

IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 2014
VOL. 66 NO. 9

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« Real Time Ionograms on the Webhttp://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 (f_oF2 , fEs , $fmin$) and monthly medians of two factors ($h'Es$, $h'F$), daily Summary Plots and monthly medians plot of f_oF2 .

a. Characteristics of Ionosphere

f_oF2	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 f_oF2).
- 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 f_oF2 , 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 f_xE and f_oE 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

fxl	Top frequency of spread F trace
f_oF2 f_oF1 f_oE f_oEs	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 replace 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 atmospheric.
- 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-associated 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 (CNT) 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

SEP. 2014

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	53	34	34	39	A	32	45	A	A	A		58			66	66	62	56	60	63	53	34	54	34	
2	A	37	B	A	34	43	53	62	A		59		63	63	66	62	66	66	63	63	66	61	32	52	
3	A	34	32	32	32	34	60	63	61	67	64	64	68	62	64	67	67	67	66	63	62	52	37	35	
4	34	32	34	34	32	32	57	56		57		A				62	64	67	64	66	62		32	A	
5	52	38	34	32	32	34	64	65	61	C	C	C	C	C	C	C	C		64	65	A	A	A	53	49
6	53	A	A	N	31	A	A	A		C	C	C	C	C		C		64	64	66	A		A	A	
7	A	39	34	58	49	53	59	64	62	62	64	65	61		68	64	68	67	64	34	65	34	53	60	
8	53	53	53	52	52	54	63	68	65	67	68	62	63	66	63	66	68	68	66	66	59	65	59	34	
9	58	54	53	52	52	53	62	65	59			65	59	70	65	68	69	69	A		59	64	67	64	46
10		53	34	48	52	34	66	62	66	59	67	70	67	67	68	66	68	64	65	64	59		53	53	
11	34	34	34	49	53	52	68	67	67	66	68	64	68	69		70	65	70	67	64	N	A	A	35	
12	63	60	52	54		26	61	62	63	63	64	65	56	64	59	67	68	64	64	63	61	34	34	A	
13	A	34	34	A	30		B			A						62	63	66	62	60	54	A		32	
14	43	32	35	34	47	53	60	63	60	66	65	64	64	67	65	64	67	66	64	66	A	59	58	44	
15	53	C	32	37	53	62	65	67	67	A	67	67	67	69	70	68	59	66	41	64	64	54	34	54	
16	53	34	34	34	32	56	68	59	69	48	69	67	67	68	69	70	67	66	65	62	63	A	54	62	
17	53	32	51	53	32	53	64	59	67	59	67	67	66	69	67	70	70	66	65	63	64	38	53	32	
18	43	42	34	43	34	54	62	70	59	59	66	68	59	59	70	68	65	65	66	66	65	49	59	A	
19	32	32	B		35	46	62	59	69	N	54	68	68	70	N	68	68	66	67	63	63	49	63	62	
20	34	59	32	53	58	61	63	70	59	69	61	61	62	68	69	70	66	69	64	54	59	C	C	C	
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	N	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C		67	65	70	69	68	70	64	62	60	63	54	63
23	60	59	32	49	32	53	63	68	69	68	64	56	63	69	59	67	68	61	61	63	62	62	34	52	
24	37	34	A	34	46	35	47	59	67	64	65	59	57	59	69	68	67	61	A	A	A	A	A	34	
25		34	A	A	26	A	53	51	58	A	61	66		64	66	67	67	66	62	53	28	34	A	49	
26	A	34	34	A	42	A	70	65	64	62	65	65	67	66	66	67	67	65	63	61	54	53	A	53	
27	42	34	34	32	A	48	72	65	68	69	68	69	68	68	68	54	59	63	64	63	34	49	34	34	
28	39	32	34		32	32	64	65	76	59	69	69		B	69	68	66	68	65	63	62	52	A	34	34
29	34	34	34	35	32	50	60	62	69	64	64	69	59	70	70	70	68	A	A	66	56	52	29	53	
30	32	51	34	34	34	47	54	64	63	59	69	59	65	70	71	68			66	56	52			53	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	21	26	23	21	25	24	26	25	24	19	22	23	22	23	24	27	27	28	27	27	24	20	21	24	
MED	43	34	34	39	34	49	62	64	64	63	65	65	64	68	68	67	67	66	64	63	60	50	53	49	
U Q	53	51	34	52	50	53	64	66	67	67	68	68	67	69	69	68	68	67	65	64	63	61	56	53	
L Q	34	34	34	34	32	34	59	60	61	59	64	62	61	64	65	66	65	64	63	61	53	34	34	34	

HOURLY VALUES OF fEs AT Wakkanai

SEP. 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	28	G	27	28	G	G	50	59	71	G	G	G	G	G	G	G	G	G	G	G	28	39	G
2	29	29	B	29	25	G	G	35	41	G	G	G	G	G	G	G	G	G	G	29	G	G	G	30
3	32	G	G	G	G	G	33	40	40	G	G	G	G	G	G	G	G	G	34	29	24	40	32	G
4	G	G	G	G	G	33	40	50	G	G	G	44	G	G	G	G	G	40	26	29	G	G	G	39
5	26	31	28	G	G	G	37	35	68	C	C	C	C	C	C	C	C	G	44	62	70	103	34	G
6	G	36	32	G	G	39	42	50	40	C	C	C	C	C	G	C	G	37	42	40	38	39	44	38
7	36	33	G	G	G	G	41	48	G	G	G	G	G	G	G	39	37	35	G	33	31	35	36	32
8	G	G	G	G	G	G	33	G	G	G	G	52	G	G	G	G	G	35	G	G	G	G	G	G
9	G	G	G	G	G	G	34	G	G	G	G	G	G	G	G	G	G	39	43	33	28	33	26	G
10	G	G	G	G	G	G	34	41	40	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G
11	G	G	G	G	G	G	G	G	50	G	54	G	G	G	G	G	G	G	G	33	40	39	36	G
12	G	27	28	G	G	G	34	G	G	G	G	G	G	G	G	G	G	G	30	G	G	G	G	36
13	34	G	G	26	G	G	B	G	G	41	G	G	G	G	G	G	G	G	35	G	G	38	G	G
14	G	G	G	G	G	G	G	G	51	G	G	G	G	68	57	38	55	39	43	38	40	G	G	31
15	26	C	G	G	G	G	G	36	49	68	G	G	43	G	61	46	48	50	36	G	G	49	G	G
16	G	G	G	G	G	G	40	38	G	G	G	45	52	52	49	G	G	G	G	G	37	44	37	28
17	30	32	33	G	G	G	G	36	G	41	G	48	G	G	G	G	35	32	G	30	G	28	G	G
18	G	G	26	34	26	29	34	40	G	G	G	G	G	G	G	G	39	33	50	29	G	G	32	33
19	28	24	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	35	G	G	33	G	38
20	28	26	G	G	G	G	G	G	40	50	G	G	G	G	G	G	G	33	33	29	G	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	32	27	G	G	G	G	G
23	G	26	26	25	29	G	G	40	41	G	62	G	44	G	G	G	G	G	38	G	36	36	G	G
24	G	G	30	G	G	G	G	G	G	59	52	G	G	G	G	G	33	32	46	39	65	50	58	25
25	G	G	39	41	28	38	34	G	G	40	G	51	G	G	G	40	42	G	44	34	40	36	38	36
26	33	28	G	32	30	38	45	G	G	G	G	G	G	G	G	G	G	G	G	G	G	39	34	G
27	G	G	G	G	37	36	33	G	G	G	G	G	G	G	G	G	35	G	G	G	G	G	G	G
28	G	G	G	G	G	G	G	G	G	G	G	B	48	G	G	G	G	G	G	G	G	34	G	G
29	G	G	G	G	G	G	G	35	40	G	G	G	G	G	G	G	G	G	G	G	29	G	G	G
30	G	G	G	G	G	G	G	G	38	41	72	G	G	42	53	55	78	70	46	38	G	30	44	33
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	26	28	28	28	27	28	28	26	26	26	26	27	29	27	28	29	29	29	29	28	28	28
MED	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	G	G	30	29	G	33	G	G
U Q	28	28	26	13	13	G	34	40	40	41	G	G	G	G	G	G	35	35	42	33	36	39	36	32
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

SEP. 2014

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

$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	18	15	15	17	16	18	15	15	17	21	27	26	24	23	22	18	16	15	18	16	14	15	14	15
2	15	16	B	15	17	18	14	15	16	17	28	71	28	52	20	15	15	14	18	14	16	15	15	15
3	15	15	15	16	15	16	14	15	17	26	26	55	54	51	21	18	14	15	15	15	15	15	14	15
4	15	15	15	15	14	14	15	15	15	21	27	27	24	21	17	17	15	15	15	14	15	66	15	15
5	15	15	14	18	27	17	15	16	15	C	C	C	C	C	C	C	C		15	14	15	15	14	18
6	15	14	15	16	18	14	15	20	20	C	C	C	C	C		C		15	15	14	15	15	14	15
7	15	15	15	16	14	17	14	14	18	23	27	28	28	66	21	16	15	14	17	15	15	14	14	15
8	15	14	16	17	15	17	14	15	14	15	16	17	27	26	24	17	15	14	18	18	14	18	16	15
9	14	14	14	14	14	15	14	14	14	56	59	59	53	28	23	17	14	14	15	15	14	15	17	21
10	15	20	15	15	15	21	15	14	15	17	24	27	51	22	22	17	14	14	21	27	32	91	15	20
11	16	15	18	15	18	15	15	16	18	23	27	27	27	27	22	20	14	14	16	15	15	16	14	21
12	21	18	15	15	66	14	16	15	15	20	27	20	22	18	15	14	20	14	15	15	17	15	15	14
13	15	15	16	18	66	66	B	18	20	22	66	66	26	26	18	15	15	14	15	15	15	15	15	17
14	20	18	15	15	15	17	14	15	15	15	20	18	55	23	18	15	15	15	14	15	15	20	15	14
15	17	C	15	15	18	15	17	15	21	20	52	21	27	28	18	16	15	14	14	15	14	16	18	22
16	16	23	15	17	15	15	16	17	18	22	20	24	23	20	20	17	15	14	15	15	14	20	14	15
17	15	14	14	15	15	15	15	15	18	22	22	24	20	22	17	17	14	15	14	14	15	15	15	18
18	14	15	15	15	15	14	14	14	15	18	21	27	22	20	43	15	16	14	14	15	15	21	14	15
19	14	15	B	15	15	15	17	15	18	17	22	20	48	14	20	16	15	21	15	15	15	15	17	14
20	15	15	15	14	15	15	21	18	22	21	29	24	20	18	16	14	15	15	15	15	17	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	21	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C												
23	23	14	15	17	15	15	32	15	14	18	15	14	22	21	44	15	15	21	14	17	17	15	15	15
24	15	15	15	15	18	15	21	15	15	18	28	27	24	21	21	16	14	14	15	15	15	15	15	22
25	27	16	16	14	15	14	15	14	20	28	33	21	21	27	16	17	15	14	15	14	14	15	15	15
26	14	14	15	15	15	14	14	15	16	17	16	15	51	45	47	20	15	21	15	21	18	14	15	16
27	14	15	15	15	15	15	14	15	16	23	22	18	26	22	20	17	14	21	14	15	17	15	17	15
28	14	15	15	20	15	21	22	14	16	21	21	26	B	56	17	18	15	21	15	14	17	15	15	15
29	15	14	14	15	17	15	15	15	17	20	20	17	20	21	20	16	17	21	15	15	15	15	17	15
30	16	15	16	15	15	15	15	17	18	20	22	23	29	24	20	17	15	14	16	15	15	14	14	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	26	28	28	28	27	28	28	26	26	26	26	27	29	27	28	29	29	29	29	28	28	28
MED	15	15	15	15	15	15	15	15	16	20	25	24	26	23	20	17	15	15	15	15	15	15	15	15
U Q	16	15	15	16	17	17	16	15	18	22	28	27	29	28	22	17	15	15	15	15	17	16	15	17
L Q	15	14	15	15	15	15	14	15	15	18	21	20	22	21	17	15	14	14	14	15	15	15	14	15

HOURLY VALUES OF fof2 AT Kokubunji

SEP. 2014

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

$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	54	54		48	44	46	65	57	76	A	90	97	90	77	77	83	81	74	68	55	70	54	54	53				
2	54	A		57		53	52	76	97	71	74	73		76	77	75	74	74	85	84	77	53	46	51				
3	A	47	47	38	47	44	67	72	76	81	77	90	81	74	75	80	83	87	89	83	74	53	45	46				
4	51	45	49		46	44	58	76	78	80	77	78	80	74	78	81	80	82	90	88	36	51	52	52				
5	49	A		A	47	45	67	73	72	72	64	77	A	A		84	81	87	90	92	85	76	52	A	53			
6	54	53	A	47	42	46	65	71	A	71	72	A		80	81	81	80	82	81	83	86	72	A	A	52			
7	51		48	49	47	46	68	76	76	74	76	75	77	83	87	100	98	98	101	78	66	54	44	53				
8	66	54	58	53	53	54	71	75	84	86	74	67	N		87	87	100	103	102	104	86	A	A	53	52			
9	54		52	45	44	47	75	111	72			83	89	86	92	86	91	91	91	85	74	73	54	52				
10	51	52	52	54	53	52	75	80	86	87	88	93	94	95	96	94	96	98	106	77	67	47	52	54				
11	51	52	54	53	47	44	67	84	92	97	88	87	91	100	108	107	107	103	102	83	54	71	54	71				
12	67	52	67	51	44	44	64	98	102	98	104	111	105	106	118	104	94	86	78	55	54	52	53	67				
13	52	52	49						A			68	67	48	73	81	82	76	67	A	49	52						
14	52		53		47	47	67	81	82	80	86	88		84	81	85	82	84	80	77	A	54	54	53				
15	52	55	54	58	44	51	71	88	83	83	88	85	92	100	93	95	94	96	87	73	72	A	55	A				
16	53		53	47	51	47	75	100	88	92	86	87	100	97	96	98	101	104	90	78	72	73	67	52				
17		53	52	51	47	51	81	100	83	90	98	96	106	112	102	96	95	96	97	76	67	53	63	54				
18	47	47		46	53	53	86	101	82	85	87	91	100	100	97	95	92	90	86	86	A	53	44	53				
19			49		45	52	81	113	93	84	84	86	88	91	97	107	100	93	86	83	52	52	53	54				
20	52	50	44	46	44	48	81	88	88	90	97	91	88	100	90	96	98	97	80	55	63	54	54	54				
21	52	45	45	53	51	52	77	87	97	72	87	85	83	81	84	86	80	85	81	72	66	54	53	53				
22	53			44	49	47	71	96	105	86	72	78	83	86	80	85	84	86	90	76	53			53				
23	39	53		47	53	52	75	95	92	108	101	96	105	102	93	90	78	78	73	72	54	67	52	54				
24	52	52	52			28	53	81	97	105	100	101	104	107	105	92	81	80	66	54	55	54	53	53				
25	51	52	89	49	43		58	86	90	100	98	104	96	87	87	87	91	88	78	67	62	54	52	A				
26			44	27	N	43	62	81	83	78	86	80	100	93	84	85	85	81	74	72	66	54	52	53				
27			44	39		46	63	93	100	114	104	107	115	92	91	97	94	84	73	53	52	53	51	53				
28	50	44		41	27	43	67	87	104	97	90	98		97	91	91	87	87	81	55	52	54	55	52				
29	52	47	47	45	46	51	72	94	97	91	101	106	105	108	103	105		C	C	C		67	67	55	52	53		
30	52	52	N	49	47	47	71	87	98	98		C	C	C	C	C	C					105	97	81	62	51	52	53
31																												
	00	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	20	22	24	25	28	29	29	28	27	27	28	24	28	29	29	28	29	29	29	29	27	26	27	26			
MED	52	52	50	48	47	47	68	87	88	86	87	88	92	92	90	91	89	87	86	77	66	54	53	53				
U Q	53	53	53	52	50	51	75	95	97	97	98	96	102	100	96	97	95	96	91	83	72	54	54	54				
L Q	51	47	47	45	44	44	64	76	82	80	77	79	83	82	81	84	82	81	78	67	54	52	52	52				

HOURLY VALUES OF fEs AT Kokubunji

SEP. 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															
2	G				G	G	G	G	G	85	62		49		49									
3		G	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G						
4	32	G	G			G	G	G																
5	G				24																			
6						G	G	G																
7	35	45	43	36	34		43	39	65	50	50		48	92	60	50								
8	G	G			G	G	G																	
9																								
10	G																							
11	G	G	G	G	G	G	G	G	G															
12																								
13	27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
14	G																							
15	G	G	G	G	G	G	G	G	G															
16																								
17	G	G	G	G	G	G	G	G	G															
18	G	G																						
19																								
20	G	G	G	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	G	G	G	G	G	G
22	G																							
23	G	G																						
24	G																							
25	G	29	G	G		G	G	G																
26																								
27	G																							
28	G	G																						
29	G	G	G	G	G	G	G	G	G	G														
30	G	G	G	G	G	G	G	G																
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	22	24	26	28	28	30	29	30	28	27	29	26	29	29	29	28	29	29	30	30	29	29	30
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	27	G	28	28	G	G
U Q	G	G	G	G	G	G	G	G	47	52	50	G	G	G	G	G	G	36	37	35	40	34	28	26
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

SEP. 2014

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

$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	15	15		17	20	14	38	15	43	36	34	56	33	48	30	40	41	17	30	22	46	20	17	15		
2	17	15		17	18	18	14	18	42	44	49	51		55	55	39	21	14	14	21	15	15	17	20		
3	14	15	14	20	15	13	13	42	40	59	45	56	46	49	54	42	17	14	17	22	14	42	37	14		
4	17	14	15		14	17	14	37	33	39	40	37	39	55	55	45	40	21	14	14	15	14	14	14		
5	14	14	14	15	14	18	14	20	34	36	36	59	40	39	39	36	39	15	18	21	17	14	14	13		
6	17	20	13	15	14	17	17	18	36	36	36	40	62	52	48	37	22	17	24	14	14	14	14	17		
7	15		14	14	18	17	14	40	39	51	38	55	59	40	50	40	14	14	13	14	14	14	15	39		
8	23	15	13	23	25	30	23	18	40	20	39	64	59	52	44	48	30	15	14	14	14	13	14	17		
9	14		14	14	14	17	17	36	40			65	57	62	40	45	21	13	13	14	13	14	17	20		
10	18	20	34	20	14	13	17	37	42	43	46	54	50	31	49	44	36	14	14	21	15	15	17	17		
11	48	43	18	39	14	20	37	39	40	42	46	45	58	34	52	42	23	17	14	14	15	20	13	15		
12	14	40	14	13	17	18	15	38	39	43	47	50	54	64	42	15	14	21	13	14	14	14	15	15		
13	21	18	13				14		39			60	54	44	44	21	18	13	13	13	14	13		24		
14	13		21		14	15	25	39	40	43	42	72		54	52	44	20	18	36	18	17	13	15	14		
15	14	15	14	17	17	15	18	33	40	38	47	47	53	62	44	44	15	29	20	14	28	20	14	14		
16	17		14	23	23	21	37	20	39	47	46	51	48	46	42	13	43	30	20	14	18	14	14	15		
17	14	13	14	15	15	14	15	39	42	45	36	54	55	38	44	36	34	13	13	14	14	14	18	15		
18	18	14		14	17	14	18	20	22	41	44	47	54	47	49	40	18	15	14	15	14	15	17	14		
19			14		17	18	30	13	39	40	45	44	56	48	42	22	39	38	15	18	14	14	15	14		
20	20	15	15	15	18	42	15	21	40	43	44	48	57	44	42	41	21	14	13	14	14	14	14	15		
21	14	14	14	15	14	14	15	18	39	43	43	43	48	54	42	40	17	18	14	14	14	17	15	15		
22	18			17	15	18	22	36	22	42	44	44	44	53	40	39	18	13	15	14	15		44	20		
23	18	14		20	20	14	39	14	39	38	40	44	40	42	42	39	35	15	14	17	13	14	15	15		
24	14	13	15	22		18	22	18	36	38	38	39	36	34	44	39	18	36	21	14	14	14	17	43		
25	14	15	15	15	14		34	33	42	43	44	52	52	47	42	39	37	22	17	23	18	18	14	14		
26			15	14	21	17	20	18	37	36	59	44	46	44	54	43	38	28	18	14	17	18	17	20		
27	18		15	21	14	17	15	18	20	43	43	45	60	44	42	43	15	25	14	14	41	14	15	15		
28	14	14		20	15	17	24	14	21	46	46	42		59	50	38	36	30	18	37	14	18	15	17		
29	15	14	17	15	20	14	31	20	20	44	39	44	53	44	40	39	C	C	C		13	13	14	18	14	
30	15	20	13	14	14	14	13	13	17	37							C				14	13	17	13	14	14
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	28	22	24	26	28	28	30	29	30	28	27	29	26	29	29	29	28	29	29	30	30	29	29	30		
MED	15	15	14	16	15	17	18	20	39	42	44	48	53	47	44	40	22	17	14	14	14	14	15	15		
U Q	18	18	15	20	18	18	25	37	40	43	46	55	57	54	50	43	36	23	18	18	17	17	17	17		
L Q	14	14	14	15	14	14	15	18	34	38	39	44	46	43	42	37	18	14	13	14	14	14	14	14		

HOURLY VALUES OF foF2 AT Yamagawa

SEP. 2014

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	67	54	52	47	48	47	54	68	77	88	86	94	95	90	88	98	103	88	81	76	83	44	51	58	
2	52	52	52	52	52	47	46	72	76	78	67	A	81	88	86	78	82	90	91	88	A	A	A	52	
3	52	54	52	52	52	50	51	77	80	78	56	85	78	74	81	87	88	A	A	89	A	52	52	54	
4	51	54	53	51	48	42	48	80	92	81	80	84	83	88	84	94	97	114	78	95	67	52	54	62	
5	54	54	50	52	53	50	54	72	71	75	75	83	91	86	A	96	114	114	99	98	88	67	54	52	
6	60	52	50	52	45	51	52	71	74	74	77	70	90	98	84	108	111	118	N	90	77	54	44	52	
7	53	51	52	46	44	40	53	80	78	78	A	A	86	92	96	97	111	114	112	98	67	54	66	66	
8	67	70	N	52	58	51	67	85	90	82	77	76	92	95	94	99	117	109	89	87	A	54	54	52	
9	60	52	51	52	50	48	67	91	76	77		84	86	95	93	98	97	105	110	85	A	A	A	53	
10	77	72	67	66	61	52	54	92	96	82	85	97	98	98	96	100	110	114	116	98	78	52	52	77	
11	74	73	78	74	46	43	54	84	89	91	86	84	87	94	96	100	108	115	109	90	67	54	54	54	
12	A	66	67	66	47	43	53	88	92	86	86	98	98	110	115	98	114	111	89	85	67	54	A	72	
13	60	53	51	48	36	34	43	48	44			A	67	76	82	90	95	88	81	80	73	58	A	53	
14	52	52	52	51	40	38	51	78	91	82	87	93	90	96	95	98	96	100	97	86	54	54	A	A	
15	52	52	52	52	47	47	51	82	82	89	84	88	93	95	97	96	112	105	98	76	79	72	73	74	
16	72	64	52	51	51	47	54	114	88	90	84	95	98	106	91	110	114	117	108	A	54	72	54	66	
17	54	64	51	48	50	34	61	94	82	96	94	94	100	110	110	98	98	107	112	A	53	52	A	66	
18	52	52	54	53	57	52	67	88	83	77	86	94	108	98	96	97	96	99	80	89	78	53	63	67	
19	67	51	60	51	51	53	72	88	90	82	80	86	94	98	96	107	96	109	97	87	49	54	52	54	
20	52	54	52	54	51	52	54	81	81	82	88	114	95	96	97	97	96	96	90	79	73	54	N	67	
21	72	52	53	54	57	52	54	90	96	88	83	84	90	88	88	94	93	92	89	78	62	52	52	52	
22	53	53	54	52	45	47	56	90	106	90	75	78	82	86	90	96	95	96	88	77	66	53	52	53	
23	54	52	51	48	44	37	53	81	91	N	91	93	96	96	96	96	94	85	83	80	80	52	52	A	
24	54	52	A	46	43	44	42	84	90	86	97	100	98	113	96	103	95	93	90	67	52	52	52	44	
25	51	47	A	A	42	36	48	78	89	88	90	69	99	97	96	98	98	100	95	69	54	53	A	46	
26	46	47	42	37	43	46	42	73	84	85	88	90	96	97	96	94	96	97	86	78	76	58	54	52	
27	52	51	51	47	47	47	51	80	100	111	96	97	98	108	98	98	N	98	86	85	54	53	53	54	
28	52	47	44	43	44	43	51	85	95	95	88	94	B	96	97	107	95	114	96	86	74	53	54		
29	53	49	51	49	59	46	52	84	102	88	97	97	95	113	111	111	98	108	96	80	67	64	54	54	
30	52	52	60	53	44	46	59	78	90	96	91	97	99	89	98	108	112	112	104	N	84	67	62	52	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	30	27	29	30	30	30	30	30	28	27	27	29	30	29	30	29	29	28	27	26	28	22	27	
MED	53	52	52	52	48	47	53	82	89	86	86	93	94	96	96	98	97	105	93	85	67	54	54	54	
U Q	63	54	54	52	52	50	54	88	92	89	90	97	98	98	97	100	111	114	101	89	78	56	54	66	
L Q	52	52	51	48	44	43	51	78	80	79	80	84	86	89	89	96	95	96	87	78	54	52	52	52	

HOURLY VALUES OF fEs AT Yamagawa

SEP. 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	G	G	37	G	46	49	55	79	66	G	G	43	G	G	34	G	24	27	G
2	G	G	G	G	G	G	G	G	G	G	G	85	47	G	G	72	G	54	40	56	85	86	58	46
3	34	27	G	33	G	26	27	58	62	54	59	48	47	G	46	55	88	99	107	74	86	26	G	34
4	G	G	G	G	G	G	G	36	46	G	54	57	54	G	G	G	G	41	81	78	34	33	49	G
5	G	G	25	G	G	G	G	G	45	52	66	61	62	69	104	66	57	131	61	52	60	41	24	31
6	32	39	36	35	32	30	G	G	50	72	67	72	G	61	60	45	G	G	G	G	G	28	28	35
7	G	31	G	G	G	G	G	35	44	72	78	84	61	54	48	56	61	45	44	G	11	32	26	25
8	29	G	G	G	G	G	G	G	G	46	49	G	46	54	51	70	78	78	60	83	33	33	32	32
9	33	G	G	34	G	40	30	39	47	G	G	G	G	G	55	48	60	52	64	69	91	74	83	G
10	G	G	G	G	G	G	G	35	47	49	G	47	G	G	G	G	G	40	47	36	49	G	35	G
11	G	G	G	G	G	G	G	G	43	G	52	52	54	44	G	52	45	44	29	49	34	26	G	49
12	81	31	44	34	24	29	G	G	43	G	61	52	G	G	G	45	G	G	43	35	G	G	82	32
13	26	G	G	G	G	G	28	G	G	G	G	50	G	G	G	43	42	40	45	53	35	49	72	G
14	G	G	G	G	G	G	G	34	G	G	G	G	G	G	52	G	G	G	G	27	36	34	60	57
15	54	G	G	G	G	G	G	34	G	49	47	G	56	48	G	42	44	36	32	41	52	29	44	29
16	G	G	G	G	G	G	G	34	40	44	G	G	G	45	G	G	61	67	59	52	34	29	G	G
17	G	G	G	G	G	G	G	37	45	G	51	G	56	52	G	49	54	54	54	86	30	34	82	G
18	G	G	G	G	G	G	G	32	G	G	G	G	56	60	G	G	G	34	32	55	35	G	28	G
19	G	G	G	G	G	G	G	G	38	46	G	G	G	G	G	G	43	G	G	32	40	32	27	G
20	G	G	G	G	G	G	G	32	42	48	62	47	G	48	G	G	42	G	G	G	49	37	G	28
21	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G	G	G	38	30	23	G	G	G	G
22	G	G	G	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	36	G	G	G	G	26
23	G	G	G	G	G	G	G	34	G	44	44	51	G	G	G	G	G	G	G	27	G	G	G	58
24	38	47	59	G	G	G	G	G	G	84	56	63	G	G	G	42	G	G	30	29	28	G	48	36
25	30	G	51	34	25	G	G	42	78	G	44	G	G	G	G	G	G	G	G	44	35	30	46	G
26	G	G	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
27	G	G	G	G	G	G	G	G	G	42	G	G	G	G	G	G	G	G	28	G	G	G	G	G
28	G	G	G	G	G	G	G	36	G	50	70	51	B	51	61	G	G	40	28	38	51	28	G	G
29	G	G	G	G	G	G	G	G	G	G	58	G	G	G	G	54	G	G	G	G	58	26	37	27
30	G	G	G	G	G	G	G	G	G	G	G	G	46	G	G	G	G	G	29	27	29	32	25	27
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	G	32	G	22	46	47	G	G	G	G	G	35	31	36	34	28	28	26
U Q	29	G	G	G	G	G	G	36	45	49	58	52	54	51	46	49	45	45	47	53	49	33	48	32
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	23	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

SEP. 2014

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

$\begin{matrix} H \\ D \end{matrix}$	00	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	17	14	14	20	22	30	24	28	22	21	21	14	14	14	14	14	14	15	15	
2	14	16	14	15	14	15	17	14	14	18	22	27	27	54	20	17	15	15	15	14	15	14	14	14	14	
3	15	15	15	14	14	17	14	15	16	21	27	35	39	27	26	36	20	14	14	14	14	15	17	17	17	
4	15	18	15	16	14	14	17	15	14	32	35	27	36	49	20	16	18	14	14	15	15	14	14	15	15	
5	14	16	17	14	14	17	22	17	15	20	20	38	36	36	35	34	32	15	14	16	14	14	15	14	14	
6	14	15	15	14	14	14	18	16	17	34	23	34	33	33	28	33	17	17	17	15	15	14	15	15	15	
7	17	14	15	16	14	14	18	16	20	18	27	35	38	38	28	26	20	14	15	14	14	14	14	14	15	
8	15	15	15	16	14	15	17	14	15	18	28	35	39	36	32	22	17	14	14	14	15	15	15	14	14	
9	14	14	16	14	15	14	16	15	16	58	101	59	59	56	36	26	20	16	14	14	14	15	14	16	16	
10	14	15	16	16	15	17	17	14	16	22	21	39	49	21	52	21	15	14	14	14	14	15	15	16	16	
11	21	17	15	15	15	14	17	17	18	37	30	36	36	36	33	28	21	16	14	14	14	15	16	15	15	
12	14	14	14	15	14	15	20	17	16	36	34	34	55	52	47	22	39	15	14	15	15	15	14	15	15	
13	15	15	17	18	66	66	14	14	14	20	24	35	48	54	33	21	22	14	14	15	14	14	14	16	16	
14	18	16	15	15	15	15	17	16	22	36	18	46	55	49	18	14	20	16	15	16	15	15	14	14	14	
15	14	14	14	14	15	17	17	16	17	21	21	44	38	39	34	22	20	14	14	14	15	14	15	16	16	
16	17	18	16	15	15	16	16	15	17	30	47	42	49	38	47	24	17	14	14	14	14	14	17	15	15	
17	15	15	15	15	15	14	15	14	17	27	21	41	28	36	50	24	20	14	15	15	14	14	14	14	14	
18	15	14	15	15	15	15	15	15	14	20	45	48	36	32	30	22	17	15	14	15	14	15	14	18	18	
19	14	15	16	15	15	15	15	14	16	24	33	30	47	28	28	24	20	16	21	17	15	15	15	15	15	
20	18	17	15	15	14	15	15	15	17	20	27	28	33	51	46	28	20	16	21	16	14	14	17	15	15	
21	20	14	28	16	16	16	16	14	14	16	37	48	18	48	45	36	40	20	14	14	15	16	16	15	15	
22	16	16	15	18	15	17	15	14	14	21	43	47	48	51	20	20	18	14	14	15	15	15	17	15	15	
23	15	15	15	15	15	15	15	14	16	17	20	38	18	18	44	39	17	14	20	16	15	15	14	16	16	
24	15	14	14	15	14	15	15	16	20	26	35	36	54	27	39	23	18	14	14	14	15	14	14	15	15	
25	14	15	15	14	14	15	18	16	16	36	28	50	26	47	40	39	17	15	21	14	16	17	17	15	15	
26	18	15	15	15	15	15	15	15	18	27	42	52	53	53	49	43	38	28	20	17	15	16	21	15	15	
27	15	14	16	15	15	15	17	14	14	22	29	48	42	28	39	38	22	14	15	14	15	15	15	15	15	
28	15	15	14	16	14	15	15	15	15	20	24	38	B	42	42	26	20	14	14	14	14	15	15	71	71	
29	15	15	14	15	16	15	17	14	15	17	35	54	45	48	44	30	18	15	20	15	14	16	15	15	15	
30	20	15	14	17	15	14	15	14	18	20	41	52	50	52	40	24	16	16	15	16	15	15	17	17	17	
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	
MED	15	15	15	15	15	15	16	15	16	21	28	38	39	38	36	24	20	14	14	14	15	15	15	15	15	
U Q	17	16	16	16	15	16	17	16	17	30	35	48	49	51	44	33	21	16	15	15	15	15	16	16	16	
L Q	14	14	14	15	14	15	15	14	14	20	22	35	33	32	28	22	17	14	14	14	14	14	14	15	15	

HOURLY VALUES OF foF2 AT Okinawa

SEP. 2014

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

$\begin{matrix} H \\ D \end{matrix}$	00	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	50	72	53	52	50	54	67	76	87	88	96	98	102	113	120	130	130	120	108	107	66	53	52	
2	52	51	52	53	53	43	44	71	78	77	78	75	87	100	104	97	101	108	108	107	81	73	54	58	
3	58	A	53	53	52	48	A	80	77	78	101	A	74	84	90	89	A	107	126	106	74	A	A	52	
4	61	53	54	54	53	47	53	79	96	84	75	87	98	96	91	111	125	143	148	130	108	107	66	109	
5	87	83	67	53	54	54	61	70	73	77	85	90	101	88	107	120	121	117	130	130	88	77	67	60	
6	67	72	73	56	52	51	58	80	80	76	85	A	106	117	127	134	138	149	132	89	86	87	68	67	
7	63	67	72	65	52	40	48	81	85	72	77	80	105	108	118	123	129	142	143	105	88	A	79	78	
8	67	76	74	N	63	60	72	88	91	81	80	91	101	108	117	126	148	139	146	130	105	109	107	84	
9	74	N	54	58	A	46	54	87	80		B	88	A	108	120	118	125	120	124	106	75	A	A	76	
10	A	72	77	72	68	53	60	90	88	78	86	108	A	124	128	119	133	114	150	132	118	128	130	108	
11	118	103	110	104	61	51	73	88	99	90	86	A	106	109	118	121	131	129	134	108	73	A	71	66	
12	54	54	66	61		42	46	84	97	87	88	120	A	131	134	131	143	142	146	131	121	88	76	81	81
13	54	53	53	49	34	32	43	54	57		76	72	A	105	117	120	127	116	118	107	88	72	82	67	
14	66	53	54	46	36	36	46	82	78	86	86	106	120	118	118	133	132	129	117	104	65	73	A	54	
15	79	83	52	54	52	44	50	77	85	100	85	98	106	118	117	118	132	134	120	108	110	A	53	105	
16	78	77	80	C	C	C	C	C	C	C	C	C		118	120	131	138	148	144	128	108	104	87	86	83
17	75	78	52	48	50	46	51	84	84	88	101	114	118	131	131	133	118	121	130	89	86	81	A	72	
18	71	52	67	63	57	51	53	88	81	84	90	103	107	118	112	108	124	131	122	108	79	77	80	87	
19	87	72	73	52	60	58	67	86	81	90	85	87	107	120	118	117	122	132	124	107	88	73	52	66	
20	82	66	54	67	60	53	77	88	90	86	87	105	109	128	126	110	108	115	118	79	88	78	72	75	
21	77	77	52	63	56	51	62	88	86	97	88	96	107	107	108	72	104	102	A	83	55	52	54	55	
22	52	39	53	52	46	48	50	78	102	90	85	78	97	101	108	117	131	118	106	80	77	74	53	72	
23	64	52	66	43		43	50	85	97	112	101	112	108	116	117	108	107	105	103	104	88	52	83	86	
24	87	82	52	52	46	42	41	80	82	86	100	120	128	126	132	130	130	131	N	110	90	48		54	
25	53	50	50		B		40	76	102	106	107	118	118	144	131	134	144	143	131	118	87	74	54	A	
26		47	48	47	44	40		77	86	94	96	104	120	133	132	131	118	129	120	107	107	72	52	52	
27	53	52	47	48	47	44	48	77	106	110	108	126	131	133	132	131	143	131	108	108	96	54	63	60	
28	66	52	47	46	44	44	48	87	89	96	97	108		120	117	118	135	131	133	120	109	89	67	60	
29	52	52	48	52	49	46	47	85	101	108	110	108	120	128	134	134	134	130	121	115	104	86	87	66	
30	67	52	67	51	47	44	47	80	88	87	95	106	120	118	143	139	149	149	N	131	132	120	86	54	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	28	30	27	25	28	27	29	29	27	28	26	27	30	30	30	29	30	27	30	30	25	25	28	
MED	67	54	54	53	52	46	50	81	86	87	88	104	107	118	118	120	130	130	124	108	88	76	68	66	
U Q	78	76	72	61	56	51	60	87	96	96	98	108	120	128	131	133	136	142	132	118	105	87	82	79	
L Q	56	52	52	49	46	43	47	77	80	81	85	88	101	107	113	117	119	118	118	105	81	72	54	56	

HOURLY VALUES OF fEs AT Okinawa

SEP. 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	35	G	49	G	58	61	52	57	63	G	G	G	28	G	25	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	49	G	G	48	80	43	G	G	G	G
3	34	28	26	29	35	G	54	36	48	G	51	102	G	G	62	G	96	50	61	56	57	86	59	39
4	45	50	G	G	G	24	G	39	51	54	50	53	59	54	G	53	48	72	79	44	25	27	33	27
5	G	G	G	G	G	G	G	33	G	G	G	G	G	G	53	58	67	73	72	49	38	60	58	26
6	G	G	G	G	G	G	G	36	45	58	76	86	76	76	53	58	G	38	G	G	G	G	34	G
7	G	G	G	G	G	G	23	33	G	G	65	G	72	54	51	48	53	46	50	74	60	59	G	30
8	G	G	G	G	G	G	G	35	G	G	51	G	G	G	76	66	50	57	36	45	G	G	G	G
9	G	G	G	57	52	39	34	43	48	G	B	G	136	53	G	54	51	46	54	58	69	69	67	50
10	58	43	G	G	G	G	G	G	48	47	43	50	G	G	G	G	G	G	47	51	55	46	G	G
11	G	45	G	11	G	G	G	36	44	48	G	73	G	G	G	G	47	56	G	53	41	58	36	G
12	32	G	46	36	G	G	G	34	53	49	54	62	G	G	G	G	G	52	35	27	G	G	G	27
13	G	G	G	G	G	G	G	G	G	G	G	54	49	50	G	49	44	30	69	46	40	32	24	G
14	G	G	G	G	G	G	G	G	G	G	G	44	G	G	G	G	G	G	37	29	46	46	53	48
15	26	34	25	26	G	G	G	34	G	G	52	G	58	G	54	93	50	46	G	G	G	49	25	G
16	G	G	G	C	C	C	C	C	C	C	C	C	G	G	50	G	G	45	35	39	58	33	33	G
17	G	G	G	G	G	G	G	35	41	47	47	G	G	G	G	52	48	49	43	60	57	58	50	G
18	G	G	G	G	G	G	G	G	G	50	G	G	G	G	G	G	G	G	G	27	G	G	G	G
19	G	G	G	G	G	G	G	G	G	43	48	54	G	G	G	G	62	46	G	40	G	G	G	G
20	G	G	G	G	G	G	G	G	45	47	G	G	G	G	G	78	55	50	28	49	32	26	G	G
21	G	G	G	G	G	G	G	33	G	41	G	G	G	G	G	G	50	46	41	35	G	G	G	G
22	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	40	57	26	26	26	G	G
23	G	G	G	G	G	G	G	G	45	50	G	G	G	G	G	G	G	G	30	39	28	24	G	G
24	G	G	G	G	G	G	G	33	49	52	54	50	G	G	G	G	G	G	G	36	26	24	G	45
25	46	G	G	G	B	G	G	35	42	93	84	86	55	G	49	G	G	68	54	39	35	32	43	G
26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	G	G	G	G	G
28	G	G	G	G	G	G	24	34	42	G	50	54	G	75	G	G	G	G	G	38	G	36	25	26
29	27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	35	G	G	G	72	58	G
30	27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	48	36	28	28	27	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	29	28	29	29	29	29	29	28	29	30	30	30	30	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	46	35	39	26	26	G	G
U Q	26	G	G	G	G	G	G	35	45	49	51	54	49	G	50	53	50	50	50	49	46	49	34	27
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	27	G	G	G	G

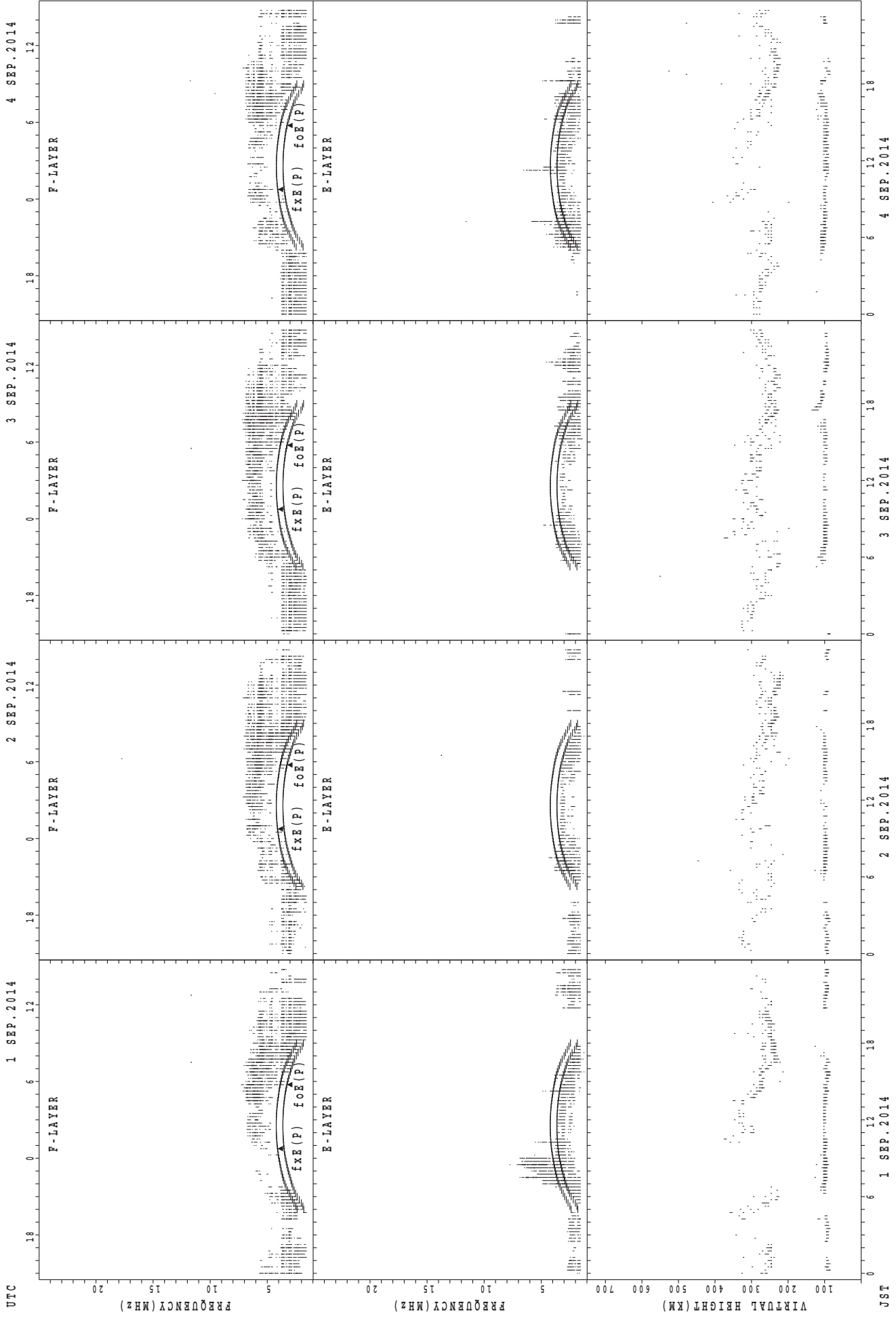
HOURLY VALUES OF fmin AT Okinawa

SEP. 2014

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

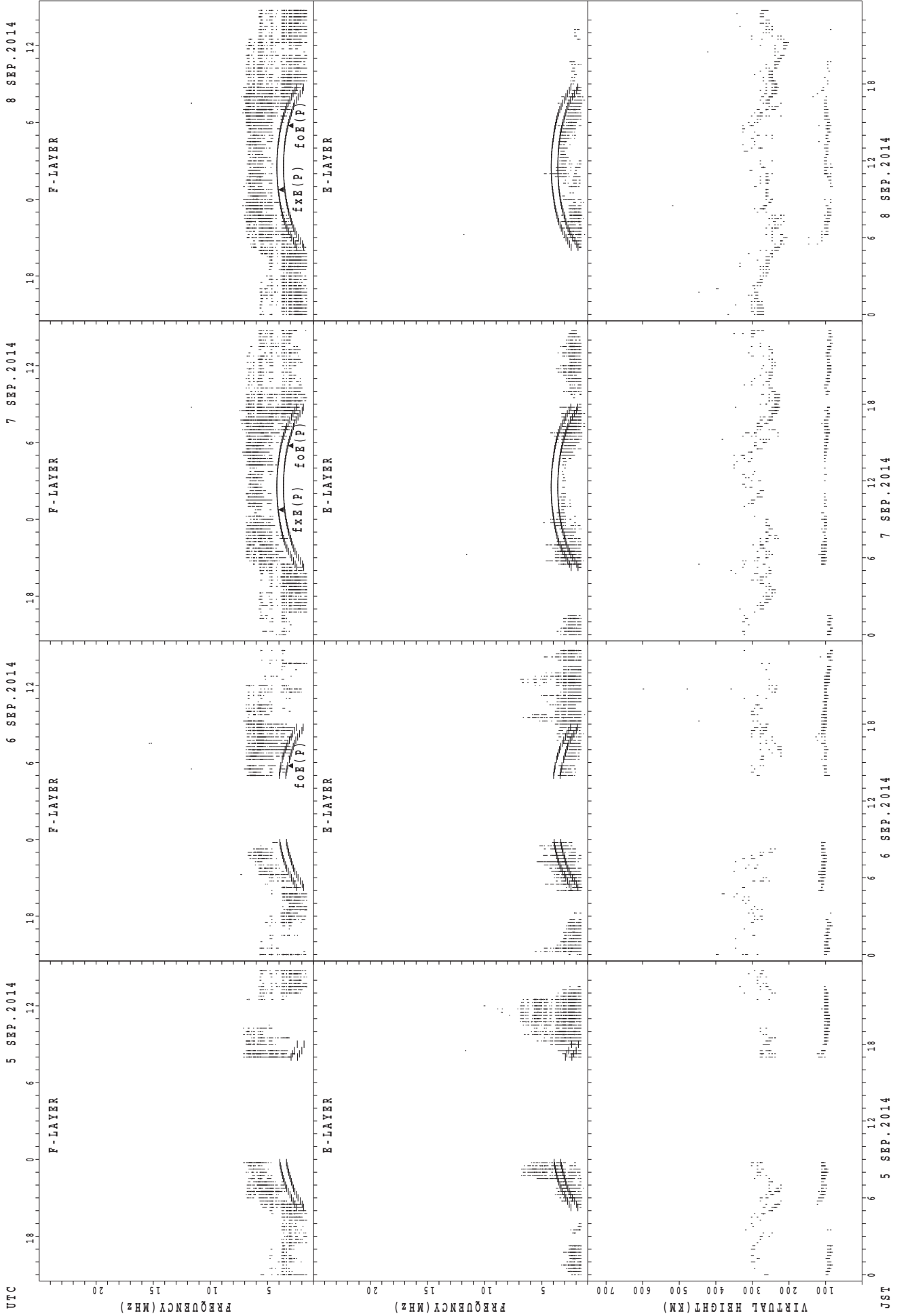
$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	18	17	15	16	14	15	15	20	22	46	40	39	38	39	32	48	21	14	17	15	16	18	17
2	16	18	18	20	15	15	15	18	18	43	49	53	66	53	30	55	42	30	14	17	24	15	15	17
3	15	15	14	15	14	17	14	15	27	42	38	39	63	72	40	46	35	18	17	14	15	14	15	15
4	16	15	20	20	23	14	18	14	17	29	44	36	43	40	48	38	34	20	14	15	16	17	17	18
5	21	17	17	42	17	15	18	16	38	43	44	40	52	65	43	39	38	17	17	17	16	15	14	15
6	15	17	15	20	16	16	16	20	30	38	40	39	39	39	42	38	39	21	17	21	18	30	17	27
7	38	17	26	20	15	17	18	18	35	38	35	68	42	40	50	40	36	17	21	15	15	14	16	16
8	15	15	21	16	15	18	16	20	21	40	42	53	52	63	40	40	22	21	16	15	16	16	16	16
9	20	18	18	15	15	14	15	15	21	60	B	65	45	43	52	38	39	32	20	16	15	15	15	15
10	18	18	24	22	14	15	18	18	21	30	29	30	52	58	49	53	42	15	14	15	16	14	38	22
11	20	17	17	15	15	18	16	20	29	41	46	40	54	71	55	48	30	21	26	15	14	14	14	39
12	20	34	35	14	18	17	18	18	28	35	39	40	53	60	53	50	39	27	16	14	16	15	16	15
13	16	20	16	15	66	66	16	18	16	71	50	40	40	42	60	36	29	18	14	15	14	15	15	16
14	18	29	16	18	18	15	15	27	20	40	48	21	55	50	59	55	59	22	14	16	17	16	15	15
15	15	15	15	14	18	16	17	21	18	44	43	50	40	50	40	38	32	15	14	16	20	15	16	20
16	15	15	15	C	C	C	C	C	C	C	C	C	53	49	52	50	42	18	17	14	15	15	15	24
17	20	17	15	18	15	15	15	14	21	32	52	48	54	63	55	39	40	26	18	15	15	15	15	17
18	15	15	17	17	16	18	16	17	33	39	45	60	57	54	46	43	40	42	17	15	18	22	21	24
19	42	23	17	14	18	15	17	24	30	29	39	36	54	56	45	45	27	18	23	14	15	27	20	20
20	15	21	17	15	20	16	16	26	21	29	44	55	N	55	52	29	23	18	14	15	16	16	51	44
21	29	49	21	17	39	15	15	20	21	41	42	50	52	68	63	52	35	24	18	14	17	20	21	18
22	17	16	40	17	16	16	16	15	17	40	43	60	52	53	67	44	21	20	18	15	14	17	17	24
23	15	18	18	17	71	17	16	28	16	35	43	50	53	47	48	43	38	18	17	16	15	14	17	40
24	20	15	39	17	15	21	18	18	20	34	38	42	58	48	46	44	37	21	18	15	15	15	40	14
25	16	15	23	18	B	66	18	20	20	36	34	35	35	54	40	47	40	22	15	15	16	18	16	18
26	66	14	22	16	17	15	66	28	21	39	40	48	54	45	52	50	42	36	18	15	15	16	16	16
27	17	17	15	16	15	15	16	27	18	42	46	58	50	48	47	48	39	18	15	17	16	18	15	15
28	16	15	16	20	18	15	16	20	29	43	43	41	141	46	48	52	42	18	17	14	40	14	16	15
29	15	16	16	15	20	20	32	29	18	42	42	50	61	54	55	42	40	21	22	16	15	20	17	20
30	14	18	20	15	17	17	16	28	40	42	42	45	52	51	53	26	20	16	15	15	14	15	18	21
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	29	28	29	29	29	29	29	28	29	29	30	30	30	30	30	30	30	30	30	30	30
MED	16	17	17	17	16	16	16	20	21	40	43	45	52	52	48	44	38	20	17	15	16	15	16	18
U Q	20	18	21	19	18	17	18	25	29	42	45	53	54	58	53	50	40	22	18	16	16	17	18	22
L Q	15	15	16	15	15	15	15	16	18	34	39	39	44	46	43	38	32	18	14	15	15	15	15	15

SUMMARY PLOTS AT Wakkanai



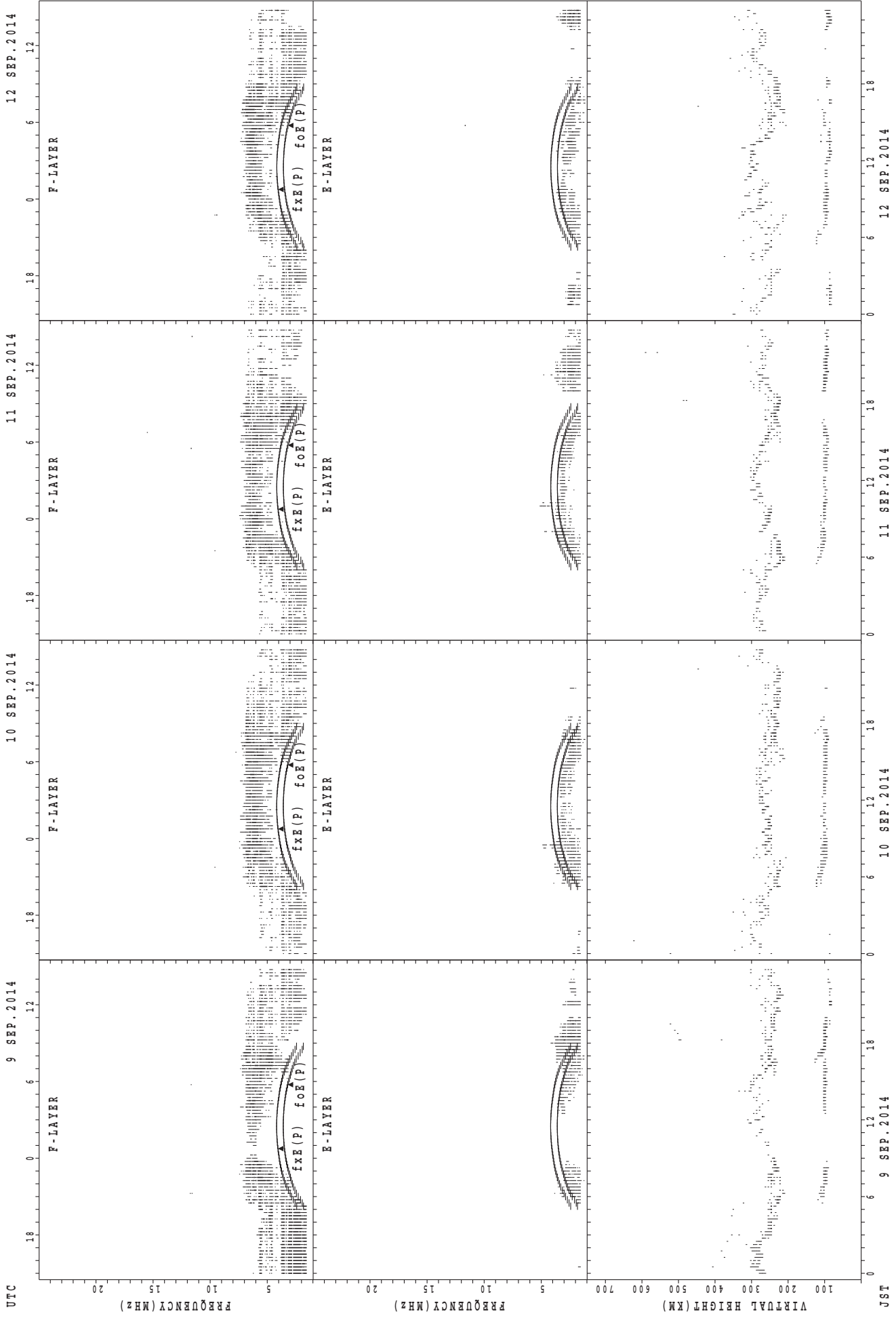
foF2(P); PREDICTED VALUE FOR foF2
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Wakkanai



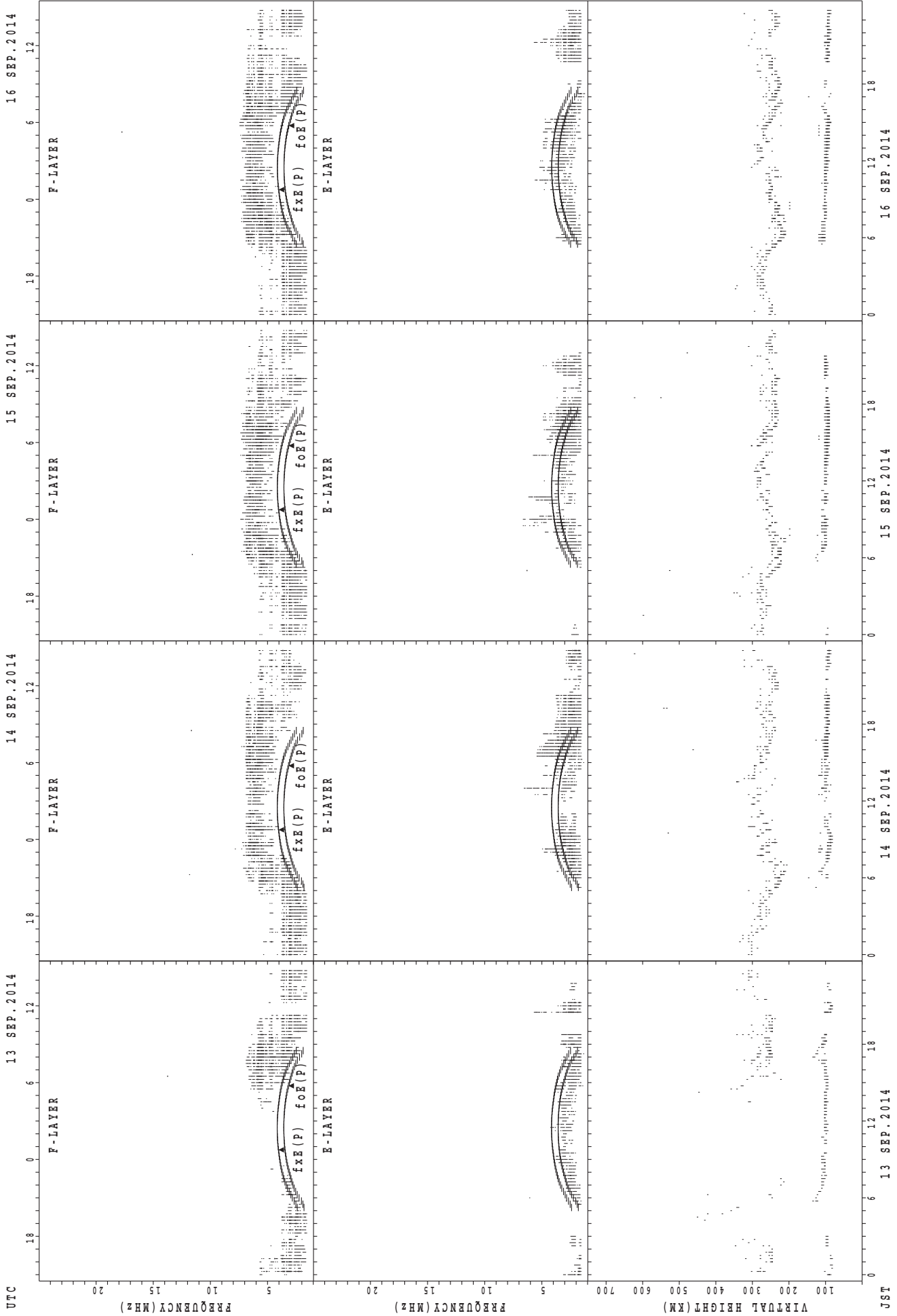
UTC
 9 SEP. 2014
 10 SEP. 2014
 11 SEP. 2014
 12 SEP. 2014

VIRTUAL HEIGHT (KM)
 FREQUENCY (MHZ)
 FREQUENCY (MHZ)
 FREQUENCY (MHZ)

foe(P); PREDICTED VALUE FOR foe
 fxe(P); PREDICTED VALUE FOR fxe

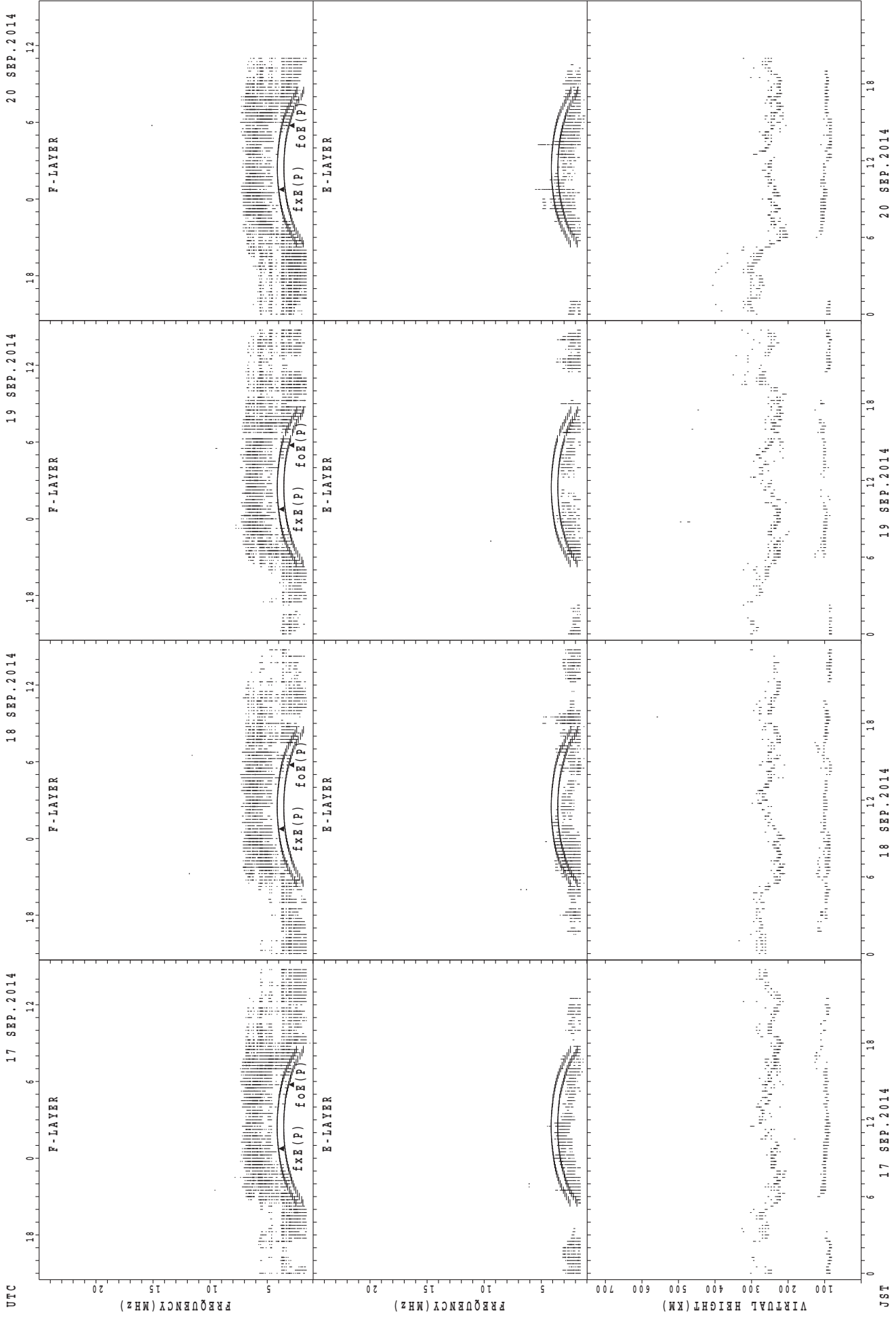
JST
 9 SEP. 2014
 10 SEP. 2014
 11 SEP. 2014
 12 SEP. 2014

SUMMARY PLOTS AT Wakkanai



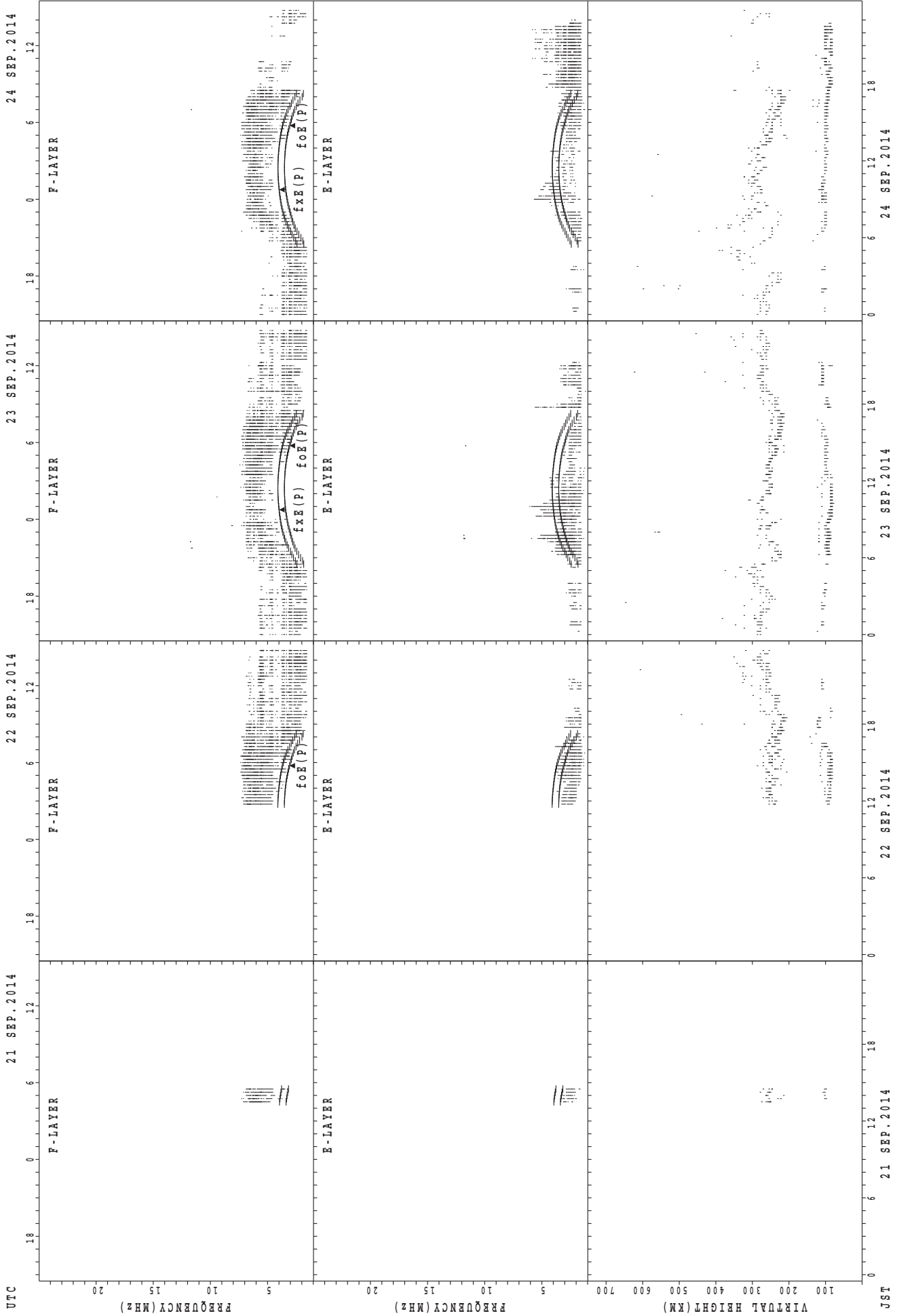
fxe(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



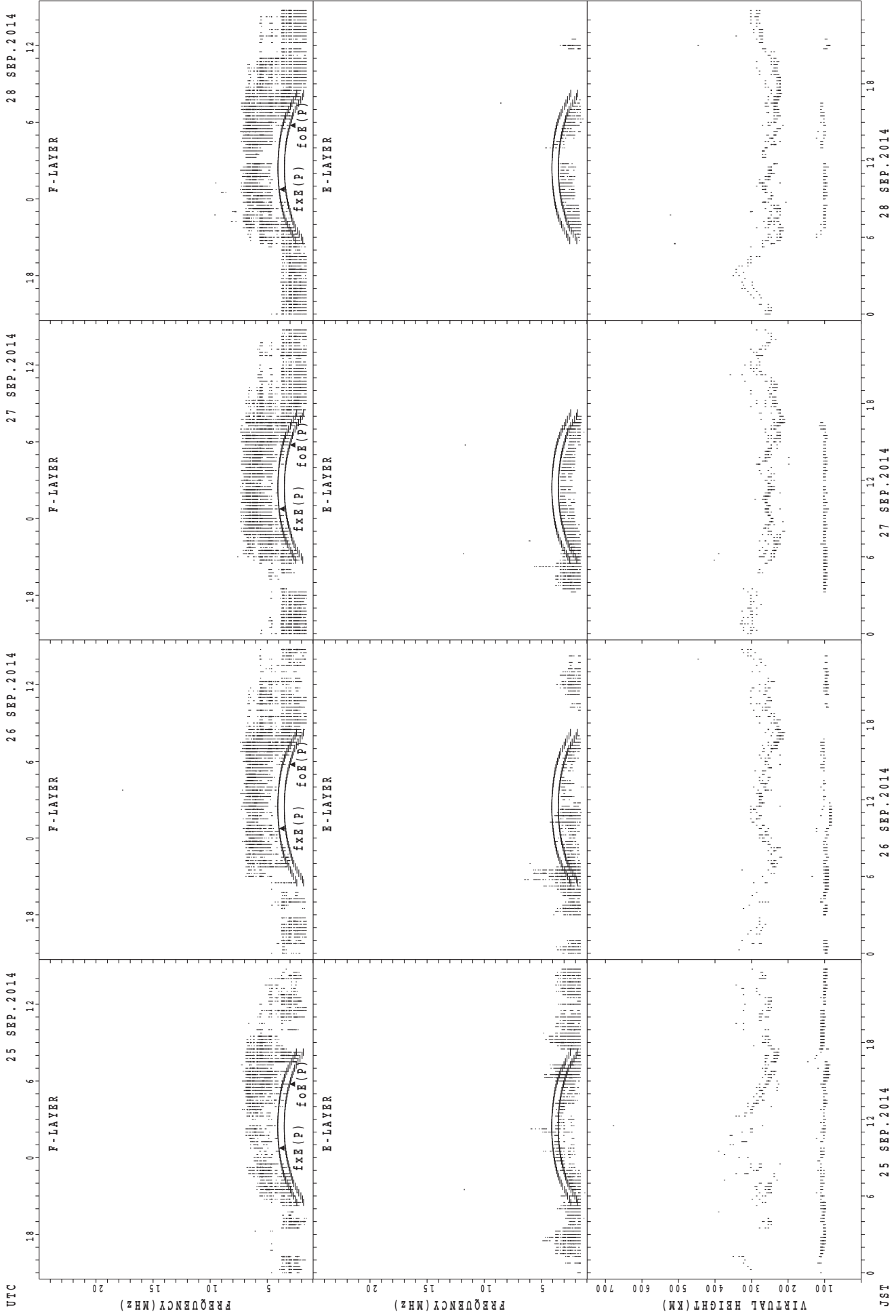
f_xE(P); PREDICTED VALUE FOR f_xE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



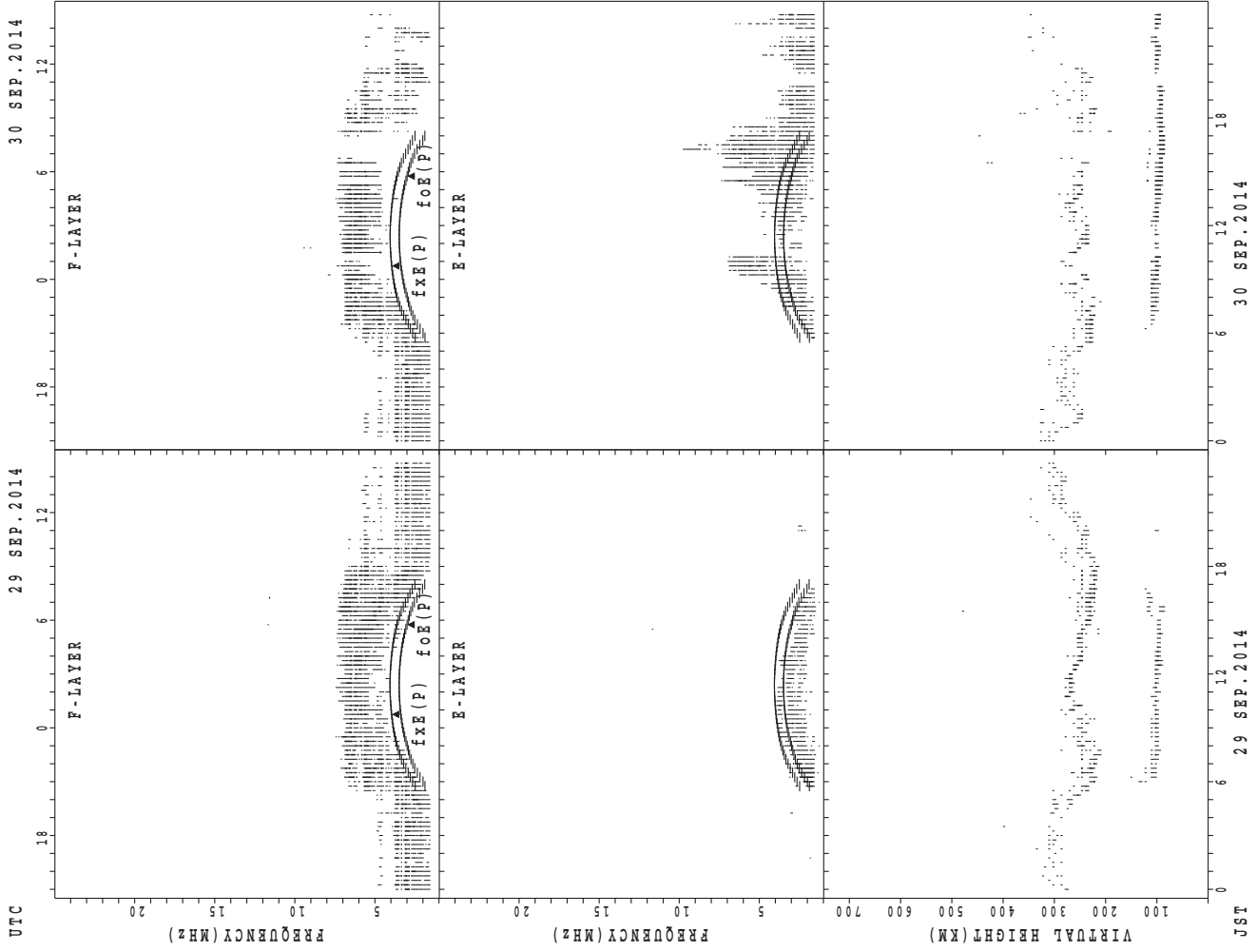
UTC
21 SEP. 2014
22 SEP. 2014
23 SEP. 2014
24 SEP. 2014
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

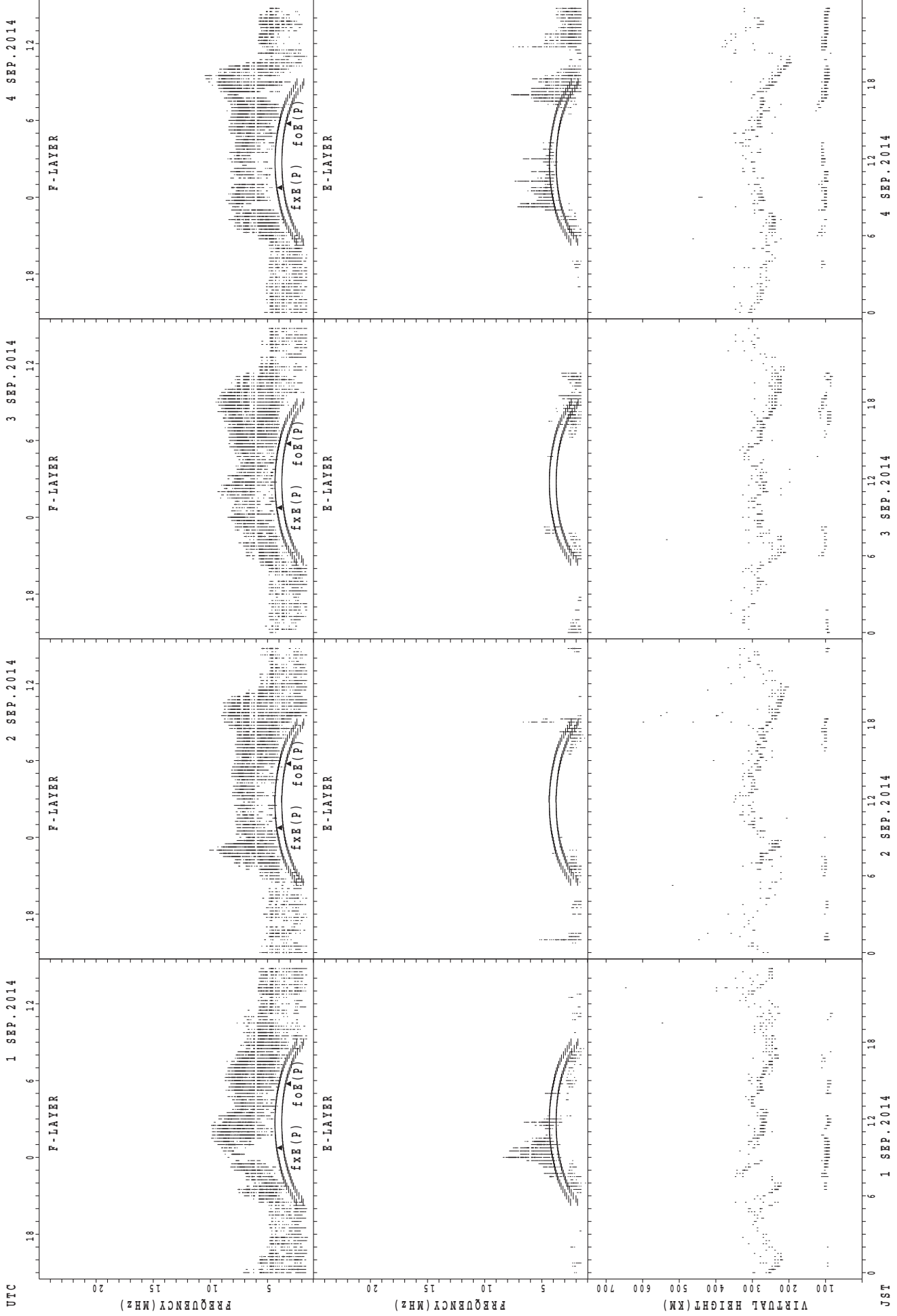


fxe(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

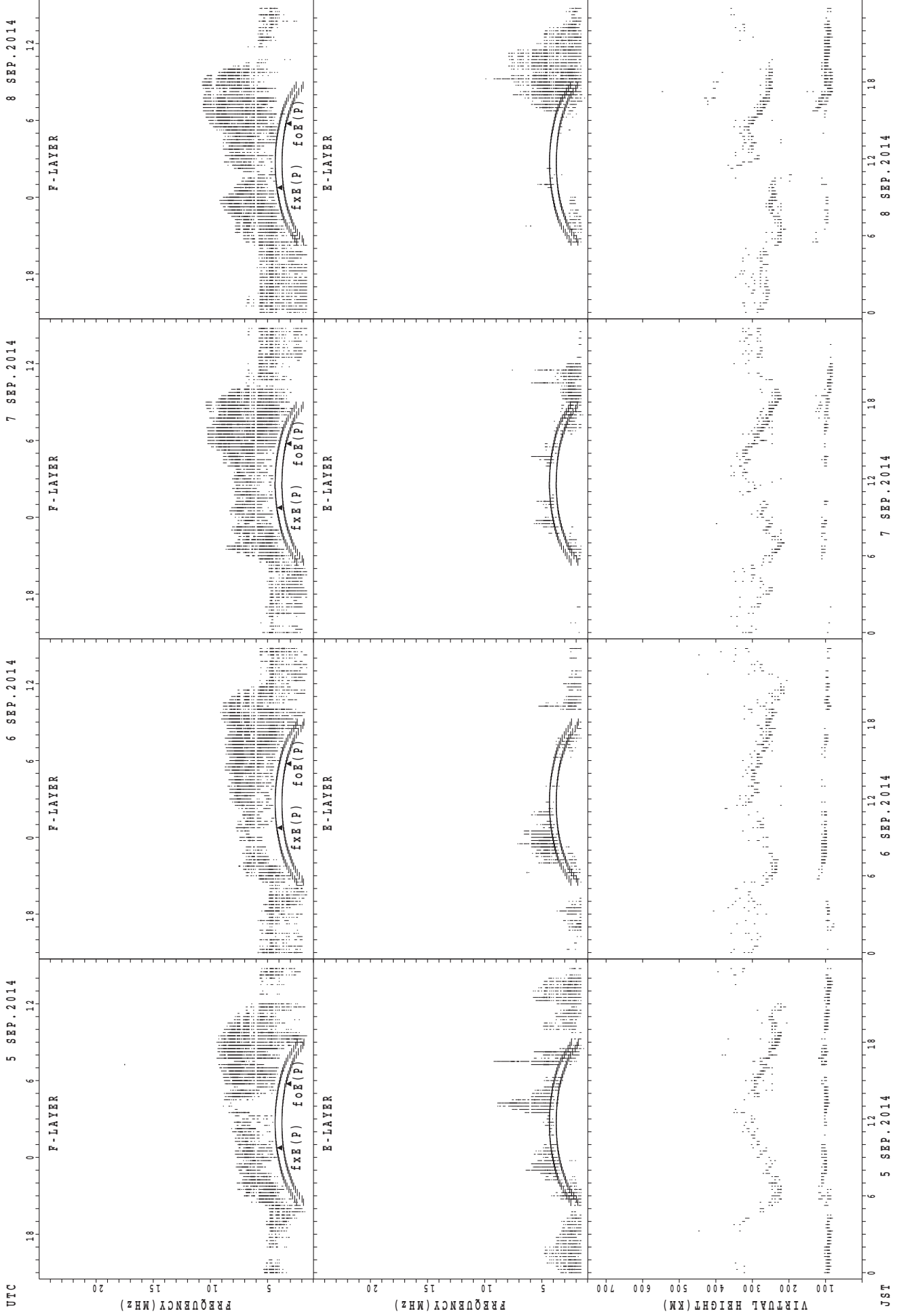


SUMMARY PLOTS AT Kokubunji



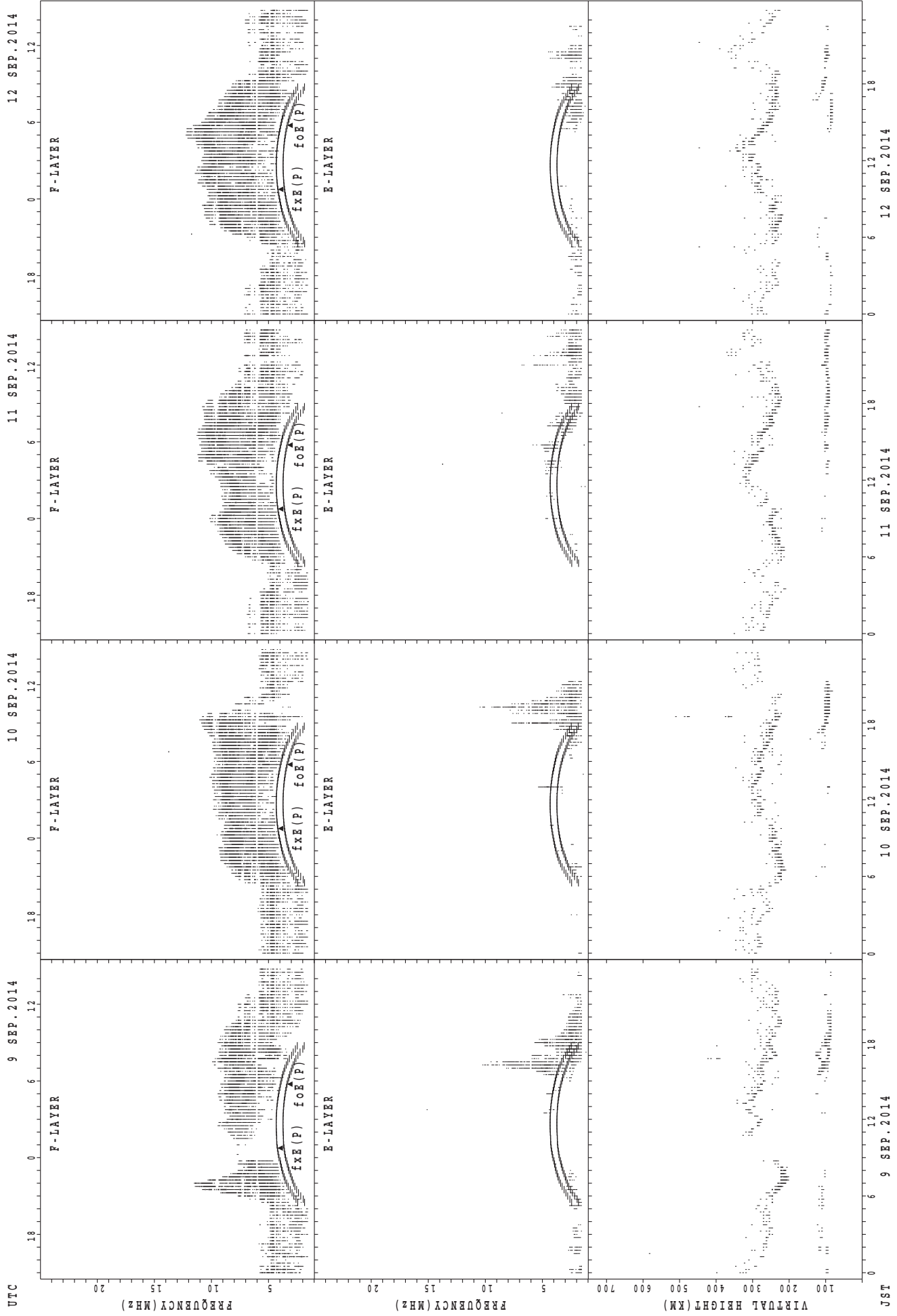
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



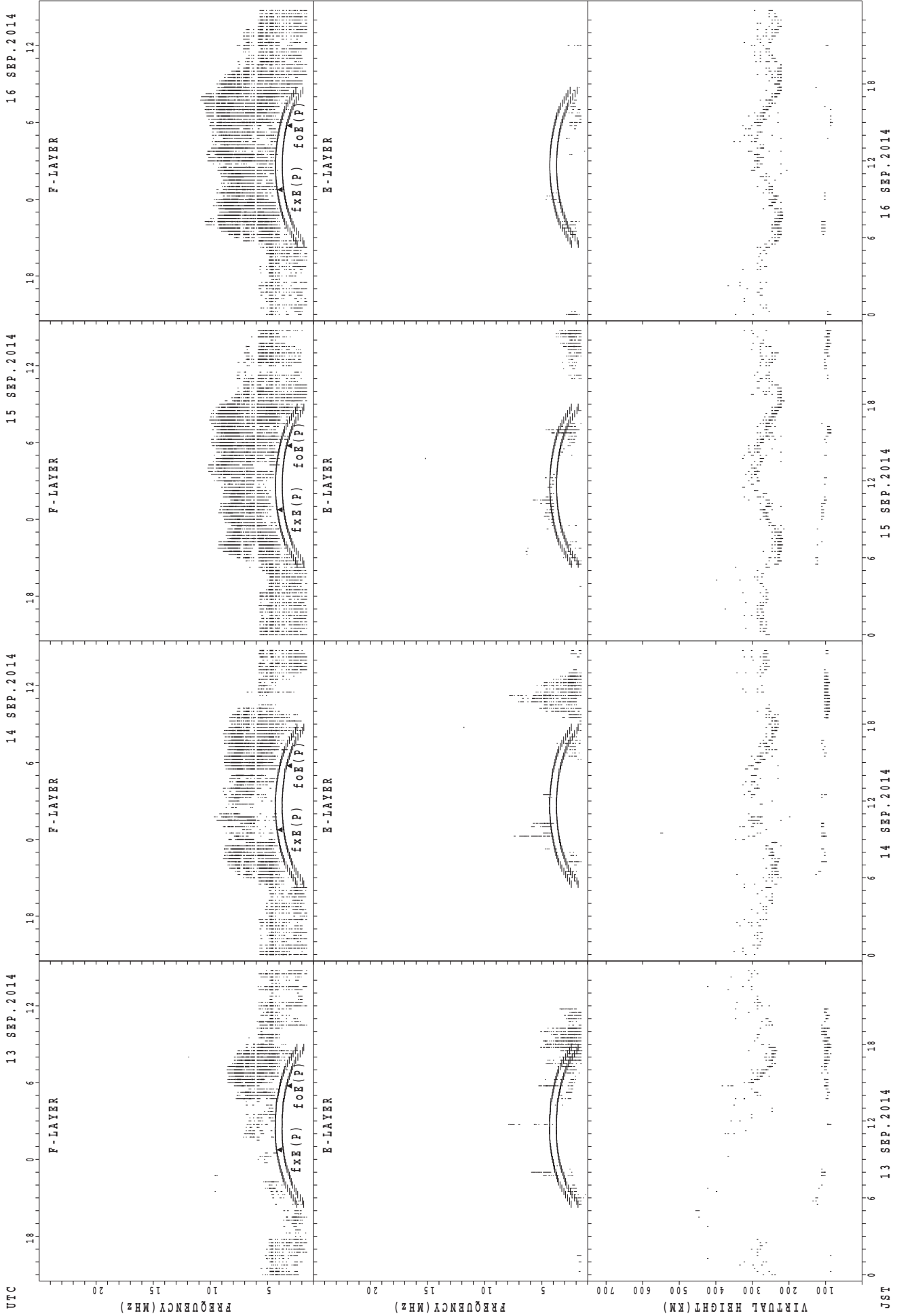
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



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

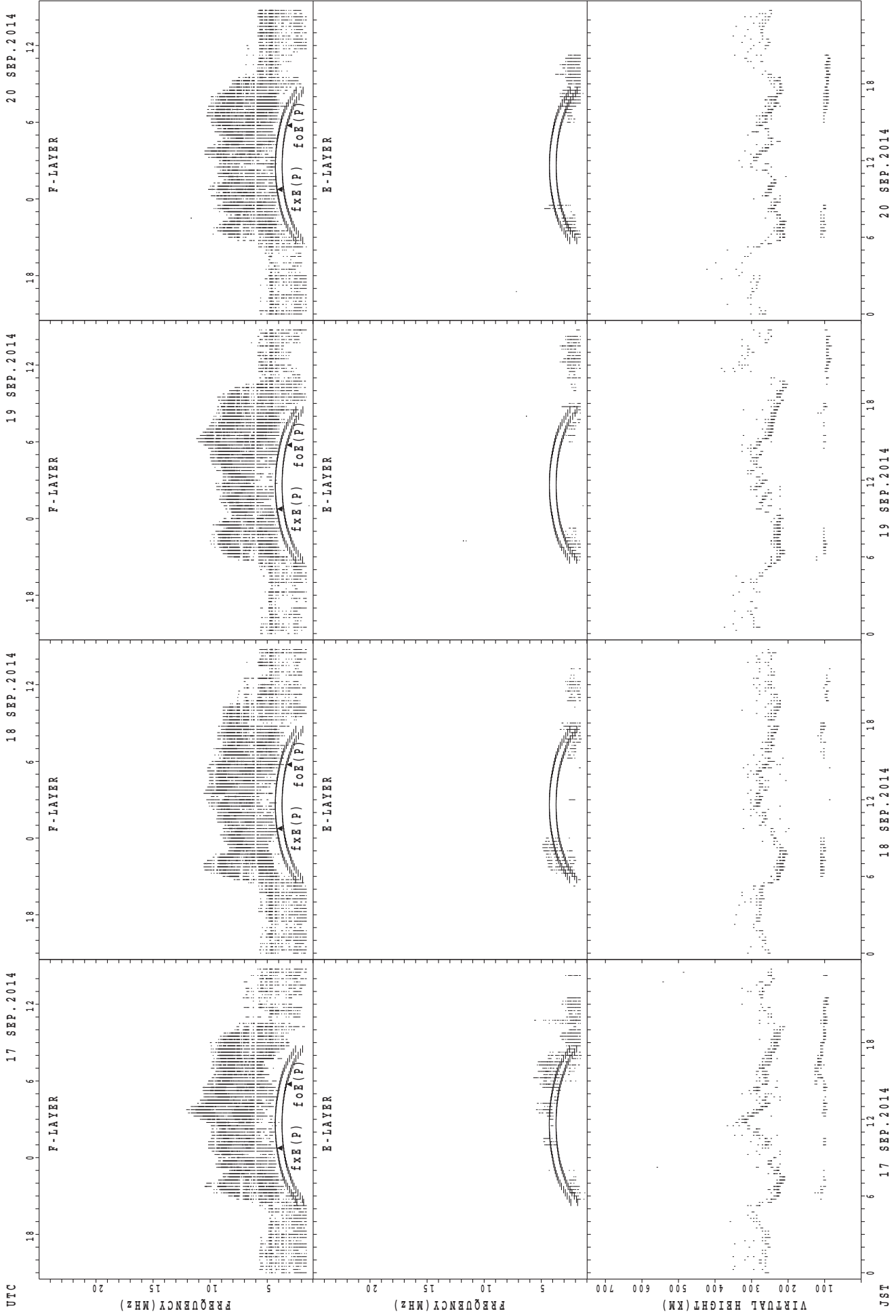
SUMMARY PLOTS AT Kokubunji



UTC
13 SEP. 2014
14 SEP. 2014
15 SEP. 2014
16 SEP. 2014
JST

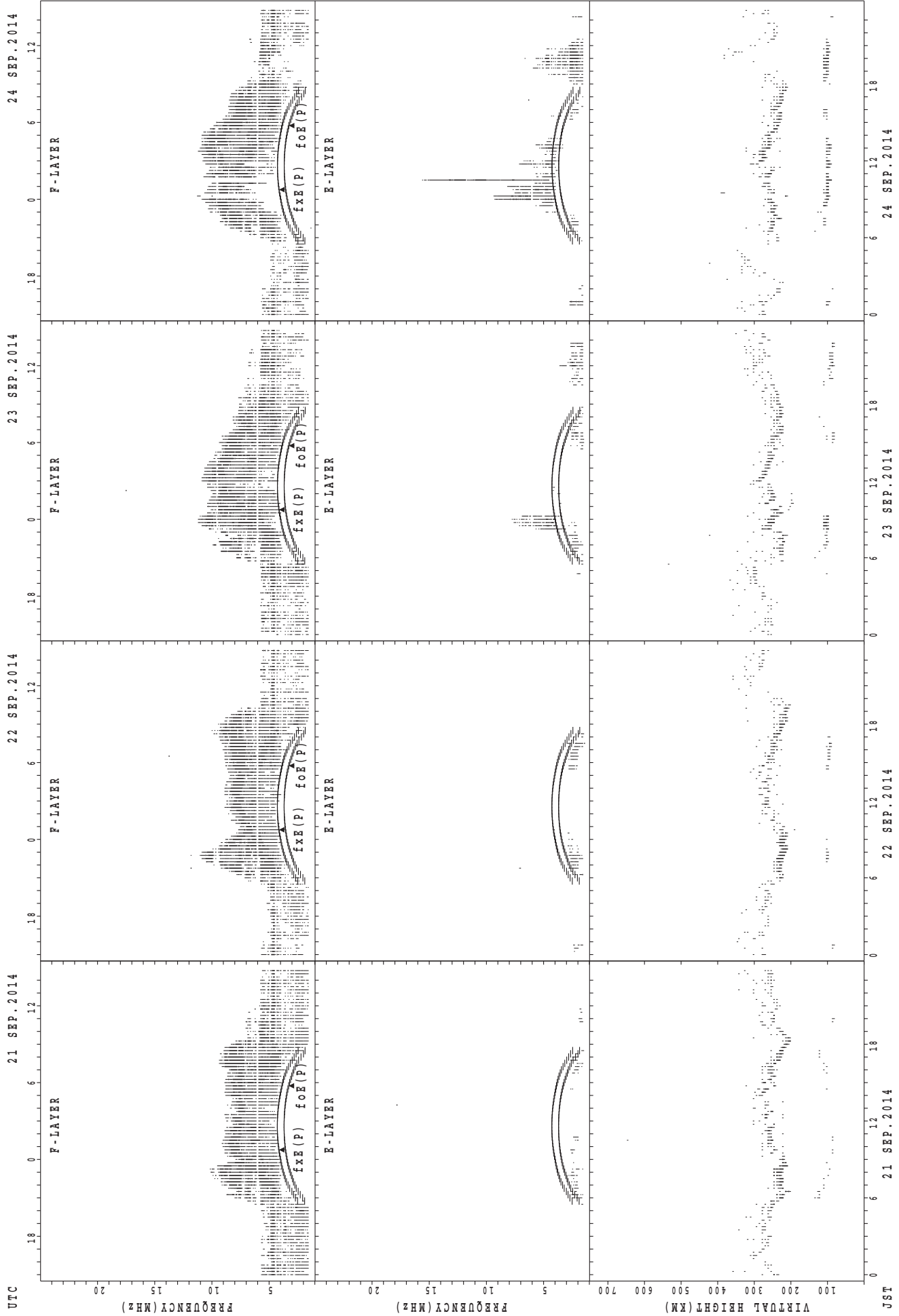
$f_{xe}(P)$; PREDICTED VALUE FOR f_{xe}
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



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

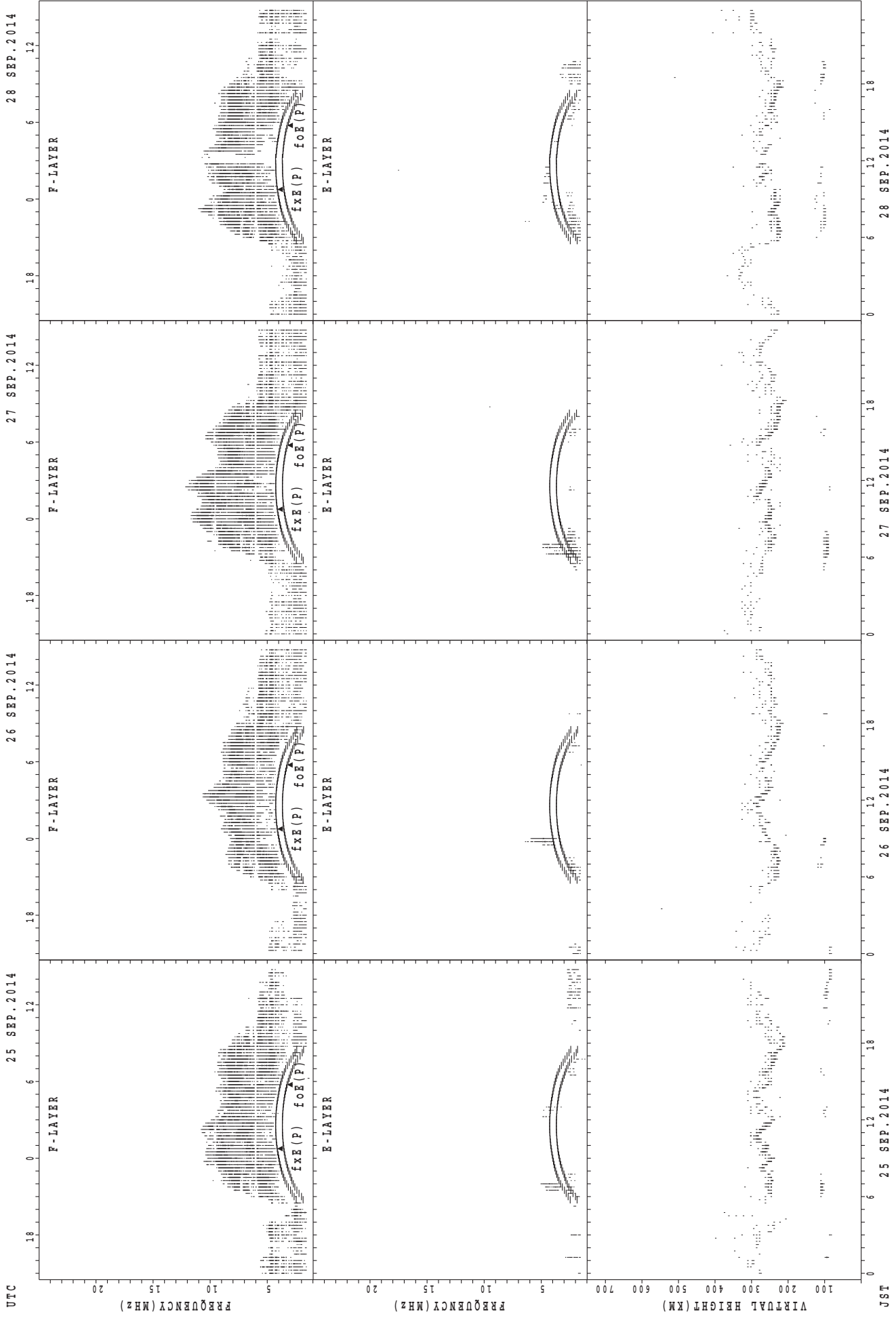
SUMMARY PLOTS AT Kokubunji



UTC
 21 SEP. 2014
 22 SEP. 2014
 23 SEP. 2014
 24 SEP. 2014
 JST

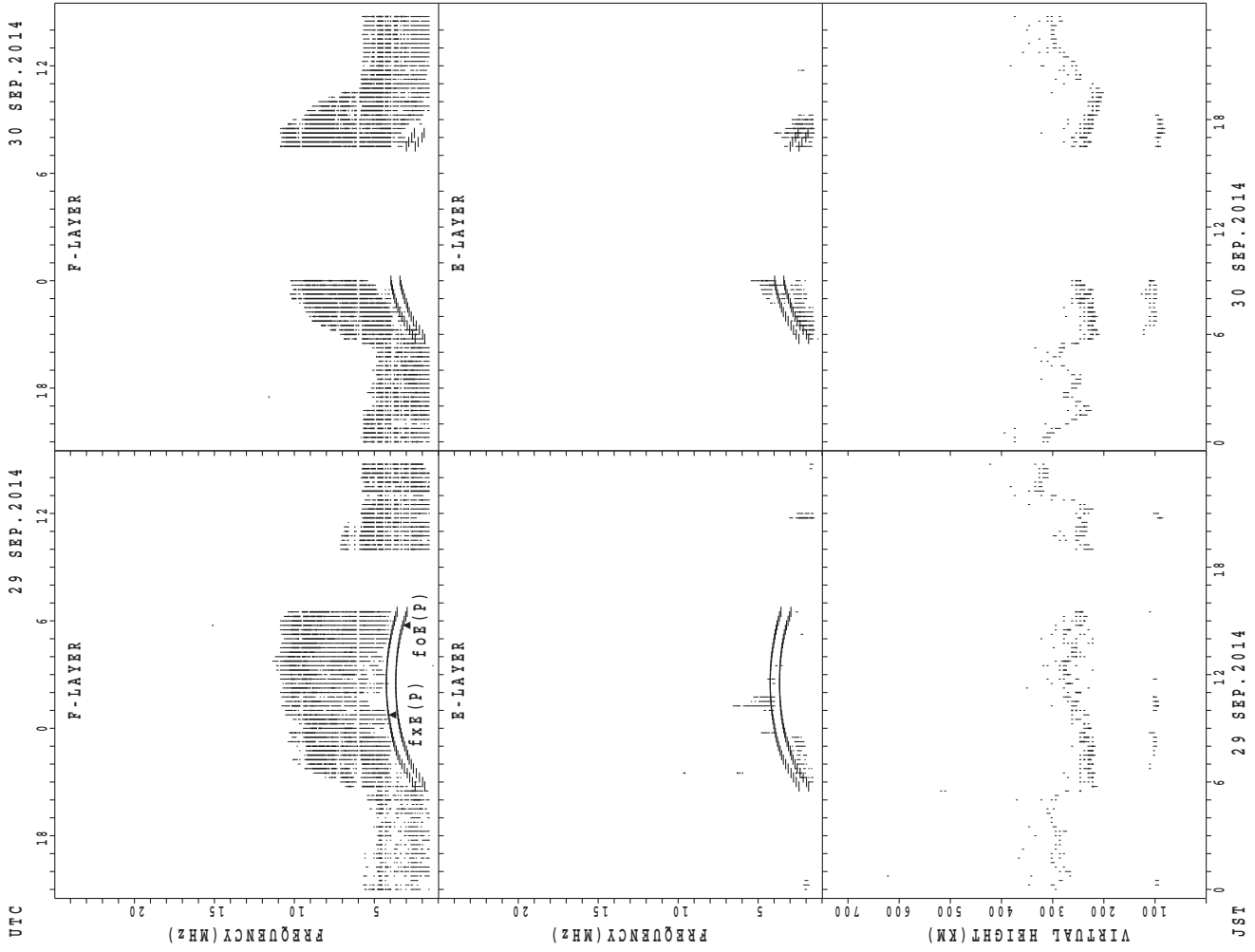
fxe(P); PREDICTED VALUE FOR fxe
 foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



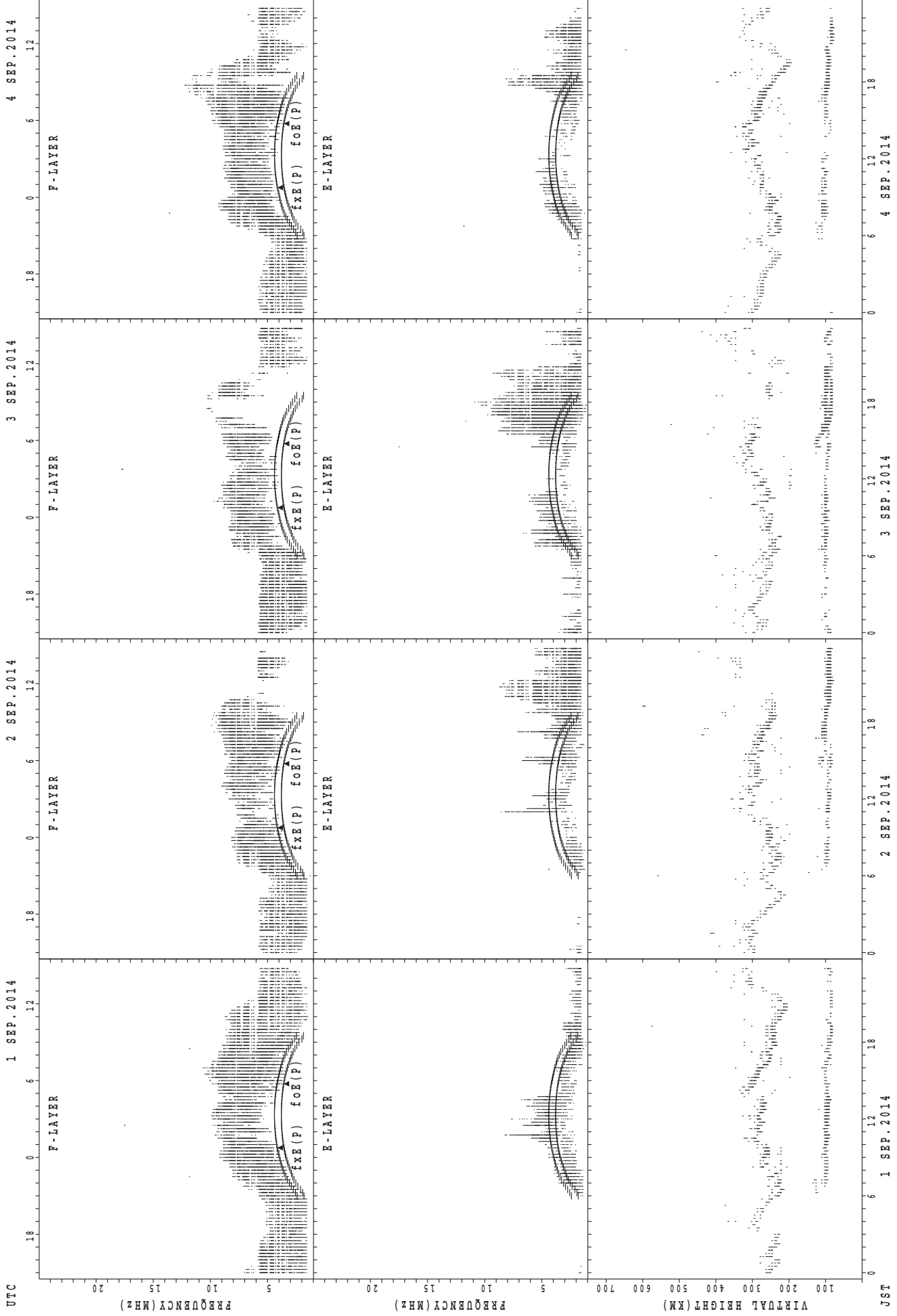
fxE(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



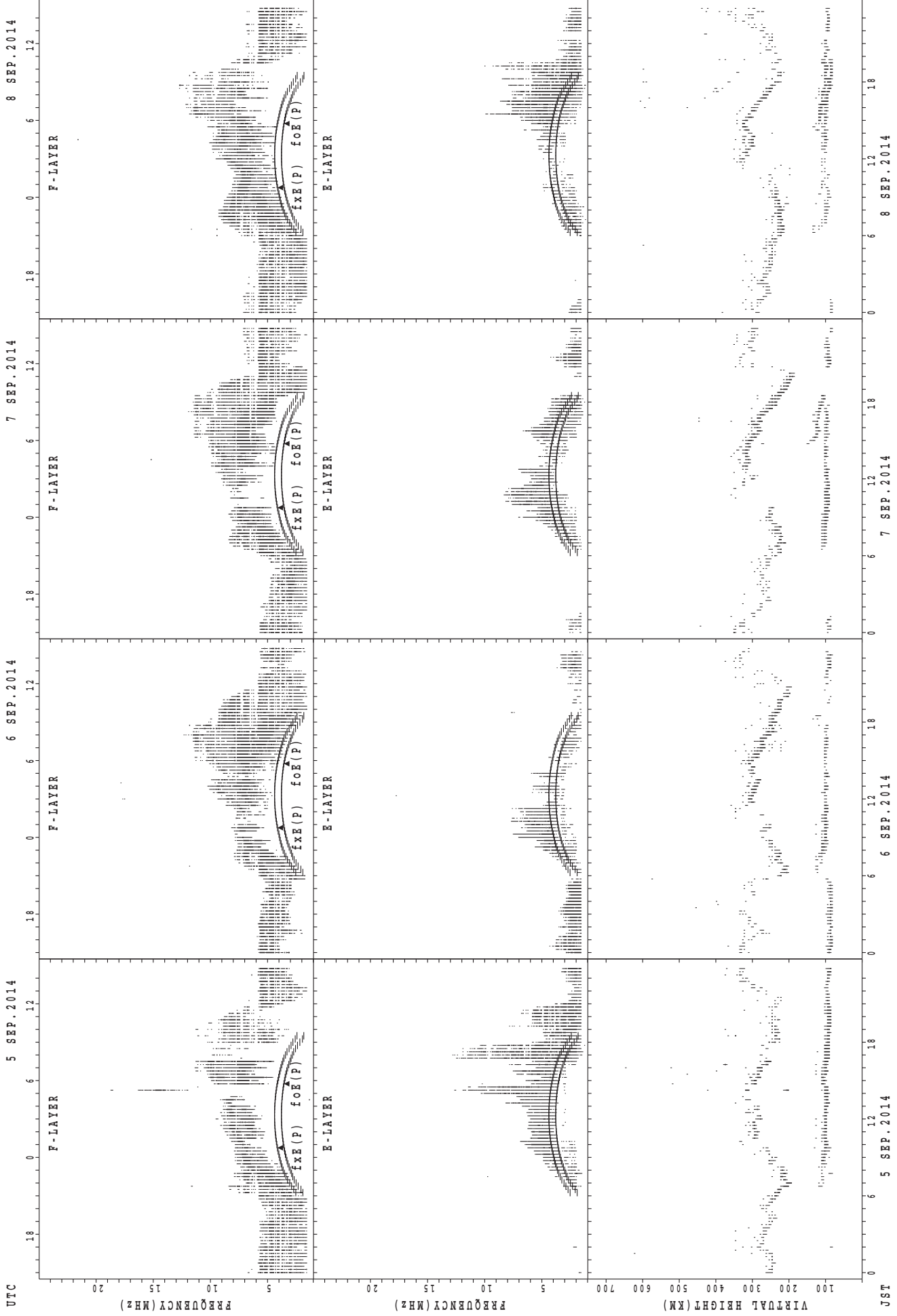
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



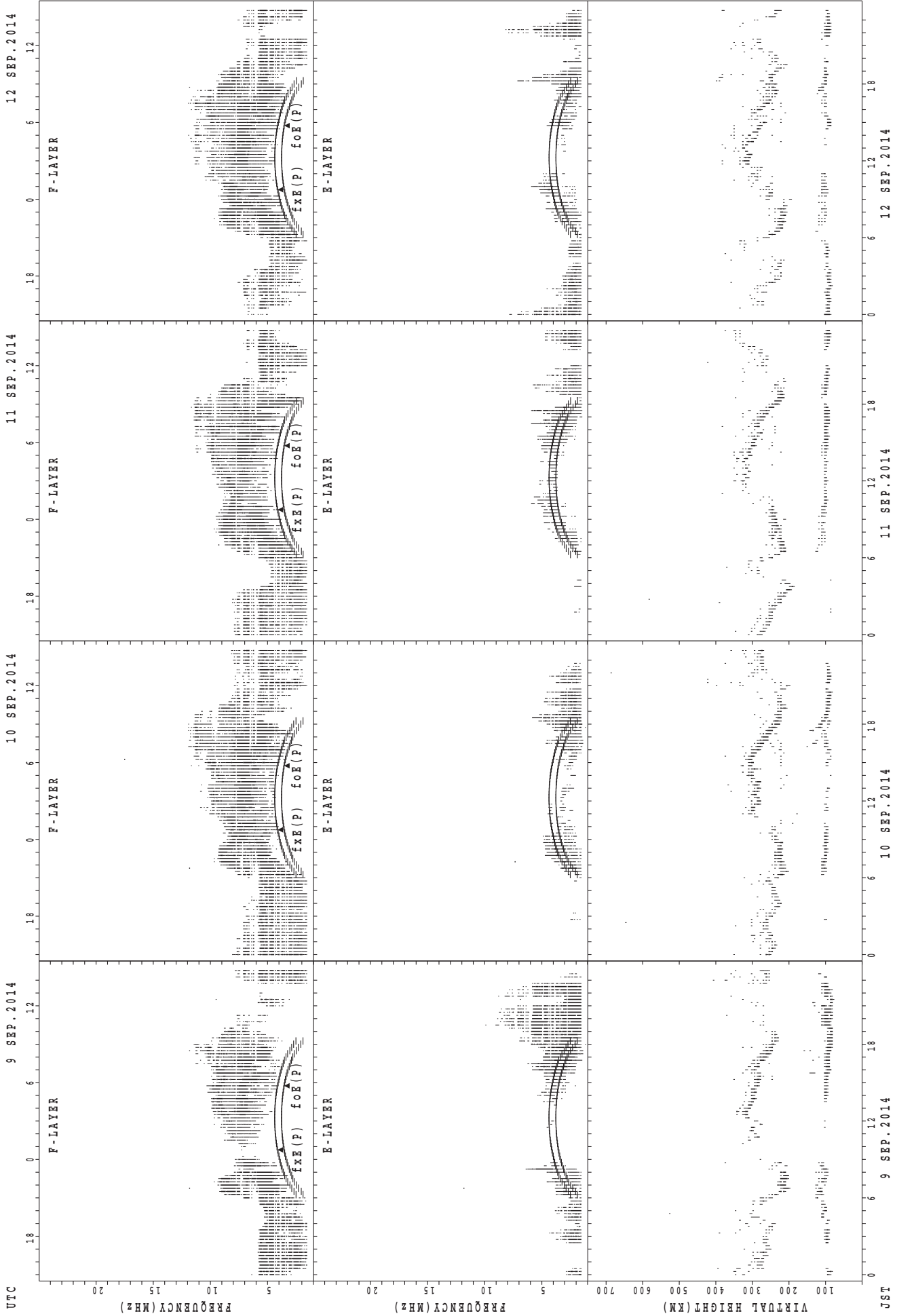
f_xE(P); PREDICTED VALUE FOR f_xE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



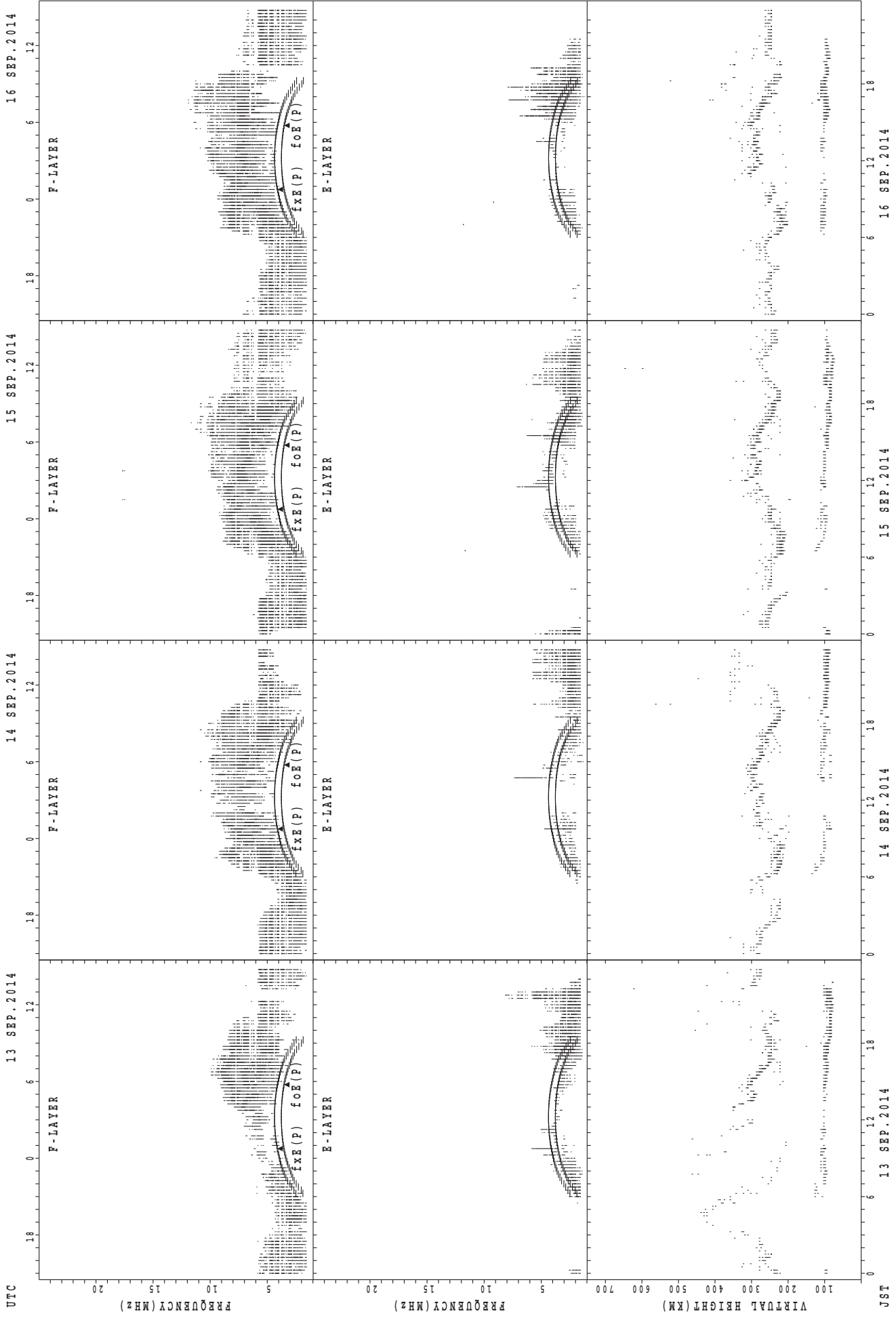
foF2(P); PREDICTED VALUE FOR foF2
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



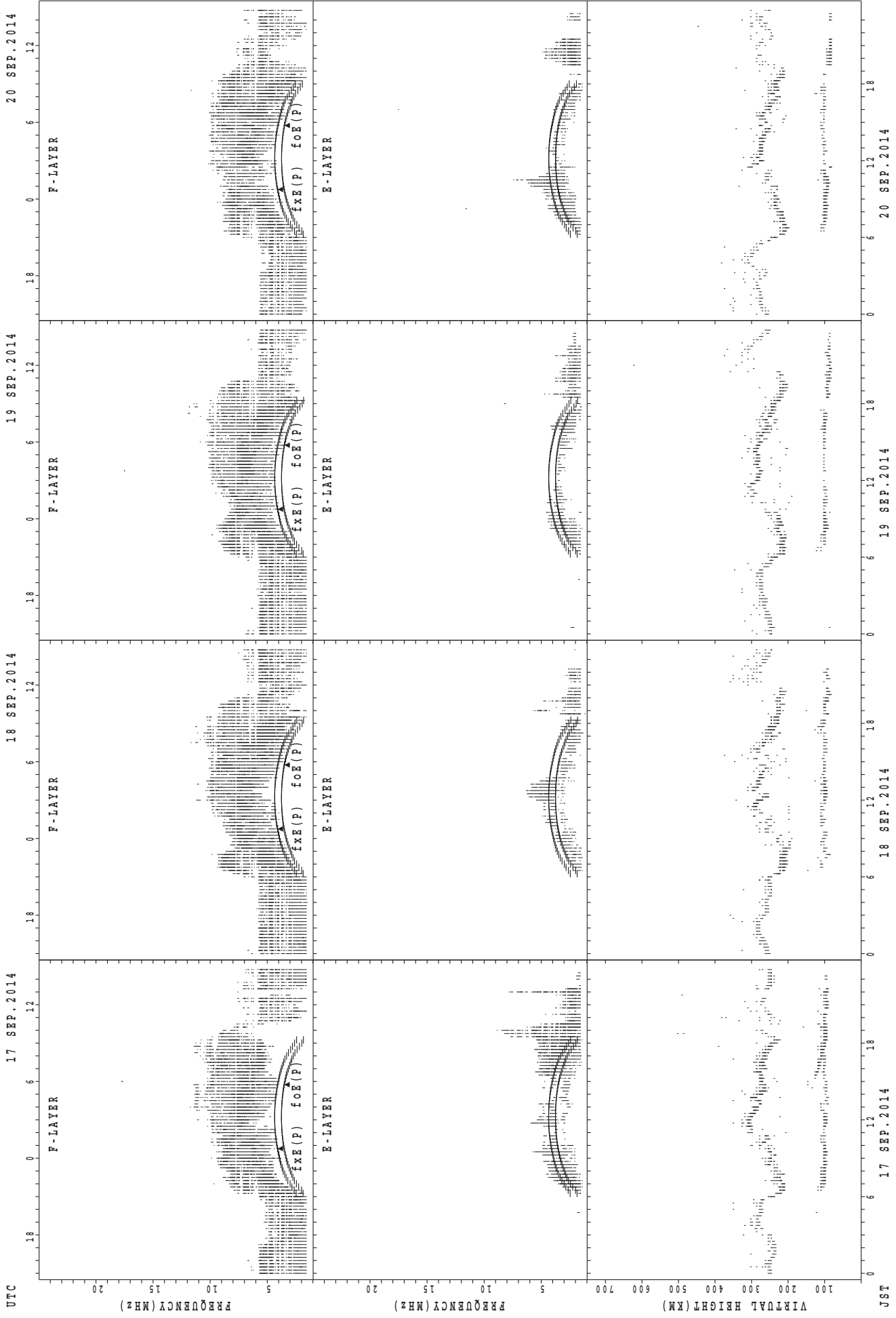
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



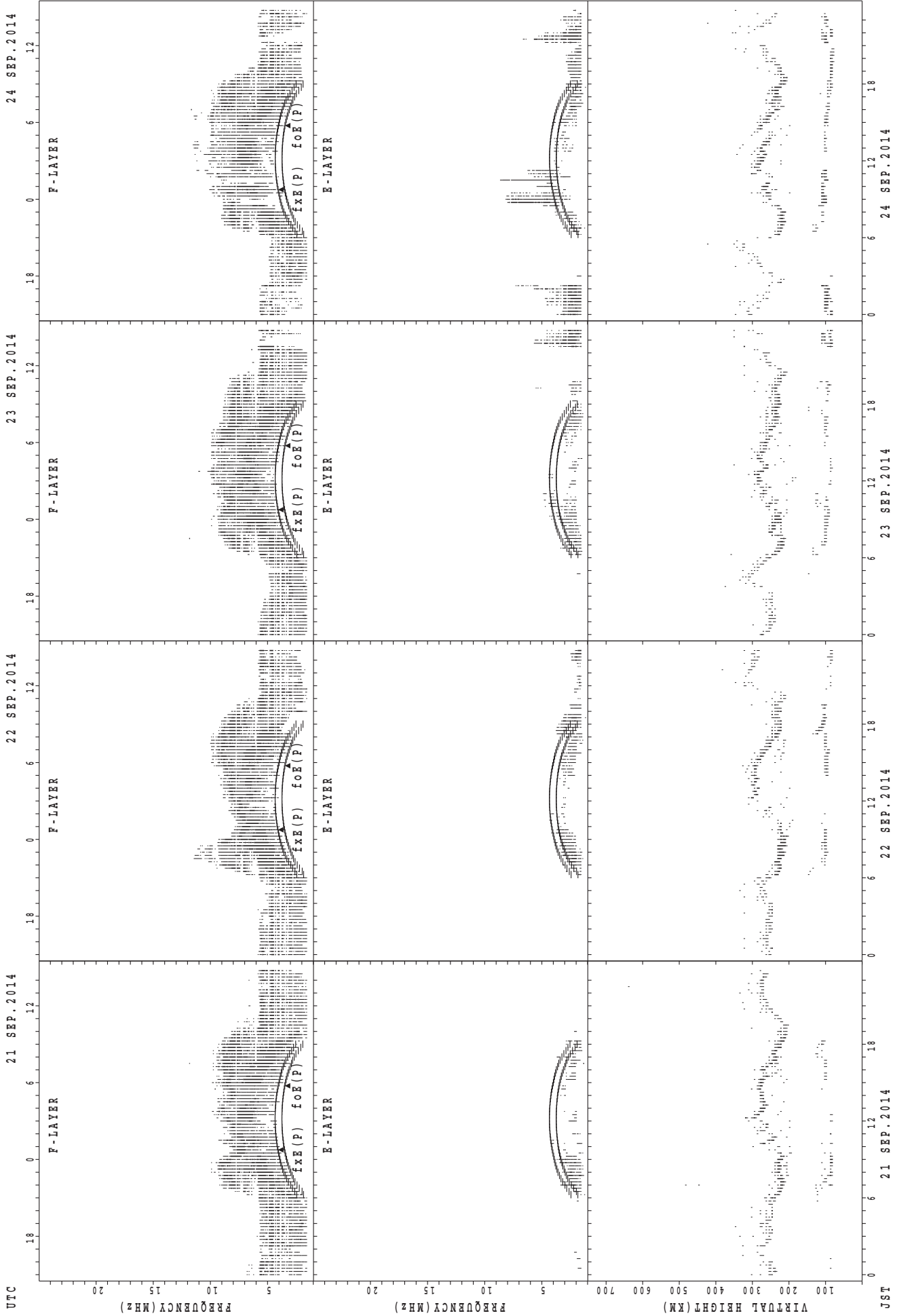
UTC
 17 SEP.2014
 18 SEP.2014
 19 SEP.2014
 20 SEP.2014

F-LAYER
 E-LAYER
 VIRTUAL HEIGHT (KM)
 VIRTUAL HEIGHT (KM)

$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

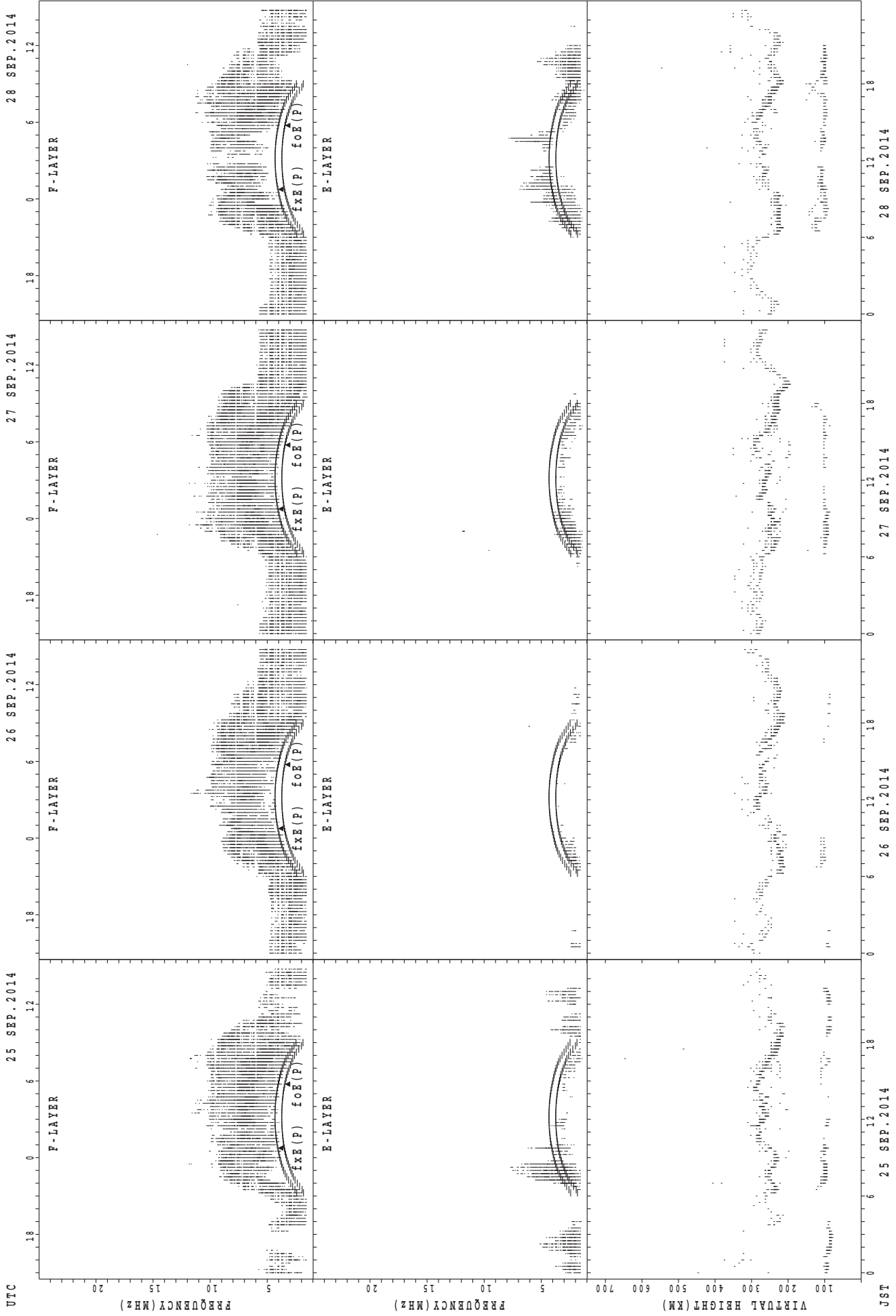
UTC
 17 SEP.2014
 18 SEP.2014
 19 SEP.2014
 20 SEP.2014

SUMMARY PLOTS AT Yamagawa



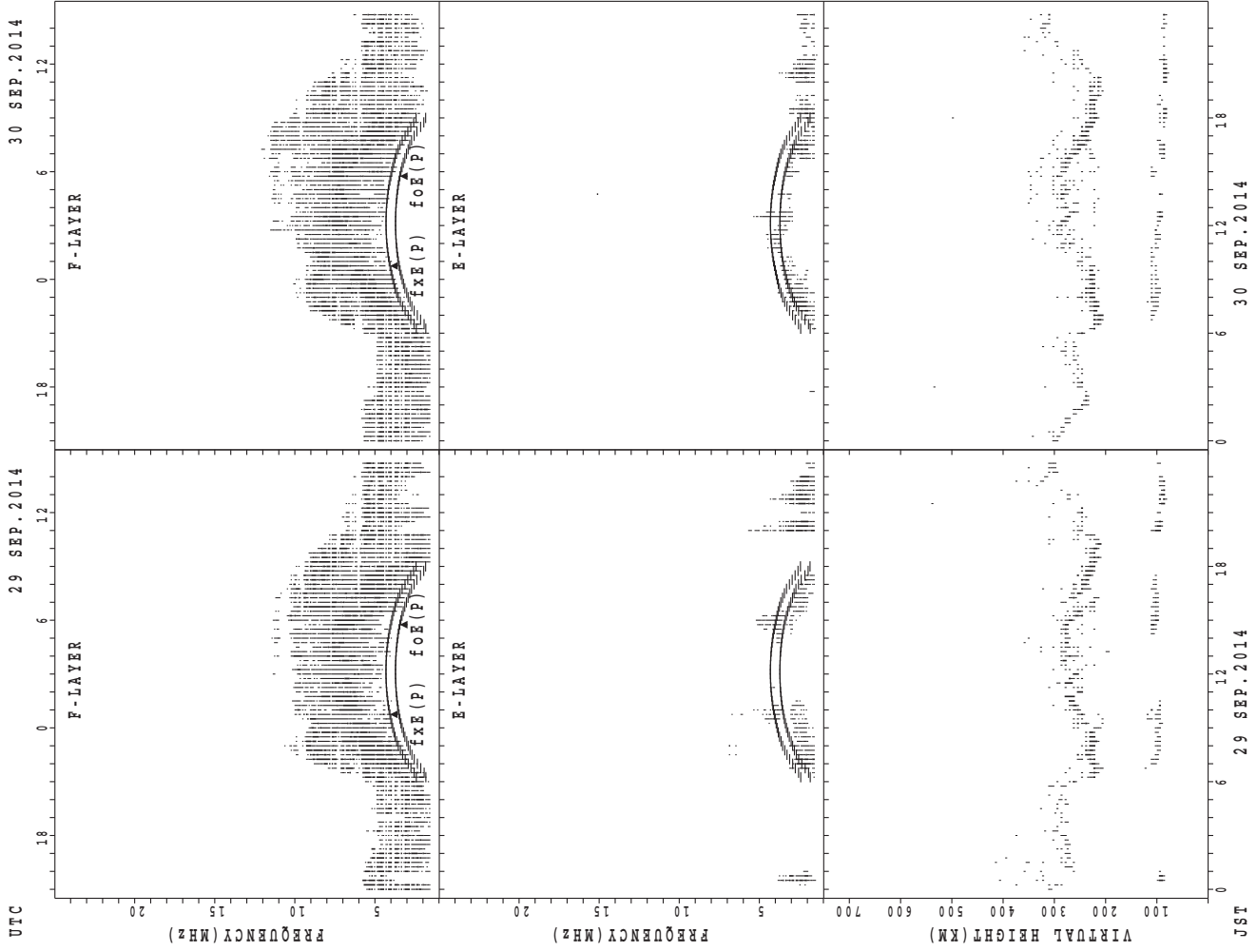
fxE(P); PREDICTED VALUE FOR fxe
 foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



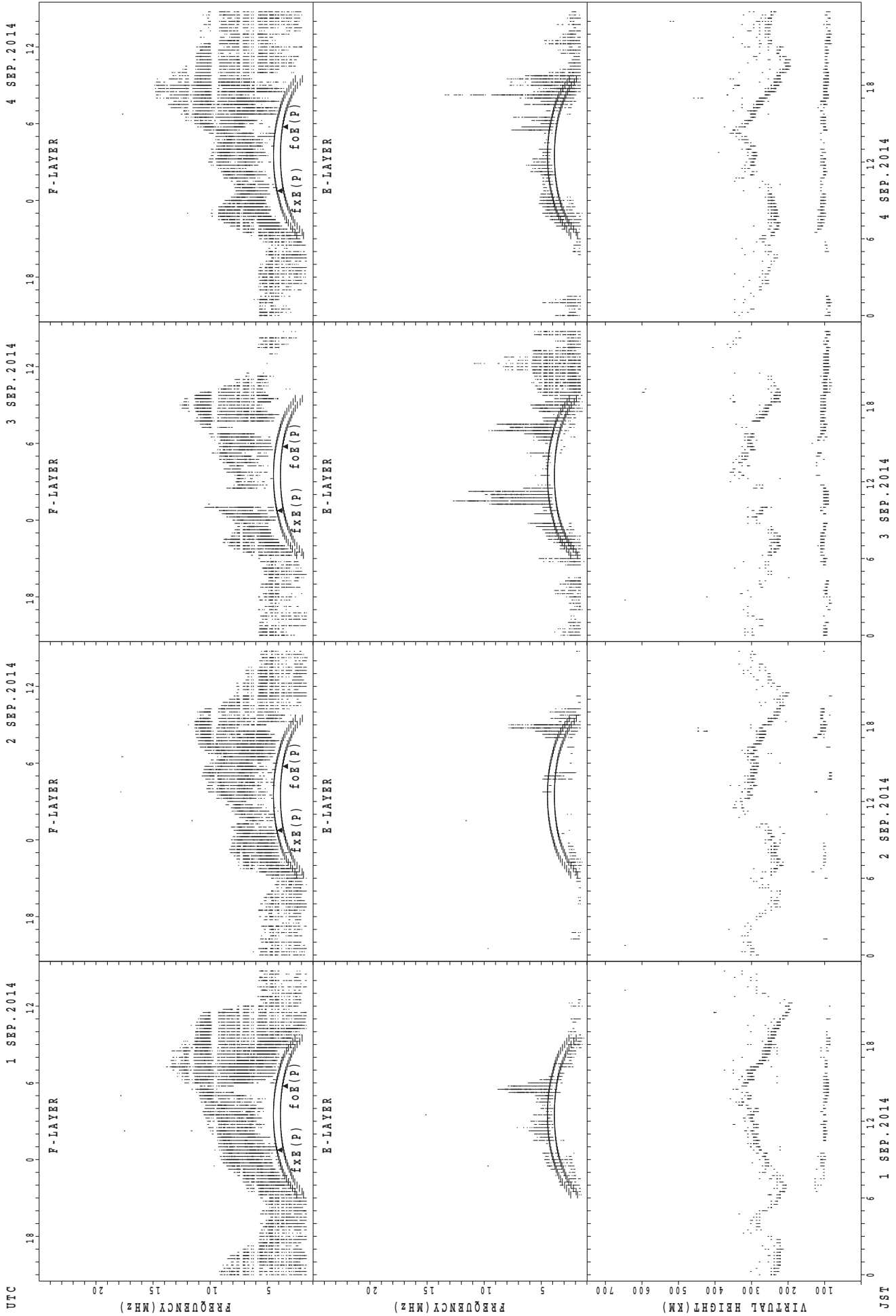
fxE(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



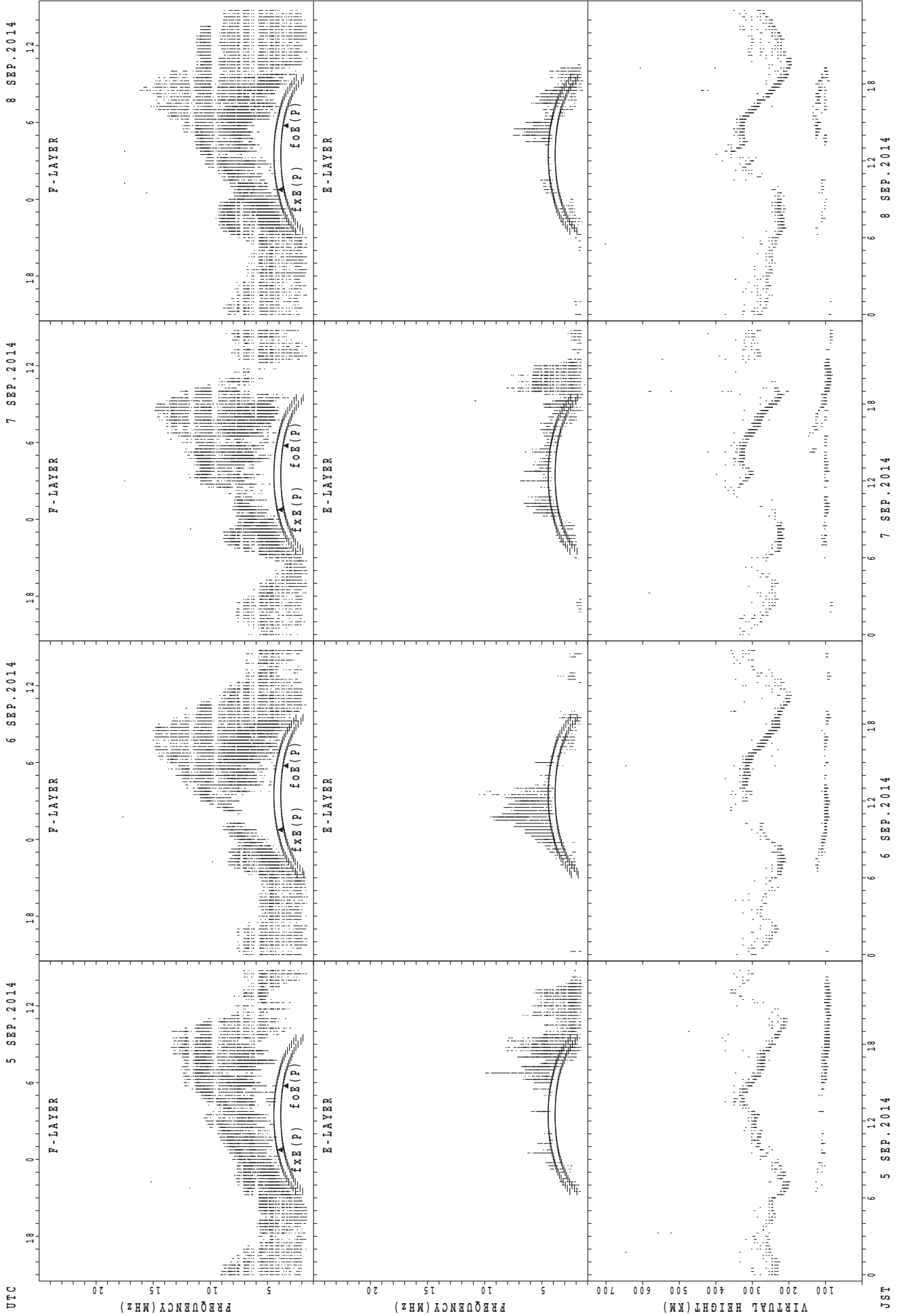
foE(P); PREDICTED VALUE FOR foE
 fxE(P); PREDICTED VALUE FOR fxE

SUMMARY PLOTS AT Okinawa



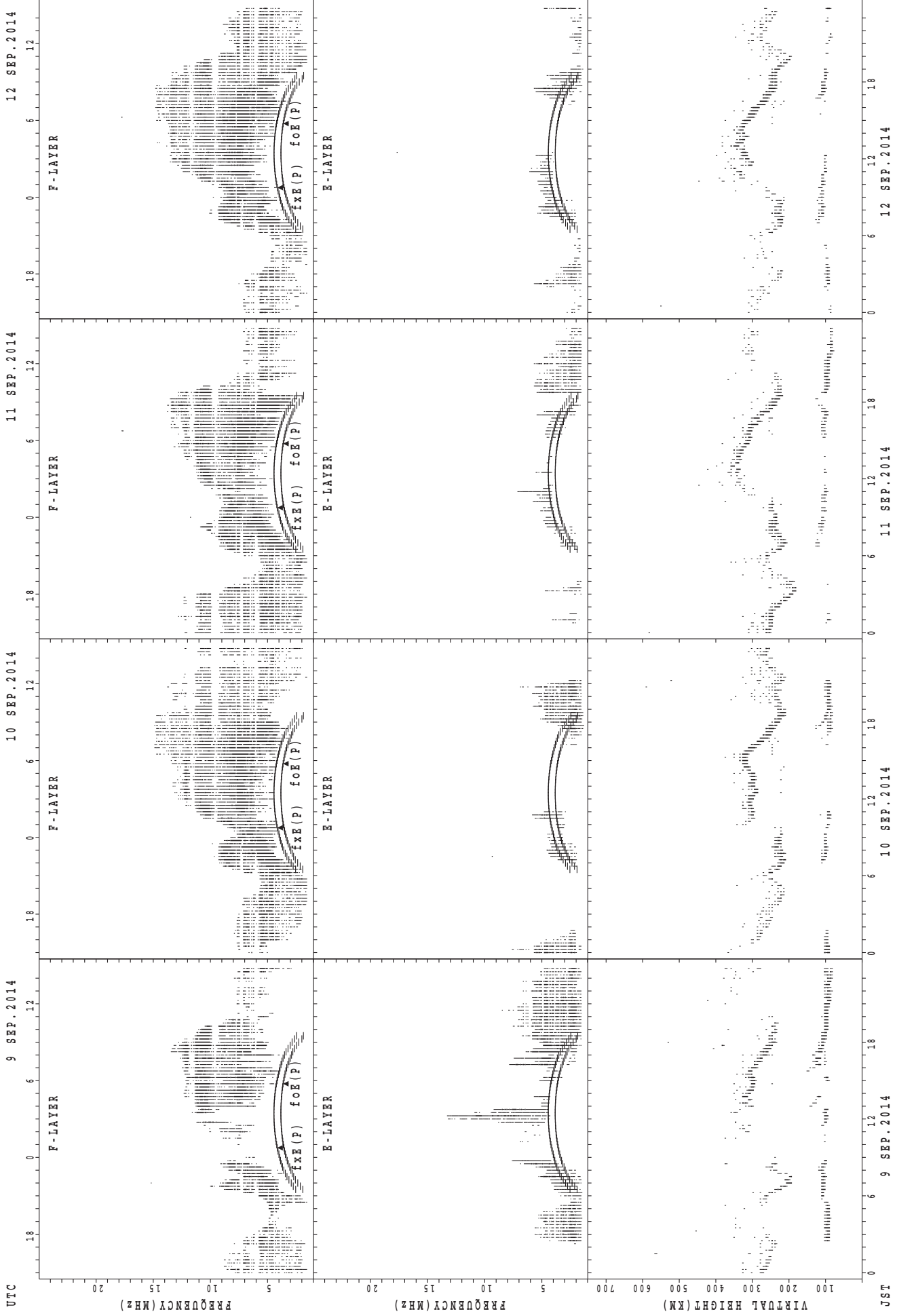
fxe(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



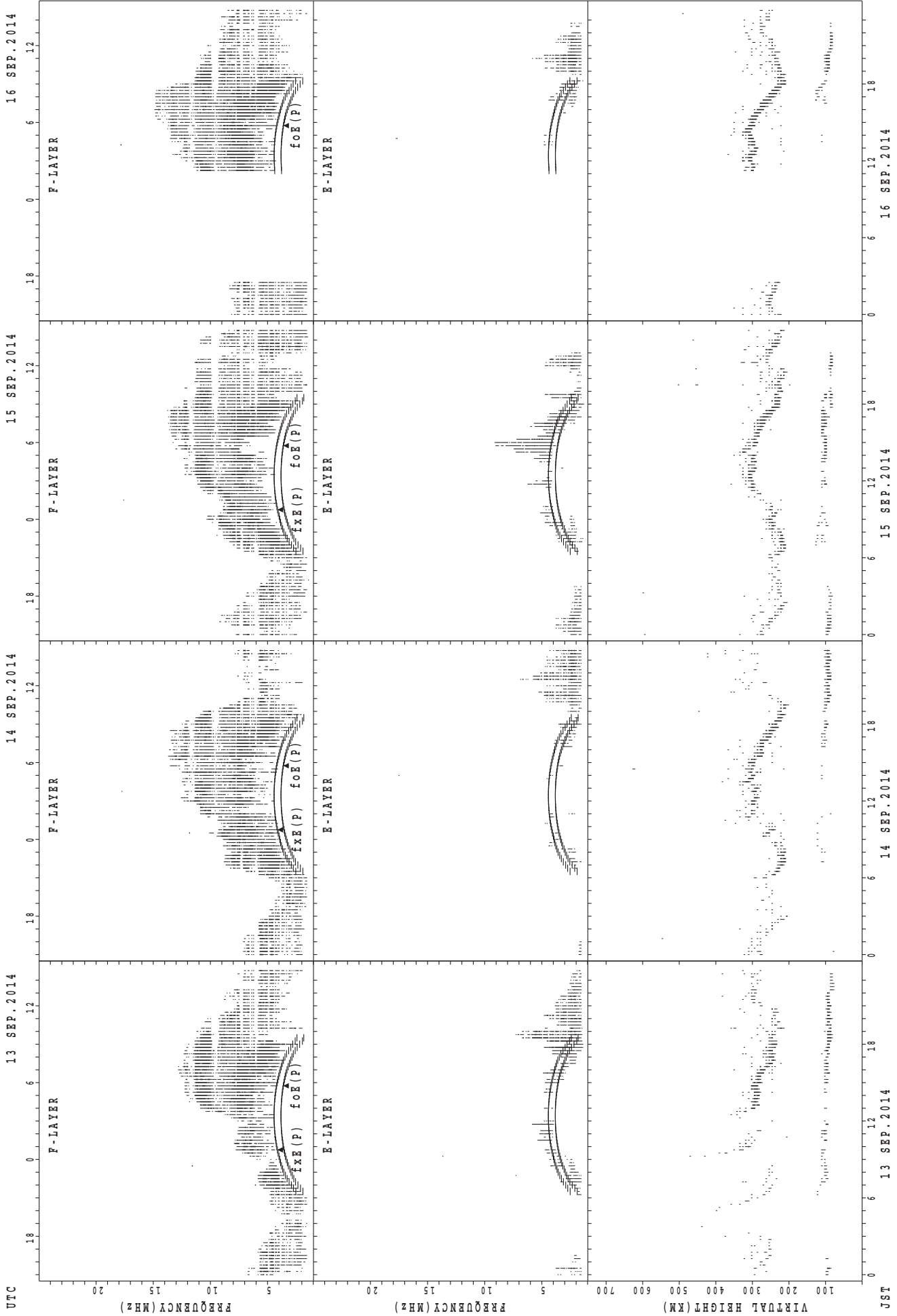
foF2(P); PREDICTED VALUE FOR foF2
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



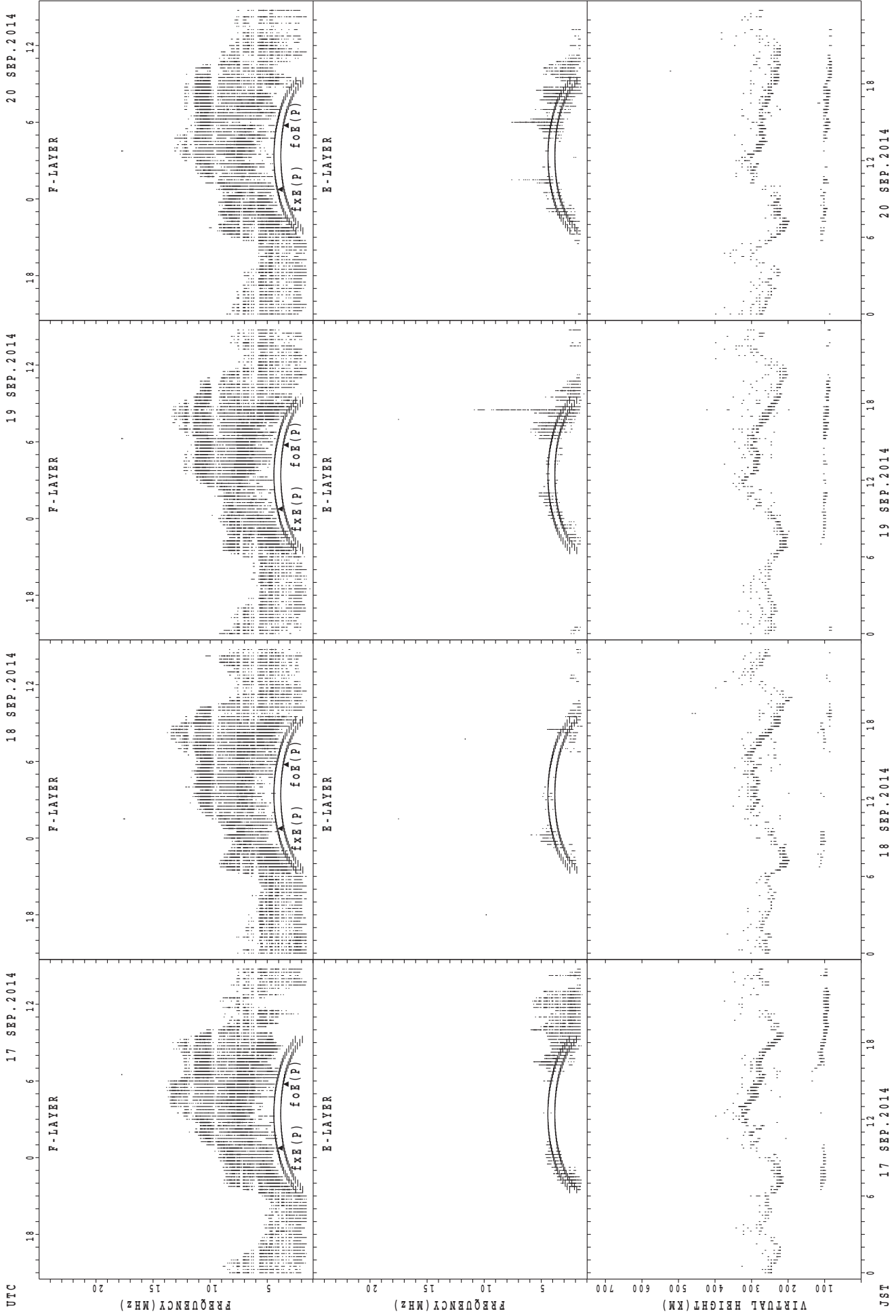
f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



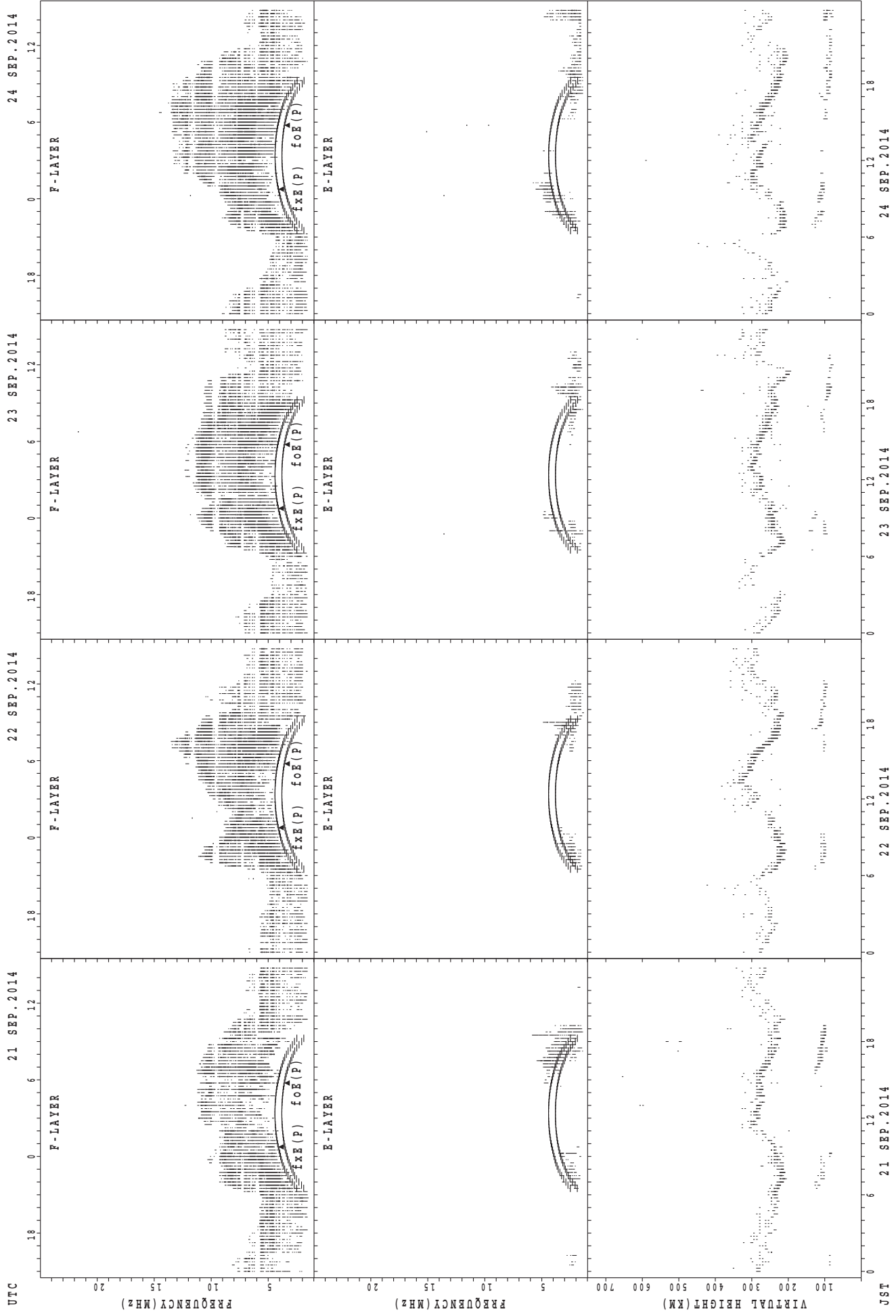
f_xE(P); PREDICTED VALUE FOR f_xE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

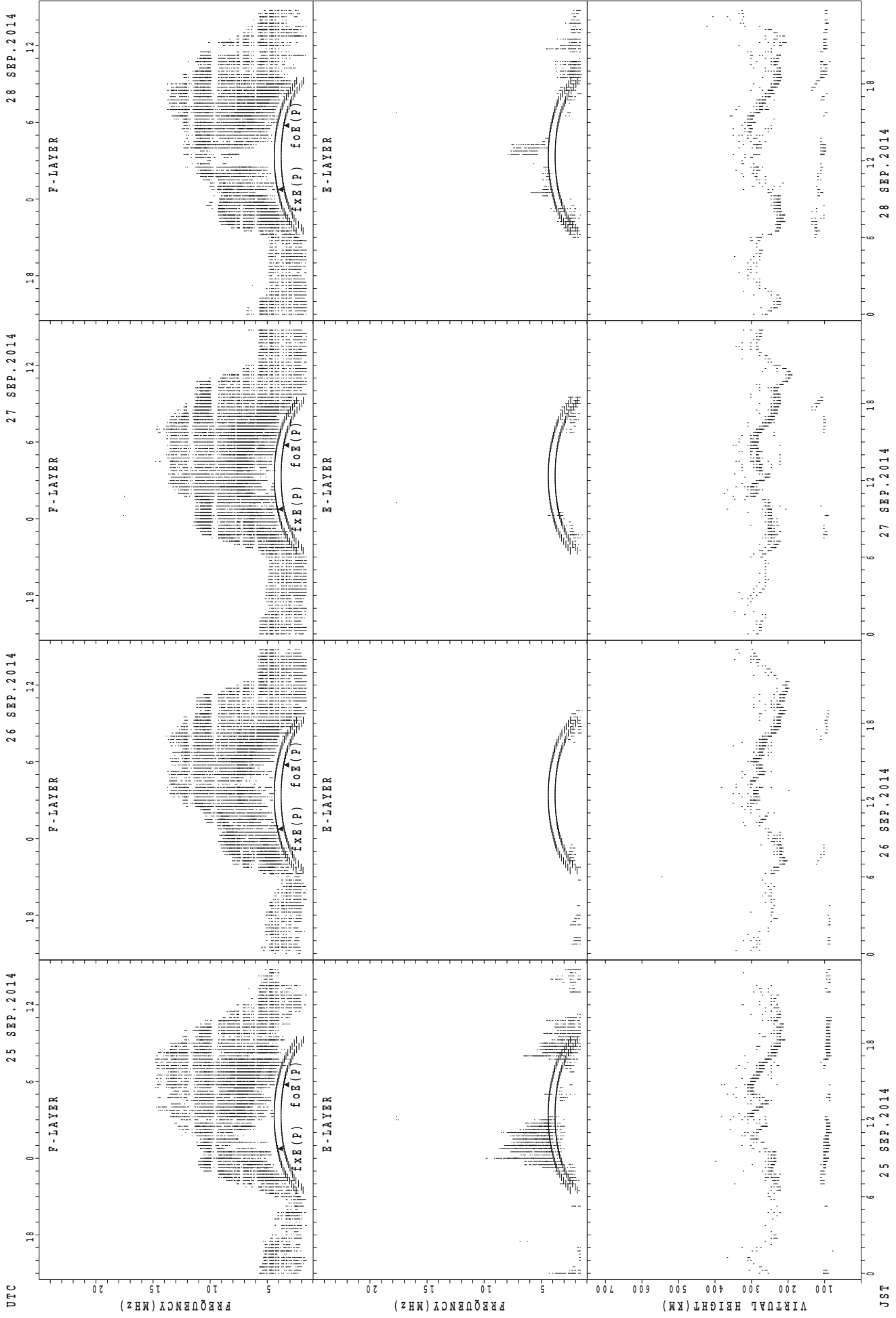


UTC
21 SEP. 2014
22 SEP. 2014
23 SEP. 2014
24 SEP. 2014

JST
21 SEP. 2014
22 SEP. 2014
23 SEP. 2014
24 SEP. 2014

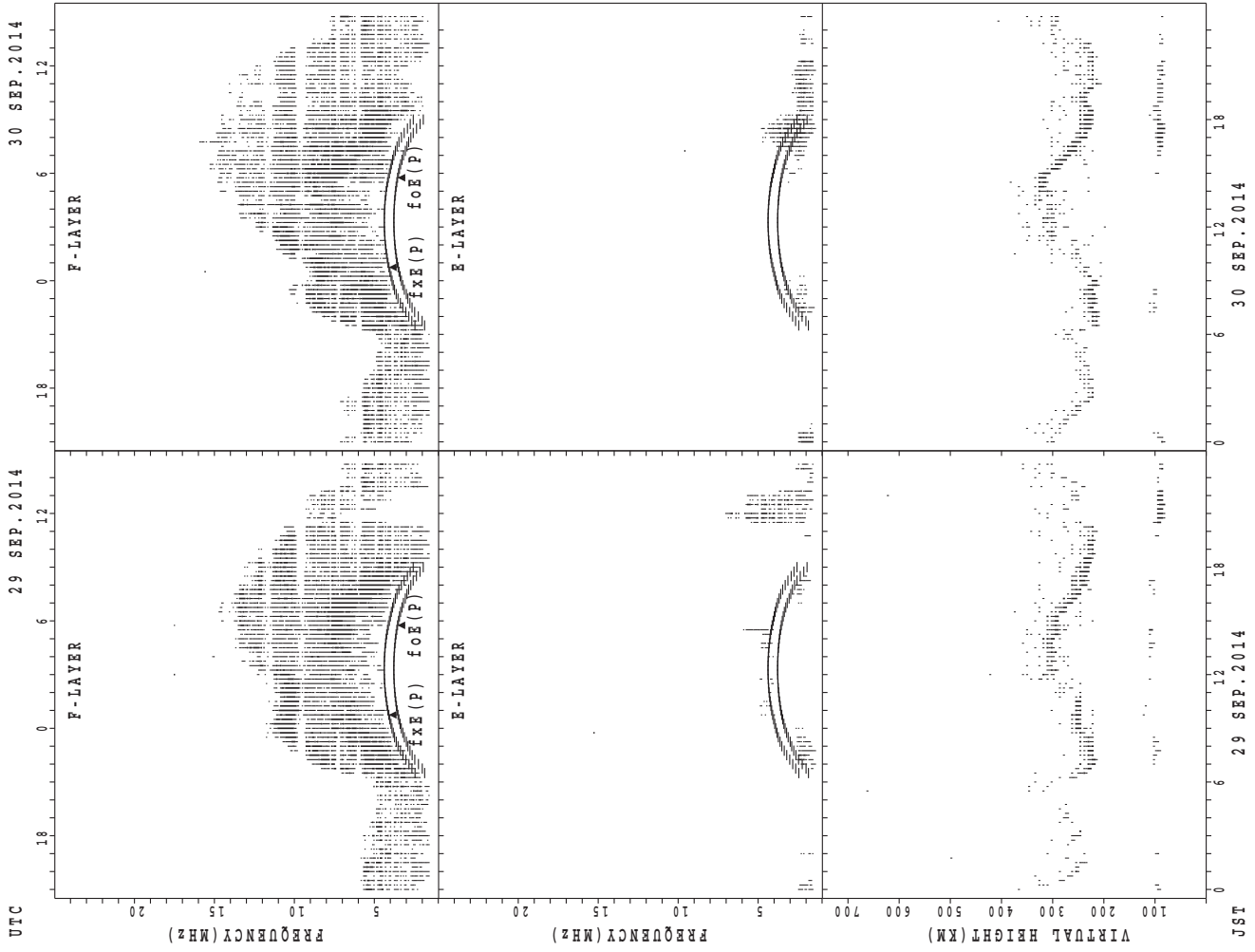
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



UTC
25 SEP. 2014
26 SEP. 2014
27 SEP. 2014
28 SEP. 2014
JST
f_xE(P); PREDICTED VALUE FOR f_xE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

MONTHLY MEDIANS OF h'F AND h'Es
 SEP. 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							10	17	20							22	24	22	12	7	3	3		
MED							247	246	252							257	264	263	268	282	272	280		
U Q							282	267	269							272	274	272	274	288	298	284		
L Q							240	237	241							250	252	252	255	272	256	280		

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	11	8	7	7	6	14	13	13	10	4	5	3	4	3	6	9	14	17	15	12	18	13	12
MED	94	93	100	97	103	104	107	103	103	105	103	99	103	107	99	96	101	97	101	99	100	95	95	95
U Q	97	97	111	105	109	109	113	106	105	107	107	104	103	112	113	99	105	113	106	103	105	101	99	98
L Q	91	89	89	95	97	97	105	102	99	103	95	94	95	99	97	95	95	95	95	95	96	91	95	88

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							13	28	27							21	28	29	25	16	2	1		
MED							256	232	246							274	264	254	248	256	255	328		
U Q							276	242	254							284	270	262	261	265	256	164		
L Q							246	224	236							259	254	246	240	246	254	164		

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	4	3	3	4	2	1	2	5	8	10	11	5	4	6	3	2	4	12	15	13	17	17	9	8
MED	95	97	97	94	105	115	97	109	107	104	105	105	105	98	99	116	116	105	103	97	95	97	97	96
U Q	97	101	101	101	113	57	99	112	111	107	111	113	105	103	127	125	120	116	107	104	97	100	100	98
L Q	93	95	85	91	97	57	95	100	105	103	103	101	99	95	93	107	102	95	99	95	91	96	96	94

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	2		1	1			1	28	29	18						2	30	29	29	26	7	1	1	
MED	319		278	248			280	230	230	241						274	271	252	238	249	266	288	306	
U Q	342		139	124			140	241	247	250						278	280	263	247	260	284	144	153	
L Q	296		139	124			140	223	222	230						270	262	246	233	238	236	144	153	

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	5	5	5	3	4	3	17	14	15	17	16	12	12	8	14	13	16	21	23	21	21	20	16
MED	91	93	89	91	91	100	119	111	104	103	103	105	103	103	102	104	103	111	103	97	95	95	95	95
U Q	96	107	96	101	99	104	121	117	111	107	108	110	105	107	112	119	113	119	108	105	98	96	98	95
L Q	89	89	88	86	87	93	103	105	103	101	102	102	99	100	100	99	95	100	95	89	89	89	93	92

MONTHLY MEDIANS OF h'F AND h'Es
 SEP. 2014 135E MEAN TIME (UTC+9H) AUTOMATIC SCALING

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

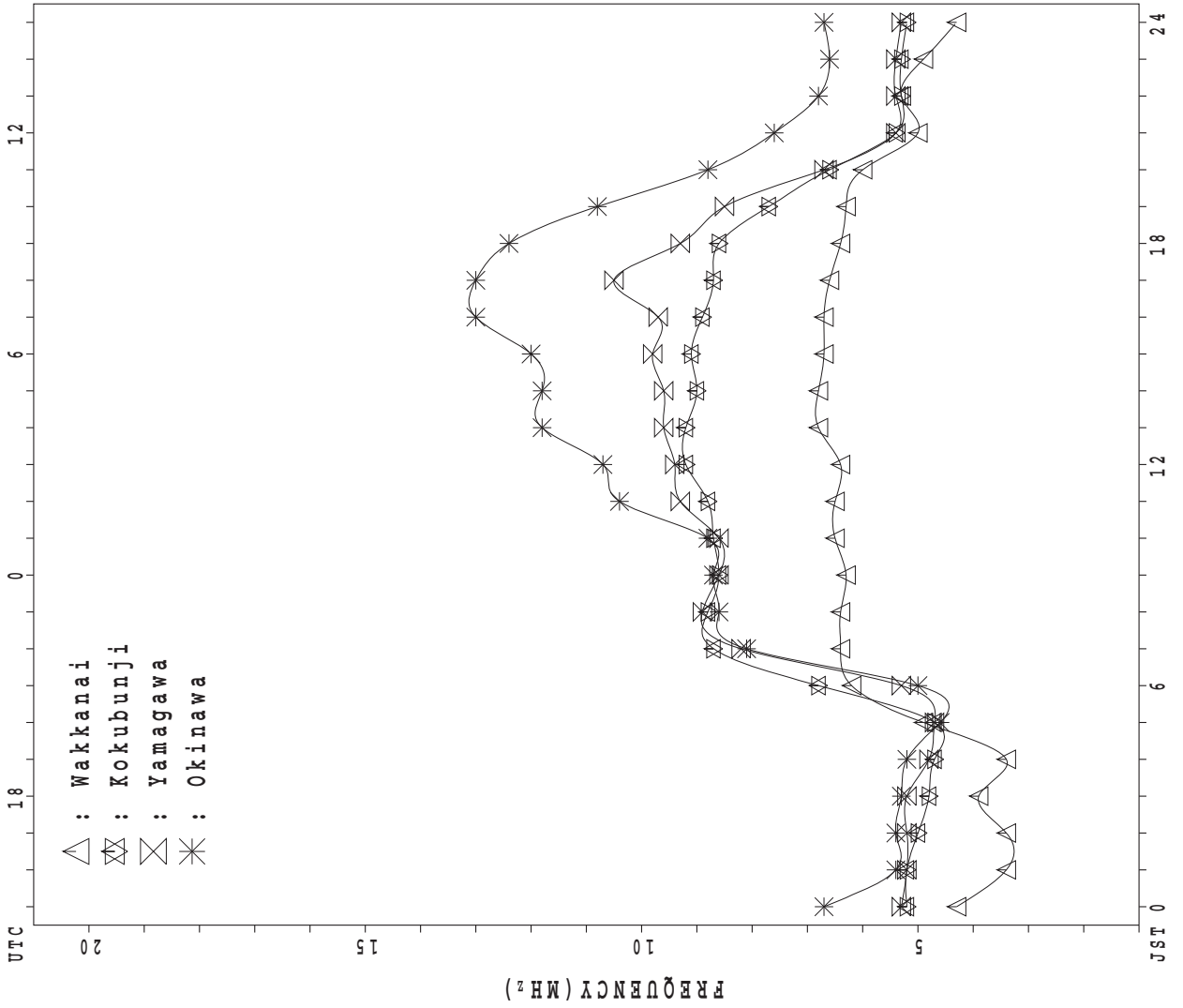
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	11	8	1	1		1	26	28	27							29	30	29	30	24	13	9	8
MED	288	288	280	210	274		262	227	226	246							278	254	238	238	240	266	296	284
U Q	320	296	293	105	137		131	236	241	258							290	262	240	248	256	307	336	309
L Q	272	280	263	105	137		131	220	222	230							270	246	230	228	232	247	263	277

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	8	5	3	4	2	2	4	16	13	14	13	14	8	7	10	11	13	20	20	25	17	20	14	11
MED	95	93	91	93	94	95	109	116	111	105	107	101	103	105	105	103	111	109	104	97	95	94	94	97
U Q	97	96	105	97	97	95	120	123	115	113	113	105	106	107	115	109	124	120	109	102	99	97	97	97
L Q	90	91	91	89	91	95	105	108	105	105	100	95	97	101	95	97	101	97	95	94	91	89	89	95

MONTHLY MEDIANS PLOT OF fOF2

SEP. 2014



IONOSPHERIC DATA STATION Wakkanai

SEP. 2014 f_{XI} (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	X 62	X 60	X 56	X 49	X 45															X 70	X 68	X 67	X 59	X 56	
2	X 54	X 49	X 53	X 52															X 77	X 80	X 78	X 74	X 58	X 60	
3		X 55	X 53	X 52	X 53																X 75	X 67	X 60	X 56	
4	X 53	X 51	X 51	X 51	X 47																X 70	X 65	X 61	X 57	
5	X 57	X 57	X 54	X 54						C	C	C	C	C	C	C	C				A	A	X 64	X 62	
6	X 59	X 59	X 55	X 55						C	C	C	C	C		C						X 77	X 77	X 59	X 57
7	X 57	X 59	X 60	X 63	X 57																	X 80	X 78	X 69	X 68
8	X 63	X 62	X 62	X 57	X 60																	X 73	X 75	X 64	X 66
9	X 66	X 67	X 64	X 58																		X 81	X 83	X 76	X 64
10	X 63	X 64	X 58	X 63																		0 78	X 77	X 69	X 65
11	X 65	X 65	X 57	X 61																	X 78	X 76	X 79	X 76	X 67
12	X 67	X 74	X 65	X 63	X 58																X 69	X 72	X 71	X 67	X 68
13	X 65	X 58	X 53	X 42	X 42																X 67	X 65	X 57	X 47	X 55
14	X 57	X 58	X 58	X 55	X 57																X 79	X 79	X 75	X 68	X 63
15	X 64		C	X 64	X 62	X 62															X 75	X 75	X 75	X 68	X 66
16	X 64	X 66	X 59	X 57	X 57																X 79	X 79	X 76	X 76	X 69
17	X 63	X 63	X 65	X 65	X 58																X 79	X 79	X 72	X 63	X 63
18	X 60	X 60	X 57	X 57	X 56																X 79	X 80	X 77	X 70	X 60
19	X 57	X 59	X 57	X 59	X 55																X 75	X 77	X 70	X 70	X 68
20	X 64	X 65	X 65	X 65	X 68																X 71	X 72	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C									X 76	X 75	X 71	X 71	X 69
23	X 66	X 66	X 63	X 59	X 61																X 72	X 69	X 69	X 65	X 64
24	X 64	X 60	X 61	X 57	X 52															X 60	X 59	X 56	X 55	X 55	
25	X 47	X 49	X 53	X 63	X 41															X 77	X 66	X 65	X 62	X 56	X 55
26	X 49	X 50	X 53	X 50	X 50																X 73	X 71	X 67	X 64	X 60
27	X 60	X 53	X 57	X 57	X 57															X 75	X 70	X 65	X 59	X 61	X 57
28	X 56	X 48	X 47	X 46	X 48																X 75	X 67	X 63	X 62	X 58
29	X 56	X 54	X 53	X 55	X 53																X 72	X 65	X 65	X 59	X 58
30	X 58	X 64	X 54	X 57	X 53																X 70	X 66	X 57	X 59	X 59
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	27	28	28	22															4	21	28	27	28	27
MED	X 60	X 59	X 57	X 57	X 56															X 76	X 73	X 74	X 71	X 64	X 62
U Q	X 64	X 64	X 62	X 62	X 58															X 77	X 78	X 78	X 76	X 69	X 66
L Q	X 57	X 54	X 53	X 53	X 50															X 68	X 70	X 68	X 65	X 59	X 57

SEP. 2014 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2014 f_oF₂ (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	55	53	49	42	38	41	46		A		56		59	65	63	64	72	66	66	62	59	63	61	60	52	49
2	47	U R 42	46	45	43	40	53	61	61	60	69	66	72	U R 71	66	63	68	68	70	74	71	68	51	53		
3	49	48	46	45	46	48	55	58	63		68	66	72	69	72	69	69	73	73	72	68	60	53	49		
4	47	44	44	44	40	42	54	62		63	63	66	58	65	59	62	64	67	67	71	63	58	54	50		
5	50	50	47	47	43	49	65	63	66		C	C	C	C	C	C			70	74	72	A	A	57	55	
6	52	52	48	48	42	43	50	57	65		C	C	C	C	C		69		66	65	71	72	70	70	52	50
7	50	52	53	56	50	50	64	69	68	62	69	71	69	68	74	74	75	78	73	72	73	71	62	61		
8	56	55	55	50	50	52	60	71	70	74		72	70	71	70	73	U Y 75	76	76	73	66	68	57	59		
9	59	60	57	51	49	52	61		Y	Y	72	70	72	74	73	74	76	75		76	80	74	76	69	57	
10	R 56	J R 57	R 51	56	50	59	69	70	74	75		Y	U R 78	77	75	74	75	79	76	73	73	71	70	62	58	
11	58	58	50	54	52	55	67	74	76	76	76		Y	78	74	76	75	76	75	71	69	72	69	60		
12	60	67	58	56	51	50	58	60	69	69	70	74	75	72	86	74	75	70	67	62	65	J R 64	60	61		
13	58	51	46	35	35	34	46		R	R		A	U R 64		58	56	61	62	62	61	60	58	50	40	48	
14	50	51	51	48	50	55	65	69	74	74	71	74	72	73	73	73	72	72	73	72	72	68	61	56		
15	57		C	57	55	55	60	72	74	74	77	74	74	72	69	76	70	J R 69	67	69	68	68	68	62	60	
16	57	R 59	53	50	50	54	73	75	76	75	75	72	76	76	74	73	72	D R 72	72	72	72	72	69	69	62	
17	56	56	58	58	50	54	71	Y	R J 74	R J 77	R 74	76	72	74	84	75	81	76	72	71	72	65	56	56		
18	53	53	50	50	49	52	69	72	72	75	79	76	76	78	70	67		70	72	72	D R 73	70	63	J R 53		
19	50	52	50	52	48	51	68	80	80	92	81	82	83	75	85	77	75	77	68	68	F 59	F 59	63	61		
20	57	F 57	58	58	57	67	68	74		Y	Y	73	70	74	78	76	73	75	74	64	65	C	C	C		
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Y 70	C	C	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C	74	74	75	76	75	Y	Y	71	69	68	64	64	62	
23	59	59	56	52	54	56	65	69	60	68	J R 69	Y	Y	75	80	75	71	67	67	65	62	62	58	57		
24	57	53	54	50	45	48	46	58	66	66	69	73	73	85		74	70	61	53	52	49	48	48	46		
25	40	42	46	49	F 31	37	61	53	62	57	63	65	62	71	73	73	68	70	70	59	59	55	49	48		
26	42	43	46	43	43	40	64	70	R 71	R 71	D R 72	74	75	71	71	71	74	69	65	66	64	R 60	57	53		
27	53	46	50	50	50	48	66	71	D R 73	Y 75	R 76	Y	Y	R 77	75	75	75	S 76	S 66	68	63	58	52	54	50	
28	49	41	40	39	41	45	62	72	80	69	Y	Y	Y	B 73	Y 78	R 74	75	75	69	68	60	56	55	51		
29	49	47	46	48	46	48	64	68	72	72	Y	Y	Y	R 76	R 77	R 76	75	75	65	65	58	58	52	51		
30	51	57	47	50	46	50	60	70	69	Y	R 74	Y	R 75	R 79	R 77	R 76	A J 85	R 76	R 63	59	50	52	52			
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	28	27	28	28	28	28	28	24	24	22	19	20	22	27	28	27	26	27	29	29	28	27	28	28		
MED	53	52	50	50	48	50	64	70	70	73	70	72	72	74	74	R 74	74	70	71	69	67	64	57	54		
U Q	57	57	54	53	50	54	68	72	R 74	75	74	74	75	76	76	76	75	75	74	72	71	69	62	60		
L Q	50	47	46	46	43	44	56	62	66	68	69	66	70	71	70	70	69	67	67	64	60	58	52	50		

SEP. 2014 f_oF₂ (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP.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

H D																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						L 372	A A	A A	A Y	Y Y	U 488	R 484	U 484	R 484	Y 460		376			L				
2						368	L	560	476	L	496	L	500	L	L	480	408	348	L					
3						244	A	L	440	L	480	L	480	L	496	L	488	432	332					
4							L	408	460	L	Y	R	488	R	392	488	456	500	428					
5						U 312	R A	L A	C C	C C	C C	C C	C C	C C	C C	C C	C C	C C	C 352		A			
6						A A	A A	A 448	C C	C C	C C	C C	C C	C C	L L	C C	376		L	A				
7								452	456	480	516	L	500	U 512	L	L	524	440	476	340				
8								312		492		L	L	L	L	L	488							
9						U 368	R 324	L	B	B	B	U 364	Y 364	L	U 548	L	L	L	L					
10							L	L	L	U 472	L	504	512	L	L	540	L	456						
11								536		L	L	L	584	U 548	L	U 580	L	L	L					
12						U 384	L 420	468	L	L	536	L	592	L	L	L	468	476						
13						U 220	L 336	388	R	A	L	A	L	L	L	L	464	416	344					
14							L	L	464	544	L	Y	512	L	L	A	U 532	L	A					
15						U 492	L 488	488	A	L	488	532	L	U 496	L	L	488							
16							L	452	504	504	528	L	L	L	L	L	U 352	L	L					
17							L	L	L	L	L	L	528	564	468	460	380							
18								L	L	508	512	508	484	488	464	U 392	R 392	L						
19							L	456	456	544	496	500	536	508	516	L	L							
20								L	L	532	520	480	464	508	444	C	C	C	C					
21						C	C	C	C	C	C	C	C	C	C	468								
22						C	C	C	C	C	C	C	U 452	Y 472	L	428	L							
23							L	U 520	L	A	L	A	U 528	L	L	464	L							
24						328	408	440	A	L	524	500	500	444	420	328								
25						A	L	444	460	A	A	472	L	L	416									
26						A		384	404	400	L	508	L	476	L	L								
27								440	L	516	516	L	468	L	432									
28							L	Y	516	L	L	U 444	Y 468	L	A	L								
29								L	L	A	L	L	U 444	Y 468	L	A	L							
30							L	L	A	L	L	L	L	A	A	A								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	8	9	14	12	11	13	14	17	11	20	13	5						
MED						U 220	L 352	408	454	474	516	512	494	496	508	464	408	344						
U Q						U 370	436	468	486	532	526	508	532	540	488	444	350							
L Q						320	354	440	458	504	498	452	474	468	442	376	336							

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1						B	220	272	U A	U A	A	A	A	A	A	324	296	U R	A						
2					B	B	224	A	292	308	352	R	360	360	352	292	312	R	288	228					
3	A					A	244	280	U R	A	A	R	368	352	348	356	320	292	232	A	A				
4						A	200	256	284	328	336	384	A	A	A	348	296	280	216	A	A				
5					B	U R	236	204	288	308	C	C	C	C	C	C	C	C	C	A	A				
6					B	A	220	276	312		C	C	C	C	C	A	C	292	228	A	A				
7						B	228	276	312	320		A	A	A		A	A		A	A	A				
8					B	B	220		312	344	320	A	A	A	352	328	288	224	252		B				
9					B	B	216	252	312		B	B		A	A	332	296	220	A	A					
10					B	B	220	276	316	324	340	R	R	372	356	352	344	312	284	A	B	B			
11					B	B	220	276	292	324	A	A	348	A	R	352	328	A	192		B				
12						B	212	280	300		A	B	R	A	R	352	344	312	260	208					
13						B	216	284	320	340	A	A	348	A	A	U R	352	320	296	216	A				
14						B		276	320	320	R	R	2	364	203	356	336	312	256		B	A			
15						B	224	268	U A	304	324	328	368	348	348	A	272	208		A	A				
16						B	208	256	300	328	336	336	A	A	U A	304	A	268	200	205					
17						B	216	236	304	304	308	A	A	320	320	320	268	192		B					
18						B	200	280	308	324	340	352	340	320	312	308	272	232		A					
19						B	220	272	R	316	340	R	R	U R	368	356	336	312	272	212	A				
20						B	216	268	300	336	336	336	348	320	276	224	272	224		A					
21						C	C	C	C	C	C	C	C	C	C	332	C	C	C	C					
22						C	C	C	C	C	C	C		336	356	328	304	260		B	B				
23						B	204		A	A	A	A	340	356	300	328	288	244	180	A					
24						B	184	248	300	328	348	348	360	340	328	316	256		A					K 244	
25						A	A	260	296	316	328	332	324	336	324	244	A	192							
26						B	A	296	320	332	356	A	348	348	348	316	276	212		B					
27					6 115	A	284	324	340	U R	356	360	360	348	324	280	260	200							
28						B	200	256	320	312	A	364		B	360	332	312	260	192		B				
29						B	212	276	312	332	U A	360	344	328	A	U R	324	324	268	196		B			
30						B	208	264	316	328	328	U R	R	R	U A	A	A	A	A	A					
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						2	24	25	27	22	18	20	18	19	24	24	25	22	2					1	
MED						176	216	276	308	326	342	356	348	348	330	312	272	214	228					K 244	
U Q							220	280	316	332	356	364	360	352	346	320	288	228							
L Q							206	258	300	320	336	338	336	320	322	300	260	196							

SEP. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	J A				J A	J A		J A	J A	J A	J A								J A	E B	E B	J A	J A	J A	28	
2	J A			J A	J A	E B	J A	J A	J A		G	G	G	G			G	G			E B	J A	E B	J A	31	
3	J A	E B	E B	J A	J A	E B	J A		J A	J A									J A	J A		J A	J A	J A	22	
4	E B	E B				J A	J A	J A			J A			J A					J A	J A			E B	J A	35	
5	J A	J A	J A	J A	J A					C	C	C	C	C	C	C	C		J A	J A	J A	J A	J A	J A	21	
6	J A	J A	J A	J A	E B	J A	J A	J A			C	C	C	C	J A	C	G		J A	J A	J A	J A	J A	J A	37	
7	35	35	20	E B	22	E B	J A	J A	J A	J A				G	34	34	J A	J A	J A	J A		J A	J A	33		
8	E B	14	19	E B	E B	E B	E B	J A			J A			J A				G		J A	J A	J A	E B	E B	14	
9	E B	E B	E B	E B	E B	E B		J A	E B	E B	E B	E B		G					J A	J A	J A	J A	J A	J A	27	
10	27	20	20	E B	E B														J A	E B	E B	E B	E B	E B	14	
11	E B	E B	E B	E B	E B	E B		J A		J A							J A	J A	E B	J A	J A	J A	J A	J A	26	
12	E B	J A	J A	J A	J A	E B		G			G			G	G	G	G			E B	E B	E B	E B	J A	29	
13	J A				E B	E B		G	G					G					J A	J A	J A	J A	J A	J A	26	
14	24	16	14	14	14	15	26	33	42	38	26	26	32	60	50	38	J A	J A	J A	J A	J A	J A	J A	J A	34	
15	J A		C E	B		E B			J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	14	
16	E B	E B	E B	E B	E B	E B					J A	J A	J A	J A	J A	J A	J A	J A	J A	E B	J A	J A	J A	J A	27	
17	31	J A	J A	J A															J A	J A	J A	J A	J A	J A	14	
18	E B	E B	J A	J A	J A		J A							G	G	G			J A	J A	J A	J A	J A	J A	27	
19	28	23	J A	22	E B	E B								G	G	G			J A	J A	J A	J A	J A	J A	33	
20	J A	J A	J A	E B	E B	J A	J A	J A		J A				G	G				J A	J A	J A	J A	E B	C	C	
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	J A	G				E B	J A	E B	E B	14	
23	18	27	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A							J A	J A	J A	J A	J A	J A	14	
24	20	E B	J A	E B	E B	E B		G			J A	J A	J A						J A	J A	J A	J A	J A	J A	27	
25	28	27	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	32
26	J A	J A	E B	J A	J A	J A		G	G	G	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	24	
27	23	23	E B	14	20	39	35	28		G	27	27							J A	E B	E B	E B	E B	E B	14	
28	E B	E B	E B	E B	E B	E B		G											G		E B	E B	E B	E B	14	
29	E B	14	20	20	14	14	14	23	30	36	39	41	41	37	37	28	22	18		J A	J A	J A	J A	J A	14	
30	E B	E B	E B	E B	E B	E B		G			J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	61	
31																										
	00	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	27	28	28	28	28	28	28	28	26	26	26	26	27	29	27	28	29	29	29	29	28	28	28		
MED	22	21	20	19	18	E B	26	33	36	38	38	36	34	34					J A	29	24	26	30	26	26	
U Q	28	27	J A	24	24	25	28	35	39	42	41	43	38	38	38	36	34	28	37	31	31	36	32	32		
L Q	E B	E B	E B	E B	E B	E B		G			G	G	G	G	G	G	G	G	E B	E B	E B	E B	E B	E B	14	

SEP. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

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

SEP. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

$\begin{matrix} H \\ D \end{matrix}$	00	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	15	16	21	25	22	22	22	16	13	14	14	15	14	14	14	14	14
2	14	14	14	14	14	17	14	11	17	14	24	21	24	24	21	17	14	14	14	14	14	14	14	14
3	14	15	14	14	14	14	14	14	14	21	16	29	24	28	14	15	14	15	13	14	14	14	14	14
4	14	14	14	14	14	14	14	13	13	16	22	21	20	15	18	14	13	14	12	14	14	14	14	14
5	14	14	14	14	14	14	14	14	14	C	C	C	C	C	C	C	C		14	16	14	14	14	14
6	14	14	14	14	14	14	14	13	15	C	C	C	C	C	C	C		14	13	14	14	14	14	14
7	14	14	14	14	14	14	14	14	16	22	20	30	29	24	18	14	14	13	14	14	14	14	14	14
8	14	14	14	14	14	16	15	14	15	14	14	17	14	23	14	16	15	15	14	14	14	14	14	14
9	14	14	14	14	14	14	14	14	15	55	58	54	29	29	22	16	14	14	14	14	14	14	14	14
10	14	14	14	14	14	14	14	14	15	17	16	16	23	23	19	15	14	14	18	16	16	16	14	14
11	14	14	14	14	14	14	14	15	17	17	24	22	21	25	18	14	14	14	14	14	14	14	14	14
12	20	14	14	14	14	14	14	14	14	20	28	18	16	19	15	12	16	14	14	14	14	14	14	14
13	14	14	14	14	14	14	14	14	14	20	15	24	22	17	16	14	13	15	14	14	14	14	14	14
14	14	16	14	14	14	15	14	14	14	15	21	20	29	21	14	14	14	14	14	14	14	14	14	14
15	14	C	14	14	14	14	16	16	16	20	29	21	22	22	20	15	14	14	14	14	14	14	14	14
16	14	21	14	17	14	14	14	14	14	17	20	23	22	20	20	14	14	14	14	14	14	14	14	14
17	14	14	14	14	14	14	14	14	14	17	17	25	16	16	14	14	13	14	14	14	14	14	14	14
18	14	14	14	14	14	14	15	15	15	15	16	18	16	14	13	15	13	14	14	14	14	14	14	14
19	14	14	14	14	14	14	14	14	14	14	18	16	16	14	14	14	13	15	14	14	14	14	14	14
20	14	14	14	14	14	14	14	17	21	16	19	20	16	16	14	12	14	14	14	14	14	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	20	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C										
23	14	14	14	14	14	14	14	14	13	19	14	15	14	14	14	14	14	15	14	14	14	14	14	14
24	14	14	14	14	14	14	14	14	15	14	17	14	14	14	14	14	14	14	14	14	15	14	14	14
25	14	14	14	14	14	14	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
26	14	14	14	14	14	14	14	15	14	14	14	14	14	14	22	18	14	15	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	15	20	17	16	17	20	16	14	13	15	14	14	14	14	14	14
28	14	14	14	14	14	16	14	15	14	17	21	26	B	28	15	14	13	16	14	14	14	14	14	14
29	14	14	14	14	14	14	14	17	14	14	17	14	14	17	19	17	14	14	14	14	14	14	14	14
30	14	14	14	14	14	14	14	14	14	15	14	21	15	18	18	14	14	14	14	14	14	14	14	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	28	28	28	28	28	28	28	26	26	26	27	27	29	27	28	29	29	29	29	28	28	28
MED	14	14	14	14	14	14	14	14	14	17	18	20	17	19	16	14	14	14	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	15	15	20	22	23	23	23	19	15	14	15	14	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	14	14	16	16	14	15	14	14	14	14	14	14	14	14	14	14

SEP. 2014 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	314	310	306	286	290	309	319		A		A	307	340	309	298	327	328	335	329	316	296	291	293	321	300
2		UR										Y		RU	R										
2	290	306	283	309	290	307	304	326	299	307			323	313	334	334	319	323	316	319	303	314	313	291	295
3	277	262	280	324	278	329	344	303	308			Y	R												
3																									
4	287	299	300	308	325	317	307	340																	
4																									
5	293	287	291	291	296	315	326	337	319																
5																									
6	283	282	277	275	273	267	330	323	357																
6																									
7	282	286	292	296	272	270	327	319	341	335	303	333	326	300	298	323	303	318	343	303	303	321	314	296	272
7																									
8	279	269	256	301	287	316	332	347	321	365															
8																									
9	275	264	259	291	302	284	380																		
9																									
10	298	277	275	285	312	313	344	343	329																
10																									
11	290	279	298	306	295	296	335	350	328																
11																									
12	289	292	305	296	270	282	317	331	315	288	354	335	321	336											
12																									
13	289	316	298	268	235	303	279																		
13																									
14	292	259	289	303	283	306	329	319	361	328															
14																									
15	280																								
15																									
16	302	295	279	290	295	306	363	378	373																
16																									
17	307	292	306	282	289	280	342																		
17																									
18	293	291	292	292	290	311	372																		
18																									
19	294	286	287	280	299	301	349	362	386	234															
19																									
20	279	264	264	277	272	281	363																		
20																									
21																									
21																									
22																									
22																									
23	286	285	294	277	310	273	337	327	333	317															
23																									
24	292	286	297	304	268	267	298	289	337	313	326	343													
24																									
25	284	274	271	284	309	280	337	347	334	311	307	327	347	304	330	322	323	317	314	299	290	309	283	291	
25																									
26	290	280	288	284	309	304	321	353	349	330	325														
26																									
27	265	264	276	256	270	296	318	365																	
27																									
28	302	291	280	288	280	288	345	352	289																
28																									
29	281	268	275	282	283	295	346	351																	
29																									
30	278	298	288	269	283	292	321	344	323																
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	27	28	28	28	28	28	22	21	13	15	17	20	22	20	24	22	25	26	28	26	27	28	27	
MED	289	286	288	287	288	298	334	344	333	317	328	333	332	333	328	330	330	331	324	310	306	308	296	290	
U Q	293	292	296	298	298	310	346	352	353	338	361	342	346	342	347	358	341	346	339	328	321	321	306	299	
L Q	280	269	276	281	276	282	320	326	317	308	311	317	322	316	319	320	323	319	316	301	293	293	288	282	

SEP. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1						L	357	A	A	A	Y	Y	U	R	U	R	Y									
2							370	L	341	378	L	377	366	L	L	U	L	361	352	400						
3							387	A	L	U	L	L	L	360	L	L	353	343	388							
4								361	357	L	Y		356	A	363	363	331	349								
5						U	R	L	A	C	C	C	C	C	C	C	C				A					
6						A	A	A	A	C	C	C	C	C	C	L	C									
7								A	373	375	355	367	U	L	L	339	363	374	380							
8									420		361	L	L	L	L		340									
9						U	R	L		B	B	B	Y	L	U	L	L	L	L							
10								L	L	L	U	L		L	L		L									
11									360	L	L	L	330	U	L	U	L	L	L							
12						U	L	346	383	353	L	L	352	L	L	L	L	376	363							
13						U	L	282	339	373	R	A	L	A	L	L		359	346	388						
14								L	L		391	346	L	Y		A	U	L	A							
15						U	L	373	396	A	L	397	364	L	U	L	L	380								
16						L			402	361	387	370	L	L	L	L	U	L								
17						L	L	L	L	L	L	L	352	Y	355	367	373	363								
18								L	L		390	381	368	374	373	375	U	R	L							
19						L			372	409	358	392	387	356	347	366	L									
20						L	L				370	380	387	383	379	396	L	L								
21						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
22						C	C	C	C	C	C	C	Y			L		L								
23								L		U	L	A	L	A	U	L	L	L								
24											A	L	352	349	350	376	379	392								
25						A		L		Y	A	A	385	L	L	L	378									
26						A			400	405	410	L	349	L	373	L	L									
27										L	357	358	L	395	L	L	381									
28								L	Y		359		B	A	L											
29								L		L	L	U	Y	L	A	L	L									
30								L	L	A	L	L	416	392	L	A	A	A								
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT						1	8	8	13	12	11	13	11	17	11	20	13	5								
MED						U	L	282	362	378	372	375	370	367	368	367	367	370	363	388						
U Q									378	404	391	384	388	380	387	382	376	378	384	394						
L Q						U			342	367	352	364	357	354	352	356	347	358	350	380						

SEP. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						330	310	A	382	A E Y	352	300	318	338	296	284	274	270						
2							314	284	370	296	266	312	300	276	280	294	292	272						
3							E A	266	272	336	334	284	308	310	284	280	308	286	256					
4								260	254	324	328	340	250	318	292	346	290							
5								264	256	280	C	C	C	C	C	C	C		276		274			
6						A	266	292	258	C	C	C	C	C	C	C	C			A				
7								282	266	274	332	298	294	292	340	280	290	266						
8								242		250	278	270	274	288	284	304	274							
9								242	258	242	244	258	270	Y	284	306	310	272	272					
10								238	264	262	252	268	276	276	276	276	276							
11									276	262	272	286	296	288	306	278	266							
12								302	286	306	318	272	318	312	336	270	280	266						
13							366	314	314	R	R	A	458	A	376	286	290	304	296					
14								248	270	250	324	276	284	280	298	298	276							
15								250	250	240	268	276	290	280	274	286								
16								234	244	260	248	262	288	288	284	262	246	246						
17								246	238	250	242	262	276	288	258	266	266							
18									236	226	258	264	264	264	276	258	258	270						
19								252	260	242	250	264	262	280	294	266	266							
20									242	264	250	264	252	270	276	258								
21						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
22						C	C	C	C	C	C	C			266	260	266	266	256					
23								264		272	268	268	266	270	250	266	250							
24								318	338	288	304	306	292	292	292	268	262	248			300			
25						E A	378		266	300	318	332	306	300	308	286	270							
26						A		256	248	278	274	304	286	286	280	272								
27									270	262	264	264	264	260	264	258								
28									240	260	272		B	268	250									
29									254		278	278	278	272	268	244	254							
30									254	244	284	240	252	272	254	258	A							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	9	20	25	23	25	25	24	27	29	26	21	10		2				
MED						U	348	302	258	260	262	272	276	281	284	280	274	268	271		287			
U Q						E A	378	314	283	284	296	295	305	295	292	293	290	281	276					
L Q							330	265	249	246	250	258	264	265	272	268	262	257	266					

SEP. 2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2014 h'F (KM)

135°E MEAN TIME (G.M.T. + 9 H)

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

H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	274	248	248	290	276	282	224		A	A	A	Y	Y	202	192	Y	222	208	228	256	252	266	258	268	274	
2	304	300	290	272	278	296	246	244	218	E Y	228	Y	208	E Y	Y	208	210	210	230	254	236	250	234	220	262	
3	288	300	278	258	260	260	E A	A	E Y	210	210	222	Y	Y	A	222	222	236	246	232	232	238	254	254		
4	272	272	276	260	236	272	238	220	202	202	E A	A	226	226	208	210	222	264	234	236	236	236	250	274		
5	268	280	294	272	292	252	242	218	A	C	C	C	C	C	C	C	C	236	262	A	A	A	A	242	274	
6	286	296	304	268	314	A	A	A	A	C	C	C	C	C	C	C	220	234	A	A	268	278	238	260	268	
7	288	304	274	254	254	258	282	A	220	212	E Y	Y	Y	Y	E Y	234	206	242	236	244	248	256	248	256	278	
8	280	290	290	270	272	250	242	186	214	204	196	A	Y	E Y	Y	218	208	214	232	256	250	254	240	210	244	254
9	250	276	276	248	232	256	E A	218	208	196	B	B	B	Y	Y	202	206	222	230	252	232	250	250	228	254	
10	264	292	280	262	272	258	E A	218	208	188	Y	202	202	192	204	220	220	244	244	244	228	228	228	254		
11	268	274	278	268	268	258	222	232	220	208	240	E A	E Y	E Y	214	238	212	220	228	256	232	246	274	264	264	250
12	286	278	258	256	274	264	240	228	210	200	Y	206	E Y	218	206	214	214	234	244	254	298	280	266	276		
13	300	264	256	278	E B	310	244	214	R	214	A	E Y	Y	200	218	218	218	240	240	248	246	262	264	296		
14	296	284	268	254	254	262	240	202	A	Y	216	198	204	Y	Y	A	A	A			254	238	252	294		
15	284	C	266	274	274	250	252	214	224	A	194	194	196	208	208	244	252	234	240	250	240	248	248	248		
16	244	250	278	274	278	280	228	214	214	196	200	226	202	A	204	A	202		236	236	244	248	258	250		
17	260	288	292	266	266	274	236	226	204	210	200	E A	240	Y	216	200	218	226	240	236	246	246	230	240	264	
18	264	268	268	290	296	256	234	224	202	A	206	200	Y	Y	Y		214	228	216	254	254	248	244	246	254	
19	292	296	314	294	280	266	260	220	198	210	194	194	196	210	210	218	226	240	238	238	264	278	278	256		
20	270	278	278	278	286	284	222	236	220	220	Y	Y	206	184	220	226	232	242	232	246	254	C	C	C		
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	210	C	C	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C	C	Y		202	208	208	214	248	238	242	234	266	264	284
23	272	292	266	254	292	290	238	228	218	212	A	Y	A	248	210	214	214	234	246	258	290	284	274	270		
24	266	268	264	240	264	340	248	238	224	A	A	250	Y	Y	212	218	A	222	A	A	282	264	A	290		
25	314	322	330	286	232	A	272	238	238	A	A	A	E Y	218	218	226	206	266	258	262	280	272	262	282	272	
26	280	292	272	278	270	A	284	208	208	190	206	A	Y	210	210	210	250	232	242	262	262	262	276	290	296	
27	296	308	290	290	298	278	254	248	212	Y	214	214	Y	E Y	214	206	220	244	226	242	242	254	272	284	244	
28	248	268	304	304	304	256	226	226	214	Y	214	248	B	A	208	254	254	242	242	244	244	244	284	286	296	
29	278	296	296	296	296	276	234	230	212	256	216	210	E Y	222	200	206	A	218	242	236	248	248	262	296	288	
30	292	270	244	276	254	282	246	250	212	222	A	E A	244	198	236	A	A	A	256	256	242	242	266	308	310	
31																										
H	00	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	27	28	28	27	25	27	24	23	18	14	18	13	19	24	24	25	28	27	27	28	27	27	28		
MED	279	284	278	272	274	265	240	225	212	210	203	208	202	211	208	218	222	238	244	246	250	258	260	271		
U Q	290	296	291	282	292	282	248	234	220	220	214	244	222	218	212	220	237	246	254	254	265	266	278	286		
L Q	267	270	267	259	260	257	232	214	208	202	198	204	200	200	206	210	216	233	238	242	243	238	246	254		

SEP. 2014 h'F (KM)

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	116	108	108	108	A	A	A	A	A	106	112	112	A					
2					B	B	112	A	106	108	108	108	108		108	108	108	108						
3	A					A	118	110	110		A	A	104	104	106	106	106	110	116	A	A			
4						A	116	106	106	106	106	106		A	A	106	106	106	106	A	A			
5					B	118	110	106	106		C	C	C	C	C	C	C	C		A	A			
6					B	A	118	110	112		C	C	C	C	C	A	C		112	A	A			
7						B	112	110	108	108		A	A	A		A	A		A	A	A			
8					B	B	108		106	98	98	98		A	A	102	104	110	112	108		B		
9					B	B	116	102	100		B	B	B		A	A	106	104	106	A	A			
10					B	B	120	110	110	110	106	106	110	110	110	110	100		A	B	B			
11					B	B	120	116	110	104		A	A	110		106	106		106	B				
12						B	126	110	106		A	B	106		A	108	108	108	108	A				
13						B	126	122	110	110		A	110		A	110	110	110	112	A				
14						B		112	106	100	108	108	108	108	108	108	108		B	A				
15						B	120	118	116	114	114	110	110	110		A	106	106		A	A			
16						B	114	114	108	110	110	110		A	A	112		116	116	B				
17						B	124	112	112	110	110		A	A	106	106	106	114	130	B				
18						B	106	114	114	110	110	108	104	106	106	108	116	112		A				
19						B	130	120	120	106	106	106	106	108	106	108	116	128		A				
20						B	124	118	118	114	108	112	102	102	102	102	108	108		A				
21						C	C	C	C	C	C	C	C	C		110		C	C	C	C			
22						C	C	C	C	C	C	C		108	108	108	108	108		B	B			
23						B	120		A	A	A	A	108	108	104	108	108	122	116	A				
24						B	122	118	108	106	106	106	106	112	112	112	112		A					106
25						A		A	118	114	110	110	110	110	110	110		110						
26						B	A		114	112	108	104		A	102	102		110	110	120	B			
27						B	A		120	112	112	112	102	102	104	104	104	116	122					
28						B	118	118	112	112	108	108		B	110	106	106	106	130	B				
29						B	138	122	112	112	112	106	106		A	106	108	114	154	B				
30						B	120	114	114	108	108	108	108	108	108		A	A	A	A				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	24	25	27	22	18	20	18	18	23	24	24	22	1					1
MED						118	119	114	110	109	108	108	107	108	108	108	110	112	108					106
U Q							123	118	112	110	110	109	108	110	110	108	114	120						
L Q							115	110	106	106	106	106	104	106	106	106	108	108						

SEP. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	102	102	102	102	102	104	126	108	108	106	104	110	110	108	104	98	108	110	126		B	B	110	104	112
2	104	102	104	104	104	B	118	110	104	106	G	G	G	G	114	104	G	G	96	108	B	108	B	104	
3	104	B	B	98	B	114	110	106	106	106	106	G	G	G	198	128	120	146	120	120	110	106	106	102	
4	B	B	126	104	104	114	114	110	110	116	106	114	106	106	124	104	124	120	120	102	102	120	B	112	
5	102	102	102	108	100	Q	126	114	114	108	C	C	C	C	C	C	C	116	110	108	108	108	108	122	
6	108	108	108	108	B	122	118	112	116	C	C	C	C	C	104	C	G	122	110	110	110	110	106	100	
7	100	100	100	B	100	B	114	114	116	110	110	110	110	114	110	110	110	106	114	98	102	102	102	102	
8	B	96	B	B	B	B	136	106	106	G	G	106	96	102	102	104	120	98	98	98	B	98	B		
9	B	B	B	B	B	B	110	110	104	B	B	B	G	104	104	110	106	120	112	110	110	94	94	100	
10	96	102	98	B	B	132	120	120	114	108	G	G	G	G	G	G	G	102	114	B	B	102	B	B	
11	B	B	B	B	B	B	112	112	114	108	108	104	112	100	102	100	108	132	B	110	110	110	104	102	
12	B	96	96	98	98	B	122	106	110	98	104	G	94	94	94	94	G	102	102	B	B	B	B	102	
13	102	92	102	102	B	B	140	112	104	110	106	106	106	106	104	122	114	134	116	112	B	94	94	98	
14	98	B	B	B	B	B	146	122	122	96	96	94	104	124	118	114	106	106	106	106	106	88	108	108	
15	108	C	B	102	102	B	134	114	114	108	108	110	110	104	104	104	104	104	104	104	B	106	110	110	
16	B	B	B	B	B	B	112	122	110	114	106	106	106	102	102	102	108	140	108	B	104	104	104	104	
17	102	96	94	96	96	118	124	108	118	108	102	102	102	102	102	106	106	124	122	112	104	98	102	B	
18	B	B	122	118	102	98	116	116	114	114	114	G	100	98	134	124	106	100	100	108	100	100	100	96	
19	96	96	96	94	B	B	140	112	G	172	182	98	98	G	G	G	116	126	114	106	106	98	98	98	
20	98	98	96	106	122	112	112	112	108	108	98	G	104	100	104	100	96	102	102	B	C	C	C	C	
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	C	C	C	C	C	C	C	C	C	
22	C	C	C	C	C	C	C	C	C	C	C	C	100	94	142	98	100	140	126	100	B	118	B	B	
23	124	116	116	116	104	110	106	106	100	100	96	96	118	92	G	102	114	G	104	104	114	112	B	B	
24	120	B	110	B	B	B	G	138	122	114	114	114	116	144	G	124	124	100	100	118	118	106	106	116	
25	124	124	124	108	116	110	112	124	116	116	114	110	110	110	106	106	98	118	118	118	112	110	110	110	
26	104	104	B	106	114	106	106	106	100	100	96	86	94	G	G	G	G	G	B	96	102	102	102	102	
27	102	102	B	114	114	114	106	G	G	106	100	G	100	G	G	G	110	110	B	B	B	B	B	B	
28	B	B	B	B	B	B	G	118	106	98	106	G	B	112	100	94	G	150	B	B	B	102	B	B	
29	B	96	96	B	B	B	140	128	130	118	118	108	108	108	102	102	96	G	B	B	106	B	B	B	
30	B	B	B	B	B	B	G	134	114	114	114	108	108	108	104	98	98	98	102	102	110	110	110	112	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	18	17	17	16	14	12	24	27	26	24	22	19	20	21	21	23	22	25	24	22	20	24	19	19	
MED	102	102	102	104	103	114	118	112	111	108	106	108	106	104	104	104	108	118	110	106	107	106	104	102	
U Q	108	103	113	108	106	120	130	120	116	114	114	110	110	109	112	110	114	129	117	110	110	110	108	112	
L Q	100	96	96	100	100	108	112	108	106	106	104	102	100	100	102	100	104	105	102	102	104	101	100	100	

SEP. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 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	F3	F1	F1	F2	F2	C1	C1	C2	C2	C1	L1	L1	L1	L1	L2	C1	C1	L1	L1			F1	F4	F1	
2	F3	F3	FF11	F2	L1		L2	L1	C2	C1					C1	L1			FF11	F3		F1		F2	
3	L2		F1	F1	F1	L1	C1	C2	C1	C1	L1				HL11	H1	C2	C1	C2	L4	F1	F4	F2	F2	
4			F1	F1	F1	L2	C2	C1	C1	C2	C1	C2	L1	L1	C1	C2	C1	C3	C2	C3	F2	F1		F2	
5	FF21	F2	F2	F1	L1	C1	C2	C1	C1									C2	L3	LL31	F3	F4	F3	F1	
6	F2	F4	F2	F2		L3	C2	C2	C1						C1			C1	L4	L4	F4	F3	F4	F4	
7	F4	F5	F1		F1		C3	C2	C1	C1	L1	L1	L1	C1	L1	L1	C1	L2	L3	L4	F2	F3	F2	F2	
8		F1					C2	L2	C1			C1	C1	L1		L2	L1	C3	C1	C1	F3		F1		
9							C2	C1	C1					L1	L1	L1	LC11	C2	L3	L3	F2	F2	F2	F1	
10	F1	F1	F1			L1	C2	C2	C2	C1								L2	L1			L1			
11							C1	C1	C1	C1	L1	L1	L1	L1	L1	L1	L1	C1		F2	F3	F3	F2	F2	
12		F2	F2	F1	F1		C3	L1	CL11	L1	L2		L1	L2	L2	L1		LC11	L3					F4	
13	F2	F1	F1	F2			C1	L1	L1	C1	L1	L1	L1	L1	L1	CL11	C1	CL22	L4	F1		F3	F1	F1	
14	F1						CL23	CL21	CL11	L2	L1	L1	L1	L1	C1	C2	C3	C2	L2	FF21	F2	FF11	F1	F3	
15	F1		F1	F1			C1	C1	C2	C1	C1	C1	C1	C1	L1	C2	C2	C2	L2	F2	F1	F3	F3		
16							C1	C1	C1	C1	C1	C1	L2	L2	L1	L2	C1	C1	HL11	L2		F3	F3	F3	F2
17	F2	F2	F3	F1	F1	C1	C1	C1	C1	C1	L1	L1	L1	L1	L1	C2	L2	C2	C1	F1	F1	F2	F1		
18			F1	F5	F2	L2	CL21	CL21	CL11	CL11	C1	C1		L1	L1	C2	C2	L2	C2	F2	F1	F1	F3	F4	
19	F3	F2	F2	F1			HL21	C1		HL11	H1	L1	L1				C2	C1	C3	F1	F1	F3	F3	F4	
20	F3	F2	F1		F1		C1	C2	C2	C2	C1	C1	L1		CL11	CL11	L1	L2	C3	F2					
21																									
22													L1	L1	HL12	L2	L2	H2	C3	C3		F2			
23	F1	F2	F2	F2	F1	L1	L2	L3	L2	L3	L3	CL12	C1	L1		L1	C1		C2	FF11	F3	FF21			
24	F1		F2					HL11	C1	C2	C1	C1	CL11	CL11		C2	CL12	CL23	L5	FF22	F3	FF22	FF32	CL11	
25	L2	LL11	L6	F4	F2	L3	C2	CL11	CL21	C1	C1	C1	C1	C1	C1	L2	CL11	L3	F2	F2	F2	F2	F2	F2	
26	F3	F2		F2	F1	C4	C3	CL11	CL11	CL11	L1	L2	L1							F1	F1	F3	F3	F1	
27	F1	F1		F1	F4	C4	C2			C1	L1						C1	C1							
28								C2	C1	C1	L1				C1	L1	L1		H2			F3			
29		F1	F1			H1	C1	H1	C1	C1	C1	C1	C1	L1	L1	L1	L2				F1				
30							C1	C1	C1	C1	C1	C1	C2	C1	C2	C2	C2	L3	L2	F4	F1	F3	F5	F4	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
U Q																									
L Q																									

SEP. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2014 f_{XI} (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	X 73	X 68	X 59	X 56	X 57	X 52														X 78	X 77	X 68	70	X 66	
2	X 60	X 57	X 55	X 57	X 56	X 54														X 91	X 85	X 67	X 59	X 59	
3	X 60	X 54	X 54	X 53	X 53	X 55														X 90	X 81	X 65	X 60	X 59	
4	X 58	X 58	X 57	X 54	X 55	X 52														X 96	X 61	X 63	X 62	X 61	
5	X 56	X 54	X 53	X 54	X 54	X 51														X 92	X 84	X 66	X 60	X 61	
6	X 64	X 64	X 62	X 59	X 55	X 53														X 94	X 86	X 65	X 60	X 59	
7	X 60	X 59	X 58	X 56	X 54	X 52														X 86	X 74	X 72	X 72	X 73	
8	X 72	X 72	X 68	X 66	X 62	X 66														X 94	X 70	X 70	X 69	X 64	
9	X 62	X 61	X 60	X 59	X 56	X 56														X 94	X 80	X 81	X 73	X 68	
10	X 69	X 67	X 65	X 66	X 62	X 61														X 100	X 75	X 62	X 68	X 68	
11	X 70	X 70	X 71	X 66	X 54	X 56														X 92	X 78	X 78	X 74	X 76	
12	X 74	X 71	X 72	X 66	X 55	X 55														X 70	X 68	X 72	X 76	X 75	
13	X 66	X 63	X 59	X 50	X 44	X 42														X 70	X 67	X 64	X 63	X 63	
14	X 64	X 61	X 61	X 59	X 56	X 54														X 84	X 71	X 74	X 68	X 68	
15	X 66	X 63	X 62	X 60	X 56	X 57														X 80	X 80	X 78	X 74	X 70	
16	X 64	X 63	X 62	X 59	X 58	X 58														X 87	X 79	X 80	X 75	X 67	
17	X 65	X 65	X 62	X 60	X 57	X 57														X 84	X 75	X 74	X 75	X 71	
18	X 66	X 66	X 63	X 62	X 62	X 62													X 95	X 95	X 80	X 78	X 72	X 70	
19	X 62	X 60	X 59	X 59	X 57	X 60														X 92	X 65	X 68	X 68	X 66	
20	X 62	X 59	X 58	X 59	X 57	X 59													X 86	X 71	X 70	X 72	X 72	X 69	
21	X 65	X 62	X 61	X 60	X 60	X 60														X 74	X 72	X 70	X 64	X 64	
22	X 61	X 59	X 60	X 57	X 56	X 55														X 83	X 66	X 64	X 68	X 69	
23	X 69	X 66	X 67	X 62	X 61	X 60														X 78	X 74	X 73	X 72	X 67	
24	X 67	X 66	X 59	X 52	X 52	X 49														X 63	X 66	X 67	X 63	X 61	
25	X 60	X 58	X 57	X 57	X 52	X 36														X 75	X 70	X 69	X 66	X 63	
26	X 57	X 55	X 53	X 47	X 46	X 49													X 80	X 79	X 73	X 70	X 66	X 63	
27	X 56	X 55	X 54	X 51	X 51	X 53														X 68	X 72	X 63	X 63	X 62	
28	X 59	X 51	X 49	X 48	X 49	X 50													X 88	X 75	X 72	X 69	X 64	X 65	
29	X 63	X 59	X 59	X 58	X 57	X 57														X 74	X 72	X 66	X 60	X 61	
30	X 60	X 63	X 56	X 56	X 53	X 53														X 88	X 70	X 64	X 61	X 60	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30														4	30	30	30	30	30
MED	X 64	X 62	X 59	X 58	X 56	X 55														X 87	X 84	X 72	X 69	X 68	X 66
U Q	X 66	X 66	X 62	X 60	X 57	X 58														X 92	X 92	X 79	X 73	X 72	X 69
L Q	X 60	X 58	X 57	X 54	X 53	X 52														X 83	X 75	X 70	X 65	X 63	X 61

SEP. 2014 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2014 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	67	61	53	50	50	46	67	61	75	83	90	96	90	76	84	83	81	74	70	71	71	62	F	60	
2	54	51	48	51	50	48	58	75	98	72	74	75	73	76	78	75	74	74	85	85	79	61	53	53	
3	54	48	48	47	47	49	66	72	74	82	84	92	84	76	74	80	82	86	92	84	74	59	53	53	
4	52	52	50	48	49	46	60	77	78	81	77	80	80	74	79	80	78	84	99	90	55	56	56	55	
5	50	48	47	F	47	45	66	74	72	73	79	78	78	86	84	84	88	92	93	86	78	60	54	55	
6	58	58	56	53	49	47	65	70	65	70	72	68	80	82	82	80	82	81	84	87	80	59	54	52	
7	54	53	52	50	48	46	70	76	78	74	76	82	79	83	90	98	98	97	100	80	67	66	65	67	
8	66	66	62	60	55	60	71	75	84	86	74	72	86	88	86	98	103	102	103	88	64	64	60	57	
9	56	55	54	53	50	50	76	112	73	70	84	89	90	88	92	85	93	91	93	88	74	75	66	62	
10	63	61	58	60	56	55	74	84	92	88	88	94	95	95	96	94	96	97	106	94	68	60	62	62	
11	64	64	65	60	48	50	68	84	92	98	88	88	91	104	108	106	108	103	102	86	72	72	68	70	
12	68	65	66	60	49	49	71	99	102	99	105	111	105	108	119	106	94	87	79	64	62	65	69	69	
13	60	56	53	44	38	36	44	50	A	64	58	71	66	64	73	80	82	77	67	63	60	58	57	57	
14	58	55	55	53	50	48	69	83	82	81	88	91	88	86	82	86	82	86	81	78	65	68	62	61	
15	60	56	56	54	50	51	72	92	83	84	89	86	92	98	92	96	94	96	88	74	74	72	68	64	
16	58	57	56	53	52	52	76	100	88	92	87	87	98	96	95	98	101	104	96	81	73	74	69	61	
17	59	59	56	52	51	51	82	99	85	90	97	96	106	113	102	98	94	95	97	78	69	68	69	65	
18	60	59	57	56	56	56	86	101	82	85	88	92	98	99	97	94	93	91	89	89	74	72	66	64	
19	56	54	53	53	51	54	82	95	94	84	84	88	90	92	96	106	99	94	92	86	59	62	62	60	
20	56	53	52	53	51	53	81	90	91	92	97	92	92	98	89	97	98	97	80	65	64	66	66	63	
21	59	56	55	54	54	54	79	87	97	79	87	84	82	81	84	87	86	91	83	68	66	64	58	57	
22	55	53	54	51	50	49	71	97	106	84	72	78	84	86	82	84	86	93	92	77	60	58	62	63	
23	63	60	61	56	55	54	72	94	87	110	100	98	106	103	94	90	79	79	74	72	68	67	66	61	
24	61	60	53	46	46	43	57	85	98	105	100	101	103	107	104	91	82	82	66	56	60	60	57	55	
25	54	52	51	F	F	30	60	85	90	100	98	103	97	88	88	88	90	90	79	69	64	63	60	56	
26	50	48	47	41	40	43	63	82	84	81	87	87	99	95	86	86	86	82	74	73	66	64	60	56	
27	50	49	48	45	45	47	61	93	98	113	104	114	114	94	89	97	94	85	74	62	66	57	56	56	
28	52	45	43	42	43	44	68	88	104	98	91	98	105	98	92	90	88	88	82	69	66	62	58	59	
29	57	53	53	52	51	51	71	94	96	95	103	105	105	108	102	104	C	C	C	68	66	60	54	55	
30	53	57	50	50	46	47	70	86	97	98	C	C	C	C	C	C	C	C	104	97	81	63	58	54	54
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	28	29	30	30	30	29	30	29	29	29	29	29	29	28	29	29	30	30	30	29	30	
MED	58	56	53	52	50	49	70	86	88	84	88	89	91	92	89	90	89	91	88	78	66	62	60	60	
U Q	60	59	56	54	51	52	74	94	97	98	97	97	101	98	96	98	95	96	96	86	73	67	66	63	
L Q	54	52	50	49	47	46	65	76	80	81	78	81	83	82	83	84	82	83	79	69	64	60	56	55	

SEP. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								A	U	L	A	A	U	L	U	L	L	L							
2								U	L	L	L	U	L	U	L	U	L	L	A	A	A				
3								L	A	L	U	L	U	L	L	L	A	L	A						
4								L	L	A	A	A	L	L	U	L	L	L	A	A					
5								L	A	L	U	L	A	U	L	A	L	L	A	A					
6								A	A	A	A	A	A	L	L	L	L	L	A						
7							L		L	L	A	L	L	L	U	L	A	L	A						
8								A	L	L	A	U	L	U	L	L	L	A	A	A					
9									L	L	L	L	L	L	A	A	A	A	A						
10									L	L	L	L	L	L	L	L	L	L							
11									L	L	L	A	L	U	L	U	L	L	A	A					
12								A	L	L	L	L	L	L	L	L	L		A						
13							U	L	U	L	A	U	L	U	L	U	L	L	L	A					
14								A	L	L	L	L	L	L	L	L	L	A							
15										L	L	L	U	L	L	L	L	A							
16								A	A	A	L	L	U	L	U	L	L	L	L						
17										L	L	L	U	L	U	L	A	L	A	A					
18										L	L	L	U	L	L	L	L	L	L						
19									L	L	L	L	L	L	L	L	L	A							
20										L	L	L	L	L	A	L	A	A	A						
21									L	L	L	L	L	L	L	L	L	L							
22										L	L	L	U	L	L	A	A								
23										A		U	L	U	L	L	L	A							
24								A	A	A	A	A	U	L	A	L	A	A							
25								A	L	L	L	U	L	L	L	L	A	L							
26									L	A	L	L	U	L	L	L	L								
27							A	A	L	L	L	U	L	L	L	L	L								
28									A	L	L	L	L	A	L	A									
29										A	L	L	L	L	L		C	C	C						
30									A	A	C	C	C	C	C	C	C								
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							1	2	1	1	4	8	14	7	5	1									
MED							U	L	U	L	U	L	U	L	U	L	U	L	U	L	U	L	U	L	U
U Q							3	7	6	4	4	2	4	8	0	4	7	2	5	0	4	4	5	2	0
L Q											U	L	U	L	U	L	U	L	U	L	U	L	U	L	U
											4	9	6	4	9	6	5	1	2	5	0	4	5	0	2

SEP. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2014 f_oE (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	A	R	A	A	A	U R	B					
2							U R	U R	A	A	R	A	A	A	A	R	A	A	A	B				
3							U R	A	A	R	A	R	R	R	A	A	A	A	A	B				
4							R	A	A	A	A	A	A	A	R	A	A	A	A	B				
5							A	A	A	A	A	A	A	A	A	A	A	A	A	B				
6							A	A	A	A	A	A	A	A	A	A	A	A	A	B				
7							U R	A	A	A	A	A	U R	A	A	A	A	A	A	B				
8							U R	A	A	A	A	R	R	R	A	A	A	A	A	B				
9							A	A	A	R	R	A	A	A	A	A	A	A	A	B				
10							2 1 6	A	A	A	A	R	R	A	A	A	U R	A	B					
11							U R	R	A	A	A	A	A	A	A	A	A	A	A	B				
12							A	A	A	R	A	R	A	R	A	A	A	U A	A					
13							U A	A	A	R	R	R	R	A	A	R	A	A	A	B				
14							A	A	A	A	A	R	A	R	A	R	A	A	A	B				
15							A	A	A	A	A	A	A	A	A	R	A	U R	B					
16							U R	A	A	A	A	A	A	R	R	R	U R	R	B					
17							A	A	A	R	A	R	A	A	A	A	A	A	A	B				
18							A	A	A	A	A	A	A	A	R	R	A	A						
19							A	A	A	R	R	R	A	R	A	A	A	U R	B					
20							B	A	A	A	A	R	R	A	A	A	A	A						
21							A	A	A	R	R	R	R	R	A	R	R	A	B					
22							U R	A	A	R	R	R	A	A	A	A	A	R	B					
23							U A	A	A	A	A	A	A	R	A	A	A	A	B					
24							1 7 2	A	A	A	A	A	A	A	A	A	A	A	A	B				
25							R	A	A	A	A	A	A	A	A	A	R	U A	B					
26							A	A	A	A	A	R	R	A	R	R	R	R						
27							A	A	R	R	R	A	A	A	A	A	R	U A	B					
28							U R	U R	A	A	A	A	A	A	A	A	A	R	U R					
29							2 0 8	2 9 6	A	A	A	A	A	A	A	R	A	C	C	C				
30							1 8 4	R	A	A	C	C	C	C	C	C	C	C	A	B				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							13	2					1				2	8						
MED							U R	U R					U R				U R	U						
U Q							2 1 6	3 1 4					4 2 8				3 2 2	2 1 8						
L Q							U R											U R						
							2 3 2											2 3 0						
							1 9 4											U A						
																		2 0 8						

SEP. 2014 f_oE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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

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

SEP. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E 15	B 16	E 16	B 16	E 14	B 15		29	31	38	73	53	40	40	G	41	36	32	G 16	E 17	B 21	E 17	B 14	E 15	
2	E 15	B 16	E 16	B 16	E 18	B 16	G	G	34	38		38	40	36	36	G	36	32	27	E 16	B 16	E 14	B 14	E 15	
3		E 24	B 15	E 15	B 16	E 15	B 15	G	34	41	G	39		G	G	38	39	35	28	30	16	E 19	B 16	E 16	
4	E 15	B 15	E 15	B 14	E 15	B 15	G	32	39	42	44	50	44	44	G	38	36	68	29	25	E 15	B 19	24	20	
5	26	38	33	29	18	17	26	31	56	38	42	44	44	61	38	40	36	38	18	33	31	24	39	22	
6	E 15	B 15	E 23	B 17	E 15	B 14	25	44	48	54	45	47	44	41	38	37	36	26	18	24	22	25	18	E 14	
7	E 15	B 18	E 15	B 15	E 14	B 15	G	38	37	42	42	43	G	45	41	37	35	30	25	28	29	21	E 16	B 15	
8	E 15	B 15	E 15	B 15	E 22	B 20	G	36	36	37	47	G	G	G	38	41	42	42	46	41	51	40	37	23	
9	19	16	18	16	E 15	B 15	24	30	34		G	46	40	45	44	39	44	31	49	24	20	E 15	B 15	E 16	
10	18	E 15	B 19	19	E 14	B 16	23	32	38	38	39	G	G	45	37	37	35	30	41	42	26	22	E 17	B 16	
11	E 14	B 15	E 15	B 16	E 15	B 17	G	G	38	41	41	44	40	44	41	40	40	36	24	32	22	20	30	16	
12	E 15	B 18	E 16	B 15	E 16	B 17	23	35	36		G	37	G	42	37	36	34	31	31	16	18	17	E 16	B 16	
13	17	18	E 15	B 14	E 14	B 15	23	32	A 66	G	G	G	G	38	34	27	32	27	24	39	20	E 14	B 15	E 15	
14	E 15	B 16	E 16	B 16	E 16	B 15	24	32	38	41	41	G	40	G	39	G	32	24	E 16	B 37	43	28	E 16	B 15	
15	E 15	B 15	E 15	B 14	E 14	B 14	24	32	38	41	43	43	42	38	40	G	38	G 14	E 15	18	23	18	20		
16	19	E 15	B 15	E 15	B 15	B 15	G	32	36	38	40	40	38	G	G	G	G	E 15	B 17	E 14	20	E 15	B 15		
17	E 16	B 15	E 15	B 15	E 15	B 15	22	31	40		41	G	43	40	38	40	42	38	23	20	18	18	E 15	B 15	
18	E 15	B 15	E 15	B 15	E 15	B 15	21	35	39	38	38	40	40	36	G	G	32	26	26	E 14	19	19	E 14	B 15	
19	E 15	B 15	E 15	B 14	E 14	B 14	21	24	34		G	G	37	G	37	37	36	G	22	16	18	20	19	20	
20	E 15	B 15	E 15	B 15	E 15	B 14	20	30	37	35	38	G	G	G	38	38	36	36	36	20	25	24	E 15	B 16	
21	E 15	B 15	E 15	B 15	E 15	B 15	23	32	39		G	G	G	G	38	G	G	25	E 15	B 15	E 16	B 15	E 15	B 15	
22	E 15	B 14	E 15	B 16	E 15	B 15	G	29	35		G	G	G	40	39	40	38	25	23	E 14	B 16	15	15	E 14	
23	E 14	B 15	E 15	B 16	E 14	B 14	22	28	34	42	40	39	41	G	40	34	31	23	E 15	B 15	18	24	E 18	B 15	
24	E 16	B 21	E 15	B 15	E 15	B 14	21	35	40	57	68	46	42	43	37	36	35	22	18	24	20	18	E 14	B 18	
25	E 16	B 16	E 15	B 15	E 15	B 16	G	41	36	36	38	40	38	36	36	36	G	22	E 15	B 15	15	15	31	18	
26	24	E 15	B 14	E 15	B 15	B 14	20	34	35	52	37	G	G	34	G	G	G	G 14	E 16	15	15	15	15	15	
27	E 15	B 15	E 14	B 16	E 15	B 15	32	37	28		G	40	34	39	38	37	G	23	E 15	B 15	14	15	E 14	B 14	
28	E 15	B 16	E 15	B 18	E 14	B 14	G	G	38	41	40	41	44	46	40	35	G	G	17	27	E 14	B 15	E 14	B 15	
29	E 16	B 15	E 15	B 15	E 14	B 15	19	31	39	37	42	38	41	35	G	37	C	C	C 14	E 15	B 15	E 14	B 15		
30	E 15	B 14	E 14	B 15	E 15	B 15	22	G	38	45	C	C	C	C	C	C	C	29	20	E 15	B 15	E 15	B 16	B 15	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	28	29	29	30	30	30	30	30	
MED	E 15	B 15	E 15	B 15	E 15	B 15	21	32	38	38	40	39	40	38	38	36	35	26	20	17	18	18	E 16	B 15	
U Q	16	16	16	16	E 15	B 15	23	35	39	42	42	43	42	44	40	38	36	32	26	27	22	21	18	16	
L Q	E 15	B 15	E 15	B 15	E 14	B 14	G	30	36		G	G	G	G	G	G	G	G 22	E 15	B 15	E 15	B 15	E 14	B 15	

SEP. 2014 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP. 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

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

SEP. 2014 fmin (0.1MHz)

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SEP. 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	307	329	291	294	287	295	330	336	307	313	318	321	325	319	324	321	335	329	321	299	313	291	F	294
2	295	264	278	285	294	308	319	328	351	326	320	315	307	319	316	322	321	316	320	320	321	284	285	288
3	288	273	276	275	294	301	331	331	311	308	312	333	324	324	306	315	324	324	328	331	329	304	275	281
4	276	290	289	287	317	291	312	346	337	331	324	316	314	315	314	319	323	321	333	354	288	282	279	300
5	288	294	283	F	282	301	348	351	347	331	341	316	317	318	317	311	321	319	322	326	319	327	283	265
6	278	290	282	304	283	269	338	367	325	352	327	314	310	319	319	314	314	322	316	315	311	305	276	286
7	275	279	286	303	291	288	326	362	336	326	334	313	314	303	292	303	319	318	331	322	303	282	279	282
8	280	291	287	288	291	306	350	352	346	353	349	282	325	309	299	304	318	325	333	328	311	288	279	285
9	274	293	301	299	307	304	334	374	382	315	320	314	312	302	312	310	310	320	324	317	305	305	301	281
10	279	287	278	294	303	294	353	349	357	332	322	316	310	304	317	308	313	316	333	349	346	281	286	274
11	283	297	304	318	295	281	334	342	337	337	321	308	294	294	303	298	315	311	331	325	301	299	267	290
12	287	279	309	307	302	274	326	323	328	314	301	302	292	292	300	314	317	329	326	296	273	272	290	307
13	310	285	279	275	233	244	267	259	A	299	236	297	312	293	317	323	333	328	320	294	296	277	271	272
14	275	283	267	293	308	289	333	343	332	306	312	303	314	316	312	316	317	327	316	315	300	290	300	301
15	296	284	287	302	291	301	341	353	345	335	345	310	311	309	304	309	320	327	339	309	299	308	311	296
16	298	291	286	287	294	305	339	354	347	340	323	309	313	310	307	310	315	330	335	325	294	298	309	307
17	292	298	299	294	289	285	345	373	330	318	324	307	295	322	302	315	319	326	333	327	294	290	293	307
18	301	290	276	286	294	304	347	368	365	340	323	310	315	310	310	319	319	326	314	320	297	293	288	309
19	279	286	283	279	288	305	346	357	362	347	326	313	323	308	311	315	327	325	324	336	280	275	281	309
20	294	283	283	281	271	281	352	365	329	317	339	323	311	328	301	318	328	341	327	306	285	295	282	295
21	301	282	292	292	291	309	359	357	357	342	336	336	318	328	315	323	321	335	338	308	303	295	294	301
22	292	288	292	293	301	302	355	348	374	372	348	333	330	328	310	325	321	326	340	338	287	278	286	297
23	291	299	282	288	269	288	334	345	308	332	306	306	306	312	324	330	338	341	317	298	300	292	288	290
24	279	293	303	289	270	261	312	325	327	338	332	319	319	317	316	332	326	338	331	307	285	295	309	286
25	280	271	282	F	F	278	331	336	315	320	310	311	319	309	307	321	324	323	316	319	295	289	302	300
26	287	296	288	292	304	293	337	363	346	333	328	311	313	321	310	323	329	330	310	304	304	302	288	280
27	285	273	273	285	273	309	321	330	326	332	312	305	321	317	311	304	330	319	326	299	302	285	292	296
28	295	300	275	277	276	280	341	340	339	336	309	329	314	319	313	315	316	326	331	309	304	314	275	273
29	275	279	281	286	272	276	335	347	331	343	327	319	310	309	304	315	C	C	C	308	298	310	264	266
30	269	304	315	300	286	288	350	348	339	336	C	C	C	C	C	C	C	319	315	332	286	289	271	269
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	28	29	30	30	30	29	30	29	29	29	29	29	29	28	29	29	30	30	30	29	30
MED	287	289	284	290	291	292	336	348	337	332	323	313	314	315	311	315	321	326	326	318	300	292	286	290
U Q	295	294	292	296	298	304	347	357	349	340	333	319	319	319	316	322	326	329	333	327	305	302	294	300
L Q	279	282	279	286	279	281	330	336	328	318	312	308	310	308	304	310	317	320	318	307	294	284	278	281

SEP. 2014 M(3000)F2 (0.01)

IONOSPHERIC DATA STATION Kokubunji

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								A	U	L	A	A	U	L	U	L	L	L							
2								U	L	L	L	U	L	U	L	U	L	L	A	A	A				
3								L	A	L	U	L	U	L	L	L	A	L	A						
4								L	L	A	A	A	L	L	U	L	L	L	A	A					
5								L	A	L	U	L	A	U	L	A	L	L	A	A					
6								A	A	A	A	A	A	L	L	L	L	L	A						
7							L		L	L	A	L	L	L	U	L	A	L	A						
8								A	L	L	A	U	L	U	L	L	L	A	A	A					
9									L	L	L	L	L	L	A	A	A	A	A						
10									L	L	L	L	L	L	L	L	L	L							
11									L	L	L	A	L	U	L	U	L	L	A	A					
12								A	L	L	L	L	L	L	L	L	L		A						
13							U	L	U	L	A	U	L	U	L	U	L	L	L	A					
14							300	348	A	L	L	L	L	L	L	L	L	L	A						
15										L	L	L	U	L	L	L	L	A							
16								A	A	A	L	L	U	L	U	L	L	L							
17										L	L	L	U	L	U	L	A	L	A	A					
18										L	L	L	U	L	L	L	L	L							
19									L	L	L	L	L	L	L	L	L	A							
20										L	L	L	L	L	A	L	A	A							
21									L	L	L	L	L	L	L	L	L								
22										L	L	L	U	L	L	A	A								
23										A		U	L	U	L	L	L	A							
24								A	A	A	A	A	U	L	A	L	A	A							
25								A	L	L	L	U	L	L	L	L	A	L							
26									L	A	L	L	U	L	L	L	L								
27							A	A	L	L	L	U	L	L	L	L	L								
28									A	L	L	L	L	A	L	A									
29										A	L	L	L	L	L		C	C	C						
30									A	A	C	C	C	C	C	C	C								
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							1	2	1	1	4	8	14	7	5	1									
MED							U	L	U	L	U	L	U	L	U	L	U	L	361						
U Q							300	349	359	355	386	378	366	362	353	370									
L Q											U	L	U	L	U	L	U	L							
											379	373	359	356	338										

SEP. 2014 M(3000)F1 (0.01)

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SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								230	324	^{E A} 324	282	276	270	306	284	286	266							
2								280	248	268	296	308	300	296	304	288	282	276	254					
3								278	280	292	284	268	278	286	324	276	280	252						
4								252	272	268	280	288	308	312	318	284	284	^{E A} 286	242					
5								248	^{E A} 250	290	286	300	298	308	288	298	264	242						
6								242	252	258	274	282	310	308	296	292	276	258						
7							264		264	280	260	310	300	332	320	276	282	260						
8								226	258	246	244	338	288	310	316	304	274	250	236					
9									226	244	294	298	284	288	294	274	278	242						
10									238	246	256	290	288	304	286	290	280							
11									256	252	286	262	318	312	292	296	270	252						
12								244	258	256	296	298	308	326	294	262		240						
13							404	452	^A	374	448	352	332	368	292	302	274	250						
14								246	256	310	296	282	284	290	292	282	254							
15									258	262	276	290	294	292	286	268								
16								238	232	248	258	276	288	280	290	290	274							
17									250	264	288	320	264	264	284	270	248							
18									248	272	264	280	274	290	266	266								
19									232	232	274	262	264	292	284	282	250							
20									248	248	272	288	262	250	274	250	240							
21									244	232	260	258	278	270	286	274	266							
22										236	256	278	270	274	268	272								
23										256		258	292	274		268	236							
24								254	260	260	260	254	282	268	268	240	244							
25								250	278	246	266	280	248	268	284	266	262							
26									246	254	272	284	276	262		278								
27							254	246	262	252	252	282	270	264	300	296								
28									240	270	266	300	260	278	242									
29									234	264	258	272	262	274				C	C	C				
30									246	250		C	C	C	C	C	C							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3	14	21	30	28	29	29	29	27	28	23	13	3					
MED							264	247	256	252	271	280	288	288	290	282	270	250	242					
U Q							404	254	263	268	285	294	300	308	296	290	278	259	254					
L Q							254	242	245	246	260	265	277	268	284	273	262	242	236					

SEP. 2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2014 h'F (KM)

135°E MEAN TIME (G.M.T. + 9 H)

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	E B	218	E B	E B	E B	E B	E A	A	A	A	202	194	198	218	202	206	228	238	E A	E A	E B	E B	E B	E B				
2	E B	298	E B	E B	E B	E B	E B	228	214	204	198	192	200	212	208	206	212	A	A	A	224	212	208	E B	E B			
3	E A	E B	E B	E B	E B	E B	E B	A	A	212	196	190	188	186	204	A	218	A	E A	E A	222	218	214	E B	E B			
4	E B	E B	E B	E B	E B	E B	E B	A	A	A	A	A	212	216	218	208	222	A	A	A	210	196	284	E A	E A			
5	E A	E A	E A	E A	E A	E A	E A	A	A	A	194	192	A	A	216	222	A	A	A	228	228	232	212	334	346			
6	E B	E B	E B	E B	E B	E B	E A	A	A	A	A	A	A	A	202	206	206	226	A	E A	E A	A	218	208	E A	E B		
7	E B	E B	E B	E B	E B	E B	E B	234	216	208	212	A	202	200	236	226	A	236	A	A	252	238	218	208	E A	E B		
8	E B	E B	E B	E B	E B	E B	E B	A	A	208	194	190	192	206	214	218	A	A	A	E A	E A	E A	E A	E A	E A	E A		
9	E A	E A	E A	E A	E B	E B	E B	E B	E B	E B	E B	E B	E B	A	A	A	A	A	E A	E A	A	250	230	220	226	E B		
10	E A	E B	E B	E B	E B	E B	E B	270	216	220	204	186	180	192	218	212	206	212	220	E A	E A	A	240	236	220	E A	E B	
11	E B	E B	E B	E B	E B	E B	E B	278	214	216	214	200	202	A	206	226	218	230	A	A	224	226	240	250	332	280		
12	E B	E B	E B	E B	E B	E B	E B	E A	A	204	192	182	220	230	212	222	214	228	A	A	230	226	282	310	260	240		
13	228	256	268	292	418	394	262	236	A	210	214	204	196	210	212	224	220	A	A	232	294	250	252	286	292			
14	E B	E B	E B	E B	E B	E B	E B	A	A	204	206	212	196	198	206	204	216	A	E A	A	240	224	244	262	258	E B	E B	
15	E B	E B	E B	E B	E B	E B	E B	A	A	A	A	A	A	A	200	204	208	A	A	240	216	216	246	248	230	E A	E A	
16	E B	E B	E B	E B	E B	E B	E B	A	A	A	188	194	192	194	200	216	218	234	226	220	228	262	232	218	218			
17	E B	E B	E B	E B	E B	E B	E B	228	220	220	192	190	196	194	206	222	A	A	A	226	210	244	262	266	238			
18	E B	E B	E B	E B	E B	E B	E B	226	216	210	198	198	190	198	204	204	212	218	E A	240	228	224	220	238	236	240		
19	E B	E B	E B	E B	E B	E B	E B	224	216	202	196	194	200	206	204	210	220	A	234	220	214	228	294	282	250			
20	E B	E B	E B	E B	E B	E B	E B	212	212	218	192	194	202	196	198	A	206	A	A	212	242	270	252	264	252			
21	E B	E B	E B	E B	E B	E B	E B	224	224	206	192	188	194	200	210	210	198	230	230	210	220	240	232	240	244			
22	E B	E B	E B	E B	E B	E B	E B	224	226	222	210	194	194	196	198	A	A	A	E A	224	238	220	214	222	278	E B	E B	
23	E B	E B	E B	E B	E B	E B	E B	222	222	218	A	200	194	200	192	222	208	A	228	236	230	246	280	270	262	E B	E B	
24	E B	E A	E B	E B	E B	E B	E B	A	A	A	A	A	A	A	A	A	A	A	A	224	212	236	288	270	230	E A	E A	
25	E B	E B	E B	E B	E B	E B	E B	A	A	224	210	204	198	204	196	202	A	220	236	212	218	246	266	276	254	E A	E A	
26	E A	E B	E B	E B	E B	E B	E B	228	224	212	A	200	230	218	192	218	204	222	232	218	240	230	236	236	258	E B	E B	
27	E B	E B	E B	E B	E B	E B	E B	A	A	220	200	204	204	214	206	212	230	216	226	220	232	238	254	268	250	E B	E B	
28	220	242	292	314	294	302	220	224	228	A	202	206	210	A	208	A	228	230	220	240	234	232	266	276	E B	E B		
29	E B	E B	E B	E B	E B	E B	E B	220	222	222	A	202	206	204	196	214	224	C	C	C	224	236	230	272	312	E B	E B	
30	E B	E B	E B	E B	E B	E B	E B	A	A	C	C	C	C	C	C	C	C	C	E A	236	218	210	206	246	280	E B	E B	
31																											E B	E 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	30	30	30	30	30	30	29	21	23	20	23	24	28	25	25	22	16	16	26	30	30	30	30	30				
MED	E B	E B	E B	E B	E B	E B	224	218	212	198	198	200	200	204	210	213	221	231	222	221	E	E	E	E	E	E	E	E
U Q	286	278	280	272	276	290	228	223	220	208	204	205	208	210	218	222	227	239	234	238	246	270	282	280	E B	E B	E B	
L Q	E B	E B	E B	E B	E B	E B	220	214	204	192	192	194	196	197	205	208	218	229	218	220	220	232	240	250	E B	E B	E B	

SEP. 2014 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							118	110	A	A	A	A	A	A	A	A	A		B						
2							114	116	A	A	112	A	A	A	A	112	A	112	B						
3							116	112	A	112	A	112	114	114	118	A	108	114	B						
4							124	116	A	A	A	A	A	A	114	116	118	A	B						
5							118	112	A	A	A	A	A	A	A	A	A	A	B						
6							122	A	A	A	A	A	A	A	A	A	A	A	B						
7							118	A	A	A	A	A	116	A	A	A	A	114	114	B					
8							116	114	110	A	A	122	122	122	A	122	116	114	B						
9							114	114	114	124	124	124	118	A	116	A	A	114	B						
10							120	112	112	118	A	114	116	A	A	A	114	114	B						
11							126	116	116	A	A	A	A	A	A	A	A	A	B						
12							114	120	120	112	A	126	A	114	A	A	A	110	A						
13							112	108	A	110	114	116	114	A	A	114	A	A	B						
14							122	120	A	110	A	114	A	124	118	120	A	A	B						
15							116	116	116	116	A	A	A	A	A	116	A	116	B						
16							118	A	A	A	A	A	A	120	120	110	108	114	B						
17							116	118	A	118	A	118	A	A	A	A	118	114	B						
18							114	A	A	A	A	A	A	A	120	116	A	116							
19							114	A	A	114	120	124	118	A	A	A	A	116	B						
20							B	A	A	A	A	122	122	122	A	A	A	A							
21							122	114	A	114	122	122	124	124	A	122	118	120	B						
22							122	114	A	114	122	126	A	A	A	A	116	116	B						
23							116	116	A	A	A	A	A	112	A	A	114	118	B						
24							118	118	114	A	A	A	A	A	A	A	A	116	B						
25							112	A	114	A	A	A	120	A	A	A	114	126	B						
26							126	116	A	A	A	120	124	A	124	126	122	118							
27							A	A	120	124	124	A	A	A	A	A	114	124	B						
28							120	112	A	118	A	A	A	A	A	A	112	122							
29							122	116	A	A	A	A	A	A	120	120	C	C	C						
30							122	116	112	A	C	C	C	C	C	C	C	A	B						
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							28	22	10	13	7	13	10	10	9	11	15	21							
MED							118	116	114	114	122	122	119	119	118	116	114	116							
U Q							122	116	116	118	124	124	122	122	120	122	118	118							
L Q							115	112	112	112	114	115	116	114	116	114	114	114							

SEP. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	94	96	96	B	B	B	122	122	106	100	98	106	96	G	98	90	102	G	B		92	90	B	B	B
2	B	98	B	100	98	98	G	G	106	100	G	98	104	102	102	G	104	122	102	B		98	B	B	98
3	94	94	94	92	108	B	G	120	106	G	100	G	G	G	118	104	126	118	112	96	96	94	B	B	
4	B	B	112	108	108	B	G	120	108	104	106	106	104	104	G	110	118	102	102	98	98	104	102	102	
5	100	94	92	92	92	92	110	120	106	102	106	106	106	104	100	104	118	104	102	102	96	96	96	94	
6	100	88	96	96	94	B	120	106	106	106	106	104	104	102	106	108	106	102	98	94	98	94	94	96	
7	94	92	92	B	B	B	G	106	106	102	102	102	G	G	102	102	104	118	124	122	110	90	90	B	90
8	90	B	B	B	B	B	G	128	110	102	100	G	G	G	104	116	126	114	100	98	100	100	92	92	
9	96	116	118	114	100	110	114	116	124	G	G	118	112	108	120	104	108	120	108	94	92	92	B	96	
10	90	92	92	90	B	B	136	124	118	122	104	G	G	G	98	104	100	126	120	100	96	92	94	B	B
11	B	B	B	84	B	B	G	G	112	106	102	100	102	96	106	102	98	98	100	92	96	104	102	98	
12	98	90	90	86	94	98	120	122	122	G	94	G	106	G	102	90	90	120	104	104	98	100	94	B	
13	90	88	92	B	B	B	126	116	106	G	G	G	G	G	106	100	98	104	96	96	106	98	100	B	
14	B	B	B	B	B	B	128	118	104	114	102	G	100	G	116	G	106	110	B	B	92	94	98	104	100
15	96	B	B	B	B	B	120	122	122	114	106	104	106	106	102	G	98	G	G	B	B	102	98	100	96
16	96	B	96	B	B	B	G	106	104	100	106	106	102	G	G	98	G	G	B	106	B	98	B	B	
17	B	B	B	B	B	B	114	120	104	G	102	G	104	102	100	120	120	118	106	102	102	102	98	98	
18	B	B	B	B	B	B	114	104	106	106	104	108	98	106	G	G	108	118	106	B	98	98	90	90	
19	B	94	B	B	B	B	118	106	106	G	G	G	106	G	100	104	104	G	100	94	94	96	94	94	
20	B	B	B	B	B	B	106	104	104	102	102	G	G	G	112	102	104	104	102	98	92	90	94	94	
21	B	B	B	B	B	B	120	122	104	G	G	G	G	G	100	G	G	126	116	94	94	92	B	B	
22	92	92	B	B	B	B	G	122	104	G	G	G	102	106	102	102	102	128	B	94	B	B	B	B	
23	B	B	B	B	B	106	128	122	106	106	106	102	100	G	92	100	122	122	B	B	88	88	90	90	
24	94	98	92	B	156	B	130	120	120	104	104	102	98	100	100	106	106	124	98	106	106	104	B	102	
25	86	B	124	84	B	B	G	106	116	108	108	102	114	102	108	102	G	B	B	82	102	98	88		
26	86	92	B	B	B	B	114	120	104	102	102	G	G	102	G	G	G	G	B	B	B	B	B	B	
27	B	B	B	B	B	106	98	100	96	G	G	96	96	106	104	108	G	138	B	B	B	B	B	B	
28	B	B	B	B	B	B	G	G	106	118	104	112	110	108	100	106	G	G	116	108	B	B	B	B	
29	94	B	B	B	B	B	128	126	108	104	106	104	104	102	G	118	C	C	C	B	B	B	B	B	
30	98	B	B	B	B	B	150	G	118	106	C	C	C	C	C	C	C	96	94	B	B	92	B	B	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	18	14	13	10	8	6	20	26	30	21	22	17	21	20	24	23	22	23	20	22	22	23	15	16	
MED	94	93	94	92	99	102	120	120	106	104	104	104	104	103	102	104	106	118	102	96	96	98	96	96	
U Q	96	96	104	100	108	106	128	122	112	107	106	106	106	106	105	108	118	124	107	104	98	100	100	98	
L Q	90	92	92	86	94	98	114	106	104	102	102	102	100	102	100	100	104	102	99	94	92	94	94	91	

SEP. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	F2	F1	F1				C1	C1	L2	L2	L2	L2	L2	L2	L1	L1	L1			F2	F2						
2		F2		F1	F1	F1			L1	L2		L2	L2	L1	L2		L1	C1	L2		F1				F1		
3	F2	F2	F2	F1	F1			C1	L2		L2				C2	L1	C1	CL12	C2	F2	F3	F1					
4			F1	F1	F3			C1	L1	L2	L2	L2	L2	L2		C1	C1	L3	L3	F3	F1	F2	F3	F3	F3		
5	F4	F4	F6	F3	F4	F2	CL22	C2	L2	L1	L2	L1	L2	L2	L2	L2	C1	L2	L1	L3	F5	F3	F3	F3	F2		
6	F2	F1	F2	F2	F1		C1	L3	L2	L2	L2	L2	L2	L2	C2	L2	L2	L2	L2	F3	F3	F3	F2	F2	F2		
7	F2	F2	F2					L1	L2	L2	L2	L2			L2	L2	CL11	CL22	CL22	FF32	F4	F2			F1		
8	F1							C2	C1	L2	L2				L2	C1	C2	CL32	L3	F3	F4	F4	F3	F2	F2		
9	F2	F2	F2	F2	F2	F2	C2	C2	C2			C2	C1	L2	L2	L2	L2	CL22	CL4	F3	F2	F2			F2		
10	F1	F1	F2	F2			H2	C1	C1	C2	L2			L2	L2	L2	C2	C1	L4	F5	F5	F3					
11				F1					C1	L2	L1	L1	L2	L2	L2	L2	L2	L3	L3	F3	F4	F2	F2	F2	F2		
12	F2	F2	F2	F2	F2	F1	C1	C2	C1		L2			L1	L2	L2	L2	CL21	L3	F2	F2	F2	F1				
13	F2	F2	F1				C1	C1	L2					L2	L2	L2	L1	L2	L2	F5	F4			F2			
14							C1	C2	L1	C2	L2			L2		C1		L2	L1	F3	F2	F2	F2	F2	F2		
15	F1						C1	C1	C1	C1	L2	L2	L2	L2	L1		L2				F2	F2	F2	F2	F2		
16	F3		F1					L2	L2	L2	L2	L1	L1			L2				F1		F2					
17							C1	C1	L2		L1			L1	L1	L2	CL12	C2	C2	L2	F2	F3	F3	F2	F1		
18							C1	L2	L2	L2	L1	L1	L1	L1	L1		L1	C2	L2		F2	F2	F1	F1	F1		
19		F1					C1	L2	L1					L1		L2	L1	L2		L2	F3	F3	F2	F2	F2		
20							L1	L2	L2	L2	L2				C1	L2	L2	L2	L2	L2	F4	F3	F1	F1			
21							C2	C1	L1							L2			C1	C1	F1	F2	F2				
22	F2	F2						C1	L2					L2	L2	L2	L2	L1	CL22		F1						
23						F1	C2	C1	L1	L2	L2	L2	L2	L2	L2	L1	L1	C1	C1			F2	F2	F2	F2		
24	F1	F3	F2		F1		C1	C2	C1	L2	L2	L1	L2	L2	L2	L1	L1	C1	L2	F3	F2	F2			F1		
25	F2		F1	F2				L3	C1	L2	L2	L1	L1	L2	L2	L2		C1		F1		F1	F4	F2			
26	F2	F1					C1	C1	L2	L2	L2			L1													
27						F1	L2	L3	L2				L2	L1	L2	L2	L1		H1								
28									L2	C1	L1	L2	L2	L2	L2	L2	L2		C2	F2							
29	F2						C1	C1	L1	L2	L3	L2	L2	L1			C2						F2				
30	F1						H1		C2	L2									L3	L3			F1				
31																											
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT																											
MED																											
U Q																											
L Q																											

SEP. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2014 f_{XI} (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	X 72	X 65	X 65	X 55	X 55	X 54														X 89	X 90	X 74	X 63	X 65	
2	X 64	X 62	X 58	X 60	X 62	X 52														X 101	X 84	X 65	X 64	X 61	
3	X 64	X 60	X 58	X 58	X 58	X 57														X 104	X A	X 63	X 60	X 62	
4	X 64	X 61	X 60	X 59	X 57	X 48														X 113	X 76	X 65	X 67	X 71	
5	X 71	X 66	X 61	X 59	X 59	X 56														X 117	X 97	X 72	X 68	X 66	
6	X 66		X 61	X 58	X 57	X 56														X 104	X 88	X 66	X 59	X 59	
7	X 58	X 58	X 58	X 52	X 50	X 48														X 112	X 76	X 71	X 75	X 74	
8	X 76	X 77	X 72	X 69	X 66	X 64														X 107	X 78	X 74	X 70	X 69	
9	X 65	X 66	X 62	X 57	X 53	X 54														X 100	X 85	X 75	X 74	X 84	
10	X 83	X 78	X 78	X 75	X 72	X 64														X 116	X 90	X 88	X 86	X 87	
11	X 87	X 82	X 86	X 82	X 52	X 50														X 108	X 75	X 72	X 70	X 72	
12	X 73	X 71	X 74	X 70	X 54	X 50														X 96	X 77	X 72	X 73	X 77	
13	X 66	X 62	X 57	X 54	X 47	X 47														X 88	X 79	X 68	X 69	X 69	
14	X 66	X 64	X 64	X 58	X 48	X 45														X 94	X 70	X 63	X 64	X 66	
15	X 64	X 64	X 64	X 58	X 55	X 51														X 95	X 87	X 85	X 89	X 81	
16	X 77	X 71	X 67	X 64	X 56	X 54														X 89	X 77	X 77	X 74	X 72	
17	X 70	X 70	X 63	X 56	X 56	X 54														X 95	X 73	X 74	X 81	X 77	
18	X 72	X 68	X 66	X 65	X 64	X 61														X 110	X 84	X 66	X 71	X 77	
19	X 76	X 71	X 68	X 63	X 62	X 62														X 106	X 80	X 68	X 68	X 71	
20	X 68	X 64	X 61	X 62	X 57	X 58														X 87	X 82	X 78	X 72	X 73	
21	X 72	X 69	X 64	X 64	X 61	X 59														X 84	X 70	X 69	X 67	X 70	
22	X 65	X 64	X 63	X 61	X 56	X 56														X 85	X 72	X 65	X 66	X 68	
23	X 67	X 64	X 58	X 54	X 50	X 53														X 89	X 86	X 66	X 65	X 68	
24	X 66	X 67	X 63	X 53	X 51	X 50														X 76	X 67	X 63	X 65	X 64	
25	X 57	X 53	X 52	X 50	X 49	X 42														X 89	X 69	X 65	X 59	X 56	
26	X 54	X 54	X 52	X 49	X 50	X 50														X 85	X 83	X 72	X 66	X 62	
27	X 62	X 58	X 57	X 56	X 54	X 54														X 93	X 68	X 61	X 61	X 60	
28	X 61	X 54	X 51	X 50	X 51	X 50														X 96	X 84	X 72	X 60	X 60	
29	X 58	X 59	X 56	X 56	X 55	X 54														X 94	X 78	X 74	X 69	X 64	
30	X 63	X 63	X 66	X 57	X 52	X 51														X 116	X 98	X 78	X 69	X 64	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	29	30	30	30	30														30	29	30	30	30	
MED	X 66	X 64	X 62	X 58	X 55	X 54														X 96	X 79	X 72	X 68	X 68	
U Q	X 72	X 70	X 66	X 63	X 58	X 56														X 107	X 86	X 74	X 72	X 73	
L Q	X 64	X 60	X 58	X 55	X 51	X 50														X 89	X 74	X 65	X 64	X 64	

SEP. 2014 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	66	59	59	49	49	48	54	69	78	88	87	95	98	R 96	90	100	104	92	83	83	84	68	57	59
2	58	56	52	54	56	46	46	72	75	78	V 68	72	81	88	86	80	83	89	96	95	78	59	58	55
3	58	54	52	52	50	51	57	76	80	80	92	86	80	75	82	87	88	A 98	A 98	A 98	57	54	56	
4	58	55	54	53	51	42	50	80	87	82	81	84	85	89	86	94	100	109	U 119	R 107	70	59	61	65
5	65	60	55	53	53	50	63	72	71	75	76	83	R 92	90	A 107	U 112	R 110	110	109	R 111	91	66	62	60
6	60		55	52	51	50	58	72	73	74	78	76	90	R 103	100	R 110	113	120	R 104	98	82	60	53	53
7	52	52	52	46	44	42	53	80	78	80	75	83	95	100	103	113	113	118	116	R 106	70	65	69	68
8	70	71	66	63	60	58	68	84	90	83	77	78	92	101	101	111	U 126	R 135	RU 128	RU 101	72	68	64	63
9	59	60	56	V 51	47	48	66	93	76	79	80	91	96	101	R 104	105	104	111	111	94	79	69	68	78
10	77	72	72	69	66	58	66	88	98	83	86	99	R 107	R 110	R 106	110	116	124	RU 127	RU 110	84	84	80	81
11	81	76	80	76	46	44	55	83	94	93	87	87	93	R 104	RU 110	RU 113	111	118	RU 124	RU 102	69	66	64	66
12	67	65	68	64	48	44	54	88	92	88	93	110	116	RU 118	R 124	116	117	113	101	90	71	66	67	71
13	60	56	51	48	41	41	43	47	Y 58	59	68	66	76	84	93	96	93	83	82	73	62	63	63	
14	60	58	58	52	42	39	50	77	90	82	88	95	U 104	R 104	R 104	110	103	102	105	88	64	57	58	60
15	58	58	58	52	49	45	55	83	82	88	86	93	101	R 109	R 108	R 107	110	106	108	89	81	79	R 83	75
16	71	65	61	58	50	48	60	85	90	90	86	98	R 108	110	107	113	116	119	111	83	71	71	68	66
17	64	64	57	50	50	48	61	80	84	96	96	100	110	R 118	R 120	R 110	104	R 108	114	89	67	68	75	71
18	R 66	62	60	59	58	55	67	94	82	78	86	95	110	R 108	R 106	100	104	110	R 109	104	78	60	65	71
19	70	65	62	57	56	56	72	91	91	83	80	86	100	R 108	R 108	107	108	109	113	100	74	62	62	65
20	62	58	55	56	51	52	70	80	80	86	90	92	102	109	106	99	101	98	97	81	76	72	66	67
21	66	63	58	58	55	53	63	90	98	92	84	85	89	97	90	94	94	94	94	78	64	63	61	64
22	59	58	57	55	50	50	56	94	106	89	74	80	82	R 88	R 90	96	100	99	90	79	66	59	60	62
23	61	58	52	48	44	47	54	83	98	101	94	96	R 103	R 102	R 103	101	94	86	84	83	80	60	59	62
24	60	61	57	47	45	44	45	84	88	90	104	107	R 116	R 118	R 107	113	103	95	93	70	61	57	59	58
25	51	47	46	44	43	36	49	80	97	96	93	95	R 114	R 116	102	109	109	110	102	83	63	59	53	50
26	48	48	46	43	44	44	48	70	84	86	89	94	R 114	U 113	R 108	98	98	102	93	79	77	66	60	56
27	56	52	51	50	48	48	52	82	104	112	106	R 118	U 119	R 112	R 108	R 109	R 110	102	92	87	62	55	55	54
28	55	48	45	44	45	44	51	85	99	95	92	104	R 107	R 104	R 108	110	110	112	107	90	78	66	54	54
29	52	53	50	50	49	48	52	85	103	97	105	109	R 112	114	116	116	110	110	103	88	72	68	63	58
30	57	57	60	51	46	45	54	80	94	97	92	104	J 118	RU 118	RU 124	RU 130	RJ 130	RJ 130	R 118	110	92	72	63	58
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	29	30	30	30	29	30	29	30	30	29	29	30	29	30	30	30
MED	60	58	56	52	49	48	54	82	90	87	86	94	101	106	104	108	106	109	105	90	73	66	62	62
U Q	66	64	60	57	51	50	63	85	98	93	92	99	111	112	R 108	111	112	116	114	R 101	80	68	66	67
L Q	58	54	52	49	45	44	51	77	80	80	80	84	91	97	95	99	100	98	94	83	68	59	58	58

SEP. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	U L	L	L	L	L	U L	L	L	L				
2								L	U L	L	L	L	L	L	U L	U L	L	L	L	L				
3								A	L	L	L	L	U L	L	L	U L	L	A	A	A				
4								L	L	U L	U L	L	U L	U L	L	U L	U L	L	L	A				
5									L	A	A	L	L	A	A	A	L	A						
6								L	A	A	A	A	U L	L	L	L	L	L	L					
7								L	L	L	A	L	L	L	U L	L	L	A	L					
8									L	L	L	L	L	L	L	L	A	A	A					
9									L	L	A	L	L	L	L	L	U L	L	L					
10								L	L	L	L	L	L	L	U L	U L	U L	U L	L					
11									L	L	L	L	U L	U L	U L	U L	L	L	L					
12									L	L	L	U L	L	L	L	L	L	L	L					
13							L	L					U R	L	U L	L	L	L	L					
14									L	L	L	L	L	L	L	L	L	L	L					
15									L	L	L	L	L	L	A	U L	U L	L	L	L				
16									L	L	L	U L	L	L	U L	U L	L	A	A					
17									L	L	L	L	L	L	U L	U L	L	L	A					
18									L	L	L	L	L	L	L	L	L	L	L					
19								L	L	L	L	L	U L	L	L	L	L	L	U L					
20									L	L	L	L	L	L	L	L	L	L	L					
21									L	L	L	L	L	L	L	L	L	L	L					
22								L	L	L	L	L	L	L	L	L	L	L	L					
23									L	L	L	L	L	L	L	L	L	L	L					
24									L	L	L	L	L	L	L	L	L	L	L					
25									L	L	L	L	L	L	L	L	L	L	L					
26								L	L	L	L	L	L	L	L	L	L	L	L					
27									L	L	L	L	L	L	L	L	L	L	L					
28									L	L	L	L	L	L	L	L	L	L	L					
29									L	L	L	L	L	L	L	L	L	L	L					
30									L	L	L	L	L	L	L	L	L	L	L					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	2	2	9	14	17	18	15	11	7	2						
MED								256	438	468	508	530	540	546	544	520	492	390						
U Q											540	548	564	564	564	532	512							
L Q											500	516	528	536	520	508	472							

SEP. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2014 f_oE (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	A	A	A	A	A	A	A	R	R	A							
2							B	268	308	336	356		A	A	R	R	328	288	220					
3							A	236	308	340	356		A	A	R	R	340	288	200					
4							A	268	296	332	356	360	380	372	380	360	328	328	252					
5							B	252	304	348	364	380	384	388	376	360	332	284	240					
6							B	268	304	332	360	376	372		A	R	364	344						
7							B	264	316	344	360	352		A	A	A	A	A						
8							B	232	296								376	340	284	204				
9							B	260	316	348	364	376	392	392	368	388	348	280						
10							B	248	300						R	A	A	A	A					
11							B	236	296	324	332				R									
12							A	272	308	352	356				A	A	A	A	A					
13								172	260	304	344	360	364		B	U	A	A	A					
14								168	248	304	344	352	360	364		A								
15							B	256	304	340	364	372			A	U	R	R						
16							B	252	308	344	376	388	392	392	376		A	U	A					
17							B	220	296	320	344				R	U	A	A						
18							B	240	292	328	352	360			A	A								
19							B	232	308	332	356	368	380	364	356	336	312	264						
20							B	216		A	A	A	A	A	A	A	R	A						
21							B	208		A	A	A	A	A	A	U	U	A						
22							A	228	300	320	344				R	R	R							
23							B	244	308	336	336	360			R									
24							B	228	292	320	364	376			A	R	U	U	A					
25							B	244	296	348	364	372	368	392	364	308	308	256	200					
26							B	236	280	332	320	368			A	R								
27							B	228	284	312	356	372			R	R	B	R						
28							B	224		A	344	380	388			A	R	R						
29							B	252	304	344	364	388			B	B	R							
30							B	252	300	340	360	372			R	R	R							
31							A	220	304	336	336				A	U	A	R						
	00	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	30	27	26	26	19	11	19	20	24	27	25	19					
MED							170	244	304	338	356	372	380	380	364	356	320	264	192					
U Q								256	308	344	364	376	384	392	376	362	328	284	216					
L Q								228	296	332	352	360	364	368	364	346	308	256	180					

IONOSPHERIC DATA STATION Yamagawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1		E	B	E	B	E	B	E	B			J	A	J	A	J	A	G		J	A	J	A	J	A					
2	J	A	J	A	J	A	E	B			J	A	J	A	J	A	J	A	G	J	A	J	A	J	A					
3	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A				
4	J	A	J	A	E	B			J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A				
5	E	B	J	A	E	B	E	B	E	B		J	A	J	A	J	A	J	A	J	A	J	A	J	A					
6	J	A		J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A					
7	J	A	J	A	J	A	E	B	E	B	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A				
8	J	A		E	B	E	B		E	B				J	A	J	A	J	A	J	A	J	A	J	A					
9	J	A		E	B	J	A	J	A	J	A	E	B	E	B		J	A	J	A	J	A	J	A	J	A				
10		E	B		J	A	E	B	E	B				G	G				J	A	J	A	J	A	J	A				
11		J	A		J	A	E	B		G		J	A	J	A	J	A	J	A	J	A	J	A	J	A					
12	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A				
13	J	A	J	A	E	B	E	B						G			J	A	J	A	J	A	J	A	J	A				
14	E	B	E	B	E	B	E	B	J	A	J	A			J	A	J	A	J	A	J	A	J	A	J	A				
15	J	A		E	B	E	B		E	B							J	A	J	A	J	A	J	A	J	A				
16	J	A	J	A	J	A	E	B		J	A	J	A				J	A	J	A	J	A	J	A	J	A				
17	E	B	E	B	E	B	E	B		J	A	J	A			G	J	A	J	A	J	A	J	A	J	A				
18		E	B	E	B	E	B		E	B	E	B		J	A	J	A		G		J	A	J	A	J	A				
19	J	A	E	B	E	B	E	B		E	B			J	A	J	A	J	A	J	A	J	A	J	A	J	A			
20	E	B	E	B		E	B	E	B	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A			
21	J	A	J	A		E	B	E	B	E	B	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A			
22		E	B	E	B	E	B	E	B	J	A	J	A			G	G	G	J	A				J	A	J	A			
23		E	B	E	B	E	B											J	A	J	A	J	A	J	A	J	A			
24	J	A	J	A	J	A	E	B	E	B			J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A		
25	J	A	J	A	J	A	J	A	E	B	E	B	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A		
26	J	A		E	B	E	B	J	A	J	A		G	G		G	E	B	J	A	J	A	J	A	J	A	J	A		
27	E	B		E	B	E	B		J	A	J	A	G	G		G	G	G	G	J	A	J	A	J	A	J	A	J	A	
28		E	B	E	B	E	B	E	B	J	A	J	A		E	B	J	A		G		J	A	J	A	J	A	J	A	
29	E	B	J	A	E	B	E	B	E	B	E	B		J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	
30		E	B		E	B		E	B	J	A					G	G	G	G	J	A	J	A	J	A	J	A	J	A	
31																														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
CNT	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30		
MED	J	A		E	B	E	B	E	B			J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	
UQ	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A	J	A
LQ	E	B	E	B	E	B	E	B	E	B					G	G	G	G		J	A				J	A	J	A	J	A

SEP. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B E B E B E B E B E B E B	16 16 16 14 15 13 16 28 33 38 39 41 44 44 42 24 34 28 23 22 14 16 16 16																						
2	16 16 16 16 16 16 16 16 26 31 36 38 40 44 33 38 45 21 38 27 36 43 26 42 23																							
3	20 16 16 16 16 16 16 18 38 39 43 45 41 43 40 44 46 50 90 106 61 81 16 16 16																							
4	E B E B E B E B E B E B E B	16 16 16 16 16 16 17 28 34 38 42 46 46 40 39 23 33 30 57 32 20 18 33 20																						
5	E B E B E B E B E B E B E B	16 16 16 16 14 16 20 27 37 44 58 52 54 58 98 58 46 75 40 31 43 28 16 17																						
6	20 26 16 20 19 17 29 41 63 52 53 42 46 42 38 36 21 23 15 16 20 20 20																							
7	16 20 16 16 16 16 17 27 36 42 59 46 53 43 42 49 53 35 30 16 16 23 17 16																							
8	16 16 16 16 16 16 18 28 34 38 43 42 44 46 45 60 67 57 49 65 18 19 17 20																							
9	16 16 16 16 16 22 16 31 39 44 59 56 42 39 45 41 41 39 45 56 46 25 36 16																							
10	E B E B E B E B E B E B E B	16 16 16 16 16 16 18 27 39 41 39 35 36 34 28 38 33 34 31 29 27 16 17 16																						
11	16 16 16 16 16 16 17 19 35 38 41 45 47 43 40 44 38 35 21 19 23 16 16 17																							
12	28 21 21 19 16 20 18 28 35 38 41 43 39 38 34 39 22 29 27 29 16 16 36 21																							
13	E B E B E B E B E B E B E B	16 16 16 16 16 16 19 27 32 37 38 44 39 39 39 36 34 31 30 44 22 21 20 16																						
14	E B E B E B E B E B E B E B	16 16 16 16 16 16 17 28 32 37 39 41 39 42 45 38 34 29 22 16 21 16 38 39																						
15	35 16 16 16 16 16 16 24 33 40 40 42 49 48 42 36 35 28 24 24 32 21 28 20																							
16	16 16 16 16 16 16 16 26 32 37 39 40 39 44 41 37 52 45 39 48 20 16 16 16																							
17	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 27 39 38 43 40 50 44 30 41 46 46 44 55 16 21 49 16																						
18	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 26 32 37 39 40 46 49 38 36 27 22 16 20 16 16 16																						
19	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 25 31 36 38 39 38 37 36 35 27 20 20 33 21 21 16																						
20	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 24 32 40 48 40 39 40 39 36 35 27 18 16 32 27 16 23																						
21	17 16 16 16 16 16 16 26 30 36 19 25 28 28 28 30 24 16 16 16 16 16																							
22	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 25 31 36 35 37 29 29 28 24 29 28 16 16 16 16 17																						
23	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 26 31 36 43 43 25 43 17 34 32 27 20 18 16 16 16 28																						
24	28 17 38 16 16 16 16 26 34 43 48 44 40 42 35 32 26 20 20 20 16 20 16																							
25	17 16 36 28 16 16 16 32 35 35 38 42 26 26 23 26 20 28 27 25 36 16																							
26	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 24 31 34 28 28 44 22 27 18 17 16 16 16 16																						
27	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 25 30 36 28 26 32 32 22 27 20 16 16 16 16 16																						
28	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 28 32 38 44 43 80 49 63 34 32 19 16 38 19 16 17																						
29	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 26 32 37 40 38 40 45 32 25 16 20 17 22 16																						
30	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 22 32 36 36 42 40 41 18 32 21 16 21 22 17 18																						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B E B E B E B E B E B E B	16 16 16 16 16 16 16 26 32 38 40 41 40 40 39 36 34 29 24 20 20 18 17 16																						
UQ	16 16 16 16 16 16 17 28 35 40 44 44 46 44 42 41 38 35 31 32 32 21 28 20																							
LQ	E B E B E B E B E B E B E B	16 16 16 16 16 16 25 32 36 38 39 38 38 38 38 32 27 20 16 16 16 16 16																						

SEP. 2014 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

SEP. 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

$\begin{matrix} H \\ D \end{matrix}$	00	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	14	15	13	12	16	16	16	20	21	22	21	20	19	18	14	12	16	14	16	16	16
2	16	16	16	16	16	16	16	14	13	17	20	19	26	22	20	16	15	16	16	16	16	16	16	16
3	16	16	16	16	16	16	14	16	16	20	19	22	26	18	21	24	16	16	14	16	16	16	16	16
4	16	16	16	16	16	16	16	16	16	16	16	21	25	24	18	16	19	16	14	16	16	16	16	16
5	16	16	16	16	14	16	20	17	16	16	18	21	19	38	28	16	28	16	16	16	16	16	16	16
6	16		16	16	16	16	16	16	18	19	20	22	24	21	17	19	16	16	16	14	16	16	16	16
7	16	16	16	16	16	16	16	16	20	18	21	30	29	27	24	20	16	16	12	16	16	16	16	16
8	16	16	16	16	16	16	14	14	16	16	18	24	28	27	21	20	16	16	13	16	16	16	16	16
9	16	16	16	16	16	16	16	16	16	44	59	48	38	26	30	24	17	17	14	16	16	16	16	16
10	16	16	16	16	16	16	15	16	16	20	18	25	32	19	19	17	16	16	12	16	16	16	16	16
11	16	16	16	16	16	16	17	16	18	20	21	36	36	37	24	20	17	16	15	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	18	20	24	36	23	24	22	17	16	16	16	16	16	16	16
13	16	16	16	16	16	16	16	16	16	16	22	29	34	35	29	20	16	16	14	16	16	16	16	16
14	16	16	16	16	16	16	16	16	16	16	18	17	24	20	16	15	17	16	16	16	16	16	16	16
15	16	16	16	16	16	16	16	16	16	17	18	21	22	28	20	17	17	14	15	16	16	16	16	16
16	16	16	16	16	16	16	16	16	17	20	22	29	21	21	20	23	16	16	16	16	16	16	16	16
17	16	16	16	16	16	16	16	16	16	20	20	19	28	24	18	22	16	16	16	16	16	16	16	16
18	16	16	16	16	16	16	16	16	16	18	18	23	23	24	20	16	16	16	14	16	16	16	16	16
19	16	16	16	16	16	16	16	16	16	19	30	30	30	28	21	21	20	16	16	16	16	16	16	16
20	16	16	16	16	16	16	16	15	18	20	20	23	26	30	20	20	20	16	14	16	16	16	16	16
21	16	16	16	16	16	16	16	16	16	16	18	16	17	31	24	19	24	16	16	16	16	16	16	16
22	16	16	16	16	16	16	16	15	16	20	21	23	21	23	20	16	17	16	15	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	20	18	20	19	14	20	16	15	15	16	16	16	16	16
24	16	16	16	16	16	16	16	16	16	19	20	22	25	22	23	20	16	16	14	16	16	16	16	16
25	16	16	16	16	16	16	16	16	16	22	20	28	26	23	26	24	16	16	15	16	16	16	16	16
26	16	16	16	16	16	16	16	16	17	20	24	27	21	21	44	28	21	16	15	16	16	16	16	16
27	16	16	16	16	16	16	16	16	16	16	23	22	22	24	21	19	16	16	16	16	16	16	16	16
28	16	16	16	16	16	16	16	16	16	20	20	22	80	40	27	21	16	16	14	16	16	16	16	16
29	16	16	16	16	16	16	16	15	16	17	19	22	21	20	20	25	17	16	16	16	16	16	16	16
30	16	16	16	16	16	16	16	16	16	18	19	22	25	22	24	16	16	16	15	16	16	16	16	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	16	16	16	16	16	16	16	16	16	18	20	22	25	24	21	20	16	16	15	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	20	21	27	29	28	24	22	17	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	16	16	18	21	22	21	20	17	16	16	14	16	16	16	16	16

SEP. 2014 fmin (0.1MHz)

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SEP. 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

^H _D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	300	307	321	291	289	295	335	351	318	331	315	316	314	323	290	305	316	319	321	311	329	324	284	285		
2	289	271	277	289	320	319	309	351	338	357	345	303	311	325	327	315	313	316	331	331	344	287	286	278		
3	295	290	279	297 ^F	305 ^F	315	322	360	325	328	318	334	323	301	317	312	313		A	A	341		A	300	277	267
4	280	289	291	296	316	306	324	351	343	353	322	315	318	315	305	318	316	317	352 ^{U R}	356	307	292	292	285		
5	302	308	295	300	315	302	342	382	367	351	310	321	331	310		A	304	319	325	328	333 ^R	349	300	281	281	
6	281		302	280 ^F	284	293	334	328	354	353	353	298	308	312	305	302	317	325	315	328	337	298	282	273		
7	276	282	297	304	299	294	333	365	365	344	323	299	302	293	289	296	297	320	331	340 ^R	327	275	276	284		
8	289	290	294	297	298	304	339	358	370	357	337	297	297	302	291	296	312 ^{U R}	327	338 ^{U R}	352	289	284	295	285		
9	292	285	300	305 ^F	294 ^F	287 ^F	317	373	386	332	307	306	296	303	300 ^R	302	304	318	332	334	315	288	282	290		
10	304	298	290	309	322	312	324	357	361	342	311	298	306	305	298	296	308	320	337	347	314	273	273	279		
11	285	305	305	336	328	281	324	361	356	341	327	300	293	284	289	293	295	308	331	344	293	284	279	278		
12	284	293	302	338	315	282	306	358	357	324	289	293	293	288	295	299	308	319	318	321	292	280	291	308		
13	317	294	281	277	236	238	284	303		Y	255	254	297	319	297	319	306	329	327	324	318	304	268	284	285	
14	279	288	296	310	313	296	322	354	371	342	322	313	305	309	300	310	312	318	338	344	314	273	279	290		
15	304	305	312	340	309	314	331	358	345	341	332	311	296	310	302	305	311	326	335	334	302	291	312	311		
16	308	299	299	311	295	299	332	370	361	339	319	300	310	306	306	305	319	337	336	328	300	297	300	305		
17	307	312	315	287	290	299	334	357	319	345	315	302	296	314	320	311	309	316	342	343	298	298	300	307		
18	297 ^R	292	288	298	300	310	326	373	385	338	318	303	319	305	314	299	314	316	331	350	339	285	291	296		
19	302	298	294	293	293	299	341	373	361	377	325	318	312	303	302	302	312	313	329	338	341	272	279	290		
20	307	290	284	297	278	290	339	361	368	346	314	317	323	317	323	313	327	324	333	323	298	313	308	296		
21	311	297	285	302	301	308	323	364	352	375	320	325	311	332	328	327	327	327	342	336	315	295	296	301		
22	315	307	312	307	299	301	318	358	378	392	369	329	307	315	305	307	325	329	335	326	308	276	276	295		
23	302	312	310	301	277	291	319	368	345	363	327	312	311	321	309	324	333	325	332	321	339	298	297	290		
24	287	300	301	306	290	278	312	362	341	326	339	304	317	320	309	309	322	331	351	328	308	289	292	314		
25	300	279	297	302	329	309	310	341	337	338	319	339	328	314	310	310	309	332	339	349	318	312	322	293		
26	288	291	309	295	295	305	316	360	357	357	328	305	303	314	317	315	319	328	332	314	327	319	307	284		
27	284	291	281	284	285	291	305	327	326	321	319	317	331	310	297	297	315	331	328	349	307	286	282	287		
28	309	297	282	279	283	282	312	352	363	355	321	320		310	298	302	319	323	328	330	315	327	292	277		
29	279	298	292	283	279	279	311	343	347	335	331	327	305	307	306	314	304	318	326	330	312	294	296	273		
30	284	289	325	309	297	307	311	348	343	353	323	311	312		317	305				329	330	326	287	278	275	
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	29	30	30	30	30	30	30	29	30	30	30	29	29	29	30	29	28	29	30	29	30	30	30		
MED	296	294	296	299	298	299	322	358	356	343	322	311	311	310	305	305	314	324	332	334	314	290	288	286		
U Q	304	302	305	307	313	307	333	364	366	355	328	318	318	315	317	312	319	327	338	344	328	298	296	296		
L Q	284	290	288	291	289	290	312	351	342	335	315	300	302	303	298	302	309	318	328	328	303	284	279	279		

SEP. 2014 M(3000)F2 (0.01)

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SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	U L	L	L	L	L	U L	L	L					
2								L	U L	L	L	L	L	L	U L	U L	L	L	L					
3								A	L	L	L	L	U L	L	U L	U L	L	A	A	A				
4								L	L	U L	U L	L	L	U L	L	L	U L	U L	L	A				
5									L	A	A	L	L	A	A	A	L	A						
6								L	A	A	A	A	U L	L	L	L	L	L	L					
7								L	L	L	A	L	L	L	U L	L	L	A	L					
8									L	L	L	L	L	L	L	L	A	A	A					
9									L	L	A	L	L	L	L	L	U L	L	L					
10								L	L	L	L	L	L	U L	U L	U L	U L	L	L					
11									L	L	L	L	U L	U L	U L	U L	L	L	L					
12									L	L	L	U L	L	U L	L	L	L	L	L					
13							L	L					U R	L	U L	L	L	L	L					
14									L	L	L	L	L	L	L	L	L	L	L					
15								A	L	L	L	L	L	L	A	U L	U L	L	L					
16									L	L	L	U L	L	L	U L	U L	L	A	A					
17									L	L	L	L	L	L	U L	U L	L	L	A					
18									L	L	U L	U L	L	L	L	L	L	L	L					
19								L	L	L	L	L	U L	L	L	L	L	L	U L	L	U L			
20									L	L	L	U L	U L	L	L	L	L	L	L					
21									L	L	L	L	U L	U L	L	L	L	U L	L	L				
22								L	L	L	U L	U L	L	L	U L	L	L	L	L					
23									L	L	U L	L	L	L	L	L	L	L	L					
24									L	L	L	U L	U L	L	L	L	L	L	L					
25									L	L	L	U L	U L	U L	L	L	L	L	L					
26								L	L	L	L	L	U L	L	L	L	L	L	L					
27									L	L	L	U L	L	L	U L	L	L	L	L					
28									L	L	L	L	L	B	L	L	U L	L	L					
29									L	L	U L	U L	L	L	L	L	L	L	L					
30									L	L	L	L	L	L	L	L	L	L	L					
31								472																
	00	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	9	14	17	18	15	11	7	2						
MED								472	377	380	U L	U L	U L	U L	U L	U L	U L	U L	U L					
U Q											404	390	384	370	369	364	371							
L Q											U L	U L	L	U L	U L	U L								
											375	369	356	351	351	353	353							

SEP. 2014 M(3000)F1 (0.01)

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SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								228	256	266	266	276	280	270	328	292	272	250	242					
2								246	236	248	254	284	328	286	286	298	290	270	250					
3								226	256	266	290	254	264	304	300	298	280	A	A					
4								234	252	240	276	288	290	296	304	288	278	266	238					
5									218	228	288	284	278	282	A	290	276	270						
6								218	228	260	252	266	306	288	298	298	268	254	240					
7								218	230	254	260	312	300	318	318	304	280	272						
8									220	238	244	258	H	328	298	308	316	290	260					
9									212	280	278	294	290	310	302	284	292	264						
10								222	222	236	244	306	280	282	304	300	282	262						
11									240	240	246	300	328	318	304	298	274	270						
12									222	258	264	290	314	322	310	268	280	248						
13							374	334	Y	478	484	356	308	350	290	300	266	250						
14									224	250	274	282	276	286	290	280	270	266						
15								220	226	248	250	290	316	284	294	278	272	248						
16									226	248	244	306	284	284	284	298	274	248						
17										248	278	308	306	286	272	272	A	262						
18									208	230	248	274	272	286	274	272	284	244						
19								216	228	222	232	290	284	284	284	278	258	248						
20									216	230	234	256	270	272	264	258	254							
21									228	220	230	H	254	H	260	268	274	274	268	236				
22								228	218	214	224	264	296	284	294	290	262	236						
23									246	226	254	268	278	264	284	266	250							
24									216	242	260	H	258	272	276	250	264	236	236					
25									252	232	252	276	266	270	270	280	262	242						
26								218	222	236	268	296	288	262	276	262	262	242						
27									258	242	252	264	262	244	H	294	288	258						
28									222	228	268	266	284	264	H	290	270	250						
29									226	252	254	250	256	268	274	272	272	244						
30								208	226	228	248	270	288	278	280	280	260	242						
31																								
	00	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	13	28	30	30	30	30	30	29	30	29	26	4					
MED							374	222	226	241	254	279	284	284	290	282	272	250	241					
U Q								231	238	252	268	294	306	296	303	298	280	264	246					
L Q								218	221	230	246	264	272	270	275	272	262	244	239					

SEP. 2014 h'F2 (KM)

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SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	248	224	234	222	280	264	228	214	218	218	214	200	224	246	240	196	208	222	232	242	216	210	244	292		
2	282	304	304	258	228	234	260	222	210	222	206	184	212	200	214	262	222	268	246	230	230	258	324	314		
3	278	256	282	262	246	250	246	A	226	234	226	208	192	192	E A	E A	A	A	A	246	A	214	286	300		
4	286	276	262	262	230	234	240	228	214	208	218	234	222	192	202	194	196	H	224	A	212	196	248	306	270	
5	244	240	262	258	240	252	234	194	204	A	A	A	A	A	A	A	A	A	A	230	224	222	218	260	302	
6	302		274	292	280	274	220	A	A	A	A	A	E A	238	212	210	224	202	238	226	202	198	264	304		
7	296	302	270	250	250	264	238	222	218	232	A	A	E A	290	210	226	A	A	262	238	210	190	280	286	286	
8	274	268	252	256	242	240	220	222	218	200	200	196	192	238	238	A	A	A	230	230	202	250	262	290		
9	288	268	252	250	236	292	250	216	A	220	A	248	210	218	212	234	238	258	242	238	252	250	318	252		
10	250	236	256	244	222	234	232	210	220	198	192	178	196	190	192	212	222	240	232	220	212	200	256	266		
11	274	248	240	212	196	274	246	218	224	210	214	214	226	222	216	236	222	240	232	212	202	260	262	288		
12	300	270	266	214	208	290	256	220	208	194	200	188	202	190	210	220	216	228	238	226	224	276	314	258		
13	216	258	268	294	398	396	298	250	228	222	206	206	188	206	212	216	218	228	234	260	226	264	308	276		
14	270	268	258	222	218	262	250	222	212	202	204	190	196	190	226	208	H	238	220	234	212	214	228	332	328	
15	292	250	242	206	244	238	234	A	210	216	192	192	E A	A	212	194	220	230	236	220	250	242	258	230		
16	238	248	242	242	232	254	248	204	204	204	196	194	206	228	200	200	A	A	234	232	234	246	242	246		
17	242	246	232	236	276	266	242	214	218	206	202	204	H E A	278	224	208	228	A	A	230	234	214	260	302	238	
18	246	258	276	260	256	242	246	208	202	190	190	194	206	E A	H	H	208	232	230	216	204	226	272	256		
19	240	246	256	258	266	262	232	216	208	202	176	184	H	A	A	204	216	228	218	236	206	214	278	300	272	
20	254	264	272	258	304	282	232	208	210	212	232	198	190	204	212	206	228	218	232	212	258	254	240	270		
21	242	246	274	250	256	240	240	218	206	206	190	202	194	210	214	214	210	220	222	210	224	254	268	266		
22	246	252	246	246	242	256	252	222	212	208	196	174	210	196	196	224	228	232	220	222	208	284	302	280		
23	264	236	234	234	284	280	254	216	216	224	204	206	192	258	198	196	H	H	204	230	224	236	222	234	252	306
24	292	264	304	220	274	304	248	218	212	E A	E A	A	200	234	202	192	224	226	214	220	238	260	280	238		
25	244	302	326	296	220	248	256	238	226	206	214	200	210	190	210	212	A	222	234	224	216	242	260	272	258	
26	268	266	236	258	262	260	244	214	214	216	214	204	198	212	224	224	230	234	216	226	222	224	248	250		
27	276	262	280	262	272	262	268	232	224	214	202	192	216	194	194	H	H	232	238	228	214	204	242	276	266	
28	242	228	276	298	286	286	254	224	220	212	216	222	B	A E A	276	198	236	246	218	220	242	220	226	306		
29	302	262	264	274	270	270	260	218	220	212	204	196	176	198	204	248	A	H	H	222	222	216	226	242	256	290
30	282	266	234	242	242	256	242	172	222	208	208	202	216	216	216	H	208	226	234	216	216	210	238	276	304	
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	29	30	30	30	30	30	27	28	28	26	28	28	28	29	27	24	25	28	30	29	30	30	30		
MED	269	258	262	253	248	262	246	218	215	210	204	200	202	210	211	210	222	230	231	220	222	247	272	274		
U Q	286	268	274	262	274	274	254	222	220	219	214	207	216	231	220	224	228	239	235	230	232	260	302	300		
L Q	244	246	242	236	232	248	234	214	210	205	196	192	193	195	202	198	217	222	223	214	206	226	256	258		

SEP. 2014 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							B					A	A	A	A										
								102	94	96	96					102	102	106	106						
2							B					A	A												
								98	94	94	98			108	102	102	102	102	102						
3							A								A			A							
								120	104	104	94	100	100	96		108		106							
4							B																		
								108	98	94	94	96	98	104	102	98	98	98	126						
5							B							A				A							
								110	100	100	102	96	92		104	100									
6							B								A										
								106	100	106	96	98	98	98		100	102		120						
7							B			A		A	A		A										
								102	102									102	110	110					
8							B										A								
								110	106	104	104	106	102	102	98			98	98						
9							B	H		B		B	B		B		A	A	A	A					
								104	98						98	104									
10							B							A											
								104	98	98	96	96		106	104	106	100	98	112						
11							A						A	A					A						
								112	100	98	98				98	96	98								
12							B						B												
								106	100	98	96	98		98	100			106	102	108					
13							B								A		A								
								112	98	98	98	102	104	104					96						
14							B						A												
								112	100	94	102	100		108	104	100	98								
15							B									A									
								104	98	98	96	96	96	98	96			106							
16							B						A												
								104	100	100	98		92	98	96	98	94								
17							B							A											
								98	100	100	98	96		94	110	106	98	102							
18							B																		
								108	102	100	100	100	98	98	96	96	98	98							B
19							B		A	A	A	A	A			98	100	102	102						
								102																	
20							B																		
								102								102	100	100	112	118					
21							A						A												
								112	104	102	104		104	108	102	100	102	104							B
22							B																		
								100	96	96	96	100	106	98	102	106	102								
23							B						A												
								102	98	96		100		100	106	100	98	110	122						
24							B								A										
								102	102	102	100	100	100		98	96	110	108	108						
25							B							A											
								104	100	104	98	102		104	106	108	106	106							
26							B									B									
								106	102	102	102	102	106	104		110	108	106							
27							B		A					A											
								118		110	106	104		100	100	108	100	100							B
28							B							B	B			A							
								112	112	100	98	102			102	100			102	120					
29							B																		
								106	96	96	96	96	94	94	100	102	100	104	150						B
30							A						A												
								108	98	96	96			106	102	104	102	96							A
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								30	27	26	25	20	14	22	24	24	25	22	13						
MED								106	100	99	98	100	99	100	102	100	102	102	114						
U Q								110	102	102	101	102	104	104	104	106	102	106	121						
L Q								102	98	96	96	96	96	98	98	100	98	98	108						

SEP. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 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	82	B	B	B	B	B	120	118	118	110	102	100	96	96	96	96	104	112	88	86	88	86	86	88	
2	88	120	118	94	96	102	B	140	152	190	118	92	92	94	128	110	88	112	106	100	92	90	90	90	
3	90	108	138	104	94	100	100	126	102	102	102	104	104	100	134	118	108	104	104	100	96	112	84	98	
4	84	116	B	98	114	116	126	116	108	112	102	100	102	120	114	88	116	106	96	92	92	100	86	86	
5	84	B	84	B	B	B	B	120	110	106	102	102	102	98	98	104	128	96	94	94	92	92	94	92	
6	92		86	88	88	88	90	114	108	102	102	100	102	100	98	102	106	94	138	94	100	98	94	92	
7	92	92	110	B	B	B	94	102	104	98	98	98	98	100	100	128	122	120	112	B	B	90	92	92	
8	94	86	B	B	92	B	130	134	126	112	108	104	104	102	100	116	114	110	104	118	104	110	94	94	
9	94	84	B	96	96	104	118	116	114	B	B	B	102	108	100	160	92	94	88	88	102	106	106	120	
10	84	B	94	104	B	B	106	108	100	100	100	102	96	94	90	184	198	116	116	96	92	96	92	94	
11	90	92	86	86	92	B	98	100	110	112	100	96	100	100	100	100	100	98	98	102	112	96	108	92	
12	94	92	92	92	98	96	164	118	112	122	104	104	106	108	100	90	96	112	102	100	102	96	96	94	
13	96	96	B	B	B	B	122	128	116	114	108	104	104	G	98	98	94	96	106	96	102	94	90	112	
14	B	B	B	B	B	B	132	90	114	116	90	114	114	124	110	116	106	110	100	106	98	94	94	94	
15	92	98	B	B	B	92	B	136	120	106	106	112	104	104	102	94	106	90	90	86	98	100	94	90	
16	88	88	86	B	86	86	120	106	106	102	106	102	110	106	112	110	92	112	102	92	90	94	100	B	
17	B	B	B	B	126	114	114	104	102	104	102	104	96	104	96	134	116	110	102	98	100	94	94	94	
18	96	B	B	B	90	B	B	110	120	108	108	112	102	100	106	106	G	122	102	102	96	96	92	88	
19	90	B	B	B	90	106	112	98	98	98	98	98	100	100	104	G	104	100	136	92	88	88	90	90	
20	B	B	92	B	B	B	108	102	98	98	94	98	100	100	106	108	108	126	100	92	86	86	90	86	
21	86	88	92	B	B	B	86	88	146	86	88	88	86	G	G	G	G	120	106	102	B	B	B	116	
22	158	B	B	B	B	B	144	134	128	116	106	106	96	G	96	98	92	128	108	116	106	112	90	86	
23	88	B	B	B	B	142	130	134	126	108	122	118	90	156	84	116	122	98	126	92	116	112	106	106	
24	86	100	94	84	B	B	126	116	104	106	104	108	174	G	100	94	92	86	86	84	100	102	98	B	
25	96	96	86	86	88	B	102	100	108	100	G	G	90	94	G	100	96	138	84	90	88	92	96	B	
26	96	96	92	92	B	B	140	118	110	104	G	G	92	G	B	G	98	122	94	88	88	106	88	B	
27	B	86	86	B	B	100	100	130	96	96	98	96	98	G	G	100	86	162	114	108	B	B	B	B	
28	94	94	B	B	B	B	134	122	130	114	110	108	B	108	106	G	172	128	122	104	100	100	B	96	
29	B	94	B	B	B	B	B	152	124	130	110	G	G	124	108	102	138	138	G	B	98	94	90	92	
30	92	B	92	B	90	B	92	116	110	110	110	100	98	110	G	88	88	G	88	102	84	86	86	88	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	25	18	16	11	14	12	22	30	30	29	28	26	28	25	24	26	28	29	29	28	27	28	27	26	
MED	92	94	92	92	92	101	119	117	111	108	102	102	100	102	100	103	105	112	102	96	96	96	92	92	
U Q	94	98	94	98	96	110	130	128	120	113	108	104	104	109	107	116	116	122	110	102	102	100	96	96	
L Q	87	88	86	86	90	94	100	106	104	102	100	98	96	100	98	98	94	98	94	92	88	92	90	90	

SEP. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 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	F							C	C	C	C	C	L	L	L	LH	L	CL	CL	L	F	F	F	F	F
2	FQ	FF	F	F	F	F			H	H	H	CL	L	L	L	CL	CL	L	C	C	FF	FF	FF	FF	FF
3	F	FF	FFF	F	FF	F	L	CC	CL	CL	C	C	C	C	HCL	CL	CL	CL	CL	FF	FF	FFF	FF	FF	
4	F	FF		F	F	F	CL	C	C	C	C	C	CL	CL	L	C	C	L	L	F	F	FF	FF	F	
5	F		F					CL	CL	CL	CL	C	C	L	L	C	CC	L	L	FQ	FQ	F	F	F	
6	F		F	FQ	FQ	FQ	LC	C	C	CL	C	C	C	L	C	CL	L	HL	F	FF	FF	FF	FF	F	
7	F	F	FF				LC	C	C	L	L	L	L	L	L	CL	CL	CL	CL			F	FQ	F	
8	FF	F			F		CL	HL	CL	CL	CL	CL	C	C	C	CC	C	C	CL	FFF	FFF	FFF	F	F	
9	FF	F		FQ	FF	F	C	C					C	C	C	HL	L	LC	LQ	F	FF	FF	FF	FF	
10	F		F	FF			CL	C	C	C	C	C	L	L	L	HL	HL	C	CL	F	F	F	F	F	
11	F	F	F	F	F		L	L	C	C	C	L	L	L	L	C	C	L	L	F	FF	FF	F	F	
12	F	F	F	F	F	FQ	HL	C	C	C	C	C	C	C	C	L	L	C	C	FF	F	F	FQ	F	
13	FF	FF					CL	CL	C	C	C	C	C	C	L	L	L	L	CL	HL	FF	FF	FF	FF	
14							HHL	LCC	C	C	LC	CL	CL	CL	CL	CL	C	CH	C	F	FF	FF	F	FQ	
15	FQ	F			F		H	C	C	C	C	C	C	C	C	L	CL	L	LC	F	FF	FF	FF	F	
16	F	F	F		F	F	C	C	C	C	C	C	C	C	C	C	L	CL	C	F	F	F	F		
17					F	FF	C	C	C	C	C	C	L	C	L	HL	C	C	C	F	F	F	F	F	
18	F				F		C	CL	CL	CL	C	C	C	C	C	C		C	C	F	F	F	FQ	F	
19	F				F	F	C	L	L	L	L	L	L	L	L	C		C	L	H	F	F	F	F	
20			F				C	C	L	L	L	L	L	L	L	C	C	C	CL	L	F	F	F	F	
21	F	F	F				L	LC	HL	L	L	L	L	L				C	C	F				F	
22	F						H	H	C	C	C	C	L		L	L	L	CL	C	F	F	FF	FF	FF	
23	FF				F		C	H	C	C	CC	CL	L	HL	L	C	C	LH	C	F	F	F	FF	FF	
24	F	FF	FF	F			CL	C	C	C	CL	C	HC		C	L	L	L	F	F	F	FF	FF	FF	
25	FF	FF	F	FF	FF		CQ	C	C	C		L	L		L	L	HL	L	F	F	F	FF	FF		
26	F	F	F	F			H	C	C	C		L					L	CL	L	F	F	FF	F	F	
27		F	F		F		CH	CL	L	L	L	L	L		L	L	H	C	F						
28	F	F					H	C	CL	C	C	CL		C	C		HHL	C	CHL	F	FFF	F		FF	
29		F					H	C	C	C	C			C	C	C	H	H		F	F	FQ	FQ		
30	FF		F		F		L	C	C	C	C	L	L	CL		L	L		L	FF	F	F	F	F	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
U Q																									
L Q																									

IONOSPHERIC DATA STATION Okinawa

SEP. 2014 f_{XI} (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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	X	X	X	X	X	X															X	X	X	X	
	105	97	78	60	58	59															118	85	64	66	
2	X	X	X	X	X	X															X	X	X	X	
	64	63	58	60	59	49															90	84	75	68	
3	X	X	X	X	X	X															X	X	X	X	
	67	67	64	60	60	58															82	68	64	65	
4	X	X	X	X	X	X															X	X	X	X	
	67	65	65	64	59	56															140	130	131	130	
5	X	X	X	X	X	X															X	X	X	X	
	120	94	81	69	61	62															106	85	74	73	
6	X	X	X	X	X	X															X	X	X	X	
	77	81	79	65	60	61															115	104	90	82	
7	X	X	X	X	X	X															X	X	X	X	
	77	102	98	86	63	46															98	82	86	88	
8	X	X	X	X	X	X															X	X	X	X	
	92	89	88	77	70	67															134	141	130	115	
9	X	X	X	X	X	X															X	X	X	X	
	101	103	108	81	54	52															85	86	82	84	
10	X	X	X	X	X	X															X	X	X	X	
	77	84	86	78	76	62															142	155	150	138	
11	X	X	X	X	X	X															X	X	X	X	
	147	142	149	126	79	65				105											85	74	76	76	
12	X	X	X	X	X	X															X	X	X	X	
	74	74	74	68	50	48															118	97	92	90	
13	X	X	X	X	X	X															X	X	X	X	
	74	69	64	54	47	50															111	98	94	84	
14	X	X	X	X	X	X															X	X	X	X	
	77	74	68	54	46	42															77	77	78	80	
15	X	X	X	X	X	X															X	X	X	X	
	86	98	89	74	60	50															143	126	137	121	
16	X	X	X	C	C	C		C	C	C	C	C									X	X	X	X	
	90	88	91																		122	117	111	102	
17	X	X	X	X	X	X															X	X	X	X	
	97	91	65	56	56	52															91	94	91	82	
18	X	X	X	X	X	X															X	X	X	X	
	82	85	74	69	66	58															94	90	96	112	
19	X	X	X	X	X	X															X	X	X	X	
	103	90	81	70	68	65															111	87	85	86	
20	X	X	X	X	X	X															X	X	X	X	
	88	93	85	76	68	64															114	90	84	82	
21	X	X	X	X	X	X															X	X	X	X	
	85	84	69	69	66	63															76	69	73	73	
22	X	X	X	X	X	X															X	X	X	X	
	69	72	64	60	56	54															113	105	77	78	
23	X	X	X	X	X	X															X	X	X	X	
	74	79	73	51	50	50															98	77	96	100	
24	X	X	X	X	X	X														X	X	X	X	X	
	108	99	75	58	52	48															130	117	71	70	76
25	X	X	X	X	X	X															X	X	X	X	
	66	57	56	48	47	42															133	108	83	71	61
26	X	X	X	X	X	X															X	X	X	X	
	58	54	54	53	51	47															133	126	84	66	66
27	X	X	X	X	X	X															X	X	X	X	
	64	60	54	56	53	52															127	114	83	70	68
28	X	X	X	X	X	X															X	X	X	X	
	72	67	54	52	52	51															135	129	117	80	65
29	X	X	X	X	X	X															X	X	X	X	
	65	71	59	59	55	52															134	130	102	101	80
30	X	X	X	X	X	X															0	X	X	X	X
	73	70	76	64	54	51															169	174	156	128	95
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	29	29	29				1											7	30	30	30	30
MED	X	X	X	X	X	X															X	X	X	X	X
U Q	92	93	85	72	64	62															133	114	88	84	82
L Q	X	X	X	X	X	X															X	X	X	X	X
	69	69	64	56	52	50															130	94	83	74	73

SEP. 2014 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	99	91 ^R	72	54	52	53	54	67	77	87	90	97	101	102	112	124	134	138	126	119	112	78	58	60	
2	58	57	52	54	53	43	43	72	79	78	78	75	88	100	103	98	101	110	116	110	84	78	69	62	
3	61	61	58	54	54	52	56	81	79	77	102	93	82	85	92	94	100 ^J	111 ^R	126	109	76	62	58	59	
4	61	59	59	58	53	50	54	80	96	84	77	91	98	96	96	114	134 ^R	149 ^R	160 ^R	149 ^R	134 ^R	124 ^R	125	124	
5	114	88	75	63	55	56	65	72	73	77	85	91	101	97	109	124	124 ^R	125 ^R	134 ^R	133	100	79	68	67	
6	71	75	73	59	54	55	58	80	80	77	88	82	107	117	130	146	161 ^R	168 ^R	152 ^R	131 ^R	109	98	84	76	
7	71	96 ^R	92	80	57	40	49	81	84	72	78	88	112	112	118	130	141	144	149	132	92	76	80	82	
8	86	83 ^J	82 ^R	71	64	61	71	93	93	82	79	92	102	116	120	130	152	158 ^U	168 ^Y	147 ^R	128	135	124	109	
9	95	97 ^R	91 ^F	67 ^F	46 ^F	46	56	88	80	77	81	99		116	121	118	126	130 ^R	126 ^R	113	79	80	76	78	
10	71	74 ^F	80	72	70	56	60	91	91	79	89	112	128	133	132	139	158 ^U	164 ^R	162 ^R	146	136	149 ^R	144 ^U	132 ^Y	
11	141 ^U	135 ^R		117 ^F	73	59	70	90	98	93	86	98	109	118	125	128	134	142	141	116	79	68	70	70	
12	68	68	68	62	44	42	46	84	96	88	97	124	138	144	144	152	153 ^U	155 ^R	144 ^R	135	112	91	86	84	
13	68	63	58	48	40	44	45	54	55	57	76	73	76	109	119	124	129	120	118	109	105	92	88	78	
14	71	68	62	48	40	36	46	82	79	88	86	107	122	120	126	134	133	135	127	104	71	71	72	74	
15	80	92	83	68	54	44	50	77	85	100	88	100	112	121	121	132	139	143	132	126	137	120	131 ^U	115 ^R	
16	84	82	85		C	C	C	C	C	C	C	C					123	133	137	147	152 ^R	154 ^R	129	120	
17	91	85	59	50	50	46	53	85	84	92	102	115	122	137	141	135	120	124	131	101	85	88	85	76	
18	76	78 ^F	68	63	60	52	62	95	81	84	90	104	112	118	115	112	126	136	128	115	88	84 ^R	90	106 ^R	
19	97	84	75	64	62	59	69	86	83	90	87	90	110	122	120	117	128	130	129	118	105	81	79	80 ^R	
20	82	87	79	70	62	58	78	96	93	87	94	112	120	134	129	117	118	121	121	127	108	84	78	76	
21	79	78	63	63	60	57	62	91	86	97	91	99	110	118	111	106	108	103	98	85	70	63	67	67	
22	63	66 ^R	58	54	50	48	52	97	102	89	85	83	98	102	114	122	137	128	110	100	107	98	71	72	
23	68	73	67	45	44	44	50	85	97	108	100	113	118	123	118	117	107	104	102	105	92	71	90	94	
24	102	93	69	52	46	42	40	80	82	88	100	123	132	131	135	140	144 ^R	142 ^R	138	124	111	65	64	70	
25	60	51	50	42	41	36	40	73	102	106	110	124	133	154 ^R	144 ^R	149 ^R	152 ^R	148	138	127	102	77	65	55	
26	52	48	48	47	45	41	43	76	86	88	96	107	129	139	149	144	141	143	134	127	120	78	60	60	
27	58	54	48	50	47	46	49	77	107	113	112	126	144	144	151	148	151	136	122	121	108	77	64	62	
28	66	61	48	46	46	45	50	87	95	95	98	111	122	124	120		129	138	140	144	129	123	111	74	
29	59	65	53	53	49	46	48	86	100	115	114	111	122	134	143	147	147	141	138	128	124	96	95	74	
30	67	64	70	58	48	45	48	80	95	91	96	112	126	136	150	168	168	168	167	163	168	150	122	89	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	29	29	29	29	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	
MED	71	74	68	58	52	46	52	82	86	88	90	100	112	120	121	130	136	139	132	122	108	82	78	76	
U Q	86	87	77	66	58	56	61	89	96	94	99	112	124	134	137	144	151 ^R	148 ^R	144 ^R	131	120	98	90	89	
L Q	63	63	58	50	46	44	47	77	80	78	85	91	102	112	115	117	126	125	126	110	88	77	68	67	

SEP. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2014 f_oF₁ (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	U	L	L	L	L	552	520	L	L	L				
2									L	U	L	L	U	L	U	L	U	L	L	A				
3									L	L	L	A	L	L	U	L	U	L	A	L	A			
4									L	L	L	L	U	L	U	L	L	L	L	A				
5									U	L	L	U	L	U	L	U	L	L	A	A	A			
6									L	A	A	A	A	U	L	L	U	L	L	L				
7								L	L	L	A	L	L	U	L	L	U	L	L	L				
8									L	L	L	L	U	L	L	A	A	L	L	L				
9											B	A	A	L	L	L	L	L	L	A				
10									L	L	L	U	L	U	L	U	L	L	L	L				
11									L	L	L	U	L	U	L	U	L	U	L	L	L			
12									L	L	L	U	L	U	L	U	L	L	L	L				
13								L	L		L	L	L	L	U	L	U	L	L	L				
14									L	L	L	L	U	L	U	L	L	L	L	L				
15									L	L	L	U	L	L	L	A	L	L	L	L				
16						C	C	C	C	C	C	U	L	L	U	L	L	L	L	L				
17									L	L	U	L	U	L	U	L	L	L	L	A				
18									L	L	L	U	L	U	L	L	L	L	L	L				
19									L	L	U	L	L	L	U	L	L	L	L	L				
20									L	L	U	L	L	L	L	A	L	L	A					
21								L	L	L	L	L	U	L	U	L	U	L	L	L				
22								L	L	L	L	L	U	L	U	L	L	L	L	L				
23									L	L	L	L	U	L	L	L	U	L	L	L				
24									U	L	U	L	U	L	U	L	L	L	L	L				
25									L	A	A	A	L	U	L	L	U	L	L	L				
26									L	L	L	L	L	L	L	L	L	L	L	L				
27									L	L	L	L	U	L	L	U	L	L	L	L				
28									L	L	L	L	B	A	L	L	L	L	L	L				
29									L	L	L	L	L	L	L	L	L	L	L	L				
30									L		L	U	L	L	L	L	L	L	L	L				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										3	7	10	19	18	18	17	9	2						
MED										U	L	U	L	U	L	U	L	L	L	L				
U Q										472	528	538	552	560	542	544	520	440						
L Q										U	L	U	L	U	L	U	L	L	L	L				
										480	556	560	568	584	572	554	534							
										U	L	U	L	U	L	U	L	L	L	L				
										456	516	528	536	544	520	518	488							

SEP. 2014 f_oF₁ (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							B	244	300	332	352	RUR	A	A	A	A	336	296	228		A				
2							B	256	300	344	364	RUR	B	RUR	A	UR	368	364	300	216		A			
3							A	A	292	324	360	UR	A	A	UR	396	368	344	284	UR	A	A			
4							B	244		A	A	A	A	A	A	B	A	UR	A	A	A	A			
5							B	248	304	344		R	A	A	A	B	A	A	A	A	A	A			
6							B	248	320	348		UR	A	A	A	A	A	352		A	A	B			
7							A	A	A	A	A	A	A	A	A	A	A	348	288		A	A			
8							A	244	308		A	A	B	B	B	UR	400	344	296		A	A			
9							A	UR	228	296		B	B	B	B	B	UR	380	300	200		A			
10							B	A	A	A	A	A	B	R	R	UR	356		296		A	A			
11							B	248	304	332		R	B	A	B	A	A	R	A	A		A			
12							A	UR	300	344		A	A	A	B	B	R	R		A	A				
13							B	UR	296	332		A	A	A	UR	A	A	324	288		A	A			
14							B	244	292	348	UR	UR	R	B	B	B	UR	356	292		A	A			
15							B	236	300	344	UR	R	B	UR	UR	A	R	332		A	A	A			
16							C	C	C	C	C	C	C	B	B	R	R	328	264	UR	A	A			
17							B	A	A	316		A	B	B	B	B	380	332	284		A	A			
18							B	236	280	328		A	A	A	A	UR	348	312	276		A	A			
19							B	216		A	A	A	A	A	R	A	A	A	A		184				
20							B	A	A	A	A	A	B		A	A	A	A	A		A	A			
21							B	208	UR	300		A	A	UR	B	B	A	324	252		A	A			
22							B	232	296	A		UR	R	B		B	372	320	268		A	A			
23							B	228	296	340	UR	R	B	B		UR	372	332	284	196		A			
24							B	UR	232	344	360	A	B	UR	UR	R	UR	UR	UR	A					
25							B	UR	196	280		A	A	A	R	A	352	320		A	A				
26							B	240		336		A	B	B	B	B	R	328	264		A				
27							B	236	300	336		A	B	B	B	B	368	304	264		A				
28							B	UR	220	300	344	376	UR	R	B	B	B	340	284	180					
29							B	240	292	316		UR	R	A	A	A	B	332		188					
30							B	220		A	UR	R	A	B	R	R	R	332		A	A				
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								22	20	19	9	4	3	3	5	10	24	20	9						
MED								236	298	336	364	UR	UR	UR	UR	UR	368	332	284	196					
UQ								244	300	344	374	UR	UR	UR	UR	UR	372	344	294	210					
LQ								228	294	328	356	UR	UR	UR	UR	UR	356	324	266	182					

IONOSPHERIC DATA STATION Okinawa

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

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E 13	B 13	E 13	B 13	E 13	B 13	E 22	J 29	A 35	J 43	A 40	J 53	A 60	J 52	A 50	J 58	A 40	G	G 22	J 29	A 20	J 22	A 19	E 13	
2	E 13	J 22	A 26	E 13	B 17	E 13	B 16	G	G	G 43	B 30	G	44	48	30	G 29	G 40	J 76	A 38	18	E 13	B 13	E 13	B 13	
3	J 32	A 22	J 22	A 39	J 43	A 17	J 50	30	J 43	A 44	J 50	A 98	A 44	53	J 56	A 44	J 91	A 44	J 54	A 51	J 64	A 97	J 67	A 45	
4	J 48	A 49	J 18	A 18	J 13	A 20	J 20	33	J 46	A 48	J 45	A 52	J 54	48	E 42	J 50	A 41	J 67	A 100	J 39	A 19	J 21	A 28	J 35	
5	J 20	A 19	E 13	B 13	E 13	B 13	E 14	27	35	42	43	48	47	44	J 52	A 52	G 62	J 67	A 66	J 52	A 49	J 72	A 62	J 20	
6	J 16	A 13	E 13	B 13	E 13	B 13	J 16	29	38	J 51	A 70	J 83	A 71	72	J 46	A 55	G	41	J 28	A 48	J 18	A 20	J 28	A 29	
7	J 22	A 19	E 22	B 18	E 13	B 13	J 16	27	J 34	A 40	J 59	A 50	J 66	54	J 49	A 47	46	40	J 44	A 83	J 73	A 73	J 17	A 28	
8	J 21	A 21	E 13	B 13	E 13	B 13	J 16	28	35	43	45	45	44	47	J 70	A 59	44	J 51	A 32	J 39	A 18	J 13	A 13	B 18	
9	E 13	B 13	E 13	B 56	J 50	A 42	J 31	37	J 42	A 62	J 72	A 72	133	55	E 44	J 48	46	40	J 49	A 51	J 70	A 79	J 72	A 49	
10	J 96	A 52	J 20	A 13	E 13	B 13	J 16	28	44	45	45	49	43	32	G 28	G 28	24	J 32	A 40	J 54	A 62	J 52	A 20	J 20	
11	18	45	13	13	14	16	14	29	40	42	44	67	44	45	44	46	41	J 52	26	48	51	58	35	30	
12	J 29	A 25	J 56	A 42	J 20	E 21	J 19	28	46	43	48	56	48	44	43	25	G	J 47	A 38	J 21	A 19	J 22	A 20	J 22	
13	J 38	A 18	J 19	E 13	B 13	E 13	J 18	27	34	40	42	48	44	45	43	43	J 38	32	J 24	A 68	J 46	A 39	J 29	A 22	
14	19	18	E 13	B 18	E 13	B 20	J 16	22	41	42	44	44	43	44	42	26	G 33	J 31	A 23	J 48	A 44	J 58	A 49		
15	J 30	A 36	J 19	A 20	J 18	E 13	J 13	30	35	44	52	42	57	44	J 48	A 88	J 57	A 41	22	23	20	A 49	J 29	J 13	
16	E 13	B 13	E 13	C	C	C	C	C	C	C	C	C	E 43	B 43	E 45	B 26	G	G	37	28	44	61	37	31	20
17	E 13	B 13	E 13	B 13	E 14	B 13	E 13	28	36	40	42	E 43	B 44	B 44	B 42	47	42	J 43	A 37	J 63	A 54	J 70	A 48	A 19	
18	18	16	18	19	E 13	B 13	E 14	26	32	45	43	44	44	44	42	30	G	G	J 17	A 27	J 21	A 16	J 22	A 13	
19	J 21	A 18	E 13	B 13	E 13	B 13	E 13	26	31	38	J 46	A 48	43	35	42	43	J 61	A 44	J 19	A 36	J 20	A 13	J 13	A 18	
20	J 22	A 13	E 13	B 13	E 14	B 20	J 18	24	39	43	41	41	43	44	45	72	J 53	A 46	J 25	A 52	J 32	A 22	J 19	A 13	
21	J 21	A 26	E 18	B 13	E 13	B 13	J 16	27	37	34	41	45	45	40	42	44	J 40	42	J 44	A 33	J 17	A 13	E 13	B 13	
22	E 13	B 13	E 13	B 13	E 13	B 13	J 14	G	G	J 37	G	G	E 44	B 47	E 43	G	G	33	J 52	A 20	J 22	A 21	A 18	A 23	
23	E 13	B 13	E 13	B 13	E 13	B 13	E 13	28	38	43	G	E 41	B 43	E 43	G	40	37	G	24	J 34	A 22	A 19	A 29	A 13	
24	E 13	B 13	E 19	B 19	E 13	B 13	E 13	28	J 43	A 47	J 47	A 45	E 42	G	G	G	G	J 31	A 25	A 46	J 21	A 20	A 21	A 46	
25	J 54	A 19	J 17	A 13	E 19	J 16	J 19	29	J 35	A 109	J 80	A 82	54	33	46	25	G 62	J 51	A 40	J 29	A 13	A 30	A 41		
26	E 13	B 18	J 17	A 21	E 18	J 19	J 19	G	J 34	A 26	J 34	E 40	B 45	E 40	B 45	42	G 26	J 21	A 20	J 18	A 13	A 13	A 13	A 18	
27	20	E 13	B 13	E 13	E 19	B 13	J 14	G	J 30	A 36	J 42	E 43	B 45	E 43	B 43	G	G	30	J 25	A 20	A 13	A 13	A 13	A 13	
28	E 13	B 13	E 13	B 18	E 13	B 40	J 18	29	36	38	J 50	A 48	E 74	B 86	E 43	42	26	J 32	A 27	J 33	A 23	A 46	A 22	A 22	
29	J 22	A 17	J 22	E 13	B 13	E 13	J 14	G	G	G	G	25	45	45	46	45	E 41	G	29	G	E 13	A 16	J 72	A 60	A 21
30	J 22	A 19	E 13	B 13	E 18	B 13	E 13	24	33	39	G	E 46	B 44	G	G	32	G 29	J 45	A 42	J 28	A 29	A 22	A 16	A 20	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	29	29	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J 20	A 18	E 13	B 13	E 13	B 13	J 16	28	35	42	43	46	44	44	44	42	G	40	J 30	A 38	J 22	A 22	A 22	A 20	
UQ	J 22	A 22	J 19	A 18	E 18	B 18	J 18	29	J 40	A 44	J 49	A 52	J 54	A 47	J 46	A 48	44	J 45	A 44	J 51	A 49	J 52	A 31	A 29	
LQ	E 13	B 13	E 13	B 13	E 13	B 13	E 14	G	G	G	G	E 44	B 43	E 42	G	G	G	32	J 25	A 23	J 18	A 19	E 17	B 13	

IONOSPHERIC DATA STATION Okinawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 14	28	33	41	40	51	44	47	49	42	G 30	G 16	G 17	E 13	B 13	E 13	B 13	
2	E 13	B 14	E 13	B 13	E 13	B 13	E 13	B 13	G	G	E 43	B 30	U 30	G	43	44	27	G 26	38	42	22	E 13	B 13	E 13	B 13
3	E 17	B 13	E 13	B 20	E 20	B 13	E 38	B 26	38	40	44	74	43	48	46	41	90	43	46	48	29	52	31	21	
4	E 27	B 30	E 13	B 13	E 13	B 13	E 13	B 13	30	40	42	42	50	45	46	E 42	B 44	40	43	34	30	16	17	20	17
5	E 18	B 13	E 13	B 13	E 13	B 13	E 14	B 24	35	40	43	46	46	44	45	50	55	G 61	51	16	29	30	30	E 30	B 13
6	E 13	B 13	E 13	B 13	E 13	B 13	E 14	B 27	37	48	61	72	66	48	44	45	G	36	24	E 14	B 14	E 13	B 13	20	20
7	E 20	B 13	E 18	B 13	E 13	B 13	E 14	B 25	34	39	55	46	53	48	46	44	44	40	38	36	41	21	E 13	B 19	
8	E 13	B 13	E 13	B 13	E 13	B 13	E 14	B 27	34	41	44	44	E 44	46	61	56	44	39	22	17	E 13	B 13	E 13	B 13	
9	E 13	B 13	E 13	B 28	E 28	B 22	20	36	39	E 62	B 72	64	A 133	A 55	E 44	B 43	45	35	47	50	36	38	30	30	
10	E 33	B 23	E 19	B 13	E 13	B 13	E 13	B 25	40	38	42	45	E 43	U 32	Y 28	Y 26	G 23	G 30	33	20	20	28	E 17	B 13	
11	E 13	B 19	E 13	B 13	E 13	B 13	E 14	B 28	39	41	42	47	E 44	44	42	43	40	30	22	43	18	31	30	24	
12	E 17	B 19	E 13	B 21	E 13	B 13	E 13	B 27	34	41	46	51	44	E 44	B 43	U 25	G	36	26	18	E 13	B 13	E 13	B 18	
13	E 21	B 13	E 13	B 13	E 13	B 13	E 14	B 26	33	40	41	47	44	44	42	41	37	31	23	40	36	38	21	19	
14	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 18	G	G	40	40	E 43	44	43	42	E 42	G 23	G 27	27	16	20	24	42	34
15	E 19	B 22	E 13	B 13	E 13	B 13	E 13	B 27	32	39	42	E 42	54	44	47	62	36	37	22	E 14	B 13	E 38	E 13	B 13	
16	E 13	B 13	E 13	B C	E C	B C	E C	B C	C	C	C	C	E 43	B 43	44	U 26	G	36	27	19	29	29	28	20	
17	E 13	B 13	E 13	B 13	E 14	B 13	E 13	B 23	33	39	42	E 43	44	44	42	46	40	42	35	50	21	31	23	E 13	B 13
18	E 13	B 13	E 13	B 13	E 13	B 13	E 14	B 26	31	41	42	42	42	42	41	27	G 17	G 22	G 17	E 13	B 13	E 13	B 13		
19	E 20	B 16	E 13	B 13	E 13	B 13	E 13	B 25	30	36	41	45	43	U 35	G 42	40	44	33	G 14	20	E 13	B 13	E 13	B 13	
20	E 18	B 13	E 13	B 13	E 14	B 13	E 13	B 24	34	36	40	41	E 43	44	44	57	35	43	22	35	21	13	E 13	B 13	
21	E 20	B 23	E 13	B 13	E 13	B 13	E 14	B 25	G 37	U 34	G 40	44	E 44	B 45	B 40	42	39	35	42	16	E 13	B 13	E 13	B 13	
22	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 36	G	G	36	G	E 44	44	E 43	G	G	32	34	14	17	17	E 13	B 13	
23	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 26	37	42	G 41	E 41	G 43	E 43	B 40	G	40	36	G	23	30	18	17	E 13	B 13
24	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 25	36	42	45	42	E 42	B 42	G	G	G	28	20	24	16	18	20	17	
25	E 20	B 13	E 13	B 13	E 13	B 13	E 13	B 28	32	46	60	64	44	33	41	G	G	21	56	36	29	27	E 13	19	26
26	E 13	B 13	E 13	B 13	E 13	B 13	E 14	B 32	G 25	U 34	Y 40	E 45	B 40	E 45	B 42	26	G 20	G 20	E 13	B 13	E 13	B 13	E 13	B 13	
27	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 20	G 27	G 42	E 43	45	43	43	G	G	30	24	14	13	13	13	E 13	B 13	
28	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 26	34	38	41	46	E 74	55	43	E 42	24	32	25	21	E 13	B 13	E 13	B 13	
29	E 17	B 13	E 13	B 13	E 13	B 13	E 14	B 25	G 44	U 44	G 44	45	44	45	E 41	G	29	G	E 13	B 13	58	39	E 13	B 13	
30	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 24	32	38	G 26	44	E 44	B 44	G	G	G 32	G 28	32	21	19	19	E 13	B 13	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	29	29	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 25	33	40	42	44	44	44	42	42	G	34	24	20	16	17	E 13	B 13	
U Q	19	14	13	13	13	13	14	27	36	41	44	48	45	46	45	44	40	39	35	30	21	30	23	19	
L Q	E 13	B 13	E 13	B 13	E 13	B 13	E 13	B 30	G 36	G 40	G 42	43	43	43	42	G	G 30	G 30	G 22	E 16	B 13	E 13	B 13	E 13	B 13

SEP. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	13	13	13	13	13	14	14	18	21	21	24	36	37	26	29	22	19	13	13	13	13	13	13
2	13	14	13	13	13	13	13	14	16	22	43	21	33	41	20	24	21	16	14	14	13	13	13	13
3	13	13	13	13	13	13	14	14	15	23	23	25	39	40	33	26	20	16	14	14	13	13	13	13
4	13	13	13	13	13	13	13	14	14	14	38	25	40	40	42	23	22	16	14	13	13	13	13	13
5	13	13	13	13	13	13	14	15	20	22	39	40	42	42	40	38	37	17	14	14	13	13	13	13
6	13	13	13	13	13	13	14	19	19	21	39	39	38	35	30	33	20	17	15	14	14	13	13	13
7	13	13	13	13	13	13	14	17	24	23	33	40	41	41	38	30	22	16	14	13	13	13	13	13
8	13	13	13	13	13	13	14	15	16	20	33	40	44	43	40	29	20	16	14	13	13	13	13	13
9	13	13	13	13	14	13	13	14	17	62	72	50	42	44	44	31	29	15	14	13	13	13	13	13
10	13	13	13	13	13	13	13	14	16	20	24	29	43	30	24	20	20	14	13	13	13	13	13	13
11	13	13	13	13	13	13	14	14	20	22	39	40	44	41	39	31	22	18	14	14	13	13	14	13
12	13	13	13	13	13	13	13	14	21	23	38	27	40	44	43	22	21	16	14	13	13	13	13	13
13	13	13	13	13	13	13	14	14	14	21	36	40	38	36	33	22	21	17	14	14	13	13	13	13
14	13	13	13	13	13	13	13	14	16	22	24	20	44	43	39	42	20	21	15	13	13	13	13	14
15	13	13	13	13	13	13	13	14	16	21	24	42	29	31	39	23	23	14	13	14	13	13	13	13
16	13	13	13	C	C	C	C	C	C	C	C	C	43	43	29	22	23	18	14	14	13	13	13	13
17	13	13	13	13	14	13	13	14	15	22	35	43	44	44	42	25	20	17	14	14	13	13	13	13
18	13	13	13	13	13	13	14	14	20	30	32	32	34	33	32	22	14	14	14	14	13	13	13	13
19	13	13	13	13	13	13	13	14	16	21	30	31	30	32	31	30	20	19	14	14	13	13	13	13
20	13	13	13	13	14	13	13	14	18	23	30	32	43	32	30	24	20	15	14	14	13	13	13	13
21	13	13	13	13	13	13	14	15	19	14	24	32	20	45	40	38	18	16	14	13	13	13	13	13
22	13	13	13	13	13	13	13	14	15	20	22	30	44	40	43	23	21	16	14	14	13	13	13	13
23	13	13	13	13	13	13	13	14	14	21	22	41	42	43	32	24	19	16	14	14	13	13	13	13
24	13	13	13	13	13	13	13	14	17	22	22	31	42	32	24	22	19	14	14	13	13	13	13	13
25	13	13	13	13	13	13	13	14	19	22	E S 24	24	29	22	20	22	15	15	14	14	13	13	13	13
26	13	13	13	13	13	13	14	14	15	21	31	40	45	40	45	42	23	16	14	13	13	13	13	13
27	13	13	13	13	13	13	13	14	16	16	21	43	45	43	43	22	22	15	14	14	13	13	13	13
28	13	13	13	13	13	13	A 13	14	14	21	21	31	74	44	43	42	20	14	14	14	13	13	13	13
29	13	13	13	13	13	13	14	14	15	20	21	23	40	40	39	41	22	18	17	13	13	13	13	13
30	13	13	13	13	13	13	13	17	16	21	21	31	44	30	31	24	19	14	14	13	13	13	13	13
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	29	29	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30
MED	13	13	13	13	13	13	13	14	16	21	30	32	42	40	38	24	20	16	14	14	13	13	13	13
U Q	13	13	13	13	13	13	14	14	19	22	37	40	44	43	42	31	22	17	14	14	13	13	13	13
L Q	13	13	13	13	13	13	13	14	15	20	22	26	38	33	30	22	20	15	14	13	13	13	13	13

SEP. 2014 fmin (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	304	306 ^R	310	294	288	309	318	332	329	330	318	311	300	297	296	297	303	318	310	316	333	333	279	273	
2	290	276	280	294	310	317	301	358	353	347	335	302	297	307	312	310	303	318	328	342	329	288	275	279	
3	288	295	272	281	304	298	327	346	342	309	344	310	297 ^R	300	303	298		316 ^R	336	348	318	282	269	270	
4	280	290	297	298	305	311	316	347	355	348	310	301	300	306	280	297	309 ^R	324 ^R	344 ^R	337 ^R	313 ^R	301 ^R	285	293	
5	286	301	291	294	300	314	313	360	359	335	320	300	308	288	288	307	312	311	324 ^R	342	332	279	275	276	
6	283	298	311	282	305	314	313	360	356	329	337	306	297	297	295	298	318 ^R	340 ^R	329	341 ^R	285	294	284	264	
7	275	273 ^R	294	281	283	292	308	364	375	338	321	277	293	287	287	290	310	312	335	335	297	273	283	285	
8	289	300 ^{J R}	300	297	305	304	323	360	354	358	309	297	288	288	289	291	309		350 ^{Y U R}	337 ^R	295	305	300	292	
9	300	305 ^R	290	280	292	312	318	396	336	353	300	291		292	300	299	308	312	330	331	295	269	270	287	
10	273	300 ^F	301	292	327	326	314	361	356	363	290	293	300	304	295	292	312 ^{U R}	336 ^{U R}	346 ^R	325	307	311	301		
11	302	310		371	304	287	303	346	335	335	324	289	271	279	284	293	296	308	328	343	286	274	290	287	
12	292	298	306	342	305	315	300	347	359	332	270	285	287	281	286	296	317 ^{U R}	331 ^R	316 ^R	323	291	271	296	297	
13	303	287	298	284	223	242	285	298	318	241	305	304	291	301	311	308	315	311	310	318	304	271	279	280	
14	288	297	296	312	292	316	313	362	360	318	324	297	308	301	305	299	312	328	338	342	298	277	288	276	
15	293	290	319	307	314	327	312	357	346	343	313	300	294	302	296	299	304	322	317	314	320	301	321	335	
16	302	298	296		C	C	C	C	C	C	C	C		297	303	299	300	318 ^R	330 ^R	339	302	303	302	288	300
17	300	309	300	292	304	312	310	362	338	325	292	309	290	297	301	310	299	308	334	329	294	280	285	289	
18	297	306 ^F	293	302	309	305	319	372	365	335	316	297	299	302	293	292	302	325	327	330	285	262	280	291	
19	306	302	315	307	298	305	330	374	353	345	321	301	289	306	302	290	302	314	328	317	316	286	274	283	
20	292	290	291	302	281	283	328	383	365	333	304	298	299	316	300	306	310	313	318	319	300	302	287	286	
21	295	311	292	309	314	316	330	366	351	342	323	301	303	322	314	310	323	331	335	321	316	296	281	291	
22	295	297 ^R	313	311	300	295	307	362	374	364	348	313	301	292	294	302	319	328	324	300	292	265	279	276	
23	288	314	311	319	280	288	311	368	339	339	321	301	310	299	301	312	316	319	323	322	352	278	270	277	
24	292	301	319	313	304	277	284	374	357	319	304	305	307	302	298	299	311 ^R	310	330	325	314	303	292	297	
25	294	271	297	328	304	334	320	331	331	327	307	307	297	325	294	308	305 ^{R J R}	332	331	324	321	292	302	291	
26	288	300	306	307	312	331	299	365	354	340	305	287	300	301	310	294	300	323	325	302	318	334	285	286	
27	281	292	271	284	287	298	293	326	335	333	317	299	321	310	301	305	312	319	327	314	314	275	266	282	
28	308	325	298	285	288	294	304	361	352	344	310	297	298	298	291		293 ^{J R}	303	321	325	320	317	323	291	270
29	275	305	290	303	298	272	280	345	344	333	324	308	291	292	297	294	311 ^{J R}	306	316	317	284	305	296	270	
30	279	293	328	330	312	323	301	347	354	348	307	294	287	292	285	298	329 ^{U R}	320 ^{U R}	315 ^{U R}	322	316	318	298	255	
31																									
H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	29	29	29	29	29	29	29	29	29	29	29	30	30	30	29	29	30	30	30	30	30	29	
MED	292	299	298	302	304	309	312	360	353	335	316	300	297	300	296	298	310	319	328	324	310	290	285	285	
U Q	300	305	310	312	307	316	318	366	358	346	324	306	300	304	301	306	316	328	335	337	318	303	292	291	
L Q	286	292	292	288	290	293	301	346	338	330	305	296	291	292	291	294	303	312	323	317	295	275	279	276	

SEP. 2014 M(3000)F2 (0.01)

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SEP. 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 KSWEPT 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										L	L	U	L	L	L	L	L	L	L						
2										L	U	L	L	L	U	L	U	L	L	A					
3										L	L	L	A	L	L	A	U	L	A	L	A				
4										L	L	L	L	U	L	U	L	L	L	A					
5										U	L	L	U	L	U	L	U	L	A	A	A	A			
6										L	A	A	A	A	U	L	L	A	L	L					
7								L	L	L	A	L	L	U	L	L	U	L	L	L					
8									L	L	L	L	U	L	L	A	A	L	L						
9											B	A	A	L	L	L	L	L	L	A					
10									L	L	L	U	L	U	L	U	L	L	L	L					
11									L	L	L	U	L	U	L	U	L	U	L	L	L				
12									L	L	L	U	L	U	L	U	L	L	L	L					
13								L	L	L	A	L	L	U	L	U	L	L	L	L					
14									L	L	L	L	U	L	U	L	L	L	L	L					
15										L	L	U	L	U	L	L	A	L	L						
16							C	C	C	C	C	C	U	L	L	U	L	L	L	L					
17									L	L	U	L	U	L	U	L	L	L	L	A					
18									L	L	L	U	L	U	L	L	L	L	L	L					
19									L	L	H	L	L	U	L	L	L	L	L	L					
20									L	L	U	L	L	L	L	L	A	L	A						
21								L	L	L	L	L	U	L	U	L	U	L	L						
22								L	L	L	L	L	U	L	U	L	L	L	L	L					
23									L	L	L	L	H	L	L	U	L	L	L	L					
24										U	L	U	L	U	L	U	L	L	L	L					
25									L	A	A	A	L	U	L	L	U	L	L						
26									L	L	L	L	L	L	L	L	L	L	L						
27									L	L	L	L	U	L	L	U	L	L	L						
28										L	L	L	B	A	L	L	L	L							
29										L	L	L	L	L	L	L	L	L							
30										L	L	L	U	L	L	L	L	L							
31													4	0	2										
	00	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	7	10	19	18	18	16	9	2							
MED										U	L	U	L	U	L	U	L	L	L						
U Q										392	365	374	364	358	356	348	351	360							
L Q										U	L	U	L	U	L	U	L	L							
										416	376	381	377	369	366	352	363								
										367	358	367	356	343	335	340	339								

IONOSPHERIC DATA STATION Okinawa

SEP. 2014 h'F2 (KM)

135°E MEAN TIME (G.M.T. + 9 H)

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									272	268	284	292	300	290	306	318	296	270	252					
2									240	250	262	322	330	304	296	288	292	272	256					
3									234	282	264	308	342 ^L	332	314	306	340 ^{E A}	272	250					
4									242	246	256	304	300	308	322	314	296	268	236					
5										238 ^L	292	286	296	304	334	304	278	272	246					
6									242	248	268	324 ^A	314	324	314	312	286	264						
7								226	226	244	260 ^L	326 ^L	324	316	330	320	298	280						
8									228	226	232	282	304	336	332	330	294	268						
9											346 ^{E B}	316 ^A		306	310	298	296	272	242					
10									228	232	320	302	306	298	300	322	296	260						
11									252	240	250	300	334	354	334	312	308	274	242					
12									228	260	322 ^L	336	318	344	330	314	290	258						
13								324 ^L	316 ^L	546	312	312	342	300	288	282	270	254						
14									218	260	254	304	300	292	300	302	282	258						
15										258	254	282	308	296	300	294	284	264						
16							C	C	C	C	C	C	310	294	312	306	280	248						
17									234	268	302	300	318	322	290	280	288	270						
18									218	286	296	278	284	288	304	306	302	264						
19									224	244	284	300	322	294	286	298	292	266						
20									230	232	250	302	312	282	270	270	278	260						
21								222	222	238	246	276	284	284	280	280	266							
22								230	220	230	252	250	288	316	318	294	272	238						
23									252	246	250	268 ^L	278	308	280	278	258	252						
24											282	302	284	272	300	286	274	250						
25									254	242	270	288	314	276	296	300	276							
26									224	238	276	308 ^L	298	282	274	294	274	258						
27									246	250	256	288	274	286	294	290	276							
28									234	244	294	288	272	288	304	280								
29									254	254	288	314	288 ^L	308	298	270								
30									220		240 ^L	276	310	316	310	276								
31																								
	00	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	22	27	28	29	29	30	30	30	30	24	7					
MED								228	232	246	262	300	306	299	302	301	282	264	246					
U Q								277	246	260	288	308	318	316	312	296	271	252						
L Q								224	224	238	253	284	288	288	290	290	276	258	242					

SEP. 2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	238	220	216	242	276	262	222	208	218	230	202	A	198	A	A	226	246	218	238	240	216	198	254	284		
2	284	298	292	268	226	220	268	224	210	204	216	202	218	210	212	216	242	254	A	228	212	224	244	276		
3	286	272	282	284	266	242	270	226	A	214	236	A	224	E A	E A	A	A	A	A	224	226	E A	E A	A		
4	306	300	264	262	236	246	272	232	234	226	204	E A	276	A	236	216	244	236	A	A	218	192	212	248	248	
5	234	224	250	248	238	242	246	210	220	200	200	234	222	212	220	A	A	A	A	220	208	256	310	300		
6	286	252	230	264	256	238	238	226	222	A	A	A	E A	E A	E A	A	230	238	236	222	200	218	242	290		
7	300	276	248	228	230	260	262	222	228	200	A	216	E A	E A	A	A	A	A	E A	258	262	232	210	246		
8	278	258	256	250	238	238	234	220	216	210	204	208	196	210	A	A	A	A	258	262	232	210	196	218	224	246
9	266	250	234	254	254	276	266	202	214	228	B	A	A	A	B	216	240	284	244	A	234	222	296	302	292	
10	322	272	258	244	220	212	266	222	216	202	190	202	188	E Y	Y	208	222	224	236	204	224	224	228	248		
11	250	244	230	192	190	240	258	214	234	220	204	212	214	212	212	234	234	226	240	222	208	298	284	280		
12	280	266	252	220	228	252	280	226	216	214	240	E A	276	198	206	222	218	226	246	242	234	198	260	262	244	
13	236	268	248	258	424	388	284	248	236	228	224	E A	248	212	208	206	220	222	220	240	238	238	266	282	278	
14	270	264	242	204	230	236	266	224	212	212	210	212	204	188	210	224	B E Y	234	222	240	218	210	276	308	304	
15	272	250	218	216	212	220	252	218	220	212	208	196	A	216	E A	246	212	248	A	230	222	220	234	244	226	
16	220	254	238	C	C	C	C	C	C	C	C	C	198	194	218	E Y	250	216	246	220	220	220	236	258	254	
17	244	232	218	248	260	246	260	222	212	212	204	198	214	206	204	254	A	226	A	240	234	232	268	272	266	
18	258	256	268	250	240	238	256	210	210	210	192	200	186	182	186	216	212	220	228	220	190	242	284	260		
19	244	238	238	246	258	244	234	214	198	200	198	238	204	208	218	230	258	A	234	240	222	210	206	276	278	
20	270	256	230	220	252	286	240	210	224	210	200	202	206	232	218	A	214	A	242	240	228	218	258	270		
21	266	254	256	244	236	234	234	220	210	204	196	198	210	222	B	198	216	248	240	234	222	216	248	290	268	
22	266	256	236	240	246	270	268	226	212	204	210	206	208	228	B	228	222	226	224	228	228	228	248	290	280	
23	280	240	224	212	292	286	268	220	230	230	A	206	182	210	E Y	220	228	232	234	246	246	208	228	276	268	
24	256	242	220	238	240	294	278	216	214	216	228	194	202	220	Y	192	212	216	236	234	214	206	224	282	246	
25	250	302	258	226	234	212	246	230	228	A	A	A	200	214	Y	216	206	234	242	226	218	224	226	238	280	
26	268	268	240	234	234	238	268	214	212	200	194	186	230	196	H	228	224	226	248	226	212	214	208	238	278	
27	280	262	268	282	254	256	268	232	224	224	216	214	216	B	214	210	202	222	244	230	232	198	218	268	280	
28	260	222	258	278	276	266	278	224	222	218	210	224	B	A	212	222	240	254	232	224	222	212	222	290		
29	312	254	230	248	258	280	298	224	220	220	214	208	H	206	212	220	224	224	236	234	222	212	274	252	266	
30	292	274	246	222	226	232	268	220	222	214	210	204	202	220	230	216	226	242	228	238	208	216	230	276		
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	30	30	29	29	29	29	29	28	27	25	24	26	27	28	26	28	25	25	30	30	30	30	30		
MED	269	256	244	244	240	244	266	222	219	212	204	205	206	211	217	223	227	240	234	222	213	228	262	277		
U Q	284	268	258	256	258	268	269	226	224	220	215	220	216	224	227	234	241	247	240	234	224	260	284	284		
L Q	250	244	230	224	230	237	246	214	212	204	199	201	198	208	211	216	222	225	229	220	208	218	244	260		

SEP. 2014 h'F (KM)

IONOSPHERIC DATA STATION Okinawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	112	110	110	108	106	A	A	A	A	116	108	112	A				
2							B	108	106	108	B	A	108	B	A	110	110	110	110	A				
3							A	A	110	106	108	A	A	A	A	108	108	108	A	A				
4							B	108	A	A	A	A	A	A	B	A	108	A	A	A				
5							B	112	112	108	A	A	A	B	A	A	A	A	A	A				
6							B	120	110	110	A	A	A	A	A	A	110	A	A	B				
7							A	A	A	A	A	A	A	A	A	A	108	110	A	A				
8							A	110	110	A	A	B	B	B	B	A	110	110	110	A	A			
9							A	110	108	B	B	B	B	B	B	A	110	110	112	A				
10							B	A	A	A	A	A	B	A	A	110	106	106	A	A				
11							B	112	110	110	B	A	B	A	A	110	A	A	118	A				
12							A	A	114	108	A	A	A	B	B	A	110	110	A	A				
13							B	A	106	104	A	A	A	A	112	A	A	112	A	A				
14							B	118	112	112	112	A	B	B	B	B	112	112	A	A				
15							B	112	108	110	106	B	A	A	A	A	108	A	A	A				
16							C	C	C	C	C	C	B	B	110	A	110	110	118	A				
17							B	A	A	104	A	B	B	B	B	112	112	112	A	A				
18							B	112	110	110	A	A	A	A	A	112	108	108	A	A				
19							B	110	A	A	A	A	A	A	A	A	A	A	128	A				
20							B	A	A	A	A	A	B	A	A	A	A	A	A	A				
21							B	116	110	106	A	A	110	B	B	A	110	110	A	A				
22							B	112	106	A	110	112	B	A	B	112	108	108	A	A				
23							B	112	108	108	108	B	B	B	116	116	110	110	138	A				
24							B	118	A	116	110	A	B	110	110	106	106	106	A	A				
25							B	108	108	A	A	A	A	A	A	106	108	A	A					
26							B	108	A	110	A	B	B	B	B	B	110	110	A					
27							B	110	110	110	A	B	B	B	B	110	108	108	A					
28							B	114	110	110	110	110	B	B	B	B	110	110	124					
29							B	108	106	106	A	A	A	A	A	B	110	A	154					
30							B	118	A	A	114	A	B	106	106	A	112	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								22	20	19	9	3	2	2	5	12	25	20	9					
MED								112	110	110	110	110	109	108	110	110	110	110	118					
U Q								114	110	110	111	112			114	112	110	110	133					
L Q								110	108	106	108	106			108	109	108	108	112					

SEP. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 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	B	B	B	B	B	92	120	120	110	116	106	106	106	102	102	102	G	94	98	96	96	96	B	
2	B	108	108	B	102	B	100	G	G	G	B	100	G	136	92	98	94	124	110	112	92	B	B	B	
3	104	102	98	102	102	110	104	112	110	110	106	102	108	108	122	130	110	110	110	106	106	104	102	100	
4	96	96	96	94	B	98	102	112	112	110	110	108	108	108	B	108	110	104	104	102	102	100	96	96	
5	96	94	B	B	B	B	B	118	118	116	118	114	116	126	116	112	110	108	102	102	100	100	100	100	
6	98	B	B	B	B	B	130	118	112	112	108	108	104	104	104	104	G	104	102	100	94	100	98	98	
7	98	90	90	90	B	B	104	104	108	104	104	104	104	104	104	148	128	124	110	102	98	102	98	94	
8	94	94	B	B	B	B	130	134	116	122	108	112	B	112	126	126	124	122	116	104	92	B	B	118	
9	B	B	B	102	102	102	114	110	112	B	B	110	106	140	B	102	132	132	112	106	106	104	104	100	
10	104	104	98	B	B	B	120	114	104	106	98	98	B	94	98	98	98	148	114	104	100	100	96	102	
11	86	96	B	B	96	112	B	116	116	110	114	106	B	106	104	112	108	102	128	104	104	100	90	92	
12	92	92	106	100	102	102	100	120	116	112	110	108	106	B	B	100	G	112	112	104	106	98	98	98	
13	98	98	98	B	B	B	132	136	118	110	110	108	104	102	144	102	102	126	98	98	98	100	94	90	
14	86	86	B	92	B	122	150	98	G	116	120	110	B	B	114	B	98	106	102	106	102	100	98	98	
15	98	94	96	94	98	B	B	128	124	114	110	B	110	114	106	106	110	106	122	92	92	92	92	B	
16	B	B	B	C	C	C	C	C	C	C	C	C	C	B	B	112	104	G	120	110	102	102	92	92	94
17	B	B	B	B	B	B	B	110	106	106	106	B	B	B	B	136	122	118	110	106	102	102	102	98	
18	100	96	96	90	B	B	B	B	B	154	116	108	108	108	108	110	110	104	G	94	110	92	94	112	96
19	94	94	B	B	B	B	B	160	108	106	108	104	104	104	104	108	102	102	102	98	94	B	B	96	
20	94	B	B	B	B	118	118	126	108	106	106	104	B	148	138	100	100	116	100	92	92	90	90	B	
21	94	92	98	B	B	B	122	118	G	106	104	110	160	B	B	126	116	116	110	108	108	B	B	B	
22	B	B	B	B	B	B	134	G	G	112	G	G	B	112	B	G	G	134	116	108	106	104	106	98	
23	B	B	B	B	B	B	B	148	140	126	G	B	G	B	G	198	200	G	132	94	94	90	96	B	
24	B	B	92	94	B	B	B	128	114	112	112	108	B	G	G	G	G	110	96	100	98	92	92	104	
25	104	88	86	B	100	96	102	106	108	102	100	98	98	98	96	G	96	96	96	96	94	B	94	94	
26	B	94	94	94	94	102	94	G	108	104	110	B	B	B	B	B	102	102	98	96	B	B	B	94	
27	94	B	B	B	132	128	G	96	102	106	B	B	B	B	B	G	G	144	116	90	B	B	B	B	
28	B	B	B	98	B	94	122	124	122	128	118	114	B	110	B	B	102	164	122	110	110	102	102	98	
29	98	100	96	B	B	B	B	G	G	G	100	114	116	112	112	B	G	112	G	B	100	96	96	96	
30	94	98	B	B	102	B	B	176	110	110	102	108	B	G	G	102	100	100	98	98	94	94	94	94	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	20	19	14	11	10	10	19	24	24	26	25	23	15	20	18	22	22	28	29	29	28	23	24	22	
MED	96	94	96	94	102	102	118	119	112	110	108	108	106	109	108	105	105	112	110	102	99	100	96	98	
U Q	98	98	98	100	102	112	130	131	117	112	111	110	110	113	116	126	116	124	115	106	103	102	99	100	
L Q	94	92	94	92	98	98	102	112	108	106	105	104	104	104	104	102	100	104	101	97	94	94	94	94	

SEP. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1						LH 11	C 1	C 1	C 1	C 1	C 1	C 1	C 1	L 2	L 2	L 1		L 1	L 1	F 3	F 3	F 1			
2		F 1	FF 11		F 2		L 1					L 1		H 1	L 3	L 1	L 1	CL 11	C 5	CL 31	F 2				
3	F 2	F 2	F 2	F 3	FF 52	FF 11	L 4	C 1	C 1	C 1	C 1	L 2	C 1	C 1	CL 11	HL 11	C 3	C 1	C 4	C 9	FF 32	FF 42	F 4	F 2	
4	F 5	F 4	F 1	F 1		F 2	L 1	C 1	C 2	C 1	C 1	C 2	C 1	C 1		C 2	C 1	C 3	L 3	L 4	F 3	F 2	F 4	F 3	
5	F 3	F 1						C 1	C 1	C 1	C 1	C 2	C 1	C 1	C 1	C 2	C 2	C 2	L 8	LQ 31	F 4	F 4	FQ 41	F 2	
6	F 2						H 1	C 1	C 1	C 1	C 3	C 3	L 2	L 1	L 1	L 2		L 1	L 1	L 2	F 1	F 1	F 2	F 1	
7	F 1	F 1	F 1	F 1			C 1	C 1	C 1	C 1	L 2	L 1	L 1	L 1	L 1	HL 11	C 2	C 2	C 2	L 6	F 5	F 4	F 2	F 2	
8	F 2	F 2					H 1	H 1	C 1	C 1	C 1	C 1		C 1	CL 12	C 1	C 1	C 1	C 1	L 4	F 1			F 1	
9				FQ 41	F 5	F 3	C 2	C 2	C 2			C 1	C 1	H 1		L 1	H 1	H 1	C 1	C 7	FQ 21	F 4	FF 23	FF 23	
10	FF 21	F 2	F 1				C 1	C 1	C 2	C 1	L 1	L 1		L 1	L 1	L 1	L 1	H 1	CL 22	CL 22	FQ 31	F 1	F 1	F 1	
11	F 1	F 2			F 1	F 1		C 1	C 1	C 1	C 1	C 1		C 1	L 1	C 1	L 2	L 1	C 2	L 2	F 5	F 4	F 4	F 2	
12	F 2	F 1	FF 21	F 3	F 1	F 1	L 1	C 1	C 1	C 1	C 1	C 1	C 1			L 1		C 3	C 3	L 1	F 1	F 3	F 2	F 2	
13	F 2	F 1	F 1				H 1	H 1	C 1	C 1	C 1	L 1	L 1	L 1	H 1	L 1	L 1	CL 11	L 2	L 6	F 5	F 7	F 3	F 3	
14	F 2	F 2		F 1		F 1	H 1	L 1		C 1	C 1	CL 11			C 1		L 1	C 1	L 3	L 1	F 3	F 4	F 3	FF 23	
15	F 3	FQ 31	F 4	F 2	F 1			C 1	C 1	CL 11	C 1		C 1	CL 11	C 1	CL 21	C 1	C 11	CL 11	L 1	F 1	F 3	F 2		
16															C 1	L 1		C 1	C 3	LQ 21	FQ 21	F 4	F 3	F 1	
17								C 1	C 1	C 1	C 1					H 1	C 1	C 1	C 3	L 6	F 4	F 4	F 5	F 3	
18	F 1	F 1	F 1	F 1			HC 11	C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 1	L 1		L 1	L 1	L 2	F 1	FF 11	F 1		
19	F 2	F 1					HC 11	C 1	C 1	C 1	L 1	L 1	L 1	L 1	L 1	L 2	L 2	L 2	L 1	L 4	F 2			F 1	
20	F 1				F 1	C 1	CL 11	C 2	C 1	L 1	L 1	L 1		HL 11	HL 11	L 2	L 2	CL 22	L 2	L 5	F 2	F 2	F 1		
21	F 1	F 1	F 1				C 1	C 1		CL 11	L 1	C 1	HL 11			C 1	C 1	CL 11	L 1	C 1	F 1				
22							H 1			C 1				C 1				H 1	C 5	C 1	F 2	F 2	F 1	F 1	
23							H 1	H 1	C 1							H 1	H 1		H 2	L 2	F 4	F 2	F 2		
24			F 1	F 1			C 1	C 1	CL 11	C 1	C 1							CL 11	L 1	FF 23	F 2	F 2	F 2	FF 22	
25	FF 12	F 1	F 1		F 1	F 1	L 1	C 2	C 1	L 2	L 3	L 3	L 1	L 1	L 1		L 1	L 5	L 3	FF 31	F 2		F 2	F 3	
26		F 2	F 1	F 2	F 1	FF 11	L 1		L 1	L 1	C 1					L 1	L 1	L 1	L 1	F 1				F 1	
27	F 1				F 1		C 1		L 1	L 1	L 1							H 1	C 3	F 1					
28				F 1		FF 11	C 2	C 2	C 1	C 1	C 1	C 1		C 1			L 1	H 1	C 2	F 3	FF 31	F 2	FQ 11	F 2	
29	F 2	F 1	F 2								L 1	CL 11	C 1	C 1	C 1			C 1			F 1	F 6	F 4	F 1	
30	F 5	F 1			F 1		H 1	C 1	C 1	L 1	L 1					L 1	L 1	L 2	LQ 11	FQ 21	FQ 31	F 3	F 1	F 2	
31																									
	00	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																									

f - PLOTS OF IONOSPHERIC DATA

KEY OF f - PLOT	
	SPREAD
◊	f _o F ₂ , f _o F ₁ , f _o E
×	f _x F ₂
*	DOUBTFUL f _o F ₂ , f _o F ₁ , f _o E
⊗	f _b E _s
└	ESTIMATED f _o F ₁
†, ‡	f _{min}
^	GREATER THAN
∨	LESS THAN

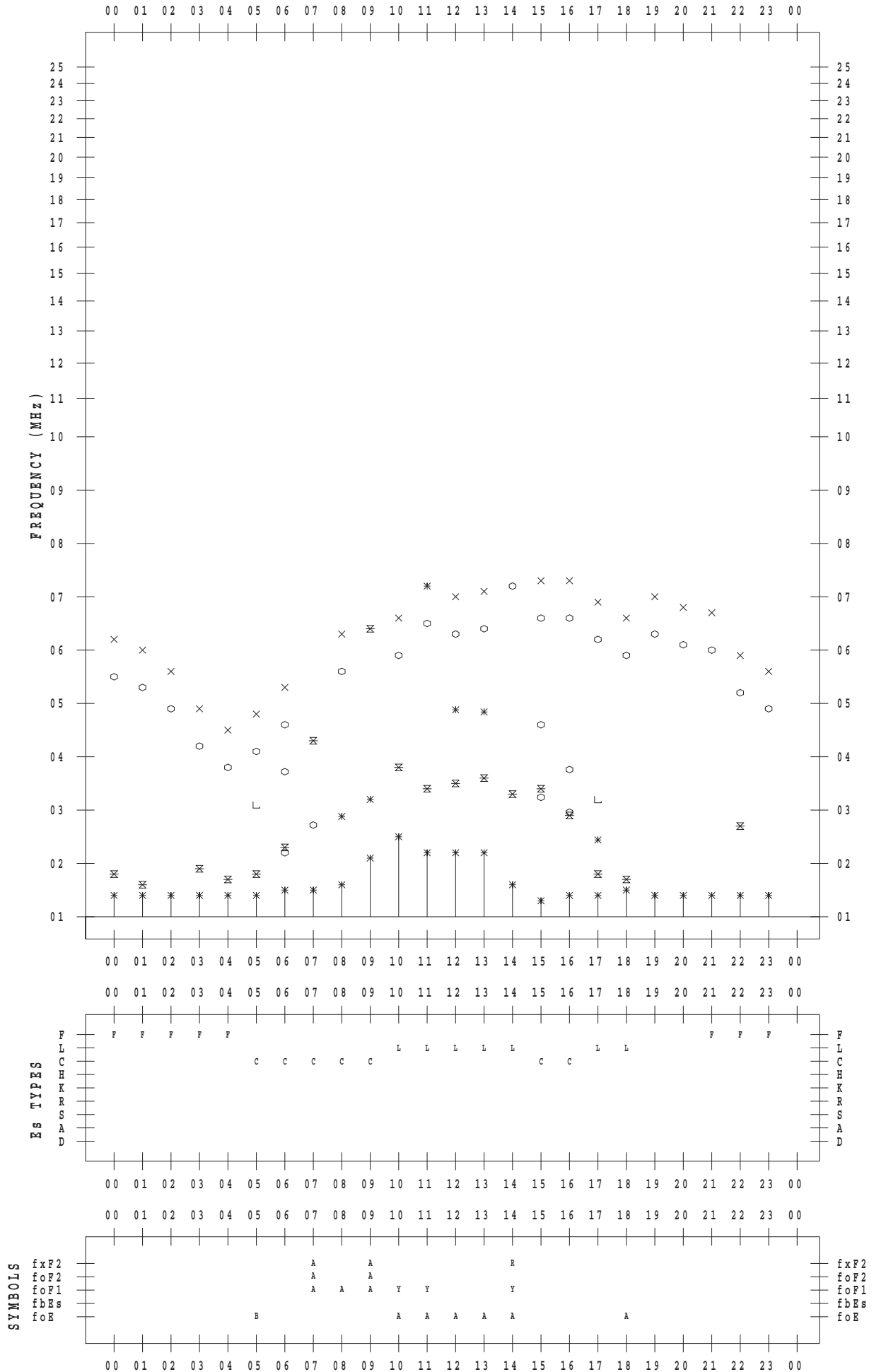
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 1

135 ° E MEAN TIME



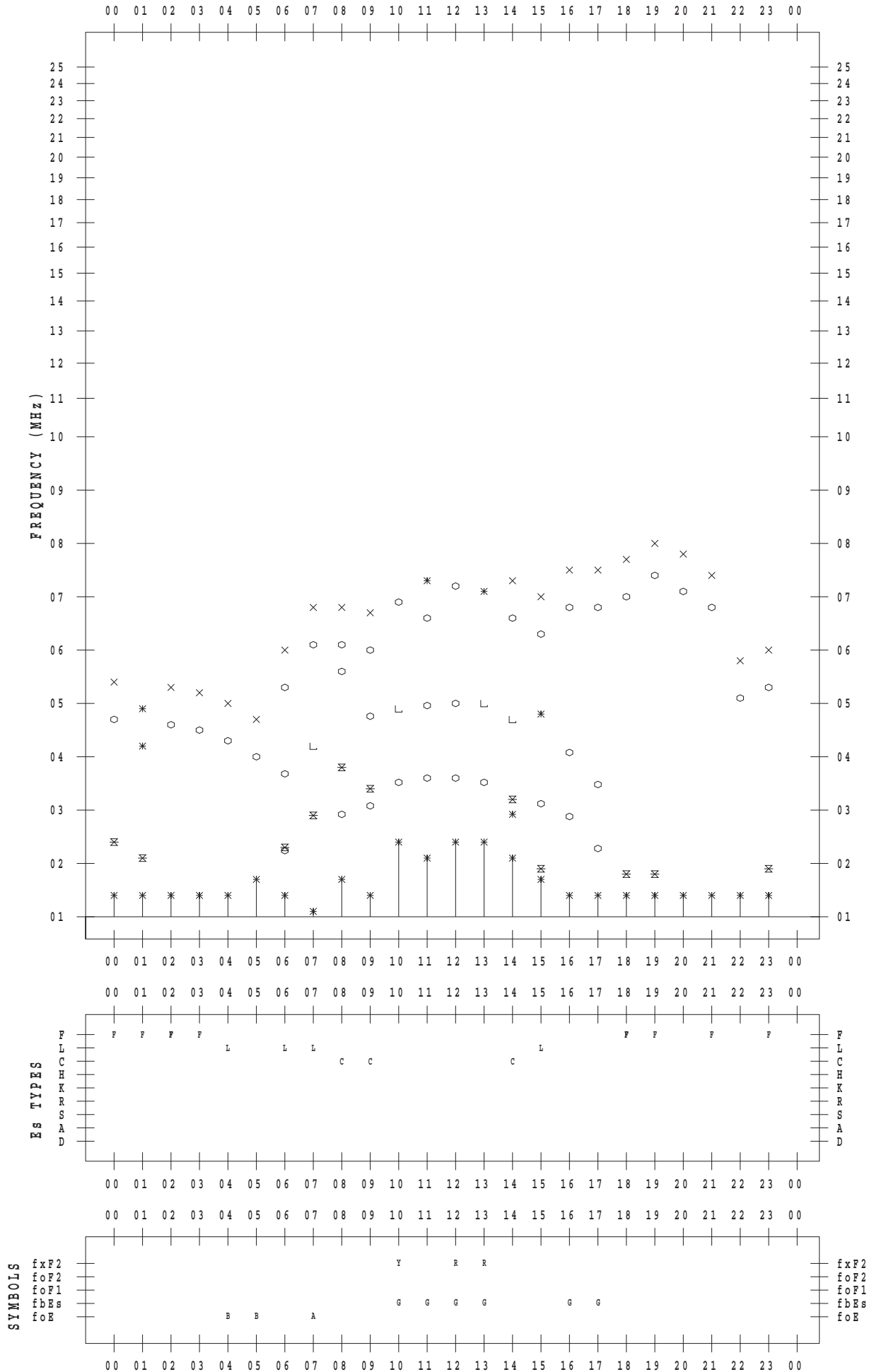
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 2

135 ° E MEAN TIME



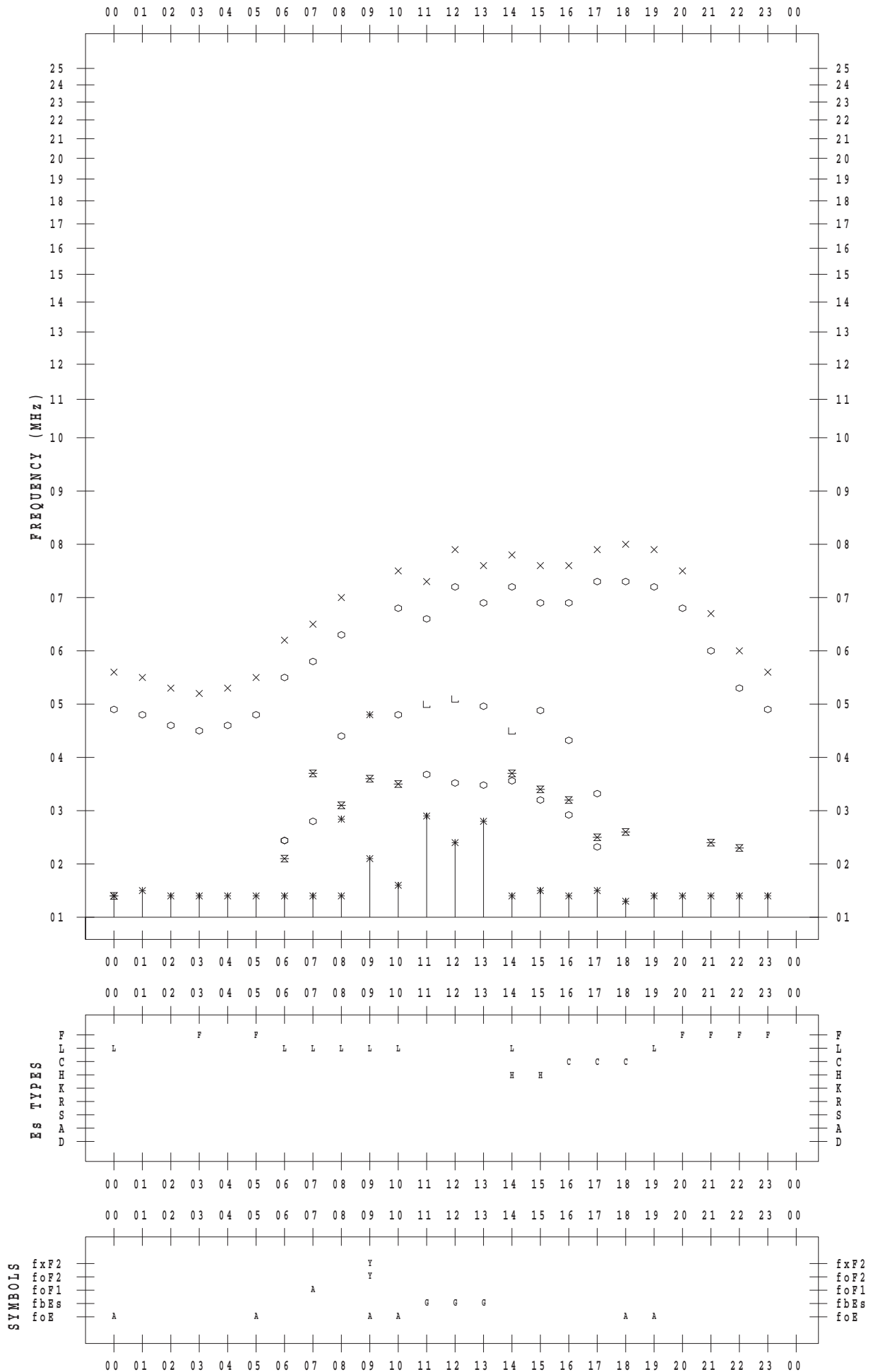
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 3

135 ° E MEAN TIME



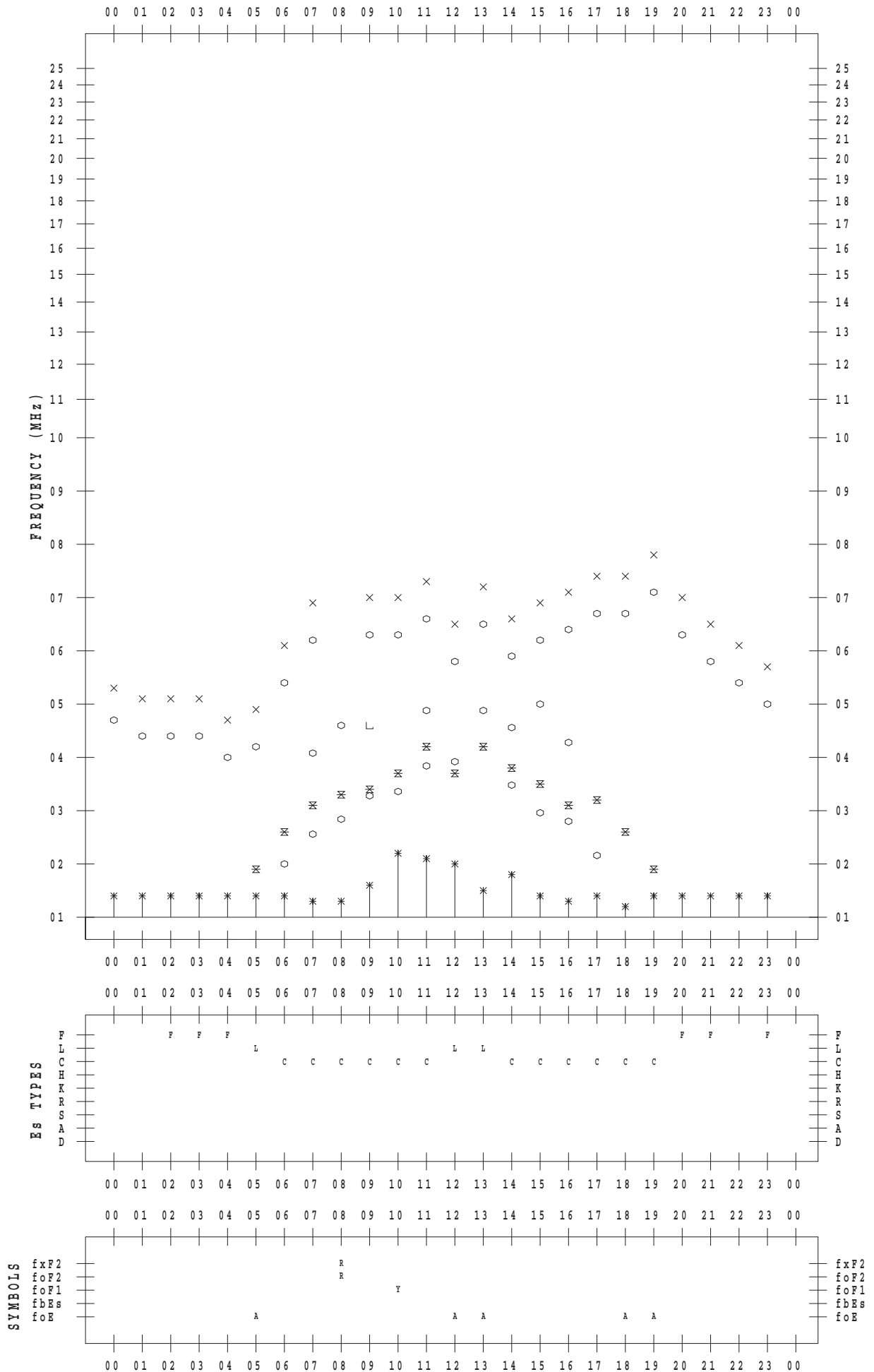
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 4

135 ° E MEAN TIME



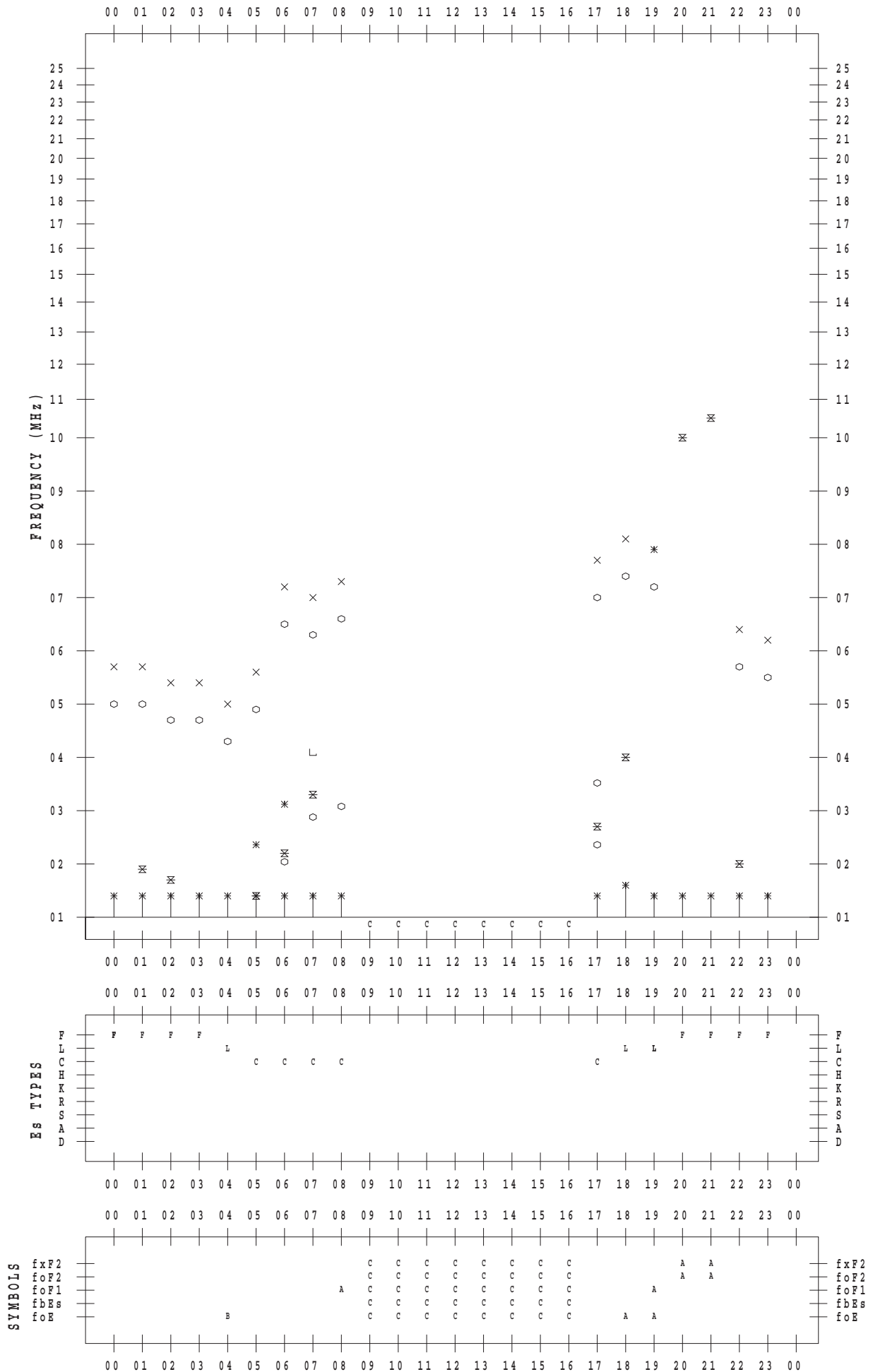
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 5

135 ° E MEAN TIME



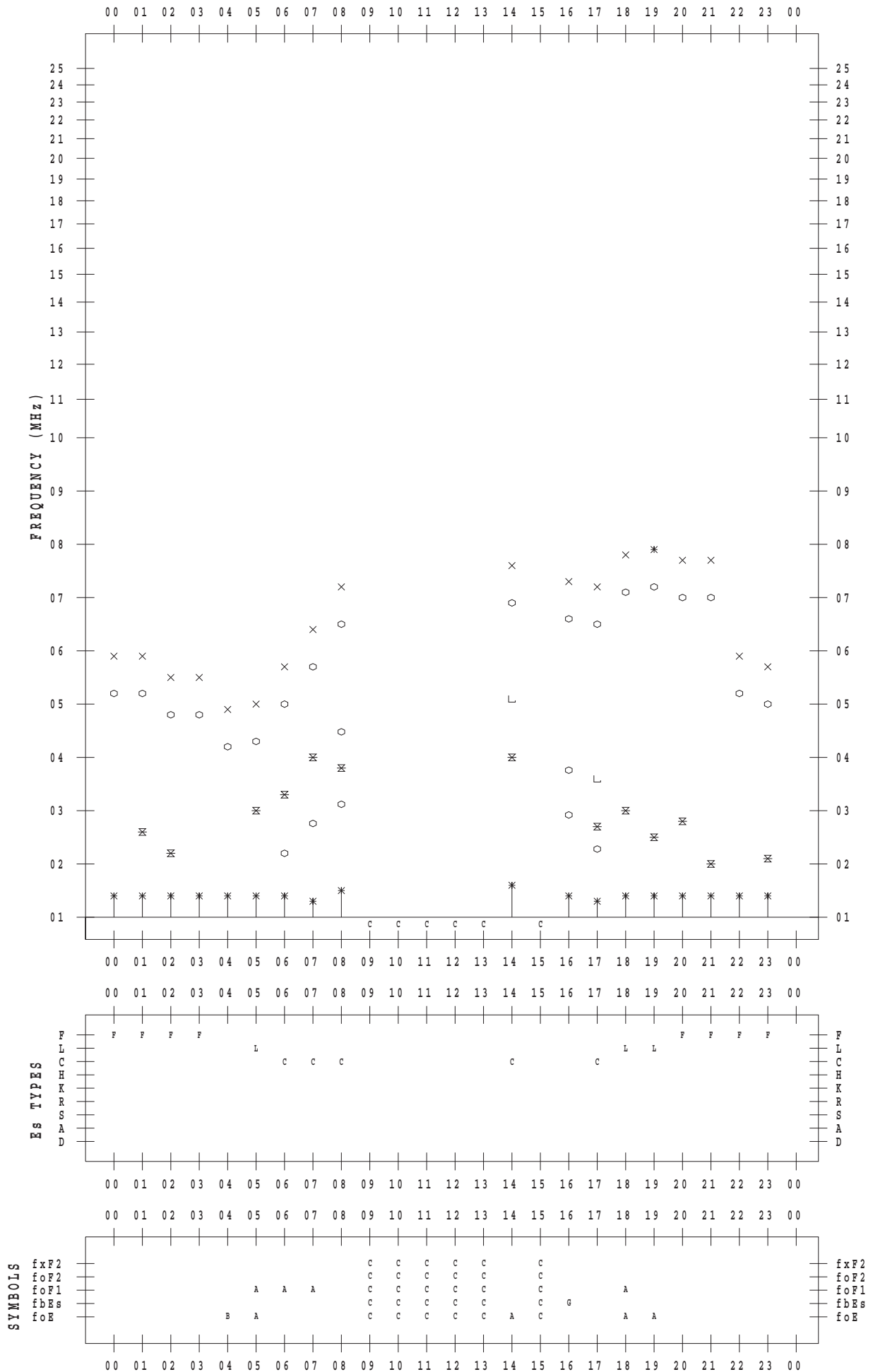
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 6

135 ° E MEAN TIME



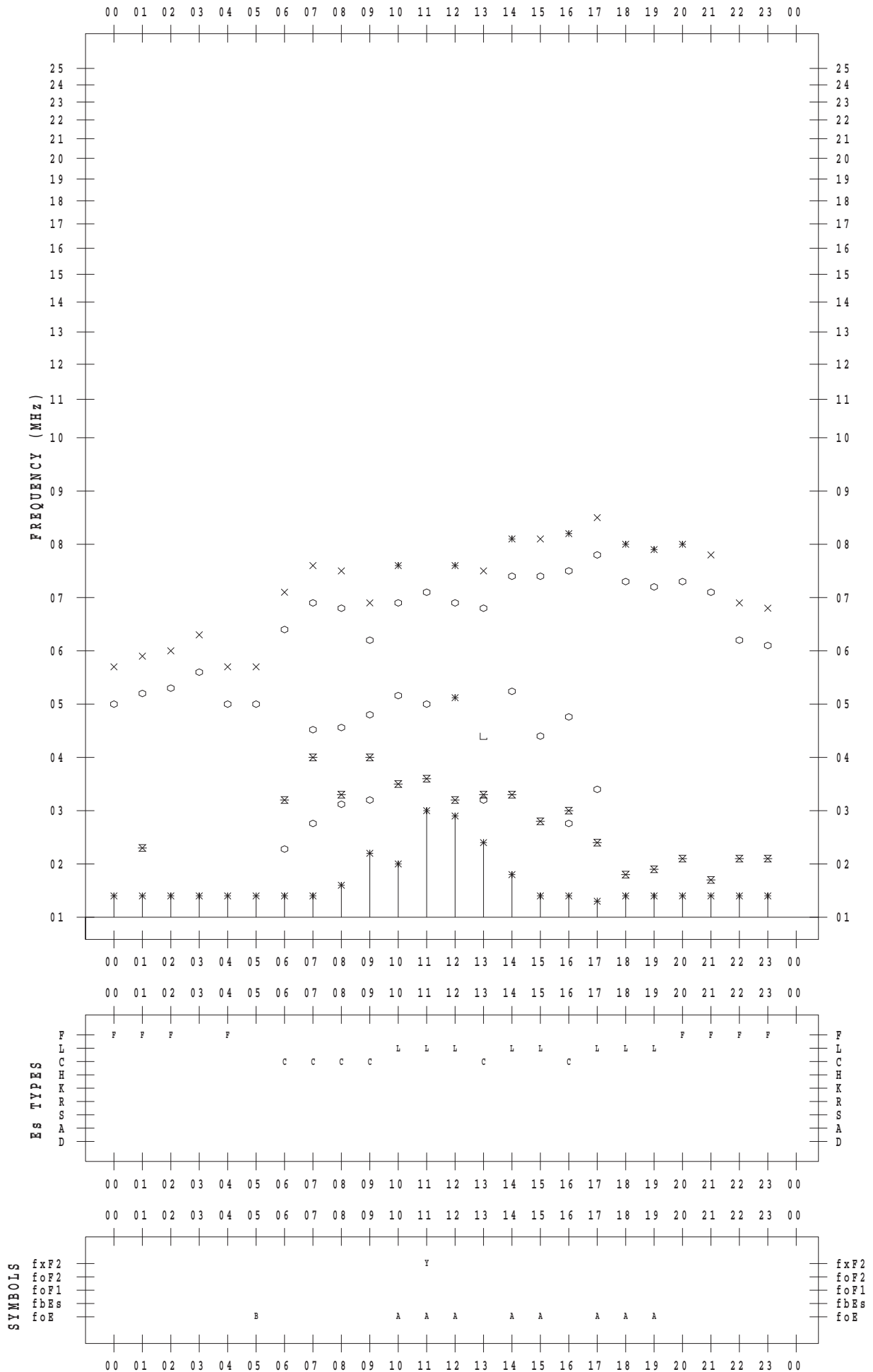
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 7

135 ° E MEAN TIME



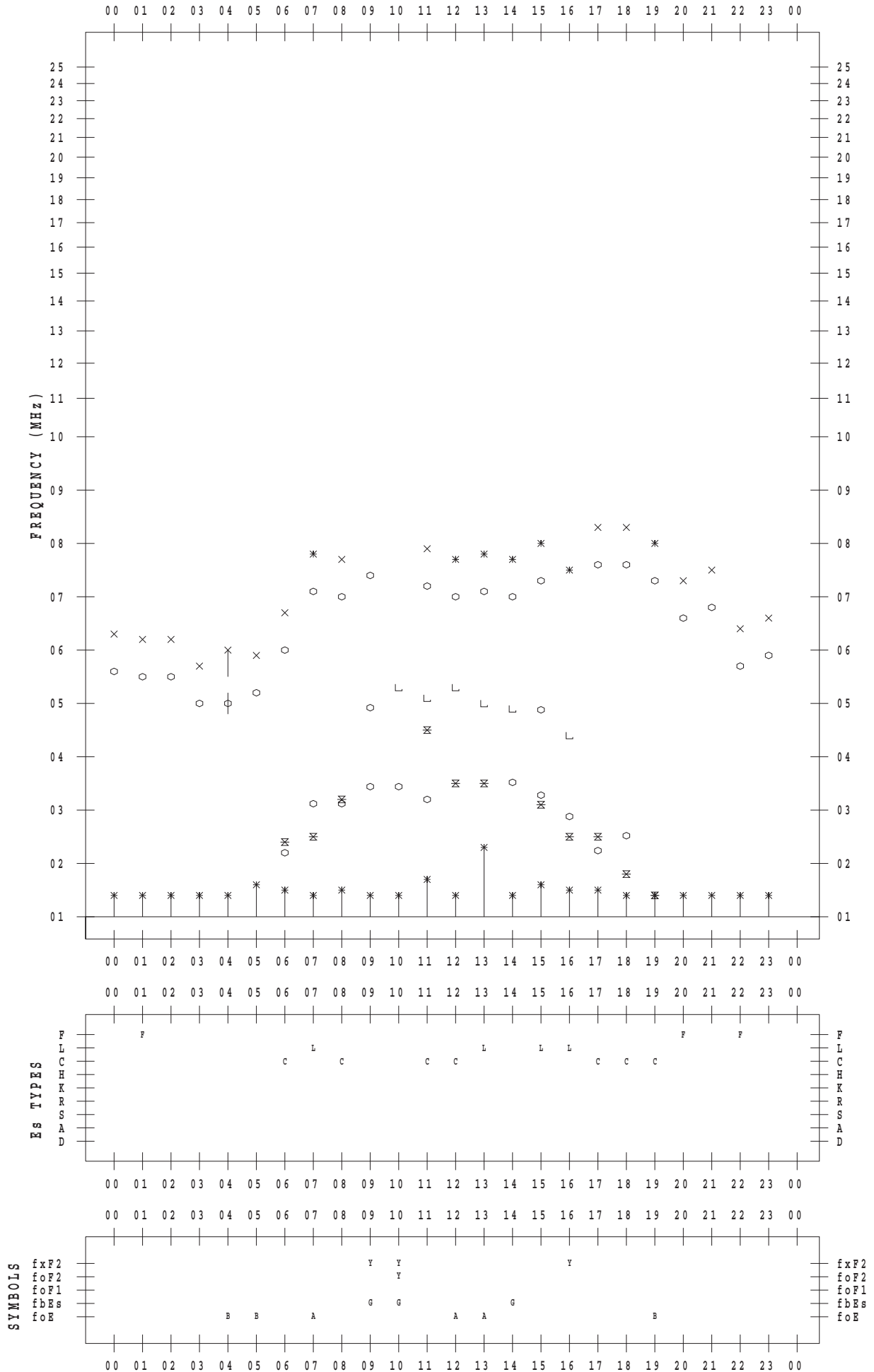
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 8

135 ° E MEAN TIME



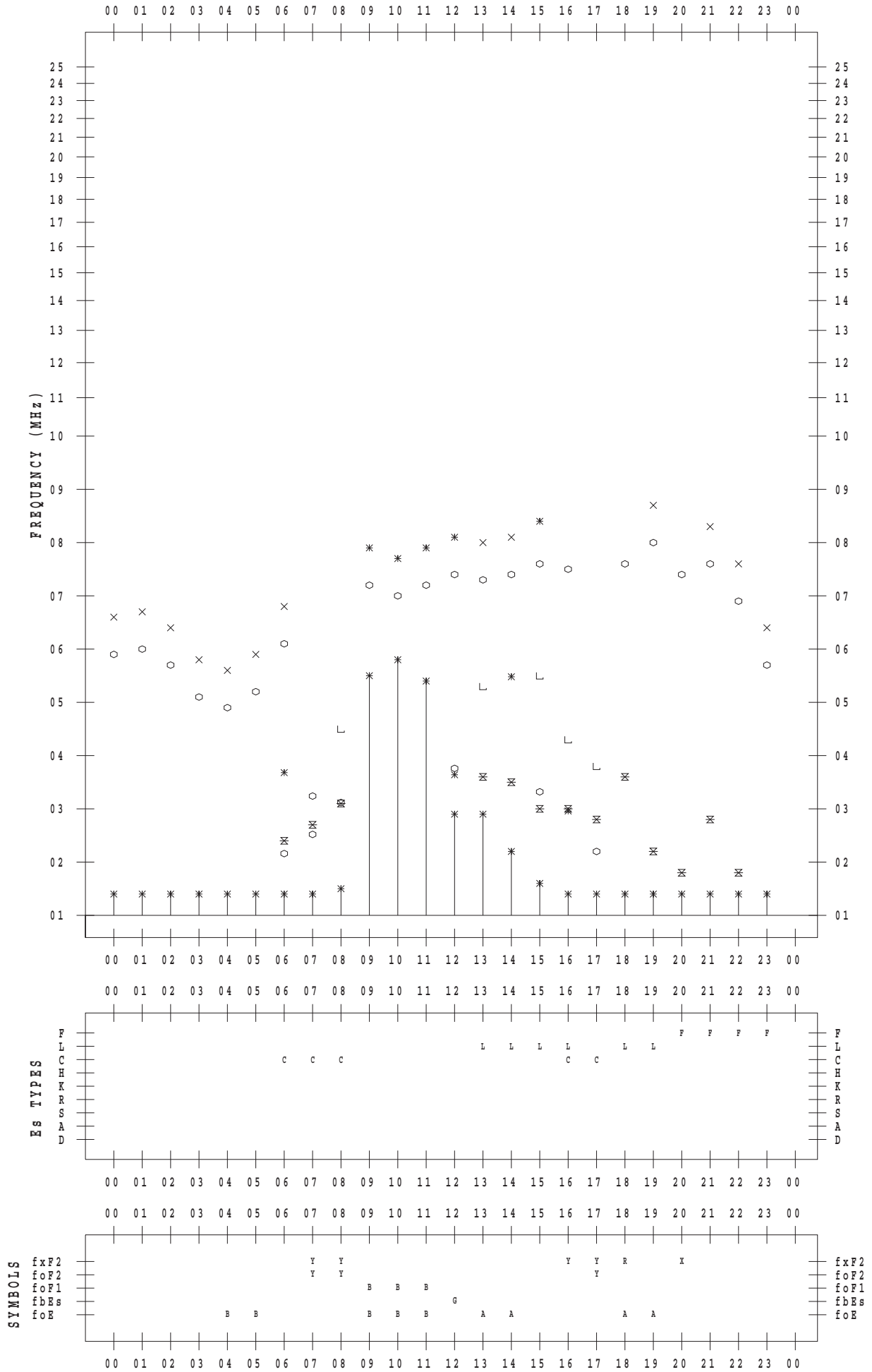
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 9

135 ° E MEAN TIME



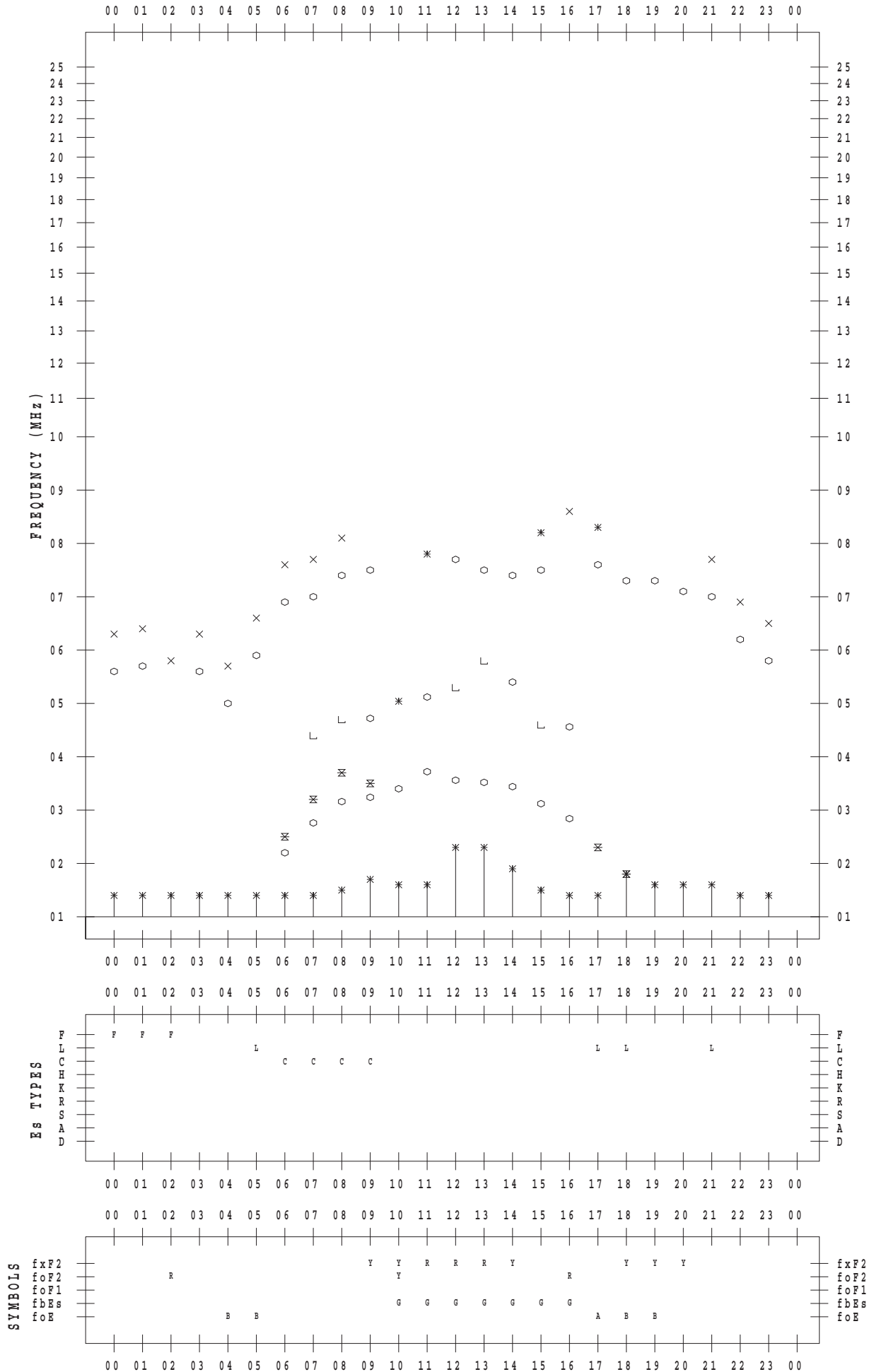
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 10

135 ° E MEAN TIME



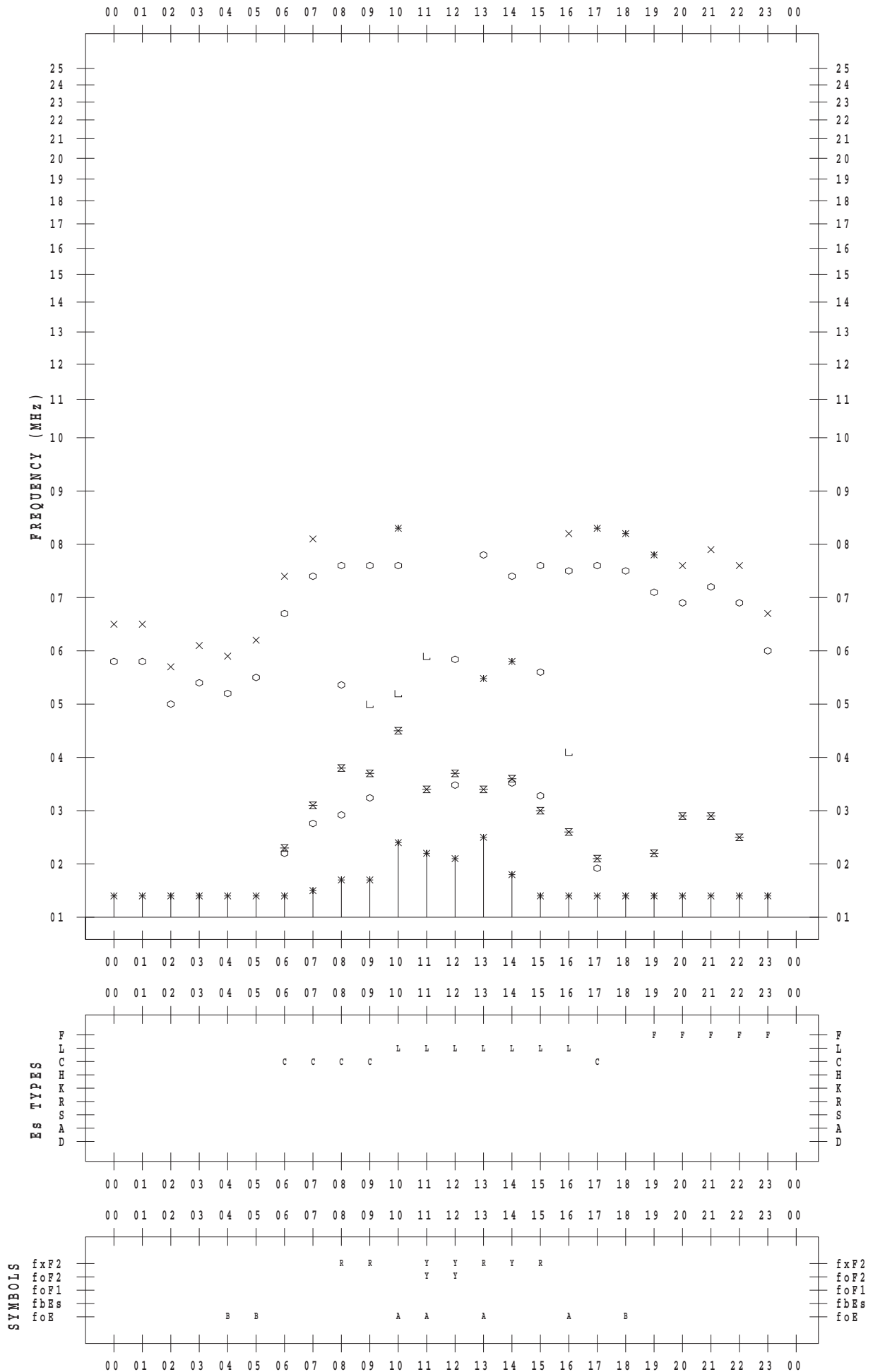
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 11

135 ° E MEAN TIME



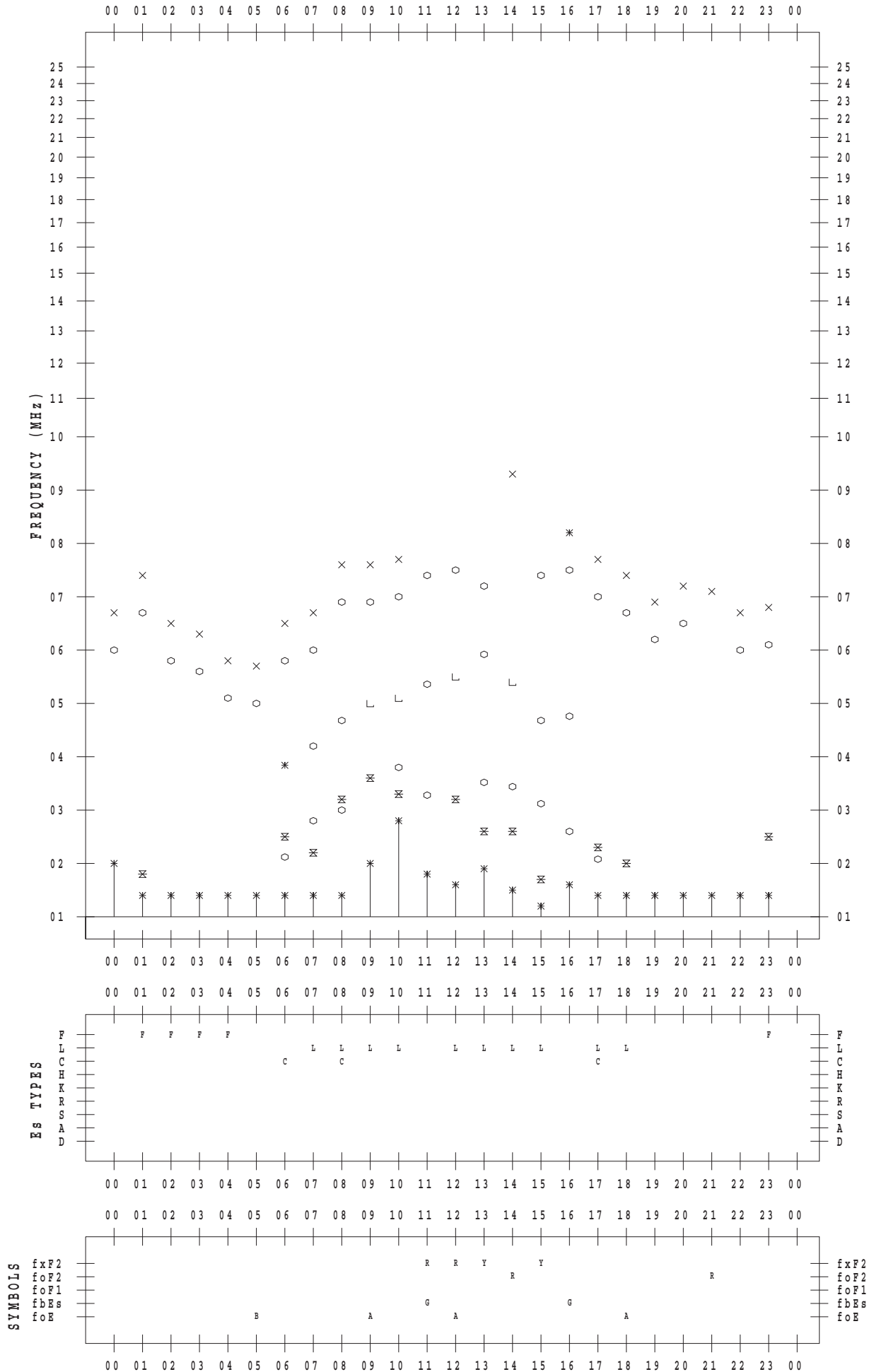
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 12

135 ° E MEAN TIME



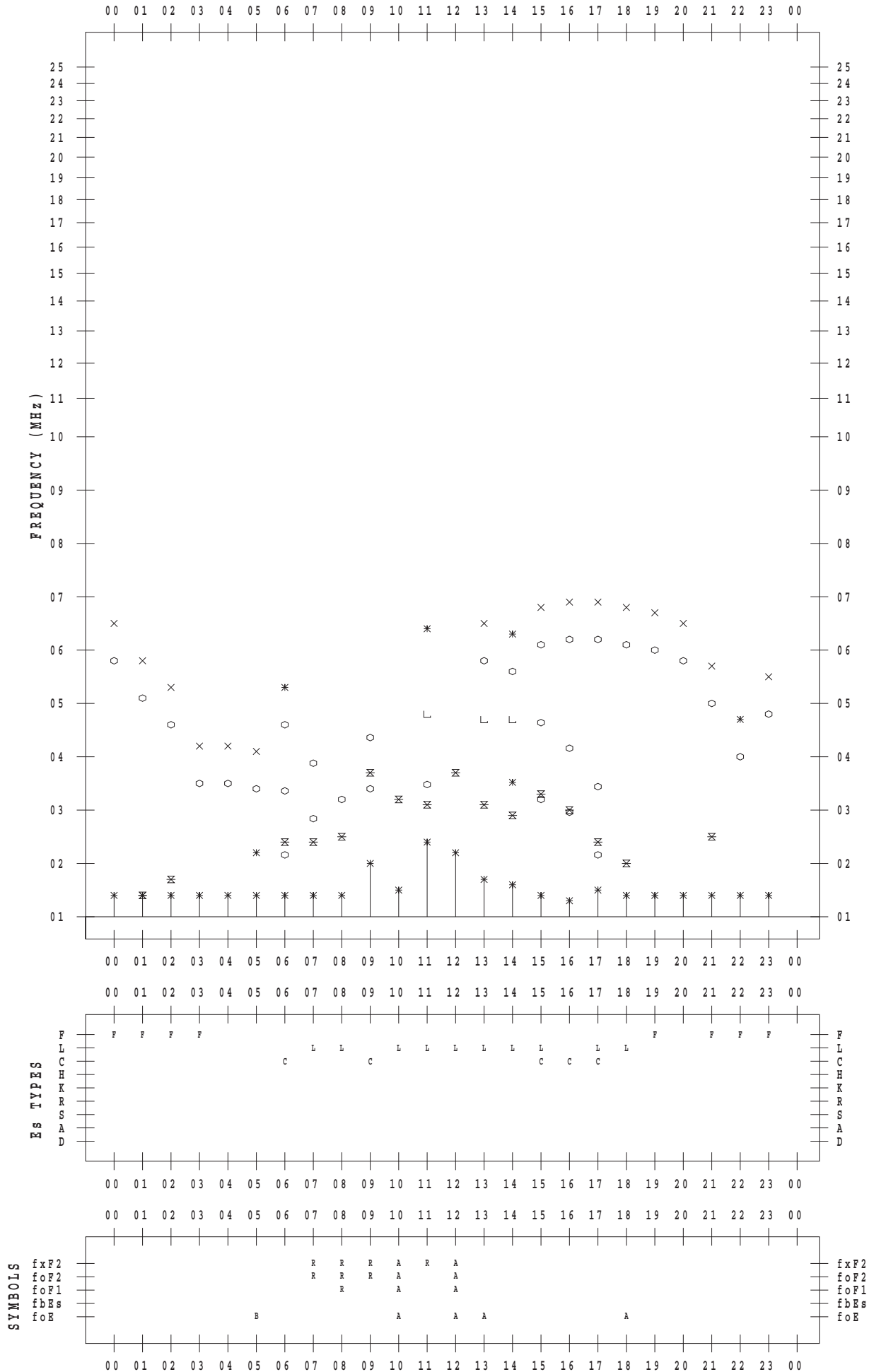
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 13

135 ° E MEAN TIME



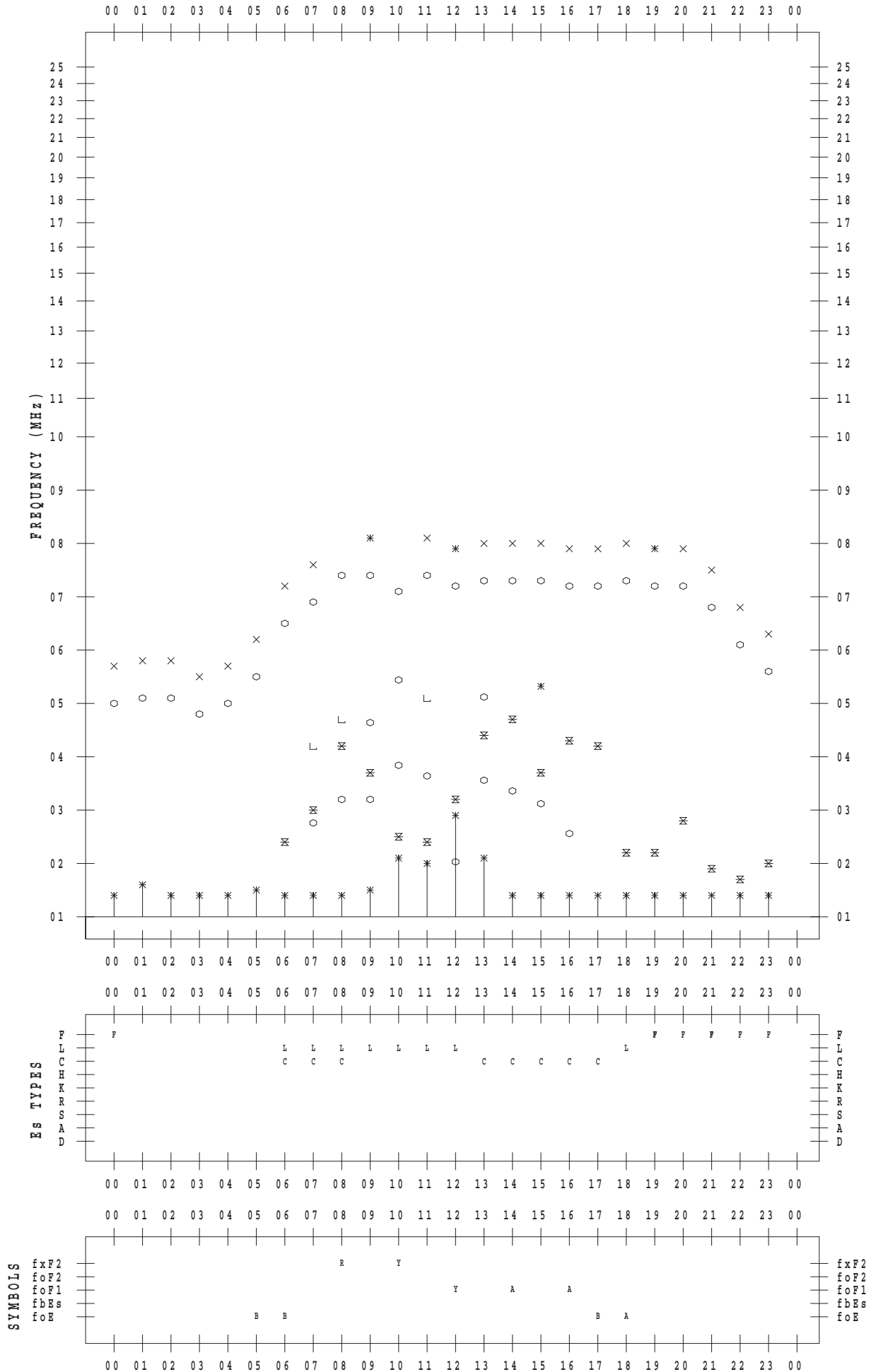
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 14

135 ° E MEAN TIME



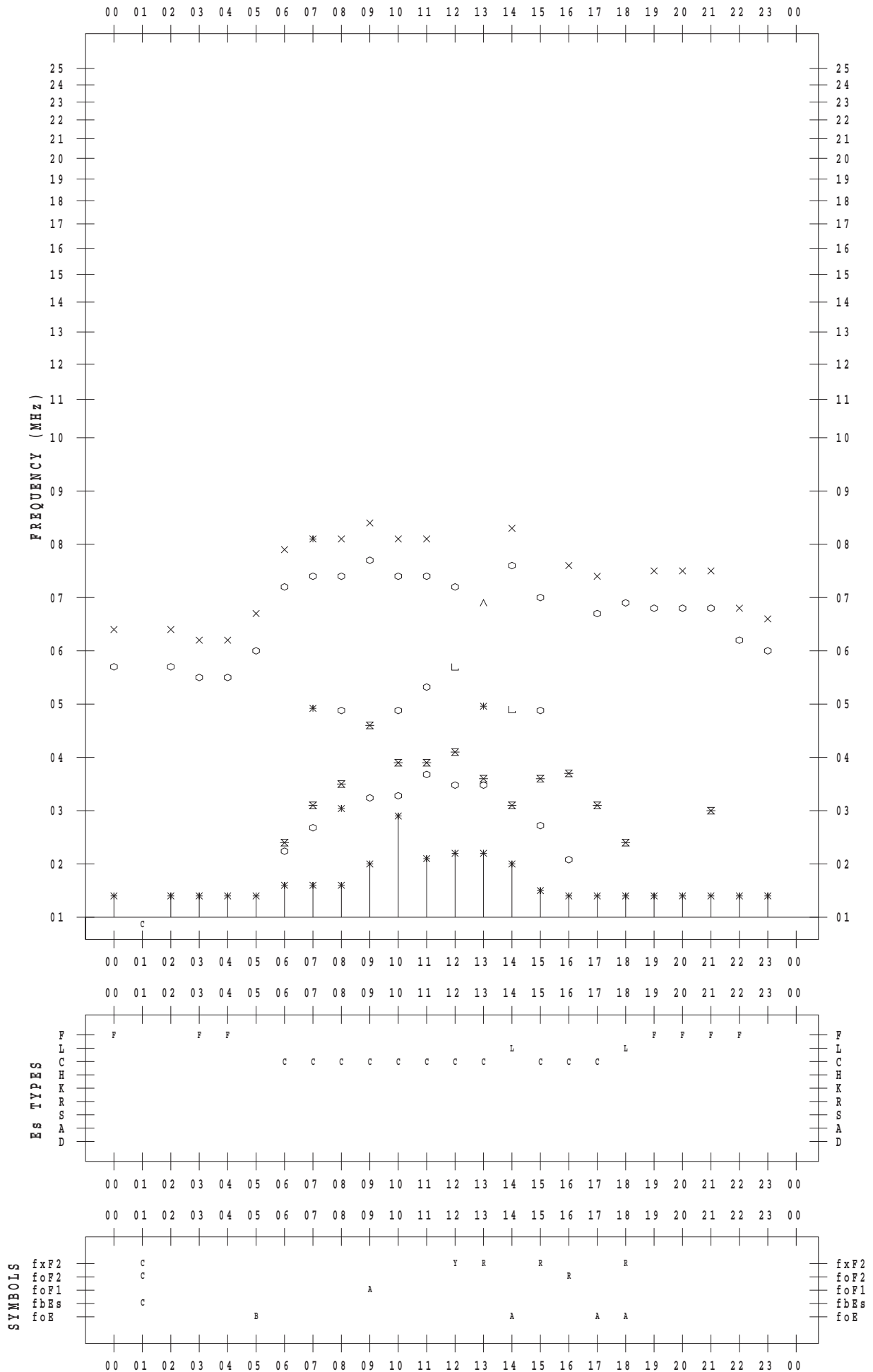
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 15

135 ° E MEAN TIME



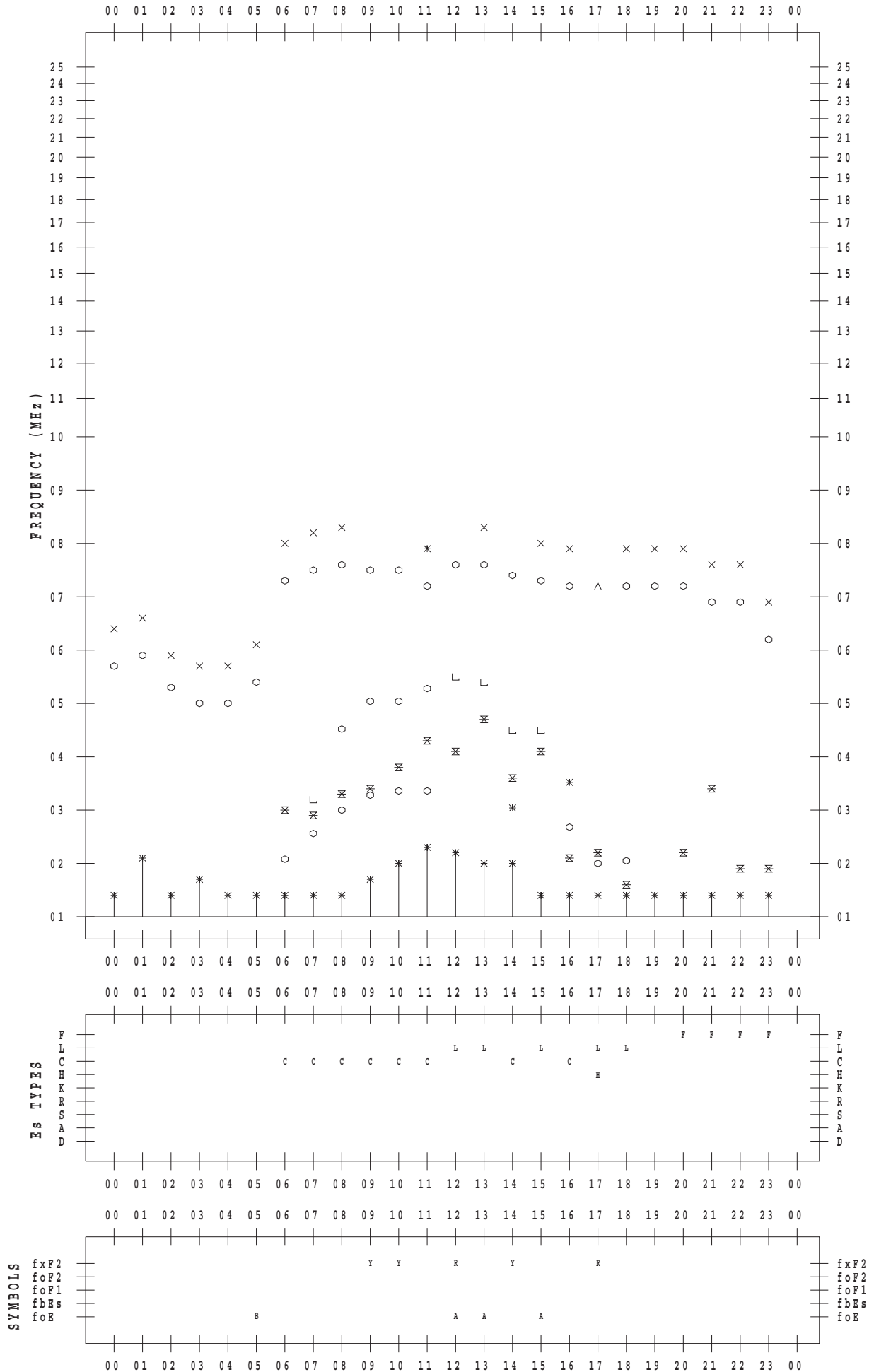
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 16

135 ° E MEAN TIME



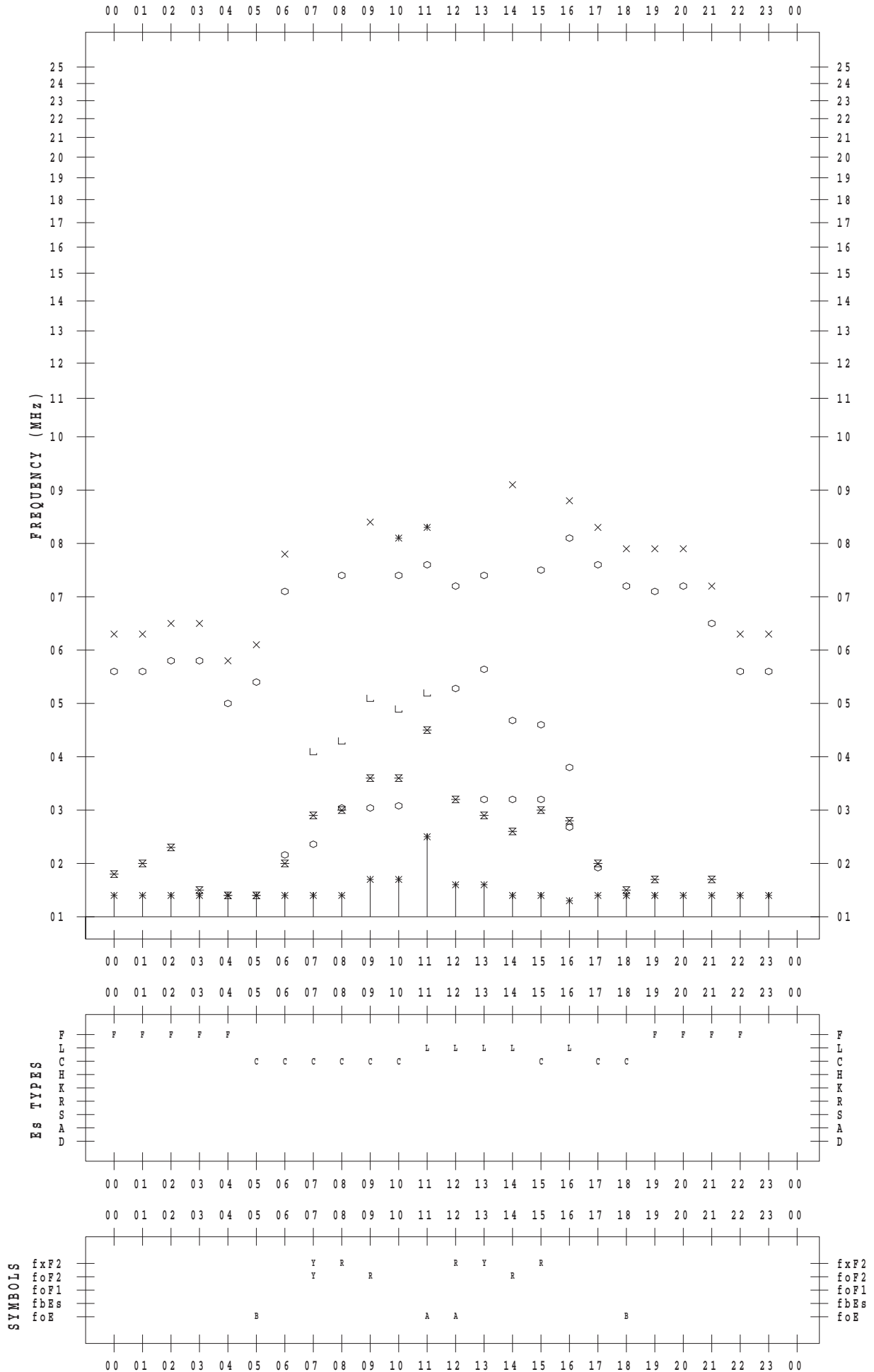
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 17

135 ° E MEAN TIME



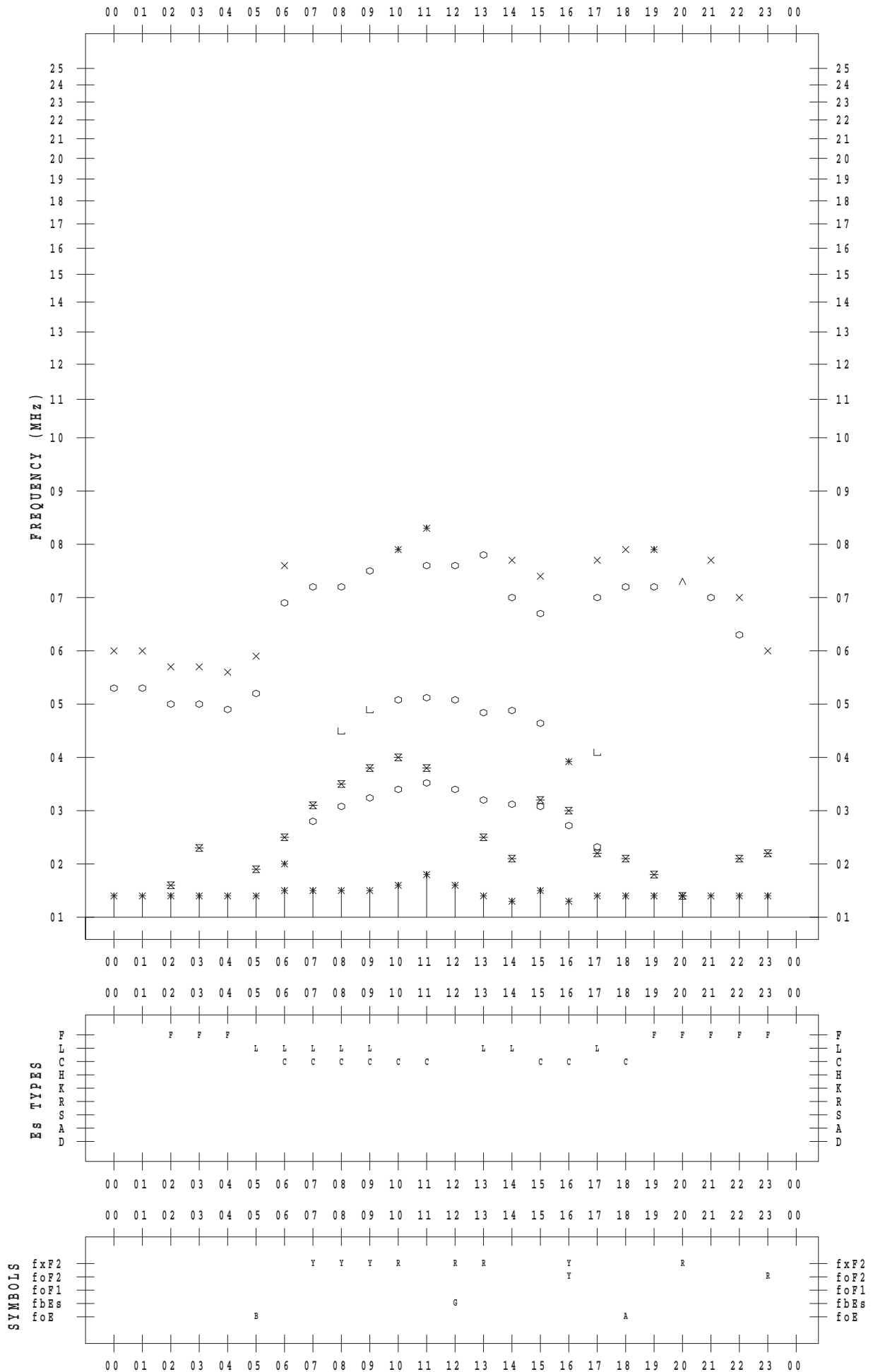
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 18

135 ° E MEAN TIME



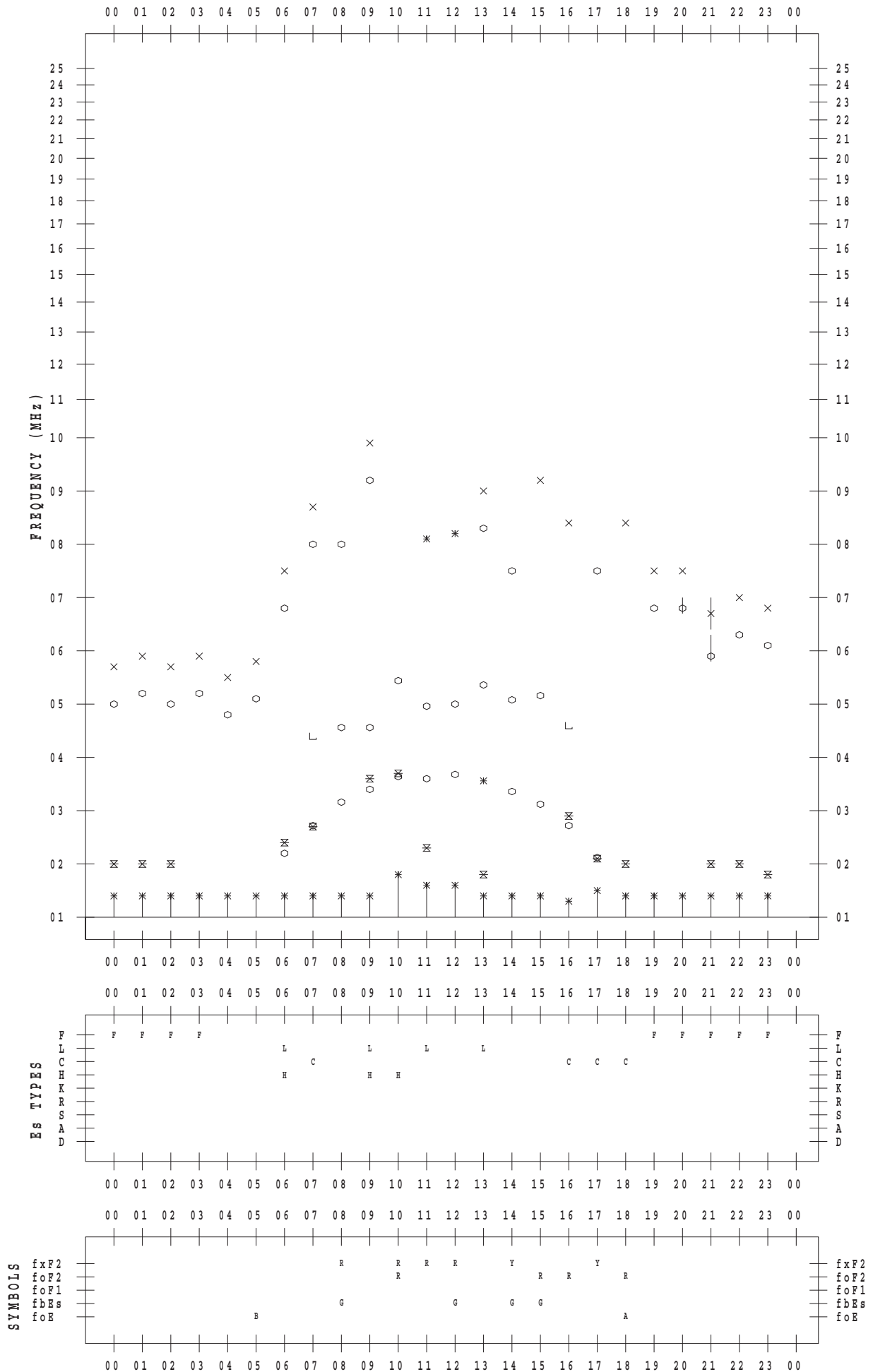
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 19

135 ° E MEAN TIME



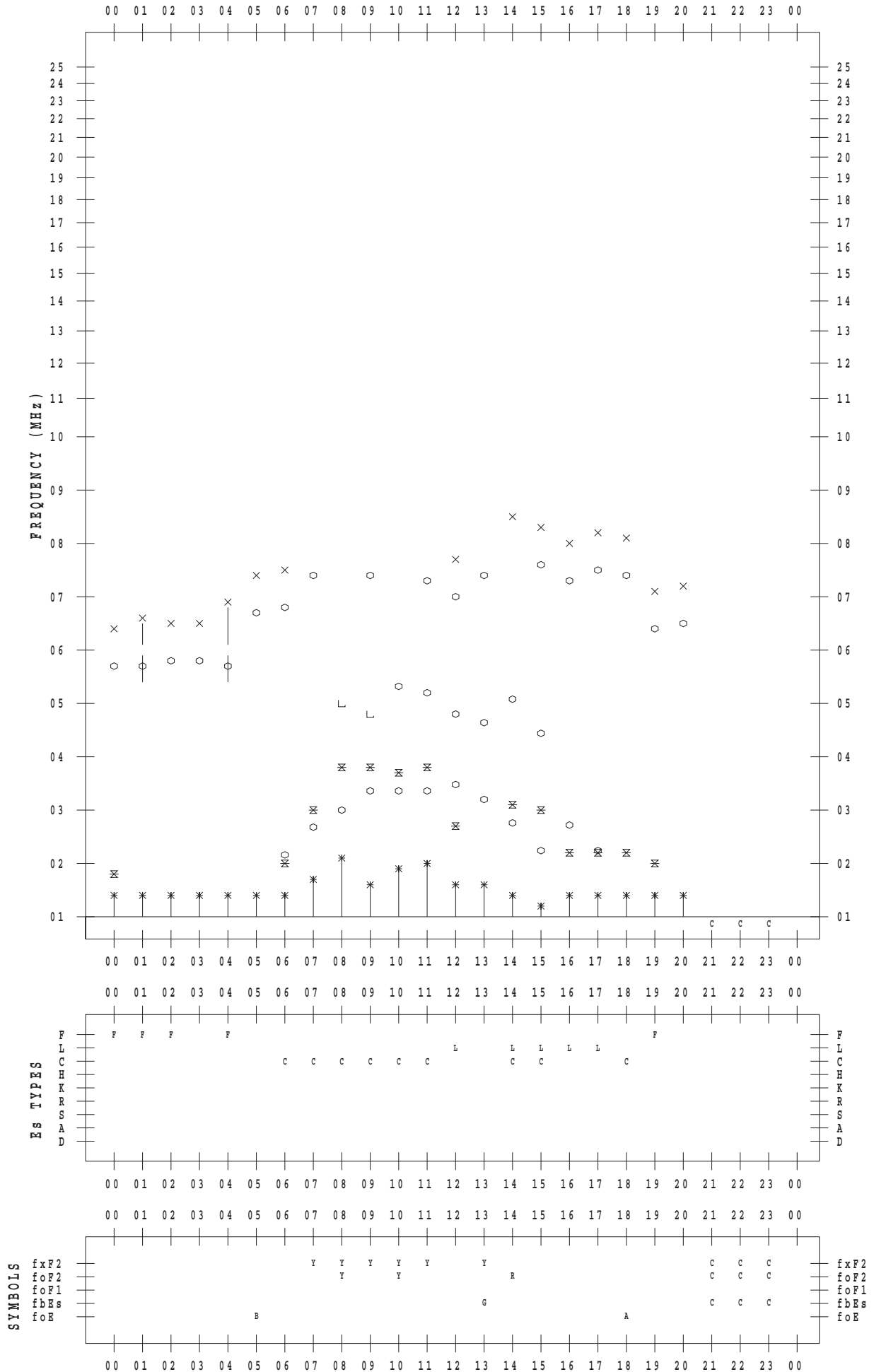
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 20

135 ° E MEAN TIME



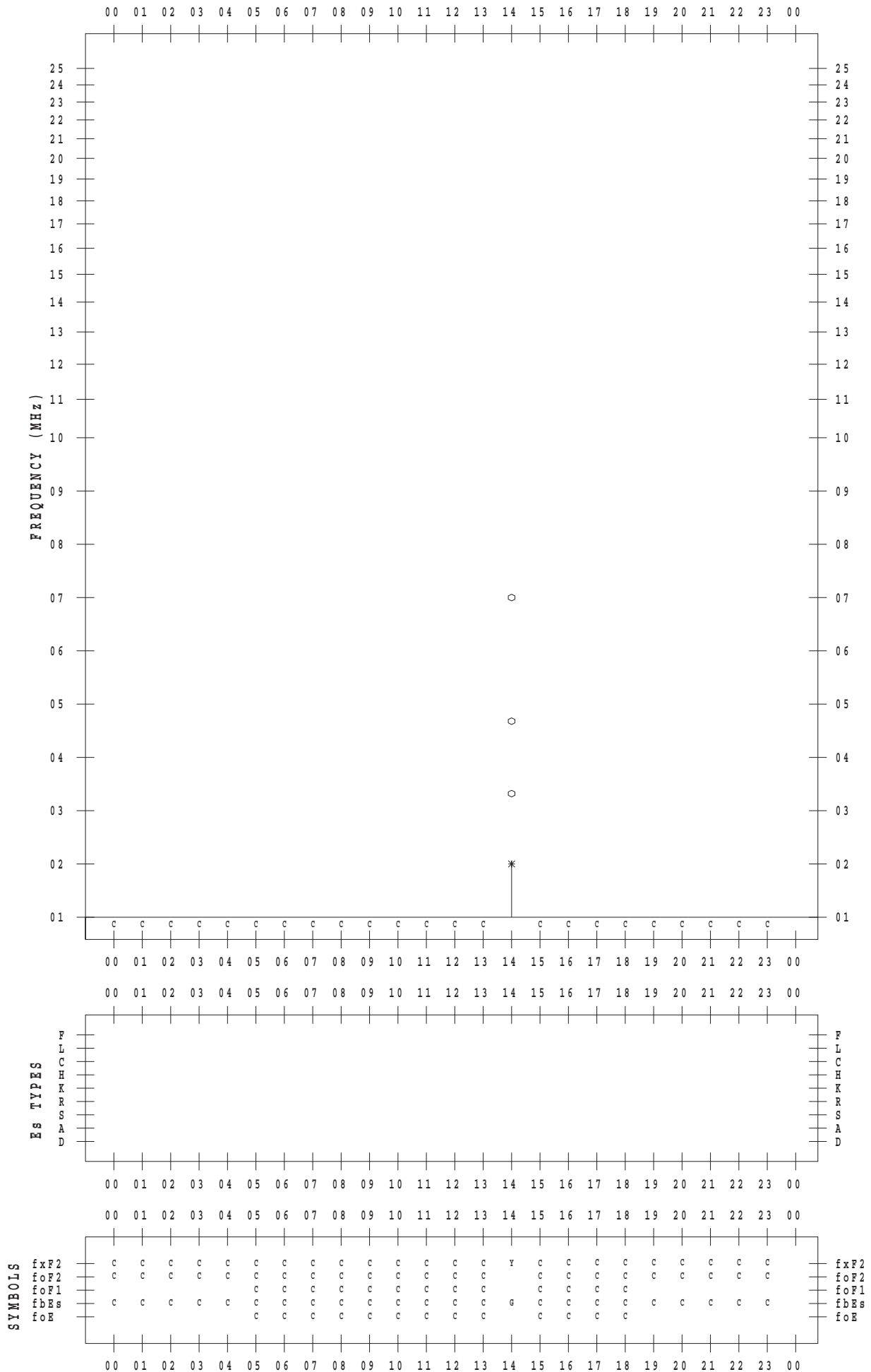
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 21

135 ° E MEAN TIME



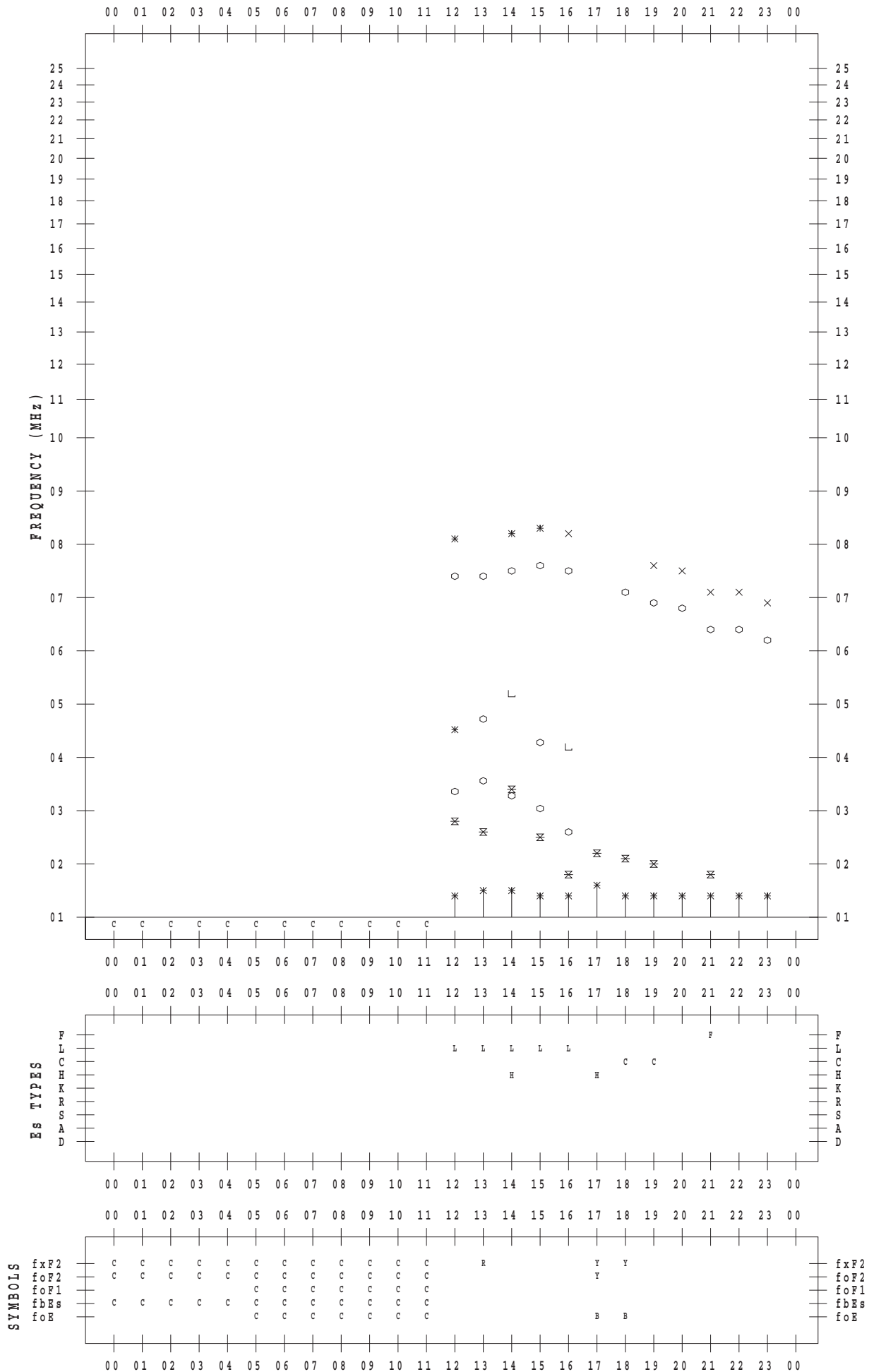
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 22

135 ° E MEAN TIME



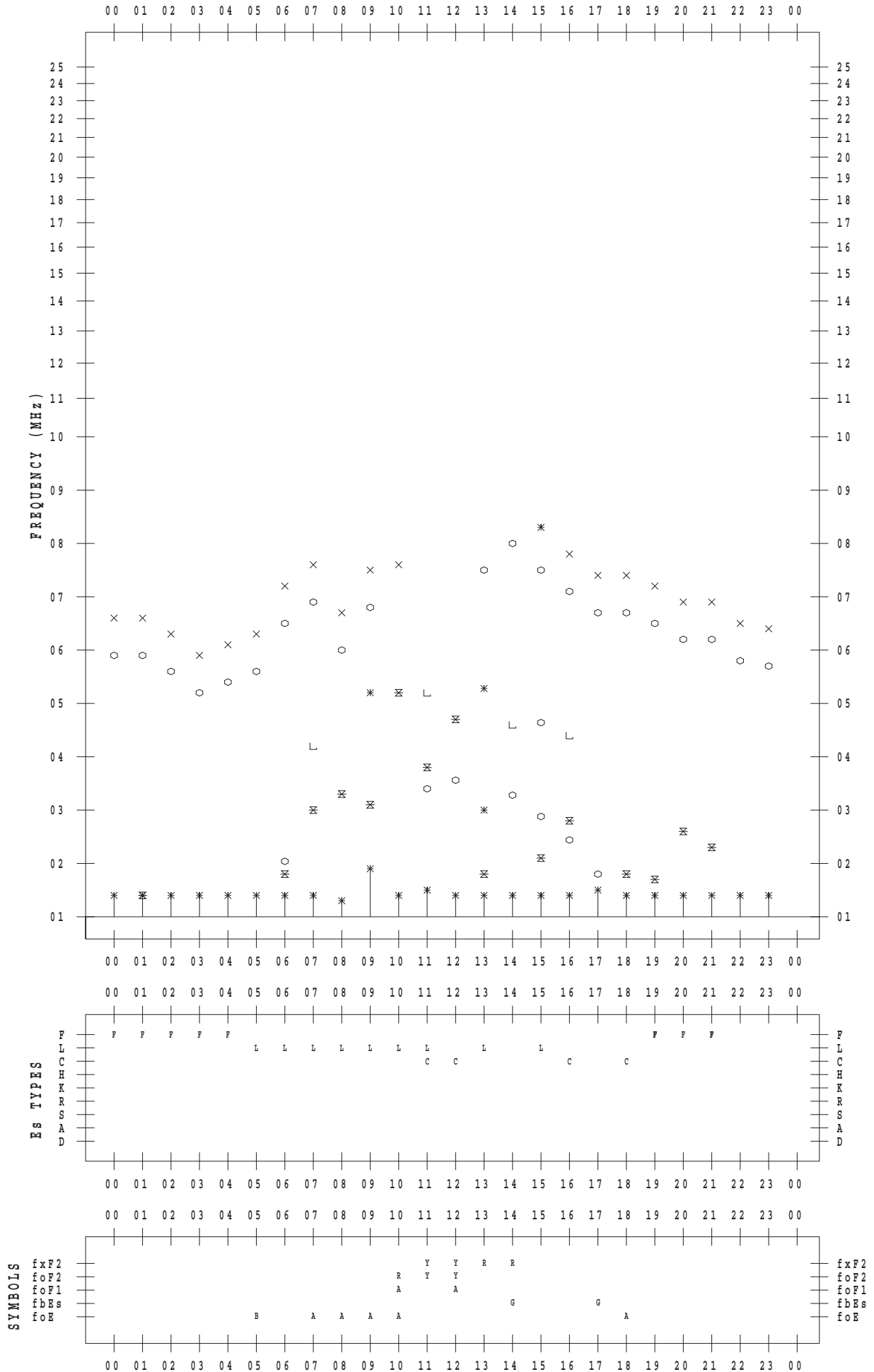
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 23

135 ° E MEAN TIME



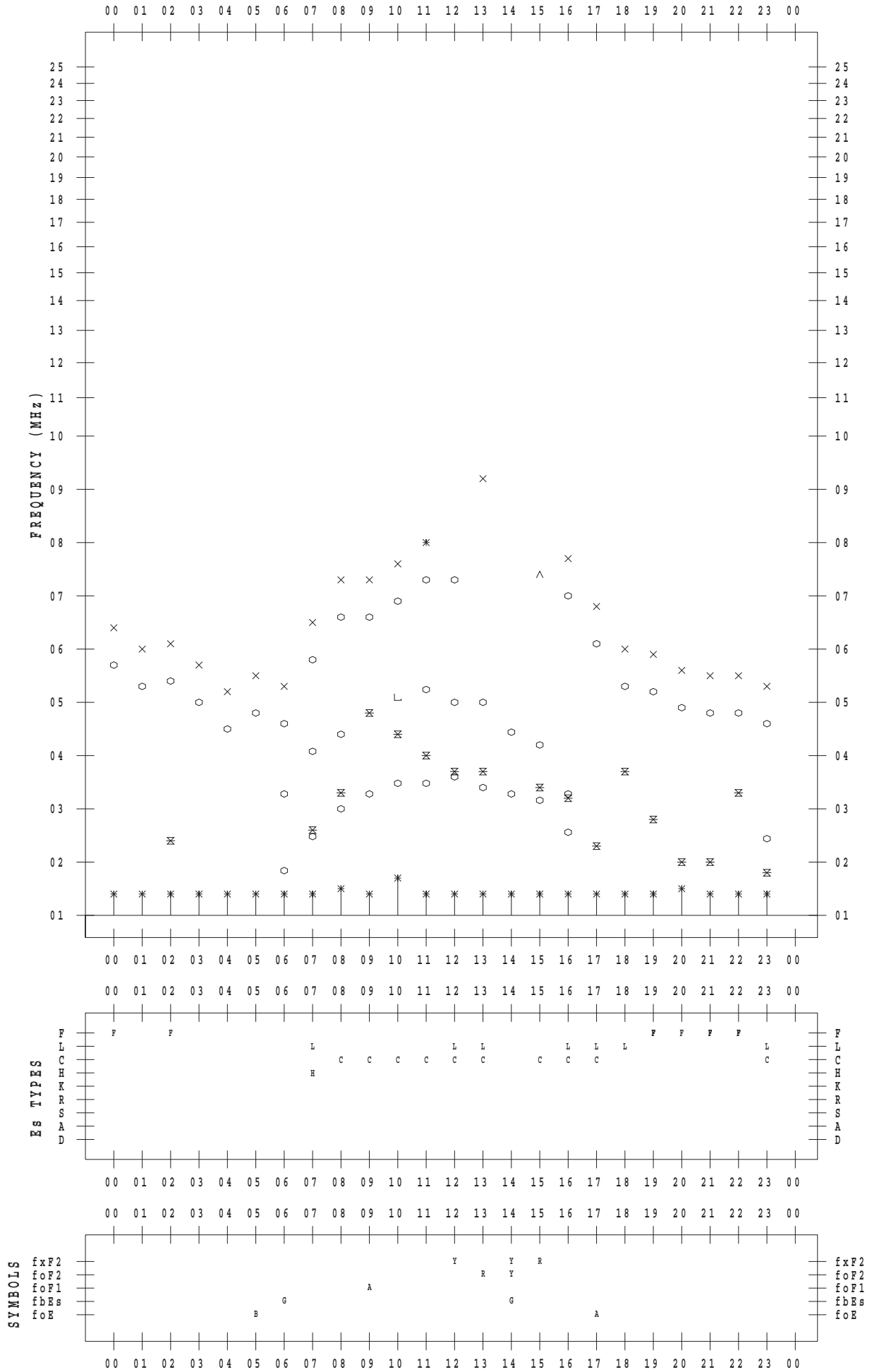
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 24

135 ° E MEAN TIME



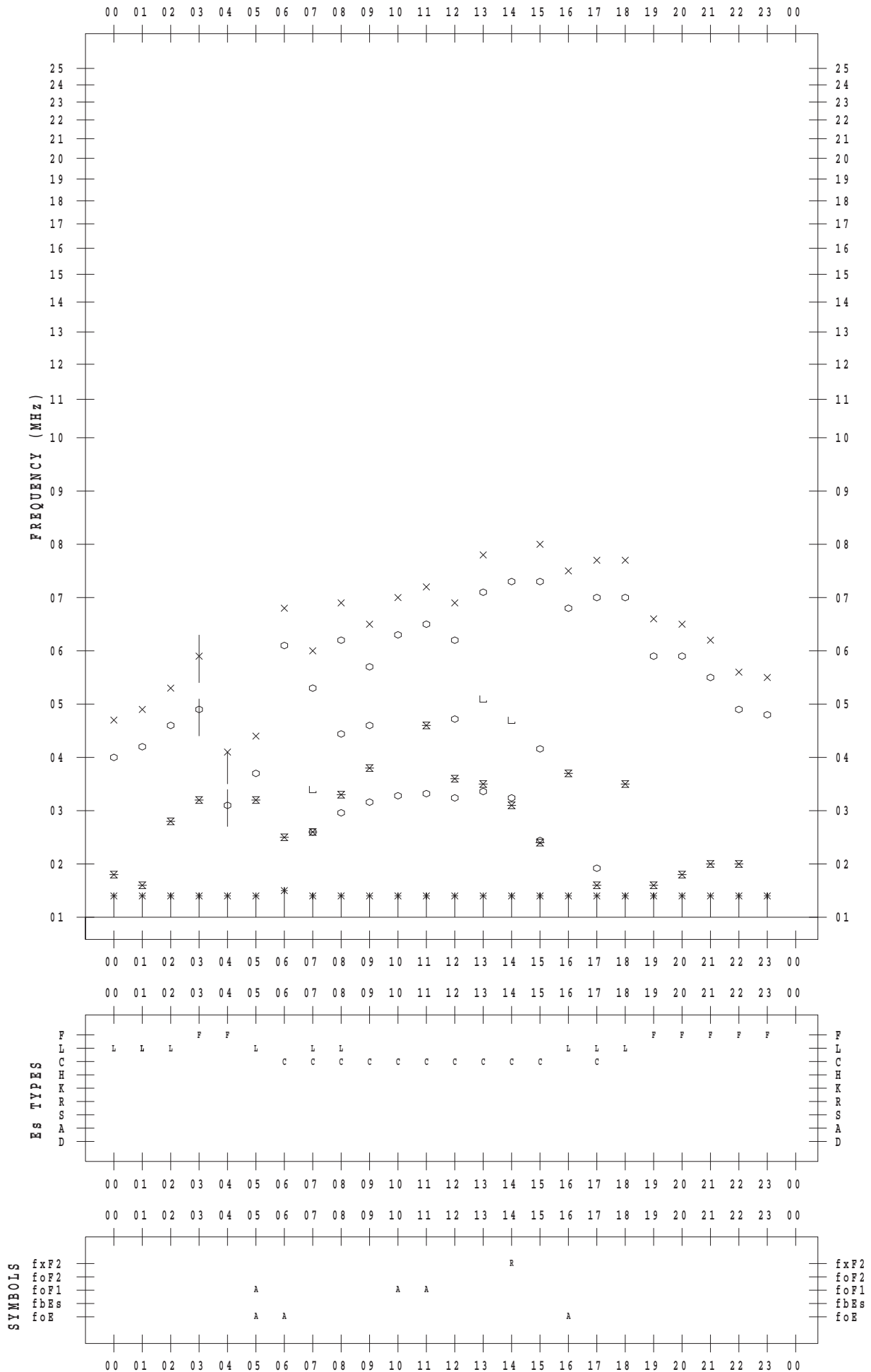
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 25

135 ° E MEAN TIME



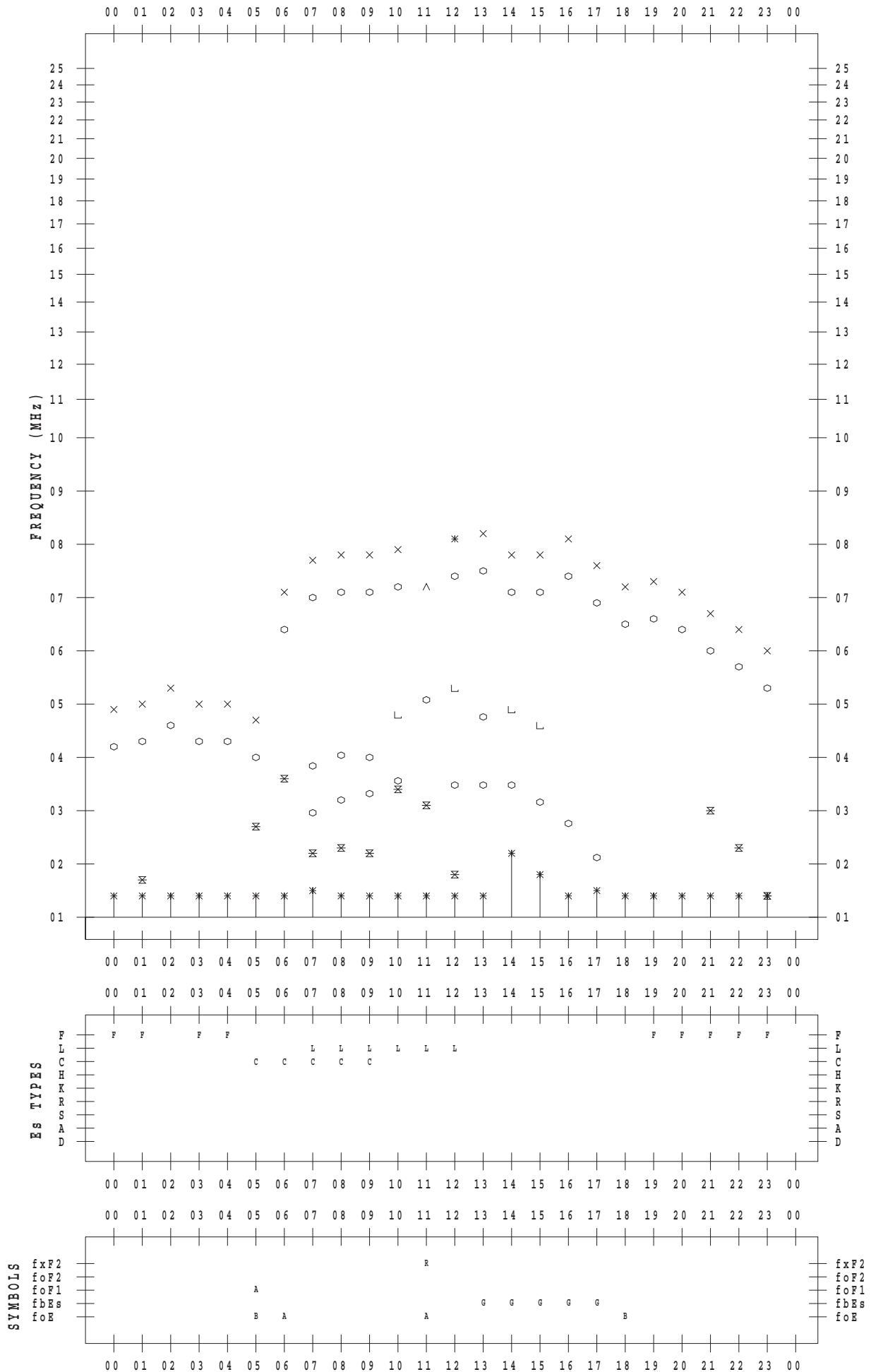
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 26

135 ° E MEAN TIME



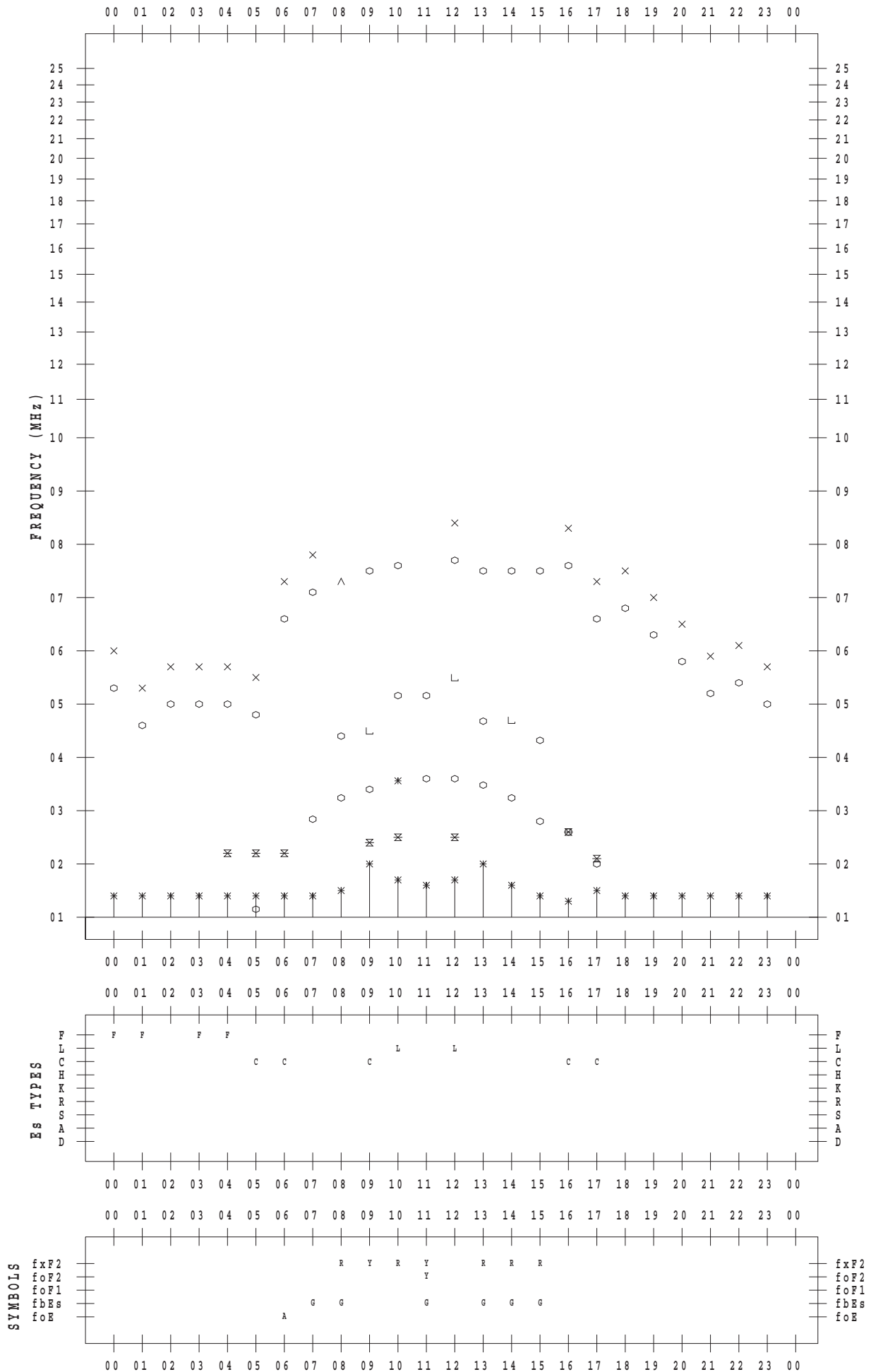
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 27

135 ° E MEAN TIME



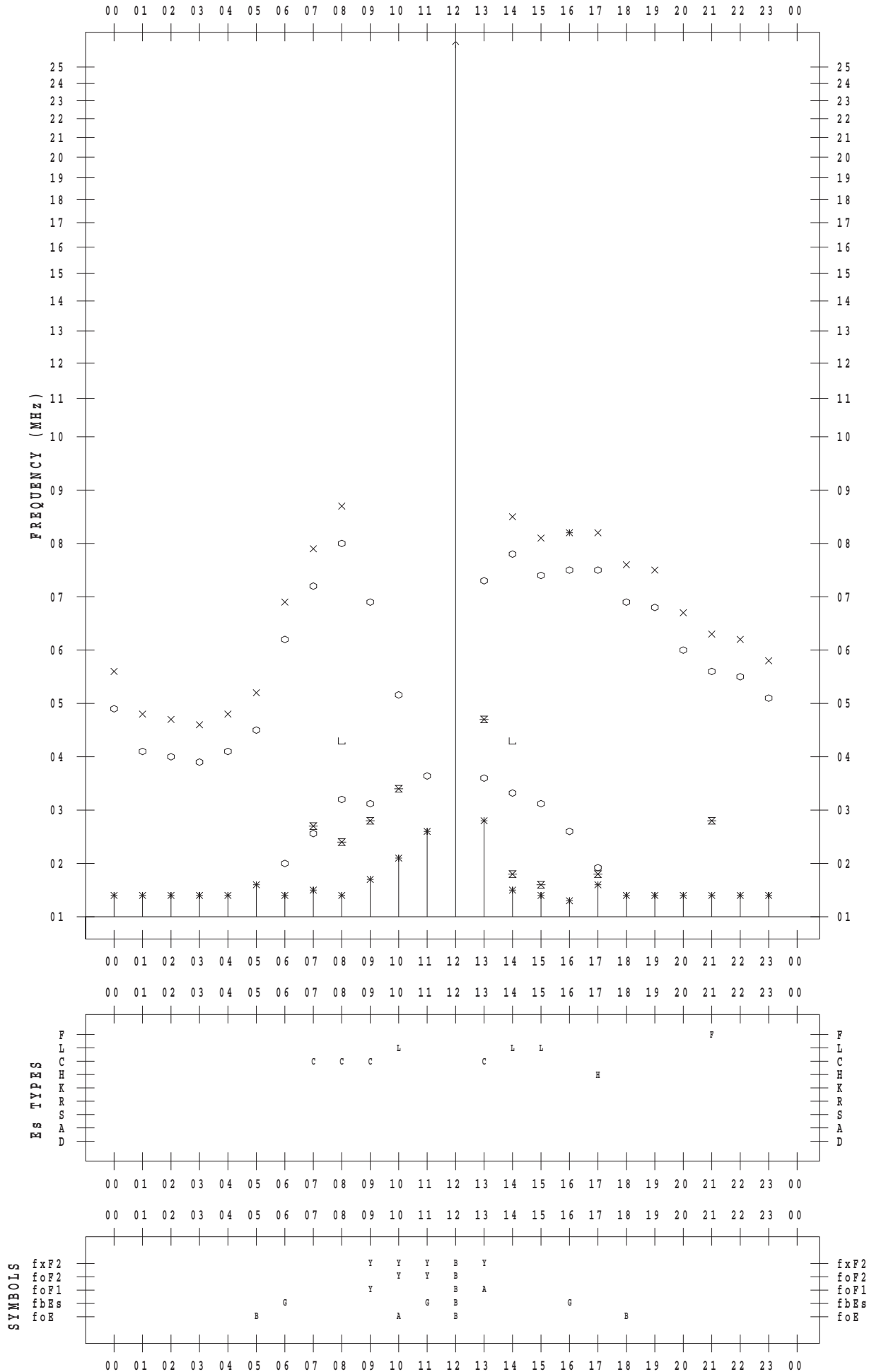
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 28

135 ° E MEAN TIME



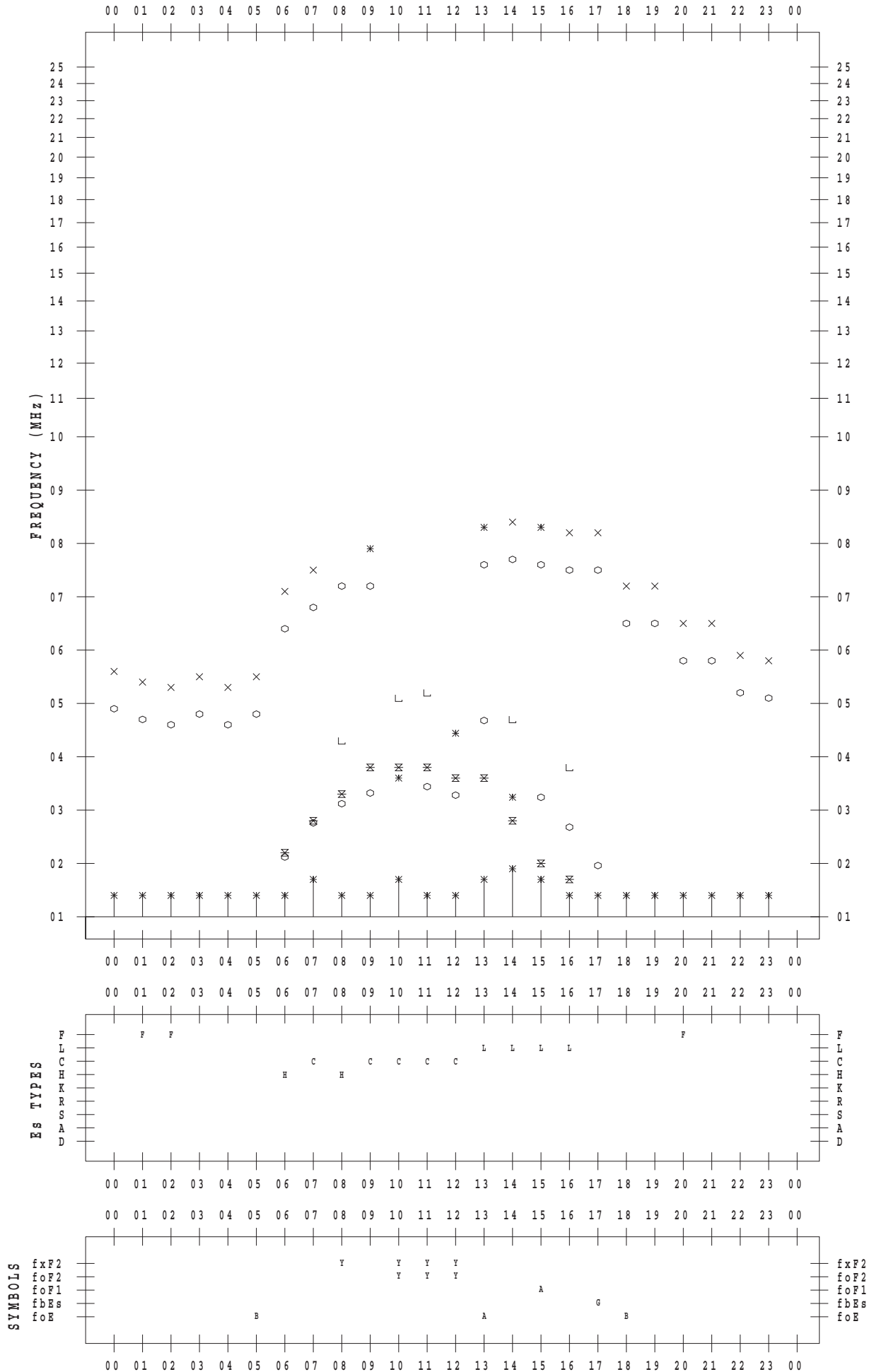
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 29

135 ° E MEAN TIME



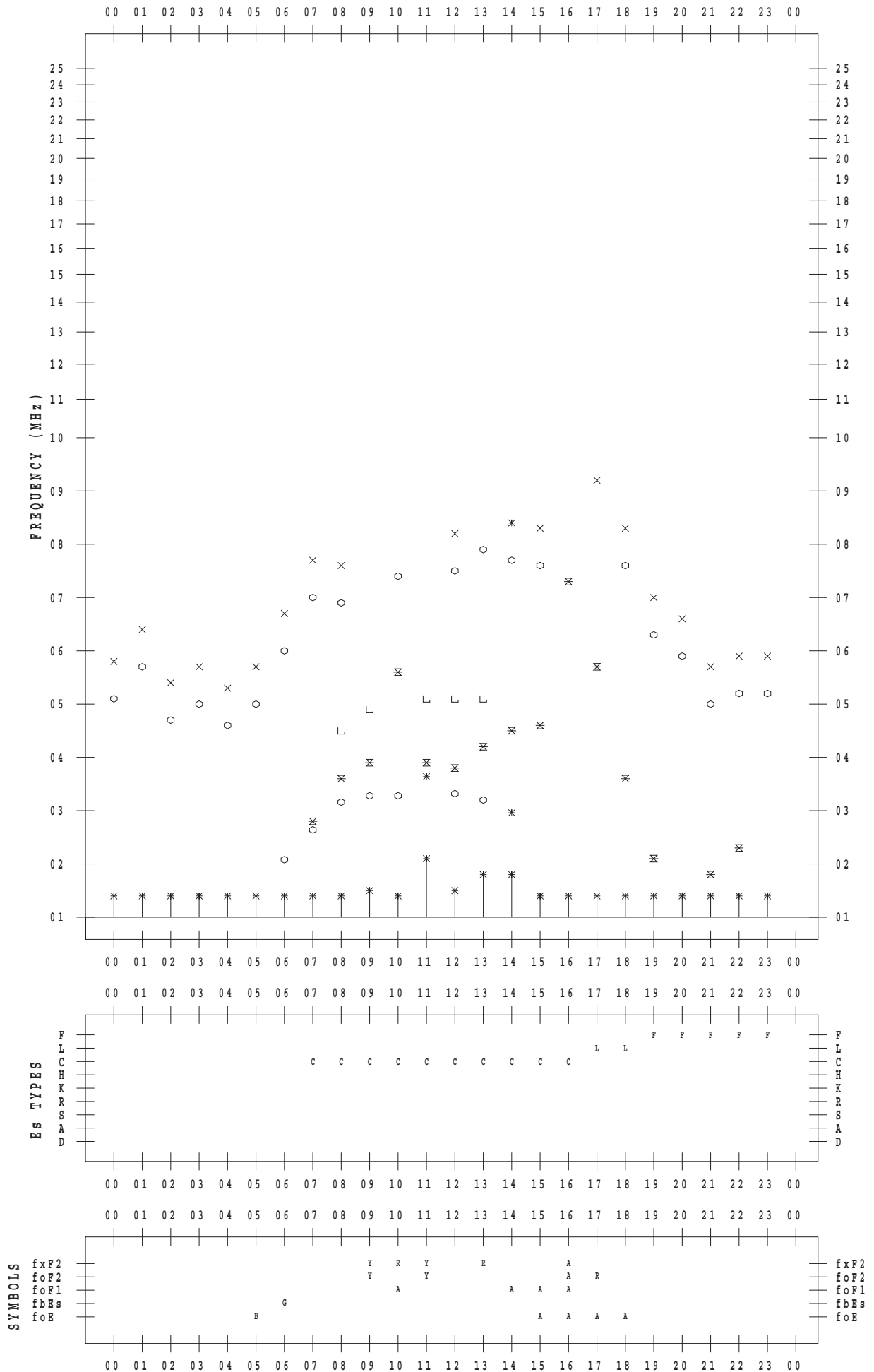
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SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014 / 9 / 30

135 ° E MEAN TIME



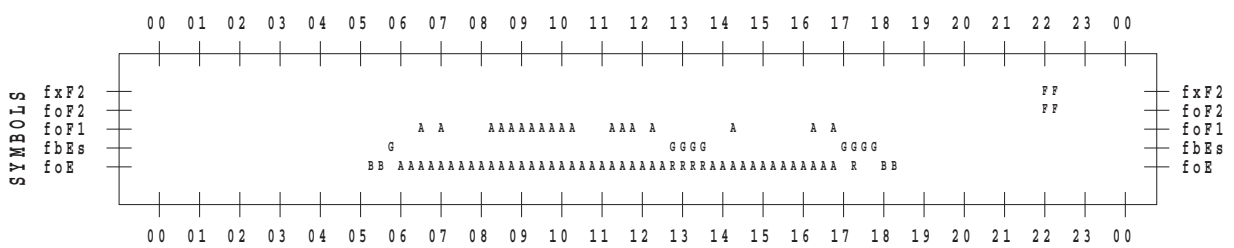
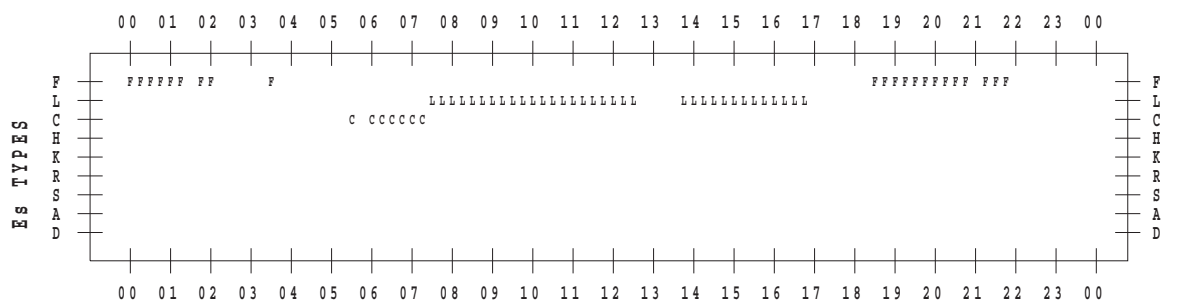
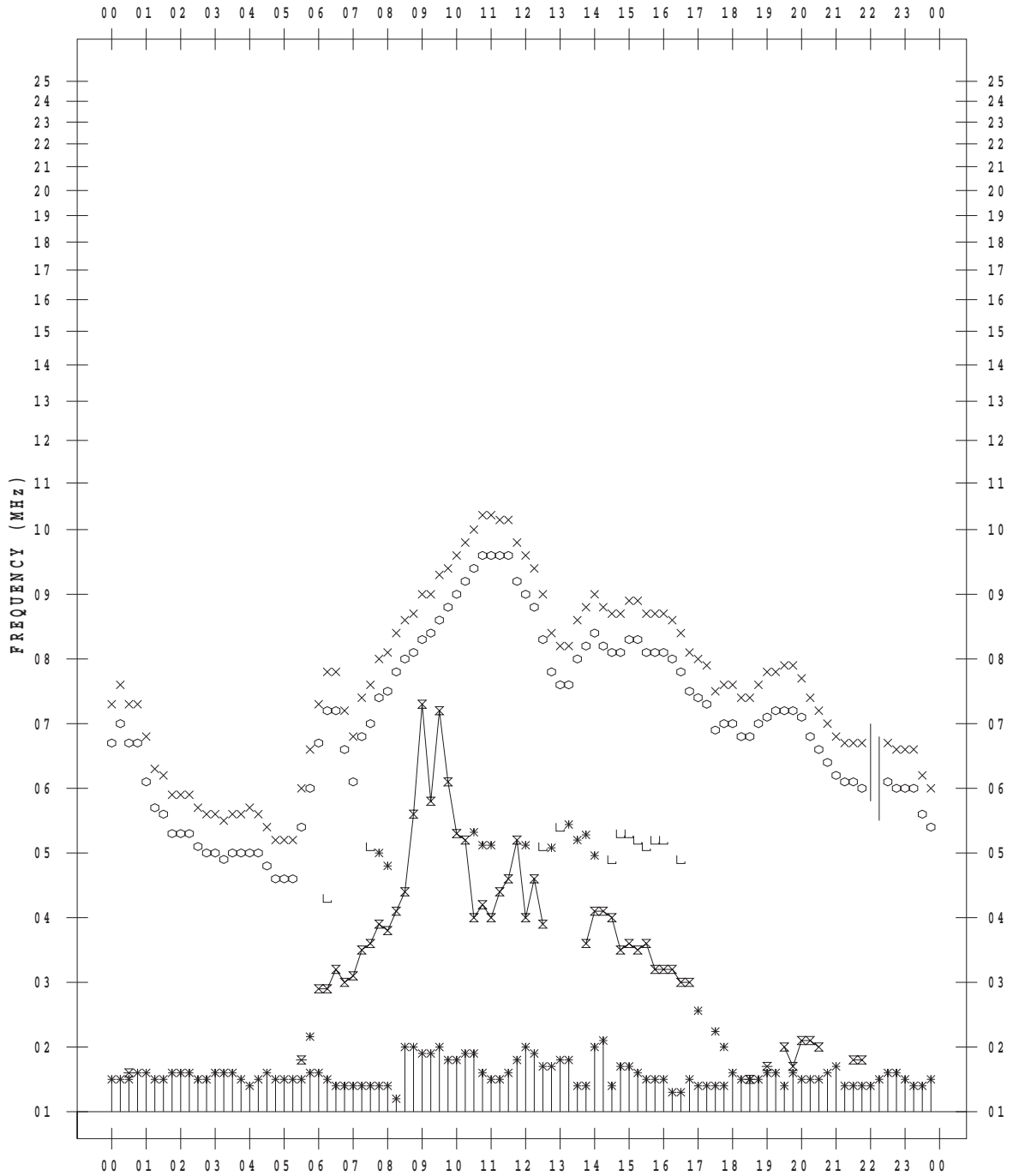
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 1

135 ° E MEAN TIME



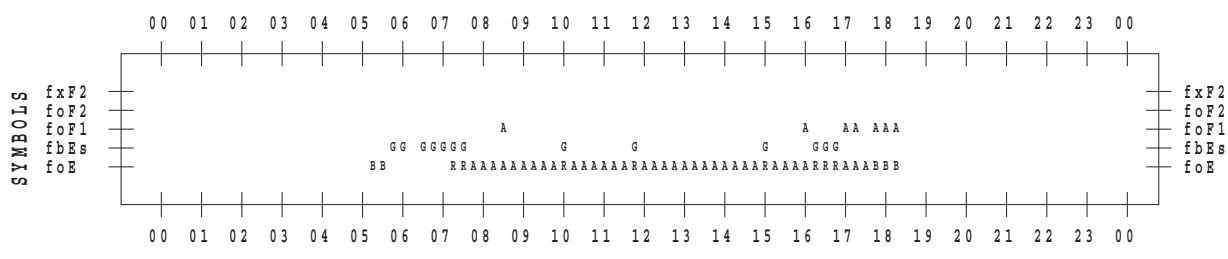
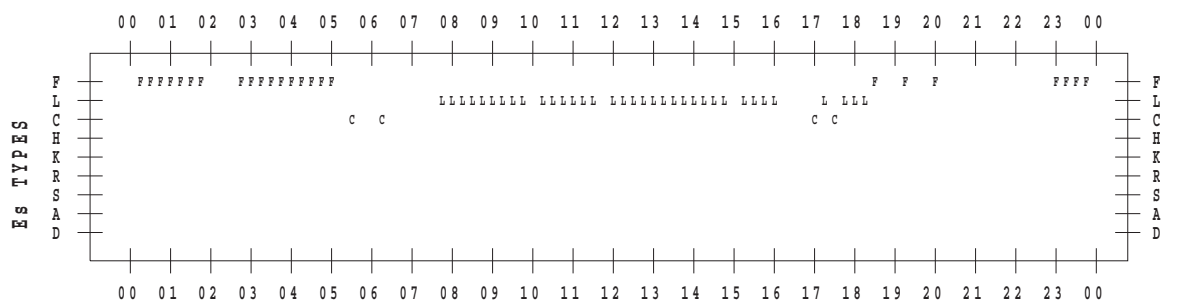
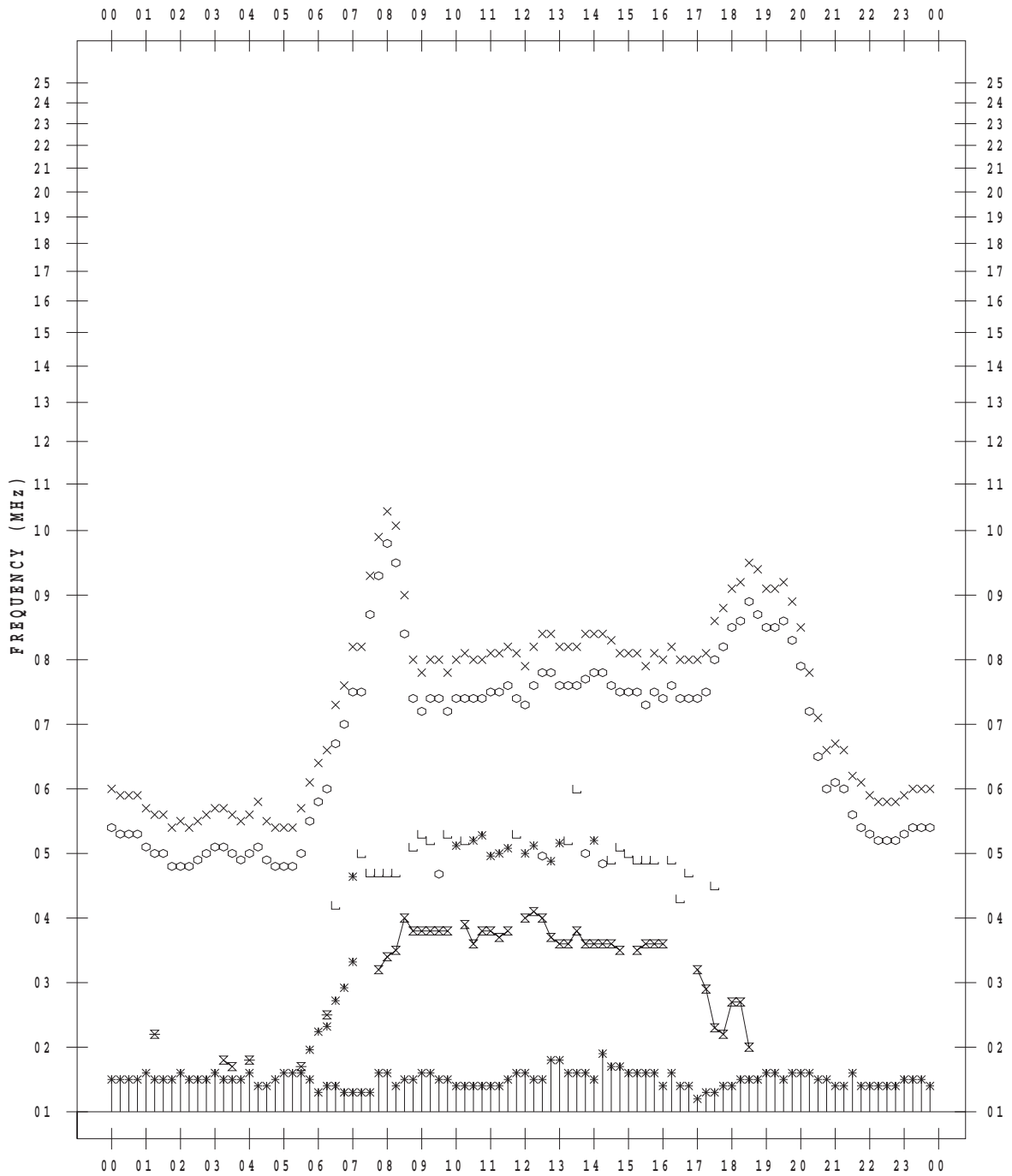
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 2

135 ° E MEAN TIME



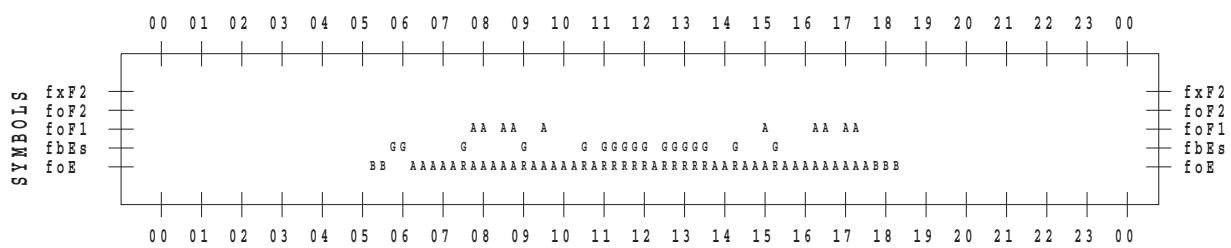
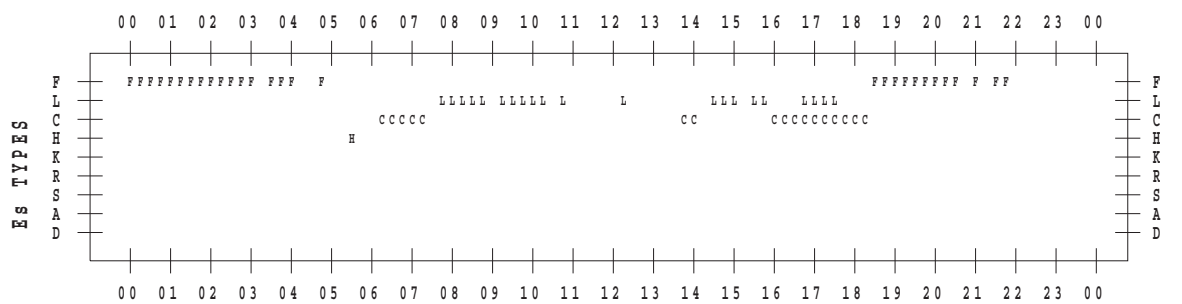
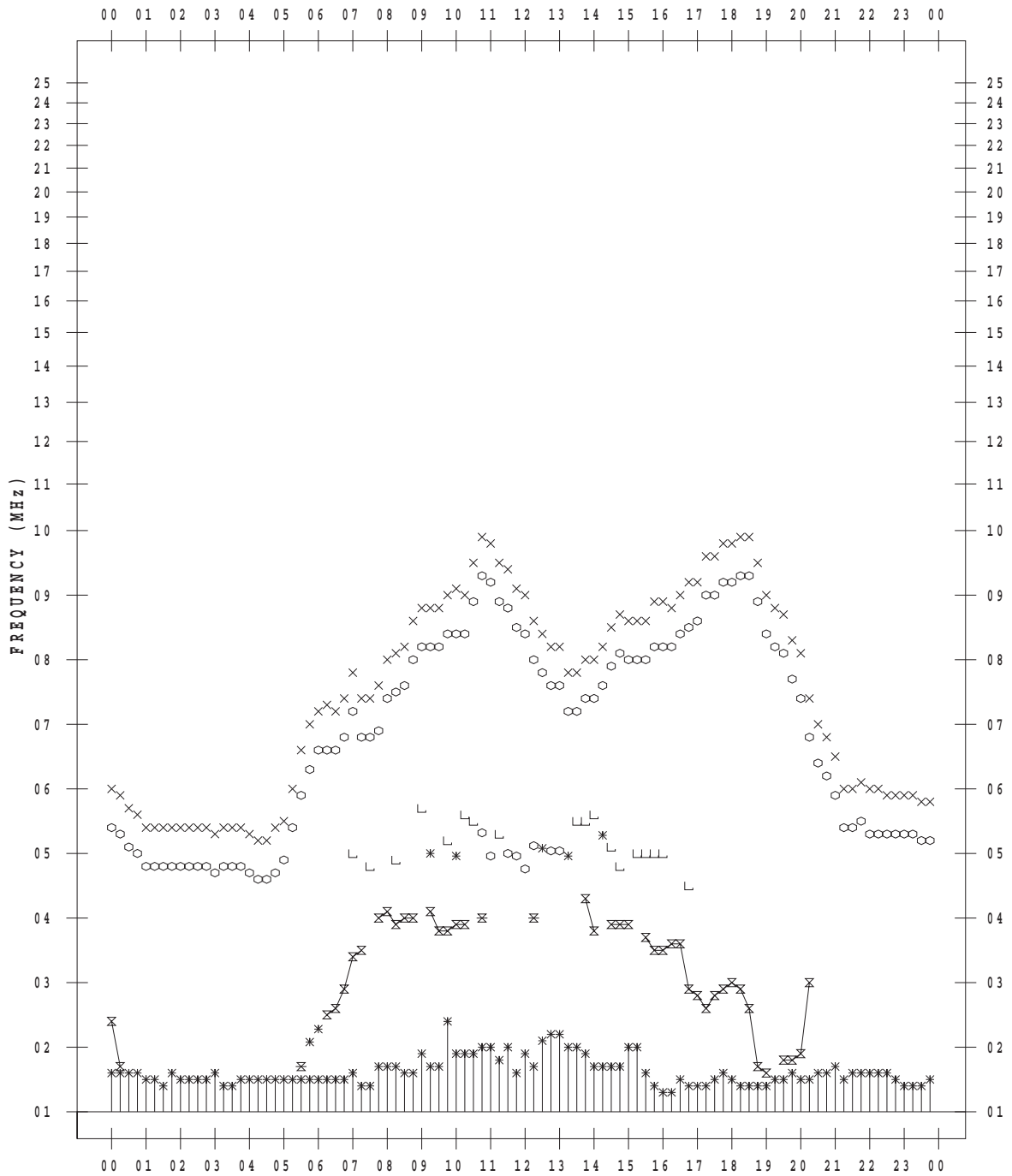
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 3

135 ° E MEAN TIME



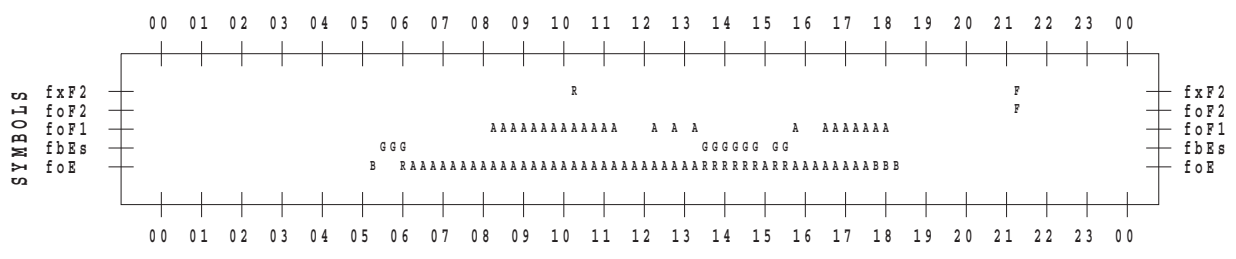
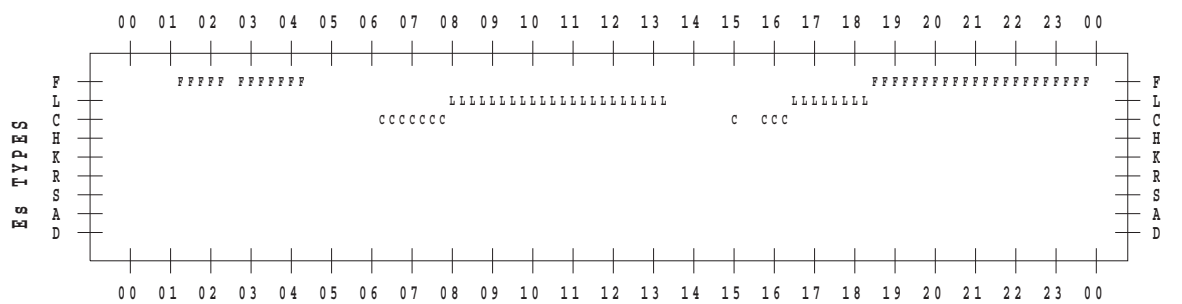
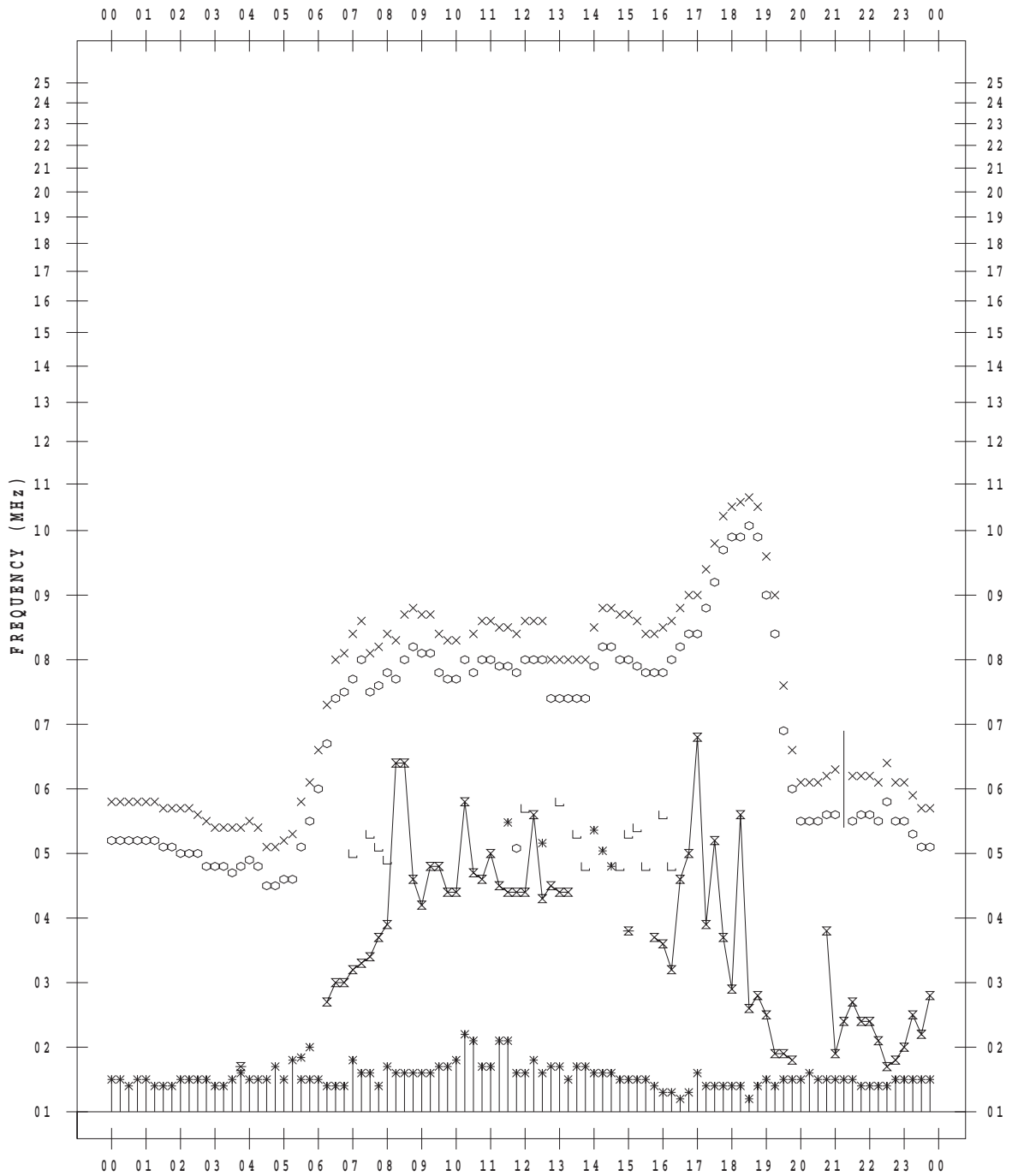
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 4

135 ° E MEAN TIME



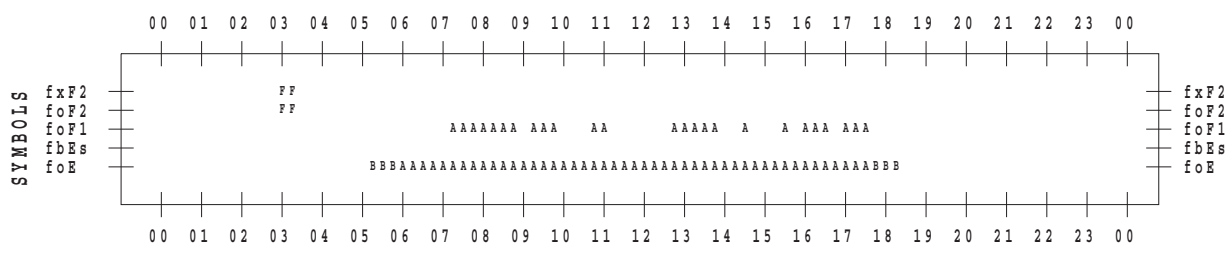
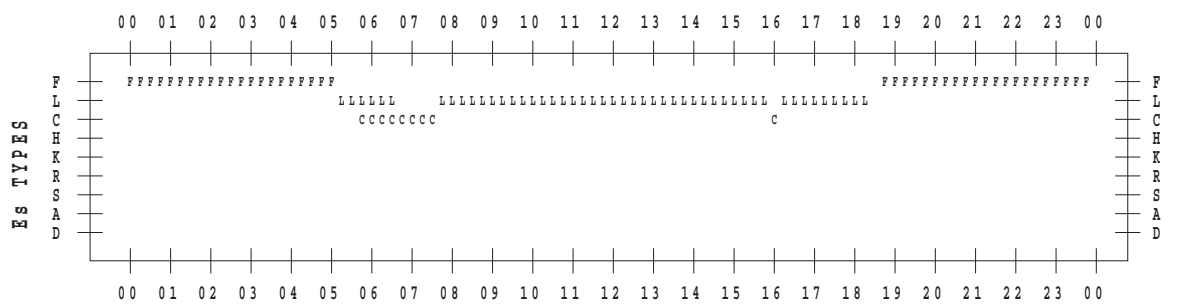
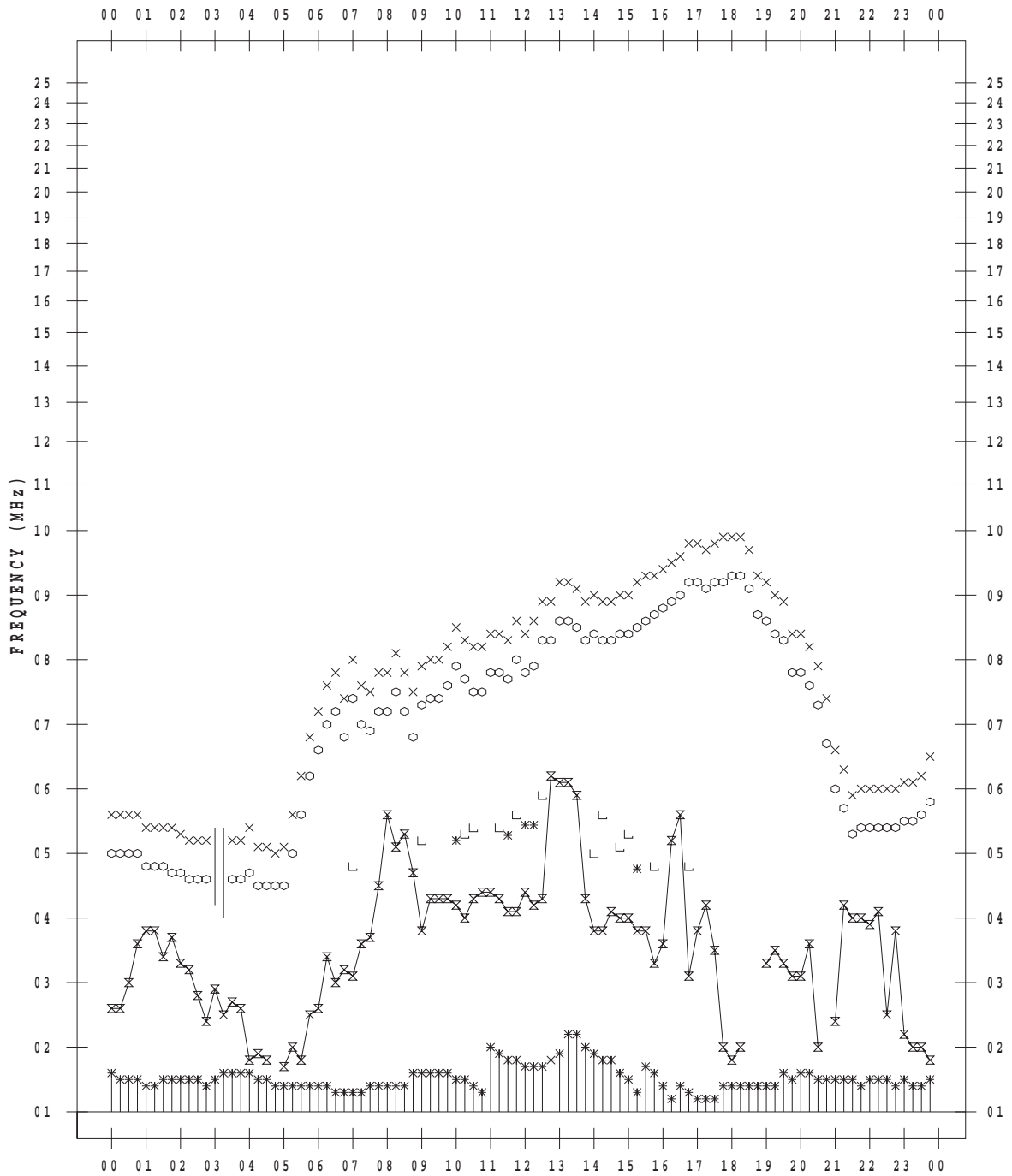
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 5

135 ° E MEAN TIME



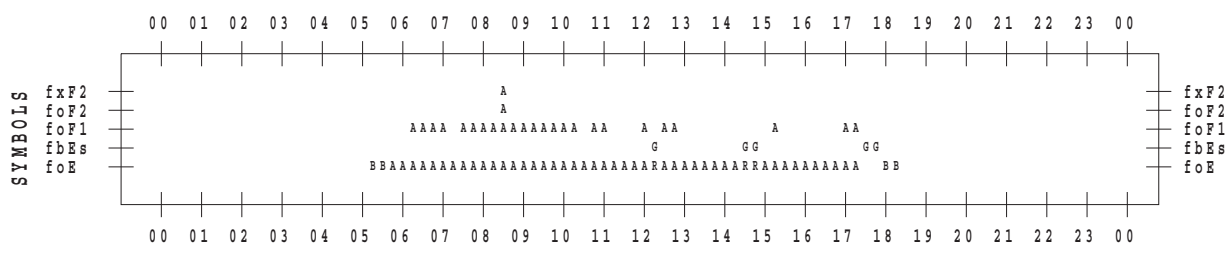
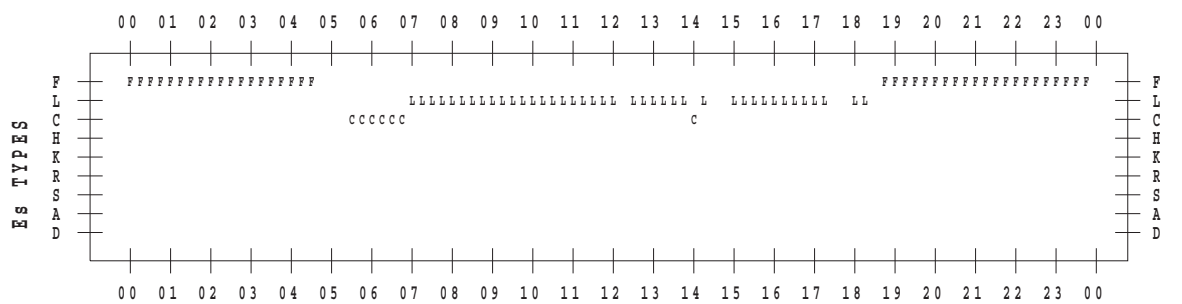
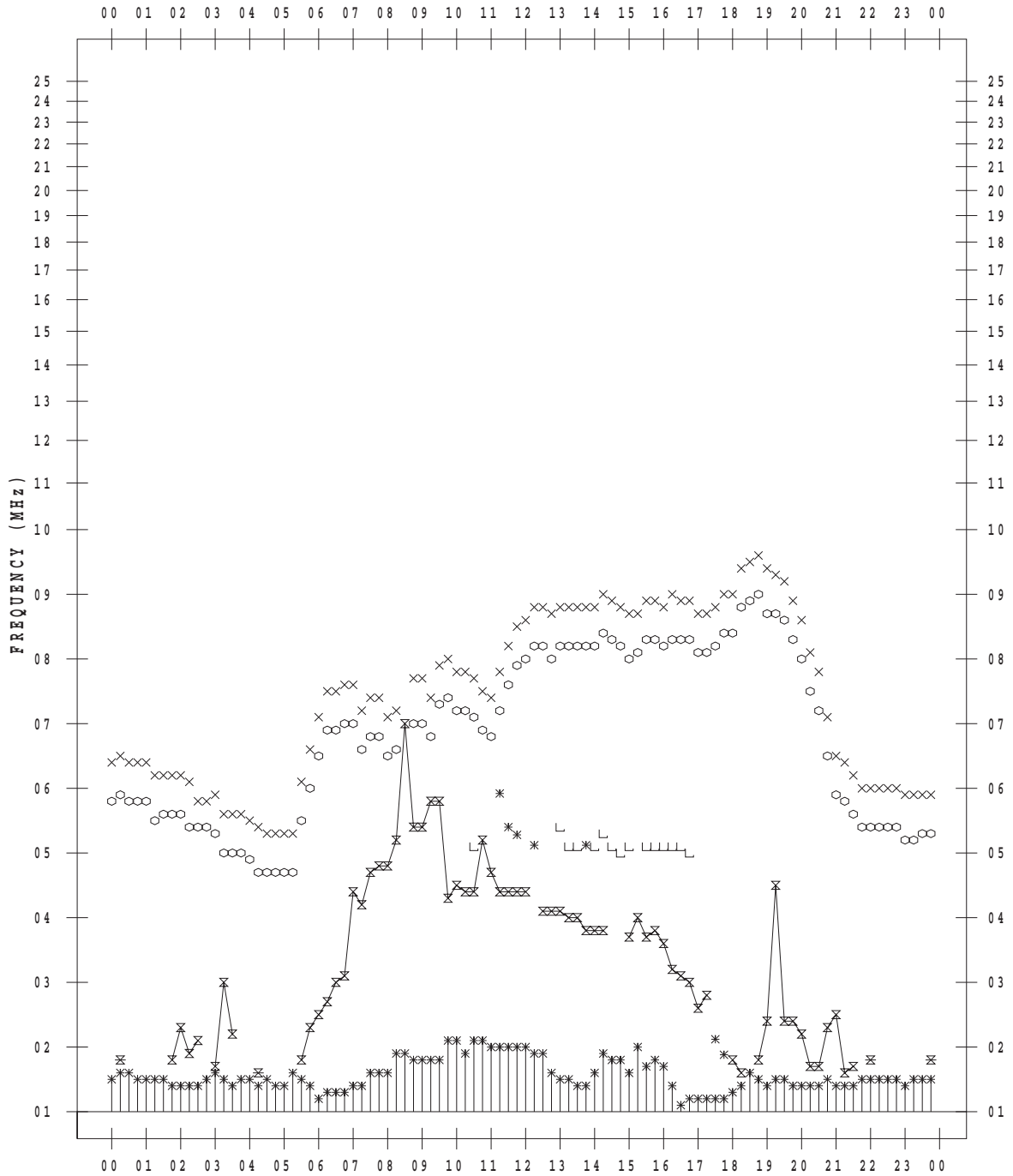
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 6

135 ° E MEAN TIME



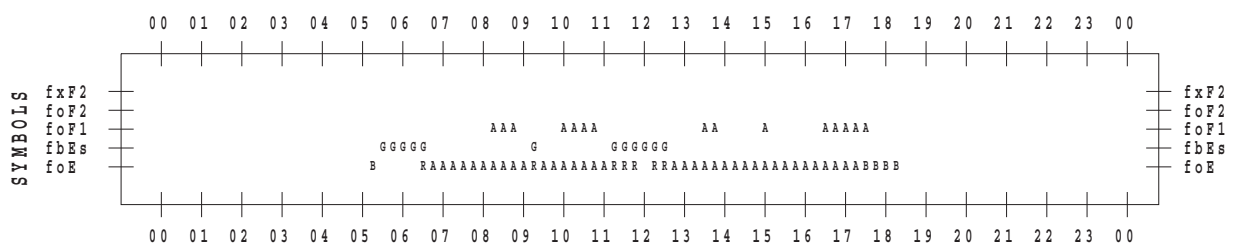
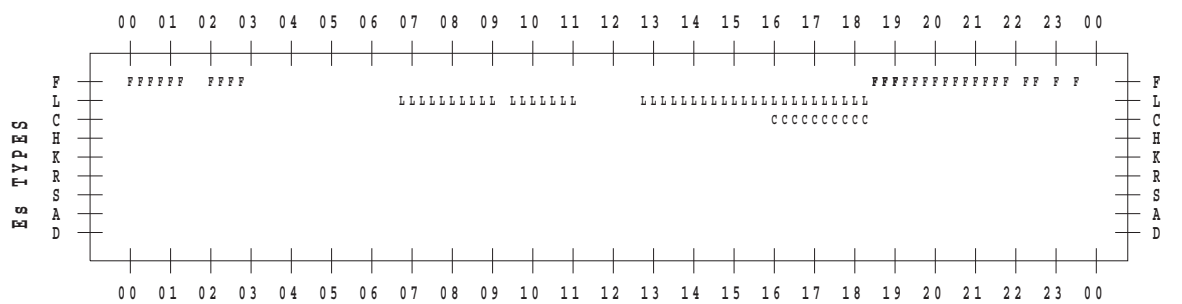
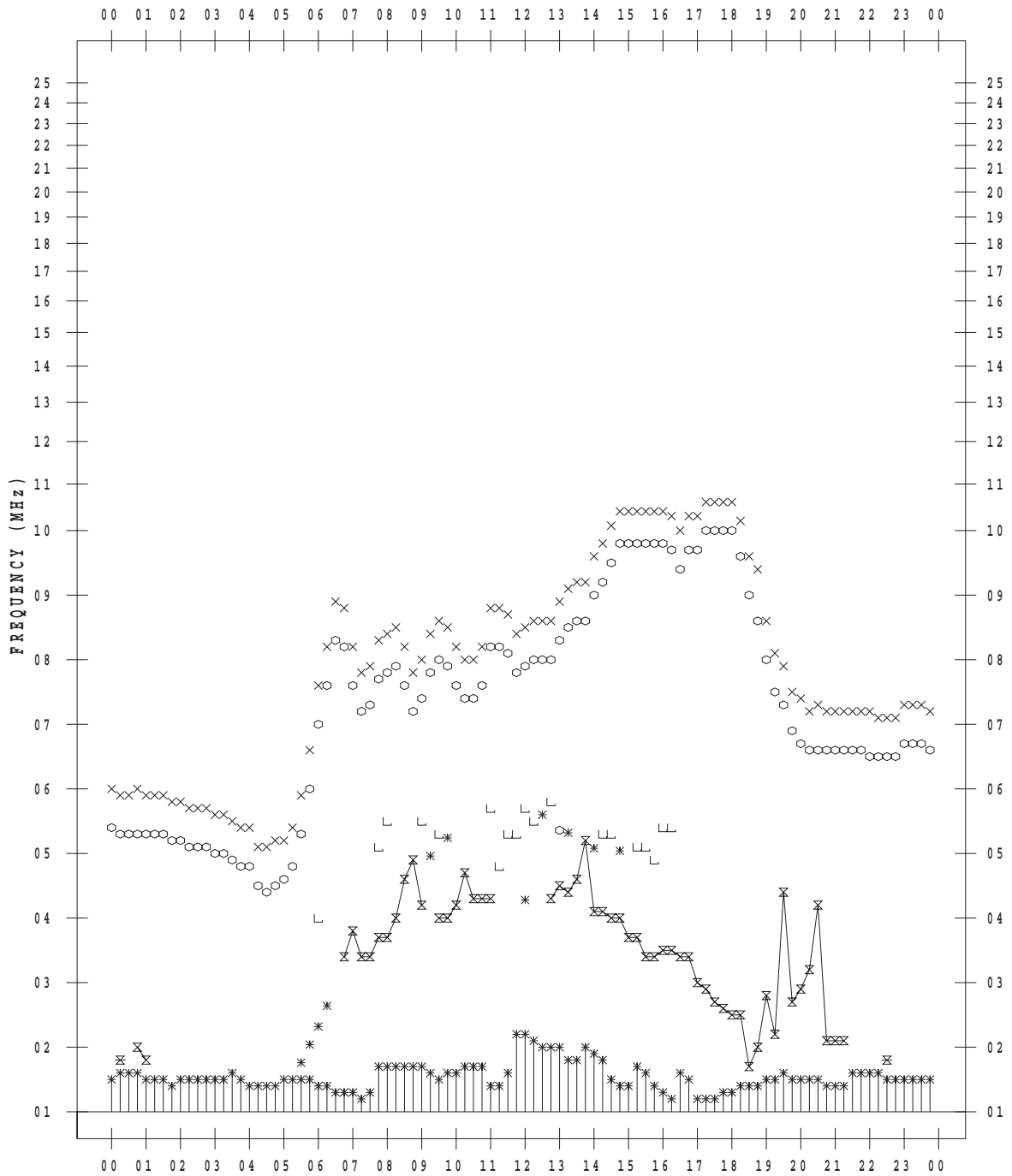
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 7

135 ° E MEAN TIME



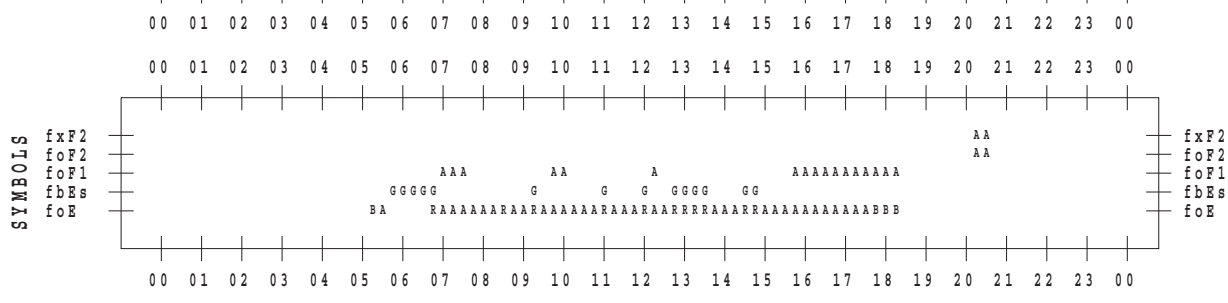
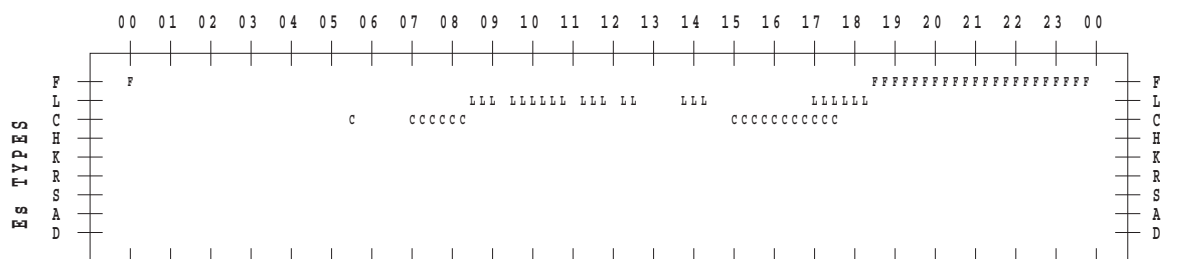
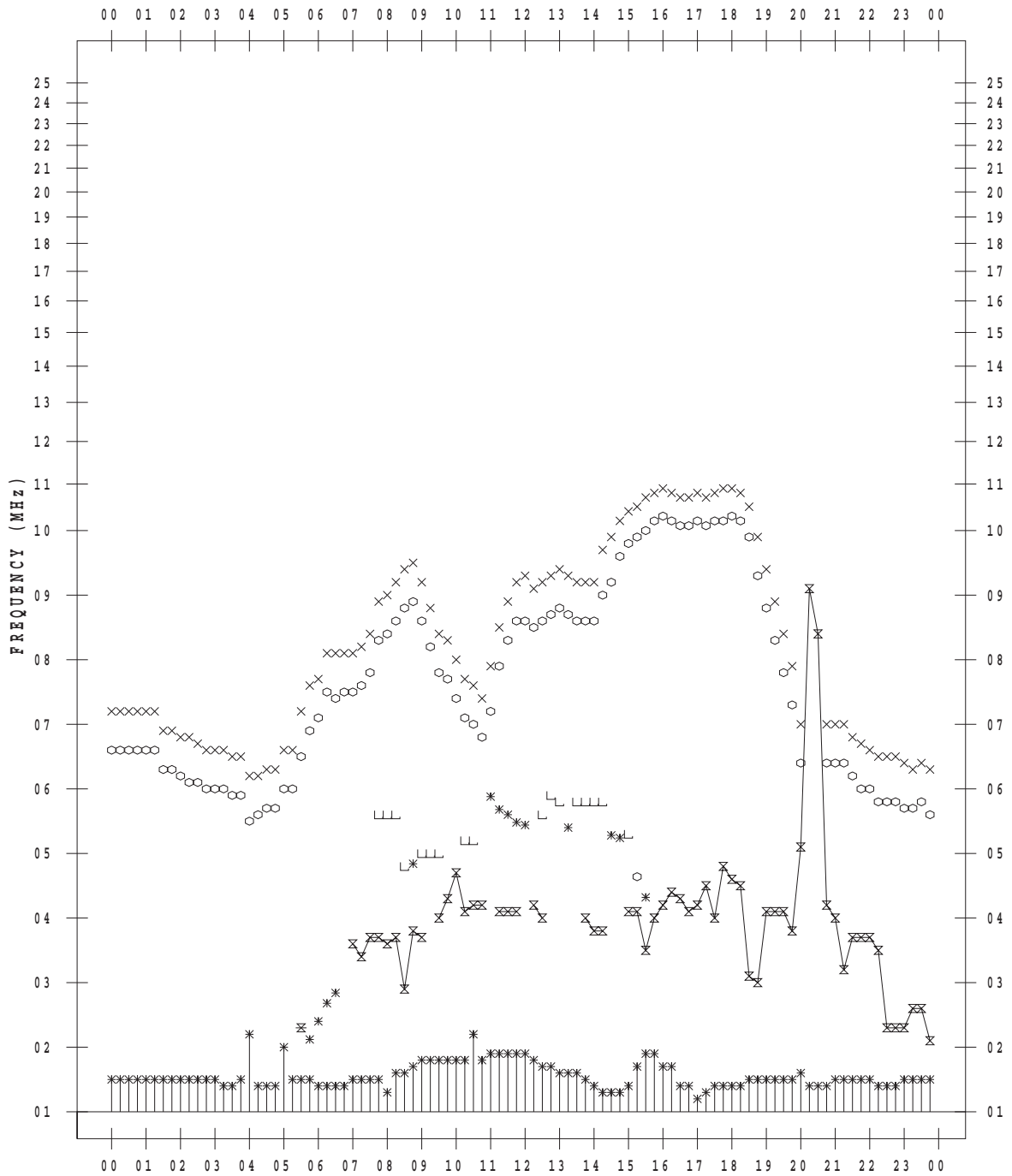
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 8

135 ° E MEAN TIME



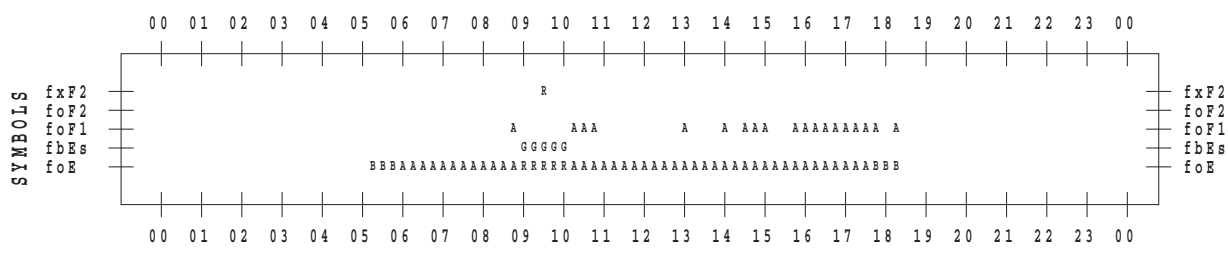
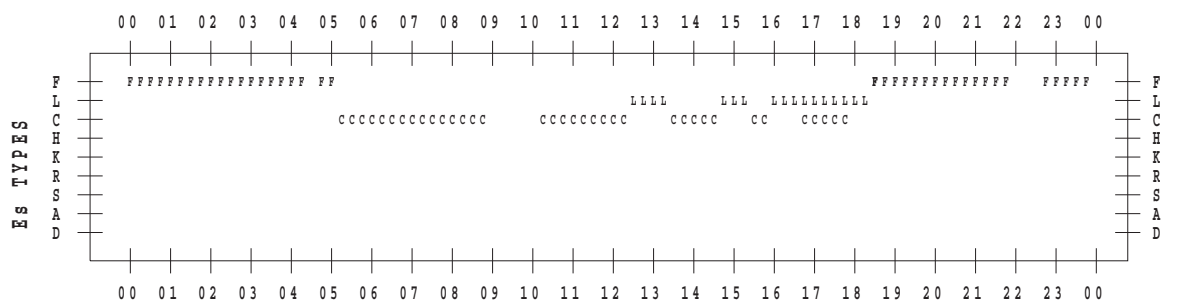
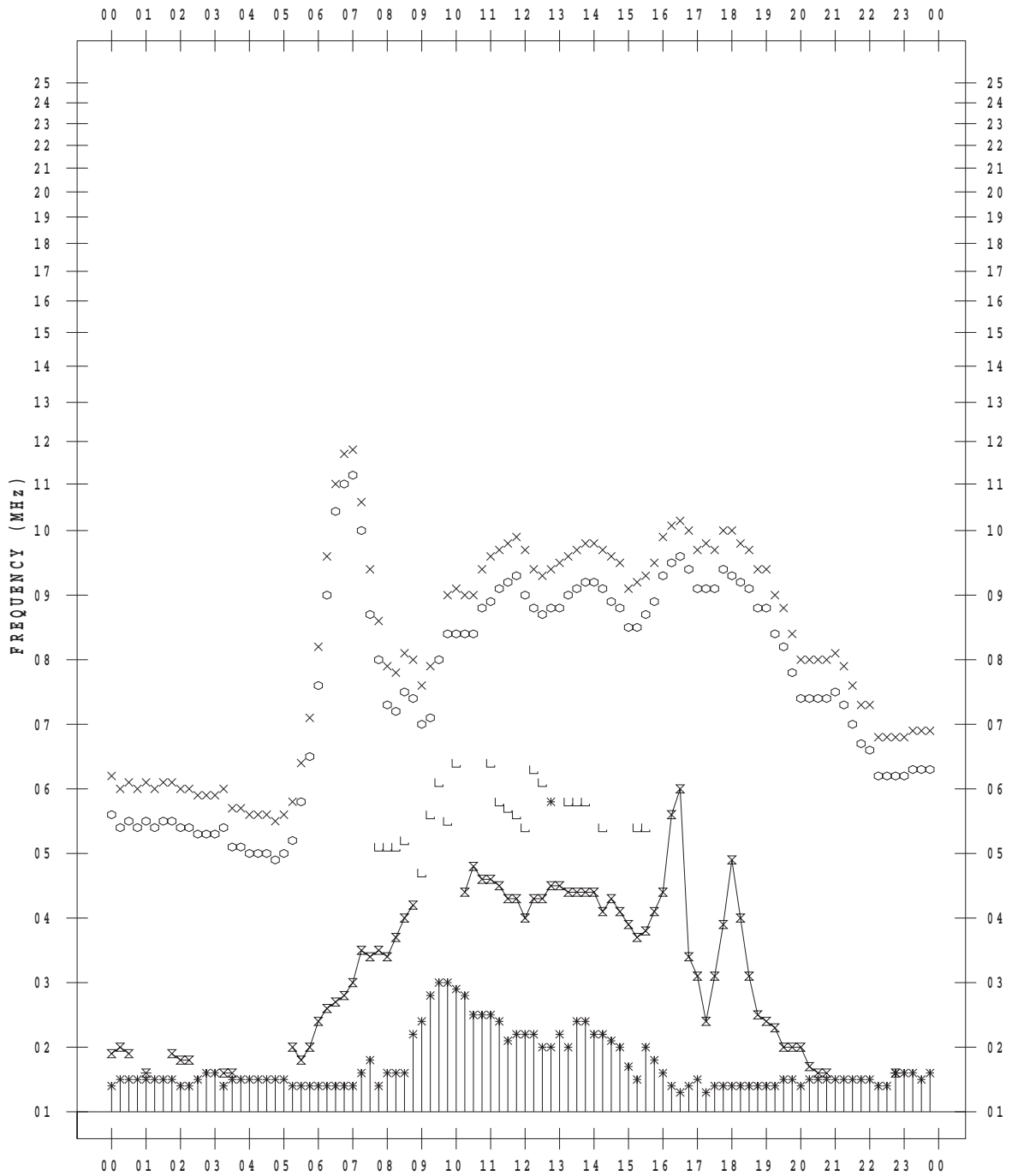
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 9

135 ° E MEAN TIME



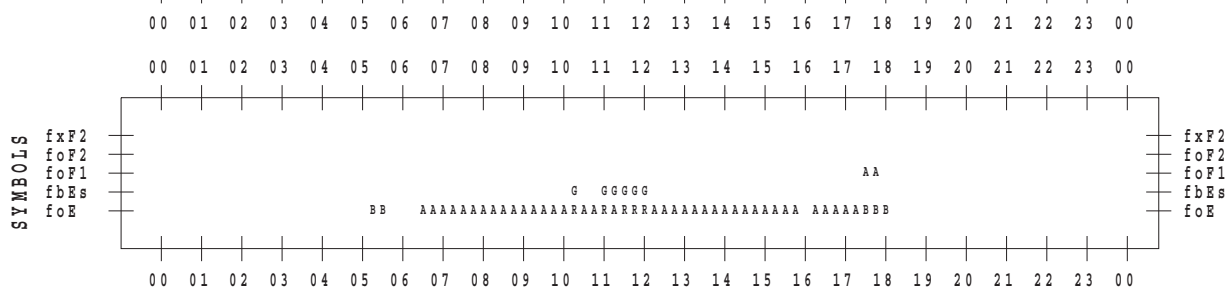
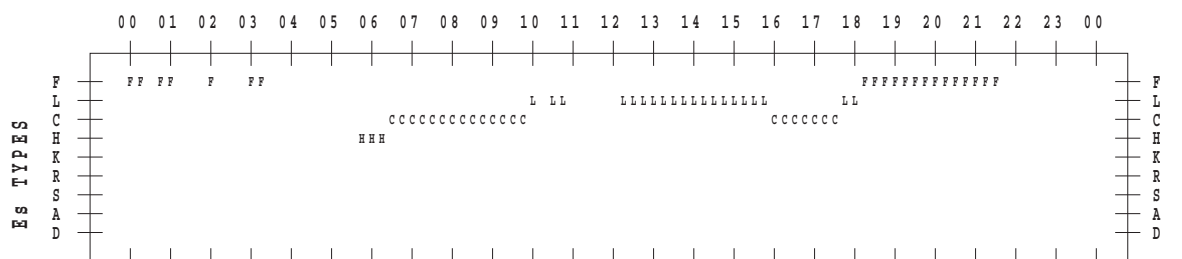
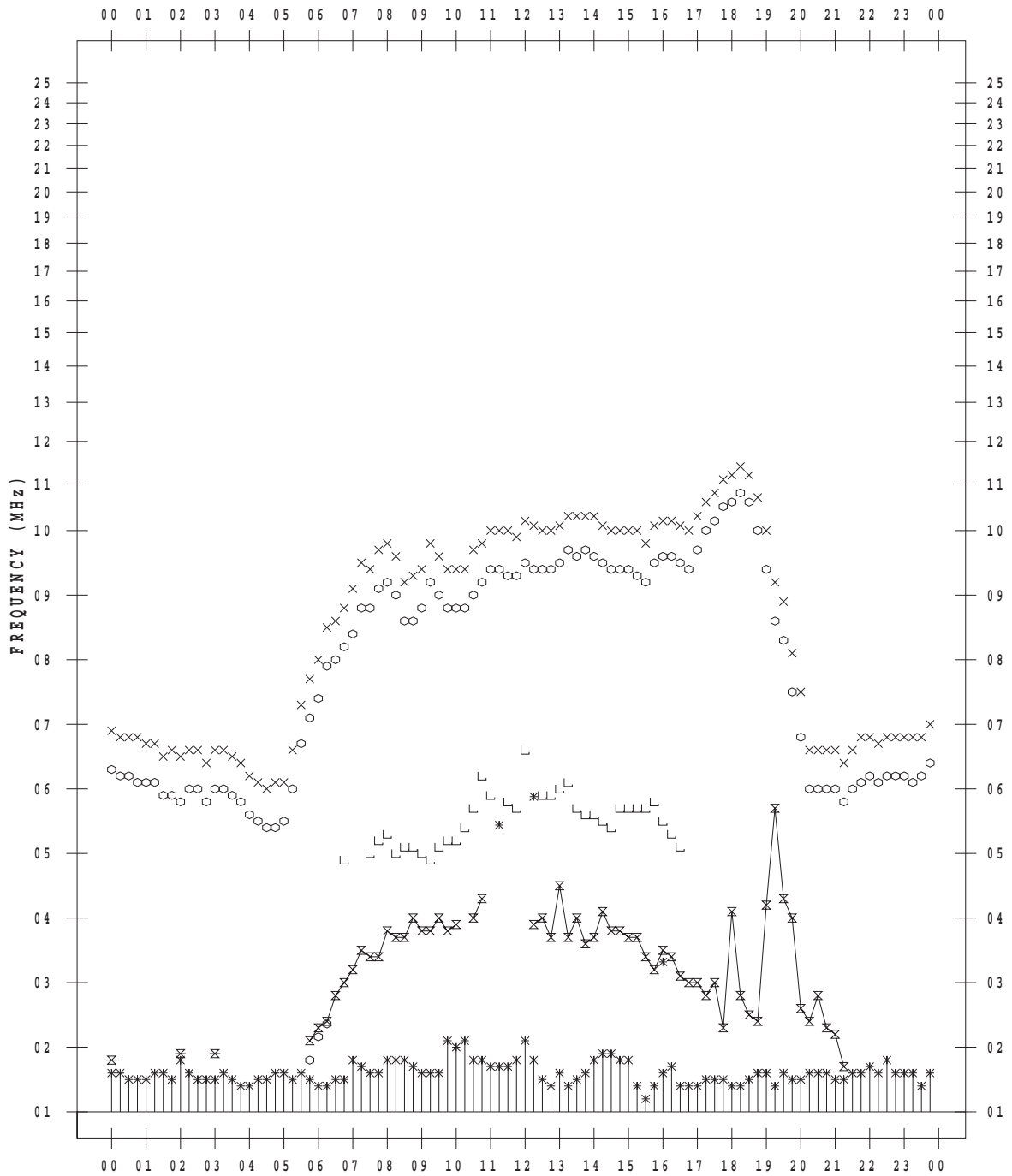
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 10

135 ° E MEAN TIME



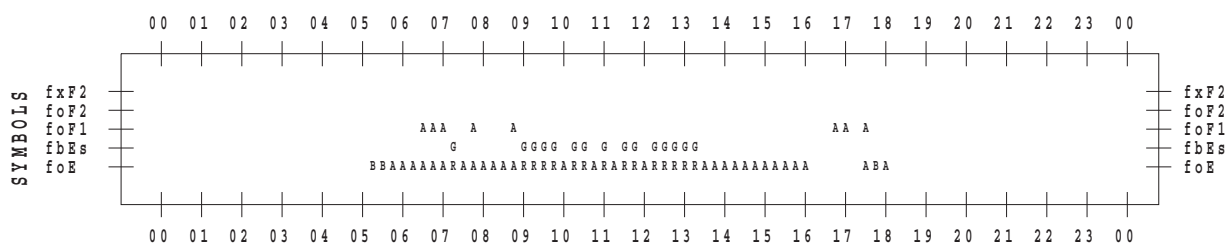
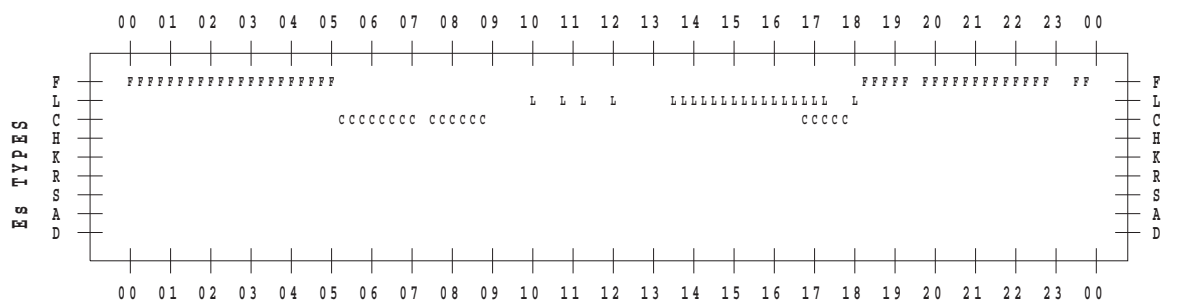
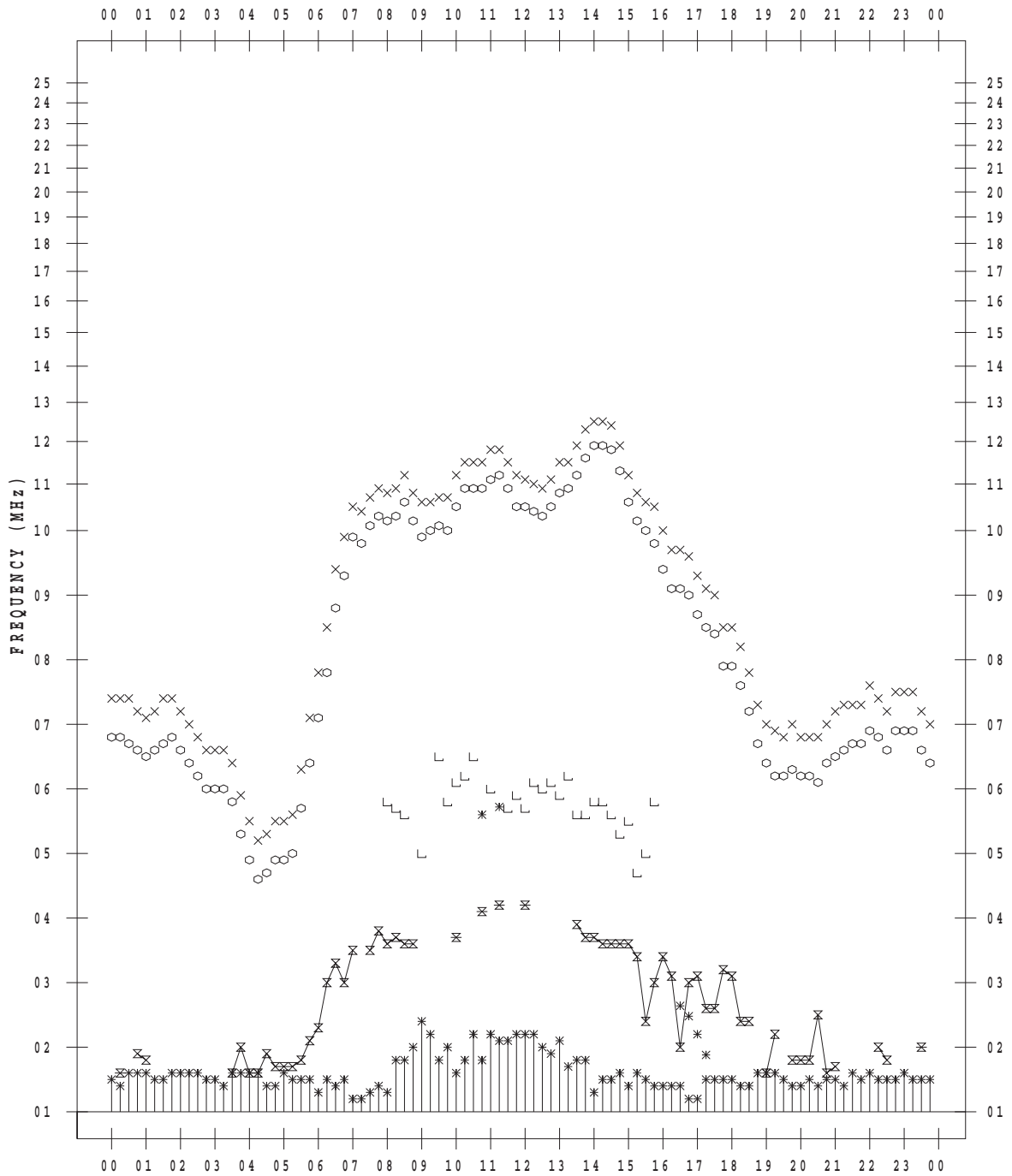
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 12

135 ° E MEAN TIME



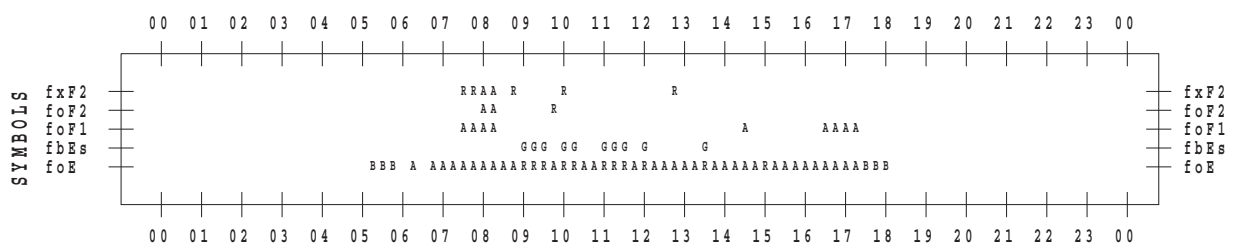
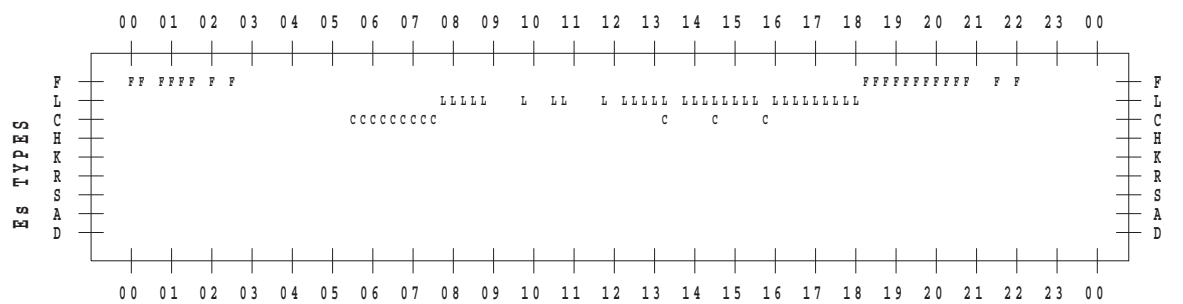
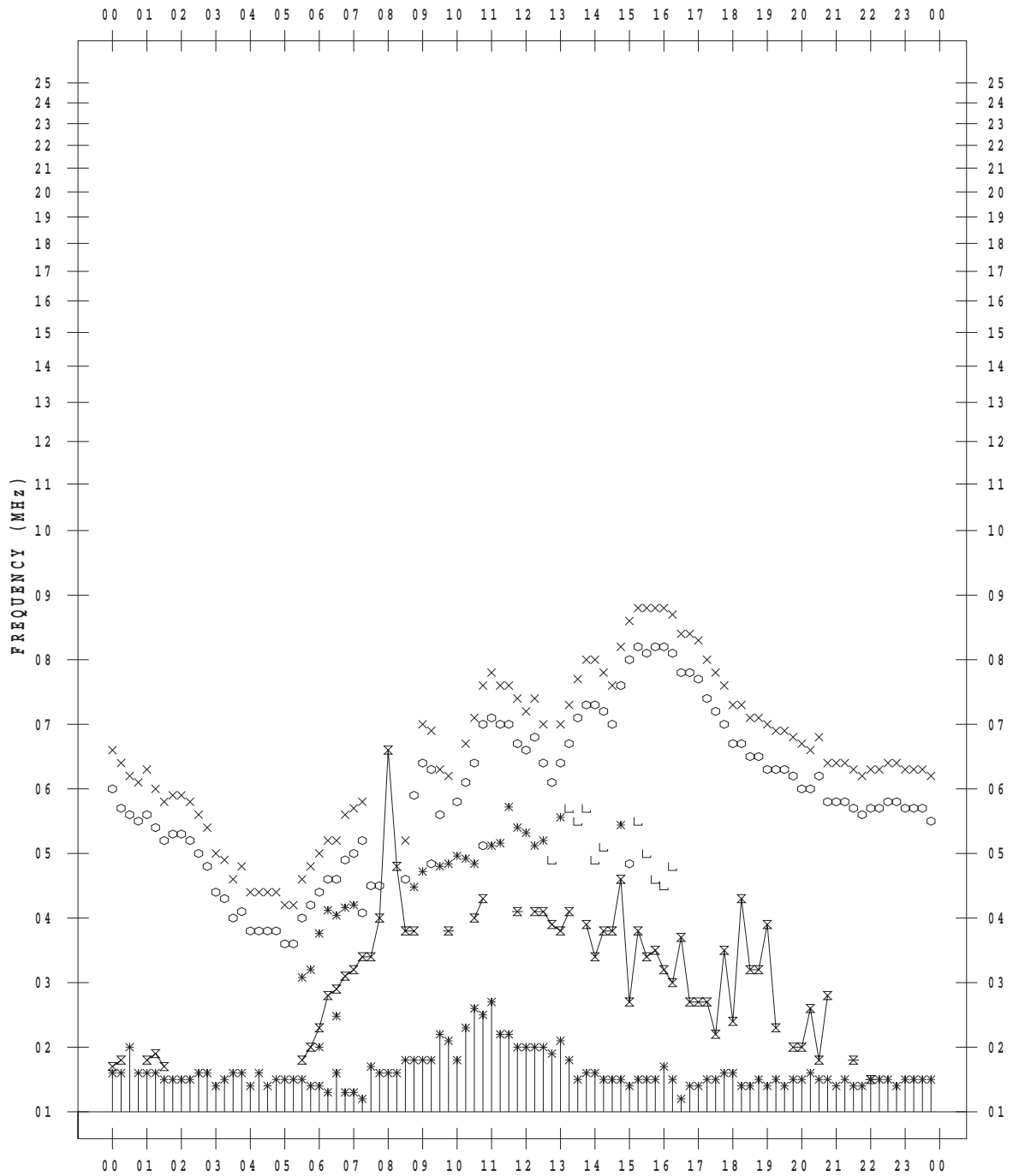
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 9/13

135 ° E MEAN TIME



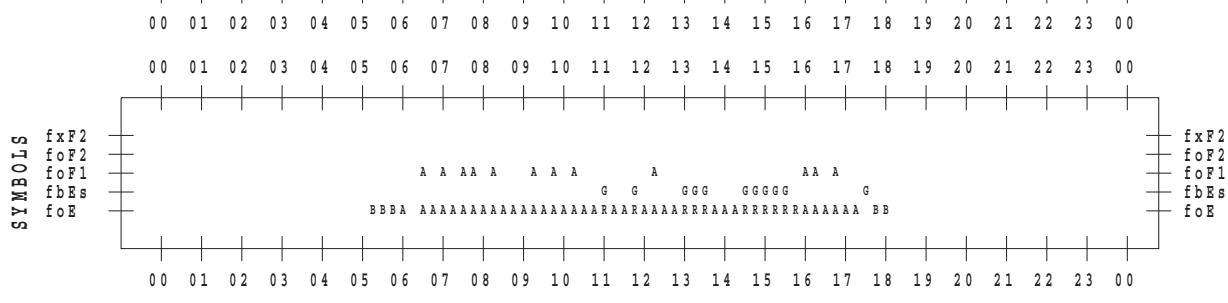
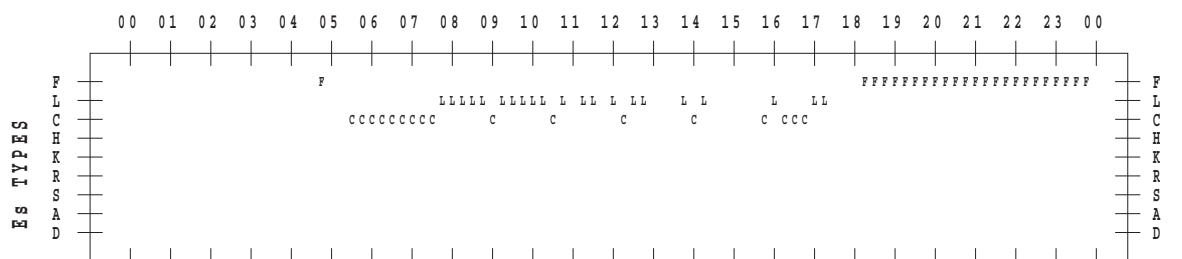
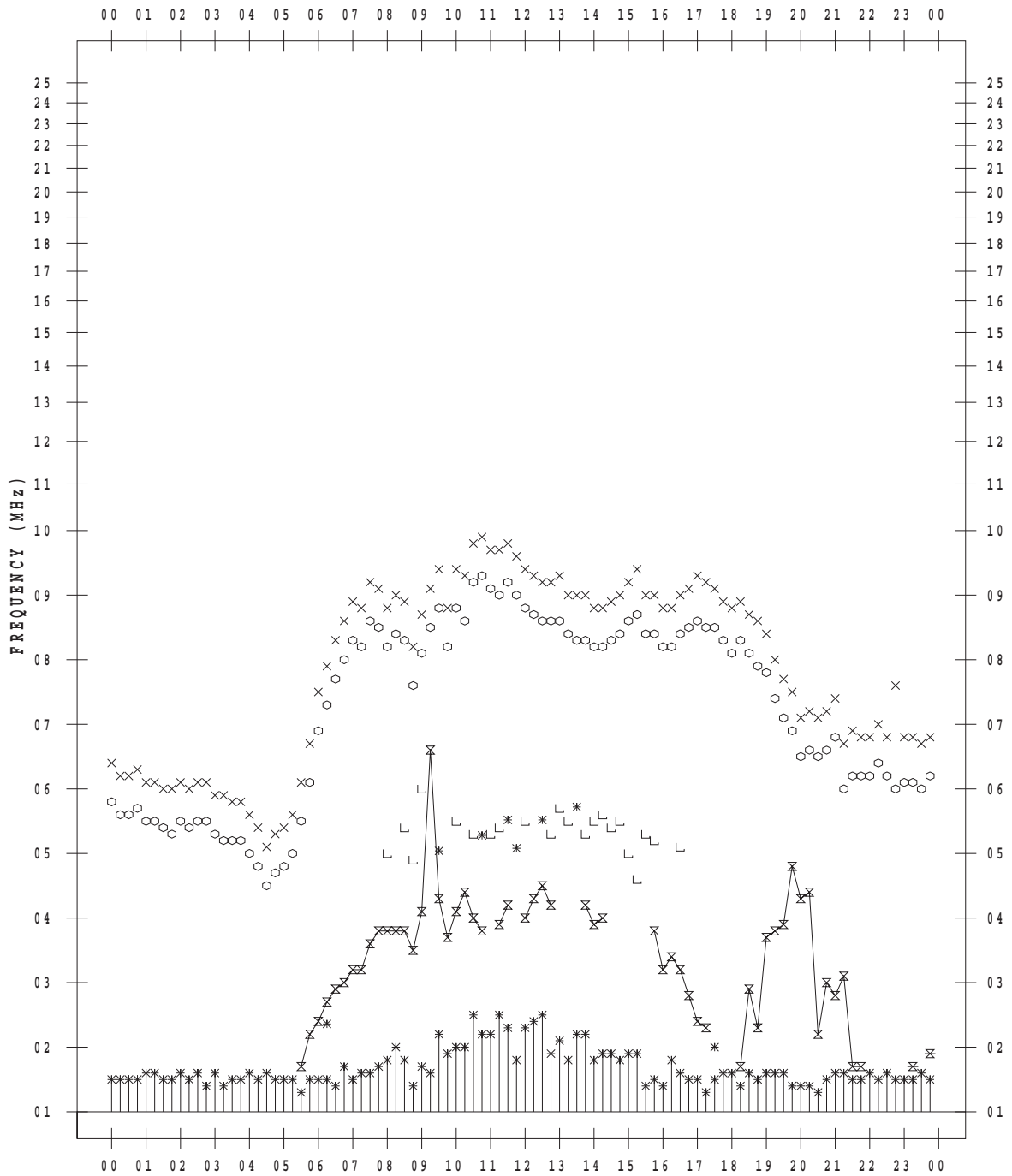
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 14

135 ° E MEAN TIME



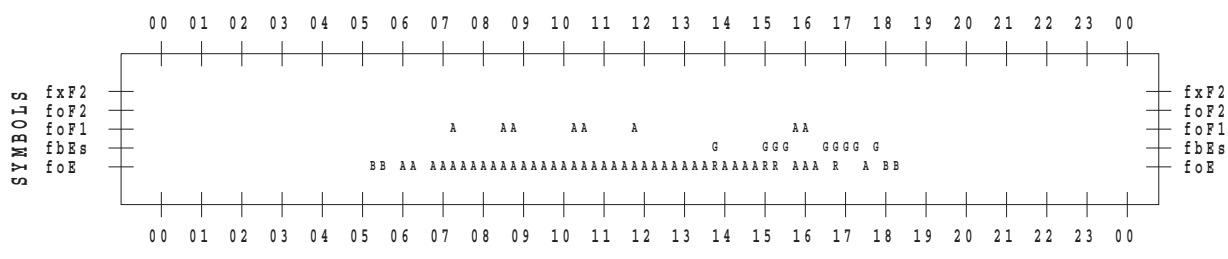
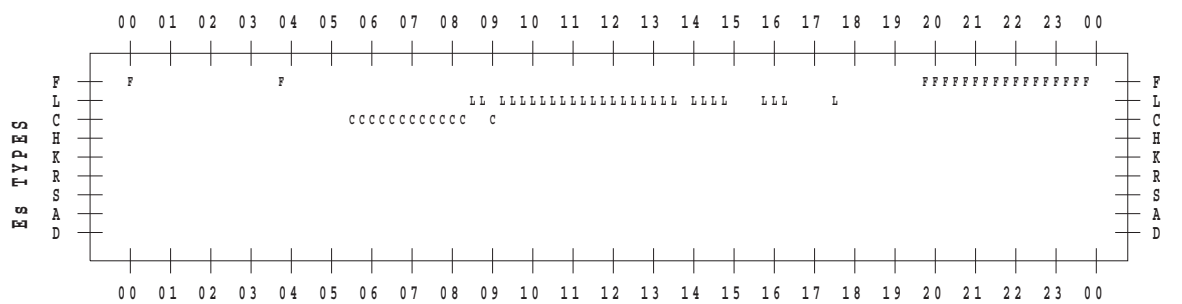
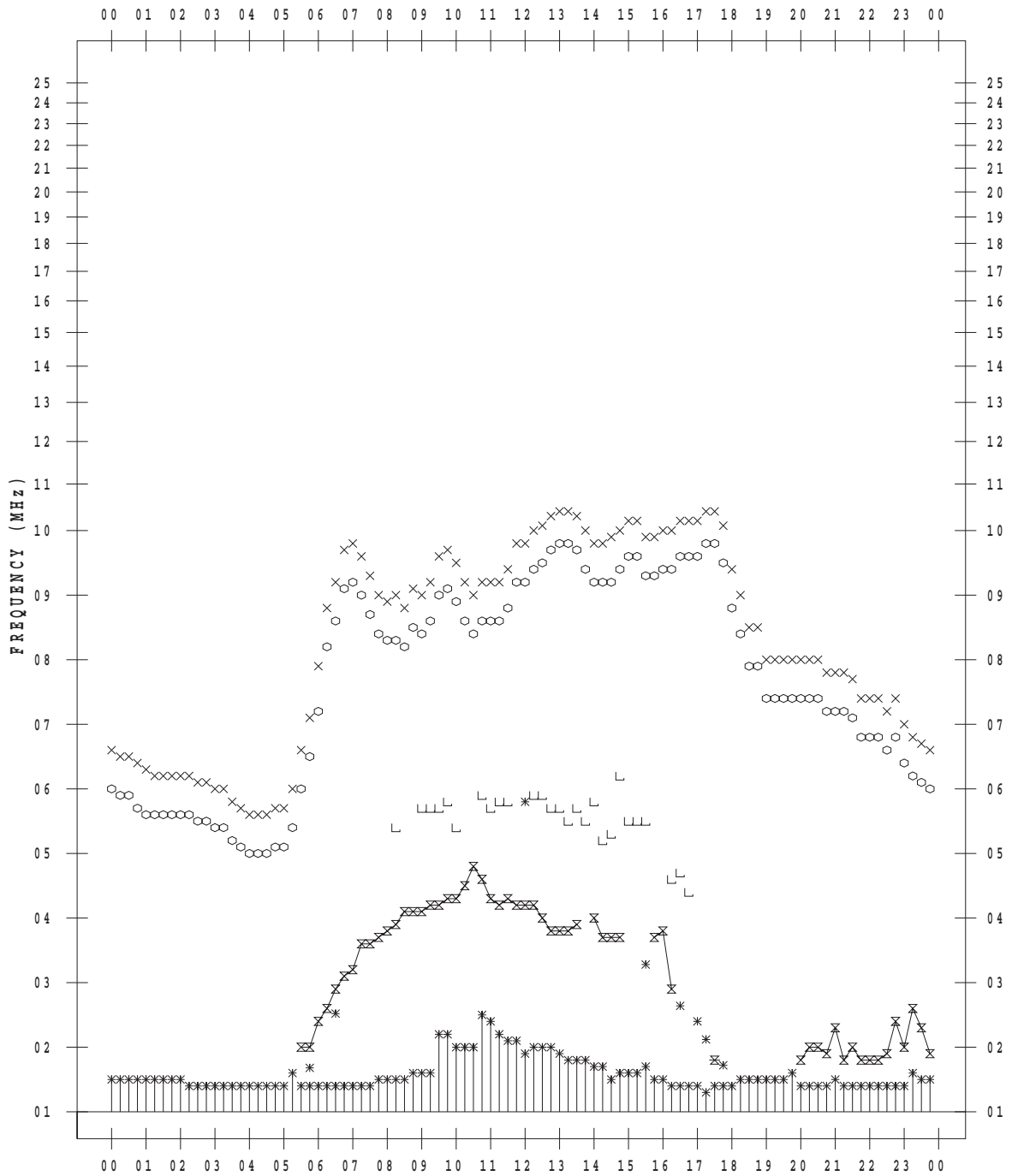
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 15

135 ° E MEAN TIME



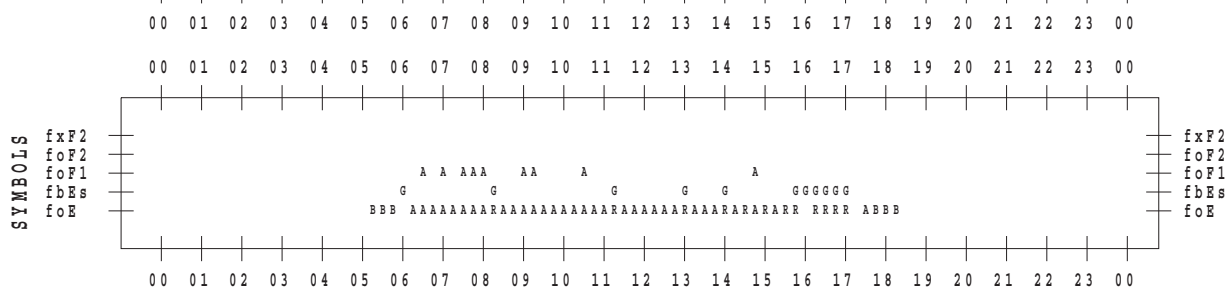
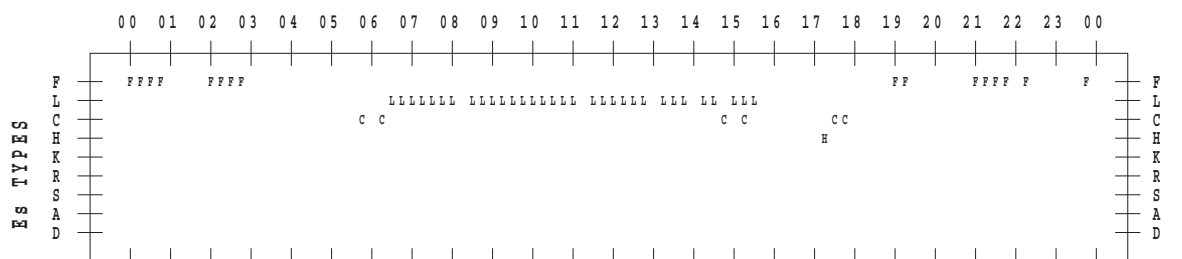
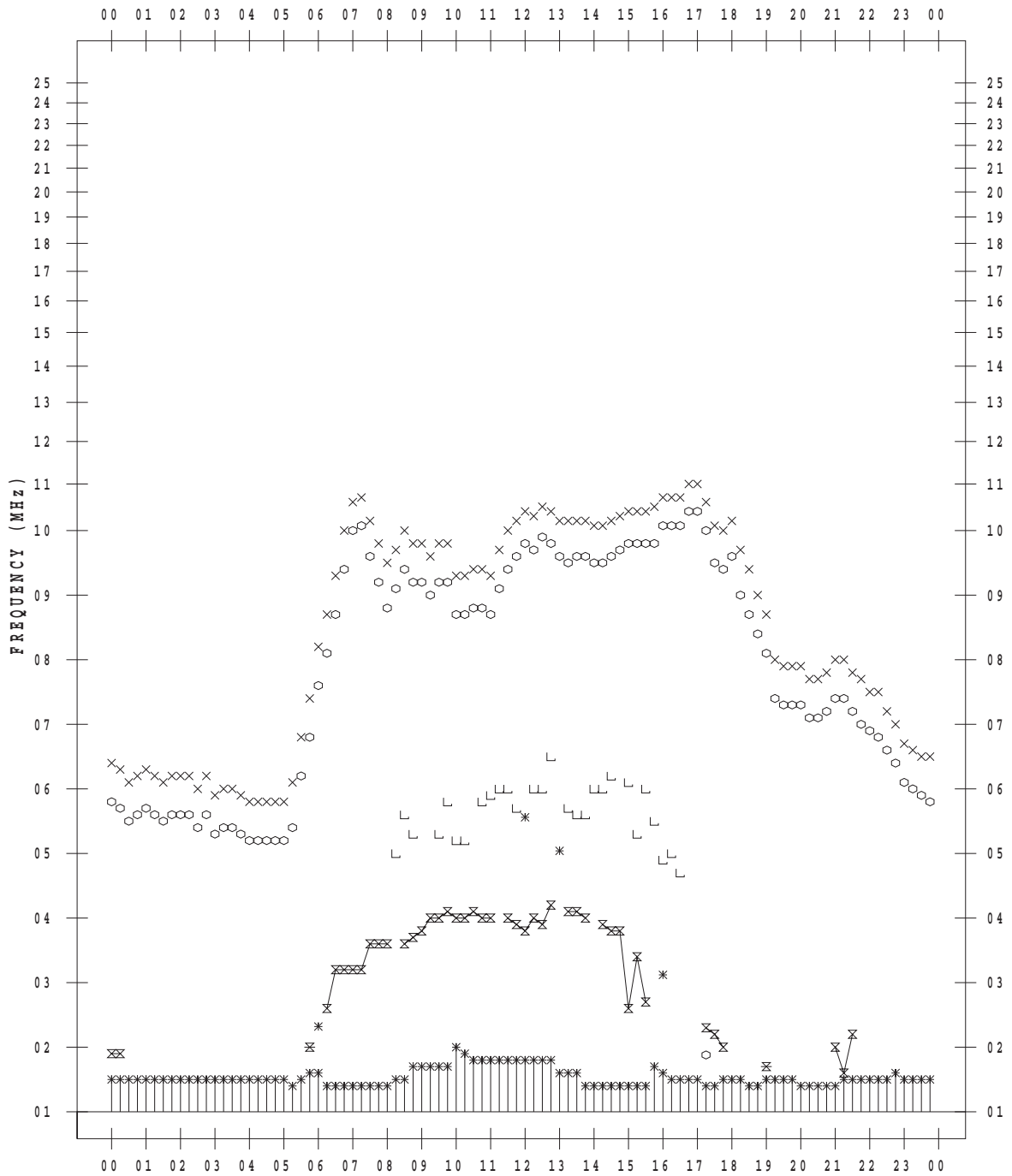
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 16

135 ° E MEAN TIME



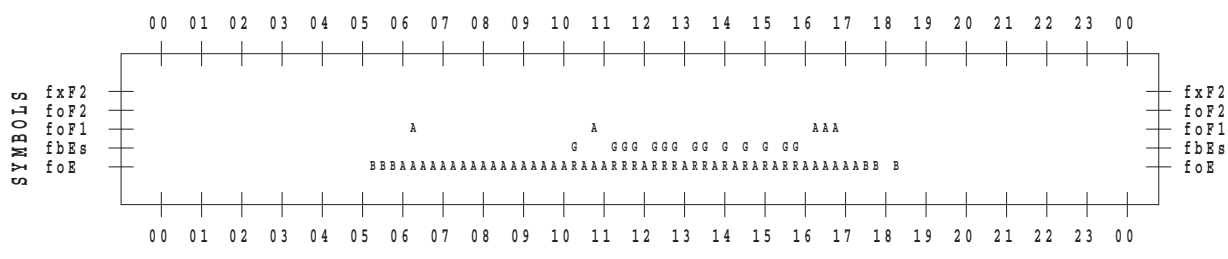
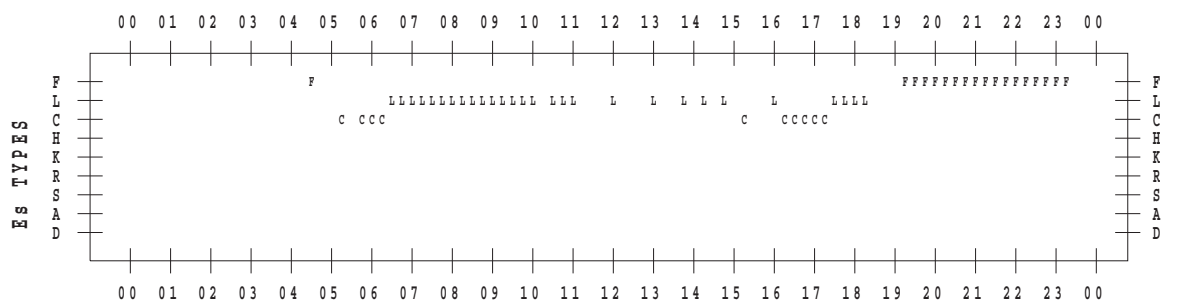
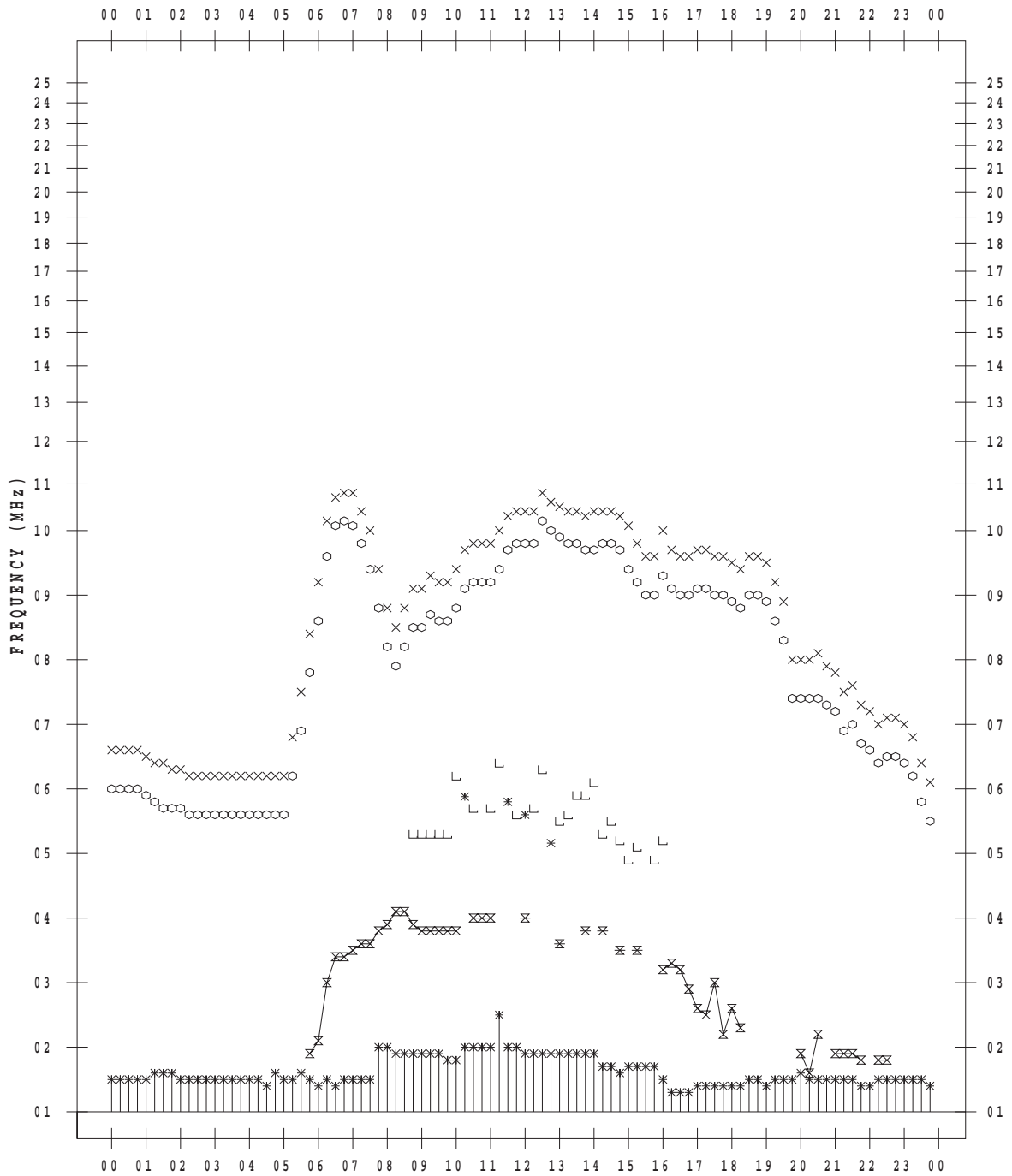
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 18

135 ° E MEAN TIME



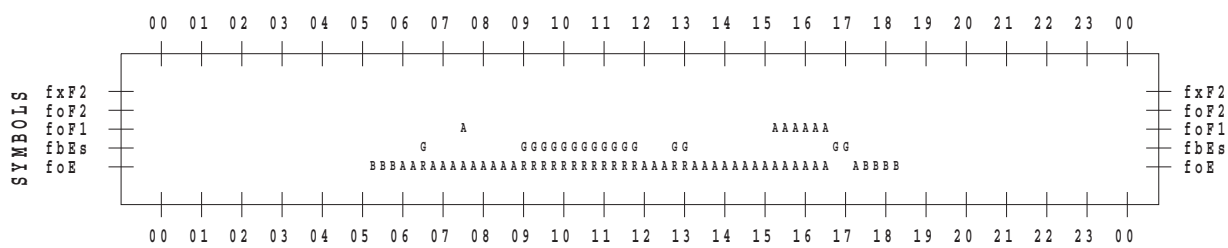
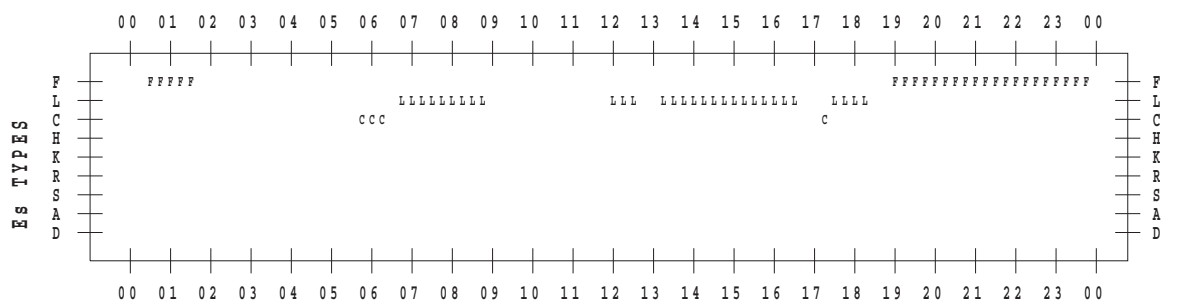
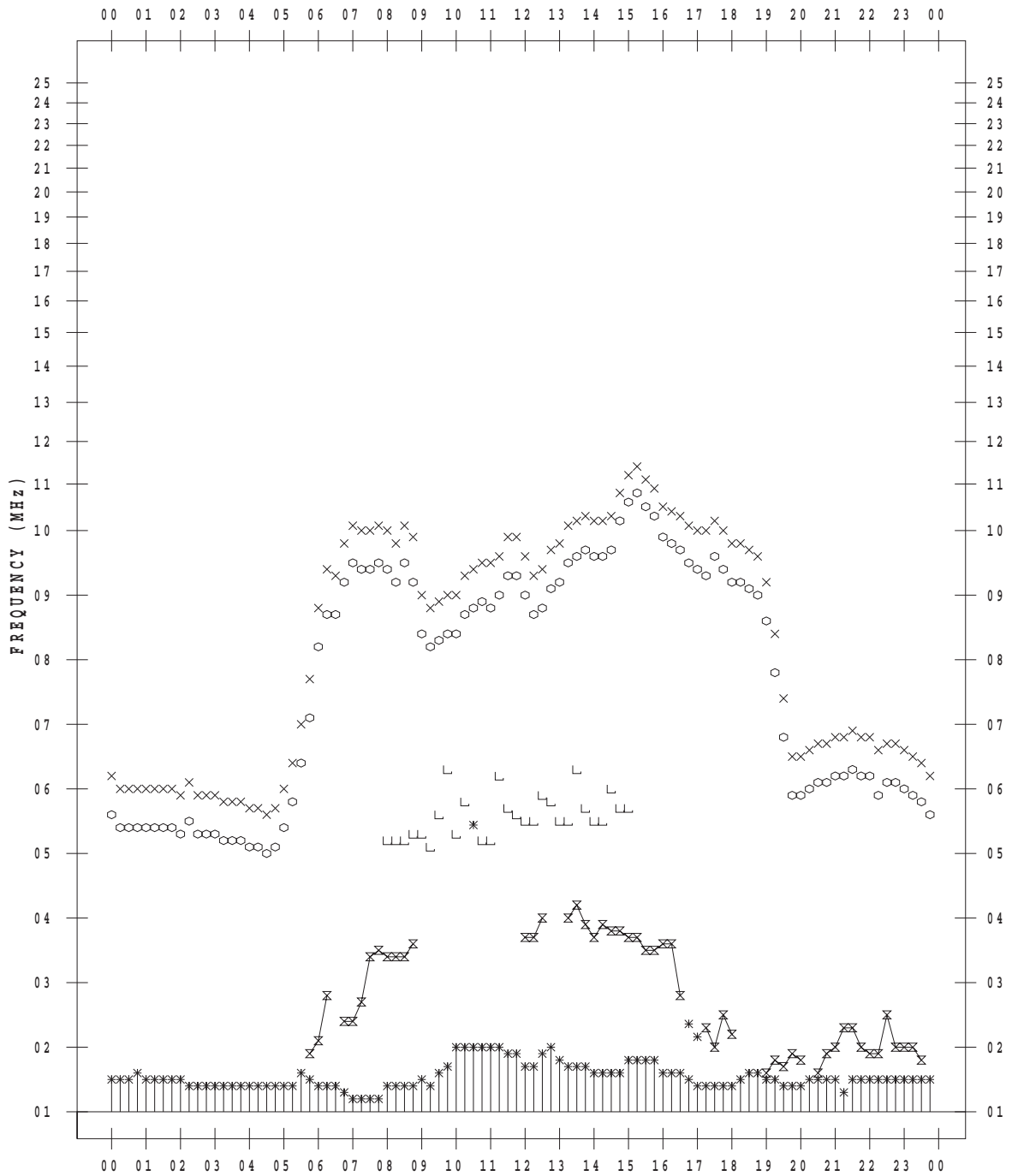
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 19

135 ° E MEAN TIME



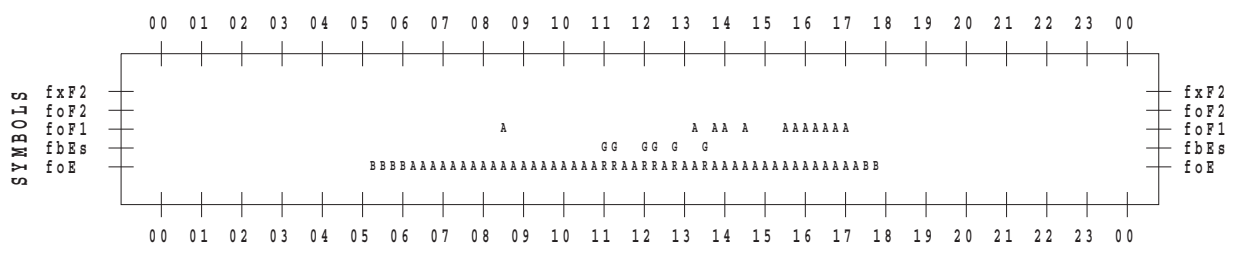
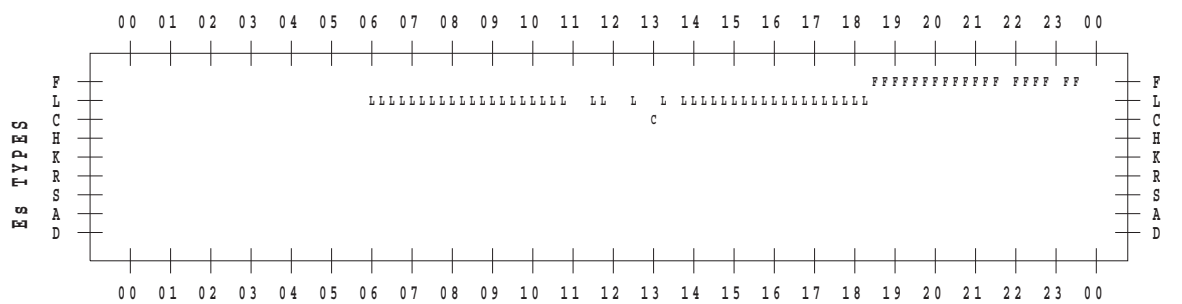
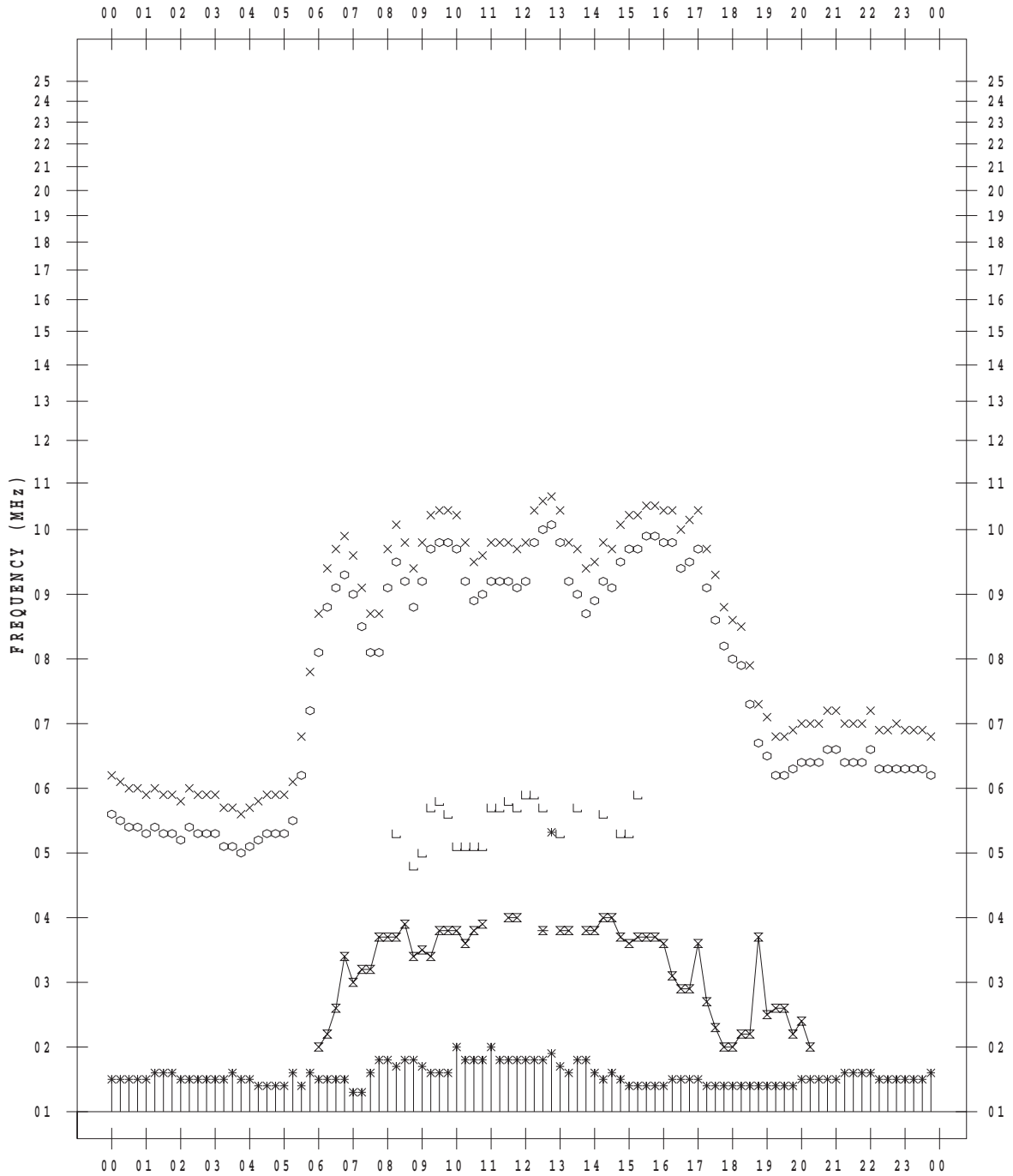
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 20

135 ° E MEAN TIME



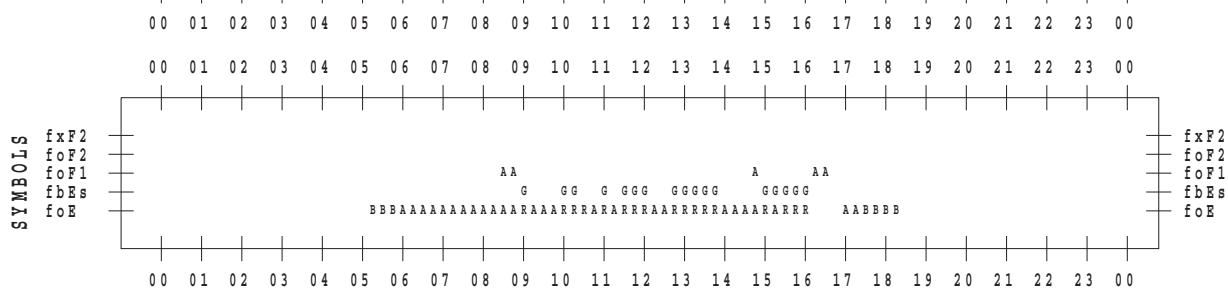
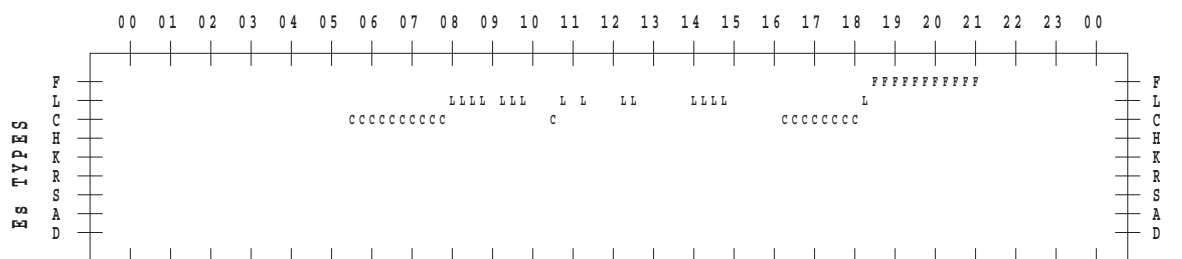
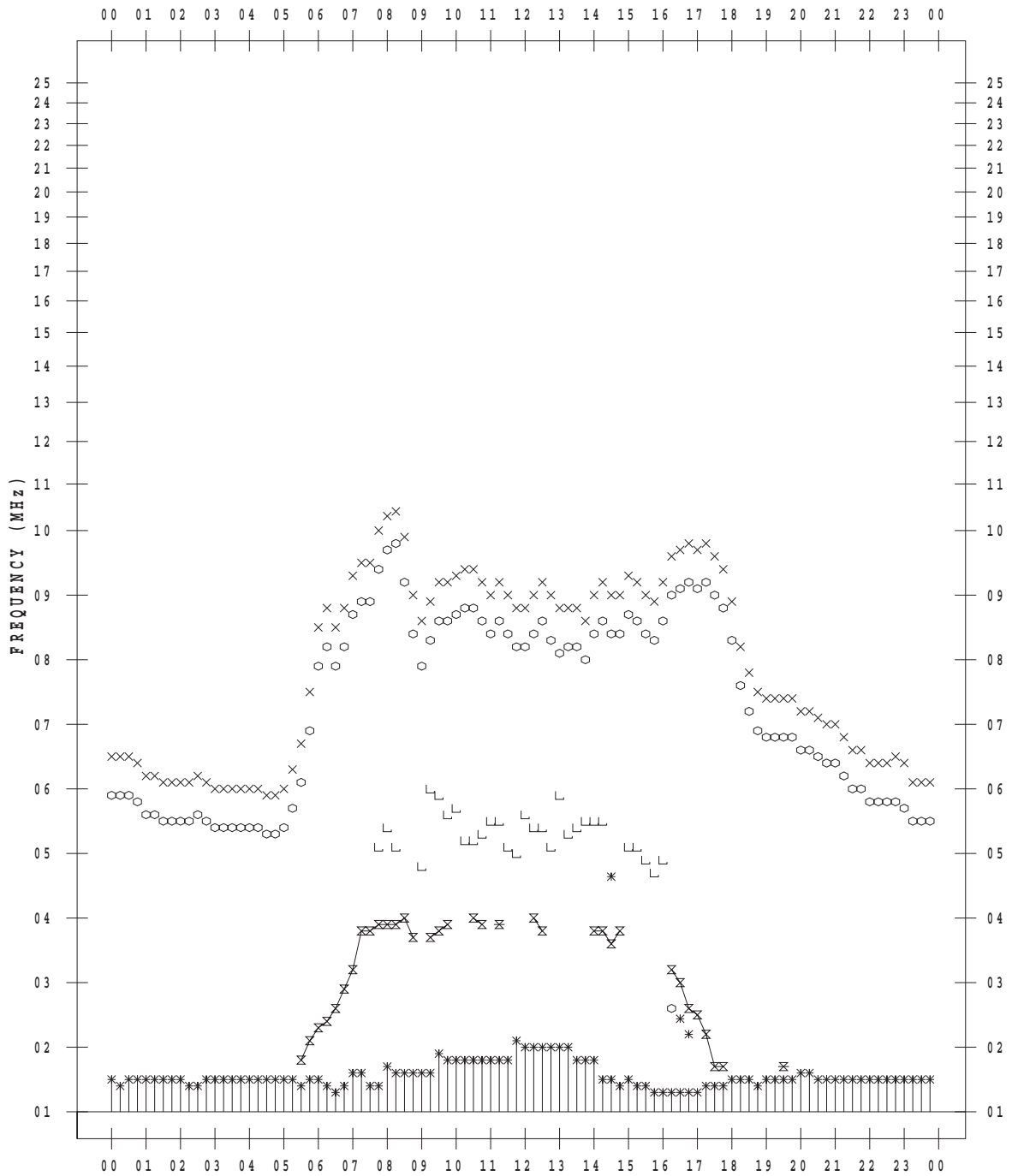
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 21

135 ° E MEAN TIME



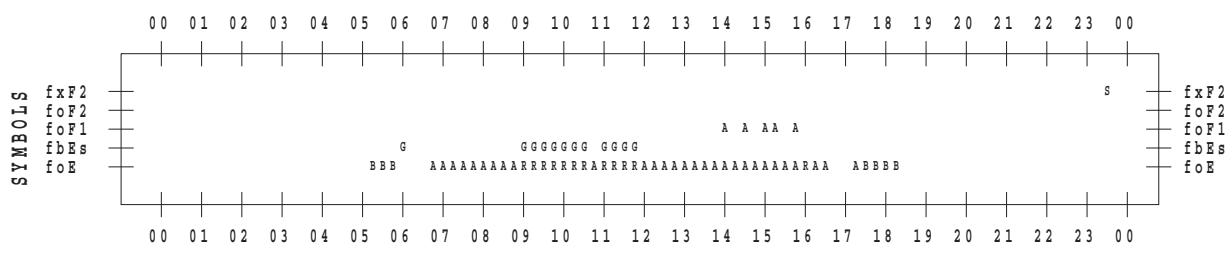
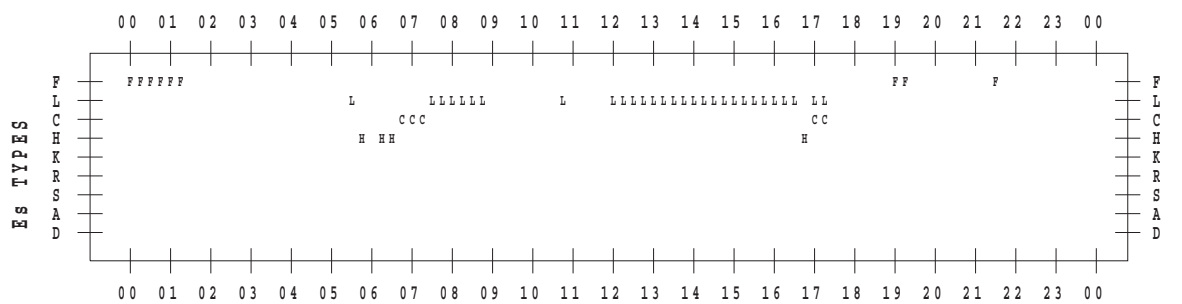
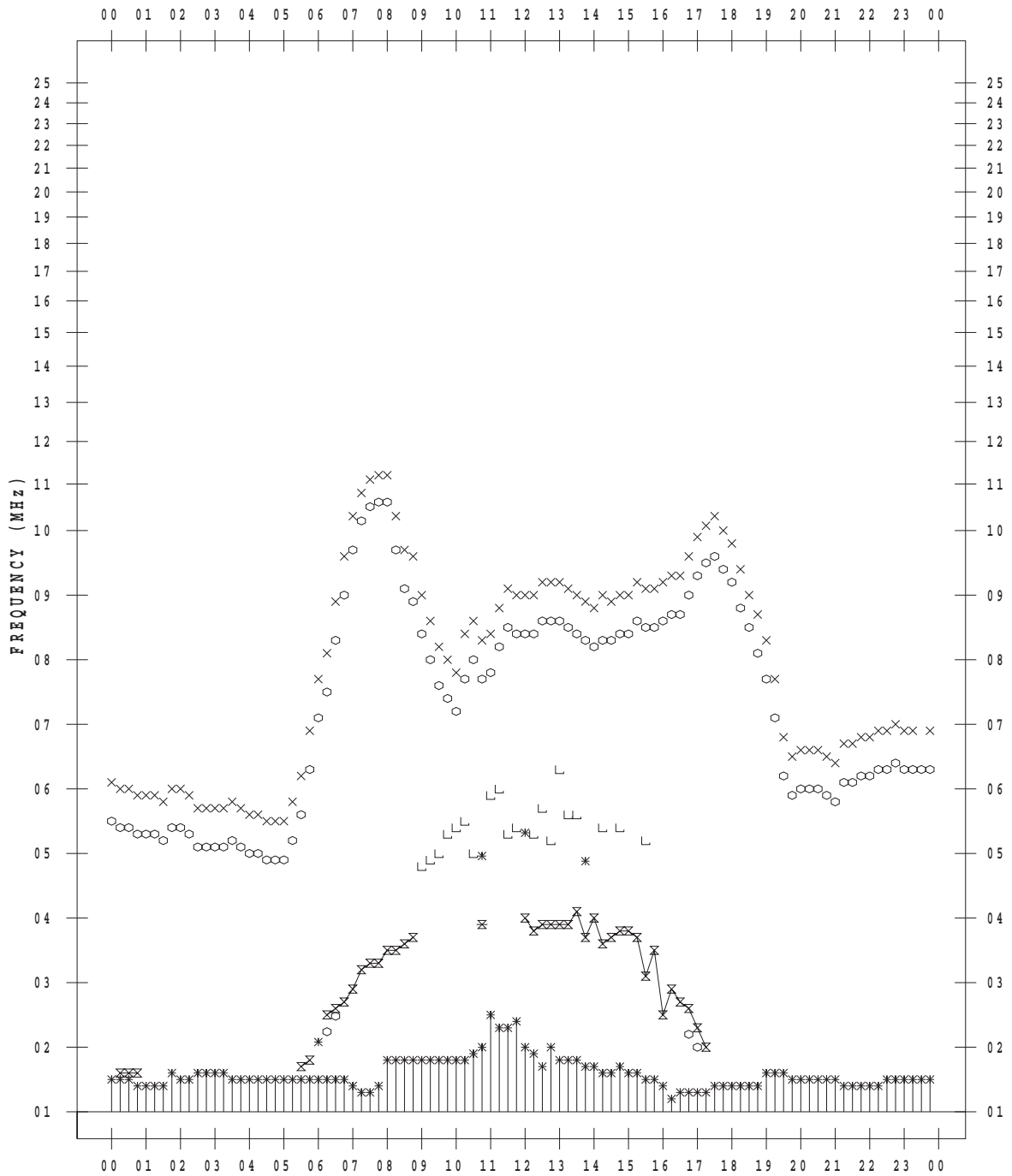
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SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 22

135 ° E MEAN TIME



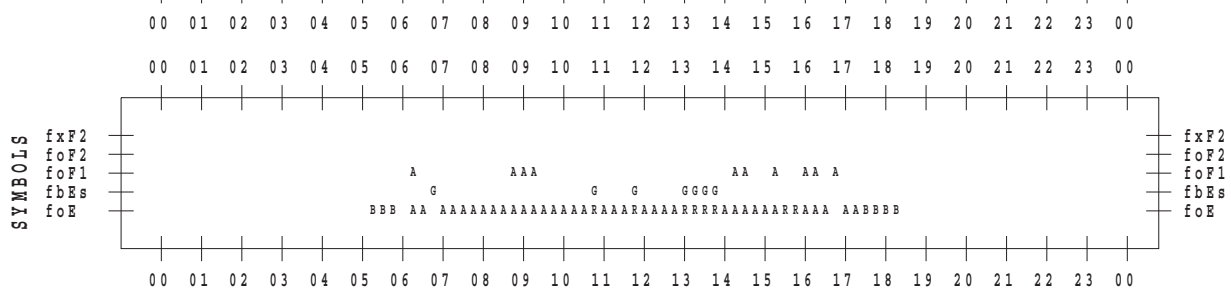
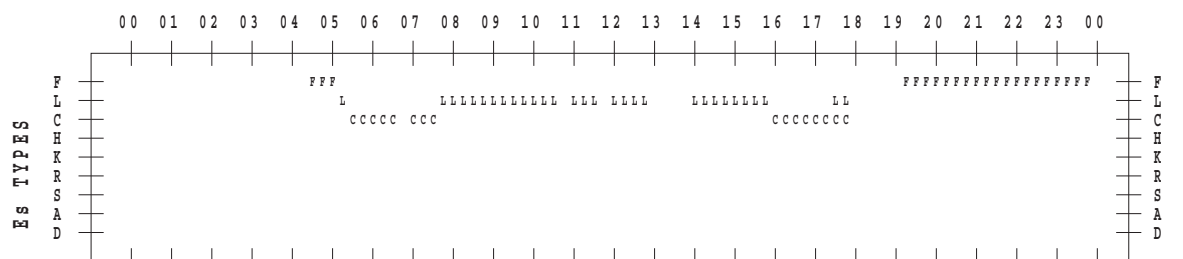
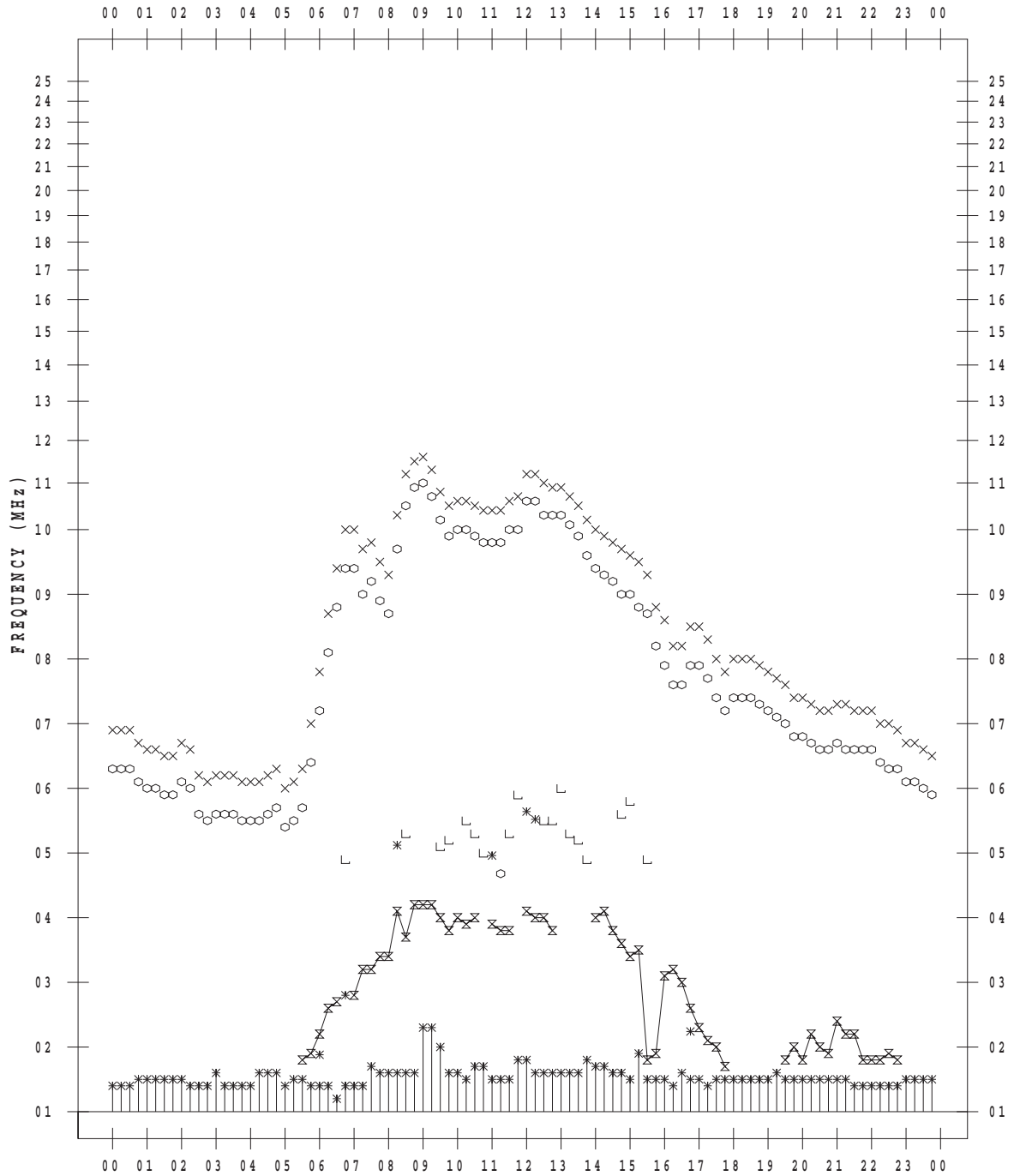
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 23

135 ° E MEAN TIME



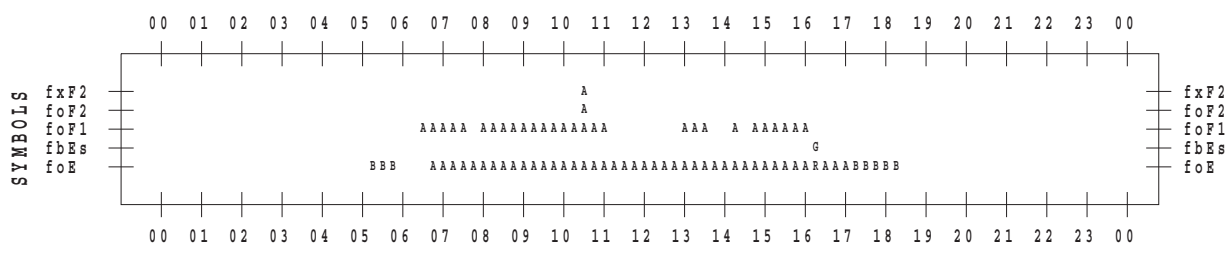
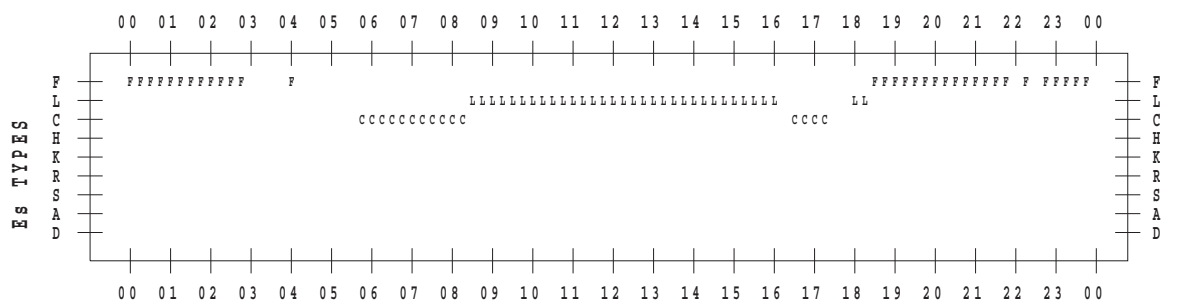
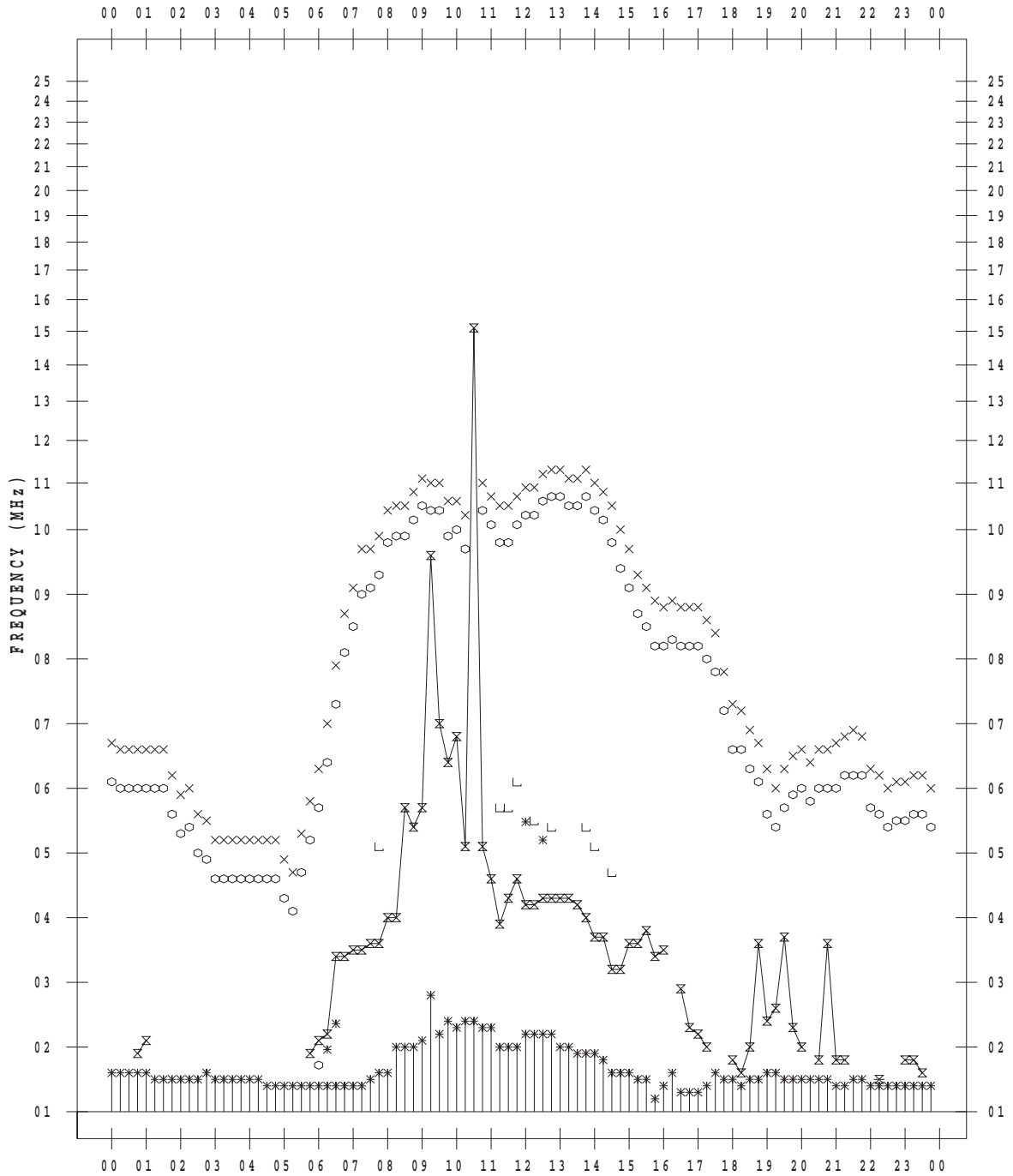
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SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 24

135 ° E MEAN TIME



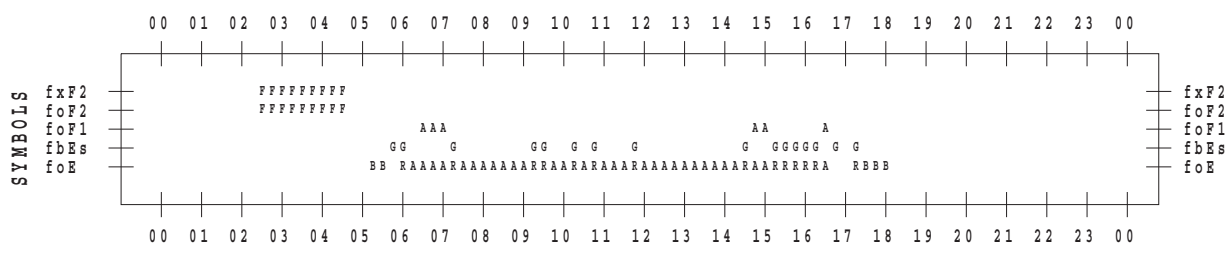
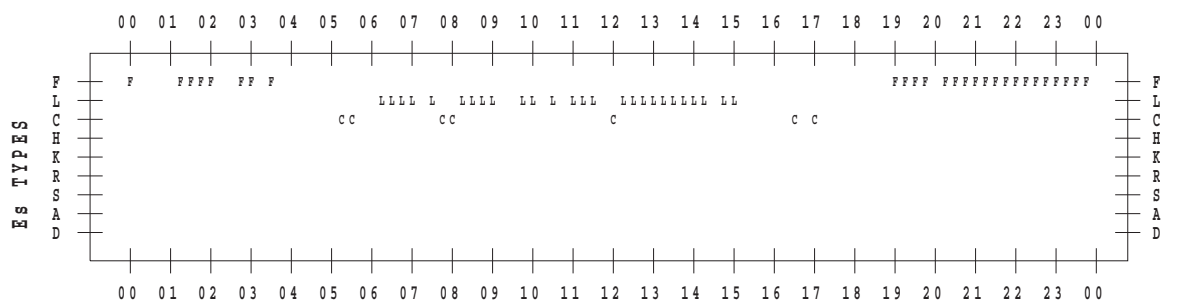
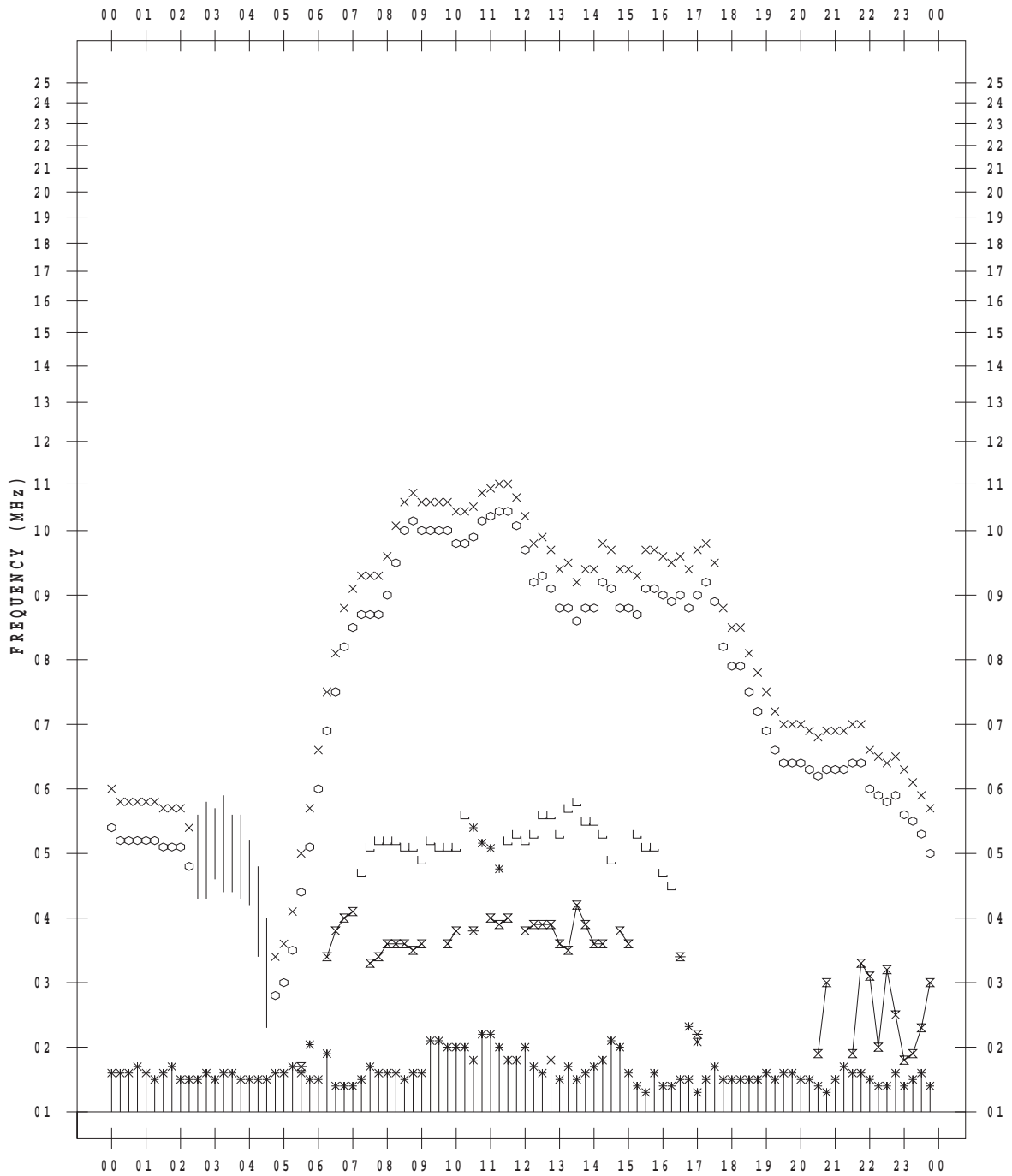
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 25

135 ° E MEAN TIME



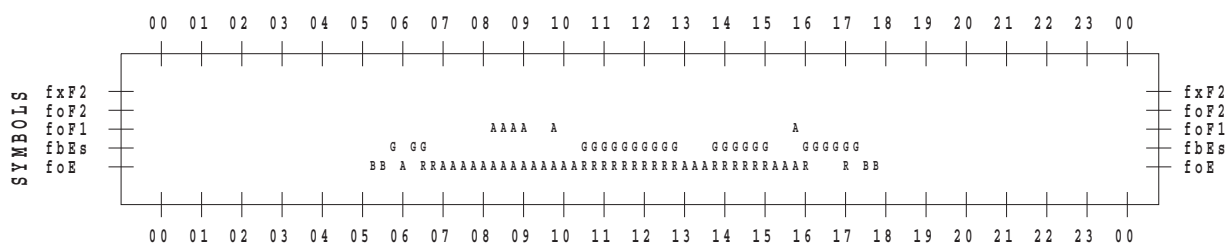
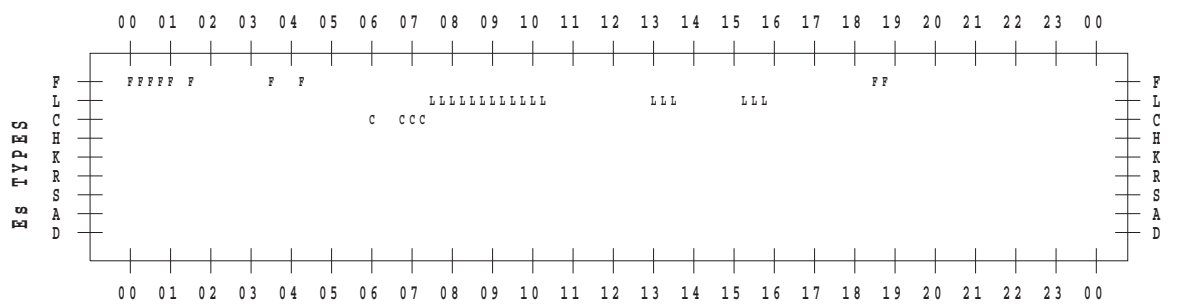
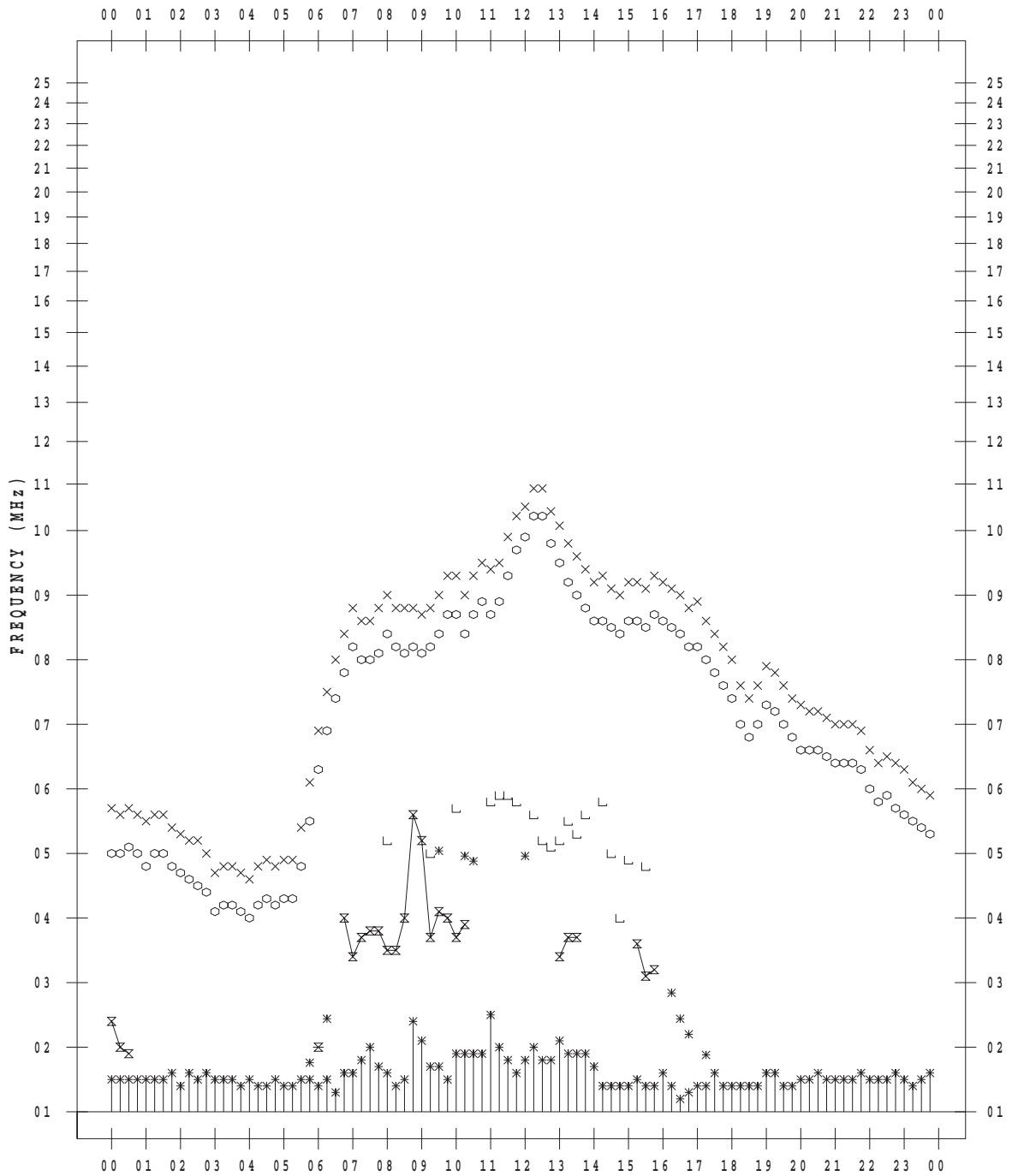
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 26

135 ° E MEAN TIME



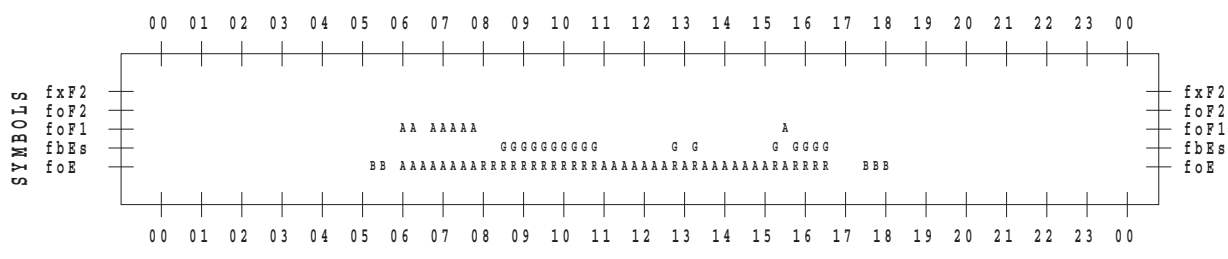
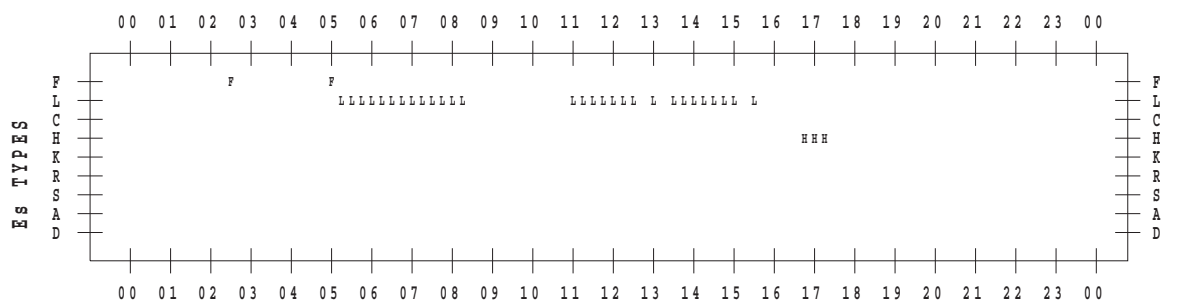
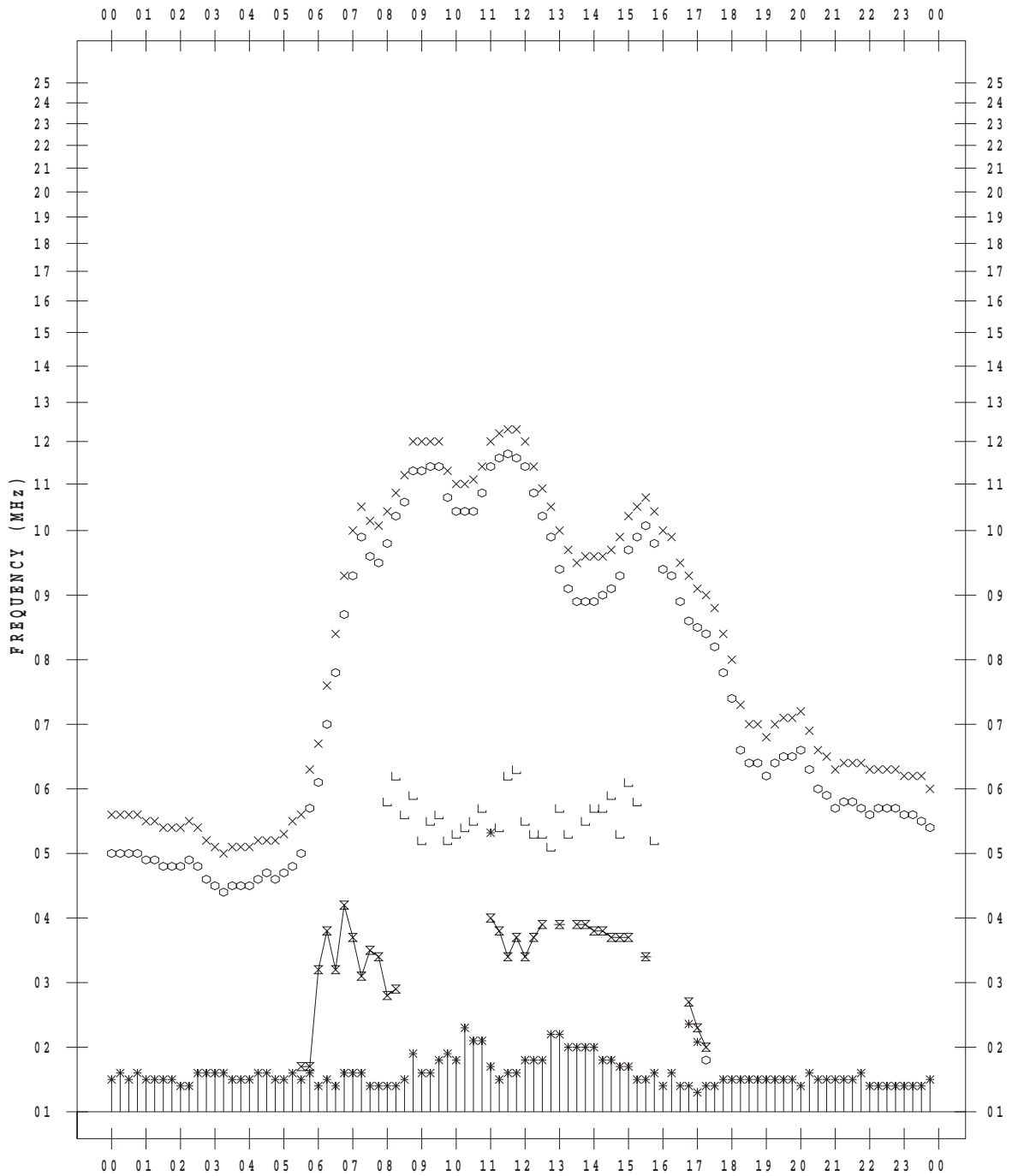
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 27

135 ° E MEAN TIME



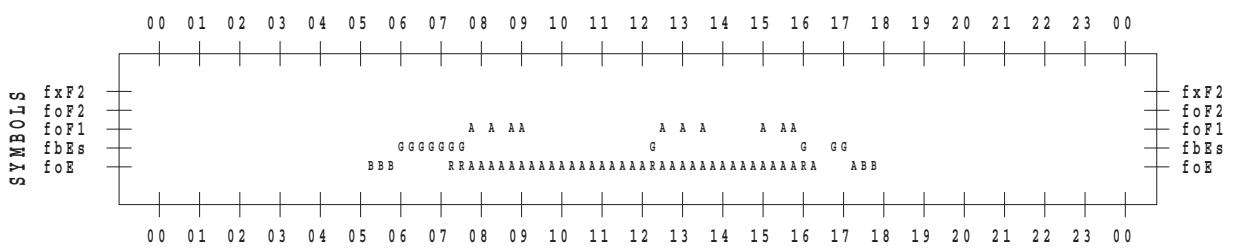
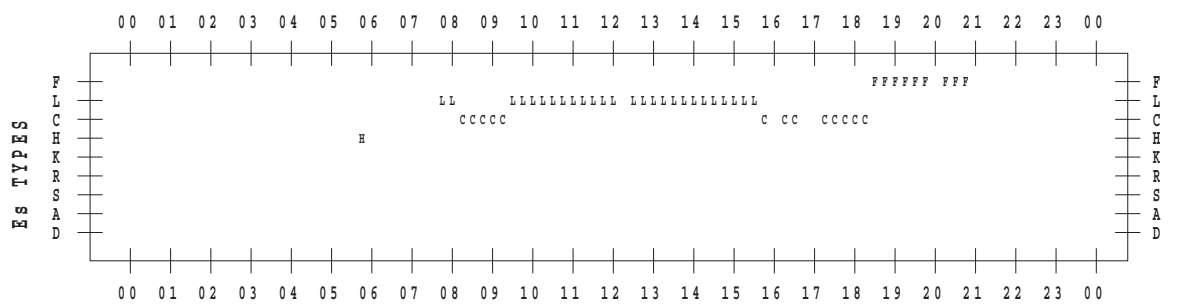
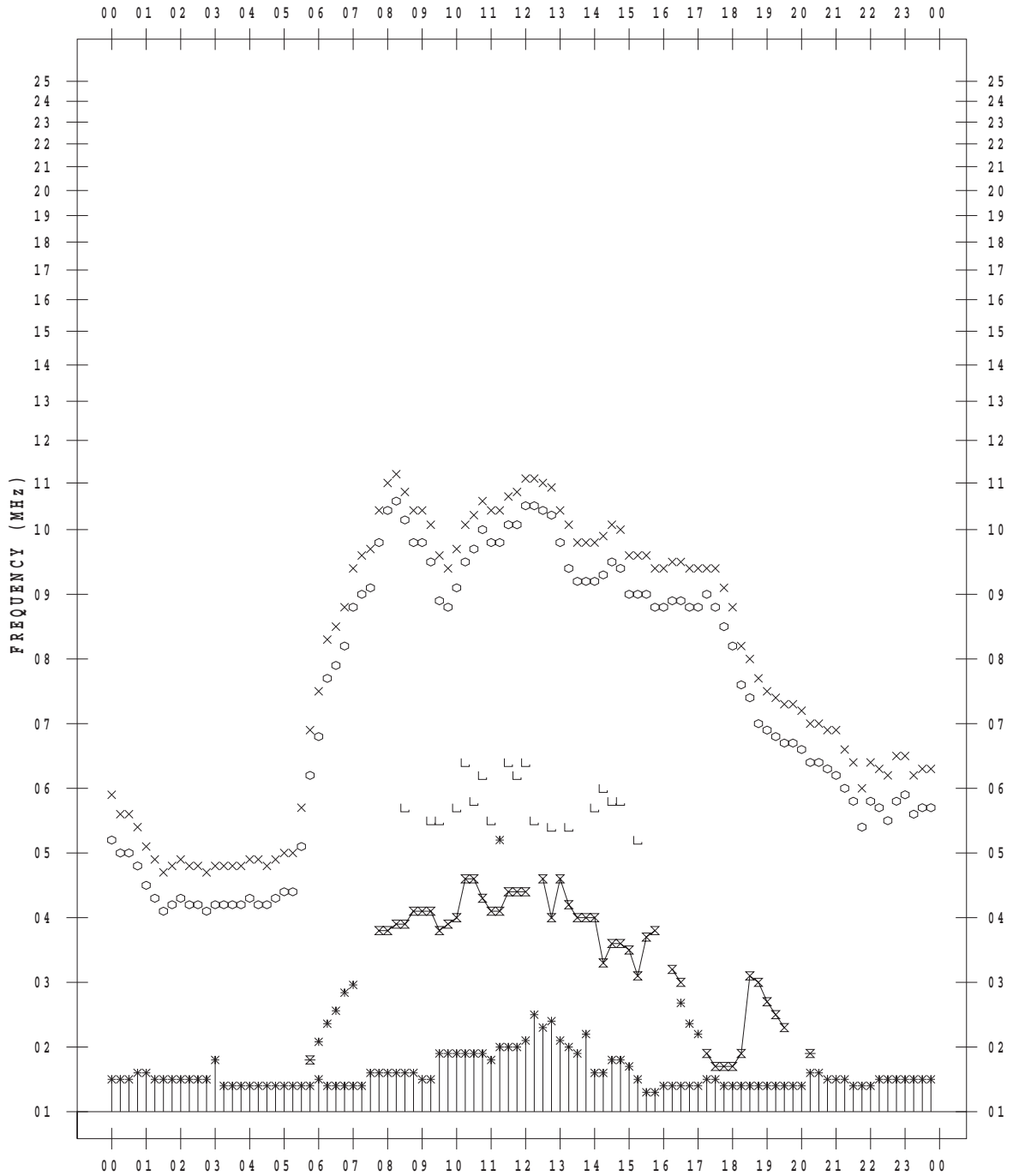
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 28

135 ° E MEAN TIME



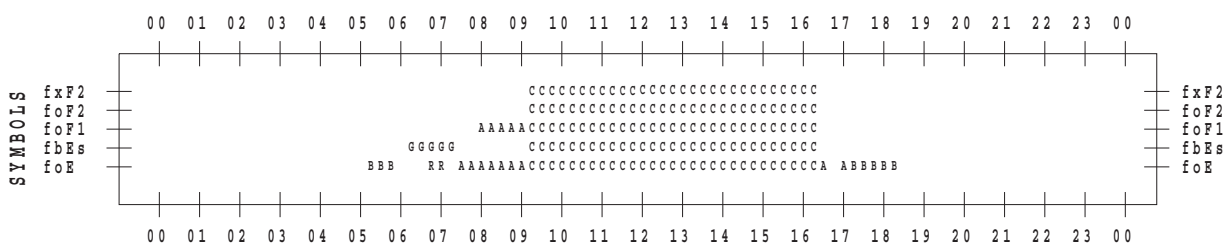
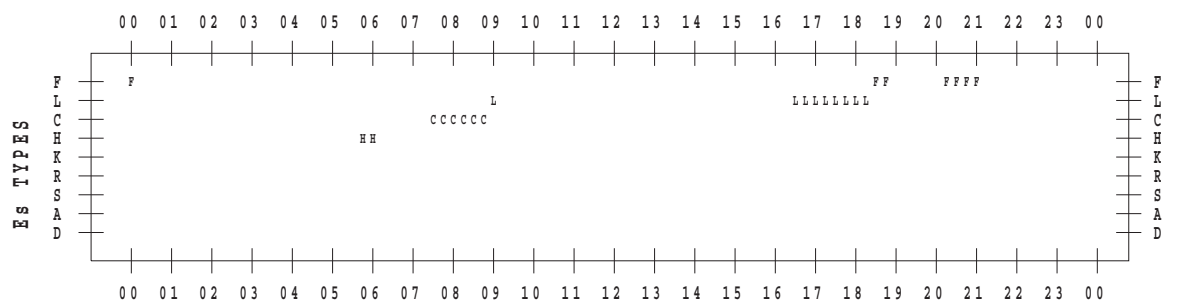
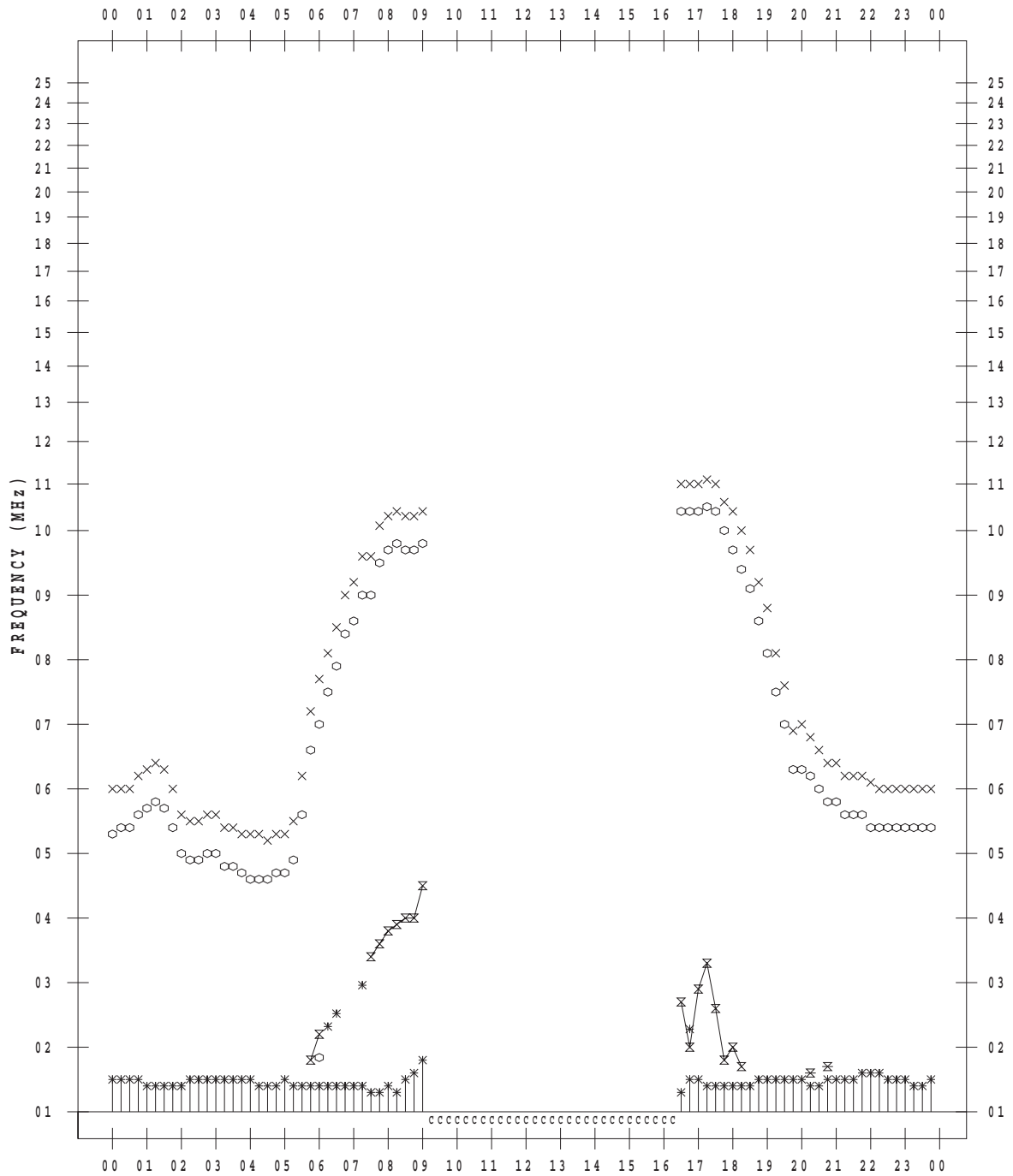
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SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014 / 9 / 30

135 ° E MEAN TIME



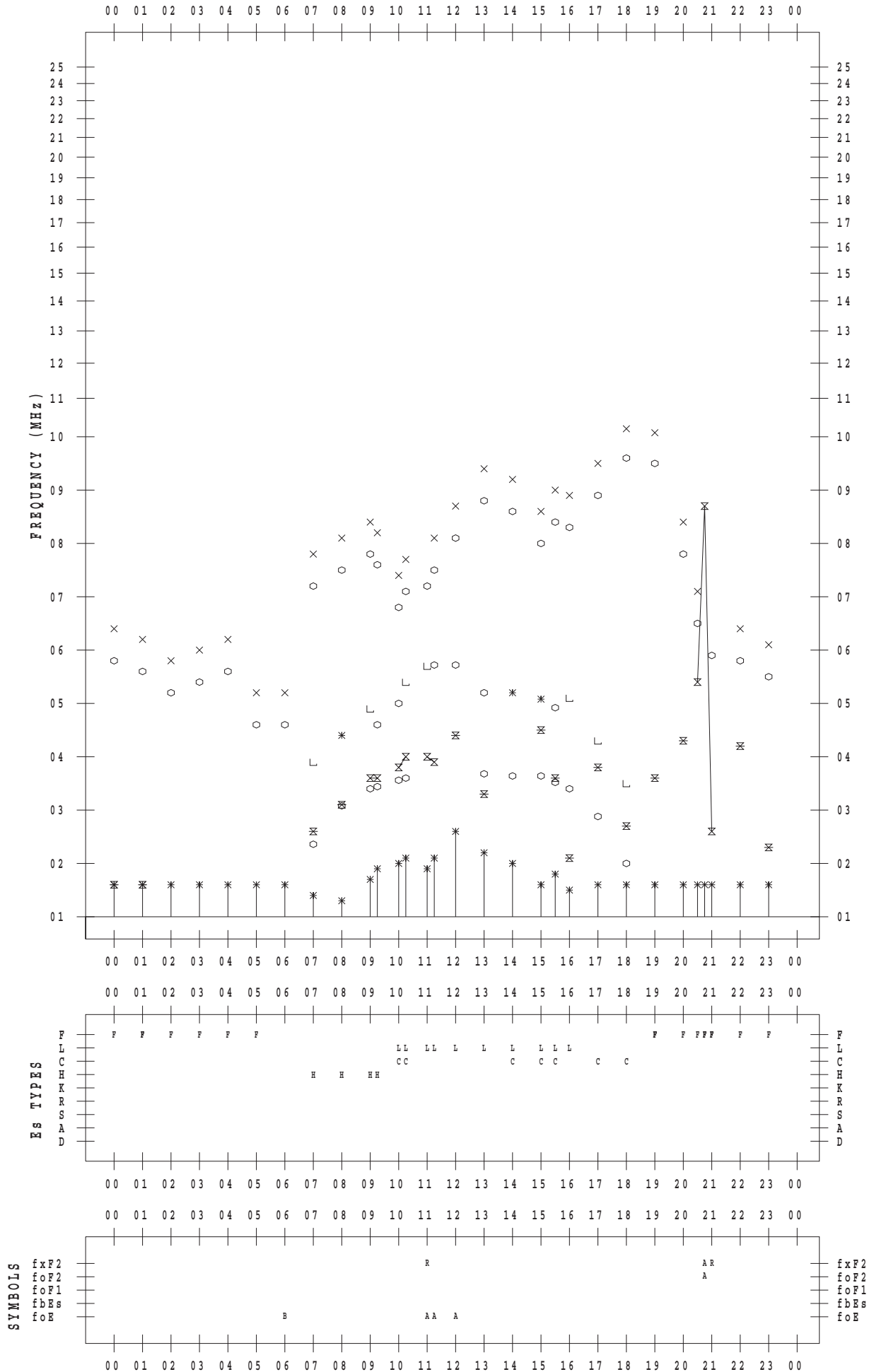
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 2

135 ° E MEAN TIME



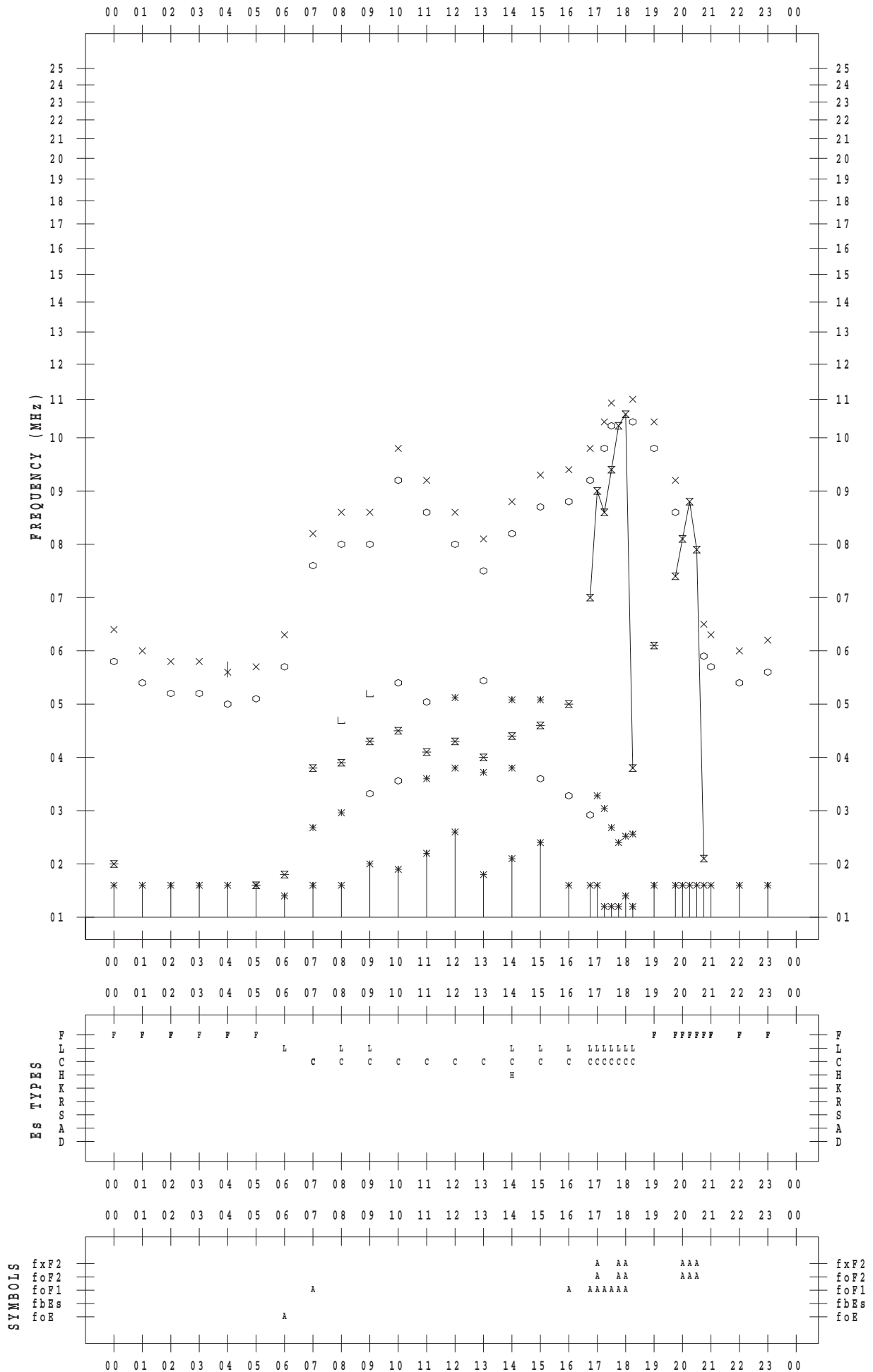
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 3

135 ° E MEAN TIME



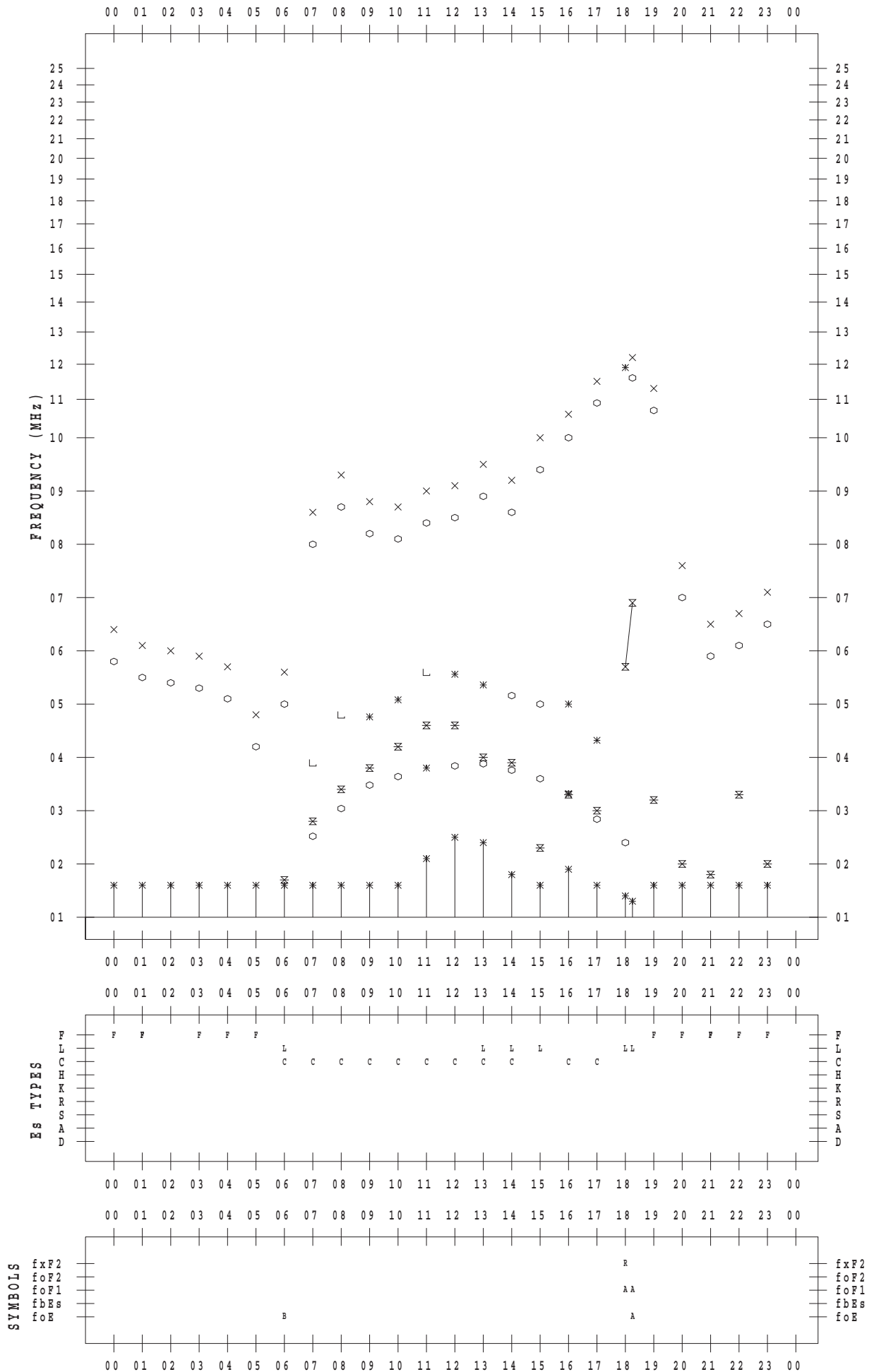
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 4

135 ° E MEAN TIME



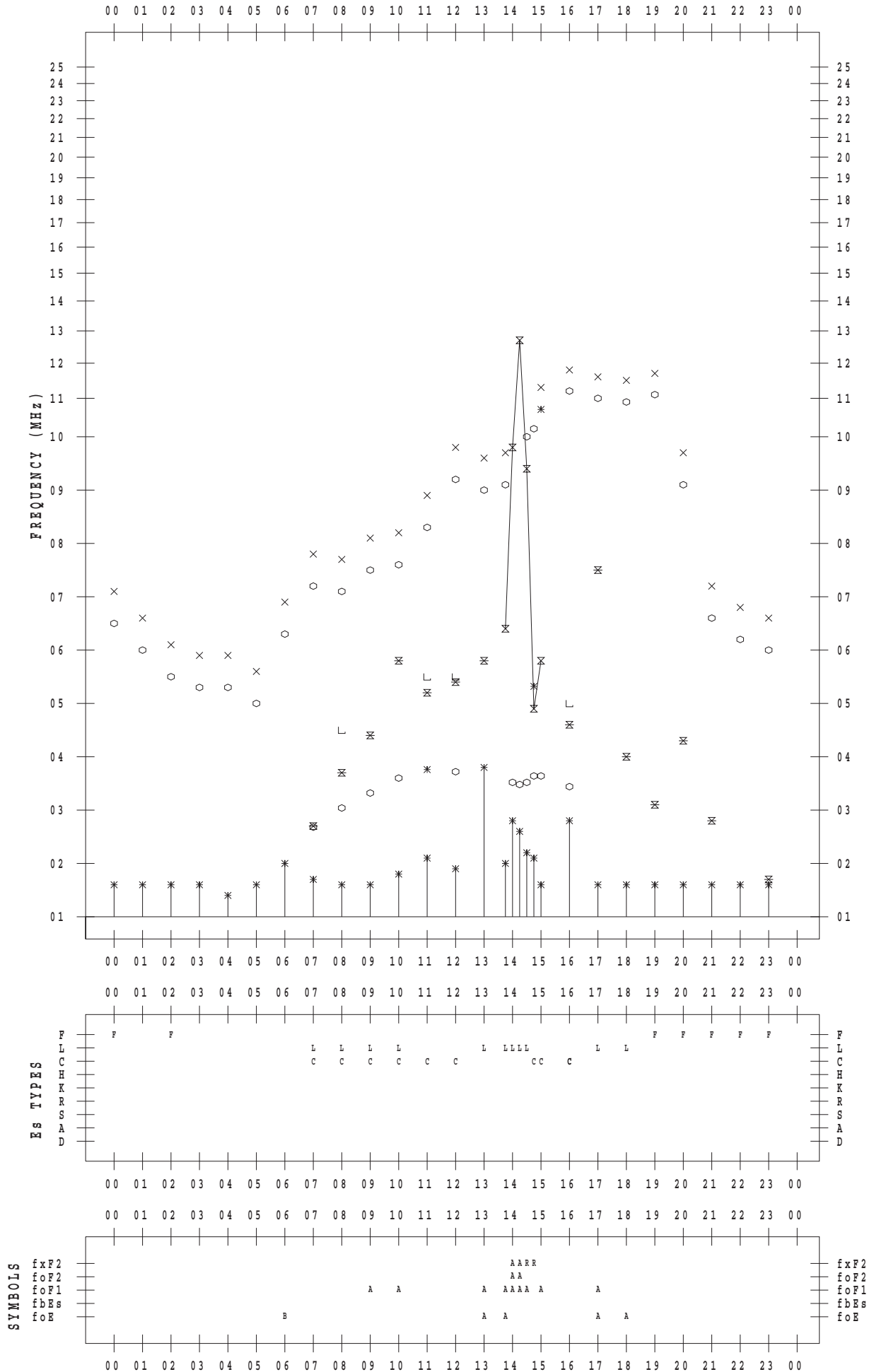
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 5

135 ° E MEAN TIME



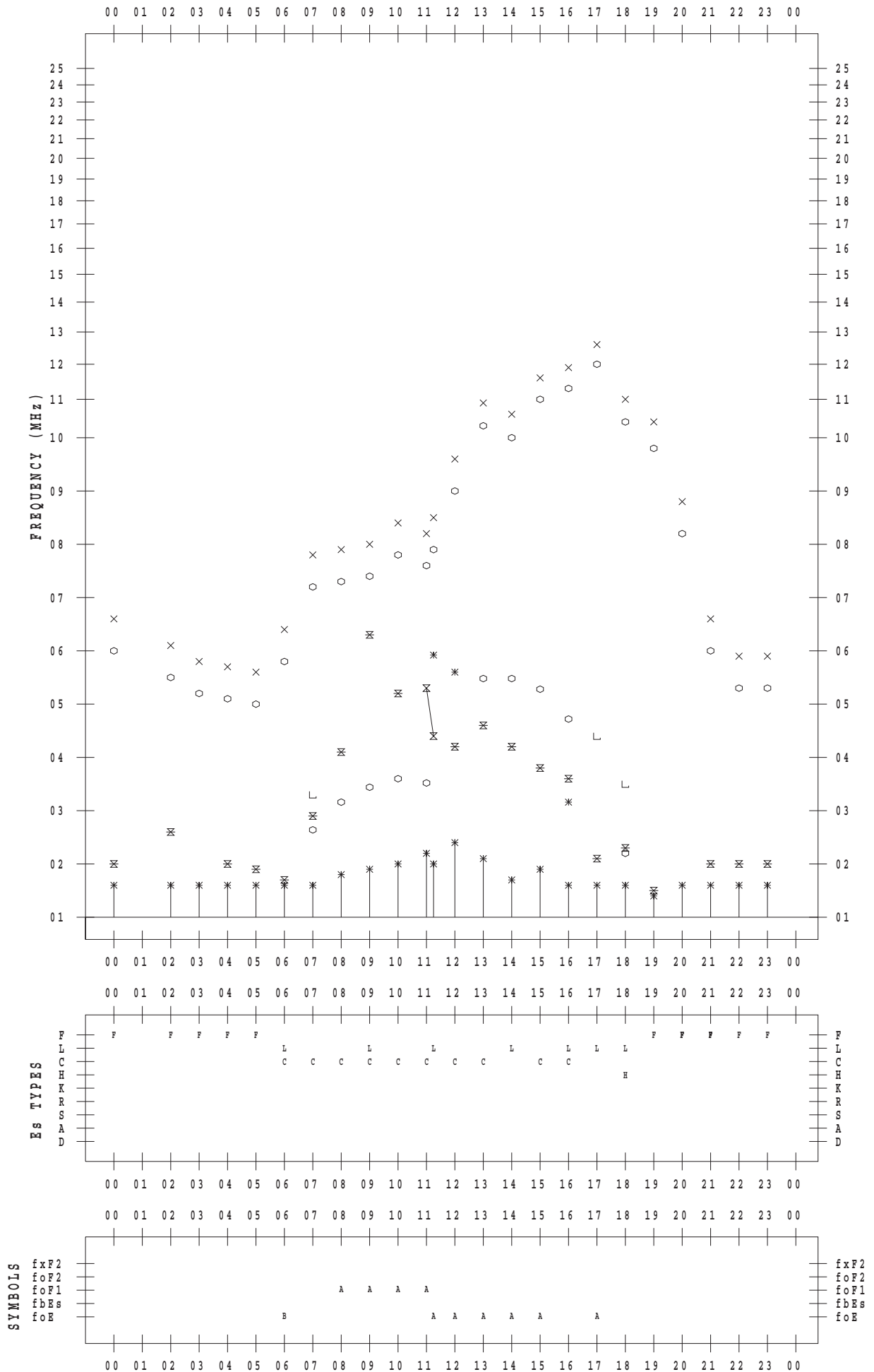
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 6

135 ° E MEAN TIME



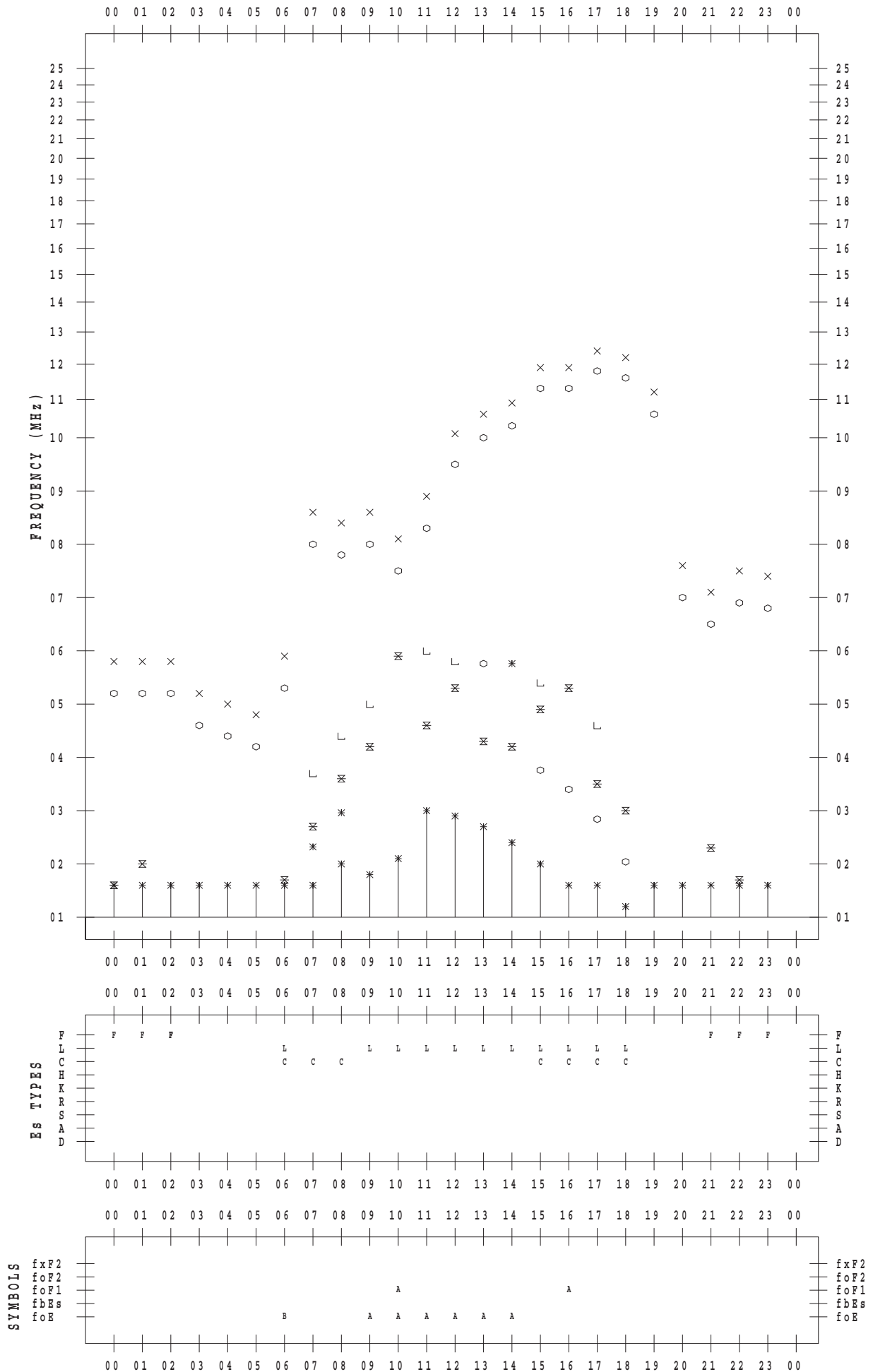
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 7

135 ° E MEAN TIME



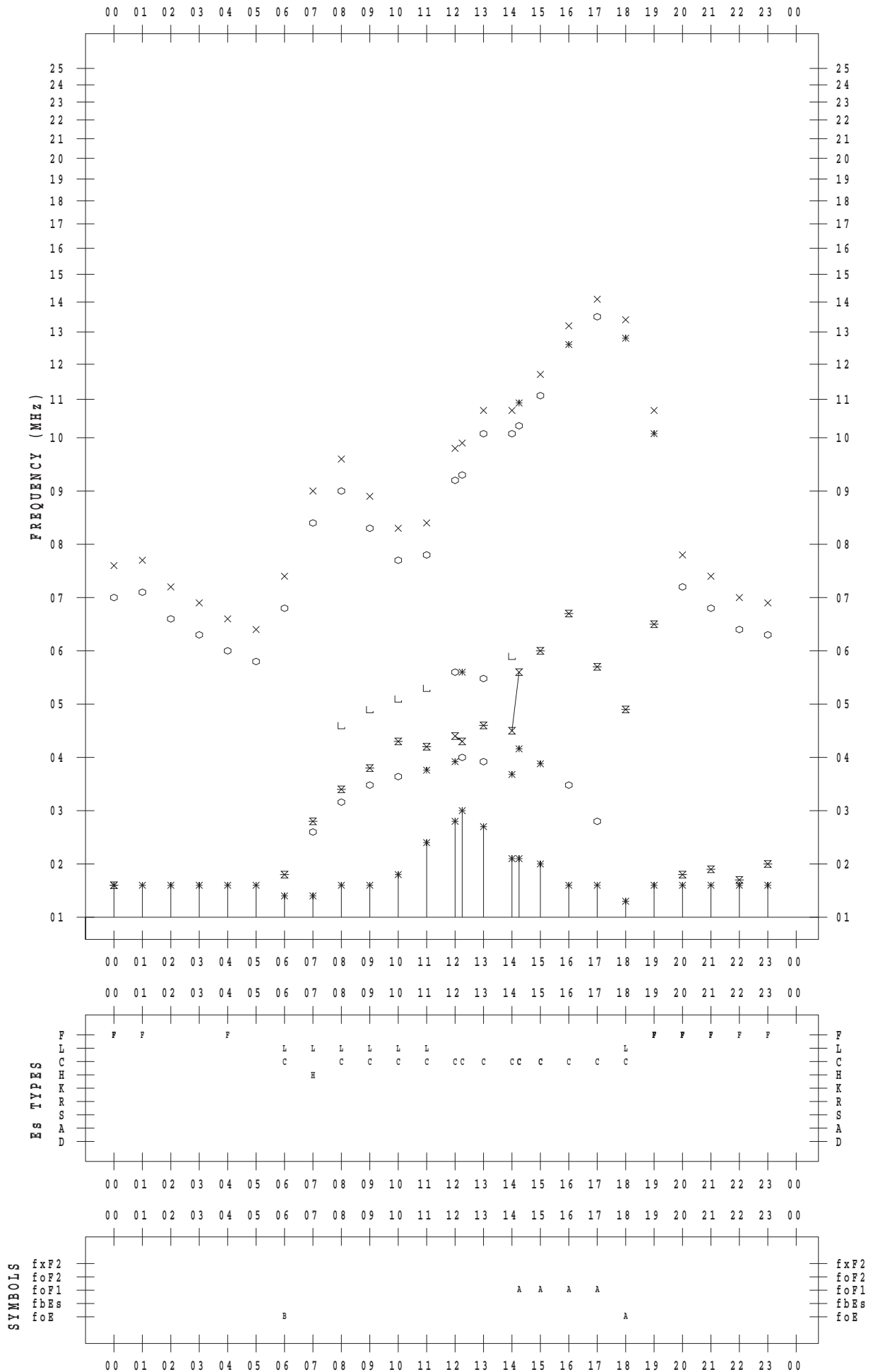
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 8

135 ° E MEAN TIME



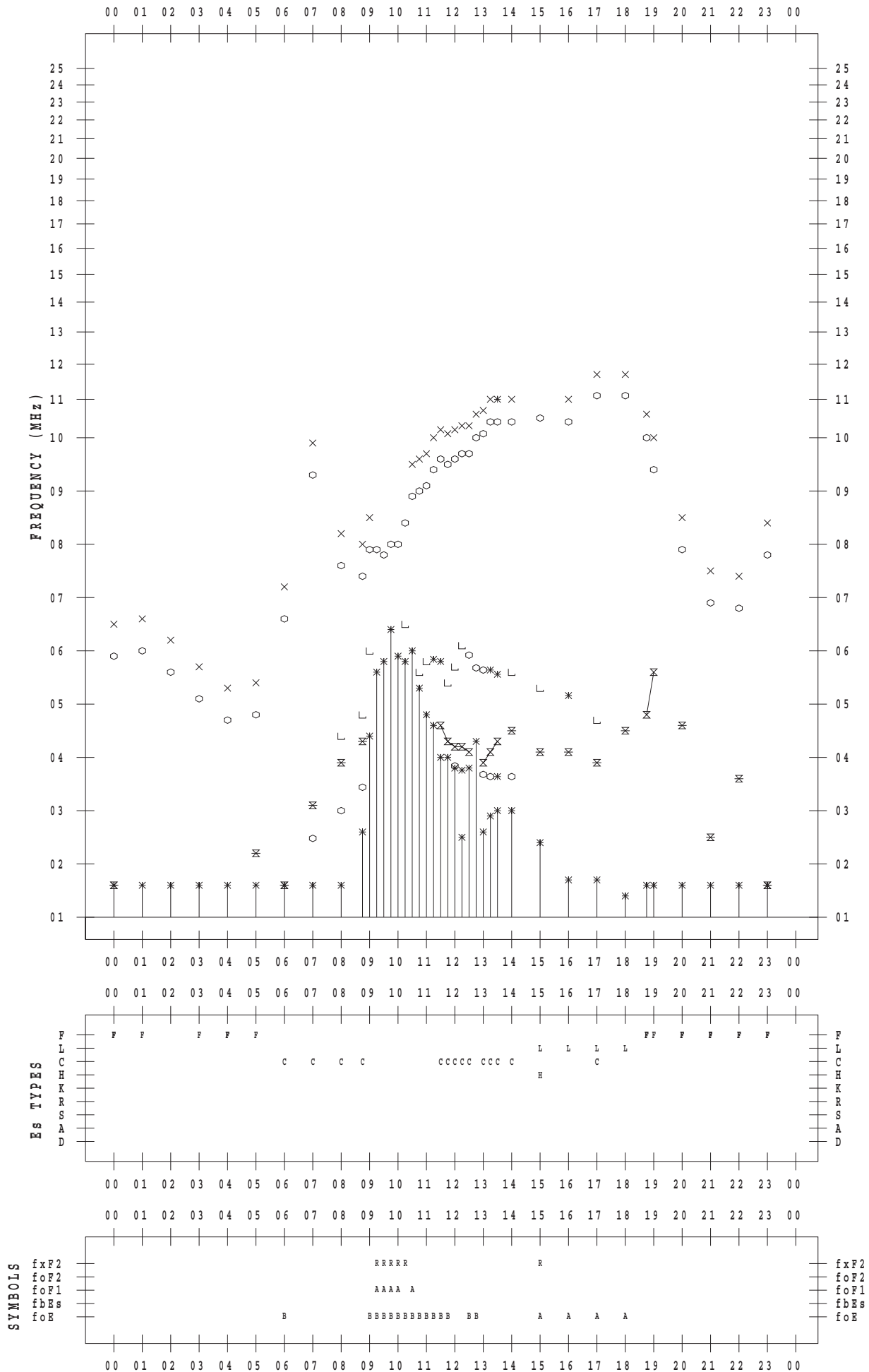
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 9

135 ° E MEAN TIME



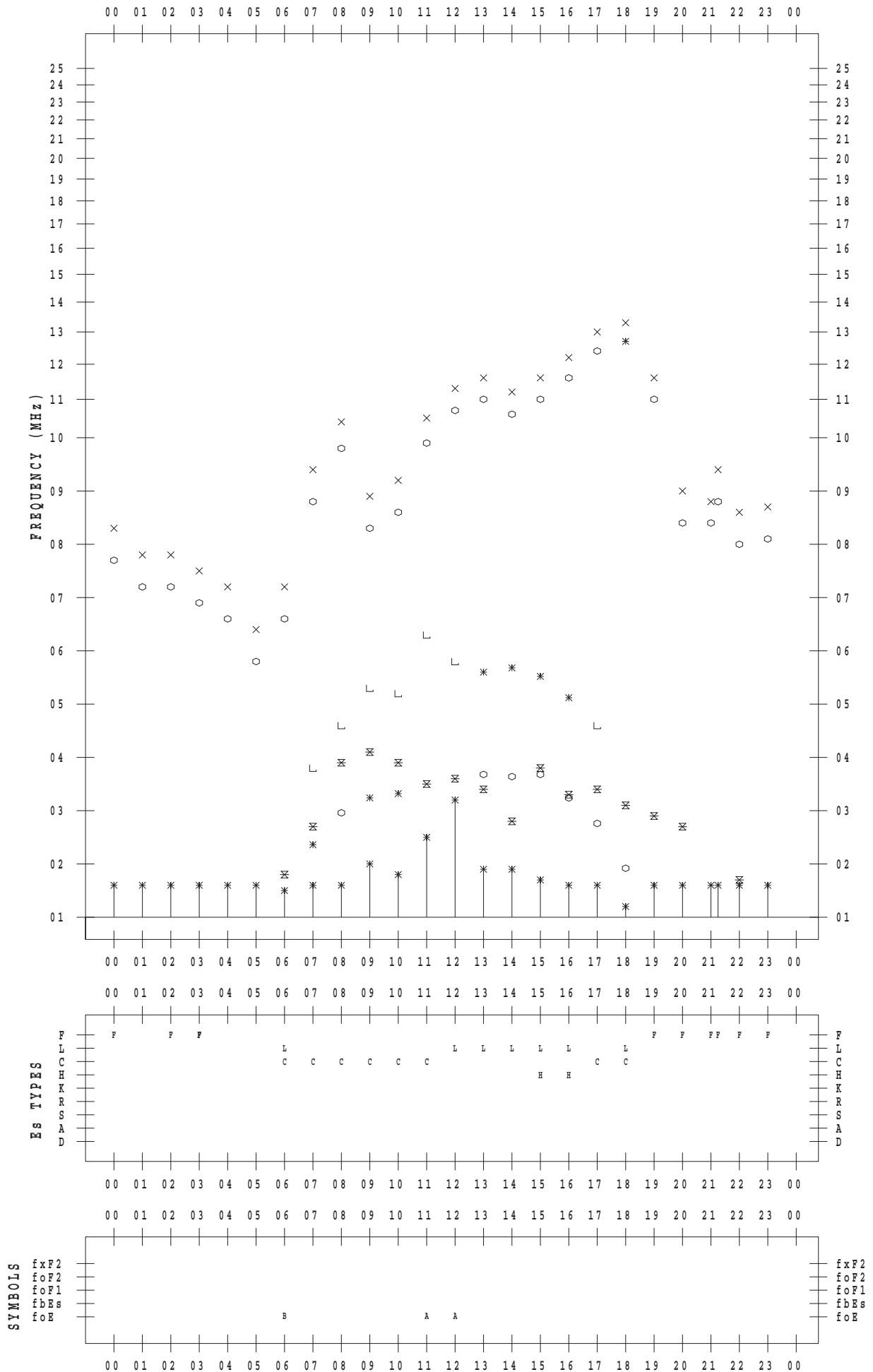
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 10

135 ° E MEAN TIME



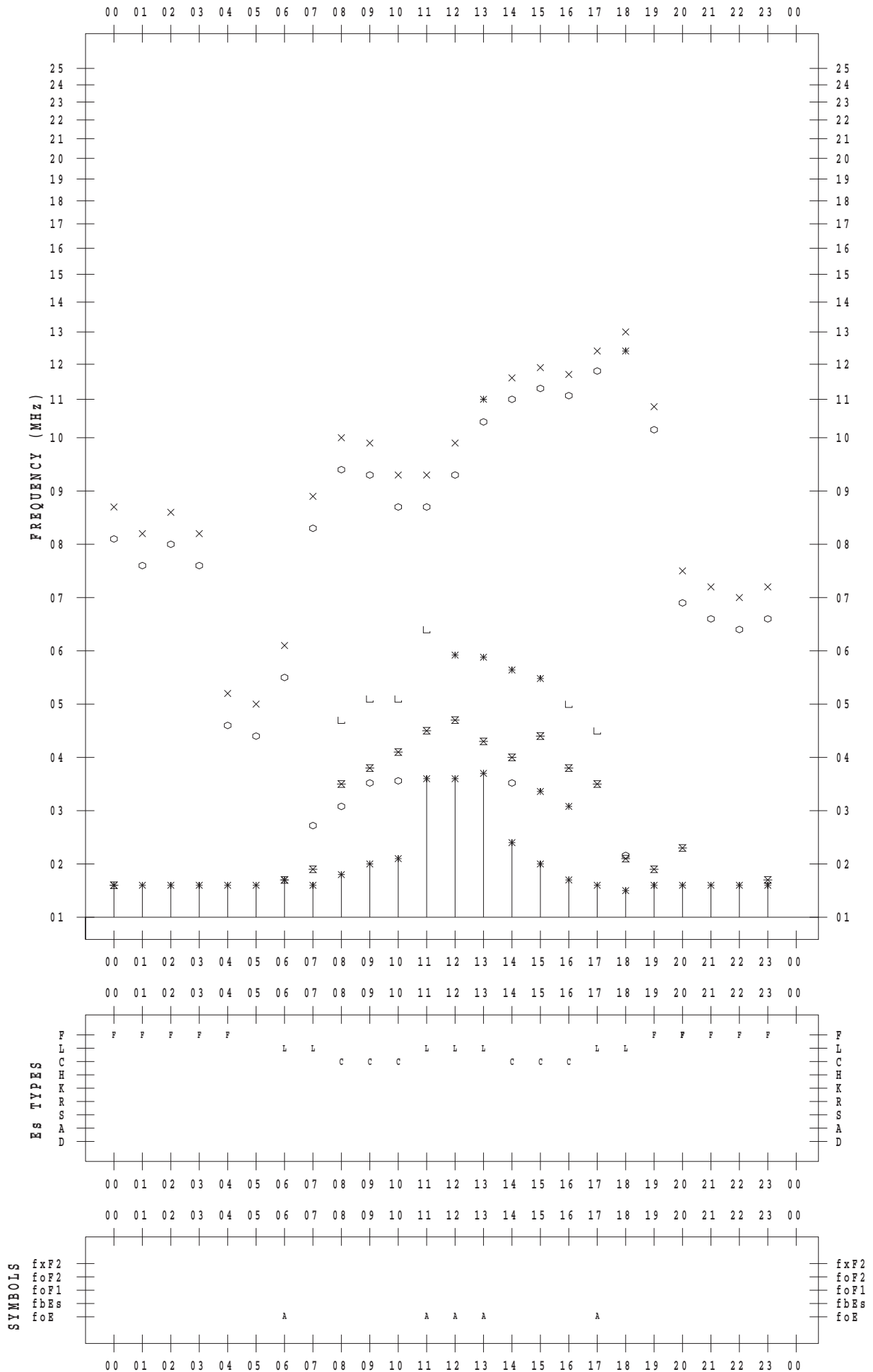
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 11

135 ° E MEAN TIME



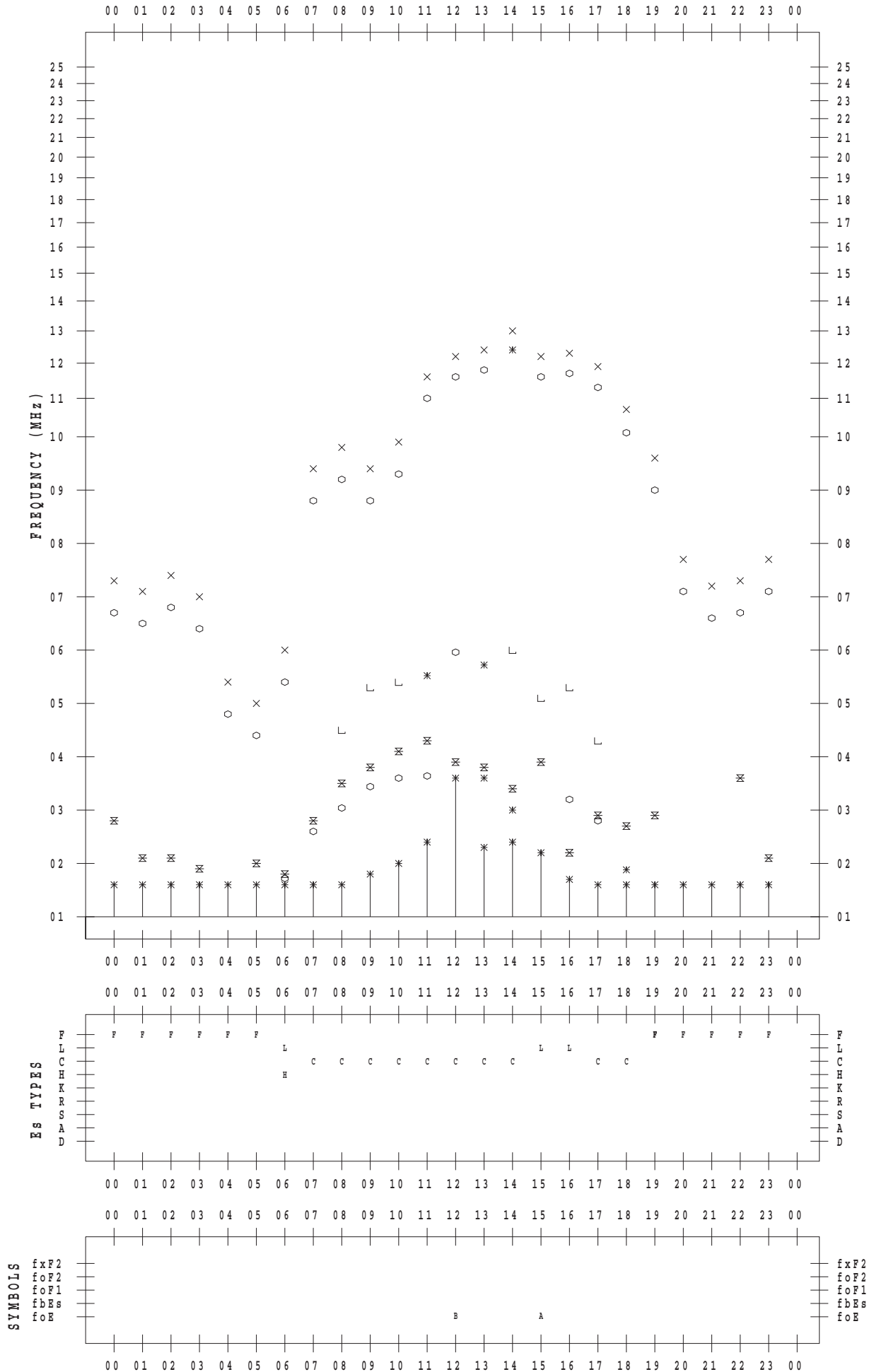
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 12

135 ° E MEAN TIME



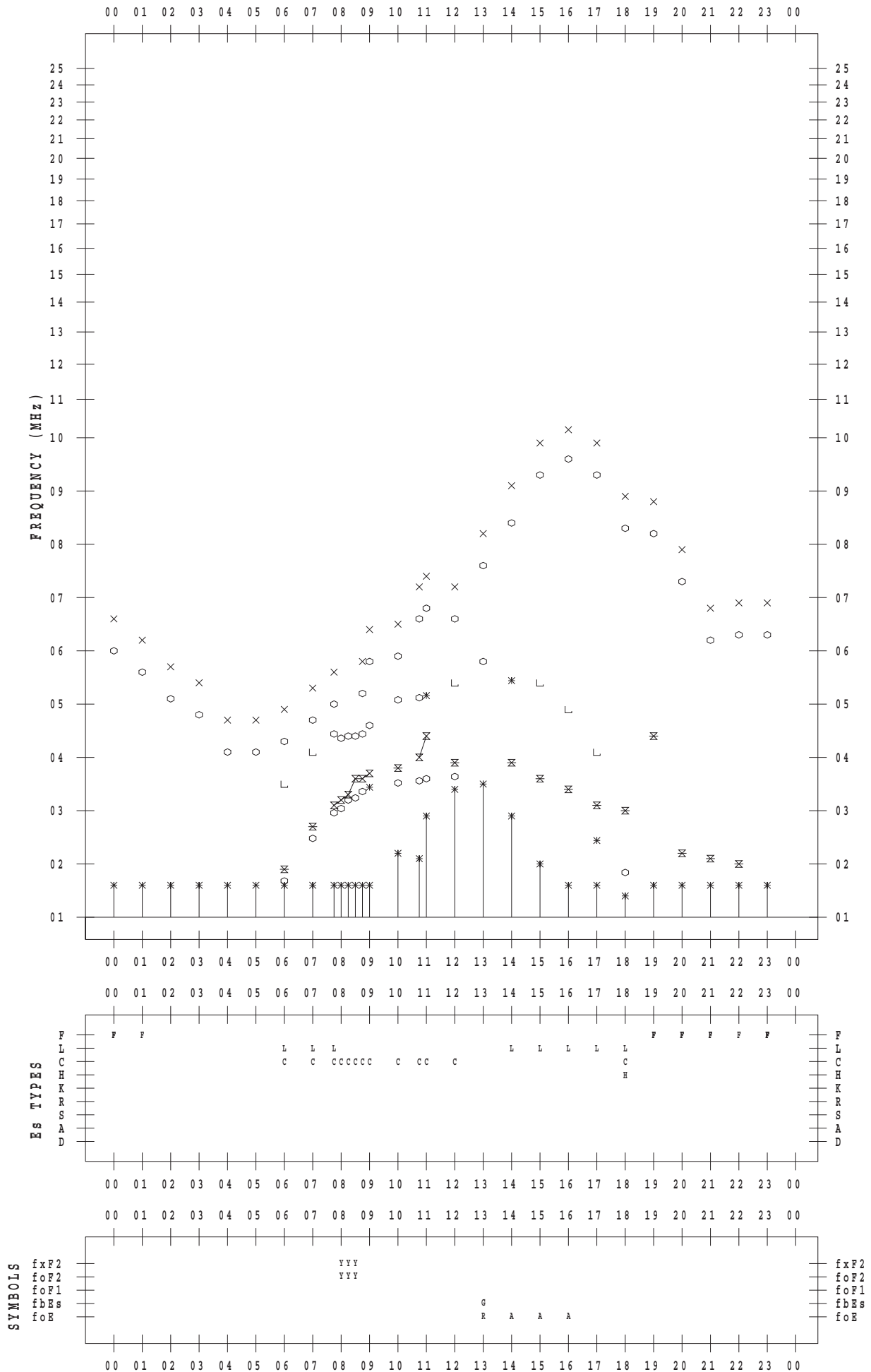
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 13

135 ° E MEAN TIME



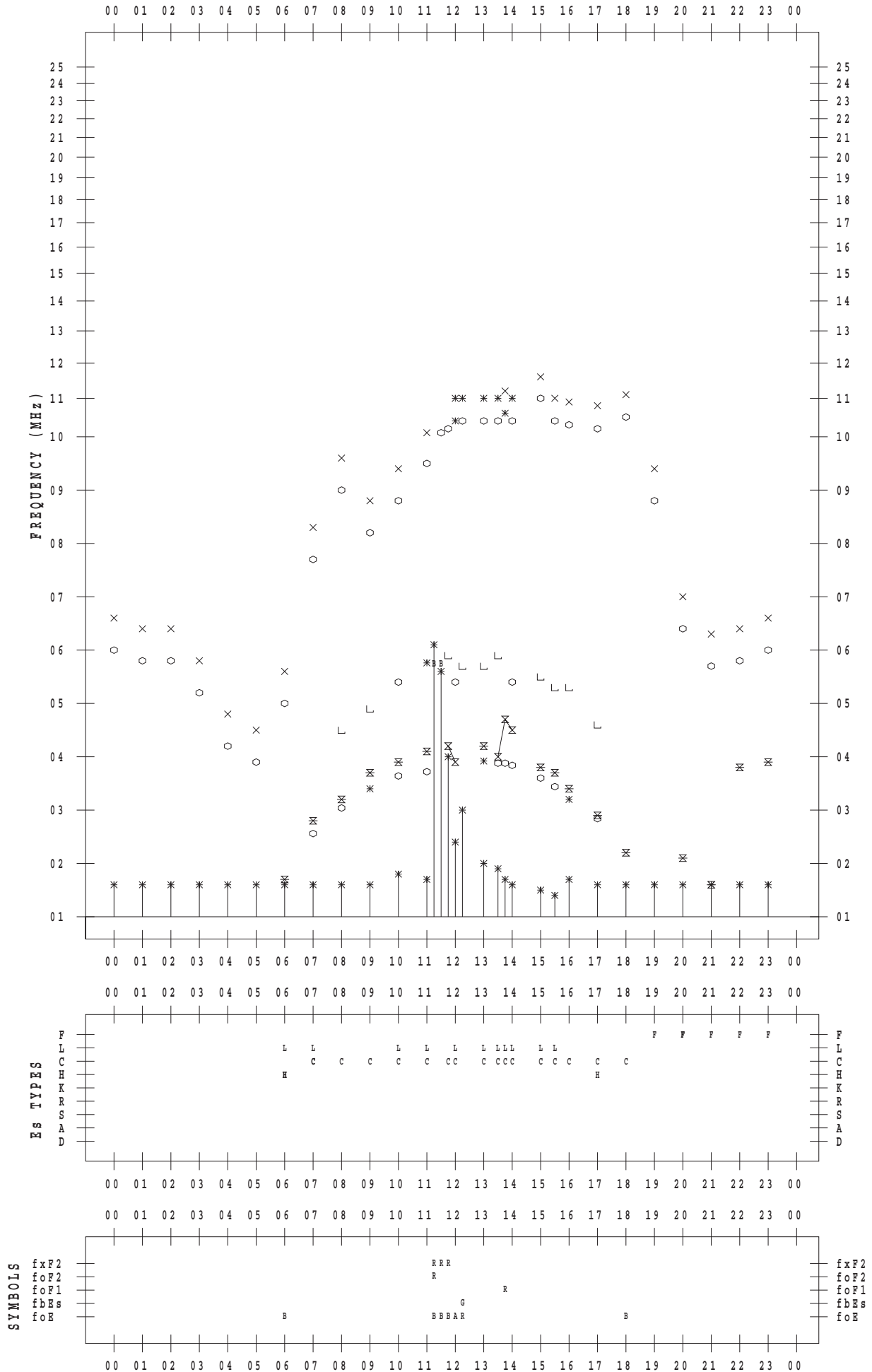
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 14

135 ° E MEAN TIME



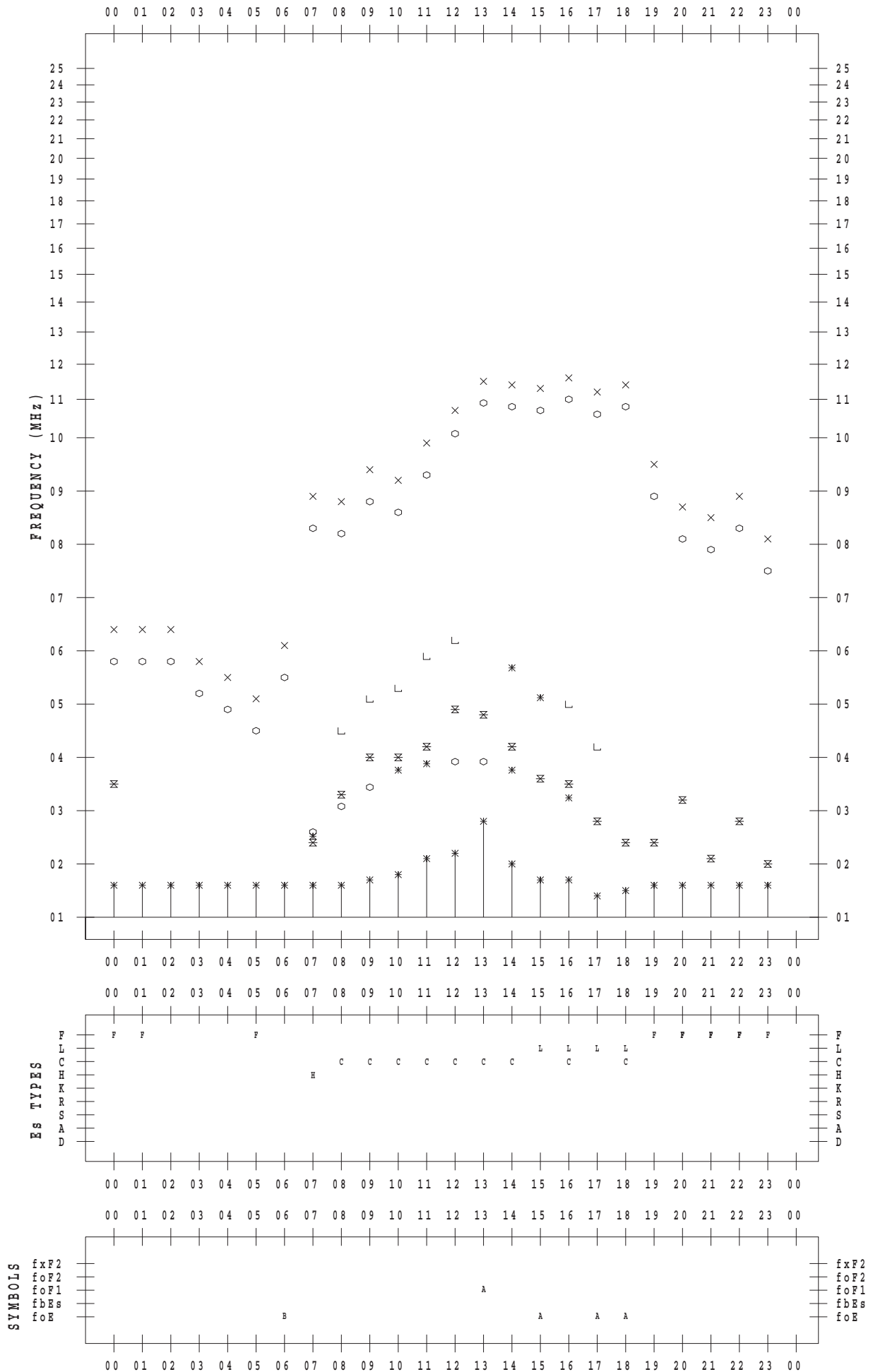
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 15

135 ° E MEAN TIME



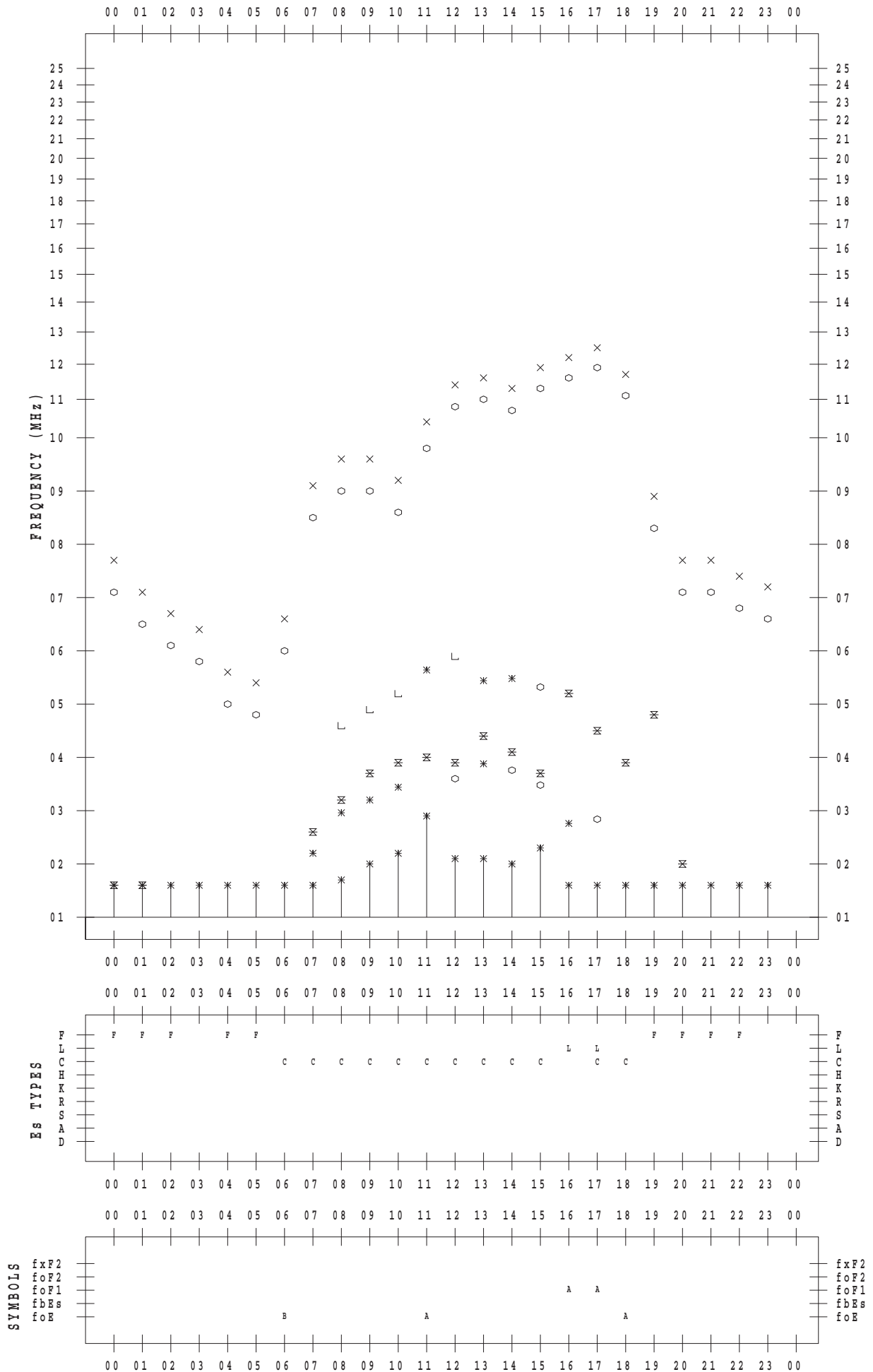
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 16

135 ° E MEAN TIME



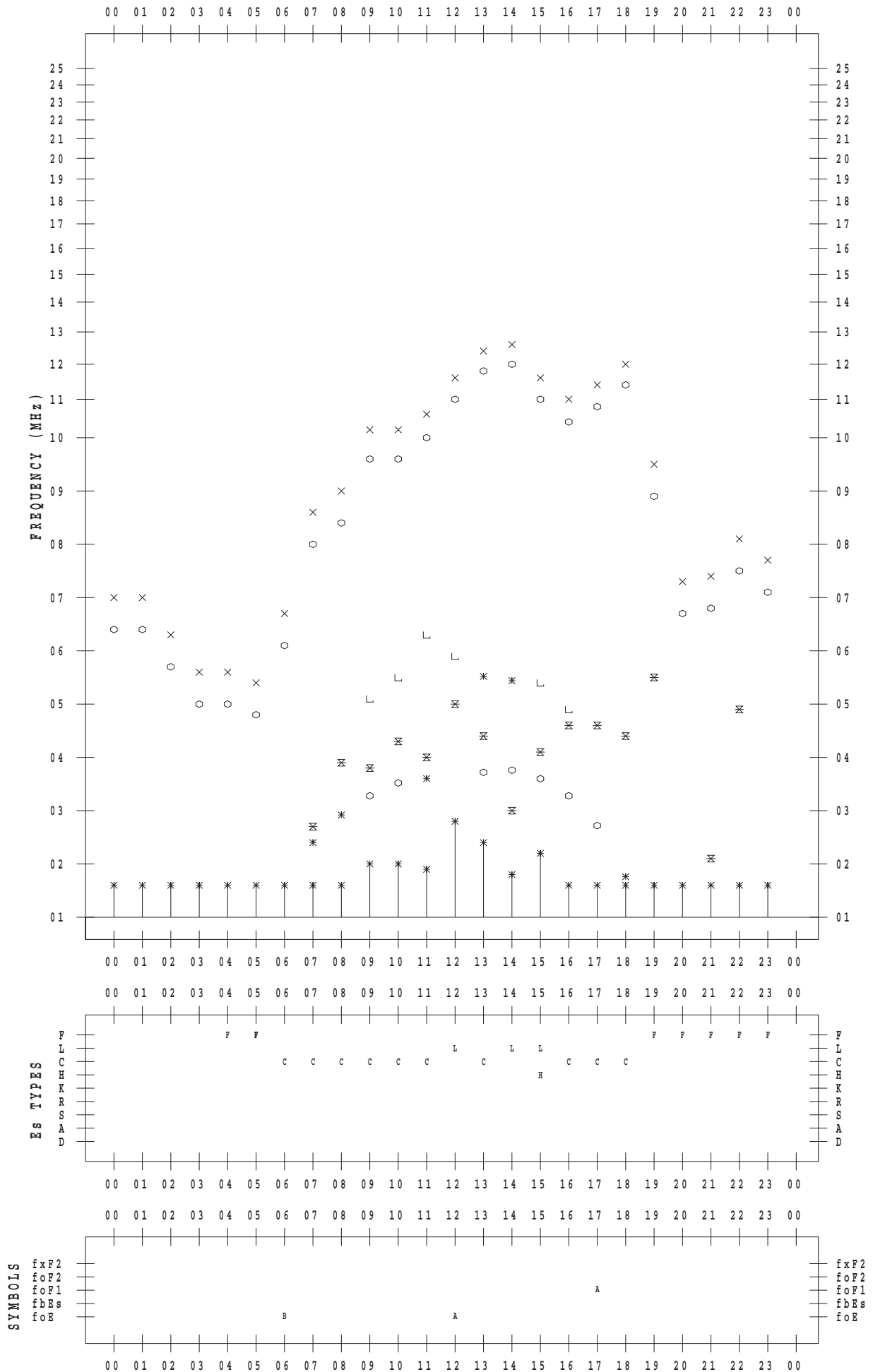
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 17

135 ° E MEAN TIME



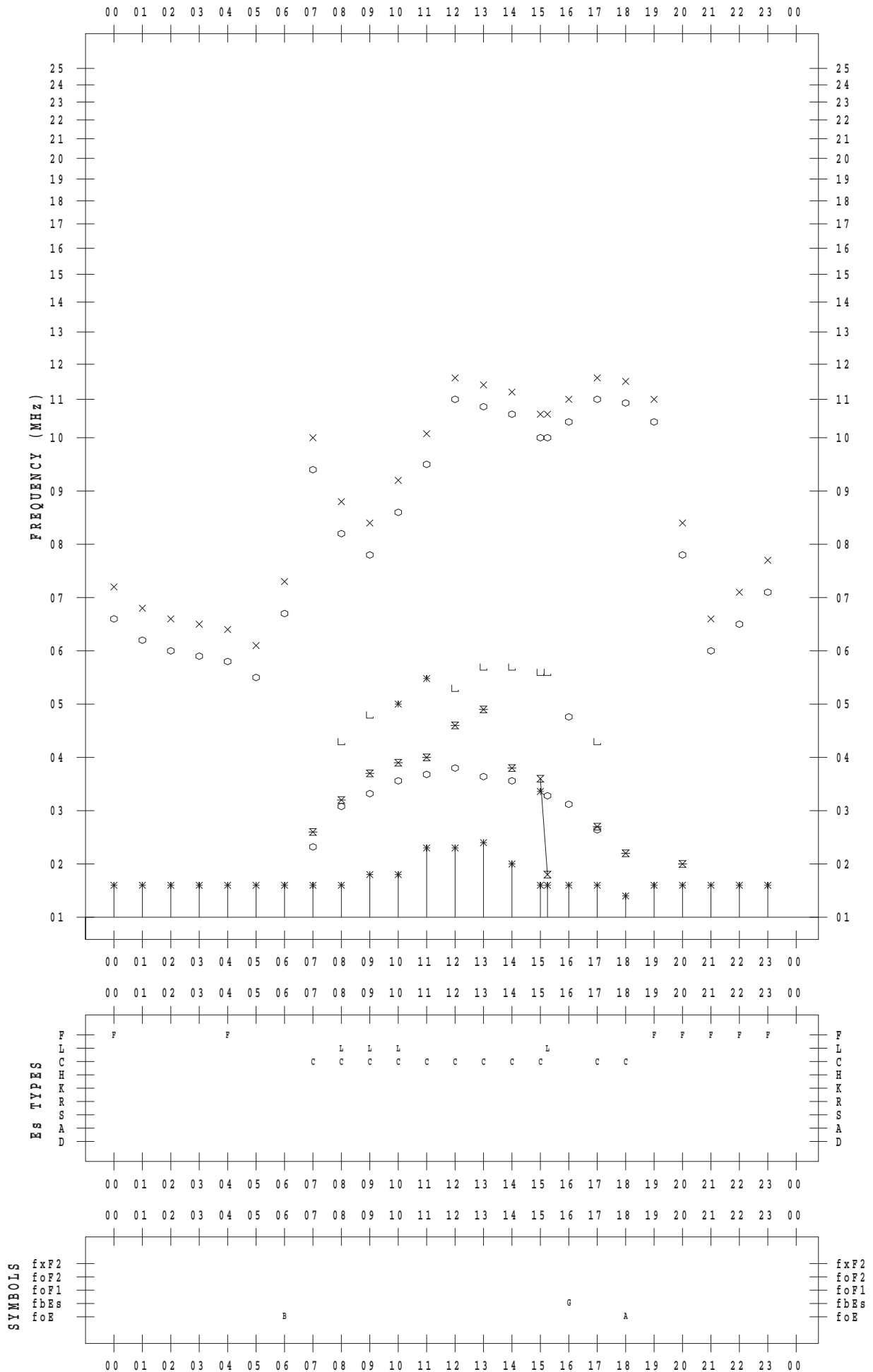
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 18

135 ° E MEAN TIME



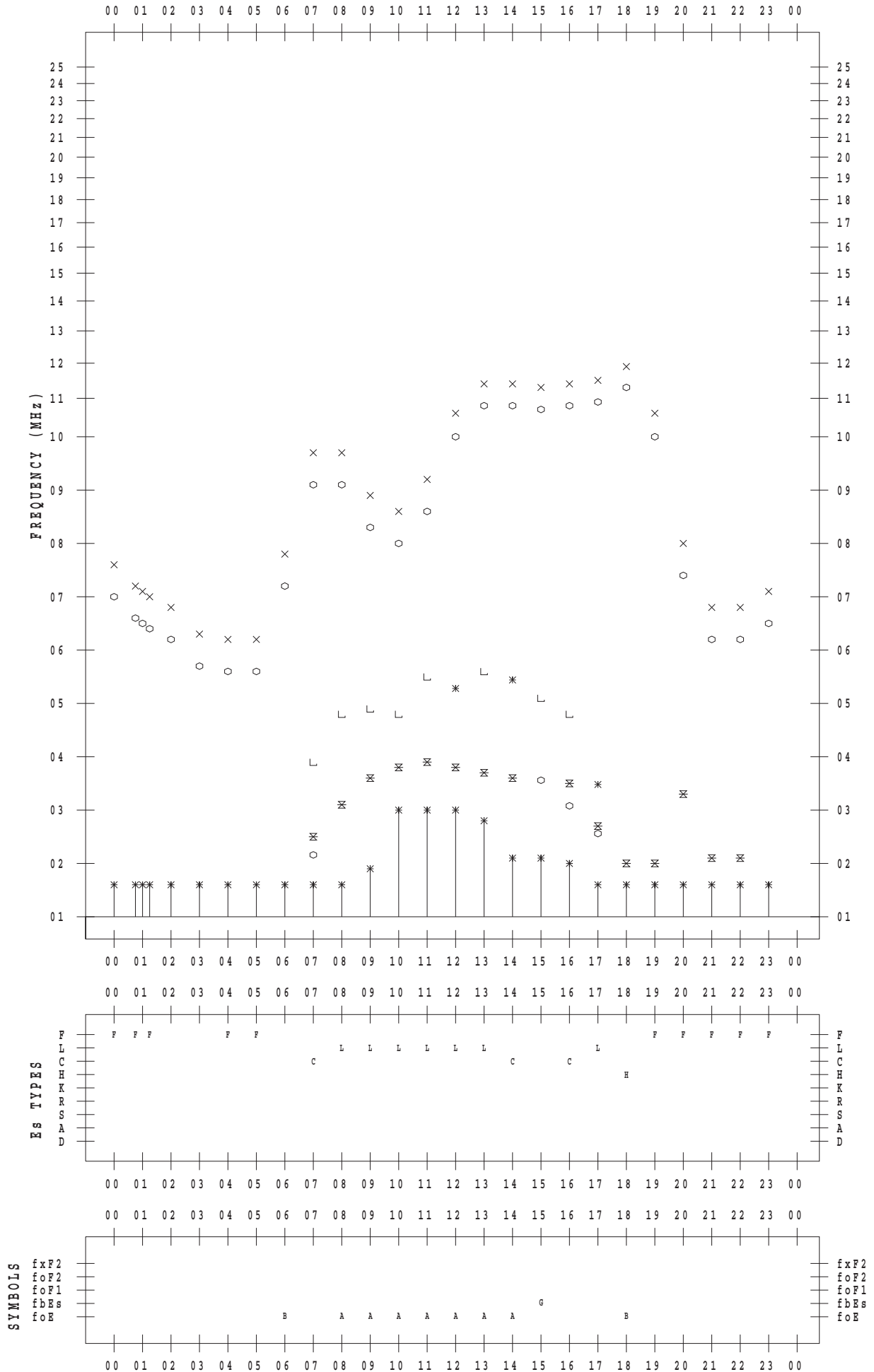
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 19

135 ° E MEAN TIME



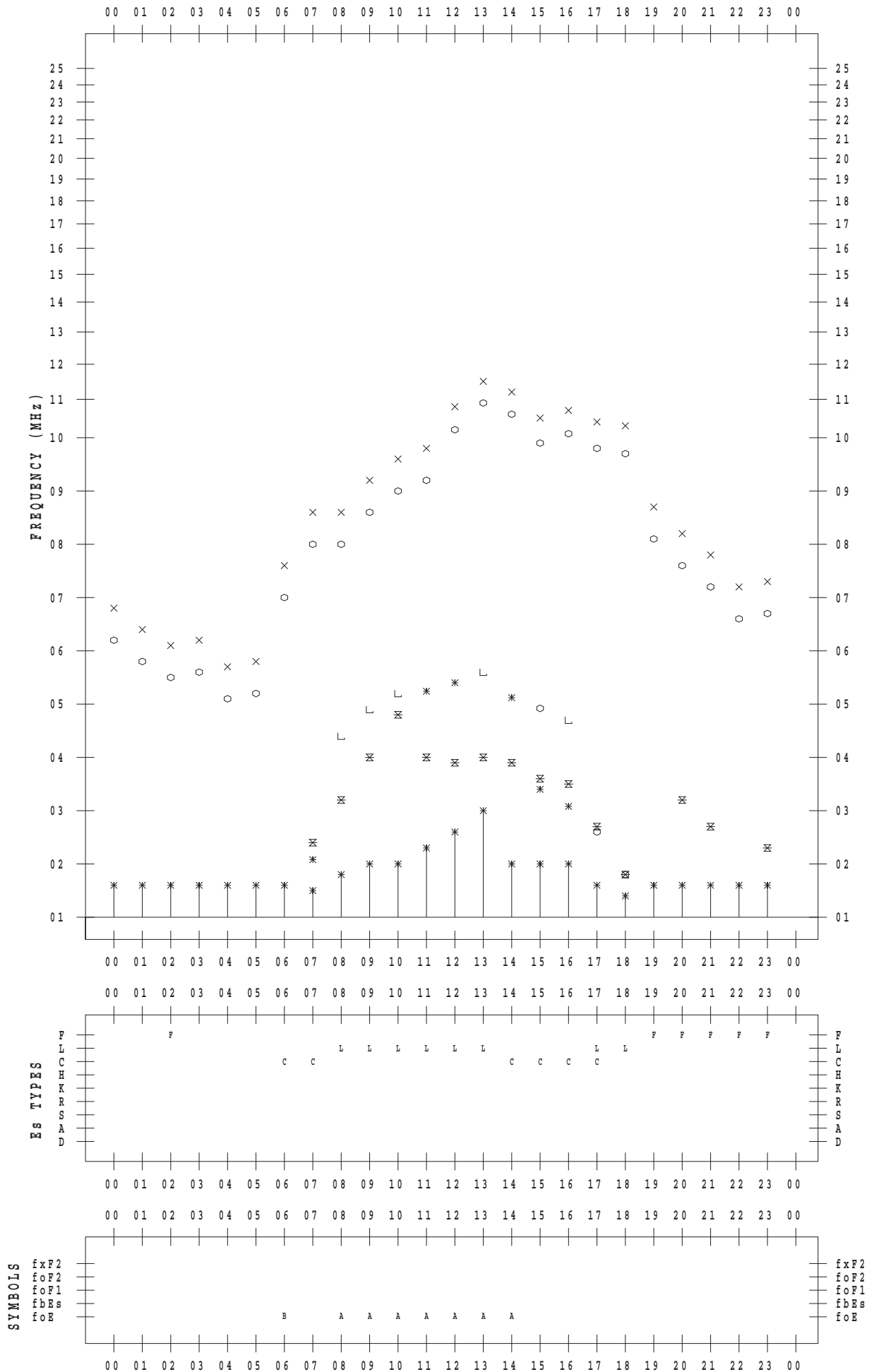
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 20

135 ° E MEAN TIME



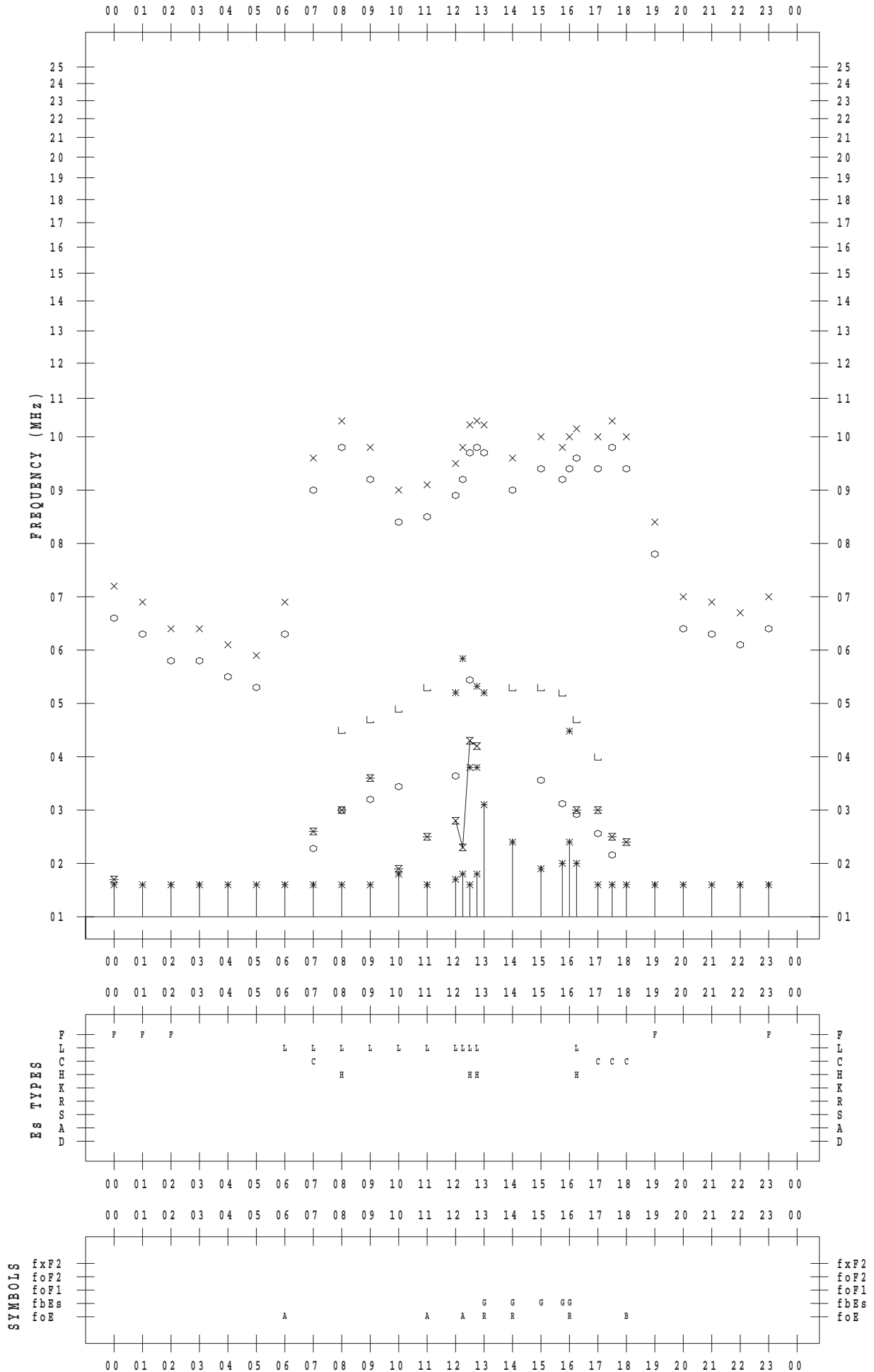
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 21

135 ° E MEAN TIME



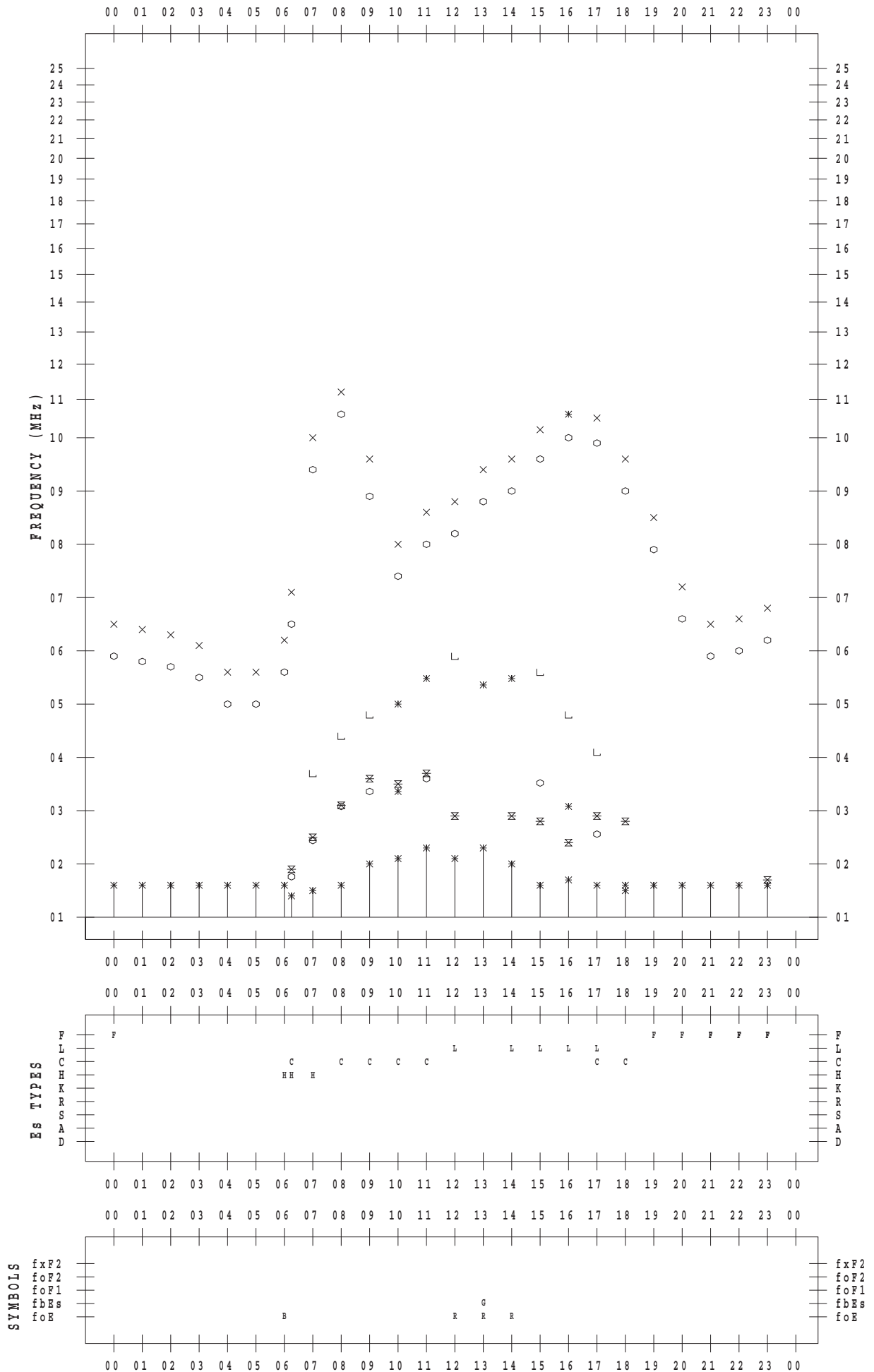
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 22

135 ° E MEAN TIME



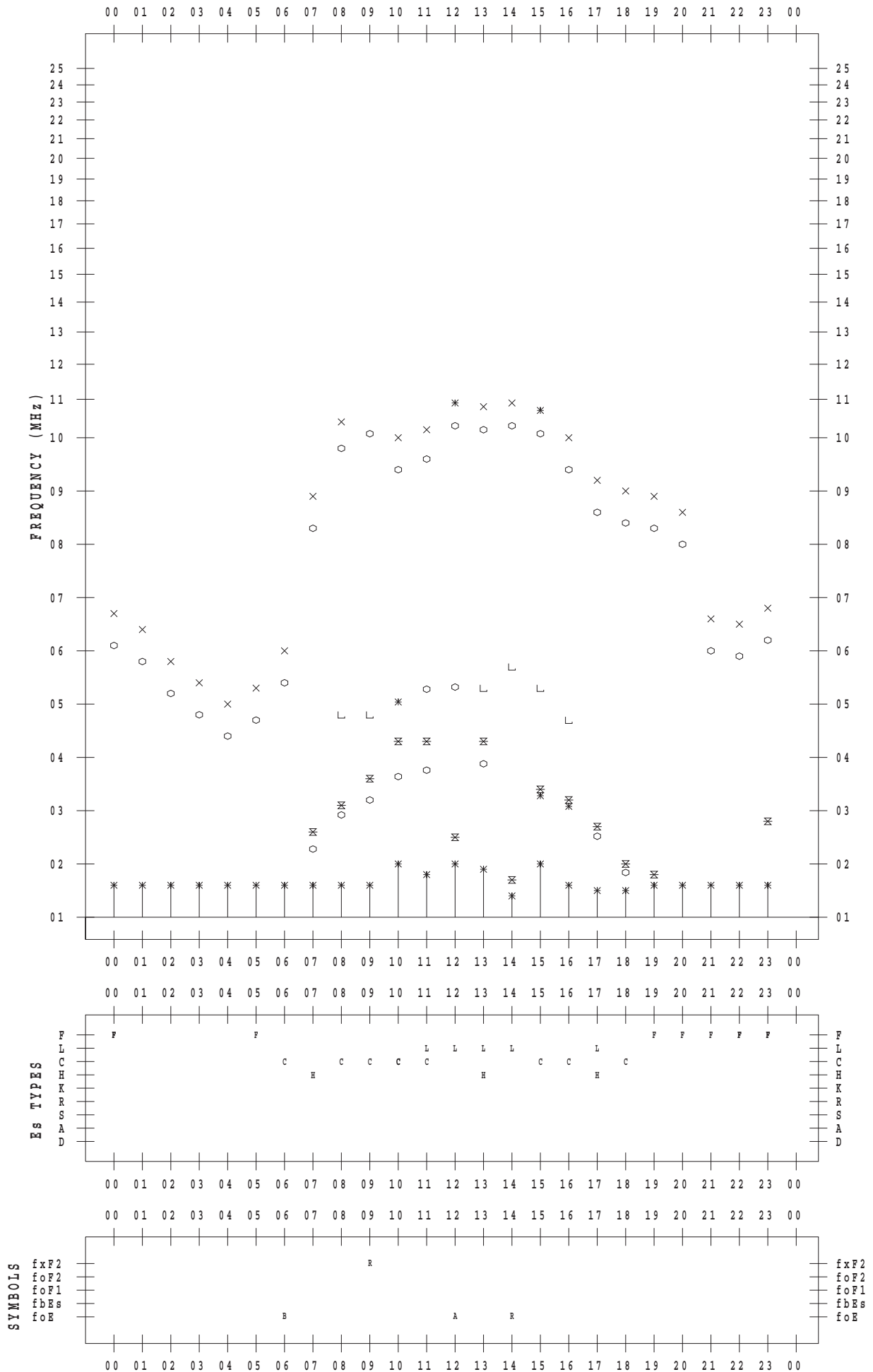
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 23

135 ° E MEAN TIME



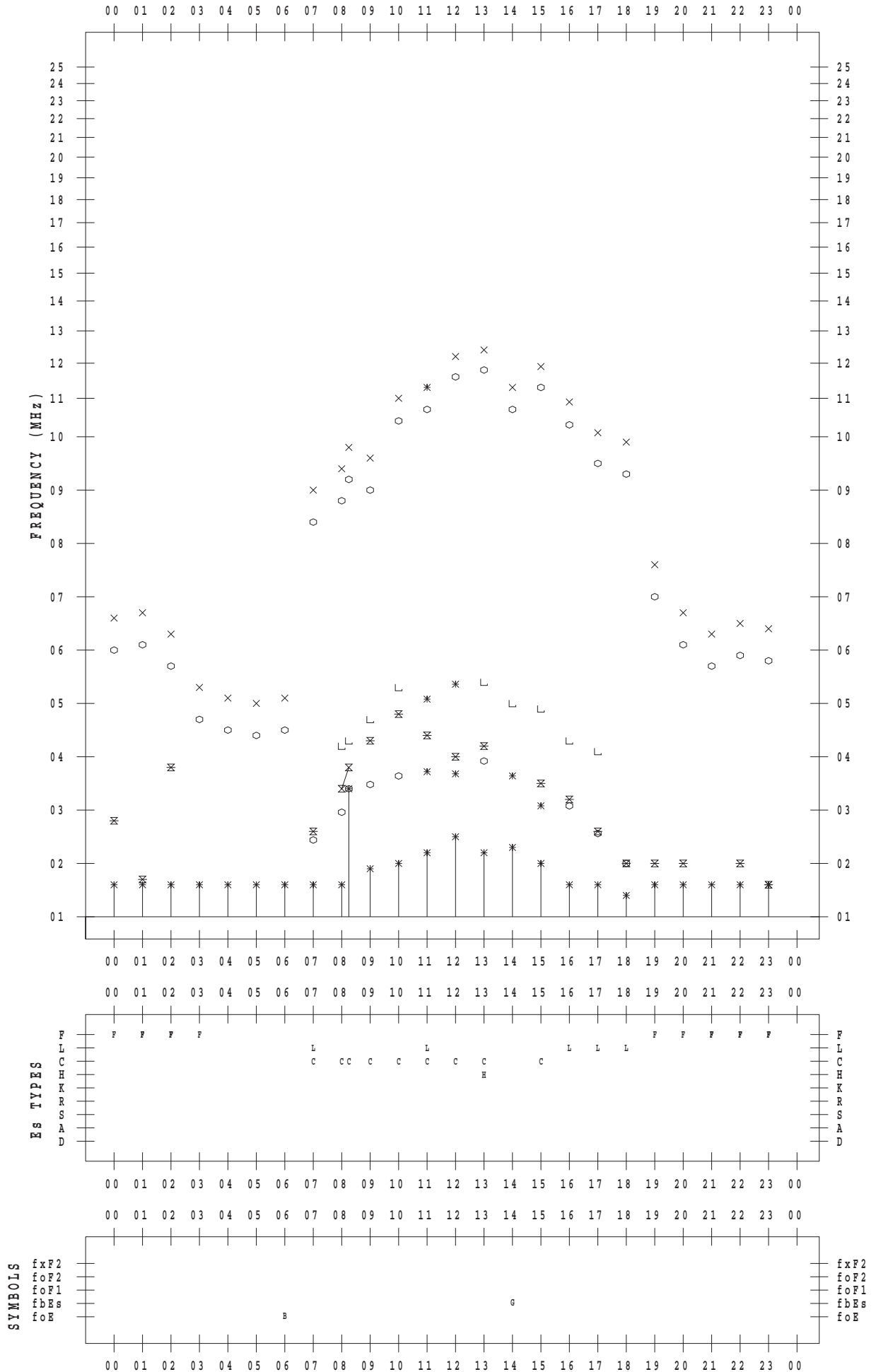
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 24

135 ° E MEAN TIME



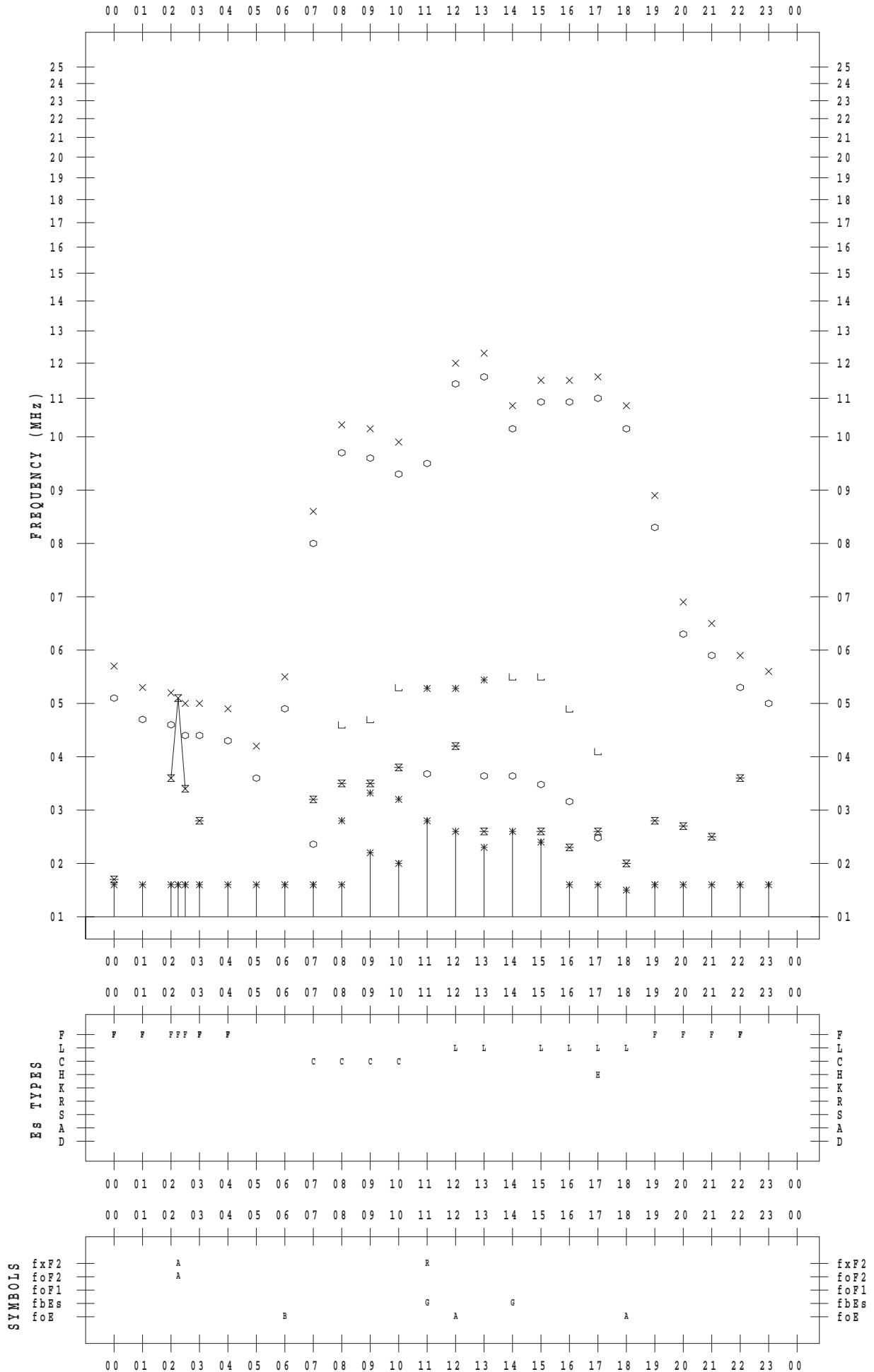
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 25

135 ° E MEAN TIME



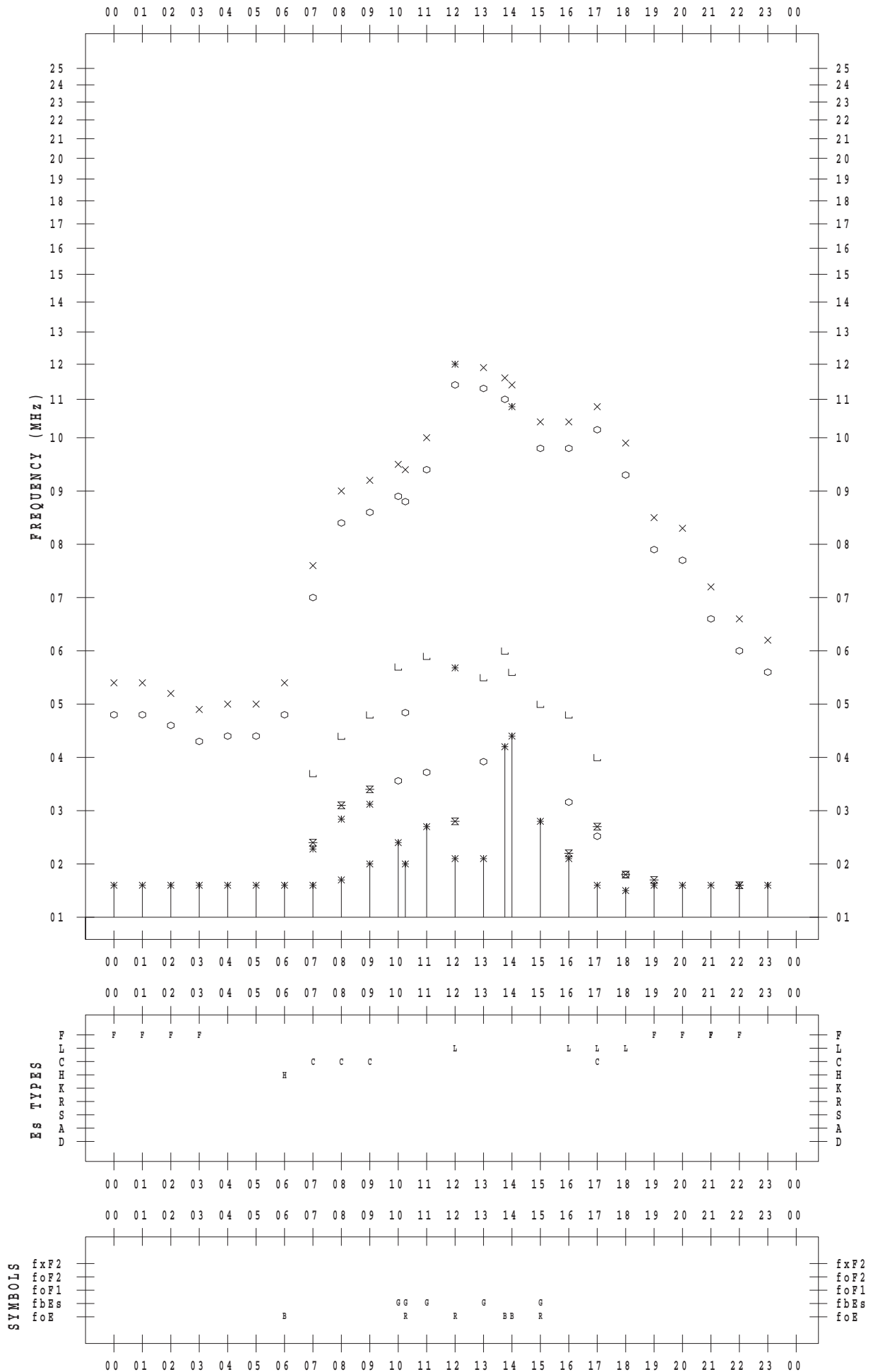
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 26

135 ° E MEAN TIME



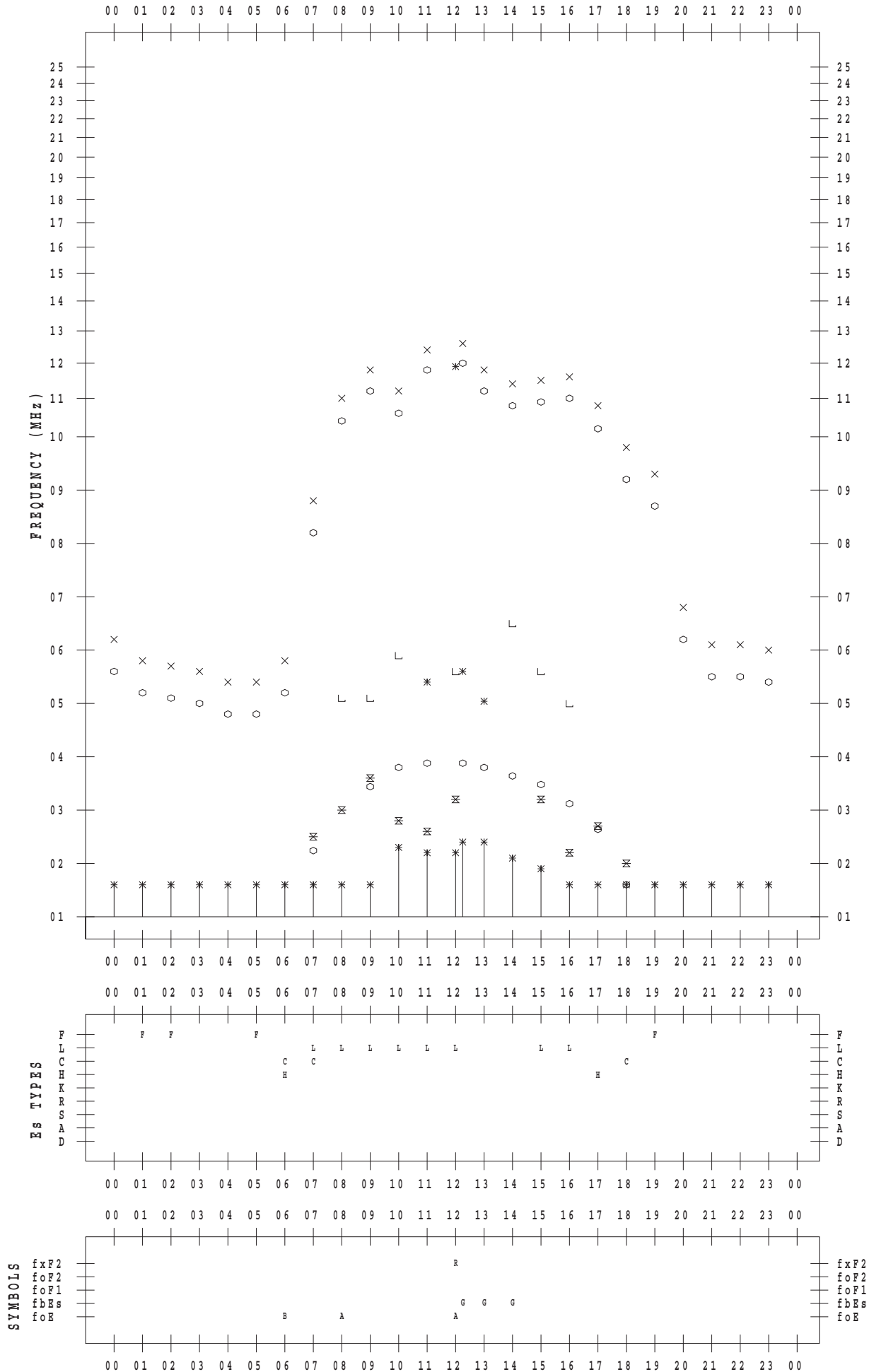
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 27

135 ° E MEAN TIME



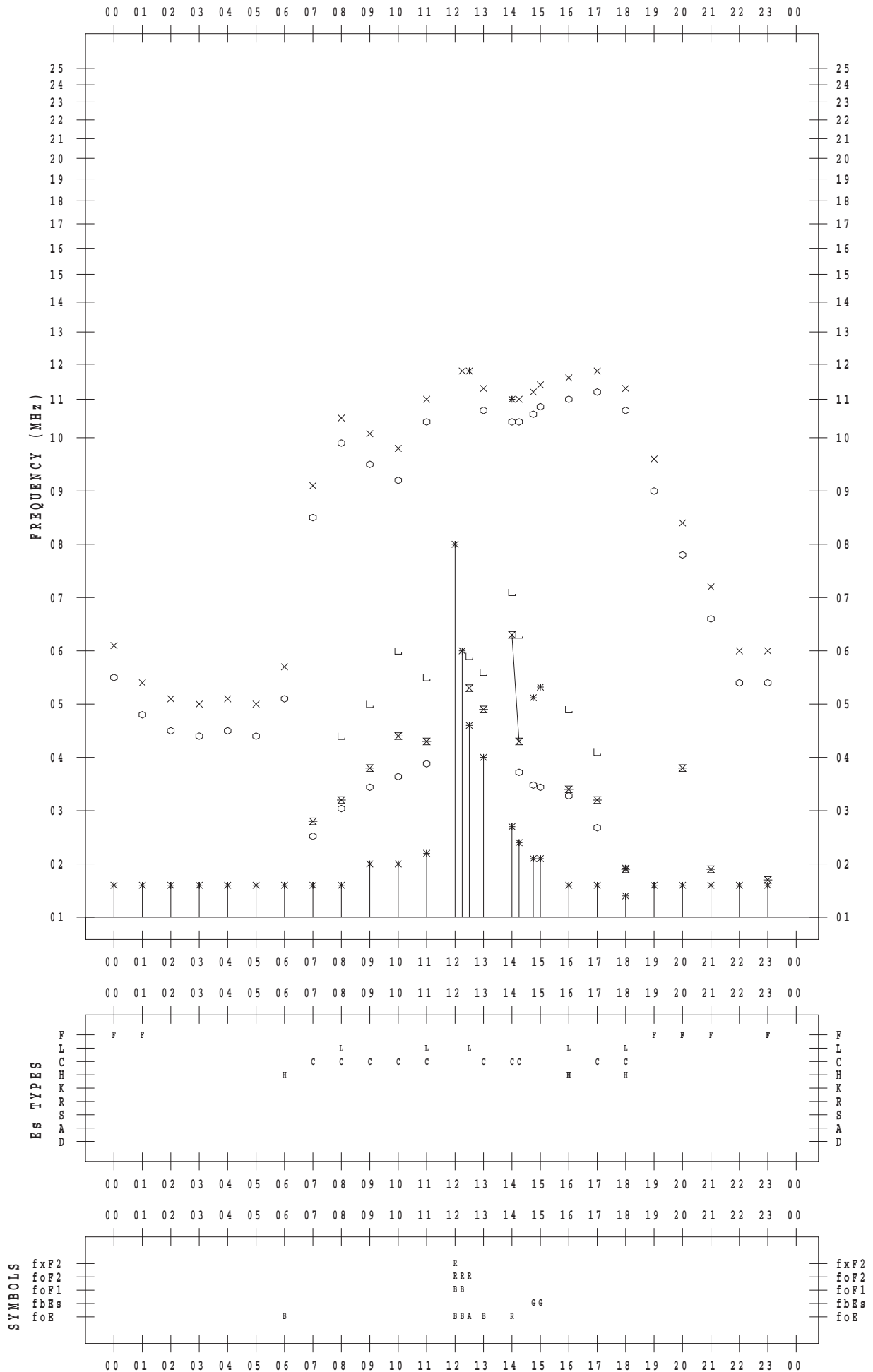
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 28

135 ° E MEAN TIME



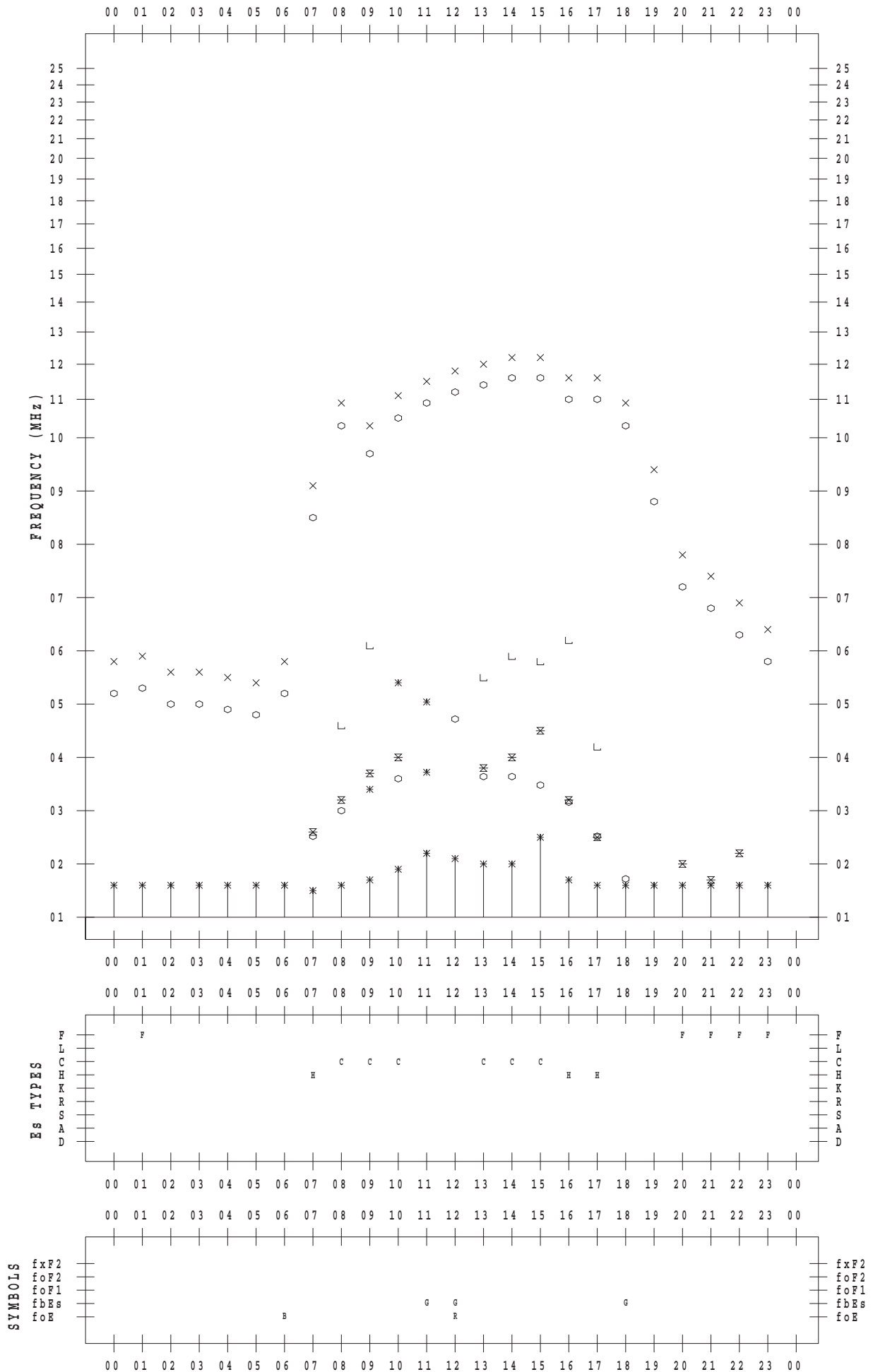
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SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 29

135 ° E MEAN TIME



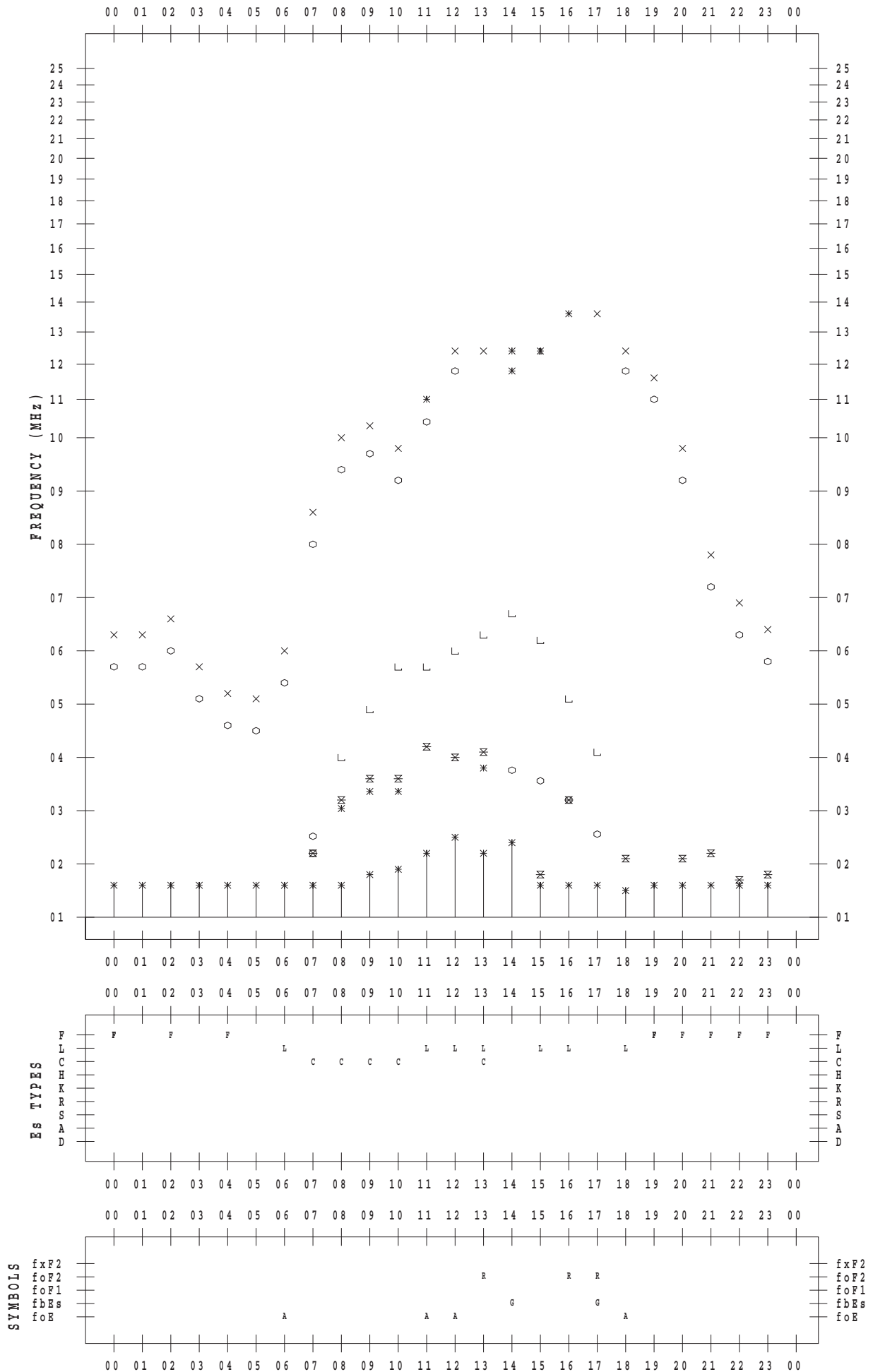
f - PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014 / 9 / 30

135 ° E MEAN TIME



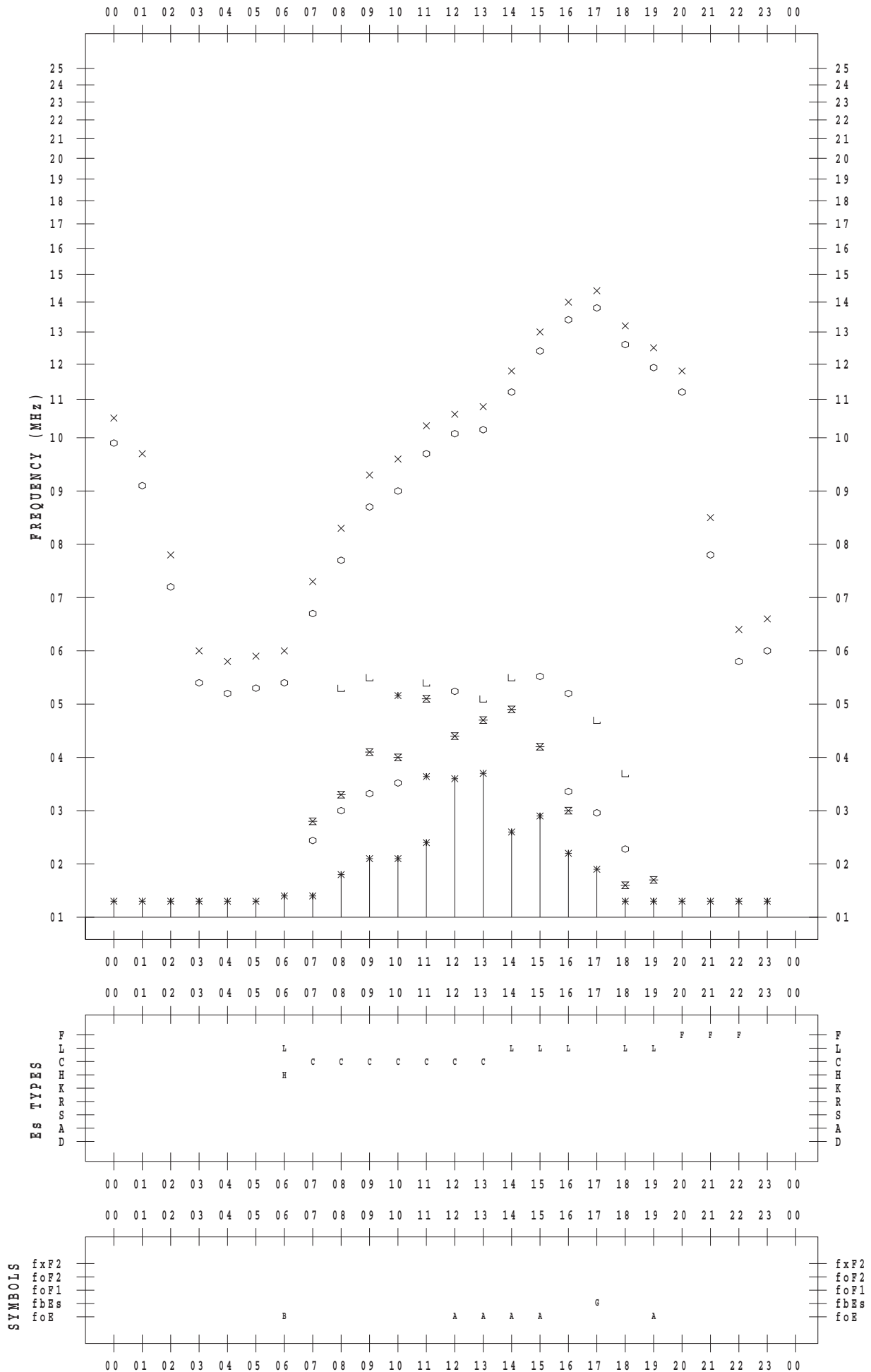
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 1

135 ° E MEAN TIME



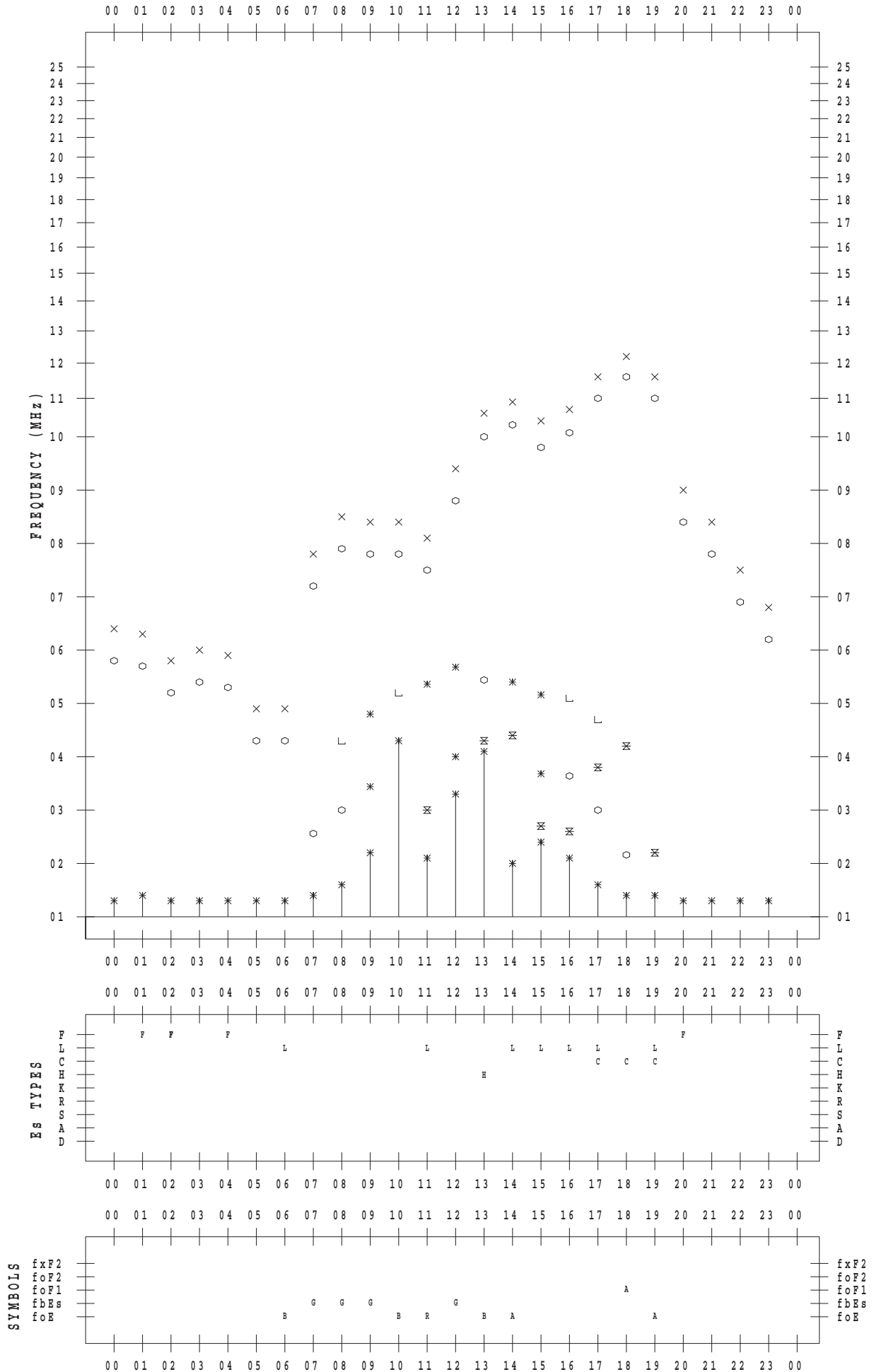
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 2

135 ° E MEAN TIME



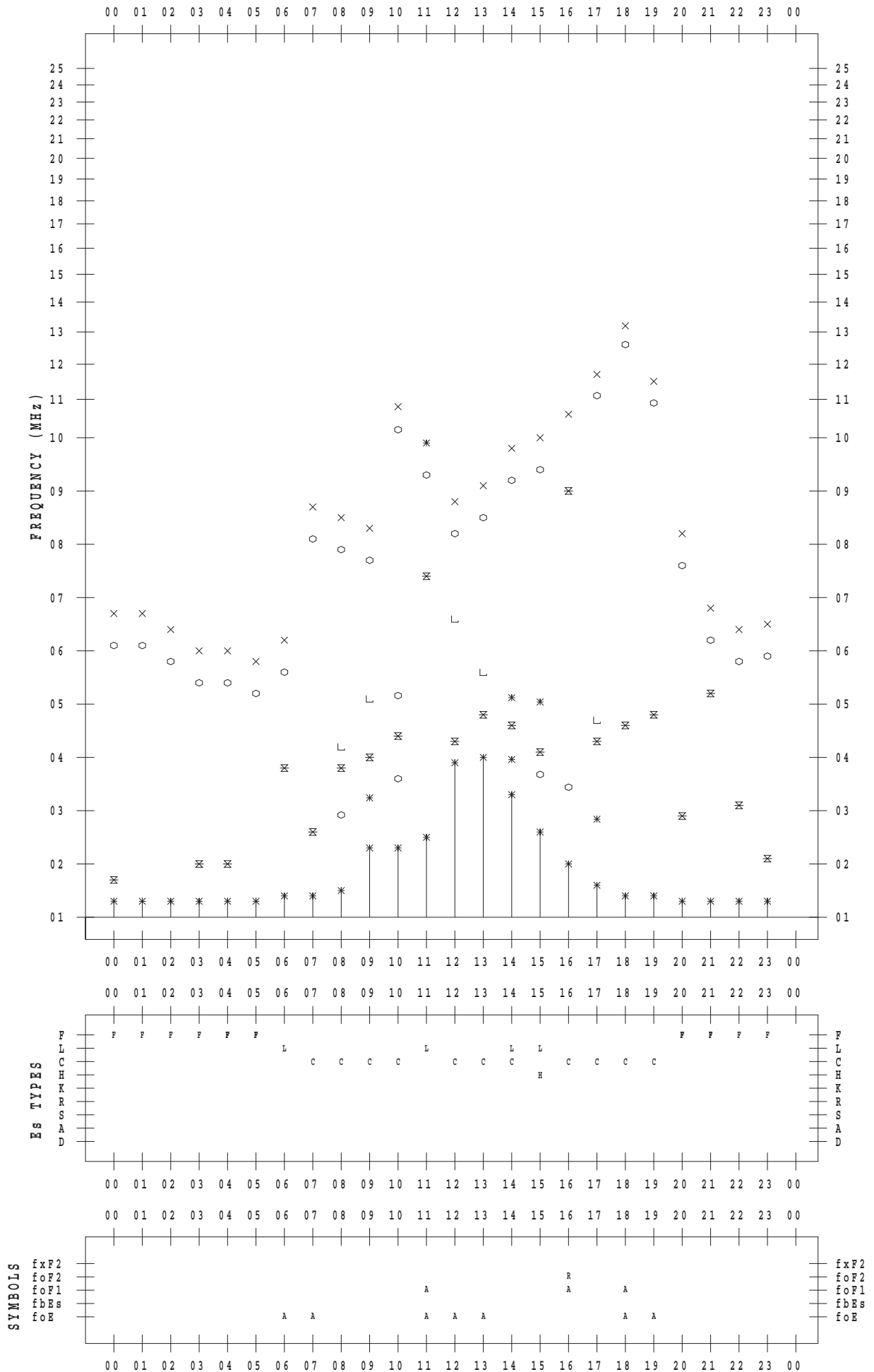
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 3

135 ° E MEAN TIME



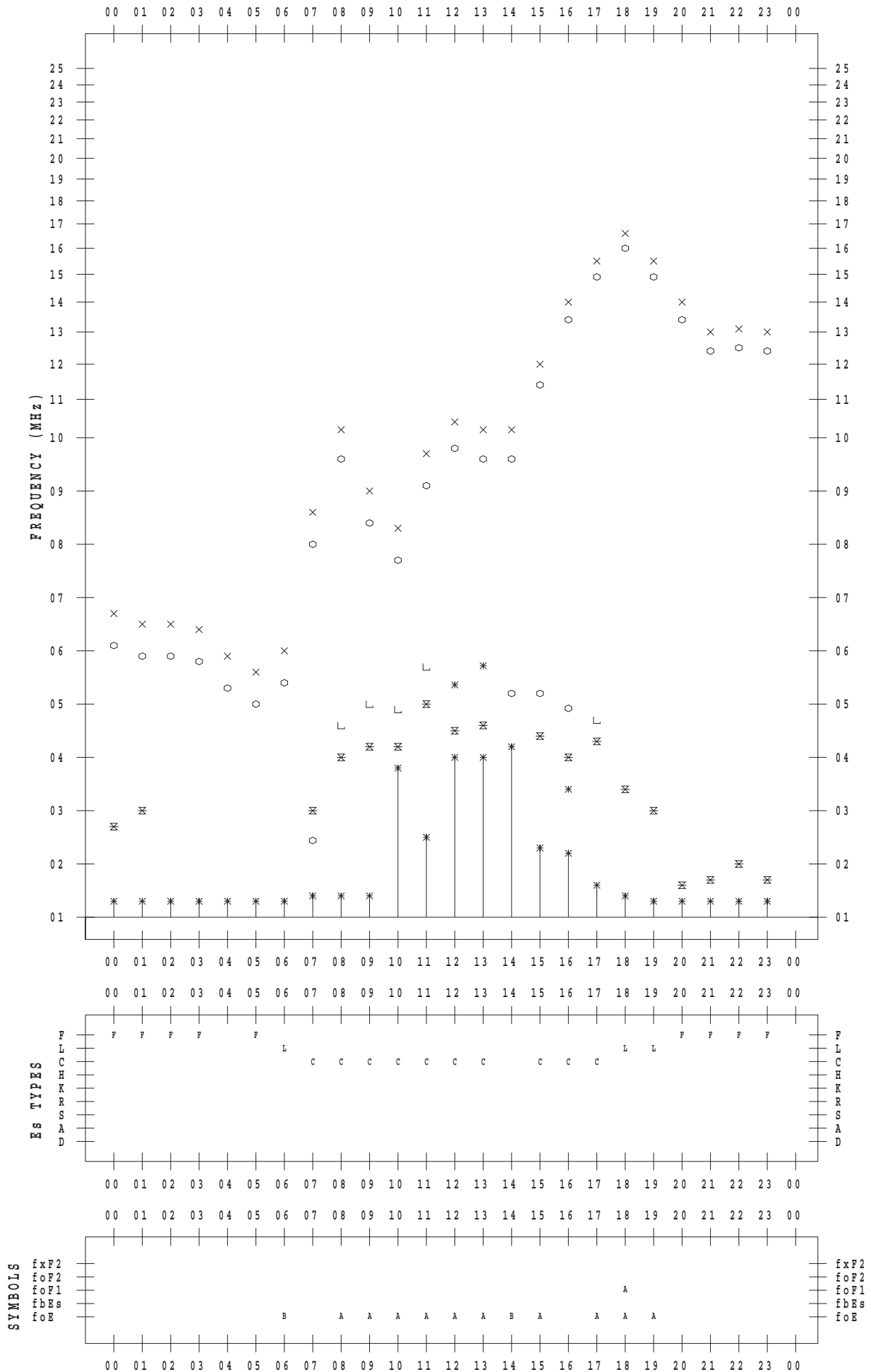
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 4

135 ° E MEAN TIME



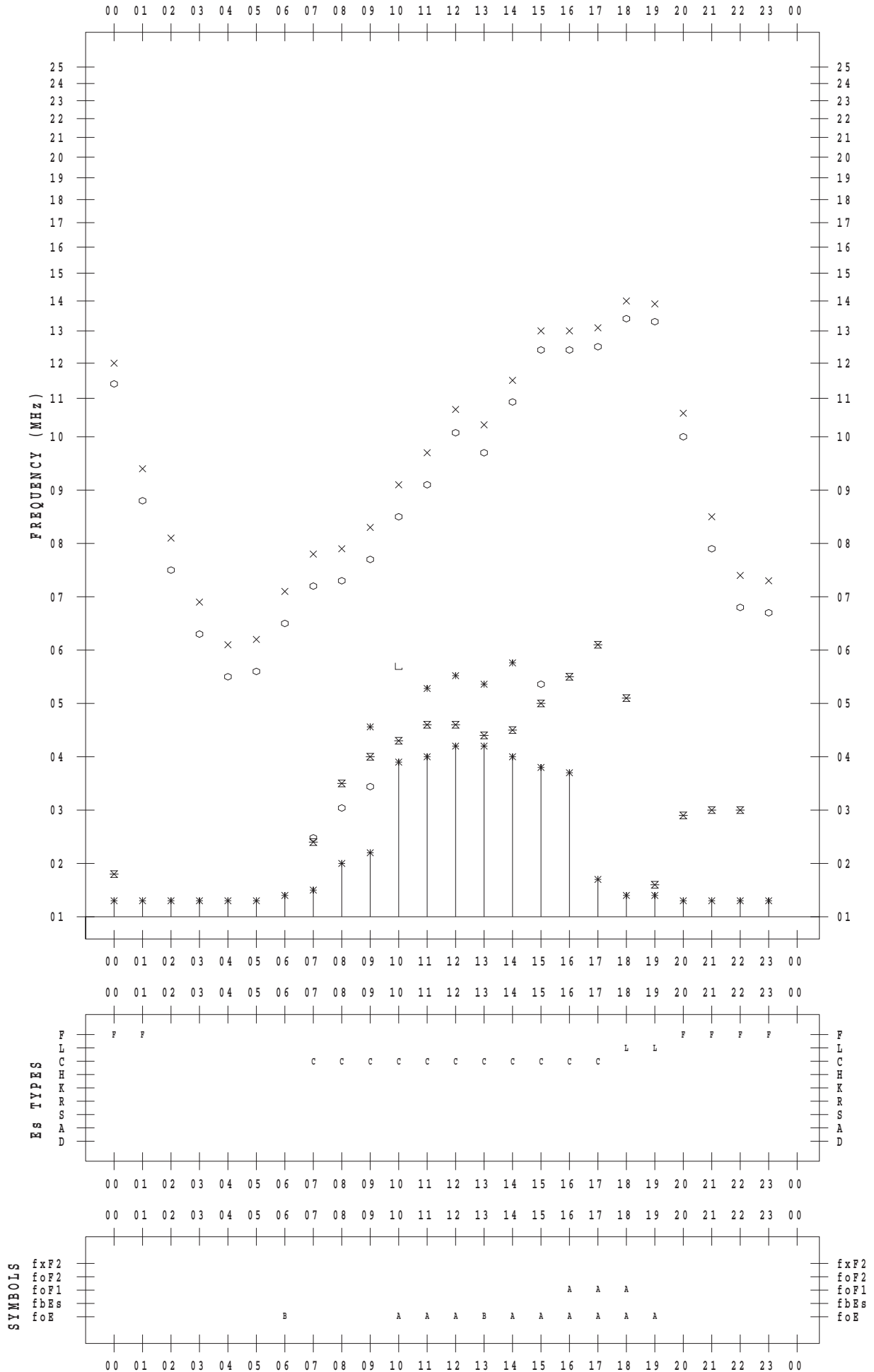
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 5

135 ° E MEAN TIME



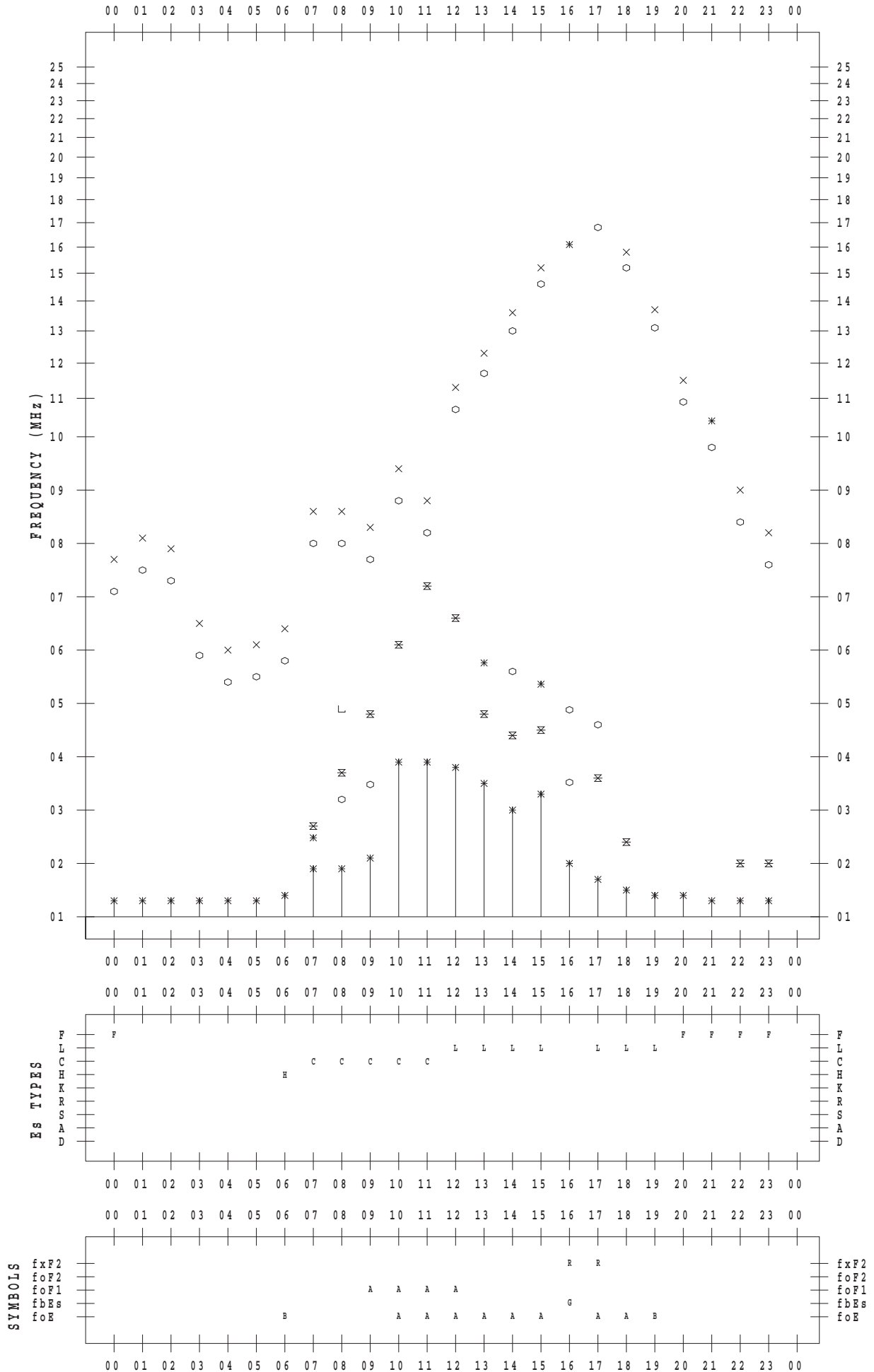
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 6

135 ° E MEAN TIME



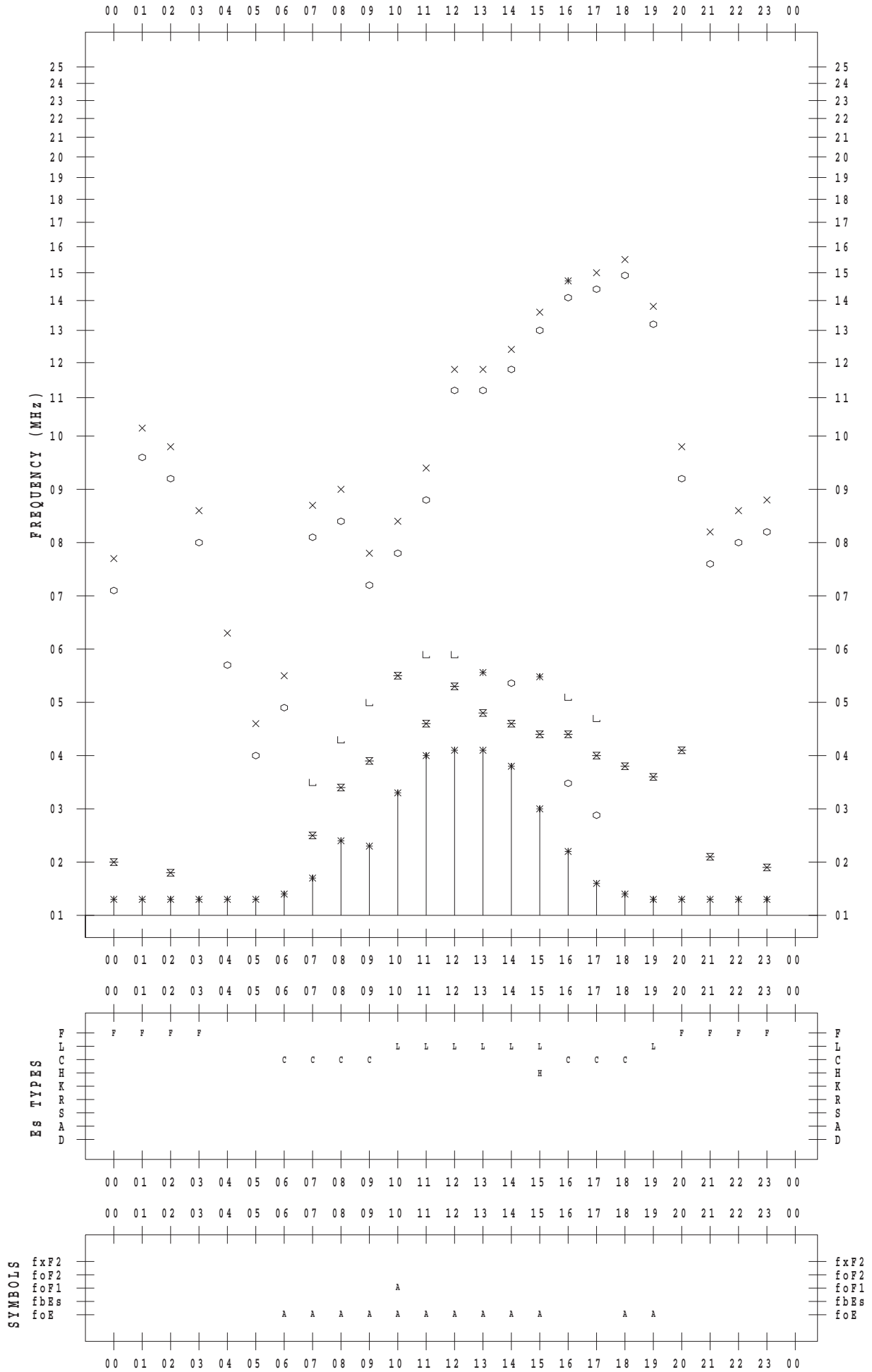
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 7

135 ° E MEAN TIME



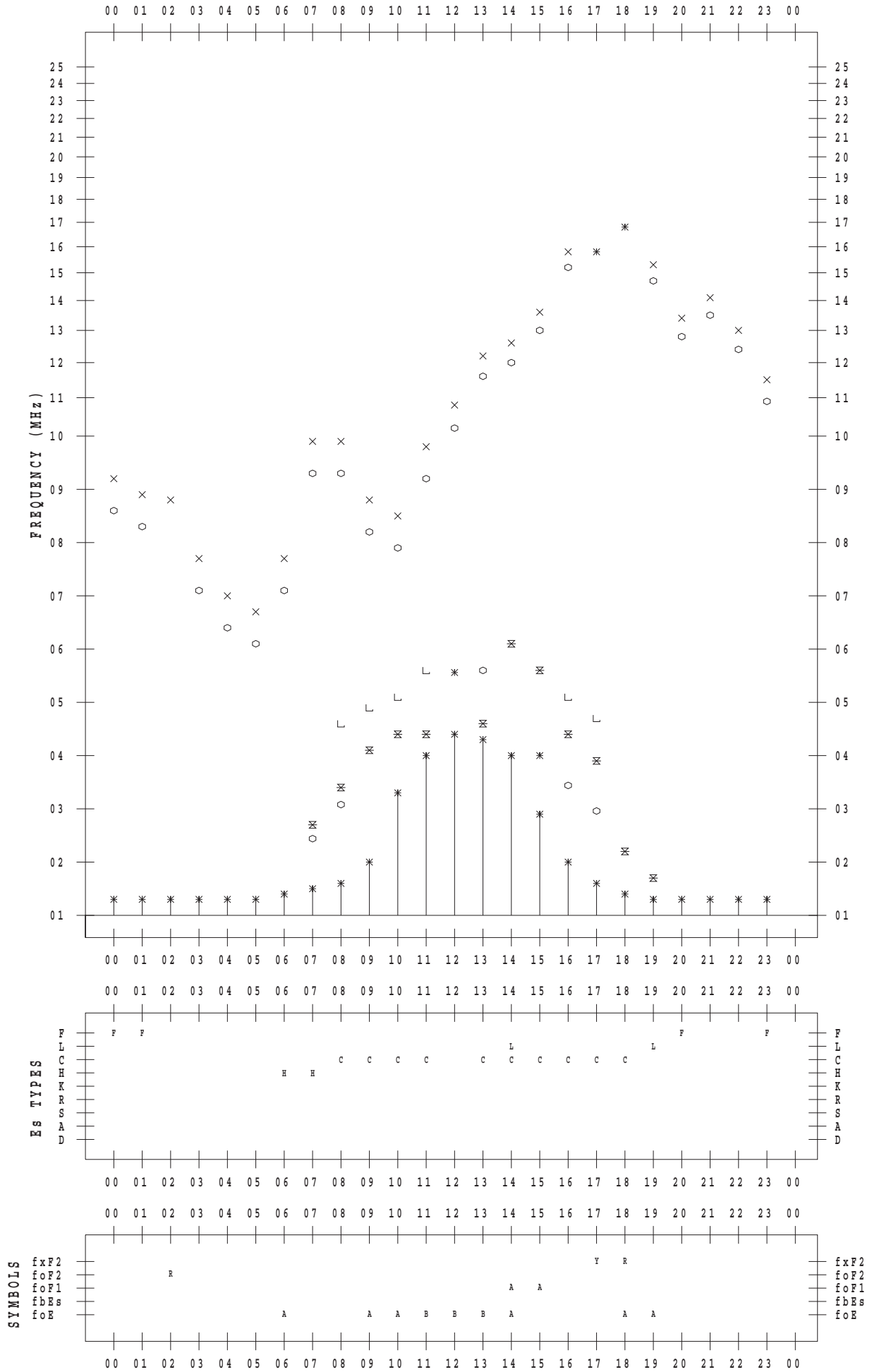
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 8

135 ° E MEAN TIME



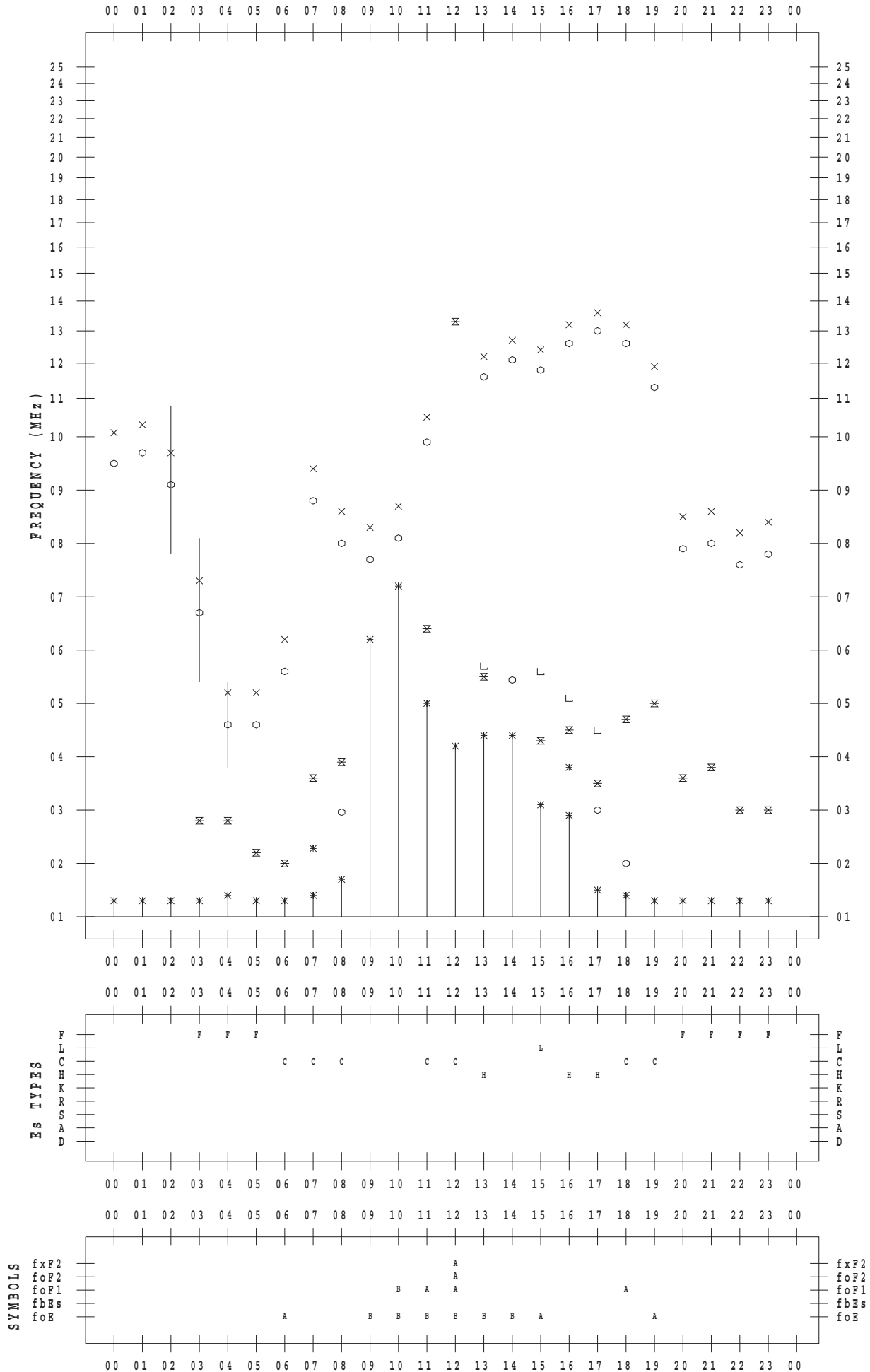
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 9

135 ° E MEAN TIME



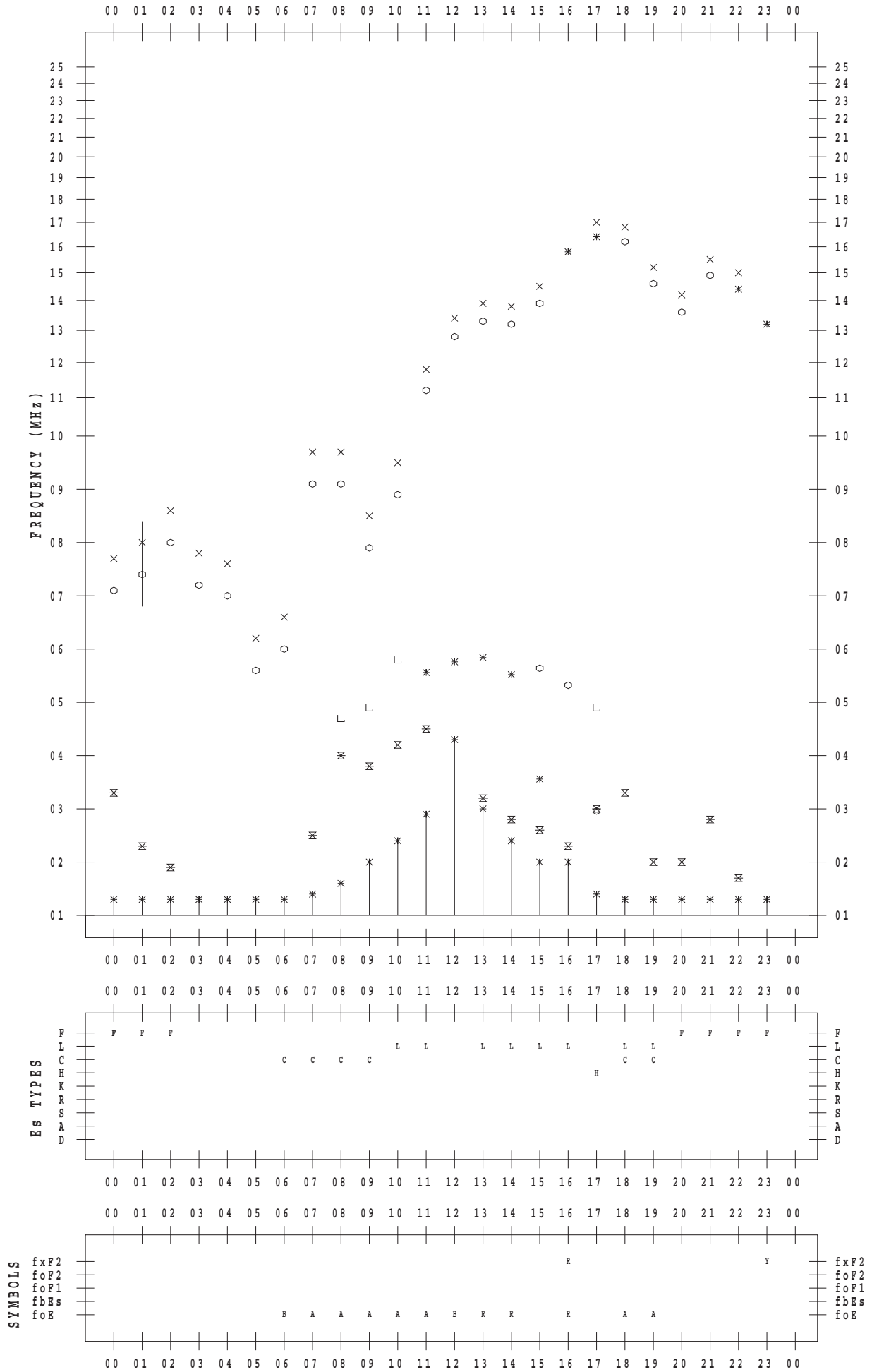
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 10

135 ° E MEAN TIME



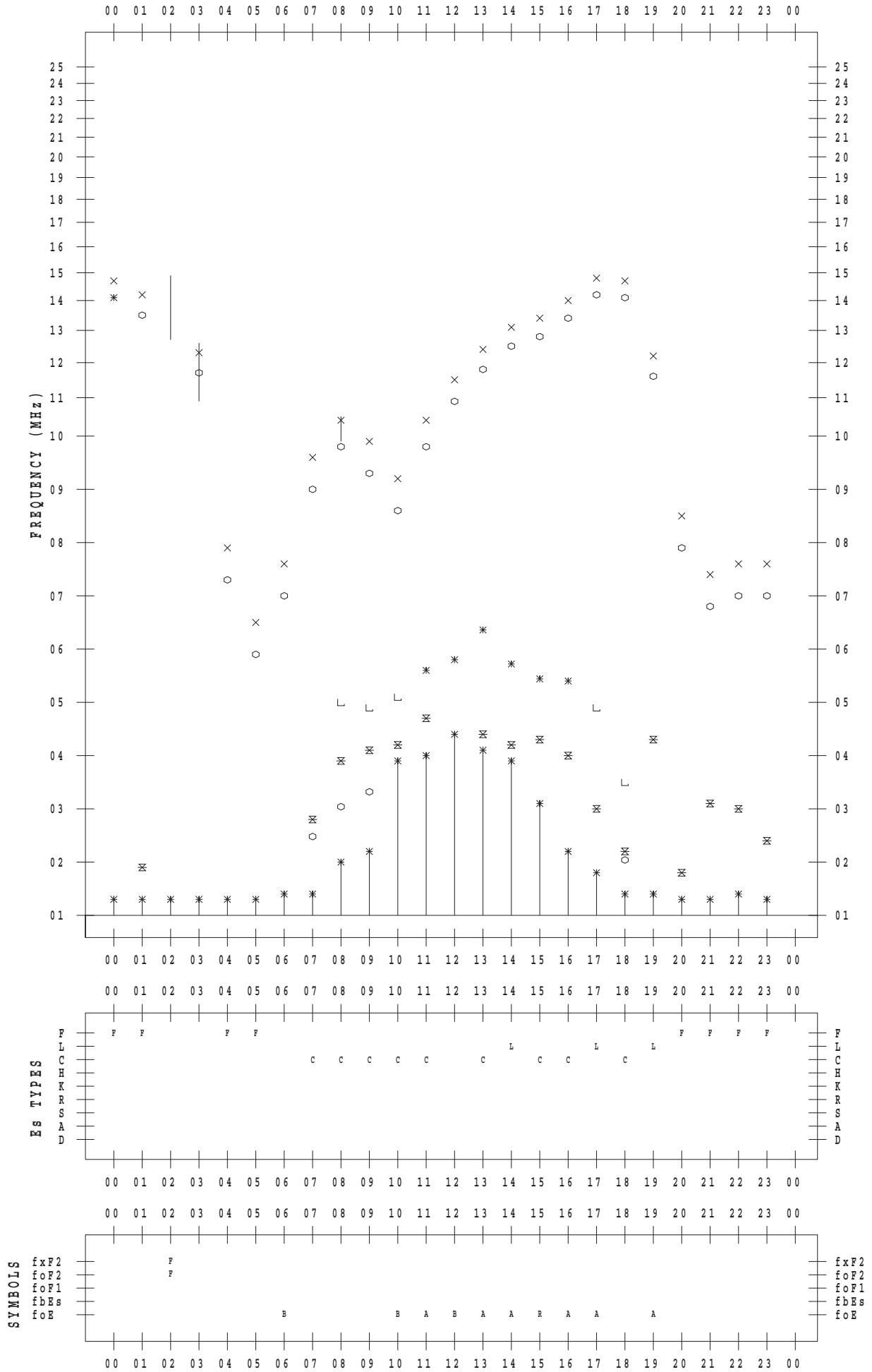
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 11

135 ° E MEAN TIME



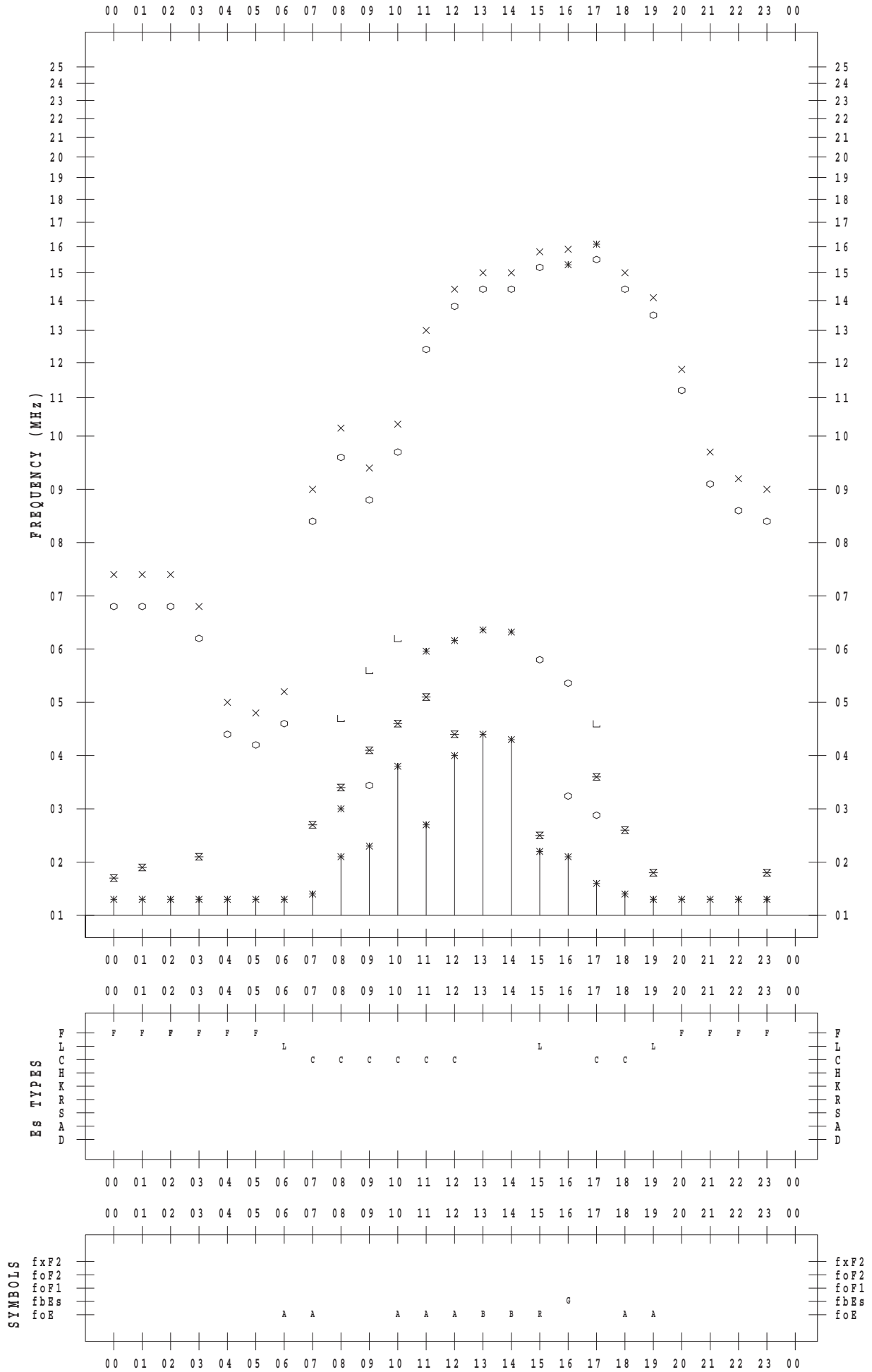
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 12

135 ° E MEAN TIME



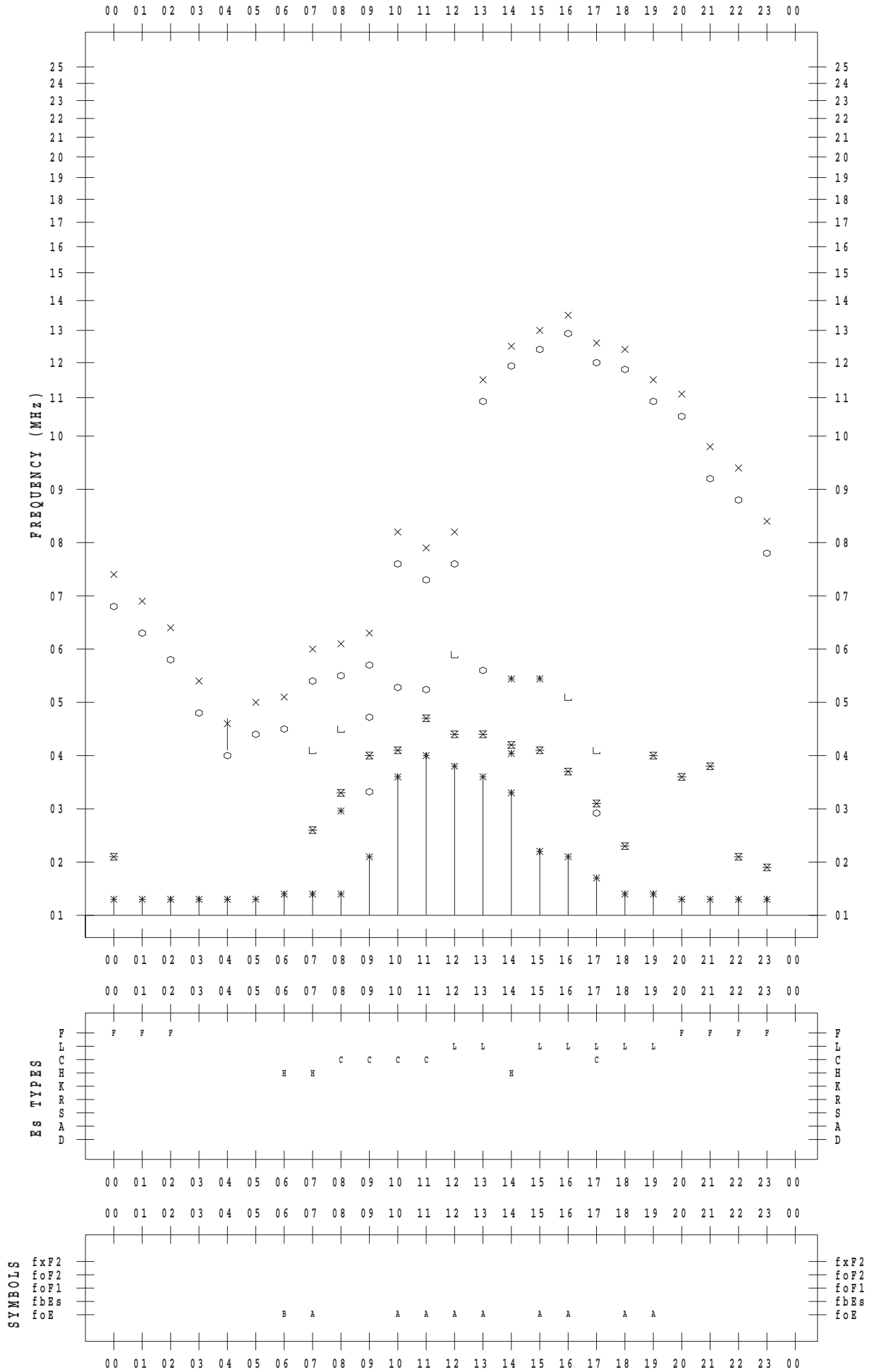
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 13

135 ° E MEAN TIME



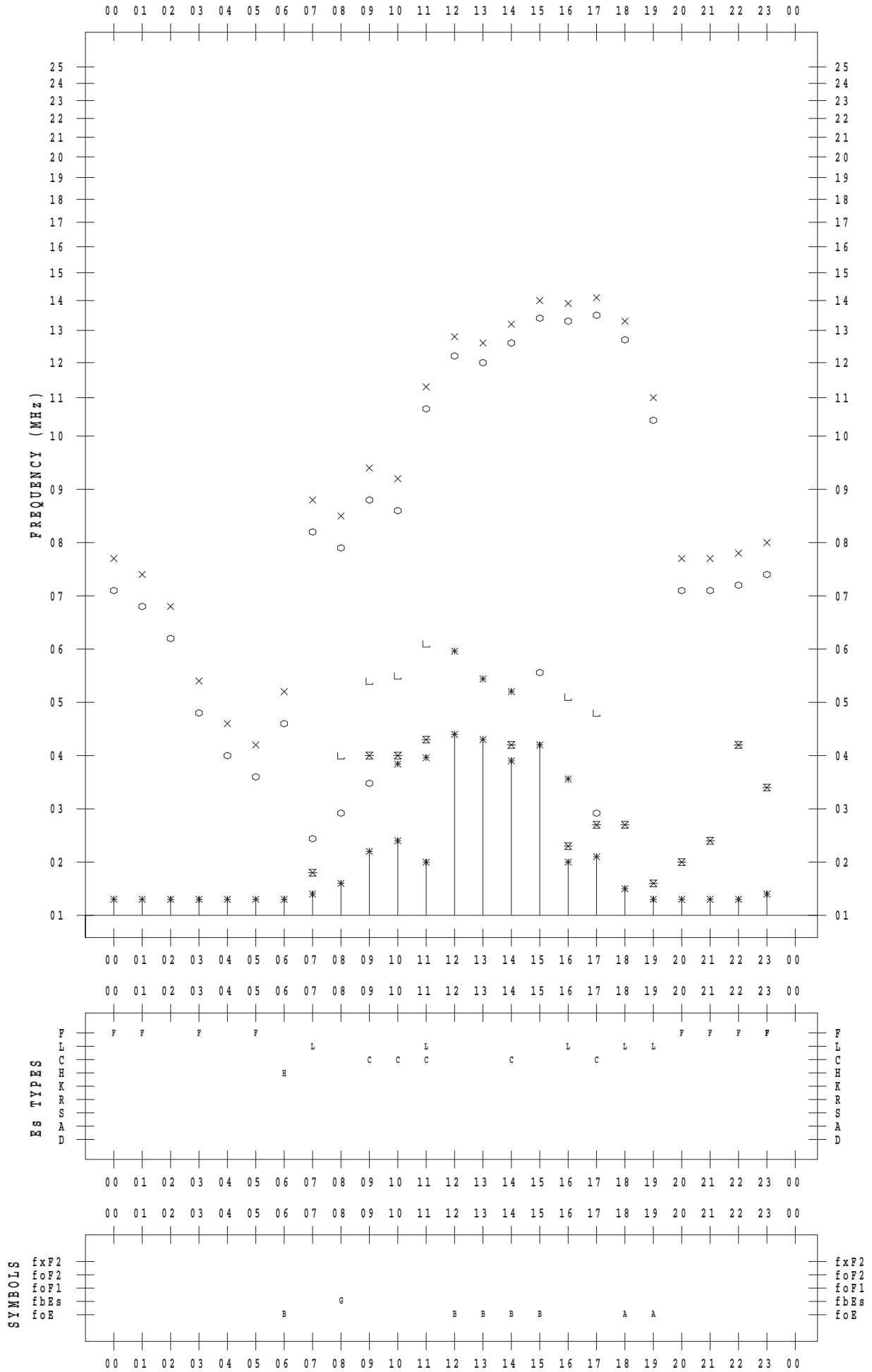
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 14

135 ° E MEAN TIME



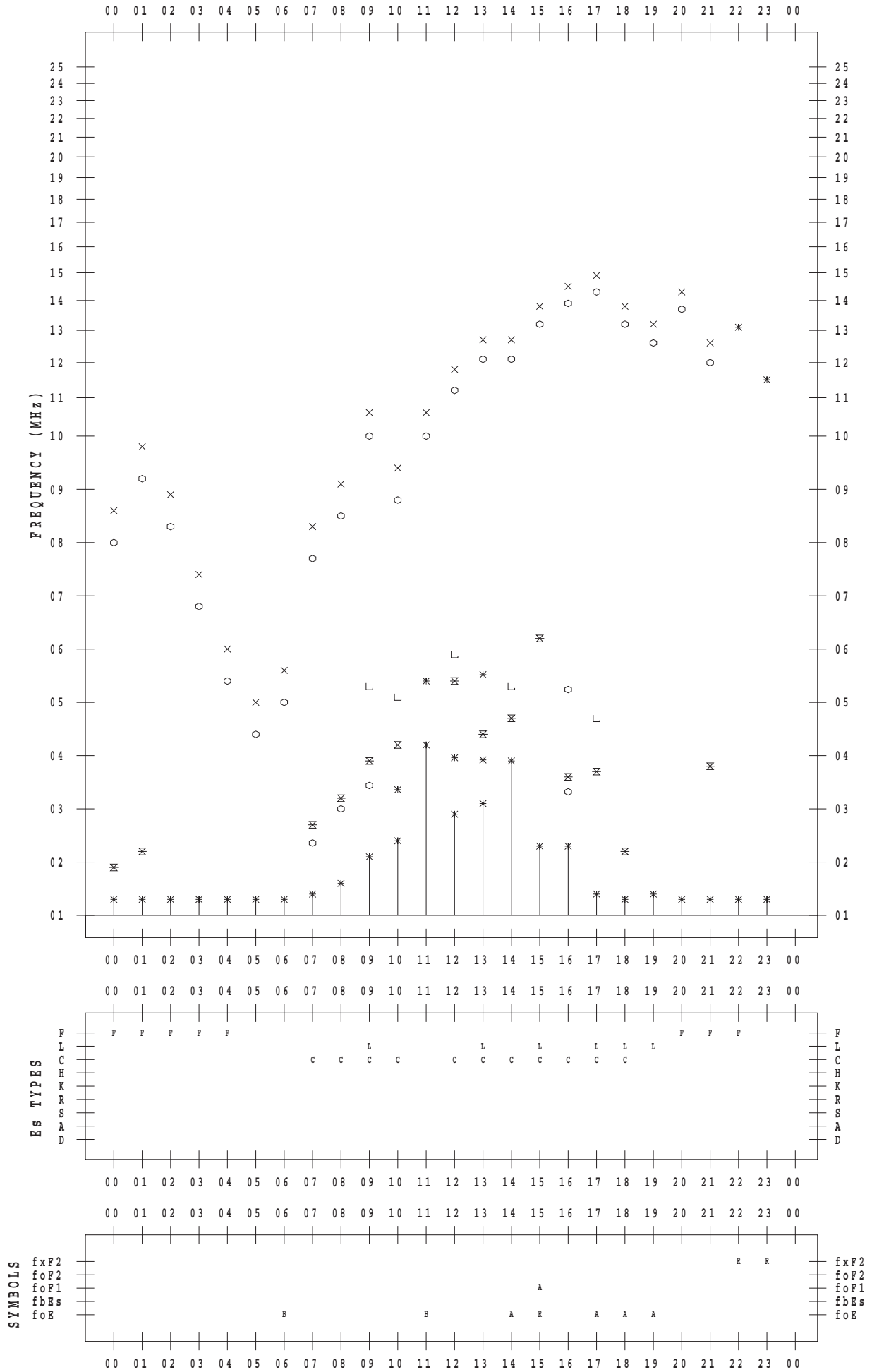
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 15

135 ° E MEAN TIME



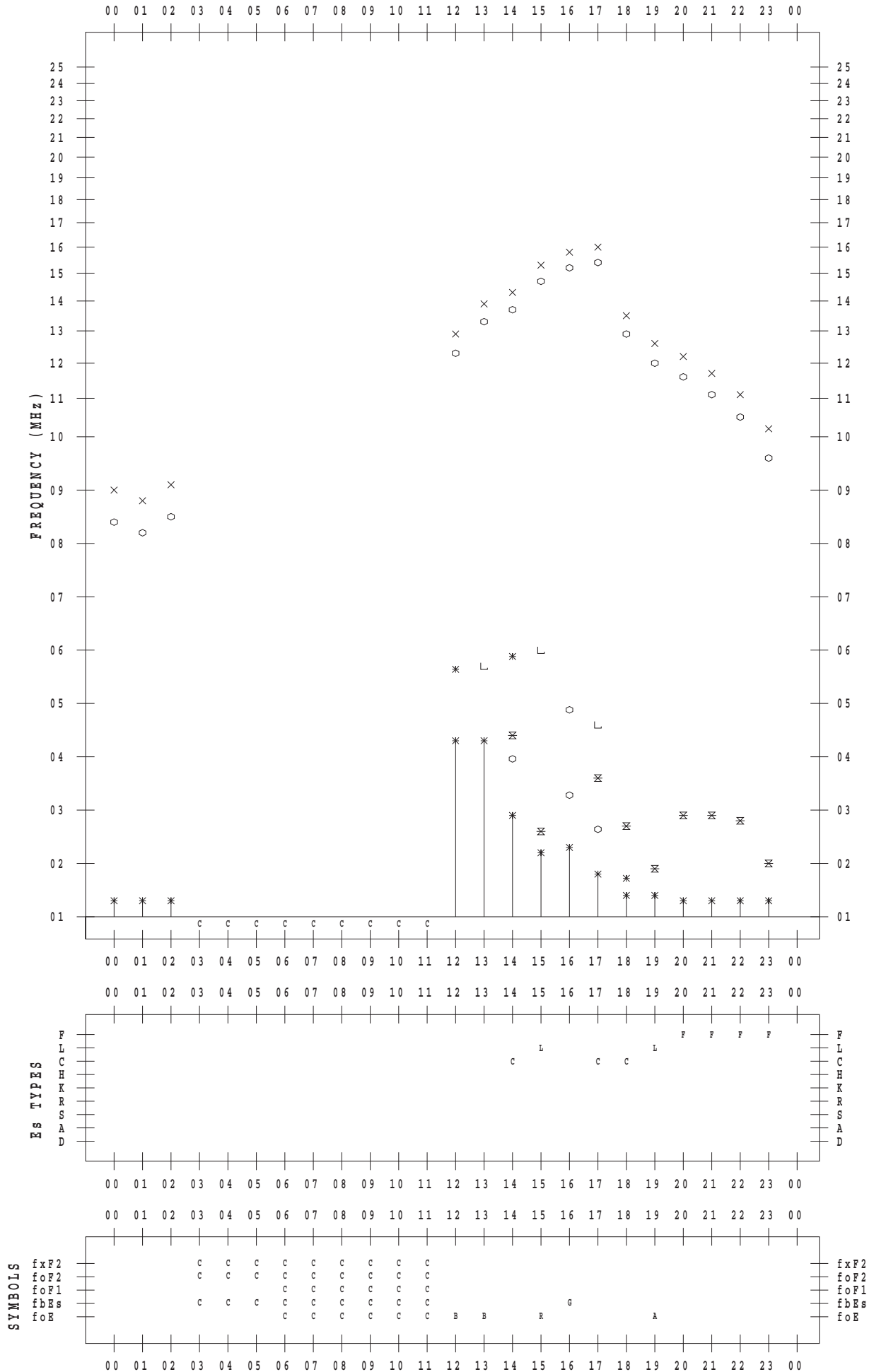
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 16

135 ° E MEAN TIME



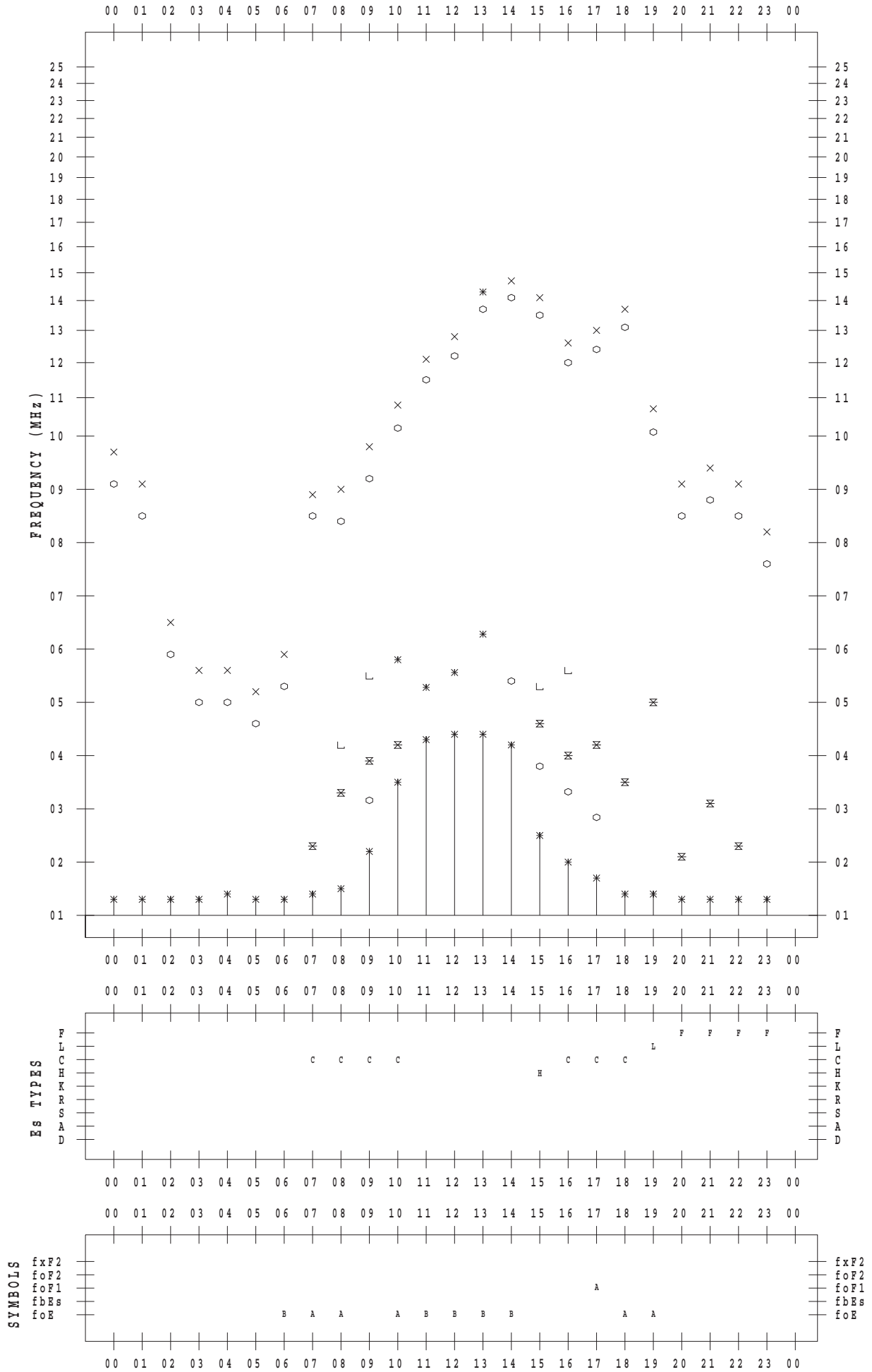
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 17

135 ° E MEAN TIME



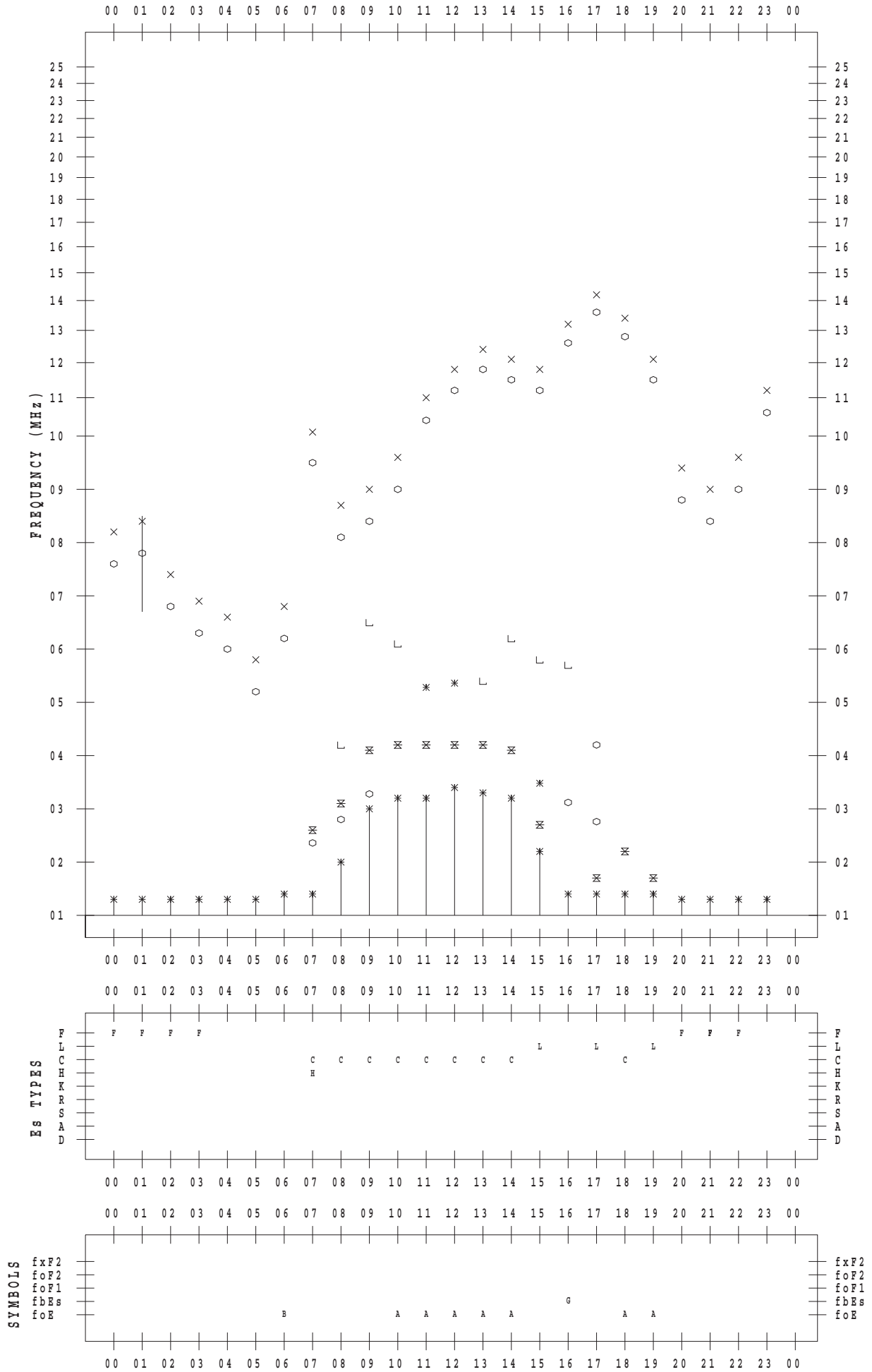
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 18

135 ° E MEAN TIME



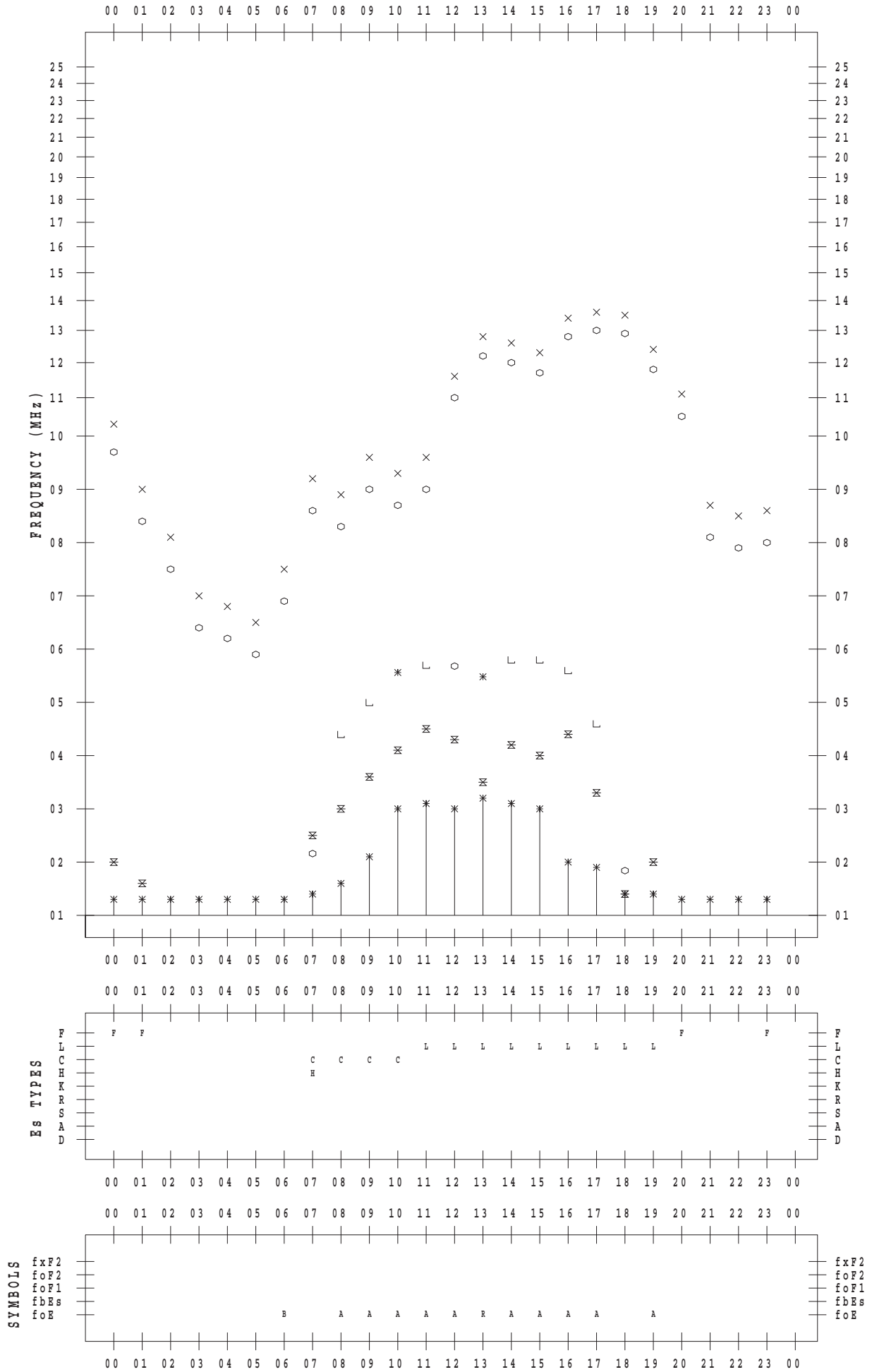
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 19

135 ° E MEAN TIME



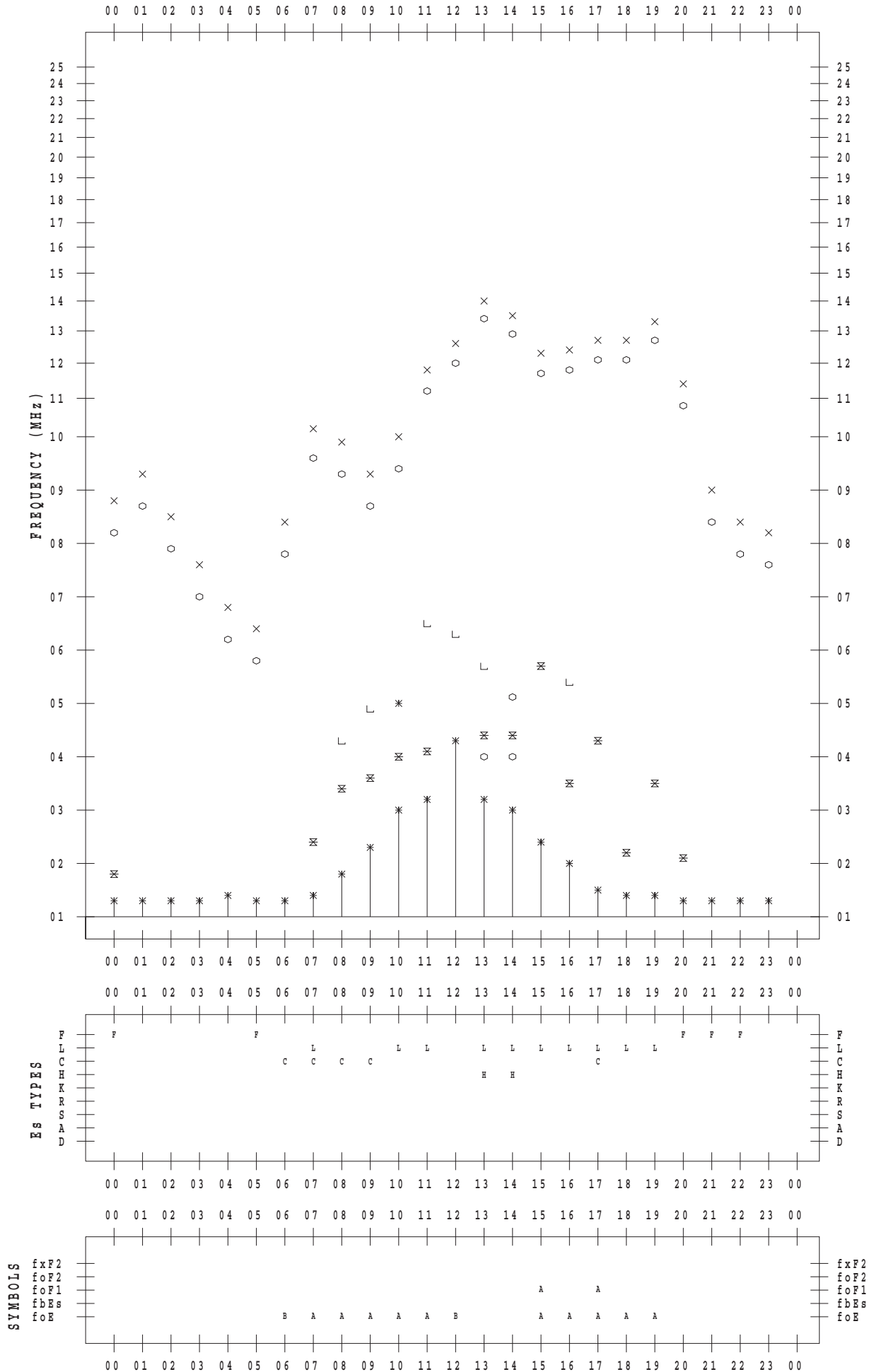
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 20

135 ° E MEAN TIME



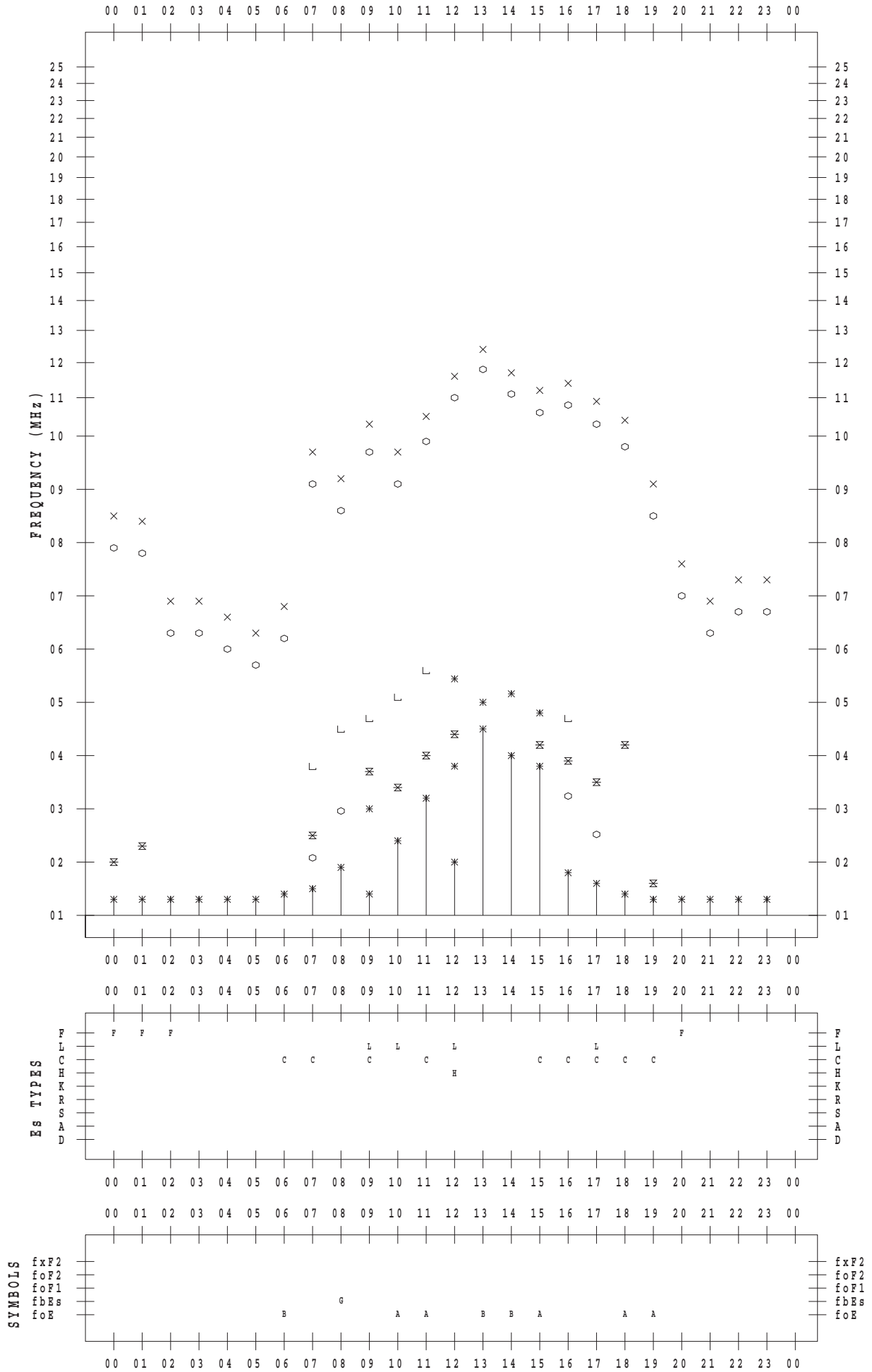
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 21

135 ° E MEAN TIME



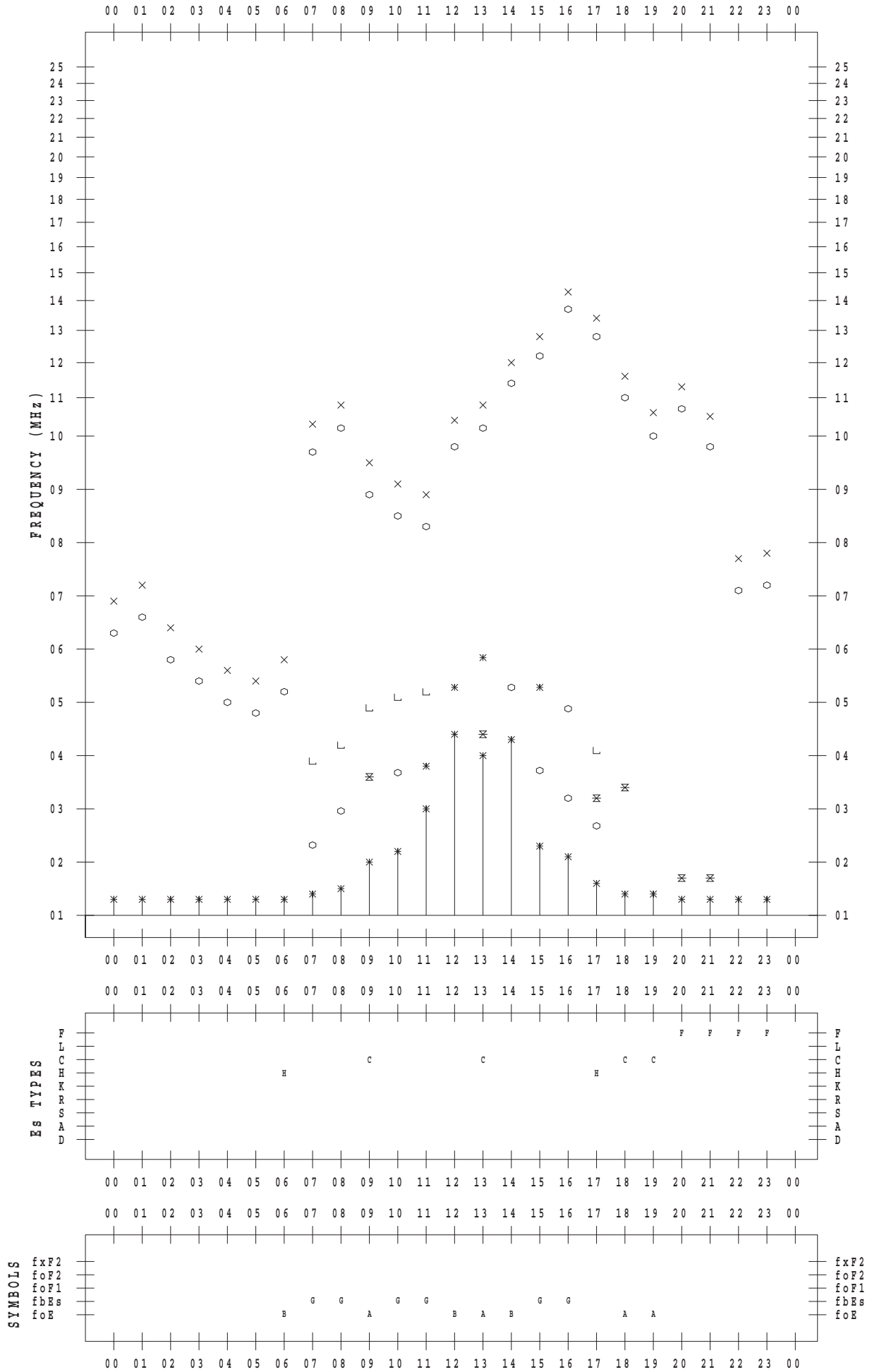
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 22

135 ° E MEAN TIME



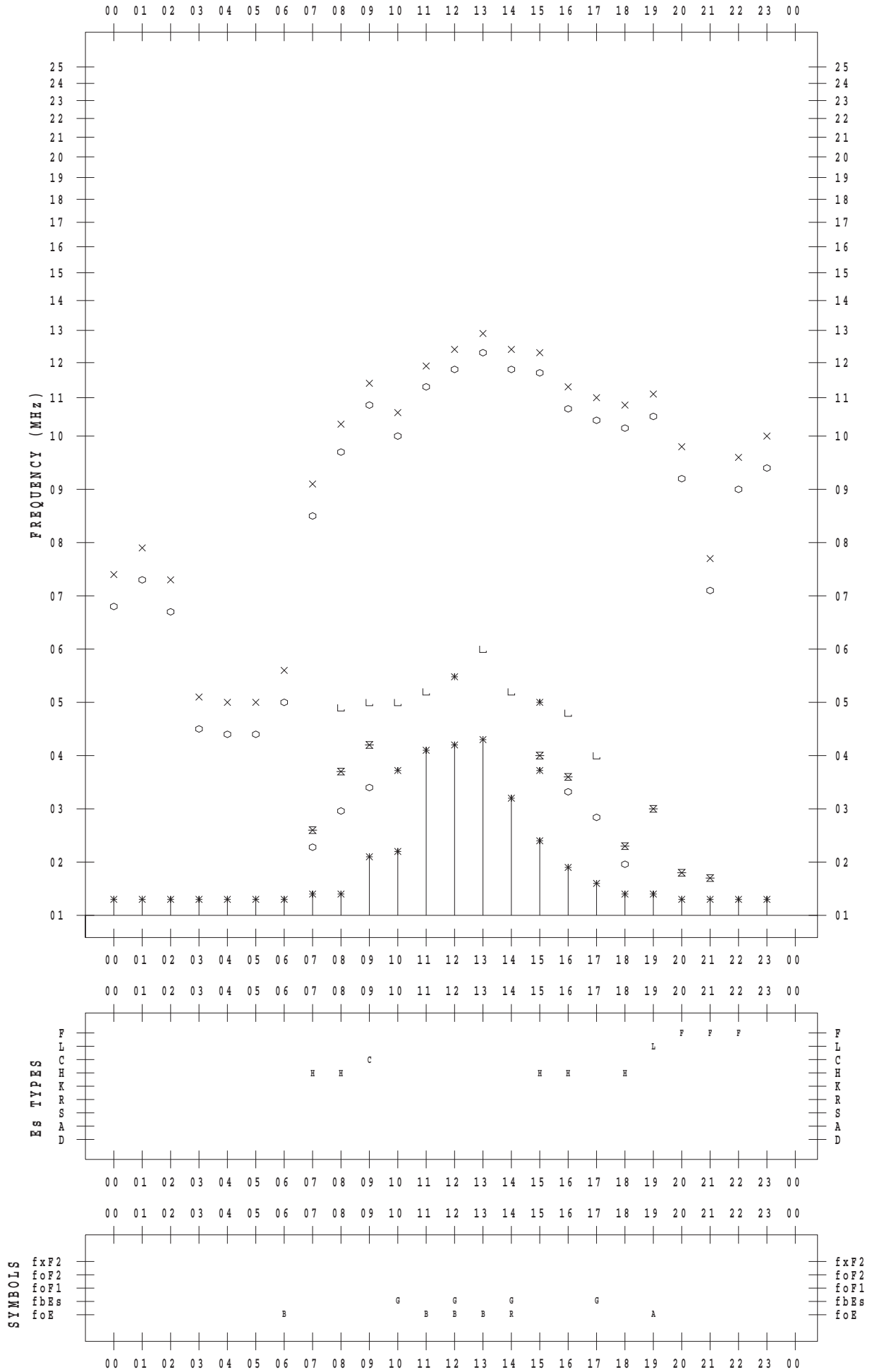
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 23

135 ° E MEAN TIME



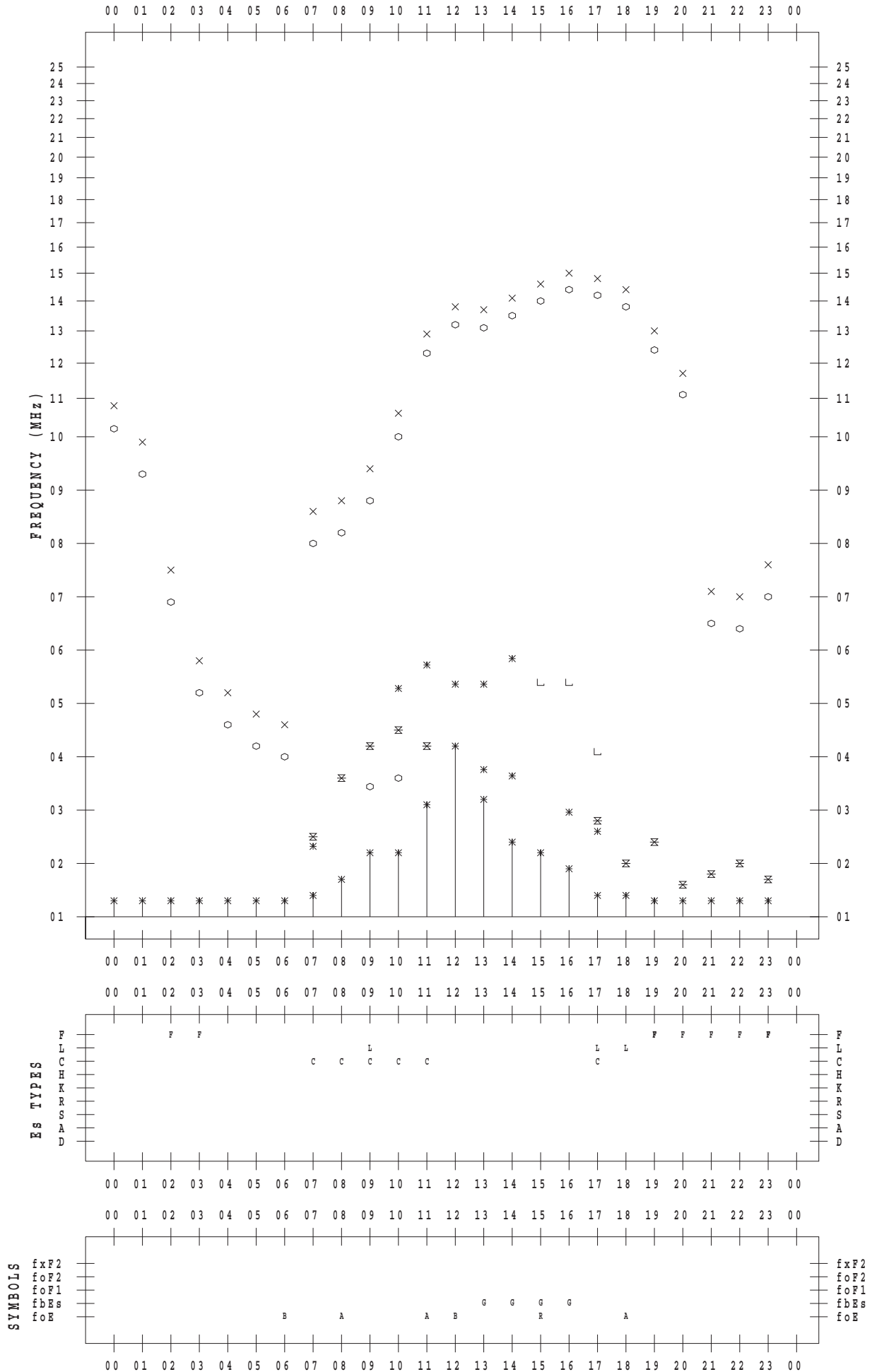
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 24

135 ° E MEAN TIME



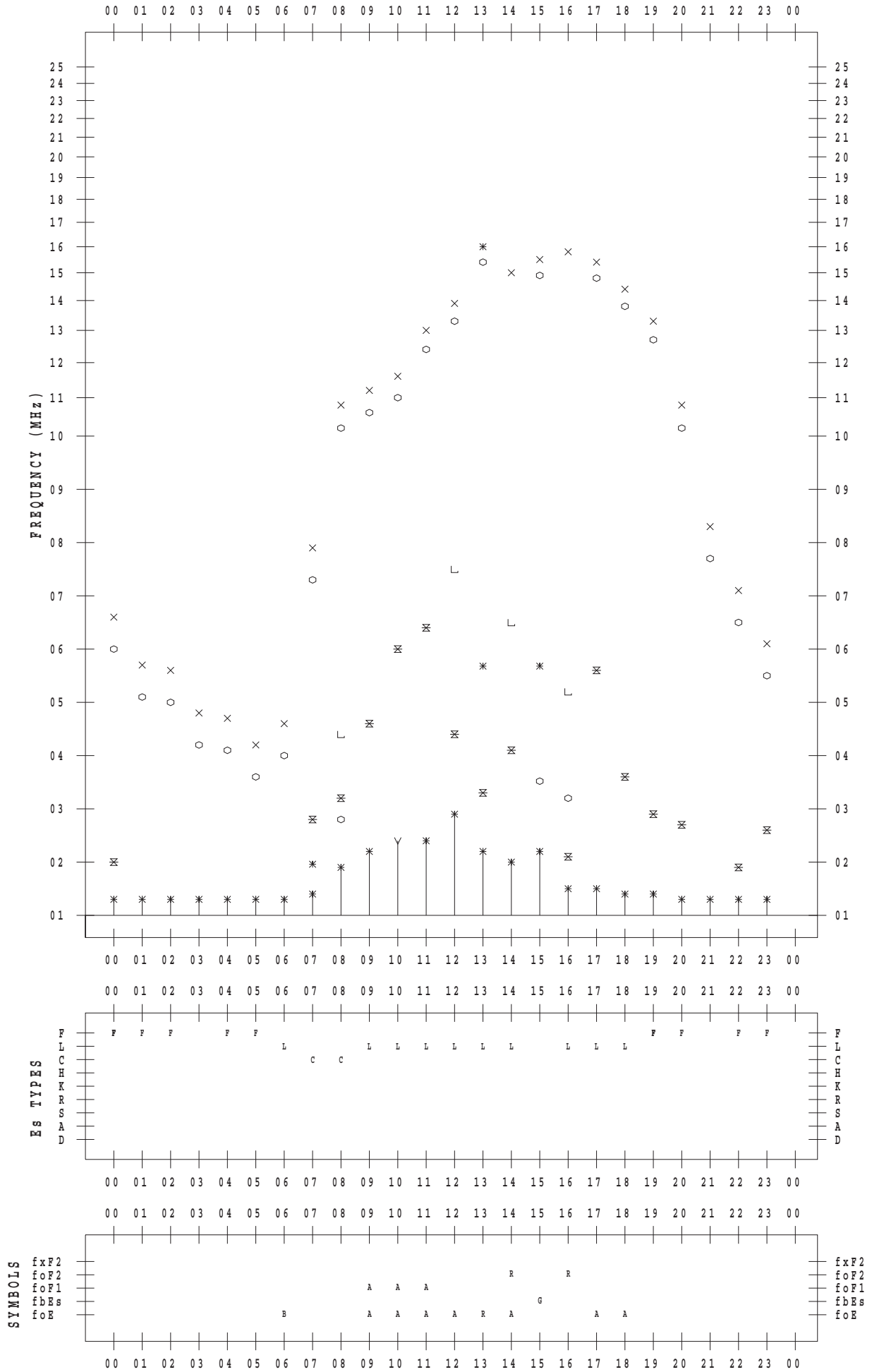
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 25

135 ° E MEAN TIME



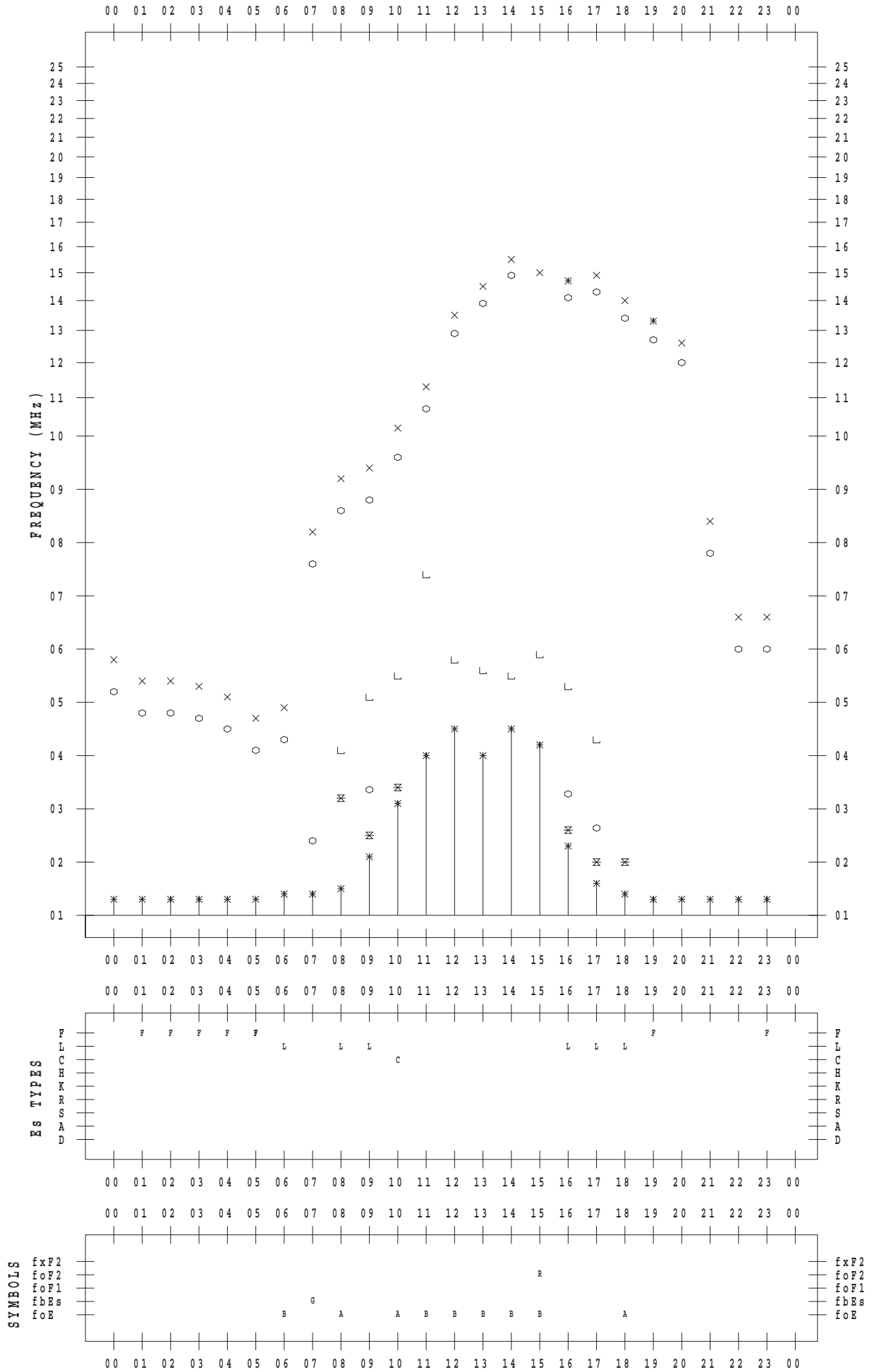
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 26

135 ° E MEAN TIME



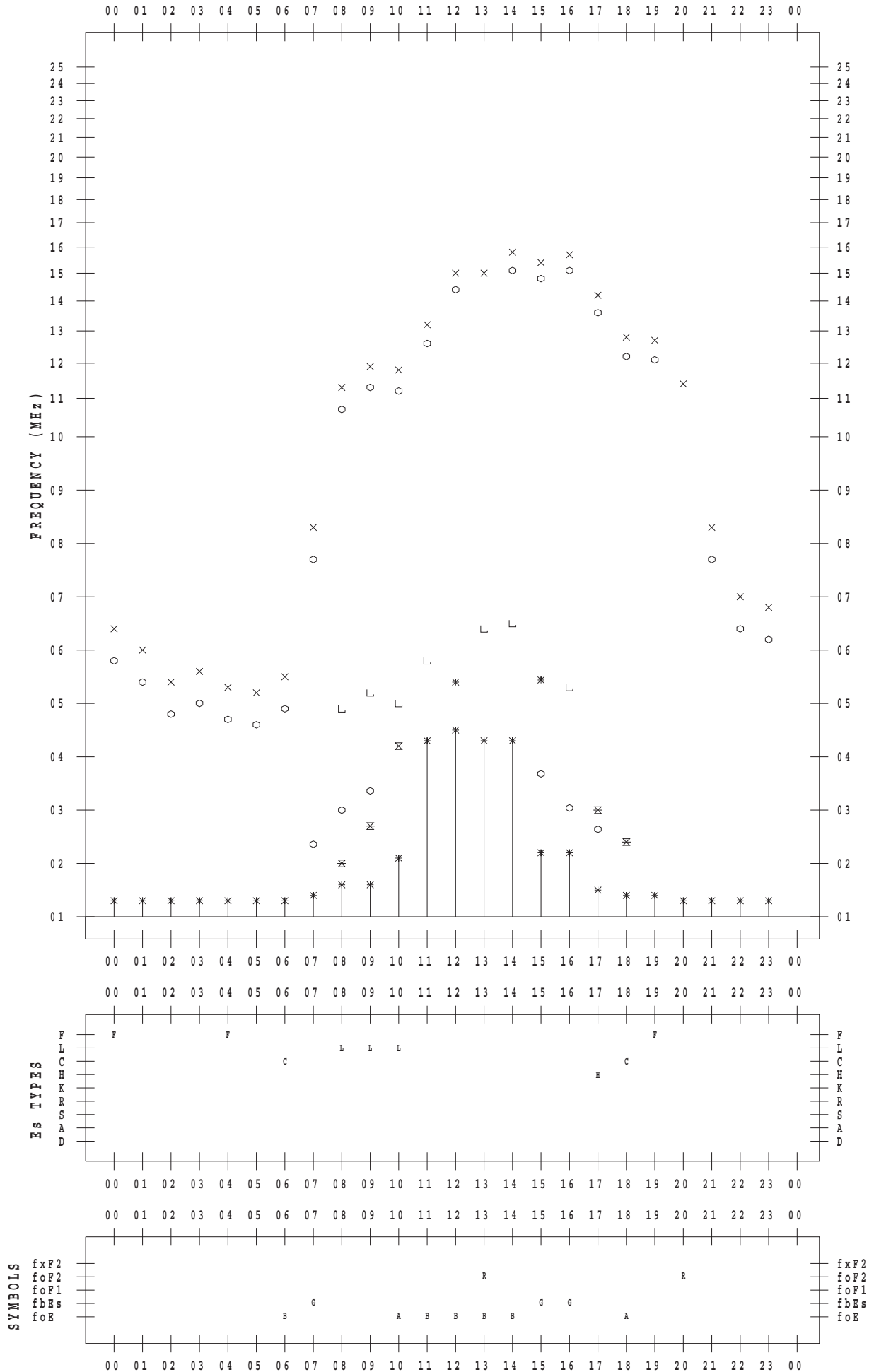
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 27

135 ° E MEAN TIME



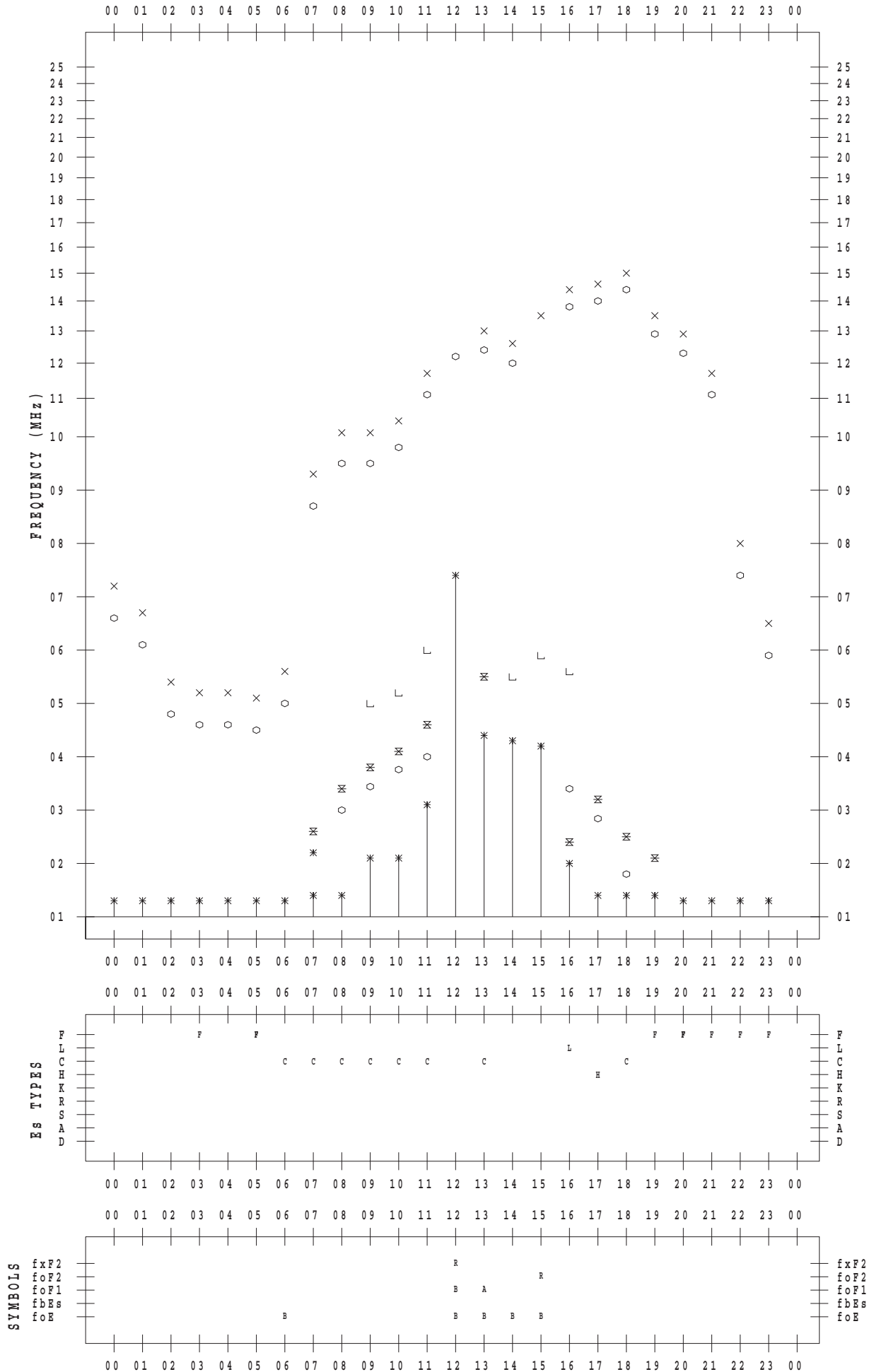
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 28

135 ° E MEAN TIME



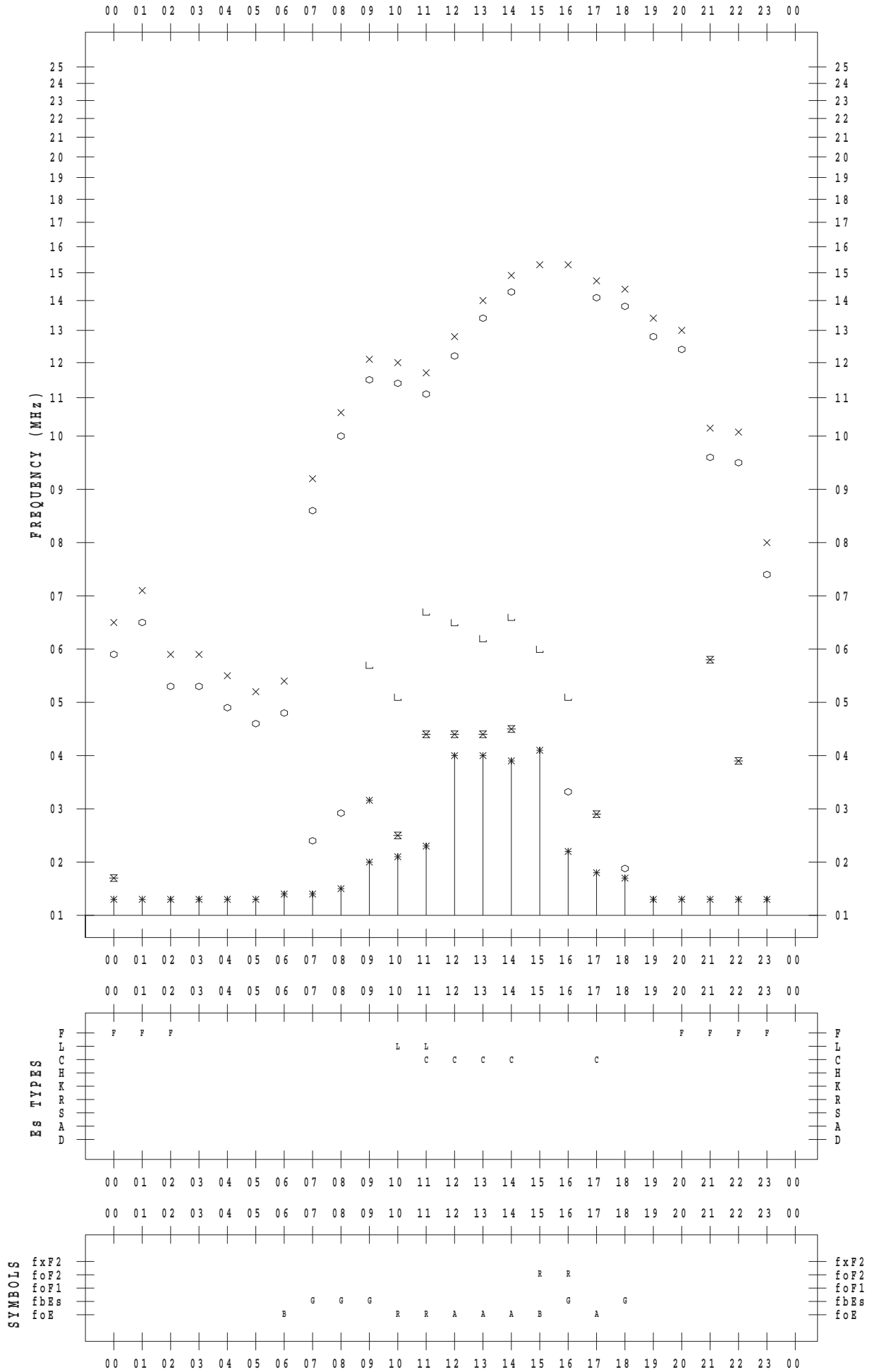
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 29

135 ° E MEAN TIME



f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014 / 9 / 30

135 ° E MEAN TIME

