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IONOSPHERIC DATA IN JAPAN

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INTRODUCTION

This Series contains data on ionosphere (I) , solar radio emission (S) and radio propagation (P) obtained at the following stations under the Communications Research Laboratory, Ministry of Posts and Telecommunications of Japan.

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45°23.5′N	141°41.2′E	35.3°N	206.5°	Vertical Sounding (I)
Kokubunji	35°42.4′N	139°29.3′E	25.5°N	205.8°	Vertical Sounding (I)
Yamagawa	31°12.1′N	130°37.1′E	20.4°N	198.3°	Vertical Sounding (I)
Okinawa	26°16.9′N	127°48.4′E	15.3°N	196.0°	Vertical Sounding (I)
Hiraiso	36°22.0′N	140°37.5′E	26.3°N	206.8°	Radio Receiving (S,P)
Inubo	35°42.2′N	140°51.5′E	25.6°N	207.0°	Radio Receiving (P)

A. IONOSPHERE

Ionospheic 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 computer storage medium as well as graphically on 35 mm photographic film. 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 as well by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

Digital ionograms are automatically scaled by the pattern recognition method. The following five factors of ionospheric characteristics are published for the present. 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*).

B Impossible measurement because of absorption in the vicinity of *fmin*.

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of trouble in the automatic data processing system, but existence of film record.

c. Definitions of the 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 descriptivel etter 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 Handbook of Ionogram Interpretation and Reduction (Second Edition) 1972 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

B. SOLAR RADIO EMISSION

Solar radio observations at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of two parabolic antennas, one with 10-meter diameter for 200 MHz measurements and one with 2-meter diameter for 500 and 2800 MHz measurements, Observations are continuously carried out almost from sunrise to sunset.

B1. Daily Data at Hiraiso

The three-hourly mean and daily mean values of the solar radio emission intensities are tabulated separately for 200 and 500 MHz measurements. The intensities are expressed by the flux density in 10^{-22} Wm^{-2} Hz^{-1} unit.

The table for 200 MHz measurements also presents the variability indices defined by the number of impulsive radio bursts within the three-hour intervals as follows:

0 quiet or no burst,

1 a few bursts,

2 many bursts,

3 very many bursts.

The daily variability index is defined as the daily mean of three-hourly indices.

The following symbols are used in the tables, when interference or radio bursts prevented measuring the base-level flux densities or determining the variability indices:

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

Daily data within parentheses mean that the observation time does not exceed one third of the period.

B2. Outstanding Occurrences at Hiraiso

The table is a list of outstanding occurrences of solar radio emission bursts observed at 200, 500 and 2800 MHz during a month.

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T. expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} Wm^{-2} Hz^{-1} unit, and the polarization.

The type of event is expressed by a combination of a numerical code and a letter symbol in accordance with the " Descriptive Text of Solar Geophysical Data, NOAA " as defined by H. Tanaka in the " Instruction Manual for Monthly Report of Solar Radio Emission, WDC-C2 " in January 1975:

SGD Code	Letter Symbol	Morphological Classification
1	S	Simple 1
2	S/F	Simple 1F
3	S	Simple 2
4	S/F	Simple 2F
5	S	Simple
6	S	Minor
7	C	Minor+
8	S	Spike
20	GRF	Simple 3
21	GRF	Simple 3A
22	GRF	Simple 3F
23	GRF	Simple 3AF
24	R	Rise
25	R	Rise A
26	FAL	Fall
27	RF	Rise and Fall
28	PRE	Precursor
29	PBI	Post Burst Increase
30	PBI	Post Burst Increase A
31	ABS	Post Burst Decrease
32	ABS	Absorption
40	F	Fluctuations
41	F	Group of Bursts
42	SER	Series of Bursts
43	NS	Onset of Noise Storm
44	NS	Noise Storm in progress
45	C	Complex
46	C	Complex F
47	GB	Great Burst
48	C	Major
49	GB	Major+

The polarization is expressed by the polarization degree and sense as follows:

R or L	right- or left-handed polarization,
W,M or S	weak,moderate or strong polarization,
0	almost zero or unable to detect polarization due to small increase of flux,
00	polarization degree of less than 1 percent.

One of the following symbols may be attached after numerical values, if necessary.

D	greater than, or later than,
E	less than or earlier than,
U	approximate, or uncertain.

B3. Summary Plots of $F_{10.7}$ at Hiraiso

The 10.7 cm solar radio flux at Hiraiso is plotted over a one month period. The 10.7 cm flux ($F_{10.7}$) is determined by adjusting the 10.7 cm radio flux measured at Hiraiso to the Pentincton 10.7 cm radio flux. The figure on the right-hand side shows the $F_{10.7}$ index estimated at Hiraiso.

C. RADIO PROPAGATION

C1. H.F. Field Strength at Hiraiso

Field strength observation of 15 MHz standard waves transmitted from WWV and WWVH stations which are located respectively at Fort Collins, Colorado and Kauai, Hawaii, is carried out at Hiraiso. In order to avoid interference among the same frequency waves, the upper sideband of WWV or WWVH with the audio tone 600 Hz is picked up by the use of a narrow band-pass filter with 80 Hz bandwidth.Particulars of the transmitters and the receiver are summarized in the following table.

The tabulated *field strength* expressed in dB above one microvolt per meter is the average of quasi-peak values of the incident upper sideband field intensity for 45 seconds after the universal time indicated on the table. Abbreviated symbols are as follows:

CNT	number of observed values,
MED	median,
UD	value of the uppermost decile when they are ranked according to magnitude,
LD	value of the lowest decile when they are ranked according to magnitude,
U	uncertain,
E	less than,
C	innuenced by, or impossible because of, any artificial accident,
S	influenced by, or impossible because of, interferences or atmospherics.

C2. Radio Propagation Quality Figures at Hiraiso

The tabulated six-hourly quality figures are calculated for standard waves WWV transmitted from Fort Collins and WWVH transmitted from Kauai.

Quality figures expressing radio propagation conditions range over five grades as follows:

1	very poor(very disturbed),
2	poor(disturbed),
3	rather poor(unstable),
4	normal,
5	good.

Whole day quality figure ranged in grades of 1o, 1+, 2-, 2o, 2+, 3-, 3o, 3+, 4-, 4o, 4+, 5-, 5o stands for an average of six-hourly quality figures of the two circuits. Abbreviated symbols are as follows:

C	artificial accident,
S	propagational accident,
U	inaccurate.

Characteristics	Transmitter		Receiver
Station Call	WWV	WWVH	
Location	Fort Collins, Colorado	Kauai, Hawaii	Hiraiso, Ibaraki
latitude	40°41′N	22°00′N	36°22′N
longitude	105°02′W	159°46′W	140°38′E
Distance	9150 km	5910 km	--
Carrier Power	10 kW	10 kW	--
Power in each sideband	625 W	625 W	--
Modulation	50 %	50 %	--
Antenna	λ / 2 vertical	λ / 2 vertical	4.5 m vertical rod
Bandwidth	--	--	80 Hz for upper sideband
Calibration	--	--	Every hour

The column of conditions presents a record of the forecast of *radio propagation conditions* which is applicable to forthcoming 12 hours and broadcast six times par hour from JJY (Japan Standard Wave) staion. The conditions are denoted as follows:

N normal,
U unstable,
W disturbed.

Data on *geomagnetic storms* which are often correlated with radio propagation disturbances are tabulated based on reports from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U.T.) is expressed in hours and minutes (or tenths of an hour) , and *range* in nanotesla. When they are uncertain quantitatively, /'s are used to replace the numerical values. Continuation of a geomagnetic storm is denoted by ---.

C3. Phase Variation in OMEGA Radio Waves at Inubo

The phase values of eight OMEGA radio signals as received at Inubo are depicted for an interval of one month, along with the phase deviation defined as a deviation from a value averaged over the six quietest day within the month. Particulars of the received signals are given in the table below.

In each of the four panels of the figure, the phase (ϕ) is shown in the lower part and the phase deviation ($\Delta\ \phi$) is shown in the upper part. The phase data are sampled every 30 min, so the curves of the phase and phase deviation are composed of 48 data points per day. The phase delay is measured as a positive value.

The polar cap phase anomaly (PCPA) caused by the solar protons are well detected on the Norway signal. The start, end and maximum times of the PCPA are listed in the table next to the figure, where the times are expressed as day / hour & minute in U.T.. The maximum phase deviation in the list is defined as a phase advance (negative values in the figure) in degrees.

C4. Sudden Ionospheric Disturbances

a. Short Wave Fade-out (SWF) at Hiraiso

The table of short wave fade-out (SWF) is prepared from the record of field intensities measured at Hiraiso.

Drop-out intensities of the 10 MHz, the 20 MHz. and the 25 MHz waves are respectively distinguished by marks ', '', and ''' from those of the 15 MHz wave for WWV and WWVH. Values of *start, duration, type,* and *importance* are obtained from data of the circuit whose drop-out intensity in dB is underlined as xx. When these quantities could not be determined accurately, they are accompanied by one of the following symbols.

D greater than,
E less than,
U uncertain or doubtful.

Types of fade-out are as follows:

S sudden drop-out and gradual recovery,
SL slow drop-out taking 5 to 15 minutes and gradual recovery,
G gradual and irregular in both drop-out and recovery.

Importance of fade-out is scaled according to its amplitude into nine ascending grades as 1-, 1, 1+, 2-, 2, 2+, 3-, 3, 3+.

Correspondence of solar optical and X-ray flares, and solar radio burst to SWF is marked by X, being determined with data from interchange messages of IUWDS and observations at Hiraiso.

In table (a) SWF, *date* indicates the day to which the *start-time* of the event belongs.

b. Sudden Phase Anomaly (SPA) at Inubo

Data of sudden phase anomaly (SPA) are prepared from the records of phase measurement of VLF radio waves received at Inubo. The transmitting stations are listed in the following table.

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by -, an indistinguishable record is spaced out, and a multi-peak event is marked by *. The most remarkable or distinct phase advance is underlined and listed in the column of *Time*.

In table (b) SPA, *date* indicates the day to which the *start-time* of the event belongs.

The following letters may be attached to the value, if necessary.

D greater than,
E less than,
U uncertain or doubtful.

Transmitting Stations

Name	Location (Geographic Coordinates)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Norway	66°25'N	013°08'E	Ω / N	13.6	10	7820
Liberia	06°18'N	010°40'W	Ω / L	13.6	10	14480
Hawaii	21°24'N	157°50'W	Ω / H	13.6	10	6100
North Dakota	46°22'N	098°20'W	Ω / ND	13.6	10	9140
La Reunion	20°58'S	055°17'E	Ω / LR	13.6	10	10970
Argentina	43°03'S	065°11'W	Ω / AR	13.6	10	17640
Australia	38°29'S	146°56'E	Ω / AU	13.6	10	8270
Japan	34°37'N	129°27'E	Ω / J	13.6	10	1040
North West Cape	21°49'S	114°10'E	NWC	22.3	1000	6990

HOURLY VALUES OF foF2 AT WAKKANAI

SEP. 1995

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz 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	A	A	34	36				A	A	A	A	A	55	54	52	A	69	56	57	57	60	57	
2	40	46	35	36	35	31	60	68	60	A	56	58	A	A	57	57	56	57	58	58	A	57		A
3	35	A	35	32	34	A	44	A	56	49	A	A	A	A	58	58		34	A	56	57	A	58	56
4		38	35	38	35	A	59	60	61	A	56	A	A	49	A	56	A	A	49			A	40	38
5	A	37	40	35		47	52		62	66		A	A	A	60	A	61	59	59	57	58		57	
6	40	48	49	A	A		A	A	A	A	A	A	A	A	A	A	A	46	58		32	37	41	58
7		30	34	32	A	A	A	A	A	A	A	A	A	A	N	52	A		59	58		57		69
8	69	35			N	A		A	A	A	A	A	A	A	A	A	A	48	A	29	58	69		35
9	29	A	A	29	A	A	32	A	A	A	A	A	A	A	A	A	A	41	A	41	36	35	N	35
10	31	38				A	A	A	A	50	A	A	A	A	A	46	46	47	53	58	56		35	35
11	A	A	28	31	28	30	A	A	A	A	A	34	A	A	A	A	43	A	46	A	43	38	40	
12	59		29	30		A		A	A	A	A	A	A	A	34		50	A	41	31	45	33		
13				A			A	A	84	63	A	A	58	56	50	A	56		57	55		38	A	33
14	30	35	35	32	A	A	38	32	A	A	A	A	A	A	A	A	32		59	A	75	58	A	
15			38	32	28	35	A	A	A	89	A	A	A	57	A	A		47			59			38
16	A	59	A	A	A	A	25	A	A	A	A	A	A	A	A	A	A		A	A	A	60	A	A
17	A	A	34		29	A	31	46	47	54	56	A	A	A	A	A	27		40	A	49	58	58	35
18	N	30	38	41	32	32		26	A	A	59	A	57	A	55	A	53		51		40	47	40	40
19	36	34	35	29	36	37	31	36	38	A	A	A	58	64	56	A	51	A	59		A	57		
20	32		38		24		50	63	57	58	60		A	58	62	68	60		A	A	69	59		56
21	57	49		29	29		30	57	60	80	A		N	56	A	54				A		56		47
22		44	44	38	43	42	34	42	58	68	58	A	A	55	58	58	57	54	59	52				
23	A		39		56	A	A	A		60	62	A	57	53	56	58	55	60	58	58	57	56	58	
24		51		A		A	63	70	70	A	68	58	55	57	57	A	52	58	70	60	60	69		
25	61		47			A					76		61	61	57	A	69	80		A	40	A	A	A
26	46			38	35		33	39	57	58	73	74	A	A	A		74	84	60	52	46		36	38
27	29	37	31	29	30		30	40	58	76		63	A	57	56	56	57		45	A		28	58	29
28	56			N	35		A	A	A	A	A	A	A	A	A	58	56		51	59	57		40	37
29	38	38	29			A	32		A	54	A	57	57	A	55	59	56	58	59	69	60	56	29	35
30	35	36	32	30	28		42	40	37	61	59		61	58	A	55		68	51	56		69	36	32
31																								
	00	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	17	20	18	17		17	13	14	14	10			13	15	14	19	16	22	17	20	21	15	18
MED	38	38	35	32	34		34	42	58	60	59			57	56	56	56	58	58	57	57	57	40	38
U Q	56	47	38	36	35		51	61	61	68	62			58	58	58	57	64	59	58	58	59	58	47
L Q	31	35	33	30	28		31	37	56	54	56			55	55	54	50	47	51	52	44	38	36	35

HOURLY VALUES OF fEs AT WAKKANAI

SEP. 1995

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz 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	31	32	26	G	G	G	34	40	46	38	48	42	38	38	30	28	25	29	28	26	G	G	34	38
2	34	24	G	24	30	34	34	39	42	35	42	36	36	35	35	30	34	31	30	G	54	44	38	55
3	60	37	33	32	29	34	39	49	42	60	33		36	32	41	36	34		62	57	41		46	39
4	38	27	23	G	G	32	54	58	38	66	36	35	31	34	36	46		72	51		62	64	29	30
5	35	33	33	34	28	38	33		60	60	41	39	31	31	31	58	50	54	59	39	32	25	G	G
6	29	G	30		47		34	40	47	58	36	30	35	32	31	30	36		47	33	29	41	37	28
7	G	G		28	37	36	46	39	30	28	29	31	32	32	32	31	40		34	31	40		24	G
8	26	G	G	G	G	33	G	63	49	30		53	46	30	29	48		41		37	34	28	G	G
9	G	26	26	25	32	24	31	40	30	28	N	32	30	28	28	30	30	32	28	G	30	30	31	G
10	G	G	G	G	G	32		35	38	27	28	31	29	35	32	33	39	36	32	29	G	G	G	G
11	30	29	G	G	G	24	30	36	36	30	32	31	32	31	33	28	30	39	38	40		30	28	25
12	G	G	G	G		39		40	33	45	32	30	29	26	28	30	39	47	54	43			G	
13	G	G	G	25	25	G	36	54	62	32	34	32	34	34	28	27	26	33	29	G	33	27	34	24
14	G	27	G	G	34	28	32	34	31	37	31	41	38	30	30	28	27	40	32	34	G	51		G
15	G	G	G	G	28	54	87	40	34	29	29	28	28	28	30	28	24	G	G	G	28	G	29	34
16	30	G	34	42	37	45	28	34	58	57	40	46	56	56		32	29		59	57	54	30	38	32
17	28	29	G	G	G	27	30	34	32	34	33	34	38	29	29	32	30	42		64		G	G	G
18	G	G	G	G	34	38		34	35	31	30	32	32	29	36	25	27	41	31	34	38	34	34	28
19	G	G	G	G	G	34	29	28	32	29	36	40	34		65	26	22	43	34	27	39	26	G	G
20	G	G	G		31		29	31	35	40	39	41	51	34	35	44	35		84	39	30	33	42	G
21	24	28		33	34	36	32	32	34	38	57	51	53	42	43	44	40		29	44		34		G
22	26	24	27	G	24	27	34	28	38	28	29	30	32	34	30	28	29	31	G	G	42	38	29	G
23	37	G	G	G	G		45	38	36	41	41	34	32	32	27	30	34	34	30	40	30	G	28	
24		G		31		33	39	40	G		30	30	31	32	40	33	38	33	29	24	G	G	G	G
25	G	28	35	27	G		36	34	38	42	55		36	28	27	29	30	G	G	54	41	34	40	29
26	26	24	23	G	26	33	33	33	34	32	38	34	33	43	35	36	43	34	G	G	28		G	G
27	G	G	G	G	G	G	31	36	30	33	35	54	26	35	32	30	25	31	46	37	32	32	32	29
28	24	G	G	25	G	G	27	24	28	34	38	38	32	28	62		29		43		33		25	26
29	G		G	B	G	28	22			34	34	34	35	40		34	G	G	G	30	29	36	G	31
30	24	28	25	G	G	G	G	27	36	28	31		50	41	35	32	28	32	35	30		G	G	27
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	27	27	28	26	27	28	29	29	28	27	29	29	28	29	28	23	28	28	25	25	28	28
MED	24	G	G	G	24	32	33	36	36	34	34	34	33	32	32	30	30	34	32	34	32	30	28	24
U Q	30	28	26	27	31	36	36	40	42	41	39	41	37	35	35	35	37	41	46	40	40	35	34	29
L Q	G	G	G	G	G	24	29	33	32	29	31	31	31	29	29	28	27	31	28	25	28	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT WAKKANAI

SEP. 1995

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

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

HOURLY VALUES OF foF2 AT KOKUBUNJI

SEP. 1995

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz 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	59		35	A	69	63	50	50	57	59	A	A	A	62	59	62	58	61	61	62	56	46	44
2		37	A	32	30	38		58	68	84		A	55	A	61	71	88		70		35	42		46
3	A	59			30		68	59	69		53	A	A	55	57	54		70	66	60	68		42	44
4	A		35	32	34		56	67	65	57	A	A	49				66		66	60	70	A	38	35
5	A	32	38	35	29		64	59	65	59	A	53		64		68	72	76	74	74			46	47
6	44	46	48	30	22	A	A	A	68	61	62	A	A	A	64	60	52	60		60	58	59	40	
7	38		34	40	35	38		59	56	49	A	A	A	A	A	57	55	60		58	63	A	46	36
8	A	A	32		32	31	70	A	47	48	48	A	A	52	52	49	55	A	53	A	50	44	37	A
9	35	A	A	A	42	A	A	44	A	A	A	A	A	A	A	A	46	48	55	A	34	A	A	A
10		A	A	A	A		36	56	68	51	A	55	A	A	A	51	45	55		68			36	46
11	A	A	A	29	26	31		55	46	A	A	A	A	A	A	60	60	A		50		32	A	46
12		32		59			70	58	48	48	53	62	49	48	A	A	A	59		49	A	A	35	40
13	40			30	N		37	68	58	A	51	A	A	58	54	52	54	72	58	56		37	36	38
14	38	41	34	31	29	32		63	58	50	49	60	A	A	62	63	N	58	67		46		A	A
15		31	32	31	30		56			54	57	58	63	A	59	56	56	57	57	57		70	50	43
16	35	N	A	A	38	A	41		68	72	64	A		A	51	51	50	48	48	59		47	44	44
17		69	30	29	30	32	31	56	58	56	55	53	55	54	A	54	50	57	57	56	43	44		34
18	34	32	N	N	35		50	56	58	55	53	A	62	56	55	53	55	61	60	57	57	37		59
19	34		58	31	30		50		47	54	49	54	60	56	58	60	53	60		58		A	37	36
20	36	34	31	35	34	32	60	50	53	48	49	56	57	60	54	60	55	57	56			A		47
21	44		38	38	31		44		61	66	63	55	58	66	66	A	61	59	55	57	42	A	43	
22	32		A	A	32		33	70		68	68	A	56	58	A	56	60	60	60	66	44	48	46	A
23	58	46	44	37	42		48	69	55	68	72	62	62	52	53	63	67		57		41	46	44	44
24		41	A	39	48	44		79	67	59	53	66				53	56		95	60	38		44	36
25		38	A	37	40	41		67	61	64	55	A	76	64	64	60	71	72	91	57		35	44	
26	56	B		59		59	56	68	65		62	74	68	63	60	63		71	68	A		25	A	
27	A	59	32	32	31	A	52	69		65	67	68	64	61	62	65		72		50	47		45	43
28		37	36		31		A	45	A	60	A	49	68	A	66	67	66	70	57	56	55	58	47	44
29	34	30	34		30	41	46	59	61	53	58	61	66	62	62		63		68		56	64	56	44
30	37	32		49	28	35	58	68	67	56	58	68	66	67	62	58		83	91	58	45	32	44	
31																								
	00	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	18	15	21	25	13	21	24	25	25	22	16	17	17	20	25	24	23	23	22	19	17	22	21
MED	37	38	34	35	31	38	52	59	61	57	56	59	62	58	60	59	56	60	60	58	47	44	44	44
U Q	44	46	38	38	35	42	61	68	67	64	62	64	66	63	62	63	64	71	68	60	58	57	46	46
L Q	34	32	32	31	30	32	42	56	54	52	53	54	55	54	54	53	53	57	57	56	42	36	38	37

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT KOKUBUNJI

SEP. 1995

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	26	G	36	27		G	26	36	40	49	28	27	35	37	36	31	27	36	32		27	G	G	G
2	G	33	34	23	G	G	34	40	44	47		44	36	37	45	45	38	35	39	37	G	32	30	30
3	40	32	25	G	G	36	32	32	30		50	55	41	40	31	44	30	35	27	G	G	30	37	34
4	39		56	33	31	G	53	56	54	57	72	54	38	48	48	34	44	42	41	56	58	56	46	34
5		28	24	30	28	G	28	36	39	43	28	26	G	G	30	30	37	34	25	27	28	28	G	G
6	26	G	G	41			69	71	52	48	37	56	N	24	49	35	43	46	28	28	24	36	29	64
7	28	G	G	G	G	G	35	29	40	38	31	38	33	32	36	27	38	40		30	38	59	35	29
8	34	27	G	G	G	G	26	32	35	40	36	30	36	49		59	50	68	55	52	36	27	49	59
9	G	29	33	51			38	35	38	54	42	35		27	30	34	40	73	73	39	28	32	57	50
10	48	40	31	29	33		32	39	46	42	35	34	35	33	37	35	44	31	40	43	56	50		G
11	30	35	28	29	30	32		56	40	50	42	55	56	62		53	42			54		48	38	25
12	G	G	G	G	G	G	35	34	31	27	34	32	34	41	69	84	74	37		61		55	41	36
13	G	G	G	G	G	G	33	44	41	45	53	48	40	26	32	28	33	G	36	30	29	34	34	36
14	28	29	24	28	33	30	38	34	55	32	38	26	27	29	31	30	40	24		33	58	54	52	50
15	28	23	G	G	G	G	24	24	28	29	32	30	31	38	22	31	28	25	G	G	G	G	G	G
16	31	26	32	40	28	30	29	39	47		34	56		40	40	31	29	34	27	30		38	43	33
17	G	G	G	G	G	G	26	27		31	31	26	29	29	29	29	30	27	G	31	23	G	G	34
18	38	G	G	G	G	G		32	28	30		31	33	32	29	30	31	30	G	G	23	G	30	51
19	29	25	G	G	G	G	28	30	30	35	42	32	32	30	30	26	30	G		26		41	60	34
20	32	G	G	G	G	G	33	36	48	44	38	34	33	28	G	28	31	G	G	G	G	34	G	G
21	G	G	G	G	22	G	33	40	51	40	48	39	G	31	30	66	50	44	35	34	32	50	38	
22	61		30	39	36	34	29	39	44	46	54	49		30	28	34	42	34	39	G	G	G	24	
23		G	G	38	25		37	32	36	36	60	69	32	37	33	31	42		G	44	34	51	48	58
24	52	43	42	G	G			55	30	38	34	28	31	28	28	26	23	30	26	G	23		36	38
25	39	39	30	G	G	G	26	30	35	30	32	34	32	30	28	30	25	39	40	34	29	38	G	G
26	G	B	G	G	G	G	33	45	42	33	43	34	39	44	29	28		42	41	54		48	54	40
27	37	G	G	G	G	34	26	34	41	44	39	39	33	42	51	60		37	37	32	33	34	41	34
28	26	28	26	G	G	G	30	31	50	41		46	34	69	47	41	34	27	31		60	44	G	32
29	G	G	G	G		30	38	36	27	34	36	G	39	36	34	30	30	27	38	40	26	G	G	24
30	G	G	G	G	G	32	24	36	40	41	26	26	39	48	47	29	27	30	30	G	28	27	30	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	28	27	30	30	26	25	27	30	29	28	27	30	26	30	28	30	28	28	25	28	25	29	29	28
MED	28	23	G	G	G	G	32	36	40	40	37	34	34	34	32	31	36	34	32	32	28	34	35	34
U Q	37	29	30	29	28	30	35	40	46	45	43	48	38	41	42	41	42	39	39	41	35	49	44	39
L Q	G	G	G	G	G	G	26	32	33	33	32	30	32	29	29	29	30	27	25	13	23	27	G	24

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT KOKUBUNJI

SEP. 1995

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14	14	14	15	15	20	15	14	17	17	18	17	16	17	18	15	16	15	15	14	15	14	14
2	15	14	14	15	15	15	15	15	14	14		17	17	17	17	15	15	14	14	15	14	15	15	14
3	14	15	14	15	15	15	15	15	15	14	17	17	15	18	17	15	15	15	16	15	15	14	15	14
4	14		15	14	15	15	15	15	15	16	18	22	26	20	16	17	14	15	15	15	14	14	15	15
5	15	14	15	15	15	16	14	15	15	17	20	18	48	48		15	15	15	15	15	15	14	14	15
6	15	15	15	14	14	15	15	14	15	15	18	16	17	46		16	15	15	14	15	16	15	14	15
7	15	15	15	15	14	14	15	14	15	15	16	17	20	18	15	15	15	14		15	14	15	15	14
8	14	15	14	16	15	15	14	14	15	14	17	15	17	17	16	18	15	15	14	15	15	14	15	15
9	14	15	15	15	15	15	15	15	16	18	16	17	18	17	15	14	16	14	15	15	15	14	14	14
10	15	15	15	14	15		15	15	15	15	17	27	20	15	15	16	15	15	14	14	15	15	14	15
11	15	14	15	14	14	14		14	14	16	20	24	34		18	16	15	15		15	15	14	14	14
12	15	14	16	14	15	15	16	14	15	16	17	18	18	15	18	16	16	15	15	14	15	15	14	15
13	15	15	15	15	15	15	15	16	15	16	16	21	17	18	18	42	16	16	14	15	17	15	14	14
14	14	14	15	14	15	15	14	15	15	17	24	18	16			16	14	15	15	14	14	15	15	14
15	14	15	15	15	15	15	17	15	16	15	18	18	22	20			14	15	15	15	14	15	15	15
16	15	15	14	15	14	14	14	14	15	17	18	16		17	15	15	16	16	15	15		15	14	14
17	15	17	16	16	14	15	15	14	14	14	17		20	20	16	15	15	16	14	15	15	15	14	14
18	14	14	15	16	14	15	17	15	16	16	18	22	20	17	17	15	15	18	14	15	15	15	15	15
19	15	15	15	15	15	15	14	15	15	17	15	18	17	16	14	14	15	16		15		14	15	14
20	15	15	15	15	14	15	14	15	15	15	16	21	16	20	23	17	18	21	15	14	17	14	15	14
21	15	15	15	14	14	15	15	15	16	16	15	15	16	16	16	15	14	14	15	15	14	15	15	
22	15		15	14	14	15	15	15	15	14	15	15	15	18	16	15	15	16	15	14	14	15	15	14
23	15	15	14	15	14		14	15	14	15	17	18	20	22	22	15	15	15	15	15	14	14	15	15
24	15	15	14	15	14	15		15	15	15	17	17	21	15	17	15	14	14	16	15	15	15	15	14
25	14	15	15	15	15	15	17	15	14	17	16	18	18	20	18	15	15	14	15	14	14	15	15	15
26	16	B	14	15	14	15	14	15	15	15	16	18	20	18	17	14		15	15	14	15	14	15	14
27	14	15	15	15	15	18	15	15	16	15	14	28	18	17	15	15		14	14	14	15	15	14	15
28	15	15	15	14	14	15	16	15	15	16	17	21	20	17	15	14	15	15	15	15	15	14	15	15
29	15	14	15	14	15	15	15	15	18	15	16		20	16	17	16	15	18	15	15	15	14	15	14
30	15	15	15	14	15	15	17	14	15	16	15	16	16	20	16	15	14	15	15	15	14	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	27	30	30	30	28	28	30	30	30	29	28	29	28	26	29	28	30	27	30	28	30	30	29
MED	15	15	15	15	15	15	15	15	15	16	17	18	18	18	16	15	15	15	15	15	15	15	15	14
U Q	15	15	15	15	15	15	15	15	15	16	18	21	20	20	17	16	15	16	15	15	15	15	15	15
L Q	14	14	14	14	14	15	14	14	15	15	16	17	17	16	15	15	15	15	14	14	14	14	14	14

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF foF2 AT YAMAGAWA

SEP. 1995

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz 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	36	34	N	59		37		A	68	66		49	58	63	67	76	75	67	67	85	77	A	24	
2	59	56	48	49		30		56	68	81		A	A	63	63	77	86	A	76	70				
3	46		69		54	37	A	A	66	58	55	A	A	61	A	63	68	67	74	84	A	59	50	
4	38	39	49	59	40			68	59	A	A	62	A	70	70	68	68	66	82	83	86	A	A	
5	69	37				36		67	62	54		A	66	75	80	81	75	83	83	68	59			69
6	36		28	A	32	A	46		68	60	73	62	70	73	67	63	62	A	68	66	A	53	59	
7		48		59		N	47	62		57	61	60	A	60	A	60	66	66	80	72		89		
8	38	48		59	49	48		68		53	57	A	A	A	72	75		63	A	A	58	52	A	40
9	A	A	59	N	69	37	42	A	A	53	55	62	60	A	A	55	55	A	A	A	34	A	69	A
10			47	30	26	N	A	48	68	62	A	68	58	A	A		60	72	A	A	A	A	A	A
11	A	A	A	A	A	A	35	51	A	A	57	62		A	A	63	67	61	A	A	60			
12	A	32	42		36	37	48	60	A	A	A	58	66	62	A	60	58	68	59	56	59		A	41
13		40	A	69	A	24		A	62	A	54	60	67	75	71	58	67	75	53	35	59	69	69	
14		37		28	26		46		54	65	A	54	A	62	67	63	55	66	78	A	50	A	36	42
15	31		37	30	24	46		69			A	60	81	68	70	62	66	66	69	72	79		59	59
16		48	34		48	38		33	57	77	71	A	67	72	66	63	60	60	67	69	66		47	A
17	50	A	69	29	30	37	55	67	62	A	59	55	A	63	65	60	58	66	68	50	36	42	38	42
18	44			69		38		62	62	55	58	57	63	60	62	59	55	55	69	A	66	A	A	24
19		46		28	35	34	N	58	57	58	58	57		61	70	67	60	67	82	83	77	A	28	
20	A	A	49	A	A	59	47	48	61	66	62	62	63	72	68	61	66	72	76	73		34	24	A
21		59	37	38	47	30		68	69	72		62	68	78	87	72	60	66	73		A		A	50
22	38	32	41	47	33		44	29	67	66	67	A	61	67	62	55	62	68	71	65	60		43	49
23	39		49		49	N	59	48	67	72	70	60	A	70	63	60	A	81	70		25	58	49	59
24	40			38	23		37	76	68	56	56	67	71	72			60	80	90			27		A
25		A	A	48			46		70	58	57	70	71	84	71	64	66	78	82	75	69	A	59	A
26		58	48	37			A	70	66	68	72	62	77	81	77	82	87	82	77	83		A	34	A
27	A	A	A	49	36	38	46	56		71	63	66	75	82	74	68	69	A	78	A	A	59		
28	47		69	69		55	47	48	A	54	67	66	74	84	75	86	77		73	73		37	A	A
29	35	35			N	N	38	56	60	67	65	69	71	78		67	67	78	74	59	32			34
30	34	37		69	36	A	49	57	53	70	67	64	72	91	81	64	66	70	80	83				38
31																								
	00	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	16	16	20	18	17	16	23	22	24	21	24	20	26	22	28	28	25	26	20	18	11	15	12
MED	38	40	48	48	36	37	46	58	64	64	61	62	68	71	70	63	66	67	74	72	60	53	47	42
U Q	46	48	54	59	48	42	47	68	68	69	67	65	71	78	74	70	68	76	80	83	69	59	59	54
L Q	36	36	39	33	30	35	43	48	60	56	57	59	63	63	66	60	60	66	69	65	50	37	34	39

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT YAMAGAWA

SEP. 1995

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz 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	25	G	G	G	G	G	32	43	49	36	32	38	43	30	30	34	30	30	28	29	G	30	28	G
2	23	G	G	G	G	G	G	33	43	40		51	37	40	32	53	38	84	40	29	38	29	23	26
3	25	G	G	31	31	G	41	57	40	29	37		29	G	31	30	33	40	30	33	33	G	G	29
4	33	35		29	24		25	43	50	54	51		35	31	60	29	31	36	33	28	28	33	33	36
5	34	31	G	23	26	G	26	36	28	30	G	40	57	63		66	53	32	28	31	32	G	G	G
6	G	G	24	28	53	28	29	46	40	29	38	40	41	43	30		59		50	59			30	30
7	28	27	G	26	30	24	G	29	30	31	30	29	28	38	32	31	43	52	61	29	30	40	32	22
8	40	G	G	G	G	G	28	31	32	32	40	54	54	61	54	42	56	51		143	52		44	45
9	33	41	32	25	G	28	29	68	46	40	32	33	29	30	29	30	40				39	48	33	30
10	27	G	G	26	26	G	32	31	39	41	37	34	31	35	30	G	44	72	152		84	92	92	60
11	44	38	34	37	39	34	26	36	49	44	35	40	G	40	39	30	35	51	77	125	79	60		41
12	58	30	25	G	G	G	24	32	52	44	34	52	66	61	61	42	40	30	30	40	G	29	79	41
13		38	39	32	34	33	36	50	40	48	40	31	30	30	29	39	31	29	28	25	G	G	G	
14	38	29	27	28	26	G	G	30	29	38	30	31	31	39	28	31	36	48	70	92	28	32	32	30
15	30	23	G	G	G	G	G	30	30	28	36	30	28	G	30	32	29	24	30	G	G	G	G	G
16	G	G	G	G	G	33		33	30	39	34	29	39	39	28	30	32	33	39	29	G	G	G	40
17	32	32	G	G	G	26	26	38	30	57	34	32	31	31	30	30	37	34	32	26	29	29	34	G
18	G	G	G	G	G	G	G	31	37	38	36	40	39	35	32	39	30	30	26	33	29	32	28	30
19	G	G	G	G	G	G	G	28	31	30	50	40		50	41	52	39	35	33	40	32	33	G	G
20	30	34	38	38	31	28	26	31	32	41	32	29	40	31	30	34	26	34	30	38	32	27	34	28
21	G	26	G	G	G	G	G	39	40	30	38	37	39	39	30	30	30	30	26		43	31		30
22	28	31	33	G	26	25	G	30	43	44	49	51	40	41	41	30	30	40	60	40	33	24	30	26
23	G	G	G	G	G	G	23	27	32	38	36	49	60	39	34	32	69	32	28		33	31		
24	G	G	G	G	G	G	G	29	56	48	32	40	31	29	29		28	31	27	G	G	G	29	31
25	27	30		23	27	G	23	31	29	29	30	40	29	28	42	45	39	28	22	73	27	40	29	32
26		G		G	G	G	36	36	42	40	30	36	37		50	37	43	65	47	64	32	30	24	34
27	38		34	26	G	G	G	33	36	34	40	38	39	38	29	62	68	88	59	33	42	30	G	G
28	G	G	G	G	G	G	G	33	43	40	40	38	32	31	38	31	28	29	31			33		38
29	26	G	G	G	G	G	G	31	30	29	31	31	40	31		29	29	29	G	G	32	32	28	30
30	24	G	G		26	31	G	28	37	32	30	36	30	32	32	33	31	28	G	G	G	29	26	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	27	29	30	29	29	30	30	30	29	28	29	29	28	28	30	28	28	25	27	28	26	28
MED	27	G	G	G	G	G	23	32	38	38	35	38	37	35	32	32	36	34	30	33	32	30	28	30
U Q	33	31	27	27	26	27	28	38	43	41	39	40	40	40	40	40	43	49	48	49	38	33	33	35
L Q	G	G	G	G	G	G	G	30	30	30	31	31	30	30	30	30	30	30	28	27	G	25	G	11

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT YAMAGAWA

SEP. 1995

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	15	14	14	14	14	14	15	17	20	20	20	20	18	16	14	16	16	15	15	14	14	15
2	14	14	14	14	15	14	15	15	16	16		20	21	18	20	17	16	15	14	14	14	14	14	15
3	15	14	15	14	14	15	14	15	15	17	20	20	20		20	20	18	15	14	14	14	14	15	14
4	14	14	14	14	15		15	15	17	20	18	17	17	23			17	15	14	14	15	14	14	14
5	15	14	14	14	15	14	15	15	15	17		46		34		18	16	15	14	14	14	17	15	15
6	15	14	14	14	14	15	14	15	15	16	18	18	18	35	20	20	18	15	14	14	14	14	15	14
7	14	14	15	14	14	15	15	14	15	17	18	22	22	21	21	16	16	14	15	14	14	14	14	14
8	14	14	15	14	14	14	14	14	15	16	18	21	21	21	17	16	14	14	14	14	14	15	14	15
9	14	14	14	15	14	14	14	14	15	16	18	18	20	20	20	17	15	15	14	15	14	14	14	14
10	14	14	16	15	14	14	14	15	16	16	21	21	22				16	15	14	15	14	14	14	15
11	14	14	14	14	14	14	14	14	17	16	22	23	45		23	20	15	15	14	15	14	14	15	14
12	14	14	14	14	14	14	14	15	14	17	18	18	18	18	17	16	15	15	15	15	15	14	14	14
13	15	15	15	14	14	14	14	14	15	16	18	20	20	20	16	16	16	14	14	15	14	14	14	14
14	15	15	15	14	15	14	14	14	16	16	21	20	15	22	21	23	17	15	14	15	14	14	14	14
15	14	14	14	14	14	15	14	14	15	16	18	18	17		15	14	17	22	15	14	14	14	15	14
16	15	15	14	14	14	15		14	15	15	17	18	20	18	20	17	18	15	14	14	14	14	14	14
17	14	14	14	14	14	14	16	14	15	16	18	20	20	20	18	17	17	15	14	14	14	14	14	14
18	14	15	14	14	14	14	15	14	15	17	20	20	21	20	22	18	16	14	17	14	14	14	14	16
19	15	15	14	14	14	15	15	15	15	17	18	20		18	17	18	17	15	14	14	14	14	14	15
20	14	14	15	14	15	14	14	14	15	16	22	21	21	18	18	17	15	14	14	14	14	14	14	15
21	14	14	14	14	15	14	14	14	15	16	18	21	21	21	22	18	17	14	16	14	14	14	14	14
22	14	14	14	14	14	14	15	14	15	17	21	17	16		20	18	17	18	15	15	14	14	15	14
23	14	15	14	14	14	17	14	14	15	15	18	21	20	20			17	15	14	14	14	14	14	14
24	14	15	15	15	14	14	14	14	15	16	20	20	20	17	16		15	14	15	14	15	15	15	14
25	14	14	15	14	14	14	15	14	15	17	18	20	18	20	16	15	14	18	15	14	15	15	14	15
26		14	14	14	14	15	14	14	15	17	21	22	21	20	20	17	15	14	14	14	14	14	15	14
27	15	14	14	14	14	14	14	14	15	15	17	21	18	18	20	16	16	15	14	14	15	14	14	14
28	14	14	14	15	14	15	14	14	15	17	18	20		21	20	17	14	14	14	14		14	14	15
29	14	14	14	15	15	14	15	14	15	20	18	21				33	16	14	14	15	14	14	14	14
30	14	14	15	15	15	15	14	15	16	18	18	18	20	23	18	17	16	14	15	15	14	14	15	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	29	29	30	30	30	28	30	26	24	25	26	30	30	30	30	29	30	30	30
MED	14	14	14	14	14	14	14	14	15	16	18	20	20	20	20	17	16	15	14	14	14	14	14	14
U Q	15	14	15	14	15	15	15	15	15	17	20	21	21	21	20	18	17	15	15	15	14	14	15	15
L Q	14	14	14	14	14	14	14	14	15	16	18	18	18	18	17	16	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT OKINAWA

SEP. 1995

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz 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	69	A		N	B		58	64		56	B	62	80	86	95	100	93	90	94				A
2	A				32		69	56	80	64	55	A	74			95	100	105	103	82	94	A	57	62
3	57	43	46	41		N	A	56	69		61	62	67	67	54	68	74	80	89		69	A	A	B
4	30		38	35			47	67		52	60	64	71	81	78	73	74	82	91	96	A	A		A
5			A	A			N	70		A	A	58			90	84	81	90	88	82	A	A	A	A
6			46	B			39	45	61	58	73	80	86		65	73	67		82	83	50	A	A	A
7			37	32	43		36	56	47	56	A	68	78	65	62	68	80		78	A	A	A	A	46
8	43	A		A	A		89	60	59	N	54	68	68	75	92	92	A	A	58		A	A	48	A
9		A	A	A	A	35	35	A	66	A	68	A	68	79	83	64	67	87	67	58	A	A	A	A
10	A	A	A	38	A	B	A	A	64	63	63	86	94	91	72	A	A	91		A	A	A	A	A
11	A	A	A	29	29	35	43	39	56	A	56	70	77	71	61	92		62	67		A	A	A	37
12	46	A	A	A	A	N	26	44	28	56	68	70	82	85	69	58	67	84		56	38		A	A
13	A	41	A	A	A	A		56	52	51	56	70	80	91	92		94		61	A			109	
14		48					89	45	59		68	62	70		84	83	68	A	92	94	A	A	A	A
15	A	A					69	69	58	64		72	87	74	82	84	70	93	82	75	68			
16		37	29		35	38		57	57	72	68	77	81	83	70	72	64	70	73	76	69			46
17	A	89	A	58			89		69	68	58	57	61	64	70	64	76	93	92	A	A	59	A	44
18	46		38		N		59		54	47	57	A	60		77	74	62	61	59	80	60	A	A	
19		59	25				89		56	61	58	58	61	64	74	73	77	83	82	92	94	A	A	A
20	A	A	A	A	N	49		48	62	68	60	61	80	103	110	91	94	100	93	95	A	44	A	
21	A	46	B	89	39	B	89	57	70	68	66	67	87	110	124	124	112	111	93	86		A	109	44
22	43		41		37		59	41		67	62	77	71	89	81	66	65	70	75	80	A	A	A	A
23	36		56	41				A	71			68	75	78	70	64	76	85	66	A	A			A
24	48	48	46	43	38	41		57	73	59	59	69	76	80	71	71	72		93	60			A	
25	A		N	39			36	45	60		65			100	91	78	73	98	96		A	A	109	A
26		69	30					44	62		80			115	112	125								
27												71	91	93	91				92	A	A	A	A	A
28	44		37	38	29		A	48		82										94	A	A	A	A
29	A	89		A				60			93	74	83		104	104	114	104		93		60		44
30	A	A	A		38			50	68	66	76	68	80	95	111	117	93	98	88	82		56	46	38
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		11	12	10			16	23	24	18	24	23	26	23	28	26	24	21	25	19				
MED		48	38	40			59	56	62	64	62	68	76	81	82	76	75	90	88	82				
U Q		69	46	43			89	58	68	68	68	72	82	93	91	92	93	98	92	94				
L Q		43	33	38			37	45	56	56	57	62	68	74	70	68	67	81	70	76				

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT OKINAWA

SEP. 1995

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz 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	25	24	25	G	G		G	32	44	39	38		45	42	35	G	G	40	35	34	42	G	G	43
2	34			G	G	G	G		26	23	34	47	G	43		40	42	44	38	34	42	58		25
3		34	37	G		25	32	27	34	48	38	48	52	56	42	53	43	29	30	40	44	67	40	
4	G		G	G			G	34	45	42	70	52	G	42	44	34	28	56	48	51	69	26		28
5			38	32			32	33	46	42	50	44	44	53	48	48	47	47	40	40	42	34	27	24
6			G			G	48	42	49	44	37	G	44	41	49	G	54	51	44		G	43	32	34
7		G	28	G	G		G	28	25	57	36	G	50	66	G	70	72	80	71	94	85	86	43	60
8			G	26	24		G	28	38	39	42	43	60	52	82	62	66	96	41	43	76	79	32	60
9	44	30	36	30	31	50	26	49	73	98	51	58	59	40	G	G	28	50	70	65	87	95	89	51
10	49	37	36	28	28		21	34	48	41	46	49	G	G	54	74	88	68		114	82	65	43	66
11	61	64	36	28	26	G	30	32	50	74	52	59	40	G	G	G	G	40	40	53	86	67	38	65
12	38	27	38	36	37	27		30	42	50	41	G	36	40	38	40	32	41	53	G	G	G	60	58
13	76	G	62	42	28	36		40	39	90	37	39	G	G	47	36	39	34	G	26	G	G	G	26
14	G	G			G		G		39	39	G	G	36	50	37	43	64	100	60	57	45	69	27	40
15	31						G		34	26		G	38	G	39	G	25	40	34	G	G	G	G	
16	G	G	G	G	G	G	G	G	30		G	38	G	G	G	G	29		65	26	40	36	42	26
17	46	G	25	G			G	24	36	42	G	G	G	G	37	48	43	45	40	41	68	33	27	40
18	G	G	G		G		24		35	39	38	38	47	45	44	45	41	32	G	54		33	25	
19		G	G			G	G		27		35		39	G	38	42	28	41	70		68	49	48	51
20	34	40	26	26	G	G	G		36	33	40	42	42	42	54	47	26	29	34	29	44	31	43	G
21	34	G		G	G		G		33	31	G	42	70	G	38	39	26	25	G	31	32	86	24	39
22	25	24	31		G	G	G	34	38	50	48	42	39	41	47	51	G	44	42	54	58		38	30
23	25		G	G	G		G		G		44	47	51	42	54	57	43	61	34	40	58	92	48	58
24	38	G	G	26	G	G		32	37	50	38	37	G	38	36	36	28	32	G	G	G	G	25	G
25	24		G	G	G		G	33	33	G	33	39	G	G	G	48	48	54	48	45	58	26	G	48
26	G	G	G	G	G	G	G	30	38	39	42	41	58	48	55	59	35							
27												40	41	G	44				29	38	46	34	45	28
28	20	G	G	G	G	G	23		50	41										56	65	60	46	39
29	32	G		35			G		27	24	G	42	G	G	G	G	G	24	28	24	38	25	G	32
30	27	27	26	G	G			24	28	40	39	G	41	37	37	G	26	24	29	G	G	G	G	25
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	21	24	23	21	14	25	19	29	26	27	27	29	29	28	28	28	26	27	27	27	28	27	26
MED	31	G	25	G	G	G	G	32	37	41	38	41	40	40	38	41	34	42	40	40	44	35	32	39
U Q	38	28	36	28	25	25	23	34	44	50	44	47	48	44	47	49	45	54	48	54	68	67	43	51
L Q	20	G	G	G	G	G	G	28	31	39	34	G	G	G	35	G	26	32	29	26	32	25	24	26

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT OKINAWA

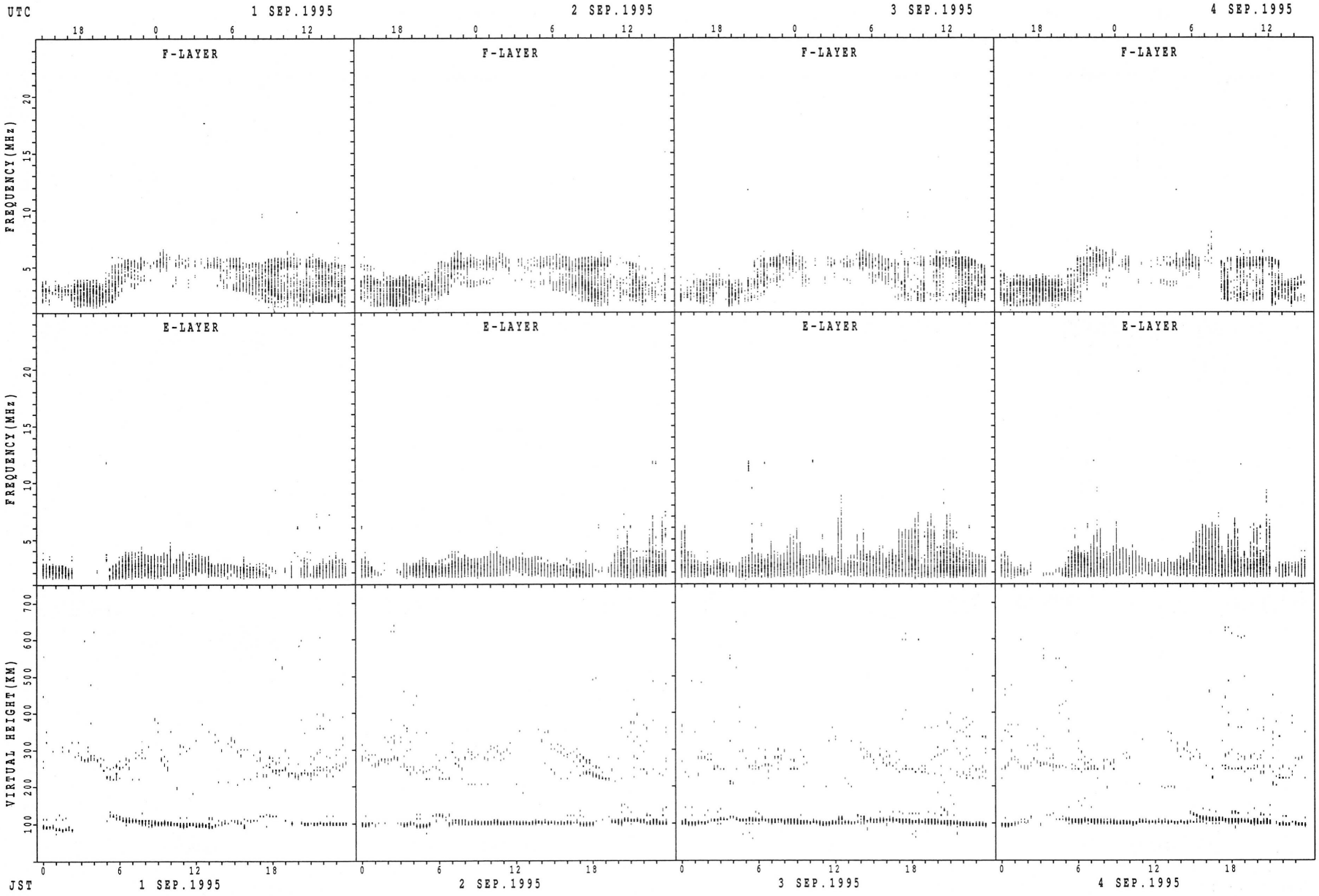
SEP. 1995

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

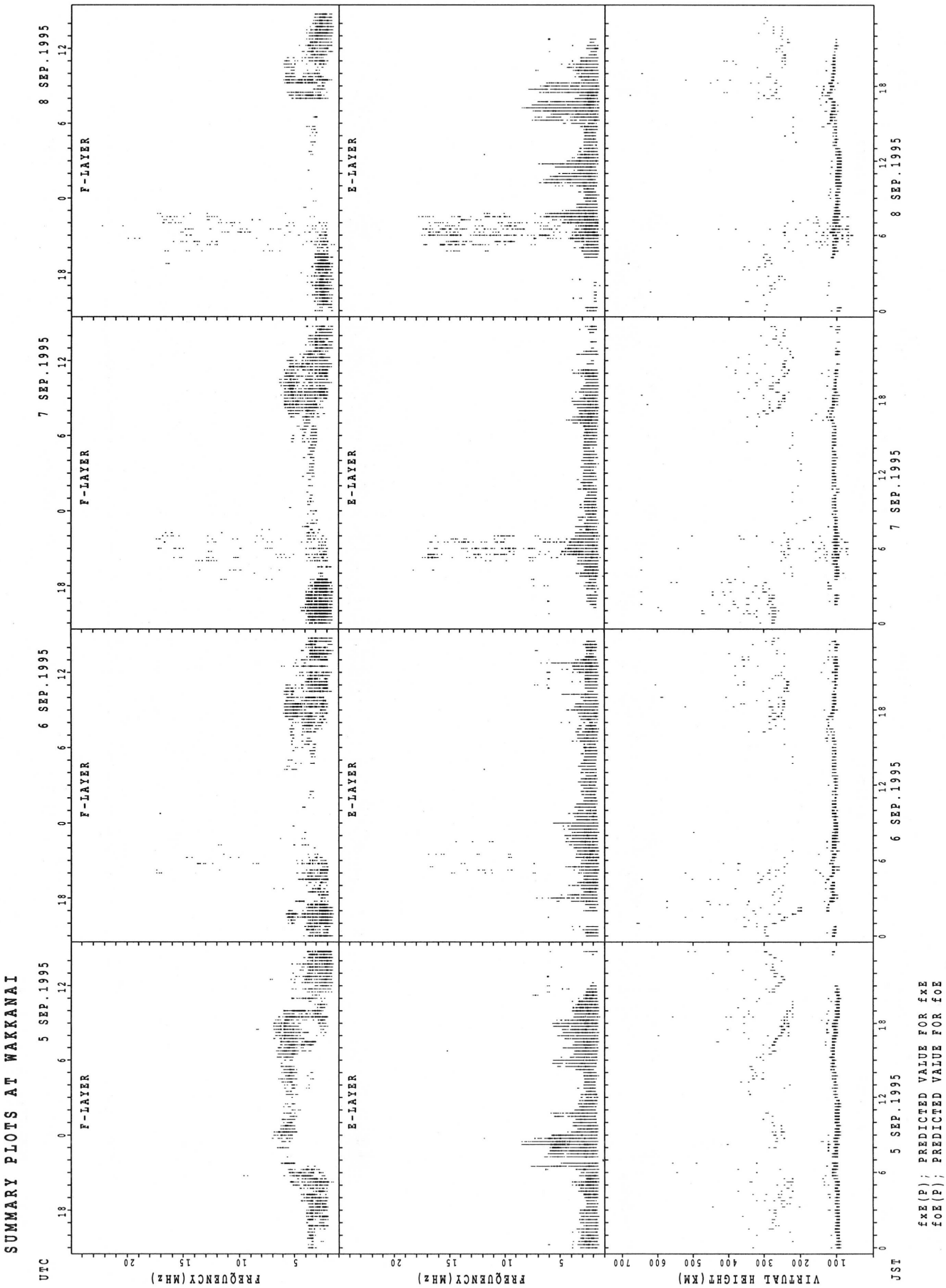
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	17	16	15	15		16	14	15	16	20		26	20	20		46		15	14	15	18		15
2	15			16	16	15	18	15	16			28		51		30	28		15	15	15	14	15	16
3	15	14	15	16		16	15	14	15	16	30	34	34	34	33	33	29		16	15	15	15	15	
4	15		16	15			15	14	20	29	30	34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

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

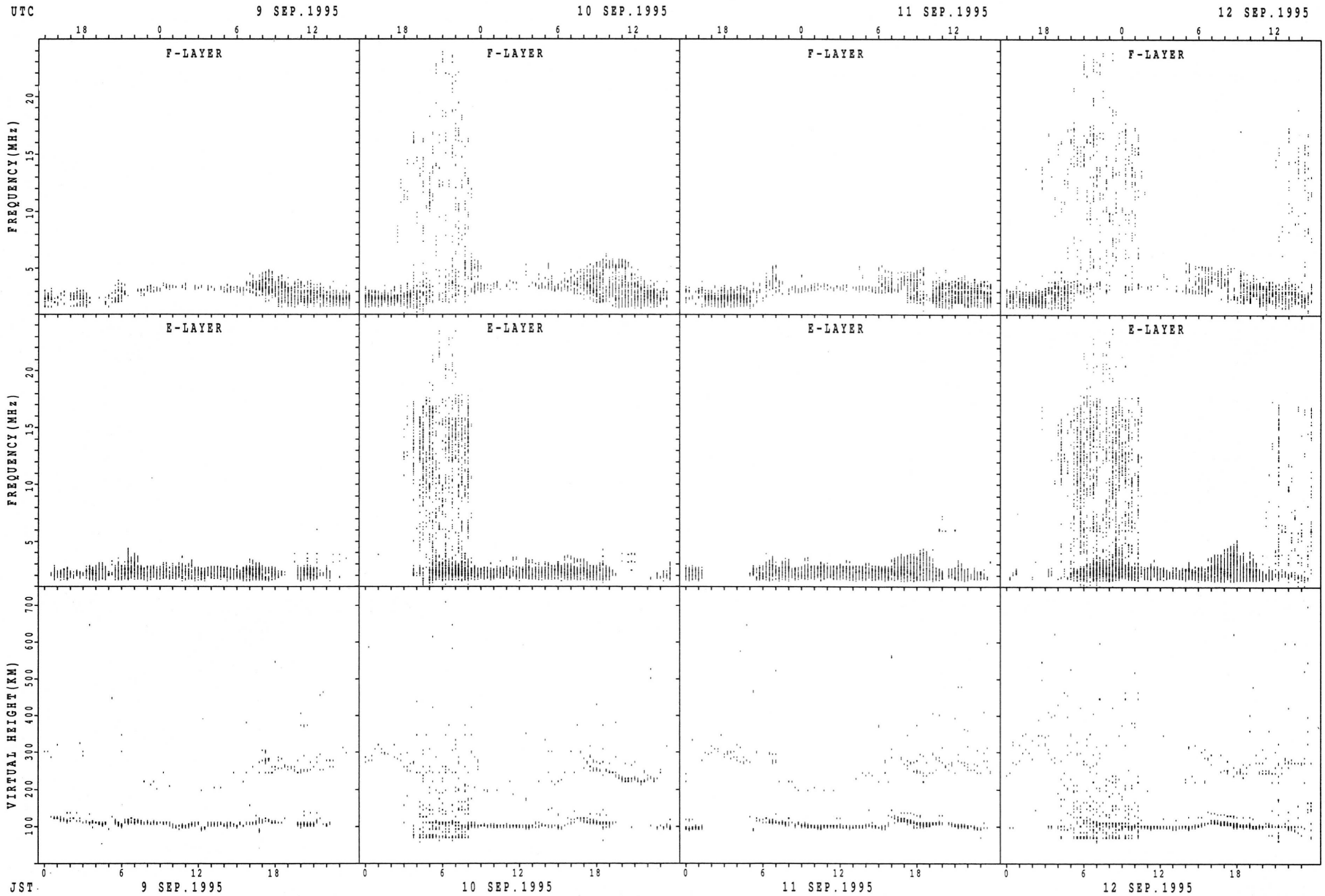
SUMMARY PLOTS AT WAKKANAI



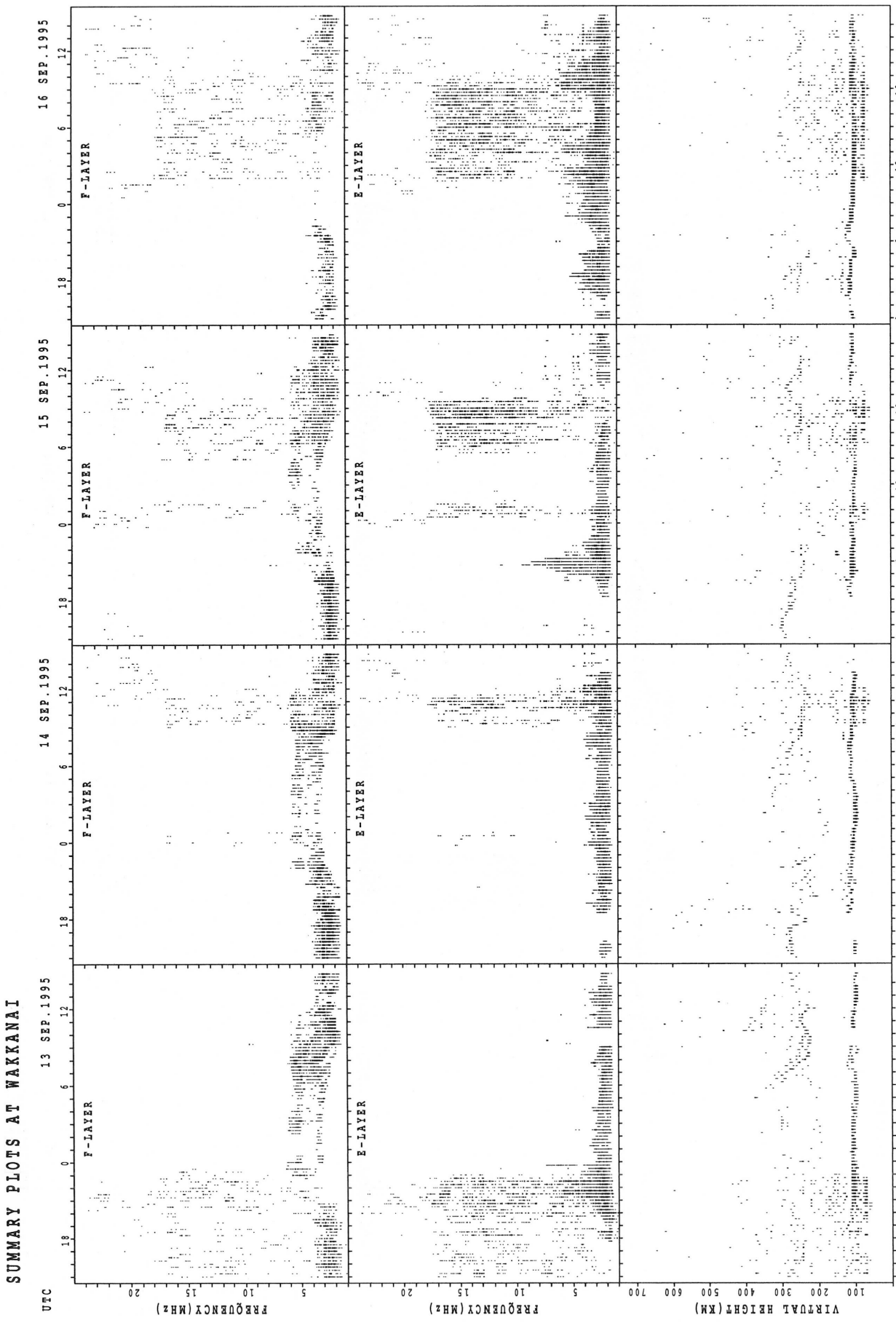
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

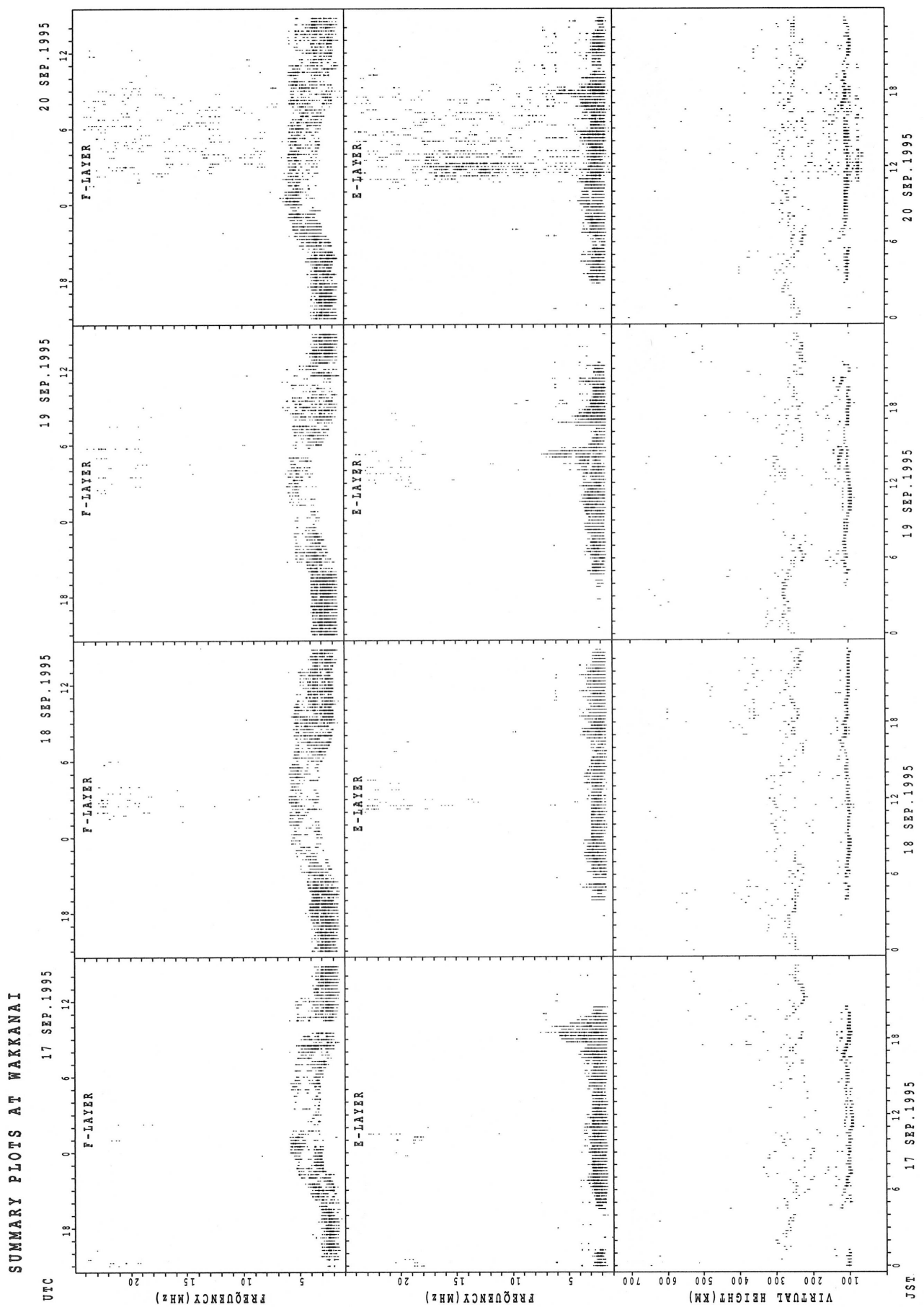

SUMMARY PLOTS AT WAKKANAI
UTC
JST
5 SEP.1995
6 SEP.1995
7 SEP.1995
8 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) ; PREDICTED VALUE FOR fxE
foE(P) ; PREDICTED VALUE FOR foE

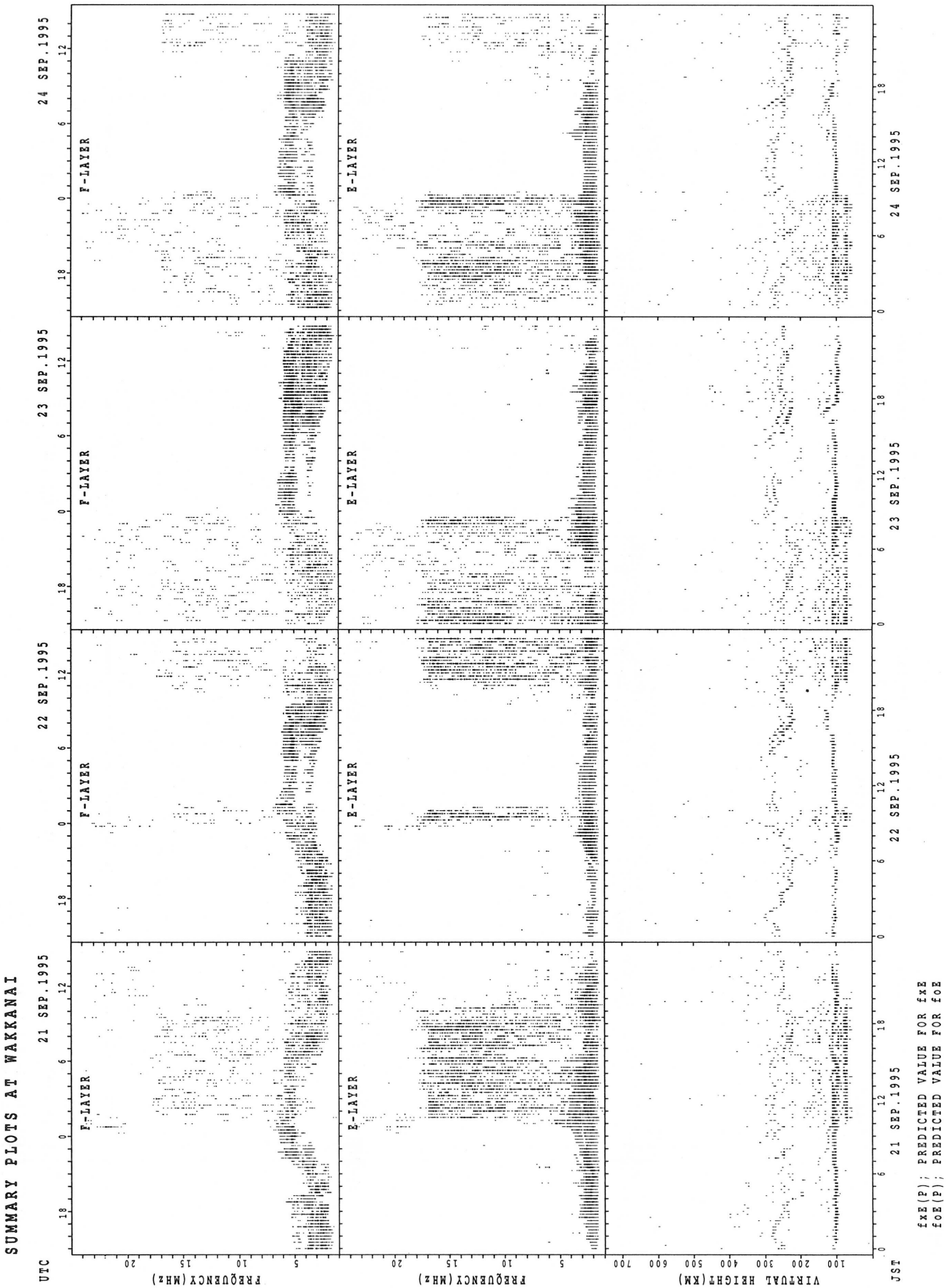
SUMMARY PLOTS AT WAKKANAI



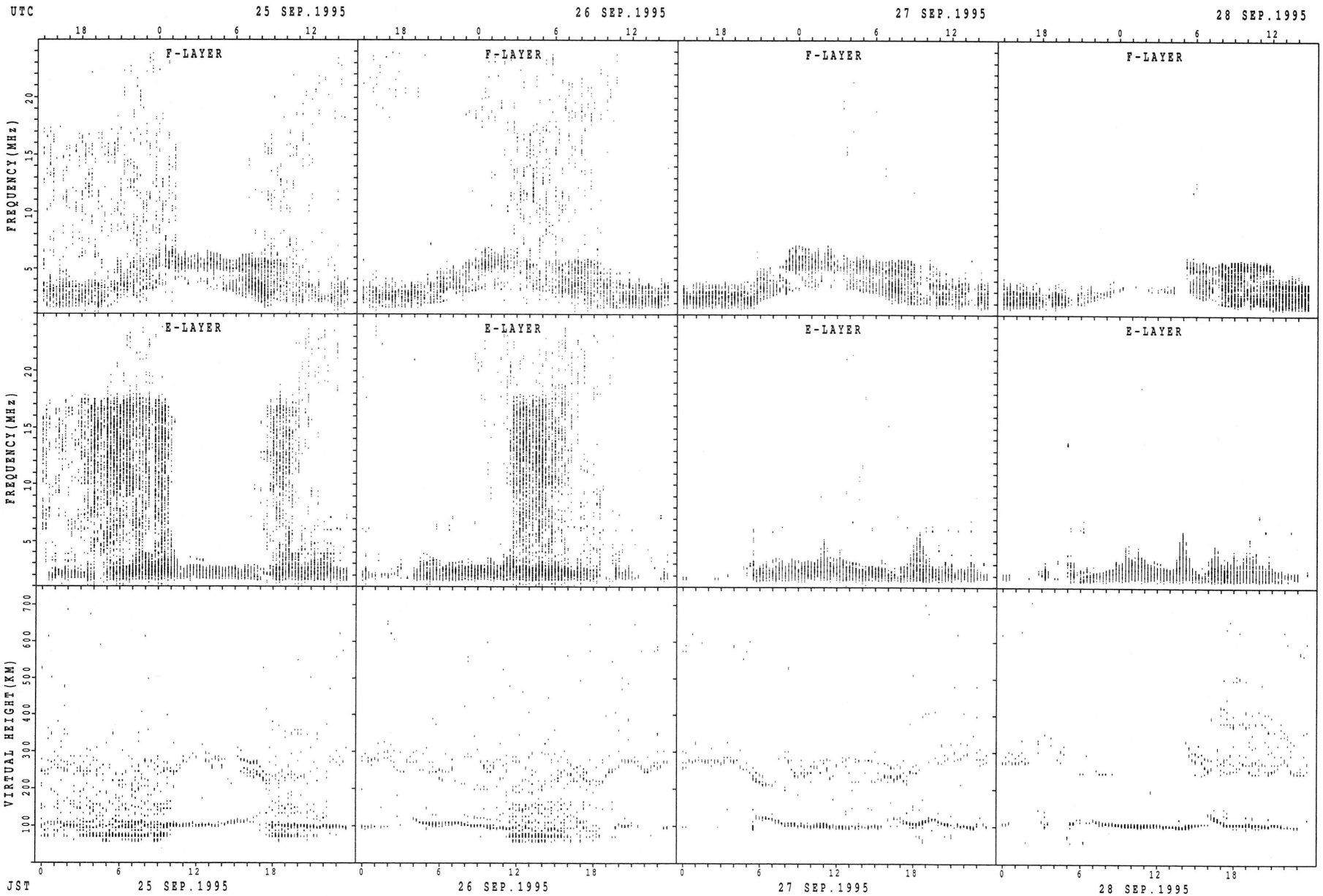
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT WAKKANAI
UTC
JST
13 SEP.1995
14 SEP.1995
15 SEP.1995
16 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT WAKKANAI
17 SEP.1995
18 SEP.1995
19 SEP.1995
20 SEP.1995
UTC
JST
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

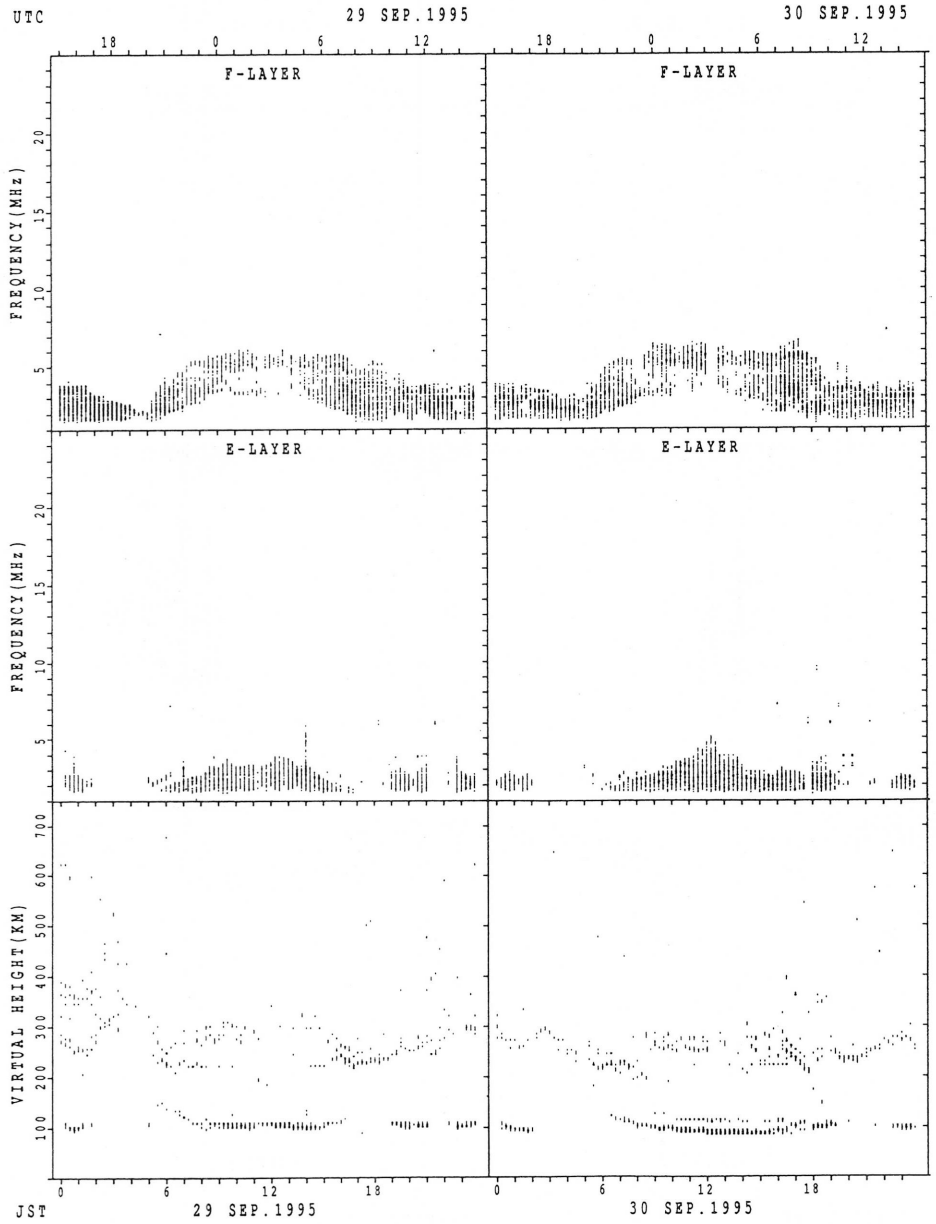

SUMMARY PLOTS AT WAKKANAI
UTC
JST
21 SEP.1995
22 SEP.1995
23 SEP.1995
24 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) ; PREDICTED VALUE FOR fxE
foE(P) ; PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI



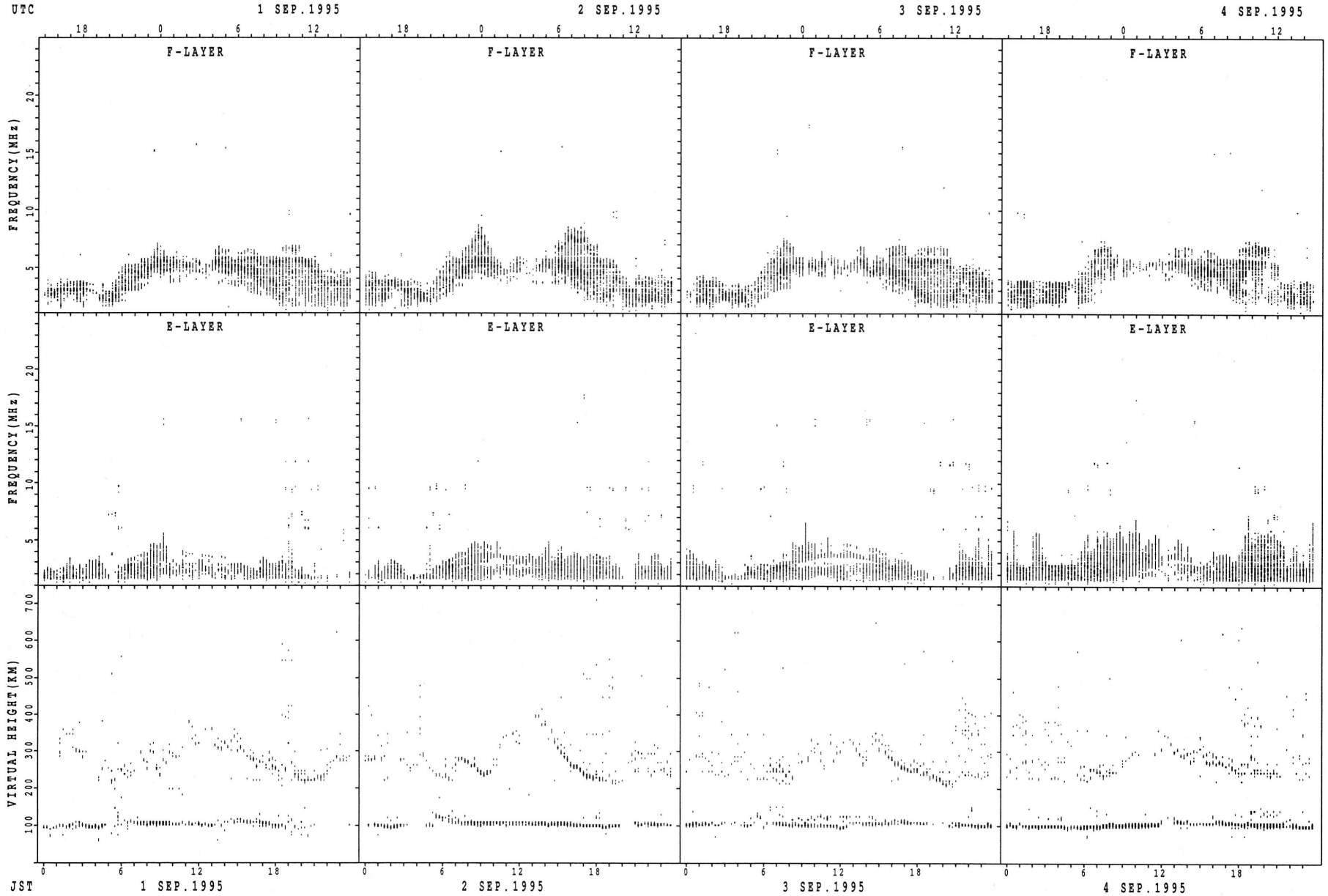
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT WAKKANAI

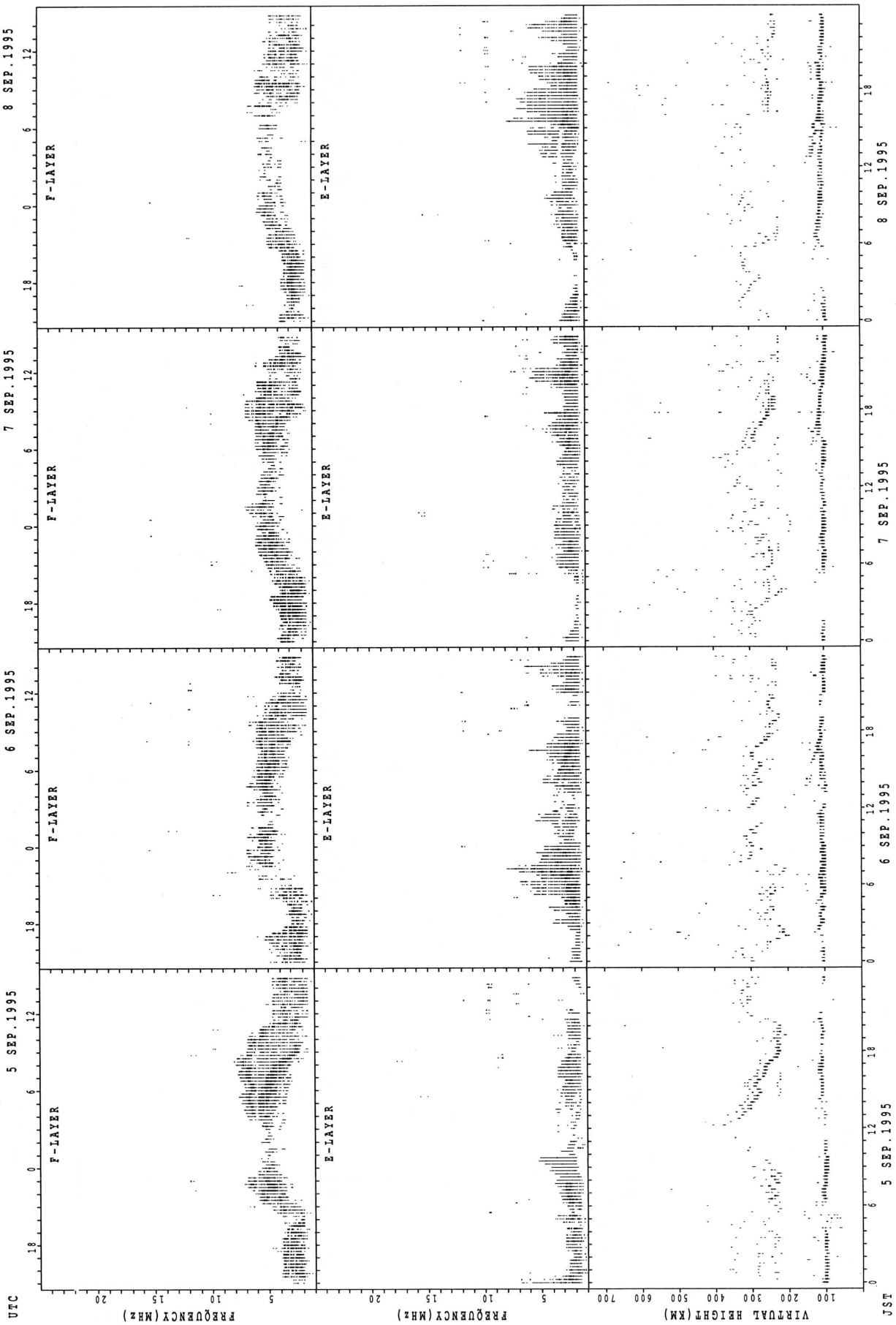


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

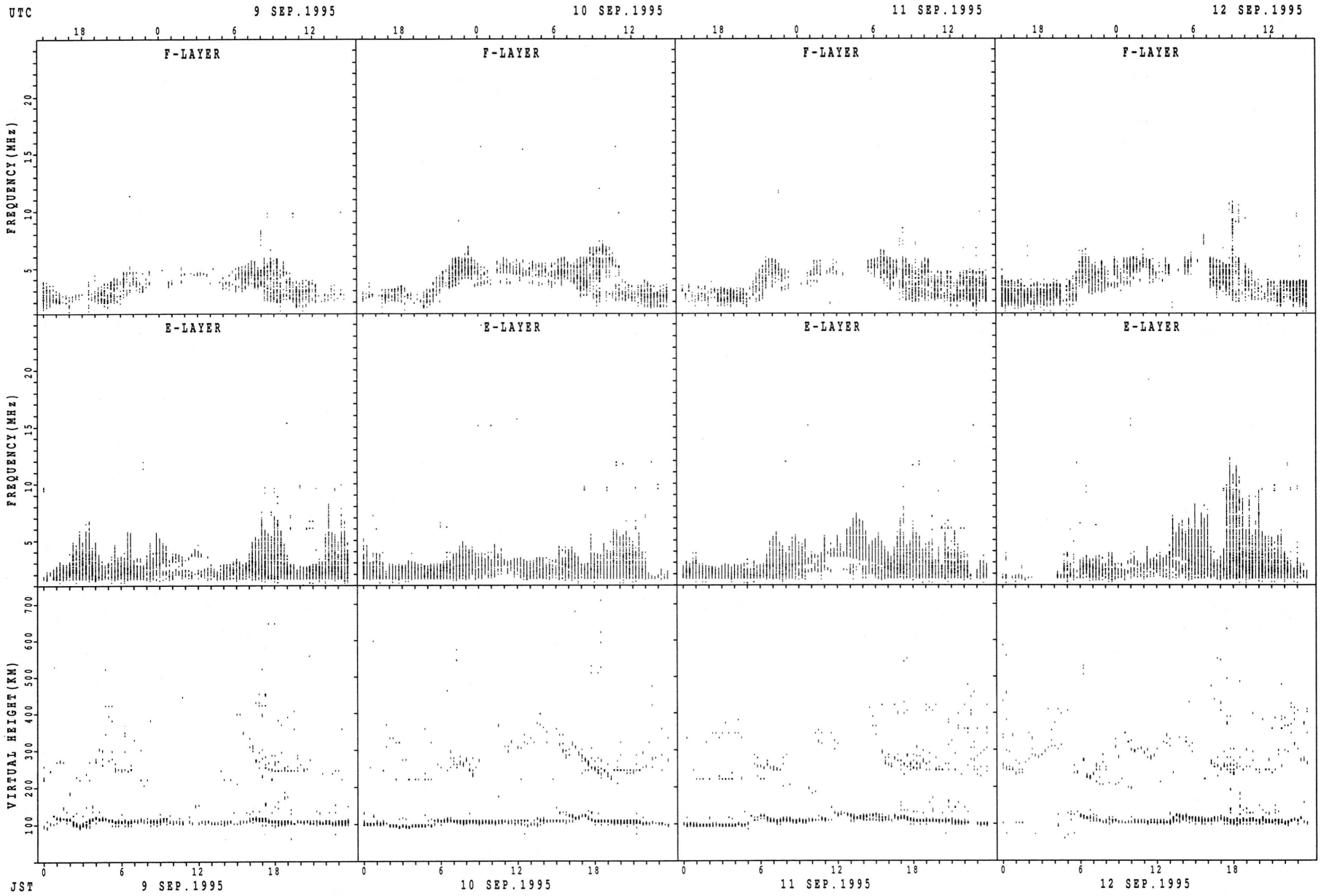
SUMMARY PLOTS AT KOKUBUNJI TOKYO



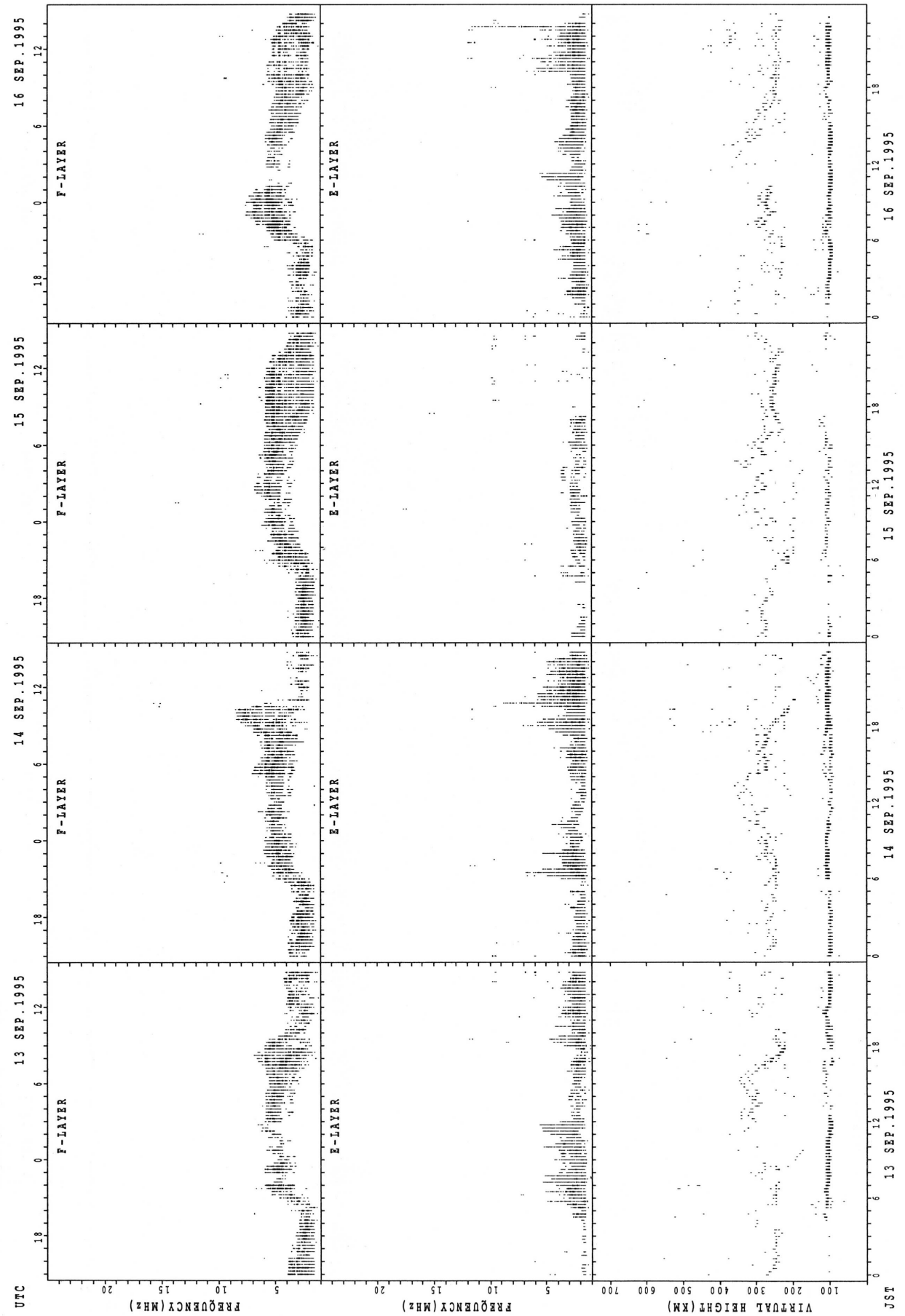
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
JST
5 SEP.1995
6 SEP.1995
7 SEP.1995
8 SEP.1995
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

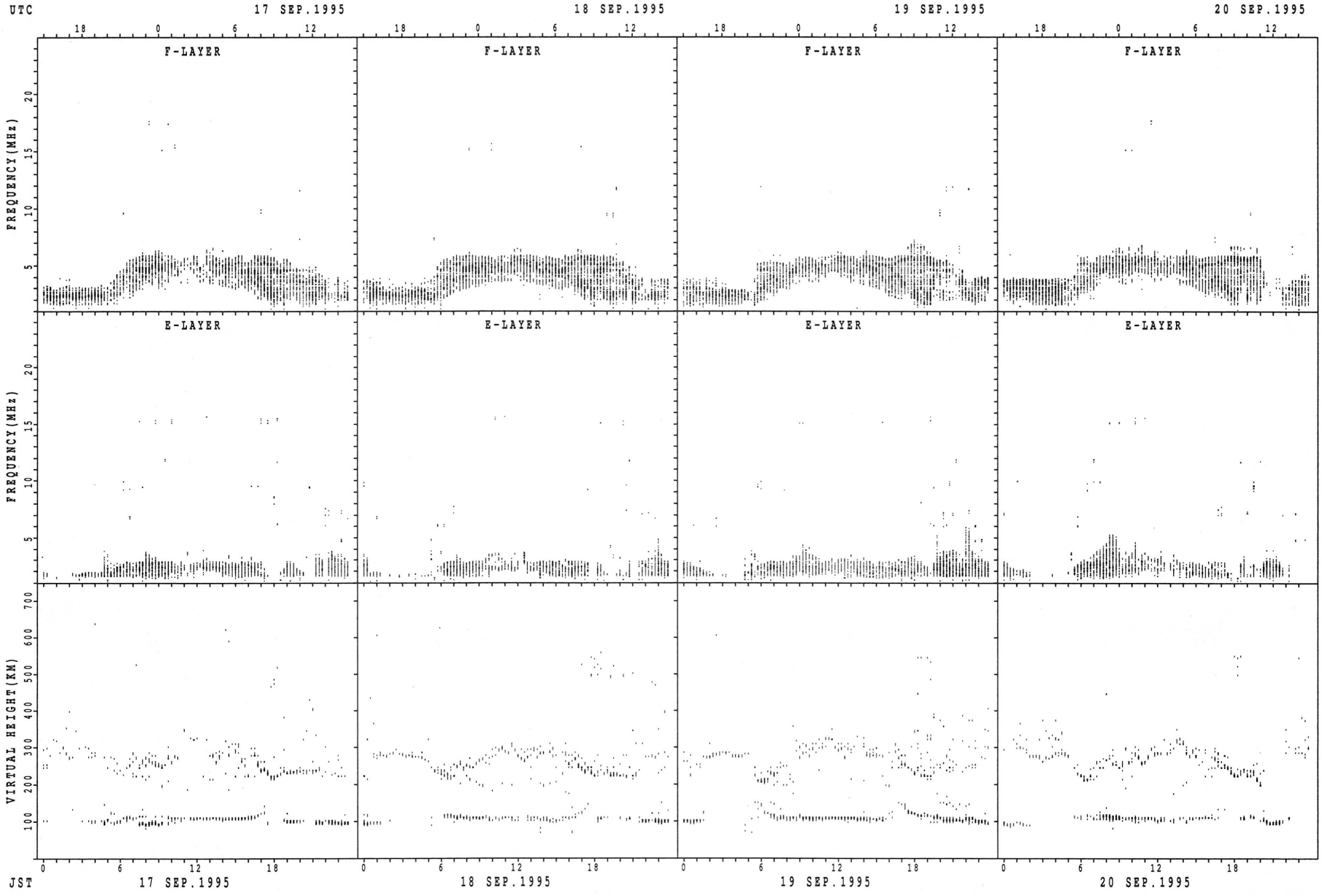
SUMMARY PLOTS AT KOKUBUNJI TOKYO



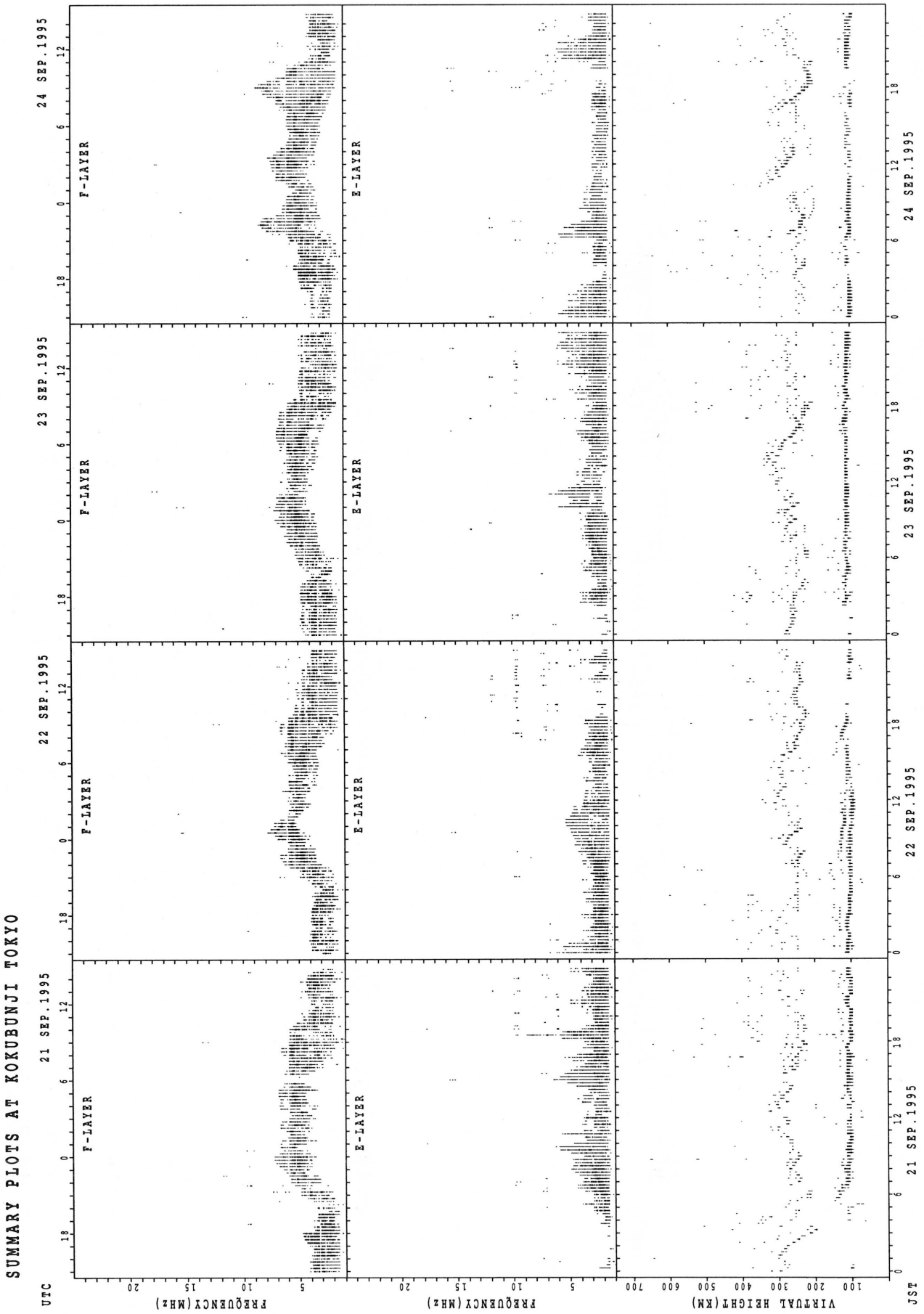
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
JST
13 SEP.1995
14 SEP.1995
15 SEP.1995
16 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) ; PREDICTED VALUE FOR fxE
foE(P) ; PREDICTED VALUE FOR foE

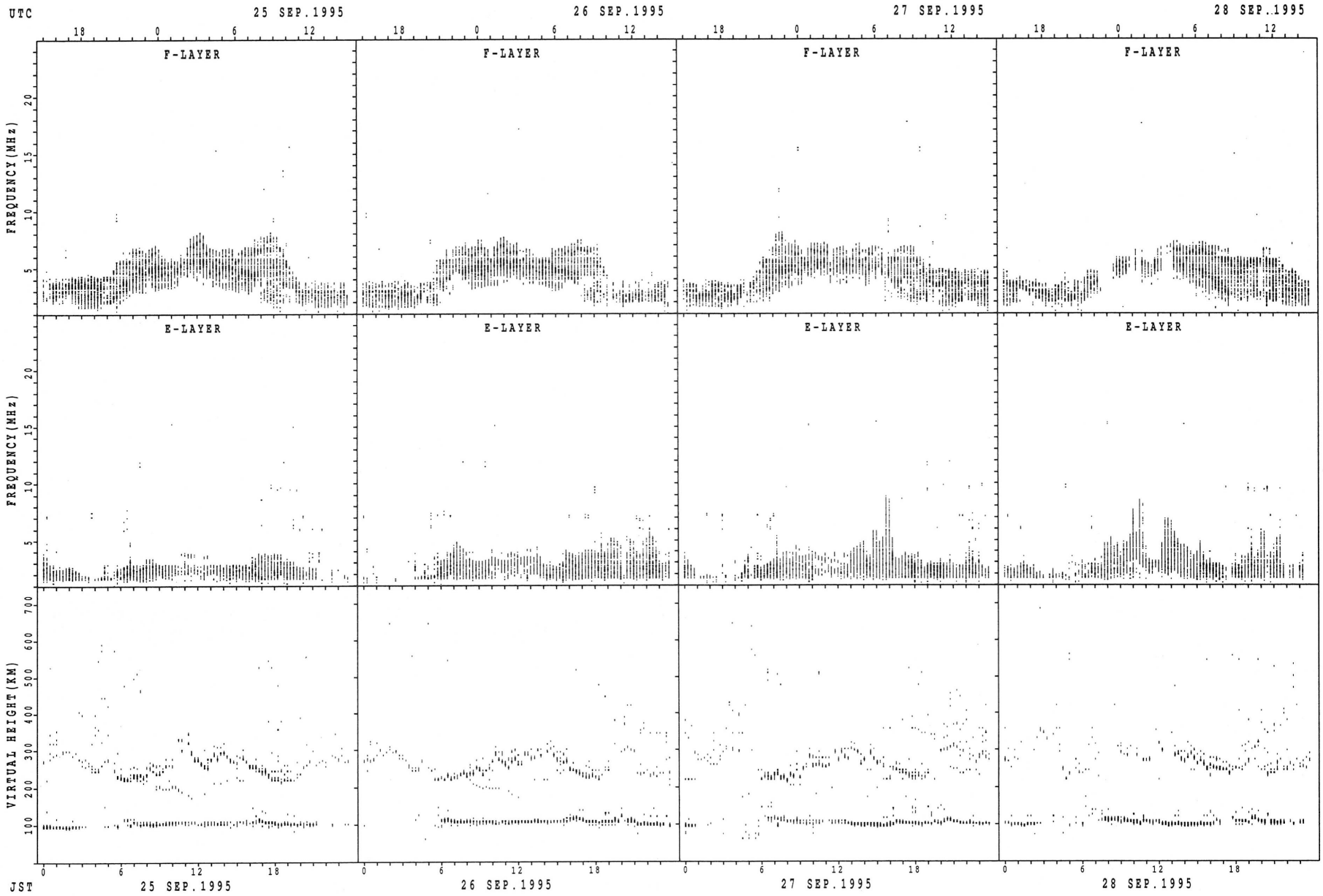
SUMMARY PLOTS AT KOKUBUNJI TOKYO



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

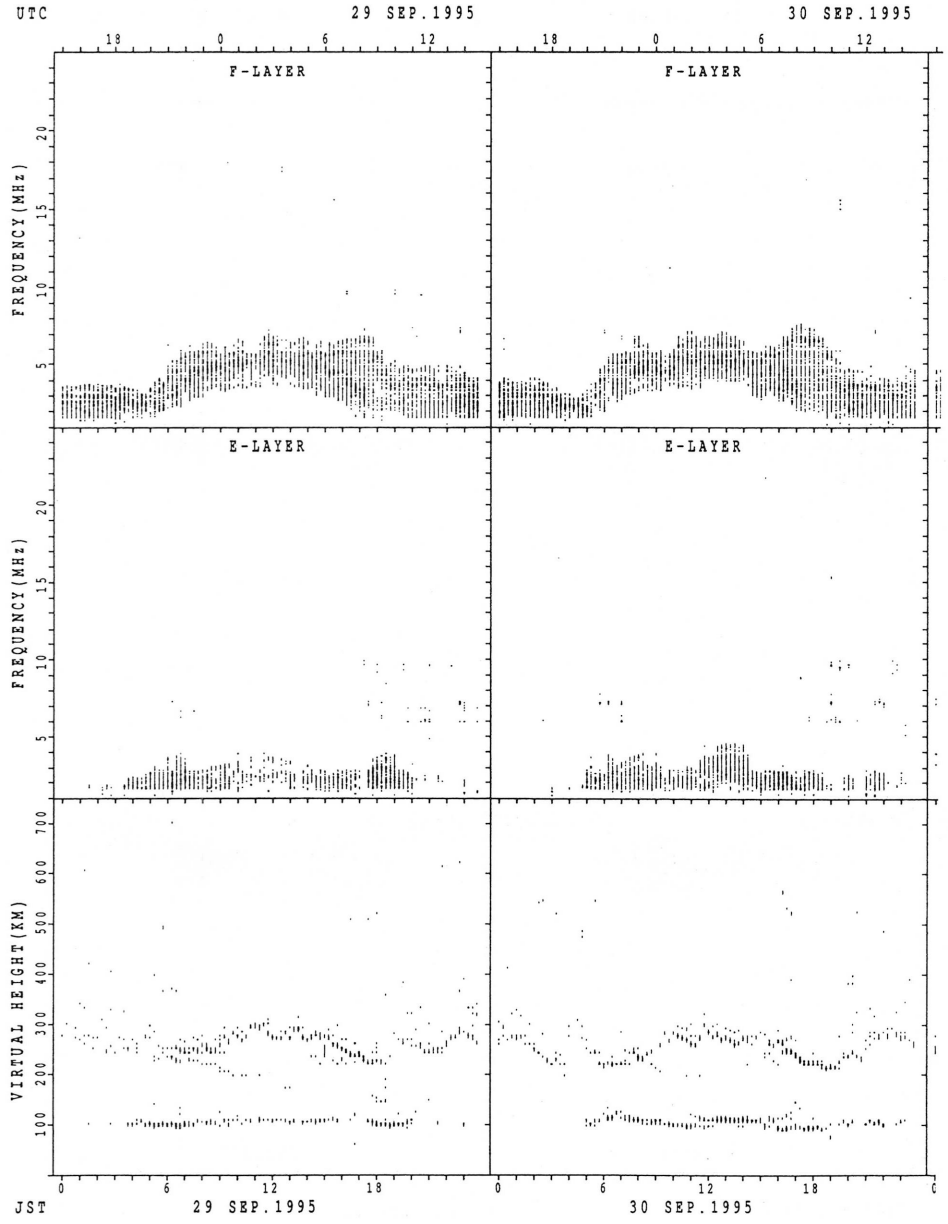

SUMMARY PLOTS AT KOKUBUNJI TOKYO
UTC
21 SEP.1995
22 SEP.1995
23 SEP.1995
24 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



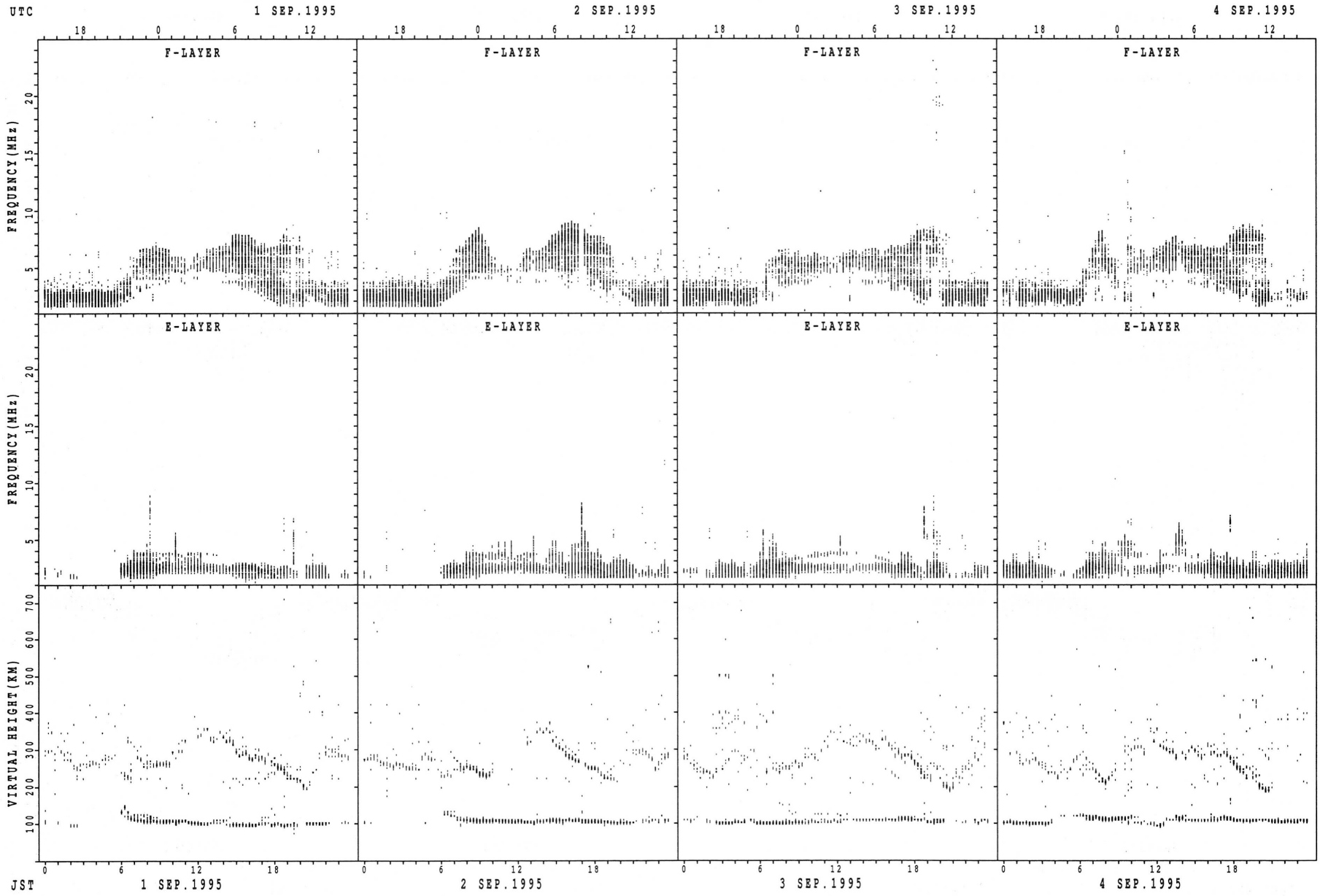
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT KOKUBUNJI TOKYO

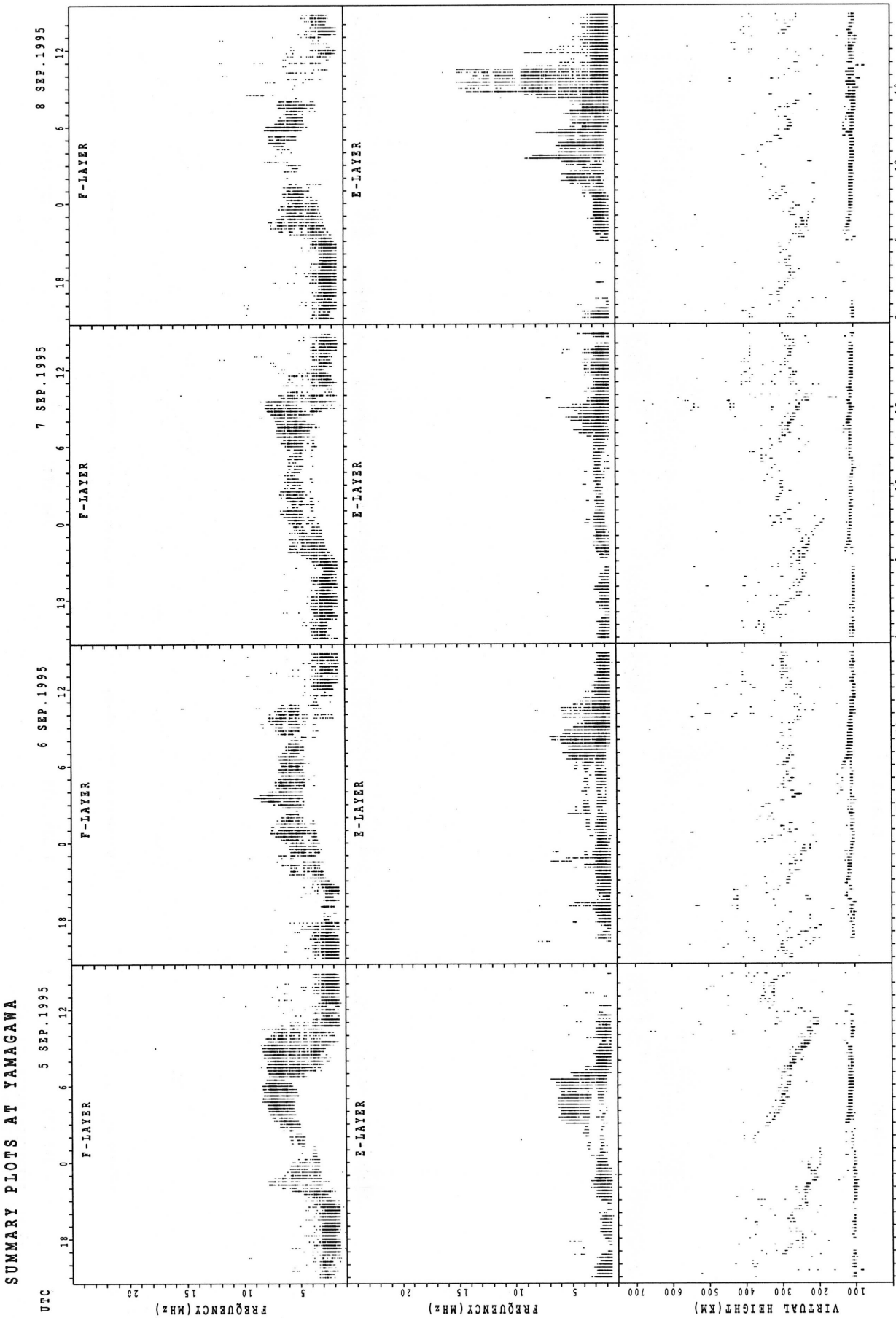


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

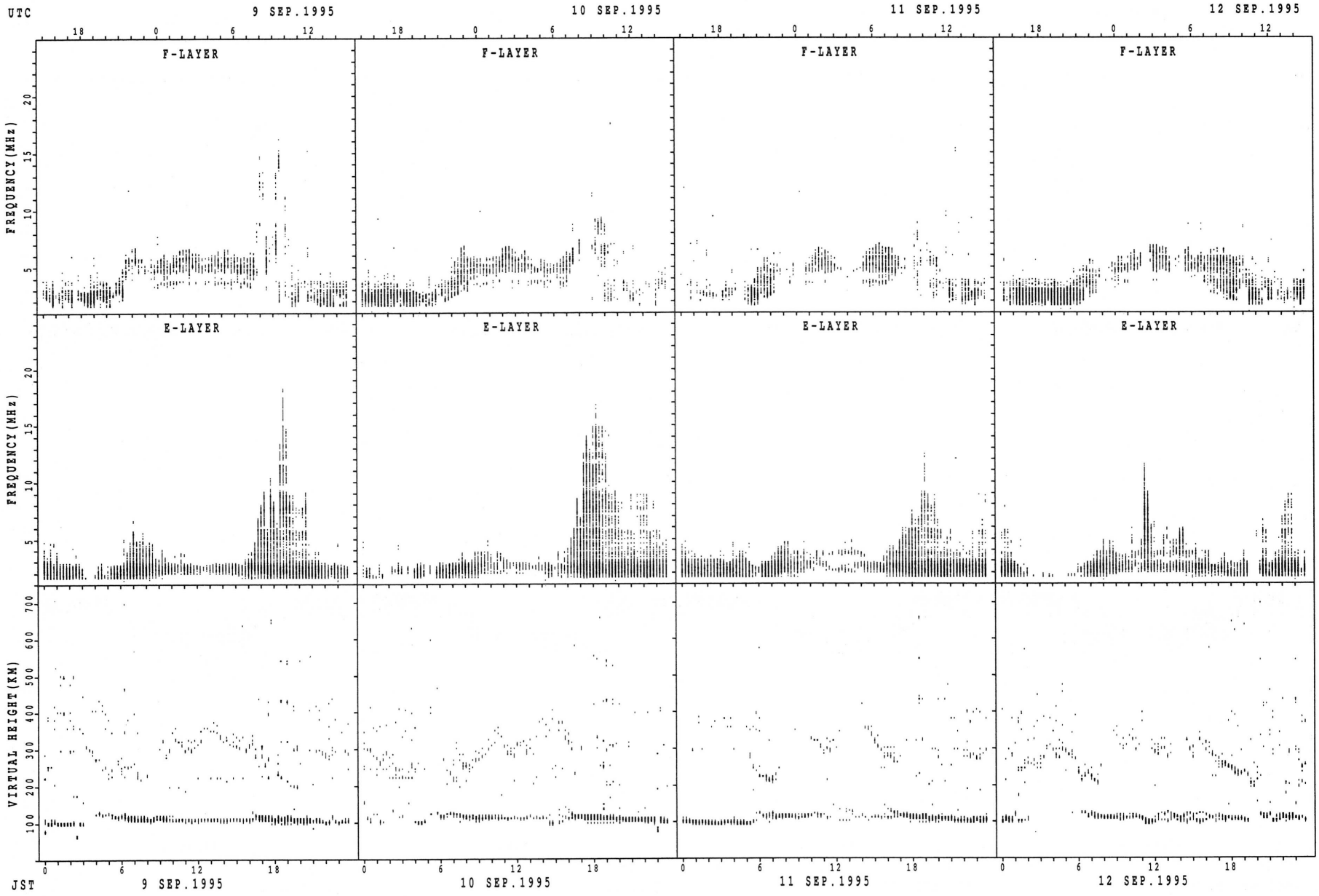
SUMMARY PLOTS AT YAMAGAWA



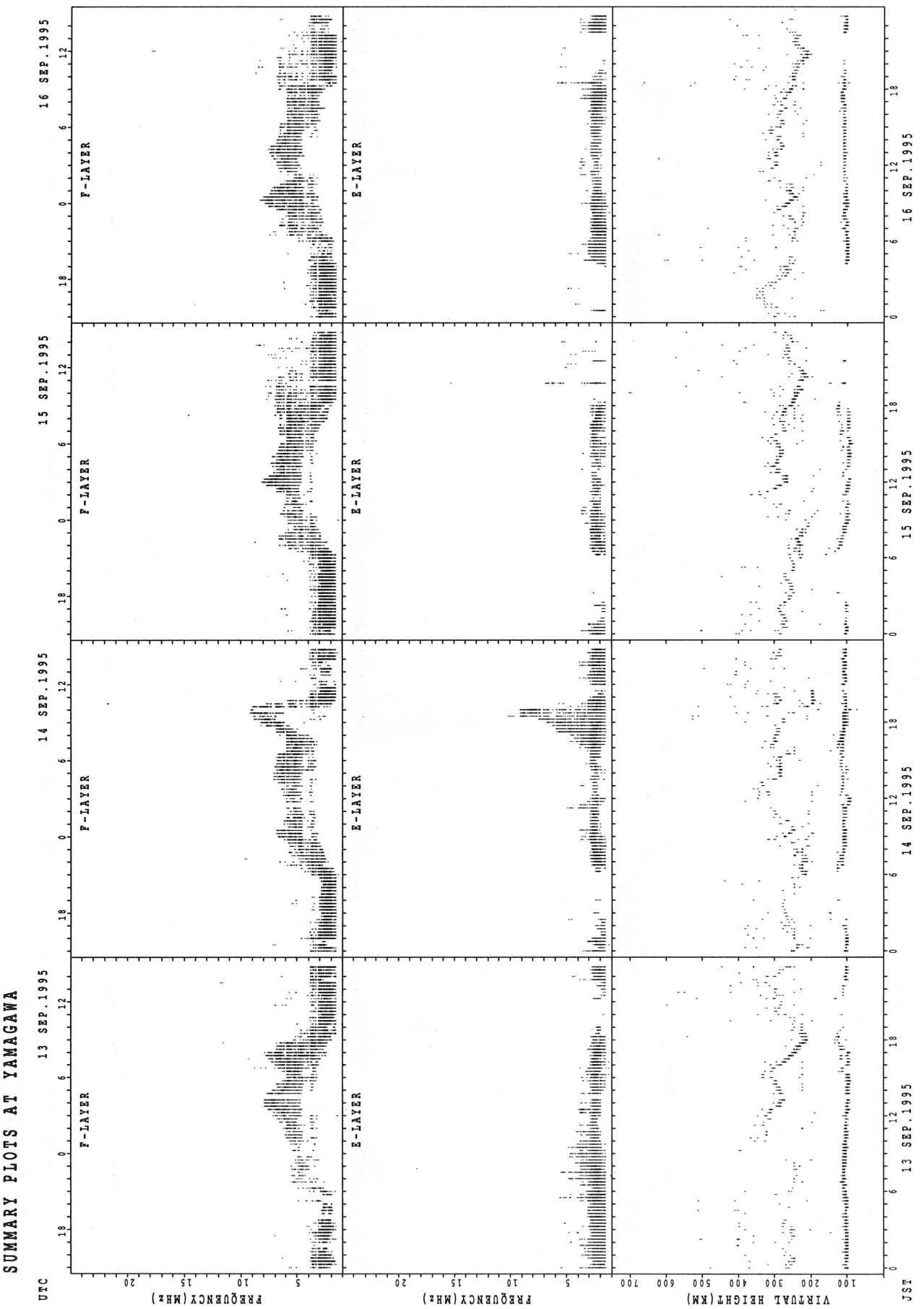
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT YAMAGAWA
UTC
JST
5 SEP.1995
6 SEP.1995
7 SEP.1995
8 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

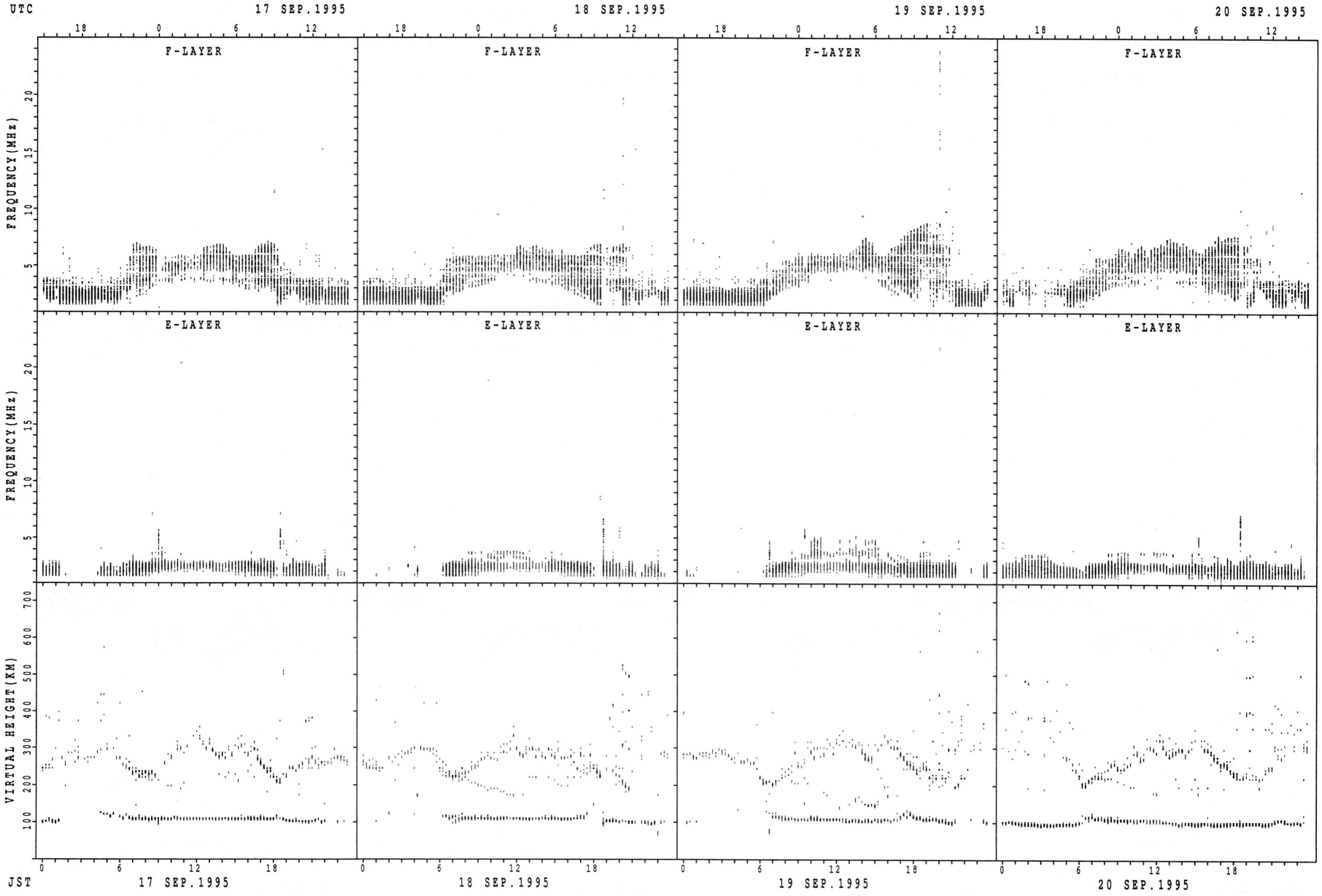
SUMMARY PLOTS AT YAMAGAWA



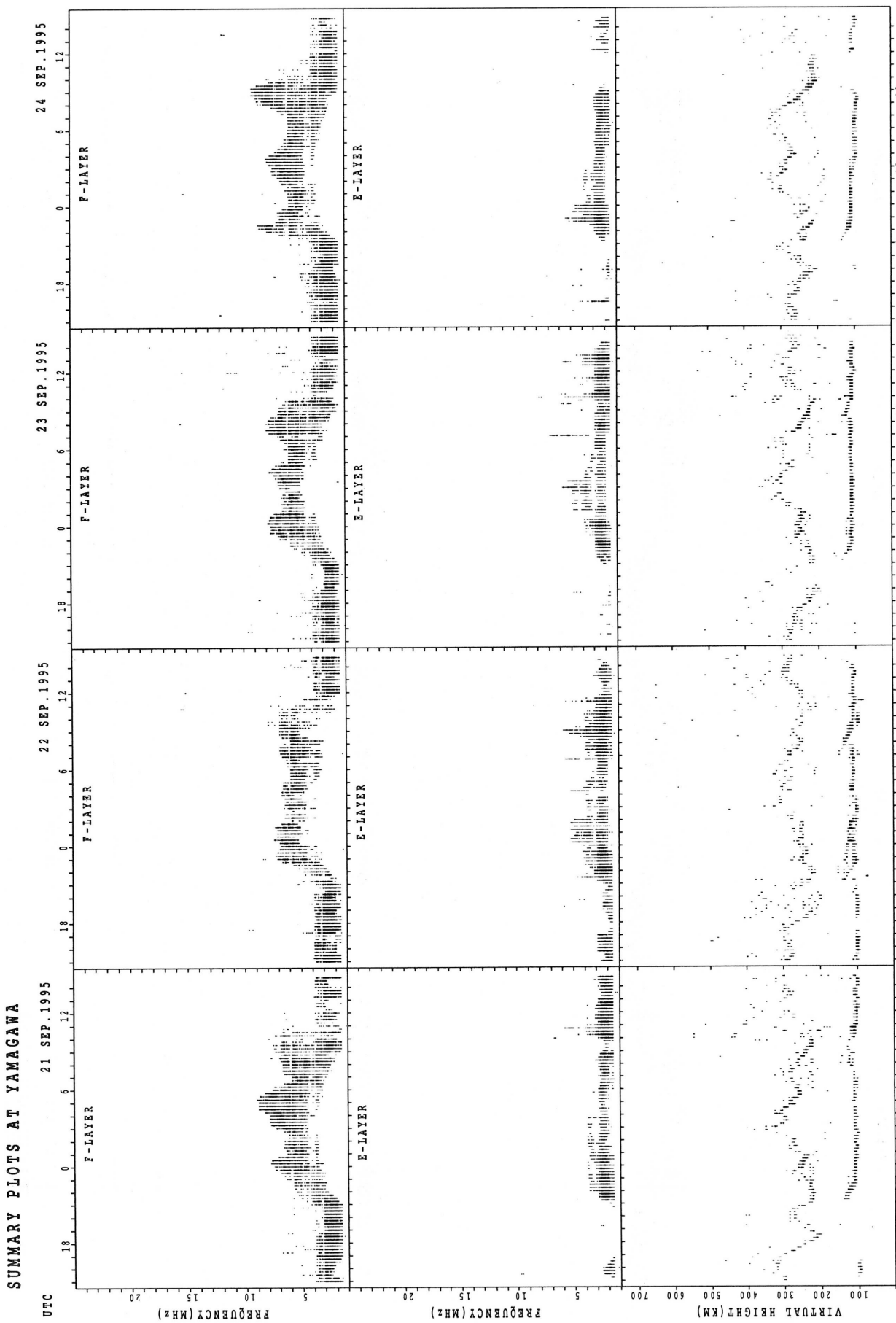
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT YAMAGAWA
UTC
JST
13 SEP.1995
14 SEP.1995
15 SEP.1995
16 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

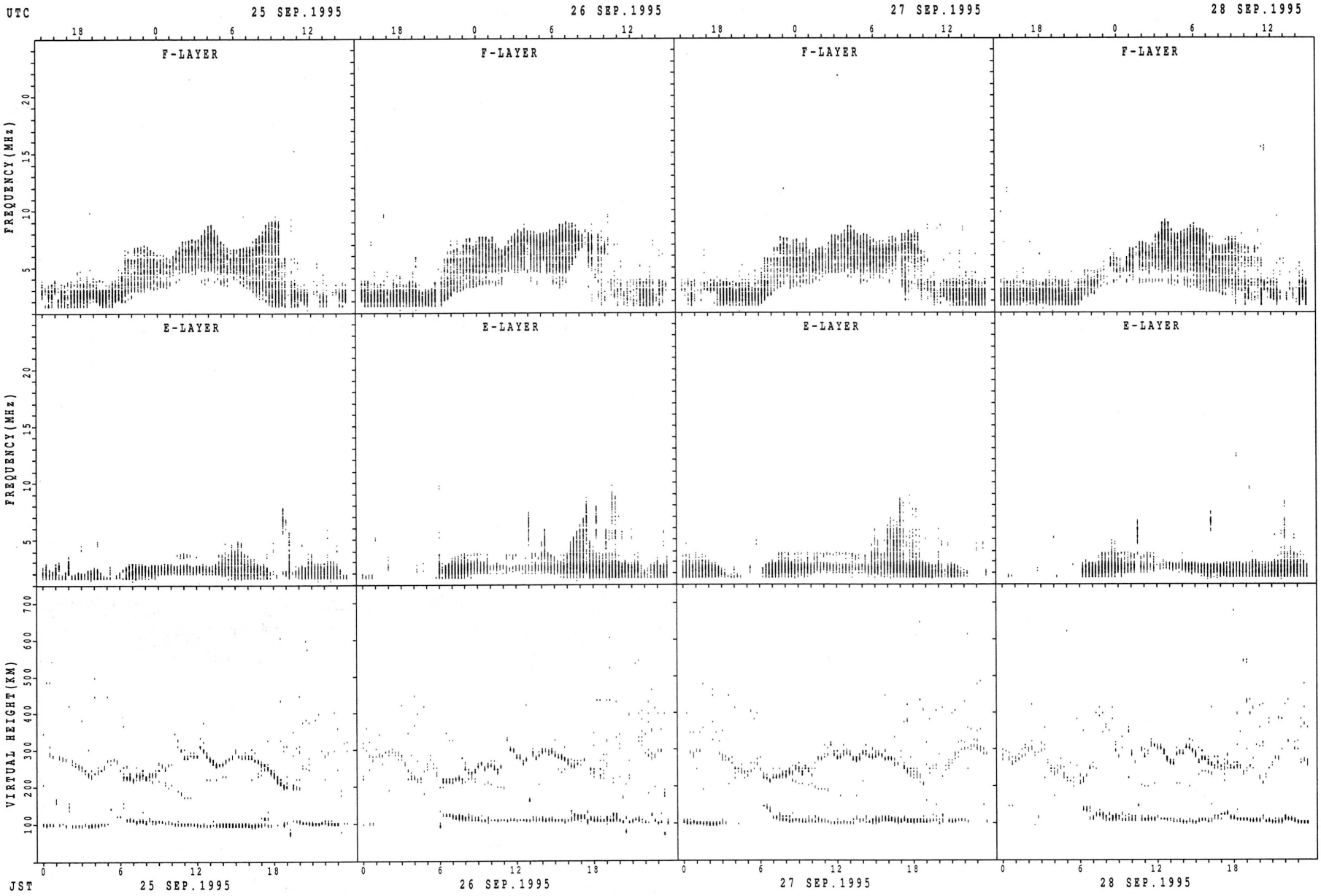
SUMMARY PLOTS AT YAMAGAWA



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

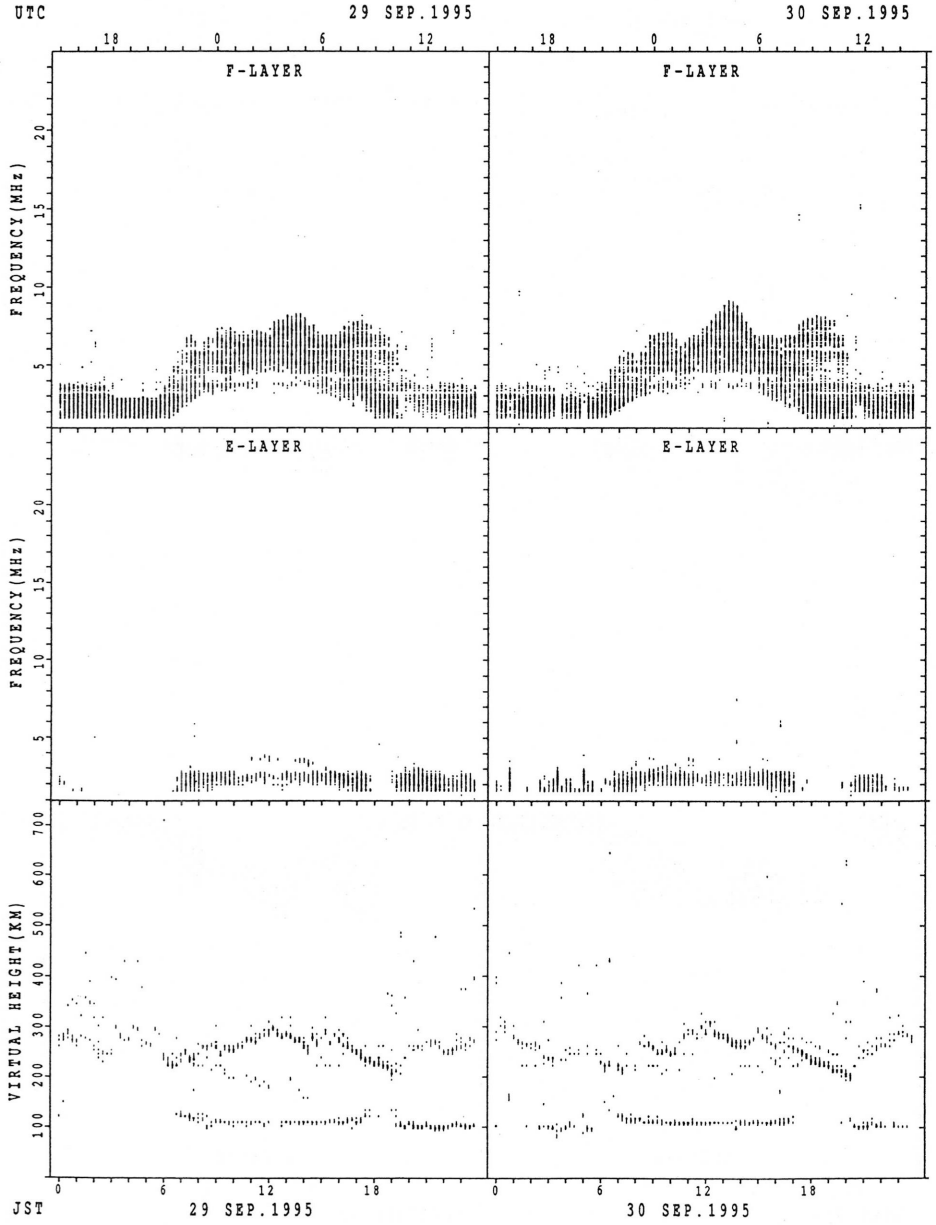

SUMMARY PLOTS AT YAMAGAWA
UTC
JST
21 SEP.1995
22 SEP.1995
23 SEP.1995
24 SEP.1995
F-LAYER
E-LAYER
FREQUENCY (MHz)
VIRTUAL HEIGHT (KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA



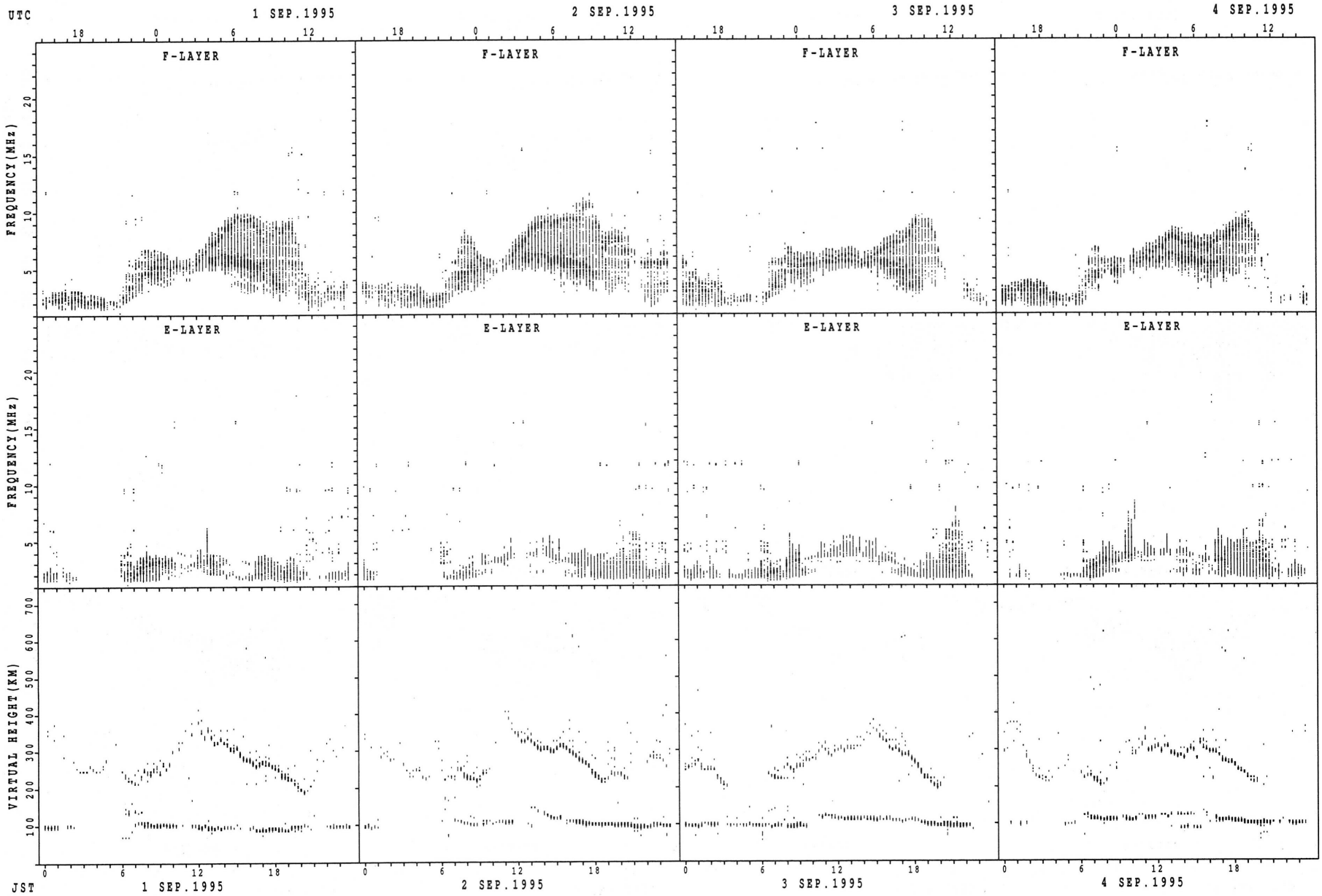
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT YAMAGAWA

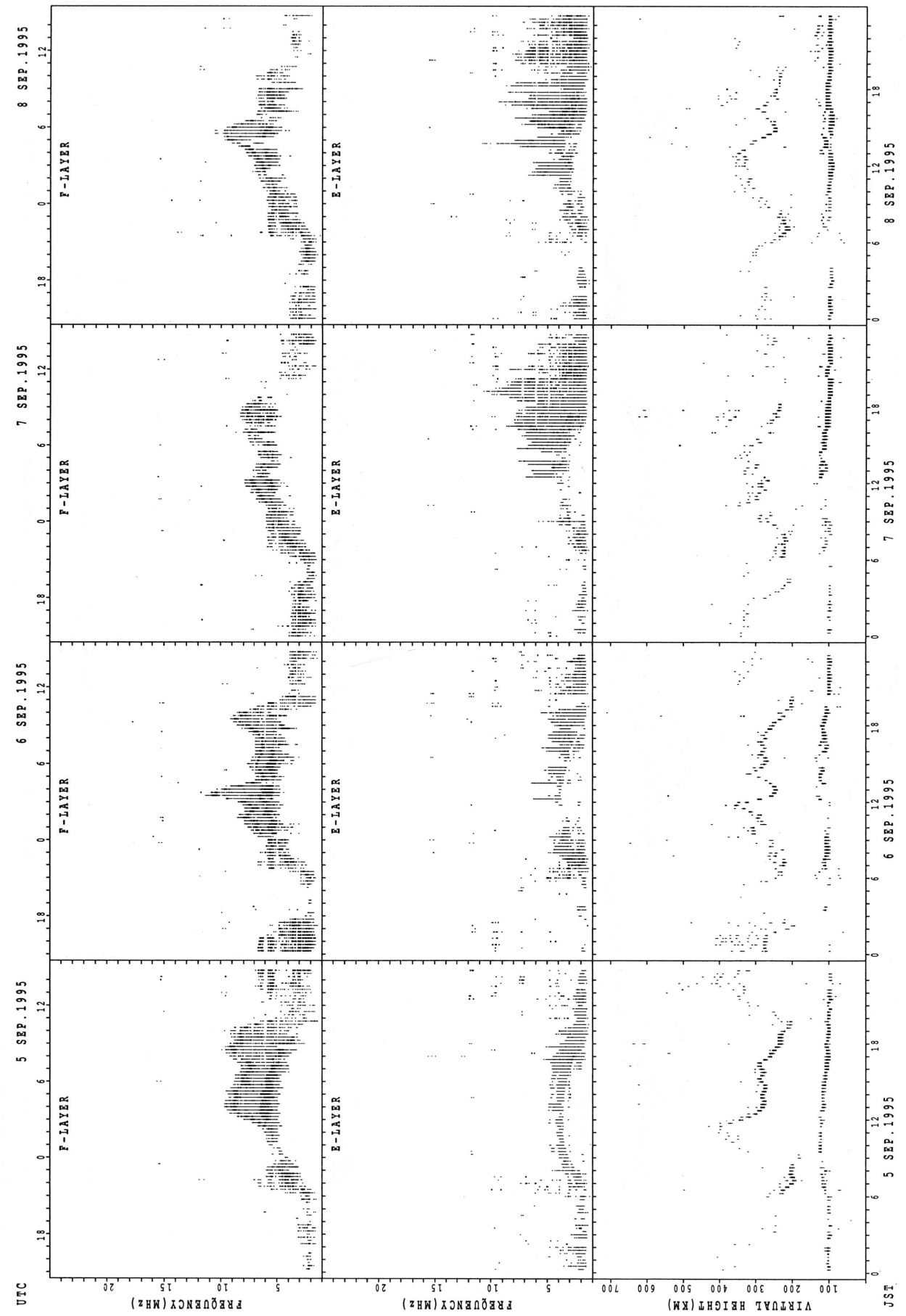


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

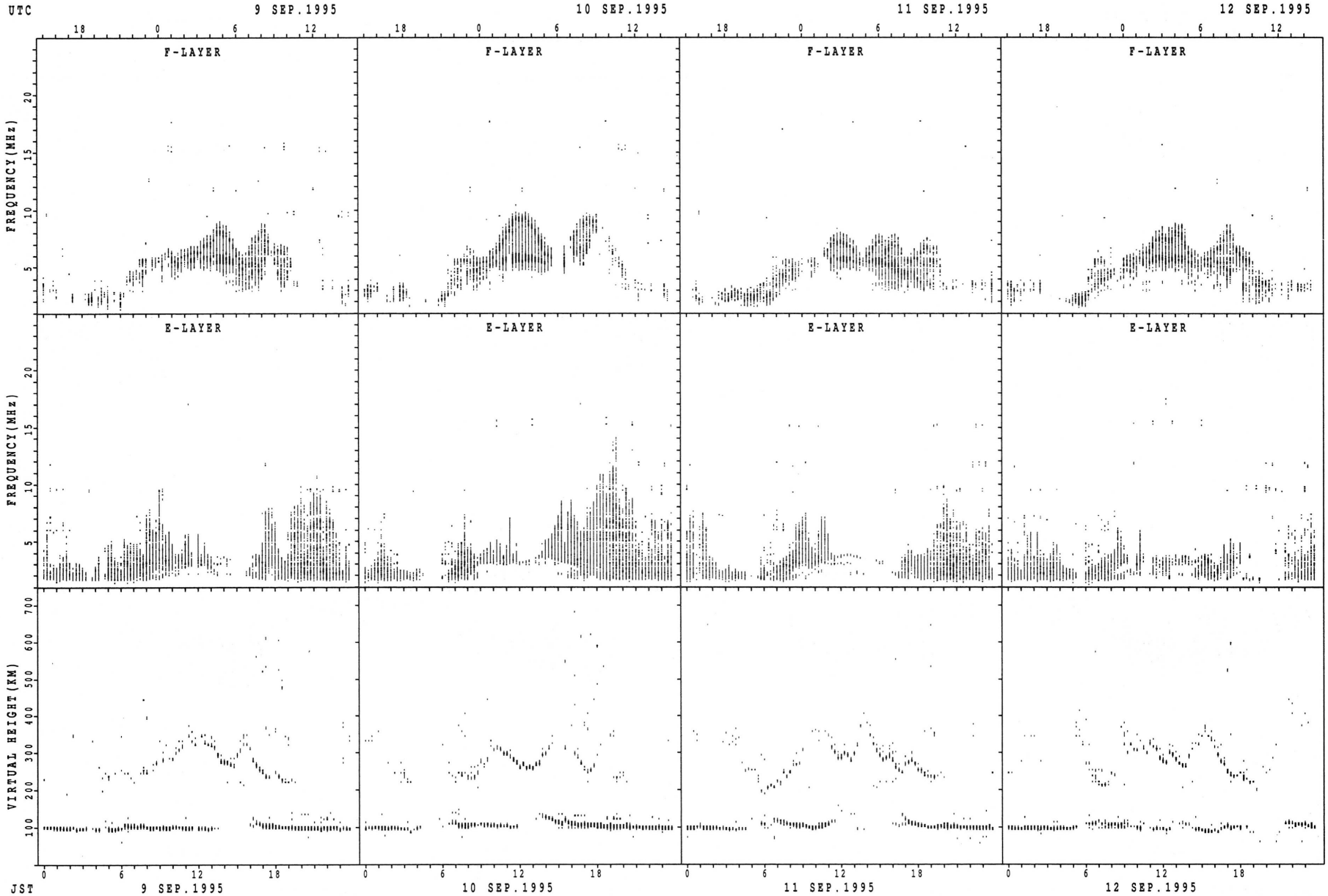
SUMMARY PLOTS AT OKINAWA



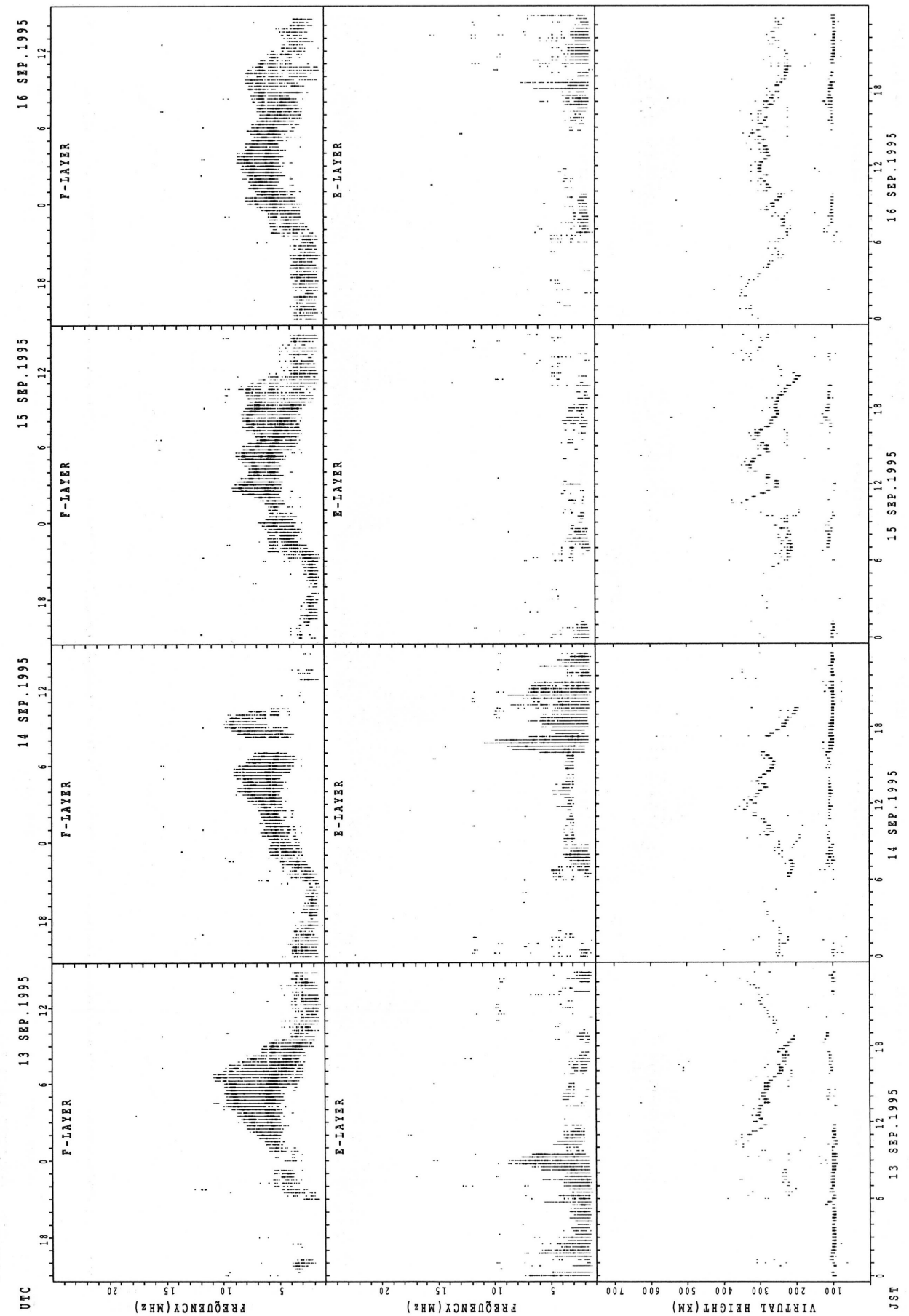
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT OKINAWA
UTC
JST
5 SEP.1995
6 SEP.1995
7 SEP.1995
8 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

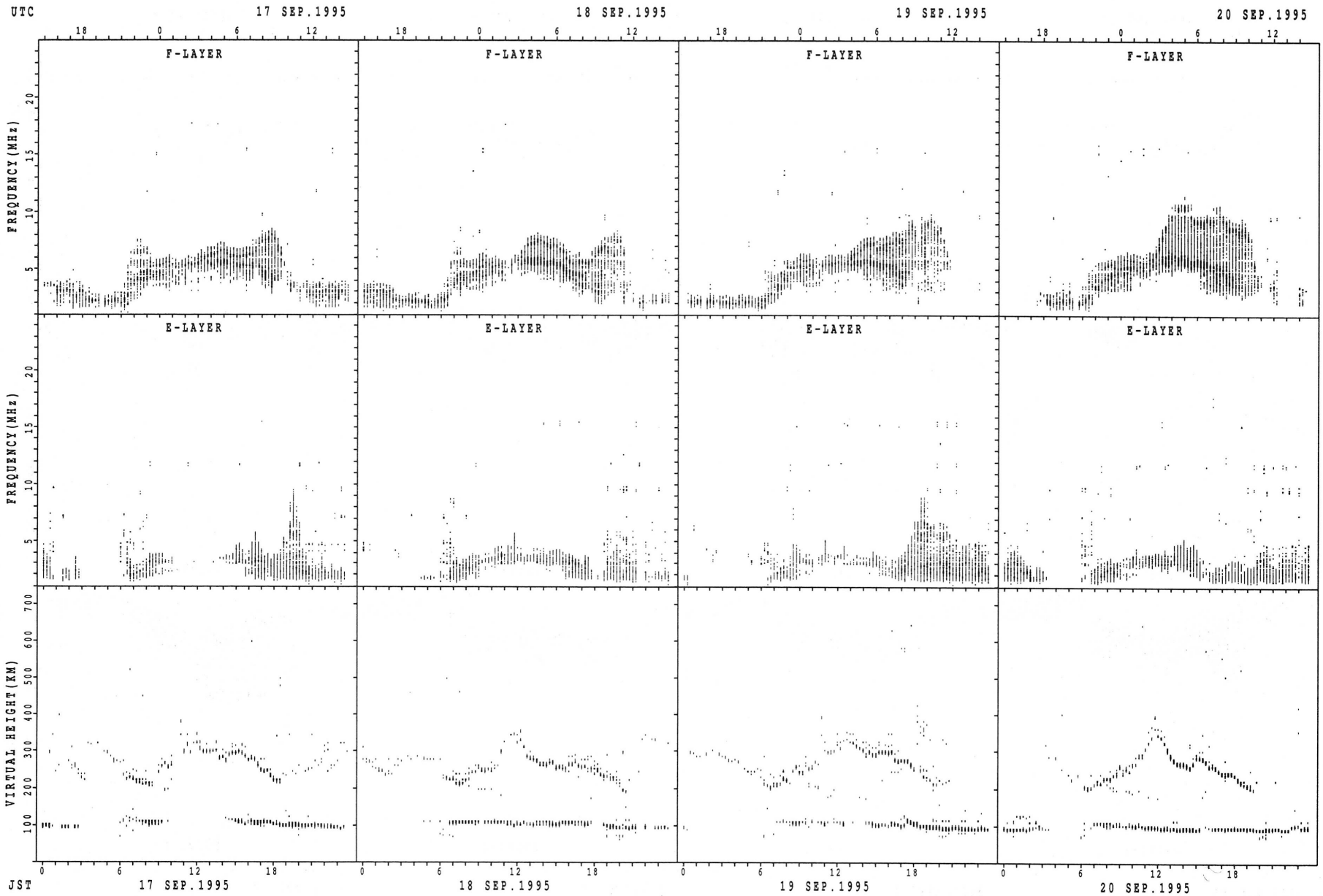
SUMMARY PLOTS AT OKINAWA



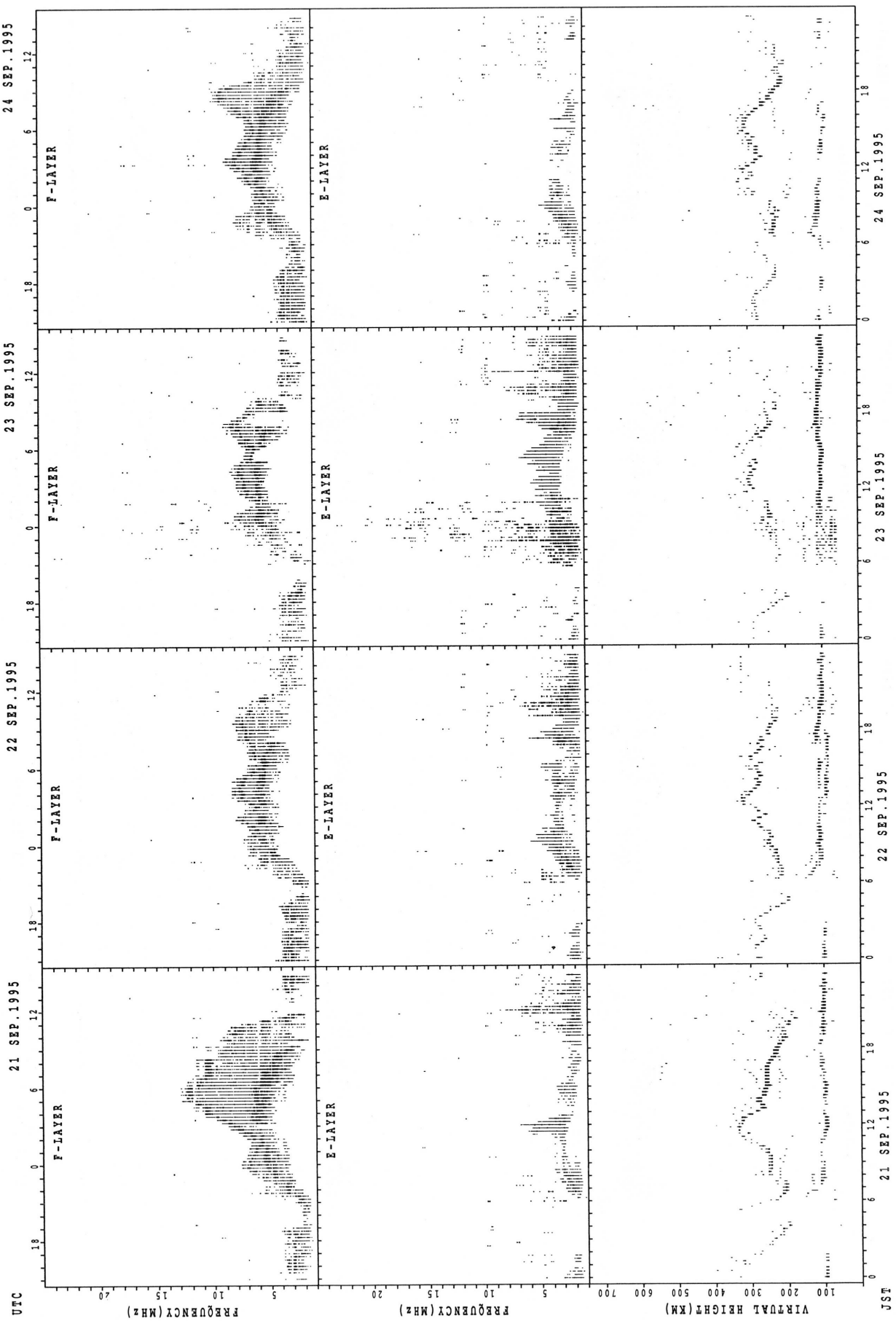
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT OKINAWA
UTC
JST
13 SEP.1995
14 SEP.1995
15 SEP.1995
16 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

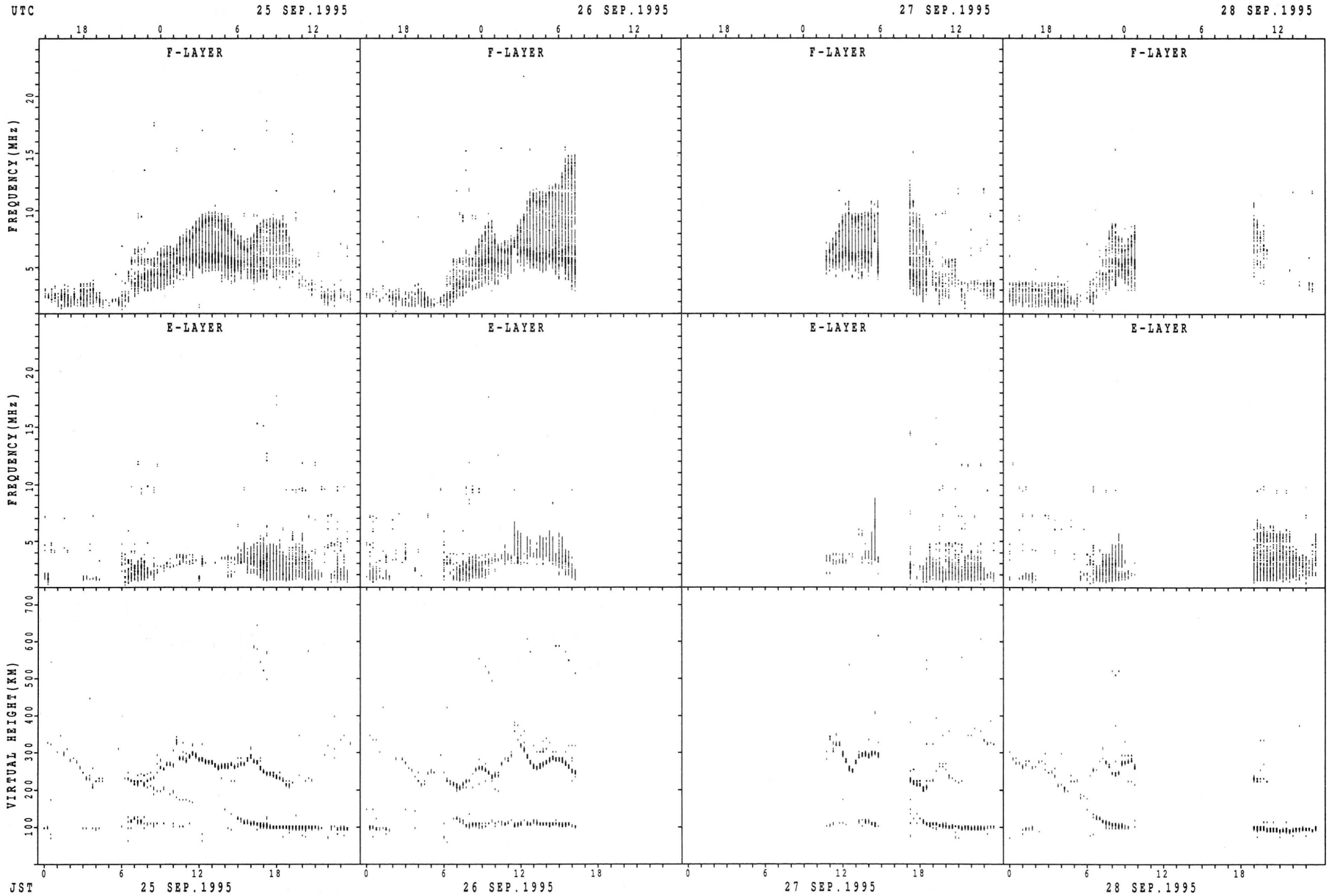
SUMMARY PLOTS AT OKINAWA



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

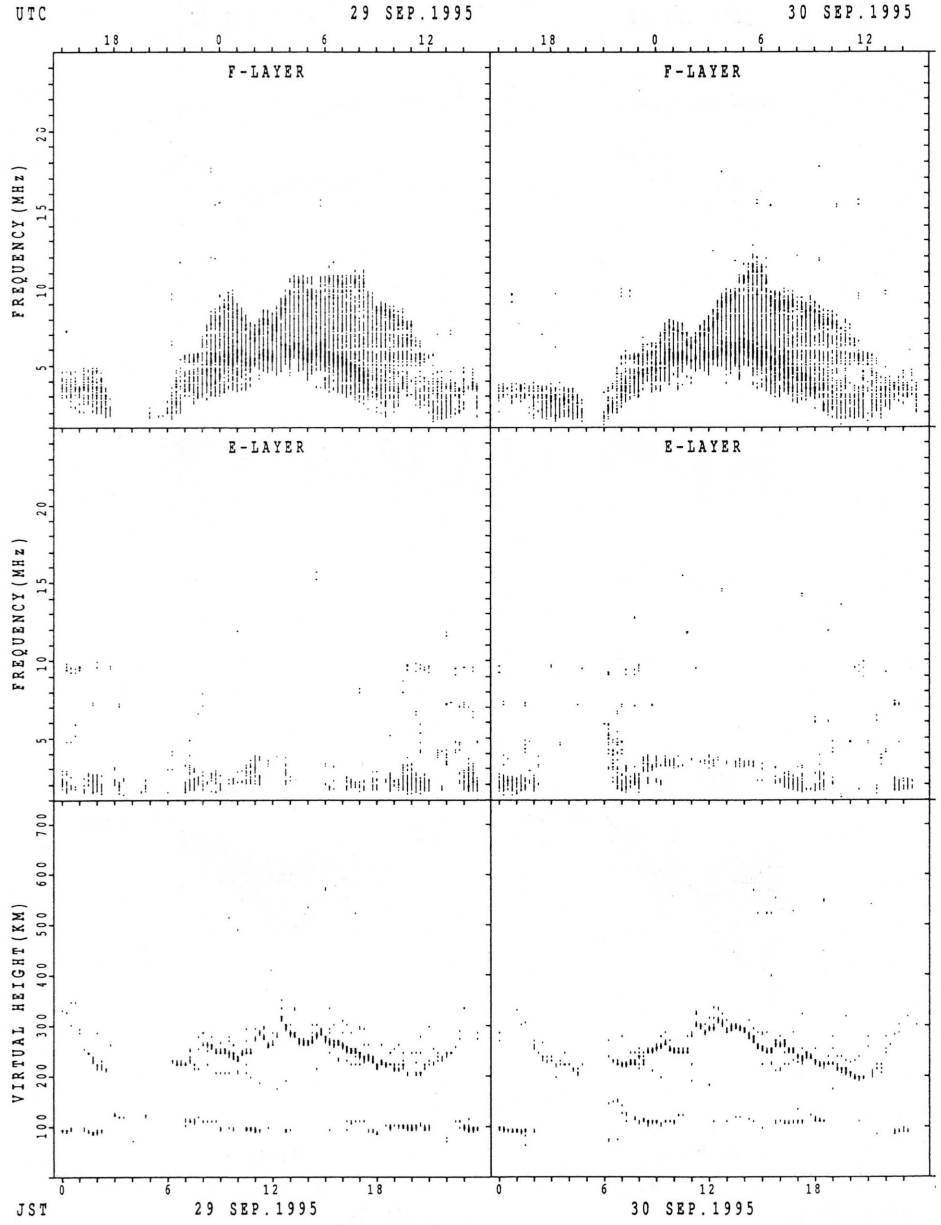

SUMMARY PLOTS AT OKINAWA
UTC
JST
21 SEP.1995
22 SEP.1995
23 SEP.1995
24 SEP.1995
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT OKINAWA



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

SUMMARY PLOTS AT OKINAWA



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

MONTHLY MEDIANS OF h'F AND h'Es

SEP. 1995 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION WAKKANAI LAT. 45.4N LON. 141.7E

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

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	15	13	12	16	23	26	29	29	30	29	28	30	29	30	30	29	23	25	24	24	21	19	16
MED	102	101	103	111	111	103	107	107	107	107	105	103	107	107	113	113	115	113	107	105	106	103	103	102
U Q	111	107	111	117	113	111	119	114	111	109	105	107	113	107	125	125	119	123	114	110	108	105	105	105
L Q	97	97	98	102	106	99	105	105	103	105	102	99	103	103	103	105	110	111	102	104	105	99	99	101

h'F STATION KOKUBUNJI LAT. 35.7N LON. 139.5E

	00	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	18								14						
MED									262	269								263						
U Q									275	296								270						
L Q									248	256								254						

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	14	14	12	13	11	28	30	30	30	29	28	25	29	29	30	28	27	22	23	23	24	22	23
MED	103	103	103	103	105	105	118	113	111	107	107	107	109	109	107	113	113	113	108	109	109	107	105	103
U Q	106	105	107	105	110	113	126	115	113	113	109	113	118	117	113	127	119	121	111	111	111	112	107	107
L Q	98	99	99	99	102	99	107	109	107	105	106	105	107	104	105	107	111	107	103	105	105	106	105	99

h'F STATION YAMAGAWA LAT. 31.2N LON. 130.6E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								10	13	15	13	13	17	19	20	19	19	22	22	10				
MED								248	262	262	280	314	304	286	294	308	298	281	262	255				
U Q								254	265	272	298	332	338	310	299	314	312	298	278	274				
L Q								244	232	254	256	292	287	276	287	282	280	272	248	248				

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	21	15	12	14	13	10	16	30	30	30	28	30	28	28	29	28	30	30	28	26	22	24	23	23
MED	105	103	105	103	105	105	117	119	113	113	111	111	111	114	113	113	115	114	111	112	107	105	107	105
U Q	107	107	131	107	109	121	126	123	115	113	113	115	173	140	115	114	125	119	118	115	111	111	111	109
L Q	105	101	100	101	102	103	105	113	111	107	109	109	107	106	105	108	111	107	106	107	105	103	103	105

MONTHLY MEDIANS OF h'F AND h'Es

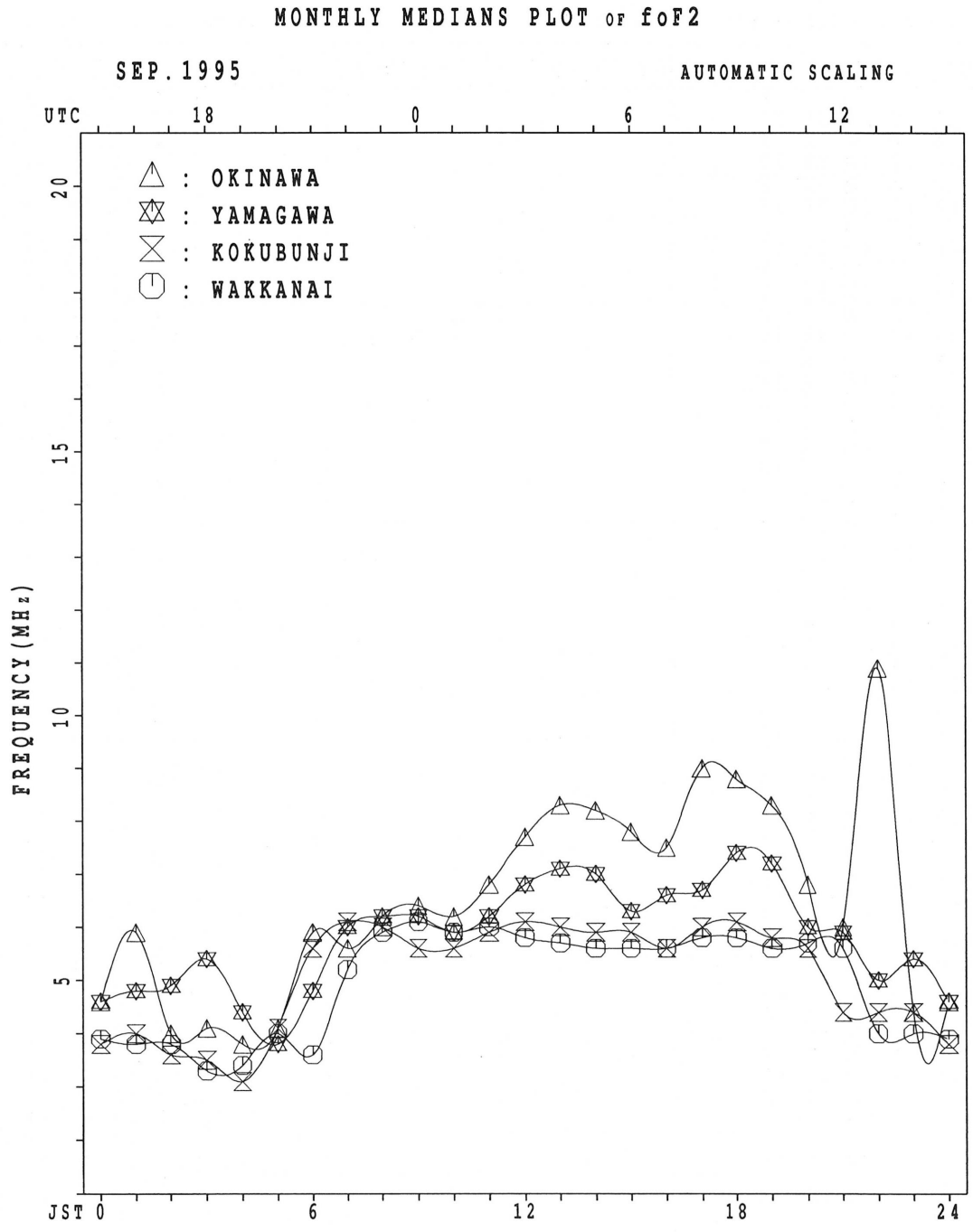
SEP.1995 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION OKINAWA LAT. 26.3N LON. 127.8E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								10	15	14	13	19	26	27	25	25	23	22	24	19				
MED								225	250	260	272	320	311	288	286	282	288	256	239	240				
U Q								232	260	278	308	340	336	310	300	310	306	270	262	250				
L Q								222	228	246	248	296	288	278	273	268	262	246	231	224				

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	11	14	10			10	28	28	27	22	21	20	18	21	20	24	27	23	25	23	23	22	24
MED	101	101	100	97			110	118	109	107	106	107	112	110	115	110	108	107	107	103	99	103	99	100
U Q	103	103	101	99			117	125	112	113	111	115	139	117	125	113	113	113	113	105	105	105	103	103
L Q	97	99	97	97			103	113	107	105	105	100	98	99	109	100	106	103	103	99	97	97	97	97


MONTHLY MEDIANS PLOT OF foF2
SEP. 1995
AUTOMATIC SCALING
UTC
18
0
6
12
△ : OKINAWA
✡ : YAMAGAWA
⧖ : KOKUBUNJI
◯ : WAKKANAI
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

SEP. 1995 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 36	37	40	39	36	X 37														X 72	X 68	X 59	X 50	X 48
2	X 48	X 45	X 42	X 42	X 38	X 39														X 63	X 45	X 47	X 44	X 46
3	X 45	44	X 42	X 39	X 37	X 38						61								X 71	X 71	X 53	54	52
4	41	40	40	40	39	X 43														X 77	76	X 56	X 41	X 40
5	O X 40	X 39	41	41	36	X 40														X 75	X 59	X 49	X 50	X 49
6	X 48	X 47	X 53	A	30	X 38														X 58	X 56	X 45	X 45	44
7	44	X 39	42	46	X 40	X 44														X 68	X 62	50	X 51	42
8	X 43	X 37	X 38	X 39	X 38	X 37														X 57	X 56	X 55	X 52	X 47
9	X 44	X 33	X 31	A	X 31	X 38														X 52	X 44	X 38	X 35	X 34
10	35	A	X 34	36	O X 31	X 33														X 76	X 54	45	X 40	X 36
11	X 37	37	X 34	X 32	32	X 34														X 61	X 50	51	46	48
12	46	42	X 35	X 38	38	X 38														X 57	A	42	42	42
13	42	X 41	X 39	X 36	X 32	X 34														X 49	X 42	43	42	44
14	X 42	X 40	X 38	37	X 36	37														X 87	X 52	38	A	A
15	X 36	X 36	X 36	X 36	X 36	X 37													X 62	X 65	X 63	X 61	X 55	X 45
16	X 42	X 39	X 39	X 43	X 42	X 41													X 54	X 59	X 59	54	54	45
17	37	X 34	X 34	X 33	X 35	X 37													X 60	X 57	X 50	X 48	X 41	X 41
18	X 39	X 38	X 36	X 36	X 37	X 40													X 66	X 62	X 56	X 49	X 41	X 40
19	X 42	X 40	X 38	X 38	X 36	X 36														X 68	X 57	X 52	43	42
20	42	40	40	40	40	X 39													X 70	X 68	X 58	X 41	39	X 43
21	44	X 42	43	50	35	X 33													X 64	X 60	X 48	X 44	46	44
22	43	41	39	40	39	X 34													X 69	X 56	X 54	X 54	X 48	X 45
23	X 46	X 48	X 48	X 48	X 48	X 44													X 64	X 49	50	51	50	X 49
24	50	X 46	47	X 51	X 54	X 49													X 88	X 65	X 49	X 42	44	42
25	X 44	44	X 44	45	46	X 43													X 83	X 65	X 40	X 40	X 42	X 41
26	X 40	X 39	X 39	X 39	X 40	X 38													X 71	X 51	X 38	41	40	39
27	X 40	X 38	40	40	38	39													X 71	X 56	X 50	51	49	X 45
28	X 47	X 43	X 41	X 36	37	X 35													X 64	X 62	66	64	X 50	X 46
29	X 40	X 39	39	38	X 36	X 36													X 66	X 53	X 50	X 50	X 48	47
30	44	X 43	X 43	X 38	X 33	X 35													X 76	X 64	X 51	X 46	X 46	X 46
31																								
	00	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	30	30						1							15	30	29	30	29	29
MED	X 42	X 40	X 40	X 39	X 37	X 38						61							X 66	X 62	X 54	X 49	X 46	X 44
U Q	X 44	X 43	X 42	42	X 39	X 40													X 71	X 68	X 59	X 53	X 50	X 46
L Q	X 40	X 38	X 38	X 36	X 35	X 36													X 64	X 57	X 50	43	X 42	X 42

SEP. 1995 fxI (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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	30	F 31	F 32	V 33	F 30	R 31	46	49	55	65	61	56	56	59	60	60	61	56	60	66	62	53	44	42
2	R 42	39	36	36	33	34	48	58	66	80	56	51	57	48	60	70	81	79	64	57	39	41	38	40
3	39	F 37	36	33	31	32	48	61	69	56	53	52	53	61	U R 57	60	66	65	62	65	65	47	F 44	F 44
4	F 32	F 32	F 32	32	F 31	J S 37	48	65	64	57	57	57	59	65	64	60	60	56	64	71	F 69	50	35	33
5	34	33	F 34	F 34	F 28	34	47	59	64	54	55	54	55	65	71	68	74	75	68	69	53	43	44	43
6	42	41	47	A	F 24	32	42	A	63	62	64	50	R 55	56	62	60	55	60	58	52	50	39	39	F 35
7	F 36	33	F 32	F 39	34	38	48	54	H 55	57	61	52	54	50	50	54	55	60	66	62	56	F 43	45	F 35
8	37	31	32	33	32	31	46	39	46	52	54	50	54	52	52	51	55	59	58	51	50	49	46	42
9	38	27	25	A	U A 25	U S 32	38	43	42	A	E G 41	47	48	44	45	46	51	48	S 53	46	38	32	29	28
10	F 28	A	28	F 29	25	26	41	54	61	50	E G 43	56	53	51	51	52	51	55	68	70	48	F 38	34	30
11	31	F 30	28	26	F 26	28	45	54	44	E G 40	50	49	50	A	A	55	58	A	A	55	44	F 43	F 38	F 41
12	F 38	F 35	29	32	F 31	32	50	51	48	54	59	61	51	54	A	A	A	52	A	51	A	F 34	F 33	F 34
13	F 34	35	33	30	26	28	43	56	J R 56	45	51	55	58	59	55	52	54	63	56	43	36	F 35	F 34	F 37
14	36	34	32	31	30	F 30	45	51	56	56	58	60	52	55	62	62	58	58	73	81	46	F 29	A	A
15	30	30	30	30	30	31	50	44	V 49	60	54	58	63	58	60	56	55	55	56	59	57	55	49	39
16	36	33	33	37	V 36	35	46	60	72	71	64	A	53	52	57	49	50	46	48	53	53	J F 46	F 44	F 39
17	30	28	28	27	29	31	J R 42	52	57	60	R 56	52	54	59	53	54	51	57	54	51	44	42	35	35
18	33	32	30	30	31	34	50	53	56	53	53	56	60	55	54	53	54	61	60	55	50	43	35	34
19	36	34	32	32	30	30	49	50	47	53	52	52	59	59	57	55	52	58	66	62	51	46	F 34	F 34
20	F 35	F 34	F 33	F 33	F 32	S 33	54	50	54	60	60	61	59	57	59	56	54	56	64	62	52	35	33	37
21	F 39	36	F 36	F 37	F 26	S 27	43	55	60	68	63	61	58	R 64	66	A	58	60	58	54	42	38	F 38	F 36
22	F 36	F 35	F 32	F 32	F 30	S 28	43	59	60	65	70	56	58	58	53	55	59	60	63	50	47	48	42	39
23	40	42	42	42	42	J S 38	48	53	54	66	72	62	61	58	57	62	65	J R 64	58	42	F 41	F 43	F 42	43
24	F 40	40	F 40	45	48	S 43	F 50	78	66	59	H 53	64	70	65	52	55	56	68	82	59	43	36	F 36	F 34
25	38	F 36	38	F 37	F 37	S 38	57	66	V 60	63	56	60	75	64	64	60	66	71	77	59	34	34	36	35
26	34	34	33	33	34	S 33	53	66	66	70	61	73	67	62	60	62	68	71	65	45	32	30	F 34	F 32
27	34	32	F 31	F 29	F 30	S 32	51	65	71	65	68	68	63	60	62	J R 65	61	66	65	50	44	F 42	F 41	39
28	42	37	35	30	F 28	29	32	45	A	59	A	58	64	68	66	67	66	63	58	V 55	F 57	F 57	44	40
29	34	33	F 32	F 30	30	30	46	58	61	56	63	60	68	62	61	59	62	69	60	47	44	44	42	F 39
30	38	37	37	32	27	29	46	53	R 65	54	59	69	66	66	61	56	61	73	70	58	45	40	40	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	30	29	30	28	30	30	30	29	29	29	29	29	30	29	28	28	29	29	28	30	29	30	29	29
MED	36	34	32	32	30	32	46	54	60	59	57	56	58	59	60	56	58	60	62	55	47	42	38	37
U Q	38	36	36	35	32	34	50	60	64	65	62	61	63	63	62	61	64	67	66	62	53	46	44	40
L Q	34	32	31	30	28	30	43	50	54	54	53	52	54	54	54	54	54	56	58	51	42	36	34	34

IONOSPHERIC DATA STATION Kokubunji

SEP. 1995 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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							280	L	L 420	432	440	448	444	464	440	432	400	U L 384						
2							L	U L 408	420	428	444	448	448	U L 420	440	412	384	L 340						
3								L	L 420	L 432	U A 424	A	440	444	428	428	400	L 340						
4								U A 396	U A 424	428	440	440	440	448	460	412	U L 400	L	L					
5							L	U L 392	400	U L 460	Y	R 444	460	440	440	420	400	L 340						
6							A	A	400	412	440	U A 440	R 452	456	U A 420	400	L 392	L						
7								L	L 400	L 420	424	R 436	440	L 440	424	420	L 372	U L 336						
8							U L 308		400	404	420	432	432	424	428	U A 400	A	A	A					
9								352	380	A	R 408	U R 408	U A 416	420	404	392	360	U L 340						
10							L	L 372	400	L 432	428	424	420	412	412	420	L 400	U L 340						
11							L	L 364	L 400	400	424	A	U A 420	A	A	U A 404	L 360	A	A					
12							L	U L 364	L 392	408	400	R 440	L 440	420	A	A	A		A					
13							L	U L 372	388	L	U A 412	440	440	432	416	412	L 400	U L 340						
14								U L 372	L 400	420	424	440	432	440	L 420	412	L 392	U L 348						
15							L	L	L 412	432	432	440	440	424	424	L 420	L	L						
16								L 392	400	412	428	A	420	420	404	L	L 372	L						
17								L	400	420	428	U R 420	440	436	L 432	412	L	L						
18							L	U L 388	400	420	432	436	440	440	L 420	U L 420	L	L						
19							L	L	L 368	420	436	444	432	440	436	L 408	U L 408	L						
20								L	L	420	440	440	452	448	440	L 400	L	L						
21								L	U A 428	428	440	L 436	L 440	L 452	440	A	U L 380	L						
22								L	L 400	440	U A 456	L 448	436	440	428	400	L	L						
23								L	L	420	U A 440	U A 440	448	448	L 424	L	L							
24								A	L 400	424		420	460	440	U L 432	L 420	U L 412	U L 340						
25								L	U L 404	424	L 440	U L 480	456	L 452	440	U L 424	L 360							
26								L	U L 412	428	L 444	452	456	L 448	U L 460	L 420	U L 384							
27								L	L 412	432	440	448	448	L 464	U L 440	L 436	A	L						
28								340	A	392	A	440	L 440	L 448	L 428	U L 420	U L 372	L						
29								L	L 432	L 420	440	460	452	L 440	L 432	L	U L 392	L						
30								L	U L 420	L	440	440	L 460	L 452	U L 440	U L 416	U L 360							
31																								
	00	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	12	26	27	27	27	30	29	28	25	21	10						
MED							294	U L 372	L 400	420	436	440	440	440	430	416	L 392	U L 340						
U Q								U L 392	L 420	428	440	448	452	L 448	440	L 420	L 400	U L 340						
L Q								364	400	412	424	436	436	428	422	406	L 372	L 340						

SEP. 1995 foF1 (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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							192	256	284	A 308	340	R	R	R 344	332	312	280	A	B					
2							A 188	256	284	304	R 324	A 328	A	A	A	A	A	A	A					
3							A	252	284	304	332	344	344	340	324	300	272	208	B					
4							A	A	A	A	A	A	344	332	320	308	272	220	B					
5							A	272	296	A	R	R	352	332	328	304	288	A 220	B					
6							212	A	A	A	332	A 340	352	352	332	304	264	208	B					
7							A	236	A	A	R 312	336	344	340	A	292	252	216	B					
8							196	256	A	A	A	336	332	328	316	288	248	A	B					
9							A	224	264	292	R 312	A	R 352	336	312	292	264	192	B					
10							A	212	U A 256	A	A	A	A	A	A	300	260	200	B					
11							A	A 228	A 268	U A 284	A	A	340	336	316	292	252	U A 204	B					
12							176	A	268	R 280	296	R	A	A	320	A 292	260	196	A					
13							A	204	A	A	A	A	A	R 320	316	288	256	A	B					
14							A	A	A 316		A	336	U R 336	332	316	296	244	224	B					
15							176	252	284	U R 308	332	R 336	R	324	312	280	256	220						
16							A	224	A	A	A	A	R	A	A	280	248	A						
17							A	244	A 308	328	U R 336	336	R	308	288	252	196							
18							176	A	288	320	340	348	340	324	316	284	252	196						
19							176	248	288	A 312	A	340	R 344	R 332	320	R	248	204	B					
20							184	A 268	300	A 312	A	U R 344	R 340	R 328	320	292	260	196						
21							U A 196	256	A	A 308	A	A	S 336	R 332	304	280	280	A						
22							192	256	288	312	332	336	344	332	320	292	252	188						
23							168	232	A 288	A	A	A	344	A	312	284	268	A						
24							A	A	280	A	A	R	R 336	U R 328	R 312	276	252	184						
25							176	244	A	312	U R 332	R	R 344	R 344	R	280	244	A						
26							A	A 228	A 268	A	A	A	A	A	300	280	240	U A 172						
27							U S 192	A	A	308	A 328	A 320	A	A	A	A	A	A						
28							A	236	280	308	U A 316	A	A	A	A	A	A	A						
29							A	A	276	296	316	B	R 340	320	308	280	240	172						
30							184	236	272	A 300	324	336	A	A	A	284	236	176						
31																								
	00	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	22	19	19	16	14	19	20	22	26	27	20						
MED							184	244	284	308	328	336	344	332	316	290	252	198						
U Q							192	256	288	312	332	340	R 344	338	320	296	264	212						
L Q							176	228	A 268	300	316	336	336	328	312	280	248	190						

SEP.1995 foE (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 24	J A 18	J A 30	J A 20	J A 30	20	G	30	34	40	G 25	G 29	G 34	37	G	G 29	G 26	J A 30	J A 25	J A 44	J A 21	E B 15	19	E B 15
2	E B 14	J A 26	34	J A 23	20	21	29	32	38	40	40	38	36	38	J A 39	J A 40	J A 32	33	J A 33	37	18	J A 25	28	J A 26
3	J A 34	J A 26	24	22	20	25	25	29	33	J A 41	44	48	41	40	37	36	29	28	J A 20	J A 18	21	J A 24	36	J A 30
4	J A 32	J A 27	J A 50	J A 28	J A 24	22	J A 48	J A 49	J A 49	J A 51	J A 68	J A 47	38	42	44	34	37	J A 35	J A 35	56	J A 51	J A 51	J A 34	J A 27
5	J A 65	J A 19	23	J A 23	J A 22	E B 15	22	J A 29	J A 34	J A 36	G 26	G 25	G	36	36	34	J A 31	28	J A 19	J A 22	28	J A 21	E B 13	16
6	25	24	21	J A 35	40	J A 32	J A 63	69	J A 50	J A 41	37	J A 49	39	41	42	35	J A 39	J A 40	J A 22	26	24	J A 28	J A 24	J A 58
7	27	21	18	18	E B 13	19	35	28	J A 34	37	G 28	37	G 26	G 23	36	32	36	J A 34	J A 23	J A 23	J A 32	J A 54	J A 30	J A 22
8	J A 26	J A 22	20	18	18	E B 16	26	G 25	31	J A 34	37	37	37	42	40	J A 53	J A 44	J A 61	54	J A 47	29	26	J A 44	J A 53
9	19	J A 22	J A 27	J A 44	J A 44	J A 26	J A 31	29	32	J A 48	38	35	42	36	G	34	34	72	72	J A 33	28	J A 26	J A 50	J A 44
10	J A 46	42	30	28	32	29	J A 26	32	J A 40	37	34	34	35	33	J A 36	35	38	26	38	43	J A 51	J A 46	J A 30	20
11	J A 28	J A 30	J A 21	28	J A 22	J A 20	22	J A 49	J A 35	J A 43	36	J A 50	J A 50	J A 56	J A 63	J A 47	35	J A 64	J A 53	J A 49	J A 39	J A 50	J A 32	23
12	22	19	18	E B 13	E B 14	20	J A 29	30	32	31	35	G 31	38	41	J A 62	82	74	30	J A 102	J A 55	J A 92	J A 50	J A 35	J A 30
13	19	E B 14	E B 14	19	18	22	J A 27	J A 40	34	J A 40	J A 48	47	38	G 25	35	G	J A 28	24	J A 30	J A 24	J A 25	J A 30	J A 26	J A 32
14	J A 22	J A 22	23	J A 21	24	J A 23	J A 32	34	J A 50	G 29	38	G 26	G 26	G 23	G 30	32	34	27	J A 74	J A 27	J A 50	J A 48	J A 49	50
15	J A 22	22	18	19	E B 14	E B 14	J A 19	G 21	G 24	G 24	G	G 28	G 30	G	G 22	G 28	28	G	E B 14	E B 13	E B 14	E B 16	E B 14	E B 13
16	22	J A 20	J A 26	J A 35	26	28	30	32	J A 40	30	34	56	G 26	J A 35	39	24	29	J A 27	27	30	J A 54	J A 33	J A 40	31
17	19	E B 12	E B 13	20	21	J A 25	23	27	J A 34	G 30	G 23	G	G 27	G 28	32	30	30	G 20	E B 14	J A 25	24	J A 24	E B 14	32
18	J A 32	21	S 18	E B 14	E B 13	E B 15	J A 20	27	G 26	G 27	G 26	G	G 24	G 26	G 25	G 23	G 19	23	J A 15	20	22	E B 13	28	J A 45
19	28	24	J A 13	18	E B 13	E B 14	21	27	G 20	34	36	G	G 31	36	34	G 28	30	26	J A 28	26	J A 32	J A 37	J A 54	J A 30
20	J A 26	20	19	E B 14	E B 14	E B 14	26	30	J A 41	J A 39	38	38	G 31	G 28	G	G	G	23	E B 15	J A 16	J A 19	34	E B 14	18
21	E B 12	19	E B 14	E B 13	21	24	26	J A 34	J A 46	40	41	39	G 30	G	35	66	J A 45	J A 39	34	31	J A 25	J A 43	J A 33	J A 27
22	J A 56	J A 30	36	J A 34	J A 30	J A 30	J A 22	32	38	40	J A 48	42	37	G	G 25	33	35	28	J A 31	E B 15	E B 14	E B 14	23	J A 25
23	J A 20	18	19	J A 32	24	J A 26	J A 24	28	32	J A 36	J A 53	J A 64	G	37	G 26	32	J A 36	J A 49	J A 24	J A 38	J A 29	J A 45	J A 47	J A 52
24	J A 49	J A 33	J A 36	21	J A 23	J A 22	J A 20	54	30	32	33	G 27	G	G 22	G 19	30	G 20	J A 25	J A 19	E B 15	22	J A 55	J A 32	J A 22
25	J A 38	26	30	22	18	21	25	28	35	G 29	G	G 33	G 26	G	G 28	31	28	38	40	33	28	J A 22	E B 14	E B 14
26	18	18	E B 14	E B 13	E B 13	E B 14	J A 26	J A 41	35	33	36	34	34	37	G	30	34	J A 36	J A 35	52	J A 32	J A 40	J A 48	J A 27
27	J A 32	19	19	E B 15	21	E B 15	G	J A 28	34	37	39	35	33	39	J A 44	J A 54	J A 86	36	37	J A 26	J A 27	30	J A 38	J A 26
28	J A 22	J A 22	25	21	22	J A 19	J A 24	29	51	J A 40	J A 72	J A 42	34	J A 63	J A 40	J A 35	J A 28	22	J A 25	J A 46	J A 54	J A 42	E B 14	J A 32
29	E B 12	E B 13	17	E B 12	J A 21	J A 24	J A 33	J A 32	30	33	36	E B 35	G	G 28	33	G	G	G	J A 32	39	J A 21	E B 15	E B 12	22
30	E B 12	E B 13	E B 15	17	18	J A 25	26	29	34	34	G 25	G 26	38	J A 41	40	G	29	24	28	20	27	J A 20	28	J A 23
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J A 24	22	20	20	21	22	26	30	34	36	36	35	G	36	35	32	32	28	J A 29	28	J A 28	J A 30	J A 30	J A 27
U Q	J A 32	J A 26	27	J A 28	24	J A 25	J A 29	J A 34	J A 40	J A 40	J A 40	J A 42	38	40	40	J A 35	J A 36	J A 36	37	J A 43	J A 32	J A 45	J A 38	J A 32
L Q	19	19	E B 18	E B 17	E B 18	E B 16	22	28	32	G 32	G	G 33	G 30	G 28	G	G	G 28	24	J A 22	22	22	E B 22	E B 19	22

SEP.1995 foEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	19	16	17	E B 14	19	E B 14	G	29	33	38	G 24	U G 29	U G 34	36	G	G 28	G 26	26	21	26	17	E B 15	E B 13	E B 15
2	E B 14	18	19	16	E B 16	E B 15	26	30	36	39	38	36	35	36	36	31	29	27	19	29	14	E B 16	18	E B 14
3	33	16	E B 13	E B 16	16	18	22	28	32	39	42	47	40	40	35	35	29	26	18	E B 15	17	23	26	19
4	16	17	16	18	18	18	23	40	35	43	37	42	U Y 37	42	42	32	35	30	24	39	32	35	17	19
5	30	17	17	19	17	E B 15	22	G 23	G 22	34	U G 26	U G 25	G	36	35	32	30	25	17	16	E B 14	E B 16	E B 13	E B 14
6	16	E B 14	E B 13	A A 35	18	26	G 18	A A 69	35	39	36	44	36	U Y 40	42	34	30	26	17	24	16	21	19	23
7	17	E B 13	E B 12	16	E B 13	E B 15	23	26	29	32	G 26	37	G 24	G 21	32	31	31	29	18	E B 14	24	24	20	17
8	18	17	15	E B 13	E B 13	E B 16	G	G 22	29	32	34	36	36	38	38	40	42	52	46	34	E B 14	20	25	36
9	E B 14	20	17	A A 44	U A 18	17	25	28	31	A A 48	36	34	42	36	G	31	32	26	47	27	E B 14	17	19	21
10	17	A A 42	20	18	21	18	22	28	37	34	33	U Y 34	34	U Y 33	34	34	34	24	22	40	41	22	16	E B 13
11	18	19	17	17	17	17	20	31	30	35	33	43	42	A A 56	A A 63	40	33	A A 64	A A 53	21	18	17	20	E B 14
12	E B 13	E B 12	15	E B 13	E B 14	E B 14	24	25	28	31	33	U G 31	37	39	A A 62	A A 82	A A 74	24	A A 102	21	A A 92	19	18	18
13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	24	28	32	32	35	44	37	G 22	34	G	27	20	23	18	16	17	20	24
14	18	17	E B 14	17	16	E B 14	22	24	33	G 26	36	G 26	G 26	G 22	G 28	32	29	25	31	21	20	18	A A 49	A A 50
15	18	17	16	E B 14	E B 14	E B 14	G	G 20	G 22	G 22	G	G 26	U G 29	G	G 21	G 22	28	G	E B 14	E B 13	E B 14	E B 16	E B 14	E B 13
16	16	E B 14	18	25	18	18	21	30	32	30	U Y 34	A A 56	G 26	34	33	G 22	28	20	17	20	22	23	18	18
17	17	E B 12	E B 13	E B 16	16	17	19	26	30	G 24	G 18	G	G 27	U G 28	32	30	27	G 16	E B 14	21	16	E B 12	E B 14	19
18	24	E B 14	E B 15	E B 14	E B 13	E B 15	19	25	G 23	G 26	G 24	G	G 24	G 24	G 23	G 21	G 18	22	E B 14	E B 12	17	E B 13	19	E B 15
19	16	17	E B 12	E B 13	E B 13	E B 14	19	G	G 19	34	35	G	G 30	35	33	U G 28	29	24	21	E B 12	22	27	20	E B 13
20	18	E B 14	17	E B 14	E B 14	E B 14	24	28	35	35	36	38	G 30	G 27	G	G	G	22	E B 15	11	18	26	E B 14	E B 14
21	E B 12	E B 15	E B 14	E B 13	17	17	24	32	43	36	40	35	G 26	G	33	A A 66	G 24	23	29	19	17	20	18	18
22	18	17	17	20	23	20	G 13	30	36	36	46	40	36	G	G 24	32	32	23	27	E B 15	E B 14	E B 14	E B 13	18
23	E B 15	17	E B 14	E B 14	E B 14	18	G 12	27	31	33	44	44	G	36	G 23	31	28	24	21	25	22	15	17	19
24	18	28	24	E B 13	E B 13	18	18	45	30	31	33	G 26	G	G 20	G 17	29	G 18	G 18	E B 16	E B 15	E B 14	17	E B 14	E B 13
25	19	17	19	E B 12	E B 13	E B 15	G	26	29	G 26	G	U G 33	G 26	G	U G 27	30	27	27	33	27	E B 14	18	E B 14	E B 14
26	E B 15	E B 15	E B 14	E B 13	E B 13	E B 14	24	33	33	33	35	U Y 34	34	36	G	29	33	30	31	40	E B 14	18	E B 14	18
27	20	E B 14	E B 15	E B 15	E B 12	E B 15	G	27	34	36	36	35	U Y 33	36	42	39	42	21	29	17	E B 14	19	22	17
28	17	17	17	E B 14	E B 15	E B 15	18	26	A A 51	34	A A 72	36	33	37	39	32	24	19	17	E B 15	48	E B 15	E B 14	E B 14
29	E B 12	E B 13	16	E B 12	16	17	27	26	28	32	34	E B 35	G	G 25	33	G	G	G	17	22	16	E B 15	E B 12	E B 15
30	E B 12	E B 13	E B 15	15	E B 14	17	G	26	32	33	G 25	G 25	35	35	39	G	28	21	19	17	E B 13	18	18	E B 14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	17	16	16	† B 14	† B 16	† B 16	20	28	32	34	34	35	G	35	33	31	29	24	21	20	16	18	18	17
U Q	18	17	17	17	17	18	24	30	35	36	36	40	36	36	38	34	32	26	29	26	22	21	20	19
L Q	E B 15	E B 14	E B 14	E B 13	E B 13	E B 15	G	26	29	G 31	G	G 33	G 29	G 28	G	G	G 27	21	E B 17	E B 15	E B 14	E B 16	E B 14	E B 14

SEP.1995 fbEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

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

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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	306	F 318	F 296	V 300	F 309	R 355	355	351	370	368	336	335	331	301	316	324	333	330	331	319	335	323	307	305
2	R 303	309	304	309	313	315	340	346	343	369	364	315	324	337	286	310	341	351	346	343	305	294	308	323
3	309	F 300	325	328	315	313	323	347	362	356	342	297	350	312	U R 341	311	330	345	326	315	343	321	F 296	F 334
4	F 298	F 317	F 328	334	F 315	J S 327	339	360	379	353	330	326	335	325	320	316	337	336	316	311	F 358	362	307	326
5	A 317	308	F 316	F 346	F 353	321	327	338	368	321	305	300	298	308	321	319	325	338	340	341	349	272	288	289
6	289	290	364	A	F 273	295	A 284	A	316	315	333	293	R 287	305	348	336	324	339	327	334	312	324	297	F 297
7	F 300	295	F 312	F 309	341	331	347	375	H 363	345	323	345	336	311	312	330	328	327	339	329	309	F 292	325	F 302
8	321	299	287	316	291	292	359	356	316	333	345	303	314	302	312	323	320	340	328	299	295	294	291	A 301
9	349	308	297	A	A	U S 330	344	338	305	A	G	299	293	279	302	298	328	328	A	350	320	301	304	317
10	F 291	A	304	F 312	294	335	339	336	334	358	G	334	333	320	297	304	331	330	334	355	362	F 324	327	321
11	297	F 327	309	292	F 304	339	351	375	367	G	292	312	331	A	A	301	337	A	A	335	339	F 303	F 283	F 312
12	F 324	F 336	301	307	F 317	326	334	358	359	349	318	335	327	325	A	A	A	345	A	339	A	F 297	F 317	F 294
13	F 321	328	322	330	311	317	318	366	J R 390	359	344	293	325	317	332	329	320	337	353	330	281	F 317	F 308	F 322
14	320	337	325	320	322	F 348	343	364	362	348	348	331	334	320	310	336	330	321	332	362	377	F 278	A	A
15	319	317	311	321	315	333	366	367	V 329	365	355	317	331	361	320	322	343	335	313	305	311	328	321	302
16	296	272	281	300	V 312	290	344	297	345	339	350	A	340	313	328	329	330	354	312	314	319	J F 278	F 320	F 339
17	335	296	328	312	316	317	J R 377	343	353	366	R 362	325	324	335	342	335	313	347	342	348	322	331	326	335
18	310	323	316	314	312	324	347	360	363	365	349	348	351	342	337	326	345	346	337	337	354	341	334	310
19	314	331	312	306	313	324	377	385	360	354	350	338	336	339	332	339	330	335	342	348	337	352	F 335	F 317
20	F 315	F 308	F 316	F 323	F 303	S 313	380	344	351	373	356	359	344	333	320	336	334	326	341	345	382	317	318	302
21	F 294	301	F 322	F 329	F 337	S 339	378	358	350	361	351	322	331	R 325	343	A	341	350	342	354	336	309	F 309	F 306
22	F 313	F 313	F 294	F 311	F 321	S 332	360	351	358	341	352	350	321	352	353	335	343	342	345	335	308	323	326	302
23	307	308	320	328	340	J S 359	362	339	345	365	363	359	330	341	328	323	353	J R 382	361	319	F 282	F 295	F 321	317
24	F 313	297	F 305	313	348	S 321	F 314	357	383	362	H 337	332	341	354	345	331	312	332	351	345	349	316	F 300	F 308
25	315	F 302	304	F 314	F 331	S 310	355	366	V 367	374	349	310	338	335	326	331	346	344	351	351	333	317	310	303
26	315	300	308	314	327	S 355	363	357	382	362	339	344	344	339	310	338	351	354	353	370	300	272	F 288	F 296
27	298	314	F 329	F 328	F 316	S 312	356	353	374	375	352	360	341	325	337	J R 342	343	341	351	315	289	F 287	F 300	309
28	304	298	289	299	F 303	362	328	331	A	330	A	347	311	314	338	323	335	327	311	V 302	F 303	F 318	306	314
29	299	312	F 305	F 303	318	324	358	357	357	356	343	328	338	339	342	352	342	341	355	312	316	316	318	F 307
30	296	304	318	343	312	324	363	356	R 370	347	328	353	332	341	346	320	335	350	350	358	323	305	301	305
31																								
	00	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	30	30	29	29	29	29	29	30	29	28	28	29	29	27	30	29	30	29	29
MED	310	308	312	314	315	324	349	356	360	356	344	331	332	325	328	328	334	340	341	336	322	316	308	308
U Q	317	318	322	328	324	335	362	362	369	365	352	346	338	339	342	336	342	346	351	348	346	323	321	319
L Q	298	300	304	308	F 310	315	339	344	345	343	329	311	324	312	314	320	328	331	328	315	306	294	F 300	302

SEP.1995 M(3000)F2 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

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SEP.1995 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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							443	L	L 373	A 381	410	415	416	372	364	355	362	U L 347						
2							L	U L 356	364	A 381	388	405	399	U L 411	369	375	359	L 377						
3								L	L 376	L 389	A	A	A	390	H 386	364	350	L 357						
4								A	383	A	412	A	Y	A 377	A 349	386	U L 367	L	L					
5							L	U L 372	395	U L 376	Y	R 397	382	387	351	355	354	L 356						
6							A	A	358	A	403	A	R 373	A 345	A	367	L 347	L						
7								L	L 386	L 405	388	Y 356	H 383	L 372	365	H 346	A 367	U L 392						
8							L		366	394	414	403	389	397	366	A	A	A	A					
9								364	379	A	R 410	U R 402	A	359	368	375	358	U L 355						
10							L	L 372	A 368	L 385	400	393	395	382	H 389	340	A 354	U L 354						
11							L	A 383	L 380	403	408	A	A	A	A	A	A	A	A					
12							L	U L 397	L 382	385	416	Y	L 384	375	A	A	A		A					
13							L	U L 386	397	L	420	A	370	377	359	384	L 349	U L 357						
14								U L 363	L 369	389	403	409	399	380	L 381	367	L 353	U L 356						
15							L	L	L	393	388	416	398	415	373	L 355	L	L						
16								L 361	352	375	357	A	404	390	361	L	L 359	L						
17								L	381	375	395	U R 419	371	377	L 370	359	L	L						
18							L	U L 374	388	397	401	397	387	H 371	H 394	U L 368	L	L						
19							L	L	L 424	393	391	394	404	382	365	L 373	U L 345	L						
20								L	L 386	393	387	390	H 376	378	L 379	L	L	L						
21								L	A 388	398	L 414	L 385	L 372	L 352		A	U L 372	L						
22								L	A 389	376	A	L 395	404	375	389	379	L	L						
23								L	L 378	A	A	398	374	L 382	L	L	L							
24								A	L 395	402	426	364	377	U L 373	L 342	U L 330	L							
25								L	U L 397	397	L 392	U L 369	H 388	L 378	361	U L 361	L 373							
26								L	U L 389	380	L 393	385	387	L 362	U L 361	L 353	A							
27								L	L 398	393	409	405	395	L 367	A	A	A	L						
28								361	A	391	A	372	L 384	L 363	A	U L 356	L	L						
29								L	L 357	L 390	384	391	385	L 387	L 358	L	U L 363	L						
30								L	L	L	392	391	L 368	L 363	A 369	U L 357	U L 369							
31																								
	00	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	24	25	24	22	26	29	25	22	18	9						
MED							443	U L 372	382	389	399	397	388	377	368	362	L 358	U L 356						
U Q								U L 383	L 392	394	410	409	398	384	380	375	U L 367	U L 367						
L Q								L 361	368	380	392	391	383	372	361	355	L 350	U L 354						

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SEP.1995 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							256	270	256	240	292	308	320	368	330	304	284	286						
2							276	268	274	242	264	348	324	L 292	374	314	266	246						
3								256	248	276	304	E A 386	302	328	284	306	284	260						
4								250	244	266	306	326	310	300	298	316	276	270	266					
5							L 278	262	242	L 308	Y 294	378	386	328	302	286	270	260						
6							A	A	310	298	296	414	420	360	280	288	300	276						
7								248	274	288	318	292	314	364	364	302	294	272						
8							264		352	306	288	400	350	374	360	328	306	A	A					
9								308	400	A	G	402	408	L 452	398	400	314	286						
10							L 286	272	276	276	G	316	314	336	370	360	288	288						
11							262	244	286	G	400	354	320	A	A	346	262	A	A					
12							272	238	254	288	304	296	306	316	A	A	A		A					
13							L 302	244	294	L	302	378	308	318	306	314	306	260						
14								248	268	280	284	298	314	330	322	278	296	272						
15							234	256	L 304	250	280	330	290	266	312	310	262	268						
16								310	268	282	274	A	306	346	308	314	298	254						
17								272	256	254	266	330	322	282	288	292	L 318	242						
18							240	256	254	270	278	294	280	282	294	284	260	250						
19							214	230	244	278	296	308	294	292	310	282	298	262						
20								238	264	246	268	266	286	294	316	282	268	268						
21								258	268	246	270	310	288	308	280	A	270	244						
22								266	236	276	252	270	288	286	292	298	262	252						
23								258	268	254	256	262	302	286	304	286	254							
24								242	230	254		298	274	256	268	296	318	260						
25								238	240	244	268	326	280	280	296	274	262							
26								234	238	252	276	266	270	280	L 308	278	252							
27								240	222	232	262	262	276	308	278	270	258	244						
28								302	A	296	A	272	324	306	270	270	262	250						
29								250	264	262	280	300	278	278	272	258	260	244						
30								228	242	270	284	266	288	280	276	292	274							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							11	28	29	28	28	29	30	29	28	28	29	23	1					
MED							264	253	264	270	284	308	306	306	303	294	274	260	266					
U Q							L 278	267	275	285	303	351	320	333	319	314	298	272						
L Q							240	241	243	251	269	282	288	282	282	282	262	250						

SEP.1995 h'F2 (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 1995 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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	298	286	304	290	A 308	260	188	220	238	A 246	200	178	H 170	222	238	202	236	236	258	258	226	224	232	278
2	276	282	308	270	262	260	A 238	242	A E 254	A E 248	214	204	190	188	228	212	238	224	234	232	214	280	296	258
3	E A 318	290	268	232	276	272	234	224	218	A 234	A	A	A	220	H 194	230	226	220	252	234	224	254	314	232
4	296	266	276	278	276	268	234	A	226	A	196	A	Y	E A 248	A	H 202	A	A 254	244	A 284	232	250	260	278
5	A	280	274	250	244	256	240	216	214	206	Y	Y 222	214	206	224	222	228	A 234	228	226	224	316	310	310
6	292	310	204	A	E A 436	A 358	A	A	E A 272	A	192	A	212	A	A	A 236	234	266	234	224	254	256	286	346
7	308	288	292	258	212	232	234	226	204	194	218	Y	H 178	222	214	H 214	A 252	A 252	238	224	268	332	246	286
8	276	286	298	270	294	310	238	226	222	210	176	206	234	232	250	A	A	A	A	A 306	276	270	318	A
9	228	A 302	356	A	A	280	264	232	218	A	204	204	A	260	226	216	A 262	A 256	A	236	260	282	320	A 320
10	326	A	A 322	276	A	280	238	226	A	200	H 188	204	208	224	H 198	A 254	A	240	248	234	A 250	288	262	262
11	290	302	292	330	338	274	226	A	202	212	188	A	A	A	A	A	A	A	A	260	250	292	346	244
12	256	238	264	280	308	296	250	212	204	H 178	198	Y	226	232	A	A	A	256	A	254	A	312	292	314
13	268	242	252	238	282	294	232	216	208	198	186	A	230	204	254	224	240	240	232	218	266	292	A 314	A 314
14	274	246	254	262	256	236	244	H 182	A 248	190	214	H 174	198	214	220	252	240	238	252	216	200	A 358	A	A
15	280	272	286	272	256	258	212	204	192	216	208	H 192	200	H 176	206	H 174	238	244	260	252	242	244	240	268
16	294	344	352	A 336	278	280	246	220	A 236	H 198	228	A	196	212	A 248	H 228	228	228	250	256	254	316	266	236
17	250	298	264	284	280	266	230	230	218	222	H 186	196	H 206	218	202	222	224	236	220	234	236	232	238	268
18	E A 310	270	272	278	266	256	230	222	208	206	H 188	184	H 176	H 178	H 178	210	H 176	242	228	232	218	222	268	278
19	270	250	262	284	278	276	210	204	196	214	206	216	192	214	212	H 200	238	252	238	224	242	232	248	278
20	284	292	274	264	276	276	226	216	232	208	194	240	202	H 196	204	202	H 204	248	230	222	206	A 292	294	288
21	290	290	278	212	260	266	220	A 240	A	212	226	192	198	200	242	A	A 240	240	236	226	232	284	298	294
22	296	294	314	308	E A 350	274	216	244	A	218	A	A 232	188	Y 236	212	226	A 256	248	232	224	254	244	246	282
23	274	260	254	252	222	248	H 220	230	224	222	A	A	190	214	208	250	230	234	224	A 240	316	270	266	264
24	258	A 324	310	256	224	248	224	A	212	200	218	194	202	214	208	218	242	244	220	210	208	266	270	276
25	268	276	278	266	246	266	236	232	216	206	206	188	H 186	196	218	234	236	238	230	222	230	A 274	258	274
26	272	282	290	272	248	250	226	A	224	208	204	196	182	218	222	H 226	A	232	230	A 244	272	360	344	324
27	324	276	270	286	300	286	230	234	222	212	194	188	204	202	A	A	A	244	232	238	302	316	310	280
28	276	280	304	332	332	228	246	244	A	220	A	218	214	232	A	A 234	238	252	248	272	E A 368	242	254	250
29	274	268	256	244	252	274	236	240	226	212	204	202	182	172	234	H 184	232	246	220	258	266	246	254	284
30	264	272	258	220	280	256	222	226	236	218	212	200	188	226	E A 258	216	220	244	228	218	236	254	284	280
31																								
	00	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	28	30	29	25	26	27	25	21	26	28	24	25	23	28	26	30	29	30	29	28
MED	276	282	277	271	274	267	232	226	219	211	204	200	198	214	218	222	236	243	233	234	242	272	270	278
U Q	296	293	304	284	297	280	238	233	A 232	218	213	211	208	225	236	232	A 240	250	248	254	266	292	310	291
L Q	269	269	264	254	254	256	223	216	208	200	190	190	H 188	201	207	H 206	228	236	228	224	225	246	254	266

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SEP. 1995 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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							122	114	110	110	120	A	A	122	116	A 136	132	A	B					
2							120	116	110	108	108	116	A	A	A	A	A	A	A					
3							A	A 134	124	110	120	A 124	116	112	116	112	118	B						
4							A	A	A 114	A	A	114	118	106	116	114	116	B						
5							A	E A 130	132	A	A	A	114	116	114	112	114	116	B					
6							A 136	A	A	A	112	108	116	114	116	A 130	A 132	116	B					
7							A	A 120	A	A	122	118	118	120	A	118	120	116	B					
8							116	128		A	A	110	110	122	126	A 132	118	A	B					
9							A	118	112	108	114	A	A	120	112	116	124	116	B					
10							A	114	110	106	A	A	A	A	A	124	116	120	B					
11							A	114	116	112	A	116	120	116	116	114	114	124	B					
12							B 136	114	108	112	108	A	A	A	116	114	116	118	A					
13							A	112	A	A	A	A	A	118	110	118	116	A	B					
14							A	A	A	126	A	118	122	114	A 126	120	118	120	B					
15							132	A 126	118	116	112	116	A	114	116	E A 136	122	126						
16							A	118	120	A	A	A	A	A	A	A 124	118	A						
17							A	A 130	A	A 122	116	116	122	A	114	114	114	A 134						
18							118	A	A 130	124	122	118	120	122	122	118	126	126						
19							140	138	116	116	110	116	128	A	122	A	112	132	B					
20							120	A	118	114	A	A	122	122	116	114	118	124						
21							136	A 136	A	A	A	A	120	110	120	118	A 130	A						
22							E B 142	A 146	A 128	124	A 120	A 118	122	110	116	122	A 138	130						
23							E B 160	A	A	A	110	A	116	A	E A 142	A 130	116	A						
24							A	A	A 126	A	A	116	114	116	114	112	124	124						
25							122	A 132	A	126	112	A	122	116	A	138	130	A						
26							A	114	110	110	108	A	A	A	110	110	116	122						
27							130	A	A	110	110	114	A	A	A	A	A	A						
28							A	A 130	114	112	110	A	A	A	A	A	A	A						
29							A	A	A 124	A 120	114	B	118	A 122	116	114	116	138						
30							128	124	112	118	A 118	120	A	A	114	114	E A 128	E B 142						
31																								
	00	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	20	19	21	19	15	18	19	23	26	27	20						
MED							126	120	116	114	112	116	120	116	116	118	118	122						
U Q							B 136	A 130	A 126	123	118	118	122	122	120	A 124	A 126	128						
L Q							120	114	110	110	110	116	116	114	114	114	116	117						

SEP. 1995 h'E (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC 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	100	96	104	106	102	110	G	122	116	112	108	108	106	164	G	114	114	110	100	122	116	B	100	B
2	B	102	98	106	118	108	122	126	120	114	116	114	114	110	108	106	104	106	102	102	110	112	114	108
3	108	108	112	114	116	108	130	144	134	120	122	124	130	128	140	124	140	114	112	114	116	108	108	104
4	106	112	104	104	102	104	104	112	108	106	106	108	118	124	120	164	132	114	110	126	108	106	126	104
5	106	102	104	106	108	B	130	108	104	100	106	104	G	142	136	128	126	114	118	112	114	112	B	112
6	108	108	112	110	110	114	110	114	106	104	122	114	170	182	144	148	130	118	116	110	114	106	108	106
7	106	106	114	108	B	110	104	142	108	102	102	166	108	106	100	154	128	118	116	112	106	102	100	98
8	98	100	104	104	106	B	118	118	118	114	108	166	160	130	132	124	114	110	106	116	116	110	104	104
9	102	124	126	104	124	120	114	118	118	114	120	122	158	172	G	144	128	116	112	110	112	110	118	108
10	118	110	102	100	102	116	114	110	112	110	110	110	112	114	114	150	128	126	112	112	110	110	104	106
11	106	102	102	100	100	108	120	114	114	112	114	116	130	126	122	128	124	118	114	112	110	118	106	104
12	110	110	128	B	B	130	126	122	120	120	118	106	134	128	122	116	112	120	106	112	110	108	104	116
13	112	B	B	112	114	128	110	110	108	108	110	102	100	104	E G 190	G	126	96	110	114	114	110	102	102
14	106	102	106	102	104	106	108	112	106	112	108	104	104	100	110	140	120	120	120	106	108	108	108	104
15	106	104	104	126	B	B	126	110	112	104	G	104	108	G	104	114	160	G	B	B	B	B	B	B
16	114	110	110	106	102	102	124	114	110	106	100	100	102	104	100	102	130	104	114	110	108	112	108	126
17	106	B	B	132	106	122	122	160	96	96	100	G	110	110	162	142	124	120	B	104	106	134	B	102
18	98	98	106	B	B	B	126	116	112	110	114	G	108	110	108	106	110	160	114	114	112	B	106	104
19	104	104	102	112	B	B	146	154	108	118	116	G	112	178	176	110	192	152	124	120	114	108	108	106
20	104	98	98	B	B	B	140	132	120	116	114	180	104	108	G	G	G	170	B	116	108	98	B	112
21	B	104	B	B	114	112	136	126	122	124	116	116	104	G	128	112	112	108	108	106	104	116	106	110
22	112	110	136	110	106	106	106	158	134	128	124	122	124	G	110	180	136	128	116	B	B	B	108	102
23	104	104	134	110	120	108	108	174	144	112	110	110	G	112	114	154	126	114	120	114	110	112	112	110
24	110	104	102	110	120	112	112	106	168	106	104	102	G	104	102	E G 172	112	102	116	B	110	110	110	112
25	112	100	98	100	104	102	126	140	112	108	G	114	108	G	108	162	138	116	108	110	108	106	B	B
26	104	120	B	B	B	B	116	114	112	114	112	108	110	112	G	E G 176	124	116	110	110	124	114	106	102
27	100	102	102	B	120	B	G	126	122	122	118	118	114	104	100	102	102	108	110	108	108	114	108	106
28	110	104	106	112	154	102	102	144	116	122	108	124	108	102	100	102	102	124	112	120	112	110	B	108
29	B	B	120	B	106	108	102	106	132	126	124	B	G	110	164	G	G	G	106	106	114	B	B	106
30	B	B	B	104	104	112	130	124	118	118	104	102	114	116	116	G	138	144	98	106	108	108	106	110
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	26	25	23	23	22	28	30	30	30	28	26	26	26	26	26	28	28	27	27	28	25	23	27
MED	106	104	104	106	106	109	119	120	115	112	111	112	111	112	114	126	126	116	112	112	110	110	108	106
U Q	110	110	113	112	118	114	126	140	120	118	117	122	124	128	136	154	131	122	116	114	114	112	108	110
L Q	104	102	102	104	104	106	109	112	108	106	107	104	108	106	108	112	113	110	108	108	108	108	104	104

SEP.1995 h'Es (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.1995 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

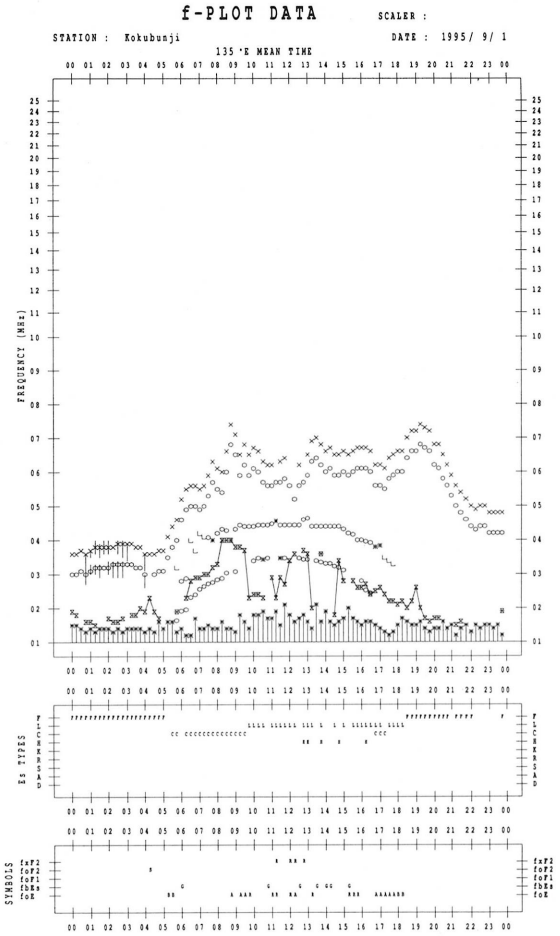
LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

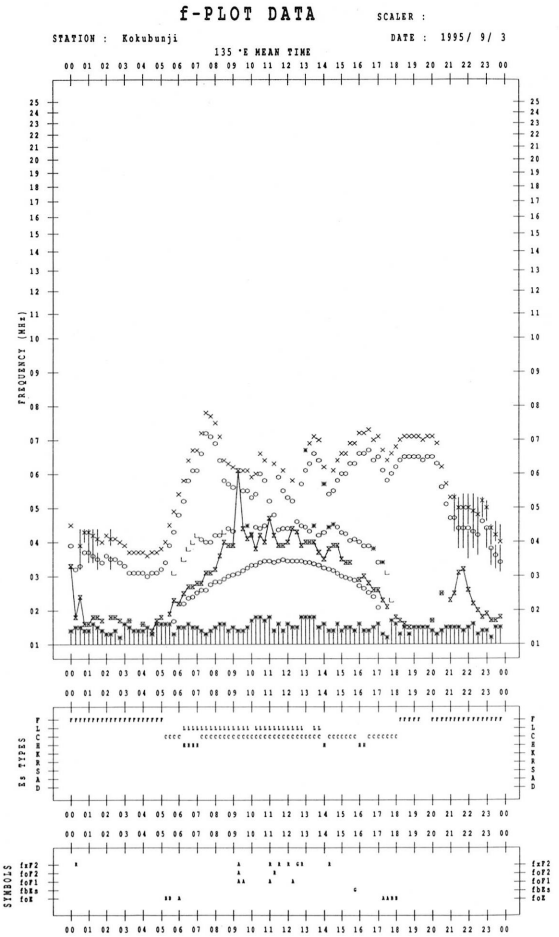
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F4	F1	F2	F1	F4	F1		C2	C1	C2	L1	L1	L1	HL11		L1	L1	CL21	L3	FF42	FF11		F1	
2		F2	F3	F1	F1	F2	C3	C2	C2	C1	C1	CL11	C1	C1	L2	L1	L2	L4	L4	F4	F1	F2	F4	F2
3	F4	F2	F3	F1	F2	F2	C2	HL12	CL11	CL21	C1	CL21	CL11	C1	H1	C2	H1	C3	C2	F1	F1	F2	F5	F4
4	F2	F2	F3	F3	F3	F2	L3	CL22	L2	CL21	C2	C2	C1	C1	C1	H1	C3	C3	C4	FF24	F3	F4	FF11	F2
5	F4	F2	F2	F4	F2		CL11	L2	LH21	L2	L1	L1		HL11	HL11	H1	C1	C2	C1	F1	F1	F1		F1
6	F2	F2	F2	F6	F4	F6	L3	CLH33	L3	L2	C1	C2	HL11	HL11	HL11	HL11	CL22	C3	L2	F2	F2	F3	F2	F4
7	F2	F1	FF11	F1		F1	L4	HL12	L1	L2	L1	HL11	L1	L1	L2	HL12	C2	C4	C2	F1	F6	F4	F4	F2
8	F2	FR21	FF21	F1	F1		C1	L1	C1	C1	L1	H1	H1	CL11	CL11	CL21	CL31	C4	L6	F3	F3	F2	F5	F4
9	F1	FF21	FF32	F4	F5	F3	C4	C2	C2	C2	C1	C1	HL11	HL11		HL11	C·L21	C4	C5	F3	F2	F2	FF23	F3
10	FF12	F3	F5	F2	F3	FF22	C4	C3	C3	C2	L1	C1	C1	CL11	CL11	HL11	C2	C2	C4	F6	F5	F5	F2	F2
11	F2	F4	F4	F4	F4	F2	C2	C2	C1	C2	C1	C1	H1	C2	C2	C2	C2	C4	C4	F5	F3	F3	F3	F2
12	F1	F1	F1			F1	C3	C2	C2	C1	C1	L1	CL11	CL12	C2	C3	C3	C3	C4	F3	F3	F3	F2	F2
13	F2			F1	F1	F2	C3	C3	C2	C1	L1	L2	L2	L1	H1		C2	LC11	CL31	FF11	F2	F2	F4	F4
14	F2	F2	F2	F2	F2	F1	L3	L2	L2	L1	L1	L1	L1	L1	LL11	HL11	CL11	CL11	CL25	F2	F2	F3	F4	F4
15	F2	F2	F2	F1			L1	L1	L1	L1		L1	L1		L1	LL11	HL11							
16	F1	F2	F4	F5	F3	F3	CL22	CL32	CL22	L1	L2	L2	L2	L1	L2	L2	CL21	LC21	F2	L2	F4	F5	F3	FF12
17	F1			FF11	F2	FF11	CL11	HL12	L3	L2	L1		L1	L1	H1	H1	C1	L1		F4	F1	F1		F3
18	F5	F2	F1				C1	L2	L1	L1	L1		L1	L1	L1	L1	L1	HL11	F1	F1	F1		F3	F3
19	F2	F2	FF11	F1			C1	HL11	L1	C1	C1		L1	HL11	HL11	L1	H1	H1	C5	F1	F2	F3	F2	F2
20	FF12	F1	F2				CH11	CL11	C2	C1	C1	HL11	L1	L1				H1		F1	F1	F3		F1
21		F1			F1	F2	C1	CHL21	L2	CL11	CL22	CL11	L1		CL11	CL31	L2	LC52	F6	F3	F3	F2	F2	F2
22	F2	F3	FF22	F4	F5	F3	L1	HCL22	HL22	CL11	CL21	CL12	CL11		L1	H1	CL22	C2	F5				F2	F2
23	F2	F2	F1	F3	F1	F3	LH11	HL12	HL22	LC11	C2	C2		L1	L1	HL11	C2	C5	F3	F4	F3	F2	F2	F5
24	F4	F4	F4	F2	F1	F2	C2	L4	HL11	L2	L1	L1		L1	L1	H1	L1	LH11	F1		F1	F3	F2	FF21
25	FF12	F2	F2	F1	F1	F1	C1	HL11	L2	L1		LL12	L1		L1	HCL11	HL11	C4	F6	F4	F2	F2		
26	F1	F1					C2	C3	C2	C2	C1	L1	L1	L1		H1	C2	C3	F6	F6	F1	F3	F4	F3
27	F4	F1	F1		F1			CL11	C1	C1	C1	C1	C1	L2	L2	L3	L3	L4	F4	FF21	F2	F3	F4	F2
28	F1	F2	F2	F1	FF11	FF11	L2	HL21	C2	C1	C3	CL11	L1	L2	L3	L2	LQ21	CL11	F1	FF13	F2	F3		F1
29			F1		F1	F2	L3	LC21	HL11	CL11	C1			L1	H1				F2	F2	F1			F1
30				F1	F1	F2	CL11	CL31	CL21	CL11	L1	L1	CL11	C1	CL21		HL11	CL11	F3	F1	F2	F2	F3	F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

SEP.1995 TYPES OF Es COMMUNICATIONS RESEARCH LABORATORY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

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


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
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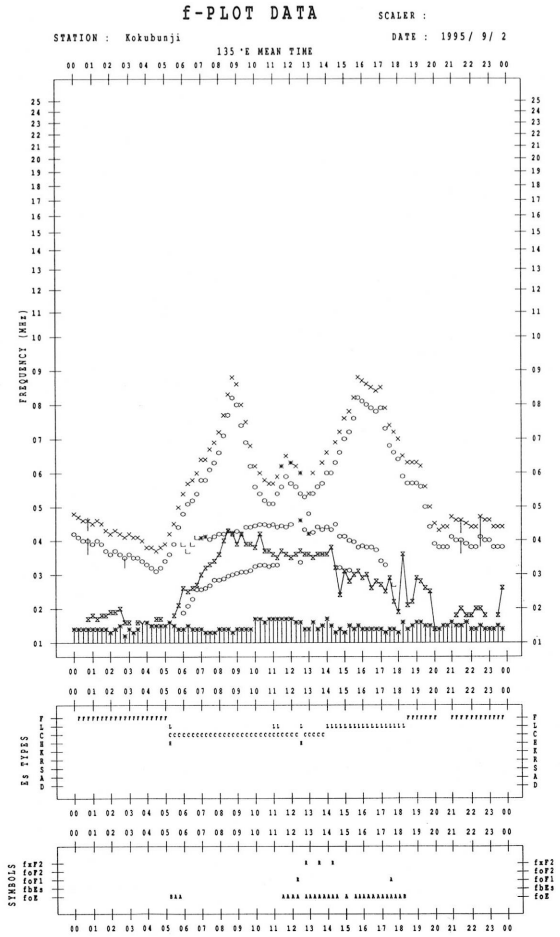
STATION : Kokubunji
DATE : 1995/ 9/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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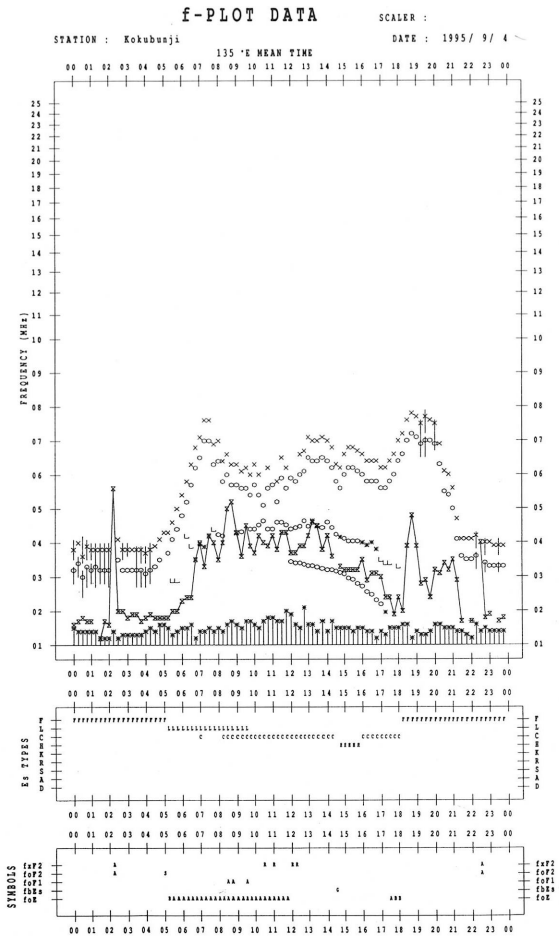
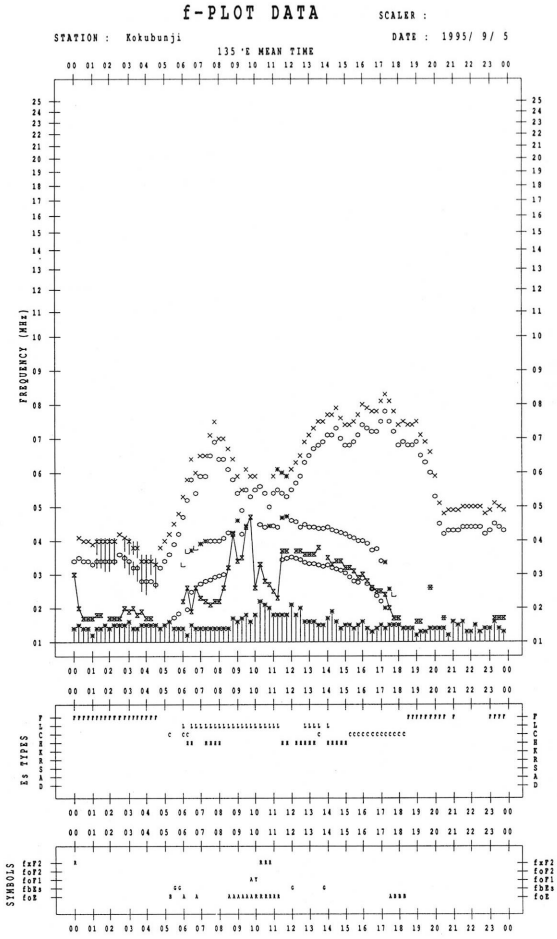
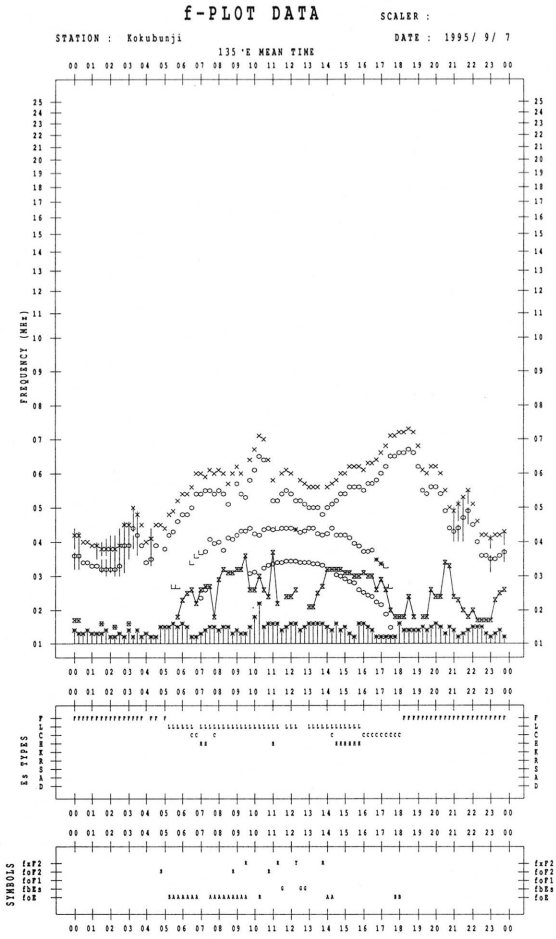
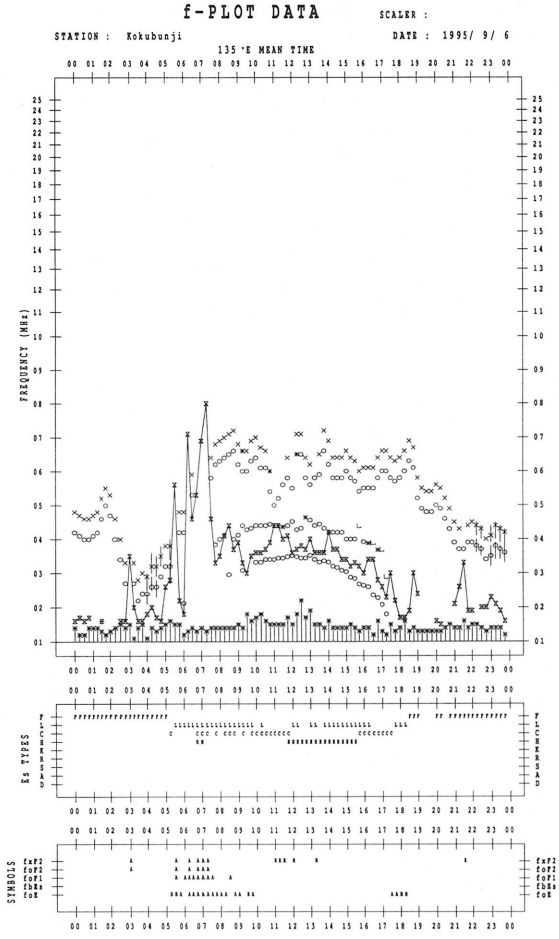
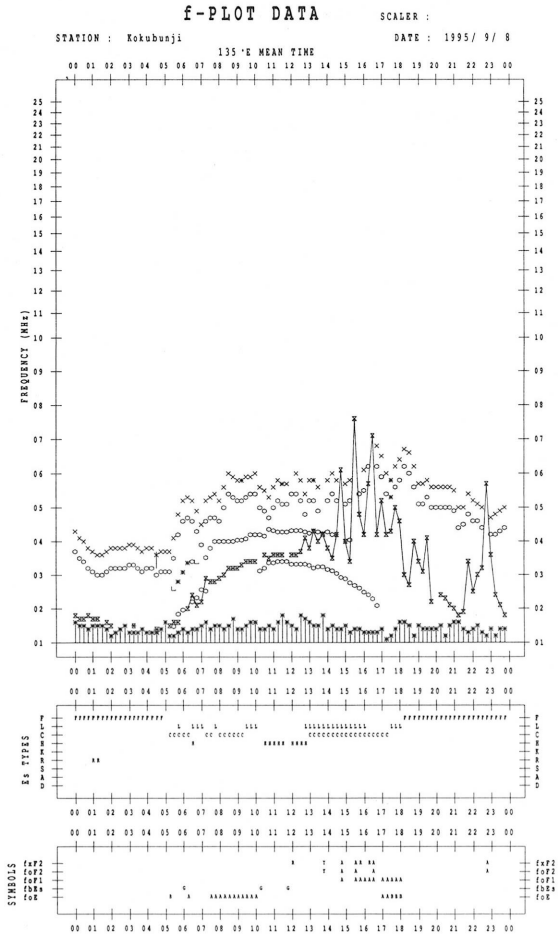
STATION : Kokubunji
DATE : 1995/ 9/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

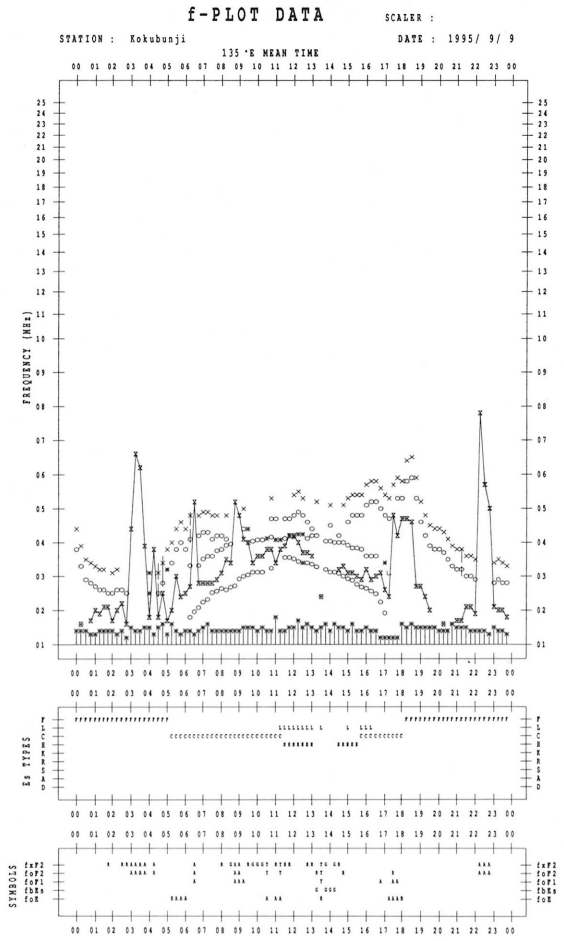

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

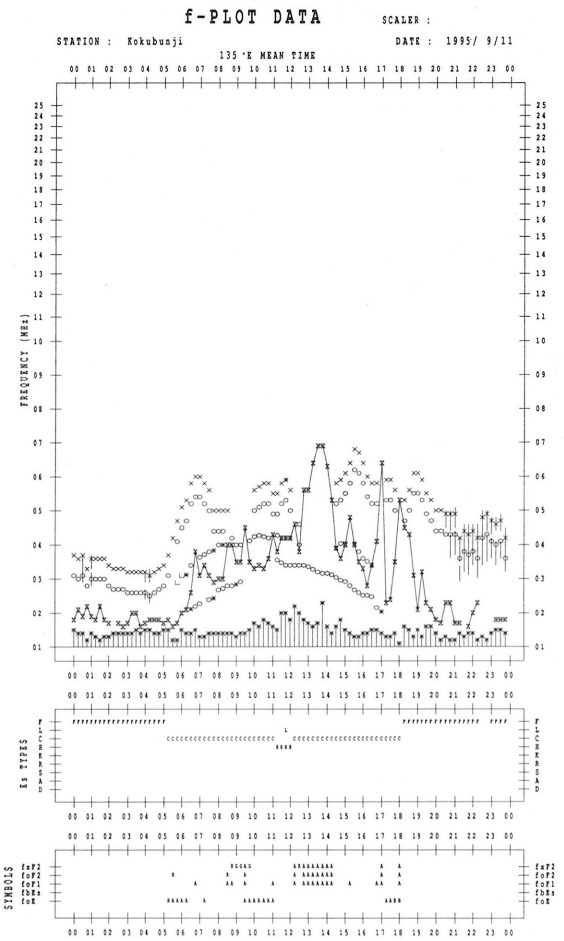

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

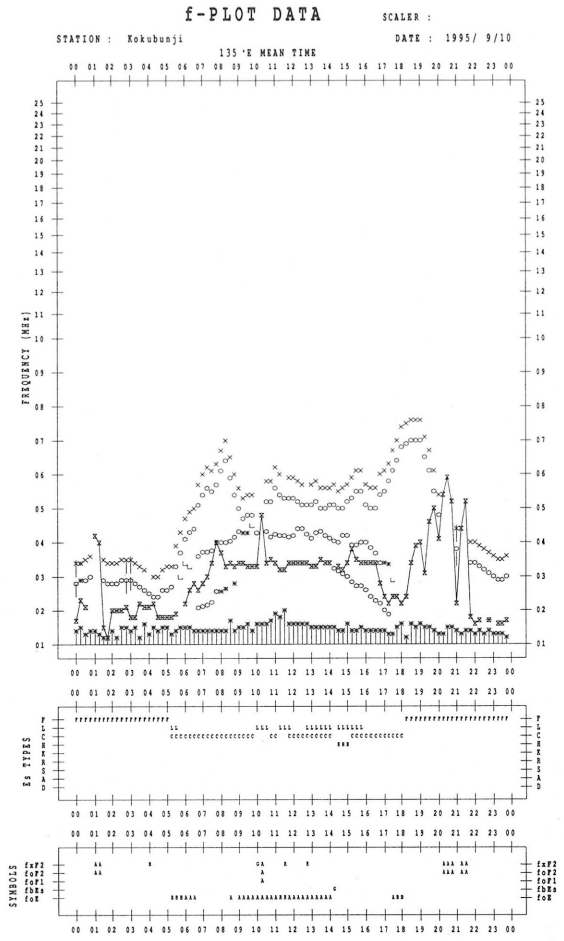

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

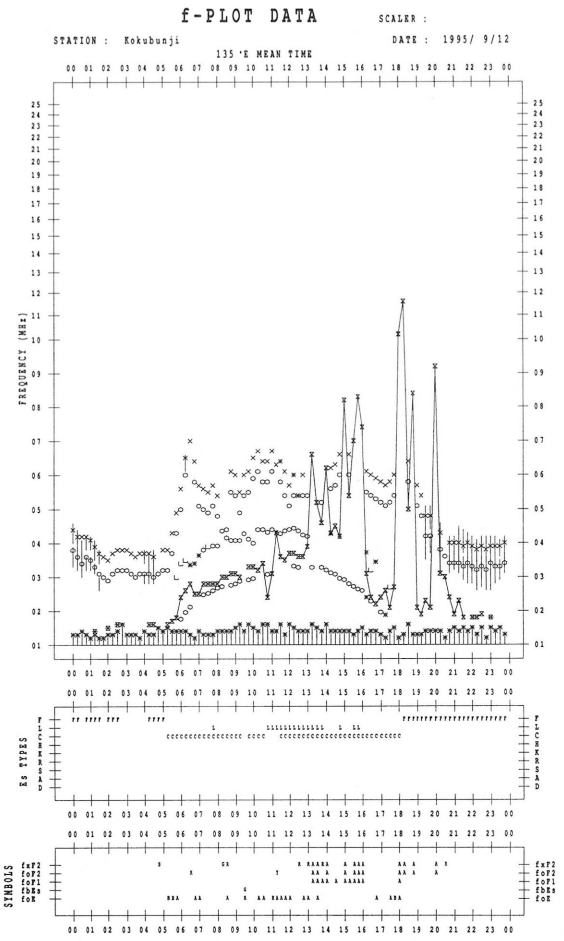

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

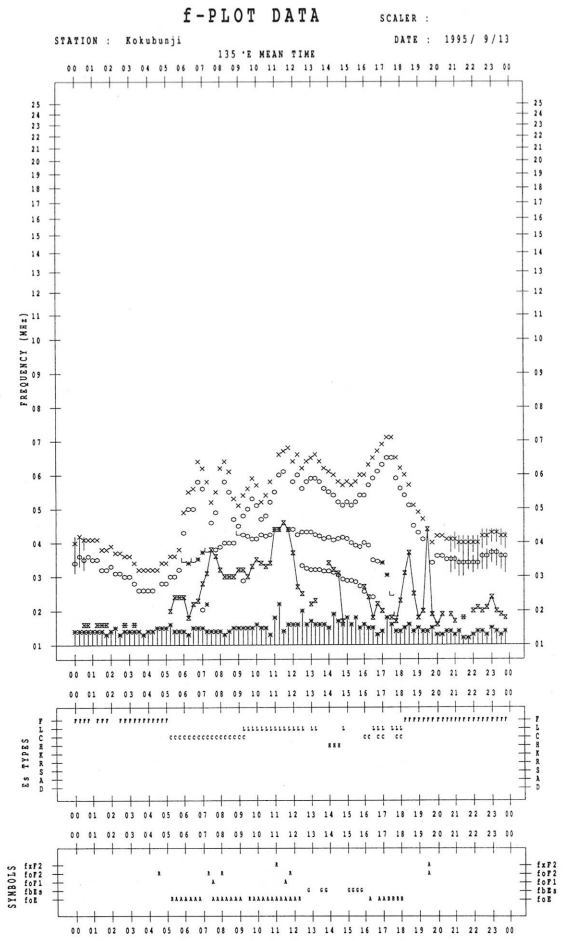

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

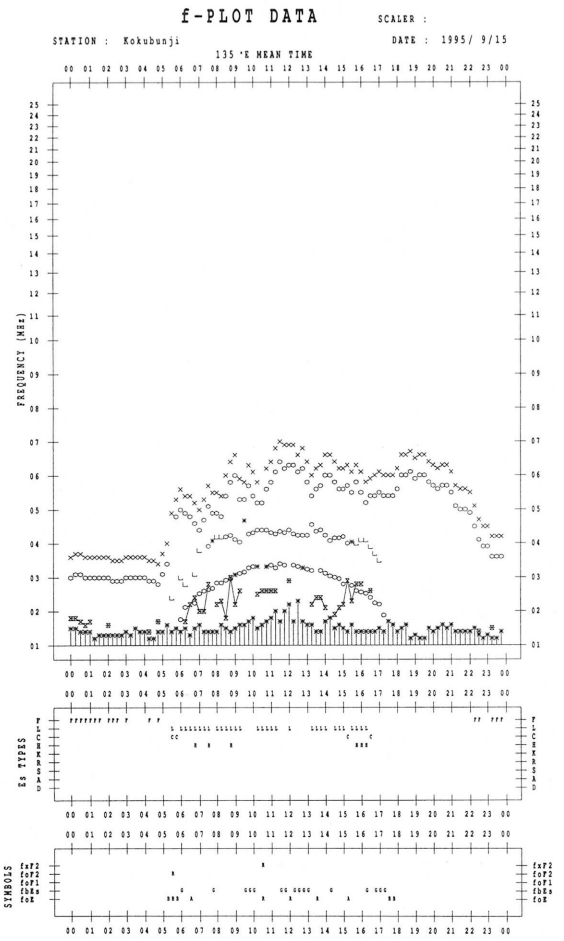

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

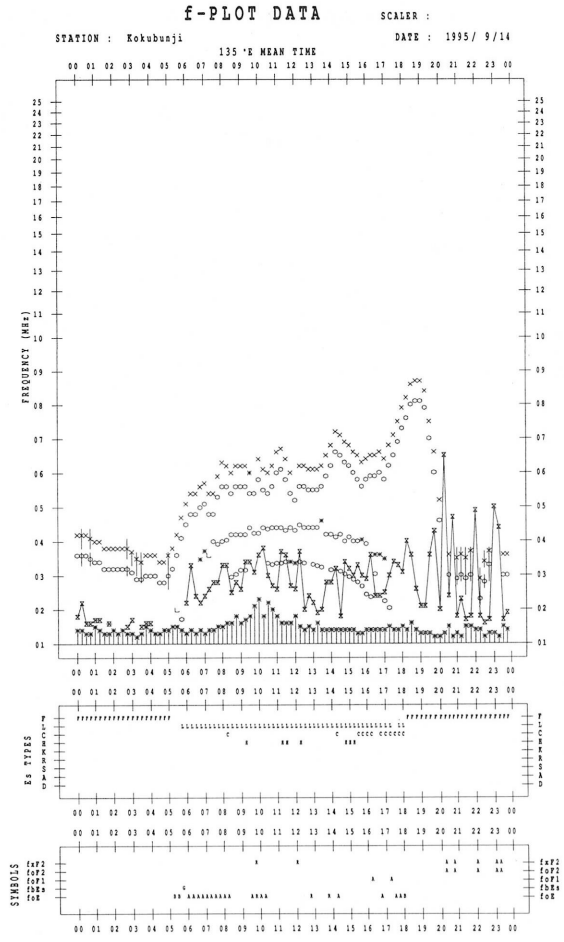

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

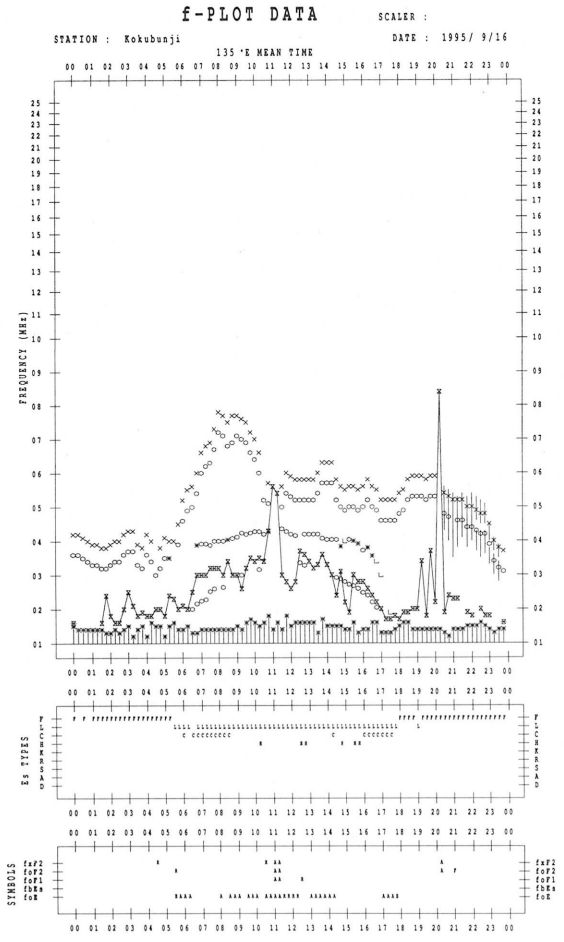

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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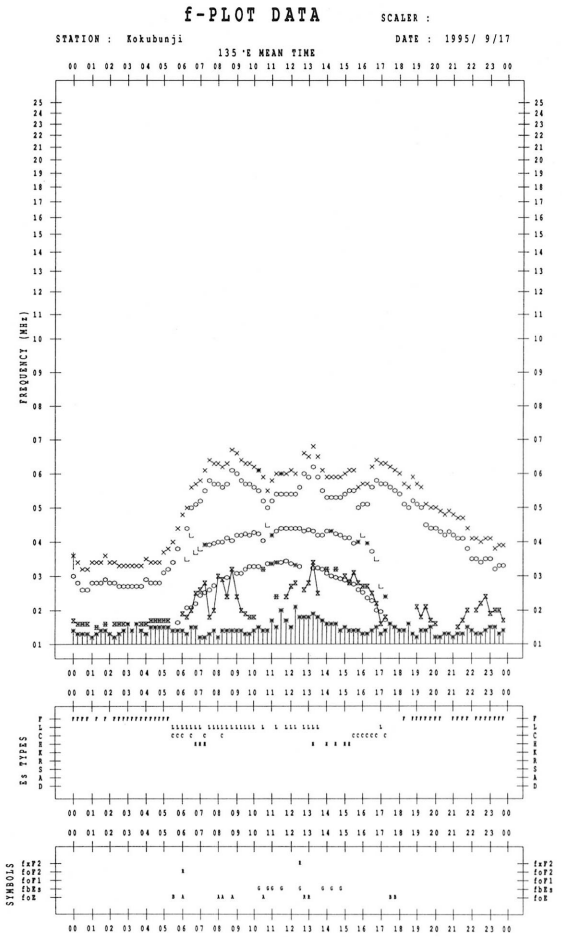
STATION : Kokubunji
DATE : 1995/ 9/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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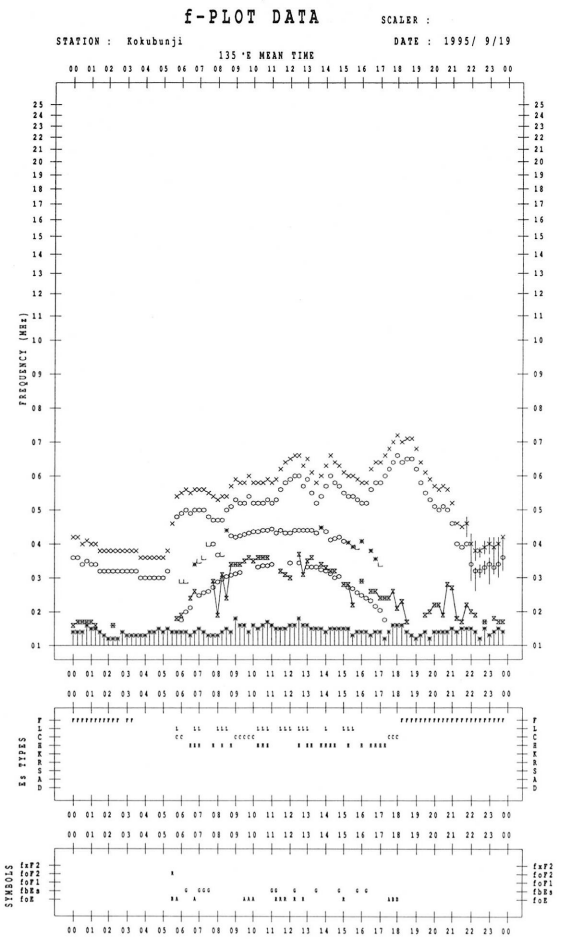
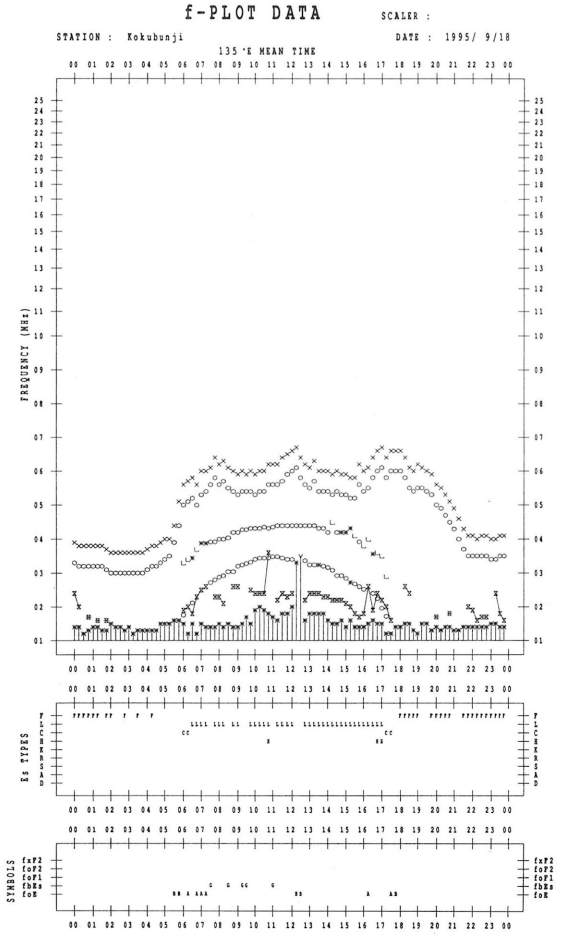
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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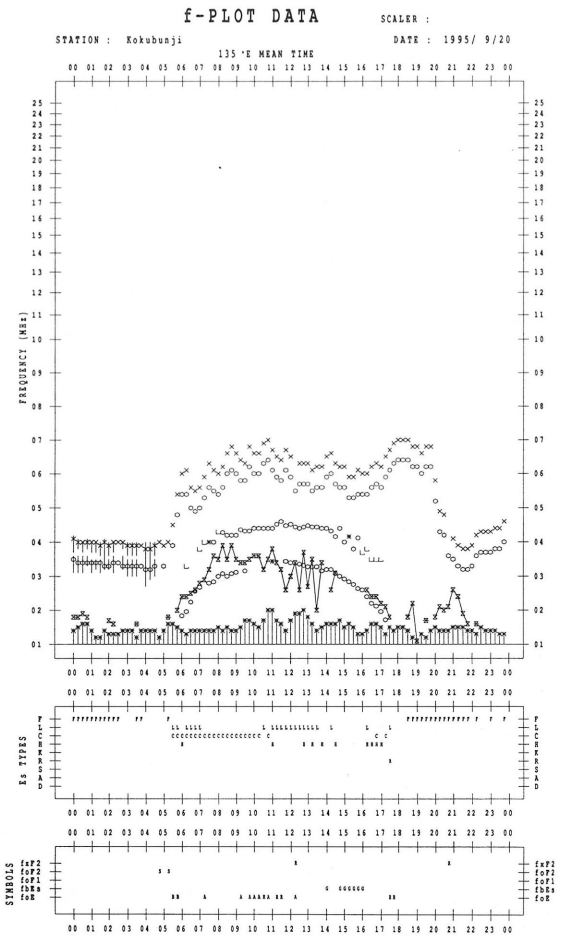
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS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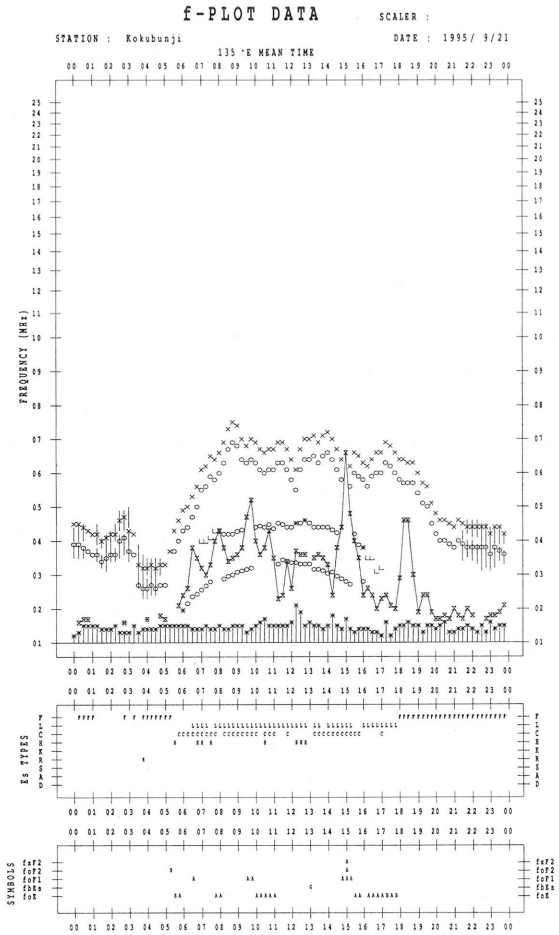
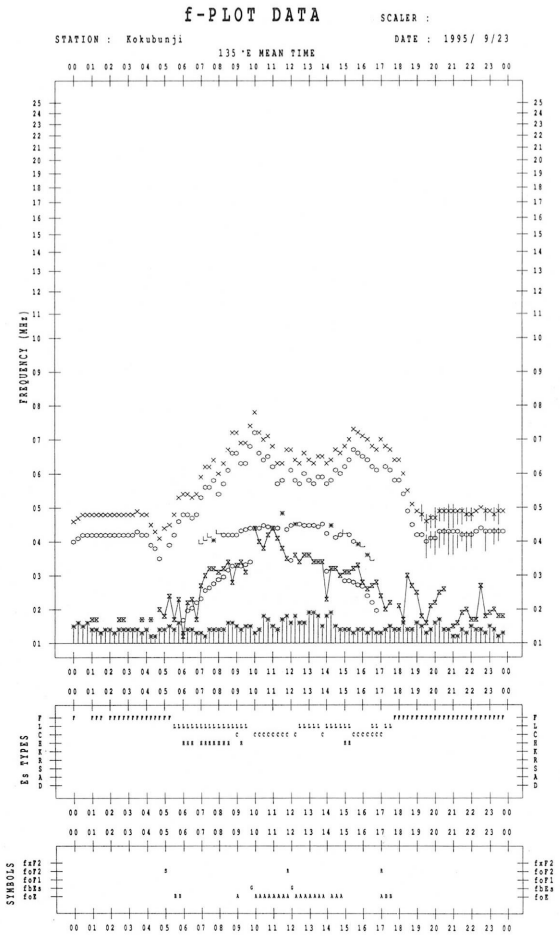
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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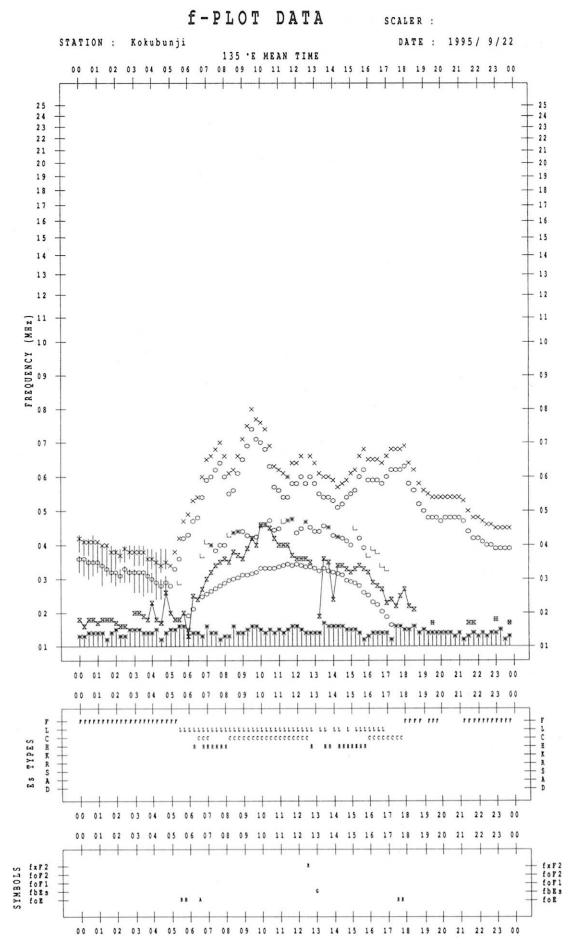
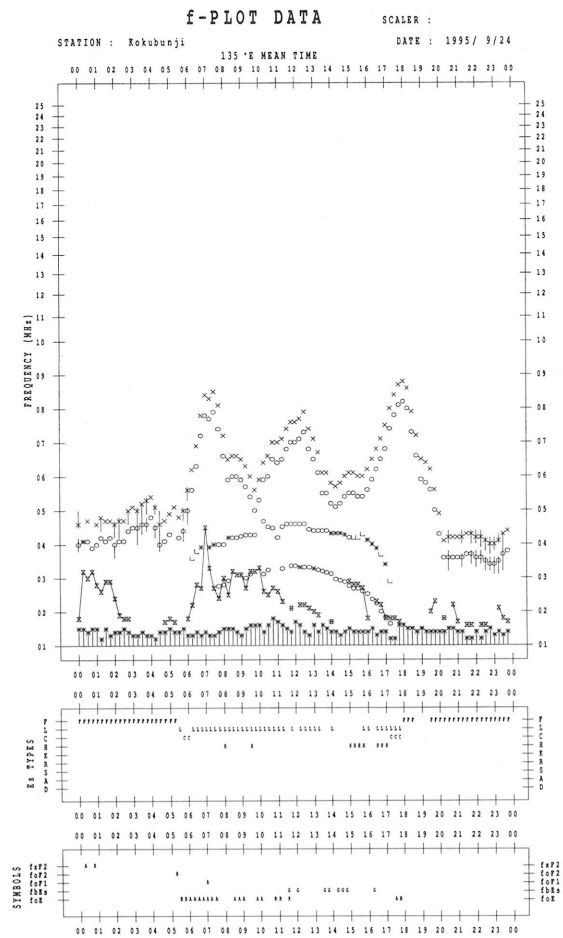
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE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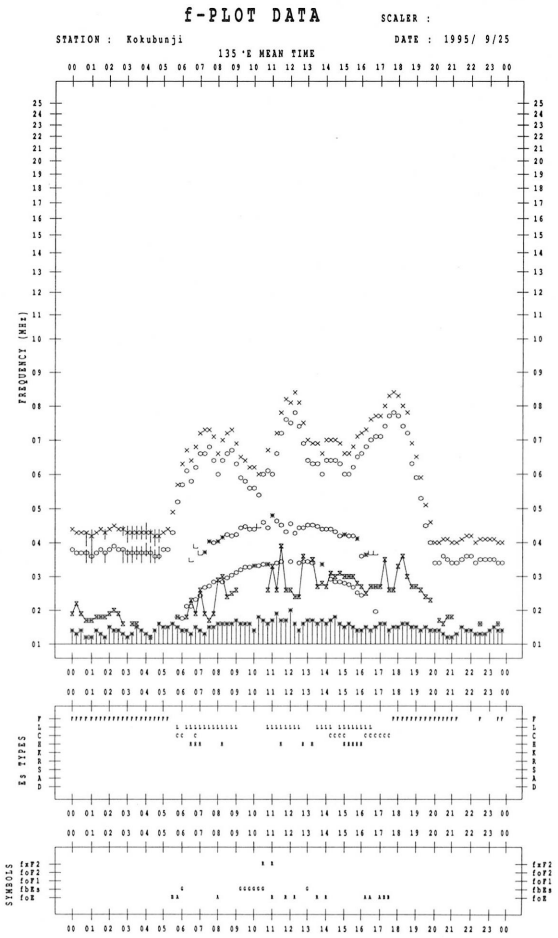
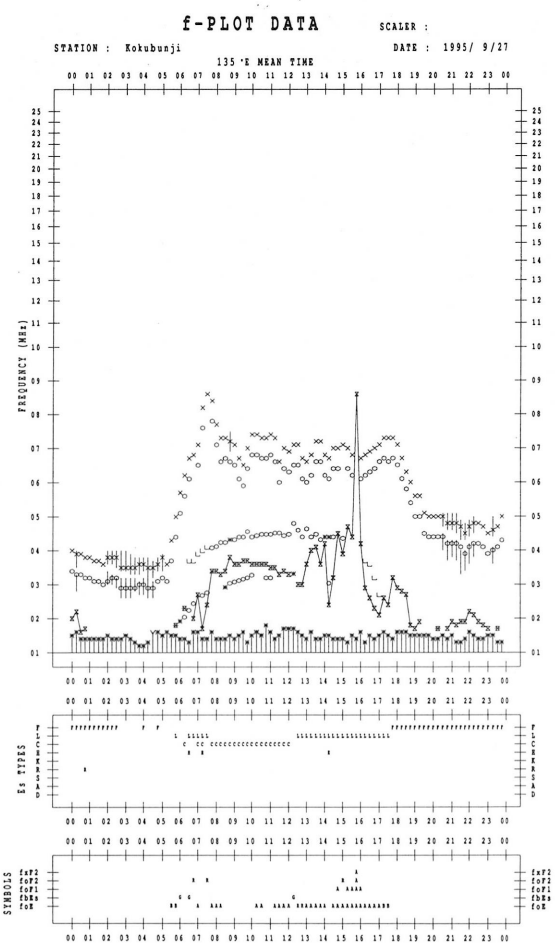
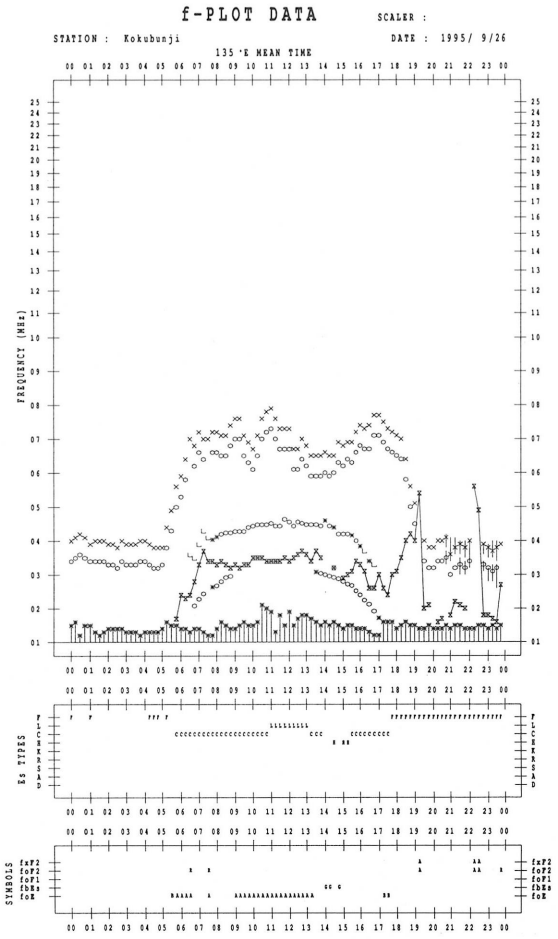
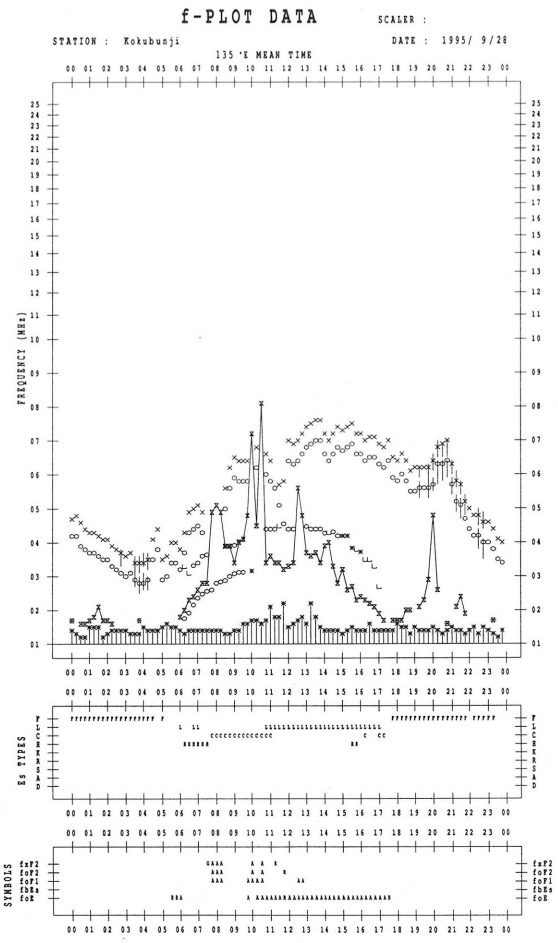
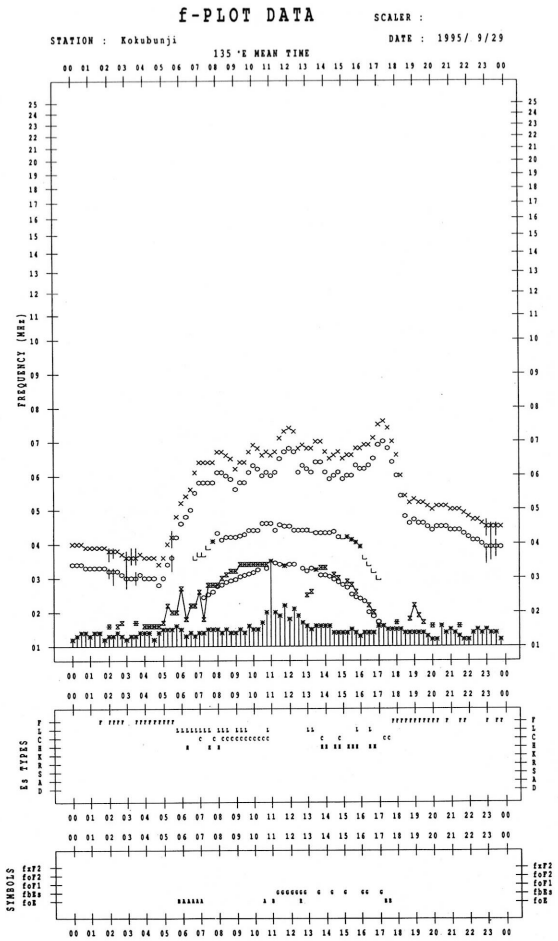
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

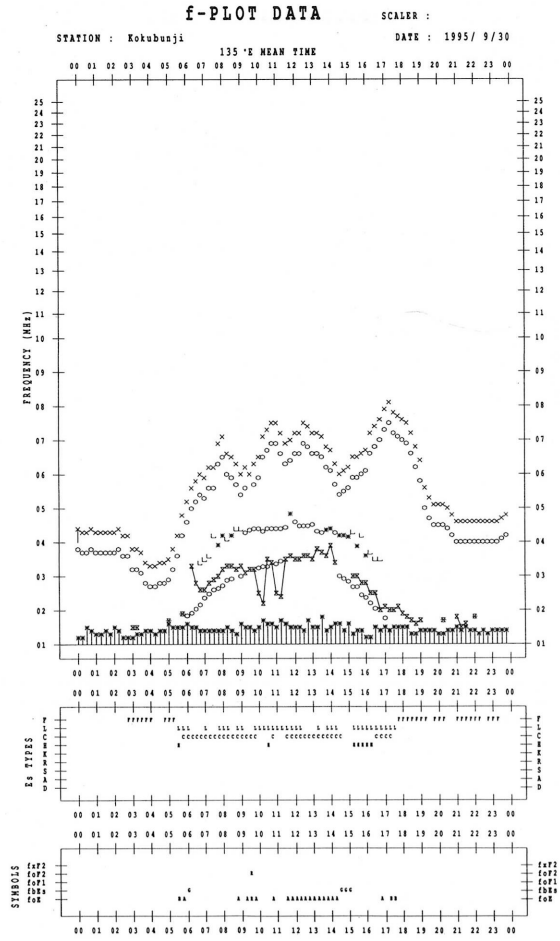

f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER :
STATION : Kokubunji
DATE : 1995/ 9/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

B. Solar Radio Emission

B1. Daily Data at Hiraiso

200 MHz

Not available until system improvement is completed.

B. Solar Radio Emission

B1. Daily Data at Hiraiso

500 MHz

Hiraiso September 1995

Single-frequency total flux observations at 500 MHz					
Flux density: 10^{-22} Wm^{-2}Hz^{-1}					
UT	00-03	03-06	06-09	21-24	Day
Date					
1	25	25	25	25	25
2	25	-	-	-	25
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-
6	-	-	-	-	-
7	-	-	-	-	-
8	-	-	-	-	-
9	-	-	-	-	-
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-
13	-	-	-	-	-
14	-	-	-	-	-
15	-	-	-	-	-
16	-	-	-	-	-
17	-	-	-	-	-
18	-	-	-	-	-
19	-	-	-	-	-
20	-	-	-	-	-
21	-	-	-	-	-
22	-	-	-	-	-
23	-	-	-	-	-
24	-	-	-	-	-
25	-	-	-	-	-
26	-	-	-	-	-
27	-	-	-	-	-
28	-	-	-	-	-
29	-	-	-	-	-
30	-	-	-	-	-

Note: No observations during the following periods.

2nd 0148 - 31st 2400

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso September 1995

Single-frequency observations

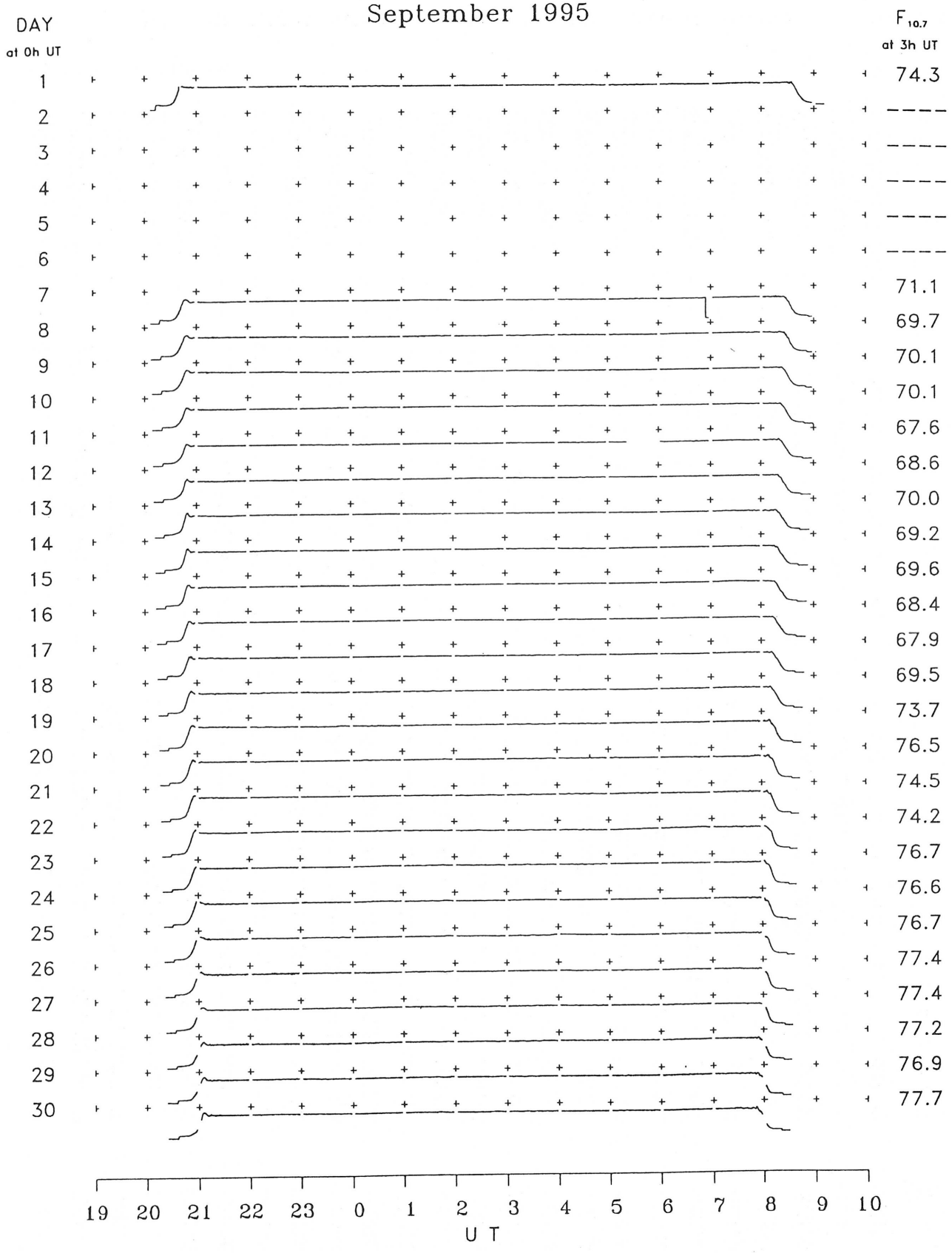
Normal observing period: 2015 - 0850 U.T. (sunrise to sunset)

SEP.	FREQ.	TYPE	START TIME	TIME OF MAXIMUM	DUR.	FLUX DENSITY (10^{-22} Wm^{-2}Hz^{-1})		POLARIZATION
1995	(MHz)		(U.T.)	(U.T.)	(MIN.)	PEAK	MEAN	REMARKS
20	2800	1 S	0437.8	0438.4	1.0	13	7	O
	200	8 S	0437.8	0438.4	0.6	28	-	O
	200	42 SER	0452.5	0455.3	11.0	30	-	WR
21	200	42 SER	2346.9	2350.6	6.0	16	-	O
22	200	42 SER	0218.4	0219.2	4.0	23	-	O
	2800	8 S	0218.6	0218.6	0.1	5	-	WR
	200	8 S	0526.6	0527.0	0.5	5	-	O
	200	41 F	0624.3	0627.5	11.0	67	-	WR
	200	46 C	0748.0	0748.1	1.5	16	9	WR
23	200	8 S	0119.0	0119.0	0.5	49	-	WL
	200	41 F	0317.6	0317.6	1.0	10	-	O
25	200	41 F	0354.3	0358.9	19	11	-	WR

B. Solar Radio Emission

B3. Summary Plots of $F_{10.7}$ at Hiraiso

September 1995



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°.

C. RADIO PROPAGATION

C1. H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWV)

SEP 1995 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT	00H	01H	02H	03H	04H	05H	06H	07H	08H	09H	10H	11H	12H	13H	14H	15H	16H	17H	18H	19H	20H	21H	22H	23H
DAY	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M	17M
	ES	ES	ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
1	-25	-25	-25	-25	-4	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
2	-25	-25	-25	-25	-25	-2	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		ES	ES
3	-7	-25	-25	-25	-25	-25	-25	-25	-24	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-3	-25	-25
	ES	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	-25																							
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5																								
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6																								
	C	C	C	C	C	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
7						-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	C	C	C	C	C	C	C	C	C	C	C	C
8	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25												
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
9	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
10	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
11	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
12	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
13	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14																								
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15																								
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16																								
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17																								
	C	C	C	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
18				-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES			
19	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-4	4	-3
		ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
20	1	-25	-25	-4	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		ES	ES	
21	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	2	-25	-25	0
	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES							
22	-25	-3	-25	-25	-25	-24	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	7	4	-2	0	0	2	0
		ES			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES		ES	ES
23	-4	-25	2	4	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	3	-25	-25
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25	-3	-2	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-24	-24	-24	-24	-24	-24	-24	-24	-24	-25	-25	-25
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26	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-3
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	ES	ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
28													-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
29	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
			ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
30	2	3	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-3	-3	-2	-2
CNT	21	20	20	21	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
MED	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
			ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
UD	1	-2	-25	-4	-25	-24	-25	-25	-25	-25	-25	-25	-24	-24	-24	-24	-24	-9	-9	-9	0	0	2	0
	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
LD	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25

C. RADIO PROPAGATION

C1. H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWVH)

SEP 1995 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT DAY	00H 46M	01H 46M	02H 46M	03H 46M	04H 46M	05H 46M	06H 46M	07H 46M	08H 46M	09H 46M	10H 46M	11H 46M	12H 46M	13H 46M	14H 46M	15H 46M	16H 46M	17H 46M	18H 46M	19H 46M	20H 46M	21H 46M	22H 46M	23H 46M
1	1	2	-1	3	13	12	13	1	-1	2	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	ES -25	-3	-1	1	-1	-1	3
2	-4	-1	3	3	12	16	20	18	8	6	-2	-2	ES -25	-2	ES -25	ES -25	ES -25	ES -25	ES -25	-4	3	1	-1	3
3	-4	1 C	5 C	-2 C	9 C	12 C	15 C	13 C	13 C	6 C	18 C	ES -25 C	ES -25 C	ES -25 C	ES -25 C	ES -25 C	ES -25 C	ES -25 C	ES -25 C	12 C	9 C	5 C	6 C	-4 C
4	2 C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C				ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES		ES		ES
7						8	12	15	-25 ES	-25	-2 ES	-25 ES	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	2 C	-25 C	-2 C	-25 C
8	3 ES	-2 ES	-2 ES	15	2	13	7	8	-25	-6 ES	-25 ES	-25 ES												
9	-25 ES	-25	-25	-2	3	-2	9	11	5	-25	-25	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-2	3	4	ES -25 ES
10	-25	-2	3	3	9	5	8	4	5	6 ES	9 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	6	4	-4	-25
11	-9 ES	-1	-15	-15	5	15	12 ES	3	-2 ES	-25	-25	-25 ES	-9 ES	-9 ES	-9 ES	-9 ES	-9 ES	-9 ES	-9 ES	-9	14	19	21	1
12	-25	1	2	2	5	8	-25	-2	-25	-4 ES	-4 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-15	2	7	2	3
13	-3 C	0 C	2 C	7 C	9 C	14 C	3 C	2 C	3 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-25 C	-15 C	2 C	7 C	2 C	3 C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C					ES	ES		ES	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES				
18			4	2	-3	0	-25	-25 ES	3 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	4	4	-15	0
19	ES -25	ES -25	6	11	13	13	5	-25	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	6	4	2	2
20	0	-2	6	12	16	21	7	0 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25	-25	-25	1	2	4	4
21	-2	-4	2	17	-19	16	9	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-4 ES	-2 ES	2 ES	4	4	-2	2
22	1	2	3	6	8	16	18	-25	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25	-25	4	12	5	2
23	5	2	5	7	7	7 ES	18 ES	2 ES	-25	-25	-25	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-2 ES	2	3	9	7	10
24	-3	2	5	6	5	-25	-25	-25	4	6 ES	-4 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	2 ES	4	0	5	8
25	2	7	0	13	12	11	4	2	2 ES	-25 ES	-25 ES	-25 ES	-24 ES	-24 ES	-24 ES	-24 ES	-24 ES	-24 ES	-24 ES	-24 ES	9	4	1	5
26	6	5	8	6	15	18	0	4 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	9 ES	7	6	0
27	0	7	-4	10	9	19	2	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25	-25	3	-2	2
28													-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	1 ES	12	5	3	3
29	7	3	5	6	16	13	20	ES -25	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	3	1	6	4
30	13	14	8	4	8	11	14	3	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	2	3	3	2
CNT	21	20	21	21	21	22	22	22	22 US	22 ES	22 ES	22 ES	22 ES	22 ES	22 ES	22 ES	22 ES	22 ES	22 ES	22 ES	22	22	22	22
MED	0	1	3	6	9	12	8	2	-25	-25	-25	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25 ES	-25	-24	4	4	2	2
UD	7 ES	7 ES	8	15	16	19	20 ES	15 ES	8 ES	6 ES	9 ES	-25 ES	-24 ES	-9 ES	-24 ES	-24 ES	-24 ES	-9 ES	-2 ES	2 ES	12	12	7	8 ES
LD	-25	-25	-15	-2	-3	-2	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-2	-1	-4	-25

C. Radio Propagation

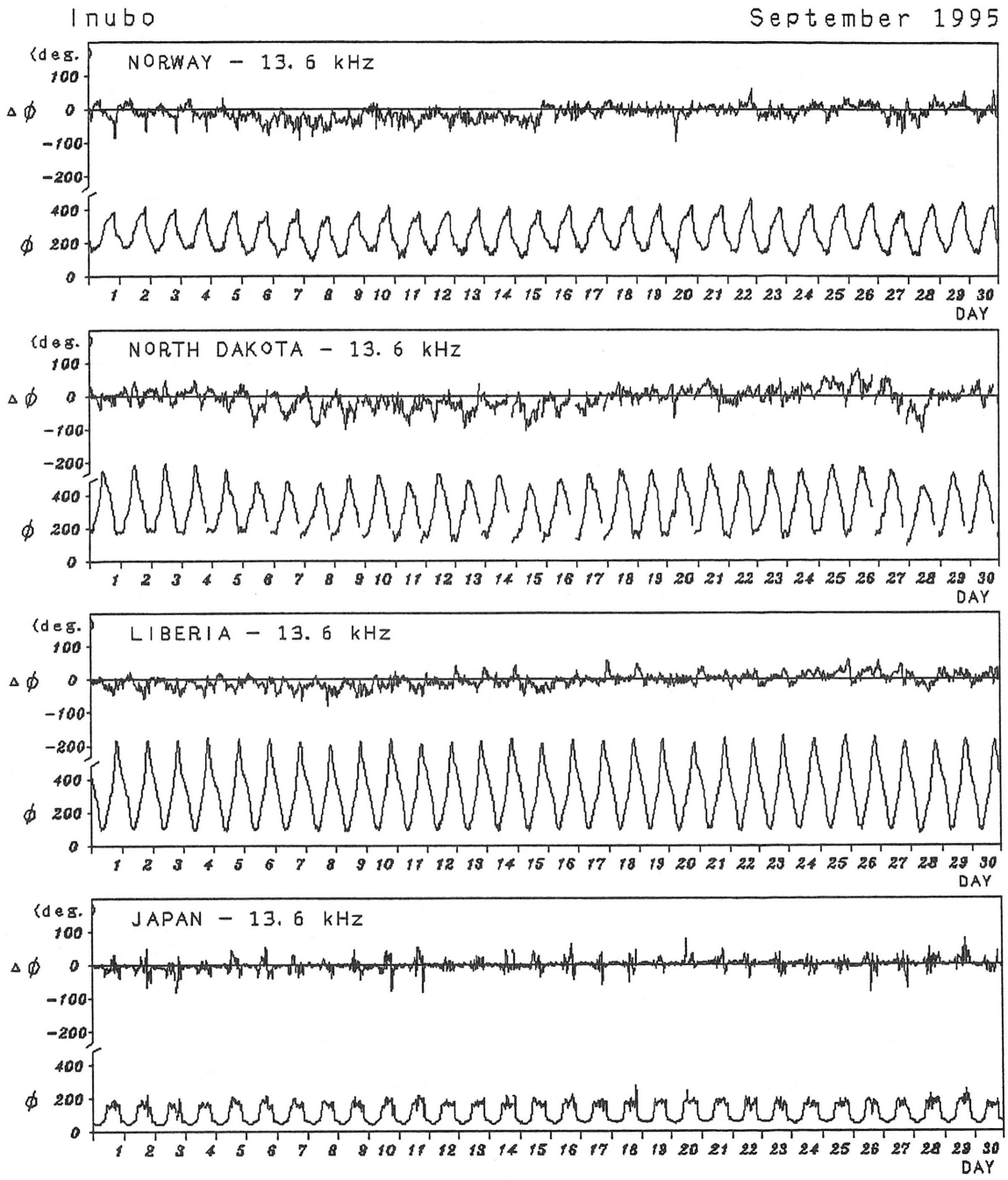
C2. Radio Propagation Quality Figures at Hiraiso

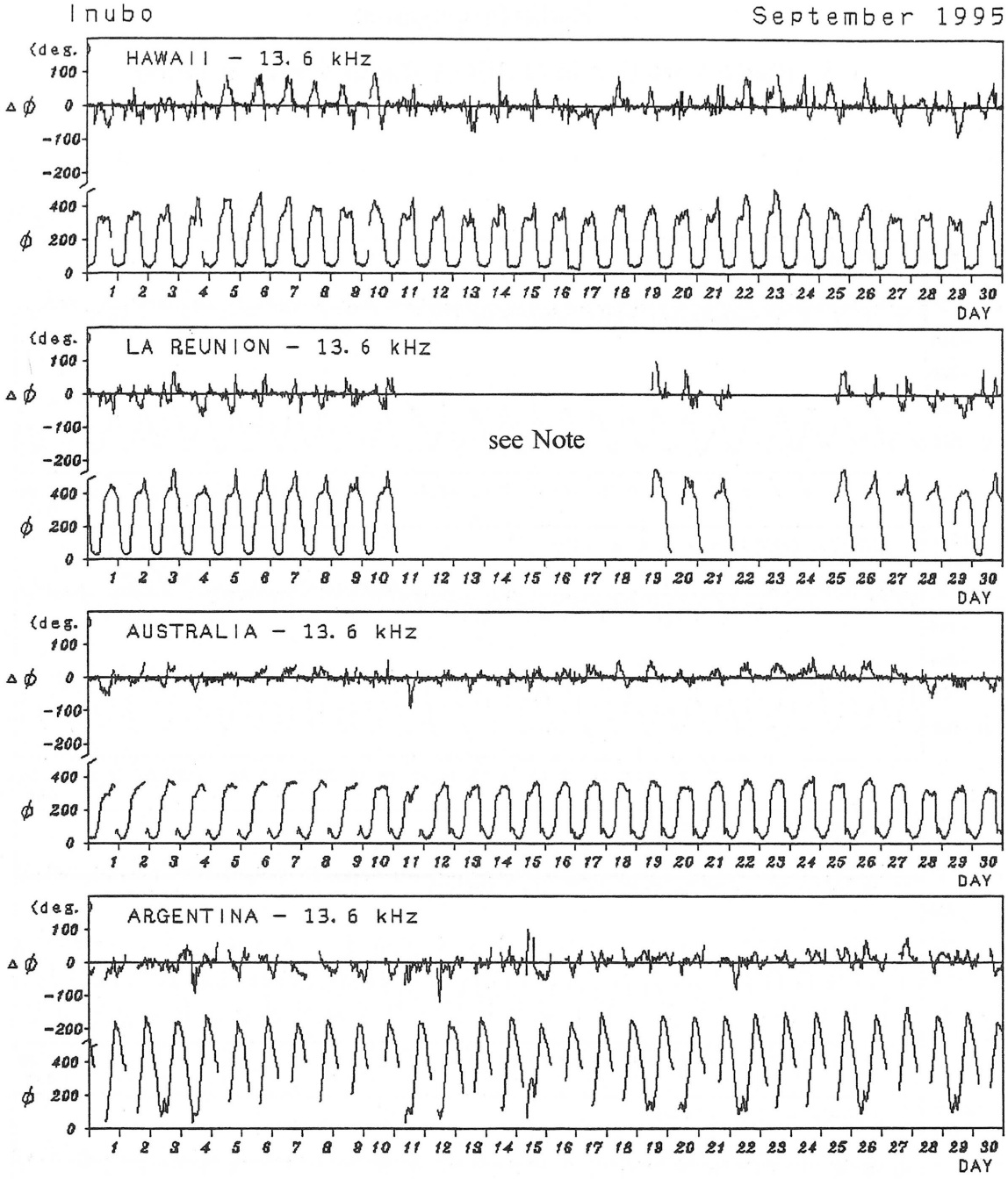
Hiraiso — Time in U.T.

SEP. 1995	Whole Day Figure	WWV 00 06 / 06 12	WWV 12 18 / 18 24	WWVH 00 06 / 06 12	WWVH 12 18 / 18 24	Condition 00 06 / 06 12	Condition 12 18 / 18 24	Principal Geomagnetic Storms Start h m	End h	Range nT
1	4o U	- -	- -	4 4U	- 4	N N	N N	None		
2	4+ U	- -	- -	4 5U	- 4	N N	N N			
3	4+ U	- -	- -	4 5U	- 4	N N	N U			
4	C	C C	C C	C C	C C	N N	N N			
5	C	C C	C C	C C	C C	N N	N N			
6	C	C C	C C	C C	C C	N N	N N			
7	C	C -	- -	C 4U	- 3	N U	U U			
8	C	- -	C C	4 4U	C C	U U	U U			
9	3+ U	- -	- -	2 5U	- 3	U U	U U			
10	4o U	- -	- -	4 5U	- 3	U U	U U			
11	4o U	- -	- -	4 4	- 4	U U	U U			
12	4- U	- -	- -	3 4U	- 4	U U	U U			
13	4o U	- -	- -	4 4U	- 4	U U	U U			
14	C	C C	C C	C C	C C	U N	N N			
15	C	C C	C C	C C	C C	N N	N N			
16	C	C C	C C	C C	C C	N N	N N			
17	C	C C	C C	C C	C C	N N	N N			
18	3o U	- -	- -	3 2U	- 4	N N	N N			
19	4-	- -	5U	3 3	4 4	N N	N N			
20	4+ U	5U -	- -	4 4U	- 4	N N	N N			
21	4+ U	- -	- 5U	4 3U	5U 4	N N	N N			
22	4o U	- -	- 5U	4 3U	- 4	N N	N N			
23	4+ U	5U -	- -	4 4U	- 4	N N	N N			
24	3+ U	- -	- -	3 3U	- 4	N N	N N			
25	4+ U	5U -	- -	4 4U	- 4	N N	N N			
26	4o U	- -	- -	4 4U	- 4	N N	N N			
27	3+ U	- -	- -	4 3U	- 3	N N	N N			
28	2+ U	- -	- -	1U 2U	- 4U	N N	N N			
29	4o U	- -	- -	4 4U	- 4	N N	N N			
30	4+ U	5U -	- 5U	4 4U	- 4	N N	N N			

C. Radio Propagation

C3. Phase Variation in OMEGA Radio Waves at Inubo





Note : As for LA REUNION-13.6kHz, Gaps in the record during 11 September 0400 UT to 29 September 1200 UT are due to transmitter maintenance.

Polar Cap Phase Anomaly (PCPA) on Norway-Inubo Circuit

NONE

C. Radio Propagation

C4. Sudden Ionospheric Disturbance

(a) Short Wave Fade-out (SWF) at Hiraiso

Hiraiso

Time in U.T.

Sep. 1995	S W F						Correspondence	
	Drop-out Intensities(dB)				Start	Dur.	Type	Imp.	Solar * Flare	Solar Burst
	CO	HA	AUS	MOS BBC						
	None									

NOTE CO:Colorade(WWV) HA:Hawaii(WWVH) AUS:Australia MOS:Moscow BBC:London

* Optical and X-ray Flares

(b) Sudden Phase Anomaly (SPA) at Inubo

Inubo

Sep. 1995	S P A								
	Phase Advance (degrees)						Time (U. T.)		
Date	Ω/N	Ω/L	Ω/LR	Ω/AU	Ω/H	Ω/ND	Start	End	Maximum
5				9	6		0052	0129	0104
18			–	8	10		2349	0046	0005
20		26	–				1056	1140	1104

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