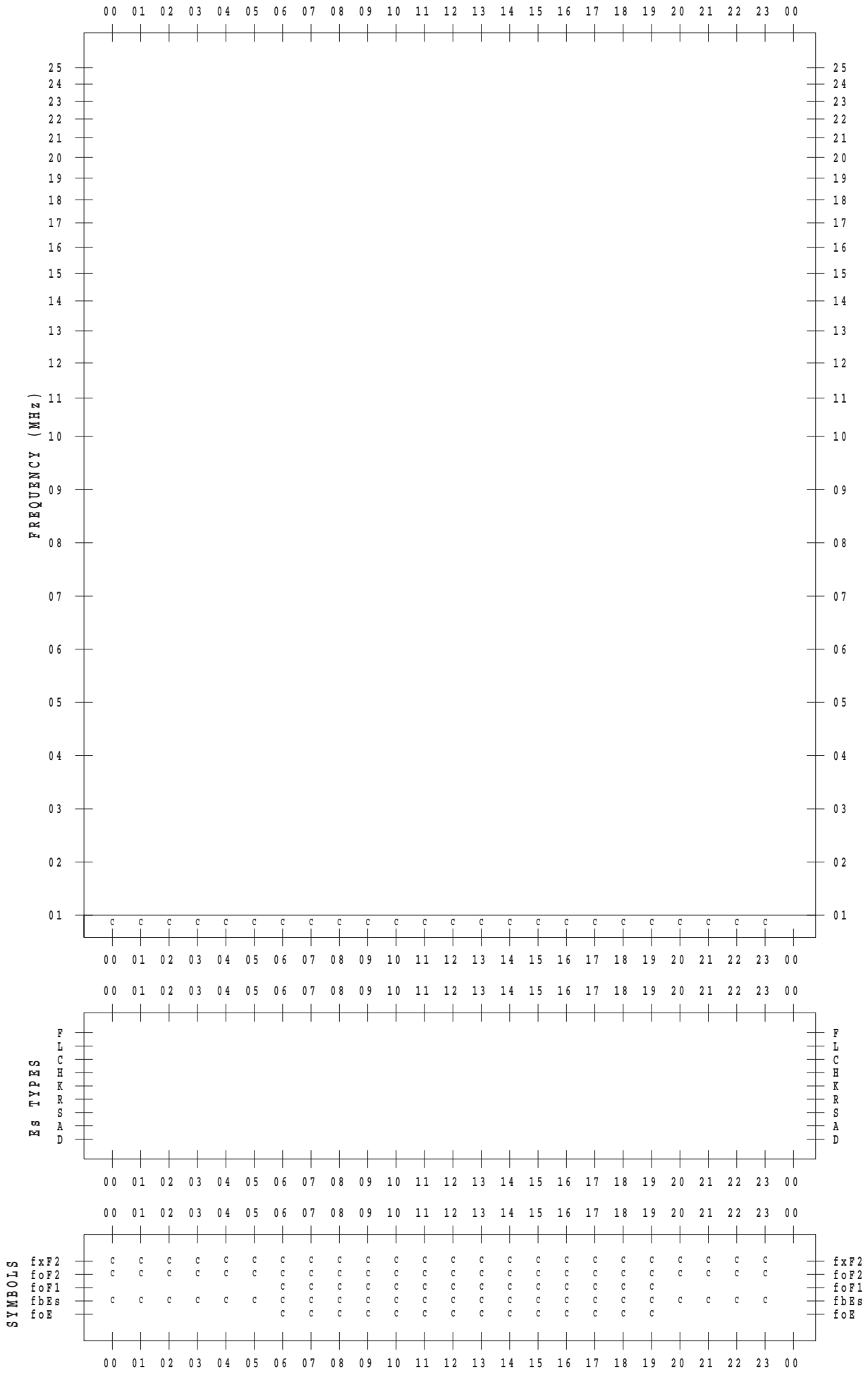
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/15

135 °E MEAN TIME



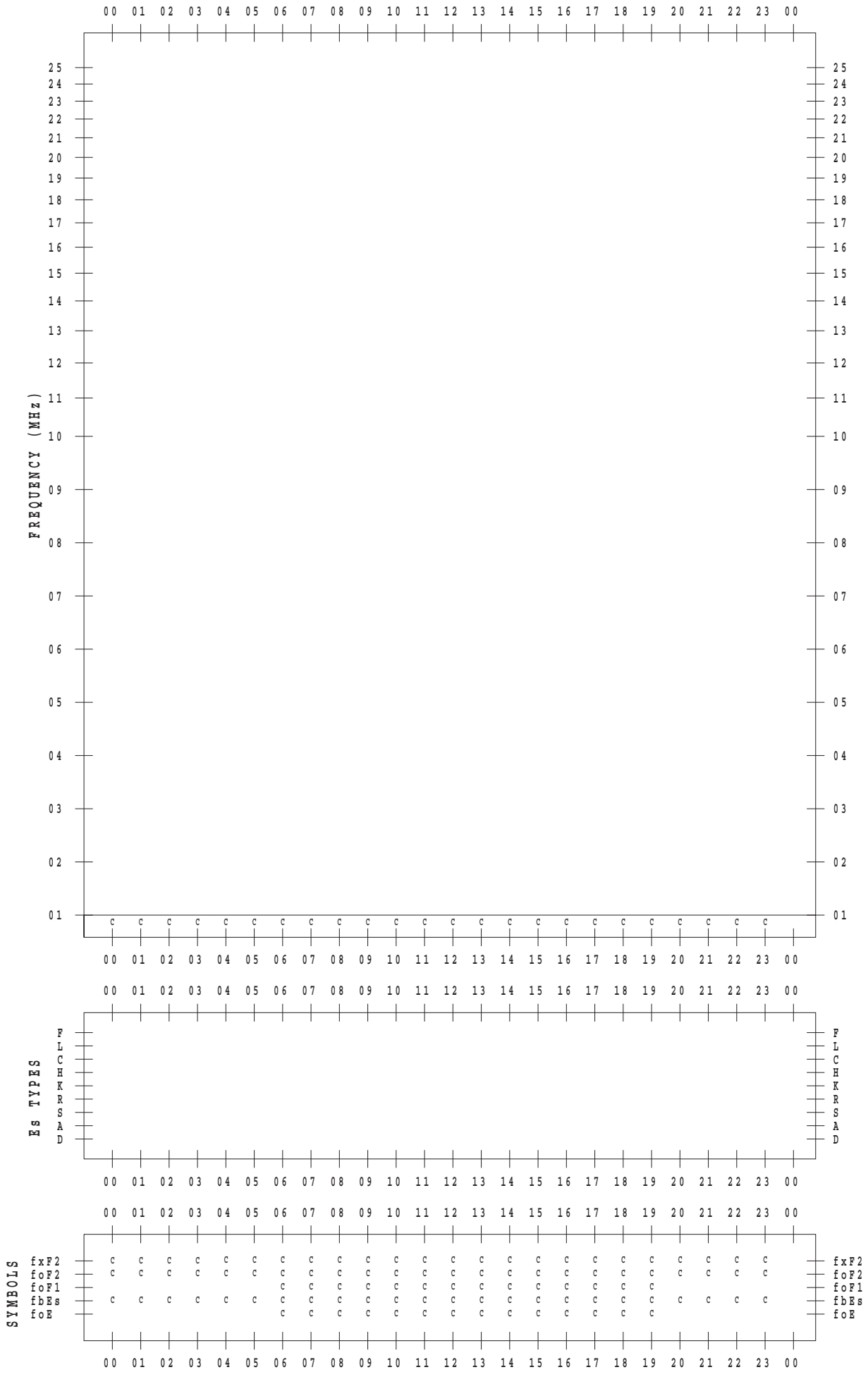
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/16

135 °E MEAN TIME



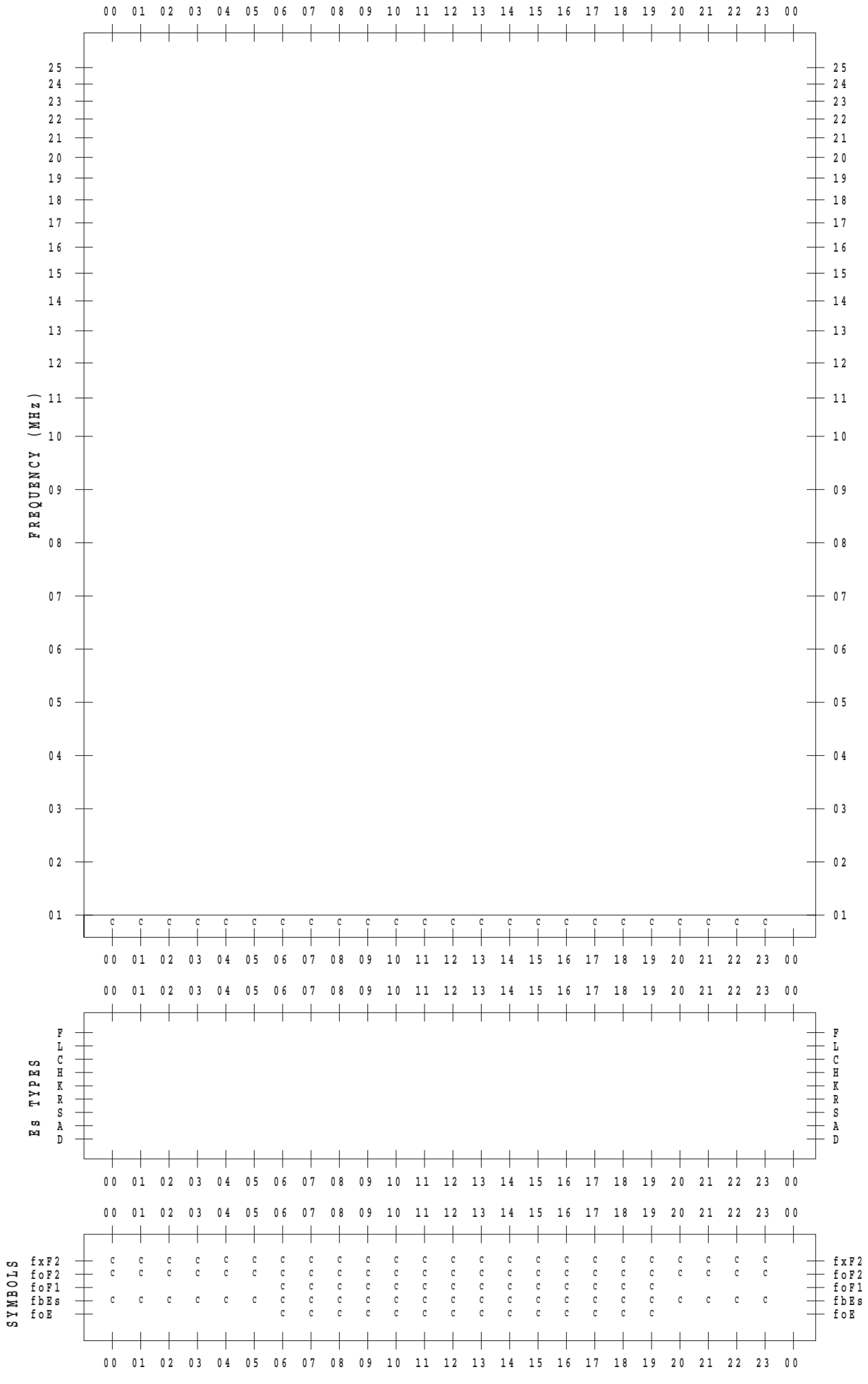
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/17

135 °E MEAN TIME



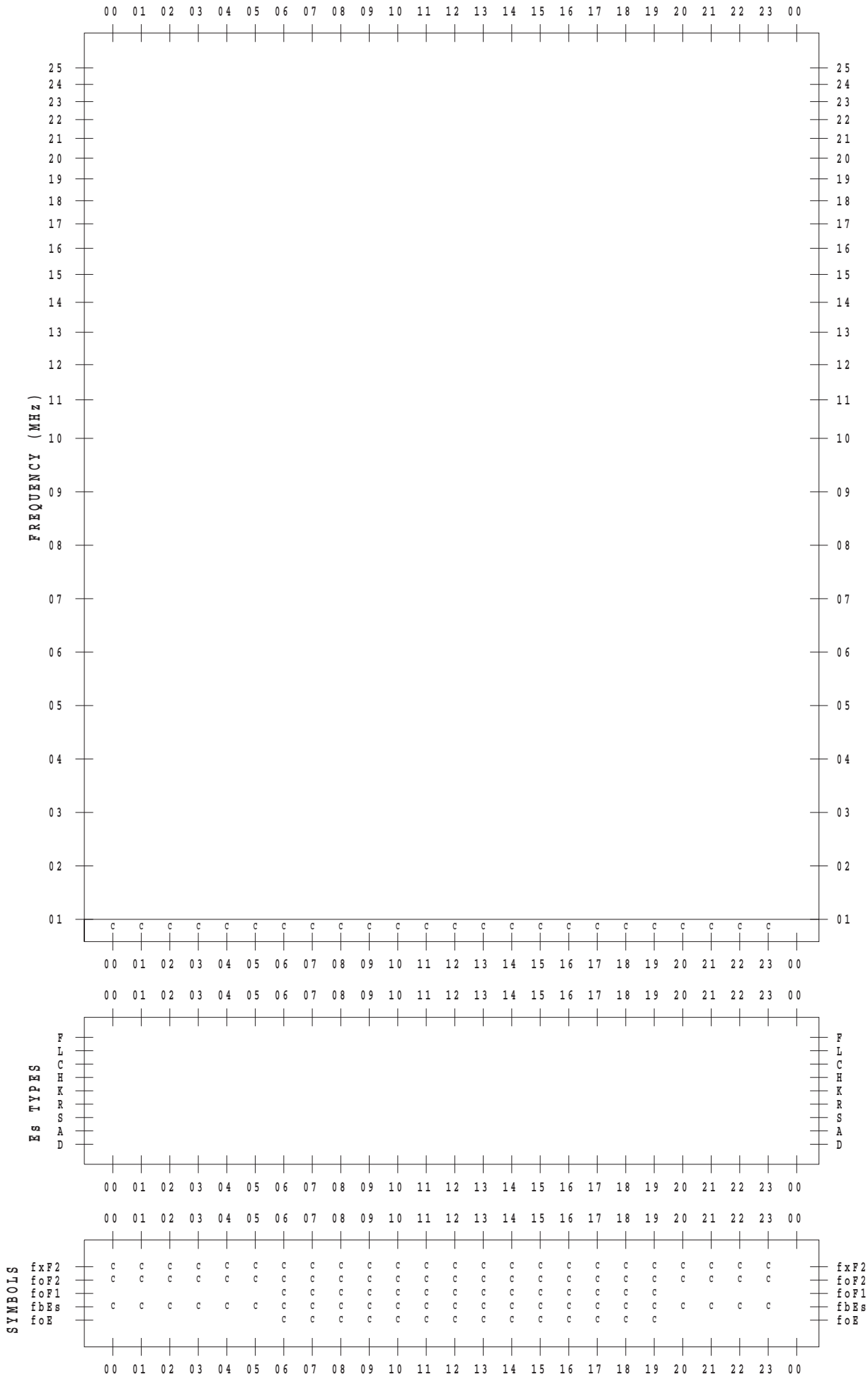
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/18

135 °E MEAN TIME



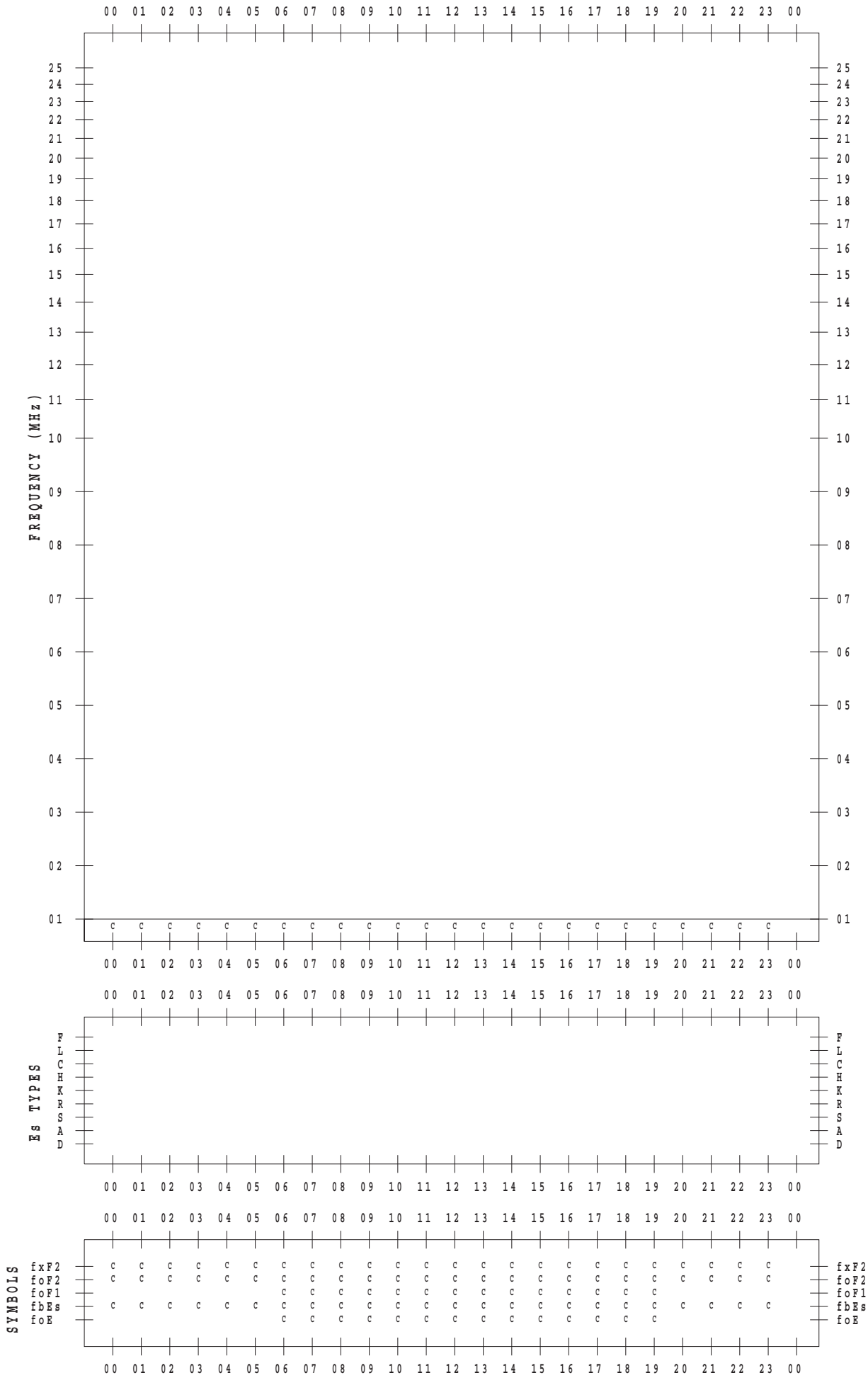
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/19

135 °E MEAN TIME



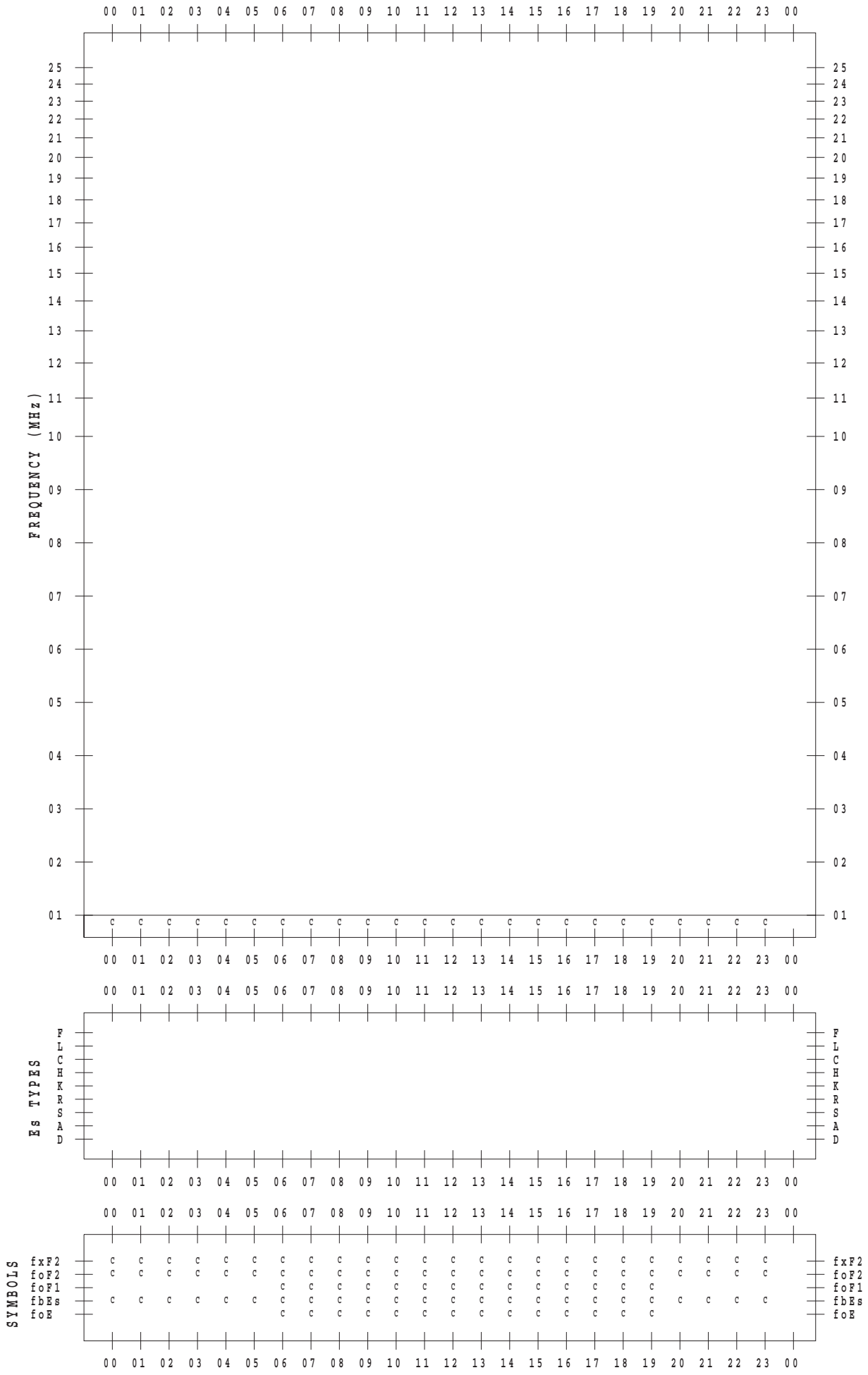
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/20

135 °E MEAN TIME



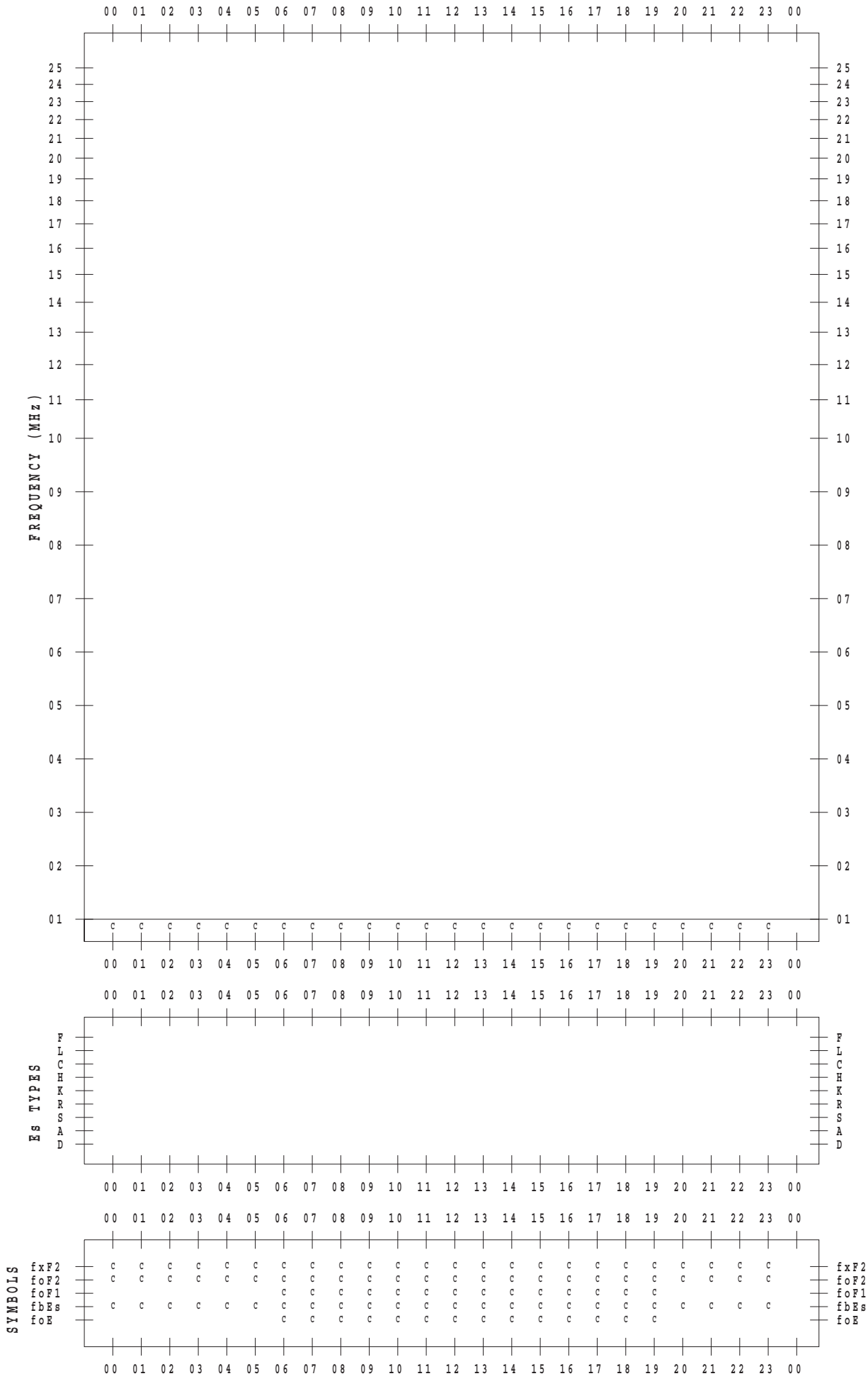
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/21

135 °E MEAN TIME



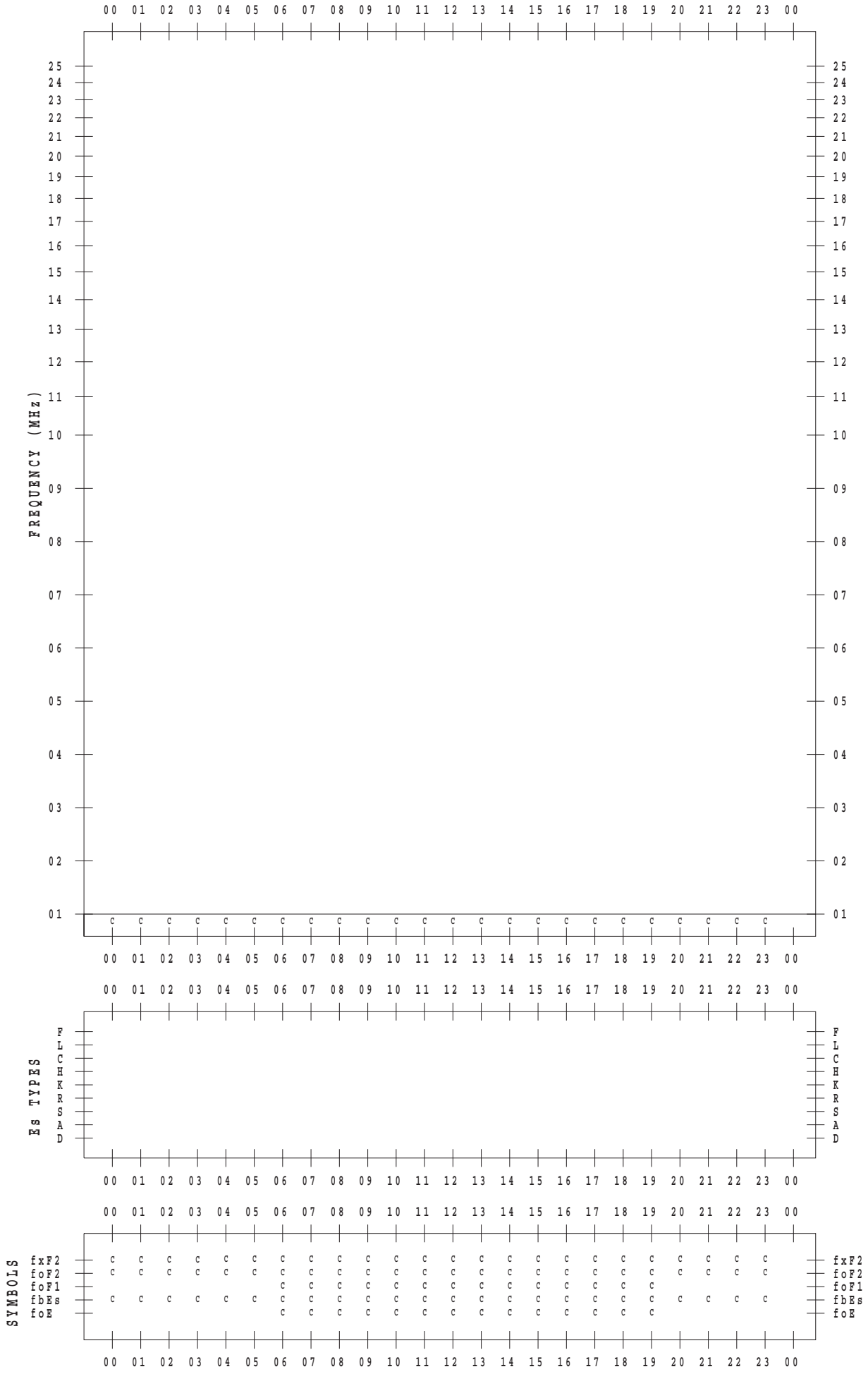
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/22

135 °E MEAN TIME



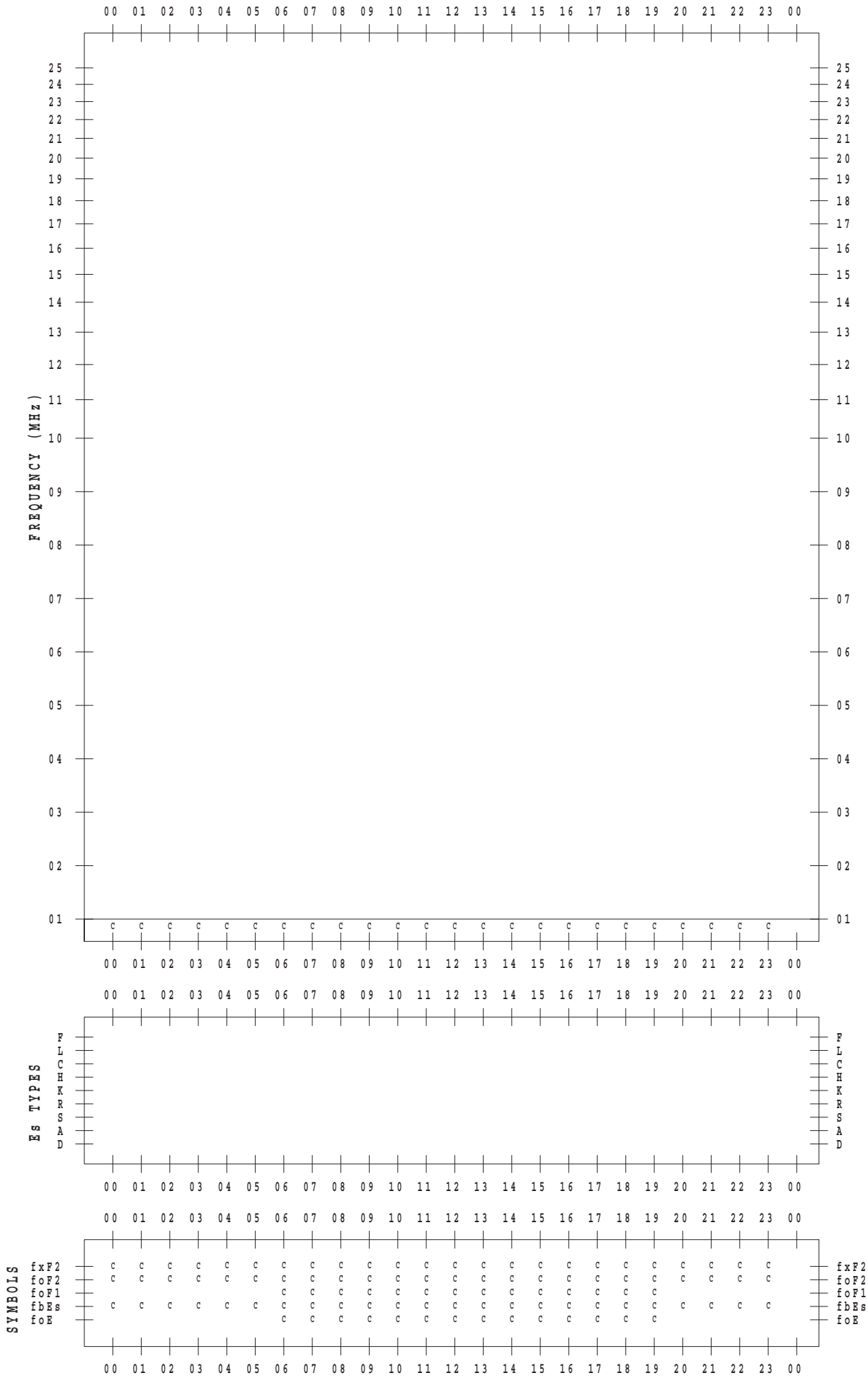
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/23

135 °E MEAN TIME



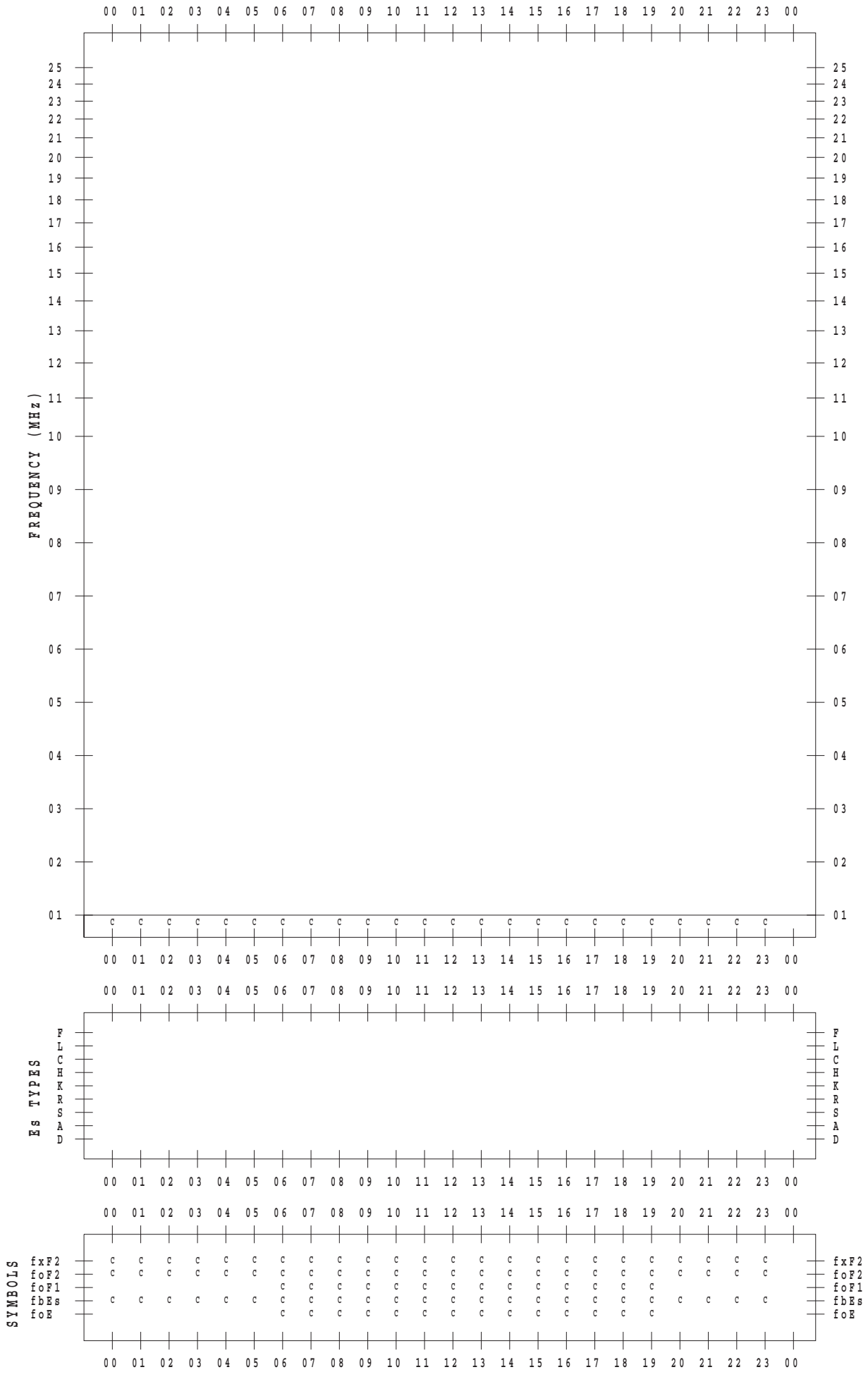
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/24

135 °E MEAN TIME



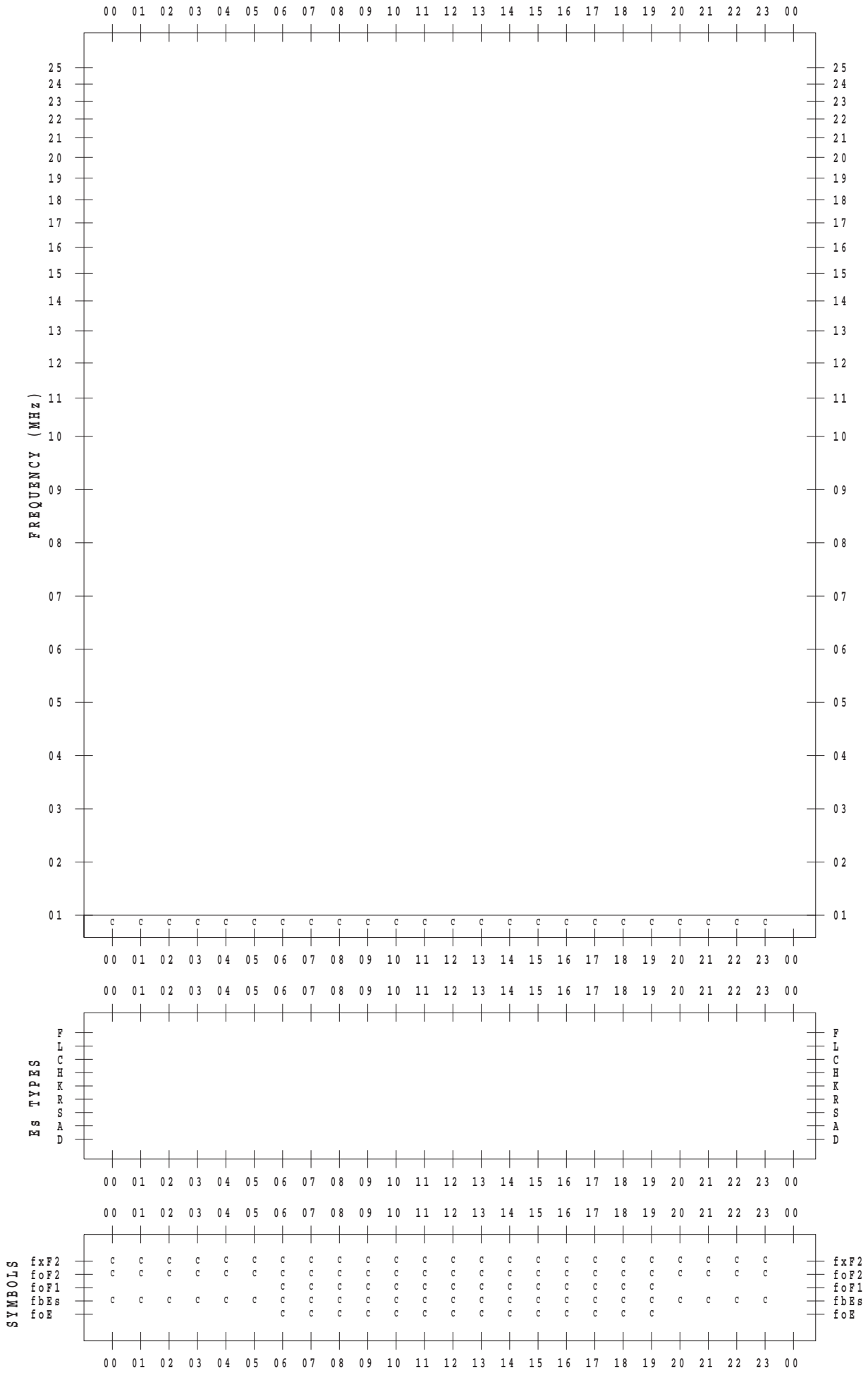
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/25

135 °E MEAN TIME



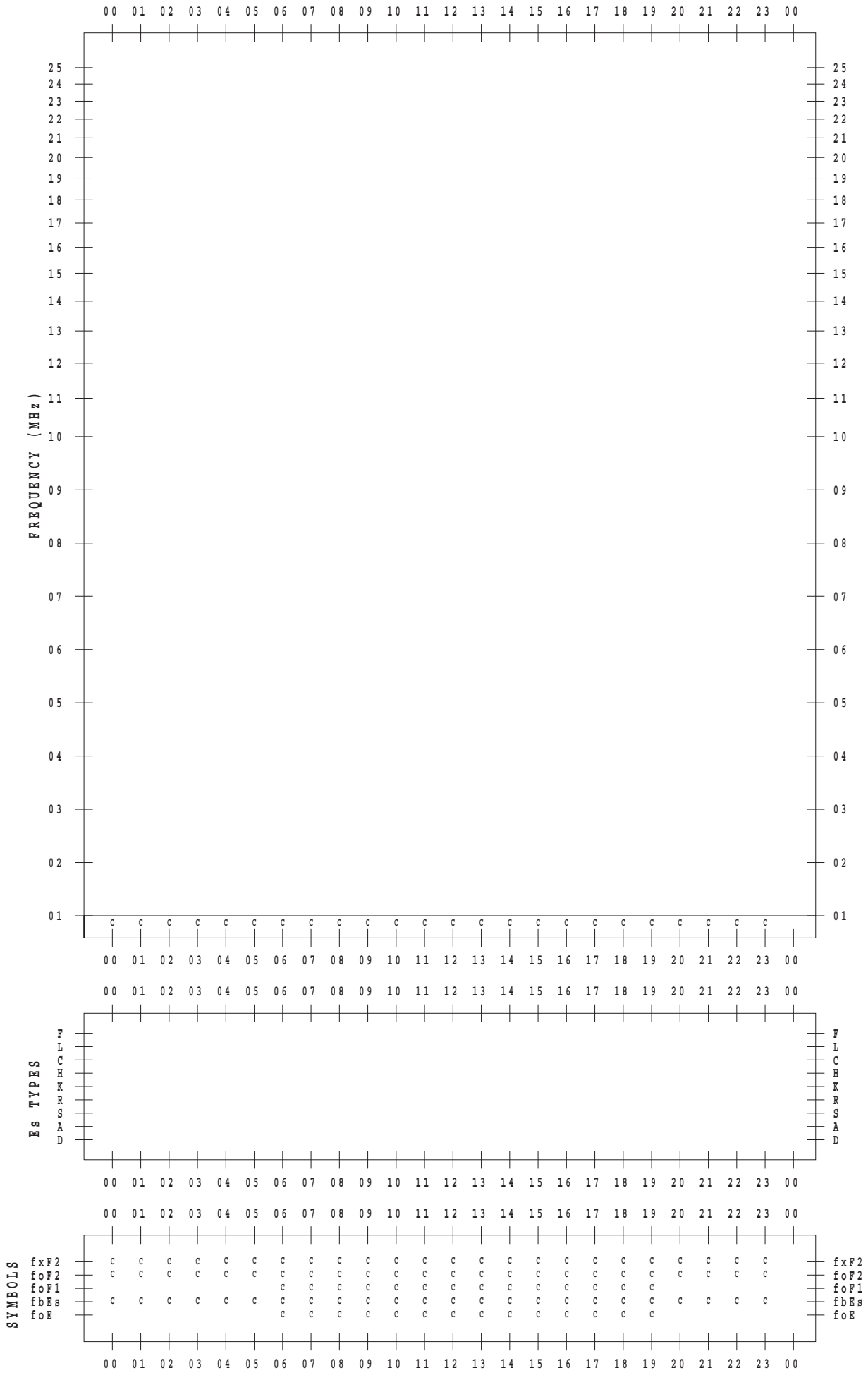
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/26

135 °E MEAN TIME



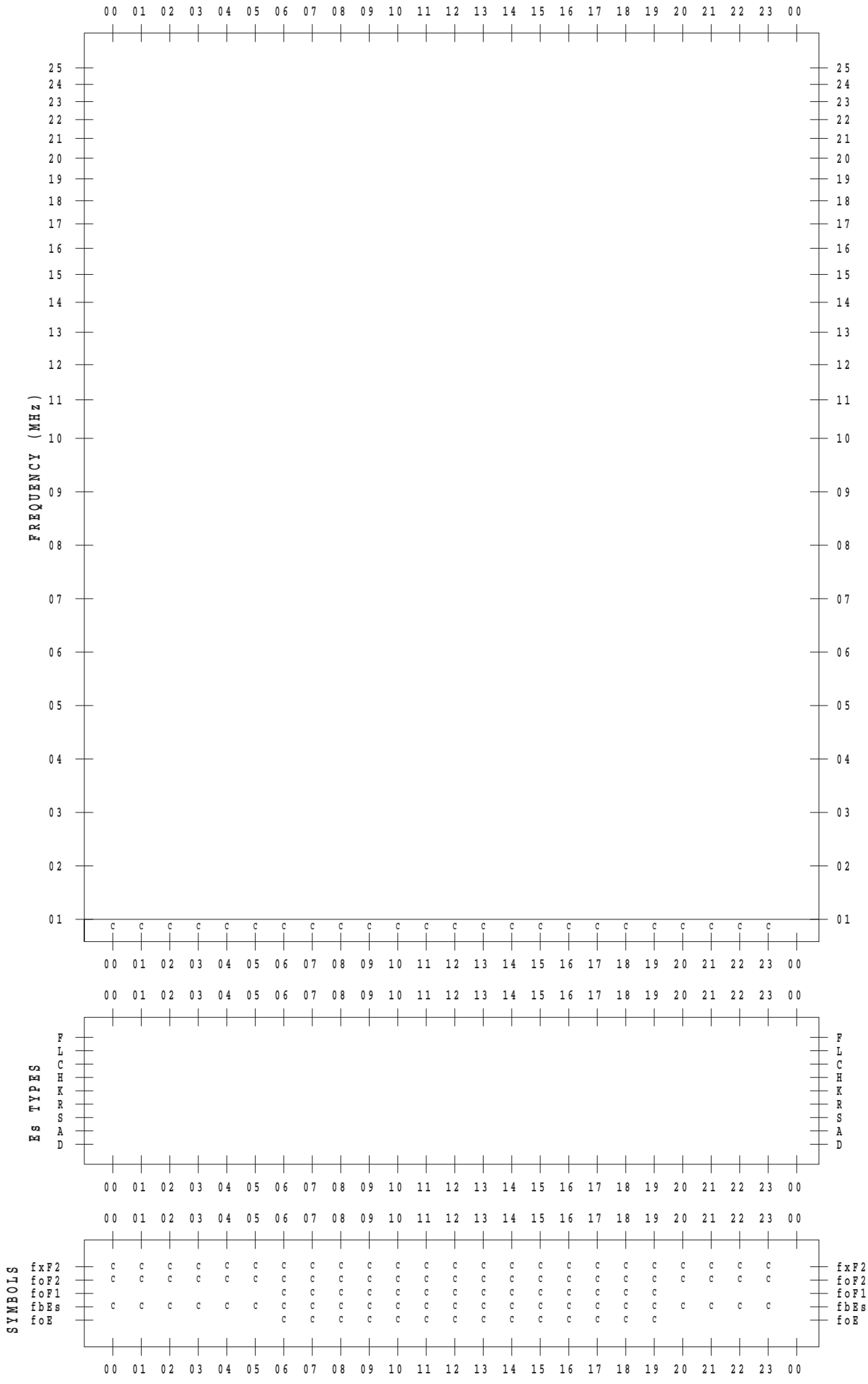
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/27

135 °E MEAN TIME



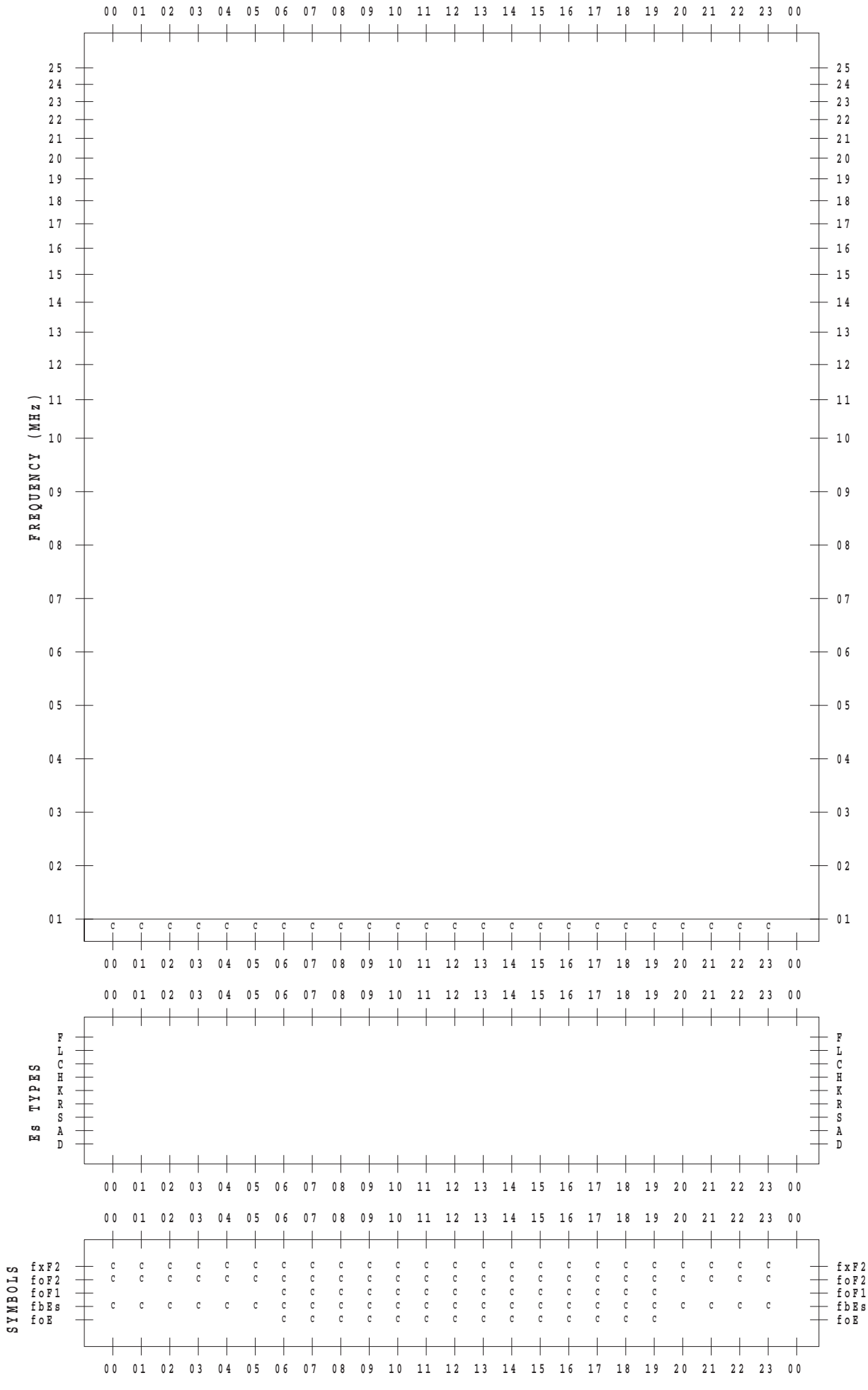
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/28

135 °E MEAN TIME



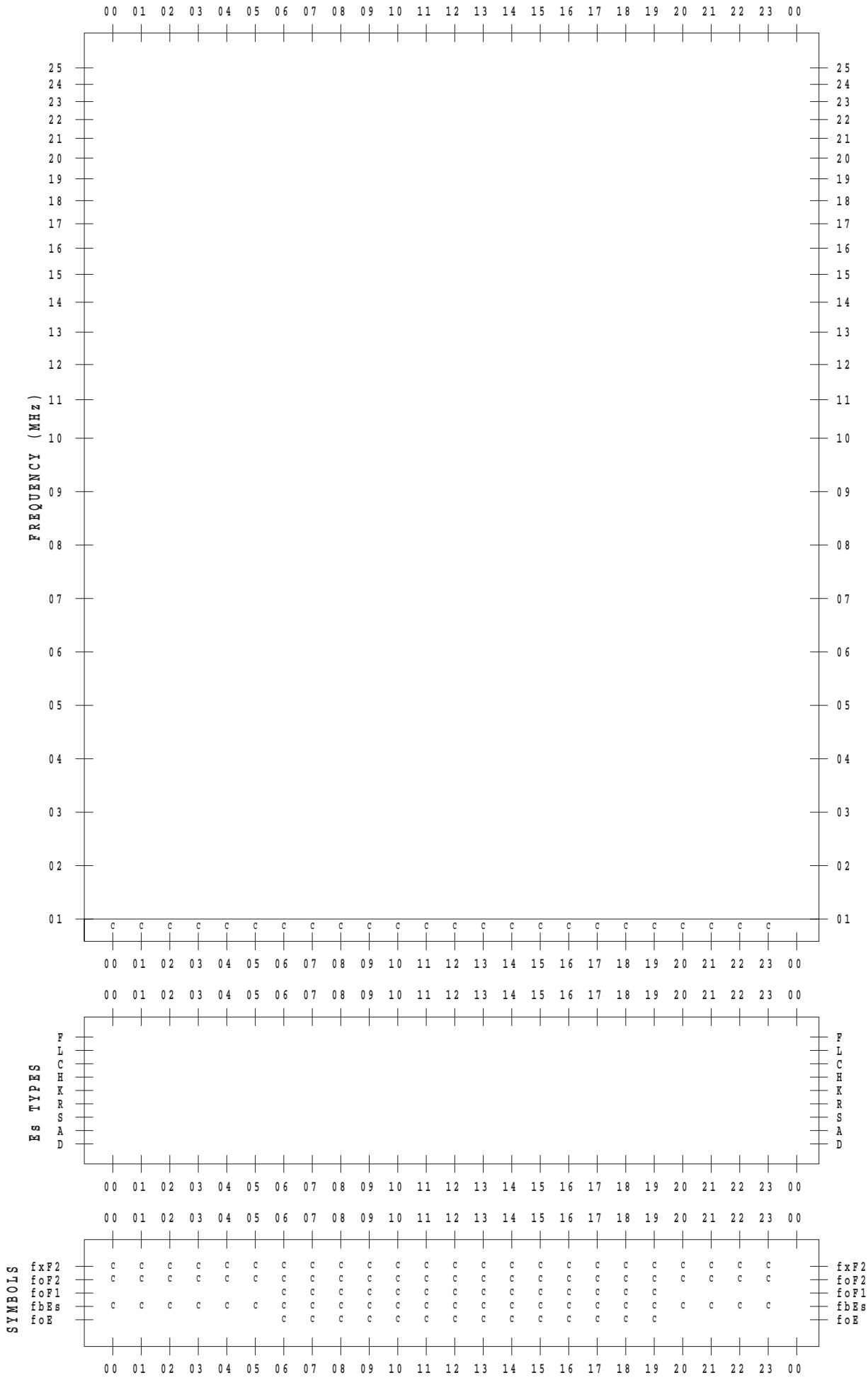
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/29

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 4/30

135 °E MEAN TIME