F-783

IONOSPHERIC DATA IN JAPAN

FOR MARCH 2014

VOL. 66 NO. 3

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

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

MAR. 2014

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	52	52	52	54	58	58	66	67	67	91	N	90	94		N	93	92	74	65	64	55	52	61	53
2	53	53	61	50	55	59	52	67	74		69			74	89	72	91	70	66	63	52	53	53	54
3	52	52	37	53	59	46	50	67	67	73		70	69	92		92	90	N	66	67	54	52	52	54
4	52	52	53	53	47	34	50	66	71	59	65	68	73	69			90	70	65	63	58	53	53	52
5	52	53	53	53	52	34	53	67	71	59	80	80	92	91	90	92		66	66	65	66	52	59	51
6	52	42	53	53	48	42	58	66		60	95	91	91	91	92	90	91	70	66	66	52	54	52	53
7	54	52	60	52	52	37	54	67	64	N	69	93	90	116	72	96	68	70	66	66	60	51	52	52
8	36	34	34	51	53	53	66		N	59	64	79		92	59	92	90	74	67	63	64	64	54	54
9	54	53	52	52	57	53	66	70	70	70	59	59	73	94	91		59		66	64	64	64	54	54
10	52	53	53	52	44	53	64	66	59	91	N	68	N			91	75	71	67	66	63	67	63	54
11	64	64	52	61	53	60	66	92	N	N	64		71	70	70		92	N	70	64	63	53	67	64
12	54	52	64	52	52	52	66		59	69	68	86		73	91	85	89	59	70	65	64	62	54	54
13	53	54	53	63	51	50	54	88	59	88	59	N	73	89	91	92	69	75	67	66	63	61	62	66
14	53	34	63	53	59	37	52	67	59	81	N	98	68	59	59	74	88	70	68	67	64	52	64	54
15	52	53	63	52	34	44	63	67		59		90	69	82	90	75	69	87	67	66	63	63	63	54
16	62	52	52	53	60	52	66	88	69	90	69	79	92	90	91	106	92	69	66	66	64	54	62	54
17	61	52	53	55	54	54	67	67	N	106	89	N	59	N		69	59	69	67	63	64	65	63	54
18	65	52	52	53	57	57	66	70		69	N	68		91	91	90	74	74	67	63	64	63	62	66
19	52	54	54	54	63	61	67	89	89	69	68	59	92	70	70	69	70	70	68	63	67	64	65	64
20	63	63	63	52	62	60	67	94	87	59		66	89	67	68	75	91	74	67	67	64	66	66	66
21	66	66	64	63	67	62	67	N	59	N		69		92	71	74	71		68	66	64	65	64	64
22	65	66	54	62	54	66	52	72	89	89	69	N	81	70	70		90	N	67	65	64	64	54	52
23	42	53	64	53	53	59	67	67	68	69		74	66	80	62	69	90	59	67	66	64	64	52	60
24	52	52	52	52	54	59	66	71	87	59	59	70	N			70	70	75	67	66	64	64	63	54
25	52	52	60	53	51	54	67	86		67	N	67		74	90	90	90	85	67	66	65	64	54	66
26	63	66	66	63	52	63	66	48	67	90		69	64	70	70	85	74	N	67	67	66	64	63	64
27	66	63	63	62	62	60	67	70	N	60	69	N	70	70		94		74	59	67	65	63	64	54
28	63	63	64	54	54	63	67	90	67	69	117	67	59	70	70	70	59	91	67	66	67	64	64	63
29	35	53	63	52	53	57	67	60	89	69			66	69	70	57	69	92	67	65	63	64	65	63
30	64	64	65	52	52	62	67	69	69		79	94	70		84	73		91	59	66	64	64	64	66
31	64	67	66	53	59	60	67	68	73	70		59	93	70	69	79	93	91	63	66	66	64	66	53
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	28	23	26	18	24	23	26	24	27	28	25	31	31	31	31	31	31
MED	53	53	54	53	54	57	66	68	69	69	69	70	73	74	72	85	88	74	67	66	64	64	62	54
U Q	63	63	63	54	59	60	67	79	74	88	79	88	91	91	90	92	90	80	67	66	64	64	64	64
L Q	52	52	52	52	52	50	54	67	64	60	64	67	68	70	70	72	69	70	66	64	63	53	54	54

HOURLY VALUES OF fEs AT Wakkanai

MAR. 2014

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	G	G	G	G	G	G	G		G	G	34	39	G	G	G	G	G	G
2	G	G	G	G	G	G	G	G	G		G			G	G	G	G	G	G	G	G	G	G	G
3	G	G	G	G	G	G	G	G	G	G		G	G	G		G	G	G	G	G	G	G	G	G
4	G	G	G	G	G	G	24	G	G	G	G	G	G	G			G	G	G	G	G	G	G	G
5	G	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G		G	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G		G	G	G	G	G	G	G	34	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	37	34	28	G	G	G	G	G
8	G	G	G	G	G	G	G		34	38	G	G		G	G	G	34	31	G	G	G	G	G	G
9	G	G	G	G	G	G	G	G	35	G	G	G	G	G	G		G		26	G	G	G	G	G
10	G	G	G	G	G	G	26	53	G	38	G	G	G			G	G	G	G	G	G	G	G	G
11	G	G	G	G	G	G	G	31	G	G	G		G	G	39		42	41	39	G	G	G	G	G
12	G	G	G	G	G	G	27		G	G	G	G		G	G	G	G	G	G	G	G	G	G	G
13	G	G	G	G	G	G	28	53	G	G	G	G	G	G	G	G	G	29	G	G	G	G	G	G
14	G	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
15	G	G	G	G	G	G	29	33		G		G	G	G	G	G	34	G	G	G	G	G	G	G
16	G	G	G	G	G	G	G	G	36	G	G	G	G	G	G	39	42	G	32	27	G	G	G	26
17	G	G	G	G	G	G	G	34	37	G	G	G	G	G		G	35	48	G	G	G	G	G	G
18	G	G	G	G	G	G	28	32		G	G	G		G	G	G	34	28	G	G	G	22	G	G
19	G	G	G	G	G	G	G	32	G	G	45	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	32	38	G		G	G	G	G	G	G	33	G	G	G	G	G	G
21	G	G	G	G	G	G	29	33	G	G		G		G	G	G	34		G	G	G	G	G	G
22	G	G	G	34	G	G	29	G	G	G	G	G	G	G	G		35	G	G	G	G	G	G	G
23	G	G	23	G	G	G	G	33	36	G		G	G	G	G	G	35	G	33	28	26	31	G	25
24	G	G	27	G	G	G	G	34	37	G	G	G	G			G	35	G	30	32	G	G	G	G
25	G	G	G	G	G	G	G	33		G	G	G		G	G	G	G	G	G	27	G	G	G	G
26	G	G	G	G	G	G	G	33	38	G		G	G	G	G	G	34	G	G	G	G	G	G	G
27	G	G	G	G	G	G	G	34	G	G	G	G	G	G		G		G	G	G	G	G	G	G
28	G	G	G	G	33	G	G	33	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	33	G	G			G	G	G	G	37	G	25	G	G	G	G	G
30	G	G	G	G	G	G	32	35	G		G	G	G		G	G		G	G	G	G	G	G	G
31	G	G	G	G	G	G	32	35	G	G		G	G	G	G	G	G	34	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	29	27	29	23	28	25	27	25	27	28	29	31	31	31	31	31	31
MED	G	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	27	33	36	G	G	G	G	G	G	G	35	30	G	G	G	G	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 Wakkanai

MAR. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	14	14	15	21	15	15	17	20	18		14	14	14	14	14	15	14	14	15	14
2	14	15	16	14	20	15	15	14	15		27			23	17	14	15	15	15	14	15	14	15	15
3	14	14	15	15	15	15	15	18	15	18		43	23	15		16	14	20	15	14	14	15	14	15
4	14	14	14	14	15	15	16	26	15	16	20	20	21	18			14	21	15	14	14	15	15	15
5	14	14	15	15	14	14	17	15	14	15	18	17	16	18	15	15		22	14	14	15	14	15	15
6	15	14	14	14	14	15	16	14		14	15	17	17	15	15	16	14	21	14	14	14	15	16	15
7	14	14	15	14	15	14	17	14	15	14	16	16	15	14	15	14	14	14	14	15	14	14	14	15
8	15	15	14	15	14	14	17		14	14	15	14		14	14	14	14	14	14	14	15	15	15	15
9	15	15	14	14	15	15	17	14	14	16	20	17	15	15	17		14		15	15	15	14	14	15
10	15	14	14	15	14	15	18	14	14	14	15	21	18			14	14	14	15	14	15	15	15	14
11	15	15	14	15	15	15	17	14	18	16	14		16	54	22		14	14	14	14	14	16	15	14
12	14	14	14	14	14	14	18		15	15	17	18		15	15	15	14	14	14	14	14	14	14	15
13	15	15	14	14	14	15	14	14	18	15	50	17	16	17	14	15	14	14	14	14	15	14	14	15
14	16	15	15	15	14	15	18	14	14	15	15	17	15	15	16	14	14	20	14	15	14	14	15	15
15	15	15	14	14	14	16	14	15		14		26	24	18	16	16	14	14	15	14	14	15	15	14
16	15	15	15	15	14	14	18	15	14	14	15	15	15	17	14	14	14	14	14	17	15	14	15	15
17	15	15	15	15	15	14	20	14	15	15	17	17	27	18		15	15	23	15	15	14	15	15	15
18	15	14	14	15	14	14	14	14		14	18	18		16	16	15	14	14	15	14	15	14	17	14
19	15	15	15	15	14	15	21	14	15	14	15	16	18	15	14	14	14	14	15	15	15	14	14	15
20	15	15	15	15	14	14	14	14	14	15		45	16	52	20	15	14	14	16	15	15	15	15	14
21	15	15	14	14	15	15	15	14	14	15		17		14	18	14	14		14	14	15	14	15	14
22	15	15	15	15	14	15	14	14	14	15	17	18	22	15	18		14	14	15	14	14	15	15	15
23	15	14	15	14	14	14	23	14	14	14		17	18	23	21	15	14	24	14	15	16	15	14	15
24	15	14	15	15	14	14	15	14	14	15	15	16	17			14	14	15	14	14	15	14	15	15
25	14	15	14	15	14	15	21	14		15	15	18		18	20	15	15	15	15	15	15	14	15	15
26	15	15	15	15	15	14	23	14	14	15		18	21	17	18	14	14	15	15	15	15	15	15	15
27	15	14	14	14	15	14	15	15	15	15	17	21	22	17		14		15	16	15	14	14	15	14
28	14	15	15	14	15	15	15	14	14	18	20	22	18	20	44	20	14	14	17	15	14	15	15	15
29	15	15	15	15	15	14	23	15	14	56			20	18	20	15	14	14	18	15	17	14	15	14
30	15	15	15	15	15	15	17	14	15		18	18	20		15	17		14	17	14	15	14	14	15
31	18	14	15	14	14	14	16	14	16	16		20	20	17	20	18	16	14	18	14	15	15	15	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	29	27	29	23	28	25	27	25	27	28	29	31	31	31	31	31	31
MED	15	15	15	15	14	15	17	14	14	15	17	18	18	17	16	15	14	14	15	14	15	14	15	15
U Q	15	15	15	15	15	15	18	15	15	15	18	20	21	18	20	15	14	17	15	15	15	15	15	15
L Q	14	14	14	14	14	14	15	14	14	14	15	17	16	15	15	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

MAR. 2014

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	51	53	53	53	44		50	84	105	114	128	130	127	130	131	130	121	110	88	77	52		52	53
2		53	53	53	46		52	88	101	98	111	123	127	128	127	122	118	110	88		54	53	53	
3		52	67	53	46		47	77	100	102	120	122	126	127	126	118	110	101	80	A	A			36
4	53	52	52	52				76	89	117	121	124	125	115	115	118	113	104	80	58			52	
5	58				44			84	114	116	127	122	122	120	117	111	114	89	88	55	73	53		
6				52	44		52	87	107	105	116	124	126	122	114	108	106	102	88	55	66	53	53	54
7			47		44	N	58	91	101	110	123	127	120	123	118	114	111	103	86	74	76	54	A	A
8		53		53	38		53	87	102	112	108	106	108	103	106	113	110	111	84	77	74	53	52	
9	52	44	52				53	88	105	114	112	122	121	120	108	108	110	104	88	66	48	72	66	
10	53		48		53	46	53	85	98	104	111	110	118	116	114	107	104	105	89	76	54	54	A	A
11		54	A	53		44	49	88	105	112	121	118	121	124	117	118	111	105	92	59	52			
12			53	52	51	38	52	84	102	112	117	111	116	121	120	122	121	111	102	73	52			
13	53	53	N	53	27	28	52	80	100	103	111	121	132	124	122	118	118	109	88	54	52	53	53	53
14			53	53	44	34	52	75	108	107	116	122	114	108	114	118	117	111	88	78	64	54	54	38
15		53	53	52	34		52	86	108	101	107	131	134	128	118	118	109	107	101	75	66	A	53	
16		53	53				52	87	108	111	117	125	130	131	128	126	122	114	108	77	53	38		66
17		44	38	53	52	44	52	88	108	102	108	115	118	118	116	107	104	97	88	76	53	67	53	
18			42	53	48		54	97	104	102	106	118	117	114	114	111	102	97	86	71	54	52		
19		48	52	52	52	46	52	105	124	111		122	108	113	104	106	110	89	86	55	53		52	73
20	67			58	45	44	54	86	99	105	111	107	108	106	109	101	100	97	88	77	65		78	79
21	67	73	54	49	58	52	74	98	106	118	111	117	115	120	113	112	115	110	89	84	N		64	77
22	77	74	52			52	82	88	107	111	118	115	116	117	115	108	105	102	88	80	54	76	65	
23		43		55		38	73	101	110	108	117	121	118	122	118	117	114	117	110	80	53	52	53	
24	54	54	A	44	44		70	101	117	120	118	C	C	C	C	C	C	C	104	76	77	78	74	64
25	67	67	54	54	54	54	72	88	105	106	C	C	C	C	C	118	117	111	104	88	74	72	66	72
26	71	76	74	67	66	54	82	101	104	112	118	121	120	124	123	120	116	117	114	87	81	78	72	71
27	73	72	73	64	52	51	72	101	115	118	117	122	121	121	125	116	115	116	112	89	78	78	78	77
28	76	73	74	71	54	64	85	100	108	114	120	131	130	130	124	118	115	116	114	101	76	73	77	67
29	66	72	73	73	53	54	77	101	120	107	110	117	130	127	125	120	122	117	111	84	80	77	81	78
30	77	74	67	54	55	59	84	100	107	110	111	112	118	126	131	127	122	116	107	88	83	84	85	84
31	88	81	68	67	57	54	73	90	104	111	118	121	122	124	121	115	106	106	101	86	78	81	81	78
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	23	23	25	25	18	29	31	31	31	29	29	29	29	29	30	30	30	31	29	28	22	23	17
MED	67	53	53	53	48	48	53	88	105	111	117	121	121	122	118	118	114	108	88	77	64	60	64	71
U Q	74	73	67	56	53	54	73	100	108	114	119	123	126	126	124	118	117	111	104	84	76	77	77	77
L Q	53	52	52	52	44	44	52	85	102	105	111	116	116	116	114	111	109	102	88	68	53	53	53	53

HOURLY VALUES OF fEs AT Kokubunji

MAR. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G
2	G	G	G	G	G		G	G	G	G	G	G	G	G	G	46	G	31	29		G	G	G	
3		G	G	G	G		G	G	G	G	G	G	G	G	G	58	75	70	55	60	51			G
4	G	G	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		
6	G		G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	47	52	G	G	G	G	33	36	28
8		G		G	G	G	G	G	G	G	G	G	G	G	G	G	56	54	60	45	G	G	G	
9	G	G	G				G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
10	G	G	G	G	G	G	G	G	G	G	G	G	G	G	57	G	G	50	29	G	G	37	51	35
11	G	29	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	46	29	G	34	G		G
12			G	G	G	G	G	G	G	G	G	G	G	G	G	G	62	G	40	32	G			
13	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G
14		G	G	G	G	G	G	G	G	G	G	G	49	G	G	G	G	G	G	G	G	G	G	G
15		G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	43	G	G	38	G	
16	G	G	G				G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
17	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
18			G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
19		G	G	G	G	G	G	G	G	G		G	G	G	G	G	G	41	31	G	G		G	G
20	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G
21	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G		G	G
22	G	G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G
23	G	G		G		G	G	G	G	G	G	G	G	G	G	76	G	G	35	41	G	G	G	
24	G	G	25	G	G		G	G	G	G	G	C	C	C	C	C	C	C	G	G	G	G	G	G
25	G	G	G	G	G	G	G	G	43	G	C	C	C	C	C	64	58	53	74	28	G	G	G	G
26	G	G	G	G	G	G	G	G	G	G	45	46	G	50	G	G	G	G	36	G	G	G	G	G
27	G	G	G	G	G	G	G	G	G	50	44	G	G	G	G	G	G	34	33	29	34	G	G	G
28	G	G	G	G	G	G	29	G	G	G	G	46	G	G	G	G	G	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
30	G	G	G	G	G	G	29	G	G	G	G	G	G	G	45	40	G	43	33	24	G	31	G	G
31	G	G	G	G	G	G	G	G	46	50	G	G	G	G	G	G	G	G	G	26	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	26	27	27	26	20	31	31	31	31	29	29	29	29	29	30	30	30	31	30	31	24	26	23
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	33	24	G	G	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 Kokubunji

MAR. 2014

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	21	21	43	17	14		15	39	40	39	40	45	45	47	44	40	40	14	15	15	15		17	22
2	20	15	18	14	14		15	34	39	40	44	54	43	44	44	43	41	18	15		42	15	20	
3		15	14	14	15		17	40	39	43	39	43	53	52	44	37	39	14	21	18	20			14
4	42	42	18	17			17	42	39	40	44	48	49	47	55	21	39	28	20	20	44		40	18
5	17				18		21	38	39	40	43	45	44	48	44	40	39	38	18	15	43	14		
6	21		17	15	18		18	36	20	40	43	44	44	44	42	42	37	36	18	41	17	18	43	14
7	43	20	20	23	17	15	17	37	39	39	44	44	55	46	47	40	20	37	17	20	17	14	17	13
8		15		18	18	20	18	37	18	42	53	49	52	42	49	43	20	21	14	14	15	18	14	
9	34	18	14				21	38	42	54	47	44	47	59	44	42	39	17	22	18	15	15	20	
10	43	17	17	15	17	15	18	40	42	43	45	53	55	50	40	44	42	14	13	43	24	15	21	18
11	44	13	17	43	18	15	20	38	43	42	42	73	43	74	59	42	40	18	14	42	14	17		44
12			14	14	20	15	20	39	40	40	42	45	60	46	50	44	34	17	17	20	20			
13	15	15	18	15	17	14	20	37	42	43	58	55	60	53	43	43	38	18	15	15	43	17	18	20
14		18	14	14	14	14	20	37	39	42	43	55	35	44	53	45	36	14	18	18	15	17	17	20
15		17	18	15	15		21	33	39	42	44	47	48	54	43	42	39	31	14	40	30	14	18	
16	24	15	40				33	36	39	43	43	55	49	47	43	40	39	39	31	17	14	42	43	20
17	43	18	15	14	17	15	21	36	35	43	53	52	54	49	44	40	37	34	18	21	20	21	43	21
18			15	17	17		20	17	21	42	45	50	53	56	55	42	36	29	31	34	14	36		
19		42	30	14	14	15	43	37	36	42		62	45	55	44	42	34	22	14	15	14		41	15
20	42			22	15	18	21	17	40	42	46	56	44	60	49	43	44	31	20	15	15		41	17
21	14	15	40	15	17	24	36	36	40	40	44	58	53	45	44	40	39	36	14	17	17		18	17
22	17	15	17			15	21	15	40	42	44	46	56	55	56	42	38	37	40	17	39	14	21	15
23	17	18		14		17	21	15	20	43	57	54	55	55	47	38	41	33	14	14	20	14	18	
24	18	42	18	21	17		28	14	21	42	52	C	C	C	C	C	C	C	18	14	14	14	13	13
25	14	14	13	14	13	13	22	13	17	20	C	C	C	C	C	21	17	13	13	13	13	14	14	14
26	13	13	13	13	13	13	22	14	17	21	36	33	40	29	39	20	15	13	13	14	13	14	14	14
27	13	14	13	13	13	14	21	13	15	20	21	41	42	40	41	22	13	13	13	13	13	13	14	14
28	13	14	13	13	14	13	14	13	20	39	21	40	45	43	20	37	18	13	18	14	14	14	13	13
29	14	13	13	13	13	13	15	15	17	42	42	43	45	42	43	21	15	14	13	14	14	14	13	14
30	14	14	13	13	13	14	15	13	15	17	40	44	43	42	42	39	15	13	13	14	14	13	14	14
31	14	13	14	13	13	13	23	14	20	35	43	45	45	43	40	40	13	14	17	14	13	14	14	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	26	27	27	26	20	31	31	31	31	29	29	29	29	29	30	30	30	31	30	31	24	26	23
MED	18	15	17	14	15	15	20	36	39	42	44	47	47	47	44	40	38	18	17	16	15	14	18	15
U Q	38	18	18	17	17	15	21	38	40	42	45	54	53	54	49	42	39	33	18	20	20	17	21	20
L Q	14	14	14	14	14	13	17	15	20	39	42	44	44	43	42	38	20	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Yamagawa

MAR. 2014

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	52	53	52	55	54	34	43	54	87	88	84	89	83	79	79	79	78	90	86	77	59	76	52	
2	54	62	53	53	52	44	44	67	88	85	88	93	N	80	87	79	79	95	91	79	53	B	49	78
3	67	53	74	77	52	B	34	54	78	87	69	69	79	79	79	89	79	88	86	76	A	53	A	49
4	59	49	49	51	40	36	28	52	81	79	69	N	91	79		86	92	79	86	77	77	39	36	72
5	65	54	36	44	49	32	31	65	88	69	69	88	N	N	79	79	86	94	90	84	69	54	53	N
6	49	36	34	49	47	40		58	86	92	86	87	79	86	87	90	94	90	84	78	56	78	78	49
7	52	47	N	53	49	37	31	82	84	91	79	94	86	N	76	95	79	90	81	78	52	76	58	53
8	53		46			B	43	77	N	80	88	84	77	89	69	83	86	81	79	A		53	49	54
9		N	52	50	49	37	47	62	81	82	60	79	N	77	82	84	79	90	86	78	78	34	54	69
10	52	55	52	60	29	37	28	N	94	93	69	87	79	78	79	82	86	94	A	69	42	59	N	43
11		44	52	45	34	36	36	72	86	84	N	84	87		86	87	94	96	91	78	71	B	N	
12	34	51	A	41	51		43	72	89	86	85	N	79	87	95	86	69	90	N	N	45	43	49	52
13	53	42	53	72	58	45	42	52	88	93	N	87	78	79	79	79	58	88	90	78	N	49	52	69
14	59	48	49	52	54	34	36	63	87	N	81	79	77	96	79	79	85	79	78	81	74	N	53	
15		49	43	55	43		B	53	87	84	69	79	85	N	62	79	79	89	90	78	N	81	39	52
16	53	52	53	54	52	37	43	69	87	88	79	79	86	149	148	152	99	79	86	79	76	78	59	
17	74	53	53	45	54	43	43	74	90	93	84	C	C	C	C	C	C	C	110	89	88	N	74	66
18	73	67	67	66	51	53	53	81	95	C	C	C	115	C	118	114	116	116	111	88	78	74	54	54
19	54	67	66	67	54	50	48	82	109	111	110	110	111	138	112	113	117	114	91	88	87	86	74	85
20	78	73	67	74	67	50	43	76	88	98	110	98	97	97	98	110	95	104	96	88	86	85	80	77
21	84	74	67	54	52	53	54	81	97	98	100	110	110	111	114	111	111	114	109	88	84	84	83	86
22	85	78	67	52	56	54	52	86	100	111	109	114	111	115	116	114	113	111	109	88	88	84	84	82
23	78	66	72	76	55	50	50	84	91	107	110	110	112	113	111	111	117	128	111	90	79	79	80	78
24	80	78	67	54	54	50	52	88	108	112	119	113	N	144	144	134	116	114	114	87	85	84	86	82
25	82	77	74	73	67	54	54	85	96	97	110	114	114	144	146	150	145	117	110	89	78	82	76	78
26	77	78	77	78	67	54	52	81	97	114	111	112	112	113	126	126	116	126	112	95	87	87	86	84
27	84	82	77	86	66	47	53	85	101	110	111	110	129	128	134	110	110	110	111	110	88	86	88	85
28	85	80	78	84	67	54	67	86	103	110	112	116	144	141	138	112	111	114	111	97	88	78	85	86
29	80	78	78	83	62	47	52	85	111	98	97	114	146	146	146	148	149	145	110	94	88	80	86	88
30	87	88	78	77	67	52	52	82	97	97	111	111	119	99	147	146	132	125	108	90	88	86	88	88
31	87	87	77	75	51	50	50	81	97	102	97	112	110	117	117	114	98	N	114	90	87	84	85	84
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	30	30	27	29	30	30	29	28	27	26	25	29	30	30	29	29	29	27	27	28	26
MED	70	62	66	55	53	47	44	76	90	93	88	94	94	99	98	102	94	95	91	87	78	78	74	78
U Q	81	78	74	75	58	52	52	82	97	104	110	112	112	133	130	114	116	114	110	89	87	84	84	84
L Q	53	50	52	52	49	37	39	63	87	85	79	84	79	79	79	83	79	89	86	78	69	54	52	54

HOURLY VALUES OF fEs AT Yamagawa

MAR. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	11	G	G	G	G	G	G	G	G	G	41	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	49	43	32	G	G	B	G	G
3	G	G	G	G	11	B	G	G	G	G	G	G	G	G	G	G	G	34	G	33	33	29	33	G
4	G	G	G	G	G	G	G	G	G	38	G	G	49	G	G	44	G	G	G	G	G	G	G	27
5	G	G	G	G	G	G	G	G	G	G	G	49	G	G	G	G	G	34	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	40	G	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	35	G	G	G	G	G	G
8	G	G	G	G	G	B	G	G	G	G	G	G	G	G	44	46	54	56	44	58	G	G	G	G
9	G	G	G	G	G	G	G	G	G	G	G	G	56	G	46	56	58	50	G	G	G	G	G	G
10	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	54	G	44	92	40	27	G	G	G
11	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	50	78	64	40	33	G	B	G	G
12	G	G	24	G	33	G	G	G	G	G	G	G	G	G	G	G	58	72	34	G	G	G	G	G
13	G	G	G	G	G	G	G	G	G	G	G	G	G	G	55	G	63	54	34	46	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
15	G	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	40	35	G	36	G	G
16	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
17	G	G	G	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	G	33	G	24	G	G
18	G	G	G	G	G	G	G	30	G	C	C	C	G	C	G	G	G	42	40	32	26	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	G	48	42	48	48	48	50	29	G	G	G	G
20	G	G	G	G	G	G	G	G	G	G	48	G	G	G	45	80	66	G	30	G	G	G	G	G
21	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	48	G	39	G	G	G	47	49	59	G	35	G	G	32	32	G	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	69	53	72	70	28	46	36	G	G
24	G	25	G	G	G	G	26	G	G	G	G	G	G	G	G	41	G	G	33	21	G	G	G	G
25	G	G	G	G	G	G	G	G	35	G	G	48	51	49	G	G	G	35	59	81	35	G	G	G
26	G	G	G	G	G	G	G	G	36	G	G	G	G	G	G	51	G	47	61	39	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	G	45	46	46	G	G	G	35	29	36	33	G	G	24
28	29	G	G	G	G	G	G	G	49	41	G	46	47	47	45	G	G	52	52	28	G	G	G	G
29	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	38	G	G	G	G	G	G	G
30	G	G	G	G	G	G	G	G	G	G	G	48	G	G	50	52	50	38	37	26	35	40	G	24
31	G	G	G	G	G	G	G	G	G	G	G	G	G	52	46	42	G	G	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	29	30	31	31	30	30	29	30	29	30	30	30	30	31	31	31	29	31	31
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	20	G	35	30	21	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	44	50	50	48	40	33	26	G	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 Yamagawa

MAR. 2014

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	17	17	17	17	16	15	15	23	18	21	46	58	54	60	56	47	21	17	23	15	18	16	16	18
2	16	15	17	17	16	16	17	21	16	18	42	58	46	50	59	45	33	18	15	16	18	B	17	18
3	15	18	16	15	16	B	16	26	34	20	38	53	57	60	53	42	21	18	15	14	15	17	18	17
4	16	16	16	16	18	20	17	23	16	41	49	55	43	52	111	26	40	30	16	17	18	18	18	15
5	16	15	18	16	16	18	18	23	15	20	40	42	60	54	45	42	18	18	22	16	15	24	17	18
6	17	17	18	17	15	20	18	23	30	36	44	53	56	55	60	40	26	21	22	17	16	17	18	17
7	17	18	16	18	17	18	18	24	29	36	42	52	56	55	54	43	35	17	22	16	18	16	17	17
8	18	20	20	20	22	B	18	23	18	39	42	55	54	55	62	39	18	18	16	20	30	22	20	16
9	71	17	21	18	17	21	17	26	18	43	42	48	39	52	57	36	33	20	16	18	17	18	17	17
10	17	17	17	18	17	17	21	27	18	38	44	62	55	53	58	38	38	18	18	15	16	18	17	18
11	66	17	17	17	18	18	24	29	36	38	44	53	60	73	55	38	30	17	15	16	15	B	16	24
12	18	16	15	17	15	16	16	24	16	22	53	55	56	59	56	38	35	26	16	15	23	15	21	18
13	18	17	18	15	17	17	16	26	38	40	47	54	56	58	39	43	33	18	15	15	20	17	17	16
14	18	18	18	17	17	18	18	24	20	36	43	54	57	54	45	50	46	33	33	20	24	17	18	71
15	91	20	17	16	17	66	B	27	33	42	56	60	55	56	56	60	35	36	17	15	24	15	18	18
16	20	17	20	18	20	18	27	26	35	59	58	56	61	54	44	58	40	35	24	17	17	18	17	24
17	18	16	16	17	17	21	18	23	34	23	43	C	C	C	C	C	C	C	22	15	16	14	16	15
18	15	15	15	15	15	15	14	23	17	C	C	C	24	C	41	22	22	15	15	14	15	14	15	15
19	14	15	14	15	14	15	15	14	17	20	23	39	40	54	41	23	20	16	15	14	15	15	14	15
20	14	15	15	15	27	15	15	26	17	22	39	44	46	60	54	35	23	24	16	15	16	15	17	14
21	14	14	14	14	15	14	14	24	18	20	38	46	47	42	40	37	22	17	22	15	17	14	15	15
22	15	15	15	16	15	15	15	26	16	24	24	40	52	30	39	23	21	18	23	14	15	16	15	15
23	15	15	15	15	14	15	15	24	18	20	42	43	48	55	50	24	22	16	14	14	14	14	15	14
24	15	16	15	15	14	15	15	15	16	22	26	41	43	56	43	26	23	15	16	15	15	15	15	14
25	14	14	15	14	15	14	15	26	14	20	24	24	28	22	24	24	21	16	17	15	14	14	15	14
26	15	14	14	14	15	14	15	15	17	20	24	41	52	43	26	22	21	16	14	14	15	15	15	15
27	15	14	15	15	15	15	15	14	16	21	22	27	44	27	43	42	22	18	15	14	14	14	16	14
28	14	15	14	15	14	14	15	14	15	22	23	29	28	23	38	36	21	14	17	14	15	16	15	15
29	15	15	14	15	15	15	15	28	16	43	42	52	45	50	33	27	21	16	23	15	15	15	14	15
30	15	15	14	15	15	16	15	14	18	20	38	40	50	47	36	34	21	18	15	15	14	14	17	15
31	15	15	14	14	15	17	15	26	18	22	40	46	48	39	38	42	23	22	23	15	15	16	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	29	30	31	31	30	30	29	30	29	30	30	30	30	31	31	31	29	31	31
MED	16	16	16	16	16	16	16	24	18	22	42	52	51	54	45	38	22	18	16	15	16	16	17	15
U Q	18	17	17	17	17	18	18	26	29	38	44	55	56	56	56	42	33	21	22	16	18	17	17	18
L Q	15	15	15	15	15	15	15	23	16	20	38	41	44	45	39	26	21	16	15	14	15	14	15	15

HOURLY VALUES OF foF2 AT Okinawa

MAR. 2014

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	87	86	86	104	88	44	40	54	87	106	120	135	140	133	146	146	148	143	130	120	130	99	102	88
2	88	88	87	86	75	47	38	67	89	96	108	123	131	132	146	147	146	137	128	108	89	106	52	86
3	88	88	88	105	53	32	28	52	87	101	124	132	144	150	149	152	136	144	130	128	135	133	128	108
4	107	110	105	88	53	42	36	62	88	107	130	130	140	147	144	138	144	145	145	125	139	130	106	105
5	105	84	51	61	40	B	29	52	100	121	132	127	136	141	141	141	142	143	132	N	129	149	129	88
6	113	101	81	88	67	43	37	62	100	110	122	127	131	130	134	140	133	136	144	142	139	135	119	105
7	104	86	77	80	71	58	B	77	88	105	130	131	131	130	130	134	140	137	132	130	139	121	108	88
8	88	87	67	62	50	51	51	76	92	102	127	121	118	120	123	131	137	147	147	144	119	88	109	79
9	109	108	104	87	67	53	54	75	98	113	126	128	127	126	119	127	131	140	134	128	140	N	N	88
10	107	118	109	101	87	60	51	67	88	105	107	110	122	123	128	130	130	122	120	128	126	107	105	88
11	87	81	78	78	52	B	37	67	90	105	112	126	126	119	128	125	121	126	108	105	87	106	81	88
12	85	88	83	82	76	54	50	73	89	108	116	126	131	130	118	136	142	142	132	128	114	69	104	105
13	73	89	88	101	82	67	51	67	97	110	117	127	131	134	131	136	128	128	126	121	104	102	109	124
14	87	88	88	89	73	42	37	52	86	107	118	126	127	131	142	132	142	143	142	130	117	106	88	88
15	110	89	106	88	45	32	30	63	85	107	128	136	150	143	148	138	147	150	144	145	144	131	110	103
16	89	N	88	88	77	46	38	52	88	114	124	143	N	150	139	138	150	171	146	142	130	47	52	106
17	89	88	88	80	52	43	40	67	88	105	108	136	141	144	148	131	130	136	131	128	118	110	107	88
18	72	84	88	83	71	54	46	72	88	107	120	134	143	147	150	144	143	150	144	118	106	88	86	81
19	80	76	76	75	63	47	43	77	102	106	121	108	131	147	145	144	147	147	142	132	N	128	N	109
20	88	87	88	88	82	47	41	74	88	101	107	108	115	118	124	120	108	107	110	107	107	104	88	88
21	105	86	79	71	67	48	46	72	88	100	111	124	124	131	135	132	131	132	130	121	118	106	107	107
22	107	86	81	54	67	67	62	87	101	111	118	120	130	134	134	141	135	130	126	110	108	110	108	106
23	88	86	85	90	71	51	51	78	88	111	114	125	127	131	136	143	142	142	144	127	111	108	107	104
24	88	104	88	80	52	52	54	84	110	118	125	130	142	152	150	148	145	144	144	131	132	131	128	107
25	88	89	87	81	67	53	51	80	94	116	116	121	143	146	139	154	151	150	145	131	128	120	99	110
26	108	103	87	90	75	47	37	73	87	109	118	116	130	144	145	146	144	144	130	120	129	128	127	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	25	26	26	26	24	25	26	26	26	26	26	25	26	26	26	26	26	26	25	25	25	24	25
MED	88	88	87	86	67	48	41	70	88	107	119	126	131	134	139	138	142	142	132	128	126	108	107	103
U Q	107	95	88	89	75	53	51	76	97	111	125	131	140	146	146	144	145	145	144	131	133	129	109	106
L Q	87	86	81	80	53	43	37	62	88	105	114	121	127	130	130	132	131	136	130	120	109	103	93	88

HOURLY VALUES OF fEs AT Okinawa

MAR. 2014

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

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

MAR. 2014

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	17	15	16	16	15	18	15	21	18	21	40	40	43	45	50	40	22	17	16	14	14	20	16	22
2	20	15	15	15	15	16	15	20	18	21	40	43	42	43	54	43	38	17	17	16	17	15	15	15
3	17	15	14	15	15	15	18	21	18	18	40	44	53	48	51	54	40	21	22	14	17	17	16	20
4	18	15	15	15	15	15	15	15	15	35	40	40	43	53	58	44	39	18	23	16	15	14	16	17
5	15	17	18	17	15	B	18	20	30	20	41	47	40	40	57	46	22	20	15	16	14	20	17	18
6	16	18	15	16	15	15	16	21	29	35	40	42	51	50	48	34	42	20	22	22	17	17	16	16
7	16	15	17	16	17	20	B	21	14	20	40	49	44	42	39	32	24	20	15	16	22	14	16	18
8	16	17	16	15	17	18	18	21	20	22	27	43	47	40	40	36	18	24	17	14	21	21	21	20
9	14	15	15	21	14	16	15	21	18	38	39	50	42	40	43	38	34	21	15	16	16	16	18	21
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16	15	15	15	15	14	16	20	22	15	39	43	53	54	55	54	43	42	20	22	18	16	17	18	16
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23	15	15	15	15	14	15	15	24	15	18	28	44	43	52	42	38	20	17	14	14	14	14	14	15
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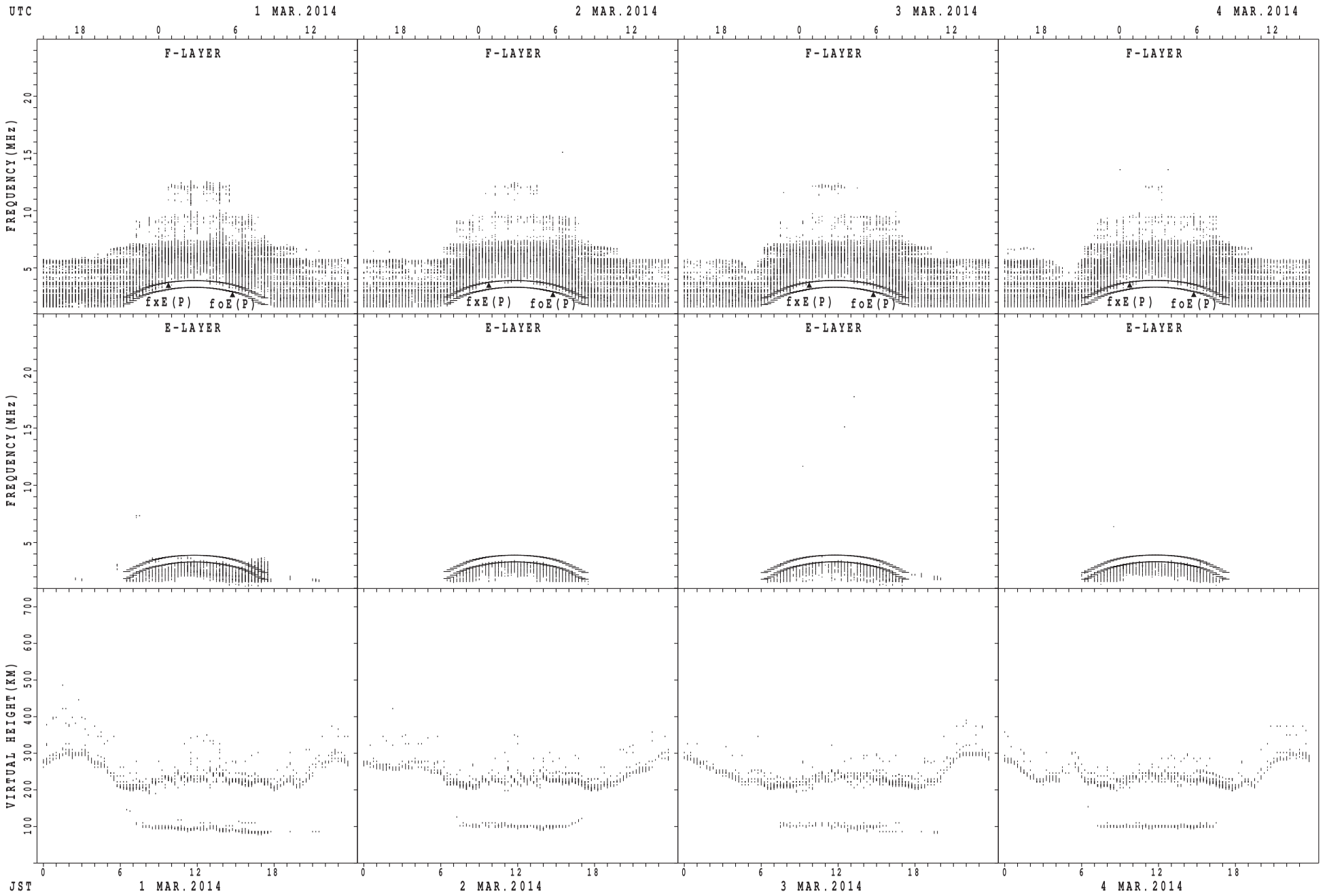
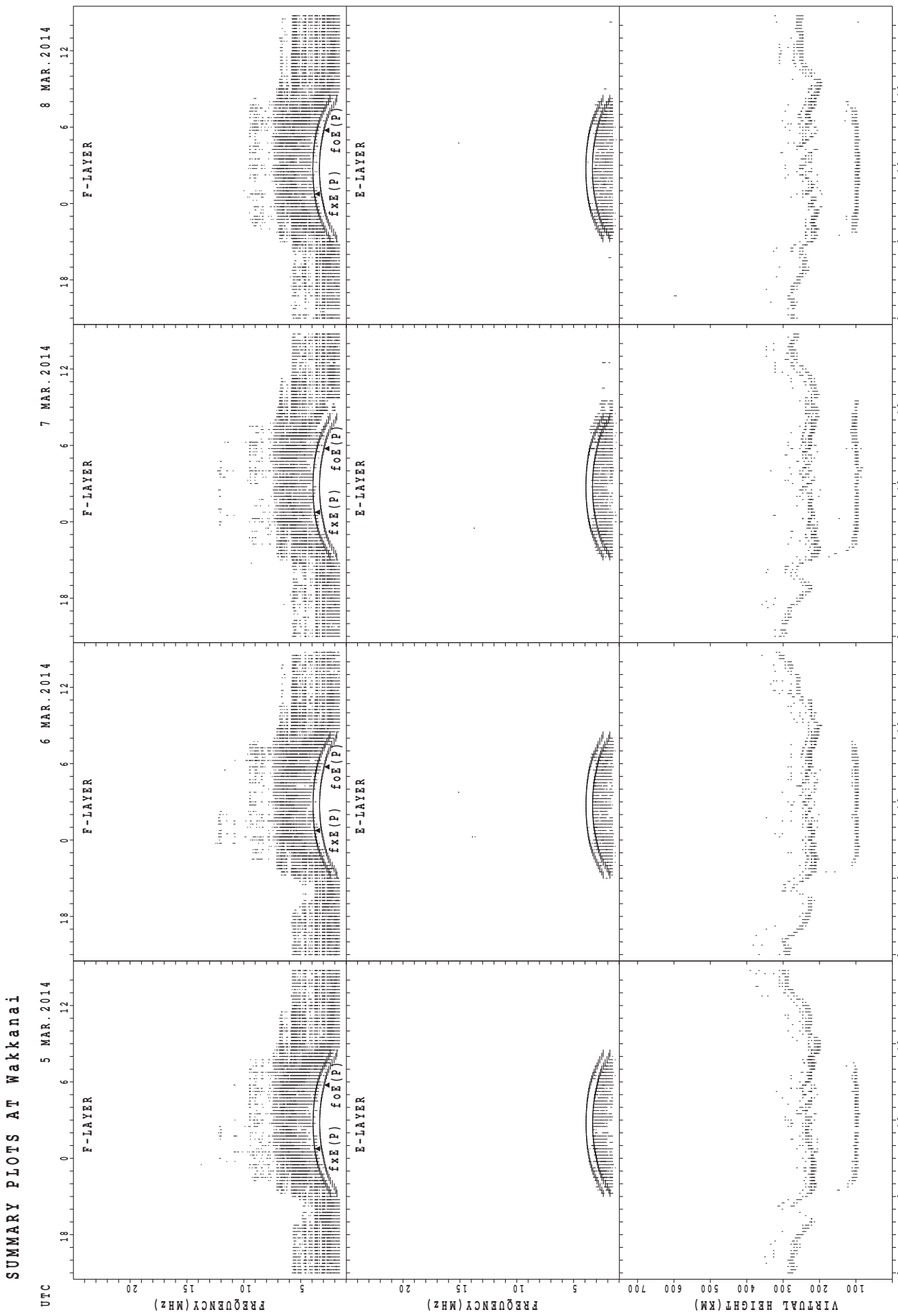
26	21	15	15	14	14	14	17	22	16	22	27	46	48	54	28	23	36	15	14	14	20	15	16	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	26	26	26	26	24	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25
MED	16	15	15	15	15	15	16	22	18	22	40	44	48	48	46	40	38	20	16	15	16	17	16	17
U Q	17	16	16	16	15	17	17	22	18	35	40	48	54	54	53	43	39	21	18	16	17	20	18	18
L Q	15	15	15	15	15	15	15	21	15	21	29	43	43	43	42	38	24	17	14	14	15	15	15	15

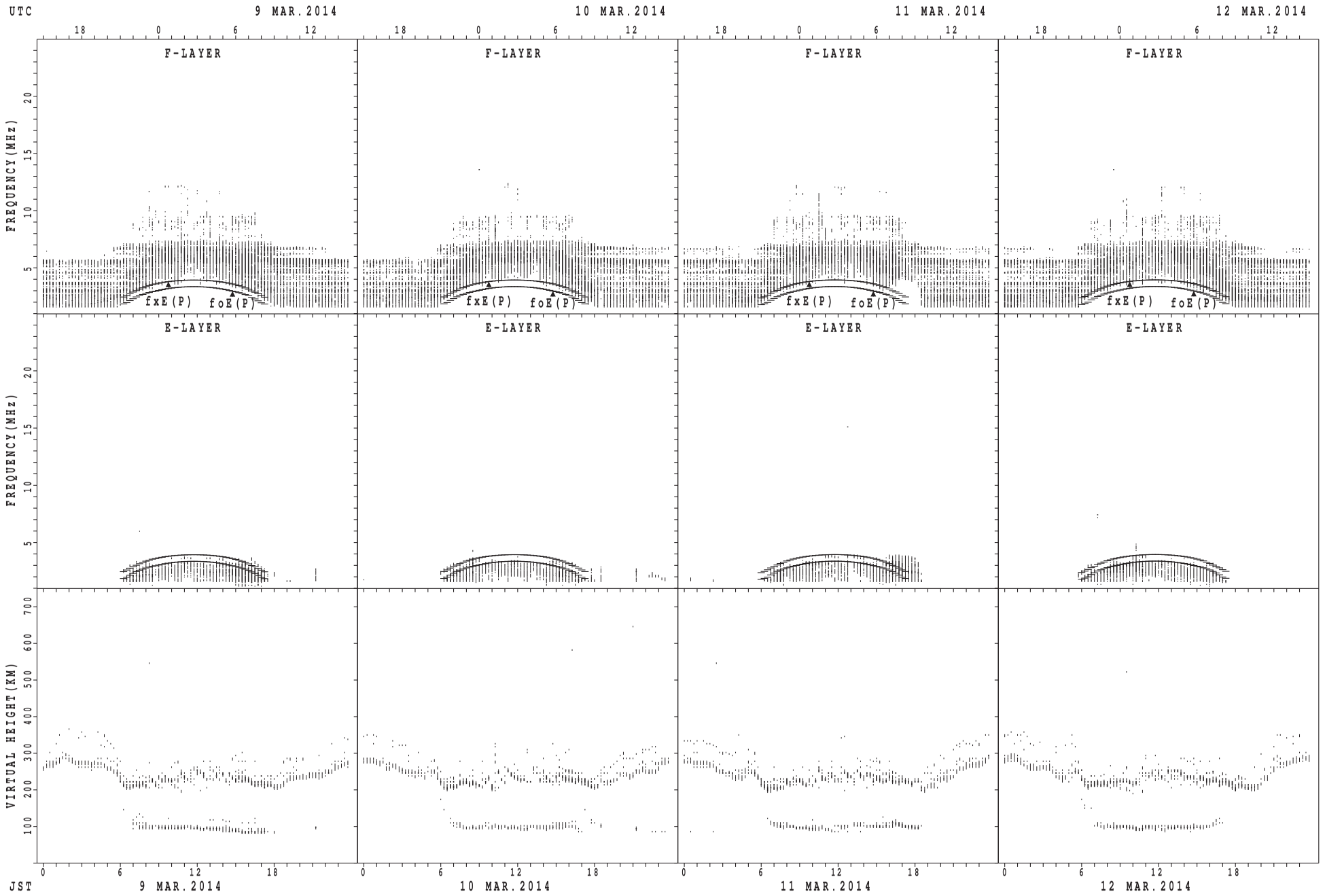
SUMMARY PLOTS AT Wakkanai



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

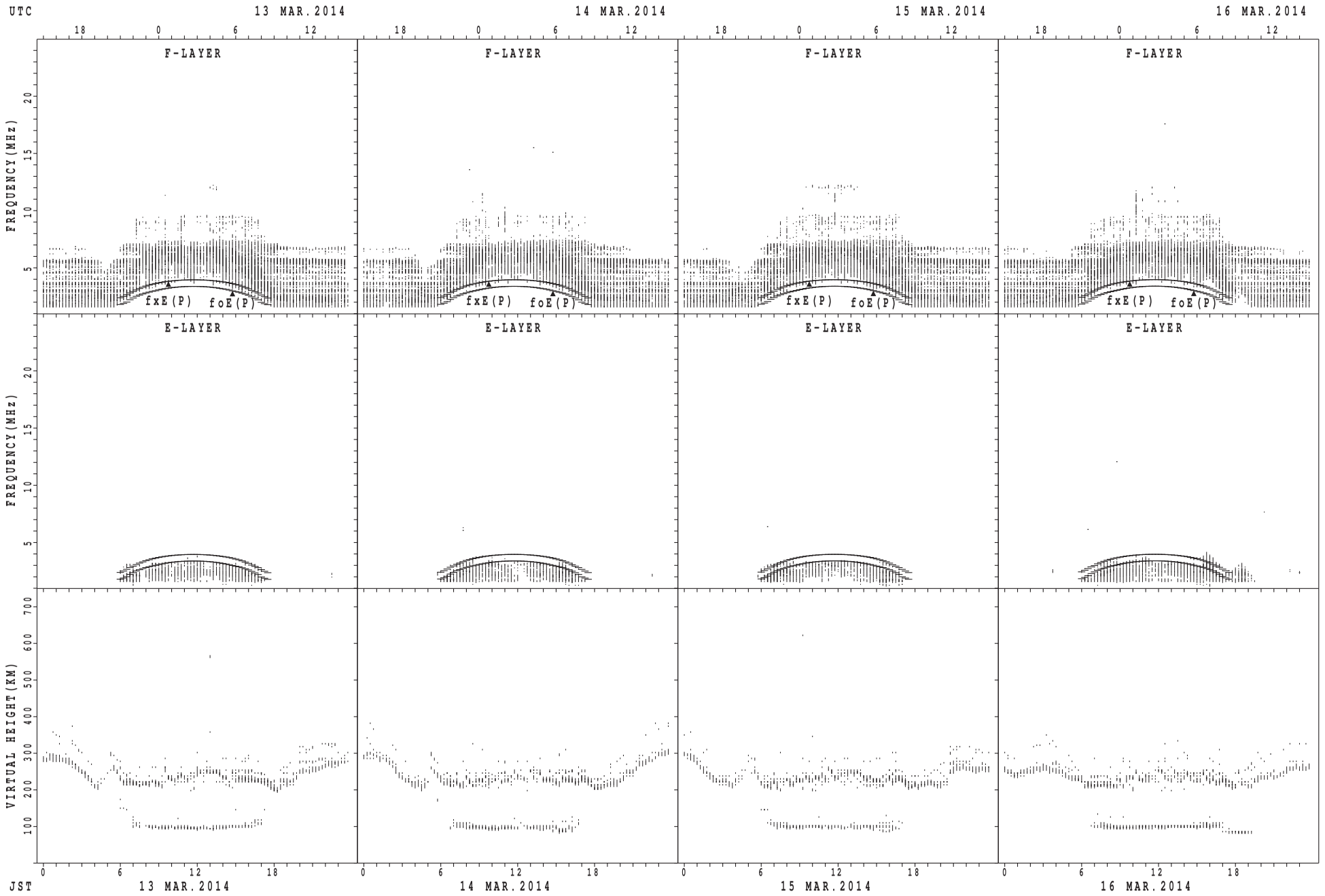

SUMMARY PLOTS AT Wakkanai
UTC
JST
5 MAR.2014
6 MAR.2014
7 MAR.2014
8 MAR.2014
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



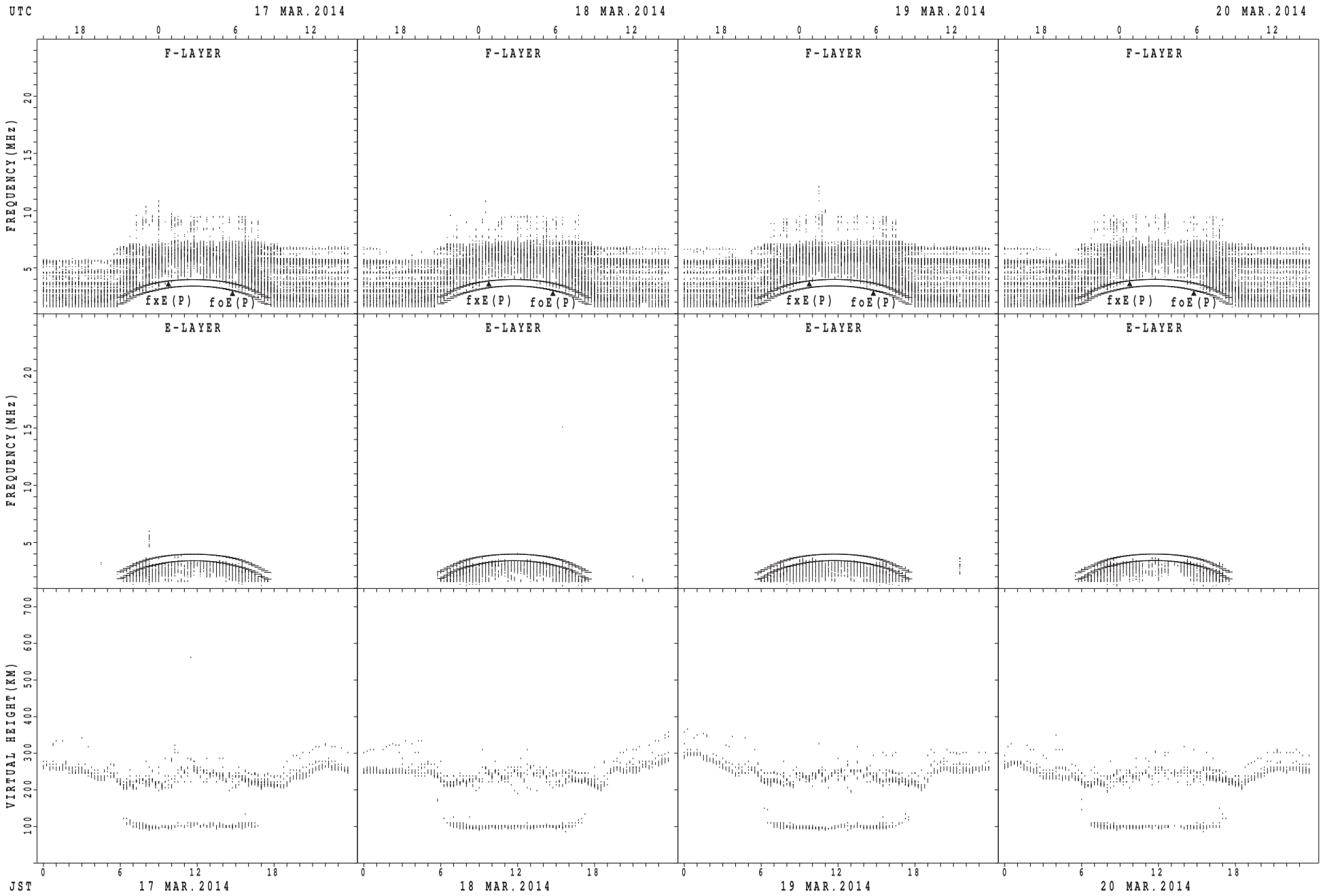
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

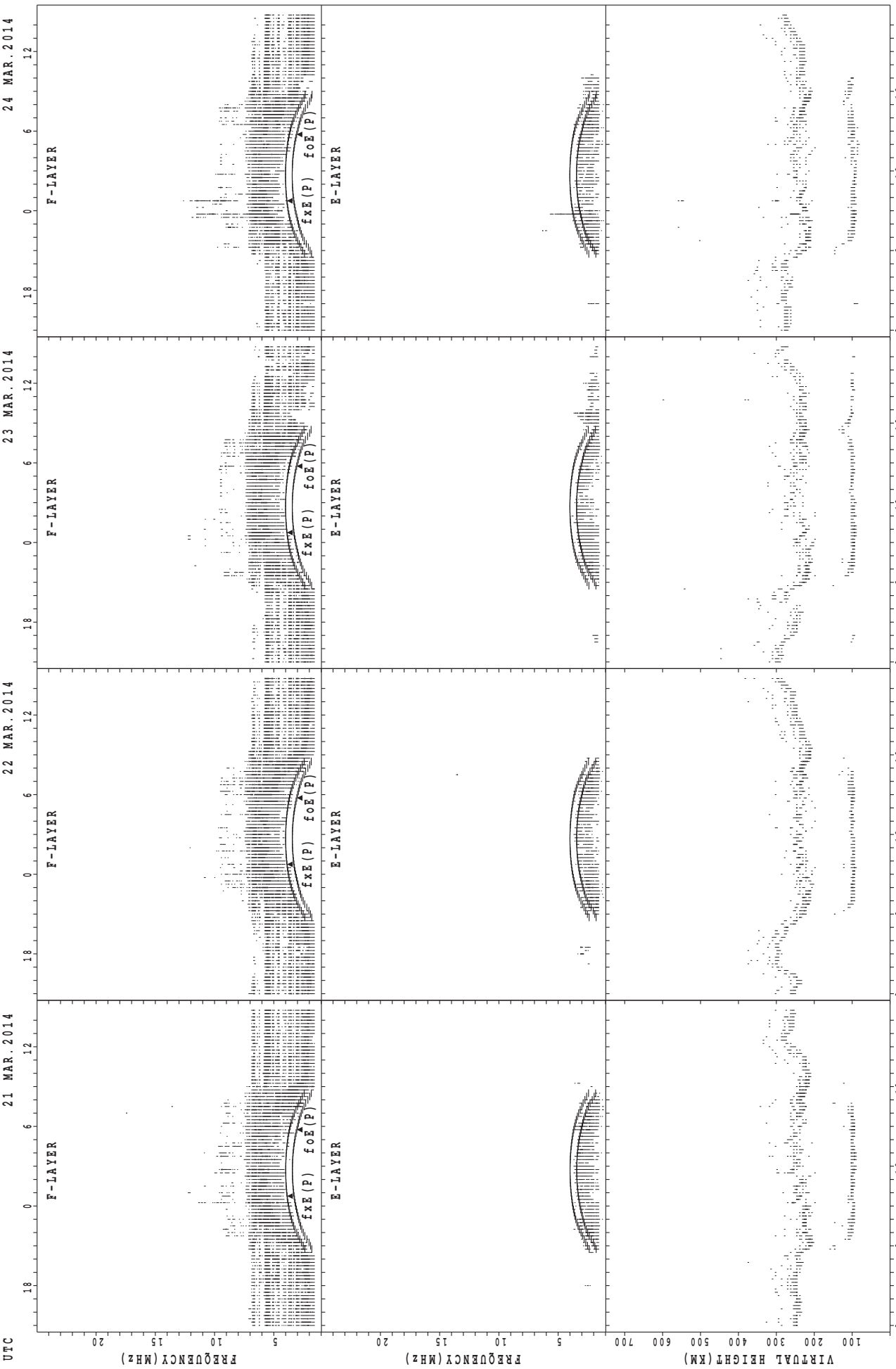


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

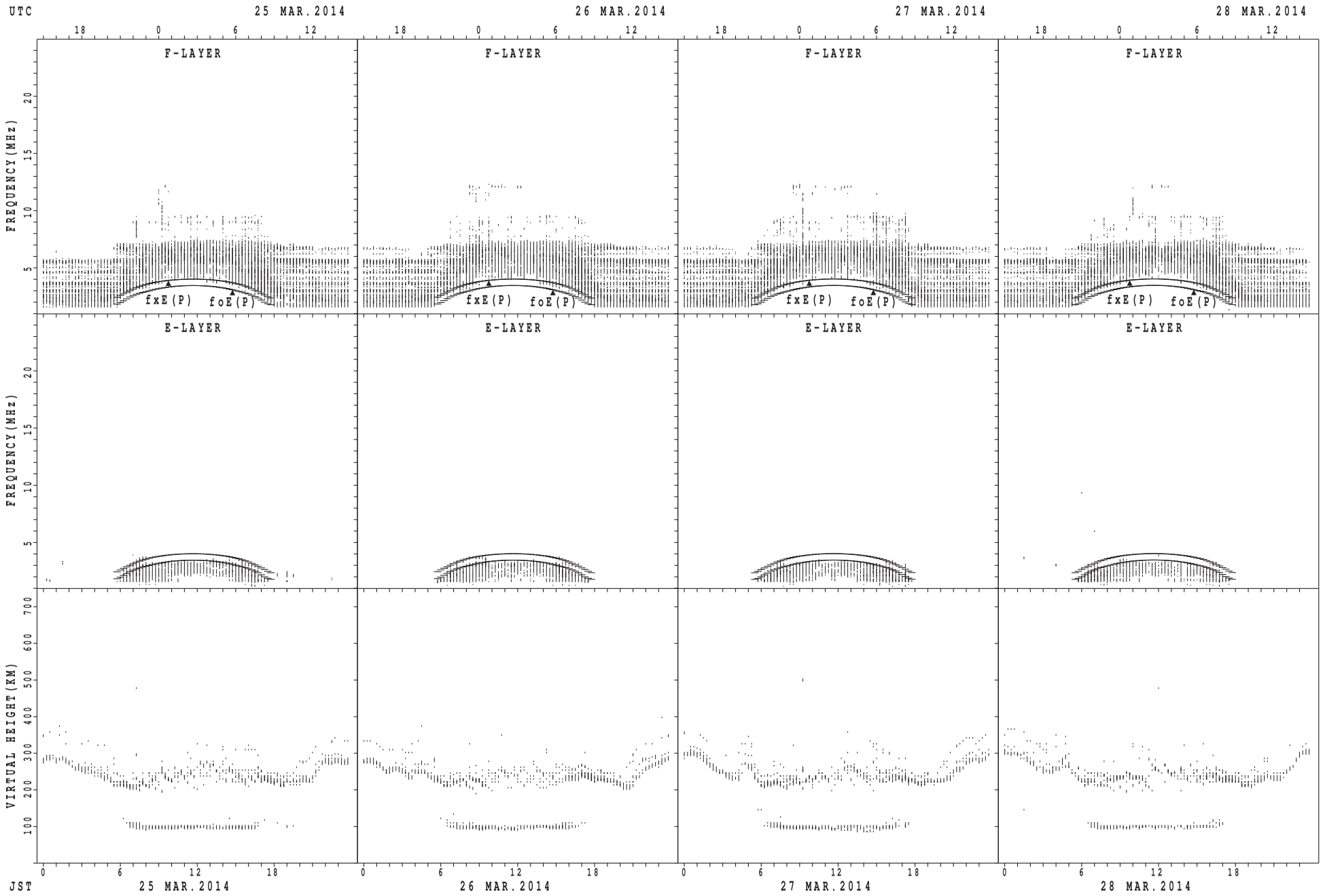
SUMMARY PLOTS AT Wakkanai



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

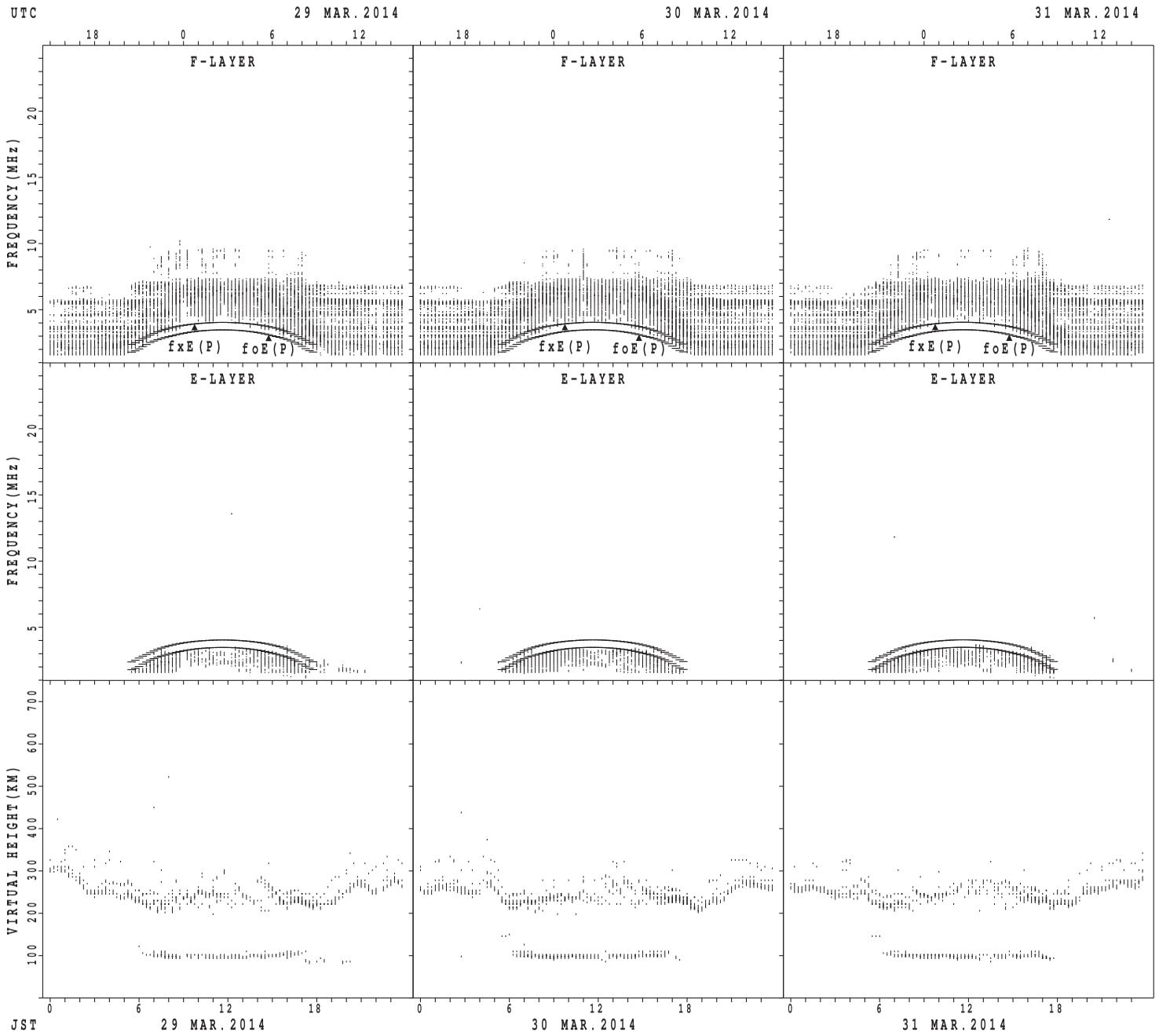

SUMMARY PLOTS AT Wakkanai
UTC
JST
21 MAR.2014
22 MAR.2014
23 MAR.2014
24 MAR.2014
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



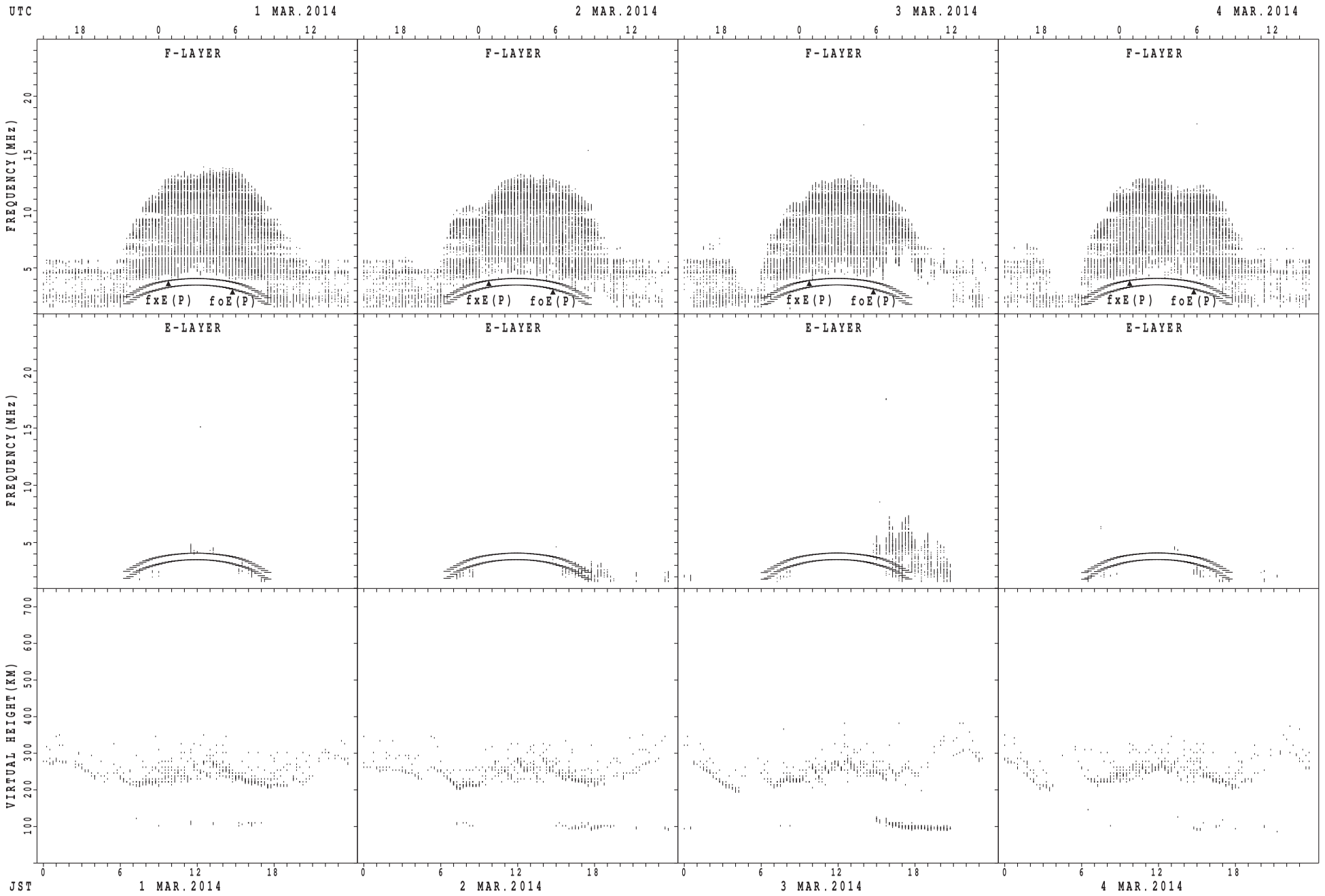
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



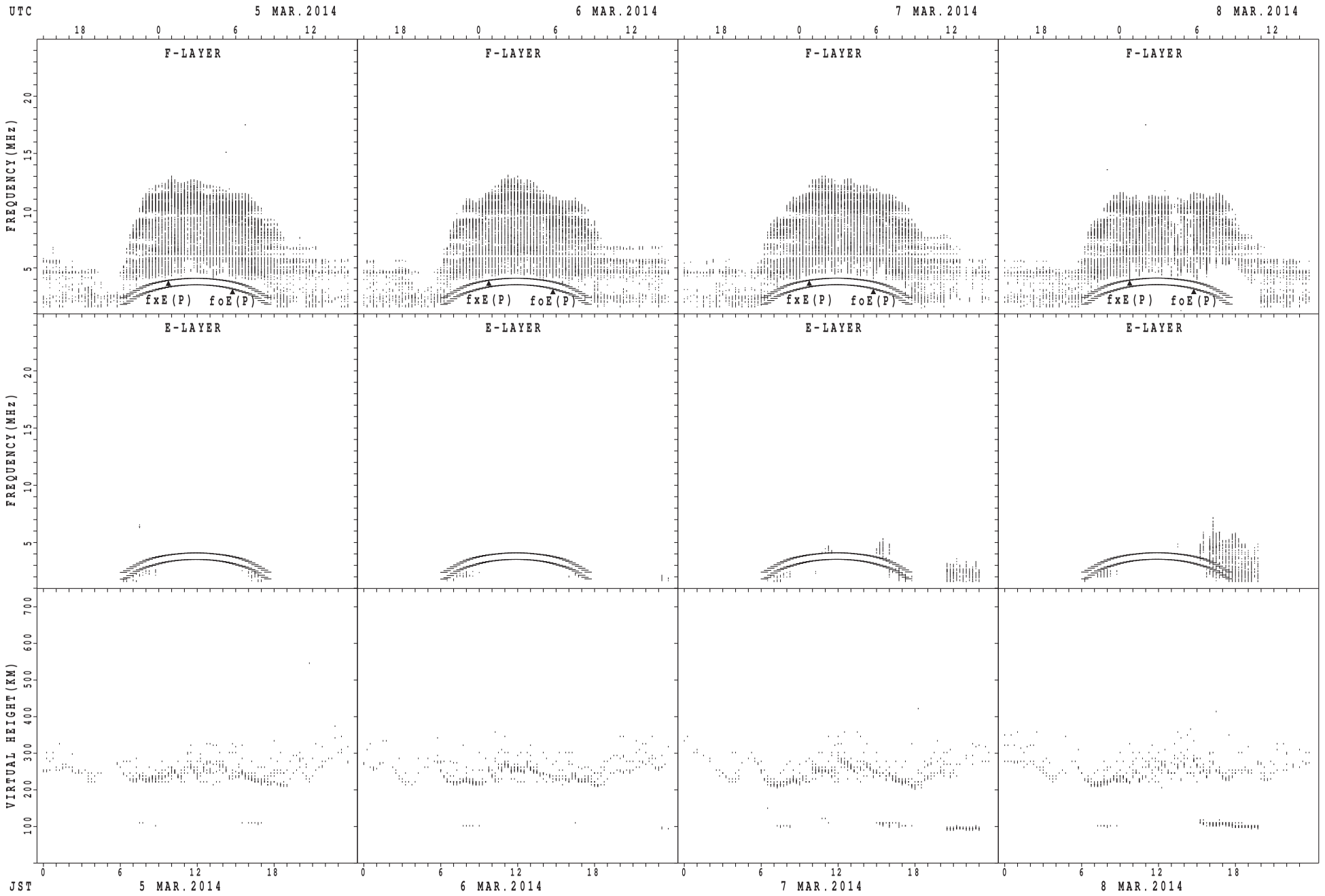
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



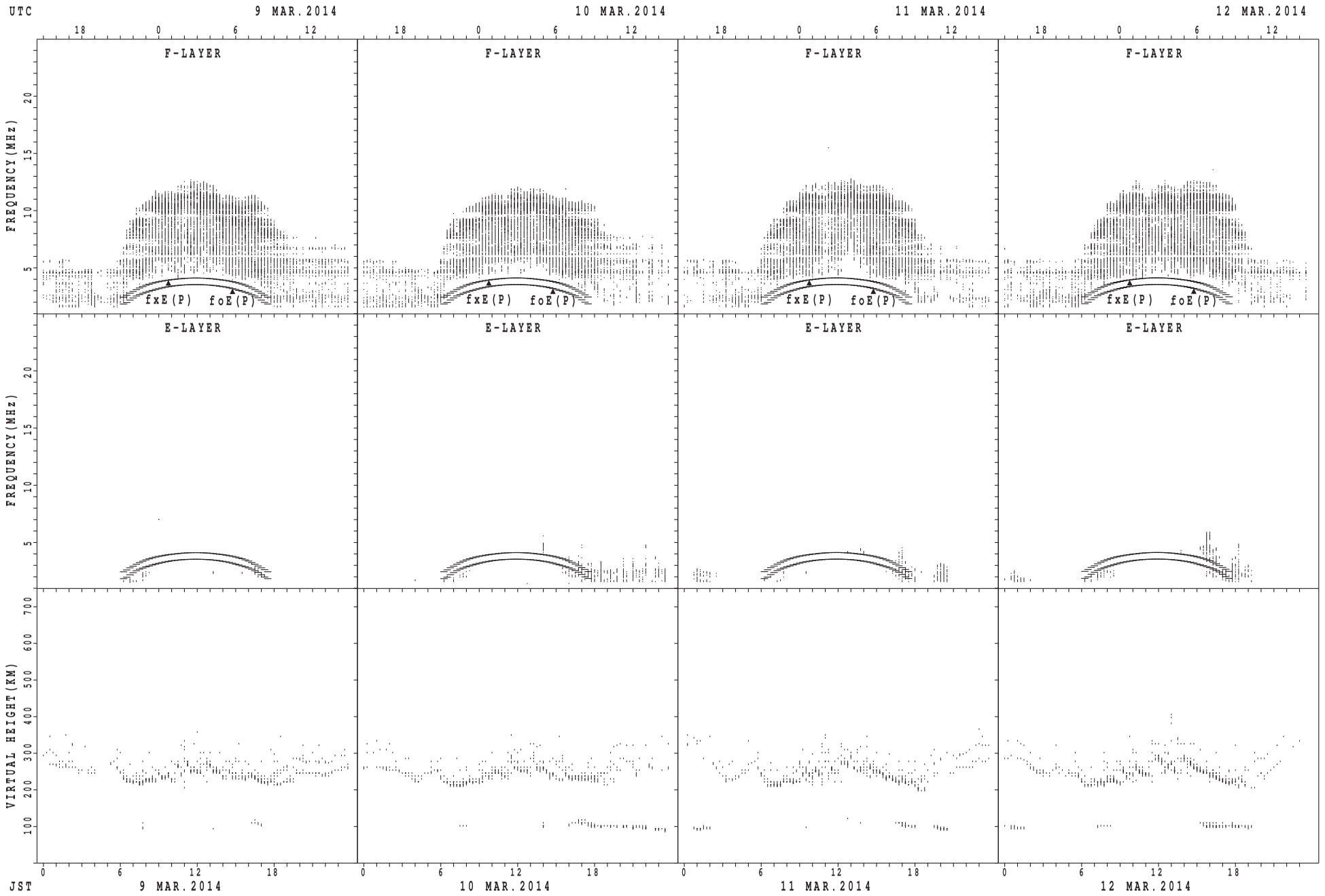
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



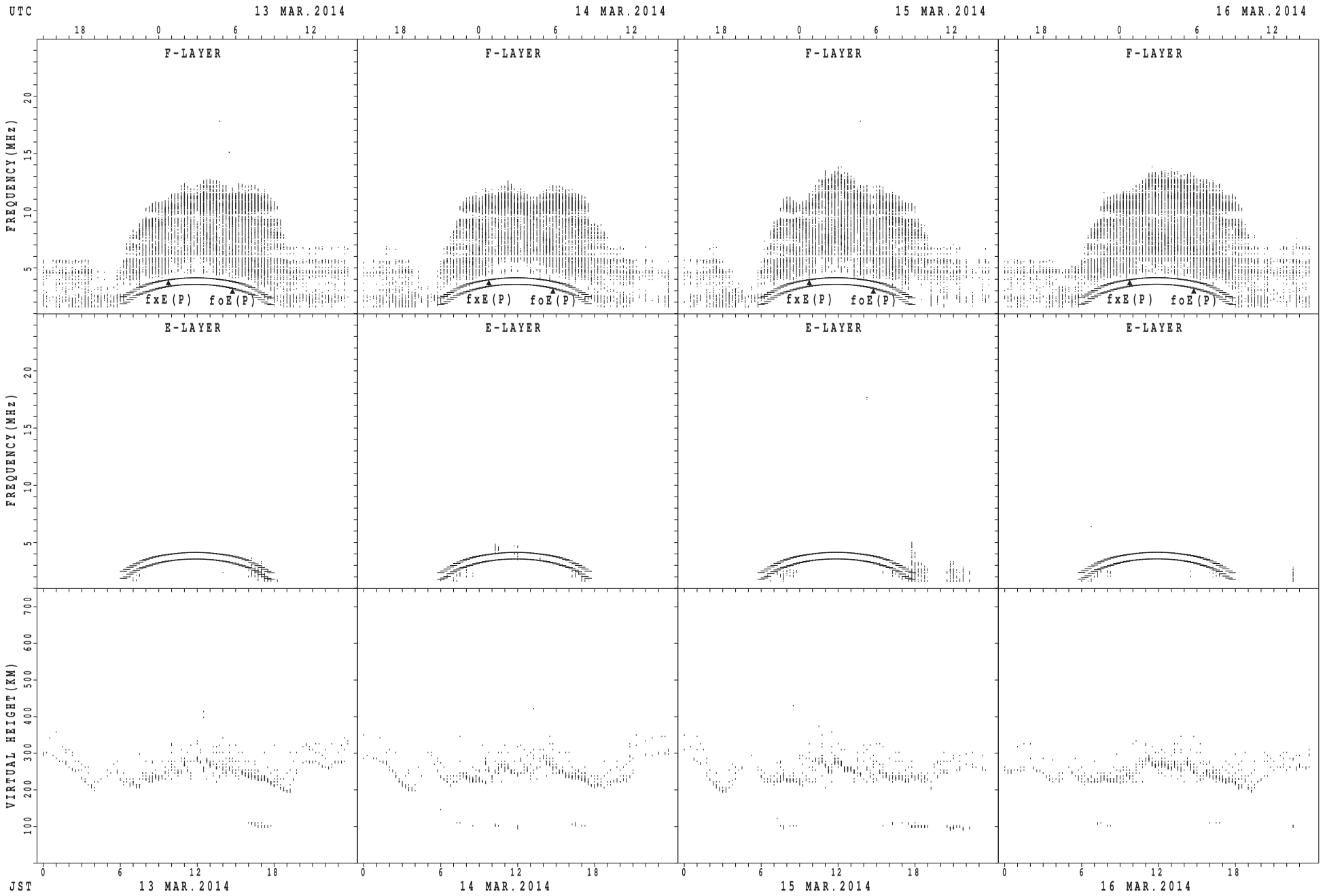
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



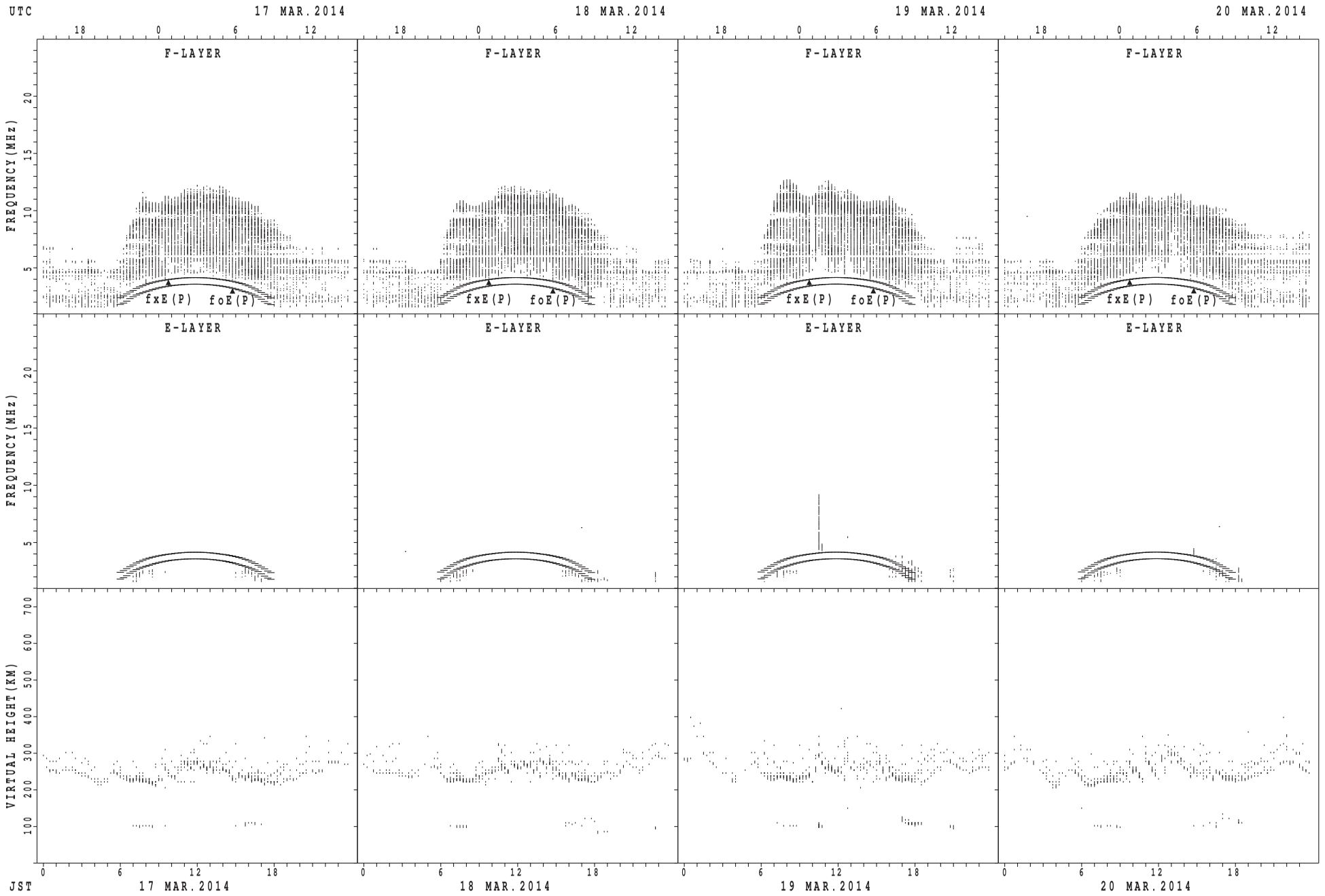
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



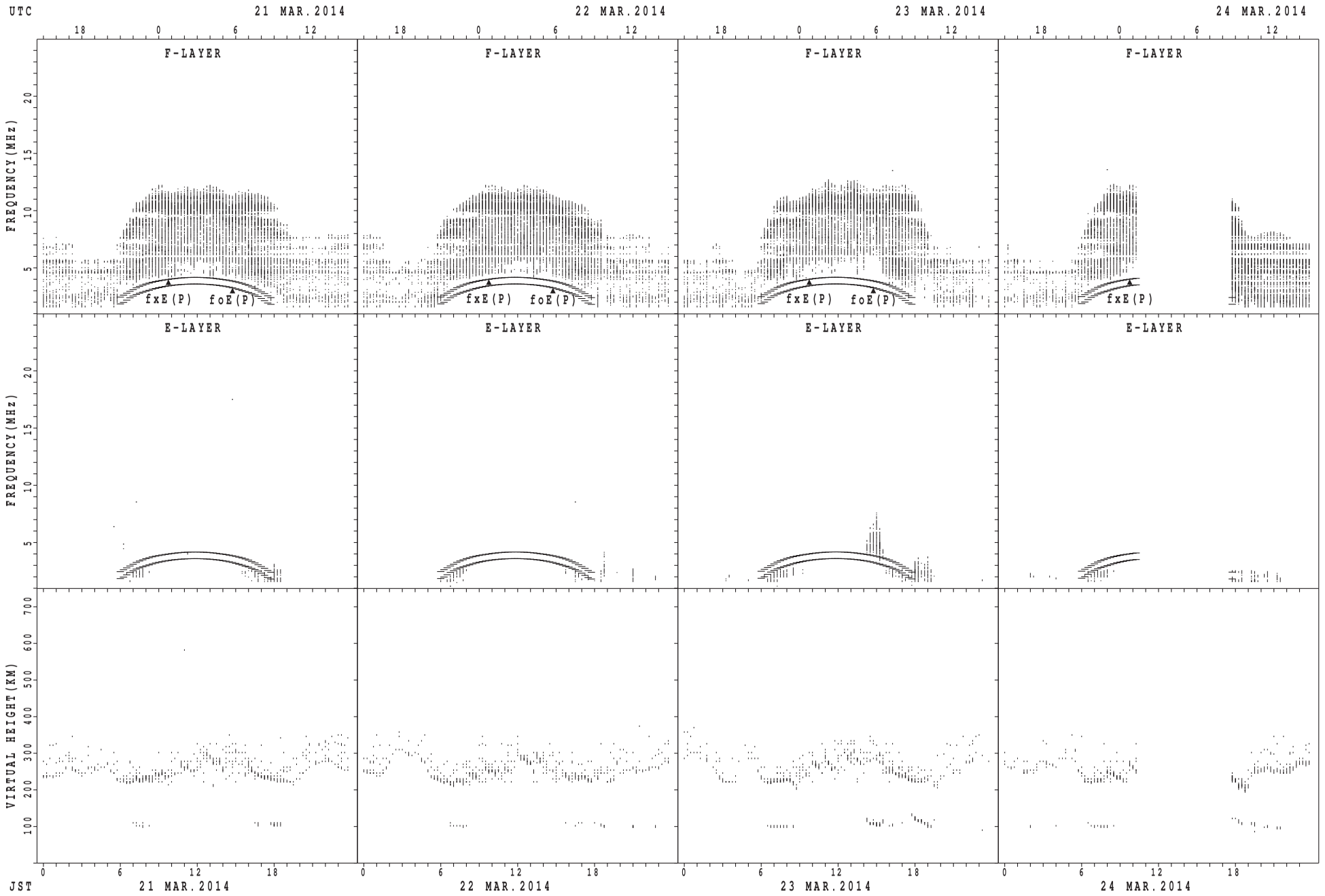
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



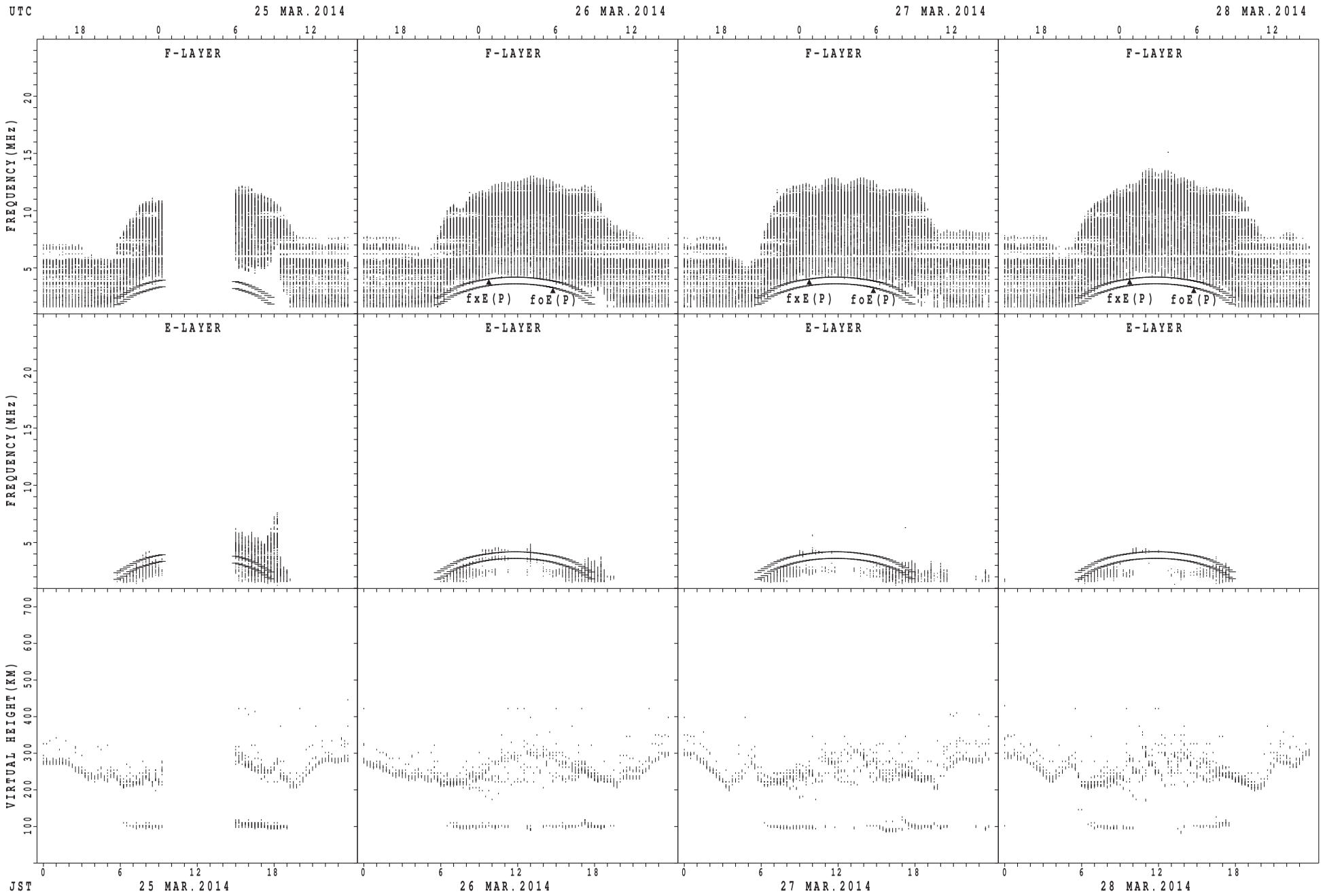
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



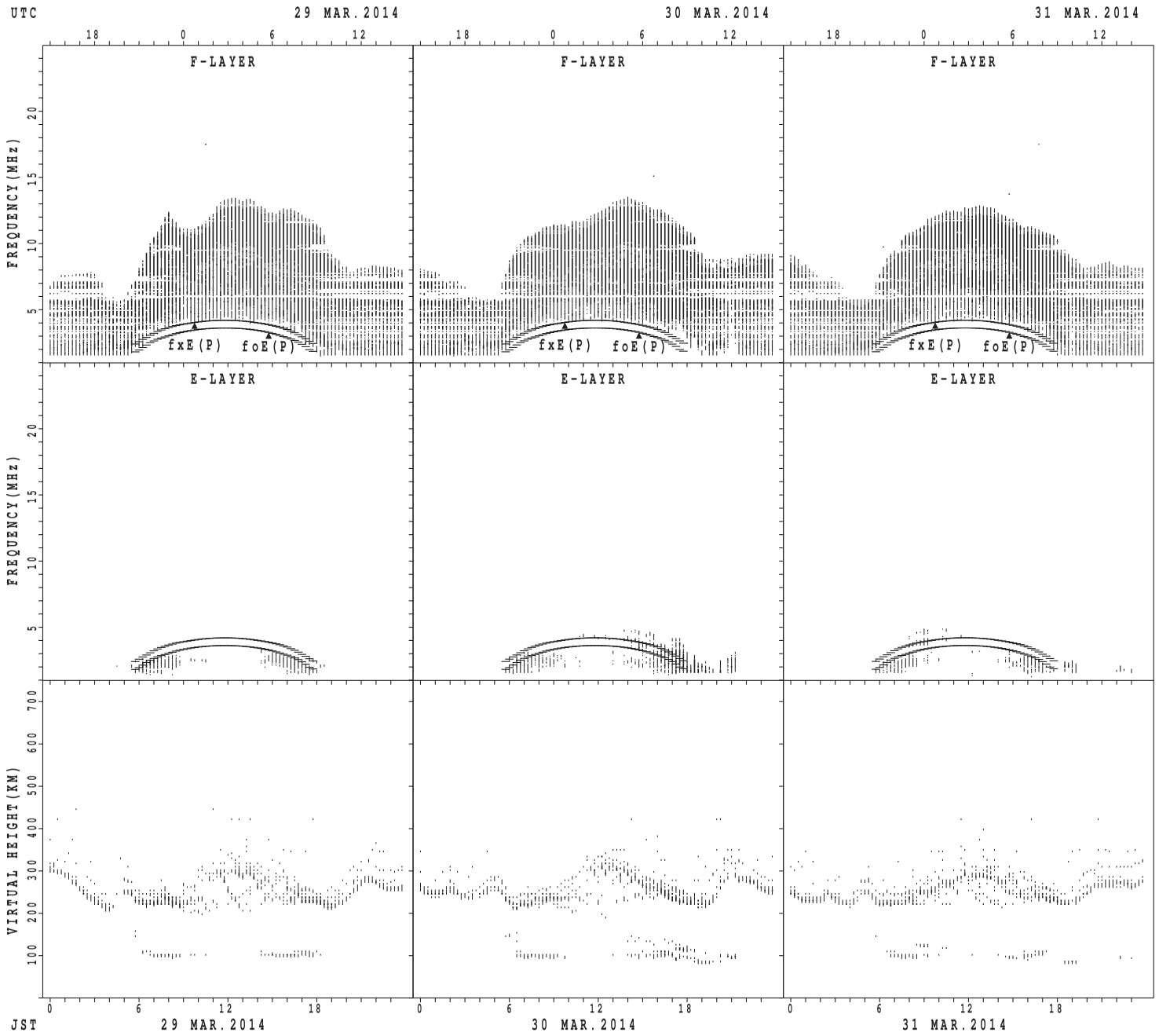
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



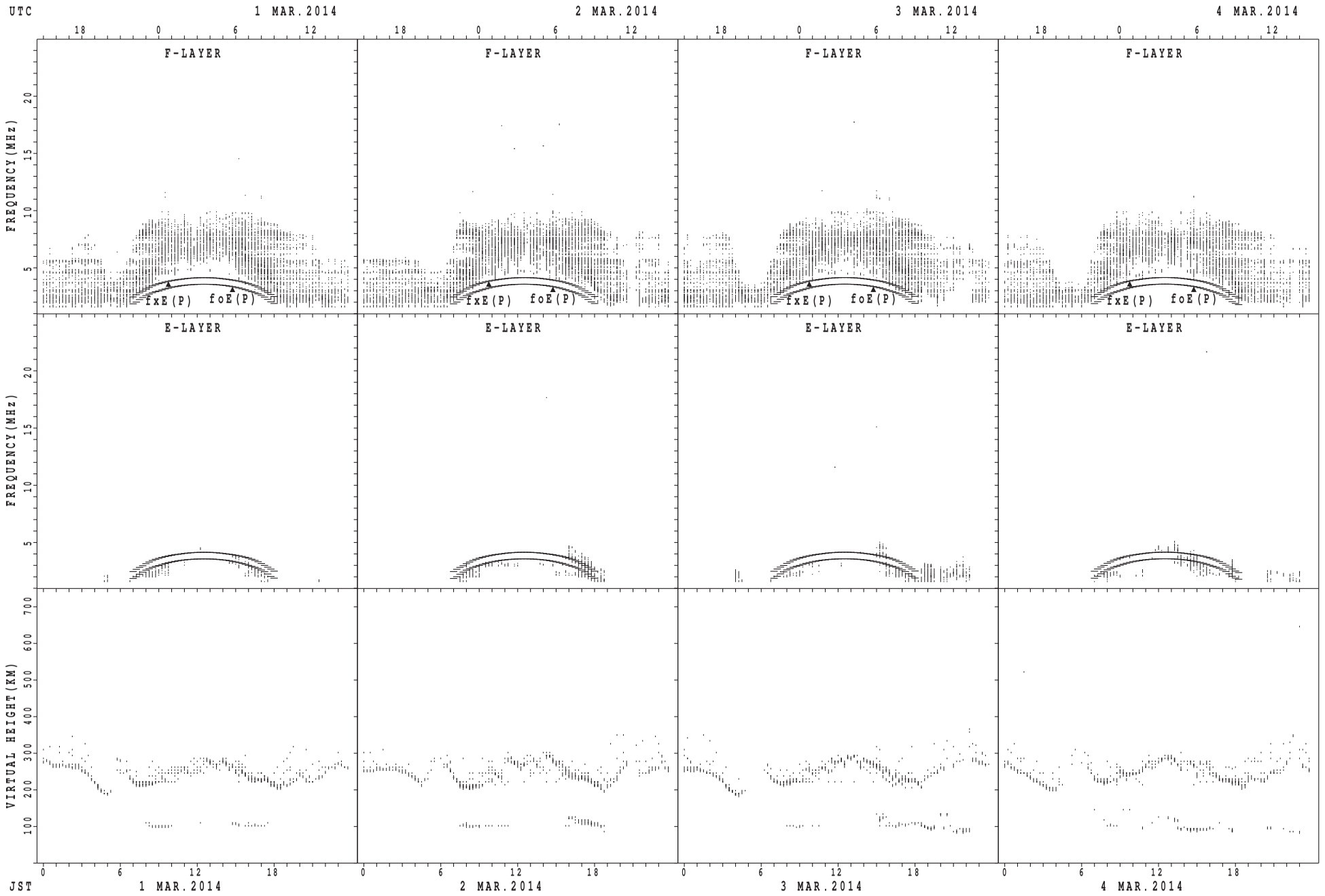
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



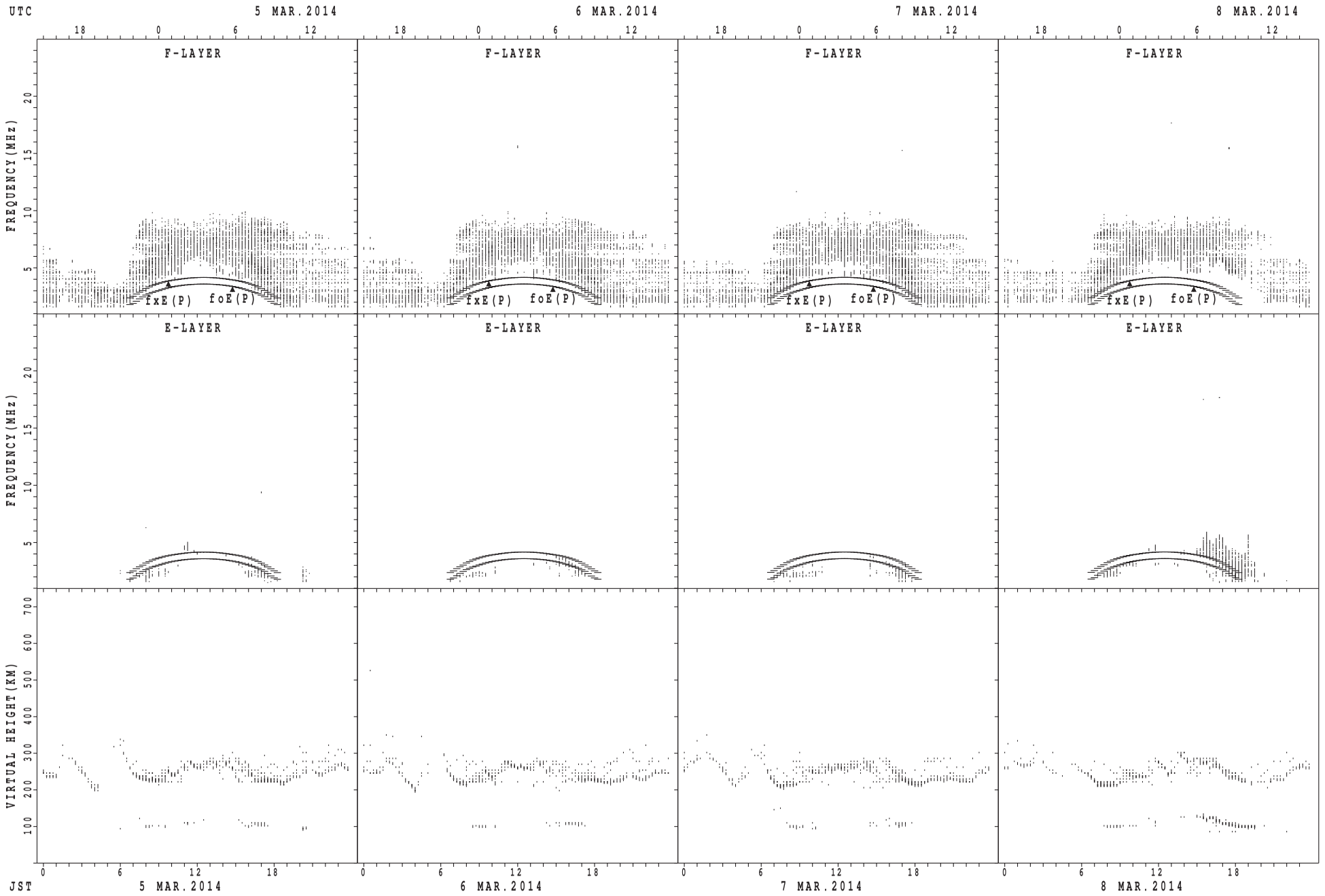
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



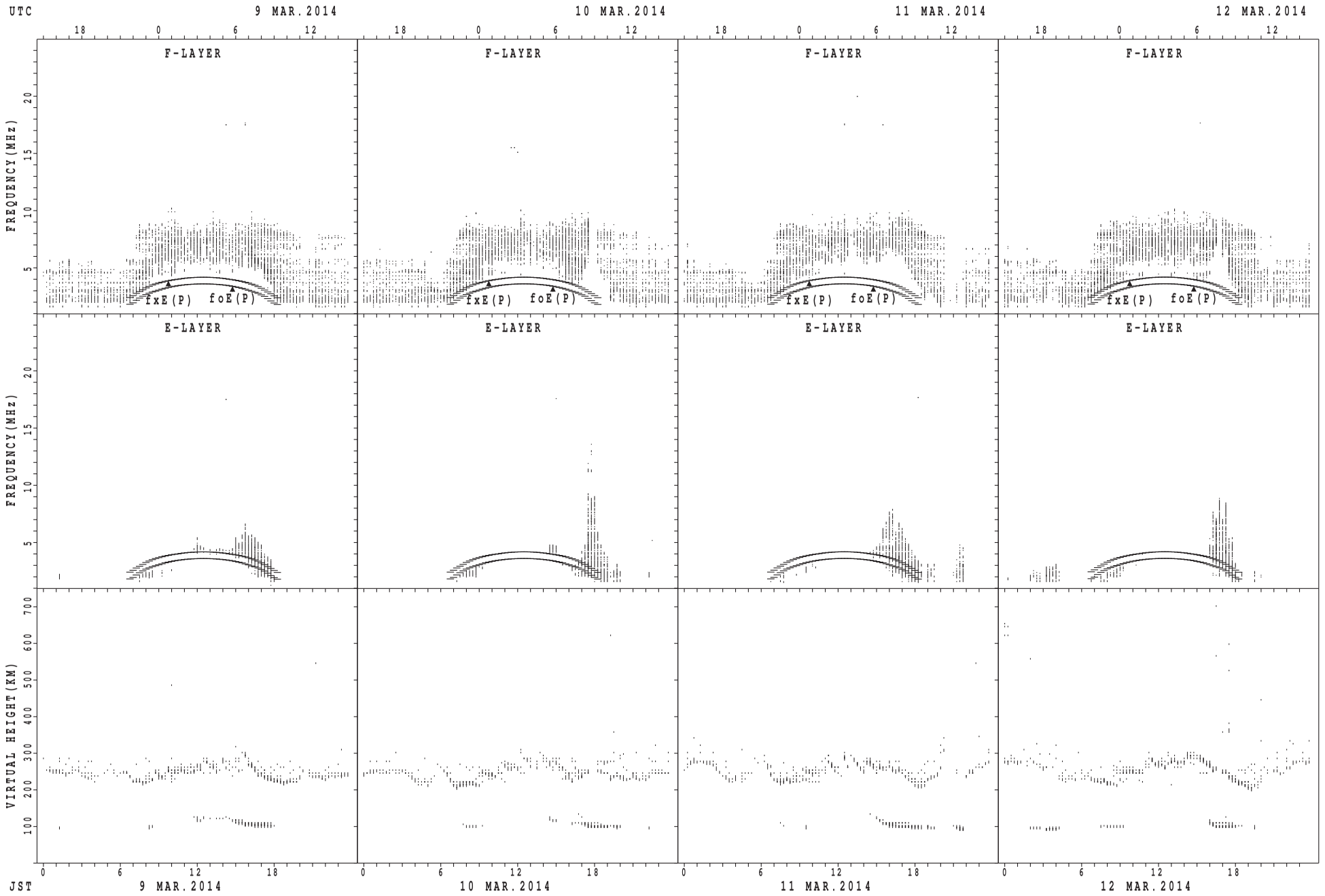
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



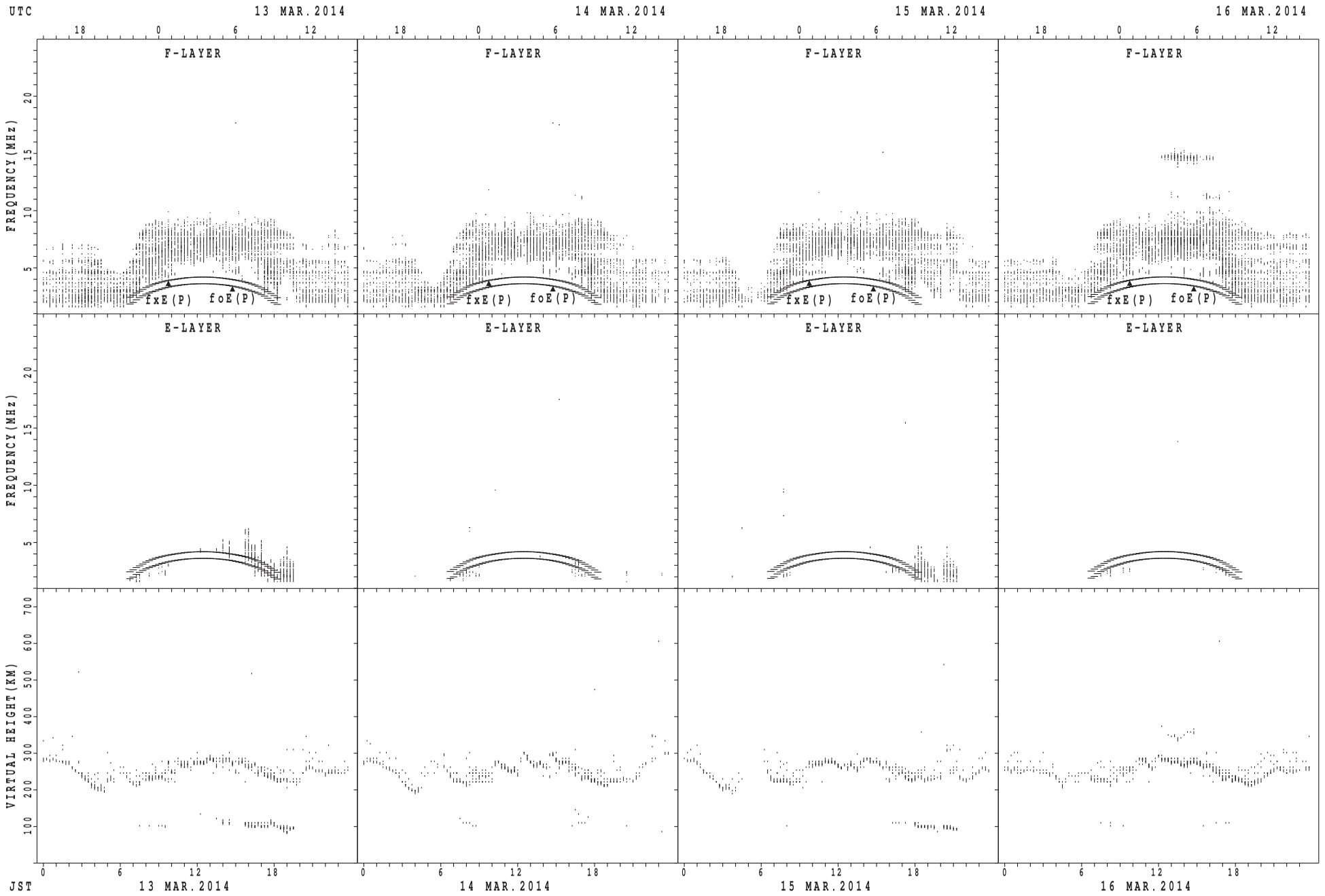
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



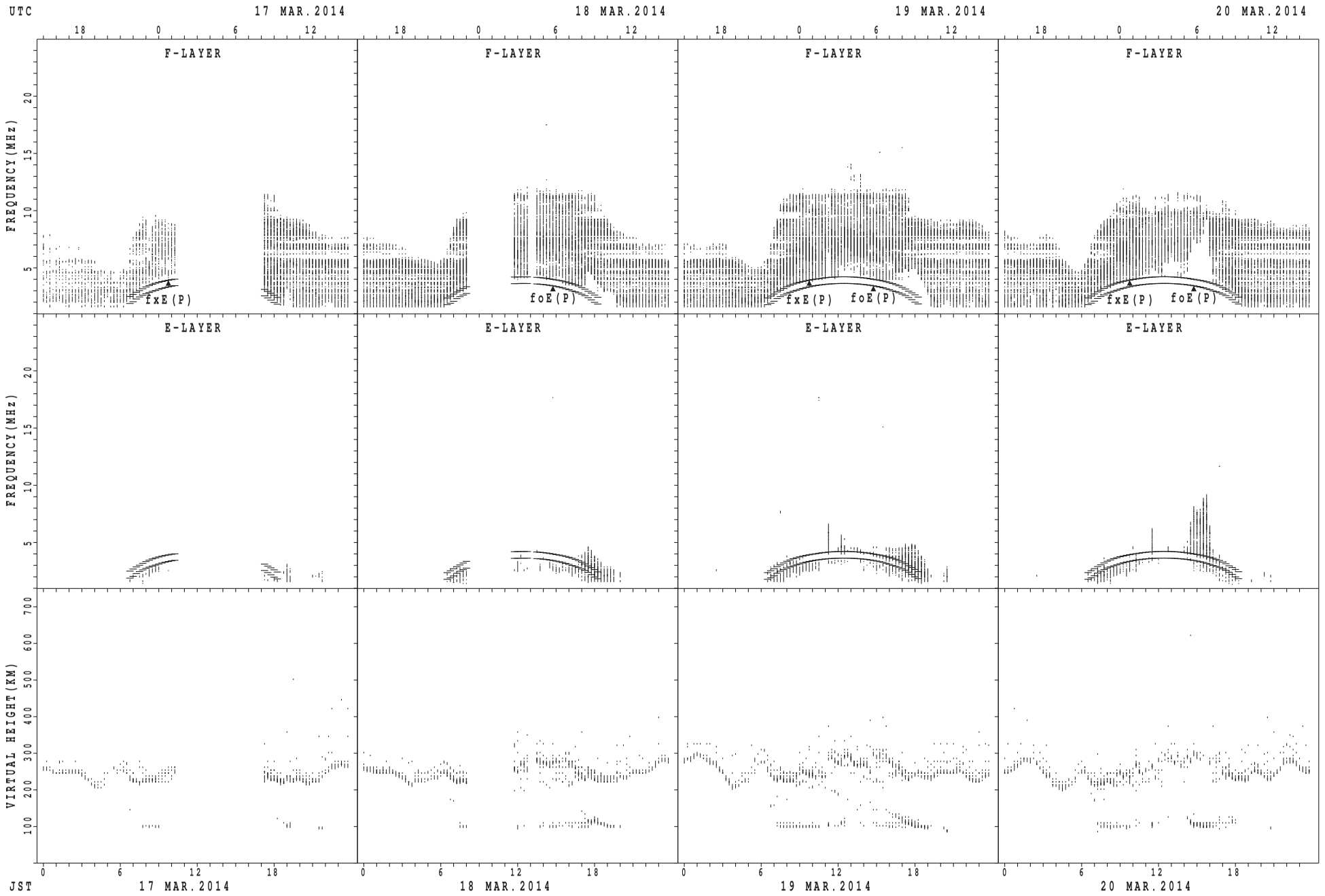
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



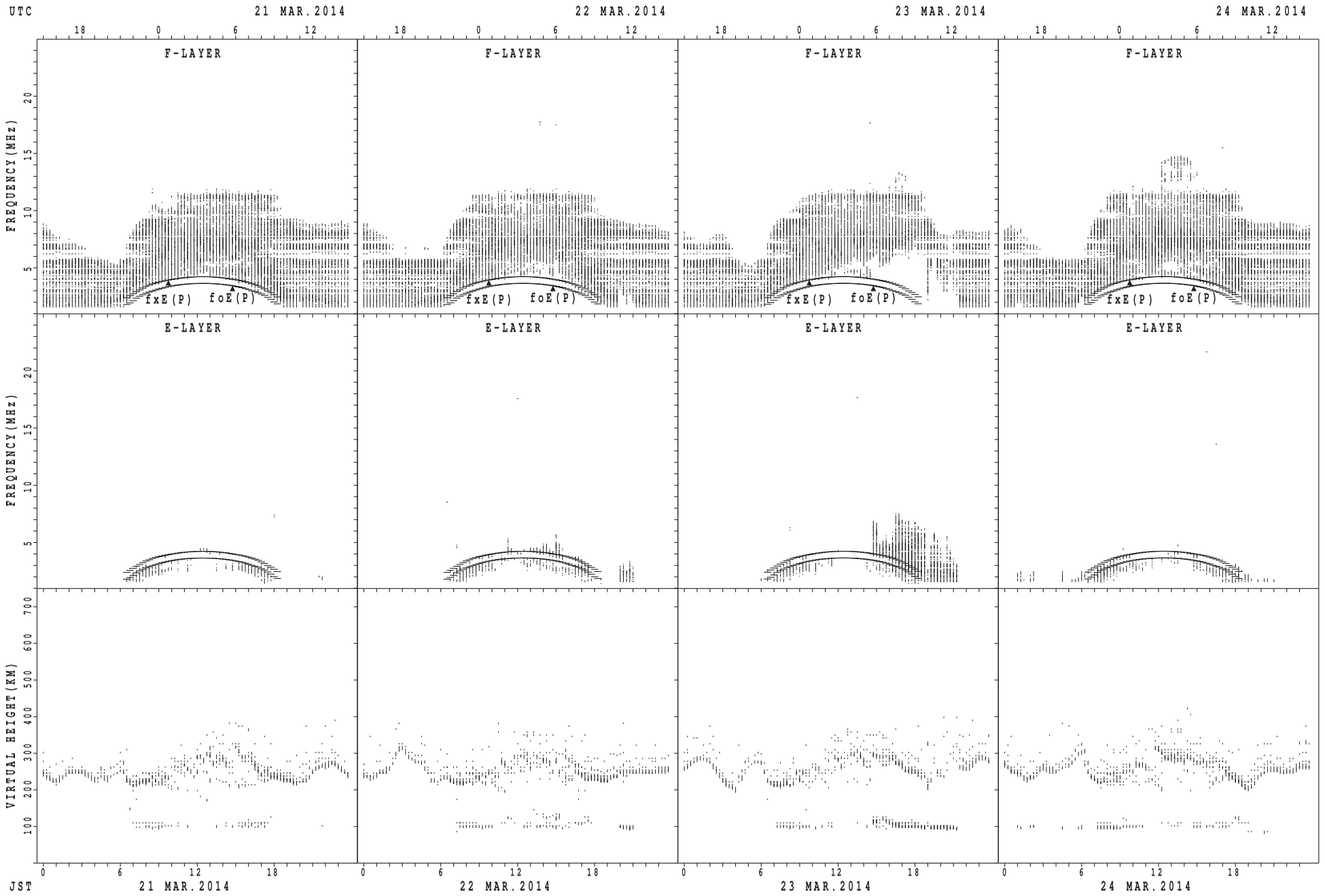
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

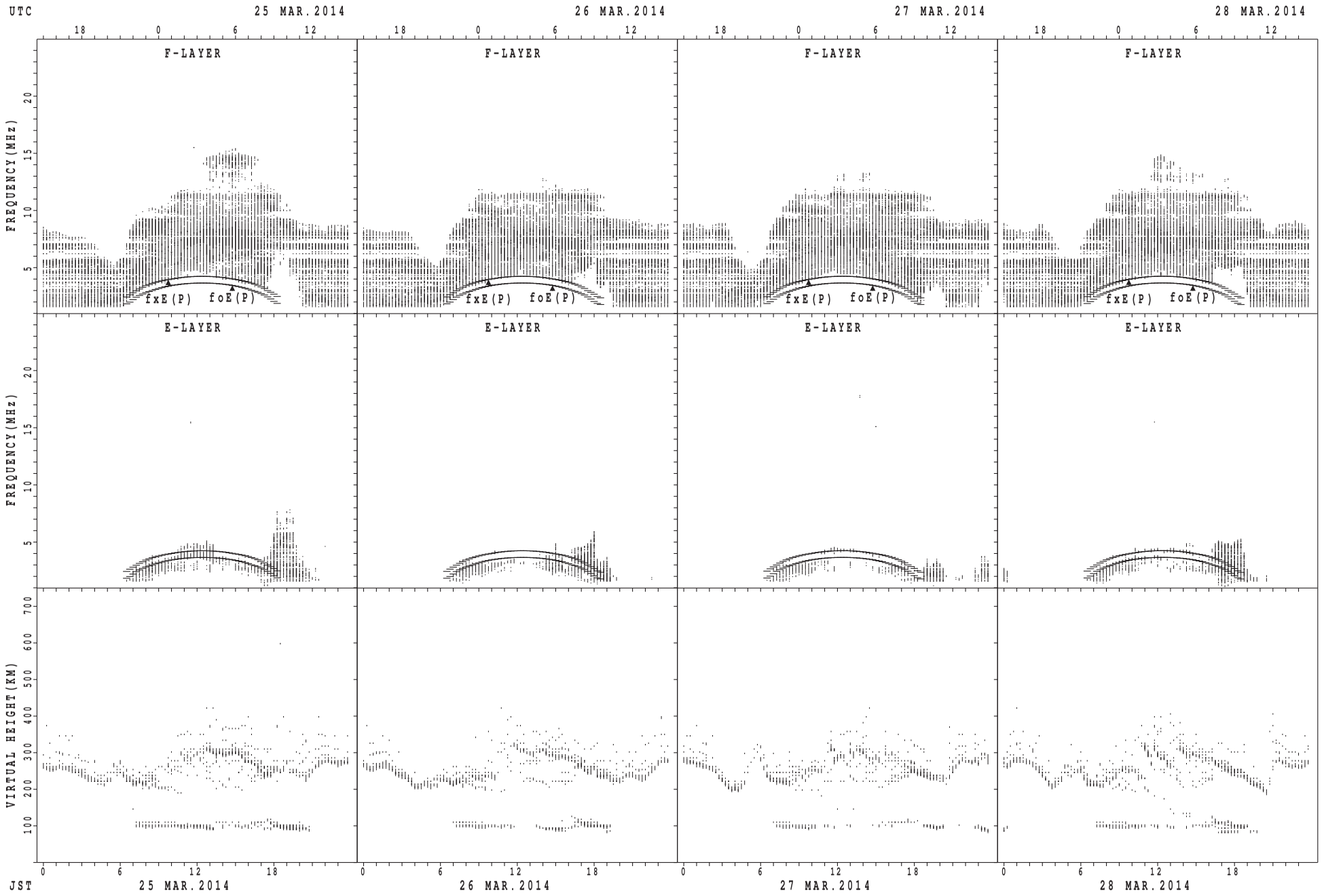


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

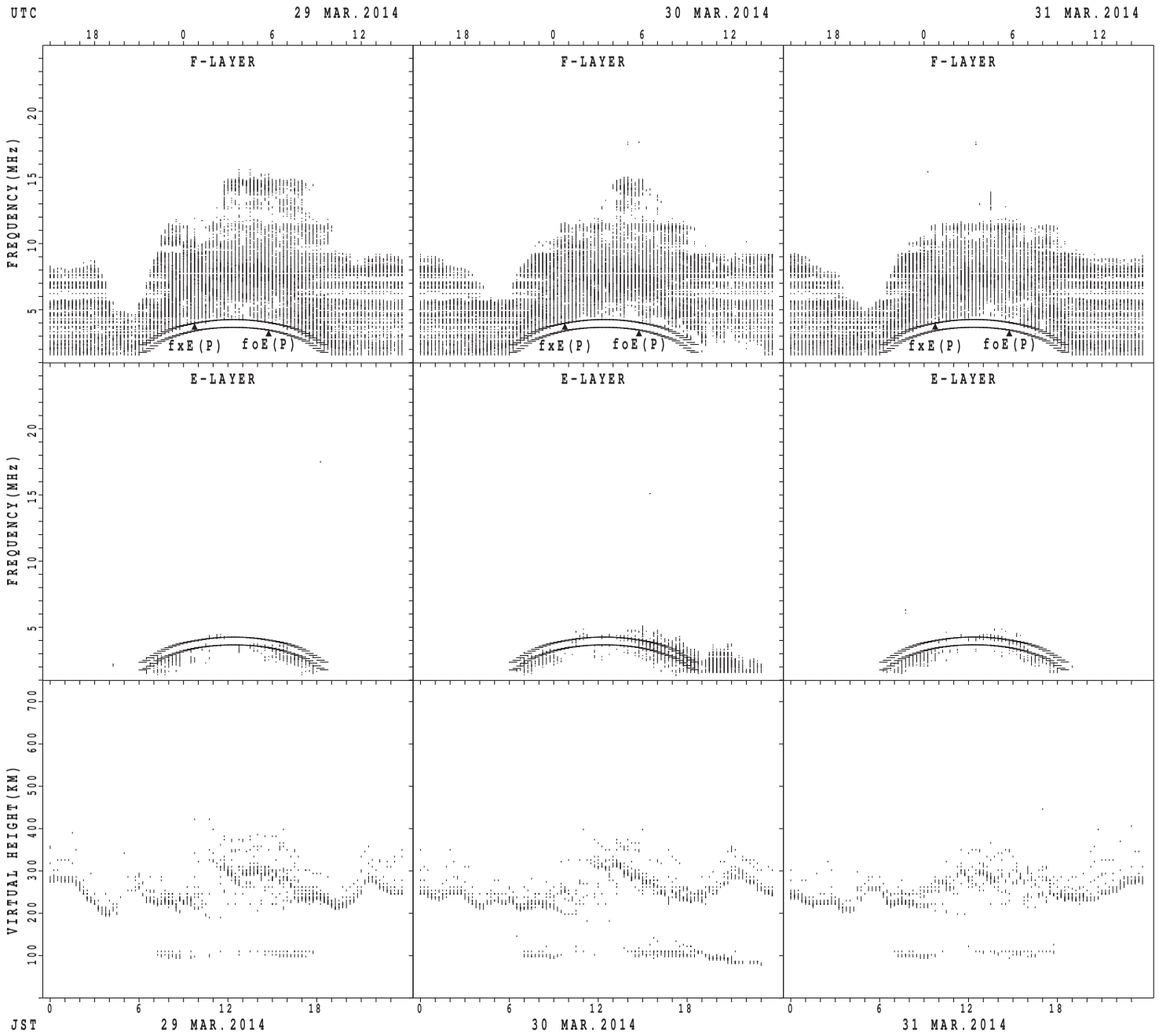


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE



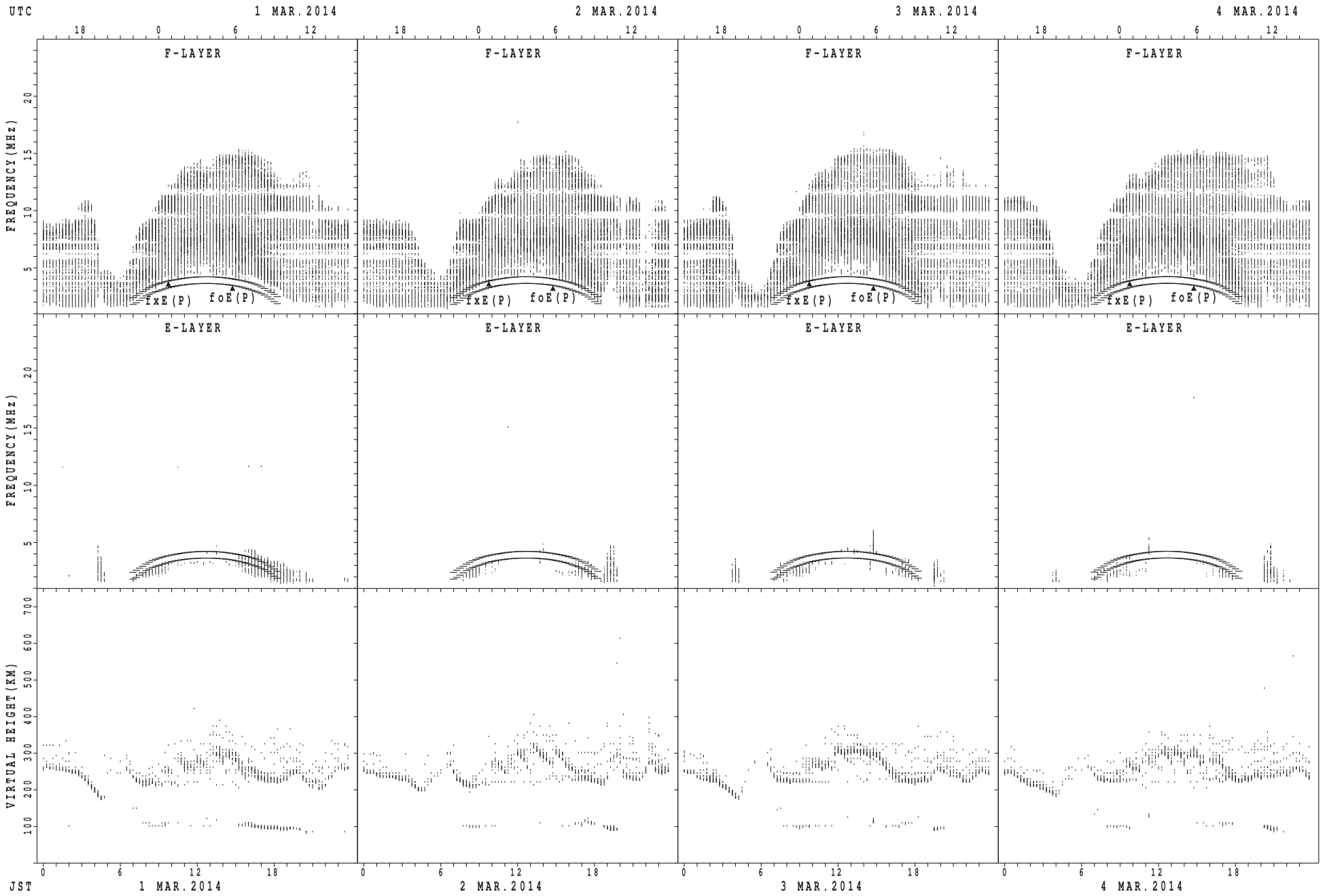
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



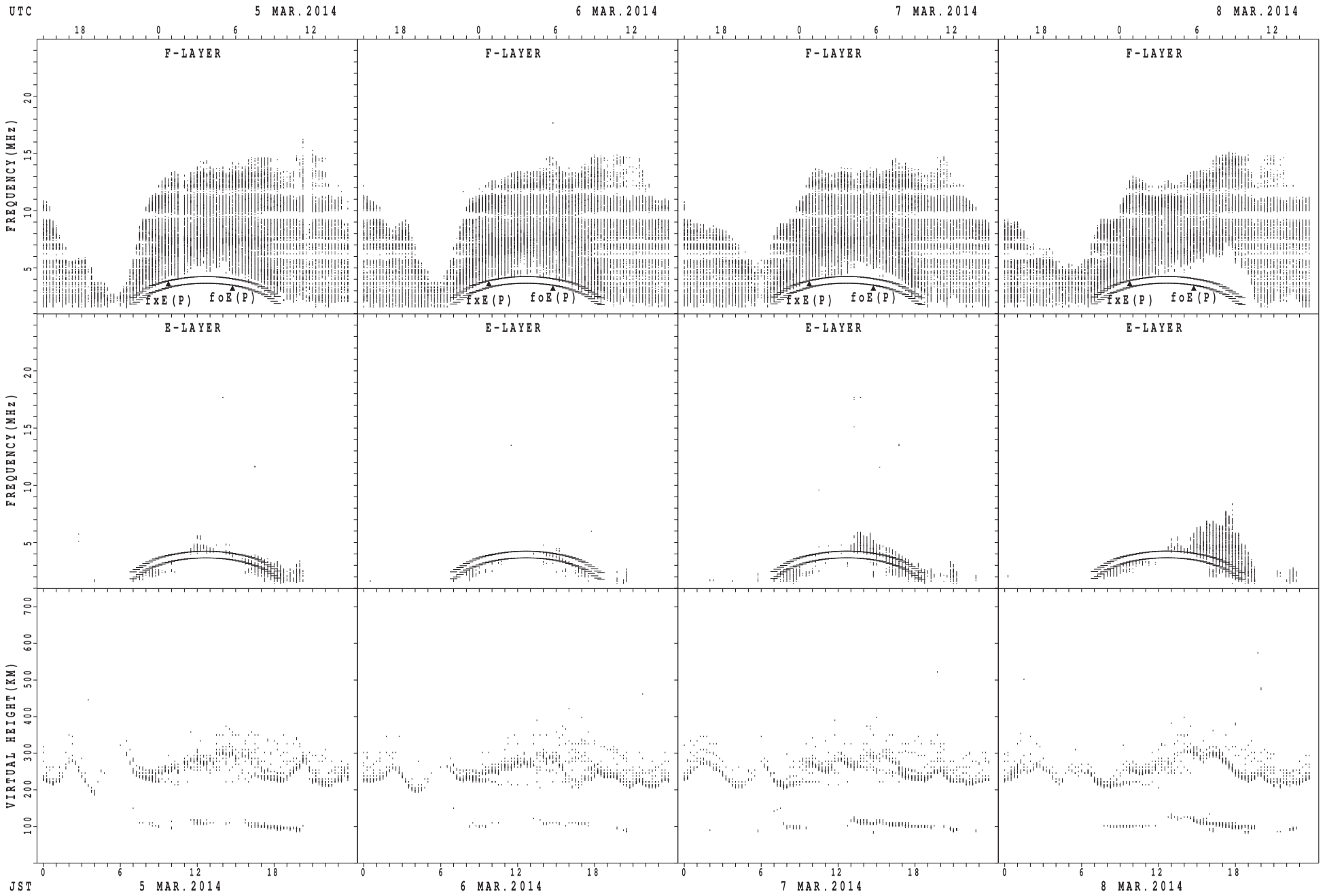
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



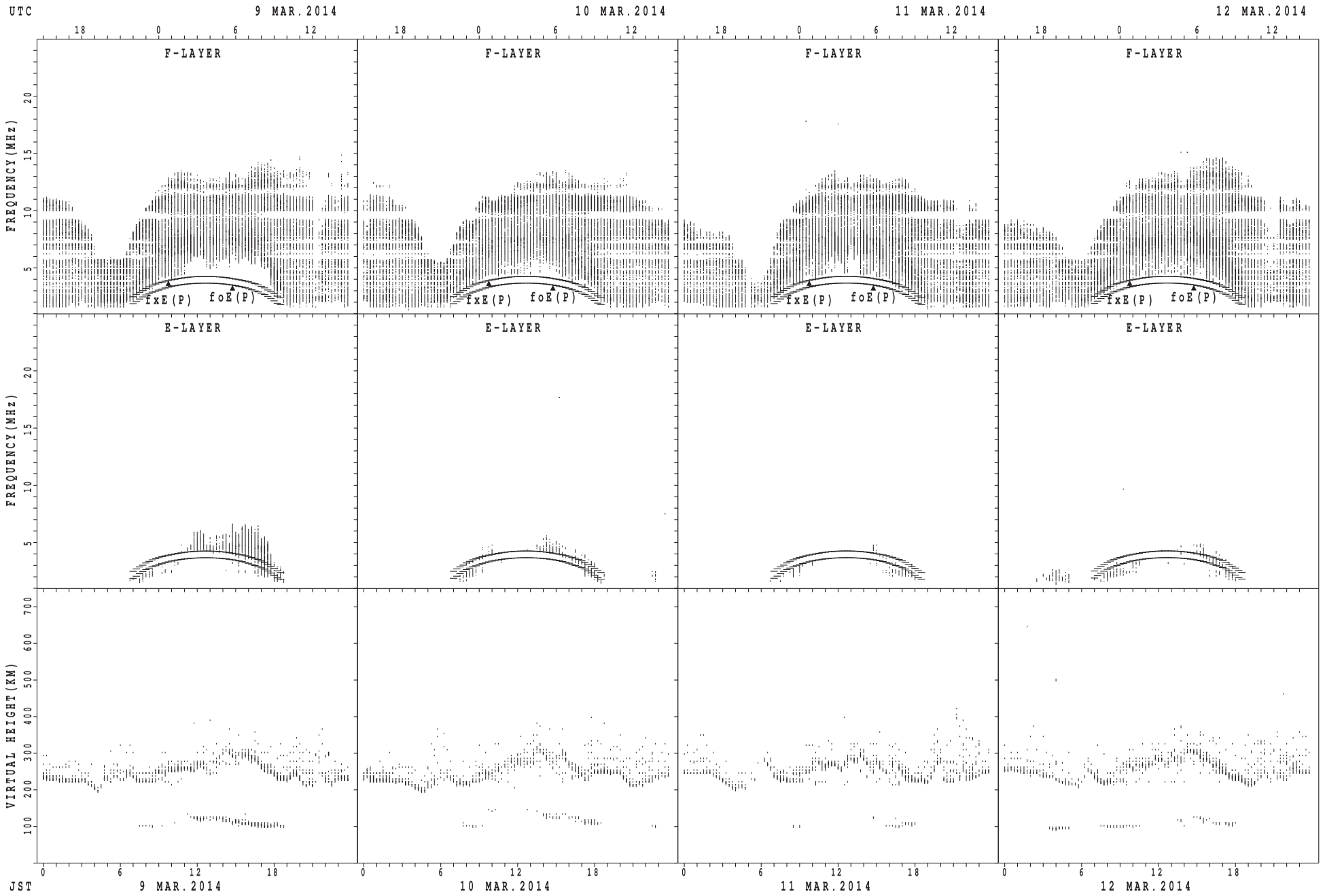
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



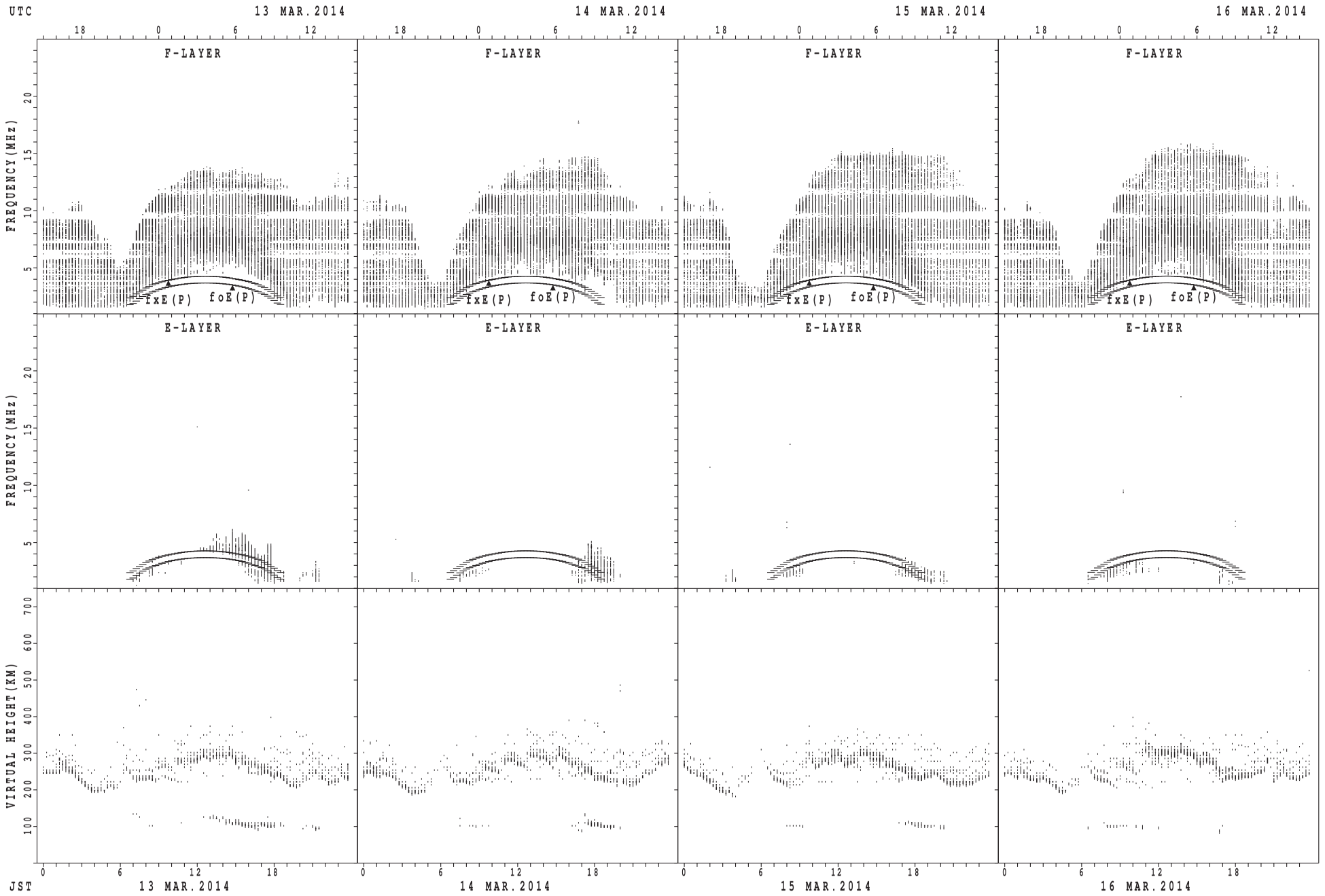
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



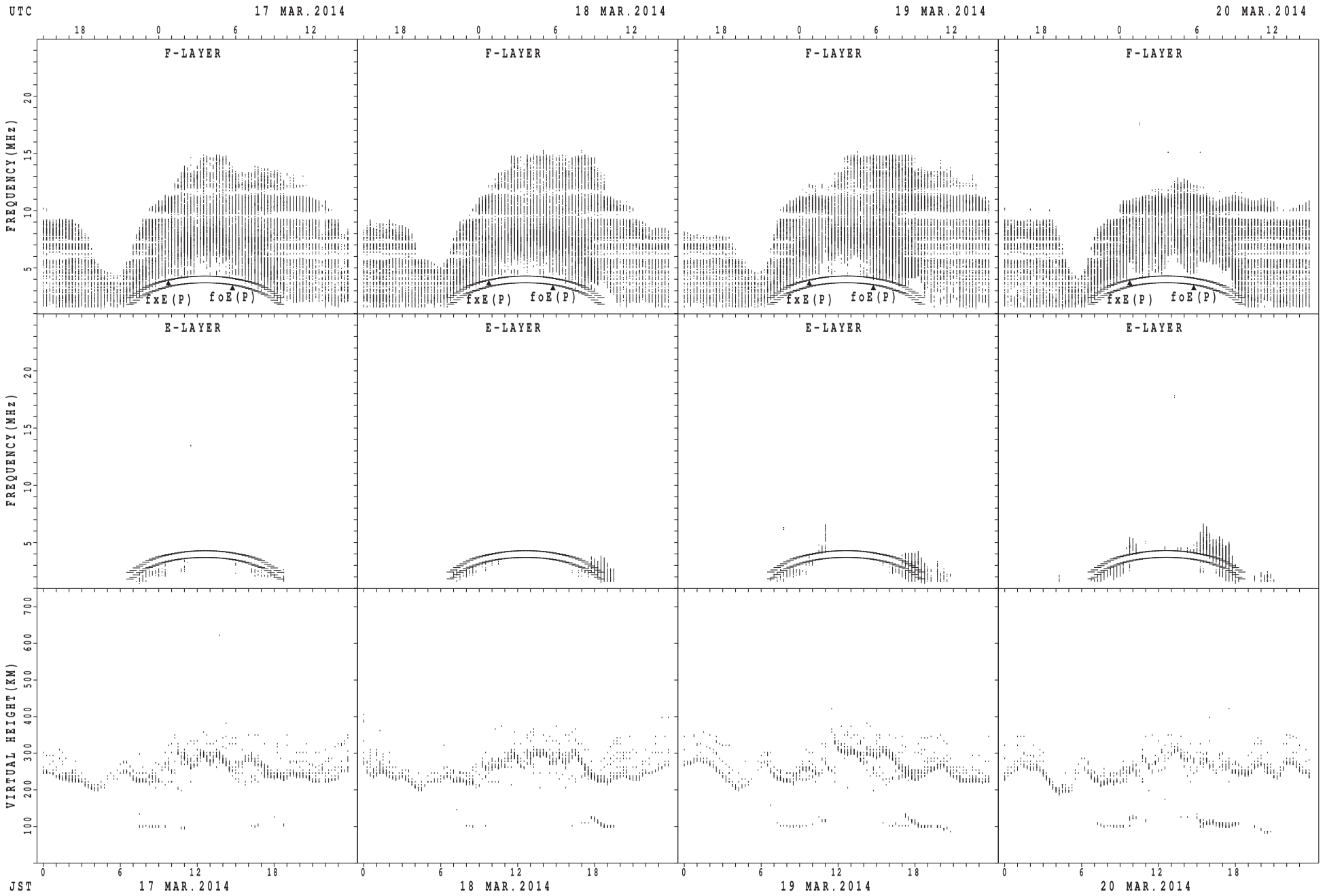
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



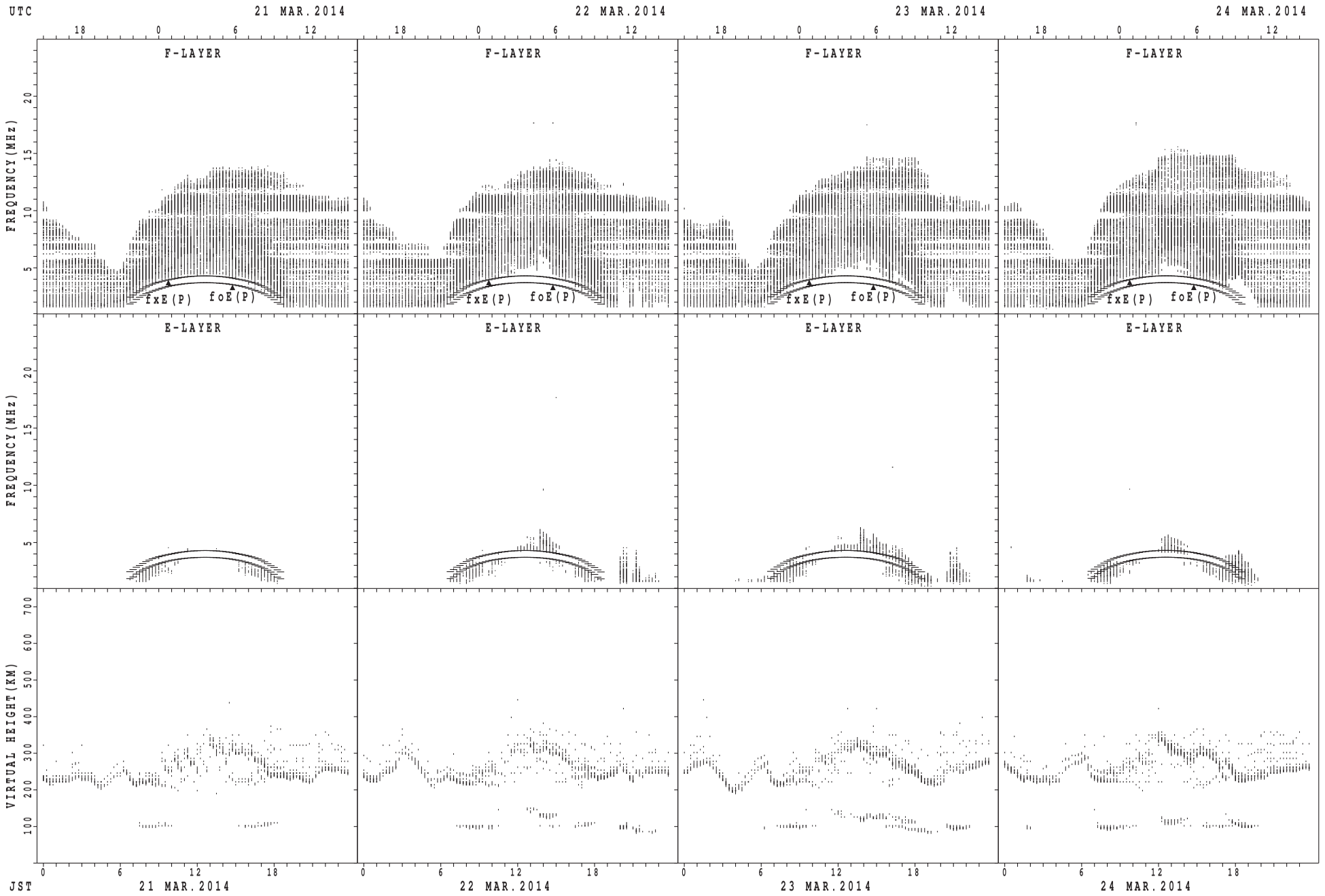
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



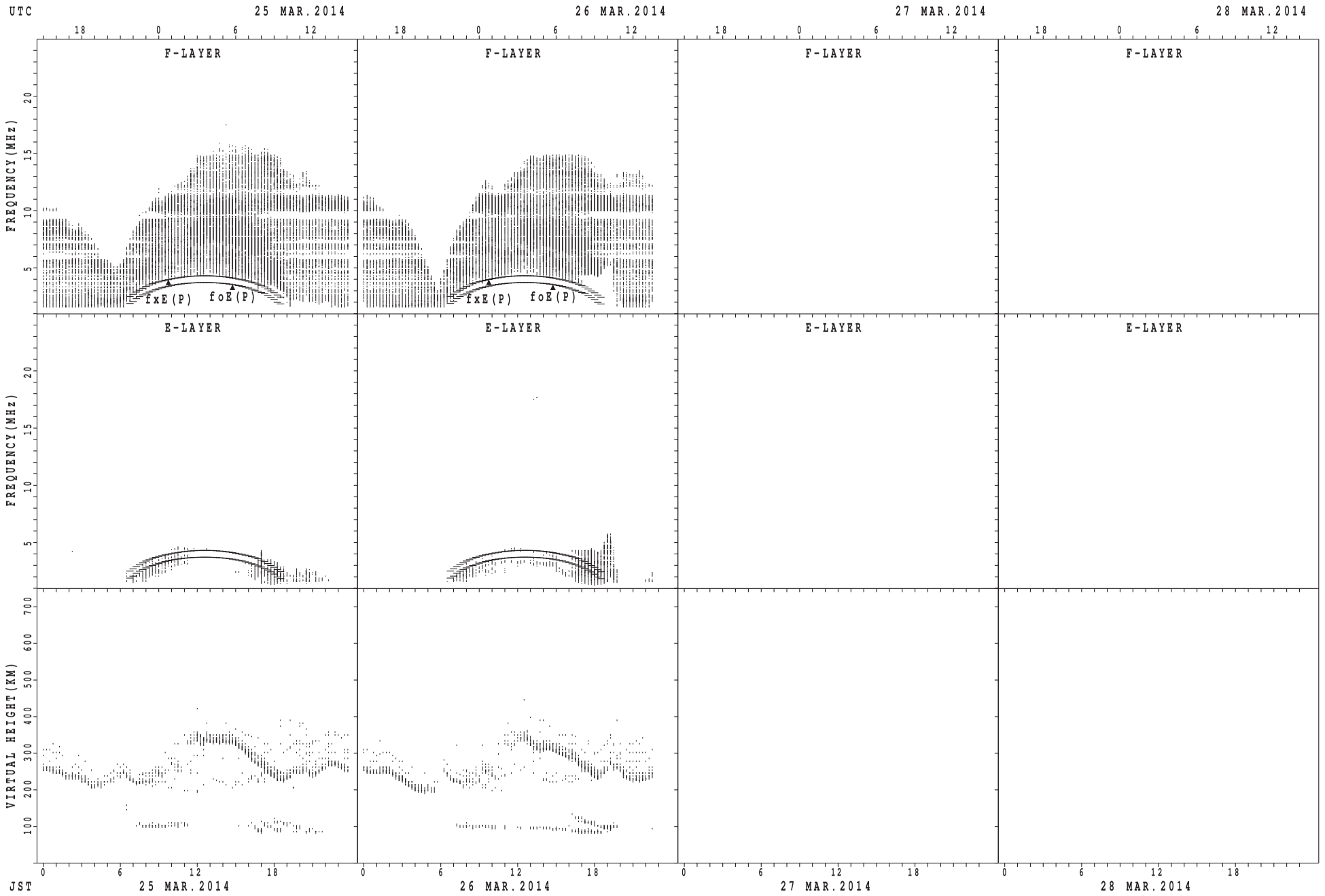
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



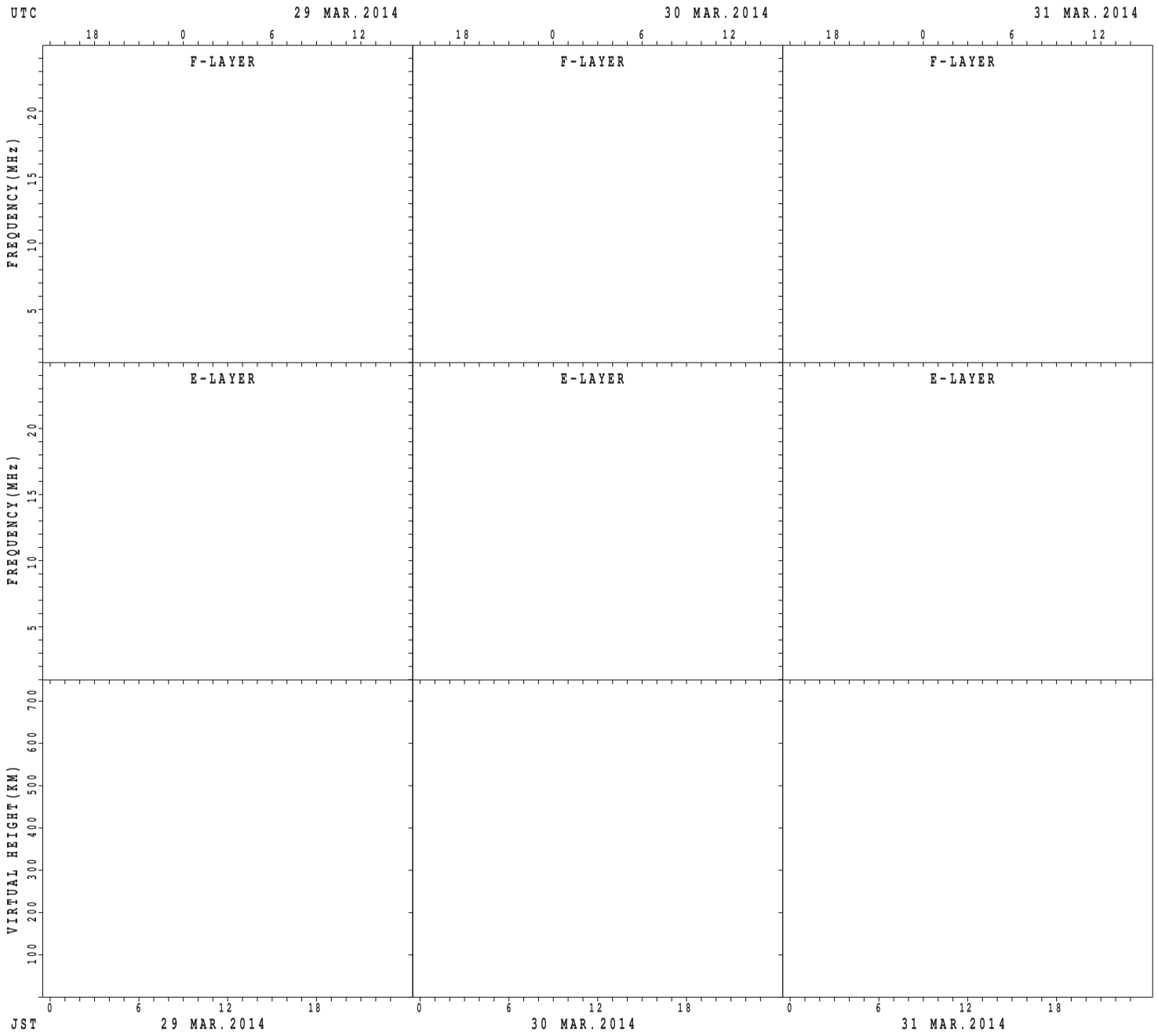
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h′F AND h′Es

MAR. 2014 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	2		1			16	29	27	15					4	27	28	29	28	17	5	2	1	4
MED	308	308		336			246	230	228	228					240	246	238	236	244	262	270	308	328	316
U Q	312	328		168			254	239	236	230					243	254	246	246	246	271	289	312	164	321
L Q	296	288		168			240	224	222	222					238	238	231	230	240	256	261	304	164	307

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		10	18	11	2	1				1	1	15	9	7	4	1	1		1
MED			97	113	175		155	105	101	109	97				105	103	103	113	99	103	105	103		95
U Q			101	56	87		167	107	103	119	48				52	51	105	134	109	105	52	51		47
L Q			93	56	87		145	103	99	99	48				52	51	101	100	89	96	52	51		47

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	4	1	2			7	30	31	16						28	30	30	31	12	4	2	5	4
MED	291	307	314	270			240	231	232	238						262	257	241	246	255	308	307	318	308
U Q	304	334	157	274			272	244	238	252						280	264	254	256	273	349	308	338	310
L Q	278	295	157	266			232	224	230	230						256	244	234	238	246	295	306	304	306

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		1	2				2		2	2	2	2	1	1	2	6	5	10	14	8	3	5	2	2
MED		95	102				148		121	152	173	136	101	95	121	112	105	109	103	102	97	97	97	95
U Q		47	105				151		139	183	175	171	50	47	139	119	111	113	107	104	97	101	99	95
L Q		47	99				145		103	121	171	101	50	47	103	107	105	103	101	93	95	96	95	95

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	8	5	4	7	2			15	29	30	2					2	30	30	30	25	11	15	12	10
MED	301	308	330	276	252			248	234	240	247					262	267	250	242	254	276	298	317	306
U Q	316	338	360	292	254			256	247	246	248					270	278	262	248	273	288	316	332	316
L Q	281	264	300	264	250			238	230	238	246					254	260	244	238	246	262	288	292	288

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	1	1	1		1		1	2	4	3	1	5	5	6	9	15	11	19	17	16	8	6	1	3
MED	91	103	97		95		99	181	104	157	131	113	119	150	129	113	113	109	105	102	102	97	93	89
U Q	45	51	48		47		49	191	106	157	65	148	141	155	138	121	123	117	112	104	105	99	46	99
L Q	45	51	48		47		49	171	101	101	65	102	101	113	111	107	105	103	103	100	97	91	46	83

MONTHLY MEDIANS OF h′F AND h′Es

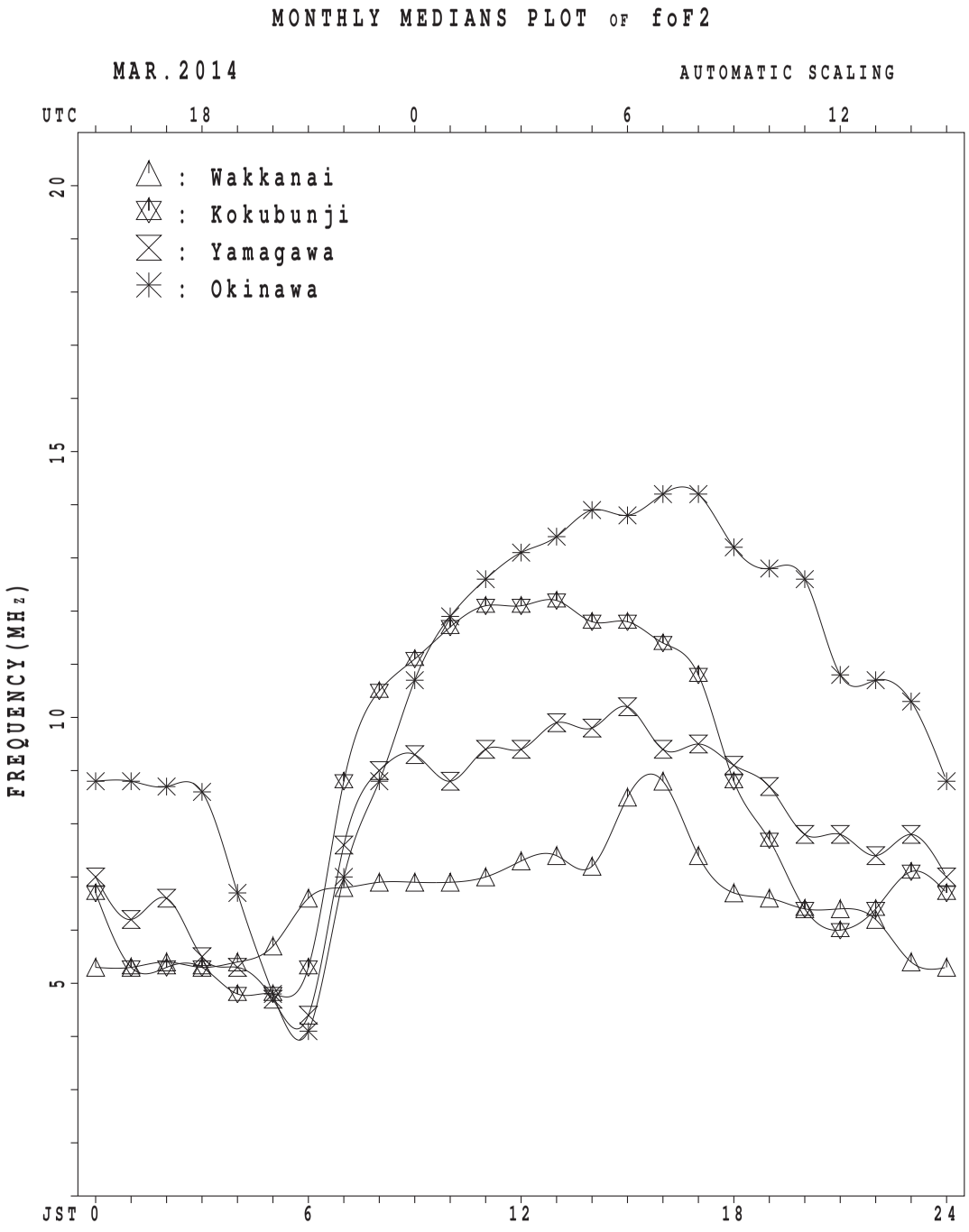
MAR.2014 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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	26	22	20	20	10	1		13	26	26	5						26	26	26	26	26	26	24	25
MED	279	275	267	255	236	322		250	238	249	256						279	262	242	251	272	260	256	278
U Q	288	292	285	272	244	161		265	246	264	271						292	270	246	256	278	272	282	294
L Q	260	260	250	246	232	161		246	232	246	250						264	248	238	246	256	248	244	254

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		3	3	3	5	2	4	8	10	10	8	12	15	13	9	5	1	
MED					142	97		155	103	105	107	113	129	123	121	120	111	106	105	101	99	95	101	
U Q					187	48		175	187	157	131	119	153	132	131	129	117	112	111	103	100	101	50	
L Q					97	48		141	95	99	103	107	116	116	113	113	110	103	101	96	96	92	50	


MONTHLY MEDIANS PLOT OF foF2
MAR.2014
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Wakkanai
⧖ : Kokubunji
⧗ : Yamagawa
✳ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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 63	64	63	63	65	X 63													X 94	X 80	X 72	X 66	X 66	X 65
2	X 65	X 65	X 66	X 63	X 63	X 58													X 89	X 81	X 70	X 65	X 63	X 62
3	X 63	X 62	X 61	X 62	X 61	X 54													X 95	X 76	X 65	X 67	X 67	X 67
4	X 68	X 68	X 69	X 62	X 57	X 52													X 82	X 73	X 63	X 61	X 63	X 64
5	X 65	X 65	X 62	X 62	X 58	X 53													X 82	X 80	X 75	X 67	X 63	X 63
6	X 64	X 64	X 65	X 64	X 55	X 51													X 85	X 78	X 70	X 69	X 69	X 67
7	X 65	X 65	X 65	X 65	X 62	X 61													X 92	X 81	X 71	X 65	X 65	X 65
8	X 63	X 63	X 61	X 64	X 62	X 58													X 93	X 75	X 73	X 73	X 73	X 68
9	X 67	X 66	X 65	X 65	X 63	X 66													X 83	X 79	X 77	X 74	X 70	X 68
10	X 67	X 65	X 65	X 65	X 63	X 61														X 89	X 81	X 78	X 74	X 71
11	X 71	X 71	X 71	X 72	X 71	X 68														X 80	X 77	X 71	X 72	X 72
12	X 72	X 72	X 72	X 70	X 69	X 67													X 101	X 83	X 71	X 69	X 69	X 69
13	X 70	X 70	X 70	X 70	X 64	X 56													X 99	X 77	X 78	X 78	X 77	X 75
14	X 71	X 71	X 71	X 72	X 65	X 52													X 96	X 81	X 74	X 69	X 69	X 68
15	X 69	X 67	X 70	X 65	X 55	X 52														X 83	X 77	X 73	X 73	X 73
16	X 74	X 71	X 70	X 67	X 67	X 67														X 79	X 76	X 71	X 68	X 68
17	X 68	X 67	X 64	X 62	X 62	X 59														X 77	X 76	X 75	X 74	X 73
18	X 72	X 72	X 67	X 65	X 65	X 64														X 76	X 77	X 77	X 75	X 75
19	X 71	X 71	X 72	X 72	X 71	X 68														X 77	X 79	X 80	X 80	X 81
20	X 77	X 75	X 75	X 71	X 68	X 65														X 87	X 83	X 82	X 82	X 83
21	X 83	X 82	X 80	X 78	X 77	X 75														X 84	X 81	X 78	X 79	X 80
22	O X 81	X 78	X 69	X 70	X 69															X 81	X 79	X 77	X 76	X 71
23	X 71	X 71	X 71	X 68	X 63	X 64														X 88	X 81	X 73	X 69	X 67
24	X 68	X 68	X 65	X 64	X 61	X 64											C			X 84	X 83	X 78	X 72	X 69
25	X 68	X 67	X 67	X 66	X 64	X 62														X 85	X 83	X 76	X 77	X 77
26	X 77	X 76	X 75	X 74	X 67	X 69														X 102	O X 85	X 78	X 75	X 74
27	X 75	X 75	X 75	X 75	X 69															X 96	X 83	X 79	X 78	X 78
28	X 75	X 75	X 77	X 76	X 71															X 93	X 83	X 78	X 74	X 70
29	X 68	X 71	X 72	X 70	X 65															X 83	X 78	X 79	X 77	X 77
30	X 79	X 74	X 72	X 69	X 64															O X 86	O X 81	X 79	X 78	X 79
31	X 77	X 77	X 75	X 70	X 67															X 84	X 82	X 81	X 79	X 78
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	25													12	31	31	31	31	31
MED	X 70	X 71	X 70	X 67	X 64	X 62													X 92	X 81	X 77	X 75	X 73	X 71
U Q	X 75	X 74	X 72	X 71	X 68	X 66													X 96	X 85	X 81	X 78	X 77	X 77
L Q	X 67	X 65	X 65	X 64	X 62	X 55													X 84	X 78	X 73	X 69	X 69	X 67

MAR. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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	56	F 54	F 52	52	F 56	56	68	R 81	J R 88	J R 102	R 116	123	122	126	125	115	100	99	88	73	65	60	59	58
2	58	58	59	56	56	51	57	J R 87	J R 93	J R 113	J R 106	U R 121	122	J R 121	J R 116	J R 108	R 97	94	83	74	64	58	56	55
3	56	55	54	55	54	47	56	74	J R 91	U R 102	J R 119	J R 119	123	J R 117	R 111	U R 106	101	92	88	70	58	59	60	60
4	61	61	62	55	50	45	56	J R 91	J R 94	R 104	J R 117	J R 118	J R 118	R 113	J R 108	R 106	98	92	75	66	56	54	56	57
5	58	57	55	55	51	46	56	J R 89	109	J R 118	114	R 118	R 116	112	R 102	J R 105	98	94	R 76	73	68	60	57	56
6	57	57	56	56	48	44	56	R 77	97	124	120	R 118	J R 112	J R 109	U R 105	J R 103	R 103	94	78	71	R 63	62	62	60
7	58	58	58	58	55	54	66	R 83	J R 95	J R 119	R 121	R 120	J R 119	R 120	J R 114	R 110	100	93	J R 85	74	64	58	58	58
8	57	56	54	57	55	51	65	J R 88	R 98	U R 103	J R 107	U R 102	J R 107	J R 108	J R 97	101	98	95	87	68	66	66	66	62
9	60	59	58	58	56	59	73	R 87	U R 93	Y	R 110	R 114	U R 118	J R 115	U R 103	R 103	R 100	92	76	74	71	67	64	62
10	61	59	58	58	56	55	70	87	U Y 99	98	J R 82	R 119	116	R 113	Y	R 102	R 102	100	90	82	74	70	68	64
11	64	64	64	65	64	61	74	R 90	U Y 100	J R 119	R	R 110	J R 118	Y	J R 110	J R 103	R 105	R 99	88	73	70	64	65	65
12	65	65	65	64	62	60	75	U R 92	J R 92	Y	Y	Y	J R 116	J R 116	J R 117	J R 115	J R 110	U R 101	94	75	64	62	62	62
13	63	63	63	64	58	48	64	92	U R 100	R 96	R	Y	Y	J R 121	R 115	J R 114	J R 112	96	92	71	71	69	69	68
14	64	64	64	65	58	45	60	U R 76	R 114	J R 113	R 112	J R 109	U R 113	R 112	J R 103	U Y 102	97	94	89	75	68	62	62	61
15	62	60	63	58	48	45	64	J R 83	R	J R 105	J R 121	J R 118	R 119	J R 117	J R 114	U R 99	98	98	J R 91	76	70	66	66	66
16	67	R 77	U R 92	J R 91	J R 106	U R 110	R 110	R 113	J R 113	J R 111	J R 105	104	J R 99	R 90	72	69	65	62	61					
17	61	60	57	55	55	52	70	82	R 102	R 108	J R 100	U R 106	Y	J R 105	R 102	R 99	94	87	84	70	69	68	67	66
18	65	65	60	58	58	57	71	U R 79	U R 88	R 94	J R 95	R 104	J R 105	J R 105	R 100	93	94	89	83	69	71	70	68	68
19	64	64	65	65	64	61	74	J R 91	U R 97	J R 115	J R 116	110	U R 102	J R 93	J R 103	R 99	98	R 89	86	71	72	73	74	74
20	70	68	68	65	61	58	76	R 92	93	U R 109	J R 107	Y	J Y 99	J Y 92	J R 93	98	J R 105	96	94	U R 80	76	75	74	77
21	76	75	73	71	70	69	R 80	J R 91	Y	U R 116	122	Y	J R 103	J R 106	U R 100	96	J R 95	94	Y 97	77	75	71	74	73
22	74	72	63	64	64	64	71	R 82	U R 94	R 112	J R 116	U R 116	Y	J R 105	U R 95	95	93	93	87	74	72	70	69	65
23	64	64	64	62	56	57	74	J R 87	J R 102	J R 120	112	U Y	J R 117	U R 110	R	102	R 98	98	92	U R 80	74	66	63	61
24	62	61	58	57	54	57	73	92	U Y 96	J R 119	J R 116	J R 110	J R 114	J R 117	J R 105	U R 100	C	96	U R 84	R 77	76	71	65	62
25	61	60	60	59	57	55	R 76	J R 88	U R 97	120	112	Y	R 112	J R 116	Y	U R 102	99	98	97	R 78	76	69	70	70
26	70	69	68	66	62	62	R 83	J Y 82	112	J R 118	122	J R 121	J R 120	J R 118	J R 114	R 100	100	U R 98	97	J R 95	R 78	71	68	67
27	68	68	68	68	62	63	R 77	J R 93	J R 99	U R 122	J R 121	J R 120	Y	J R 119	J R 113	J R 114	J R 113	U R 98	J R 95	R 87	76	72	71	71
28	68	69	70	69	64	65	R 74	U R 87	J R 97	R 110	U R 116	J R 118	J R 117	J R 116	J R 105	J R 105	J R 97	R 98	94	86	76	71	67	63
29	61	64	65	63	58	59	72	R 85	94	Y	U R 108	J R 116	Y	Y	Y	J R 114	J R 97	R 95	88	R 76	71	72	70	70
30	72	67	65	63	57	60	76	J R 90	J R 96	U Y 104	J R 104	Y	U Y 100	J R 109	J R 107	R	99	95	96	R 79	74	72	71	72
31	71	70	67	63	60	62	76	88	J R 95	R	J R 107	J R 105	J R 105	R 110	Y	Y	98	93	R 90	77	75	75	72	71
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	29	27	28	24	26	29	26	29	30	31	31	31	31	31	31	31
MED	63	64	63	60	57	57	72	R 87	R 96	R 112	J R 113	R 117	J R 116	J R 113	J R 106	R 103	98	95	88	74	71	68	66	64
U Q	68	67	65	65	62	61	R 76	R 91	R 100	J R 119	R 118	R 119	R 118	J R 117	J R 114	J R 107	R 102	R 98	94	R 78	75	71	70	70
L Q	60	59	58	57	55	51	64	R 82	J R 93	R 104	J R 107	R 110	J R 107	J R 108	R 102	100	97	93	84	71	66	62	62	61

MAR. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								256		L	L	L	L	L	L									
2											L	L	L		L									
3								264	L	L	L	L	L		L									
4								256		L	L	L	L											
5												L	L	L	L									
6										L	L	L	L	L	L									
7								248		L		L	L	L	L	L								
8								248		U L 392	L	L	L	L	L 408	L								
9											L	L	L	L	L									
10								276		L	L	L	L	L	L									
11											L		L			U L 360	L							
12								280		L	U L 464	L	L	L	L	L								
13									L		L		L	L	L									
14									L	L	L	L	L	L	L	L								
15									L		L	L		L	L	L	324							
16										L	L	L	L	L	L	L								
17										L	L	L	U L 476	L	L	L	L							
18									L	L	L	L	L	L	L	L	L							
19									L	L	L	L	L	U L 524	U L 428	L	L							
20										L	L	L	L			L								
21										L	L		L	L	L	L								
22									L	L		L		L	L	L								
23										L	L	L	L	L	L									
24									L	L	U L 492	L	L	L	L	L	C							
25							236		L	L	L	L	L	L	L	L	L							
26									L	L	L	L	L		L									
27										L	L	L	L	L	L	L								
28									L	L	L	L	L			L	L							
29									L		L	L	L	L	L	L								
30								L		L	L	L		L	L	L								
31								L	L	L	L	L	L	L	L	L								
	00	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	7		1	2		1	1	2	1	1							
MED							236	256		U L 392	U L 478		U L 476	U L 524	L 418	U L 360	324							
U Q								276																
L Q								248																

MAR. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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 192	280	308	344	352R	368	356	332	300		A 264	A						
2							B 204	296	320	340	356	356	352	332	296		264	A						
3							B 216	288	336	344	348R	364R	348	332	308		252	176A						
4							J R 168	216	288	332	344	356R	348	352	336	316	264	204						
5							J R 176	216	284	U R 312	340	336	348	324	324	296	256	180						
6							J K 172	244	276	332	336	U R 348	364	356	340	312	260	200						
7							J R 180	220	R 280	328	340	352	356	348	336	316	260	A						
8							J R 176	216	288	328	344	U R 356	R 360	340	316	312	264	A						
9							J R 180	260	284	324	348	348	344	344	332	312	268	212						
10							184	232	296	328	352	368	R 360	R 356	336	316	284	204	B					
11							168	244	R 292	328	344	364	360	B	352	316	280	A	A					
12							192	236	304	320	348	360	364	356	332	300	280	A						
13							188	232	292	328	R 356	356	360	344	324	312	272	A						
14							192	240	284	R 304	320	R 336	360	340	344	316	280	212						
15							200	264	288	332	352	356	R 360	R 356	340	312	284	224	B					
16							192	252	288	300	316	A	348	352	340	324	A	220	A					
17							184	232	292	316	R 360	R 376	R 376	364	356	312	284	200	B					
18							196	248	300	332	356	376	376	368	356	328	276	220	B					
19							204	260	312	328	A	364	372	364	352	320	288	216	B					
20							200	260	296	R 336	U A 348	R	368	B	360	340	280	204	B					
21							220	244	304	336	352	U A 360	A	344	344	296	280	232	B					
22						B	208	272	308	340	348	368	R 384	376	352	320	268	232	B					
23							208	268	300	U A 324	344	U R 348	A	R	348	320	284	244	A					
24							192	280	320	A	A	368	356	368	360	316	C	216	A					
25							188	288	U A 300	336	352	R	360	368	360	336	288	220	B					
26							212	276	A	R 344	R 352	360	R 360	352	344	324	272	236	B					
27						B	H 224	264	320	340	344	R 356	U R 372	R 372	360	332	292	228	B					
28						B	H 220	276	320	332	352	R 376	368	352	U R 328	328	300	224	B					
29						B	208	264	300	B	U R 352	368	U R 368	R 360	348	336	288	236	A					
30						B	176	280	328	U R 348	R 352	U R 368	R 368	368	356	340	296	224	B					
31						B	192	292	320	352	356	R 360	U R 376	372	R 332	312	296	224	B					
	00	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	31	30	29	29	28	29	28	31	31	28	24						
MED							192	248	296	328	348	358	360	356	340	316	280	220						
U Q							206	268	304	336	R 352	368	R 368	366	352	324	286	226						
L Q							J R 180	232	288	322	344	R 352	358	348	332	312	266	204						

MAR. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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	J A 13	J A 13	J A 15	E B 15	E B 15	E B 14	22	G	36	35	G 30	G 30	G 27	G 33	G 25	J A 25	J A 31	J A 20	J A 14	19	18	E B 14	E B 14
2	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	G	G	G	G	G	G 32	G 32	G	28	20	E B 17	20	20	E B 13	E B 13	E B 12
3	E B 12	18	E B 14	E B 14	E B 14	E B 14	E B 16	24	G	G	G	G	G	G 24	G 22	G 26	28	20	J A 17	E B 15	21	21	E B 15	E B 15
4	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	24	G	G	38	G 32	G 32	G	E B 15	G	G	G	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12
5	E B 12	E B 13	E B 13	E B 12	E B 12	E B 12	J A 23	25	G 26	G 31	34	G 33	G 32	G 27	G 25	G	28	22	E B 12	E B 14	E B 14	E B 14	E B 14	E B 14
6	E B 14	E B 16	E B 15	E B 14	E B 14	E B 14	G	G	G	G	G 30	G 34	40	G 28	G 30	G 24	G 24	G	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
7	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	G	24	G	G 26	37	G	39	G 26	G 27	34	30	J A 25	J A 19	E B 14	E B 14	E B 14	E B 14	E B 14
8	18	E B 14	E B 14	E B 15	E B 15	J A 17	G	26	G	36	G	G 34	39	G 26	34	G	G	24	J A 17	E B 12	E B 12	E B 12	E B 12	18
9	18	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 18	G 22	34	G 32	38	G	37	37	34	29	J A 24	J A 20	18	E B 13	E B 13	E B 13	E B 13
10	E B 15	E B 15	E B 15	E B 15	E B 15	17	G	25	32	38	G	G	40	40	G 27	35	G 20	27	J A 20	E B 12	E B 16	J A 16	E B 16	23
11	18	E B 12	E B 12	E B 12	E B 12	E B 14	G	G 21	G	G 26	G 28	40	40	E B 53	40	34	34	J A 33	36	E B 14	18	18	E B 13	E B 13
12	E B 13	E B 13	E B 13	E B 16	E B 15	E B 15	G	27	G	G 31	G 35	G	G	G	G 29	31	G 21	21	E B 16	E B 12	E B 14	E B 14	E B 14	E B 14
13	E B 12	E B 12	E B 15	E B 14	E B 14	E B 14	G	27	G	G 27	40	40	40	38	G	35	G 25	20	E B 14	E B 13	E B 14	E B 14	E B 16	E B 15
14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	25	31	33	35	G 33	G 23	G 26	G 26	G 23	G 20	G 19	E B 15	J A 13	18	E B 14	E B 14	E B 14
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G 26	32	G 27	G 28	G	G 30	G 24	G	G	29	G 19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	33	35	37	G	G 34	G 16	G	J A 34	G 18	J A 27	J A 25	E B 14	E B 17	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	G	G 26	G 25	G 34	40	G	G 41	G	G	G	G	G 24	E B 15	E B 14	20	E B 14	E B 14	E B 14
18	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	G	G	G	G 24	G	G	G 42	G	G	G	G	G	J A 16	19	E B 14	E B 14	E B 14	E B 14
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	38	37	G 30	G	G 21	37	36	32	26	J A 16	E B 17	E B 14	E B 14	E B 14	E B 14
20	E B 12	E B 12	E B 12	E B 12	E B 13	E B 12	G	29	36	G	37	G 33	G 35	E B 46	G 31	G	G	25	E B 16	E B 12	E B 12	E B 12	E B 12	E B 12
21	E B 12	E B 12	E B 12	E B 15	E B 15	E B 15	G	28	35	36	36	37	38	G 33	38	34	G	G 21	J A 18	E B 15	E B 15	E B 15	E B 15	E B 15
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G 27	G 29	G 29	G	G	G	G	G	G 21	J A 17	E B 16	J A 15	E B 15	E B 15	E B 15
23	E B 14	19	J A 14	E B 13	E B 13	E B 13	G	G	32	35	37	39	39	38	G	G	G	G 24	J A 28	J A 20	J A 19	J A 23	J A 14	J A 16
24	20	18	J A 19	E B 14	E B 14	E B 14	24	G	G 27	37	35	G	G 27	G	G 20	G	C	24	J A 23	30	E B 14	E B 14	E B 14	E B 16
25	20	18	17	E B 13	E B 16	E B 16	21	G	34	G 33	G 32	G 33	G 33	G	G 27	G 27	G 24	24	20	J A 17	E B 12	E B 12	J A 13	E B 15
26	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	31	38	G	G	G 29	G	G	G 32	G	25	E B 12	17	E B 12	E B 12	E B 12	E B 15
27	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	G 34	G 32	G	G 29	G 26	G 24	G 26	G 26	24	E B 15	E B 15	19	E B 15	E B 15	18
28	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G 25	G 32	36	G	40	G	G	G 21	G 25	G 22	G	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
29	J A 15	J A 17	E B 14	E B 14	E B 14	E B 14	G	G	32	E B 46	G	G	G 32	G	G	G	G	G	J A 22	J A 19	J A 17	18	E B 15	E B 15
30	E B 15	E B 15	E B 14	J A 17	E B 12	E B 12	23	G	G 29	G	G	G	G 28	G 32	G 23	G 22	E B 15	24	J A 21	E B 14	E B 14	E B 14	E B 14	E B 14
31	22	20	E B 14	E B 14	E B 14	E B 14	22	G	G	G	G	G	G	G 22	G	G	G	J A 25	E B 16	21	E B 13	E B 13	E B 13	E B 13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31
MED	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	G	G	G	G 32	G	G	G	17	E B 14	E B 14	E B 14	E B 14	E B 14
U Q	15	16	E B 15	E B 15	E B 15	E B 15	G	G	G	36	36	G	39	G	G	G	28	25	J A 20	18	18	15	E B 14	15
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	25	G 32	G 31	G 34	G 33	G 32	G 26	G 25	G 27	G 25	G 21	E B 15	E B 14	E B 14	E B 13	E B 13	E B 14

MAR. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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 15	E B 15	E B 15	E B 14	21	G	34	35	G 29	G 27	G 24	G 22	G 20	23	26	18	E B 14	E B 14	E B 14	E B 14	E B 14
2	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	G	G	G	G	G	G 23	G 22	G	G 26	19	E B 17	E B 13	E B 13	E B 13	E B 13	E B 12
3	E B 12	E B 12	E B 14	E B 14	E B 14	E B 14	E B 16	22	G	G	G	G	G	G 17	G 20	G 20	G 25	19	E B 15	E B 15	E B 13	E B 15	E B 15	E B 15
4	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	22	G	G	G 34	G 28	G 28	G	E B 15	G	G	G	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12
5	E B 12	E B 13	E B 13	E B 12	E B 12	E B 12	G	24	G 21	G 24	G 23	G 23	G 22	G 22	G 20	G	26	20	E B 12	E B 14	E B 14	E B 14	E B 14	E B 14
6	E B 14	E B 16	E B 15	E B 14	E B 14	E B 14	G	G	G	G	G 20	G 26	39	G 24	G 23	G 22	G 18	G	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
7	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	G	23	G	G 23	36	G	36	G 21	G 22	G 31	26	23	18	E B 14	E B 14	E B 14	E B 14	E B 14
8	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15	G	24	G	34	G	G 23	37	G 21	G 31	G	G	19	E B 15	E B 12	E B 12	E B 12	E B 12	E B 12
9	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 14	G 17	33	G 25	36	G	36	36	32	27	G 18	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13
10	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 22	30	34	G	G	37	38	G 22	34	G 17	G 17	E B 12	E B 12	E B 16	E B 16	E B 16	E B 16
11	E B 13	E B 12	E B 12	E B 12	E B 12	E B 14	G	G 18	G	G 18	G 21	40	40	E B 53	40	33	33	23	23	E B 14	E B 14	E B 14	E B 13	E B 13
12	E B 13	E B 13	E B 13	E B 16	E B 15	E B 15	G	24	G	G 25	G 25	G	G	G	G 24	G 30	G 18	20	E B 16	E B 12	E B 14	E B 14	E B 14	E B 14
13	E B 12	E B 12	E B 15	E B 14	E B 14	E B 14	G	25	G	G 22	37	38	38	U Y 37	G	32	G 21	20	E B 14	E B 13	E B 14	E B 14	E B 16	E B 15
14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G 24	30	G 30	35	G 31	G 22	G 22	G 22	G 22	G 18	G 17	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G 20	31	G 26	G 25	G	G 25	G 22	G	G	G 27	G 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	33	34	34	G	G 23	G 16	G	32	G 15	16	17	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	G	24	G 22	33	38	G	38	G	G	G	G	G 22	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
18	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	G	G	G	G 20	G	G	38	G	G	G	G	G	E B 17	E B 14	E B 14	E B 14	E B 14	E B 14
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	35	36	G 30	G	G 20	G 33	33	30	23	E B 15	E B 17	E B 14	E B 14	E B 14	E B 14
20	E B 12	E B 12	E B 12	E B 12	E B 13	E B 12	G	26	32	G	G 34	U G 33	G 32	E B 46	G 27	G	G	22	E B 16	E B 12	E B 12	E B 12	E B 12	E B 12
21	E B 12	E B 12	E B 12	E B 15	E B 15	E B 15	G	25	G 30	35	G 35	G 36	35	G 31	37	33	G	G 17	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G 18	G 20	G 20	G	G	G	G	G	G 18	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15
23	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	32	34	35	39	38	37	G	G	G	G 24	20	16	17	17	E B 14	E B 14
24	E B 14	E B 14	16	E B 14	E B 14	E B 14	20	G	G 20	33	33	G	G 24	G	G 20	G	C	24	23	22	E B 14	E B 14	E B 14	E B 16
25	E B 16	E B 13	E B 13	E B 13	E B 16	E B 16	20	G	G 26	G 26	G U 29	G 32	G 31	G	G 26	G 25	G 22	23	E B 17	16	E B 12	E B 12	E B 16	E B 15
26	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	28	37	G	G	G 26	G	G	G 26	G	24	E B 12	E B 13	E B 12	E B 12	E B 12	E B 15
27	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	G 28	G 28	G	G 26	G 24	G 21	G 21	G 20	G 23	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14
28	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 17	G 17	G 32	35	G	39	G	G	G 19	G 19	G 18	G	E B 14	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	E B 14	E B 14	G	G	32	E B 46	G	G	G 27	G	G	G	G	G	17	E B 15	E B 15	E B 15	E B 15	E B 15
30	E B 15	E B 15	E B 14	E B 13	E B 12	E B 12	23	G	G 23	G	G	G	G 24	G 22	G 19	G 20	E B 15	G 22	18	E B 14	E B 14	E B 14	E B 14	E B 14
31	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G	G	G	G	G	G	G 18	G	G	G	G 17	E B 16	E B 11	E B 13	E B 13	E B 13	E B 13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31
MED	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	G	G	G	G 26	G	G	G 22	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
U Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	34	G	G	37	G	G	G	G	G	17	15	E B 14	E B 14	E B 15	E B 15
L Q	E B 14	E B 13	E B 14	E B 14	E B 14	E B 14	G	G 22	G 30	G 26	G 28	G 31	G 27	G 22	G 21	G 25	G 21	G 18	E B 14	E B 13	E B 13	E B 13	E B 13	E B 14

MAR. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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	15	15	15	14	14	12	12	12	12	17	16	16	16	16	13	17	14	14	14	14	14
2	14	14	14	14	14	14	14	14	14	14	14	13	14	19	16	16	16	17	17	13	13	13	13	12
3	12	12	14	14	14	14	16	16	16	17	15	15	20	14	18	18	14	14	15	15	13	15	15	15
4	15	15	15	15	15	15	15	15	15	16	16	16	16	15	15	15	15	14	12	12	12	12	12	12
5	12	13	13	12	12	12	12	10	10	11	10	10	10	13	13	13	13	12	12	14	14	14	14	14
6	14	16	15	14	14	14	14	14	16	16	15	15	15	17	17	16	16	16	14	14	14	14	14	14
7	14	15	15	15	15	15	16	15	16	15	15	14	16	17	16	16	16	14	14	14	14	14	14	14
8	14	14	14	15	15	15	16	15	15	14	17	17	18	18	16	16	16	17	15	12	12	12	12	12
9	15	15	15	15	15	15	16	13	15	16	17	16	14	17	17	16	17	16	13	13	13	13	13	13
10	15	15	15	15	15	15	14	14	14	14	14	14	12	12	13	12	12	12	12	12	16	16	16	16
11	13	12	12	12	12	14	15	11	20	20	16	15	15	53	15	15	17	16	16	14	14	14	13	13
12	13	13	13	16	15	15	15	11	13	13	15	17	19	16	16	14	15	16	16	12	14	14	14	14
13	12	12	15	14	14	14	12	12	12	18	16	13	14	15	14	12	12	14	14	13	14	14	16	15
14	15	15	15	15	15	15	15	15	12	14	16	16	17	16	16	16	15	15	15	14	14	14	14	14
15	16	16	16	16	16	16	16	16	16	16	16	18	17	17	16	15	16	16	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	14	14	14	14	16	16	16	16	12	15	15	14	14	14	14	14
17	14	14	14	14	14	14	15	15	15	15	14	13	12	12	12	15	15	16	15	14	14	14	14	14
18	15	15	15	14	14	14	15	15	14	16	18	17	13	14	14	14	15	15	17	14	14	14	14	14
19	15	15	15	15	15	15	16	14	15	15	17	16	18	18	15	15	15	15	15	17	14	14	14	14
20	12	12	12	12	13	12	12	14	15	15	12	12	13	46	21	14	14	16	16	12	12	12	12	12
21	12	12	12	15	15	15	14	14	12	13	12	12	17	16	20	11	13	12	14	15	15	15	15	15
22	14	14	14	14	14	14	15	14	14	16	17	17	15	15	15	14	14	15	15	16	15	15	15	15
23	14	13	13	13	13	13	13	13	14	14	18	15	14	15	13	13	12	12	12	14	14	14	14	14
24	14	14	14	14	14	14	14	16	12	12	12	13	13	12	12	12	C	14	14	14	14	14	14	16
25	16	13	13	13	16	16	15	14	11	11	13	16	18	16	17	16	16	16	17	12	12	12	16	15
26	15	15	14	14	14	14	15	12	15	15	16	16	15	16	16	15	14	13	12	13	12	12	12	15
27	15	15	15	15	15	15	15	13	14	14	12	12	12	12	12	13	12	12	15	15	15	15	15	14
28	14	14	14	14	14	14	14	13	12	12	14	14	14	14	15	15	15	14	14	14	14	14	14	14
29	14	14	14	14	14	14	14	14	16	46	22	17	16	16	16	16	12	14	12	15	15	15	15	15
30	15	15	14	13	12	12	15	15	14	14	18	18	18	16	15	15	15	17	14	14	14	14	14	14
31	14	14	14	14	14	14	14	14	16	17	16	17	17	17	22	20	18	14	16	11	13	13	13	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31
MED	14	14	14	14	14	14	15	14	14	15	15	15	15	16	16	15	15	15	15	14	14	14	14	14
U Q	15	15	15	15	15	15	15	15	15	16	17	17	17	17	16	16	16	16	16	14	14	14	15	15
L Q	14	13	14	14	14	14	14	13	12	14	14	13	14	14	14	14	13	14	14	13	13	13	13	14

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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	287	F 279	F 281	279	F 266	294	313	R 358	R	R	R 324	313	315	306	311	312	322	333	310	309	321	284	276	280
2	294	294	290	289	289	294	310	R	R	R	R	U R 302	318	R	R	R	R 328	339	335	313	291	288	297	276
3	276	289	293	299	318	307	315	369	R	U R 329	R	R	326	R	R 312	U R 323	332	331	312	311	297	285	274	275
4	287	304	314	306	314	288	313	R	R	R 330	R	R	R	R 311	R	R 320	333	329	322	317	297	285	278	272
5	286	290	286	285	297	276	299	R	329	R	323	R 325	R 312	315	R 329	R	334	349	R 328	295	308	303	287	287
6	284	271	288	307	313	301	309	R 354	336	332	321	R 325	R	R	U R 326	J R 327	R 340	327	314	309	R 292	297	291	278
7	273	271	269	291	306	285	309	R 338	R	R	R 316	R 306	R	R 307	R	R 321	326	335	J R 299	316	308	301	286	286
8	287	289	295	297	290	292	319	R	R 361	U R 352	R	U R 341	R	R	R	336	336	334	323	294	294	296	297	306
9	295	291	277	280	293	291	324	R 355	U R 349	Y	R 331	R 327	U R 317	R	U R 344	R 329	R 342	327	334	296	309	301	302	286
10	272	281	288	289	297	297	332	349	U Y 370	355	R	R 320	323	R 309	Y	R 318	R 318	324	320	307	295	313	290	284
11	285	285	285	298	297	299	365	R 358	U Y 384	R	R	R 327	J R 327	Y	R	R	R 337	R 349	332	325	298	282	279	281
12	283	283	289	277	288	287	329	U R 350	R	Y	Y	Y	R	R	R	R	R	U R 343	323	341	309	296	288	291
13	284	285	285	309	316	286	318	333	U R 360	R 344	R	Y	Y	R	R 308	R	R	332	317	318	293	288	288	274
14	267	268	279	312	321	288	326	U R 353	R 348	R	R 324	R	U R 324	R 322	R	U Y 319	329	326	337	319	290	293	288	278
15	272	276	312	331	313	297	323	R	R	R	R	R	R 309	R	J R 310	U R 342	331	335	R	337	309	285	289	305
16	305	304	292	292	294	302	R 339	U R 335	R	R	U R 338	R 337	R 320	R	315	R	313	J R 318	R 327	318	302	302	303	296
17	298	293	303	302	302	309	343	341	R 326	R 336	R	U R 324	Y	R	R 334	R	342	318	316	307	305	299	292	297
18	309	307	294	304	296	298	337	U R 374	U R 362	R 336	R	R 317	R	R	R 328	320	318	333	334	291	298	295	289	281
19	273	276	271	281	288	291	331	R	U R 358	R	R	317	U R 338	325	R	R 330	318	R 329	323	293	288	307	304	300
20	302	286	290	304	296	299	333	R 332	333	U R 327	R	Y	Y	Y	R	308	R	317	321	U R 307	310	316	302	296
21	297	302	312	306	295	298	R 333	R	Y	U R 311	315	Y	R	R	U R 324	313	R	321	R	322	304	293	280	286
22	307	302	269	263	266	284	330	R 331	U R 343	R 333	R	U R 309	Y	R	U R 322	334	330	331	330	315	305	307	290	289
23	269	269	281	289	275	274	341	R	R	R	310	U Y	R	U R 302	R	311	R 314	326	326	U R 316	326	303	290	275
24	280	282	281	286	290	285	345	327	U Y 357	R	R	R	R	R	R	U R 335	C	344	U R 323	R 320	311	307	291	300
25	286	288	290	294	298	309	R 345	R	U R 333	317	309	Y	R 298	R	R	U R 320	314	317	322	R 335	313	288	282	281
26	282	285	289	298	301	302	R 335	Y	317	R	305	R	R	R	R	R 307	306	U R 317	321	R	R 341	300	286	293
27	272	272	287	298	298	280	R 354	R	R	U R 303	R	R	Y	R	R	R	R	U R 337	R	R 316	319	287	270	284
28	272	269	289	291	284	282	R 365	U R 333	R	R 315	U R 309	R	R	R	R	J R 282	R	R 329	329	332	317	310	300	274
29	279	272	285	296	282	294	338	R 338	331	Y	U R 321	R	Y	Y	Y	R	R	R 331	325	R 314	301	296	301	286
30	297	291	289	291	289	294	341	R	R	U Y 335	R	Y	U Y 307	R	R	R	316	328	343	R 326	318	289	294	299
31	306	300	299	284	290	296	347	336	R	R	R	R	R	R 299	Y	Y	311	329	R 318	312	294	296	291	297
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	19	17	15	13	14	13	9	12	20	23	31	28	30	31	31	31	31
MED	285	285	289	294	296	294	332	R 341	U R 348	R 332	R 321	R 322	R 318	R 309	R 323	R 320	328	329	323	316	305	296	290	286
U Q	297	293	293	304	302	299	341	R 355	U R 360	R 336	R 324	R 327	R 325	318	R 328	R 330	334	335	330	320	311	303	297	296
L Q	273	276	281	286	289	286	318	R 333	332	R 317	310	R 313	R 310	R 304	R 312	312	316	326	319	307	295	288	286	278

MAR. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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								455		L	L	L	L	L	L									
2											L	L	L		L									
3								421	L	L	L	L	L		L									
4								458		L	L	L	L											
5												L	L	L	L									
6										L	L	L	L	L	L									
7								471		L		L	L	L	L	L								
8								483		U 414 L	L	L	L	L	415 L	L								
9											L	L	L	L	L									
10								468		L	L	L	L	L	L									
11											L		L			U 400 L	L							
12								481		L	U 385 L	L	L	L	L	L								
13									L		L		L	L	L									
14									L	L	L	L	L	L	L	L								
15									L		L	L		L	L	L	427							
16										L	L	L	L	L	L	L								
17										L	L	L	U 359 L	L	L	L	L							
18									L	L	L	L	L	L	L	L	L							
19									L	L	L	L	L	U 385 L	U 385 L	L	L							
20										L	L	L	L			L								
21										L	L		L	L	L	L								
22									L	L		L		L	L	L								
23										L	L	L	L	L	L									
24									L	L	U 369 L	L	L	L	L	L	C							
25							469		L	L	L	L	L	L	L	L	L							
26									L	L	L	L	L		L									
27										L	L	L	L	L	L	L								
28									L	L	L	L	L			L	L							
29									L		L	L	L	L	L	L								
30								L		L	L	L		L	L	L								
31								L	L	L	L	L	L	L	L	L								
	00	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	7		1	2		1	1	2	1	1							
MED							469	468		U 414 L	U 377 L		U 359 L	U 385 L	400 L	U 400 L	427							
U Q								481																
L Q								455																

MAR. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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								222		222	222	242	258	258	258									
2											244	280	278		264									
3								226	224	224	262	260	260		258									
4								222		222	236	238	238											
5												238	238	250	250									
6										244	244	244	244	260	254									
7								218		224		264	252	270	262	254								
8								220		220	226	232	244	276L	242	242								
9											242	242	260	268	260									
10								222		222	218	264	254	272	272									
11											272		250			244	244							
12								226		226	226	226	232	250	250	250								
13									234		234		246	268	246									
14									244	236	238	248	248	250	246	278L								
15									248		246	246		246	246	246	240							
16										240	240	240	260	272	272	270								
17										228	248	248	248	248	248	248	246							
18									236	236	236	236	254	256	256	256	256							
19									226	240	240	240	250	252	252	252	246							
20										250	250	250	252			254								
21										254	254		252	252	262	262								
22									272	272		254		274	258	258								
23										278	278	278	278	278	278									
24									228	226	234	234	248	272	276	270	C							
25							238		234	234	234	234	298	296	296	280	270							
26									236	236	252	252	252		252									
27										230	230	238	238	262	262	262								
28									240	240	240	240	246			250	250							
29									240		254	254	254	254	286	280								
30								250		250	250	250		250	270	270								
31								252	252	252	252	262	262	262	262	262								
	00	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	9	13	24	28	28	28	24	27	20	7							
MED							238	222	236	236	241	245	252	261	258	257	246							
U Q								238	246	247	251	254	259	272	270	270	256							
L Q								221	231	225	234	238	246	251	250	250	244							

MAR. 2014 h′F2 (KM)

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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	260	276	288	288	278	272	220	188	200	200	200	208	208	208	212	212	212	216	216	218	218	230	256	272
2	278	272	272	272	272	266	260	240	224	224	222	216	216	216	218	218	218	216	216	216	216	236	244	266
3	278	278	268	258	244	238	234	206	208	208	H 208	208	224	224	224	224	224	224	224	224	226	276	290	290
4	272	272	246	238	238	238	238	192	202	202	202	202	214	214	214	214	214	214	214	214	242	264	276	284
5	284	284	270	270	210	254	254	228	228	228	228	228	228	228	224	224	224	224	224	228	228	234	268	284
6	284	284	256	248	230	260	256	226	220	220	220	218	218	218	218	218	224	224	224	224	224	250	252	278
7	294	294	294	262	246	256	246	184	206	206	210	210	H 204	228	228	228	228	228	228	226	226	240	258	266
8	266	270	270	270	254	254	242	184	206	206	206	206	206	H 206	168	214	226	226	226	226	242	250	250	250
9	250	266	282	280	272	264	228	224	224	224	224	190	198	198	198	212	214	214	214	216	234	234	238	256
10	272	272	272	270	264	264	244	186	208	208	208	210	210	H 210	210	220	220	220	220	220	234	234	248	254
11	262	264	264	262	250	250	226	220	220	220	218	222	222	232	232	232	232	232	230	230	230	230	260	262
12	264	270	270	270	260	248	240	190	212	212	212	206	206	206	218	218	218	218	218	220	220	238	264	270
13	264	278	278	262	220	236	236	234	234	234	234	234	204	Y 230	230	230	230	230	208	210	240	240	256	264
14	278	286	280	234	226	H 224	224	224	224	224	224	224	210	204	220	220	220	230	216	216	218	238	260	282
15	290	290	256	236	230	248	246	240	230	230	222	216	216	216	216	216	216	218	218	218	218	240	246	250
16	250	250	250	250	250	250	240	230	226	222	222	222	222	208	208	208	228	228	228	228	228	228	246	246
17	258	258	258	258	258	252	236	232	232	214	214	214	216	216	216	216	216	216	216	216	220	240	258	258
18	248	248	248	248	248	248	234	228	H 200	200	200	202	H 194	196	196	220	220	220	220	220	254	254	254	270
19	286	296	296	272	246	246	240	236	230	226	226	226	226	206	206	206	216	216	216	216	244	244	244	258
20	260	272	270	250	250	250	246	242	242	244	238	Y 240	240	240	240	220	226	226	222	222	236	248	248	248
21	248	248	248	248	248	248	230	230	230	230	230	230	220	218	210	H 210	224	228	228	228	228	242	264	264
22	256	250	288	288	288	284	228	228	214	214	214	214	238	228	208	208	224	228	228	228	232	240	254	256
23	286	286	278	246	246	270	242	230	230	220	H 188	188	208	218	218	218	218	220	220	220	220	234	240	270
24	270	270	270	270	270	270	232	232	224	224	210	210	210	210	210	212	C	240	224	230	230	230	240	256
25	264	288	284	270	254	248	196	202	202	202	212	212	212	212	212	214	214	216	220	220	220	226	266	270
26	270	270	264	264	264	260	254	234	228	206	206	208	208	208	208	208	226	228	228	228	228	228	250	260
27	288	288	278	250	246	260	220	218	218	218	218	204	204	204	218	218	230	230	230	230	230	242	260	272
28	296	298	292	272	270	272	232	232	230	230	230	222	208	238	238	238	240	236	234	232	232	232	232	278
29	298	298	286	242	242	242	242	242	212	226	220	220	220	220	220	198	214	218	218	220	232	244	244	262
30	264	264	264	264	264	264	242	228	228	224	222	206	220	220	220	220	220	220	220	220	222	260	260	260
31	260	260	260	256	256	256	H 190	204	204	204	204	204	204	204	208	208	230	230	230	230	246	256	256	266
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31
MED	270	272	270	262	250	254	238	228	224	220	218	212	212	216	216	218	222	224	220	220	228	240	254	264
U Q	284	286	282	270	264	264	244	232	230	226	224	222	220	224	220	220	226	228	228	228	234	248	260	272
L Q	260	264	260	248	244	248	228	204	208	206	208	206	206	206	208	212	216	218	216	218	220	234	246	256

MAR. 2014 h′F (KM)

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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 106	106	114	118	118	118	118	118	118	118	A	A						
2							B 118	114	114	116	112	110	118	118	114	114								
3							B 114	114	114	104	104	106	106	108	112	112		A						
4							B 120	120	120	120	120	120	112	110	110	110	140							
5							B 138	126	112	112	112	116	114	114	114	114	114							
6							B 112	110	108	114	118	104	110	118	118	118	128							
7							B 128	110	118	118	114	116	114	114	114	114		A						
8							B 112	112	112	104	106	106	106	106	106	106	120							
9							B 124	118	112	112	112	108	108	108	108	108	108	108						
10							148	124	116	116	108	108	108	108	108	108	108	116	B					
11							E B 202	A 122	116	116	116	114	114	B	114	114	114							
12							152	122	116	118	118	118	118	116	116	116	114							
13							158	122	122	116	116	116	110	108	100	100	118	A						
14							152	114	114	114	114	114	106	114	114	114	114	128						
15							138	138	120	116	116	116	116	116	116	116	118	118	B					
16							150	106	112	112	112	A	112	112	110	110	A	128						
17							138	110	110	110	106	106	106	106	106	106	106	106	B					
18							132	108	108	108	108	108	108	108	108	108	108	122	B					
19							134	112	108	108		114	106	106	106	106	106	106	B					
20							144	112	112	112	112	A	112	B	112	112	112	122	B					
21							136	132	110	110	110	110	110	110	110	110	110	132	B					
22						B	138	112	108	110	110	100	104	102	102	102	102	136	B					
23							142	122	122	114	106	108	106	106	96	96	96	134	A					
24							134	114	114	A		106	106	106	106	106	C	120	A					
25							120	116	118	120	114	A	114	108	108	108	120	120	B					
26							120	116	A	116	114	112	112	108	108	118	118	118	B					
27						B	152	110	104	120	120	108	108	108	108	114	120	120	B					
28						B	116	128	128	110	110	110	110	110	110	110	118	118	B					
29						B	118	118	118	B	114	108	108	108	108	108	108	108						
30						B	132	122	122	106	106	102	102	116	110	110	110	110	B					
31						B	110	110	110	110	110	110	110	106	106	106	108	108	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							22	31	30	29	29	28	31	29	31	31	28	23						
MED							138	116	114	114	112	111	110	108	108	110	113	120						
U Q							150	122	118	116	116	114	114	114	114	114	118	128						
L Q							132	112	110	110	109	108	106	106	106	106	108	110						

MAR. 2014 h′E (KM)

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 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	102	102	102		B	B	B	158	G	180	202	96	96	96	96	96	96	96	96	96	96	B	B
2	B	B	B	B	B	B	B	184	G	G	G	G	G	106	106	G	162	134	B	104	100	B	B	B
3	B	98	B	B	B	B	B	176	G	G	G	G	G	96	96	96	152	204	92	B	92	92	B	B
4	B	B	B	B	B	B	G	160	G	G	194	104	104	G	B	G	G	G	B	B	B	B	B	B
5	B	B	B	B	B	B	104	162	118	118	118	102	102	98	98	G	144	170	B	B	B	B	B	B
6	B	B	B	B	B	B	G	G	G	G	104	104	208	98	98	98	98	G	B	B	B	B	B	B
7	B	B	B	B	B	B	G	166	G	102	206	G	200	96	96	140	132	120	114	B	B	B	B	B
8	100	B	B	B	B	114	G	158	G	200	G	98	204	98	140	G	G	140	124	B	B	B	B	106
9	104	B	B	B	B	B	G	104	104	152	100	126	G	132	130	142	142	98	98	106	B	B	B	B
10	B	B	B	B	B	100	G	176	156	134	G	G	180	188	110	120	118	102	112	B	B	112	B	100
11	100	B	B	B	B	B	G	100	G	100	100	122	122	B	122	216	134	126	114	B	104	104	B	B
12	B	B	B	B	B	B	G	164	G	106	106	G	G	G	106	106	106	112	B	B	B	B	B	B
13	B	B	B	B	B	B	G	156	G	110	206	206	186	206	G	154	122	122	B	B	B	B	B	B
14	B	B	B	B	B	B	G	174	174	176	122	102	102	102	100	100	100	114	B	100	100	B	B	B
15	B	B	B	B	B	B	G	110	178	100	100	G	100	100	G	G	200	108	B	B	B	B	B	B
16	B	B	B	B	B	B	G	G	G	124	118	114	G	112	100	G	100	100	100	100	B	100	B	B
17	B	B	B	B	B	B	G	116	116	180	184	G	186	G	G	G	G	178	B	B	124	B	B	B
18	B	B	B	B	B	B	G	G	G	100	G	G	188	G	G	G	G	G	96	96	B	B	B	B
19	B	B	B	B	B	B	G	G	G	118	106	104	G	104	184	182	152	152	124	B	B	B	B	B
20	B	B	B	B	B	B	G	164	130	G	124	104	104	B	104	G	G	134	B	B	B	B	B	B
21	B	B	B	B	B	B	G	184	144	144	144	118	118	114	198	196	G	120	B	B	B	B	B	B
22	B	B	B	B	B	B	G	G	G	106	106	96	G	G	G	G	G	106	130	B	130	B	B	B
23	B	116	100	B	B	B	G	G	176	122	156	126	120	126	G	G	G	174	122	114	112	110	110	108
24	108	108	96	B	B	B	150	G	110	104	102	G	102	G	102	G	C	128	122	114	B	B	B	B
25	100	100	100	B	B	B	180	G	108	108	108	108	108	G	108	108	106	128	114	114	B	B	110	B
26	B	B	B	B	B	B	G	G	110	182	G	G	98	G	G	98	G	134	B	100	B	B	B	B
27	B	B	B	B	B	B	G	G	G	104	104	G	104	104	102	102	102	162	B	B	94	B	B	92
28	B	B	B	B	B	B	114	114	134	122	G	198	G	G	96	100	100	G	B	B	B	B	B	B
29	100	100	B	B	B	B	G	G	118	B	G	G	102	G	G	G	G	G	102	98	98	96	B	B
30	B	B	B	108	B	B	146	G	112	G	G	G	100	100	98	98	B	170	90	B	B	B	B	B
31	90	90	B	B	B	B	156	G	G	G	G	G	G	102	G	G	G	102	B	102	B	B	B	B
	00	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	7	4	2		2	6	18	15	23	21	17	22	19	21	17	18	26	16	12	10	7	2	4
MED	100	100	100	105		107	148	161	118	118	118	104	106	102	102	106	120	127	113	101	100	100	110	103
U Q	104	108	101				156	174	156	152	170	124	186	114	116	148	144	152	122	110	112	110		107
L Q	100	98	98				114	116	110	104	104	102	102	98	98	98	100	108	97	99	96	96		96

MAR. 2014 h′Es (KM)

IONOSPHERIC DATA STATION Wakkanai

MAR. 2014 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

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

MAR. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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 69	X 68	X 66	X 68	X 61	X 58													X 102	X 84	X 76	X 67	X 65	X 67
2	X 68	X 68	X 66	X 66	X 64	X 56													X 102	X 77	X 75	X 69	X 66	X 66
3	X 69	X 69	X 74	X 85	X 53	X 42													X 90	X 72	X 71	X 69	X 68	X 71
4	X 70	X 72	X 76	X 64	X 44	X 39													X 88	X 74	X 72	X 68	X 69	X 70
5	X 73	X 71	X 63	X 59	X 54	X 46													X 98	X 79	X 80	X 73	X 70	X 67
6	X 69	X 66	X 63	X 63	X 53	X 50													X 96	X 78	X 78	X 74	X 76	X 75
7	X 66	X 65	X 66	X 65	X 59	X 56													X 96	X 85	X 86	X 79	X 72	X 67
8	X 66	X 65	X 64	X 64	X 58	X 53													X 100	X 88	X 80	X 70	X 67	X 68
9	X 67	X 65	X 63	X 62	X 56	X 57													X 99	X 85	X 81	X 81	X 78	X 75
10	X 74	X 70	X 66	X 66	X 63	X 54													X 108	X 89	X 85	X 83	X 79	X 76
11	X 72	X 69	X 67	X 71	X 61	X 57													X 101	X 80	X 76	X 75	X 72	X 72
12	X 72	X 69	X 68	X 64	X 61	X 60													X 109	X 84	X 72	X 67	X 67	X 67
13	X 68	X 68	X 70	X 67	X 52	X 49													X 110	X 80	X 73	X 77	X 76	X 75
14	X 75	X 73	X 75	X 73	X 58	X 49													X 101	X 86	X 80	X 71	X 70	X 71
15	X 70	X 71	X 75	X 63	X 48	X 43													X 107	X 84	X 78	X 76	X 74	X 74
16	X 74	X 70	X 68	X 65	X 60	X 57													X 116	X 95	X 81	X 76	X 77	X 77
17	X 78	X 72	X 71	X 68	X 63	X 52													X 95	X 86	X 76	X 77	X 73	X 72
18	X 72	X 72	X 67	X 65	X 60	X 57													X 94	X 82	X 74	X 75	X 72	X 71
19	X 71	X 68	X 68	X 69	X 64	X 59													X 94	X 81	X 78	X 81	X 82	X 80
20	X 76	X 71	X 72	X 72	X 62	X 57													X 100	X 92	X 89	X 88	X 87	X 87
21	X 85	X 80	X 77	X 69	X 67	X 66														X 94	X 86	X 86	X 85	X 88
22	X 87	X 84	X 74	X 69	X 68	X 74														X 91	X 85	X 86	X 82	X 79
23	X 75	X 73	X 74	X 74	X 60	X 59														X 90	X 77	X 76	X 74	X 74
24	X 75	X 74	X 70	X 65	X 63	X 61						C	C	C	C	C	C	C		X 82	X 83	X 85	X 82	X 76
25	X 75	X 73	X 72	X 71	X 67	X 62					C	C	C	C	C				X 110	X 96	X 81	X 78	X 77	X 80
26	X 80	X 82	X 81	X 76	X 72	X 67													X 120	X 100	X 89	X 85	X 77	X 77
27	X 77	X 77	X 79	X 76	X 64	X 58													X 120	X 105	X 86	X 86	X 87	X 85
28	X 82	X 81	X 81	X 81	X 71	X 70													X 119	X 107	X 84	X 81	X 84	X 80
29	X 78	X 78	X 79	X 80	X 62	X 63													X 117	X 96	X 85	X 85	X 88	X 86
30	X 84	X 82	X 76	X 72	X 66	X 66														X 97	X 90	X 94	X 94	X 98
31	X 95	X 87	X 76	X 74	X 66	X 62														X 94	X 86	X 87	X 89	X 86
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31													25	31	31	31	31	31
MED	X 74	X 71	X 71	X 68	X 61	X 57													X 101	X 86	X 80	X 77	X 76	X 75
U Q	X 78	X 77	X 76	X 73	X 64	X 62													X 110	X 94	X 85	X 85	X 82	X 80
L Q	X 69	X 68	X 66	X 65	X 58	X 52													X 96	X 81	X 76	X 73	X 70	X 71

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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	63	62	60	61	55	52	61	84	105	114	130	131	133	136	139	134	121	110	96	78	70	61	59	60
2	62	62	59	60	58	50	58	95	100	98	112	122	131	130	129	123	119	110	96	71	69	63	60	60
3	63	63	68	79	47	36	49	78	98	102	120	123	127	127	123	118	109	100	84	66	65	63	62	65
4	64	66	70	58	37	35	47	82	99	118	121	125	124	121	117	118	116	104	82	68	66	62	62	64
5	67	65	57	53	48	39	50	84	112	120	127	121	124	119	118	113	111	98	92	73	74	66	64	61
6	63	60	57	57	47	44	56	88	107	107	117	126	126	123	115	109	105	102	90	72	72	68	70	69
7	60	59	60	59	53	50	59	90	100	109	124	128	122	124	119	114	112	103	90	78	79	73	66	61
8	60	59	58	58	52	47	60	88	102	112	108	106	110	105	107	113	109	110	94	82	74	64	60	61
9	61	59	57	56	50	51	62	95	105	115	113	126	122	120	110	109	110	105	93	79	75	75	72	69
10	68	63	60	60	56	48	62	90	98	103	111	109	120	117	115	108	106	105	102	82	79	77	73	70
11	66	63	61	65	55	51	68	90	104	113	120	121	120	127	118	118	115	104	95	74	70	69	66	66
12	66	63	62	58	55	54	64	84	102	113	118	115	122	121	120	124	123	115	103	78	66	61	61	61
13	62	61	64	60	46	42	56	81	98	104	112	120	120	125	122	118	118	116	104	74	67	71	70	69
14	69	67	68	67	52	43	58	81	108	107	115	122	115	110	114	118	117	110	95	80	74	65	64	65
15	64	65	69	56	41	37	55	87	108	104	114	134	138	132	120	118	112	106	101	78	72	70	68	68
16	68	64	62	59	54	51	64	88	108	114	117	130	137	136	132	126	122	115	109	89	75	70	71	71
17	71	66	65	62	57	46	60	92	109	103	108	116	120	118	118	108	105	99	89	80	70	71	67	66
18	66	65	61	58	54	51	63	96	102	101	106	118	116	115	113	111	100	97	88	76	68	68	66	65
19	65	62	62	63	58	53	68	105	126	115	116	122	116	114	104	106	109	98	88	75	72	75	76	74
20	70	65	66	66	56	51	68	86	98	108	113	107	107	111	108	101	99	100	93	86	83	82	81	81
21	79	74	71	63	61	60	74	98	108	118	113	118	116	119	114	111	115	110	102	88	80	80	79	82
22	81	78	68	63	62	68	84	96	107	113	119	116	117	118	116	109	105	102	95	85	79	80	76	73
23	69	66	68	67	54	53	74	100	109	109	118	120	120	124	120	118	120	119	111	84	70	70	68	68
24	68	68	64	59	57	55	75	100	117	120	119	C	C	C	C	C	C	C	103	76	77	79	76	70
25	69	67	66	65	61	56	74	95	104	105	C	C	C	C	C	118	117	112	104	89	75	72	71	74
26	74	76	75	70	66	61	82	101	104	112	118	121	121	126	124	120	116	118	114	94	83	79	71	71
27	71	71	73	70	58	52	71	101	115	119	118	124	124	121	125	120	115	116	114	99	80	80	81	79
28	76	75	75	75	65	64	87	102	108	114	120	133	130	130	126	119	116	116	113	100	78	75	78	74
29	72	72	73	74	56	56	77	100	120	108	109	120	130	130	127	120	122	118	111	90	79	79	82	79
30	77	76	70	66	60	60	82	99	106	110	111	114	120	128	131	127	122	117	108	90	84	88	88	91
31	89	81	70	68	60	56	72	90	103	111	118	120	122	124	120	115	108	106	100	87	80	81	82	80
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	29	29	29	29	30	30	30	31	31	31	31	31	31
MED	68	65	65	62	55	51	64	90	105	111	117	121	122	123	119	118	115	108	96	80	74	71	70	69
U Q	71	71	70	67	58	56	74	99	108	114	119	126	126	128	124	120	118	115	104	88	79	79	76	74
L Q	63	62	60	58	52	46	58	86	102	105	112	117	118	118	114	111	109	102	92	75	70	66	64	65

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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									
2											L	A	L		L									
3									L		L	L	L	L	L	A								
4											L		L	L										
5											L			L	L									
6												L	L	L	L									
7											L	L	L	L	L	A								
8											L		L	L	L	L		A						
9										L			A	L										
10													L		A									
11										L	L	L	L	L	A	A	L							
12										L	L	L	L	L	L	A	A							
13											L	L	L	L			A							
14									A		L	L			L	L	A							
15											L	L	L	L	L	L								
16											L	L	L	L	L	L								
17												L	L	L	L	L								
18										A	L	L	L	L	L	L								
19										L	L	A	L	L			L							
20										L	L	L	L	L	L	A								
21										L	L	L	L	L	L	L	L							
22											L	L	L	L	L	L								
23											L	L		L	L		L	A	A					
24									L	L	L	C	C	C	C	C	C	C						
25									L		C	C	C	C	C	L	A	A						
26										L	L	L	L	L	L	L	L							
27										L		L		L	L	L								
28											L	L		L	L									
29												L		L	L	L	L							
30										L	L	L	L	L	L	L	A	A						
31										L	L	L	L	L	L	L								
	00	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																								

MAR. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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	R	R	A	R	A	A	A	A	A	A	A						
2							B	R	R	R	R	A	R	R	R	A	A	A						
3							B	R	R	A	A	R	R	R	R	A	A	A						
4							B	216	A	A	R	R	R	R	R	A	A	240						
5							B	U R 244	R	R	A	A	R	A	A	R	A	R						
6							B	R	R	R	A	A	R	A	R	A	A	A						
7							B	R	R	A	A	A	R	R	A	A	A	B						
8							B	R	R	A	R	A	R	R	R	R	A	A						
9							B	R	R	A	R	R	A	R	R	R	A	A						
10							B	R	A	A	A	A	A	R	A	A	A	A						
11							B	R	R	R	R	R	R	A	A	A	R	A						
12							B	R	A	R	A	A	A	A	A	A	A	A						
13							B	R	R	A	R	R	R	R	R	R	A	A						
14							B	240	A	R	R	R	A	A	A	R	A	B						
15							B	R	R	A	A	R	R	R	U R 364	R	A	U R 220						
16							B	R	R	A	R	R	R	R	R	R	R	R						
17							B	R	R	A	R	R	R	R	R	A	R	R						
18							B	R	R	A	R	R	R	R	R	A	R	A						
19							B	R	R	R	R	A	A	R	R	R	A	A						
20							B	R	R	R	A	A	R	R	R	A	R	A						
21							B	R	A	R	R	A	R	R	R	A	R	A	B					
22							B	R	A	A	A	A	A	R	R	R	A	A	B					
23							B	R	R	A	A	R	R	R	R	A	A	U A 256	B					
24							B	R	R	R	R	C	C	C	C	C	C	C	B					
25							B	U R 284	A	A	C	C	C	C	C	A	A	A						
26							180	R	A	A	A	A	A	A	A	R	R	A						
27							B	R	R	A	A	R	R	A	R	R	R	A						
28							B	R	R	A	R	R	R	R	A	A	A	A						
29							184	R	R	R	A	R	A	A	A	A	A	A						
30							B	R	R	A	R	R	R	A	A	A	A	A	B					
31							192	288	A	A	A	R	R	R	A	R	A	R	B					
	00	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	5							1			3						
MED							184	244							U R 364			U 240						
U Q							192	286										U A 256						
L Q							180	228										U R 220						

MAR. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 15	E B 14	E B 16	E B 14	E B 14	E B 14	G	G	40	G	43	46	46	43	41	38	23	22	E B 14	E B 14	E B 15	E B 15	E B 15
2	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	G	G	49	G	G	G	J A 46	40	38	J A 26	J A 36	E B 14	J A 18	E B 16	E B 15
3	J A 19	18	E B 15	E B 14	E B 14	E B 15	E B 14	G	G	44	40	G	G	G	G	J A 54	J A 72	J A 67	J A 50	J A 56	J A 50	21	E B 14	E B 14
4	E B 15	E B 15	E B 15	E B 15	E B 14	E B 13	E B 14	28	42	42	G	G	G	G	G	41	38	34	J A 22	E B 15	J A 22	E B 15	J A 22	E B 15
5	E B 14	E B 15	E B 14	E B 15	J A 18	E B 14	E B 15	G	G	G	42	44	G	43	44	G	40	G	E B 14	E B 14	E B 15	E B 16	E B 15	E B 14
6	E B 14	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14	G	G 27	G	42	42	G	40	G	42	36	J A 33	E B 15	E B 14	E B 15	E B 15	E B 16	20
7	E B 14	E B 15	E B 13	E B 14	E B 14	E B 16	E B 16	G	G 26	44	43	47	G	G	G	J A 46	J A 48	26	J A 20	E B 15	E B 15	J A 29	J A 38	J A 26
8	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	G	G	44	G	45	G	G	G	G	J A 54	J A 52	J A 59	J A 41	J A 33	E B 15	E B 15	E B 15
9	E B 13	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	G	G	G	G	46	G	G	G	38	26	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
10	E B 16	E B 15	E B 15	E B 14	21	E B 15	E B 17	G	41	42	47	50	J A 44	G	J A 56	44	J A 42	J A 46	J A 29	J A 23	J A 26	J A 46	J A 46	J A 38
11	J A 31	J A 29	J A 28	E B 15	E B 15	E B 15	E B 15	G	G	G	G	G	G	51	46	40	G	J A 43	29	E B 15	J A 31	E B 15	E B 15	E B 14
12	20	22	20	E B 15	E B 14	E B 15	E B 14	G	41	G	44	41	J A 48	45	44	44	J A 61	J A 36	J A 46	J A 40	E B 15	E B 14	E B 15	22
13	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	E B 16	G	G	44	G	G	G	G	G	G	40	36	E B 15	E B 14	E B 14	E B 14	E B 13	E B 15
14	E B 14	E B 15	E B 15	E B 14	E B 15	E B 14	20	35	40	G	G	G	48	45	39	G	36	35	E B 14	E B 15	E B 14	E B 15	E B 15	E B 15
15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 17	G	G	41	J A 39	G	G	G	G	G	J A 42	G	44	J A 27	E B 16	J A 43	J A 30	22
16	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	21	G	G	43	G	G	G	G	G	G	G	G	E B 13	E B 14	E B 15	E B 14	J A 18	E B 15
17	E B 14	E B 15	E B 16	E B 15	E B 14	E B 14	20	G	G	44	G	G	G	G	G	42	G	G	E B 16	E B 14	E B 14	E B 14	E B 14	E B 15
18	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	20	G	G	41	G	G	G	G	G	J A 40	G	32	22	J A 27	E B 15	E B 15	E B 15	J A 22
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	20	G	G	G	G	42	42	G	G	G	38	36	J A 29	E B 14	E B 15	J A 28	E B 14	E B 14
20	E B 14	E B 15	E B 14	E B 13	E B 15	E B 15	21	G	G	G 32	45	46	G	G	G	J A 46	G	33	E B 16	E B 15	E B 15	E B 14	E B 14	E B 15
21	E B 15	E B 14	E B 15	E B 15	E B 16	E B 16	20	G	41	G	G	43	G	G	G	41	G	28	34	E B 14	E B 14	E B 14	E B 14	E B 15
22	E B 14	E B 14	E B 15	E B 15	E B 16	E B 14	21	G	40	42	42	42	44	G	G	G	38	32	22	J A 20	E B 15	J A 32	E B 15	E B 15
23	E B 15	E B 15	E B 16	20	20	20	22	G	G 29	46	46	G	G	G	G	J A 74	35	35	J A 32	J A 39	E B 15	E B 14	E B 15	E B 14
24	E B 15	E B 14	J A 20	20	21	E B 15	24	G	G 27	G	G	C	C	C	C	C	C	C	20	J A 22	J A 21	E B 15	E B 15	E B 15
25	E B 14	E B 15	E B 14	E B 14	E B 15	E B 14	23	G	37	40	C	C	C	C	C	J A 61	J A 56	J A 46	J A 70	J A 23	E B 14	E B 14	E B 14	E B 15
26	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	G	G	35	40	40	42	41	J A 47	43	G	G	30	J A 31	22	E B 15	E B 15	E B 16	E B 15
27	E B 16	E B 16	E B 15	E B 14	E B 14	E B 14	21	G	G	39	J A 53	G	G	42	G	G	G 26	29	J A 28	J A 30	J A 32	E B 14	E B 15	E B 14
28	22	E B 15	E B 15	E B 15	E B 15	E B 14	23	G	G 29	40	G	G	G	G	41	42	36	30	E B 14	E B 14	E B 14	E B 14	E B 15	E B 15
29	E B 14	E B 15	E B 14	E B 15	E B 14	E B 15	24	G	G	G	43	G	43	43	41	41	37	30	20	E B 15	E B 14	E B 15	E B 14	E B 14
30	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	24	G	G 30	43	G	G	G	43	45	42	42	36	J A 32	J A 24	22	J A 26	E B 16	E B 15
31	E B 15	E B 13	E B 15	E B 15	E B 14	E B 15	24	36	41	44	44	G	G	G	42	G	41	G	E B 15	J A 25	19	E B 15	19	20
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	29	29	29	29	30	30	30	31	31	31	31	31	31
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	20	G	G	40	G	G	G	G	G	41	38	32	22	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	15	E B 15	E B 15	E B 15	15	E B 15	21	G	37	43	43	43	42	43	42	J A 44	J A 42	J A 36	J A 32	J A 27	J A 21	J A 18	J A 16	15
L Q	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	G	G	G	G	G	G	G	G	G 26	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15

MAR. 2014 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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 14	E B 15	E B 14	E B 16	E B 14	E B 14	E B 14	G	G	39	G	41	44	43	40	38	35	22	E B 15	E B 14	E B 14	E B 15	E B 15	E B 15
2	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	G	G	45	G	G	G	39	35	38	21	21	E B 14	E B 15	E B 16	E B 15
3	E B 16	E B 15	E B 15	E B 14	E B 14	E B 15	E B 14	G	G	37	38	G	G	G	G	45	66	58	46	33	39	E B 15	E B 14	E B 14
4	E B 15	E B 15	E B 15	E B 15	E B 14	E B 13	E B 14	28	39	41	G	G	G	G	G	37	36	28	18	E B 15	18	E B 15	E B 16	E B 15
5	E B 14	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15	G	G	G	39	43	G	40	40	G	37	G	E B 14	E B 14	E B 15	E B 16	E B 15	E B 14
6	E B 14	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14	G	G 24	G	39	40	G	39	G	38	32	22	E B 15	E B 14	E B 15	E B 15	E B 16	E B 16
7	E B 14	E B 15	E B 13	E B 14	E B 14	E B 16	E B 16	G	G 25	37	41	44	G	G	G	38	42	25	17	E B 15	E B 15	25	30	19
8	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	G	G	36	G	43	G	G	G	G	45	38	51	36	E B 15	E B 15	E B 15	E B 15
9	E B 13	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	G	G	G	G	42	G	G	G	35	24	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
10	E B 16	E B 15	E B 15	E B 14	E B 15	E B 15	E B 17	G	35	39	42	42	38	G	48	40	37	37	21	19	E B 15	31	40	30
11	E B 15	21	18	E B 15	E B 15	E B 15	E B 15	G	G	G	G	G	G	47	42	40	G	34	24	E B 15	24	E B 15	E B 15	E B 14
12	E B 15	E B 15	E B 14	E B 15	E B 14	E B 15	E B 14	G	37	G	39	37	40	39	41	43	41	30	30	24	E B 15	E B 14	E B 15	E B 15
13	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	E B 16	G	G	40	G	G	G	G	G	G	36	29	E B 15	E B 14	E B 14	E B 14	E B 13	E B 15
14	E B 14	E B 15	E B 15	E B 14	E B 15	E B 14	19	31	37	G	G	G	42	41	37	G	33	24	E B 14	E B 15	E B 14	E B 15	E B 15	E B 15
15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 17	G	G	37	35	G	G	G	G	G	37	G	36	21	E B 16	34	18	E B 15
16	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	19	G	G	38	G	G	G	G	G	G	G	G	E B 13	E B 14	E B 15	E B 14	E B 15	E B 15
17	E B 14	E B 15	E B 16	E B 15	E B 14	E B 14	19	G	G	37	G	G	G	G	G	39	G	G	E B 16	E B 14	E B 14	E B 14	E B 14	E B 15
18	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	18	G	G	37	G	G	G	G	G	36	G	27	19	E B 14	E B 15	E B 15	E B 15	E B 15
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	19	G	G	G	G	40	38	G	G	G	36	34	23	E B 14	E B 15	20	E B 14	E B 14
20	E B 14	E B 15	E B 14	E B 13	E B 15	E B 15	20	G	G	G 28	40	42	G	G	G	42	G	31	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15
21	E B 15	E B 14	E B 15	E B 15	E B 16	E B 16	20	G	37	G	G	40	G	G	G	38	G	26	30	E B 14	E B 14	E B 14	E B 14	E B 15
22	E B 14	E B 14	E B 15	E B 15	E B 16	E B 14	19	G	35	40	37	39	42	G	G	G	35	32	19	E B 16	E B 15	21	E B 15	E B 15
23	E B 15	E B 15	E B 16	E B 16	E B 16	E B 14	20	G	G 26	40	40	G	G	G	G	55	32	30	28	33	E B 15	E B 14	E B 15	E B 14
24	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	19	G	G 26	G	G	C	C	C	C	C	C	C	18	E B 16	E B 16	E B 15	E B 15	E B 15
25	E B 14	E B 15	E B 14	E B 14	E B 15	E B 14	21	G	35	37	C	C	C	C	C	52	44	39	64	19	E B 14	E B 14	E B 14	E B 15
26	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	G	G	33	37	40	42	41	41	36	G	G	28	27	E B 15	E B 15	E B 15	E B 16	E B 15
27	E B 16	E B 16	E B 15	E B 14	E B 14	E B 14	20	G	G	36	40	G	G	42	G	G	G 19	26	22	18	16	E B 14	E B 15	E B 14
28	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14	21	G	G 28	36	G	G	G	G	37	37	34	27	E B 14	E B 14	E B 14	E B 14	E B 15	E B 15
29	E B 14	E B 15	E B 14	E B 15	E B 14	E B 15	22	G	G	G	40	G	43	40	38	38	34	26	17	E B 15	E B 14	E B 15	E B 14	E B 14
30	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	21	G	G 28	39	G	G	G	42	44	39	36	33	24	16	E B 15	21	E B 16	E B 15
31	E B 15	E B 13	E B 15	E B 15	E B 14	E B 15	23	32	39	41	42	G	G	G	40	G	33	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	29	29	29	29	30	30	30	31	31	31	31	31	31
MED	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	18	G	G	37	G	G	G	G	G	38	35	28	19	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G	35	39	40	42	39	40	39	39	37	33	27	19	15	15	E B 16	E B 15
L Q	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	G	G	G	G	G	G	G	G	G 24	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15

MAR. 2014 fbEs (0.1MHz)

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MAR. 2014 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	14	15	14	16	14	14	14	15	16	16	18	18	20	20	24	19	16	13	15	14	14	15	15	15
2	14	15	15	15	15	14	15	14	19	15	18	21	16	20	17	16	16	15	16	14	14	15	16	15
3	16	15	15	14	14	15	14	16	13	16	16	22	22	22	21	19	18	14	14	14	15	15	14	14
4	15	15	15	15	14	13	14	12	14	11	19	19	18	18	17	17	13	17	15	15	15	15	16	15
5	14	15	14	15	14	14	15	15	17	17	16	16	22	20	20	18	17	15	14	14	15	16	15	14
6	14	15	14	15	14	14	14	15	14	18	17	18	19	16	15	14	13	15	15	14	15	15	16	16
7	14	15	13	14	14	16	16	15	13	16	14	20	20	20	18	17	14	14	14	15	15	14	15	15
8	15	15	15	15	14	15	15	14	15	16	16	16	17	16	16	15	14	13	14	15	15	15	15	15
9	13	15	15	14	15	15	15	14	14	15	19	19	16	17	24	14	12	14	15	15	15	15	15	15
10	16	15	15	14	15	15	17	14	14	18	20	24	19	20	22	20	18	14	13	14	15	15	14	14
11	15	15	14	15	15	15	15	14	12	15	14	16	17	17	16	15	16	12	15	15	15	15	15	14
12	15	15	14	15	14	15	14	14	16	16	16	18	17	16	19	16	13	14	14	14	15	14	15	15
13	14	14	15	14	14	14	16	15	15	18	18	16	17	17	15	16	15	14	15	14	14	14	13	15
14	14	15	15	14	15	14	14	13	12	17	19	17	15	16	13	17	17	14	14	15	14	15	15	15
15	15	15	14	14	14	14	17	14	15	13	18	19	18	16	21	19	17	16	15	13	16	14	14	15
16	15	15	15	15	14	14	15	14	12	16	21	20	20	18	16	17	16	14	13	14	15	14	15	15
17	14	15	16	15	14	14	15	14	15	18	20	19	22	19	18	17	16	14	16	14	14	14	14	15
18	15	15	16	15	15	14	15	15	13	20	18	18	17	21	18	18	16	14	13	14	15	15	15	15
19	15	15	15	15	15	14	15	17	15	13	21	22	22	19	18	17	12	13	14	14	15	14	14	14
20	14	15	14	13	15	15	15	16	15	15	20	17	18	21	20	20	18	13	16	15	15	14	14	15
21	15	14	15	15	16	16	16	18	14	14	20	20	20	20	19	20	17	13	15	14	14	14	14	15
22	14	14	15	15	16	14	14	12	12	14	14	19	22	18	17	17	16	14	14	16	15	15	15	15
23	15	15	16	16	16	14	14	15	12	11	15	16	17	17	20	18	13	15	17	15	15	14	15	14
24	15	14	15	15	15	15	14	14	14	20	20	C	C	C	C	C	C	C	14	16	16	15	15	15
25	14	15	14	14	15	14	15	14	13	19	C	C	C	C	C	18	14	13	15	15	14	14	14	15
26	15	15	15	15	14	14	14	14	13	15	16	17	19	17	16	14	14	14	14	15	15	15	16	15
27	16	16	15	14	14	14	15	14	15	16	19	20	19	18	20	18	14	14	14	15	14	14	15	14
28	14	15	15	15	15	14	15	13	17	17	16	14	22	17	14	18	15	12	14	14	14	14	15	15
29	14	15	14	15	14	15	13	15	14	14	15	19	19	16	17	18	14	12	13	15	14	15	14	14
30	15	14	15	15	15	14	14	13	14	13	16	20	19	17	18	16	14	15	14	16	15	13	16	15
31	15	13	15	15	14	15	16	16	16	18	18	19	17	20	20	22	14	14	15	15	15	15	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	29	29	29	29	30	30	30	31	31	31	31	31	31
MED	15	15	15	15	14	14	15	14	14	16	18	19	19	18	18	17	15	14	14	15	15	15	15	15
U Q	15	15	15	15	15	15	15	15	15	18	19	20	20	20	20	18	16	14	15	15	15	15	15	15
L Q	14	15	14	14	14	14	14	14	13	14	16	17	17	17	16	16	14	13	14	14	14	14	14	14

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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	287	290	298	302	308	279	317	343	333	316	315	310	305	299	306	311	315	322	311	303	307	280	285	283
2	290	306	310	311	308	297	315	350	346	324	307	309	301	298	295		313	315	329	301	299	292	300	288
3	284	305	314	328	349	302	321	351	344	332	318	314	310	303	304	304	314	315	313	299	281	277	284	282
4	284	302	334	336	315	304	308	348	319	324	314	307	307	299	294	296	313	323	316	303	300	279	276	289
5	306	308	306	291	298	302	302	334	328	325	323	312	308	308	301	304	314	313	312	306	299	292	285	283
6	297	297	293	317	289	290	315	347	337	324	318	312	315	310	308	306	305	319	314	290	297	283	293	306
7	288	276	294	305	300	284	316	351	329	323	311	316	300	308	305	307	314	315	314	297	302	313	299	293
8	297	290	286	301	297	299	324	357	341	336	327	315	304	310	305	317	305	325	310	310	303	294	305	305
9	308	302	290	294	287	285	318	346	338	335	310	302	308	311	300	306	309	316	314	304	307	299	311	300
10	289	298	307	307	310	299	326	360	342	328	321	310	308	297	309	306	311	317	319	307	295	305	293	302
11	286	281	302	316	310	293	325	343	335	321	317	314	301	307	303	311	316	327	329	304	300	296	288	289
12	273	278	298	303	295	301	325	338	335	322	311	319	304	305	298	302	307	320	328	314	294	285	280	281
13	282	294	298	325	336	306	331	351	336	317	311	320	305	308	301	303	312	314	321	313	286	293	299	290
14	278	280	304	325	308	289	321	330	335	324	322	312	304	302	299	308	313	323	322	305	300	290	282	277
15	270	288	321	334	319	301	324	333	338	319	308	317	311	314	302	310	313	324	327	306	308	302	290	299
16	300	307	308	313	311	309	328	334	338	319	305	298	304	304	301	300	306	321	323	319	291	306	300	294
17	307	304	298	318	329	302	332	340	346	319	313	306	314	304	308	307	314	321	315	307	302	302	296	286
18	299	307	306	300	302	294	328	344	342	323	310	320	309	301	301	308	304	312	311	310	285	301	288	275
19	290	282	295	300	295	283	304	323	336	326	300	311	307	308	297	298	313	312	316	290	284	290	306	299
20	305	288	290	307	314	307	336	338	339	328	323	311	297	299	308	302	309	315	308	296	296	291	288	291
21	307	303	308	306	292	297	326	331	333	325	313	309	295	297	293	292	303	310	308	311	287	279	276	291
22	301	302	278	276	279	297	324	331	322	307	312	302	294	295	295	299	305	311	308	304	285	297	296	292
23	272	275	286	326	290	276	324	337	339	305	302	301	293	294	289	283	301	309	333	313	284	290	280	274
24	298	308	304	282	274	285	322	328	318	313	304	C	C	C	C	C	C	C	330	286	285	286	299	290
25	289	284	293	310	295	303	334	328	329	316	C	C	C	C	C	285	300	308	314	317	289	280	281	275
26	285	291	302	309	298	302	338	341	314	313	297	291	286	285	287	288	294	304	326	302	279	284	282	277
27	279	283	306	327	314	273	321	326	322	314	302	290	291	285	294	295	290	296	313	315	270	272	276	272
28	275	275	276	300	291	284	323	326	320	315	300	304	292	288	289	295	294	306	312	323	290	271	280	276
29	269	279	293	317	290	288	332	331	345	320	297	284	289	286	292	283	298	300	314	307	284	270	284	296
30	297	299	295	300	291	298	341	341	328	323	306	287	282	283	291	298	298	305	313	301	272	272	283	299
31	312	313	304	309	287	293	326	334	330	308	306	298	293	286	289	291	290	304	310	297	277	283	283	286
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	29	29	29	29	29	30	30	31	31	31	31	31	31
MED	289	294	298	309	298	297	324	338	335	322	311	310	304	301	300	302	308	315	314	305	291	290	288	289
U Q	300	304	306	318	311	302	328	347	339	325	317	314	308	308	304	307	313	321	323	311	300	297	299	296
L Q	282	282	293	300	291	285	318	331	328	316	305	302	294	294	294	295	301	309	312	301	284	280	282	281

MAR. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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									
2											L	A	L		L									
3									L		L	L	L	L	L	A								
4											L		L	L										
5											L			L	L									
6												L	L	L	L									
7											L	L	L	L	L	A								
8											L		L	L	L	L		A						
9										L			A	L										
10													L		A									
11										L	L	L	L	L	A	A	L							
12										L	L	L	L	L	L	A	A							
13											L	L	L	L			A							
14									A		L	L			L	L	A							
15											L	L	L	L	L	L								
16											L	L	L	L	L	L								
17												L	L	L	L	L								
18										A	L	L	L	L	L	L								
19										L	L	A	L	L			L							
20										L	L	L	L	L	L	A								
21										L	L	L	L	L	L	L	L							
22											L	L	L	L	L	L								
23											L	L		L	L		L	A	A					
24									L	L	L	C	C	C	C	C	C	C						
25									L		C	C	C	C	C	L	A	A						
26										L	L	L	L	L	L	L	L							
27										L		L		L	L	L								
28											L	L		L	L									
29												L		L	L	L	L							
30										L	L	L	L	L	L	L	A	A						
31										L	L	L	L	L	L	L								
	00	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																								

MAR. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1															270									
2											278	248	288		286									
3									240		272	272	280	286	280	252								
4											280		276	272										
5											270			274	278									
6												278	268	274	260									
7											274	272	268	276	278	252								
8											262		272	254	284	276		240						
9										258			246	276										
10													274		264									
11										278	250	270	260	296	248	258	250							
12										268	268	250	296	274	292	266	244							
13											272	268	290	278			240							
14									242		246	268			294	272	244							
15											276	274	280	264	284	282								
16											252	294	276	270	272	262								
17												290	284	274	280	278								
18										244	256	272	268	276	278	284								
19										250	284	260	260	270			270							
20										260	262	286	314	278	272	258								
21										264	254	266	278	300	268	298	290							
22											268	276	306	272	284	284								
23											292	292		306	290		276	244	226					
24									264	256	272	C	C	C	C	C	C	C						
25									250		C	C	C	C	C	302	270	244						
26										246	266	296	302	316	306	294	286							
27										256		302		306	300	280								
28											272	292		274	302									
29												306		302	290	308	292							
30										248	264	308	322	314	308	294	266	244						
31										284	276	282	292	310	288	290								
	00	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	12	23	23	22	25	25	19	11	4	1					
MED									246	257	270	276	279	276	284	280	270	244	226					
U Q									257	266	276	292	292	301	291	294	286	244						
L Q									241	249	262	268	268	273	272	262	244	242						

MAR. 2014 h'F2 (KM)

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IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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 268	E B 268	E B 266	E B 260	228	224	228	216	214	216	218	212	222	230	228	232	220	218	212	212	218	226	E B 276	E B 276
2	E B 262	E B 256	E B 246	E B 246	E B 234	E B 250	E B 248	218	214	214	208	A	222	226	220	222	E A 236	222	210	216	E B 236	E B 240	E B 258	E B 270
3	E B 282	E B 268	E B 242	214	198	226	E B 242	210	200	224	198	208	204	212	212	A	E A 250	E A 248	E A 242	E A 258	E A 302	E B 270	E B 288	E B 286
4	E B 274	E B 258	228	208	204	E B 262	E B 256	220	220	226	226	242	226	202	228	226	234	222	206	218	E A 240	E B 276	E B 286	E B 272
5	E B 246	E B 248	E B 250	E B 232	216	E B 260	E B 256	224	218	224	216	218	230	212	214	222	234	214	216	210	E B 240	232	E B 268	E B 282
6	E B 268	E B 256	E B 258	220	208	E B 248	E B 248	220	228	218	216	216	206	208	206	224	222	220	216	210	E B 242	E B 238	E B 260	E B 254
7	E B 268	E B 288	E B 274	228	216	E B 278	E B 246	210	214	218	214	216	208	216	214	A	234	220	208	214	E B 238	E A 242	E A 260	E A 268
8	E B 264	E B 264	E B 262	E B 244	218	E B 244	E B 240	214	214	218	208	E A 236	210	204	208	210	232	A	E A 238	E A 244	222	222	E B 248	E B 260
9	E B 262	E B 258	E B 258	E B 244	E B 244	E B 260	E B 244	214	220	210	208	208	A	220	218	228	230	222	218	E B 210	E B 242	E B 236	E B 232	E B 246
10	E B 254	E B 258	E B 254	E B 240	224	E B 238	232	210	218	212	222	224	202	222	A	222	234	230	228	210	E B 238	E A 250	E A 298	E A 268
11	E B 258	E A 294	E A 280	E B 232	E B 222	E B 244	E B 236	216	210	208	208	206	208	204	A	A	210	224	214	208	E A 246	E B 234	E B 252	E B 268
12	E B 276	E B 276	E B 256	E B 236	E B 236	E B 236	222	212	216	214	214	208	206	206	218	A	A	224	216	208	226	E B 238	E B 268	E B 276
13	E B 294	E B 282	E B 258	230	202	226	226	210	226	228	214	202	208	212	E A 238	218	A	232	214	194	E B 248	E B 264	E B 258	E B 260
14	E B 278	E B 278	E B 256	212	196	E B 234	232	214	A	218	200	202	230	220	194	222	A	228	210	210	214	E B 236	E B 278	E B 288
15	E B 298	E B 274	226	208	210	E B 262	230	216	222	210	208	198	208	212	202	224	226	232	224	212	E B 236	E A 276	E A 262	E B 250
16	E B 244	E B 246	E B 248	E B 234	216	E B 248	222	220	224	216	208	194	208	214	218	208	232	226	214	206	218	E B 240	E B 254	E B 258
17	E B 250	E B 246	E B 248	E B 236	220	216	236	224	218	218	234	214	206	202	220	218	232	224	214	E B 220	E B 224	E B 240	E B 248	E B 264
18	E B 256	E B 246	E B 240	E B 236	228	E B 248	244	224	224	A	208	202	188	206	210	226	230	230	216	226	E B 242	E B 250	E B 256	E B 276
19	E B 276	E B 288	E B 278	242	218	E B 252	240	228	228	204	214	A	192	208	218	222	226	222	218	224	E B 246	E A 270	E B 246	E B 254
20	E B 254	E B 268	E B 264	E B 242	206	E B 234	224	214	216	216	202	196	226	202	208	A	238	E A 240	220	E B 228	E B 232	E B 246	E B 266	E B 264
21	E B 234	230	E B 250	E B 234	E B 248	E B 250	214	222	224	212	202	192	204	206	198	222	226	236	224	218	E B 226	E B 258	E B 272	E B 256
22	E B 248	E B 236	E B 254	E B 294	E B 278	E B 248	222	216	220	226	198	208	208	210	218	216	224	230	230	220	232	E A 258	E B 242	E B 254
23	E B 272	E B 290	E B 268	226	216	E B 278	228	222	226	212	212	218	232	216	208	270	218	A	A	212	210	E B 238	E B 262	E B 286
24	E B 262	E B 252	E B 246	E B 262	E B 258	E B 278	E A 240	222	216	200	192	C	C	C	C	C	C	C	222	206	E B 246	E B 242	E B 248	E B 260
25	E B 272	E B 272	E B 266	E B 240	224	222	222	210	212	206	C	C	C	C	C	A	A	A	E A 254	222	206	E B 250	E B 276	E B 276
26	E B 274	E B 266	E B 248	E B 234	E B 228	E B 222	216	216	214	192	176	194	212	214	204	204	226	236	228	218	212	224	E B 242	E B 278
27	E B 286	E B 282	E B 250	224	220	E B 246	220	218	214	H 184	208	198	230	212	206	222	226	E A 238	228	226	202	E B 262	E B 280	E B 280
28	E B 280	E B 282	E B 264	E B 242	222	E B 250	212	212	208	214	H 182	H 168	216	206	202	226	224	232	226	216	206	E B 250	E B 268	E B 262
29	E B 292	E B 288	E B 254	228	204	E B 240	224	222	214	214	212	H 194	212	206	206	224	224	232	224	216	222	E B 258	E B 266	E B 256
30	E B 256	E B 240	E B 246	E B 234	E B 230	E B 250	226	218	218	208	204	H 182	H 180	222	218	230	A	A	226	218	E B 232	E A 286	E B 276	E B 258
31	E B 248	224	218	E B 228	214	E B 236	218	218	226	212	194	200	198	216	218	216	228	238	226	226	240	E B 260	E B 260	E B 260
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	30	30	30	27	28	29	27	24	25	26	30	31	31	31	31	31
MED	E B 268	E B 266	E B 254	E B 234	214	E B 248	226	216	218	214	208	204	208	212	213	222	227	226	218	214	E 232	E B 246	E B 262	E B 264
U Q	E B 276	E B 282	E B 264	E B 242	E B 228	E B 252	E B 242	222	224	218	214	216	222	216	218	226	234	232	226	222	E B 242	E B 260	E B 276	E B 276
L Q	E B 254	E B 248	E B 246	228	210	234	222	214	214	210	202	196	205	206	206	218	224	222	214	210	218	238	E B 252	E B 258

MAR. 2014 h′F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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	122	122	A	118	A	114	116	120	120	A	A						
2							B	114	114	114	116	122	122	124	128	A	A	A						
3							B	126	114	A	120	124	128	122	126	124	A	A						
4							B	118	118	A	118	118	124	126	126	A	A	126						
5							B	126	114	110	A	118	118	A	A	124	124	120						
6							B	118	118	118	A	A	120	A	124	A	A	A						
7							B	120	116	112	114	114	120	120	122	A	A	B						
8							B	114	112	A	112	116	122	122	122	122	A	A						
9							B	122	118	122	122	122	A	118	126	126	118	A						
10							B	118	A	116	A	A	A	118	A	122	122	A						
11							B	122	122	122	120	124	118	126	122	122	120	A						
12							B	118	A	112	A	A	A	A	114	118	A	A						
13							B	122	118	122	126	116	124	124	122	122	116	A						
14							B	116	118	112	124	124	A	A	A	126	A	B						
15							B	126	112	A	A	118	118	124	114	114	A	114						
16							B	116	116	A	116	118	118	118	124	118	114	120						
17							B	116	114	A	116	120	120	120	120	A	118	114						
18							B	116	116	A	116	116	120	116	112	A	116	114						
19							B	122	114	114	114	A	A	120	120	120	120	116						
20							B	116	116	116	A	A	120	120	122	A	118	118						
21							B	118	112	114	112	A	118	120	124	A	116	114	B					
22							B	114	A	A	A	126	A	116	116	116	A	116	B					
23							B	114	118	A	A	118	120	120	122	A	A	118	B					
24							B	118	116	116	122	C	C	C	C	C	C	C	B					
25							B	110	A	A	C	C	C	C	C	A	A	A						
26							118	116	A	A	A	A	A	A	A	112	110	112						
27							B	114	112	A	A	112	112	A	112	118	120	112						
28							B	110	116	A	116	116	116	118	A	A	110	A						
29							112	118	116	116	A	116	A	A	A	A	112	A						
30							B	116	116	A	116	118	118	A	118	116	116	116	B					
31							116	116	118	116	116	116	116	116	A	114	A	118	B					
	00	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	31	26	16	19	21	21	21	22	18	16	15						
MED							116	118	116	116	116	118	120	120	122	120	117	116						
U Q							118	122	118	117	120	122	121	123	124	122	120	118						
L Q							112	116	114	113	116	116	118	118	118	116	115	114						

MAR. 2014 h′E (KM)

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	G	G	102	G	106	114	120	120	114	104	108	98	B	B	B	B	B
2	B	B	B	B	B	B	B	G	G	G	G	118	G	G	G	106	104	106	100	104	B	96	B	B
3	96	96	B	B	B	B	B	G	G	102	116	G	G	G	G	122	108	102	102	96	96	96	B	B
4	B	B	B	B	B	B	B	148	118	104	G	G	G	G	G	98	106	154	98	B	94	B	94	B
5	B	B	B	B	94	B	B	G	G	G	106	112	G	102	104	G	116	G	B	B	B	B	B	B
6	B	B	B	B	B	B	B	G	102	G	102	102	G	102	G	106	106	106	B	B	B	B	B	98
7	B	B	B	B	B	B	B	G	104	116	124	120	G	G	G	106	106	104	104	B	B	102	102	102
8	B	B	B	B	B	B	B	G	G	104	G	120	G	G	G	G	104	104	104	104	104	B	B	B
9	B	B	B	B	B	B	B	G	G	G	G	G	104	G	G	G	112	108	B	B	B	B	B	B
10	B	B	B	B	96	B	B	G	108	120	104	108	106	G	106	122	120	104	104	102	100	100	100	92
11	98	92	96	B	B	B	B	G	G	G	G	G	G	122	116	118	G	106	106	B	100	B	B	B
12	100	100	100	B	B	B	B	G	106	G	102	102	106	106	114	124	106	106	106	102	B	B	B	86
13	B	B	B	B	B	B	B	G	G	120	G	G	G	G	G	G	116	104	B	B	B	B	B	B
14	B	B	B	B	B	B	140	164	112	G	G	G	102	102	100	G	106	106	B	B	B	B	B	B
15	B	B	B	B	B	B	B	G	G	104	104	G	G	G	G	G	106	G	102	102	B	102	92	92
16	B	B	B	B	B	B	156	G	G	106	G	G	G	G	G	G	G	G	B	B	B	B	106	B
17	B	B	B	B	B	B	156	G	G	100	G	G	G	G	G	104	G	G	B	B	B	B	B	B
18	B	B	B	B	B	B	148	G	G	102	G	G	G	G	G	108	G	132	110	92	B	B	B	96
19	B	B	B	B	B	B	142	G	G	G	G	104	102	G	G	G	122	122	114	B	B	102	B	B
20	B	B	B	B	B	B	148	G	G	104	104	104	G	G	G	108	G	122	B	B	B	B	B	B
21	B	B	B	B	B	B	144	G	116	G	G	106	G	G	G	104	G	120	112	B	B	B	B	B
22	B	B	B	B	B	B	146	G	104	102	98	120	116	G	G	G	106	122	114	110	B	104	B	B
23	B	B	B	102	98	98	162	G	102	104	104	G	G	G	G	106	104	132	126	110	B	B	B	B
24	B	B	100	102	102	B	132	G	102	G	G	C	C	C	C	C	C	C	116	114	106	B	B	B
25	B	B	B	B	B	B	154	G	100	100	C	C	C	C	C	108	106	106	104	102	B	B	B	B
26	B	B	B	B	B	B	G	G	104	102	100	104	102	100	100	G	G	120	108	104	B	B	B	B
27	B	B	B	B	B	B	146	G	G	102	102	G	G	102	G	G	94	122	110	108	104	B	B	B
28	100	B	B	B	B	B	140	G	98	106	G	G	G	G	102	104	116	108	B	B	B	B	B	B
29	B	B	B	B	B	B	150	G	G	G	106	G	100	106	108	104	118	106	106	B	B	B	B	B
30	B	B	B	B	B	B	140	G	104	102	G	G	G	108	132	124	124	122	120	96	94	96	B	B
31	B	B	B	B	B	B	148	160	120	118	120	G	G	G	106	G	102	G	B	92	96	B	96	96
	00	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	2	4	1	16	3	15	20	14	13	9	10	11	18	23	25	21	15	9	8	6	7
MED	99	96	100	102	97	98	147	160	104	104	104	106	104	104	106	107	106	108	106	102	100	101	98	96
U Q	100	100	100		100		152	164	112	106	106	119	110	108	116	118	116	122	113	108	104	102	102	98
L Q	97	92	96		95		141	148	102	102	102	104	102	102	102	104	104	106	103	96	95	96	94	92

IONOSPHERIC DATA STATION Kokubunji

MAR. 2014 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										L 1		L 2	C 1	C 2	C 1	C 1	L 2	L 2	F 1					
2												C 2				L 2	L 2	L 2	F 2	F 2		F 2		
3	F 2	F 1								L 2	C 2					C 2	L 2	L 3	F 3	F 4	F 3	F 2		
4								H 1	C 2	L 2						L 1	L 2	H 1	F 3		F 2		F 2	
5					F 1						L 1	C 2		L 2	L 2		C 1							
6									L 1		L 2	L 2		L 2		L 2	L 2	L 2						F 1
7									L 2	C 1 L 2	C 1	C 1				L 2	L 2	L 2	F 2			F 5	F 3	F 2
8										L 2		C 2					L 2	L 3	F 4	F 4	F 3			
9													L 2				C 2	L 2						
10					F 1				L 1	C 2	L 2	L 2	L 2		L 2	C 1	C 1	L 2	F 4	F 3	F 2	F 2	F 3	F 3
11	F 1	F 3	F 2											C 2	C 2	C 2		L 2	F 2		F 3			
12	F 1	F 2	F 2						L 2		L 2	L 2	L 2	L 2	C 1	C 1	L 3	L 2	F 2	F 3				F 1
13										C 2							C 2	L 3						
14							H 1	H 2	C 2				L 2	L 2	L 2		L 1	L 2						
15										L 2	L 2						L 2		F 3	F 2		F 4	F 3	F 2
16							H 1			L 2													F 2	
17							H 1			L 2						L 2								
18							H 1			L 2						L 2		C 2	F 1	F 1				F 2
19							H 1					L 2	L 2				C 1	C 1	F 4			F 2		
20							H 2			L 2	L 2	L 2				L 2		C 1						
21							H 1		C 1			L 2				L 2		C 1	C 2					
22							H 1		L 2	L 2	L 2	C 1	C 1				L 2	C 1	C 2	F 2		F 2		
23				F 1	F 2	F 2	H 1		L 2	L 2	L 2					L 2	L 2	C 1	C 3	F 5				
24			F 2	F 3	F 2		H 1		L 2										C 2	F 2	F 2			
25							H 2		L 3	L 2						L 2	L 2	L 3	F 4	F 3				
26									L 2	L 2	L 1	L 1	L 1	L 2	L 1			C 2	F 4	F 2				
27							H 2			L 2	L 2			L 3			L 2	C L 2 2	F 3	F 4	F 2			
28	F 2						H 2		L 2	L 2					L 2	L 2	C 1	L 2						
29							H 2				L 1		L 1	L 2	L 2	L 2	C 1	L 2	F 6					
30							H 2		L 2	L 2				L 2	C 1	C 1	C 1	C 3	C 3	F 2	F 1	F 4		
31							H 2	H L 2 2	C 1	C 1	C 1				L 2		L 1			F 2	F 1		F 1	F 3
	00	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																								

MAR. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 77	X 77	X 76	X 84	X 79	X 50	X 50													X 100	X 95	X 89	X 76	X 78
2	X 78	X 75	X 74	X 73	X 68	X 52	X 51													X 92	X 92		X 87	X 89
3	X 90	X 87	X 83	X 89	X 62	X 42	X 42													X 90	X 88	X 89	X 83	X 86
4	X 84	X 83	X 82	X 77	X 54	X 43	X 42													O X 106	X 98	X 89	X 80	X 79
5	X 81	X 66	X 63	X 59	X 51	X 42	X 43													X 104	X 99	O X 95	X 89	X 82
6	X 84	X 78	X 68	X 72	X 58	X 48	X 48													O X 104	X 98	X 100	X 89	X 84
7	X 78	X 70	X 68	X 71	X 62	X 52	X 55													X 103	X 100	X 98	X 86	X 74
8	X 71	X 67	X 64	X 62	X 60	X 54	X 56													X 119	X 98	X 92	X 84	X 81
9	X 80	X 76	X 75	X 71	X 58	X 57	X 55													O X 102	X 100	X 98	X 96	X 93
10	X 89	X 83	X 76	X 72	X 69	X 54	X 48													O X 106	O X 103	X 98	X 87	X 85
11	X 75	X 72	X 69	X 68	X 58	X 50	X 50													X 98	X 92		X 88	X 82
12	X 76	X 73	X 70	X 69	X 64	X 58	X 54													X 105	X 87	X 88	X 83	X 80
13	X 78	X 79	X 78	X 83	X 81	X 63	X 54													X 100	X 86	X 87	X 87	X 86
14	X 81	X 81	X 80	X 82	X 62	X 46	X 46													X 98	X 92	X 81	X 76	X 73
15	X 78	X 78	X 78	X 78	X 50	X 40														X 106	X 97	X 94	X 85	X 76
16	X 76	X 74	X 69	X 70	X 66	X 53														X 116	O X 105	O X 105	O X 100	X 92
17	X 86	X 81	X 75	X 72	X 62	X 51						C	C	C	C	C	C	C		X 108	X 100	X 88	X 82	X 79
18	X 80	X 76	X 76	X 72	X 63	X 59				C	C	C		C						X 102	X 86	X 81	X 76	X 76
19	X 76	X 73	X 73	X 75	X 66	X 55														X 100	X 98	X 99	X 106	X 92
20	X 84	X 79	X 76	X 80	X 73	X 56	X 52													X 101	X 100	X 93	X 90	X 90
21	X 91	X 81	X 76	X 71	X 65	X 59														X 116	X 100	X 93	X 92	X 95
22	X 93	X 86	X 77	X 70	X 70	X 71														X 105	X 99	X 94	X 92	X 89
23	X 84	X 78	X 78	X 82	X 64	X 56														X 111	X 89	X 86	X 86	X 84
24	X 87	X 87	X 76	X 70	X 66	X 63														X 101	X 96	X 98	X 95	X 90
25	X 89	X 85	X 82	X 80	X 72	X 61														X 115	X 100	X 92	X 89	X 90
26	X 90	X 86	X 84	X 84	X 75	X 61														X 112	X 102	X 102	X 95	X 92
27	X 91	X 90	X 90	X 94	X 72	X 53														X 121	X 101	X 97	X 98	X 98
28	X 94	X 87	X 85	X 90	X 76	X 68														X 122	X 103	X 89	X 94	X 95
29	X 87	X 84	X 87	X 89	X 69	X 52														X 128	X 119	X 100	X 100	X 100
30	X 96	X 96	X 86	X 84	X 73	X 65														X 116	X 108	X 108	X 115	X 111
31	X 107	X 95	X 84	X 81	X 64	X 56														X 112	X 98	X 96	X 96	X 94
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	15													31	31	29	31	31
MED	X 84	X 79	X 76	X 75	X 65	X 54	X 50													X 105	X 98	X 94	X 89	X 86
U Q	X 90	X 86	X 82	X 83	X 72	X 59	X 54													X 115	X 100	X 98	X 95	X 92
L Q	X 78	X 75	X 73	X 71	X 62	X 50	X 46													X 101	X 92	X 89	X 84	X 80

MAR. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 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	71	71	70	78	73	44	44	70	92	U R 108	R	R	R	R	J R 145	J R 144	J R 136	J R 122	J R 110	R 94	89	83	70	72
2	72	69	68	67	62	46	45	72	92	92	J R 115	J R 112	J R 130	J R 130	J R 127	R	U R 118	115	U R 103	86	86	F	81	83
3	84	J R 81	77	83	56	36	36	62	84	95	U R 104	J R 97	R	R	R	J R 142	R 116	U R 110	95	84	82	83	77	80
4	R 78	77	76	71	48	37	36	65	88	J R 115	J R 116	J R 118	J R 128	J R 137	R	R	R	116	108	100	92	83	R 74	73
5	75	R 60	R 57	53	45	36	37	65	J R 104	116	J R 114	R 116	R	R	J R 118	U R 114	U R 115	U R 112	R 103	98	93	U R 89	83	76
6	78	72	62	66	52	42	42	70	91	J R 110	R	R	R	R	J R 118	R	U R 110	110	U R 108	98	R 92	94	83	78
7	72	64	62	65	56	46	49	78	91	R	U R 98	U R 116	R	R	116	J R 112	J R 112	U R 110	R 101	R 97	R 94	92	80	68
8	65	61	58	56	54	48	50	79	93	U R 95	J R 112	101	U R 104	R	R 118	R	U R 110	U R 108	U R 114	113	92	R 86	78	75
9	74	70	69	65	52	51	49	R 68	90	R	U R 110	R	J R 113	J R 114	R	U R 101	R 110	99	102	96	R 94	92	R 90	87
10	R 83	77	70	66	63	48	42	72	89	101	U R 104	U R 101	U R 104	J R 112	R	R	R 101	R	R	U R 100	R 97	R 92	81	79
11	R 69	66	63	62	52	44	44	74	93	96	U R 108	R	R	R	U R 110	R	111	113	102	92	86	F 88	82	76
12	R 70	67	64	63	58	52	48	72	89	U R 108	J R 112	U R 110	R	R	R	R	R	U R 120	R 112	U R 99	81	82	76	74
13	72	73	72	F 75	F 72	57	48	64	91	U R 104	R	J R 116	R	J R 118	J R 114	R	J R 113	J R 112	U R 110	R 94	80	81	81	80
14	75	75	74	76	56	40	40	69	91	R	97	J R 116	U R 93	J R 116	J R 116	J R 114	R	118	R 110	92	86	75	70	U R 67
15	72	72	72	72	44	34	37	70	92	95	R	R	J R 146	R	R	R	U R 117	U R 115	U R 108	100	91	88	79	70
16	70	68	63	64	60	47	44	71	93	R	R	R	149	156	156	153	147	136	U R 124	R 110	99	R 99	R 94	86
17	80	75	69	66	56	45	46	74	R 96	R	J R 111	C	C	C	C	C	C	C	111	102	94	82	76	73
18	74	70	70	66	57	53	52	82	96	C	C	C	R 122	C	U R 129	R 122	U R 121	115	112	96	80	75	70	70
19	69	67	67	69	60	49	49	82	110	118	R 113	115	U R 123	138	U R 125	116	R 119	R 116	104	94	92	93	R 100	86
20	78	73	70	74	67	50	46	75	91	107	110	106	R 108	115	114	112	101	R 105	103	95	94	87	84	84
21	85	75	70	65	59	53	55	80	97	106	109	118	R 118	U R 124	U R 124	118	118	118	116	110	94	87	86	89
22	87	80	71	64	64	65	64	87	102	110	113	116	U R 122	118	U R 126	118	116	114	110	99	93	88	86	83
23	78	72	72	76	58	50	56	83	96	107	112	116	U R 124	J R 126	128	U R 127	128	131	U R 126	105	83	80	80	78
24	81	81	70	64	60	57	60	92	109	116	R 122	R 118	R 138	144	143	134	U R 125	U R 125	118	95	90	92	89	84
25	83	79	76	74	66	55	56	85	96	101	110	118	R 132	R 144	149	151	146	U R 136	118	R 109	94	86	83	84
26	84	80	78	78	69	55	55	81	97	113	114	115	U R 126	132	R 134	128	U R 123	U R 128	118	106	96	96	89	86
27	85	84	84	88	66	47	53	85	103	113	113	116	129	R 130	135	U R 127	117	118	118	115	95	91	92	92
28	88	81	79	84	70	62	67	86	103	115	116	129	144	R 141	R 138	129	125	128	U R 125	116	97	83	88	89
29	81	78	81	83	63	46	53	85	114	111	104	R 118	148	152	154	150	148	144	J R 137	R 122	113	94	94	94
30	90	90	80	78	67	59	62	82	98	104	113	115	128	R 142	149	144	132	124	116	110	R 102	102	109	105
31	101	89	78	75	58	50	56	81	97	106	116	118	U R 129	134	U R 126	116	116	113	112	106	92	90	90	88
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	25	25	23	22	20	24	21	27	29	30	31	31	30	31	31
MED	78	73	70	69	59	48	49	75	93	107	R 112	116	R 127	R 131	R 126	127	R 117	116	110	99	92	88	83	80
U Q	84	80	76	76	66	53	55	82	98	113	R 114	118	132	142	140	143	125	124	118	109	94	92	89	86
L Q	72	69	67	65	56	44	44	70	91	101	U R 108	R 112	R 118	J R 118	R 118	R 115	R 112	R 112	104	95	86	83	78	74

MAR. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								216	292	L	L	L	L	L	L	L	L	L						
2										L	L	L	L	L	L	L	L							
3										L	L	L	L	L	L	L	L	L 396	252					
4								228		L	L	L	L	L	L	L	L							
5											L	L		L	L	L	L	L	212					
6								220		L	L	L	L	L	L	L	L							
7								224		L	L	L	L	L	L	L	L							
8								220		L	L	L	L	L	L	L	L							
9										L	L	L	L	L	L	L	L							
10								220		L	L	L	L	U 548 L	L	L	L							
11								228		L	L	L	L		L		A	A						
12								224		L	L	L	L	L	L	L								
13								236	R 348	L	L	L	L	L	L	L	A	A						
14								232		L	L	L	L	U 548 L	L	U 540 L	L							
15										L	L	L	L	L	L	L	L	L						
16										L	L	L	L	L	L	L	L							
17									L	L	L	C	C	C	C	C	C	C						
18								240	L	C	C	C	L	C	L	L	L							
19								244	L	L	L	L	U 560 L	L	L	L	L							
20								248		L	L	L	L	L	L	A	A	U 400 L						
21								248		L	L	L	L	L	L	L	L	L						
22										L	L	U 560 L	L	L	L	L	L							
23								272		L	L	L	L	L	L	A	L	A						
24								248	L	L	L	L	U 628 L	L	L	L	L	L						
25								260		L	L	L	L	L	L	L	L	L	A					
26								236	U 400 L	L	U 504 L	L	U 624 L	L	L	L	L	L	A					
27								248		L	U 512 L	L	L	L	L	L	L	L	L					
28									L	L	L	L 640	U 608 L	L	U 608 L	L	L							
29									L		L	U 648 L	U 616 L	L	U 588 L	L	L	L						
30										L	L	L	L	L	L	L	L	L						
31								256	L	L	L	L	U 576 L	L	L	L	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								20	3		2	3	6	2	2	1		2	2					
MED								236	348		U 508 L	U 640 L	U 612 L	U 548 L	U 598 L	U 540 L		L 398	232					
U Q								248	U 400 L			U 648 L	U 624 L											
L Q								224	292			U 560 L	U 576 L											

MAR. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B 188	268 272	320 R 324	332 R 352	U R 372 U R 360	R U R 364 U R 340	B	B U R 372	352 R 356	U A 312	268 280	A B					
2								224	268	324 R 324	R 340	U R 384	B	R	U R 380	360	336	272	B					
3								B 224	268	332 R 324	U R 340	B	U R 408	R 400	R	A	A	264	A					
4								216	272	292	R 328	B	380	R 384	R 376	U R 336	U A 300	U A 240	176					
5								168	260	R 320	U R 348	R	U R 384	396	376	352	U A 320	A	200					
6								B 260	308		U R 352	R 384	B	U R 384	376	348	U A 320	U A 256	B					
7								B 268	320 R 320		U R 364	U R 396	R 400	R 396	R 392	R 364	336	280	164					
8								192	268	B	R 344	R 384	R 392	R 396	R 396	364	324	A 272	B					
9								B 272	U R 328	U R 340	U R 380		B	B	B	372	U R 344	284	A					
10								192	R 300	R 324	U R 360	R 428	B	B	B	R 364	324	A 272	A					
11								180	256	R	R	U R 396	B	B	B	R 352	U R 344	A 276	A					
12								A 184	R 272	U R 344	U R 380	B	B	B	U R 376	U R 352	U A 320	A 264	U A 172					
13								188	276	U R 332	U R 344	B	B	B	B	B	U R 344	276	B					
14							B	228	U R 268	312		R	B	B	B	B	U R 340	U R 284	U A 184					
15							B	B 276	R 292		R 340	B	B	R 348	B	B	U R 340	A	B					
16							B	188	U R 268	U R 340	R	C	C	C	C	C	C	C	R 212					
17							B	200	276	C	C	C	R 380	C	R 388	R 372	332	284	A 196					
18							B	200	284	R 332	364	U R 364	R	U R 428	396	364	332	284	U A 184					
19								204	R 288	R 332	R 376	B	R 404	B	R 404	368	328	A 280	U A 168					
20							B	204	292	340	368	R 384	U R 400	R 396	R	U R 368	R 332	280	188					
21							B	236	292	348	364	R 392	R 396	R 400	392	360	340	296	216					
22							B	208	R 288	R 348	R 348	R 388	U R 400	R 404	R	368	336	A 292	A 200					
23							B	204	300	344	R 360	R 376	R	A 400	380	356	328	280	A 208					
24							B	232	284	U A 336	U A 360	U A 356	U A 368	U A 328	388	R 372	340	284	U A 184					
25							B	U A 204	U A 280	R 332	R 352	U R 356		U R 396	A	A	328	284	U A 192					
26							B	220	R 284	R	360	R 384	R 400	404	400	B	340	292	204					
27							B	228	292	A 332	U A 340	A	A	R 408	388	364	336	A 292	U A 192					
28							B	236	296	B	360	B	B	B	396	380	A 336	292	224					
29							B	232	284	332	R 372	384	R 404	396	388	A 364	A 360	304	208					
30							B	U A 220	300	R 348	R 372	R 392	400	B	R 396	364	U A 324	R 300	216					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								25	31	26	27	19	15	17	19	24	29	28	20					
MED								204	276	R 332	R 352	R 384	R 400	R 396	388	364	332	280	194					
U Q								226	288	R 340	R 364	R 392	R 400	R 402	R 396	R 368	U R 340	288	208					
L Q								190	268	320	R 340	U R 372	380	R 390	R 376	354	U A 324	A 272	U A 184					

MAR. 2014 foE (0.01MHz)

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	G	G	42	43	E B 45	E B 45	41	34	G	19	19	E B 16	18	E B 16	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	G	G	E B 45	G	40	42	37	J A 25	J A 18	J A 19	E B 16	E B 16	E B 16
3	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	G 22	35	G	42	E B 45	G	41	42	G	G	J A 21	J A 28	J A 27	J A 38	J A 29	J A 16
4	E B 16	E B 16	E B 16	E B 16	17	E B 16	E B 16	21	29	38	G	E B 44	48	46	G	43	28	G 22	J A 27	J A 23	E B 16	J A 21	J A 20	J A 20
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 24	G	G	31	G	49	43	42	40	36	33	27	20	E B 16	J A 24	22	E B 16	E B 16
6	E B 16	E B 16	E B 16	E B 16	21	E B 16	E B 16	19	G	34	G	G	42	42	41	40	34	27	G	E B 16	E B 16	E B 16	E B 16	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	G	38	42	43	40	40	38	34	28	E B 20	E B 16	E B 16	E B 16	E B 16	E B 16
8	E B 16	J A 18	E B 16	E B 17	E B 16	E B 16	E B 16	19	G	G	39	43	45	42	44	46	47	J A 50	J A 38	58	J A 22	E B 20	20	E B 16
9	E B 17	E B 16	J A 16	20	E B 16	20	E B 16	G	G	E B 39	G 29	41	49	45	45	49	J A 51	J A 44	22	E B 16	E B 16	E B 16	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	G	35	G	41	E B 44	E B 44	44	J A 49	G	37	J A 87	J A 35	J A 20	21	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	G	G	G 31	G	E B 51	E B 69	E B 46	J A 49	J A 72	J A 59	J A 34	J A 29	E B 16	J A 28	E B 16	E B 16
12	20	E B 16	J A 19	J A 20	J A 28	20	E B 16	20	G 25	30	33	41	E B 44	E B 42	E B 42	G	59	J A 68	J A 27	J A 17	J A 26	J A 24	A E 16	B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	20	E B 16	20	G	38	40	E B 45	44	43	J A 49	43	J A 57	J A 48	J A 28	J A 42	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	G	G	G	E B 45	E B 48	E B 44	E B 46	E B 45	38	G	E B 28	E B 18	E B 16	J A 16	E B 16	24
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	E B 44	E B 44	E B 42	E B 45	E B 45	G	G	J A 37	J A 28	E B 16	J A 40	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	25	E B 16	E B 16	E B 26	G	G	G	E B 44	E B 49	G	E B 42	E B 39	G	28	E B 23	E B 16	E B 16	E B 16	E B 16	E B 16
17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	G	G	G	C	C	C	C	C	C	C	G	J A 27	E B 16	J A 18	J A 17	E B 16
18	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	C	C	C	G	C	42	40	36	35	J A 33	J A 25	J A 19	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	32	37	G	G	G	47	45	41	41	40	J A 43	J A 23	E B 16	E B 16	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	32	G	41	E B 45	G	E B 50	48	J A 74	J A 62	32	22	E B 16	E B 16	E B 16	E B 16	E B 16
21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	31	G	39	G	44	42	G	G	G	G	G	E B 16	E B 16	E B 16	19	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	32	38	40	G	42	47	48	51	37	36	24	E B 16	J A 27	J A 26	E B 16	E B 16
23	E B 16	E B 16	18	E B 16	E B 16	E B 16	21	24	32	38	G	41	43	44	G	J A 63	J A 48	J A 66	J A 63	J A 24	J A 40	J A 34	E B 16	E B 16
24	E B 16	J A 21	J A 17	E B 16	E B 16	E B 16	J A 20	23	35	37	39	G	G	43	42	40	G	G	J A 26	18	18	19	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	31	36	39	42	45	J A 44	G	G	37	33	J A 53	J A 78	J A 37	J A 23	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	34	G	G	G 34	34	43	34	J A 45	35	40	J A 55	J A 32	E B 16	E B 16	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	G	G	38	44	46	46	43	E B 43	G	31	22	J A 30	J A 28	J A 16	J A 22	J A 21
28	J A 22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	30	35	37	39	40	46	44	38	36	J A 46	J A 46	J A 22	19	E B 16	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	E B 43	38	E B 43	E B 44	E B 42	G	G	36	31	G	E B 16	E B 16	E B 16	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	30	G	39	J A 47	45	42	46	J A 48	46	38	30	J A 20	J A 32	J A 36	J A 21	26
31	E B 16	17	E B 16	E B 16	E B 16	E B 16	E B 16	24	G	38	40	42	43	46	46	42	35	G	23	J A 16	E B 16	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	30	29	30	29	30	30	30	30	31	31	31	31	31	31
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	G	E G 30	G	E G 42	44	43	42	41	36	32	26	J A 20	E B 16	16	E B 16	E B 16
U Q	E B 16	E B 16	B 16	E B 16	16	E B 16	E B 16	24	31	37	39	E B 44	45	46	45	J A 46	J A 46	J A 40	J A 37	J A 28	J A 24	J A 23	J A 16	16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 19	G	G	G	G	G 42	42	G 40	39	G 28	G	21	E B 16	E B 16	E B 16	E B 16	E B 16

MAR. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19		G	G	G	41	43	E B 45	E B 45	40	33	G	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	G	G	E B 45	G	40	41	35	23	16	16	E B 16	E B 16	E B 16
3	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	G U Y 22	35	G	U Y 42	E B 45	G	U Y 41	41	G	G	21	26	25	30	26	E B 16
4	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	28	38	G	E B 44	U Y 48	46	G	39	U Y 28	G 22	26	18	E B 16	19	E B 16	17
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	U Y 31	G	49	U Y 43	U Y 42	U Y 40	U Y 36	U Y 33	U Y 27	20	E B 16	E B 16	18	E B 16	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	U Y 34	G	G	42	U Y 42	41	39	34	U Y 27	G	E B 16	E B 16	E B 16	E B 16	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	G	38	42	U Y 43	U Y 40	40	U Y 38	33	28	E B 20	E B 16	E B 16	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 17	E B 16	E B 16	E B 16	E B 16	19	G	G	U Y 39	U Y 43	U Y 45	U Y 42	44	45	46	48	37	53	20	E B 20	17	E B 16
9	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	E B 39	G	U Y 41	48	44	U Y 45	48	50	42	21	E B 16	E B 16	E B 16	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	G	U Y 35	G	U Y 41	E B 44	E B 44	U Y 44	44	G	37	85	34	19	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	G	G	G 31	G	E B 51	E B 69	E B 46	49	68	58	32	28	E B 16	20	E B 16	E B 16
12	E B 16	E B 16	E B 18	E B 16	E B 22	E B 16	E B 16	20	G 25	G 29	G 33	U Y 41	E B 44	E B 42	E B 42	G	54	58	22	E B 16	E B 16	E B 16	E B 16	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	G	38	40	E B 45	U Y 44	U Y 43	47	42	56	47	27	35	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	G	G	G	E B 45	E B 48	E B 44	E B 46	E B 45	37	G	E B 28	E B 18	E B 16	E B 16	E B 16	20
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	E B 44	E B 44	E B 42	E B 45	E B 45	G	G	26	26	E B 16	24	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	20	E B 16	E B 16	E B 26	G	G	G	E B 44	E B 49	G	E B 42	E B 39	G	U Y 28	E B 23	E B 16	E B 16	E B 16	E B 16	E B 16
17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	G	G	G	C	C	C	C	C	C	C	G	26	E B 16	E B 16	16	E B 16
18	16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	C	C	C	G	C	42	40	35	34	31	23	16	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	32	36	G	G	G	46	43	40	40	37	41	21	E B 16	E B 16	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	31	G	40	E B 45	G	E B 50	45	71	61	30	22	E B 16	E B 16	E B 16	E B 16	E B 16
21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	31	G	39	G	44	42	G	G	G	G	G	E B 16	E B 16	E B 16	16	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	32	38	39	G	42	46	48	49	37	34	24	E B 16	22	E B 16	E B 16	E B 16
23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	32	37	G	41	43	U Y 44	G	62	47	66	61	21	19	28	E B 16	E B 16
24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	31	37	39	G	G	43	41	39	G	G	26	17	E B 16	E B 16	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	30	36	39	40	44	42	G	G	37	33	51	63	22	E B 16	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	30	G	G	G 34	U Y 34	43	U Y 34	38	35	39	52	30	E B 16	E B 16	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	G	G	38	44	45	45	43	E B 43	G	31	22	28	28	E B 16	E B 16	E B 16
28	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	30	35	37	39	U Y 40	46	43	38	36	44	43	20	16	E B 16	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	31	E B 43	38	E B 43	E B 44	E B 42	G	G	35	31	G	E B 16	E B 16	E B 16	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	U Y 30	G	39	43	U Y 45	42	45	41	40	36	29	E B 16	18	24	20	17
31	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	G	37	40	42	43	45	44	U Y 42	35	G	23	E B 16	E B 16	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	30	29	30	29	30	30	30	30	31	31	31	31	31	31
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	G	G	G	E G 41	44	42	42	40	35	32	24	18	E B 16	E B 16	E B 16	E B 16
U Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	37	39	E B 44	45	45	45	45	41	39	32	26	18	18	16	E B 16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 19	G	G	G	G	G 42	42	G 40	38	G	G	21	E B 16	E B 16	E B 16	E B 16	E B 16

MAR. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	16	16	16	16	16	16	16	16	18	28	27	30	45	45	21	17	16	16	16	16	16	16	16
2	16	16	16	16	16	16	16	16	16	16	22	26	28	45	28	20	21	16	16	16	16	16	16	16
3	16	16	16	16	16	16	16	16	16	17	20	23	45	28	20	21	18	16	16	16	16	16	16	16
4	16	16	16	16	16	16	16	16	16	16	19	44	33	29	30	19	22	18	16	16	16	16	16	16
5	16	16	16	16	16	16	16	16	16	16	22	39	29	26	27	18	19	16	16	16	16	16	16	16
6	16	16	16	16	16	16	16	17	16	20	23	20	26	40	22	22	24	19	16	16	16	16	16	16
7	16	16	16	16	16	16	16	16	16	16	17	22	41	31	22	17	16	16	20	16	16	16	16	16
8	16	16	16	17	16	16	16	16	16	20	20	29	31	20	21	21	16	17	15	16	16	20	16	16
9	17	16	16	16	16	16	16	16	16	39	22	24	24	23	28	20	20	19	16	16	16	16	16	16
10	16	16	16	16	16	16	16	16	17	16	22	18	44	44	40	28	23	18	16	16	16	16	16	16
11	16	16	16	16	16	16	16	16	16	20	21	29	51	69	46	29	28	16	16	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	19	29	30	44	42	42	28	21	23	16	16	16	16	16	16
13	16	16	16	16	16	16	16	16	20	19	23	45	40	41	29	25	27	19	16	16	16	16	16	16
14	16	16	16	16	16	16	16	16	16	20	29	45	48	44	46	45	28	19	28	18	16	16	16	16
15	16	16	16	16	16	16	16	20	19	24	29	44	44	42	45	45	20	18	16	16	16	16	16	16
16	16	16	16	16	16	16	16	26	18	22	27	44	49	28	42	39	29	26	23	16	16	16	16	16
17	16	16	16	16	16	16	16	16	16	19	23	C	C	C	C	C	C	C	15	16	16	16	16	16
18	16	16	16	16	16	16	16	16	16	C	C	C	24	C	24	20	20	16	14	16	16	16	16	16
19	16	16	16	16	16	16	16	16	16	16	22	29	22	29	24	20	20	16	16	16	16	16	16	16
20	16	16	16	16	16	16	16	16	16	18	22	45	28	50	29	28	20	20	16	16	16	16	16	16
21	16	16	16	16	16	16	16	16	16	20	20	30	26	24	19	20	20	16	16	16	16	16	16	16
22	16	16	16	16	16	16	16	16	16	26	20	29	29	29	21	21	20	20	16	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	20	31	25	31	36	30	27	19	16	14	16	16	16	16	16
24	16	16	16	16	16	16	16	16	16	19	22	26	29	27	18	27	20	16	15	16	16	16	16	16
25	16	16	16	16	16	16	16	16	16	16	20	22	28	20	21	20	20	16	16	16	16	16	16	16
26	16	16	16	16	16	16	16	16	16	19	20	23	31	20	27	20	19	16	16	16	16	16	16	16
27	16	16	16	16	16	16	16	14	16	19	19	26	28	24	29	43	22	19	16	16	16	16	16	16
28	16	16	16	16	16	16	16	16	16	20	20	27	24	21	26	19	19	14	14	16	16	16	16	16
29	16	16	16	16	16	16	16	16	16	43	23	43	44	42	30	27	20	16	16	16	16	16	16	16
30	16	16	16	16	16	16	16	16	16	16	28	28	31	30	26	21	18	16	16	16	16	16	16	16
31	16	16	16	16	16	16	16	16	18	20	25	24	28	40	29	29	26	20	16	16	16	16	16	16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	30	29	30	29	30	30	30	30	31	31	31	31	31	31
MED	16	16	16	16	16	16	16	16	16	19	22	28	30	30	28	21	20	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	20	25	41	44	42	30	28	22	19	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	16	16	20	24	28	25	22	20	19	16	16	16	16	16	16	16

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MAR. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	292	294	300	313	341	311	299	338	342	U R 328	R	R	R	R	R	R	R	R	R	R 314	298	314	302	294
2	303	300	308	314	331	301	300	334	366	332	R	R	R	R	R	R	U R 329	315	U R 343	316	283	F	303	295
3	297	R	319	348	372	294	307	341	346	342	U R 351	R	R	R	R	R	R 338	U R 312	331	296	285	303	288	295
4	R 295	308	325	345	338	300	301	343	340		R	R	R	R	R	R	R	317	324	311	314	303	R 284	293
5	317	R 322	R 281	314	343	296	276	321	R	325	R	R 316	R	R	R	U R 311	U R 310	U R 303	R 326	300	302	U R 315	300	295
6	300	301	281	309	344	293	297	334	345	R	R	R	R	R	R	R	U R 314	313	U R 326	324	R 318	322	312	309
7	304	277	287	310	318	302	290	344	345	R	R	U R 336	R	R	323	R	R	U R 338	R 331	R 321	R 320	318	319	310
8	299	306	302	302	312	297	312	352	358	U R 348	R	337	U R 340	R	R 299	R	U R 314	U R 345	R	335	344	R 312	297	292
9	299	312	317	313	320	295	305	R 346	339	R	U R 340	R	R	R	R	U R 320	R 323	337	339	338	R 310	311	R 319	322
10	R 304	313	306	312	328	336	309	358	356	343	U R 352	U R 339	U R 332	R	R	R	R 334	R	R	U R 331	R 318	R 313	304	307
11	R 297	280	295	318	327	303	291	336	356	341	U R 327	R	R	R	U R 324	R	326	321	346	315	297	F	302	290
12	R 293	283	293	305	314	320	297	331	340	U R 329	R	U R 312	R	R	R	R	R	U R 331	R 335	U R 333	299	285	285	288
13	285	285	292	F 317	F 353	313	309	333	337	U R 337	R	R	R	R	R	R	R	R	U R 328	R 342	284	295	304	307
14	293	292	303	331	352	305	296	337	326	R	334	R	U R 335	R	R	R	R	318	R 344	338	313	297	290	U R 285
15	289	296	316	333	359	307	302	335	341	329	R	R	R	R	R	R	U R 331	U R 329	U R 341	324	326	315	316	301
16	313	308	316	318	340	322	310	327	330	R	R	R	296	308	303	303	299	305	U R 325	R 334	318	R 308	R 315	313
17	306	313	318	320	345	314	312	342	R 357	R	R	C	C	C	C	C	C	C	315	318	320	306	292	288
18	297	305	307	311	313	310	311	345	348	C	C	C	R 312	C	U R 301	R 297	U R 300	304	312	316	294	290	295	283
19	284	276	289	311	310	299	288	323	335	329	R 321	295	U R 291	304	U R 302	293	R 303	R 313	306	302	300	296	R 310	313
20	304	285	287	308	335	320	299	342	340	337	306	311	R 303	300	297	297	299	R 304	304	301	300	291	280	296
21	310	305	310	305	304	304	303	346	341	334	311	315	R 299	U R 299	U R 294	289	303	301	307	307	296	281	286	296
22	305	307	290	270	274	297	297	329	328	328	313	307	U R 300	307	U R 297	300	296	305	310	305	301	293	292	300
23	293	278	285	326	317	289	289	340	334	321	310	306	U R 300	R	290	U R 287	291	307	U R 321	325	294	272	285	278
24	294	313	317	291	289	278	281	330	320	326	R 306	R 307	R 291	290	286	292	U R 289	U R 301	322	311	280	291	300	289
25	298	293	302	307	322	315	307	350	335	320	300	305	R 285	R 286	282	282	287	U R 292	312	R 303	281	273	282	288
26	297	294	301	319	335	331	312	335	321	320	308	287	U R 286	286	R 287	290	U R 298	U R 300	313	304	286	299	289	278
27	283	294	299	333	345	284	289	335	328	321	307	286	291	R 287	288	U R 285	293	298	317	319	307	278	284	287
28	294	280	286	313	313	303	296	331	322	312	304	288	295	R 287	R 283	288	295	297	U R 313	315	326	266	283	295
29	286	278	297	333	324	293	297	329	337	328	301	R 288	290	296	286	283	293	296	R	R 317	280	276	296	311
30	304	315	295	314	316	317	322	345	339	319	312	285	285	R 281	291	292	301	301	309	295	R 284	277	289	303
31	319	329	319	322	315	293	306	334	335	315	306	304	U R 294	292	U R 298	296	287	295	303	305	298	283	285	284
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	31	31	31	31	31	30	23	18	18	18	13	18	17	24	27	27	31	31	29	31	31
MED	297	298	301	314	327	303	300	336	340	328	310	306	R 296	292	296	292	300	305	322	316	300	296	295	295
U Q	304	308	316	322	343	314	309	344	345	337	U R 327	R 315	U R 303	302	U R 301	R 298	R 318	U R 318	R 331	325	318	312	304	307
L Q	293	285	290	309	314	295	296	331	334	321	306	288	291	R 286	287	288	294	301	312	305	286	282	285	288

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IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								497	456	L	L	L	L	L	L	L	L	L						
2										L	L	L	L	L	L	L	L							
3										L	L	L	L	L	L	L	L	L 412	428					
4								511		L	L	L	L	L	L	L	L							
5											L	L		L	L	L	L	L	445					
6								485		L	L	L	L	L	L	L	L							
7								496		L	L	L	L	L	L	L	L							
8								490		L	L	L	L	L	L	L	L							
9										L	L	L	L	L	L	L	L							
10								459		L	L	L	L	U L 376	L	L	L							
11								494		L	L	L	L		L		A	A						
12								478		L	L	L	L	L	L	L								
13								426	R 413	L	L	L	L	L	L	L	A	A						
14								478		L	L	L	L	U L 369	L	U L 359	L							
15										L	L	L	L	L	L	L	L	L						
16										L	L	L	L	L	L	L	L							
17									L	L	L	C	C	C	C	C	C	C						
18								473	L	C	C	C	L	C	L	L	L							
19								498	L	L	L	L	U L 385	L	L	L	L							
20								472		L	L	L	L	L	L	A	A	U L 374						
21								483		L	L	L	L	L	L	L	L	L						
22										L	L	U L 378	L	L	L	L	L							
23								448		L	L	L	L	L	L	A	L	A						
24								492	L	L	L	L	U L 346	L	L	L	L	L						
25								494		L	L	L	L	L	L	L	L	L	A					
26								506	U L 399	L	U L 407	L	U L 330	L	L	L	L	L	A					
27								A		L	U L 398	L	L	L	L	L	L	L	L					
28									L	L	L	L 367	U L 348	L	U L 357	L	L							
29									L		L	U L 346	U L 349	L	U L 353	L	L	L						
30										L	L	L	L	L	L	L	L	L						
31								493	L	L	L	L	U L 360	L	L	L	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								19	3		2	3	6	2	2	1		2	2					
MED								490	413		U L 402	U L 367	U L 348	U L 372	U L 355	U L 359		L 393	436					
U Q								496	456			U L 378	U L 360											
L Q								473	U L 399			U L 346	U L 346											

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MAR. 2014 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								216	216	236	256	252	266	274	282	254	234	224						
2										224	258	280	272	284	296	270	244							
3										242	244	264	280	286	284	264	244	228	224					
4								228		254	246	270	278	290	272	262	260							
5											242	266		280	284	274	258	224	224					
6								226		238	238	276	262	262	262	244	234							
7								218		248	248	264	266	264	272	252	268							
8								222		220	242	238	278	244	290	284	278							
9										244	242	252	266	266	282	264	270							
10								212		242	242	264	258	270	280	272	246							
11								226		240	244	278	248		274		264	240						
12								222		254	252	270	270	274	274	288								
13								218	228	238	248	264	282	286	286	258	260	250						
14								224		238	246	262	242	276	262	280	266							
15										238	266	280	268	270	282	272	258	248						
16										248	258	284	294	278	270	272	258							
17									236	240	248	C	C	C	C	C	C	C						
18								226	222	C	C	C	248	C	280	272	272							
19								226	226	254	240	238	272	286	270	290	280							
20								214		248	236	250	280	292	292	288	266	248						
21								212		242	268	268	290	294	286	322	258	240						
22										234	244	270	286	268	284	282	280							
23								210		228	268	288	286	302	282	288	290	260						
24								228	246	244	254	262	310	292	280	276	280	266						
25								214		224	244	284	298	306	298	304	278	252	244					
26								212	218	230	234	314	314	300	308	288	288	266	246					
27								220		246	252	252	288	302	302	288	286	278	250					
28									234	256	252	310	294	270	302	280	280							
29									238		244	318	294	296	296	284	284	248						
30										236	236	242	308	318	296	276	272	252						
31								220	236	244	270	264	280	294	280	270	298	280						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								20	10	28	30	29	29	28	30	29	29	16	5					
MED								220	231	241	246	266	280	285	282	276	268	249	244					
U Q								226	236	247	254	280	292	294	292	288	280	263	248					
L Q								214	222	236	242	257	266	270	274	267	258	240	224					

MAR. 2014 h′F2 (KM)

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IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 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	268	260	262	248	218	180	244	156	188	220	220	206	204	210	220	218	226	218	210	210	232	218	244	260
2	250	250	250	244	226	222	260	234	208	200H	226	210	220	224	236	222	234	234	214	204	244	254Q	240	256
3	250Q	250	238	218	184	232	252	220	216	222	222	216	218	202	224	226	218	214	210	232	258	262	276	270
4	260	246	228	208	194	266	264	148	222	224	216	214	250	224	246	194H	230	224	214	222	220	242	264	274
5	242	234	280	240	196	258	296	240	232	216	216	250	254	228	228	212	212	220	190	222	234	248	240	262
6	246	240	264	230	192	226	272	152	212	218	222	216	214	218	208	206	200	222	226	212	220	234	224	238
7	248	270	282	246	206	240	276	146	214	218	220	218	224	206	202	210	210	228	212	218	224	228	218	238
8	252	266	262	266	236	242	240	152	212	214	218	218	240	214	214	242	246	250	228	236	212	222	238	258
9	254	244	236	236	216	240	226	218	218	226	214	232	236	214	254	240	264	236	222	216	228	232	224	234
10	234	244	242	244	216	204	236	186	214	214	214	222	224	208	224	234	226	236	296	240	228	234	224	238
11	244	266	262	234	216	226	266	162	228	218	218	228	B	290	242	242	A	A	216	222	256	260Q	234	252
12	266	266	266	250	240	218	224	162	218	220	220	220	220	210	210	210	268	244	222	202	208	250	250	272
13	274	274	258	234Q	198	214	234	194	216	230	226	238	266	230	252	234	A	A	232	222	214	254	230	238
14	264	270	250	218	188	232	258	162	214	216	218	226	232	206	234	240	238	232	222	212	220	220	262	292
15	280	266	234	202	190	252	282	224	222	218	222	220	222	216	228	242	232	242	228	224	226	240	218	242
16	248	246	248	240	232	222	228	228	218	220	224	216	254	218	218	216	226	232	228	214	218	250	248	248
17	254	240	246	236	206	220	242	224	212	214	194	C	C	C	C	C	C	C	226	226	226	216	240	264
18	256	244	244	226	220	222	238	166	220	C	C	C	212	C	206	224	218	232	230	216	226	242	248	268
19	270	290	270	242	204	218	272	160	222	214	208	206	190	242	236	222	234	240	230	228	244	242	236	222
20	242	262	272	244	206	208	244	172	220	218	212	214	222	250	220H	A	A	220	228	230	240	238	272	254
21	238	216	238	242	220	226	250	166	220	216	200	190H	190H	220	214	212H	202	226	234	226	216	240	258	260
22	232	236	250	304	274	238	224	218	216	222	206H	196	190	244	242	244	198H	236	230	224	234	238	244	248
23	254	278	270	222	194	256	270	162	218	212	222	222	196	228	224	A	254	A	242	204	206	276	252	280
24	266	242	226	254	242	258	294	150	218	216	204	212	210	198	208	204	202H	228	226	198	236	250	248	254
25	256	254	254	234	220	220	244	170	212	202	200	174	214	218	216	204H	206H	230	A	266	224	244	272	264
26	260	256	254	230	202	208	224	144	204	198	192H	190H	210	222	220	214	218	244	A	230	214	234	226	262
27	272	266	252	222	200	228	280	A	220	204	188	214	234	234	222	218	218	232	246	230	220	240	278	264
28	262	274	264	236	208	238	248	212	212	206H	186	202	170	232	208	206	224	250	238	222	204	252	262	260
29	276	276	254	218	192	226H	260	226	214	224	182H	186	222	196H	206	218	198H	226	234	218	216	248	268	246
30	244	236	242	234	212	224	230	212	224	214	202	192	214	176H	236	242	242	230	232	228	238	280	274	252
31	234	224	218	218	202	242	258	152	218	216	200	196	192	214	216H	226	212H	250	234	234	228	242	250	268
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	30	31	30	30	29	29	29	30	28	27	27	29	31	31	31	31	31
MED	254	254	252	236	206	226	250	168	218	216	215	214	220	218	221	220	224	232	228	222	226	242	248	258
U Q	266	266	264	244	220	240	270	218	220	220	220	221	233	229	236	237	234	240	233	230	234	250	262	264
L Q	244	242	242	222	196	220	236	156	212	214	200	199	207	209	214	211	210H	226	219	214	216	234	234	246

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MAR. 2014 h′E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B 148	104	98	102	102	106	B 102	B 102	102	102	102	A 106					
2								150	100	100	100	102	102	B 102	102	100	100	106	B 104					
3								154	116	98	98	100	B 102	100	98	98	102	104	B 104					
4								B 130	100	98	98	B 102	106	102	96	A 100	A 108	112	A 110					
5								154	100	100	98	B 102	102	98	100	94	100	104	132					
6								B 130	H 102	98	98	96	96	B 102	100	102	106	106	E B 146					
7								B 130	100	98	96	96	B 102	112	100	100	100	104	B 106					
8								B 130	98	100	100	104	100	92	96	96	108	106	B 106					
9								116	100	B 102	104	100	98	104	104	102	102	108	B 106					
10								B 130	102	100	100	92	B 102	B 102	B 102	108	110	106	A 110					
11								130	94	100	108	96	B 102	B 102	B 102	106	110	104	A 110					
12								E B 118	110	A 102	A 102	96	B 102	B 102	B 102	116	100	112	A 110					
13								134	102	102	102	B 102	B 102	B 102	104	104	106	102	102					
14								120	104	104	104	B 102	B 102	B 102	B 102	B 102	112	102	B 102					
15							B	154	100	106	106	B 102	B 102	B 102	B 102	B 102	106	106	106					
16							B	B 130	102	102	102	B 102	B 102	100	B 102	B 102	116	A 110	B 110					
17							B	114	100	96	98	C 102	C 102	C 102	C 102	C 102	C 102	C 102	128					
18							B	116	98	C 102	C 102	C 102	98	C 102	100	98	98	100	116					
19							B	112	102	98	98	102	102	106	102	102	96	104	110					
20								112	104	98	98	B 102	104	B 102	104	102	102	102	B 102					
21							B	112	102	102	102	108	100	100	94	98	106	100	110					
22							B	108	104	104	94	102	102	102	100	94	102	104	114					
23							B	104	100	100	100	100	104	114	102	104	102	102	108					
24							B	98	110	A 102	96	100	102	98	94	106	102	102	114					
25							B	H 104	100	100	98	98	100	98	96	98	108	104	A 106					
26							B	104	102	100	98	98	A 102	96	A 102	A 102	106	98	108					
27							B	102	100	98	96	96	98	100	106	B 102	102	104	112					
28							B	102	100	100	96	A 102	A 102	96	96	98	98	104	A 106					
29							B	104	100	B 102	98	B 102	B 102	B 102	108	108	102	104	108					
30							B	100	94	92	104	104	104	104	104	100	98	100	A 106					
31							B	98	98	98	98	100	102	B 102	102	100	104	104	108					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								24	31	26	29	20	18	17	22	24	29	29	16					
MED								112	100	100	98	100	102	100	100	101	102	104	110					
U Q								125	102	100	102	102	104	104	104	104	106	106	115					
L Q								104	100	98	98	96	100	98	96	98	100	102	108					

MAR. 2014 h′E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 h′Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	148	G	G	G	120	112	B	B	106	108	G	132	104	B	94	B	B
2	B	B	B	B	B	B	B	G	G	G	G	G	G	B	G	148	122	116	104	104	94	B	B	B
3	B	B	B	B	B	B	B	86	100	178	G	158	B	G	138	128	G	G	106	96	132	100	90	96
4	B	B	B	B	98	B	B	140	186	144	G	B	126	128	G	92	92	92	92	92	B	94	90	88
5	B	B	B	B	B	B	94	G	G	126	G	112	114	114	112	112	108	104	190	B	100	90	B	B
6	B	B	B	B	104	B	B	154	G	198	G	G	138	132	114	108	108	106	G	B	B	B	B	B
7	B	B	B	B	B	B	B	146	G	G	142	126	120	130	122	114	114	108	B	B	B	B	B	B
8	B	94	B	B	B	B	B	146	G	G	144	124	118	128	124	128	122	110	104	100	100	B	84	B
9	B	B	94	94	B	96	B	G	G	B	96	146	116	122	122	110	110	104	104	B	B	B	B	B
10	B	B	B	B	B	B	B	152	G	172	G	142	B	B	130	118	G	118	100	100	100	100	B	B
11	B	B	B	B	B	B	B	158	G	G	98	G	B	B	B	122	104	102	98	98	B	100	B	B
12	100	B	94	94	92	94	B	150	100	100	100	124	B	B	B	G	110	102	100	100	100	108	88	B
13	B	B	B	B	B	92	B	140	G	174	164	B	140	218	110	118	98	100	106	98	B	B	B	B
14	B	B	B	B	B	B	B	162	G	G	G	B	B	B	B	B	162	G	B	B	B	98	B	90
15	B	B	B	B	B	B	B	G	G	G	G	B	B	B	B	B	G	G	106	100	B	94	B	B
16	B	B	B	B	220	B	B	B	G	G	G	B	B	G	B	B	G	106	B	B	B	B	B	B
17	B	B	B	B	B	B	B	150	G	G	G	C	C	C	C	C	C	C	G	102	B	98	92	B
18	88	B	B	B	B	B	B	164	142	C	C	C	G	C	184	174	174	134	116	106	102	B	B	B
19	B	B	B	B	B	B	B	152	156	134	G	G	G	158	158	144	132	118	106	100	B	B	B	B
20	B	B	B	B	B	B	B	166	160	G	118	B	G	B	122	108	104	110	106	B	B	B	B	B
21	B	B	B	B	B	B	B	154	172	G	146	G	182	176	G	G	G	G	G	B	B	B	102	B
22	B	B	B	B	B	B	B	170	160	144	140	G	122	148	126	118	190	176	210	B	100	98	B	B
23	B	B	98	B	B	B	98	154	186	142	G	212	186	116	G	114	114	106	106	106	100	100	B	B
24	B	100	100	B	B	B	98	140	98	128	126	G	G	112	116	110	G	G	120	108	84	84	B	B
25	B	B	B	B	B	B	B	160	130	108	106	100	98	94	G	G	182	158	100	108	92	92	B	B
26	B	B	B	B	B	B	B	110	104	G	G	98	98	192	94	90	146	108	104	102	B	B	B	B
27	B	B	B	B	B	B	B	186	G	G	158	164	148	148	156	B	G	212	124	100	98	100	90	94
28	92	B	B	B	B	B	B	G	116	110	104	98	98	140	130	158	132	106	104	102	86	B	B	B
29	B	B	B	B	B	B	B	162	136	B	124	B	B	B	G	G	116	198	G	B	B	B	B	B
30	B	B	B	B	B	B	B	170	130	G	124	108	168	118	110	110	112	112	108	108	94	94	90	82
31	B	84	B	B	B	B	B	132	G	132	132	124	118	108	106	106	112	G	182	130	B	B	B	B
	00	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	4	2	4	3	3	25	15	14	16	15	17	18	18	22	23	23	24	21	14	16	8	5
MED	92	94	96	94	101	94	98	152	136	138	125	124	120	129	122	114	114	108	106	102	100	98	90	90
U Q	100	100	99		162	96	98	162	160	172	143	146	144	148	130	128	132	118	118	106	100	100	91	95
L Q	88	84	94		95	92	94	143	104	126	105	108	113	116	112	108	108	104	104	100	94	94	89	85

IONOSPHERIC DATA STATION Yamagawa

MAR. 2014 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								H 1				C 1	C 1			C 1	C 1		H 1	F 1		F 1		
2																H 1	C 2	C 2	C 3	F F 1 1	F F 1 1			
3								L 1	L 1	H 1		H 1			H 1	C 1			C 1	F 4	F 3	F F 3 2	F 2	F 1
4					F 1			H 1	H 1	H 1			C 1	C 1		L 2	L 1	L 1	L 3	F 2		F 1	F 1	F 2
5							F 1			C 1		C 1	C 1	C 1	C 1	C 1	C 1	C 1	H 1		F 2	F 1		
6					F 1			H 1		H 1			H 1	H 1	C 1	C 1	C 1	C 1						
7								H 1			H 1	C 1	C 1	C 1	C 1	C L 1 1	C 1	C 1						
8		F 1						H 1			H 1	C 1	C 1	C 1	C 1	C 1	C L 1 1	C 2	C L 2 1	F 6	F 3		F 1	
9			F 1	F 1		F 1					L 1	H 1	C 1	C L 1 1	C 1	C 1	C 2	C 2	C 1					
10								H 1		H 1		H 1			H 1	C 1		C 2	L 3	F 3	F 3	F 1		
11								H 1			L 1					C 1	C 3	C 2	L 4	F 2		F 2		
12	F 1		F 2	F 1	F 4	F 1		H 1	L 1	L 1	L 1	C 1					C 1	C 4	L 2	F 1	F 2	F F 1 1	F 1	
13						F 1		H 1		H 1	H 1		H 1	H 1	C 1	C 1	C 3	C 3	C 1	F F 4 3				
14								H 1									H 1					F 1		F 1
15																			C 2	F 6		F 2		
16					F 1													C 1						
17								H 1												F 3		F 1	F 1	
18	F 1							H 1	H 1						H 1	H 1	H 1	H 1	C 5	F 4	F 2			
19								H 1	H 1	H 1				H 1	H 1	H 1	H 1	C 1	C 4	F 3				
20								H 1	H 1		C 1				C 1	C 4	C 2	C 1	C 1					
21								H 1	H 1		H 1		H 1	H 1									F 1	
22								H 1	H 1	H 1	H 1		C 1	H 1	C 1	C 2	H 1	H 1	H 1		F 5	F 4		
23			F 1				L 1	H 1	H 1	H 1		H 1	H 1	C 1		C 2	C 2	C 5	C 8	F 6	F 4	F 3		
24		F 2	F 2				L 2	H 1	L 1	C L 1 1	C 1			C 1	C 1	C 1			C 2	F F 1 1	F 1	F 1		
25								H 1	H 1	C 1	C 1	C 1	L 1	L 1			H L 1 1	H L 1 1	C L 5 1	F F 1 7	F 4	F 2		
26								C 1	C 1			L 1	L 1	H 1	L 1	L 1	H L 1 1	C 2	C 8	F F 5 1				
27								H 1			H 1	H L 1 1	H L 1 1	H L 1 1	H 1			H 1	C 1	F 6	F 5	F 1	F 1	F 1
28	F 4								C 1	C 1	C 1	L 1	L 1	H 1	H 1	H 1	H 1	C L 3 2	C L 5 1	F 4	F 1			
29								H 1	H 1		C 1						C 1	H 1						
30								H C 1 1	H 1		C 1	C 1	H 1	C 1	C 1	C H 1 1	C 1	C 1	C L 4 2	F 3	F 3	F F 2 3	F 3	F 2
31		F 1						H 1		H 1	H 1	C 1	C 1	C 1	C 1	C 1	C 1		H 1	F 1				
	00	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																								

MAR. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 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 97	X 93	X 98	X 111	X 95	X 52	X 47														X 157	O X 152	X 125	X 107
2	X 105	X 101	X 96	X 93	X 81	X 54	X 47														X 145	X 128	144	155
3	X 99	X 103	X 118	114	X 66	X 40	X 37														X 153	X 156	X 150	X 138
4	X 132	X 131	X 114	X 102	X 60	X 48	X 42														X 176	X 154	X 130	X 124
5	X 121	X 92	X 69	X 68	X 47	X 38	X 38													X 156	X 181	X 202	O X 162	X 164
6	146	X 117	X 92	X 95	X 72	X 50	X 45														X 190	X 172	X 157	X 126
7	X 114	X 93	X 90	X 87	X 76	X 65	X 59														X 166	X 170	X 131	X 109
8	X 102	104	X 75	X 69	X 62	X 57	X 57														X 191	X 192	O X 159	X 156
9	X 136	X 129	X 114	X 93	X 73	73	71	85													X 162	X 168	191	160
10	X 156	X 152	X 145	X 112	X 96	73	63	76													X 147	X 137	X 121	X 110
11	X 100	X 88	X 85	X 84	X 66	C														X 116	125	X 124	136	X 106
12	X 106	X 104	106	X 89	X 81	X 68	X 59														X 155	X 158	X 140	X 120
13	X 111	113	114	X 110	X 89	X 76	60	76		118											X 122	X 132	X 151	X 158
14	166	160	X 128	X 114	X 80	X 48	X 44														X 141	X 143	X 120	X 119
15	X 137	X 120	X 129	X 97	X 52	X 40	X 40														X 176	X 161	X 138	X 129
16	X 108	115	115	X 98	X 85	X 52	X 45														X 156	X 152	X 149	X 125
17	X 108	X 102	107	X 86	X 64	X 49	X 48														X 146	X 139	X 125	X 104
18	108	110	103	X 90	X 77	X 62															X 130	X 112	X 94	X 88
19	X 86	X 82	X 82	X 82	X 70	X 55															X 157	X 162	X 154	X 130
20	X 108	X 101	X 98	X 103	X 88	X 54															X 115	X 112	X 103	X 108
21	X 113	X 98	X 86	X 76	X 74	X 55														X 136	X 141	X 129	X 120	X 114
22	X 116	X 92	X 87	X 74	X 75	X 72															X 130	X 125	X 120	X 114
23	X 108	X 93	X 90	X 101	X 77	X 57															X 141	X 128	X 116	X 114
24	X 110	X 109	X 103	X 86	X 68	X 64															X 152	X 152	X 148	X 125
25	X 108	X 106	X 95	X 90	X 74	X 60															X 150	X 144	X 136	X 130
26	X 125	X 113	X 102	X 102	X 82	X 54															X 152	X 158	X 153	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	26	26	26	26	25	16	3		1										3	26	26	26	25
MED	X 109	X 104	X 100	X 93	X 74	X 55	X 47	76		118										X 136	X 152	X 152	X 137	X 124
U Q	X 125	X 115	X 114	X 102	X 81	X 64	59	85												X 156	X 162	X 161	X 151	X 134
L Q	X 106	X 93	X 90	X 86	X 66	X 50	X 43	76												X 116	X 141	X 129	X 121	X 110

MAR. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 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	91	87	92	105	91	46	41	66	88	107	120	138	140	143	151	156	156	149	138	136	151	U R 146	119	101
2	99	95	90	87	75	48	41	66	92	96	117	124	139	144	152	152	150	140	129	122	139	122	F	F 110
3	93	97	F 110	F 104	60	34	31	58	87	101	124	132	150	164	R 172	R 176	R 170	150	134	140	147	150	144	132
4	126	125	108	96	54	42	36	62	92	108	129	133	142	154	157	R 164	157	159	154	158	R 170	148	124	118
5	115	86	63	62	41	32	32	59	100	120	132	129	139	142	141	140	144	146	145	R 150	U R 175	196	D Y 156	J R 158
6	F 138	111	86	89	66	44	39	64	100	113	124	127	134	134	141	144	134	139	149	156	J R 184	U R 166	151	120
7	108	87	84	81	70	59	53	76	87	106	131	131	134	136	132	135	141	139	141	144	R 160	J R 164	125	R 103
8	96	F 94	69	63	56	51	51	76	91	102	128	121	118	123	127	133	138	151	156	R 159	J R 185	J R 186	D R 153	150
9	130	123	108	87	67	F 63	F 60	F 75	97	115	127	133	129	128	126	129	134	140	140	142	R 156	162	F 174	U F 151
10	J R 150	146	J R 139	106	90	F 61	F 52	F 68	88	105	111	116	123	126	133	132	132	122	122	130	141	131	115	104
11	94	82	79	78	60	C	38	67	92	104	116	124	128	127	130	128	124	126	116	110	F 112	118	F 120	100
12	100	98	F 88	83	75	62	53	73	95	112	124	128	131	132	R 130	139	144	144	138	134	149	152	U R 134	114
13	105	F 101	F 102	104	83	V 70	F 51	F 68	96	F 111	117	129	138	137	136	135	132	130	128	126	116	U R 126	145	U R 152
14	J R 160	F 154	122	108	74	42	38	62	87	109	119	126	130	135	143	140	143	145	145	143	135	J R 137	114	R 113
15	131	114	R 123	91	46	34	34	63	85	108	129	137	154	156	158	J R 161	R 158	160	149	R 158	J R 170	155	132	123
16	102	F 98	F 103	92	79	46	39	63	91	117	126	144	R 157	U R 172	R 180	U R 172	170	R 163	153	151	150	R 146	R 143	119
17	102	96	F 100	80	58	43	42	69	94	106	116	140	144	153	155	143	134	142	138	141	140	133	119	98
18	F 97	F 94	F 90	84	71	56	49	72	93	108	124	137	151	155	159	152	145	156	152	131	124	R 106	88	82
19	80	76	76	76	64	49	46	77	102	113	122	119	137	152	152	151	157	153	144	144	151	156	148	124
20	102	95	92	97	82	48	41	74	90	102	108	115	115	119	125	119	111	108	111	108	109	106	97	102
21	107	92	80	70	68	49	47	74	92	99	113	125	125	133	139	137	137	138	132	130	135	123	114	108
22	110	86	81	68	69	66	62	87	100	115	119	121	131	140	140	143	137	132	126	123	124	119	114	108
23	102	87	84	95	71	51	52	79	92	111	115	126	129	136	143	144	143	144	144	132	135	122	110	108
24	104	103	97	80	62	58	60	84	110	119	126	132	148	164	R 166	162	158	151	146	145	146	146	142	119
25	102	100	89	84	68	54	52	79	96	107	117	125	147	U R 168	R 174	R 172	R 172	166	154	143	144	138	130	124
26	119	107	96	96	76	48	38	72	92	115	118	120	134	150	155	154	152	147	138	127	146	R 152	R 147	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	26	26	26	26	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	25
MED	103	96	91	87	68	49	44	70	92	108	121	128	136	141	143	144	144	144	140	140	146	146	130	114
U Q	119	107	103	96	75	58	52	76	96	113	126	133	144	154	R 157	R 156	157	151	149	145	R 156	155	146	124
L Q	99	87	84	80	60	44	38	64	90	105	117	124	129	133	133	135	134	139	132	130	135	123	114	104

MAR. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 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							
2										L	L	L	L	L	L	L	L							
3											L	L	L	L	L	L	L							
4											L	L	L	L	U L 520	L	L	L						
5										L	L	L	L	L	L	L	L	L						
6											L	L	L	U L 532	L	L	L	L	L					
7											L	L	L	L	L	L	L							
8											L	L	L		L	L								
9										L	L	L			L									
10										L		L	L	L	L	L	L	L	L					
11										L	L	L	L	L	L	L	L	L	U L 236					
12											L	L	L	L	L	L	L	L						
13										L	L	L	L	L	L	L		L						
14										L	L	L	L	L	L	L	L	L						
15										L	L	L	L	L	L	L	L	L						
16									L	L	L	U L 608	L	L	L	L	L							
17											L	L	L	U L 524	U L 568			L	L					
18										L	L	L	U L 568	L	U L 668	L	L	L						
19										L	L	A	U L 580	U L 608	U L 524	L	U L 600	L						
20								224	L	L	L	L	L	L	L		A							
21								232			L	L	L	L	L	L	L	L	L					
22										L	L	L	L	L	L	L	L	L						
23									L	L	L	L	L	L	L	L	L	L						
24										L	L	L	L	L	L	L	L							
25										L	L	L	L	L	L	U L 668	L	L						
26										L	L	L	L	L	L	L	L	L						
27							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					
29							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					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2				1	2	3	4	1	1		1					
MED								228				U L 608	U L 574	U L 532	U L 546	U L 668	U L 600		U L 236					
U Q														U L 608	U L 618									
L Q														U L 524	U L 522									

MAR. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								204	264	324	R 356	384	404	404	R 392	368	344	A	A	A				
2								184	256	304	344	R 392	U R 380	U R 400	U R 404	376	332	292	A	A				
3								208	260	324	360	388	400	396	U R 396	372	340	292	184	B				
4								A	256	328	360	384	396	R 372	U R 392	360	336	288	A	B				
5								200	272	324	356	388	392	384	368	348	312	A	A					
6								196	256	R 332	360	380	392	408	372	U A 356	A	288	R 204	B				
7								204	256	320	352	380	388	R 392	R 380	360	324	A	A	A				
8								200	260	320	R 376	380	U R 408	392	392	364	340	288	A	A				
9								200	268	344	U R 380	U R 392	392	396	R 392	364	336	284	A	B				
10								176	268	336	376	396	U R 416	U R 404	R 400	376	352	300	A	B				
11							B	200	B	324	R 352	U R 368	R	B	B	368	348	296	A					
12								220	264	328	368	384	R 400	R 388	R 380	364	336	U A 284	A	B				
13								208	300	352	368	396	400	400	384	360	U A 332	U A 276	A	A				
14								180	280	320	376	U R 384	U R 404	B	R	U R 380	332	280	192	A				
15								188	252	316	R 348	392	A	A	U R 384	U R 364	336	292	A	A				
16								196	272	320	U R 356	R	U R 396	R	368	R 356	U R 332	288	200	B				
17								200	252	320	A	372	U R 392	R 384	U R 384	R 360	332	292	U A 212	B				
18							B	A	284	328	R 376	404	396	R 388	R 376	360	332	288	216	A				
19							B	188	292	324	344	U A 384	A	U R 392	U R 356	R 380	332	300	220	A				
20							B	200	288	356	U A 388	A	U R 392	B	B	384	352	296	A	B				
21							B	200	280	340	384	U R 404	U R 396	U R 412	U R 404	U R 376	332	292	212					
22							B	232	280	348	R 376	396	U R 424	R 432	R 412	384	U R 352	296	224	B				
23							B	224	280	344	384	U R 396	424	432	U R 396	R 376	348	300	A	B				
24							B	196	A	340	A	R 384	B	R 396	384	384	328	292	220	A				
25							B	224	288	U A 336	U A 356	A	U R 392	R	R 376	364	344	A	200	A				
26							B	224	288	R 324	A	A	A	A	R 396	A	352	U A 292	A	A				
27							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					
29							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					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								24	24	26	23	22	21	19	23	25	25	22	11					
MED								200	270	326	360	386	R 396	R 396	R 384	364	336	292	212					
U Q								208	282	340	376	396	U R 404	R 404	U R 396	R 376	346	296	220					
L Q								196	258	320	356	384	392	R 388	376	360	332	288	200					

MAR. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

MAR. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 13	E B 14	E B 14	E B 14	E B 13	E B 14	G	G	G	G	G	G	42	43	39	38	30	27	24	19	E B 14	E B 14	17
2	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	42	G	G	45	41	35	31	22	34	E B 14	E B 14	E B 14	E B 14
3	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 15	28	34	38	42	44	44	G	44	G 27	32	22	E B 14	17	E B 14	E B 14	E B 14
4	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	21	29	35	41	41	43	G	G	G	36	G	23	E B 14	E B 14	20	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	E B 14	G	G	34	38	41	50	46	42	39	36	31	23	21	22	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	E B 14	G	G	35	38	41	42	G	42	40	35	G	G	E B 14	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	E B 14	E B 14	G	28	34	39	40	42	48	50	43	39	32	23	18	E B 14	23	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	E B 14	G	28	G 30	40	41	43	48	46	57	60	58	55	32	E B 14	19	18	E B 14
9	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	44	53	48	51	53	56	49	25	E B 14	E B 14	E B 14	E B 14	19
10	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	20	33	39	44	44	43	44	48	45	39	35	26	E B 14	E B 14	E B 14	E B 14	E B 14
11	E B 17	E B 17	E B 16	E B 15	E B 15	C	E B 15	G	E B 29	G	G	G	U G 34	E B 50	E B 44	38	36	30	18	E B 14	E B 16	E B 15	E B 15	E B 18
12	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	36	39	41	43	43	41	44	37	32	21	E B 14	E B 14	E B 14	E B 14	E B 14
13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	31	39	40	42	44	48	45	48	44	33	23	15	E B 14	24	E B 14	E B 14
14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	31	G	39	G	G	E B 44	G	G	G	31	20	21	20	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	E B 14	22	28	G	G	42	45	42	G	G	G	33	27	20	18	E B 14	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	G 29	G	G	G	G	G 24	23	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	E B 14	G	29	G	40	G 29	G	G	G 24	G 28	G	G	22	E B 14	E B 14	E B 14	E B 14	E B 14
18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	G	G	G	G	G	G	G	G	G 26	G	28	20	E B 14	E B 14	E B 14	E B 14
19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	31	34	38	61	39	G	G	G	G	35	31	24	16	18	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	31	37	48	52	G	E B 50	E B 48	44	52	45	25	E B 14	E B 14	E B 14	E B 14	E B 14
21	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	G	38	G	44	G	G	G	G	G	G	G	E B 14	E B 14	E B 14	E B 14	E B 14
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E G 14	32	37	G 31	43	48	50	53	44	G	36	26	E B 14	23	E B 14	E B 14	E B 14
23	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	32	36	G 30	42	50	48	56	47	37	36	25	E B 12	E B 13	28	20	E B 14
24	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	28	37	40	G	44	49	44	G	G	31	34	27	E B 14	E B 14	E B 14	E B 14
25	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	37	40	42	G	G	G	G	G	37	27	17	17	E B 14	E B 14	E B 14
26	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G 18	G	39	39	41	43	42	40	36	36	36	49	E B 14	E B 14	E B 14	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	26	26	26	26	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25
MED	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	28	34	38	41	42	43	42	40	36	32	24	14	E B 14	E B 14	E B 14	E B 14
U Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	31	37	40	42	44	48	46	44	38	36	27	21	17	15	E B 14	E B 14
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	G	G	G	G	G	G 30	22	E B 14	E B 14	E B 14	E B 14	E B 14

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	13	14	14	14	13	14	14	16	18	22	26	25	28	24	22	21	15	14	14	14	14	14	14
2	14	14	14	14	14	14	14	14	15	20	21	23	23	26	24	22	20	17	14	14	14	14	14	14
3	14	14	14	14	14	14	14	14	16	18	25	24	28	24	25	23	21	16	14	14	14	14	14	14
4	14	14	14	14	14	14	14	14	14	16	20	21	21	24	32	19	25	15	14	14	14	14	14	14
5	14	14	14	14	14	14	14	14	16	16	22	22	24	24	25	21	21	14	14	14	14	14	14	14
6	14	14	14	14	14	14	14	14	14	20	21	23	22	30	21	21	20	16	16	14	14	14	14	14
7	14	14	14	14	14	14	14	14	14	17	20	21	24	25	24	22	19	16	14	14	14	14	14	14
8	14	14	14	14	14	14	14	14	18	20	20	23	29	21	24	22	18	16	14	14	14	14	14	14
9	14	14	14	14	14	14	14	14	14	22	20	22	23	24	25	21	24	13	14	14	14	14	14	14
10	14	14	14	14	14	14	14	14	15	22	22	26	24	27	22	22	22	20	14	14	14	14	14	14
11	17	17	16	15	15	C	15	15	29	22	22	27	29	50	44	24	20	18	15	14	16	15	15	18
12	14	14	14	14	14	14	14	15	14	20	24	22	25	24	23	22	20	21	14	14	14	14	14	14
13	14	14	14	14	14	14	14	14	22	20	27	24	24	26	24	21	17	14	14	14	14	14	14	14
14	14	14	14	14	14	14	14	14	15	19	22	26	25	44	32	33	21	14	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	18	18	23	23	40	30	31	24	24	20	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	14	20	24	28	24	28	32	21	20	15	16	14	14	14	14	14
17	14	14	14	14	14	14	14	14	14	17	20	20	24	23	20	20	21	20	14	14	14	14	14	14
18	14	14	14	14	14	14	14	16	18	17	21	24	24	22	24	22	18	17	14	14	14	14	14	14
19	14	14	14	14	14	14	14	14	19	18	22	20	27	27	25	25	22	17	14	14	14	14	14	14
20	14	14	14	14	14	14	14	14	14	18	23	42	29	50	48	26	19	14	13	14	14	14	14	14
21	14	14	14	14	14	14	14	14	14	20	20	24	24	30	22	21	22	14	14	14	14	14	14	14
22	14	14	14	14	14	14	14	14	14	17	22	27	30	31	33	22	21	14	14	14	14	14	14	14
23	14	14	14	14	14	14	14	14	14	19	22	24	32	34	26	21	18	14	14	12	13	13	14	14
24	14	14	14	14	14	14	14	14	14	20	21	24	42	26	22	21	18	14	14	14	14	14	14	14
25	14	14	14	14	14	14	14	14	15	19	23	22	26	30	24	24	21	14	12	13	14	14	14	14
26	14	14	14	14	14	14	14	14	14	20	19	22	22	30	25	21	18	14	13	13	14	14	14	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	26	26	26	26	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25
MED	14	14	14	14	14	14	14	14	14	19	22	24	24	27	24	22	20	15	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	16	20	23	26	29	30	31	23	21	17	14	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	14	18	20	22	24	24	24	21	19	14	14	14	14	14	14	14

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MAR. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	288	298	311	328	381	278	290	329	338	312	312	308	303	289	292	301	299	301	296	282	300	R	289	289
2	300	305	316	323	347	322	295	323	353	312	301	301	293	286	296	289	298	298	305	288	269	293	F	F 315
3	305	313	F 314	F 356	370	320	293	337	349	317	312	310	293	294	R 299	R 302	R 297	298	291	287	293	296	308	302
4	304	317	329	338	340	310	305	324	333	319	319	298	292	293	297	R 294	286	303	308	310	R 298	304	302	297
5	316	317	285	322	322	303	267	303	330	328	322	305	302	292	286	288	282	293	298	R 296	U R 306	316	Y	J R 300
6	F 314	298	281	315	337	304	294	322	333	321	324	310	310	297	290	295	285	279	294	309	J R 304	U R 317	316	309
7	316	286	290	305	318	315	290	331	321	306	318	316	302	303	291	293	294	298	300	305	R 308	J R 298	319	R 309
8	308	F 309	303	309	338	304	309	347	350	322	328	321	305	296	286	294	287	299	319	R 310	J R 298	R	R	305
9	318	320	325	332	348	F 312	F 304	F 327	329	324	322	319	302	294	286	289	292	305	314	297	R 321	316	F 322	U F 325
10	J R 336	312	J R 309	324	342	F 339	F 317	F 333	347	325	323	306	297	291	291	290	298	301	301	306	292	305	299	295
11	300	295	304	316	350	C	277	325	334	322	306	313	304	301	300	291	291	304	312	312	F 306	304	F 304	303
12	291	285	F 291	310	326	310	298	323	327	308	313	306	300	294	R 289	294	303	310	307	302	262	274	U R 285	294
13	304	F 310	F 290	327	337	V 323	F 279	F 313	324	F 317	298	297	300	295	293	296	298	299	298	305	292	U R 298	305	U R 321
14	R	F 278	293	310	348	328	299	321	324	306	318	303	313	298	295	292	300	303	312	313	303	J R 297	281	R 292
15	296	311	R 317	343	348	314	283	331	316	303	310	306	304	302	297	J R 300	R 305	298	312	R 306	J R 312	316	311	294
16	295	F 324	F 323	324	355	336	284	322	312	305	302	292	R 303	U R 300	R 288	U R 298	296	R 297	307	302	291	R 311	R 315	310
17	300	309	F 320	333	348	311	308	333	329	310	298	303	294	302	308	295	294	303	309	299	301	309	316	304
18	F 307	F 313	F 317	318	345	321	313	336	337	308	310	307	305	295	300	297	292	314	314	299	287	R 298	293	290
19	290	289	294	311	334	314	282	325	335	314	318	299	290	296	291	289	293	303	294	298	293	308	299	318
20	302	285	282	306	354	344	296	344	337	318	318	312	291	286	295	291	299	288	295	297	288	285	280	293
21	317	321	314	308	335	317	305	357	337	312	303	299	285	279	286	283	285	295	297	298	289	284	290	293
22	308	313	307	270	281	302	301	330	330	315	307	285	281	283	284	286	293	291	306	294	296	297	281	301
23	294	283	288	322	334	299	289	336	322	313	297	297	285	284	286	285	295	298	312	302	269	290	279	278
24	287	318	322	309	304	279	279	318	314	310	298	289	278	295	R 302	288	291	288	307	301	289	287	285	289
25	296	301	310	323	320	316	302	346	330	322	295	278	279	U R 286	R 290	R 281	R 286	295	304	291	274	287	281	289
26	285	292	300	340	343	356	295	339	321	306	309	273	275	285	283	287	287	297	299	289	282	R 299	R 297	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	26	26	26	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24	23	25
MED	302	309	308	322	341	314	295	330	330	314	311	304	298	294	291	292	294	298	306	300	293	298	299	300
U Q	311	313	317	328	348	322	304	336	337	321	318	310	303	297	297	295	298	303	312	306	R 303	308	311	309
L Q	294	292	291	310	334	304	284	323	324	308	302	297	290	286	286	288	287	295	298	296	288	292	285	292

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MAR. 2014 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							
2										L	L	L	L	L	L	L	L							
3											L	L	L	L	L	L	L							
4											L	L	L	L	U L 388	L	L	L						
5										L	L	L	L	L	L	L	L	L						
6											L	L	L	U L 378	L	L	L	L	L					
7											L	L	L	L	L	L	L							
8											L	L	L		L	L								
9										L	L	L			L									
10										L		L	L	L	L	L	L	L	L					
11										L	L	L	L	L	L	L	L	L	U L 396					
12											L	L	L	L	L	L	L	L						
13										L	L	L	L	L	L	L		L						
14										L	L	L	L	L	L	L	L	L						
15										L	L	L	L	L	L	L	L	L						
16									L	L	L	U L 349	L	L	L	L	L							
17											L	L	L	U L 386	U L 353		L	L						
18										L	L	L	U L 356	L	U L 342	L	L	L						
19										L	L	A	U L 371	U L 351	U L 387	L	U L 341	L						
20								448	L	L	L	L	L	L	L		A							
21								468			L	L	L	L	L	L	L	L	L					
22										L	L	L	L	L	L	L	L	L						
23									L	L	L	L	L	L	L	L	L	L						
24										L	L	L	L	L	L	L	L							
25										L	L	L	L	L	L	U L 336	L	L						
26										L	L	L	L	L	L	L	L	L						
27							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					
29							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					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2				1	2	3	4	1	1		1					
MED								458				U L 349	U L 364	U L 378	U L 370	U L 336	U L 341		U L 396					
U Q														U L 386	U L 388									
L Q														U L 351	U L 348									

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MAR. 2014 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											252	274	284	290	286	288	272							
2										218	274	254	304	308	296	310	274							
3											272	276	308	316	312	300	258							
4											268	300	302L	292	276	298	286	274						
5										254	264	282	296	290	308	286	306	270						
6											260	274	286	276	300	284	280L	296	270					
7											278	260	290	276	300	300	294							
8											260	258	284		314	306								
9										254	260	266			302									
10										256		278	286	294	306	296	278	250						
11										268	268	268	268	282	282	282	282	276	254					
12											260	272	288	302	304L	308	286	260						
13										270	270	270	290	290	298	288		264						
14										244	262	288	276	302	294	296	286	272						
15										274	286	286	306	280	308	290	272	262						
16									230	276	264	316	298	306	312	288	288							
17											256	292	274	278	286		288	272						
18										246	272	270	280	292	302	284	286	280						
19										258	254	274	316	306	272	296	298	264						
20								226	220	254	266	284	288L	300	296		260							
21								224			262	298	300L	328	314	308	296	286	246					
22										258	268	278L	312L	326	314	308	278	274L						
23									228	268	276L	288	310	324	322	304	290	274						
24										254	270	272	342	316	300	298	296							
25										254	280	272L	342	338	340	330	304	278						
26										236	244	330	336	332	318	308	294	272						
27							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					
29							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					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	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	17	25	26	25	24	26	23	23	17	3					
MED								225	228	254	266	275	296	301	302	298	286	272	254					
U Q									230	268	272	288	309	316	312	308	294	277	270					
L Q									220	250	260	270	285	290	296	288	278	264	246					

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MAR. 2014 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	256	250	252	236	198	226	240	236	220	214	214	214	210	198	212	216	216	224	226	232	244	Q 202	210	258
2	250	242	234	228	210	206	240	250	216	198	H 194	220	212	218	240	232	236	228	224	232	272	232	Q 240	Q 242
3	250	240	Q 224	210	182	218	254	238	226	224	224	218	214	200	224	238	226	226	222	224	256	238	224	248
4	244	236	216	206	188	226	246	240	230	226	226	208	220	228	206	206	218	218	230	228	232	238	242	252
5	232	218	266	234	186	228	310	252	232	224	218	206	242	252	196	218	224	224	232	234	264	Q 224	212	226
6	Q 226	226	250	236	194	206	258	244	234	226	220	214	210	210	206	208	210	212	240	238	224	214	214	214
7	230	260	262	242	210	220	258	226	212	216	222	216	212	246	250	228	236	230	234	232	252	220	216	216
8	228	Q 230	248	254	220	252	240	230	216	216	216	212	208	238	230	A	A 296	284	244	226	238	214	214	218
9	232	230	222	224	200	Q 224	224	238	226	224	216	224	256	236	254	A 262	284	262	246	230	230	212	Q 224	Q 226
10	Q 228	226	Q 222	220	206	204	Q 228	224	218	220	234	224	206	234	242	246	228	232	248	248	244	212	220	230
11	258	258	258	236	214	C	270	248	236	236	236	236	236	B 260	236	A 236	236	236	A 236	236	Q 268	238	Q 238	238
12	252	Q 250	Q 240	242	228	208	216	236	218	224	224	218	226	214	216	230	220	240	234	214	236	Q 236	222	246
13	244	Q 246	Q 248	222	196	206	214	234	234	230	226	226	226	252	238	264	248	236	238	222	214	242	228	220
14	Q 238	Q 234	240	210	194	198	242	224	224	H 192	220	210	212	230	228	226	222	226	224	224	230	218	244	Q 268
15	Q 264	238	222	198	184	214	272	232	212	214	210	212	216	218	202	216	218	230	238	238	236	218	216	230
16	240	236	Q 228	232	210	212	220	236	218	206	204	212	186	202	190	206	218	222	234	238	250	224	Q 240	230
17	248	240	Q 226	220	198	210	240	230	226	H 196	218	184	208	180	192	224	204	226	240	236	240	222	Q 224	228
18	Q 260	Q 238	Q 238	236	208	214	220	224	218	208	220	206	208	210	198	198	204	236	234	214	238	226	238	256
19	266	280	270	238	204	200	250	240	228	212	234	A	204	198	194	H 206	218	238	232	248	266	236	218	220
20	230	258	258	242	198	196	244	194	220	220	242	262	228	B 242	262	236	A	252	248	246	270	238	268	250
21	232	224	224	230	216	210	236	172	220	220	210	228	H 194	H 208	214	220	216	232	238	236	234	226	258	254
22	238	220	250	296	268	224	222	230	222	218	218	216	A 244	252	A 258	220	216	H 224	240	238	262	228	248	248
23	246	268	266	226	196	214	254	220	202	216	214	H 204	A 240	240	A 278	250	212	234	244	220	210	252	260	262
24	268	238	228	222	216	258	274	232	228	214	206	196	220	A 252	220	216	208	238	236	234	232	248	252	258
25	256	246	232	226	204	214	240	226	218	208	198	200	H 194	206	220	212	212	236	242	238	250	238	260	264
26	256	244	248	226	202	198	238	228	212	204	202	H 186	172	220	228	216	222	234	242	254	252	228	232	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	26	26	26	26	25	26	26	26	26	26	25	26	26	26	25	25	26	26	26	26	26	26	25
MED	245	239	240	229	203	214	240	232	220	216	218	214	212	224	222	220	218	232	237	234	242	227	230	242
U Q	256	250	252	236	210	224	254	238	228	224	224	222	226	242	240	236	232	236	242	238	256	238	244	255
L Q	232	230	226	222	196	206	228	226	218	208	210	206	208	208	206	214	214	226	232	226	232	218	218	226

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MAR. 2014 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								148	110	110	108	108	108	108	108	108	108	A	A	A				
2								182	108	108	106	108	108	110	110	108	108	108	A	A				
3								146	114	106	108	106	106	108	108	108	122	110	110	B				
4								A 110	110	106	106	106	108	110	110	110	110	110	A	B				
5								150	112	106	108	108	108	108	108	108	108	A	A					
6								146	110	108	108	108	106	108	108	108	A	108	114	B				
7								144	110	106	106	106	110	110	108	108	108	A	A	A				
8								150	108	116	A	108	108	108	110	112	112	112	A	A				
9								144	106	106	108	108	108	108	108	108	108	108	A	B				
10								140	108	106	106	108	108	108	108	112	112	114	A	B				
11							B	134	B	108	108	108	A	B	B	108	108	108	A					
12								156	104	106	108	108	108	108	108	108	108	108	A	B				
13								136	112	110	110	106	108	108	108	108	110	110	A	A				
14								122	108	108	108	110	110	B	110	122	108	108	114	A				
15								134	108	108	108	108	A	A	110	110	110	110	A	A				
16								130	106	108	108	106	106	106	106	106	106	106	108	B				
17								132	110	110	A	108	108	108	112	110	110	110	116	B				
18							B	142	110	110	106	106	106	106	108	108	118	112	116	A				
19							B	122	110	108	108	110	A	110	108	110	110	110	114	A				
20							B	122	108	108	108	A	108	B	B	108	108	108	A	B				
21							B	122	108	108	106	106	106	108	108	108	108	108	114					
22							B	120	110	108	112	108	108	108	108	108	112	110	110	B				
23							B	126	110	108	114	110	110	110	110	108	108	108	A	B				
24							B	108	A	108	A	108	B	108	108	108	106	106	110	A				
25							B	110	106	106	106	A	106	106	106	106	106	A	106	A				
26							B	112	112	108	A	A	A	A	A	A	108	A	A	A				
27							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					
29							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					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								25	24	26	22	23	21	21	23	25	25	21	11					
MED								134	110	108	108	108	108	108	108	108	108	108	114					
U Q								146	110	108	108	108	108	108	110	110	110	110	114					
L Q								122	108	106	106	106	106	108	108	108	108	108	110					

MAR. 2014 h′E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 h′Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	90	102	B	B	B	B	G	G	G	G	G	G	116	158	114	108	104	100	100	94	90	94	94
2	90	B	B	B	B	B	B	G	G	G	G	176	G	G	152	152	144	132	108	100	100	90	B	B
3	B	B	B	B	B	B	98	96	166	170	164	144	140	136	G	124	104	118	132	114	98	B	96	90
4	B	B	B	B	B	B	B	140	154	152	136	154	142	G	G	G	128	G	124	B	B	98	94	B
5	94	B	B	B	B	B	B	G	G	174	146	134	114	110	114	112	112	106	98	100	100	96	B	B
6	90	96	B	B	B	B	B	G	G	178	160	150	140	G	114	110	110	G	G	108	98	B	B	B
7	B	96	94	94	94	100	94	G	162	182	142	138	132	118	114	110	106	106	106	102	100	96	96	98
8	94	94	B	B	B	B	B	G	172	100	152	152	138	124	124	116	112	110	106	106	88	98	102	100
9	B	B	96	B	98	B	B	G	G	G	G	138	118	118	118	114	112	112	108	B	B	B	B	98
10	B	B	B	B	B	B	B	180	176	146	136	140	148	148	132	126	122	114	108	B	B	B	B	102
11	B	B	B	B	B	C	B	G	B	G	G	G	106	B	B	120	126	126	122	B	B	B	B	B
12	B	B	B	100	100	98	B	G	G	176	156	144	138	136	118	124	120	110	110	94	B	B	B	B
13	B	B	B	B	B	B	B	204	190	154	154	146	138	124	118	112	106	106	104	94	96	106	B	B
14	B	B	B	B	B	B	B	G	192	G	162	G	G	B	G	G	G	148	112	106	100	98	98	96
15	B	B	B	B	B	B	B	150	142	G	G	166	164	172	G	G	G	120	106	102	102	100	98	B
16	92	B	B	B	B	B	B	G	G	G	G	G	100	G	G	G	G	112	136	94	B	B	B	B
17	B	B	B	B	B	B	B	G	136	G	180	100	G	G	94	102	G	G	122	B	B	B	B	B
18	B	B	B	B	B	B	B	152	G	G	G	G	G	G	G	G	104	G	116	104	B	B	B	B
19	B	B	B	B	B	B	B	156	156	134	132	118	102	G	G	G	G	136	116	106	102	98	B	B
20	B	B	B	B	B	B	B	186	194	190	120	118	G	B	B	126	114	114	106	110	96	90	B	B
21	B	B	B	B	B	B	B	160	G	144	G	170	G	G	G	G	G	G	G	B	90	B	B	94
22	B	B	B	B	102	B	B	100	170	154	104	154	160	140	132	132	G	208	192	B	108	96	92	92
23	94	B	B	B	106	104	B	172	184	184	104	152	134	130	120	120	132	114	112	92	92	100	104	B
24	B	B	100	B	B	B	B	144	96	130	106	G	120	112	112	G	G	158	114	106	B	B	98	90
25	B	B	B	B	B	B	B	G	G	112	110	106	G	G	G	G	G	96	116	110	100	94	94	94
26	B	B	B	B	B	B	B	G	104	G	102	100	98	102	156	96	142	120	112	106	108	B	94	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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	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	4	4	2	5	3	2	12	15	16	18	20	18	14	15	17	17	21	24	19	17	14	12	11
MED	93	95	98	97	100	100	96	154	166	154	139	144	136	124	118	116	112	114	112	104	100	97	96	94
U Q	94	96	101		104	104		176	184	177	156	153	140	136	132	125	127	129	119	106	101	98	98	98
L Q	90	92	95		96	98		142	142	139	110	126	114	116	114	111	107	108	106	100	95	94	94	92

IONOSPHERIC DATA STATION Okinawa

MAR. 2014 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		F1	F1											C1	HC11	C1	C1	C3	L2	L5	F2	F1	F1	F1
2	F1											H1			H1	H1	H1	H1	C1	L5	F1	F1		
3							F2	L1	HL11	H1	H1	H1	H1	H1		C1	L1	C1	H1	C1	F2		F1	F1
4								H2	H1	H1	H1	H1	H1				H1		C1			F3	F2	
5	F1									H1	HL11	H1	C1	C1	C1	C1	C1	C2	L2	L3	FQ31	F1		
6	F1	F1								H1	H1	H1	H1		C1	C1	C1			L1	F1			
7		F1	F1	F1	F1	F1	F1		H1	H1	H1	HL11	H1	C1	C1	C1	C1	C1	C1	L4	F2	F3	F1	F1
8	F1	F1							H1	L1	HL11	H1	H1	C1	C1	C1	CL22	C4	C4	CL52	F1	F2	F2	F1
9			F1		F1							H1	C1	C1	C1	C1	C2	CL21	C2					F2
10								H1	H1	H1	H1	H1	H1	H1	H1	C1	C1	C1	C1					F1
11													L1			C1	C1	C1	C1					
12				F2	F2	F2				H1	H1	H1	H1	H1	C1	C1	C1	C1	C1	L1				
13								H1	H1	H1	H1	H1	H1	C1	C1	C1	C1	C1	C1	L1	F1	F2		
14									H1		H1							HL11	C3	C4	F2	FF11	F1	F1
15								H1	H1			H1	H1	HC11				C1	C3	L2	F2	F1	F1	
16	F1												L1					C2	H1	L1				
17									H1		HL11	L1			L1	L1			CL11					
18								H1									L1		C1	L3				
19								H1	H1	H1	HL11	C1	L1					H1	C3	C1	F1	F1		
20								H1	H1	H1	C2	C1				C1	C3	C4	C2	C1	F2	F1		
21								H1		H1		H1									F1			F1
22					F1			L1	HL11	H1	L1	H1	H1	H1	H2	H1		H1	H1		F9	F3	F2	F1
23	F1				F1	F1		HL11	HL11	H1	L1	HL11	H1	H1	C1	C1	HL11	CL11	CL21	L2	F1	F5	F3	
24			F2					H1	L2	H1	LC11		C1	C1	C1			H1	C3	L8			F1	F1
25										C1	C1	C1						L2	CL11	C4	F3	F1	F1	F1
26									L1		L1	L1	L1	L1	HL11	L1	H1	CL11	CL22	L4	FF11		F2	
27																								
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

MAR. 2014 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

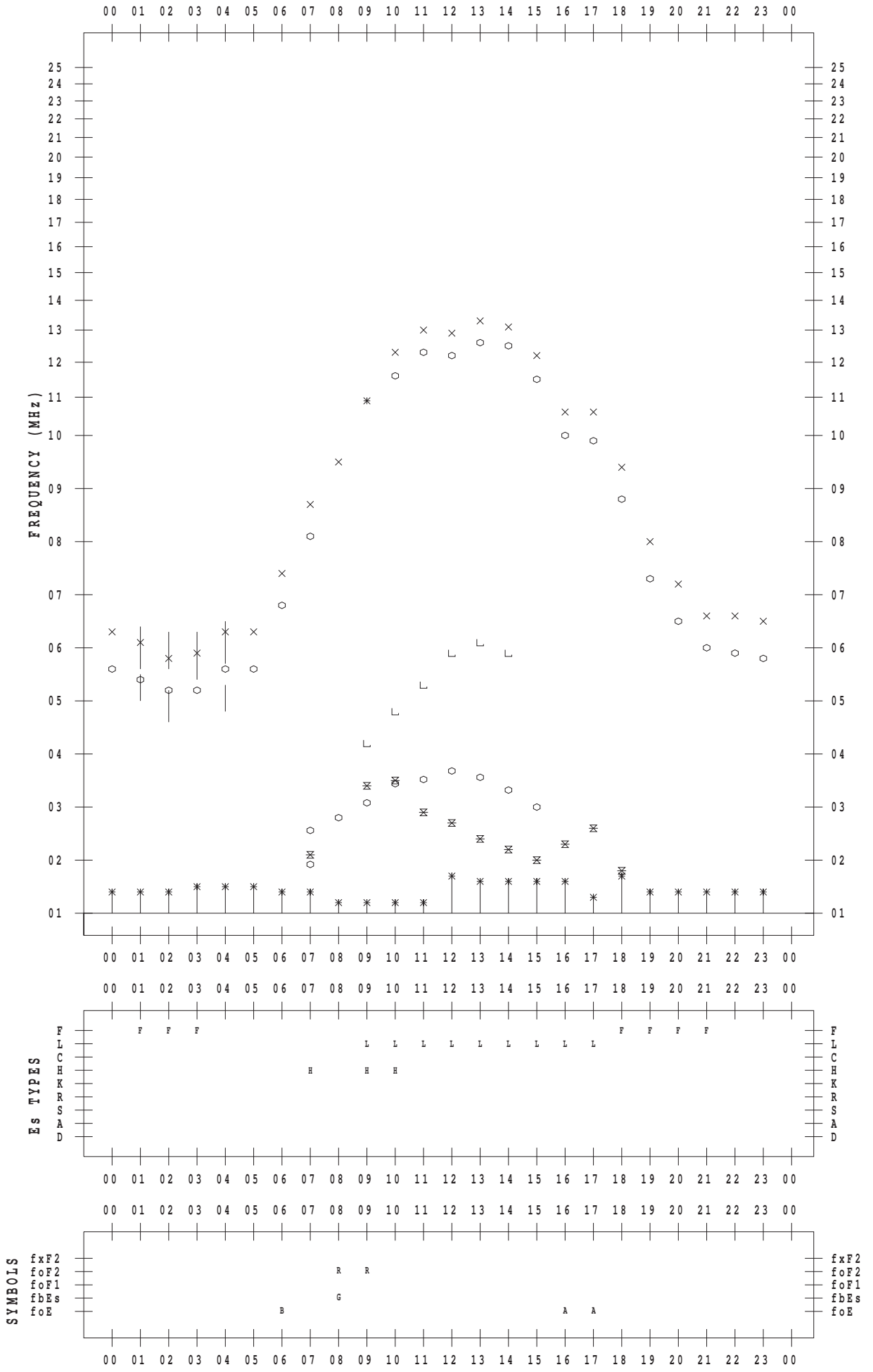
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 1

135 °E MEAN TIME



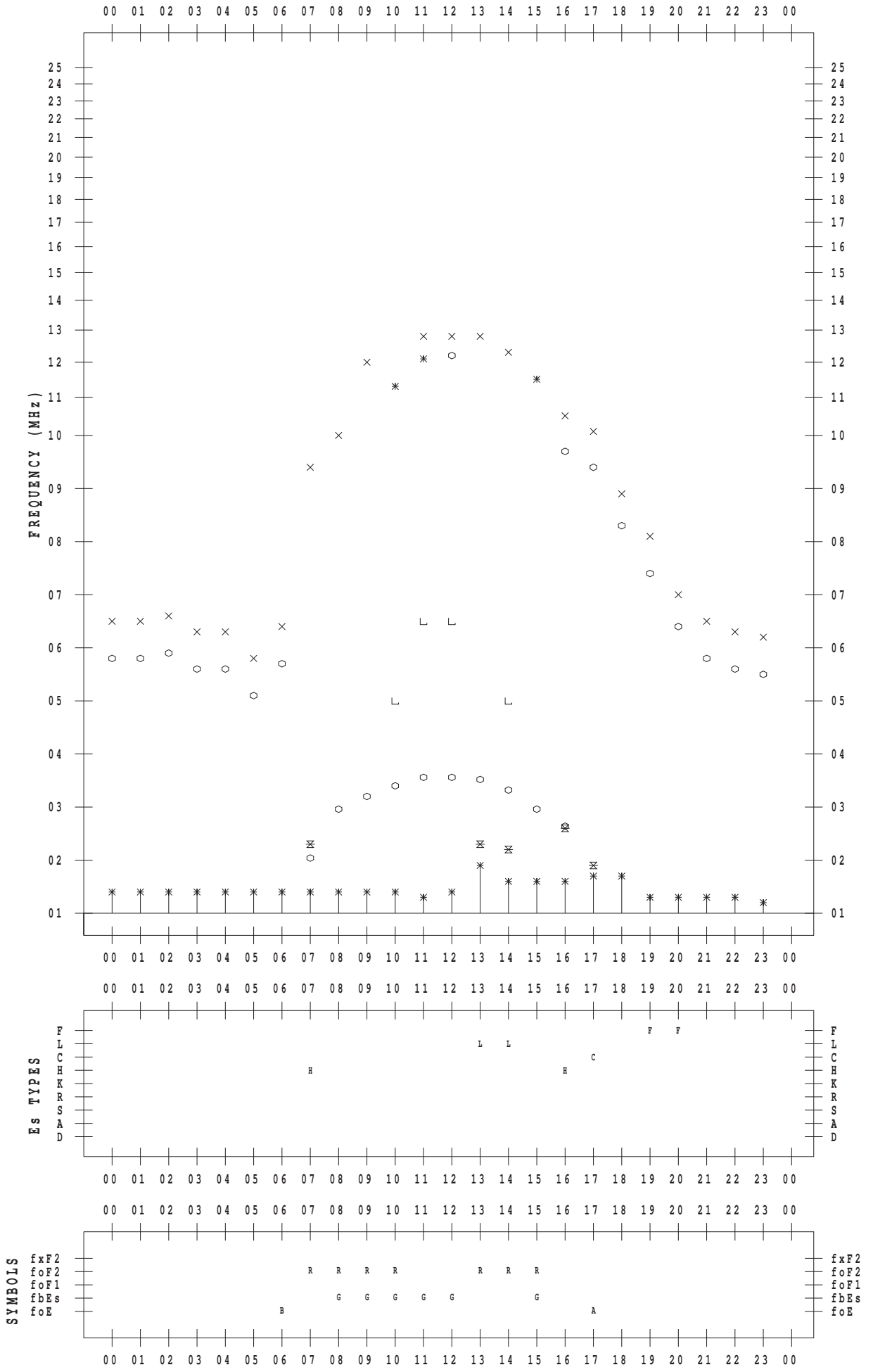
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 2

135 °E MEAN TIME



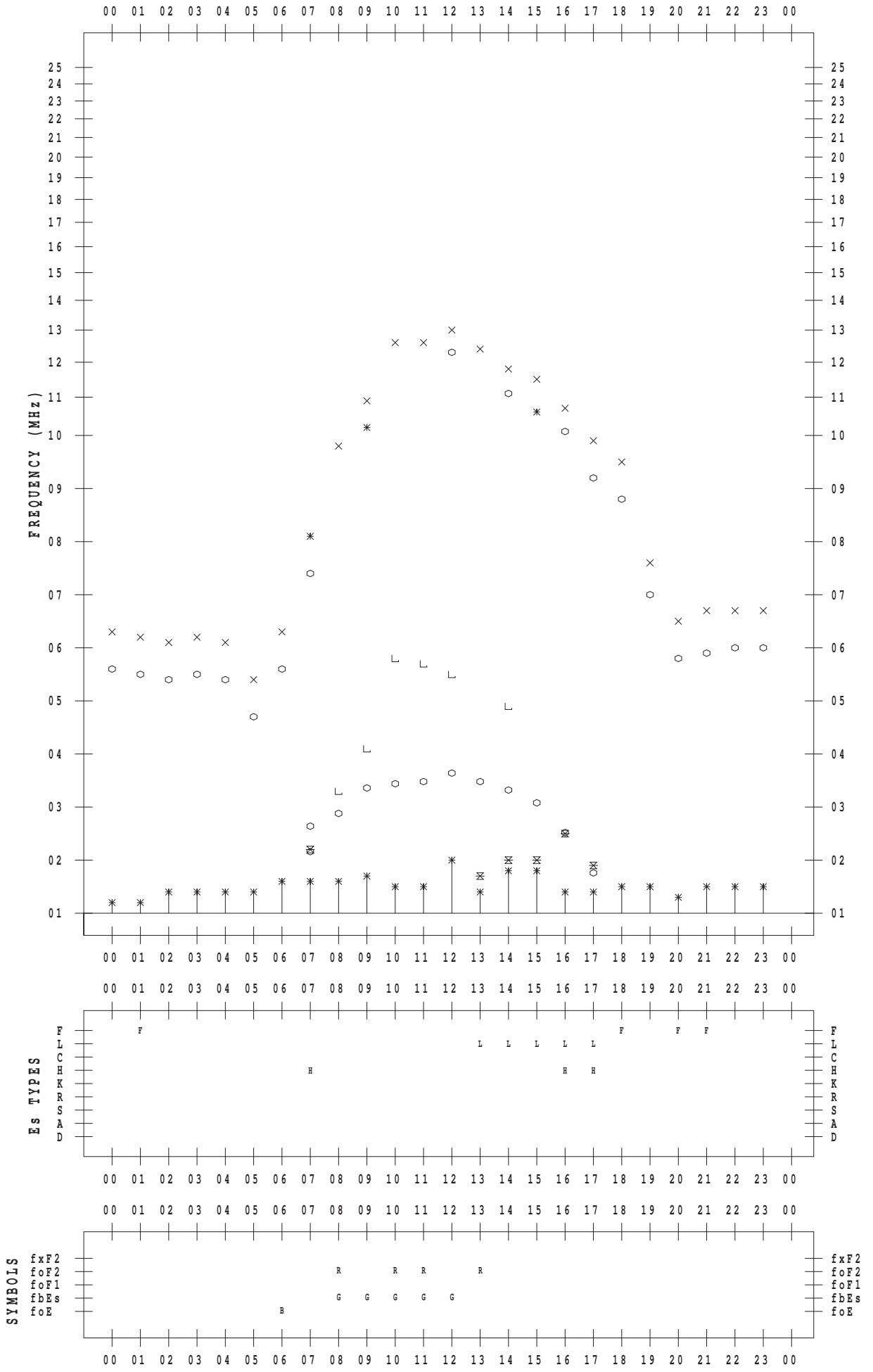
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 3

135 °E MEAN TIME



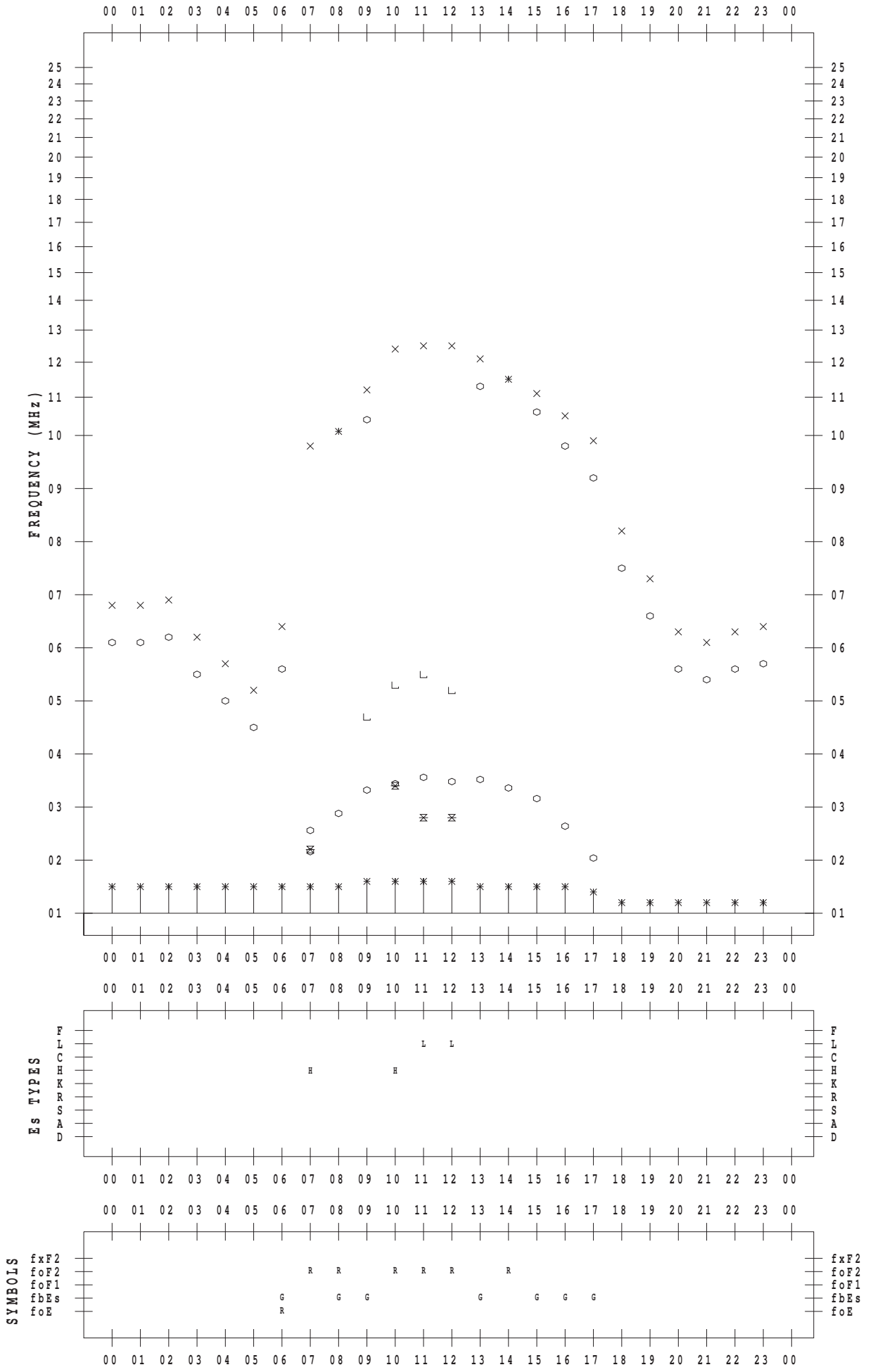
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 4

135 °E MEAN TIME



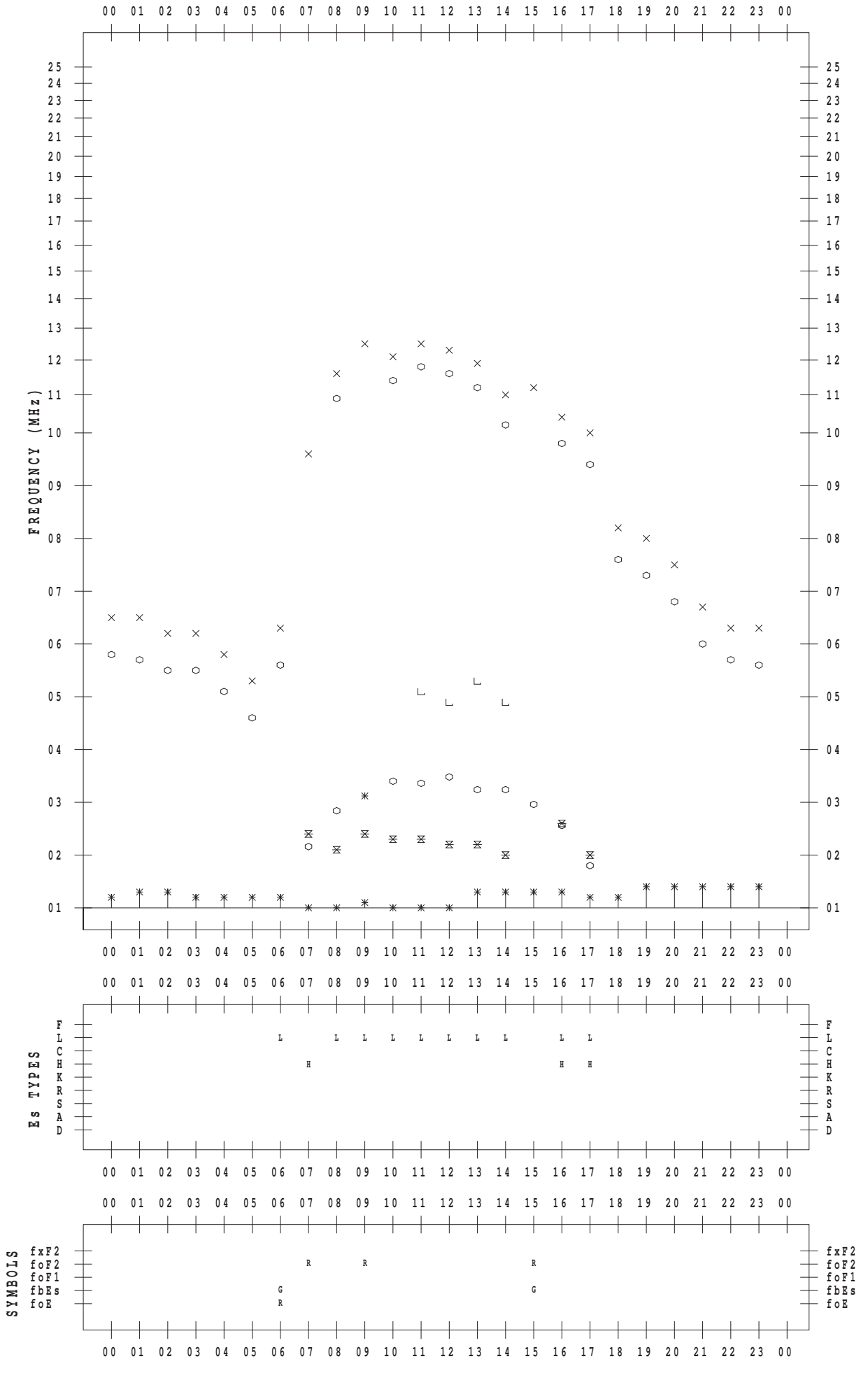
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 5

135 °E MEAN TIME



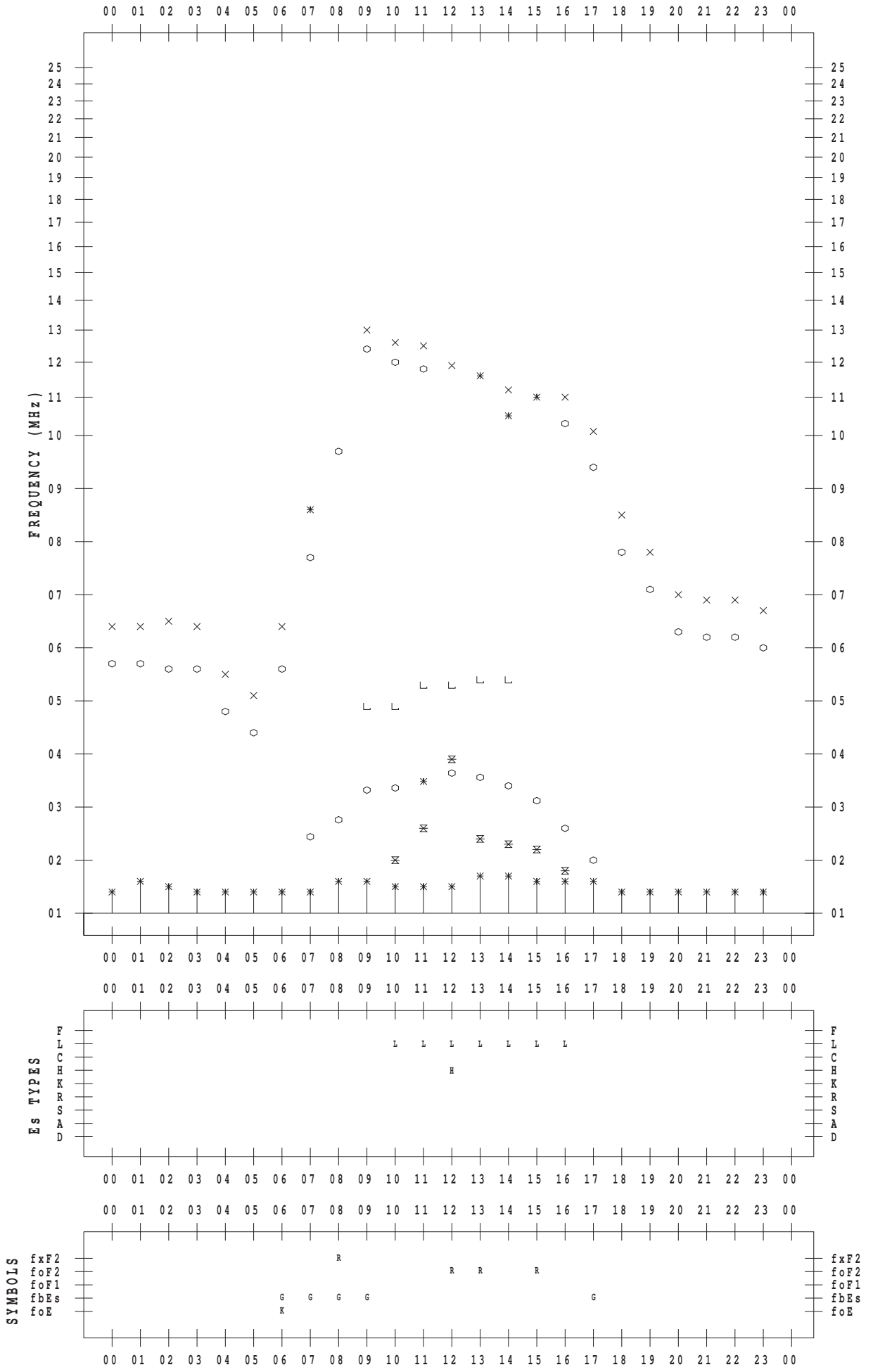
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 6

135 °E MEAN TIME



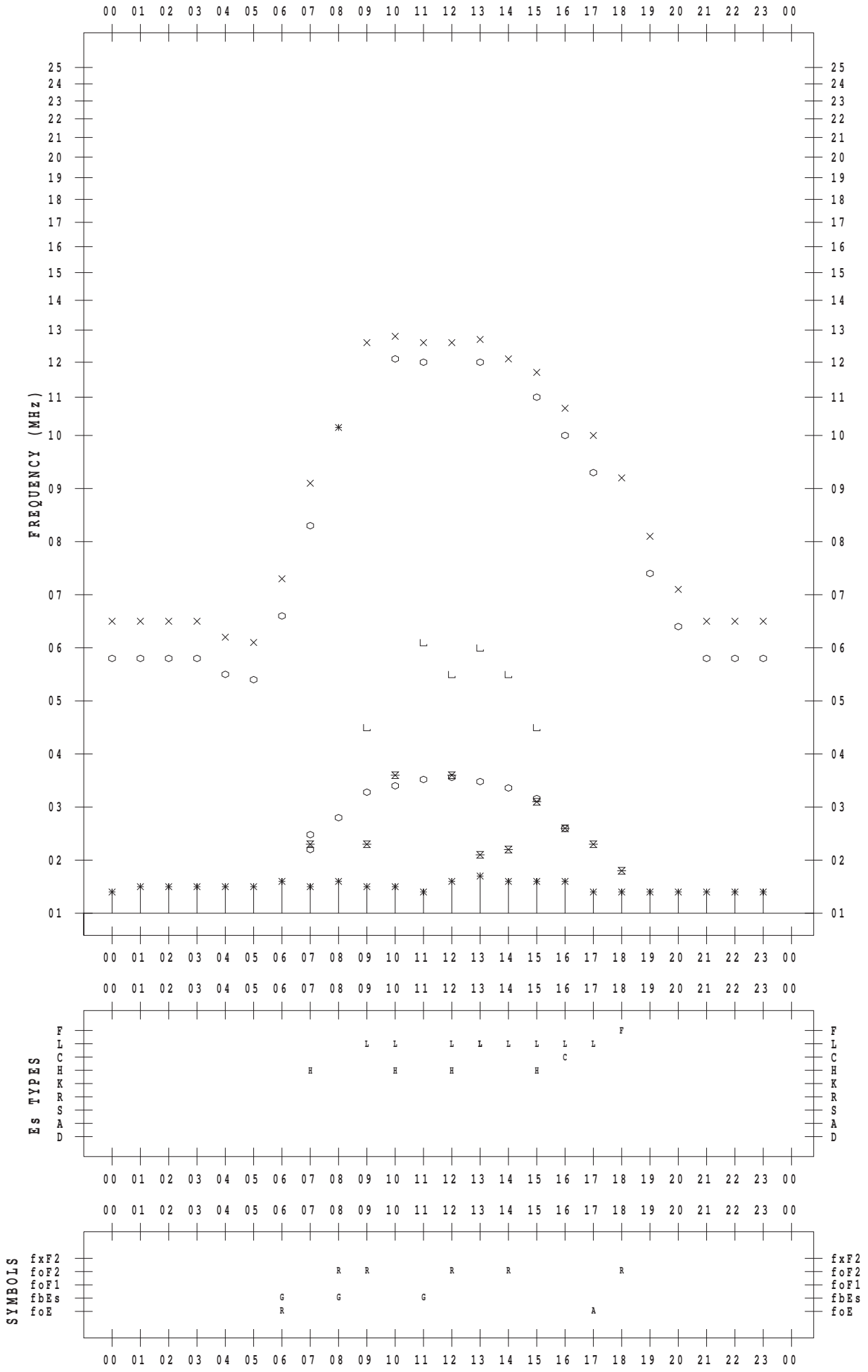
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 7

135 °E MEAN TIME



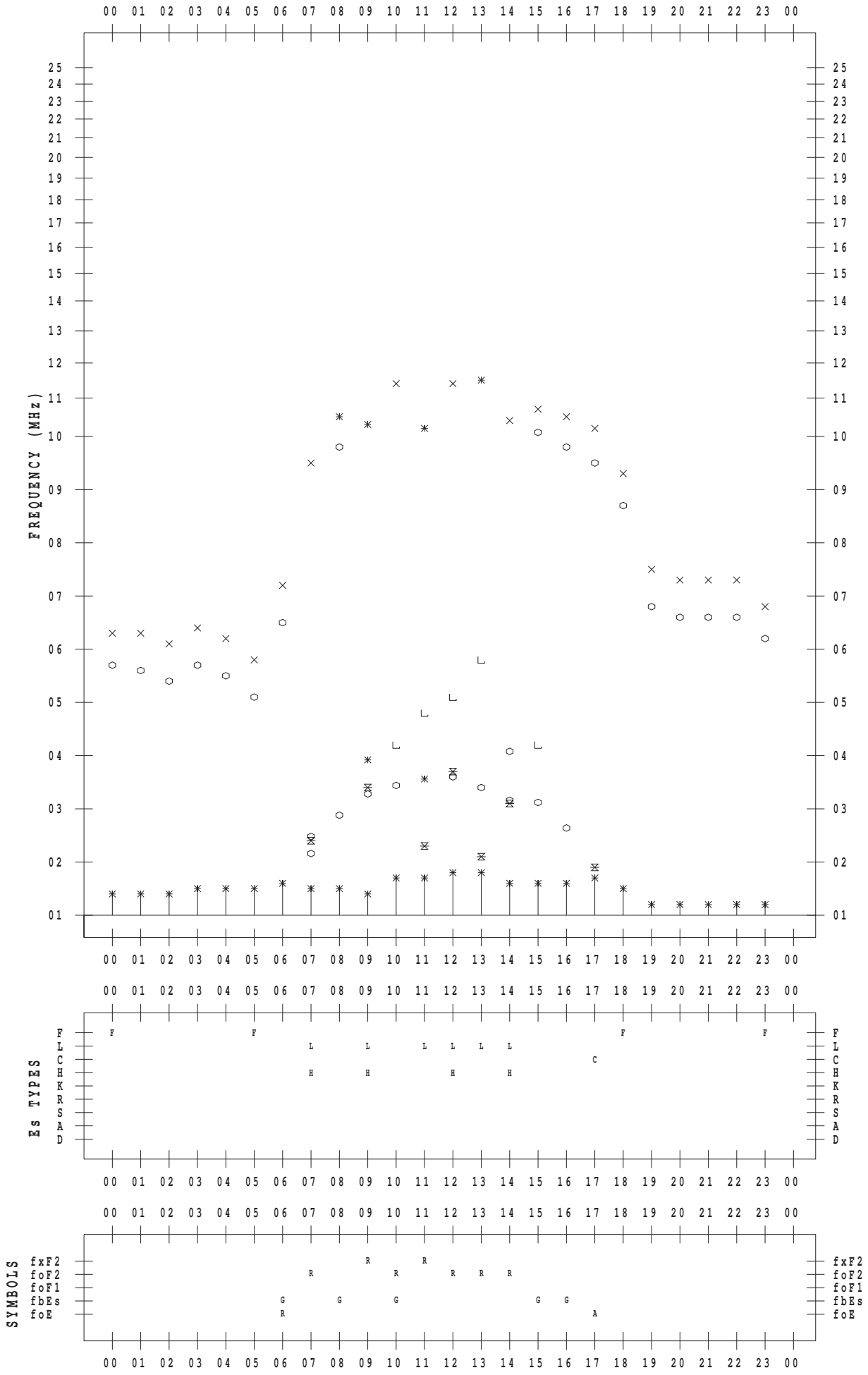
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 8

135 °E MEAN TIME



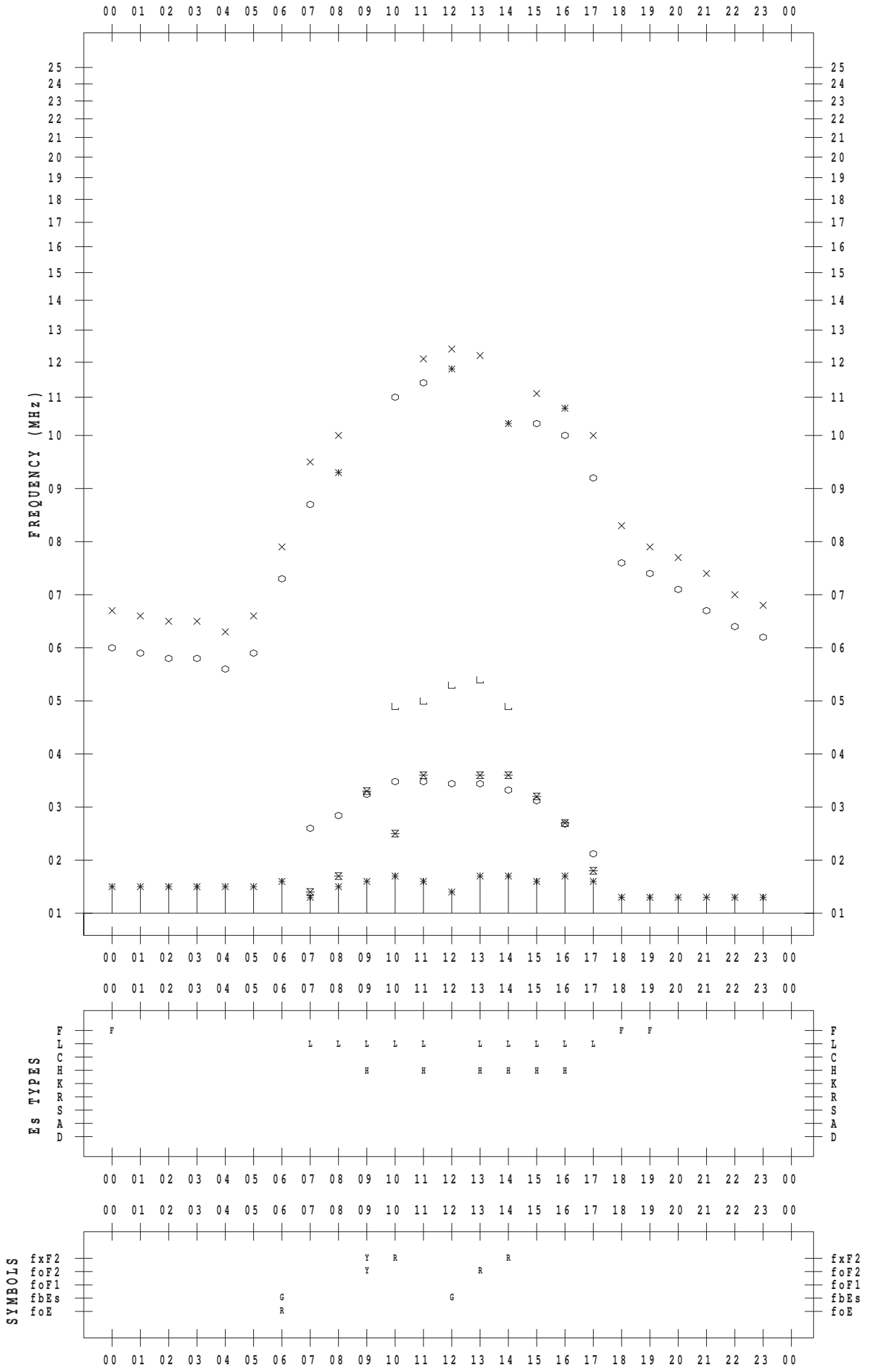
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/ 9

135 °E MEAN TIME



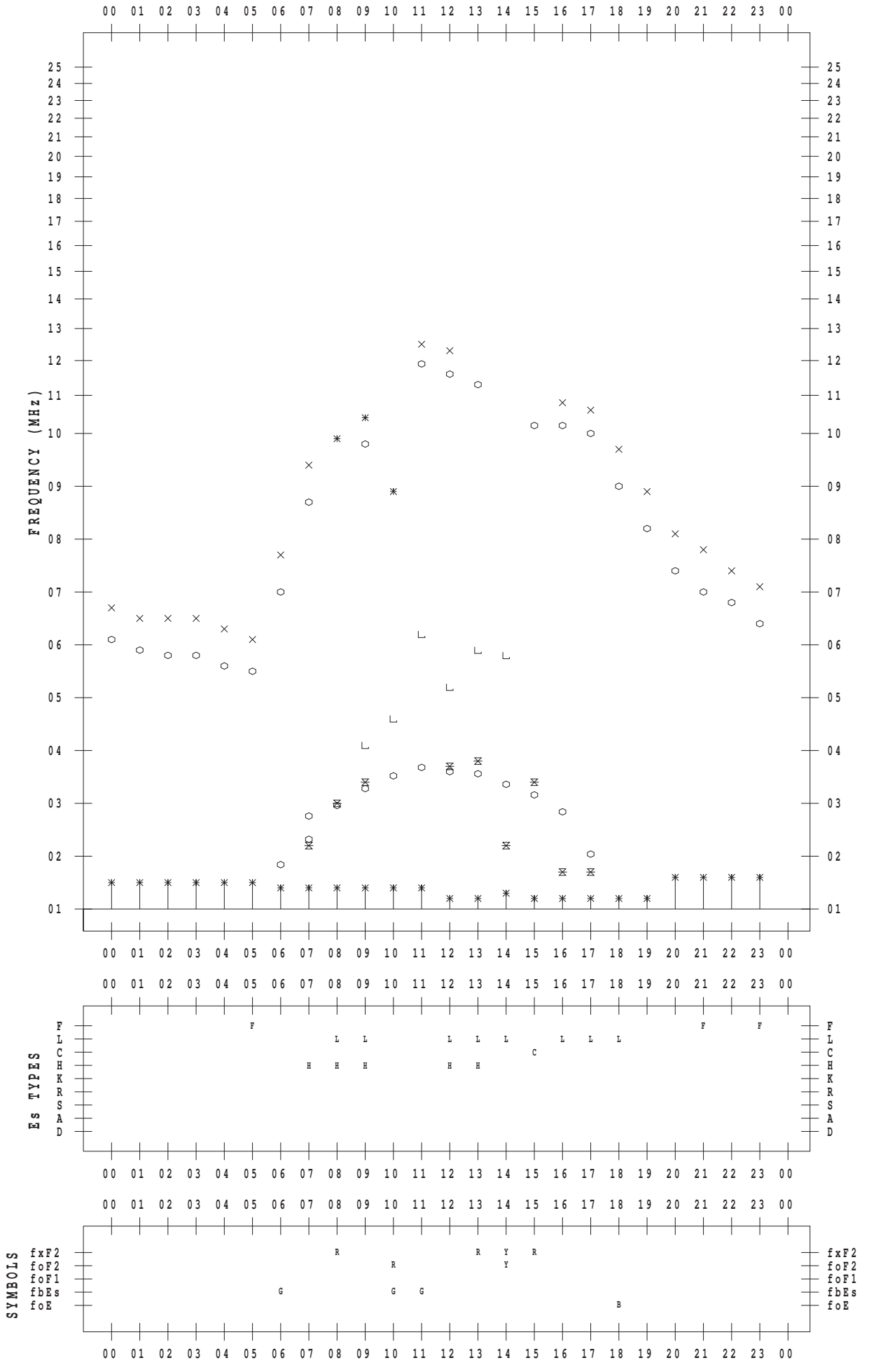
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/10

135 °E MEAN TIME



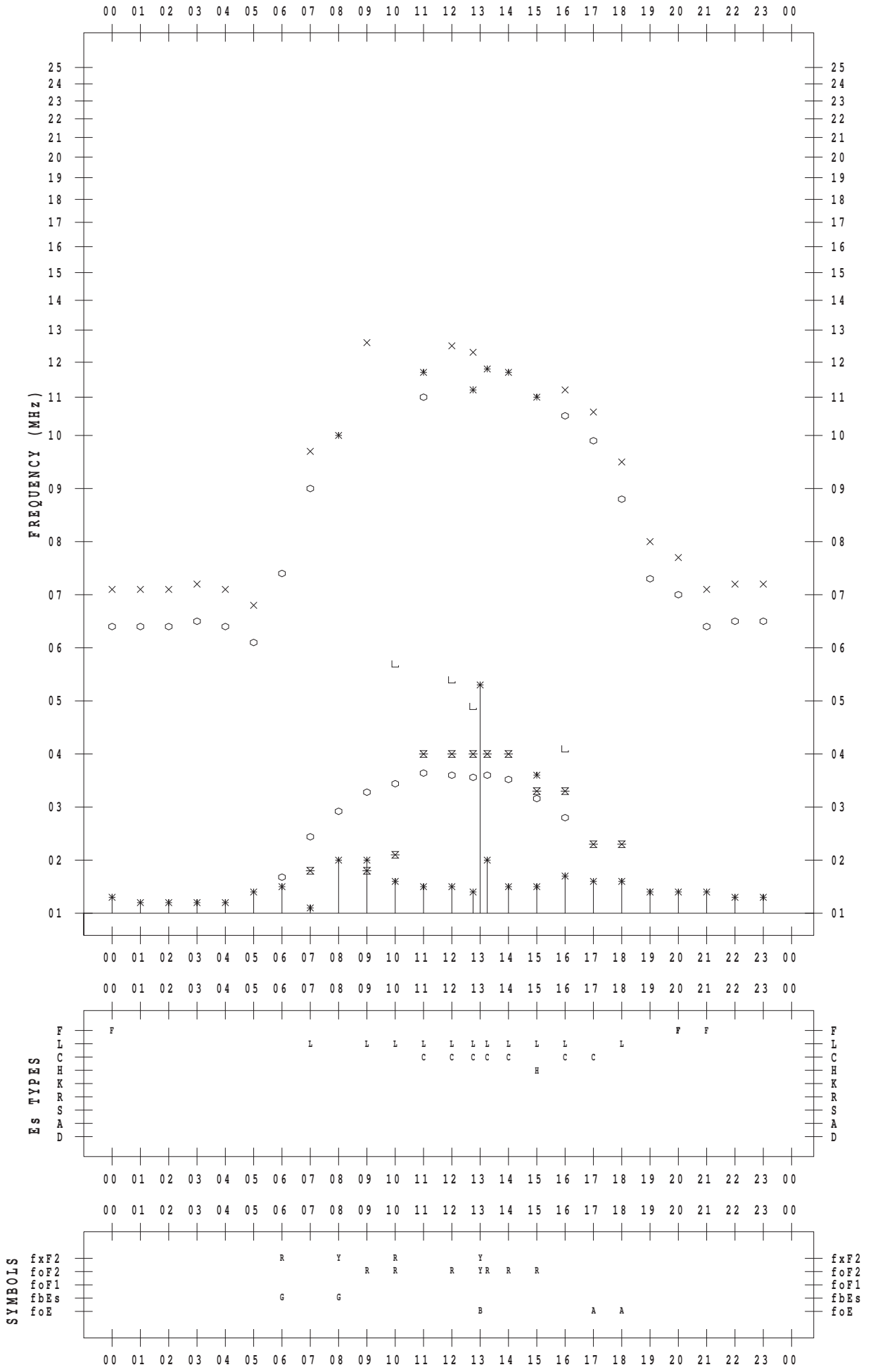
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/11

135 °E MEAN TIME



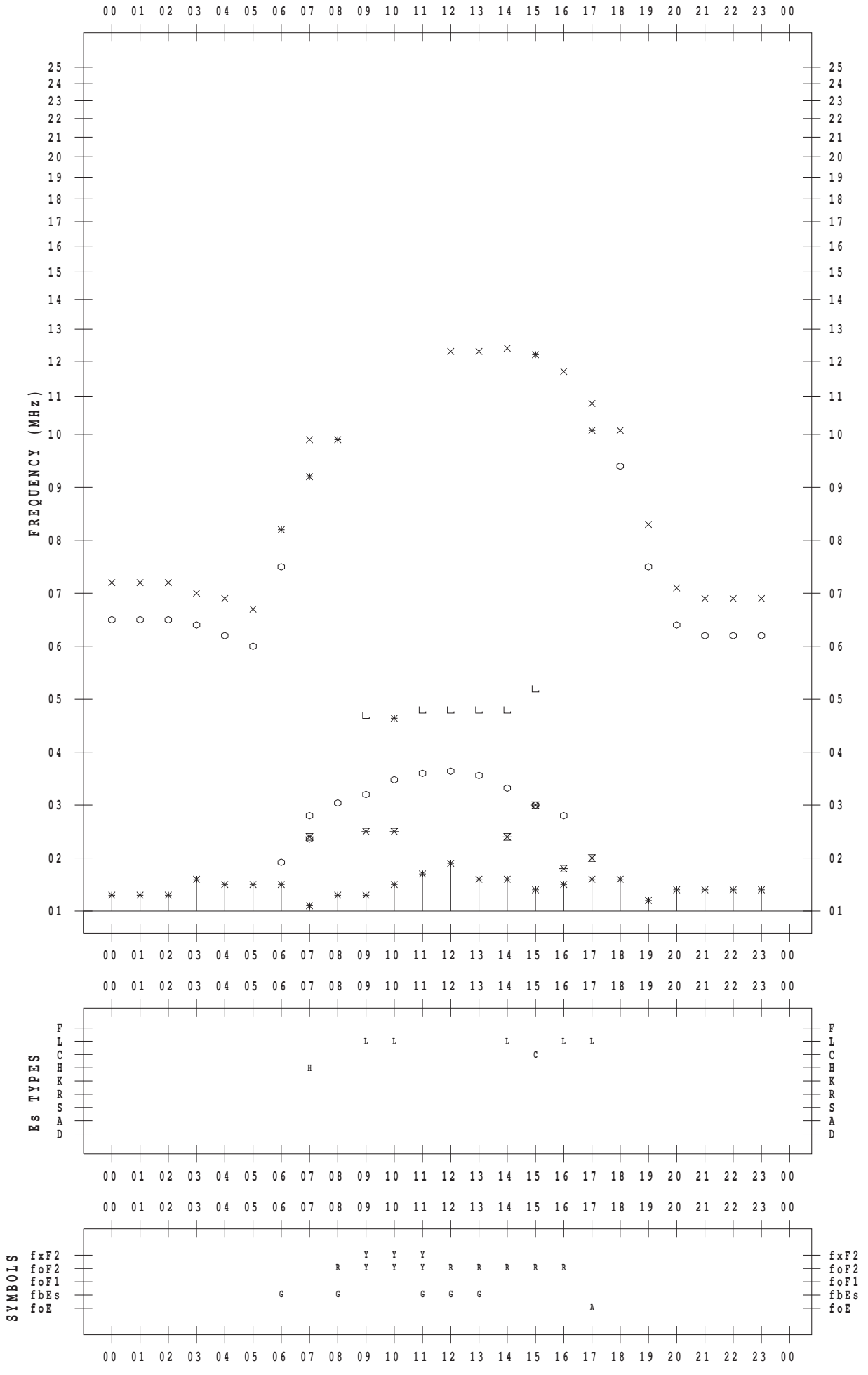
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/12

135 °E MEAN TIME



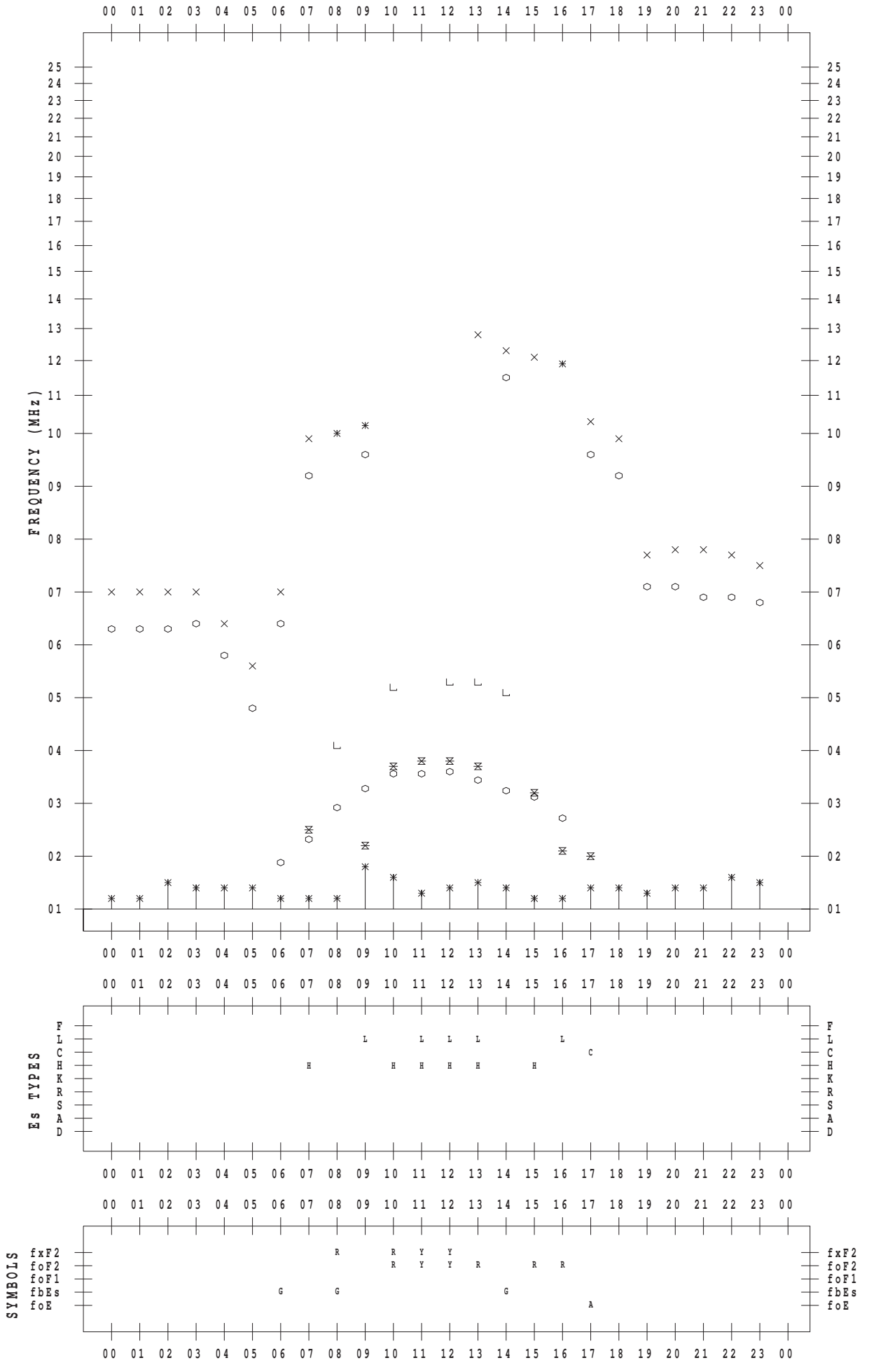
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/13

135 °E MEAN TIME



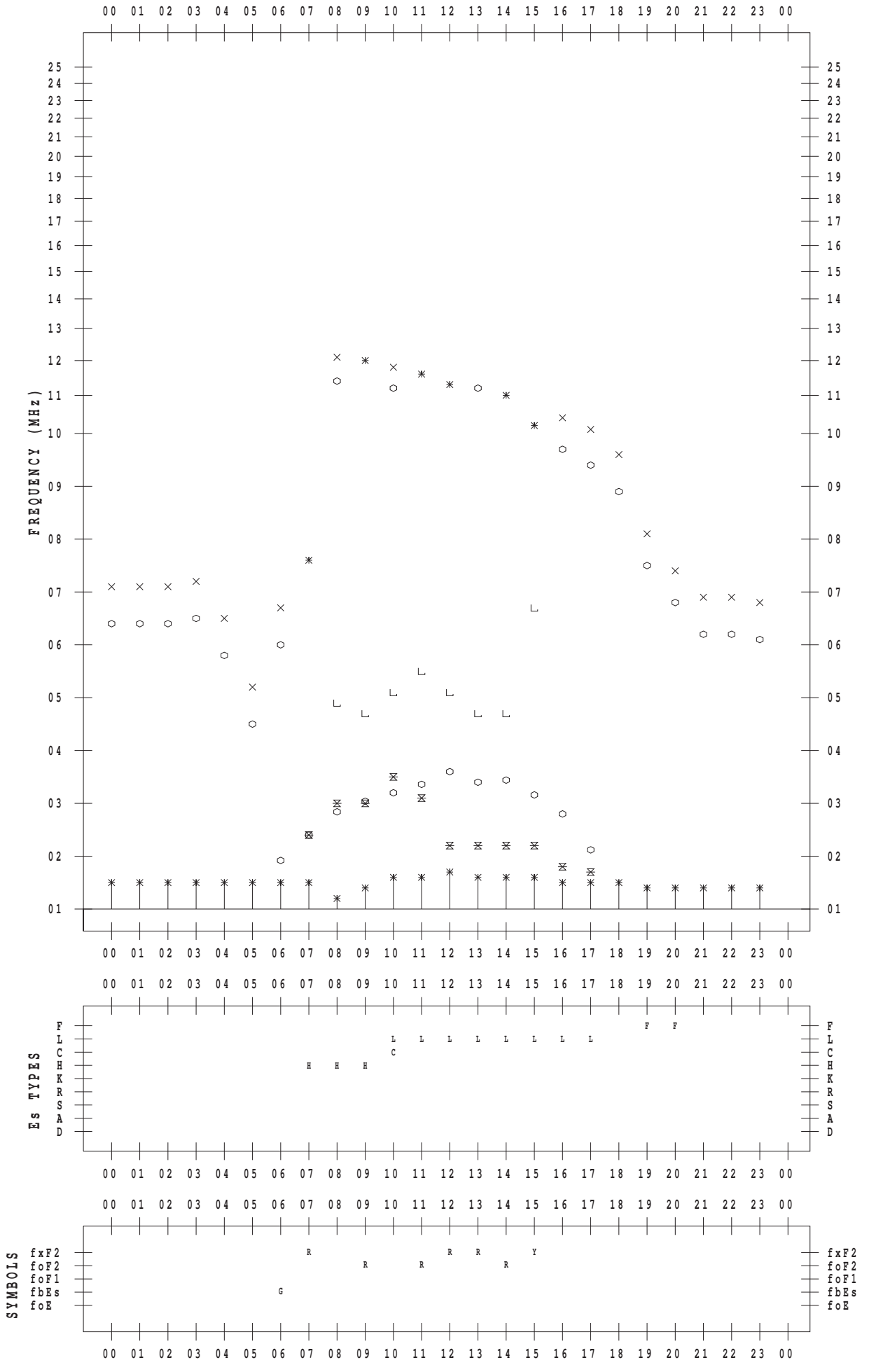
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/14

135 °E MEAN TIME



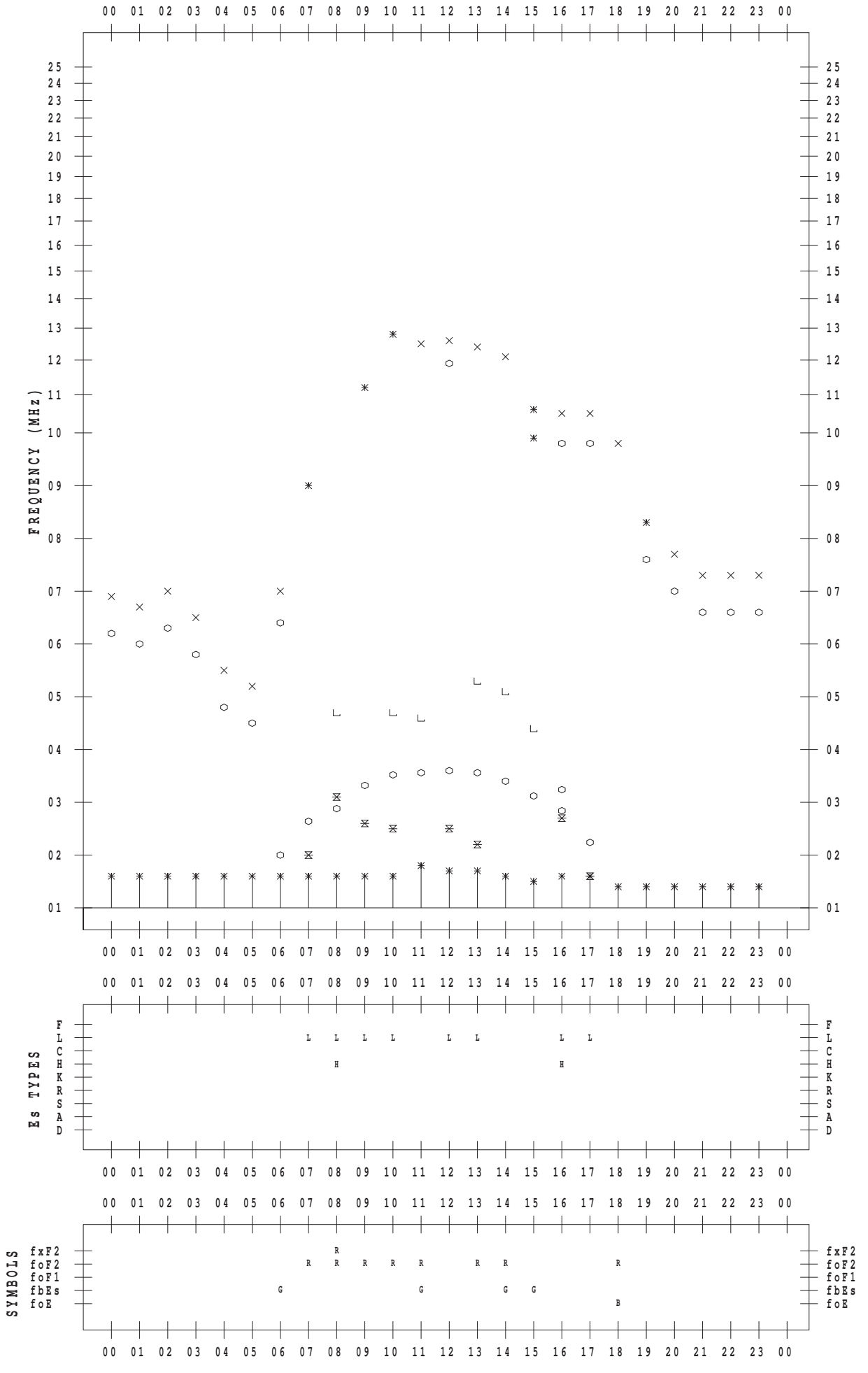
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/15

135 °E MEAN TIME



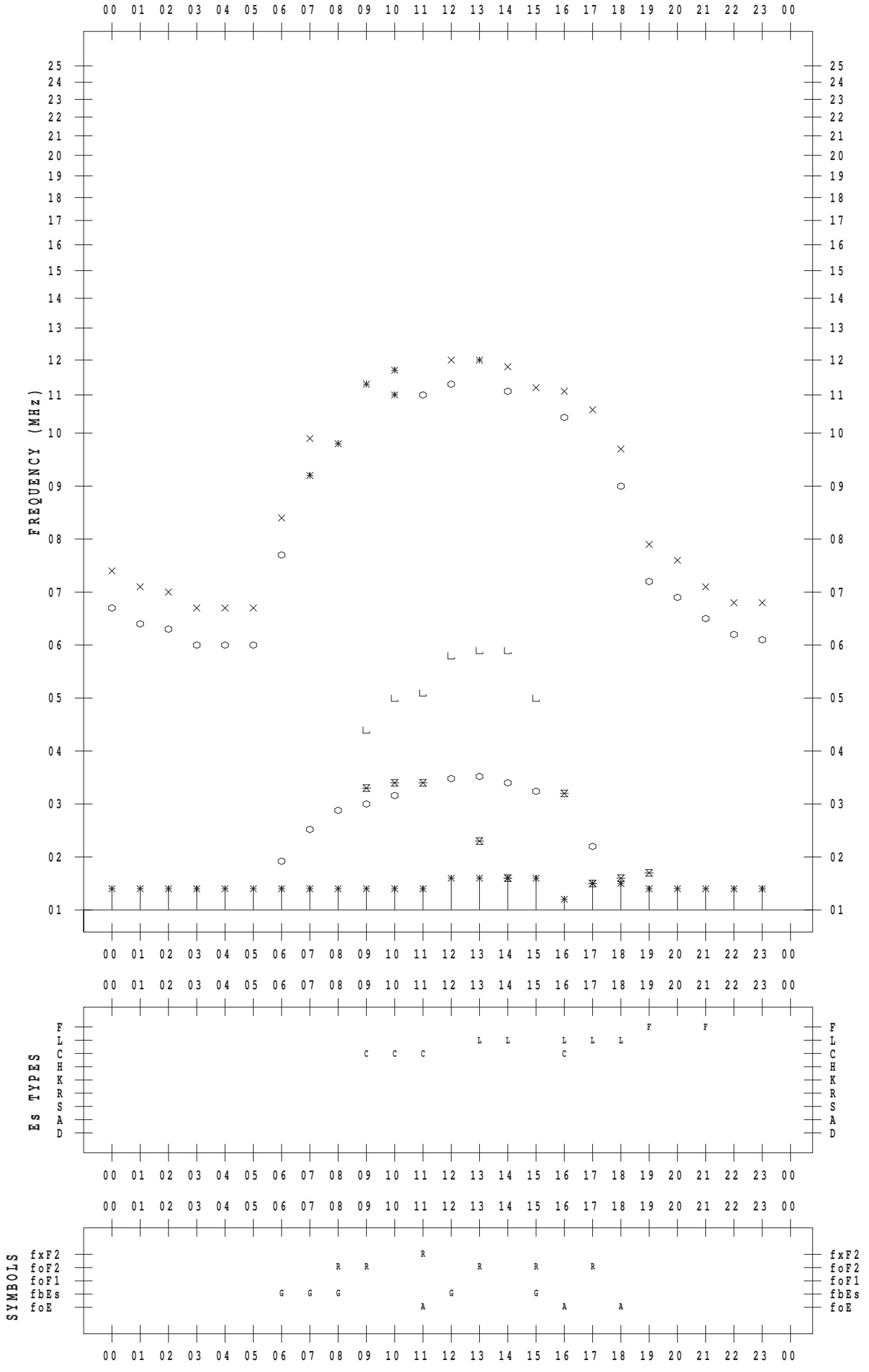
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/16

135 °E MEAN TIME



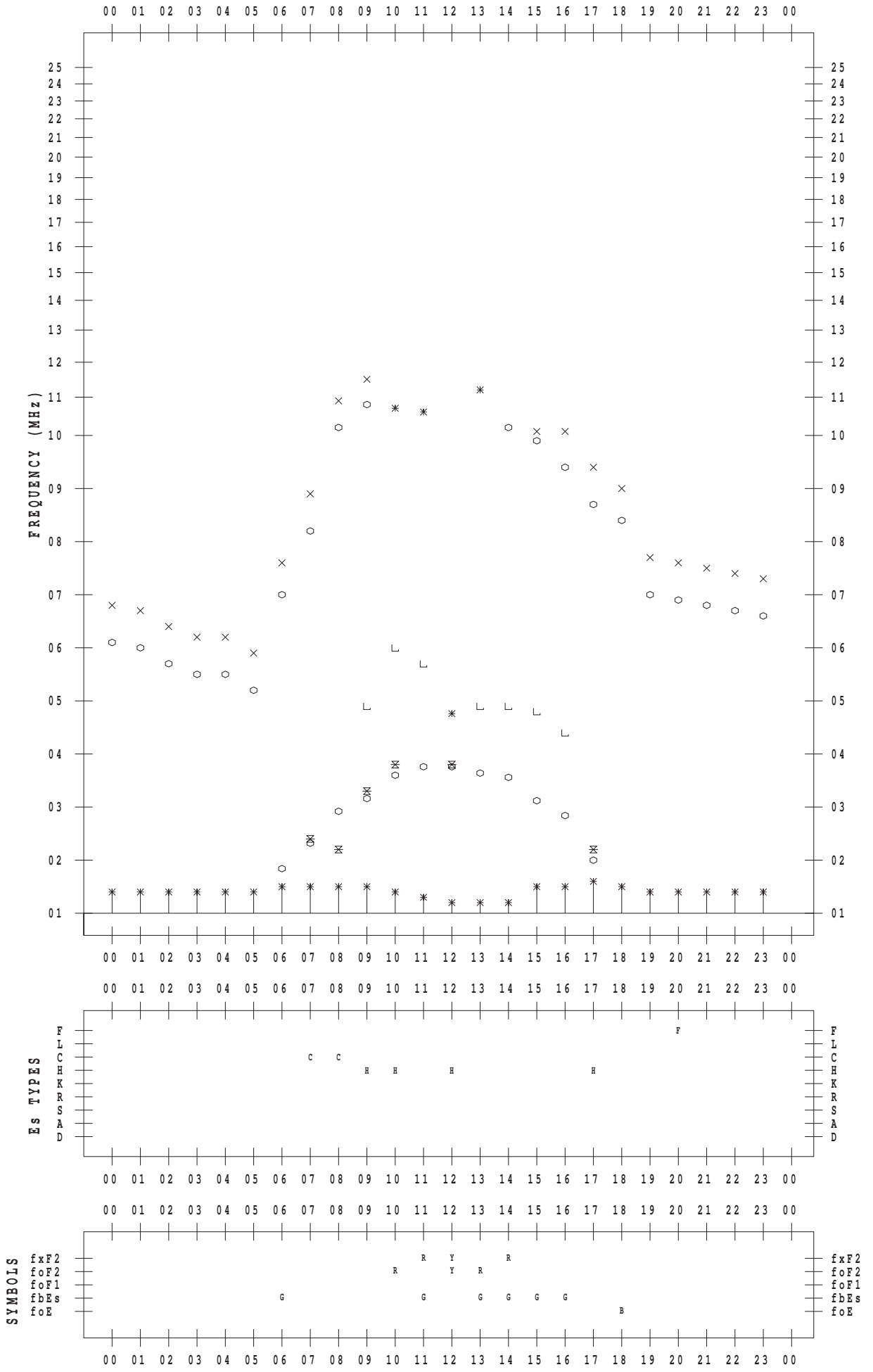
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/17

135 °E MEAN TIME



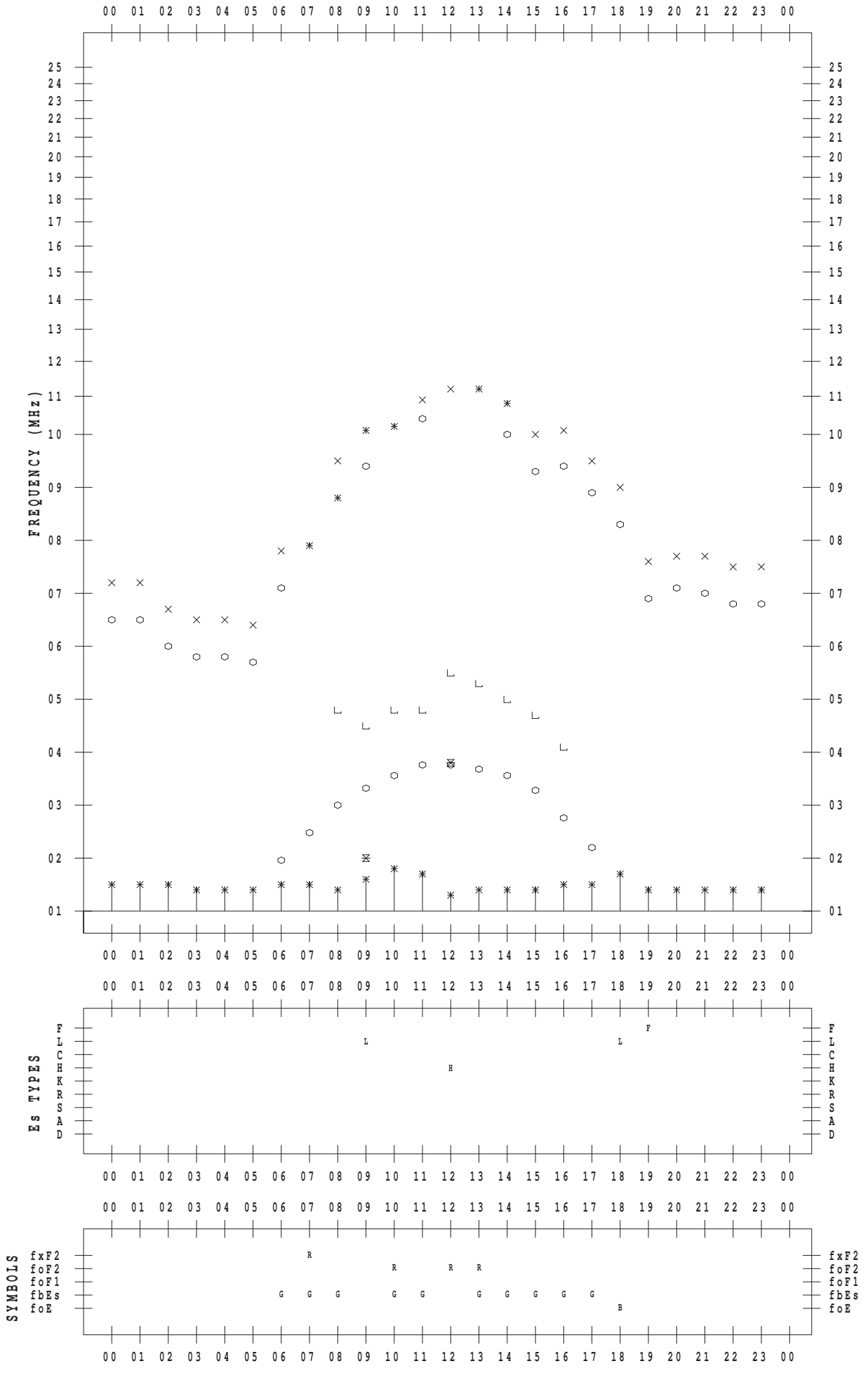
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/18

135 °E MEAN TIME



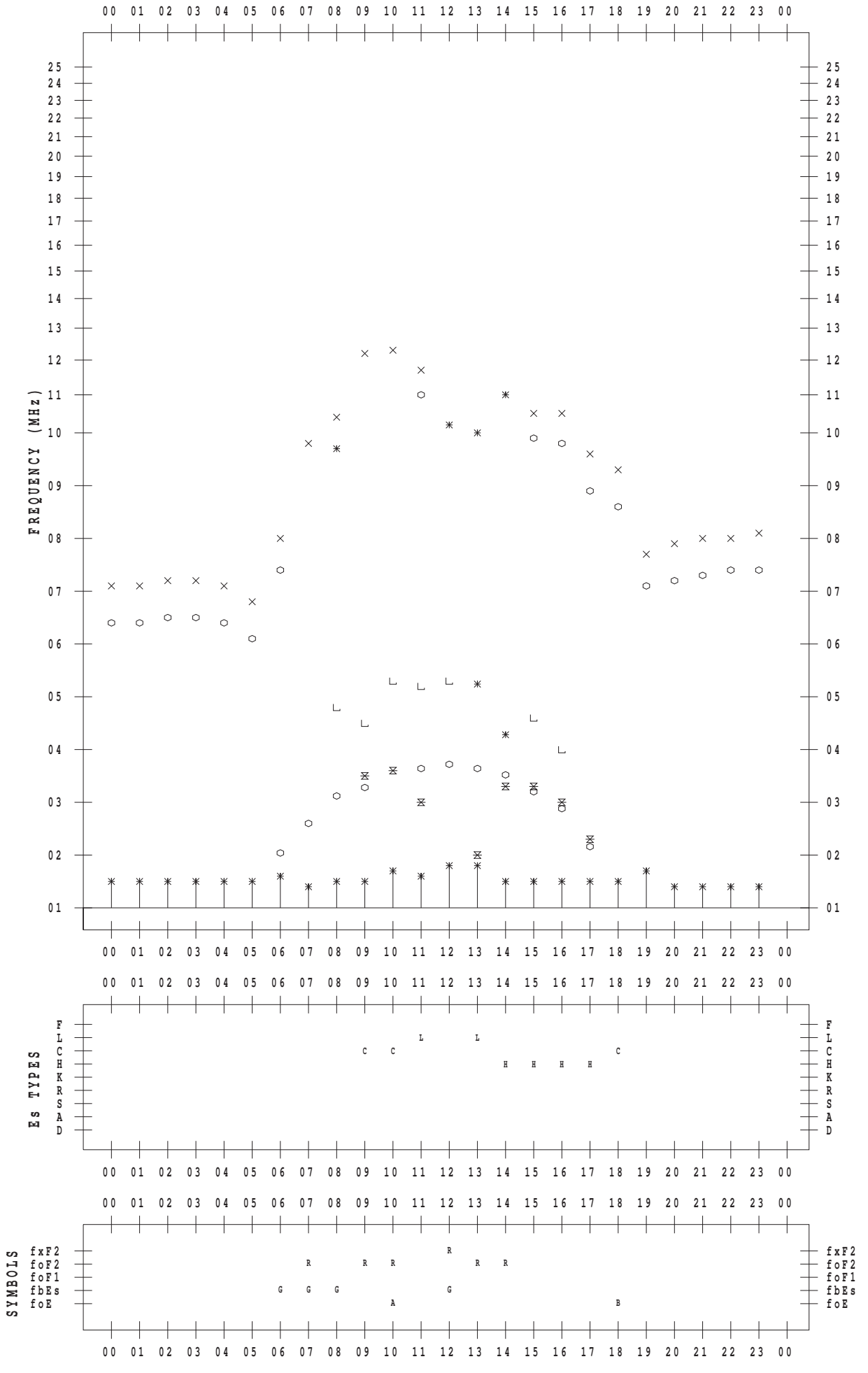
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/19

135 °E MEAN TIME



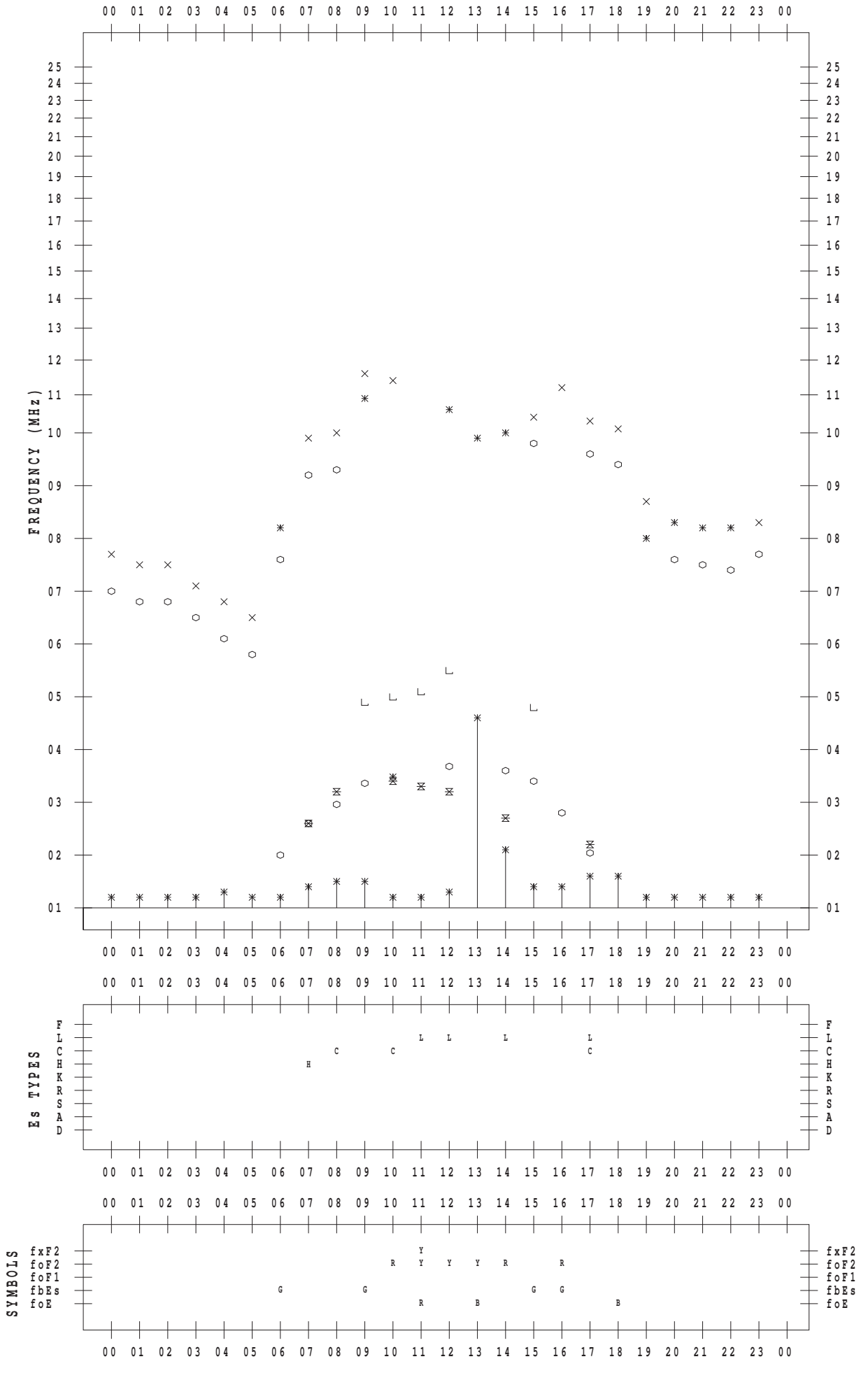
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/20

135 °E MEAN TIME



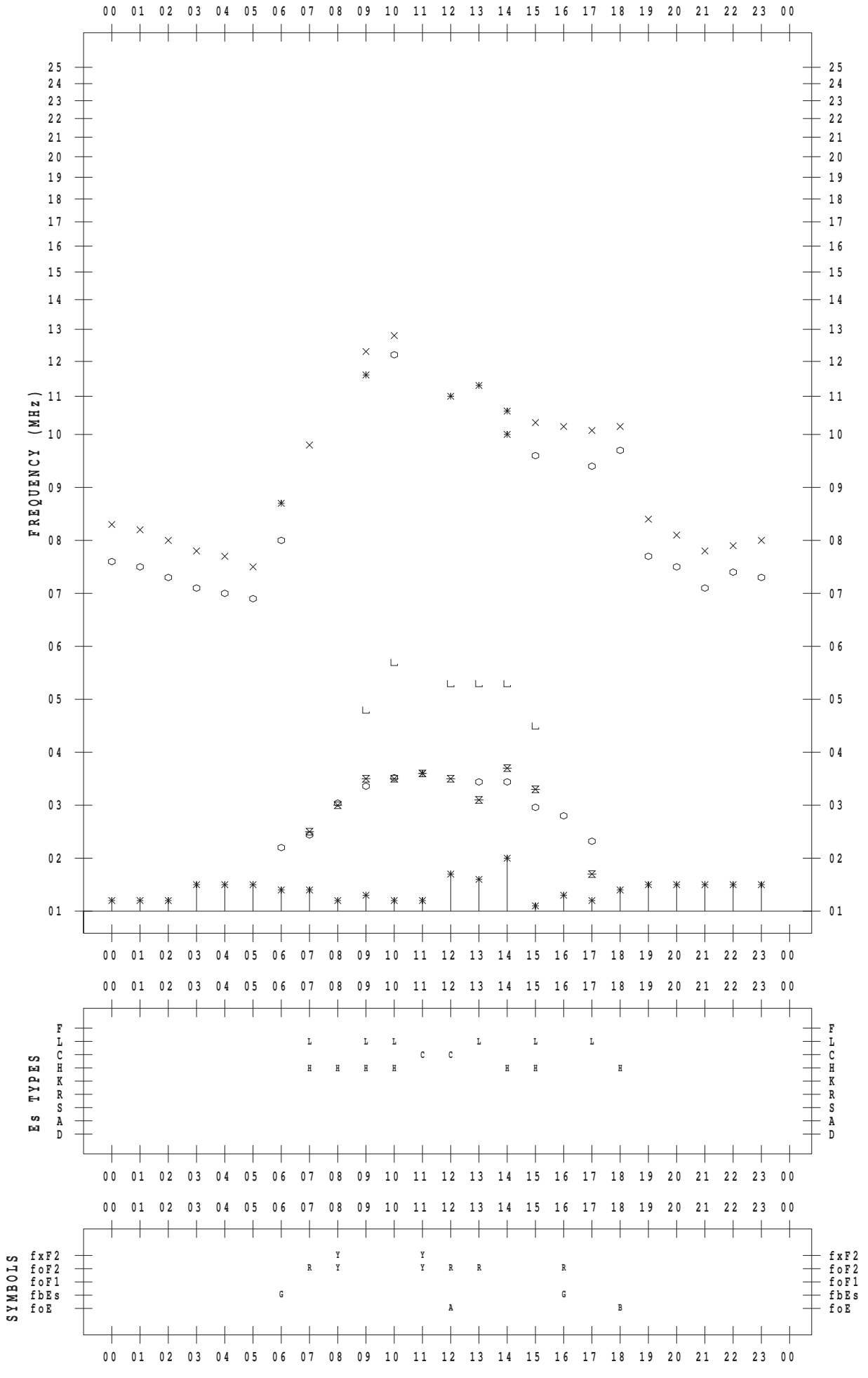
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/21

135 °E MEAN TIME



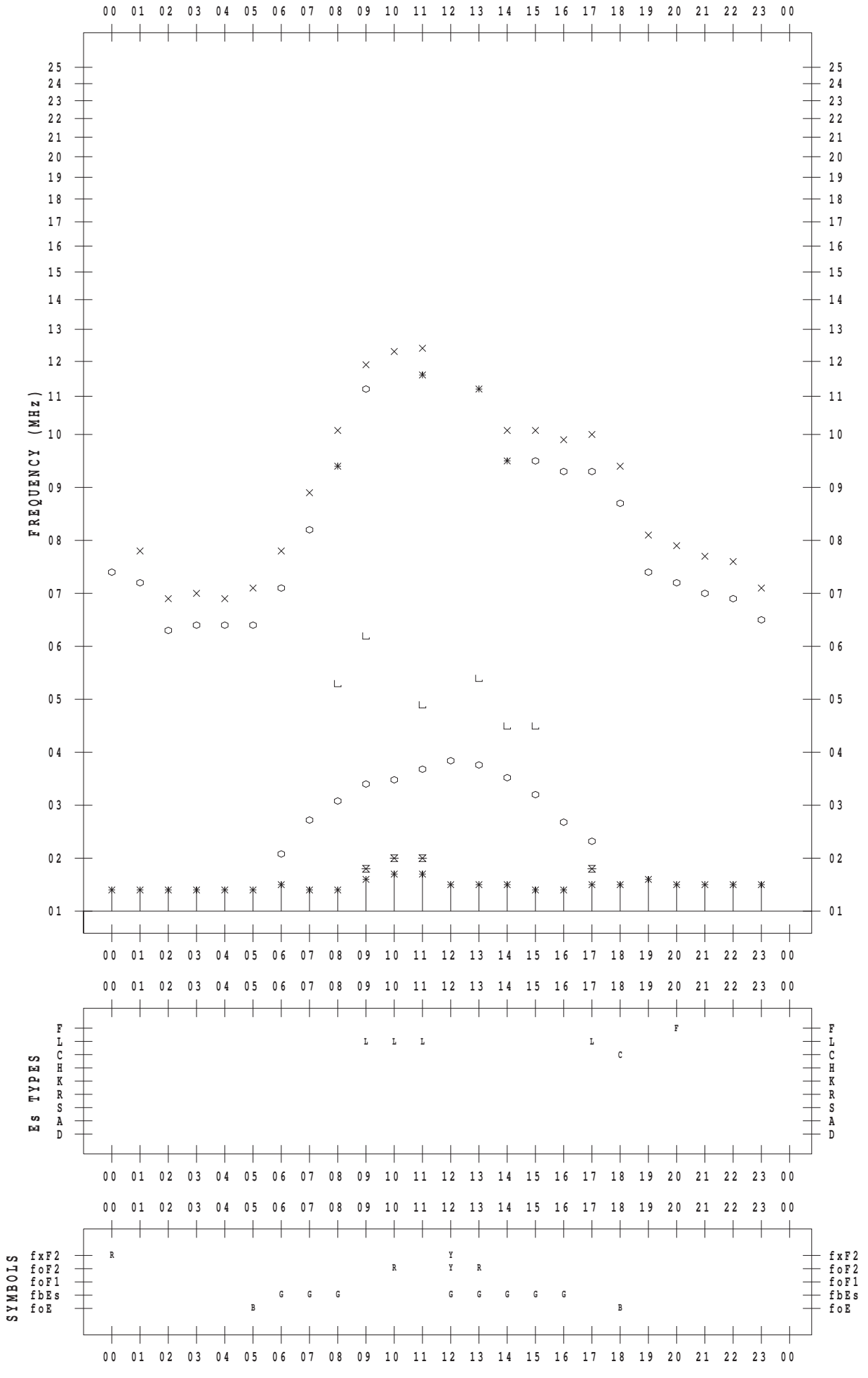
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/22

135 °E MEAN TIME



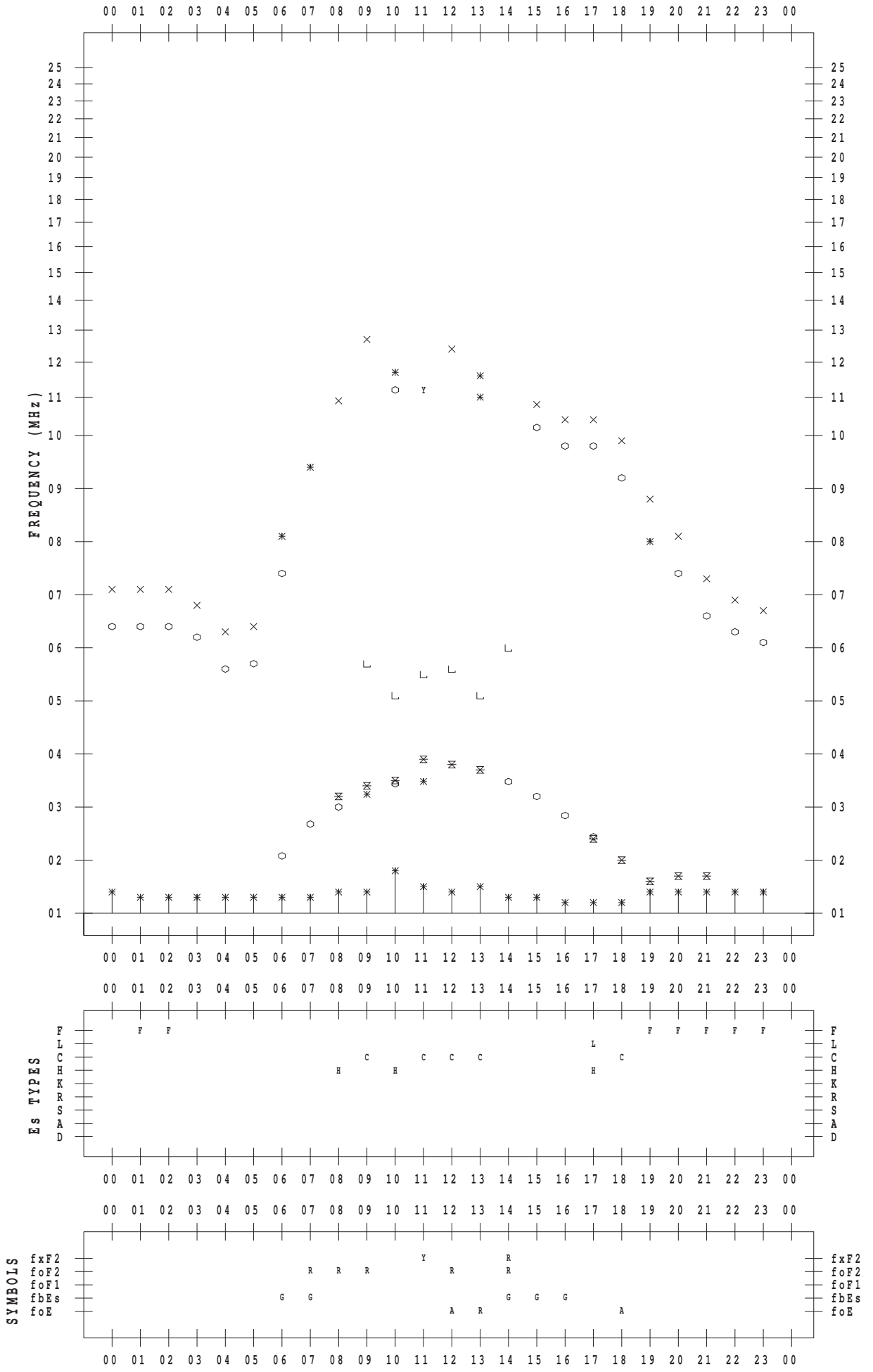
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/23

135 °E MEAN TIME



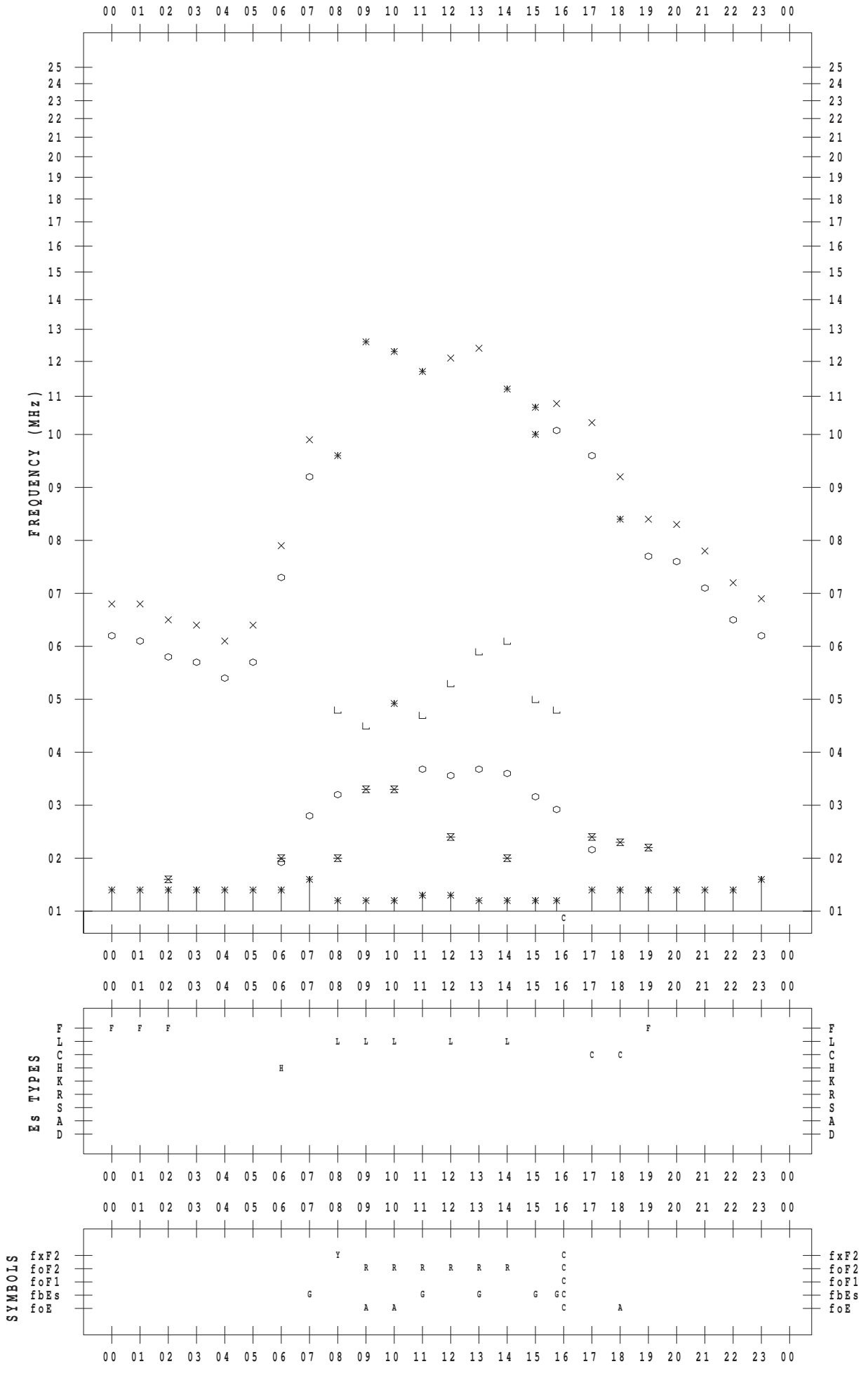
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/24

135 °E MEAN TIME



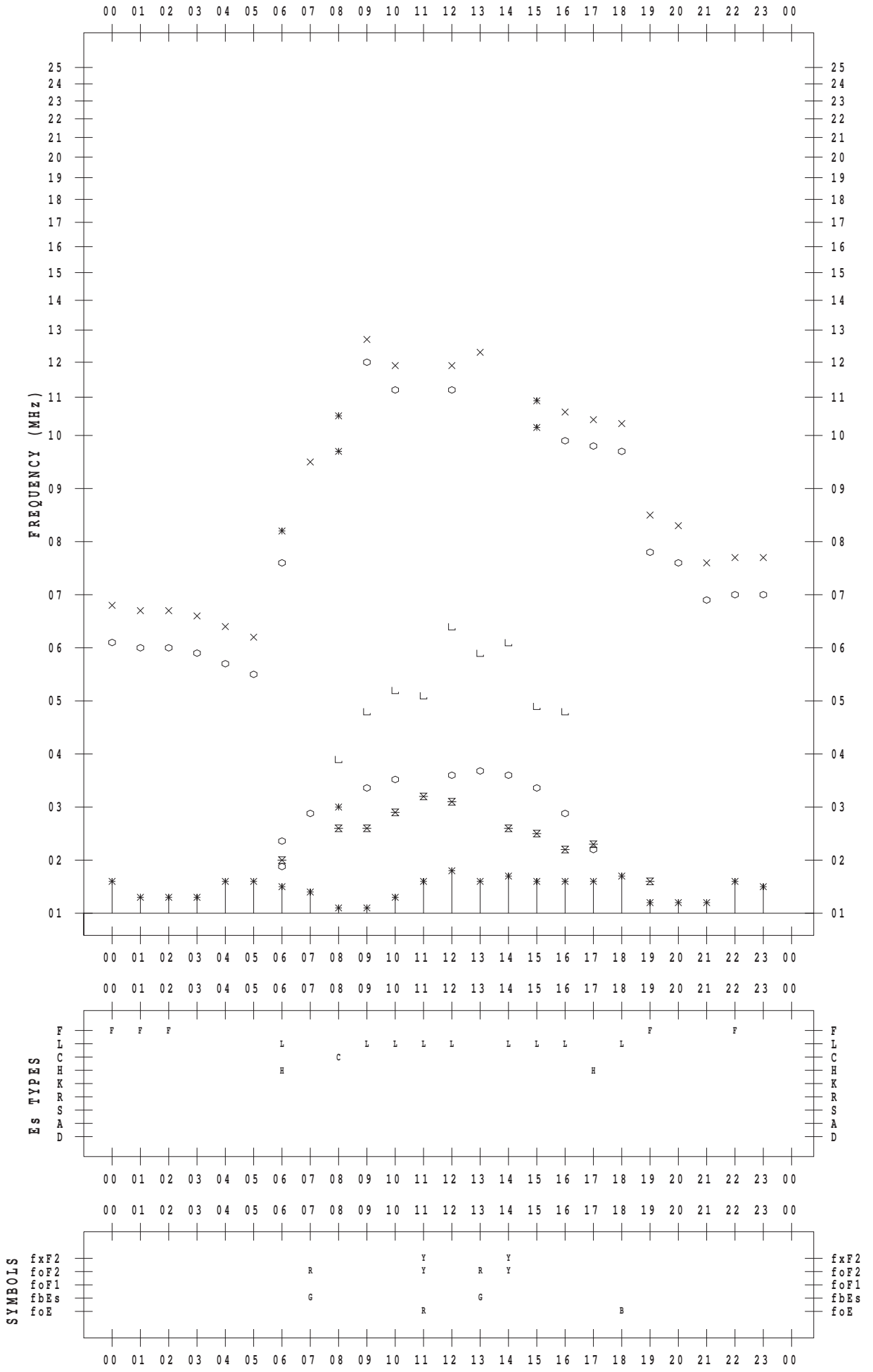
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/25

135 °E MEAN TIME



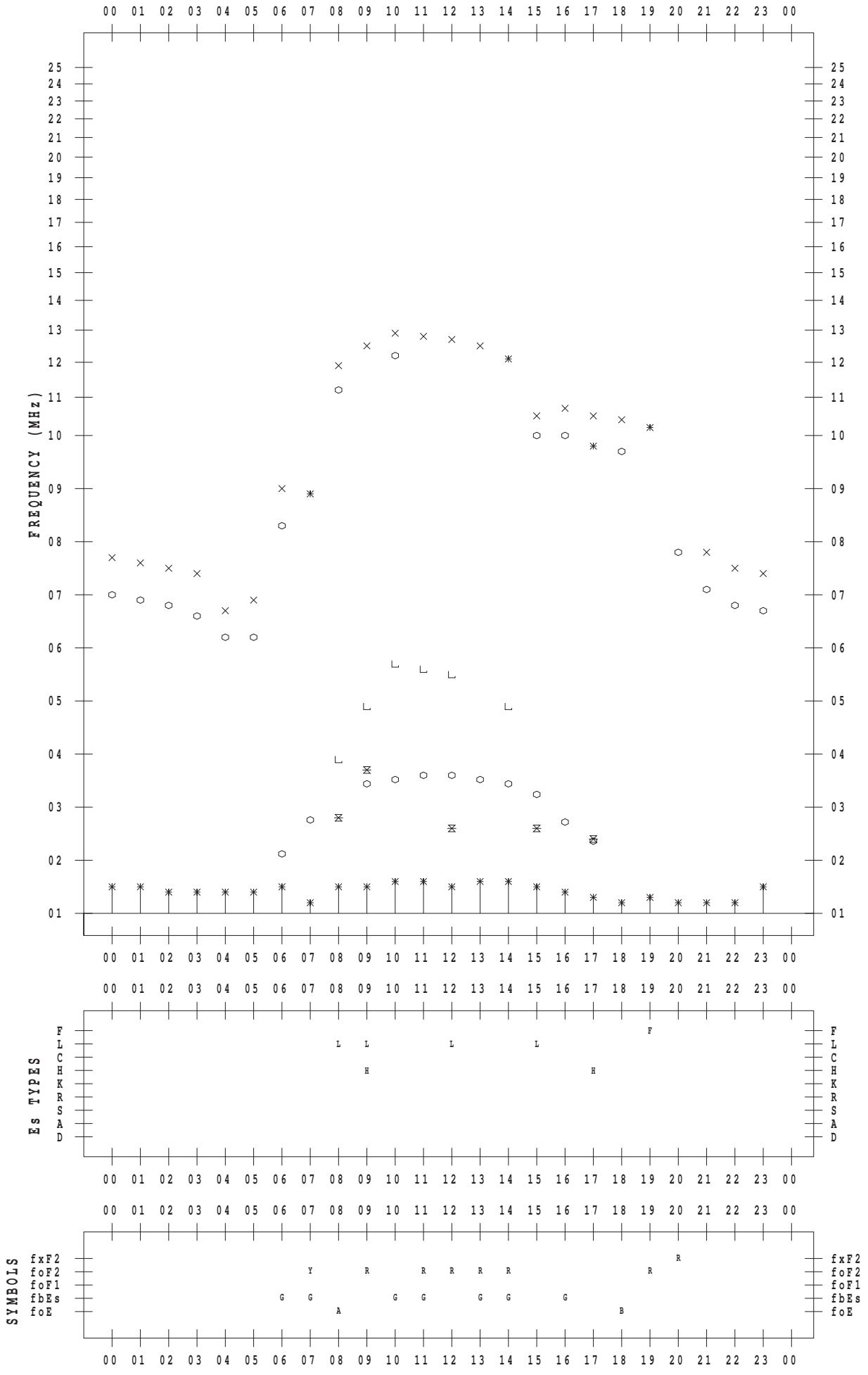
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/26

135 °E MEAN TIME



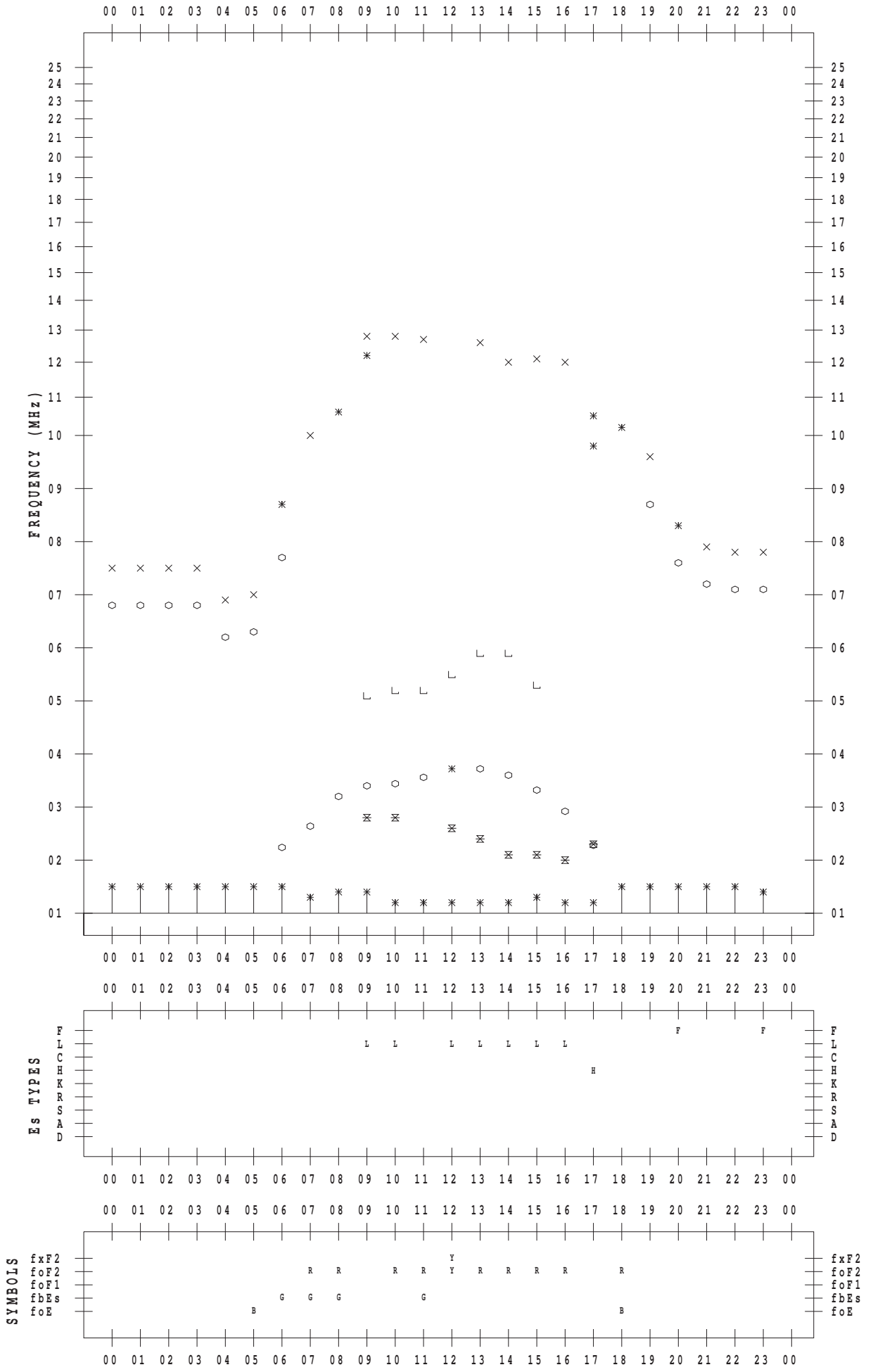
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/27

135 °E MEAN TIME



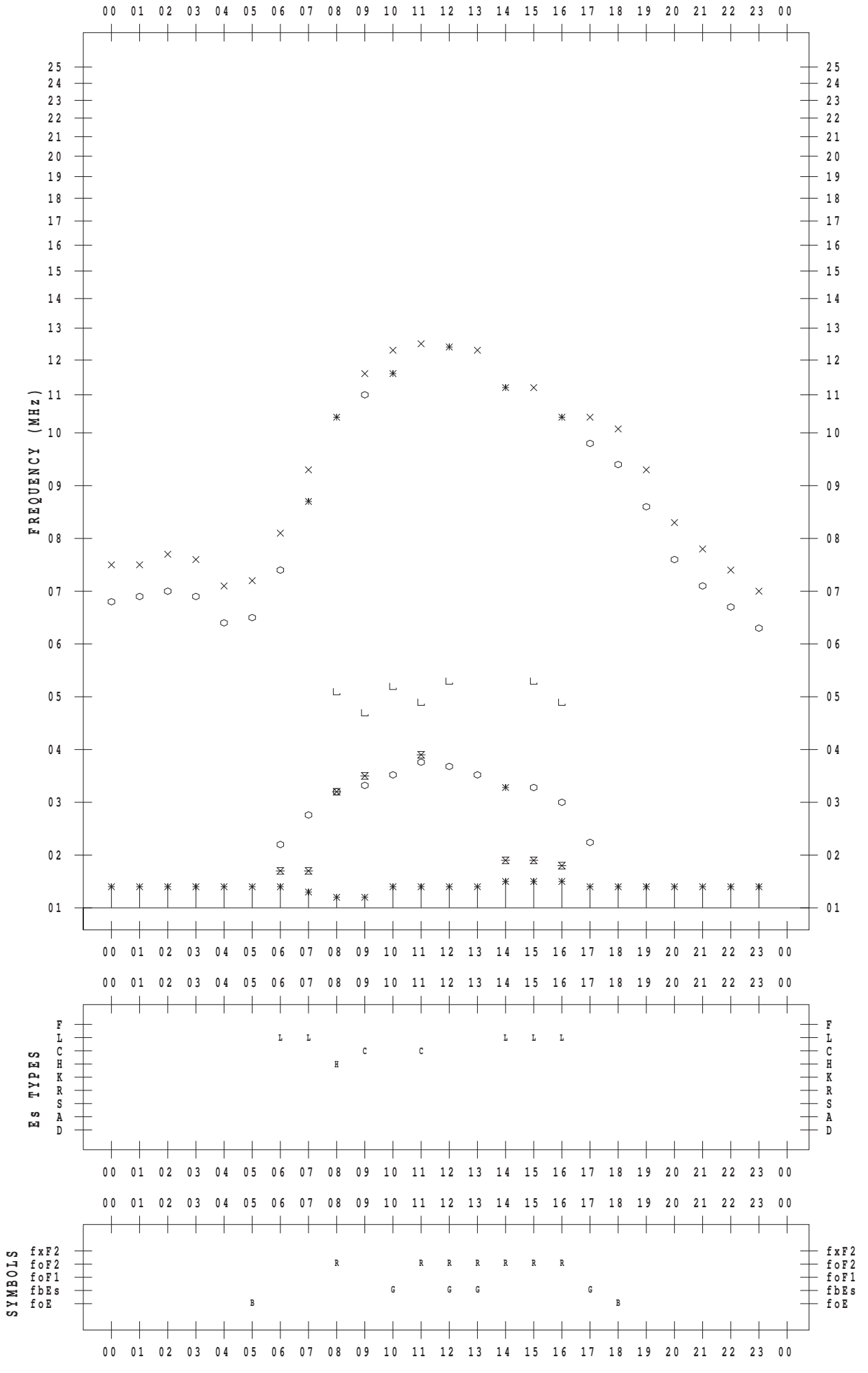
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/28

135 °E MEAN TIME



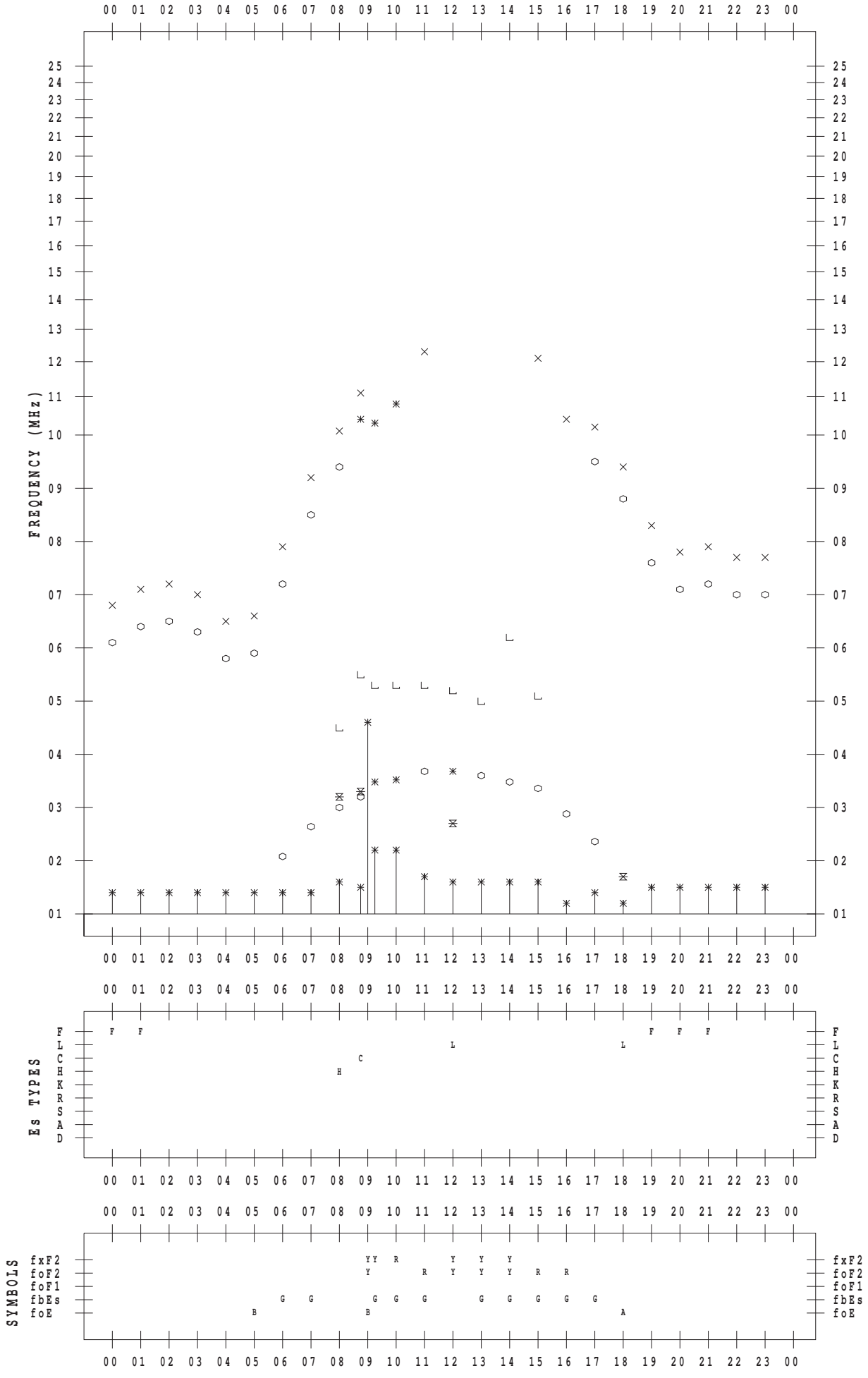
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/29

135 °E MEAN TIME



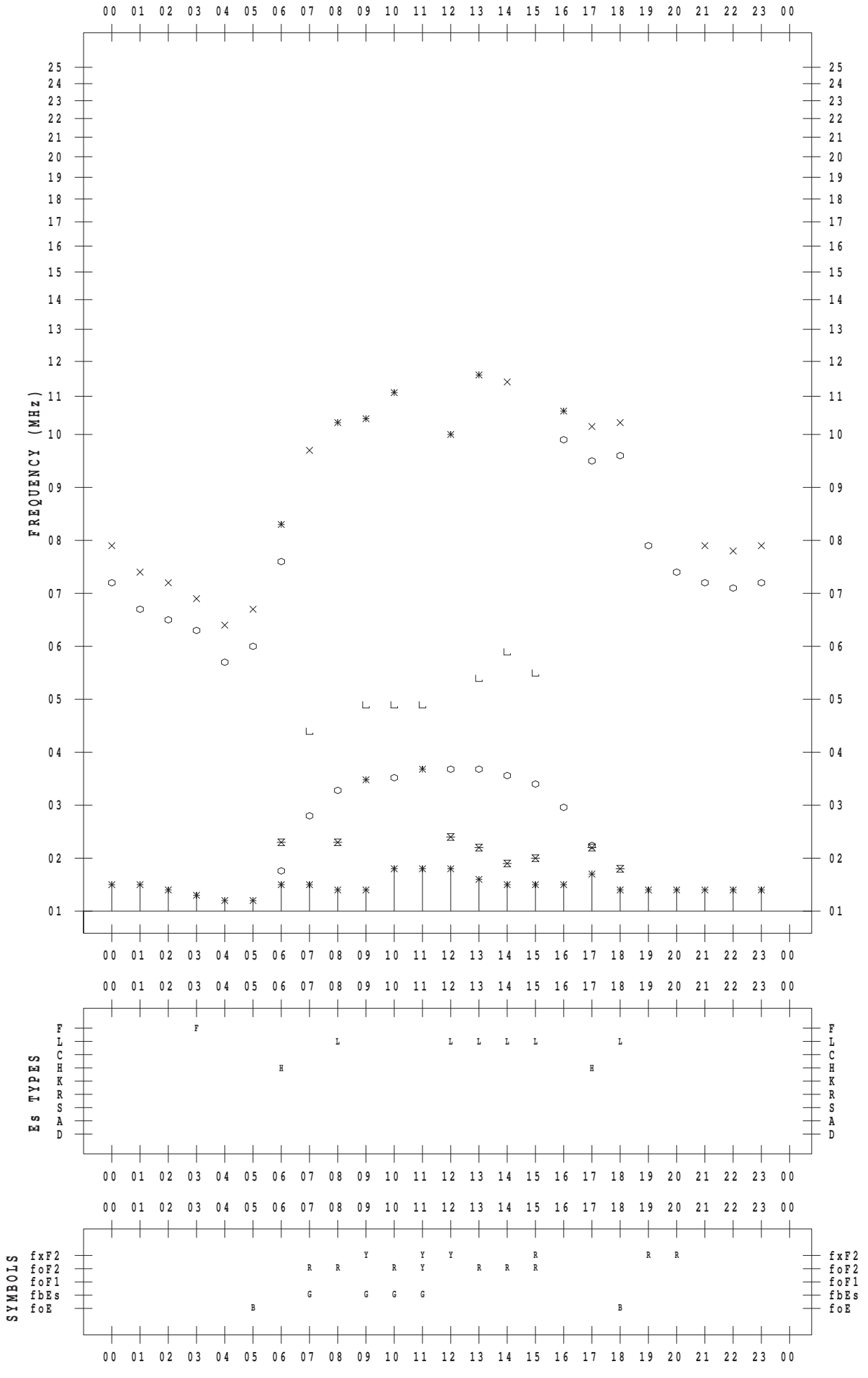
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/30

135 °E MEAN TIME



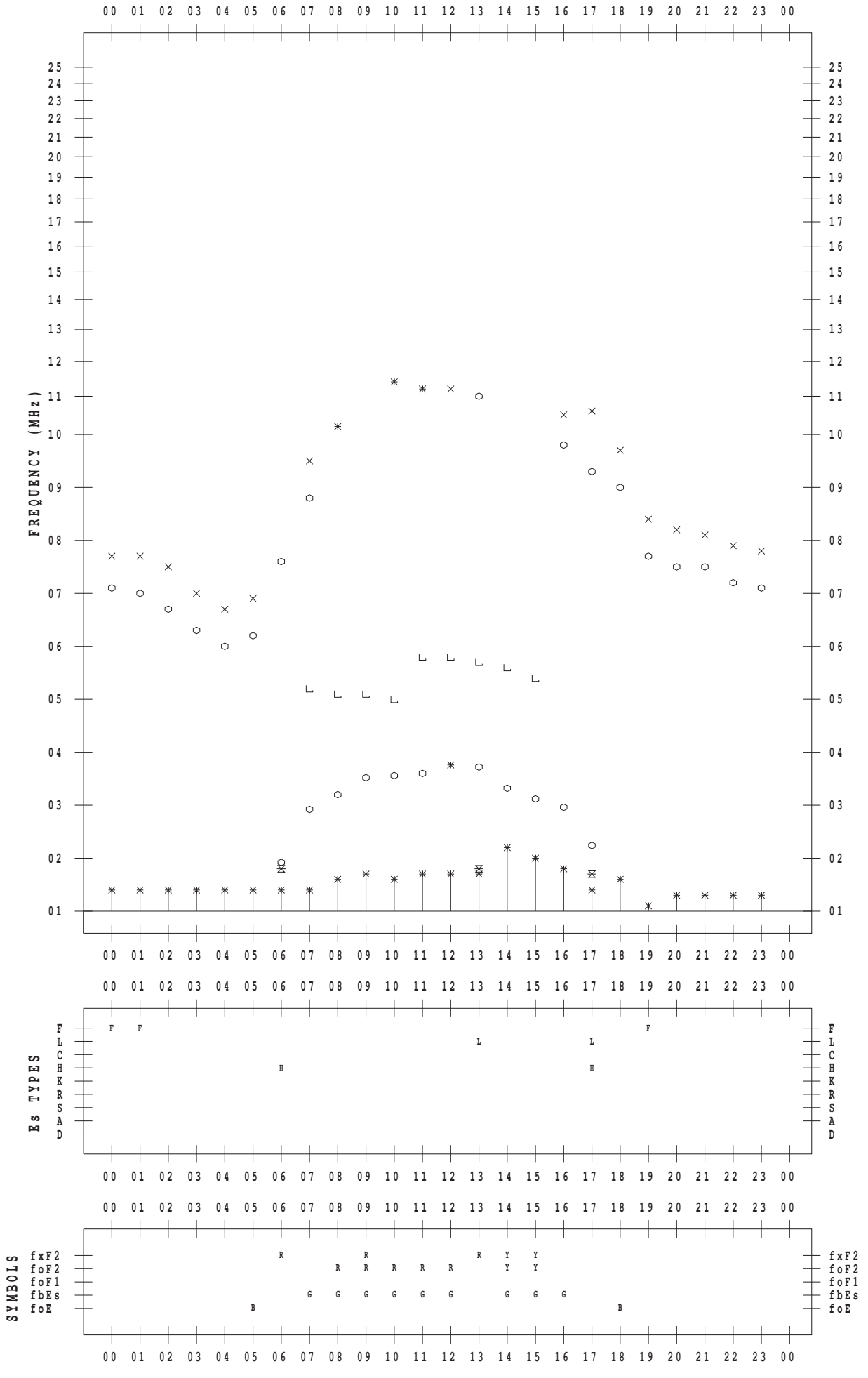
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 3/31

135 °E MEAN TIME



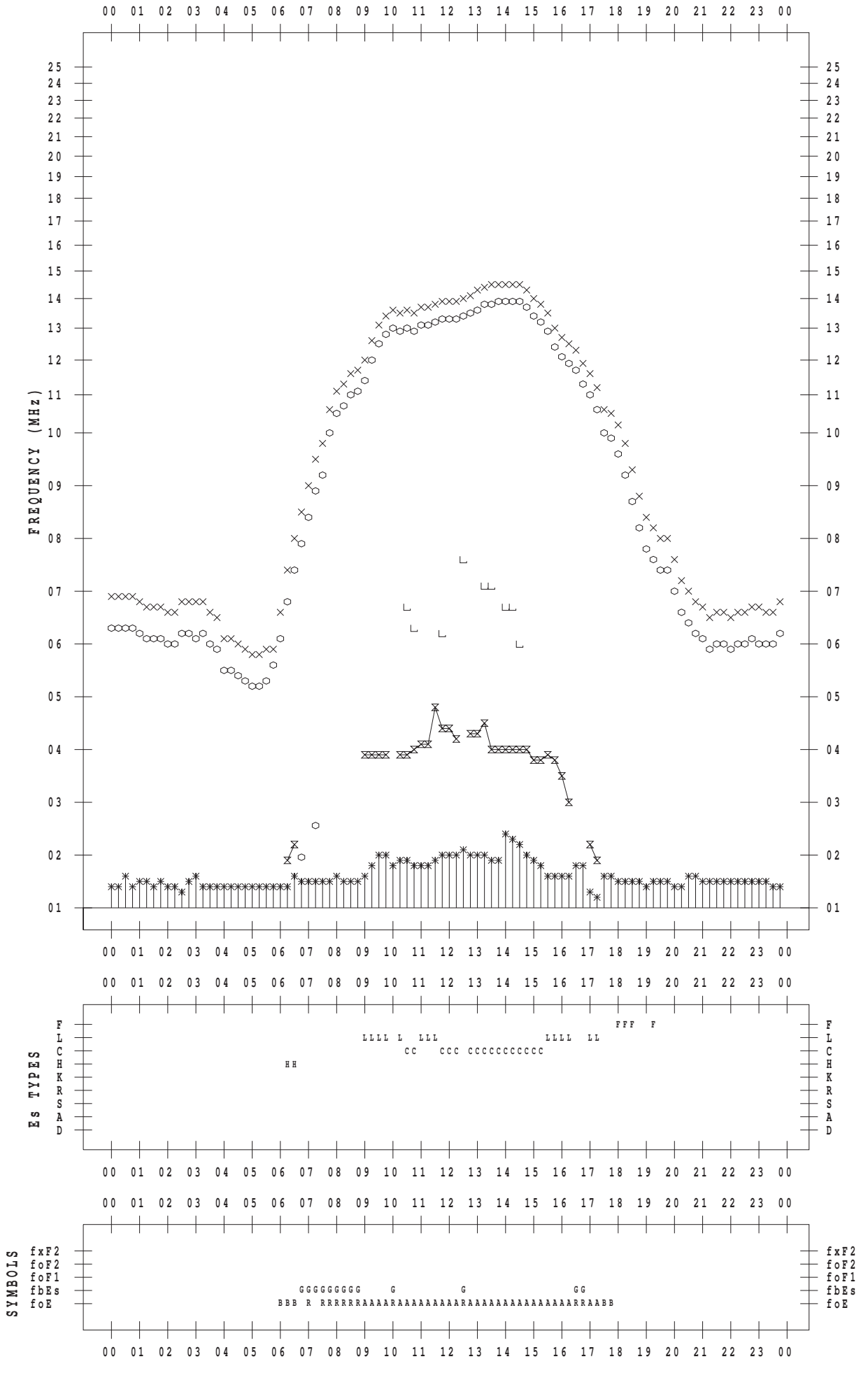
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 1

135 °E MEAN TIME



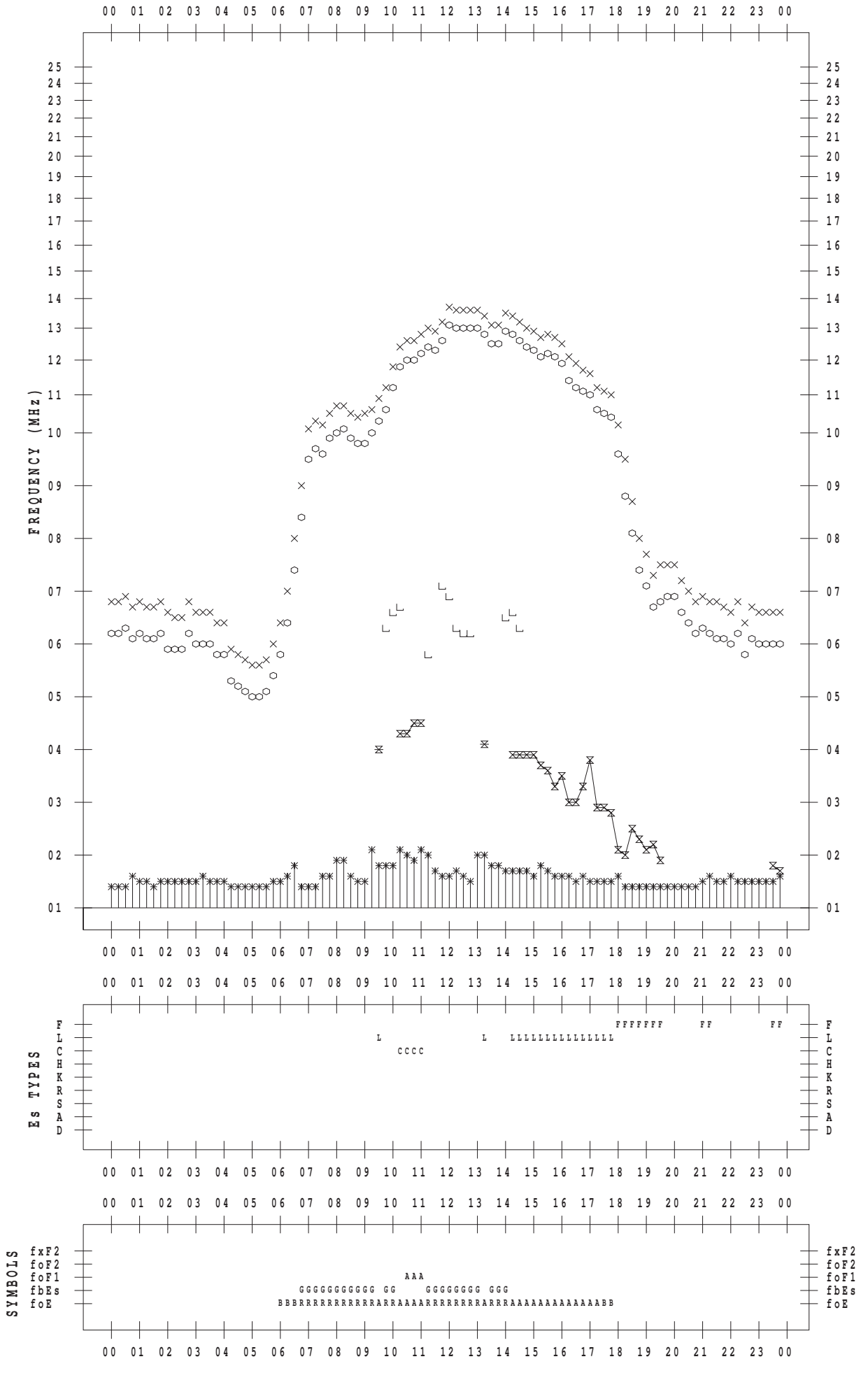
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 2

135 °E MEAN TIME



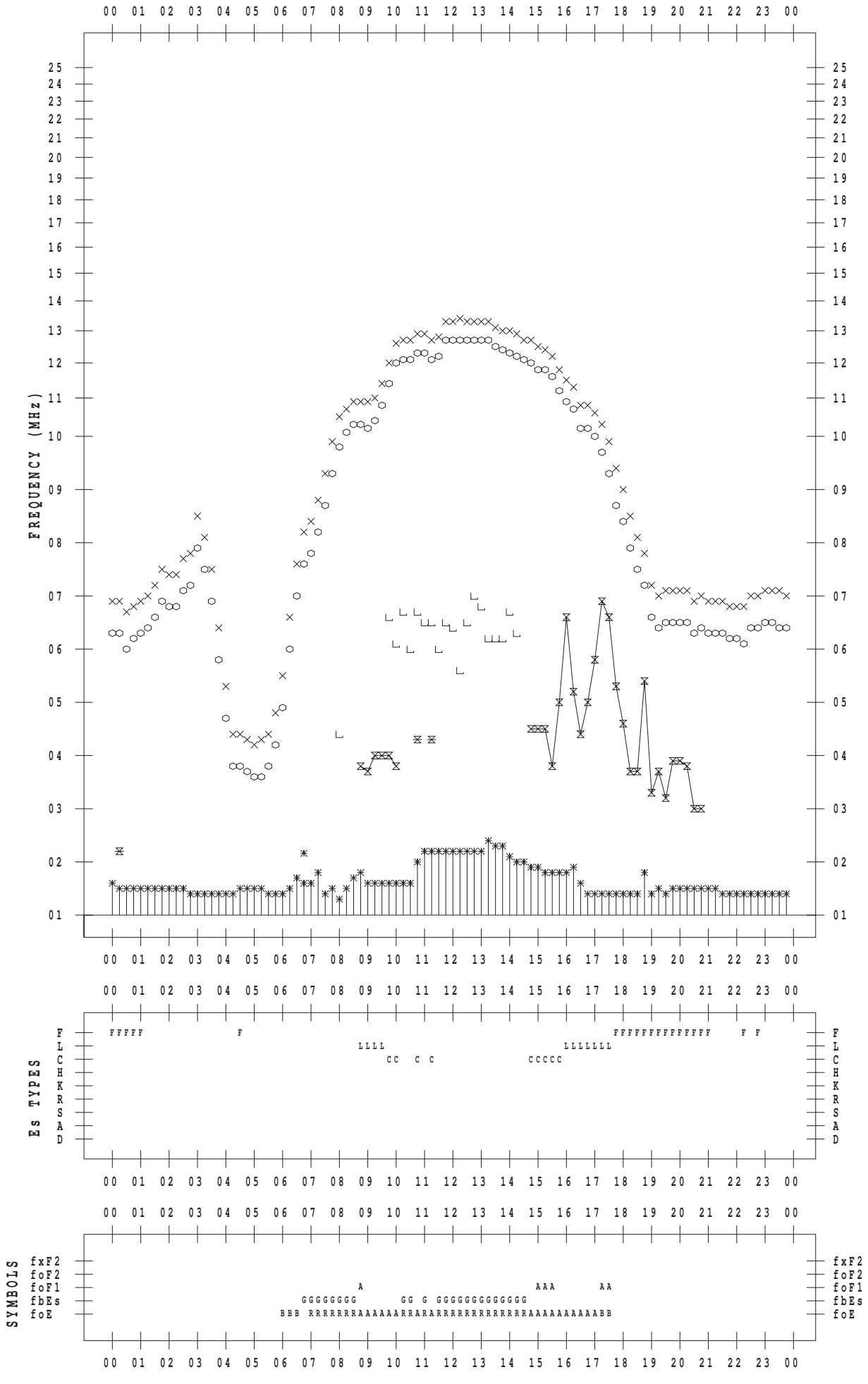
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 3

135 °E MEAN TIME



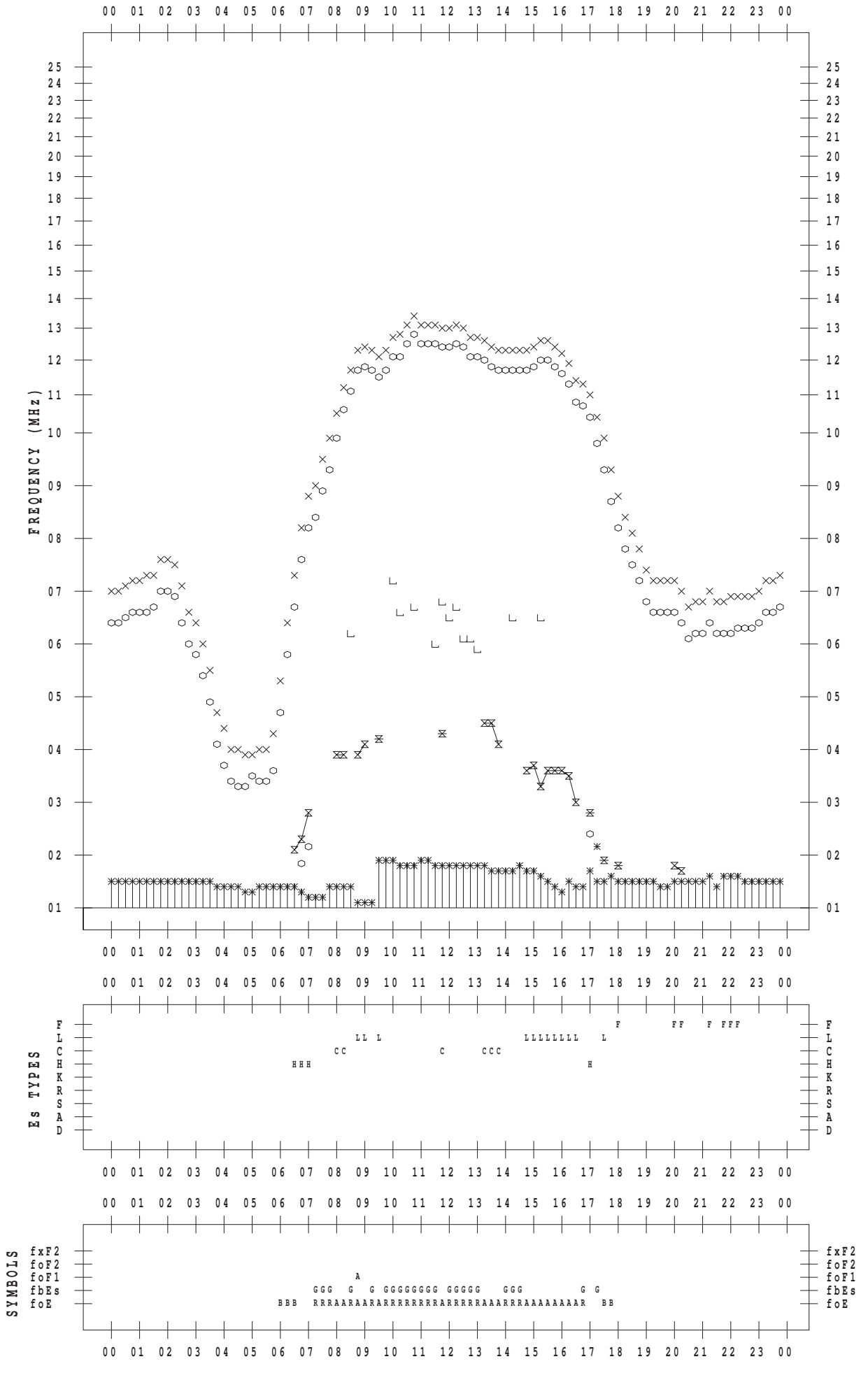
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 4

135 °E MEAN TIME



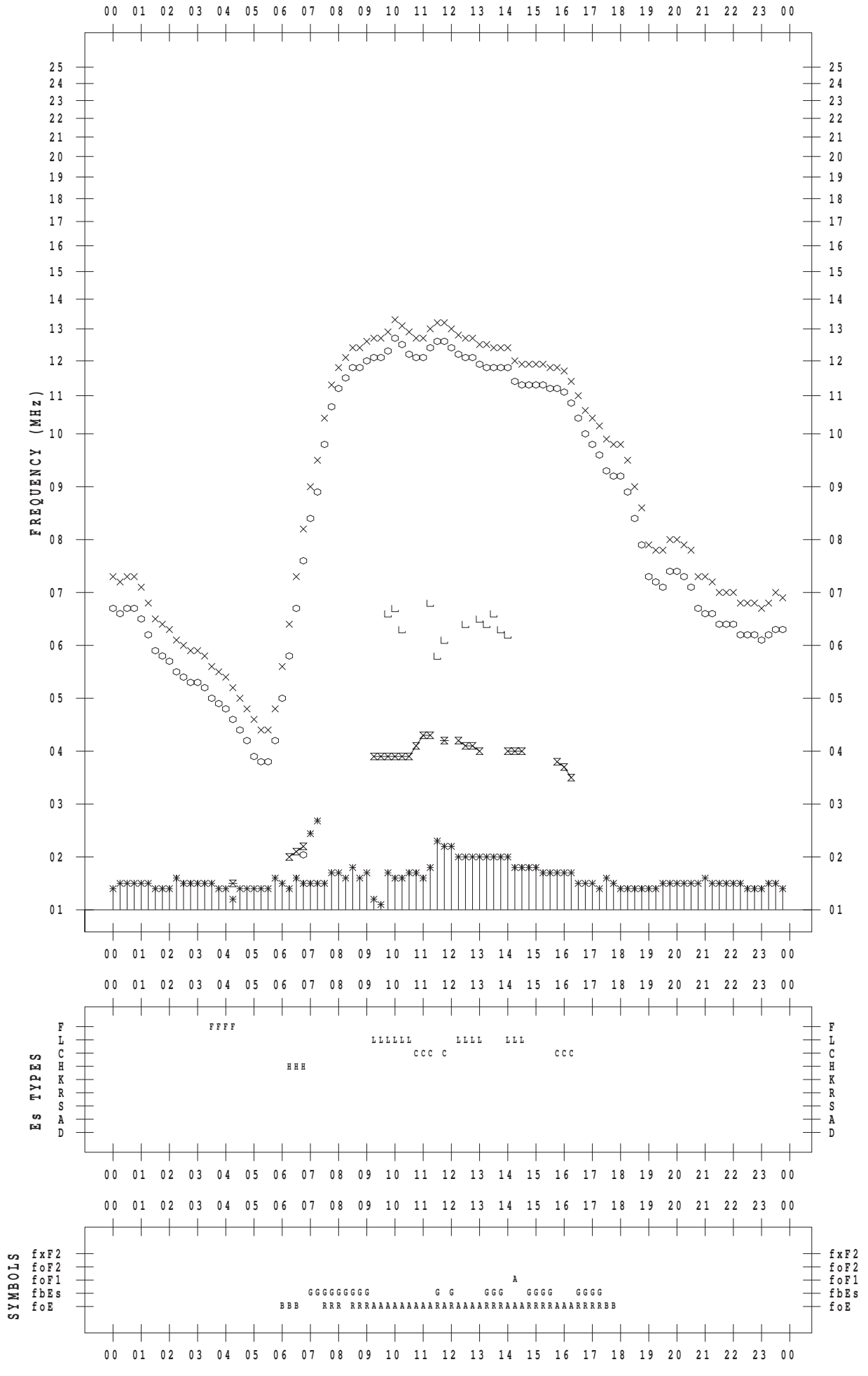
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 5

135 °E MEAN TIME



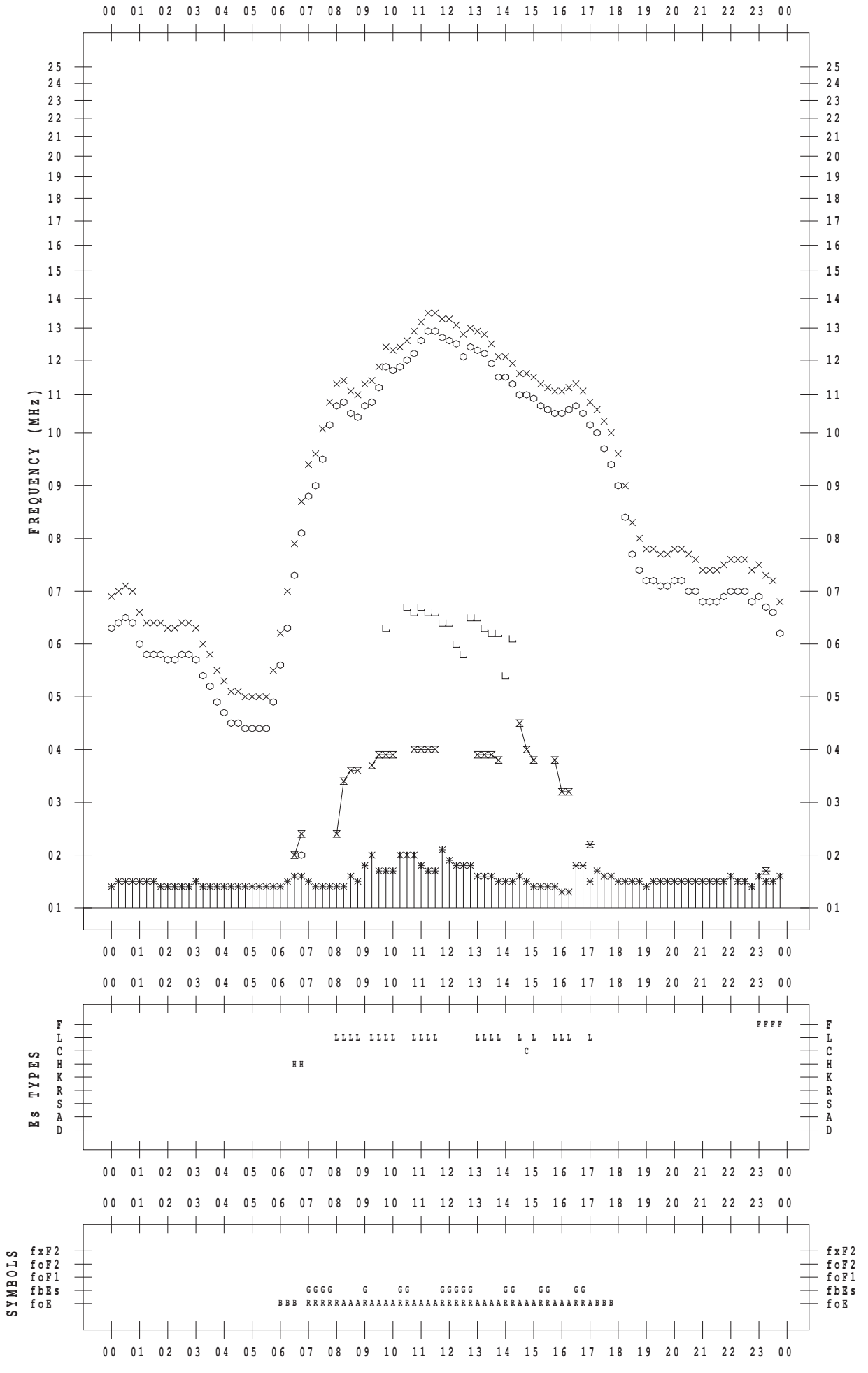
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 6

135 °E MEAN TIME



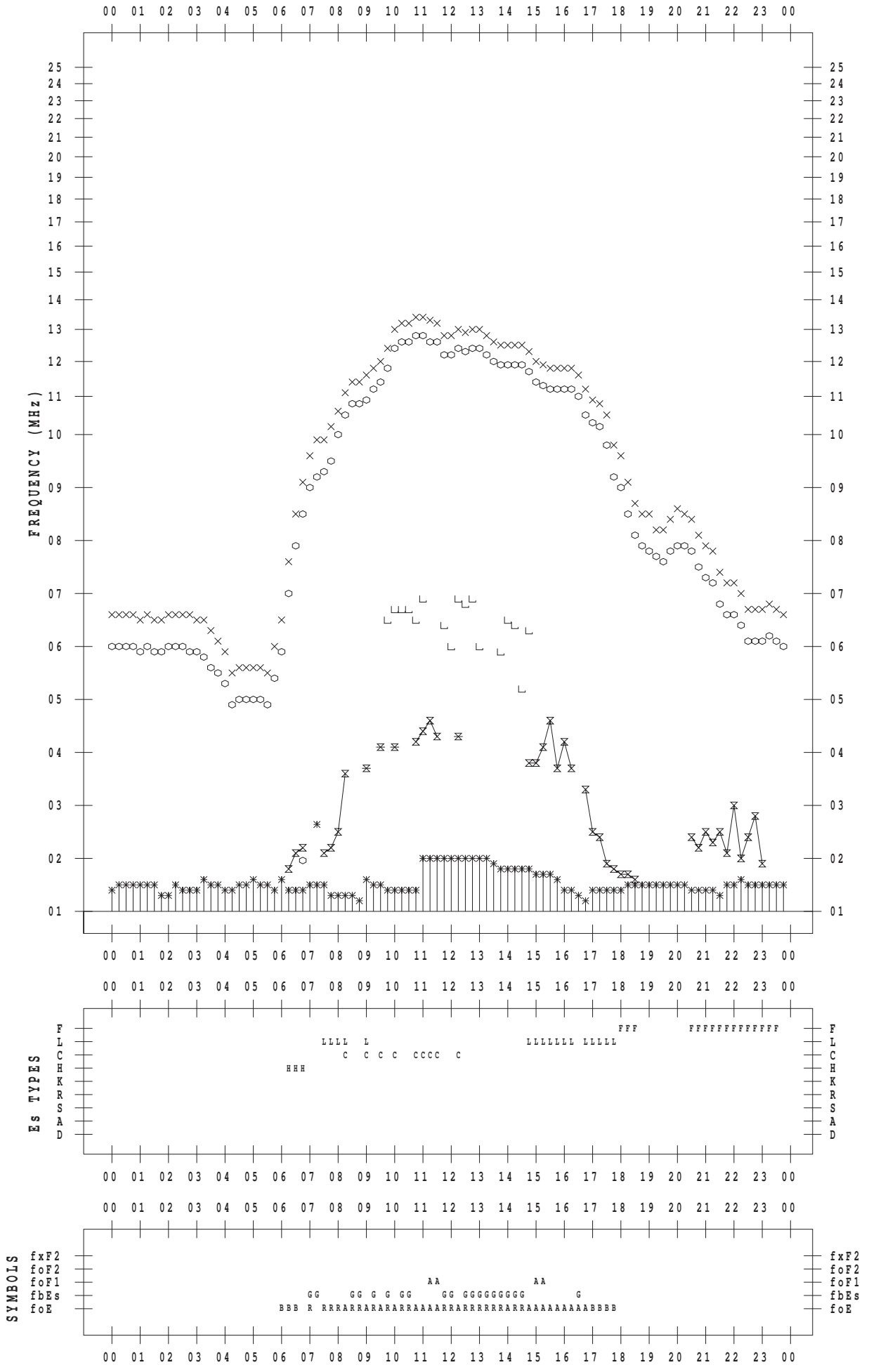
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 7

135 °E MEAN TIME



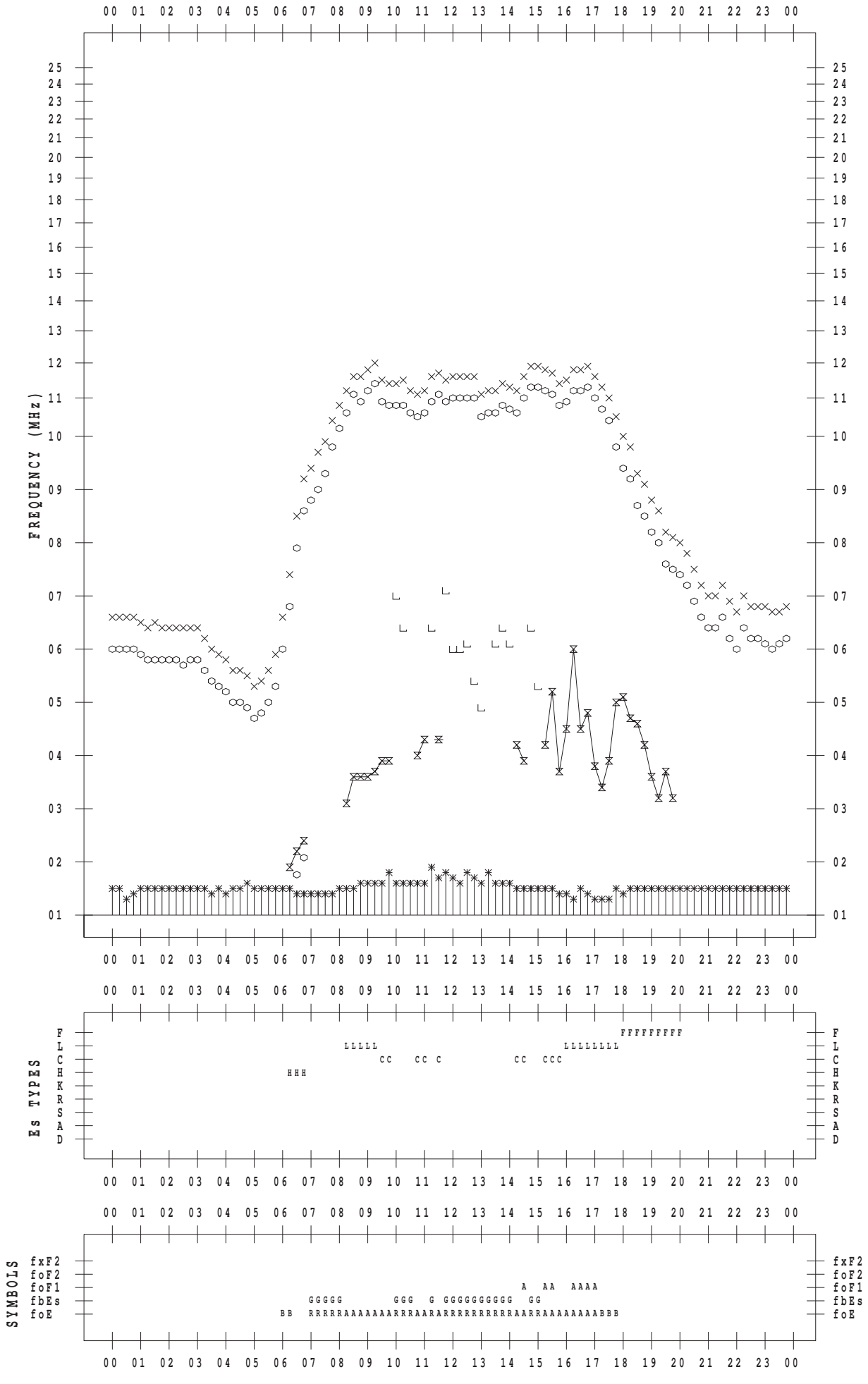
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 8

135 °E MEAN TIME



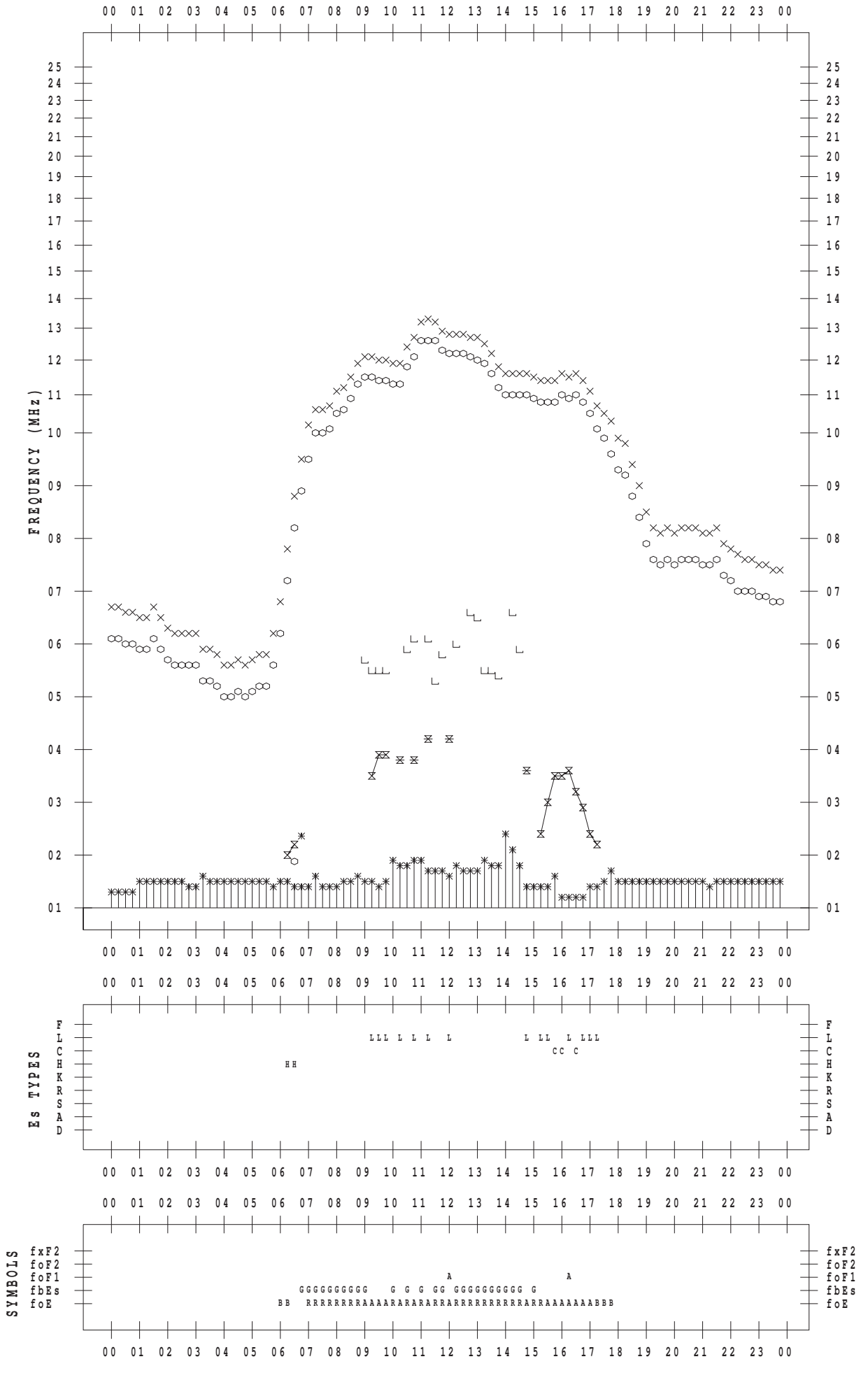
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/ 9

135 °E MEAN TIME



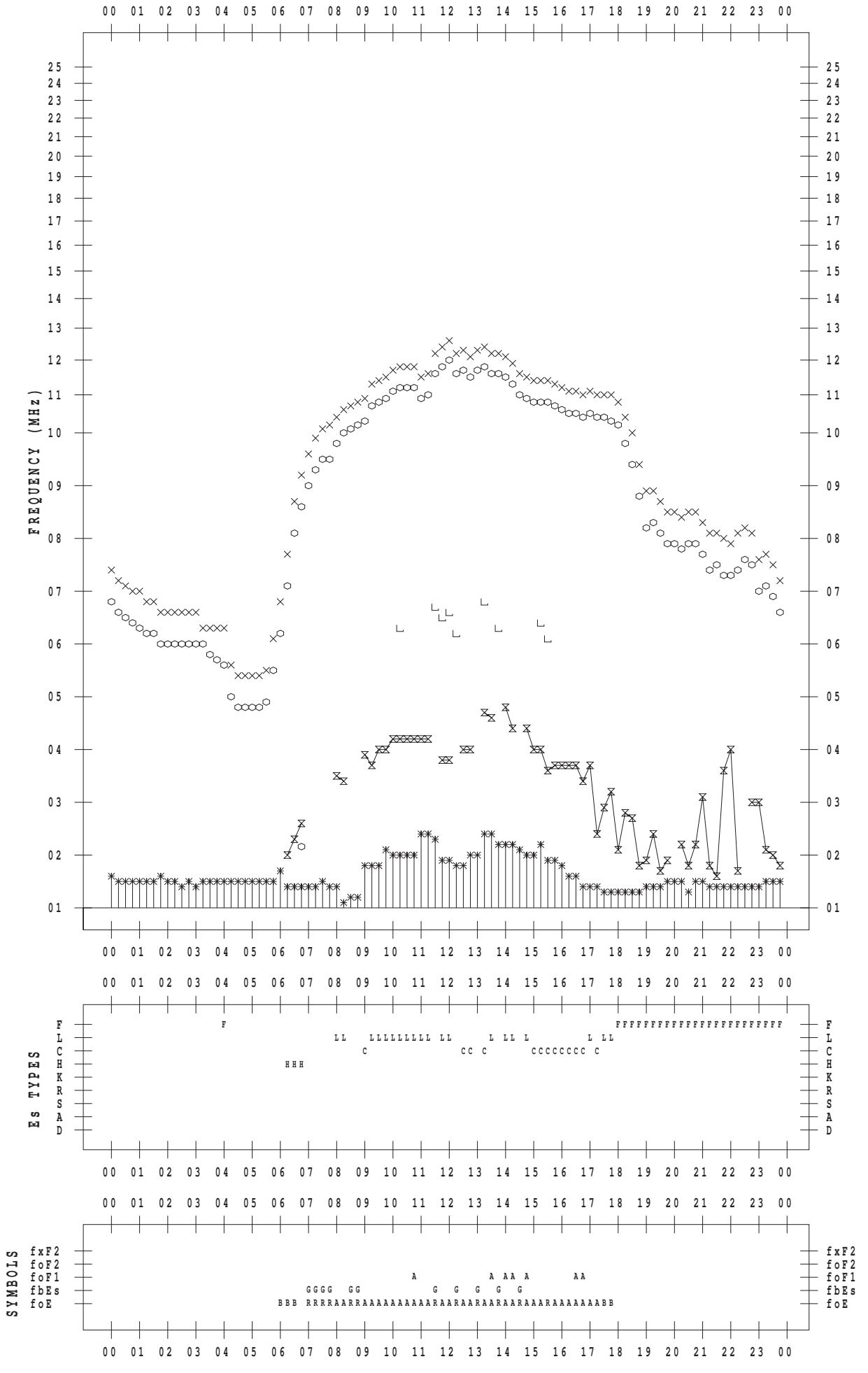
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/10

135 °E MEAN TIME



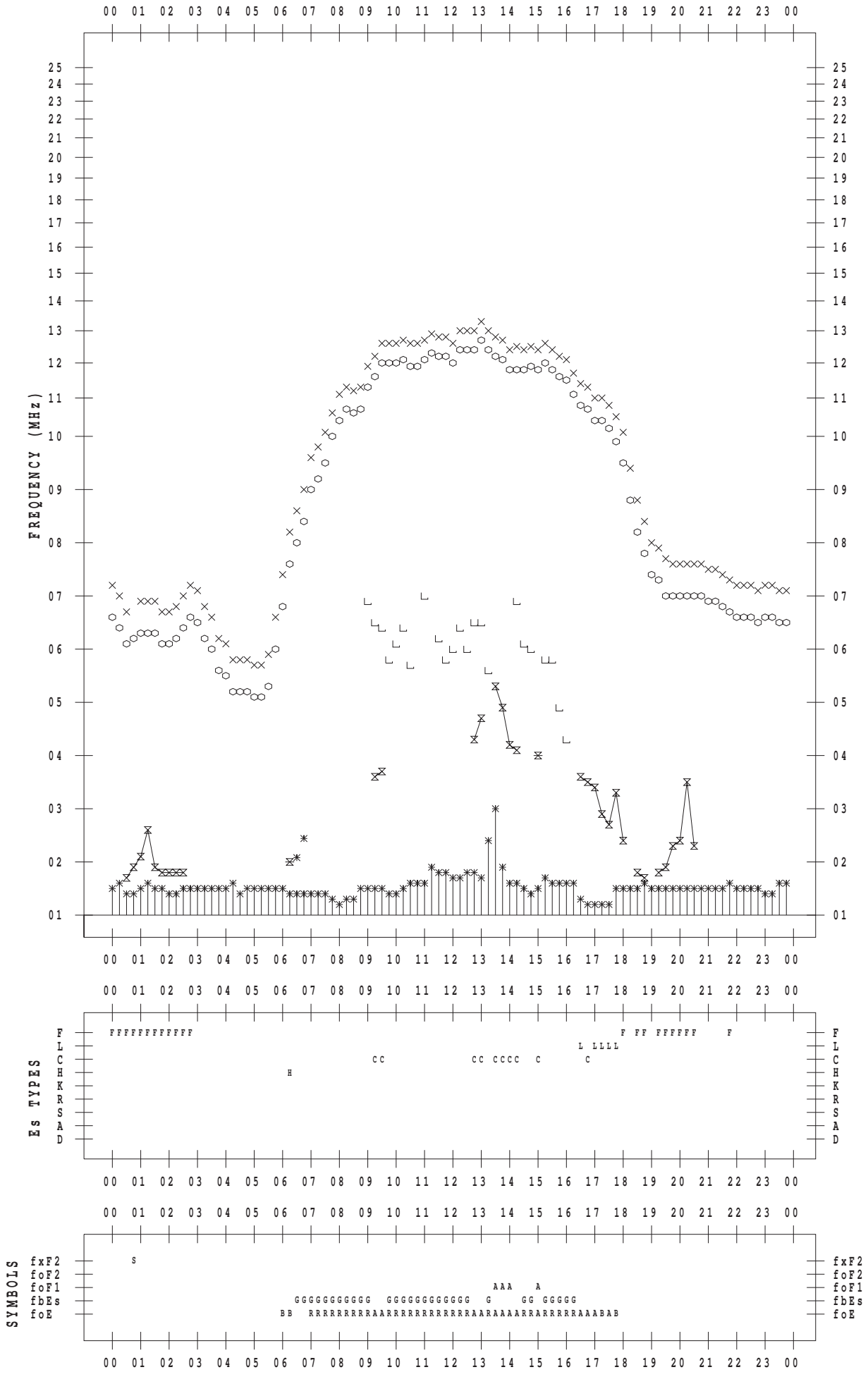
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/11

135 °E MEAN TIME



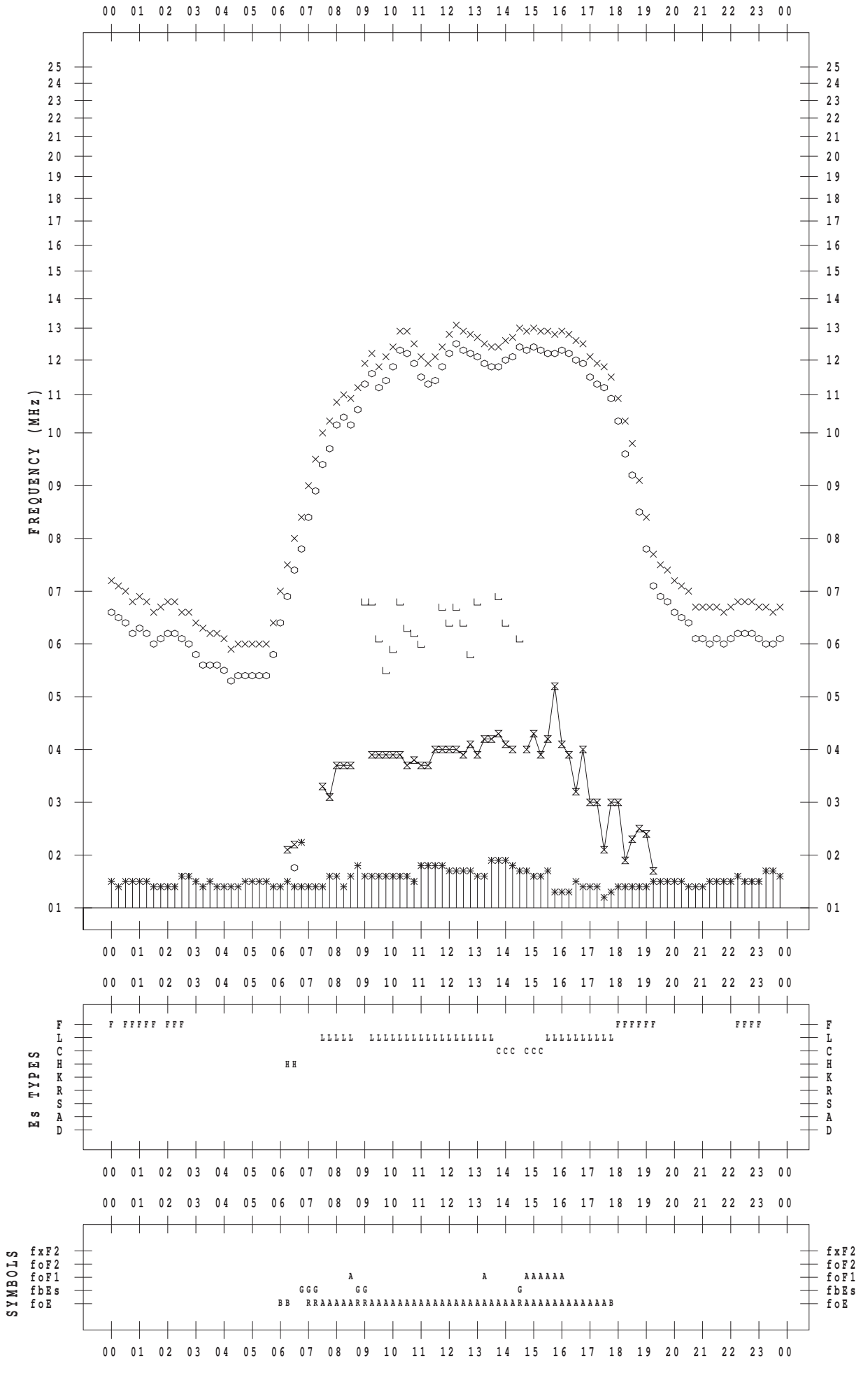
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/12

135 °E MEAN TIME



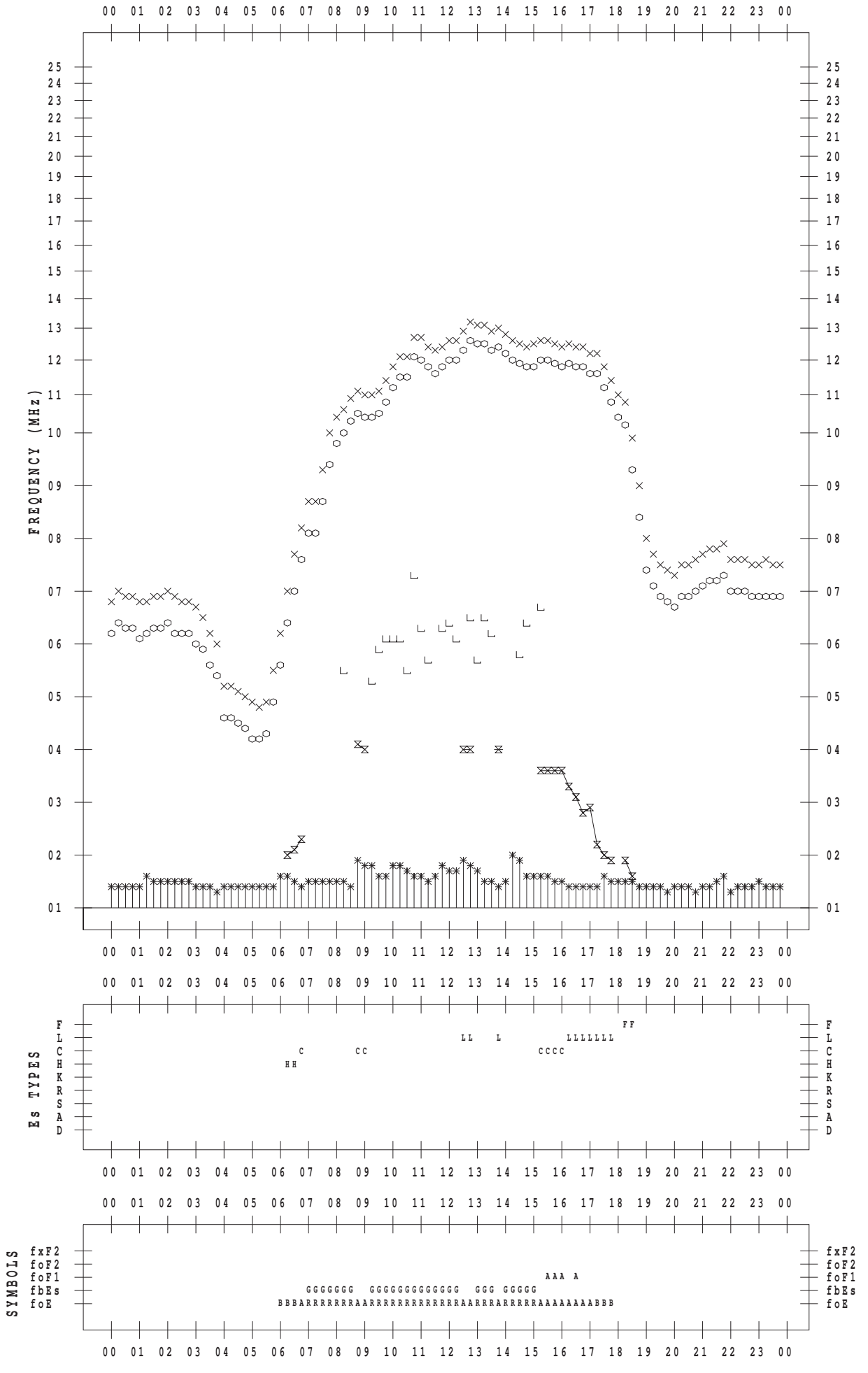
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/13

135 °E MEAN TIME



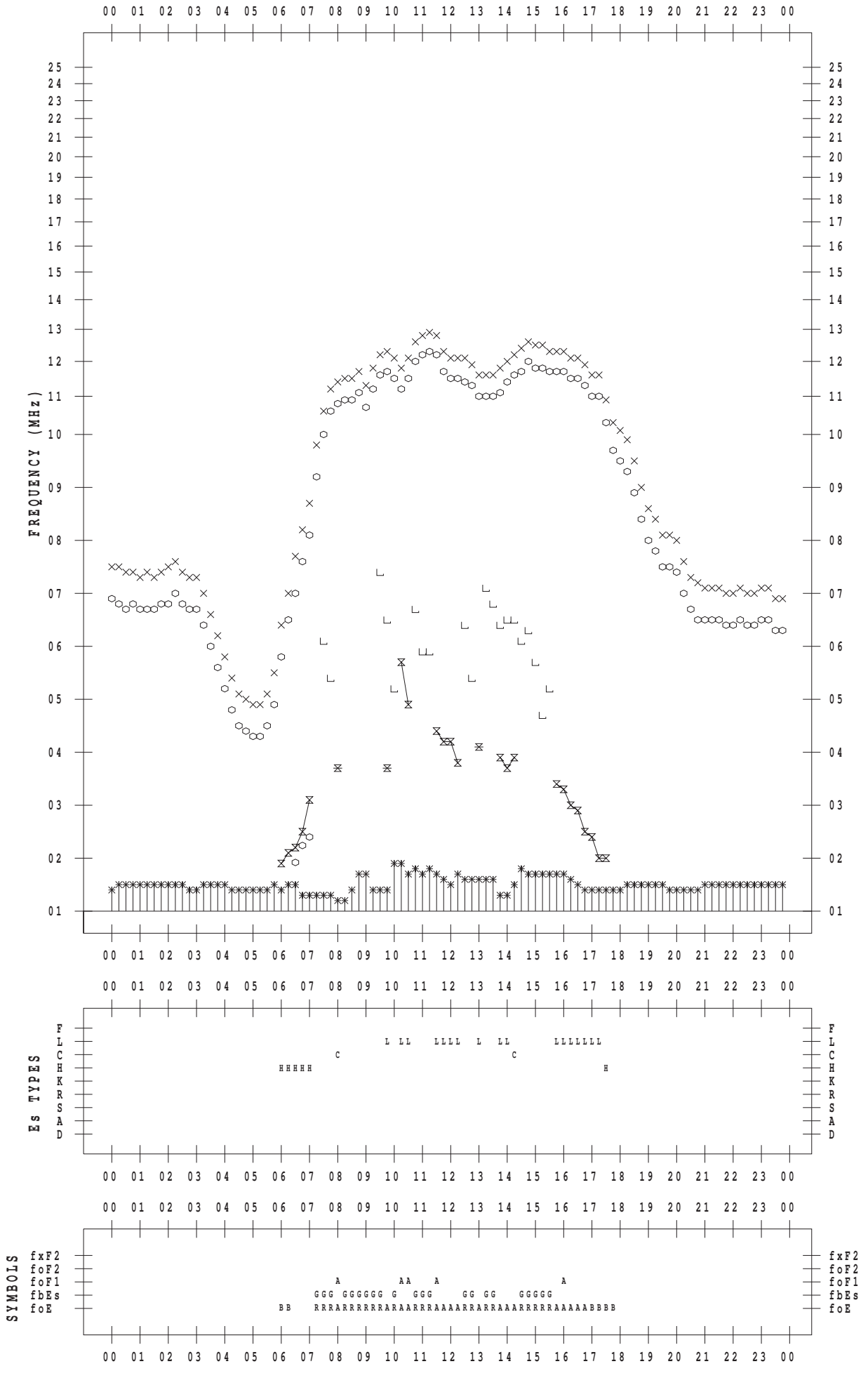
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/14

135 °E MEAN TIME



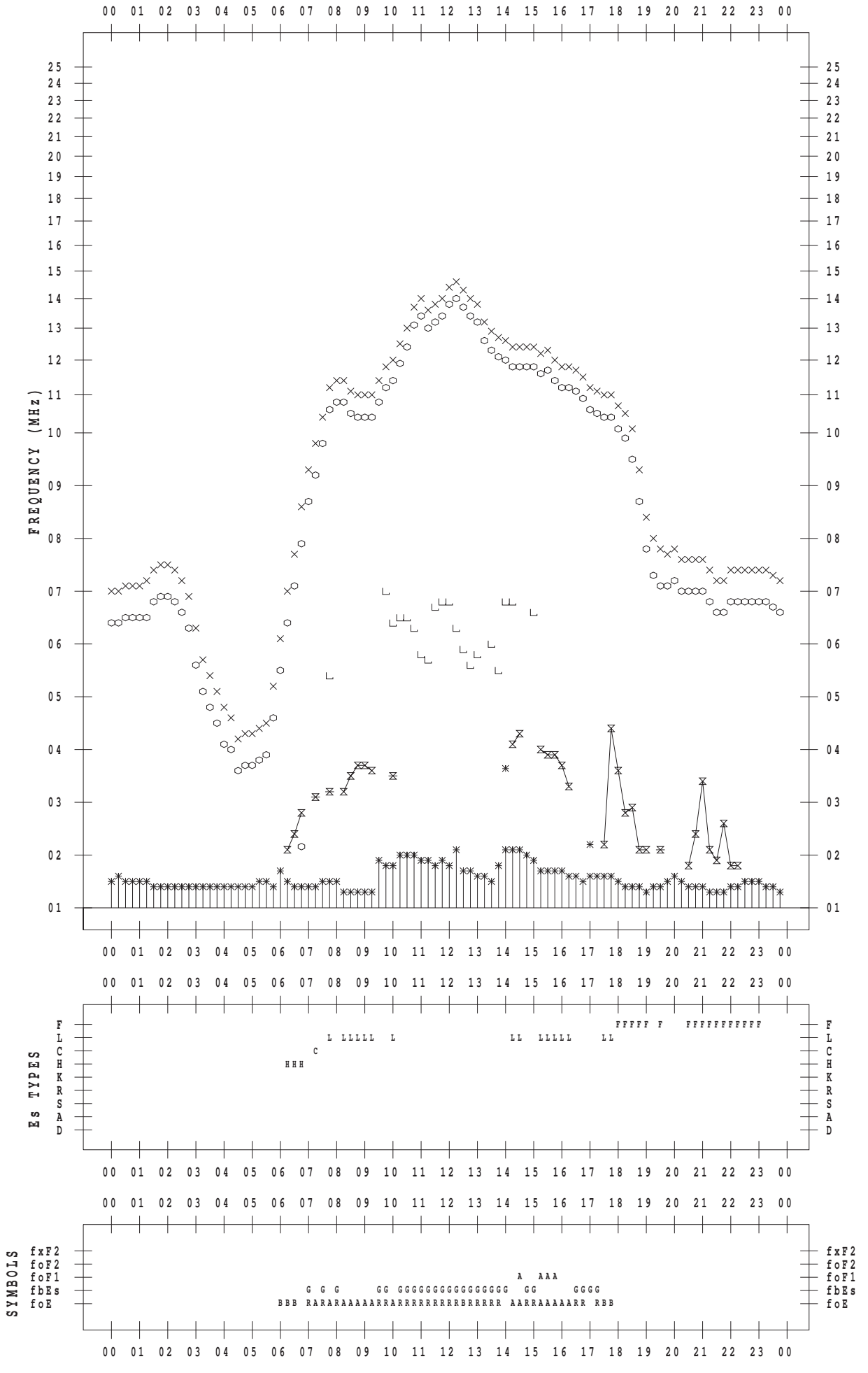
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/15

135 °E MEAN TIME



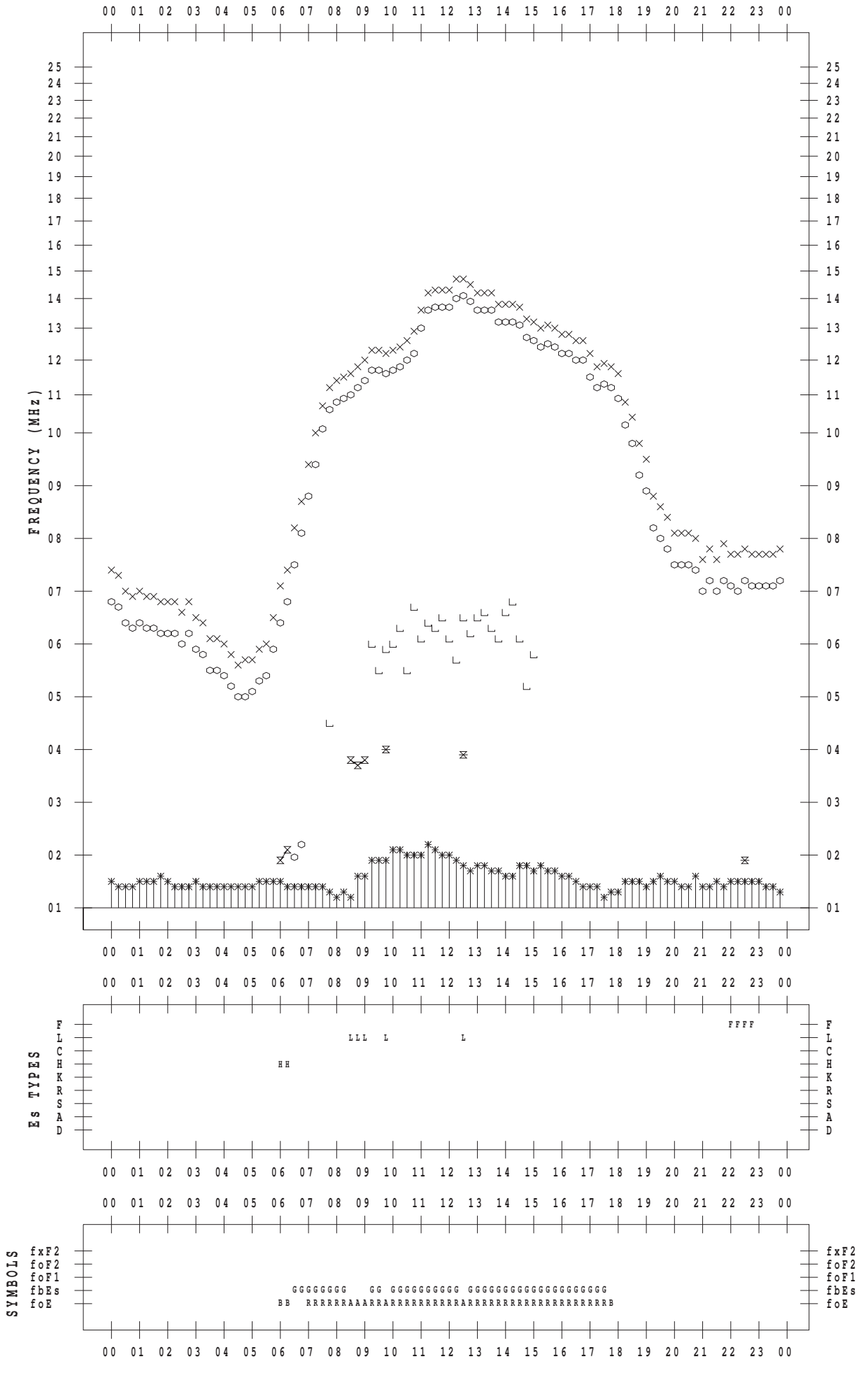
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/16

135 °E MEAN TIME



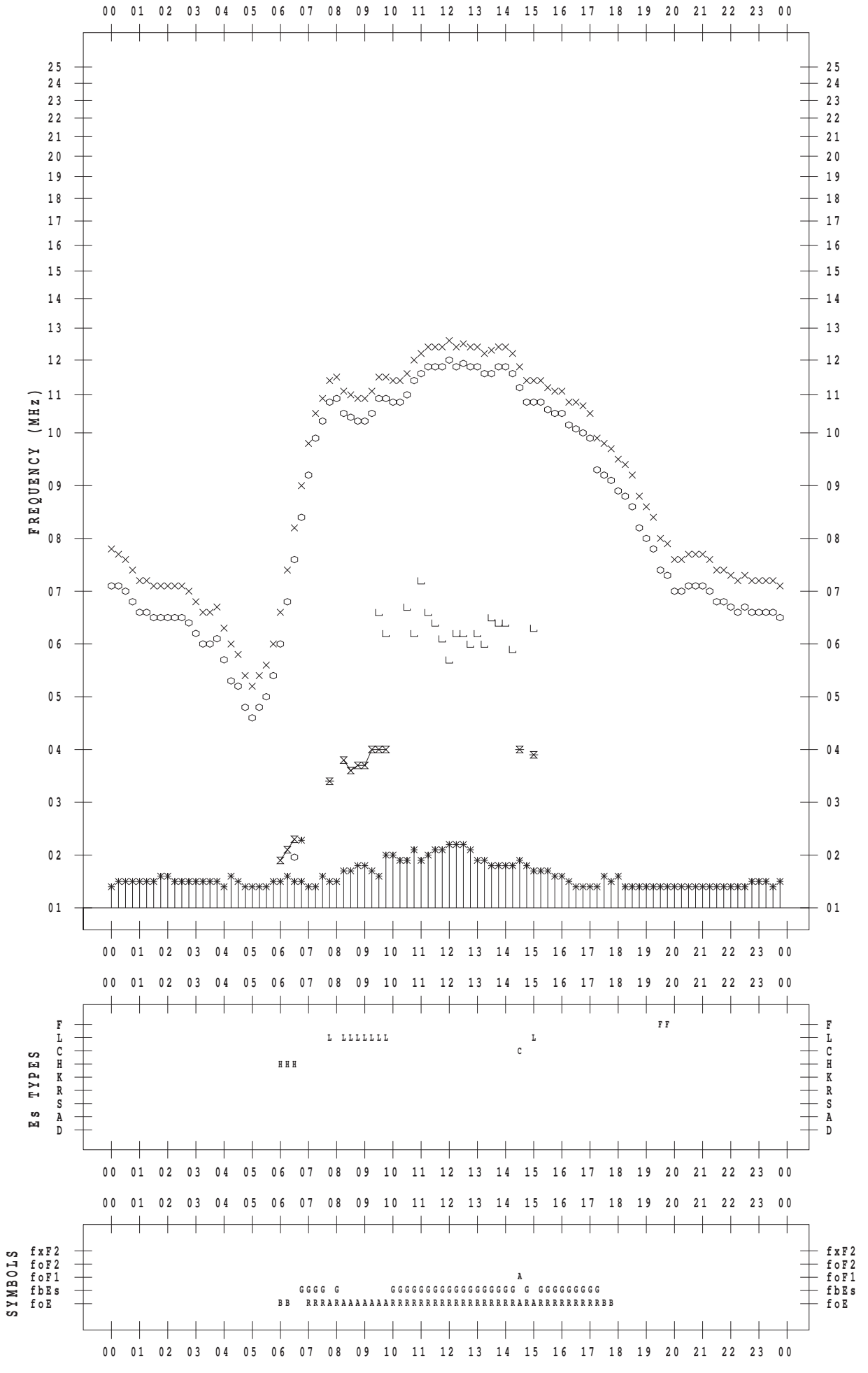
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/17

135 °E MEAN TIME



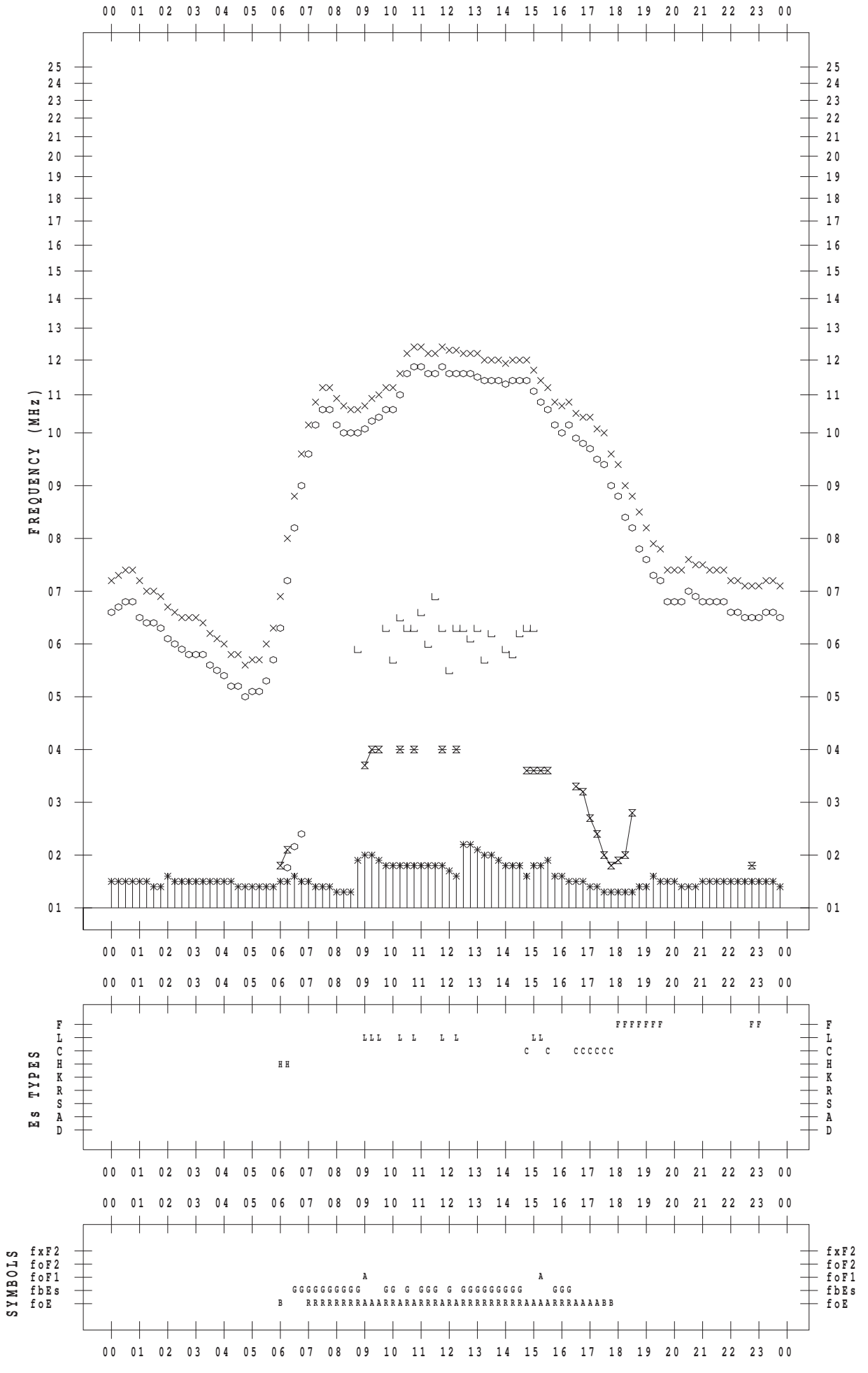
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/18

135 °E MEAN TIME



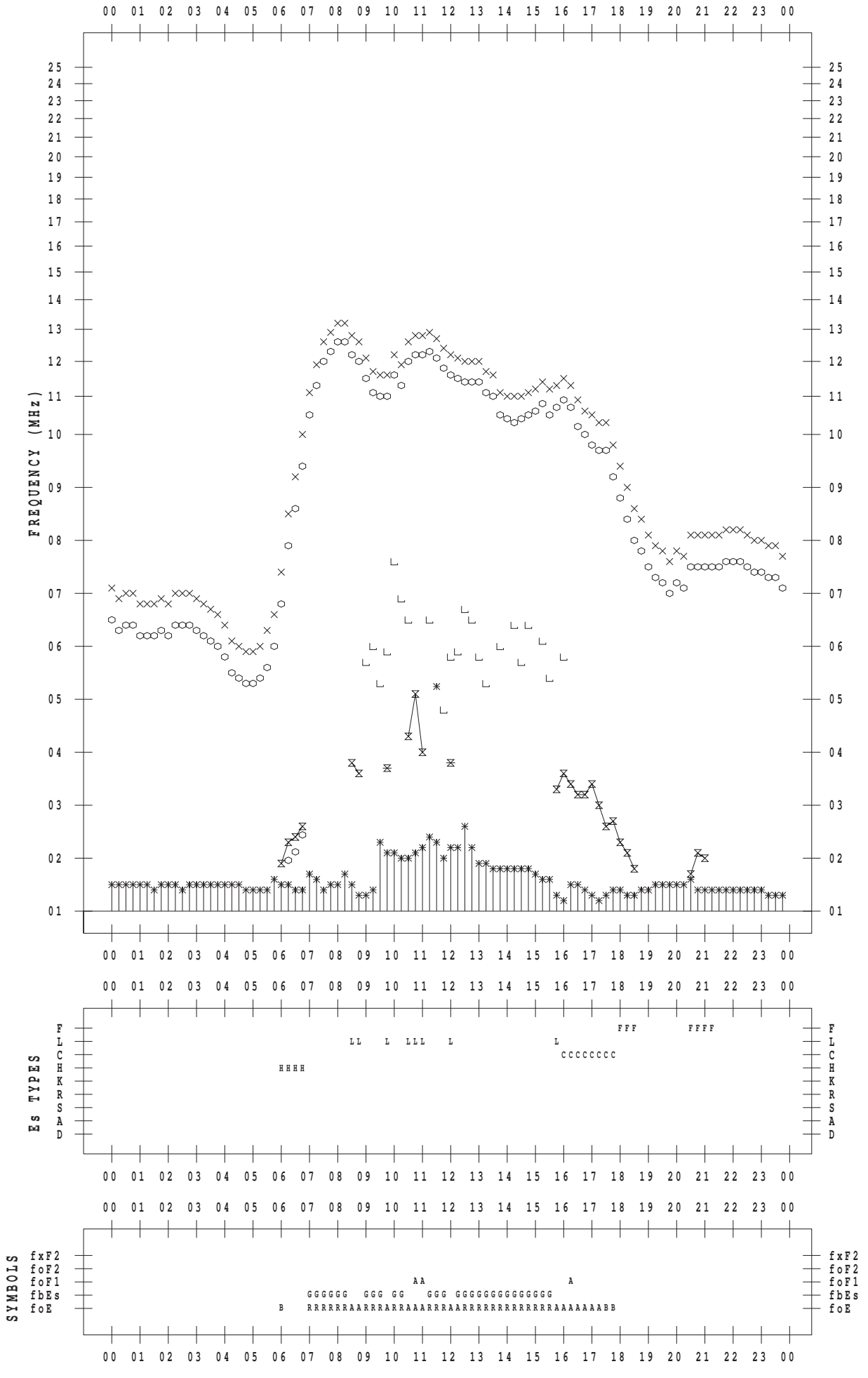
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/19

135 °E MEAN TIME



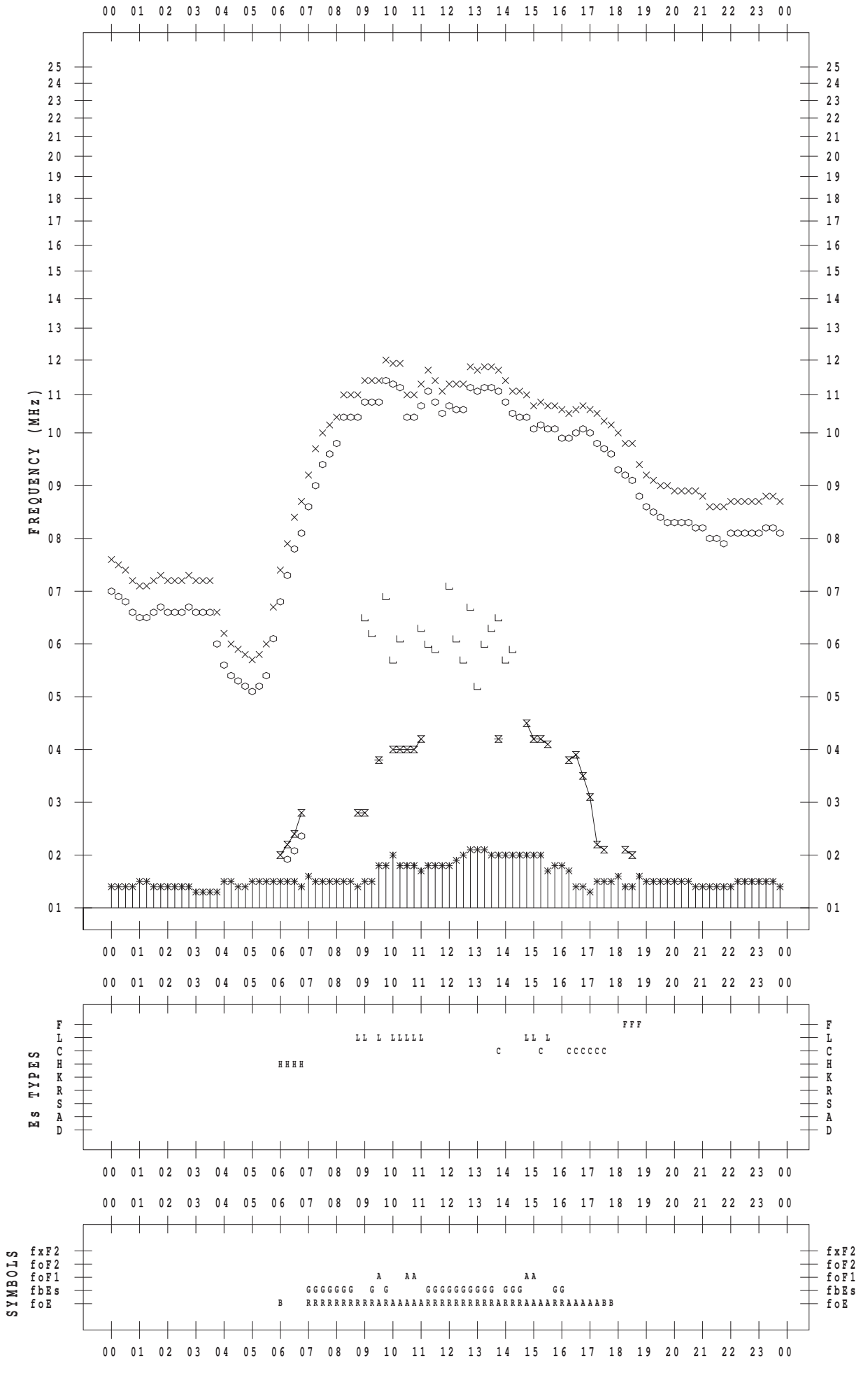
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/20

135 °E MEAN TIME



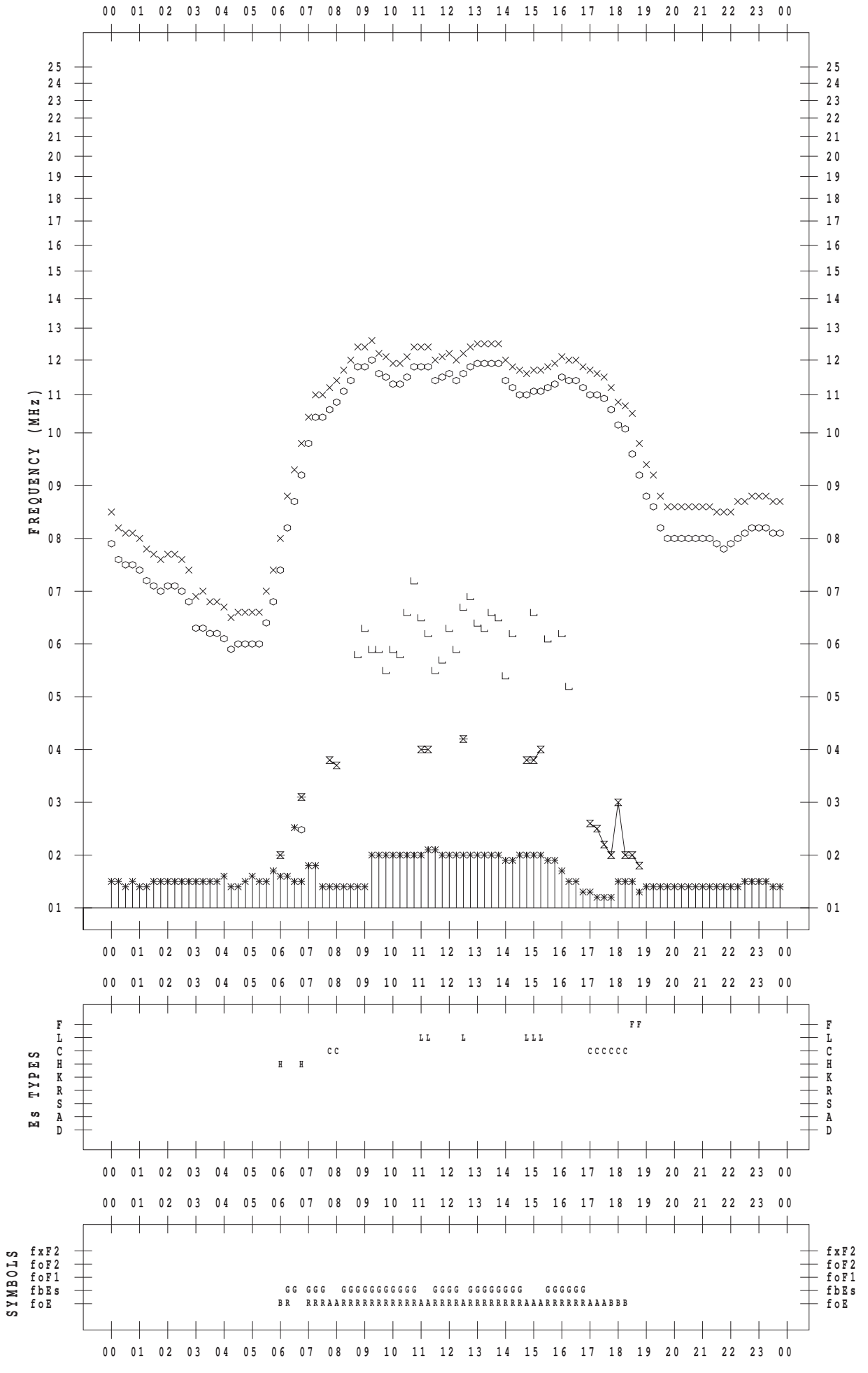
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/21

135 °E MEAN TIME



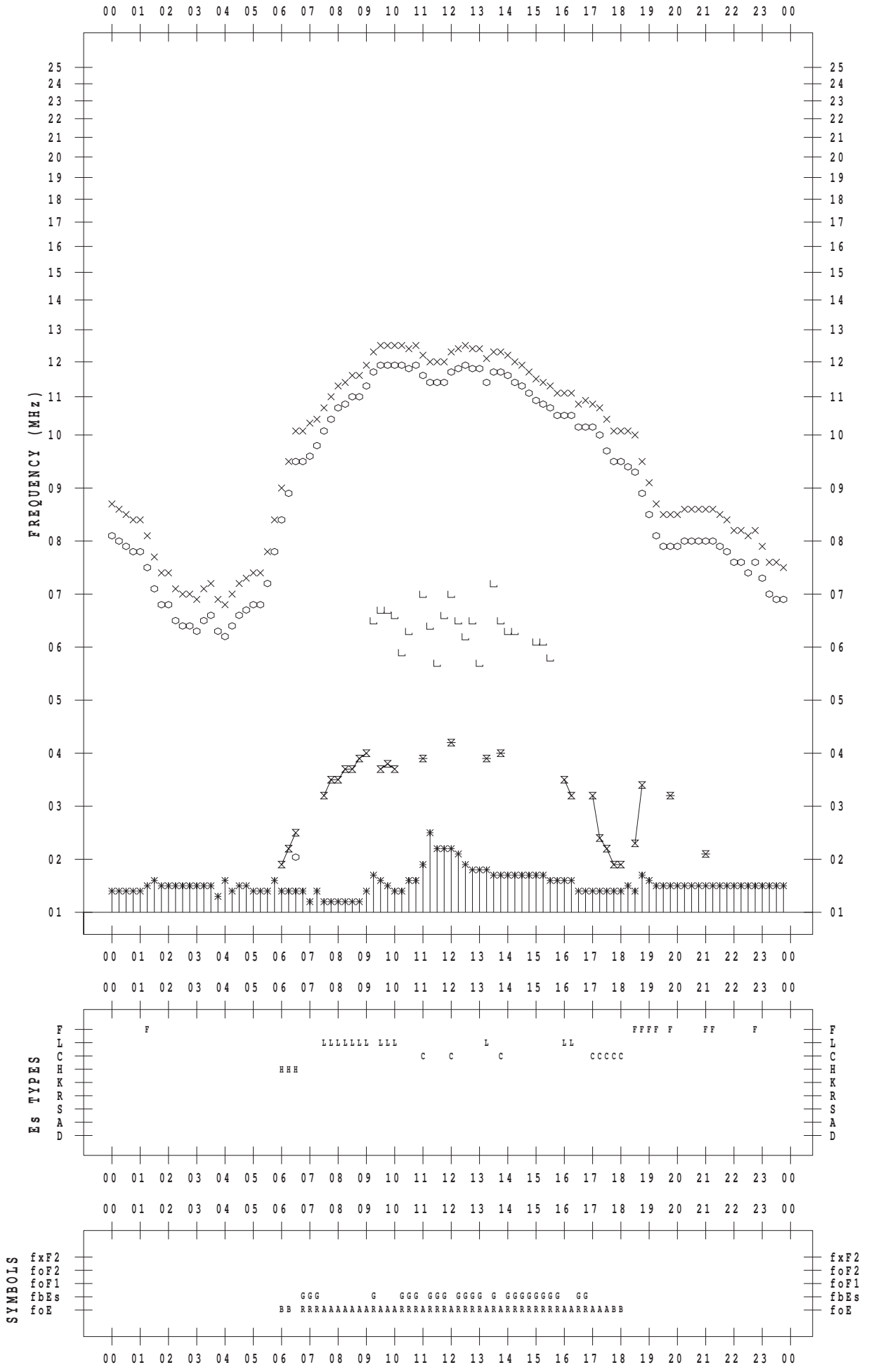
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/22

135 °E MEAN TIME



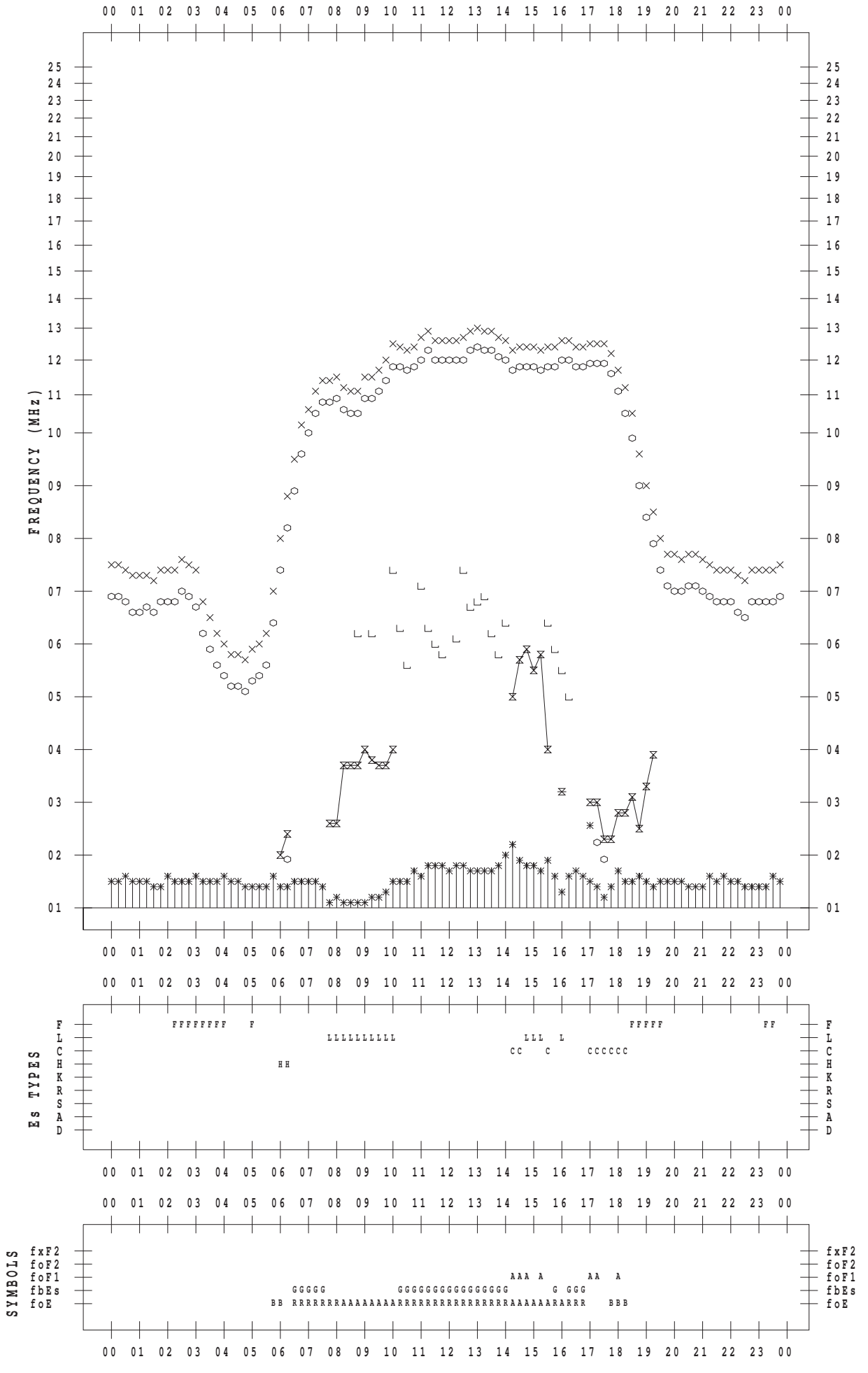
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/23

135 °E MEAN TIME



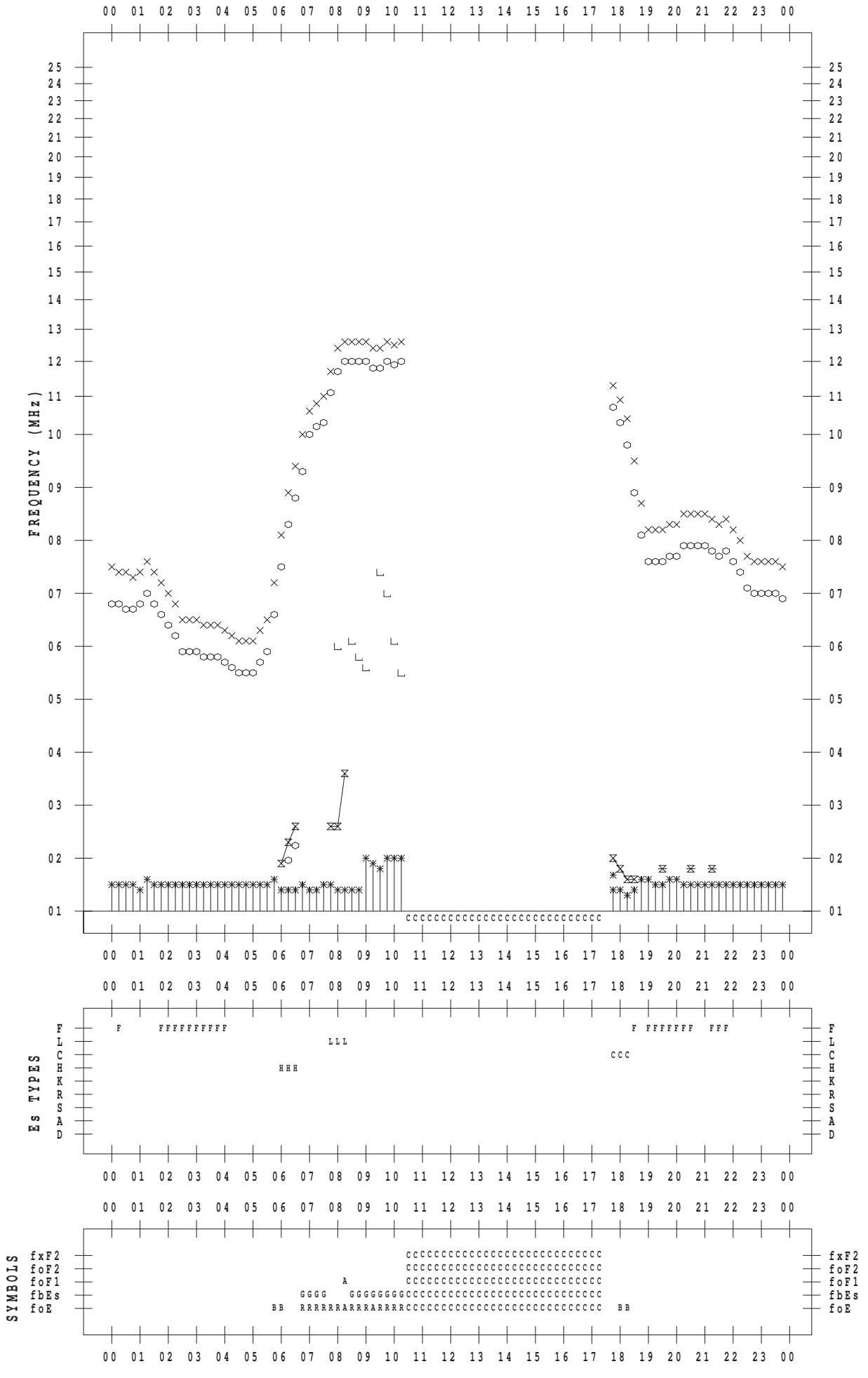
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/24

135 °E MEAN TIME



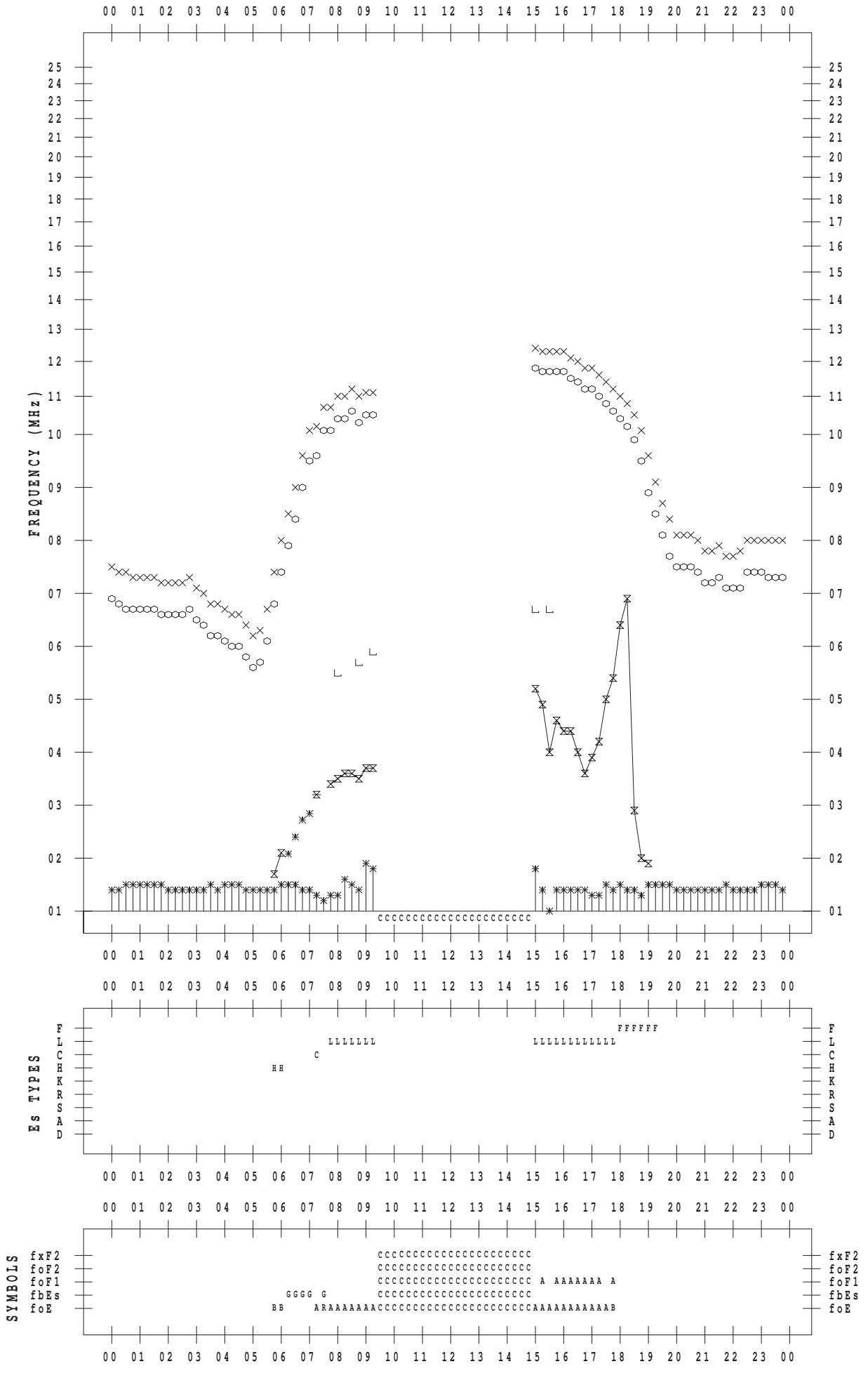
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/25

135 °E MEAN TIME



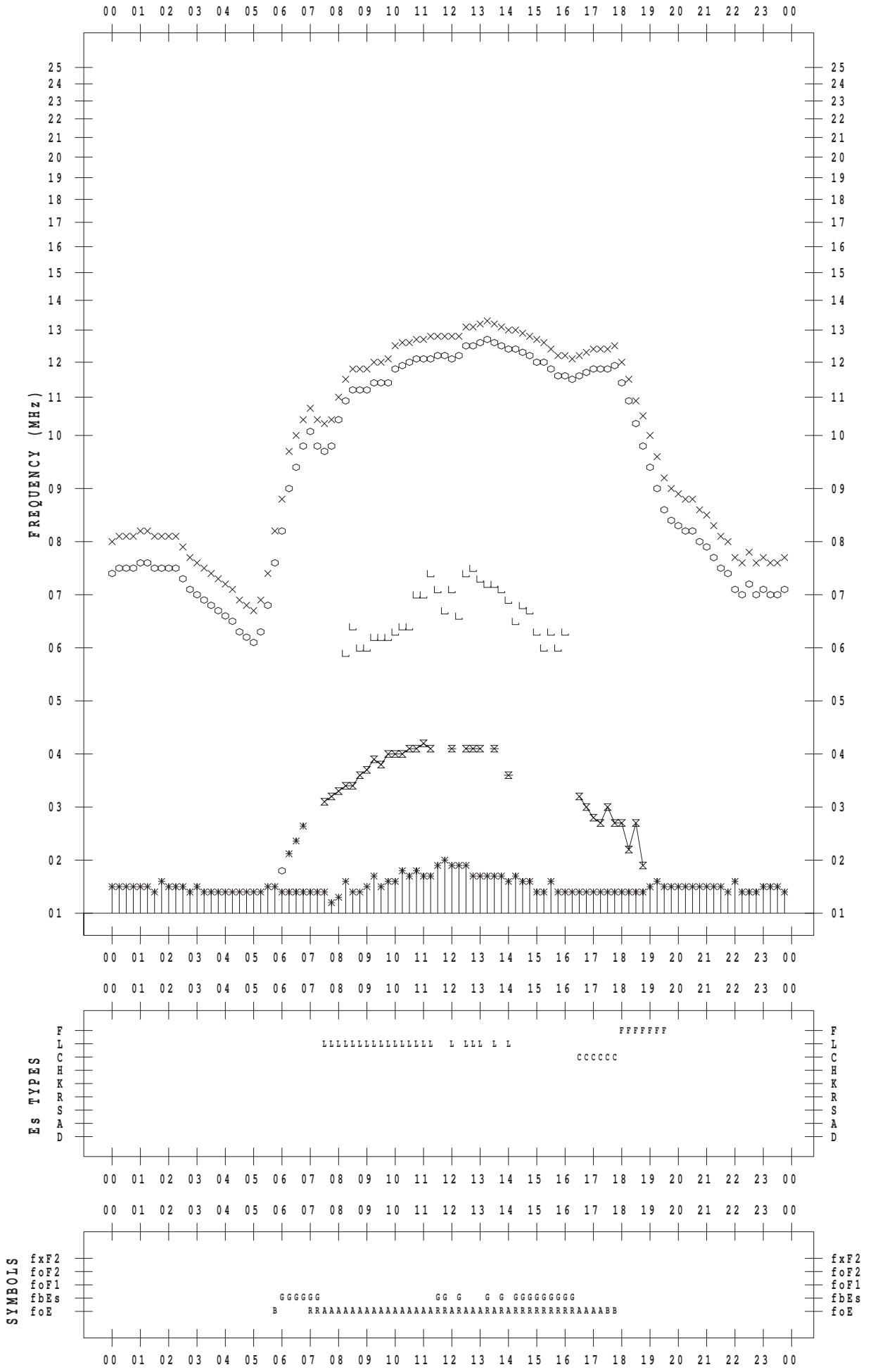
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/26

135 °E MEAN TIME



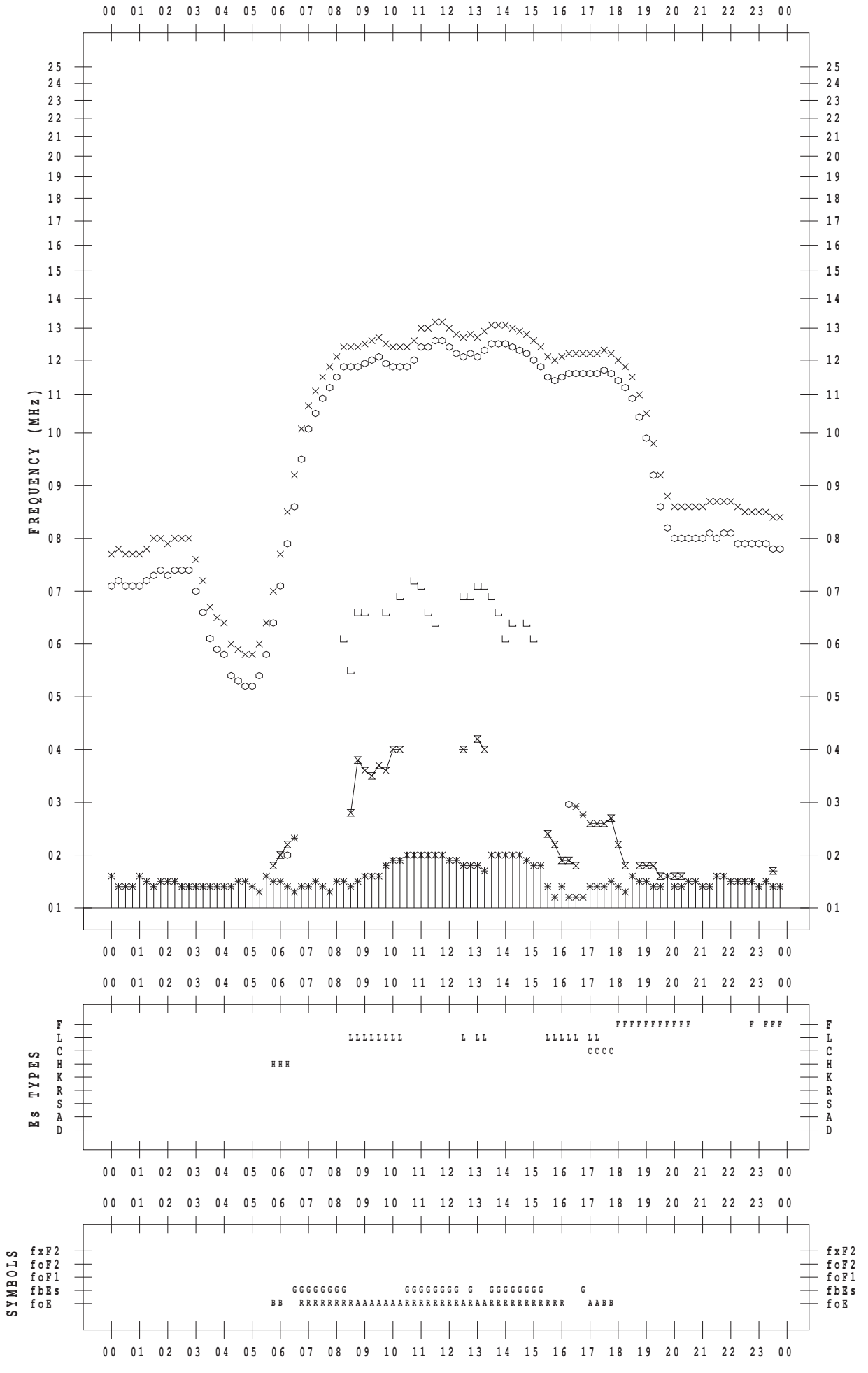
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/27

135 °E MEAN TIME



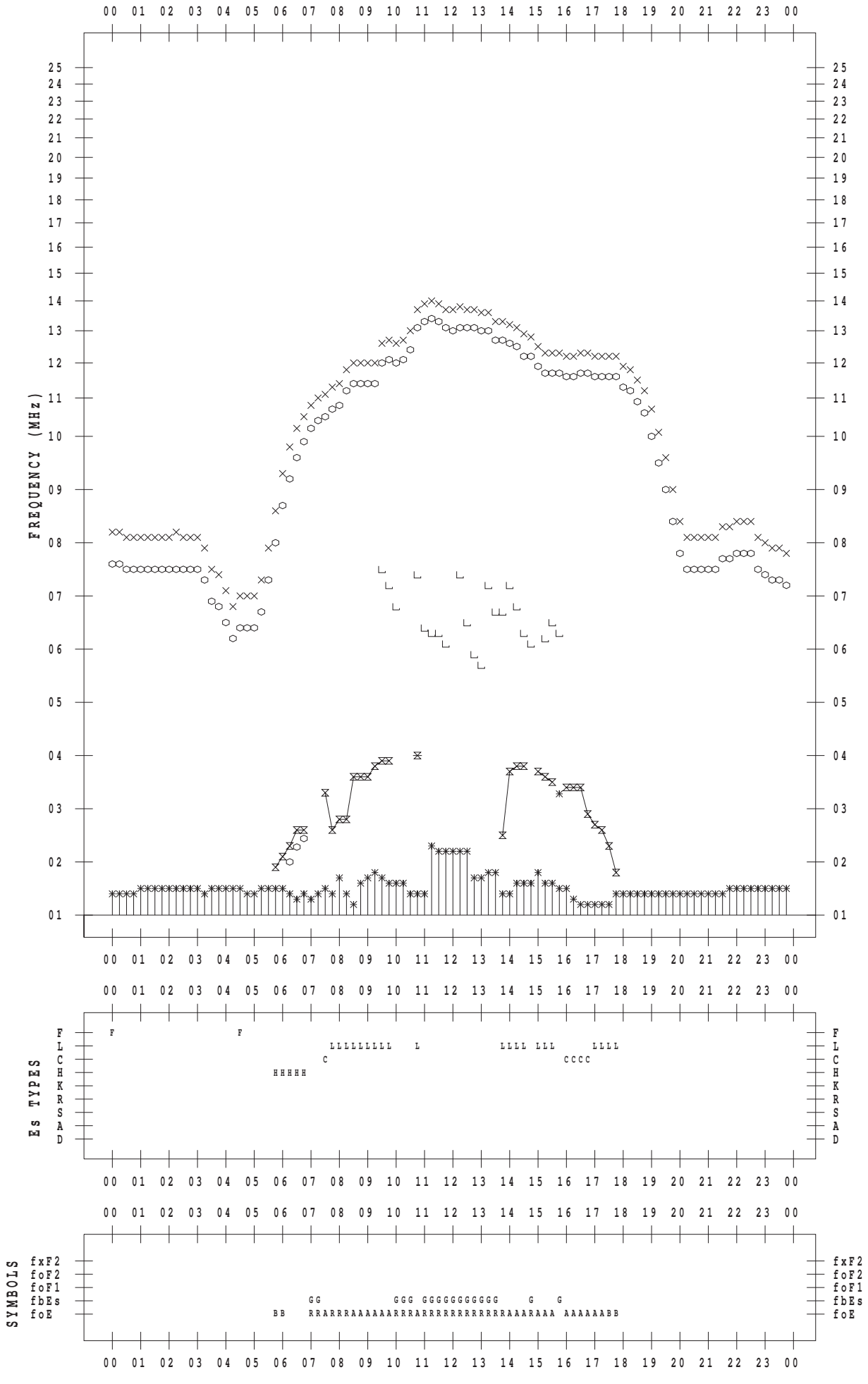
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/28

135 °E MEAN TIME



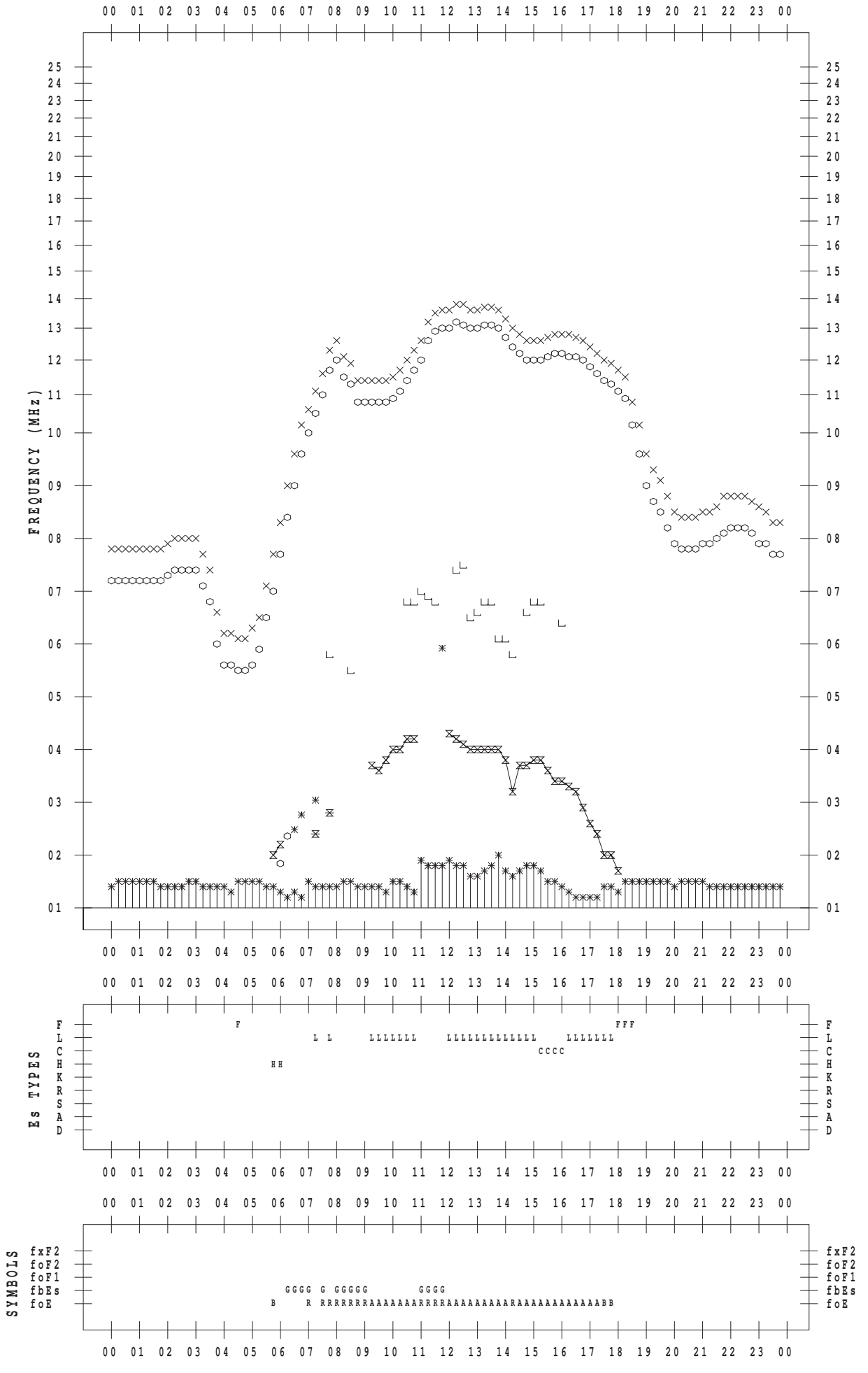
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/29

135 °E MEAN TIME



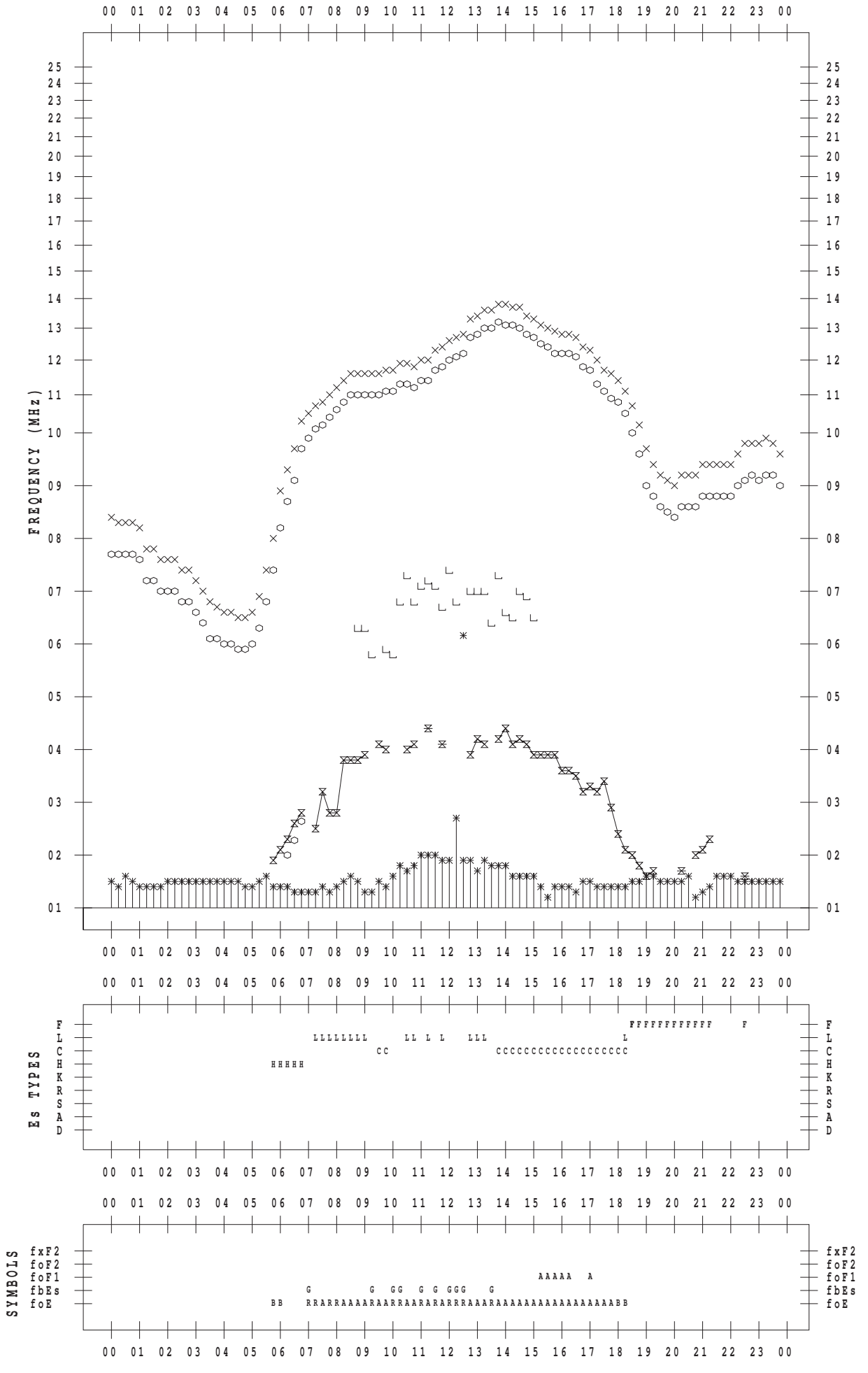
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/30

135 °E MEAN TIME



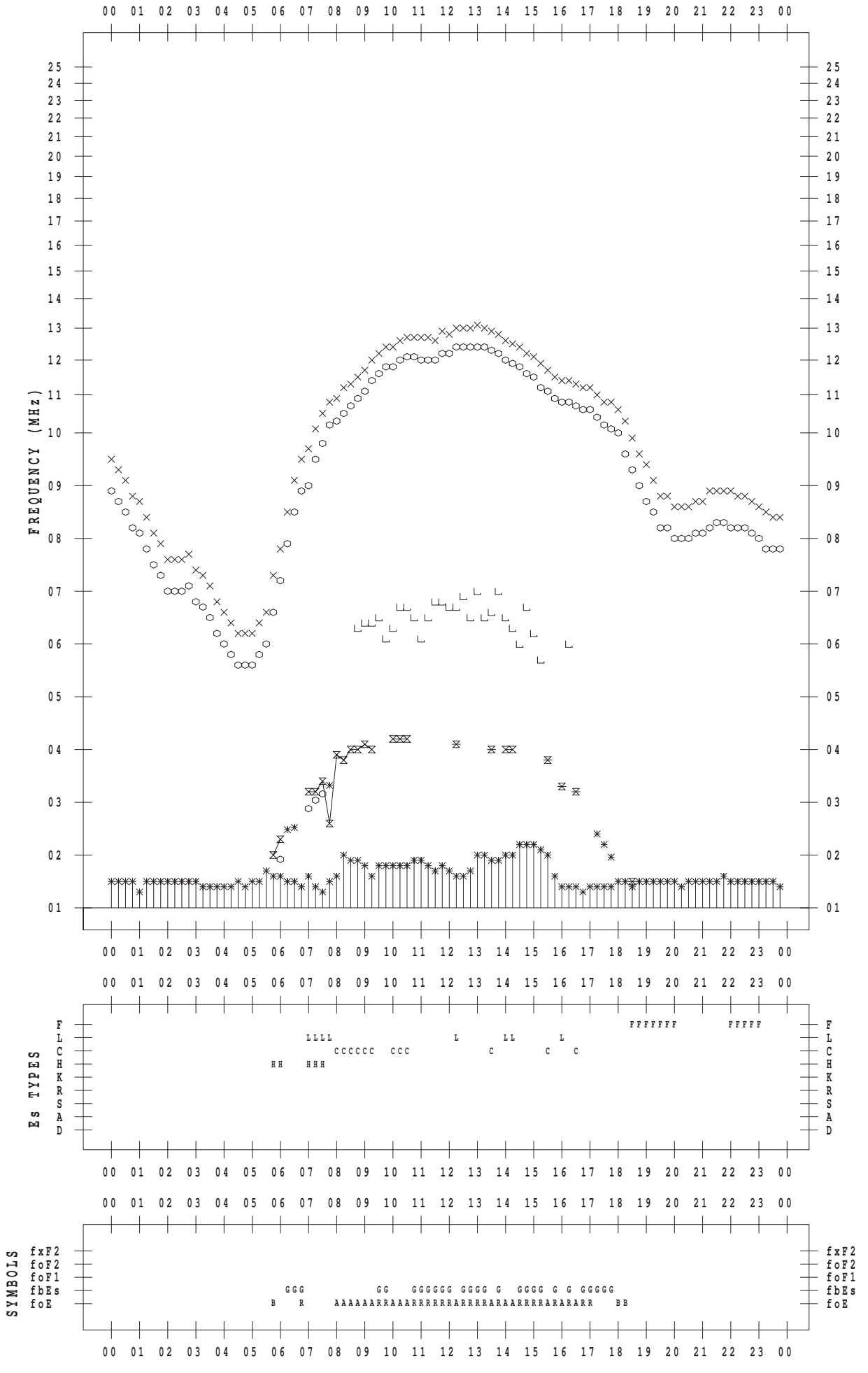
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 3/31

135 °E MEAN TIME



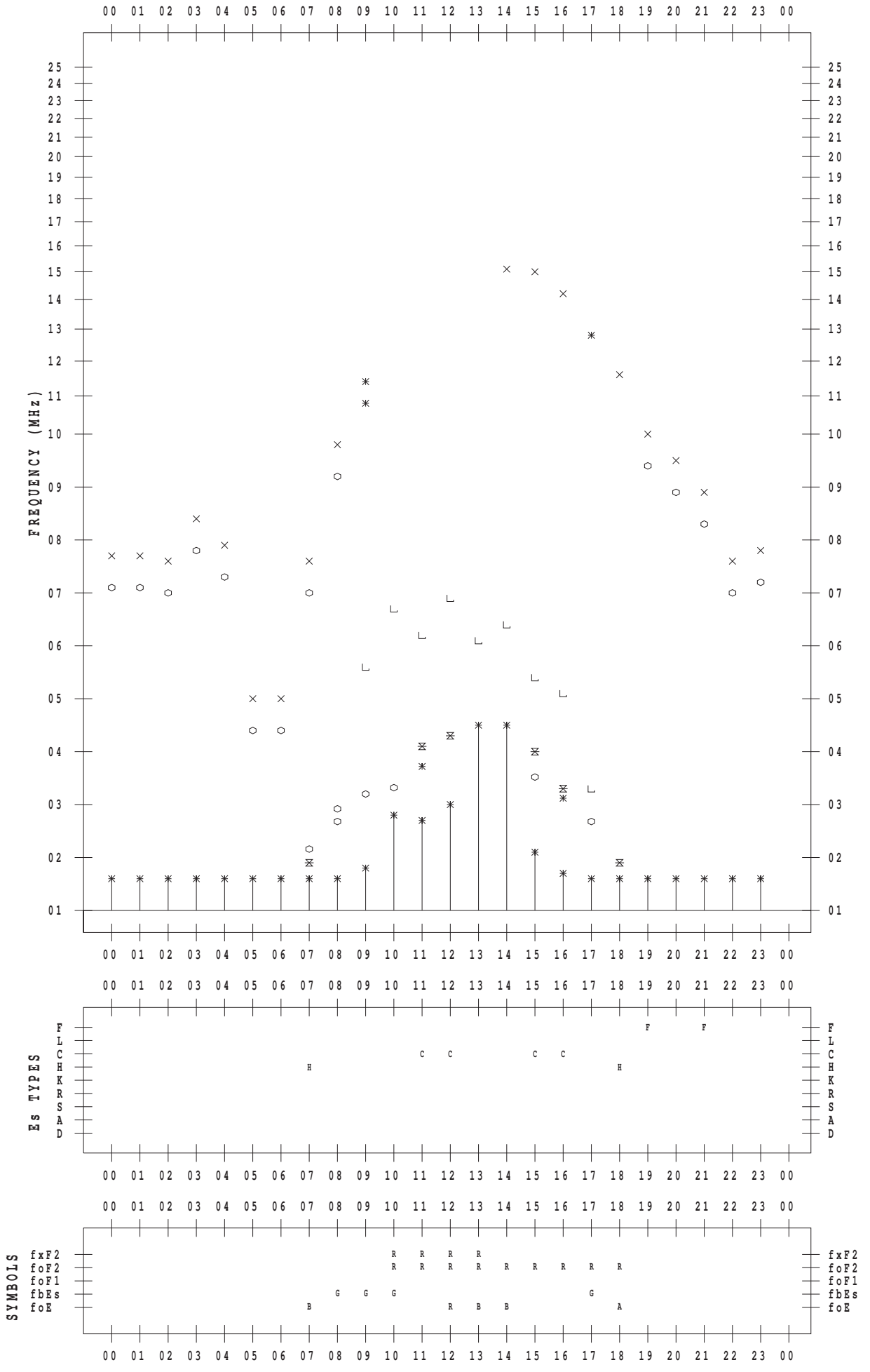
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 1

135 °E MEAN TIME



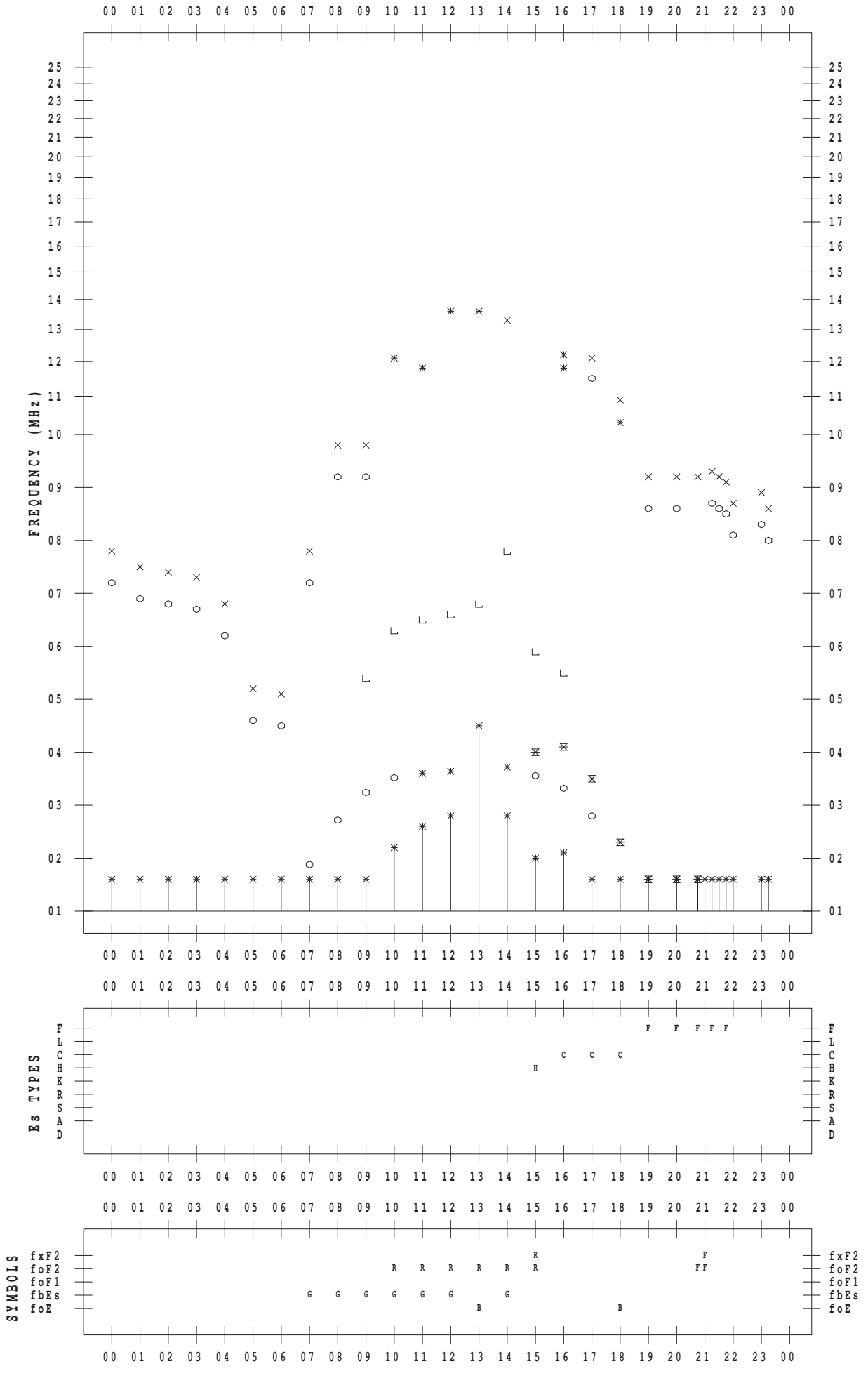
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 2

135 °E MEAN TIME



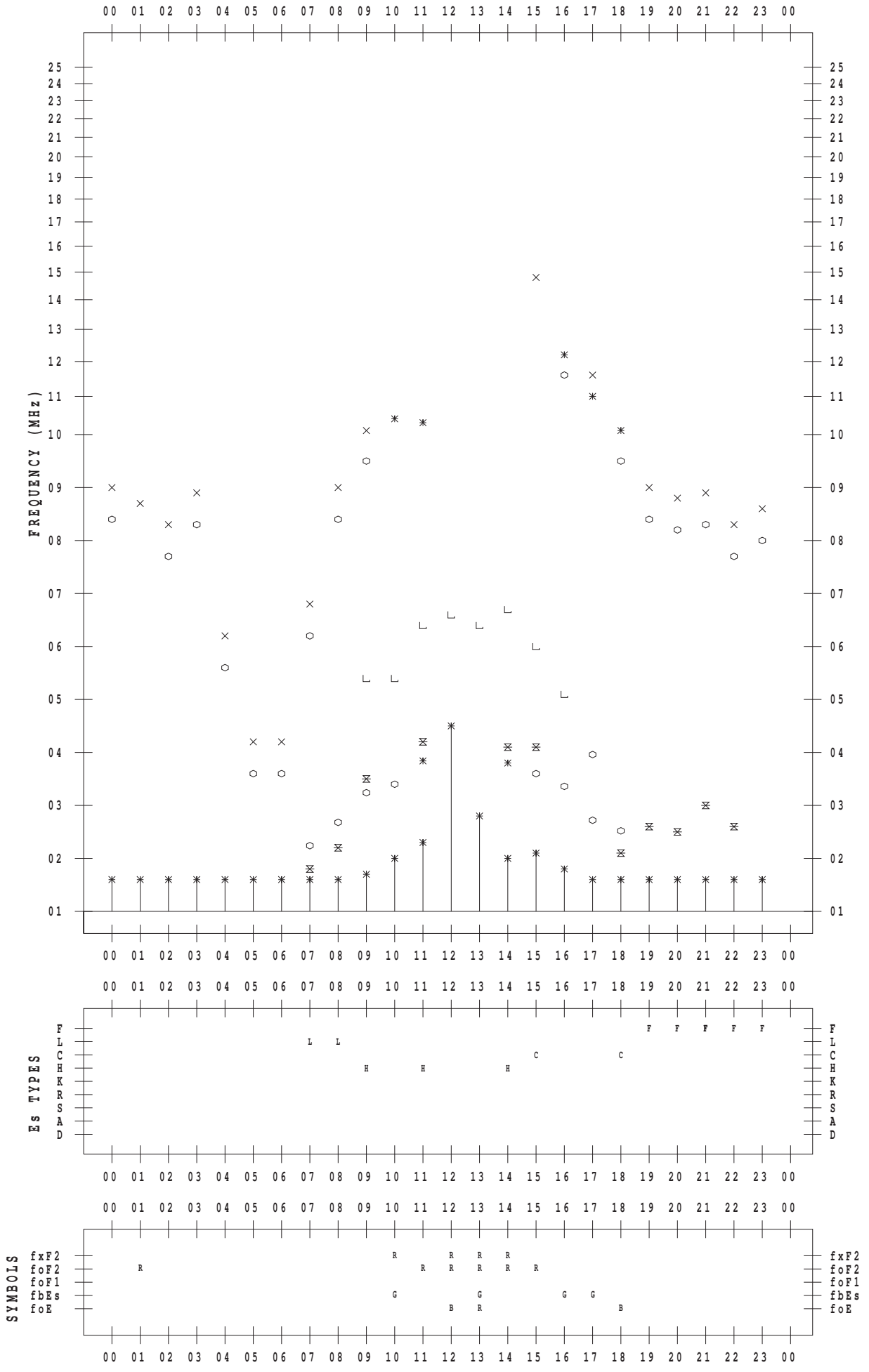
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 3

135 °E MEAN TIME



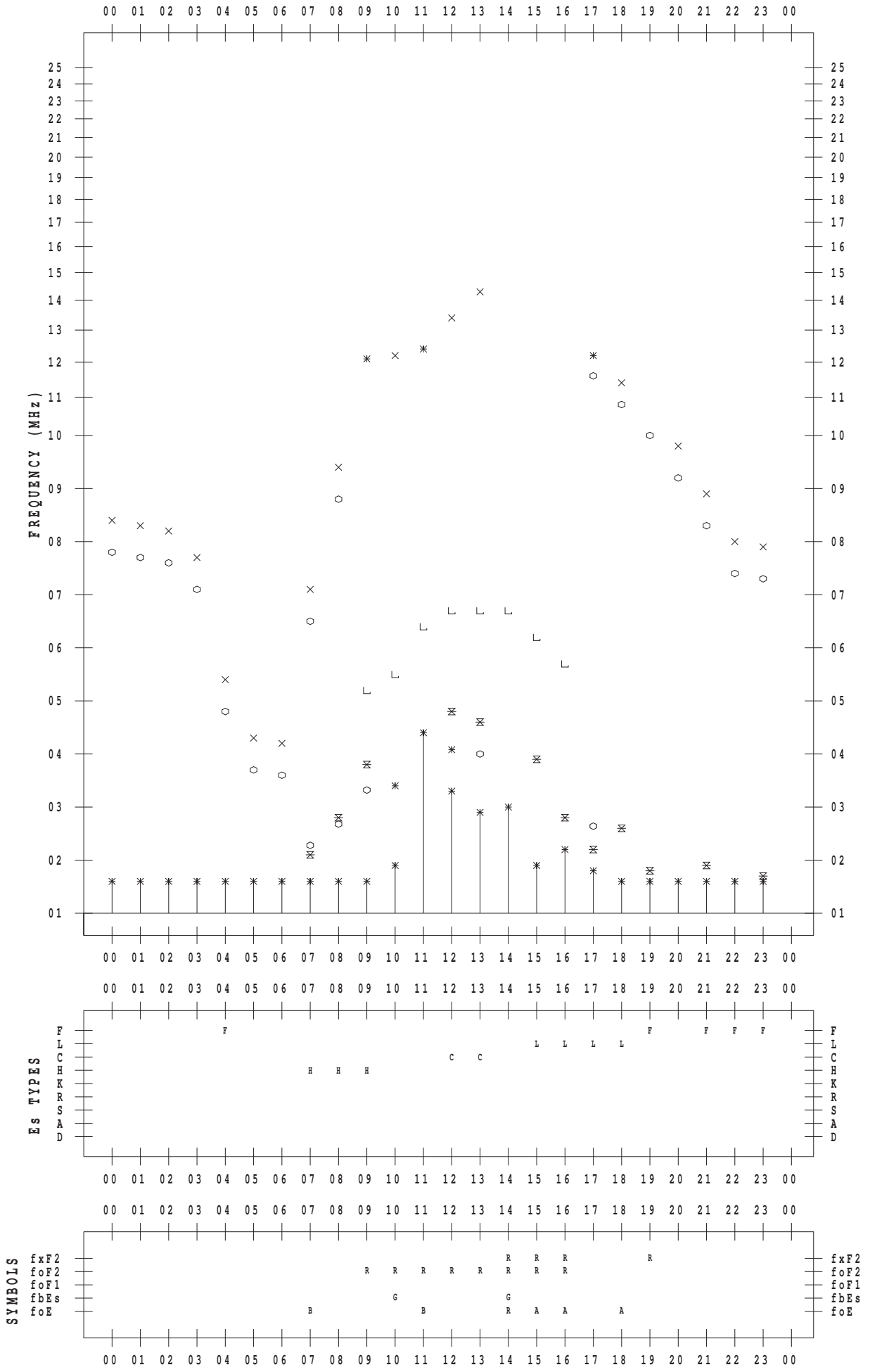
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 4

135 °E MEAN TIME



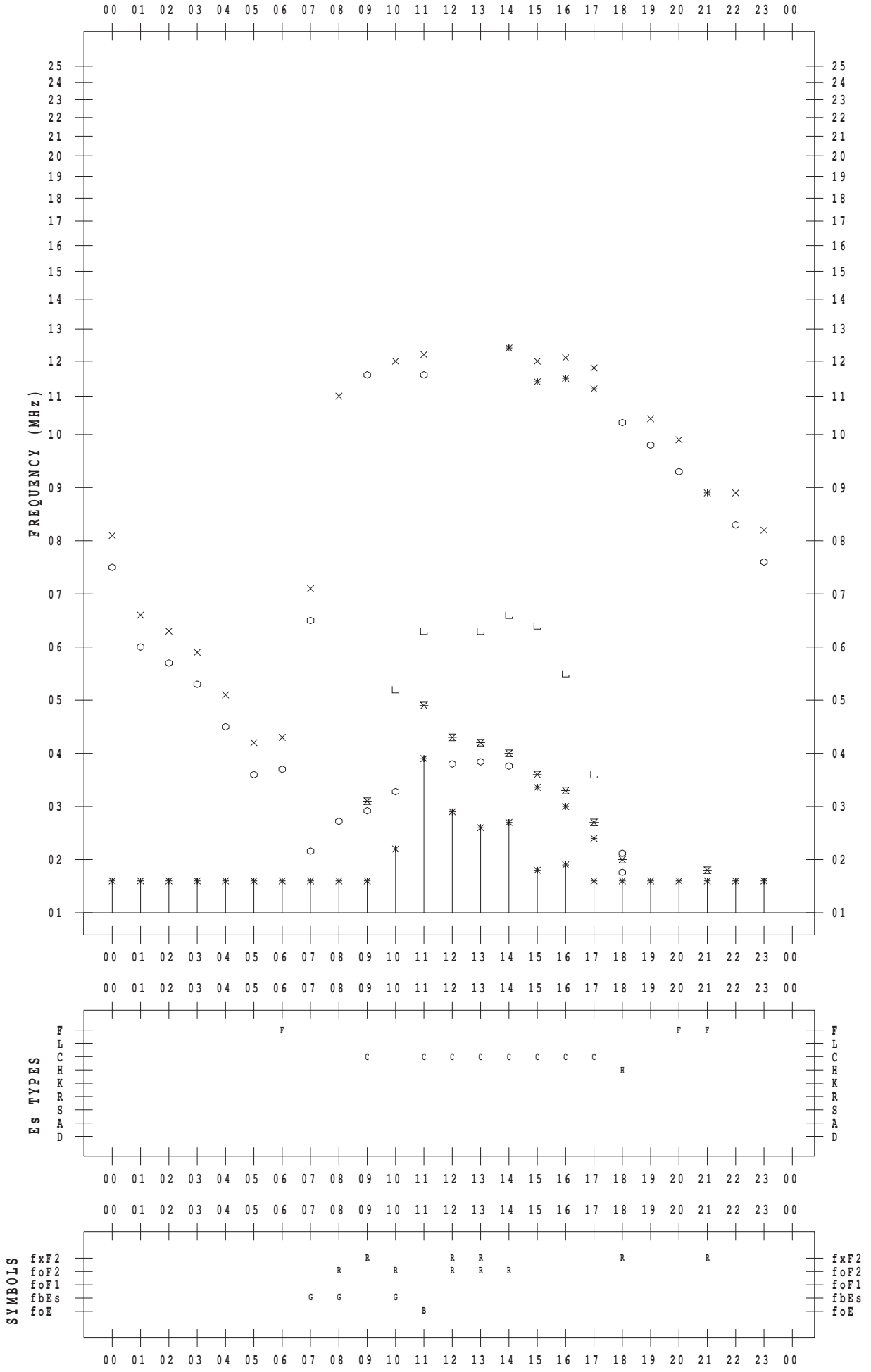
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 5

135 °E MEAN TIME



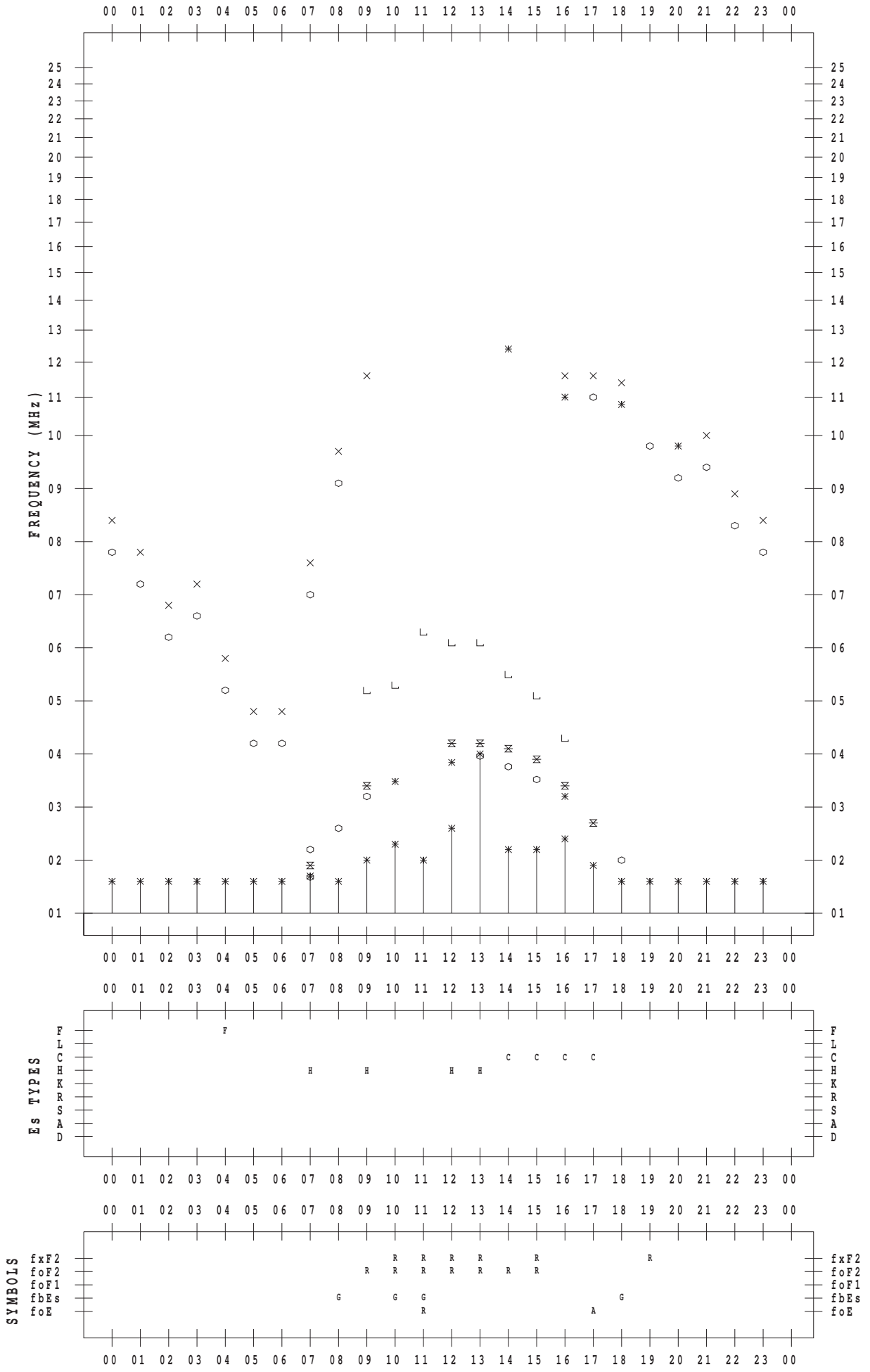
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 6

135 °E MEAN TIME



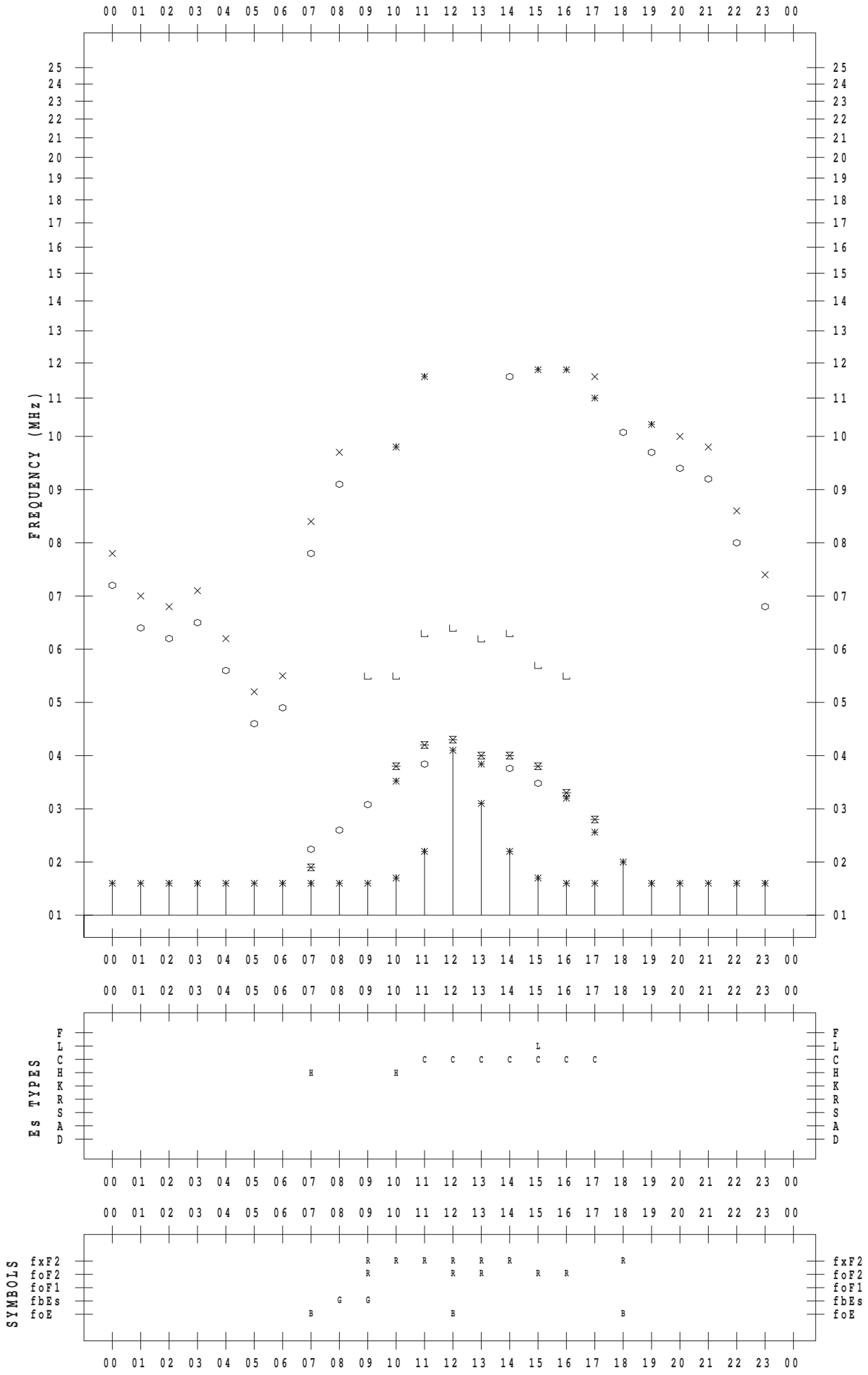
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 7

135 °E MEAN TIME



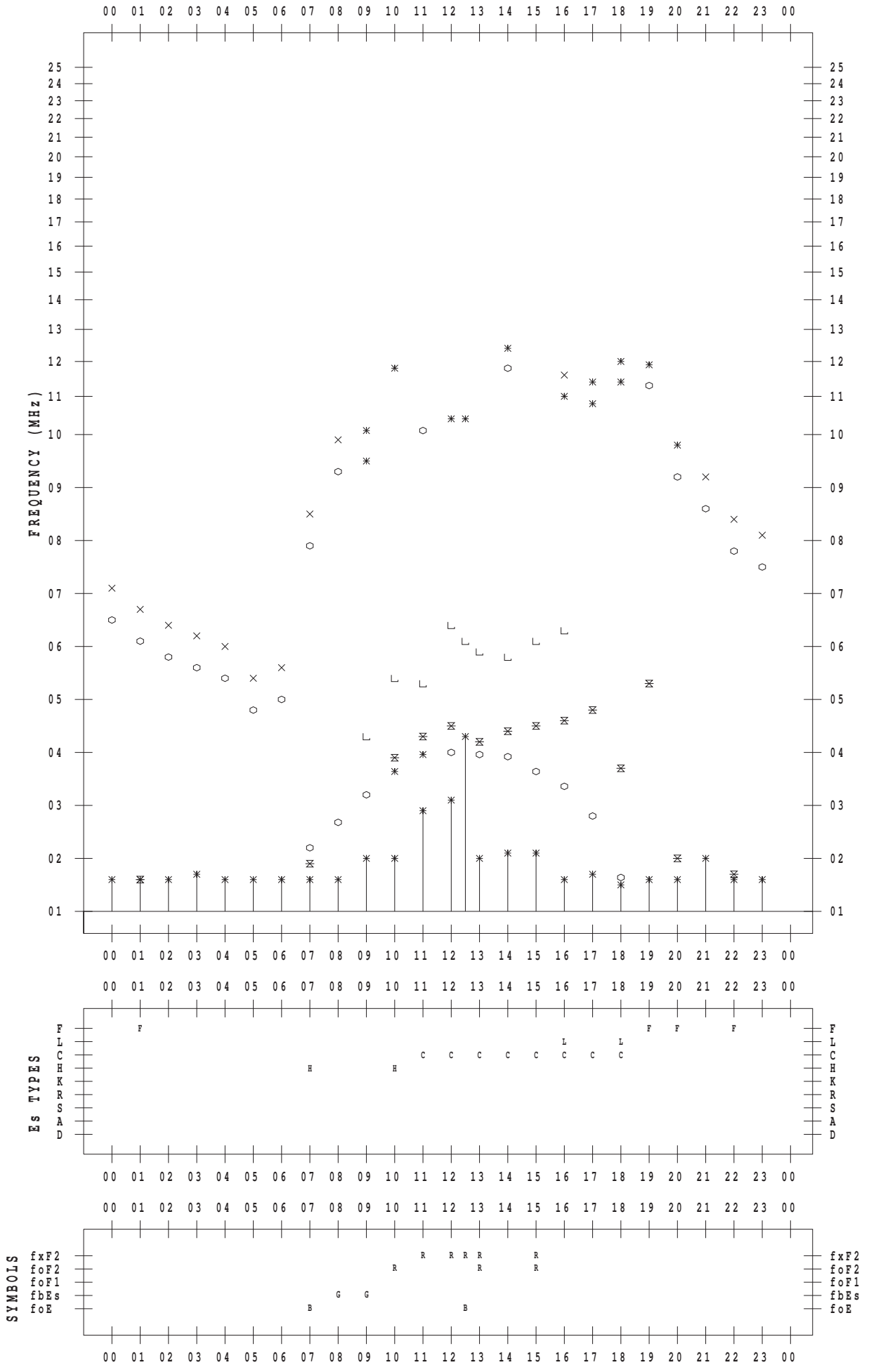
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 8

135 °E MEAN TIME



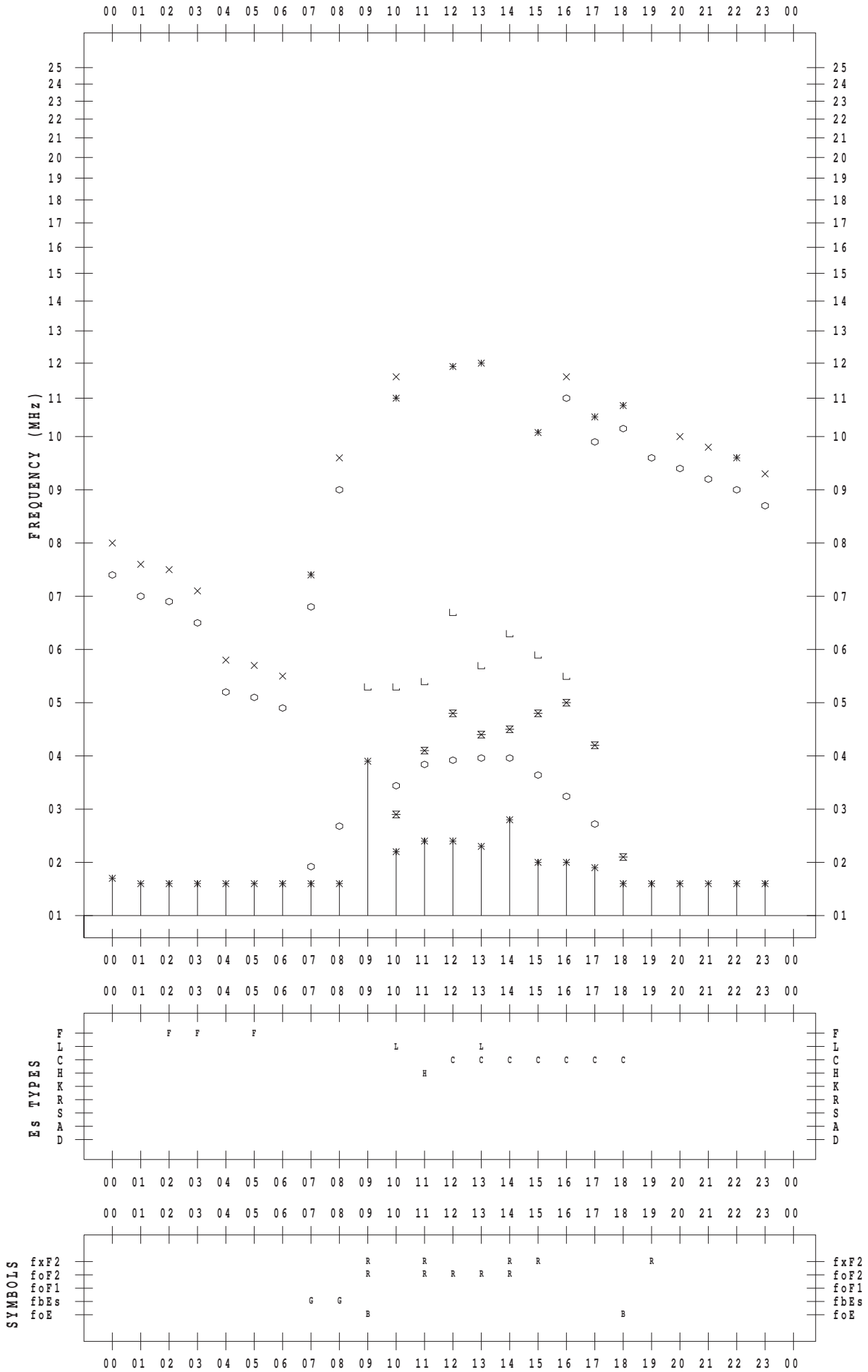
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/ 9

135 °E MEAN TIME



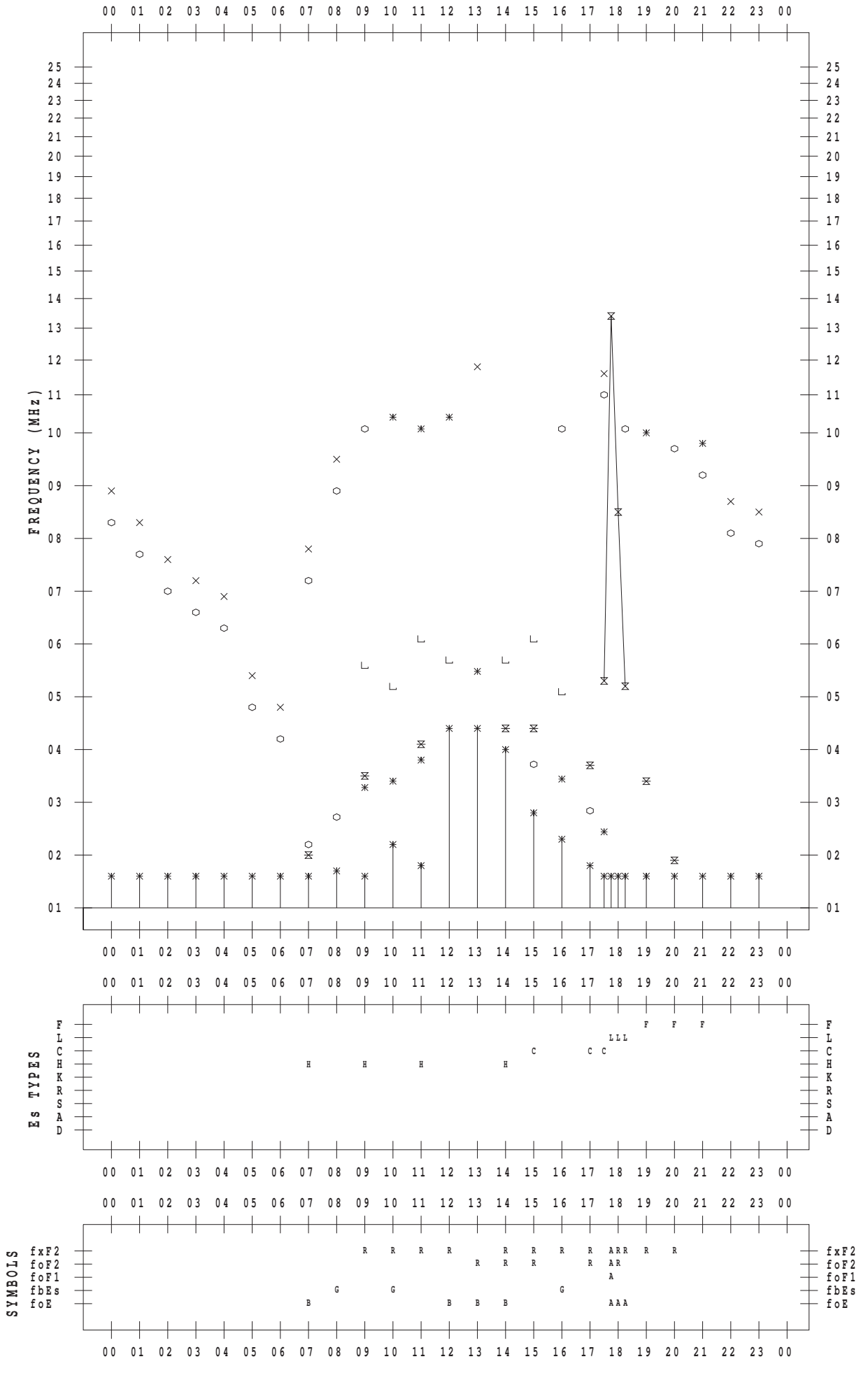
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/10

135 °E MEAN TIME



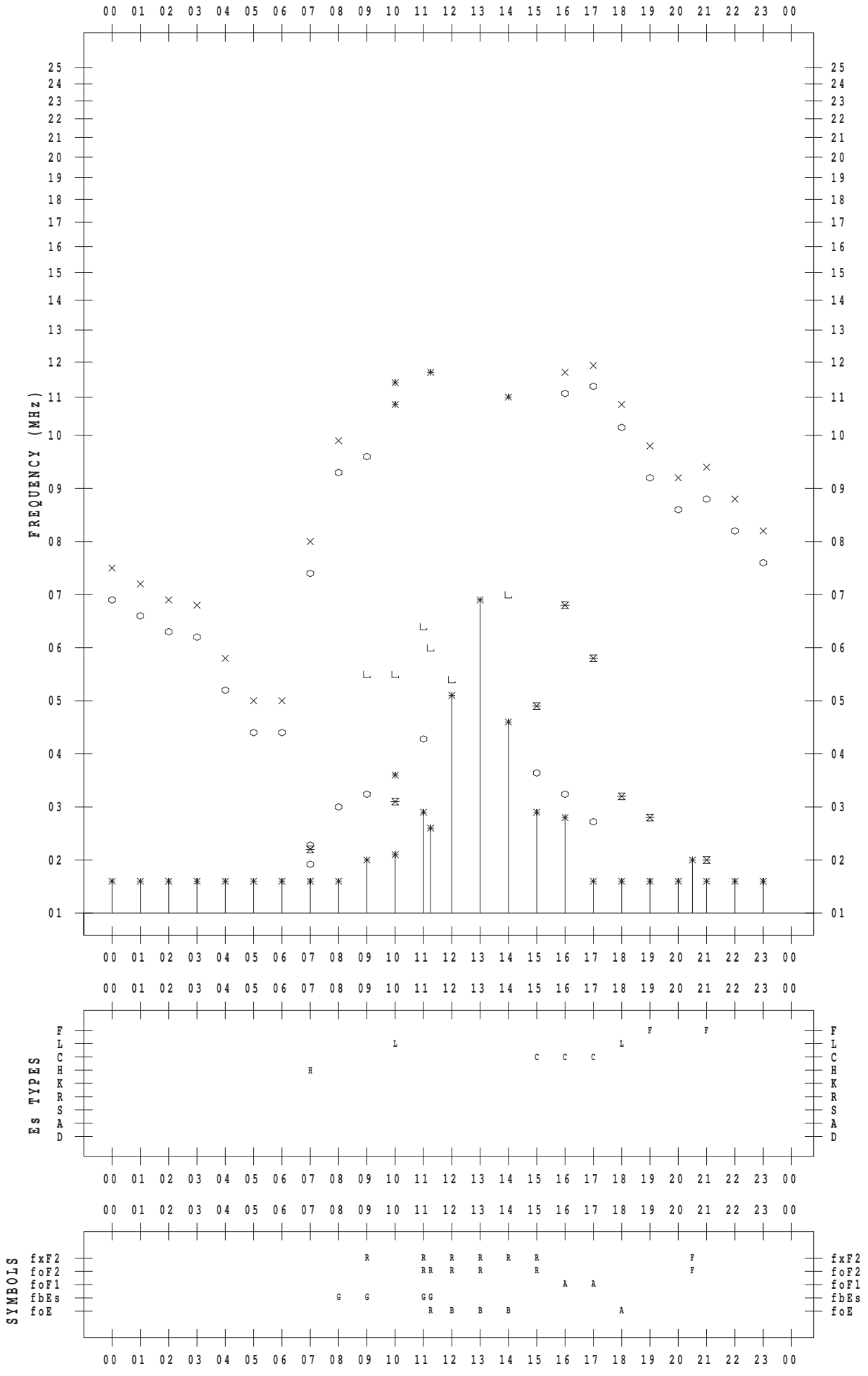
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/11

135 °E MEAN TIME



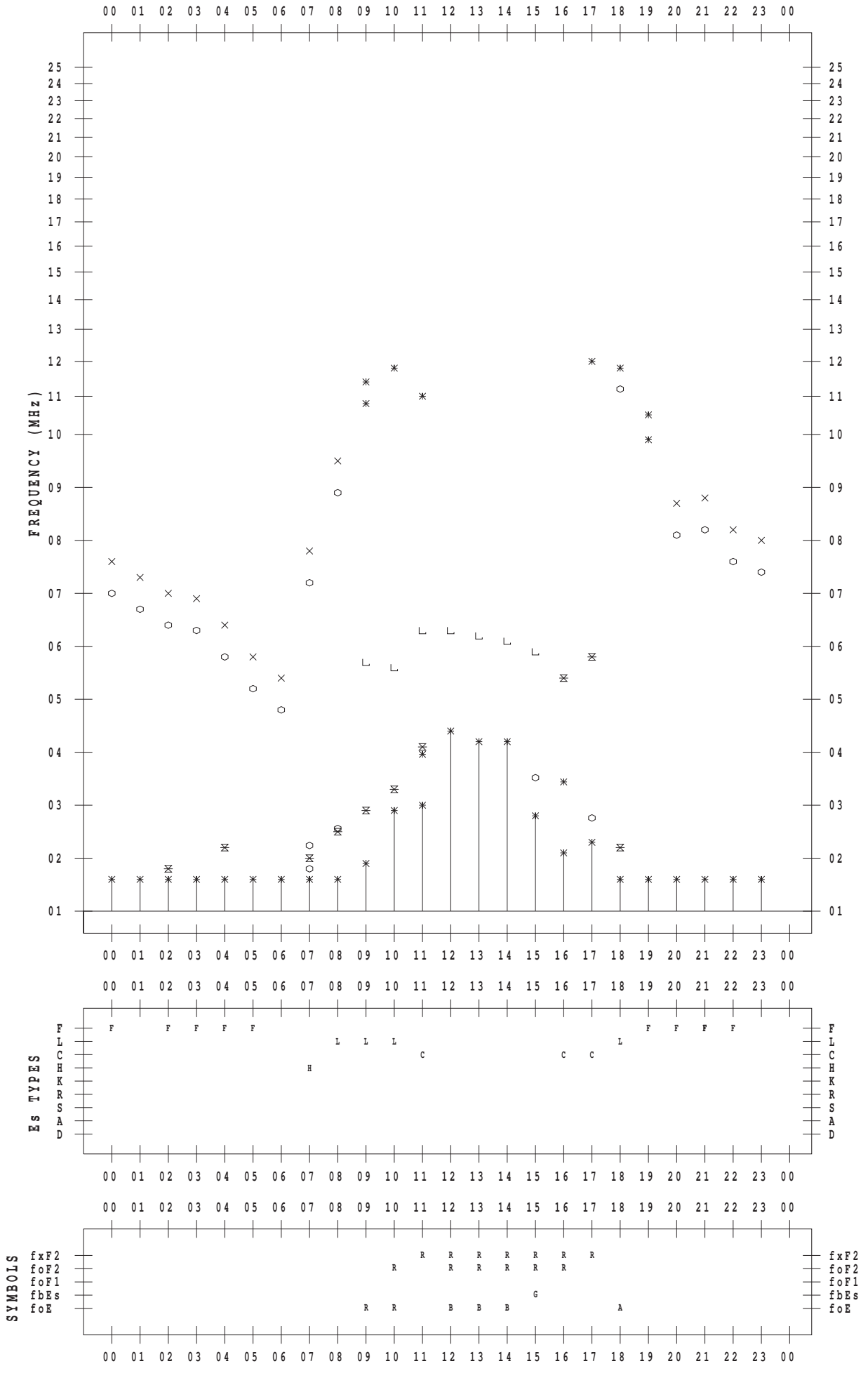
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/12

135 °E MEAN TIME



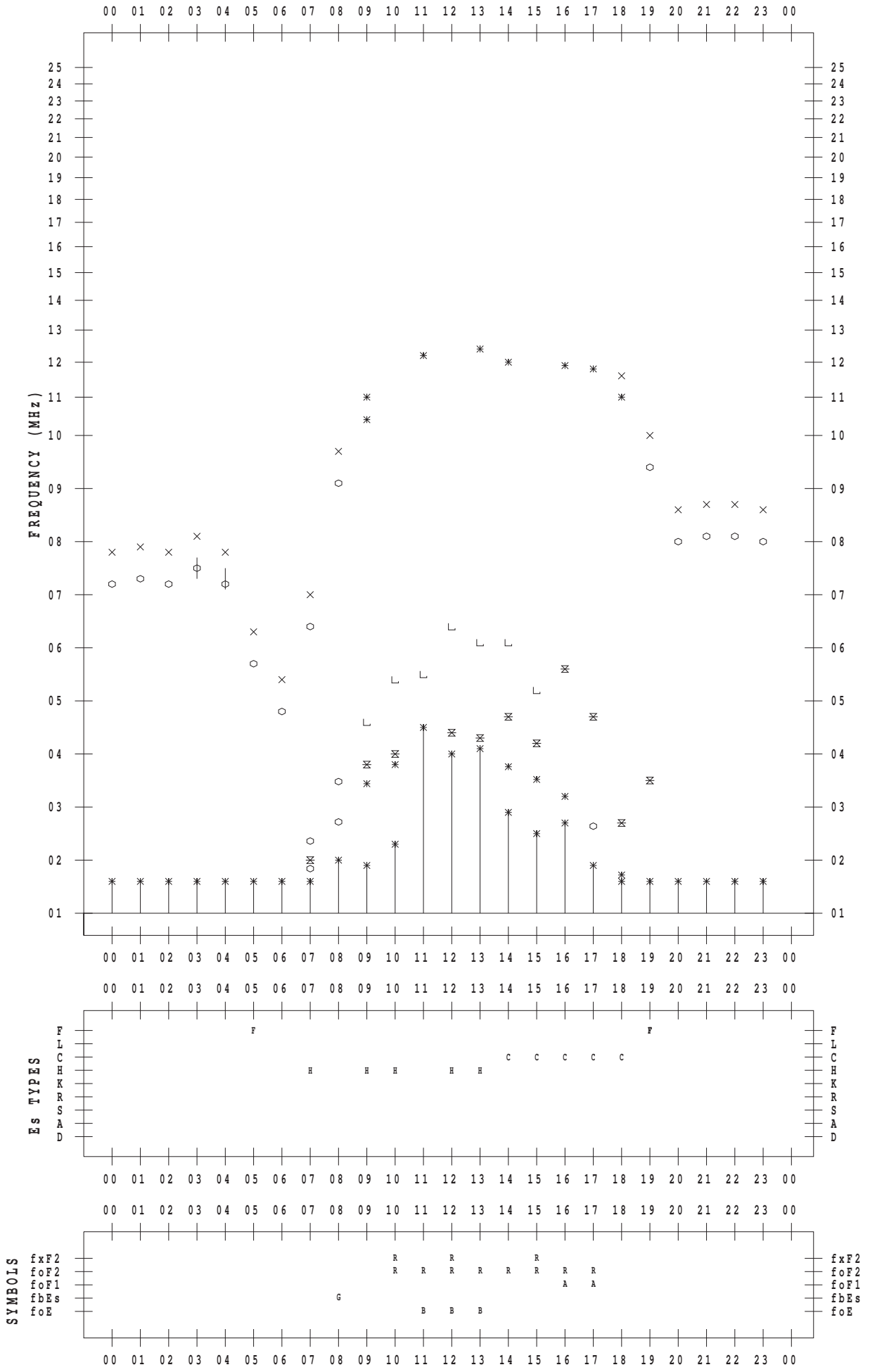
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/13

135 °E MEAN TIME



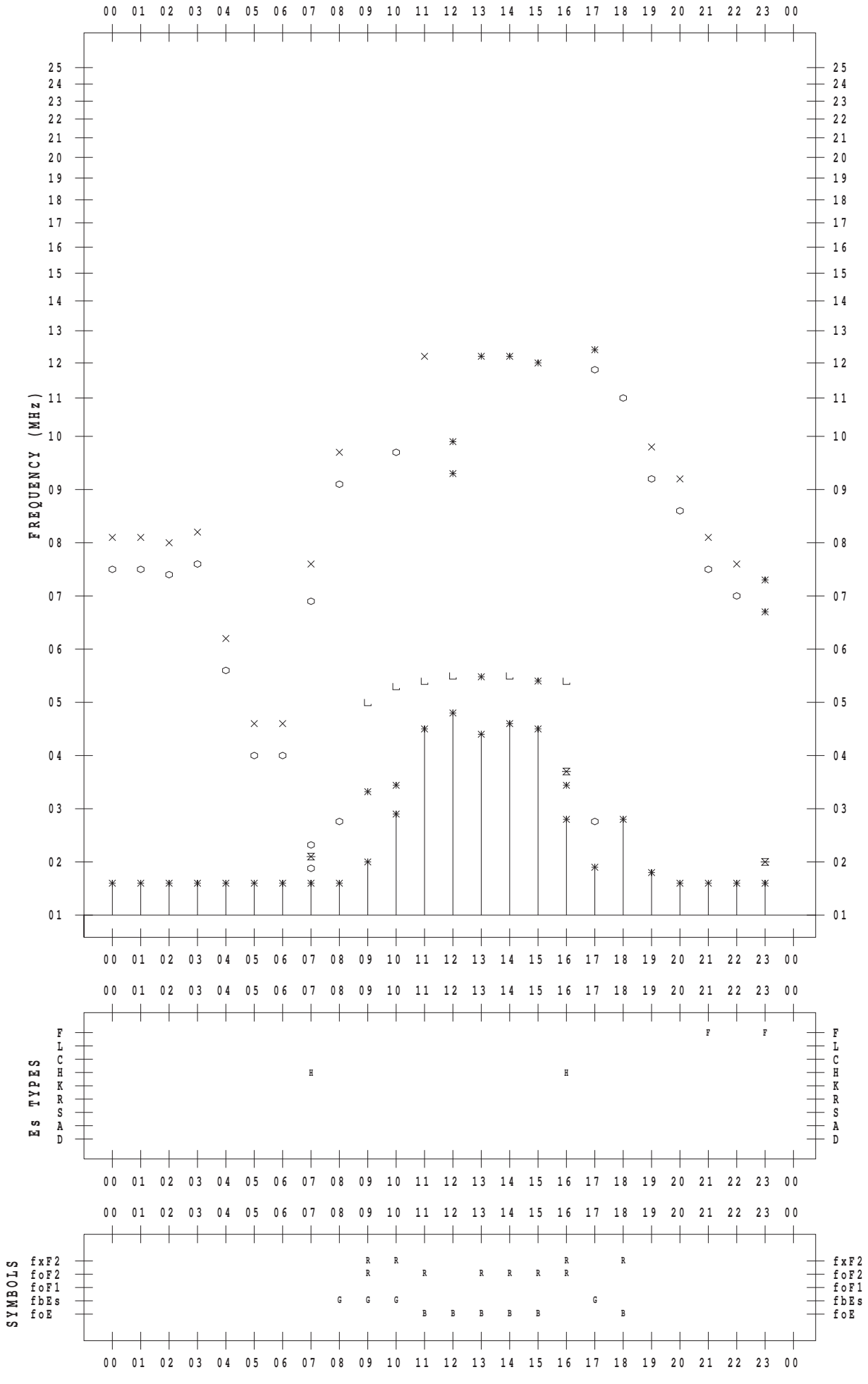
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/14

135 °E MEAN TIME



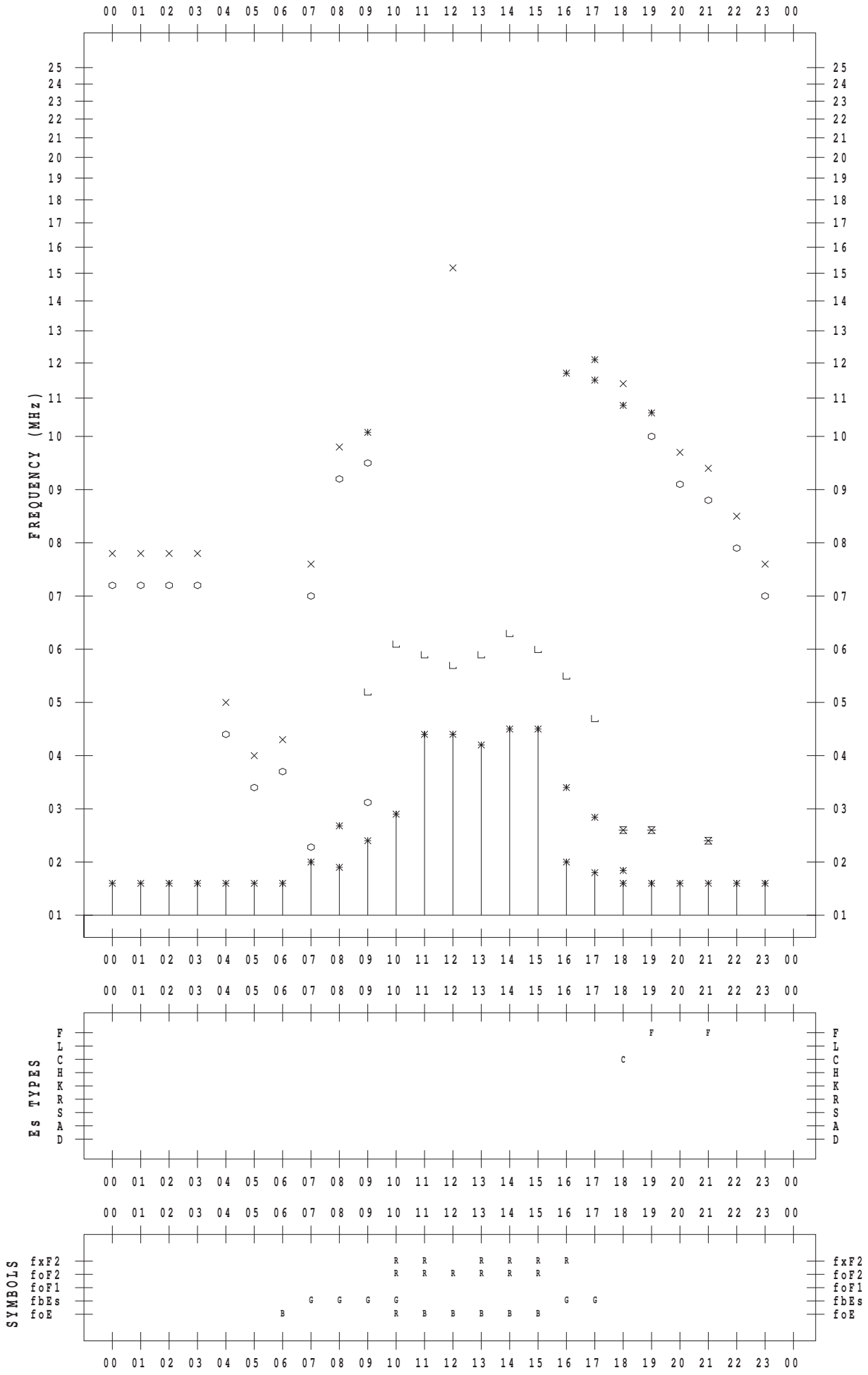
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/15

135 °E MEAN TIME



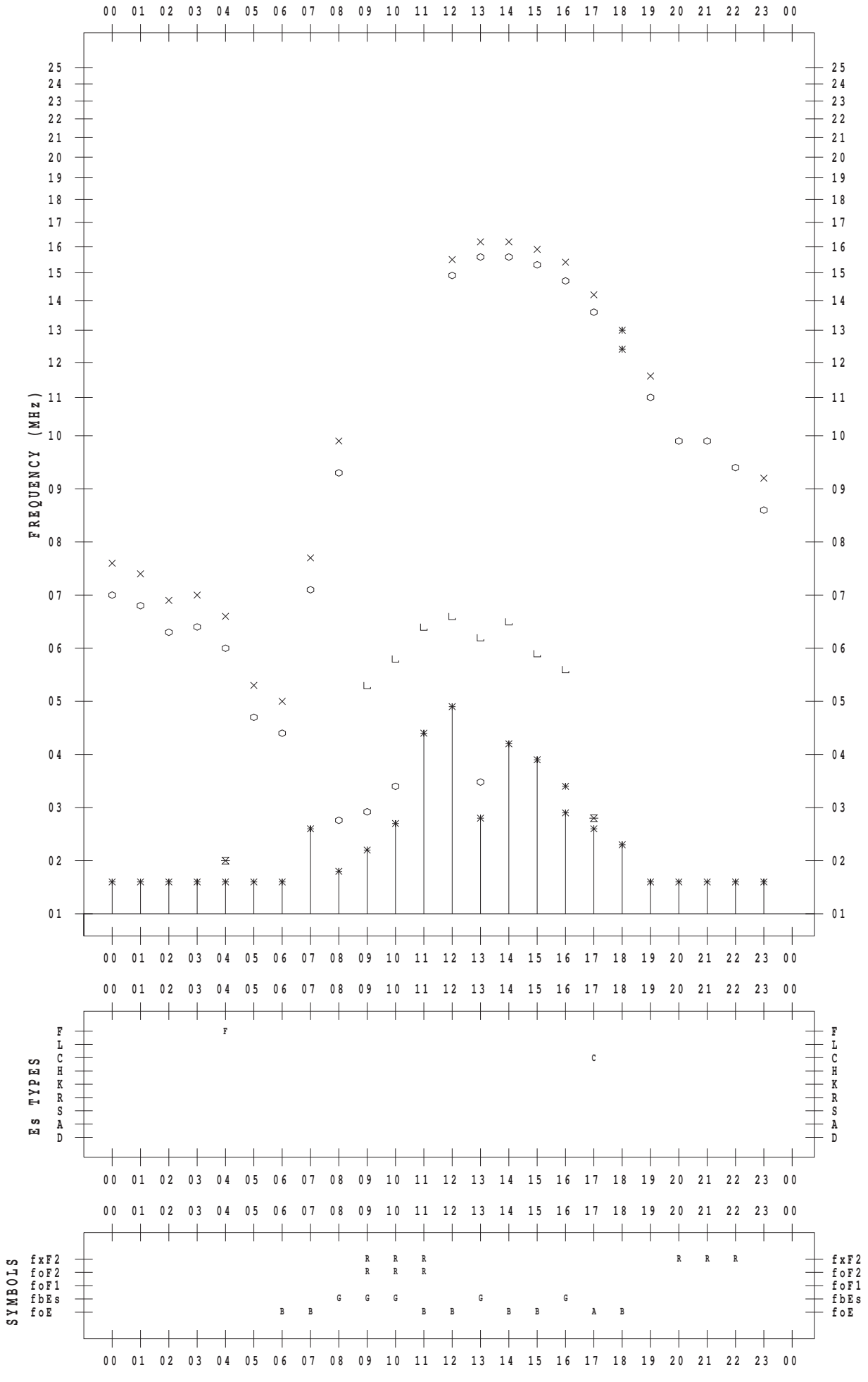
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/16

135 °E MEAN TIME



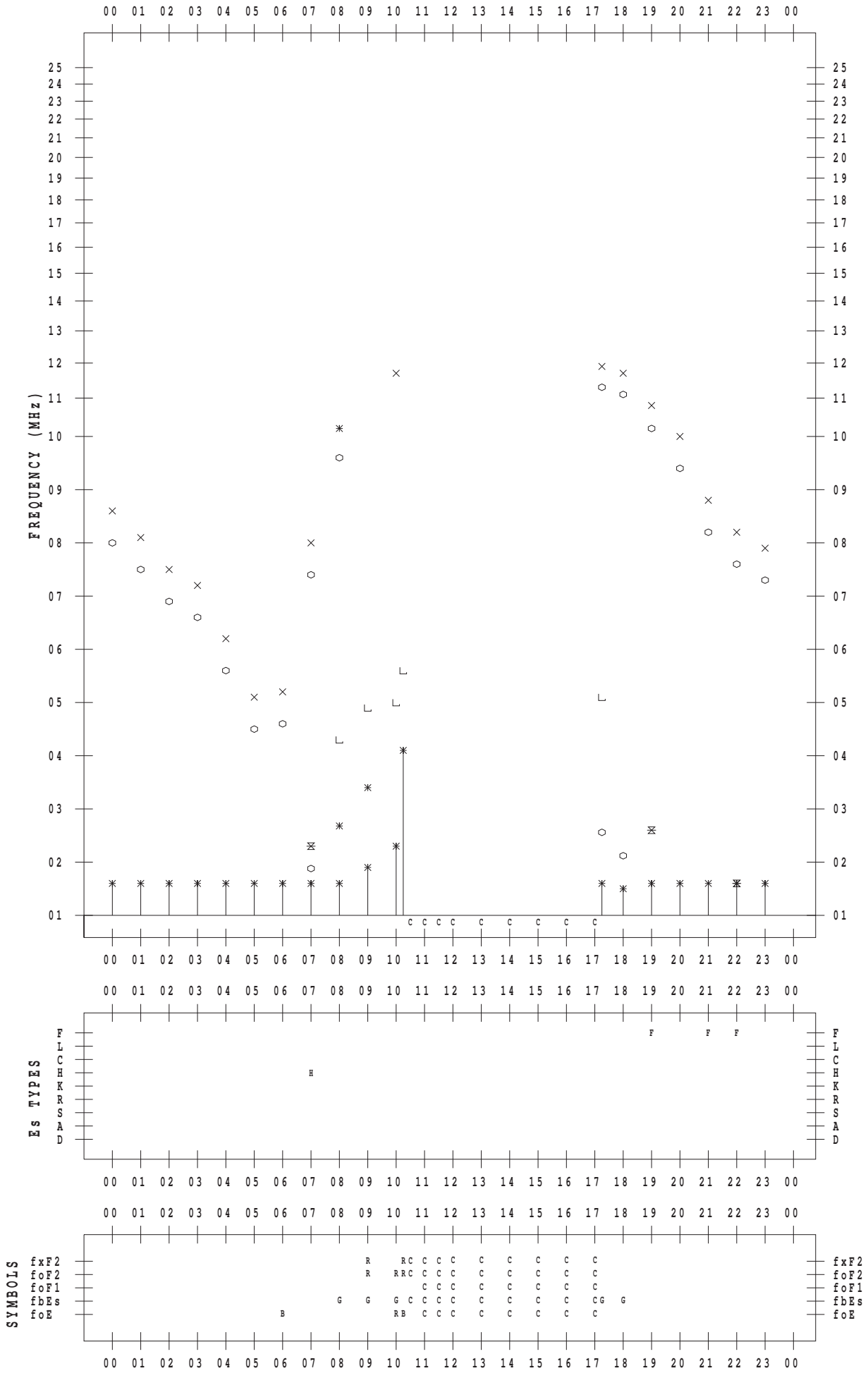
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/17

135 °E MEAN TIME



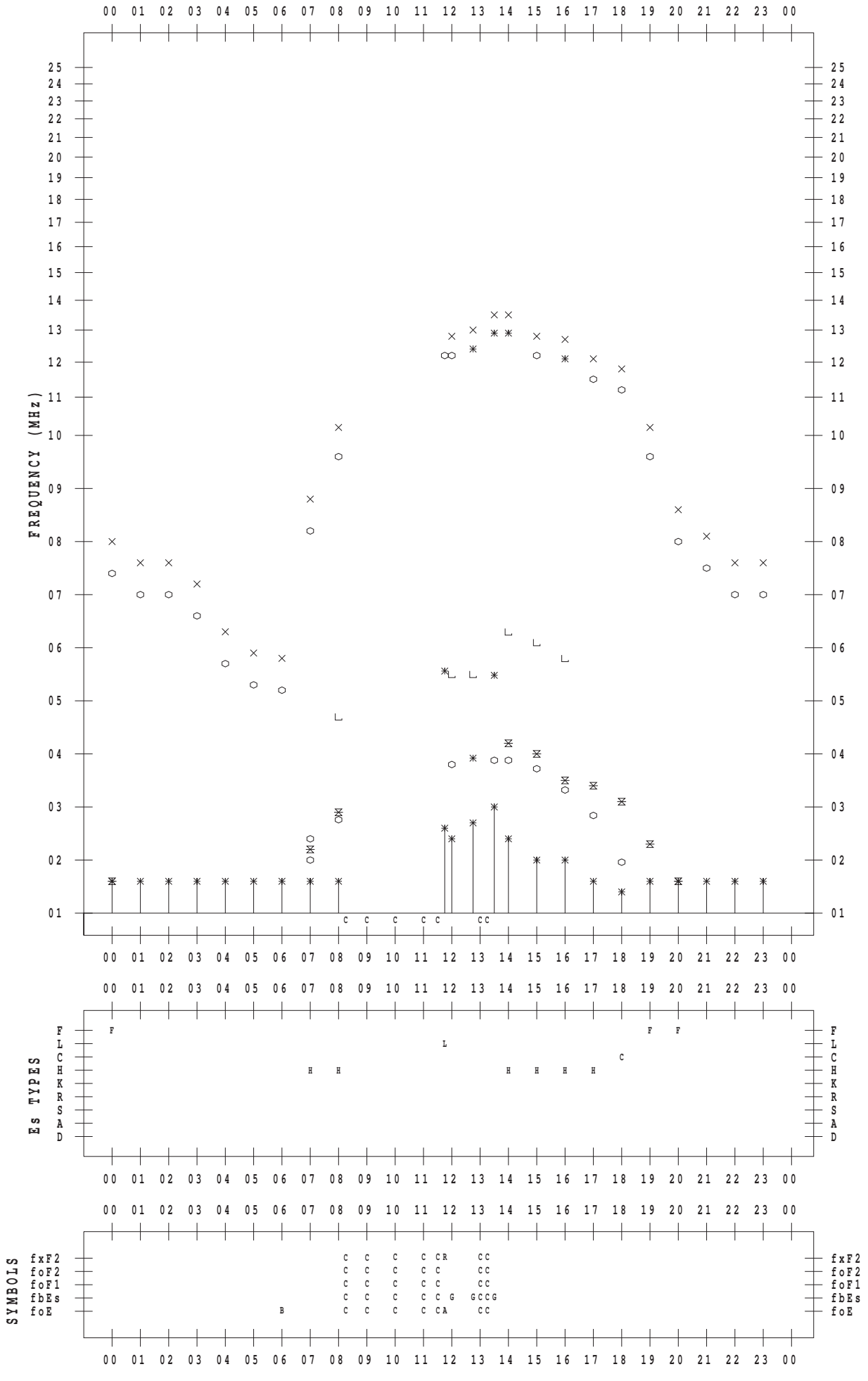
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/18

135 °E MEAN TIME



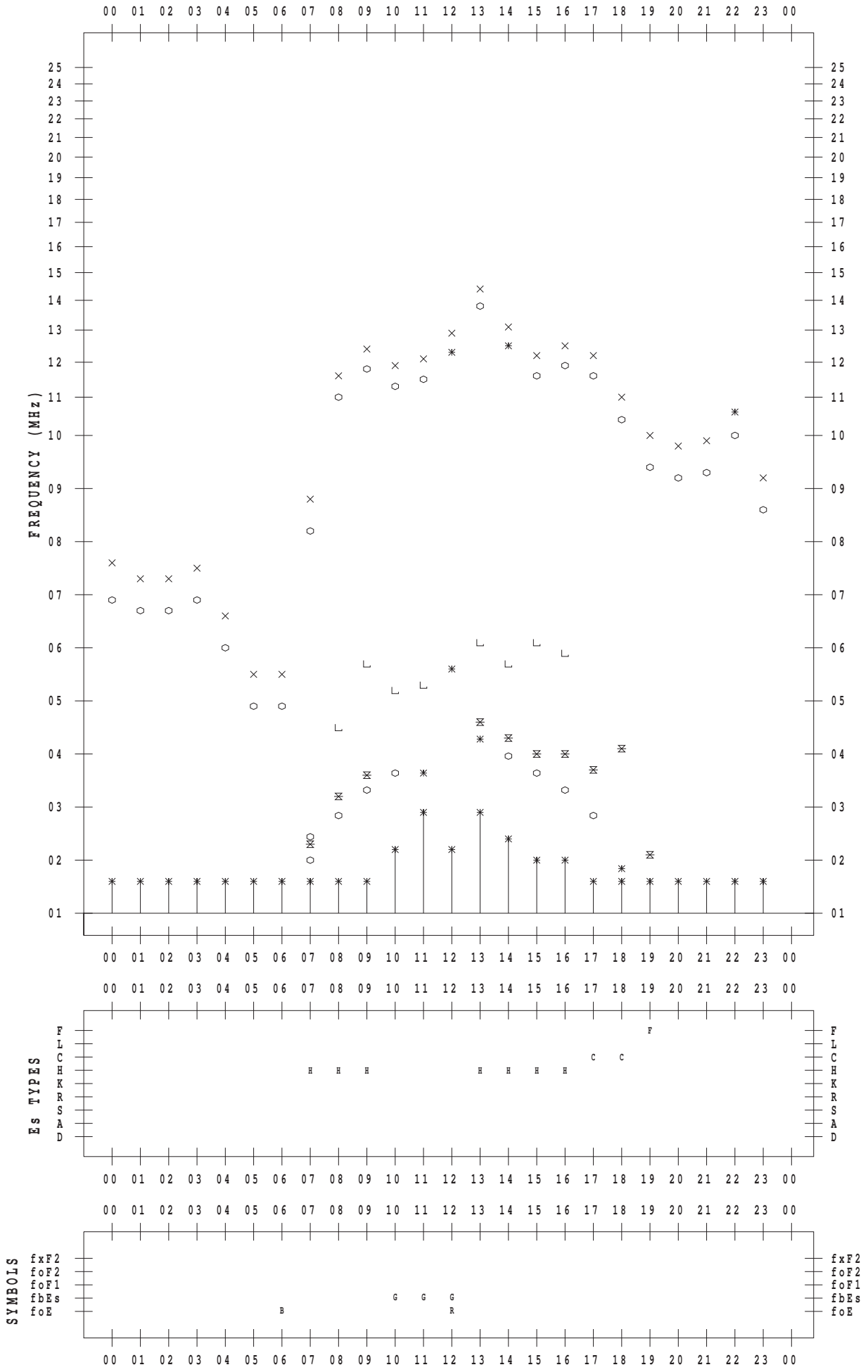
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/19

135 °E MEAN TIME



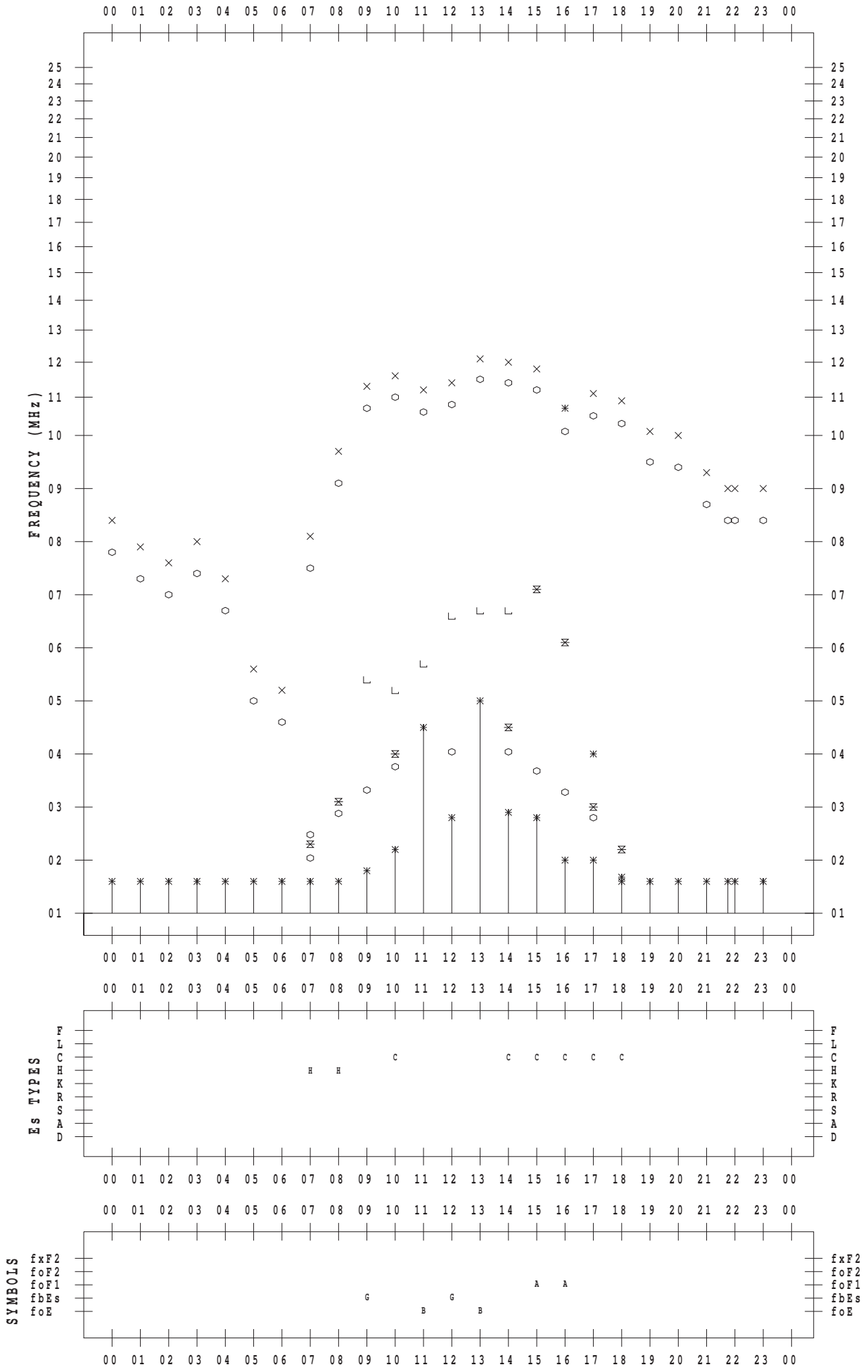
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/20

135 °E MEAN TIME



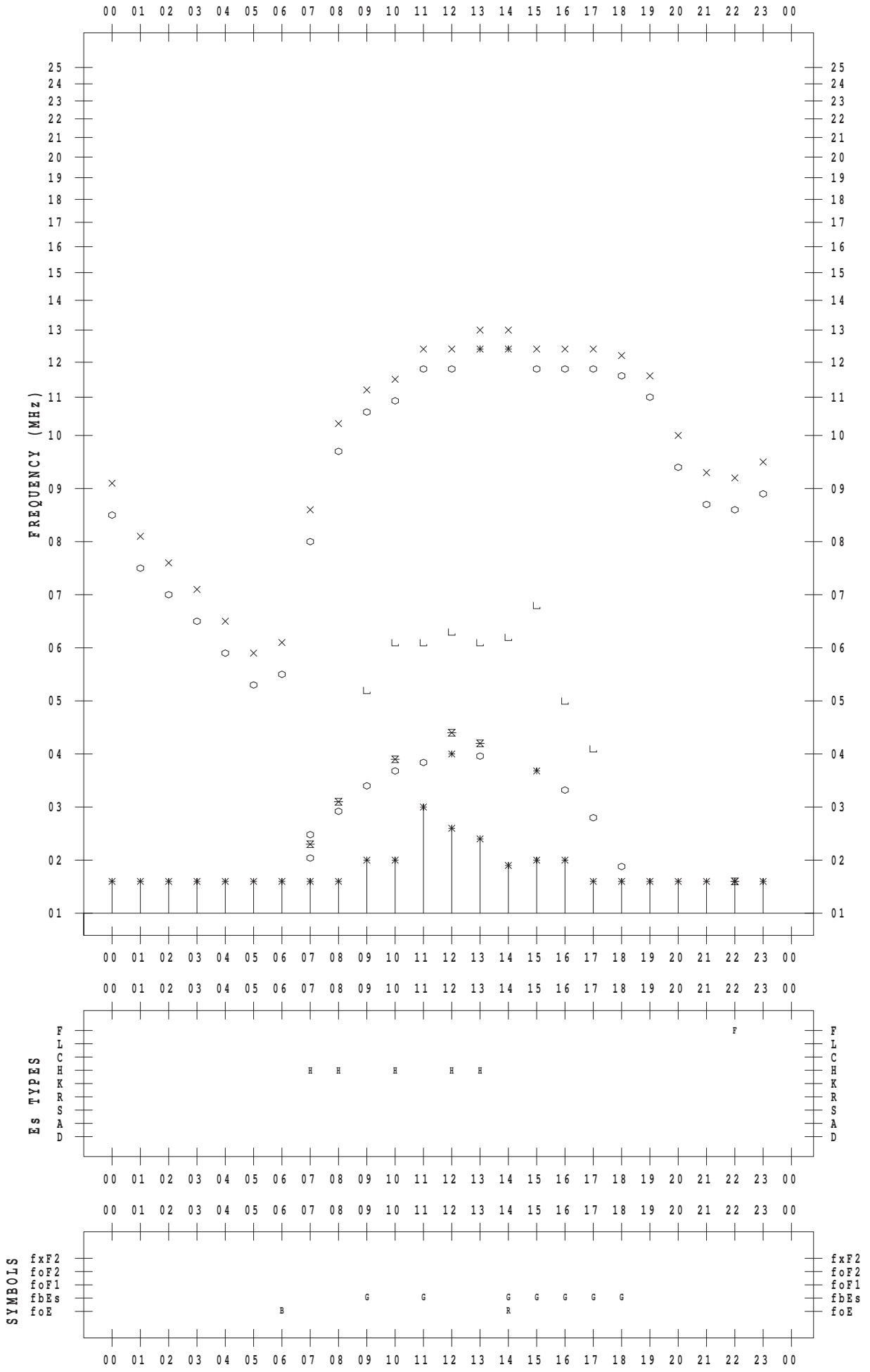
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/21

135 °E MEAN TIME



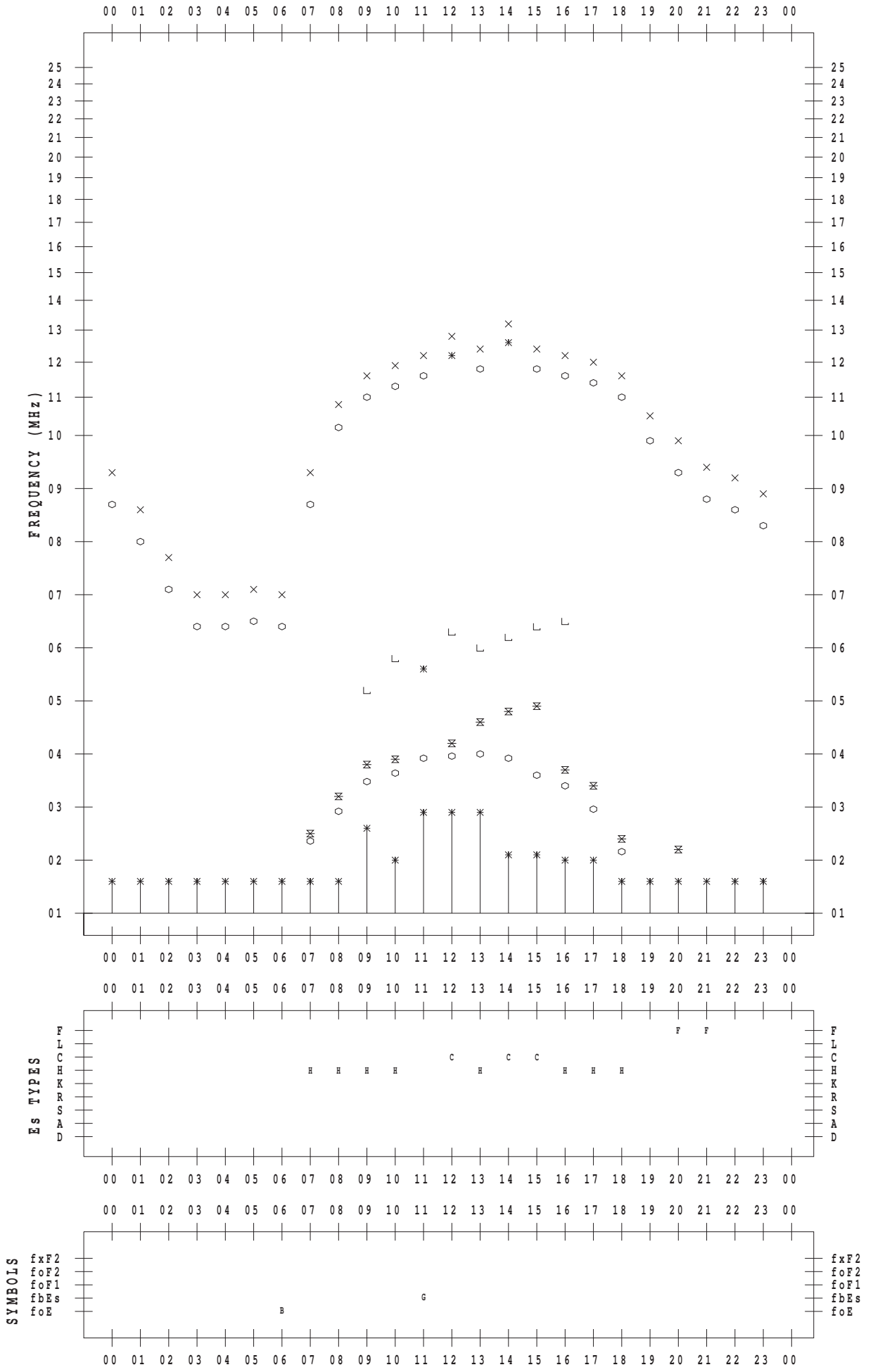
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/22

135 °E MEAN TIME



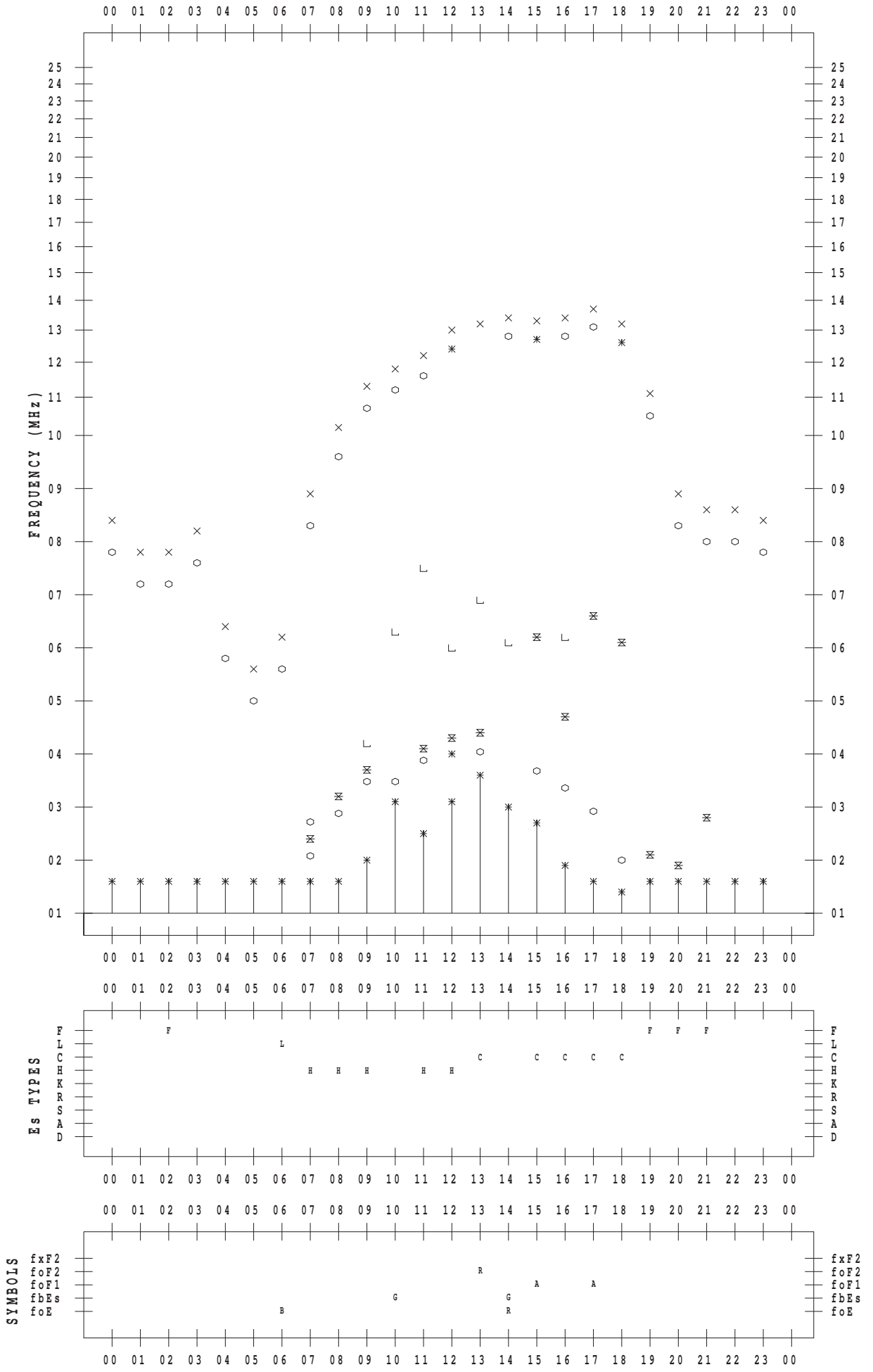
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/23

135 °E MEAN TIME



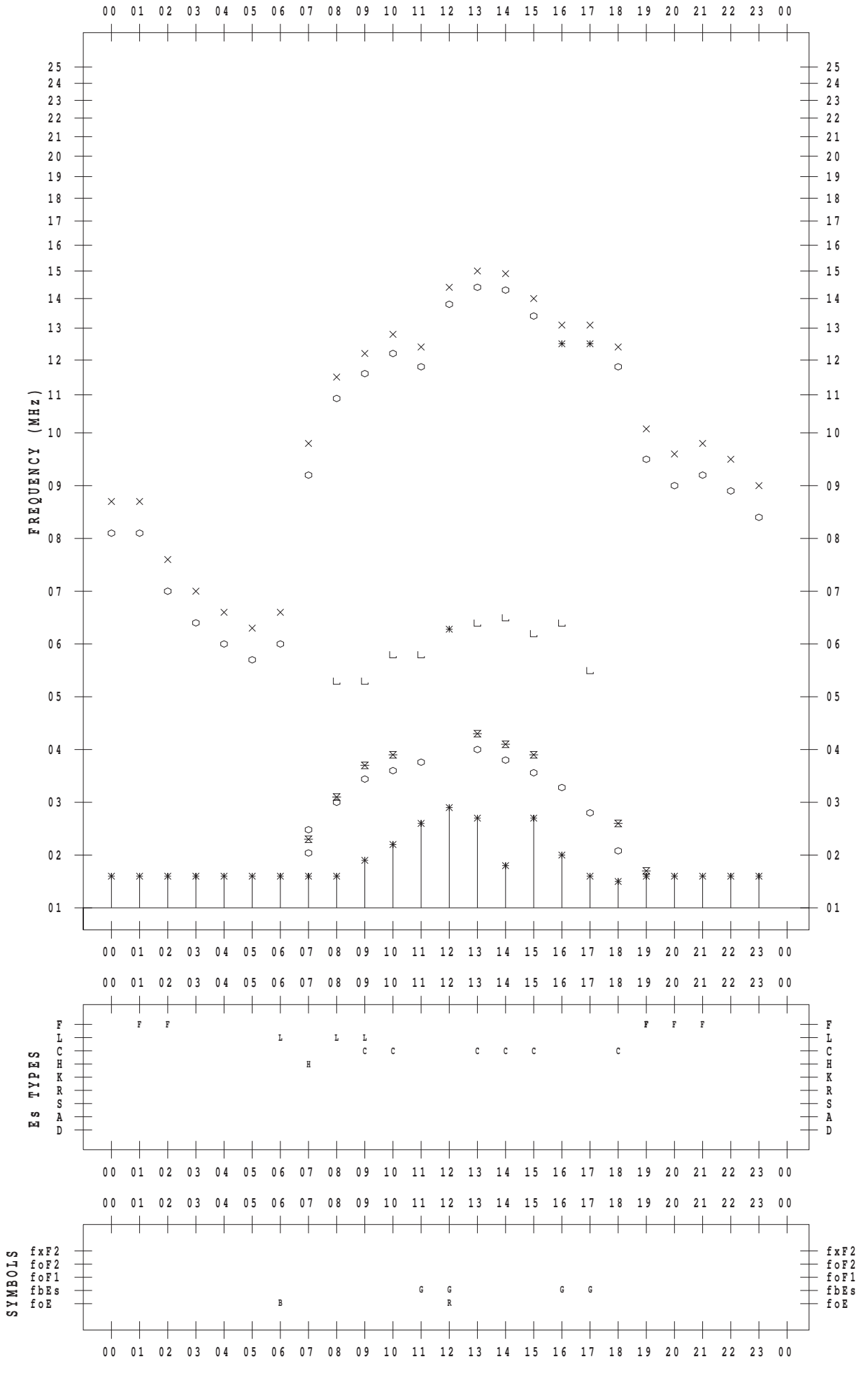
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/24

135 °E MEAN TIME



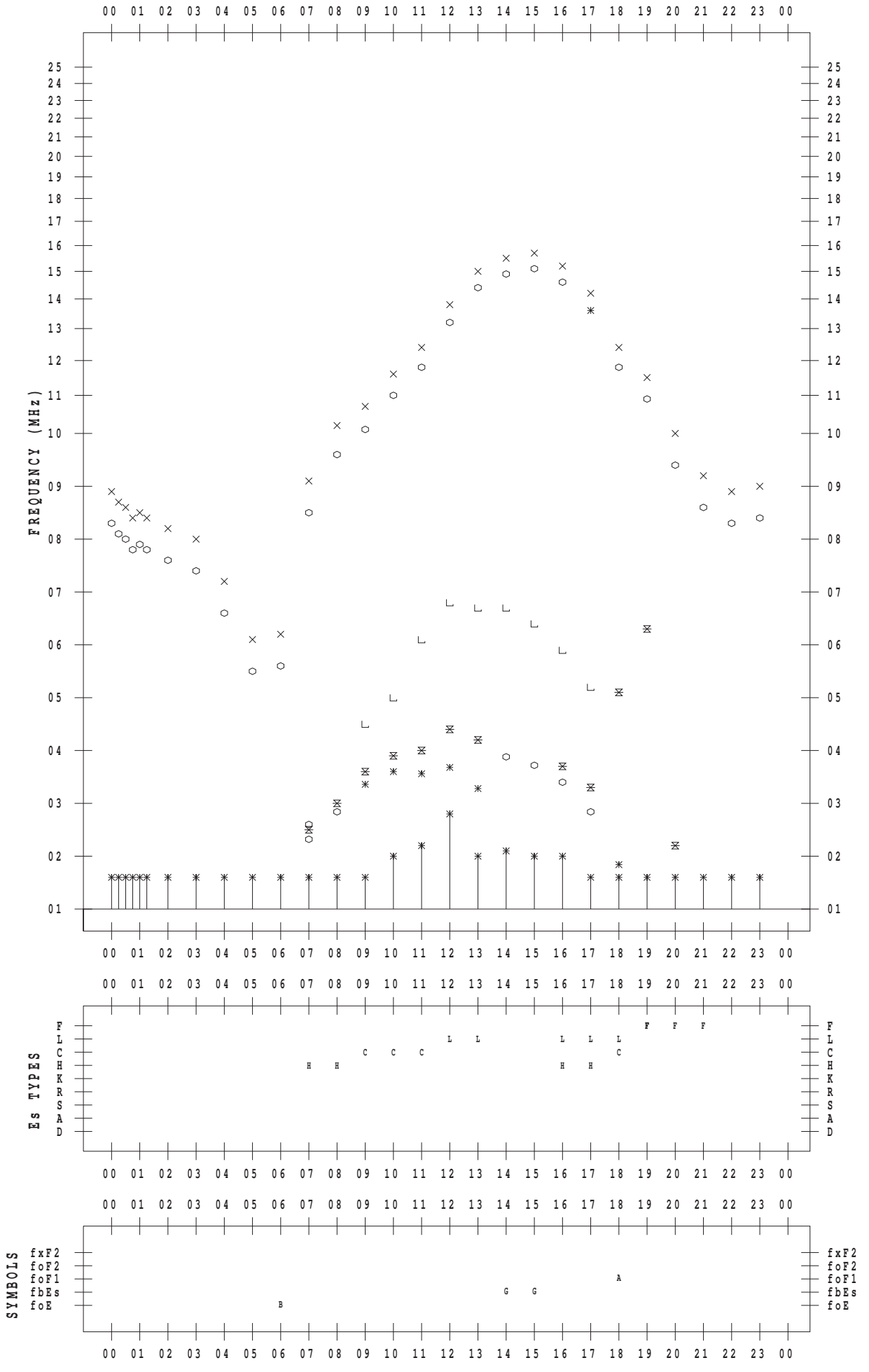
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/25

135 °E MEAN TIME



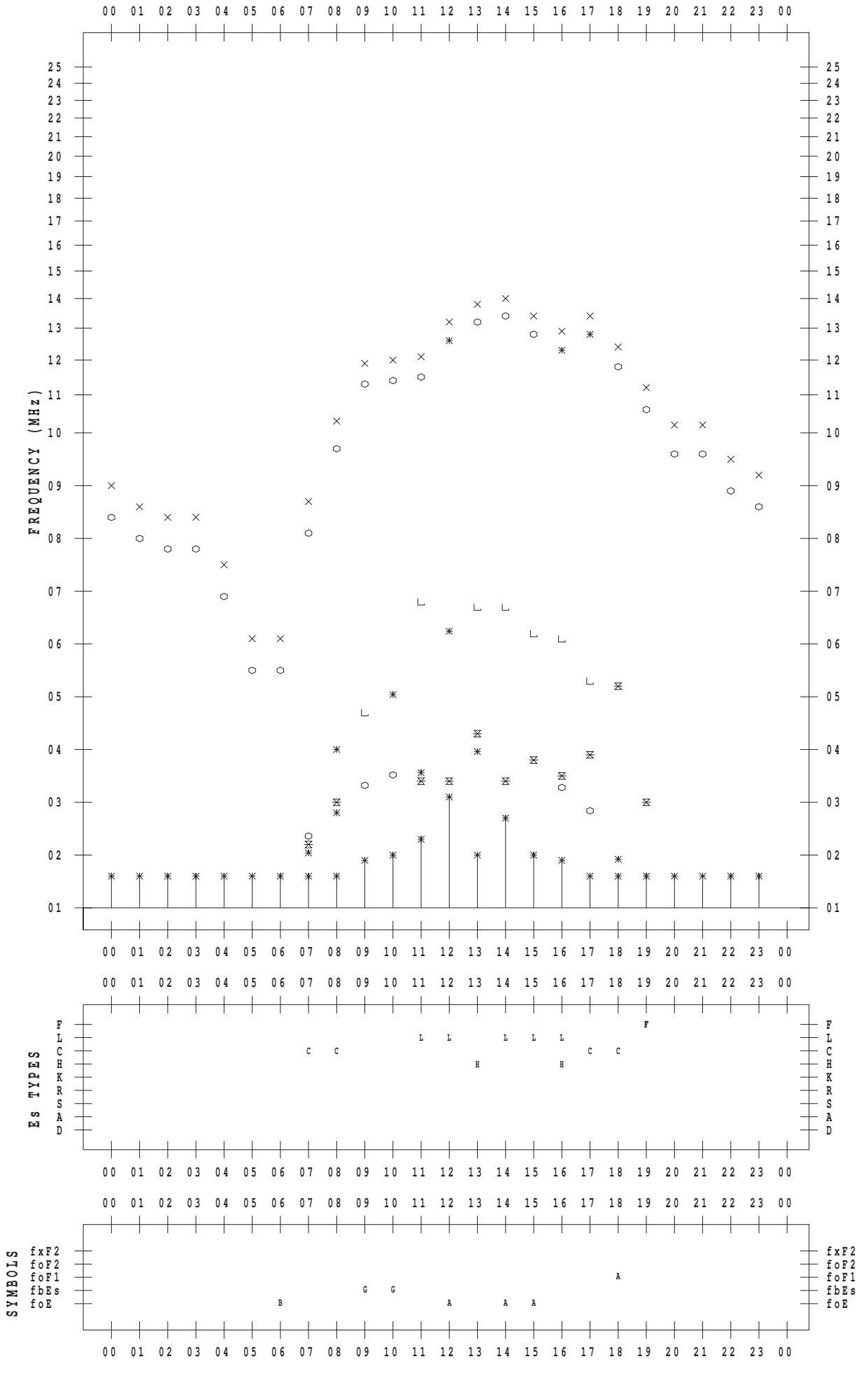
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/26

135 °E MEAN TIME



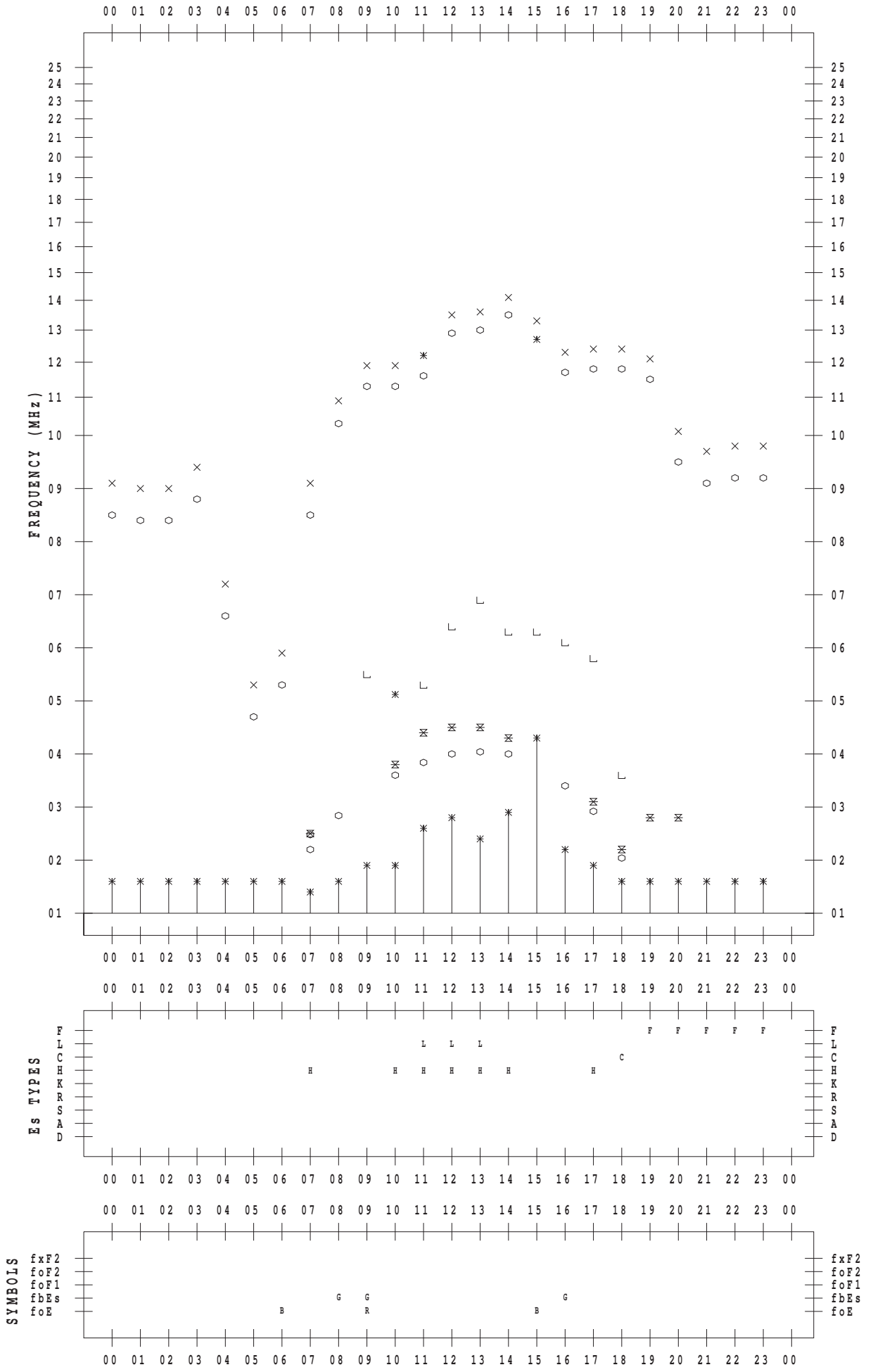
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/27

135 °E MEAN TIME



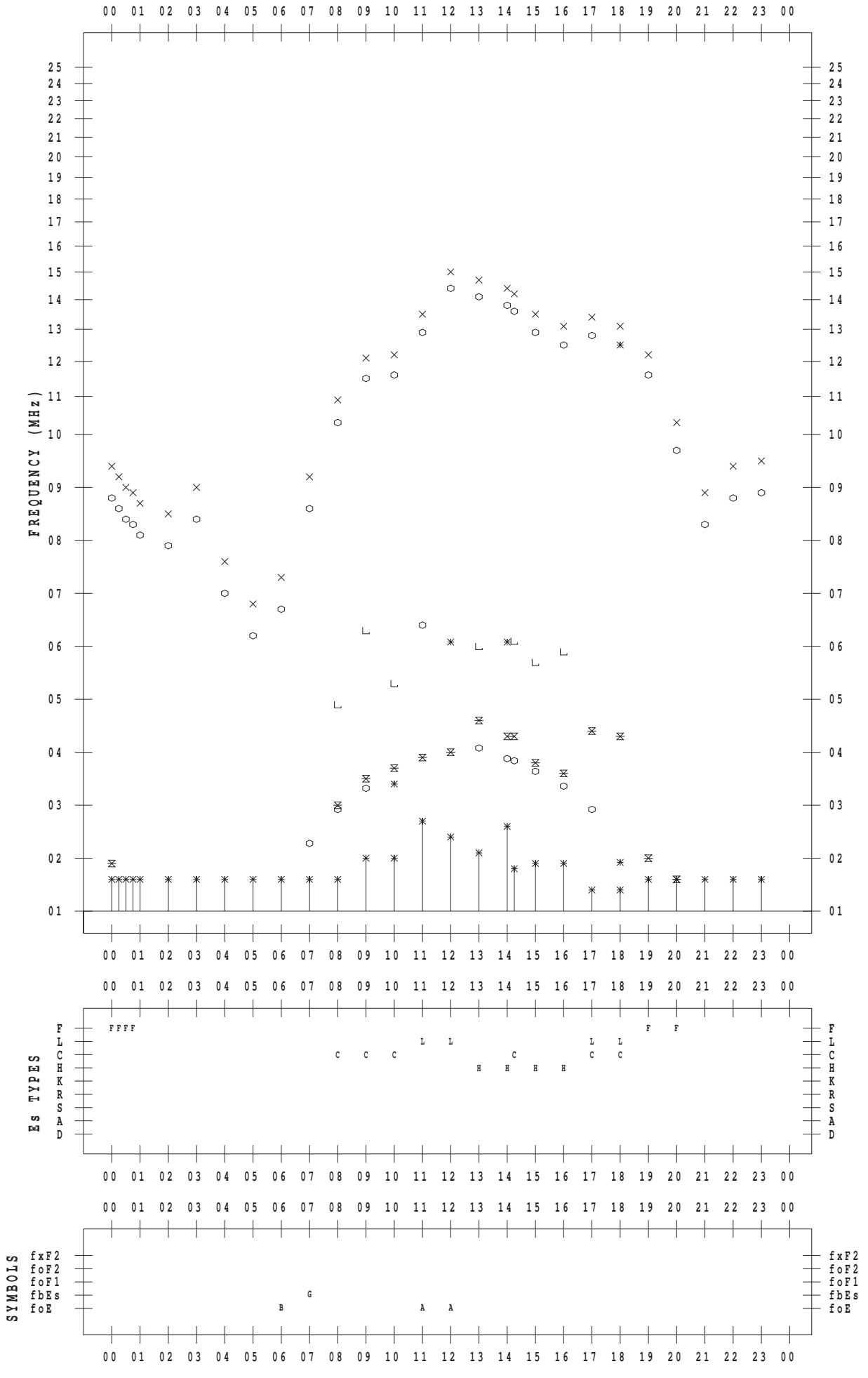
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/28

135 °E MEAN TIME



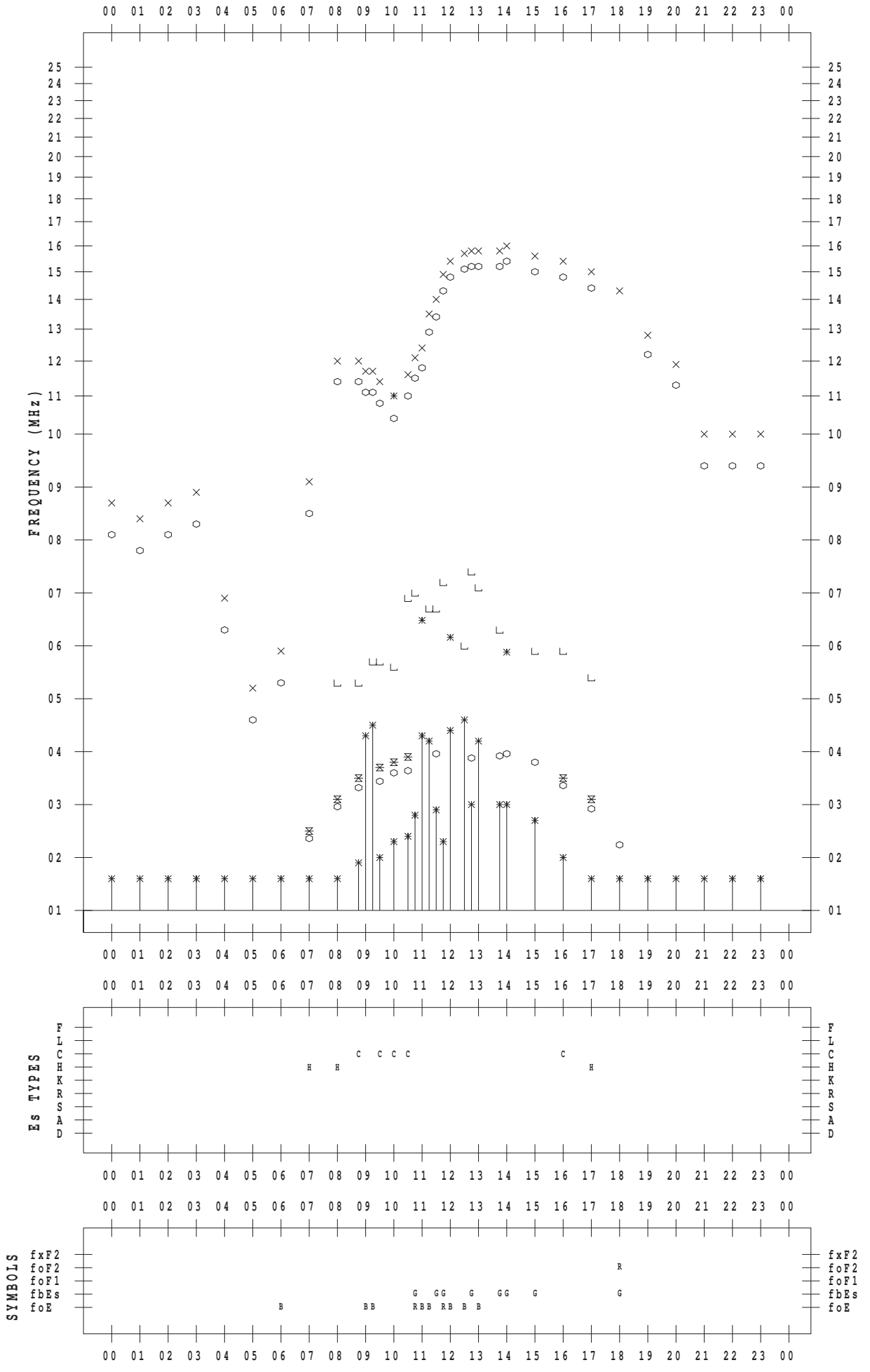
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/29

135 °E MEAN TIME



f-PLOT DATA

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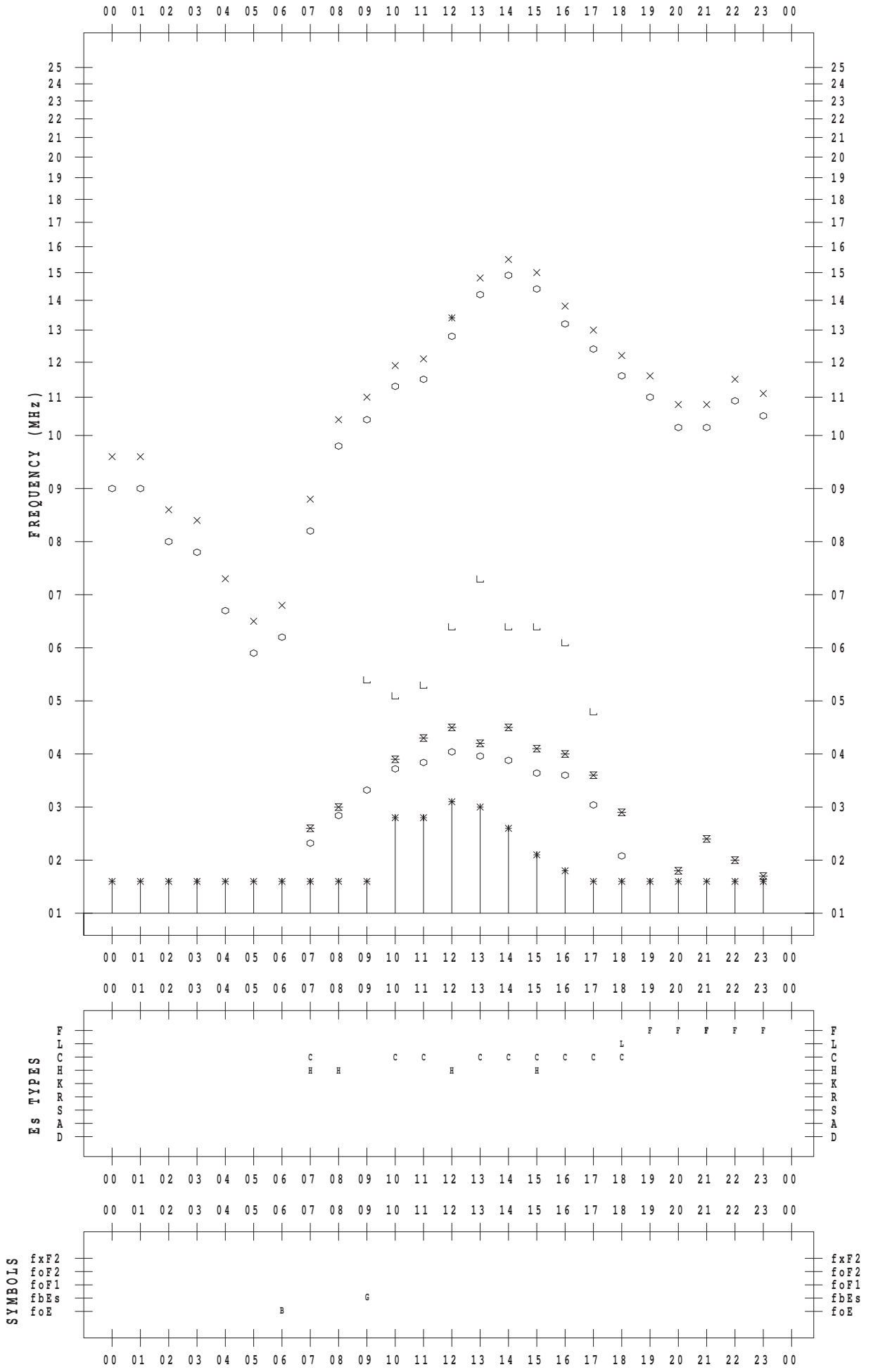
STATION : Yamagawa

DATE : 2014/ 3/30

135 °E MEAN TIME



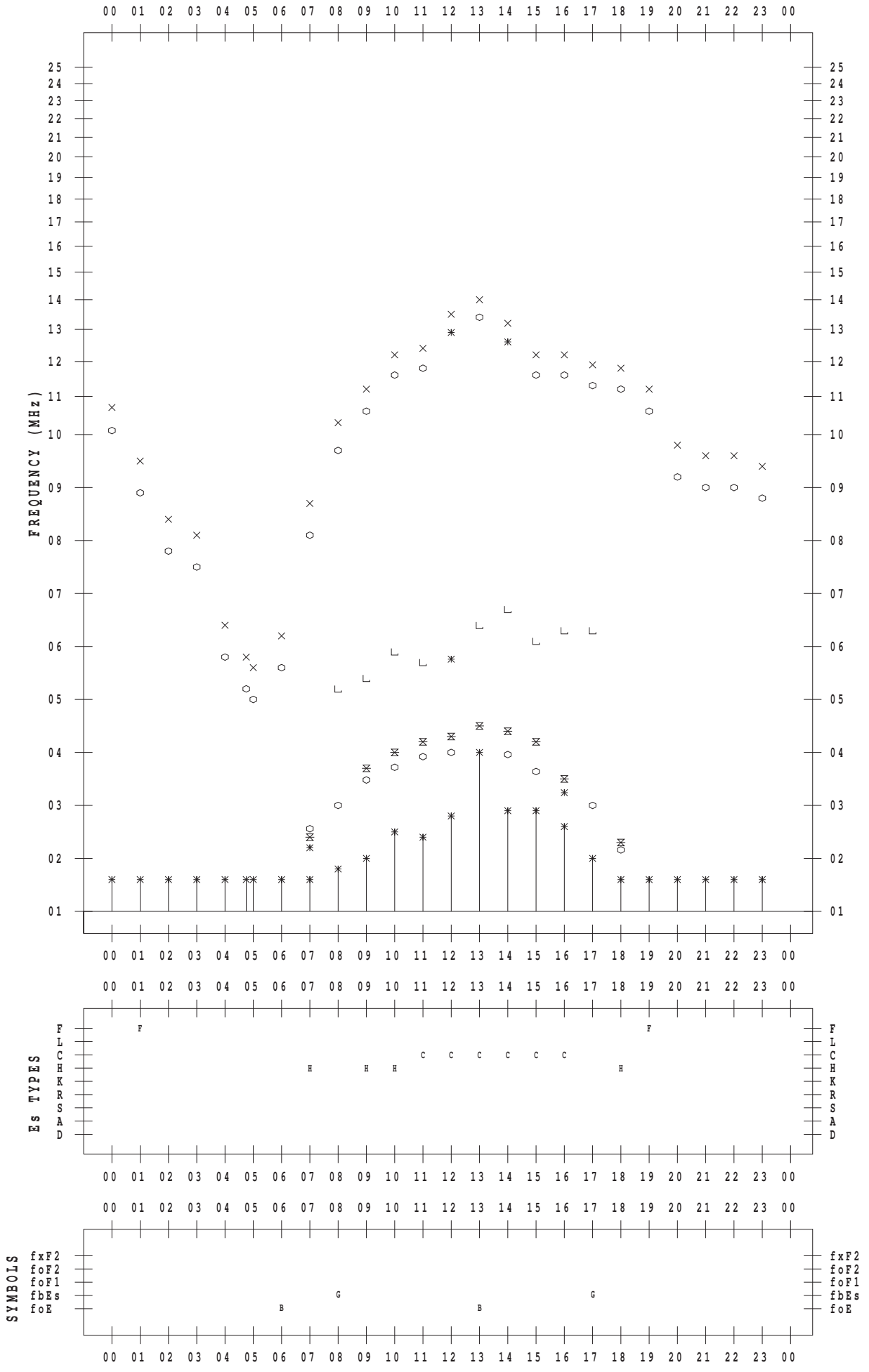
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 3/31

135 °E MEAN TIME



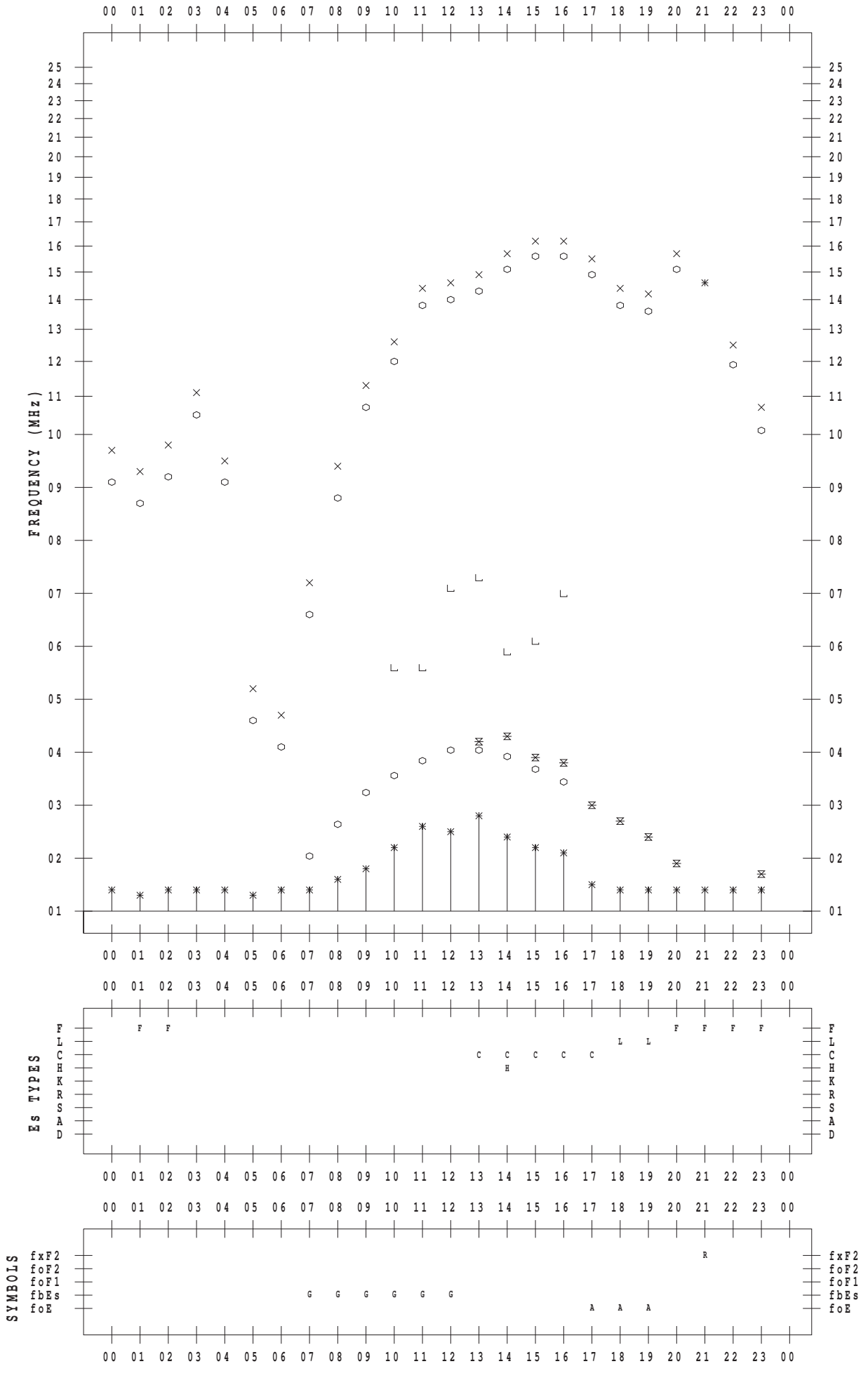
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 1

135 °E MEAN TIME



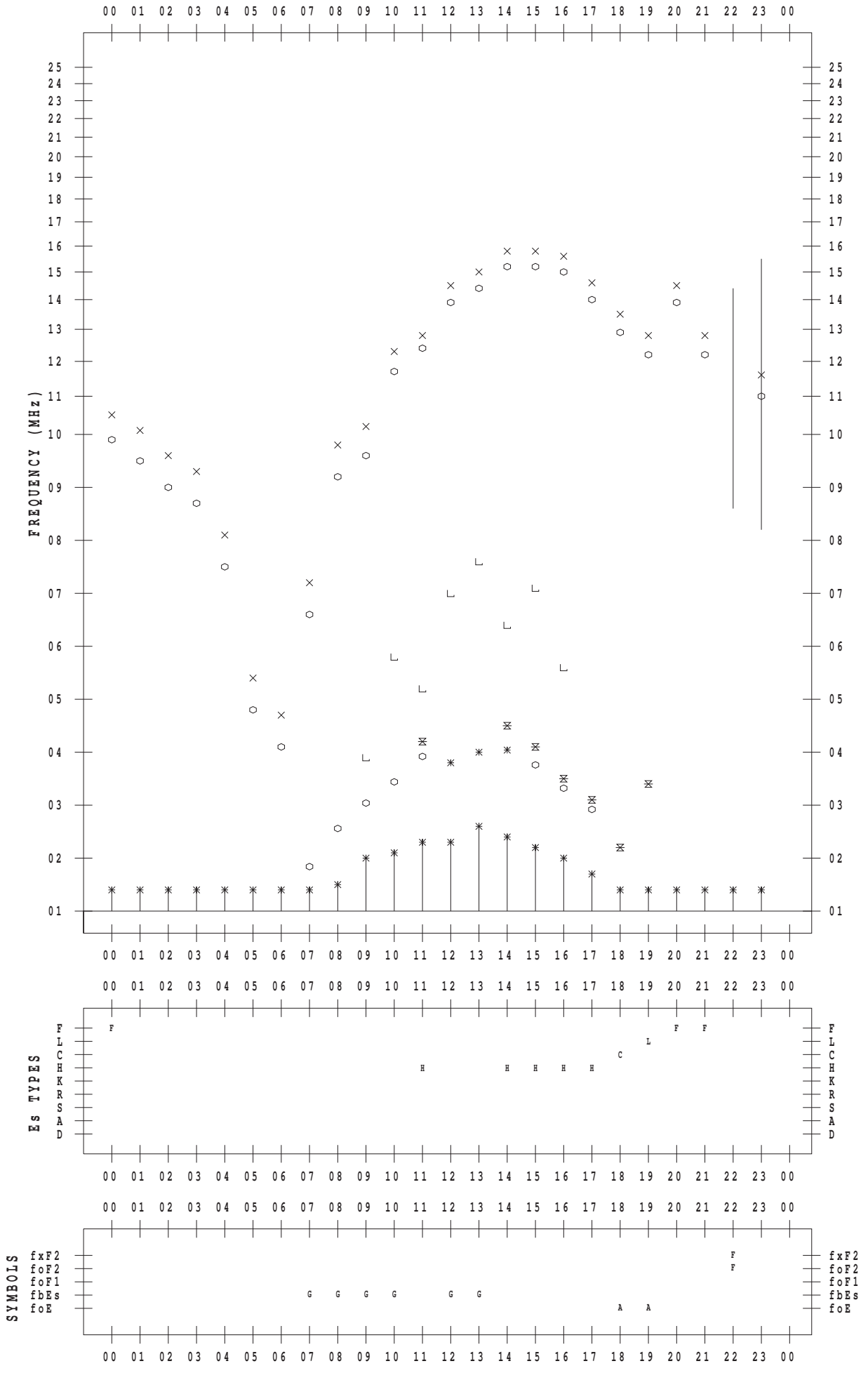
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 2

135 °E MEAN TIME



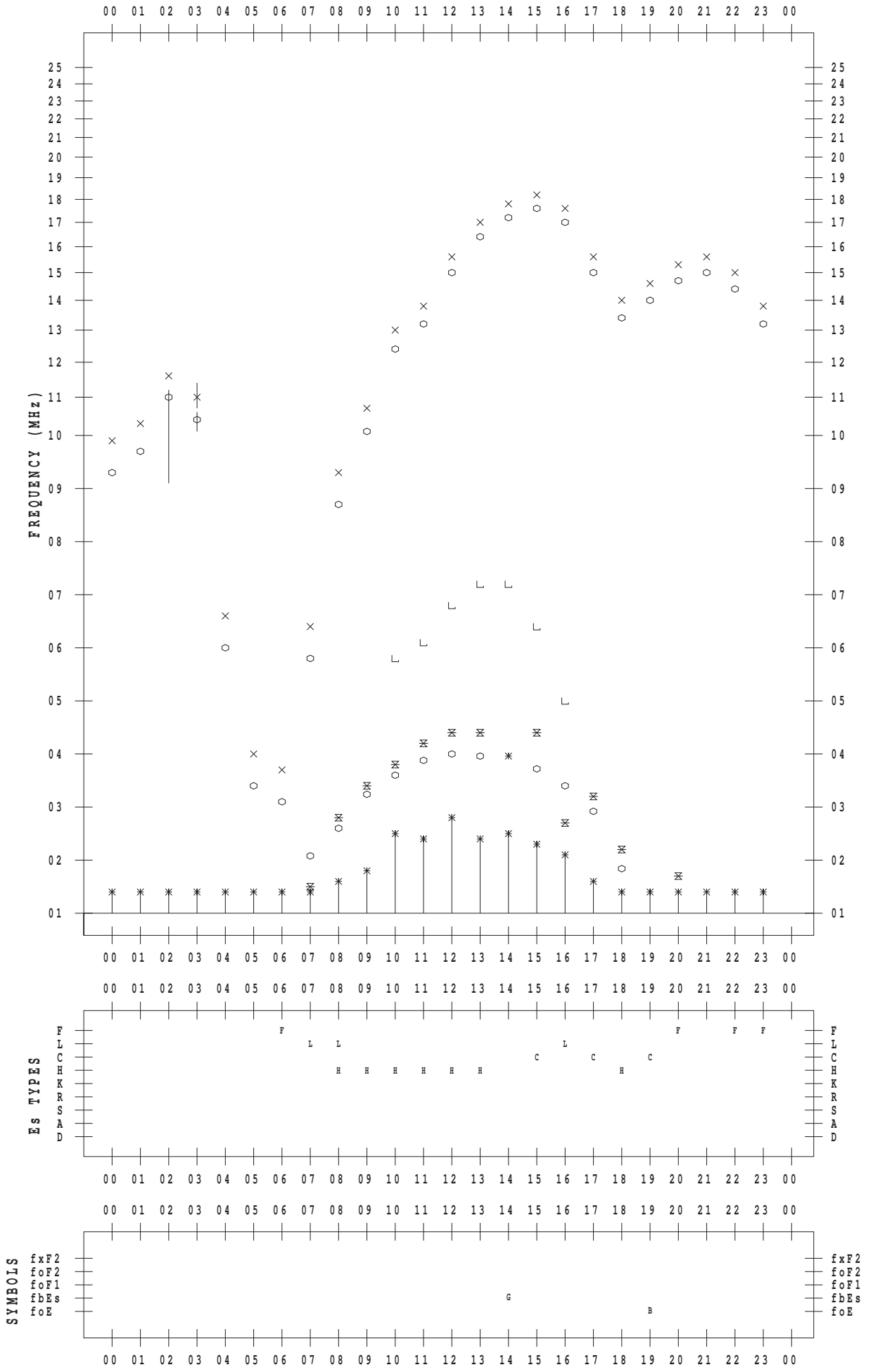
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 3

135 °E MEAN TIME



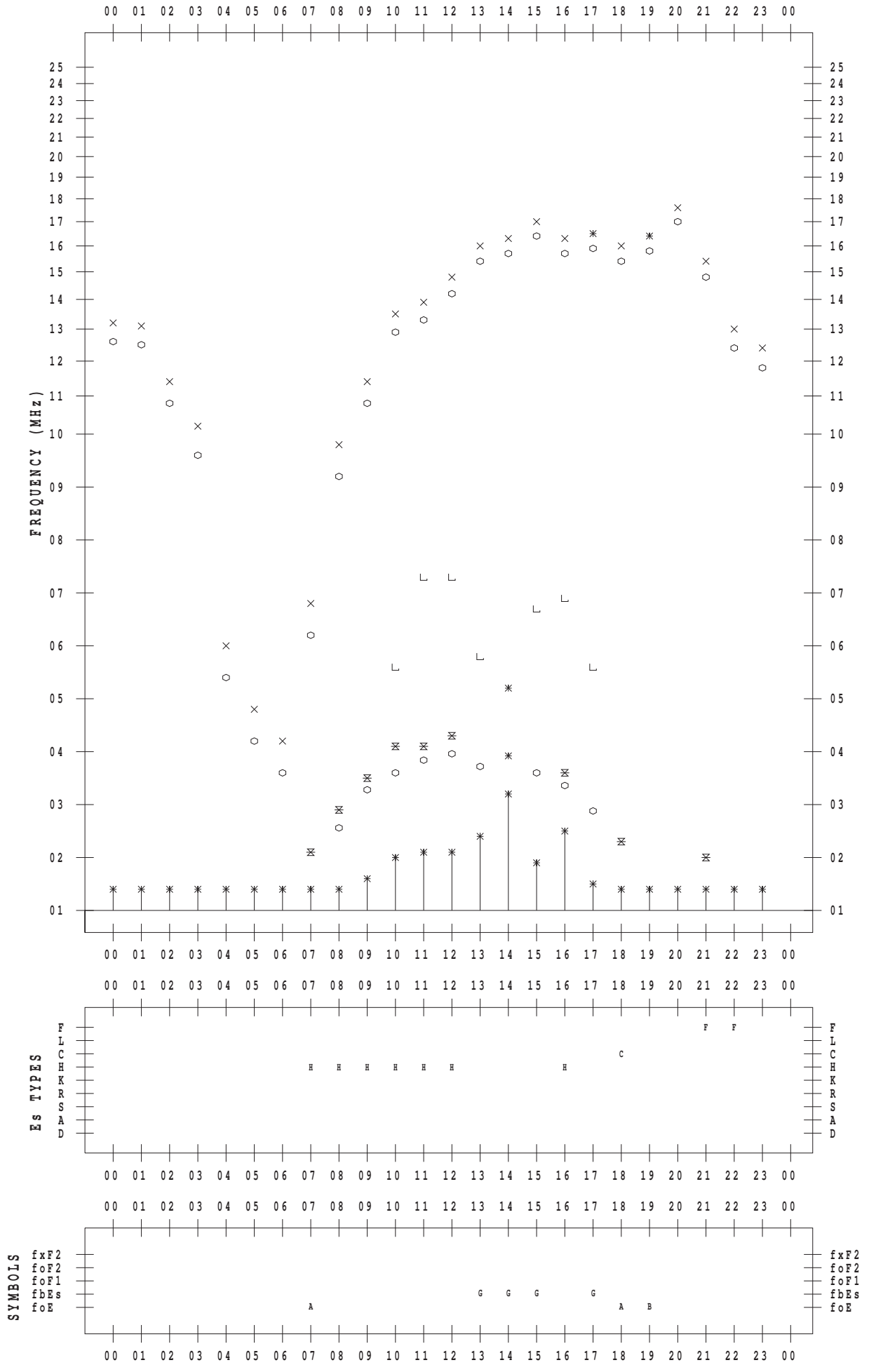
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 4

135 °E MEAN TIME



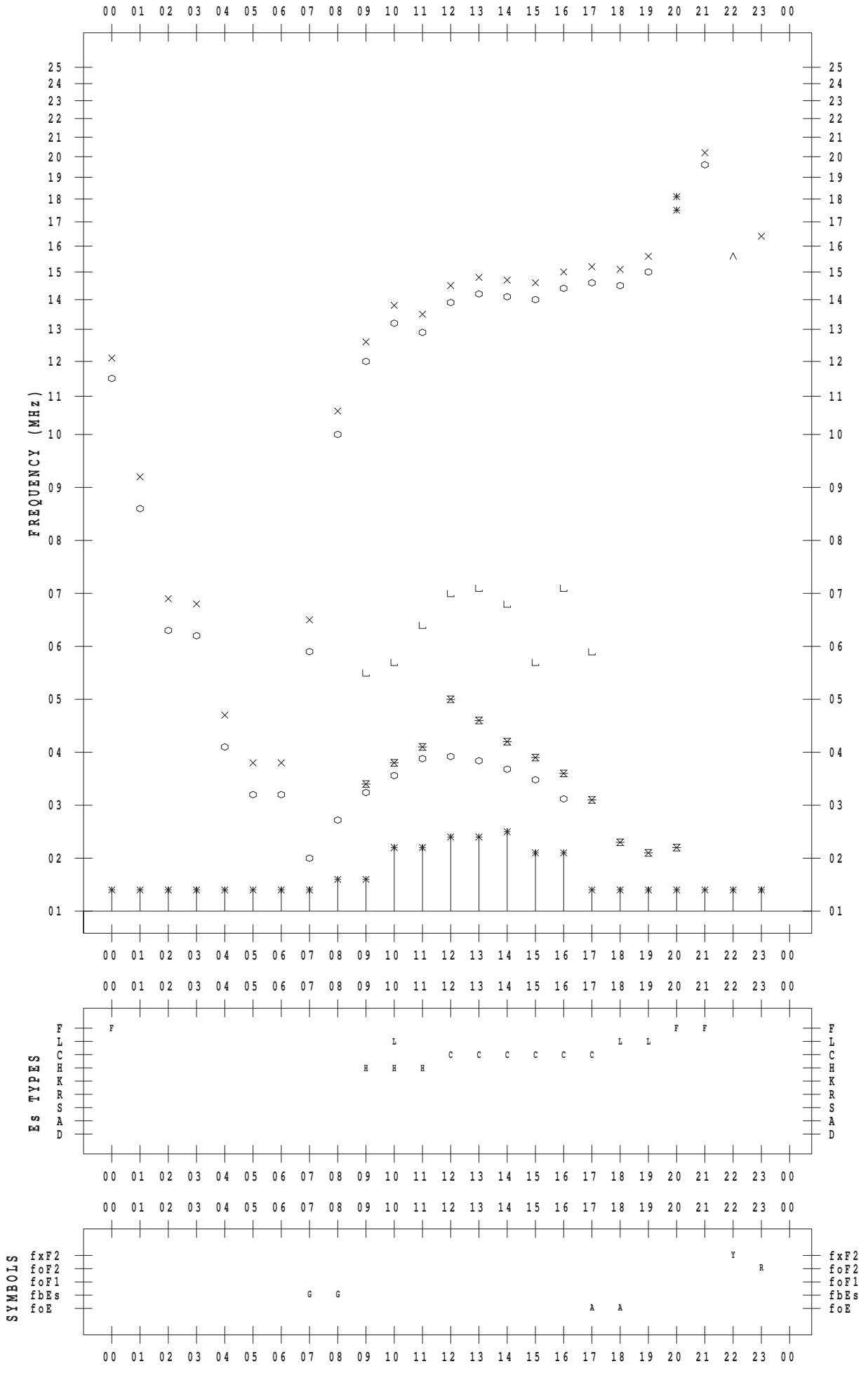
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 5

135 °E MEAN TIME



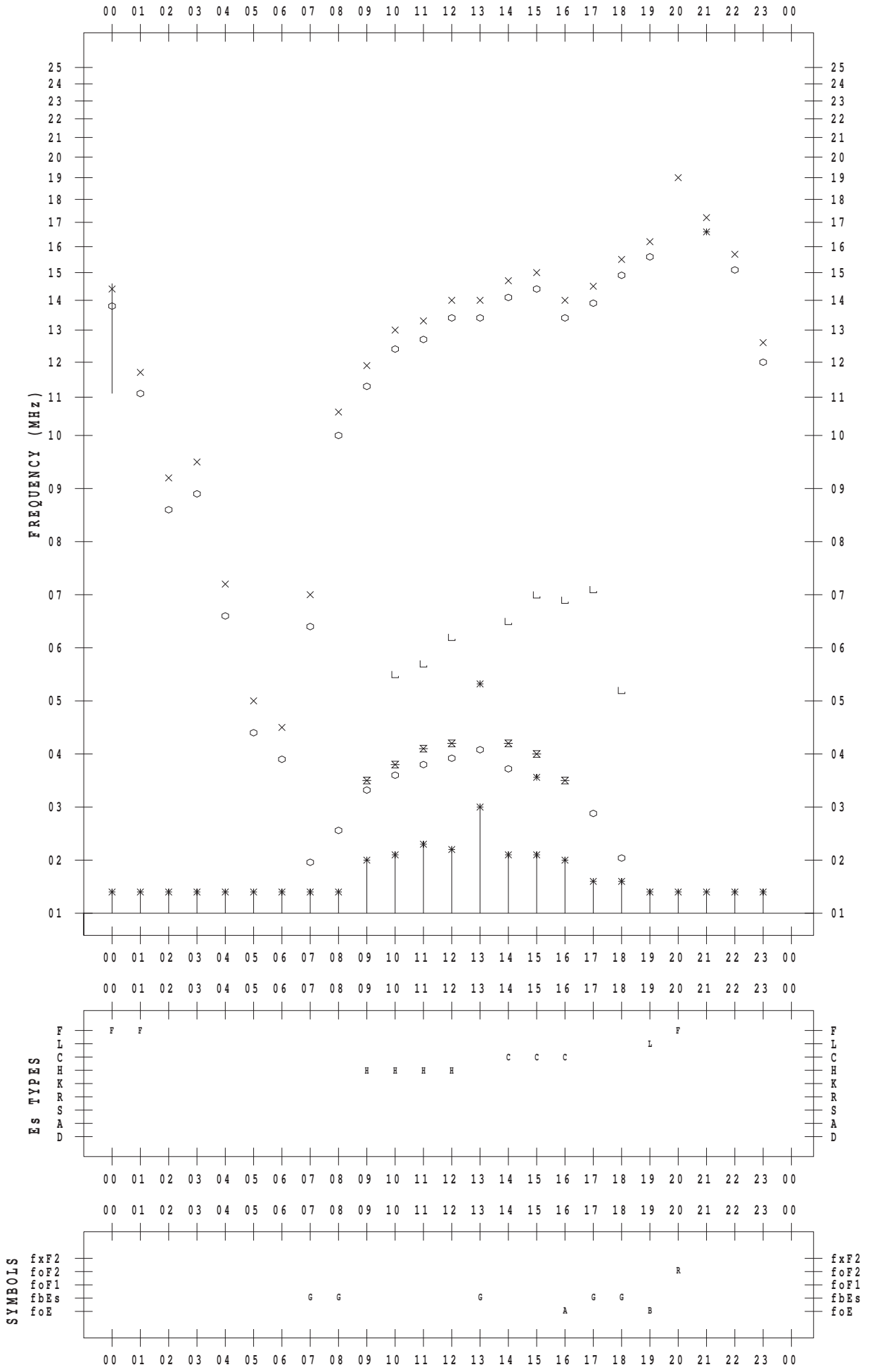
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 6

135 °E MEAN TIME



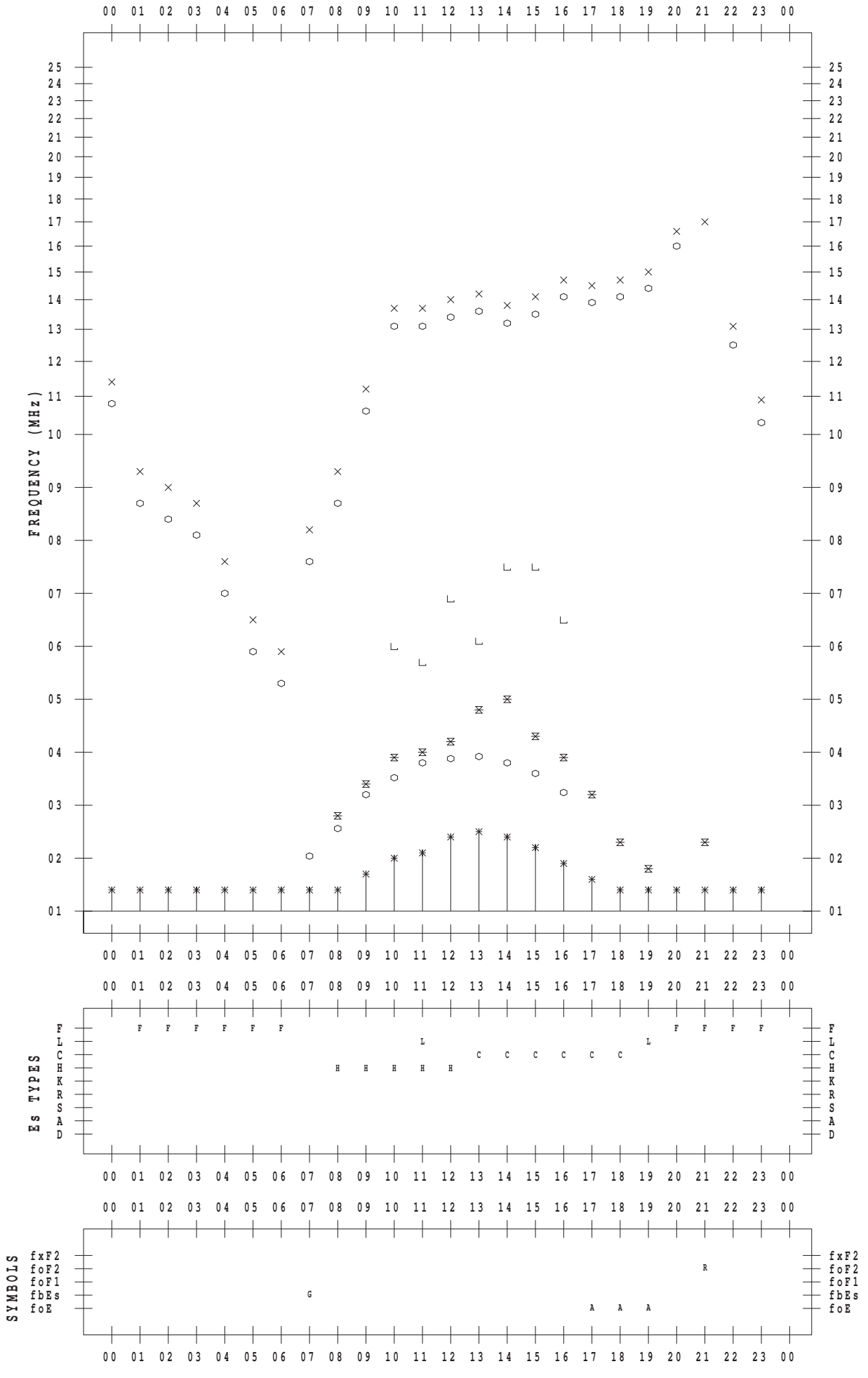
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 7

135 °E MEAN TIME



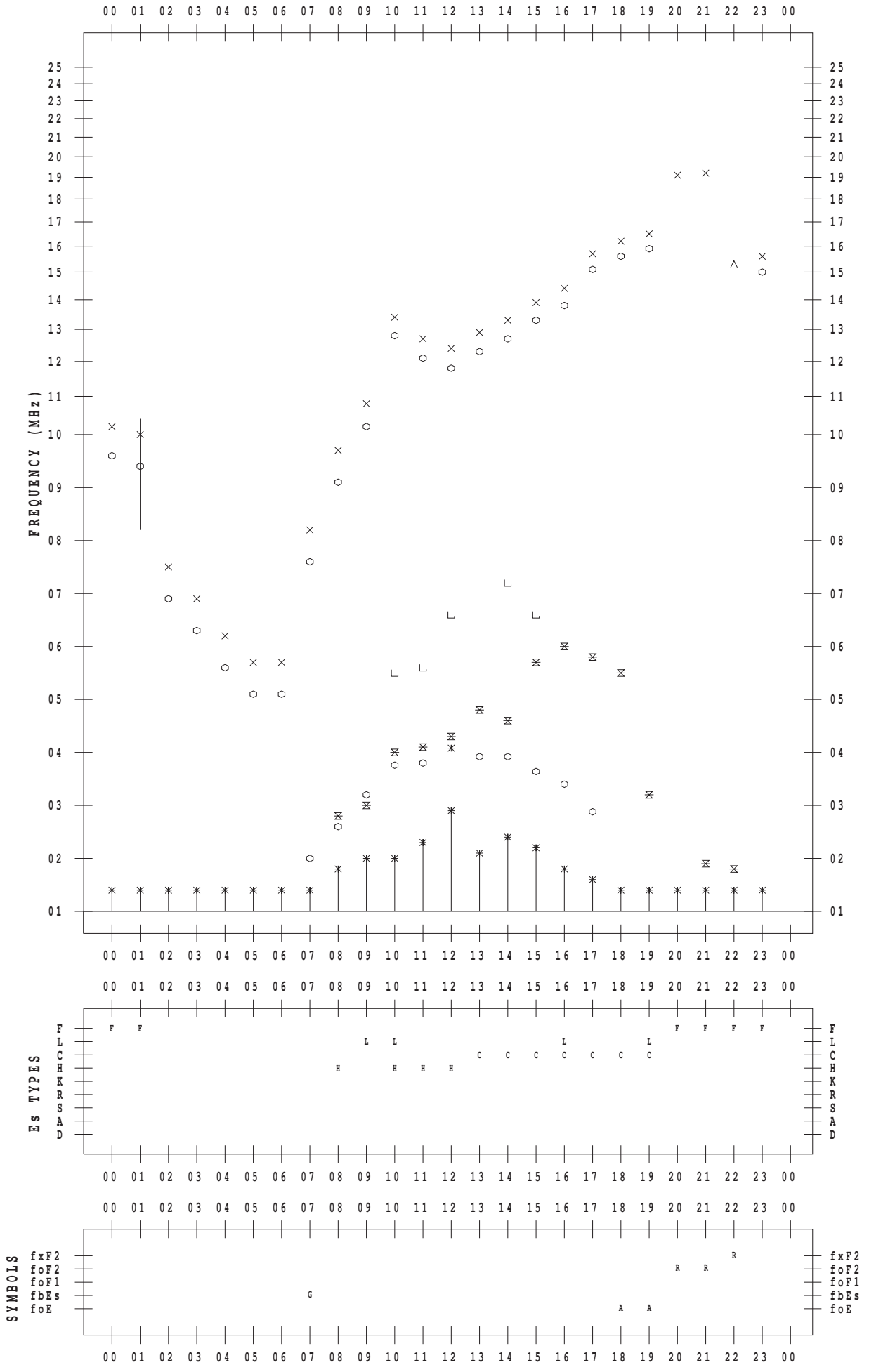
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 8

135 °E MEAN TIME



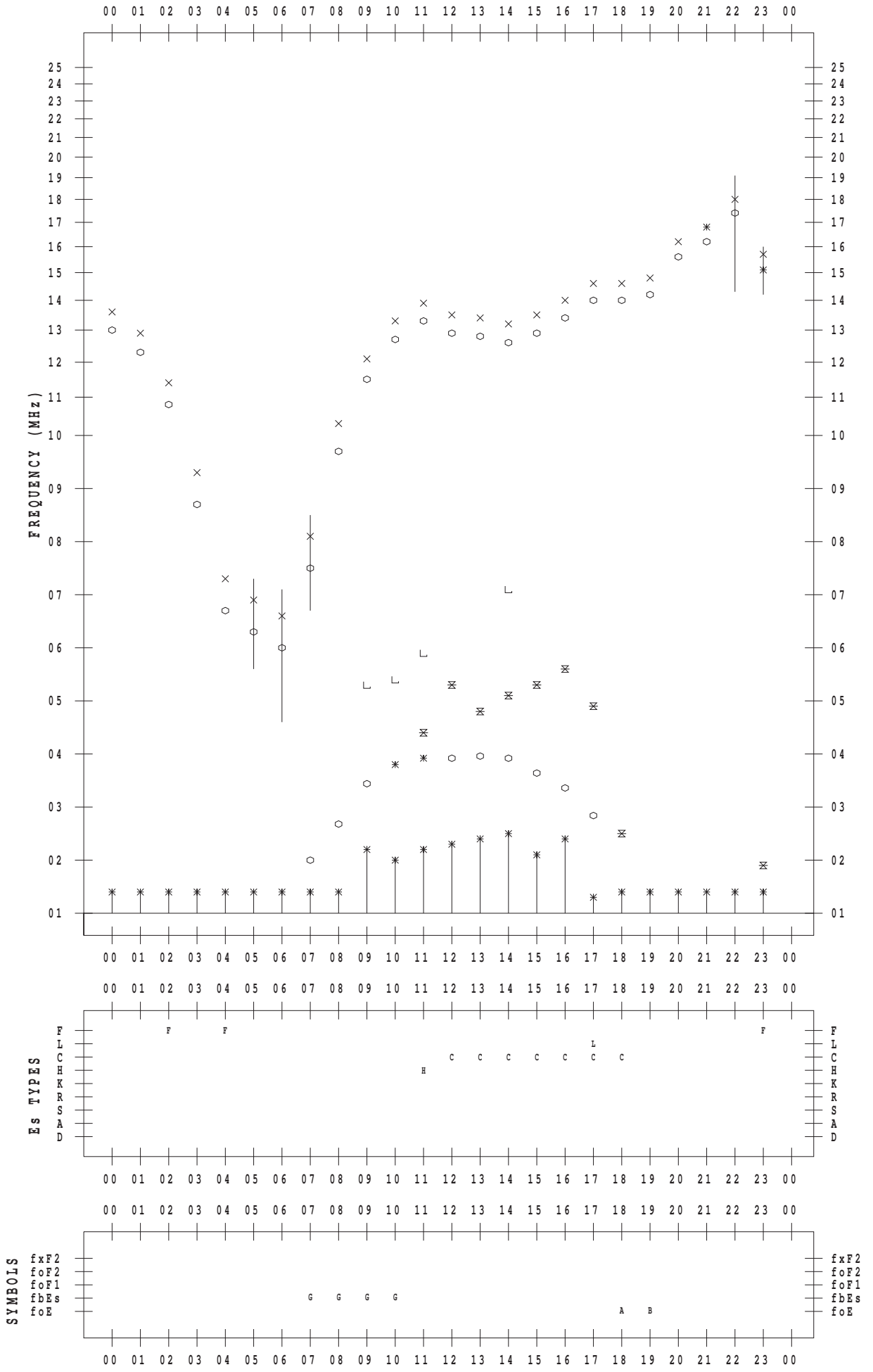
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/ 9

135 °E MEAN TIME



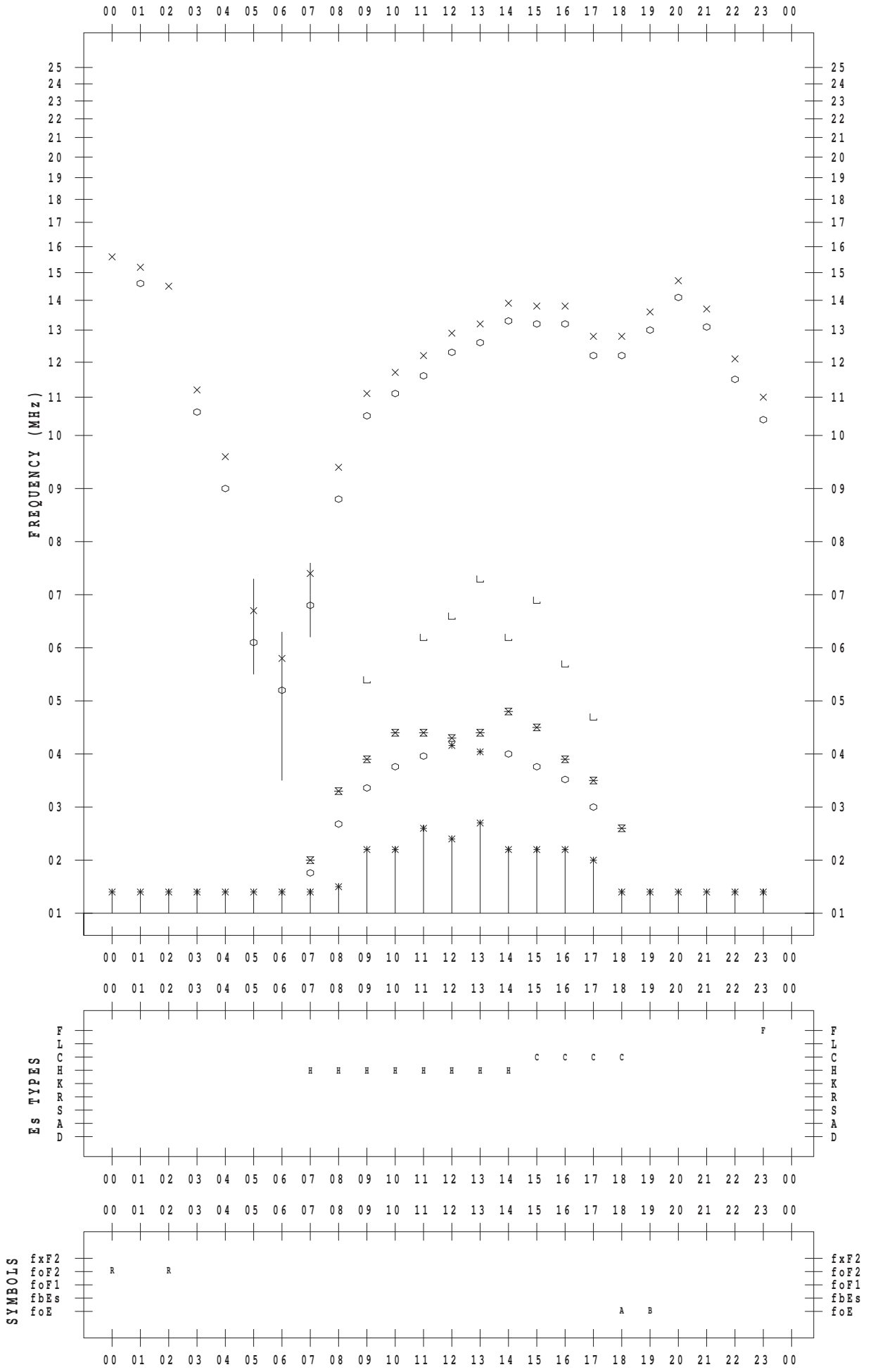
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/10

135 °E MEAN TIME



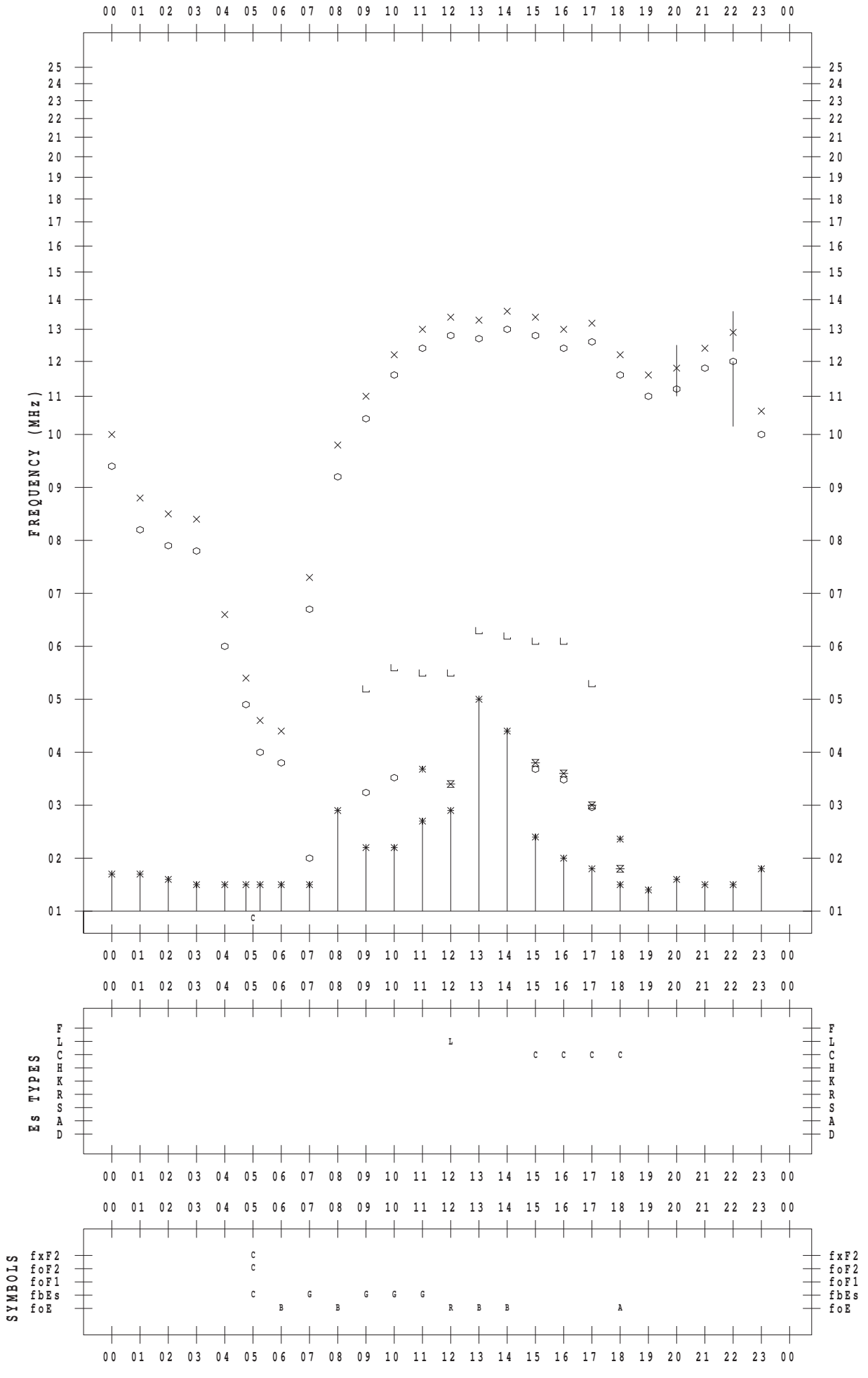
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/11

135 °E MEAN TIME



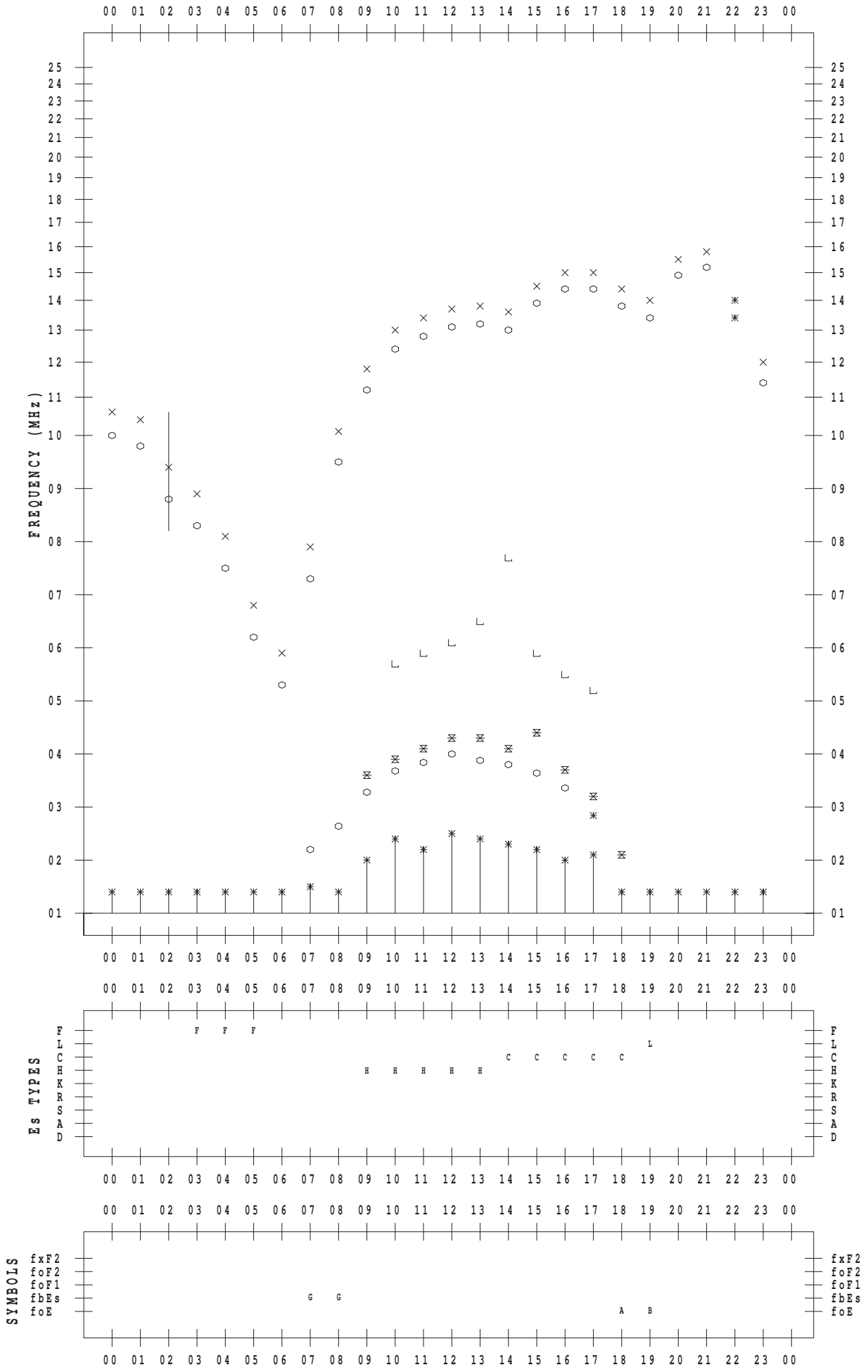
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/12

135 °E MEAN TIME



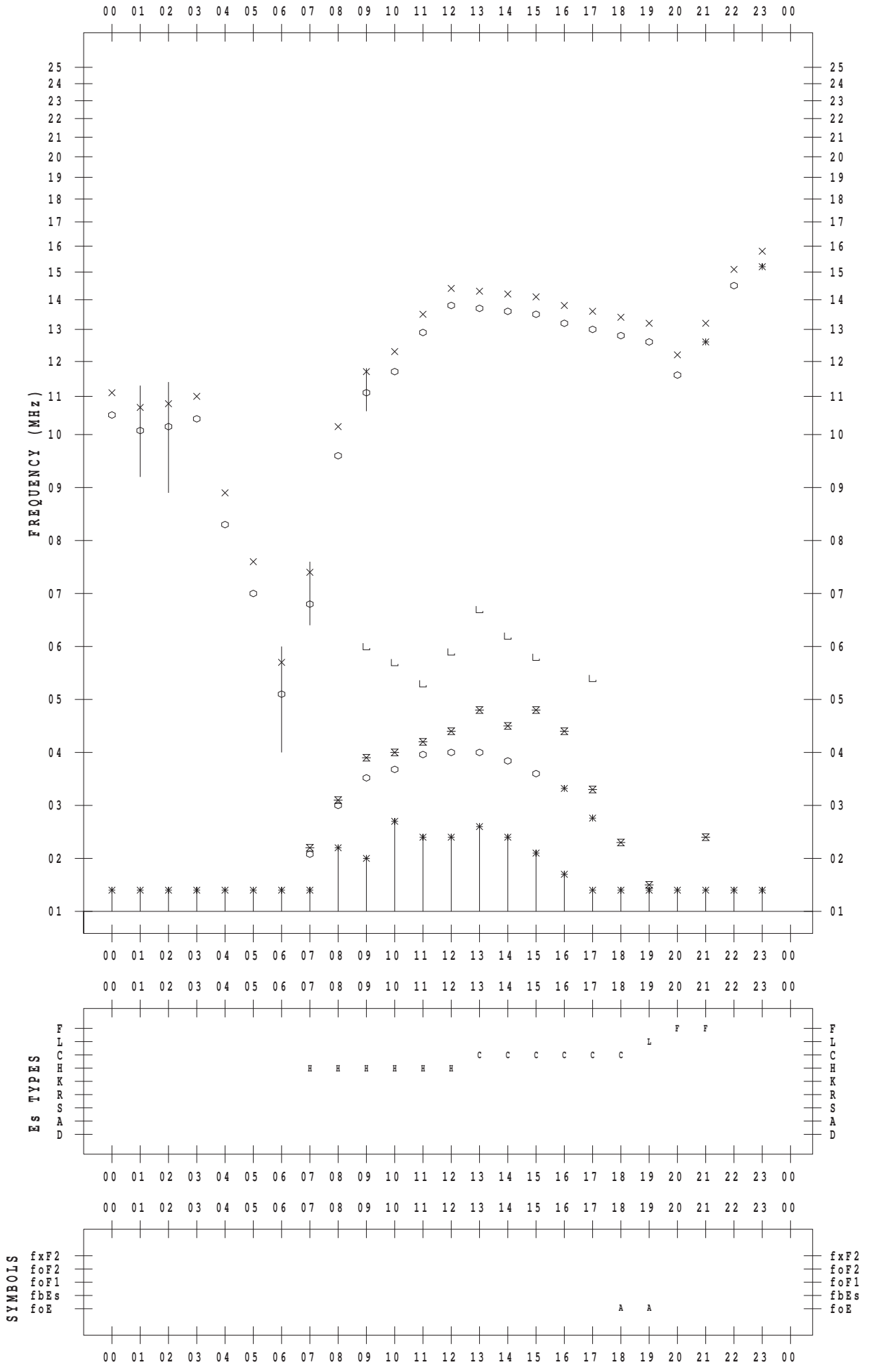
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/13

135 °E MEAN TIME



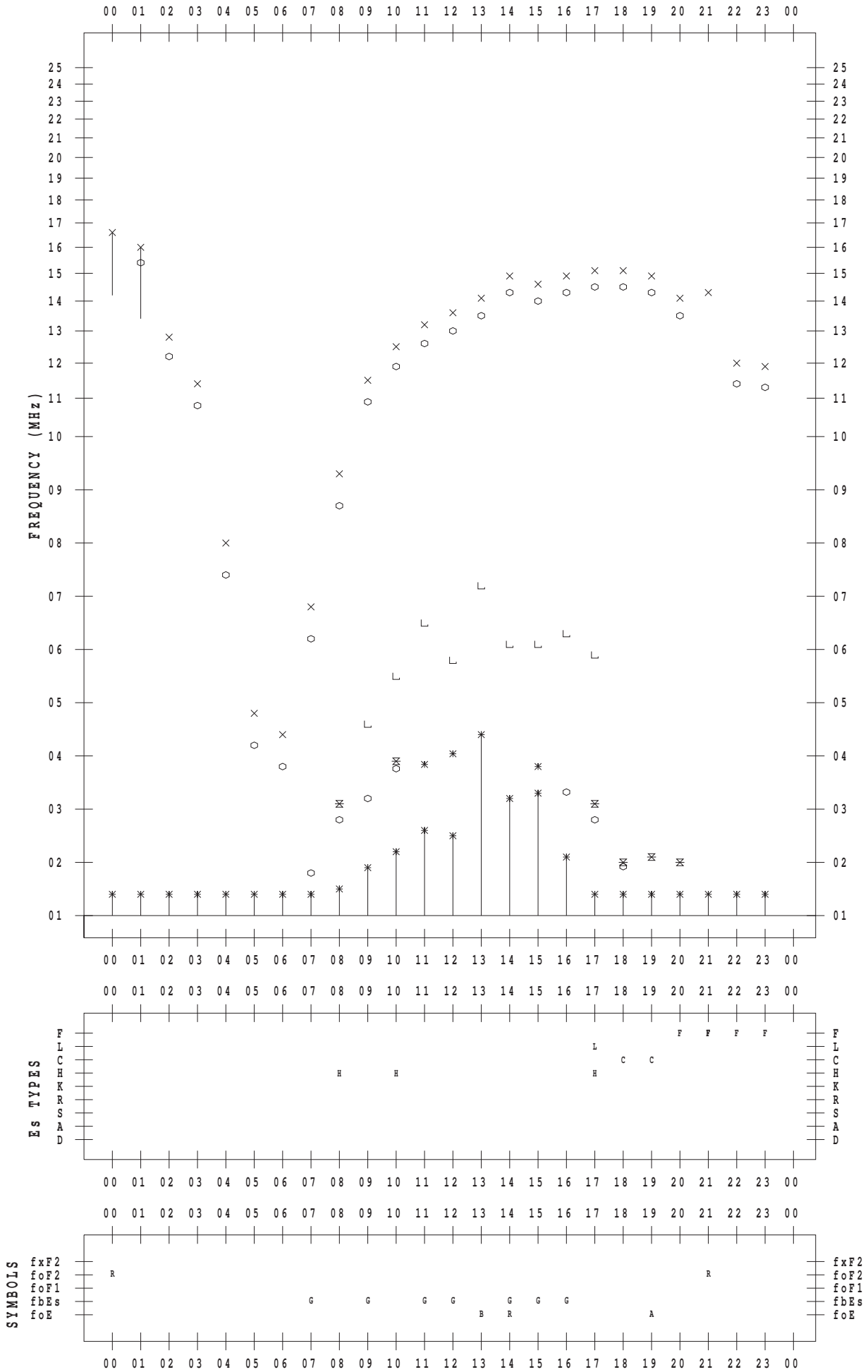
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/14

135 °E MEAN TIME



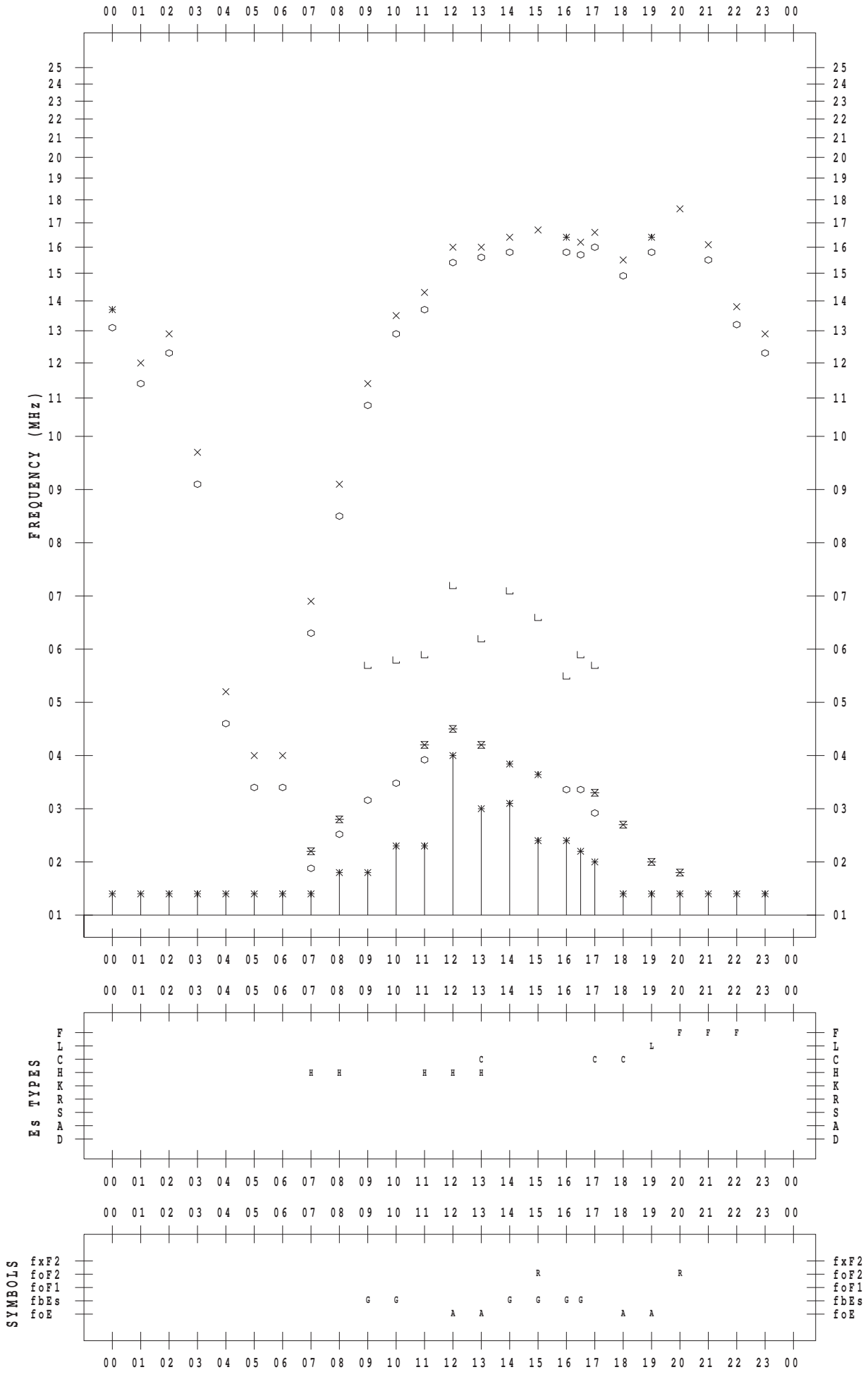
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/15

135 °E MEAN TIME



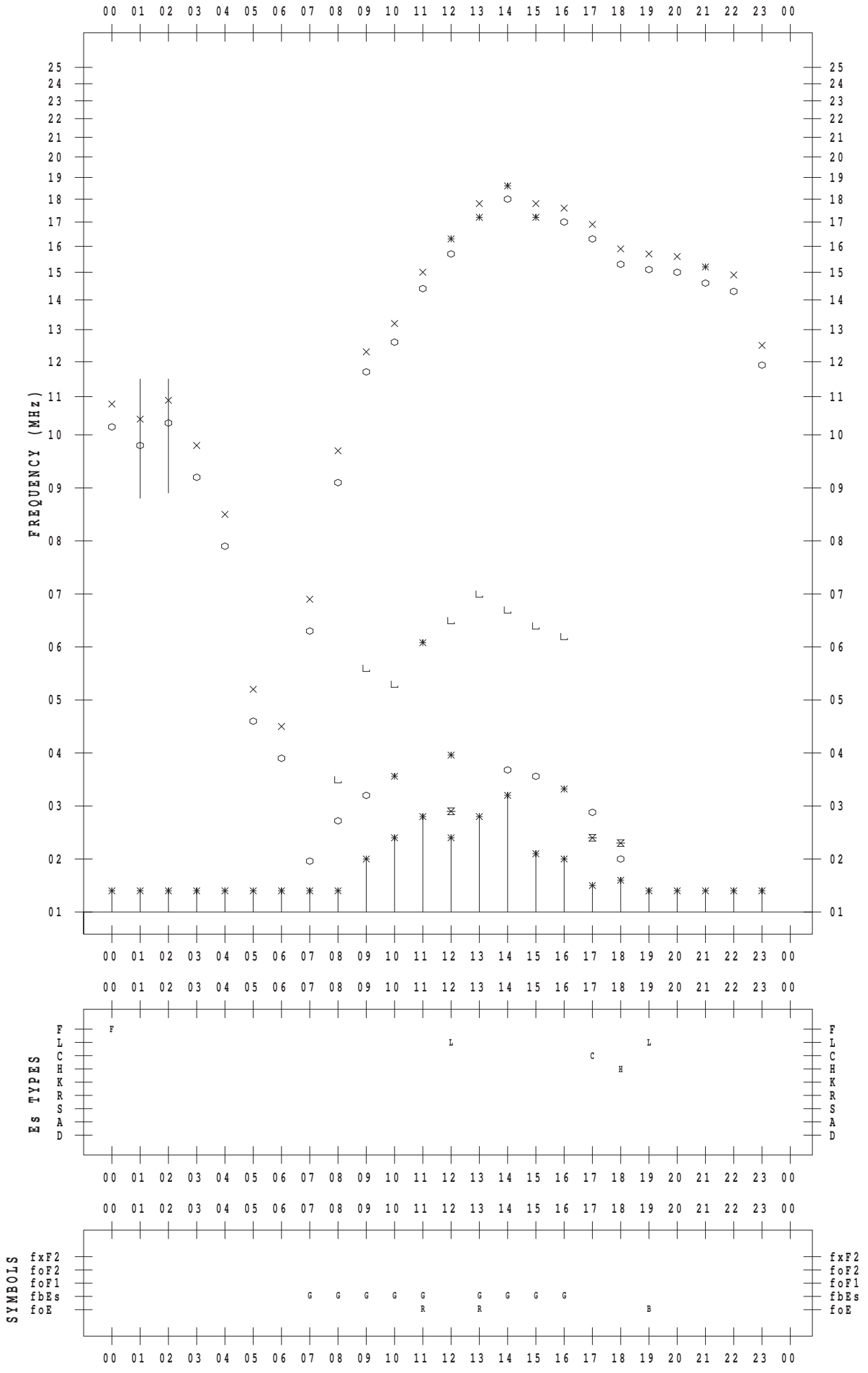
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/16

135 °E MEAN TIME



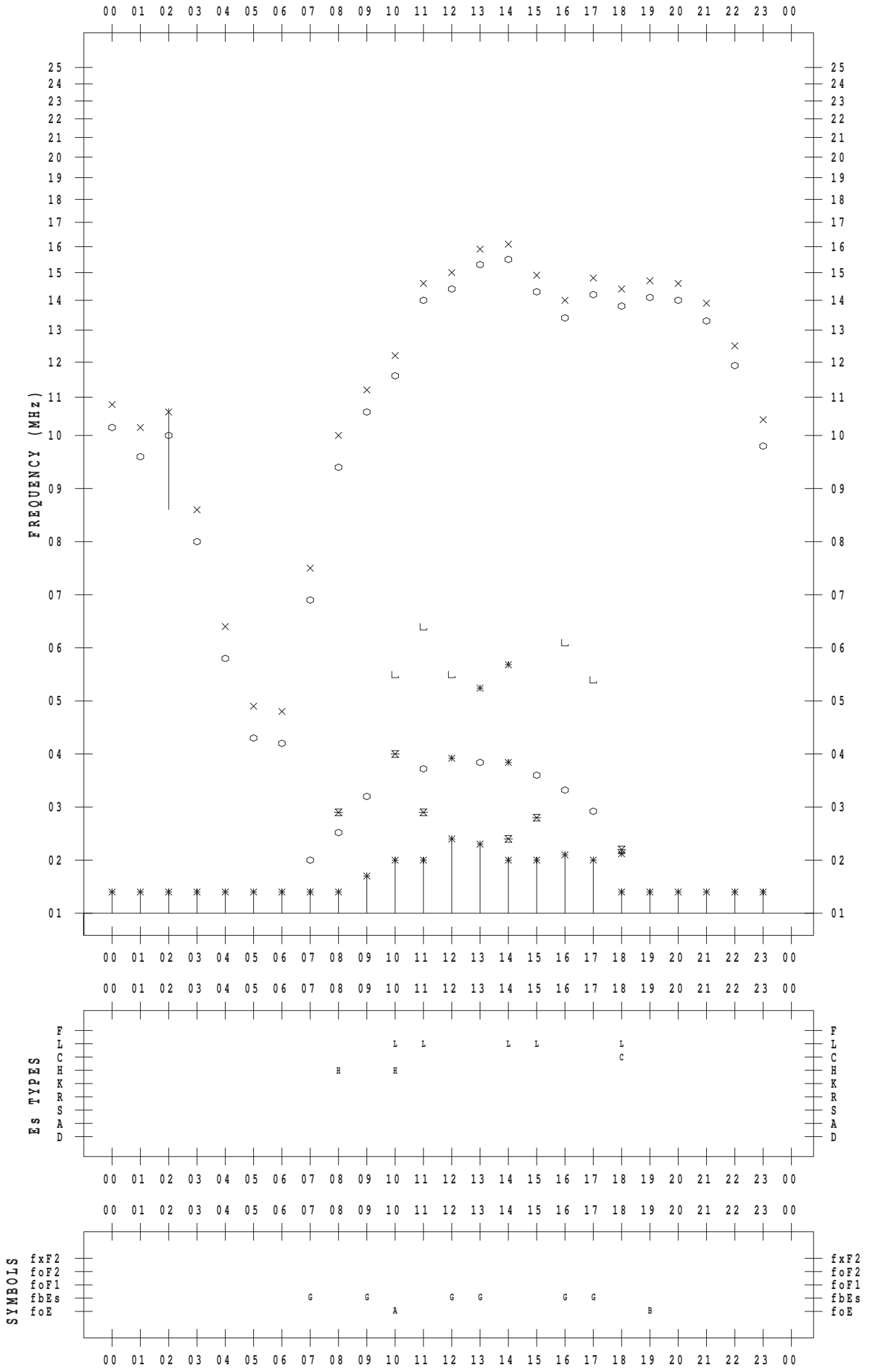
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/17

135 °E MEAN TIME



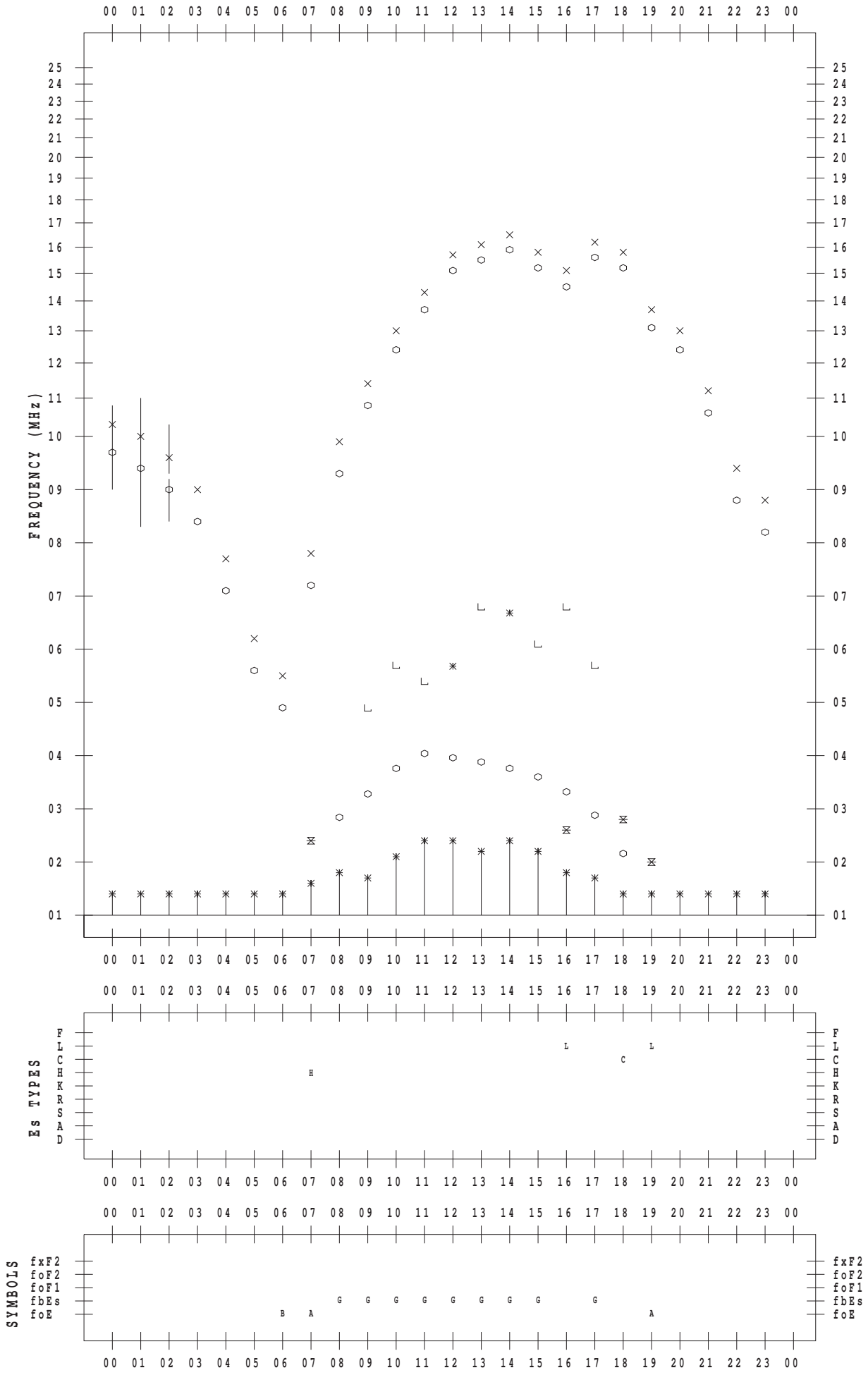
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/18

135 °E MEAN TIME



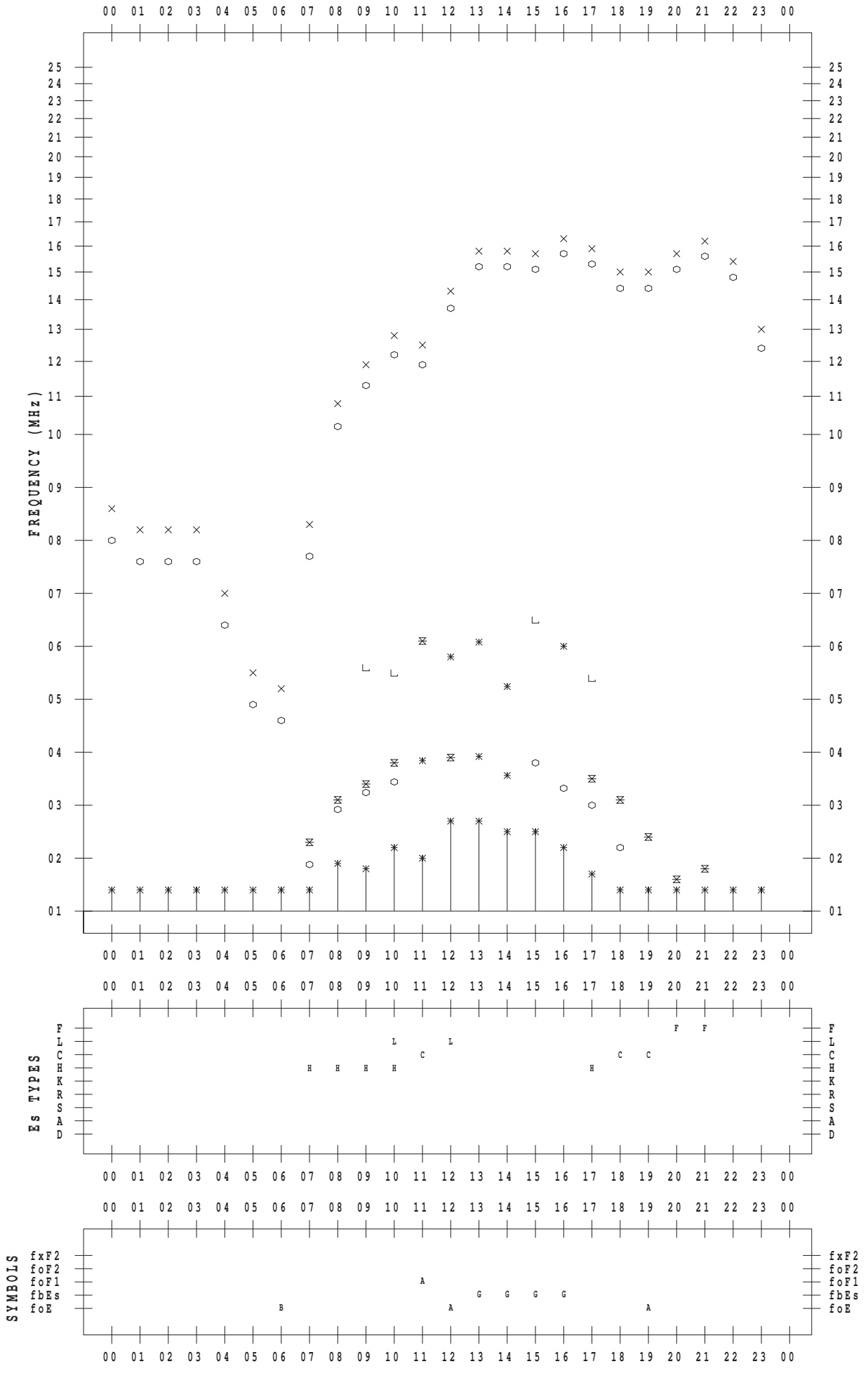
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/19

135 °E MEAN TIME



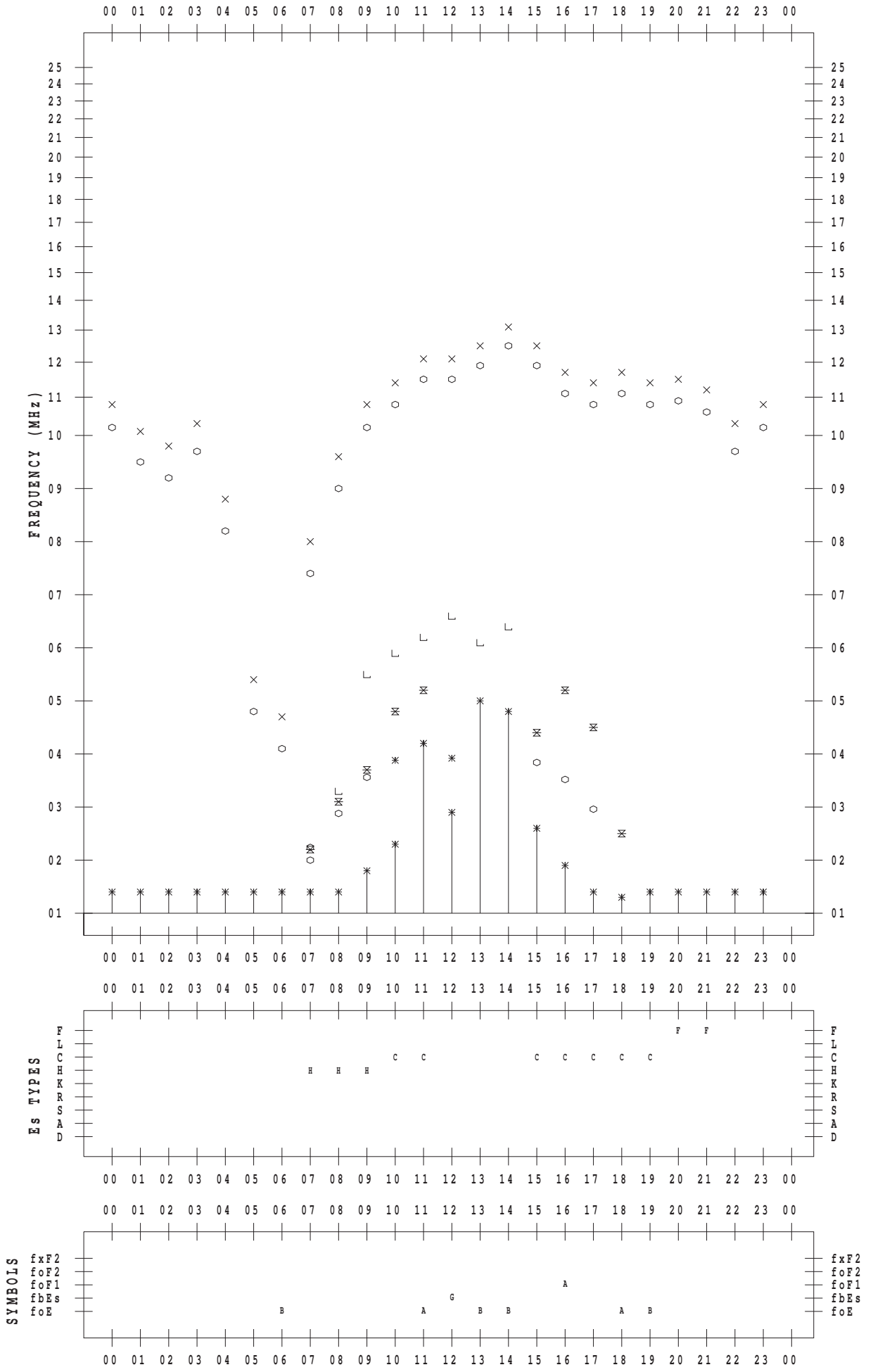
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/20

135 °E MEAN TIME



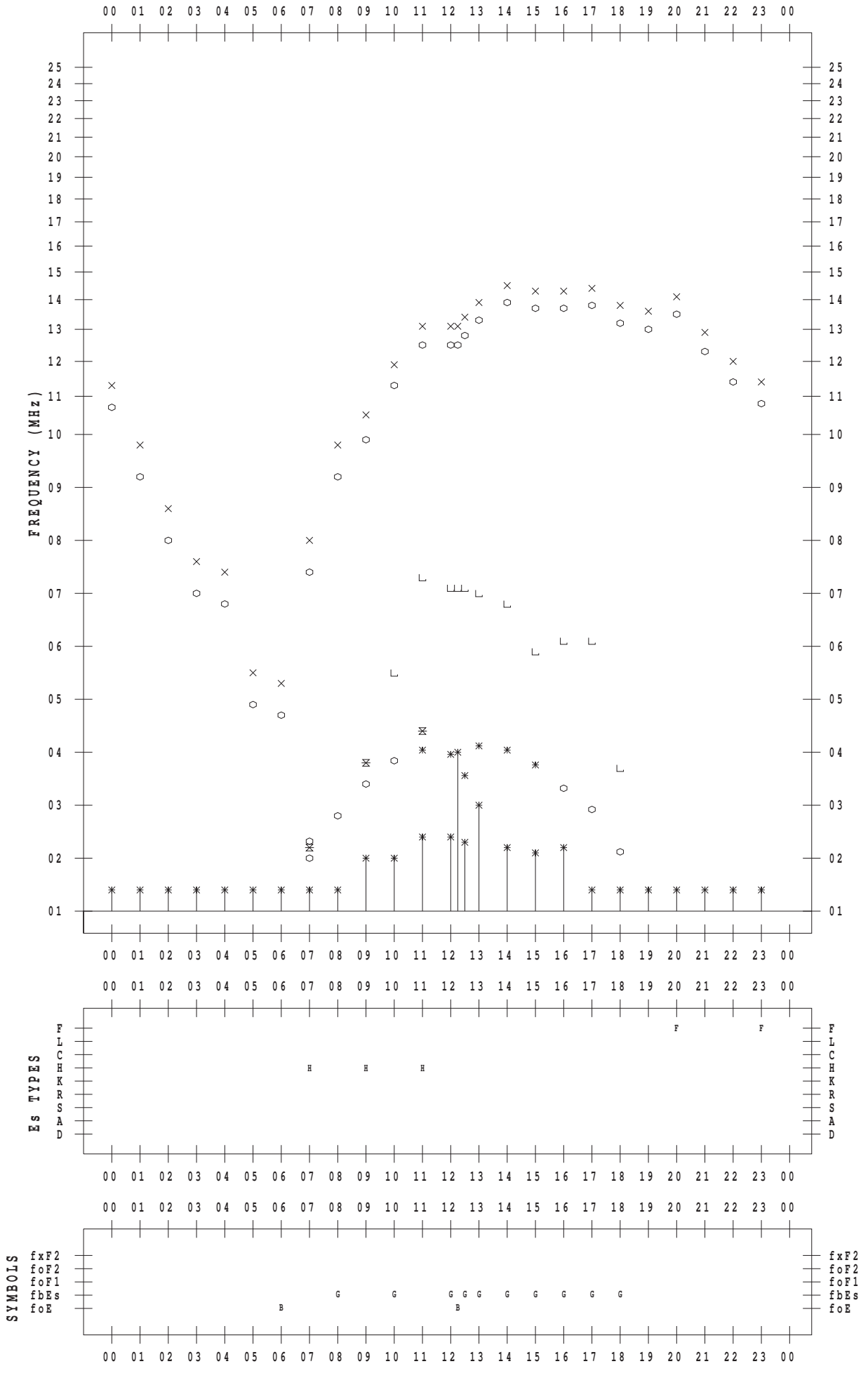
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/21

135 °E MEAN TIME



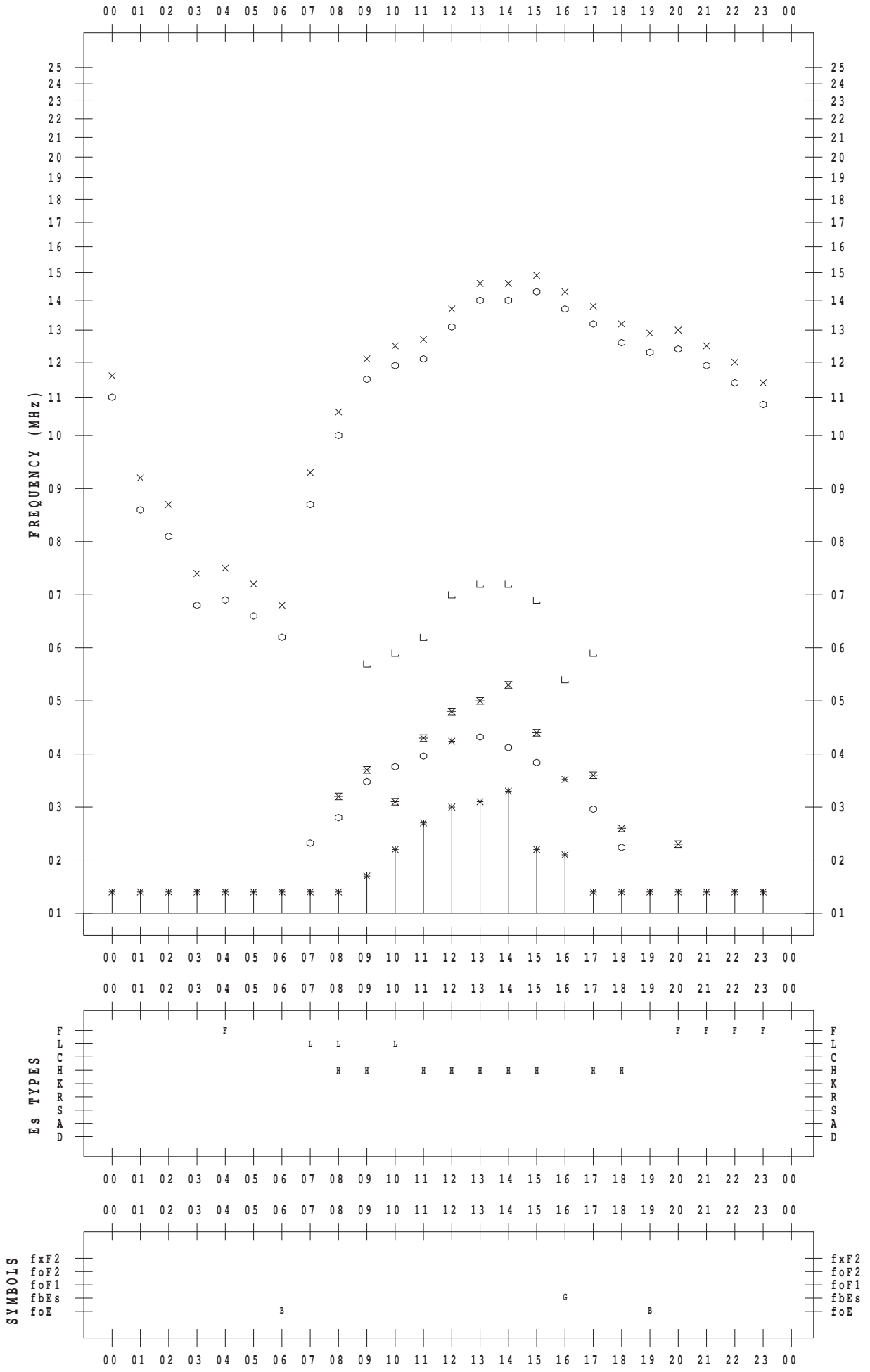
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/22

135 °E MEAN TIME



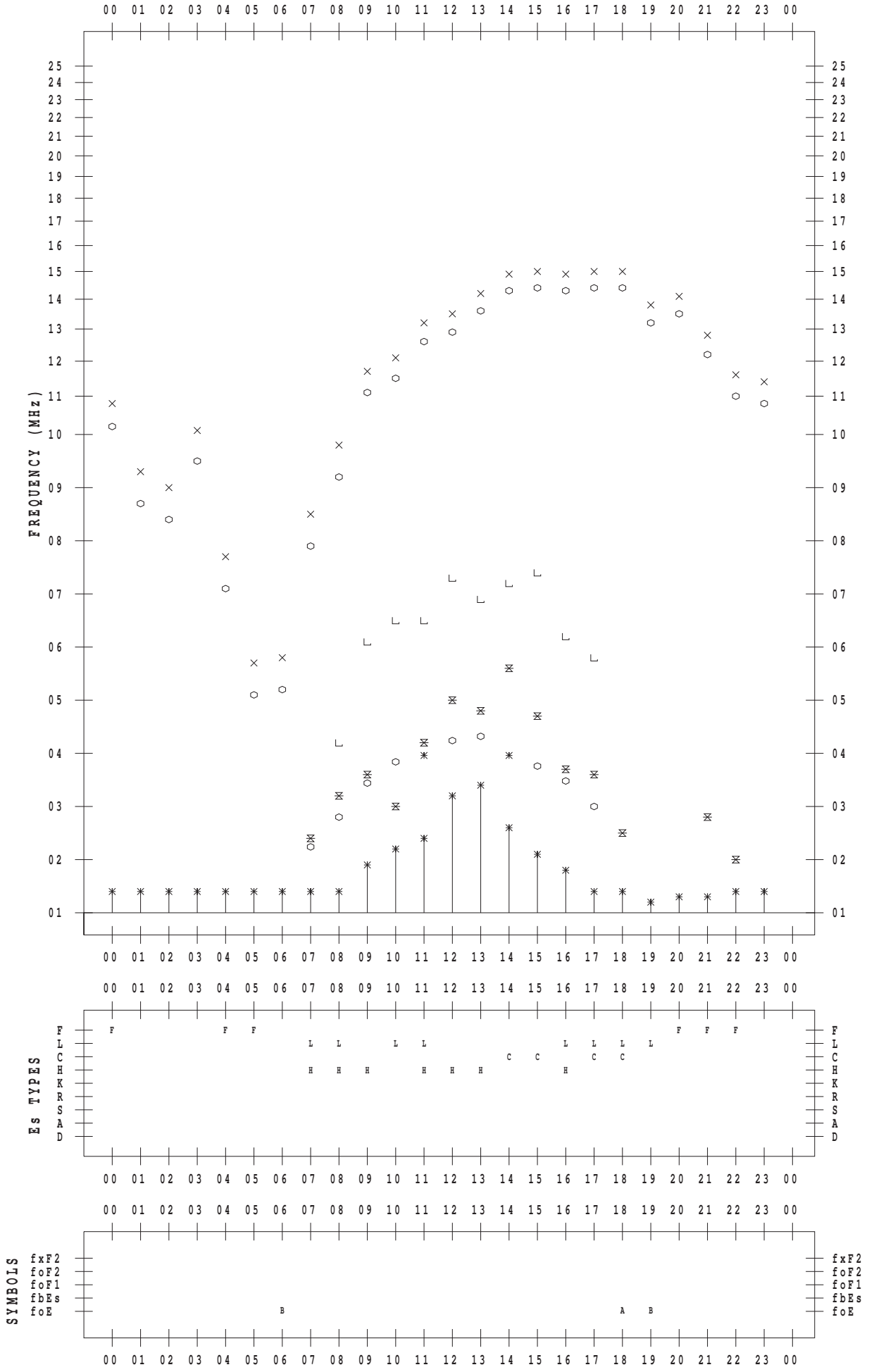
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/23

135 °E MEAN TIME



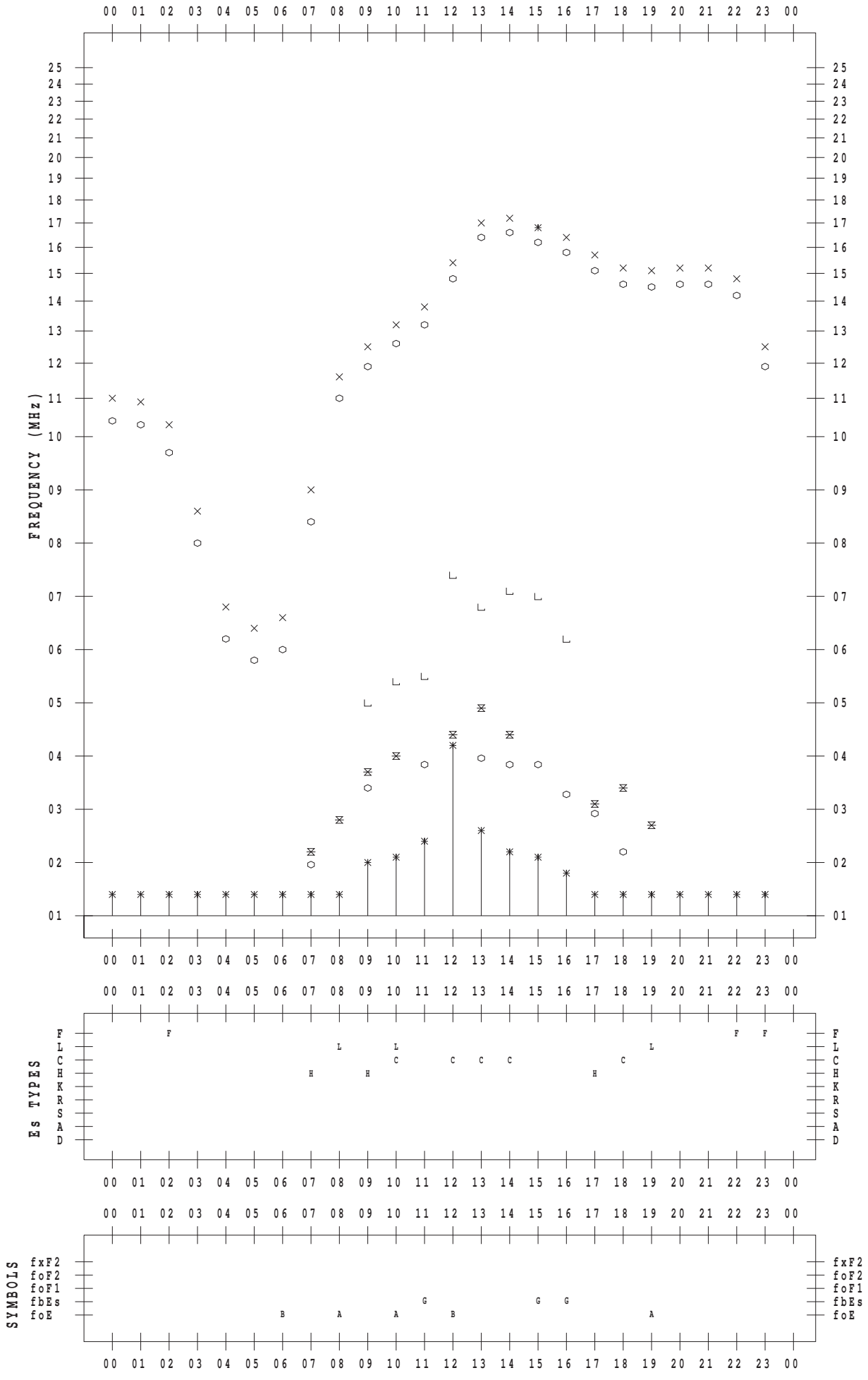
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/24

135 °E MEAN TIME



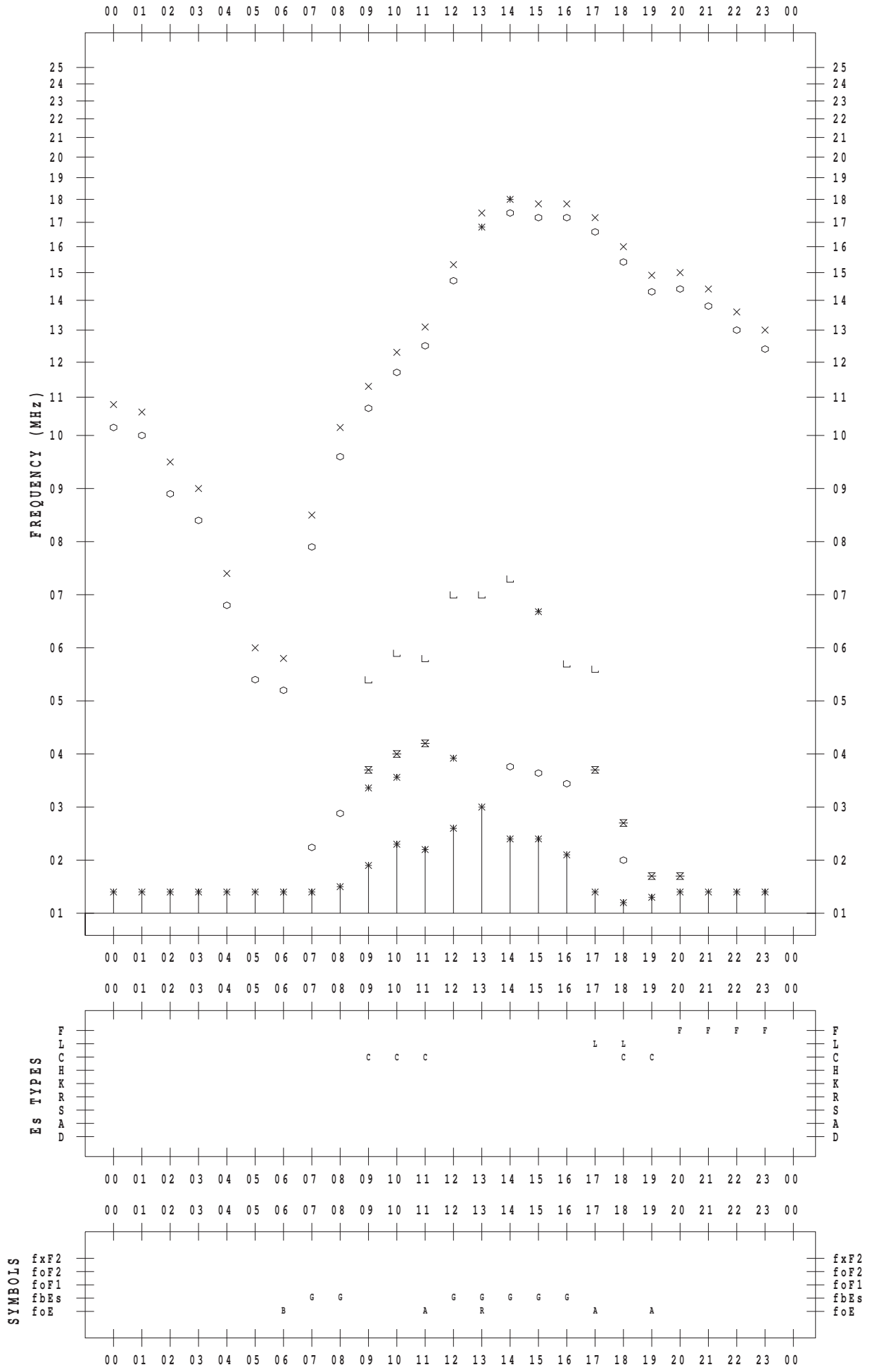
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/25

135 °E MEAN TIME



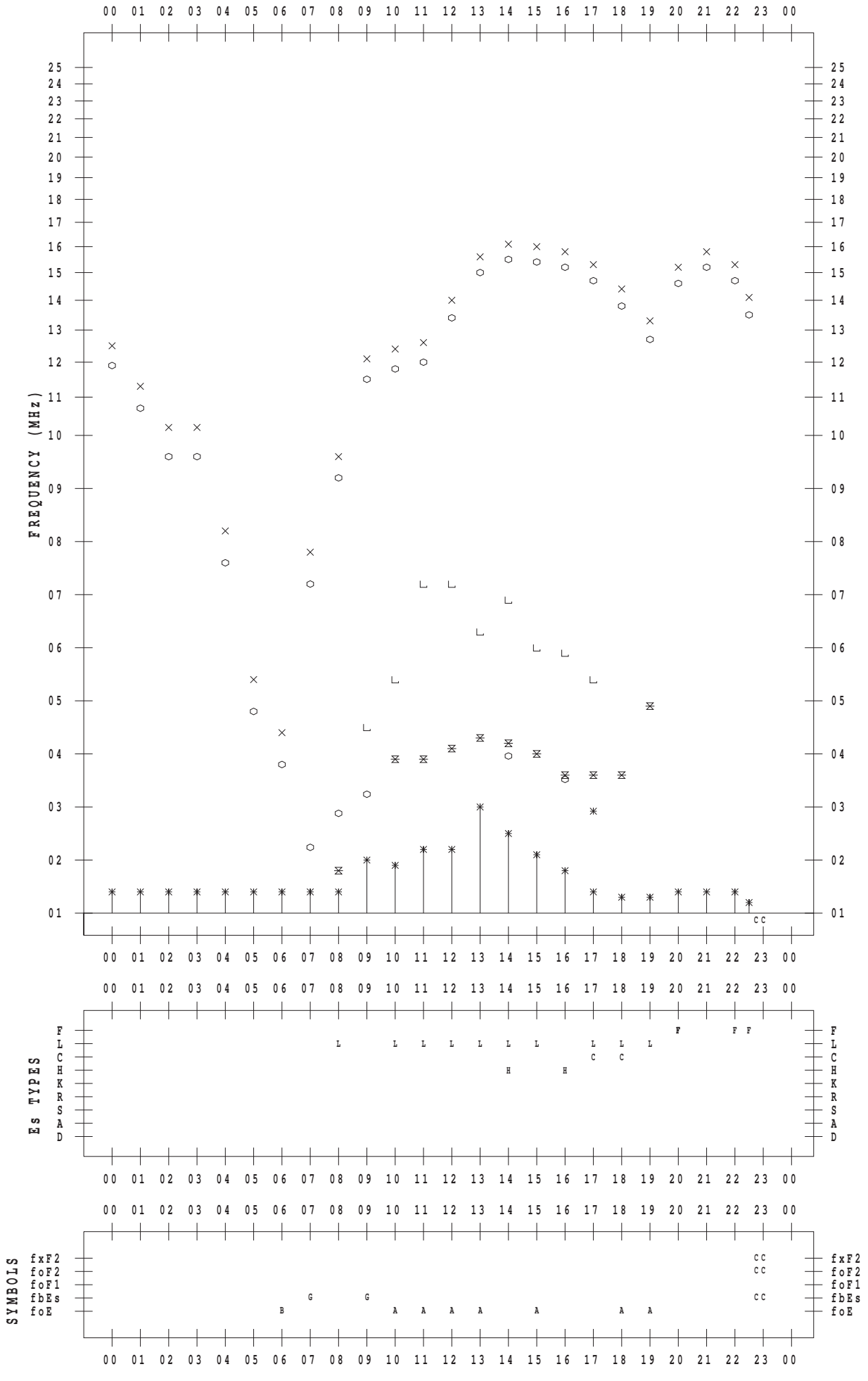
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/26

135 °E MEAN TIME



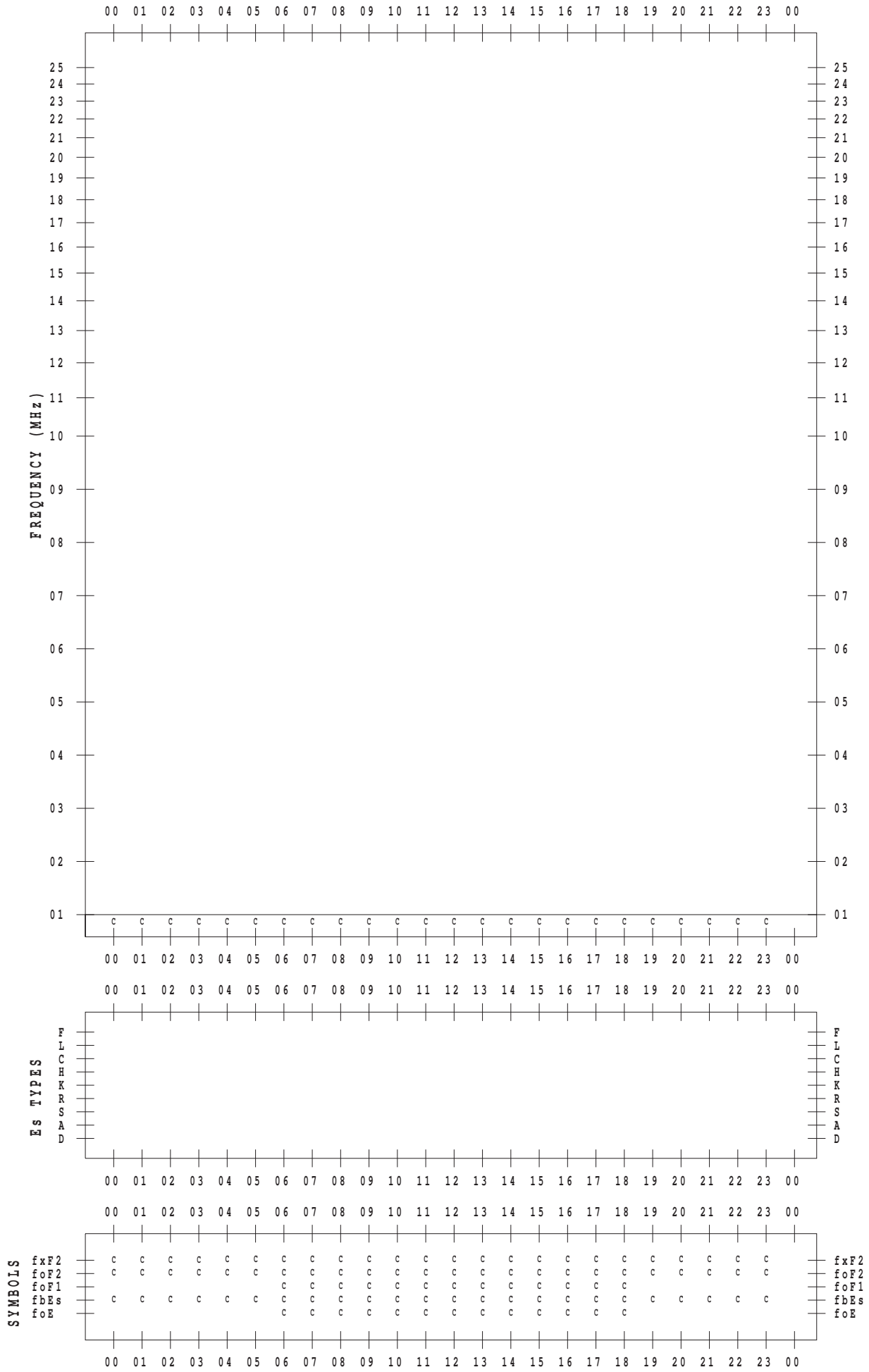
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/27

135 °E MEAN TIME



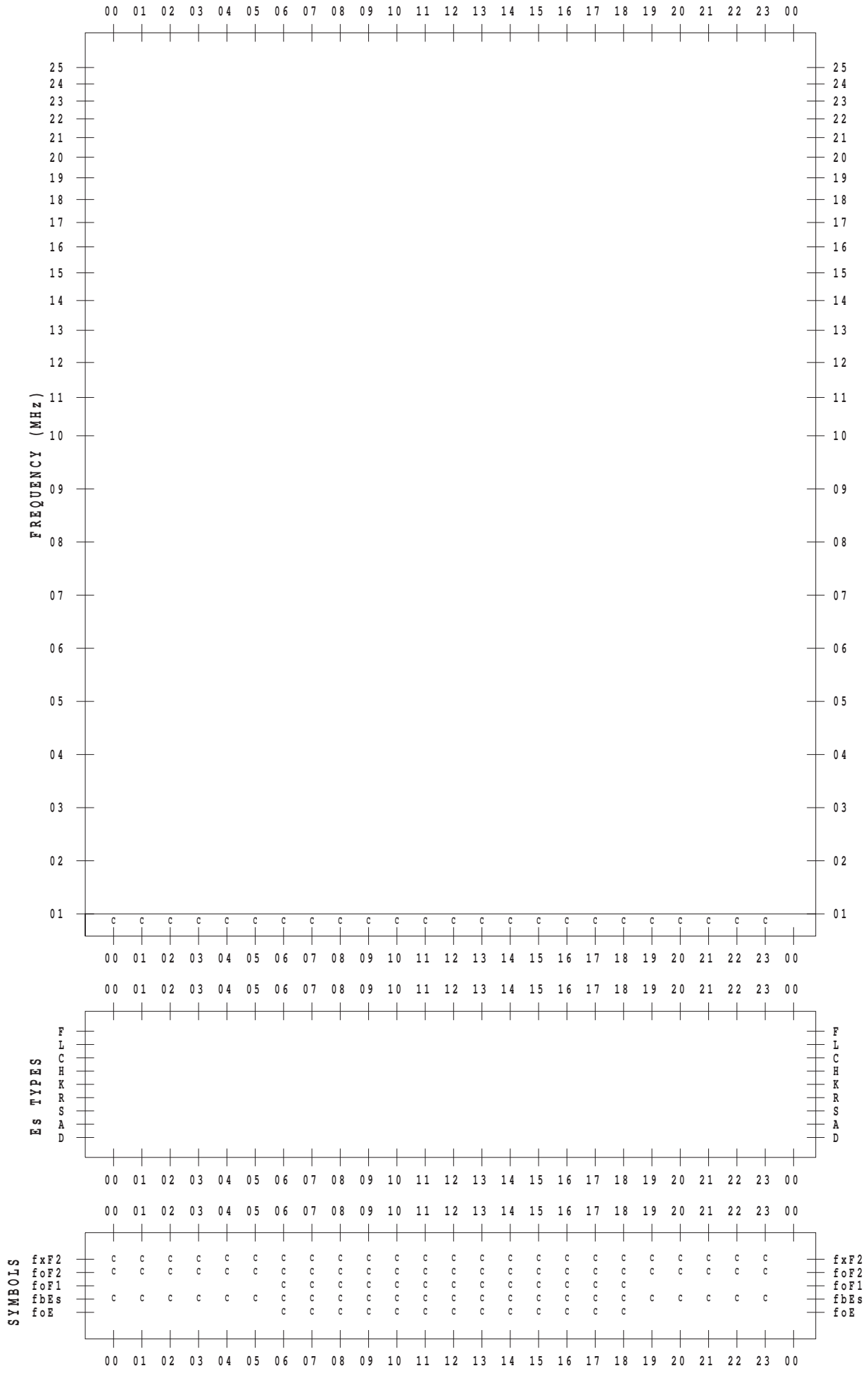
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/28

135 °E MEAN TIME



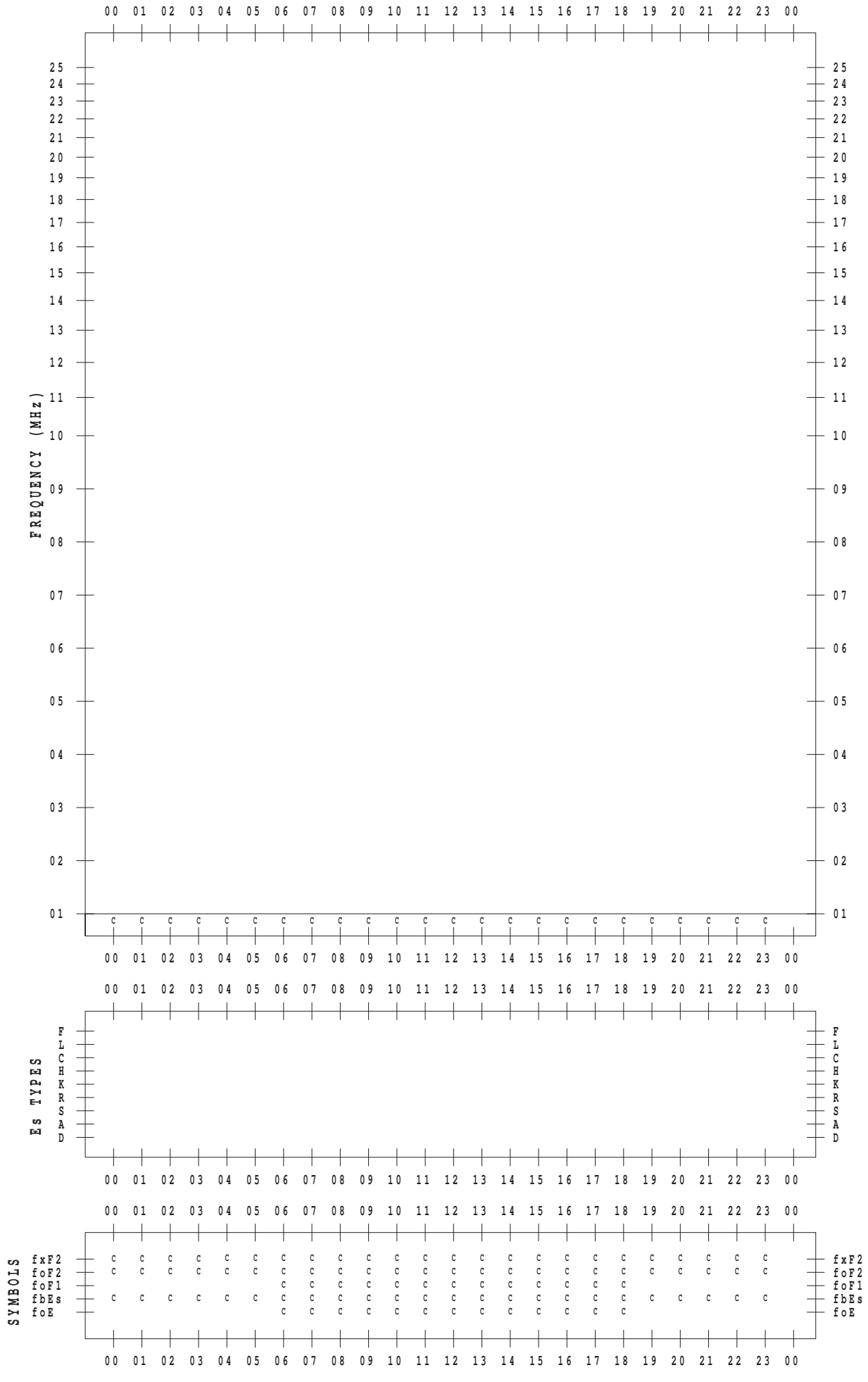
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/29

135 °E MEAN TIME



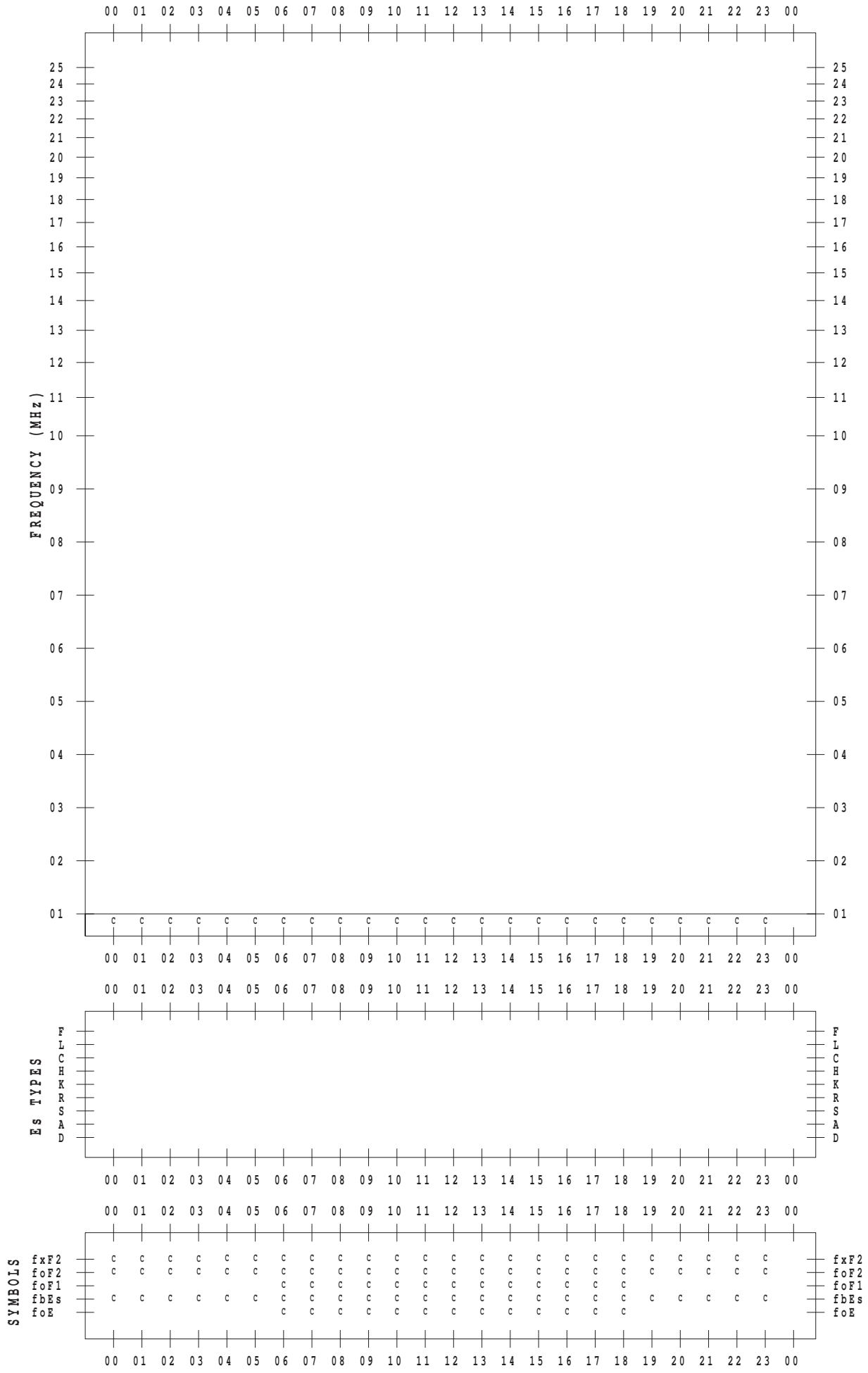
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 3/31

135 °E MEAN TIME