

IONOSPHERIC DATA IN JAPAN

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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 ($foF2$, fEs , $fmin$) and monthly medians of two factors ($h'Es$, $h'F$), daily Summary Plots and monthly medians plot of $foF2$.

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

- A Impossible measurement because of the presence of a lower thin layer, for example **Es** (for $foF2$).
- C Impossible measurement because of any failure in observation.
- G Impossible automatic scaling because of very small ionization density of the layer (for fEs).
- N Impossible automatic scaling because of complex echoes.
- Blank No digital record because of problems occurring in the automatic data processing system, but existence of film record.

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

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

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

of values.

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

The following letters are entered after, or used to 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 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 (CND) is the number of values from which the median has been computed. In addition to numerical values, the count may include certain descriptive letters.

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

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

HOURLY VALUES OF fof2 AT Wakkanai

SEP. 2020

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

HOURLY VALUES OF fEs AT Wakkanai

SEP. 2020

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	40	32	38	28	25	40	41	59	43	140	40	46	38	32	41		40	47	60	61	31	G	G	G	
2	G	G	41	26	28	49	39	35	40	41	38	42	39		37	54	57	148	153	88	34	28	32	G	
3	G	G	G	G	38	33	33	46	40		46	44	40	36	38	G	38	37	32	34	59	40	36	45	
4	G	G	32		G	28	34	36	52	54	60	58	44	59	57	40	36	30	27	G	33	33	27	36	
5	26	G	G	G	G	G	60	59	41	47	51	41	42	48	43	36	38	37	G	30	38	36	43	41	
6	34	34	26	33	34	31	23	38	60	44	43	42	38	38	38	40	34	34	24	28	G	G	27	33	
7		26	G	G	112	29	29	52	34	91	33	62	38	36	44	41	37	29	G	G	G	31	36	25	
8	31	49	30	32	114	30	121	49	40		71	34	39	38	32		32	32	32	33	G	G	G	G	
9	G	G	G	24	G	40	59	56	58	53	56	38	38	35	38	34	39	34	G		25	28	G	26	
10	27	G	G	G	G	173	27	32	34	37		36	40	40	45	33	46	61	30	33	32	G	G	G	
11	G		G	G	25		28	40	37	38	48	36	47	46	37	37	33	29	G	25	46		25	G	
12	28	27	G	G	119	G	33	38	40	38	38	47	40	37	35	36	36	G	27	28	38	27	34	33	
13	33	G	G	G	G	G	29	28	36	36	38	38	38	134	34	38	34	32	28	31	32	G	32	G	
14	G	G	25	24	27	24	45	92	41	43	91	60		44	44	44	40	32	28	11	G	33	G	G	
15	G	G	G	28	59	56	31	71	45	58	72	46	76	50	48	84	38	36	57	47	30	33	33	28	
16	G	G	27	39	32	29	32	39	92	78	46	41	47	38		34	37	23	26	24	G	G	28	26	
17	26	28	24	G	G	G	114	33	40	45	39	38	47	45	36	40	35	35	34	35	33	26	G	G	
18	G	G	G	G	G	G	27	33	36	36	37	38	37	38	34	34	34	153	27	G	G	G	G	G	
19	G	G	G	G	G		28	59		38	40	34	39	43	54	53	56	44	27	35	70	70	40	40	
20	46	35	120	32	32	36	34	40	36	36	45	49	47	41	46	37	31	28	32	26	G	G	G	35	
21	G	G	G	G	G	34	31	31	126	65	61	49	49	38	45	91	40	51	32	33	28	G	G	G	
22	G	G	G	G	G	22	45	37	58	35	42	47	46	48	46		29	G	40	50	56	11	35	58	
23	33	28	G	28	28	27	32	58	37	49	37	59	42	39	39	108	31	G	32	40	33	G	G		
24	G	G	G		122		69	27	32	41	36	45	50	95	32	38	59	60	G	G	G	11	G	26	
25	25	G	G	G	G	G	56		38	42	52	48	44	45	51	38	36	30	28	26	34	G	G	G	
26	G	30	28	34	27	24	32	28	40	36	39	45	34	50	41	31	30	27	28	32	27	G	19	27	
27	G	G	G	G	25	33	33	52	28	39	32	109	38	35	44	64	92	91	28	32	34	29	G	G	
28	29	G	G	G	G	G	40	29	40	43	59	38	34	37	37	35	G	29	33	G	26	G	G	G	
29	G	G	G	G		G	36	65	41	53		G	G	G		40	28	34	37	30	40	44	33	39	32
30	G	G	G	G	G	G	G	G	40	43	42	39	36	43	40	50	35	31		33	35	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	29	29	30	28	29	27	30	29	29	28	29	30	29	29	29	27	30	30	29	30	30	30	30	28	
MED	G	G	G	G	25	28	33	40	40	42	42	44	39	41	40	38	36	32	28	32	32	18	10	26	
U Q	28	27	26	28	34	33	45	58	44	53	50	49	45	47	45	44	40	37	32	35	35	33	33	33	
L Q	G	G	G	G	G	G	29	34	36	38	38	38	38	36	37	34	34	29	26	25	G	G	G	G	

HOURLY VALUES OF fmin AT Wakkanai

SEP. 2020

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

HOURLY VALUES OF fof2 AT Kokubunji

SEP. 2020

LAT. 35°43.0'N LON. 139°29.0'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	35	33	33	31	29	27	A	A	A	A	A	43	A	A	A	A	48	A	55	57	A	34	A	A
2	28	30	30	31	29	30	A	51	N 68	A	A	44	A	49	A	A	45	41	34	A	40	36	34	35
3	30	25	24	30	30	31	41	43	A	50	A	A	A	50	47	42	44	45	51	56	50	38	33	33
4	31	30	29	27	26	26	41	44	51	A	C	C	A	50	47	C	47	A	53	63	50	34	34	32
5	34	33	31	31	N 32	31	38	51	52	58	51	A	A	A	51	59	58	45	51	A	43	45	39	39
6	34	35	32	32	27	30	39	48	51	54	A	A	49	52	54	48	51	51	50	57	51	43	40	36
7	36	34	32	31	30	30	42	51	49	50	49	A	57	56	60	47	45	46	45	52	51	56	35	34
8	32	32	32	31	33	35	40	48	51	A	A	52	53	51	53	55	54	49	51	51	44	41	38	36
9	32	N 31	32	32	32	26	41	46	53	A	53	45	50	51	51	53	53	48	A	A	A	37	35	33
10	31	31	26	N 25	24	24	40	42	49	51	A	51	51	55	55	49	50	49	48	56	51	A	32	
11	N 31	27	27	N 25	30	N 24	37	44	55	49	51	50	49	48	47	50	49	47	N 60	68	59	41	38	36
12	34	33	32	33	25	24	39	48	54	62	51	51	49	51	51	50	51	61	72	71	44	40	38	35
13	33	33	33	29	33	30	43	45	53	56	60	53	50	49	49	49	51	60	73	61	54	44	37	36
14	34	35	34	34	32	32	43	52	51	57	53	52	53	56	52	51	57	A	74	85	83	48	A	31
15	31	31	31	30	25	25	41	63	54	53	53	48	55	53	59	59	63	A	67	77	57	42	40	36
16	35	31	33	33	30	31	44	52	65	71	55	57	54	A	54	53		43	56	N 59	53	43	32	A
17	32	30	30	27	24	25	38	53	56	61	49	53	46	A	53	46	46	48	58	63	65	47	36	A
18	A	31	29	27	25	26	35	53	64	63	65	51	50	A	51	47	47	54	59	53	48	37	33	30
19	31	N 31	30	29	24	23	39	51	51	49	46	59	53	51	A	51	47	A	62	54	43	34	25	30
20	31	31	28	27	24	A	37	52	A	50	A	55	67	54	52	48	43	53	54	53		33	27	32
21	32	31	30		26	29	39	47	53	55	55	58	51	A			44	45	51		43			
22	A	31	30			N 23	38	46	45	52	51		52	53	55	52	55	65	66	56	47	37	32	
23	32		31	31	A	A	41	48	49	55	51	64	62	66	51		50	54	64	60	54	A	A	A
24	34	33	33	34	35		41		68	77	79	60	59	53	55		58	71	70	63	74	45	34	A
25	N 30	29	29	30	A		39	49	C	68	58		58	63	49	49	57	67	82	A	A	A	A	31
26	A	31	A	A	A	A	43	55	59	69	70	67	60	63	66	52	61	59	68	72	53	30	34	34
27	31	31	31	A	A	A	51	55	69	67	65	66	55	54	54	60	63	79	86	49	25	26	27	30
28	30	33	30	A	29	27	A	64	68	56	65	65	60	70	67	62	61	64	63	61	44	A	A	A
29	A	37	35	32	39	30	42	63	65	67	67	73	71	58	63	64	61	52	61	51	48	40	41	40
30	36	37	32	34	40		40	55	56	61	58	65	58	57	A	51	55	66	56	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	26	29	29	25	25	23	27	28	26	25	22	23	25	25	25	24	29	26	29	24	25	22	22	22
MED	32	31	31	31	29	27	40	51	54	56	54	53	53	53	53	51	51	52	59	58	50	39	35	34
U Q	34	33	32	32	32	30	42	53	64	65	65	64	58	56	55	54	57	64	67	63	53	43	38	36
L Q	31	31	29	28	25	25	39	46	51	51	51	51	50	51	51	48	47	47	51	53	44	34	33	32

HOURLY VALUES OF fEs AT Kokubunji

SEP. 2020

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	28	29	G	G	28	28	36	70	64	39	38	G	37	37	33	34	49	87	34	77	87	33	40	34		
2	31	G	G	G	G	31	38	52	84	53	52		42	37	36	61	50		37	34	32	G	33	G		
3	24	29	G	36	24	G	26	34	38	38	84	42	40		G		39	41	29	G	G	34	33	G		
4	23	G	G	G	G	G	29	27	42	36	C	C	41	G		C	32	81	29	40	31		25	25		
5	29	29	31	24	G		31	39	56	49	38	53	40	50	39	29	32	G	G		33	32	25	G	G	
6	27	G	G	31	G	25	G	29	92	36	90	52	38	39	34	38	28	G	G	G	G	G		29	G	
7	29	31	26	G	G	G	35	32	36		40	40	41	40	37	39	31	G	G	G		27	26	G	G	
8	G	G	G	G	G	23	31	37	38	47	41	40	40	G	49	34	31	39	38	G		39	31	29	G	
9	G	G	G	G	G		30	39	31	43	39	35	G	37	51	36	47	52	58	102	59	40	33	G	G	
10	G	G	G	G	G	25	35	G	G	34	41	41	40	39	G	G	28	28	G	G		11		28	G	
11	G	G	G	G	32	G	30	35	35	34	40	G	G		G		108	40	32	G	25	11	G	34	G	
12	G	G	G	G			29		34	36	47	40	41	40	32	34	39	36	35	28	29	G	G			
13	G	G	G	G		G	23	32	35	37	42		39	G	G		34	35	29	G	G	11	G	G	G	
14	G	G		24	31	22	27		42	38	34	33	G	G	36	37	42	43	33	52	36	25	32	G	G	
15	24	G	G	G	G	84	28	36	58	37	38	76	39	40	49	56		82	41	40	G	G	31	G	G	
16	G	G	G	G	G	G	30	33	37	34	40	37	38	G	G	33		37	32	31	36		G			
17	G	G	G		G	G	31	29	38	56	G	40		37	36	39	44	31	27	43	36	26	31	33	33	
18	30		G	G	G	G	26	34	36	37	39	39	40	39	G	G	29	G	G	G	G	G	G	G	23	
19	G	G	G	G			30	36	40	G	48	42	40	48	65	49	46	84	52	35	43	G	G	G	G	
20	G	G	G	G	G	24	31	39	57	50	70		96	52	47	42	32	36	35	36		G		28		
21	G	G	G		G	G	31	36	61	49	49	40	42	38			26	29	G		40		34			
22	40	G	G			G	45	40	42	G	43		G		37	44	40	37	29	75	29	G	G			
23	G		G	G	26	30	38	40	38		31	41	40	38	G		40	34	38	G	49	40	40	93		
24	28	33	G	25	31		29		41	46	37	50	39	47	36		37	33	46	72	27	28	33	55		
25	G	G	G	27	35		24	29	C	41			52	35	G	34	75	51	40	72	69	57	56	29		
26	49	31	34	32	29	31	36	43	33	36	44	37	G	46	33	33	31	31	G		33	47		25	27	
27	G	G	G	39	41	31	35	28	31	33	G	40	G	41	G	33	35	52	11	51		G	G	G		
28	G	G		24	33	G	25	81	42	38	34	40	G	54	37	G	40	29	35	54	38	40	34	49	70	
29	41	G	G	G	G	G	29	36	31	33	G	G	G	G	G	40	40	31	28	G	31	G	28	29		
30	29	29	G	G	46		28	42	42	43	65	47	40	36	49	47	39	32	36	35	71	44	33	39		
31																										
	00	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	28	30	27	26	23	29	28	29	28	28	25	29	28	27	26	28	29	30	29	28	24	29	26		
MED	G	G	G	G	G	23	30	36	38	37	40	40	40	38	34	37	37	33	33	33	32	13	29	G		
U Q	29	15	G	27	28	28	35	40	49	44	47	42	41	40	44	42	41	46	40	40	41	33	33	29		
L Q	G	G	G	G	G	G	28	32	35	34	38	18	19	36	G	33	31	29	G	G	18	G	G	G		

HOURLY VALUES OF fmin AT Kokubunji

SEP. 2020

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	16	16	16	15	15	15	15	15	13	15	20	19	17	16	16	17	15	14	14	15	15	16	16	15
2	16	15	14	20	16	15	14	14	15	16	22		14	20	17	16	18	14	14	15	14	16	16	15
3	16	16	16	15	16	15	15	14	14	16	13	15	16	15		16	16	14	16	15	15	15	15	15
4	16	15	15	15	14	15	15	15	16	15	C	C	34	43		C	15	15	14	15	15	15	15	16
5	16	16	15	15	15		15	15	16	15	16	15	15	17	15	23	24	15	15	15	15	15	16	15
6	15	18	13	16	15	16	23	15	18	15	11	20	16	14	16	14	15	15	14	14	15	15	15	15
7	15	16	15	14	14	15	15	17	17	15	17	15	33	33	16	15	16	15	17	18	15	16	15	15
8	15	14	14	14	14	16	16	17	15	19	17	17	34	49	16	16	15	14	15	16	15	16	16	15
9	16	15	14	13	14		15	15	16	18	20	17	17	17	15	15	15	15	16	10	16	15	16	14
10	15	14	15	15	15	15	16	15	15	17	17	17	17	15	15	16	15	15	17	14	14		15	20
11	18	13	14	15	15	14	15	17	16	17	17	24	48		23	15	15	16	14	15	20	16	15	15
12	15	16	15	16			15	14	15	16	17	18	15	16	16	15	15	15	15	15	15	16	15	
13	17	22	15	15		17	16	15	15	16	15	17	23	47	15	17	17	16	15	16	14	14	15	18
14	15	16	16	16	15	16	16	15	15	18	17	17	15	22	17	17	14	14	15	15	15		16	16
15	15	14	14	14	15	14	15	17	15	21	34	30	21	18	16	17	8	15	15	15	15	13	15	18
16	14	14	14	20	17	15	16	16	16	15	15	16	16	15	15	15		15	15	16	15		15	
17	14	17	18	15	17	14	16	15	16	17	15	43	15	17	17	15	15	15	16	16	15	16	15	16
18	15		15	14	15	15	15	14	15	16	17	22	33	17	17	16	15	15	14	14	16	14	14	15
19	18	15	17	17			15	17	15	15	17	17	16	15	16	22	15	15	14	14	15	16	15	17
20	22	14	14	14	14	15	14	17	13	14	12	15	19	16	15	15	17	17	16	14		16	15	16
21	15	17	18		17	14	16	16	15	16	17	19	23	21			15	16	16		16		15	
22	15	20	15			17	15	17	15	17	15		16	18	19	16	15	15	13	15	16	14	17	
23	15		16	16	15	16	16	16	15	16	17	16	16	17	16		15	16	15	15	15	14	15	15
24	16	15	14	16	14		16		15	15	16	16	16	15	15		17	16	14	14	16	15	15	16
25	15	14	14	15	15		16	16	C	15	16		16	16	15	14	13	14	14	15	15	17	15	16
26	15	15	17	15	16	16	15	15	17	15	14	17	17	17	16	17	16	15	15	15	15	15	16	15
27	15	17	14	15	16	15	15	15	15	17	15	17	15	15	17	16	15	14	13	15	16	22	18	14
28	13	14	16	14	15	16	16	14	15	15	16	16	19	31	17	15	15	17	15	15	15	16	14	15
29	15	15	16	17	14	18	15	14	15	15	15	15	15	17	36	16	15	16	15	15	16	17	17	15
30	15	16	15	15	15		15	15	16	19	17	19	17	19	16	17	15	15	15	14	15	15	15	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	28	30	28	26	23	30	29	29	30	29	26	30	29	27	26	29	30	30	29	29	26	30	26
MED	15	15	15	15	15	15	15	15	15	16	17	17	16	17	16	16	15	15	15	15	15	16	15	15
U Q	16	16	16	16	16	16	16	16	16	17	17	19	21	20	17	17	16	16	15	15	16	16	16	16
L Q	15	14	14	14	14	15	15	15	15	15	15	16	16	15	15	15	15	15	14	14	15	15	15	15

HOURLY VALUES OF fof2 AT Yamagawa

SEP. 2020

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	39	37	A	33	A	A	A	A	A	A	53	A	A	A	52	A	47	A	N	70	61	47	A	A	A		
2	A	A	A	A	A	A	A	47	39	A	A	A	48	A	57	68	49	46	48	51	A	49	43	42			
3	A	A	A	27	A	A	39	47	51	48	A	A	A	55	54	47	50	56	61	65	55	46	37	35			
4	A	N	N	B	N	27	27	35	47	55	58	55	54	48	A	52	51	51	52	54	68	57	A	31	A		
5	B	31	31	A	A	A	34	57	67	57	52	A	A	57	59	67	65	59	55	51	53	51	39	36			
6	36	35	32	32	32	N	27	35	52	53	55	54	52	57	58	59	63	59	57	60	61	C	C	C	C		
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	57	67	61	33	32		
8	33	33	33	N	A	26	37	49	N	57	54	54	54	62	57	62	A	A	56	59	56	59	47	42	39		
9	A	A	A	31	A	A	36	51	47	51	54	A	51	60	58	61	58	55	58	54	57	44	35	34			
10	34	33	33	32	28	29	33	49	51	57	55	52	A	58	61	57	57	55	65	65	72	45	36	37			
11	34	34	31	33	31	B	23	33	51	45	53	49	55	54	A	53	55	50	51	58	71	68	40	34	33		
12	35	33	B	48	B	B	24	31	49	61	64	51	47	48	54	60	60	57	63	76	70	55	47	37	31		
13	31	33	32	B	31	N	25	34	47	55	62	64	51	53	52	53	56	53	57	63	75	71	52	35	34		
14	33	34	32	33	31	29	34	53	56	57	58	53	57	64	56	55	65	77	85	76	70	40	39	37			
15	35	38	33	32	N	N	26	30	34	50	50	57	60	53	58	67	63	63	57	N	62	77	85	61	45	A	36
16	39	33	33	33	31	31	35	55	76	76	63	64	63	62	59	54	47	51	55	68	71	64	49	37			
17	35	32	A	33	32	N	30	31	55	62	58	53	55	52	54	54	54	49	51	63	65	70	47	38	36		
18	A	A	33	34	31	N	31	A	49	71	77	59	58	56	55	57	57	49	57	65	69	53	33	34	32		
19	33	30	32	N	31	32	24	31	48	62	55	48	56	N	53	51	A	55	53	59	70	60	48	B	25	A	A
20	31	31	33	31	25	N	25	32	47	55	52	55	54	55	61	59	58	A	56	61	69	A	A	A	31		
21	32	31	33	31	N	29	30	32	47	67	68	A	62	52	57	62	61	51	52	57	63	56	A	A	A		
22	A	A	A	31	A	N	25	34	48	51	57	57	54	53	58	65	61	66	81	80	57	53	45	41	37		
23	39	39	40	38	37	30	39	46	49	67	53	59	67	61	56	53	60	65	77	80	57	47	A	38			
24	39	A	A	39	41	A	35	57	69	84	61	58	54	66	68	72	72	73	81	70	69	53	A	33			
25	32	32	31	34	B	B	34	55	73	71	65	64	67	61	64	A	69	84	81	61	36	A	35	36			
26	36	36	36	32	34	31	34	51	59	94	72	69	77	67	71	66	61	71	80	84	88	A	31	31			
27	A	A	32	34	33	A	41	56	60	84	71	67	71	66	60	61	74	97	109	57	25	30	31	32			
28	33	34	34	33	35	30	35	54	79	71	66	65	73	83	83	59	67	76	79	76	A	34	A	35			
29	34	38	A	34	33	N	30	37	65	65	91	91	91	82	81	79	81	65	66	66	73	53	41	41	43		
30	43	42	44	37	33	25	34	52	65	70	85	75	63	64	69	68	73	88	76	49	A	A	32	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	22	21	27	21	21	26	28	28	27	26	24	25	25	28	26	27	28	29	30	25	22	21	24			
MED	34	33	33	33	32	29	34	50	58	58	56	56	56	60	59	60	57	58	65	65	57	46	36	36			
U Q	36	36	33	34	34	30	35	54	66	71	64	64	65	65	63	63	65	72	78	71	69	49	40	37			
L Q	33	32	32	31	30	25	33	47	51	55	53	53	52	56	56	55	50	55	58	57	53	40	33	32			

HOURLY VALUES OF fEs AT Yamagawa

SEP. 2020

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	30	33	40	28	31	140	65	56	110	95	40	111	56	46	44	60	72	169	113	76	40	34	106	46	
2	41	72	45	47	37	32	60	84	144	109	93	107	55	69	46	47	29	31	27	G	69	28	38	37	
3	48	46	28	25	33	40	32	30	35	43	47	48	48	41	33	36	42	50	31	24	24	G	27	G	
4	36	G	G	B	27	41	24	32	35	39	37	48	41	46	45	41	36	31	29	25	43	56	41	40	
5	B	G	23	28	27	52	28	38	93	45	43	72	68	47	46	35	35	26	G	G	G	G	35	G	
6	G	G	26	G	G	G	G	80	37	42	49	46	41	40	44	41	41	38	40	38	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	32	G	G	
8	G	G	G	G	53	G	30	37	42	36	50	41	48	46	52	75	61	70	48	25	11	32	G	32	
9	48	58	49	57	36	59	G	32	35	44	64	49	34	54	44	95	43	36	31	41	G	11	G	G	
10	26	32	G	24	G	G	23	28	32	36	48	50	48	41	44	41	G	31	24	G	G	20	28	G	
11	G	G	G	24	G	B	G	31	40	44	44	45	40	39	38	34	40	38	34	31	21	26	G	G	
12	G	G	B	48	B	B	23	34	41	38	45	46	41	44	44	45	36	44	48	32	34	G	G	G	
13	G	G	G	B	G	G	24	28	29	G	36	32	48	44	38	36	33	40	55	G	30	48	G	G	
14	G	G	G	G	G	G	24	48	45	43	48	41	40	48	36	35	38	35	26	31	34	26	G	27	
15	G	G	G	G	G	G	G	33	45	47	51	48	53	45	50	43	48	36	40	53	30	44	41	30	
16	27	G	G	G	G	G	G	39	44	109	40	33	39	33	45	34	34	29	26	39	G	24	24	28	
17	G	G	27	G	G	G	G	33	39	42	41	48	47	37	39	36	39	38	60	G	G	28	27	29	
18	30	26	G	G	G	G	40	35	35	36	49	47	46	40	39	39	40	28	26	G	48	G	G	G	
19	G	G	G	G	G	G	26	151	39	45	44	44	45	39	55	44	48	29	29	31	39	B	27	28	
20	25	32	G	G	27	26	G	37	47	93	54	43	50	56	55	34	52	45	49	33	49	74	43	26	
21	G	G	G	G	G	G	G	34	57	85	76	44	45	41	44	31	G	28	G	G	11	54	41	61	
22	34	29	46	G	26	G	G	38	41	36	45	48	47	47	45	44	40	38	34	31	38	38	G	26	
23	31	G	G	G	G	G	G	48	47	45	43	44	40	34	41	32	34	40	33	39	G	G	34	G	
24	33	109	59	32	40	39	G	37	34	41	38	38	47	44	44	34	29	29	30	24	G	48	40	26	
25	G	G	G	G	B	B	24	39	36	36	47	45	44	44	55	57	44	41	29	48	G	40	G	G	
26	G	G	G	G	G	G	G	92	39	39	41	46	46	44	34	G	G	28	33	29	G	77	35	27	
27	39	35	G	25	25	27	25	28	30	36	35	39	39	33	35	36	30	33	24	56	G	G	G	G	
28	G	G	24	G	G	G	G	34	36	41	37	36	45	45	37	45	40	36	35	33	39	G	26	26	
29	G	G	32	29	30	G	G	29	148	45	35	43	33	32	38	N	38	41	54	35	25	26	25	G	
30	G	G	G	G	G	G	G	32	41	33	39	48	48	78	42	40	36	32	23	36	31	29	27	40	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	29	28	27	27	25	29	29	29	29	29	29	29	29	29	28	29	29	29	30	29	28	29	29	
MED	G	G	G	G	G	G	G	35	40	42	44	46	46	44	44	40	38	36	31	31	25	28	27	26	
U Q	32	32	27	28	30	35	25	43	46	45	49	48	48	46	45	44	42	40	44	38	39	39	36	29	
L Q	G	G	G	G	G	G	G	32	35	36	39	42	40	39	38	34	33	30	26	G	G	6	G	G	

HOURLY VALUES OF fmin AT Yamagawa

SEP. 2020

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	16	16	15	16	16	14	15	15	14	15	17	19	20	18	16	15	14	11	11	15	15	15	16	15	
2	15	16	16	16	15	16	15	15	8	7	15	15	16	15	15	15	16	16	15	16	16	15	15	15	
3	15	16	16	17	15	16	17	15	15	15	16	22	21	15	16	17	16	15	15	17	16	15	15	15	
4	15	16	15	B	15	15	15	16	16	16	15	17	19	16	19	16	14	16	15	15	16	15	15	14	
5	B	15	15	16	15	16	16	16	13	15	16	16	17	18	17	17	15	16	21	15	15	15	15	14	
6	15	15	16	16	15	15	15	15	15	15	15	15	16	17	18	16	15	14	15	14	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	15	15	16	15	15	
8	15	15	14	15	15	15	16	16	15	15	16	18	19	17	15	15	15	16	15	16	14	16	17	15	
9	16	15	16	15	15	15	16	16	17	16	15	15	17	16	17	17	15	15	16	15	15	15	15	15	
10	16	16	15	15	16	15	15	15	15	15	17	18	17	15	16	15	16	16	15	14	14	16	16	16	
11	14	15	14	16	16	B	16	16	16	15	17	17	19	18	17	17	15	15	15	16	15	15	15	15	
12	16	15	B	15	B	B	14	16	15	16	16	16	16	16	15	15	16	15	14	14	15	16	16	14	15
13	14	15	14	B	15	15	15	15	15	16	15	15	17	15	17	17	16	13	14	14	16	15	16	15	
14	14	14	14	15	15	16	15	15	14	15	17	18	16	19	17	16	15	16	15	15	15	16	16	15	
15	15	15	15	15	14	14	15	15	15	16	18	18	15	20	13	15	14	15	15	14	16	15	15	15	
16	15	16	15	15	15	15	14	15	14	14	15	17	18	19	16	15	17	16	16	15	15	15	15	15	
17	15	18	15	15	14	16	15	15	17	16	15	17	23	42	17	17	17	17	15	15	15	15	16	16	
18	16	17	15	16	16	15	15	15	15	15	15	16	18	14	18	16	14	16	15	17	15	15	16	15	
19	15	15	15	15	14	17	16	15	15	15	16	16	15	15	15	15	13	16	15	16	15	B	16	16	
20	15	16	15	14	16	15	16	15	13	15	13	15	19	13	13	14	11	14	15	15	15	16	17	16	
21	16	15	16	15	14	18	14	15	14	14	16	16	19	15	15	15	15	15	15	14	23	16	15	16	
22	16	16	15	15	16	15	15	16	15	16	15	20	18	15	14	15	13	15	15	16	15	15	15	16	
23	16	15	15	15	15	16	15	16	14	15	16	17	18	16	18	15	15	15	16	15	15	15	15	15	
24	17	9	16	15	15	15	16	16	16	14	16	17	16	16	17	17	15	14	15	15	15	14	15	16	
25	14	14	16	15	B	B	15	15	15	14	15	16	15	18	17	14	14	17	14	16	15	16	15	15	
26	14	14	14	15	15	16	17	16	16	15	17	16	17	17	16	16	16	14	17	15	15	16	15	15	
27	15	15	15	15	16	15	16	15	16	15	17	17	17	17	17	16	16	15	15	14	17	14	14	14	
28	14	14	15	14	15	15	16	15	17	15	17	17	17	18	17	17	16	17	15	16	15	15	16	15	
29	15	16	16	15	16	16	15	15	16	17	15	15	16	34	17	16	17	15	15	16	16	16	15	15	
30	14	14	15	14	14	16	15	15	15	16	18	17	19	15	19	17	17	16	17	16	16	16	15	15	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	29	29	28	28	27	29	29	29	29	29	29	29	29	29	29	29	29	29	30	29	29	29	29	
MED	15	15	15	15	15	15	15	15	15	15	16	17	17	16	17	16	15	15	15	15	15	15	15	15	
U Q	16	16	16	15	16	16	16	16	16	16	17	17	19	18	17	17	16	16	15	16	16	16	16	15	
L Q	14	15	15	15	15	15	15	15	14	15	15	15	16	15	15	15	14	14	15	15	15	15	15	15	

HOURLY VALUES OF fof2 AT Okinawa

SEP. 2020

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	38	34	A	29	A	B	29	62	54	A	A	64	56	A	60	62	91	A	75	68	A	A	A	A	
2	A	26	A	A	A	B	26	A	54	48	A	A	A	64	72	66	52	A	A	A	52	46	34	42	
3	42	36	34	28	A	A	A	50	46	56	50	N	57	55	54	54	51	41	67	67	54	46	B	N	
4	N	25	N	B	A	B	N	49	55	45	51	46	48	53	52	50	52	A	54	71	54	26	A	28	
5	26	A	A	N	N	B	28	47	38	A	76	A	64	73	75	78	70	67	189	52	53	B	B	B	
6	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	70	66	63	63	77	54	28	30	28	
7	26	31	31	30	25	B	N	41	52	48	58	59	60	64	52	54	52	59	70	73	73	A	A	30	
8	A	28	B	28	B	N	28	30	53	79	55	A	A	64	64	A	62	67	62	66	60	A	A	32	
9	34	A	A	A	26	A	30	50	44	56	54	A	60	57	59	64	62	71	78	81	53	47	A	28	
10	32	31	A	28	A	N	A	44	59	51	58	50	45	58	64	71	81	85	84	86	71	50	32	28	
11	34	34	30	28	N	B	N	44	50	44	52	59	52	51	54	51	56	56	70	71	54	34	30	30	
12	23	25	32	26	B	B	B	46	64	57	51	59	45	51	56	64	70	A	A	A	54	34	A	B	
13	A	N	N	B	N	B	N	42	53	67	56	54	59	45	53	59	A	A	A	74	78	30	A	26	
14	28	28	30	32	B	B	N	50	51	47	46	51	57	66	64	66	77	81	84	55	63	50	50	42	
15	40	35	30	28	N	N	N	54	52	54	59	54	A	63	73	60	53	68	83	86	79	44	35	32	
16	36	32	N	25	26	B	25	30	52	81	74	63	59	57	60	66	54	52	51	54	65	72	86	B	A
17	25	25	25	N	B	N	N	25	43	68	64	56	55	53	52	51	50	48	A	64	70	71	50	A	A
18	A	A	A	31	N	A	N	25	43	72	91	60	56	56	57	68	61	52	57	70	83	45	A	N	29
19	29	25	27	31	N	A	23	45	59	55	51	49	51	54	A	A	55	A	A	A	45	N	A	A	
20	A	24	N	N	B	B	N	24	47	51	57	52	54	60	74	73	55	58	56	66	70	35	A	A	A
21	25	26	29	23	N	N	N	25	47	63	69	61	54	53	58	65	64	63	65	78	95	61	31	30	A
22	A	A	35	33	33	27	29	45	50	49	52	57	52	58	63	60	75	85	81	63	A	45	39	39	
23	40	39	39	35	33	28	29	45	51	62	65	55	57	62	58	64	76	97	118	99	45	A	A	A	
24	A	33	31	A	N	B	N	25	49	74	77	53	54	61	71	87	84	92	97	94	82	63	38	30	A
25	A	A	27	30	40	B	N	25	54	74	70	65	A	58	67	66	66	85	85	82	65	47	B	31	34
26	B	B	B	B	B	B	B	B	B	B	B	B	B	75	72	65	75	90	89	92	69	N	N	29	
27	31	B	B	B	B	B	B	B	B	B	B	61	69	85	61	67	84	106	105	51	30	30	30	30	
28	29	30	30	36	A	B	25	53	B	B	B	B	B	B	B	B	73	89	81	64	59	A	29	B	
29	B	B	B	B	B	B	B	B	B	B	99	105	97	94	95	89	77	81	74	B	B	B	36	39	
30	41	B	B	B	B	B	B	B	B	B	74	B	74	B	72	B	B	B	B	B	B	B	B	B	B
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	18	19	16	19	12	6	16	24	24	22	24	20	24	26	27	26	28	22	25	25	26	20	16	17	
MED	32	30	30	28	24	24	26	47	54	56	56	55	57	61	64	64	64	70	78	71	54	36	30	30	
U Q	38	34	31	31	29	27	29	50	63	69	62	59	60	67	72	66	76	85	84	82	69	46	34	36	
L Q	26	25	27	26	23	23	25	44	51	49	52	54	52	55	56	55	52	59	66	65	52	30	30	28	

HOURLY VALUES OF fEs AT Okinawa

SEP. 2020

LAT. 26°41.0'N LON. 128°09.0'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	54	33	56	33	34	B	27	66	69	70	111	50	56	60	64	78	97	149	54	92	59	40	28	32
2	48	G	36	29	28	B	28	57	48	167	84	79	60	60	66	56	44	103	103	70	G	G	40	32
3	57	38	38	G	45	44	34	153	43	49	43	44	52	G	44	44	42	44	33	27	25	27	B	G
4	46	27	G	B	74	B	23	33	40	48	47	48	48	38	51	55	39	102	113	92	39	24	27	G
5	G	25	33	G	G	B	G		38	43	110	115	80	81	56	64	56	78	43	144	57	G	B	B
6	B	B	B	B	B	B	B	B	B	B	B	B	B	B	109	44	34	45	39	59	48	39	28	G
7	G			G	G	B	G													G				
8		25	25	G	B	G	G		31	40	44	46	50	59	35	38	45	34	33	28		30	32	30
9	27	G	B	G	B	G	G		37	41	108	58	142	96	44	53	75	54	36	33	34	39	41	170
10	48	71	48	113	30	31	G		32	44	47	47	48	46	40	44	48	80	32	33	27	40	33	33
11	G	G	45	G	26	G	G		31	30	31	45	55	50	61	50	47	31	41	36	G	G	G	G
12	G	G	G	G	G	B	G		28	41	35	38	48	42	48	47	38	41	38	40	30	47	26	27
13	G	26	G	B	B	B	B		56	39	44	42	39	42	43	60	52	44	105	70	52	55	48	32
14	32	G	G	B	G	B	25		32	38	37	36	47	38	48	60	57	72	57	84	35	38	32	32
15	G	G	G	G	B	B	G		30	44	39	40	48	45	134	40	42	35	149	38	40	G	G	25
16	G	G	G	G	G	G	G		35	58	46	52	92	90	48	70	43	39	61	35	G	G	G	30
17	29	G	G	G	B	G	23		35	48	43	48	44	78	46	35	45	34	30		G	G	B	27
18	G	94	G	G	B	G	60		32	39	41	40	48	44	46	45	38	40	112	53	38	25	59	36
19	56	35	28	G	G	32	26		53	36	36	70	47	70	46	44	43	34	34	29	49	34	38	G
20	G	G	G	G	G	G	G		39	40	43	41	52	58	48	72	60	57	135	110	92	34	28	30
21	35	71	G	G	B	B	G		33	102	48	60	46	50	58	52	46	44	40	35	40	84	60	43
22	G	G	G	G	G	G	90		38	60	73		60	50	46	42	G	G		33	38	29	59	19
23	39	27	39	24	25	20	G		58	35	45	46	128	44	45	46	35	38	47	72	33	60	35	32
24	G	27	G	G	G	G	G		32	44	35	60	44	76	61	48	45	40	44	78	106	58	88	48
25	54	27	27	33	24	B	G		27	36	39	46	41	164	37	54	41	35	28	29	G	11	G	53
26	39	33	G	G	19	B	G		31	36	40	41	66	42	90	50	50	45	45	34	24	40	B	G
27	B	B	B	B	B	B	B		B	B	B	B	B	B	46	46	41	33	29	24	G	71	G	G
28	G	B	B	B	B	B	B		B	B	B	B	B	B	46	46	41	33	29	24	G	G	G	G
29	G	G	G	G		B	G					41	42	37	37	44	32	34	28	48				
30	B	B	B	B	B	B	B		30		B	B	B	B	B	B		40	36	59	26	48	26	G
31	B	B	B	B	B	B	B		B	B	B	B	B	B	B	B		B	B	B	B	B	B	B
32	G	B	B	B	B	B	B		B	B	B	B	B	B	B	B		B	B	B	B	B	B	B
33	G	B	B	B	B	B	B		B	B	B	B	B	B	B	B		B	B	B	B	B	B	B
34																								
35																								
36	00	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	25	24	23	20	11	24	25	24	24	25	26	27	27	29	28	29	29	29	28	28	26	26	26
MED	G	25	G	G	10	G	G	33	41	44	46	48	50	46	47	44	40	43	38	34	39	30	28	26
U Q	46	33	34	24	28	32	26	46	46	48	59	60	70	56	60	53	44	81	71	54	51	40	33	32
L Q	G	G	G	G	G	G	G	31	38	39	41	44	44	40	44	41	34	34	31	25	25	19	G	G

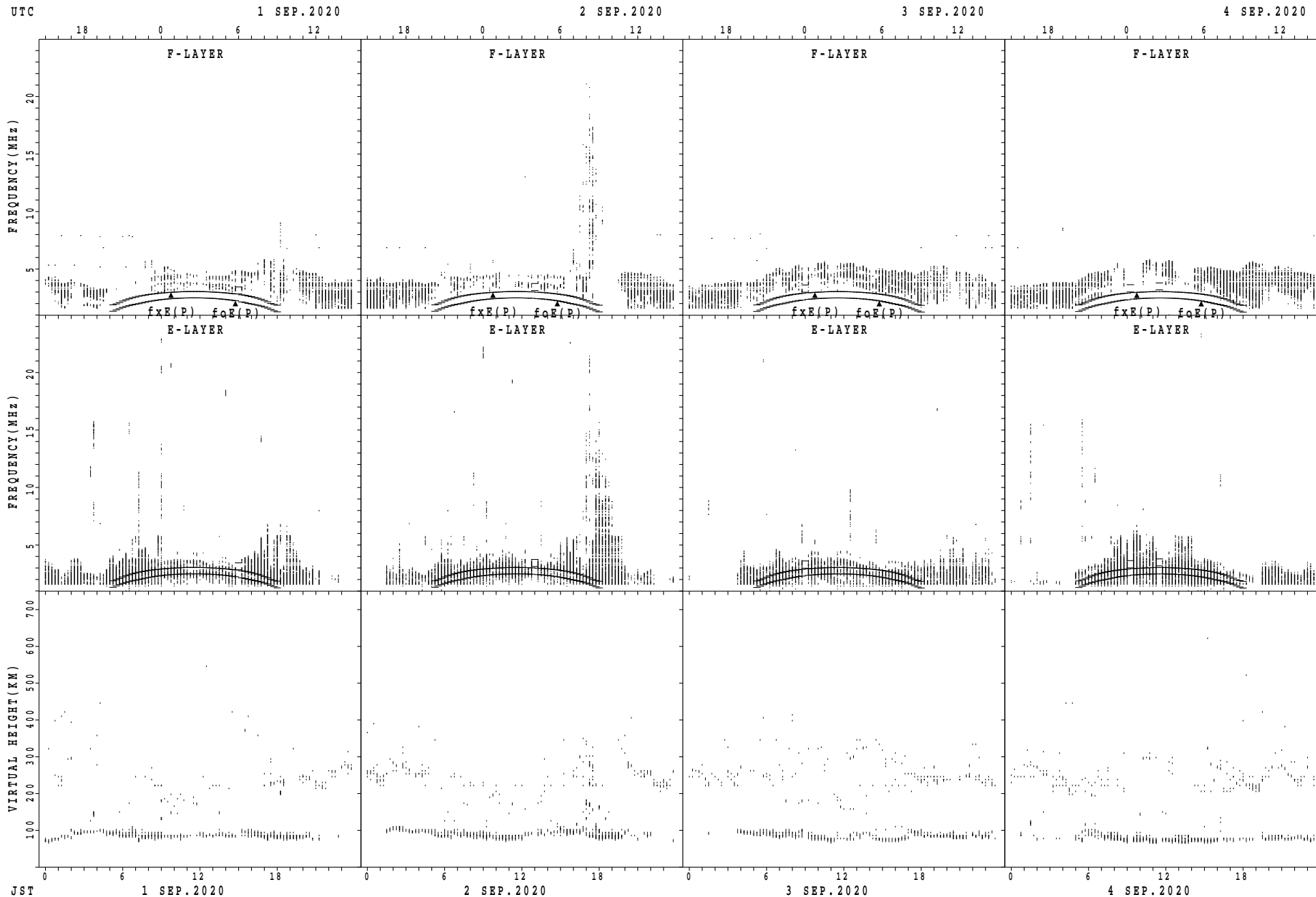
HOURLY VALUES OF fmin AT Okinawa

SEP. 2020

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

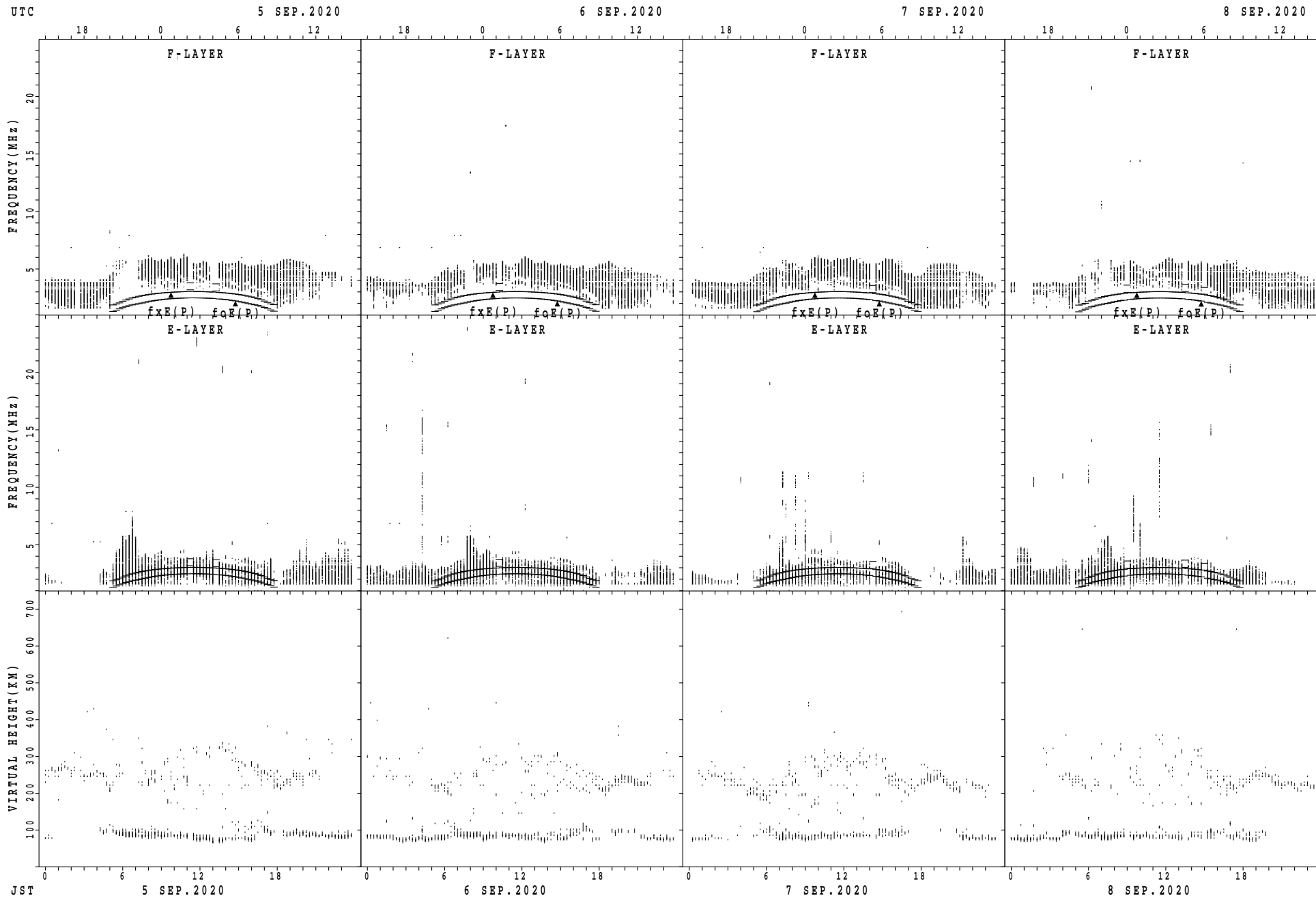
$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	15	14	B	14	14	14	14	15	22	23	22	20	17	14	16	14	15	14	14	14	14
2	14	15	14	14	14	B	15	15	15	14	15	20	20	15	14	15	14	14	15	14	15	16	14	14
3	14	14	14	15	14	17	14	15	16	14	18	28	30	24	20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

SUMMARY PLOTS AT Wakkanai



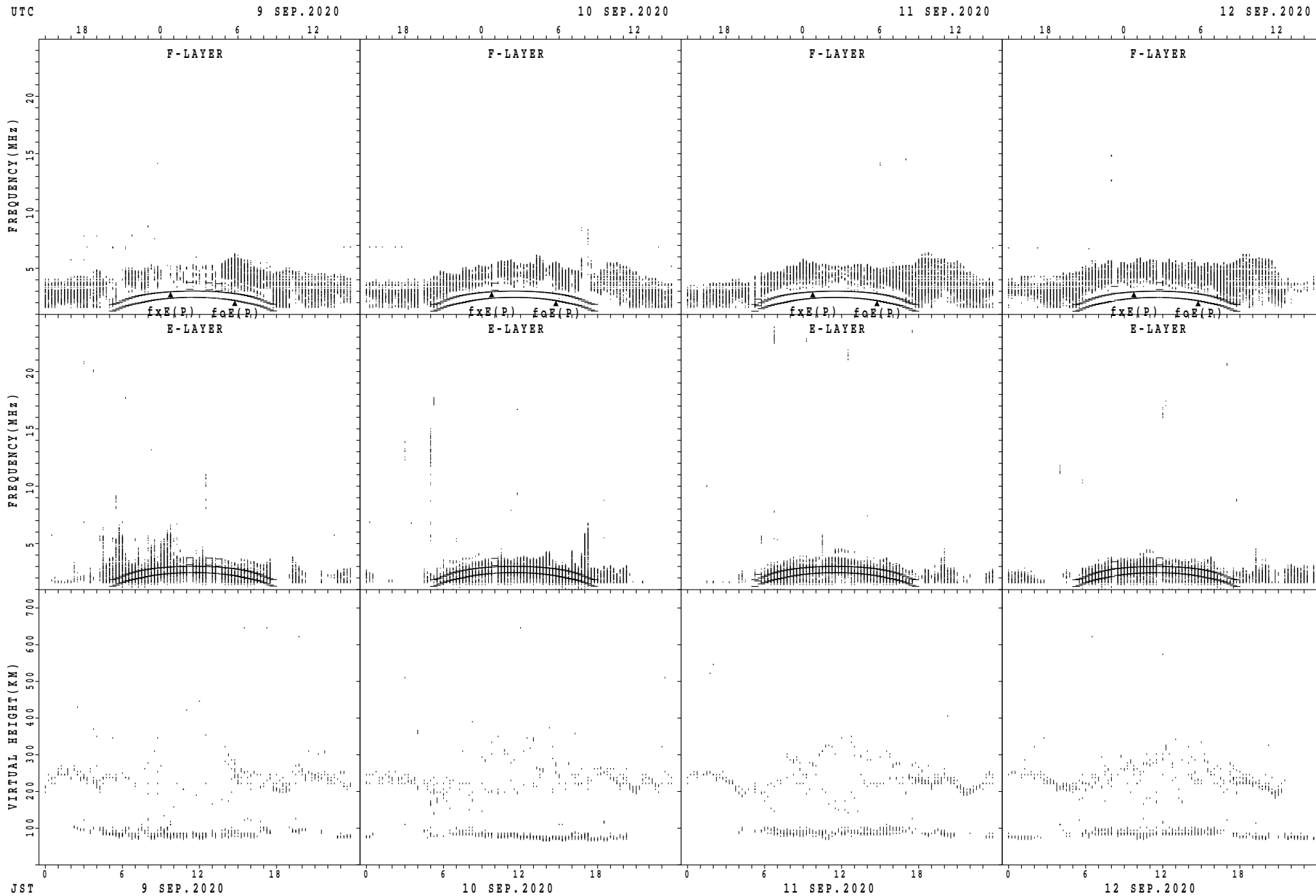
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Wakkanai



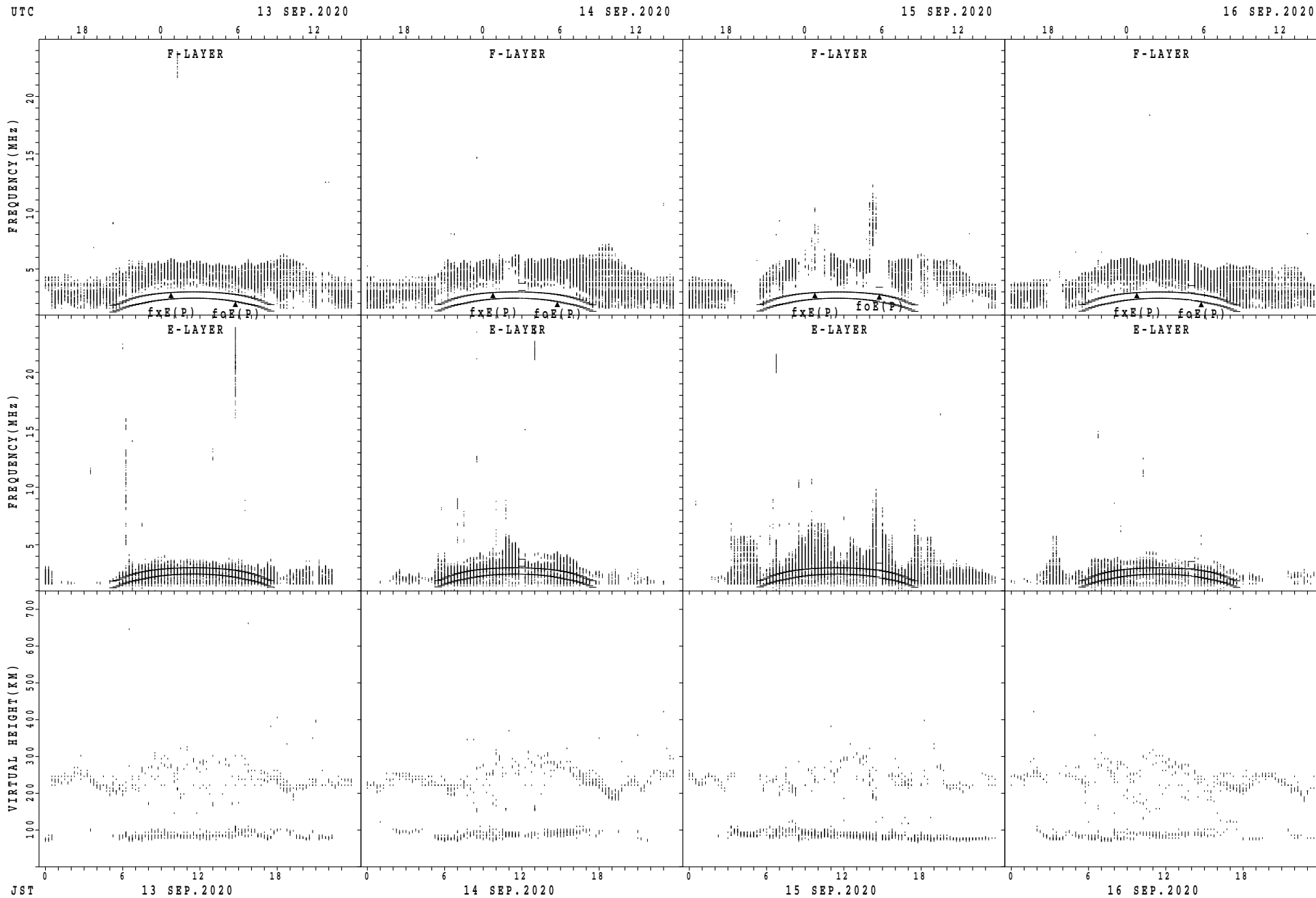
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



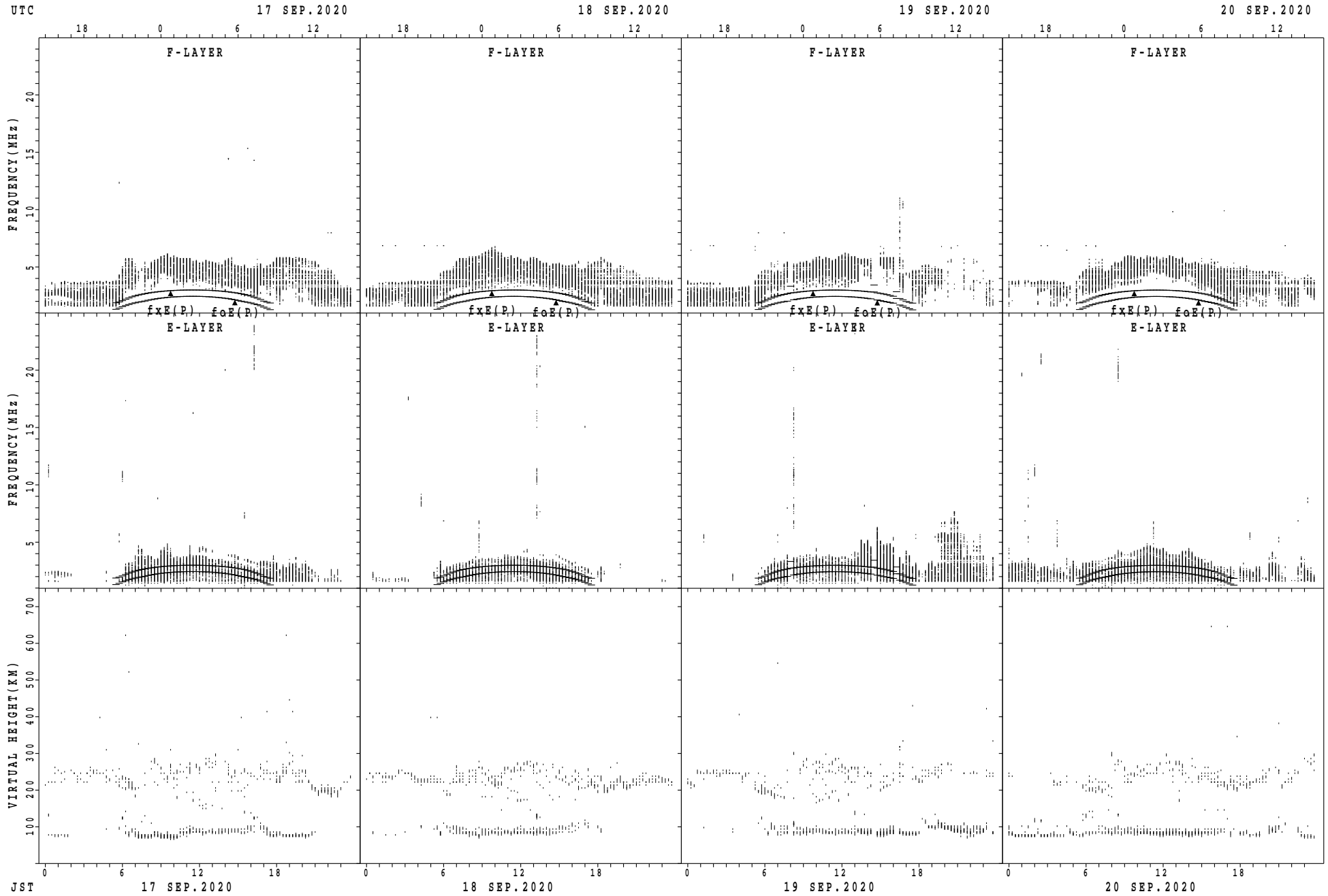
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Wakkanai



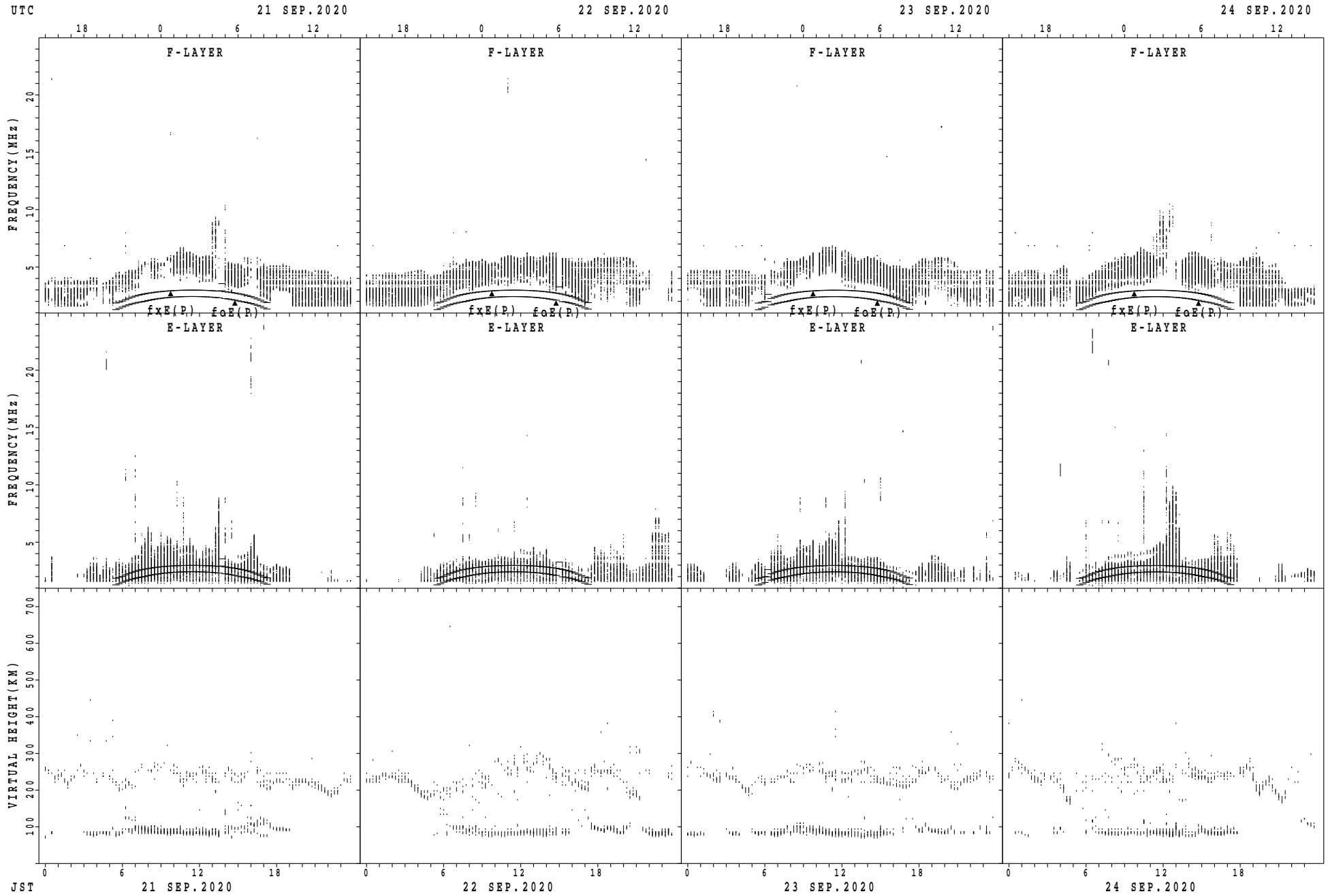
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



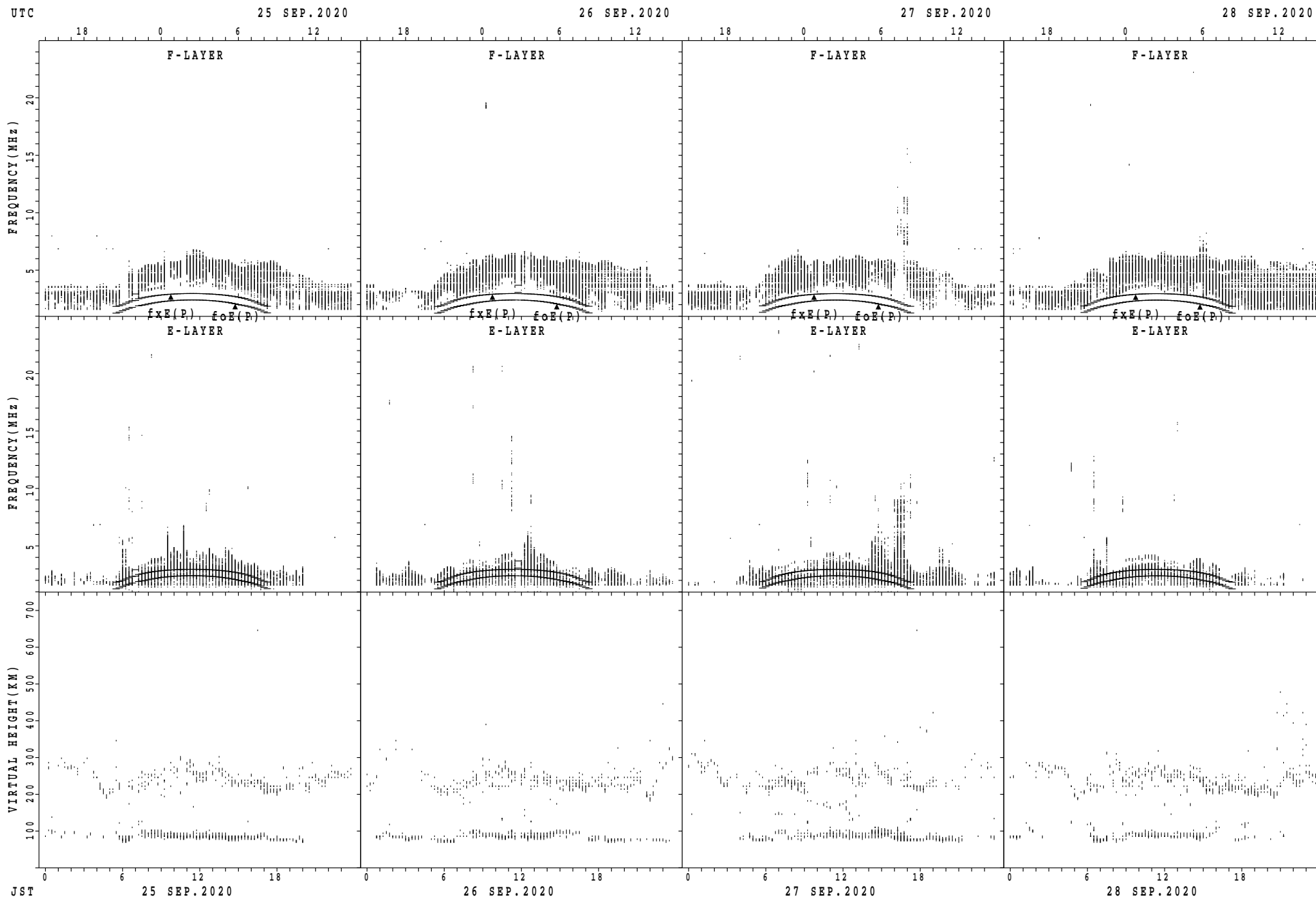
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



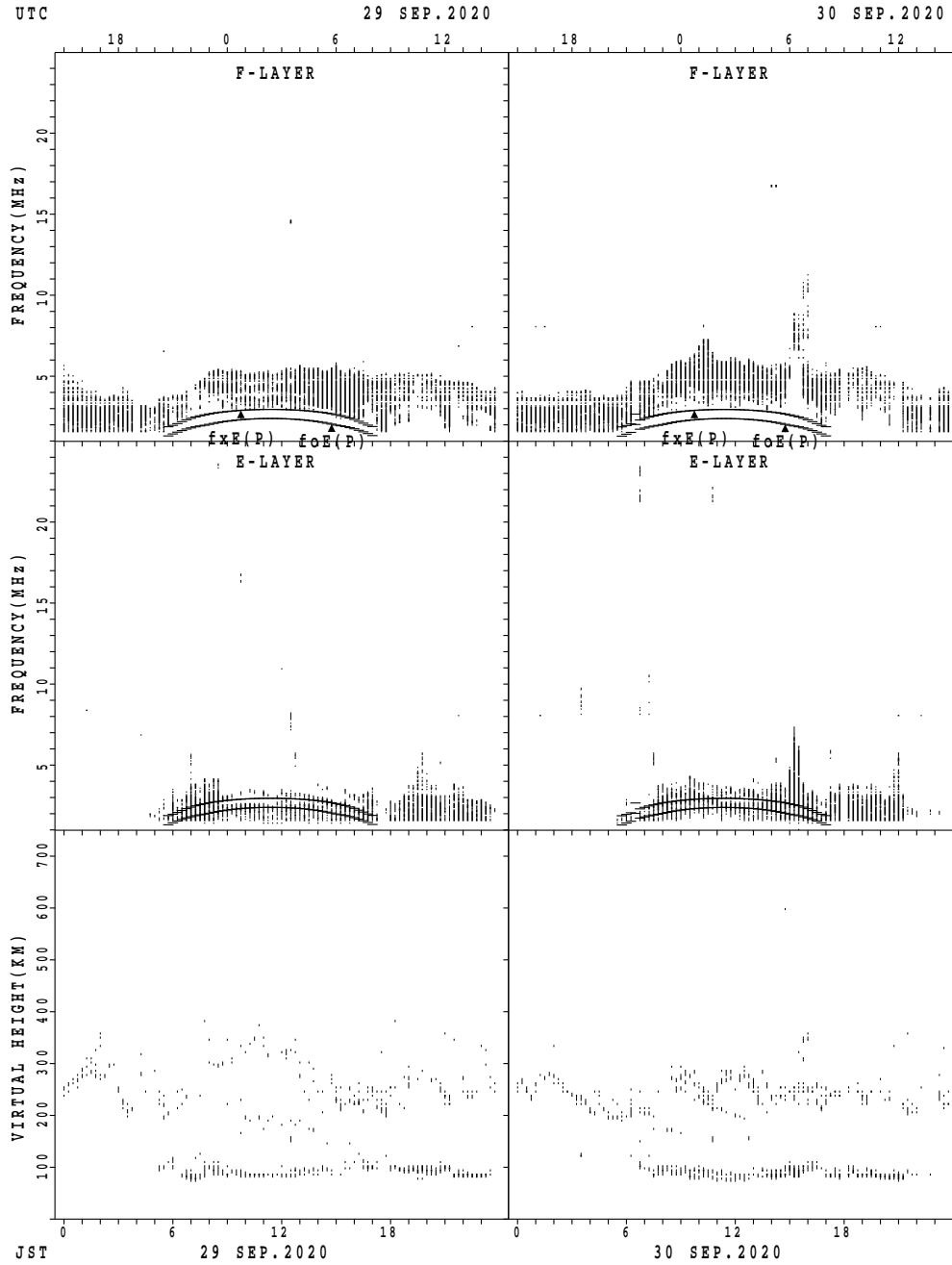
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Wakkanai



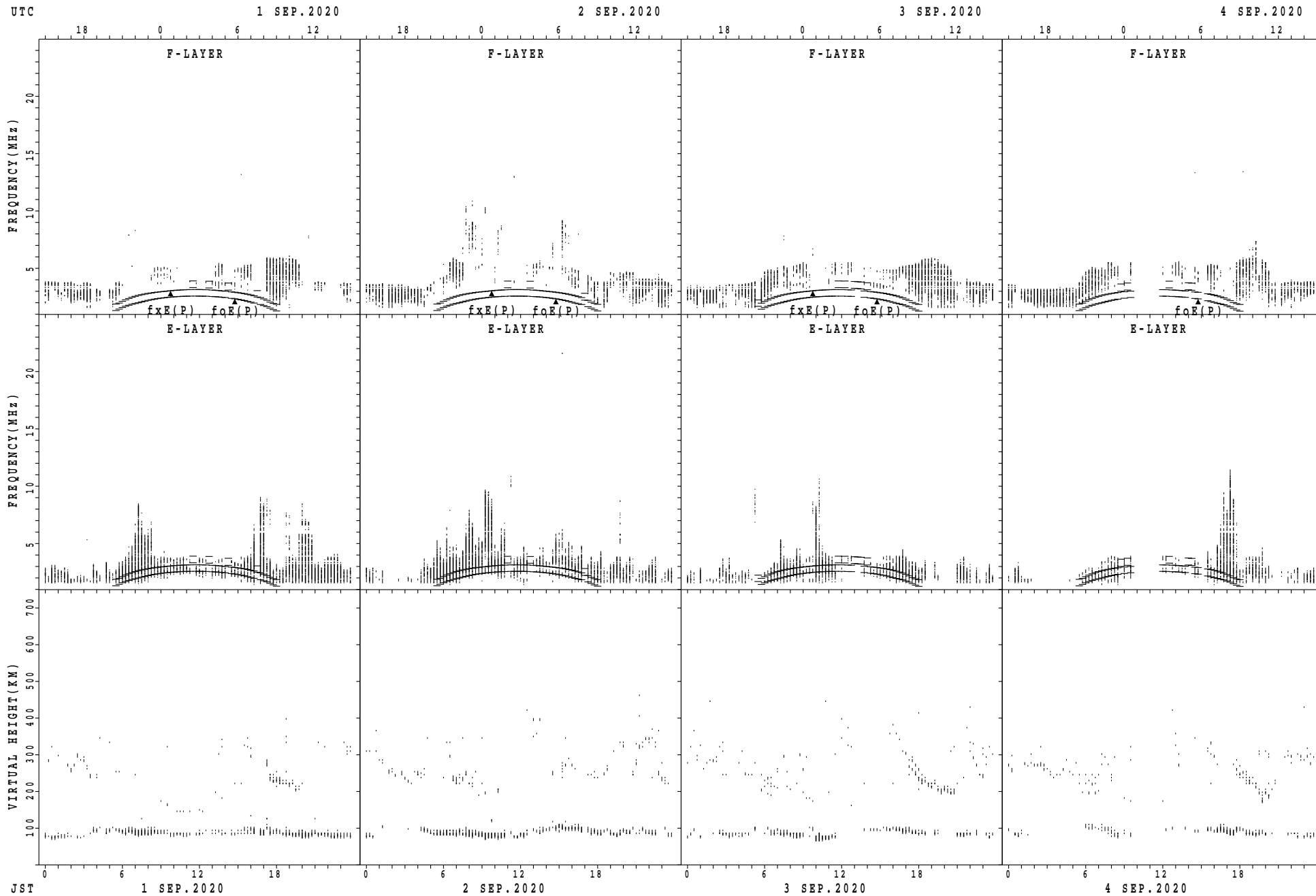
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



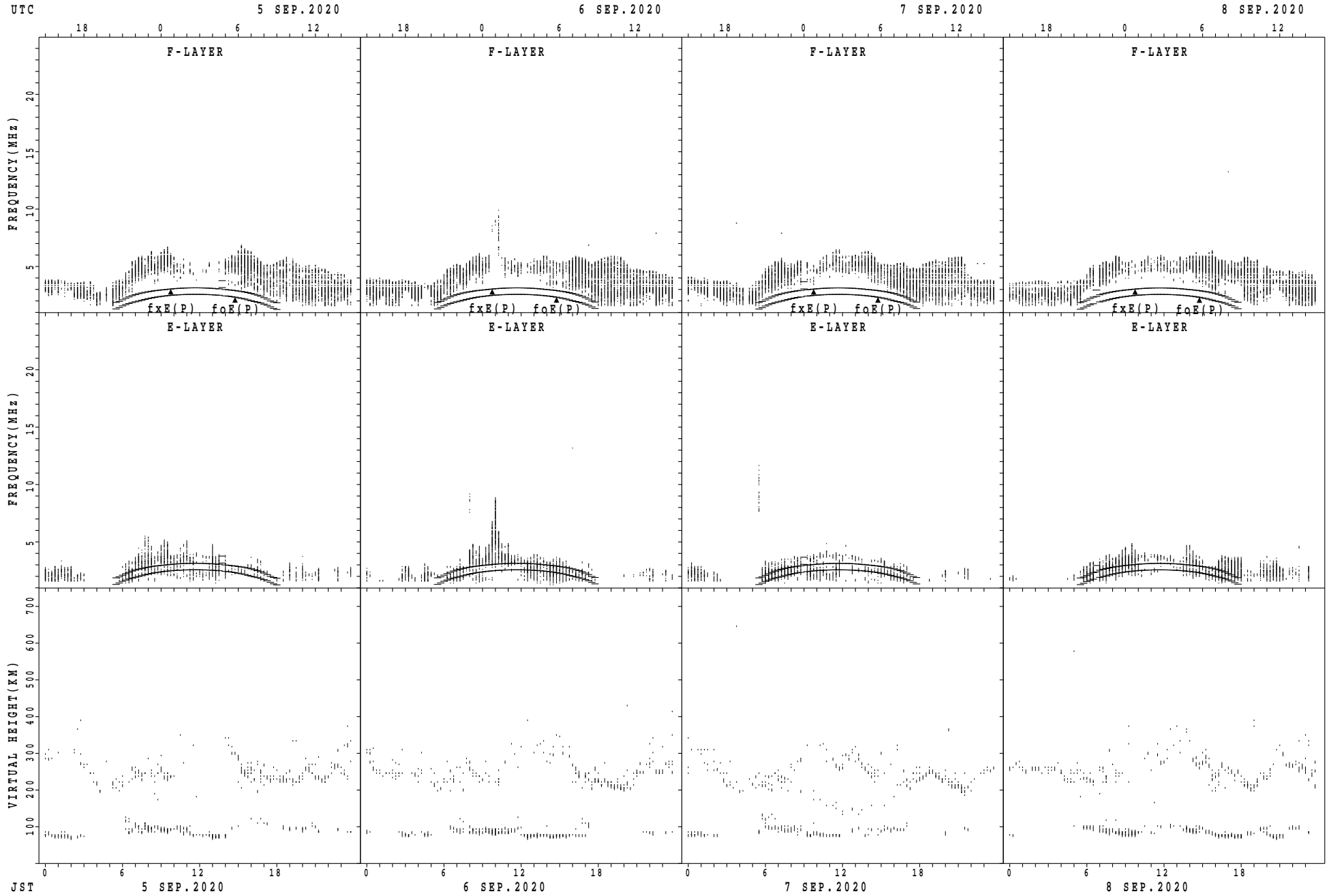
$fxE(P)$; PREDICTED VALUE FOR fxE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



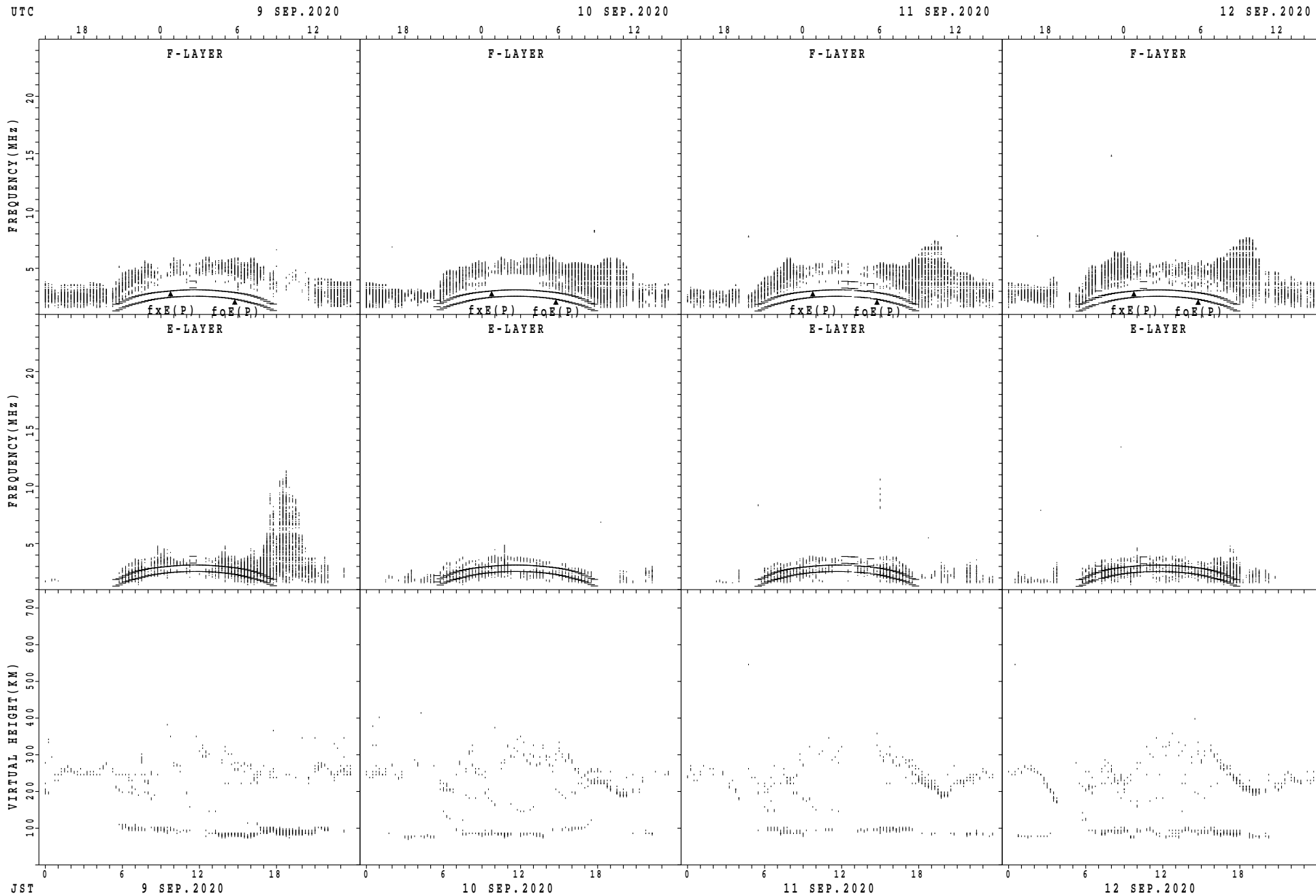
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Kokubunji



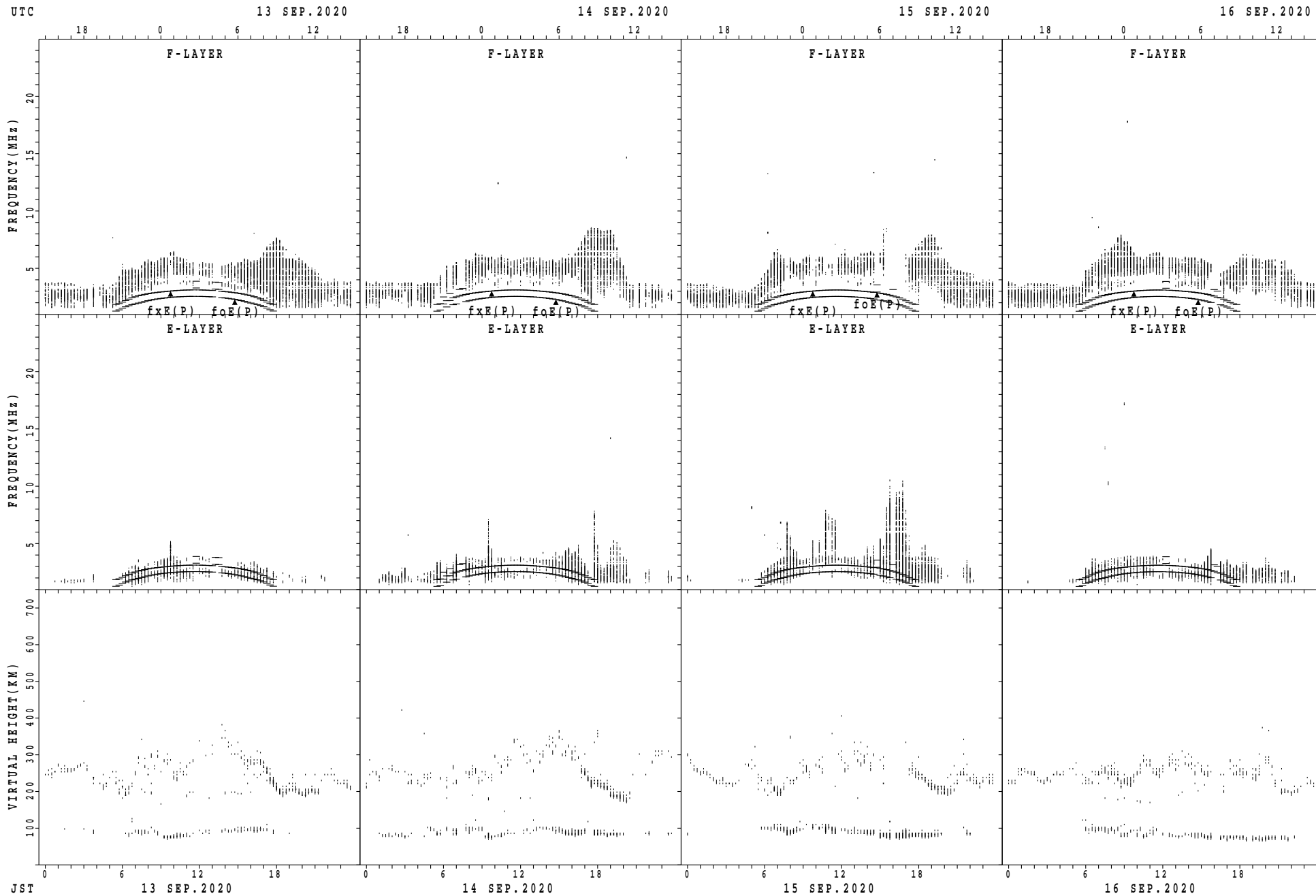
$f_{xE}(P)$; PREDICTED VALUE FOR f_{xE}
 $f_{oE}(P)$; PREDICTED VALUE FOR f_{oE}

SUMMARY PLOTS AT Kokubunji



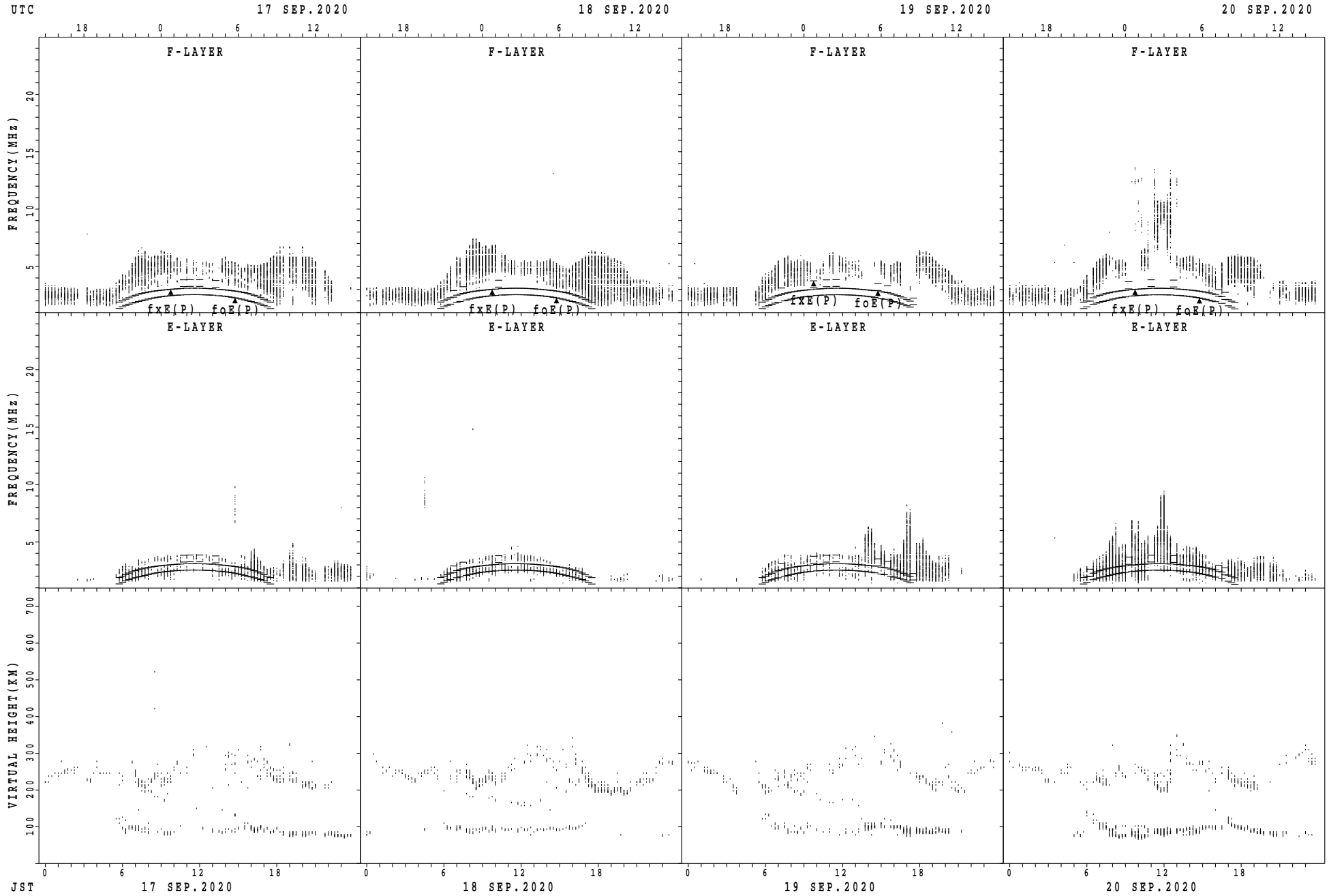
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



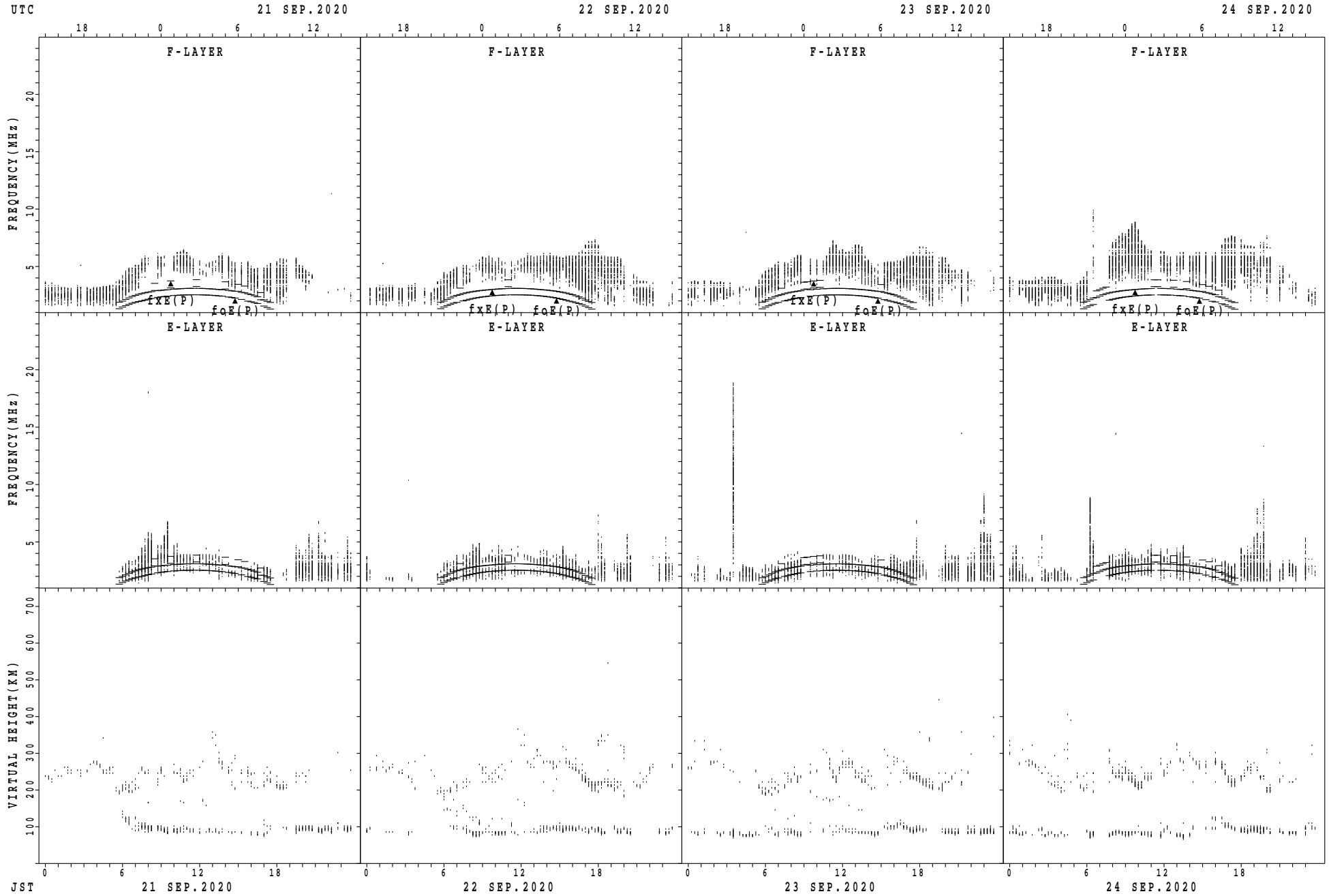
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Kokubunji



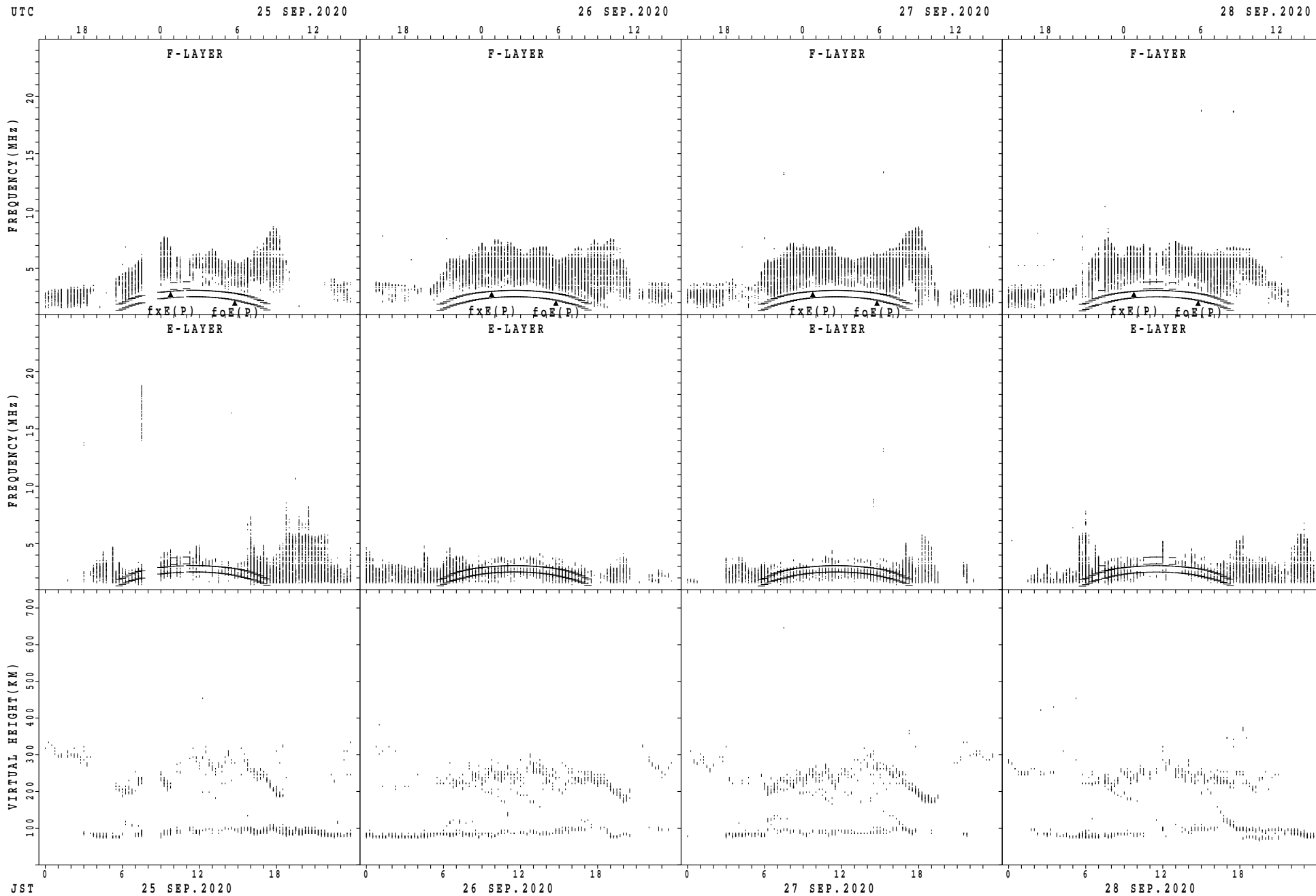
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



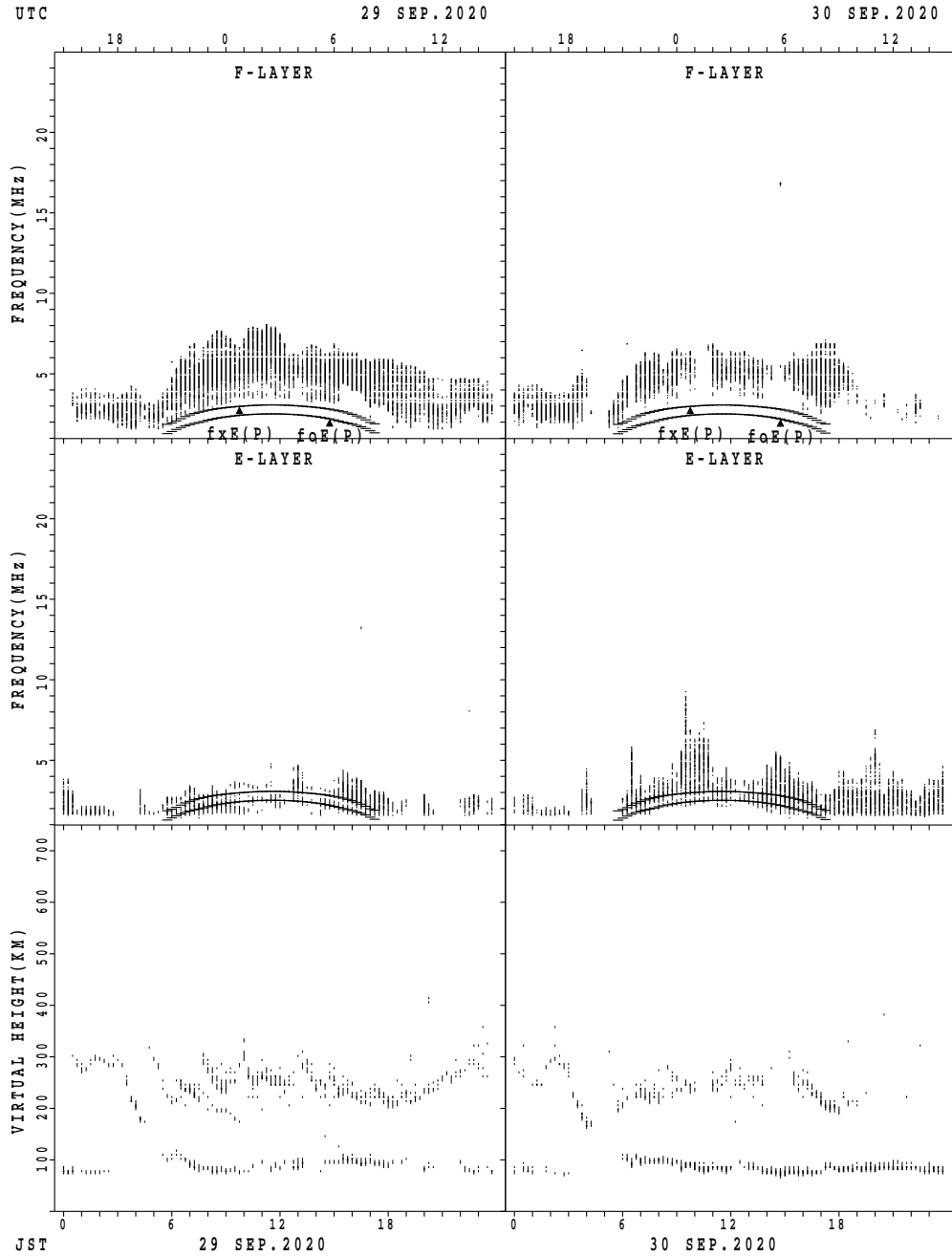
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Kokubunji



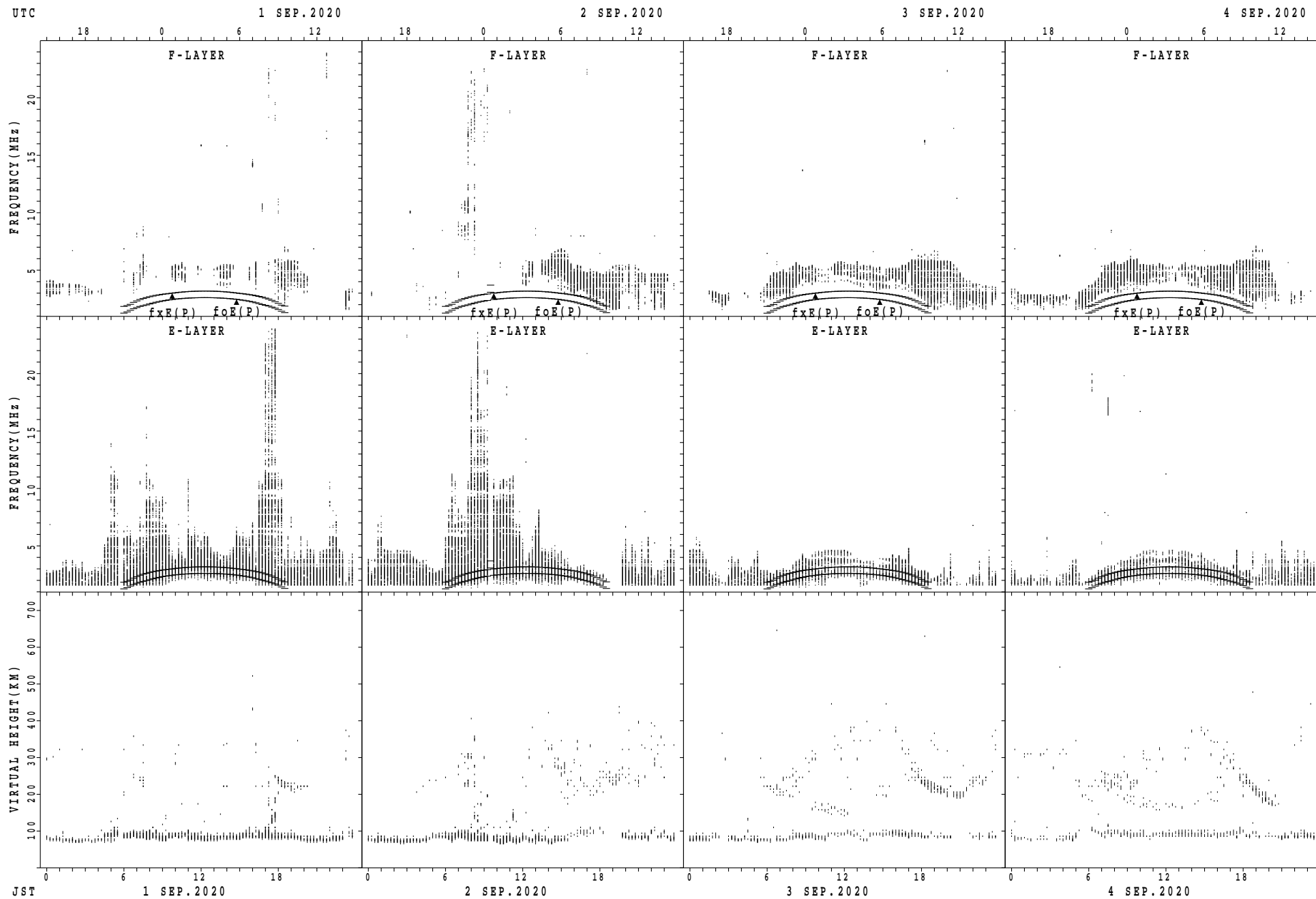
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



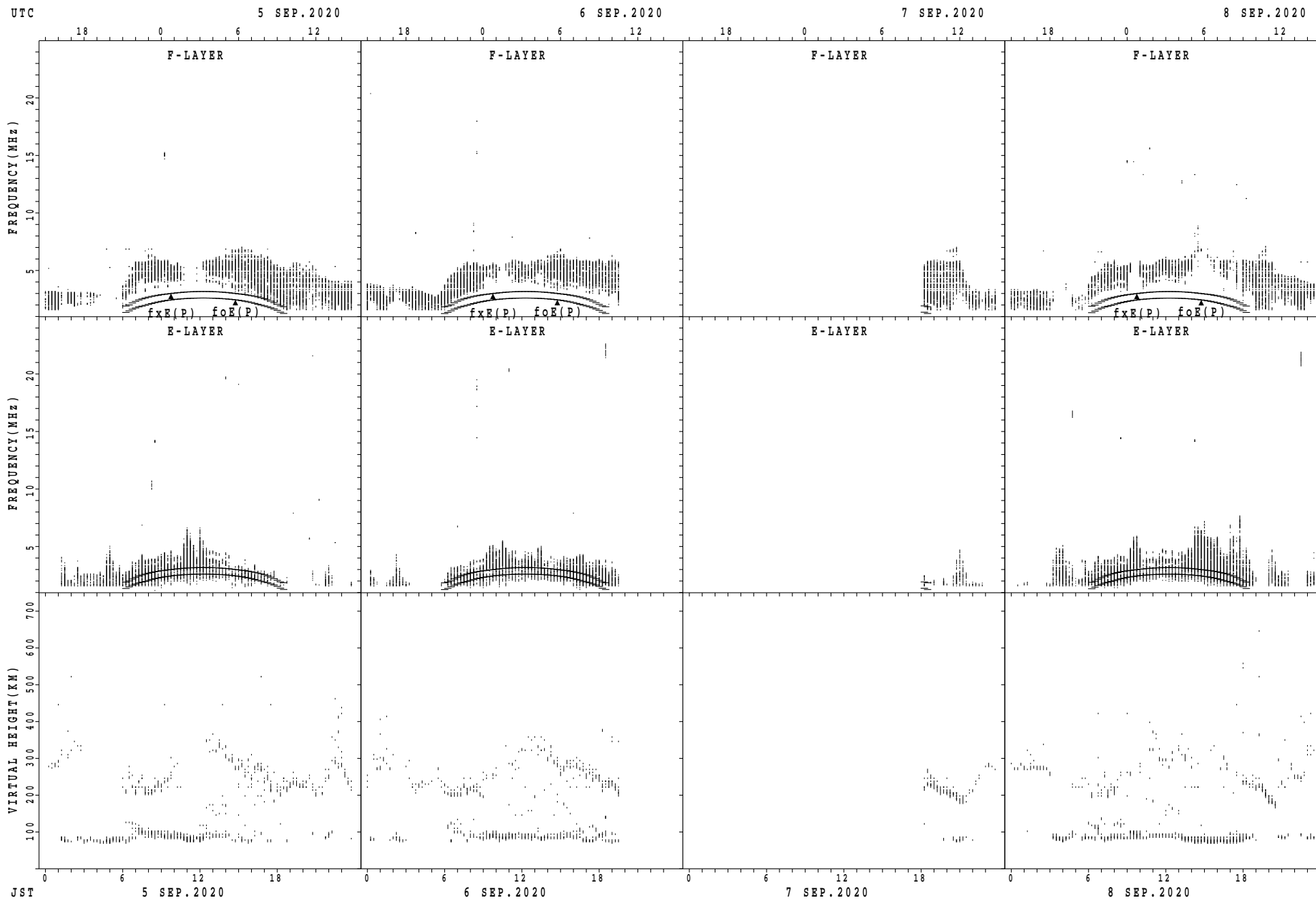
f_xE(P); PREDICTED VALUE FOR f_xE
 f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



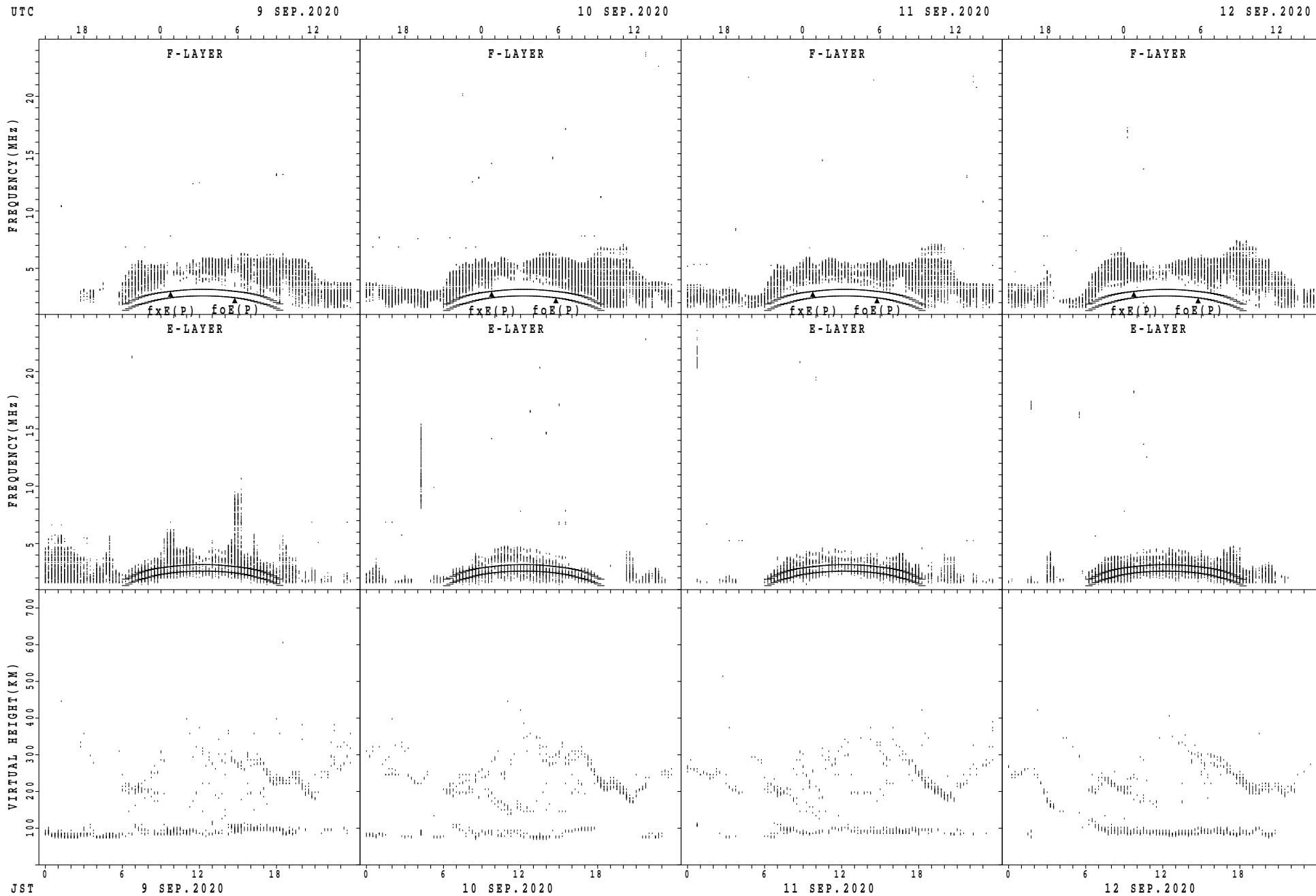
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



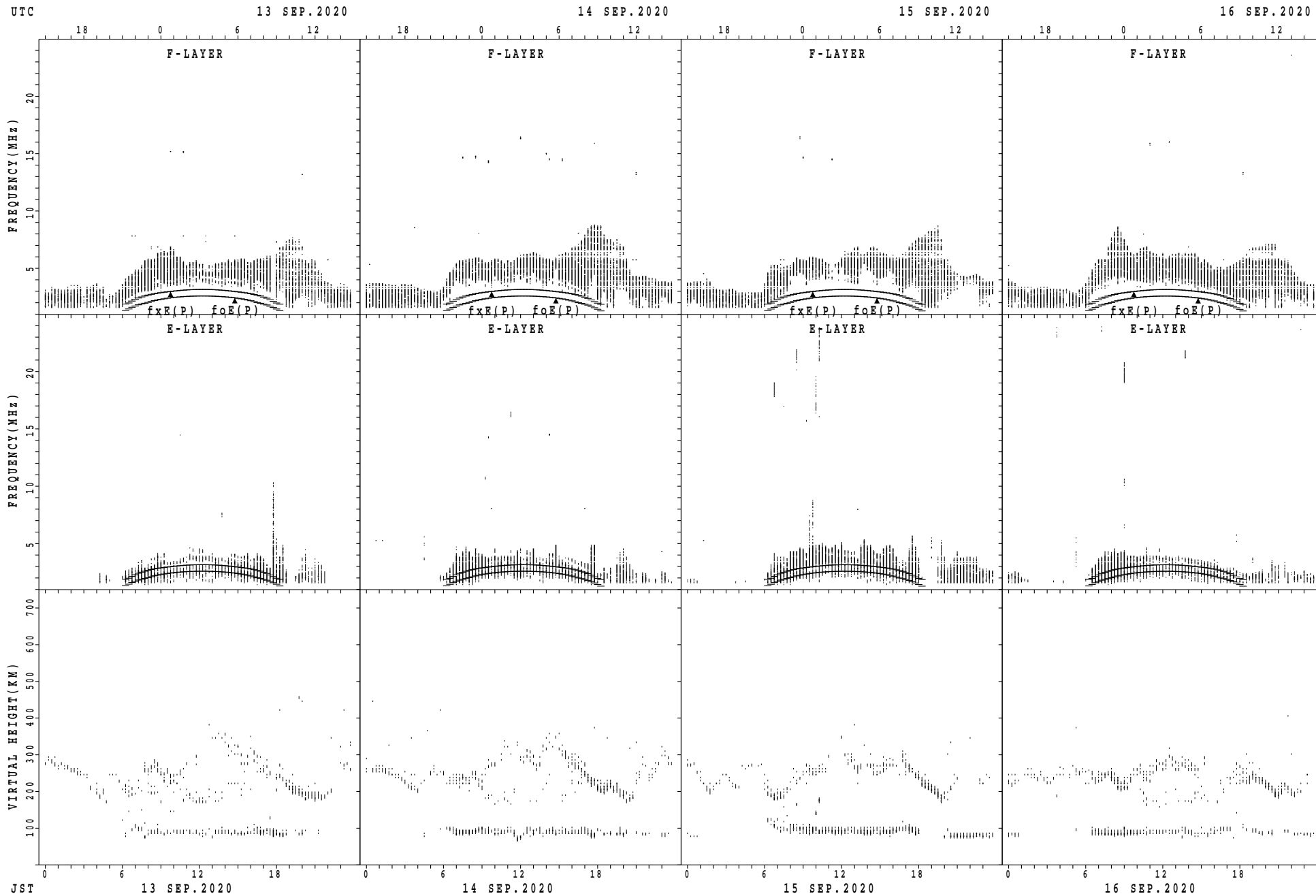
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



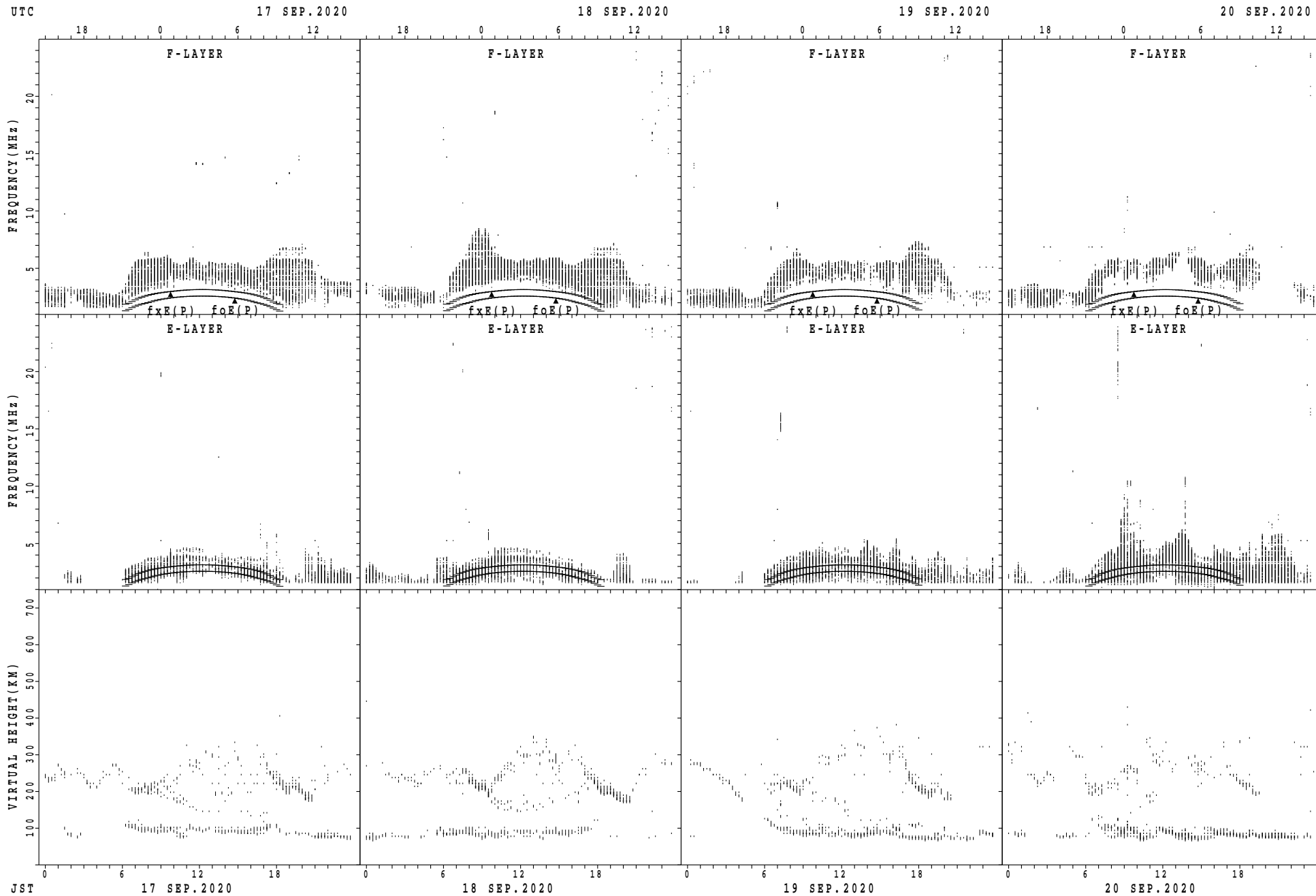
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



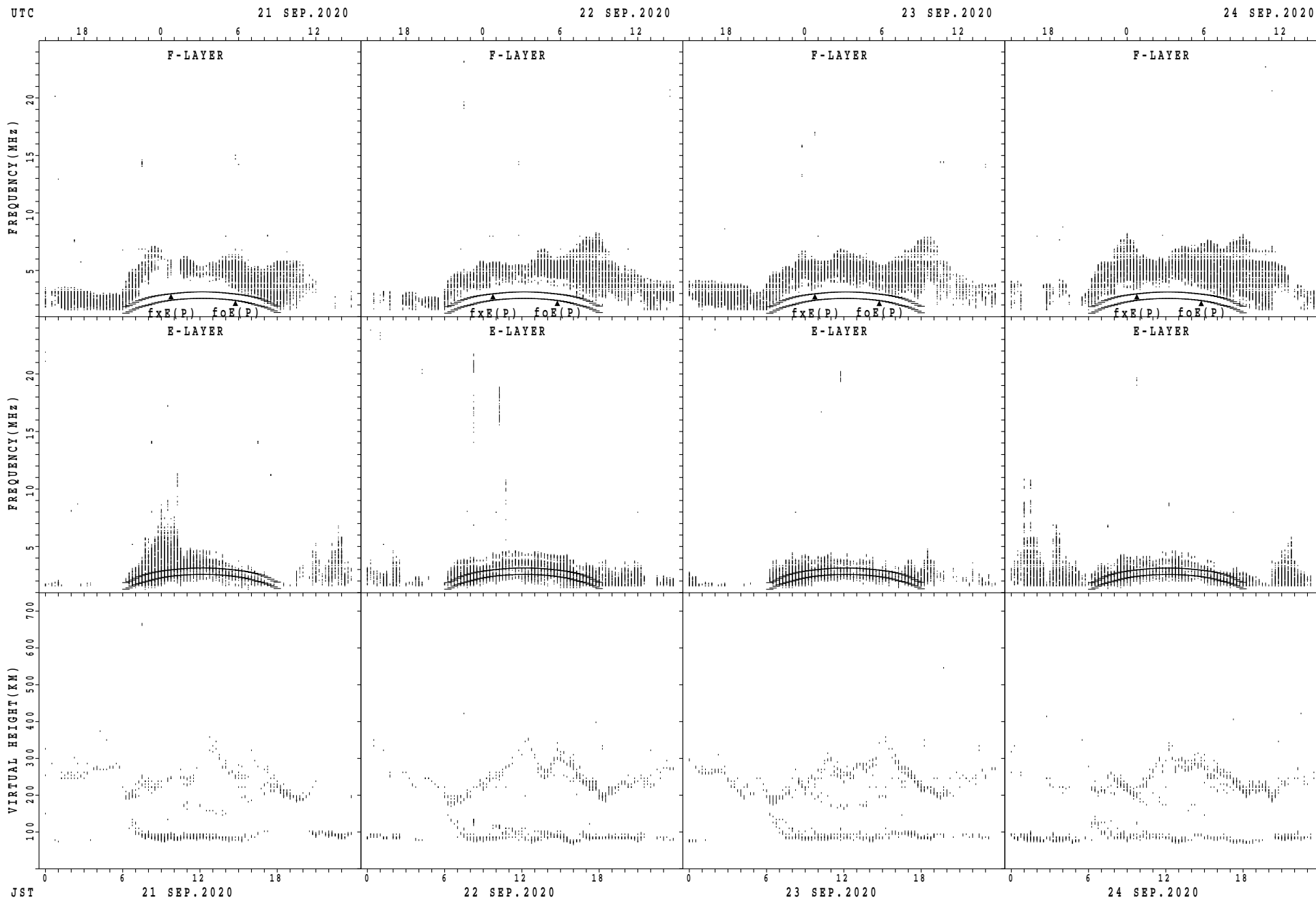
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



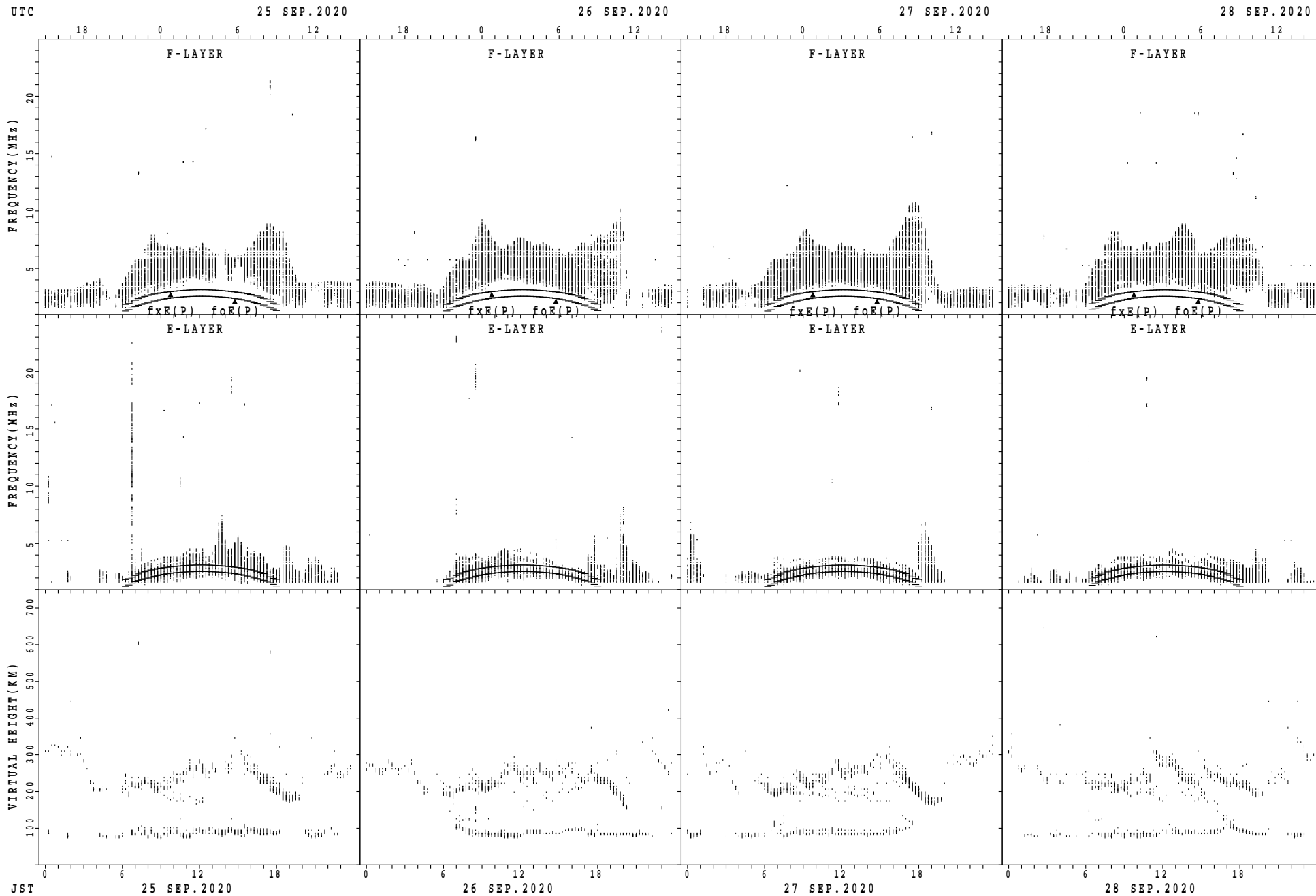
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



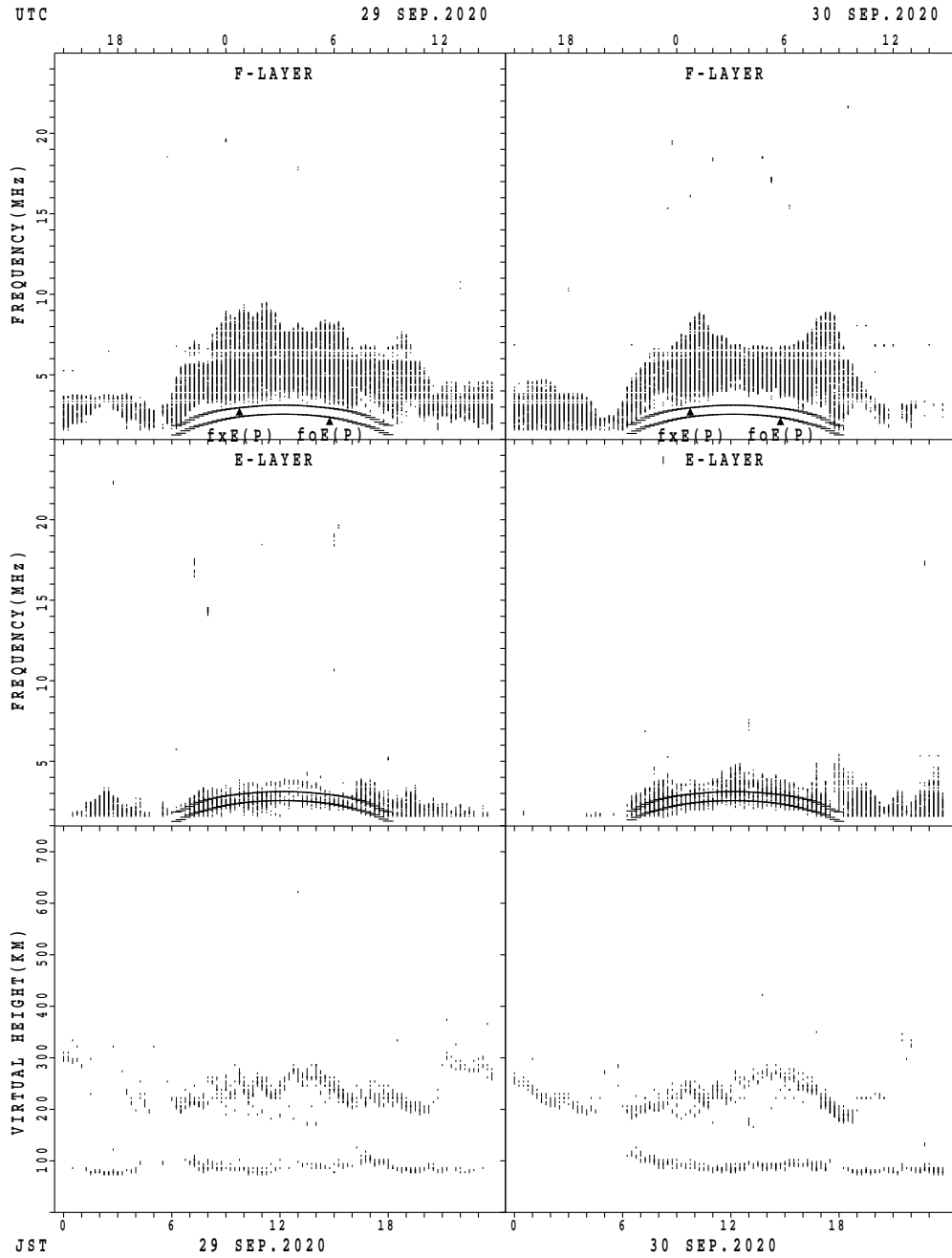
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



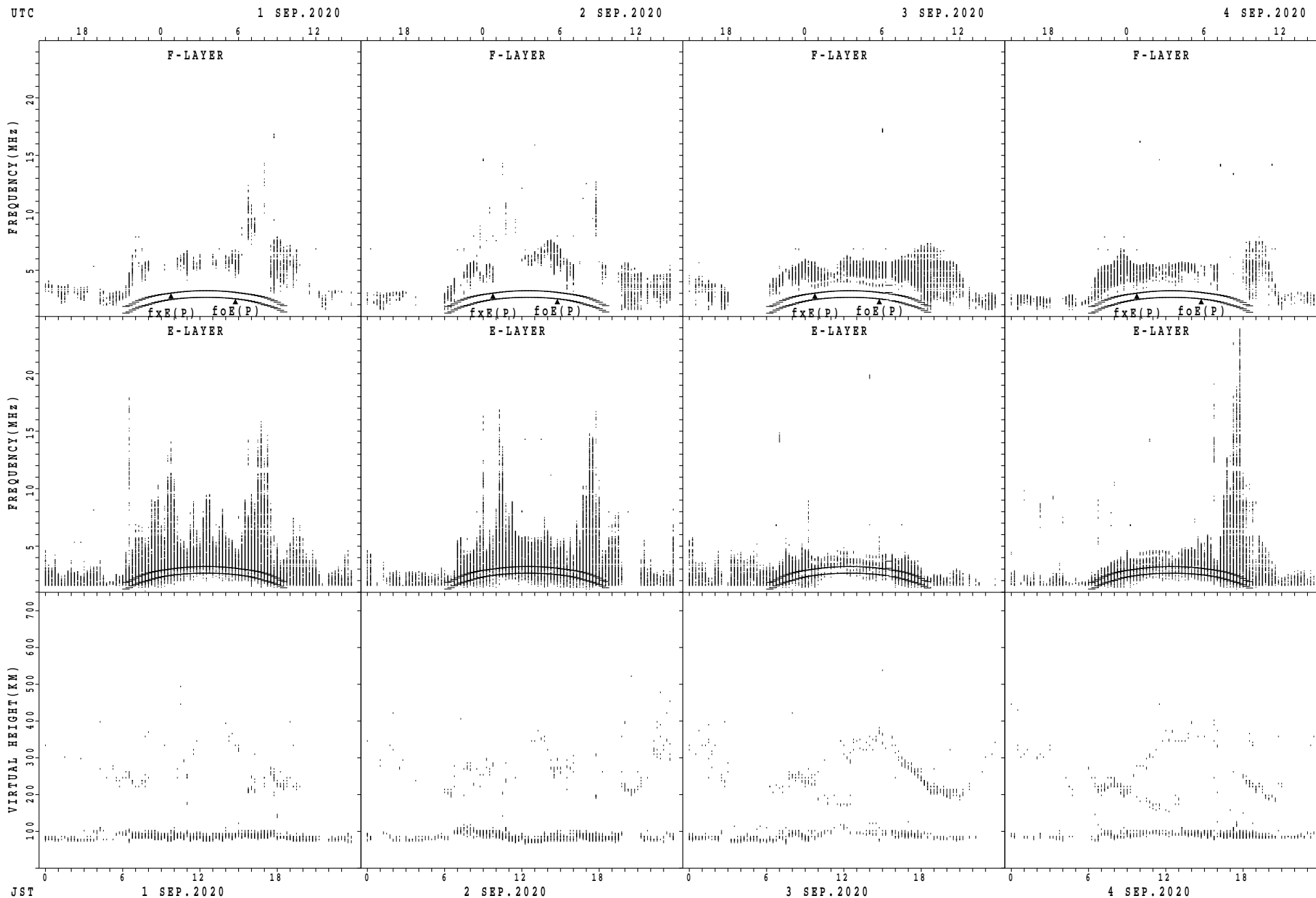
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



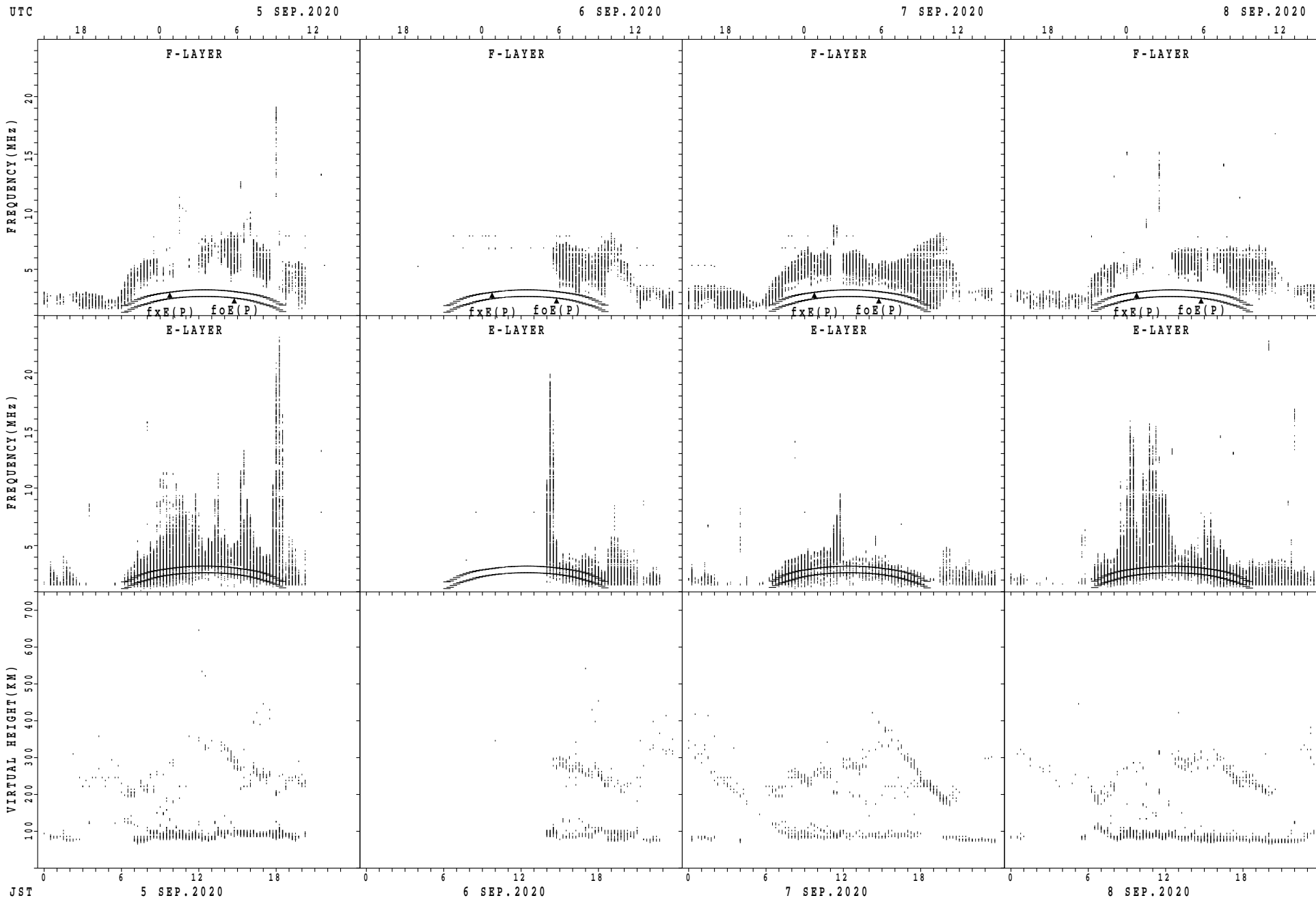
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



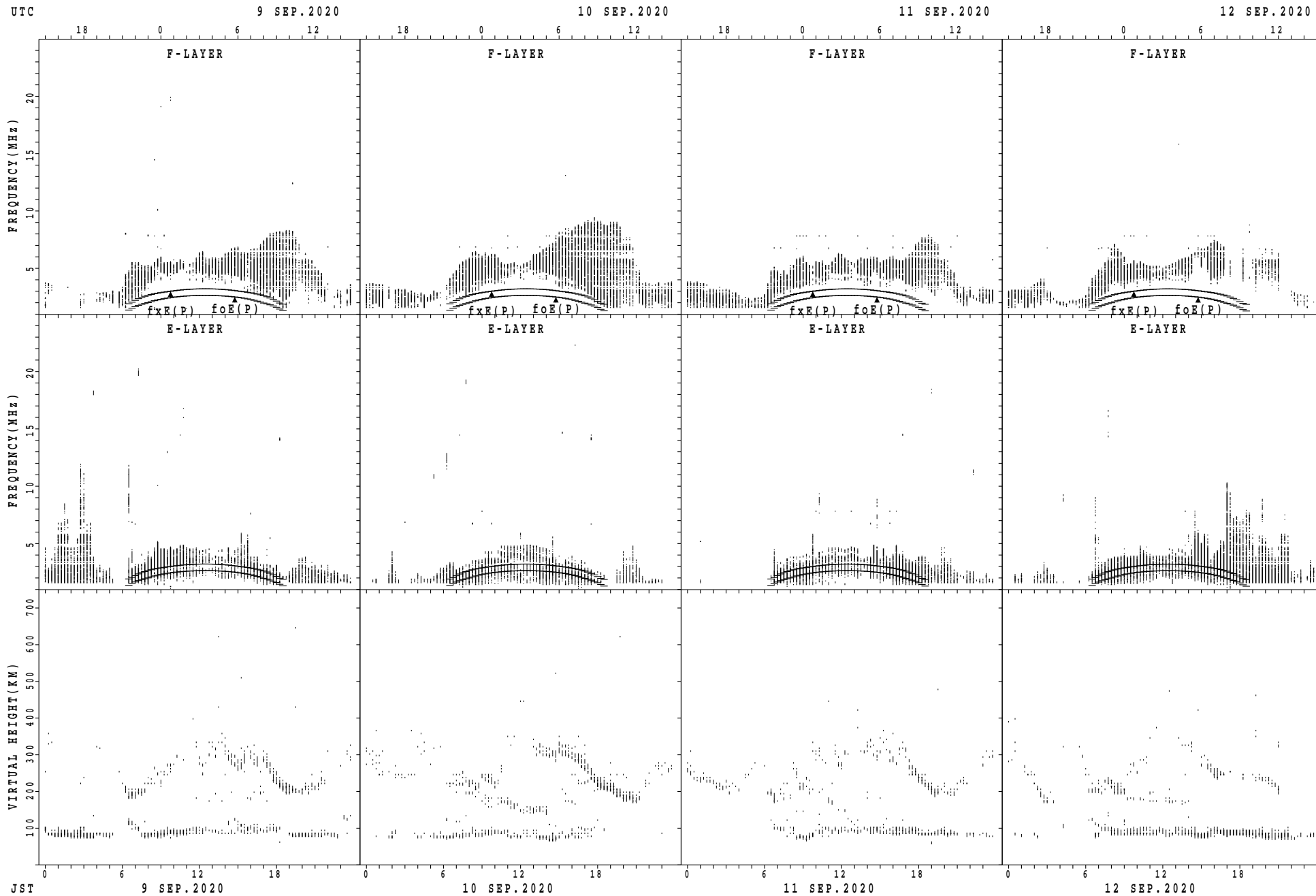
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



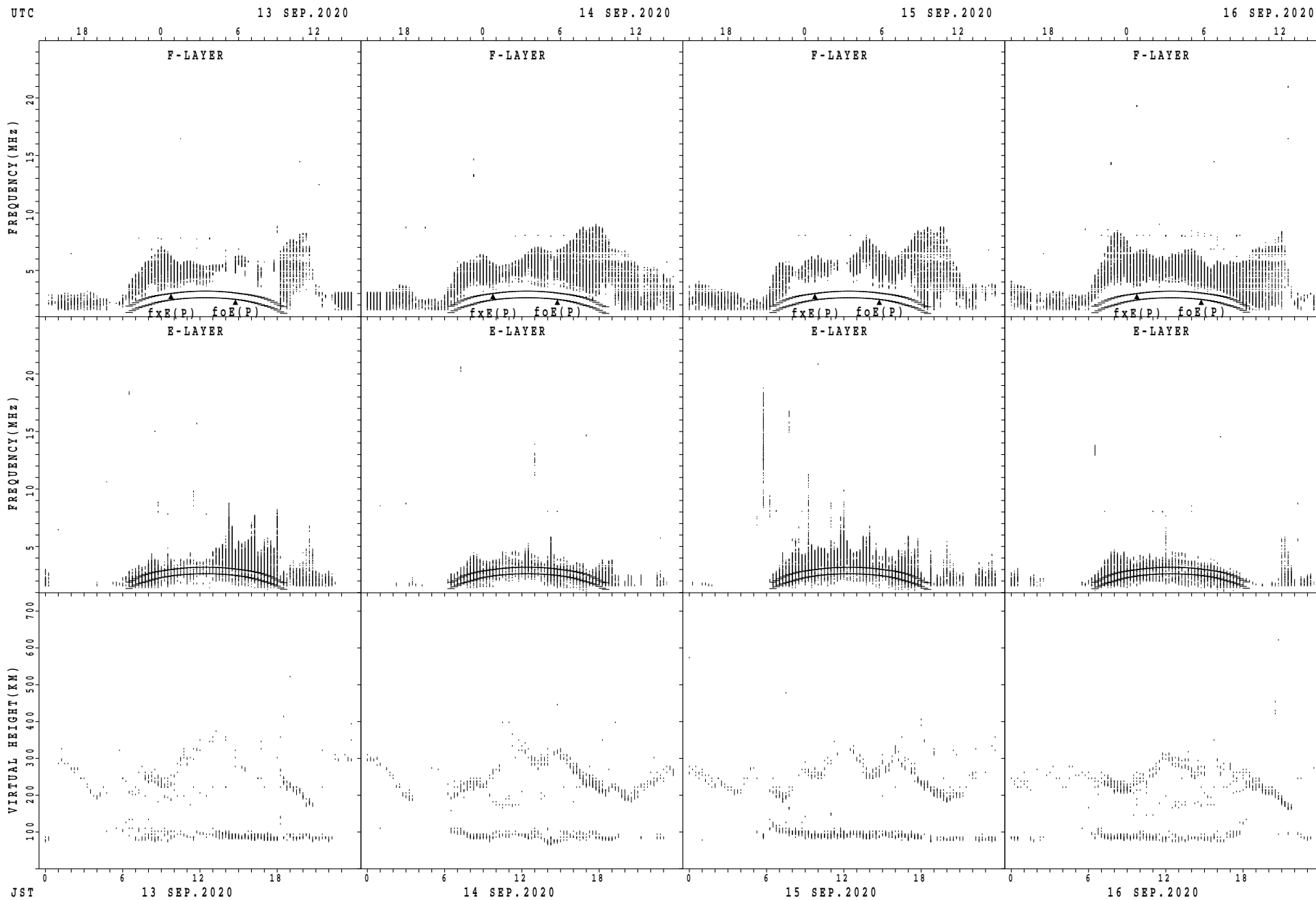
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



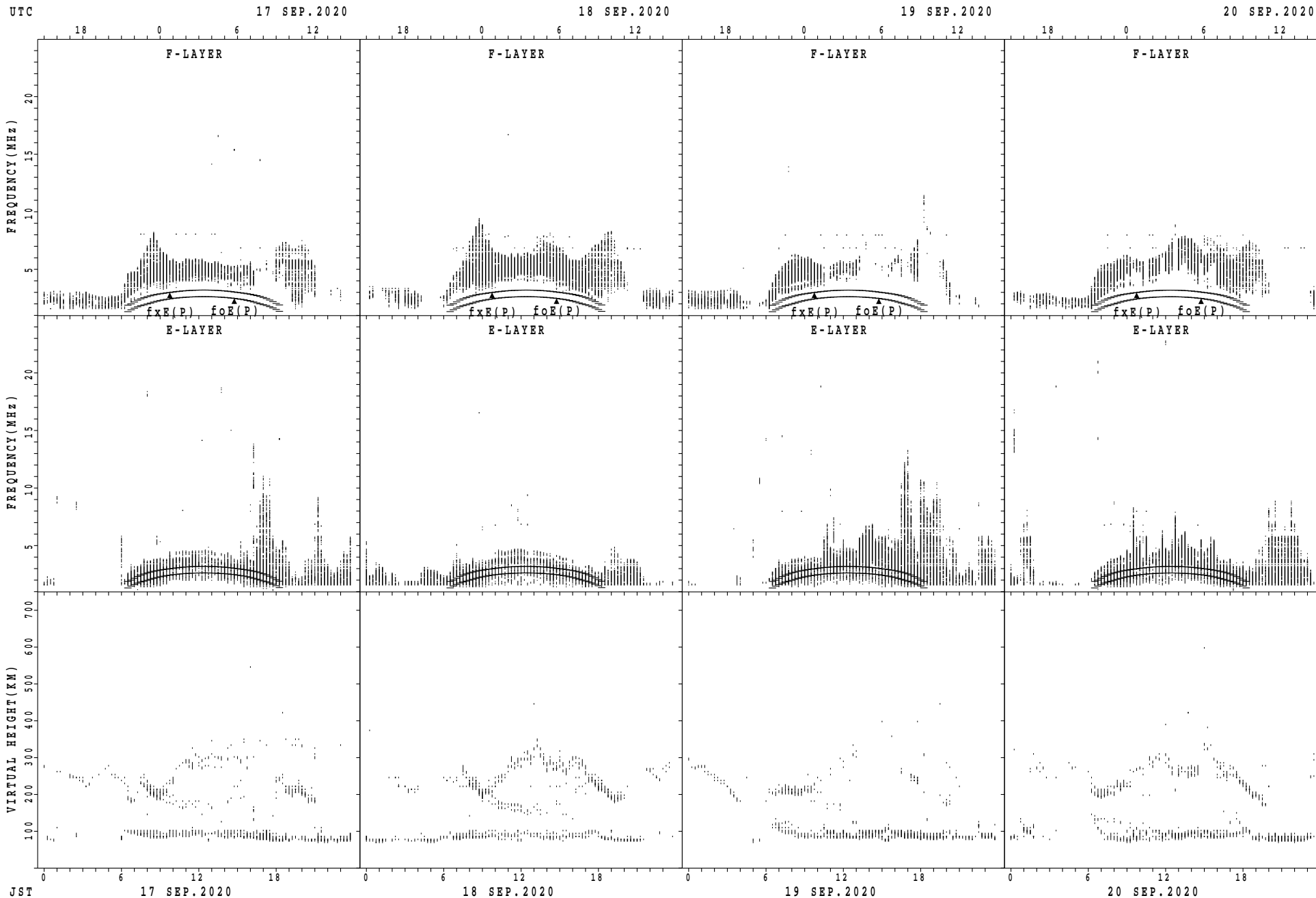
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



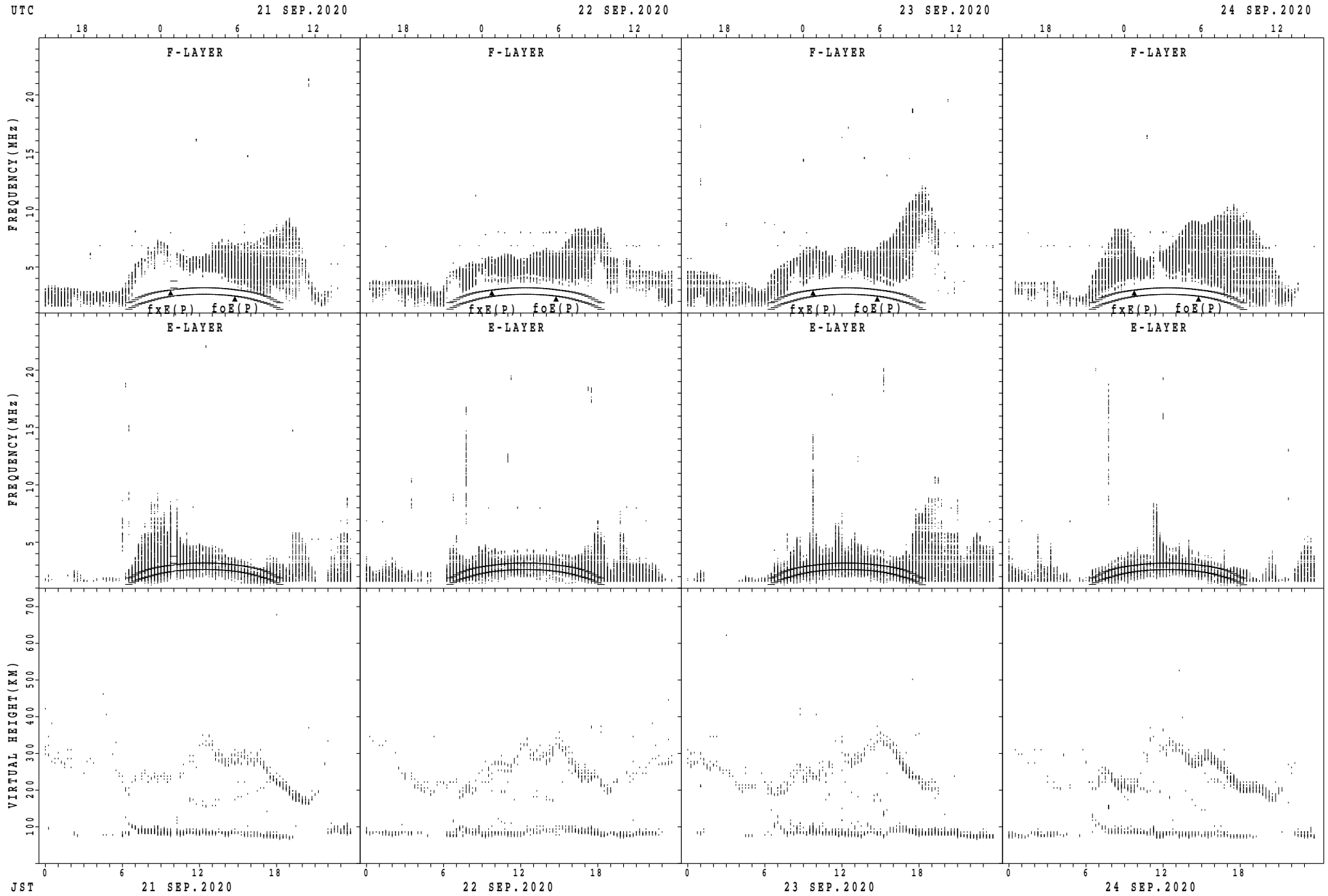
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



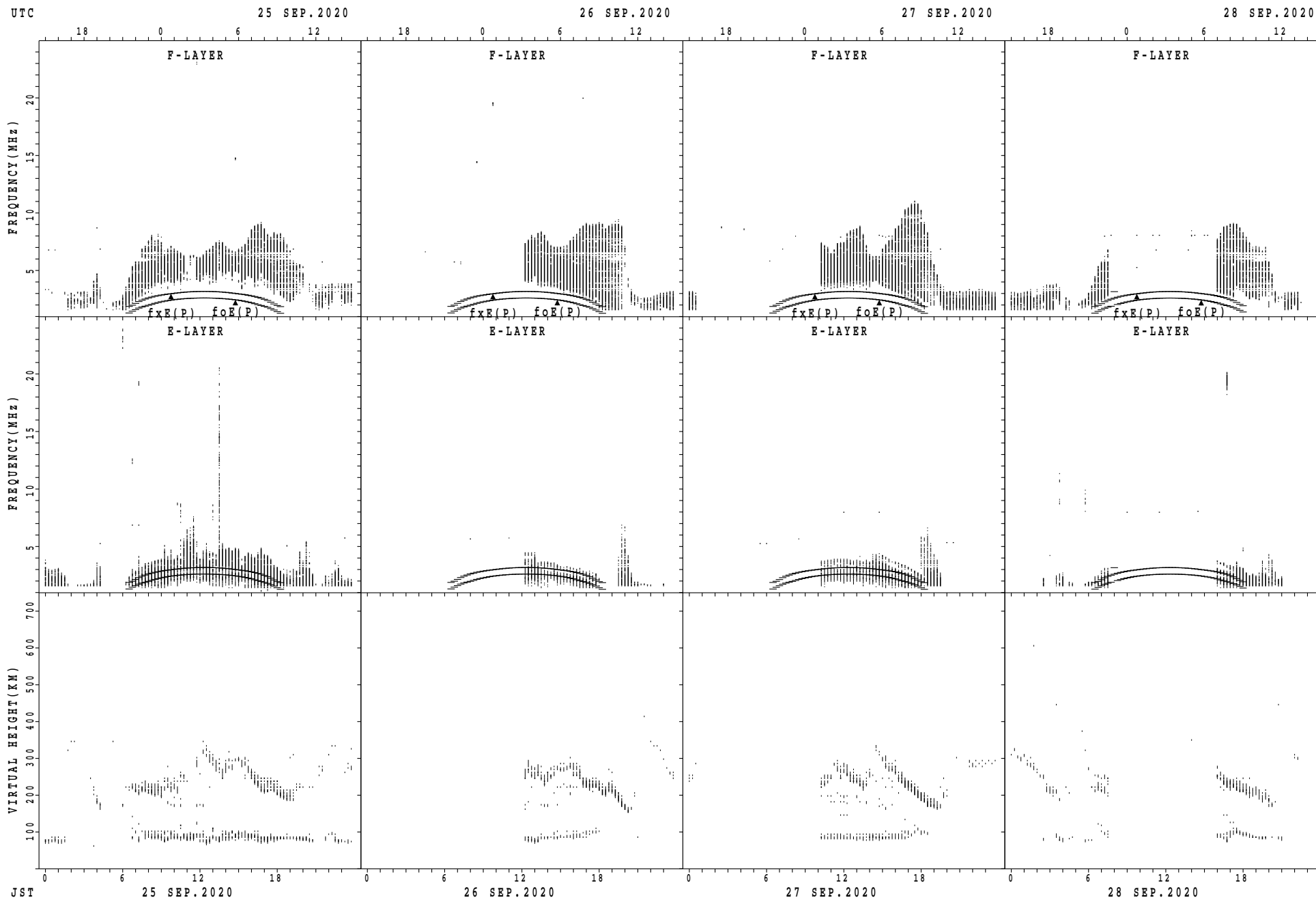
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



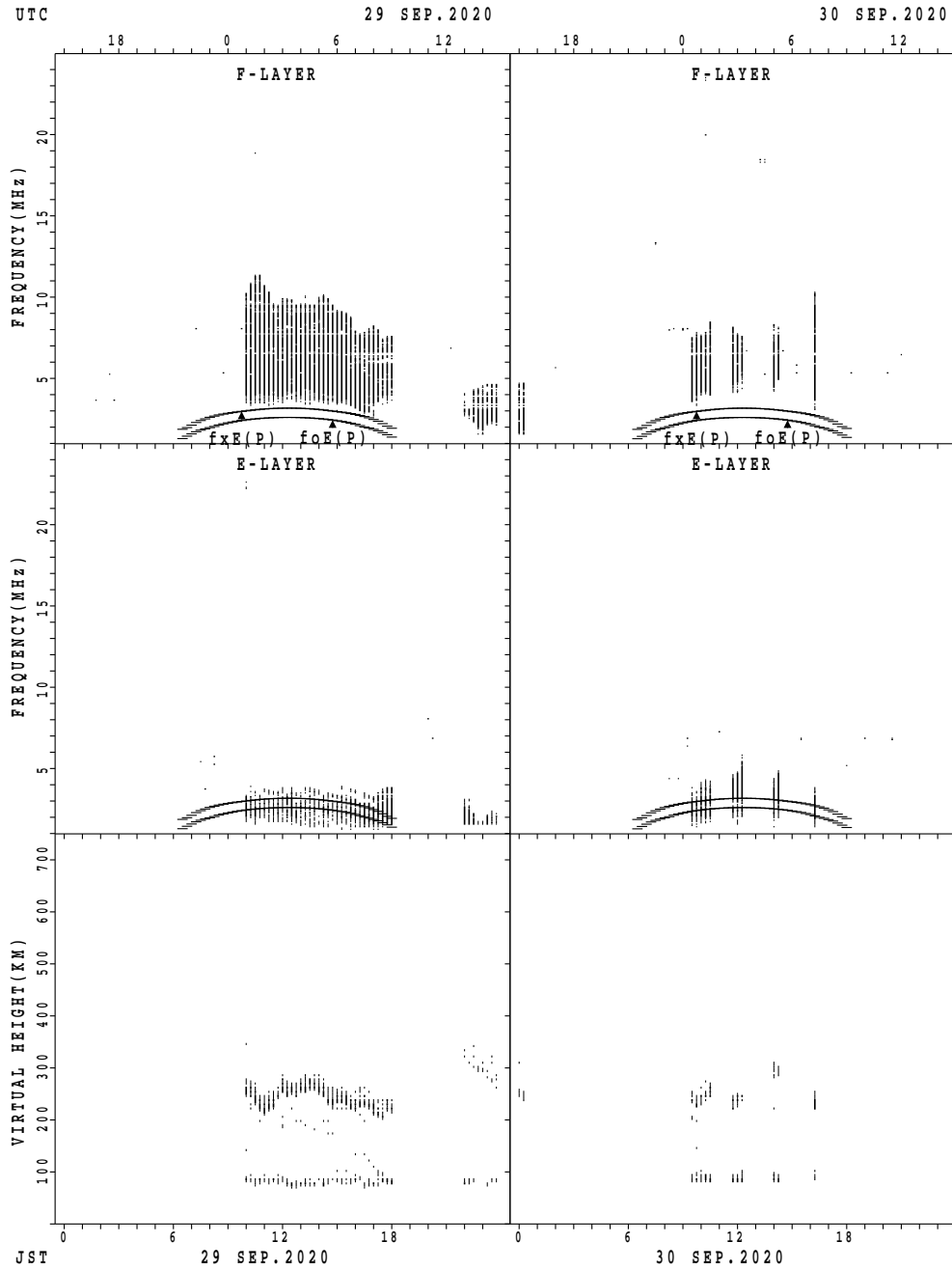
$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $foE(P)$; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

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. 2020 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									2							2	1	2						
MED									251							217	286	219						
U Q									264							228	143	248						
L Q									238							206	143	190						

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	23	20	27	23	27	29	30	30	30	30	30	30	30	30	30	30	30	28	27	30	27	22	25	24
MED	96	97	98	96	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	97
U Q	98	98	98	98	98	98	100	100	98	98	98	98	100	98	100	100	100	100	98	98	98	98	98	98
L Q	96	96	96	96	98	96	96	96	96	96	96	94	96	96	96	98	96	97	96	96	96	96	96	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	4							1	3	5	7	5	1			
MED								232	240							268	254	240	226	228	214			
U Q								246	256							134	266	275	238	280	107			
L Q								218	225							134	232	225	200	209	107			

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	22	14	15	18	16	16	29	29	29	30	29	25	29	26	25	26	29	30	24	25	25	21	26	20
MED	96	96	98	97	98	98	98	98	98	98	98	98	96	98	98	98	98	98	98	96	96	98	96	96
U Q	98	98	98	98	98	98	100	100	98	98	98	99	99	98	98	100	100	98	98	98	98	98	98	98
L Q	96	96	96	96	96	97	98	98	96	94	96	96	95	96	96	96	96	96	96	96	96	93	96	96

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	9								4	9	14	5	2			
MED								223	232								276	240	229	232	213			
U Q								234	260								278	271	240	254	234			
L Q								212	227								255	228	208	215	192			

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	20	21	22	22	19	18	24	29	29	29	29	29	29	28	29	29	29	29	28	27	24	28	25	25
MED	96	96	96	96	96	96	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	96	96	96
U Q	98	98	98	98	98	98	98	99	100	98	98	98	98	98	101	100	100	100	98	98	98	98	98	98
L Q	96	96	96	96	94	94	97	96	96	96	96	98	96	96	94	96	97	98	96	96	96	95	96	96

MONTHLY MEDIANS OF h'F AND h'Es
 SEP. 2020 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1						1	9	1							13	14	18	14	5	1		
MED		214						210	232	210							272	239	232	230	208	196		
U Q		107						105	238	105							302	282	240	248	217	98		
L Q		107						105	220	105							252	230	218	208	202	98		

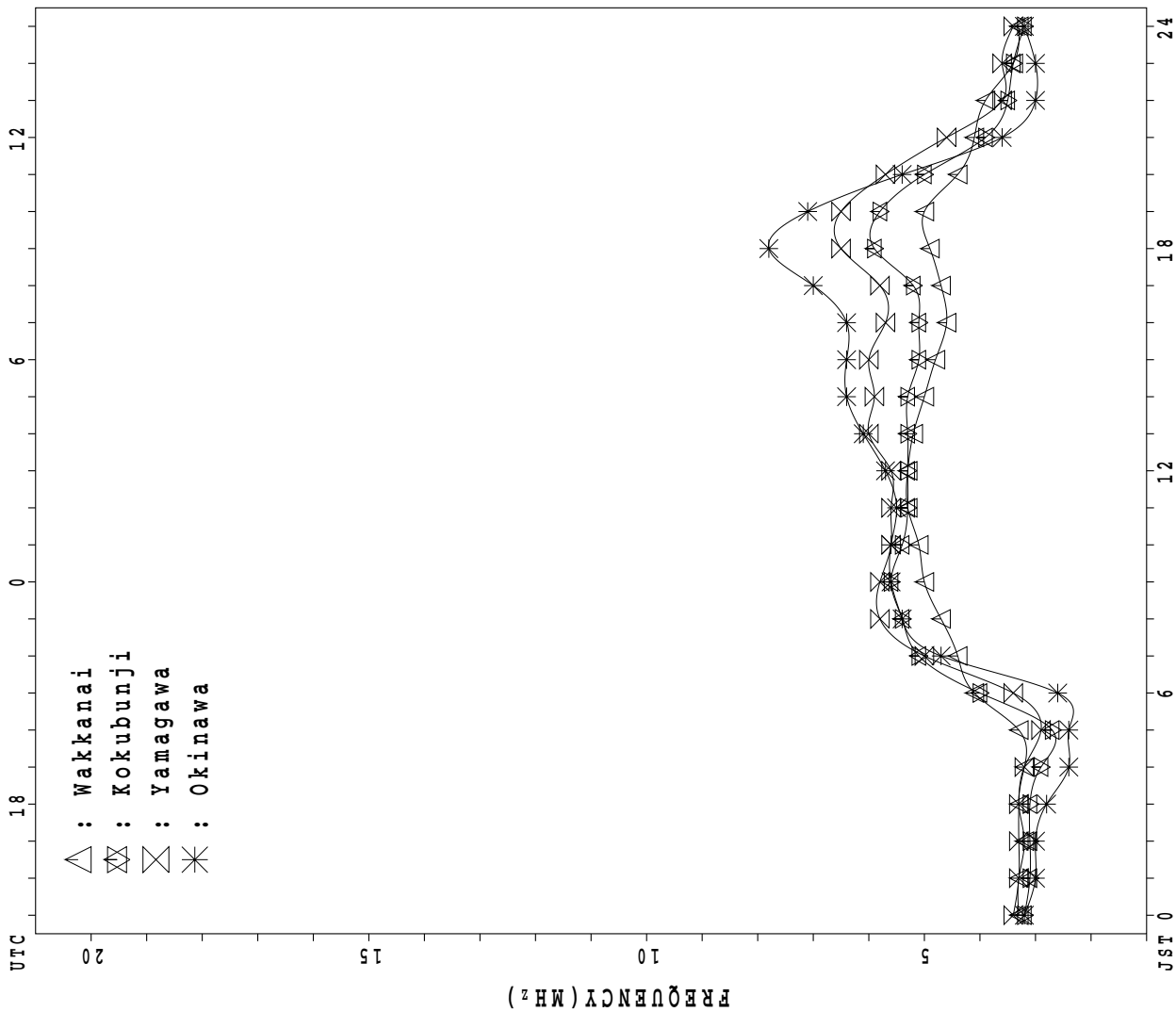
h'Es

	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	17	15	14	11	14	10	14	25	24	24	26	26	27	26	29	28	28	29	27	25	23	22	19	18
MED	96	92	86	96	96	95	96	98	100	98	98	98	96	98	97	98	98	98	95	94	91	91	92	94
U Q	98	96	96	98	98	98	98	104	107	101	101	100	107	100	99	99	101	99	98	98	96	98	96	96
L Q	87	85	81	94	87	88	89	94	95	96	96	94	94	92	95	95	94	95	89	88	87	84	81	89

MONTHLY MEDIANS PLOT OF fOF2

SEP. 2020

AUTOMATIC SCALING



- △ : Wakkanai
- ◻ : Kokubunji
- ◇ : Yamagawa
- * : Okinawa

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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 43	X 44	X 41	X 36	X 33	X 37													X 51	X 60	X 51	X 47	X 40	X 40	
2	X 44	X 42	X 37	X 39	X 39	X 38													X 45	X 49	X 48	X 48	X 46	X 43	
3	X 37	X 38	X 38	X 41	X 39	X 41													X 49	X 55	X 52	X 48	X 44	X 42	
4	X 37	X 35	X 36	X 39	X 39	X 42													X 51	X 55	X 50	X 50	X 49	X 47	
5	X 42	X 42	X 41	X 40	X 39	X 44													X 57	X 59	X 57	X 51	X 46	X 45	
6	X 45	X 43	X 39	X 42	X 36	X 41													X 56	X 57	X 51	X 50	X 46	X 45	
7	C	X 41	X 39	X 38	X 39	X 44													X 47	X 57	X 58	X 54	X 50	X 41	
8	X 39	X 33	X 39	X 39	X 39	X 41													X 52	X 51	X 51	X 51	X 50	X 46	
9	X 43	X 43	X 43	X 45	X 50	X 43													X 49	X 52	X 48	X 47	X 45	X 45	
10	X 40	X 40	X 41	X 41	X 42	X 41													X 47	X 55	X 54	X 49	X 45	X 40	
11	X 37	X 37	X 39	X 39	X 40	X 40													X 60	X 66	X 59	X 58	X 49	X 42	
12	X 42	X 45	X 46	X 44	X 46	X 47													X 62	X 67	X 62	X 47	X 44	X 41	
13	X 43	X 45	X 44	X 43	X 44	X 46													X 61	X 65	X 55	X 48	X 49	X 44	
14	X 45	X 43	X 43	X 45	X 45	X 46													X 71	X 70	X 54	X 51	X 46	X 46	
15	X 45	X 43	X 41	X 40	X 40	X 40													X 66	X 59	X 60	X 54	X 39	X 41	
16	X 38	X 41	X 42	X 43	X 41	X 41													X 54	X 53	X 51	X 52	X 52	X 41	
17	X ⁰ 36	X 38	X 38	X 38	X 39	X 39													X 61	X 62	X 59	X 57	X 51	X 37	
18	X 35	X 38	X 39	X 39	X 38	X 39													X 57	X 54	X 53	X 48	X 43	X 42	
19	X 40	X 37	X 37	X 35	X 35	X 39													X 50	X 52	X 52	A	X 39	X 39	
20	X 41	X 39	X 39	X 39	X 38	X 37													X 52	X 48	X 46	X 45	X 43	X 40	
21	X 42	X 41	X 39	X 40	X 40	X 39													X 53	X 50	X 49	X 48	X 48	X 41	
22	X 45	X 45	X 47	X 46	X 49	X 43													X 61	X 64	X 65	X 54	X 49	X 48	
23	X 48	X 50	X 51	X 49	X 49	X 45													X 57	X 58	X 60	X 53	X 51	C	
24	X 49	X 48	X 50	X 44	X 51	X 41													X 59	X 65	X 52	X 52	X 35	X 34	
25	X 37	X 39	X 39	X 38	X 38	X 32													X 57	X 51	X 48	X 44	X 40	X 40	
26	X 39	X 35	X 35	X 35	X 35	X 35													X 59	X 58	X 54	X 52	X 45	X 37	
27	X 37	X 39	X 39	X 39	X 38	X 31													X 54	X 51	X 48	X 40	X 38	X 38	
28	X 40	X 37	X 37	X 38	X 36	X 42													X 65	X 62	X 52	X 56	X 58	X 56	
29	X 58	X 43	X 40	X 44	X 33	X 33													X 50	X 53	X 51	X 49	X 45	X 41	
30	X 41	X 40	X 39	X 41	X 40	X 37													C	X 56	X 53	X 45	X 41	X 41	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	30	30	30	30	30													29	30	30	29	30	29	
MED	X 41	X 41	X 39	X 40	X 39	X 41													X 56	X 56	X 52	X 50	X 46	X 41	
U Q	X 44	X 43	X 42	X 43	X 42	X 43													X 60	X 62	X 57	X 52	X 49	X 45	
L Q	X 38	X 38	X 39	X 39	X 38	X 38													X 50	X 52	X 51	X 48	X 43	X 40	

SEP. 2020 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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	36	^F 32	34	29	26	30	33	36		^A 44	43	41	40	^{U R} 42	41	42	42	50	44	53	44	40	33	33
2	^F 32	35	30	32	32	31	32	39	37	40	43	^{U R} 40	40	40	39	41		^A 38	38	42	41	41	39	36
3	30	31	31	34	32	34	39	44	44	45	49	45	50	48	44	44	44	42	42	48	45	41	37	35
4	30	28	29	32	32	35	40	41	44		^A 48	50	52	48	44	45	45	43	44	48	43	43	42	40
5	35	35	34	33	32	37		^A 40	56	52	52	54	50	45	49	51	48	47	50	52	50	44	39	38
6	38	36	32	35	29	34	44	45	45	48	48	46	54	50	50	49	44	44	49	50	44	43	39	38
7	^C	34	32	31	^V 32	37	44	44	50	50	56	51	54	52	50	51	50	41	40	50	51	47	43	34
8	32	26	32	32	32	34	32	37	45	47	46	47	54	50	48	50	48	48	45	44	44	44	43	39
9	36	36	36	38	43	36	44	42	44	44	44	45	^R 45	48	52	54	46	43	42	44	41	40	38	38
10	33	33	34	34	35	34	42	40	43	47	50	50	49	50	46	49	43	39	40	48	47	42	38	33
11	30	30	32	32	33	33	40	42	46	52	48	47	46	49	48	45	47	47	53	59	52	51	42	35
12	35	38	39	37	39	40	46	45	50	50	53	52	50	50	50	46	48	48	55	60	55	40	37	34
13	36	38	37	36	37	39	44	46	49	49	53	51	50	47	47	46	49	50	54	58	48	41	42	37
14	38	36	36	38	38	39	48	47	47	52	50	52	55	53	55	51	54	56	64	63	47	44	39	39
15	38	36	34	33	33	33	43	45	56	46	51	59	52	52	54	52	50	54	59	52	53	47	32	34
16	31	34	35	36	34	34	41	45	51	54	49	49	52	52	52	47	47	49	46	46	44	45	45	34
17	30	31	31	31	32	32	43	45	45	54	54	51	48	49	50	45	44	45	54	56	52	50	44	30
18	28	31	32	32	32	32	41	50	53	54	61	54	52	52	47	48	47	44	50	47	46	41	36	^C 35
19	33	30	30	28	28	32	42	42	48	48	^V 53	51	56	54	51	47	44	38	43	45	45		^A 32	32
20	34	32	32	32	31	30	42	45	46	53	51	52	52	52	48	46	45	43	45	41	39	38	36	33
21	35	34	32	33	33	32	38	42	47	47	55	58	54	54	48	47	44	46	46	43	42	41	41	34
22	38	38	40	39	42	36	39	44	48	51	48	54	52	54	54	54	49	48	54	57	58	47	42	41
23	41	43	44	42	42	38	39	39	50	54		^C 61	59	52	53	49	46	43	50	51	53	46	44	
24	42	41	43	38	^V 44	34	34	41	48	55	59	56	53	53	57	55	48	48	52	58	45	45	28	27
25	30	32	32	31	31	26		^A 44	50	48	52	58	62	55	54	48	49	52	50	44	41	37	33	33
26	32	28	28	28	28	28	41	46	55	54	55	59	59	57	56	51	54	52	52	51	47	45	38	30
27	30	32	32	32	31	24	41	49	59	52	54	50	55	53	51	52	52	48	47	44	41	33	31	31
28	33	30	30	31	29	35	42	43	56	61	60	56	61	57	56	67	55	55	58	55	45	^F 39	^F 43	^F 42
29	^F 43	36	33	37	26	26	32	36	47	48	46	46	48	51	50	50	47	42	43	46	44	42	38	34
30	34	33	32	34	33	30	38	43	44	54	65	54	56	55	49	49	45	45		^C 49	46	38	34	34
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	30	28	30	29	29	29	30	30	30	30	30	29	30	29	30	30	29	30	29
MED	34	34	32	33	32	34	41	44	48	50	51	51	52	52	50	49	47	46	49	50	45	42	38	34
U Q	37	36	35	36	35	36	43	45	50	54	54	54	55	53	53	51	49	49	54	55	50	45	42	38
L Q	30	31	32	32	31	31	38	41	45	47	48	47	50	49	48	46	44	43	44	45	44	40	36	33

SEP. 2020 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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							A	L	A	L	L	L	A	L	L	376	360	L						
2							L	L	L	L	L	392	L	L	L	L	A	L						
3							L	L	L	L	L	L	L	L	L	L	L	L						
4							L	L	L	A	L	L	L	416	L	L	L	L						
5							A	L	L	L	L	404	436	L	L	L	L	324						
6							L	L	A	L	L	L	L	L	L	392	352							
7							L	L	L	L	L	L	L	L	L	L	L	L						
8							L	L	L	408	L	L	L	L	L	L	L	L						
9							L	L	L	408	L	L	L	L	L	L	L	L						
10							L	L	L	388	400	412	412	412	A	L	404	348						
11							252	L	L	L	L	412	412	L	L	396	388	L	L					
12							248	L	L	L	L	424	L	L	L	392	392	L	L					
13							L	L	L	380	400	408	L	L	L	L	L	L						
14							L	L	L	388	408	L	L	424	408	400	L	L						
15							L	L	L	400	408	L	A	428	416	L	L	380						
16							L	L	L	392	A	A	L	L	L	L	A	L						
17							L	L	L	L	L	L	L	L	L	L	L	L						
18							L	L	L	396	L	L	L	L	L	L	L	L						
19							368	L	L	L	L	L	L	L	L	A	A	L						
20							L	L	L	408	L	L	L	L	L	A	L							
21							L	L	L	388	L	L	L	L	L	L	L	L						
22							L	L	L	A	A	396	L	L	L	L	L	L						
23							L	L	L	L	L	C	A	L	L	L	L	L						
24							L	L	L	L	L	L	L	L	L	L	L	L						
25							L	L	L	392	416	416	420	L	L	L	384	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	L						
28							L	L	L	L	L	L	L	L	L	L	L	L						
29							L	L	L	L	L	L	L	L	L	L	L	L						
30							332	L	L	380	396	408	L	L	L	396	360	L						
31							L	L	L	L	L	L	L	L	L	L	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	3	9	11	9	9	8	7	6	6	7	1						
MED							250	356	388	408	412	412	426	412	396	386	352	324						
U Q							368	392	408	414	422	432	416	400	392	364								
L Q							332	382	400	402	406	408	408	392	376	348								

SEP. 2020 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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							180	232	244	300	308	308	308	308	296	272	236	208							
2							A	220	228	224	A	296	A	268	288	272	244	188							
3							168	228	256	256	A	A	308	304	292	276	256	196							
4							188	216	232	208	A	A	312	A	A	276	232	200							
5							180	228	264	280	292	A	A	A	292	276	240	228							
6							240	240	276	320	316	A	308	304	304	268	264	A							
7							184	272	288	288	312	324	308	308	308	276	248	196							
8							A	A	272	288	300	324	316	316	300	284	240	204							
9							204	244	288	288	308	336	308	312	252	264	232	172							
10							172	244	276	296	316	316	A	304	A	264	212	176							
11							A	244	280	292	300	316	324	300	300	272	252	176							
12							204	252	288	296	304	320	320	312	284	284	200	176							
13							188	244	276	284	304	300	324	304	288	276	252	228							
14							A	260	280	292	320	312	312	312	304	264	232	A							
15							192	240	284	288	308	308	312	288	248	288	232	A							
16							212	232	236	304	304	312	304	280	264	264	240	208							
17							188	232	A	312	308	324	304	304	292	268	244	180							
18							192	236	276	288	304	312	308	308	296	268	232	172							
19							200	244	260	288	316	328	324	292	284	252	228	A							
20							204	240	268	284	292	292	A	276	256	A	228	196							
21							212	248	276	284	300	300	300	284	288	268	220	164							
22							180	244	280	280	304	312	312	300	280	256	216	204							
23							212	A	276	304	304	300	292	260	240	176	228	184							
24							196	240	276	276	304	304	304	292	260	260	A	A							
25							A	228	268	268	292	292	292	280	248	184	224	A							
26							A	212	252	276	296	280	288	276	244	212	212	184							
27							200	200	248	284	284	300	300	300	280	236	232	A							
28							184	232	236	276	296	296	288	280	264	228	212	B							
29							188	A	256	284	280	300	280	280	264	240	212	A							
30							184	212	252	252	276	252	300	300	A	252	216	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							24	27	29	30	27	26	26	28	27	29	29	20							
MED							190	240	272	286	304	308	308	300	284	268	232	192							
U Q							204	244	278	292	308	316	312	306	296	276	242	204							
L Q							184	228	252	276	296	300	300	280	260	252	218	176							

SEP. 2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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 48	30	J A 31	J A 20	26	J A 52	J A 33	J A 51	J A 38	J A 51	39	33	34	34	33	34	34	47	60	J A 62	J A 30	J A 23	J A 21	23	
2	E B 16	E B 16	J A 41	J A 25	27	32	J A 31	J A 27	J A 32	J A 33	36	J A 36	J A 36	32	37	J A 48	J A 50	J A 33	J A 143	J A 86	J A 26	J A 28	J A 24	E B 16	
3	E B 23	E B 16	J A 28	J A 22	J A 32	J A 26	J A 26	J A 39	J A 34	J A 33	36	J A 36	J A 32	G 30	G 33	32	30	29	24	J A 36	J A 77	J A 35	J A 30	44	
4	J A 21	E B 16	J A 39	J A 21	E B 16	J A 24	J A 27	J A 28	J A 41	J A 47	J A 53	58	J A 47	J A 55	J A 52	J A 48	J A 31	J A 27	27	22	32	J A 28	J A 24	J A 32	
5	27	29	23	16	21	25	J A 53	J A 53	J A 34	J A 40	J A 34	J A 36	J A 36	J A 41	35	32	31	30	E B 16	J A 24	36	37	J A 38	J A 38	
6	J A 33	J A 33	J A 25	J A 30	J A 32	J A 32	J A 26	J A 31	J A 61	J A 43	J A 37	J A 35	J A 37	34	G 30	32	J A 28	J A 27	J A 25	J A 26	J A 26	J A 27	J A 20	J A 30	
7	D C 20	J A 26	J A 21	J A 20	E B 16	28	23	J A 51	J A 32	J A 83	J A 34	J A 80	J A 36	J A 36	34	33	29	24	J A 27	J A 24	J A 24	J A 24	J A 33	J A 23	
8	J A 23	47	29	29	J A 33	J A 23	J A 33	J A 47	J A 36	J A 63	J A 63	37	36	33	32	32	J A 25	J A 31	J A 33	J A 31	J A 21	J A 23	J A 27	E B 16	
9	19	J A 23	20	25	25	J A 32	J A 51	J A 33	J A 52	J A 47	38	39	38	J A 33	J A 37	31	28	25	E B 16	24	J A 21	J A 31	J A 24	J A 24	
10	28	E B 15	21	21	23	J A 169	J A 24	J A 45	J A 32	35	35	J A 50	J A 34	J A 34	J A 37	28	J A 38	60	29	J A 26	J A 32	E B 16	19	31	
11	E B 16	E B 15	18	19	30	J A 199	J A 22	J A 29	J A 32	33	34	36	J A 41	34	34	30	27	J A 21	22	24	J A 48	J A 23	J A 23	J A 21	
12	J A 24	J A 27	24	J A 21	E B 16	26	J A 26	J A 33	J A 35	34	36	36	34	38	32	36	J A 29	J A 24	J A 31	J A 30	J A 38	J A 20	34	32	
13	J A 30	19	19	E B 16	21	21	J A 21	J A 29	J A 29	34	34	34	36	36	33	30	30	J A 27	J A 23	J A 25	J A 25	E B 16	31	20	
14	E B 16	20	25	J A 26	J A 29	24	J A 40	J A 87	J A 33	J A 35	J A 87	J A 56	37	37	37	J A 52	J A 32	J A 24	30	26	J A 30	J A 27	J A 22	J A 20	
15	E B 16	E B 16	J A 23	J A 28	J A 51	J A 51	J A 24	J A 33	J A 38	J A 59	J A 65	J A 38	J A 39	J A 48	J A 46	J A 77	J A 31	J A 30	J A 51	J A 53	J A 24	J A 28	J A 32	J A 25	
16	22	24	22	J A 32	J A 31	J A 24	J A 27	J A 32	J A 33	J A 31	J A 34	J A 33	J A 34	J A 31	J A 32	J A 27	J A 30	J A 23	J A 26	J A 19	J A 16	J A 16	J A 21	J A 21	
17	J A 21	J A 23	24	E B 16	E B 16	J A 25	J A 52	J A 31	J A 33	J A 39	35	34	34	36	35	33	28	27	34	J A 32	J A 25	J A 27	J A 16	J A 24	
18	19	21	21	J A 29	J A 26	J A 24	J A 29	J A 27	J A 29	J A 32	J A 29	J A 35	J A 30	J A 35	J A 32	J A 32	J A 26	J A 22	J A 29	J A 26	J A 31	J A 29	J A 27	J A 21	
19	E B 16	E B 16	E B 16	E B 16	26	31	J A 24	J A 21	J A 52	J A 52	J A 34	J A 46	G	J A 36	J A 51	J A 53	J A 48	J A 37	J A 20	J A 29	J A 63	J A 63	J A 33	J A 52	
20	J A 41	J A 36	J A 29	J A 29	J A 30	J A 28	J A 27	J A 26	J A 31	J A 35	J A 37	J A 41	J A 39	J A 34	J A 38	J A 29	J A 25	J A 30	J A 26	J A 25	J A 25	J A 26	J A 40	J A 34	
21	J A 23	E B 16	22	J A 24	J A 31	J A 34	J A 28	J A 33	J A 58	J A 56	J A 43	J A 41	J A 38	J A 37	J A 33	J A 33	J A 47	J A 25	J A 34	J A 28	E B 16	E B 16	E B 16	J A 19	
22	20	J A 22	18	E B 16	34	21	J A 27	J A 30	J A 32	J A 50	J A 36	J A 36	J A 37	J A 40	J A 38	J A 34	J A 26	J A 20	J A 39	J A 50	J A 52	J A 42	J A 38	J A 31	
23	J A 26	J A 28	J A 23	J A 31	28	27	J A 25	J A 50	J A 32	J A 41	J A 36	J A 58	J A 35	J A 31	J A 33	J A 38	J A 24	J A 19	J A 25	J A 33	J A 32	J A 52	J A 18	J A C	
24	26	J A 18	19	J A 23	J A 25	J A 21	J A 82	J A 28	J A 31	J A 35	J A 35	J A 37	J A 43	J A 93	J A 33	J A 30	J A 52	J A 56	J A 24	J A 26	E B 16	E B 16	J A 23	J A 25	
25	26	22	31	J A 26	J A 24	J A 28	J A 47	J A 25	J A 33	J A 34	J A 44	J A 42	J A 35	J A 39	J A 47	J A 30	J A 30	J A 25	J A 20	J A 25	J A 35	J A 16	J A 24	J A 27	
26	32	31	27	J A 38	J A 27	J A 24	J A 34	J A 24	J A 30	J A 31	J A 34	J A 37	J A 36	J A 42	J A 34	J A 27	J A 26	J A 26	J A 30	J A 26	J A 26	J A 21	J A 19	J A 26	
27	J A 23	20	24	E B 15	25	31	J A 31	J A 44	J A 81	J A 32	J A 33	J A 40	J A 33	J A 35	J A 35	J A 58	J A 43	J A 35	J A 25	J A 35	J A 32	J A 24	J A 26	J A 20	
28	J A 22	J A 25	J A 23	J A 21	J A 18	J A 20	J A 22	J A 32	J A 28	J A 32	J A 36	J A 53	J A 32	J A 32	J A 30	J A 29	J A 29	E B 16	J A 23	J A 43	J A 18	J A 22	J A 16	J A 20	
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 22	J A 29	J A 61	J A 35	J A 33	31	G	G	G	31	J A 29	J A 26	J A 31	J A 25	J A 39	J A 44	J A 44	J A 32	
30	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 25	J A 24	J A 32	J A 30	J A 35	J A 33	J A 32	G	J A 33	J A 45	J A 29	J A 23	C	J A 37	J A 29	J A 51	J A 22	J A 22	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	29	
MED	22	22	23	22	26	26	J A 27	J A 32	J A 33	35	36	36	36	35	34	32	30	J A 27	J A 26	J A 27	J A 30	J A 26	J A 24	J A 24	
U Q	J A 26	J A 27	J A 27	J A 28	J A 31	J A 32	J A 33	J A 47	J A 38	J A 47	J A 39	J A 41	J A 37	J A 38	J A 37	J A 38	J A 32	J A 31	J A 32	J A 36	J A 35	J A 31	J A 32	J A 32	
L Q	E B 19	E B 16	E B 20	E B 19	E B 21	E B 24	J A 25	J A 28	J A 32	J A 33	J A 34	J A 36	J A 34	J A 34	J A 33	J A 30	J A 27	J A 24	J A 24	J A 25	E B 24	E B 21	E B 21	J A 20	

SEP. 2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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	18	18	22	16	E B E B	G	A A	G	G	31	31	A	G	31	30	31	28	28	A		E B E B	E B E B	E B E B	E B E B		
2	E B E B	E B E B	E B E B	E B E B	18	16	19	25	30	26	A	31	A	28	28	31	A A	22	A	17	17	E B E B	18	E B E B		
3	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	27	29	31	31	29	32	28	30	30	27	26	17	18	16	18	18	16		
4	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	26	26	A A	26	34	35	34	28	28	19	G E	E B E B	E B E B	E B E B	E B E B	E B E B		
5	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	A A	G	31	32	32	32	32	29	35	31	28	26	E B	16	16	16	22	17	18	
6	E B E B	20	E B E B	18	18	18	G	19	27	A	G	29	33	32	34	34	G	30	25	23	20	17	E B E B	E B E B	E B E B	
7	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	21	23	29	32	32	33	36	34	34	31	28	20	E B E B	E B E B	E B E B	E B E B	E B E B		
8	17	21	19	17	16	16	23	19	25	30	34	32	33	G	32	30	30	23	19	16	16	16	16	16	16	
9	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	18	27	29	34	34	34	30	32	32	30	26	22	E B E B	18	E B E B	16	17		
10	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	24	30	33	33	33	A	G	29	28	G	G	16	20	20	18	E B E B	E B E B	
11	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	28	27	31	33	32	32	32	31	29	G	24	18	16	16	17	E B E B	E B E B	
12	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	20	24	27	32	34	35	33	31	31	28	G	G	20	17	16	18	17	17	17
13	17	E B E B	17	E B E B	E B E B	E B E B	G	20	19	26	34	34	32	33	33	31	27	G	G	20	20	19	18	E B E B	E B E B	
14	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	22	23	32	32	32	A	35	32	33	33	24	19	16	16	E B E B	E B E B	E B E B	E B E B	
15	E B E B	E B E B	E B E B	E B E B	18	16	20	24	32	A	A	33	33	33	34	A	G	23	19	22	26	17	17	19	E B E B	
16	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	24	24	30	32	31	32	27	28	26	28	20	16	16	16	16	18	16	
17	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	23	23	30	32	31	34	G	32	28	26	17	G	17	17	17	E B E B	E B E B	
18	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	18	23	24	30	29	34	28	34	30	26	G	G	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	
19	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	18	24	23	29	30	G	G	34	42	A	28	22	18	18	24	A A	20	E B E B	
20	E B E B	20	18	E B E B	17	17	24	23	30	31	34	34	34	31	24	29	24	18	16	16	16	16	16	16	17	
21	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	28	A E A	40	33	35	36	33	30	31	22	22	22	16	E B E B	E B E B	E B E B	E B E B	
22	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	22	22	25	32	35	32	35	33	28	28	22	18	20	16	16	16	17	19	
23	16	16	E B E B	E B E B	E B E B	E B E B	G	18	26	30	36	30	42	33	27	30	26	G	G	18	20	20	17	E B E B	C	
24	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	16	23	22	29	32	36	39	32	28	28	20	18	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	
25	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	16	20	28	32	E A	37	33	34	32	26	G	16	16	E B	23	E B E B	E B E B	E B E B	
26	E B E B	16	16	16	16	E B E B	E B E B	22	22	26	28	29	G	34	32	30	27	25	22	17	G E B	20	16	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	E B E B	E B E B	E B E B	G	19	25	27	30	30	30	32	31	30	26	26	23	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	
28	19	E B E B	E B E B	E B E B	E B E B	E B E B	G	19	24	26	31	34	28	G	28	28	25	26	E B	18	E B E B	E B E B	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	E B E B	E B E B	E B E B	G	23	23	30	30	30	G	G	G	30	27	24	24	E B	16	16	16	16	18	18
30	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	18	22	30	29	32	32	31	G	A	23	20	C	20	20	20	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	30	30	30	30	30	30	30	30	28	29	28	29	27	30	30	27	30	30	27	30	30	30	30	29		
MED	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	19	24	28	31	32	32	33	G	30	28	24	20	16	16	16	16	16	16	16	
U Q	16	16	16	16	16	16	21	26	30	32	34	34	34	33	32	30	27	22	20	18	18	17	17	17		
L Q	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	G	G	30	30	32	32	30	28	26	23	18	16	16	16	16	16	16	16	

SEP. 2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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	16	16	16	16	15	16	13	12	13	13	15	16	20	13	17	15	16	15	16	16	16	16	16	16	
2	16	16	16	16	16	16	16	12	15	15	16	14	15	16	16	14	14	16	16	16	16	16	16	16	
3	16	16	16	16	16	16	12	12	14	15	16	13	11	14	14	12	10	14	16	16	16	16	16	16	
4	16	16	16	16	16	16	16	14	14	14	13	15	14	14	13	14	13	13	16	16	16	16	16	17	
5	16	16	16	16	16	16	11	12	13	15	16	14	14	15	14	16	13	13	16	16	16	16	16	16	
6	16	16	16	16	16	16	11	11	15	16	16	16	16	15	15	10	16	16	17	15	16	16	16	16	
7	16	16	16	16	16	16	15	16	16	12	15	15	14	14	14	15	13	10	16	16	16	16	16	16	
8	16	16	16	16	16	16	16	12	10	15	16	10	16	16	16	14	14	15	16	16	16	16	16	16	
9	16	16	16	16	16	16	12	14	13	15	15	16	13	16	13	13	12	10	16	16	15	15	15	12	
10	15	15	16	16	16	15	11	12	13	15	14	13	15	13	13	10	10	10	15	15	16	16	15	15	
11	16	15	16	16	16	16	16	12	14	12	12	11	16	14	14	12	12	14	15	16	16	16	16	16	
12	16	16	16	16	16	16	15	10	10	14	11	12	16	16	10	13	10	10	16	16	16	16	16	16	
13	16	16	16	16	16	16	16	12	10	15	16	16	14	14	12	12	10	10	17	16	16	16	16	16	
14	16	16	16	16	15	16	14	14	11	14	12	14	17	16	10	12	15	15	15	16	16	16	16	16	
15	16	16	16	16	16	16	11	10	12	13	14	15	14	13	14	14	12	10	15	16	16	16	16	16	
16	16	16	16	15	16	16	16	9	14	13	15	16	16	15	15	12	10	16	16	17	16	16	16	16	
17	16	16	16	15	16	16	16	12	13	13	15	16	14	14	14	14	14	13	14	16	16	16	16	16	
18	16	16	16	16	16	16	14	12	14	14	15	15	16	14	12	12	12	13	15	17	17	17	16	16	
19	16	16	16	16	16	16	11	11	13	14	13	14	14	12	16	14	13	14	15	16	16	16	16	16	
20	15	16	16	16	16	16	16	9	10	10	14	12	11	9	10	13	10	13	16	16	16	16	16	16	
21	16	16	16	15	16	16	16	15	15	16	15	15	15	14	15	16	9	13	16	16	16	16	16	16	
22	16	16	16	16	16	16	16	16	13	14	15	16	16	12	12	14	10	14	14	16	16	16	16	16	
23	16	16	16	16	16	16	14	14	11	12	14	15	15	14	14	12	10	14	14	15	15	16	16	C	
24	16	17	16	16	16	16	16	10	12	12	12	15	15	14	12	10	16	15	16	16	16	16	16	16	
25	16	17	16	16	16	16	15	15	12	15	15	15	15	11	12	10	13	15	16	16	16	16	16	16	
26	16	16	16	16	16	16	11	12	15	15	15	15	15	10	15	13	11	14	16	16	16	16	15	15	
27	16	16	16	15	15	15	15	10	12	12	12	16	12	13	13	11	10	10	16	16	16	16	16	16	
28	16	16	16	16	16	16	16	15	12	12	16	15	16	15	15	11	16	16	16	16	16	16	16	16	
29	16	16	16	16	16	17	14	16	15	17	16	14	12	12	14	12	14	16	16	C	16	16	16	16	
30	16	16	16	16	16	16	16	16	16	16	17	18	17	16	16	14	16	14			15	15	15	15	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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	29	
MED	16	16	16	16	16	16	15	12	13	14	15	15	15	14	14	13	12	14	16	16	16	16	16	16	
U Q	16	16	16	16	16	16	16	14	14	15	16	16	16	15	15	14	14	15	16	16	16	16	16	16	
L Q	16	16	16	16	16	16	12	11	12	13	14	14	14	13	12	12	10	13	15	16	16	16	16	16	

SEP. 2020 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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	296	314 ^F	313	292	291	389	238	259		303	323	407	415			283	294		218	316	313	327	297	271
2	271 ^F	302	302	301	337	327	289	333	332	397	397		390	401	394	322		330	233	305	277	302	302	339
3	320	319	319	318	319	318	352	352	358	316	321	339	315	312	330	326	323	341	325	314	337	334	309	344
4	313	313	312	312	311	352	367	363	359		294	335	326	341	320	316	324	332	329	326	320	279	329	304
5	304	297	296	296	321	349		347	375	364	387	386	294		323	344	344	341	330	317	325	322	298	301
6	301	300	330	326	326	352	382	369	347	346	347	330	330	329	353	344	341	338	338	322	319	322	332	332
7		309 ^C	309	309	335 ^V	357	375	360	380	338	357	335	327	338	338	338	362	348	319	315	329	344	340	346
8	325	397	318	317	355	355	314	270	335	354	357	292	338	297	334	340	340	348	352	325	315	329	325	325
9	325	316	316	315	341	309	365	361	359	342	314	257	288 ^R	338	325	370	353	350	347	336	311	310	310	336
10	327	327	326	321	354	349	397	358	354	354	321	341	340	304	312	363	353	241	325	334	330	339	328	315
11	327	327	326	326	365	351	373	339	353	374	364	321	310	325	334	331	339	336	319	331	325	325	349	329
12	328	327	327	326	346	343	347	366	380	367	367	347	332	323	344	319	342	320	320	337	336	351	324	324
13	323	323	315	315	346	360	369	356	329	341	365	360	352	327	345	322	350	337	326	351	352	314	340	327
14	327	327	321	321	320	334	362	338	381	352	320	322	352	332	325	324	324	329	336	346	327	325	308	308
15	307	307	331	330	329	329	344	369	387	351	352	351	333	323	322	346	327	347	346	299	353	352	338	328
16	319	319	303	337	336	336	356	340	350	350	374	343	345	345	345	366	323	336	339	307	321	328	352	352
17	338	325	326	325	313	342	366	398	319	355	377	377	361	352	337	334	332	348	327	310	326	331	360	359 ^C
18	330	322	322	322	322	337	352	361	365	362	368	343	363	361	360	342	336	333	332	329	339	331	315	315 ^C
19	337	321	320	320	319	321	377	354	381	346	357 ^V	357	349	363	361	356	362	348	333	330	327		343	295 ^A
20	295	331	314	314	348	330	372	371	337	362	362	362	361	344	344	337	347	344	341	338	337	337	300	281
21	297	305	318	318	344	335	385	362	305	357	357	356	348	363	354	343	340	356	340	337	334	331	349	340
22	322	322	322	321	360	360	386	386	348	378	345 ^C	365	309	353	326	333	333	330	330	305	344	343	326	304 ^C
23	315	312	315	314	349	349	365	374	374	361		360	360	359	358	345	342	339	317	316	341	338	304	
24	304	304	303	302	340	310	362	325	346	347	347	374	349	335	335	351	330	352	301	313	310	369	321	304
25	304	303	303	302	318	378		377	373	358	348	345	347	346	329	340	351	350	344	333	316	316	315	314
26	339	310	310	309	317	316	382	364	316	338	359	351	350	349	349	339	339	339	324	324	320	317	354	310
27	309	309	309	309	324	338	337	337	356	370	343	322	355	323	323	351	325	349	336	318	339	339	302	302
28	331	309	309	308	308	360	358	341	350	356	356	356	344	359	359	359	359	344	327	341	328	307 ^F		307 ^F
29		291 ^F	307	307	306	316	361	351	329	315	321	318	316	339	339	373	349	346	323	305	306	315	315	306
30	306	289	288	311	347	346	346	359	332	349	349	360	338	337	351	378	357	354		327 ^C	323	344	309	309
31																								
	00	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	30	30	30	30	30	28	30	29	29	29	29	30	28	29	30	29	29	29	30	30	29	29	28
MED	320	314	315	315	332	342	364	358	353	354	356	347	344	338	338	341	340	341	329	324	326	329	324	315
U Q	327	323	322	321	346	352	374	366	374	362	364	360	352	352	352	351	350	348	338	334	337	339	340	334
L Q	304	305	309	309	319	329	350	340	334	344	333	332	327	326	326	331	328	334	322	314	319	316	308	304

SEP. 2020 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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							A	L	A	L	L	L	A	L	L	361	355	L						
2							L	L	L	L	L	445	L	L	L	L	A	L						
3							L	L	L	L	L	L	L	L	L	L	L	L						
4							L	L	L	A	L	L	L	381	L	L	L	L						
5							A	L	L	L	L	408	390	L	L	L	L	386						
6							L	L	A	L	L	L	L	L	L	366	378							
7							L	L	L	L	L	L	L	L	L	L	L	L						
8							L	L	L	L	L	L	L	L	L	L	L	L						
9							L	L	L	L	L	L	L	L	L	L	L	L						
10							433	L	L	L	398	399	A	L	404	384	L	L						
11							416	L	L	L	L	412	L	L	395	377	L	L						
12							L	L	L	L	L	L	L	L	L	L	L	L						
13							L	L	L	L	L	L	L	L	L	L	L	L						
14							L	L	L	L	L	L	L	L	L	L	L	L						
15							L	L	L	L	L	L	L	L	L	L	L	L						
16							L	L	L	L	L	L	L	L	L	L	L	L						
17							L	L	L	L	L	L	L	L	L	L	L	L						
18							352	L	L	L	L	L	L	L	L	L	L	L						
19							L	L	L	L	L	L	L	L	L	L	L	L						
20							L	L	L	L	L	L	L	L	L	L	L	L						
21							L	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	L						
24							L	L	L	L	L	L	L	L	L	L	L	L						
25							L	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	L						
28							L	L	L	L	L	L	L	L	L	L	L	L						
29							L	L	L	L	L	L	L	L	L	L	L	L						
30							L	L	L	L	L	L	L	L	L	L	L	L						
31							L	L	L	L	L	L	L	L	L	L	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	3	9	11	9	9	8	7	6	6	7	1						
MED							424	358	382	390	398	408	379	391	380	371	378	386						
U Q							383	392	396	404	418	386	394	395	377	397								
L Q							352	378	372	376	380	372	381	378	366	355								

SEP. 2020 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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							444	408		A	372	326	192	192	310	338	432	396	388					
2							366	310	310	216	232	252	294	238	236	304		A	302					
3							274	278	288	344	342	314	334	342	306	306	306	282						
4							248	224	276		A	332	314	318	302	270	314	262	270					
5							A	296	240	262	238	238	322	432	312	282	284	256						
6							230	240	E A	288	286	288	320	318	300	274	280	246						
7							206	244	248	268	268	282	316	294	304	292	254	246						
8							316	292	292	302	300	386	298	352	298	284	270	254						
9							254	230	282	276	298	326	326	316	304	244	244							
10							208	222	288	288	306	306	308	342	326	258	266		A					
11							224	248	270	244	272	322	340	314	304	304	286	272						
12							218	238	238	254	260	292	288	330	306	344	282	282						
13								248	290	290	252	304	282	326	298	258	264	258						
14								258	240	274	308	340	264	294	306	284	284	248						
15									E A	A		278	306	312	314	266	272	244						
16								296	250	258	258	306	286	268	268	236	270	258						
17							258	208	314	260	250	256	256	264	292	292	298							
18								264	254	260	226	260	260	270	258	256	260	252						
19								222	232	276	276	272	272	260	254	E A	284	284						
20									298	252	268	268	268	268	226	250								
21								244	A	360	264	266	244	266	250	270	248	260						
22									260	240	298	258	320	272	282	274	250							
23							232		242	260		C	252	248	262	262	250	260						
24							228	274	278	258	264	234	276	262	286	252	278							
25							A	248	248	266	274	288	262	278	262	258	258							
26								248	314	288	258	270	244	254	254	246								
27								260	242	242	276	290	266	302	260	258								
28							274	296	260	258	266	266	276	270	260	244	252							
29								252	320	332	330	350	328	296	296	250	242							
30							232	242	284	270	252	254	280	262	238									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							16	26	29	29	28	30	30	30	30	29	25	14						
MED							240	248	273	264	270	280	284	294	284	262	266	258						
U Q							274	278	291	287	299	314	318	314	304	292	284	282						
L Q							226	240	245	256	258	256	266	264	260	250	256	252						

SEP. 2020 h'F2 (KM)

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IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 h'F (KM)

135°E MEAN TIME (G.M.T. + 9 H)

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

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	278	234 ^Q	284	286	302	224		204 ^A		216 ^A	184	174		210 ^A	214	214	230	264		232 ^A	252	232	248	258 ^Q	
2	258 ^Q	246 ^Q	282	268	250	258	236	196	196	196	208	178	196	202	202	202		202 ^A	260 ^{E A}	228	282 ^Q	272	262	228	
3	242	272	266	254	232	250	210	208	200	184	176	184	184	184	200	216	206	226	250	242	238	228	250	224	
4	246	246	258	240	240	216	212	184	202		196	184	202	202	186	210	210	210	258	238	252	268 ^Q	240	252	
5	252	272	266	254	260	226		226 ^A	214	214	196	186	198	220	242	216	210	206	234	234	228	254	288	266	
6	262	258	240	240	258	236	204	204		192	202	202	204	206	196	218	198	238	238	232	248	236	240	240	
7	222 ^{E B}	242	252	238	224 ^Q	216	190	200	212	198	188	184	212	224	200	194	200	190	236	258	238	224	224	204	
8	254	182	240	250	232	232	222	222	198	198	226	190	186	188	186	198	218	218	220	248	248	230	230	232	
9	214	252	240	240	228	244	222	196	208	206	194	190	190	190	200	206	196	234	220	220	258	246	240	230	
10	230	230	234	240	216	220	172	174	206	214	196	192		212 ^A	188	214	200	200	256	248	238	210	244	218	
11	242	258	258	240	204	218	188	206	190	202	196	194	174	174	206	206	206	214	248	226	246	226	202	214	
12	248	242	236	230	218	218	186	206	200	194	212	192	192	202	204	216	208	214	244	232	212	212	244	250	
13	250	236	254	242	222	208	210	212	212	214	192	186	200	192	194	194	224	202	240	220	224	240	240	250	
14	228	226	246	246	236	234	214	194	206	206	196		206	206	242	216	220	220	236	208	228	230	240	252	
15	262	236	242	226	252	262	226	224	208		200	200	220	194		208	208	224	268	234	220	220	248		
16	240	240	264	228	238	246	224	200	214	204	194	176	202	202	190	194	238	224	220	244	258	240	228	202	
17	230	232	258	240	246	226	216	194	190	196	190	184	184	184	200	200	222	248	234	246	244	212	212	212	
18	244	252	234	240	228	236	234	208	212	198	190	196	188	196	188	178	196	218	224	212	220	224	224	236	
19	222	254	250	258	242	242	216	196	196	196	194	194	198	200		218	238	234	248	232		220	256		
20	238	204	272	248	216	234	224	236	202	204	196	202	202	194		210	246	234	212	220	230	228 ^Q	228	254	
21	254	242	242	254	220	240	192	196		204	204	196	196	198	214	202	240	240	230	226	226	202	222		
22	238	238	240	240	210	190	200	220	198	198	198	198	198	206	210	202	202	230	258	238	206	196	240	214	
23	252	248	248	248	224	198	198	206	206	230			202	196	186	192	198	242	250	264	234	206	242		
24	252	264	242	250	218	196	196	226	204	204	204	200		194	194	214	188	230	268	252	228	190	260	296	
25	298	280	280	280	248	200	200	214	208	200			214	194	212	212	218	224	214	230	258	242	254	256	
26	242	248	280	270	238	242	216	206	208	200	214	196	182	206	206	190	230	232	242	230	230	248	196	246	
27	270	282	282	232	242	214	236	204	220	202	188	176	198	204	206	208	250	222	210	238	236	210	286	282	
28	258	268	264	264	268	210	240	212	214	218	208	208	194	218	190	220	198	238	232	218	222	222	250 ^Q	266 ^Q	
29	252	276	270	258	248	248	220	224	250	208	212	190	196	202	234	208	206	236	236	262	238	238	256	256	
30	262	262	276	240	212	212	190	190	192	180	202	202	188	176	202	248	250	232		232	250	250	214	252	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	28	30	27	27	27	27	27	30	28	28	29	30	28	30	30	29	30	29	
MED	249	247	256	244	234	226	213	206	206	202	196	192	198	202	200	209	208	225	236	233	237	228	240	248	
U Q	258	262	270	254	248	242	223	214	212	208	204	200	202	206	206	215	223	236	249	248	248	241	250	256	
L Q	238	236	242	240	220	214	197	196	198	196	192	184	188	194	192	199	200	214	224	228	228	216	224	223	

SEP. 2020 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

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SEP. 2020 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							110	100	100	102	102	102	102	100	100	106	106	100							
2							A	108	98	98	A	98	A	98	104	104	104	110							
3							104	100	98	98	A	A	96	86	86	86	98	80							
4							92	92	92	92	A	A	92	A	A	92	92	92							
5							104	104	104	104	104	A	A	A	104	104	102	108							
6							108	104	104	100	100	A	100	100	100	100	114	A							
7							96	118	108	104	104	104	104	104	104	104	118	118							
8							A	A	104	104	104	104	104	104	104	104	110	110							
9							110	104	104	104	104	104	104	104	94	102	102	102							
10							100	108	108	108	108	108	A	100	A	100	100	100							
11							A	108	108	108	108	102	110	110	110	110	110	106							
12							106	110	108	100	100	100	100	100	100	100	100	106							
13							104	110	100	100	100	100	104	104	104	104	106	98							
14							A	98	110	108	106	106	106	106	106	100	104	A							
15							104	106	106	96	106	106	106	94	94	110	104	A							
16							116	104	94	100	100	100	100	98	98	98	98	108							
17							100	96	A	112	92	96	108	108	108	108	108	94							
18							116	106	106	106	96	104	104	104	104	104	98	112							
19							108	108	96	112	106	106	106	104	104	104	104	A							
20							104	100	100	100	100	100	A	94	94	A	110	110							
21							108	108	102	102	102	102	102	92	98	108	108	98							
22							112	108	108	108	108	108	108	96	96	102	96	106							
23							106	A	106	106	104	104	104	90	90	90	110	110							
24							114	114	110	102	102	102	102	94	94	104	A	A							
25							A	104	104	104	104	104	100	100	100	100	100	A							
26							A	100	100	100	100	100	100	100	100	100	104	104							
27							98	98	98	98	98	98	98	98	98	98	98	A							
28							114	108	104	104	104	104	104	104	104	104	104	B							
29							104	A	100	100	100	100	102	102	102	104	112	A							
30							96	114	104	104	102	102	102	102	A	102	112	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							24	27	29	30	27	26	26	28	27	29	29	20							
MED							105	106	104	103	102	102	103	100	100	104	104	106							
U Q							110	108	107	106	104	104	104	104	104	104	110	110							
L Q							102	100	100	100	100	100	100	97	96	100	100	99							

SEP. 2020 h'E (KM)

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SEP. 2020 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	96	96	118	112	112	112	106	106	102	102	102	146	152	172	130	116	108	106	100	100	100	100	100	100
2	B	B	120	114	114	114	108	108	102	102	134	98	98	106	138	116	116	108	106	106	106	92	102	B
3	88	B	98	102	104	104	106	100	104	104	96	88	88	102	134	144	118	114	106	102	98	98	102	102
4	104	B	84	92	B	98	108	108	94	94	94	94	92	92	92	92	92	92	92	92	98	102	102	100
5	92	100	100	B	116	102	112	106	106	106	106	94	94	94	148	130	124	112	B	102	102	102	102	102
6	102	102	94	94	96	96	96	106	106	98	98	98	102	128	96	138	124	122	94	108	108	102	100	92
7	94	94	94	88	B	94	108	102	148	86	92	92	146	146	146	120	114	176	100	108	84	98	98	98
8	96	96	96	96	106	106	104	102	96	96	90	114	108	90	114	106	106	92	92	94	94	88	88	B
9	98	98	94	108	104	104	104	96	124	112	98	96	92	108	104	126	126	108	B	104	104	96	96	96
10	96	B	96	96	96	96	94	102	162	144	124	90	90	132	88	110	104	98	88	96	94	B	74	96
11	B	B	90	90	102	102	104	164	108	152	124	122	102	140	128	124	116	106	104	100	100	100	96	96
12	96	90	90	90	B	100	102	106	102	156	130	122	120	100	116	124	104	94	94	94	94	90	90	90
13	90	124	116	B	98	98	98	92	114	158	138	144	142	124	114	114	118	102	108	108	96	B	96	92
14	B	112	112	104	108	98	92	92	114	114	104	106	106	150	118	118	110	110	104	104	104	104	94	88
15	B	B	100	108	108	108	104	116	118	118	106	106	106	106	98	102	102	94	94	96	96	96	96	96
16	94	122	114	94	94	100	100	114	114	114	114	100	158	108	190	98	152	142	96	96	B	B	96	96
17	90	96	96	B	B	96	96	98	92	94	116	116	140	166	166	122	158	112	96	96	92	98	B	98
18	98	98	94	100	90	108	110	158	96	146	102	144	100	142	128	162	114	124	108	100	100	92	96	96
19	B	B	B	110	110	104	98	98	98	136	110	G	G	106	106	96	108	98	98	112	120	110	110	108
20	108	94	94	94	98	98	128	128	136	114	104	104	100	100	100	102	102	102	102	102	104	104	104	86
21	86	B	94	98	98	98	98	120	108	114	106	102	102	102	104	158	130	124	110	110	B	B	B	88
22	88	94	94	B	94	94	102	142	142	90	108	108	108	106	100	102	128	148	116	112	106	116	104	104
23	100	100	100	100	98	98	98	98	130	120	104	104	98	98	98	98	102	128	110	110	102	124	108	C
24	108	96	96	100	100	100	100	140	132	110	110	110	106	116	98	98	102	104	104	102	B	B	102	132
25	100	100	100	94	94	94	94	134	108	108	108	108	102	102	102	102	102	102	92	92	92	B	92	104
26	124	98	98	98	98	98	92	142	152	112	132	104	104	104	104	112	148	96	96	96	94	94	86	86
27	88	88	100	B	98	98	98	100	118	118	118	104	104	130	122	114	106	98	98	98	98	98	98	92
28	96	100	104	96	96	96	138	92	126	114	114	106	106	134	116	100	130	B	98	92	86	98	B	106
29	B	B	B	B	B	116	116	100	128	118	128	G	114	G	144	144	132	112	112	112	112	112	98	98
30	B	B	B	B	94	B	86	112	110	102	102	102	112	G	106	116	116	108	C	108	104	104	96	96
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	20	27	23	25	29	30	30	30	30	30	28	29	28	30	30	30	29	27	30	27	24	27	27
MED	96	98	96	98	98	98	102	106	112	113	107	104	104	107	114	115	115	108	100	102	100	99	98	96
U Q	100	100	100	104	107	104	108	120	128	118	118	112	113	133	130	124	126	118	106	108	104	104	102	102
L Q	90	95	94	94	96	97	98	100	102	102	102	98	99	102	100	102	104	98	94	96	94	96	96	92

SEP. 2020 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

SEP. 2020 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

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	FQ 31	FQ 21	FF 32	F 3	F 2	F 4	C 5	C 3	C 3	C 2	LC 11	HL 11	HL 11	C 1	C 2	C 3	C 6	F 4	F 4	FF 41	F 1	F 1	F 2		
2			F 2	F 2	F 3	F 4	C 3	C 2	C 3	C 3	HL 11	LC 21	L 1	C 1	HL 21	C 2	C 4	C 4	F 4	F 4	F 3	F 2	F 3		
3	F 1		F 1	F 1	F 2	F 4	C 2	C 4	C 3	C 2	L 3	L 2	LC 11	CL 11	HL 11	HL 22	CL 11	C 3	F 2	F 3	F 2	F 3	F 3	F 3	
4	F 1		F 1	F 1		F 4	C 3	C 3	C 4	L 4	L 2	L 3	C 2	L 2	L 2	LC 21	LC 21	LC 21	F 1	F 1	FQ 31	FQ 31	FQ 21	F 4	
5	F 3	F 1	F 1		F 1	F 1	C 5	C 4	C 2	C 3	C 2	L 2	L 3	L 2	C 1	C 2	CL 22	C 2		F 3	F 3	F 4	F 3	F 8	
6	F 5	F 5	F 2	F 2	F 5	F 2	LC 21	C 2	C 3	C 2	C 2	L 2	LC 21	C 1	LC 21	CL 21	CL 21	L 2	F 1	F 2	F 1	F 1	F 2	F 3	
7	F 2	F 2	F 2	F 2		F 1	C 2	C 4	CL 22	LC 21	LC 21	LC 21	CL 11	FL 11	HL 21	CL 21	CL 21	HL 21	F 1	F 1	F 1	F 3	F 4	F 2	
8	F 4	F 5	F 3	F 2	F 3	F 3	L 5	L 4	LH 21	LH 21	LC 21	C 1	C 2	LC 21	CL 11	CL 21	CL 21	LC 21	FF 21	F 2	F 1	F 1	F 1		
9	F 1	F 1	F 1	F 2	F 2	F 3	C 3	LC 21	CL 21	CL 21	L 2	LC 21	LC 21	CL 11	C 2	C 2	CL 22	CL 31		F 1	F 5	F 1	F 1	F 4	
10	F 2		F 1	F 1	F 1	F 1	LC 11	LC 21	HL 11	HL 22	CL 22	LC 11	L 2	HL 22	L 3	CL 22	C 3	L 6	F 3	FQ 31	FQ 31		F 1	F 1	
11			F 2	F 1	F 1	F 1	C 2	HL 22	C 2	HL 21	CL 21	CL 11	LC 11	HL 11	CL 21	CL 21	CL 21	C 1	F 2	F 3	F 2	F 1	F 1	F 1	
12	F 3	F 2	F 2	F 1		F 1	LC 11	C 2	C 2	HL 21	CL 22	CL 21	C 1	C 2	C 2	C 2	C 11	LC 4	F 3	F 4	F 1	F 3	F 4	F 4	
13	FQ 41	F 1	F 2		F 1	F 1	LC 21	LC 22	C 2	H 2	H 2	H 2	HL 21	CL 21	C 1	C 21	CL 22	C 3	F 3	F 3	F 4		F 5	F 1	
14		F 1	F 1	F 1	F 3	F 1	L 5	L 4	C 2	C 2	CL 11	C 3	C 2	C 2	C 3	C 3	C 3	C 3	F 2	F 1	F 1	FF 11	F 1	F 1	
15			F 2	FF 21	F 5	F 3	C 2	C 3	C 4	C 3	C 3	C 2	C 2	C 2	C 3	C 3	LC 21	L 3	F 5	FQ 51	F 2	F 3	F 3	F 3	
16	F 1	F 1	F 2	F 5	F 3	F 2	LC 21	CL 33	CL 21	CL 21	CL 21	CL 11	CL 11	CL 11	C 1	C 1	C 1	H 2	F 2	F 2			F 3	F 1	
17	F 1	F 2	F 1			F 1	LC 11	LC 21	L 3	LQ 21	CL 22	CL 11	HL 11	HL 11	HL 11	C 11	HL 21	CL 5	F 6	F 6	F 5	F 1		F 1	
18	F 1	F 1	F 1	F 1	F 1	F 2	LC 11	CL 21	LC 21	HL 11	CL 11	HL 11	LC 11	HL 11	CL 21	HL 11	C 2	C 2	F 1	F 1	F 1	F 1	F 1	F 1	
19				F 1	F 1	F 1	LC 11	CL 21	CL 21	HL 21	C 2			C 1	C 3	C 4	C 7	C 4	F 2	F 6	F 3	F 5	F 3	F 2	
20	F 2	F 8	F 2	F 3	F 3	F 4	CL 22	C 2	C 2	C 2	C 2	C 3	L 3	C 2	C 4	A 3	L 2	LC 11	F 2	F 2	F 1	F 1	F 1	FQ 21	
21	F 2		F 1	F 2	F 2	F 2	LC 11	C 2	C 5	C 5	C 3	C 4	C 2	C 3	C 2	C 2	H 1	H 21	CL 3	F 3	F 3			F 1	
22	F 1	F 1	F 1		F 1	F 1	LC 11	C 2	HL 21	LC 11	C 2	C 2	C 2	C 3	C 2	C 2	C 2	C HL	F 4	F 3	F 3	F 1	FQ 51	FQ 61	
23	FQ 31	F 2	F 1	F 2	F 2	F 2	F 3	F 4	FL 21	CL 31	CL 21	CQ 31	CQ 21	C 2	C 2	C 2	C 2	C 3	F 3	F 5	FQ 31	LL 11	F 1		
24	F 1	F 2	F 2	F 1	F 1	F 1	LC 11	H 2	HL 21	C 2	C 2	C 1	C 3	C 2	C 2	C 2	L 2	L 2	F 1	F 1			F 1	F 2	
25	F 2	F 2	F 1	F 2	F 1	F 1	L 5	C 2	C 2	C 2	C 2	C 2	C 2	C 2	C 3	C 3	C 3	C 2	F 2	F 2	F 4		F 1	F 1	
26	F 1	F 3	F 3	F 4	F 4	F 2	L 3	C 2	H 2	C 1	C 2	C 3	C 2	C 5	C 3	C 2	C 2	LC 11	F 2	F 3	F 3	F 1	F 1	F 2	
27	F 1	F 1	F 1		F 1	F 5	LC 21	LC 11	CL 21	C 2	C 2	C 2	C 2	C 2	C 2	C 2	CQ 52	AQ 62	F 2	F 2	F 4	F 2	F 1	F 1	
28	F 4	F 1	F 1	F 2	F 1	F 1	C 2	LC 41	C 2	C 2	C 2	C 2	C 1	CL 11	C 2	C 2	C 3		FF 31	F 1	F 1	F 1		F 1	
29					F 2		C 2	L 3	C 3	C 2	C 1		CL 11		H 1	C 1	C 1	L 4	F 3	F 4	F 4	F 3	F 6	F 4	
30				F 1			LC 11	C 1	C 2	C 2	C 2	C 2	C 2		L 3	C 3	C 3	L 3		F 5	F 4	F 3	F 1	F 1	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
U Q																									
L Q																									

SEP. 2020 TYPES OF Es

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SEP. 2020 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 42	X 39	X 40	X 38	X 35																A		40	40	40	
2	X 36	X 36	X 36	X 39	X 34																		45	45	44	
3	X 37	X 34	X 36	X 36	X 37																	X 56	X 45	X 37	X 38	
4	X 36	X 35	X 33	X 35	X 33						C	C					C					X 56	X 41	X 40	X 39	
5	X 42	X 39	X 36	X 37	X 38																	X 52	X 53	X 48	X 45	
6	X 41	X 42	X 40	X 39	X 38	39																X 58	X 50	X 48	X 45	
7	X 44	X 42	X 38	X 38	X 35																	X 58	X 61	X 43	X 40	
8	X 39	X 39	X 39	X 38	X 40																	X 51	X 48	X 46	X 48	
9	X 39	X 37	X 38	X 39	X 38																	X 51	X 44	X 43	X 43	
10	X 40	X 37	X 34	X 31	X 30																	X 58	C	X 38	X 38	
11	X 36	X 34	X 33	X 33	X 35																	X 65	X 50	X 46	X 43	
12	X 40	X 39	X 38	X 38	X 31																X 76	X 52	X 49	X 47	X 41	
13	X 41	X 40	X 40	X 38	X 40																	X 61	X 52	X 44	X 42	
14	X 41	X 41	X 40	X 40	X 39																	X 55	C	X 38	X 38	
15	X 38	X 38	X 38	X 36	X 32																	X 64	X 50	X 48	X 43	
16	X 42	X 38	X 39	X 38	X 37												C				X 65	X 58	C	X 51	X 40	
17	X 38	X 36	X 35	X 34	X 32																	X 66	X 55	X 44	X 36	
18	X 35	X 35	X 35	X 35	X 33																	X 56	X 45	C	C	
19	X 38	X 37	X 36	X 34	X 31																	X 49	X 42	X 33	X 35	
20	X 36	X 37	X 35	X 35	X 32																	C	X 38	X 38	X 36	
21	X 39	X 36	X 36	C	X 33											C	C				C	X 52	C	37	C	
22	X 35	X 36	X 36	C	C							C										X 55	X 44	X 39	C	
23	X 38	C	X 37	X 36	X 36																X 66	X 59	X 50	X 44	43	
24	45	40	41	41	41	C		C														X 78	X 50	X 41	X 32	
25	X 34	X 36	X 35	X 36	X 36	C		C														X 36	X 37	X 45	X 38	
26	X 38	X 38	X 38	X 37	X 36																	X 76	X 59	X 36	X 41	X 41
27	X 36	X 38	X 38	X 40	X 36																	X 33	X 33	X 34	X 36	
28	X 36	X 38	X 38	X 36	X 34																	X 51	X 39	A	A	
29	X 43	X 44	X 43	X 41	X 46																	X 53	X 50	X 48	X 45	
30	X 48	X 44	X 41	X 40	X 46																	X 40	A	39	X 35	
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	29	30	28	29	1															4	27	25	28	26	
MED	X 38	X 38	X 38	X 38	X 36	39															X 71	X 56	X 45	X 43	X 40	
U Q	X 41	X 40	X 39	X 39	X 38																X 76	X 59	X 50	X 46	X 43	
L Q	X 36	X 36	X 36	X 36	X 33																X 66	X 51	X 40	X 38	X 38	

SEP. 2020 f_{XI} (0.1MHz)

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SEP. 2020 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	36	33	34	32	29	27	35	A	48	48	44	52	52	48	51	46	50	52	55	58	A	F	F	F	
2	30	30	30	F	28	31	39	55	A	49	54	53	47	50	54	48	48	42	36	43	41	39	F	F	
3	31	28	F	30	31	32	42	46	46	52	A	52	50	52	48	44	45	48	51	56	50	39	31	32	
4	30	29	27	30	27	28	43	44	52	52	C	C	47	51	46	C	50	47	53	64	50	35	34	33	
5	F	33	30	32	32	30	38	52	51	58	53	49	49	51	52	60	59	48	49	53	46	47	42	39	
6	35	36	34	33	F	F	39	48	51	55	A	52	49	52	54	49	53	52	50	57	52	44	42	F	
7	F	F	F	32	29	29	42	51	50	51	48	57	58	56	60	48	47	46	45	51	52	55	37	34	
8	33	33	33	32	34	34	41	47	52	49	50	54	54	50	55	55	55	49	51	51	45	42	40	F	
9	33	31	32	33	32	26	42	46	50	45	54	54	53	51	52	55	54	47	47	51	45	38	F	F	
10	F	31	28	25	24	24	41	43	49	52	51	52	52	56	55	51	51	50	50	56	52	C	32	32	
11	30	28	27	27	29	25	38	45	55	50	53	50	49	47	47	50	50	48	59	67	59	44	40	37	
12	34	33	32	32	25	26	40	48	55	60	51	51	51	53	52	54	52	59	70	70	46	43	41	35	
13	35	34	34	32	34	31	44	46	54	56	60	54	49	51	49	51	52	59	72	60	55	46	38	36	
14	35	35	34	34	33	32	44	52	52	58	53	54	54	57	54	53	58	74	82	80	49	C	32	32	
15	32	32	32	30	26	26	41	62	55	54	54	50	58	56	59	59	64	58	68	76	58	44	42	37	
16	36	32	33	32	31	32	44	54	63	70	56	58	56	55	56	53	C	45	56	59	52	C	45	34	
17	32	30	29	28	26	26	39	56	56	61	51	52	50	50	54	47	47	48	59	62	60	48	38	30	
18	29	29	29	29	27	27	37	54	63	63	64	53	51	47	52	46	46	55	59	53	50	39	C	C	
19	32	31	30	28	25	24	40	52	52	51	45	58	53	52	A	52	49	A	59	54	43	36	27	29	
20	30	31	29	29	26	26	37	52	52	52	56	55	A	55	55	50	45	54	55	54	C	32	32	30	
21	33	30	30	C	27	28	38	46	54	55	56	58	51	50	C	C	46	46	51	C	46	C	F	C	
22	29	30	30	C	C	25	40	44	46	52	52	C	54	55	56	54	56	64	66	57	49	38	33	C	
23	32	C	32	31	30	28	42	47	52	55	52	62	61	65	51	C	51	55	63	60	53	44	38	F	
24	F	34	35	35	35	C	41	C	68	73	78	60	60	55	55	C	58	70	70	60	72	44	35	26	
25	28	30	29	30	30	C	42	49	C	68	60	C	60	62	51	50	57	66	80	44	30	31	F	32	
26	32	32	32	31	30	28	44	54	58	68	70	68	61	64	65	52	59	59	68	70	53	30	35	35	
27	30	32	32	34	30	30	51	55	69	68	64	66	56	54	56	59	63	76	83	52	27	28	28	30	
28	30	32	32	30	28	29	A	62	69	58	64	64	60	69	66	61	62	64	64	60	45	33	A	A	
29	37	38	37	35	40	29	44	63	66	70	68	72	71	58	64	64	60	54	59	52	47	44	42	39	
30	F	38	35	36	40	18	41	56	59	61	59	66	59	58	54	52	56	66	58	39	34	A	F	29	
31																									
	00	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	28	28	27	28	27	29	28	28	30	27	27	29	30	28	26	29	29	30	29	28	24	22	20	
MED	32	32	32	32	30	28	41	52	53	55	54	54	53	54	54	52	52	54	59	57	50	40	38	32	
U Q	34	33	34	33	32	30	42	54	58	61	60	60	58	56	56	55	58	62	68	61	52	44	41	36	
L Q	30	30	30	30	27	26	39	46	51	52	51	52	50	51	52	49	48	48	51	52	45	36	32	30	

SEP. 2020 foF2 (0.1MHz)

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SEP. 2020 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

SEP. 2020 foF1 (0.01MHz)

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SEP. 2020 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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	R	A	U	A	U	R	U	R	A	A	A	A		
2						B	A	A	A	A	A	R	A	R	A	A	A	A	A	A	A	A	A		
3						B	U	A	A	A	U	A	A	R	R	U	A	U	A	A	A	A	A	B	
4						B	A	U	R	A	A	C	C	U	R	U	R	R	C	A	A	A	A	B	
5						B	U	A	A	A	A	A	A	R	A	A	R	U	A	U	A	A	A	B	
6						B	U	A	U	A	A	A	A	U	A	A	A	U	A	U	A	A	B	B	
7						B	U	A	A	A	A	A	R	U	A	U	A	U	R	U	R	A	B	B	
8						B	A	A	A	A	U	A	R	U	A	R	A	U	R	U	R	A	A	B	
9						B	A	A	A	A	A	A	A	U	R	A	A	A	A	A	A	A	A	B	
10						B	A	U	R	U	R	R	A	U	A	U	R	R	R	U	R	U	R	B	B
11						B	U	A	U	R	R	U	A	U	A	U	A	A	A	A	A	B	B		
12						B	U	A	A	A	A	U	R	U	R	U	R	R	A	U	R	B			
13						B	U	R	U	R	U	R	A	U	A	R	R	A	A	A	B	B			
14						B	A	A	A	U	R	A	U	R	A	A	A	A	A	B	B				
15						B	A	A	A	A	U	A	A	A	A	A	A	A	A	B	B				
16						B	A	A	A	A	A	A	R	R	U	R	U	R	C	A	B				
17						B	A	A	U	R	U	A	U	R	U	R	A	A	R	A	A	B	B		
18						B	U	R	U	R	U	R	R	R	R	U	A	U	R	U	R	B	B		
19						B	U	A	A	A	U	A	U	R	A	A	A	A	A	B	B				
20						B	A	A	A	A	A	A	A	A	A	A	A	U	A	U	A	B	B		
21						B	A	U	A	A	A	A	A	A	A	C	C	A	A	B	C				
22						B	U	A	U	A	A	A	C	U	R	A	A	A	A	B	B				
23						B	U	R	U	A	A	A	R	U	R	U	R	C	A	A	B				
24						C	U	R	C	A	A	A	A	A	U	R	C	A	A	B	B				
25						C	B	U	A	C	A	A	C	A	A	U	U	R	A	A	A	B			
26						B	A	U	R	U	R	U	R	U	R	A	U	A	U	A	B				
27						B	A	A	U	A	A	R	U	R	A	A	A	A	A	B	B				
28						B	A	A	A	A	U	R	R	A	A	R	A	U	R	A	B	B			
29						B	A	A	U	R	U	R	R	R	A	U	R	U	A	A	B	B			
30						B	U	R	A	A	A	A	A	A	A	A	A	A	U	R	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							14	12	9	10	11	10	9	11	13	11	11	8							
MED							U	U	A	U	R	U	R	U	R	U	R	U	U						
U Q							196	252	296	312	324	338	344	324	312	292	252	210							
L Q							208	260	302	320	340	348	358	332	320	308	260	224							
							U	A	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	
							188	240	282	304	320	336	332	320	302	276	244	200							

SEP. 2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2020 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	23		J A	J A	J A	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
2	J A	24	22	E B	J A	J A	J A	J A	J A	J A	J A		G	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A
3	J A	23	25	20	J A	J A		G	J A	J A	J A	J A		G		J A	J A	J A	J A	E B	J A	J A	J A	J A
4	24	23	21	21	19	19	23		G	J A	J A		C	C	G	G	C	J A	J A	J A	J A	J A	J A	J A
5	J A	J A	J A	J A		E B		J A	J A	J A		J A		G	J A	J A	G		J A	J A	J A	J A	J A	J A
6	J A	30	20	E B	J A	22	24	25	30	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	J A
7	J A	J A	J A	E B	E B	E B	E B	27	28	32	35	37		G		G		J A	J A	J A	J A	J A	J A	J A
8	21	E B	E B	E B	E B	J A		26	30	35	44	41		G		J A	J A	J A	J A	J A	J A	J A	J A	J A
9	20	20	16	E B	E B	E B		J A	34	32	39	36	36	34		G	J A	J A	J A	J A	J A	J A	J A	J A
10	25	E B	16	24	E B	J A		26	30		G	G		J A		G	G		G	E B	E B	E B	E B	E B
11	E B	E B	E B	E B		E B		24	28		G	G		41	38	37	36	35	33	J A	J A	E B	E B	J A
12	21	24	21	21	E B	E B		G		J A		G		G		G	G	J A	J A	J A	J A	J A	J A	E B
13	E B	E B	E B	E B	E B	E B		G	G		J A		G		G		G		J A	J A	J A	J A	J A	E B
14	20	21	24	J A	J A	J A	J A	J A	J A	J A	J A	J A		G		J A	J A	J A	J A	J A	J A	J A	J A	J A
15	24	E B	16	19	19	20	20	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
16	E B	E B	E B	E B	E B	E B		24	29	32	34	37	39		G	G	G		J A	J A	J A	J A	J A	J A
17	E B	16	14	15	21	16	16	27	29		G		G		G		J A	J A	J A	J A	J A	J A	J A	J A
18	J A	J A	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
19	E B	16	21	E B	E B	E B	E B		24	30	33	34		G		J A	J A	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		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
21	J A	E B	E B	E B	E B	E B		24	30	57	44	42	36	44	35		C	C		J A	J A	J A	J A	J A
22	J A	E B	16	21		C	E B	16	22	32	37	38	38		C	G	J A	J A	J A	J A	J A	J A	J A	J A
23	J A	26		23	23	J A	J A		G	28	34	36	36		G		G	G	C	J A	J A	J A	J A	J A
24	J A	J A	E B	E B	J A	J A		G	C	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
25	22	E B	E B	J A	J A	C		20	28		C	J A	C	J A	36	34		J A	J A	J A	J A	J A	J A	J A
26	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
27	22	E B	E B	J A	J A	J A	J A		G	G		G		G		J A	J A	J A	J A	J A	J A	J A	J A	J A
28	E B	E B	16	22	J A	22	23	J A	J A	38	32	35		G	G	J A	50	39		G	J A	J A	J A	J A
29	J A	43	23	23	E B	E B		J A		G	G	G	G	G	G	J A	45		J A	J A	J A	J A	J A	J A
30	J A	J A	24	24	22	21	20		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
31																								
	00	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	28	29	28	30	29	29	30	29	27	30	30	29	26	29	30	30	29	29	26	29	27
MED	24	20	20	22	20	20	24	30	33	36	37	35	36	36	34	32	32	J A	J A	J A	J A	J A	J A	J A
U Q	J A	J A	23	25	26	24	27	34	41	39	42	39	40	38	38	36	40	37	40	36	42	30	34	27
L Q	E B	E B	E B	E B	E B	E B		G		G	G	G	G	G	G	G		E B			E B		E B	E B

SEP. 2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2020 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 B 16	E B 19	E B 16	E B 16	E B 16	E B 16		A A 24 66	40	32	35	G			G	G				E B A A 16 101	21	22	22								
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 21	26	32	A A 80	44	36	G		G			32	26	18	22	17	E B 16	19	E B 16							
3	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16		G	26	27	33	A A 89	35		G	G				E B E B 16 16	16	22	E B E B 16 16								
4	E B 16	E B 16	E B 15	E B 15	E B 16	E B 16		G		35	32	C	C	G	G	G	C			29	45	19	19	16	E B E B 16 15	E B E B 15 14					
5	E B 16	E B 15	E B 18	E B 15	E B 15	E B 16	22	30	32	41	35	35		G			G								E B E B 16 15	E B E B 18 18					
6	E B 16	E B 16	E B 16	E B 20	E B 16	E B 16	22	27	34	34	A A 85	40	37	37	32	30	27	24	E B E B 16 16	E B E B 16 16	16	16	18	E B 16							
7	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	24	28	31	34	36		G		G	G			E B E B 16 16	E B E B 16 16	15	15	16	E B E B 16 16							
8	E B 16	E B 16	E B 15	E B 15	E B 14	E B 16	23	29	32	37	38		G		G	G			E B E B 16 16	E B E B 16 16	20	16	16	E B E B 16 16							
9	E B 16	E B 16	E B 16	E B 14	E B 16	E B 16	22	28	31	37	36	36	34		G										E B 15	E B 17	E B 15				
10	E B 15	E B 16	E B 16	E B 16	E B 14	E B 17	24	28		G	G				G	G	G			E B E B 15 15	E B E B 16 16				E B E B 16 16						
11	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	23	27		G	G	40	38	37	35	33	32	32	26	E B E B 16 18	E B E B 16 16	16	16	16	E B E B 16 16						
12	E B 15	E B 15	E B 16	E B 15	E B 16	E B 16		G	30	30	32		G		G	G			G	E B 16		E B E B 15 16	E B E B 16 24								
13	E B 16	E B 20	E B 15	E B 15	E B 20	E B 16		G		30	36	35	36		G	G				E B E B 16 16	E B E B 16 16	15	15	16	E B E B 16 16						
14	E B 16	E B 16	E B 16	E B 22	E B 16	E B 16	23	30	32		G	G			G	G									E B 16	C	E B 24	E B 15			
15	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	20	28	38	34	36	35	37	36	36	46	39	23	20	23	E B E B 15 15	E B E B 15 15	14								
16	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	22	27	30	32	35	35		G	G	G	G	C								C	E B E B 16 16				
17	E B 16	E B 14	E B 15	E B 16	E B 16	E B 16	21	26		G	G				G					E B 15	E B E B 16 18	E B E B 16 17	17	24							
18	E B 15	E B 16	E B 16	E B 16	E B 15	E B 17		G	G	G	G	G	G	G	G					E B E B 16 16	E B E B 15 16	15	16			C	C				
19	E B 16	E B 16	E B 16	E B 15	E B 15	E B 15	22	28	31	32		G	G		G	A A 36 62	35	35	A A 80	34	25	28	E B E B 16 16	E B E B 16 15							
20	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	21	29	44	40	46	46	A A 98	41	38	33	30	28	26	21		C	E B E B 15 16	E B E B 16 16							
21	E B 16	E B 16	E B 16		C	E B E B 16 16	22	27	44	40	38	34	35	33		C	C									C	C				
22	E B 16	E B 16	E B 18		C	E B 16	21	28	36	36	36		C		G					E B E B 15 18	E B E B 17 16	E B E B 16 16					C				
23	E B 16		C	E B 17	E B 16		G	27	32	34	33		G		G	G	C										E B 24	E B 23	E B 23	E B 16	
24	E B 15	E B 15	E B 15	E B 15	E B 16		G			31	34	35	36	36	36												E B 16	E B 19	E B 19	E B 15	
25	E B 15	E B 15	E B 15	E B 16	22		C										G														
26	22	20	20	22	20	E B 16	22	29		G	G		G	G							E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	
27	E B 16	E B 17	E B 15	E B 17	22	21	22	26	31	32		G	G		G					E B E B 16 15	E B E B 16 16	E B E B 16 16	E B E B 16 16	E B E B 16 16	E B E B 16 16	E B E B 16 16	E B E B 16 16	E B E B 16 16	E B E B 16 16		
28	E B 16	E B 16	E B 16	24	E B 15	E B 16	A A 78	33	29	33		G	G		G					G	23	44	29	29	18	A A 49	A A 66				
29		E B 23	E B 16	E B 16	E B 16	E B 16	20	26		G	G	G	G		G												E B E B 16 16	E B E B 16 18			
30		E B 17	E B 15	E B 16	E B 16	E B 16		G	28	30	35	40	36	38	33	39	32	25		E B 16	E B 24	22	A A 41	21	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	29	30	28	29	28	30	29	29	30	29	27	30	30	29	26	29	30	30	29	29	26	29	27							
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	28	31	33	35	34	34	33	33	32	29	24	18	18	E B 16	E B 16	E B 16	E B 16							
U Q	E B 16	E B 16	E B 16	16	16	16	23	29	34	35	37	35	38	36	35	32	32	28	22	22	22	19	19	18							
L Q	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	G	26	G	G	G	G	G	G	G	G				E B 16	E B 16	E B 16	E B 16								

SEP. 2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2020 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

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

SEP. 2020 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2020 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	322	317	321	313	347	312	328	A	344	332	314	283	268	274	284	305	327	330	337	363	A	F	F	F
2	303	300	317	F	341	335	335	381	A	335	321	279	295	309	288	322	341	351	328	312	276	292	F	F
3	306	311	F	313	332	334	360	357	284	362	A	248	318	316	319	271	309	333	338	362	357	337	275	314
4	323	316	310	305	342	322	366	365	376	305	C	C	326	321	310	C	329	335	330	358	387	331	303	307
5	F	311	311	314	364	351	375	369	307	363	366	360	319	315	311	333	350	346	342	336	308	324	312	330
6	298	319	328	324	F	F	366	351	367	368	A	327	348	335	357	333	349	362	345	347	356	306	322	F
7	F	F	F	344	368	366	372	370	367	359	316	326	355	340	356	337	331	353	333	321	338	366	334	320
8	319	321	325	318	321	354	351	369	337	384	340	363	358	324	329	339	350	346	347	348	334	294	286	F
9	366	325	317	312	316	331	361	358	384	310	353	302	333	313	328	338	341	358	346	329	365	313	F	F
10	F	315	309	328	313	353	384	376	335	378	333	323	324	331	342	334	339	343	320	338	361	C	316	335
11	339	342	331	343	399	342	383	362	387	351	347	320	341	337	313	338	342	328	327	345	382	327	332	320
12	329	336	329	369	367	329	360	363	355	398	370	342	334	324	342	337	327	333	341	370	335	355	322	336
13	320	309	308	312	348	338	364	358	363	354	377	367	331	333	320	332	334	333	353	352	368	350	317	343
14	326	332	326	345	354	335	367	363	373	367	341	359	312	356	303	298	321	321	344	378	383	C	309	303
15	303	326	325	342	332	326	367	398	394	382	354	312	340	317	332	342	342	310	327	363	358	312	324	325
16	334	319	326	344	326	330	373	350	357	342	357	349	362	367	346	357	C	316	319	342	302	C	368	328
17	343	328	323	352	329	341	362	358	376	380	371	385	325	338	356	337	337	326	328	336	370	320	341	340
18	320	331	349	358	331	333	337	362	378	382	393	368	331	337	354	336	323	344	352	361	373	329	C	C
19	318	323	331	345	330	324	390	381	380	396	403	371	358	341	A	344	335	A	358	367	351	364	330	311
20	320	315	329	344	330	338	374	366	372	388	362	367	A	367	351	353	321	362	358	368	C	319	304	295
21	318	340	340	C	327	342	381	373	409	372	373	372	364	330	C	C	389	346	348	C	344	C	F	C
22	319	310	310	C	C	315	412	397	388	376	377	C	338	347	338	325	346	359	364	342	376	336	317	C
23	329	C	304	323	345	334	399	408	349	371	362	351	346	367	373	C	332	332	347	342	367	335	312	F
24	F	303	309	343	360	C	373	C	350	350	380	371	374	330	330	C	331	352	347	296	383	338	362	299
25	291	304	300	322	330	C	358	356	C	363	388	C	367	354	336	329	357	347	385	367	290	294	F	302
26	322	305	295	330	342	337	374	379	353	381	359	356	342	346	363	335	346	346	327	359	396	294	307	325
27	287	302	319	329	354	341	373	379	374	381	368	357	359	308	343	351	340	350	379	393	302	303	300	293
28	309	336	321	321	316	319	A	350	388	332	361	364	336	355	352	362	353	350	341	373	372	305	A	A
29	298	304	297	286	376	304	343	356	331	332	315	344	350	325	344	349	373	344	360	344	329	299	323	299
30	F	305	284	313	426	316	367	357	360	369	381	365	350	356	339	341	333	359	362	281	314	A	F	294
31																								
	00	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	28	28	27	28	27	29	28	28	30	27	27	29	30	28	26	29	29	30	29	28	24	22	20
MED	320	316	320	328	342	334	367	364	367	368	362	356	340	334	338	337	339	346	344	348	358	322	317	317
U Q	328	327	327	344	357	341	374	378	379	381	377	367	356	347	352	342	348	352	353	365	372	336	330	329
L Q	304	307	309	313	330	324	360	358	350	350	341	323	326	321	320	332	330	332	330	337	332	304	307	300

SEP. 2020 M(3000)F2 (0.01)

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SEP. 2020 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	A	U	L	U	L	U	L	U	L	U	L	A					
2						A	A	A	A	A	U	L	U	L	U	L	U	L	A	A	A	A			
3								L	L	U	L	A	U	L	U	L	U	L	A						
4								L	L	U	L	C	C	U	L	U	L	C	U	L	A	A			
5									L	U	L	A	U	L	U	L	A	U	L	L	L				
6							A					A	U	L	U	L	U	L	L						
7								L	U	L	U	L	U	L	A	U	L	U	L						
8							A	L	A	U	L	U	L	A	U	L	A	U	L	L	A	A			
9									L	U	L	U	L	U	L	U	L	L	A	A	A				
10									U	L	U	L	U	L	U	L	U	L	L						
11								L	U	L	U	L	U	L	U	L	U	L	U	L					
12								L	U	L	U	L	A	U	L	U	L	U	L	L					
13							L	L	U	L	U	L	U	L	U	L	U	L	L						
14									L	U	L	U	L	U	L	U	L	A	L						
15								L	A	U	L	U	L	U	L	A	A								
16								L	U	L	U	L	U	L	U	L	U	L	C	L					
17								L	A	U	L	U	L	U	L	U	L		L						
18								L	U	L	U	L	U	L	U	L	U	L	L						
19								A	A	A	A	A	A	A	A	U	L	A							
20																U	L								
21									A	A	U	L	U	L	U	L	C	C						C	
22									U	L	U	L	C	U	L	A	U	L	L	L					
23						A			L	U	L	U	L	U	L	L	C	L	L						
24						C		C	U	L	U	L	U	L	U	L	C	L	A						
25						C			C	U	L	A	C	A	U	L	L	L							
26									L	U	L	U	L	U	L	U	L	L							
27						A			L	U	L	U	L	U	L	U	L	L							
28							A		L	U	L	U	L	A	U	L	L	L	A	A					
29								L	U	L	U	L	U	L	A	L	L								
30								L	L	U	L	U	L	U	L	A	L	L						A	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT									15	21	23	25	22	24	21	15	10	2							
MED									401	412	420	418	412	417	395	390	372	357							
U Q									417	426	436	430	436	424	413	392	375								
L Q									390	400	401	408	401	400	384	382	365								

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SEP. 2020 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								A	282	304	328	388	388	404	340	382	288	288	232					
2					E A	270	266	224	A	E A	312	338	398	398	354	368	340	268	236	236	256			
3							276	260	394	260		A	424	340	340	332	414	356	284					
4							248	260	238	312		C	C	344	324	370		C	E A	292	330	244		
5								240	292	256	246	280	R	328	336	342	284	258	278					
6							220		262	236		A	298	320	310	282	326	276	248					
7								248	268	268	364	298	262	278	258	308	308							
8							238	264	280	244	298	258	276	336	306	276	248	246	E A	228				
9									234	388	266	382	308	328	312	272	272	250	244	244				
10									300	252	320	322	308	298	298	312	288	266						
11								266	230	276	288	324	296	320	348	296	290	306						
12								258	258	212	268	290	302	324	294	284	302	268						
13							228	258	248	260	246	254	322	306	340	310	284	270						
14								244	240	286	270	316	254	324	352	296	252							
15								218	218	248	268	350	298	298	292	268	254							
16								254	254	232	250	274	260	260	272	266		C	292					
17								246	218	216	264	244	316	300	256			288						
18								254	242	228	228	266	292		292	292	324	256						
19								254	246	232		260	266	286		A	262	280		A				
20								E A	238	250	228	268	E A	238	A	268	268	268		244				
21									242	250	250	230	270	336			C	C				C		
22										252	248		C	308	264	294	292	268						
23					E A	290			308	254	254	258	268	250	260		C	270	272					
24					C			C	250	250		234	234	314	294		C	280	236					
25					C				C	236	220		C	262	262	282	292	266						
26									272	238	238	250	250	264	234		270							
27					E A	274			248	230	234	244	260	284	276	258								
28						A			218	252	252	252	278	248	260	260	246	230	E A	248				
29								248	280	240	304	262	260	306	250	250								
30								248	244	244	248	242	274	254	266	266	262			E A	290			
31																								
	00	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	6	17	27	30	25	27	29	29	28	24	24	20	6	3				
MED					E A	274	243	254	250	248	264	266	296	300	293	288	278	264	237	250				
U Q					E A	290	266	259	280	260	293	322	318	326	328	311	291	286	244	290				
L Q					E A	270	228	243	242	236	247	250	264	264	267	267	267	247	232	244				

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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 234	B 260	A 250	B 266	B 218	B 278	B 228		A	A	176	204	186	218	194	194	206	E 232	A 232	A	192		A	E 290	A 318	A 296				
2	E 288	B 266	B 252	E 226	B 226		A	A	A	A	192	188	188	206	200		A	A	A	A	E 282	A 258	B 306	E 226						
3	E 242	B 256	B 256	B 240	E 250	B 238	194	194	194	192		A	192	180	174	188	188	200		A	234	210	202	224	E 282	B 234				
4	E 254	B 254	B 254	B 254	B 240	B 246	214	206	202	180		C	C	180	180	184		C	196		A	A	206	186	216	E 254	B 252			
5	E 252	B 256	B 292	A 248	E 208	B 226	214	214	210		A	188	200	200		192	210	214	204	232	222	E 230	A 230	B 230	B 240					
6	E 268	B 238	B 232	B 250	A 214	B 220		A	200	206	186		A	A	210	194	196	196	204	218	218	212	206	E 242	B 258	B 246				
7	E 240	B 254	B 248	B 214	B 196	B 210	210	210	194	196	196	198	196		A	192	184	182	214	E 236	B 236	210	210	200	238					
8	E 238	B 244	B 248	B 248	B 246	B 206		A	196	194		212	186		A	194	194	192		A	A	208	E 232	B 280	A 254	B 246				
9	E 206	B 214	B 246	B 234	B 234	B 246	204	204	190	192	178	194	194	246	190	190	190			A	A	A	208	228	E 242	B 242				
10	E 234	B 236	B 236	B 236	B 244	B 256	210	198	198	196	188	182	216	184	184	206	204	208	226	212	196		C	E 240	B 244					
11	E 230	B 238	B 246	B 226	B 186	B 224	206	218	204	192	204	204	194	192	192	200	212	212	232	212	190	210	220	238						
12	E 230	B 242	B 250	B 212	B 178	B 250	212	206	202	190	186	186		A	182	214	182	E 242	A	210	210	202	198	204	E 228	B 244				
13	E 228	B 260	B 254	B 254	B 224	B 220	190	188	188	188	206	206	196	194	194	194	202	216	216	210	192	198	224	216						
14	E 204	B 224	B 242	B 250	B 212	B 236	204	212	194	188	188	188	188	188	196	218		A	202	208	192	182		C	E 278	B 282				
15	E 282	B 244	B 236	B 212	B 226	B 262	198	192		A	192	192	194	194	194	194		A	A	216	236	206	204	E 212	B 218	B 218				
16	E 214	B 240	B 240	B 222	B 238	B 250	220	198	198	192	180	180	182	184	184	198		C	206	228	226	E 266		C	194	210				
17	E 208	B 230	B 248	B 240	B 250	B 234	210	202		A	188	188	188	188	188	186	210	220	212	E 230	B 222	206	E 206	B 194	E 278					
18	E 232	B 232	B 236	B 234	B 234	B 236	206	208	190	190	190	192	186	180	212	204	204	220	202	194	194	208		C		C				
19	E 256	B 256	B 244	B 214	B 204	B 252	196	204	202	194	188	188	190	202		A	A	A	A	218	204	E 234	A 198	B 224	B 248					
20	E 260	B 256	B 248	B 218	B 236	B 236	208		A	A	A	A	A	A	A		196	208		A	208	208		C	E 250	B 262	B 262			
21	E 234	B 230	B 240		C	B 260	244	200	200		A	A	200	172	182	174		C	C	210	210	210	214		C	218	C			
22	E 248	B 248	B 256		C	B 238	200	200	202	204	204		178		204	204	210	216	204	212	190	206	228		E	B	C			
23	E 258		C	B 276	B 252	B 214		A	192	204	204	204	190	188	188	190	208		C	208	220	220	212		E	A	A	B		
24	E 292	B 274	B 262	B 216	200		C	210		C	200	202	198	198	204	210	178		C	206		A	E	A	232	232	198	218	208	208
25	E 292	B 292	B 292	B 266	B 264		C	196	196		196				184	192	196	214	226	198	206	E 300	A 322	A 236	A 244					
26	E 252	A 274	A 294	A 282	A 234	216	208	222	194	194	194	214	186	186	190	210	210	214	214	206	180	E 248	B 266	B 236						
27	E 294	B 278	B 254	B 254	B 240		A	206	206	206	198	198	186	204	194	194	232	232	212	196	180	E 230	B 242	B 268	B 282					
28	E 278	B 240	B 248	B 284	B 262	B 232		A	232	194	192	184	194		A	194	194	188	188		A	A	200	E 226	B 226		A	A		
29	E 308	A 260	B 280	B 282	B 202	B 270	216	202	202	202	198	196	194		A	206	202	220	208	206	214	E 228	B 236	B 256	B 266					
30	E 260	A 242	B 272	B 252	B 176	B 328	204	210	194	192		A	192	194	180		A	204	198	212	186	E 246		A	E	B	A	312	278	
31																														
	00	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	28	29	25	26	26	23	25	24	25	25	25	25	23	25	21	24	26	28	25	28	26						
MED	E 250	B 248	B 249	B 244	B 226	B 238	206	204	198	192	192	192	194	190	194	200	206	212	213	208	200	E 226	B 241	B 244						
U Q	E 268	B 260	B 256	B 254	B 242	B 251	210	210	202	196	199	197	198	194	198	206	214	217	E 231	212	230	A 245	B 264	B 262						
L Q	E 232	B 238	B 244	B 224	B 206	B 225	200	198	194	189	188	186	186	183	189	194	199	209	207	204	195	209	222	B 236						

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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						B	A	A	A	A	A	A	A	114	112	112	112	A	A	A	A				
2						B	A	A	A	A	A	A	112	A	104	A	A	A	A	A	A	A	A		
3						B	A	A	A	A	A	A	A	108	106	108	110	110		A	A	B			
4						B	A	110	A	A	C	C	104	104	104	C	110	A	A	B					
5						B	110	110	A	A	A	A	114	A	A	114	114	116	A	B					
6						B	116	108	A	A	A	A	108	A	A	A	108	108		B	B				
7						B	108	108	108	108	108	106	112	112	112	112	112	112		B	B				
8						B	116	116	116	A	116	112	112	112	A	112	112	A	A	B					
9						B	A	A	108	A	A	A		108	A	A	A	A	A	B					
10						B	118	118	116	116	112	A	110	110	110	110	110	110		B	B				
11						B	112	108	108	108	108	108	108	108	108	108	A	A	B	B					
12						B	124	A	120	A	120	120	114	108	108	108	A	116	B						
13						B	118	108	110	110	A	110	110	108	108	108	A	A	B	B					
14						B	A	A	A	108	108	108	106	106	A	A	A	A	B	B					
15						B	A	A	A	108	108	A	A	A	A	A	A	A	B	B					
16						B	108	A	A	A	A	A	106	110	112	112	C	A	B						
17						B	A	112	112	108	108	108	108	108	108	108	A	A	B	B					
18						B	120	122	114	114	112	112	112	106	106	106	108	108		B	B				
19						B	114	114	114	110	110	110	110	110	A	A	A	A	B	B					
20						B	132	124	A	114	A	A	A	A	A	A	A	116	116	B	B				
21						B	A	108	A	A	A	A	A	A	C	C	110	108	B	C					
22						B	112	112	112	112	A	C	110	A	A	A	A	A	B	B					
23						B	116	108	A	108	108	108	108	112	114	C	114	A	B						
24						C	128	C	A	A	110	A	A	A	108	C	108	A	B	B					
25						C	B	108	C	A	A	C	A	A	106	112	A	A	A	B					
26						B	A	108	108	108	112	112	112	112	110	110	110	108	B						
27						B	A	108	108	108	108	108	108	108	108	158	112	A	B	B					
28						B	A	A	A	110	110	110	A	110	110	110	114	A	B	B					
29						B	A	A	114	110	108	108	108	A	108	108	A	A	B	B					
30						B	A	A	A	A	A	A	A	A	A	A	A	108	B	B					
31							122																		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							17	18	14	17	16	16	20	20	18	17	15	10							
MED							116	109	112	108	109	110	109	108	108	110	110	109							
U Q							121	114	114	111	112	112	112	111	110	112	114	116							
L Q							111	108	108	108	108	108	108	107	108	108	110	108							

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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	84	84	84	82	96	98	102	92	92	94	94	G	92	130	G	G	98	92	92	92	86	96	94	88	
2	88	88	B	104	104	92	92	92	92	88	88	G	88	G	98	108	108	102	98	96	100	98	96	96	
3	88	88	88	86	86	96	G	96	86	148	78	78	G	G	128	128	120	98	98	98	B	88	88	88	
4	94	88	88	88	88	108	108	G	94	94	C	C	G	G	G	C	116	98	98	92	88	88	90	90	
5	90	84	76	76	84	B	128	110	98	98	98	94	G	80	80	G	120	120	106	100	92	100	94	94	
6	94	86	B	84	84	92	166	128	98	92	92	92	132	80	84	80	132	118	B	B	88	102	90	90	
7	96	92	86	B	B	B	118	118	116	114	110	G	140	136	G	G	146	116	B	B	84	100	102	102	
8	80	B	B	B	B	108	134	134	134	86	108	G	148	G	94	G	G	88	88	88	90	86	92	92	
9	82	82	B	B	B	90	106	106	118	98	98	100	100	G	94	94	94	100	100	96	88	94	94	B	
10	94	B	90	86	B	88	152	138	G	G	G	88	146	G	G	G	G	G	B	B	B	C	B	B	
11	B	B	B	86	86	B	146	140	G	G	154	154	144	136	116	116	104	104	B	98	B	B	86	86	
12	86	86	86	86	B	B	G	126	124	102	G	G	166	G	G	G	100	100	100	88	88	88	88	B	
13	B	B	100	100	B	B	G	G	140	G	G	G	G	G	G	118	106	106	106	106	B	B	100	B	
14	92	92	92	86	86	106	96	96	102	G	G	G	G	118	106	100	92	100	96	96	94	C	96	96	
15	96	B	104	104	104	102	110	106	104	114	110	104	104	104	96	88	90	90	90	90	98	B	98	B	
16	B	B	B	B	B	90	128	102	102	96	96	96	G	G	G	G	C	80	80	80	86	C	86	B	
17	B	B	B	88	B	B	98	126	G	126	G	G	G	G	126	148	140	100	100	100	88	88	88	86	
18	86	86	B	B	94	88	G	G	G	G	G	G	G	G	150	G	G	G	B	B	88	B	C	C	
19	B	88	B	B	B	B	132	132	122	122	G	G	G	122	104	106	106	94	94	94	88	88	B	B	
20	B	B	B	102	B	86	134	126	90	106	92	92	92	92	92	96	150	124	104	100	C	92	92	92	
21	86	B	B	C	B	B	124	114	102	102	100	100	98	96	C	C	130	122	94	C	100	C	100	C	
22	100	B	94	C	C	B	132	132	132	118	118	C	G	98	98	98	98	98	98	112	96	96	B	C	
23	96	C	90	90	90	86	G	134	134	122	116	G	G	G	G	C	114	108	108	100	90	90	90	90	
24	90	92	B	92	92	C	G	C	92	92	114	80	98	88	G	C	122	106	104	104	96	96	96	96	
25	88	B	B	88	88	C	148	142	G	96	96	C	96	96	146	G	98	100	100	96	88	94	94	94	
26	88	88	88	82	82	94	94	120	G	G	G	154	G	G	G	152	142	142	108	108	94	84	90	90	90
27	90	B	B	90	88	94	94	130	114	114	G	G	G	G	116	162	132	108	B	98	98	B	B	B	
28	B	B	98	94	90	84	84	84	114	114	G	G	104	114	G	G	114	G	120	106	104	90	92	92	92
29	84	84	84	B	B	140	110	102	G	G	G	G	G	92	G	118	104	104	104	100	92	B	92	92	
30	82	84	84	84	84	166	G	98	98	98	94	96	92	92	84	82	82	G	90	88	88	94	96	90	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	23	16	16	21	17	19	23	26	23	23	19	14	17	17	19	17	25	27	24	25	25	20	26	19	
MED	88	87	88	88	88	94	118	119	102	102	98	96	104	98	98	108	106	102	99	96	88	93	92	92	
U Q	94	88	93	93	93	106	134	132	122	114	110	104	142	124	128	123	126	108	104	100	95	96	96	94	
L Q	86	84	85	85	85	88	98	102	94	94	92	92	94	92	94	95	98	98	94	91	88	88	90	90	

SEP. 2020 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 2020 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

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	F3	F4	F2	F2	F3	L2	L2	L3	L2	L1	F2		L2	C2			L3	L3	L3	L2	F6	F2	F3	F3	
2	F2	F2		F1	F2	L4	L3	L2	L3	L3	L2		L1		L1	L2	L2	L2	L4	F4	F2	F3	F2		
3	F2	F2	F2	F2	F2	L2		L2	L3	H1	L3	L3			H1	H2	C2	L3	L3	L1		F3	F2	F2	
4	F1	F2	F2	F2	F1	L1	L3		L2	L2							C2	L3	L2	L3	F1	F1	F2	F2	
5	F2	F2	F4	F3	F1		C2	C2	L2	L2	L2	L2		L3	L2		C1	C2	L2	L3	F4	F2	F1	F1	
6	F2	F2		F6	F2	L2	H2	C2	L3	L2	L4	L2	H1	L2	L2	L1	H1	C2			F1	F2	F3	F1	
7	F2	F2	F2				C2	C2	C1	C1	C1		H1	H1			H1	C2			F2	F2	F2	F2	
8	F2					L1	CL22	C2	C2	L3	C2		H1		L2			L3	L3	L1	F2	F2	F1	F1	
9	F1	F1				L1	L2	L2	C1	L1	L1	L1	L1		L2	L2	L2	L3	L3	L2	F3	F2	F3		
10	F1		F2	F2		L4	H3	H3				L2	H1										F2		
11				F1	F2		H2	H2			H1	H2	H1	H1	C1	C2	L2	L3		L1			F2	F2	
12	F2	F3	F2	F2				CL22	CL22	L2			H1				L3	L2	L5	L3	F3	F2	F1		
13			F2	F2					H2		L3	C1	C1			C1	L1	L1	L1	L1			F1		
14	F1	F3	F3	F3	F2	L2	L3	L2	L2					C1	L2	L3	L3	L2	L3	L3	F2		F4	F2	
15	F2		F1	F1	F1	L1	L2	L2	L3	H2	C1	L2	L1	L2	L2	L3	L3	L2	L3	L3	F1		F2		
16						L1	C2	L2	L2	L2	L2	L1	L1					L5	L4	L4	F5		F1		
17				F1			L2	C2		C1				C1	H1	H1	L2	L2	L1	L4	F3	F3	F1	F3	
18	F2	F2		F1	L2										H1						F1				
19		F2					H2	H2	C2	C1				H1	L3	L3	L3	L3	L6	L3	F5	F1			
20				F1	L2	C2	C2	L3	CL22	LL22	L2	L2	L4	L2	L2	L3	H2	C2	L6	L4		F2	F1	F2	
21	F2						C2	C2	L2	L2	L2	L1	L2	L2			H1	C2	L1		F5		F2		
22	F3		F3				H2	H2	H2	C1	CL11				L1	L2	L2	L2	L2	L1	F3	F1			
23	F1		F3	F2	F4	L4		H2	CL22	CL21	C1				L2		C1	L3	L2	L1	F4	F3	F4	F3	
24	F2	F2		F3	F2				L2	L2	C2	L2	L1	L2			C2	L5	L4	L3	F2	F3	F4	F2	
25	F1			F2	F3		HL21	H2		L2	L2		L2	L1	H2		L2	L3	L6	L3	F3	F5	F2	F2	
26	F4	F3	F4	F4	F4	L2	L2	C3				H1			H1	H2	H2	C2	L1	L3	F2	F1	F2	F2	
27	F1			F4	F6	L4	L2	C1	C1	C1					C2	H1	H2	L3		L2	F2				
28			F3	F6	F2	L5	L5	L3	CL22	C2			L2	C1		C2		L2	L4	L7	F5	F3	F4	F4	
29	F3	F2	F2			H1	C2	L2						L2		C1	L2	L6	L2	L1	F4		F1	F2	
30	F1	F2	F2	F2	F1	H1		L2	L1	L1	L2	L2	L2	L1	L2	L3	L3		L2	L3	F5	F8	F7	F5	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
U Q																									
L Q																									

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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 45	X 40	X 40	X 38	X 36															X 66	X 51	X 34	A	37	
2	40	A	A	A	A															X 54	X 56	X 53	49	49	
3	42	X 37	X 32	X 30	X 30															X 68	X 61	X 51	X 43	X 38	
4	X 35	X 30	X 30	X 29	X 29															X 70	X 61	A	X 33	36	
5	X 33	40	X 31	X 31	X 30	A														X 57	X 57	X 53	X 44	45	
6	42	39	39	37	X 33															X 64	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	X 65	X 68	X 66	X 37	X 36	
8	X 35	X 36	X 35	X 34	A															X 62	X 69	X 50	X 47	43	
9	42	X 37	X 39	X 32	X 34															X 58	X 61	X 48	X 41	40	
10	X 37	X 37	X 35	X 33	X 33															X 70	X 76	X 50	X 42	X 40	
11	X 37	X 37	X 35	X 34	X 32															X 75	X 73	X 45	X 39	X 38	
12	X 38	X 37	X 36	X 50	X 24															X 73	X 63	X 51	X 42	X 35	
13	X 35	X 37	X 38	X 37	X 40															X 77	X 65	X 59	X 41	X 38	
14	X 38	X 38	X 37	X 36	X 34		X 36													X 78	X 70	X 44	X 44	X 40	
15	X 40	X 42	X 37	X 35	X 31															X 87	X 67	X 48	X 46	X 41	
16	X 43	X 36	X 36	X 36	X 33		X 38													X 70	X 75	X 66	X 54	X 40	
17	X 38	X 35	X 35	X 35	X 33															X 68	X 76	X 51	X 42	X 40	
18	X 38	X 36	X 37	X 36	X 33															X 72	X 59	X 38	X 38	X 33	
19	X 35	X 36	X 35	X 34	X 34															X 65	X 53	X 32	X 33	X 33	
20	X 34	X 34	X 36	X 33	X 31															X 72	X 40	A	X 37	X 39	
21	39	41	38	36	X 31															X 67	X 60	X 43	A	A	
22	A	X 32	X 32	X 32	X 29															X 64	X 56	X 49	X 45	X 42	
23	X 43	X 44	X 44	X 42	X 40															X 81	X 64	X 49	X 44	X 41	
24	X 41	X 38	X 38	X 40	X 44															X 72	X 75	X 54	X 40	X 36	
25	X 34	X 34	X 36	X 36	X 40															X 66	X 41	X 40	X 41	X 41	
26	X 40	X 41	X 39	X 37	X 37															X 84	X 90	A	X 36	X 38	
27	X 35	X 37	X 37	X 39	X 37															X 59	X 32	X 34	X 36	X 35	
28	X 35	X 38	X 36	X 36	X 35															X 76	X 40	X 39	X 35	X 38	
29	X 38	X 38	X 39	X 39	X 38															X 78	X 58	X 46	X 48	X 48	
30	X 48	X 47	X 47	X 42	X 38		X 37													X 55	X 40	X 33	X 36	X 36	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	28	28	28	27		3													30	29	26	27	28	
MED	X 38	X 37	X 36	X 36	X 33		X 37													X 69	X 61	X 48	X 41	X 38	
U Q	X 42	X 40	X 38	X 38	X 37		X 38													X 75	X 70	X 51	X 44	X 41	
L Q	X 35	X 36	X 35	X 34	X 31		X 36													X 64	X 54	X 40	X 37	X 36	

SEP. 2020 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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	37	34	34	32	30	A	A	48	A	46	50	47	49	46	51	48	50	57	65	60	45	28	A	F	
2	F	A	A	A	A	22	30	48	A	A	48	50	48	A	56	64	46	44	44	48	50	47	F	F	
3	F	31	26	24	24	24	34	46	50	48	46	48	50	53	49	46	47	52	60	62	55	45	37	32	
4	29	24	24	23	23	24	33	44	52	54	51	51	48	49	49	49	49	49	54	64	54	A	27	F	
5	27	F	25	25	24	A	31	54	62	56	50	46	50	56	59	64	64	57	50	51	51	47	38	F	
6	F	F	F	F	27	24	32	48	52	49	50	54	52	52	59	61	56	55	56	58	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	59	62	60	31	30
8	29	30	29	28	A	25	33	47	55	52	53	51	58	56	60	63	57	54	55	56	63	44	41	F	
9	F	31	F	26	F	24	32	50	47	48	50	48	50	56	53	59	56	58	57	52	55	F	35	F	
10	31	31	29	27	27	25	30	44	49	55	51	51	50	54	60	56	54	51	64	64	70	44	36	34	
11	31	31	29	28	26	22	29	49	45	54	48	54	50	49	49	52	48	50	58	69	67	39	33	32	
12	32	31	30	44	18	19	28	46	57	59	47	46	47	52	54	57	55	60	70	67	57	45	36	29	
13	29	31	32	31	34	24	32	45	54	62	62	50	50	48	51	53	50	56	62	71	59	53	35	32	
14	32	32	31	30	28	24	30	51	54	54	54	53	58	61	54	55	63	74	83	72	64	38	38	34	
15	34	36	31	29	25	25	32	48	48	52	56	49	56	63	62	61	57	62	73	81	61	42	40	35	
16	35	30	30	30	27	27	32	54	71	71	59	62	59	59	59	52	46	47	54	64	69	60	48	34	
17	32	29	29	29	27	24	28	52	60	54	50	53	52	52	50	50	44	49	60	62	70	45	36	34	
18	32	30	31	30	27	24	28	48	68	75	58	54	53	53	53	56	48	54	63	66	53	32	32	27	
19	29	30	29	28	28	19	27	46	57	51	46	51	51	49	50	52	51	58	70	59	47	26	27	27	
20	28	28	30	27	25	24	28	45	54	50	54	52	54	60	57	54	47	52	60	66	34	A	31	F	
21	F	F	F	F	25	24	27	48	62	63	54	58	51	53	59	60	49	48	55	61	54	37	A	A	
22	A	26	26	26	23	21	30	46	46	54	53	50	52	58	62	59	64	75	76	58	50	43	39	36	
23	37	38	38	36	34	27	35	46	49	62	54	56	64	59	55	50	57	63	74	75	58	43	38	35	
24	35	32	32	34	38	A	29	54	70	77	59	56	56	64	66	70	68	69	77	66	69	48	34	30	
25	28	28	30	30	34	31	34	54	68	66	64	62	64	60	61	58	65	78	77	60	35	34	35	35	
26	34	35	33	31	31	26	31	50	60	89	70	66	73	66	66	63	60	68	74	80	84	A	30	32	
27	29	31	31	33	31	31	38	56	58	80	66	63	67	63	60	60	71	93	100	53	26	28	30	29	
28	29	32	30	30	29	25	33	55	74	65	63	66	68	79	81	58	64	74	74	70	34	33	29	32	
29	32	34	33	33	32	25	36	62	63	86	89	89	79	78	76	76	63	63	63	72	52	40	42	42	
30	42	41	41	36	32	20	31	51	61	66	82	70	62	62	63	63	68	82	73	49	34	27	F	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	23	25	25	26	26	26	28	29	27	28	29	29	29	28	29	29	29	29	29	30	29	25	25	21	
MED	32	31	30	30	27	24	31	48	57	56	54	53	52	56	59	58	56	57	63	63	55	43	35	32	
U Q	34	33	32	32	31	25	33	53	62	66	60	60	60	62	62	62	64	68	74	69	64	46	38	34	
L Q	29	30	29	27	25	24	29	46	50	52	50	50	50	52	52	52	48	52	56	58	48	34	31	30	

SEP. 2020 foF2 (0.1MHz)

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SEP. 2020 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						A	A	L	A									U L	A						
										408	416	428	440	428	424	412	388	372							
2								A	A	A	A			A	U L	U L	U L								
												416	456	444	416	428	400								
3						A			U L	U L	U L			A	U L	U L	U L		L						
										388	436	420	432	420	424	432	404	368							
4									L	404	436	428	444	452	436	420	404	356							
												U L	U L	U L	U L										
5										416	436	448	436	420	416	412	400								
									L	L		U L	U L	U L	U L	U L			A						
6										428	428	440	436	424	408	392	360								
						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
7																									
8										416	424	432	424	432	420			A	A	L	L				
									L	U L	U L														
9										424	428	444	440	432	428	412	396	372							
									L			A													
10										408	428		432	432	428	420	408	364							
											U L	U L	U L	U L	U L	U L	U L								
11										408	432	428	432	440	428	420	400	372			A				
									L	L	U L	U L				U L					A				
12										432	440	420	424	412	404	388									
									L	U L	U L	U L	U L	U L	U L	U L	U L								
13										408	428	440	440	432	432	424	432	360			A				
									L	L							U L	U L							
14										424	424	428	428	432	412	408	356								
											A		A												
15										428	440		424			404	396								
								L	A																
16										412	428	436	440	436	436			U L							
										L	L							U L							
17												456	444	432	408	408	392								
								L	L									U L							
18										408	432	436	440	436	436	420	416								
										L	U L	U L	U L	U L	U L	U L	U L								
19										452	424	436	436		A	U L	U L	U L							
									A	L	U L	U L	U L	U L	U L	U L	U L								
20										428	436	420			A	U L	U L	U L							
									L							408	408								
21											432	432	448	432	424	416	408								
										L	U L	U L	U L	U L	U L	U L	U L								
22										432	440	440	440	440	432	432	404								
														U L	U L	U L	U L								
23										436	428	428	468	440	440	400	356								
					A				L	L	U L	U L	U L	U L	U L	U L	U L								
24											448	444	444	428	424	396									
									L	L	U L	U L	U L	U L	A	A	A	A							
25										428	440	460	460												
											L	L		L	L	L	L								
26												444	412												
										L	L	L													
27													444	436	428	408									
									L	L	L	U L	U L	U L	U L	U L									
28												440		440											
									L	L															
29											436	456		448	440										
										L	U L	U L	U L	U L	U L	U L	U L								
30										420	440			L	U L	U L	U L								
															448	428									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT									1	11	23	26	25	24	24	23	21	13							
MED									U L	388	408	428	436	440	434	428	416	400	364						
U Q									U L	416	432	440	444	440	436	424	408	372							
L Q										408	428	428	430	430	424	408	394	356							

SEP. 2020 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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	U R	A	A	A	A	A	A	A	A	B				
2						B	A	A	A	A	A	A	A	A	A	A	U R	U R	U R	U R				
3						B	A	U R	A	A	R	R	U R	U R	U R	U A	A	A	A	B				
4						B	B	A	R	U R	U R	U R	R	A	A	A	U R	U R	A	B				
5							A	A	A	A	A	A	A	U R	U R	U R	U R	U R	U R	U R				
6						B	B	A	A	A	A	A	A	A	U R	U R	U R	A	A	B				
7						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
8						B	A	U R	A	U R	A	A	U R	A	A	A	A	A	A	A				
9						B	B	U R	U R	A	A	A	U R	U R	U R	A	A	A	A	B				
10						B	B	U R	U R	U R	U R	U R	U R	A	U R	U R	U R	U R	U R	U R				
11						B	B	A	A	U R	U R	A	A	A	A	A	A	A	A	B				
12						B	B	A	A	U R	U R	A	A	A	A	A	A	A	A	B				
13						B	B	A	A	U R	U R	U R	U R	A	U R	U R	A	A	A	B				
14						B	B	A	A	U R	U R	U R	U R	A	U R	U R	A	A	A	B				
15						B	B	A	A	U R	U R	A	A	A	A	A	A	A	A	B				
16						B	B	A	A	U R	U R	A	A	A	A	A	U R	U R	U R	U R				
17						B	B	U R	A	A	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
18						B	B	U R	A	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
19						B	B	U R	A	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
20						B	B	A	A	A	A	A	A	A	A	A	A	A	A	B				
21						B	B	A	A	A	A	A	A	A	A	A	U R	U R	U R	U R				
22						B	B	U R	A	A	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
23						B	B	U R	A	A	A	A	U R	U R	U R	U R	U R	U R	U R	U R				
24						B	B	A	A	A	A	A	U R	U R	U R	U R	U R	U R	U R	U R				
25						B	B	U R	U R	A	A	A	A	A	A	A	A	A	A	B				
26						B	B	U R	U R	A	A	A	U R	U R	U R	U R	U R	U R	U R	U R				
27						B	B	U R	A	A	R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
28						B	B	U R	A	A	A	A	A	U R	U R	U R	U R	U R	U R	U R				
29						B	B	U R	R	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
30						B	B	U R	A	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R	U R				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								17	10	11	11	12	14	13	14	15	16	14	4					
MED								U	U	A	U	U	U	U	U	U	U	U	U	U	U	U	U	U
U Q								224	272	304	332	336	338	332	324	304	276	236	186					
L Q								234	276	316	336	344	344	336	332	312	284	244	192					
								U	A	U	U	U	U	U	U	U	U	U	U					
								214	268	300	320	332	332	326	316	300	268	224	180					

SEP. 2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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	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	
2	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	
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	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	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	
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	
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	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	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	
8	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	
9	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	
10	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	
11	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	
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	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	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	
14	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	
15	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	
16	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	
17	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	
18	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	
19	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	
20	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	
21	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	
22	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	
23	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	
24	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	
25	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	
26	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	
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	J A	
28	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	
29	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	
30	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	
31	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	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	30	29	29	29	29
MED	23	22	22	21	22	21	22	28	33	36	37	38	38	38	37	34	32	29	J A	J A	25	24	J A	J A	24
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	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
L Q	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B

SEP. 2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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 16	20	22	20	19	A A 66	A A 61	26	A A 103	34	G	37	34	34	34	36	35	27	25	E B 16	E B 16	19	A A 49	E B 15	
2	E B 15	A A 76	A A 41	A A 42	A A 32	18	19	32	A A 158	A A 122	46	37	30	A A 66	36	35	G	G	G E 16	16	22	E B 16	E B 16	E B 16	
3	21	20	E B 16	E B 16	19	19	E B 16	G	28	32	G	G	41	G	G	34	32	28	21	16	E B 16	E B 16	E B 16	E B 16	
4	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	G	G	G	G	G	35	35	33	G	26	19	E B 16	E B 17	A A 54	E B 15	E B 20	
5	E B 16	E B 16	E B 16	E B 16	E B 16	A A 55	17	24	32	32	36	38	39	37	G	G	31	25	G E 15	E B 15	E B 15	20	E B 16	E B 16	
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	34	37	37	35	37	36	G	32	28	26	E B 16	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E B 16	E B 15	E B 15	E B 16	E B 16	
8	E B 16	E B 16	E B 16	E B 16	A A 52	E B 16	19	26	34	33	38	36	40	G	36	50	39	27	18	E B 16	E B 16	E B 24	E B 15	E B 16	
9	E B 16	22	21	E B 16	E B 16	E B 16	E B 16	G	G	35	36	37	G	37	37	34	31	27	20	E B 16	E B 16	E B 16	E B 16	E B 16	
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	41	41	36	G	G	G	G	G E 16	E B 16	E B 16	E B 16	E B 18	E B 16	
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	29	33	36	37	38	37	36	G	32	27	26	E B 16	E B 16	E B 16	E B 16	E B 16	
12	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	33	G	G	34	34	34	33	31	32	22	18	E B 16	E B 16	E B 16	E B 16	
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	32	35	35	G	35	35	33	30	28	20	E B 16	E B 16	E B 16	E B 16	E B 16	
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	26	G	G	G	G	37	G	33	31	26	18	E B 16	E B 16	E B 16	E B 16	E B 15	
15	E B 16	E B 16	E B 16	E B 17	E B 16	E B 16	E B 16	23	34	36	36	37	44	36	40	34	32	26	28	E B 16	21	18	25	E B 16	
16	E B 16	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	21	35	35	35	G	G	36	G	G	G	G	19	18	E B 15	E B 16	E B 16	E B 20	
17	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	E B 16	G	30	31	34	G	39	36	G	34	30	26	19	E B 16	E B 16	E B 16	E B 16	E B 16	
18	E B 16	20	E B 16	E B 16	E B 16	E B 16	E B 16	G	28	31	16	E B 16	G	G	G	34	32	30	G	19	E B 16	E B 16	E B 16	E B 16	
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	17	26	30	34	36	36	38	36	44	34	29	26	18	20	E B 16	E B 16	E B 20	E B 16	
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	36	32	36	34	38	48	47	32	33	30	30	E B 16	24	A A 78	E B 21	E B 16	
21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	57	37	36	36	34	32	G	G	G E 16	E B 16	E B 16	E B 16	A A 20	A A 38	A A 62	
22	A A 36	19	E B 16	E B 16	E B 16	E B 16	E B 16	25	32	33	37	37	37	38	36	35	32	25	17	16	18	E B 16	E B 16	E B 16	
23	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	29	34	34	34	G	G	G	30	33	G	29	22	E B 16	E B 15	19	E B 20	
24	E B 16	E B 16	E B 16	17	E B 16	A A 35	E B 16	24	28	33	33	34	G	34	G	G	G	G	19	E B 16	E B 16	E B 19	E B 16	E B 17	
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	32	32	36	36	35	46	48	35	28	19	16	E B 16	E B 16	E B 20	E B 16	E B 16	
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	29	32	35	35	G	36	34	31	G	G	18	19	18	A A 31	A A 16	E B 16	
27	E B 16	E B 16	E B 16	E B 16	E B 16	18	16	G	28	30	G	G	G	G	G	G	29	25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	28	32	30	32	33	36	G	G	32	28	27	23	27	E B 16	E B 16	E B 16	
29	E B 16	E B 16	22	21	20	E B 16	E B 16	G	G	31	G	G	G	G	G	G	29	26	20	E B 16	E B 16	E B 16	E B 16	E B 16	
30	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	29	G	G	G	G	G	G	G	G	G E 16	E B 16	26	20	17	E B 16	E B 19	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	30	29	29	29	29	
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	29	32	34	35	34	36	34	33	30	26	19	E B 16	E B 16	E B 16	E B 16	E B 16	
U Q	16	16	16	16	16	16	16	26	32	34	36	37	38	37	36	34	32	28	22	16	18	20	17	16	
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	31	G	G	G	G	G	G	G	G	G	E B 16	E B 16	E B 16	E B 16	E B 16	

SEP. 2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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	16	16	16	16	14	14	14	16	21	18	19	16	17	19	16	16	16	16	16	15	15
2	16	16	16	16	16	16	14	15	16	17	14	16	15	15	15	17	15	16	15	16	16	16	16	16
3	17	16	16	16	16	16	16	15	15	15	15	18	20	20	20	20	19	16	16	16	16	16	16	16
4	16	16	16	16	16	16	16	14	13	16	18	20	20	19	19	16	16	16	15	16	17	17	15	16
5	16	16	16	15	16	16	16	16	16	15	16	17	19	19	20	20	16	17	15	15	15	16	16	16
6	16	16	16	16	16	16	16	14	14	15	15	12	18	20	20	18	16	15	15	16	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	16	16	15	16
8	16	16	16	16	16	16	16	16	16	16	18	20	20	20	20	17	17	16	16	16	16	16	15	16
9	16	16	16	16	16	16	16	17	16	16	18	17	17	17	17	18	16	16	16	16	16	16	16	16
10	16	16	16	16	16	16	16	16	15	15	15	19	18	15	16	14	14	14	13	16	16	16	17	16
11	16	16	16	16	16	16	16	16	16	16	18	19	21	21	20	18	16	16	16	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	16	18	16	19	18	18	16	17	16	15	16	16	16	16	16
13	16	16	16	16	16	16	16	16	16	16	16	16	16	16	18	17	17	14	15	16	16	16	16	16
14	16	16	16	16	16	16	16	16	13	16	19	22	18	19	19	17	17	16	15	16	16	16	16	15
15	16	16	16	17	16	16	16	15	14	16	19	21	20	20	16	16	16	16	16	16	16	16	16	16
16	16	16	16	16	16	16	16	15	15	14	18	18	20	20	20	19	18	16	16	15	15	16	16	15
17	16	16	16	16	15	16	16	16	16	16	17	17	22	23	20	20	18	16	15	16	16	16	16	16
18	16	16	16	16	16	16	16	16	15	16	16	16	19	16	20	18	15	15	15	16	16	16	16	16
19	16	16	16	16	16	15	15	15	16	16	16	17	18	18	15	14	13	15	15	16	16	16	16	16
20	16	16	16	16	16	16	16	16	16	16	14	15	18	14	14	14	14	16	16	16	16	16	16	16
21	16	16	16	16	16	15	16	15	14	14	16	16	22	16	15	16	16	16	16	16	16	16	17	16
22	16	16	16	16	16	16	16	15	16	16	16	19	19	18	18	16	14	16	16	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	16	16	18	18	19	18	18	16	15	16	15	16	16	16
24	16	16	16	16	16	16	16	15	15	15	15	17	18	18	18	18	18	15	15	16	16	16	16	17
25	16	16	16	16	16	16	16	16	16	16	17	17	17	19	17	16	16	15	15	16	16	16	16	16
26	16	16	16	16	16	16	16	16	16	16	18	18	18	18	18	18	17	17	16	16	15	15	16	16
27	16	16	16	16	16	16	16	14	17	17	17	19	20	20	20	18	18	15	16	16	16	16	16	16
28	16	16	16	16	16	16	16	16	16	16	16	19	19	20	20	18	18	16	16	15	16	16	16	16
29	16	16	16	16	16	16	16	16	16	19	16	16	16	18	20	20	18	16	16	16	16	16	16	16
30	16	16	16	16	16	16	16	15	15	15	17	20	21	22	20	20	16	16	16	16	16	16	16	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	30	29	29	29	29
MED	16	16	16	16	16	16	16	16	16	16	16	17	19	19	19	18	16	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	16	18	19	20	20	20	18	18	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	15	15	15	16	16	18	18	16	16	16	15	15	16	16	16	16	16

SEP. 2020 fmin (0.1MHz)

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SEP. 2020 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	305	303	313	306	328	A	A	344	A	345	347	308	315	279	311	335	317	325	341	356	363	320	A	F	
2	F	A	A	A	A	390	346	369	A	A	362	313	268	A	324	361	347	331	332	320	317	320	F	F	
3	F	315	300	333	326	342	363	362	365	336	313	290	334	338	320	280	304	333	351	342	361	362	326	328	
4	309	328	305	315	315	340	363	369	371	369	364	339	304	297	311	289	308	331	325	354	380	A	297	F	
5	323	F	309	326	351	A	353	395	385	385	326	331	306	316	323	335	354	350	342	330	317	365	324	F	
6	F	F	F	F	340	323	387	393	366	384	378	344	329	325	334	355	329	343	350	334	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	327	343	386	335	315
8	324	315	302	316	A	383	364	391	394	372	363	329	344	319	339	348	340	341	354	331	386	328	317	F	
9	F	349	F	319	F	315	363	374	385	360	376	308	310	346	348	349	339	332	343	314	344	F	315	F	
10	317	300	321	347	342	341	349	373	375	369	356	370	291	323	331	319	321	330	339	325	356	348	327	329	
11	322	327	334	346	363	324	350	404	383	350	364	352	331	294	335	325	317	337	330	345	375	346	324	299	
12	303	315	326	415	319	317	330	354	385	408	388	340	319	328	333	345	338	339	339	354	343	352	357	316	
13	311	302	311	323	359	354	351	357	364	361	361	353	346	311	320	323	307	322	314	341	414	382	338	297	
14	301	301	309	333	362	326	355	372	388	381	366	329	338	339	316	311	322	338	348	338	379	326	330	288	
15	318	347	353	306	344	329	344	386	379	380	373	355	315	356	347	352	337	314	322	337	369	338	314	323	
16	341	320	328	350	339	338	344	361	362	381	362	371	349	349	349	348	342	328	321	326	337	383	346	332	
17	353	314	316	329	349	342	328	382	399	391	404	324	354	355	359	356	350	329	344	348	370	361	323	311	
18	336	327	329	342	368	348	346	344	360	369	375	370	342	314	327	351	340	353	357	357	387	335	338	340	
19	317	313	320	342	372	338	344	362	391	413	397	361	347	313	347	322	328	334	358	380	393	293	313	313	
20	305	311	357	313	321	315	359	406	387	383	363	329	356	341	348	368	336	344	362	361	394	A	319	F	
21	F	F	F	F	299	343	340	355	385	407	367	386	333	323	348	358	333	327	357	368	391	384	A	A	
22	A	313	333	330	370	368	381	399	399	381	364	365	347	325	353	312	324	346	365	341	330	337	318	306	
23	310	326	305	335	351	353	373	392	350	391	375	341	369	341	338	311	323	331	351	368	368	328	321	325	
24	335	307	304	358	375	A	361	378	355	382	373	350	343	330	323	322	332	325	357	334	363	361	335	332	
25	307	308	308	313	358	345	346	377	373	380	361	344	334	344	350	330	339	351	362	394	334	316	311	328	
26	311	318	313	314	361	357	383	372	350	389	370	337	355	356	352	336	347	357	340	344	409	A	288	304	
27	303	310	313	321	386	328	361	399	388	369	354	369	350	350	355	339	322	344	386	416	293	314	315	308	
28	303	320	324	338	358	337	337	365	364	390	348	311	348	330	351	327	327	354	354	375	377	312	304	278	
29	293	312	315	317	327	304	341	361	319	344	344	344	339	335	331	362	361	362	343	358	350	295	312	296	
30	312	338	343	333	361	331	343	376	379	355	358	373	372	341	337	337	326	371	393	335	314	307	F	303	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	23	25	25	26	26	26	28	29	27	28	29	29	29	28	29	29	29	29	29	29	30	29	25	25	21
MED	311	315	315	330	351	339	350	373	379	380	364	344	339	330	337	336	332	337	348	343	363	337	321	313	
U Q	323	326	328	342	362	348	363	392	387	387	374	363	348	342	348	352	340	348	357	358	383	362	332	328	
L Q	305	309	308	316	328	326	344	362	364	365	357	329	317	318	324	322	322	330	339	334	340	318	314	301	

SEP. 2020 M(3000)F2 (0.01)

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SEP. 2020 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						A	A	L	A									U L	A						
2									A	A	A				A		U L	U L							
3						A			U L	U L	U L					U L	U L	U L		L					
4									L			U L	U L	U L	U L		U L	U L							
5											U L	U L	U L	U L	U L	U L	U L	U L							
6									L	L		U L	U L	U L	U L	U L	U L	U L		A					
7						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
8											418	417	435	445	444	432		A	A	L	L				
9									L	U L	U L							U L							
10									L			A									L				
11										U L	U L						U L	U L		A					
12									L	U L	U L						U L	U L		A	A				
13									L	U L	U L	U L	U L	U L	U L	U L	U L	U L		A					
14									L	L							U L	U L	U L						
15										A					A		U L	U L	U L						
16								L	A								L		U L						
17										L	L						U L	U L		L					
18								L	L								U L	U L		L					
19										L	U L	U L				A	U L	U L	U L						
20									A	L	U L	U L			A	A	U L	U L	U L		A				
21									L												L				
22										L	U L	U L					U L	U L		L					
23														U L	U L	U L	U L	U L							
24						A			L	L	U L	U L	U L	U L	U L	A	A	A	A						
25									L	L	U L	U L	U L	U L	U L	A	A	A	A						
26										L	L			L	L	L	L	L							
27										L	L							L	L						
28									L	L	L	U L	U L	U L	U L	U L	U L	U L							
29									L	L								L	L						
30										L	U L	U L			L	U L	U L	U L							
31											421	421				389	380								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT									1	11	23	26	25	24	24	23	21	13							
MED									U L	398	418	412	419	423	422	403	397	379	372						
U Q										420	423	435	437	440	430	410	395	382							
L Q										U L	402	400	412	414	410	396	382	367	366						

SEP. 2020 M(3000)F1 (0.01)

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SEP. 2020 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						A	A	276	A	304	292	364	360	454	342	330	358	296	236					
2								238	A	A	E A	286	342	472	A	328	256	298	318					
3					E A	284			262	300	334	410	306	306	344	430	362	298	246					
4									246	254	254	304	372	392	362	366	338	290						
5										230	296	322	376	330	310	274	256	246						
6									234	248	266	286	322	338	302	264	288	264	248					
7					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8										248	262	322	294	310	284	E A	256	264	264	234				
9									234	280	264	364	364	276	284	274	274	274						
10									230	244	276	250	370	334	292	292	292	288	250					
11										250	280	290	314	392	340	318	336	288	248					
12									238	212	256	336	358	320	320	288	278	264	232					
13									246	246	240	280	286	350	338	314	344	272	244					
14									226	226	266	318	300	284	320	320	288	268						
15										232	242	282	310	272	272	260	270	282						
16								252	246	220	244	236	268	268	268	262		290						
17										218	218	328	262	282	282	274	278	306	248					
18								268	236	224	238	258	302	330	322	262	276	252						
19										230	276	276	296	342	E A	284	308	276	266					
20									222	262	252	318	294	266	266	266	288	274						
21									234		256	236	308	314	286	256	304	304						
22										236	256	276	288	304	260	304	290	254						
23											254	306	240	280	280	358	294	274						
24					A				254	224	234	272	292	292	272	272	272	268						
25									246	226	238	256	290	280	264	E A	288	258	236					
26										216	238	254	238	238	260	260	260							
27										232	238	238	246	252	256	278	278	256						
28								236		238	238	270	270	238	250									
29									272	248	248	248	248	262	262	246	246							
30										256	230	230	242	264	276	276	262							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1		4	16	25	29	29	29	28	29	29	27	25	9					
MED					E A	284		260	237	236	254	282	296	298	284	274	278	274	246					
U Q								272	246	252	271	322	340	332	321	311	298	290	248					
L Q								245	234	225	238	252	269	271	267	261	270	264	235					

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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 264	B 274	A 268	E 268	A 252	A	A	206	A	204	188	216	182	178	208	212	E 252	A 208	A 202	E 202	B 266	E 266	A 296	E 296	
2	E 264	B	A	A	A	206	214	A	A	A	A	188	E 228	A	194	194	194	200	220	E 230	B 230	E 230	E 290	B 232	
3	E 252	A 266	E 256	B 264	E 296	A	208	208	196	192	180	180	A	180	176	200	200	200	212	214	200	200	E 222	B 236	
4	E 238	B 256	E 280	B 272	E 272	220	188	208	206	184	184	184	184	184	202	194	194	194	200	206	178	A 278	E 314	A 314	
5	E 258	B 276	E 284	B 256	E 214	A	214	206	206	196	196	206	192	192	180	198	210	192	206	E 214	B 214	200	222	E 258	
6	E 220	B 266	E 248	B 248	E 222	222	216	208	196	196	202	194	194	176	192	184	212	212	A 220	E 220	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	220	208	188	E 208	B 256
8	E 256	B 256	E 256	B 256	A	212	220	204	210	188	202	190	190	174	176	A	A	184	184	E 224	B 190	218	E 240	B 268	
9	E 254	B 264	A 300	E 260	B 276	E 288	210	210	178	178	178	188	180	180	180	198	196	190	200	202	E 202	186	E 234	B 256	
10	E 256	B 268	E 246	B 246	E 218	236	210	190	184	176	176	A 238	E 178	168	168	190	190	208	216	200	186	E 218	B 238	E 238	
11	E 256	B 244	E 244	B 224	E 192	252	210	200	194	194	204	192	192	192	190	190	190	202	A 208	186	192	E 238	B 264	E 264	
12	E 254	B 240	E 240	B 186	E 298	262	214	214	206	188	186	186	186	178	178	178	194	A	A	202	202	202	202	E 224	
13	E 264	B 262	E 254	B 240	E 192	216	204	204	204	190	200	200	184	184	184	196	196	196	A	210	194	190	190	E 262	
14	E 250	B 250	E 244	B 228	E 206	238	222	206	200	190	182	182	182	194	194	190	196	204	202	206	192	E 220	B 226	E 274	
15	E 260	B 226	E 200	B 230	E 212	250	212	194	202	A	202	200	A	190	A	204	204	206	E 234	A 204	186	210	E 258	B 212	
16	E 214	B 240	E 240	B 224	E 250	242	224	204	A	194	194	184	170	184	184	184	172	172	216	E 230	A 214	196	E 196	B 216	
17	E 234	B 242	E 238	B 230	E 210	224	216	206	198	190	184	184	204	194	194	202	184	210	210	196	196	196	E 220	B 238	
18	E 232	B 260	A 224	E 224	B 210	224	224	212	200	186	178	178	170	170	184	208	194	198	212	202	182	E 218	B 218	E 254	
19	E 264	B 266	E 238	B 226	E 192	276	214	214	216	200	188	188	188	188	A	188	192	194	202	186	186	E 256	B 292	E 266	
20	E 280	B 276	E 242	B 252	E 260	272	214	200	A	200	194	184	184	A	A	184	198	A	216	196	212	E 270	A 262	E 262	
21	E 248	B 242	E 242	B 242	E 262	270	220	204	200	212	190	190	186	168	168	198	198	208	224	196	184	188	A	A	
22	A 300	E 262	B 254	E 220	B 224	196	196	198	206	194	194	194	192	192	192	194	208	212	194	202	210	208	208	E 244	
23	E 274	B 256	E 256	B 244	E 200	204	204	192	192	224	196	196	172	192	192	192	192	216	216	198	198	206	E 224	B 234	
24	E 250	B 272	E 272	B 220	E 192	A	226	218	202	194	194	186	180	180	184	184	210	204	208	210	198	198	E 208	B 220	
25	E 278	B 302	E 280	B 280	E 204	208	198	212	212	202	194	194	188	188	A	A	A	A	202	188	216	E 282	B 252	E 242	
26	E 250	B 250	E 266	B 260	E 224	204	194	204	208	200	200	194	178	208	190	190	190	214	226	206	168	A 304	E 266	B 266	
27	E 240	B 268	E 236	B 250	E 186	238	210	200	200	200	198	198	184	194	190	190	198	216	190	174	210	E 252	B 270	E 278	
28	E 296	B 254	E 254	B 222	E 222	222	216	216	198	206	186	186	186	208	200	196	220	220	214	194	232	E 232	B 252	E 284	
29	E 294	B 264	E 280	B 270	E 196	202	210	210	202	194	194	194	194	194	186	200	210	210	210	208	200	E 250	B 260	E 268	
30	E 254	B 238	E 216	B 216	E 198	256	214	200	200	196	192	180	192	176	184	182	206	206	188	196	210	E 262	B 296	E 298	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	28	28	28	27	25	28	28	25	27	28	28	27	27	25	27	27	26	24	30	29	26	27	28	
MED	E 255	B 261	E 251	B 245	E 214	B 224	212	206	200	194	194	189	185	184	186	194	196	204	208	201	195	198	E 234	B 257	
U Q	E 264	B 268	E 267	B 258	E 252	B 254	216	210	206	200	197	194	192	192	193	198	208	210	216	214	210	E 232	B 270	E 268	
L Q	E 249	B 247	E 240	B 225	E 198	B 214	209	200	197	190	185	184	182	178	180	184	192	194	201	196	188	196	E 218	B 237	

SEP. 2020 h'F (KM)

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SEP. 2020 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	110	A	A	A	A	A	A	A	B							
2						B	A	A	A	A	A	A	A		112	A	114	114	114							
3						B	A			A	116	116	114	114	110	110		A	A	B						
4						B	B	A		110	120	116	116	116		A	A	114	114							
5							A			A	A	A														
6						B	B			110	110	110		A	A	112	110	110	110	110	110	110				
7						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
8						B	A				A					A	A	A	A	A						
9						B	B			110	110	110		A	A											
10						B	B			116	116	116		110	110	108		108	108							
11						B	B			108	108	108	108	108	108	108	108	108	108	A	B					
12						B	B			108	108	108	108	108		A	A	A	A		A	B				
13						B	B			108	108	108	108	108	110	110	110	110	110		A	B				
14						B		A	A		108	108	108	108		A		A	A	A	B					
15						B	B			108	108	A	A	A	A	A	A	A								
16						B		A	A	A	A		108	104	108	108	108	108	108							
17						B	B			110	110	A	A													
18						B	B			104	104	110	110	110	110	110	110	110	110							
19						B	B			110	110	110	110	110	110	110	110	110	110							
20						B	B			110	110	A	A	A	A	A		A	A	B						
21						B	B			110	A	A	A	A	A	A	110	110	110							
22						B	B			110	110	110	110	110		110	110		A	A	A					
23						B	B			110	110	110		110	110	110	110		A	B						
24						B	B			110	110	A	A		A		108	108	108	108						
25						B	B			108	108	108	108		A	98	A	A	A	A	B					
26						B	B			112	112	112	A	A		110	110	110	110	110	110					
27						B	B			110	110	110	110	110	110	110	112	112	112							
28						B	B			112	112	112	A	A		112	112	112	112							
29						B	B			112	112	110	110	110	110	110	108	108	108		A	B				
30						B		A		114	114	114	114		A		A	114	114	114						
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT								24	22	19	16	16	20	17	20	19	21	17	4							
MED								110	110	110	110	110	110	110	110	110	110	110	110							
U Q								112	112	112	110	110	110	110	110	110	111	112	112							
L Q								108	108	108	108	108	108	110	108	108	108	108	108	109						

SEP. 2020 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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

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	92	92	82	82	82	96	96	96	92	90	G	88	88	88	88	88	88	88	88	88	90	80	80	90	
2	90	88	86	86	86	88	88	98	90	90	82	82	82	88	110	86	G	G	G	86	94	94	102	102	
3	86	86	90	90	90	86	86	G	112	92	G	G	136	G	G	126	102	98	98	90	90	90	90	90	
4	90	90	90	84	84	98	B	98	G	G	G	G	G	98	98	100	G	146	114	94	94	94	94	94	
5	106	98	90	90	90	82	86	112	112	98	98	88	112	118	G	G	152	126	G	88	B	92	92	104	
6	92	92	92	92	B	96	122	122	112	112	98	98	98	134	146	G	130	116	112	92	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	102	90	90	90	114
8	96	102	110	110	88	104	94	126	120	118	100	128	150	G	96	90	88	88	88	88	B	96	B	94	
9	94	92	92	92	86	86	86	G	G	112	96	96	G	110	118	104	118	120	112	96	96	96	96	B	
10	90	90	90	90	B	88	88	G	G	G	G	142	148	80	G	G	G	G	G	B	B	90	90	90	
11	B	90	90	90	B	B	80	G	96	138	134	132	118	114	114	G	114	98	96	92	92	100	B	100	
12	94	94	94	94	B	B	118	124	122	120	G	G	102	96	96	96	112	104	102	94	94	94	B	B	
13	B	B	B	B	102	B	B	122	130	110	144	148	G	116	128	118	118	94	94	B	96	96	96	B	
14	B	B	B	B	B	B	110	98	98	G	G	G	G	96	G	96	96	96	116	96	96	96	96	86	
15	86	86	B	B	94	110	110	110	110	104	104	104	102	98	98	98	98	114	90	B	88	88	88	88	
16	88	88	B	86	86	B	110	102	100	100	100	G	G	152	G	G	G	G	116	98	98	90	90	90	
17	B	B	90	90	B	92	114	G	114	106	106	G	146	134	G	160	144	134	132	90	90	90	90	90	
18	82	80	80	80	80	92	92	G	142	146	B	G	G	G	146	148	148	G	118	80	80	B	78	78	
19	78	B	78	B	B	B	126	126	126	124	124	110	136	136	108	108	108	132	94	78	94	92	72	92	
20	92	92	92	B	92	94	94	122	118	96	96	96	96	96	96	110	96	96	88	92	92	86	86	86	
21	86	82	84	84	96	104	B	120	106	96	92	92	96	96	96	G	G	G	100	B	B	96	96	96	
22	96	96	96	96	92	B	B	120	116	114	114	114	102	110	108	98	90	90	90	92	92	90	98	96	
23	84	84	84	84	84	90	90	142	108	114	98	98	G	G	92	118	G	106	94	92	92	92	92	92	
24	92	92	92	92	92	86	86	114	114	96	108	100	G	90	G	G	G	G	90	88	88	88	88	88	
25	B	86	86	B	86	90	90	90	90	108	108	86	98	98	98	98	98	98	98	86	86	86	90	104	
26	B	B	B	B	B	B	B	122	122	126	96	96	G	142	142	150	G	G	102	94	94	92	92	92	
27	92	92	84	84	86	90	90	G	116	120	G	G	G	G	G	G	140	132	108	B	B	B	B	B	
28	B	B	84	B	92	94	94	112	122	112	94	94	108	98	G	G	154	124	104	92	92	92	92	92	
29	84	84	84	82	90	B	104	G	G	166	G	G	G	G	G	G	136	106	106	96	96	88	88	88	
30	B	B	B	B	B	132	122	G	98	G	G	114	90	G	96	G	G	G	B	88	88	88	88	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	21	22	23	20	20	20	24	20	25	25	19	20	18	22	19	18	20	21	25	25	24	27	25	25	
MED	90	90	90	90	89	92	94	117	112	112	100	98	102	98	98	102	113	106	100	92	92	92	90	92	
U Q	93	92	92	92	92	97	110	122	121	120	108	114	136	118	118	118	138	125	112	94	94	94	95	96	
L Q	86	86	84	84	86	88	88	100	99	97	96	93	96	96	96	96	97	96	92	88	90	88	88	88	

SEP. 2020 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

SEP. 2020 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

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	F3	F6	F6	F5	F4	LL64	L8	L6	L6	L6		L2	L3	L2	L2	L3	L3	L3	L5	F3	F5	F6	F6	F6
2	F2	F6	F6	F6	F6	L3	L5	L5	L7	L6	L4	L2	L2	L5	CL22	L2				F1	F4	F3	F2	F2
3	F8	F6	F2	F2	F6	L4	L3		C2	L2			H1			C1	L2	L3	L3	F3	F1	F1	F2	F2
4	F5	F2	F2	F2	F2	L2		L3						L2	L2	L2		H2	C2	F2	F2	F5	F2	F4
5	F2	F1	F2	F4	F2	F3	L2	C2	C2	L3	L1	L4	CL22	C2			HL21	C2		F1		F2	F5	F2
6	F1	F2	F2	F2		L1	C1	C2	C2	C2	L2	L2	L2	CL12	H1		H1	CL22	C4	F4				
7																				F2	F1	F1	F1	F1
8	F1	F1	F1	F2	F7	L2	L6	CL23	CL22	CL22	L2	C1	H1		L3	L6	L4	L4	L4	F1		F4		F2
9	F2	F5	F5	F2	F2	L3	L2			C2	L3	L2		C1	C1	L2	C2	C2	C2	F1	F1	F1	F2	
10	F2	F2	F2	F2		L2	L2					H1	H2	L3								F1	F3	F2
11		F2	F2	F3			L3		L2	H1	H1	H1	C1	C2	C1		C2	L5	L4	F2	F1	F1		F2
12	F2	F1	F2	F1			C1	C2	C3	C2			L2	L2	L3	L3	C2	L3	L3	F3	F3	F1		
13					F2			C2	H1	C2	H1	H1		C1	C1	C1	C1	L3	L5		F2	F1	F1	
14						L2	L6	L5						L2		L2	L2	L2	C2	F1	F1	F2	F2	F2
15	F1	F1			F1	C2	C1	C2	C4	L3	L2	L2	L2	L2	L3	L2	L3	C2	L2		L1	L3	L5	L4
16	L3	L2		F1	F2		C1	L3	L4	L2	L2			H1					C2	F5	F2	F2	F1	F4
17			F2	F1		L2	C1		C2	L2	L1		H1	H1		H1	H2	H2	C3	F1	F1	F3	F2	F3
18	F3	F2	F2	F2	F3	L2	L3		H1	H1				H1	H1	H1	H1	C2	C2	F2	F1	F2	F2	F2
19	F2		F1				C2	C2	C3	C2	C2	C1	H1	H1	C2	C1	C2	H2	L4	F5	F1	F2	F3	F3
20	F1	F2	F1		F2	L2	L2	C2	C3	L3	L3	L2	L2	L4	L5	C1	L3	L3	L5	F3	F7	F7	F4	F2
21	F2	F2	F1	F1	F1	L1		C2	L4	L4	L3	L1	L2	L2	L2				L1			F3	F6	F6
22	F6	F2	F3	F2	F5			C2	C2	C2	C1	C2	L1	C2	C2	L2	L3	L3	L2	F1	F6	F1	F1	F2
23	F5	F2	F1	F2	F1	L2	L1	H2	C1	C2	L2	L2		L2	C1			L3	L5	F1	F3	F1	F2	F2
24	F2	F3	F5	F5	F3	L6	L2	C2	C1	L2	C1	L2		L3					L4	F2	F1	F4	F2	F2
25		F2	F1		F3	L1	L3	L1	L3	CL22	C2	L2	L1	L1	L3	L5	L3	L4	L5	F1	F2	F5	F2	F1
26								C3	C2	C2	L3	L3		H1	H1	H1			L2	F5	F6	F5	F2	F1
27	F2	F4	F2	F2	F2	L4	L3		C2	C2							H1	C2	C1					
28			F4		F3	L3	L2	C3	CL12	CL22	L2	L2	C1	L1			H2	C3	L5	F7	F9	F1	F3	F3
29	F1	F3	F8	F8	F4		L1			H1							H2	L1	L2	F3	F1	F4	F4	F2
30						C1	C1		L2			C1	L2		L1					F6	F9	F8	F2	F8
31																								
	00	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. 2020 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 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 43	X 39	X 39	X 36	X 34	X 32															X 48	X 32	X 34	X 34		
2	X 32	X 31	X 32	X 32	A	A																X 59	X 52	45	52	
3	52	48	41	33	A	A																X 65	X 52	X 34	X 32	
4	X 28	X 31	X 28	X 26	X 27	X 27																X 62	X 35	X 33	X 34	
5	X 32	X 30	X 30	X 31	X 30	X 26																X 58	C	C	C	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C								X 64	X 39	X 36	X 32	
7	X 32	X 35	X 37	X 36	X 32	X 23																X 78	X 38	X 35	X 36	
8	X 34	X 34	X 34	X 34	X 34	X 30																X 67	X 46	X 37	X 38	
9	43	A	X 36	X 33	X 32	X 30																X 69	X 53	X 39	X 36	
10	X 36	X 39	X 36	X 32	X 29	X 30		X 49														X 79	X 61	X 40	X 39	
11	X 40	X 39	X 37	X 33	X 29	X 26																X 65	X 42	X 36	X 36	
12	X 36	X 33	X 37	X 36	X 22	X 23																X 70	X 65	X 34	X 30	
13	X 31	X 31	X 32	X 32	X 31	X 26																X 84	X 42	X 32	X 32	
14	X 33	X 35	X 34	X 38	X 27	X 27																X 69	X 57	X 55	X 50	
15	X 44	X 42	X 36	X 33	X 29	X 28																X 82	X 51	X 41	X 39	
16	X 42	X 38	X 33	X 33	X 32	X 31																X 75	X 85	X 33	X 33	
17	X 32	X 32	X 32	X 32	X 30	X 28																X 77	X 56	X 36	X 36	
18	X 36	A	X 35	X 36	X 31	A																X 52	X 38	X 36	X 35	
19	X 34	X 33	X 34	X 34	X 30	X 22																X 52	X 30	X 29	X 30	
20	X 30	X 31	X 30	X 30	X 28	X 27																X 41	A	A	X 34	
21	X 33	X 36	X 33	X 31	X 30	X 29	34															X 66	X 35	X 33	X 38	
22	X 36	X 39	X 39	X 40	X 40	X 34														X 68		X 58	X 52	X 47	X 45	
23	X 44	X 45	X 45	X 41	X 40	X 34														X 103		X 51	X 42	A	A	
24	X 38	X 39	X 38	X 38	X 30	X 25																X 84	X 69	X 45	X 37	X 37
25	X 37	X 34	X 32	X 33	X 48	X 24																X 69	X 54	X 38	X 39	X 41
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C								X 92	X 74		X 30	X 33
27	X 36	C	C	C	C	C	C	C	C	C	C											X 58	X 36	X 34	X 36	X 36
28	X 35	X 36	X 36	X 41	X 33	X 21			C	C	C	C	C	C	C							X 73	X 64	X 32	X 34	C
29	C	C	C	C	C	C	C	C	C	C												C	C	C	C	C
30	51	C	C	C	C	C	C	C	C	C												C	C	C	C	C
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	27	23	25	25	23	22	1	1													7	28	25	25	25	
MED	X	X	X	X	X	X		X													X	X	X	X	X	
U Q	42	39	37	36	33	30															92	72	52	39	38	
L Q	X	X	X	X	X	X															X	X	X	X	X	
	32	32	32	32	29	25															68	56	36	34	33	

SEP. 2020 f_{XI} (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 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	37	33	33	30	28	26	30	64	53	48	58	61	56	58	62	62	59	A	75	67	42	26	28	28						
2	26	26	26	26	A	A	26	A	51	48	46	46	56	62	71	65	51	A	A	52	53	46	F	F						
3	F	F	F		A	A	29	41	48	55	49	E	G	57	54	53	55	60	68	68	59	46	28	26						
4	22	25	22	20	21	21	24	48	54	57	50	51	50	52	51	50	51	57	66	72	56	29	27	28						
5	26	24	24	25	24	20	27	46	56	52	52	54	61	H	74	H	70	68	A	51	52	C	C	C						
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	60	70	64	63	63	75	60	33	30	26						
7	26	28	31	30	26	17	25	40	52	62	57	58	60	62	53	54	52	59	69	72	72	32	29	30						
8	28	28	28	28	27	24	27	46	51	50	54	51	55	61	63	J	R	60	66	63	63	61	40	31	32					
9	F	A																												
9	30		30	27	26	24	29	48	48	55	50	45	59	54	58	64	62	70	78	80	63	47	33	30						
10	30	F	30	26	23	24	21	43	58	56	58	49	47	57	J	R	81	86	87	88	73	55	34	33						
10	30	26	30	26	23	24	21	43	58	56	58	49	47	57	63	77	81	86	87	88	73	55	34	33						
11	34	33	31	27	23	20	22	42	45	57	50	49	57	50	54	52	56	56	69	76	59	36	30	30						
12	30	27	31	30	J	B	16	17	23	45	63	55	50	48	46	51	56	63	70	A	68	66	64	59	28	24				
13	25	25	26	26	25	20	24	42	56	66	56	55	50	50	52	59	54	48	A	74	78	36	26	26						
14	27	F	28	31	21	21	24	48	56	59	51	51	57	66	63	65	73	80	83	67	63	51	49	44						
15	38	36	30	27	23	22	26	52	48	53	58	54	53	62	73	60	57	69	80	82	76	45	36	33						
16	36	31	27	27	26	25	28	52	78	71	63	59	57	61	65	53	54	54	54	65	69	79	27	27						
17	26	26	26	26	24	22	25	44	66	63	54	55	54	51	48	49	47	48	63	69	71	50	30	30						
18	30	A	29	30	25	A	24	44	70	85	60	58	56	61	70	H	67	54	58	68	78	46	32	30	29					
19	28	27	28	28	J	B	24	16	22	45	58	56	50	48	53	54	A	49	54	66	A	A	46	24	23	24				
20	24	25	24	24	22	21	23	48	52	58	52	55	61	74	72	H	69	66	60	65	69	35	A	A	28					
21	27	F	27	25	24	23	F	24	47	63	68	55	54	54	60	65	67	69	71	82	91	60	29	27	32					
22	30	32	33	34	34	28	29	44	48	48	52	57	52	58	62	61	74	79	81	62	52	46	41	39	A	A				
23	38	39	39	35	34	28	28	45	50	61	63	56	58	62	59	65	76	95	113	97	45	36								
24	32	33	32	32	24	19	23	50	72	78	54	55	60	69	86	83	90	97	93	78	63	39	31	31						
25	31	28	26	27	41	18	25	54	72	70	65	57	58	67	66	65	81	82	78	63	48	33	33	35						
26	C	C	C	C	C	C	C	C	C	C	C	C	C	74	70	66	75	87	87	86	68	26	24	27						
27	30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	81	100	98	51	30	28	30	30	C					
28	29	30	30	34	J	B	27	15	26	53		C	C	C	C	C		73	86	79	67	58	26	28	C					
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C					
30	F	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	98	103	96	93	96	88	76	78	72	C	C	C	C	C
30	42										72		73		73															
31																														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
CNT	27	23	25	25	23	22	25	24	24	24	26	26	27	27	28	28	29	26	25	27	28	26	25	25						
MED	30	28	29	27	24	21	25	46	55	57	54	54	57	61	63	64	64	68	75	69	60	36	30	30						
U Q	34	32	31	30	27	24	28	49	63	64	58	57	60	67	70	67	74	82	82	78	66	46	33	32						
L Q	26	26	26	26	23	19	24	44	50	54	50	49	53	54	57	56	54	59	67	65	50	29	28	27						

SEP. 2020 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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				U A	A	A	A							
2									A					A	A	A	U L	A	A					
3									L	A							A							
4									L															
5																								
6							C	C	C	C	C	C	C	C										
7									U L					U L										
8									L	A				A										
9																								
10																								
11									L															
12									L	L														
13									L															
14									L															
15									L															
16									L															
17									L	L														
18									L															
19																								
20																								
21																								
22																								
23									U L	A	L													
24									L	L														
25									L	L														
26							C	C	C	C	C	C	C											
27							C	C	C	C	C	L	L											
28									C	C	C	C	C	C	C	C								
29							C	C	C	C	L	L	L	L	L	L	L	L	L	L	L	L	L	L
30							C	C	C	C	U L	C	L	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	6	14	23	25	25	25	24	22	24	16						
MED								U L	382	408	424	436	436	436	432	422	400	372						
U Q									384	416	432	438	440	440	436	428	408	378						
L Q									372	404	424	432	432	428	424	416	398	370						

SEP. 2020 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	A	A	A	A	A	A	A	A	A	288	240	A	A				
2							B	A	240	276	304	A	328	A	A	A	284	A	A	A				
3							A	196	232	264	296	312	336	332	324	312	296	256	A	A				
4							B	204	212	268	A	A	332	332	320	308	292	252	A	B				
5							B	A	256	284	324	A	A	A	A	316	288	248	A	A				
6							C	C	C	C	C	C	C	C	344	328	296	252	192	A				
7							B	A	232	288	312	308	336	324	312	320	292	244	A	B				
8							B	184	A	A	A	328	A	A	320	A	A	248	A	A				
9							B	212	A	276	308	324	324	324	324	312	280	252	A	B				
10							B	268	296	320	328	336	332	324	308	284	244	172	B					
11							B	196	212	A	A	320	336	340	332	312	284	236	A	A				
12							B	A	A	280	A	A	A	A	A	A	280	228	A	A				
13							B	U A	A	A	A	344	348	336	320	304	276	232	A	A				
14							B	A	A	A	A	340	348	328	328	304	284	224	A	A				
15							B	A	260	292	308	320	340	336	320	308	284	A	A	B				
16							B	A	A	U A	A	A	A	320	324	296	272	228	A	B				
17							B	A	A	A	332	A	340	340	328	312	A	A	A	A				
18							B	A	A	A	328	336	344	332	324	A	280	228	A	A				
19							B	200	244	292	320	A	A	A	312	304	272	A	A	A				
20							B	A	244	280	308	328	328	328	324	308	A	236	A	A				
21							U A	192	A	A	A	A	A	A	A	296	276	228	A	A				
22							B	A	264	A	U A	A	320	340	328	320	308	280	A	A				
23							B	U A	192	256	284	308	A	A	A	324	320	284	248	A				
24							B	196	A	280	A	A	A	324	A	A	272	228	A	A				
25							B	200	248	292	A	A	A	A	316	300	272	A	A					
26							C	C	C	C	C	C	C	A	316	296	276	228	A		J K	159		
27							C	C	C	C	C	328	328	336	324	300	264	216	A					
28							B	196	C	C	C	C	C	C	C	C	260	224	A					
29							C	C	C	C	304	328	340	316	312	296	260	228	A					
30							C	C	C	C	U A	A	C	A	C	A	C	C	C	C				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								12	13	15	15	14	16	17	22	22	26	23	2					1
MED								196	244	280	308	328	336	332	324	308	280	236	182		J K	159		
U Q								200	258	292	320	328	340	336	324	312	284	248						
L Q								U A	192	232	276	304	320	330	324	320	300	272	228					

SEP. 2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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	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
2	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
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	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	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
5	J A	J A	J A	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	J A	J A	J A	J A	J A	J A	J A	J A
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	J A	J A	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	J A	J A	J A	J A	J A	J A	J A	J A	J A
8	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
9	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
10	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
11	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	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	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
13	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
14	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	J A	J A	J A	J A	J A	J A	J A	J A	J A
15	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	J A	J A	J A	J A	J A	J A	J A	J A	J A
16	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
17	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
18	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
19	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
20	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
21	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
22	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
23	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
24	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
25	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
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	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	J A	J A	J A	J A	J A	J A	J A	J A	J A
28	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	J A	J A	J A	J A	J A	J A	J A	J A	J A
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	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	J A	J A	J A	J A	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	27	25	25	25	25	25	25	25	24	24	26	26	27	27	29	28	29	29	29	28	28	27	27	26
MED	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
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	J A	J A	J A	J A	J A	J A	J A	J A	J A
L Q	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B	E B

SEP. 2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 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	18	E B	16	18	E B	E B	E B	18	56	38	41	37	34	36	43	39	39	43	A A	124	42	54	19	E B	E B	E B	E B	
2	E B	E B	E B	E B	A A	A A	A E	B A	A	33	32	43	44	48	36	46	43	32	A A	A A	A	22	E B	E B	E B	E B	18	
3	E B	E B	E B	E B	E B	A A	A A	A	21	28	35	40	36	37	37	36	36	34	30	23	18	18	18	E B	E B	E B	E B	
4	E B	E B	E B	E B	E B	E B	E B	E B	25	31	34	33	34	36	36	42	37	32	34	26	E B	E B	E B	E B	E B	E B	E B	
5	E B	E B	E B	E B	E B	E B	E B	E B	28	33	36	40	40	36	46	44	46	47	33	A A	172	18	E B	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	38	35	32	38	29	20	20	E B	E B	E B	E B	E B	
7	E B	E B	E B	E B	E B	E B	E B	E B	24	32	36	38	38	38	36	37	34	G	G	20	E B	E B	E B	E B	E B	E B	E B	
8	E B	E B	E B	E B	E B	E B	E B	E B	27	33	40	37	38	45	41	37	43	35	27	20	20	29	24	E B	E B	E B	E B	
9	E B	A A	18	E B	E B	E B	E B	E B	24	29	40	38	40	38	38	36	40	31	G	E B	20	16	29	E B	E B	E B	E B	
10	E B	E B	E B	E B	E B	E B	E B	E B	22	29	32	G	G	G	43	40	34	33	28	20	E B	E B	E B	E B	E B	E B	E B	
11	E B	E B	E B	E B	E B	E B	E B	E B	23	30	34	36	36	G	41	36	34	34	29	32	20	26	18	E B	E B	E B	E B	
12	E B	E B	E B	E B	E B	E B	E B	E B	24	30	32	34	34	35	36	34	42	33	A A	98	46	43	16	E B	E B	E B	E B	
13	20	E B	E B	E B	E B	E B	E B	E B	24	30	33	33	36	37	39	43	47	49	42	A A	79	20	18	E B	E B	E B	E B	
14	E B	E B	E B	E B	E B	E B	E B	E B	22	30	31	34	36	38	36	35	34	G	26	27	29	E B	E B	E B	E B	E B	E B	
15	E B	E B	E B	E B	E B	E B	E B	E B	24	35	34	42	38	38	38	45	35	32	36	19	E B	16	22	18	E B	E B	E B	
16	E B	E B	E B	E B	E B	E B	E B	E B	23	32	32	36	36	36	34	G	G	G	26	20	16	E B	E B	E B	E B	E B	E B	
17	E B	E B	E B	E B	E B	E B	E B	E B	23	30	33	G	35	37	26	G	35	G	31	28	33	28	E B	E B	E B	E B	E B	
18	E B	A A	18	E B	E B	A A	A E	B	21	29	32	G	36	G	36	G	31	31	27	19	24	24	27	E B	E B	E B	E B	
19	E B	E B	E B	E B	E B	E B	E B	E B	26	31	33	35	40	41	40	A A	66	42	39	46	A A	A A	A	E B	E B	E B	E B	20
20	E B	E B	E B	E B	E B	E B	E B	E B	26	31	40	42	37	40	43	41	35	33	30	25	30	20	A A	A A	A	A	18	
21	E B	E B	E B	E B	E B	E B	E B	E B	25	34	42	42	36	38	33	33	G	G	G	17	20	18	E B	E B	E B	E B	E B	
22	E B	E B	E B	E B	E B	E B	E B	E B	24	29	35	36	36	37	36	35	33	31	30	61	20	21	E B	E B	E B	E B	E B	
23	E B	E B	E B	E B	E B	E B	E B	E B	22	36	34	35	35	34	36	35	38	32	34	62	45	26	E B	A A	A A	A	48	
24	E B	E B	E B	E B	E B	E B	E B	E B	21	28	32	34	36	40	35	37	35	G	G	18	20	E B	E B	E B	E B	E B	28	
25	E B	20	E B	E B	E B	E B	E B	E B	22	29	33	33	36	36	38	41	40	36	35	25	E B	16	20	E B	E B	E B	E B	
26	C	C	C	C	C	C	C	C	C	C	C	C	C	33	G	G	G	24	17	E B	E B	E B	E B	E B	E B	E B	E B	
27	E B	C	C	C	C	C	C	C	C	C	C	35	35	27	G	G	36	30	26	20	E B	E B	E B	E B	E B	E B	E B	
28	E B	E B	E B	E B	E B	E B	E B	24	C	C	C	C	C	C	C	C	C	32	28	25	17	E B	E B	E B	E B	E B	C	
29	C	C	C	C	C	C	C	C	C	C	34	G	G	G	G	G	30	28	33	C	C	C	C	C	C	C	C	
30	E B	C	C	C	C	C	C	C	C	C	34	C	39	C	33	C	C	C	C	C	C	C	C	C	C	C	C	
31																												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
CNT	27	25	25	25	25	25	25	25	24	24	26	26	27	27	29	28	29	29	29	28	28	27	27	26				
MED	E B	E B	E B	E B	E B	E B	E B	E B	24	31	34	36	36	37	36	36	35	32	29	25	19	16	E B	E B	E B	E B	E B	
U Q	E B	E B	16	E B	E B	E B	E B	E B	26	33	38	38	38	38	40	41	40	34	36	44	26	20	16	16	16	16	16	
L Q	E B	E B	E B	E B	E B	E B	E B	E B	22	30	32	34	35	G	G	G	G	G	E B	E B	E B	E B	E B	E B	E B	E B	E B	

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

SEP. 2020 fmin (0.1MHz)

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SEP. 2020 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	306	318	320	314	345	284	346	406	381	312	352	358	290	284	287	301	304	A	353	363	422	336	292	292
2	294	311	317	354	A	A	376	A	367	348	343	246	303	304	307	349	332	A	A	327	336	326	F	F
3	F	F	F		A	A	357	375	375	390	383	G	325	313	312	306	317	336	343	350	361	379	348	311
4	293	308	309	320	341	384	352	381	377	403	367	349	313	311	300	305	313	329	348	351	385	310	C	C
5	305	304	323	337	338	363	355	382	389	390	357	317	290	H	H	300	324	342	A	320	336	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	314	316	338	341	328	344	374	339	303	289
7	302	326	326	340	383	381	363	363	359	373	354	365	337	346	314	307	294	322	329	344	395	397	313	312
8	328	311	313	333	349	354	355	393	390	364	367	326	300	337	342	J	R	324	321	345	319	342	363	351
9	F	A	358	356	326	322	338	385	376	384	345	323	345	322	317	345	315	309	337	350	376	374	355	309
10	308	F	338	318	338	338	336	321	370	381	371	393	322	280	321	J	R	264	280	294	346	327	367	354
11	320	341	335	370	381	336	334	395	344	394	344	301	354	301	323	315	338	318	A	343	367	372	338	300
12	321	327	356	402	B	335	338	382	375	397	357	324	268	305	318	339	349		330	337	355	385	345	310
13	310	306	315	338	382	314	347	358	364	372	372	340	327	313	318	345	335	314	A	346	385	384	294	304
14	296	F	334	375	318	333	342	373	381	386	369	298	310	326	325	309	326	345	365	327	351	315	315	305
15	315	319	348	360	367	339	334	385	388	342	367	347	327	326	342	330	313	319	330	346	381	368	317	319
16	330	339	333	333	355	336	340	354	380	380	365	356	333	329	353	348	333	332	323	330	356	404	331	303
17	314	337	333	353	352	335	351	377	385	410	378	348	343	329	336	338	347	322	336	360	363	394	321	292
18	323	A	337	361	368	A	339	341	364	400	379	344	340	299	316	H	305	328	340	358	388	370	316	321
19	313	315	334	375	381	B	324	377	394	391	380	364	347	333	A	303	326	352	A	A	380	376	A	A
20	301	324	320	344	324	331	333	384	371	383	367	343	325	330	329	254	286	310	345	380	384			356
21	305	F	317	328	316	315	365	378	381	388	370	354	326	309	336	324	282	297	309	375	398	381	279	281
22	289	305	315	333	362	388	355	397	396	364	355	360	324	332	333	302	321	336	358	358	324	325	A	A
23	317	310	309	315	358	366	345	399	365	368	374	352	322	340	295	276	293	329	358	389	404	323		
24	311	321	326	335	378	275	329	366	355	368	389	316	315	304	312	315	320	331	355	351	354	359	311	321
25	314	289	289	312	390	298	325	372	379	397	372	334	309	327	335	317	342	366	365	360	357	302	283	318
26	C	C	C	C	C	C	C	C	C	C	C	C	C	346	348	323	330	349	350	347	420	265	281	307
27	340	C	C	C	C	C	C	C	C	C	C	C	C	350	324	338	341	310	C	327	361	386	389	327
28	291	302	317	369	379	B	315	357	C	C	C	C	C	C	C		328	354	357	341	391	278	296	
29	C	C	C	C	C	C	C	C	C	C	C	326	352	325	319	314	335	360	367	346	C	C	C	C
30	F	C	C	C	C	C	C	C	C	C	C	350	C	360	C	311	C	C	C	C	C	C	C	C
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	23	25	25	22	20	25	24	24	24	26	26	27	27	28	28	29	26	25	27	28	26	25	25
MED	313	315	320	338	356	336	342	378	378	384	367	344	325	322	318	315	326	334	346	350	371	345	309	307
U Q	321	326	334	360	379	358	355	385	383	392	374	352	337	332	336	332	334	345	358	363	385	379	319	318
L Q	302	308	315	330	338	318	334	368	366	368	354	322	309	305	312	304	313	319	330	341	356	316	296	298

SEP. 2020 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

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SEP. 2020 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

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							
2									A	410	419	A	A	A	398	A	A	U L	A	A					
3									L	A	407	407	443	433	421	402	394	376			L				
4									L	397	394	435	446	457	420	A	405	409	377			L			
5										405	377	408	417		A	A	A	A	L	A					
6							C	C	C	C	C	C	C	C	383	378	383		A	L					
7									U L	383	383	421	394	415	438	400	412	388	372			L			
8									L	A	411	428		A	U A		A	L							
9										A	450	418	450	441	396	407		A							
10										450	418	450	441	396	407		A								
11									L	389	407	401	457	462		A	390	359	360			L			
12									L	409	405	432	461	401	415	412	374	371			A				
13									L	411	411	419	431	428		A	405								
14									L	385	394	419	411	424		A	A	A	A	A					
15									L	403	416	434	407	399	407	390	400	386			L				
16									L	396	A	409	408	423		A	388	382	375			L			
17									L	386	387	401	422	434	419	403	393	376	362			L			
18									L	412	417	427	422	391	397	379	384								
19									L	392	423	422	445	432	422	404	382	370							
20										396	415	418		A	423	A	A	A	A	A	A	A			
21									A	A	413	443		A	A		L	L							
22									A	A	432	445	448	410	376	361	357								
23									U L	408	403	408	402	410	388	365									
24								U L	A	L	370	423	425	423	417	399	355	362			A				
25								L	L	406	380	427	415	417	369	362	367								
26								L	392	406	410	419	401	373	359		U A	A	A						
27							C	C	C	C	C	C	C	C	411	385	368	361			L				B
28							C	C	C	C	C	L	L	U L	U L	U L	L	L			L				
29							C	C	C	C	L	L	L	L	U L	U L	L	L			L				
30							C	C	C	C	U L	C	L	C	384		C	C	C	C	C				
31										395	399														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								1	6	14	22	25	24	23	21	20	23	15							
MED								U L	393	395	408	418	423	417	403	389	379	372							
U Q									410	405	416	432	443	424	416	402	388	376							
L Q									L	386	387	401	408	410	401	384	370	364	367						

SEP. 2020 M(3000)F1 (0.01)

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SEP. 2020 h'F2 (KM)

135°E MEAN TIME (G.M.T. + 9 H)

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

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	348	264	264	372	368	352	334	342	A	236					
2								A	260	266	302	544	362	332	304	272	298	A	A					
3									254	236	248	G	316	344	348	354	328	286	252					
4								232	238	220	268	296	362	356	382	360	350	292	252					
5									232	284	334	356	326	314	286	282	264	A						
6							C	C	C	C	C	C	C	C	332	296	278	262	268					
7									262	250	268	264	292	282	326	350	380	308	252					
8									232	258	250	330	370	292	280	302	306	266						
9									210	232	290	360	290	330	320	276	306	298						
10									234	254	228	324	452	336	316	324	306	276	230					
11								L	242	226	302	392	282	384	328	320	300	308	244					
12									226	218	268	350	480	378	336	284	256	A						
13									252	238	244	298	338	358	350	280	304	E A	A					
14									236	234	262	372	336	302	300	318	274	244						
15									280	262	288	322	312	262	304	332	286	242						
16									228	226	250	270	300	300	270	270	298	284						
17									226	208	250	288	294	322	310	314	282	318						
18									238	208	238	278	292	320	284	294	296	272						
19									226	250	276	286	316	A	378	312	248	A	A					
20									236	270	284	304	270	270	330	292	264							
21									226	256	280	312	328	284	292	296	276							
22									268	268	328	302	292	334	288	246								
23								204	228	248	242	276	322	290	332	354	320	262						
24									244	224	228	342	328	328	286	284	284	250						
25									222	216	238	250	276	304	282	310	264	228						
26							C	C	C	C	C	C	C	260	258	286	272	240				322		
27							C	C	C	C	C	258	280	252	274	314	274	236						
28								C	C	C	C	C	C	C	C	C	268	244						
29							C	C	C	C	266	232	270	274	270	252	234	234						
30							C	C	C	C	248	C	242	C	300	C	C	C	C					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	18	23	26	26	27	27	28	28	29	26	8			1		
MED								218	235	232	259	288	316	320	302	307	296	264	248			322		
U Q									244	250	268	342	356	336	330	332	309	286	252					
L Q									228	224	248	270	290	292	281	285	276	246	239					

SEP. 2020 h'F2 (KM)

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SEP. 2020 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	278	258	252	272	248	264	230	216	A	A	216	176	172	A	E A	E A	A	A	A	246	180	226	286	304				
2	314	276	258	234	A	A	208	A	218	194	A	A	A	208	A	A	194	A	A	226	224	216	276	306				
3	238	286	296	234	A	A	212	208	E A	A	A	198	192	166	182	184	208	208	218	236	212	200	188	218	274			
4	328	280	296	292	254	190	238	210	218	208	182	172	160	186	E A	A	220	E A	A	236	210	180	218	284	284			
5	296	298	280	226	226	228	212	202	226	216	E A	A	256	218	A	A	A	A	A	228	A	224	C	C	C			
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	236	212	218	A	256	214	192	188	266	316			
7	290	274	236	222	200	244	220	210	222	230	204	222	198	188	208	180	196	204	226	214	186	182	E A	266	266			
8	276	290	272	260	224	230	230	210	226	A	210	192	A	E A	A	222	192	218	218	206	224	198	226	244	272			
9	258	A	210	208	260	272	222	196	180	A	200	190	186	220	200	A	194	194	240	210	200	200	220	248				
10	274	258	246	240	258	254	270	212	212	184	172	178	158	E A	A	A	208	252	212	220	214	186	178	222	254			
11	258	232	226	214	204	272	256	188	198	214	200	180	158	238	190	196	232	202	H	A	210	196	196	242	268			
12	280	274	224	172	B	336	244	212	216	204	186	188	182	186	190	A	196	A	A	258	236	202	196	218	290			
13	318	292	272	238	198	E B	306	224	214	228	206	206	186	200	198	A	A	A	A	A	226	198	172	290	288			
14	296	290	242	204	254	262	240	214	210	196	184	184	218	186	204	194	192	216	E A	226	222	200	204	234	246			
15	260	250	226	216	210	258	238	212	210	202	A	200	200	192	A	216	210	E A	A	226	210	192	202	254	248			
16	240	234	238	260	224	236	244	210	206	210	210	190	186	180	184	184	178	218	226	228	212	190	194	276				
17	264	258	248	232	230	262	228	196	206	202	188	178	182	176	204	H	178	204	224	250	210	212	186	254	286			
18	248	A	250	218	208	A	244	218	218	198	186	174	166	176	162	168	224	216	228	202	196	E A	324	258	250			
19	276	274	242	224	184	E B	254	218	218	206	200	212	A	200	A	A	A	A	A	A	A	182	E A	E A	E A	358		
20	310	262	276	242	244	266	240	208	212	A	A	192	194	A	A	186	218	216	238	200	190	A	A	A	234			
21	294	280	268	246	258	280	224	216	216	A	A	180	174	174	174	190	200	216	232	202	178	184	290	298				
22	308	272	260	236	206	192	212	198	210	214	198	202	194	196	180	176	232	214	238	198	238	218	238	264	A			
23	274	268	268	246	210	208	214	184	A	218	188	184	162	178	192	252	228	A	224	198	184	206	A	A	A			
24	288	262	268	230	200	E B	352	258	224	236	196	198	196	208	176	190	232	218	226	216	204	192	198	242	E A	326		
25	262	342	320	278	192	370	238	226	218	212	188	184	182	196	E A	E A	E A	A	A	220	196	204	256	292	248			
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	170	180	180	210	232	234	220	178	B	342	294			
27	244	C	C	C	C	C	C	C	C	C	C	C	C	C	194	194	194	196	238	220	228	204	180	204	286	278	282	C
28	306	296	272	216	196	B	248	226	C	C	C	C	C	C	C	C	218	236	226	204	186	318	290	C	C	C	C	
29	C	C	C	C	C	C	C	C	C	C	C	218	200	200	200	186	204	208	226	226	C	C	C	C	C	C	C	C
30	250	C	C	C	C	C	C	C	C	C	C	192	C	192	C	188	C	C	C	C	C	C	C	C	C	C	C	C
31																												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
CNT	27	23	25	25	22	20	25	24	22	18	22	25	24	24	22	21	25	21	23	27	28	25	25	25				
MED	276	274	258	234	217	259	238	211	216	206	198	190	184	188	190	199	214	217	226	210	196	201	256	274				
U Q	296	290	272	246	248	276	244	216	222	214	206	198	196	200	204	224	222	228	238	224	203	222	288	296				
L Q	258	258	240	217	200	233	221	205	210	198	188	180	169	179	184	182	198	215	224	202	186	188	236	252				

SEP. 2020 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 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	A	A	A	A	A	A	A	A	A	104	104	A	A						
2							B	A	108	108	108	A	108	A	A	A	108	A	A	A						
3							A	108	102	100	100	100	104	104	102	104	102	102	A	A						
4							B	114	102	102	A	A	106	106	106	106	106	106	A	B						
5							B	A	108	106	106	A	A	A	A	A	106	102	102	A	A					
6							C	C	C	C	C	C	C	C	C	102	104	104	104	112	A					
7							B	A	104	104	102	100	106	106	104	104	104	102	A	B						
8							B	114	A	A	A	108	A	A	104	A	A	108	A	A						
9							B	114	A	104	100	100	104	104	102	102	102	102	A	B						
10							B	102	102	104	104	104	102	104	104	104	104	110	A	B						
11							B	106	106	A	A	106	108	106	106	104	104	102	A	A						
12							B	A	A	102	A	A	A	A	A	A	104	104	A	A						
13							B	106	A	A	A	104	104	104	102	102	102	102	A	A						
14							B	A	A	A	A	104	104	104	110	106	102	102	A	A						
15							B	A	108	108	104	104	102	102	98	104	104	A	A	B						
16							B	A	A	102	A	A	A	102	102	102	102	102	A	B						
17							B	A	A	A	108	A	108	108	104	104	A	A	A	A						
18							B	A	A	A	102	102	102	102	102	A	102	102	A	A						
19							B	120	108	108	106	A	A	A	104	104	104	A	A	A						
20							B	A	102	108	104	104	102	108	104	104	A	104	A	A						
21							104	A	A	A	A	A	A	A	A	100	100	108	A	A						
22							B	A	102	A	104	108	108	104	104	104	104	A	A							
23							B	124	114	108	102	A	A	A	106	106	104	104	A							
24							B	110	A	104	A	A	A	104	A	A	104	104	A	A						
25							B	110	106	104	A	A	A	A	108	104	104	A	A							
26							C	C	C	C	C	C	C	A	100	100	100	102	A				B			
27							C	C	C	C	C	102	102	108	102	102	102	102	A							
28							B	110	C	C	C	C	C	C	C	C	106	104	A							
29							C	C	C	C	104	104	100	104	104	102	102	108	A							
30							C	C	C	C	104	C	A	C	A	C	C	C	C							
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT								12	13	15	15	14	16	17	22	22	26	23	2							
MED								110	106	104	104	104	104	104	104	104	104	104	111							
U Q								114	108	108	106	104	107	106	104	104	104	104								
L Q								107	102	102	102	102	102	103	102	102	102	102								

SEP. 2020 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 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

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	96	90	94	88	110	92	106	102	104	98	104	104	102	96	118	114	106	102	100	96	96	94	92	92										
2	100	86	92	92	92	92	90	116	120	104	106	106	106	88	104	108	108	104	96	96	98	B	92	92										
3	92	92	92	90	90	90	86	112	104	102	104	108	120	118	116	114	116	102	98	96	94	90	90	90										
4	100	94	98	100	94	94	94	126	102	110	110	108	108	112	106	110	134	106	102	98	98	98	C	C										
5	98	98	90	90	B	B	B		90	120	104	114	104	98	96	102	110	106	106	104	102	102		C										
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	110	142	144	120	114	108	104	108	88	92									
7	96	94	92	92	88	B	B		154	118	110	116	114	110	110	156	108	G	G		136	94	94	90	90									
8	94	96	98	102	106	B		92	120	128	112	120	108	104	96	108	104	94	110		92	96	86	86	106	100								
9	106	98	96	96	96	92	94	142	94	106	108	110	110	162	132	120	114		G		108	96	94	94	94	94								
10	148	96	92	B	90	92	92	104	144	128		G	G	G		154	154	154	170	128	146	B	B	B	90	90								
11	B	92	B	B	B	B		94	166	150	154	140	126	G		122	156	134	130	112	104	100	100	98	96	96								
12	92	94	92	90	90	90		90	128	120	112	128	104	108	104	98	106	100	100	98	90	92	84	96	B									
13	90	B	B	B		124	110	146	178	164	108	136	146	120	110	104	104	100	100	100	98	96	94		B									
14	96	B	B	B	90	B	B		110	106	100	118	132	164	114	110	106		G		106	104	98	84	B	B	96							
15	B	90	90	B	B	B	B		122	114	114	106	110	106	110	104	112	114	100	98	92	92	94	B	108									
16	98	96	92	B	B	B		96	112	112	100	104	164	152	92	106		G	G	G		168	138	114	B	B	100	96						
17	96	B	B	B	B		104	92	112	126	110		G		104	126	100	108		G		104	98	96	94	94	90	90	90					
18	92	90	90	90	90	90	98	98	152	176		G		136	158		G		G		106	136	144	104	106	92	92	90	90					
19	96	B	B	B	B		80	138	128	120	112	160	108	108	130	112	114	112	104	104	98	116	98	94	98									
20	98	120	126	120	118	88	88	140	138	112	112	114	106	108	110	110	108	132	118	92	92	94	92	96										
21	96	B	94	84	88	88	98	112	104	100	100	100	96	96	92		G	G		90	90	86	86	84	98	102								
22	102	96	96	100	94	90		96	140	118	116	118	118	114	118	110	108	106	98	96	90	98	98	92										
23	96	96	B	B	88	88	92	142	122	158	100	98	98	112	114	174	158	126	98	98	98	98	88	88	B	B	88	88						
24	90	90	90	90	90	92	96	136	148	108	100	98	92	146	92	160		G		92	88	88	86											
25	90	88	88	88	82	B	B		130	130	130	110	98	104	114	112	110	106	102	100	100	96	96	96	86									
26	C	C	C	C	C	C	C	C	C	C	C	C	C		90		G	G	G		166	110	B	B	96	150	98							
27	B	C	C	C	C	C	C	C	C	C	C		158	148	92		G		172	154	122	112	112		B	B	B	B						
28	B	B	B	B		94	98	96	148		C	C	C	C	C	C	C	C		164	130	112	104	102	96		B	C						
29	C	C	C	C	C	C	C	C	C	C	C		G	G		G	G			136	118	98	C	C	C	C	C	C	C	C				
30	B	C	C	C	C	C	C	C	C	C	C		100	C		102	C		C	C	C	C	C	C	C	C	C	C	C	C	C			
31																																		
CNT	00	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	19	18	15	18	18	18	25	24	24	23	24	23	27	24	23	23	27	29	26	24	21	22	24										
MED	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
MED	96	94	92	90	90	92	94	120	121	111	110	109	106	112	110	110	114	106	102	98	94	94	93	94										
U Q	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
U Q	98	96	96	100	94	94	98	141	139	124	118	127	118	122	117	134	136	126	111	100	98	98	98	97										
L Q	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
L Q	92	90	90	90	90	90	92	107	105	104	104	104	102	96	104	108	106	102	98	96	91	91	90	90										

SEP. 2020 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

SEP. 2020 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F3	F3	F3	F3	FF22	F2	C2	C2	C4	L3	C2	C1	C2	L2	CL11	C1	C4	C5	C2	L3	F3	F3	F3	F4
2	F1	F1	F2	F3	F3	F2	LC11	C4	C2	C1	C2	CL22	C3	L2	CL21	C21	CL21	C6	L6	L3	F1		F2	F2
3	F4	F5	F4	F4	F5	F3	LC31	C3	C2	C3	C2	C1	C1	C1	C1	C1	C2	C2	L2	L1	F3	F2	F1	F1
4	F1	F1	F1	F1	F2	F1	LC22	C3	C2	C1	C1	C1	C1	C1	C2	C2	H1	C4	C3	L3	F3	F2	F2	F1
5	F1	F2	F2	F1				LC23	CL21	C2	C2	C2	L2	L2	CH21	C2	C5	C2	C4	C4	F3			
6															C2	H1	H1	C2	C3	CL12	F3	F1	F2	F1
7	F1	F2	F2	F1	F1			HC11	C2	C2	C1	C1	C1	C1	H1	C1			H1	L1	F3	F3	F4	F2
8	F2	F1	F1	F1	F1		L1	C4	CL22	C3	CL21	C3	C2	L1	C1	CL22	L2	CL11	L2	L3	F4	F6	F2	F2
9	F2	F6	F4	F3	F2	F2	L1	HC11	LHC21	C2	C1	C1	C1	HC11	H1	C1	C1		C2	C2	F3	F3	F2	F1
10	F1	F1	F6		F3	F2	L2	C2	H1	C1				H1	H1	H1	H1	C1	HL11				F2	F1
11		F1					L1	HC11	HC11	HL12	HC11	C1	C1	C1	C1	H1	H1	C2	C4	C2	F5	F3	F2	F2
12	F1	F2	F2	F1	F1	F1		LHC11	C1	C1	C1	C1	C1	C1	L2	C3	C6	C8	C9	L9	FQ21	F2	F2	F1
13	F3					F1	C1	HCL33	HC12	HC11	C1	H1	H1	C1	C1	C2	C4	C5	C9	C2	F5	F2	F2	
14	F1				F1			C1	C2	C1	C1	H1	H1	C1	CL11	C1		C1	C4	L8	F1			F1
15		F1	F1					C2	C3	C1	C2	C2	C2	C1	C2	C1	C1	C4	L3	L1	F5	F5		FF11
16	F2	F1	F1		F1	C1	C2	C2	C2	C1	HC11	HC11	LH11	C1				H1	H1	C1			F1	F2
17	F1				F1	LC11	C3	C1	C1	C1	C1	C1	C1	L1	C1		C3	L3	L7	L3	F3	F3	F3	F4
18	F3	F6	F4	F4	F4	F6	L3	L3	HC11	HC11		H1	H1		C1	C1	H1	H2	C2	CL19	F9	F5	F2	F2
19	F2				F1	H1	C4	C2	C1	HC11	C2	CH11	CL11	C4	C2	C3	C4	C6	L6	L6	FF14	F3	F5	F4
20	F2	FF22	FF22	FF13	FF11	F1	L1	HC31	H2	CL11	C2	C1	C2	C2	C1	C1	CH21	C3	C3	L3	F4	F4	F6	F2
21	F1		F1	F1	F2	F1	L1	C4	CQ31	CQ41	C3	C2	L2	L1	L1			L2	L3	L2	F1	F1	F1	F3
22	F2	F2	F4	F2	F1	F1		L5	H1	CL12	CL11	CL11	CL11	C1	C1	C1	C1	C2	L6	F3	F3	F3	F3	F1
23	F1	F1			F1	F1	L2	H1	CL31	HCL11	C1	L1	L1	CL11	C1	H1	H1	C2	L8	F5	F5	F5	F5	F5
24	F3	F3	F1	F3	F2	F1	L1	H1	HC11	C1	L1	L1	L2	HL11	L2	HL11		L1	L2	F2	F1			FQ31
25	F2	F3	F1	F1	F1			H1	HC11	HC11	C1	L1	C1	C1	C2	C2	C2	C6	L5	F3	F4	F2	F1	F2
26														L1				H1	C1			FK31	F1	F1
27											H1	H1	L1			H1	H1	C1	C2	F2				
28					F2	F1	L2	HC21									H1	H2	C3	F3	F1	F2		
29											HL11			H1			H1	C2	L3					
30											C1		C2		C2									
31																								
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

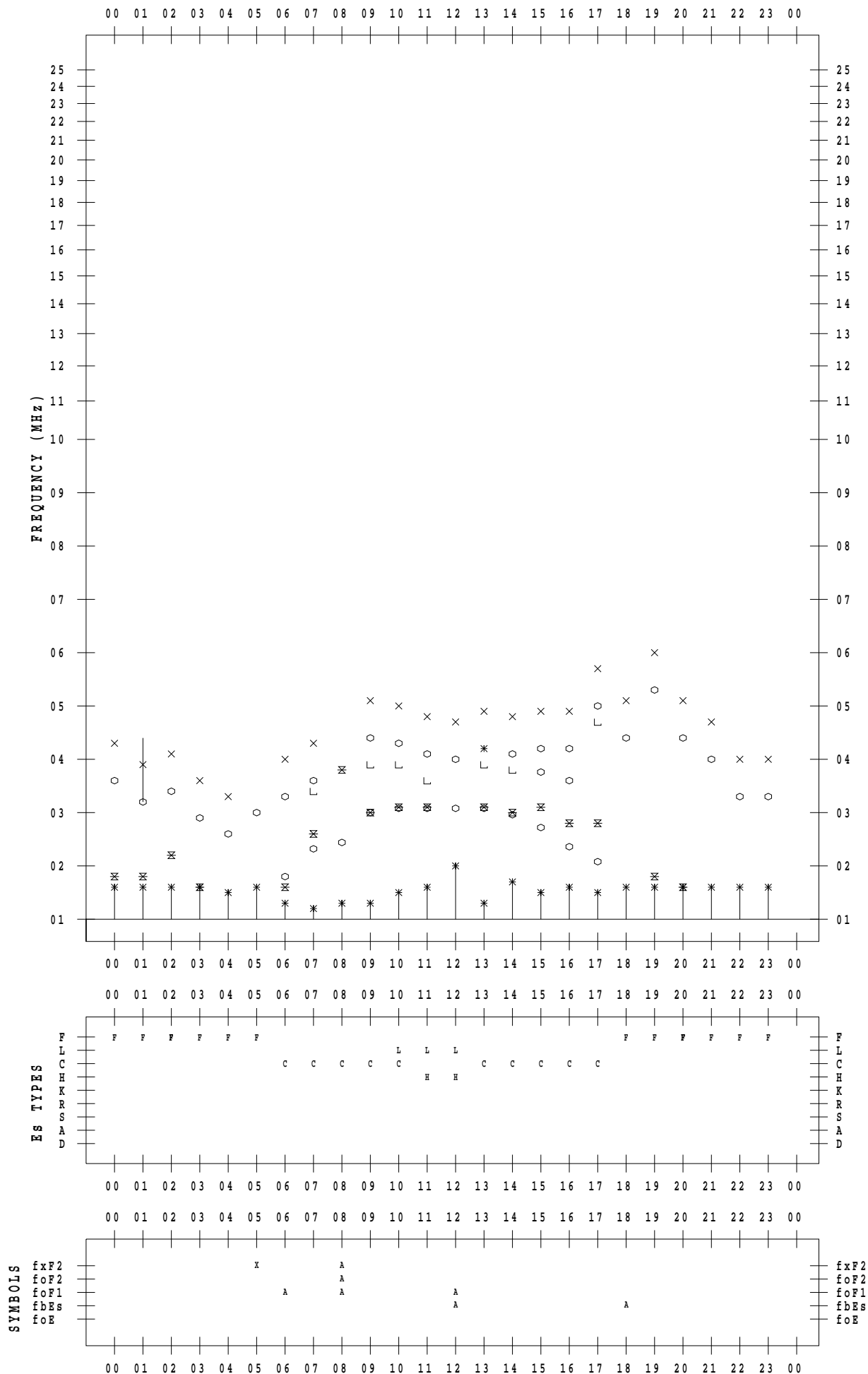
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 1

135 ° E MEAN TIME



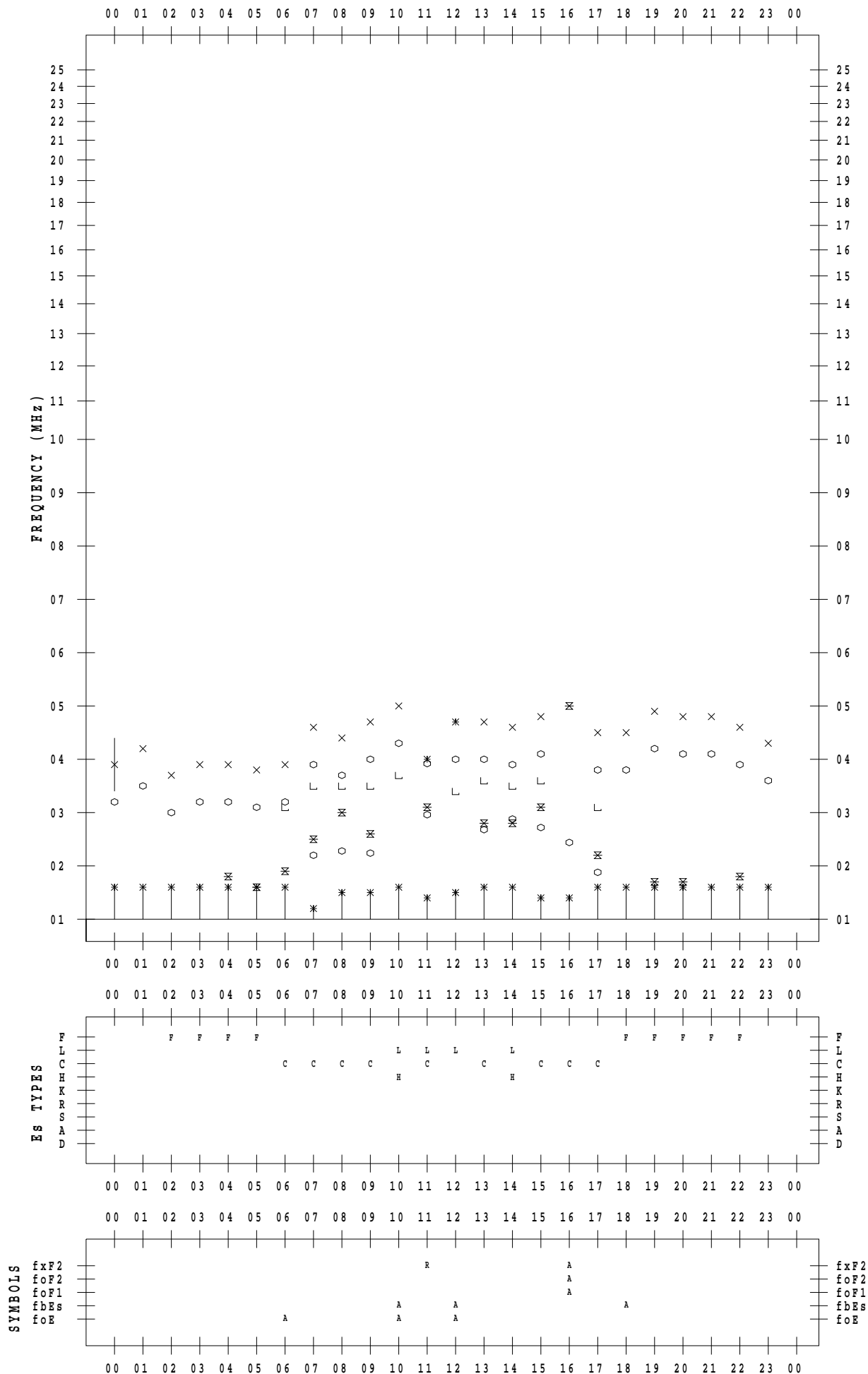
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 2

135 ° E MEAN TIME



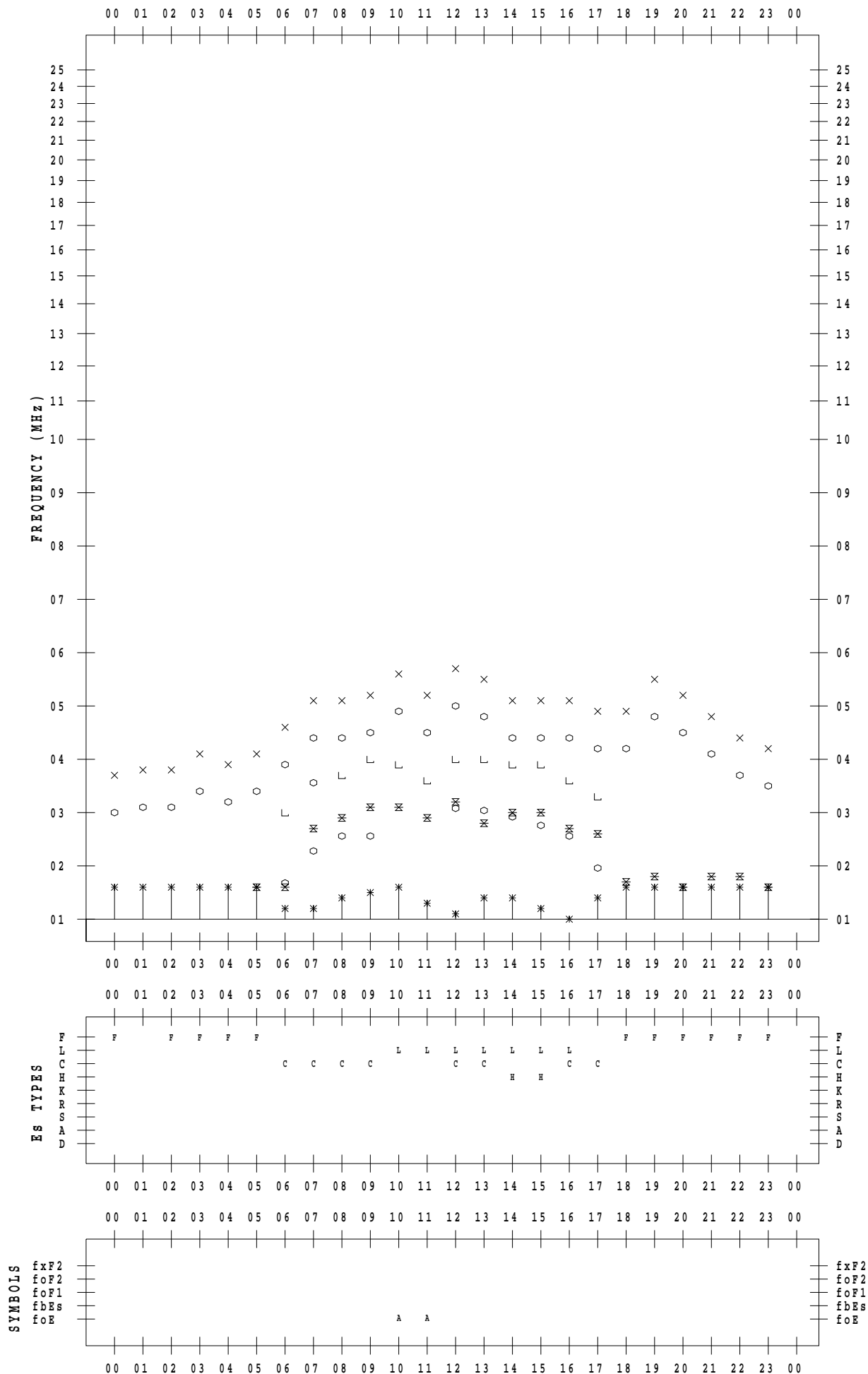
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 3

135 ° E MEAN TIME



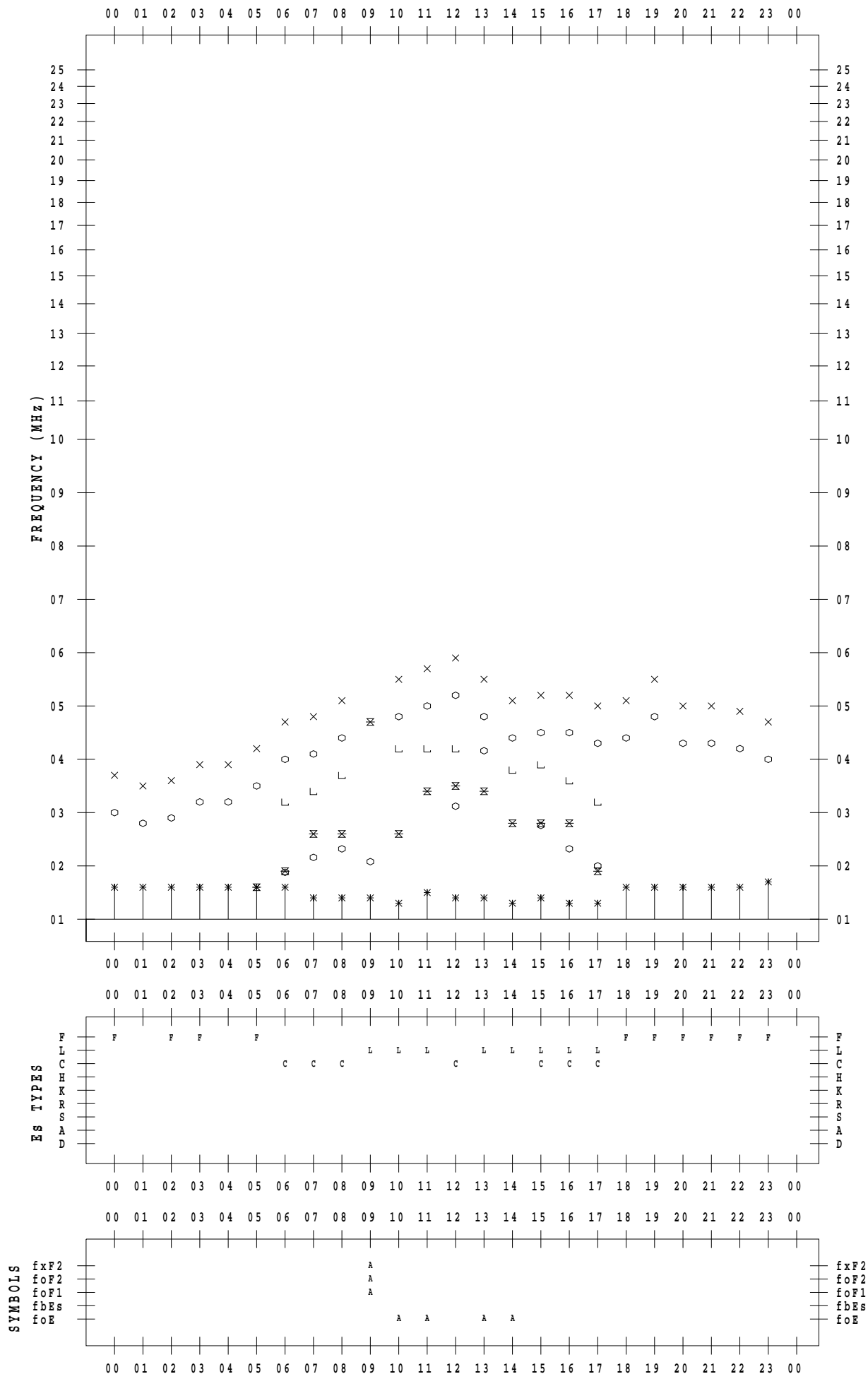
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 4

135 ° E MEAN TIME



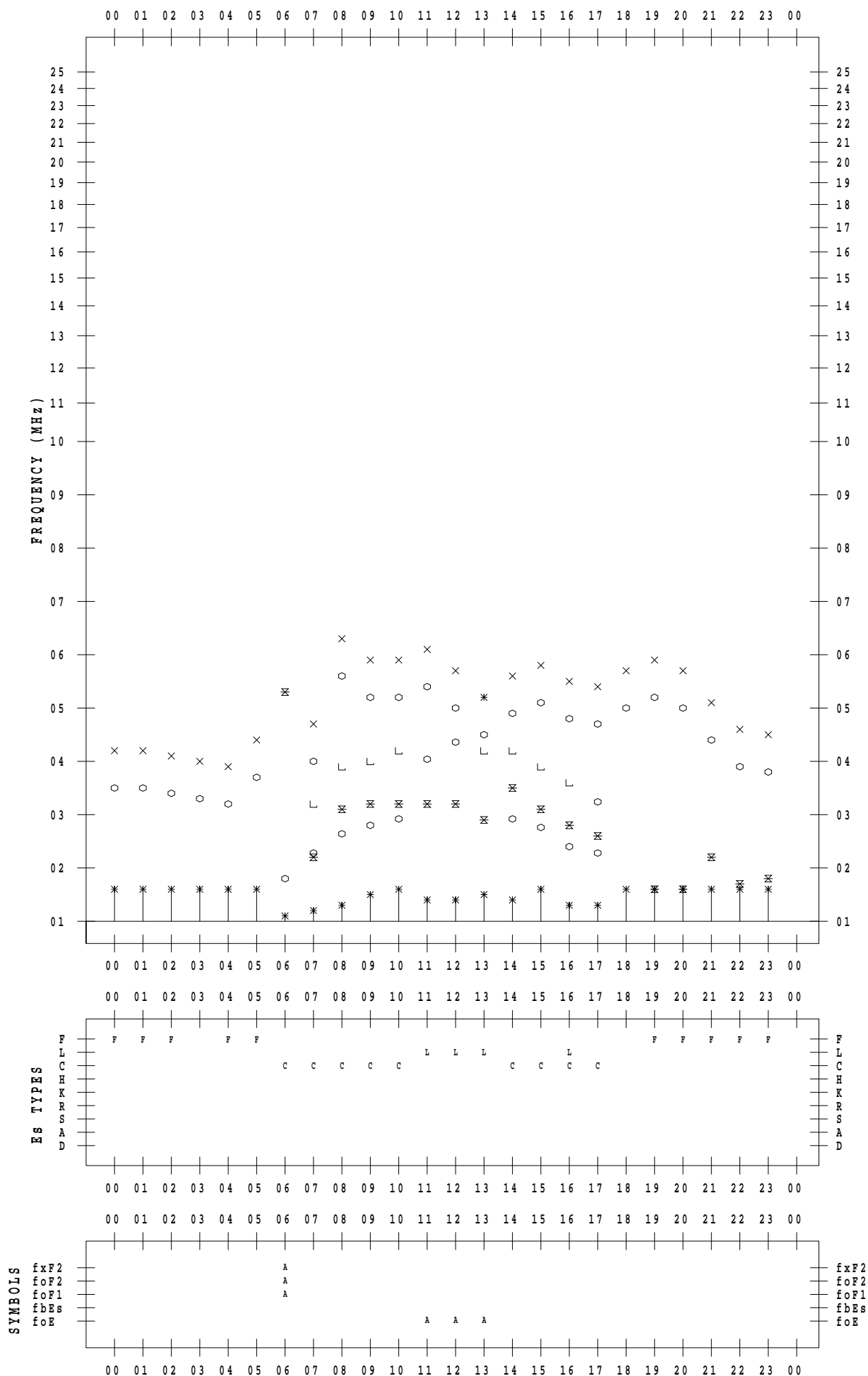
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 5

135 ° E MEAN TIME



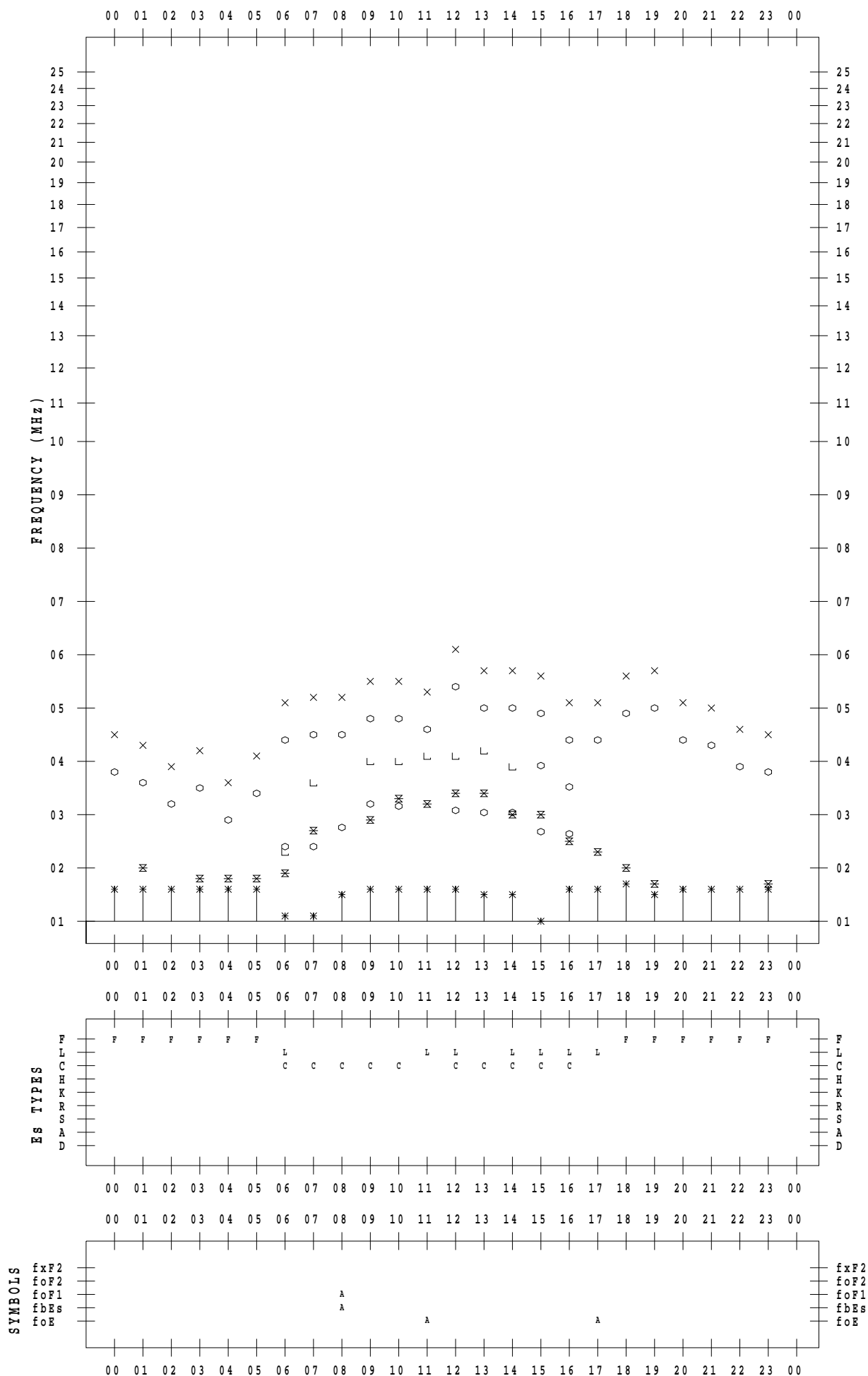
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 6

135 ° E MEAN TIME



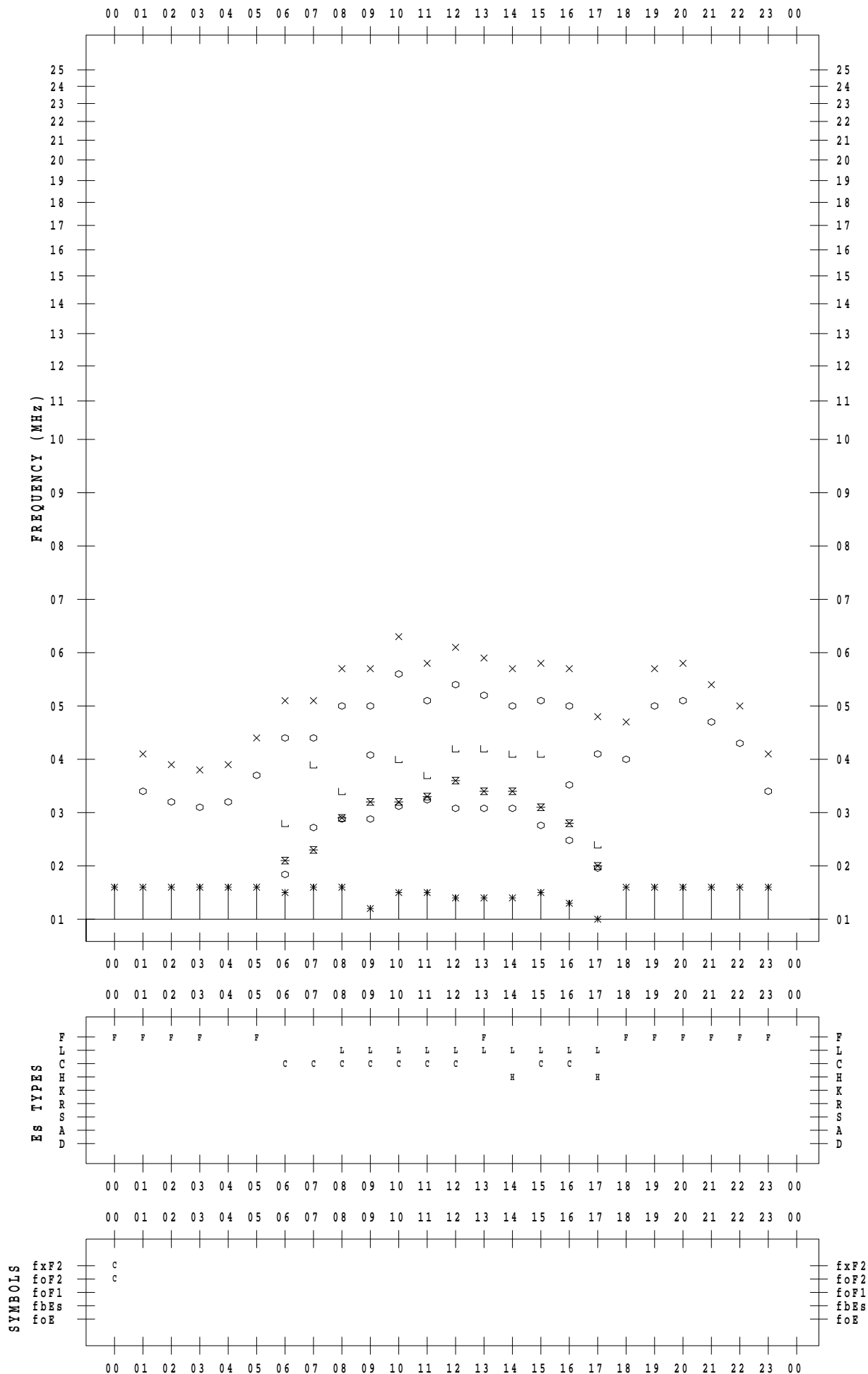
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 7

135 ° E MEAN TIME



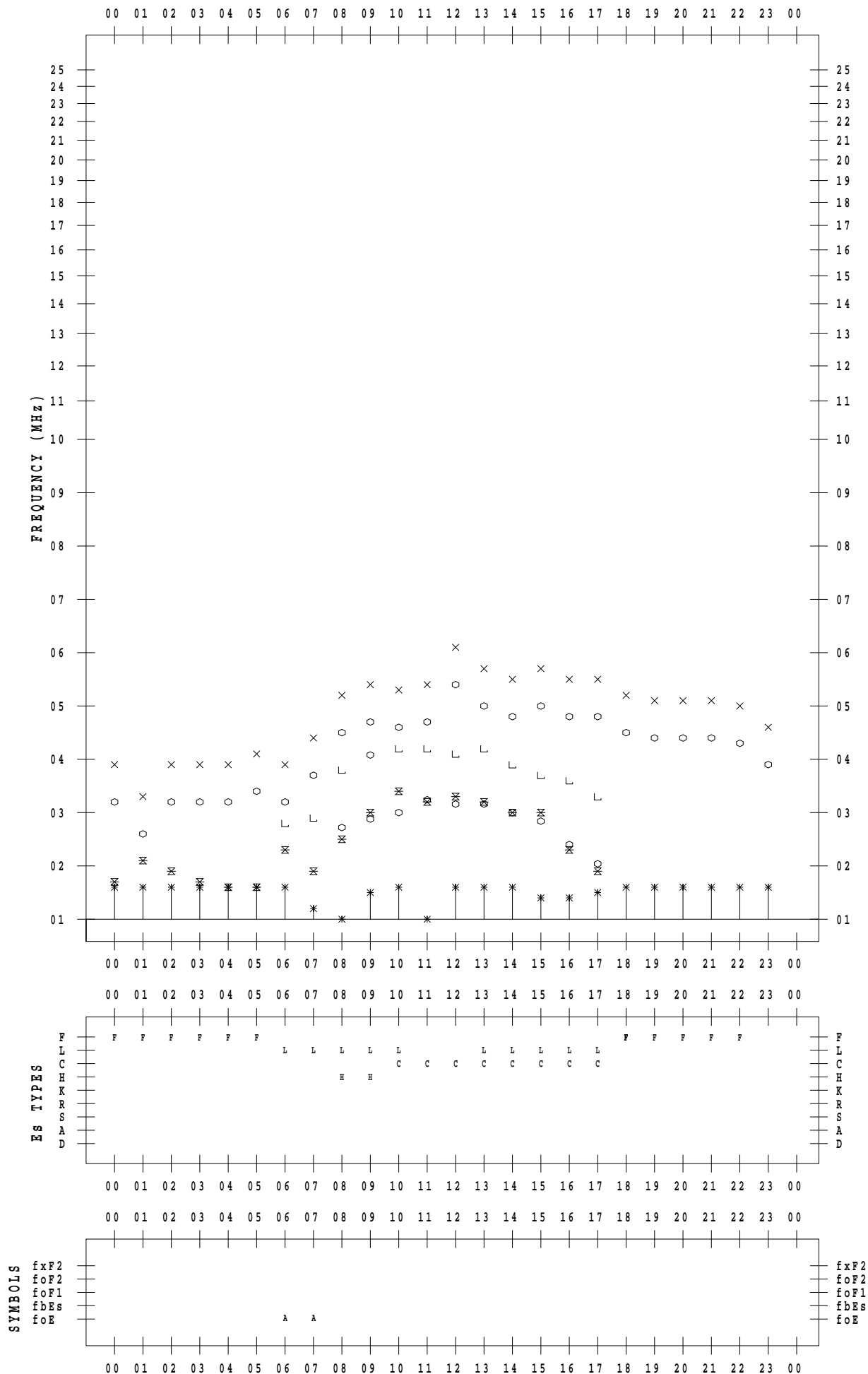
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 8

135 ° E MEAN TIME



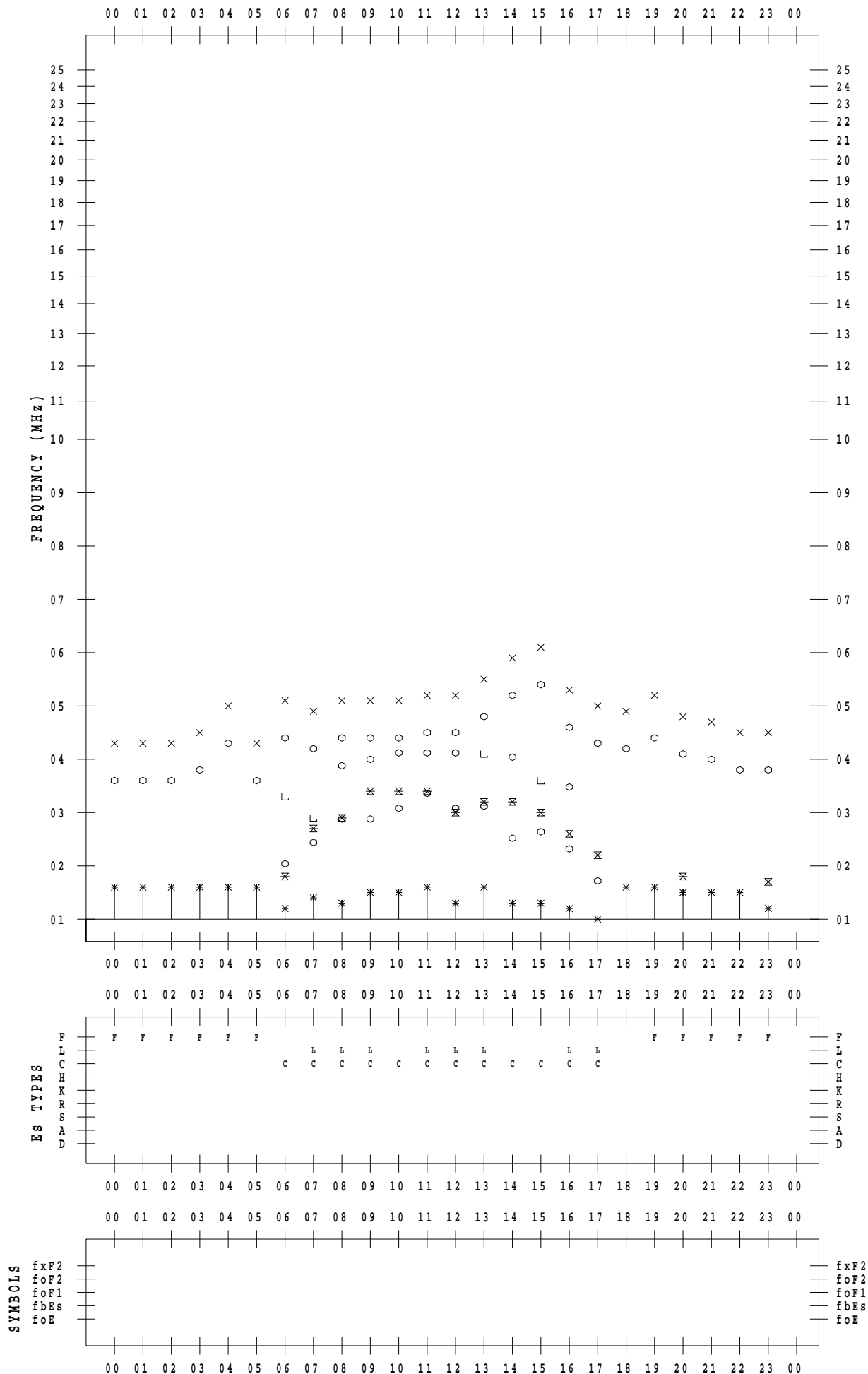
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 9

135 ° E MEAN TIME



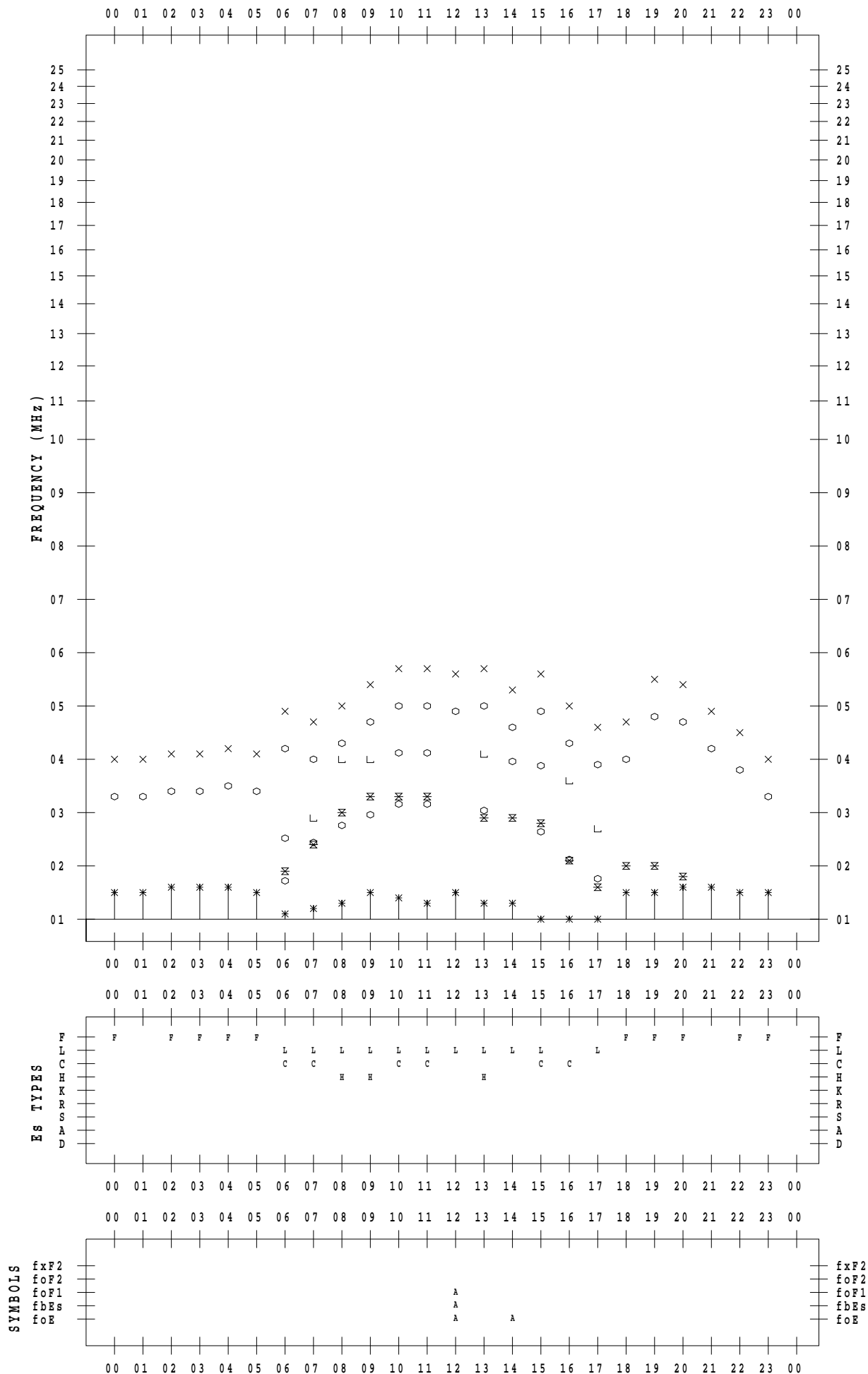
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 10

135 ° E MEAN TIME



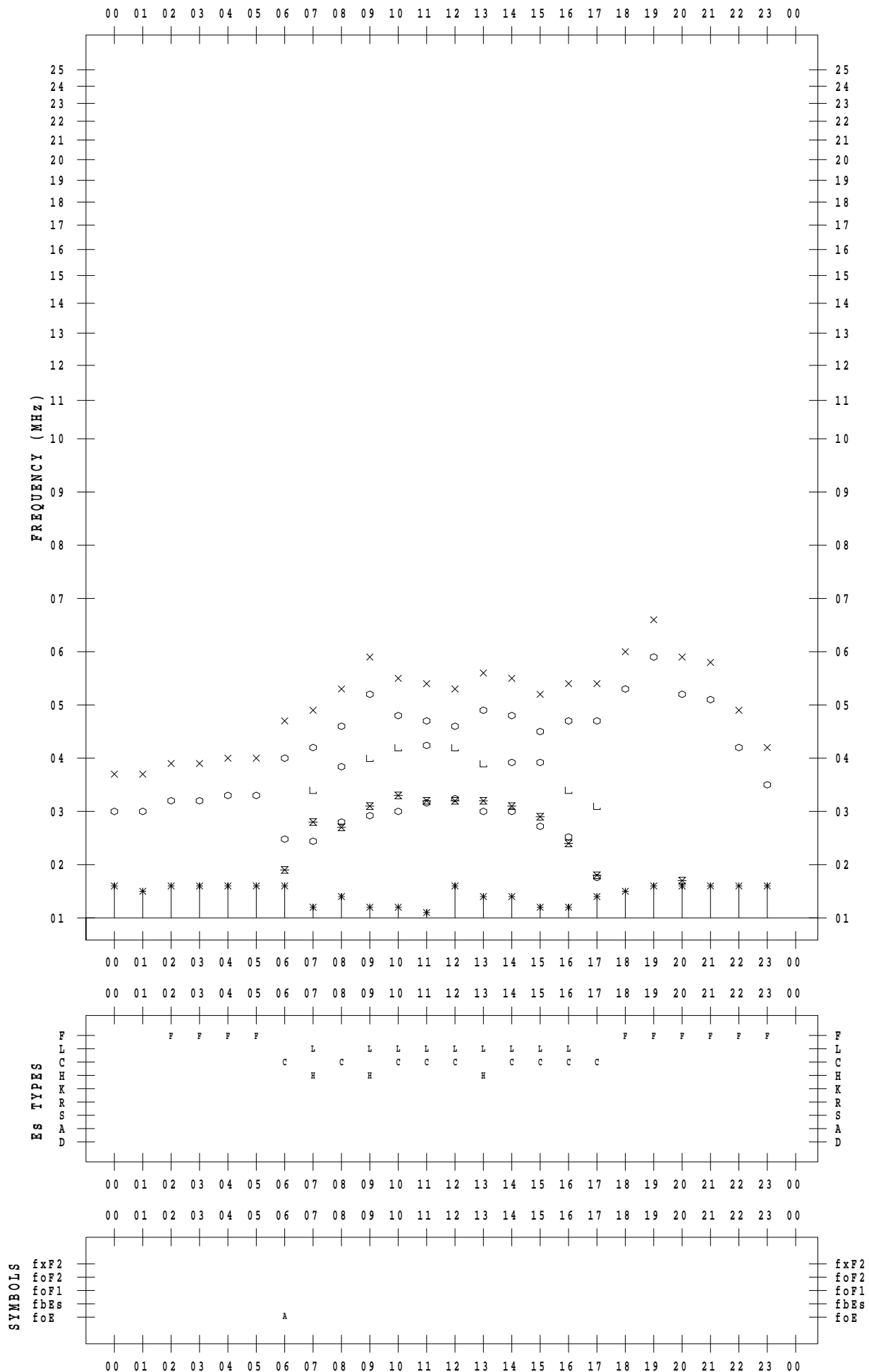
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 11

135 ° E MEAN TIME



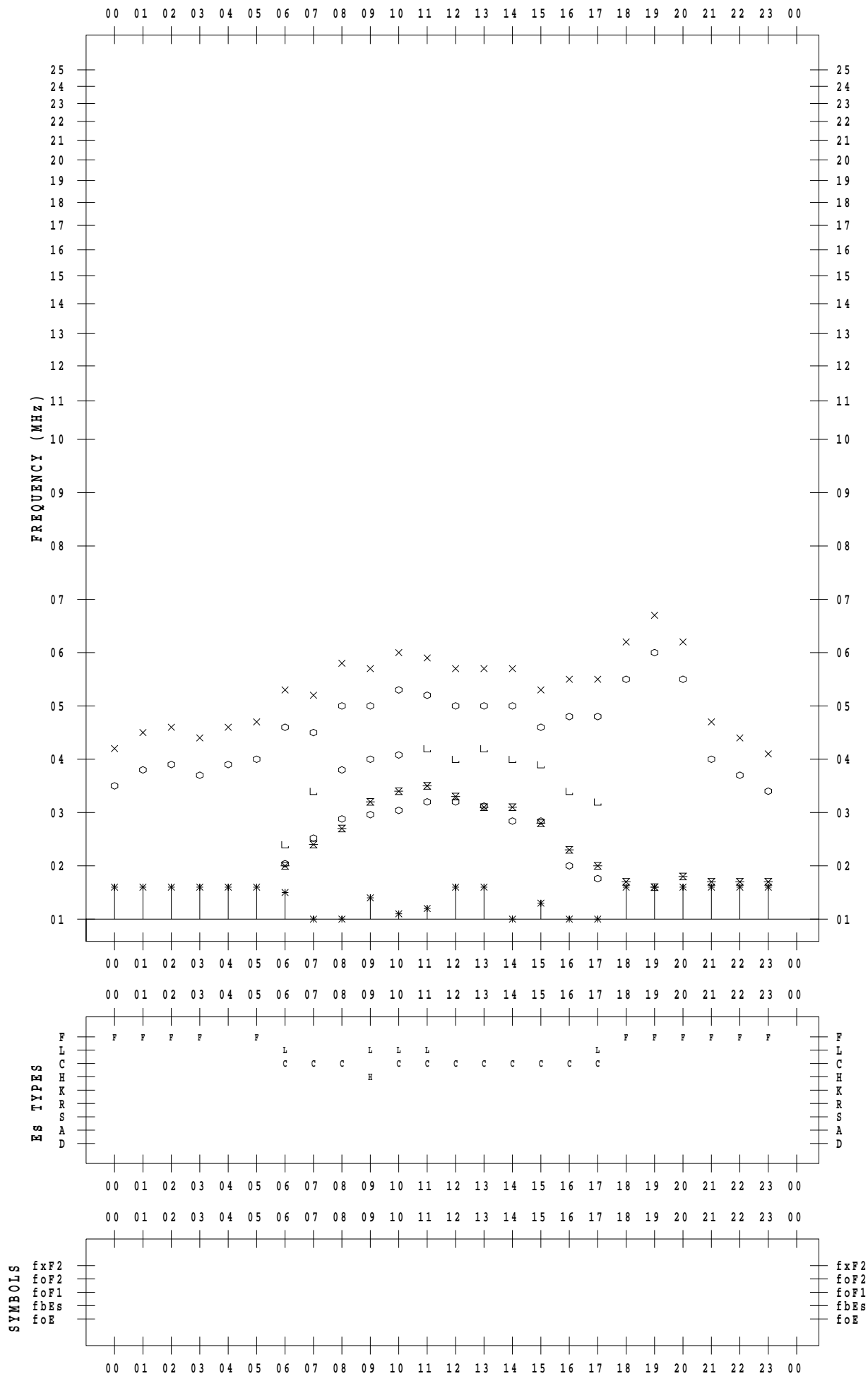
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 12

135 ° E MEAN TIME



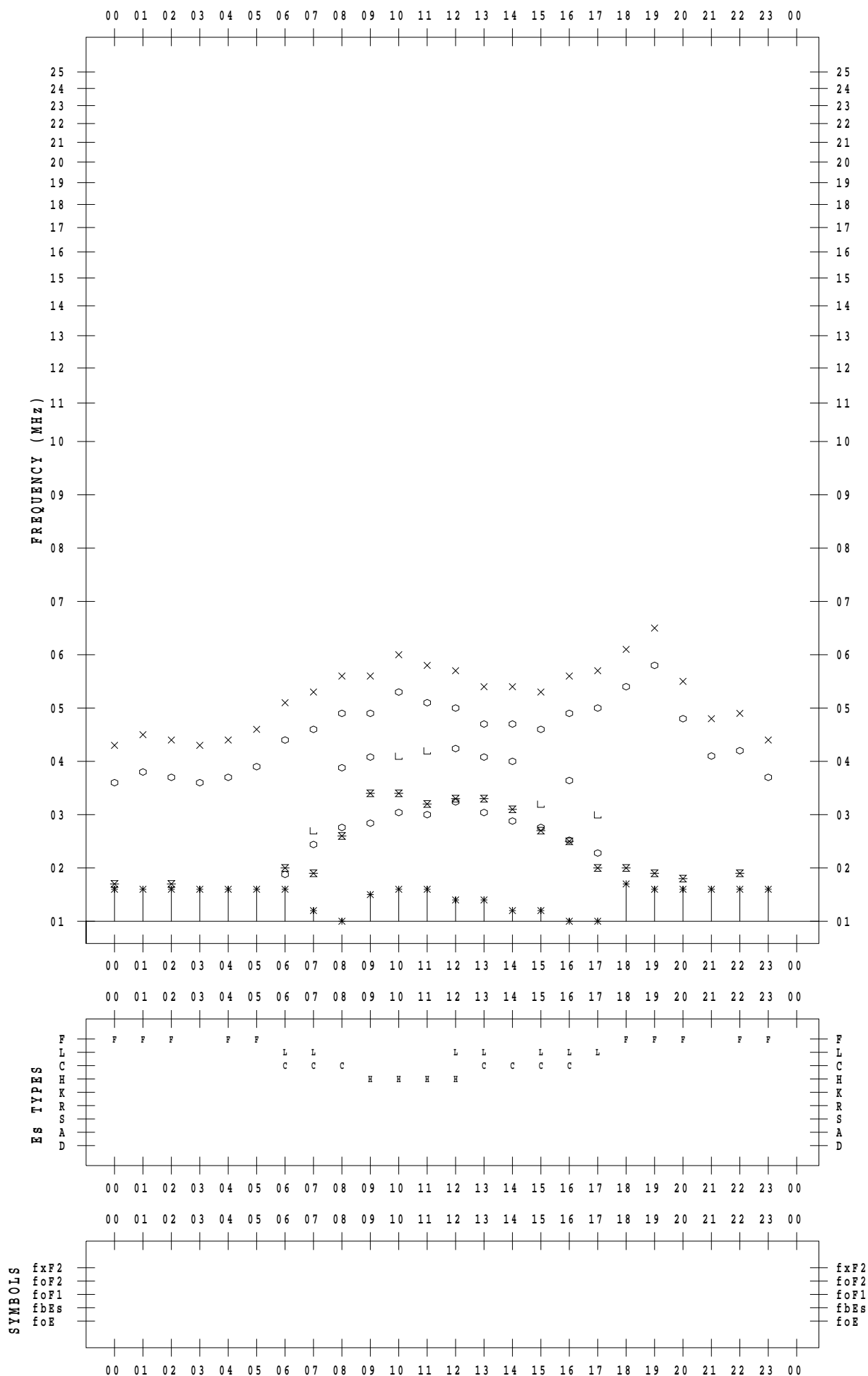
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 13

135 ° E MEAN TIME



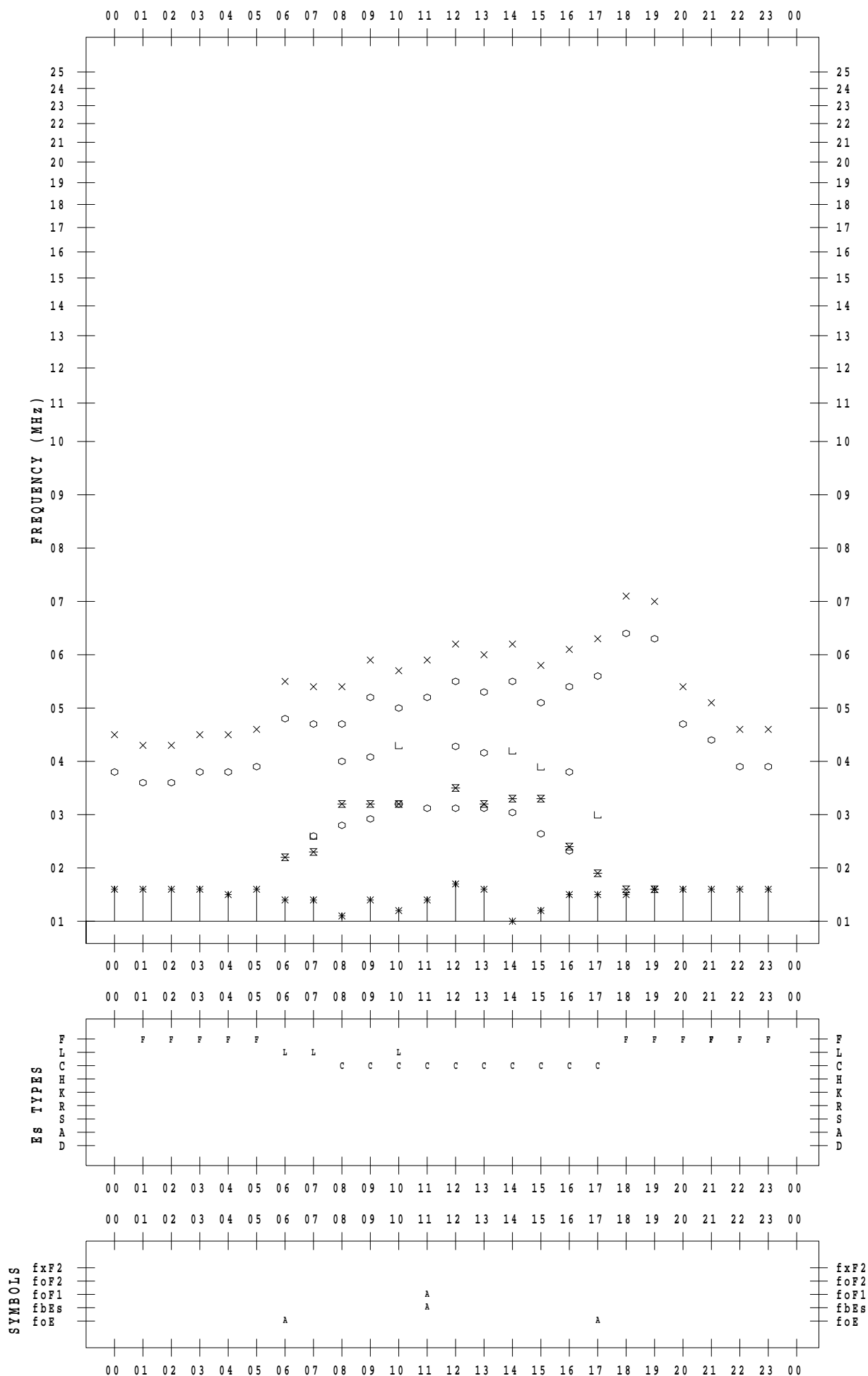
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 14

135 ° E MEAN TIME



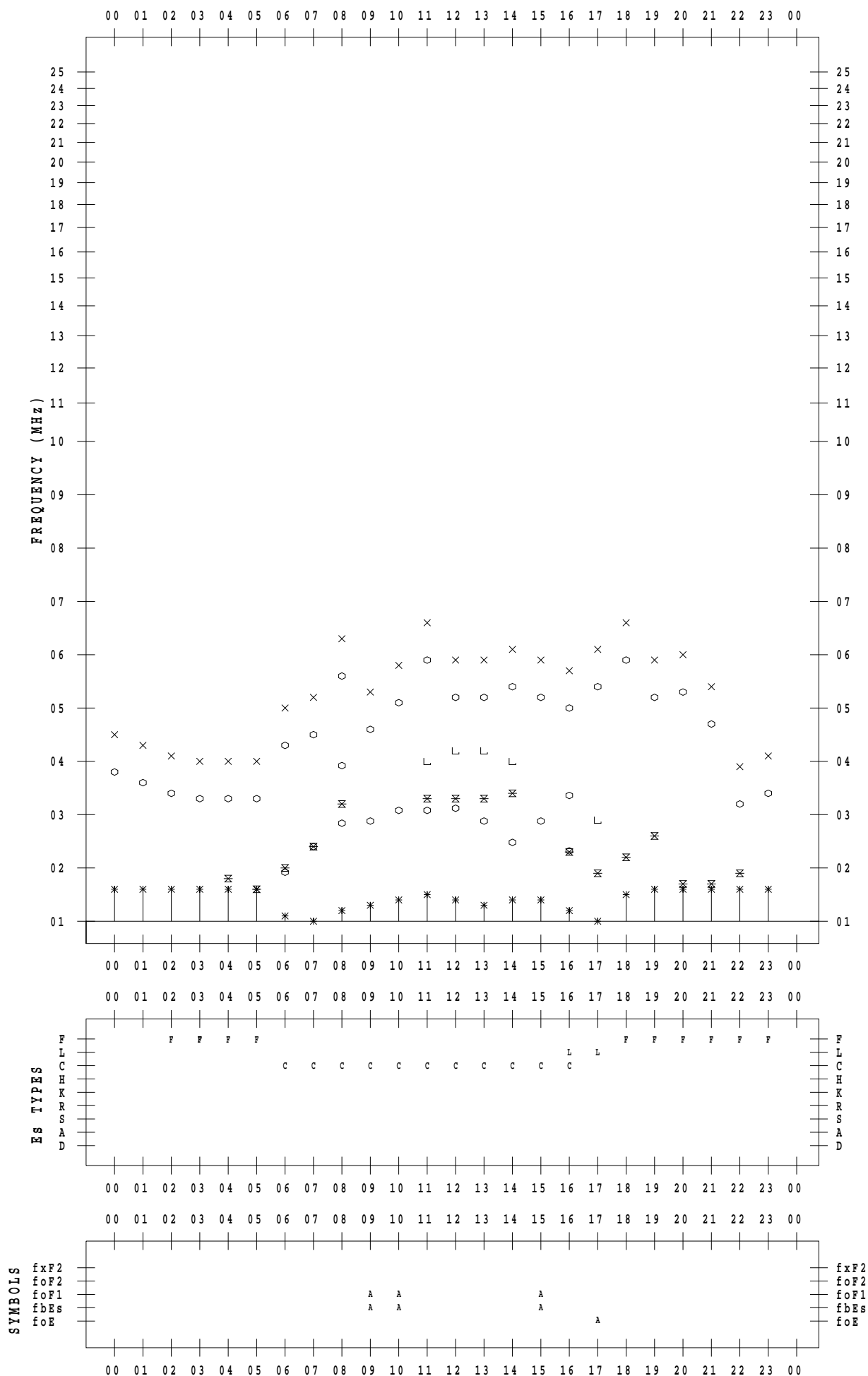
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 15

135 ° E MEAN TIME



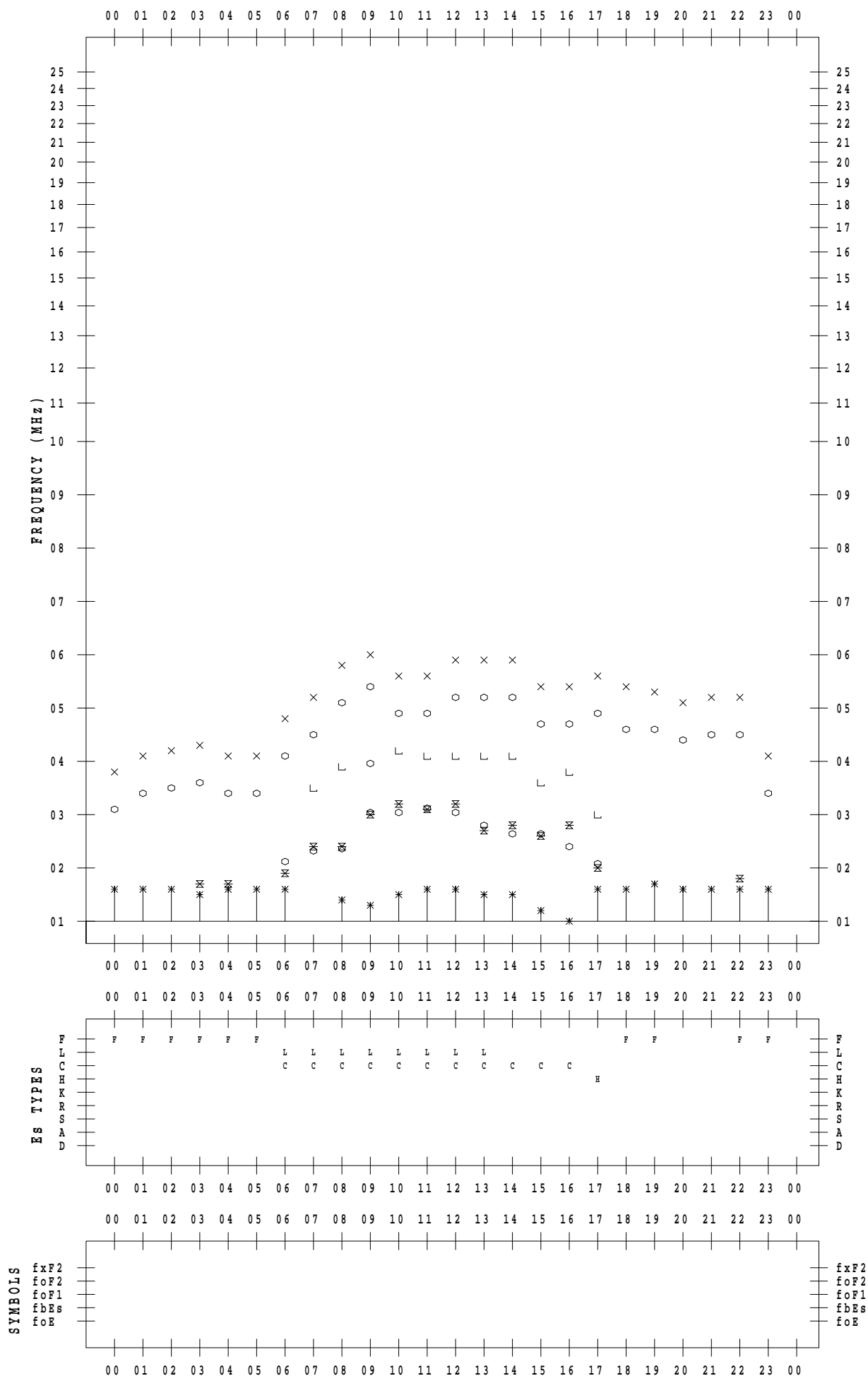
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 16

135 ° E MEAN TIME



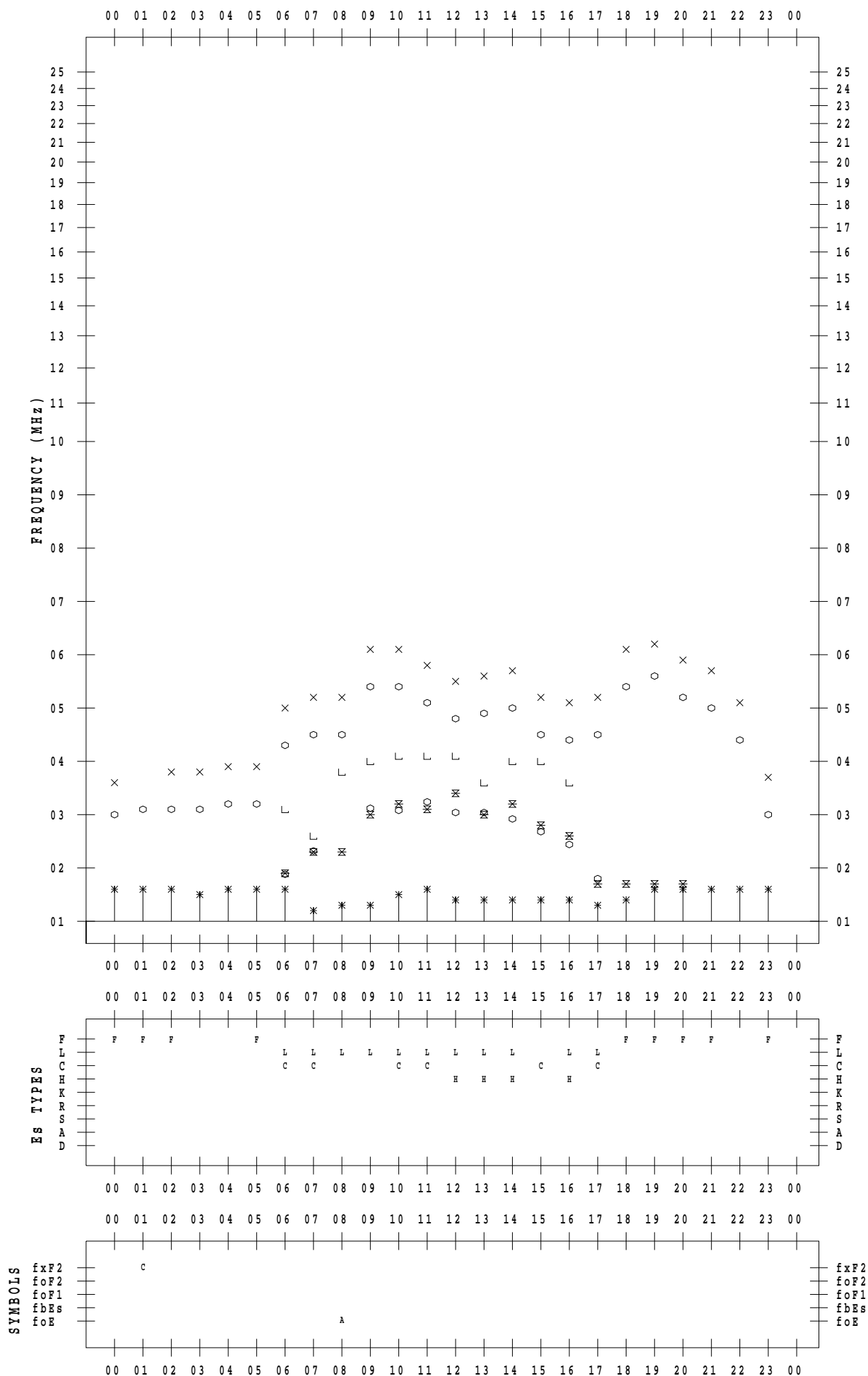
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 17

135 ° E MEAN TIME



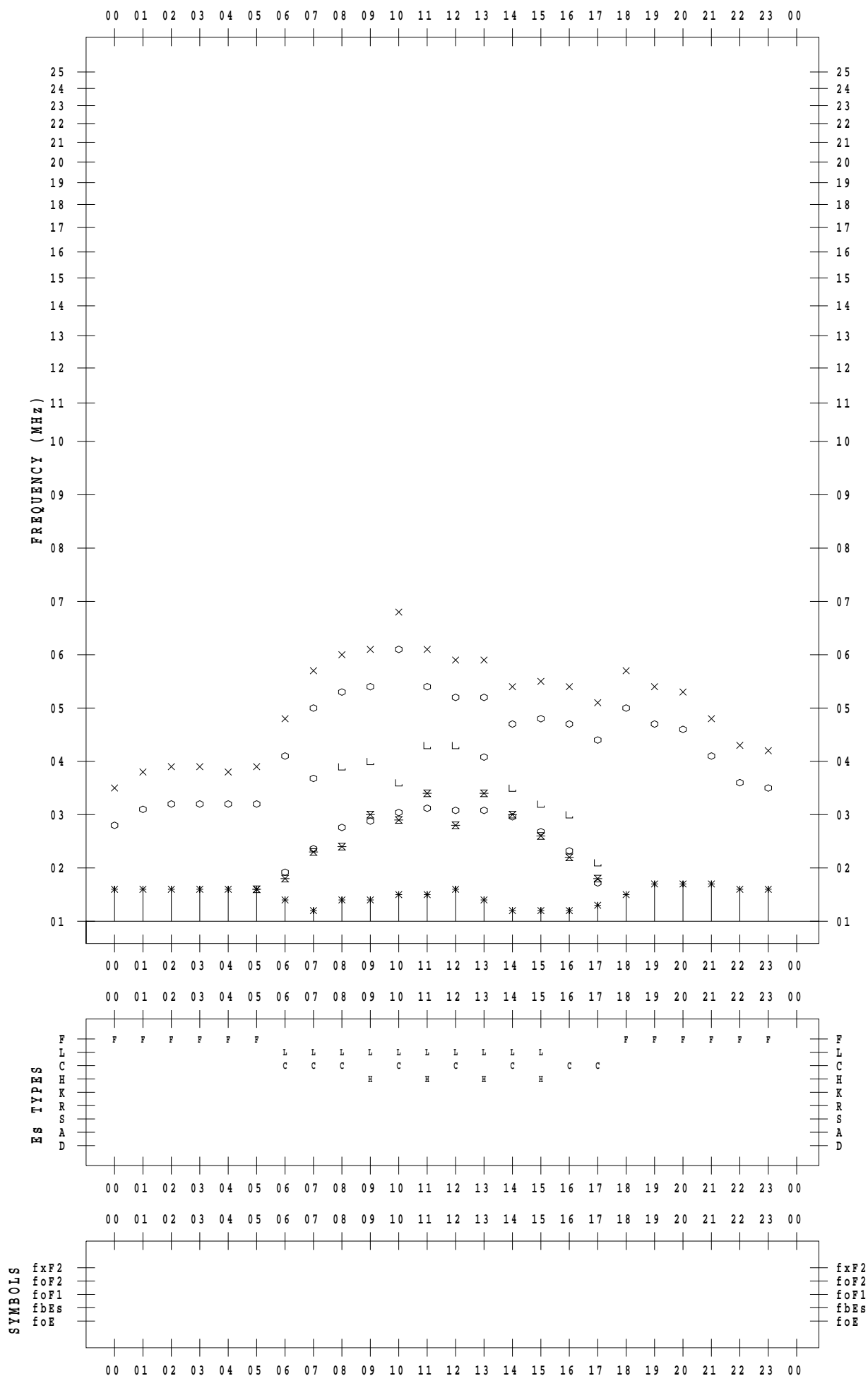
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 18

135 ° E MEAN TIME



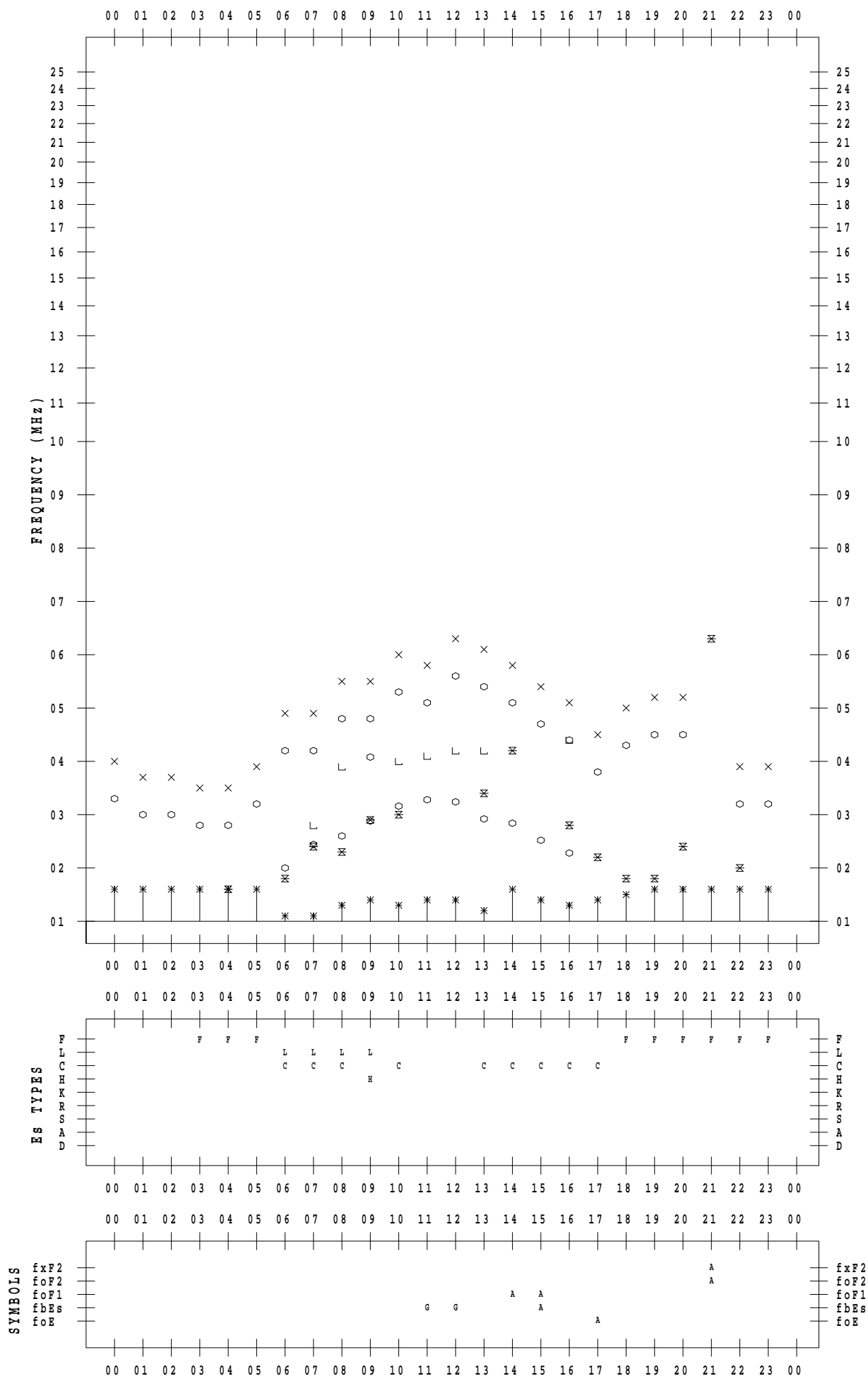
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 19

135 ° E MEAN TIME



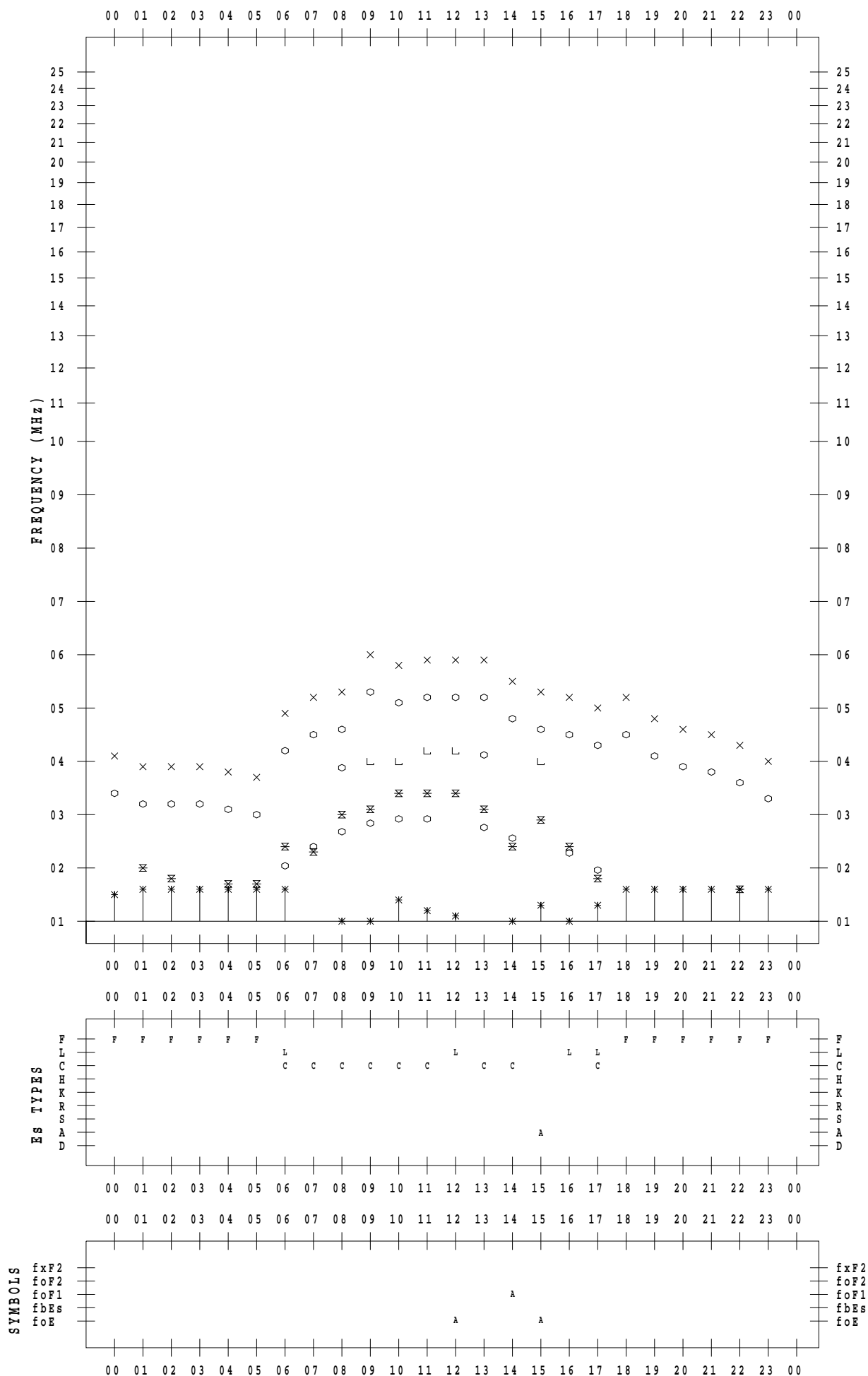
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 20

135 ° E MEAN TIME



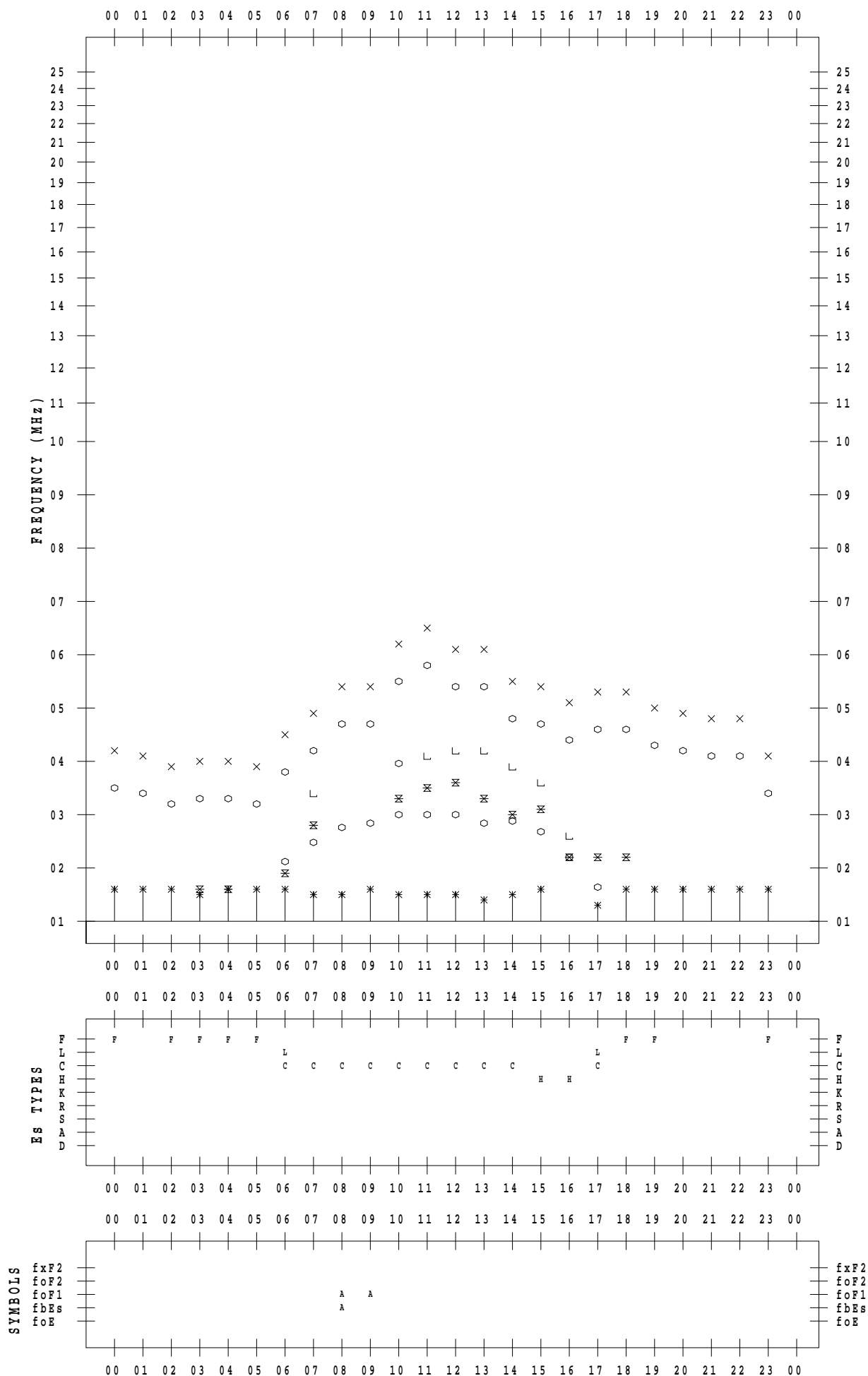
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 21

135 ° E MEAN TIME



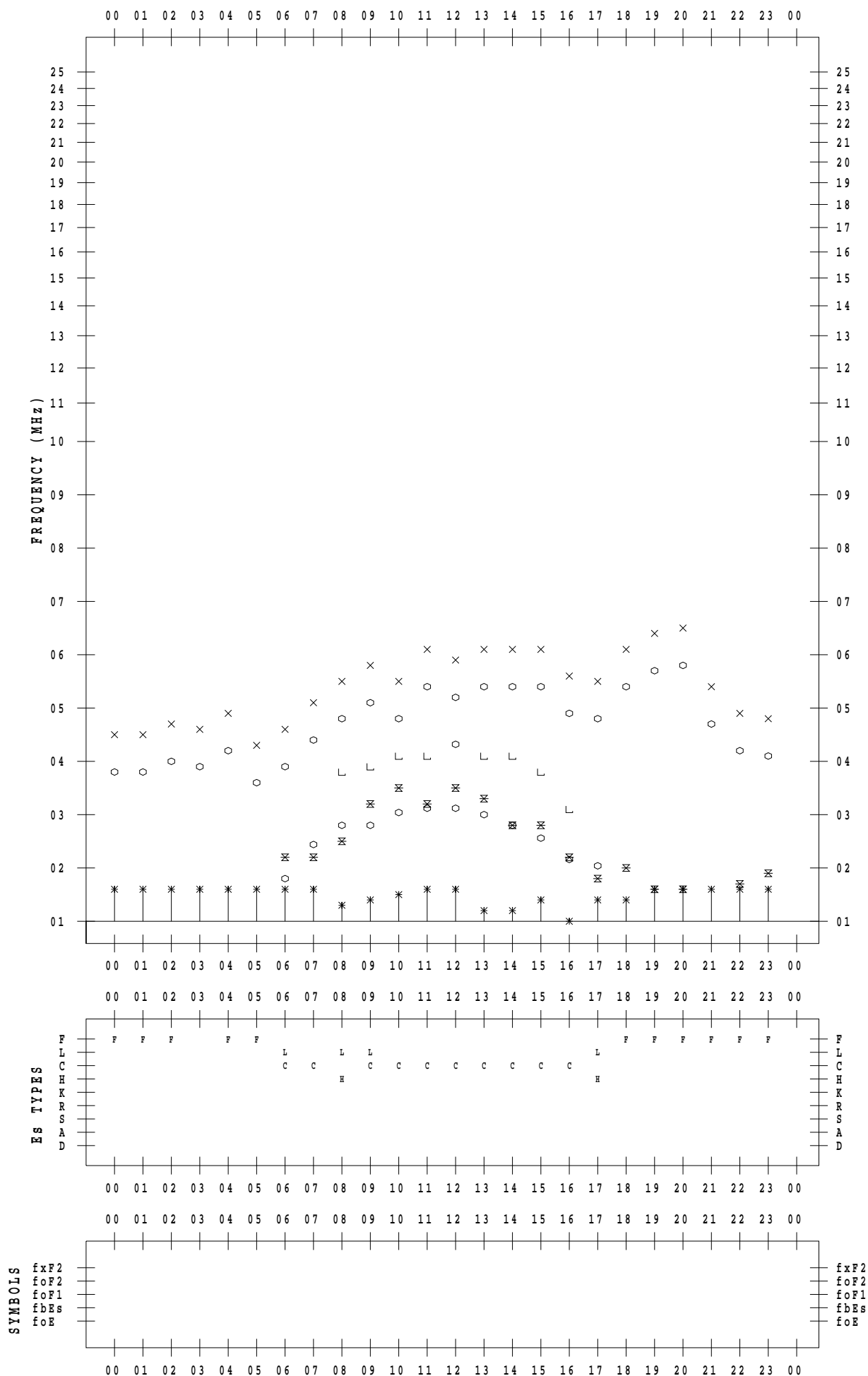
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 22

135 ° E MEAN TIME



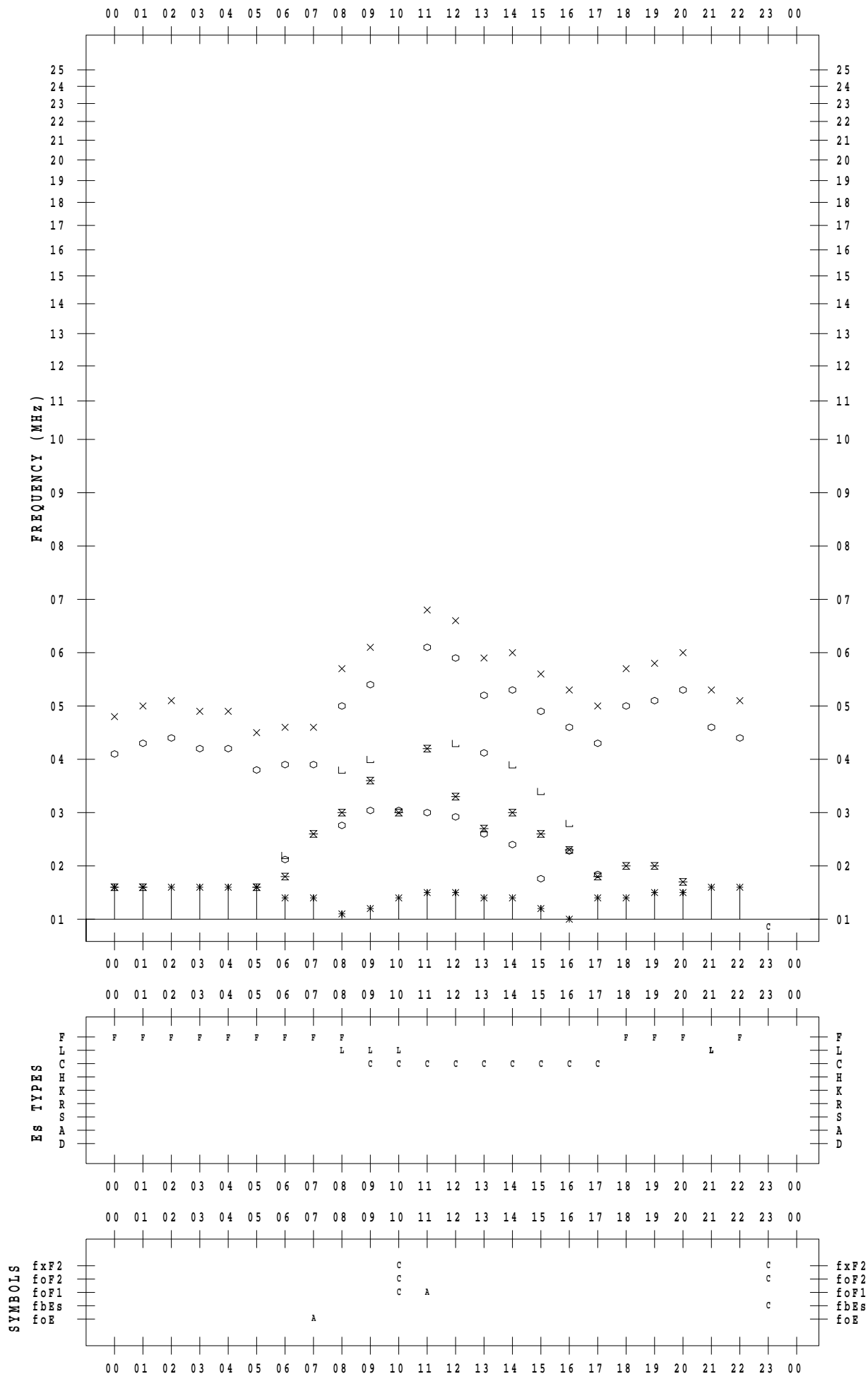
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 23

135 ° E MEAN TIME



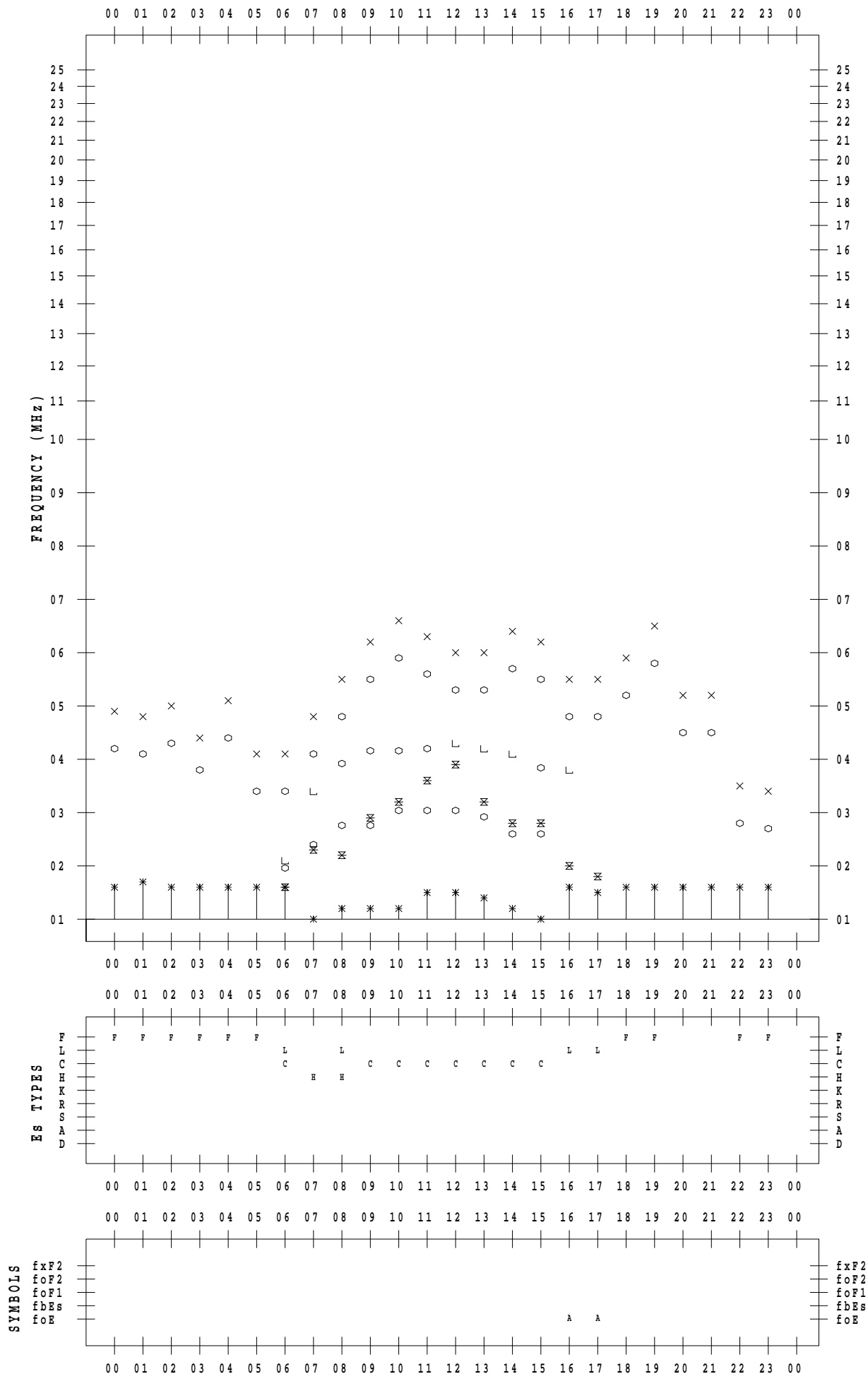
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 24

135 ° E MEAN TIME



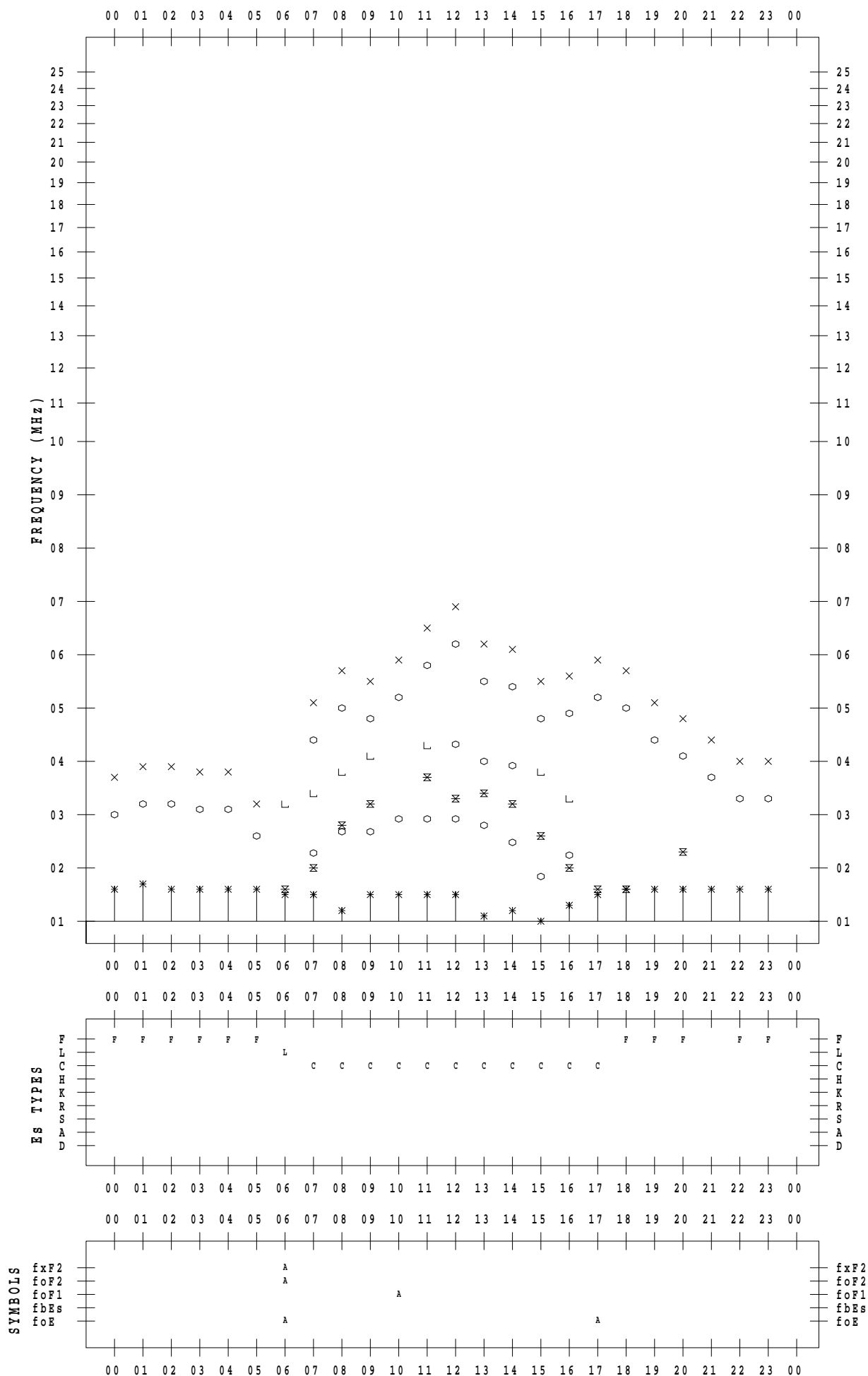
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 25

135 ° E MEAN TIME



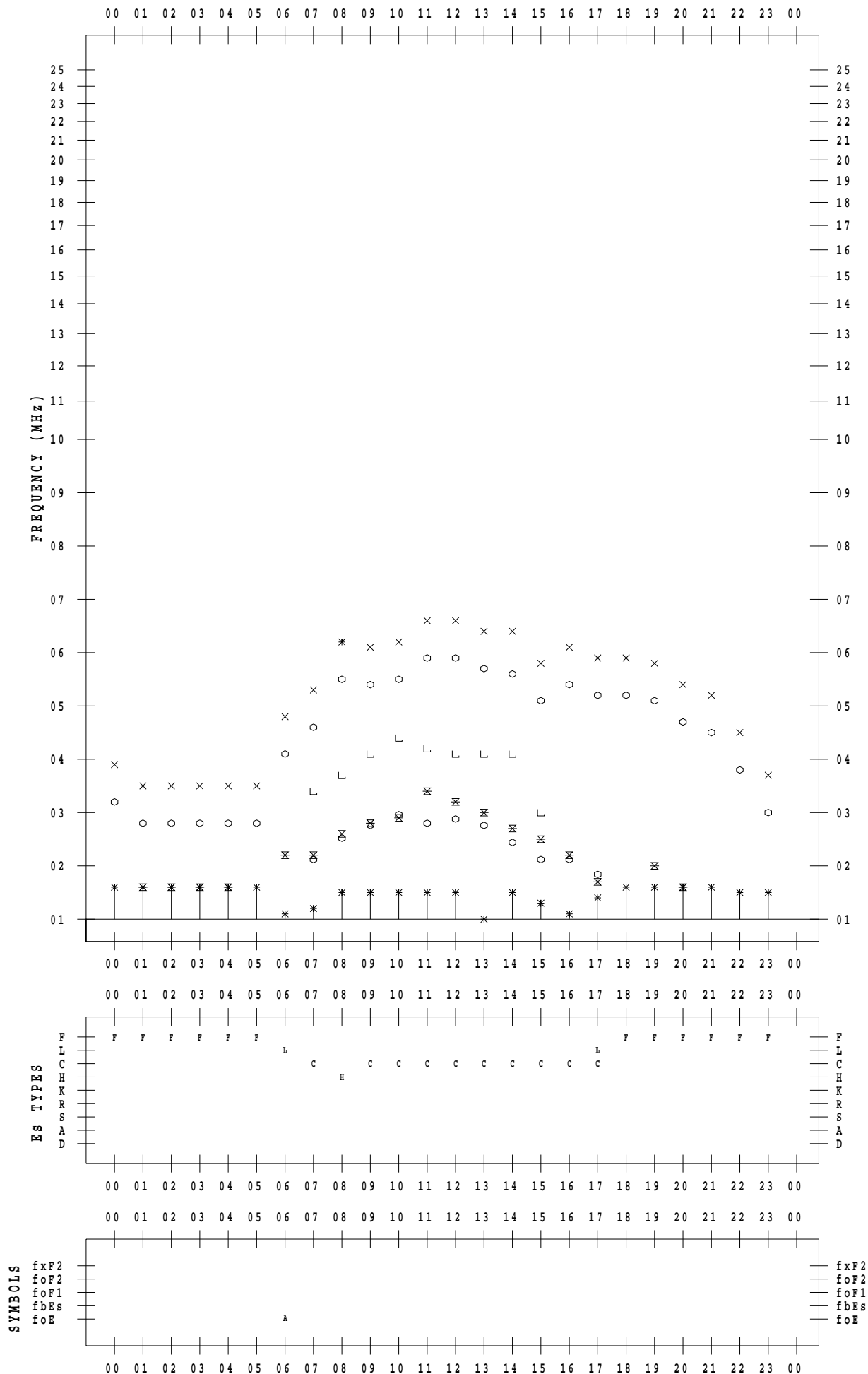
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 26

135 ° E MEAN TIME



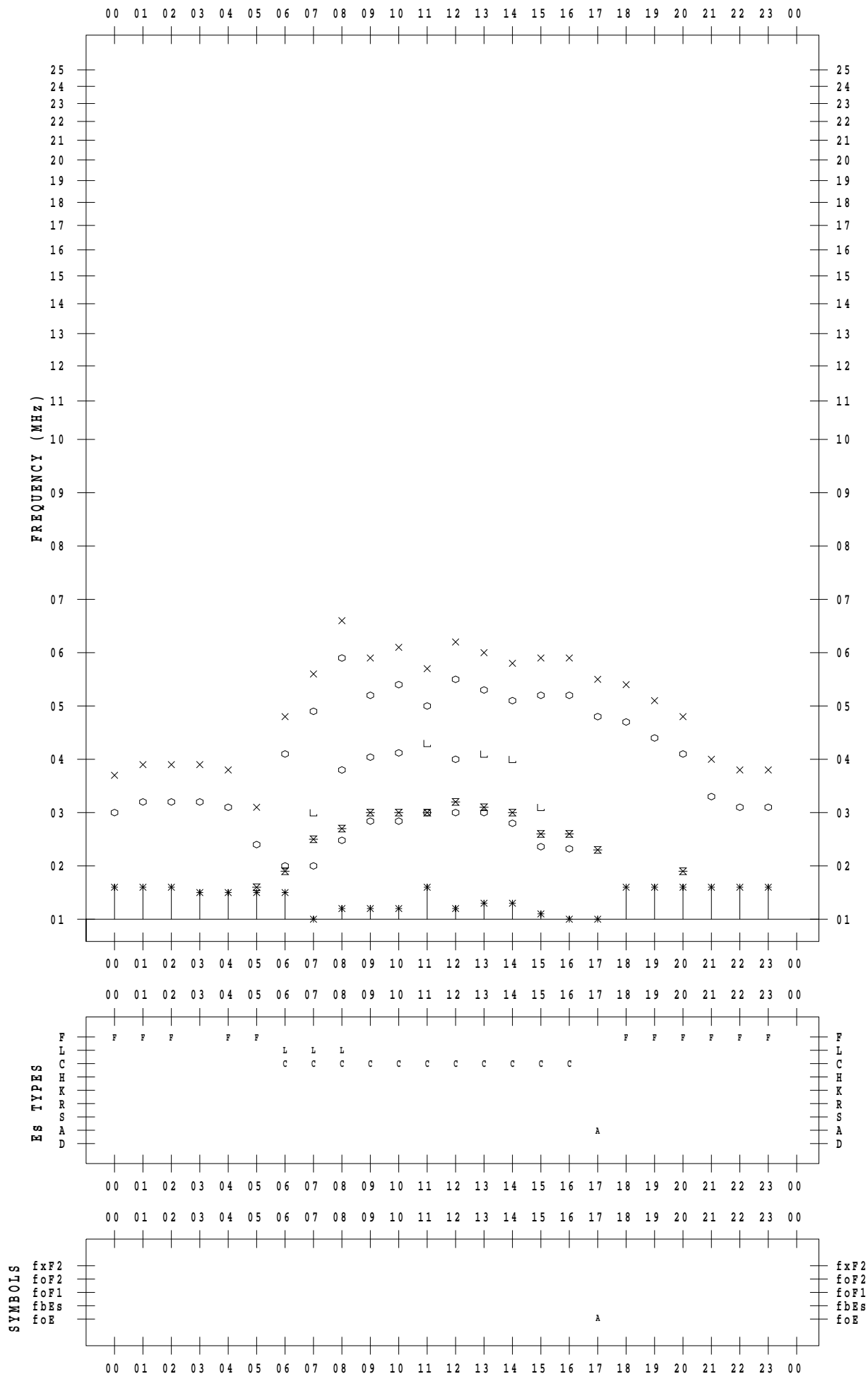
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 27

135 ° E MEAN TIME



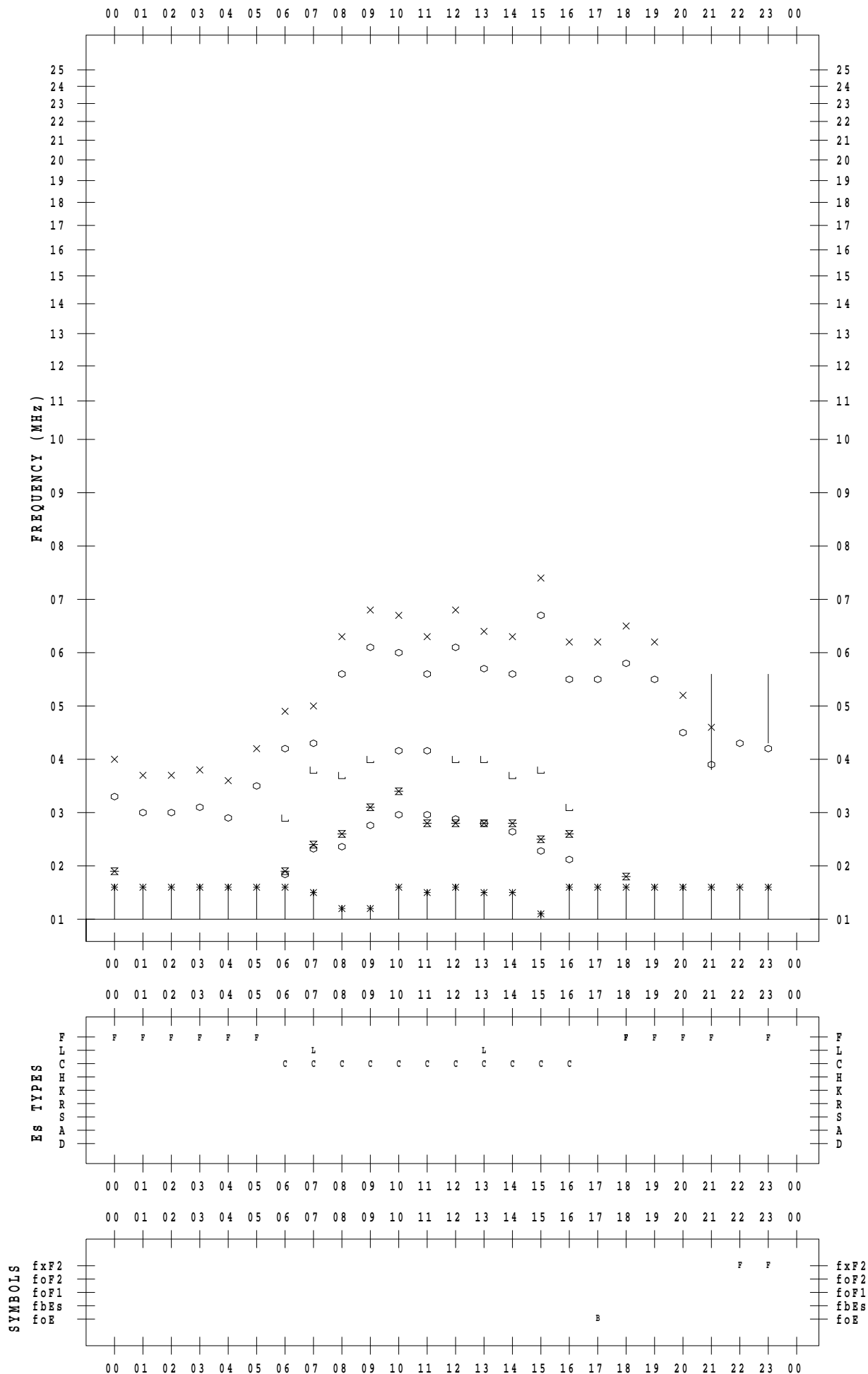
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 28

135 ° E MEAN TIME



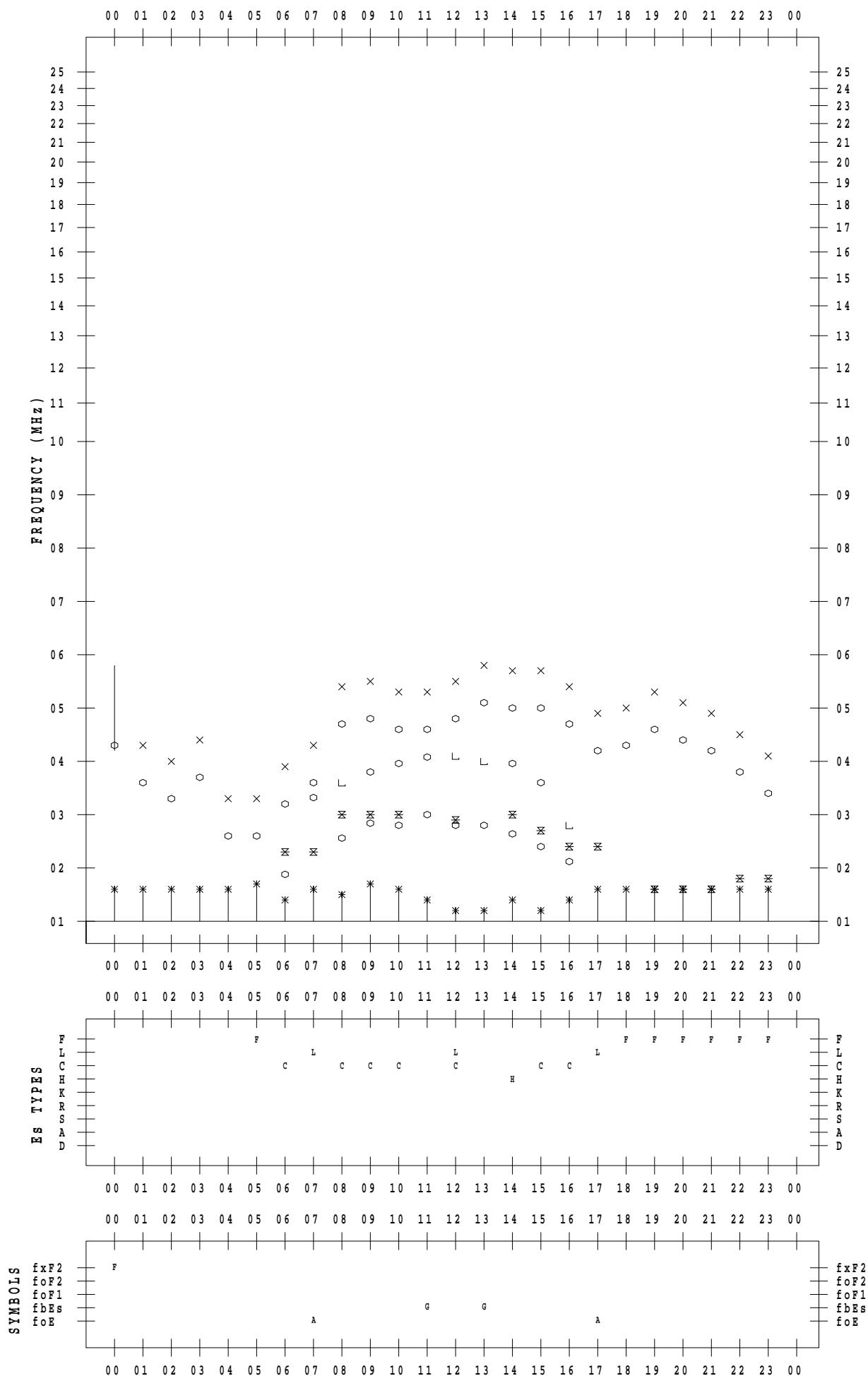
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 29

135 ° E MEAN TIME



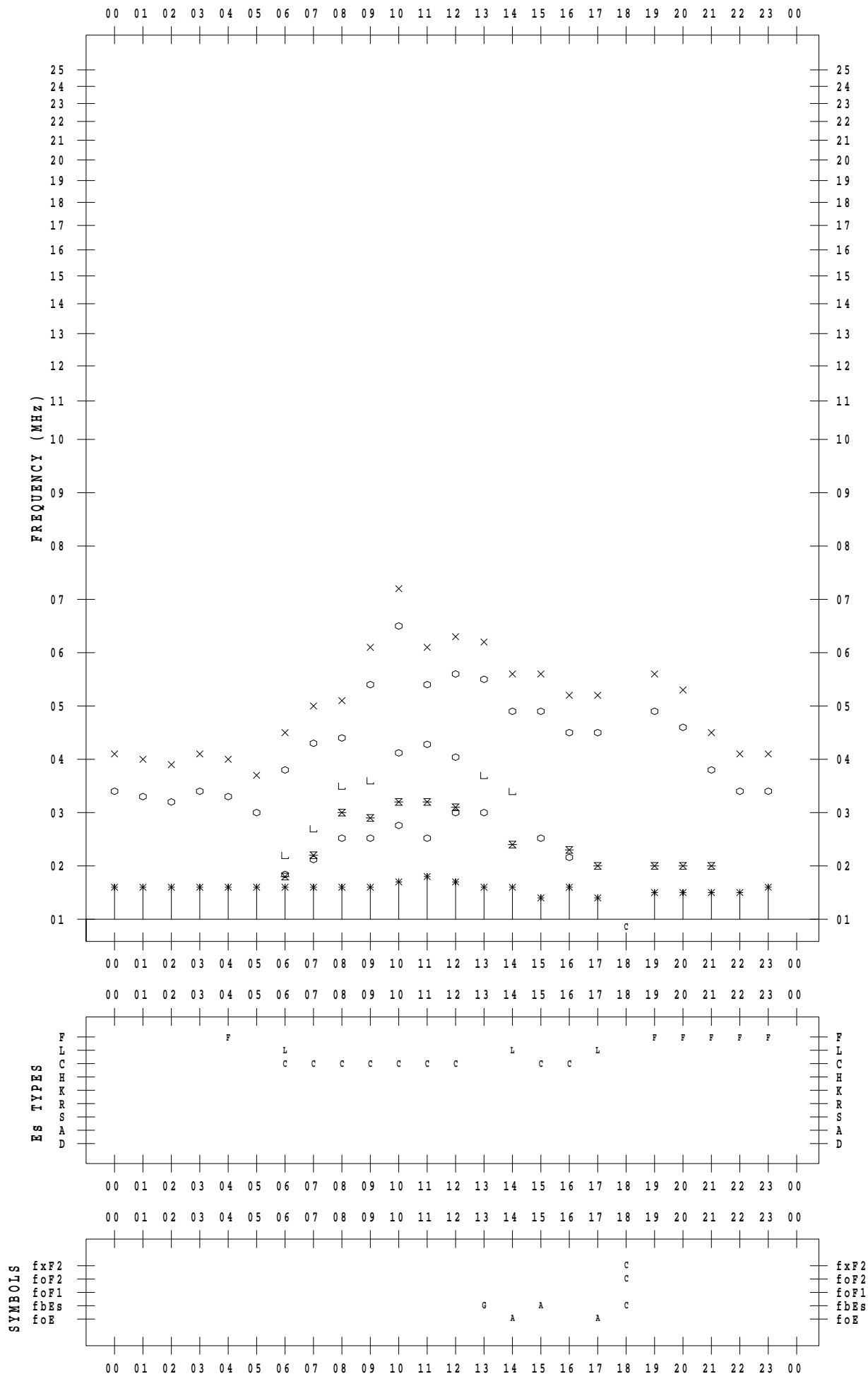
f - PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020 / 9 / 30

135 ° E MEAN TIME



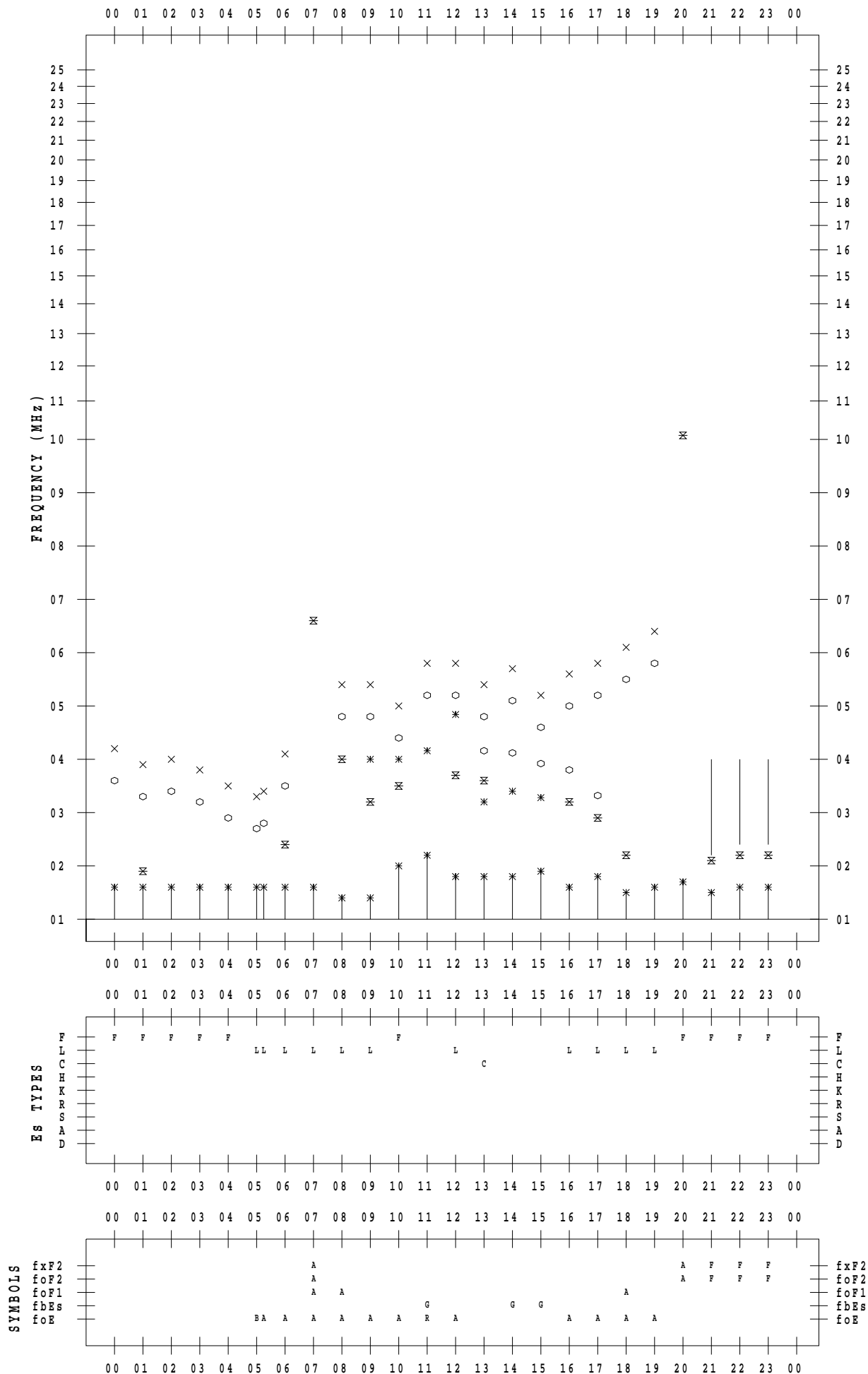
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 1

135 ° E MEAN TIME



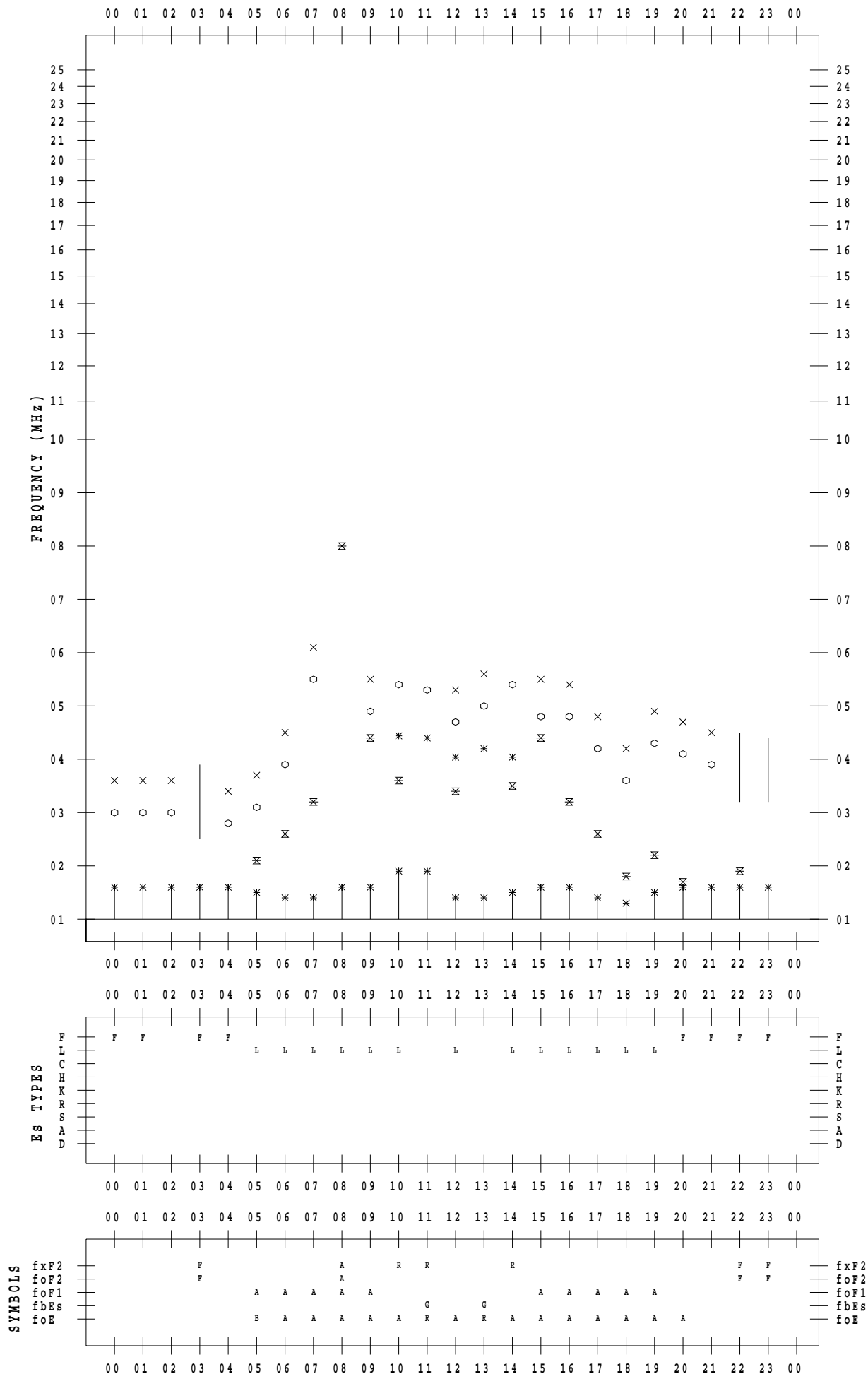
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 2

135 ° E MEAN TIME



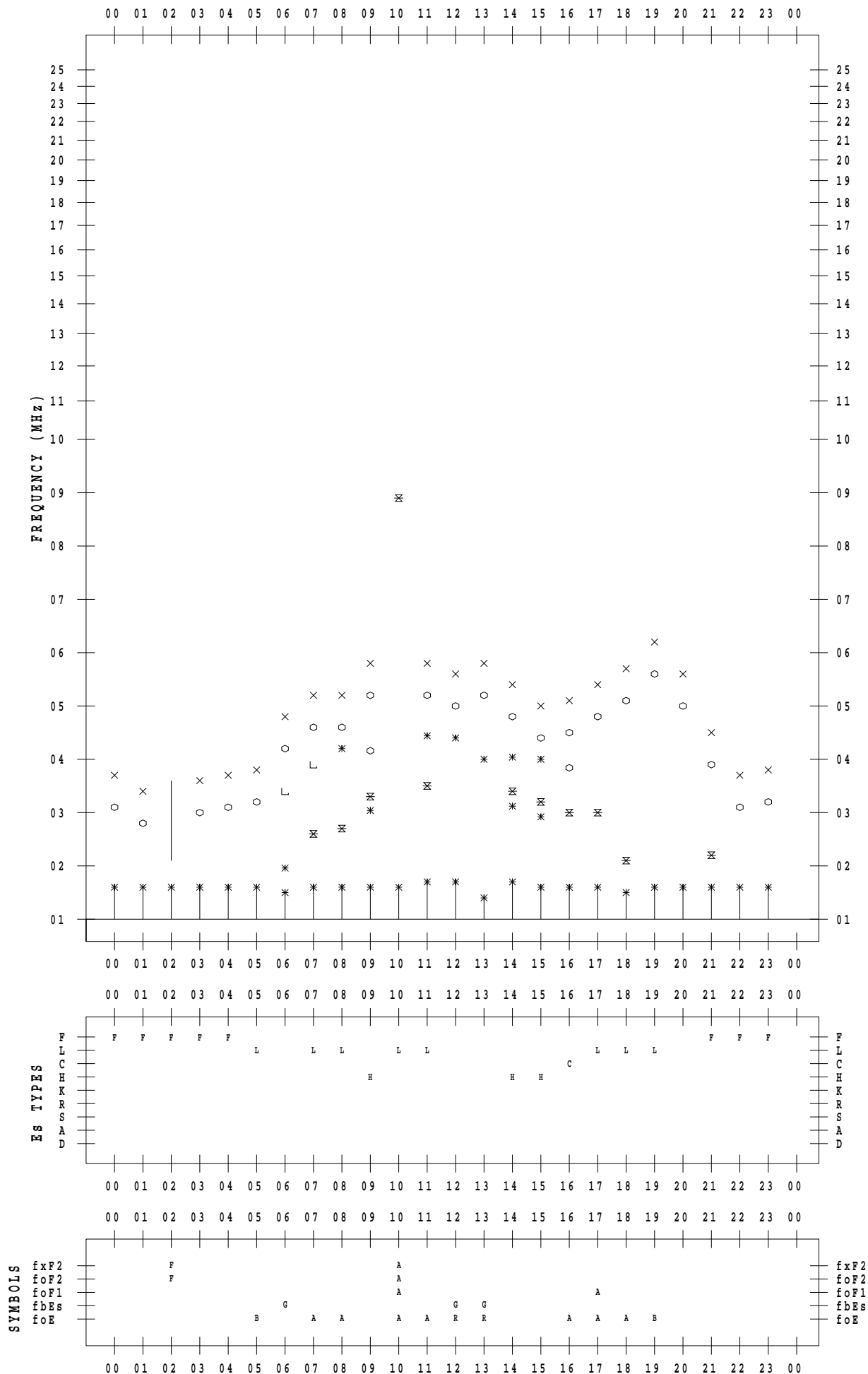
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 3

135 ° E MEAN TIME



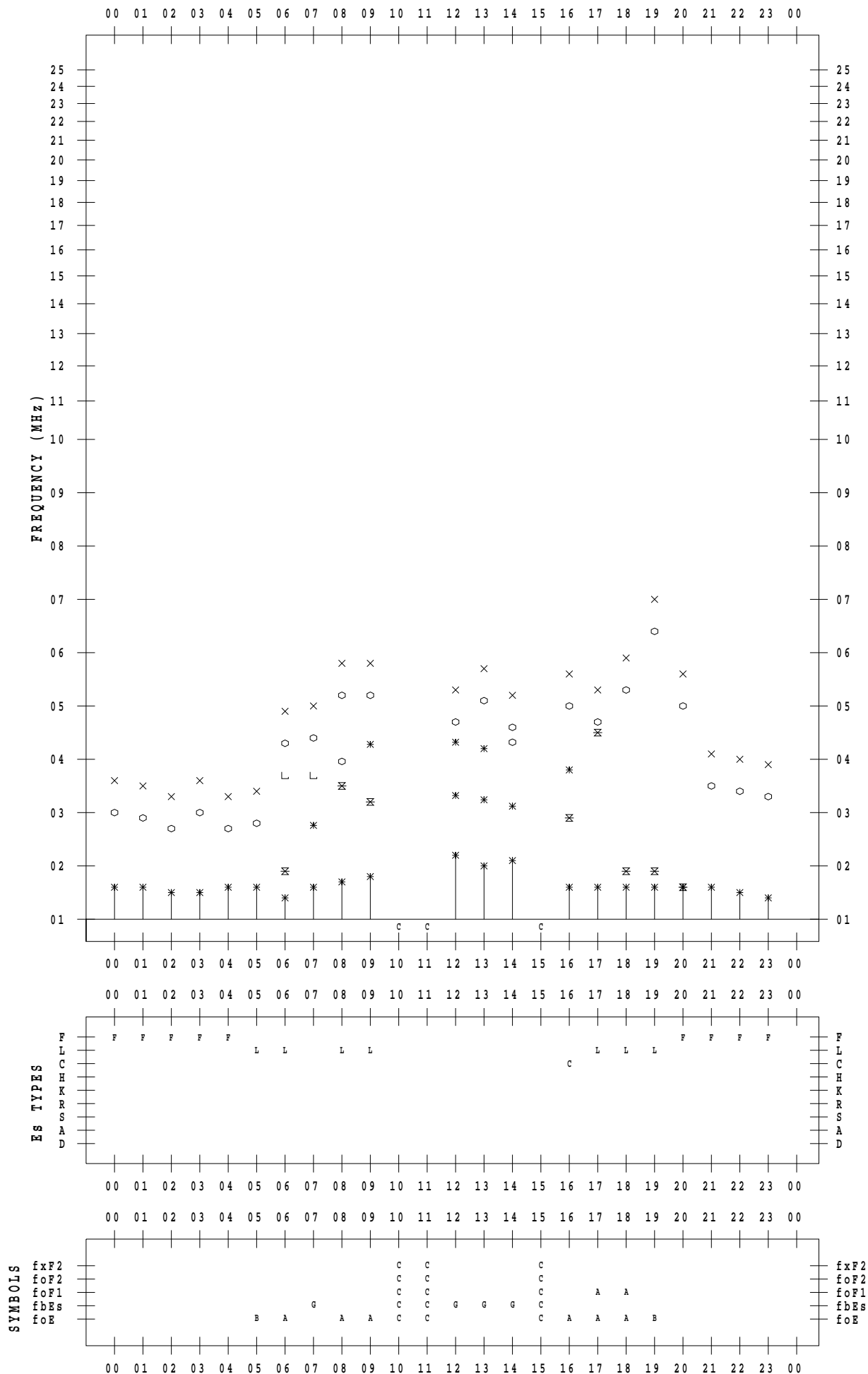
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 4

135 ° E MEAN TIME



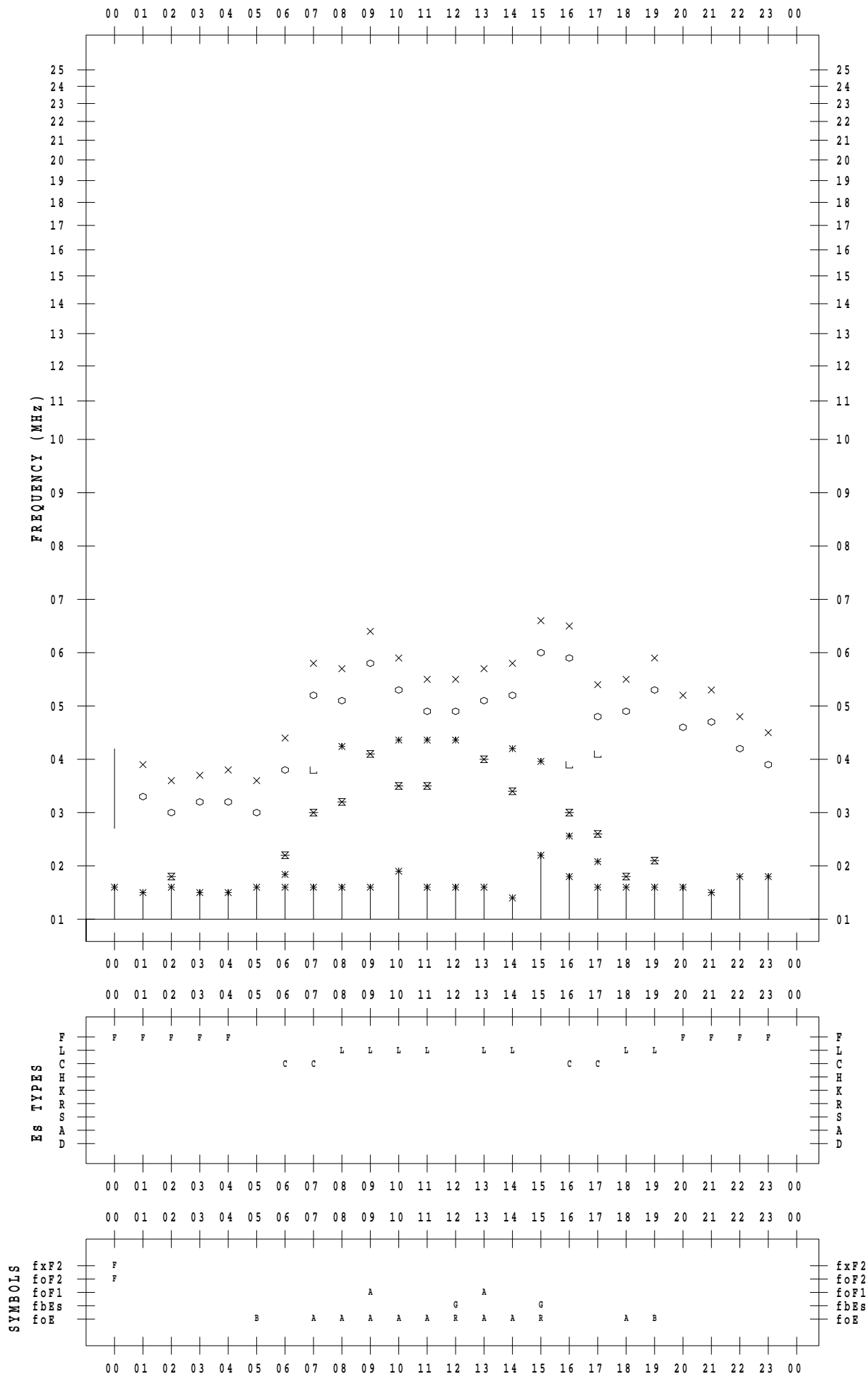
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 5

135 ° E MEAN TIME



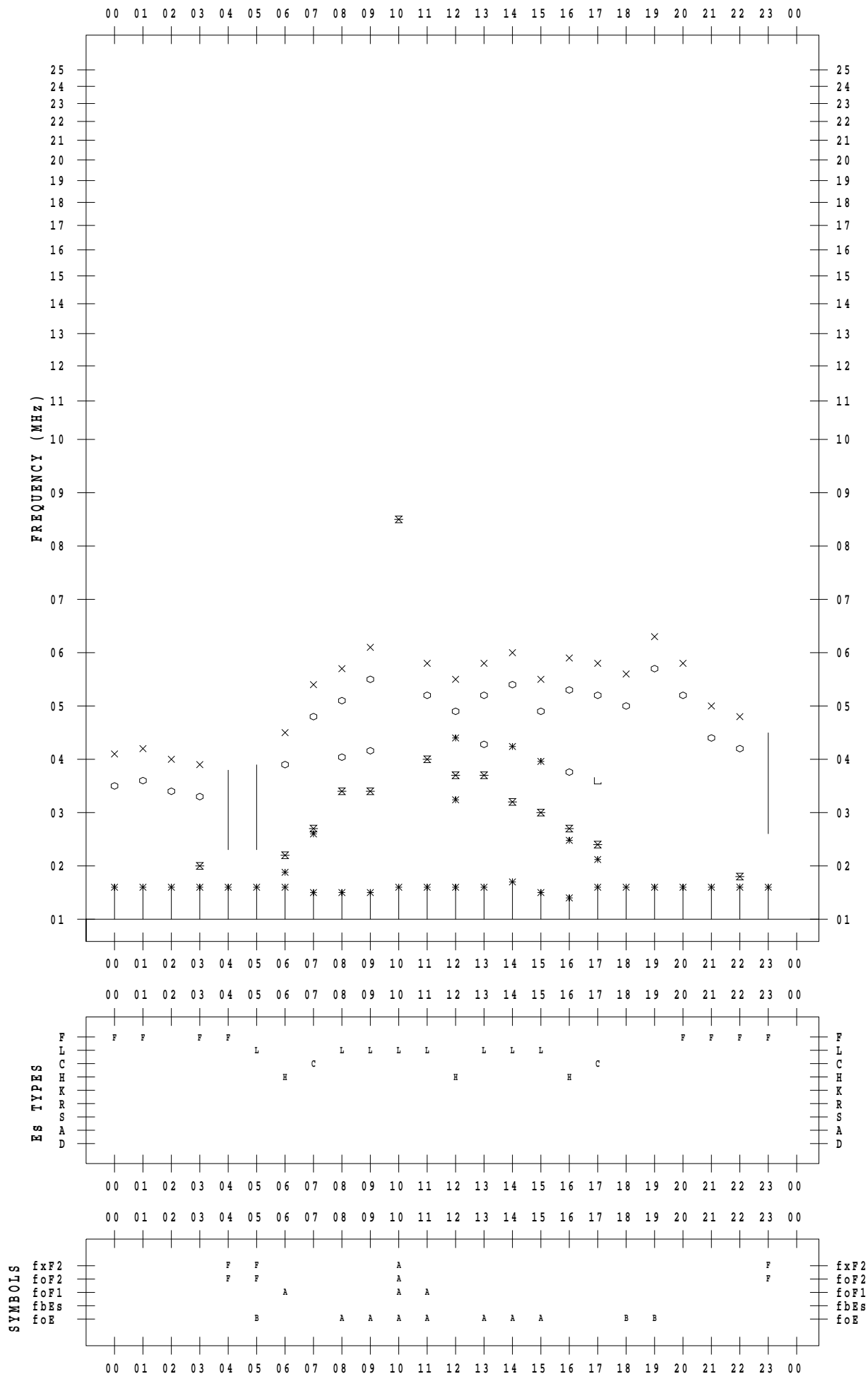
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 6

135 ° E MEAN TIME



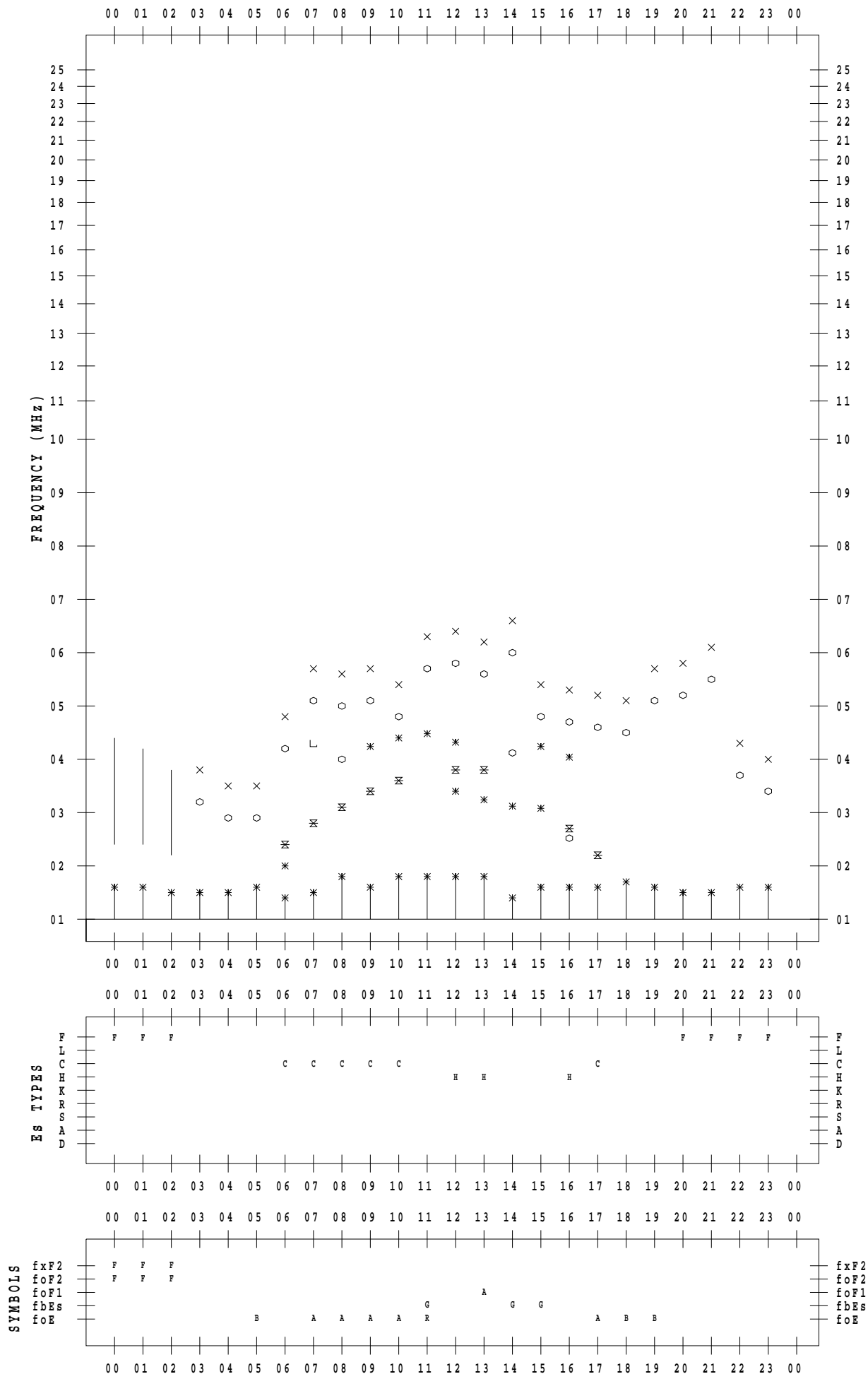
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 7

135 ° E MEAN TIME



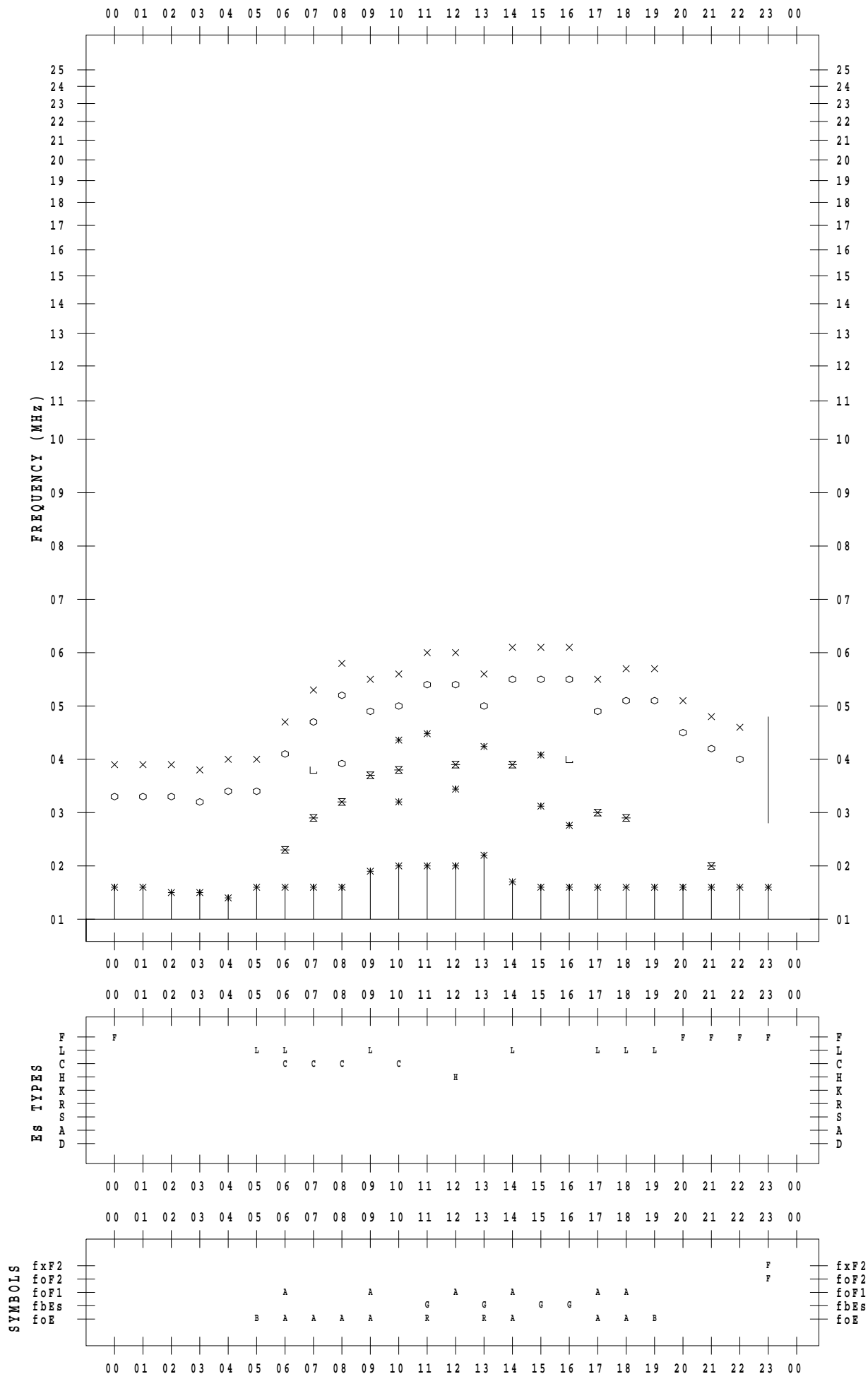
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 8

135 ° E MEAN TIME



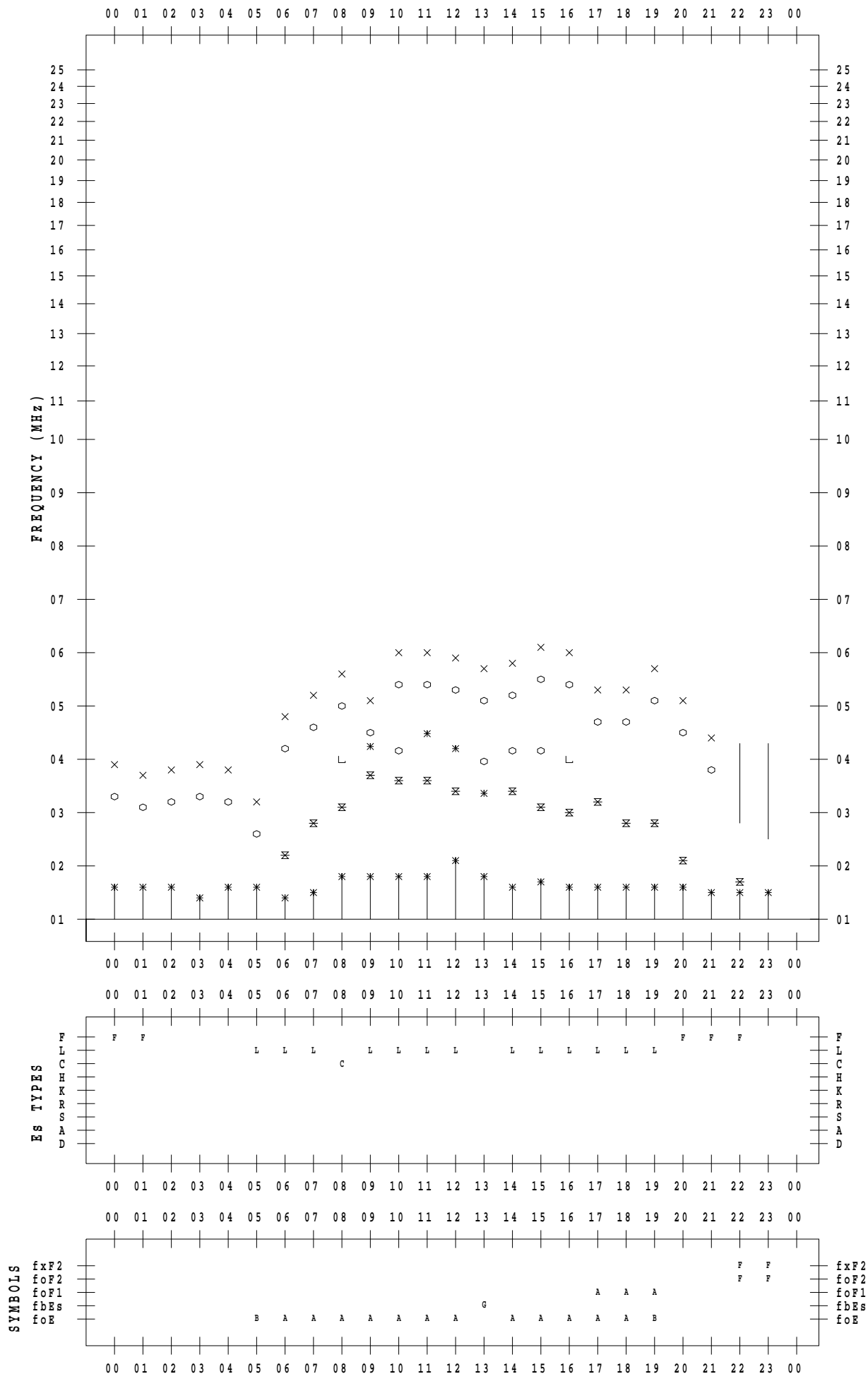
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 9

135 ° E MEAN TIME



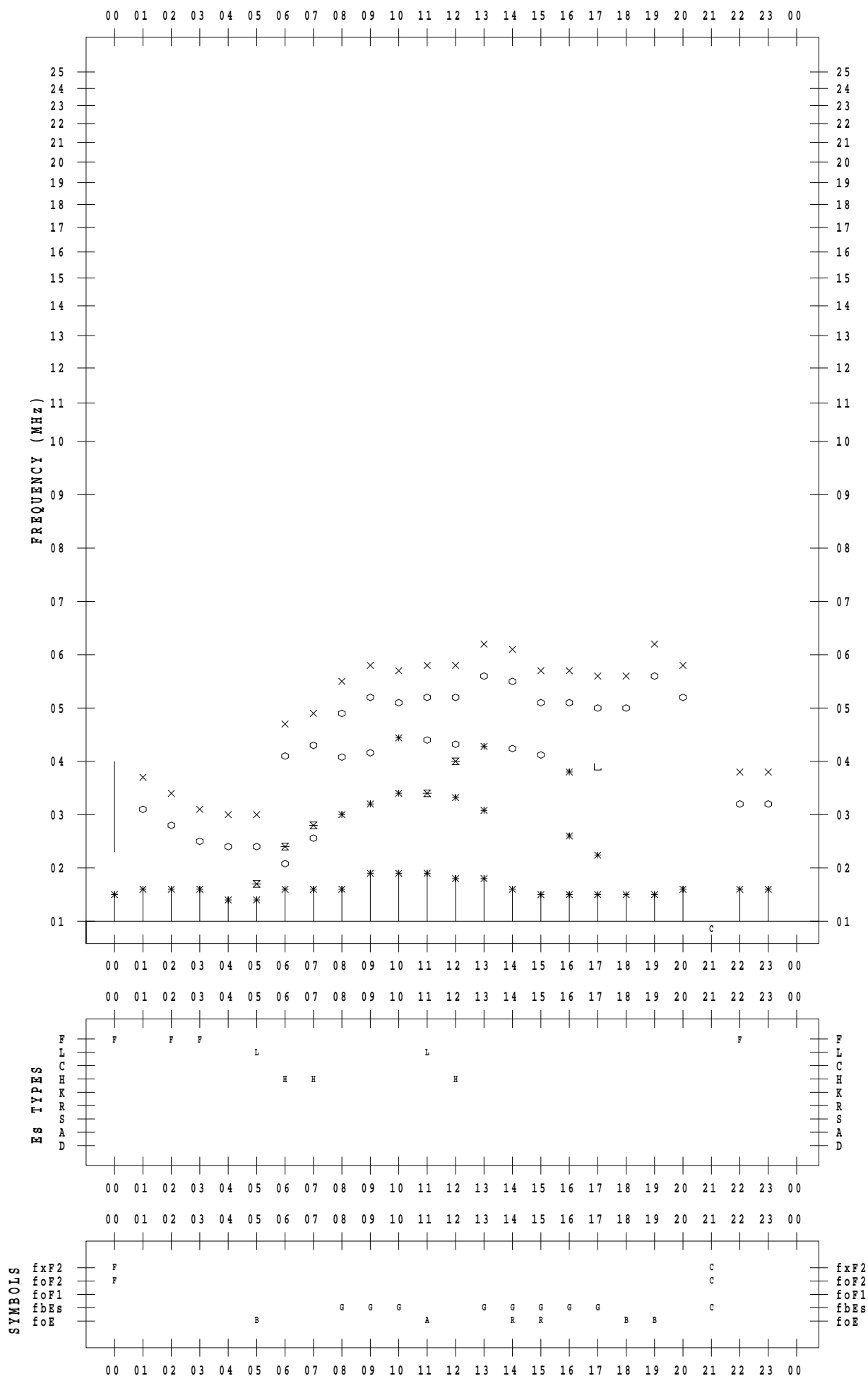
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 10

135 ° E MEAN TIME



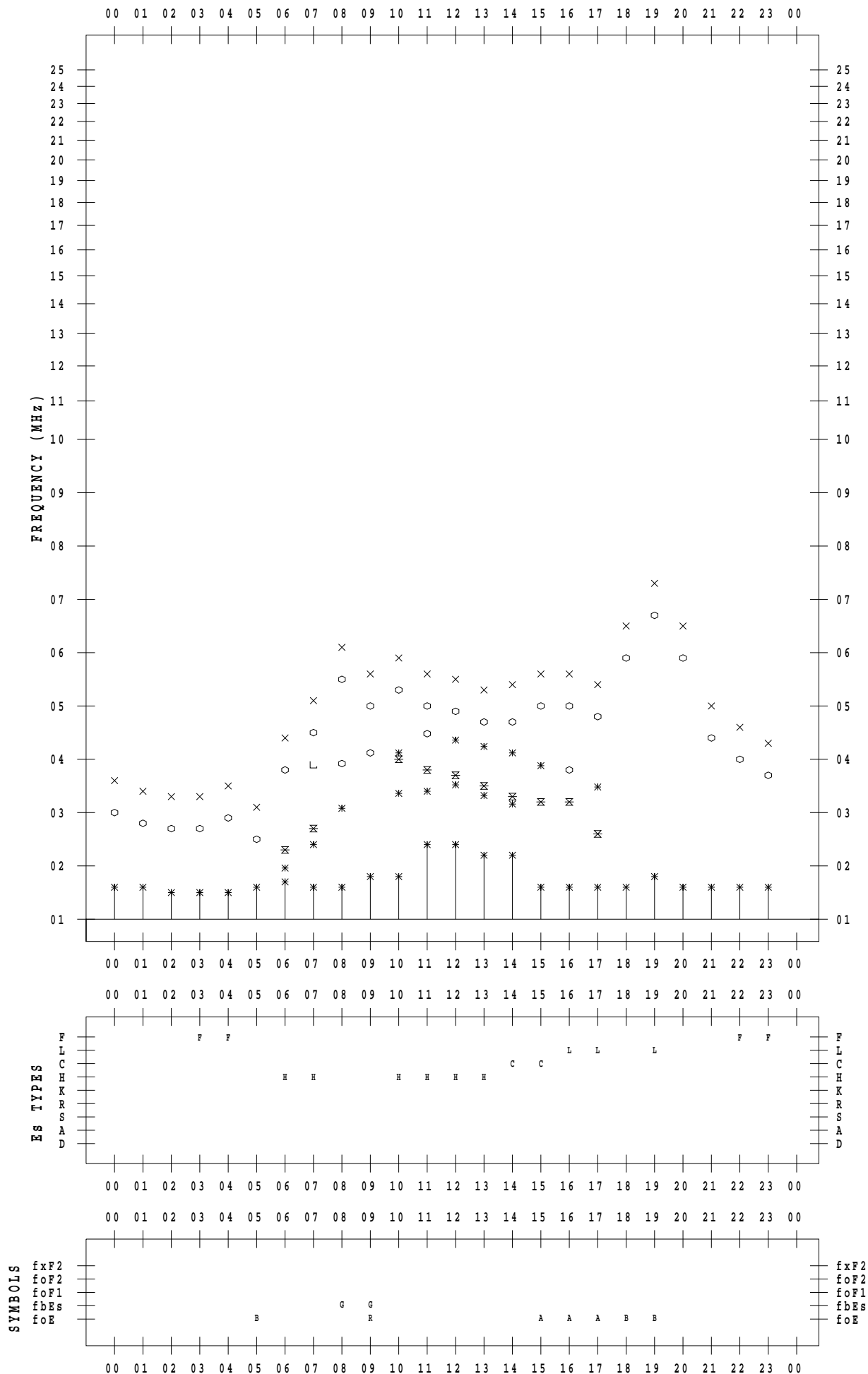
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 11

135 ° E MEAN TIME



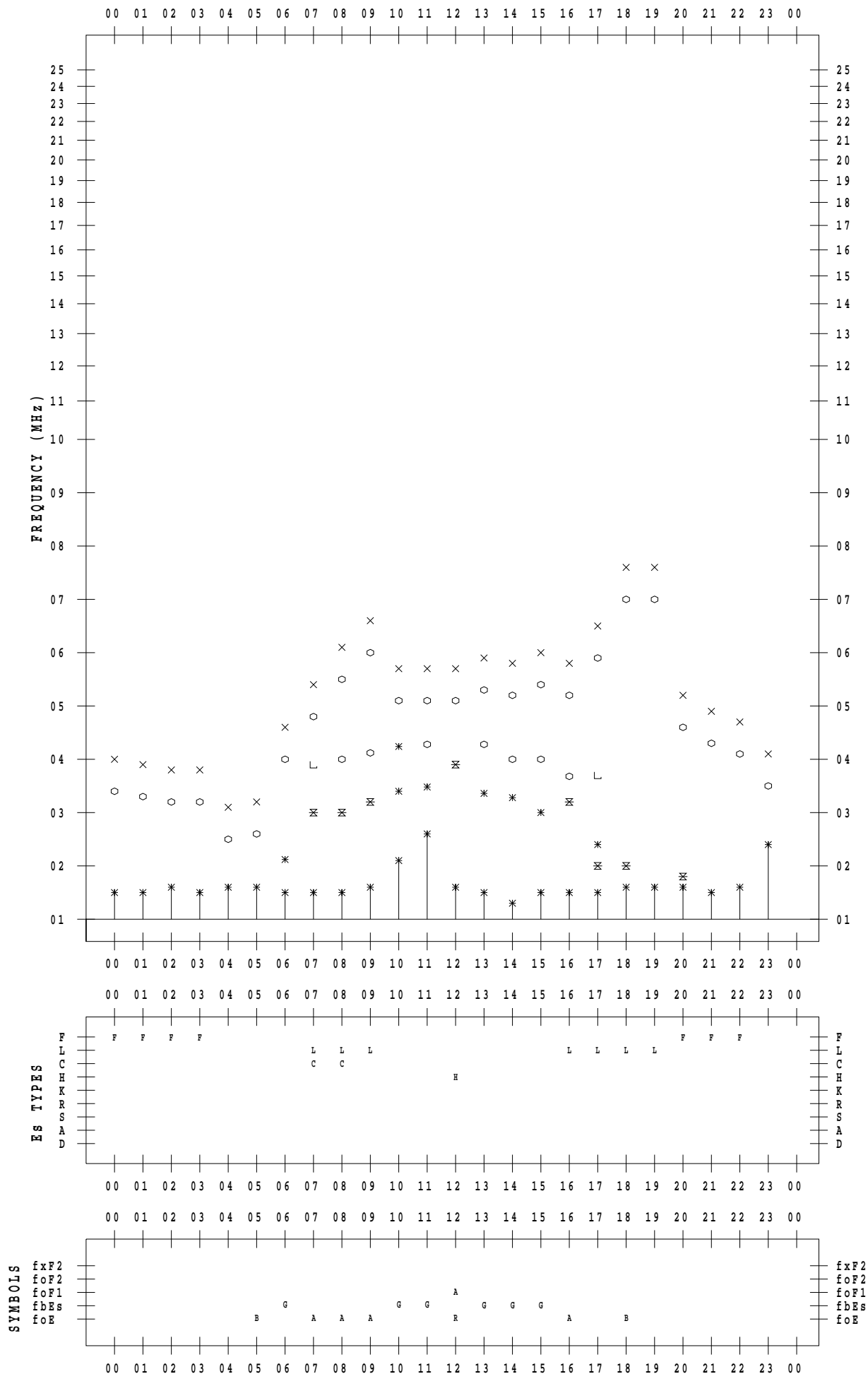
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 12

135 ° E MEAN TIME



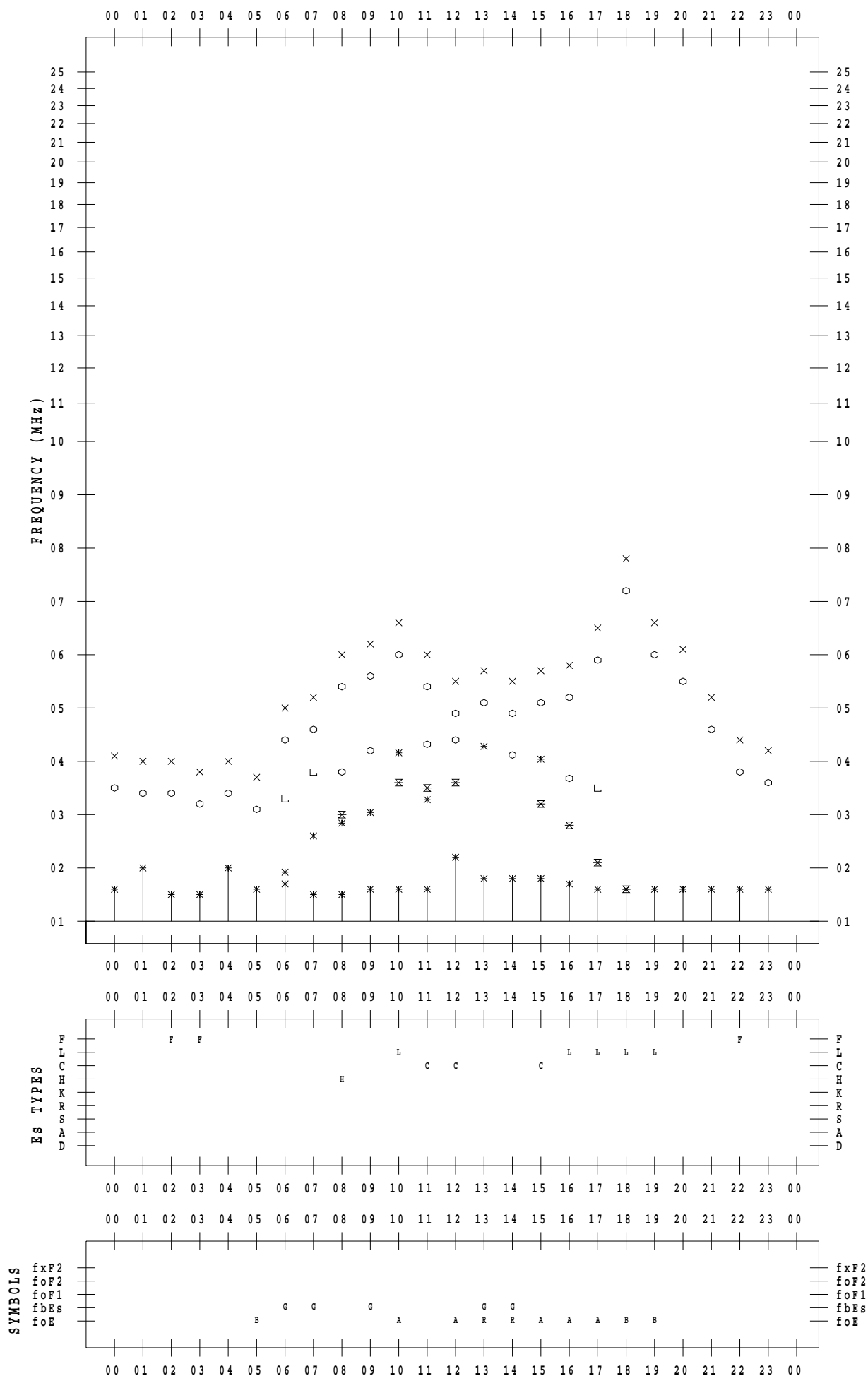
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 13

135 ° E MEAN TIME



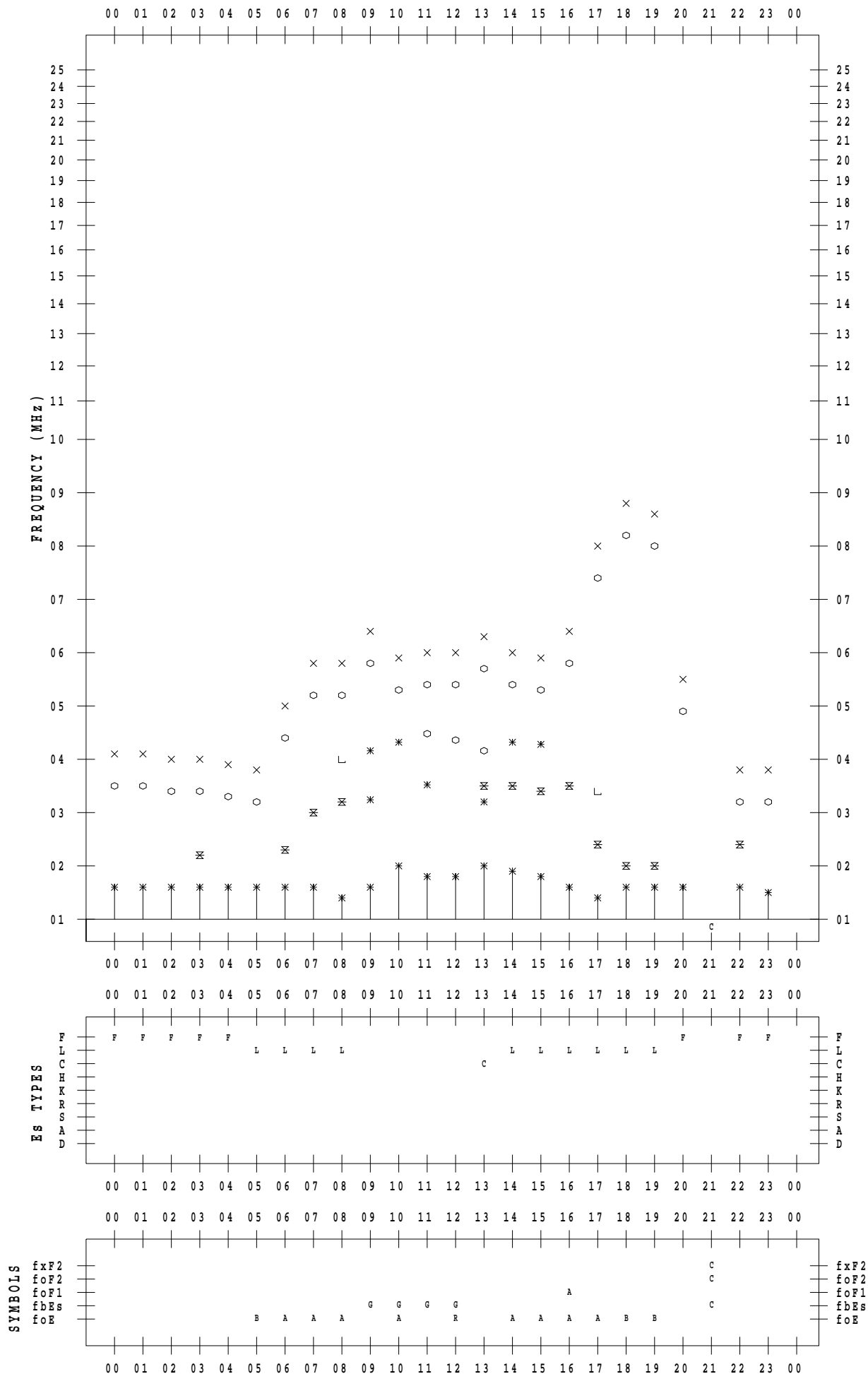
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 14

135 ° E MEAN TIME



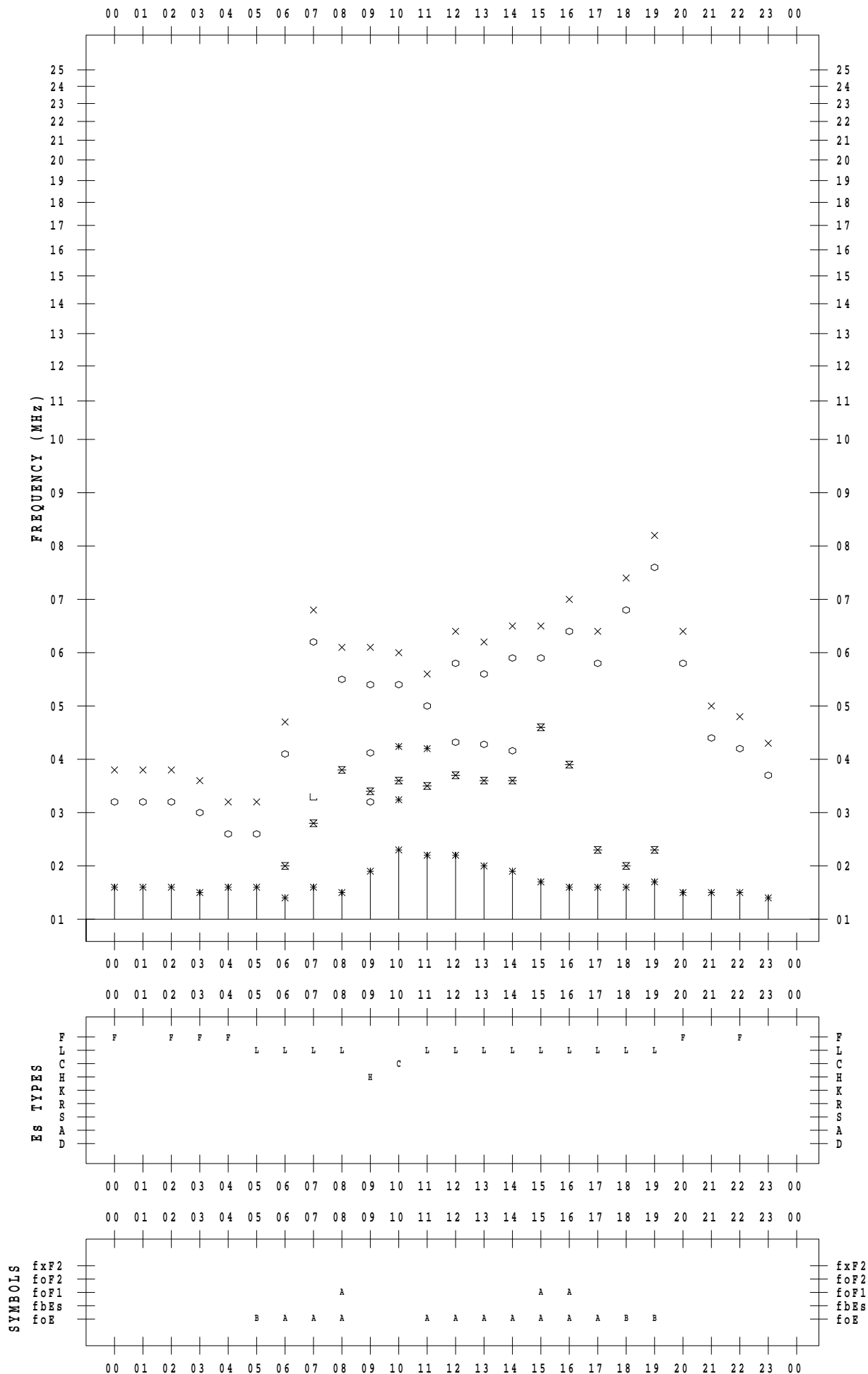
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 15

135 ° E MEAN TIME



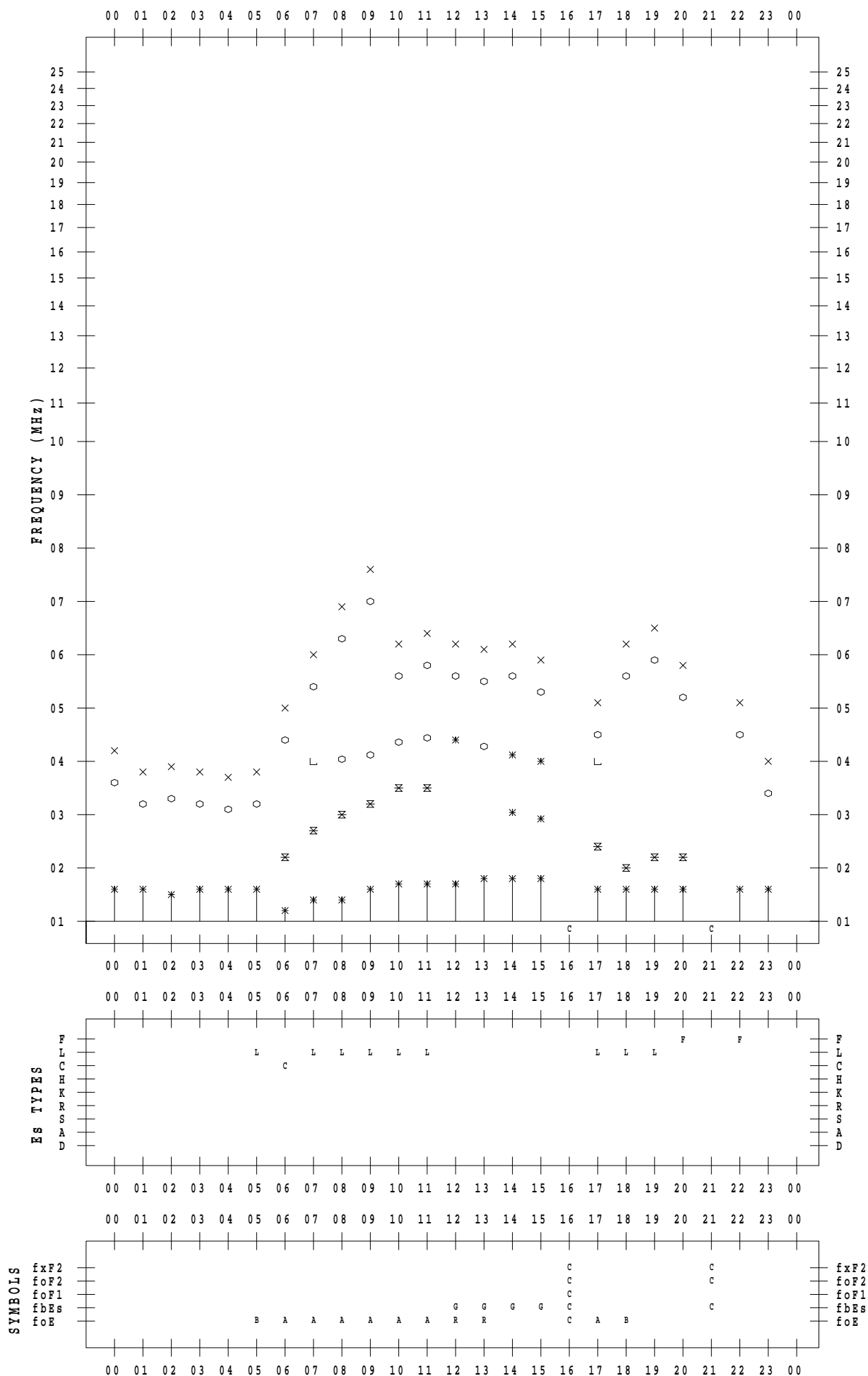
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 16

135 ° E MEAN TIME



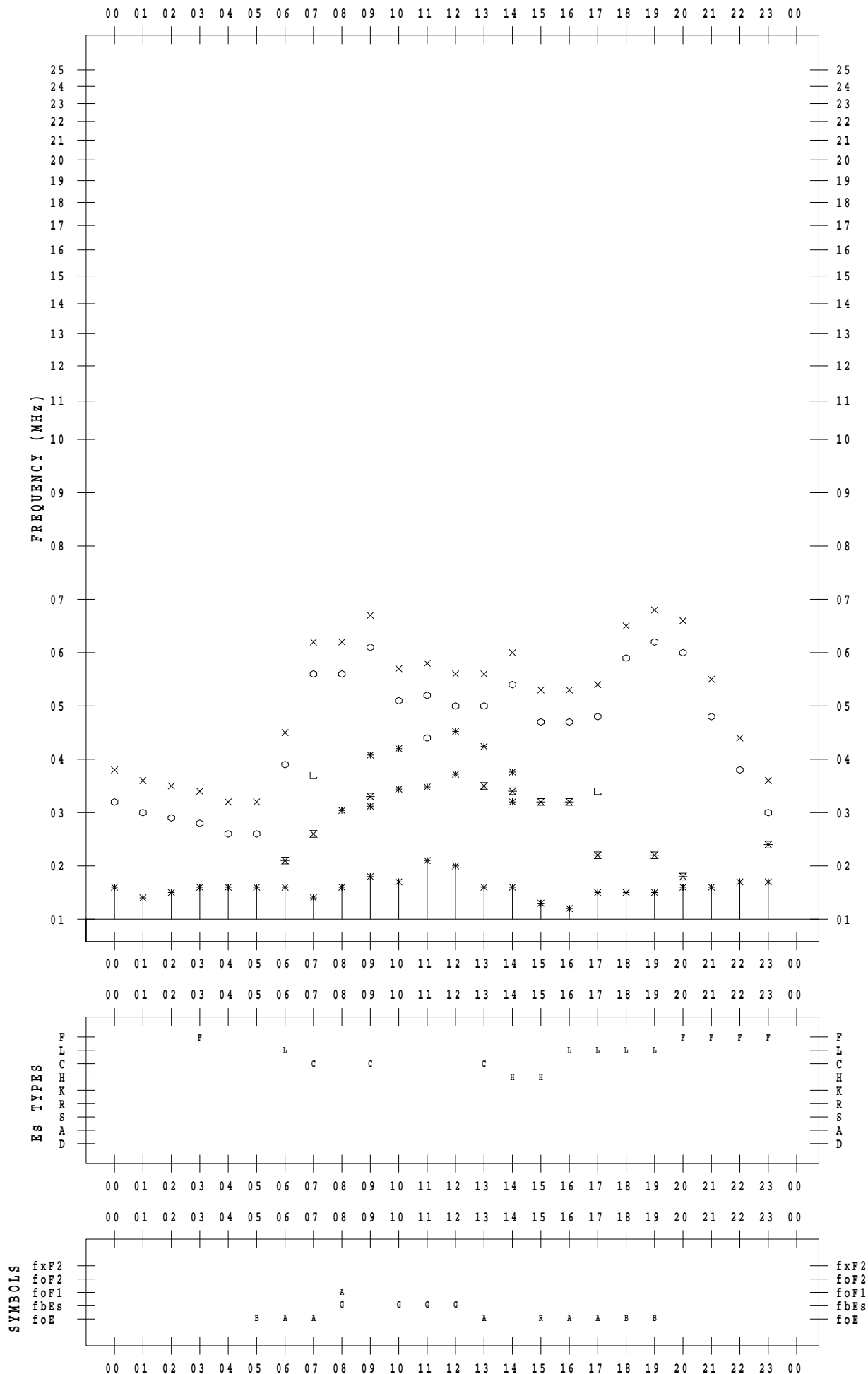
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 17

135 ° E MEAN TIME



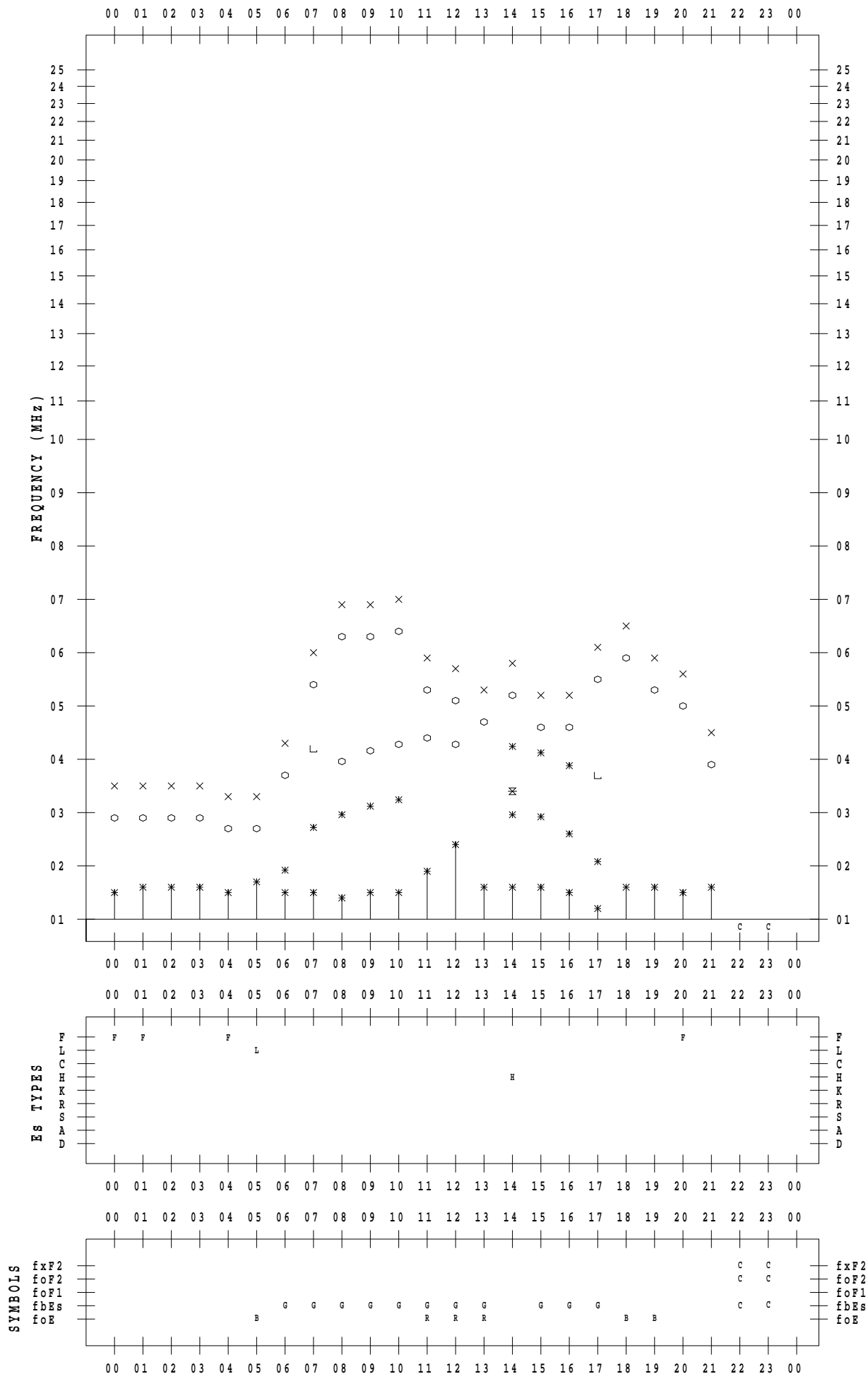
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 18

135 ° E MEAN TIME



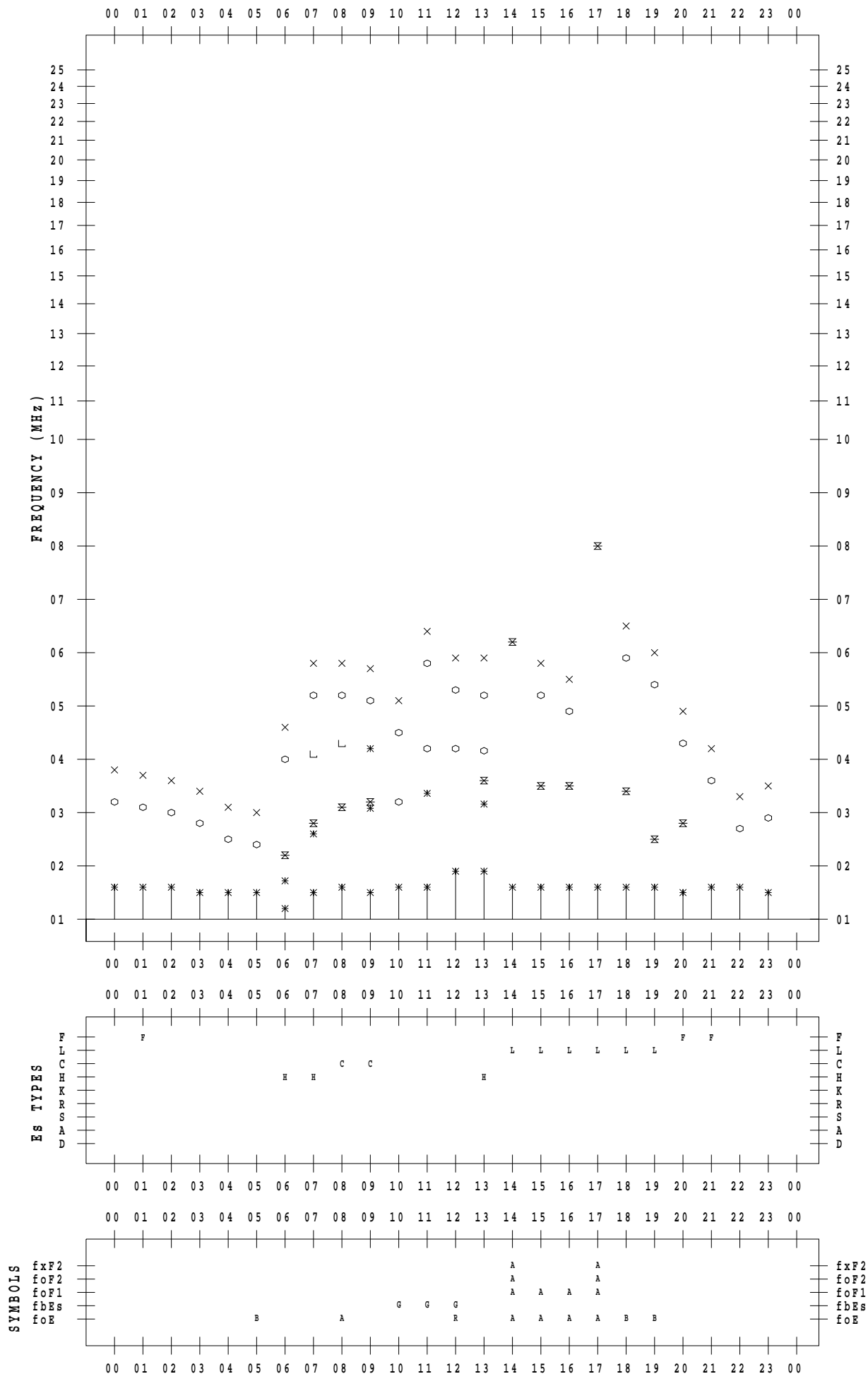
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 19

135 ° E MEAN TIME



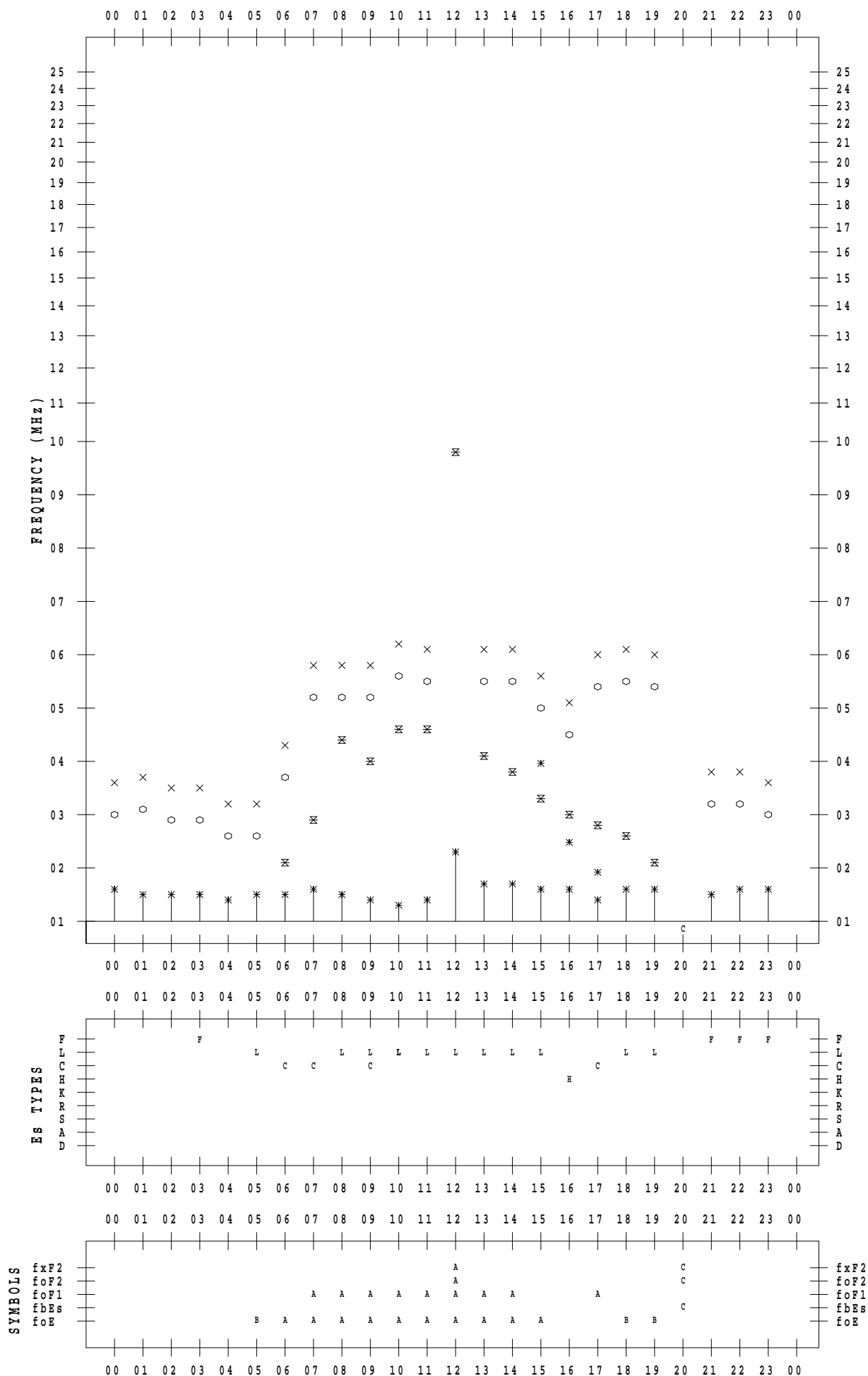
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 20

135 ° E MEAN TIME



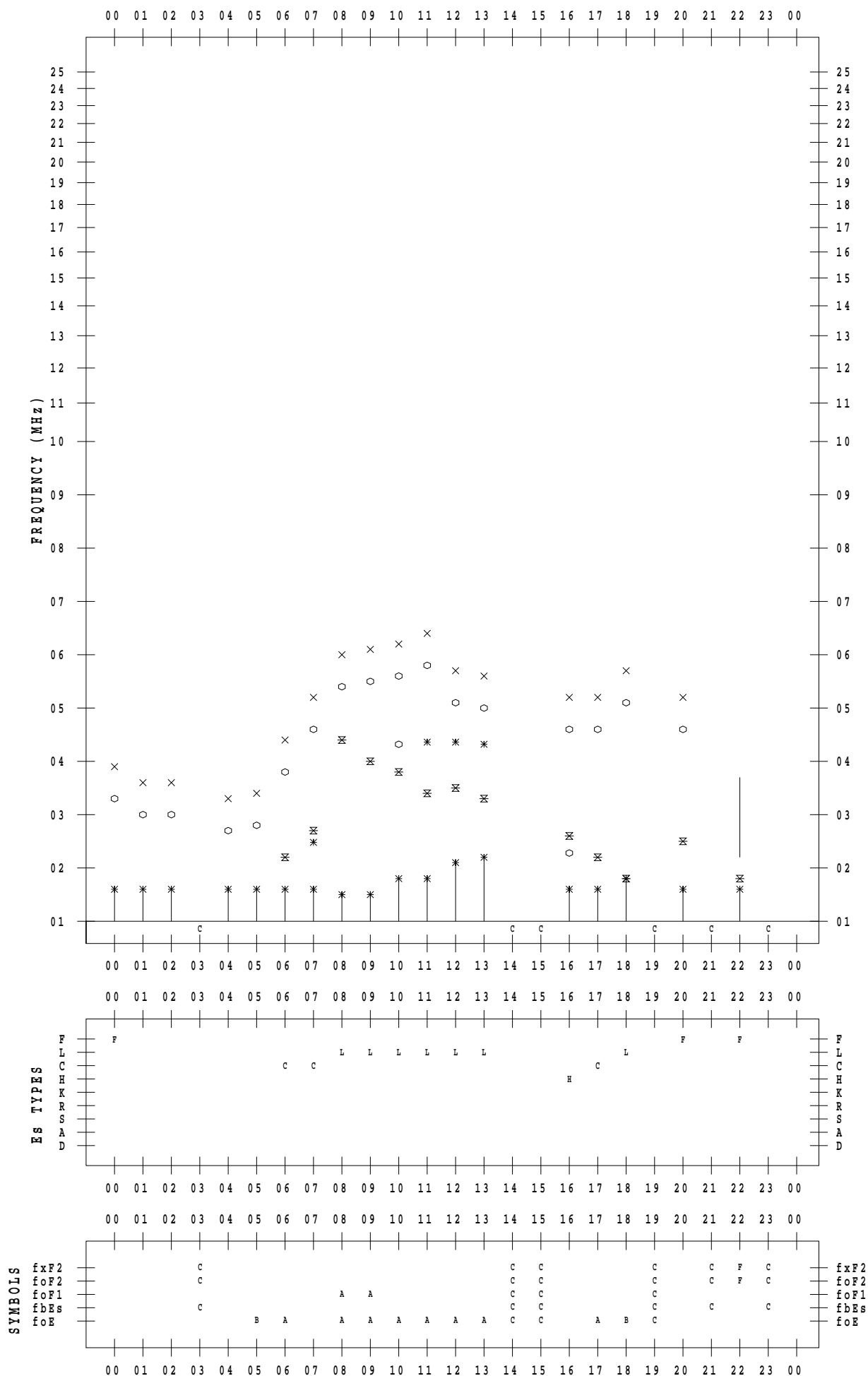
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 21

135 ° E MEAN TIME



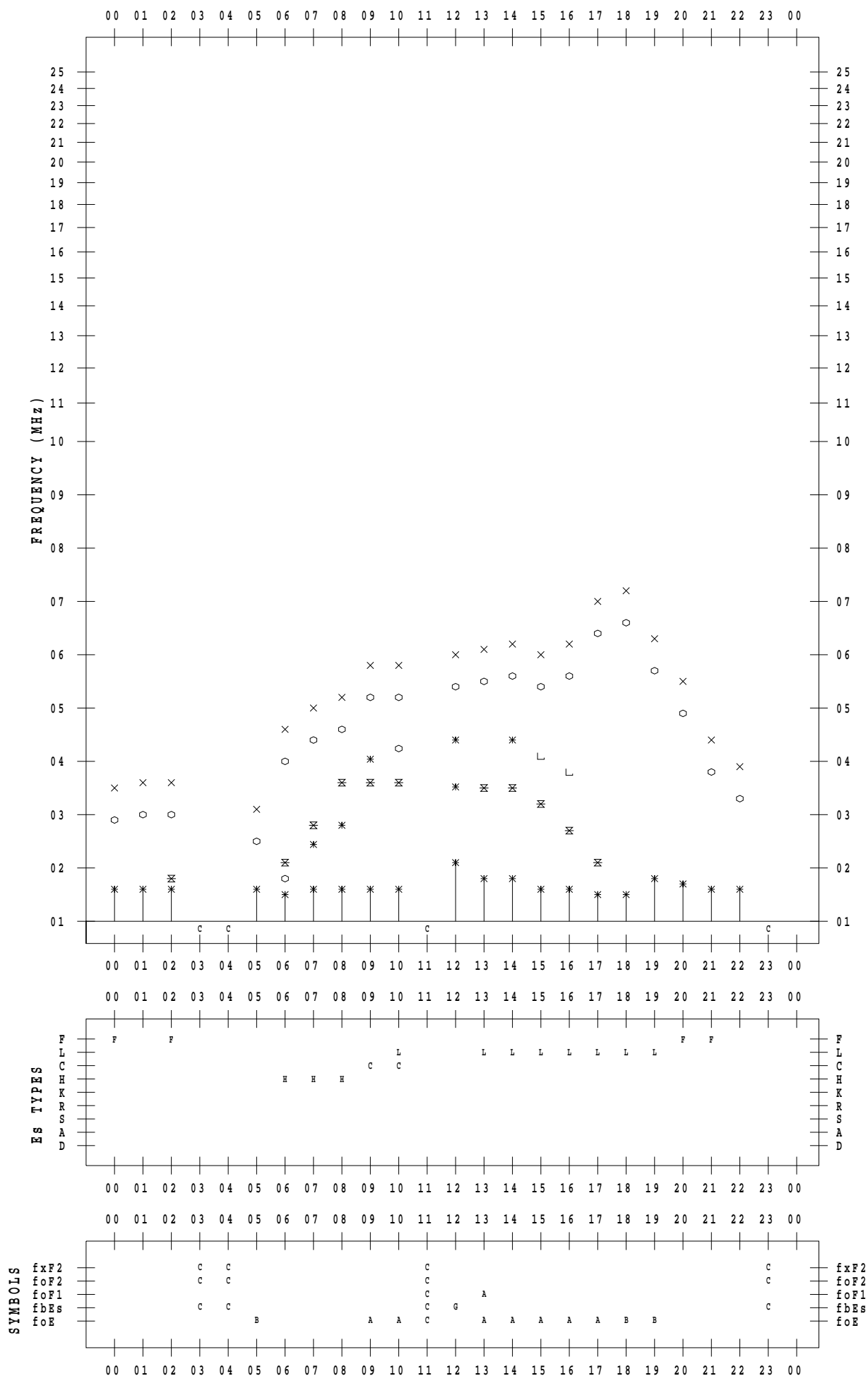
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 22

135 ° E MEAN TIME



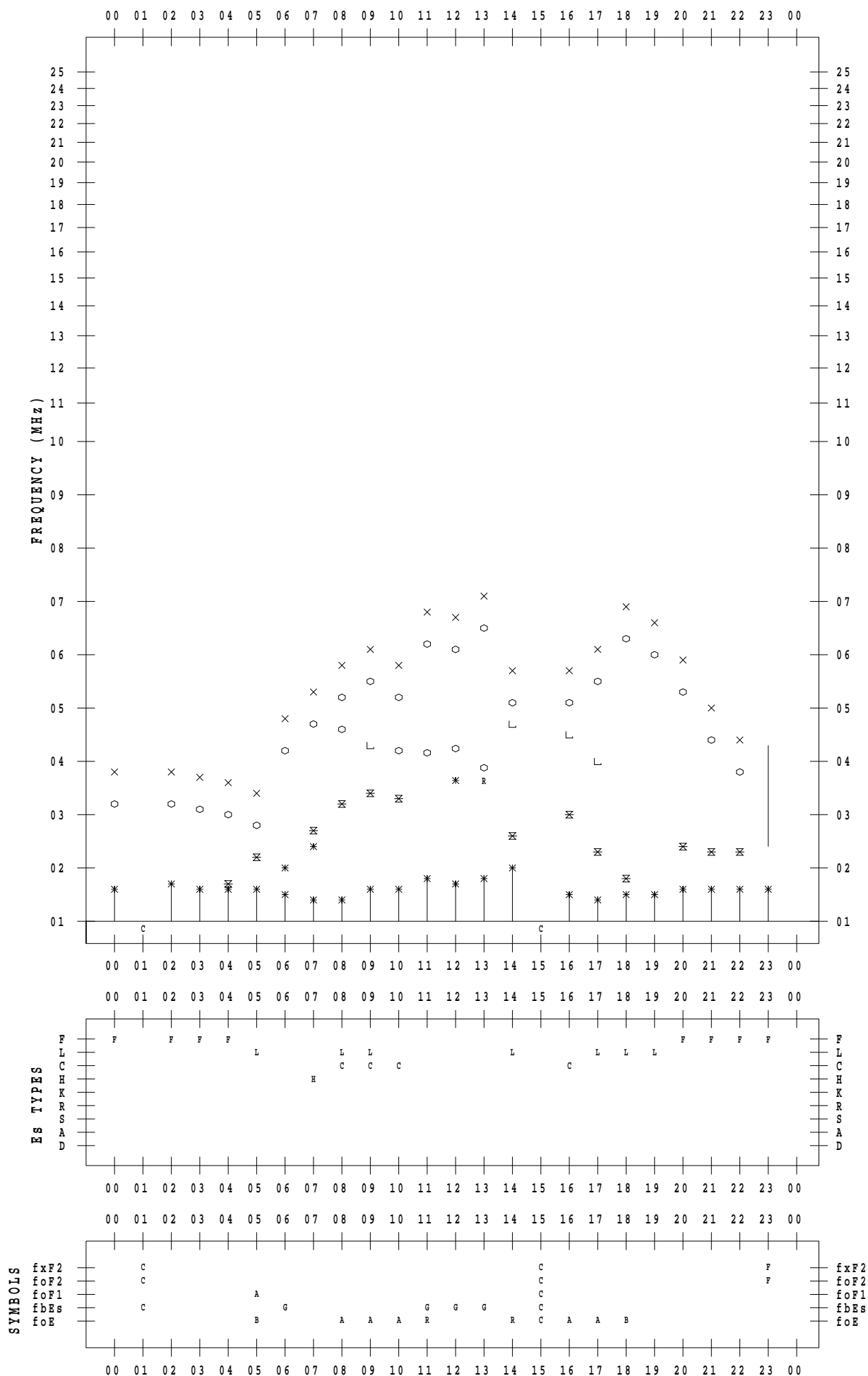
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 23

135 ° E MEAN TIME



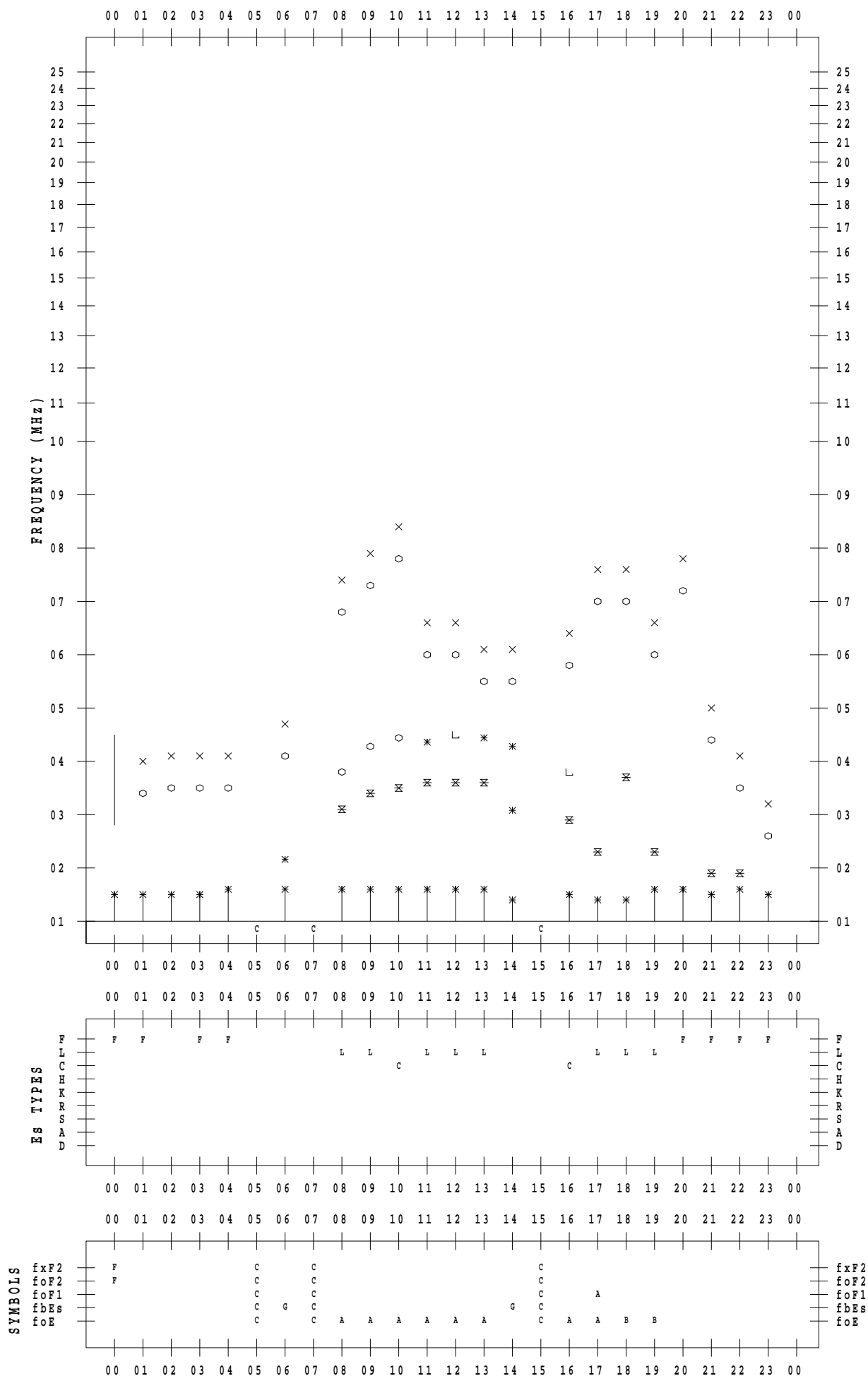
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 24

135 ° E MEAN TIME



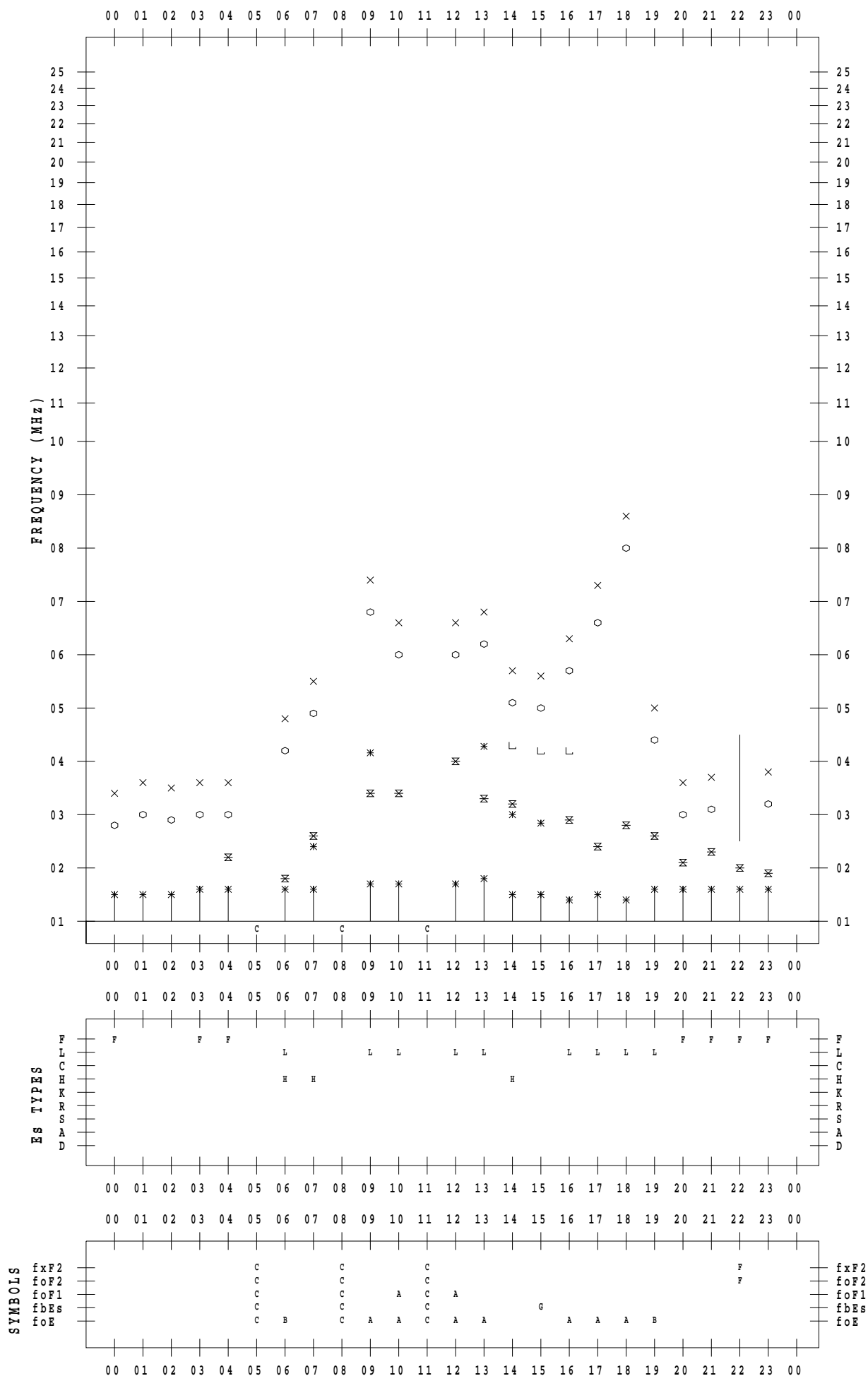
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 25

135 ° E MEAN TIME



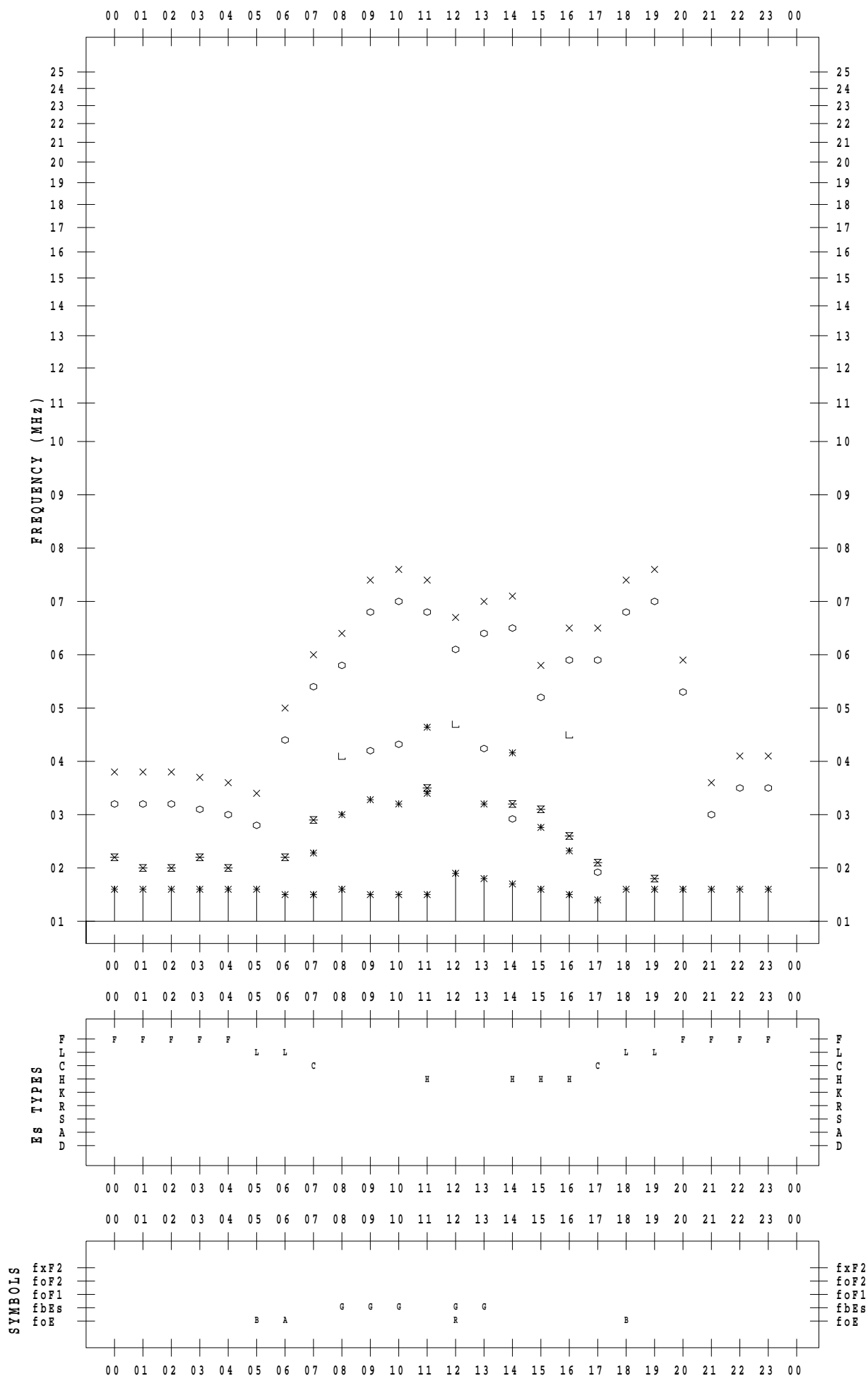
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 26

135 ° E MEAN TIME



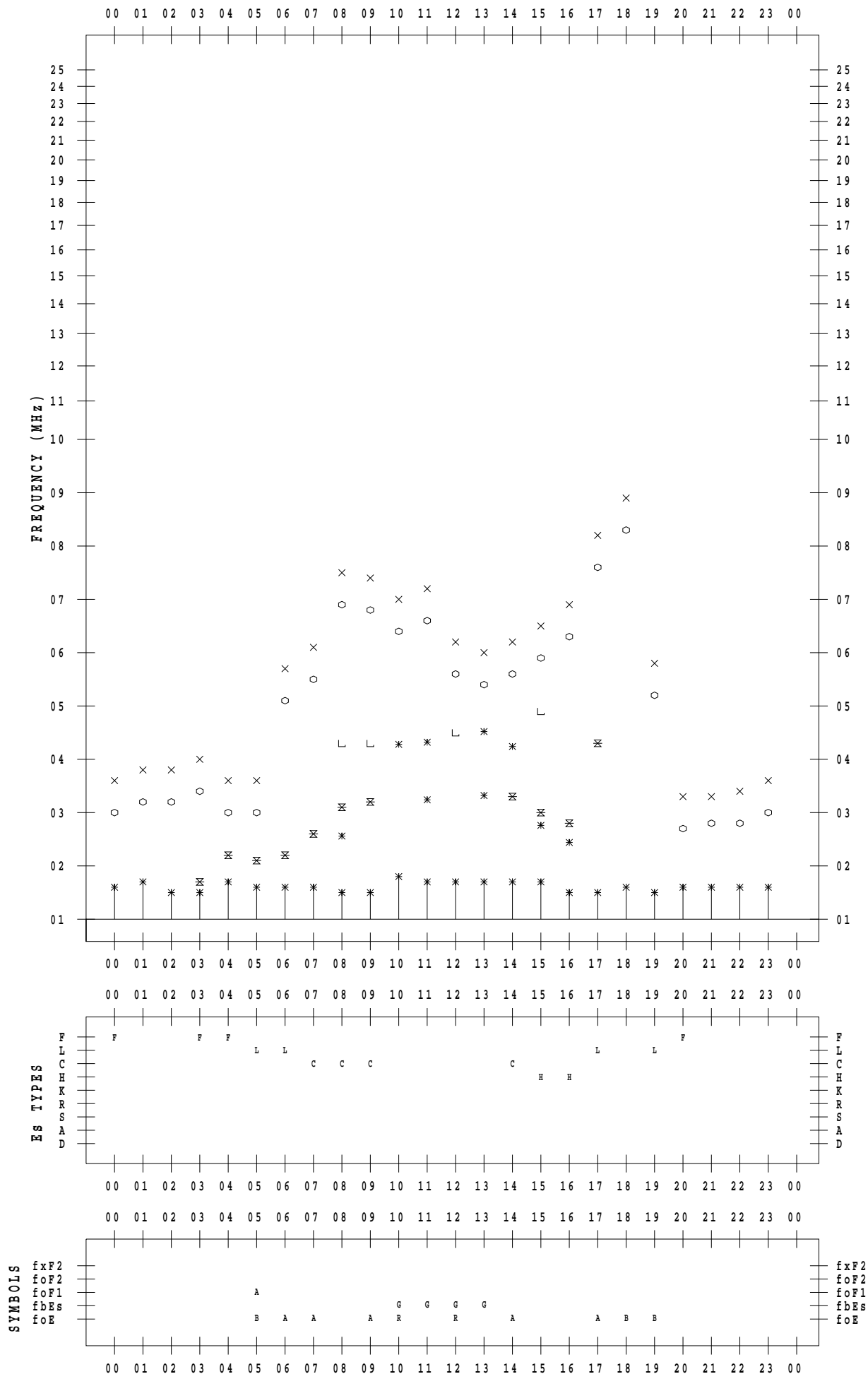
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 27

135 ° E MEAN TIME



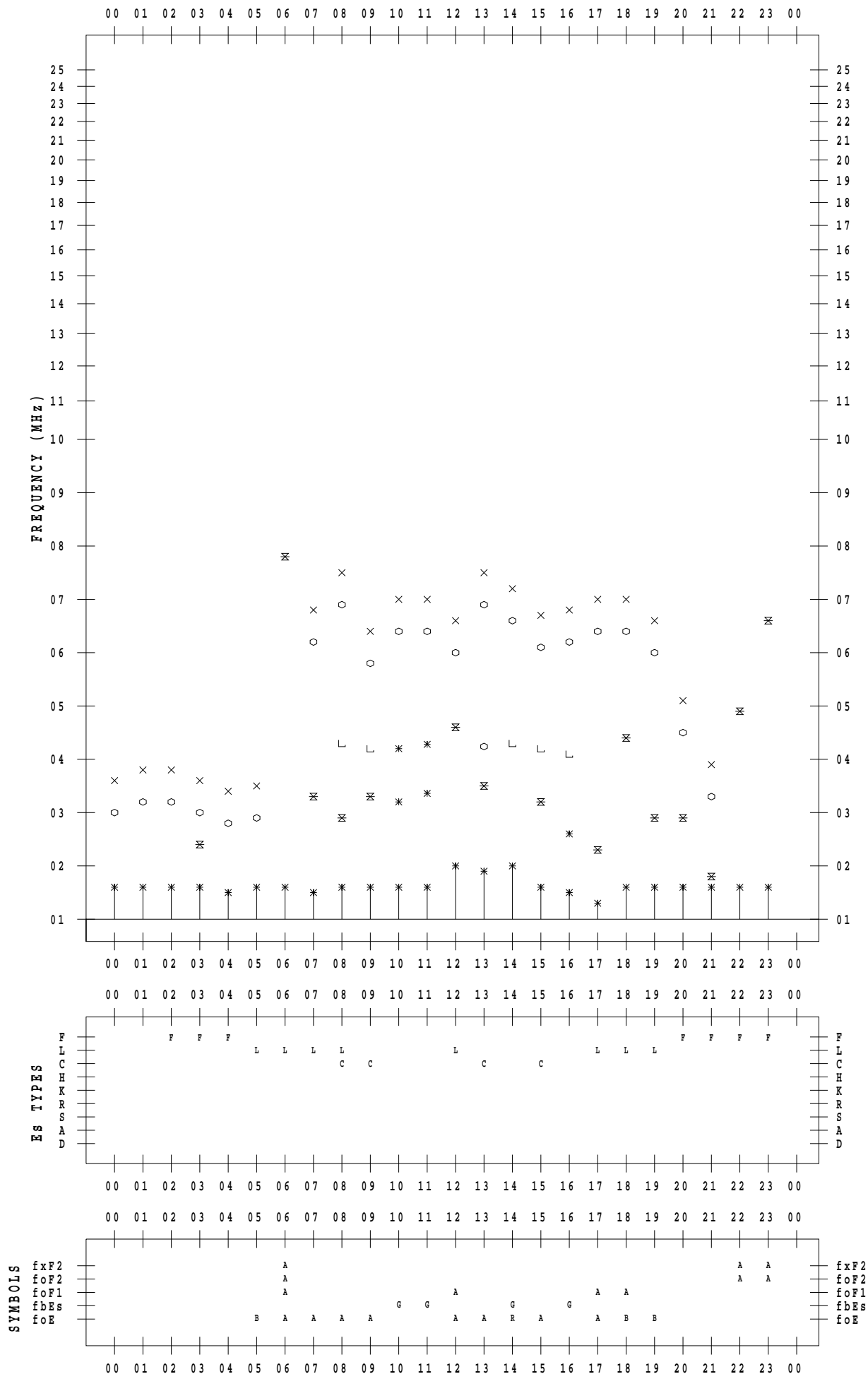
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 28

135 ° E MEAN TIME



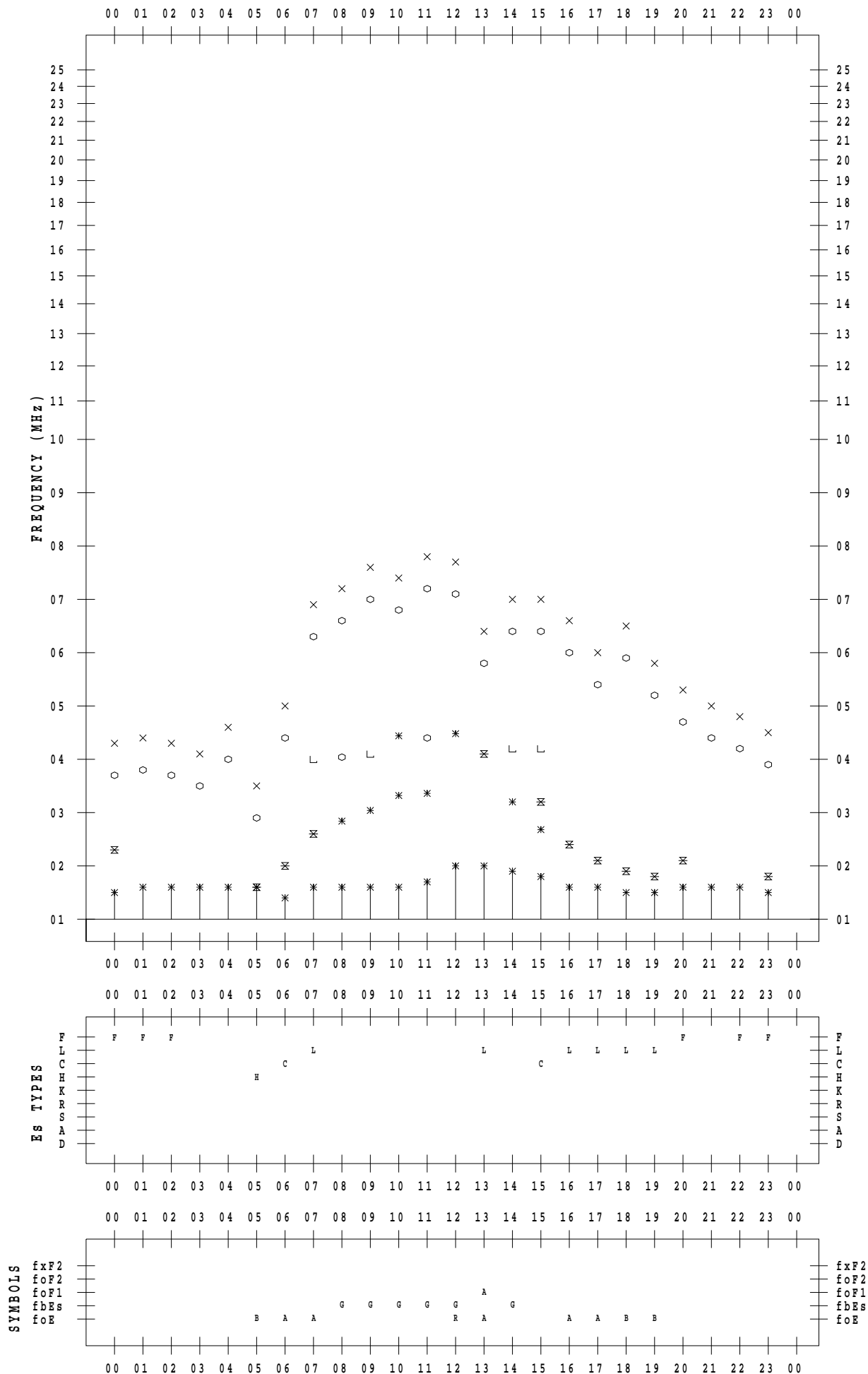
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 29

135 ° E MEAN TIME



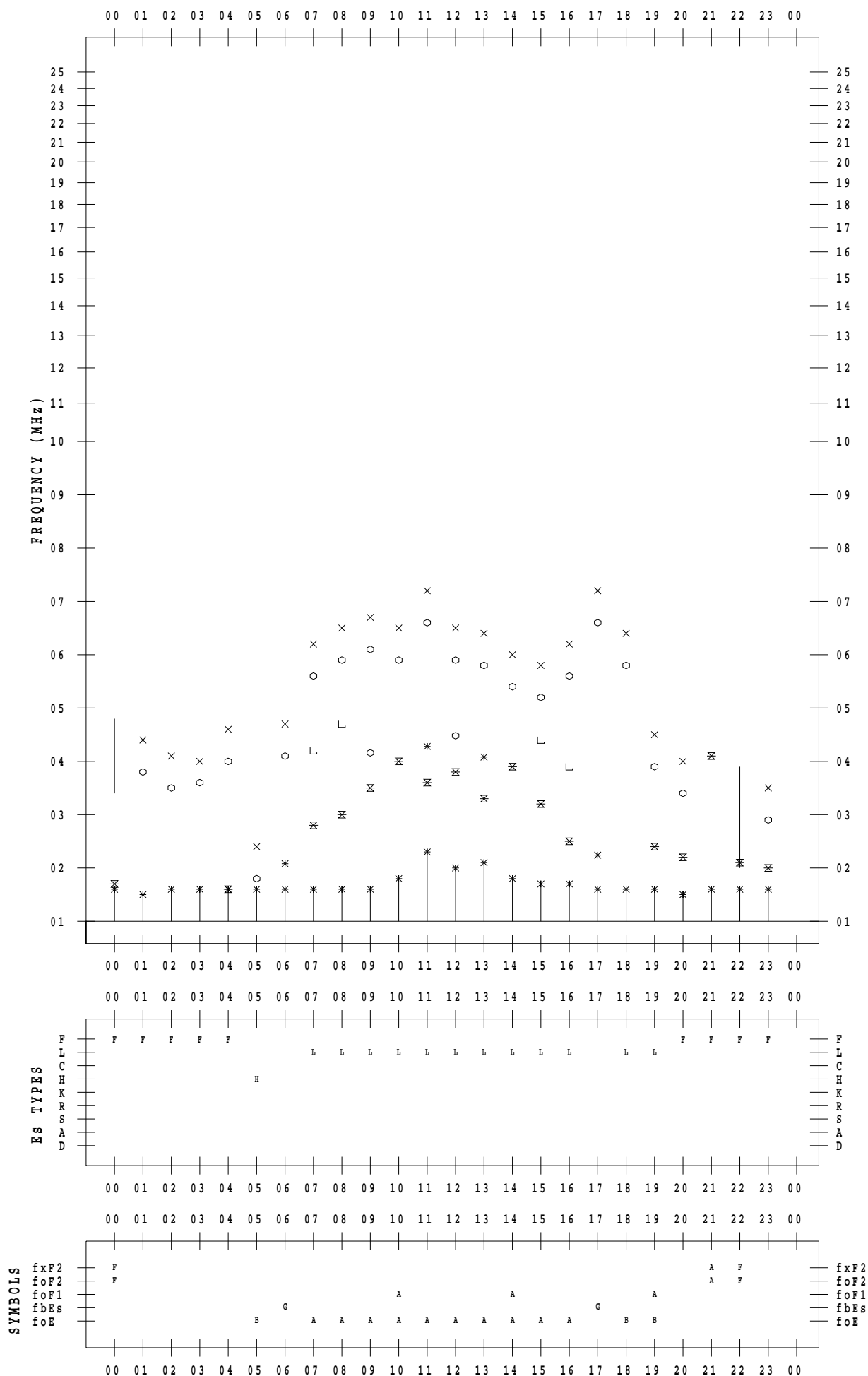
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020 / 9 / 30

135 ° E MEAN TIME



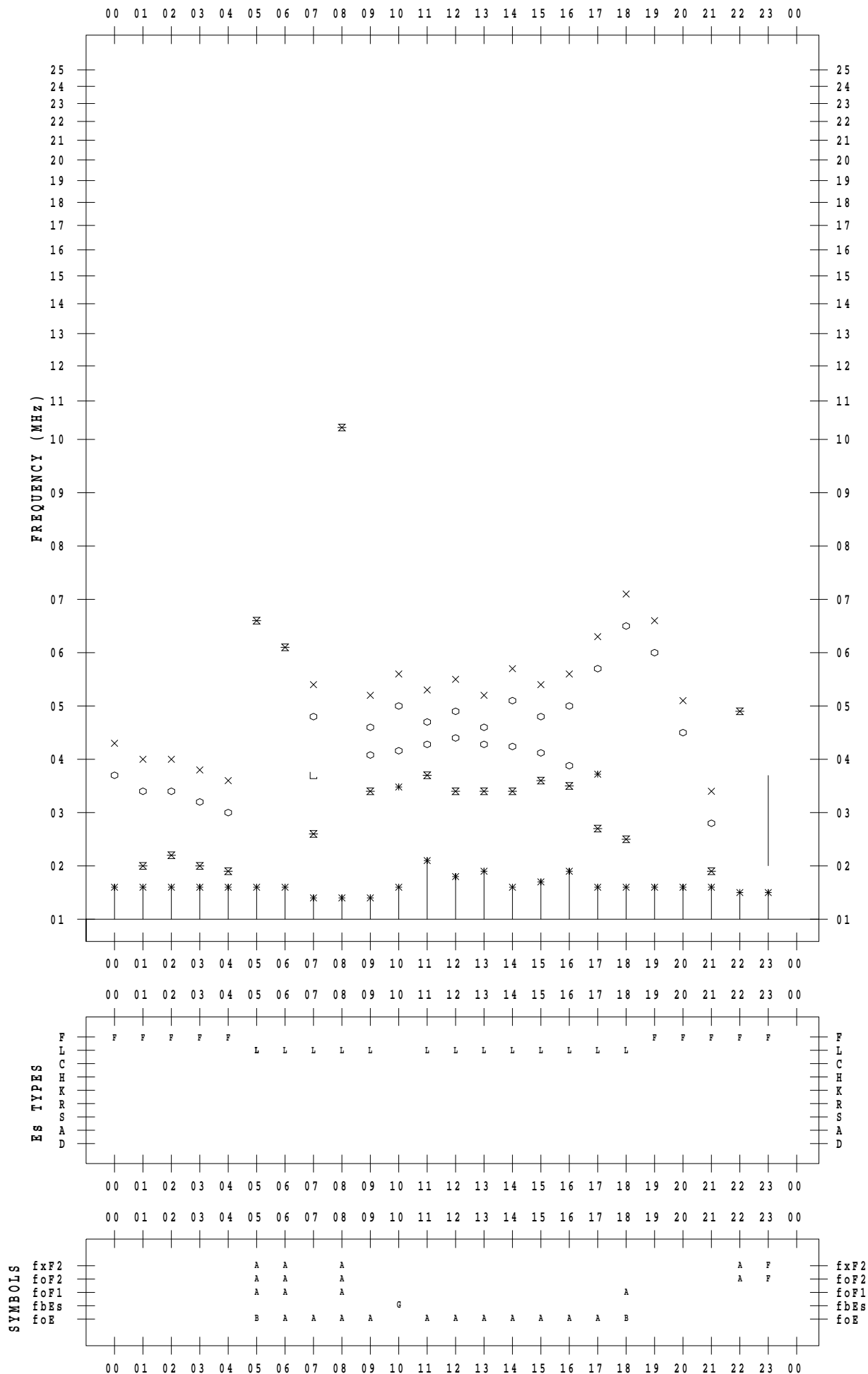
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 1

135 ° E MEAN TIME



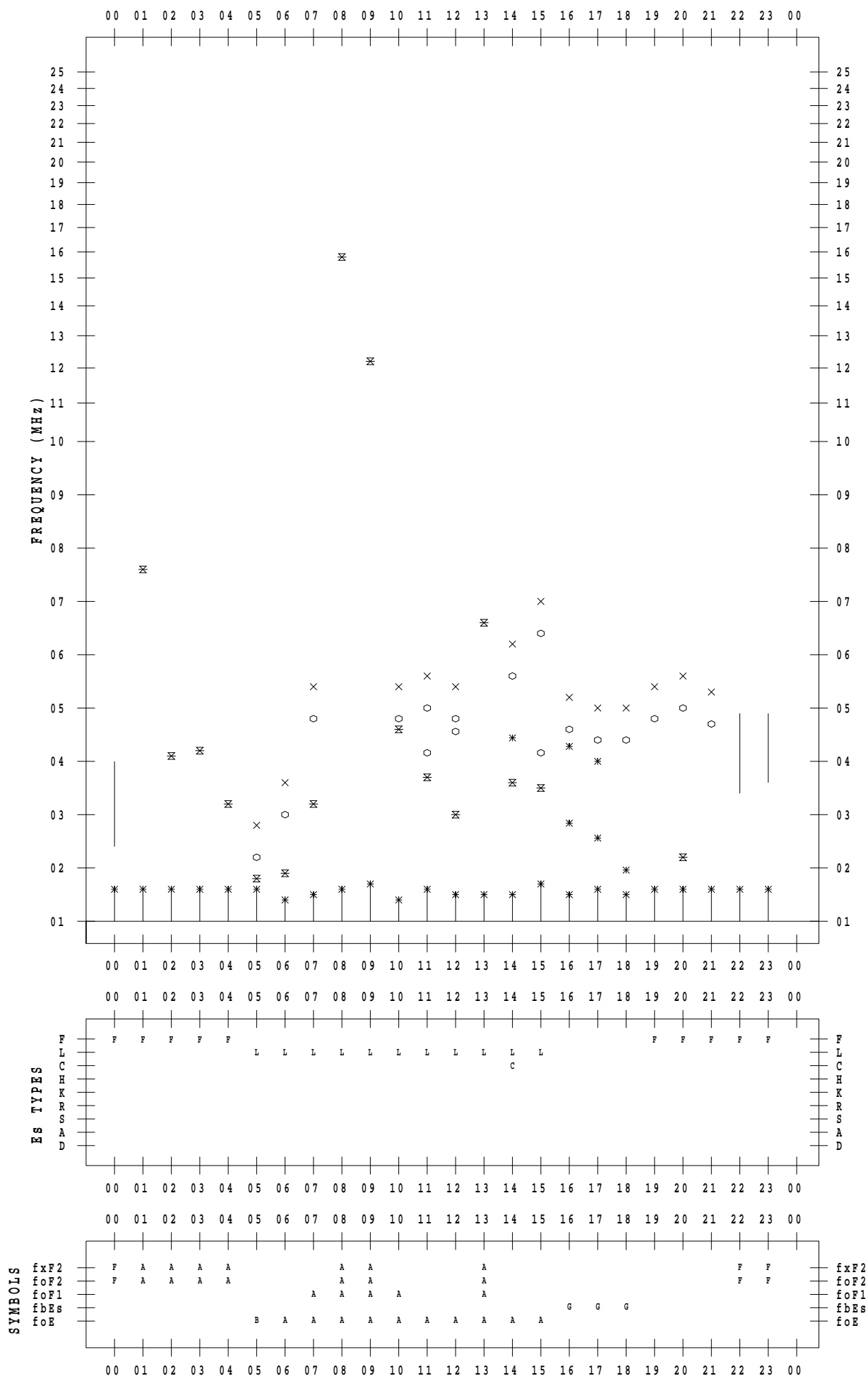
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 2

135 ° E MEAN TIME



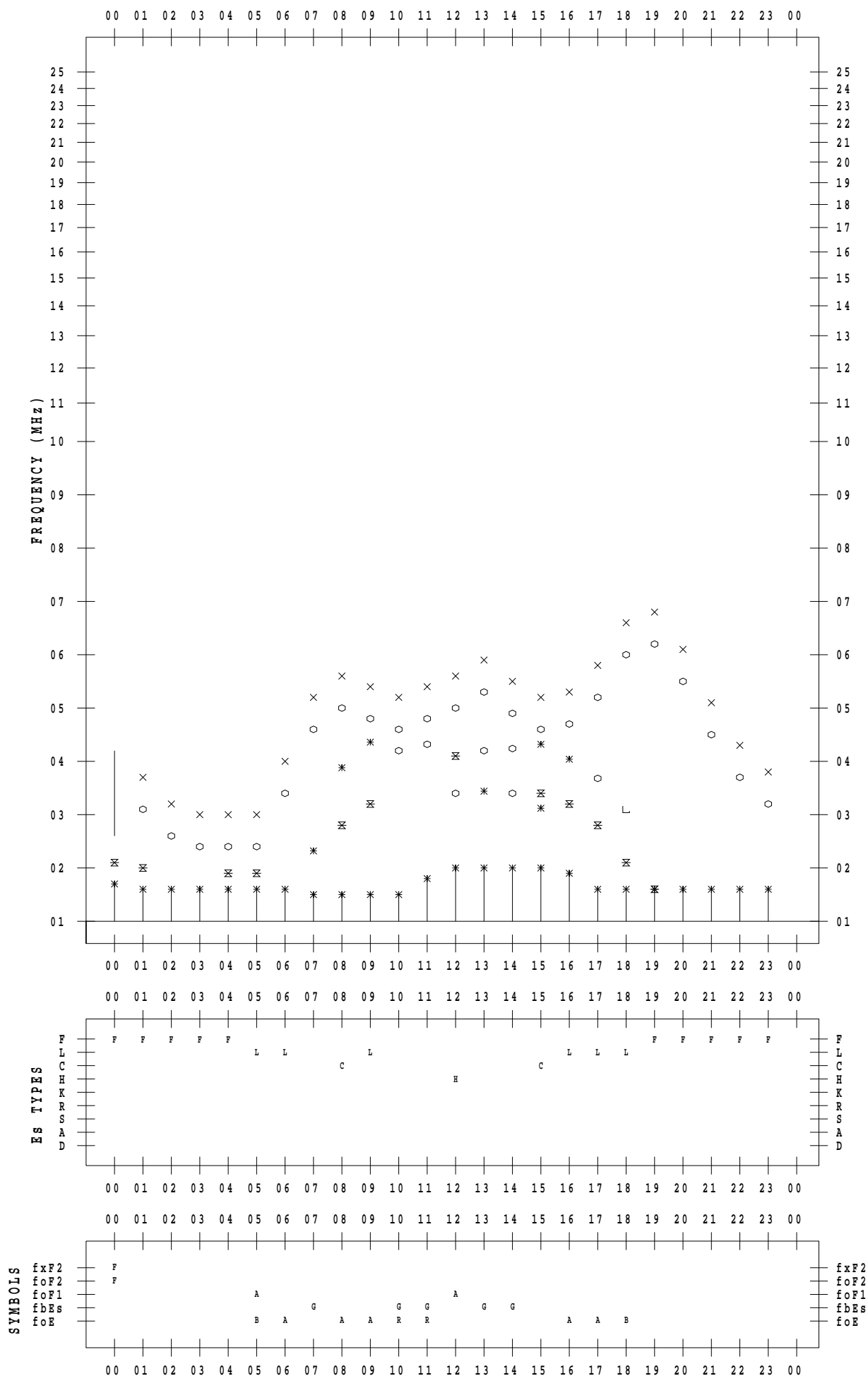
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 3

135 ° E MEAN TIME



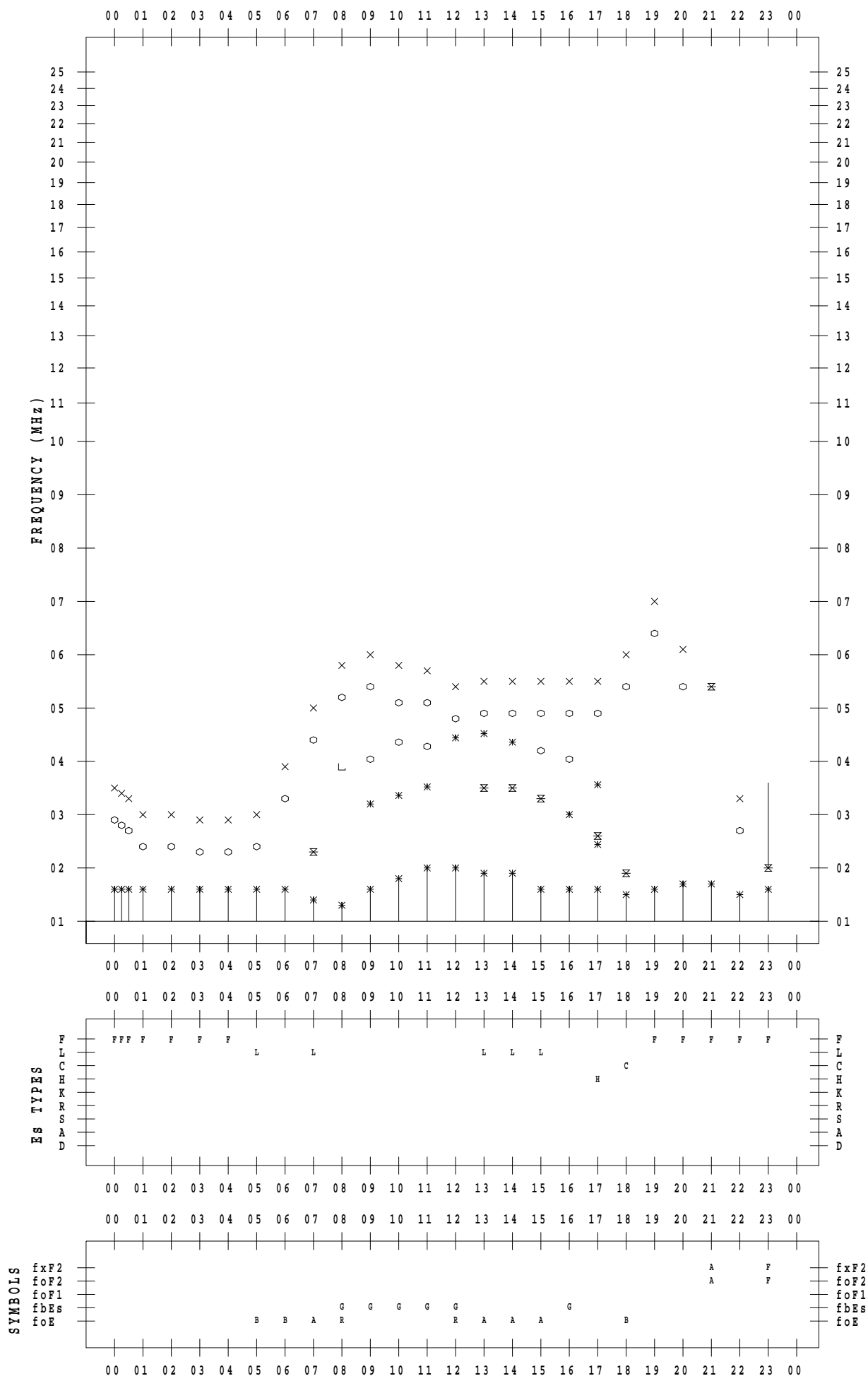
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 4

135 ° E MEAN TIME



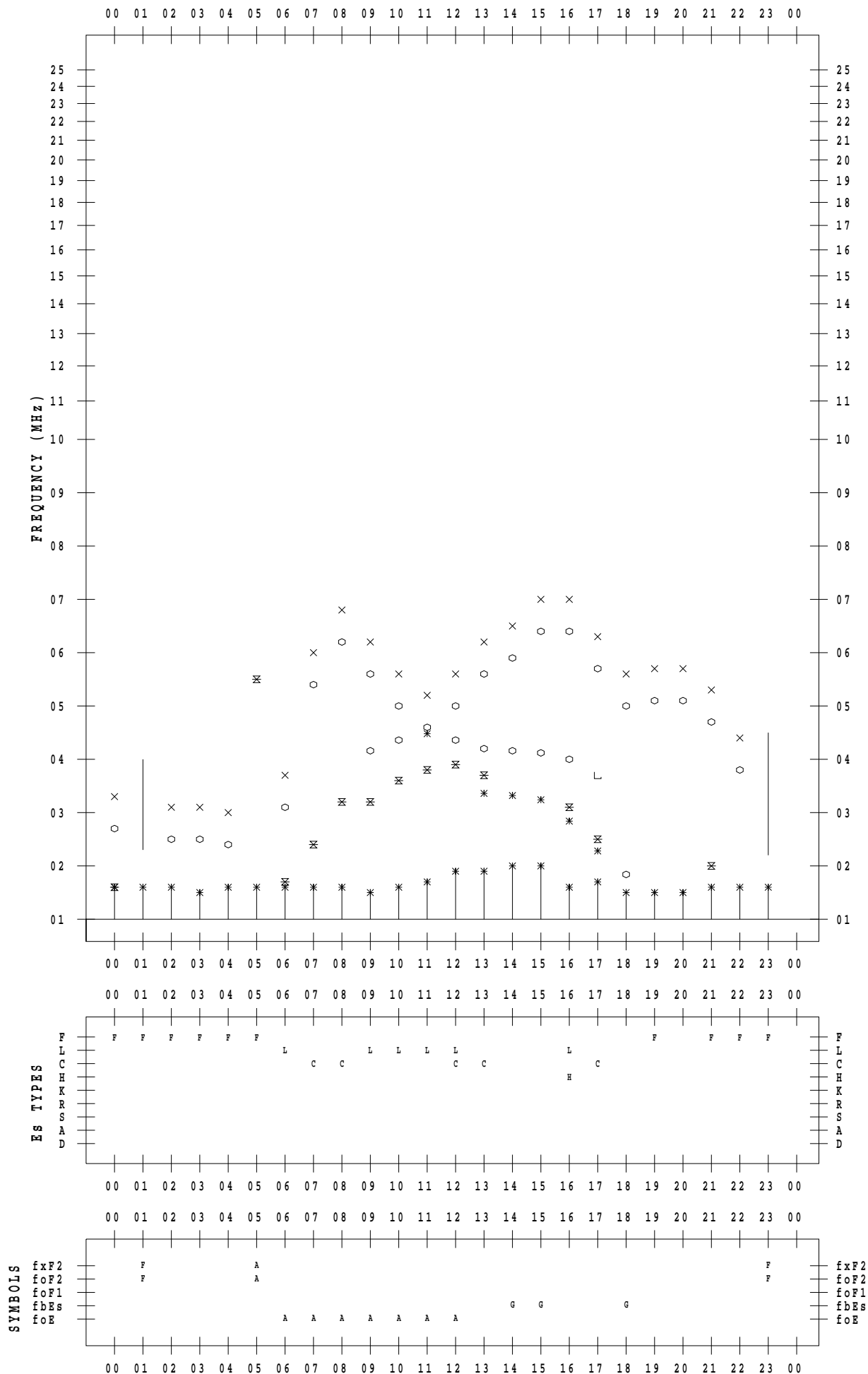
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 5

135 ° E MEAN TIME



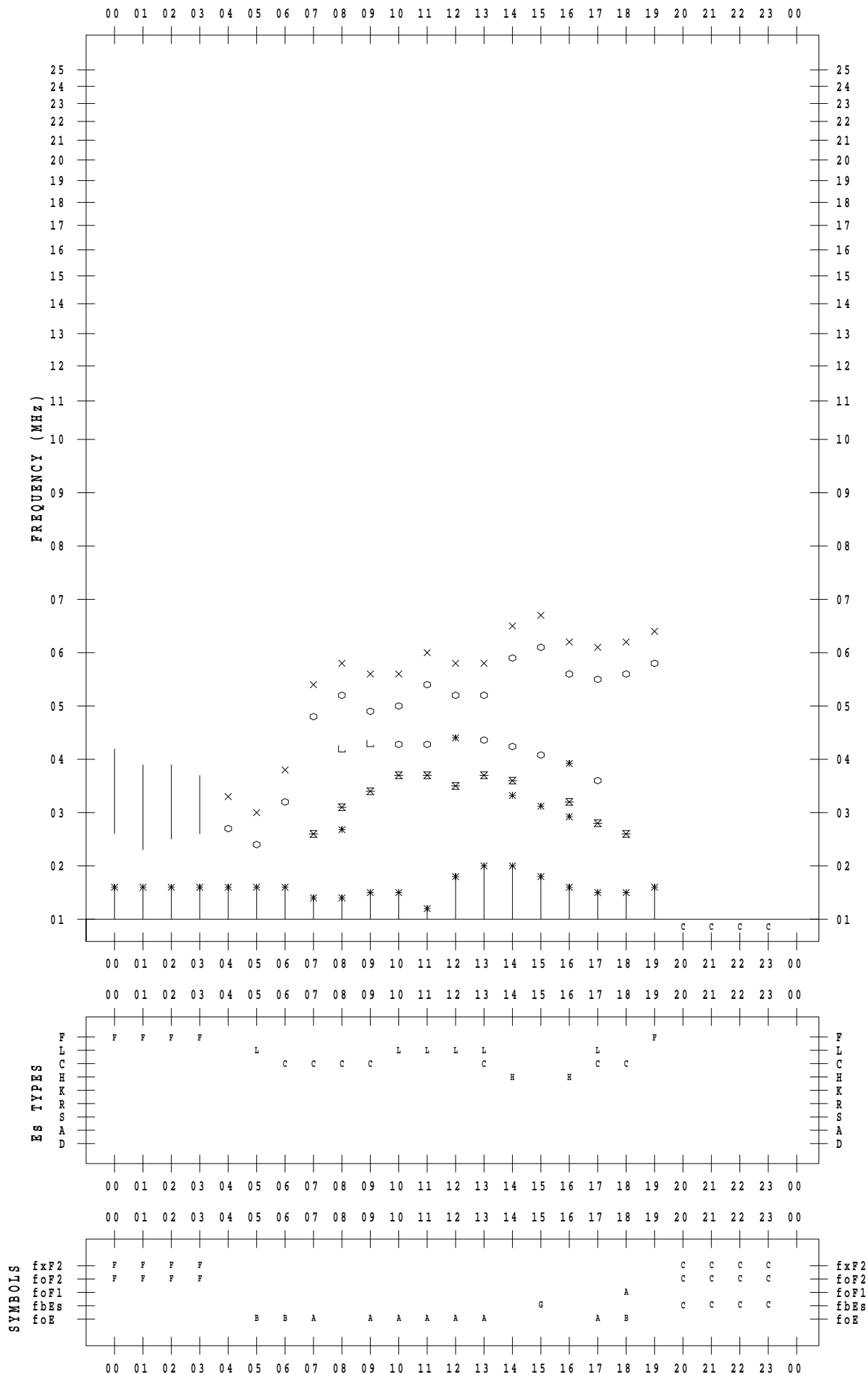
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SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 6

135 ° E MEAN TIME



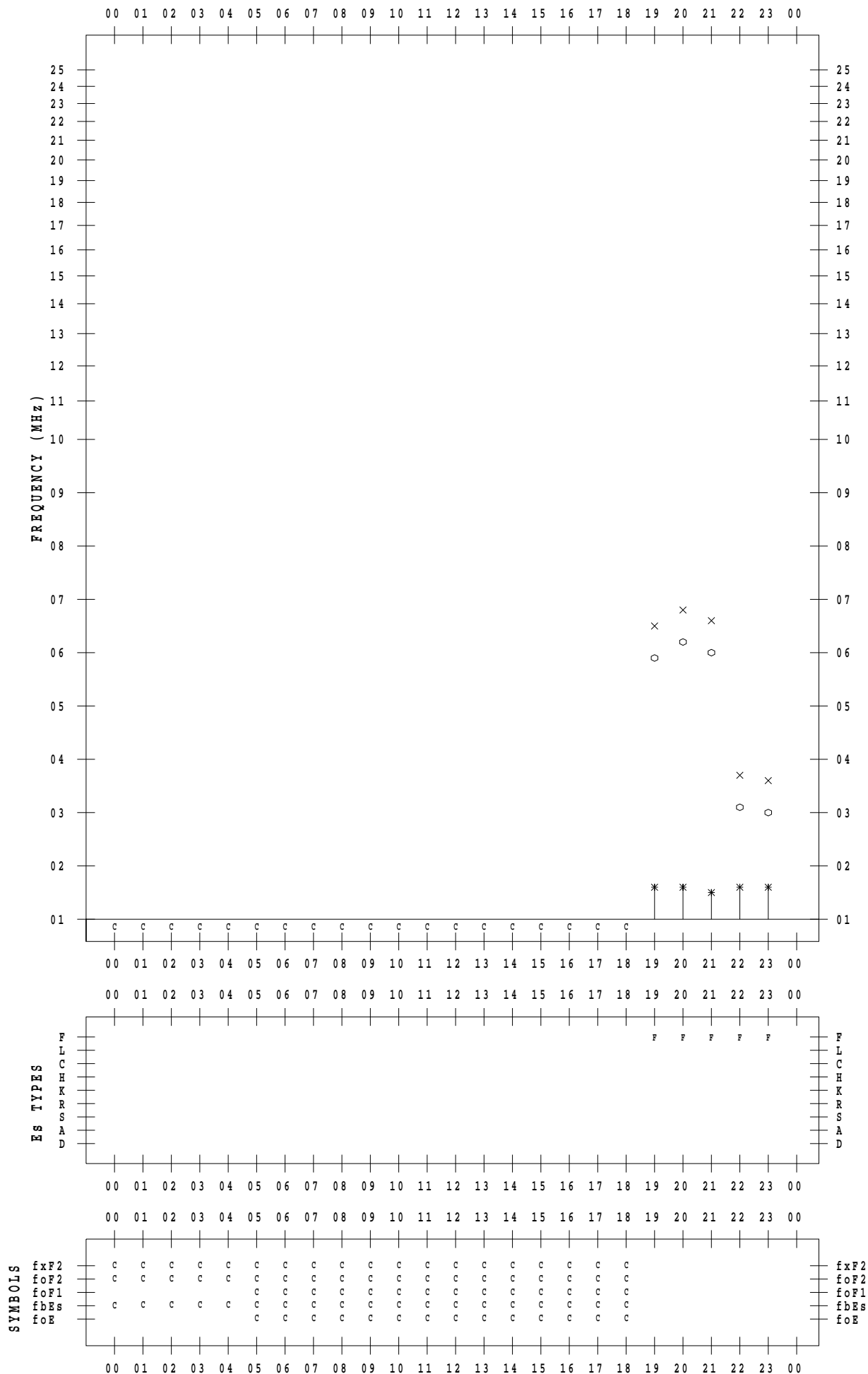
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 7

135 ° E MEAN TIME



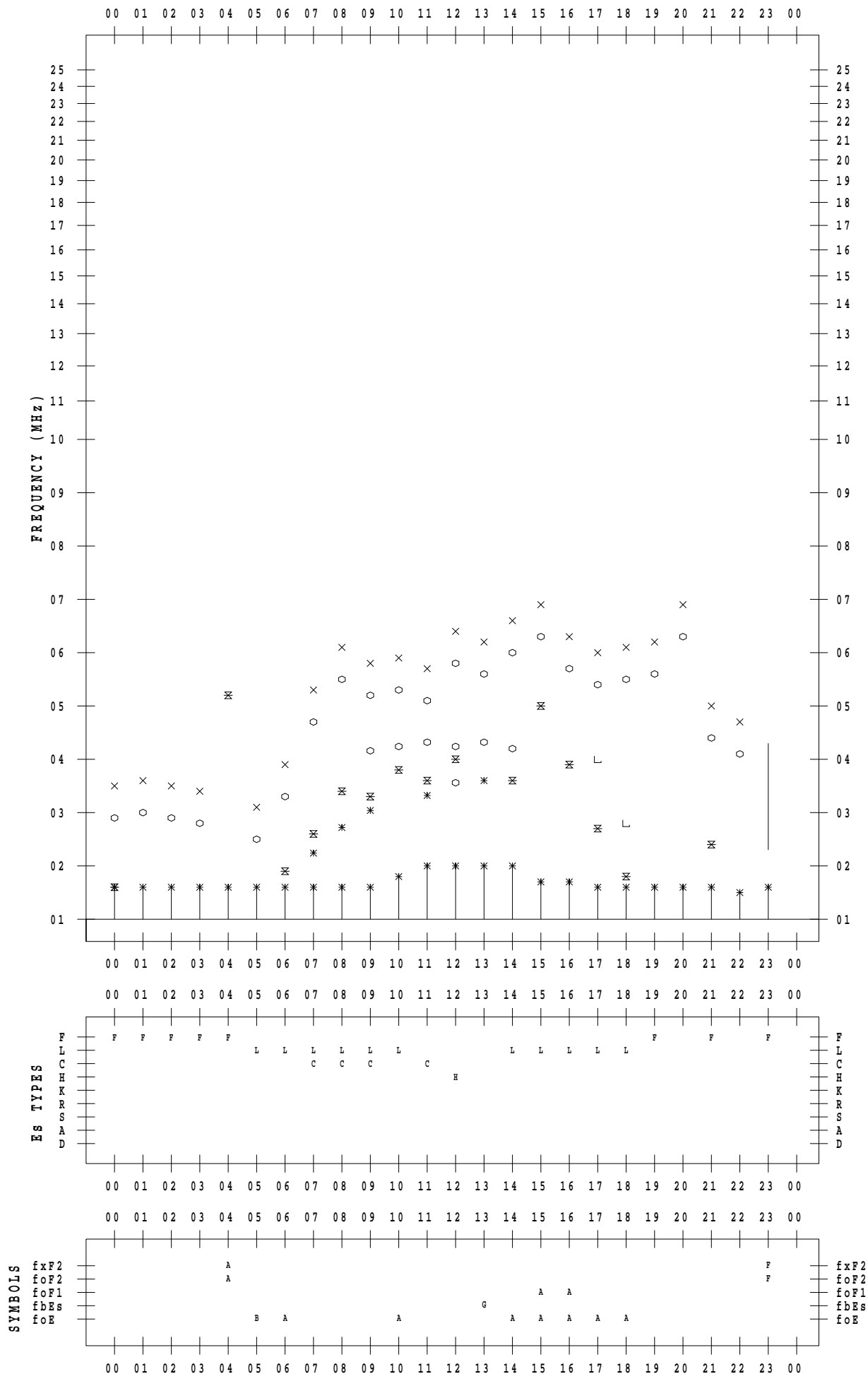
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 8

135 ° E MEAN TIME



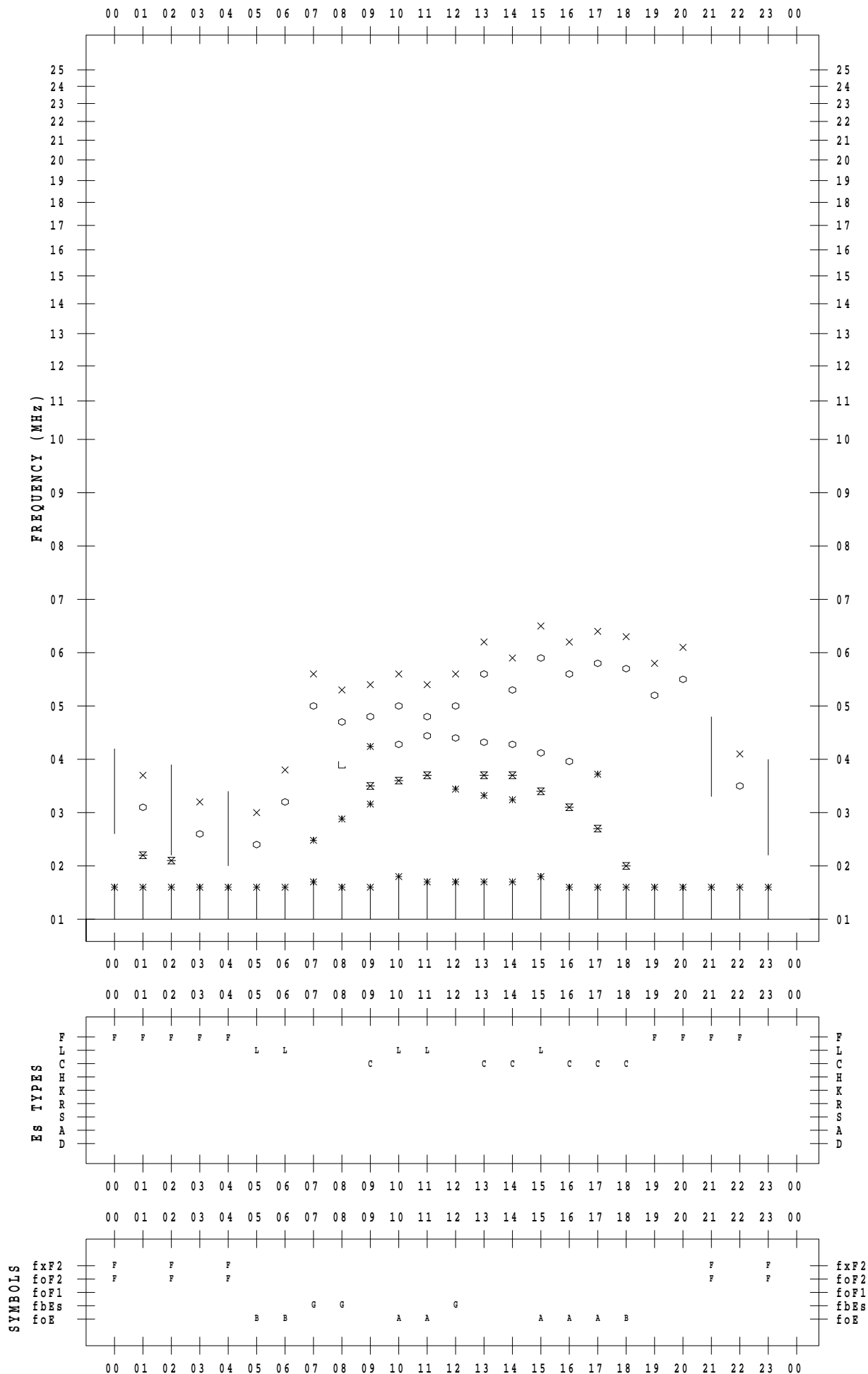
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 9

135 ° E MEAN TIME



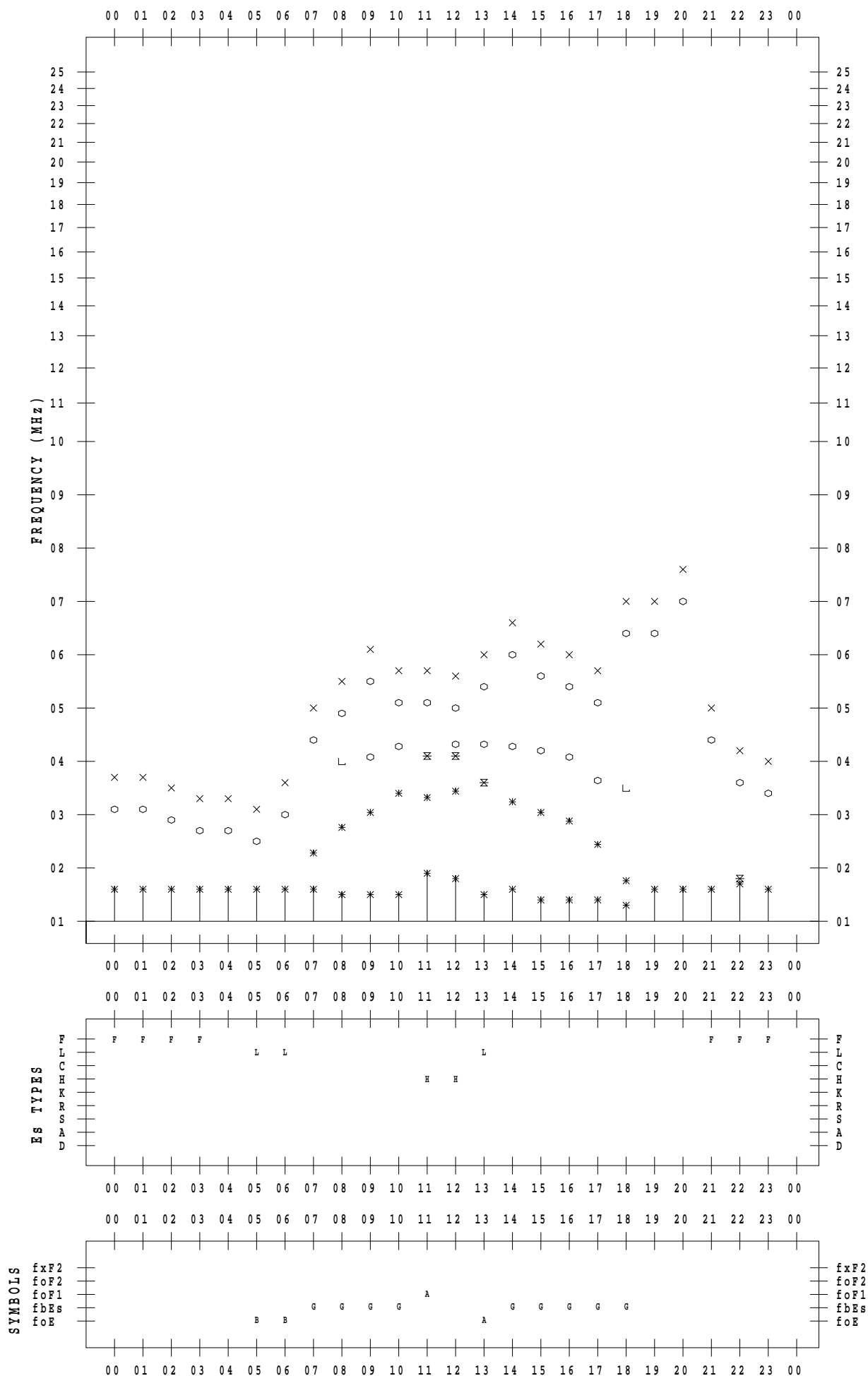
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 10

135 ° E MEAN TIME



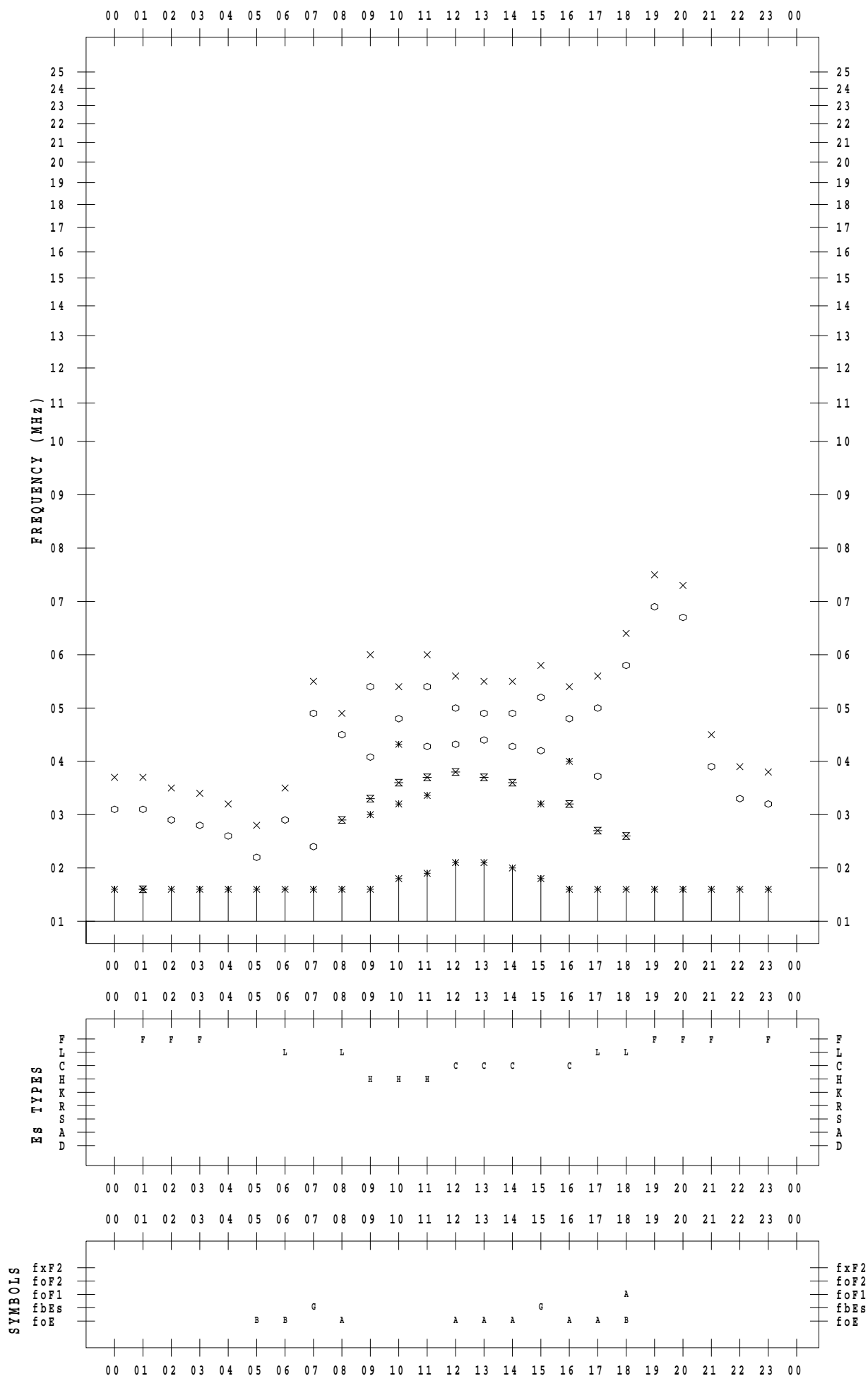
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 11

135 ° E MEAN TIME



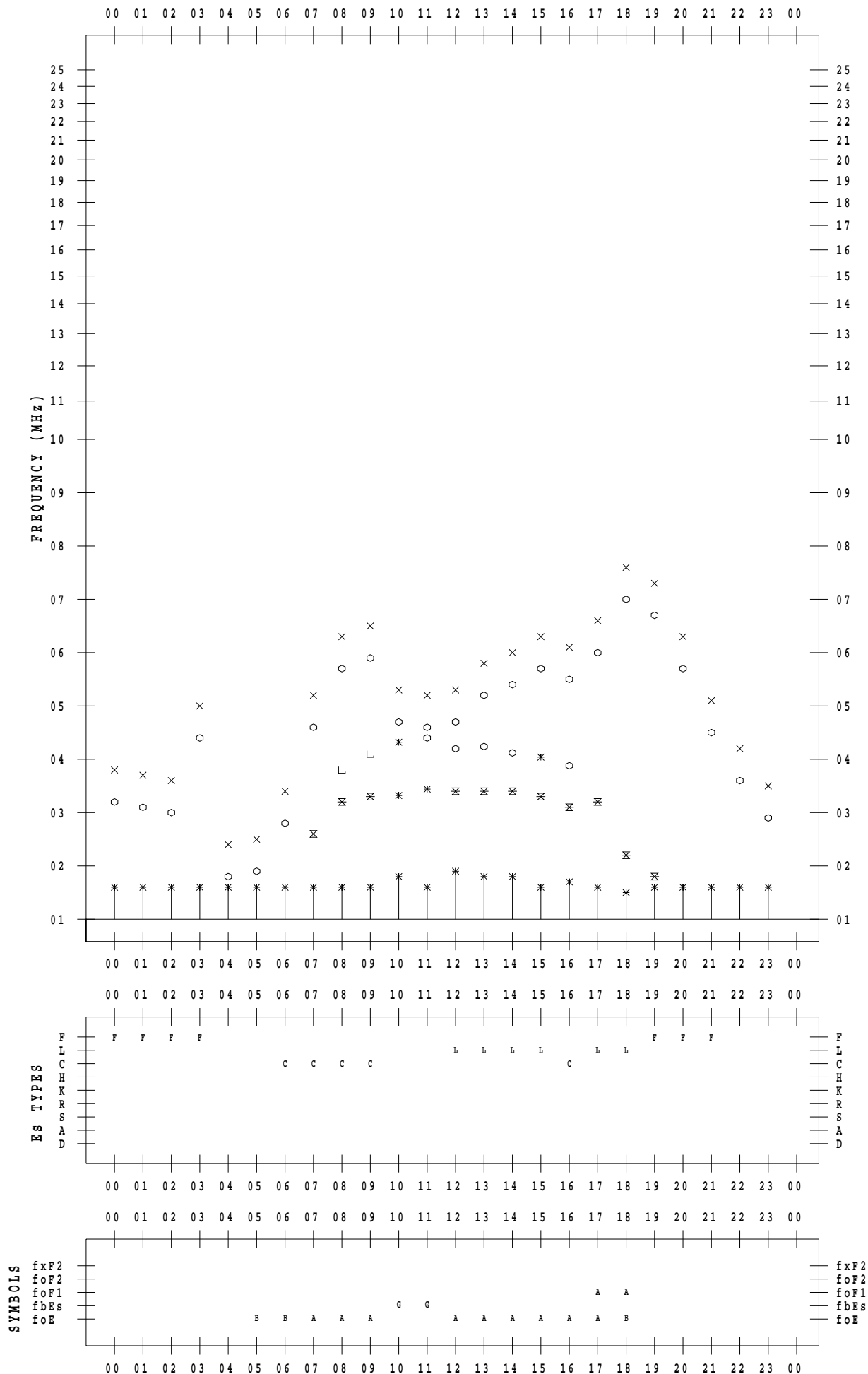
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 12

135 ° E MEAN TIME



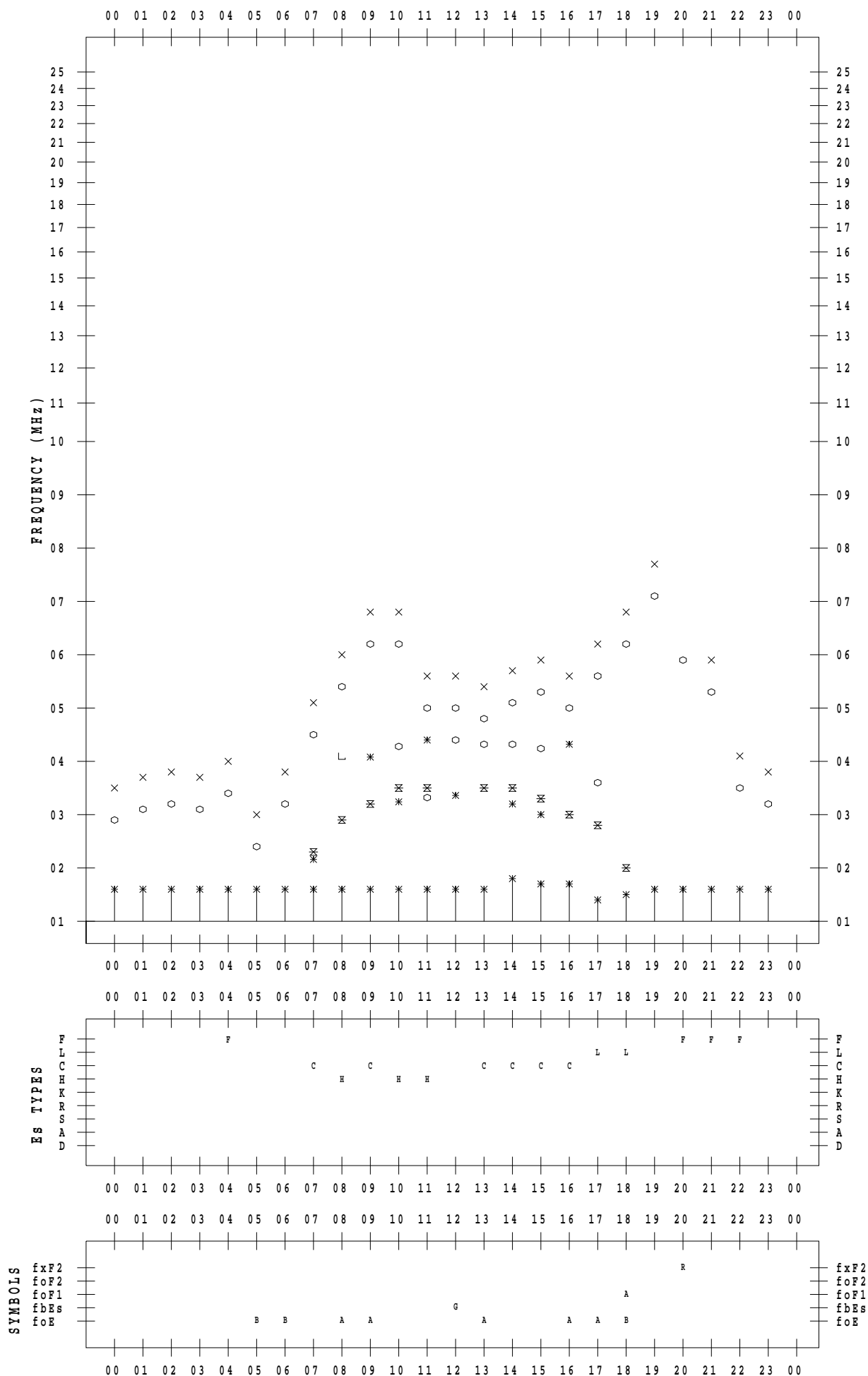
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 13

135 ° E MEAN TIME



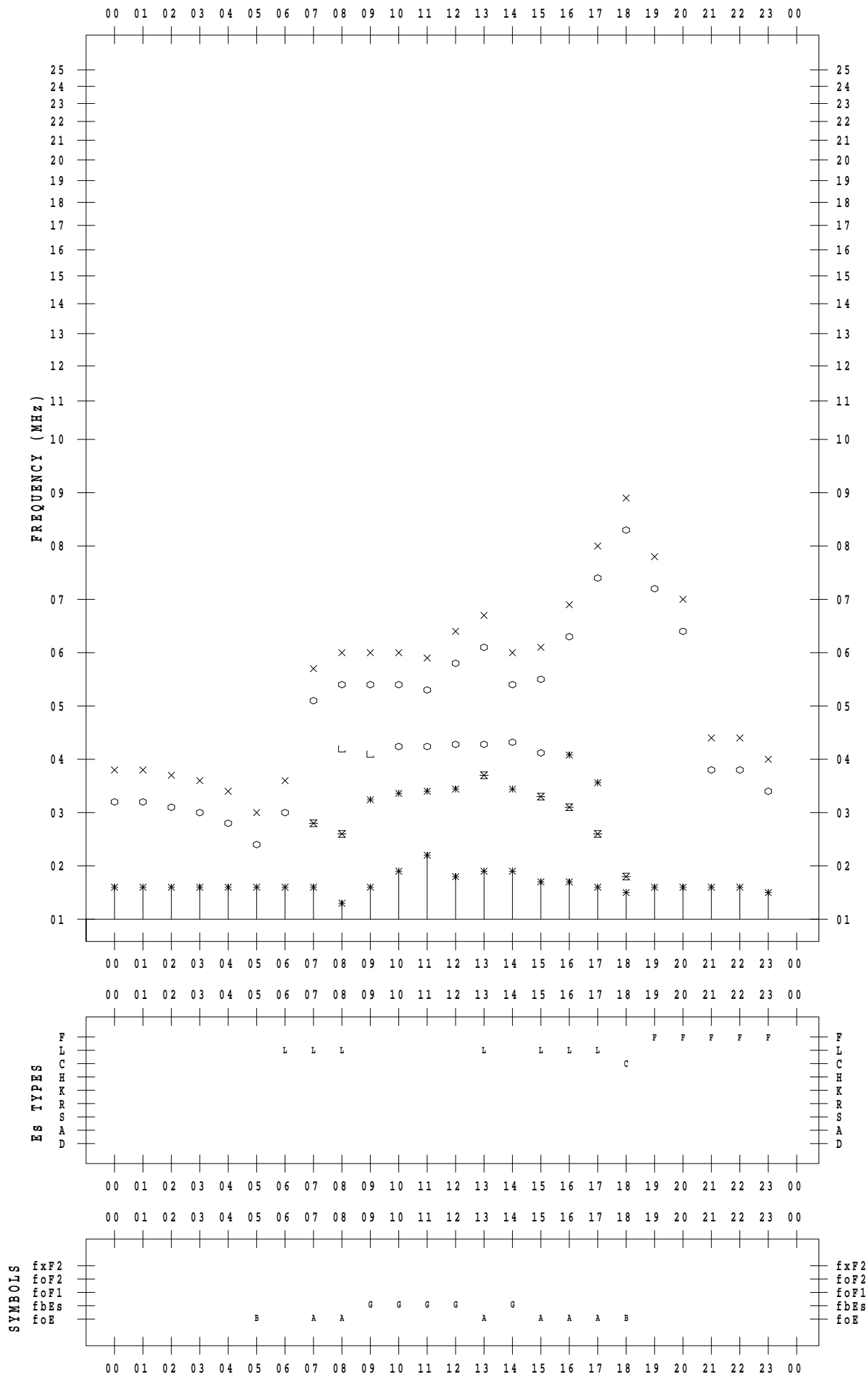
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 14

135 ° E MEAN TIME



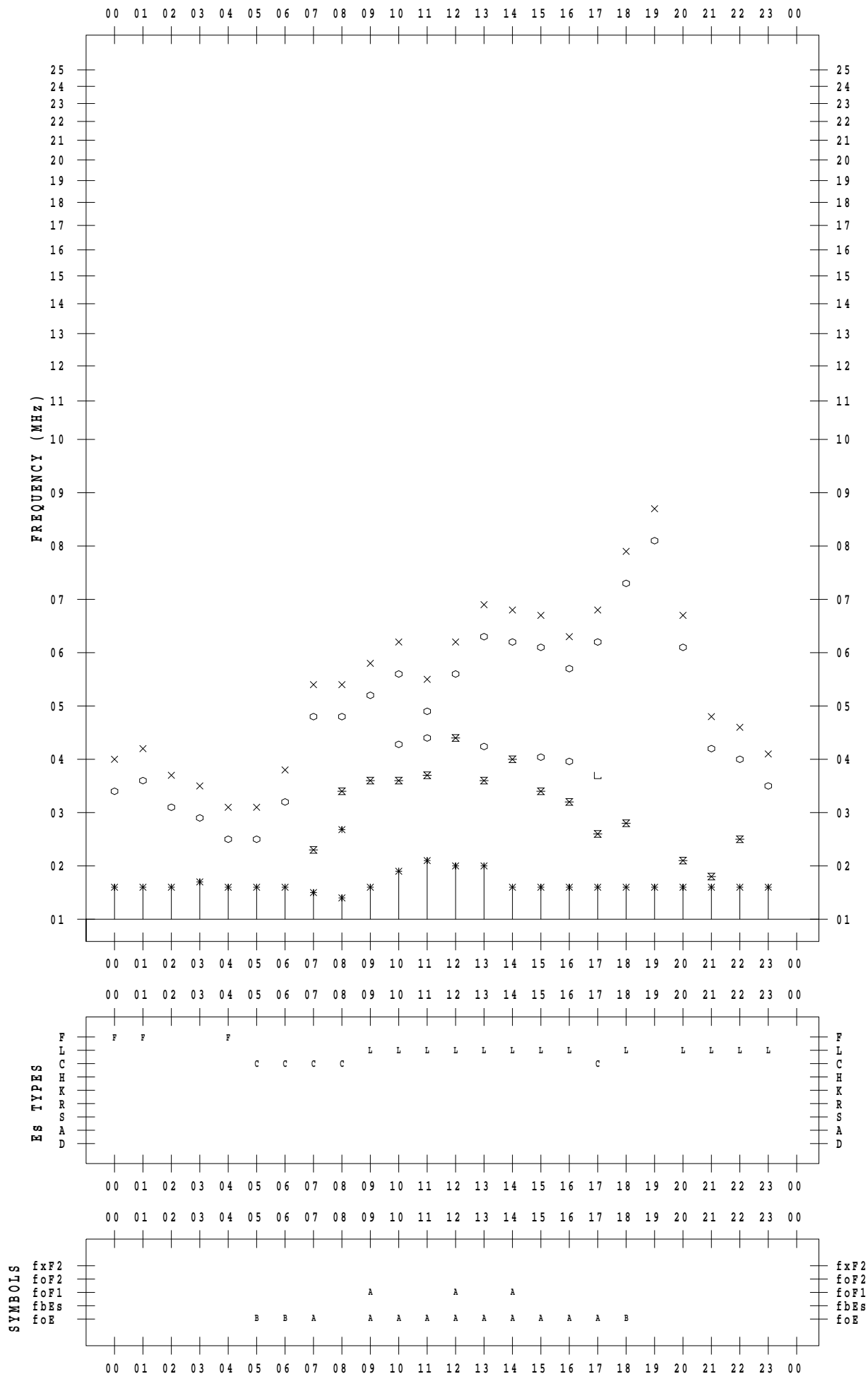
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 15

135 ° E MEAN TIME



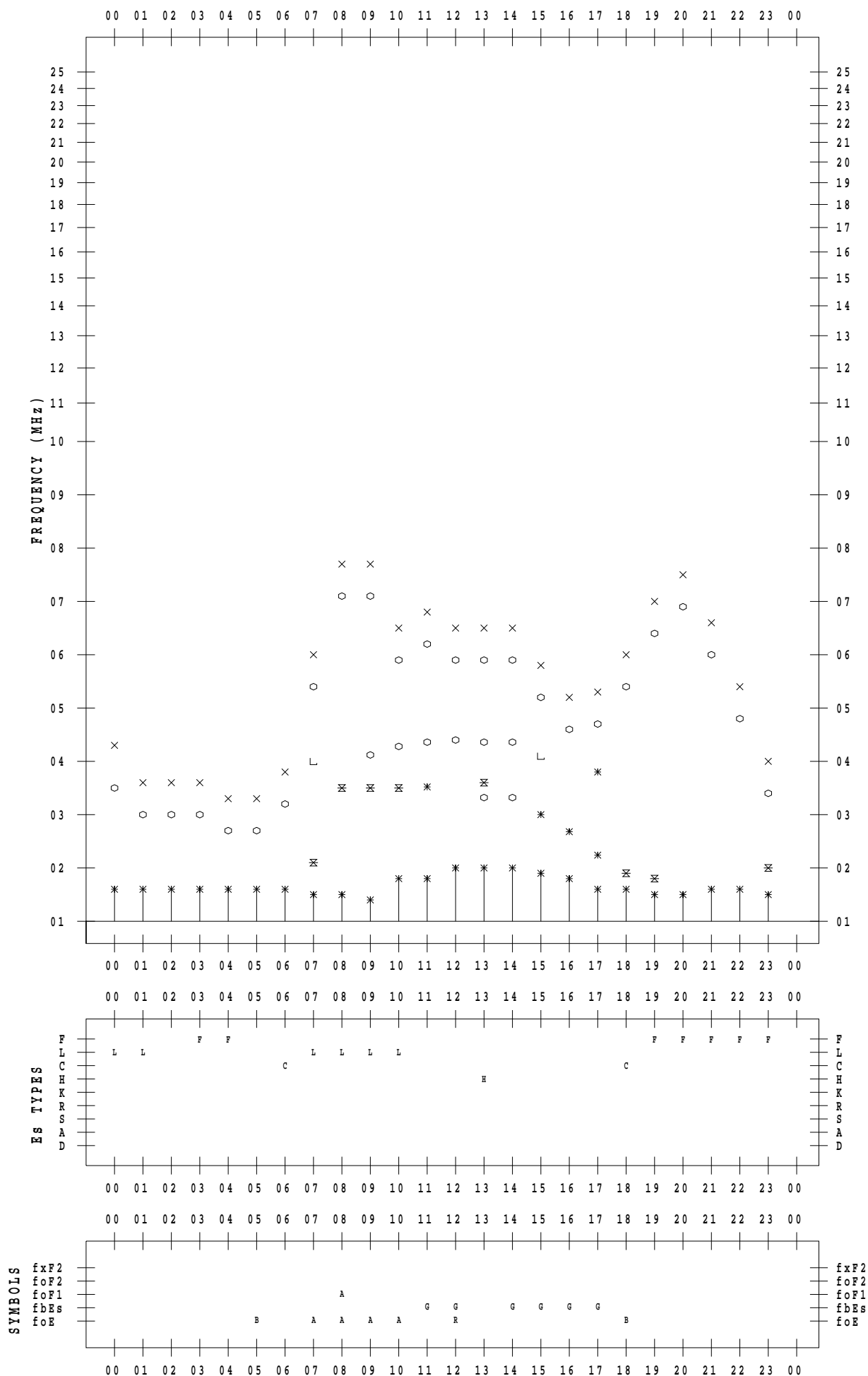
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 16

135 ° E MEAN TIME



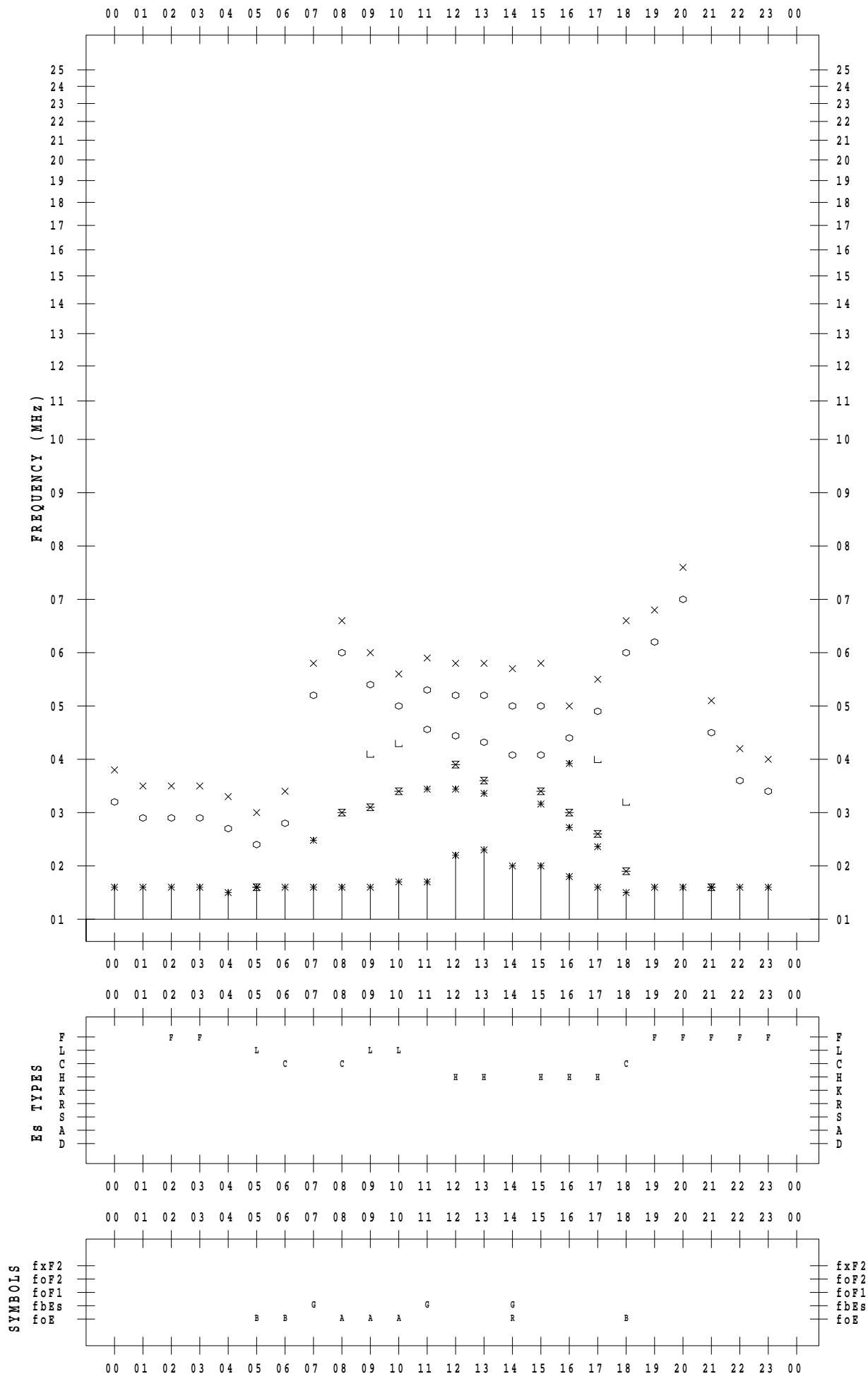
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 17

135 ° E MEAN TIME



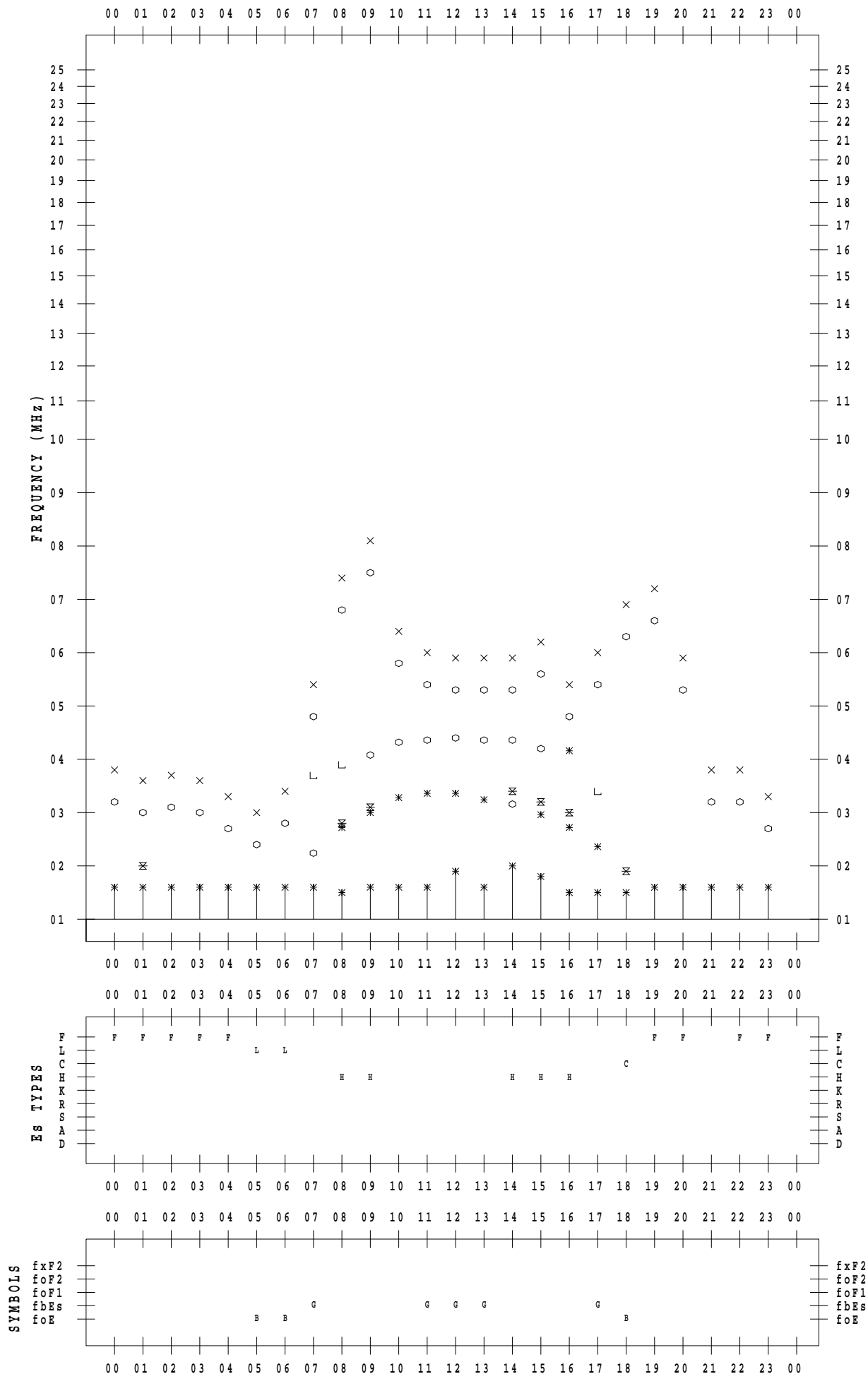
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 18

135 ° E MEAN TIME



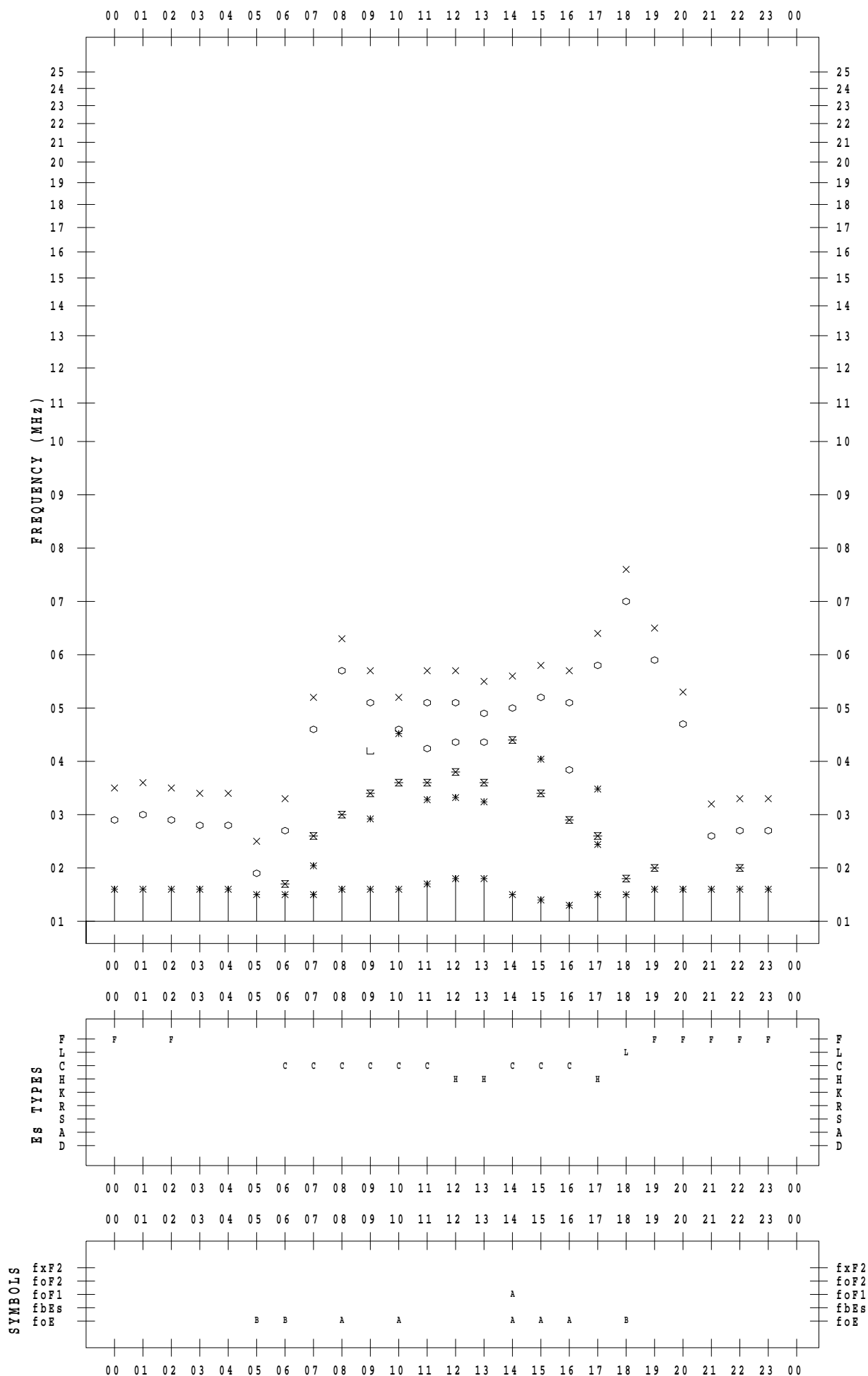
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 19

135 ° E MEAN TIME



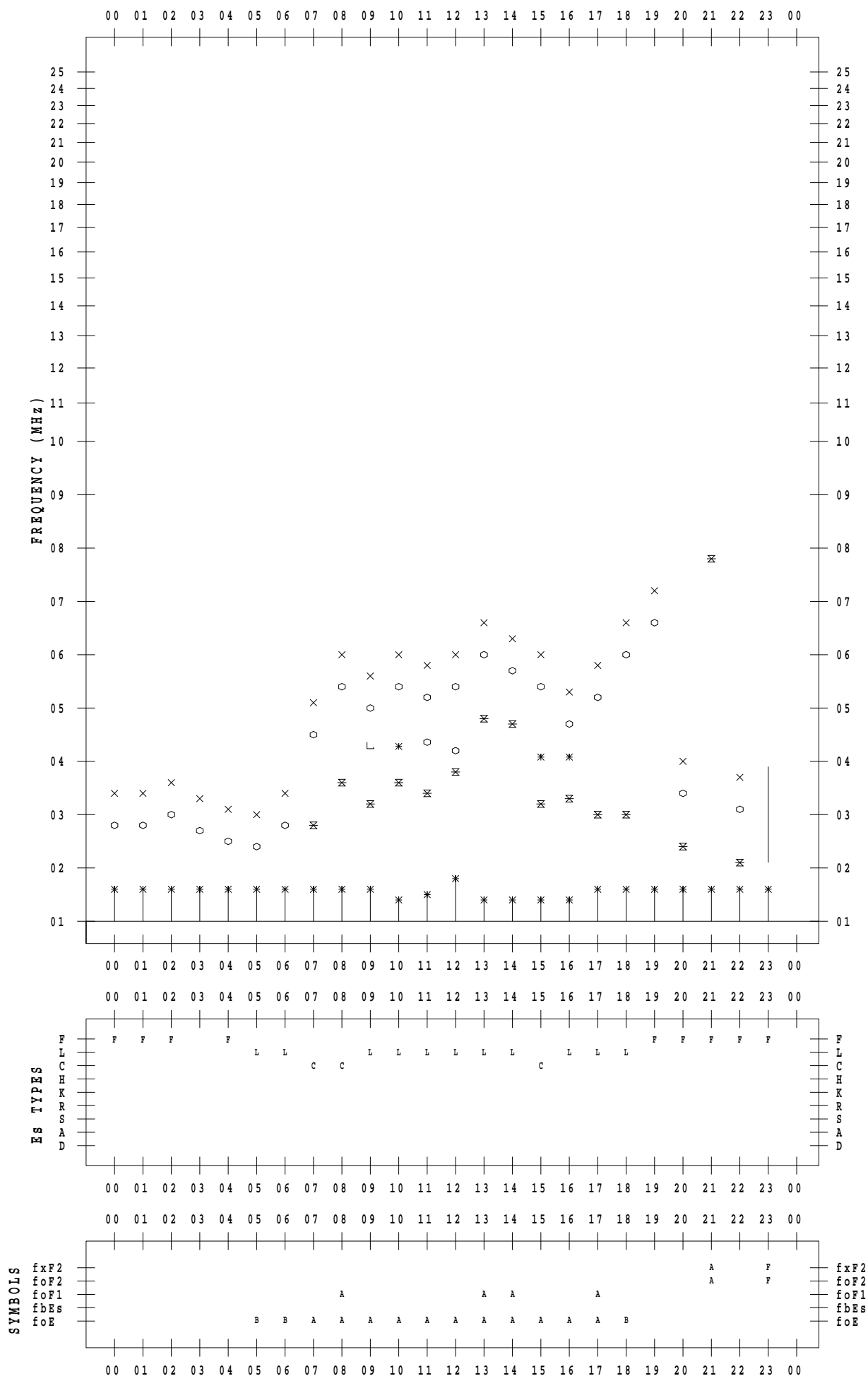
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 20

135 ° E MEAN TIME



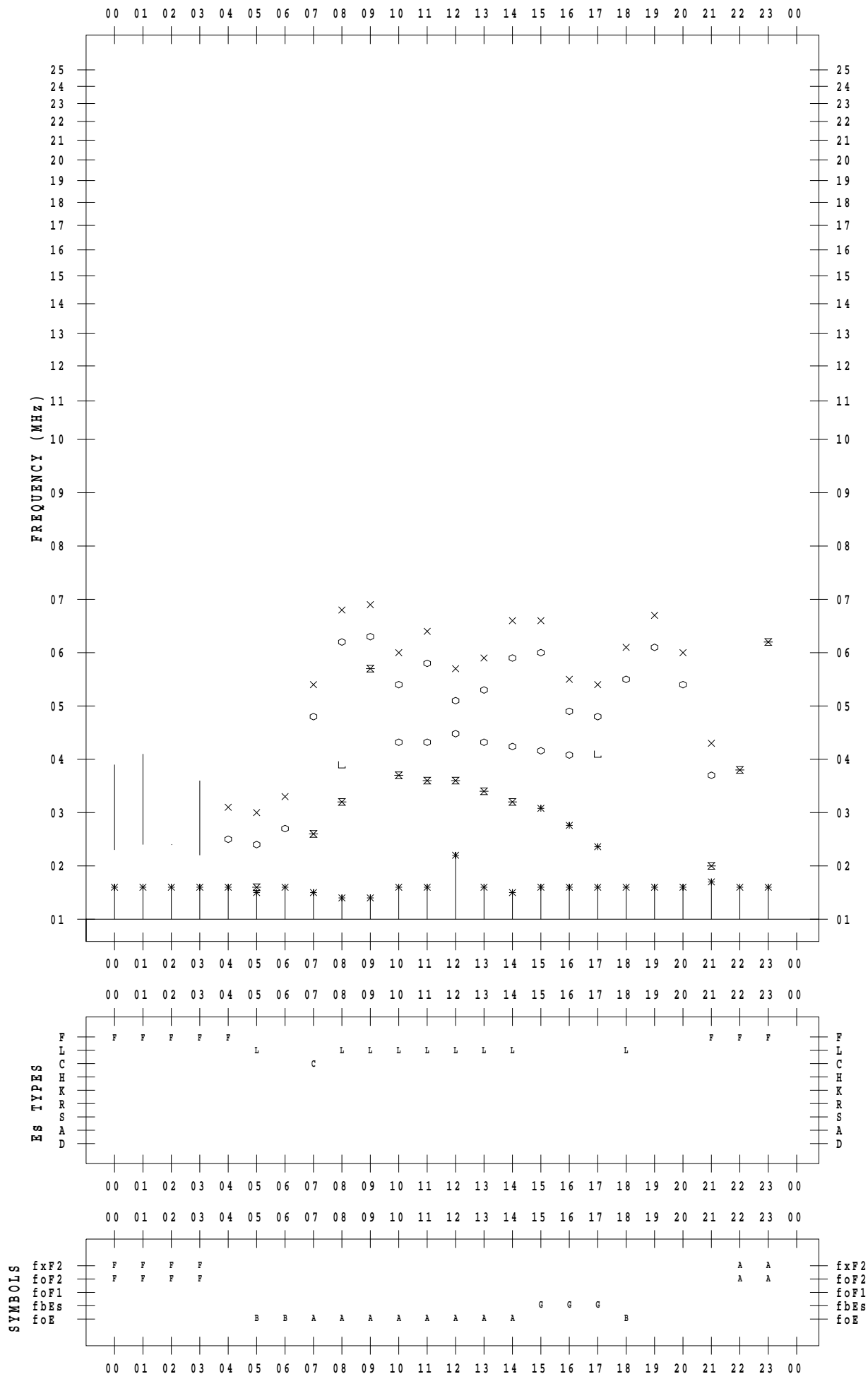
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 21

135 ° E MEAN TIME



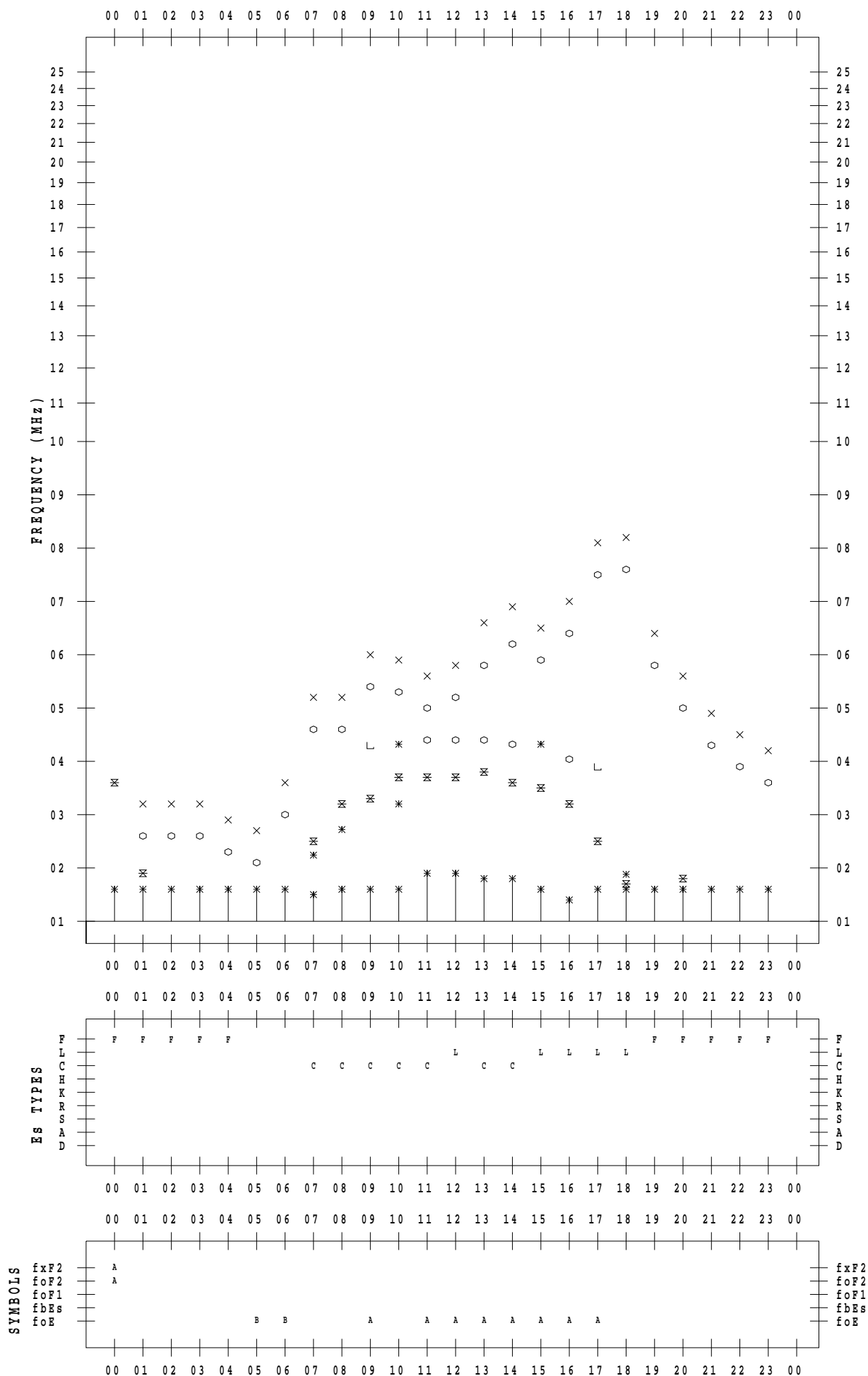
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 22

135 ° E MEAN TIME



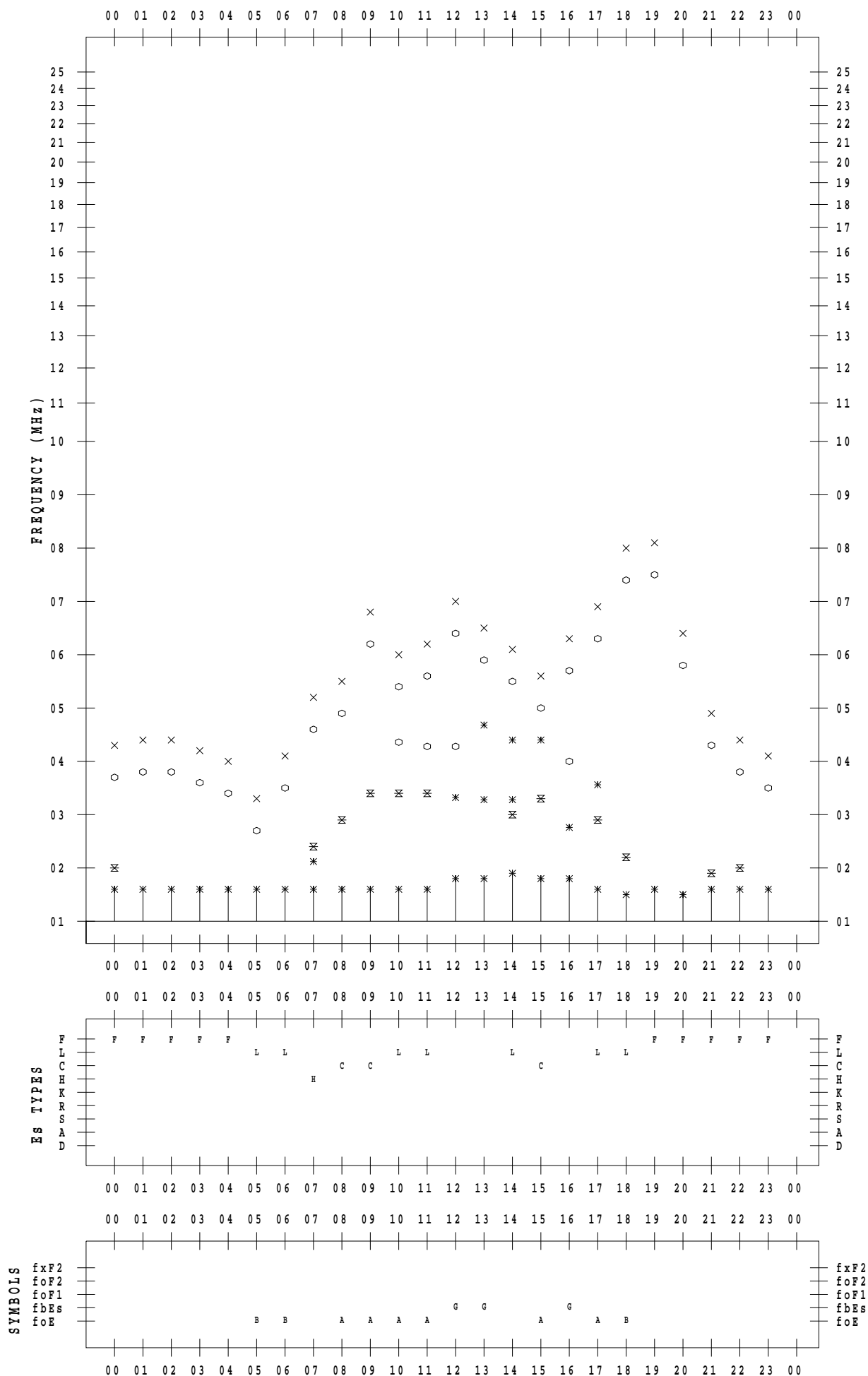
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 23

135 ° E MEAN TIME



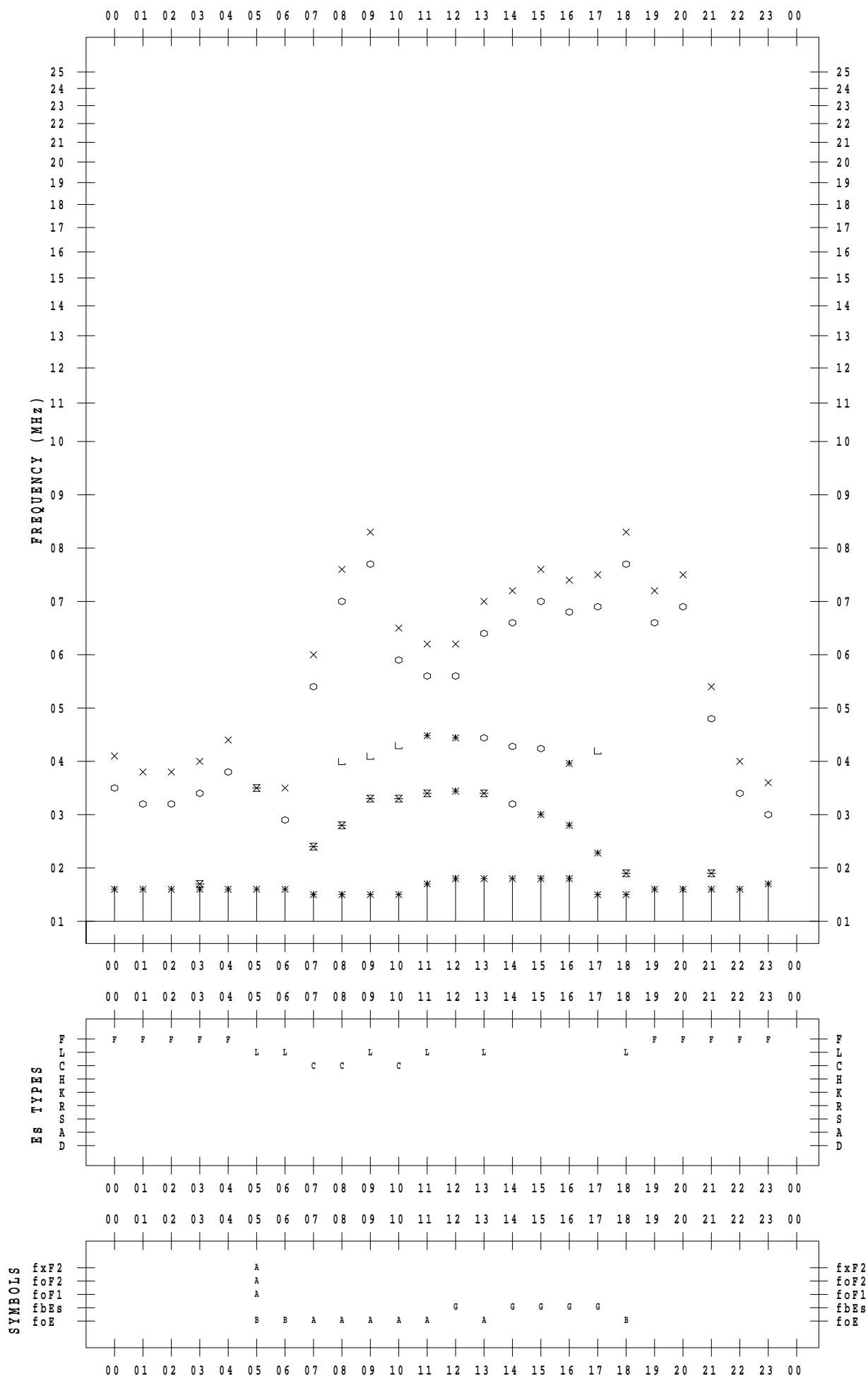
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 24

135 ° E MEAN TIME



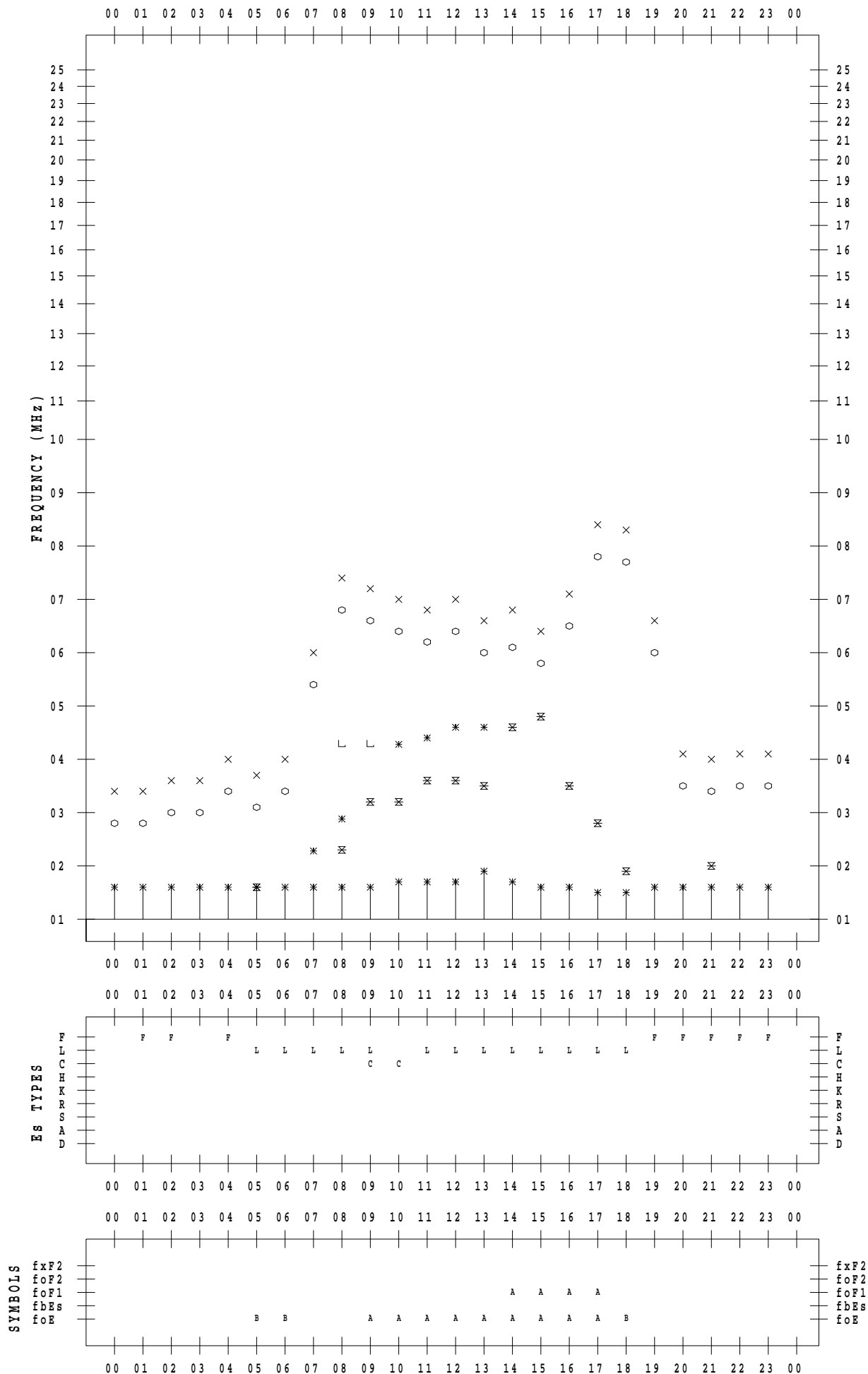
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 25

135 ° E MEAN TIME



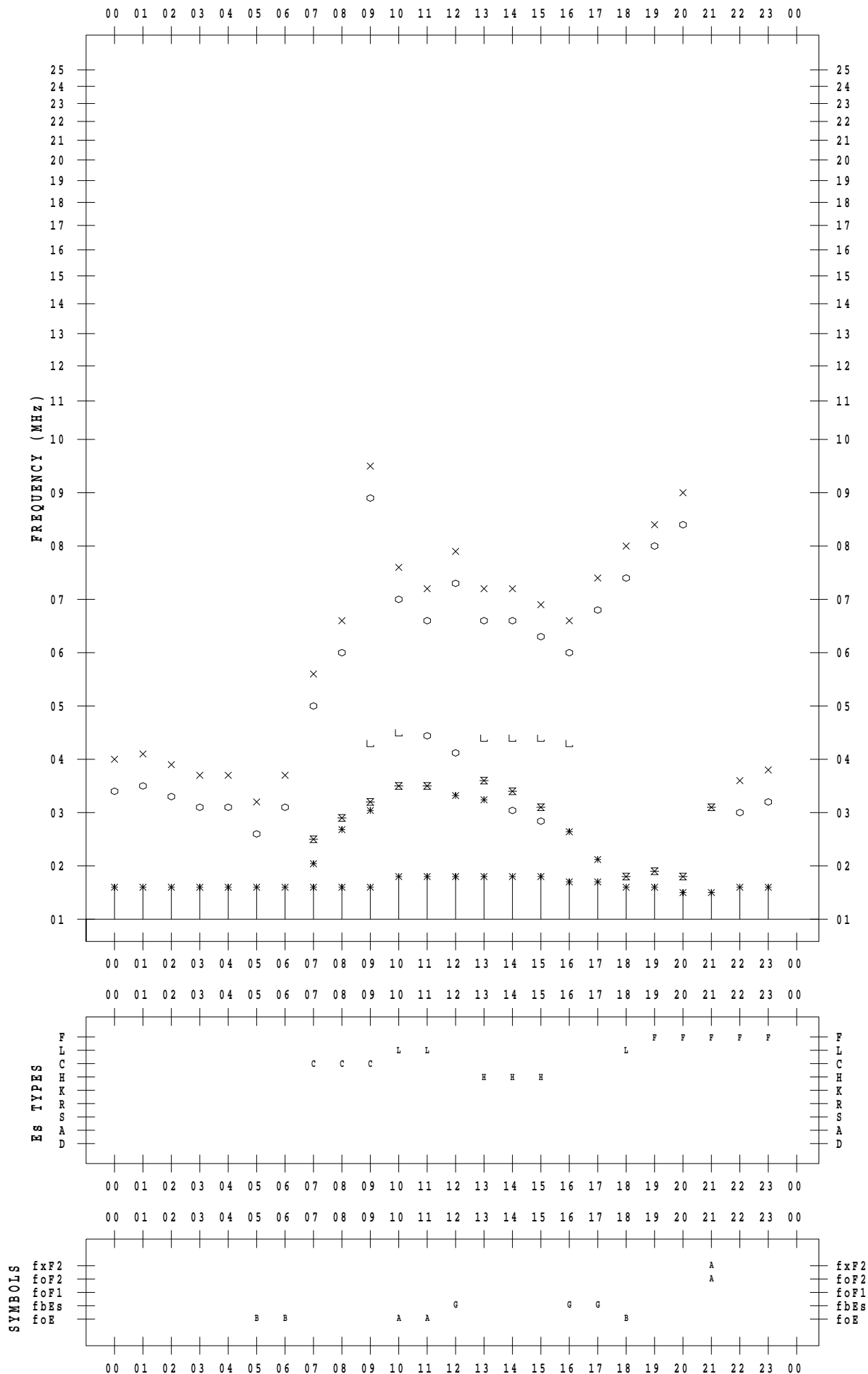
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 26

135 ° E MEAN TIME



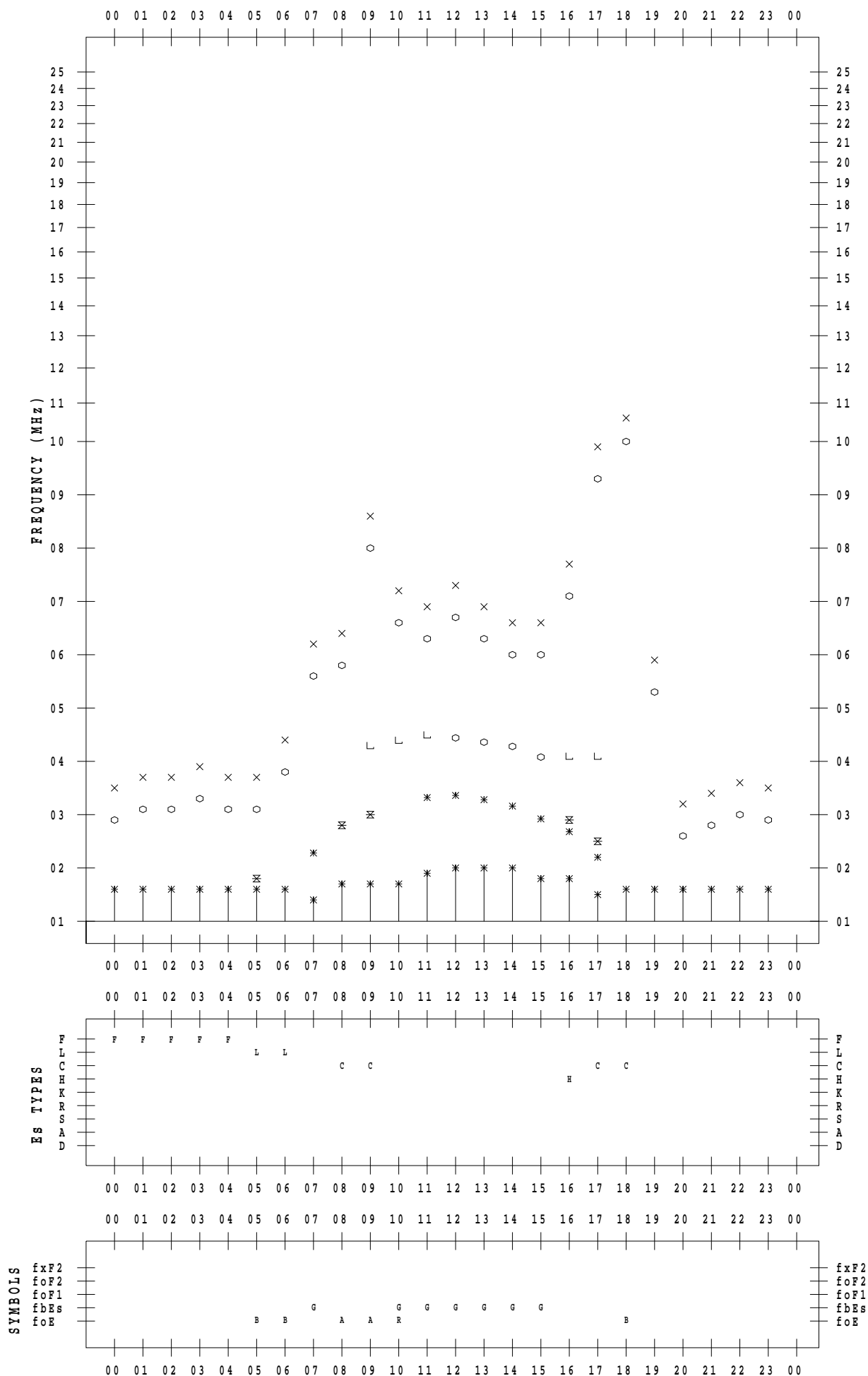
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 27

135 ° E MEAN TIME



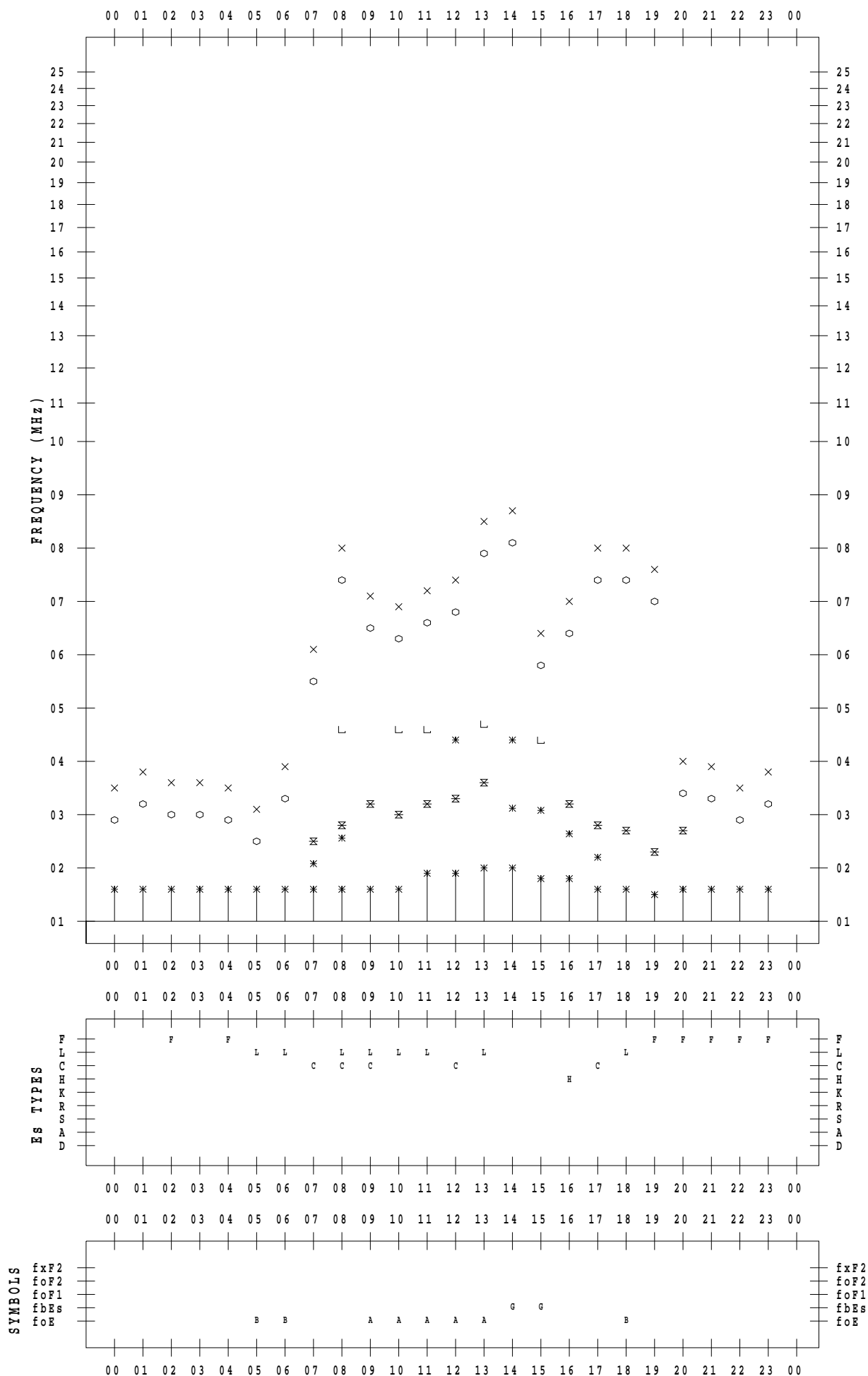
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 28

135 ° E MEAN TIME



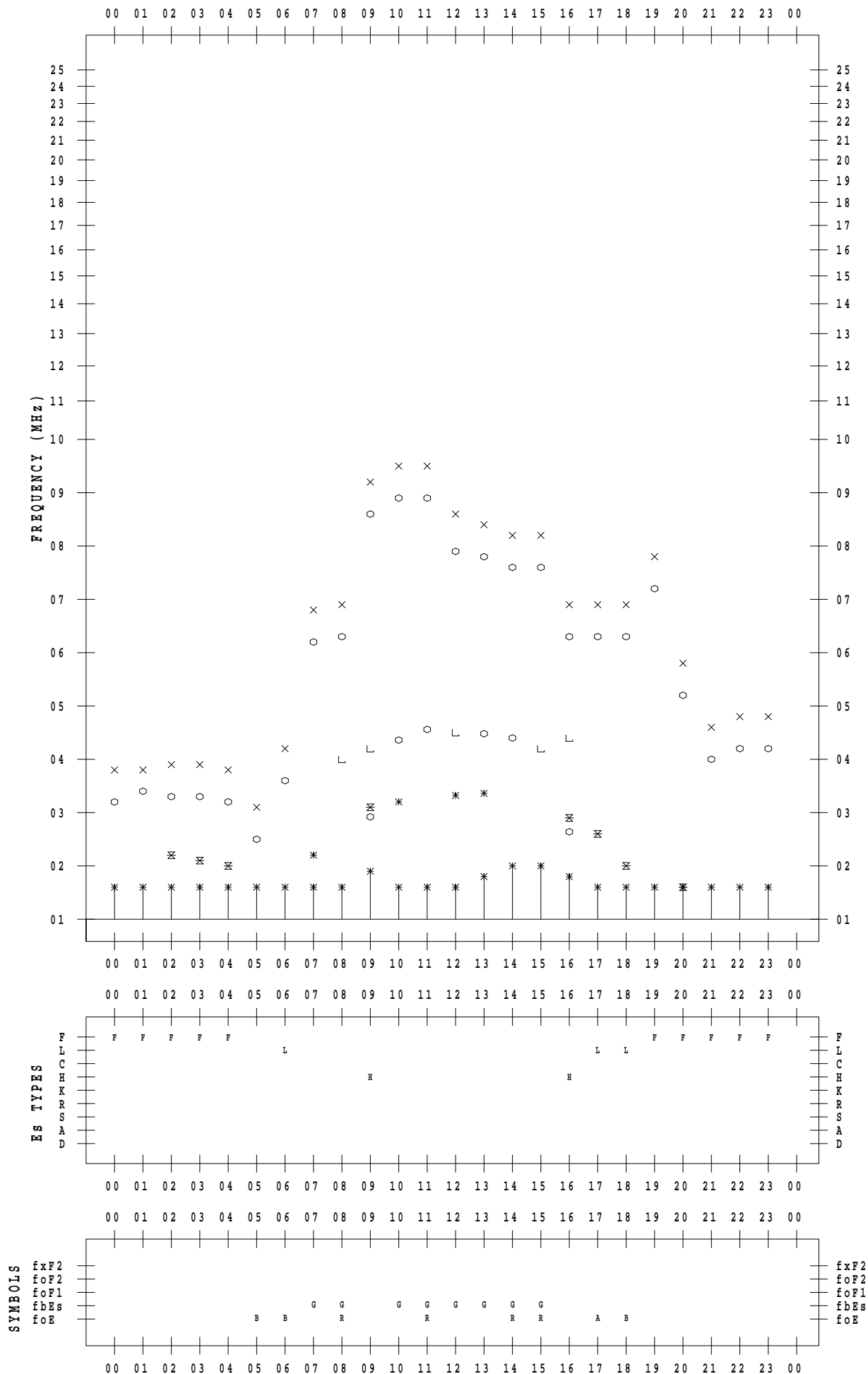
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 29

135 ° E MEAN TIME



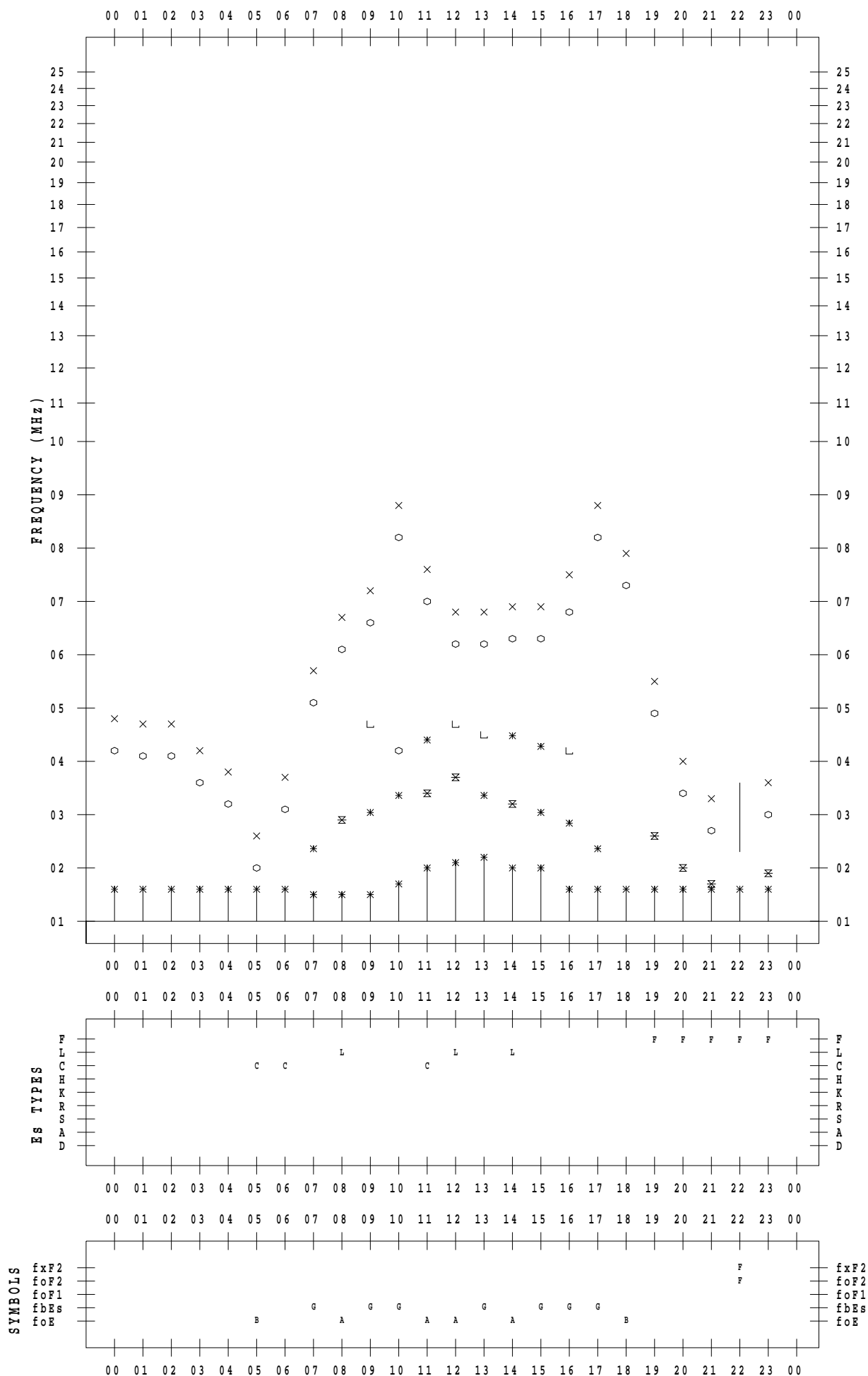
f - PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020 / 9 / 30

135 ° E MEAN TIME



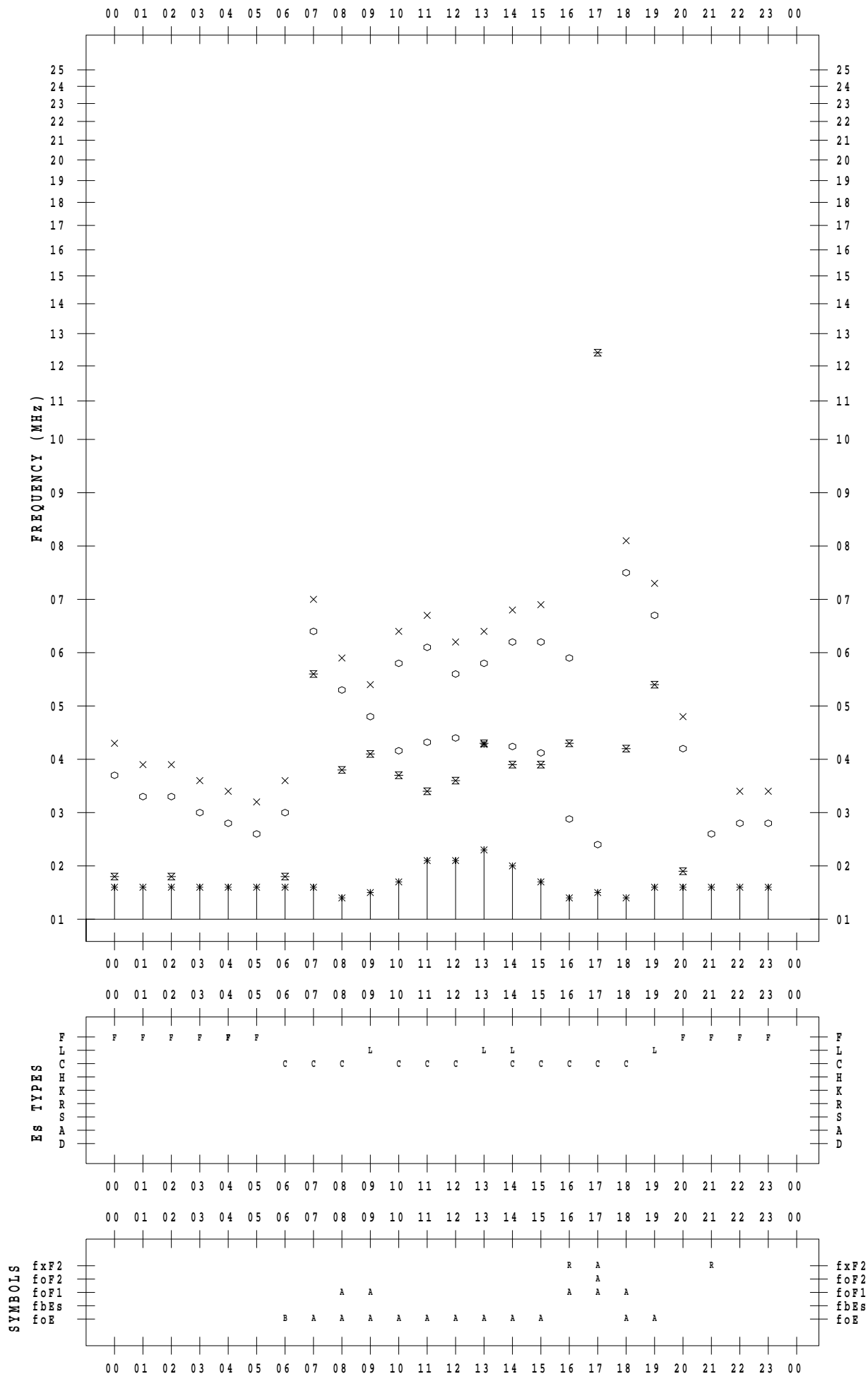
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 1

135 ° E MEAN TIME



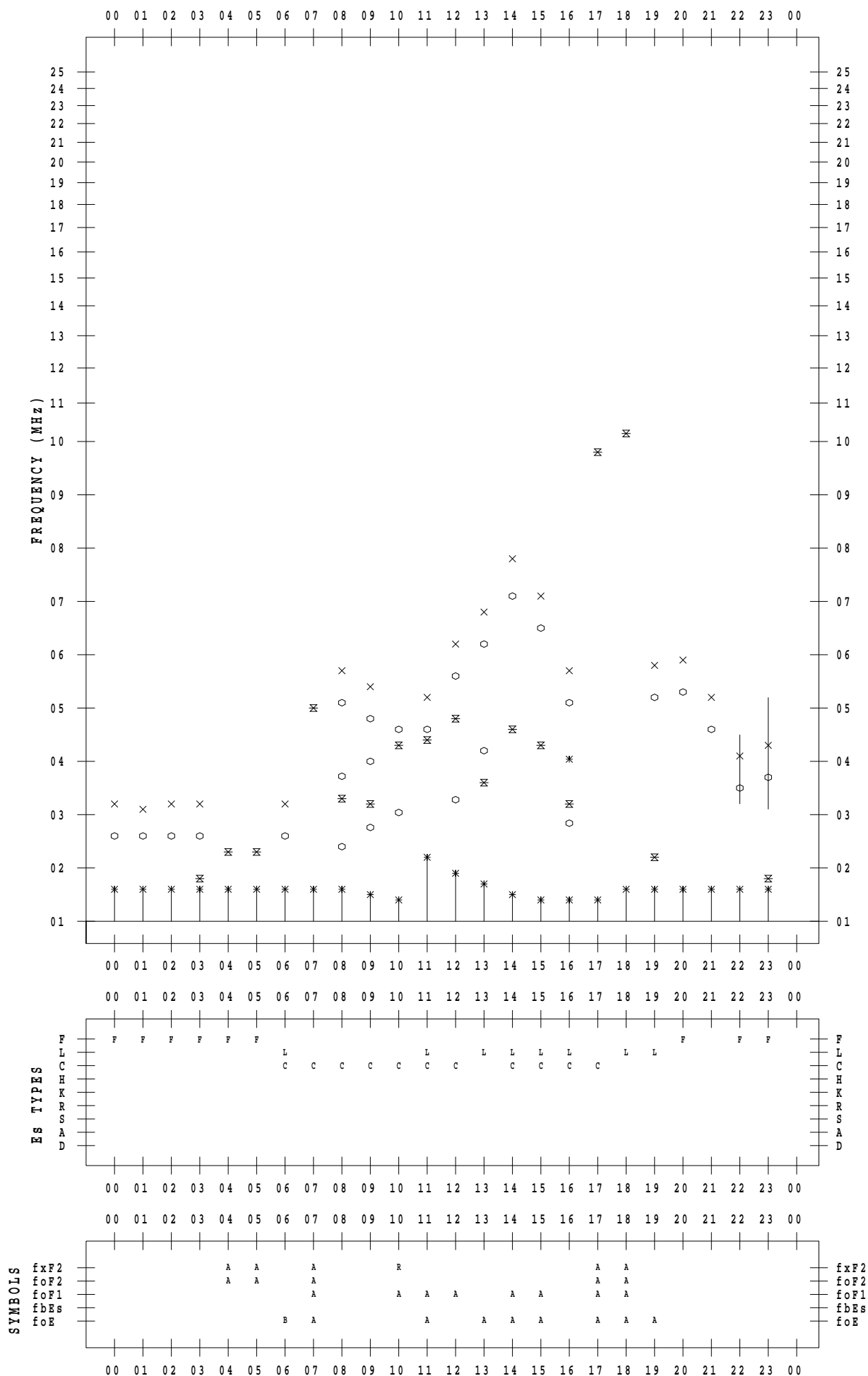
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 2

135 ° E MEAN TIME



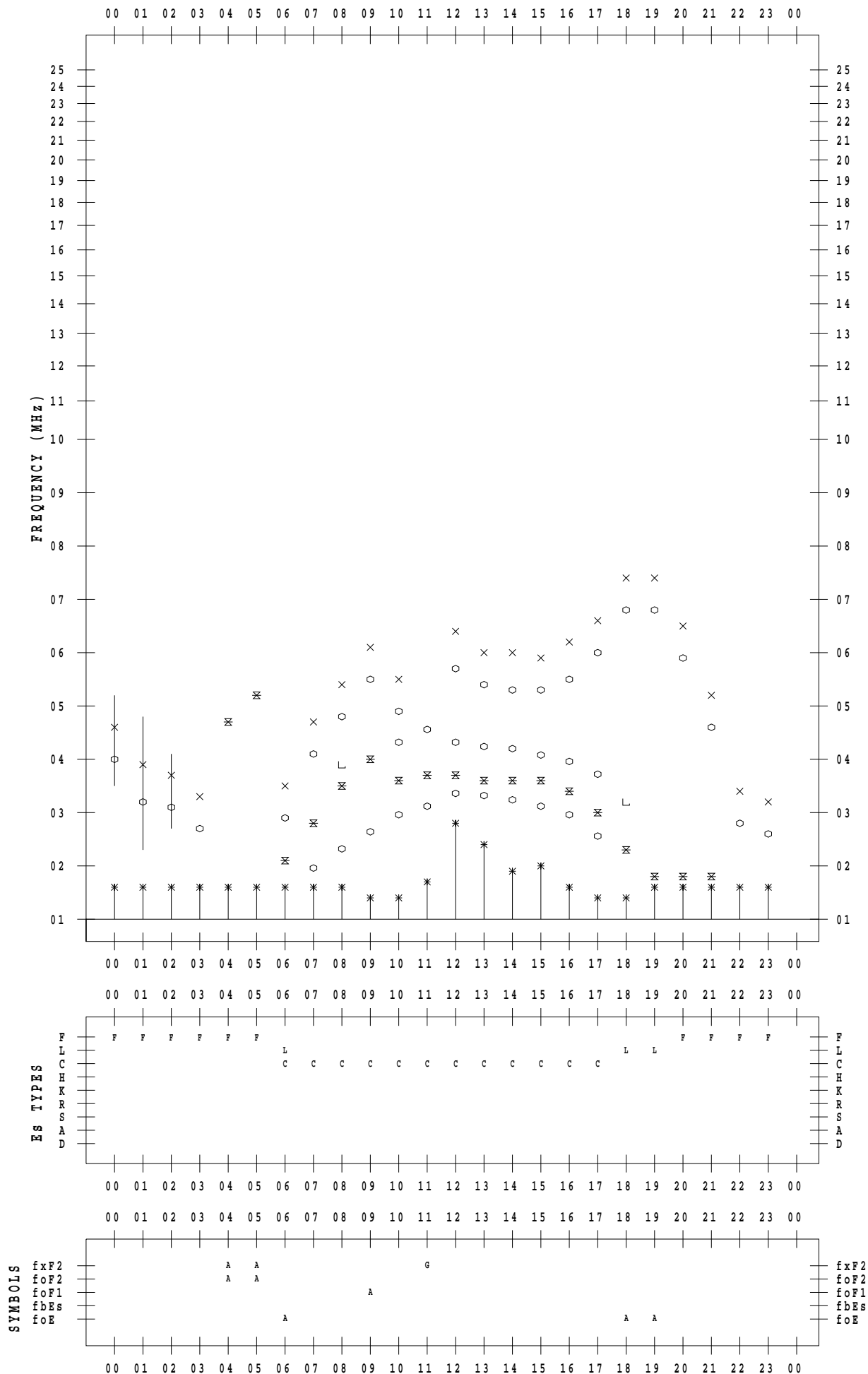
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 3

135 ° E MEAN TIME



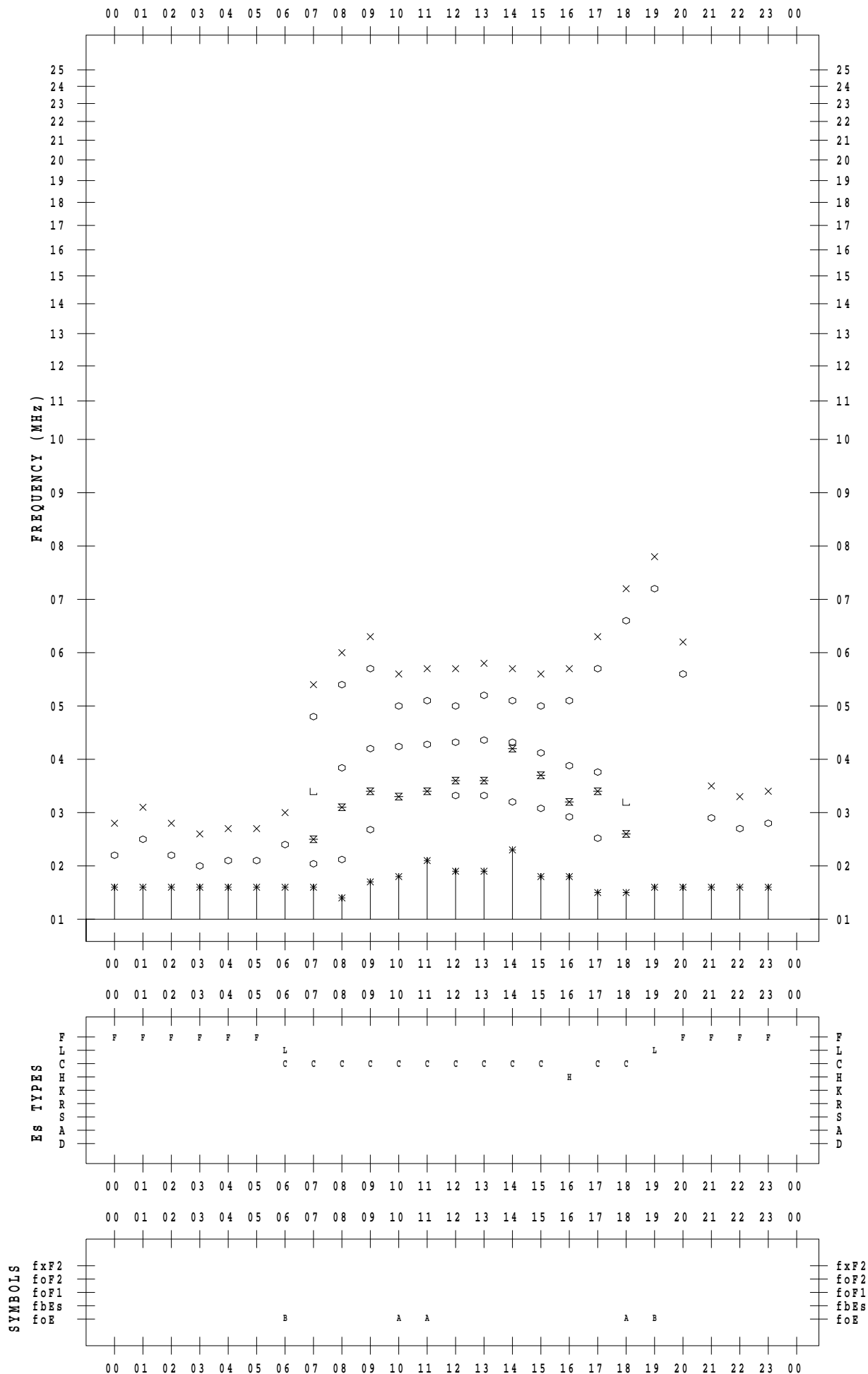
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 4

135 ° E MEAN TIME



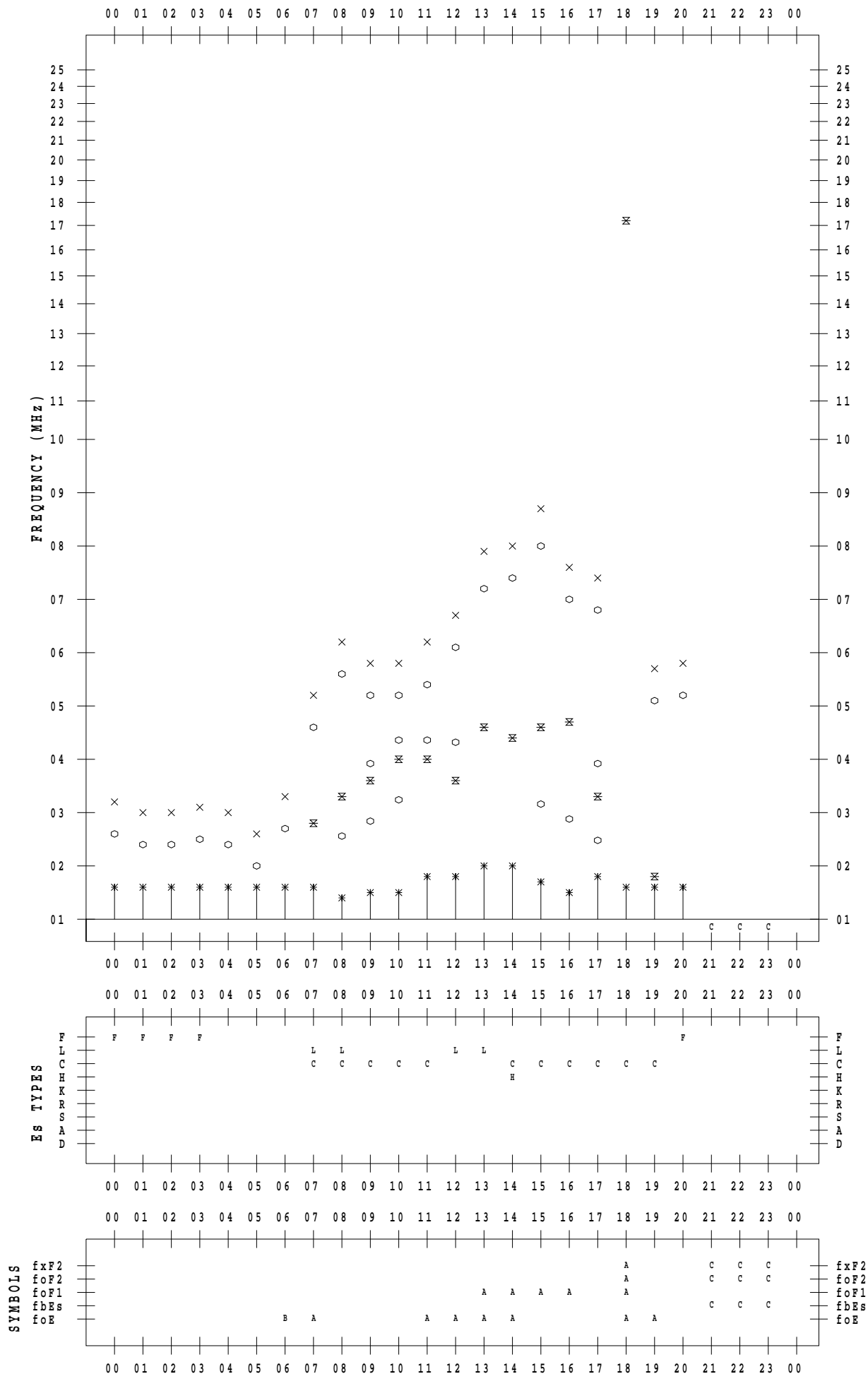
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 5

135 ° E MEAN TIME



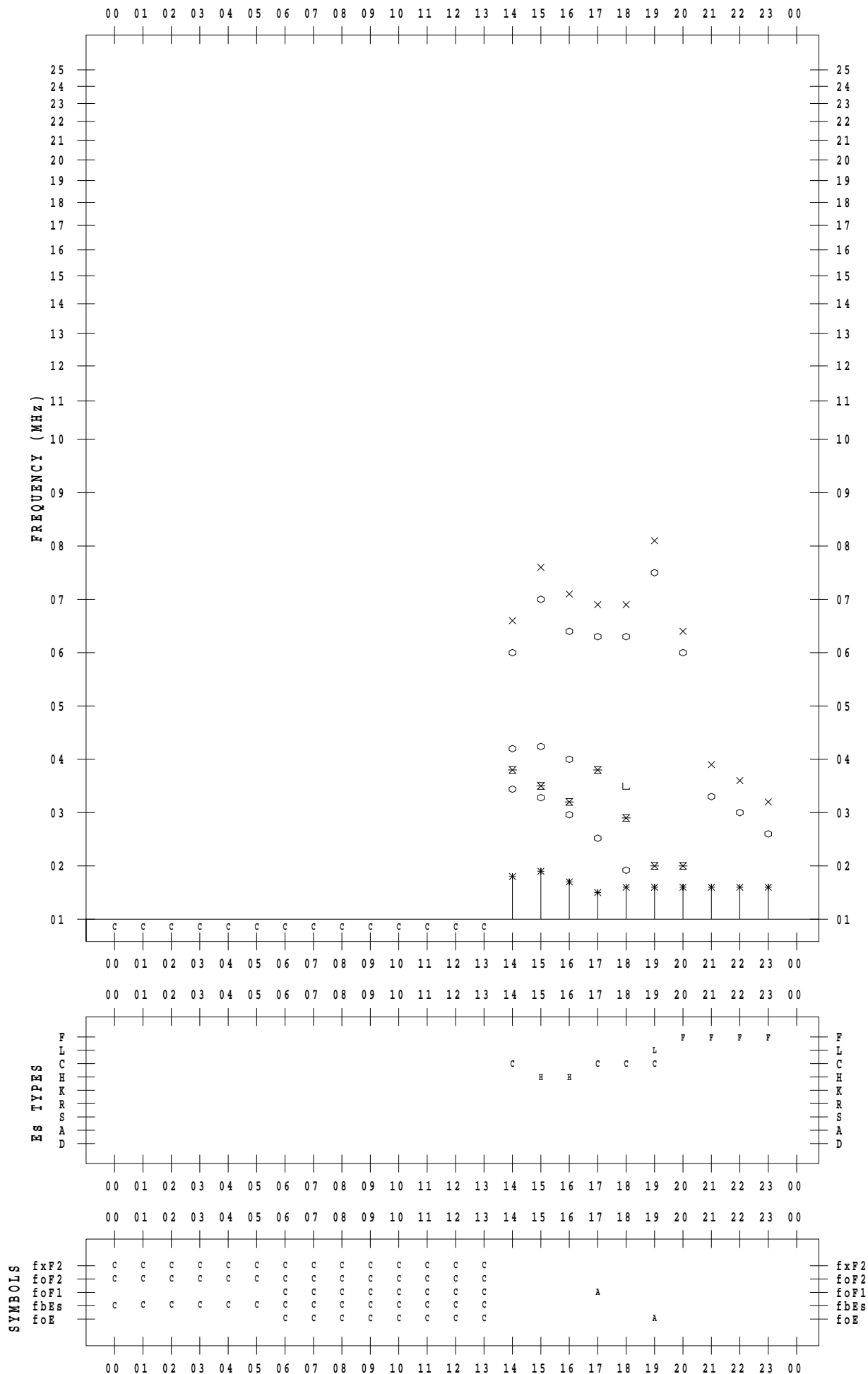
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 6

135 ° E MEAN TIME



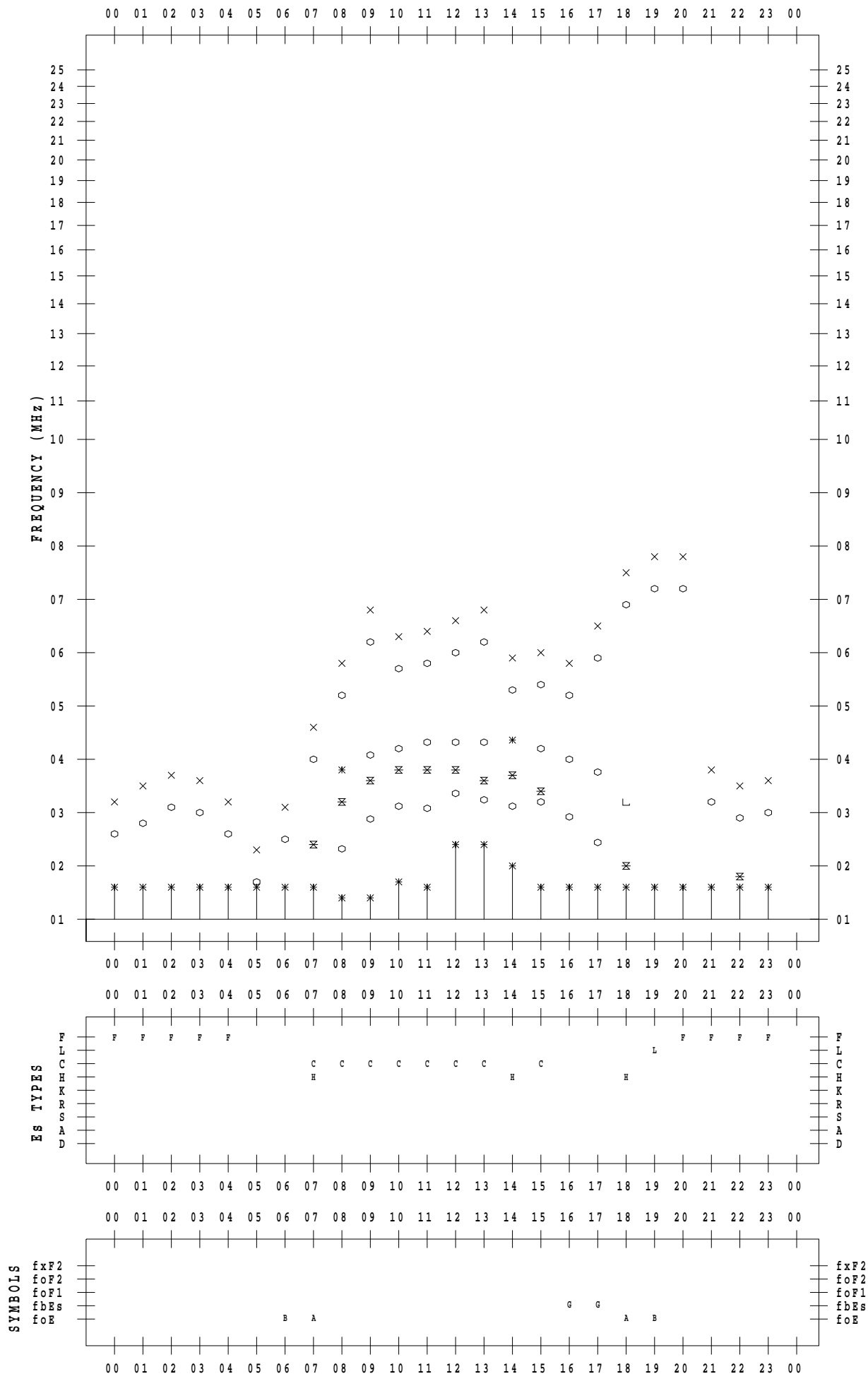
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 7

135 ° E MEAN TIME



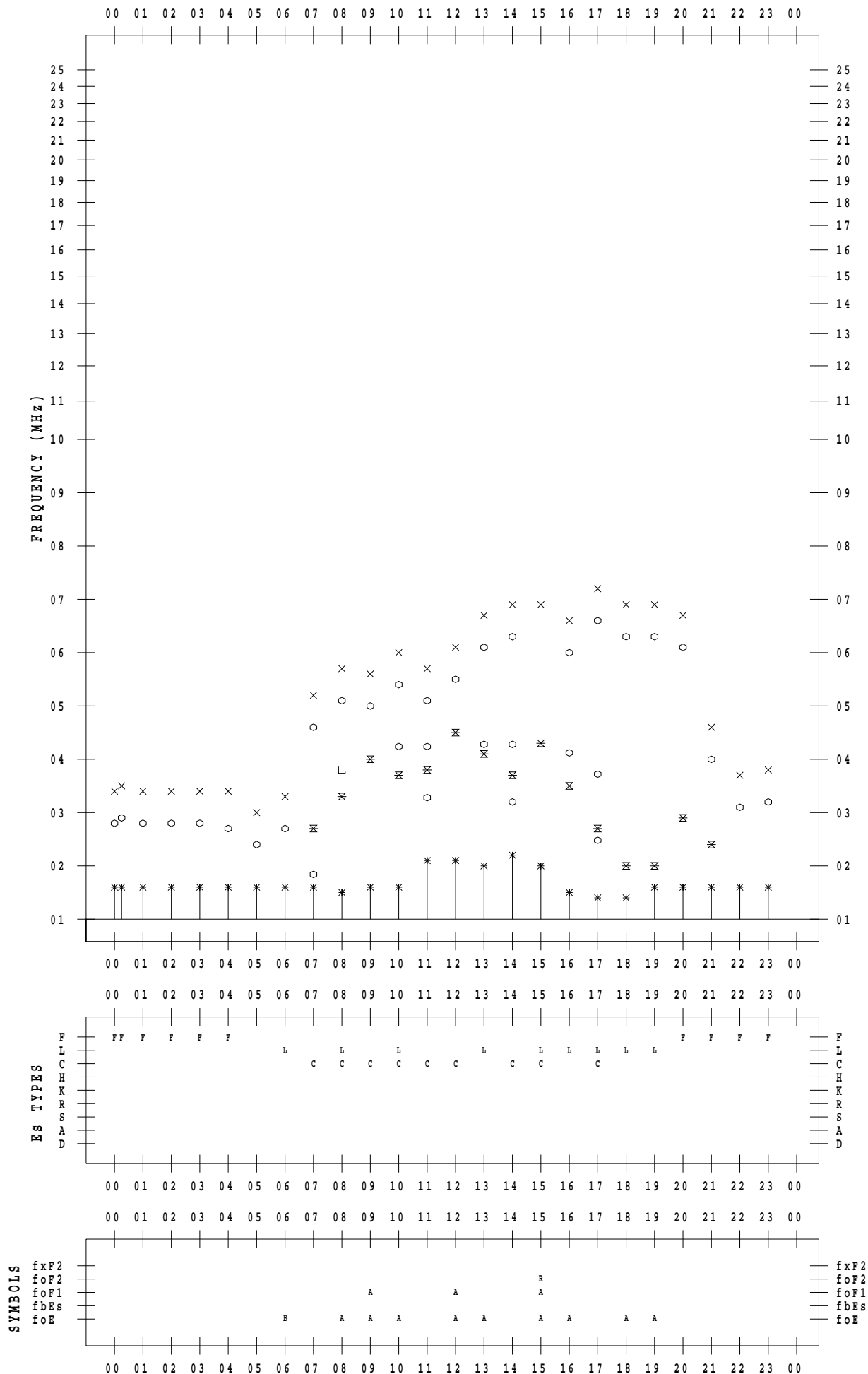
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 8

135 ° E MEAN TIME



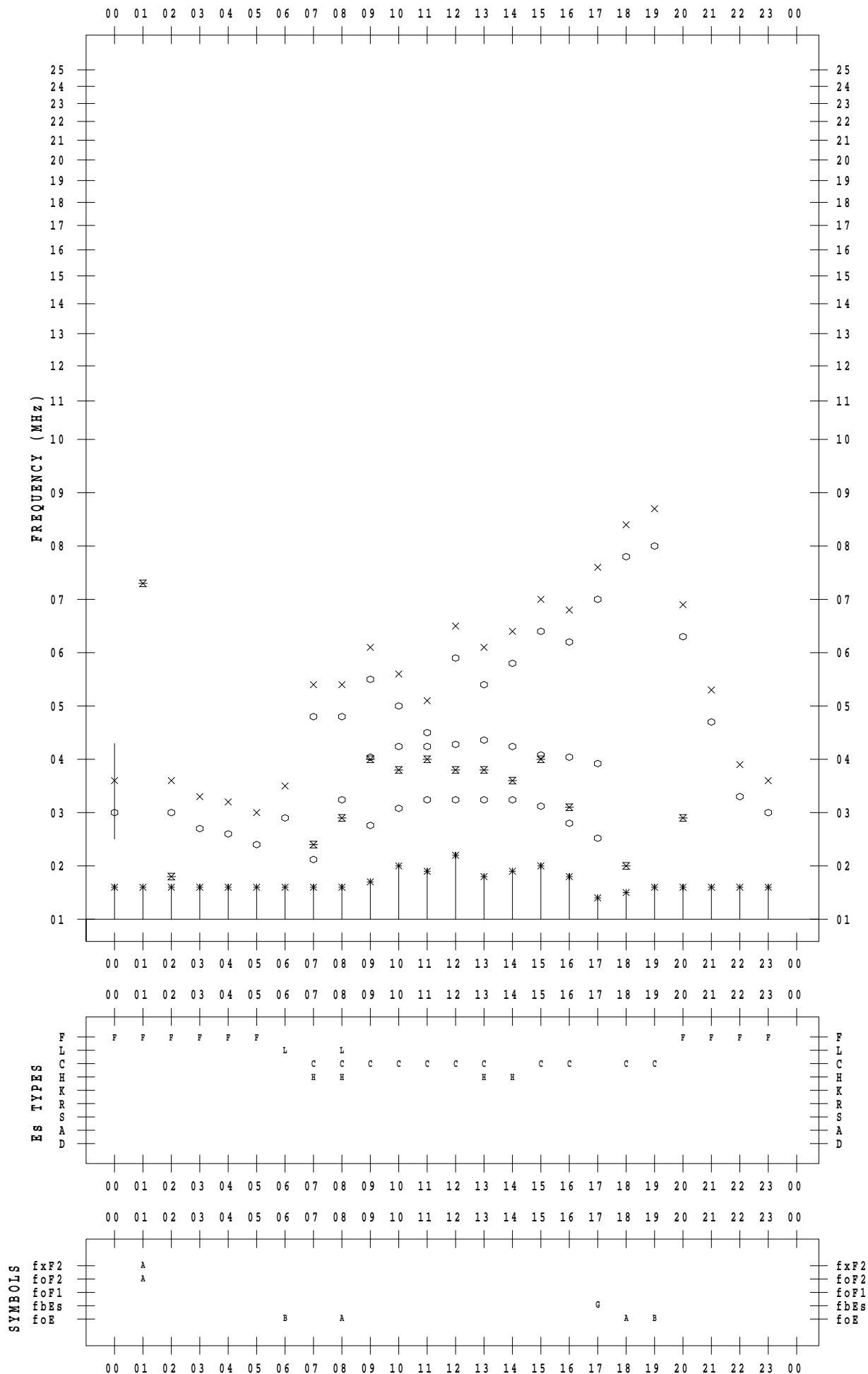
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 9

135 ° E MEAN TIME



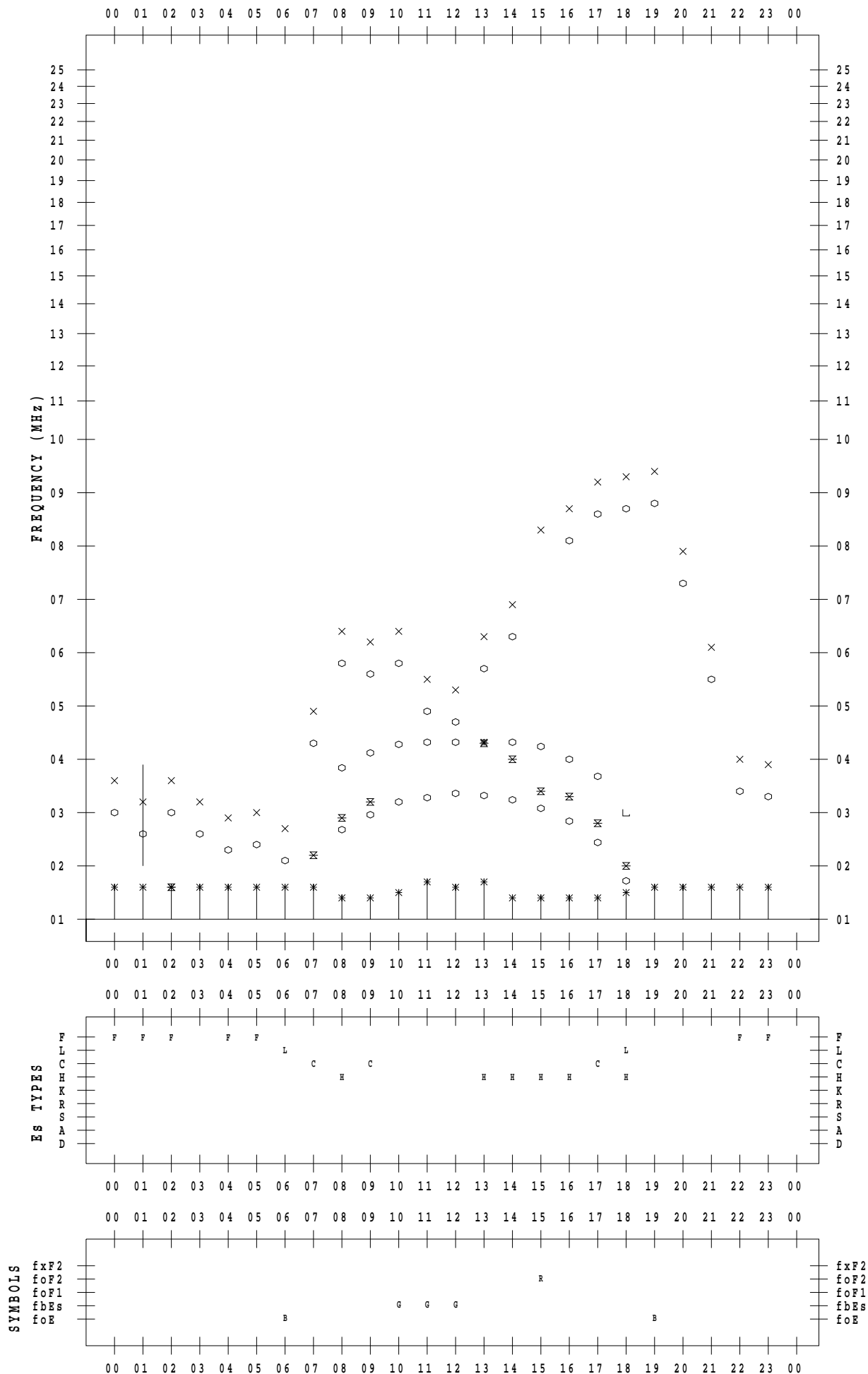
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 10

135 ° E MEAN TIME



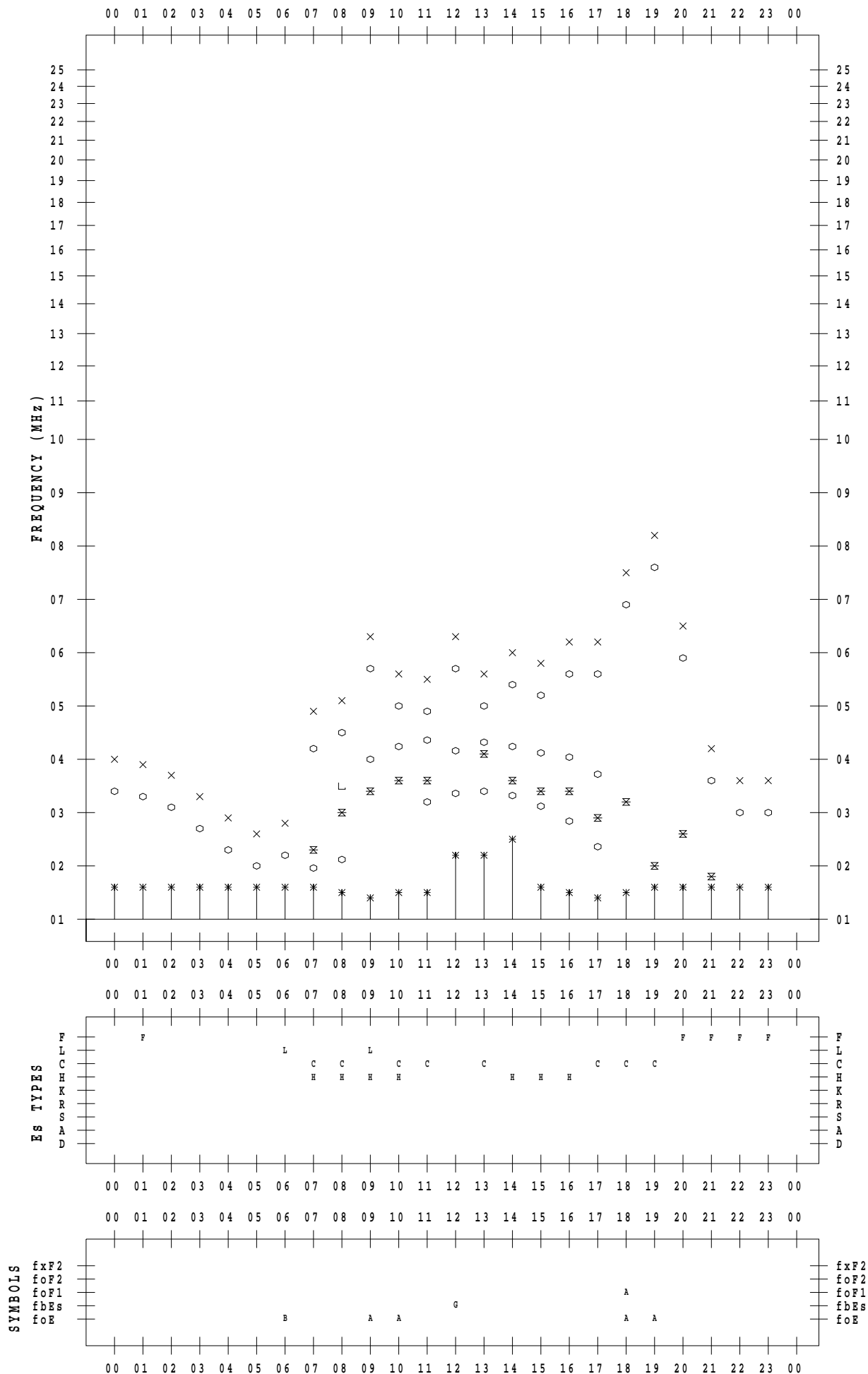
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 11

135 ° E MEAN TIME



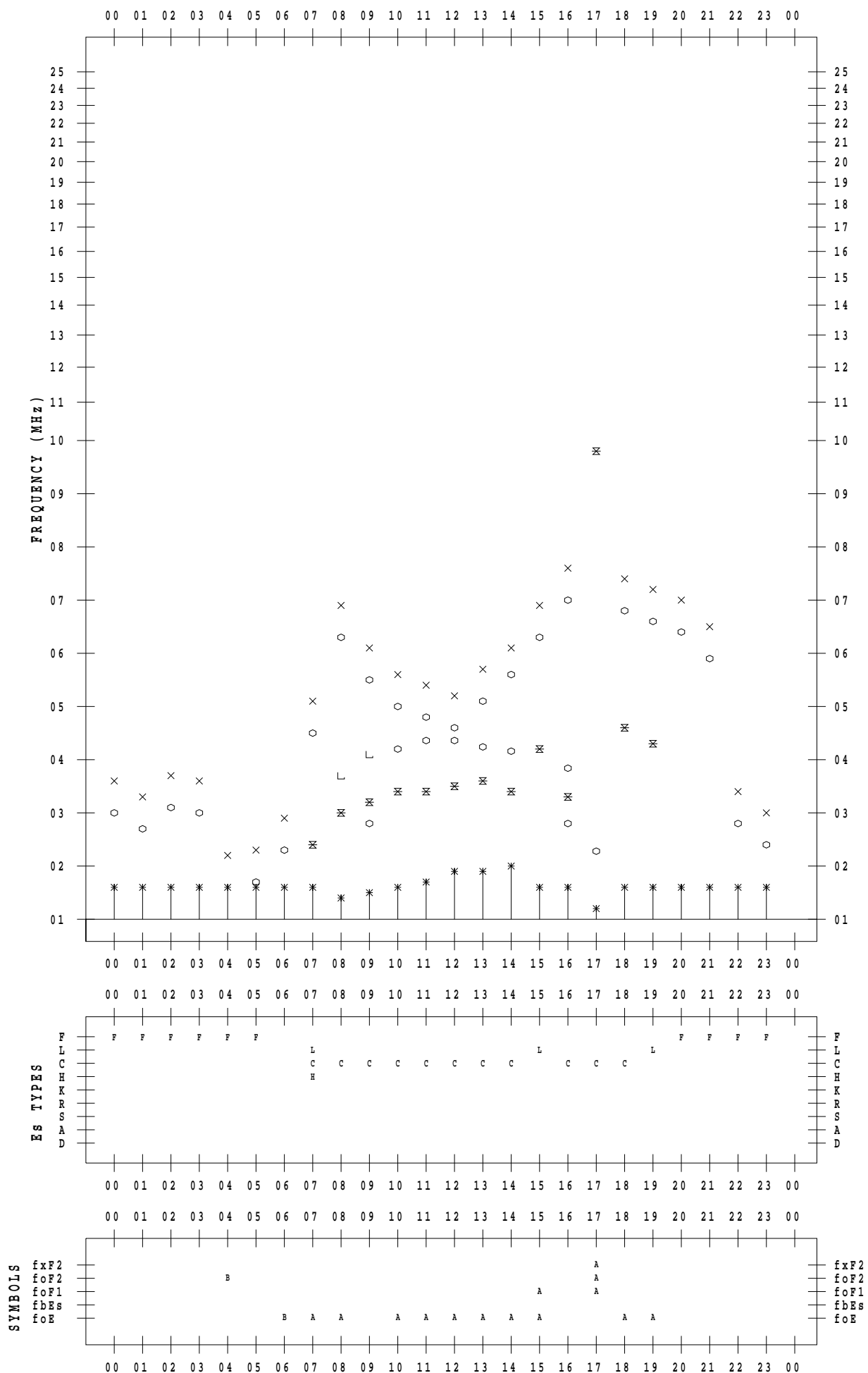
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 12

135 ° E MEAN TIME



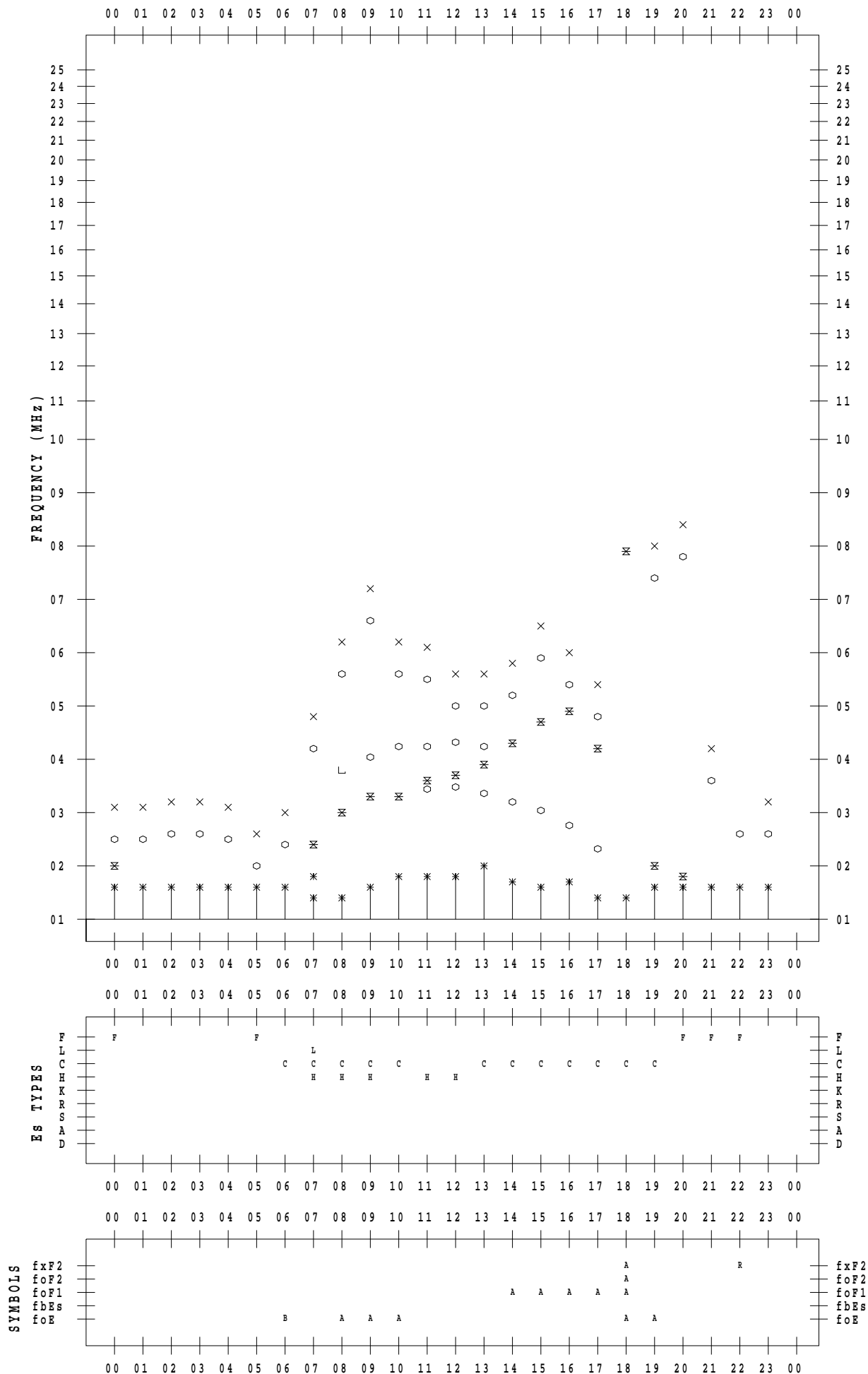
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 13

135 ° E MEAN TIME



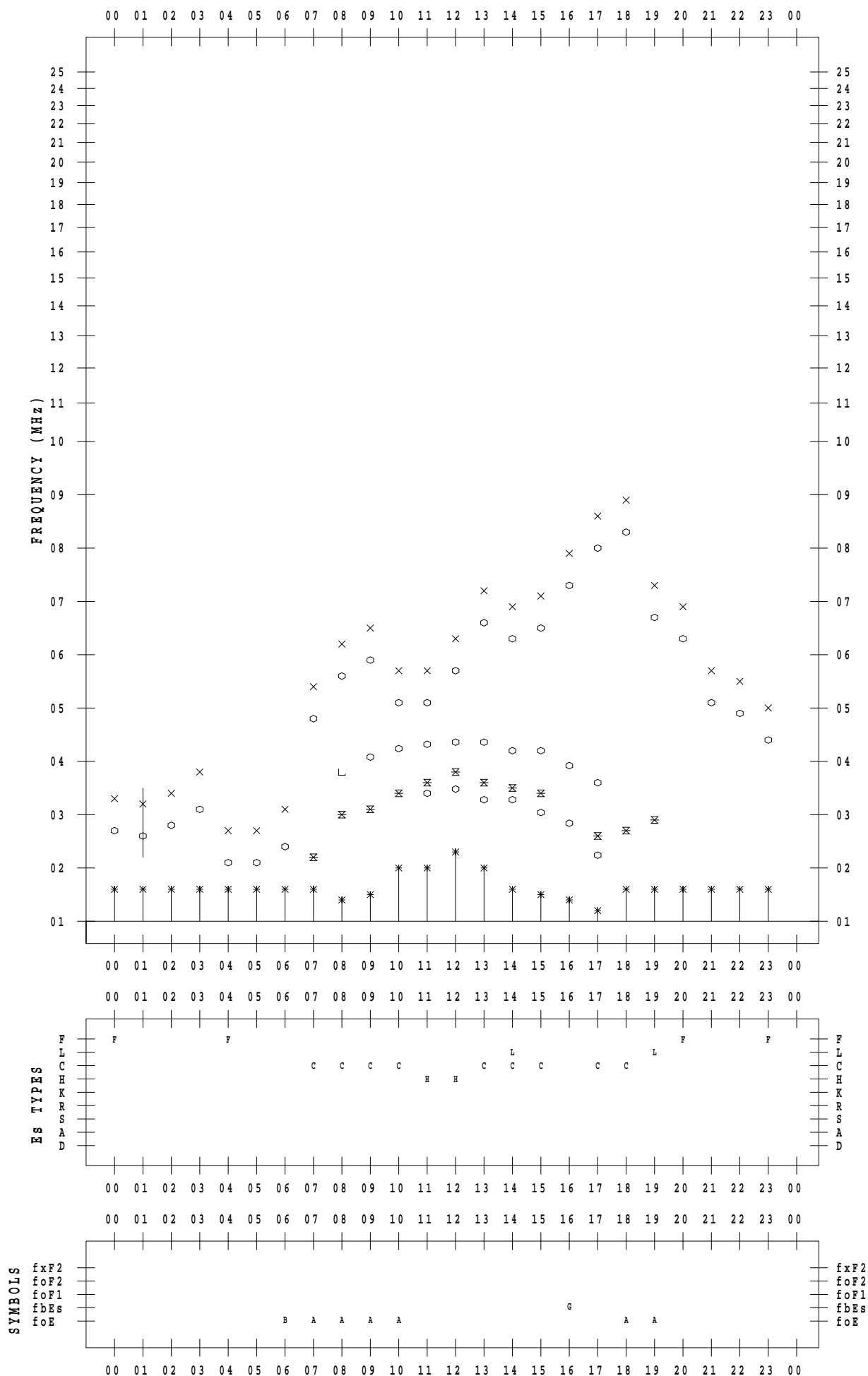
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 14

135 ° E MEAN TIME



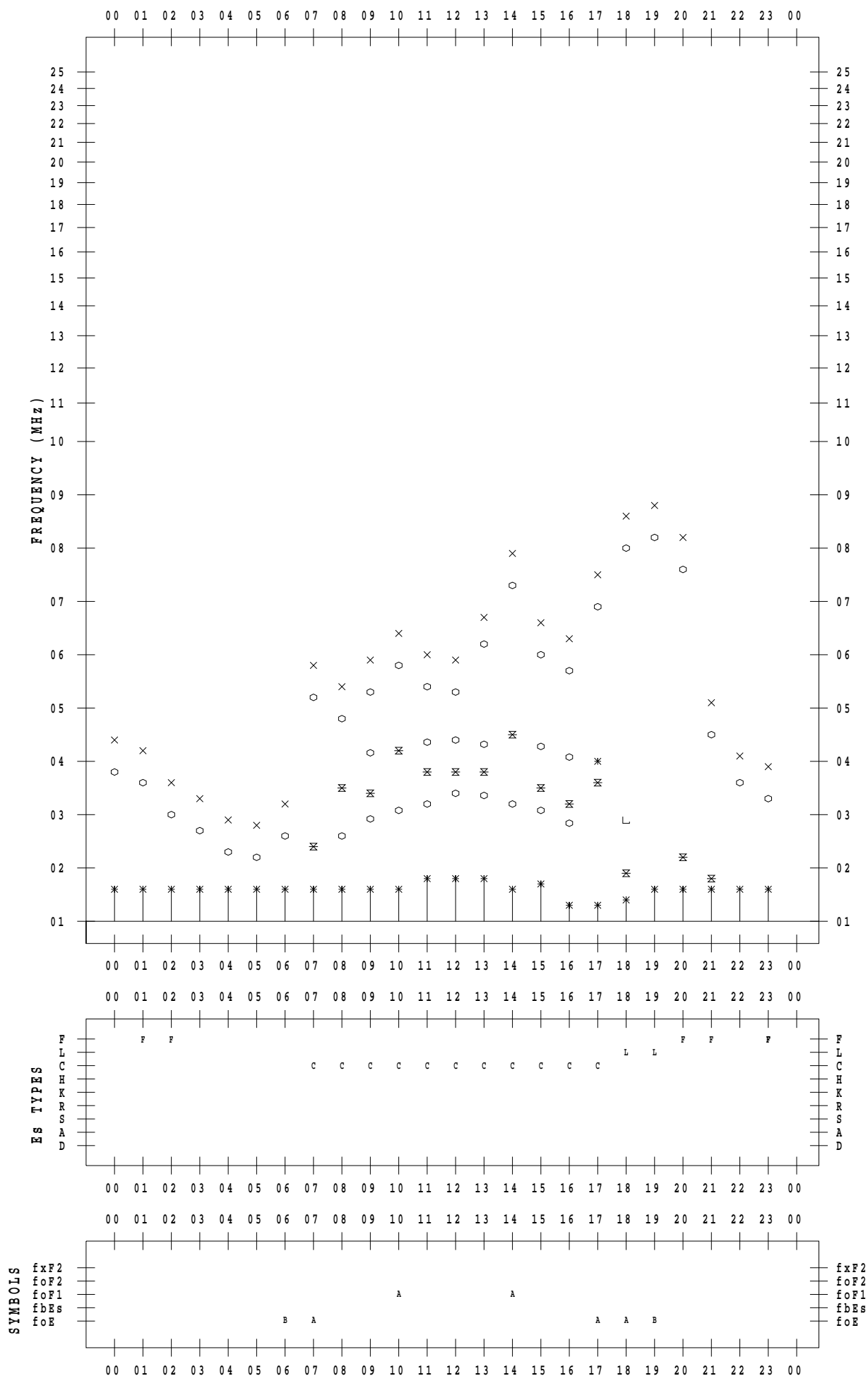
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 15

135 ° E MEAN TIME



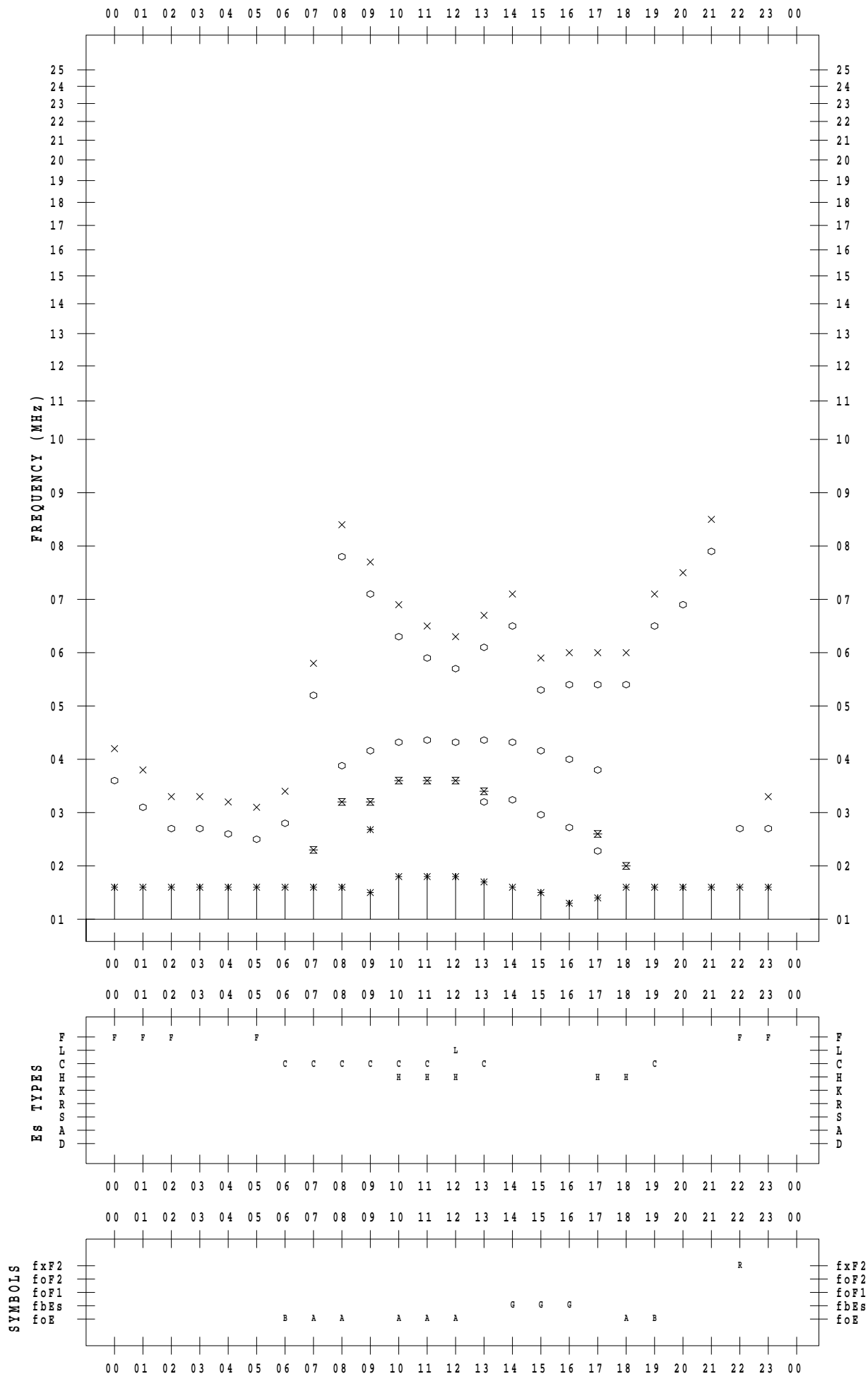
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 16

135 ° E MEAN TIME



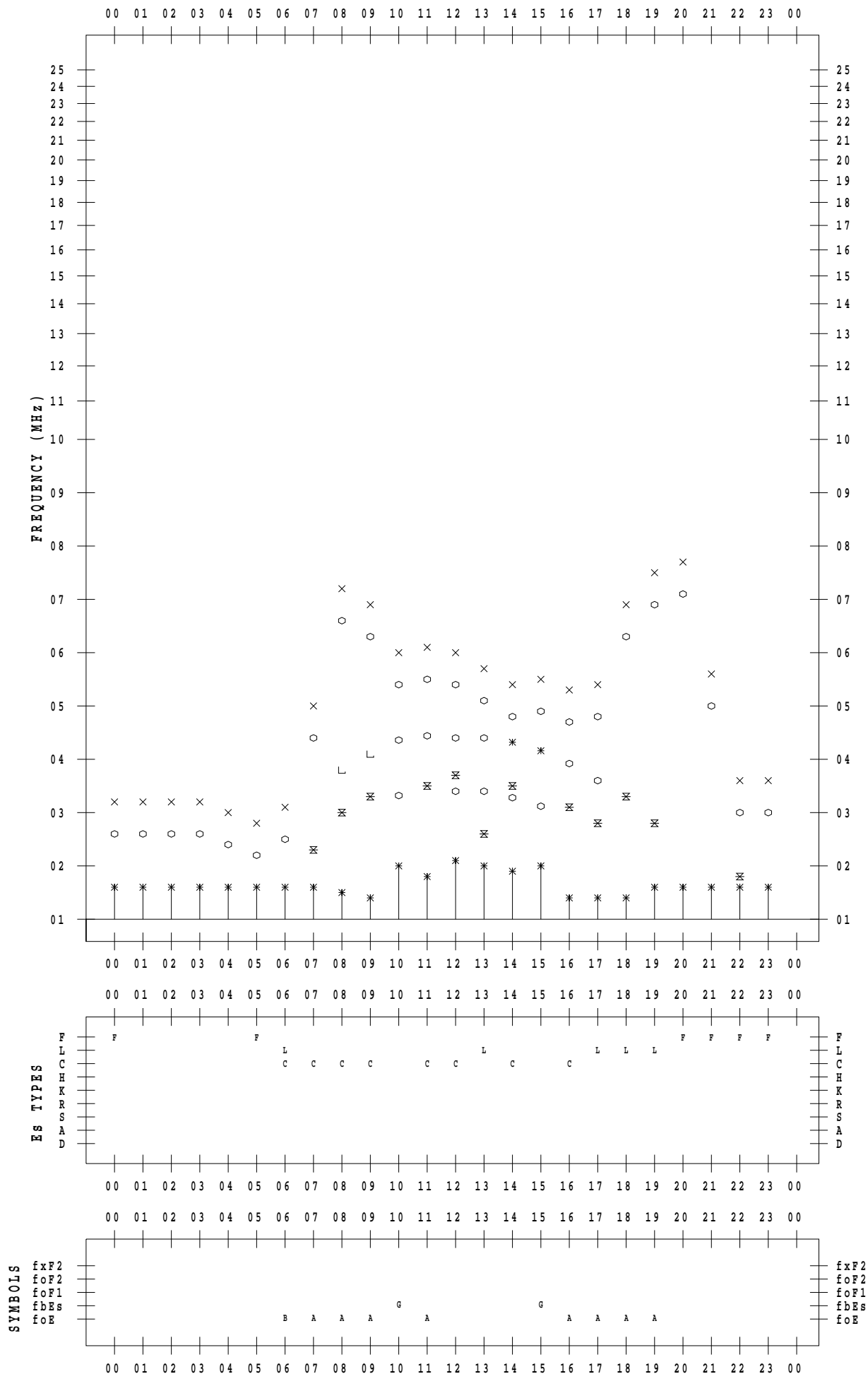
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 17

135 ° E MEAN TIME



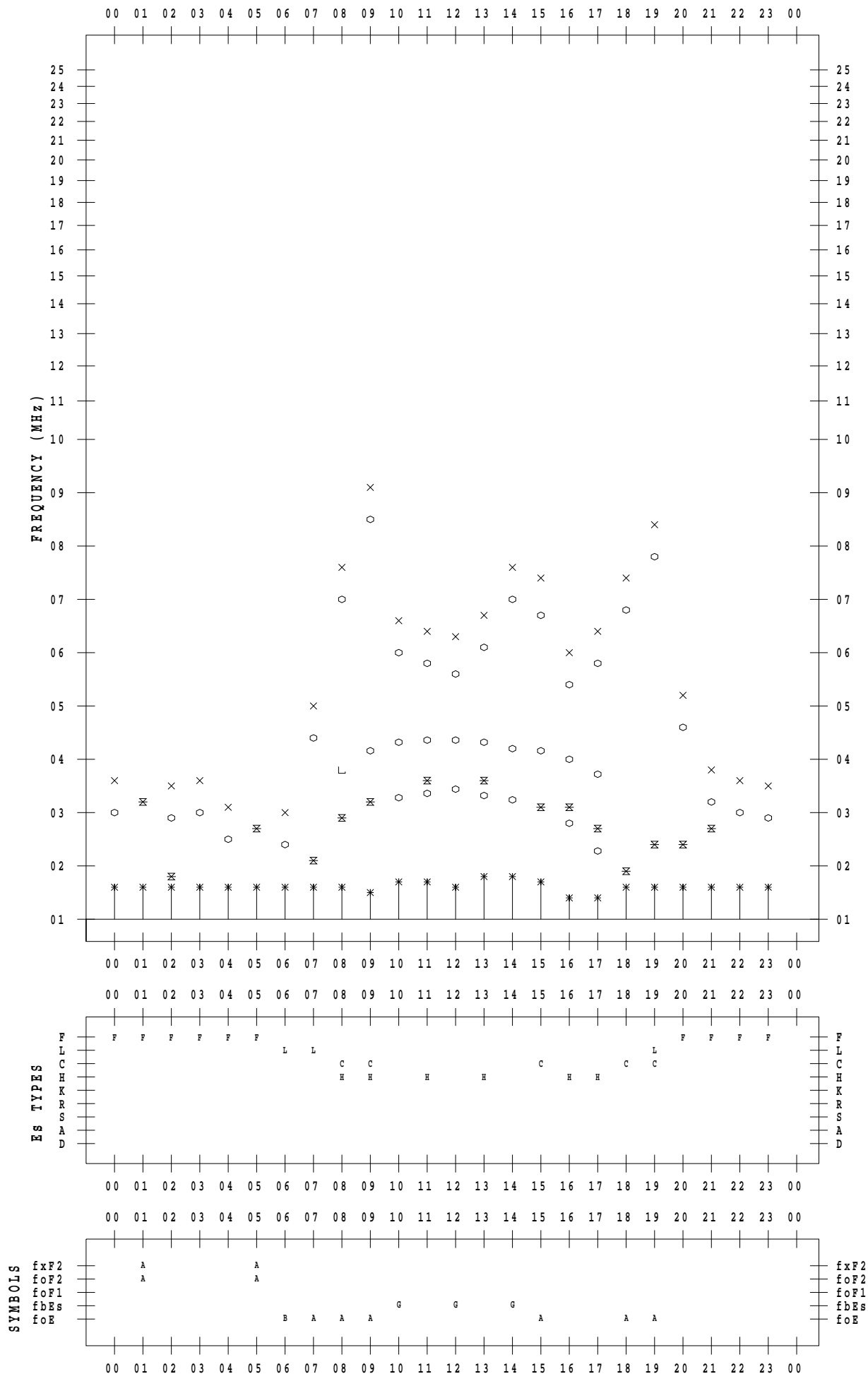
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 18

135 ° E MEAN TIME



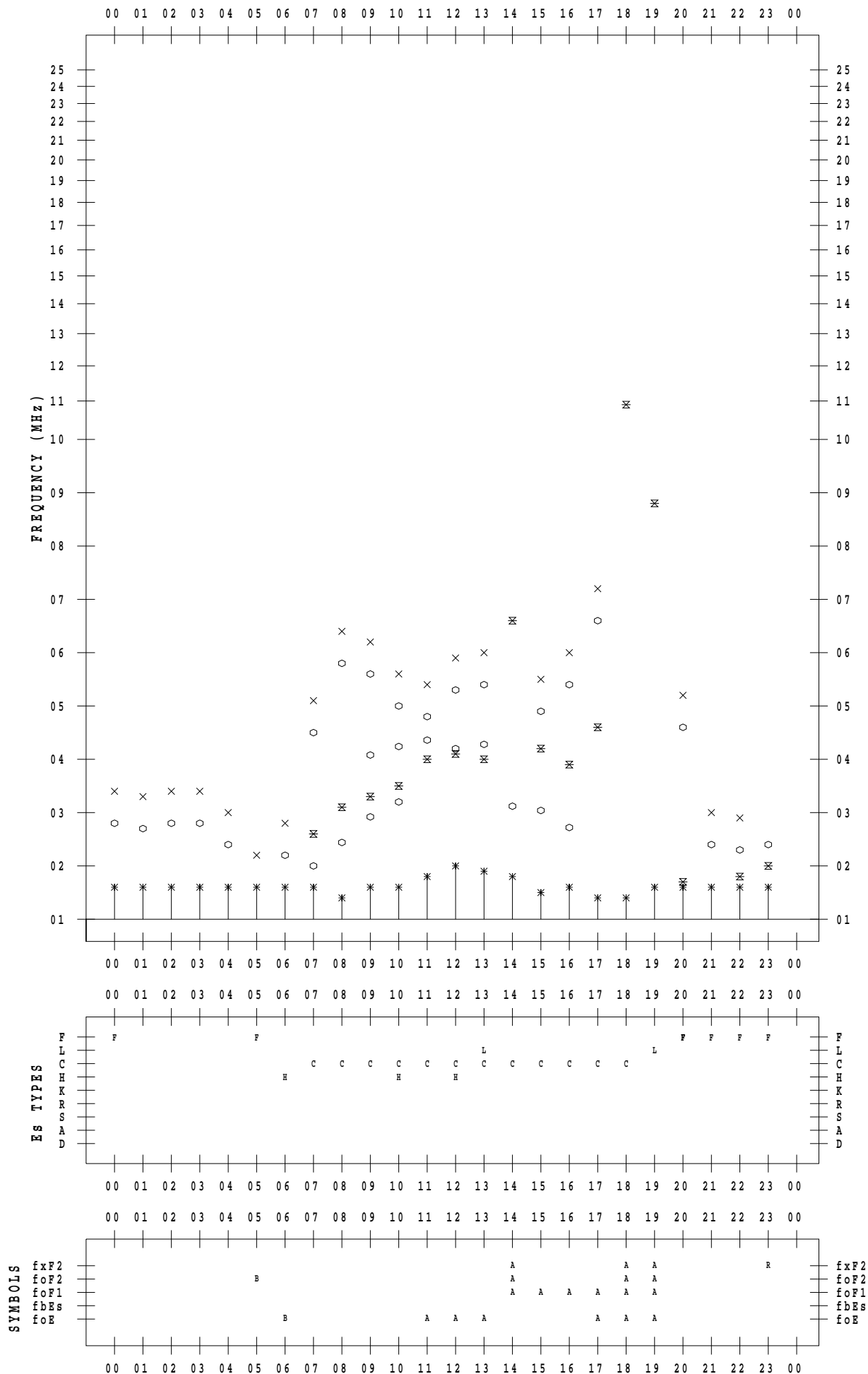
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 19

135 ° E MEAN TIME



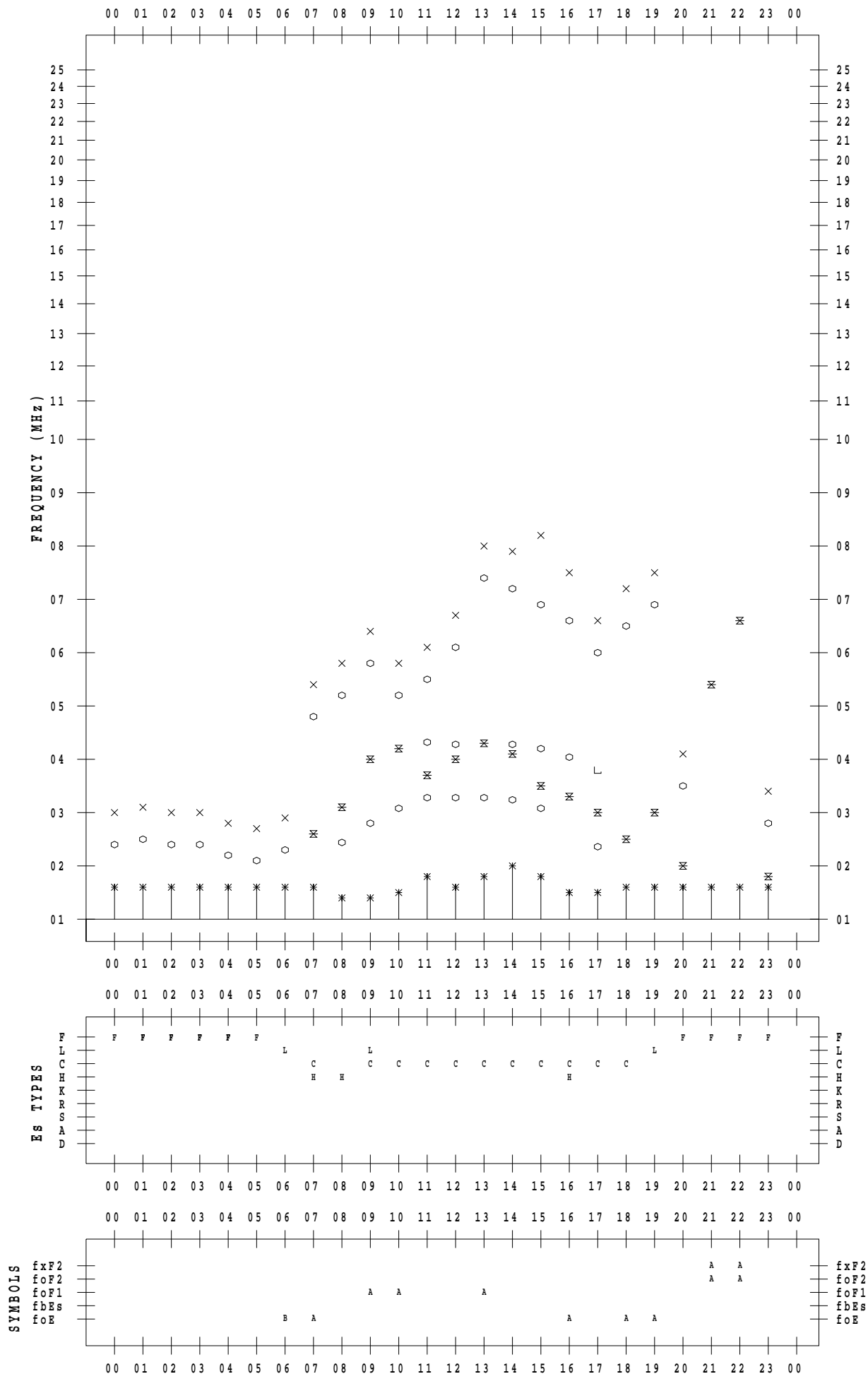
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 20

135 ° E MEAN TIME



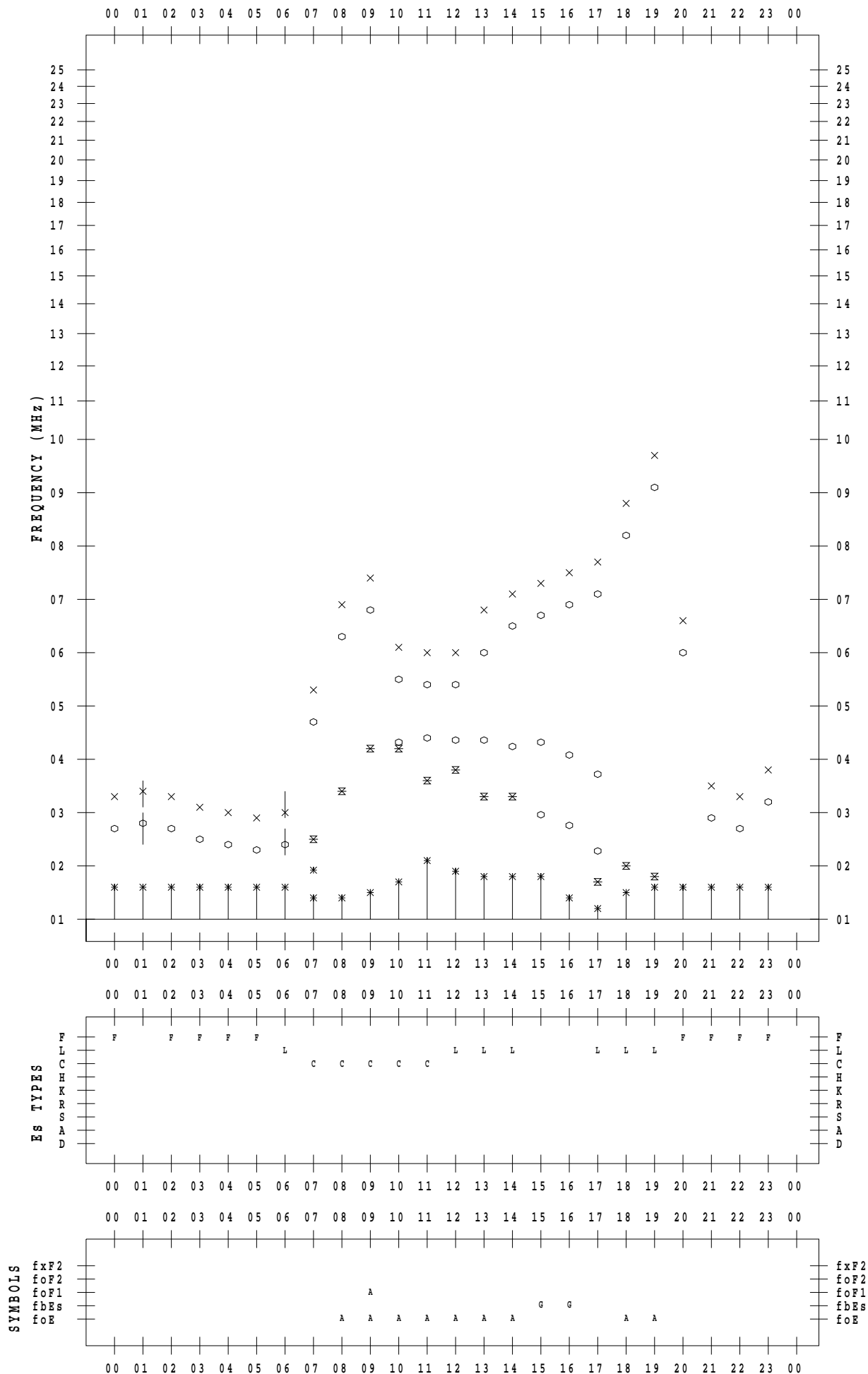
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 21

135 ° E MEAN TIME



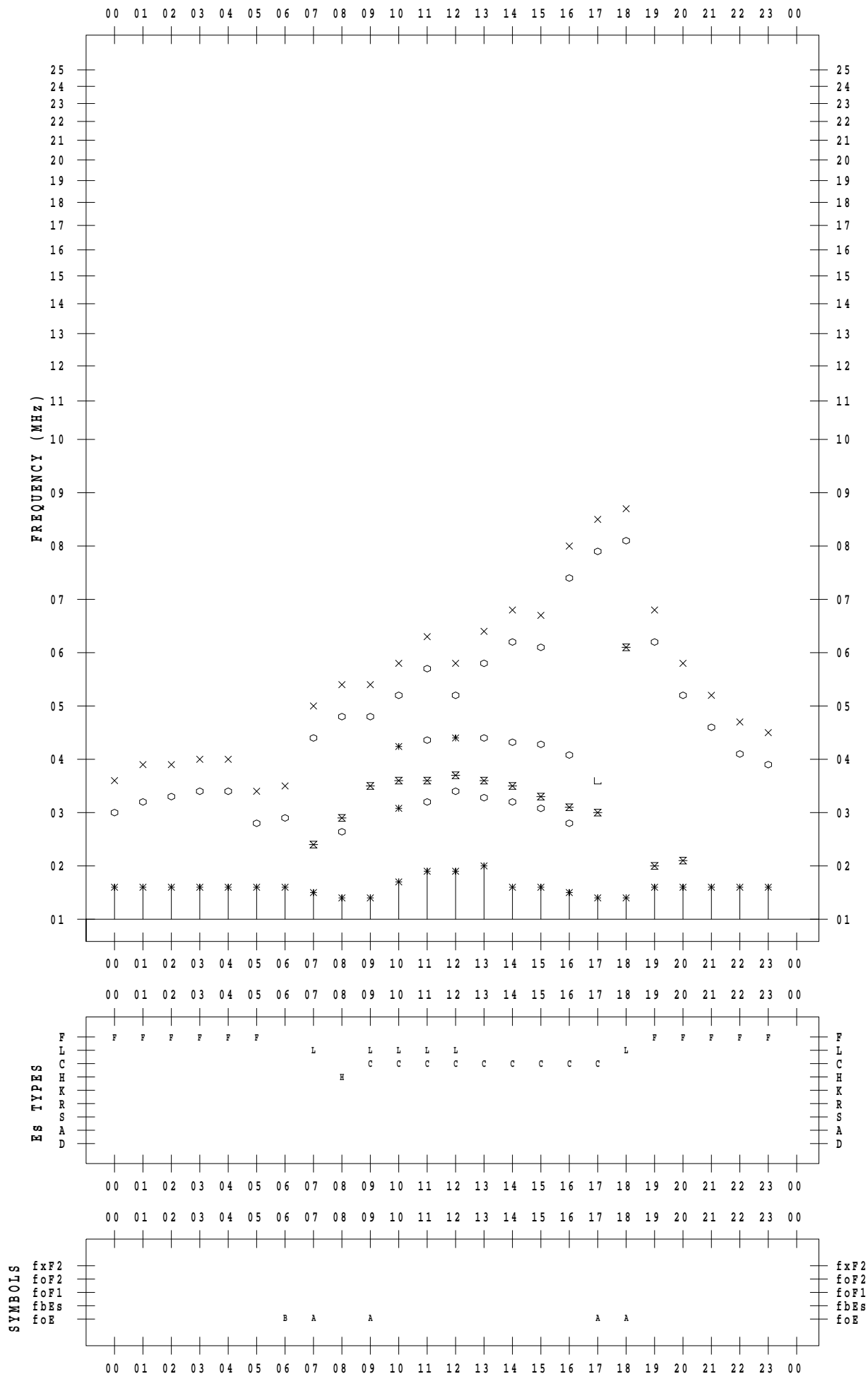
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 22

135 ° E MEAN TIME



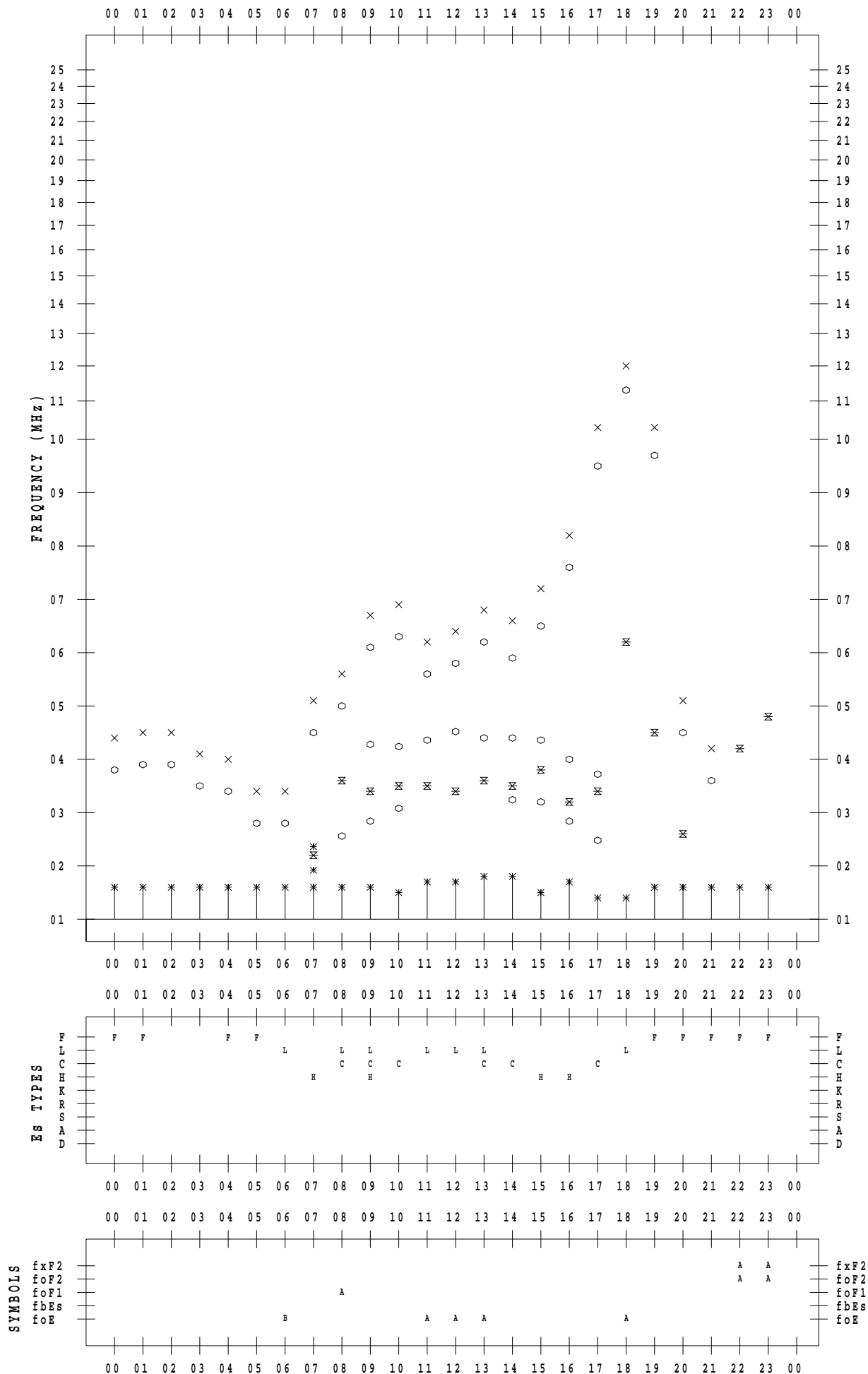
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 23

135 ° E MEAN TIME



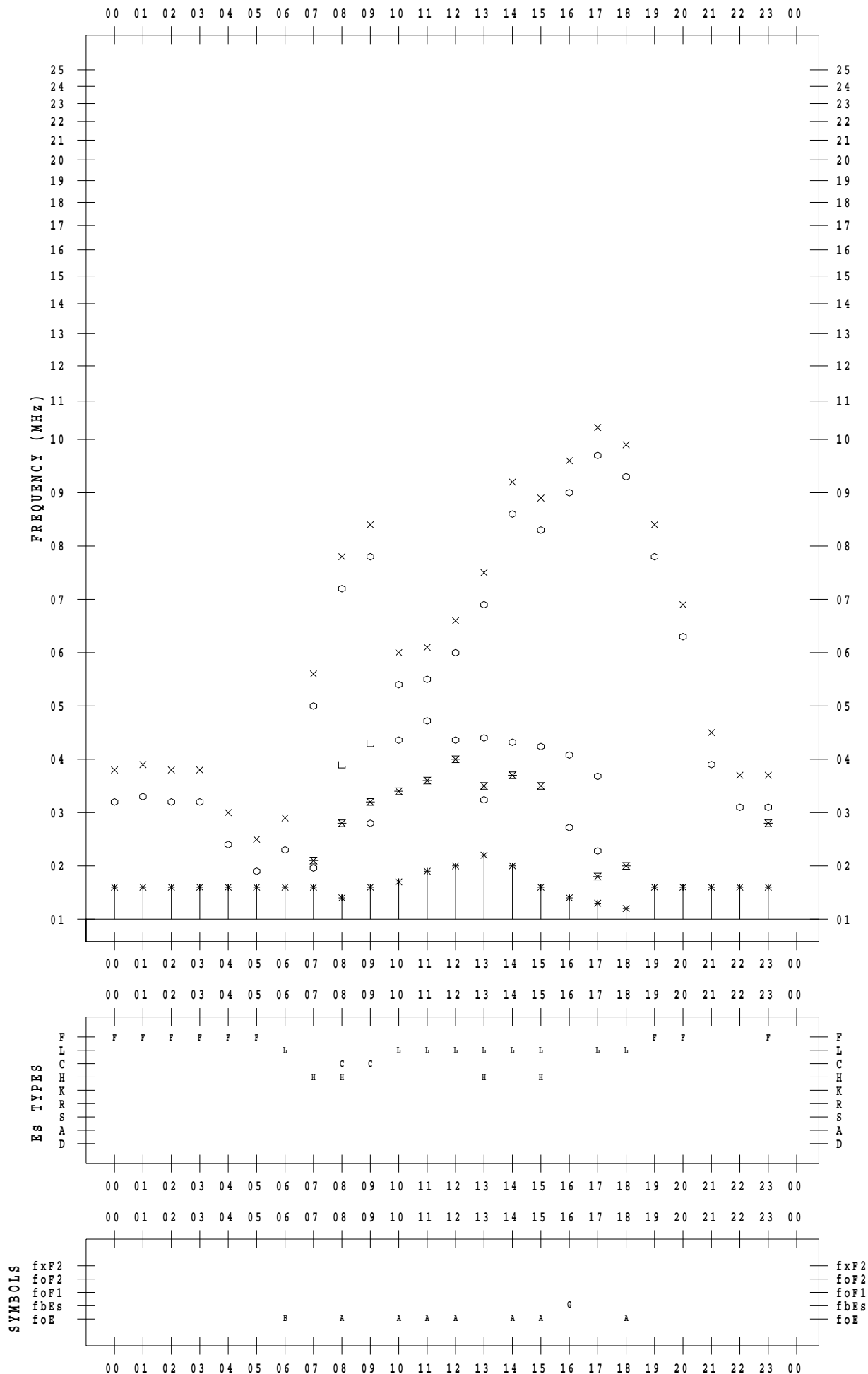
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 24

135 ° E MEAN TIME



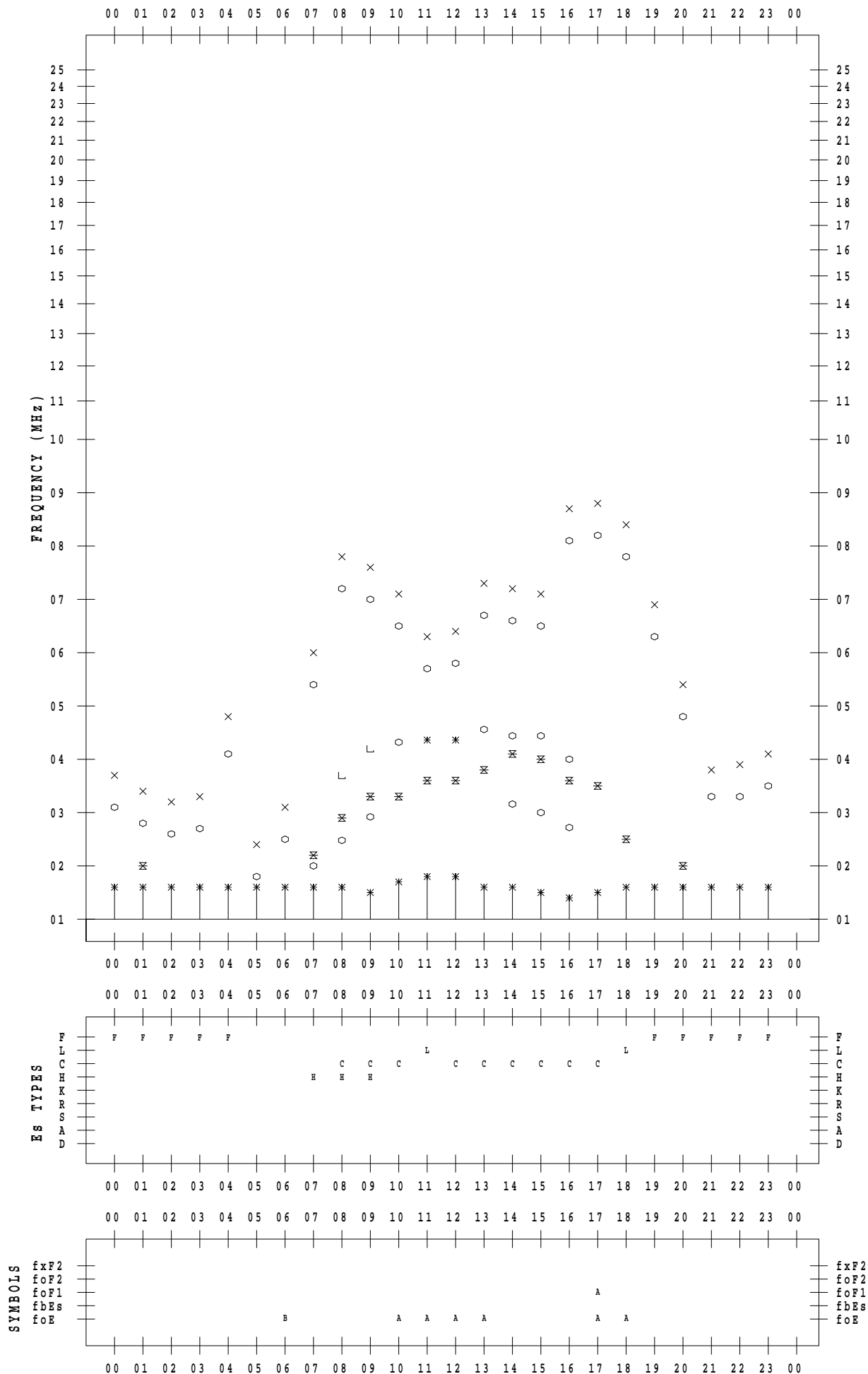
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 25

135 ° E MEAN TIME



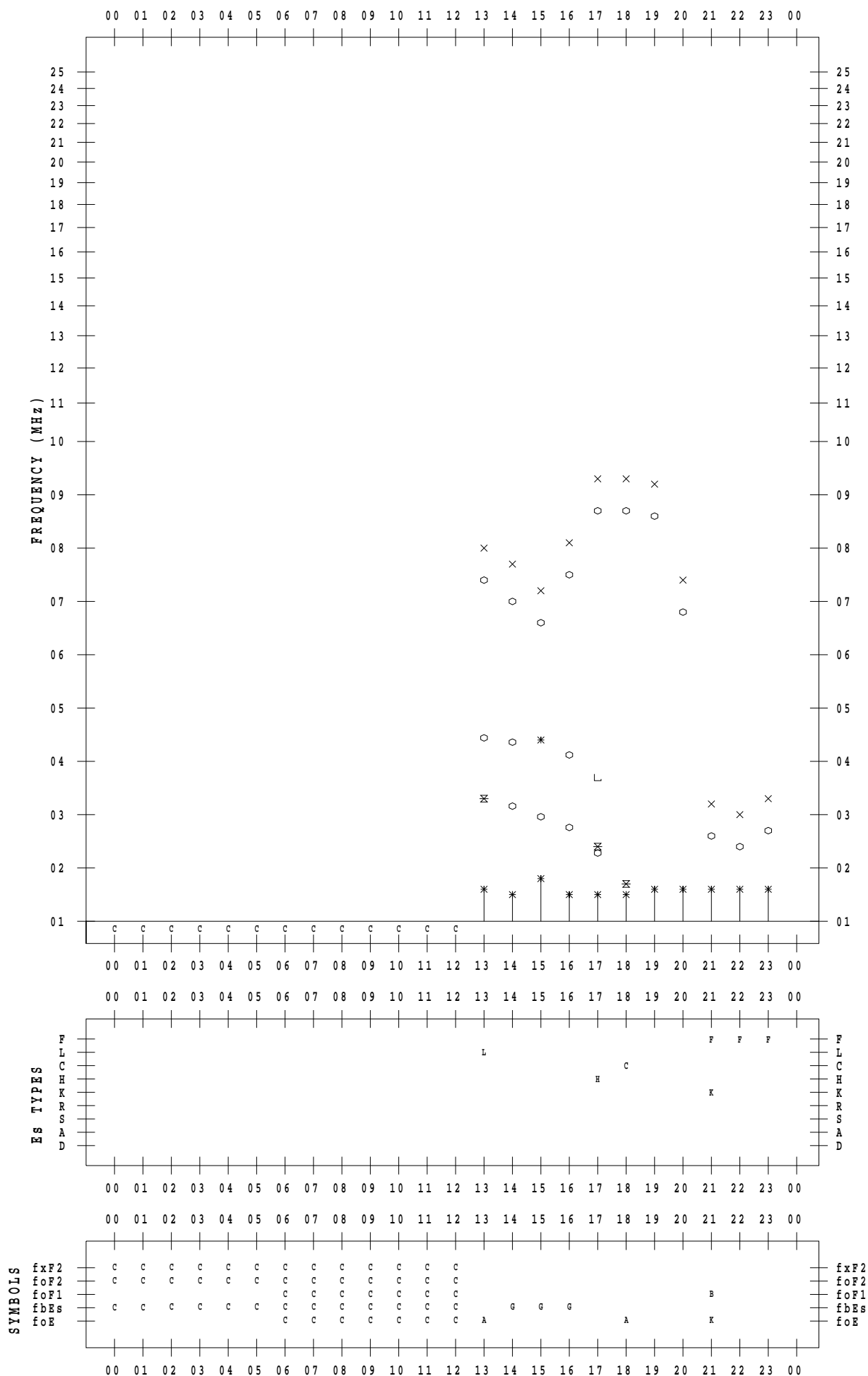
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 26

135 ° E MEAN TIME



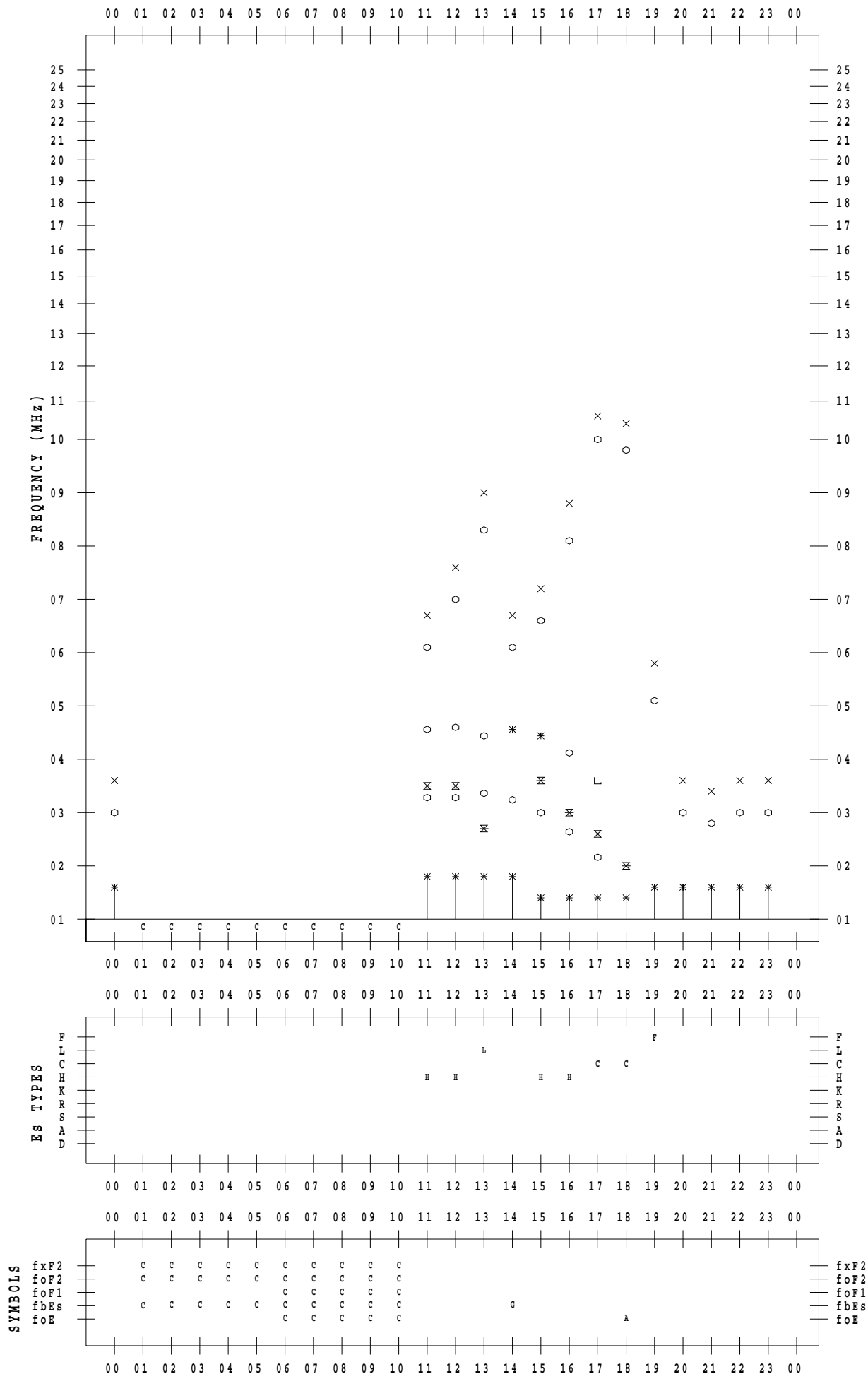
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 27

135 ° E MEAN TIME



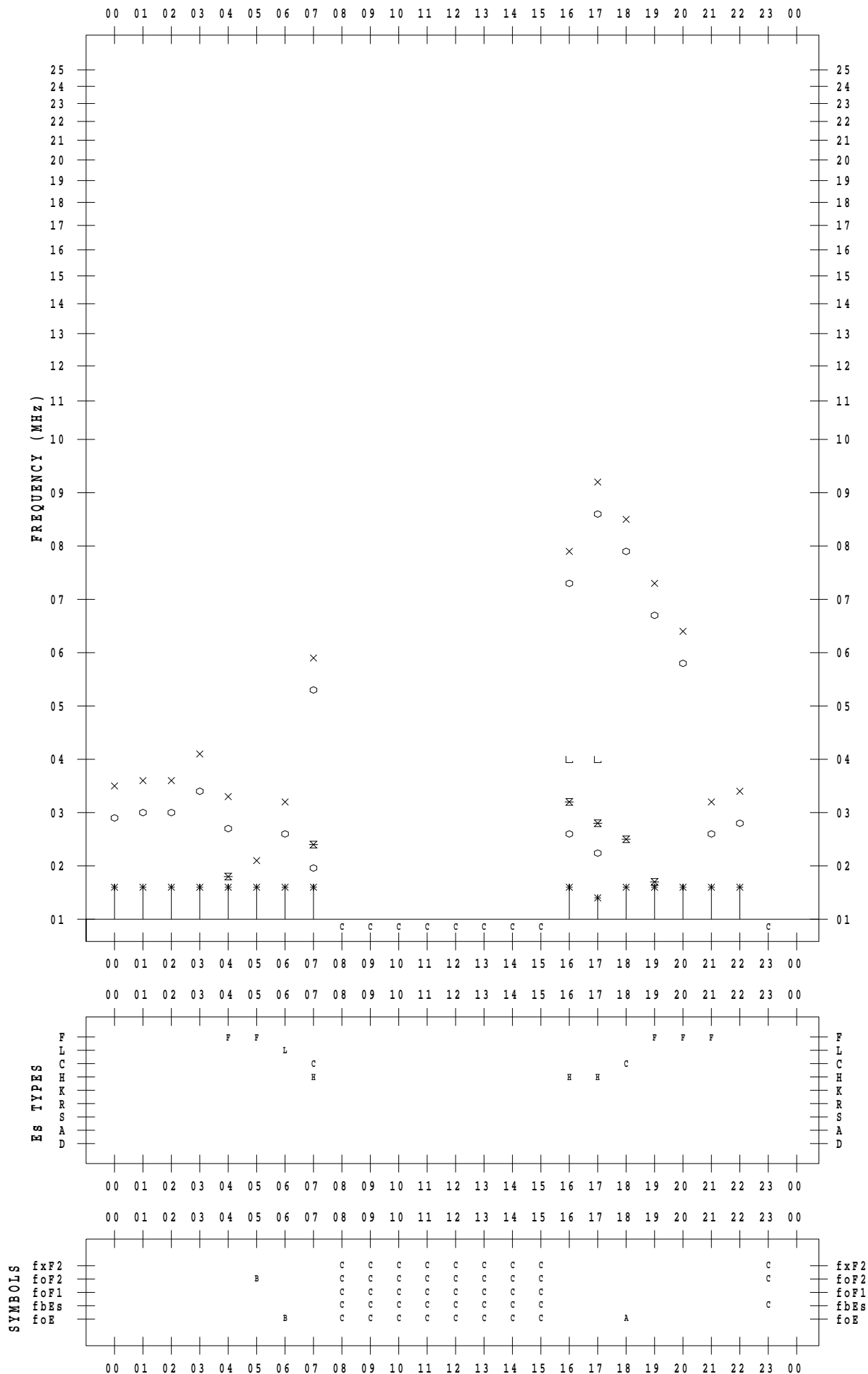
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SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 28

135 ° E MEAN TIME



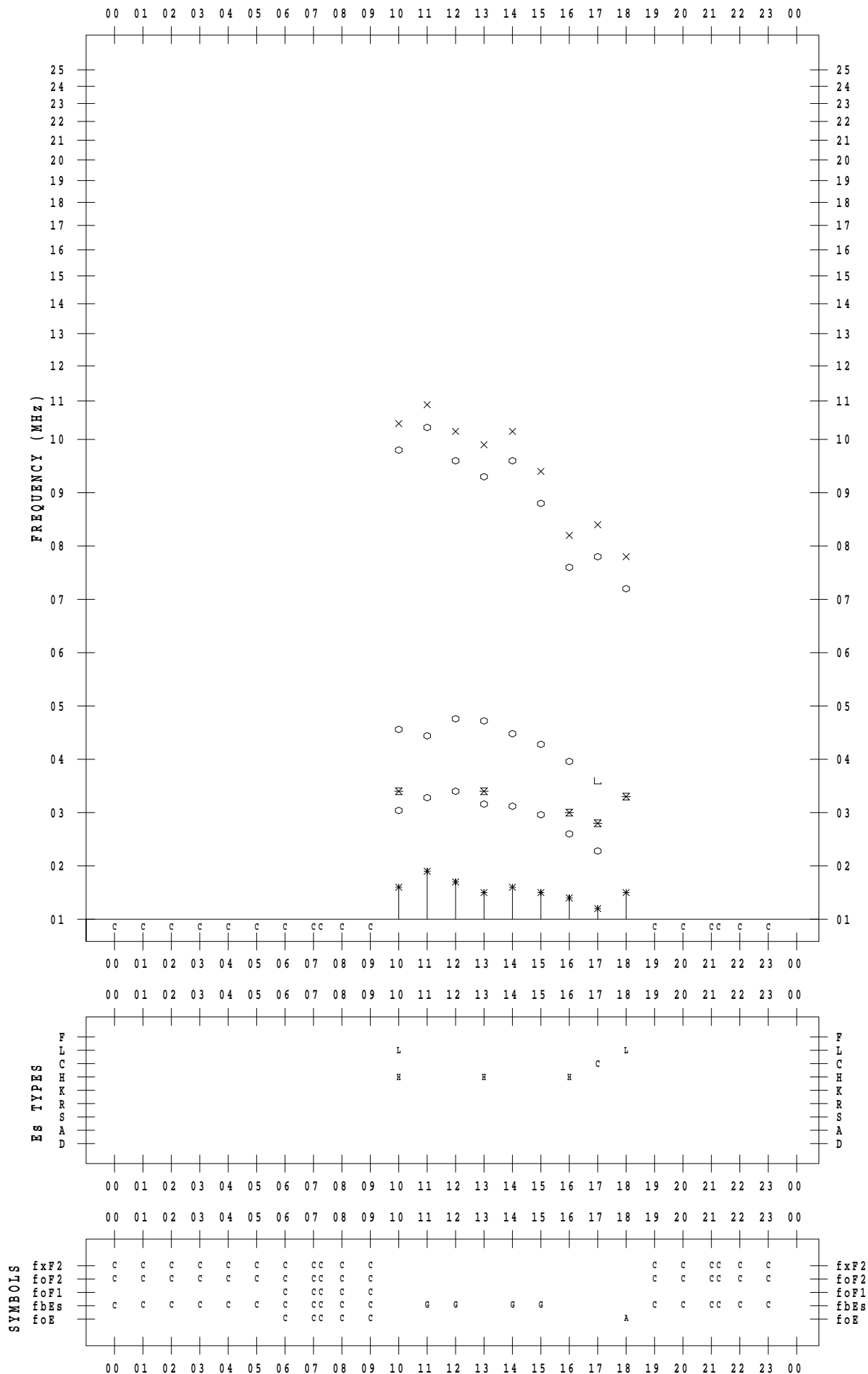
f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 29

135 ° E MEAN TIME



f - PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020 / 9 / 30

135 ° E MEAN TIME

