

# IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 1984

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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 Radio Research Laboratories, 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)  |
| Akita     | 39°43.5'N  | 140°08.0'E | 29.5°N      | 205.9°    | " (I)                  |
| Kokubunji | 35°42.4'N  | 139°29.3'E | 25.5°N      | 205.8°    | " (I)                  |
| Yamagawa  | 31°12.1'N  | 130°37.1'E | 20.4°N      | 198.3°    | " (I)                  |
| Okinawa   | 26°16.9'N  | 127°48.4'E | 15.3°N      | 196.0°    | " (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°    | " (P)                  |

## A. IONOSPHERE

Ionospheric observations are carried out at five stations in Japan by means of vertical sounding method.

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".

## a. Characteristics of Ionosphere

|                |   |
|----------------|---|
| $f_x I$        | Top frequency of spread $F$ trace   |
| $f_o F_2$      | Ordinary wave critical frequency  |
| $f_o F_1$      | for the $F_2$ , $F_1$ , $E$ and $E_s$ including particle  |
| $f_o E$        | $E$ layers respectively   |
| $f_o E_s$      |   |
| $f_b E_s$      | Blanketing frequency of the $E_s$ layer, e.g. the lowest ordinary wave frequency visible through $E_s$    |
| $f_{min}$      | Lowest frequency which shows vertical ionospheric reflections   |
| $M(3000)F_2$   | Maximum usable frequency factor   |
| $M(3000)F_1$   | for a path of 3000 km for transmission by $F_2$ and $F_1$ layers respectively                             |
| $h'F_2$        | Minimum virtual height on the ordinary wave for the $F_2$ , whole $F$ , $E$ and $E_s$ layers respectively |
| $h'F$          |   |
| $h'E$          |   |
| $h'E_s$        |   |
| Types of $E_s$ | See below A. b. (iii)   |

## b. Symbols

## (i) Descriptive Letters

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

|   |   |
|---|---|
| A | Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example $E_s$ .                      |
| B | Measurement influenced by, or impossible because of, absorption in the vicinity of $f_{min}$ .                                    |
| 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 perturbation of parameters—Presence of polar spur traces.  |

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

## (ii) Qualifying Letters

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

|   |  |
|---|--|
| A | Less than. Used only when $f_b E_s$ is deduced from $f_o E_s$ 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  $E_s$ 

When more than one type of  $E_s$  trace is present on the ionogram, the type for the trace used to determine  $f_o E_s$  must be written first. The number of multiple traces is indicated after the type letter.

The types are:

|   |  |
|---|--|
| f | An $E_s$ trace which shows no appreciable increase of height with frequency.   |
| l | A flat $E_s$ trace at or below normal $E$ layer minimum virtual height or below the particle $E$ layer minimum virtual height.   |
| c | An $E_s$ trace showing a relatively symmetrical cusp at or below $f_o E$ . (Usually a daytime type.)   |
| h | An $E_s$ trace showing a discontinuity in height with the normal $E$ layer trace at or above $f_o E$ . The cusp is not symmetrical, the low frequency end of the $E_s$ trace lying clearly above the high frequency end of the normal $E$ trace. (Usually a daytime type.) |
| q | An $E_s$ trace which is diffuse and non-blanketing over a wide frequency range.  |
| r | An $E_s$ trace showing an increase in virtual height at the high frequency end similar to group retardation.   |
| a | An $E_s$ 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 *f<sub>min</sub>*.
  - 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 *f<sub>oEs</sub>* > *f<sub>oE</sub>* (particle E) the *Es* type precedes k.
- c. Definitions of the CNT, MED, UQ and LQ

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

*Median* (MED) of a set of numbers is the middle value when the numbers 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 are carried out on 100, 200 and 500 MHz at Hiraíso. Observation equipments are: a 5 meter parabolic reflector with a total-power receiver for 500 MHz and a 10 meter parabolic reflector with two polarimeters for 100 and 200 MHz. Observations are feasible almost from sunrise to sunset.

Time is expressed in hours, minutes and tenths of minutes U. T. and the unit of flux density is  $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$  for both components of polarization.

All symbols and terminology in the table of data are used in accordance with the "Descriptive Text of Solar-Geophysical Data, NOAA" and "Instruction Manual Monthly Report for Solar Radio Emission, WDC-C2".

a. Daily Data

*Flux density.* The three-hourly and daily mean values are given.

*Variability.* The three-hourly and daily mean values are given at 200 MHz only. Variability is expressed in the following four grades.

- 0 quiet or no burst,
- 1 a few bursts,
- 2 many bursts,
- 3 very many bursts.

The number of bursts exceeding the mean flux level is counted.

Daily data with parenthesis mean that observation time does not exceed one third of the period.

b. Outstanding Occurrences

The phenomena are picked up on the following criteria:

1. distinct from the prevailing kind of activity,
2. correlated with other known solar phenomena,
3. remarkable change-over from one situation to another.

*Type* is denoted by numerical code and letter symbol in parallel as follows:

| SGD Cord | 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 <sup>+</sup>           |
| 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 <sup>+</sup>           |

*Flux density* is the increase of flux over the level at which daily flux is calculated, or the increase of flux over the underlying burst when the event is superposed on another burst of long duration.

*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.

The following symbols may be attached after numerical values in table, if necessary.

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

**C. RADIO PROPAGATION**

a. Measurement of H. F. Field Strength

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 Hiraíso. In order to avoid interference among the same frequency waves, the upper side-band 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 band width. Particulars of the transmitters and the receiver are summarized in the following table.

| Characteristics | Transmitter                   |                       | Receiver                  |
|-----------------|-------------------------------|-----------------------|---------------------------|
|                 | WWV<br>Fort Collins, Colorado | WWVH<br>Kauai, Hawaii |                           |
| Station Call    | WWV                           | WWVH                  | Hiraíso, Ibaraki          |
| Location        | Fort Collins, Colorado        | Kauai, Hawaii         |                           |
| 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                 | -                         |
| Modulation      | 50 %                          | 50 %                  | -                         |
| Antenna         | $\lambda/2$ vertical          | $\lambda/2$ vertical  | 4.5 m vertical rod        |
| Bandwidth       | -                             | -                     | 80 Hz for upper side-band |
| Calibration     | -                             | -                     | Every an hour             |

The tabulated *field strength* in dB above one microvolt per meter is the peak average of the incident upper side-band field intensity in 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   | influenced by, or impossible because of, any artificial accident,          |
| S   | influenced by, or impossible because of, interferences or atmospheric.     |

#### b. Radio Propagation Quality Figures

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

*Quality figures* expressing radio propagation conditions are ranged 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 1<sub>0</sub>, 1<sub>+</sub>, 2<sub>-</sub>, 2<sub>0</sub>, 2<sub>+</sub>, 3<sub>-</sub>, 3<sub>0</sub>, 3<sub>+</sub>, 4<sub>-</sub>, 4<sub>0</sub>, 4<sub>+</sub>, 5<sub>-</sub>, 5<sub>0</sub> stands for an average of six-hourly ones of the two circuits. Abbreviated symbols are as follows:

|   |                         |
|---|-------------------------|
| C | artificial accident,    |
| S | propagational accident, |
| U | inaccurate.             |

*Radio propagation conditions* which can be described with a code in the following

|   |           |
|---|-----------|
| N | normal,   |
| U | unstable, |
| W | disturbed |

are forecast 12 hours in advance and broadcast six per an hour from JJY Station.

Data on a *geomagnetic storm* correlated with a radio propagation disturbance are tabulated from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U.T.) is expressed in unit of hour and minute (or tenth of hour), and *range* in gamma. When they are uncertain quantitatively, /'s are replaced with them. Continuation of a geomagnetic storm is denoted by ---.

#### c. Sudden Ionospheric Disturbances

##### (i) SWF

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 these 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 are not given correctly, they are accompanied by 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<sub>-</sub>, 1, 1<sub>+</sub>, 2<sub>-</sub>, 2, 2<sub>+</sub>, 3<sub>-</sub>, 3, 3<sub>+</sub>.

*Correspondence* of solar optical flare, solar radio burst, and geomagnetic crochet to SWF is marked by X in accordance with interchange messages of IUWDS and observations at Hiraiso.

##### (ii) SPA

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 —, and indistinguishable record is spaced out, and multi-peak event is marked by \*.

Out of more than two circuits on which the same SPA event is observed, the *phase advance* on the circuit on which the SPA is the most remarkable or distinct is underlined. As for the underlined, *phase advance*, *start*, *end* and *maximum* times are obtained.

In table (i) SWF and (ii) SPA, *date* indicates the day to which *start-time* of 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<br>(Geographic Coordinate) |            | Call Sign | Frequency<br>(kHz) | Radiation<br>Power<br>(kW) | Arc Distance<br>from Inubo<br>(km) |
| Rugby                 | 52° 22' N                           | 001° 11' W | GBR       | 16.0               | (750)<br>60                | 9550                               |
| Jim Creek             | 48° 12' N                           | 121° 55' W | NLK       | 18.6               | (1200)<br>130              | 7620                               |
| North West Cape       | 21° 49' S                           | 114° 10' E | NWC       | 22.3               | 1000                       | 6990                               |
| Aldra                 | 66° 25' N                           | 013° 09' E | Ω/N       | 13.6               | 10                         | 7820                               |
| North Dakota          | 46° 22' N                           | 098° 21' W | Ω/ND      | 13.6               | 10                         | 9140                               |
| Haiku                 | 21° 24' N                           | 157° 50' W | Ω/H       | 13.6               | 10                         | 6100                               |
| La Reunion            | 20° 58' S                           | 055° 17' E | Ω/LR      | 13.6               | 10                         | 10970                              |

# IONOSPHERIC DATA

SEP. 1984

FXI (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |         |         |         | Lat.    | 45 23.5 N |    |    |    | Long | 141 41.2 E |    |    |    | Sweep | 1 MHz to 25 MHz in 24sec in |    |    |    | automatic operation |         |         |         |         |
|-------------|----------|---------|---------|---------|---------|-----------|----|----|----|------|------------|----|----|----|-------|-----------------------------|----|----|----|---------------------|---------|---------|---------|---------|
| Hour<br>Day | 00       | 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<br>51  | X<br>47 | X<br>47 | X<br>46 | X<br>40 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>66             | X<br>62 | X<br>57 | X<br>55 | X<br>51 |
| 2           | X<br>46  | X<br>43 | X<br>40 | X<br>40 | X<br>42 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>68             | X<br>59 | X<br>52 | X<br>50 | X<br>49 |
| 3           | X<br>44  | X<br>46 | X<br>45 | X<br>44 | X<br>40 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>67             | X<br>63 | X<br>56 | X<br>51 | X<br>51 |
| 4           | X<br>48  | X<br>46 | X<br>44 | X<br>43 | X<br>42 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | c                   | c       | c       | c       | c       |
| 5           | c        | c       | c       | c       | c       |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | A                   | X<br>51 | X<br>45 | X<br>43 | X<br>45 |
| 6           | X<br>40  | X<br>41 | X<br>39 | X<br>35 | A       |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>65             | X<br>68 | X<br>64 | X<br>63 | X<br>59 |
| 7           | X<br>50  | X<br>46 | X<br>42 | X<br>41 | X<br>40 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>71             | X<br>72 | X<br>72 | X<br>64 | X<br>57 |
| 8           | X<br>52  | X<br>50 | X<br>48 | X<br>47 | X<br>47 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>76             | X<br>78 | X<br>69 | X<br>57 | X<br>51 |
| 9           | X<br>50  | X<br>48 | X<br>48 | X<br>49 | X<br>47 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>71             | X<br>71 | X<br>64 | X<br>60 | X<br>52 |
| 10          | X<br>46  | X<br>40 | X<br>42 | X<br>42 | X<br>42 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>80             | X<br>79 | X<br>71 | X<br>57 | X<br>49 |
| 11          | X<br>43  | X<br>46 | X<br>48 | X<br>48 | X<br>46 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>77             | X<br>70 | X<br>60 | X<br>57 | X<br>55 |
| 12          | X<br>57  | X<br>56 | X<br>52 | X<br>57 | X<br>55 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>67             | X<br>64 | X<br>64 | X<br>60 | X<br>54 |
| 13          | X<br>52  | X<br>56 | X<br>48 | X<br>50 | X<br>50 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>57             | X<br>56 | X<br>55 | X<br>55 | X<br>47 |
| 14          | X<br>45  | X<br>45 | X<br>43 | X<br>44 | X<br>44 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>67             | X<br>64 | X<br>54 | X<br>53 | X<br>46 |
| 15          | X<br>45  | X<br>45 | X<br>47 | X<br>48 | X<br>46 |           |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>51             | X<br>51 | X<br>50 | X<br>48 | X<br>50 |
| 16          | X<br>48  | X<br>46 | X<br>44 | X<br>43 | X<br>43 | X<br>47   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>66             | X<br>58 | X<br>60 | X<br>55 | X<br>53 |
| 17          | X<br>49  | X<br>47 | c       | c       | c       | c         |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>63             | X<br>59 | X<br>59 | X<br>52 | X<br>50 |
| 18          | X<br>50  | X<br>48 | X<br>44 | X<br>44 | X<br>43 | X<br>42   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>73             | X<br>70 | X<br>58 | X<br>56 | X<br>54 |
| 19          | X<br>51  | X<br>49 | X<br>48 | X<br>47 | X<br>46 | X<br>42   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>71             | X<br>66 | X<br>64 | X<br>62 | X<br>56 |
| 20          | X<br>51  | X<br>51 | X<br>42 | X<br>38 | A       | A         |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>70             | X<br>69 | X<br>58 | X<br>48 | X<br>47 |
| 21          | X<br>47  | X<br>46 | X<br>43 | X<br>47 | X<br>45 | X<br>45   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>58             | X<br>59 | X<br>58 | X<br>52 | X<br>48 |
| 22          | X<br>46  | X<br>44 | X<br>42 | X<br>40 | X<br>42 | X<br>42   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>58             | X<br>58 | A       | X<br>50 | X<br>43 |
| 23          | X<br>43  | X<br>45 | X<br>46 | X<br>41 | X<br>42 | X<br>38   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>67             | X<br>59 | X<br>60 | X<br>41 | X<br>33 |
| 24          | X<br>36  | X<br>34 | X<br>39 | X<br>30 | X<br>33 | X<br>31   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>50             | X<br>47 | X<br>53 | X<br>34 | X<br>36 |
| 25          | X<br>38  | X<br>42 | X<br>44 | X<br>42 | X<br>35 | X<br>36   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>61             | X<br>56 | X<br>47 | X<br>43 | X<br>35 |
| 26          | X<br>38  | X<br>38 | X<br>39 | X<br>39 | X<br>33 | X<br>36   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>56             | X<br>52 | X<br>53 | X<br>49 | X<br>45 |
| 27          | X<br>44  | X<br>41 | X<br>37 | X<br>34 | X<br>32 | A         |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>62             | X<br>61 | X<br>57 | X<br>52 | X<br>43 |
| 28          | X<br>45  | X<br>42 | X<br>45 | X<br>44 | X<br>32 | X<br>35   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>66             | X<br>52 | X<br>45 | X<br>42 | X<br>42 |
| 29          | X<br>42  | X<br>42 | X<br>42 | X<br>40 | X<br>40 | X<br>38   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>50             | X<br>46 | X<br>50 | X<br>51 | X<br>48 |
| 30          | X<br>50  | X<br>50 | X<br>49 | X<br>48 | X<br>43 | c         |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>63             | X<br>62 | X<br>53 | X<br>48 | X<br>46 |
| 31          |          |         |         |         |         |           |    |    |    |      |            |    |    |    |       |                             |    |    |    |                     |         |         |         |         |
| CNT         | 29       | 29      | 28      | 28      | 26      | 11        |    |    |    |      |            |    |    |    |       |                             |    |    |    | 15                  | 28      | 28      | 29      | 29      |
| MED         | X<br>46  | X<br>46 | X<br>44 | X<br>44 | X<br>42 | X<br>38   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>63             | X<br>64 | X<br>59 | X<br>52 | X<br>49 |
| UQ          | X<br>50  | X<br>48 | X<br>48 | X<br>47 | X<br>46 | X<br>42   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>66             | X<br>68 | X<br>64 | X<br>60 | X<br>56 |
| LQ          | X<br>44  | X<br>42 | X<br>42 | X<br>40 | X<br>40 | X<br>36   |    |    |    |      |            |    |    |    |       |                             |    |    |    | X<br>58             | X<br>58 | X<br>53 | X<br>49 | X<br>45 |

SEP. 1984

FXI (0.1 MHz)

### IONOSPHERIC DATA

SEP. 1984

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station | WAKKANAI |      |    |    |    |    |    |    |        |        |      | Lat. 45° 23' 5" N |        | Long. 141° 41' 2" E |    | Sweep 1 MHz to 25 MHz in 24 sec in automatic operation |    |      |    |    |    |    |    |    |    |    |  |  |
|---------|----------|------|----|----|----|----|----|----|--------|--------|------|-------------------|--------|---------------------|----|--|----|------|----|----|----|----|----|----|----|----|--|--|
|         | Hour     | 00   | 01 | 02 | 03 | 04 | 05 | 06 | 07     | 08     | 09   | 10                | 11     | 12                  | 13 | 14   | 15 | 16   | 17 | 18 | 19 | 20 | 21 | 22 | 23 |    |  |  |
| 1       |          | 44   | 40 | 40 | 39 | 33 | 38 | 45 | 45     | 56     | H 53 | 55                | 53     | 50                  | 54 | 55   | 53 | 55   | 53 | 53 | 59 | 55 | 50 | 48 | 44 |    |  |  |
| 2       |          | 39   | 36 | 33 | 33 | 35 | 38 | 53 | 61     | 53     | 60   | 63                | 58     | 60                  | 60 | 61   | 63 | 64   | 63 | 66 | 61 | 52 | 45 | 43 | 42 |    |  |  |
| 3       |          | 37   | 39 | 38 | 37 | 33 | 31 | A  | A      | A      | 54   | 53                | 53     | 51                  | 58 | 57   | 55 | 54   | 59 | 60 | 60 | 56 | 49 | 44 | 44 |    |  |  |
| 4       |          | 41   | 39 | 37 | 36 | 35 | 41 | 52 | 65     | 66     | 70   | 68                | 66     | 63                  | 61 | 64   | 67 | 73   | C  | C  | C  | C  | C  | C  | C  |    |  |  |
| 5       |          | C    | C  | C  | C  | C  | C  | C  | C      | C      | W    | 44                | E G 42 | E G 41              | 47 | 46   | 44 | 45   | 42 | 45 | A  | 44 | 38 | 36 | 38 |    |  |  |
| 6       |          | 33   | 34 | 32 | 28 | A  | A  | 45 | A      | 63     | 60   | 65                | 64     | 59                  | 62 | 66   | 64 | 63   | 50 | 50 | 58 | 61 | 57 | 56 | 52 |    |  |  |
| 7       |          | 43   | 39 | 35 | 34 | 33 | 34 | 43 | 55     | A      | 62   | 59                | 56     | 58                  | 59 | 57   | 61 | 54   | 51 | 60 | 64 | 65 | 65 | 57 | 50 |    |  |  |
| 8       |          | 45   | 43 | 41 | 40 | 40 | 39 | 53 | 60     | 60     | 58   | 55                | 60     | 60                  | 61 | 59   | 59 | 57   | 55 | 64 | 69 | 71 | 62 | 50 | 44 |    |  |  |
| 9       |          | 43   | 41 | 41 | 42 | 40 | 39 | 49 | A      | 57     | 61   | 55                | 68     | 60                  | 61 | 60   | 56 | 62   | 59 | 56 | 64 | 64 | 57 | 53 | 45 |    |  |  |
| 10      |          | 39   | 33 | 35 | 35 | 35 | 36 | 50 | 59     | 66     | 60   | 61                | 68     | 67                  | 68 | 59   | 61 | 61   | 58 | 64 | 73 | 72 | 64 | 50 | 42 |    |  |  |
| 11      |          | 36   | 39 | 41 | 41 | 39 | 40 | 46 | 56     | 60     | 66   | 57                | 62     | 66                  | 69 | 69   | 83 | 71   | 70 | 79 | 70 | 63 | 53 | 50 | 48 |    |  |  |
| 12      |          | F    | F  | F  | F  | 48 | 45 | 48 | 55     | 64     | 65   | 63                | 58     | 62                  | C  | C  | C  | C    | C  | C  | 63 | 60 | 57 | 57 | 53 | 47 |  |  |
| 13      |          | 45   | 49 | 41 | F  | F  | 43 | 45 | A      | A      | 54   | 62                | 59     | 64                  | 62 | 54   | 55 | 54   | 51 | 44 | 50 | 49 | 48 | 48 | 40 |    |  |  |
| 14      |          | 38   | 38 | 36 | 37 | 37 | 39 | 42 | 50     | 55     | 59   | 66                | 60     | 55                  | 62 | 53   | 53 | 52   | 59 | 64 | 60 | 57 | 47 | 46 | 39 |    |  |  |
| 15      |          | 38   | 38 | 40 | 41 | 39 | 39 | 46 | 54     | H 62   | 73   | 60                | 55     | 60                  | 60 | 58   | 55 | 56   | 62 | 60 | 44 | 44 | 43 | 41 | 43 |    |  |  |
| 16      |          | 41   | 39 | 37 | 36 | 36 | 40 | 46 | 52     | 52     | 60   | H 58              | 61     | 68                  | 64 | 65   | 60 | 55   | 62 | 59 | 51 | 53 | 48 | 46 | 44 |    |  |  |
| 17      |          | 42   | 40 | C  | C  | C  | C  | C  | C      | C      | 72   | 61                | 61     | 61                  | 63 | 63   | 60 | 54   | 59 | 56 | 52 | 52 | 45 | 43 | 43 |    |  |  |
| 18      |          | 43   | 41 | 37 | 37 | 36 | 35 | 44 | 52     | 63     | 65   | 67                | 64     | 64                  | 54 | 54   | 58 | 54   | 57 | 66 | 63 | 51 | 49 | 47 | 45 |    |  |  |
| 19      |          | 44   | 42 | 41 | 40 | 39 | 35 | 51 | 53     | 56     | 68   | 62                | 59     | 57                  | 58 | 58   | 61 | 63   | 64 | 64 | 59 | 57 | 55 | 49 | 49 |    |  |  |
| 20      |          | 44   | 44 | 35 | 31 | A  | A  | A  | 43     | 43     | 46   | 49                | 49     | 53                  | 54 | 52   | 51 | 51   | 56 | 63 | 62 | 51 | 41 | 41 | 40 |    |  |  |
| 21      |          | 40   | 39 | 36 | 40 | 38 | 38 | 40 | 50     | 52     | 47   | 49                | 49     | 53                  | 54 | 52   | 51 | 49   | 47 | 51 | 52 | 51 | 45 | 41 | 40 |    |  |  |
| 22      |          | 39   | 37 | 35 | 33 | 35 | 35 | 41 | 48     | 55     | 54   | 60                | 54     | 58                  | 55 | 54   | 53 | 51   | 49 | 51 | 51 | A  | 43 | 36 | 35 |    |  |  |
| 23      |          | 36   | 38 | 39 | 34 | 35 | 31 | 40 | 43     | 44     | 46   | 46                | A      | 49                  | 52 | 53   | 62 | 63   | 68 | 60 | 52 | 53 | 34 | 34 | 27 |    |  |  |
| 24      |          | 30   | 27 | 32 | 23 | 26 | 24 | 30 | E G 32 | E G 34 | A    | E G 40            | E G 39 | E G 39              | A  | E G 40   | 41 | 40   | 44 | 43 | 40 | 46 | 27 | 28 | 30 |    |  |  |
| 25      |          | 31   | 35 | 37 | 35 | 28 | 29 | 36 | 43     | 45     | 48   | 53                | 50     | 49                  | 49 | 54   | 47 | H 45 | 46 | 54 | 49 | 40 | 36 | 33 | 28 |    |  |  |
| 26      |          | 31   | 31 | 32 | 32 | 26 | 29 | 43 | 50     | 54     | 70   | 64                | 55     | 54                  | 55 | 55   | 54 | 56   | 55 | 49 | 45 | 46 | 42 | 40 | 38 |    |  |  |
| 27      |          | 37   | 34 | 30 | 27 | 25 | A  | 46 | 60     | 60     | 69   | 68                | 65     | 62                  | 58 | 59   | 55 | 57   | 51 | 55 | 54 | 50 | 45 | 43 | 36 |    |  |  |
| 28      |          | 38   | 35 | 38 | 37 | 25 | 28 | 40 | 53     | 68     | 66   | 70                | 70     | 63                  | 62 | 63   | 56 | 61   | 55 | 59 | 45 | 38 | 35 | 35 | 35 |    |  |  |
| 29      |          | 35   | 35 | 35 | 33 | 33 | 31 | 48 | 49     | 54     | 58   | 60                | 60     | 61                  | 66 | 59   | 65 | 65   | 56 | 43 | 39 | 43 | 44 | 41 | 41 |    |  |  |
| 30      |          | F 43 | 43 | 42 | 41 | F  | C  | C  | 50     | 56     | 64   | 60                | 67     | 69                  | 66 | 62   | 64 | 64   | 60 | 56 | 55 | 46 | 41 | 41 | 39 |    |  |  |
| 31      |          | 00   | 01 | 02 | 03 | 04 | 05 | 06 | 07     | 08     | 09   | 10                | 11     | 12                  | 13 | 14   | 15 | 16   | 17 | 18 | 19 | 20 | 21 | 22 | 23 |    |  |  |
| CNT     |          | 28   | 28 | 27 | 26 | 24 | 24 | 25 | 24     | 25     | 28   | 30                | 29     | 30                  | 28 | 29   | 29 | 29   | 28 | 29 | 28 | 28 | 29 | 29 | 29 |    |  |  |
| MED     |          | 39   | 39 | 37 | 36 | 35 | 37 | 45 | 52     | 56     | 60   | 60                | 59     | 60                  | 60 | 58   | 56 | 56   | 56 | 59 | 56 | 52 | 45 | 43 | 42 |    |  |  |
| UQ      |          | 43   | 40 | 40 | 40 | 38 | 39 | 48 | 56     | 62     | 66   | 63                | 64     | 63                  | 62 | 61   | 61 | 63   | 60 | 63 | 62 | 57 | 53 | 49 | 44 |    |  |  |
| LQ      |          | 36   | 35 | 35 | 33 | 33 | 31 | 42 | 48     | 53     | 54   | 55                | 54     | 53                  | 54 | 54   | 53 | 54   | 51 | 51 | 50 | 46 | 42 | 41 | 38 |    |  |  |

SEP. 1984

FOF2 (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    | Lat. | 45° 23' 5" N |  |  |  | Long | 141° 41' 2" E |  |  |  | Sweep | 1 MHz to 25 MHz |  | in 24sec |  | in automatic operation |  |  |
|-------------|----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|------|--------------|--|--|--|------|---------------|--|--|--|-------|-----------------|--|----------|--|------------------------|--|--|
| Hour<br>Day | 00       | 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   | H   | H   | H   | 440 | 450 | 420 | L   | 390 |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 2           |          |    |    |    |    |    |    | A   | A   | 430 | 440 | 450 | 450 | 450 | 430 | 420 | 400 |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 3           |          |    |    |    |    |    |    | A   | A   | A   | 430 | 440 | 450 | 440 | 430 | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 4           |          |    |    |    |    |    |    | L   | 420 | 430 | 440 | 440 | 450 | 450 | 440 | H   | 430 | 400 |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 5           |          |    |    |    |    |    |    | C   | C   | H   | 390 | 400 | 420 | 410 | 420 | 410 | 390 | 370 |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 6           |          |    |    |    |    |    |    | A   | 410 | 440 | 440 | 450 | 440 | 450 | 420 | 410 | L   |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 7           |          |    |    |    |    |    |    | 400 | A   | 430 | 430 | 430 | 440 | 430 | 430 | 410 |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 8           |          |    |    |    |    |    |    | A   | 400 | 420 | 420 | 440 | 440 | 440 | L   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 9           |          |    |    |    |    |    |    | A   | A   | 420 | 430 | 440 | 430 | 430 | H   | L   | 390 |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 10          |          |    |    |    |    |    |    | L   | 380 | 400 | 420 | 430 | 440 | 440 | H   | L   | L   |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 11          |          |    |    |    |    |    |    | L   | 400 | L   | L   | 440 | 430 | 450 | 430 | 400 | L   |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 12          |          |    |    |    |    |    |    | L   | 380 | H   | 380 | 420 | 400 | 440 | 430 | C   | C   | C   | C  |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 13          |          |    |    |    |    |    |    | A   | A   | 420 | 420 | 430 | 430 | 420 | H   | 410 | 400 | L   |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 14          |          |    |    |    |    |    |    | 400 | 410 | 420 | 430 | 430 |     | A   | A   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 15          |          |    |    |    |    |    |    | 390 | 400 | 420 | 420 | 440 | 420 | 400 | L   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 16          |          |    |    |    |    |    |    | 390 | 410 | 440 | 430 | 410 | 420 | 420 | L   | 390 |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 17          |          |    |    |    |    | C  | C  | C   | H   | 410 | 420 | 430 | 420 | 410 | 400 | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 18          |          |    |    |    |    |    |    | 400 | 410 | 420 | 430 | 420 | 410 |     | L   |     |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 19          |          |    |    |    |    |    |    | 400 | 420 | 420 | 430 | H   | 440 |     | 400 |     |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 20          |          |    |    |    |    | A  | A  | A   | 360 | 390 | 410 | 410 | 410 | 400 | L   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 21          |          |    |    |    |    |    |    | 350 | 380 | 400 | 410 | A   | 430 | A   | L   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 22          |          |    |    |    |    |    |    |     | A   | A   | A   | A   | 420 | A   | 410 | 380 |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 23          |          |    |    |    |    |    |    |     | 360 | 400 | 400 | A   | 420 | 420 | 410 | 390 | 350 |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 24          |          |    |    |    |    |    |    | 320 | 340 | A   | 400 | 390 | 390 | A   | 400 | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 25          |          |    |    |    |    |    |    | A   | L   | 410 | 400 | 410 | 420 | 420 | 420 | 400 | L   | L   |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 26          |          |    |    |    |    |    |    | 400 | 410 | 420 | 420 |     | 410 |     | L   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 27          |          |    |    |    |    |    |    | L   | 390 | 410 | H   | 430 | 420 | 420 | L   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 28          |          |    |    |    |    |    |    | L   | 360 | 410 | 420 | 420 | 420 | 400 | A   |     |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 29          |          |    |    |    |    |    |    | 380 | L   | 410 | 420 | 420 | 410 | 420 | A   | L   |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 30          |          |    |    |    |    |    |    | L   | 380 | 410 | 410 | 430 | 430 | L   | L   | 400 |     |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| 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         |          |    |    |    |    |    |    | 5   | 20  | 27  | 29  | 27  | 29  | 25  | 22  | 16  | 6   |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| MED         |          |    |    |    |    |    |    | 380 | 390 | 410 | 420 | 430 | 430 | 420 | 415 | 405 | 390 |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| UQ          |          |    |    |    |    |    |    | L   | 380 | 400 | 420 | 430 | 440 | 440 | 440 | 430 | 410 | 400 |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |
| LQ          |          |    |    |    |    |    |    | 350 | 380 | 405 | 410 | 420 | 420 | 410 | 410 | 390 | 370 |     |    |    |    |    |    |      |              |  |  |  |      |               |  |  |  |       |                 |  |          |  |                        |  |  |

SEP. 1984

FOF1 (0.01 MHz)

### IONOSPHERIC DATA

SEP. 1984      F0E (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station |     | WAKKANAI |    | Lat. 45° 23.5' N |    | Long. 141° 41.2' E |     | Sweep 1 |     | MHz to 25 MHz |     | in 24 sec |     | in automatic operation |     |     |     |     |     |     |     |    |    |    |    |
|---------|-----|----------|----|------------------|----|--------------------|-----|---------|-----|---------------|-----|-----------|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| Hour    | Day | 00       | 01 | 02               | 03 | 04                 | 05  | 06      | 07  | 08            | 09  | 10        | 11  | 12                     | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| 1       |     |          |    |                  |    | S                  |     | 200     | 240 | 270           | A   | A         | 315 | 325                    | A   | A   | 300 | 260 | A   | S   |     |    |    |    |    |
| 2       |     |          |    |                  |    | S                  |     | 200     | 235 | 285           | 305 | 315       | 320 | 325                    | 315 | 305 | 295 | 270 | 210 |     | S   |    |    |    |    |
| 3       |     |          |    |                  |    | S                  |     | 190     | 240 | 285           | 300 | 310       | 310 | 315                    | 320 | 310 | 295 | 250 | 205 |     | S   |    |    |    |    |
| 4       |     |          |    |                  |    | A                  |     | 190     | 225 | 280           | 305 | 315       | 320 | 320                    | 320 | 305 | 285 | 260 |     | C   | C   |    |    |    |    |
| 5       |     |          |    |                  |    |                    |     |         | C   | C             |     | A         | 315 | 320                    | 315 | 300 | 280 | 250 | 195 |     | S   |    |    |    |    |
| 6       |     |          |    |                  |    |                    |     | 125     | 170 | 210           | A   | A         | A   | A                      | A   | 310 | A   | A   | A   | 200 | 125 |    |    |    |    |
| 7       |     |          |    |                  |    | S                  |     | 195     | 240 |               | A   | 300       | 310 | 320                    | 325 | 310 | 300 | 290 | 250 | 205 |     |    |    | A  |    |
| 8       |     |          |    |                  |    | S                  |     | 190     | A   | 250           | A   | 320       | 320 | 320                    | 310 | 300 | 290 | 250 | 180 |     | S   |    |    |    |    |
| 9       |     |          |    |                  |    | S                  |     | 190     | 245 | 265           | 290 | A         | 320 | 320                    | 310 | A   | 280 | A   | 185 |     | S   |    |    |    |    |
| 10      |     |          |    |                  |    | S                  |     | 195     | 230 | 270           | 295 | 300       |     | A                      | A   | A   | A   | 280 | A   | A   | E   |    |    |    |    |
| 11      |     |          |    |                  |    | S                  |     | 190     | 225 | 270           | 290 | 305       | 310 | 310                    | 300 | 290 | 275 | 225 | 180 |     | S   |    |    |    |    |
| 12      |     |          |    |                  |    | S                  |     | 190     | 230 | 260           | 280 | 305       | 310 | 310                    |     | C   | C   | C   | C   | C   | E   |    |    |    |    |
| 13      |     |          |    |                  |    | S                  | S   | 230     | 260 | 295           | 300 | 305       | 305 | 300                    | 290 | 275 | 240 |     | A   | E   |     |    |    |    |    |
| 14      |     |          |    |                  |    | E                  | A   | 190     | A   | 275           | A   | 305       | A   | 310                    | A   | A   | A   | 235 | 180 |     | S   |    |    |    |    |
| 15      |     |          |    |                  |    | S                  |     | 180     | 235 | 275           | 295 | 305       | 310 | 310                    | 300 | 290 | 275 | 230 | 185 |     | E   |    |    |    |    |
| 16      |     |          |    |                  |    |                    |     | 165     | 230 | 265           | 295 | 300       | 305 | 305                    | 300 | 290 | 265 | 215 | 175 |     |     |    |    |    |    |
| 17      |     |          |    |                  |    |                    |     | C       | C   | C             | 295 | 300       | 305 | 300                    | 300 | 290 | 265 | 225 |     | A   |     |    |    |    |    |
| 18      |     |          |    |                  |    |                    |     | 180     | 230 | 275           | 295 | 305       | 310 | 305                    | 305 | 295 | 270 | 230 | 175 |     |     |    |    |    |    |
| 19      |     |          |    |                  |    |                    |     | 180     | 230 | 260           | 295 | 305       | 310 | 310                    | 300 | 290 | 255 | 220 |     | A   |     |    |    |    |    |
| 20      |     |          |    |                  |    |                    |     | 160     | 215 | 255           | 280 | 295       | 305 | 305                    | A   | 300 | A   | 220 |     | S   |     |    |    |    |    |
| 21      |     |          |    |                  |    |                    |     | 160     | 215 | 255           | 275 | 295       | 300 | 300                    | A   | 290 | A   | 220 |     | A   |     |    |    |    |    |
| 22      |     |          |    |                  |    | S                  |     | 220     | 260 | 290           | 295 |           | A   | A                      | A   | 310 | 290 |     | A   | A   |     |    |    |    |    |
| 23      |     |          |    |                  |    | S                  |     | 220     | 255 | 275           | 295 | 300       |     | A                      | A   | A   | 255 | 215 |     | S   |     |    |    |    |    |
| 24      |     |          | E  |                  |    | S                  |     | 200     | 250 |               | A   | A         | A   | 300                    | A   | A   | 270 | 210 |     | S   |     |    |    |    |    |
| 25      |     |          |    |                  |    | S                  |     | 210     | 250 | 285           | 295 | 300       | 300 | 300                    | 290 | 250 | 215 | 170 |     |     |     |    |    |    |    |
| 26      |     |          |    |                  |    | B                  |     | 225     | 260 | 290           | 295 | 300       | 300 | 295                    | 280 | 245 |     | A   | A   |     |     |    |    |    |    |
| 27      |     |          |    |                  |    | S                  |     | 225     | 260 | 285           | 290 | 300       | 300 | 295                    | 275 | 245 | 205 |     |     | S   |     |    |    |    |    |
| 28      |     |          |    |                  |    | A                  |     | 210     | 250 |               | A   | A         | 295 | 295                    | A   | A   | A   | A   | A   |     |     |    |    |    |    |
| 29      |     |          |    |                  |    | S                  |     | 220     | 260 | 285           | 300 | 300       | 300 | 290                    | 280 | 260 | 210 |     |     | S   |     |    |    |    |    |
| 30      |     |          |    |                  |    | C                  |     | 220     | 250 | 270           | 290 | 300       |     | A                      | 305 | A   | A   | A   | A   |     |     |    |    |    |    |
| 31      |     |          |    |                  |    |                    |     |         |     |               |     |           |     |                        |     |     |     |     |     |     |     |    |    |    |    |
|         |     | 00       | 01 | 02               | 03 | 04                 | 05  | 06      | 07  | 08            | 09  | 10        | 11  | 12                     | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| CNT     |     |          | 1  |                  |    | 2                  | 18  | 26      | 26  | 24            | 24  | 25        | 25  | 20                     | 20  | 23  | 22  | 13  |     | 5   |     |    |    |    |    |
| MED     |     |          | E  |                  |    | E E                | 125 | 190     | 225 | 260           | 292 | 300       | 310 | 310                    | 302 | 290 | 275 | 228 | 185 |     | E   |    |    |    |    |
| UQ      |     |          |    |                  |    |                    | 190 | 230     | 270 | 295           | 305 | 315       | 320 | 310                    | 300 | 288 | 250 | 200 |     | E   |     |    |    |    |    |
| LQ      |     |          |    |                  |    |                    | 180 | 220     | 255 | 285           | 295 | 300       | 300 | 300                    | 290 | 262 | 215 | 180 |     | E   |     |    |    |    |    |

SEP. 1984      F0E (0.01 MHz)



### IONOSPHERIC DATA

SEP. 1984

FOES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |        |        |        |          |        |        |         |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | Lat.   | 45 23.5 N |  | Long | 141 41.2 E |  | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------|----------|--------|--------|--------|----------|--------|--------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--|------|------------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Hour<br>Day | 00       | 01     | 02     | 03     | 04       | 05     | 06     | 07      | 08      | 09     | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1           | 40       | 35     | 24     | 23     | 28       | E S 15 | 27     | 40      | 53      | 41     | 41     | 33     | G      | 41     | 40     | G      | G      | 43     | J A 76 | J A 95 | 38     | 37     | 26     | 34     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2           | 30       | 31     | 31     | 21     | E E S 16 | 28     | 48     | 54      | 42      | G      | G      | G      | G      | G      | 37     | 36     | G      | 30     | 31     | E S 12 | E S 16 | E S 13 | 23     | E S 12 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3           | E S 16   | E S 15 | E S 11 | 24     | J A 52   | J A 56 | J A 44 | J A 104 | J A 90  | 45     | G      | 36     | 40     | G      | 39     | J A 58 | 35     | 32     | 37     | 40     | 40     | J A 40 | J A 52 | E      |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4           | 27       | 22     | 26     | J A 50 | 31       | 27     | J A 75 | J A 88  | J A 83  | J A 45 | 40     | 40     | 36     | G      | 37     | 40     | 37     | C      | C      | C      | C      | C      | C      | C      |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5           | C        | C      | C      | C      | C        | C      | C      | C       | C       | G      | 34     | G      | G      | G      | G      | G      | G      | 31     | 25     | J A 53 | 41     | 35     | E S 15 | E S 15 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6           | E S 15   | 22     | 30     | 28     | 40       | 47     | J A 51 | J A 58  | 37      | J A 50 | 34     | 33     | 33     | G      | 40     | 40     | 33     | 38     | 24     | E S 15 | 56     | J A 33 | 36     | J A 53 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7           | 34       | 31     | E S 12 | E S 12 | 27       | 25     | 27     | 37      | J A 130 | G      | G      | G      | G      | G      | G      | G      | G      | 27     | 28     | 23     | 27     | E S 16 | 32     | 40     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8           | 40       | 27     | 27     | E S 12 | E S 15   | 20     | 43     | 44      | 45      | 40     | 28     | G      | G      | G      | G      | G      | G      | 32     | 28     | 20     | 25     | 29     | 24     | 31     | 23     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9           | 22       | E S 16 | 26     | 20     | E S 12   | E S 16 | 32     | 61      | 51      | 50     | 41     | G      | G      | G      | 31     | 35     | 35     | 26     | 39     | 35     | 26     | 35     | 23     | E S 16 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10          | E S 13   | 26     | 21     | E S 14 | J A 70   | E S 16 | 25     | 31      | G       | G      | 38     | 50     | 44     | 41     | 37     | G      | 31     | 27     | 23     | 32     | 27     | E S 12 | E S 11 | E S 16 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11          | E S 16   | E S 15 | 26     | 31     | 20       | 18     | 26     | 40      | G       | 35     | G      | G      | G      | 36     | G      | G      | 35     | 25     | 34     | 35     | 50     | 28     | 26     | 33     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12          | 30       | 27     | E S 13 | 30     | 35       | 30     | 27     | G       | G       | G      | G      | 26     | G      | 27     | C      | C      | C      | C      | 26     | 35     | J A 56 | 26     | 23     | E S 12 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13          | 22       | 21     | E S 11 | 21     | E S 16   | E S 15 | J A 60 | J A 63  | 61      | 43     | 37     | G      | G      | G      | G      | G      | G      | 41     | 43     | 28     | 36     | J A 53 | J A 61 | 40     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14          | 30       | 35     | 31     | 24     | 23       | 23     | G      | 28      | G       | 34     | G      | 38     | 42     | J A 56 | 52     | 41     | 27     | 40     | 33     | 44     | 49     | J A 51 | 44     | 23     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15          | E S 13   | E S 11 | 32     | 30     | E E S 13 | 25     | 32     | G       | G       | G      | G      | G      | G      | G      | G      | G      | G      | G      | 24     | E S 16 | E S 16 | E S 16 | E S 16 | 26     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16          | E S 13   | E S 13 | E S 14 | E S 13 | E E S 16 | G      | G      | G       | G       | G      | G      | G      | G      | G      | G      | G      | G      | 23     | 23     | E S 13 | E S 16 | E S 16 | E S 16 | E S 16 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17          | E S 16   | E S 14 | C      | C      | C        | C      | C      | C       | C       | G      | G      | G      | G      | G      | G      | 21     | 20     | G      | 16     | 33     | 38     | 31     | 30     | 22     | E S 16 | E S 16    |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18          | 20       | E S 16 | E S 11 | E S 12 | E S 16   | E S 13 | G      | G       | 33      | 20     | G      | G      | G      | G      | G      | 25     | 17     | G      | 26     | 23     | E S 16 | 35     | 26     | 26     | 27     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19          | 24       | 29     | 26     | E S 16 | E S 16   | E S 16 | G      | 31      | G       | G      | 37     | 26     | G      | 35     | 20     | G      | G      | 23     | E S 16 | E S 16 | E S 16 | E S 16 | 19     | E S 16 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20          | E S 12   | E S 13 | E S 16 | 30     | 43       | 51     | 47     | 44      | 40      | G      | G      | G      | G      | 37     | G      | 33     | 27     | 21     | 31     | 29     | 26     | 21     | 35     | 24     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21          | 23       | 23     | E S 14 | 22     | E S 16   | 25     | 58     | 43      | G       | 34     | J A 93 | J A 65 | 48     | 52     | G      | 34     | 52     | 39     | 35     | 31     | 24     | 34     | 24     | 35     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22          | 26       | 30     | 24     | 26     | E S 16   | E S 12 | 40     | 42      | 50      | J A 98 | J A 55 | J A 51 | 40     | 53     | 47     | 40     | 43     | 35     | 49     | 53     | J A 64 | 34     | J A 48 | 42     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23          | 52       | J A 49 | 56     | 30     | 25       | 20     | 40     | 42      | 35      | 36     | 50     | 60     | J A 54 | J A 53 | 44     | G      | 32     | 39     | 25     | 40     | 29     | E S 16 | E S 16 | E S 16 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24          | E S 12   | 35     | 16     | E S 12 | E S 11   | 29     | 20     | 27      | G       | 42     | 43     | 33     | 25     | J A 53 | J A 50 | G      | 26     | 22     | 27     | 39     | 39     | E S 16 | E S 17 | 24     |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25          | E S 16   | E S 12 | E S 12 | E S 13 | E S 13   | E S 16 | 40     | 40      | G       | G      | G      | G      | G      | G      | G      | G      | G      | 20     | E S 15 | E S 15 | 22     | 30     | E S 15 |        |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26          | E S 16   | E S 16 | E S 16 | 27     | E S 15   | 26     | E B 18 | G       | G       | G      | G      | G      | 15     | G      | G      | 15     | 28     | 24     | 20     | 22     | E S 12 | E S 15 | 23     | E S 15 | E S 15 |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27          | E S 15   | E S 11 | E S 12 | E S 12 | E S 15   | 38     | E S 18 | G       | G       | G      | G      | G      | 38     | G      | G      | 19     | 27     | 20     | 23     | 24     | E S 16 | E S 12 | E S 16 | E S 16 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28          | E S 16   | E S 16 | E S 13 | E S 16 | E S 16   | 23     | 26     | 27      | 24      | 31     | 34     | 33     | 45     | 35     | J A 51 | J A 83 | J A 64 | J A 47 | J A 43 | 40     | 31     | 30     | E S 16 | E S 15 |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29          | 22       | E S 11 | E S 11 | E S 15 | 20       | E S 15 | 20     | 26      | 38      | 34     | 24     | G      | G      | 36     | 42     | 48     | G      | 42     | 61     | 27     | 30     | 31     | 31     | 28     | 27     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30          | 25       | 22     | E S 16 | 24     | E S 15   | C      | C      | G       | 36      | 39     | G      | G      | 32     | G      | 40     | 36     | F      | J A 53 | J A 50 | 35     | 28     | E S 16 | E S 16 | E S 16 | 24     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31          |          |        |        |        |          |        |        |         |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CNT         | 29       | 29     | 28     | 28     | 28       | 27     | 27     | 28      | 28      | 30     | 30     | 30     | 30     | 29     | 29     | 29     | 29     | 29     | 28     | 29     | 29     | 29     | 29     | 29     | 29     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MED         | 22       | 22     | 16     | 22     | 16       | 20     | 27     | 38      | 34      | 34     | E S 24 | G      | G      | G      | G      | 25     | 17     | 27     | 29     | 27     | 30     | 29     | 24     | 23     | 23     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| UQ          | 27       | 29     | 26     | 28     | 28       | 26     | 42     | 44      | 50      | 42     | 38     | 33     | 38     | 41     | 40     | 36     | 35     | 39     | 35     | 39     | 39     | 39     | 34     | 31     | 27     |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LQ          | E S 16   | E S 14 | E S 12 | E S 13 | E S 15   | E S 16 | 20     | 26      | G       | G      | G      | G      | G      | G      | G      | G      | G      | 23     | 23     | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 |           |  |      |            |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

SEP. 1984

FOES (0.1 MHz)

The Radio Research Laboratories, Japan

### IONOSPHERIC DATA

SEP. 1984      FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station WAKKANAI · Lat. 45 23.5 N · Long 141 41.2 E Sweep 1 MHz to 25 MHz in 24sec in automatic operation

| Hour<br>Day | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15  | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|
| 1           |    | 21 | 30 | E  | E  | E  | E  | S  | G  | G  | 51 | 34 | 35 | 30 | G  | 34  | 32 | G  | G  | 33 | 37 | 38 | 25 | 29 | E  | E  |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| 2           |    | E  | E  | E  | E  | E  | E  | S  | G  | 46 | 48 | G  | G  | G  | G  | G   | G  | G  | 29 | 23 | E  | S  | E  | S  | E  | S  | E  | S  |    |    |    |    |    |    |    |    |    |    |   |   |
| 3           |    | E  | S  | E  | S  | E  | S  | E  | 25 | 20 | A  | A  | A  | A  | A  | 90  | 43 | G  | G  | G  | G  | 38 | 37 | G  | 31 | 26 | 30 | 22 | E  | E  | E  |    |    |    |    |    |    |    |   |   |
| 4           |    | E  | E  | E  | E  | E  | 19 | 28 | G  | 36 | 41 | 40 | G  | G  | G  | G   | G  | 37 | 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  | G  | 32 | G   | G  | G  | G  | G  | G  | 30 | 23 | A  | A  | 53 | E  | E  | E  | S  | E  | S  |    |    |    |    |    |    |   |   |
| 6           |    | E  | S  | E  | E  | 20 | A  | A  | A  | A  | 47 | 30 | A  | A  | 58 | 29  | 37 | 31 | 32 | 33 | G  | 32 | 32 | 27 | 27 | G  | E  | S  | 15 | 50 | 30 | 27 | E  |    |    |    |    |    |   |   |
| 7           |    | 24 | E  | E  | S  | E  | S  | E  | 12 | E  | G  | G  | 36 | A  | A  | 130 | G  | G  | G  | G  | G  | G  | G  | G  | 18 | 16 | E  | E  | E  | S  | E  | E  | E  |    |    |    |    |    |   |   |
| 8           |    | E  | E  | E  | E  | S  | E  | S  | 12 | E  | S  | G  | 37 | 38 | 33 | 32  | 28 | G  | G  | G  | G  | G  | G  | 28 | 18 | E  | E  | E  | E  | 20 | E  | E  |    |    |    |    |    |    |   |   |
| 9           |    | E  | E  | S  | E  | E  | S  | E  | S  | 12 | E  | S  | G  | A  | A  | 61  | 42 | G  | 33 | G  | G  | G  | 31 | 27 | 26 | G  | 31 | 28 | E  | E  | E  | E  | S  | 16 |    |    |    |    |   |   |
| 10          |    | E  | S  | E  | E  | S  | E  | S  | 14 | E  | E  | S  | G  | 30 | G  | G   | G  | G  | 38 | 38 | 36 | 34 | 30 | G  | 25 | 20 | 20 | 20 | E  | E  | S  | E  | S  | E  | S  |    |    |    |   |   |
| 11          |    | E  | S  | E  | S  | E  | 22 | E  | 17 | G  | 30 | G  | G  | G  | G  | G   | 29 | G  | G  | G  | G  | G  | G  | 23 | 22 | 47 | 20 | E  | 20 | E  | 20 | E  | 20 |    |    |    |    |    |   |   |
| 12          |    | E  | E  | E  | S  | 13 | 26 | 23 | 27 | G  | G  | G  | G  | G  | G  | 26  | 27 | G  | C  | C  | C  | C  | C  | C  | C  | E  | E  | E  | E  | E  | E  | E  | S  | 12 |    |    |    |    |   |   |
| 13          |    | E  | E  | E  | S  | 11 | E  | E  | S  | 16 | E  | S  | A  | A  | A  | 63  | 61 | 38 | G  | G  | G  | G  | G  | G  | 24 | 30 | E  | E  | E  | E  | E  | E  | E  | E  | E  |    |    |    |   |   |
| 14          |    | E  | E  | E  | 25 | E  | E  | E  | G  | 28 | G  | 32 | G  | 33 | 30 | 46  | 46 | 32 | 17 | 32 | 27 | 26 | 25 | 25 | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  |    |    |    |    |   |   |
| 15          |    | E  | S  | E  | S  | 13 | 21 | 30 | G  | G  | G  | G  | G  | G  | G  | G   | G  | G  | G  | G  | G  | G  | G  | 16 | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |    |   |   |
| 16          |    | E  | S  | E  | S  | E  | S  | E  | S  | 14 | E  | S  | E  | S  | E  | S   | 16 | G  | G  | G  | G  | G  | G  | G  | 16 | E  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |   |
| 17          |    | E  | S  | E  | S  | 14 | E  | S  | 13 | C  | C  | C  | C  | C  | C  | C   | C  | C  | C  | C  | C  | C  | C  | 25 | 18 | E  | E  | E  | E  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |   |
| 18          |    | E  | E  | E  | S  | E  | S  | E  | S  | 16 | E  | S  | E  | S  | 13 | G   | G  | G  | G  | G  | G  | G  | G  | G  | 13 | E  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |   |
| 19          |    | E  | E  | E  | E  | S  | 16 | E  | S  | E  | S  | E  | S  | 16 | G  | G   | G  | G  | G  | G  | G  | G  | G  | 19 | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |   |
| 20          |    | E  | S  | E  | S  | E  | S  | 16 | 20 | A  | A  | A  | A  | A  | 43 | 51  | 47 | 36 | 30 | G  | G  | G  | G  | G  | 30 | G  | 28 | 21 | 20 | 20 | E  | E  | E  | 24 | E  | E  |    |    |   |   |
| 21          |    | E  | E  | E  | S  | 14 | E  | S  | 16 | E  | 21 | 32 | G  | G  | G  | 47  | 40 | 45 | G  | 28 | 42 | 21 | 29 | E  | E  | 23 | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  |    |    |   |   |
| 22          |    | E  | E  | E  | E  | S  | 16 | E  | S  | 12 | 30 | 32 | 39 | 51 | 46 | 41  | 36 | 46 | 36 | 33 | 32 | 18 | 46 | 36 | A  | A  | 64 | 30 | 20 | E  | E  | E  | E  | E  | E  | E  | E  |    |   |   |
| 23          |    | 21 | E  | 20 | E  | E  | E  | 29 | 32 | 33 | 36 | G  | A  | A  | 60 | 38  | 33 | 37 | G  | 31 | 30 | E  | E  | 20 | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |   |
| 24          |    | E  | S  | E  | S  | 12 | E  | 14 | E  | S  | 11 | E  | 20 | G  | A  | A   | 42 | 36 | 31 | 25 | A  | A  | 53 | 32 | G  | G  | 20 | E  | 32 | E  | E  | S  | E  | S  | E  | S  | E  | S  |   |   |
| 25          |    | E  | S  | E  | S  | E  | S  | E  | S  | 12 | E  | S  | E  | S  | 13 | E   | S  | 16 | 31 | 31 | G  | G  | G  | G  | G  | G  | G  | G  | E  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S |   |
| 26          |    | E  | S  | E  | S  | E  | S  | E  | S  | 15 | E  | S  | E  | S  | 18 | G   | G  | G  | G  | G  | G  | G  | G  | G  | 23 | 18 | E  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S |   |
| 27          |    | E  | S  | E  | S  | E  | S  | E  | S  | 15 | E  | S  | E  | S  | 38 | 18  | G  | G  | G  | G  | G  | G  | G  | 28 | G  | G  | G  | 27 | 19 | E  | E  | E  | S  | E  | S  | E  | S  | E  | S |   |
| 28          |    | E  | S  | E  | S  | E  | S  | E  | S  | 16 | E  | 20 | G  | 22 | 31 | 32  | G  | 39 | 32 | 50 | 28 | 53 | 42 | 40 | 32 | 23 | E  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |   |
| 29          |    | E  | E  | S  | E  | S  | E  | S  | 11 | E  | S  | 15 | G  | G  | 37 | G   | 24 | G  | G  | 36 | 37 | 40 | G  | 36 | 51 | E  | E  | E  | E  | E  | 20 | E  | E  | E  | E  | E  | E  | E  |   |   |
| 30          |    | E  | E  | E  | S  | 16 | E  | E  | S  | 15 | C  | C  | G  | 35 | 37 | G   | G  | 31 | G  | 31 | 28 | 32 | 18 | E  | E  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S |   |
| 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 | 28 | 28 | 28 | 27 | 27 | 28 | 28 | 30 | 30 | 30 | 30 | 29 | 29 | 29  | 29 | 29 | 28 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |   |   |
| MED         | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E   | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  |   |   |
| UQ          | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | 16 | E  | S  | 16 | E  | S   | 16 | E  | S  | 30 | 36 | 38 | 36 | 32 | 30 | 31 | 33 | 32 | 28 | 27 | 30 | 26 | 26 | 20 | E  | S  | E  | S  | E | S |
| LQ          | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E   | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E  | E |   |

IONOSPHERIC DATA

SEP. 1984

FMIN (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |      |      |      | Lat. 45 23.5 N | Long 141 41.2 E |      |    |    | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |    |      |    |    |    |    |      |      |      |      |      |      |      |      |
|-------------|----------|------|------|------|----------------|-----------------|------|----|----|---|----|----|------|----|----|----|----|------|------|------|------|------|------|------|------|
| Hour<br>Day | 00       | 01   | 02   | 03   | 04             | 05              | 06   | 07 | 08 | 09  | 10 | 11 | 12   | 13 | 14 | 15 | 16 | 17   | 18   | 19   | 20   | 21   | 22   | 23   |      |
| 1           | E 12     | E 14 | E 13 | E    | E 16           | E 15            | 16   | 10 | 16 | 20  | 18 | 20 | 21   | 20 | 18 | 18 | 17 | 10   | E 13 | E 13 | E 13 | E 16 | E 16 | E 13 |      |
| 2           | E 11     | E 13 | E 13 | E    | E 16           | E 16            | 13   | 12 | 16 | 17  | 19 | 21 | 22   | 19 | 17 | 17 | 10 | 13   | E 13 | E 12 | E 16 | E 13 | E 11 | E 12 |      |
| 3           | E 16     | E 15 | E 11 | E    | E 13           | E 13            | 11   | 12 | 18 | 18  | 20 | 20 | 20   | 18 | 18 | 18 | 14 | 11   | E 12 | E    | E    | E    | E    | E    |      |
| 4           | E        | E    | E    | E    | E              | E               | E    | 13 | 17 | 18  | 19 | 20 | 20   | 19 | 19 | 19 | 11 | C    | C    | C    | C    | C    | C    | C    |      |
| 5           | C        | C    | C    | C    | C              | C               | C    | C  | C  | 17  | 19 | 19 | 18   | 18 | 17 | 17 | 16 | 10   | E 15 | E    | E    | E    | E 15 | E 15 |      |
| 6           | E 15     | E    | E    | E    | E              | E               | E    | 10 | 17 | 18  | 19 | 19 | 20   | 18 | 18 | 19 | 16 | E    | E    | E 15 | E    | E    | E    | E    |      |
| 7           | E        | E    | E    | E    | E              | E               | 11   | 11 | 10 | 11  | 17 | 19 | E 25 | 21 | 19 | 18 | 17 | 11   | E    | E    | E    | E    | E 16 | E    |      |
| 8           | E 15     | E 15 | E    | E 12 | E 15           | E 13            | 11   | 11 | 11 | 19  | 20 | 19 | 20   | 20 | 18 | 17 | 15 | 12   | E 16 | E 12 | E 16 | E 16 | E 11 | E 16 |      |
| 9           | E 12     | E 16 | E 11 | E    | E 12           | E 16            | E 16 | 10 | 13 | 21  | 19 | 20 | 20   | 20 | 17 | 18 | 10 | 10   | E 11 | E 16 | E 13 | E 16 | E 16 | E 16 |      |
| 10          | E 13     | E 16 | E 12 | E 14 | E 13           | E 16            | 16   | 13 | 17 | 19  | 19 | 23 | 21   | 19 | 20 | 17 | 12 | 10   | E    | E    | E    | E 12 | E 11 | E 16 |      |
| 11          | E 16     | E 15 | E 13 | E    | E 16           | E 11            | 13   | 10 | 17 | 18  | 19 | 19 | 20   | 18 | 16 | 15 | 11 | 10   | E 13 | E 15 | E 17 | E 16 | E 16 | E    |      |
| 12          | E 12     | E 13 | E 13 | E    | E 12           | E 12            | 16   | 17 | 20 | 17  | 18 | 18 | 20   | C  | C  | C  | C  | C    | E    | E    | E 12 | E 13 | E 16 | E 11 | E 12 |
| 13          | E 16     | E 13 | E 11 | E 16 | E 16           | E 15            | E 16 | 13 | 16 | 23  | 19 | 19 | 19   | 19 | 17 | 17 | 11 | 10   | E    | E    | E    | E    | E    | E    |      |
| 14          | E        | E    | E    | E    | E              | E               | E    | 12 | 15 | 16  | 17 | 19 | 19   | 17 | 17 | 10 | 10 | 12   | E 13 | E 13 | E 16 | E 15 | E 16 | E 16 |      |
| 15          | E 13     | E 11 | E 11 | E 13 | E 13           | E 13            | 12   | 16 | 19 | 19  | 17 | 20 | 18   | 17 | 16 | 16 | 12 | E    | E    | E 16 | E 16 | E 16 | E 16 | E 13 |      |
| 16          | E 13     | E 13 | E 14 | E 13 | E 16           | E 11            | 11   | 16 | 19 | 18  | 19 | 20 | 19   | 11 | 11 | 10 | 10 | E    | E    | E 13 | E 16 | E 16 | E 16 | E 16 |      |
| 17          | E 16     | E 14 | C    | C    | C              | C               | C    | C  | C  | 17  | 20 | 17 | 18   | 17 | 16 | 16 | 11 | 10   | E    | E    | E 16 | E 12 | E    | E 16 | E 16 |
| 18          | E 16     | E 16 | E 11 | E 12 | E 16           | E 13            | 10   | 16 | 10 | 16  | 21 | 20 | 19   | 20 | 10 | 10 | 12 | 10   | E    | E    | E 16 | E 16 | E 16 | E 16 |      |
| 19          | E 13     | E 13 | E 14 | E 16 | E 16           | E 16            | 11   | 12 | 10 | 18  | 18 | 19 | 19   | 12 | 10 | 16 | 15 | 10   | E 16 | E 16 | E 16 | E 16 | E 13 | E 16 |      |
| 20          | E 12     | E 13 | E 16 | E    | E 13           | E 13            | 10   | 10 | 11 | 18  | 19 | 16 | 17   | 18 | 16 | 17 | 17 | E 16 | E    | E    | E 16 | E 11 | E 16 | E 16 |      |
| 21          | E 16     | E 12 | E 14 | E 15 | E 16           | E               | 10   | 16 | 11 | 16  | 17 | 17 | 17   | 17 | 12 | 10 | 10 | 10   | E 16 | E 16 | E 15 | E 13 | E 16 | E 11 |      |
| 22          | E 17     | E 17 | E 11 | E    | E 16           | E 12            | 17   | 13 | 17 | 13  | 19 | 17 | 17   | 12 | 16 | 12 | 10 | 13   | E    | E    | E 11 | E 12 | E 14 | E 16 |      |
| 23          | E 16     | E 11 | E 16 | E 16 | E 13           | E 16            | E 16 | 16 | 16 | 20  | 19 | 19 | 18   | 19 | 19 | 17 | 13 | E 15 | E    | E 11 | E    | E 16 | E 16 | E 16 |      |
| 24          | E 12     | E 16 | E    | E 12 | E 11           | E 16            | E 16 | 16 | 17 | 17  | 18 | 18 | 18   | 17 | 19 | 18 | 16 | E 16 | E    | E 12 | E 15 | E 16 | E 17 | E 16 |      |
| 25          | E 16     | E 12 | E 12 | E 13 | E 13           | E 16            | E 16 | 16 | 16 | 19  | 18 | 18 | 19   | 19 | 18 | 17 | 16 | 11   | E    | E    | E 15 | E 15 | E    | E 15 |      |
| 26          | E 16     | E 16 | E 16 | E    | E 15           | E               | 18   | 10 | 12 | 12  | 18 | 11 | 19   | 19 | 10 | 10 | 10 | 11   | E    | E    | E 12 | E 15 | E 15 | E 15 |      |
| 27          | E 15     | E 11 | E 12 | E 12 | E 15           | E               | E 18 | 16 | 12 | 17  | 19 | 17 | 17   | 18 | 18 | 11 | 18 | E 16 | E 16 | E    | E 16 | E 12 | E 16 | E 16 |      |
| 28          | E 16     | E    | E 16 | E 13 | E 16           | E 16            | E 16 | 16 | 13 | 19  | 13 | 19 | 17   | 12 | 10 | 10 | 14 | E    | E 12 | E    | E 15 | E    | E 16 | E 15 |      |
| 29          | E        | E 11 | E 11 | E 15 | E              | E 15            | E 17 | 17 | 16 | 17  | 18 | 19 | 20   | 20 | 19 | 10 | 14 | E 16 | E    | E 16 | E 15 | E 16 | E    | E 16 |      |
| 30          | E 12     | E 15 | E 16 | E 13 | E 15           | C               | C    | 16 | 17 | 16  | 19 | 17 | 17   | 17 | 17 | 16 | 12 | 11   | E    | E    | E 16 | E 16 | E 16 | E 12 |      |
| 31          |          |      |      |      |                |                 |      |    |    |   |    |    |      |    |    |    |    |      |      |      |      |      |      |      |      |
| CNT         | 29       | 29   | 28   | 28   | 28             | 27              | 27   | 28 | 28 | 30  | 30 | 30 | 30   | 29 | 29 | 29 | 29 | 28   | 29   | 29   | 29   | 29   | 29   | 29   |      |
| MED         | E 13     | E 13 | E 12 | E 12 | E 13           | E 13            | 12   | 12 | 16 | 18  | 19 | 19 | 19   | 18 | 17 | 17 | 12 | 10   | E    | E 12 | E 15 | E 16 | E 16 | E 15 |      |
| UQ          | E 16     | E 15 | E 14 | E 13 | E 16           | E 16            | E 16 | 16 | 17 | 19  | 19 | 20 | 20   | 19 | 18 | 17 | 16 | 12   | E 13 | E 16 | E 16 | E 16 | E 16 | E 16 |      |
| LQ          | E 12     | E 11 | E 11 | E    | E              | E 11            | 10   | 10 | 12 | 17  | 18 | 17 | 18   | 17 | 16 | 11 | 11 | 10   | E    | E    | E 11 | E 12 | E 11 | E 12 |      |

SEP. 1984

FMIN (0.1 MHZ)

The Radio Research Laboratories, Japan

### IONOSPHERIC DATA

SEP. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Lat. | 45 23.5 N |     |  |  | Long | 141 41.2 E |  |  |  | Sweep | 1 MHz to 25 MHz |  | in 24 sec |  | in automatic operation |  |  |
|-------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------|-----|--|--|------|------------|--|--|--|-------|-----------------|--|-----------|--|------------------------|--|--|
| Hour<br>Day | 00       | 01  | 02  | 03  | 04  | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23   |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 1           | 295      | 295 | 280 | 300 | 305 | 295 | 315 | 310 | A   | H   | 285 | 330 | 320 | 265 | 305 | 320 | 310 | 325 | 325 | 320 | 315 | 310 | 295 | 270  | 270       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 2           | 280      | 290 | 305 | 280 | 300 | 295 | 340 | 345 | A   |     | 335 | 335 | 330 | 320 | 315 | 320 | 315 | 310 | 320 | 320 | 325 | 305 | 295 | 285  | 290       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 3           | 295      | 275 | 290 | 295 | 325 | 320 | A   | A   | A   |     | 325 | 330 | 310 | 315 | 320 | 315 | 320 | 315 | 320 | 320 | 315 | 320 | 290 | 285  | 300       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 4           | 300      | 295 | 300 | 305 | 295 | 300 | 325 | 330 | 335 | 325 | 325 | 335 | 340 | 320 | 320 | 315 | 325 | C   | C   | C   | C   | C   | C   | C    |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 5           | C        | C   | C   | C   | C   | C   | C   | C   | C   | W   |     | 260 | G   | G   |     | 260 | 280 | 255 | 275 | 265 | 305 | A   | 270 | 270  | 275       | 290 |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 6           | 295      | 310 | 280 | 285 | A   | A   |     | A   |     | 340 | 315 | 305 | 310 | 325 | 315 | 325 | 330 | 340 | 340 | 300 | 280 | 295 | 305 | 305  | 310       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 7           | 290      | 290 | 305 | 295 | 285 | 315 | 310 | 330 | A   |     | 330 | 340 | 330 | 330 | 320 | 320 | 320 | 330 | 305 | 315 | 295 | 300 | 315 | 325  | 295       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 8           | 280      | 280 | 285 | 290 | 300 | 295 | 340 | 335 | 340 | 350 | 345 | 320 | 325 | 335 | 325 | 320 | 330 | 325 | 305 | 290 | 305 | 320 | 320 | 270  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 9           | 280      | 275 | 285 | 290 | 295 | 295 | 365 | A   |     | 335 | 345 | 315 | 320 | 335 | 325 | 335 | 320 | 320 | 325 | 305 | 295 | 310 | 300 | 300  | 305       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 10          | 300      | 280 | 285 | 295 | 300 | 305 | 325 | 340 | 360 | 320 | 325 | 315 | 300 | 330 | 335 | 320 | 325 | 325 | 295 | 300 | 310 | 315 | 300 | 315  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 11          | 280      | 280 | 280 | 290 | 290 | 285 | 320 | 340 | 330 | 335 | 335 | 310 | 310 | 305 | 300 | 315 | 325 | 305 | 315 | 310 | 315 | 285 | 295 | 290  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 12          | F        | F   | F   | F   | 310 | 310 | 310 | 325 | 340 | 330 | 340 | 320 | 320 | C   | C   | C   | C   | C   | C   | 315 | 305 | 300 | 300 | 285  | 270       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 13          | 275      | 290 | 280 | F   | F   |     | 320 | 335 | A   | A   |     | 325 | 320 | 320 | 310 | 325 | 325 | 325 | 340 | 350 | 295 | 285 | 275 | 285  | 310       | 300 |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 14          | 280      | 295 | 295 | 295 | 310 | 325 | 310 | 325 | 340 | 330 | 345 | 335 | 335 | 320 | 340 | 340 | 330 | 325 | 315 | 135 | 320 | 310 | 310 | 285  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 15          | 290      | 290 | 295 | 290 | 300 | 295 | 320 | 335 | 320 | H   | 350 | 350 | 345 | 320 | 335 | 325 | 340 | 335 | 340 | 350 | 300 | 295 | 285 | 285  | 295       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 16          | 310      | 290 | 290 | 295 | 310 | 325 | 370 | 350 | 365 | 345 | 320 | 320 | 340 | 330 | 325 | 350 | 335 | 325 | 340 | 295 | 305 | 305 | 295 | 295  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 17          | 290      | 280 | C   | C   | C   | C   | C   | C   | C   |     | 350 | 355 | 345 | 330 | 335 | 335 | 350 | 345 | 335 | 340 | 305 | 315 | 315 | 285  | 285       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 18          | 295      | 300 | 305 | 300 | 310 | 320 | 345 | 345 | 340 | 355 | 345 | 330 | 345 | 350 | 340 | 345 | 335 | 330 | 320 | 335 | 305 | 290 | 295 | 305  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 19          | 300      | 290 | 295 | 300 | 310 | 320 | 370 | 370 | 345 | 345 | 355 | 340 | 340 | 325 | 330 | 325 | 320 | 315 | 325 | 295 | 275 | 290 | 270 | 265  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 20          | 270      | 320 | 295 | 285 | A   | A   | A   |     | 335 | 260 | 310 | 305 | 290 | 320 | 350 | 310 | 335 | 315 | 335 | 315 | 325 | 315 | 290 | 290  | 280       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 21          | 285      | 305 | 285 | 280 | 290 | 290 | 330 | 325 | 340 | 315 | 310 | A   |     | 315 | 340 | 325 | 335 | 320 | 320 | 315 | 305 | 295 | 310 | 290  | 280       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 22          | 300      | 290 | 285 | 295 | 290 | 320 | 340 | 300 | 345 | A   |     | 320 | 350 | 335 | 335 | 335 | 345 | 350 | 325 | A   | 300 | A   | 325 | 310  | 290       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 23          | 285      | 290 | 290 | 295 | 310 | 280 | 300 | 295 | 270 | 305 | 305 | A   |     | 280 | 290 | 290 | 300 | 320 | 315 | 290 | 320 | 280 | 315 | 245  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 24          | 260      | 250 | 275 | 260 | 270 | 310 | 310 | G   | G   | A   | G   | G   |     | G   | A   | G   | 295 | 305 | 305 | 300 | 275 | 345 | 270 | 280  | 275       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 25          | 290      | 285 | 285 | 290 | 285 | 275 | A   |     | 325 | 275 | 275 | 320 | 300 | 310 | 305 | 345 | 350 | H   | 330 | 310 | 320 | 305 | 295 | 305  | 295       | 260 |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 26          | 280      | 275 | 295 | 310 | 270 | 305 | 315 | 330 | 335 | 330 | 340 | 350 | 320 | 330 | 325 | 335 | 330 | 350 | 325 | 285 | 295 | 285 | 285 | 290  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 27          | 280      | 300 | 325 | 290 | 280 | A   |     | 325 | 335 | 335 | 320 | 360 | 340 | 325 | 325 | 340 | 340 | 340 | 335 | 310 | 310 | 285 | 290 | 285  | 275       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 28          | 290      | 285 | 285 | 325 | 290 | 305 | 300 | 320 | 315 | 335 | 320 | 340 | 325 | 320 | 335 | 315 | 335 | 335 | 345 | 335 | 300 | 290 | 290 | 290  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 29          | 285      | 285 | 300 | 305 | 295 | 305 | 350 | 340 | 360 | 335 | 335 | 335 | 325 | 320 | 320 | 325 | 345 | A   |     | 345 | 295 | 290 | 290 | 285  | 285       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 30          | F        | 300 | 310 | 305 | F   | C   | C   |     | 355 | 350 | 345 | 340 | 330 | 325 | 340 | 320 | 335 | 335 | 335 | 320 | 325 | 305 | 295 | 295  | 295       |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| 31          |          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
|             | 00       | 01  | 02  | 03  | 04  | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23   |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| CNT         | 28       | 28  | 27  | 26  | 24  | 24  | 24  | 24  | 23  | 28  | 30  | 28  | 30  | 28  | 29  | 29  | 29  | 27  | 28  | 28  | 28  | 29  | 29  | 29   |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| MED         | 288      | 290 | 290 | 295 | 298 | 305 | 325 | 332 | 340 | 330 | 330 | 325 | 322 | 325 | 325 | 325 | 330 | 325 | 315 | 300 | 305 | 295 | 290 | 290  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| UQ          | 295      | 295 | 298 | 300 | 310 | 320 | 340 | 340 | 342 | 345 | 340 | 338 | 330 | 335 | 335 | 340 | 335 | 335 | 322 | 312 | 312 | 305 | 300 | 295  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |
| LQ          | 280      | 280 | 285 | 290 | 290 | 295 | 312 | 325 | 325 | 318 | 320 | 312 | 310 | 318 | 320 | 315 | 320 | 320 | 308 | 292 | 295 | 290 | 285 | 275  |           |     |  |  |      |            |  |  |  |       |                 |  |           |  |                        |  |  |

SEP. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

SEP. 1984

M(3000)F1 (0.01)

135 E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |    |    |    | Lat. | 45 23.5 N |    |    |     | Long | 141 41.2 E |     |     |     | Sweep | 1 MHz to 25 MHz |     |     |    | in 24 sec in automatic operation |    |    |    |    |
|-------------|----------|----|----|----|------|-----------|----|----|-----|------|------------|-----|-----|-----|-------|-----------------|-----|-----|----|----------------------------------|----|----|----|----|
| Hour<br>Day | 00       | 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   | H    | H          | H   |     | H   |       | L               |     |     |    |                                  |    |    |    |    |
| 2           |          |    |    |    |      |           |    | A  | A   | 365  | 380        | 375 | 365 | 365 | 365   | 340             | 315 |     |    |                                  |    |    |    |    |
| 3           |          |    |    |    |      |           |    | A  | A   | A    | 390        | 385 | 365 | 355 | 370   | L               |     |     |    |                                  |    |    |    |    |
| 4           |          |    |    |    |      |           |    | L  | 380 | A    | A          | 385 | 375 | 390 | 365   | 360             | A   |     |    |                                  |    |    |    |    |
| 5           |          |    |    |    |      |           |    | C  | C   | H    | 360        | 370 | 380 | 350 | 350   | 345             | 320 | 320 |    |                                  |    |    |    |    |
| 6           |          |    |    |    |      |           |    | A  | 345 | 365  | 365        | 355 | 380 | 350 | 375   | 350             | L   |     |    |                                  |    |    |    |    |
| 7           |          |    |    |    |      |           |    | A  | A   | 385  | 390        | 395 | 380 | 395 | 370   | 350             |     |     |    |                                  |    |    |    |    |
| 8           |          |    |    |    |      |           |    | A  | 375 | 405  | 420        | 395 | 385 | 385 | 365   | L               | L   |     |    |                                  |    |    |    |    |
| 9           |          |    |    |    |      |           |    | A  | A   | 380  | 395        | 385 | 375 | 370 | 335   | 330             | 315 |     |    |                                  |    |    |    |    |
| 10          |          |    |    |    |      |           |    | L  | 340 | 355  | 390        | 370 | 365 | 370 | 380   | H               | 355 | L   |    |                                  |    |    |    |    |
| 11          |          |    |    |    |      |           |    | L  | 370 | L    | L          | L   | 345 | 355 | 355   | 345             | 335 | L   |    |                                  |    |    |    |    |
| 12          |          |    |    |    |      |           |    | L  | 365 | 370  | H          | 400 | 385 | 370 | C     | C               | C   | C   |    |                                  |    |    |    |    |
| 13          |          |    |    |    |      |           |    | A  | A   | 355  | 380        | 395 | 380 | 355 | 370   | 365             |     |     |    |                                  |    |    |    |    |
| 14          |          |    |    |    |      |           |    |    | 365 | 360  | 375        | 385 | 375 | A   | A     | L               |     |     |    |                                  |    |    |    |    |
| 15          |          |    |    |    |      |           |    |    | 360 | 375  | 390        | 390 | 365 | 360 | L     | L               |     |     |    |                                  |    |    |    |    |
| 16          |          |    |    |    |      |           |    |    | 370 | 365  | 365        | 365 | 365 | 375 | 355   | 365             |     |     |    |                                  |    |    |    |    |
| 17          |          |    |    |    |      |           | C  | C  | C   | H    | 350        | 375 | 375 | 380 | 380   | 360             | L   |     |    |                                  |    |    |    |    |
| 18          |          |    |    |    |      |           |    |    | 365 | 380  | 385        | 395 | 390 | 390 | L     |                 |     |     |    |                                  |    |    |    |    |
| 19          |          |    |    |    |      |           |    |    | 370 | 390  | 405        | 370 | 365 |     | 355   |                 |     |     |    |                                  |    |    |    |    |
| 20          |          |    |    |    |      |           | A  | A  | 360 | 360  | 360        | 365 | 355 | 370 | L     | L               |     |     |    |                                  |    |    |    |    |
| 21          |          |    |    |    |      |           |    | A  | 330 | 350  | 365        |     | A   | A   | A     | L               | L   |     |    |                                  |    |    |    |    |
| 22          |          |    |    |    |      |           |    |    | A   | A    | A          | A   | 380 | A   | A     | A               |     |     |    |                                  |    |    |    |    |
| 23          |          |    |    |    |      |           |    |    | A   | A    | 385        | A   | A   | 340 | A     | 320             | A   |     |    |                                  |    |    |    |    |
| 24          |          |    |    |    |      |           |    |    | 345 | 350  | A          | A   | 365 | 375 | A     | 305             | L   |     |    |                                  |    |    |    |    |
| 25          |          |    |    |    |      |           | A  |    | L   | 350  | 375        | 360 | 380 | 380 | 345   | 335             | L   |     |    |                                  |    |    |    |    |
| 26          |          |    |    |    |      |           |    |    | 350 | 360  | 355        | 380 |     | 365 |       | L               | L   |     |    |                                  |    |    |    |    |
| 27          |          |    |    |    |      |           |    |    | L   | 360  | 360        | H   | 390 | 380 | L     | L               |     |     |    |                                  |    |    |    |    |
| 28          |          |    |    |    |      |           |    |    | L   | 390  | 365        | 350 | 385 | A   | 375   | A               |     |     |    |                                  |    |    |    |    |
| 29          |          |    |    |    |      |           |    | A  | L   | 365  | 355        | 370 | 370 | A   | A     | L               |     |     |    |                                  |    |    |    |    |
| 30          |          |    |    |    |      |           |    | A  | A   | 380  | 355        | 365 | 355 | L   | L     |                 |     |     |    |                                  |    |    |    |    |
| 31          |          |    |    |    |      |           |    |    |     |      |            |     |     |     |       |                 |     |     |    |                                  |    |    |    |    |
|             | 00       | 01 | 02 | 03 | 04   | 05        | 06 | 07 | 08  | 09   | 10         | 11  | 12  | 13  | 14    | 15              | 16  | 17  | 18 | 19                               | 20 | 21 | 22 | 23 |
| CNT         |          |    |    |    |      |           |    | 3  | 17  | 24   | 27         | 27  | 26  | 24  | 20    | 15              | 4   |     |    |                                  |    |    |    |    |
| MED         |          |    |    |    |      |           |    | L  | 345 | 360  | 365        | 380 | 385 | 375 | 365   | 360             | 350 | 318 |    |                                  |    |    |    |    |
| UQ          |          |    |    |    |      |           |    |    | 355 | 370  | 378        | 390 | 390 | 380 | 378   | 368             | 358 | 340 |    |                                  |    |    |    |    |
| LQ          |          |    |    |    |      |           |    |    | 342 | 350  | 360        | 365 | 368 | 365 | 355   | 342             | 338 | 315 |    |                                  |    |    |    |    |

SEP. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

SEP. 1984

H\*F2 (KM)

135° E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |    |    |    | Lat. 45 23.5 N |    |    |     | Long 141 41.2 E |     |     |     | Sweep 1 |     | MHz to 25 |     | MHz in 24 |     | sec in |    | automatic operation |    |    |    |
|-------------|----------|----|----|----|----------------|----|----|-----|-----------------|-----|-----|-----|---------|-----|-----------|-----|-----------|-----|--------|----|---------------------|----|----|----|
| Hour<br>Day | 00       | 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               | 345 | 305 | 350 | 455     | 360 | 325       | 325 | 295       |     |        |    |                     |    |    |    |
| 2           |          |    |    |    |                |    |    | 245 | A               | 275 | 280 | 300 | 320     | 310 | 305       | 300 | 295       |     |        |    |                     |    |    |    |
| 3           |          |    |    |    |                |    |    | A   | A               | 315 | 305 | 350 | 355     | 325 | 315       | 300 |           |     |        |    |                     |    |    |    |
| 4           |          |    |    |    |                |    |    | 250 | 255             | 265 | 260 | 265 | 270     | 300 | 285       | 300 | 260       |     |        |    |                     |    |    |    |
| 5           |          |    |    |    |                |    |    | C   | C               | W   |     | G   | G       | 485 | 425       | 525 | 360       |     |        |    |                     |    |    |    |
| 6           |          |    |    |    |                |    |    | A   |                 | 275 | 325 | 300 | 290     | 300 | 305       | 275 | 280       | 255 |        |    |                     |    |    |    |
| 7           |          |    |    |    |                |    |    | 295 | A               | 250 | 270 | 320 | 300     | 315 | 285       | 285 |           |     |        |    |                     |    |    |    |
| 8           |          |    |    |    |                |    |    | 250 | 245             | 265 | 275 | 305 | 310     | 295 | 295       | 285 |           |     |        |    |                     |    |    |    |
| 9           |          |    |    |    |                |    |    | A   |                 | 280 | 255 | 305 | 295     | 275 | 295       | 280 | 290       | 285 |        |    |                     |    |    |    |
| 10          |          |    |    |    |                |    |    | 265 | 245             | 295 | 285 | 285 | 305     | 260 | 285       | 300 | 275       |     |        |    |                     |    |    |    |
| 11          |          |    |    |    |                |    |    |     | 260             | 260 | 275 | 300 | 295     | 300 | 325       | 275 | 255       |     |        |    |                     |    |    |    |
| 12          |          |    |    |    |                |    |    | 280 | 250             | 255 | 270 | 330 | 275     |     | C         | C   | C         | C   |        |    |                     |    |    |    |
| 13          |          |    |    |    |                |    |    | A   | A               | 320 | 295 | 310 | 295     | 270 | 270       | 270 |           |     |        |    |                     |    |    |    |
| 14          |          |    |    |    |                |    |    |     | 275             | 290 | 265 | 285 | 295     | 295 | 295       | 275 |           |     |        |    |                     |    |    |    |
| 15          |          |    |    |    |                |    |    |     | 275             | 245 | 255 | 270 | 300     | 290 | 275       | 275 |           |     |        |    |                     |    |    |    |
| 16          |          |    |    |    |                |    |    |     | 250             | 255 | 295 | 295 | 255     | 285 | 275       | 255 |           |     |        |    |                     |    |    |    |
| 17          |          |    |    |    |                |    |    | C   | C               | C   | 240 | 250 | 270     | 280 | 280       | 275 | 255       |     |        |    |                     |    |    |    |
| 18          |          |    |    |    |                |    |    |     | 255             | 250 | 255 | 265 | 255     | 250 | 265       |     |           |     |        |    |                     |    |    |    |
| 19          |          |    |    |    |                |    |    |     |                 | 250 | 250 | 255 | 255     | 305 |           | 290 |           |     |        |    |                     |    |    |    |
| 20          |          |    |    |    |                |    |    | A   |                 | 305 | 445 | 370 | 350     | 385 | 325       | 295 | 325       | 285 |        |    |                     |    |    |    |
| 21          |          |    |    |    |                |    |    |     | 300             | 300 | 345 | 350 |         | A   | 340       | 295 | 305       | 280 |        |    |                     |    |    |    |
| 22          |          |    |    |    |                |    |    |     |                 | 285 |     | A   | 300     | 270 | 295       | 295 | 300       | 295 |        |    |                     |    |    |    |
| 23          |          |    |    |    |                |    |    |     |                 | 415 | 355 | 360 |         | A   | 410       | 375 | 375       | 305 | 305    |    |                     |    |    |    |
| 24          |          |    |    |    |                |    |    |     | G               | G   | A   | G   | G       | G   | A         | G   | 355       |     |        |    |                     |    |    |    |
| 25          |          |    |    |    |                |    |    |     | 290             | 400 | 405 | 305 | 350     | 335 | 325       | 295 | 270       |     |        |    |                     |    |    |    |
| 26          |          |    |    |    |                |    |    |     |                 | 305 | 280 | 265 | 270     |     | 285       | 300 | 270       |     |        |    |                     |    |    |    |
| 27          |          |    |    |    |                |    |    |     |                 | 265 | 285 | 250 | 280     | 280 | 275       | 265 |           |     |        |    |                     |    |    |    |
| 28          |          |    |    |    |                |    |    |     |                 | 290 | 255 | 275 | 265     | 260 | 275       | 275 |           |     |        |    |                     |    |    |    |
| 29          |          |    |    |    |                |    |    |     |                 | 255 | 275 | 270 | 280     | 290 | 285       | 275 | 280       |     |        |    |                     |    |    |    |
| 30          |          |    |    |    |                |    |    |     |                 | 255 | 250 | 255 | 280     | 275 | 255       | 285 |           |     |        |    |                     |    |    |    |
| 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         |          |    |    |    |                |    |    | 10  | 22              | 28  | 30  | 28  | 29      | 28  | 28        | 25  | 9         |     |        |    |                     |    |    |    |
| MED         |          |    |    |    |                |    |    | 285 | 275             | 275 | 278 | 292 | 295     | 295 | 290       | 285 | 285       |     |        |    |                     |    |    |    |
| UQ          |          |    |    |    |                |    |    | 300 | 300             | 322 | 305 | 325 | 325     | 308 | 310       | 300 | 295       |     |        |    |                     |    |    |    |
| LQ          |          |    |    |    |                |    |    | 250 | 255             | 255 | 265 | 270 | 275     | 282 | 275       | 275 | 260       |     |        |    |                     |    |    |    |

SEP. 1984

H\*F2 (KM)

IONOSPHERIC DATA

SEP. 1984

H\*F (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station     | WAKKANAI |     |     |     |     |     |     | Lat. 45 23.5 N |     |     |     | Long 141 41.2 E |     |     |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |     |     |
|-------------|----------|-----|-----|-----|-----|-----|-----|----------------|-----|-----|-----|-----------------|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Hour<br>Day | 00       | 01  | 02  | 03  | 04  | 05  | 06  | 07             | 08  | 09  | 10  | 11              | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |
| 1           | 265      | A   | 285 | 270 | 225 | 250 | 225 | 230            | A   | 205 | 195 | 210             | H   | 200 | 225 | 205   | 225 | 270 | A   | A   | 270 | 280 | 255 | 290 |     |     |
| 2           | 295      | 280 | 295 | 300 | 255 | 240 | 240 | A              | A   | 200 | 200 | 195             | H   | 195 | 200 | 230   | 230 | 245 | 250 | 245 | 225 | 235 | 250 | 275 | 260 |     |
| 3           | 300      | 300 | 265 | 250 | 260 | A   | A   | A              | A   | A   | 210 | 205             | 230 | 200 | A   | A   | H   | A   | 250 | 250 | 250 | 245 | 325 | 250 |     |     |
| 4           | 265      | 270 | 275 | 290 | 275 | 250 | 250 | 225            | 240 | A   | A   | 205             | 200 | 210 | 220 | H   | A   | C   | C   | C   | C   | C   | C   | C   |     |     |
| 5           | C        | C   | C   | C   | C   | C   | C   | C              | C   | H   | 200 | 205             | 205 | 220 | H   | 210   | 220 | 240 | 250 | A   | A   | 325 | 320 | 325 | 295 |     |
| 6           | 265      | 250 | 255 | 335 | A   | A   | 260 | A              | 215 | 225 | 210 | 210             | 220 | 230 | 210 | 240   | 230 | 225 | 260 | 275 | A   | 300 | 270 | 250 |     |     |
| 7           | 270      | 285 | 270 | 300 | 300 | 275 | 220 | A              | A   | 215 | 200 | 200             | 210 | 200 | 200 | 205   | 230 | 240 | 265 | 275 | 260 | 240 | 250 | 260 |     |     |
| 8           | 290      | 275 | 285 | 275 | 255 | 245 | A   | A              | 210 | 195 | H   | 190             | 195 | 190 | H   | 205   | 220 | 225 | 245 | 250 | 255 | 250 | 250 | 220 | 240 | 295 |
| 9           | 290      | 305 | 280 | 255 | 255 | 255 | 245 | A              | A   | 220 | 200 | 195             | 195 | 200 | 225 | 225   | 245 | 245 | 255 | 295 | 245 | 255 | 240 | 235 |     |     |
| 10          | 240      | 300 | 295 | 260 | 255 | 275 | 245 | 225            | 215 | 200 | A   | 220             | 205 | 205 | H   | 200   | 240 | 245 | 245 | 280 | 260 | 245 | 235 | 230 | 235 |     |
| 11          | 300      | 300 | 295 | 300 | 280 | 245 | 240 | 235            | 225 | 210 | 195 | 200             | 215 | 235 | 230 | 235   | 235 | 240 | 240 | 245 | A   | 250 | 255 | 275 |     |     |
| 12          | 300      | 280 | 250 | 280 | 245 | 250 | 225 | 225            | 230 | 205 | 195 | 205             | H   | 195 | C   | C   | C   | C   | C   | 225 | 240 | 270 | 250 | 245 | 255 |     |
| 13          | 290      | 250 | 255 | 245 | 250 | 255 | A   | A              | A   | A   | 235 | 210             | 195 | 195 | 195 | 210   | 220 | H   | A   | 270 | 300 | 265 | 245 | 255 |     |     |
| 14          | 275      | 300 | 300 | 275 | 245 | 225 | 205 | 240            | 210 | 225 | 200 | 200             | 195 | A   | A   | A   | 245 | 260 | 245 | 270 | 255 | 250 | 250 | 255 |     |     |
| 15          | 270      | 280 | 290 | 275 | 250 | 260 | 240 | 230            | 230 | 205 | 200 | 205             | 200 | 195 | 240 | 240   | 240 | 245 | 215 | 245 | 255 | 275 | 295 | 260 |     |     |
| 16          | 250      | 265 | 285 | 275 | 250 | 230 | 215 | 235            | 210 | H   | 205 | 200             | 205 | 205 | 235 | 240   | 235 | H   | 215 | 250 | 250 | 250 | 270 | 250 |     |     |
| 17          | 275      | 295 | C   | C   | C   | C   | C   | C              | C   | H   | 195 | 200             | 205 | 220 | 205 | H   | 200 | 235 | 230 | 250 | 230 | 245 | 245 | 245 | 280 |     |
| 18          | 255      | 260 | 255 | 255 | 250 | 220 | 205 | 230            | 215 | 215 | 200 | 195             | 195 | 205 | 205 | H   | 205 | 240 | 245 | 235 | 220 | 250 | 260 | 275 | 265 |     |
| 19          | 255      | 265 | 270 | 255 | 240 | 225 | 215 | 225            | H   | 200 | 220 | 205             | 200 | 195 | 205 | H   | 230 | 235 | 250 | 240 | 225 | 255 | 295 | 280 | 290 | 305 |
| 20          | 310      | 240 | 270 | 300 | A   | A   | A   | A              | 205 | 205 | 225 | 210             | H   | 195 | 200 | 235   | 245 | 225 | 250 | 245 | 230 | 245 | 245 | 290 | 285 |     |
| 21          | 270      | 245 | 295 | 275 | 270 | 250 | 245 | A              | 245 | 225 | 220 | A               | A   | A   | 225 | 220   | A   | 255 | 265 | 245 | 255 | 275 | 280 | 280 |     |     |
| 22          | 250      | 300 | 285 | 250 | 280 | 255 | A   | H              | A   | A   | A   | A               | 200 | A   | A   | A   | 260 | 245 | A   | A   | A   | A   | 240 | 270 | 300 |     |
| 23          | 305      | 290 | 295 | 295 | 265 | 255 | A   | 255            | A   | A   | 200 | A               | A   | 230 | A   | 245   | A   | 250 | 240 | 275 | 245 | 305 | 245 | 370 |     |     |
| 24          | 305      | 375 | 320 | 355 | 305 | 290 | 280 | 250            | 230 | A   | A   | 205             | 205 | A   | 260 | 245   | 260 | 275 | 250 | A   | 240 | 305 | 295 | 300 |     |     |
| 25          | 305      | 285 | 275 | 275 | 220 | 305 | A   | A              | 235 | 215 | 210 | 200             | 200 | 210 | 220 | 215   | H   | 210 | 255 | 240 | 240 | 265 | 255 | 295 | 300 |     |
| 26          | 300      | 300 | 285 | 255 | 320 | 275 | 245 | 245            | 210 | 220 | 225 | 205             | H   | 205 | H   | 200   | 250 | 230 | 235 | 275 | 280 | 280 | 285 | 295 |     |     |
| 27          | 300      | 245 | 225 | 275 | 300 | A   | 250 | 235            | 220 | 205 | 210 | 205             | H   | 205 | 200 | 200   | 245 | 245 | 245 | 245 | 255 | 250 | 255 | 270 | 255 |     |
| 28          | 265      | 290 | 275 | 210 | 285 | 275 | 245 | 240            | 220 | 215 | 205 | 210             | A   | 200 | A   | H   | 225 | A   | A   | A   | A   | 275 | 285 | 290 | 300 |     |
| 29          | 275      | 300 | 285 | 275 | 275 | 255 | 230 | 225            | A   | 225 | 205 | 210             | A   | A   | A   | 245   | 245 | A   | 220 | 255 | 275 | 275 | 295 | 280 |     |     |
| 30          | 275      | 250 | 245 | 230 | 255 | C   | C   | 235            | A   | A   | 205 | 205             | H   | 205 | 225 | 215   | 245 | 245 | 225 | 230 | 240 | 220 | 250 | 255 | 260 |     |
| 31          |          |     |     |     |     |     |     |                |     |     |     |                 |     |     |     |   |     |     |     |     |     |     |     |     |     |     |
| CNT         | 29       | 28  | 28  | 28  | 26  | 24  | 21  | 18             | 18  | 24  | 27  | 27              | 27  | 24  | 24  | 26  | 25  | 24  | 27  | 26  | 26  | 29  | 29  | 29  |     |     |
| MED         | 275      | 282 | 282 | 275 | 255 | 255 | 240 | 235            | 218 | 212 | 205 | 205             | 200 | 205 | 222 | 235   | 245 | 245 | 245 | 250 | 252 | 255 | 270 | 275 |     |     |
| UQ          | 300      | 300 | 292 | 292 | 280 | 275 | 245 | 240            | 230 | 220 | 210 | 205             | 208 | 210 | 230 | 240   | 245 | 250 | 258 | 270 | 270 | 280 | 290 | 295 |     |     |
| LQ          | 265      | 262 | 268 | 255 | 250 | 245 | 225 | 225            | 210 | 205 | 200 | 200             | 195 | 200 | 210 | 220   | 230 | 240 | 232 | 245 | 245 | 250 | 250 | 255 |     |     |

SEP. 1984

H\*F (KM)

The Radio Research Laboratories, Japan

### IONOSPHERIC DATA

SEP. 1984

H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23' 5" N Long 141° 41' 2" E Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

| Hour<br>Day | 00 | 01 | 02 | 03 | 04 | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19 | 20 | 21 | 22 | 23 |
|-------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|
| 1           |    |    |    |    |    | S   | 125 | 105 | 110 | 110 | A   | A   | 105 | A   | A   | 110 | 110 | 120 |     | S  |    |    |    |    |
| 2           |    |    |    |    |    | S   | 125 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 105 | 110 | 110 | 115 |     | S  |    |    |    |    |
| 3           |    |    |    |    |    | S   | 110 | 110 | 110 | 110 | 105 | 105 | 110 | 110 | 110 | 110 | 110 |     | A   | S  |    |    |    |    |
| 4           |    |    |    |    |    | A   | 115 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |     | C   | C  |    |    |    |    |
| 5           |    |    |    |    |    |     |     | C   | C   | 110 | A   | 105 | 105 | 105 | 105 | 105 | 110 | 110 |     | S  |    |    |    |    |
| 6           |    |    |    |    |    | 115 | 110 | 105 | A   | A   | A   | A   | A   | 110 | A   | A   | A   | 115 | 120 |    |    |    |    |    |
| 7           |    |    |    |    |    | S   | 120 | 105 | A   | 105 | 105 | 110 | 110 | 110 | 105 | 110 | 110 |     | A   | A  |    |    |    |    |
| 8           |    |    |    |    |    | S   | 120 | A   | 105 | 110 | 125 | 110 | 105 | 110 | 105 | 110 | 110 | 125 |     | S  |    |    |    |    |
| 9           |    |    |    |    |    | S   | 135 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | A   | A   | A   | 115 |     | S  |    |    |    |    |
| 10          |    |    |    |    |    | S   | 130 | 110 | 115 | 110 | 110 | A   | 110 | 115 | 115 | 105 |     | A   | A   | E  |    |    |    |    |
| 11          |    |    |    |    |    | S   | 130 | 110 | 120 | 115 | 110 | 110 | 105 | A   | 110 | 105 | 115 | 125 |     | S  |    |    |    |    |
| 12          |    |    |    |    |    | S   | 130 | 125 | 125 | 115 | 110 | 130 | 130 |     | C   | C   | C   | C   | C   | E  |    |    |    |    |
| 13          |    |    |    |    |    | S   | S   | 120 | 110 | 120 | 110 | 110 | 110 | 110 | 110 | 115 | 115 |     | A   | E  |    |    |    |    |
| 14          |    |    |    |    |    | E   | 110 | 110 | 110 | A   | 105 | A   | A   | A   | A   | A   | 120 | 125 |     | S  |    |    |    |    |
| 15          |    |    |    |    |    | S   | 125 | 120 | 105 | 105 | 105 | 105 | 110 | 105 | 110 | 110 | 125 | 125 |     | E  |    |    |    |    |
| 16          |    |    |    |    |    |     | 130 | 115 | 105 | 105 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |     | A   |    |    |    |    |    |
| 17          |    |    |    |    |    |     | C   | C   | C   |     | 110 | 110 | 105 | 110 | 105 | 120 | 125 | 125 |     | A  |    |    |    |    |
| 18          |    |    |    |    |    |     | 125 | 120 | 115 | 115 | 115 | 110 | 110 | 110 | 110 | 110 | 110 | 130 |     |    |    |    |    |    |
| 19          |    |    |    |    |    |     | 125 | 110 | 105 | 105 | 105 | 120 | 105 | 125 | 110 | 115 | 115 |     | A   |    |    |    |    |    |
| 20          |    |    |    |    |    |     | 125 | 110 | 110 | 110 | 110 | 105 | 105 |     | A   | 105 |     | A   | A   | S  |    |    |    |    |
| 21          |    |    |    |    |    |     | 135 | 125 | 110 | 110 | 105 | 105 | 105 | 105 | 105 |     | A   | A   | A   |    |    |    |    |    |
| 22          |    |    |    |    |    |     | S   | 120 | 115 | 105 | 110 |     | A   | A   | A   | 105 | 105 |     | A   | A  |    |    |    |    |
| 23          |    |    |    |    |    |     | S   | 125 | 110 | 120 | 110 | 110 |     | A   | 115 | 120 | 115 | 120 |     | S  |    |    |    |    |
| 24          |    |    |    | E  |    |     | S   | 125 | 120 | 110 | 110 |     | A   | 120 | A   | A   | 120 | 125 |     | S  |    |    |    |    |
| 25          |    |    |    |    |    |     | S   | 125 | 120 | 115 | 110 | 110 | 110 | 110 | 110 | 115 | 120 | 120 | 125 |    |    |    |    |    |
| 26          |    |    |    |    |    |     | B   | 105 | 110 | 105 | 110 | 110 | 115 | 110 | 110 | 110 | 110 |     | A   |    |    |    |    |    |
| 27          |    |    |    |    |    |     | S   | 110 | 110 | 105 | 110 | 105 |     | A   | 110 | 110 | 125 | 120 |     | S  |    |    |    |    |
| 28          |    |    |    |    |    |     | A   | 115 | 125 | 110 | 105 | 110 | 105 |     | A   | A   | A   | A   | A   |    |    |    |    |    |
| 29          |    |    |    |    |    |     | S   | 120 | 110 | 105 | 125 | 110 | 110 | 110 | 110 | 120 | 125 |     | S   |    |    |    |    |    |
| 30          |    |    |    |    |    |     | C   | 125 | 110 | 120 | 110 | 105 |     | A   | 110 | A   | A   | A   | A   |    |    |    |    |    |
| 31          |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
|             | 00 | 01 | 02 | 03 | 04 | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19 | 20 | 21 | 22 | 23 |
| CNT         |    |    |    |    |    | 1   | 18  | 27  | 26  | 28  | 27  | 24  | 24  | 22  | 22  | 22  | 21  | 11  | 1   |    |    |    |    |    |
| MED         |    |    |    |    |    | 115 | 125 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 115 | 125 | 120 |    |    |    |    |    |
| UQ          |    |    |    |    |    | 130 | 120 | 115 | 112 | 110 | 110 | 110 | 110 | 110 | 110 | 115 | 120 | 125 |     |    |    |    |    |    |
| LQ          |    |    |    |    |    | 120 | 110 | 110 | 105 | 108 | 105 | 105 | 105 | 110 | 105 | 110 | 110 | 115 |     |    |    |    |    |    |

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H°E (KM)



# IONOSPHERIC DATA

SEP. 1984

H<sup>o</sup>ES (KM)

135 E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45 23.5 N Long 141 41.2 E Sweep 1 MHz to 25 MHz in 24sec in automatic operation

| Hour<br>Day | 00  | 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 | 100 | 105 | 105 | 115 | S   | 125 | 115 | 110 | 105 | 105 | 105 | G   | 105 | 105 | G   | G   | 115 | 110 | 110 | 110 | 105 | 105 | 105 |
| 2           | 105 | 100 | 100 | 105 | E   | S   | 125 | 110 | 110 | 120 | G   | G   | G   | G   | 145 | 130 | G   | 115 | 110 | S   | S   | S   | 105 | S   |
| 3           | S   | S   | S   | 120 | 110 | 110 | 110 | 110 | 110 | 110 | G   | 115 | 110 | G   | 145 | 125 | 120 | 115 | 115 | 110 | 110 | 110 | 110 | E   |
| 4           | 105 | 105 | 105 | 105 | 100 | 105 | 115 | 120 | 110 | 110 | 110 | 110 | G   | 110 | 115 | 120 | C   | C   | C   | C   | C   | C   | C   | C   |
| 5           | C   | C   | C   | C   | C   | C   | C   | C   | C   | C   | G   | 105 | G   | G   | G   | G   | G   | 110 | 110 | 105 | 110 | 110 | S   | S   |
| 6           | S   | 100 | 105 | 120 | 115 | 115 | 110 | 110 | 105 | 105 | 105 | 105 | 105 | G   | 105 | 105 | 105 | 120 | 120 | S   | 125 | 105 | 105 | 100 |
| 7           | 100 | 100 | S   | S   | 130 | 125 | 125 | 115 | 105 | G   | G   | G   | G   | G   | G   | G   | G   | 100 | 100 | 100 | 100 | S   | 105 | 105 |
| 8           | 105 | 105 | 105 | S   | S   | 125 | 120 | 105 | 105 | 105 | 105 | G   | G   | G   | G   | G   | 135 | 125 | 125 | 115 | 110 | 115 | 105 | 105 |
| 9           | 105 | S   | 105 | 105 | S   | S   | 130 | 120 | 115 | 110 | 110 | G   | G   | G   | 105 | 105 | 105 | 120 | 110 | 110 | 105 | 105 | 110 | S   |
| 10          | S   | 100 | 105 | S   | 105 | S   | 125 | 115 | G   | G   | 110 | 105 | 115 | 115 | 115 | G   | 105 | 105 | 105 | 110 | 115 | S   | S   | S   |
| 11          | S   | S   | 130 | 130 | 130 | 125 | 125 | 115 | G   | 120 | G   | G   | G   | 105 | G   | G   | 125 | 125 | 110 | 110 | 110 | 105 | 105 | 105 |
| 12          | 105 | 105 | S   | 125 | 125 | 120 | 125 | G   | G   | G   | G   | 105 | 105 | C   | C   | C   | C   | C   | 120 | 110 | 105 | 105 | 105 | S   |
| 13          | 105 | 105 | S   | 105 | S   | S   | 125 | 125 | 120 | 120 | 115 | G   | G   | G   | G   | G   | 105 | 110 | 115 | 110 | 115 | 110 | 105 |     |
| 14          | 100 | 100 | 100 | 100 | 100 | 100 | G   | 115 | G   | 105 | G   | 105 | 105 | 100 | 100 | 100 | 105 | 125 | 110 | 110 | 105 | 105 | 105 | 120 |
| 15          | S   | S   | 105 | 105 | E   | S   | 130 | 120 | G   | G   | G   | G   | G   | G   | G   | G   | G   | G   | 120 | S   | S   | S   | S   | 115 |
| 16          | S   | S   | S   | S   | E   | S   | G   | G   | G   | G   | G   | G   | G   | G   | G   | G   | G   | 105 | 105 | S   | S   | S   | S   | S   |
| 17          | S   | S   | C   | C   | C   | C   | C   | C   | C   | G   | G   | G   | G   | G   | 105 | 105 | 105 | 105 | 100 | 105 | 105 | 105 | S   | S   |
| 18          | 100 | S   | S   | S   | S   | S   | G   | G   | 105 | 100 | G   | G   | G   | G   | 100 | 100 | G   | 105 | 105 | S   | 120 | 115 | 110 | 110 |
| 19          | 105 | 110 | 105 | S   | S   | S   | G   | 125 | G   | G   | 125 | 105 | G   | 105 | 100 | G   | G   | 100 | S   | S   | S   | S   | 105 | S   |
| 20          | S   | S   | S   | 125 | 125 | 120 | 115 | 115 | 110 | G   | G   | G   | G   | 105 | G   | 105 | 105 | 135 | 125 | 120 | 125 | 100 | 105 | 125 |
| 21          | 100 | 100 | S   | 140 | S   | 135 | 125 | 125 | G   | 120 | 110 | 105 | 105 | 110 | G   | 100 | 135 | 130 | 125 | 120 | 115 | 105 | 130 | 105 |
| 22          | 105 | 100 | 105 | 100 | S   | S   | 125 | 125 | 120 | 110 | 110 | 105 | 105 | 105 | 105 | 105 | 105 | 135 | 115 | 120 | 120 | 110 | 105 | 105 |
| 23          | 105 | 105 | 130 | 105 | 100 | 100 | 115 | 125 | 120 | 120 | 110 | 105 | 105 | 105 | 105 | G   | 125 | 125 | 120 | 110 | 110 | S   | S   | S   |
| 24          | S   | 105 | 130 | S   | S   | 110 | 125 | 115 | G   | 110 | 105 | 105 | 105 | 105 | 110 | G   | 145 | 130 | 110 | 115 | 110 | S   | S   | 105 |
| 25          | S   | S   | S   | S   | S   | S   | 110 | 110 | G   | G   | G   | G   | G   | G   | G   | G   | G   | G   | 145 | S   | S   | 110 | 105 | S   |
| 26          | S   | S   | S   | 120 | S   | 105 | B   | G   | G   | G   | G   | 100 | G   | G   | 100 | 110 | 110 | 105 | 105 | S   | S   | 105 | S   | S   |
| 27          | S   | S   | S   | S   | S   | 105 | S   | G   | G   | G   | G   | G   | 105 | G   | G   | 105 | 140 | 135 | 105 | 105 | S   | S   | S   | S   |
| 28          | S   | E   | S   | S   | S   | 105 | 105 | 120 | 100 | 110 | 105 | 150 | 105 | 105 | 100 | 115 | 100 | 100 | 100 | 100 | 105 | 100 | S   | S   |
| 29          | 100 | S   | S   | S   | 105 | S   | 160 | 150 | 125 | 125 | 110 | G   | 125 | 115 | 125 | 105 | 135 | 125 | 110 | 110 | 105 | 110 | 110 | 105 |
| 30          | 105 | 105 | S   | 125 | S   | C   | C   | G   | 125 | 120 | G   | G   | 105 | G   | 105 | 105 | 105 | 105 | 105 | 105 | S   | S   | S   | 105 |
| 31          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| CNT         | 16  | 16  | 14  | 17  | 12  | 15  | 21  | 22  | 16  | 18  | 15  | 14  | 14  | 12  | 18  | 16  | 19  | 26  | 28  | 21  | 21  | 19  | 18  | 15  |
| MED         | 105 | 102 | 105 | 105 | 112 | 110 | 125 | 115 | 110 | 110 | 110 | 105 | 105 | 105 | 105 | 105 | 110 | 115 | 110 | 110 | 110 | 105 | 105 | 105 |
| UQ          | 105 | 105 | 105 | 125 | 125 | 122 | 125 | 125 | 120 | 120 | 110 | 105 | 110 | 108 | 110 | 112 | 130 | 125 | 120 | 115 | 115 | 110 | 110 | 108 |
| LQ          | 100 | 100 | 105 | 105 | 102 | 105 | 115 | 115 | 105 | 105 | 105 | 105 | 105 | 105 | 100 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |

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H<sup>o</sup>ES (KM)

# IONOSPHERIC DATA

SEP. 1984

TYPES OF ES

135 E Mean Time (G.M.T. + 9 h)

| Station |     | WAKKANAI |    |      |    |    |    |    |      |    |    |    | Lat. 45 23.5 N Long 141 41.2 E |    |    |      |      |      |      |      |      |      |      | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |  |  |  |  |  |  |  |  |  |
|---------|-----|----------|----|------|----|----|----|----|------|----|----|----|--------------------------------|----|----|------|------|------|------|------|------|------|------|---|----|--|--|--|--|--|--|--|--|--|
| Hour    | Day | 00       | 01 | 02   | 03 | 04 | 05 | 06 | 07   | 08 | 09 | 10 | 11                             | 12 | 13 | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22  | 23 |  |  |  |  |  |  |  |  |  |
| 1       |     | F5       | F4 | F2   | F2 | F1 |    | C2 | C2   | C4 | C2 | L3 | L2                             |    | L2 | L2   |      | C3   | C4   | F3   | F6   | F7   | F2   | F2  |    |  |  |  |  |  |  |  |  |  |
| 2       |     | F2       | F2 | F2   | F2 |    |    | C3 | C5   | C4 | C1 |    |                                |    | H1 | C2   |      | C4   | C4   |      |      |      | F2   |   |    |  |  |  |  |  |  |  |  |  |
| 3       |     |          |    |      | F2 | F4 | C3 | C4 | C5   | C3 | C2 |    | C1                             | C2 | H1 | C3   | C2   | CL32 | C3   | F2   | F3   | F2   | F3   |   |    |  |  |  |  |  |  |  |  |  |
| 4       |     | F2       | F1 | F2   | F3 | F2 | L2 | C2 | C2   | C2 | C2 | C2 | C1                             |    | C2 | C2   | C2   |      |      |      |      |      |      |   |    |  |  |  |  |  |  |  |  |  |
| 5       |     |          |    |      |    |    |    |    |      |    | L2 |    |                                |    |    |      |      | C2   | C3   | F4   | F2   | F2   |      |   |    |  |  |  |  |  |  |  |  |  |
| 6       |     |          | F1 | F2   | F2 | F4 | C3 | C3 | C5   | L2 | L2 | L1 | L1                             | L1 |    | L2   | L2   | L2   | C2   | C2   |      | F3   | F4   | F4  | F2 |  |  |  |  |  |  |  |  |  |
| 7       |     | F3       | F2 |      |    | F2 | C2 | C2 | C2   | L4 |    |    |                                |    |    |      |      |      | L1   | L2   | F2   | F2   |      | F2  | F3 |  |  |  |  |  |  |  |  |  |
| 8       |     | F2       | F1 | F2   |    |    | C1 | C3 | L2   | C2 | C2 | L2 |                                |    |    |      |      | C3   | C4   | C3   | F2   | F3   | F1   | FF32  | F2 |  |  |  |  |  |  |  |  |  |
| 9       |     | F1       |    | F2   | F1 |    |    | C1 | C4   | C4 | C2 | C2 |                                |    | L2 | L2   | L3   | C2   | C7   | F3   | F2   | F2   | F2   |   |    |  |  |  |  |  |  |  |  |  |
| 10      |     |          | F2 | F1   |    | F1 |    | C3 | C3   |    |    | C2 | L3                             | C3 | C3 | C1   |      | L3   | L1   | L4   | F3   | F2   |      |   |    |  |  |  |  |  |  |  |  |  |
| 11      |     |          |    | F3   | F5 | F1 | C1 | C1 | C3   |    |    | C3 |                                |    | L2 |      |      | C2   | CL31 | C4   | FF21 | F4   | F2   | F1  | F4 |  |  |  |  |  |  |  |  |  |
| 12      |     | F2       | F2 |      | F3 | F3 | C3 | C2 |      |    |    | L2 | L2                             |    |    |      |      |      |      | C1   | F2   | F2   | F2   | F1  |    |  |  |  |  |  |  |  |  |  |
| 13      |     | F1       | F1 |      | F1 |    |    | C3 | C6   | C3 | C2 | C2 |                                |    |    |      |      |      | L3   | C4   | F2   | F2   | F2   | F2  | F2 |  |  |  |  |  |  |  |  |  |
| 14      |     | F2       | F2 | F3   | F2 | F1 | L1 |    | C1   |    | L2 |    | L2                             | L4 | L5 | L4   | L1   | C4   | C5   | F3   | F3   | F3   | F3   | F1  |    |  |  |  |  |  |  |  |  |  |
| 15      |     |          |    | F5   | F4 |    |    | C2 | C3   |    |    |    |                                |    |    |      |      |      |      | C1   |      |      |      |   | F1 |  |  |  |  |  |  |  |  |  |
| 16      |     |          |    |      |    |    |    |    |      |    |    |    |                                |    |    |      |      |      | L1   | F1   |      |      |      |   |    |  |  |  |  |  |  |  |  |  |
| 17      |     |          |    |      |    |    |    |    |      |    |    |    |                                |    | L2 | L2   | L1   | L4   | F3   | F2   | F2   | F1   |      |   |    |  |  |  |  |  |  |  |  |  |
| 18      |     | F1       |    |      |    |    |    |    | L2   | L2 |    |    |                                |    | L1 | L1   |      | L1   | F1   |      | FF21 | FF21 | F2   | F2  |    |  |  |  |  |  |  |  |  |  |
| 19      |     | F2       | F2 | F2   |    |    |    |    | C3   |    | C1 | L2 |                                | L2 | L1 |      |      | L2   |      |      |      |      | F1   |   |    |  |  |  |  |  |  |  |  |  |
| 20      |     |          |    |      | F4 | F6 | F6 | C5 | C5   | C2 |    |    |                                | L2 | L3 | L2   | L2   | C3   | F2   | F1   | F1   | F2   | F4   | FF11  |    |  |  |  |  |  |  |  |  |  |
| 21      |     | F2       | F1 |      | F2 |    | F1 | C2 | C4   |    | C1 | C2 | C3                             | C3 | C3 | L3   | CL52 | CL31 | FF41 | FF32 | F1   | F3   | F2   | F2  |    |  |  |  |  |  |  |  |  |  |
| 22      |     | F2       | F2 | F2   | F2 |    |    | C4 | C4   | C3 | C4 | C3 | L3                             | L2 | L3 | C2   | C3   | L5   | CL11 | F6   | F6   | F5   | F7   | F3  | F3 |  |  |  |  |  |  |  |  |  |
| 23      |     | F2       | F2 | FF12 | F2 | F2 | F1 | C4 | C4   | C2 | C2 | C2 | C3                             | L2 | C3 | C3   |      | C3   | C4   | F1   | F3   | F2   |      |   |    |  |  |  |  |  |  |  |  |  |
| 24      |     | F2       |    | CK11 |    | F1 | C2 | C2 |      | C3 | C3 | L2 | L1                             | L3 | L2 |      | H2   | C2   | F2   | FF63 | F3   |      |      | F1  |    |  |  |  |  |  |  |  |  |  |
| 25      |     |          |    |      |    |    |    | C4 | C3   |    |    |    |                                |    |    |      |      |      |      | F1   |      |      | F1   | F2  |    |  |  |  |  |  |  |  |  |  |
| 26      |     |          |    | F2   |    | F2 |    |    |      |    |    | L1 |                                |    | L1 | C2   | C1   | L2   | F1   |      |      |      | F1   |   |    |  |  |  |  |  |  |  |  |  |
| 27      |     |          |    |      |    | F5 |    |    |      |    |    |    |                                | L2 |    | L2   | C2   | C2   | F2   | F2   |      |      |      |   |    |  |  |  |  |  |  |  |  |  |
| 28      |     |          |    |      | F2 | L1 | C1 | L2 | C2   | C2 | H1 |    | C3                             | L3 | L3 | CL22 | L4   | L4   | F4   | F3   | F4   | F2   |      |   |    |  |  |  |  |  |  |  |  |  |
| 29      |     | F1       |    |      | F1 | H1 | H1 | C2 | C2   | L1 |    |    | C3                             | C2 | C3 | L1   | C3   | C5   | F2   | F2   | F2   | FF22 | FF22 | F2  |    |  |  |  |  |  |  |  |  |  |
| 30      |     | F2       | F2 |      | F1 |    |    | C4 | CL41 |    |    |    | L2                             |    | L2 | L5   | L6   | L1   | F2   | F2   |      |      |      |   | 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     |     |          |    |      |    |    |    |    |      |    |    |    |                                |    |    |      |      |      |      |      |      |      |      |   |    |  |  |  |  |  |  |  |  |  |
| UQ      |     |          |    |      |    |    |    |    |      |    |    |    |                                |    |    |      |      |      |      |      |      |      |      |   |    |  |  |  |  |  |  |  |  |  |
| LQ      |     |          |    |      |    |    |    |    |      |    |    |    |                                |    |    |      |      |      |      |      |      |      |      |   |    |  |  |  |  |  |  |  |  |  |

SEP. 1984

TYPES OF ES

# IONOSPHERIC DATA

SEP. 1984

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station |     | AKITA   |         |         |         | Lat.    | 39 43.5 N |         |    |    | Long. | 140 08.0 E |    |    |    | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |    |    |    |         |         |         |         |         |
|---------|-----|---------|---------|---------|---------|---------|-----------|---------|----|----|-------|------------|----|----|----|---|----|----|----|----|---------|---------|---------|---------|---------|
| Hour    | Day | 00      | 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<br>43 |         | X<br>42 | X<br>43 | X<br>45 | X<br>43   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>68 | X<br>57 | X<br>54 | X<br>56 | X<br>57 |
| 2       |     |         | X<br>53 | X<br>53 | X<br>51 | X<br>50 | X<br>48   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>69 | X<br>50 | X<br>48 | X<br>47 | X<br>46 |
| 3       |     | X<br>45 | X<br>45 | X<br>44 | X<br>45 | X<br>40 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>74 | X<br>62 | X<br>52 | X<br>50 | X<br>51 |
| 4       |     | X<br>50 | X<br>48 | X<br>46 | X<br>44 | X<br>43 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>76 | X<br>76 | X<br>79 | X<br>69 | X<br>71 |
| 5       |     | X<br>55 | X<br>44 | X<br>52 | X<br>42 | X<br>41 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>45 | X<br>46 | X<br>45 | X<br>44 | X<br>44 |
| 6       |     | X<br>42 | X<br>40 | X<br>40 | X<br>35 | A       |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>65 | X<br>68 | X<br>68 | X<br>67 | X<br>60 |
| 7       |     | X<br>50 | X<br>46 | X<br>45 | X<br>43 | X<br>45 | X<br>44   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>74 | X<br>73 | X<br>70 | X<br>60 | X<br>53 |
| 8       |     | X<br>51 | X<br>53 | X<br>53 | X<br>50 | X<br>50 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>84 | X<br>79 | X<br>72 | X<br>50 | X<br>45 |
| 9       |     | X<br>46 | X<br>43 | X<br>44 | X<br>45 | X<br>43 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>69 | X<br>79 | X<br>67 | X<br>62 | X<br>58 |
| 10      |     | X<br>45 | X<br>42 | X<br>42 | X<br>43 | X<br>40 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>80 | X<br>84 | X<br>68 | X<br>49 | X<br>45 |
| 11      |     | X<br>45 | X<br>46 | X<br>47 | X<br>48 | X<br>45 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>82 | X<br>63 | X<br>59 | X<br>60 | X<br>54 |
| 12      |     | X<br>50 | X<br>50 | X<br>53 | X<br>53 | X<br>54 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>68 | X<br>63 | X<br>63 | X<br>63 | X<br>62 |
| 13      |     | X<br>54 | X<br>53 | X<br>53 | X<br>51 | X<br>52 |           | X<br>57 |    |    |       |            |    |    |    |   |    |    |    |    | X<br>61 | X<br>61 | X<br>59 | X<br>56 | X<br>47 |
| 14      |     | X<br>42 | X<br>42 | X<br>41 | X<br>42 | X<br>48 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>68 | X<br>59 | X<br>52 | X<br>43 | X<br>50 |
| 15      |     | X<br>45 | X<br>44 | X<br>45 | X<br>43 | X<br>42 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>52 | X<br>50 | X<br>47 | X<br>48 | X<br>52 |
| 16      |     | X<br>45 | X<br>42 | X<br>40 | X<br>40 | X<br>39 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>59 | X<br>57 | X<br>55 | X<br>52 | X<br>52 |
| 17      |     | X<br>50 | X<br>47 | X<br>46 | X<br>45 | X<br>39 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>62 | X<br>64 | X<br>49 | X<br>49 | X<br>49 |
| 18      |     | X<br>48 | X<br>46 | X<br>46 | X<br>42 | X<br>42 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>72 | X<br>55 | X<br>50 | X<br>52 | X<br>52 |
| 19      |     | X<br>52 | X<br>52 | X<br>50 | X<br>53 | X<br>50 | X<br>44   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>73 | X<br>63 | X<br>62 | X<br>62 | X<br>58 |
| 20      |     | X<br>54 | X<br>56 | X<br>46 | X<br>40 | A       |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>79 | X<br>53 | X<br>43 | X<br>44 | X<br>43 |
| 21      |     | X<br>42 | X<br>40 | X<br>38 | X<br>40 | X<br>40 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>63 | X<br>62 | X<br>53 | X<br>44 | X<br>48 |
| 22      |     | X<br>49 | X<br>45 | X<br>39 | X<br>39 | X<br>40 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>63 | X<br>54 | A       | A       | A       |
| 23      |     | A       | X<br>42 | X<br>43 | X<br>43 | X<br>42 | X<br>38   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>62 | X<br>62 | X<br>42 | X<br>48 | X<br>A  |
| 24      |     | X<br>40 | X<br>37 | X<br>38 | X<br>32 | X<br>34 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>50 | X<br>54 | A       | X<br>32 | X<br>33 |
| 25      |     | X<br>34 | X<br>35 | X<br>33 | X<br>32 | X<br>39 | X<br>39   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>60 | X<br>49 | X<br>44 | X<br>40 | X<br>40 |
| 26      |     | X<br>38 | X<br>38 | X<br>38 | X<br>37 | X<br>31 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>51 | X<br>51 | X<br>48 | X<br>46 | X<br>45 |
| 27      |     | X<br>44 | X<br>46 | X<br>39 | X<br>30 | X<br>32 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>62 | X<br>55 | X<br>51 | X<br>50 | X<br>50 |
| 28      |     | X<br>47 | X<br>45 | X<br>46 | X<br>45 | H<br>30 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>50 | X<br>36 | X<br>39 | X<br>40 | X<br>39 |
| 29      |     | X<br>40 | X<br>38 | X<br>38 | X<br>38 | X<br>37 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>45 | X<br>51 | X<br>52 | X<br>47 | X<br>47 |
| 30      |     | X<br>51 | X<br>49 | X<br>45 | X<br>42 | X<br>39 |           |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>55 | X<br>53 | X<br>42 | X<br>44 | X<br>42 |
| 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      | 28      | 4         | 1       |    |    |       |            |    |    |    |   |    |    |    |    | 29      | 30      | 28      | 29      | 28      |
| MED     |     | X<br>46 | X<br>45 | X<br>44 | X<br>43 | X<br>42 | X<br>42   | X<br>57 |    |    |       |            |    |    |    |   |    |    |    |    | X<br>65 | X<br>58 | X<br>52 | X<br>49 | X<br>50 |
| UQ      |     | X<br>50 | X<br>48 | X<br>46 | X<br>45 | X<br>45 | X<br>44   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>73 | X<br>63 | X<br>62 | X<br>56 | X<br>54 |
| LQ      |     | X<br>43 | X<br>42 | X<br>40 | X<br>40 | X<br>39 | X<br>38   |         |    |    |       |            |    |    |    |   |    |    |    |    | X<br>59 | X<br>53 | X<br>48 | X<br>44 | X<br>45 |

SEP. 1984

FXI (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |      |      |      | Lat. | 39 43.5 N |      |      |    | Long | 140 08.0 E |    |    |      | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |    |    |    |      |      |      |      |      |
|-------------|-------|------|------|------|------|-----------|------|------|----|------|------------|----|----|------|---|----|----|----|----|------|------|------|------|------|
| Hour<br>Day | 00    | 01   | 02   | 03   | 04   | 05        | 06   | 07   | 08 | 09   | 10         | 11 | 12 | 13   | 14  | 15 | 16 | 17 | 18 | 19   | 20   | 21   | 22   | 23   |
| 1           | 37    | F 35 | 37   | 39   | 37   | 39        | 45   | 54   | 55 | 58   | 56         | 56 | 54 | 55   | 59  | 61 | 61 | 56 | 53 | 62   | 51   | F 46 | F    | F    |
| 2           | F 46  | F 45 | F 44 | F 43 | 42   | 43        | 61   | 56   | 63 | 66   | 60         | 62 | 66 | 59   | 60  | 66 | 66 | 72 | 71 | 63   | 44   | 42   | 41   | 40   |
| 3           | 39    | 39   | 38   | 39   | 34   | 30        | 41   | 48   | 56 | A    | 53         | 59 | A  | 56   | 58  | 60 | 60 | 66 | 66 | 68   | 56   | 46   | F 43 | F 43 |
| 4           | 44    | F 39 | F 38 | 38   | 37   | 38        | 54   | 66   | 82 | 72   | 66         | 63 | 61 | 70   | 64  | 68 | 76 | 78 | 71 | 70   | 70   | 73   | 63   | 65   |
| 5           | 49    | 38   | 46   | 36   | 35   | 33        | 32   | E 35 | A  | 44   | 47         | A  | A  | 46   | 48  | 41 | 43 | A  | 47 | 39   | 40   | 39   | 38   | 38   |
| 6           | 36    | 34   | 34   | 29   | A    | A         | 58   | 56   | 55 | 71   | 66         | 64 | 62 | 67   | 60  | 64 | 62 | 56 | 51 | 59   | 62   | 62   | F 59 | 54   |
| 7           | 44    | 40   | 39   | F 36 | F    | F 36      | 44   | 57   | 76 | 66   | 55         | 59 | 60 | 64   | 60  | 63 | 57 | 57 | 60 | 68   | 67   | 64   | 54   | 47   |
| 8           | 45    | F 44 | F 43 | F 42 | F 41 | 41        | 62   | 67   | 69 | 60   | 54         | 62 | 64 | V 61 | A   | 66 | A  | A  | 69 | 78   | 73   | 66   | 44   | 39   |
| 9           | 40    | 37   | 38   | 39   | 37   | 38        | 62   | 56   | 66 | 70   | 59         | 69 | 64 | 59   | 60  | 63 | 65 | 69 | 66 | 63   | F    | F 57 | F    | F    |
| 10          | 39    | 36   | 36   | 37   | 34   | 34        | 56   | 75   | 72 | 56   | 64         | 65 | 67 | 68   | 60  | 64 | 64 | 65 | 64 | R 74 | 78   | 62   | 43   | 39   |
| 11          | 39    | 40   | 41   | 42   | 39   | 46        | 54   | 63   | 54 | 65   | 61         | 64 | 66 | 72   | 81  | 83 | 82 | 80 | 81 | 76   | 57   | 53   | 54   | 48   |
| 12          | 44    | R 44 | 47   | 47   | 48   | 44        | 49   | 52   | 71 | 72   | 59         | 59 | 65 | 60   | 65  | 59 | 61 | 67 | 72 | 62   | 57   | F    | F    | F    |
| 13          | F     | F    | F    | F 42 | F 41 | 41        | F 47 | 54   | 60 | A    | 75         | 77 | 72 | 66   | 66  | 57 | 54 | 52 | 50 | F 53 | F    | F    | F 46 | 41   |
| 14          | 36    | 36   | 35   | 36   | F 37 | 36        | 46   | 49   | 55 | 60   | 64         | 68 | 58 | 59   | 59  | 55 | 56 | 61 | 72 | 62   | 53   | 46   | 37   | F 40 |
| 15          | 39    | 38   | 39   | 37   | 36   | 36        | 50   | 61   | 73 | 82   | 71         | 56 | 64 | 66   | 54  | 60 | 58 | 65 | 67 | 46   | 44   | 41   | 42   | F 43 |
| 16          | 39    | 36   | 34   | 34   | 33   | 35        | 50   | 57   | 53 | 57   | 58         | 65 | 70 | 69   | 71  | 65 | 62 | 66 | 66 | 53   | 51   | 49   | 46   | 46   |
| 17          | 44    | 41   | 40   | 39   | 33   | 32        | 43   | 57   | 80 | 75   | 60         | 68 | 67 | 66   | 60  | 62 | 60 | 60 | 66 | 56   | 58   | 43   | 43   | 43   |
| 18          | 42    | 40   | 39   | 36   | 36   | 33        | 50   | 57   | 59 | 66   | 67         | 70 | 60 | 60   | 56  | 57 | 61 | 66 | 76 | 66   | 49   | 44   | F    | F 44 |
| 19          | F     | F 40 | F    | F    | F    | F         | 51   | 60   | 57 | 71   | 66         | 57 | 60 | 58   | 57  | 64 | 70 | 74 | 73 | 67   | 57   | 56   | F 53 | F 51 |
| 20          | F     | 50   | 40   | 34   | A    | A         | 48   | 49   | 52 | 54   | 62         | 53 | 65 | 57   | 58  | 58 | 56 | 62 | 75 | 73   | 47   | 37   | 38   | 37   |
| 21          | 36    | 34   | 32   | 34   | 34   | 31        | 43   | 58   | 67 | 61   | 60         | A  | 57 | 72   | 65  | 54 | 54 | 56 | 59 | F    | F    | F 46 | 38   | F 37 |
| 22          | F     | F 36 | 33   | 33   | 34   | 34        | 43   | 48   | 56 | 67   | 62         | 56 | 56 | 61   | 57  | 56 | 59 | 57 | 57 | 57   | 48   | A    | A    | A    |
| 23          | A     | F 33 | F 34 | F    | F    | F 30      | 43   | 54   | 54 | 56   | 57         | 52 | 53 | A    | 70  | 84 | 73 | 82 | 75 | A    | F 51 | 36   | 42   | A    |
| 24          | F 33  | 31   | 32   | 26   | 28   | 30        | 33   | 37   | A  | A    | 44         | A  | 42 | 43   | 45  | 48 | 46 | 47 | 51 | 44   | F    | A    | 26   | 27   |
| 25          | 28    | 29   | 27   | 26   | F 29 | F         | 47   | 44   | 52 | 50   | 57         | 55 | 52 | 54   | 54  | 52 | 47 | 51 | 59 | 54   | 43   | 38   | 34   | 34   |
| 26          | 32    | 32   | 32   | 31   | 25   | 28        | 44   | 59   | 66 | 74   | 69         | 59 | 56 | 58   | 57  | 54 | 58 | 62 | 54 | 45   | 45   | 42   | 40   | 39   |
| 27          | 38    | 40   | 33   | 24   | 26   | 27        | 46   | 63   | 71 | 74   | 72         | 67 | 66 | 66   | 58  | 57 | 61 | 56 | 57 | 56   | 49   | 45   | 44   | 44   |
| 28          | 40    | 39   | 40   | 39   | H 21 | 29        | 44   | 60   | 63 | 74   | 72         | 74 | 66 | 62   | 62  | 62 | 66 | 74 | 67 | 44   | 30   | 33   | F    | F    |
| 29          | 34    | 32   | 32   | 32   | 31   | 31        | 49   | 58   | 59 | 67   | 63         | 62 | 66 | 71   | 71  | 66 | 72 | 61 | 46 | 39   | F 42 | F    | 41   | 41   |
| 30          | F 41  | F 40 | 39   | 36   | 33   | 34        | 49   | 54   | 61 | 68   | 65         | 67 | 76 | 77   | 68  | 66 | 67 | 67 | 50 | 49   | 47   | 36   | 38   | 36   |
| 31          |       |      |      |      |      |           |      |      |    |      |            |    |    |      |   |    |    |    |    |      |      |      |      |      |
|             | 00    | 01   | 02   | 03   | 04   | 05        | 06   | 07   | 08 | 09   | 10         | 11 | 12 | 13   | 14  | 15 | 16 | 17 | 18 | 19   | 20   | 21   | 22   | 23   |
| CNT         | 25    | 29   | 28   | 28   | 25   | 26        | 30   | 30   | 28 | 27   | 30         | 27 | 28 | 29   | 29  | 30 | 29 | 28 | 30 | 28   | 26   | 25   | 24   | 24   |
| MED         | 39    | 38   | 38   | 36   | 34   | 34        | 48   | 56   | 60 | 66   | 62         | 62 | 64 | 61   | 60  | 62 | 61 | 64 | 66 | 60   | 51   | 46   | 42   | 41   |
| UQ          | 44    | 40   | 40   | 39   | 37   | 38        | 51   | 60   | 70 | 72   | 66         | 67 | 66 | 67   | 65  | 65 | 66 | 68 | 71 | 68   | 57   | 56   | 46   | 45   |
| LQ          | 36    | 35   | 34   | 34   | 33   | 31        | 44   | 52   | 55 | 59   | 57         | 58 | 58 | 58   | 57  | 57 | 57 | 56 | 54 | 51   | 45   | 41   | 38   | 38   |

SEP. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

SEP. 1984

FOF1 (0.01 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |    |    |    |    |    |    | Lat. | 39 43.5 N |     |     | Long | 140 08.0 E |     |     | Sweep | 1 MHz to 25 MHz |     | in 24sec in |    | automatic operation |    |    |    |
|-------------|-------|----|----|----|----|----|----|------|-----------|-----|-----|------|------------|-----|-----|-------|-----------------|-----|-------------|----|---------------------|----|----|----|
| Hour<br>Day | 00    | 01 | 02 | 03 | 04 | 05 | 06 | 07   | 08        | 09  | 10  | 11   | 12         | 13  | 14  | 15    | 16              | 17  | 18          | 19 | 20                  | 21 | 22 | 23 |
| 1           |       |    |    |    |    |    |    | 400  | A         | 430 | L   | 440  | 450        | 460 | 420 | 430   | 400             |     |             |    |                     |    |    | L  |
| 2           |       |    |    |    |    |    | L  | L    |           | 430 | 440 | L    | 460        | 450 | 440 | 440   | 430             | 410 |             |    |                     |    |    | L  |
| 3           |       |    |    |    |    |    |    | 380  | 410       |     | A   | L    | A          | A   | L   | L     | 430             |     |             |    |                     |    | L  | A  |
| 4           |       |    |    |    |    |    | L  | A    |           | 430 | 440 | 440  | L          | L   | A   | A     | L               | 410 |             |    |                     |    |    |    |
| 5           |       |    |    |    |    |    |    | 350  | A         | 400 | 400 | A    | A          | 410 | 420 | L     | 370             | A   |             |    |                     |    |    |    |
| 6           |       |    |    |    |    | A  | A  | A    | A         | A   | A   | 460  | 440        | 450 | 440 | L     | L               |     |             |    |                     |    |    |    |
| 7           |       |    |    |    |    |    |    | L    |           | 420 | 430 | L    | L          | 450 | 460 | L     | 420             | L   |             |    |                     |    |    |    |
| 8           |       |    |    |    |    | L  | L  | A    |           | 430 | L   | 460  | 460        | 480 | L   | A     | L               | A   | A           |    |                     |    |    |    |
| 9           |       |    |    |    |    |    |    | A    | L         | 430 | 450 | 450  | L          | L   | L   | L     | L               | L   | A           |    |                     |    |    |    |
| 10          |       |    |    |    |    |    |    | L    | L         | 420 | L   | 460  | 440        | L   | L   | L     | L               | L   | A           |    |                     |    |    |    |
| 11          |       |    |    |    |    |    |    | L    | L         | L   | L   | 460  | 460        | L   | 440 | L     | L               | L   |             |    |                     |    |    |    |
| 12          |       |    |    |    |    |    |    | L    | 420       | 430 | L   | 440  | L          | L   | 430 | L     | L               | L   |             |    |                     |    |    |    |
| 13          |       |    |    |    |    | A  | A  | A    | A         | A   | 440 | 440  | 440        | 420 | A   | L     |                 |     |             |    |                     |    |    |    |
| 14          |       |    |    |    |    |    |    | L    | L         | 420 | 420 | 430  | 430        | 430 | L   | 430   | L               | L   |             |    |                     |    |    |    |
| 15          |       |    |    |    |    |    |    | L    | 410       | 420 | 430 | L    | 450        | 430 | L   | L     | L               |     |             |    |                     |    |    |    |
| 16          |       |    |    |    |    |    |    | L    | 390       | 410 | L   | L    | 430        | 440 | 430 | L     | L               |     |             |    |                     |    |    |    |
| 17          |       |    |    |    |    |    |    | L    | 400       | 420 | L   | 430  | 430        | 430 | L   | 390   | L               |     |             |    |                     |    |    |    |
| 18          |       |    |    |    |    |    |    | 400  | 420       | 430 | 430 | 430  | 430        | 410 | L   | L     | L               |     |             |    |                     |    |    |    |
| 19          |       |    |    |    |    |    |    | L    | L         | 430 | 430 | 430  | L          | L   | L   | L     | L               |     |             |    |                     |    |    |    |
| 20          |       |    |    |    |    |    |    | L    | 390       | A   | 420 | 430  | 430        | 420 | L   | 400   | A               |     |             |    |                     |    |    |    |
| 21          |       |    |    |    |    |    |    | L    | A         | 420 | A   | A    | 430        | 420 | 420 | L     | L               |     |             |    |                     |    |    |    |
| 22          |       |    |    |    |    |    |    | L    | A         | 420 | 430 | 440  | L          | 430 | 420 | L     | L               |     |             |    |                     |    |    |    |
| 23          |       |    |    |    |    |    |    | 360  | A         | 410 | 420 | A    | A          | A   | 420 | 410   | L               |     |             |    |                     |    |    |    |
| 24          |       |    |    |    |    |    |    | 330  | A         | A   | 390 | A    | 390        | 400 | 400 | 380   | L               |     |             |    |                     |    |    |    |
| 25          |       |    |    |    |    |    |    | L    | 390       | L   | 430 | 430  | 430        | 420 | 420 | L     | L               |     |             |    |                     |    |    |    |
| 26          |       |    |    |    |    |    |    | L    | 350       | 400 | 400 | 410  | 440        | L   | 430 | L     | L               |     |             |    |                     |    |    |    |
| 27          |       |    |    |    |    |    |    | L    | 410       | 420 | 440 | 440  | L          | L   | L   | L     | L               |     |             |    |                     |    |    |    |
| 28          |       |    |    |    |    |    |    | L    | L         | 410 | L   | 440  | L          | L   | L   | L     | L               |     |             |    |                     |    |    |    |
| 29          |       |    |    |    |    |    |    |      | A         | A   | A   | L    | A          | 460 | 420 | L     |                 |     |             |    |                     |    |    |    |
| 30          |       |    |    |    |    |    |    |      | L         | 420 | 430 | 470  | 430        | A   | L   | L     | A               |     |             |    |                     |    |    |    |
| 31          |       |    |    |    |    |    |    |      |           |     |     |      |            |     |     |       |                 |     |             |    |                     |    |    |    |
|             | 00    | 01 | 02 | 03 | 04 | 05 | 06 | 07   | 08        | 09  | 10  | 11   | 12         | 13  | 14  | 15    | 16              | 17  | 18          | 19 | 20                  | 21 | 22 | 23 |
| CNT         |       |    |    |    |    |    |    | 6    | 12        | 22  | 16  | 20   | 20         | 19  | 16  | 8     | 4               |     |             |    |                     |    |    |    |
| MED         |       |    |    |    |    |    |    | 355  | 405       | 420 | 430 | 440  | 435        | 430 | 420 | 415   | 405             |     |             |    |                     |    |    |    |
| UQ          |       |    |    |    |    |    |    | 380  | 415       | 430 | 430 | 460  | 450        | 445 | 430 | 430   | 410             |     |             |    |                     |    |    |    |
| LQ          |       |    |    |    |    |    |    | 350  | 395       | 420 | 420 | 430  | 430        | 425 | 420 | 395   | 385             |     |             |    |                     |    |    |    |

SEP. 1984

FOF1 (0.01 MHZ)

### IONOSPHERIC DATA

SEP. 1984

FOE (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     |    | AKITA |    |    |    |     |     |     | Lat. 39 43.5 N |     | Long. 140 08.0 E |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |    |    |    |    |    |    |
|-------------|----|-------|----|----|----|-----|-----|-----|----------------|-----|------------------|-----|---|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| Hour<br>Day | 00 | 01    | 02 | 03 | 04 | 05  | 06  | 07  | 08             | 09  | 10               | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18 | 19 | 20 | 21 | 22 | 23 |
| 1           |    |       |    |    |    | S   | 205 | A   | A              | 310 | 330              | A   | 350   | 350 | 330 | A   | 275 | A   | S  |    |    |    |    |    |
| 2           |    |       |    |    |    | S   | A   | A   | A              | A   | 340              | 350 | A   | 350 | 330 | 300 | 260 | A   | S  |    |    |    |    |    |
| 3           |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | 355 | 340 | A   | A   | A   | S  |    |    |    |    |    |
| 4           |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | A   | A   | A   | 275 | 220 | S  |    |    |    |    |    |
| 5           |    | S     |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | A   | 320 | 295 | 265 | A   | S  |    |    |    |    |    |
| 6           |    |       |    |    |    | S   | A   | A   | A              | A   | A                | 345 | 355   | 345 | 330 | A   | 260 | 205 | S  |    |    |    |    |    |
| 7           |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | 355   | 350 | 325 | 290 | A   | 220 | S  |    |    |    |    |    |
| 8           |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | 360   | 350 | A   | A   | 260 | A   | S  |    |    |    |    |    |
| 9           |    |       |    |    |    | S   | 205 | A   | A              | A   | A                | A   | A   | A   | A   | A   | A   | A   | S  |    |    |    |    |    |
| 10          |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | 335 | A   | 295 | A   | A   | S  |    |    |    |    |    |
| 11          |    |       |    |    |    | S   | A   | A   | A              | A   | 320              | 330 | 345   | 340 | 320 | 280 | 245 | A   | S  |    |    |    |    |    |
| 12          |    |       |    |    |    | S   | A   | A   | A              | 305 | 320              | 335 | 345   | A   | 320 | 295 | 255 | A   | S  |    |    |    |    |    |
| 13          |    |       |    |    |    | S   | 180 | 245 | A              | A   | A                | A   | A   | 330 | A   | A   | A   | A   | S  |    |    |    |    |    |
| 14          |    |       |    |    |    | S   | 180 | 235 | A              | A   | A                | A   | A   | A   | 310 | 290 | A   | A   | S  |    |    |    |    |    |
| 15          |    |       |    |    |    | S   | A   | A   | A              | A   | 320              | 330 | 340   | 320 | 300 | 280 | 250 | A   | S  |    |    |    |    |    |
| 16          |    |       |    |    |    | S   | 180 | 255 | 285            | 305 | 315              | 340 | 345   | 335 | A   | A   | 240 | A   | S  |    |    |    |    |    |
| 17          |    |       |    |    |    | S   | A   | A   | A              | A   | 315              | 325 | A   | 330 | 315 | 285 | 250 | 190 | S  |    |    |    |    |    |
| 18          |    |       |    |    |    | S   | 195 | 240 | A              | A   | 325              | A   | A   | 325 | 300 | 270 | 230 | 180 | S  |    |    |    |    |    |
| 19          |    |       |    |    |    | S   | 180 | 245 | A              | 310 | 325              | 335 | 340   | 325 | 305 | 275 | 245 | S   | S  |    |    |    |    |    |
| 20          |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | A   | A   | A   | A   | A   | S  |    |    |    |    |    |
| 21          |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | A   | A   | 270 | 240 | A   | S  |    |    |    |    |    |
| 22          |    |       |    |    |    | S   | A   | A   | A              | A   | A                | 335 | A   | A   | A   | 265 | A   | S   | S  |    |    |    |    |    |
| 23          |    |       |    |    |    | S   | A   | A   | A              | A   | A                | A   | A   | A   | A   | A   | 235 | A   | S  |    |    |    |    |    |
| 24          |    |       |    |    |    | S   | 185 | 230 | A              | A   | 305              | A   | 310   | 305 | A   | A   | 230 | A   | S  |    |    |    |    |    |
| 25          |    |       |    |    |    | S   | A   | A   | A              | 285 | 305              | 320 | 315   | 310 | 290 | 260 | 225 | S   | S  |    |    |    |    |    |
| 26          |    |       |    |    |    | S   | S   | A   | 265            | 290 | 310              | 325 | 320   | 310 | A   | A   | A   | S   | S  |    |    |    |    |    |
| 27          |    |       |    |    |    | S   | S   | A   | 270            | 295 | 305              | 315 | 320   | 310 | 295 | 275 | 230 | S   | S  |    |    |    |    |    |
| 28          |    |       |    |    |    | S   | S   | A   | 260            | 285 | 300              | 315 | 320   | 305 | A   | 270 | 225 | S   | S  |    |    |    |    |    |
| 29          |    |       |    |    |    | S   | A   | 250 | A              | 295 | A                | A   | A   | 315 | 295 | 270 | 240 | S   | S  |    |    |    |    |    |
| 30          |    |       |    |    |    | S   | S   | 240 | 265            | A   | A                | A   | A   | A   | A   | 265 | 230 | A   | S  |    |    |    |    |    |
| 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         |    |       |    |    |    | 8   | 8   | 5   | 9              | 14  | 13               | 14  | 20  | 16  | 18  | 21  | 5   |     |    |    |    |    |    |    |
| MED         |    |       |    |    |    | 182 | 242 | 265 | 295            | 318 | 330              | 342 | 330   | 318 | 278 | 245 | 205 |     |    |    |    |    |    |    |
| UQ          |    |       |    |    |    | 200 | 248 | 270 | 305            | 325 | 335              | 350 | 348   | 328 | 290 | 260 | 220 |     |    |    |    |    |    |    |
| LQ          |    |       |    |    |    | 180 | 238 | 265 | 290            | 305 | 325              | 320 | 312   | 300 | 270 | 230 | 190 |     |    |    |    |    |    |    |

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FOE (0.01 MHz)

IONOSPHERIC DATA

SEP. 1984

FOES (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station  | AKITA  |        |        |        | Lat.   | 39 43.5 N |        | Long   | 140 08.0 E |         | Sweep 1 | MHz to 25 MHz in 24sec in automatic operation |         |        |        |        |        |        |        |         |        |        |        |        |        |
|----------|--------|--------|--------|--------|--------|-----------|--------|--------|------------|---------|---------|---|---------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| Hour Day | 00     | 01     | 02     | 03     | 04     | 05        | 06     | 07     | 08         | 09      | 10      | 11  | 12      | 13     | 14     | 15     | 16     | 17     | 18     | 19      | 20     | 21     | 22     | 23     |        |
| 1        | E 16   | J A 24 | J A 29 | J A 24 | J A 19 | J A 24    | G      | J A 44 | J A 54     | G       | G       | J A 85  | G       | G      | G      | J A 33 | G      | 26     | 20     | J A 26  | E S 16 | J A 50 | J A 34 | J A 28 |        |
| 2        | J A 17 | J A 34 | J A 31 | J A 29 | J A 25 | J A 24    | J A 27 | J A 38 | 36         | 37      | G       | G   | 41      | G      | 40     | 36     | 32     | J A 29 | J A 25 | J A 48  | J A 32 | J A 20 | J A 24 | E S 16 |        |
| 3        | E S 15 | E S 15 | E S 15 | E S 15 | E S 16 | J A 29    | J A 25 | 30     | 37         | J A 84  | J A 46  | J A 57  | J A 85  | G      | 43     | 41     | J A 42 | J A 38 | J A 26 | J A 21  | J A 31 | J A 29 | J A 46 | J A 29 |        |
| 4        | J A 46 | J A 23 | J A 29 | J A 29 | J A 21 | J A 20    | J A 41 | J A 65 | J A 50     | J A 44  | J A 47  | J A 54  | J A 46  | J A 59 | J A 48 | J A 41 | G      | G      | E S 16 | E S 15  | E S 15 | J A 18 | E S 15 | E S 15 |        |
| 5        | E S 15 | E S 15 | E S 16 | J A 29 | J A 25 | J A 24    | J A 25 | J A 46 | J A 86     | J A 36  | J A 50  | J A 56  | J A 58  | J A 38 | G      | G      | G      | J A 49 | J A 38 | J A 29  | J A 88 | J A 46 | J A 25 | J A 18 |        |
| 6        | J A 42 | J A 18 | J A 20 | J A 26 | J A 32 | J A 50    | J A 46 | J A 64 | J A 56     | J A 97  | J A 54  | G   | G       | G      | 37     | J A 34 | G      | G      | E S 17 | E S 15  | J A 32 | J A 51 | J A 44 | J A 30 |        |
| 7        | J A 24 | J A 22 | E S 15 | E S 15 | E S 15 | J A 20    | J A 30 | 29     | 32         | 36      | J A 57  | J A 44  | G       | G      | G      | J A 44 | J A 29 | G      | E S 16 | E S 16  | J A 18 | J A 24 | E S 15 | E S 15 |        |
| 8        | J A 43 | J A 37 | J A 29 | J A 29 | J A 24 | J A 20    | J A 34 | 32     | J A 62     | J A 38  | 39      | J A 38  | G       | G      | J A 71 | J A 32 | J A 80 | J A 80 | J A 54 | J A 20  | J A 38 | J A 36 | J A 26 | E S 15 |        |
| 9        | J A 29 | J A 18 | J A 20 | J A 19 | J A 22 | J A 25    | 26     | 32     | J A 51     | J A 41  | J A 52  | J A 38  | J A 40  | J A 44 | J A 38 | 32     | J A 46 | J A 34 | J A 33 | J A 53  | J A 86 | J A 46 | J A 50 | J A 29 |        |
| 10       | J A 19 | J A 24 | E S 16 | J A 20 | E S 15 | E S 15    | J A 32 | J A 34 | J A 41     | J A 44  | 35      | 36  | 35      | G      | J A 46 | G      | J A 41 | J A 44 | J A 32 | J A 33  | J A 53 | J A 29 | E S 15 | E S 15 |        |
| 11       | E S 16 | E S 16 | J A 18 | E S 15 | J A 20 | J A 20    | J A 24 | 31     | 31         | 34      | G       | G   | G       | G      | G      | 32     | 32     | J A 32 | J A 26 | J A 20  | J A 24 | J A 43 | J A 25 | J A 29 |        |
| 12       | J A 28 | J A 36 | J A 29 | J A 24 | J A 29 | J A 53    | J A 50 | 30     | J A 38     | G       | G       | G   | G       | J A 37 | G      | 39     | J A 44 | J A 46 | J A 64 | J A 77  | J A 65 | J A 44 | J A 31 | J A 52 |        |
| 13       | J A 36 | J A 26 | J A 29 | J A 24 | J A 19 | E S 15    | 22     | J A 50 | J A 61     | J A 170 | J A 48  | J A 51  | J A 36  | G      | J A 37 | J A 44 | J A 32 | 25     | J A 44 | J A 78  | J A 42 | J A 42 | J A 24 | J A 18 |        |
| 14       | E S 16 | J A 25 | E S 15 | E S 15 | E S 15 | E S 16    | G      | 27     | J A 32     | 36      | J A 35  | J A 47  | J A 40  | J A 36 | G      | G      | 28     | J A 36 | J A 51 | J A 50  | J A 85 | J A 66 | J A 64 | J A 34 |        |
| 15       | J A 37 | J A 21 | J A 20 | J A 20 | J A 19 | J A 18    | 21     | J A 28 | 32         | 32      | G       | G   | G       | G      | G      | G      | 30     | J A 29 | J A 20 | E S 15  | J A 18 | E S 15 | E S 15 | J A 21 |        |
| 16       | J A 19 | E S 15 | E S 16 | E S 16 | E S 15 | E S 16    | G      | G      | G          | 35      | 35      | G   | G       | G      | G      | 37     | J A 36 | J A 26 | 20     | J A 21  | E S 15 | J A 21 | J A 19 | E S 15 | E S 15 |
| 17       | E S 15 | E S 15 | E S 15 | E S 16 | E S 15 | E S 15    | 20     | 30     | 32         | 35      | G       | G   | 36      | G      | G      | G      | G      | G      | E S 16 | J A 20  | J A 21 | J A 24 | E S 16 | E S 16 |        |
| 18       | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | E S 16    | G      | G      | 30         | 35      | G       | J A 50  | 38      | G      | G      | G      | G      | G      | E S 16 | J A 25  | J A 26 | J A 21 | J A 18 | J A 24 |        |
| 19       | J A 19 | J A 20 | E S 15 | E S 15 | J A 21 | J A 20    | 22     | G      | 31         | G       | G       | G   | G       | G      | G      | G      | G      | 21     | J A 20 | E S 15  | E S 15 | E S 15 | E S 16 | J A 18 |        |
| 20       | J A 18 | E S 16 | E S 15 | J A 25 | J A 36 | J A 46    | J A 41 | 31     | J A 41     | J A 48  | J A 38  | J A 36  | J A 36  | J A 36 | J A 50 | J A 29 | J A 38 | J A 32 | J A 28 | J A 25  | J A 24 | J A 24 | E S 15 | J A 18 |        |
| 21       | J A 20 | J A 20 | J A 18 | E S 15 | E S 15 | E S 15    | 24     | 32     | J A 46     | J A 48  | J A 48  | J A 58  | J A 54  | 36     | 35     | G      | J A 32 | 31     | J A 38 | J A 106 | J A 84 | J A 46 | J A 38 | J A 29 |        |
| 22       | J A 52 | J A 36 | J A 41 | J A 29 | J A 21 | J A 16    | J A 31 | J A 36 | J A 59     | J A 38  | J A 38  | G   | J A 50  | J A 41 | J A 38 | G      | J A 54 | J A 32 | J A 29 | J A 45  | J A 60 | J A 66 | J A 60 | J A 66 |        |
| 23       | J A 82 | J A 40 | J A 20 | E S 16 | J A 24 | J A 19    | J A 24 | J A 41 | J A 49     | J A 45  | J A 46  | J A 48  | J A 107 | J A 66 | J A 54 | J A 36 | G      | J A 41 | J A 64 | J A 87  | J A 26 | J A 38 | J A 21 | J A 77 |        |
| 24       | J A 30 | J A 26 | J A 23 | E S 16 | J A 18 | E S 15    | G      | 27     | J A 42     | J A 45  | G       | J A 41  | G       | G      | 35     | 29     | G      | J A 24 | J A 30 | J A 51  | J A 41 | J A 53 | J A 30 | J A 24 |        |
| 25       | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | J A 24    | J A 24 | J A 32 | J A 32     | 31      | G       | G   | G       | G      | G      | G      | G      | E S 17 | E S 16 | J A 20  | J A 21 | J A 20 | J A 20 | E S 15 |        |
| 26       | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | E S 15    | E S 18 | J A 29 | G          | G       | G       | G   | G       | G      | G      | J A 33 | J A 28 | J A 24 | J A 26 | J A 26  | J A 20 | J A 20 | J A 19 | J A 21 | J A 20 |
| 27       | E S 15 | E S 15 | E S 15 | E S 15 | J A 21 | J A 18    | J A 23 | J A 34 | G          | G       | G       | G   | G       | G      | G      | G      | G      | 22     | J A 77 | E S 16  | E S 15 | J A 20 | E S 15 | E S 15 |        |
| 28       | E S 16 | E S 15 | E S 15 | J A 19 | E S 16 | E S 16    | 24     | 30     | 31         | J A 44  | G       | G   | G       | G      | 30     | G      | G      | E S 16 | 21     | J A 26  | J A 27 | J A 30 | E S 16 | J A 20 |        |
| 29       | E S 16 | E S 15 | E S 15 | E S 15 | E S 16 | J A 21    | J A 43 | 27     | J A 52     | J A 54  | J A 54  | J A 44  | J A 48  | 34     | 34     | G      | G      | 20     | J A 29 | J A 27  | J A 28 | J A 50 | J A 33 | J A 40 |        |
| 30       | J A 21 | J A 24 | J A 28 | J A 20 | E S 15 | E S 15    | 20     | G      | 37         | 36      | 35      | 35  | 34      | J A 44 | J A 39 | 33     | 36     | J A 36 | J A 22 | J A 28  | J A 32 | J A 29 | J A 18 | J A 19 |        |
| 31       |        |        |        |        |        |           |        |        |            |         |         |   |         |        |        |        |        |        |        |         |        |        |        |        |        |
|          | 00     | 01     | 02     | 03     | 04     | 05        | 06     | 07     | 08         | 09      | 10      | 11  | 12      | 13     | 14     | 15     | 16     | 17     | 18     | 19      | 20     | 21     | 22     | 23     |        |
| CNT      | 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 19 | J A 20 | 17     | 18     | J A 19 | J A 20    | J A 24 | 31     | J A 38     | 36      | 35      | 36  | 34      | G      | 34     | 29     | 27     | J A 28 | J A 26 | J A 26  | J A 28 | J A 30 | J A 22 | J A 20 |        |
| UQ       | J A 30 | J A 25 | J A 28 | J A 24 | J A 22 | J A 24    | J A 31 | J A 36 | J A 51     | J A 45  | J A 47  | J A 48  | J A 41  | J A 36 | J A 39 | J A 36 | J A 36 | J A 36 | J A 38 | J A 48  | J A 42 | J A 46 | J A 33 | J A 29 |        |
| LQ       | E S 16 | E S 15 | E S 15 | E S 15 | E S 15 | E S 16    | 20     | 27     | 32         | 32      | G       | G   | G       | G      | G      | G      | G      | 20     | 20     | J A 20  | J A 21 | J A 20 | E S 16 | E S 16 |        |

SEP. 1984

FOES (0.1 MHZ)

# IONOSPHERIC DATA

SEP. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | AKITA  |        |        |        |        |        |        | Lat. | 39 43.5 N |         |    | Long.  | 140 08.0 E |        |        | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |        |        |        |        |        |        |        |        |        |   |        |
|---------|-----|--------|--------|--------|--------|--------|--------|--------|------|-----------|---------|----|--------|------------|--------|--------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|--------|
| Hour    | Day | 00     | 01     | 02     | 03     | 04     | 05     | 06     | 07   | 08        | 09      | 10 | 11     | 12         | 13     | 14     | 15  | 16     | 17     | 18     | 19     | 20     | 21     | 22     | 23     |        |   |        |
| 1       |     | E S 16 | E      | 23     | E      | E      | 20     | G      | 38   | 47        | G       | G  | 37     | G          | G      | G      | 32  | G      | 25     | 18     | E      | E S 16 | 29     | 29     | 18     |        |   |        |
| 2       |     | E      | E      | 25     | 25     | E      | 18     | 23     | 30   | 32        | 34      | G  | G      | 38         | G      | 37     | 36  | 29     | 27     | 24     | 42     | 26     | E      | 23     | E S 16 |        |   |        |
| 3       |     | E S 15 | E S 15 | E S 15 | E S 15 | E S 16 | G      | 24     | 28   | 34        | A A 84  | 40 | 57     | A A 85     | G      | 38     | 40  | 35     | 35     | 22     | 18     | 19     | 22     | 24     | E      |        |   |        |
| 4       |     | 37     | E      | E      | E      | E      | G      | 28     | 53   | 39        | 36      | 42 | 42     | 41         | 49     | 46     | 38  | G      | G      | E S 16 | E S 15 | E S 15 | E      | E S 15 | E S 15 |        |   |        |
| 5       |     | E S 15 | G      | E S 16 | 28     | E      | 19     | 22     | 28   | A A 86    | 32      | 35 | A A 56 | A A 58     | 36     | G      | G   | G      | A A 49 | 37     | 23     | E      | 29     | 19     | E      |        |   |        |
| 6       |     | 18     | E      | E      | E      | A A 32 | A A 50 | 37     | 50   | 47        | 61      | 48 | G      | G          | G      | 37     | 33  | G      | G      | E S 17 | E S 15 | 32     | 39     | 18     | 29     |        |   |        |
| 7       |     | E      | E      | E S 15 | E S 15 | E S 15 | 18     | 30     | 27   | 32        | 34      | 40 | 39     | 23         | G      | G      | 24  | 28     | G      | E S 16 | E S 16 | E      | E      | E S 16 | E S 15 |        |   |        |
| 8       |     | E      | 23     | E      | 20     | 19     | G      | 28     | 30   | 48        | 34      | 37 | 37     | G          | G      | A A 71 | 32  | A A 80 | A A 80 | 41     | E      | E      | 18     | E      | E S 15 |        |   |        |
| 9       |     | E      | E      | E      | E      | E      | G      | 24     | 30   | 49        | 40      | 39 | 36     | 36         | 35     | 33     | 30  | 34     | 33     | 32     | 20     | E      | E      | 29     | E      |        |   |        |
| 10      |     | E      | 22     | E S 16 | E      | E S 15 | E S 15 | 21     | 29   | 38        | 37      | 35 | 36     | 35         | G      | 32     | G   | 33     | 35     | 32     | E      | 42     | E      | E S 15 | E S 15 |        |   |        |
| 11      |     | E S 16 | E S 16 | E      | E S 15 | E      | G      | 21     | 28   | 30        | 34      | G  | G      | G          | G      | G      | 32  | 29     | 28     | 21     | E      | E      | E      | 19     | E      |        |   |        |
| 12      |     | E      | 28     | 20     | E      | 27     | 22     | 28     | 29   | 31        | G       | G  | G      | G          | 37     | G      | 39  | 32     | 30     | 54     | 39     | 22     | 23     | E      | 18     |        |   |        |
| 13      |     | E      | E      | E      | E      | E      | E S 15 | 21     | 48   | 47        | A A 170 | 46 | 37     | 36         | G      | 32     | 43  | 26     | 25     | 39     | E      | 26     | E      | E      | E      |        |   |        |
| 14      |     | E S 16 | 18     | E S 15 | E S 15 | E S 15 | E S 16 | G      | 27   | 30        | 35      | 35 | 36     | 37         | 35     | G      | G   | 28     | 32     | 41     | 19     | 22     | 28     | E      | E      |        |   |        |
| 15      |     | 19     | E      | E      | E      | E      | G      | 20     | 27   | 30        | 32      | G  | G      | G          | G      | G      | G   | 28     | 26     | G      | E S 15 | E      | E S 15 | E S 15 | E      |        |   |        |
| 16      |     | E      | E S 15 | E S 16 | E S 16 | E S 15 | E S 16 | G      | G    | G         | 34      | 35 | G      | G          | G      | 37     | 32  | 22     | 20     | G      | E S 15 | E      | E      | E S 15 | E S 15 |        |   |        |
| 17      |     | E S 15 | E S 15 | E S 15 | E S 16 | E S 15 | E S 15 | 20     | 28   | 30        | 33      | G  | G      | 35         | G      | G      | G   | G      | G      | E S 16 | E      | E      | E      | E S 16 | E S 16 |        |   |        |
| 18      |     | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | E S 16 | G      | G    | 30        | 34      | G  | 36     | 35         | G      | G      | G   | G      | G      | E S 16 | 20     | 21     | E      | E      | E      |        |   |        |
| 19      |     | E      | E      | E S 15 | E S 15 | E      | G      | 21     | G    | 30        | G       | G  | G      | G          | G      | G      | G   | 21     | G      | E S 15 | E S 15 | E S 15 | E S 15 | E S 16 | E      |        |   |        |
| 20      |     | E      | E S 16 | E S 15 | 25     | A A 36 | A A 46 | 38     | 28   | 34        | 41      | 37 | 35     | 35         | 33     | 32     | 29  | 34     | 21     | 27     | 22     | 19     | E      | E S 15 | E      |        |   |        |
| 21      |     | E      | E      | E      | E S 15 | E S 15 | E S 15 | 23     | 25   | 42        | 32      | 46 | A A 58 | 41         | 34     | 34     | G   | 21     | 19     | 35     | E      | 35     | 31     | 26     | 24     |        |   |        |
| 22      |     | 23     | E      | E      | E      | E      | E S 16 | 27     | 30   | 48        | 37      | 36 | G      | 36         | 36     | 33     | G   | 28     | 21     | 21     | 45     | 33     | A A 66 | A A 60 | A A 66 |        |   |        |
| 23      |     | A A 82 | 24     | E      | E S 16 | E      | G      | 23     | 28   | 40        | 38      | 39 | 48     | 51         | A A 66 | 33     | 32  | G      | 24     | 62     | A A 87 | E      | 23     | 19     | A A 77 |        |   |        |
| 24      |     | 23     | 24     | 20     | E S 16 | E      | E S 15 | G      | 27   | A A 42    | A A 45  | G  | A A 41 | G          | G      | 29     | 28  | G      | 20     | 21     | E      | 29     | A A 53 | 24     | E      |        |   |        |
| 25      |     | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | G      | 20     | 26   | 30        | 31      | G  | G      | G          | G      | G      | G   | G      | E S 17 | E S 16 | 19     | E      | E      | E      | E S 15 |        |   |        |
| 26      |     | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | E S 15 | 18     | 25   | G         | G       | G  | G      | G          | G      | 30     | 28  | 24     | 19     | G      | E      | E      | E      | E      | E      |        |   |        |
| 27      |     | E S 15 | E S 15 | E S 15 | E S 15 | E      | G      | G      | 24   | G         | G       | G  | G      | G          | G      | G      | G   | G      | 21     | G      | E S 16 | E S 15 | E      | E S 15 | E S 15 |        |   |        |
| 28      |     | E S 16 | E S 15 | E S 15 | E      | E S 16 | E S 16 | E S 16 | 24   | 30        | 30      | 39 | G      | G          | G      | 30     | G   | G      | E S 16 | 19     | 19     | 19     | E      | E S 16 | E      |        |   |        |
| 29      |     | E S 16 | E S 15 | E S 15 | E S 15 | E S 16 | 18     | 31     | 26   | 49        | 44      | 50 | 38     | 46         | 34     | 34     | G   | G      | 20     | 26     | E      | E      | 21     | 25     | 19     |        |   |        |
| 30      |     | E      | 20     | E      | E      | E S 15 | E S 15 | 20     | G    | 35        | 36      | 35 | 35     | 34         | 43     | 36     | 31  | 34     | 34     | G      | 21     | 22     | 22     | E      | E      |        |   |        |
| 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     | 30     |   |        |
| MED     |     | E      | E      | E      | E      | E      | E      | G      | 21   | 28        | 34      | 34 | 35     | 36         | 34     | G      | 31  | 28     | 23     | 21     | 21     | 16     | 16     | E      | E S 15 | 16     | E | E S 15 |
| UQ      |     | E S 16 | E S 16 | E S 15 | E S 16 | E S 15 | 18     | 27     | 30   | 47        | 38      | 39 | 38     | 37         | 35     | 34     | 32  | 29     | 30     | 32     | 20     | 22     | 23     | 23     | E      | E S 16 |   |        |
| LQ      |     | E      | E      | E      | E      | E      | G      | 18     | 25   | 30        | 32      | G  | G      | G          | G      | G      | G   | G      | 19     | E      | G      | 16     | E      | E      | E      | E      | E |        |

SEP. 1984

FBES (0.1 MHz)



# IONOSPHERIC DATA

SEP. 1984

FMIN (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |      |      |      | Lat. 39 43.5 N | Long. 140 08.0 E | Sweep 1 MHz to 25 MHz in 24 sec in automatic operation |    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |  |  |  |  |  |  |
|-------------|-------|------|------|------|----------------|------------------|--|----|----|----|----|----|----|----|----|----|----|----|------|------|------|------|------|------|--|--|--|--|--|--|
| Hour<br>Day | 00    | 01   | 02   | 03   | 04             | 05               | 06   | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18   | 19   | 20   | 21   | 22   | 23   |  |  |  |  |  |  |
| 1           | E 16  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 17 | 20 | 18 | 19 | 17 | 16 | 17 | 16 | E 16 | E 15 | E 16 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 2           | E 15  | E 15 | E 16 | E 15 | E 15           | E 15             | E 16   | 16 | 16 | 17 | 16 | 20 | 17 | 17 | 19 | 17 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 16 |  |  |  |  |  |  |
| 3           | E 15  | E 15 | E 15 | E 15 | E 16           | E 16             | E 16   | 16 | 17 | 17 | 18 | 18 | 19 | 18 | 17 | 17 | 17 | 17 | E 16 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 4           | E 16  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 18 | 18 | 19 | 18 | 18 | 17 | 16 | 16 | E 16 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 5           | E 15  | E 15 | E 16 | E 15 | E 15           | E 16             | E 15   | 16 | 17 | 17 | 19 | 16 | 19 | 17 | 17 | 16 | 16 | 16 | E 16 | E 15 | E 15 | E 15 | E 16 | E 15 |  |  |  |  |  |  |
| 6           | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 16 | 16 | 17 | 19 | 20 | 20 | 18 | 17 | 16 | 16 | E 17 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 7           | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 20 | 19 | 17 | 17 | 17 | 17 | 16 | 17 | E 16 | E 16 | E 15 | E 16 | E 16 | E 15 |  |  |  |  |  |  |
| 8           | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 19 | 20 | 19 | 17 | 17 | 16 | 16 | 16 | E 16 | E 16 | E 15 | E 16 | E 15 | E 15 |  |  |  |  |  |  |
| 9           | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 17 | 17 | 17 | 17 | 17 | 18 | 18 | 18 | 17 | 17 | 16 | E 16 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 10          | E 15  | E 16 | E 16 | E 15 | E 15           | E 15             | E 16   | 17 | 16 | 17 | 17 | 18 | 17 | 17 | 16 | 17 | 17 | 16 | E 16 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 11          | E 16  | E 16 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 16 | 18 | 18 | 18 | 19 | 18 | 17 | 17 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 12          | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 18 | 17 | 18 | 20 | 17 | 17 | 17 | 17 | E 16 | E 16 | E 15 | E 16 | E 15 | E 16 |  |  |  |  |  |  |
| 13          | E 16  | E 16 | E 15 | E 15 | E 15           | E 15             | E 15   | 17 | 17 | 16 | 17 | 17 | 18 | 17 | 16 | 16 | 16 | 16 | E 16 | E 16 | E 16 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 14          | E 16  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 16 | 18 | 17 | 18 | 18 | 17 | 17 | 17 | 16 | 15 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 15          | E 16  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 16 | 17 | 18 | 18 | 19 | 18 | 18 | 17 | 17 | 17 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 16          | E 15  | E 15 | E 16 | E 16 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 17 | 17 | 16 | 17 | 17 | 17 | 15 | 15 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 17          | E 15  | E 15 | E 15 | E 16 | E 15           | E 15             | E 16   | 17 | 17 | 17 | 18 | 18 | 18 | 18 | 17 | 17 | 17 | 17 | E 16 | E 16 | E 15 | E 15 | E 15 | E 16 |  |  |  |  |  |  |
| 18          | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 18 | 18 | 19 | 18 | 18 | 17 | 16 | 16 | E 16 | E 16 | E 16 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 19          | E 15  | E 15 | E 15 | E 15 | E 15           | E 15             | E 16   | 16 | 17 | 16 | 18 | 18 | 17 | 18 | 18 | 16 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 20          | E 15  | E 16 | E 15 | E 15 | E 15           | E 15             | E 16   | 16 | 16 | 16 | 17 | 17 | 18 | 18 | 17 | 17 | 16 | 16 | E 15 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 21          | E 16  | E 15 | E 15 | E 15 | E 15           | E 15             | E 16   | 16 | 16 | 16 | 17 | 17 | 18 | 18 | 16 | 16 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 22          | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 16 | 17 | 17 | 18 | 18 | 17 | 17 | 17 | 16 | 16 | E 16 | E 16 | E 16 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 23          | E 15  | E 15 | E 15 | E 16 | E 15           | E 16             | E 16   | 17 | 17 | 18 | 17 | 18 | 16 | 17 | 16 | 17 | 16 | 16 | E 16 | E 16 | E 16 | E 15 | E 15 | E 16 |  |  |  |  |  |  |
| 24          | E 16  | E 15 | E 15 | E 16 | E 15           | E 15             | E 16   | 16 | 16 | 17 | 18 | 17 | 17 | 17 | 17 | 17 | 17 | 16 | E 16 | E 16 | E 16 | E 16 | E 16 | E 16 |  |  |  |  |  |  |
| 25          | E 15  | E 15 | E 15 | E 15 | E 15           | E 15             | E 16   | 16 | 16 | 17 | 19 | 18 | 17 | 17 | 17 | 17 | 17 | 17 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 26          | E 15  | E 15 | E 15 | E 15 | E 15           | E 15             | E 18   | 16 | 17 | 16 | 19 | 18 | 18 | 18 | 17 | 16 | 16 | 16 | E 16 | E 15 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 27          | E 15  | E 15 | E 15 | E 15 | E 15           | E 15             | E 16   | 16 | 18 | 17 | 17 | 18 | 18 | 18 | 18 | 17 | 16 | 16 | E 16 | E 16 | E 16 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 28          | E 16  | E 15 | E 15 | E 15 | E 16           | E 16             | E 16   | 18 | 16 | 16 | 18 | 19 | 18 | 19 | 19 | 18 | 17 | 16 | E 16 | E 15 | E 16 | E 16 | E 15 | E 16 |  |  |  |  |  |  |
| 29          | E 16  | E 15 | E 15 | E 15 | E 16           | E 16             | E 16   | 16 | 17 | 16 | 17 | 18 | 18 | 18 | 16 | 16 | 16 | 16 | E 17 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 30          | E 15  | E 15 | E 15 | E 15 | E 15           | E 15             | E 16   | 17 | 16 | 17 | 17 | 17 | 17 | 17 | 18 | 17 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| 31          |       |      |      |      |                |                  |  |    |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |  |  |  |  |  |  |
| CNT         | 30    | 30   | 30   | 30   | 30             | 30               | 30   | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30   | 30   | 30   | 30   | 30   | 30   |  |  |  |  |  |  |
| MED         | E 15  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 18 | 18 | 18 | 18 | 17 | 17 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |
| UQ          | E 16  | E 15 | E 15 | E 15 | E 15           | E 16             | E 16   | 16 | 17 | 17 | 18 | 18 | 19 | 18 | 18 | 17 | 17 | 16 | E 16 | E 16 | E 15 | E 15 | E 16 | E 15 |  |  |  |  |  |  |
| LQ          | E 15  | E 15 | E 15 | E 15 | E 15           | E 15             | E 16   | 16 | 16 | 16 | 17 | 17 | 17 | 17 | 17 | 16 | 16 | 16 | E 16 | E 16 | E 15 | E 15 | E 15 | E 15 |  |  |  |  |  |  |

SEP. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

SEP. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

| Station     | AKITA            |                  |                  |                  |                  |                  |                  |     |     |     |     |                 |     |                  |     |     |     |     |     |                  |                  |                  |                  |                  |
|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----|-----|-----|-----|-----------------|-----|------------------|-----|-----|-----|-----|-----|------------------|------------------|------------------|------------------|------------------|
|             | Lat. 39 43.5 N   |                  |                  |                  |                  |                  |                  |     |     |     |     | Long 140 08.0 E |     |                  |     |     |     |     |     |                  |                  |                  |                  |                  |
| Hour<br>Day | 00               | 01               | 02               | 03               | 04               | 05               | 06               | 07  | 08  | 09  | 10  | 11              | 12  | 13               | 14  | 15  | 16  | 17  | 18  | 19               | 20               | 21               | 22               | 23               |
| 1           | 340              | 295 <sup>F</sup> | 300              | 305              | 310              | 345              | 335              | 350 | 325 | 325 | 310 | 325             | 315 | 285              | 310 | 320 | 340 | 330 | 325 | 325              | 335              | 305 <sup>F</sup> | F                | F                |
| 2           | 280              | 295 <sup>F</sup> | 290 <sup>F</sup> | 300 <sup>F</sup> | 285              | 300              | 360              | 350 | 335 | 345 | 330 | 335             | 335 | 340              | 305 | 320 | 315 | 335 | 330 | 335              | 295              | 290              | 285              | 300              |
| 3           | 290              | 290              | 295              | 300              | 345              | 345              | 345              | 310 | 335 | A   | 315 | A               | A   | 305              | 310 | 320 | 320 | 325 | 320 | 325              | 320              | 305              | 295 <sup>F</sup> | 300 <sup>F</sup> |
| 4           | 300              | 310 <sup>F</sup> | 305 <sup>F</sup> | 310              | 295              | 315              | 330              | 340 | 350 | 350 | 340 | 325             | 315 | 330              | 325 | 325 | 325 | 325 | 315 | 295              | 280              | 295              | 275              | 305              |
| 5           | 325              | 270              | 310              | 270              | 275              | 330              | 375              | G   | A   | 255 | 270 | A               | A   | 275              | 300 | 285 | 260 | A   | 320 | 275              | 275              | 255              | 255              | 290              |
| 6           | 320              | 295              | 325              | 310              | A                | A                | 350              | 360 | 315 | 330 | 335 | 330             | 325 | 335              | 330 | 330 | 340 | 340 | 305 | 285              | 290              | 300              | 305 <sup>F</sup> | 315              |
| 7           | 300              | 300              | 300              | 305 <sup>F</sup> | F                | F                | 320              | 340 | 350 | 365 | 345 | 335             | 335 | 330              | 330 | 340 | 335 | 315 | 315 | 315              | 310              | 330              | 320              | 285              |
| 8           | 290              | 295 <sup>F</sup> | 290 <sup>F</sup> | 295 <sup>F</sup> | 295 <sup>F</sup> | 310              | 345              | 375 | 380 | 380 | 345 | 330             | 330 | 330 <sup>V</sup> | A   | 335 | A   | A   | 305 | 325              | 325              | 335              | 310              | 290              |
| 9           | 290              | 280              | 315              | 310              | 325              | 315              | 360              | 375 | 365 | 350 | 340 | 335             | 330 | 320              | 325 | 315 | 325 | 335 | 315 | 300              | F                | F                | F                | F                |
| 10          | 315              | 310              | 305              | 330              | 295              | 295              | 340              | 345 | 390 | 370 | 330 | 305             | 350 | 330              | 335 | 320 | 320 | 325 | 295 | 310 <sup>R</sup> | 320              | 350              | 320              | 300              |
| 11          | 300              | 290              | 305              | 315              | 290              | 330              | 355              | 350 | 350 | 335 | 345 | 325             | 315 | 305              | 310 | 320 | 325 | 320 | 320 | 340              | 305              | 290              | 290              | 310              |
| 12          | 290              | 285 <sup>R</sup> | 305              | 325              | 325              | 315              | 325              | 310 | 350 | 350 | 350 | 310             | 325 | 340              | 340 | 320 | 330 | 330 | 335 | 325              | 310              | F                | F                | F                |
| 13          | F                | F                | F                | 315 <sup>F</sup> | 315 <sup>F</sup> | 315              | 320 <sup>F</sup> | 365 | 350 | A   | 320 | 330             | 335 | 335              | 340 | 350 | 345 | 340 | 325 | 305 <sup>F</sup> | F                | F                | 305 <sup>F</sup> | 320              |
| 14          | 310              | 315              | 315              | 300              | 330 <sup>F</sup> | 335              | 375              | 360 | 345 | 340 | 330 | 350             | 325 | 325              | 320 | 320 | 335 | 325 | 335 | 320              | 325              | 320              | 315              | 305 <sup>F</sup> |
| 15          | 305              | 315              | 305              | 315              | 320              | 295              | 345              | 340 | 340 | 345 | 365 | 320             | 325 | 340              | 335 | 330 | 340 | 340 | 355 | 320              | 300              | 290              | 290              | 295 <sup>F</sup> |
| 16          | 330              | 310              | 295              | 310              | 305              | 350              | 365              | 380 | 375 | 345 | 325 | 325             | 340 | 340              | 325 | 345 | 330 | 345 | 350 | 320              | 295              | 305              | 305              | 305              |
| 17          | 295              | 300              | 305              | 340              | 325              | 330              | 345              | 340 | 355 | 360 | 335 | 340             | 340 | 350              | 340 | 350 | 355 | 340 | 345 | 315              | 340              | 300              | 290              | 295              |
| 18          | 310              | 315              | 310              | 310              | 330              | 325              | 375              | 370 | 370 | 350 | 350 | 355             | 365 | 345              | 350 | 340 | 335 | 330 | 335 | 350              | 325              | 300              | F                | 305 <sup>F</sup> |
| 19          | F                | 305 <sup>F</sup> | F                | F                | F                | F                | 350              | 370 | 350 | 340 | 370 | 350             | 340 | 310              | 310 | 330 | 325 | 335 | 335 | 330              | 295              | 305              | 280              | 280 <sup>F</sup> |
| 20          | F                | 305              | 305              | 315              | A                | A                | 335              | 355 | 345 | 325 | 350 | 305             | 330 | 345              | 315 | 345 | 325 | 325 | 335 | 340              | 320              | 295              | 305              | 285              |
| 21          | 310              | 300              | 300              | 295              | 300              | 305              | 325              | 320 | 360 | 345 | 335 | A               | 305 | 325              | 345 | 335 | 340 | 350 | 335 | F                | F                | 315 <sup>F</sup> | 300              | 310 <sup>F</sup> |
| 22          | F                | 290              | 305              | 295              | 295              | 340              | 355              | 335 | 340 | 360 | 345 | 335             | 310 | 335              | 335 | 330 | 340 | 340 | 335 | 335              | 310              | A                | A                | A                |
| 23          | A                | 300 <sup>F</sup> | 330 <sup>F</sup> | F                | F                | 305 <sup>F</sup> | 325              | 335 | 330 | 325 | 365 | 305             | A   | A                | 300 | 305 | 300 | 330 | 335 | A                | 295 <sup>F</sup> | 270              | 320              | A                |
| 24          | 280 <sup>F</sup> | 265              | 285              | 260              | 280              | 300              | 320              | 280 | A   | A   | 270 | A               | 250 | 265              | 275 | 320 | 325 | 320 | 320 | 305              | F                | A                | 310              | 290              |
| 25          | 285              | 320              | 345              | 320              | 325 <sup>F</sup> | F                | 340              | 350 | 330 | 295 | 325 | 325             | 325 | 330              | 320 | 355 | 305 | 305 | 315 | 325              | 315              | 305              | 295              | 295              |
| 26          | 285              | 290              | 310              | 320              | 330              | 320              | 330              | 340 | 335 | 350 | 345 | 345             | 330 | 325              | 345 | 350 | 335 | 340 | 315 | 295              | 285              | 290              | 290              | 280              |
| 27          | 295              | 345              | 340              | 290              | 310              | 325              | 330              | 335 | 350 | 330 | 345 | 350             | 335 | 345              | 345 | 335 | 340 | 350 | 335 | 325              | 305              | 305              | 285              | 295              |
| 28          | 300              | 280              | 300              | 340              | 335 <sup>H</sup> | 295              | 320              | 315 | 335 | 350 | 345 | 350             | 350 | 355              | 320 | 330 | 325 | 365 | 360 | 370              | 265              | 285              | F                | F                |
| 29          | 310              | 290              | 320              | 335              | 330              | 320              | 350              | 365 | 360 | 360 | 355 | 340             | 325 | 320              | 340 | 335 | 350 | 360 | 325 | 325              | 290 <sup>F</sup> | F                | 290              | 300              |
| 30          | 305 <sup>F</sup> | 310 <sup>F</sup> | 325              | 325              | 305              | 320              | 365              | 350 | 345 | 350 | 345 | 320             | 330 | 335              | 340 | 340 | 360 | 370 | 315 | 315              | 355              | 300              | 305              | 320              |
| 31          |                  |                  |                  |                  |                  |                  |                  |     |     |     |     |                 |     |                  |     |     |     |     |     |                  |                  |                  |                  |                  |
| CNT         | 25               | 29               | 28               | 28               | 25               | 26               | 30               | 30  | 28  | 27  | 30  | 26              | 27  | 29               | 29  | 30  | 29  | 28  | 30  | 28               | 26               | 25               | 24               | 24               |
| MED         | 300              | 300              | 305              | 310              | 310              | 318              | 345              | 348 | 350 | 345 | 342 | 330             | 330 | 330              | 325 | 330 | 330 | 335 | 325 | 322              | 308              | 300              | 298              | 300              |
| UQ          | 310              | 310              | 315              | 320              | 325              | 330              | 355              | 360 | 358 | 350 | 345 | 340             | 335 | 340              | 340 | 340 | 340 | 340 | 335 | 328              | 320              | 305              | 308              | 305              |
| LQ          | 290              | 290              | 300              | 300              | 295              | 305              | 330              | 335 | 335 | 332 | 330 | 325             | 325 | 320              | 310 | 320 | 325 | 325 | 315 | 308              | 295              | 290              | 290              | 290              |

The Radio Research Laboratories, Japan

SEP. 1984

M(3000)F2 (0.01)

# IONOSPHERIC DATA

SEP. 1984

M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9 h)

| Station |     | AKITA |    |    |    |    |    |    | Lat. 39 43.5 N |     |     | Long. 140 08.0 E |     |     | Sweep 1 MHz to 25 MHz in 24 sec in automatic operation |     |     |     |     |    |    |    |    |    |    |
|---------|-----|-------|----|----|----|----|----|----|----------------|-----|-----|------------------|-----|-----|--|-----|-----|-----|-----|----|----|----|----|----|----|
| Hour    | Day | 00    | 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   |     |                  |     |     |  |     |     |     |     |    |    |    |    |    |    |
| 2       |     |       |    |    |    |    |    |    |                |     | L   | L                |     |     |  |     |     |     |     |    |    |    |    |    |    |
| 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      |     |       |    |    |    |    |    |    |                |     |     |                  |     |     |  |     |     |     |     |    |    |    |    |    |    |
| 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     |     |       |    |    |    |    |    |    |                | 5   | 11  | 22               | 16  | 20  | 19   | 19  | 16  | 7   | 4   |    |    |    |    |    |    |
| MED     |     |       |    |    |    |    |    |    |                | 370 | 375 | 382              | 385 | 390 | 395  | 370 | 362 | 360 | 362 |    |    |    |    |    |    |
| UQ      |     |       |    |    |    |    |    |    |                | 370 | 382 | 395              | 398 | 395 | 398  | 380 | 372 | 362 | 365 |    |    |    |    |    |    |
| LQ      |     |       |    |    |    |    |    |    |                | 355 | 368 | 380              | 375 | 385 | 385  | 370 | 355 | 350 | 355 |    |    |    |    |    |    |

SEP. 1984

M(3000)F1 (0.01)

### IONOSPHERIC DATA

SEP. 1984

H<sup>o</sup>F<sub>2</sub> (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |    |    |    |    |    |     |     |     |     | Lat. | 39 43.5 N |     |     |     |     |     |     |     |     |     | Long | 140 08.0 E |    |  |  |  |  |  |  |  |  | Sweep | 1 |  |  |  |  | MHz to 25 MHz in 24sec in automatic operation |  |  |  |  |
|-------------|-------|----|----|----|----|----|-----|-----|-----|-----|------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------------|----|--|--|--|--|--|--|--|--|-------|---|--|--|--|--|---|--|--|--|--|
| Hour<br>Day | 00    | 01 | 02 | 03 | 04 | 05 | 06  | 07  | 08  | 09  | 10   | 11        | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22         | 23 |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 1           |       |    |    |    |    |    |     | 285 | 295 | 295 | 325  | 320       | 340 | 405 | 310 | 310 | 280 | 260 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 2           |       |    |    |    |    |    | 240 | 240 | 275 | 270 | 310  | 295       | 290 | 295 | 350 | 300 | 290 | 250 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 3           |       |    |    |    |    |    |     | 340 | 300 |     | A    | 325       |     | A   |     | A   | 345 | 340 | 300 | 300 | 270 |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 4           |       |    |    |    |    |    |     | 260 | 270 | A   | 250  | 250       | 270 | 295 | 300 | 290 | 290 | 300 | 270 |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 5           |       |    |    |    |    |    |     |     | G   | A   |      | 520       | 460 |     | A   | A   | 480 | 400 | 430 | 480 |     | A    |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 6           |       |    |    |    |    |    | 260 |     | A   | A   | A    |           | 280 | 295 | 295 | 280 | 295 | 285 | 260 |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 7           |       |    |    |    |    |    |     | 275 | 250 | 245 | 280  | 295       | 300 | 300 | 300 | 280 | 260 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 8           |       |    |    |    |    |    | 250 | 240 | 230 | 240 | 270  | 305       | 290 | 310 |     | A   | 290 |     | A   | A   |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 9           |       |    |    |    |    |    |     |     | 250 | 255 | 270  | 270       | 290 | 275 | 290 | 310 | 270 | 250 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 10          |       |    |    |    |    |    |     | 250 | 220 | 250 | 295  | 300       | 270 | 290 | 290 | 295 | 270 | 260 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 11          |       |    |    |    |    |    |     |     | 230 | 255 | 270  | 330       | 310 | 325 | 300 | 280 | 255 | 255 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 12          |       |    |    |    |    |    |     |     | 255 | 245 | 255  | 325       | 295 | 280 | 290 | 300 | 275 | 255 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 13          |       |    |    |    |    |    |     | A   |     | A   |      | 285       | 290 | 270 | 260 | 295 | 275 | 270 | 245 |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 14          |       |    |    |    |    |    |     | 240 | 280 | 280 | 280  | 260       | 300 | 310 | 305 | 270 | 275 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 15          |       |    |    |    |    |    |     | 250 | 255 | 240 | 240  | 300       | 300 | 280 | 275 | 285 | 270 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 16          |       |    |    |    |    |    |     |     | 240 | 260 | 280  | 285       | 270 | 285 | 280 | 270 | 260 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 17          |       |    |    |    |    |    |     | 260 | 240 | 235 | 300  | 255       | 270 | 270 | 280 | 255 | 250 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 18          |       |    |    |    |    |    |     |     | 240 | 250 | 260  | 250       | 250 | 280 | 275 | 295 | 270 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 19          |       |    |    |    |    |    |     | 230 | 240 | 260 | 245  | 255       | 260 | 340 | 305 | 280 | 275 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 20          |       |    |    |    |    |    |     |     | 280 | 280 | 320  | 280       | 310 | 300 | 280 | 290 | 270 | 260 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 21          |       |    |    |    |    |    |     | 250 | 255 | 255 | 275  |           | A   | 360 | 290 | 260 | 280 | 255 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 22          |       |    |    |    |    |    |     |     | 255 | 290 | 260  | 260       | 295 | 340 | 290 | 285 | 290 | 270 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 23          |       |    |    |    |    |    |     |     | 270 | 295 | 320  | 260       |     | A   | A   | A   | 320 | 290 | 290 |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 24          |       |    |    |    |    |    |     |     | 455 | A   | A    |           | 495 | A   | 560 | 440 | 440 | 310 | 300 |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 25          |       |    |    |    |    |    |     |     | 240 | 290 | 355  | 320       | 315 | 330 | 305 | 305 | 260 | 280 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 26          |       |    |    |    |    |    |     |     | 280 | 270 | 250  | 260       | 270 | 300 | 300 | 270 | 250 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 27          |       |    |    |    |    |    |     |     | 250 | 255 | 270  | 260       | 260 | 280 | 275 | 270 | 260 | 270 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 28          |       |    |    |    |    |    |     |     | 280 | 265 | 260  | 260       | 255 | 245 | 260 | 285 | 280 | 275 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 29          |       |    |    |    |    |    |     |     |     | 255 | 255  | 255       | 275 | 295 | 290 | 260 | 270 |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 30          |       |    |    |    |    |    |     |     |     | 255 | 255  | 260       | 300 | 270 | 270 | 260 | 270 | 240 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| 31          |       |    |    |    |    |    |     |     |     |     |      |           |     |     |     |     |     |     |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
|             | 00    | 01 | 02 | 03 | 04 | 05 | 06  | 07  | 08  | 09  | 10   | 11        | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21   | 22         | 23 |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| CNT         |       |    |    |    |    |    | 4   | 21  | 27  | 26  | 30   | 25        | 27  | 29  | 29  | 30  | 27  | 7   |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| MED         |       |    |    |    |    |    | 255 | 260 | 255 | 255 | 272  | 295       | 295 | 290 | 290 | 282 | 270 | 255 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| UQ          |       |    |    |    |    |    | 260 | 280 | 280 | 270 | 295  | 300       | 300 | 310 | 305 | 300 | 278 | 260 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |
| LQ          |       |    |    |    |    |    | 245 | 250 | 245 | 250 | 260  | 270       | 270 | 280 | 275 | 270 | 260 | 252 |     |     |     |      |            |    |  |  |  |  |  |  |  |  |       |   |  |  |  |  |   |  |  |  |  |

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135 E Mean Time (G.M.T. + 9 h)

| Station     | AKITA   |         |     |         | Lat. 39 43.5 N |         |     |     | Long 140 08.0 E |     |     |     | Sweep 1 MHz to 25 MHz in 24 sec in automatic operation |     |     |     |     |     |     |     |         |         |         |         |     |
|-------------|---------|---------|-----|---------|----------------|---------|-----|-----|-----------------|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|---------|---------|---------|---------|-----|
| Hour<br>Day | 00      | 01      | 02  | 03      | 04             | 05      | 06  | 07  | 08              | 09  | 10  | 11  | 12   | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20      | 21      | 22      | 23      |     |
| 1           | 235     | 275     | A   | 270     | 250            | 240     | 220 | A   | A               | 215 | 200 | 195 | 195  | 200 | 200 | 230 | 220 | 235 | 250 | 230 | 210     | A       | A       | 300     |     |
| 2           | 260     | 275     | A   | A       | 280            | 275     | 225 | 220 | 210             | 200 | 200 | 205 | 200  | 220 | 220 | A   | 230 | A   | 240 | A   | A       | 265     | A       | 280     |     |
| 3           | E S 305 | E S 300 | 280 | 265     | 220            | 250     | 235 | 225 | 220             | A   | 230 | A   | A  | 220 | A   | A   | A   | A   | 250 | 220 | 230     | 245     | A       | 270     |     |
| 4           | A       | 250     | 270 | 260     | 270            | 270     | 230 | A   | A               | 210 | 220 | A   | 220  | A   | A   | A   | 235 | 240 | 240 | 270 | 290     | 265     | 280     | 250     |     |
| 5           | 230     | 325     | 245 | A       | E S 330        | 295     | 250 | 230 | A               | 210 | 200 | A   | A  | 220 | 220 | 235 | 230 | A   | A   | A   | E S 300 | A       | A       | 280     |     |
| 6           | 270     | 270     | 270 | 255     | A              | A       | A   | A   | A               | A   | A   | 220 | 210  | 210 | 220 | 220 | 230 | 220 | 245 | 280 | A       | A       | 255     | 250     |     |
| 7           | 240     | 280     | 270 | 290     | 285            | 280     | A   | 220 | 210             | 205 | 210 | 200 | 200  | 200 | 215 | 200 | 220 | 245 | 255 | 240 | 245     | 235     | 225     | 270     |     |
| 8           | 290     | A       | 290 | 285     | 250            | 260     | A   | 225 | A               | 200 | 195 | 190 | 200  | 210 | A   | 225 | A   | A   | A   | 235 | 230     | 225     | 205     | 275     |     |
| 9           | 295     | 310     | 285 | 280     | 245            | 260     | 230 | 220 | A               | A   | 210 | 200 | 200  | 200 | 210 | 220 | A   | A   | A   | 240 | 270     | 245     | 220     | A       | 230 |
| 10          | 245     | A       | 280 | 240     | 255            | 280     | 245 | 230 | A               | 210 | 200 | 200 | 200  | 200 | 200 | 230 | A   | A   | A   | 245 | 255     | 210     | 225     | 270     |     |
| 11          | 275     | 290     | 280 | 245     | 285            | 240     | 225 | 220 | 200             | 200 | 195 | 200 | 200  | 230 | 220 | 225 | 245 | A   | 230 | 210 | 240     | 270     | 250     | 240     |     |
| 12          | 270     | A       | 250 | 240     | A              | 255     | 230 | 210 | 205             | 205 | 195 | 205 | 200  | 220 | 210 | A   | A   | A   | A   | A   | 260     | A       | 280     | 275     |     |
| 13          | 280     | 270     | 230 | 250     | 260            | 260     | 230 | A   | A               | A   | A   | 205 | 200  | 195 | 210 | A   | 225 | 245 | A   | 270 | A       | 255     | 250     | 240     |     |
| 14          | 270     | 280     | 275 | 255     | 250            | 230     | 220 | 215 | 220             | 220 | 200 | 200 | 200  | 220 | 205 | 230 | 240 | 270 | A   | 225 | 240     | A       | 260     | 255     |     |
| 15          | 290     | 275     | 270 | 260     | 255            | 275     | 240 | 220 | 220             | 200 | 190 | 195 | 190  | 230 | 220 | 230 | 235 | 240 | 220 | 220 | 255     | 280     | 280     | 270     |     |
| 16          | 235     | 250     | 290 | 270     | 260            | 220     | 230 | 220 | 210             | 210 | 210 | 200 | 205  | 210 | A   | 225 | 230 | 245 | 220 | 215 | 255     | 245     | 255     | 260     |     |
| 17          | 265     | 270     | 270 | 235     | 245            | 240     | 230 | 240 | 210             | 210 | 200 | 200 | 195  | 235 | 220 | 200 | 225 | 230 | 220 | 220 | 230     | 235     | 280     | 275     |     |
| 18          | 250     | 260     | 260 | 245     | 230            | 250     | 220 | 225 | 225             | 200 | 200 | 205 | 195  | 200 | 210 | 230 | 240 | 250 | 230 | 220 | 220     | 260     | 290     | 250     |     |
| 19          | 250     | 270     | 275 | 250     | 240            | 240     | 230 | 215 | 210             | 215 | 200 | 200 | 220  | 200 | 210 | 245 | 220 | 245 | 220 | 230 | 275     | 255     | 285     | 295     |     |
| 20          | 320     | 240     | 250 | A       | A              | A       | A   | 235 | 225             | A   | A   | 205 | 200  | 220 | 205 | 210 | A   | 250 | 245 | 220 | 220     | 205     | 260     | 275     |     |
| 21          | 270     | 265     | 275 | 280     | 255            | 275     | 240 | 240 | A               | 220 | A   | A   | A  | A   | 200 | 240 | 230 | 240 | 245 | 250 | 275     | A       | A       | A       | A   |
| 22          | A       | E S 295 | 270 | 275     | 270            | 235     | 220 | 235 | A               | A   | 210 | 195 | 195  | 200 | 210 | 190 | A   | 250 | 230 | A   | A       | A       | A       | A       |     |
| 23          | A       | A       | 250 | 240     | 280            | 280     | 250 | 235 | A               | A   | A   | A   | A  | A   | 225 | 220 | 250 | 245 | A   | A   | 260     | A       | 255     | A       |     |
| 24          | A       | A       | A   | E S 360 | 310            | 275     | 280 | 245 | A               | A   | 200 | A   | 200  | 205 | 220 | 245 | 240 | 255 | 255 | 245 | A       | A       | A       | E S 330 |     |
| 25          | E S 310 | 280     | 250 | E S 285 | 255            | E S 300 | 245 | 220 | 205             | 200 | 240 | 195 | 200  | 200 | 220 | 195 | 210 | 250 | 255 | 235 | 230     | 270     | 270     | 260     |     |
| 26          | 295     | 275     | 275 | 235     | 245            | 280     | 255 | 240 | 230             | 215 | 205 | 205 | 200  | 200 | 210 | 225 | 255 | 245 | 235 | 230 | 280     | 260     | 295     | 290     |     |
| 27          | 275     | 235     | 220 | E S 305 | E S 300        | E S 290 | 240 | 230 | 215             | 200 | 210 | 200 | 250  | 200 | 225 | 240 | 245 | 230 | 230 | 230 | 255     | 260     | 270     | 245     |     |
| 28          | 275     | 285     | 270 | 230     | E S 245        | 285     | 240 | 230 | 225             | 200 | A   | 220 | 240  | 230 | 200 | 230 | 235 | 230 | 215 | 205 | E S 345 | E S 300 | E S 295 | E S 315 |     |
| 29          | 285     | E S 320 | 275 | 260     | 255            | 270     | 235 | 230 | A               | A   | A   | A   | A  | 205 | 230 | 240 | 245 | 225 | 235 | 220 | 280     | A       | A       | 250     |     |
| 30          | 260     | 255     | 240 | 230     | 250            | 260     | 220 | 220 | A               | 220 | 200 | 200 | 205  | A   | A   | 240 | A   | 220 | 215 | 245 | 220     | A       | 270     | 275     |     |
| 31          |         |         |     |         |                |         |     |     |                 |     |     |     |  |     |     |     |     |     |     |     |         |         |         |         |     |
|             | 00      | 01      | 02  | 03      | 04             | 05      | 06  | 07  | 08              | 09  | 10  | 11  | 12   | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20      | 21      | 22      | 23      |     |
| CNT         | 26      | 25      | 27  | 27      | 27             | 28      | 26  | 26  | 16              | 21  | 23  | 23  | 25   | 27  | 25  | 25  | 22  | 22  | 23  | 25  | 24      | 19      | 21      | 27      |     |
| MED         | 271     | 272     | 270 | 255     | 255            | 262     | 230 | 225 | 212             | 210 | 200 | 200 | 200  | 205 | 215 | 230 | 235 | 245 | 235 | 230 | 246     | 255     | 265     | 270     |     |
| UQ          | 285     | 282     | 275 | 273     | 270            | 278     | 240 | 235 | 222             | 215 | 210 | 205 | 205  | 220 | 220 | 230 | 240 | 250 | 248 | 245 | 263     | 264     | 280     | 276     |     |
| LQ          | 250     | 265     | 250 | 242     | 248            | 245     | 225 | 220 | 210             | 200 | 200 | 200 | 200  | 200 | 210 | 220 | 225 | 230 | 225 | 220 | 230     | 235     | 255     | 250     |     |

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135 E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |    |    |    | Lat. 39 43.5 N |    | Long. 140 08.0 E |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
|-------------|-------|----|----|----|----------------|----|------------------|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| Hour<br>Day | 00    | 01 | 02 | 03 | 04             | 05 | 06               | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18 | 19 | 20 | 21 | 22 | 23 |
| 1           |       |    |    |    |                | S  | S                | 110 | 105   | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 110 | 110 |    |    |    |    |    |    |
| 2           |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 110 |    |    |    |    |    |    |
| 3           |       |    |    |    |                | S  | S                | 110 | 105   | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 115 |    |    |    |    |    |    |
| 4           |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | 105 | 105 | 105 | 110 | 110 | 110 | 110 |    |    |    |    |    |    |
| 5           |       | S  |    |    |                | S  | S                | 110 | 105   | 105 | 105 | A   | A   | A   | 105 | 105 | 110 | 110 |    |    |    |    |    |    |
| 6           |       |    |    |    |                | S  | S                | 110 | 105   | A   | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 115 |    |    |    |    |    |    |
| 7           |       |    |    |    |                | S  | S                | 110 | 105   | 105 | A   | A   | 110 | 105 | 105 | 110 | 105 | 115 |    |    |    |    |    |    |
| 8           |       |    |    |    |                | S  | S                | 105 | 105   | 105 | 105 | 110 | 105 | 105 | A   | A   | A   | A   | S  |    |    |    |    |    |
| 9           |       |    |    |    |                | S  | S                | 105 | 105   | 105 | 105 | 105 | 105 | 105 | A   | 105 | A   | 110 | S  |    |    |    |    |    |
| 10          |       |    |    |    |                | S  | S                | 110 | 105   | 105 | 105 | 105 | 105 | 100 | A   | 105 | A   | A   | S  |    |    |    |    |    |
| 11          |       |    |    |    |                | S  | S                | 110 | 110   | 110 | 110 | 105 | 105 | 105 | 105 | 110 | 110 |     | S  | S  |    |    |    |    |
| 12          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 110 | 105 | 105 | 105 | 105 | 110 | 110 |     | S  | S  |    |    |    |    |
| 13          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | A   | A   | 100 | A   | A   | A   | S   | S  |    |    |    |    |    |
| 14          |       |    |    |    |                | S  | S                | 110 | A   | A   | A   | A   | A   | A   | 100 | 105 | A   | A   | S  |    |    |    |    |    |
| 15          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | 105 | 100 | 105 | 105 | 110 | 115 |     | S  | S  |    |    |    |    |
| 16          |       |    |    |    |                | S  | S                | 110 | 110   | 110 | 100 | 100 | 105 | 105 | 105 | A   | A   | S   | S  |    |    |    |    |    |
| 17          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 110 |     | S  | S  |    |    |    |    |
| 18          |       |    |    |    |                | S  | S                | 110 | 110   | 110 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |     | S  | S  |    |    |    |    |
| 19          |       |    |    |    |                | S  | S                | 110 | 105   | 105 | 105 | 105 | 105 | 100 | 105 | 105 | 110 |     | S  | S  |    |    |    |    |
| 20          |       |    |    |    |                | S  | S                | 110 | 105   | 105 | 105 | A   | A   | A   | A   | A   | A   | A   | S  |    |    |    |    |    |
| 21          |       |    |    |    |                | S  | S                | 110 | 105   | 110 | 105 | 105 | 105 | 105 | 105 | 105 | A   | S   | S  |    |    |    |    |    |
| 22          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | 105 | A   | A   | 100 | 105 | A   | S   | S  |    |    |    |    |    |
| 23          |       |    |    |    |                | S  | S                | 115 | 110   | 110 | 110 | 105 | 105 | 105 | A   | 110 | 105 |     | S  | S  |    |    |    |    |
| 24          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | A   | 105 | 100 | 100 | 110 | 115 |     | A  | S  |    |    |    |    |
| 25          |       |    |    |    |                | S  | S                | 110 | 110   | 110 | 110 | 105 | 105 | 100 | 110 | 110 | 115 |     | S  | S  |    |    |    |    |
| 26          |       |    |    |    |                | S  | S                | A   | 105   | 110 | 110 | 105 | 100 | 110 | 110 | 110 | A   | S   | S  |    |    |    |    |    |
| 27          |       |    |    |    |                | S  | S                | A   | 105   | 110 | 100 | 105 | 105 | 105 | 105 | 110 | 110 |     | S  | S  |    |    |    |    |
| 28          |       |    |    |    |                | S  | S                | 110 | 110   | 110 | 105 | 105 | 105 | 100 | 110 | 110 |     | S   | S  | S  |    |    |    |    |
| 29          |       |    |    |    |                | S  | S                | 115 | 110   | 105 | 105 | 105 | 105 | 110 | 105 | 110 | 115 |     | S  | S  |    |    |    |    |
| 30          |       |    |    |    |                | S  | S                | 110 | 110   | 105 | 105 | 105 | 105 | 105 | 110 | 110 | 115 |     | S  | S  |    |    |    |    |
| 31          |       |    |    |    |                |    |                  |     |   |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |
|             | 00    | 01 | 02 | 03 | 04             | 05 | 06               | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18 | 19 | 20 | 21 | 22 | 23 |
| CNT         |       |    |    |    |                |    |                  | 28  | 29  | 28  | 28  | 24  | 25  | 26  | 24  | 26  | 19  | 8   |    |    |    |    |    |    |
| MED         |       |    |    |    |                |    |                  | 110 | 110   | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 110 | 110 |    |    |    |    |    |    |
| UQ          |       |    |    |    |                |    |                  | 110 | 110   | 110 | 105 | 105 | 105 | 105 | 105 | 110 | 112 | 115 |    |    |    |    |    |    |
| LQ          |       |    |    |    |                |    |                  | 110 | 105   | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 110 |    |    |    |    |    |    |

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# IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |     |     |     | Lat. 39 43.5 N |     |     |     | Long 140 08.0 E |     |     |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------|-------|-----|-----|-----|----------------|-----|-----|-----|-----------------|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Hour<br>Day | 00    | 01  | 02  | 03  | 04             | 05  | 06  | 07  | 08              | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |
| 1           | S     | 100 | 100 | 100 | 100            | 100 | G   | 120 | 110             | G   | G   | 120 | G   | G   | G   | 110 | G   | 110 | 110 | 105 | S   | 105 | 105 | 105 |     |     |
| 2           | 100   | 100 | 100 | 100 | 100            | 100 | 120 | 110 | 115             | 120 |     | G   | G   | 110 | G   | 140 | 120 | 120 | 115 | 110 | 100 | 105 | 105 | 105 | S   |     |
| 3           | S     | S   | S   | S   | S              | 120 | 115 | 110 | 120             | 110 | 110 | 110 | 110   | G   | 150 | 125 | 120 | 120 | 110 | 105 | 110 | 100 | 110 | 105 |     |     |
| 4           | 105   | 100 | 100 | 100 | 100            | 100 | 115 | 110 | 110             | 115 | 110 | 110 | 110   | 105 | 110 | 110 | G   | G   | S   | S   | S   | 105 | S   | S   |     |     |
| 5           | S     | S   | S   |     | 120            | 120 | 115 | 115 | 120             | 105 | 110 | 110 | 100   | 100 | 100 | G   | G   | G   | 110 | 110 | 110 | 105 | 100 | 100 | 100 |     |
| 6           | 100   | 100 | 100 | 100 | 100            | 120 | 110 | 110 | 105             | 105 | 105 | G   | G   | G   | 145 | 110 | G   | G   | S   | S   | 120 | 110 | 100 | 100 |     |     |
| 7           | 100   | 95  | S   | S   | S              | 120 | 110 | 120 | 115             | 120 | 105 | 100 | 100   | G   | G   | 100 | 110 | G   | S   | S   | 100 | 105 | S   | S   |     |     |
| 8           | 100   | 100 | 100 | 100 | 100            | 105 | 110 | 110 | 105             | 110 | 115 | 110 | G   | G   | 105 | 100 | 130 | 120 | 120 | 95  | 105 | 105 | 105 | S   |     |     |
| 9           | 105   | 100 | 100 | 100 | 100            | 115 | 135 | 115 | 110             | 110 | 110 | 110 | 105   | 105 | 105 | 105 | 105 | 110 | 110 | 105 | 110 | 105 | 110 | 105 |     |     |
| 10          | 100   | 100 | S   | 100 | S              | S   | 125 | 110 | 110             | 110 | 110 | 110 | 110   | G   | G   | 100 | 100 | 100 | 100 | 100 | 110 | 105 | S   | S   |     |     |
| 11          | S     | S   | 100 | S   | 100            | 125 | 120 | 110 | 115             | 115 | G   | G   | G   | G   | G   | 140 | 120 | 110 | 110 | 95  | 100 | 105 | 100 | 100 |     |     |
| 12          | 100   | 100 | 100 | 100 | 120            | 110 | 110 | 110 | 110             |     | G   | G   | G   | G   | G   | 105 | G   | 120 | 120 | 110 | 110 | 110 | 105 | 105 | 110 | 100 |
| 13          | 100   | 95  | 100 | 100 | 100            | S   | 125 | 110 | 110             | 110 | 105 | 100 | 100   | G   | 100 | 100 | 100 | 120 | 110 | 105 | 110 | 105 | 105 | 105 |     |     |
| 14          | S     | 100 | S   | S   | S              | S   | G   | 155 | 105             | 115 | 100 | 100 | 100   | 100 | G   | G   | 140 | 120 | 110 | 100 | 110 | 110 | 105 | 105 |     |     |
| 15          | 100   | 100 | 100 | 100 | 100            | 120 | 115 | 115 | 110             | 110 |     | G   | G   | G   | G   | G   | 130 | 115 | 110 | S   | 105 | S   | S   | 105 |     |     |
| 16          | 100   | S   | S   | S   | S              | S   | G   | G   | G               | 135 | 130 | G   | G   | G   | 110 | 105 | 100 | 130 | 100 | S   | 110 | 110 | S   | S   |     |     |
| 17          | S     | S   | S   | S   | S              | S   | 130 | 115 | 115             | 110 | G   | G   | 120   | G   | G   | G   | G   | G   | S   | 100 | 100 | 100 | S   | S   |     |     |
| 18          | S     | S   | S   | S   | S              | S   | G   | G   | 120             | 120 | G   | 105 | 110   | G   | G   | G   | G   | G   | S   | 100 | 100 | 95  | 100 | 115 |     |     |
| 19          | 100   | 100 | S   | S   | 105            | 100 | 140 | G   | 115             | G   | G   | G   | G   | G   | G   | G   | G   | 140 | 100 | S   | S   | S   | S   | 100 |     |     |
| 20          | 100   | S   | S   |     | 125            | 120 | 120 | 110 | 110             | 110 | 110 | 105 | 105   | 105 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 110 | 100 | 100 |     |
| 21          | 100   | 95  | 95  | S   | S              | S   | 135 | 120 | 120             | 120 | 110 | 110 | 110   | 110 | G   | 100 | 125 | 110 | 110 | 110 | 105 | 100 | 100 | 100 |     |     |
| 22          | 100   | 100 | 100 | 100 | 105            | S   | 120 | 115 | 110             | 110 | 110 |     | G   | 100 | 100 | 110 | G   | 105 | 105 | 110 | 105 | 110 | 110 | 110 | 110 |     |
| 23          | 100   | 100 | 100 | S   | 100            | 120 | 120 | 120 | 110             | 110 | 110 | 110 | 105   | 105 | 105 | 110 | G   | 110 | 115 | 110 | 105 | 110 | 115 | 100 |     |     |
| 24          | 105   | 115 | 120 | S   | 110            | S   | G   | 150 | 110             | 105 | G   | 100 | G   | G   | 115 | 120 | G   | 105 | 105 | 105 | 100 | 100 | 100 | 100 |     |     |
| 25          | S     | S   | S   | S   | S              | 100 | 115 | 115 | 110             | 140 |     | G   | G   | G   | G   | G   | G   | S   | S   | 110 | 110 | 105 | 105 | S   |     |     |
| 26          | S     | S   | S   | S   | S              | S   | S   | 100 | G               | G   | G   | G   | G   | G   | 110 | 110 | 105 | 105 | 105 | 100 | 100 | 100 | 100 | 100 |     |     |
| 27          | S     | S   | S   | S   | 105            | 105 | 105 | 105 | G               | G   | G   | G   | G   | G   | G   | G   | G   | G   | 130 | 110 | S   | S   | 100 | S   | S   |     |
| 28          | S     | S   | S   | 105 | S              | S   | S   | 155 | 145             | 140 | 125 | G   | G   | G   | 120 | G   | G   | S   | 130 | 120 | 120 | 120 | S   | 110 |     |     |
| 29          | S     | S   | S   | S   | S              | 105 | 130 | 140 | 130             | 125 | 115 | 120 | 120   | 120 | 125 | G   | G   | 145 | 120 | 105 | 105 | 105 | 100 | 100 |     |     |
| 30          | 100   | 100 | 100 | 100 | S              | S   | 150 | G   | 120             | 120 | 120 | 110 | 110   | 105 | 110 | 155 | 135 | 120 | 110 | 100 | 100 | 100 | 125 | 115 |     |     |
| 31          |       |     |     |     |                |     |     |     |                 |     |     |     |   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| CNT         | 18    | 18  | 15  | 15  | 17             | 18  | 23  | 26  | 27              | 25  | 18  | 17  | 17  | 11  | 18  | 17  | 17  | 23  | 24  | 23  | 26  | 28  | 20  | 21  |     |     |
| MED         | 100   | 100 | 100 | 100 | 100            | 112 | 120 | 115 | 110             | 110 | 110 | 110 | 110   | 105 | 110 | 110 | 110 | 115 | 110 | 105 | 105 | 105 | 105 | 100 |     |     |
| UQ          | 100   | 100 | 100 | 100 | 105            | 120 | 128 | 120 | 115             | 120 | 115 | 110 | 110   | 105 | 120 | 120 | 120 | 120 | 110 | 108 | 110 | 108 | 110 | 105 |     |     |
| LQ          | 100   | 100 | 100 | 100 | 100            | 100 | 112 | 110 | 110             | 110 | 105 | 100 | 100   | 100 | 105 | 105 | 100 | 110 | 108 | 100 | 100 | 100 | 100 | 100 |     |     |

SEP. 1984

H°ES (KM)

The Radio Research Laboratories, Japan

# IONOSPHERIC DATA

SEP. 1984

TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

| Station     | AKITA |    |    |    |    |    |      | Lat. 39 43.5 N | Long. 140 08.0 E | Sweep 1 | MHz to 25 | MHz in 24 | sec in | automatic operation |    |      |      |      |      |    |    |    |    |    |    |
|-------------|-------|----|----|----|----|----|------|----------------|------------------|---------|-----------|-----------|--------|---------------------|----|------|------|------|------|----|----|----|----|----|----|
| Hour<br>Day | 00    | 01 | 02 | 03 | 04 | 05 | 06   | 07             | 08               | 09      | 10        | 11        | 12     | 13                  | 14 | 15   | 16   | 17   | 18   | 19 | 20 | 21 | 22 | 23 |    |
| 1           |       | F2 | F3 | F1 | F2 | L2 |      | C3             | C3               |         |           | C1        |        |                     |    | C2   |      | C2   | C2   | F2 |    | F5 | F3 | F2 |    |
| 2           | F2    | F2 | F4 | F3 | F2 | L2 | C3   | C2             | C2               | C1      |           |           | C1     |                     | H2 | C2   | C2   | C3   | C3   | F3 | F5 | F2 | F4 |    |    |
| 3           |       |    |    |    |    | C1 | C2   | C2             | C2               | C3      | C2        | C2        | C4     |                     | H1 | C2   | C2   | C3   | C2   | F2 | F2 | F2 | F5 | F2 |    |
| 4           | F4    | F2 | F2 | F2 | F2 | L1 | C4   | C5             | C3               | C2      | C2        | C2        | C2     | C3                  | C2 | C2   |      |      |      |    |    |    | F2 |    |    |
| 5           |       | K1 |    | F6 | F2 | C3 | C3   | C2             | C3               | C1      | C2        | L2        | L3     | L2                  |    |      |      | C2   | C3   | F2 | F2 | F3 | F3 | F1 |    |
| 6           | F2    | F1 | F2 | F2 | F5 | C6 | C5   | C3             | C2               | L3      | C2        |           |        |                     | H2 | C1   |      |      |      |    | F3 | F6 | F3 | F4 |    |
| 7           | F1    | F2 |    |    |    | C2 | C3   | C2             | C2               | C1      | L2        | L2        | L1     |                     |    | L1   | C1   |      |      |    | F1 | F2 |    |    |    |
| 8           | F3    | F2 | F2 | F2 | F5 | L2 | C5   | C3             | C2               | C2      | C1        | C1        |        |                     | L3 | L2   | CL52 | CL42 | CL42 | F1 | F2 | F2 | F1 |    |    |
| 9           | F2    | F2 | F2 | F2 | F2 | C1 | H2   | C2             | C3               | C2      | C2        | C1        | C1     | C1                  | L1 | C2   | L3   | C4   | C6   | F3 | F3 | F2 | F2 | F2 |    |
| 10          | F2    | F3 |    | F1 |    |    | C2   | C3             | C2               | C2      | C1        | C1        | C1     |                     | L1 |      | L3   | L4   | L4   | F2 | F6 | F1 |    |    |    |
| 11          |       |    | F1 |    | F1 | C1 | C2   | C2             | C2               | C1      |           |           |        |                     |    | HL22 | C2   | C4   | C3   | F2 | F1 | F2 | F2 | F2 |    |
| 12          | F2    | F4 | F3 | F3 | F3 | C3 | C3   | C2             | C2               |         |           |           |        |                     |    | C2   | C2   | C4   | C4   | F3 | F2 | F3 | F2 | F3 |    |
| 13          | F2    | F2 | F2 | F2 | F1 |    | C2   | C5             | C3               | C3      | C3        | L2        | L2     |                     | L3 | L2   | L2   | C2   | C3   | F2 | F5 | F3 | F2 | F2 |    |
| 14          |       | F2 |    |    |    |    |      | H1             | L2               | CL12    | L2        | L1        | L1     | L2                  |    |      | HL13 | CL33 | CL23 | F1 | F3 | F2 | F3 | F3 |    |
| 15          | F2    | F2 | F2 | F2 | F2 | C1 | C2   | C2             | C2               | C2      |           |           |        |                     |    |      | C2   | C2   | C1   |    | F1 |    |    | F2 |    |
| 16          | F1    |    |    |    |    |    |      |                |                  | H1      | C1        |           |        |                     | C2 | L2   | L2   | C2   | L2   |    | F2 | F1 |    |    |    |
| 17          |       |    |    |    |    | C2 | C2   | C2             | C2               | C1      |           |           |        | C1                  |    |      |      |      |      |    | F2 | F1 | F2 |    |    |
| 18          |       |    |    |    |    |    |      |                | C1               | C2      |           | C1        | C1     |                     |    |      |      |      |      |    | F2 | F2 | F2 | F1 | F1 |
| 19          | F1    | F1 |    |    | F1 | L2 | H2   |                | C1               |         |           |           |        |                     |    |      |      |      | H1   | L1 |    |    |    | F2 |    |
| 20          | F2    |    |    | F3 | F5 | C6 | C7   | C2             | C2               | C4      | C3        | L2        | L2     | L2                  | L2 | L2   | L3   | L3   | L4   | L4 | F4 | F1 | F1 | F2 |    |
| 21          | F2    | F2 | F3 |    |    | H2 | CL11 | C3             | C1               | C2      | C4        | C2        | C1     | C2                  |    | L1   | CL11 | C3   | F2   | F2 | F5 | F4 | F3 |    |    |
| 22          | F3    | F2 | F2 | F2 | F1 |    | C2   | C2             | C2               | C2      | C1        |           |        | L2                  | L2 | C1   |      | L1   | C2   | F4 | F5 | F3 | F6 | F4 |    |
| 23          | F4    | F4 | F2 |    | F1 | C2 | C3   | C2             | C3               | C2      | C2        | C2        | C2     | C4                  | L2 | C3   |      | C3   | C7   | F3 | F2 | F3 | F3 | F5 |    |
| 24          | F4    | F3 | F6 |    | F2 |    |      | H1             | C2               | C3      |           | L2        |        |                     | C1 | C2   |      | L2   | L2   | F2 | F4 | F2 | F3 | F2 |    |
| 25          |       |    |    |    |    | L1 | C2   | C2             | C3               | H1      |           |           |        |                     |    |      |      |      |      |    | F1 | F1 | F1 | F1 |    |
| 26          |       |    |    |    |    |    |      | L2             |                  |         |           |           |        |                     |    | C1   | C1   | L2   | L2   | L1 | F1 | F1 | F2 | F2 |    |
| 27          |       |    |    |    | F2 | L2 | L1   | L2             |                  |         |           |           |        |                     |    |      |      | C2   | C1   |    |    | F1 |    |    |    |
| 28          |       |    |    | F1 |    |    |      | H1             | H1               | H1      | C1        |           |        |                     |    | C1   |      |      |      | C3 | F3 | F2 | F2 | F2 |    |
| 29          |       |    |    |    |    | L3 | C2   | H2             | C2               | C2      | C2        | C1        | C2     | C1                  | C1 |      |      |      | H2   | C3 | F2 | F2 | F2 | F6 |    |
| 30          | F2    | F3 | F2 | F1 |    |    | H2   |                | C2               | CL31    | C1        | C1        | C1     | C3                  | C2 | H1   | H2   | C5   | C1   | F2 | F3 | F3 | F2 | F2 |    |
| 31          |       |    |    |    |    |    |      |                |                  |         |           |           |        |                     |    |      |      |      |      |    |    |    |    |    |    |
|             | 00    | 01 | 02 | 03 | 04 | 05 | 06   | 07             | 08               | 09      | 10        | 11        | 12     | 13                  | 14 | 15   | 16   | 17   | 18   | 19 | 20 | 21 | 22 | 23 |    |
| CNT         |       |    |    |    |    |    |      |                |                  |         |           |           |        |                     |    |      |      |      |      |    |    |    |    |    |    |
| MED         |       |    |    |    |    |    |      |                |                  |         |           |           |        |                     |    |      |      |      |      |    |    |    |    |    |    |
| UQ          |       |    |    |    |    |    |      |                |                  |         |           |           |        |                     |    |      |      |      |      |    |    |    |    |    |    |
| LQ          |       |    |    |    |    |    |      |                |                  |         |           |           |        |                     |    |      |      |      |      |    |    |    |    |    |    |

SEP. 1984

TYPES OF ES



# IONOSPHERIC DATA

SEP. 1984

FXI (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | OKUBUNJI TOKYO |         |         | Lat.    | 35 42.4 N |         | Long |    | 139 29.3 E |    | Sweep 1 MHz to 20 MHz in 20sec in automatic operation |    |    |    |    |    |    |    |         |         |         |         |         |    |
|---------|-----|----------------|---------|---------|---------|-----------|---------|------|----|------------|----|---|----|----|----|----|----|----|----|---------|---------|---------|---------|---------|----|
| Hour    | Day | 00             | 01      | 02      | 03      | 04        | 05      | 06   | 07 | 08         | 09 | 10  | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18      | 19      | 20      | 21      | 22      | 23 |
| 1       |     | S<br>40        | X<br>38 | S<br>38 | X<br>39 | X<br>40   | S<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>70 | X<br>54 | X<br>48 | S<br>48 | X<br>47 |    |
| 2       |     | X<br>49        | X<br>47 | X<br>46 | X<br>44 | X<br>42   | X<br>44 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>74 | S<br>46 | X<br>45 | X<br>44 | S<br>43 |    |
| 3       |     | S<br>42        | X<br>41 | X<br>41 | X<br>46 | X<br>46   | X<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>79 | X<br>59 | X<br>48 | S<br>45 | S       |    |
| 4       |     | S<br>50        | S<br>45 | S<br>45 | S<br>43 | X<br>42   | S<br>41 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>78 | S<br>77 | S<br>80 | S<br>75 | S<br>73 |    |
| 5       |     | X<br>64        | X<br>53 | X<br>62 | S<br>56 | X<br>54   | S<br>56 | 50   | 49 | 50         |    |   |    |    |    |    |    |    |    | X<br>48 | A       | S<br>45 | X<br>44 | A       |    |
| 6       |     | S<br>42        | S<br>38 | S<br>38 | S<br>36 | S<br>34   | X<br>37 |      |    |            |    |   |    |    |    |    |    |    |    | C       | C       | C       | C       | C       |    |
| 7       |     | C              | C       | C       | C       | C         | C       |      |    |            |    |   |    |    |    |    |    |    |    | S<br>82 | S<br>81 | S<br>70 | S<br>54 | S<br>51 |    |
| 8       |     | S<br>51        | X<br>50 | X<br>49 | X<br>46 | X<br>45   | S<br>46 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>83 | S       | S<br>81 | S<br>70 | S<br>52 |    |
| 9       |     | X<br>46        | S<br>44 | S       | S<br>44 | X<br>45   | X<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>86 | X<br>71 | X<br>72 | S<br>62 | A<br>5  |    |
| 10      |     | S<br>50        | S<br>41 | X<br>41 | X<br>41 | X<br>39   | X<br>38 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>76 | S<br>85 | S<br>85 | S<br>59 | X<br>47 |    |
| 11      |     | S<br>47        | X<br>45 | X<br>46 | X<br>46 | X<br>45   | X<br>50 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>94 | S<br>81 | X<br>56 | X<br>56 | S<br>57 |    |
| 12      |     | X<br>49        | S<br>48 | X<br>51 | X<br>46 | X<br>46   | S<br>46 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>82 | X<br>69 | S<br>60 | X<br>56 | S<br>60 |    |
| 13      |     | S<br>52        | S<br>49 | X<br>51 | X<br>45 | X<br>46   | S<br>43 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>65 | X<br>62 | S<br>61 | S       | X<br>49 |    |
| 14      |     | S<br>42        | X<br>42 | S<br>41 | S<br>44 | X<br>42   | X<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>80 | S<br>69 | S<br>55 | S<br>40 | S<br>43 |    |
| 15      |     | S<br>41        | X<br>43 | X<br>43 | X<br>41 | X<br>41   | S<br>41 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>77 | X<br>59 | X<br>48 | X<br>47 | X<br>46 |    |
| 16      |     | S<br>45        | X<br>39 | X<br>39 | X<br>41 | X<br>38   | X<br>41 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>77 | X<br>71 | X<br>55 | X<br>56 | X<br>51 |    |
| 17      |     | X<br>49        | X<br>49 | X<br>47 | X<br>46 | X<br>41   | X<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>78 | S<br>75 | X<br>57 | X<br>49 | X<br>47 |    |
| 18      |     | X<br>46        | X<br>45 | X<br>44 | X<br>42 | X<br>39   | S<br>39 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>87 | S<br>80 | X<br>46 | X<br>45 | S<br>45 |    |
| 19      |     | S<br>46        | S<br>45 | X<br>45 | X<br>44 | X<br>40   | X<br>39 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>98 | S<br>79 | X<br>58 | X<br>57 | X<br>56 |    |
| 20      |     | S<br>51        | S<br>55 | S<br>49 | X<br>42 | S<br>39   | S       |      |    |            |    |   |    |    |    |    |    |    |    | C       | S<br>89 | X<br>56 | X<br>44 | S<br>41 |    |
| 21      |     | X<br>40        | S<br>40 | X<br>39 | X<br>38 | X<br>40   | X<br>37 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>74 | S<br>71 | A       | S       | A       |    |
| 22      |     | S<br>46        | X<br>45 | X<br>44 | S<br>40 | X<br>40   | S<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>80 | X<br>63 | X<br>48 | X<br>43 | X<br>39 |    |
| 23      |     | X<br>45        | S<br>41 | X<br>41 | X<br>39 | S<br>36   | X<br>38 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>86 | S<br>59 | A       | S<br>52 | S<br>50 |    |
| 24      |     | X<br>40        | S<br>39 | S       | A       | X<br>43   | X<br>54 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>63 | X<br>63 | X<br>46 | X<br>42 | A<br>34 |    |
| 25      |     | X<br>35        | X<br>34 | X<br>33 | S<br>30 | X<br>34   | X<br>35 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>71 | X<br>69 | X<br>51 | X<br>42 | X<br>41 |    |
| 26      |     | X<br>40        | X<br>41 | X<br>39 | X<br>40 | X<br>33   | X<br>34 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>71 | X<br>57 | X<br>50 | X<br>49 | X<br>46 |    |
| 27      |     | X<br>46        | X<br>46 | X<br>38 | X<br>29 | X<br>31   | X<br>33 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>71 | X<br>58 | X<br>51 | X<br>49 | X<br>50 |    |
| 28      |     | X<br>46        | X<br>46 | X<br>44 | X<br>43 | X<br>34   | X<br>34 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>72 | X<br>39 | A       | S<br>37 | S<br>38 |    |
| 29      |     | S<br>38        | X<br>36 | X<br>37 | X<br>37 | X<br>34   | X<br>32 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>58 | X<br>51 | X<br>46 | X<br>47 | X<br>46 |    |
| 30      |     | S<br>46        | X<br>45 | X<br>43 | X<br>41 | S<br>38   | X<br>40 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>58 | X<br>54 | X<br>51 | X<br>40 | X<br>40 |    |
| 31      |     |                |         |         |         |           |         |      |    |            |    |   |    |    |    |    |    |    |    |         |         |         |         |         |    |
| CNT     |     | 29             | 29      | 27      | 28      | 29        | 28      | 1    | 1  | 1          |    |   |    |    |    |    |    |    |    | 22      | 28      | 25      | 26      | 25      |    |
| MED     |     | S<br>46        | X<br>45 | X<br>43 | X<br>42 | X<br>40   | X<br>40 | 50   | 49 | 50         |    |   |    |    |    |    |    |    |    | X<br>77 | X<br>70 | X<br>55 | X<br>48 | X<br>47 |    |
| UQ      |     | X<br>49        | X<br>46 | X<br>46 | X<br>44 | X<br>43   | X<br>42 |      |    |            |    |   |    |    |    |    |    |    |    | S<br>83 | S<br>78 | S<br>60 | S<br>56 | X<br>50 |    |
| LQ      |     | S<br>42        | X<br>41 | X<br>39 | X<br>40 | X<br>38   | X<br>38 |      |    |            |    |   |    |    |    |    |    |    |    | X<br>71 | X<br>59 | X<br>50 | X<br>45 | X<br>44 |    |

SEP. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

SEP. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station TOKUBUNJI TOKYO Lat. 35 42.4 N Long. 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

| Hour<br>Day | 00      | 01      | 02      | 03      | 04      | 05      | 06      | 07      | 08      | 09      | 10      | 11 | 12      | 13      | 14      | 15 | 16      | 17      | 18      | 19      | 20      | 21      | 22      | 23      |         |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----|---------|---------|---------|----|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1           | S<br>34 | F<br>32 | S<br>33 | S<br>34 | S<br>34 | 46      | H<br>54 | 56      | 60      | 58      | 60      | 60 | 55      | 62      | 70      | 63 | 57      | 58      | S<br>64 | 48      | S<br>42 | S<br>42 | S<br>41 |         |         |
| 2           | S<br>43 | 41      | 40      | 38      | 36      | 38      | 54      | 54      | 60      | 65      | 63      | 64 | 64      | 62      | 58      | 69 | J<br>75 | S<br>80 | S<br>74 | S<br>68 | S<br>40 | 39      | 38      | S<br>37 |         |
| 3           | S<br>36 | 35      | 35      | J<br>40 | S<br>40 | 34      | S<br>47 | 56      | 55      | 61      | 65      | 67 | 61      | 55      | 62      | 66 | 70      | S<br>74 | S<br>70 | S<br>73 | 53      | S<br>42 | S<br>39 | S       |         |
| 4           | S<br>44 | S<br>39 | S<br>39 | S<br>37 | 36      | S<br>35 | 55      | S<br>74 | J<br>77 | S<br>73 | 67      | 68 | 68      | 69      | 70      | 70 | S<br>80 | 83      | S<br>79 | S<br>72 | 71      | S<br>74 | 69      | 67      |         |
| 5           | 58      | 47      | 56      | J<br>50 | S<br>48 | S<br>50 | F<br>43 | F<br>44 | A       | 48      | A       | 47 | 50      | 50      | R<br>42 | 43 | 53      | 50      | S<br>42 | A       | 39      | 38      | A       |         |         |
| 6           | S<br>36 | S<br>32 | S<br>32 | 30      | S<br>28 | 31      | 55      | 59      | 57      | A       | 69      | 69 | 70      | 66      | 66      | 61 | S<br>63 | 62      | 58      | C       | C       | C       | C       | C       |         |
| 7           | C       | C       | C       | C       | C       | C       | C       | C       | C       | 62      | 58      | 57 | 63      | 63      | 66      | 65 | 64      | 65      | 66      | S<br>76 | S<br>75 | S<br>64 | S<br>48 | S<br>45 |         |
| 8           | S<br>45 | 44      | S<br>43 | S<br>40 | 39      | 40      | 63      | S<br>75 | J<br>73 | S<br>63 | 60      | 62 | 70      | A       | 69      | 68 | 69      | 69      | S<br>77 | I<br>78 | S<br>75 | S<br>64 | F       | S       |         |
| 9           | F       | S<br>38 | I<br>36 | S<br>38 | F       | F       | 65      | 60      | 62      | 69      | 68      | 66 | 71      | 62      | 63      | 68 | 73      | S<br>78 | S<br>80 | 65      | 66      | S<br>56 | A       | I<br>45 |         |
| 10          | S<br>44 | S<br>35 | 35      | 35      | 33      | 32      | 61      | 84      | S<br>79 | 58      | 64      | 69 | 76      | 66      | 68      | 68 | 69      | 70      | 70      | J<br>79 | J<br>79 | S<br>53 | 41      | 40      |         |
| 11          | S<br>41 | 39      | 40      | 40      | 39      | 44      | S<br>66 | S<br>62 | 60      | 62      | 69      | 60 | 67      | 81      | 88      | 85 | 84      | A       | S<br>88 | S<br>75 | 50      | 50      | 51      | 50      |         |
| 12          | 43      | 42      | 45      | 40      | 40      | S<br>40 | 55      | 58      | 68      | S<br>75 | 62      | 68 | 70      | 70      | 67      | 68 | A       | S<br>69 | S<br>76 | 63      | 54      | 50      | F       | S       |         |
| 13          | F       | S<br>43 | 45      | F       | F       | 37      | 53      | 67      | 65      | 70      | J<br>75 | 87 | 69      | 69      | 72      | 64 | 59      | 58      | 59      | 56      | S<br>55 | I<br>50 | I<br>48 | S<br>43 |         |
| 14          | S<br>36 | 36      | S<br>35 | S<br>38 | 36      | S<br>34 | 48      | 54      | 58      | S<br>64 | 67      | 63 | 67      | 64      | 64      | 63 | 63      | 64      | S<br>74 | S<br>63 | J<br>49 | I<br>38 | S<br>34 | S<br>37 |         |
| 15          | S<br>35 | 37      | 37      | 35      | 35      | S<br>35 | 50      | 65      | 89      | 83      | 69      | 69 | 71      | 72      | 66      | 63 | 65      | 70      | 71      | 53      | 42      | S<br>41 | 40      | S<br>43 |         |
| 16          | S<br>39 | 33      | 33      | 35      | 32      | 35      | 48      | 60      | 59      | 59      | 62      | 73 | S<br>74 | 74      | 72      | 74 | 74      | 67      | 71      | 65      | 49      | 50      | S<br>45 | 44      |         |
| 17          | 43      | S<br>43 | 41      | 40      | 35      | 34      | 49      | 66      | J<br>78 | S<br>69 | 70      | 71 | 73      | 67      | 65      | 64 | S<br>63 | 65      | S<br>72 | 69      | 51      | 43      | S<br>41 | S<br>41 |         |
| 18          | 40      | 39      | 38      | 36      | 33      | 33      | 52      | 57      | S<br>64 | 62      | 72      | 64 | 61      | R<br>62 | 58      | 58 | 64      | S<br>78 | S<br>81 | S<br>74 | 40      | 39      | 41      | 39      |         |
| 19          | S<br>40 | 39      | 39      | 38      | 34      | 33      | 48      | 62      | S<br>63 | 63      | 66      | 60 | 59      | 55      | 61      | 64 | 74      | 84      | S<br>92 | S<br>73 | S<br>52 | S<br>51 | 50      | 49      |         |
| 20          | S<br>45 | S<br>49 | S<br>45 | 36      | S<br>33 | A       | A       | 57      | S<br>75 | 60      | 75      | 70 | 63      | 65      | 64      | 65 | 64      | S<br>73 | I<br>84 | C<br>83 | S<br>50 | 38      | S<br>35 | 35      |         |
| 21          | 34      | J<br>34 | 33      | 32      | S<br>34 | 31      | 51      | 64      | S<br>75 | S<br>73 | 61      | 60 | 57      | 75      | 75      | 61 | 58      | S<br>64 | S<br>68 | S<br>65 | A       | I<br>48 | A       | J<br>40 |         |
| 22          | U<br>40 | F       | F       | S<br>34 | S<br>34 | 45      | 50      | 58      | 70      | 61      | 59      | 63 | 71      | 59      | 58      | 61 | 71      | S<br>74 | J<br>74 | S<br>57 | 42      | 37      | 33      | S<br>35 |         |
| 23          | F       | S<br>35 | 35      | 33      | S<br>30 | 32      | 45      | 67      | 61      | 72      | A       | A  | A       | 64      | 84      | 96 | 83      | 85      | 80      | S<br>53 | A       | J<br>46 | F       | A       |         |
| 24          | S<br>34 | S<br>33 | I<br>35 | A       | 37      | S<br>48 | 43      | 43      | R<br>41 | 44      | 48      | 46 | 45      | 50      | 53      | 56 | 54      | A       | 57      | 57      | S<br>40 | 36      | A       | 28      |         |
| 25          | 29      | 28      | 27      | S<br>24 | F<br>28 | F<br>29 | 48      | 52      | 54      | 49      | 63      | 61 | 59      | 57      | 57      | 58 | 52      | 56      | 65      | S<br>63 | S<br>45 | 36      | S<br>36 | 35      |         |
| 26          | S<br>34 | 35      | 33      | 34      | 27      | 28      | 43      | 62      | S<br>79 | 64      | 65      | 68 | 59      | 65      | 62      | 56 | 57      | 68      | 65      | 51      | 44      | 43      | 40      | 40      |         |
| 27          | 40      | 40      | 32      | 23      | 25      | 27      | 48      | 62      | 85      | 73      | S<br>76 | 75 | 71      | 66      | 65      | 56 | 61      | 71      | 65      | S<br>52 | S<br>45 | S<br>43 | S<br>42 | J<br>44 |         |
| 28          | 40      | 40      | 38      | 37      | 28      | 28      | 46      | 62      | S<br>75 | S<br>75 | 70      | 75 | R<br>76 | J<br>76 | 61      | 62 | 67      | S<br>75 | S<br>99 | S<br>66 | 33      | A       | 31      | S<br>32 | S<br>31 |
| 29          | S<br>32 | 30      | 31      | 31      | 28      | 26      | 47      | 63      | 63      | 69      | 66      | 63 | 70      | 75      | 81      | 76 | 70      | U<br>67 | S<br>67 | S<br>52 | S<br>45 | 40      | 41      | 42      | 40      |
| 30          | 40      | 39      | 37      | 35      | 32      | 34      | S<br>53 | 54      | S<br>72 | 69      | 69      | 70 | 76      | 85      | 80      | 71 | S<br>79 | 67      | 52      | 48      | 45      | 34      | 34      | S<br>34 |         |
| 31          |         |         |         |         |         |         |         |         |         |         |         |    |         |         |         |    |         |         |         |         |         |         |         |         |         |
|             | 00      | 01      | 02      | 03      | 04      | 05      | 06      | 07      | 08      | 09      | 10      | 11 | 12      | 13      | 14      | 15 | 16      | 17      | 18      | 19      | 20      | 21      | 22      | 23      |         |
| CNT         | 26      | 27      | 28      | 27      | 27      | 27      | 27      | 29      | 29      | 28      | 29      | 28 | 29      | 29      | 30      | 30 | 29      | 28      | 30      | 29      | 25      | 29      | 23      | 24      |         |
| MED         | S<br>40 | 39      | 36      | 36      | 34      | 34      | 49      | 60      | 63      | 64      | 66      | 66 | 67      | 65      | 65      | 65 | 64      | 69      | 70      | S<br>64 | 49      | S<br>43 | S<br>41 | S<br>40 |         |
| UQ          | S<br>43 | 40      | 40      | S<br>38 | 36      | S<br>36 | 54      | 64      | S<br>75 | 71      | 69      | 70 | 71      | 70      | 70      | 69 | 74      | 76      | S<br>77 | S<br>73 | S<br>54 | S<br>50 | S<br>44 | S<br>44 |         |
| LQ          | S<br>35 | 35      | 33      | 34      | 31      | 32      | 47      | 54      | 58      | 62      | 62      | 60 | 61      | 62      | 62      | 61 | 61      | 64      | 65      | 53      | 44      | 39      | 37      | S<br>36 |         |

SEP. 1984

FOF2 (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FOF1 (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

| Station |     | ROKUBUNJI TOKYO |    |    |    |    |     |     | Lat. 35 42.4 N |                  | Long. 139 29.3 E |     | Sweep 1 MHz to 20 MHz in 20sec in automatic operation |                  |                  |     |     |                  |     |     |     |    |    |    |    |
|---------|-----|-----------------|----|----|----|----|-----|-----|----------------|------------------|------------------|-----|---|------------------|------------------|-----|-----|------------------|-----|-----|-----|----|----|----|----|
| Hour    | Day | 00              | 01 | 02 | 03 | 04 | 05  | 06  | 07             | 08               | 09               | 10  | 11  | 12               | 13               | 14  | 15  | 16               | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| 1       |     |                 |    |    |    |    |     |     |                | 420              | 450              | 460 | 450 <sup>H</sup>                                      | 450              | 440              | 440 | 430 | 400 <sup>L</sup> | A   | A   |     |    |    |    |    |
| 2       |     |                 |    |    |    |    |     |     | L              |                  | 440              | 460 | 450   | 470              | 450              | 460 | A   | A                | L   |     |     |    |    |    |    |
| 3       |     |                 |    |    |    |    |     |     |                |                  | 400 <sup>H</sup> | L   | 420   | 470 <sup>H</sup> | 460 <sup>H</sup> | 460 | L   | 460              | A   | A   | A   |    |    |    |    |
| 4       |     |                 |    |    |    |    |     |     | L              | A                | L                | A   | 450   | 480              | 480              | 480 | 470 | 480 <sup>U</sup> | A   | A   |     |    |    |    |    |
| 5       |     |                 |    |    |    |    |     |     |                |                  | 320              | 360 | 380   | A                | A                | A   | 420 | 420              | 420 | 400 | 390 |    |    |    |    |
| 6       |     |                 |    |    |    |    |     |     | A              | A                | A                | A   | U   | L                | A                | 470 | 450 | 460              | L   | L   |     |    |    |    |    |
| 7       |     |                 |    |    |    |    |     |     | C              | C                | C                | 430 | 450   | 470              | 470              | 460 | 450 | 430              | L   | L   |     |    |    |    |    |
| 8       |     |                 |    |    |    |    |     |     | A              | L                | A                | A   | 460   | 470              | 470              | A   | 460 | 450              | L   | A   |     |    |    |    |    |
| 9       |     |                 |    |    |    |    |     |     | L              | A                | L                | A   | 450   | 450              | 520 <sup>U</sup> | 460 | 450 | 470              | 440 | L   | L   |    |    |    |    |
| 10      |     |                 |    |    |    |    |     |     | L              | L                | L                | 440 | 460   | 480              | 470              | U   | 470 | 430              | 440 | U   | L   |    |    |    |    |
| 11      |     |                 |    |    |    |    |     |     | A              | L                | U                | L   | 450   | 460              | 450              | 470 | 460 | 450              | A   | A   | A   |    |    |    |    |
| 12      |     |                 |    |    |    |    |     |     |                | A                | 420              | 440 | 490   | 460              | 460              | 440 | L   | A                | A   |     |     |    |    |    |    |
| 13      |     |                 |    |    |    |    |     |     | L              | L                | A                | L   | A   | 460              | A                | A   | 410 | U                | L   | A   |     |    |    |    |    |
| 14      |     |                 |    |    |    |    |     |     | L              | L                | 410              | 450 | 450   | 440              | 440              | L   | 420 | L                | L   |     |     |    |    |    |    |
| 15      |     |                 |    |    |    |    |     |     | L              | 410              | 430              | 450 | 440   | 440              | 440              | 420 | 400 | L                | L   |     |     |    |    |    |    |
| 16      |     |                 |    |    |    |    |     |     | L              | U                | L                | 430 | 450   | 460              | 450              | 440 | 440 | 430              | L   |     |     |    |    |    |    |
| 17      |     |                 |    |    |    |    |     |     | L              | 410              | 430              | 450 | 470   | 450              | 440              | 440 | 410 | L                | A   |     |     |    |    |    |    |
| 18      |     |                 |    |    |    |    |     |     | 400            | U                | L                | 440 | 450   | 450              | 460              | 460 | L   | 420              | L   | L   |     |    |    |    |    |
| 19      |     |                 |    |    |    |    |     |     | L              | L                | 420              | 450 | 450   | 450              | 430              | 440 | 420 | A                | A   |     |     |    |    |    |    |
| 20      |     |                 |    |    |    |    |     |     | A              | A                | 420              | 440 | 460   | 470              | 430              | 440 | U   | L                | A   |     |     |    |    |    |    |
| 21      |     |                 |    |    |    |    |     |     | L              | L                | L                | 400 | 430   | 430              | 440              | U   | L   | L                | L   | A   |     |    |    |    |    |
| 22      |     |                 |    |    |    |    |     |     | A              | 400              | 420              | 450 | 450   | 450              | 430              | U   | L   | U                | L   | A   |     |    |    |    |    |
| 23      |     |                 |    |    |    |    |     |     | A              | 400              | A                | A   | A   | A                | A                | A   | 410 | A                | A   |     |     |    |    |    |    |
| 24      |     |                 |    |    |    |    |     |     | L              | 350 <sup>H</sup> | 370              | 390 | 410   | 420              | 410              | 450 | 410 | 400              | L   | A   |     |    |    |    |    |
| 25      |     |                 |    |    |    |    |     |     | L              | 400              | U                | L   | 420   | 440              | 440              | 430 | 440 | 410              | L   |     |     |    |    |    |    |
| 26      |     |                 |    |    |    |    |     |     | L              | 410              | 420              | 430 | 450   | 450              | 430              | 440 | L   |                  |     |     |     |    |    |    |    |
| 27      |     |                 |    |    |    |    |     |     | U              | L                | 420              | 430 | 460   | 440              | 450              | 450 | L   | L                | L   |     |     |    |    |    |    |
| 28      |     |                 |    |    |    |    |     |     | L              | 450              | 460              | 460 | 460   | 440              | 430              | 500 | U   | L                | A   |     |     |    |    |    |    |
| 29      |     |                 |    |    |    |    |     |     | L              | U                | L                | 430 | 440   | L                | 460              | 440 | 450 | L                | L   |     |     |    |    |    |    |
| 30      |     |                 |    |    |    |    |     |     | L              | 430              | L                | A   | 450   | U                | L                | A   | U   | L                | L   |     |     |    |    |    |    |
| 31      |     |                 |    |    |    |    |     |     |                |                  |                  |     |   |                  |                  |     |     |                  |     |     |     |    |    |    |    |
|         |     | 00              | 01 | 02 | 03 | 04 | 05  | 06  | 07             | 08               | 09               | 10  | 11  | 12               | 13               | 14  | 15  | 16               | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| CNT     |     |                 |    |    |    |    | 1   | 3   | 13             | 25               | 26               | 25  | 29  | 25               | 25               | 19  | 4   |                  |     |     |     |    |    |    |    |
| MED     |     |                 |    |    |    |    | 320 | 360 | 400            | 430              | 450              | 450 | 460   | 440              | 440              | 420 | 380 |                  |     |     |     |    |    |    |    |
| UQ      |     |                 |    |    |    |    | 380 | 410 | 440            | 460              | 470              | 470 | 450   | 460              | 430              | 395 |     |                  |     |     |     |    |    |    |    |
| LQ      |     |                 |    |    |    |    | 355 | 400 | 420            | 440              | 450              | 450 | 440   | 430              | 410              | U   | L   |                  |     |     |     |    |    |    |    |

SEP. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

SEP. 1984 F0E (0.01 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | ROKUBUNJI TOKYO |    |    | Lat. | 35 42.4 N |    |     | Long. | 139 29.3 E |     |     | Sweep 1 MHz to 20 MHz in 20 sec in automatic operation |     |     |     |     |     |     |     |    |    |    |    |    |
|---------|-----|-----------------|----|----|------|-----------|----|-----|-------|------------|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|
| Hour    | Day | 00              | 01 | 02 | 03   | 04        | 05 | 06  | 07    | 08         | 09  | 10  | 11   | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19 | 20 | 21 | 22 | 23 |
| 1       |     |                 |    |    |      |           |    | 180 | 250   | 290        |     | A   | A  | A   |     |     |     | 320 | 275 | 220 |    |    |    |    | B  |
| 2       |     |                 |    |    |      |           |    | A   | A     | A          |     | A   |  | A   |     |     |     |     |     | A   |    |    |    |    | B  |
| 3       |     |                 |    |    |      |           |    | A   | A     |            |     | A   | I R  |     |     |     |     |     |     |     |    |    |    |    | S  |
| 4       |     |                 |    |    |      |           |    | A   | A     | A          |     | A   | A  |     |     |     |     |     |     | A   |    |    |    |    | S  |
| 5       | S   | S               | S  |    |      |           |    | A   | A     | A          |     | A   | A  |     |     |     |     |     |     |     |    |    |    |    | S  |
| 6       |     |                 |    |    |      |           |    | A   | A     | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    | S  |
| 7       |     |                 |    |    |      |           |    | C   | C     | C          |     | A   | A  |     |     |     |     |     |     |     |    |    |    |    | B  |
| 8       |     |                 |    |    |      |           |    | A   | A     | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    |    |
| 9       |     |                 |    |    |      |           |    | A   | A     | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    |    |
| 10      |     |                 |    |    |      |           |    | A   |       | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    |    |
| 11      |     |                 |    |    |      |           |    | A   | A     | A          |     | A   | I R  |     |     |     |     |     |     |     |    |    |    |    | H  |
| 12      |     |                 |    |    |      |           |    | A   | A     | A          |     | A   | R  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 13      |     |                 |    |    |      |           |    | A   | A     | A          |     | A   | R  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 14      |     |                 |    |    |      |           |    | A   |       | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 15      |     |                 |    |    |      |           |    | A   | A     | A          |     | A   | R  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 16      |     |                 |    |    |      |           |    | 170 | 260   | 285        | 310 | 335 |  | A   |     |     |     |     |     |     |    |    |    |    | A  |
| 17      |     |                 |    |    |      |           |    | A   | A     | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 18      |     |                 |    |    |      |           |    | 185 | 260   |            | A   | A   |  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 19      |     |                 |    |    |      |           |    | 190 | 255   | 275        | 305 |     | A  | R   |     |     |     |     |     |     |    |    |    |    | H  |
| 20      |     |                 | S  | S  |      |           |    | 150 | 240   |            | A   | A   |  | R   |     |     |     |     |     |     |    |    |    |    | S  |
| 21      |     |                 |    |    |      |           |    | 170 | 240   | 280        |     | A   | A  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 22      |     |                 |    |    |      |           |    | S   | A     | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 23      |     |                 |    |    |      |           |    | S   | A     | A          |     | A   |  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 24      |     |                 |    |    |      |           |    | S   |       | A          |     | A   | R  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 25      |     |                 |    |    |      |           |    | A   | A     |            | A   |     |  |     |     |     |     |     |     |     |    |    |    |    | A  |
| 26      |     |                 |    |    |      |           |    | S   |       | 240        | 270 | 290 |  | R   |     |     |     |     |     |     |    |    |    |    | R  |
| 27      |     |                 |    |    |      |           |    | S   |       | 230        | 270 | 295 | 310  |     | R   |     |     |     |     |     |    |    |    |    | A  |
| 28      |     |                 |    |    |      |           |    | S   |       | 230        | A   | I R |  | R   |     |     |     |     |     |     |    |    |    |    | H  |
| 29      |     |                 |    |    |      |           |    | S   |       | A          |     | A   | H  |     |     |     |     |     |     |     |    |    |    |    | S  |
| 30      |     |                 |    |    |      |           |    |     |       | 170        | 240 | 275 | 295  |     | A   |     |     |     |     |     |    |    |    |    | S  |
| 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     |     |                 |    |    |      |           |    | 7   | 13    | 12         | 6   | 11  | 11   | 11  | 16  | 20  | 22  | 22  | 12  |     |    |    |    |    |    |
| MED     |     |                 |    |    |      |           |    | 170 | 240   | 275        | 298 | 325 | 335  | 340 | 335 | 310 | 290 | 252 | 202 |     |    |    |    |    |    |
| UQ      |     |                 |    |    |      |           |    | 182 | 250   | 282        | 305 | 338 | 342  | 342 | 342 | 325 | 300 | 265 | 220 |     |    |    |    |    |    |
| LQ      |     |                 |    |    |      |           |    | 170 | 240   | 270        | 295 | 310 | 320  | 330 | 322 | 300 | 280 | 250 | 192 |     |    |    |    |    |    |

IONOSPHERIC DATA

SEP. 1984

FOES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station  | KOKUBUNJI TOKYO                                  |        |        |        |        |        |        |        |        |        |        |        |                 |        |        |        |        |         |        |        |         |        |        |        |        |    |
|----------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------|--------|--------|--------|--------|---------|--------|--------|---------|--------|--------|--------|--------|----|
| Lat.     | 35 42.4 N  |        |        |        |        |        |        |        |        |        |        |        | Long 139 29.3 E |        |        |        |        |         |        |        |         |        |        |        |        |    |
| Sweep    | 1 MHz to 20 MHz in 20 sec in automatic operation |        |        |        |        |        |        |        |        |        |        |        |                 |        |        |        |        |         |        |        |         |        |        |        |        |    |
| Hour Day | 00   | 01     | 02     | 03     | 04     | 05     | 06     | 07     | 08     | 09     | 10     | 11     | 12              | 13     | 14     | 15     | 16     | 17      | 18     | 19     | 20      | 21     | 22     | 23     |        |    |
| 1        | 20   | J A 21 | J A 22 | J A 21 | J A 25 | 20     | 22     | 33     | J A 42 | J A 52 | 37     | J A 56 | J A 51          | J A 37 | 38     | 36     | J A 34 | J A 47  | J A 40 | 22     | 19      | J A 29 | 22     | J A 25 |        |    |
| 2        | J A 26   | J A 42 | 22     | J A 26 | J A 21 | J A 17 | J A 29 | 33     | J A 49 | 38     | 38     | 37     | 39              | 39     | 39     | J A 46 | J A 80 | J A 88  | J A 83 | J A 71 | J A 29  | J A 28 | J A 20 | 19     |        |    |
| 3        | 22   | J A 30 | 17     | 21     | 19     | 20     | 21     | 26     | G      | 35     | G 33   | 38     | 39              | G      | G      | J A 51 | J A 48 | J A 48  | 16     | J A 26 | 22      | J A 28 | J A 31 | J A 33 |        |    |
| 4        | J A 29   | J A 26 | J A 18 | 23     | 17     | 19     | J A 47 | J A 52 | J A 54 | J A 54 | J A 86 | 41     | J A 50          | 41     | J A 47 | 68     | 55     | J A 44  | J A 23 | 24     | J A 20  | 19     | E S 15 | 18     |        |    |
| 5        | E S 15   | E S 15 | E S 14 | J A 22 | J A 23 | J A 30 | J A 35 | 35     | J A 48 | 98     | 61     | 57     | 53              | 37     | G      | G      | 29     | 26      | 18     | J A 25 | J A 65  | J A 54 | J A 43 | J A 80 |        |    |
| 6        | J A 53   | J A 28 | J A 28 | J A 25 | J A 23 | J A 24 | J A 50 | 49     | J A 53 | J A 95 | J A 51 | J A 83 | J A 48          | 34     | 35     | 33     | 31     | G       | 19     | C      | C       | C      | C      | C      |        |    |
| 7        | C  | C      | C      | C      | C      | C      | C      | C      | C      | 39     | 36     | J A 48 | J A 46          | 29     | G      | G      | G      | 17      | 24     | J A 18 | J A 18  | 21     | 20     | 23     | E S 15 |    |
| 8        | J A 22   | J A 24 | J A 39 | J A 25 | J A 21 | 24     | J A 43 | J A 45 | J A 51 | 58     | 36     | 36     | 36              | J A 80 | 38     | 39     | 36     | J A 54  | J A 51 | J A 84 | J A 33  | J A 30 | J A 40 | J A 34 |        |    |
| 9        | J A 27   | 23     | J A 31 | 24     | 19     | E S 14 | J A 31 | 37     | J A 51 | J A 62 | J A 51 | J A 46 | J A 47          | J A 44 | J A 50 | J A 55 | J A 46 | J A 30  | J A 64 | J A 51 | J A 54  | J A 79 | J A 69 | J A 58 |        |    |
| 10       | J A 26   | E B 13 | E S 14 | E S 15 | 23     | 19     | 23     | 31     | J A 46 | J A 46 | J A 46 | 39     | 31              | 34     | G 24   | G 27   | J A 36 | J A 30  | J A 30 | J A 18 | 22      | J A 53 | J A 26 | 23     |        |    |
| 11       | 19   | 23     | 22     | J A 20 | 19     | E S 14 | 25     | 37     | 40     | J A 41 | 31     | 31     | G 29            | 36     | 34     | J A 55 | J A 51 | 90      | J A 58 | J A 30 | 36      | 24     | 21     | J A 27 |        |    |
| 12       | J A 27   | J A 26 | J A 20 | J A 18 | 23     | J A 25 | 39     | J A 52 | J A 41 | 39     | 34     | G 32   | G 33            | 41     | 35     | 40     | J A 75 | J A 105 | J A 26 | J A 38 | J A 68  | J A 30 | J A 29 | J A 28 |        |    |
| 13       | 18   | E S 14 | 19     | 23     | 20     | E S 14 | 21     | J A 36 | J A 42 | J A 66 | G 32   | 66     | 38              | J A 61 | J A 49 | G 27   | 30     | J A 46  | J A 64 | J A 66 | J A 54  | J A 39 | J A 56 | J A 29 |        |    |
| 14       | J A 29   | E S 14 | 27     | 23     | 19     | 19     | 18     | 29     | 34     | J A 34 | 35     | J A 46 | J A 45          | 36     | J A 49 | 39     | 34     | J A 30  | J A 24 | 60     | J A 55  | J A 55 | J A 52 | J A 30 |        |    |
| 15       | J A 30   | J A 21 | 20     | J A 20 | J A 19 | E S 15 | 23     | 28     | 32     | 33     | 29     | G 24   | G 29            | G 26   | G 21   | 31     | 32     | 29      | J A 29 | E S 14 | E S 15  | J A 24 | E S 15 | E S 15 |        |    |
| 16       | 19   | 19     | 19     | E S 15 | 16     | E S 15 | 20     | G      | 31     | 34     | 23     | 37     | 25              | J A 40 | 33     | 30     | G 22   | 24      | E S 15 | J A 25 | E S 15  | E S 15 | J A 19 | J A 21 |        |    |
| 17       | E S 15   | 20     | 18     | E S 14 | E S 15 | E S 14 | 23     | 31     | 36     | 37     | 36     | 34     | G 28            | G 31   | G 26   | 32     | G 23   | J A 40  | E S 15 | J A 22 | J A 20  | J A 20 | J A 20 | 23     |        |    |
| 18       | 19   | 19     | E S 14 | E S 15 | E S 14 | E S 15 | 23     | 28     | 33     | 33     | 33     | 34     | 36              | J A 43 | J A 34 | J A 36 | J A 36 | J A 23  | J A 30 | J A 21 | 24      | 18     | E S 16 | 20     |        |    |
| 19       | 18   | 21     | 17     | E S 15 | E S 14 | E S 15 | 24     | 27     | 31     | 32     | 35     | G 33   | G 33            | G 31   | 34     | J A 41 | J A 54 | J A 53  | J A 41 | J A 29 | E S 15  | E S 15 | E S 14 | J A 19 |        |    |
| 20       | J A 20   | 21     | E S 15 | 18     | J A 26 | J A 34 | J A 52 | J A 40 | J A 60 | 35     | J A 42 | G 31   | 36              | J A 43 | G 27   | J A 30 | 30     | 29      | C      | J A 20 | J A 24  | J A 20 | 24     | 19     |        |    |
| 21       | 22   | J A 19 | J A 17 | E S 14 | 21     | E S 14 | 20     | 28     | 31     | 33     | 43     | 39     | 38              | 37     | 34     | 36     | 33     | J A 37  | J A 41 | J A 30 | J A 84  | J A 37 | J A 53 | J A 56 |        |    |
| 22       | J A 31   | J A 28 | J A 20 | 21     | 19     | E S 14 | 24     | J A 40 | 36     | J A 46 | J A 55 | J A 50 | J A 48          | J A 52 | J A 33 | J A 30 | 31     | J A 60  | J A 52 | J A 32 | J A 25  | J A 29 | J A 21 | 20     |        |    |
| 23       | J A 19   | J A 20 | J A 19 | J A 21 | J A 19 | J A 19 | 35     | 33     | 40     | 51     | 170    | 66     | 119             | 56     | 61     | 25     | J A 57 | J A 53  | J A 47 | J A 94 | J A 112 | J A 86 | J A 42 | J A 70 |        |    |
| 24       | J A 27   | J A 20 | J A 33 | J A 44 | J A 16 | 19     | 23     | 26     | G      | 30     | 27     | G 36   | G 22            | G 23   | G 23   | 32     | J A 55 | 70      | J A 44 | J A 40 | J A 54  | J A 19 | J A 43 | J A 26 |        |    |
| 25       | 20   | 19     | 20     | E S 14 | E S 15 | E S 15 | 17     | 24     | G 25   | G 30   | G 22   | G 21   | G 22            | G 24   | G 20   | G 16   | G      | G       | E S 15 | J A 27 | 22      | J A 21 | E S 16 | E S 14 |        |    |
| 26       | E S 15   | 17     | 18     | E S 15 | E S 15 | E S 15 | 20     | G      | 28     | G 20   | G 23   | G      | G               | G      | G      | G      | G      | G       | 24     | 18     | J A 43  | 23     | J A 23 | J A 19 | J A 20 |    |
| 27       | 22   | 18     | E S 15 | E S 14 | J A 21 | J A 19 | 18     | G      | J A 18 | J A 29 | G      | G 22   | G 18            | G      | G      | 25     | 33     | G       | 31     | 27     | 20      | J A 20 | 22     | 19     | J A 17 | 19 |
| 28       | E S 15   | E S 14 | E S 15 | 16     | 18     | 18     | 17     | 29     | 36     | 32     | 28     | G 27   | G 21            | 36     | 36     | G      | J A 49 | 30      | 49     | J A 32 | J A 36  | J A 21 | J A 19 | 22     |        |    |
| 29       | J A 19   | 20     | E S 14 | 22     | 22     | 18     | 22     | 38     | J A 47 | 33     | 41     | 39     | 36              | 38     | 18     | G      | 28     | 25      | J A 26 | J A 21 | 22      | J A 24 | J A 35 | J A 26 |        |    |
| 30       | 23   | 21     | 21     | J A 21 | 19     | E S 15 | 23     | 26     | 32     | 38     | E A 54 | 39     | J A 38          | J A 54 | G      | 32     | 26     | 38      | J A 20 | J A 24 | J A 21  | J A 21 | J A 19 | J A 19 |        |    |
| 31       |  |        |        |        |        |        |        |        |        |        |        |        |                 |        |        |        |        |         |        |        |         |        |        |        |        |    |
|          | 00   | 01     | 02     | 03     | 04     | 05     | 06     | 07     | 08     | 09     | 10     | 11     | 12              | 13     | 14     | 15     | 16     | 17      | 18     | 19     | 20      | 21     | 22     | 23     |        |    |
| CNT      | 29   | 29     | 29     | 29     | 29     | 29     | 29     | 29     | 29     | 30     | 30     | 30     | 30              | 30     | 30     | 30     | 30     | 30      | 30     | 29     | 29      | 29     | 29     | 29     |        |    |
| MED      | 22   | 20     | 19     | 21     | 19     | 18     | 23     | 31     | 36     | 38     | 36     | 38     | 36              | 37     | 34     | 32     | 34     | J A 34  | J A 29 | J A 27 | J A 24  | J A 24 | J A 22 | J A 23 |        |    |
| UQ       | J A 27   | J A 23 | 22     | J A 23 | 21     | 19     | J A 31 | 37     | J A 47 | J A 51 | 44     | 46     | J A 46          | J A 43 | 38     | 39     | J A 49 | J A 53  | J A 47 | J A 40 | J A 54  | J A 30 | J A 40 | J A 29 |        |    |
| LQ       | 19   | 19     | 17     | E S 15 | 17     | E S 15 | 21     | 27     | 31     | 33     | 31     | 32     | G 29            | G 31   | G 23   | G 25   | 29     | 26      | 19     | J A 22 | 21      | J A 20 | J A 19 | J A 19 |        |    |

SEP. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

SEP. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | KOKUBUNJI TOKYO |    |    |    | Lat. | 35 42.4 N |    |    |    | Long. | 139 29.3 E |    |     |    | Sweep 1 MHz to 20 MHz in 20sec in automatic operation |    |    |    |     |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |   |   |    |
|-------------|-----------------|----|----|----|------|-----------|----|----|----|-------|------------|----|-----|----|---|----|----|----|-----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|---|---|----|
| Hour<br>Day | 00              | 01 | 02 | 03 | 04   | 05        | 06 | 07 | 08 | 09    | 10         | 11 | 12  | 13 | 14  | 15 | 16 | 17 | 18  | 19 | 20 | 21 | 22 | 23 |    |    |    |    |     |    |    |    |    |    |    |   |   |    |
| 1           | E               | 19 | 17 | E  | 21   | E         | 22 | 30 | 33 | 42    | 37         | 39 | 38  | 35 | 36  | 33 | 32 | 36 | 34  | E  | E  | 17 | E  | 19 |    |    |    |    |     |    |    |    |    |    |    |   |   |    |
| 2           | 20              | 23 | E  | 16 | 17   | E         | 22 | 29 | 33 | 37    | 36         | 36 | 37  | 36 | 36  | 43 | 51 | 26 | 29  | 30 | 22 | 22 | 15 | E  |    |    |    |    |     |    |    |    |    |    |    |   |   |    |
| 3           | E               | 19 | E  | E  | E    | E         | 21 | 26 | G  | 34    | G          | 37 | 39  | G  | G   | 43 | 43 | 37 | 15  | E  | E  | E  | 25 | 23 |    |    |    |    |     |    |    |    |    |    |    |   |   |    |
| 4           | 16              | E  | E  | E  | E    | E         | 34 | 32 | 43 | 39    | 46         | 38 | 40  | 40 | 40  | 44 | 47 | 41 | 15  | E  | E  | G  | E  | S  | G  |    |    |    |     |    |    |    |    |    |    |   |   |    |
| 5           | G               | G  | E  | S  | E    | 21        | 18 | 23 | 31 | 34    | A          | A  | 43  | A  | A   | 35 | 36 | G  | G   | 29 | 24 | 16 | 15 | A  | A  | 24 | 21 | A  | A   | 80 |    |    |    |    |    |   |   |    |
| 6           | 19              | 19 | 21 | 19 | 19   | E         | 40 | 39 | 51 | A     | A          | 95 | 41  | 47 | 37  | 33 | 35 | 32 | 29  | G  | 19 | C  | C  | C  | C  | C  |    |    |     |    |    |    |    |    |    |   |   |    |
| 7           | C               | C  | C  | C  | C    | C         | C  | C  | C  | C     | 38         | 35 | 40  | 39 | 28  | G  | G  | G  | 17  | 24 | 16 | E  | E  | E  | E  | E  | S  | 15 |     |    |    |    |    |    |    |   |   |    |
| 8           | 17              | 15 | 16 | 15 | 15   | E         | 31 | 31 | 45 | 50    | 36         | 35 | 35  | A  | A   | 80 | 37 | 37 | 32  | 54 | 45 | 64 | E  | 16 | E  | 21 |    |    |     |    |    |    |    |    |    |   |   |    |
| 9           | 20              | E  | E  | E  | E    | E         | S  | 14 | 28 | 35    | 43         | 40 | 39  | 38 | 36  | 36 | 35 | 36 | 33  | 25 | 47 | 32 | 23 | 41 | A  | A  | 69 | 44 |     |    |    |    |    |    |    |   |   |    |
| 10          | 18              | E  | B  | E  | S    | E         | S  | 14 | 20 | 28    | 37         | 40 | 40  | 39 | 29  | G  | G  | G  | 23  | 18 | 20 | E  | E  | 34 | 21 | E  |    |    |     |    |    |    |    |    |    |   |   |    |
| 11          | E               | E  | E  | E  | E    | E         | S  | 14 | 23 | 35    | 37         | 39 | 31  | 31 | G   | G  | G  | 29 | 36  | 34 | 53 | 47 | A  | A  | 90 | 54 | E  | E  | E   | E  | 17 |    |    |    |    |   |   |    |
| 12          | 22              | E  | E  | E  | 16   | 19        | 23 | 35 | 40 | 37    | 34         | 32 | G   | G  | 33  | 39 | 33 | 36 | A   | A  | 75 | 55 | 21 | 33 | 40 | 17 | E  | 18 |     |    |    |    |    |    |    |   |   |    |
| 13          | E               | E  | S  | E  | E    | E         | S  | 14 | 20 | 32    | 36         | 60 | 31  | 57 | 35  | 57 | 48 | 26 | G   | G  | 43 | 44 | 33 | 21 | 31 | 19 | 19 |    |     |    |    |    |    |    |    |   |   |    |
| 14          | 22              | E  | S  | 14 | 15   | 19        | E  | E  | 18 | 28    | 32         | 33 | 34  | 35 | 37  | 36 | 33 | 30 | 29  | 24 | 24 | 43 | 20 | 27 | 19 | 15 |    |    |     |    |    |    |    |    |    |   |   |    |
| 15          | 19              | 15 | E  | E  | E    | E         | S  | 15 | 22 | 26    | 30         | 33 | 29  | G  | G   | 29 | G  | G  | 21  | 30 | 29 | 27 | 25 | E  | S  | 14 | E  | S  | 15  | E  | S  | 15 |    |    |    |   |   |    |
| 16          | E               | E  | E  | E  | S    | E         | E  | S  | 15 | 20    | G          | 30 | 33  | 23 | 35  | G  | 24 | 37 | 32  | G  | G  | 21 | 21 | E  | S  | 15 | 19 | E  | S   | 15 | 15 | E  |    |    |    |   |   |    |
| 17          | E               | S  | 15 | E  | E    | E         | S  | 14 | E  | S     | 14         | 20 | 29  | 33 | 36  | 36 | 34 | 28 | G   | G  | 31 | 26 | 31 | G  | 40 | E  | S  | 15 | 19  | 18 | E  | E  | E  |    |    |   |   |    |
| 18          | E               | E  | E  | S  | E    | S         | E  | S  | 14 | 15    | 21         | 27 | 30  | 33 | 33  | 34 | 35 | 38 | 32  | 25 | 33 | G  | E  | 20 | E  | E  | E  | S  | 16  | E  |    |    |    |    |    |   |   |    |
| 19          | E               | E  | E  | E  | S    | E         | S  | 14 | 15 | 21    | 27         | 30 | 32  | 35 | 33  | G  | G  | 31 | 34  | 35 | 52 | 48 | 25 | 27 | E  | S  | 15 | E  | S   | 15 | E  | S  | 14 | 18 |    |   |   |    |
| 20          | 17              | E  | E  | S  | 15   | G         | 24 | A  | A  | 34    | A          | A  | 52  | 38 | 59  | 34 | 37 | 31 | G   | 35 | 37 | 27 | 30 | 28 | 28 | C  | 19 | 22 | 17  | 16 | E  |    |    |    |    |   |   |    |
| 21          | E               | 17 | E  | E  | S    | E         | E  | S  | 14 | 19    | 26         | 30 | 32  | 41 | 37  | 38 | 37 | 32 | 35  | 30 | 36 | 41 | 25 | A  | A  | 84 | E  | A  | A   | 53 | E  |    |    |    |    |   |   |    |
| 22          | E               | 21 | 17 | E  | E    | E         | S  | 14 | 22 | 34    | 34         | 39 | 43  | 38 | 37  | 33 | 31 | 28 | 29  | 47 | 30 | 23 | 17 | 17 | E  | E  |    |    |     |    |    |    |    |    |    |   |   |    |
| 23          | E               | 17 | 19 | 17 | 15   | 16        | 31 | 33 | 36 | 49    | A          | A  | 170 | A  | A   | 66 | A  | A  | 119 | 52 | 54 | 25 | 47 | 43 | 27 | 28 | A  | A  | 112 | E  | E  | A  | A  | 70 |    |   |   |    |
| 24          | 20              | 15 | 28 | A  | A    | 44        | 14 | E  | 22 | 25    | G          | 30 | 27  | 35 | 22  | G  | G  | 22 | G   | 30 | 29 | A  | A  | 70 | 30 | 30 | 28 | 17 | A   | A  | 43 | E  |    |    |    |   |   |    |
| 25          | E               | E  | E  | E  | S    | E         | S  | 14 | E  | S     | 15         | 17 | 24  | G  | 30  | G  | 21 | G  | 21  | G  | 24 | G  | 20 | G  | G  | G  | E  | S  | 15  | 18 | E  | E  | E  | S  | 16 | E | S | 14 |
| 26          | E               | S  | 15 | E  | E    | E         | S  | 15 | E  | S     | 15         | 20 | G   | 28 | 20  | G  | 23 | G  | G   | G  | G  | 26 | G  | 18 | G  | 23 | 24 | E  | 19  | E  | 20 | E  | 19 |    |    |   |   |    |
| 27          | E               | E  | E  | S  | E    | S         | 14 | 15 | E  | 18    | 18         | G  | 26  | G  | 21  | G  | 18 | G  | G   | 25 | 32 | G  | 28 | 20 | 18 | 15 | E  | E  | E   | E  |    |    |    |    |    |   |   |    |
| 28          | E               | S  | 15 | E  | S    | 14        | E  | S  | 15 | E     | E          | 17 | 27  | 32 | 31  | G  | G  | 28 | 26  | G  | 21 | 36 | 33 | G  | 43 | 30 | 46 | E  | A   | A  | 36 | E  | E  | E  |    |   |   |    |
| 29          | E               | E  | E  | S  | E    | E         | E  | E  | 21 | 26    | 35         | 33 | 41  | 38 | 35  | 37 | 18 | G  | G   | 28 | 23 | 20 | 17 | E  | 19 | 24 | 23 |    |     |    |    |    |    |    |    |   |   |    |
| 30          | E               | E  | E  | 19 | E    | E         | S  | 15 | 20 | G     | 32         | 37 | 44  | 38 | 36  | 54 | G  | G  | 32  | G  | 38 | 16 | E  | E  | E  | E  | 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              | 29 | 29 | 29 | 29   | 29        | 29 | 29 | 29 | 30    | 30         | 30 | 30  | 30 | 30  | 30 | 30 | 30 | 30  | 30 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29  | 29 | 29 | 29 | 29 | 29 | 29 |   |   |    |
| MED         |                 |    | E  | E  | E    | E         | S  | 14 | E  | E     | E          | S  | 14  | 21 | 28  | 33 | 36 | 36 | 36  | 35 | 36 | 32 | 30 | 29 | 29 | 21 | 19 | 15 | 16  | E  | E  | 15 | 15 |    |    |   |   |    |
| UQ          | 18              | 15 | 15 | E  | S    | 15        | 15 | E  | S  | 15    | 23         | 32 | 37  | 40 | 41  | 38 | 37 | 37 | 35  | 35 | 43 | 43 | 30 | 28 | 22 | 19 | 19 | 19 |     |    |    |    |    |    |    |   |   |    |
| LQ          | E               | E  | E  | E  | E    | E         | 20 | 26 | 30 | 33    | 31         | 32 | G   | G  | G   | G  | G  | G  | G   | G  | G  | G  | 23 | 24 | 16 | E  | E  | E  | E   | E  |    |    |    |    |    |   |   |    |

SEP. 1984

FBES (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FMIN (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station | KOKUBUNJI TOKYO     |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
|---------|---------------------|------|------|------|------|------|------|----|----|----|----|----|----|----|----|----|----|------|------|------|------|------|------|------|
| Lat.    | 35 42.4 N           |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
| Long    | 139 29.3 E          |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
| Sweep   | 1                   |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
| MHz to  | 20                  |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
| in      | 20                  |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
| sec in  | automatic operation |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
| Hour    | 00                  | 01   | 02   | 03   | 04   | 05   | 06   | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
| Day     | 00                  | 01   | 02   | 03   | 04   | 05   | 06   | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
| 1       | E 15                | E 15 | E 14 | E 14 | 13   | E 15 | E 14 | 14 | 14 | 14 | 19 | 15 | 20 | 16 | 15 | 16 | 13 | 14   | 14   | E 14 | E 14 | E 14 | E 15 | E 14 |
| 2       | E 14                | 13   | E 15 | E 14 | E 14 | E 15 | E 15 | 14 | 14 | 15 | 17 | 19 | 19 | 16 | 14 | 14 | 15 | 13   | 14   | E 15 | E 15 | 13   | E 14 | E 15 |
| 3       | E 15                | 13   | 13   | E 14 | E 14 | E 15 | 14   | 14 | 14 | 15 | 14 | 19 | 21 | 19 | 16 | 16 | 14 | 14   | E 14 | E 14 | E 14 | E 15 | E 15 | E 15 |
| 4       | E 15                | E 14 | E 14 | E 15 | E 14 | E 14 | 13   | 14 | 14 | 17 | 20 | 16 | 15 | 20 | 17 | 15 | 13 | 13   | E 14 | E 15 | E 15 | E 15 | E 15 | E 15 |
| 5       | E 15                | E 15 | E 14 | E 15 | 13   | 13   | 14   | 14 | 14 | 14 | 15 | 15 | 17 | 19 | 16 | 14 | 15 | 14   | 13   | 13   | E 15 | E 14 | E 15 | E 14 |
| 6       | E 14                | E 14 | E 15 | E 14 | E 14 | E 15 | 13   | 14 | 14 | 15 | 15 | 19 | 19 | 20 | 16 | 15 | 14 | 13   | E 14 | C    | C    | C    | C    | C    |
| 7       | C                   | C    | C    | C    | C    | C    | C    | C  | C  | 14 | 18 | 19 | 16 | 15 | 15 | 14 | 13 | 13   | 13   | E 14 | E 14 | E 15 | E 15 | E 15 |
| 8       | E 15                | 13   | E 14 | E 14 | E 14 | E 15 | 13   | 13 | 15 | 16 | 19 | 17 | 19 | 15 | 16 | 14 | 13 | 13   | 13   | E 15 | E 15 | E 14 | E 15 | 13   |
| 9       | E 14                | 13   | E 14 | E 14 | E 14 | E 14 | 13   | 14 | 15 | 19 | 19 | 17 | 19 | 18 | 19 | 14 | 14 | 13   | 13   | E 14 | E 14 | E 15 | E 15 | E 14 |
| 10      | E 14                | 13   | E 14 | E 15 | E 14 | E 14 | 13   | 13 | 14 | 14 | 16 | 20 | 16 | 15 | 19 | 16 | 13 | 13   | 13   | E 15 | E 15 | E 16 | E 14 | E 15 |
| 11      | E 15                | 13   | 13   | E 14 | 13   | E 14 | 14   | 14 | 14 | 14 | 19 | 19 | 19 | 15 | 15 | 14 | 14 | 13   | E 15 | E 15 | E 15 | E 14 | E 15 | E 15 |
| 12      | E 15                | E 15 | E 15 | 13   | 13   | 13   | 13   | 13 | 14 | 15 | 16 | 16 | 20 | 19 | 16 | 19 | 15 | 13   | 13   | E 15 | E 14 | E 15 | E 15 | E 15 |
| 13      | E 14                | E 14 | E 14 | E 14 | E 14 | E 14 | E 15 | 14 | 15 | 15 | 20 | 17 | 16 | 15 | 14 | 18 | 15 | 15   | E 14 | E 15 | E 14 | E 14 | E 15 | E 14 |
| 14      | E 15                | E 14 | E 14 | E 15 | E 15 | E 15 | 15   | 14 | 14 | 15 | 16 | 16 | 20 | 19 | 16 | 14 | 13 | 13   | E 14 | E 15 | E 15 | E 14 | E 15 | E 14 |
| 15      | 13                  | 13   | E 14 | E 14 | E 14 | E 15 | 13   | 15 | 14 | 16 | 15 | 16 | 17 | 16 | 14 | 15 | 14 | 13   | E 15 | E 14 | E 15 | E 14 | E 15 | E 15 |
| 16      | E 15                | 13   | E 15 | E 15 | E 14 | E 15 | 13   | 14 | 14 | 14 | 16 | 20 | 16 | 15 | 14 | 14 | 14 | 14   | E 15 | E 14 | E 15 | E 15 | E 14 | E 15 |
| 17      | E 15                | E 15 | E 15 | E 14 | E 15 | E 14 | 14   | 14 | 15 | 14 | 14 | 14 | 16 | 20 | 16 | 15 | 14 | 13   | E 15 | E 14 | E 14 | E 15 | E 15 | E 15 |
| 18      | E 15                | 13   | E 14 | E 15 | E 14 | E 15 | 13   | 14 | 14 | 16 | 17 | 15 | 14 | 16 | 14 | 14 | 14 | 14   | E 15 | E 14 | E 15 | E 15 | E 16 | E 15 |
| 19      | E 15                | E 14 | E 14 | E 15 | E 14 | E 15 | E 14 | 14 | 14 | 14 | 14 | 15 | 14 | 14 | 15 | 15 | 15 | 13   | 13   | E 14 | E 15 | E 15 | E 14 | E 15 |
| 20      | E 14                | E 15 | E 15 | E 15 | E 15 | E 14 | 13   | 14 | 13 | 15 | 19 | 15 | 19 | 14 | 19 | 14 | 13 | 14   | C    | E 15 | E 14 | E 14 | E 14 | E 14 |
| 21      | E 16                | E 15 | E 15 | E 14 | E 15 | E 14 | E 15 | 13 | 15 | 15 | 14 | 14 | 14 | 15 | 16 | 15 | 14 | 15   | E 14 | E 15 | E 15 | E 16 | E 16 | E 15 |
| 22      | E 16                | E 15 | 13   | E 15 | E 14 | E 14 | E 15 | 14 | 15 | 15 | 20 | 16 | 20 | 17 | 15 | 14 | 15 | 14   | 14   | E 14 | E 15 | E 16 | 13   | E 15 |
| 23      | E 15                | 13   | 13   | E 14 | E 14 | E 14 | E 15 | 15 | 15 | 20 | 20 | 20 | 20 | 15 | 15 | 14 | 14 | 13   | E 15 | E 15 | E 14 | E 15 | E 16 | E 15 |
| 24      | E 14                | 13   | 13   | 13   | 13   | E 15 | E 14 | 15 | 14 | 15 | 17 | 15 | 16 | 15 | 15 | 14 | 14 | 14   | E 14 | 13   | E 14 | 13   | E 15 | E 15 |
| 25      | E 14                | E 14 | E 14 | E 14 | E 15 | E 15 | E 15 | 15 | 14 | 15 | 16 | 15 | 18 | 15 | 14 | 14 | 15 | 13   | E 15 | E 14 | E 15 | E 14 | E 16 | E 14 |
| 26      | E 15                | E 14 | E 15 | E 15 | E 15 | E 15 | E 16 | 14 | 14 | 16 | 16 | 20 | 20 | 21 | 19 | 15 | 15 | 15   | E 15 | E 15 | E 15 | E 14 | E 15 | E 15 |
| 27      | E 15                | E 15 | E 15 | E 14 | 13   | E 15 | E 15 | 15 | 15 | 14 | 15 | 15 | 19 | 15 | 15 | 15 | 14 | E 14 | E 14 | 13   | E 15 | E 15 | E 15 | E 15 |
| 28      | E 15                | E 14 | E 15 | E 14 | E 14 | E 15 | E 15 | 15 | 15 | 15 | 15 | 19 | 16 | 15 | 14 | 15 | 15 | 14   | E 14 | 13   | E 15 | E 14 | E 15 | E 15 |
| 29      | E 15                | E 15 | E 14 | E 15 | E 14 | E 15 | E 14 | 15 | 14 | 17 | 17 | 20 | 15 | 14 | 15 | 15 | 14 | E 15 | E 14 | E 15 | E 15 | 13   | E 15 | E 15 |
| 30      | E 15                | E 14 | E 14 | E 15 | E 15 | E 15 | E 14 | 15 | 16 | 15 | 15 | 15 | 17 | 15 | 15 | 14 | 14 | E 15 | 13   | E 15 | E 16 | E 15 | E 15 | 13   |
| 31      |                     |      |      |      |      |      |      |    |    |    |    |    |    |    |    |    |    |      |      |      |      |      |      |      |
|         | 00                  | 01   | 02   | 03   | 04   | 05   | 06   | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
| CNT     | 29                  | 29   | 29   | 29   | 29   | 29   | 29   | 29 | 29 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30   | 29   | 29   | 29   | 29   | 29   | 29   |
| MED     | E 15                | E 14 | E 14 | E 14 | E 14 | E 15 | 14   | 14 | 14 | 15 | 16 | 16 | 18 | 15 | 15 | 14 | 14 | 14   | E 14 | E 15 | E 15 | E 15 | E 15 | E 15 |
| UQ      | E 15                | E 15 | E 15 | E 15 | E 14 | E 15 | E 15 | 15 | 15 | 16 | 19 | 19 | 19 | 19 | 16 | 15 | 15 | 14   | E 15 | E 15 | E 15 | E 15 | E 15 | E 15 |
| LQ      | E 14                | 13   | E 14 | E 14 | E 14 | E 14 | 13   | 14 | 14 | 14 | 15 | 15 | 16 | 15 | 15 | 14 | 14 | 13   | 13   | E 14 | E 14 | E 14 | E 15 | E 14 |

SEP. 1984

FMIN (0.1 MHz)

The Radio Research Laboratories, Japan

# IONOSPHERIC DATA

SEP. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station: **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long. **139 29.3 E** Sweep 1 MHz to 20 MHz in 20sec in automatic operation

| Hour<br>Day | 00  | 01  | 02  | 03  | 04  | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1           | S   | F   | S   | 290 | 310 | 310 | 355 | 325 | H   | 320 | 340 | 305 | 315 | 320 | 305 | 300 | 325 | 325 | 335 | 320 | 315 | S   | 310 | 295 | S   | 290 | 285 |     |
| 2           | S   | S   | S   | 300 | 305 | 305 | 345 | 330 | 305 | 330 | 315 | 330 | 325 | 330 | 310 | 315 | J   | S   | S   | S   | S   | S   | 300 | 290 | 285 | 285 |     |     |
| 3           | S   | S   | S   | J   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   | S   |     |     |
| 4           | S   | S   | S   | S   | 300 | 300 | 325 | 330 | J   | S   | 340 | 325 | 330 | 310 | 310 | 315 | 305 | 310 | 315 | S   | 320 | 295 | S   | 280 | 285 | 290 | 290 |     |
| 5           | S   | S   | S   | J   | S   | S   | F   | F   | F   | A   | 270 | A   | 270 | 285 | 310 | 295 | R   | 250 | 300 | 320 | 305 | A   | 275 | 270 | A   |     |     |     |
| 6           | S   | S   | S   | 310 | 315 | 295 | 320 | 345 | 330 | A   | 315 | 315 | 315 | 330 | 335 | 315 | S   | 315 | 330 | 305 | C   | C   | C   | C   | C   |     |     |     |
| 7           | C   | C   | C   | C   | C   | C   | C   | C   | C   | 335 | 340 | 310 | 320 | 320 | 315 | 320 | 325 | 320 | 310 | 315 | S   | 315 | S   | S   | 290 | 290 |     |     |
| 8           | S   | 300 | 300 | S   | 300 | 300 | 330 | 340 | J   | S   | 340 | 350 | 340 | 310 | 320 | A   | 320 | 320 | 320 | 310 | S   | I   | S   | S   | F   | S   |     |     |
| 9           | F   | S   | I   | S   | S   | F   | F   | 360 | 345 | 350 | 330 | 340 | 315 | 325 | 330 | 305 | 310 | 320 | S   | 315 | S   | 310 | 320 | 300 | A   | I   | S   |     |
| 10          | S   | S   | S   | 315 | 300 | 300 | 340 | 335 | S   | 350 | 340 | 315 | 315 | 320 | 325 | 315 | 305 | 320 | 310 | 310 | J   | S   | J   | S   | S   | 285 | 300 |     |
| 11          | S   | 290 | 300 | S   | 295 | 310 | 350 | 340 | S   | 355 | 340 | 340 | 320 | 305 | 295 | 310 | 310 | 320 | A   | 320 | S   | 325 | 290 | 285 | 305 | 320 |     |     |
| 12          | S   | 280 | 310 | 300 | S   | 290 | 340 | 335 | S   | 335 | 340 | 340 | 315 | 320 | 325 | 330 | 335 | A   | S   | S   | S   | S   | S   | 310 | F   | S   |     |     |
| 13          | F   | S   | 315 | F   | F   | 310 | 330 | 340 | S   | 330 | 335 | J   | R   | 325 | 330 | 330 | 320 | 335 | 345 | 340 | 330 | 335 | 335 | 315 | S   | I   | S   |     |
| 14          | S   | 285 | 290 | S   | 310 | 310 | 340 | 350 | 345 | 325 | 345 | 330 | 325 | 325 | 320 | 320 | 335 | 330 | 310 | S   | J   | S   | I   | S   | 290 | 295 |     |     |
| 15          | S   | 295 | 300 | 300 | 300 | 305 | 320 | 325 | 340 | 355 | 325 | 330 | 330 | 320 | 320 | 340 | 340 | 340 | 340 | 340 | 335 | 295 | 285 | 300 | 310 |     |     |     |
| 16          | S   | 300 | 290 | 305 | 305 | 330 | 345 | 360 | 350 | 340 | 335 | 330 | 325 | S   | 320 | 320 | 330 | 330 | 325 | 330 | 335 | 300 | 300 | 305 | 310 |     |     |     |
| 17          | 275 | 295 | 300 | 305 | 320 | 320 | 330 | 335 | J   | S   | 350 | 340 | 340 | 325 | 340 | 325 | 330 | 335 | S   | 340 | 335 | 330 | 340 | 330 | 305 | 285 | 295 |     |
| 18          | 295 | 305 | 310 | 320 | 320 | 335 | 355 | 340 | S   | 350 | 350 | 340 | 340 | 340 | 335 | R   | 320 | 325 | S   | 330 | S   | 335 | 340 | 320 | 300 | 280 | 290 |     |
| 19          | S   | 310 | 300 | 335 | 315 | 325 | 360 | 345 | S   | 365 | 335 | 345 | 340 | 345 | 335 | 315 | 310 | 320 | 320 | 340 | S   | 330 | 305 | 295 | S   | 285 | 285 |     |
| 20          | S   | S   | S   | 330 | 295 | A   | A   | 320 | S   | 330 | 310 | 340 | 330 | 310 | 330 | 330 | 335 | 330 | S   | I   | C   | S   | 340 | 360 | 325 | S   | 310 |     |
| 21          | S   | J   | S   | 295 | 305 | 300 | 340 | 330 | S   | 340 | 335 | 340 | 335 | 295 | 305 | 340 | 335 | 325 | S   | 330 | 330 | A   | I   | S   | A   | J   | S   |     |
| 22          | U   | S   | F   | F   | S   | 315 | 330 | 340 | 340 | 340 | 340 | 330 | 320 | 325 | 330 | 330 | 330 | S   | J   | S   | 340 | 315 | 305 | 285 | 295 |     |     |     |
| 23          | F   | S   | 310 | 315 | 285 | 300 | 330 | 345 | 320 | 330 | A   | A   | A   | 290 | 295 | 285 | 325 | 330 | 325 | U   | S   | A   | J   | S   | F   | A   |     |     |
| 24          | S   | S   | I   | S   | A   | 275 | 300 | 325 | 300 | 240 | R   | 240 | 275 | 295 | 275 | 310 | 330 | 320 | 325 | A   | 315 | 335 | 295 | 340 | A   | 285 |     |     |
| 25          | 295 | 300 | 315 | 285 | S   | 305 | 305 | 350 | 340 | 340 | 310 | 315 | 310 | 335 | 330 | 335 | 330 | 315 | 330 | 315 | S   | 330 | 325 | 280 | 290 | 310 |     |     |
| 26          | S   | 315 | 295 | 320 | 320 | 295 | 315 | 310 | S   | 325 | 340 | 335 | 335 | 340 | 335 | 330 | 340 | 325 | 330 | 340 | 340 | 290 | 290 | 290 | 290 |     |     |     |
| 27          | 300 | 310 | 340 | 295 | 305 | 305 | 330 | 315 | 330 | 340 | S   | 335 | 335 | 330 | 325 | 335 | 335 | 340 | 340 | S   | 310 | S   | S   | S   | J   | S   |     |     |
| 28          | 305 | 305 | 305 | 320 | 280 | 300 | 325 | 305 | S   | 350 | S   | 330 | 335 | R   | J   | R   | 330 | 345 | 315 | 330 | S   | 335 | 360 | 350 | A   | 295 | 305 | 290 |
| 29          | S   | 290 | 310 | 320 | 330 | 310 | 340 | 355 | 335 | 340 | 340 | 330 | 310 | 315 | 315 | 330 | 335 | U   | S   | 350 | 340 | S   | 330 | 305 | 295 | 300 | 305 |     |
| 30          | 310 | 310 | 310 | 320 | 310 | 310 | 350 | 350 | S   | 350 | 350 | 335 | 325 | 325 | 320 | 335 | 340 | S   | 330 | 340 | 335 | 335 | 325 | 305 | 300 | 300 |     |     |
| 31          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| CNT         | 26  | 27  | 28  | 27  | 27  | 27  | 27  | 29  | 29  | 28  | 29  | 28  | 29  | 29  | 30  | 30  | 29  | 28  | 30  | 29  | 25  | 29  | 23  | 24  |     |     |     |     |
| MED         | S   | 295 | 300 | 305 | 305 | 305 | 340 | 335 | 340 | 340 | 335 | 330 | 325 | 325 | 320 | 325 | 325 | 330 | 328 | S   | 310 | S   | 300 | 290 | 295 |     |     |     |
| UQ          | S   | 300 | 300 | 310 | 318 | 315 | 310 | 348 | 345 | S   | 350 | 340 | 340 | 330 | 330 | 330 | 335 | 330 | 335 | 335 | 340 | 320 | 310 | S   | S   | S   |     |     |
| LQ          | S   | 290 | 288 | 290 | 298 | 300 | 300 | 330 | 325 | 330 | 330 | 325 | 315 | 315 | 310 | 315 | 315 | 320 | 322 | S   | 315 | S   | 300 | 290 | 285 | 290 |     |     |

SEP. 1984

M(3000)F2 (0.01)



IONOSPHERIC DATA

SEP. 1984

M(3000)F1 (0.01)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | ROKUBUNJI TOKYO |    |    |    |    |     |     |     |     |     |     | Lat. 35 42.4 N Long 139 29.3 E Sweep 1 MHz to 20 MHz in 20sec in automatic operation |     |     |     |     |     |     |     |     |    |    |    |    |
|---------|-----|-----------------|----|----|----|----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| Hour    | Day | 00              | 01 | 02 | 03 | 04 | 05  | 06  | 07  | 08  | 09  | 10  | 11   | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| 1       |     |                 |    |    |    |    |     |     |     | 350 | 355 | 355 | 365  | H   | 370 | 360 | 350 | 340 | L   | A   | A   |    |    |    |    |
| 2       |     |                 |    |    |    |    |     |     | L   |     | 355 | 360 | 370  | 370 | 360 | 340 | A   | A   | L   |     |     |    |    |    |    |
| 3       |     |                 |    |    |    |    |     |     | H   | L   | 380 | 345 | 375  | H   | 350 | L   | 350 | A   | A   | A   |     |    |    |    |    |
| 4       |     |                 |    |    |    |    |     |     | L   | A   | 370 | A   | 365  | L   | 360 | 355 | 345 | A   | A   | A   |     |    |    |    |    |
| 5       |     |                 |    |    |    |    |     |     |     |     | 320 | 350 | A  | A   | A   | A   | 360 | 345 | 350 | 350 | 340 | L  |    |    |    |
| 6       |     |                 |    |    |    |    |     |     | A   | A   | A   | A   | U  | L   | A   | 350 | 360 | 350 | L   | L   |     |    |    |    |    |
| 7       |     |                 |    |    |    |    |     |     | C   | C   | C   | 370 | 375  | 370 | 370 | 350 | 350 | 350 | L   | L   |     |    |    |    |    |
| 8       |     |                 |    |    |    |    |     |     | A   | L   | A   | A   | 370  | 360 | 355 | A   | 345 | 340 | L   | L   | A   |    |    |    |    |
| 9       |     |                 |    |    |    |    |     |     | L   | A   | 360 | 360 | U  | L   | 360 | 360 | 345 | 350 | L   | L   |     |    |    |    |    |
| 10      |     |                 |    |    |    |    |     |     | L   | L   | A   | 360 | 345  | 355 | U   | L   | 355 | 350 | U   | L   | L   |    |    |    |    |
| 11      |     |                 |    |    |    |    |     |     | A   | L   | U   | L   | 370  | 370 | 360 | 340 | 345 | 350 | A   | A   | A   |    |    |    |    |
| 12      |     |                 |    |    |    |    |     |     | A   | 370 | 380 | 340 | 355  | 360 | 345 | L   | A   | A   |     |     |     |    |    |    |    |
| 13      |     |                 |    |    |    |    |     |     | L   | 375 | A   | 385 | A  | 370 | A   | A   | 360 | U   | L   | A   |     |    |    |    |    |
| 14      |     |                 |    |    |    |    |     |     | L   | 380 | 375 | U   | L  | 385 | 380 | 350 | H   | L   | 340 | L   | L   |    |    |    |    |
| 15      |     |                 |    |    |    |    |     |     | L   | 350 | 365 | 350 | 375  | 370 | 355 | 360 | 340 | L   | L   |     |     |    |    |    |    |
| 16      |     |                 |    |    |    |    |     |     | L   | U   | L   | 365 | 360  | 350 | 375 | 370 | 355 | 340 | L   |     |     |    |    |    |    |
| 17      |     |                 |    |    |    |    |     |     | L   | 360 | 370 | 370 | 355  | 360 | 360 | 350 | 370 | L   | A   |     |     |    |    |    |    |
| 18      |     |                 |    |    |    |    |     |     |     | 375 | 370 | 370 | 395  | 370 | 365 | L   | 350 | L   | L   |     |     |    |    |    |    |
| 19      |     |                 |    |    |    |    |     |     | L   | L   | U   | L   | 370  | 365 | 375 | 365 | 345 | 340 | A   | A   |     |    |    |    |    |
| 20      |     |                 |    |    |    |    |     |     | A   | A   | 370 | A   | 350  | 360 | 370 | 360 | U   | L   | L   | A   |     |    |    |    |    |
| 21      |     |                 |    |    |    |    |     |     | L   | 360 | 355 | A   | 365  | U   | L   | 360 | 350 | U   | L   | L   | A   |    |    |    |    |
| 22      |     |                 |    |    |    |    |     |     | A   | 360 | 380 | A   | 370  | 375 | 375 | U   | L   | U   | L   | L   | A   |    |    |    |    |
| 23      |     |                 |    |    |    |    |     |     | A   | A   | A   | A   | A  | A   | A   | A   | 340 | A   | A   |     |     |    |    |    |    |
| 24      |     |                 |    |    |    |    |     |     | L   | H   | 340 | 370 | 370  | 380 | R   | 350 | 375 | H   | L   | 345 | 350 | L  | A  |    |    |
| 25      |     |                 |    |    |    |    |     |     | L   | 360 | U   | L   | 390  | 350 | 360 | 375 | 350 | 365 | L   |     |     |    |    |    |    |
| 26      |     |                 |    |    |    |    |     |     | L   | 340 | 355 | 380 | 380  | 375 | 370 | 350 | L   |     |     |     |     |    |    |    |    |
| 27      |     |                 |    |    |    |    |     |     |     | U   | L   | 360 | 355  | 360 | 350 | 375 | L   | L   | L   |     |     |    |    |    |    |
| 28      |     |                 |    |    |    |    |     |     | L   | 360 | 355 | 350 | 370  | 360 | 345 | 350 | U   | L   | A   |     |     |    |    |    |    |
| 29      |     |                 |    |    |    |    |     |     | L   | U   | L   | 390 | L  | 360 | 380 | 355 | L   | L   |     |     |     |    |    |    |    |
| 30      |     |                 |    |    |    |    |     |     | L   | 370 | A   | 380 | U  | L   | A   | U   | L   | L   |     |     |     |    |    |    |    |
| 31      |     |                 |    |    |    |    |     |     |     | 345 | 350 | 360 | 355  | 350 | 355 | 350 | 345 | 340 | L   |     |     |    |    |    |    |
|         |     | 00              | 01 | 02 | 03 | 04 | 05  | 06  | 07  | 08  | 09  | 10  | 11   | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| CNT     |     |                 |    |    |    |    | 1   | 3   | 11  | 24  | 23  | 25  | 29   | 25  | 25  | 18  | 4   |     |     |     |     |    |    |    |    |
| MED     |     |                 |    |    |    |    | 320 | 350 | H   | 360 | 370 | 365 | 365  | 360 | 360 | 350 | 350 | 350 |     |     |     |    |    |    |    |
| UQ      |     |                 |    |    |    |    | 350 | 365 | 370 | 375 | 375 | 370 | 365  | 355 | 355 | 350 | 365 |     |     |     |     |    |    |    |    |
| LQ      |     |                 |    |    |    |    |     |     |     | 345 | 350 | 360 | 355  | 350 | 355 | 350 | 345 | 340 |     |     |     |    |    |    |    |

SEP. 1984

M(3000)F1 (0.01)

# IONOSPHERIC DATA

SEP. 1984

H<sup>o</sup>F<sub>2</sub> (KM)

135 E Mean Time (G.M.T. + 9 h)

Station **KOKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep **1** MHz to **20** MHz in **20** sec in **automatic operation**

| Hour<br>Day | 00 | 01 | 02 | 03 | 04 | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
|-------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| 1           |    |    |    |    |    |     |     |     | 290 | 265 | 350 | 320 | 315 | 365 | 340 | 285 | 275 | 255 | 260 |     |    |    |    |    |
| 2           |    |    |    |    |    |     |     | 235 |     | 280 | 295 | 285 | 305 | 285 | 330 | 305 | 285 | 255 |     |     |    |    |    |    |
| 3           |    |    |    |    |    |     |     | 330 | 295 | 285 | 285 | 275 | 275 | L   | 340 | 295 | 280 | 255 |     |     |    |    |    |    |
| 4           |    |    |    |    |    |     |     | 230 | 245 | 245 | 280 | 290 | 325 | 305 | 305 | 315 | 280 | 250 |     |     |    |    |    |    |
| 5           |    |    |    |    |    |     | 415 | 560 | 530 | A   | 500 | A   | 505 | 430 | 360 | 415 | 585 | 325 |     |     |    |    |    |    |
| 6           |    |    |    |    |    | E A | E A | E A | A   | A   | 300 | 280 | 305 | 290 | 285 | L   | L   |     |     |     |    |    |    |    |
| 7           |    |    |    |    |    | C   | C   | C   |     |     | 260 | 260 | 335 | 300 | 310 | 305 | 305 | 280 | 270 |     |    |    |    |    |
| 8           |    |    |    |    |    |     | 240 | 235 | 240 | 240 | 275 | 325 | 285 | A   | 295 | 295 | 280 | E A | 300 |     |    |    |    |    |
| 9           |    |    |    |    |    |     |     | 235 | 235 | 260 | 250 | 315 | 280 | 285 | 320 | 305 | 290 | 255 |     |     |    |    |    |    |
| 10          |    |    |    |    |    |     |     | 245 | 225 | 250 | 300 | 325 | 270 | 300 | 295 | 300 | 275 | 270 |     |     |    |    |    |    |
| 11          |    |    |    |    |    |     |     | 235 | 235 | 255 | 265 | 285 | 340 | 320 | 275 | 275 | 265 | A   |     |     |    |    |    |    |
| 12          |    |    |    |    |    |     |     | 255 | 235 | 270 | 300 | 300 | 285 | 290 | 275 |     | A   | E A | 285 |     |    |    |    |    |
| 13          |    |    |    |    |    |     |     | 250 | 270 | E A | 280 | 290 | 265 | 270 | E A | 305 | 280 | 255 | 265 | 265 |    |    |    |    |
| 14          |    |    |    |    |    |     |     | 260 | 270 | 260 | 290 | 305 | 295 | 300 | 295 | 265 | 260 |     |     |     |    |    |    |    |
| 15          |    |    |    |    |    |     |     | 265 | 265 | 245 | 280 | 280 | 295 | 280 | 280 | 270 | 265 | 255 |     |     |    |    |    |    |
| 16          |    |    |    |    |    |     |     | 250 | 265 | 285 | 285 | 275 | 295 | 280 | 280 | 265 |     |     |     |     |    |    |    |    |
| 17          |    |    |    |    |    |     |     | 260 | 230 | 250 | 265 | 295 | 260 | 280 | 280 | 265 | 270 | 250 |     |     |    |    |    |    |
| 18          |    |    |    |    |    |     |     | 250 | 245 | 265 | 270 | 270 | 300 | L   | 305 | 295 | 260 |     |     |     |    |    |    |    |
| 19          |    |    |    |    |    |     |     | 225 | 230 | 255 | 265 | 270 | 275 | 300 | 330 | 310 | 275 | 270 |     |     |    |    |    |    |
| 20          |    |    |    |    |    |     |     | 285 | 255 | 290 | 260 | 275 | 320 | 285 | 295 | 285 | 280 | 265 |     |     |    |    |    |    |
| 21          |    |    |    |    |    |     |     | 285 | 265 | 250 | 255 | 280 | L   | 345 | 305 | 260 | 275 | L   | 290 | 265 |    |    |    |    |
| 22          |    |    |    |    |    |     |     | 250 | 270 | 270 | 265 | 305 | 305 | 295 | 265 | 310 | 260 | 255 |     |     |    |    |    |    |
| 23          |    |    |    |    |    |     |     | 255 | 285 | 260 | A   | A   | A   | 375 | 315 | 280 | 260 | 255 |     |     |    |    |    |    |
| 24          |    |    |    |    |    |     | 310 | 390 | 600 | 600 | 475 | 435 | 480 | 370 | 330 | 300 | 275 | A   |     |     |    |    |    |    |
| 25          |    |    |    |    |    |     |     | 255 | 280 | L   | 375 | 325 | 300 | 285 | 295 | 300 | 285 |     |     |     |    |    |    |    |
| 26          |    |    |    |    |    |     |     | 295 | 260 | 250 | 295 | 290 | 280 | 300 | 295 | 250 |     |     |     |     |    |    |    |    |
| 27          |    |    |    |    |    |     |     | 255 | 250 | 275 | 275 | 285 | 290 | 270 | 255 | 275 |     |     |     |     |    |    |    |    |
| 28          |    |    |    |    |    |     |     | 260 | 270 | 275 | 270 | 260 | 250 | 350 | 285 | 275 |     |     |     |     |    |    |    |    |
| 29          |    |    |    |    |    |     |     | 250 | 255 | 260 | 290 | 305 | 300 | 280 | 260 | 250 |     |     |     |     |    |    |    |    |
| 30          |    |    |    |    |    |     |     | 245 | 235 | 270 | 270 | 280 | 290 | 265 | 260 | 250 |     |     |     |     |    |    |    |    |
| 31          |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |
|             | 00 | 01 | 02 | 03 | 04 | 05  | 06  | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| CNT         |    |    |    |    |    |     | 4   | 20  | 28  | 28  | 29  | 28  | 29  | 28  | 29  | 30  | 27  | 20  | 1   |     |    |    |    |    |
| MED         |    |    |    |    |    |     | 300 | 255 | 256 | 256 | 275 | 288 | 295 | 296 | 295 | 285 | 275 | 258 | 260 |     |    |    |    |    |
| UQ          |    |    |    |    |    |     | 362 | 285 | 272 | 270 | 295 | 302 | 305 | 305 | 320 | 305 | 280 | 268 |     |     |    |    |    |    |
| LQ          |    |    |    |    |    |     | 252 | 235 | 245 | 250 | 265 | 275 | 275 | 288 | 280 | 270 | 265 | 255 |     |     |    |    |    |    |

SEP. 1984

H<sup>o</sup>F<sub>2</sub> (KM)

IONOSPHERIC DATA

SEP. 1984

H° F (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | ROKUBUNJI TOKYO |         |         |     |         |     |         | Lat. 35 42.4 N |       | Long. 139 29.3 E |         | Sweep 1 MHz to 20 MHz in 20sec in automatic operation |       |       |         |         |         |       |         |         |     |         |         |         |     |
|---------|-----|-----------------|---------|---------|-----|---------|-----|---------|----------------|-------|------------------|---------|---|-------|-------|---------|---------|---------|-------|---------|---------|-----|---------|---------|---------|-----|
| Hour    | Day | 00              | 01      | 02      | 03  | 04      | 05  | 06      | 07             | 08    | 09               | 10      | 11  | 12    | 13    | 14      | 15      | 16      | 17    | 18      | 19      | 20  | 21      | 22      | 23      |     |
| 1       |     | 240             | E A 310 | 310     | 270 | 270     | 250 | 225     | H 235          | 220   | A                | H 180   | 210   | 205   | H 180 | H 205   | H 230   | 230     | A     | A       | 215     | 210 | 265     | 290     | E A 320 |     |
| 2       |     | E A 320         | E A 315 | 275     | 290 | E A 305 | 260 | H 235   | 225            | H 210 | H 220            | 205     | 205   | 200   | H 210 | H 200   | A       | A       | 250   | 240     | 215     | 240 | E A 325 | 300     | 305     |     |
| 3       |     | 295             | 320     | 305     | 280 | 230     | 225 | 225     | 210            | H 200 | H 190            | H 180   | H 190   | 230   | H 190 | H 200   | A       | A       | A     | 240     | 220     | 205 | 250     | E A 350 | E A 350 |     |
| 4       |     | 260             | 280     | 280     | 265 | 270     | 265 | 260     | 220            | A     | 210              | A       | 195   | 220   | 210   | E A 250 | A       | A       | A     | 240     | 275     | 295 | 280     | 270     | 265     |     |
| 5       |     | 245             | 345     | 280     | 300 | 325     | 295 | 270     | 255            | A     | A                | A       | A   | H 215 | 225   | 230     | H 235   | H 250   | 270   | 255     | 255     | A   | A       | E A 375 | A       |     |
| 6       |     | 265             | E A 305 | E A 310 | 280 | 285     | 290 | A       | A              | A     | A                | E A 245 | A   | 210   | 210   | 220     | 220     | 205     | H 245 | 240     | C       | C   | C       | C       | C       |     |
| 7       |     | C               | C       | C       | C   | C       | C   | C       | C              | C     | 210              | 205     | 205   | 215   | H 195 | 220     | 220     | 225     | 250   | 250     | 240     | 225 | 225     | 220     | 280     |     |
| 8       |     | 285             | 265     | 285     | 270 | 275     | 260 | A       | 230            | A     | A                | 195     | 180   | H 210 | A     | 240     | E A 240 | E A 260 | A     | E A 280 | E A 275 | 235 | 210     | 245     | E A 325 |     |
| 9       |     | 330             | 325     | 305     | 245 | 255     | 255 | 215     | 225            | A     | E A 250          | 225     | 215   | H 200 | 205   | 220     | E A 240 | E A 255 | 230   | 250     | 270     | 240 | E A 265 | A       | A       |     |
| 10      |     | 255             | 255     | 270     | 240 | 280     | 305 | H 240   | H 230          | 220   | A                | A       | 225   | 205   | 210   | 190     | 235     | 230     | 245   | 250     | 240     | 220 | E A 240 | 300     | 285     |     |
| 11      |     | 275             | 290     | 275     | 240 | 275     | 245 | 220     | A              | 225   | A                | A       | 185   | 190   | 200   | 225     | 230     | A       | A     | A       | 255     | 205 | 240     | 305     | 250     | 235 |
| 12      |     | 300             | 305     | 250     | 220 | 235     | 275 | 245     | H 240          | A     | 225              | A       | 180   | 220   | 215   | E A 235 | 220     | E A 265 | A     | A       | 225     | 235 | E A 305 | 235     | 325     | 255 |
| 13      |     | 280             | 280     | 235     | 250 | 265     | 280 | 220     | 235            | 235   | A                | A       | H 195   | A     | 200   | A       | A       | 235     | 215   | A       | E A 275 | 255 | 230     | E A 360 | 290     | 245 |
| 14      |     | E A 275         | 265     | 290     | 265 | 245     | 265 | 215     | H 235          | H 205 | 210              | 205     | 185   | 235   | 175   | 250     | 220     | 260     | 255   | 230     | E A 250 | 230 | E A 285 | 305     | 275     |     |
| 15      |     | E A 300         | 275     | 285     | 270 | 260     | 275 | H 240   | H 210          | 210   | 205              | 190     | 175   | H 175 | 170   | 220     | 225     | 235     | A     | A       | 240     | 205 | 260     | 320     | 295     | 255 |
| 16      |     | 245             | 265     | 300     | 265 | 250     | 250 | 225     | H 230          | 220   | 220              | 215     | 185   | H 190 | H 205 | 210     | 220     | H 230   | H 240 | H 225   | 220     | 260 | 250     | 275     | 275     |     |
| 17      |     | 280             | 275     | 275     | 250 | 230     | 255 | 240     | 240            | 220   | 195              | 210     | 180   | 215   | H 195 | 215     | 215     | 200     | A     | 230     | 220     | 215 | 265     | 305     | 285     |     |
| 18      |     | 475             | 280     | 265     | 250 | 270     | 255 | 220     | 225            | 220   | 210              | 180     | 175   | 200   | 225   | 210     | H 195   | E A 255 | 250   | 225     | 210     | 200 | 270     | 320     | 285     |     |
| 19      |     | 255             | 270     | 275     | 255 | 240     | 250 | 210     | 220            | 220   | 210              | 195     | 215   | H 180 | 195   | 220     | H 260   | A       | A     | 245     | 220     | 265 | 270     | 305     | 305     |     |
| 20      |     | 320             | 265     | 250     | 225 | E A 315 | A   | A       | A              | A     | 205              | A       | H 190   | H 230 | 230   | 225     | 230     | 250     | A     | I C 240 | A 240   | 210 | 245     | 290     | 270     |     |
| 21      |     | 290             | 275     | 285     | 295 | 270     | 285 | 245     | 230            | 220   | 215              | A       | 205   | 200   | 220   | 195     | E A 240 | 245     | A     | E A 255 | A 235   | A   | 235     | A       | 275     |     |
| 22      |     | 255             | 280     | 285     | 295 | 275     | 250 | 225     | A              | 220   | E A 250          | A       | 220   | 210   | 210   | H 200   | H 195   | 240     | A     | 240     | 215     | 245 | 255     | 310     | 300     |     |
| 23      |     | 290             | 290     | 275     | 260 | 310     | 270 | E A 250 | A              | A     | A                | A       | A   | A     | A     | A       | H 225   | A       | A     | 240     | 225     | A   | 260     | 275     | A       |     |
| 24      |     | 360             | 370     | 320     | A   | 335     | 275 | 300     | 235            | 220   | H 200            | H 185   | 235   | 210   | 205   | H 185   | 245     | 250     | A     | 270     | 235     | A   | 225     | A       | 325     |     |
| 25      |     | 300             | 290     | 255     | 305 | 270     | 275 | 245     | 235            | H 215 | H 195            | H 200   | H 205   | 200   | 210   | 210     | H 205   | H 230   | H 250 | 255     | 230     | 215 | 280     | 290     | 265     |     |
| 26      |     | 305             | 270     | 295     | 250 | 255     | 290 | H 250   | 245            | 225   | 205              | 195     | 200   | 205   | 200   | 200     | 225     | 235     | H 250 | 210     | 225     | 300 | 280     | 300     | 305     |     |
| 27      |     | 265             | 250     | 220     | 250 | 310     | 300 | 240     | H 230          | 235   | 215              | H 185   | H 185   | H 180 | 235   | 225     | 220     | 250     | 245   | 230     | 225     | 260 | 270     | 285     | 265     |     |
| 28      |     | 280             | 285     | 255     | 230 | 255     | 290 | 230     | 240            | 225   | H 205            | H 200   | H 200   | 210   | 230   | H 200   | 240     | A       | 240   | 225     | 215     | A   | 320     | 310     | 325     |     |
| 29      |     | 315             | 310     | 290     | 260 | 240     | 260 | 220     | 225            | H 230 | 220              | 215     | H 200   | 215   | 230   | 225     | 210     | 235     | 225   | 215     | 240     | 270 | 300     | 300     | E A 325 |     |
| 30      |     | 280             | 260     | 235     | 250 | 260     | 250 | 225     | 225            | 225   | 225              | A       | 215   | 235   | A     | A       | H 210   | H 240   | 240   | 230     | 210     | 220 | 235     | 235     | 280     | 300 |
| 31      |     |                 |         |         |     |         |     |         |                |       |                  |         |   |       |       |         |         |         |       |         |         |     |         |         |         |     |
|         |     | 00              | 01      | 02      | 03  | 04      | 05  | 06      | 07             | 08    | 09               | 10      | 11  | 12    | 13    | 14      | 15      | 16      | 17    | 18      | 19      | 20  | 21      | 22      | 23      |     |
| CNT     |     | 29              | 29      | 29      | 28  | 29      | 28  | 26      | 24             | 21    | 23               | 23      | 26  | 29    | 26    | 28      | 26      | 22      | 15    | 29      | 29      | 24  | 28      | 26      | 26      |     |
| MED     |     | 280             | 278     | 278     | 260 | 268     | 265 | 230     | 230            | 220   | 210              | 195     | 200   | 210   | 210   | 215     | 224     | 235     | 245   | 240     | 225     | 236 | 258     | 294     | 280     |     |
| UQ      |     | 300             | 298     | 290     | 275 | 278     | 282 | 245     | 235            | 225   | 219              | 206     | 215   | 215   | 225   | 224     | 235     | 248     | 250   | 248     | 240     | 260 | 278     | 305     | 302     |     |
| LQ      |     | 262             | 270     | 265     | 250 | 255     | 252 | 220     | 225            | 220   | 205              | 185     | 185   | 200   | 195   | 200     | 220     | 230     | 240   | 230     | 220     | 218 | 238     | 280     | 265     |     |

SEP. 1984

H° F (KM)

### IONOSPHERIC DATA

SEP. 1984      H°E (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | ROKUBUNJI TOKYO |    | Lat. | 35 42.4 N |    | Long. | 139 29.3 E |     | Sweep | 1 MHz to 20 MHz |     | in 20 sec |     | in automatic operation |     |     |     |     |     |     |     |    |    |    |
|---------|-----|-----------------|----|------|-----------|----|-------|------------|-----|-------|-----------------|-----|-----------|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|
| Hour    | Day | 00              | 01 | 02   | 03        | 04 | 05    | 06         | 07  | 08    | 09              | 10  | 11        | 12  | 13                     | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21 | 22 | 23 |
| 1       |     |                 |    |      |           |    |       |            | A   | A     | A               | A   | A         | A   | A                      | A   | 115 | 110 | 105 | 115 | B   |     |    |    |    |
| 2       |     |                 |    |      |           |    |       |            | 125 | 105   | 100             | 115 | 105       | A   | A                      | A   | 115 | 110 | 105 | 115 | B   |     |    |    |    |
| 3       |     |                 |    |      |           |    |       |            | 120 | 105   | 115             | 115 | 115       | 110 | A                      | A   | 105 | 110 | 105 | 110 | B   |     |    |    |    |
| 4       |     |                 |    |      |           |    |       |            | 115 | 105   | 105             | 105 | A         | A   | 105                    | 105 | 105 | 105 | 105 | 110 | S   |     |    |    |    |
| 5       |     | S               | S  | S    |           |    |       |            | 115 | 110   | 105             | 105 | 105       | 100 | 105                    | 105 | A   | A   | A   | S   |     | S   | S  | S  |    |
| 6       |     |                 |    |      |           |    |       |            | 115 | 110   | 110             | 100 | 100       | A   | A                      | A   | A   | A   | 105 | 105 | S   |     |    |    |    |
| 7       |     |                 |    |      |           |    |       |            | C   | C     | C               | 120 | 105       | A   | A                      | A   | A   | 110 | 110 | B   |     |     |    |    |    |
| 8       |     |                 |    |      |           |    |       |            | A   | A     | A               | 105 | A         | A   | A                      | A   | 115 | 120 | 110 | 120 |     |     |    |    |    |
| 9       |     |                 |    |      |           |    |       |            | 120 | 115   | 115             | A   | 105       | 105 | A                      | A   | A   | A   | A   | 110 |     |     |    |    |    |
| 10      |     |                 |    |      |           |    |       |            | 115 | 110   | 105             | 105 | 105       | A   | A                      | A   | A   | A   | E   | A   |     |     |    |    |    |
| 11      |     |                 |    |      |           |    |       |            | 120 | 110   | 105             | 105 | A         | A   | A                      | A   | 115 | 115 | 110 | 105 | 115 |     |    |    |    |
| 12      |     |                 |    |      |           |    |       |            | 120 | 110   | 105             | 110 | A         | 130 | A                      | A   | 110 | 105 | 110 | 115 |     |     |    |    |    |
| 13      |     |                 |    |      |           |    |       |            | 120 | 110   | 105             | 105 | A         | A   | A                      | A   | A   | 120 | 115 | 115 |     |     |    |    |    |
| 14      |     |                 |    |      |           |    |       |            | 125 | 120   | 120             | A   | 115       | A   | A                      | E   | A   | 120 | A   | A   | A   |     |    |    |    |
| 15      |     |                 |    |      |           |    |       |            | 115 | 110   | 105             | 105 | E         | 125 | 110                    | A   | 115 | 120 | 110 | 110 | 110 | 120 |    |    |    |
| 16      |     |                 |    |      |           |    |       |            | 125 | 115   | 110             | 110 | 110       | 110 | 115                    | 130 | 105 | A   | 125 | 115 |     |     |    |    |    |
| 17      |     |                 |    |      |           |    |       |            | 125 | 110   | 110             | 115 | A         | 110 | 105                    | E   | A   | 120 | A   | A   | 125 | 115 |    |    |    |
| 18      |     |                 |    |      |           |    |       |            | 125 | 110   | 105             | 105 | 105       | 110 | A                      | A   | A   | E   | A   | A   | 120 | 115 |    |    |    |
| 19      |     |                 |    |      |           |    |       |            | 130 | 120   | 110             | A   | E         | A   | E                      | A   | E   | A   | 110 | 110 | 115 | S   | S  | S  |    |
| 20      |     |                 | S  | S    |           |    |       |            | 120 | 115   | 105             | 110 | 105       | E   | 125                    | A   | A   | E   | A   | A   | 120 |     |    |    |    |
| 21      |     |                 |    |      |           |    |       |            | E   | S     | 140             | 110 | 110       | 105 | 105                    | 105 | 105 | 105 | A   | A   | A   | 125 |    |    |    |
| 22      |     |                 |    |      |           |    |       |            | S   |       | 110             | 105 | 105       | A   | A                      | A   | A   | A   | A   | A   | A   |     |    |    |    |
| 23      |     |                 |    |      |           |    |       |            | S   |       | 110             | 110 | 110       | A   | A                      | A   | A   | A   | 120 | A   | A   |     |    |    |    |
| 24      |     |                 |    |      |           |    |       |            | S   |       | 120             | 110 | A         | 120 | 115                    | 110 | 110 | 115 | 115 | A   | 125 |     |    |    |    |
| 25      |     |                 |    |      |           |    |       |            | A   | A     | 120             | A   | 115       | 115 | 110                    | 115 | 115 | 115 | 115 | 110 | 125 |     |    |    |    |
| 26      |     |                 |    |      |           |    |       |            | S   |       | 110             | 115 | 105       | 105 | 100                    | 100 | 100 | 115 | 110 | A   | A   |     |    |    |    |
| 27      |     |                 |    |      |           |    |       |            | S   |       | 105             | A   | E         | A   | 100                    | 110 | 110 | A   | 120 | 110 | 105 | 115 | A  |    |    |
| 28      |     |                 |    |      |           |    |       |            | S   | E     | 130             | A   | A         | E   | A                      | 120 | 120 | 115 | 110 | 115 | 110 | 115 |    |    |    |
| 29      |     |                 |    |      |           |    |       |            | S   | A     | E               | 130 | A         | 105 | 115                    | 115 | 115 | 110 | 105 | 110 | S   |     |    |    |    |
| 30      |     |                 |    |      |           |    |       |            |     |       | 130             | 110 | 110       | 105 | 105                    | 105 | 105 | 105 | 105 | 110 | S   |     |    |    |    |
| 31      |     |                 |    |      |           |    |       |            |     |       | 115             | 110 | 105       | 105 | 105                    | 105 | 105 | 105 | 110 | 105 | 110 |     |    |    |    |
|         |     | 00              | 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    | 27         | 28  | 24    | 23              | 18  | 16        | 20  | 22                     | 22  | 20  | 21  |     |     |     |     |    |    |    |
| MED     |     |                 |    |      |           |    | 120   | 110        | 109 | 105   | 105             | 110 | 110       | 112 | 112                    | 110 | 110 | 115 |     |     |     |     |    |    |    |
| UQ      |     |                 |    |      |           |    | 125   | 114        | 112 | 110   | 112             | 115 | 115       | 118 | 115                    | 115 | 115 | 120 |     |     |     |     |    |    |    |
| LQ      |     |                 |    |      |           |    | 115   | 110        | 105 | 105   | 105             | 105 | 105       | 105 | 105                    | 110 | 105 | 105 | 110 |     |     |     |    |    |    |

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IONOSPHERIC DATA

SEP. 1984

H°ES (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station     | ROKUBUNJI TOKYO |     |     |     |     |     |     |     |     |     | Lat. | 35 42.4 N |     |     | Long | 139 29.3 E |     |     | Sweep | 1 MHz to 20 MHz in 20sec in automatic operation |     |     |     |     |     |     |     |     |     |     |
|-------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------|-----|-----|------|------------|-----|-----|-------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Hour<br>Day | 00              | 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             | 125 | 100 | 115 | 100 | 100 | 160 | 125 | 120 | 110 | 110  | 100       | 105 | 105 | 115  | 125        | 120 | 115 | 110   | 105   | 105 | 100 | 125 | 100 |     |     |     |     |     |     |
| 2           | 100             | 100 | 100 | 100 | 100 | 115 | 115 | 110 | 110 | 115 | 120  | 120       | 115 | 130 | 130  | 110        | 110 | 105 | 105   | 100   | 100 | 100 | 100 | 100 |     |     |     |     |     |     |
| 3           | 100             | 100 | 100 | 100 | 125 | 120 | 125 | 115 |     | G   | 110  | 105       | 160 | 145 |      | G          | 125 | 120 | 115   | 115   | 105 | 100 | 100 | 110 | 105 |     |     |     |     |     |
| 4           | 100             | 95  | 95  | 95  | 95  | 115 | 110 | 110 | 110 | 110 | 105  | 115       | 110 | 105 | 105  | 105        | 105 | 100 | 105   | 105   | 120 | 105 |     | S   | 100 |     |     |     |     |     |
| 5           | S               | S   | S   |     | 130 | 120 | 115 | 110 | 110 | 110 | 100  | 100       | 105 | 110 | 120  |            | G   | G   | 130   | 115   | 110 | 105 | 105 | 105 | 100 | 100 |     |     |     |     |
| 6           | 100             | 95  | 100 | 100 | 120 | 125 | 110 | 110 | 110 | 105 | 105  | 105       | 105 | 110 | 145  | 105        | 135 |     | G     | 130   | C   | C   | C   | C   | C   |     |     |     |     |     |
| 7           | C               | C   | C   | C   | C   | C   | C   | C   | C   |     | 110  | 115       | 100 | 100 | 100  | 100        |     | G   | 100   | 165   | 100 | 100 | 100 | 95  | 95  | S   |     |     |     |     |
| 8           | 105             | 100 | 100 | 100 | 100 | 100 | 100 | 115 | 110 | 105 | 105  | 105       | 110 | 100 | 155  | 140        | 130 | 120 | 115   | 110   | 110 | 110 | 105 | 100 | 100 |     |     |     |     |     |
| 9           | 100             | 100 | 100 | 100 | 100 |     | S   | 115 | 115 | 110 | 110  | 105       | 105 | 105 | 105  | 110        | 105 | 115 | 110   | 105   | 105 | 105 | 105 | 105 | 105 |     |     |     |     |     |
| 10          | 100             | B   | S   | S   |     | 100 | 100 | 115 | 115 | 110 | 110  | 110       | 110 | 100 | 100  | 100        | 105 | 100 | 100   | 100   | 115 | 110 | 105 | 100 | 105 |     |     |     |     |     |
| 11          | 100             | 100 | 100 | 100 | 110 |     | S   | 120 | 110 | 110 | 110  | 105       | 105 | 105 | 120  | 150        | 125 | 115 | 110   | 110   | 105 | 105 | 105 | 105 | 105 |     |     |     |     |     |
| 12          | 100             | 100 | 100 | 100 | 120 | 115 | 115 | 115 | 110 | 105 | 105  | 105       | 105 | 105 | 150  | 130        | 115 | 110 | 110   | 105   | 105 | 100 | 105 | 100 | 100 |     |     |     |     |     |
| 13          | 100             |     | S   |     |     |     | S   | 120 | 115 | 110 | 105  | 100       | 100 | 100 | 95   | 95         | 95  | 140 | 110   | 105   | 105 | 100 | 110 | 105 | 100 |     |     |     |     |     |
| 14          | 100             |     | S   |     |     |     | S   | 100 | 120 | 155 | 135  | 100       | 120 | 115 | 100  | 170        | 100 | 100 | 130   | 95  | 95  | 110 | 110 | 110 | 105 | 105 |     |     |     |     |
| 15          | 105             | 100 | 100 | 120 | 110 |     | S   | 110 | 115 | 110 | 110  | 105       | 105 | 105 | 100  | 100        | 155 | 125 | 120   | 110   |     | S   | S   | 110 | S   | S   |     |     |     |     |
| 16          | 100             | 95  | 95  |     | S   |     | S   | 135 |     | G   | 130  | 130       | 100 | 120 | 100  | 110        | 155 | 125 | 105   | 120   |     | S   | 105 | S   | S   | 105 | 100 |     |     |     |
| 17          | S               |     | 100 | 100 |     | S   | S   | 125 | 120 | 115 | 115  | 110       | 110 | 105 | 110  | 105        | 115 | 110 | 110   |   | S   | 105 | 100 | 100 | 100 | 95  |     |     |     |     |
| 18          | 95              | 95  |     | S   | S   |     | S   | 140 | 130 | 120 | 115  | 115       | 115 | 105 | 105  | 105        | 100 | 100 | 100   | 100   | 105 | 110 | 100 |     | S   | 95  |     |     |     |     |
| 19          | 95              | 100 | 100 |     | S   |     | S   | 130 | 130 | 125 | 125  | 125       | 115 | 110 | 110  | 165        | 130 | 120 | 115   | 115   | 115 |     | S   | S   | S   | 100 |     |     |     |     |
| 20          | 100             | 100 |     | S   | 130 | 120 | 115 | 115 | 115 | 110 | 110  | 110       | 100 | 100 | 100  | 100        | 100 | 135 | 120   |   | C   | 115 | 110 | 110 | 105 | 110 |     |     |     |     |
| 21          | 105             | 100 | 100 |     | S   |     | S   | 145 | 125 | 125 | 115  | 110       | 110 | 110 | 110  | 105        | 110 | 135 | 120   | 115   | 110 | 105 | 110 | 110 | 100 | 100 |     |     |     |     |
| 22          | 95              | 95  | 95  | 95  | 95  |     | S   | 120 | 110 | 110 | 110  | 105       | 105 | 100 | 100  | 100        | 100 | 105 | 100   | 100   | 100 | 100 | 100 | 100 | 105 | 105 |     |     |     |     |
| 23          | 105             | 100 | 100 | 95  | 95  | 95  | 115 | 115 | 110 | 110 | 105  | 105       | 105 | 100 | 100  | 105        | 105 | 105 | 105   | 100   | 100 | 110 | 110 | 105 | 100 | 100 |     |     |     |     |
| 24          | 100             | 100 | 115 | 115 | 125 | 125 | 135 | 125 |     | G   | 105  | 105       | 160 | 100 | 100  | 100        | 165 | 140 | 115   | 105   | 100 | 100 | 100 | 100 | 100 | 100 |     |     |     |     |
| 25          | 100             | 100 | 100 |     | S   |     | S   | 125 | 110 | 105 | 100  | 100       | 100 | 100 | 100  | 100        | 100 |     | G     | G   | S   | 105 | 110 | 100 | S   | S   |     |     |     |     |
| 26          | S               |     | 100 | 100 |     | S   | S   | S   |     | G   | 150  |           | G   | 130 | 100  | 100        |     | G   | G     | G   | 100 | 100 | 100 | 145 | 100 | 100 | 100 | 100 | 100 | 100 |
| 27          | 100             | 100 |     | S   | S   |     | 100 | 100 | 150 | 100 | 100  |           | G   | 100 | 100  |            | G   | 105 | 150   |   | G   | 130 | 125 | 120 | 110 | 110 | 110 | 105 | 100 | 100 |
| 28          | S               | S   | S   |     | 105 | 100 | 140 | 120 | 150 | 135 | 145  | 105       | 105 | 100 | 140  | 135        |     | G   | 135   | 130   | 120 | 120 | 115 | 120 | 115 | 115 | 115 |     |     |     |
| 29          | 105             | 105 |     | S   | 100 | 100 | 115 | 145 | 135 | 135 | 140  | 130       | 130 | 150 | 130  | 105        |     | G   | 150   | 125   | 110 | 105 | 105 | 105 | 105 | 100 | 100 |     |     |     |
| 30          | 100             | 100 | 100 | 100 | 100 |     | S   | 140 | 130 | 120 | 115  | 110       | 110 | 110 | 110  |            | G   | 155 | 160   | 120   | 115 | 120 | 105 | 105 | 105 | 100 | 100 |     |     |     |
| 31          |                 |     |     |     |     |     |     |     |     |     |      |           |     |     |      |            |     |     |       |   |     |     |     |     |     |     |     |     |     |     |
|             | 00              | 01  | 02  | 03  | 04  | 05  | 06  | 07  | 08  | 09  | 10   | 11        | 12  | 13  | 14   | 15         | 16  | 17  | 18    | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |
| CNT         | 25              | 24  | 22  | 20  | 24  | 16  | 29  | 27  | 27  | 29  | 30   | 29        | 28  | 28  | 27   | 25         | 29  | 28  | 26    | 28  | 26  | 27  | 24  | 26  |     |     |     |     |     |     |
| MED         | 100             | 100 | 100 | 100 | 100 | 115 | 120 | 115 | 110 | 110 | 105  | 105       | 105 | 105 | 105  | 110        | 120 | 115 | 110   | 105   | 105 | 105 | 105 | 100 | 100 |     |     |     |     |     |
| UQ          | 100             | 100 | 100 | 110 | 115 | 118 | 135 | 125 | 122 | 115 | 110  | 115       | 110 | 110 | 140  | 125        | 135 | 120 | 115   | 110   | 110 | 110 | 105 | 105 | 105 |     |     |     |     |     |
| LQ          | 100             | 100 | 100 | 98  | 100 | 100 | 115 | 110 | 110 | 105 | 105  | 105       | 100 | 100 | 100  | 100        | 105 | 108 | 100   | 105   | 100 | 100 | 100 | 100 | 100 |     |     |     |     |     |

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H°ES (KM)

IONOSPHERIC DATA

SEP. 1984

TYPES OF ES

135 E Mean Time (G.M.T. + 9 h)

| Station |     | KOKUBUNJI TOKYO |    |    |     |    |    |    |    |    |     | Lat. 35 42.4 N |    | Long. 139 29.3 E |    | Sweep 1 MHz to 20 MHz in 20sec in automatic operation |     |    |    |    |    |    |    |     |    |
|---------|-----|-----------------|----|----|-----|----|----|----|----|----|-----|----------------|----|------------------|----|---|-----|----|----|----|----|----|----|-----|----|
| Hour    | Day | 00              | 01 | 02 | 03  | 04 | 05 | 06 | 07 | 08 | 09  | 10             | 11 | 12               | 13 | 14  | 15  | 16 | 17 | 18 | 19 | 20 | 21 | 22  | 23 |
| 1       | F   | FF              | F  | FF | F   | F  | HL | H  | C  | CL | C   | L              | L  | L                | CL | C   | C   | C  | L  | F  | F  | F  | FF | F   |    |
| 2       | F   | F               | F  | F  | F   | F  | CL | C  | CL | CL | CL  | CL             | CL | HL               | HL | C   | C   | C  | L  | F  | F  | F  | F  | F   |    |
| 3       | F   | F               | F  | F  | FF  | F  | C  | C  |    | CL | LL  | H              | H  |                  |    | H   | C   | C  | CL | F  | F  | F  | FF | FF  |    |
| 4       | F   | F               | F  | F  | F   | F  | C  | C  | C  | C  | C   | C              | C  | C                | C  | L   | L   | L  | L  | F  | FF | LK | K  | LHK |    |
| 5       | HK  | HK              | K  | F  | F   | F  | C  | C  | C  | L  | L   | L              | L  | L                | L  | L   | C   | C  | L  | F  | F  | F  | F  | F   |    |
| 6       | F   | F               | F  | F  | FF  | FF | CL | C  | CL | C  | C   | LL             | L  | L                | HL | L   | H   |    | H  |    |    |    |    |     |    |
| 7       |     |                 |    |    |     |    |    |    | CL | C  | L   | L              | L  | L                | L  | L   | L   | HL | L  | F  | F  | F  | F  | F   |    |
| 8       | F   | F               | F  | F  | F   | F  | L  | CL | CL | C  | LL  | LL             | LL | L                | HL | HL  | HL  | CL | FF | FF | F  | F  | F  | F   |    |
| 9       | F   | F               | F  | F  | F   |    | C  | CL | CL | C  | C   | L              | L  | L                | L  | CL  | L   | CL | F  | F  | F  | FF | F  | F   |    |
| 10      | F   |                 |    |    | F   | FF | C  | C  | C  | C  | C   | LL             | L  | L                | L  | L   | L   | LC | F  | FF | F  | F  | F  | F   |    |
| 11      | F   | F               | F  | F  | F   |    | C  | C  | C  | C  | L   | L              | L  | CL               | HL | HL  | C   | C  | FF | F  | F  | F  | F  | F   |    |
| 12      | F   | F               | F  | F  | F   | F  | C  | C  | C  | CL | C   | L              | L  | L                | H  | H   | C   | C  | F  | F  | F  | F  | F  | F   |    |
| 13      | F   |                 | F  | F  | F   |    | C  | C  | C  | C  | L   | L              | L  | L                | LL | L   | HL  | C  | FF | F  | F  | F  | F  | F   |    |
| 14      | F   |                 | F  | F  | F   | F  | L  | HL | HL | L  | CL  | CL             | L  | HL               | LH | LH  | HL  | L  | F  | FF | FF | F  | F  | F   |    |
| 15      | F   | F               | F  | F  | FFF | F  | C  | C  | C  | C  | L   | L              | L  | L                | L  | HL  | H   | C  | F  |    |    |    |    |     |    |
| 16      | F   | F               | F  |    | F   |    | H  |    | C  | CL | L   | CL             | L  | CL               | HL | CL  | L   | C  |    | F  |    |    | F  | F   |    |
| 17      |     | F               | F  |    |     |    | C  | C  | C  | CL | CL  | CL             | LL | LL               | L  | LL  | L   | CL |    | F  | F  | F  | F  | F   |    |
| 18      | F   | F               |    |    |     |    | H  | C  | C  | C  | C   | CL             | LL | L                | L  | L   | L   | L  | F  | F  | F  | F  | F  | F   |    |
| 19      | F   | F               | F  |    |     |    | H  | CL | CL | CL | HCL | LL             | LL | LL               | HL | HL  | C   | C  | F  | F  | K  | K  | K  | F   |    |
| 20      | F   | F               | K  | HK | F   | F  | C  | C  | C  | C  | L   | L              | L  | L                | L  | L   | CL  | C  |    | F  | F  | F  | F  | F   |    |
| 21      | F   | F               | F  |    | F   |    | H  | C  | H  | C  | CL  | CL             | CL | CL               | L  | LL  | HL  | CL | FF | F  | F  | F  | FF | F   |    |
| 22      | F   | F               | F  | F  | F   |    | C  | C  | C  | C  | L   | L              | L  | L                | L  | L   | L   | L  | F  | F  | F  | F  | F  | F   |    |
| 23      | F   | F               | F  | F  | F   | F  | C  | C  | C  | C  | L   | L              | L  | L                | L  | L   | LL  | L  | F  | F  | F  | F  | F  | F   |    |
| 24      | F   | F               | F  | F  | F   | F  | H  | HL |    | L  | L   | HL             | L  | L                | L  | HL  | HLL | CL | F  | F  | F  | F  | F  | F   |    |
| 25      | F   | F               | F  |    |     |    | L  | L  | L  | L  | L   | L              | L  | L                | L  | L   |     |    |    | F  | F  | F  | F  | F   |    |
| 26      |     | F               | F  |    |     |    | HL |    | HL | L  | L   |                |    |                  | L  | L   | L   | HL | F  | F  | F  | F  | F  | F   |    |
| 27      | F   | F               |    |    | F   | F  | HL | L  | L  |    | L   | L              |    | L                | H  |   | H   | CL | F  | F  | F  | F  | FF | F   |    |
| 28      |     |                 | F  | F  | FF  | L  | HL | HL | HL | L  | L   | L              | L  | HL               | HL |   | H   | C  | FF | F  | F  | F  | F  | F   |    |
| 29      | F   | F               |    | F  | F   | F  | H  | HL | HL | HL | H   | HL             | HL | HL               | L  |   | H   | C  | F  | F  | F  | F  | F  | F   |    |
| 30      | F   | F               | F  | F  | F   |    | H  | H  | C  | C  | C   | C              | C  | C                |    | H   | H   | C  | F  | F  | F  | F  | F  | F   |    |
| 31      |     |                 |    |    |     |    |    |    |    |    |     |                |    |                  |    |   |     |    |    |    |    |    |    |     |    |
|         | 00  | 01              | 02 | 03 | 04  | 05 | 06 | 07 | 08 | 09 | 10  | 11             | 12 | 13               | 14 | 15  | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23  |    |
| CNT     |     |                 |    |    |     |    |    |    |    |    |     |                |    |                  |    |   |     |    |    |    |    |    |    |     |    |
| MED     |     |                 |    |    |     |    |    |    |    |    |     |                |    |                  |    |   |     |    |    |    |    |    |    |     |    |
| UQ      |     |                 |    |    |     |    |    |    |    |    |     |                |    |                  |    |   |     |    |    |    |    |    |    |     |    |
| LQ      |     |                 |    |    |     |    |    |    |    |    |     |                |    |                  |    |   |     |    |    |    |    |    |    |     |    |

SEP. 1984

TYPES OF ES

# IONOSPHERIC DATA

SEP. 1984

FXI (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |    |    |    | Lat. | 31 12 1 N |    |    |    | Long | 130 37 1 E |    |    |    | Sweep 1 MHz to 25 MHz in 24 sec in automatic operation |    |    |    |    |     |    |    |    |    |
|-------------|----------|----|----|----|------|-----------|----|----|----|------|------------|----|----|----|--|----|----|----|----|-----|----|----|----|----|
| Hour<br>Day | 00       | 01 | 02 | 03 | 04   | 05        | 06 | 07 | 08 | 09   | 10         | 11 | 12 | 13 | 14   | 15 | 16 | 17 | 18 | 19  | 20 | 21 | 22 | 23 |
| 1           | 47       | 57 | X  | X  | X    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 78  | S  | U  | S  | A  |
| 2           | X        | X  | X  | X  | S    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 80  | X  | O  | S  | S  |
| 3           | X        | X  | X  | X  | U    | U         |    |    |    |      |            |    |    |    |  |    |    |    |    | 79  | 66 | 51 | 49 | U  |
| 4           | 50       | U  | S  | 48 | 50   | 45        | U  | S  |    |      |            |    |    |    |  |    |    |    |    | 84  | X  | X  | X  | X  |
| 5           | X        | S  | X  | U  | H    | U         | S  |    |    |      |            |    |    |    |  |    |    |    |    | 53  | X  | U  | A  | A  |
| 6           | X        | X  | U  | S  | S    | X         | A  |    |    |      |            |    |    |    |  |    |    |    |    | 76  | X  | X  | X  | U  |
| 7           | X        | X  | X  | X  | X    | 45        | 50 |    |    |      |            |    |    |    |  |    |    |    |    | 109 | U  | S  | X  | X  |
| 8           | X        | 50 | 50 | 52 | 50   | 52        |    |    |    |      |            |    |    |    |  |    |    |    |    | 91  | X  | 70 | 73 | 70 |
| 9           | 65       | 65 | 60 | 61 | 56   | 48        |    |    |    |      |            |    |    |    |  |    |    |    |    | 83  | 78 | 77 | 60 | 53 |
| 10          | 52       | 59 | O  | S  | 53   | 52        | U  | S  | 54 |      |            |    |    |    |  |    |    |    |    | 89  | X  | S  | S  | X  |
| 11          | X        | S  | X  | X  | X    | 41        | S  |    |    |      |            |    |    |    |  |    |    |    |    | 85  | O  | U  | S  | A  |
| 12          | 60       | 61 | 60 | 48 | X    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 78  | S  | 56 | 53 | X  |
| 13          | 50       | X  | 44 | 39 | S    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 71  | S  | A  | 40 | 45 |
| 14          | 43       | 45 | 43 | 50 | 42   | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 76  | X  | A  | A  | 50 |
| 15          | 50       | 45 | 45 | 47 | S    | 41        |    |    |    |      |            |    |    |    |  |    |    |    |    | 71  | X  | S  | S  | X  |
| 16          | X        | X  | X  | X  | S    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 100 | X  | U  | U  | X  |
| 17          | X        | X  | S  | X  | X    | S         |    |    |    |      |            |    |    |    |  |    |    |    |    | 99  | U  | S  | S  | X  |
| 18          | X        | X  | X  | X  | X    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 80  | X  | X  | X  | S  |
| 19          | X        | X  | X  | S  | X    | S         |    |    |    |      |            |    |    |    |  |    |    |    |    | 114 | X  | S  | S  | S  |
| 20          | S        | S  | U  | S  | A    | A         |    |    |    |      |            |    |    |    |  |    |    |    |    | 101 | X  | X  | A  | X  |
| 21          | A        | S  | X  | O  | S    | S         |    |    |    |      |            |    |    |    |  |    |    |    |    | 95  | S  | A  | A  | S  |
| 22          | S        | S  | S  | S  | S    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 74  | U  | X  | A  | S  |
| 23          | A        | X  | X  | X  | X    | X         |    |    |    |      |            |    |    |    |  |    |    |    |    | 77  | S  | A  | X  | X  |
| 24          | 41       | X  | X  | X  | S    | 60        | U  | S  | 55 | 59   | 61         | 80 | 78 |    |  |    |    |    |    | 87  | S  | U  | X  | X  |
| 25          | X        | S  | X  | X  | X    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 79  | X  | X  | X  | X  |
| 26          | X        | 46 | 40 | U  | S    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 72  | X  | S  | S  | S  |
| 27          | X        | X  | X  | X  | X    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 74  | X  | X  | X  | X  |
| 28          | X        | X  | X  | X  | X    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 40  | X  | S  | S  | S  |
| 29          | S        | X  | X  | X  | S    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 61  | O  | S  | X  | X  |
| 30          | X        | X  | X  | X  | X    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 47  | X  | A  | X  | X  |
| 31          |          |    |    |    |      |           |    |    |    |      |            |    |    |    |  |    |    |    |    |     |    |    |    |    |
| CNT         | 27       | 30 | 30 | 30 | 28   | 28        | 11 |    | 1  | 1    |            | 1  | 1  | 1  |  |    |    |    | 2  | 30  | 30 | 22 | 24 | 25 |
| MED         | X        | 45 | X  | 43 | 40   | 38        | X  |    | 55 | 59   | 61         | 80 | 78 |    |  |    |    |    | X  | 79  | 58 | 50 | 46 | 46 |
| UQ          | 50       | 50 | 46 | 47 | 44   | 42        | 48 |    |    |      |            |    |    |    |  |    |    |    |    | 87  | X  | X  | 54 | 50 |
| LQ          | X        | X  | X  | X  | X    | X         | X  |    |    |      |            |    |    |    |  |    |    |    |    | 74  | X  | S  | X  | X  |

SEP. 1984

FXI (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

F0F2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | YAMAGAWA |     |     |     |     |     |     | Lat. |     | 31 12.1 N |    | Long |    | 130 37.1 E |     | Sweep 1 |     | MHz to 25 |     | MHz in 24 |    | sec in |     | automatic operation |     |     |     |     |    |     |    |   |   |
|---------|-----|----------|-----|-----|-----|-----|-----|-----|------|-----|-----------|----|------|----|------------|-----|---------|-----|-----------|-----|-----------|----|--------|-----|---------------------|-----|-----|-----|-----|----|-----|----|---|---|
| Hour    | Day | 00       | 01  | 02  | 03  | 04  | 05  | 06  | 07   | 08  | 09        | 10 | 11   | 12 | 13         | 14  | 15      | 16  | 17        | 18  | 19        | 20 | 21     | 22  | 23                  |     |     |     |     |    |     |    |   |   |
| 1       |     | F        | U F | 43  | 40  | 38  | 31  | 24  | 38   | 49  | 60        | 59 | R    | 60 | 67         | U R | 64      | 61  | 65        | 79  | 76        | 72 | 72     | 72  | 50                  | U S | 41  | U S | 40  | A  |     |    |   |   |
| 2       |     | 40       | 39  | 40  | 38  | 38  | 35  | 41  | 51   | 63  | 65        | 68 | H    | 63 | 60         | 63  | 64      | 73  | 93        | 89  | 85        | 74 | 54     | 45  | 44                  | 46  | S   |     |     |    |     |    |   |   |
| 3       |     | 47       | 44  | S   | 38  | 41  | U S | 32  | 43   | 51  | 63        | 65 | 69   | 65 | 60         | 59  | 65      | 82  | H         | 87  | 75        | H  | 79     | 73  | 60                  | 45  | U S | 43  | U S | 44 |     |    |   |   |
| 4       |     | F        | U S | U F | 38  | F   | 36  | S   | 43   | 73  | 79        | 65 | H    | 66 | 65         | 71  | 72      | 72  | 75        | 80  | 85        | 83 | 78     | 85  | 79                  | 77  | 75  |     |     |    |     |    |   |   |
| 5       |     | 70       | 55  | 62  | J S | 69  | U F | 44  | U S  | 49  | U S       | 42 | S    | 44 | S          | 47  | A       | U R | 49        | U S | 53        | 53 | 58     | 48  | E G                 | 44  | 47  | 61  | 57  | 47 | 36  | 36 | A | A |
| 6       |     | S        | 41  | 37  | U S | 38  | 36  | 31  | A    | H   | 38        | 60 | 61   | R  | 61         | 64  | 66      | 84  | 72        | 66  | 62        | 63 | 66     | 61  | S                   | 70  | 70  | 71  | U S | 72 | J S | 44 |   |   |
| 7       |     | 40       | 38  | 38  | 35  | U S | 36  | U F | 38   | U F | 40        | 82 | 77   | 66 | 62         | 62  | 71      | 77  | H         | 81  | U H       | 78 | 73     | 74  | 84                  | 103 | 90  | U F | 49  | 39 | 39  |    |   |   |
| 8       |     | 40       | F   | F   | F   | F   | 39  | F   | 40   | 49  | 70        | 72 | 62   | 63 | 73         | 74  | 87      | 81  | 84        | 86  | 85        | 88 | 85     | 70  | 64                  | F   | F   | F   | F   |    |     |    |   |   |
| 9       |     | F        | F   | F   | F   | F   | F   | F   | F    | 53  | 67        | 62 | 64   | 70 | 67         | 82  | 69      | 66  | 74        | 87  | 92        | 92 | 77     | F   | F                   | F   | F   | F   |     |    |     |    |   |   |
| 10      |     | F        | F   | U S | F   | F   | J S | 43  | F    | 45  | 71        | 73 | 61   | 60 | 79         | 87  | U H     | 83  | U H       | 94  | U R       | 91 | 93     | 90  | 86                  | 83  | 70  | S   | 41  | S  | 40  |    |   |   |
| 11      |     | 41       | S   | 39  | 37  | 39  | 35  | S   | 37   | S   | 51        | 54 | 61   | 65 | 67         | 61  | 69      | 91  | 96        | 88  | 85        | 84 | 90     | U S | 79                  | 59  | U S | 56  | F   | A  |     |    |   |   |
| 12      |     | F        | F   | F   | F   | 42  | 32  | 28  | 38   | 68  | 73        | 63 | 65   | 73 | 81         | 84  | 81      | 72  | 71        | 74  | 77        | 72 | S      | 53  | 50                  | F   | 46  |     |     |    |     |    |   |   |
| 13      |     | 39       | 37  | F   | F   | S   | 31  | 30  | 39   | 66  | 67        | 73 | 76   | 88 | 85         | 90  | 92      | 85  | 70        | 65  | 67        | 65 | S      | 56  | A                   | F   | F   |     |     |    |     |    |   |   |
| 14      |     | F        | F   | F   | F   | F   | F   | F   | F    | 30  | 42        | 53 | 59   | 69 | 71         | 63  | 66      | 78  | 84        | 83  | 76        | 73 | 67     | 70  | 63                  | A   | A   | F   |     |    |     |    |   |   |
| 15      |     | F        | U F | U F | U F | S   | 38  | F   | 32   | 38  | 54        | 75 | 70   | 74 | 80         | H   | 72      | 78  | U H       | 82  | 75        | 68 | 71     | 81  | 65                  | 43  | S   | 44  | S   | 45 | 46  |    |   |   |
| 16      |     | 44       | 40  | 36  | 33  | 31  | 30  | 42  | 55   | 58  | 67        | 62 | 72   | 71 | 76         | 82  | 88      | 90  | R         | 87  | S         | 91 | 94     | U F | 45                  | 37  | U S | 37  | 37  |    |     |    |   |   |
| 17      |     | 38       | 37  | S   | 34  | 33  | S   | S   | S    | 68  | 68        | 64 | 63   | 75 | 68         | 68  | 75      | 71  | 68        | H   | 76        | 81 | 93     | U S | 61                  | 40  | S   | 40  | 39  |    |     |    |   |   |
| 18      |     | 39       | 39  | 38  | 36  | 34  | 35  | 43  | 55   | 68  | 65        | 69 | 63   | 73 | 71         | 75  | 76      | 68  | 84        | 94  | 74        | S  | 50     | J S | 44                  | 43  | 44  |     |     |    |     |    |   |   |
| 19      |     | 41       | 41  | 40  | 37  | 36  | S   | 34  | 43   | 55  | 67        | 71 | 63   | 74 | 69         | 64  | 73      | 79  | 94        | 104 | 108       | 87 | 53     | S   | S                   | S   |     |     |     |    |     |    |   |   |
| 20      |     | S        | J S | U S | 32  | A   | A   | 35  | 86   | 69  | 63        | 81 | 75   | 70 | 83         | 72  | 64      | 68  | 88        | 95  | 79        | 59 | A      | 31  | S                   | 34  |     |     |     |    |     |    |   |   |
| 21      |     | A        | J S | S   | 34  | 29  | A   | 27  | S    | 37  | 70        | 67 | 70   | 57 | 63         | 70  | 84      | 88  | 69        | 60  | 65        | 85 | 89     | 46  | A                   | A   | S   |     |     |    |     |    |   |   |
| 22      |     | J S      | S   | S   | J S | 32  | 33  | 40  | 55   | 60  | 63        | 62 | 66   | 74 | 78         | 83  | 78      | R   | 69        | 84  | 88        | 68 | 34     | A   | A                   | 32  |     |     |     |    |     |    |   |   |
| 23      |     | A        | 34  | 33  | 32  | 30  | F   | 30  | 38   | 54  | 85        | 69 | 65   | 63 | 61         | 86  | 105     | 107 | 97        | 91  | 109       | 71 | 38     | A   | J S                 | 34  | 31  |     |     |    |     |    |   |   |
| 24      |     | F        | 32  | 33  | 35  | 38  | 40  | F   | J S  | 68  | 51        | F  | F    | 50 | 55         | 52  | 57      | F   | F         | 61  | 65        | 61 | 79     | 81  | S                   | S   | 44  | 40  | 36  |    |     |    |   |   |
| 25      |     | 35       | S   | 35  | 33  | F   | 30  | 27  | 32   | 51  | 55        | 59 | 70   | 81 | 81         | 66  | 64      | 60  | 60        | 68  | 80        | S  | 73     | S   | 51                  | 33  | 34  | 36  |     |    |     |    |   |   |
| 26      |     | S        | F   | S   | U S | 31  | F   | 31  | 56   | 80  | 58        | 61 | 77   | H  | 79         | U R | 67      | 62  | 63        | 64  | 71        | 87 | 66     | 40  | S                   | 41  | 40  | 39  |     |    |     |    |   |   |
| 27      |     | J S      | 41  | 35  | 28  | 26  | 26  | 27  | 33   | 62  | 86        | 92 | 72   | 68 | 79         | 81  | 76      | 67  | 60        | 72  | 83        | 68 | 37     | 39  | 37                  | 40  |     |     |     |    |     |    |   |   |
| 28      |     | 38       | 37  | 34  | 33  | 27  | 25  | 31  | 60   | 84  | 80        | 62 | 68   | 85 | 68         | 64  | 81      | 90  | 112       | 75  | 34        | 30 | S      | 31  | S                   | 34  | 34  |     |     |    |     |    |   |   |
| 29      |     | 35       | 37  | 37  | 38  | S   | 35  | 24  | 36   | 57  | 68        | 68 | 62   | 60 | 76         | 91  | 99      | 90  | 76        | 80  | 70        | 55 | 50     | 46  | 50                  | 40  |     |     |     |    |     |    |   |   |
| 30      |     | 39       | 39  | 36  | 36  | 33  | 30  | 37  | 58   | 77  | 70        | 66 | 71   | 78 | 100        | 98  | 92      | 83  | 98        | 75  | 41        | 39 | A      | 37  | 36                  |     |     |     |     |    |     |    |   |   |
| 31      |     |          |     |     |     |     |     |     |      |     |           |    |      |    |            |     |         |     |           |     |           |    |        |     |                     |     |     |     |     |    |     |    |   |   |
| CNT     |     | 23       | 25  | 25  | 25  | 24  | 25  | 30  | 30   | 29  | 29        | 30 | 30   | 30 | 30         | 30  | 30      | 30  | 30        | 30  | 30        | 30 | 29     | 21  | 19                  | 21  |     |     |     |    |     |    |   |   |
| MED     |     | 40       | 38  | 37  | 36  | 33  | 32  | 40  | 56   | 68  | 65        | 64 | 67   | 72 | 76         | 76  | 77      | 74  | 78        | 83  | 73        | 51 | 44     | 40  | 39                  |     |     |     |     |    |     |    |   |   |
| UQ      |     | 41       | 40  | 39  | 38  | 37  | 35  | 43  | 68   | 75  | 69        | 69 | 74   | 79 | 84         | 84  | 84      | 87  | 88        | 88  | 81        | 60 | 49     | 44  | 44                  |     |     |     |     |    |     |    |   |   |
| LQ      |     | 38       | 37  | 34  | 33  | 31  | 28  | 37  | 54   | 61  | 63        | 62 | 63   | 68 | 68         | 66  | 69      | 68  | 71        | 75  | 68        | 43 | S      | 40  | 37                  | 36  |     |     |     |    |     |    |   |   |

The Radio Research Laboratories, Japan

SEP. 1984

F0F2 (0.1 MHz)



# IONOSPHERIC DATA

SEP. 1984

FOF1 (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |    |    |    | Lat. | 31 12.1 N |    | Long | 130 37.1 E |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |     |    |    |    |    |
|-------------|----------|----|----|----|------|-----------|----|------|------------|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| Hour<br>Day | 00       | 01 | 02 | 03 | 04   | 05        | 06 | 07   | 08         | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| 1           |          |    |    |    |      |           |    | A    | L          | U L | A   | 460 | 460 | 470 | 460 | 440 | 420 | U L |     |     |    |    |    |    |
| 2           |          |    |    |    |      |           |    | L    | A          | L   | 430   | 450 | 460 | 490 | 450 | 460 | 450 | L   | A   |     |    |    |    |    |
| 3           |          |    |    |    |      |           |    | L    | U L        | U L | L   | L   | 470 | U L | 470 | 440 | 430 |     | L   | A   |    |    |    |    |
| 4           |          |    |    |    |      |           |    | L    | A          | L   | 460   | 480 | 480 | A   | L   | 470 | L   | 440 | L   |     |    |    |    |    |
| 5           |          |    |    |    |      |           |    | 330  | A          | A   | A   | 420 | 430 | 430 | L   | 440 | 400 | A   | A   |     |    |    |    |    |
| 6           |          |    |    |    |      |           |    | L    | L          | 490 | A   | 480 | A   | A   | 490 | L   | L   | L   |     |     |    |    |    |    |
| 7           |          |    |    |    |      |           |    | L    | A          | 430 | L   | 460 | 480 | 480 | U L | 460 | L   | L   | L   |     |    |    |    |    |
| 8           |          |    |    |    |      |           |    | L    | L          | L   | L   | 450 | A   | A   | A   | L   | L   | L   | L   |     |    |    |    |    |
| 9           |          |    |    |    |      |           |    | A    | L          | L   | L   | 480 | L   | 480 | L   | 450 | L   | L   |     |     |    |    |    |    |
| 10          |          |    |    |    |      |           |    | L    | A          | A   | A   | 470 | 470 | 470 | 470 | 450 | 420 | U L | L   |     |    |    |    |    |
| 11          |          |    |    |    |      |           |    | L    | L          | A   | U L   | A   | 470 | 480 | A   | 450 | A   | L   |     |     |    |    |    |    |
| 12          |          |    |    |    |      |           |    | A    | A          | L   | L   | 460 | L   | 460 | L   | 450 | 440 | A   | A   | A   |    |    |    |    |
| 13          |          |    |    |    |      |           |    | A    | L          | A   | A   | 450 | L   | 470 | L   | 480 | L   | L   | L   |     |    |    |    |    |
| 14          |          |    |    |    |      |           |    | L    | L          | L   | L   | 450 | L   | 490 | L   | 460 | L   | L   | L   |     |    |    |    |    |
| 15          |          |    |    |    |      |           |    | U L  | L          | U L | L   | 460 | L   | 450 | L   | 450 | U L | L   |     |     |    |    |    |    |
| 16          |          |    |    |    |      |           |    | L    | U L        | U L | U L   | U L | 460 | 450 | 450 | U L | U L | L   |     |     |    |    |    |    |
| 17          |          |    |    |    |      |           |    | L    | L          | U L | U L   | L   | 450 | 450 | 470 | 450 | 440 | 420 | L   | A   |    |    |    |    |
| 18          |          |    |    |    |      |           |    | L    | L          | L   | L   | 420 | 430 | 450 | 460 | 470 | 450 | 430 | L   | L   |    |    |    |    |
| 19          |          |    |    |    |      |           |    | L    | L          | L   | L   | 460 | 460 | 450 | 440 | 440 | 420 | A   |     |     |    |    |    |    |
| 20          |          |    |    |    |      |           |    | A    | A          | U L | L   | 430 | 450 | 450 | 460 | 440 | L   | U L | L   |     |    |    |    |    |
| 21          |          |    |    |    |      |           |    | L    | L          | L   | A   | 440 | 460 | 460 | L   | 420 | L   | L   |     |     |    |    |    |    |
| 22          |          |    |    |    |      |           |    | A    | U L        | L   | 450   | U L | 460 | 460 | 450 | A   | 420 | U L |     |     |    |    |    |    |
| 23          |          |    |    |    |      |           |    | L    | 390        | A   | L   | U L | 450 | 470 | 440 | 450 | 440 | A   | L   |     |    |    |    |    |
| 24          |          |    |    |    |      |           |    | L    | 380        | 400 | 420   | 430 | 460 | 440 | 440 | U L | U L | L   |     |     |    |    |    |    |
| 25          |          |    |    |    |      |           |    | L    | L          | L   | L   | 450 | 450 | 440 | U L | U L | L   | L   |     |     |    |    |    |    |
| 26          |          |    |    |    |      |           |    | L    | 390        | 420 | U L   | 450 | 460 | 450 | 470 | 430 | 430 | L   | L   |     |    |    |    |    |
| 27          |          |    |    |    |      |           |    | L    | L          | U L | L   | 430 | U L | L   | U L | 460 | U L | L   | L   |     |    |    |    |    |
| 28          |          |    |    |    |      |           |    | L    | L          | L   | L   | 450 | U L | 470 | 470 | L   | U L | L   | L   |     |    |    |    |    |
| 29          |          |    |    |    |      |           |    | L    | L          | L   | L   | 450 | 500 | 470 | U L | 430 | A   | A   |     |     |    |    |    |    |
| 30          |          |    |    |    |      |           |    | A    | L          | A   | A   | L   | U L | 510 | A   | U L | L   | 300 |     |     |    |    |    |    |
| 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    | 5          | 13  | 17  | 25  | 26  | 27  | 26  | 27  | 15  | 4   |     |     |    |    |    |    |
| MED         |          |    |    |    |      |           |    | 330  | 390        | 430 | L   | 450 | 460 | 460 | 460 | 455 | 440 | L   | 420 | U L |    |    |    |    |
| UQ          |          |    |    |    |      |           |    | U L  | 400        | L   | 430   | L   | 450 | 470 | 470 | 470 | 470 | 445 | L   | U L |    |    |    |    |
| LQ          |          |    |    |    |      |           |    | 390  | U L        | 420 | U L   | 430 | 450 | 460 | 450 | 450 | 430 | 415 | 330 |     |    |    |    |    |

SEP. 1984

FOF1 (0.01 MHZ)

### IONOSPHERIC DATA

SEP. 1984

FOE (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |    |    |    | Lat. | 31 12.1 N |     |     |     | Long | 130 37.1 E |     |     |     | Sweep | 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |    |    |    |
|-------------|----------|----|----|----|------|-----------|-----|-----|-----|------|------------|-----|-----|-----|-------|---|-----|-----|-----|-----|-----|----|----|----|
| Hour<br>Day | 00       | 01 | 02 | 03 | 04   | 05        | 06  | 07  | 08  | 09   | 10         | 11  | 12  | 13  | 14    | 15  | 16  | 17  | 18  | 19  | 20  | 21 | 22 | 23 |
| 1           |          |    |    |    |      |           | S   | H   | H   | H    |            | A   | A   | A   | A     | A   | A   | A   | A   |     |     |    |    |    |
| 2           |          |    |    |    |      |           | S   | A   | A   | A    | A          | A   | A   |     | 350   |   | 325 | 300 | 250 |     |     |    |    |    |
| 3           |          |    |    |    |      |           | S   |     | A   | A    |            |     | A   |     | 345   | 340   | 320 | 295 | 250 |     |     |    |    |    |
| 4           |          |    |    |    |      |           | S   | A   | A   |      | A          | A   | A   |     | 340   | 320   |     | A   | 250 |     |     |    |    | S  |
| 5           |          |    |    |    |      |           | S   |     | A   |      | A          | A   | A   |     | A     | A   | A   | A   | A   |     |     |    |    |    |
| 6           |          |    |    |    |      |           | S   |     | 210 | 260  | 290        | 310 | A   | A   | A     | A   | 280 | A   | A   |     |     |    |    | H  |
| 7           |          |    |    |    |      |           |     | A   |     | 265  | 290        | 315 | A   |     | R     |   |     |     |     |     |     |    |    | S  |
| 8           |          |    |    |    |      |           | S   |     | 220 | 260  | 295        | A   | A   | A   | A     |   | 320 | 295 | 255 | 170 |     |    |    |    |
| 9           |          |    |    |    |      |           | S   | A   |     | 260  | A          | A   | A   | A   | A     | A   | A   | A   | 265 |     |     |    |    | S  |
| 10          |          |    |    |    |      |           | S   |     | 210 | 270  | 290        | 305 | A   | A   | A     | A   | A   | A   | 250 |     |     |    |    | S  |
| 11          |          |    |    |    |      |           | S   |     | 210 | 250  | 270        | 290 | A   | A   | A     | A   | A   | A   | A   |     |     |    |    | S  |
| 12          |          |    |    |    |      |           | S   | A   | A   | A    | A          | A   | A   | A   | A     |   | 310 | 285 | 235 |     |     |    |    | S  |
| 13          |          |    |    |    |      |           | S   |     | 195 | 255  | A          | A   | R   | A   | A     | A   | R   |     |     |     |     |    |    | S  |
| 14          |          |    |    |    |      |           | S   |     | 215 | 275  | A          | A   |     | A   |       |   |     |     |     |     |     |    |    | S  |
| 15          |          |    |    |    |      |           | S   |     | 190 | A    | A          | U   | S   | U   | R     | U   | R   | 335 | 320 | 310 | 275 |    | A  | B  |
| 16          |          |    |    |    |      |           | S   | H   |     | A    | 300        | 320 | 330 | 325 | 320   | A   | A   | 270 | A   | A   |     |    |    |    |
| 17          |          |    |    |    |      |           | S   |     | 205 | A    | H          | 300 | 310 | A   | A     | A   | A   | 300 | 260 | A   | A   |    |    |    |
| 18          |          |    |    |    |      |           |     |     | 230 | 250  | A          | A   | A   | A   | A     |   | 315 | 300 | 290 | 240 |     |    |    | S  |
| 19          |          |    |    |    |      |           | S   | A   | A   | A    | A          | A   | A   | A   | A     | A   | A   | 280 | 215 |     |     |    |    |    |
| 20          |          |    |    |    |      |           | S   | A   |     | 250  | 290        | 310 | A   | A   | A     | A   | A   | A   | 215 |     |     |    |    |    |
| 21          |          |    |    |    |      |           | S   |     | 175 | 230  | A          | A   | A   |     | 325   | A   | A   | A   | 280 | 230 |     |    |    | S  |
| 22          |          |    |    |    |      |           |     |     | 205 | A    | A          | A   | A   | A   | A     | A   | A   | A   | A   | A   |     |    |    |    |
| 23          |          |    |    |    |      |           |     |     | A   | A    | A          | A   | A   | A   | A     | A   | A   | A   | A   | A   |     |    |    |    |
| 24          |          |    |    |    |      |           |     |     | A   |      | 250        | 275 | 290 | 300 | A     | 320   | 310 | 300 | 260 | A   | A   |    |    |    |
| 25          |          |    |    |    |      |           |     |     | 210 | 250  | 290        | 300 | 325 | 330 | 330   | A   |     | 290 | 260 | 220 |     |    |    | S  |
| 26          |          |    |    |    |      |           |     |     | A   | A    | 290        | 305 | 320 | 325 | 330   | 320   | 290 | 250 | 210 |     |     |    |    | S  |
| 27          |          |    |    |    |      |           |     |     | A   |      | 270        | 290 | 300 | 315 | 320   | 315   | 300 | 290 | 260 | 210 |     |    |    | S  |
| 28          |          |    |    |    |      |           |     |     | 200 | 250  | 285        | 300 | 315 | 320 | 320   | 310   | 290 | 260 | 220 |     |     |    |    | S  |
| 29          |          |    |    |    |      |           |     |     | 190 | 250  | A          | A   |     | 310 | 310   | 320   | 320 | 290 | 270 | 210 |     |    |    | S  |
| 30          |          |    |    |    |      |           |     |     | 210 | 260  | 285        | 310 | A   | A   |       | 320   | 310 | 300 | 275 | 210 |     |    |    | S  |
| 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   | 19  | 18  | 17   | 16         | 11  | 9   | 13  | 12    | 19  | 20  | 20  | 2   |     |     |    |    |    |
| MED         |          |    |    |    |      |           | 180 | 210 | 258 | 290  | 310        | 325 | 325 | 330 | 320   | 300   | 278 | 235 | 170 |     |     |    |    |    |
| UQ          |          |    |    |    |      |           |     | 212 | 265 | 300  | 318        | 330 | 330 | 335 | 332   | 315   | 292 | 250 |     |     |     |    |    |    |
| LQ          |          |    |    |    |      |           |     | 202 | 250 | 290  | 300        | 315 | 320 | 320 | 310   | 290   | 260 | 215 |     |     |     |    |    |    |

SEP. 1984

FOE (0.01 MHz)

# IONOSPHERIC DATA

SEP. 1984

FOES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | YAMAGAWA |        |        |        |        |        |        | Lat.   | 31 12-1 N |         |        | Long    | 130 37-1 E |        |        | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |        |        |        |         |         |         |        |        |        |        |
|---------|-----|----------|--------|--------|--------|--------|--------|--------|--------|-----------|---------|--------|---------|------------|--------|--------|---|--------|--------|--------|---------|---------|---------|--------|--------|--------|--------|
| Hour    | Day | 00       | 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 66   | J A 36 | J A 22 | 23     | 21     | 22     | J A 38 | 35     | 34        | J A 52  | J A 61 | J A 40  | J A 38     | J A 40 | 39     | J A 39  | J A 36 | J A 50 | J A 50 | J A 27  | J A 24  | 33      | J A 37 | J A 44 |        |        |
| 2       |     | 22       | J A 27 | 32     | J A 24 | 18     | E S 16 | E S 16 | 25     | J A 48    | 59      | J A 39 | 36      | 36         | 37     | 38     | 39  | J A 50 | J A 62 | J A 51 | J A 42  | J A 40  | J A 21  | J A 20 | J A 23 |        |        |
| 3       |     | E S 16   | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | 27     | J A 43    | J A 40  | 42     | J A 46  | J A 45     | J A 43 | G      | G   | 35     | 34     | J A 70 | 18      | 22      | J A 33  | J A 34 | 50     |        |        |
| 4       |     | J A 30   | J A 25 | J A 24 | 23     | 23     | 21     | 18     | J A 39 | J A 56    | J A 44  | J A 49 | J A 109 | J A 74     | J A 55 | J A 45 | 38  | J A 36 | 26     | J A 33 | J A 50  | J A 44  | J A 37  | J A 18 | J A 26 |        |        |
| 5       |     | 22       | E S 16 | E S 16 | E S 16 | 20     | J A 21 | J A 28 | 28     | J A 58    | J A 104 | J A 75 | J A 84  | 37         | J A 64 | 43     | J A 45  | J A 42 | J A 55 | J A 51 | J A 41  | J A 50  | J A 89  | J A 87 | J A 91 |        |        |
| 6       |     | J A 31   | J A 27 | J A 24 | J A 20 | J A 18 | J A 34 | J A 24 | 30     | 30        | J A 50  | J A 48 | 42      | J A 83     | J A 50 | J A 40 | J A 48  | J A 38 | J A 25 | 25     | 30      | J A 27  | J A 25  | J A 17 | 22     |        |        |
| 7       |     | 25       | 24     | 20     | 20     | E S 16 | E S 16 | 23     | J A 28 | J A 42    | 36      | J A 40 | J A 44  | 32         | G      | 27     | G   | 22     | G      | 23     | 21      | 23      | J A 29  | J A 32 | E S 16 | E S 22 |        |
| 8       |     | E S 16   | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | 26     | 28        | 39      | J A 46 | 50      | J A 63     | J A 63 | 36     | G   | G      | G      | 26     | J A 23  | J A 41  | J A 85  | J A 53 | J A 80 |        |        |
| 9       |     | J A 58   | J A 33 | J A 25 | J A 32 | J A 27 | 19     | E S 16 | J A 35 | J A 48    | J A 74  | J A 71 | J A 67  | J A 55     | J A 66 | J A 64 | J A 64  | J A 74 | G      | J A 64 | J A 63  | J A 44  | J A 32  | J A 36 | J A 26 |        |        |
| 10      |     | J A 65   | J A 23 | J A 51 | J A 30 | J A 20 | J A 24 | 20     | J A 37 | J A 52    | J A 49  | J A 65 | J A 49  | J A 43     | J A 41 | J A 37 | 34  | J A 31 | 26     | 22     | 22      | 18      | 20      | J A 24 | J A 33 |        |        |
| 11      |     | J A 27   | J A 17 | J A 18 | 18     | E S 16 | E S 16 | E S 16 | 26     | 31        | J A 70  | 32     | J A 54  | J A 47     | J A 46 | J A 53 | 44  | J A 66 | J A 43 | J A 62 | J A 60  | J A 89  | J A 80  | J A 24 | J A 58 |        |        |
| 12      |     | J A 26   | E S 16 | J A 22 | 22     | 23     | 22     | 22     | J A 54 | J A 46    | J A 62  | J A 44 | 37      | 40         | J A 43 | 39     | J A 43  | J A 55 | J A 66 | J A 86 | J A 145 | J A 65  | J A 27  | J A 26 | J A 26 |        |        |
| 13      |     | 22       | J A 44 | 22     | 20     | J A 21 | 22     | E S 16 | 30     | J A 43    | J A 50  | J A 49 | G       | 36         | 35     | J A 35 | 28  | G      | G      | 20     | J A 77  | J A 128 | J A 85  | J A 52 | J A 43 |        |        |
| 14      |     | J A 38   | J A 20 | J A 23 | J A 23 | E S 16 | E S 16 | E S 16 | 26     | G         | 34      | J A 36 | G       | J A 45     | 28     | G      | 32  | 37     | 30     | J A 27 | 20      | 20      | J A 60  | J A 65 | J A 64 |        |        |
| 15      |     | J A 41   | J A 28 | J A 42 | 23     | E S 16 | E S 16 | 23     | 25     | 30        | 32      | G      | G       | G          | G      | 35     | 26  | J A 21 | 23     | E S 20 | 17      | 20      | E S 16  | E S 16 | E S 16 |        |        |
| 16      |     | E S 16   | E S 16 | E S 16 | E S 15 | E S 15 | 20     | 24     | 24     | 31        | 33      | 37     | 36      | J A 41     | 36     | J A 50 | J A 53  | J A 49 | J A 36 | J A 39 | J A 40  | 18      | 20      | J A 24 | J A 25 |        |        |
| 17      |     | J A 19   | 20     | 20     | E S 12 | 18     | E S 16 | 19     | 25     | 29        | G       | 35     | 38      | 37         | 37     | 37     | 36  | J A 43 | J A 37 | J A 41 | J A 21  | J A 24  | 22      | 21     | J A 18 |        |        |
| 18      |     | 20       | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | G      | 30        | 34      | 33     | 33      | 34         | 34     | G      | 27  | G      | G      | E S 16 | J A 51  | J A 29  | J A 21  | E S 16 | E S 16 |        |        |
| 19      |     | E S 16   | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | 25     | 33        | 34      | 36     | 34      | 34         | 34     | 34     | 33  | 42     | J A 54 | J A 48 | J A 61  | J A 34  | E S 16  | E S 16 | E S 16 |        |        |
| 20      |     | E S 16   | 20     | 20     | 20     | J A 34 | J A 37 | J A 41 | J A 47 | J A 69    | J A 60  | 41     | J A 36  | J A 61     | 39     | J A 48 | J A 41  | J A 33 | J A 36 | J A 36 | J A 40  | J A 82  | J A 52  | J A 33 | J A 24 |        |        |
| 21      |     | J A 53   | E S 16 | J A 30 | J A 25 | J A 33 | 19     | 21     | 31     | J A 47    | J A 42  | J A 80 | J A 36  | G          | J A 37 | J A 40 | J A 44  | 35     | 41     | J A 49 | J A 83  | J A 44  | J A 74  | J A 46 | J A 33 |        |        |
| 22      |     | J A 26   | J A 25 | J A 24 | 21     | J A 29 | J A 24 | E S 16 | 26     | J A 53    | J A 49  | J A 41 | J A 50  | J A 41     | 35     | J A 51 | J A 61  | J A 84 | J A 51 | J A 47 | J A 85  | J A 85  | J A 103 | J A 33 | J A 33 |        |        |
| 23      |     | J A 40   | J A 28 | J A 24 | J A 22 | J A 24 | J A 20 | J A 26 | J A 38 | J A 42    | J A 78  | J A 75 | 37      | J A 48     | J A 35 | 32     | 43  | J A 46 | J A 27 | J A 53 | J A 83  | J A 84  | J A 51  | J A 76 | J A 25 |        |        |
| 24      |     | 19       | 22     | E S 16 | J A 46 | J A 54 | J A 29 | J A 25 | J A 31 | G         | G       | 26     | G       | 24         | J A 34 | 26     | G   | G      | 24     | J A 37 | J A 36  | J A 77  | J A 43  | J A 25 | J A 34 |        |        |
| 25      |     | J A 21   | J A 21 | 23     | 18     | 18     | 18     | 18     | G      | G         | 24      | G      | 21      | G          | 23     | 34     | 34  | J A 39 | G      | G      | E S 16  | E S 16  | E S 16  | J A 29 | J A 32 | J A 24 |        |
| 26      |     | J A 18   | 20     | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | 22     | J A 33    | G       | G      | G       | G          | 25     | G      | G   | G      | G      | 17     | 24      | 22      | 22      | 20     | E S 16 | J A 17 | E S 16 |
| 27      |     | 19       | E S 16 | E S 16 | E S 16 | J A 28 | 22     | E S 16 | J A 21 | G         | G       | G      | G       | 39         | 38     | 36     | G   | 33     | J A 34 | 20     | J A 20  | E S 16  | E S 16  | 21     | 19     |        |        |
| 28      |     | E S 16   | 20     | 21     | 19     | 20     | E S 16 | E S 16 | 24     | 29        | 31      | 31     | G       | 33         | 36     | 38     | G   | 32     | 32     | 24     | J A 51  | J A 21  | 22      | J A 38 | J A 30 |        |        |
| 29      |     | J A 25   | J A 51 | J A 29 | 18     | E S 16 | E S 16 | E S 16 | 28     | 33        | 34      | 33     | G       | 36         | 37     | 35     | 36  | 43     | J A 53 | J A 50 | J A 26  | J A 26  | J A 20  | 22     | J A 21 |        |        |
| 30      |     | J A 21   | J A 18 | J A 17 | 19     | E S 16 | E S 16 | E S 16 | 28     | J A 54    | J A 47  | J A 60 | J A 51  | J A 63     | 39     | 48     | 33  | G      | G      | J A 30 | 24      | J A 22  | J A 53  | J A 24 | J A 20 |        |        |
| 31      |     |          |        |        |        |        |        |        |        |           |         |        |         |            |        |        |   |        |        |        |         |         |         |        |        |        |        |
|         |     | 00       | 01     | 02     | 03     | 04     | 05     | 06     | 07     | 08        | 09      | 10     | 11      | 12         | 13     | 14     | 15  | 16     | 17     | 18     | 19      | 20      | 21      | 22     | 23     |        |        |
| CNT     |     | 30       | 30     | 30     | 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 22   | 20     | 22     | 20     | 18     | 18     | 17     | 28     | 34        | 41      | J A 40 | 36      | 38         | 37     | 38     | 35  | 36     | 31     | J A 36 | J A 38  | J A 30  | J A 30  | J A 24 | J A 26 |        |        |
| UQ      |     | J A 31   | J A 27 | J A 24 | J A 23 | J A 23 | 22     | 23     | J A 31 | J A 48    | J A 52  | J A 49 | J A 49  | J A 47     | J A 43 | J A 43 | J A 43  | J A 43 | J A 43 | J A 50 | J A 60  | J A 50  | J A 53  | J A 37 | J A 34 |        |        |
| LQ      |     | 19       | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | E S 16 | 25     | 30        | 33      | 33     | G       | 34         | 34     | 34     | 23  | G      | G      | J A 21 | 23      | 23      | 22      | 21     | 20     | J A 20 | J A 21 |

SEP. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

SEP. 1984

FBES (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |        |        |        | Lat.   | 31 12.1 N |        |    |    | Long    | 130 37.1 E |    |      |      | Sweep 1 |      | MHz to 25 |        | MHz in 24 |        | sec in  |        | automatic operation |        |        |   |
|-------------|----------|--------|--------|--------|--------|-----------|--------|----|----|---------|------------|----|------|------|---------|------|-----------|--------|-----------|--------|---------|--------|---------------------|--------|--------|---|
| Hour<br>Day | 00       | 01     | 02     | 03     | 04     | 05        | 06     | 07 | 08 | 09      | 10         | 11 | 12   | 13   | 14      | 15   | 16        | 17     | 18        | 19     | 20      | 21     | 22                  | 23     |        |   |
| 1           | E        | E      | E      | E      | 20     | E         | 27     | 33 | 33 | 40      | 46         | 36 | 36   | 36   | 35      | 35   | 32        | 32     | 31        | 22     | E       | 20     | E                   | A A 44 |        |   |
| 2           | E        | 18     | E      | E      | E      | E S 16    | E S 16 | 24 | 43 | 31      | 35         | 36 | 36   | 37   | 37      | 38   | 33        | 56     | 46        | 40     | 28      | E      | E                   | E      |        |   |
| 3           | E S 16   | E S 16 | E S 16 | E S 16 | E S 16 | E S 16    | E S 16 | G  | 29 | 34      | 38         | 43 | 41   | 41   | G       | G    | 34        | 33     | 68        | 18     | 20      | 19     | 27                  | 19     |        |   |
| 4           | 23       | 18     | 20     | E      | E      | E         | E      | 29 | 49 | 41      | 38         | 38 | 41   | 51   | 44      | 36   | 31        | G      | 33        | 33     | 38      | 30     | E                   | 17     |        |   |
| 5           | E        | E S 16 | E S 16 | E S 16 | E      | 18        | 22     | 28 | 38 | A A 104 | 43         | 40 | 35   | 33   | 41      | 41   | 39        | 48     | 43        | 29     | 19      | 29     | A A 87              | A A 91 |        |   |
| 6           | 25       | 22     | 18     | 18     | 17     | A A 34    | 22     | 26 | 30 | 47      | 44         | 41 | 65   | 49   | 38      | 44   | 36        | U Y 25 | 20        | 29     | 25      | 22     | E                   | E      |        |   |
| 7           | 17       | 21     | E      | E      | E S 16 | E S 16    | G      | 25 | 40 | 32      | 35         | 43 | G 31 | G 29 | G 26    | G 22 | G 23      | G 20   | 20        | 18     | E       | E S 16 | E S 16              | E      |        |   |
| 8           | E S 16   | E S 16 | E S 16 | E S 16 | E S 16 | E S 16    | E S 16 | 24 | 28 | 34      | 42         | 49 | 49   | 50   | 34      | G    | G         | G      | 23        | E      | 30      | 26     | 30                  | E      |        |   |
| 9           | E        | E      | 20     | 21     | 18     | E         | E S 16 | 29 | 38 | 40      | 42         | 44 | 43   | 39   | 34      | 41   | 31        | G      | 39        | 40     | E       | 19     | E                   | E      |        |   |
| 10          | E        | 17     | 20     | E      | E      | 19        | 18     | 33 | 45 | 45      | 44         | 44 | 41   | 41   | 34      | 32   | 18        | G      | 21        | E      | E       | E      | 24                  | 27     |        |   |
| 11          | 18       | E      | E      | E      | E S 16 | E S 16    | E S 16 | 26 | 31 | 47      | 32         | 47 | 44   | 43   | 52      | 37   | 64        | 36     | 60        | 57     | 45      | 17     | E                   | A A 58 |        |   |
| 12          | E        | E S 16 | E      | E      | E      | E         | G      | 50 | 39 | 59      | 40         | 35 | 39   | 41   | 38      | 38   | 44        | 60     | 62        | 58     | 34      | E      | E                   | 18     |        |   |
| 13          | E        | E      | E      | E      | E      | E         | E S 16 | 30 | 39 | 45      | 46         | G  | 35   | 35   | 33      | 28   | G         | G      | G         | 18     | 42      | 40     | A A 85              | 25     | E      |   |
| 14          | 18       | E      | E      | E      | E S 16 | E S 16    | E S 16 | 26 | G  | 33      | 33         | G  | 35   | 27   | G       | 32   | 35        | 28     | 26        | E      | E       | A A 60 | A A 65              | 20     |        |   |
| 15          | E        | 20     | E      | E      | E S 16 | E S 16    | E      | 22 | 28 | 31      | G          | G  | G    | G    | G       | G    | G         | 21     | 23        | E B 20 | 17      | E      | E S 16              | E S 16 | E S 16 |   |
| 16          | E S 16   | E S 16 | E S 16 | E S 15 | E S 15 | E         | G      | 25 | 28 | G       | 36         | G  | 35   | 34   | 42      | 33   | G         | 28     | 31        | 33     | E       | 17     | 17                  | E      |        |   |
| 17          | E        | E      | E      | E B 12 | E      | E S 16    | G      | 23 | 29 | G       | 33         | 36 | 36   | 36   | 36      | 33   | 40        | 34     | 40        | 18     | 18      | E      | E                   | E      |        |   |
| 18          | E        | E S 16 | E S 16 | E S 16 | E S 16 | E S 16    | E S 16 | G  | G  | 31      | 33         | 33 | 34   | 33   | 27      | 23   | G         | G      | E S 16    | 23     | 18      | E      | E S 16              | E S 16 | E S 16 |   |
| 19          | E S 16   | E S 16 | E S 16 | E S 16 | E S 16 | E S 16    | E S 16 | 24 | 30 | 32      | 34         | 34 | 34   | 34   | 34      | G    | 38        | 50     | 45        | 35     | E       | E S 16 | E S 16              | E S 16 |        |   |
| 20          | E S 16   | E      | E      | E      | A A 34 | A A 37    | 27     | 43 | 50 | 44      | 35         | 34 | 35   | 35   | 34      | 33   | 29        | 30     | 34        | 37     | 20      | A A 52 | 20                  | 17     |        |   |
| 21          | A A 53   | E S 16 | 25     | 20     | A A 33 | E         | 19     | 28 | 37 | 34      | 48         | 34 | G    | 34   | 33      | 36   | 33        | 33     | 49        | 45     | 40      | A A 74 | A A 46              | 25     |        |   |
| 22          | E        | 18     | E      | E      | E      | E S 16    | 25     | 50 | 37 | 36      | 38         | 36 | 35   | 34   | 56      | 36   | 25        | 36     | 33        | 17     | A A 103 | A A 33 | 28                  |        |        |   |
| 23          | A A 40   | 26     | 19     | E      | 18     | E         | E      | 30 | 32 | 66      | 41         | 36 | 41   | 35   | 32      | 42   | 41        | 24     | 50        | 19     | A A 84  | A A 51 | 17                  | 20     |        |   |
| 24          | E        | E      | E S 16 | 19     | 18     | 22        | 18     | 22 | G  | G       | 26         | 24 | 34   | 26   | G 23    | G    | G         | 24     | 20        | 29     | 20      | 32     | 25                  | 27     |        |   |
| 25          | 17       | 18     | E      | E      | E      | E         | E      | G  | G  | 24      | 26         | 21 | 23   | G    | G       | 32   | G         | G      | E S 16    | E S 16 | E S 16  | 20     | 26                  | 18     |        |   |
| 26          | E        | E      | E S 16 | E S 16 | E S 16 | E S 16    | E S 16 | 22 | 32 | G       | G          | G  | G    | G    | G       | 20   | G         | 17     | 24        | 18     | E       | E      | E S 16              | E S 16 |        |   |
| 27          | E        | E S 16 | E S 16 | E S 16 | E      | E S 16    | E S 16 | 21 | G  | G       | G          | G  | 39   | 38   | 36      | G    | 31        | 28     | 20        | 18     | E S 16  | E S 16 | E                   | E      |        |   |
| 28          | E S 16   | E      | E      | E      | E      | E S 16    | E S 16 | 24 | 29 | 31      | 31         | G  | 33   | 36   | 37      | G    | 31        | 32     | 24        | 29     | 17      | E      | E                   | E      |        |   |
| 29          | 24       | 29     | E      | 18     | E S 16 | E S 16    | E S 16 | 25 | 31 | 33      | 33         | G  | 36   | 37   | 35      | 34   | 43        | 46     | 43        | 22     | E       | E      | E                   | E      |        |   |
| 30          | E        | E      | E      | E      | E S 16 | E S 16    | E S 16 | 27 | 52 | 39      | 55         | 48 | 42   | 38   | 47      | 33   | G         | G      | 19        | 21     | E       | 20     | A A 53              | E      | E      |   |
| 31          |          |        |        |        |        |           |        |    |    |         |            |    |      |      |         |      |           |        |           |        |         |        |                     |        |        |   |
|             | 00       | 01     | 02     | 03     | 04     | 05        | 06     | 07 | 08 | 09      | 10         | 11 | 12   | 13   | 14      | 15   | 16        | 17     | 18        | 19     | 20      | 21     | 22                  | 23     |        |   |
| CNT         | 30       | 30     | 30     | 30     | 30     | 30        | 30     | 30 | 30 | 30      | 30         | 30 | 30   | 30   | 30      | 30   | 30        | 30     | 30        | 30     | 30      | 30     | 30                  | 30     |        |   |
| MED         | E        | E      | E      | E      | E      | E         | E      | 25 | 32 | 34      | 36         | 36 | 36   | 36   | 34      | 33   | 31        | 26     | 31        | 26     | 18      | 19     | 16                  | 16     |        |   |
| UQ          | 17       | 18     | E S 16 | E S 16 | E S 16 | E S 16    | E S 16 | 29 | 39 | 44      | 42         | 41 | 41   | 39   | 37      | 37   | 36        | 33     | 43        | 35     | 28      | 32     | 25                  | 20     |        |   |
| LQ          | E        | E      | E      | E      | E      | E         | E      | 23 | 28 | 31      | 33         | 22 | 34   | 33   | 32      | 22   | G         | G      | G         | 17     | 19      | 20     | 18                  | E      | E      | E |

SEP. 1984

FBES (0.1 MHZ)

IONOSPHERIC DATA

SEP. 1984

FMIN (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |     |     |     | Lat. | 31 12 1 N |     |     |     | Long | 130 37 1 E |    |    |    | Sweep | 1 MHz to 25 MHz in 24sec in |    |     |     | automatic operation |     |     |     |     |
|-------------|----------|-----|-----|-----|------|-----------|-----|-----|-----|------|------------|----|----|----|-------|-----------------------------|----|-----|-----|---------------------|-----|-----|-----|-----|
| Hour<br>Day | 00       | 01  | 02  | 03  | 04   | 05        | 06  | 07  | 08  | 09   | 10         | 11 | 12 | 13 | 14    | 15                          | 16 | 17  | 18  | 19                  | 20  | 21  | 22  | 23  |
| 1           | E S      | E S | E S | E S | E S  | E S       | E S | 13  | 15  | 16   | 16         | 18 | 19 | 21 | 17    | 16                          | 16 | 16  | 13  | E S                 | E S | E S | E S |     |
| 2           | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 16         | 20 | 20 | 23 | 21    | 16                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 3           | E S      | E S | E S | E S | E S  | E S       | E S | 15  | 12  | 16   | 17         | 24 | 23 | 16 | 20    | 17                          | 17 | 16  | E S | E S                 | E S | E S | E S |     |
| 4           | E S      | E S | E S | E S | E S  | E S       | E S | 13  | 15  | 16   | 17         | 19 | 20 | 20 | 20    | 19                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 5           | E S      | E S | E S | E S | E S  | E S       | E S | E S | E S | 16   | 20         | 25 | 21 | 20 | 20    | 18                          | 18 | E S | E S | E S                 | E S | E S | E S |     |
| 6           | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 15  | 18   | 15         | 21 | 21 | 25 | 20    | 16                          | 17 | 14  | 16  | E S                 | E S | E S | E S |     |
| 7           | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 16         | 20 | 20 | 19 | 19    | 17                          | 16 | 16  | 14  | E S                 | E S | E S | E S |     |
| 8           | E S      | E S | E S | E S | E S  | E S       | E S | E S | E S | 16   | 19         | 16 | 19 | 18 | 20    | 20                          | 18 | 16  | E S | E S                 | E S | E S | E S |     |
| 9           | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 16         | 20 | 23 | 20 | 20    | 21                          | 17 | 16  | E S | E S                 | E S | E S | E S |     |
| 10          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 18         | 20 | 18 | 21 | 19    | 16                          | 16 | 12  | E S | E S                 | E S | E S | E S |     |
| 11          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 20         | 21 | 20 | 20 | 19    | 16                          | 14 | 16  | E S | E S                 | E S | E S | E S |     |
| 12          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 18         | 20 | 21 | 20 | 20    | 18                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 13          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 17  | 16   | 18         | 20 | 21 | 20 | 21    | 16                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 14          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 17         | 19 | 19 | 19 | 23    | 20                          | 17 | E S | E S | E S                 | E S | E S | E S |     |
| 15          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 17   | 20         | 17 | 18 | 17 | 21    | 16                          | 16 | 16  | 20  | E S                 | E S | E S | E S |     |
| 16          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 17   | 20         | 18 | 21 | 19 | 15    | 15                          | 12 | 12  | E S | E S                 | E S | E S | E S |     |
| 17          | E S      | E S | E S | 12  | E S  | E S       | E S | E S | E S | 16   | 17         | 13 | 21 | 25 | 20    | 20                          | 17 | 16  | 15  | E S                 | E S | E S | E S |     |
| 18          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 17         | 18 | 17 | 20 | 17    | 17                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 19          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 12  | 16   | 17         | 19 | 18 | 19 | 17    | 15                          | 13 | 13  | E S | E S                 | E S | E S | E S |     |
| 20          | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 20         | 20 | 20 | 20 | 18    | 17                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 21          | E S      | E S | E S | E S | E S  | E S       | E S | 12  | 16  | E S  | 16         | 18 | 20 | 20 | 20    | 19                          | 15 | 16  | E S | E S                 | E S | E S | E S |     |
| 22          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 17         | 19 | 17 | 18 | 15    | 16                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 23          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 15  | 16   | 18         | 20 | 20 | 21 | 20    | 19                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 24          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 16         | 18 | 16 | 19 | 18    | 20                          | 18 | 12  | E S | E S                 | E S | E S | E S |     |
| 25          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 18         | 20 | 19 | 17 | 16    | 16                          | 15 | 16  | E S | E S                 | E S | E S | E S |     |
| 26          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 17         | 20 | 18 | 22 | 20    | 14                          | 13 | 16  | E S | E S                 | E S | E S | E S |     |
| 27          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 15   | 17         | 17 | 19 | 21 | 19    | 16                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 28          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 18         | 20 | 17 | 16 | 20    | 16                          | 15 | 16  | E S | E S                 | E S | E S | E S |     |
| 29          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 18   | 17         | 18 | 19 | 18 | 16    | 16                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 30          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 15  | 15   | 16         | 19 | 21 | 21 | 19    | 14                          | 16 | 16  | E S | E S                 | E S | E S | E S |     |
| 31          |          |     |     |     |      |           |     |     |     |      |            |    |    |    |       |                             |    |     |     |                     |     |     |     |     |
|             | 00       | 01  | 02  | 03  | 04   | 05        | 06  | 07  | 08  | 09   | 10         | 11 | 12 | 13 | 14    | 15                          | 16 | 17  | 18  | 19                  | 20  | 21  | 22  | 23  |
| CNT         | 30       | 30  | 30  | 30  | 30   | 30        | 30  | 30  | 30  | 30   | 30         | 30 | 30 | 30 | 30    | 30                          | 30 | 30  | 30  | 30                  | 30  | 30  | 30  | 30  |
| MED         | E S      | E S | E S | E S | E S  | E S       | E S | E S | 16  | 16   | 16         | 17 | 20 | 20 | 20    | 20                          | 16 | 16  | 16  | E S                 | E S | E S | E S | E S |
| UQ          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 20         | 20 | 20 | 21 | 20    | 17                          | 16 | 16  | E S | E S                 | E S | E S | E S | E S |
| LQ          | E S      | E S | E S | E S | E S  | E S       | E S | 16  | 16  | 16   | 16         | 18 | 18 | 19 | 17    | 16                          | 16 | 16  | E S | E S                 | E S | E S | E S | E S |

SEP. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

SEP. 1984

M(3000)F2 (0.01)

135° E Mean Time (G.M.T. + 9 h)

| Station | YAMAGAWA |     |     |     | .Lat. 31 12.1 N |     |     |     | Long 130 37.1 E |     |     |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|---------|----------|-----|-----|-----|-----------------|-----|-----|-----|-----------------|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|         | Hour     | 00  | 01  | 02  | 03              | 04  | 05  | 06  | 07              | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |     |     |     |     |     |  |  |
| 1       | F        | 300 | 285 | 290 | 355             | 335 | 355 | 335 | 350             | 340 | 335 | 330 | U R   | 320 | 295 | 290 | 310 | 330 | 320 | 340 | 340 | S   | 320 | U S | 290 | U S | 260 | A   |     |     |     |  |  |
| 2       |          | 275 | 280 | 300 | 290             | 300 | 340 | 325 | 360             | 335 | 340 | 340 | H   | 340 | 310 | 310 | 295 | 295 | 315 | 325 | 335 | 335 | 335 | 275 | 270 | 270 | S   |     |     |     |     |  |  |
| 3       |          | 295 | 285 | 310 | 290             | S   | 340 | U S | 310             | 360 | 350 | 340 | 340   | 345 | 340 | 335 | 290 | 290 | 315 | H   | 325 | 335 | H   | 320 | 330 | 340 | 300 | U S | 280 | U S | 295 |  |  |
| 4       | F        | 300 | U S | 295 | F               | F   | 305 | 325 | 355             | 355 | 340 | 340 | H   | 325 | 310 | 335 | 320 | 305 | 310 | 310 | 305 | 290 | 280 | 280 | 285 | 280 |     |     |     |     |     |  |  |
| 5       |          | 305 | 255 | 280 | J S             | U S | 270 | U S | 285             | U S | 335 | 270 | S   | 265 | A   | U R | 225 | U S | 255 | 275 | 310 | 280 | G   | 255 | 305 | 305 | 295 | 320 | 250 | A   | A   |  |  |
| 6       | S        | 290 | 270 | U S | 290             | 275 | 290 | A   | 290             | 340 | 310 | 320 | R   | 325 | 305 | 335 | 325 | 310 | 320 | S   | 325 | 320 | 305 | 285 | 285 | 295 | S   | U S | J S | 320 |     |  |  |
| 7       |          | 285 | 265 | 290 | 285             | U S | 275 | U F | 310             | 355 | 375 | 370 | 345   | 305 | 300 | 310 | H   | U H | 295 | 310 | 305 | 310 | 340 | 365 | U F | 345 | 280 | 280 |     |     |     |  |  |
| 8       |          | 300 | F   | F   | F               | F   | 305 | F   | 375             | 345 | 370 | 390 | 370   | 325 | 300 | 290 | 300 | 295 | 310 | 320 | 315 | 330 | 335 | 315 | 310 |     | F   | F   |     |     |     |  |  |
| 9       | F        | F   | F   | F   | F               | F   |     |     | 360             | 390 | 370 | 350 | 340   | 315 | 315 | 325 | 295 | 305 | 315 | 335 | 340 | 330 |     | F   | F   | F   | F   |     |     |     |     |  |  |
| 10      | F        |     | F   | U S | F               | F   | J S | 300 | 355             | 350 | 375 | 360 | 285   | 330 | 320 | U H | 285 | U H | 265 | U R | 300 | 325 | 320 | 335 | 330 | 215 | 290 | S   | S   | 275 |     |  |  |
| 11      |          | 290 | 295 | 295 | 320             | 315 | 335 | 350 | 360             | 385 | 345 | 345 | 320   | 275 | 290 | 315 | 310 | 310 | 310 | 320 | 340 | 330 | 350 | 320 | 330 | 310 | F   | A   |     |     |     |  |  |
| 12      | F        | F   | F   | 335 | 330             | 305 | 315 | 380 | 385             | 380 | 330 | 315 | 320   | 320 | 325 | 320 | 340 | 330 | 350 | 320 | 330 | S   | 330 | 310 |     | F   | 315 |     |     |     |     |  |  |
| 13      | F        | 295 | 295 | F   | F               | S   | 340 | 335 | 335             | 375 | 375 | 340 | 330   | 330 | 315 | 300 | 315 | 330 | 335 | 340 | 360 | 330 | S   | 330 |     | A   | F   | F   |     |     |     |  |  |
| 14      | F        | F   | F   | F   | F               | 335 | 335 | 375 | 370             | 360 | 350 | 335 | 305   | 315 | 315 | 325 | 340 | 350 | 345 | 330 | 375 |     | A   | A   | F   |     |     |     |     |     |     |  |  |
| 15      | F        | U F | 315 | U F | 315             | U F | 330 | F   | 330             | 330 | 335 | 345 | 340   | 325 | H   | 310 | 315 | U H | 310 | 320 | 340 | 340 | 340 | 345 | 290 | S   | 285 | S   | 290 | 295 |     |  |  |
| 16      |          | 320 | 325 | 290 | 320             | 320 | 315 | 355 | 365             | 360 | 365 | 340 | 335   | 315 | 315 | 305 | 320 | 315 | 320 | R   | S   | 330 | 370 | 345 | 295 | U S | 295 | 295 |     |     |     |  |  |
| 17      |          | 290 | 310 | 295 | 310             | 335 | S   | 330 | S               | 365 | S   | 365 | 350   | 335 | 345 | 340 | 315 | 335 | 325 | 325 | 315 | H   | 340 | 335 | U S | 370 | S   | 310 | S   | 295 |     |  |  |
| 18      |          | 280 | 305 | 300 | 320             | 325 | 340 | 350 | 365             | 375 | 385 | 360 | 325   | 330 | 315 | 320 | 335 | 310 | 325 | 350 | 365 | S   | 330 | J S | 305 | 290 | 295 |     |     |     |     |  |  |
| 19      |          | 305 | 290 | 310 | 325             | 320 | S   | 325 | 335             | 380 | 375 | 340 | 340   | 335 | 325 | 295 | 300 | 290 | 315 | 335 | 350 | 360 | 320 |     | S   | S   | S   |     |     |     |     |  |  |
| 20      | S        | J S | 290 | U S | 310             | 330 | A   | A   | 285             | 350 | 370 | 315 | 350   | 340 | 320 | 330 | 335 | 330 | 315 | 325 | 355 | 355 | 370 |     | A   | 290 | 295 | S   |     |     |     |  |  |
| 21      | A        | J S | 315 | 295 | 295             | A   | 295 | 310 | 350             | 330 | 365 | 370 | 310   | 290 | 310 | 330 | 320 | 335 | 330 | 340 | 365 | 390 |     | A   | A   | S   |     |     |     |     |     |  |  |
| 22      | J S      | 295 | S   | 285 | J S             | 290 | 280 | 305 | 325             | 345 | 335 | 350 | 315   | 305 | 305 | 300 | 320 | 295 | R   | 305 | 320 | 330 | 330 | 340 |     | A   | A   | 280 |     |     |     |  |  |
| 23      | A        | 295 | 305 | 295 | 285             | 300 | 330 | 315 | 340             |     | A   | 325 | 315   | 270 | R   | 265 | 300 | 310 | 320 | 305 | 330 | 350 | 235 |     | A   | J S | 310 | 260 |     |     |     |  |  |
| 24      | F        | 265 | 270 | 315 | 265             | 250 | F   | J S | 310             | 305 | F   | 280 | F   | 300 | F   | 265 | 295 | F   | 305 | 305 | 325 | 305 | 315 | 340 | 290 | S   | 270 | 285 | 290 |     |     |  |  |
| 25      |          | 270 | 285 | 305 | 265             | 315 | 335 | 310 | 345             | 325 | 315 | 300 | 310   | 335 | 325 | 320 | 315 | 315 | 325 | 335 | 350 | S   | 325 | S   | 270 | 265 | 305 |     |     |     |     |  |  |
| 26      | S        | 280 | F   | 280 | U S             | 310 | 370 | F   | 305             | 330 | 360 | 380 | 325   | 270 | H   | 340 | U R | 305 | 330 | 315 | 320 | 315 | 345 | 280 | 300 | 280 | 260 | 270 |     |     |     |  |  |
| 27      | J S      | 290 | 300 | 285 | 305             | 290 | 295 | 305 | 320             | 335 | 340 | 340 | 310   | 320 | 325 | 330 | 390 | 310 | 320 | 335 | 360 | 295 | 280 | 270 | 275 |     |     |     |     |     |     |  |  |
| 28      |          | 290 | 295 | 295 | 305             | 335 | 280 | 320 | 325             | 355 | 360 | 345 | 315   | 330 | 340 | 290 | 310 | 315 | 345 | 375 | 325 | 265 | 260 | S   | 280 | S   | 280 |     |     |     |     |  |  |
| 29      |          | 270 | 295 | 285 | 315             | S   | 340 | 290 | 320             | 350 | 360 | 375 | 360   | 310 | 295 | 295 | 305 | 320 | 315 | 330 | 355 | 310 | 310 | 280 | 320 | 300 |     |     |     |     |     |  |  |
| 30      |          | 270 | 295 | 305 | 305             | 320 | 300 | 325 | 345             | 350 | 355 | 335 | 330   | 290 | 310 | 320 | 325 | 320 | 330 | 360 | 315 | 295 |     | A   | 310 | 275 |     |     |     |     |     |  |  |
| 31      |          |     |     |     |                 |     |     |     |                 |     |     |     |   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
| CNT     |          | 23  | 25  | 25  | 25              | 24  | 25  | 30  | 30              | 29  | 28  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 29  | 21  | 19  | 21  |     |     |     |     |     |  |  |
| MED     |          | 290 | 295 | 295 | 305             | 320 | 310 | 328 | 350             | 360 | 350 | 338 | 318   | 315 | 310 | 310 | 315 | 318 | 322 | 338 | 335 | 320 | 285 | 285 | 290 |     |     |     |     |     |     |  |  |
| UQ      |          | 295 | 300 | 305 | 315             | 335 | 335 | 345 | 365             | 375 | 365 | 345 | 330   | 325 | 320 | 320 | 320 | 325 | 330 | 350 | 350 | 340 | S   | 295 | 302 | 295 |     |     |     |     |     |  |  |
| LQ      |          | 280 | 285 | 285 | 290             | 290 | 300 | 310 | 335             | 340 | 340 | 325 | 310   | 295 | 295 | 295 | 305 | 315 | 315 | 330 | 325 | 290 | 280 | 275 | 275 |     |     |     |     |     |     |  |  |

SEP. 1984

M(3000)F2 (0.01)

# IONOSPHERIC DATA

SEP. 1984

M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9 h)

| Station  | YAMAGAWA            |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
|----------|---------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|
| Lat.     | 31 12.1 N           |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
| Long.    | 130 37.1 E          |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
| Sweep    | 1                   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
| MHz to   | 25                  |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
| MHz in   | 24sec               |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
| in       | automatic operation |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
| Hour Day | 00                  | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19 | 20 | 21 | 22 | 23 |
| 1        |                     |    |    |    |    |    |    | A   | L   | U L | A   | 390 | 390 | 380 | 370 | 365 | 355 | U L | L   |    |    |    |    |    |
| 2        |                     |    |    |    |    |    |    | L   | A   | 370 | 390 | 390 | 375 | 400 | 390 | 365 | 335 | L   | A   |    |    |    |    |    |
| 3        |                     |    |    |    |    |    |    | L   | U L | U L | L   | 345 | 380 | 365 | 360 | 375 | 360 | L   | A   |    |    |    |    |    |
| 4        |                     |    |    |    |    |    |    | L   | A   | L   | 380 | 385 | 375 | A   | A   | 350 | 340 | L   |     |    |    |    |    |    |
| 5        |                     |    |    |    |    |    |    |     | A   | A   | A   | 380 | H   | 360 | A   | A   | A   | A   | A   |    |    |    |    |    |
| 6        |                     |    |    |    |    |    |    | L   | L   | A   | A   | 345 | A   | A   | 355 | L   | L   | L   |     |    |    |    |    |    |
| 7        |                     |    |    |    |    |    |    | L   | A   | 395 | 390 | 370 | 395 | 375 | U L | 360 | L   | L   | L   |    |    |    |    |    |
| 8        |                     |    |    |    |    |    |    | L   | L   | L   | 400 | A   | A   | A   | 350 | 340 | 360 | L   | L   | L  |    |    |    |    |
| 9        |                     |    |    |    |    |    |    |     | A   | L   | L   | 365 | 355 | 390 | 390 | A   | 360 | L   |     |    |    |    |    |    |
| 10       |                     |    |    |    |    |    |    | L   | A   | A   | A   | A   | 380 | 370 | 370 | 355 | 335 | U L | L   |    |    |    |    |    |
| 11       |                     |    |    |    |    |    |    | L   | L   | A   | U L | A   | A   | 335 | A   | 335 | A   | L   |     |    |    |    |    |    |
| 12       |                     |    |    |    |    |    |    |     | A   | A   | 380 | L   | 380 | 370 | 375 | 365 | A   | A   | A   |    |    |    |    |    |
| 13       |                     |    |    |    |    |    |    |     | L   | A   | A   | 400 | 360 | 360 | 345 | 370 | L   | L   |     |    |    |    |    |    |
| 14       |                     |    |    |    |    |    |    |     | L   | L   | 375 | 390 | 365 | 380 | 360 | 350 | L   | L   |     |    |    |    |    |    |
| 15       |                     |    |    |    |    |    |    |     | U L | L   | U L | 370 | 360 | 375 | 375 | U L | 360 | L   |     |    |    |    |    |    |
| 16       |                     |    |    |    |    |    |    |     | L   | U L | U L | U L | U L | 360 | 390 | A   | 350 | U L | L   |    |    |    |    |    |
| 17       |                     |    |    |    |    |    |    | L   | L   | U L | U L | L   | 390 | 360 | 345 | 365 | A   | L   | A   |    |    |    |    |    |
| 18       |                     |    |    |    |    |    |    |     | L   | 390 | 395 | 400 | 390 | 380 | 375 | 360 | L   | L   |     |    |    |    |    |    |
| 19       |                     |    |    |    |    |    |    |     | L   | L   | L   | 380 | 380 | 375 | 385 | 350 | A   | A   |     |    |    |    |    |    |
| 20       |                     |    |    |    |    |    |    |     | A   | A   | U L | L   | 375 | 370 | 375 | L   | U L | L   |     |    |    |    |    |    |
| 21       |                     |    |    |    |    |    |    | L   | L   | L   | A   | 410 | 390 | 370 | L   | 370 | L   | L   |     |    |    |    |    |    |
| 22       |                     |    |    |    |    |    |    |     | A   | U L | 345 | U L | 370 | 345 | 335 | A   | 320 | U L | L   |    |    |    |    |    |
| 23       |                     |    |    |    |    |    |    | L   | 345 | A   | L   | U L | 365 | 330 | 365 | 335 | 330 | A   | L   |    |    |    |    |    |
| 24       |                     |    |    |    |    |    |    | L   | 315 | 350 | 370 | 360 | 325 | 330 | 330 | U L | U L | L   |     |    |    |    |    |    |
| 25       |                     |    |    |    |    |    |    |     | L   | L   | L   | 355 | 355 | 350 | U L | U L | L   | L   |     |    |    |    |    |    |
| 26       |                     |    |    |    |    |    |    | L   | 370 | 380 | U L | 360 | 390 | 350 | 370 | 370 | L   | L   |     |    |    |    |    |    |
| 27       |                     |    |    |    |    |    |    | L   | L   |     | 385 | U L | L   | U L | 360 | U L | L   | L   |     |    |    |    |    |    |
| 28       |                     |    |    |    |    |    |    | L   | L   | L   | L   | 365 | U L | 350 | 350 | L   | U L | L   | L   |    |    |    |    |    |
| 29       |                     |    |    |    |    |    |    |     | L   | L   | L   | L   | 365 | 330 | 350 | U L | A   | A   |     |    |    |    |    |    |
| 30       |                     |    |    |    |    |    |    |     | A   | L   | A   | A   | L   | U L | A   | U L | L   | 400 |     |    |    |    |    |    |
| 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   | 5   | 11  | 17  | 24  | 25  | 27  | 23  | 25  | 12  | 4   |     |    |    |    |    |    |
| MED      |                     |    |    |    |    |    |    | 365 | 355 | 370 | 380 | 372 | 375 | 365 | 360 | 360 | 348 | U L | 375 |    |    |    |    |    |
| UQ       |                     |    |    |    |    |    |    | U L | L   | L   | 390 | 390 | 380 | 375 | 375 | 365 | 360 | 395 |     |    |    |    |    |    |
| LQ       |                     |    |    |    |    |    |    | 345 | 370 | 375 | 360 | 360 | 350 | 348 | 350 | 338 | 360 | U L |     |    |    |    |    |    |

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M(3000)F1 (0.01)

# IONOSPHERIC DATA

SEP. 1984

H<sup>o</sup>F2 (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |    |    |    | Lat. 31 12 1 N |    |    |          | Long 130 37 1 E |          |            |          | Sweep 1 |     | MHz to 25 MHz |     | in 24sec in |          | automatic operation |    |    |    |    |    |
|-------------|----------|----|----|----|----------------|----|----|----------|-----------------|----------|------------|----------|---------|-----|---------------|-----|-------------|----------|---------------------|----|----|----|----|----|
| Hour<br>Day | 00       | 01 | 02 | 03 | 04             | 05 | 06 | 07       | 08              | 09       | 10         | 11       | 12      | 13  | 14            | 15  | 16          | 17       | 18                  | 19 | 20 | 21 | 22 | 23 |
| 1           |          |    |    |    |                |    |    | 245      | 255             | 280      | 325        | 285      | 300     | 355 | 360           | 305 | 280         | 270      | 255                 |    |    |    |    |    |
| 2           |          |    |    |    |                |    |    | 240      | 275             | 265      | 270        | 290      | 350     | 310 | 345           | 330 | 280         |          |                     |    |    |    |    |    |
| 3           |          |    |    |    |                |    |    | L<br>235 | 260             | 265      | 275        | 285      | 310     | 375 | 360           | 300 | 265         | 260      | E A<br>295          |    |    |    |    |    |
| 4           |          |    |    |    |                |    |    | 240      | 225             | 255      | 260        | 310      | 320     | 275 | 300           | 305 | 295         | 270      |                     |    |    |    |    |    |
| 5           |          |    |    |    |                |    |    | 430      | 465             | A        | 595        | 485      | 450     | 350 | 445           | G   | 495         | A        | 295                 |    |    |    |    |    |
| 6           |          |    |    |    |                |    |    | 255      | 280             | 275      | 290        | 325      | 280     | 280 | 295           | 280 | 290         | 280      |                     |    |    |    |    |    |
| 7           |          |    |    |    |                |    |    | 240      | 225             | 245      | 265        | L<br>270 | 330     | 300 | 300           | 285 | 280         | 295      | 260                 |    |    |    |    |    |
| 8           |          |    |    |    |                |    |    | 235      | 230             | 230      | 290        | 290      | 310     | 295 | 295           | 305 | 290         | 275      | 250                 |    |    |    |    |    |
| 9           |          |    |    |    |                |    |    | 230      | 255             | 280      | 320        | 290      | 295     | 345 | 330           | 295 | 260         |          |                     |    |    |    |    |    |
| 10          |          |    |    |    |                |    |    | 240      | 220             | 250      | E A<br>280 | 280      | 290     | 290 | 320           | 300 | 290         | 250      | 240                 |    |    |    |    |    |
| 11          |          |    |    |    |                |    |    | 230      | 230             | 270      | 260        | 310      | 380     | 315 | 275           | 270 | 290         | 265      |                     |    |    |    |    |    |
| 12          |          |    |    |    |                |    |    | 230      | E A<br>270      | 290      | 300        | 290      | 280     | 280 | 295           | 280 | E A<br>295  | A<br>270 |                     |    |    |    |    |    |
| 13          |          |    |    |    |                |    |    | 230      | 250             | 270      | 280        | 280      | 270     | 295 | 295           | 280 | 280         | 270      |                     |    |    |    |    |    |
| 14          |          |    |    |    |                |    |    | 240      | 250             | 260      | 275        | 325      | 310     | 300 | 275           | 270 | 260         |          |                     |    |    |    |    |    |
| 15          |          |    |    |    |                |    |    | 255      | 260             | 280      | 265        | 305      | 295     | 285 | 275           | 260 | 255         |          |                     |    |    |    |    |    |
| 16          |          |    |    |    |                |    |    | 235      | 250             | 280      | 270        | 295      | 295     | 300 | 290           | 265 | 260         |          |                     |    |    |    |    |    |
| 17          |          |    |    |    |                |    |    | 225      | 225             | 245      | 270        | 255      | 275     | 305 | 280           | 275 | 280         | 265      | 245                 |    |    |    |    |    |
| 18          |          |    |    |    |                |    |    | 235      | 240             | 245      | 290        | 290      | 290     | 300 | 280           | 295 | 270         |          |                     |    |    |    |    |    |
| 19          |          |    |    |    |                |    |    | 235      | 245             | 250      | 270        | 280      | 300     | 325 | 320           | 290 | 250         |          |                     |    |    |    |    |    |
| 20          |          |    |    |    |                |    |    | 225      | 245             | 255      | 255        | 275      | 275     | 275 | 275           | 300 | 275         |          |                     |    |    |    |    |    |
| 21          |          |    |    |    |                |    |    | 245      | 250             | 240      | 255        | 330      | 330     | 300 | 280           | 270 | 270         | 285      |                     |    |    |    |    |    |
| 22          |          |    |    |    |                |    |    | 275      | 275             | 290      | 280        | 290      | 290     | 270 | 280           | 280 | 260         |          |                     |    |    |    |    |    |
| 23          |          |    |    |    |                |    |    | 270      | 240             | A        | 275        | 270      | 370     | 350 | 290           | 280 | 250         | 280      |                     |    |    |    |    |    |
| 24          |          |    |    |    |                |    |    | 280      | 440             | 400      | 340        | 375      | 440     | 310 | 300           | 315 | 280         | 280      |                     |    |    |    |    |    |
| 25          |          |    |    |    |                |    |    | 240      | 270             | 305      | 280        | 265      | 255     | 305 | 300           | 240 | 270         |          |                     |    |    |    |    |    |
| 26          |          |    |    |    |                |    |    | 270      | 240             | 240      | 290        | 280      | 265     | 280 | 265           | 270 | 270         | 275      |                     |    |    |    |    |    |
| 27          |          |    |    |    |                |    |    | 270      | 260             | 240      | 240        | 290      | 290     | 270 | 280           | 275 | 260         | 270      |                     |    |    |    |    |    |
| 28          |          |    |    |    |                |    |    | 265      | 240             | 230      | 250        | 300      | 260     | 280 | 290           | 300 | 275         | 240      |                     |    |    |    |    |    |
| 29          |          |    |    |    |                |    |    | 240      | 240             | 240      | 310        | 320      | 310     | 280 | 260           | 260 | 240         |          |                     |    |    |    |    |    |
| 30          |          |    |    |    |                |    |    | 240      | 240             | A<br>270 | 265        | 310      | 290     | 260 | 260           | 270 | 240         |          |                     |    |    |    |    |    |
| 31          |          |    |    |    |                |    |    |          |                 |          |            |          |         |     |               |     |             |          |                     |    |    |    |    |    |
|             | 00       | 01 | 02 | 03 | 04             | 05 | 06 | 07       | 08              | 09       | 10         | 11       | 12      | 13  | 14            | 15  | 16          | 17       | 18                  | 19 | 20 | 21 | 22 | 23 |
| CNT         |          |    |    |    |                |    |    | 18       | 30              | 28       | 30         | 30       | 30      | 30  | 30            | 30  | 30          | 29       | 8                   |    |    |    |    |    |
| MED         |          |    |    |    |                |    |    | 242      | 240             | 250      | 274        | 285      | 298     | 295 | 295           | 282 | 280         | 270      | 255                 |    |    |    |    |    |
| UQ          |          |    |    |    |                |    |    | 270      | 255             | 270      | 290        | 310      | 325     | 310 | 305           | 305 | 290         | 275      | 274                 |    |    |    |    |    |
| LQ          |          |    |    |    |                |    |    | 235      | 230             | 240      | 260        | 270      | 280     | 280 | 280           | 275 | 270         | 260      | 248                 |    |    |    |    |    |

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H<sup>o</sup>F2 (KM)



# IONOSPHERIC DATA

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H\*F (KM)

135 E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |         |         |         | Lat. 31 12.1 N |         |         |         | Long. 130 37.1 E |       |         |         | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |         |       |         |         |         |     |         |     |         |         |         |     |
|-------------|----------|---------|---------|---------|----------------|---------|---------|---------|------------------|-------|---------|---------|---|---------|-------|---------|---------|---------|-----|---------|-----|---------|---------|---------|-----|
| Hour<br>Day | 00       | 01      | 02      | 03      | 04             | 05      | 06      | 07      | 08               | 09    | 10      | 11      | 12  | 13      | 14    | 15      | 16      | 17      | 18  | 19      | 20  | 21      | 22      | 23      |     |
| 1           | E S 325  | 255     | E S 295 | 270     | 225            | 245     | E A 245 | A       | 230              | A     | A       | 200     | H 200   | 195     | 215   | 205     | 220     | E A 245 | A   | 225     | 205 | E A 270 | E S 345 | A       |     |
| 2           | 300      | 315     | A 285   | 280     | 275            | 245     | 245     | 210     | A                | 200   | H 175   | 200     | 200   | 200     | 205   | 220     | A 255   | A       | 245 | 240     | 230 | 280     | 305     | 305     |     |
| 3           | 285      | 300     | 295     | 270     | 225            | 235     | 225     | 225     | 205              | 215   | 205     | E A 270 | 215   | 230     | 200   | H 190   | E A 255 | A       | A   | 230     | 205 | 255     | 320     | 300     |     |
| 4           | E A 295  | 280     | E A 295 | 275     | 280            | 275     | 245     | A       | A                | A     | 215     | 205     | E A 225   | A       | A     | 210     | 225     | 230     | 250 | E A 295 | 285 | 300     | 250     | 300     |     |
| 5           | 250      | 325     | 280     | 205     | 245            | 295     | 325     | E A 250 | A                | A     | A       | E A 225 | 205   | H 250   | A     | A       | A       | A       | A   | E A 275 | 245 | A       | A       | A       |     |
| 6           | 290      | 330     | A 300   | 270     | 270            | A       | 280     | 250     | 230              | A     | A       | 240     | A   | A       | 220   | A       | 260     | 250     | 250 | 275     | 275 | 255     | 235     | 215     |     |
| 7           | 330      | 335     | 275     | E S 275 | 285            | 305     | 255     | 230     | A                | 205   | 200     | E A 255 | 195   | 195     | 200   | 210     | H 225   | H 220   | 255 | 230     | 205 | 210     | 260     | 295     |     |
| 8           | E S 290  | E S 300 | E S 295 | 275     | 265            | 230     | 240     | 230     | 210              | 205   | 220     | A       | A   | A       | 195   | 200     | 230     | 235     | A   | 230     | 250 | E A 260 | E A 290 | E S 265 |     |
| 9           | E S 300  | E S 300 | 300     | 270     | 235            | 245     | 240     | 210     | A                | A     | E A 270 | E A 275 | E A 270   | 230     | 200   | A       | 240     | 240     | 250 | 250     | 275 | 240     | 225     | E S 290 |     |
| 10          | 275      | 225     | E A 335 | 300     | 290            | 240     | 240     | 240     | A                | A     | A       | A       | A   | 225     | 230   | 210     | 215     | 235     | 235 | 260     | 230 | 210     | 200     | 350     | 350 |
| 11          | 280      | 260     | 290     | 240     | 250            | 220     | 215     | 220     | 210              | A     | 205     | A       | A   | A       | A     | 250     | A       | A       | A   | 270     | 235 | E A 320 | 260     | 290     | A   |
| 12          | 270      | 255     | 260     | 215     | 225            | E S 280 | 250     | 240     | A                | A     | E A 240 | 230     | 220   | E A 250 | 225   | E A 250 | A       | A       | A   | A       | A   | E S 250 | E S 305 | 250     |     |
| 13          | E S 295  | E S 295 | 260     | 250     | 260            | 235     | 240     | A       | A                | A     | A       | 200     | H 190   | H 180   | 225   | 220     | 225     | 235     | 240 | 265     | 250 | A       | A       | 300     |     |
| 14          | E A 300  | E S 300 | 295     | 250     | 235            | 255     | 240     | 220     | 215              | 235   | 200     | 190     | H 195   | H 200   | 215   | 225     | E A 250 | 245     | 235 | 225     | 215 | A       | A       | E A 320 |     |
| 15          | 275      | E A 295 | 270     | 250     | 225            | 245     | 225     | 220     | 210              | 205   | 205     | 200     | H 185   | H 195   | 200   | 225     | 215     | 240     | 245 | 205     | 230 | 305     | 280     | 265     |     |
| 16          | 240      | 245     | 270     | 255     | 240            | 245     | 220     | 215     | 220              | 210   | E A 220 | 200     | 195   | H 205   | A     | 200     | H 215   | 255     | 240 | 210     | 205 | E A 275 | E A 285 | 295     |     |
| 17          | 285      | 285     | 285     | 260     | 240            | 250     | 245     | 225     | 210              | 200   | 190     | H 175   | 210   | 205     | 220   | 220     | A       | A       | A   | 225     | 185 | E S 275 | 255     | 280     |     |
| 18          | 300      | 285     | 275     | 265     | 250            | 240     | 225     | 225     | 230              | 205   | 190     | H 195   | 190   | 180     | 200   | 205     | 215     | 220     | 230 | 205     | 225 | 250     | 260     | 265     |     |
| 19          | 290      | 265     | 270     | 260     | 245            | 250     | 230     | 205     | 225              | 200   | 200     | H 200   | 205   | 195     | H 225 | A       | A       | A       | 230 | 215     | 235 | 310     | 280     | 300     |     |
| 20          | 300      | 275     | 210     | 225     | A              | A       | E A 330 | 250     | A                | A     | A       | 210     | 190   | H 200   | 205   | 215     | 240     | 235     | A   | 225     | 240 | 205     | A       | E A 320 | 290 |
| 21          | A        | 250     | A       | 275     | A              | E S 300 | 270     | A       | A                | 220   | A       | 200     | 200   | 190     | 200   | A       | A       | A       | 260 | 240     | A   | A       | A       | E A 350 |     |
| 22          | 270      | 270     | 300     | 270     | 280            | 240     | 240     | 230     | A                | 230   | 210     | 200     | 215   | 190     | 190   | A       | 260     | 260     | 240 | 215     | 205 | A       | A       | A       |     |
| 23          | A        | 330     | 290     | 270     | 320            | 275     | 220     | 240     | 240              | A     | A       | 230     | 260   | 225     | 210   | A       | A       | 240     | 240 | 205     | A   | A       | 240     | 370     |     |
| 24          | 380      | 325     | 250     | 310     | 340            | 275     | 240     | 250     | 220              | H 200 | H 210   | 200     | 190   | 190     | H 250 | 235     | 220     | 250     | 255 | 225     | 265 | E A 340 | 280     | 320     |     |
| 25          | 315      | 290     | 250     | 260     | 260            | 225     | 270     | 230     | 220              | H 200 | 205     | 200     | 190   | 190     | 190   | 205     | 200     | H 235   | 240 | 225     | 210 | 275     | E A 360 | 280     |     |
| 26          | 310      | 275     | 290     | 250     | 200            | 330     | 270     | 260     | 230              | 210   | 200     | 190     | H 200   | 200     | 190   | 210     | H 210   | 240     | 230 | 210     | 235 | 280     | 290     | 310     |     |
| 27          | 260      | 245     | 275     | 240     | 300            | 280     | 255     | 260     | 240              | 215   | 200     | 190     | H 230   | 250     | 220   | 215     | 235     | 235     | 240 | 210     | 205 | 300     | 290     | 290     |     |
| 28          | 270      | 270     | 270     | 260     | 220            | E S 290 | 260     | 235     | 235              | 230   | 210     | 210     | 210   | 220     | 220   | 250     | 250     | 260     | 210 | 260     | 290 | 330     | 300     | 310     |     |
| 29          | A        | A       | 280     | 250     | 220            | 240     | 240     | 220     | 240              | 230   | 200     | 190     | H 230   | 240     | 240   | A       | A       | A       | 220 | 230     | 240 | 280     | 240     | 255     |     |
| 30          | 290      | 270     | 240     | 255     | 235            | 255     | 240     | 220     | A                | A     | A       | A       | A   | A       | A     | A       | A       | A       | A   | H 260   | 220 | A       | 265     | 300     |     |
| 31          |          |         |         |         |                |         |         |         |                  |       |         |         |   |         |       |         |         |         |     |         |     |         |         |         |     |
| CNT         | 28       | 30      | 29      | 30      | 28             | 28      | 30      | 26      | 18               | 19    | 22      | 26      | 27  | 26      | 25    | 24      | 22      | 20      | 24  | 29      | 29  | 22      | 25      | 26      |     |
| MED         | 284      | 278     | 278     | 260     | 248            | 246     | 240     | 229     | 222              | 210   | 202     | 200     | 200   | 201     | 210   | 219     | 225     | 239     | 240 | 228     | 232 | 265     | 272     | 295     |     |
| UQ          | 300      | 300     | 292     | 270     | 278            | 272     | 255     | 240     | 230              | 225   | 210     | U 212   | 215   | 225     | 220   | 234     | 242     | 248     | 250 | 238     | 250 | 290     | 298     | 305     |     |
| LQ          | 274      | 265     | 270     | 250     | 230            | 240     | 240     | 220     | 210              | 202   | 200     | 195     | 195   | 195     | 200   | 208     | 220     | 235     | 230 | 215     | 205 | U 232   | 258     | 272     |     |

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H\*F (KM)

### IONOSPHERIC DATA

SEP. 1984

H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12' N Long. 130° 37' E Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

| Hour<br>Day | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
|-------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| 1           |    |    |    |    |    |    | S  | E A | E A |     |     |     | H   |     |     | H   |     |     | A   |     |    |    |    |    |
| 2           |    |    |    |    |    |    | S  | 110 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 110 | 105 |     | A   |    |    |    |    |
| 3           |    |    |    |    |    |    | S  | 120 | A   | 105 | 100 | 115 | 115 | 115 | 110 | 105 | 110 | 110 | E S |     |    |    |    |    |
| 4           |    |    |    |    |    |    | S  | 110 | 105 | 110 | 105 | 105 | 105 | 105 | 110 | 110 | 110 | 110 | S   |     |    |    |    |    |
| 5           |    |    |    |    |    |    | S  | 120 | 110 | 110 | 105 | 115 | 105 | 110 | 110 | 110 | 110 | A   | A   |     |    |    |    |    |
| 6           |    |    |    |    |    |    | S  | 110 | 115 | 110 | 115 | 110 | 110 | 115 | 115 | 115 | 110 | A   | 110 |     |    |    |    |    |
| 7           |    |    |    |    |    |    | S  | 125 | H   | 110 | 110 | 110 | E A | 125 | 120 | 110 | 110 | E A | S   |     |    |    |    |    |
| 8           |    |    |    |    |    |    | S  | 120 | 110 | 115 | A   | 115 | A   | 115 | 115 | 115 | 110 | 115 | S   |     |    |    |    |    |
| 9           |    |    |    |    |    |    | S  | 120 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | A   | 115 | S   |     |    |    |    |    |
| 10          |    |    |    |    |    |    | S  | 120 | 110 | 110 | 110 | 110 | 110 | A   | A   | 105 | A   | 110 | S   |     |    |    |    |    |
| 11          |    |    |    |    |    |    | S  | 120 | 110 | 110 | 110 | 110 | 110 | 110 | A   | A   | A   | A   | S   |     |    |    |    |    |
| 12          |    |    |    |    |    |    | S  | A   | 120 | 120 | 115 | 115 | 115 | 115 | 115 | 110 | 115 | 120 | S   |     |    |    |    |    |
| 13          |    |    |    |    |    |    | S  | 120 | 115 | 115 | 115 | 110 | H   | A   | A   | A   | A   | 115 | 115 | S   |    |    |    |    |
| 14          |    |    |    |    |    |    | S  | 120 | 115 | 110 | 110 | 110 | A   | A   | A   | 120 | 120 | 115 | 120 | S   |    |    |    |    |
| 15          |    |    |    |    |    |    | S  | E S | 120 | 115 | A   | 105 | 105 | H   | 105 | 105 | 115 | E A | E A | A   | B  |    |    |    |
| 16          |    |    |    |    |    |    | S  | E S | 120 | 110 | 110 | H   | 105 | 105 | 105 | A   | A   | A   | A   | A   |    |    |    |    |
| 17          |    |    |    |    |    |    | S  | 120 | 110 | 110 | 110 | 110 | 120 | 110 | 110 | 110 | 110 | 110 | A   |     |    |    |    |    |
| 18          |    |    |    |    |    |    | H  | 115 | 110 | 110 | A   | A   | A   | A   | E A | E A | 120 | 115 | 110 | 115 | S  |    |    |    |
| 19          |    |    |    |    |    |    | S  | 120 | 110 | 105 | 105 | 105 | 105 | E A | E A | 115 | 110 | 110 | A   |     |    |    |    |    |
| 20          |    |    |    |    |    |    | S  | A   | 110 | 110 | 110 | A   | A   | A   | A   | A   | A   | 110 |     |     |    |    |    |    |
| 21          |    |    |    |    |    |    | S  | 120 | 110 | A   | A   | A   | 105 | A   | A   | 105 | 105 | 115 | S   |     |    |    |    |    |
| 22          |    |    |    |    |    |    |    | 120 | 110 | 110 | A   | 110 | A   | 110 | 110 | 110 | A   | A   | A   |     |    |    |    |    |
| 23          |    |    |    |    |    |    |    | A   | A   | 110 | 110 | 110 | A   | A   | 115 | A   | A   | A   | A   |     |    |    |    |    |
| 24          |    |    |    |    |    |    |    | A   | 110 | 110 | 120 | 120 | A   | 120 | 120 | 115 | 115 | 100 | A   |     |    |    |    |    |
| 25          |    |    |    |    |    |    |    | 120 | 120 | E A | 125 | 110 | 115 | 110 | E A | 125 | A   | 120 | 115 | 120 | S  |    |    |    |
| 26          |    |    |    |    |    |    |    | A   | 110 | 110 | 110 | 110 | 115 | 115 | 115 | 115 | 110 | 110 | S   |     |    |    |    |    |
| 27          |    |    |    |    |    |    |    | A   | 115 | 115 | 105 | 115 | 110 | 110 | 110 | 110 | 110 | 110 | S   |     |    |    |    |    |
| 28          |    |    |    |    |    |    |    | E S | 140 | 110 | 110 | 110 | 110 | 110 | 120 | 110 | 110 | 110 | 110 | S   |    |    |    |    |
| 29          |    |    |    |    |    |    |    | E A | 135 | 110 | 110 | 110 | 110 | 110 | 110 | 105 | E A | 120 | 110 | S   |    |    |    |    |
| 30          |    |    |    |    |    |    |    | E S | 130 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 115 | A   | S   |    |    |    |    |
| 31          |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |
| CNT         |    |    |    |    |    |    |    | 24  | 28  | 28  | 26  | 27  | 22  | 23  | 23  | 25  | 23  | 22  | 2   |     |    |    |    |    |
| MED         |    |    |    |    |    |    |    | 120 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 112 |     |    |    |    |    |
| UQ          |    |    |    |    |    |    |    | 120 | 115 | 111 | 110 | 115 | 112 | 115 | 115 | 115 | 114 | 115 |     |     |    |    |    |    |
| LQ          |    |    |    |    |    |    |    | 120 | 110 | 110 | 105 | 110 | 105 | 110 | 110 | 110 | 110 | 110 |     |     |    |    |    |    |

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H°E (KM)

IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

| Station     | YAMAGAWA |     |     |     | Lat. 31 12.1 N |     |     |     | Long. 130 37.1 E |     |     |     | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------|----------|-----|-----|-----|----------------|-----|-----|-----|------------------|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Hour<br>Day | 00       | 01  | 02  | 03  | 04             | 05  | 06  | 07  | 08               | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |     |
| 1           | 105      | 105 | 100 | 105 | 105            | 105 | 100 | 130 | 130              | 120 | 110 | 120 | 120   | 115 | 120 | 120 | 125 | 110 | 105 | 105 | 105 | 105 | 105 | 105 |     |
| 2           | 105      | 105 | 105 | 100 | 105            | S   | S   | 110 | 105              | 115 | 120 | 120 | 125   | 130 | 125 | 125 | 120 | 105 | 105 | 105 | 100 | 105 | 105 | 105 |     |
| 3           | S        | S   | S   | S   | S              | S   | S   | 145 | 120              | 125 | 115 | 115 | 110   | 115 | G   | G   | 145 | 125 | 115 | 105 | 105 | 105 | 100 | 110 |     |
| 4           | 100      | 100 | 100 | 100 | 100            | 105 | 125 | 115 | 115              | 115 | 110 | 105 | 110   | 105 | 110 | 110 | 120 | 155 | 120 | 105 | 105 | 110 | 105 | 100 |     |
| 5           | 100      | S   | S   | S   | 155            | 125 | 115 | 115 | 110              | 105 | 105 | 115 | 105   | 130 | 105 | 105 | 105 | 105 | 105 | 100 | 105 | 120 | 110 | 110 |     |
| 6           | 100      | 100 | 100 | 100 | 100            | 125 | 125 | 135 | 125              | 120 | 120 | 110 | 110   | 110 | 110 | 110 | 110 | 110 | 140 | 120 | 120 | 115 | 110 | 115 |     |
| 7           | 100      | 100 | 105 | 100 | S              | S   | 145 | 120 | 110              | 110 | 110 | 105 | 105   | 100 | 105 | 105 | 100 | 100 | 125 | 100 | 105 | S   | S   | 105 |     |
| 8           | S        | S   | S   | S   | S              | S   | S   | 120 | 125              | 120 | 115 | 115 | 110   | 110 | 120 | G   | G   | G   | 130 | 120 | 110 | 115 | 120 | 115 |     |
| 9           | 110      | 110 | 100 | 100 | 100            | 105 | S   | 120 | 115              | 110 | 110 | 110 | 110   | 105 | 115 | 110 | 105 | G   | 120 | 110 | 115 | 115 | 110 | 110 |     |
| 10          | 110      | 100 | 100 | 100 | 100            | 115 | 100 | 115 | 110              | 110 | 110 | 110 | 110   | 110 | 105 | 105 | 110 | 140 | 125 | 120 | 110 | 110 | 110 | 110 |     |
| 11          | 110      | 110 | 110 | 100 | S              | S   | S   | 125 | 115              | 110 | 110 | 110 | 105   | 105 | 115 | 120 | 120 | 120 | 115 | 110 | 110 | 115 | 110 | 110 |     |
| 12          | 105      | S   | 100 | 100 | 100            | 105 | 115 | 110 | 115              | 110 | 110 | 115 | 110   | 115 | 125 | 125 | 125 | 115 | 115 | 110 | 110 | 110 | 105 | 105 |     |
| 13          | 110      | 100 | 100 | 100 | 100            | 100 | S   | 120 | 120              | 110 | 110 | G   | 105   | 100 | 100 | 100 | G   | G   | 130 | 110 | 100 | 105 | 105 | 110 |     |
| 14          | 105      | 105 | 100 | 105 | S              | S   | S   | 150 | G                | 155 | 120 | G   | 100   | 100 | G   | 170 | 140 | 125 | 120 | 115 | 115 | 115 | 110 | 110 |     |
| 15          | 115      | 120 | 105 | 105 | S              | S   | 125 | 115 | 110              | 110 | G   | G   | G   | G   | G   | 125 | 100 | 100 | 100 | B   | 100 | 100 | S   | S   | S   |
| 16          | S        | S   | S   | S   | S              | 145 | 135 | 130 | 125              | 145 | 125 | 125 | 120   | 120 | 95  | 110 | 105 | 95  | 95  | 95  | 95  | 95  | 95  | 120 | 105 |
| 17          | 105      | 105 | 100 | B   | 100            | S   | 140 | 120 | 140              | G   | 125 | 110 | 110   | 110 | 110 | 115 | 110 | 105 | 105 | 105 | 105 | 105 | 105 | 100 | 105 |
| 18          | 110      | S   | S   | S   | S              | S   | S   | G   | 125              | 115 | 110 | 110 | 105   | 110 | 110 | 105 | G   | G   | S   | 110 | 105 | 105 | S   | S   |     |
| 19          | S        | S   | S   | S   | S              | S   | S   | 120 | 115              | 115 | 115 | 120 | 120   | 120 | 115 | 120 | 140 | 125 | 120 | 110 | 120 | S   | S   | S   |     |
| 20          | S        | 140 | 130 | 125 | 115            | 120 | 115 | 115 | 115              | 110 | 115 | 110 | 105   | 110 | 105 | 105 | 105 | 135 | 115 | 110 | 110 | 105 | 105 | 105 |     |
| 21          | 105      | S   | 100 | 100 | 100            | 100 | 115 | 110 | 110              | 110 | 105 | 105 | G   | 105 | 105 | 125 | 135 | 130 | 115 | 110 | 110 | 105 | 100 | 100 |     |
| 22          | 110      | 100 | 100 | 100 | 105            | 105 | S   | 120 | 115              | 110 | 110 | 110 | 105   | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 135 | 105 | 105 | 100 |     |
| 23          | 100      | 100 | 100 | 100 | 100            | 100 | 115 | 110 | 110              | 110 | 110 | 110 | 110   | 110 | 110 | 110 | 105 | 105 | 115 | 110 | 120 | 110 | 110 | 110 |     |
| 24          | 100      | 100 | S   | 120 | 115            | 115 | 110 | 110 | G                | G   | 110 | 110 | 100   | 100 | 100 | G   | G   | 100 | 100 | 100 | 115 | 100 | 100 | 100 |     |
| 25          | 100      | 100 | 140 | 100 | 100            | 100 | 100 | G   | 115              | 115 | 110 | 110 | E G   | 150 | 150 | 100 | 100 | G   | G   | S   | S   | S   | 110 | 110 | 105 |
| 26          | 105      | 100 | S   | S   | S              | S   | S   | 110 | 110              | G   | G   | G   | 100   | G   | G   | 100 | 100 | E G | 165 | 100 | 100 | 100 | S   | 100 | S   |
| 27          | 100      | S   | S   | S   | 110            | 110 | S   | 110 | 110              | 100 | G   | 105 | 170   | 150 | 140 | G   | 135 | 120 | 120 | 115 | S   | S   | 110 | 115 |     |
| 28          | S        | 110 | 110 | 110 | 140            | S   | S   | 140 | 130              | 140 | E G | 140 | G   | 140 | 135 | 130 | G   | 160 | 140 | 120 | 110 | 110 | 120 | 110 | 110 |
| 29          | 110      | 110 | 110 | 110 | S              | S   | S   | 140 | 135              | 140 | 150 | G   | 110   | 160 | 160 | 140 | 120 | 115 | 115 | 115 | 115 | 110 | 110 | 110 |     |
| 30          | 105      | 105 | 105 | 105 | S              | S   | S   | 135 | 115              | 115 | 115 | 115 | 110   | 115 | 115 | 130 | G   | 115 | 120 | 115 | 100 | 120 | 105 | 100 |     |
| 31          |          |     |     |     |                |     |     |     |                  |     |     |     |   |     |     |     |     |     |     |     |     |     |     |     |     |
| CNT         | 24       | 21  | 21  | 21  | 18             | 16  | 15  | 28  | 28               | 27  | 27  | 24  | 28  | 28  | 27  | 25  | 24  | 25  | 27  | 29  | 28  | 25  | 26  | 26  |     |
| MED         | 105      | 105 | 100 | 100 | 100            | 105 | 115 | 120 | 115              | 115 | 110 | 110 | 110   | 110 | 110 | 110 | 115 | 115 | 115 | 110 | 110 | 110 | 108 | 108 |     |
| UQ          | 110      | 110 | 105 | 105 | 110            | 118 | 125 | 130 | 125              | 120 | 116 | 115 | 112   | 120 | 120 | 120 | 130 | 125 | 120 | 110 | 115 | 115 | 110 | 110 |     |
| LQ          | 100      | 100 | 100 | 100 | 100            | 102 | 112 | 112 | 110              | 110 | 110 | 110 | 105   | 105 | 105 | 105 | 105 | 105 | 108 | 105 | 105 | 105 | 105 | 105 |     |

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H°ES (KM)

# IONOSPHERIC DATA

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TYPES OF ES

135 E Mean Time (G.M.T. + 9 h)

| Station |     | YAMAGAWA |      |    |    |    |      |      | Lat. 31 12.1 N |      | Long. 130 37.1 E |      | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|-----|----------|------|----|----|----|------|------|----------------|------|------------------|------|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Hour    | Day | 00       | 01   | 02 | 03 | 04 | 05   | 06   | 07             | 08   | 09               | 10   | 11  | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
| 1       |     | F3       | F3   | F3 | F2 | F3 | F2   | L3   | CL43           | HL23 | CL32             | CL32 | C1  | C1   | C2   | C1   | C2   | C4   | L5   | F5   | F3   | F5   | F3   | F8   |      |
| 2       |     | F2       | F3   | F4 | F3 | F1 |      |      | C3             | C8   | C2               | C1   | C1  | C1   | C1   | C2   | C3   | C6   | L8   | F8   | F4   | F2   | F2   | F2   |      |
| 3       |     |          |      |    |    |    |      |      | H2             | CL12 | C1               | C2   | C4  | C2   | CL21 |      | H2   | C4   | C7   | F3   | F3   | F3   | F8   | FF22 |      |
| 4       |     | F3       | F2   | F4 | F2 | F2 | F1   | C1   | C6             | C5   | C2               | C2   | C3  | C2   | C2   | C3   | C1   | H1   | C5   | F4   | F7   | F5   | F2   | F3   |      |
| 5       |     | F2       |      |    |    | F2 | F4   | L6   | C5             | C4   | C4               | C3   | CC12  | C2   | CC13 | C3   | C3   | C3   | L4   | L5   | F6   | F3   | FF23 | F4   | F4   |
| 6       |     | F2       | F4   | F5 | F2 | F2 | FF72 | CL42 | C2             | CL21 | C5               | CL31 | C2  | C4   | C3   | C2   | C3   | C6   | L2   | C1   | F6   | F7   | F2   | F1   | F1   |
| 7       |     | F2       | F3   | F1 | F1 |    | H1   | C2   | C6             | C2   | C2               | C3   | L1  | L2   | L1   | L1   | L2   | L3   | C2   | F2   | F1   |      |      | F2   |      |
| 8       |     |          |      |    |    |    |      | C2   | C2             | C3   | CL32             | C3   | CL21  | C3   | C1   |      |      |      | H5   | F1   | F6   | F3   | F4   | F7   |      |
| 9       |     | F2       | F2   | F3 | F5 | F3 | F1   |      | C4             | C3   | C3               | C2   | C3  | C3   | C2   | C2   | C3   | L2   |      | C6   | F4   | F3   | F3   | F2   | F2   |
| 10      |     | F3       | F3   | F5 | F3 | F3 | F7   | LC12 | C4             | C5   | C4               | C3   | C4  | C2   | L2   | L2   | C2   | L2   | HL22 | CL41 | F1   | F1   | F1   | F3   | FF41 |
| 11      |     | F3       | F2   | F2 | F2 |    |      |      | C4             | C4   | C4               | C1   | C3  | C3   | C4   | CL43 | HL12 | CL75 | CL25 | C5   | F6   | F4   | FF21 | F2   | F7   |
| 12      |     | F2       |      | F5 | F2 | F2 | F2   | C1   | L6             | C4   | C5               | C3   | C2  | C2   | C2   | C3   | C3   | C6   | C6   | F5   | F5   | F7   | F2   | F5   |      |
| 13      |     | F1       | F2   | F2 | F2 | F2 | F3   |      | C4             | C4   | C4               | C3   |   | L2   | L2   | L2   | L1   |      | H3   | F6   | F5   | F5   | F5   | F2   |      |
| 14      |     | F4       | F2   | F2 | F1 |    |      | H3   |                | HC12 | C2               |      |   | L2   | L1   |      | H1   | H2   | C2   | C4   | F1   | F1   | F6   | F4   | F3   |
| 15      |     | FF22     | FF31 | F2 | F1 |    |      | L1   | C3             | CL22 | CL22             |      |   |      |      | C1   | L3   | L2   | L2   |      | F1   | F2   |      |      |      |
| 16      |     |          |      |    |    | F1 | H2   | H3   | C2             | H1   | C2               | C1   | C1  | C1   | L3   | CL23 | LC31 | L4   | L5   | F4   | F2   | F2   | F1   | F2   |      |
| 17      |     | F1       | F1   | F1 |    | F1 | H1   | C4   | HC22           |      | CL21             | C2   | C1  | C2   | C2   | C2   | C5   | C7   | L8   | F4   | F4   | F2   | F1   | F1   |      |
| 18      |     | F1       |      |    |    |    |      |      | C2             | C2   | L2               | L2   | L2  | L1   | L1   | L1   |      |      |      | F4   | F3   | F2   |      |      |      |
| 19      |     |          |      |    |    |    |      | C3   | C3             | C3   | C2               | C1   | C1  | CL11 | CL11 | CL11 | HL31 | CL61 | F7   | F3   | F1   |      |      |      |      |
| 20      |     | F1       | F1   | F1 | F7 | F7 | L5   | L3   | C5             | C3   | C2               | L1   | L2  | L2   | L2   | L2   | L2   | H4   | F7   | F7   | F3   | F3   | F4   | F2   |      |
| 21      |     | F7       |      | F4 | F1 | F3 | F1   | C3   | C5             | C4   | L3               | L4   | L1  |      | L1   | L2   | CL26 | H2   | C4   | C5   | F3   | F7   | F4   | F4   | F4   |
| 22      |     | F2       | F2   | F2 | F2 | F2 | F2   |      | C5             | C6   | C2               | L2   | C2  | L2   | C1   | C2   | C5   | L3   | L3   | L5   | F4   | FF11 | F5   | F5   | F4   |
| 23      |     | F5       | F7   | F6 | F2 | F6 | F2   | F2   | L3             | L4   | C4               | C2   | C1  | L3   | L1   | C2   | L2   | L3   | L3   | C4   | F3   | FF14 | F4   | F4   | F3   |
| 24      |     | F2       | F2   |    | F3 | F5 | F7   | F5   | L4             |      |                  | L1   | L1  | L2   | L1   | L1   |      |      | C1   | L3   | F4   | FF24 | F3   | F2   | F3   |
| 25      |     | F2       | F1   | F1 | F1 | F1 | F1   | F1   |                | L1   | L1               | L1   | L1  | H1   | HL11 | L1   | L1   |      |      |      |      | F5   | F7   | F5   |      |
| 26      |     | F1       | F1   |    |    |    |      |      | C2             | C3   |                  |      |   | L1   |      |      | L1   | L1   | H1   | LC11 | F1   | F1   |      | F2   |      |
| 27      |     | F2       |      |    |    | F1 | F1   |      | L1             | L2   | L1               |      | L1  | H1   | H1   | H1   |      | H2   | C3   | C2   | FF12 |      | F1   | F1   |      |
| 28      |     |          | F2   | F2 | F2 | F1 |      |      | C3             | C3   | C1               | C1   |   | H1   | HL11 | H2   |      | H2   | H3   | C4   | F4   | F3   | F1   | F2   | F2   |
| 29      |     | F7       | F8   | F2 | F2 |    |      | H5   | HL22           | HC11 | HC11             |      | C1  | H1   | H1   | H1   | CL52 | C7   | L7   | F3   | F3   | F1   | F1   | F3   |      |
| 30      |     | F2       | F2   | F2 | F1 |    |      |      | C4             | C4   | C3               | C4   | C4  | C3   | C2   | C3   | CL11 |      | L1   | L3   | F1   | F3   | FF25 | F1   | F4   |
| 31      |     |          |      |    |    |    |      |      |                |      |                  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |
|         |     | 00       | 01   | 02 | 03 | 04 | 05   | 06   | 07             | 08   | 09               | 10   | 11  | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
| CNT     |     |          |      |    |    |    |      |      |                |      |                  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |
| MED     |     |          |      |    |    |    |      |      |                |      |                  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |
| UQ      |     |          |      |    |    |    |      |      |                |      |                  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |
| LQ      |     |          |      |    |    |    |      |      |                |      |                  |      |   |      |      |      |      |      |      |      |      |      |      |      |      |

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TYPES OF ES

IONOSPHERIC DATA

SEP. 1984

FXI (0.1 MHZ)

135° E Mean Time (G.M.T. + 9 h)

| Station     | OKINAWA |         |         |         | Lat.    | 26 16.9 N |         |    |    | Long | 127 48.4 E |    |    |    | Sweep 1 | MHz to 25 MHz in 24sec in |    |    |    | automatic operation |          |          |         |         |         |   |   |
|-------------|---------|---------|---------|---------|---------|-----------|---------|----|----|------|------------|----|----|----|---------|---------------------------|----|----|----|---------------------|----------|----------|---------|---------|---------|---|---|
| Hour<br>Day | 00      | 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<br>42 | A       | 50      | 55      | X<br>38 | X<br>27   | X<br>38 |    |    |      |            |    |    |    |         |                           |    |    |    | X<br>78             | X<br>58  | X<br>44  | X<br>44 | 50      |         |   |   |
| 2           | X<br>47 | X<br>46 | X<br>44 | X<br>43 | X<br>40 | X<br>39   | X<br>37 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>120 | X<br>91  | X<br>80 | X<br>63 | X<br>65 |   |   |
| 3           | X<br>66 | X<br>58 | X<br>51 | X<br>48 | X<br>49 | X<br>49   | X<br>36 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>86  | X<br>71  | X<br>48 | X<br>45 | 48      |   |   |
| 4           | X<br>47 | X<br>48 | X<br>47 | X<br>42 | X<br>41 | X<br>40   | X<br>50 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>100 | X<br>99  | X<br>86 | X<br>85 | X<br>80 |   |   |
| 5           | X<br>82 | X<br>70 | X<br>66 | X<br>67 | X<br>58 | X<br>55   | S       |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>72  | X<br>56  | X<br>46 | A       | 45      |   |   |
| 6           | A       | 56      | S       | 45      | 44      | 42        | Y       |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>89  | X<br>93  | X<br>86 | X<br>60 | X<br>53 |   |   |
| 7           | X<br>50 | X<br>47 | X<br>48 | X<br>37 | X<br>35 | X<br>34   | X<br>41 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>146 | X<br>110 | X<br>48 | X<br>44 | X<br>47 |   |   |
| 8           | X<br>48 | X<br>48 | X<br>54 | X<br>54 | X<br>50 | X<br>42   | X<br>41 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>110 | Y        | X<br>63 | X<br>54 | X<br>55 |   |   |
| 9           | X<br>62 | 70      | 70      | X<br>71 | X<br>59 | X<br>50   | X<br>47 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>87  | S<br>68  | A       | A       | 65      |   |   |
| 10          | 65      | 70      | S       | S       | S       | U         | S       | X  |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>116 | U        | S       | U       | S       | X | X |
| 11          | A       | X<br>54 | X<br>46 | X<br>41 | X<br>36 | X<br>34   | X<br>38 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | Y<br>99  | X<br>79  | A       | Y       | A       |   |   |
| 12          | A       | A       | 56      | S       | X<br>30 | X<br>28   | X<br>36 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>94  | X<br>67  | A       | X<br>55 | S<br>61 |   |   |
| 13          | X<br>63 | X<br>56 | X<br>49 | X<br>46 | X<br>34 | X<br>31   | X<br>40 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>92  | X<br>68  | X<br>41 | A       | A       |   |   |
| 14          | X<br>37 | 40      | X<br>37 | X<br>35 | X<br>32 | X<br>30   | X<br>35 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>85  | X<br>53  | X<br>42 | X<br>36 | A       |   |   |
| 15          | A       | A       | X<br>40 | X<br>43 | S<br>42 | X<br>33   | X<br>35 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>68  | X<br>62  | X<br>60 | X<br>63 | X<br>60 |   |   |
| 16          | X<br>59 | X<br>57 | X<br>48 | X<br>44 | X<br>37 | X<br>33   | X<br>37 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>132 | X<br>77  | X<br>47 | X<br>38 | X<br>38 |   |   |
| 17          | X<br>38 | X<br>40 | X<br>37 | X<br>37 | X<br>37 | X<br>36   | X<br>38 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>147 | X<br>89  | X<br>83 | X<br>60 | X<br>59 |   |   |
| 18          | X<br>55 | X<br>56 | X<br>54 | X<br>50 | X<br>49 | X<br>42   | X<br>40 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>90  | X<br>73  | X<br>68 | X<br>43 | X<br>42 |   |   |
| 19          | X<br>40 | X<br>44 | X<br>41 | X<br>40 | X<br>38 | X<br>37   | X<br>39 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>115 | X<br>91  | 100     | 90      | 92      |   |   |
| 20          | U       | S       | 0       | S       | S       | A         | X       | S  |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>78  | S<br>63  | S       | X<br>45 | A       |   |   |
| 21          | X<br>41 | S<br>41 | X<br>42 | X<br>34 | X<br>33 | X<br>34   | X<br>37 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>90  | A        | A       | A       | A       |   |   |
| 22          | A       | 39      | X<br>40 | X<br>37 | X<br>30 | X<br>30   | X<br>39 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>78  | X<br>39  | A       | A       | X<br>35 |   |   |
| 23          | S<br>35 | A       | A       | A       | S       | X<br>36   | X<br>33 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>79  | S<br>63  | X<br>71 | X<br>86 | X<br>49 |   |   |
| 24          | X<br>38 | X<br>46 | X<br>34 | X<br>38 | S       | S         | X<br>54 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>112 | X<br>50  | X<br>44 | X<br>47 | X<br>44 |   |   |
| 25          | X<br>45 | X<br>46 | X<br>41 | X<br>43 | X<br>32 | A         | X<br>31 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>73  | X<br>53  | X<br>41 | X<br>39 | X<br>39 |   |   |
| 26          | X<br>38 | X<br>39 | X<br>39 | X<br>37 | X<br>31 | X<br>22   | X<br>30 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>74  | X<br>45  | X<br>44 | X<br>46 | X<br>45 |   |   |
| 27          | X<br>45 | X<br>44 | X<br>36 | X<br>30 | X<br>28 | X<br>30   | X<br>36 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>77  | X<br>45  | X<br>44 | X<br>48 | X<br>52 |   |   |
| 28          | X<br>53 | X<br>48 | X<br>45 | X<br>45 | X<br>37 | X<br>27   | X<br>32 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | S<br>73  | S<br>75  | S<br>56 | S<br>46 | X<br>50 |   |   |
| 29          | X<br>48 | X<br>53 | X<br>58 | X<br>53 | X<br>49 | X<br>30   | X<br>32 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>68  | X<br>73  | X<br>68 | X<br>57 | X<br>49 |   |   |
| 30          | X<br>49 | X<br>47 | X<br>47 | X<br>46 | X<br>36 | X<br>32   | X<br>35 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | H<br>83  | Y        | Y       | S<br>53 | X<br>50 |   |   |
| 31          |         |         |         |         |         |           |         |    |    |      |            |    |    |    |         |                           |    |    |    |                     |          |          |         |         |         |   |   |
| CNT         | 25      | 26      | 28      | 27      | 26      | 28        | 28      |    |    |      |            |    |    |    |         |                           |    |    |    |                     | 30       | 27       | 23      | 24      | 25      |   |   |
| MED         | X<br>48 | X<br>48 | X<br>47 | X<br>43 | X<br>37 | X<br>34   | X<br>37 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>88  | X<br>68  | X<br>49 | X<br>48 | X<br>50 |   |   |
| UQ          | X<br>59 | X<br>56 | X<br>52 | X<br>47 | X<br>44 | X<br>41   | X<br>40 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>110 | X<br>78  | X<br>70 | X<br>60 | X<br>59 |   |   |
| LQ          | X<br>41 | X<br>44 | X<br>40 | X<br>38 | X<br>33 | X<br>30   | X<br>35 |    |    |      |            |    |    |    |         |                           |    |    |    |                     | X<br>78  | X<br>57  | X<br>44 | X<br>44 | X<br>45 |   |   |

SEP. 1984

FXI (0.1 MHZ)

### IONOSPHERIC DATA

SEP. 1984

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station<br>Hour<br>Day | OKINAWA |    |     |     | Lat. 26° 16' 9" N |     |     |     | Long. 127° 48' 4" E |     |     |     | Sweep 1 MHz to 25 MHz in 24 sec in automatic operation |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |
|------------------------|---------|----|-----|-----|-------------------|-----|-----|-----|---------------------|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
|                        | 00      | 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      | A  | F   | F   | 32                | J R | 21  | 32  | 54                  | 54  | 71  | 69  | 77   | 83  | 77  | 83  | 90  | 96  | 99  | 92  | 72  | 52  | 38  | 38  | F   |     |     |    |    |
| 2                      | 41      | 40 | 38  | 37  | 34                | 33  | 31  | 52  | 68                  | 71  | 72  | 58  | 64   | 65  | 75  | 85  | 110 | 112 | 116 | 114 | 85  | J R | 74  | 57  | 57  |     |     |    |    |
| 3                      | 60      | 52 | 45  | 42  | 43                | 43  | 30  | 55  | 64                  | 67  | 62  | 65  | 64   | 64  | 72  | 89  | 93  | 80  | 81  | 80  | 65  | 42  | 39  | F   |     |     |     |    |    |
| 4                      | 41      | 42 | 41  | 36  | 35                | 34  | 44  | 70  | 66                  | 64  | 68  | 73  | 83   | 90  | 87  | 90  | 94  | 99  | 103 | 94  | S   | 93  | 80  | 79  | 74  |     |     |    |    |
| 5                      | 76      | 64 | 60  | 61  | H                 | 52  | 49  | S   | U S                 | 45  | 43  | A   | R  | 46  | 53  | 58  | A   | 57  | 54  | 53  | 68  | 68  | 66  | 50  | 40  | A   | F   |    |    |
| 6                      | A       | F  | 41  | F   | F                 | 36  | Y   | 56  | 67                  | 64  | 60  | A   | 87   | 92  | 72  | 69  | 68  | 70  | 74  | 83  | 87  | 80  | 54  | 47  |     |     |     |    |    |
| 7                      | J S     | 44 | 41  | 42  | 31                | 29  | 28  | 35  | 82                  | 73  | 63  | 65  | 82   | 97  | 114 | 133 | 132 | 121 | U R | U R | 119 | 118 | 140 | J S | U S | 42  | 38  | 41 |    |
| 8                      | 42      | 42 | 48  | 48  | S                 | 44  | 36  | 35  | 67                  | 71  | 66  | 68  | 73   | 98  | 117 | 126 | 123 | 125 | Y   | 115 | J S | 104 | Y   | 57  | 48  | 49  |     |    |    |
| 9                      | 56      | F  | F   | J S | 65                | 53  | J S | 44  | 41                  | 68  | 58  | 62  | 72   | 89  | 109 | 103 | R   | 97  | 100 | 105 | 105 | J R | 99  | 81  | 62  | A   | A   | F  |    |
| 10                     | F       | F  | S   | S   | S                 | S   | S   | 38  | 37                  | 69  | 73  | 70  | 63   | 103 | 126 | 133 | 146 | 145 | 145 | 160 | R   | 142 | 110 | S   | 58  | 43  | 43  | 43 |    |
| 11                     | A       | S  | S   | 40  | 35                | 30  | 28  | 32  | 48                  | 67  | 63  | 70  | 64   | 73  | 101 | C   | 86  | 92  | 94  | 95  | 93  | S   | 73  | A   | Y   | A   |     |    |    |
| 12                     | A       | A  | F   | S   | 24                | 22  | 30  | 69  | 65                  | 67  | 73  | 93  | 115  | 125 | 120 | R   | C   | U R | U R | U R | 105 | 103 | 97  | 88  | 61  | A   | 49  | 55 |    |
| 13                     | 57      | 50 | 43  | 40  | 28                | 25  | 34  | 58  | 68                  | 80  | 84  | 109 | 135  | 143 | 142 | 132 | 126 | U R | U R | R   | 100 | 92  | 86  | R   | U S | A   | A   |    |    |
| 14                     | S       | F  | 31  | J S | J S               | U S | 26  | 24  | 29                  | 54  | 63  | 72  | 72   | 76  | 85  | 98  | 113 | 113 | 105 | 83  | 72  | 79  | 47  | 36  | 30  | A   |     |    |    |
| 15                     | A       | A  | U S | F   | S                 | F   | S   | 29  | 56                  | 60  | 70  | 72  | 87   | 92  | 102 | 110 | 94  | 83  | 89  | 89  | 62  | 56  | U S | 54  | 57  | 54  |     |    |    |
| 16                     | 53      | S  | 42  | 38  | 31                | 27  | 31  | 50  | 57                  | J R | 71  | 67  | 70   | 70  | 87  | 94  | 110 | 126 | 130 | 133 | 126 | J R | 71  | J R | 41  | 32  | 32  |    |    |
| 17                     | 32      | 34 | 31  | 31  | 31                | 30  | 32  | 63  | 61                  | 61  | 66  | 81  | 79   | 90  | 91  | 84  | 94  | 101 | 108 | 141 | J S | 83  | J S | 77  | J S | 54  | J S | 53 |    |
| 18                     | 49      | 50 | U S | U S | J S               | 43  | 36  | 34  | 56                  | 64  | J R | 69  | 60   | 64  | 83  | 94  | 97  | 106 | U S | 110 | J S | 100 | 84  | U S | 67  | U S | 62  | 37 | 36 |
| 19                     | S       | S  | 35  | 34  | 32                | 31  | 33  | 60  | 69                  | 64  | 63  | 78  | 93   | 102 | 104 | 117 | 130 | 146 | 143 | 109 | 85  | F   | F   | F   |     |     |     |    |    |
| 20                     | 82      | F  | U S | J S | A                 | S   | J S | 28  | 82                  | 76  | 60  | 81  | 79   | 87  | 98  | 85  | 77  | 84  | 104 | R   | 104 | 104 | S   | 72  | 57  | A   | S   | A  |    |
| 21                     | 35      | S  | 36  | 28  | 27                | 28  | U S | 31  | 61                  | 83  | 67  | 59  | 70   | 90  | 101 | 98  | 83  | 77  | 85  | 103 | 84  | A   | A   | A   | A   |     |     |    |    |
| 22                     | A       | F  | 34  | 31  | J S               | 24  | S   | J S | 33                  | 56  | 58  | 69  | 71   | 78  | 92  | 104 | 114 | 115 | 107 | 114 | 111 | 72  | 33  | A   | A   | U S | 29  |    |    |
| 23                     | S       | A  | A   | A   | A                 | 30  | 27  | 55  | 94                  | 74  | 64  | 76  | 99   | 129 | J R | 154 | 149 | 149 | U R | 149 | 163 | 73  | 57  | 65  | 80  | 43  |     |    |    |
| 24                     | 32      | 40 | 28  | 32  | S                 | S   | 48  | 57  | 57                  | 63  | 57  | J S | 72   | S   | 72  | 103 | 90  | 82  | 94  | 84  | 103 | 106 | J S | 44  | 38  | 41  | 38  |    |    |
| 25                     | 39      | 40 | 35  | 37  | 26                | A   | 25  | 53  | 58                  | 70  | 74  | 95  | 103  | 88  | 79  | 72  | 73  | 91  | 84  | 67  | 47  | 35  | 33  | S   |     |     |     |    |    |
| 26                     | 32      | 33 | 33  | 31  | 25                | 16  | 24  | 59  | 76                  | 70  | 62  | 83  | 116  | 92  | 78  | 84  | 77  | 78  | J S | 97  | 68  | 39  | 38  | 40  | 39  |     |     |    |    |
| 27                     | 39      | 38 | 30  | 24  | 22                | 24  | 30  | 59  | 85                  | 110 | 86  | 87  | 91   | 114 | 99  | 93  | 80  | 85  | 86  | 71  | 39  | 38  | 42  | 46  |     |     |     |    |    |
| 28                     | 47      | 42 | S   | 39  | 39                | 31  | 21  | 26  | 74                  | 75  | 72  | 70  | 61   | 83  | 85  | 95  | 110 | 127 | 125 | 89  | U S | 67  | U S | J S | U S | 40  | 44  |    |    |
| 29                     | 42      | 47 | 52  | 47  | S                 | 43  | 24  | U S | 26                  | 58  | 68  | 61  | 73   | 61  | 79  | 105 | 127 | 107 | 97  | 101 | 83  | 62  | U S | 67  | S   | 51  | S   | 43 |    |
| 30                     | 43      | 41 | S   | 40  | 30                | 26  | 29  | 61  | 71                  | 77  | 75  | 82  | 81   | 110 | 129 | 127 | 137 | R   | Y   | Y   | U S | 77  | Y   | Y   | 47  | 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                    | 24      | 20 | 25  | 24  | 25                | 27  | 28  | 30  | 30                  | 29  | 30  | 29  | 30   | 29  | 29  | 29  | 30  | 28  | 29  | 30  | 27  | 22  | 23  | 20  |     |     |     |    |    |
| MED                    | 42      | 42 | 40  | 37  | 31                | 28  | 31  | 58  | 67                  | 69  | 68  | 77  | 87   | 101 | 97  | 94  | 101 | 100 | 99  | 82  | 62  | 42  | 42  | 44  |     |     |     |    |    |
| UQ                     | 51      | 49 | 43  | 41  | 36                | 35  | 34  | 67  | 73                  | 71  | 72  | 83  | 98   | 110 | 120 | 115 | 125 | 113 | 111 | 104 | 72  | 62  | 52  | 51  |     |     |     |    |    |
| LQ                     | 34      | 39 | 34  | 31  | 27                | 24  | 29  | 55  | 60                  | 64  | 63  | 70  | 79   | 90  | 85  | 84  | 84  | 85  | 89  | 72  | 51  | 38  | 38  | 38  |     |     |     |    |    |

SEP. 1984

FOF2 (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FOF1 (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station     | OKINAWA |    |    |    |    |    |    | Lat. | 26 16.9 N |    |     |     | Long. | 127 48.4 E |     |     |     | Sweep 1 | MHz to 25 |    | MHz in 24sec in |    | automatic operation |    |  |  |
|-------------|---------|----|----|----|----|----|----|------|-----------|----|-----|-----|-------|------------|-----|-----|-----|---------|-----------|----|-----------------|----|---------------------|----|--|--|
| Hour<br>Day | 00      | 01 | 02 | 03 | 04 | 05 | 06 | 07   | 08        | 09 | 10  | 11  | 12    | 13         | 14  | 15  | 16  | 17      | 18        | 19 | 20              | 21 | 22                  | 23 |  |  |
| 1           |         |    |    |    |    |    |    |      |           | L  | A   | 470 | 480   | 480        | A   | L   | 440 | A       | L         |    |                 |    |                     |    |  |  |
| 2           |         |    |    |    |    |    |    | L    | L         | L  | L   | L   | 470   | 470        | 470 | L   | L   | A       |           |    |                 |    |                     |    |  |  |
| 3           |         |    |    |    |    |    |    |      | L         | L  | L   | L   | 470   | 490        | L   | L   | L   | L       |           |    |                 |    |                     |    |  |  |
| 4           |         |    |    |    |    |    |    |      | L         | L  | L   | A   | L     | L          | L   | L   | L   | L       | L         |    |                 |    |                     |    |  |  |
| 5           |         |    |    |    |    |    |    | L    | 380       | A  | A   | 430 | A     | A          | 430 | 440 | 420 | A       |           |    |                 |    |                     |    |  |  |
| 6           |         |    |    |    |    |    |    |      | A         | L  | L   | A   | A     | A          | A   | L   | A   | L       | L         |    |                 |    |                     |    |  |  |
| 7           |         |    |    |    |    |    |    |      |           | A  | L   | U   | L     | A          | L   | L   | A   | A       | L         |    |                 |    |                     |    |  |  |
| 8           |         |    |    |    |    |    |    |      | L         | L  | U   | L   | L     | 460        | L   | 450 | A   | L       | L         |    |                 |    |                     |    |  |  |
| 9           |         |    |    |    |    |    |    |      |           | A  | L   | L   | U     | L          | 490 | 490 | A   | A       | L         | L  |                 |    |                     |    |  |  |
| 10          |         |    |    |    |    |    |    |      |           | A  | L   | A   | L     | L          | L   | 480 | 480 | U       | L         | L  |                 |    |                     |    |  |  |
| 11          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | A     | A          | C   | A   | L   | A       | A         |    |                 |    |                     |    |  |  |
| 12          |         |    |    |    |    |    |    |      | A         | L  | L   | A   | A     | A          | A   | C   | A   | A       | A         |    |                 |    |                     |    |  |  |
| 13          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | A     | L          | L   | L   | L   | L       |           |    |                 |    |                     |    |  |  |
| 14          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | L   | 440 | L   | L       | L         |    |                 |    |                     |    |  |  |
| 15          |         |    |    |    |    |    |    |      | L         | L  | U   | L   | L     | 450        | 470 | L   | 470 | 450     | 450       | L  | L               |    |                     |    |  |  |
| 16          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | 460 | 450 | L   | L       | L         |    |                 |    |                     |    |  |  |
| 17          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | L   | L   | L   | A       | L         |    |                 |    |                     |    |  |  |
| 18          |         |    |    |    |    |    |    |      | L         | L  | 440 | L   | 460   | 460        | 480 | L   | 420 | A       |           |    |                 |    |                     |    |  |  |
| 19          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | 460   | 470        | 460 | 440 | A   | A       |           |    |                 |    |                     |    |  |  |
| 20          |         |    |    |    |    |    |    | L    | L         | L  | L   | 460 | 470   | 460        | 470 | L   | 430 | 430     | L         |    |                 |    |                     |    |  |  |
| 21          |         |    |    |    |    |    |    | L    | A         | A  | L   | L   | 480   | 450        | 450 | L   | 420 | L       |           |    |                 |    |                     |    |  |  |
| 22          |         |    |    |    |    |    |    |      | L         | A  | A   | A   | L     | L          | L   | A   | L   | L       |           |    |                 |    |                     |    |  |  |
| 23          |         |    |    |    |    |    |    |      | L         | L  | L   | A   | L     | 480        | A   | L   | 430 | L       |           |    |                 |    |                     |    |  |  |
| 24          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | L   | L   | L   | L       |           |    |                 |    |                     |    |  |  |
| 25          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | L   | L   | 400 | L       |           |    |                 |    |                     |    |  |  |
| 26          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | 460 | L   | L   | L       | L         |    |                 |    |                     |    |  |  |
| 27          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | L   | L   | L   | L       |           |    |                 |    |                     |    |  |  |
| 28          |         |    |    |    |    |    |    | L    | L         | L  | L   | L   | 500   | 480        | 480 | 450 | 410 |         |           |    |                 |    |                     |    |  |  |
| 29          |         |    |    |    |    |    |    |      | L         | L  | 430 | 440 | 490   | 460        | 470 | L   | L   |         |           |    |                 |    |                     |    |  |  |
| 30          |         |    |    |    |    |    |    |      | L         | L  | L   | L   | L     | L          | L   | L   | L   | L       |           |    |                 |    |                     |    |  |  |
| 31          |         |    |    |    |    |    |    |      |           |    |     |     |       |            |     |     |     |         |           |    |                 |    |                     |    |  |  |
|             | 00      | 01 | 02 | 03 | 04 | 05 | 06 | 07   | 08        | 09 | 10  | 11  | 12    | 13         | 14  | 15  | 16  | 17      | 18        | 19 | 20              | 21 | 22                  | 23 |  |  |
| CNT         |         |    |    |    |    |    |    |      | 1         |    | 5   | 6   | 13    | 15         | 13  | 9   | 10  |         |           |    |                 |    |                     |    |  |  |
| MED         |         |    |    |    |    |    |    |      | 380       |    | 450 | 470 | 470   | 470        | 460 | 450 | 425 |         |           |    |                 |    |                     |    |  |  |
| UQ          |         |    |    |    |    |    |    |      |           |    | 450 | 470 | 480   | 480        | 470 | 460 | 440 |         |           |    |                 |    |                     |    |  |  |
| LQ          |         |    |    |    |    |    |    |      |           |    | 440 | 440 | 460   | 460        | 450 | 440 | 420 |         |           |    |                 |    |                     |    |  |  |

SEP. 1984

FOF1 (0.01 MHz)

# IONOSPHERIC DATA

SEP. 1984

FOE (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26 16.9 N Long 127 48.4 E Sweep 1 MHz to 25 MHz in 24sec in automatic operation

| Hour<br>Day | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
|-------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| 1           |    |    |    |    |    |    |    | 220 | 270 | 305 | 325 | A   | A   | 345 | A   | 330 | A   | A   | A   |     |    |    |    |    |
| 2           |    |    |    |    |    |    |    | 190 | 250 | A   | 305 | A   | 350 | 355 | 345 | 335 | 315 | A   | A   |     |    |    |    |    |
| 3           |    |    |    |    |    |    |    | 210 | 265 | A   | A   | 350 | 360 | 355 | 350 | 335 | 305 | 270 | 195 |     |    |    |    |    |
| 4           |    |    |    |    |    |    |    | A   | A   | A   | A   | 345 | A   | 360 | A   | A   | 305 | A   | 195 |     |    |    |    |    |
| 5           |    |    |    |    |    |    |    | 210 | A   | A   | 330 | A   | A   | A   | A   | A   | 300 | 265 | A   |     |    |    |    |    |
| 6           |    |    |    |    |    |    |    | 210 | 260 | 300 | R   | 320 | A   | A   | A   | A   | A   | A   | U   | R   |    |    |    |    |
| 7           |    |    |    |    |    |    |    | S   | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   |     |    |    |    |    |
| 8           |    |    |    |    |    |    |    | H   | 215 | 265 | A   | A   | A   | A   | A   | A   | A   | A   | A   |     |    |    |    |    |
| 9           |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | 335 | A   | A   | A   | A   | 255 | A   |     |    |    |    |    |
| 10          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   | 190 |     |    |    |    |    |
| 11          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | C   | A   | 290 | A   | A   |     |    |    |    |    |
| 12          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | 335 | C   | 290 | 250 | A   |     |    |    |    |    |
| 13          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | A   | A   | 280 | 250 | 205 |     |    |    |    |    |
| 14          |    |    |    |    |    |    |    | 210 | 275 | A   | A   | 345 | S   | 360 | 355 | 345 | 325 | 295 | 260 | 190 |    |    |    |    |
| 15          |    |    |    |    |    |    |    | A   | 235 | A   | A   | A   | A   | A   | A   | 335 | 320 | 290 | 250 | A   |    |    |    |    |
| 16          |    |    |    |    |    |    |    | 230 | 270 | A   | 320 | 340 | 345 | 340 | 330 | 320 | 285 | A   | A   |     |    |    |    |    |
| 17          |    |    |    |    |    |    |    | A   | A   | A   | A   | 345 | 350 | 345 | 335 | A   | A   | A   | A   |     |    |    |    |    |
| 18          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   | 250 | A   |     |    |    |    |    |
| 19          |    |    |    |    |    |    |    | A   | A   | 280 | A   | A   | A   | 340 | 330 | 315 | 285 | 255 | S   |     |    |    |    |    |
| 20          |    |    |    |    |    |    |    | A   | 230 | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   |     |    |    |    |    |
| 21          |    |    |    |    |    |    |    | A   | 220 | A   | A   | A   | A   | A   | A   | A   | A   | 250 | A   |     |    |    |    |    |
| 22          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   | A   |     |    |    |    |    |
| 23          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | A   | A   | 250 | 230 | A   |     |    |    |    |    |
| 24          |    |    |    |    |    |    |    | A   | A   | 285 | 340 | 350 | 350 | 345 | 335 | 320 | 290 | 240 | S   |     |    |    |    |    |
| 25          |    |    |    |    |    |    |    | A   | A   | 305 | 325 | 330 | 340 | 335 | A   | A   | 290 | 230 | A   |     |    |    |    |    |
| 26          |    |    |    |    |    |    |    | 195 | A   | 300 | A   | R   | 340 | R   | 350 | 340 | 325 | 305 | 285 | 220 | S  |    |    |    |
| 27          |    |    |    |    |    |    |    | 180 | A   | 295 | 320 | A   | A   | 340 | 320 | 300 | 280 | 230 | S   |     |    |    |    |    |
| 28          |    |    |    |    |    |    |    | 190 | 230 | 280 | 310 | A   | A   | A   | 330 | 320 | 280 | 230 | S   |     |    |    |    |    |
| 29          |    |    |    |    |    |    |    | 200 | A   | A   | A   | R   | 335 | 340 | 335 | R   | R   | 305 | 270 | A   | A  |    |    |    |
| 30          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | 330 | 320 | A   | A   | A   | A   |     |    |    |    |    |
| 31          |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |
|             | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 | 21 | 22 | 23 |
| CNT         |    |    |    |    |    |    |    | 13  | 11  | 8   | 9   | 10  | 9   | 14  | 14  | 12  | 19  | 16  | 6   |     |    |    |    |    |
| MED         |    |    |    |    |    |    |    | 210 | 260 | 298 | 320 | 342 | 350 | 342 | 332 | 320 | 290 | 250 | 195 |     |    |    |    |    |
| UQ          |    |    |    |    |    |    |    | 210 | 268 | 302 | 325 | 345 | 350 | 355 | 335 | 328 | 292 | 255 | 200 |     |    |    |    |    |
| LQ          |    |    |    |    |    |    |    | 195 | 232 | 282 | 320 | 335 | 345 | 340 | 325 | 310 | 282 | 230 | 190 |     |    |    |    |    |

SEP. 1984

FOE (0.01 MHz)



# IONOSPHERIC DATA

SEP. 1984

FOES (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

| Station     | OKINAWA |      |      |      | Lat. 26 16.9 N | Long. 127 48.4 E | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |      |      |      |      |       |      |       |      |      |      |       |       |       |      |       |      |      |    |
|-------------|---------|------|------|------|----------------|------------------|---|------|------|------|------|-------|------|-------|------|------|------|-------|-------|-------|------|-------|------|------|----|
| Hour<br>Day | 00      | 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 32    | A 53 | 30   | 24   | 20             | E 16             | S 17  | J 26 | 31   | J 39 | A 48 | J 58  | J 55 | 45    | J 51 | J 48 | J 43 | J 43  | J 27  | 31    | 31   | E 16  | J 17 | J 30 |    |
| 2           | J 25    | E 16 | E 16 | 22   | J 17           | 23               | 20  | J 25 | J 34 | J 38 | J 49 | J 39  |      | G     | G    | 41   | 39   | J 43  | J 35  | J 41  | J 64 | J 35  | J 17 | E 16 |    |
| 3           | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | 25   | J 31 | J 42 | 40   | 40    | 40   | 41    | 42   | 37   | 34   | J 76  | J 32  | J 51  | J 37 | J 37  | J 31 | J 30 |    |
| 4           | J 25    | J 17 | E 16 | E 16 | E 16           | E 16             | E 16  | J 28 | J 37 | J 41 | J 42 | J 71  | J 58 | J 44  | J 46 | J 41 | J 42 | J 33  | J 24  | J 22  | J 21 | J 26  | J 34 | 23   |    |
| 5           | J 18    | J 17 | E 16 | E 16 | E 16           | J 17             | J 21  | J 29 | J 34 | J 51 | J 50 | J 54  | J 96 | J 102 | J 38 | J 33 | J 38 | J 53  | J 36  | E 16  | J 20 | J 17  | J 88 | 31   |    |
| 6           | J 78    | J 26 | J 21 | J 22 | E 16           | E 16             | E 16  | 29   | J 50 | J 44 | 42   | J 102 | J 65 | J 53  | 82   | J 58 | J 60 | J 40  | 31    | J 34  | J 25 | J 30  | J 25 | 22   |    |
| 7           | 23      | E 16 | J 22 | E 16 | E 16           | E 16             | E 16  | 27   | J 43 | J 67 | J 57 | J 51  | J 52 | J 53  | 40   | 65   | J 50 | J 35  | J 36  | J 64  | J 77 | J 108 | J 24 | E 16 |    |
| 8           | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | 25   | J 30 | J 48 | J 37 | J 65  | J 50 | 43    | 51   | J 55 | J 52 | J 39  | J 54  | J 109 | J 29 | J 33  | J 26 | J 33 |    |
| 9           | J 50    | J 42 | J 35 | 30   | J 23           | 22               | J 22  | J 35 | J 42 | J 54 | 83   | J 75  | J 60 | J 50  | J 65 | J 88 | J 51 | J 50  | J 73  | J 60  | J 87 | J 89  | J 84 | J 33 |    |
| 10          | J 40    | 18   | J 30 | J 25 | J 24           | J 28             | J 32  | J 64 | J 53 | J 76 | J 89 | J 63  | J 55 | J 39  | J 40 | J 44 | G 25 | J 33  | J 27  | J 20  | 23   | J 33  | 22   | E 16 |    |
| 11          | J 75    | J 52 | J 24 | J 23 | 23             | 23               | J 21  | J 27 | J 43 | J 41 | 36   | J 100 | J 64 | J 87  | C    | J 51 | 39   | J 64  | J 35  | J 41  | J 44 | J 51  | J 32 | J 64 |    |
| 12          | J 84    | J 53 | 28   | J 28 | E 16           | E 16             | J 32  | J 63 | J 77 | J 76 | 62   | J 89  | J 65 | 51    | C    | 90   | J 49 | J 84  | 55    | J 40  | J 83 | J 35  | J 33 |      |    |
| 13          | J 24    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | J 34 | J 35 | J 49 | J 40 | J 38  | J 52 | J 37  | J 38 | 33   | 34   | G     | 27    | J 22  | J 24 | J 39  | J 54 | J 40 |    |
| 14          | J 29    | J 24 | J 27 | J 19 | E 16           | E 16             | E 16  | J 24 | G    | J 32 | J 34 | G     | G    | G     | 31   | 38   | 38   | 40    | J 35  | J 34  | J 33 | J 54  | J 34 | J 41 | 74 |
| 15          | J 76    | J 53 | J 29 | E 16 | E 16           | E 16             | E 16  | J 24 | J 34 | J 38 | J 35 | J 38  | J 33 | J 34  | 38   | 39   | 34   | 31    | J 22  | E 16  | J 24 | J 26  | E 16 | E 16 |    |
| 16          | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | J 17  | J 25 | J 32 | J 36 | J 38 | 38    | 45   | 38    | 40   | 38   | J 33 | J 34  | J 29  | J 30  | J 24 | J 21  | J 17 | E 16 |    |
| 17          | E 16    | J 21 | E 16 | E 16 | 21             | 19               | 19  | J 23 | J 29 | J 31 | J 33 | G     | 39   | J 42  | 39   | J 39 | J 46 | J 34  | J 30  | J 68  | J 26 | J 20  | J 18 | J 21 |    |
| 18          | 22      | 22   | J 21 | J 18 | 18             | E 16             | E 16  | 23   | 32   | 32   | J 39 | J 42  | J 37 | J 33  | J 39 | J 46 | J 43 | J 51  | J 35  | J 41  | J 41 | J 65  | J 25 | 21   |    |
| 19          | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | J 25 | J 37 | J 38 | J 37 | J 38  | J 37 | J 42  | 39   | J 44 | J 48 | J 41  | J 53  | J 86  | J 51 | J 84  | J 34 | 22   |    |
| 20          | E 16    | 20   | 19   | 19   | J 42           | J 27             | J 23  | J 35 | J 43 | J 64 | J 54 | J 64  | J 38 | 38    | J 36 | J 34 | J 29 | J 38  | J 22  | J 24  | J 50 | J 54  | J 32 | J 74 |    |
| 21          | J 27    | J 29 | J 25 | J 22 | J 20           | J 20             | 21  | 23   | J 40 | J 87 | J 50 | J 140 | J 87 | J 74  | J 64 | J 54 | J 37 | J 160 | J 110 | J 77  | J 77 | J 74  | J 84 | J 84 |    |
| 22          | J 54    | 31   | J 24 | 23   | 23             | E 16             | J 17  | 28   | 33   | 72   | 69   | 74    | 57   | 44    | 43   | 87   | 33   | 33    | 33    | 33    | J 26 | J 41  | J 41 | 31   |    |
| 23          | J 25    | J 32 | J 26 | J 29 | J 27           | J 22             | 22  | J 29 | J 40 | J 44 | J 40 | J 77  | J 54 | J 64  | J 64 | J 34 | 30   | 27    | J 37  | J 52  | 23   | J 40  | J 34 | J 34 |    |
| 24          | J 29    | J 24 | J 17 | E 16 | J 34           | J 31             | J 61  | J 32 | J 38 | J 34 | G    | G     | G    | G     | G    | G    | G    | G     | E 16  | J 17  | 22   | E 16  | J 32 | 31   |    |
| 25          | J 28    | 28   | E 16 | E 16 | E 16           | E 16             | E 16  | J 23 | J 33 | G    | G    | G     | G    | 34    | 36   | J 34 | G    | 28    | J 25  | 28    | J 18 | J 21  | E 16 | E 16 |    |
| 26          | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | 23   | J 33 | G    | J 40 | G     | G    | 37    | 34   | G    | G    | G     | 22    | E 16  | E 16 | E 16  | E 16 | E 16 |    |
| 27          | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | 21   | 31   | G    | G    | 38    | 37   | 37    | J 36 | G    | 36   | 28    | J 26  | J 26  | E 16 | 21    | E 16 | E 16 |    |
| 28          | E 16    | E 16 | E 16 | E 16 | 19             | E 16             | 20  | 32   | 30   | 37   | 43   | 40    | 38   | 37    | 40   | G    | G    | J 65  | J 54  | J 53  | J 22 | 21    | 23   | 22   |    |
| 29          | J 21    | J 21 | 22   | 21   | E 16           | E 16             | E 16  | 29   | J 31 | 34   | 35   | G     | G    | G     | 40   | 41   | J 43 | J 44  | J 26  | J 26  | J 52 | J 26  | J 25 | 25   |    |
| 30          | J 24    | 22   | E 16 | E 16 | E 16           | E 16             | 22  | J 25 | J 34 | J 84 | J 47 | J 49  | J 50 | 39    | J 46 | 38   | J 43 | J 33  | 20    | E 16  | E 16 | J 51  | E 16 | J 28 |    |
| 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    | 29   | 29   | 30   | 30    | 30    | 30    | 30   | 30    | 30   | 30   |    |
| MED         | J 24    | 21   | 18   | E 16 | E 16           | E 16             | 16  | J 26 | J 34 | J 41 | J 40 | J 49  | J 48 | J 40  | J 39 | 38   | J 36 | J 32  | J 33  | J 26  | J 34 | J 26  | J 26 |      |    |
| UQ          | J 32    | J 29 | J 25 | J 22 | 23             | 22               | 21  | J 29 | J 40 | J 54 | J 50 | 65    | 57   | 50    | 46   | 48   | 43   | 49    | 36    | 53    | 50   | 51    | 34   | 33   |    |
| LQ          | E 16    | E 16 | E 16 | E 16 | E 16           | E 16             | E 16  | J 24 | J 31 | J 34 | J 36 | 38    | 37   | 37    | 38   | 34   | 33   | J 33  | J 26  | J 22  | J 22 | J 21  | J 17 | E 16 |    |

SEP. 1984

FOES (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | OKINAWA |    |    |    |    |    |    | Lat. 26 16.9 N |    | Long. 127 48.4 E |    | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
|---------|-----|---------|----|----|----|----|----|----|----------------|----|------------------|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| Hour    | Day | 00      | 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  | AA      | AA | 21 | E  | E  | E  | S  | E              | 24 | 29               | 35 | 46  | 39 | 44 | 40 | 48 | 40 | 39 | 40 | 25 | 27 | 25 | E  | S  | E  | E  |    |    |    |    |    |   |
| 2       |     | E       | E  | S  | E  | S  | E  | E  | E              | 24 | 30               | 31 | 38  | 43 | 38 | G  | G  | 41 | 39 | 39 | 31 | 33 | 53 | U  | Y  | E  | E  | S  | E  | S  |    |    |   |
| 3       |     | E       | S  | E  | S  | E  | S  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |
| 4       | 25  | E       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |    |   |
| 5       |     | E       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |    |   |
| 6       | AA  | AA      | U  | A  | E  | E  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |    |   |
| 7       | 20  | E       | S  | E  | S  | E  | S  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |
| 8       |     | E       | S  | E  | S  | E  | S  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |
| 9       | 29  | 23      | 21 | 21 | E  | E  | E  | 19 | 24             | 40 | 43               | 40 | 43  | 39 | 44 | 58 | 51 | 37 | 37 | 27 | 45 | 33 | AA | AA | 33 | E  |    |    |    |    |    |    |   |
| 10      | E   | E       | E  | E  | E  | E  | E  | 28 | 33             | 47 | 59               | 47 | 60  | 42 | 38 | 39 | 40 | G  | 25 | 27 | G  | E  | 18 | 21 | E  | E  | S  | E  | S  | E  | S  |    |   |
| 11      | AA  | AA      | 25 | E  | 21 | 18 | E  | 20 | 23             | 31 | 40               | 34 | 45  | 51 | 82 | C  | 50 | 38 | 37 | 33 | 26 | 41 | 27 | 19 | AA | 64 |    |    |    |    |    |    |   |
| 12      | AA  | AA      | AA | AA | 19 | 27 | E  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |
| 13      | E   | E       | S  | E  | S  | E  | S  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |
| 14      | E   | E       | E  | E  | E  | E  | E  | E  | E              | G  | 32               | 33 | G   | G  | U  | Y  | 31 | 38 | 37 | 36 | 29 | 27 | 26 | 34 | 24 | 25 | AA | 74 |    |    |    |    |   |
| 15      | AA  | AA      | AA | AA | 25 | E  | S  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |    |   |
| 16      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 17      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 18      | E   | E       | E  | E  | E  | E  | E  | E  | E              | 21 | 31               | 31 | 35  | 36 | 34 | 33 | 38 | 41 | 40 | 43 | 33 | U  | Y  | 41 | 35 | 38 | 21 | 21 |    |    |    |    |   |
| 19      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 20      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 21      | U   | Y       | 27 | 25 | 20 | E  | 17 | E  | 20             | 22 | 40               | 40 | 41  | 45 | 41 | 42 | 41 | 42 | 34 | 31 | 75 | 40 | AA | AA | AA | AA | AA | AA | AA | AA | AA |    |   |
| 22      | AA  | AA      | 25 | 21 | E  | E  | E  | S  | E              | E  | 32               | 61 | 48  | 48 | 42 | 37 | 41 | 48 | 30 | 31 | 29 | E  | 24 | AA | AA | AA | AA | 19 |    |    |    |    |   |
| 23      | 20  | AA      | AA | AA | AA | AA | AA | 27 | E              | E  | 25               | 32 | 38  | 35 | 55 | 44 | 39 | 48 | 33 | 29 | 24 | 32 | 45 | 19 | 35 | 28 | 30 |    |    |    |    |    |   |
| 24      | 26  | 21      | E  | E  | S  | E  | S  | A  | E              | 30 | 28               | 28 | 32  | G  | G  | G  | G  | G  | G  | G  | G  | G  | E  | S  | E  | E  | E  | S  | E  | S  | E  | S  |   |
| 25      | 28  | 26      | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 26      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 27      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 28      | E   | S       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 29      | E   | E       | E  | E  | E  | E  | E  | E  | E              | 21 | 29               | 35 | 40  | 38 | 38 | 37 | 39 | G  | G  | G  | 40 | 40 | 42 | 42 | 25 | 23 | 25 | U  | Y  | 26 | 19 | E  |   |
| 30      | E   | E       | E  | S  | E  | S  | E  | S  | E              | S  | E                | S  | E   | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  |   |
| 31      |     |         |    |    |    |    |    |    |                |    |                  |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| CNT     |     | 30      | 30 | 30 | 30 | 30 | 30 | 30 | 30             | 30 | 30               | 30 | 30  | 30 | 30 | 29 | 29 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |   |
| MED     |     | 16      | 16 | 16 | E  | S  | E  | S  | E              | S  | 16               | 24 | 32  | 35 | 36 | 39 | 40 | 38 | 39 | 38 | 36 | 32 | 28 | 26 | 24 | 22 | 20 | 16 |    |    |    |    |   |
| UQ      |     | 27      | 25 | E  | S  | E  | S  | E  | S              | E  | S                | E  | S   | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S  | E  | S |
| LQ      |     | E       | E  | E  | E  | E  | E  | E  | E              | E  | 22               | 29 | 32  | 34 | 35 | 37 | 37 | 36 | 33 | 30 | 28 | 22 | 16 | 18 | E  | E  | E  | E  |    |    |    |    |   |

SEP. 1984

FBES (0.1 MHz)

# IONOSPHERIC DATA

SEP. 1984

FMIN (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

| Station |     | OKINAWA |     |     |     |     |     |     | Lat. | 26 16.9 N |    |    |    | Long | 127 48.4 E |    |    |    | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |     |     |     |     |     |  |  |  |  |
|---------|-----|---------|-----|-----|-----|-----|-----|-----|------|-----------|----|----|----|------|------------|----|----|----|---|----|-----|-----|-----|-----|-----|--|--|--|--|
| Hour    | Day | 00      | 01  | 02  | 03  | 04  | 05  | 06  | 07   | 08        | 09 | 10 | 11 | 12   | 13         | 14 | 15 | 16 | 17  | 18 | 19  | 20  | 21  | 22  | 23  |  |  |  |  |
| 1       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 2       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 3       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 4       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 5       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 6       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 7       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 8       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 9       |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 10      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 11      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 12      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 13      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 14      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 15      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 16      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 17      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 18      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 19      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 20      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 21      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 22      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 23      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 24      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 25      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 26      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 27      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 28      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 29      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 30      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| 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         | 29 | 29 | 30 | 30  | 30 | 30  | 30  | 30  | 30  | 30  |  |  |  |  |
| MED     |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| UQ      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |
| LQ      |     | E S     | E S | E S | E S | E S | E S | E S |      |           |    |    |    |      |            |    |    |    |   |    | E S | E S | E S | E S | E S |  |  |  |  |

SEP. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

SEP. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9h)

| Station     | OKINAWA |     |     |     | Lat. | 26 16.9 N |     |     |     | Long | 127 48.4 E |     |     |     | Sweep | 1 MHz to | 25 MHz in | 24 sec in | automatic operation |     |     |     |     |     |     |     |     |   |
|-------------|---------|-----|-----|-----|------|-----------|-----|-----|-----|------|------------|-----|-----|-----|-------|----------|-----------|-----------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
| Hour<br>Day | 00      | 01  | 02  | 03  | 04   | 05        | 06  | 07  | 08  | 09   | 10         | 11  | 12  | 13  | 14    | 15       | 16        | 17        | 18                  | 19  | 20  | 21  | 22  | 23  |     |     |     |   |
| 1           | 335     | A   | F   | F   | J R  | 360       | 380 | 345 | 370 | 340  | 350        | 335 | 325 | 335 | 300   | 290      | 310       | 310       | 340                 | 360 | 345 | 335 | 315 | 290 | F   |     |     |   |
| 2           | 290     | 300 | 315 | 295 | 325  | 335       | 340 | 345 | 310 | 340  | 345        | 345 | 320 | 305 | 295   | 295      | 315       | 330       | 325                 | 360 | 315 | J R | 245 | 270 | 270 |     |     |   |
| 3           | 285     | 290 | 300 | 310 | 350  | 370       | 335 | 380 | 350 | 360  | 320        | 325 | 310 | 310 | 290   | 315      | 340       | 345       | 335                 | 350 | 355 | 310 | 305 | F   |     |     |     |   |
| 4           | 305     | 310 | 305 | 320 | 315  | 325       | 340 | 385 | 355 | 345  | 340        | 315 | 325 | 310 | 310   | 300      | 310       | 315       | 320                 | 310 | S   | 315 | 275 | 290 | 295 |     |     |   |
| 5           | 315     | 280 | 265 | 310 | H    | 305       | 285 | S   | U S | 280  | A          | 240 | 265 | 295 | A     | 300      | 295       | 275       | 310                 | 325 | 335 | 330 | 260 | A   | F   |     |     |   |
| 6           | A       | F   | 330 | F   | F    | 335       | Y   | 330 | 345 | 330  | 300        | A   | 300 | 325 | A     | 305      | 315       | 305       | 310                 | 315 | 335 | 350 | 285 | 275 |     |     |     |   |
| 7           | J S     | 305 | 295 | 320 | 275  | 305       | 315 | 385 | 385 | 355  | 315        | 280 | 285 | 280 | 300   | 305      | 310       | U R       | U R                 | 305 | J S | U S | 355 | 290 | 290 |     |     |   |
| 8           | 295     | 295 | 290 | 310 | S    | 320       | 360 | 340 | 375 | 365  | 350        | 330 | 265 | 270 | 285   | 285      | 300       | 310       | Y                   | 330 | J S | Y   | 335 | 280 | 285 |     |     |   |
| 9           | 275     | F   | F   | J S | 360  | J S       | 340 | S   | 365 | 380  | 340        | 290 | 270 | 295 | 300   | 280      | 290       | 320       | 335                 | J R | 350 | S   | A   | A   | F   |     |     |   |
| 10          | F       | F   | S   | S   | S    | S         | S   | S   | 360 | 370  | 340        | 300 | 300 | 315 | 285   | 295      | 295       | 305       | 330                 | R   | S   | 360 | 290 | 290 | 315 |     |     |   |
| 11          | A       | S   | S   | 340 | 350  | 320       | 360 | 375 | 360 | 315  | 330        | 280 | 260 | 305 | C     | 295      | 315       | 330       | R                   | 315 | 355 | 320 | A   | Y   | A   |     |     |   |
| 12          | A       | A   | F   | S   | 335  | 320       | 365 | 375 | 370 | 330  | 285        | 305 | 305 | 305 | R     | C        | 315       | U R       | U R                 | U R | 330 | 345 | A   | 305 | 290 |     |     |   |
| 13          | 305     | 290 | 315 | 350 | 320  | 340       | 380 | 360 | 350 | 360  | 335        | 300 | 305 | 300 | 310   | 320      | 325       | U R       | R                   | 350 | R   | U S | A   | A   |     |     |     |   |
| 14          | 355     | F   | 340 | J S | J S  | U S       | S   | 380 | 365 | 375  | 360        | 315 | 295 | 295 | 320   | 330      | 340       | 355       | 345                 | 365 | 350 | 335 | 300 | A   |     |     |     |   |
| 15          | A       | A   | U S | F   | S    | F         | S   | 375 | 350 | 330  | 325        | 310 | 305 | 305 | 320   | 330      | 335       | 330       | 350                 | 330 | 295 | U S | 280 | 295 |     |     |     |   |
| 16          | 300     | S   | 310 | 315 | 340  | 370       | 340 | 380 | 370 | J R  | 350        | 345 | 330 | 300 | 315   | 305      | 310       | 315       | 330                 | 355 | 375 | J R | J R | 295 | 310 |     |     |   |
| 17          | 310     | 310 | 305 | 320 | 355  | 365       | 345 | 365 | 360 | 335  | 320        | 315 | 310 | 310 | 320   | 320      | 320       | 315       | 325                 | 360 | J S | J S | J S | J S |     |     |     |   |
| 18          | 275     | 300 | U S | U S | J S  | 360       | 340 | 335 | 350 | J R  | 335        | 335 | 295 | 300 | 285   | 310      | 315       | U S       | U S                 | J S | 310 | U S | U S | S   |     |     |     |   |
| 19          | 340     | S   | 300 | 315 | 340  | 345       | 355 | 365 | 335 | 375  | 360        | 320 | 320 | 320 | 295   | 290      | 305       | 320       | 315                 | 330 | 365 | 350 | F   | F   | F   |     |     |   |
| 20          | 285     | F   | U S | J S | A    | 295       | J S | 360 | 360 | 315  | 320        | 305 | 300 | 315 | 315   | 300      | 325       | 300       | R                   | 355 | 335 | 315 | A   | 305 | A   |     |     |   |
| 21          | 315     | S   | 305 | 305 | 335  | 340       | U S | 320 | 335 | 360  | 360        | 320 | 285 | 290 | 305   | 325      | 315       | 310       | 330                 | 350 | 380 | A   | A   | A   | A   |     |     |   |
| 22          | A       | F   | 325 | 320 | J S  | 355       | S   | J S | 365 | 375  | 345        | 340 | 340 | 320 | 295   | 305      | 325       | 330       | 325                 | 350 | 360 | 345 | 365 | A   | A   | U S | 295 |   |
| 23          | S       | A   | A   | A   | A    | 300       | 315 | 310 | 305 | 345  | 330        | 275 | 260 | 280 | J R   | 300      | 295       | 310       | U R                 | 310 | 325 | 315 | 265 | 270 | 335 | 280 |     |   |
| 24          | 280     | 325 | 265 | 280 | S    | S         | 355 | 340 | 315 | 315  | 290        | J S | 265 | 300 | 320   | 285      | 330       | 335       | 320                 | 365 | J S | 365 | 290 | 315 | 315 |     |     |   |
| 25          | 305     | 325 | 330 | 365 | 345  | A         | 320 | 380 | 345 | 330  | 295        | 315 | 340 | 330 | 290   | 335      | 340       | 340       | 370                 | 360 | 340 | 315 | 305 | 305 | S   |     |     |   |
| 26          | 345     | 320 | 335 | 320 | 380  | S         | 355 | 355 | 375 | 370  | 320        | 300 | 345 | 315 | 305   | 320      | 325       | 345       | J S                 | 350 | 370 | 335 | 290 | 310 | 280 |     |     |   |
| 27          | 305     | 340 | 365 | 355 | S    | S         | 315 | 340 | 340 | 355  | 350        | 320 | 295 | 325 | 325   | 320      | 330       | 340       | 360                 | 375 | 360 | 290 | 310 | 295 | S   |     |     |   |
| 28          | 285     | 310 | S   | 305 | 340  | 310       | 305 | 360 | 375 | 345  | 340        | 285 | 315 | 295 | 265   | 340      | 335       | 345       | 360                 | U S | U S | J S | U S | U S | 285 |     |     |   |
| 29          | 275     | 295 | 305 | 320 | S    | 370       | 310 | U S | 345 | 380  | 365        | 345 | S   | R   | 310   | 270      | 295       | 325       | 325                 | 325 | 345 | 360 | 340 | U S | S   | 305 | 300 | S |
| 30          | 280     | 305 | S   | 350 | 335  | 325       | 310 | 370 | 375 | 355  | 345        | 335 | 285 | 310 | 310   | 320      | 305       | R         | Y                   | Y   | U S | Y   | Y   | 295 | 295 |     |     |   |
| 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      | 20  | 25  | 24  | 24   | 25        | 28  | 30  | 30  | 29   | 30         | 29  | 30  | 29  | 28    | 29       | 30        | 28        | 29                  | 30  | 27  | 22  | 23  | 20  |     |     |     |   |
| MED         | 298     | 305 | 315 | 320 | 342  | 340       | 340 | 365 | 360 | 345  | 328        | 305 | 300 | 305 | 308   | 310      | 320       | 330       | 345                 | 348 | 335 | 300 | 295 | 292 |     |     |     |   |
| UQ          | 312     | 318 | 325 | 340 | 355  | 360       | 355 | 375 | 370 | 355  | 340        | 320 | 315 | 310 | 320   | 320      | 325       | 340       | 355                 | 365 | 355 | 320 | 305 | 298 |     |     |     |   |
| LQ          | 285     | 298 | 305 | 310 | 322  | 320       | 320 | 340 | 345 | 335  | 315        | 285 | 290 | 295 | 292   | 300      | 310       | 315       | 325                 | 325 | 315 | 285 | 290 | 282 |     |     |     |   |

SEP. 1984

M(3000)F2 (0.01)

# IONOSPHERIC DATA

SEP. 1984

M(3000)F1 (0.01)

135 E Mean Time (G.M.T. + 9 h)

| Station     | OKINAWA |    |    |    | Lat. | 26 16.9 N |    |     |    | Long | 127 48.4 E |     |     |     | Sweep | 1 MHz to 25 MHz |     | in 24sec in |     | automatic operation |    |    |    |    |
|-------------|---------|----|----|----|------|-----------|----|-----|----|------|------------|-----|-----|-----|-------|-----------------|-----|-------------|-----|---------------------|----|----|----|----|
| Hour<br>Day | 00      | 01 | 02 | 03 | 04   | 05        | 06 | 07  | 08 | 09   | 10         | 11  | 12  | 13  | 14    | 15              | 16  | 17          | 18  | 19                  | 20 | 21 | 22 | 23 |
| 1           |         |    |    |    |      |           |    |     |    | L    | A          | 380 | 355 | 375 | A     | L               | 365 | A           | L   |                     |    |    |    |    |
| 2           |         |    |    |    |      |           |    | L   | L  | L    | L          | L   | 405 | 395 | 380   | 400             | L   | A           |     |                     |    |    |    |    |
| 3           |         |    |    |    |      |           |    |     | L  | L    | L          | L   | 380 | 365 | L     | L               | L   | L           | L   |                     |    |    |    |    |
| 4           |         |    |    |    |      |           |    |     | L  | L    | L          | A   | 415 | L   | L     | L               | L   | L           | L   |                     |    |    |    |    |
| 5           |         |    |    |    |      |           | L  | 370 | A  | A    | A          | 385 | A   | A   | 420   | 385             | 355 | A           |     |                     |    |    |    |    |
| 6           |         |    |    |    |      |           |    |     | A  | L    | L          | A   | A   | A   | A     | L               | A   | L           | L   |                     |    |    |    |    |
| 7           |         |    |    |    |      |           |    |     |    | A    | L          | A   | A   | L   | L     | A               | A   | L           |     |                     |    |    |    |    |
| 8           |         |    |    |    |      |           |    |     | L  | L    | U L        | L   | 390 | L   | A     | A               | A   | L           |     |                     |    |    |    |    |
| 9           |         |    |    |    |      |           |    |     |    | A    | L          | L   | U L | 345 | 345   | A               | A   | L           | L   |                     |    |    |    |    |
| 10          |         |    |    |    |      |           |    |     |    | A    | L          | A   | L   | L   | L     | U L             | 340 | L           |     |                     |    |    |    |    |
| 11          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | A   | A   | C     | A               | L   | A           | A   |                     |    |    |    |    |
| 12          |         |    |    |    |      |           |    |     | A  | L    | L          | A   | A   | A   | A     | C               | A   | A           | A   |                     |    |    |    |    |
| 13          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | A   | L   | L     | L               | L   | L           |     |                     |    |    |    |    |
| 14          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | L     | 385             | L   | L           | L   |                     |    |    |    |    |
| 15          |         |    |    |    |      |           |    |     | L  | L    | U L        | L   | L   | 365 | 370   | L               | 360 | 365         | 355 | L                   | L  |    |    |    |
| 16          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | 370   | 390             | L   | L           | L   |                     |    |    |    |    |
| 17          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | L     | L               | L   | A           | L   |                     |    |    |    |    |
| 18          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | 410 | 400 | 345   | 355             | L   | A           | A   |                     |    |    |    |    |
| 19          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | 390 | 380 | 370   | 340             | L   | A           | A   |                     |    |    |    |    |
| 20          |         |    |    |    |      |           | L  | L   | L  | L    | L          | 360 | 360 | 370 | 370   | L               | 360 | 350         | L   |                     |    |    |    |    |
| 21          |         |    |    |    |      |           | L  | A   | A  | L    | L          | L   | 345 | 365 | 355   | L               | 355 | L           |     |                     |    |    |    |    |
| 22          |         |    |    |    |      |           |    |     | L  | A    | A          | A   | L   | L   | L     | A               | L   | L           |     |                     |    |    |    |    |
| 23          |         |    |    |    |      |           |    |     | L  | L    | L          | A   | L   | L   | A     | L               | 350 | L           |     |                     |    |    |    |    |
| 24          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | 395 | L   | L     | L               | L   | L           |     |                     |    |    |    |    |
| 25          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | L     | L               | L   | L           |     |                     |    |    |    |    |
| 26          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | 390   | L               | L   | L           | L   |                     |    |    |    |    |
| 27          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | L     | L               | L   | L           |     |                     |    |    |    |    |
| 28          |         |    |    |    |      |           | L  | L   | L  | L    | L          | L   | 340 | 355 | 335   | 345             | 365 | L           |     |                     |    |    |    |    |
| 29          |         |    |    |    |      |           |    | L   | L  | L    | L          | 395 | U L | 410 | U L   | 365             | U L | 370         | U L | 340                 | L  | L  |    |    |
| 30          |         |    |    |    |      |           |    |     | L  | L    | L          | L   | L   | L   | L     | L               | L   | L           | L   |                     |    |    |    |    |
| 31          |         |    |    |    |      |           |    |     |    |      |            |     |     |     |       |                 |     |             |     |                     |    |    |    |    |
| 00          | 01      | 02 | 03 | 04 | 05   | 06        | 07 | 08  | 09 | 10   | 11         | 12  | 13  | 14  | 15    | 16              | 17  | 18          | 19  | 20                  | 21 | 22 | 23 |    |
| CNT         |         |    |    |    |      |           |    | 1   |    | 5    | 5          | 13  | 15  | 12  | 9     | 8               |     |             |     |                     |    |    |    |    |
| MED         |         |    |    |    |      |           |    | 370 |    | 390  | 380        | 380 | 370 | 368 | 360   | 355             |     |             |     |                     |    |    |    |    |
| UQ          |         |    |    |    |      |           |    |     |    | 395  | 385        | 395 | 378 | 382 | 370   | 365             |     |             |     |                     |    |    |    |    |
| LQ          |         |    |    |    |      |           |    |     |    | U L  | L          | L   | L   | L   | L     | L               | L   | L           |     |                     |    |    |    |    |

SEP. 1984

M(3000)F1 (0.01)

### IONOSPHERIC DATA

SEP. 1984      H° F2 (KM)

135° E Mean Time (G.M.T. + 9 h)

| Station     | OKINAWA |    |    |    |    |    |    | Lat. | 26 16.9 N |    |    |    | Long. | 127 48.4 E |    |    |    | Sweep | 1 MHz to 25 MHz |    | in 24sec in |    | automatic operation |    |  |
|-------------|---------|----|----|----|----|----|----|------|-----------|----|----|----|-------|------------|----|----|----|-------|-----------------|----|-------------|----|---------------------|----|--|
| Hour<br>Day | 00      | 01 | 02 | 03 | 04 | 05 | 06 | 07   | 08        | 09 | 10 | 11 | 12    | 13         | 14 | 15 | 16 | 17    | 18              | 19 | 20          | 21 | 22                  | 23 |  |
| 1           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 2           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 3           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 4           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 5           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 6           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 7           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 8           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 9           |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 10          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 11          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 12          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 13          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 14          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 15          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 16          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 17          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 18          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 19          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 20          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 21          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 22          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 23          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 24          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 25          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 26          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 27          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 28          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 29          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 30          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| 31          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| Hour<br>Day | 00      | 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         |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| UQ          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |
| LQ          |         |    |    |    |    |    |    |      |           |    |    |    |       |            |    |    |    |       |                 |    |             |    |                     |    |  |

SEP. 1984      H° F2 (KM)

# IONOSPHERIC DATA

SEP. 1984

H<sup>o</sup>F (KM)

135° E Mean Time (G.M.T. + 9 h)

| Station     |         | OKINAWA |     |         |     |         |         |     | Lat. 26 16.9 N |     | Long. 127 48.4 E |         | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |     |         |         |         |         |     |         |     |         |     |         |     |     |
|-------------|---------|---------|-----|---------|-----|---------|---------|-----|----------------|-----|------------------|---------|---|-----|---------|---------|---------|---------|-----|---------|-----|---------|-----|---------|-----|-----|
| Hour<br>Day | 00      | 01      | 02  | 03      | 04  | 05      | 06      | 07  | 08             | 09  | 10               | 11      | 12  | 13  | 14      | 15      | 16      | 17      | 18  | 19      | 20  | 21      | 22  | 23      |     |     |
| 1           | 300     | A       | 300 | 245     | 245 | 250     | 240     | 220 | 220            | 215 | A                | 210     | A   | 205 | A       | A       | A       | A       | 245 | 210     | 215 | 275     | 310 | 350     |     |     |
| 2           | 305     | 300     | 275 | 290     | 295 | 240     | 255     | 210 | 200            | 220 | 245              | A       | 200   | 210 | 200     | A       | A       | A       | 250 | 210     | 250 | A       | 290 | 305     |     |     |
| 3           | 300     | 290     | 295 | 285     | 240 | 215     | 215     | 235 | 210            | 225 | 200              | 200     | 210   | 215 | E A 250 | 230     | 230     | E A 270 | 250 | 250     | 220 | 265     | 300 | 360     |     |     |
| 4           | 310     | 270     | 270 | 265     | 275 | 270     | 250     | 225 | 225            | A   | 240              | 210     | A   | 210 | A       | A       | A       | A       | 220 | 245     | 260 | 250     | 250 | 295     | 300 |     |
| 5           | 255     | 275     | 340 | 210     | 210 | 315     | 305     | 260 | 245            | A   | A                | 250     | A   | A   | 205     | 225     | E A 290 | A       | 290 | 245     | 245 | E S 320 | A   | 340     |     |     |
| 6           | A       | 295     | 260 | 300     | 290 | 235     | 300     | 255 | A              | A   | 220              | A       | A   | A   | A       | A       | A       | A       | A   | A       | 265 | 255     | 230 | 240     | 290 |     |
| 7           | 315     | 295     | 270 | 210     | 335 | 320     | 280     | 220 | H 220          | H   | A                | E A 255 | A   | A   | A       | E A 230 | A       | A       | 240 | 270     | 240 | 220     | 250 | 290     | 300 |     |
| 8           | 300     | 305     | 290 | 245     | 245 | 205     | 230     | 220 | H 205          | 200 | 195              | 200     | 210   | 235 | A       | A       | A       | A       | 250 | E A 255 | 220 | 225     | 255 | 330     |     |     |
| 9           | U A 330 | 315     | 295 | 255     | 200 | 215     | 220     | 215 | 220            | A   | 200              | H 200   | A   | 200 | A       | A       | A       | A       | A   | 245     | 240 | A       | A   | 260     | 360 |     |
| 10          | 300     | 220     | 220 | 300     | 245 | 210     | 250     | 240 | 230            | A   | A                | A       | A   | A   | 230     | 220     | A       | A       | 235 | 240     | 230 | 210     | 200 | 280     | 305 | 305 |
| 11          | A       | 255     | 270 | 240     | 240 | 220     | 245     | 215 | 215            | A   | 190              | A       | A   | A   | C       | A       | A       | A       | A   | 220     | 235 | A       | 255 | 290     | A   |     |
| 12          | A       | A       | 230 | U A 210 | 265 | 280     | 265     | 220 | A              | A   | 195              | A       | A   | A   | A       | C       | A       | A       | A   | A       | 230 | 230     | A   | 295     | 305 |     |
| 13          | 275     | 275     | 250 | 225     | 270 | 260     | 225     | 220 | 220            | A   | 230              | 200     | A   | 200 | 240     | 220     | 215     | 250     | 240 | 210     | 210 | E A 250 | A   | A       |     |     |
| 14          | 275     | 305     | 285 | 245     | 250 | 275     | 240     | 225 | 210            | 210 | 200              | 180     | 200   | 195 | 210     | 250     | A       | 240     | 245 | 220     | 230 | 270     | A   | A       |     |     |
| 15          | A       | A       | 315 | 250     | 220 | 225     | 250     | 220 | H 220          | A   | A                | 195     | 190   | 180 | 195     | 180     | 235     | 240     | 230 | 225     | 210 | 255     | 280 | 280     | 275 |     |
| 16          | 255     | 250     | 245 | 250     | 250 | 240     | 220     | 210 | 225            | 215 | 220              | 210     | A   | 225 | 210     | 200     | 200     | E A 250 | 240 | 210     | 190 | E A 250 | 310 | 315     |     |     |
| 17          | 315     | 295     | 300 | 275     | 230 | 230     | 240     | 220 | 210            | 200 | 200              | 200     | 200   | 210 | 210     | E A 230 | A       | 245     | 255 | 210     | 195 | 220     | 260 | 275     |     |     |
| 18          | 290     | 290     | 280 | 255     | 230 | 210     | 220     | 210 | 230            | 200 | 210              | 210     | 180   | 180 | H 230   | A       | A       | A       | 230 | 230     | 215 | 240     | 270 | 315     |     |     |
| 19          | 300     | 300     | 270 | 270     | 250 | 230     | 230     | 220 | 230            | 205 | 195              | 190     | 195   | A   | A       | 250     | A       | A       | A   | 225     | 220 | 225     | 300 | 295     | 295 |     |
| 20          | 220     | 280     | 235 | 210     | A   | 300     | 300     | 250 | 210            | 210 | 200              | 250     | 190   | 210 | 210     | 215     | 230     | 250     | 230 | 210     | 240 | A       | 300 | A       |     |     |
| 21          | A       | 310     | 260 | 260     | 270 | 250     | 260     | 220 | A              | A   | 240              | E A 300 | 240   | 260 | A       | 250     | 260     | A       | 250 | 250     | 250 | 210     | A   | A       | A   |     |
| 22          | A       | 315     | 295 | 270     | 290 | 295     | 245     | 220 | 210            | A   | A                | A       | E A 250   | 200 | A       | A       | 220     | 250     | 230 | 200     | 210 | A       | A   | 360     |     |     |
| 23          | E A 350 | A       | A   | A       | A   | 270     | 230     | 230 | 240            | 230 | 210              | A       | A   | 220 | A       | 220     | 220     | 230     | 220 | 210     | 300 | 340     | 230 | E A 350 |     |     |
| 24          | E A 440 | 270     | 300 | S 295   | A   | 300     | 230     | 275 | 240            | 220 | 225              | H 200   | 190   | 210 | 225     | 210     | 225     | 240     | 255 | 205     | 195 | 275     | 300 | A       |     |     |
| 25          | E A 340 | 295     | 245 | 225     | 240 | A       | E S 275 | 225 | A              | 205 | 190              | 200     | 195   | 190 | 200     | 210     | 220     | E A 230 | 240 | 210     | 210 | 270     | 300 | 310     |     |     |
| 26          | 280     | 300     | 250 | 260     | 210 | S 295   | E S 245 | 240 | 210            | 200 | 200              | 190     | 210   | 200 | 230     | 215     | 245     | 240     | 200 | 240     | 300 | 265     | 315 |         |     |     |
| 27          | 300     | 250     | 240 | E S 260 | S   | S       | S 270   | 250 | 240            | 215 | 210              | 200     | 205   | 210 | 240     | 240     | 245     | 240     | 240 | 210     | 200 | 315     | 300 | 280     |     |     |
| 28          | 260     | 260     | 280 | 240     | 210 | E S 310 | 290     | 230 | 220            | 220 | 250              | 210     | 210   | 210 | 260     | 260     | 230     | 240     | 220 | A       | 210 | 230     | 300 | 290     |     |     |
| 29          | 320     | 280     | 250 | 245     | 200 | 285     | 245     | 215 | 225            | 215 | 205              | 200     | 200   | 190 | A       | A       | A       | 240     | 225 | U A 220 | 255 | 235     | 255 | 270     |     |     |
| 30          | 295     | 275     | 260 | 220     | 225 | 260     | 255     | 220 | 230            | A   | A                | A       | 190   | 200 | A       | 225     | A       | A       | 200 | 200     | 210 | 245     | 265 | U A 300 |     |     |
| 31          |         |         |     |         |     |         |         |     |                |     |                  |         |   |     |         |         |         |         |     |         |     |         |     |         |     |     |
| CNT         | 24      | 26      | 29  | 29      | 26  | 27      | 30      | 30  | 25             | 18  | 25               | 19      | 20  | 22  | 19      | 16      | 16      | 19      | 27  | 29      | 29  | 24      | 25  | 24      |     |     |
| MED         | 299     | 290     | 270 | 250     | 245 | 250     | 246     | 220 | 220            | 215 | 202              | 200     | 200   | 210 | 215     | 226     | 229     | 240     | 240 | 210     | 220 | 256     | 290 | 305     |     |     |
| UQ          | 308     | 300     | 295 | 270     | 270 | 280     | 265     | 235 | 230            | 220 | 220              | 210     | 209   | 215 | 238     | 238     | 239     | 248     | 250 | 230     | 245 | 279     | 300 | 328     |     |     |
| LQ          | 278     | 270     | 250 | 240     | 225 | 228     | 230     | 220 | 210            | 205 | 200              | 200     | 190   | 200 | 208     | 218     | 220     | 240     | 230 | 210     | 210 | 237     | 265 | 292     |     |     |

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H<sup>o</sup>F (KM)

### IONOSPHERIC DATA

SEP. 1984

H<sup>o</sup>E (KM)

135 E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26 16.9 N Long 127 48.4 E Sweep 1 MHz to 25 MHz in 2.4 sec in automatic operation

| Hour<br>Day | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22 | 23 |  |
|-------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|--|
| 1           |    |    |    |    |    |    |    | 115 | A   | A   | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |     | A   |     |     |    |    |  |
| 2           |    |    |    |    |    |    |    | 110 | 110 | 110 | 110 | 110 | 115 | 110 | 110 | 110 | 110 | 110 | 110 |     | A   |     |    |    |  |
| 3           |    |    |    |    |    |    |    | 110 | 110 | 110 | 110 | 115 | 110 | 115 | 115 | 110 | 115 | 110 | 115 |     |     |     |    |    |  |
| 4           |    |    |    |    |    |    |    | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |     |     |     |    |    |  |
| 5           |    |    |    |    |    |    |    | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |     | A   |     |     |    |    |  |
| 6           |    |    |    |    |    |    |    | 120 | 110 | 115 | A   | A   | 120 | 110 | 110 | 115 | B   | 110 | 110 | 110 | 115 |     |    |    |  |
| 7           |    |    |    |    |    |    |    | 120 | 115 | 105 | 110 | 110 | 110 |     | A   | A   | A   | A   | A   | A   |     |     |    |    |  |
| 8           |    |    |    |    |    |    |    | S   | 130 | 110 | 105 | 110 | 110 | 115 | B   | H   | 105 | 110 | A   | A   | 115 |     |    |    |  |
| 9           |    |    |    |    |    |    |    | A   | 110 | 110 | 115 | 115 | 120 | B   | B   | 115 | 110 | 110 | 105 | 110 |     | A   |    |    |  |
| 10          |    |    |    |    |    |    |    | 115 | 110 | 115 | 110 | 110 | 110 |     | A   | A   | A   | E   | A   | A   | A   |     |    |    |  |
| 11          |    |    |    |    |    |    |    | A   | 105 | 110 | 110 | 110 | 110 | 110 |     | C   | A   | A   | A   | A   |     |     |    |    |  |
| 12          |    |    |    |    |    |    |    | 120 | 105 | 115 | 115 | 120 | B   | B   | B   | A   |     | C   | H   | A   | A   |     |    |    |  |
| 13          |    |    |    |    |    |    |    | 120 | 110 | 110 | 110 | 105 | A   | A   | A   | A   |     |     |     | 110 | 110 | 110 |    |    |  |
| 14          |    |    |    |    |    |    |    | 120 | 110 | 110 | 110 | 110 | 105 | 115 | 115 | 115 | 115 |     | A   | S   |     |     |    |    |  |
| 15          |    |    |    |    |    |    |    | S   | 120 | 105 | A   | A   | A   | A   | A   | E   | A   | A   | A   | A   | A   |     |    |    |  |
| 16          |    |    |    |    |    |    |    | 120 | 110 | 110 | 110 | 110 | 110 | 110 |     | A   | A   |     | 110 | 110 |     | A   |    |    |  |
| 17          |    |    |    |    |    |    |    | 115 | 110 | 110 | 110 | 110 | 115 | 110 | 115 | 110 | 110 | 110 | 110 |     | A   |     |    |    |  |
| 18          |    |    |    |    |    |    |    | 110 | 110 | 110 | 110 | 110 | 110 |     | A   | A   | A   | A   | 110 |     | A   |     |    |    |  |
| 19          |    |    |    |    |    |    |    | S   | 110 | 110 | 110 | A   | 110 | 110 | 115 | 115 | A   | 115 | 115 |     | S   |     |    |    |  |
| 20          |    |    |    |    |    |    |    | A   | 110 | 110 | 110 | 110 | 110 | 110 |     | A   | 105 |     | 110 | 110 |     |     |    |    |  |
| 21          |    |    |    |    |    |    |    | 110 | 100 | A   | A   | A   | A   | A   | A   | A   | A   | A   | 110 |     | A   |     |    |    |  |
| 22          |    |    |    |    |    |    |    | 115 | 110 | 110 | 110 | 110 | 110 | 110 |     | A   | A   | A   | 110 |     | S   |     |    |    |  |
| 23          |    |    |    |    |    |    |    | A   | A   | A   | A   | A   | A   | A   | A   | A   |     | 110 | 110 |     | A   |     |    |    |  |
| 24          |    |    |    |    |    |    |    | A   | A   | 110 | 115 | 115 | 120 | 115 | 115 | 115 | 115 | 115 |     | S   |     |     |    |    |  |
| 25          |    |    |    |    |    |    |    | 115 | 110 | 110 | 110 | 110 | 105 | E   | A   | A   | A   |     | 110 | 115 |     | A   |    |    |  |
| 26          |    |    |    |    |    |    |    | 125 | 110 | 110 | A   | 105 | 105 | 115 | 115 | 110 | 115 | 115 |     | S   |     |     |    |    |  |
| 27          |    |    |    |    |    |    |    | S   | 110 | 110 | 110 | 110 | A   | 110 | 110 | 110 | 110 | 110 |     | S   |     |     |    |    |  |
| 28          |    |    |    |    |    |    |    | 120 | 110 | 110 | E   | A   | 120 | 110 | 110 | 110 | 110 | 110 |     | S   |     |     |    |    |  |
| 29          |    |    |    |    |    |    |    | 125 | A   | H   | 110 | 105 | H   | 110 | 110 | A   | A   | A   | E   | A   | A   |     |    |    |  |
| 30          |    |    |    |    |    |    |    | S   | 120 | 110 | 110 | H   | A   | B   | B   |     |     |     | A   | A   |     |     |    |    |  |
| 31          |    |    |    |    |    |    |    | 120 | 110 | 110 | 105 | 115 | 120 | 120 | 110 | 110 | 110 |     |     |     |     |     |    |    |  |
|             | 00 | 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  | 27  | 26  | 26  | 26  | 25  | 23  | 19  | 19  | 22  | 23  | 6   |     |     |     |    |    |  |
| MED         |    |    |    |    |    |    |    | 120 | 110 | 110 | 110 | 110 | 110 | 110 | 112 | 110 | 110 | 110 | 112 |     |     |     |    |    |  |
| UQ          |    |    |    |    |    |    |    | 120 | 110 | 110 | 110 | 110 | 115 | 115 | 115 | 112 | 115 | 111 | 115 |     |     |     |    |    |  |
| LQ          |    |    |    |    |    |    |    | 112 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 | 110 |     |     |     |    |    |  |

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H<sup>o</sup>E (KM)



## IONOSPHERIC DATA

SEP. 1984

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

| Station     | OKINAWA |     |     |     | Lat. | 26 16 9 N |     |     |     | Long | 127 48 4 E |     |     |     | Sweep | 1 MHz to 25 MHz in 24sec in automatic operation |     |     |     |     |     |     |     |     |   |   |
|-------------|---------|-----|-----|-----|------|-----------|-----|-----|-----|------|------------|-----|-----|-----|-------|---|-----|-----|-----|-----|-----|-----|-----|-----|---|---|
| Hour<br>Day | 00      | 01  | 02  | 03  | 04   | 05        | 06  | 07  | 08  | 09   | 10         | 11  | 12  | 13  | 14    | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |   |   |
| 1           | 110     | 105 | 105 | 100 | 100  | S         | 100 | 140 | 100 | 130  | 115        | 115 | 110 | 115 | 115   | 110   | 110 | 110 | 110 | 100 | S   | 105 | 105 |     |   |   |
| 2           | 100     | S   | S   | 100 | 110  | 100       | 105 | 120 | 110 | 110  | 110        | 110 | 125 | G   | G     | 180   | 150 | 110 | 105 | 105 | 100 | 100 | 100 | S   |   |   |
| 3           | S       | S   | S   | S   | S    | S         | S   | 150 | 150 | 135  | 115        | 150 | 150 | 145 | 195   | 160   | 150 | 115 | 120 | 110 | 105 | 100 | 100 | 100 |   |   |
| 4           | 100     | 100 | S   | S   | S    | S         | S   | 110 | 115 | 115  | 110        | 110 | 110 | 110 | 110   | 110   | 110 | 115 | 130 | 120 | 105 | 105 | 100 | 100 |   |   |
| 5           | 100     | 100 | S   | S   | S    | 140       | 120 | 110 | 110 | 110  | 110        | 110 | 100 | 100 | 110   | 115   | 130 | 110 | 105 | S   | 100 | 100 | 115 | 110 |   |   |
| 6           | 100     | 100 | 100 | 95  | S    | S         | S   | 130 | 125 | 125  | 130        | 105 | 105 | 105 | 100   | 105   | 100 | 105 | 130 | 115 | 110 | 100 | 105 | 110 |   |   |
| 7           | 100     | S   | 100 | S   | S    | S         | S   | 120 | 120 | 105  | 105        | 105 | 100 | 100 | 115   | 110   | 115 | 120 | 115 | 105 | 105 | 115 | 110 | S   |   |   |
| 8           | S       | S   | S   | S   | S    | S         | S   | 140 | 140 | 120  | 120        | 110 | 110 | 105 | 105   | 100   | 100 | 125 | 115 | 105 | 105 | 115 | 115 | 110 |   |   |
| 9           | 105     | 100 | 100 | 100 | 100  | 130       | 120 | 115 | 110 | 110  | 110        | 110 | 110 | 110 | 105   | 105   | 105 | 110 | 115 | 105 | 110 | 110 | 105 | 110 |   |   |
| 10          | 110     | 100 | 105 | 100 | 100  | 115       | 115 | 110 | 110 | 110  | 105        | 100 | 105 | 105 | 100   | 100   | 100 | 100 | 125 | 100 | 115 | 105 | 105 | S   |   |   |
| 11          | 105     | 100 | 100 | 100 | 105  | 110       | 115 | 115 | 115 | 105  | 105        | 100 | 100 | 100 | C     | 100   | 125 | 95  | 110 | 105 | 105 | 100 | 105 | 105 |   |   |
| 12          | 105     | 100 | 100 | 100 | 100  | S         | S   | 115 | 110 | 110  | 110        | 110 | 105 | 110 | 115   | C   | 110 | 115 | 110 | 105 | 105 | 100 | 100 | 100 |   |   |
| 13          | 105     | S   | S   | S   | S    | S         | S   | 120 | 110 | 110  | 115        | 110 | 100 | 100 | 100   | 115   | 115 | G   | 115 | 110 | 110 | 105 | 110 | 110 |   |   |
| 14          | 105     | 110 | 100 | 100 | S    | S         | S   | 150 | G   | 120  | 115        | G   | G   | 100 | 150   | 155   | 140 | 130 | 125 | 110 | 100 | 105 | 115 | 115 |   |   |
| 15          | 105     | 105 | 100 | S   | S    | S         | S   | 115 | 110 | 105  | 100        | 100 | 100 | 95  | 130   | 120   | 115 | 135 | 90  | S   | 110 | 105 | S   | S   |   |   |
| 16          | S       | S   | S   | S   | S    | S         | 130 | 130 | 125 | 120  | 125        | 120 | 115 | 120 | 115   | 115   | 110 | 110 | 105 | 100 | 100 | 100 | 100 | S   |   |   |
| 17          | S       | 100 | S   | S   | 100  | 100       | 100 | 120 | 120 | 110  | 115        | G   | 115 | 110 | 115   | 110   | 110 | 110 | 105 | 100 | 100 | 100 | 100 | 100 |   |   |
| 18          | 100     | 95  | 95  | 100 | 95   | S         | S   | 120 | 120 | 115  | 110        | 110 | 110 | 110 | 100   | 140   | 135 | 110 | 110 | 110 | 110 | 100 | 100 | 100 |   |   |
| 19          | S       | S   | S   | S   | S    | S         | S   | 125 | 110 | 110  | 115        | 110 | 125 | 115 | 120   | 150   | 130 | 120 | 110 | 110 | 110 | 105 | 105 | 105 |   |   |
| 20          | S       | 140 | 135 | 120 | 110  | 110       | 110 | 110 | 110 | 115  | 110        | 110 | 110 | 110 | 110   | 105   | 110 | 115 | 115 | 110 | 110 | 110 | 100 | 100 |   |   |
| 21          | 100     | 100 | 100 | 100 | 100  | 100       | 110 | 110 | 110 | 110  | 110        | 100 | 100 | 100 | 100   | 100   | 100 | 110 | 110 | 110 | 110 | 110 | 100 | 100 |   |   |
| 22          | 100     | 105 | 100 | 105 | 110  | S         | 110 | 110 | 110 | 110  | 110        | 110 | 110 | 110 | 110   | 105   | 105 | 110 | 105 | 100 | 100 | 100 | 100 | 100 |   |   |
| 23          | 100     | 100 | 100 | 100 | 100  | 100       | 100 | 110 | 110 | 100  | 100        | 100 | 100 | 100 | 100   | 100   | 110 | 125 | 110 | 100 | 100 | 100 | 100 | 100 |   |   |
| 24          | 100     | 100 | 100 | S   | 120  | 110       | 110 | 110 | 110 | 120  | G          | G   | G   | G   | G     | G   | G   | G   | S   | 100 | 100 | S   | 100 | 100 |   |   |
| 25          | 95      | 95  | S   | S   | S    | 110       | S   | 110 | 110 | G    | G          | G   | G   | E   | G     | 145   | 100 | 100 | G   | 130 | 100 | 100 | 100 | 100 | S | S |
| 26          | S       | S   | S   | S   | S    | S         | S   | 135 | 110 | G    | 100        | G   | G   | 150 | 100   | G   | G   | G   | 130 | S   | S   | S   | S   | S   | S |   |
| 27          | S       | S   | S   | S   | S    | S         | S   | 140 | 125 | G    | G          | 110 | 100 | 150 | 150   | G   | 125 | 125 | 110 | 110 | S   | 110 | S   | S   |   |   |
| 28          | S       | S   | S   | S   | 100  | S         | 130 | 130 | 130 | 120  | 120        | 115 | 130 | 130 | 170   | G   | G   | 115 | 110 | 110 | 110 | 110 | 110 | 110 |   |   |
| 29          | 105     | 105 | 105 | 105 | S    | S         | S   | 130 | 120 | 120  | 115        | G   | G   | G   | 150   | 135   | 120 | 115 | 110 | 110 | 105 | 100 | 100 | 100 |   |   |
| 30          | 105     | 105 | S   | S   | S    | S         | 120 | 125 | 120 | 110  | 110        | 110 | 115 | 120 | 115   | 110   | 105 | 105 | 105 | S   | S   | 105 | S   | 100 |   |   |
| 31          |         |     |     |     |      |           |     |     |     |      |            |     |     |     |       |   |     |     |     |     |     |     |     |     |   |   |
|             | 00      | 01  | 02  | 03  | 04   | 05        | 06  | 07  | 08  | 09   | 10         | 11  | 12  | 13  | 14    | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  |   |   |
| CNT         | 21      | 20  | 16  | 14  | 14   | 11        | 15  | 30  | 29  | 27   | 27         | 24  | 25  | 27  | 27    | 25  | 26  | 27  | 29  | 26  | 27  | 27  | 25  | 22  |   |   |
| MED         | 100     | 100 | 100 | 100 | 100  | 110       | 110 | 120 | 110 | 110  | 110        | 110 | 110 | 110 | 110   | 110   | 110 | 115 | 110 | 108 | 105 | 105 | 100 | 100 |   |   |
| UQ          | 105     | 105 | 102 | 100 | 110  | 112       | 120 | 130 | 120 | 120  | 115        | 110 | 115 | 116 | 118   | 120   | 125 | 120 | 115 | 110 | 110 | 108 | 105 | 110 |   |   |
| LQ          | 100     | 100 | 100 | 100 | 100  | 100       | 108 | 110 | 110 | 110  | 110        | 105 | 100 | 100 | 100   | 105   | 105 | 110 | 110 | 105 | 100 | 100 | 100 | 100 |   |   |

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H°ES (KM)

The Radio Research Laboratories, Japan

# IONOSPHERIC DATA

SEP. 1984

TYPES OF ES

135 E Mean Time (G.M.T. + 9 h)

| Station |     | OKINAWA |    |    |    |    |    |    |     |    |    |    | Lat. 26 16.9 N · Long 127 48.4 E |    |    |    |    |    |    |    |    |    |    | Sweep 1 MHz to 25 MHz in 24sec in automatic operation |    |  |  |  |  |  |  |  |  |  |
|---------|-----|---------|----|----|----|----|----|----|-----|----|----|----|----------------------------------|----|----|----|----|----|----|----|----|----|----|---|----|--|--|--|--|--|--|--|--|--|
| Hour    | Day | 00      | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08 | 09 | 10 | 11                               | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22  | 23 |  |  |  |  |  |  |  |  |  |
| 1       | F   | F       | F  | F  | F  | F  | F  | H  | LH  | HL | C  | C  | C                                | C  | C  | C  | C  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 2       | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | C  | H  | H  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 3       | F   | F       | F  | F  | F  | F  | F  | H  | HC  | HC | C  | H  | H                                | H  | H  | H  | H  | C  | C  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 4       | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | C  | C  | C  | C  | H  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 5       | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | C  | C  | H  | C  | L  | F  | F  | F  | FF | F   |    |  |  |  |  |  |  |  |  |  |
| 6       | F   | F       | F  | F  | F  | F  | F  | H  | H   | HL | HL | C  | C                                | C  | C  | C  | C  | C  | H  | FF | FF | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 7       | F   | F       | F  | F  | F  | F  | F  | H  | C   | C  | C  | C  | C                                | L  | CL | LL | CL | CL | CL | FF | FF | FF | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 8       | F   | F       | F  | F  | F  | F  | F  | H  | H   | C  | CL | C  | C                                | C  | C  | C  | LH | HL | C  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 9       | F   | F       | F  | F  | F  | F  | F  | L  | C   | C  | C  | C  | C                                | C  | C  | C  | C  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 10      | F   | F       | FF | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | L  | L  | L  | L  | LH | HL | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 11      | F   | F       | F  | F  | F  | F  | F  | L  | C   | C  | C  | C  | C                                | C  | C  | L  | HL | L  | CL | FF | FF | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 12      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | CL | C  | C  | CL | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 13      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | L                                | L  | L  | CL | C  | C  | C  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 14      | F   | F       | F  | F  | F  | F  | F  | H  | C   | C  | C  | C  | L                                | L  | HL | HL | HL | HL | H  | F  | F  | F  | FF | FF  |    |  |  |  |  |  |  |  |  |  |
| 15      | F   | F       | F  | F  | F  | F  | F  | C  | C   | CL | L  | L  | L                                | L  | CL | HL | CL | HL | L  | F  | FF | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 16      | F   | F       | F  | F  | F  | F  | F  | H  | H   | C  | H  | H  | C                                | C  | CL | CL | C  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 17      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | C  | C  | C  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 18      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | L  | L  | HL | HL | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 19      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | CL | CL                               | CL | CL | HL | HL | CL | CL | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 20      | F   | F       | F  | F  | F  | F  | F  | L  | C   | C  | C  | C  | C                                | C  | L  | C  | C  | C  | F  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 21      | F   | F       | F  | F  | F  | F  | F  | C  | C   | L  | L  | L  | L                                | L  | L  | L  | L  | C  | L  | FF | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 22      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | CL | L  | L  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 23      | F   | F       | F  | F  | F  | F  | F  | L  | L   | L  | L  | L  | L                                | L  | L  | L  | C  | C  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 24      | F   | F       | F  | F  | FF | FF | F  | L  | L   | C  | C  | C  | C                                | C  | C  | C  | C  | C  | C  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 25      | F   | F       | F  | F  | F  | F  | F  | L  | L   | C  | C  | C  | C                                | HL | L  | L  | C  | HL | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 26      | F   | F       | F  | F  | F  | F  | F  | H  | C   | L  | C  | C  | C                                | HL | L  | L  | C  | H  | C  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 27      | F   | F       | F  | F  | F  | F  | F  | HL | C   | C  | C  | C  | L                                | H  | H  | C  | HL | H  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 28      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | CL | C  | C                                | C  | C  | H  | C  | C  | C  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 29      | F   | F       | F  | F  | F  | F  | F  | H  | CHL | C  | C  | C  | C                                | C  | HL | HL | CL | CL | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 30      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | CL | C                                | C  | C  | C  | C  | L  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
| 31      | F   | F       | F  | F  | F  | F  | F  | C  | C   | C  | C  | C  | C                                | C  | C  | C  | C  | L  | L  | F  | F  | F  | F  | F   |    |  |  |  |  |  |  |  |  |  |
|         | 00  | 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     |     |         |    |    |    |    |    |    |     |    |    |    |                                  |    |    |    |    |    |    |    |    |    |    |   |    |  |  |  |  |  |  |  |  |  |
| UQ      |     |         |    |    |    |    |    |    |     |    |    |    |                                  |    |    |    |    |    |    |    |    |    |    |   |    |  |  |  |  |  |  |  |  |  |
| LQ      |     |         |    |    |    |    |    |    |     |    |    |    |                                  |    |    |    |    |    |    |    |    |    |    |   |    |  |  |  |  |  |  |  |  |  |

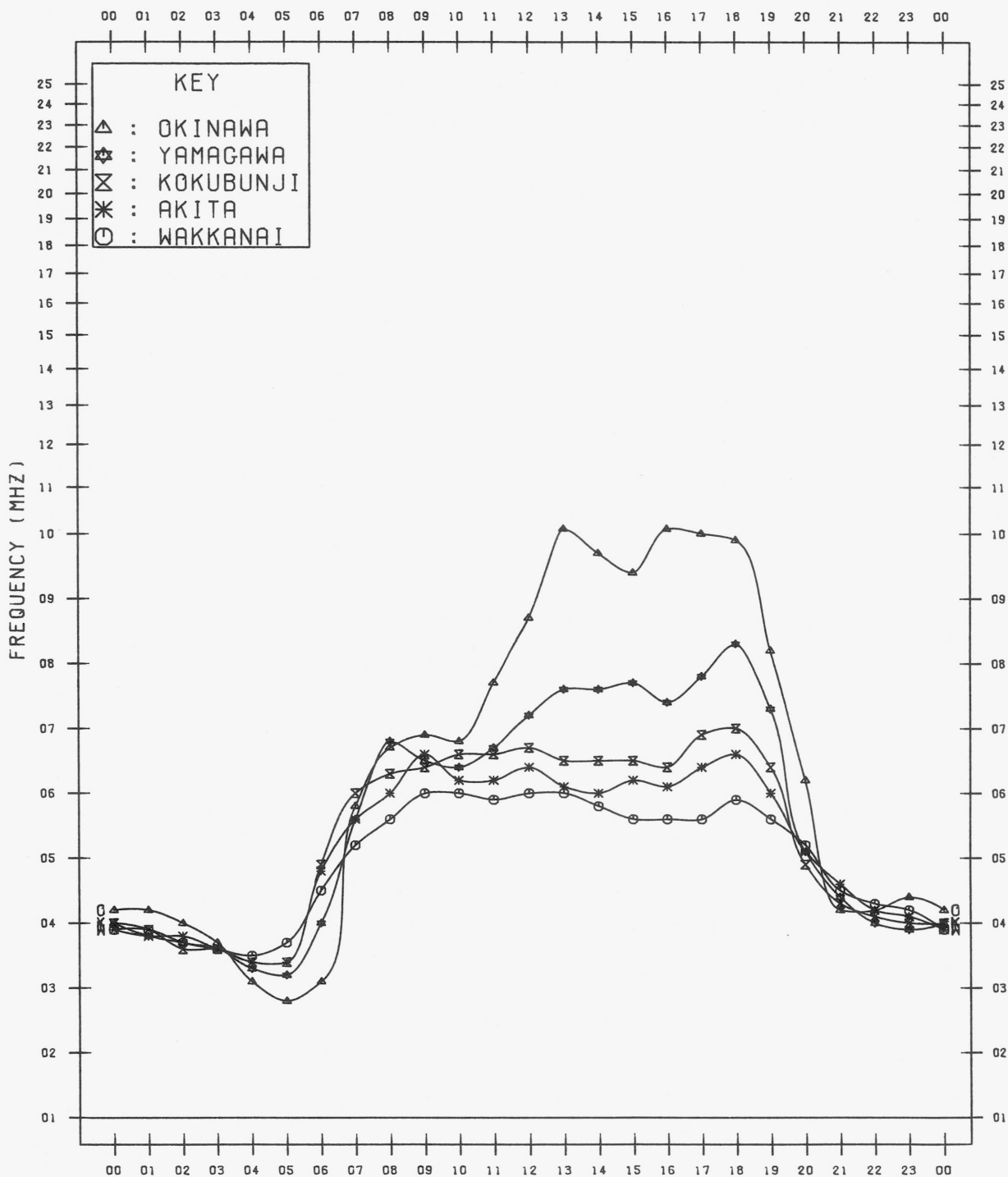
SEP. 1984

TYPES OF ES

# MONTHLY MEDIAN VALUES OF FOF2

135 °E MEAN TIME

SEP. 1984



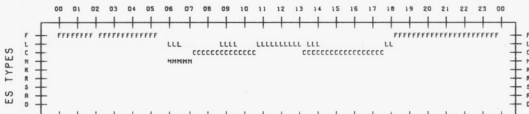
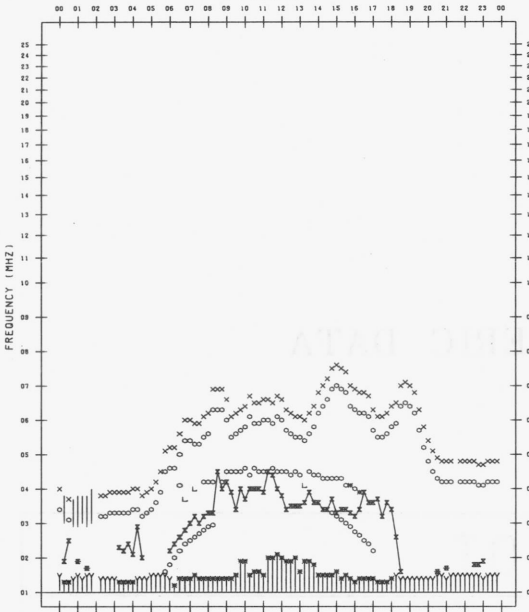
*f*-PLOTS OF IONOSPHERIC DATA

| KEY OF F-PLOT |   |
|---------------|---|
| I             | SPREAD  |
| ○             | F <sub>0</sub> F <sub>2</sub> , F <sub>0</sub> F <sub>1</sub> , F <sub>0</sub> E          |
| ×             | F <sub>X</sub> F <sub>2</sub>   |
| *             | DOUBTFUL F <sub>0</sub> F <sub>2</sub> , F <sub>0</sub> F <sub>1</sub> , F <sub>0</sub> E |
| ⊗             | FBES  |
| L             | ESTIMATED F <sub>0</sub> F <sub>1</sub>   |
| †, ‡          | F <sub>MIN</sub>  |
| ^             | GREATER THAN  |
| v             | LESS THAN   |

F-PLOT DATA

SCALER : S-HIIDOME

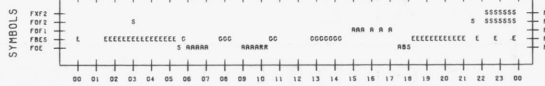
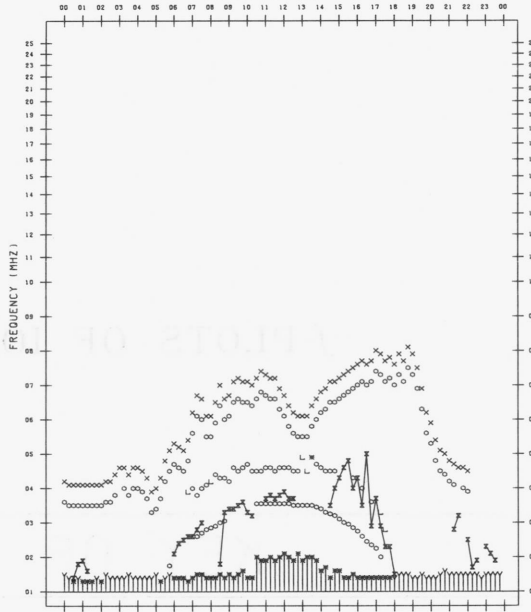
STATION : KOKUBUNJI TOKYO  
135°E MEAN TIME  
DATE : 1984/ 9/ 1



F-PLOT DATA

SCALER : S-HIIDOME

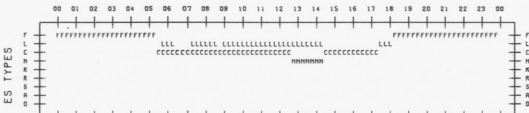
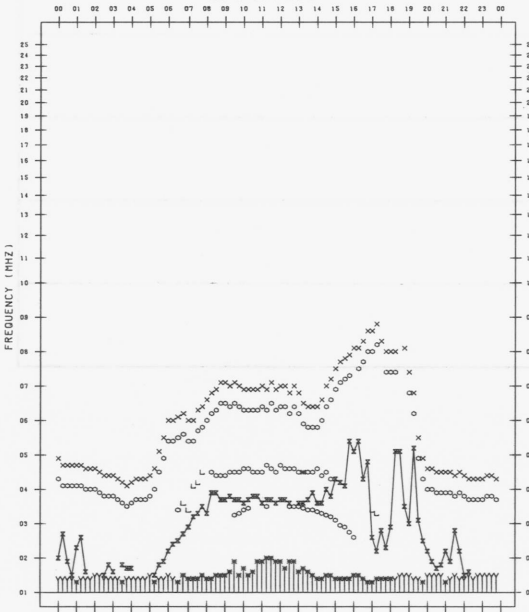
STATION : KOKUBUNJI TOKYO  
135°E MEAN TIME  
DATE : 1984/ 9/ 3



F-PLOT DATA

SCALER : S-HIIDOME

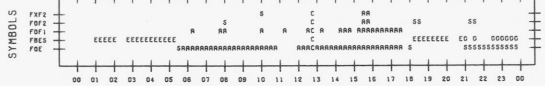
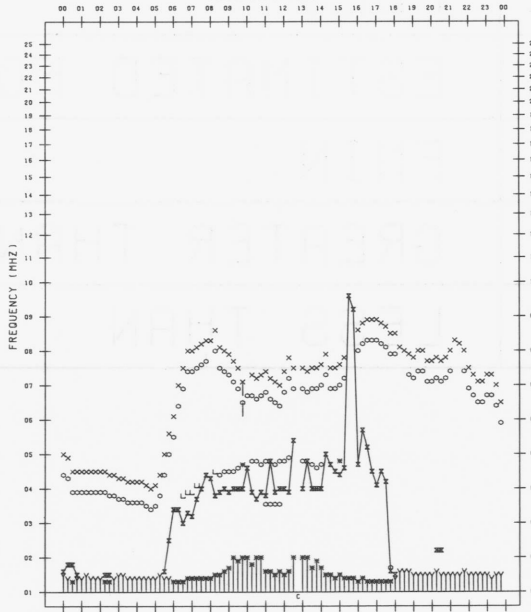
STATION : KOKUBUNJI TOKYO  
135°E MEAN TIME  
DATE : 1984/ 9/ 2

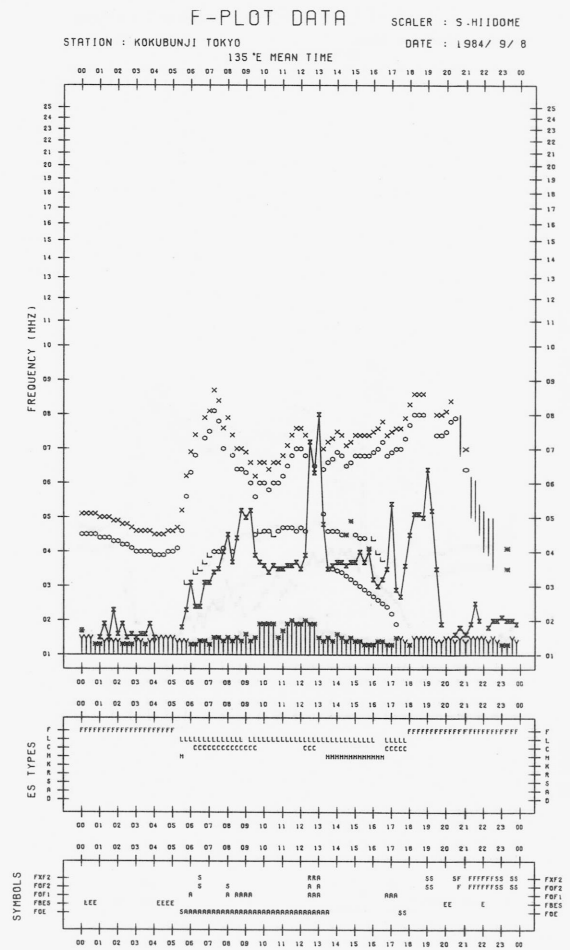
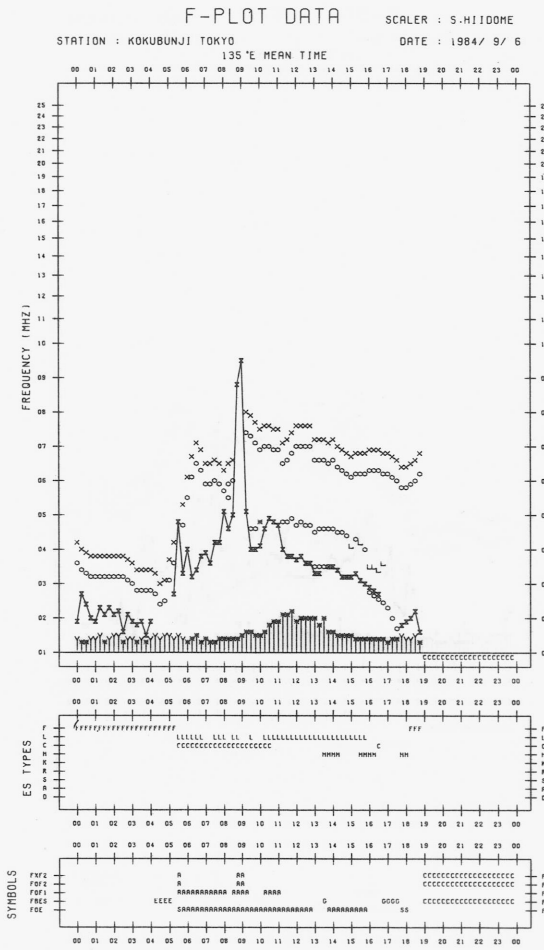
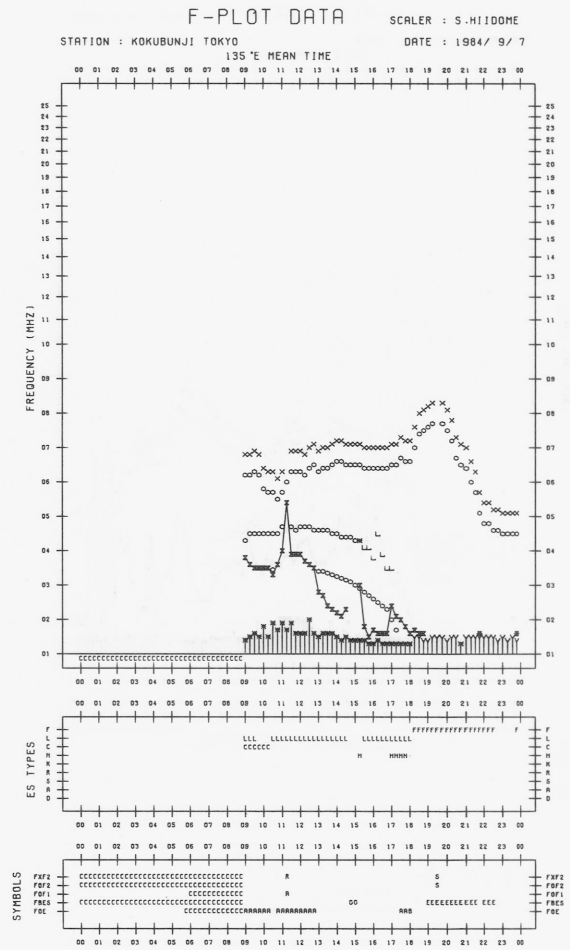
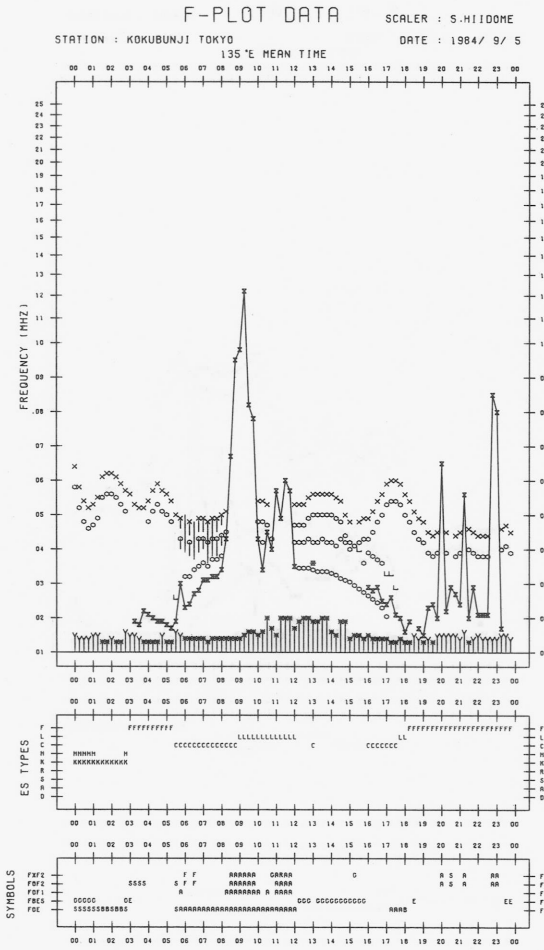


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO  
135°E MEAN TIME  
DATE : 1984/ 9/ 4



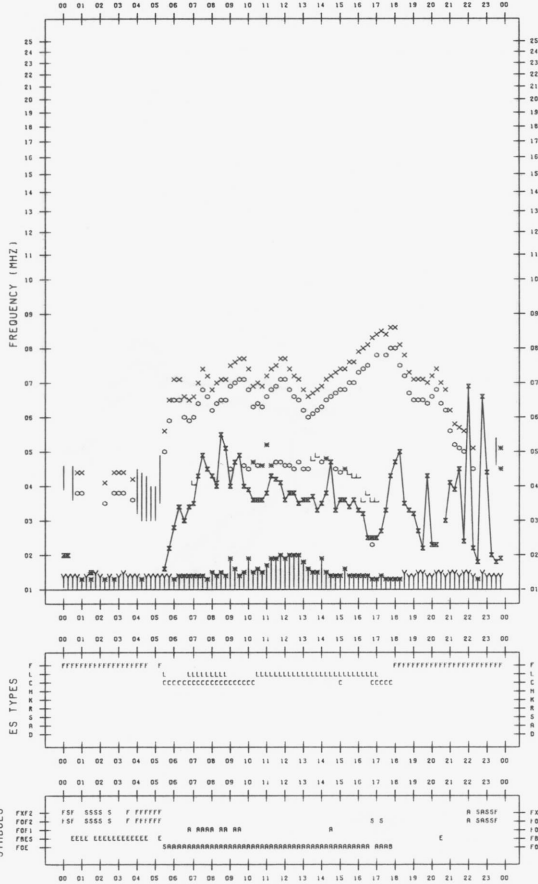


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/ 9

135°E MEAN TIME

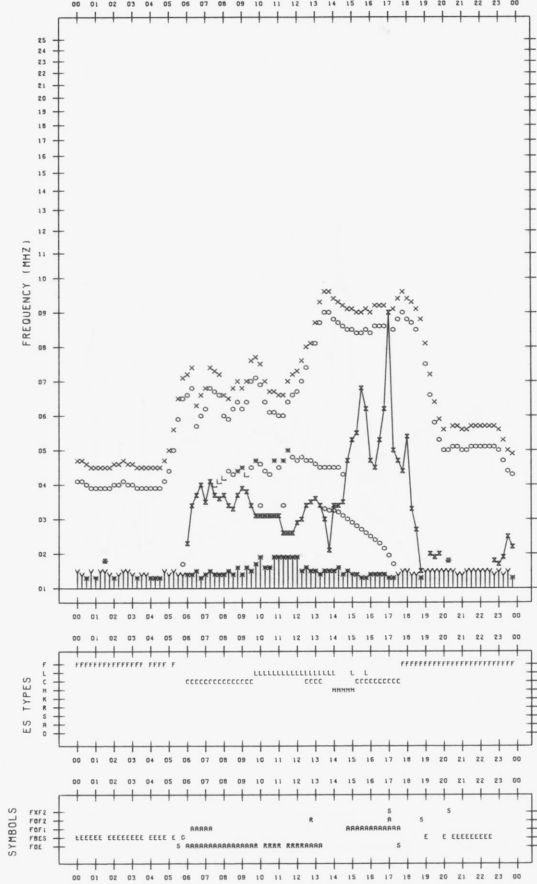


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/11

135°E MEAN TIME

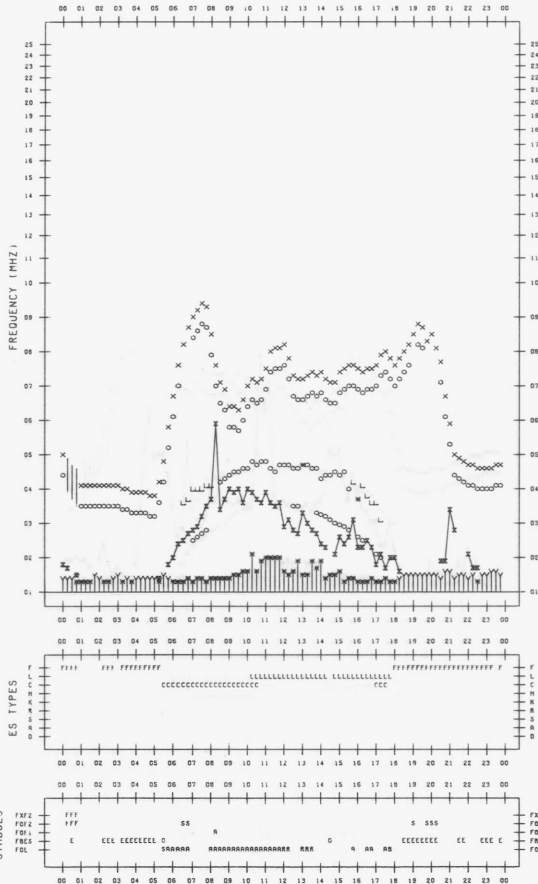


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/10

135°E MEAN TIME

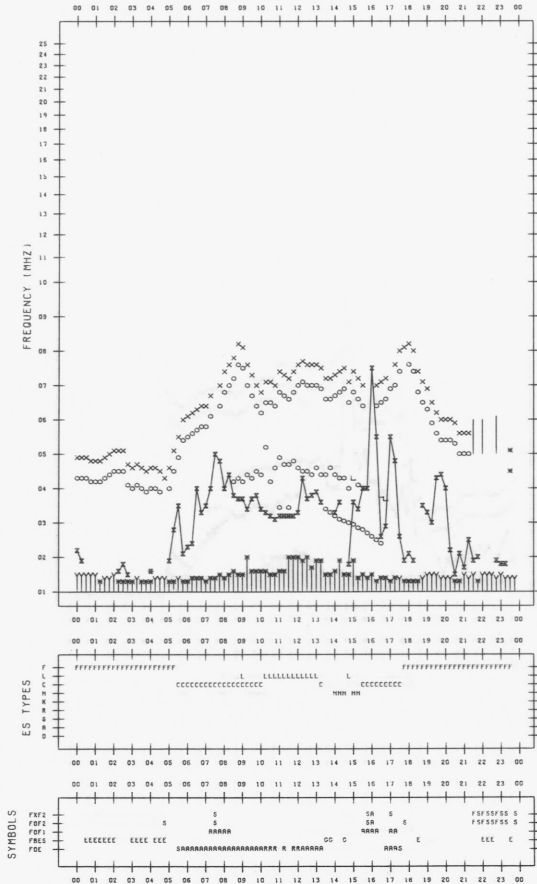


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/12

135°E MEAN TIME

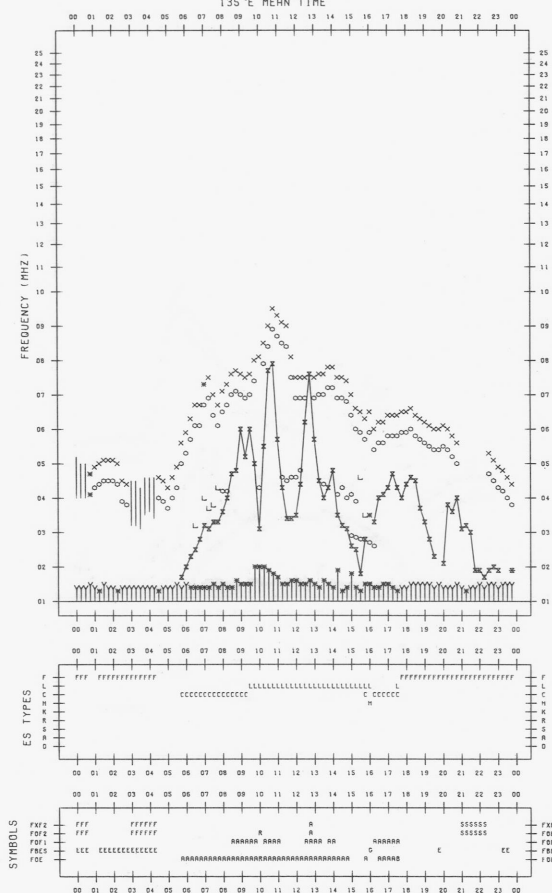


F-PLOT DATA

SCALER : S.HIJDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/13

135°E MEAN TIME

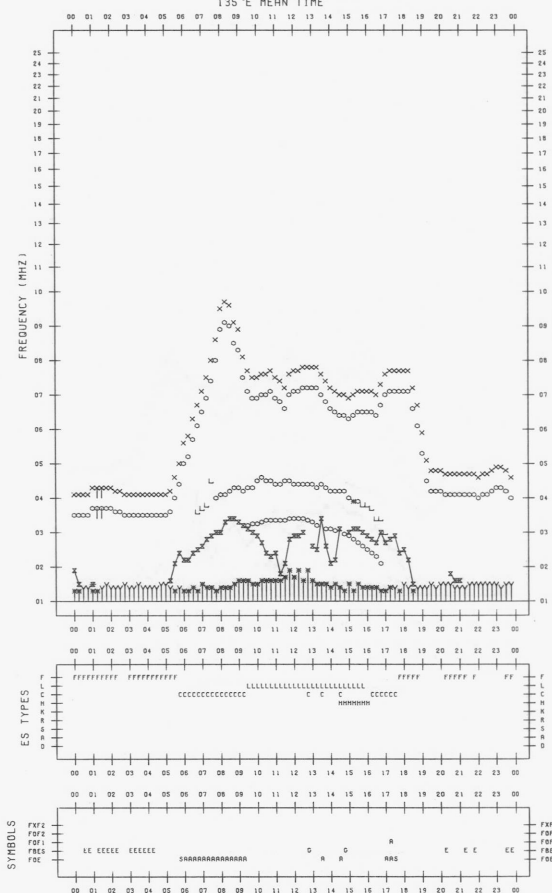


F-PLOT DATA

SCALER : S.HIJDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/15

135°E MEAN TIME

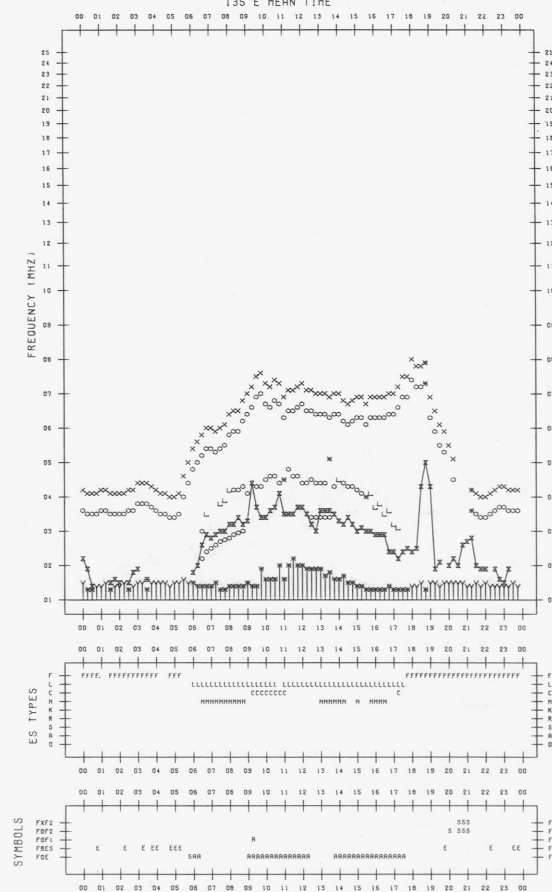


F-PLOT DATA

SCALER : S.HIJDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/14

135°E MEAN TIME

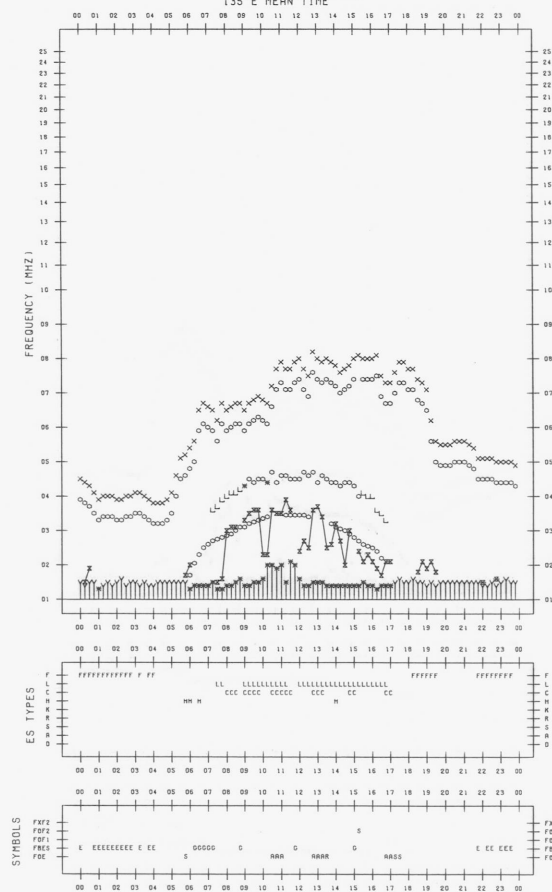


F-PLOT DATA

SCALER : S.HIJDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 9/16

135°E MEAN TIME





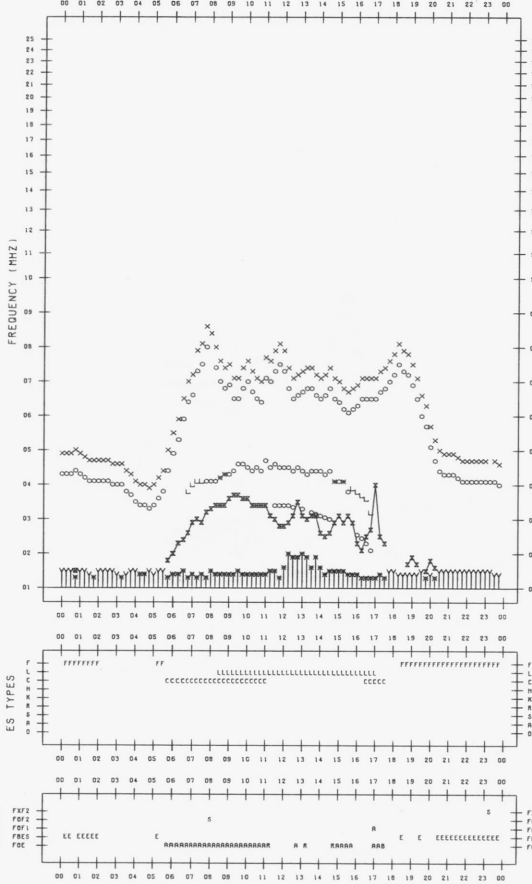
F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 9/17

135°E MEAN TIME



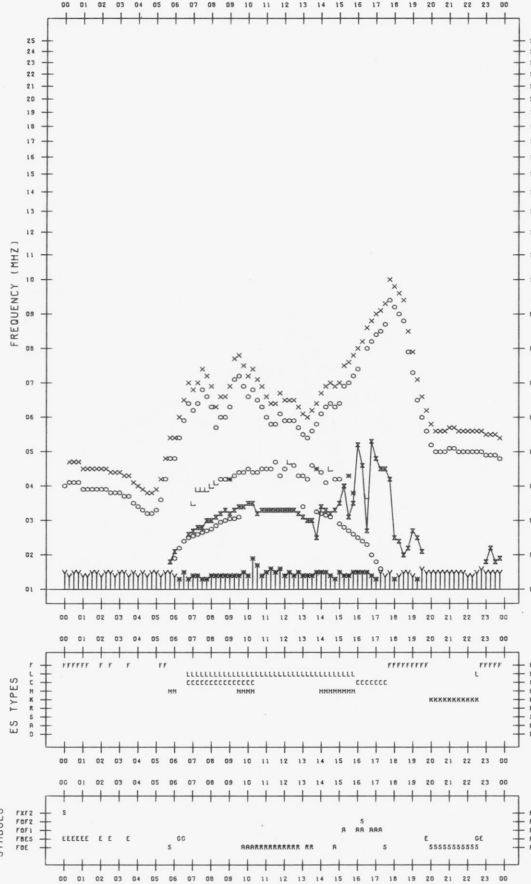
F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 9/19

135°E MEAN TIME



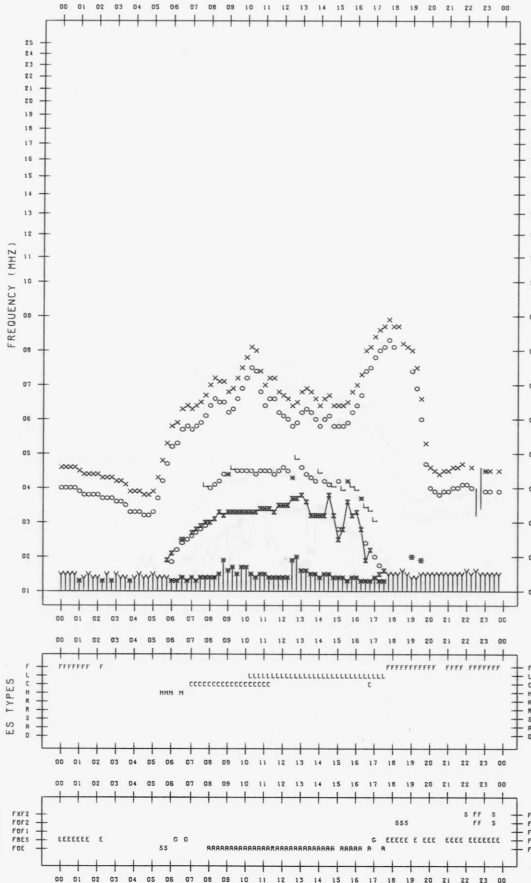
F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 9/18

135°E MEAN TIME



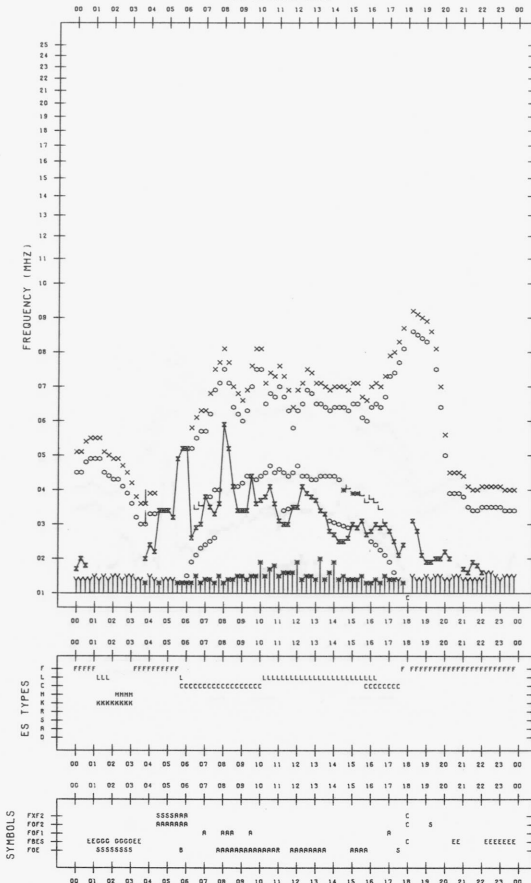
F-PLOT DATA

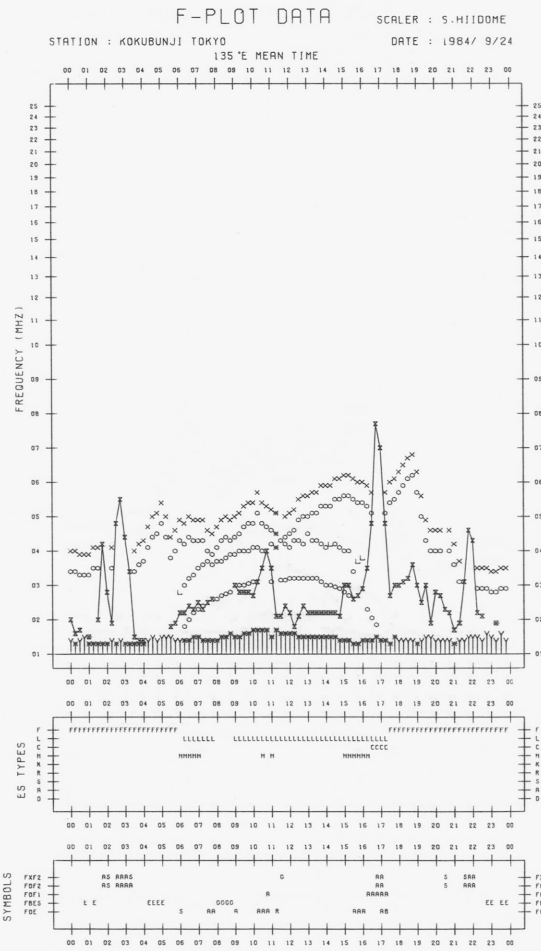
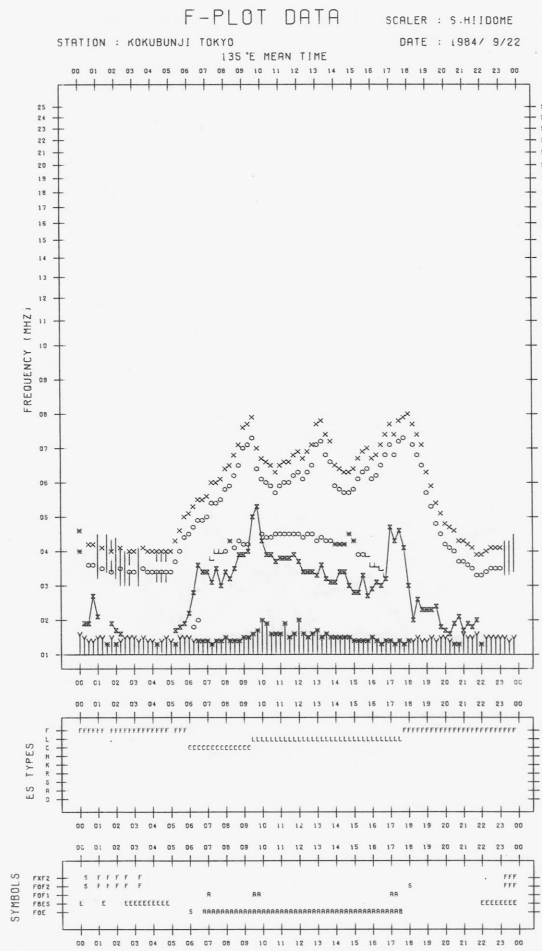
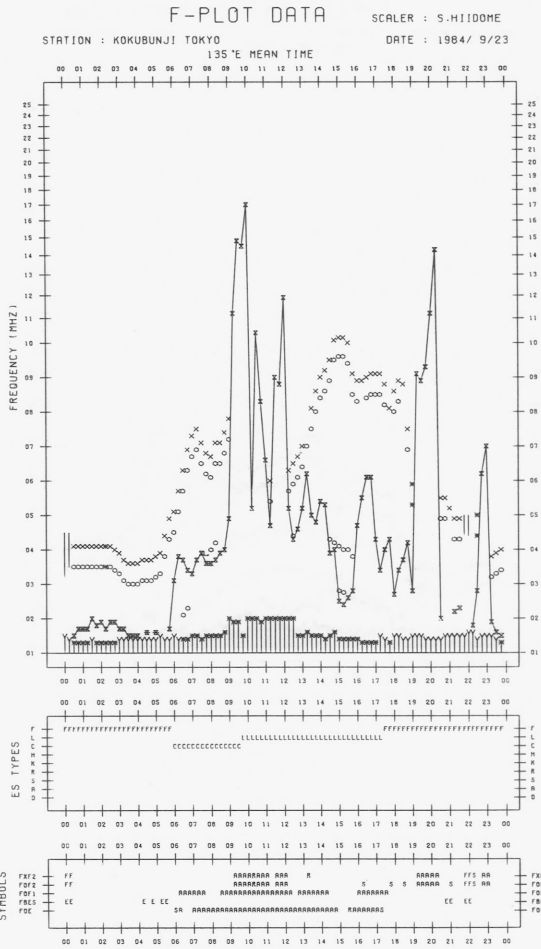
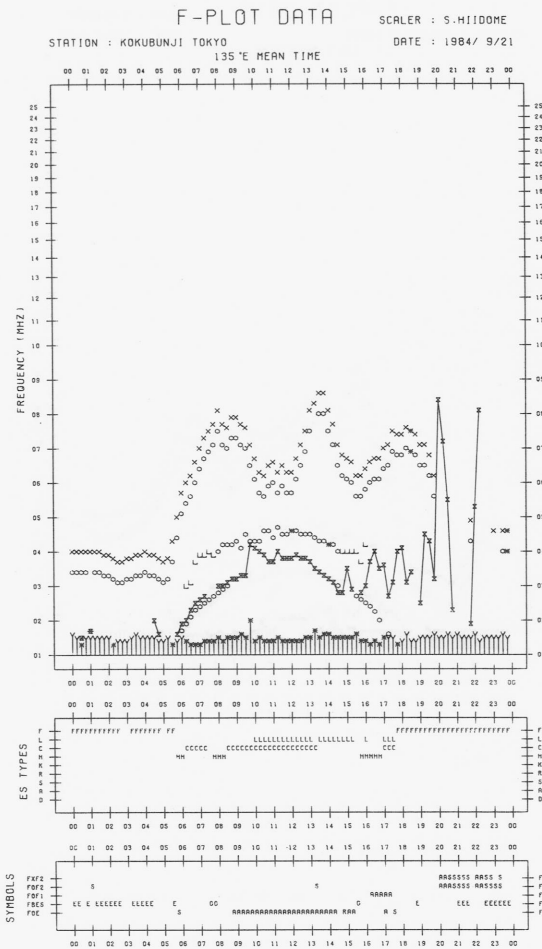
SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 9/20

135°E MEAN TIME

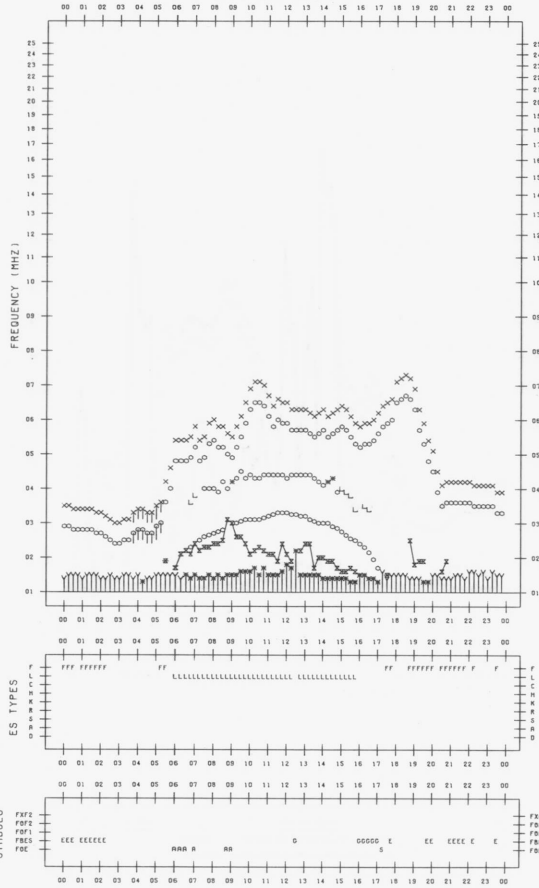




F-PLOT DATA

SCALER : S.HIIDOME

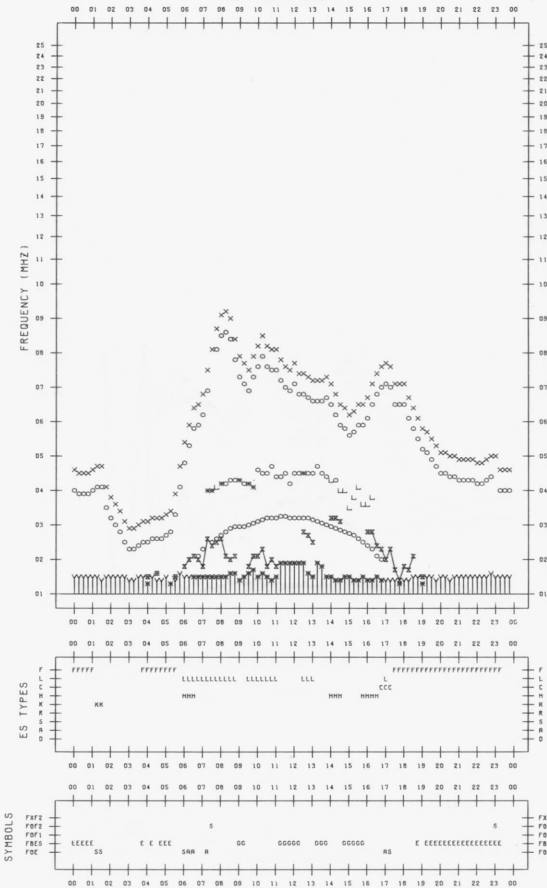
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 9/25



F-PLOT DATA

SCALER : S.HIIDOME

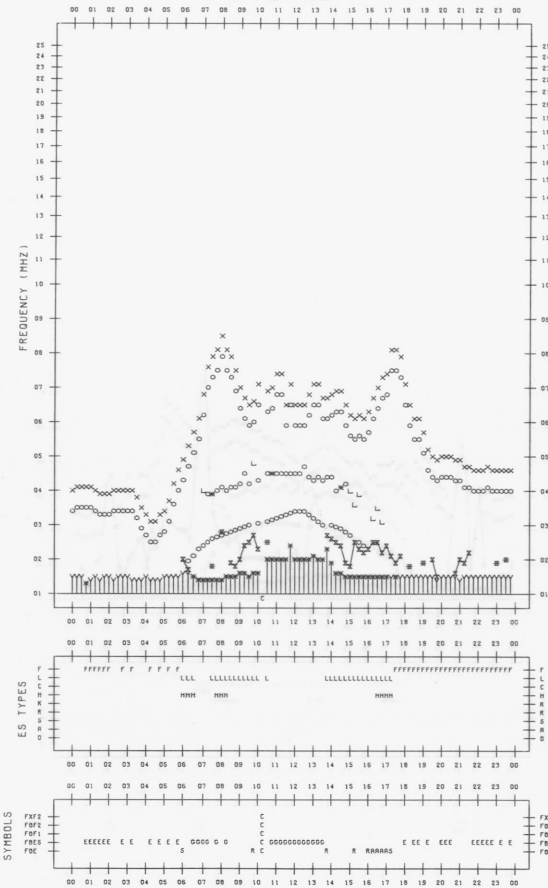
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 9/27



F-PLOT DATA

SCALER : S.HIIDOME

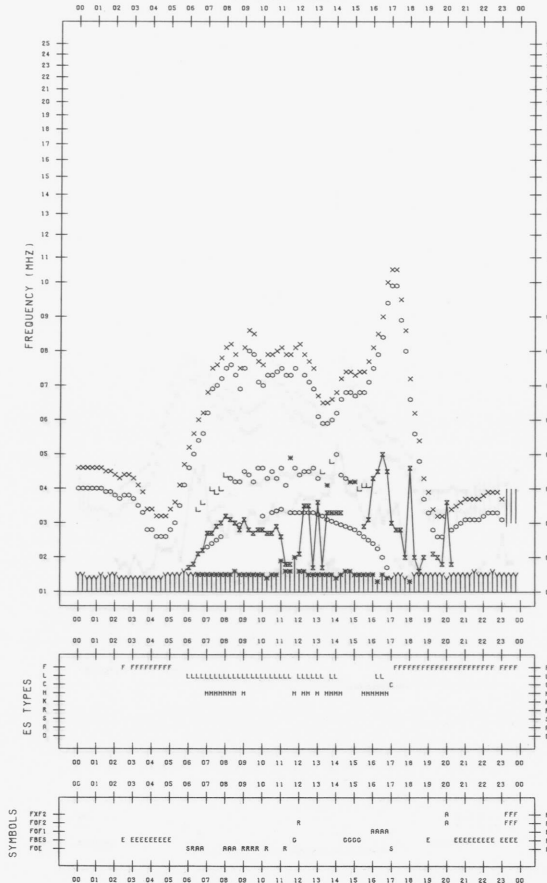
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 9/26



F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 9/28



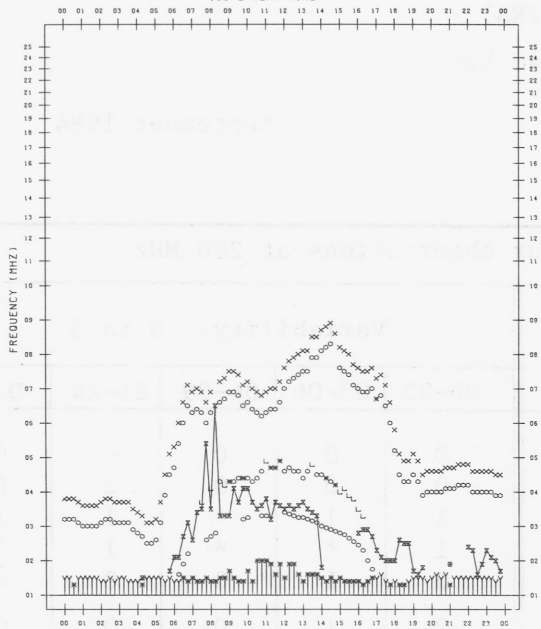
F-PLOT DATA

SCALER : 5.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 9/29

135°E MEAN TIME



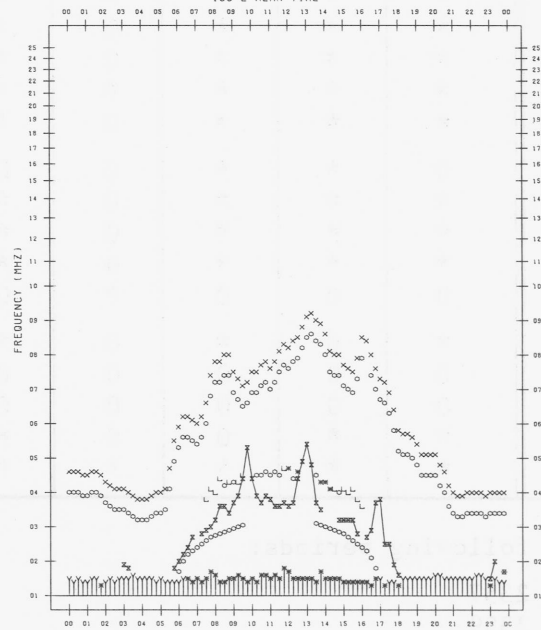
F-PLOT DATA

SCALER : 5.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 9/30

135°E MEAN TIME



## SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,  
Nakaminato, Ibaraki,  
311-12 JAPAN

September 1984

| Single-frequency total flux observations at 200 MHz    |       |       |       |       |     |                     |       |       |       |     |
|--|-------|-------|-------|-------|-----|---------------------|-------|-------|-------|-----|
| Flux density: $10^{-22} \text{Wm}^{-2} \text{Hz}^{-1}$ |       |       |       |       |     | Variability: 0 to 3 |       |       |       |     |
| UT   | 00-03 | 03-06 | 06-09 | 21-24 | Day | 00-03               | 03-06 | 06-09 | 21-24 | Day |
| Date   |       |       |       |       |     |                     |       |       |       |     |
| 1  | 8     | 8     | 8     | -     | 8   | 0                   | 0     | 0     | -     | 0   |
| 2  | 8     | 8     | 8     | 8     | 8   | 0                   | 0     | 0     | 2     | 0   |
| 3  | 8     | 8     | 8     | 8     | 8   | 1                   | 1     | *     | 1     | 1   |
| 4  | 8     | 8     | 8     | 8     | 8   | 1                   | *     | *     | 1     | 1   |
| 5  | 8     | 8     | 7     | 7     | 8   | 0                   | 1     | 0     | 0     | 0   |
| 6  | 7     | 8     | 7     | 7     | 7   | 0                   | 1     | 0     | 0     | 0   |
| 7  | 7     | 8     | 8     | -     | 8   | 0                   | 0     | 0     | -     | 0   |
| 8  | 7     | q     | q     | 7     | 7   | 0                   | *     | *     | 0     | *   |
| 9  | 8     | 8     | 8     | 7     | 7   | 0                   | 0     | 0     | 0     | 0   |
| 10   | 7     | q     | q     | 7     | 7   | *                   | *     | *     | *     | *   |
| 11   | 7     | 7     | q     | 7     | 7   | 0                   | *     | *     | *     | *   |
| 12   | 7     | 7     | 7     | 7     | 7   | 0                   | *     | 0     | 0     | *   |
| 13   | 7     | 7     | 7     | 7     | 7   | 0                   | *     | 0     | *     | 0   |
| 14   | q     | 7     | 7     | 7     | 7   | *                   | 0     | 0     | 0     | *   |
| 15   | 7     | 7     | q     | 7     | 7   | 0                   | *     | *     | *     | *   |
| 16   | 7     | 7     | q     | 7     | 7   | *                   | *     | *     | *     | *   |
| 17   | 7     | 7     | q     | 7     | 7   | *                   | *     | *     | 0     | *   |
| 18   | 7     | q     | 7     | 7     | 7   | *                   | *     | *     | 0     | *   |
| 19   | 7     | 7     | 7     | 7     | 7   | *                   | *     | *     | *     | *   |
| 20   | 7     | q     | q     | 7     | 7   | *                   | *     | *     | 0     | *   |
| 21   | 7     | 7     | q     | 7     | 7   | 0                   | *     | *     | 0     | 0   |
| 22   | 7     | 7     | q     | 7     | 7   | *                   | *     | *     | 0     | *   |
| 23   | q     | q     | q     | 7     | q   | *                   | *     | *     | 0     | *   |
| 24   | 7     | 7     | 7     | 7     | 7   | *                   | *     | *     | 0     | *   |
| 25   | 7     | 7     | 7     | 7     | 7   | 0                   | 0     | 0     | *     | 0   |
| 26   | 7     | 7     | q     | 7     | 7   | *                   | 0     | *     | 0     | *   |
| 27   | 7     | 7     | 7     | 7     | 7   | 0                   | 0     | 0     | 0     | 0   |
| 28   | 8     | 8     | 8     | 7     | 8   | 0                   | 0     | 0     | 0     | 0   |
| 29   | 7     | 7     | 7     | 7     | 7   | *                   | *     | 0     | 0     | *   |
| 30   | 7     | 7     | 7     | 7     | 7   | *                   | *     | *     | *     | *   |

Note No observations during the following periods:

1st 2006 - 2357

7th 2014 - 2359

q: likely quiet.

\*: interference.

## SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,  
Nakaminato, Ibaraki,  
311-12 JAPAN

September 1984

| Single-frequency total flux observations at 500 MHz      |       |       |       |       |     |
|--|-------|-------|-------|-------|-----|
| Flux density: $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$ |       |       |       |       |     |
| UT   | 00-03 | 03-06 | 06-09 | 21-24 | Day |
| Date   |       |       |       |       |     |
| 1  | 30    | 30    | 29    | 30    | 30  |
| 2  | 30    | 31    | 30    | 31    | 30  |
| 3  | 30    | 31    | 31    | 31    | 31  |
| 4  | 31    | 31    | 31    | 31    | 31  |
| 5  | 31    | 30    | 31    | 30    | 31  |
| 6  | 29    | 30    | 30    | 29    | 30  |
| 7  | 29    | 30    | 30    | -     | 29  |
| 8  | 29    | 29    | 29    | 29    | 29  |
| 9  | 28    | 28    | 28    | 28    | 28  |
| 10   | 28    | 28    | 28    | 29    | 28  |
| 11   | 28    | 28    | 29    | 28    | 28  |
| 12   | 28    | 28    | 28    | 28    | 28  |
| 13   | 28    | 28    | 28    | 27    | 28  |
| 14   | 27    | 27    | 27    | 27    | 27  |
| 15   | 27    | 27    | 27    | 26    | 27  |
| 16   | 26    | 27    | 27    | 27    | 26  |
| 17   | 27    | 27    | 27    | 27    | 27  |
| 18   | 27    | 27    | 27    | 27    | 27  |
| 19   | 26    | 27    | 27    | 26    | 27  |
| 20   | 26    | 26    | 26    | 26    | 26  |
| 21   | 26    | 26    | 26    | 26    | 26  |
| 22   | 27    | 27    | 27    | 26    | 27  |
| 23   | 26    | 27    | 27    | 27    | 27  |
| 24   | 27    | 28    | 27    | 28    | 27  |
| 25   | 29    | 29    | 28    | -     | 29  |
| 26   | 29    | 29    | 29    | 29    | 29  |
| 27   | 29    | 29    | 29    | 29    | 29  |
| 28   | 29    | 29    | 29    | 29    | 29  |
| 29   | 29    | 29    | 29    | 28    | 29  |
| 30   | 29    | 29    | 28    | 28    | 29  |

Note No observations during the following periods:

7th 2020 - 2400  
25th 2030 - 2340

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,  
Nakaminato, Ibaraki,  
311-12 JAPAN

September 1984

Outstanding Occurrences  
(single-frequency observations)

Normal observing period: 2025 - 0845 (sunrise to sunset)

| SEP<br>1984 | FREQ STATION | TYPE   | START<br>TIME<br>UT | TIME OF<br>MAXIMUM<br>UT | DUR<br>MIN | FLUX DENSITY |      | POLARIZATION<br>POSITION<br>REMARKS |
|-------------|--------------|--------|---------------------|--------------------------|------------|--------------|------|-------------------------------------|
|             |              |        |                     |                          |            | PEAK         | MEAN |                                     |
| 2           | 200 HIRA     | 44 NS  | 2007E               | 2147                     | 240D       | 7            | 3    | MR                                  |
| 3           | 200          | 46 C   | 0646.3              | 0647.3                   | 2.7        | 160          | 34   | MR                                  |
|             | 200          | 44 NS  | 2009E               | 0333                     | 630D       | 10           | 3    | MR                                  |
| 6           | 500          | 42 SER | 0414.4              | 0426.9                   | 12.7       | 8            | -    | 0                                   |

Note: No observations during the following periods:  
2025 - 0845 (sunrise to sunset)  
2030 - 2345

RADIO PROPAGATION

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

SEP 1984 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAIKO

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



RADIO PROPAGATION

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

SEP 1984 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAI SO

| UT DAY | 00H 45M | 01H 45M | 02H 45M | 03H 45M | 04H 45M | 05H 45M | 06H 45M | 07H 45M | 08H 45M | 09H 45M | 10H 45M | 11H 45M | 12H 45M | 13H 45M | 14H 45M | 15H 45M | 16H 45M | 17H 45M | 18H 45M | 19H 45M | 20H 45M | 21H 45M | 22H 45M | 23H 45M |   |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---|
| 1      | 8       | 9       | C       | 15      | 18      | 22      | 20      | 7       | ES -5   | ES -14  | ES -14  | ES -14  | ES 5    | ES -6   | ES -23  | ES -23  | ES -23  | ES -14  | ES -23  | 5       | 8       | 21      | 14      | 11      |   |
| 2      | 7       | 13      | 8       | 14      | 20      | 21      | 21      | 13      | ES 0    | ES -13  | ES -24  | ES -24  | ES -24  | ES -24  | ES -4   | ES -24  | ES -24  | ES -24  | ES -24  | 7       | 6       | -1      | 6       | 6       |   |
| 3      | 7       | 6       | 13      | 15      | 13      | 21      | 22      | 10      | -4      | 6       | 2       | ES -6   | ES -12  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | 12      | 6       | 8       | 11      | 9       |   |
| 4      | 5       | 9       | 7       | 13      | 17      | 22      | 18      | 19      | 19      | 20      | 15      | 14      | 15      | ES -6   | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | -5      | -2      | -3      | -3      |   |
| 5      | -13     | -4      | -4      | 3       | 3       | 6       | ES -13  | 13      | 15      | -15     | ES -24  | ES -16  | ES -2   | ES -9   | -9      | -15     | -12     | -6      | -9      | 8       | 8       | 1       | -3      | -3      |   |
| 6      | 3       | 5       | 5       | 9       | 14      | 17      | 13      | 9       | 2       | 17      | 5       | 5       | ES -5   | ES -19  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | -1      | 11      | 10      | 9       | 6       |   |
| 7      | 6       | 7       | 3       | 4       | 7       | 19      | 21      | -1      | ES -8   | 2       | 3       | 3       | ES -6   | ES -24  | ES -24  | ES -24  | ES -24  | -4      | -15     | -1      | 17      | 15      | 7       | 7       |   |
| 8      | 6       | 7       | 8       | 13      | 13      | 22      | 21      | 13      | 6       | 13      | 6       | -3      | ES -3   | ES -7   | ES -20  | ES -20  | ES -20  | -2      | ES -24  | 15      | 19      | 13      | S       | S       |   |
| 9      | S       | S       | S       | 14      | S       | 18      | 21      | 19      | 17      | 10      | S       | 15      | 17      | ES -23  | ES -14  | ES -23  | ES -23  | -14     | ES -23  | 12      | 17      | 16      | 17      | 7       |   |
| 10     | 6       | 14      | 16      | 16      | 21      | 21      | 17      | 17      | 13      | 18      | 14      | 2       | ES -14  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 8       | 15      | 8       | 14      | 8       |         |   |
| 11     | 21      | 27      | 23      | 31      | 37      | 34      | 24      | 17      | 17      | 31      | ES -9   | ES 6    | ES -14  | ES -14  | ES -8   | ES -23  | ES -23  | ES -11  | ES -11  | 7       | 19      | 10      | 10      | 9       |   |
| 12     | 8       | 13      | 10      | 13      | 17      | 19      | 16      | 3       | ES -5   | -1      | -3      | -2      | ES -4   | ES -11  | ES -11  | ES -8   | ES -8   | ES -23  | ES -23  | 13      | 15      | 16      | 6       | 10      |   |
| 13     | 11      | 9       | 17      | 17      | 23      | 19      | 10      | ES -9   | ES -18  | -3      | ES -18  | ES -18  | ES -24  | ES -15  | ES -24  | ES -24  | ES -24  | ES -24  | 3       | 9       | 14      | 6       | 6       |         |   |
| 14     | 6       | 12      | 12      | 14      | 21      | 30      | 16      | ES -15  | ES -5   | ES -10  | ES -15  | ES -10  | ES -15  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | -8      | 12      | 9       | 8       | 7       |   |
| 15     | 12      | 8       | 15      | 10      | 23      | 14      | ES -5   | ES -5   | ES -5   | ES -8   | ES -23  | ES -23  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | -7      | 7       | 14      | 7       | 5       | 8       |   |
| 16     | 8       | 10      | 17      | 17      | 16      | 15      | 16      | 7       | ES -2   | ES -14  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -2   | ES -8   | ES -5   | 12      | 10      | 16      | 13      | 13      |   |
| 17     | 5       | 12      | 14      | 13      | 14      | 22      | 11      | ES -1   | ES -3   | ES -8   | ES -6   | ES -3   | ES -8   | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 7       | 2       | 6       | 2       | 6       |   |
| 18     | 18      | 10      | 10      | 16      | 19      | 6       | 16      | 14      | -2      | -5      | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 2       | 6       | 6       | 9       | 8       |   |
| 19     | 6       | S       | 11      | 8       | 19      | 18      | 18      | 8       | 3       | -6      | 10      | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | -7      | 4       | 9       | 11      | 9       |   |
| 20     | 10      | 6       | 11      | 11      | 17      | 21      | 21      | 12      | 10      | 11      | 1       | ES -15  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | 6       | 11      | 13      | 3       |   |
| 21     | -6      | 7       | 10      | 12      | 11      | 13      | 15      | 1       | 1       | ES 4    | -4      | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | 9       | 4       | 5       | 8       | -1      |   |
| 22     | 5       | 12      | 16      | 13      | 19      | 19      | S       | S       | S       | ES -14  | ES -14  | ES -11  | ES -22  | ES -22  | ES -22  | ES -22  | ES -22  | ES -22  | ES -22  | -9      | 14      | 13      | 7       | -4      |   |
| 23     | -2      | -2      | 7       | 12      | 19      | 24      | 27      | 6       | 10      | 4       | -2      | ES -6   | ES -9   | ES -9   | ES -9   | ES -9   | ES -9   | ES -9   | ES -24  | ES -24  | -2      | -5      | -6      | -12     |   |
| 24     | -3      | -3      | 0       | 2       | -5      | 7       | -5      | ES -5   | ES -8   | ES -11  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 13      | 14      | 11      | 3       |         |   |
| 25     | 6       | 14      | 10      | 12      | 5       | -14     | 12      | ES -3   | -8      | ES -17  | ES -14  | ES 6    | ES -6   | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | -8      | 11      | 12      | 8       | 10      |   |
| 26     | 9       | 9       | 15      | 6       | 22      | 21      | ES -10  | ES -10  | ES -3   | -14     | ES -23  | ES -23  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | -9      | 6       | 17      | 8       | 6       |   |
| 27     | 11      | 7       | 13      | 18      | 19      | 14      | 13      | 4       | 12      | 7       | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 3       | 8       | 18      | 8       | 8       |   |
| 28     | 9       | 8       | 7       | 14      | 8       | 18      | ES -8   | ES -3   | ES -8   | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | -2      | -8      | 7       | 3       | 8       |   |
| 29     | 5       | 5       | 8       | 9       | 19      | 18      | 14      | ES -8   | ES -8   | ES -23  | ES -23  | ES -23  | ES -23  | ES -14  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | -5      | 7       | 2       | 7       | 8       |   |
| 30     | 2       | 8       | 13      | 12      | 12      | 21      | 8       | ES -6   | ES -2   | ES -19  | ES -19  | ES -24  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 7       | 9       | 8       | 13      | 4       | 7 |
| CNT    | 29      | 28      | 28      | 30      | 29      | 30      | 29      | 29      | 29      | 30      | 29      | 30      | 30      | 30      | 30      | 30      | 30      | 30      | 30      | 30      | 30      | 30      | 29      | 29      |   |
| MED    | 6       | 8       | 10      | 13      | 17      | 19      | 16      | 6       | US -2   | US -6   | ES -14  | ES -14  | ES -18  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | ES -23  | 3       | 8       | 10      | 8       | 7       |   |
| UD     | 12      | 14      | 17      | 17      | 23      | 24      | 22      | 17      | 17      | 18      | 10      | ES 6    | ES 5    | ES -7   | ES -9   | ES -15  | ES -9   | -6      | ES -7   | 12      | 17      | 17      | 14      | 10      |   |
| LD     | -3      | -2      | 3       | 4       | 5       | 6       | ES -8   | ES -9   | ES -8   | ES -19  | ES -23  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -24  | ES -23  | -2      | -1      | -3      | -3      |   |

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

| Sep.<br>1984 | Whole<br>Day<br>Figure | W W V |    |    |    | W W V H |    |    |    | Conditions |    |    |    | Principal<br>Geomagnetic Storms |      |       |
|--------------|------------------------|-------|----|----|----|---------|----|----|----|------------|----|----|----|---------------------------------|------|-------|
|              |                        | 00    | 06 | 12 | 18 | 00      | 06 | 12 | 18 | 00         | 06 | 12 | 18 | Start                           | End  | Range |
|              |                        | 06    | 12 | 18 | 24 | 06      | 12 | 18 | 24 | 06         | 12 | 18 | 24 |                                 |      |       |
| 1            | 4+                     | S     | S  | S  | 5  | 4       | 4U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 2            | 4o                     | 5U    | S  | S  | 3  | 4       | 4U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 3            | 4o                     | 4U    | S  | S  | 4  | 4       | 5  | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 4            | 4-                     | 4U    | S  | S  | 4U | 4       | 5  | S  | 2  | N          | N  | N  | N  | 0746                            | ---  | 160   |
| 5            | 3+                     | 2U    | S  | S  | 3U | 3       | 3U | 5U | 4  | U          | U  | U  | U  | ---                             | 24.0 |       |
| 6            | 4-                     | 3U    | S  | S  | 4  | 4       | 4  | S  | 4  | U          | U  | U  | U  |                                 |      |       |
| 7            | 4+                     | 4U    | S  | S  | 5  | 4       | 4U | 5U | 4  | N          | N  | N  | N  |                                 |      |       |
| 8            | 5-                     | 4U    | S  | S  | 5U | 4       | 5  | S  | 5U | N          | N  | N  | N  |                                 |      |       |
| 9            | 5-                     | S     | 5U | S  | 4  | 4U      | 5  | 5U | 5  | N          | N  | N  | N  |                                 |      |       |
| 10           | 4+                     | 5U    | S  | S  | 4  | 4       | 5  | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 11           | 5-                     | 5U    | S  | 5U | 4  | 5       | 5  | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 12           | 4o                     | 4U    | 4U | S  | 4  | 4       | 4U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 13           | 4-                     | 4U    | S  | S  | 4  | 4       | 3U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 14           | 4o                     | 4U    | S  | S  | 5  | 4       | 3U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 15           | 4-                     | 4U    | S  | S  | 4  | 4       | 3U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 16           | 4+                     | 4U    | S  | S  | 5  | 4       | 4U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 17           | 4o                     | 5U    | S  | S  | 4  | 4       | 3U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 18           | 4+                     | 4U    | S  | S  | 5  | 4       | 4  | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 19           | 4-                     | S     | S  | S  | 3U | 4       | 4  | S  | 4  | N          | N  | N  | N  | 08.3                            | ---  | 147   |
| 20           | 4-                     | 3U    | S  | S  | 4  | 4       | 5  | S  | 3  | N          | N  | N  | N  | ---                             | 22.0 |       |
| 21           | 4o                     | 4U    | S  | S  | 4  | 4       | 4U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 22           | 4-                     | 4U    | S  | S  | 3U | 4       | S  | S  | 4  | N          | N  | N  | N  | 19.0                            | ---  | 104   |
| 23           | 3+                     | 3U    | S  | S  | 2U | 4       | 5  | S  | 2  | N          | N  | N  | N  | ---                             | ---  |       |
| 24           | 3-                     | 2U    | S  | S  | 2U | 3       | 3U | S  | 3  | U          | U  | U  | U  | ---                             | 24.0 |       |
| 25           | 3+                     | 2U    | s  | S  | 3  | 4       | 3U | S  | 4  | U          | U  | U  | U  | 04.0                            | ---  | 81    |
| 26           | 3o                     | 3U    | S  | S  | 3U | 3       | 2U | S  | 4  | N          | N  | N  | N  | ---                             | ---  |       |
| 27           | 4-                     | 3U    | S  | S  | 3U | 4       | 4  | S  | 4  | N          | N  | N  | N  | ---                             | 24.0 |       |
| 28           | 3+                     | 4U    | S  | S  | 4  | 4       | 2U | S  | 3  | N          | N  | N  | N  |                                 |      |       |
| 29           | 4-                     | 4U    | S  | S  | 4  | 4       | 3U | S  | 4  | N          | N  | N  | N  |                                 |      |       |
| 30           | 4-                     | 4U    | S  | 5U | 4  | 4       | 3U | S  | 3  | N          | N  | N  | N  |                                 |      |       |

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO

Time in U.T.

| Sep.<br>1984 | S W F                     |    |    |    |       |          |      | Correspondence |                |                |                    |
|--------------|---------------------------|----|----|----|-------|----------|------|----------------|----------------|----------------|--------------------|
|              | Drop-out Intensities (dB) |    |    |    | Start | Duration | Type | Imp.           | Solar<br>Flare | Solar<br>Noise | Geomag.<br>Crochet |
|              | CO                        | HA | 1) | 2) |       |          |      |                |                |                |                    |
| 2            |                           |    | 10 |    | 1008  | 38       | SL   | 1-             | x              |                |                    |

CO: Colorado(WWV) HA: Hawaii(WWVH) 1): Australia 2): New Zealand

RADIO PROPAGATION  
Sudden Ionospheric Disturbance (SPA)

I N U B O

| Sep.<br>1984 | S P A                   |              |           |             |              |             |      |         |
|--------------|-------------------------|--------------|-----------|-------------|--------------|-------------|------|---------|
|              | Phase Advance (degrees) |              |           |             |              | Time (U.T.) |      |         |
| Date         | GBR                     | $\Omega$ /LR | NWC       | $\Omega$ /H | $\Omega$ /ND | Start       | End  | Maximum |
| 1            |                         | <u>12</u>    | 8         |             |              | 0810        | 0836 | 0815    |
| 2            |                         | 75           |           |             |              | 1006        | 1130 | 1018    |
| 4            |                         | 13           | —         |             |              | 0427        | 0525 | 0439    |
| 4            | 29                      |              | —         |             |              | 0745        | 0816 | 0749    |
| 5            |                         | 9            |           |             |              | 0621        | 0716 | 0624    |
| 8            |                         |              |           | 6           |              | 2116        | 2144 | 2121    |
| 8            |                         |              | <u>22</u> | 14          |              | 2358        | 0038 | 0003    |
| 19           |                         |              | 10        |             |              | 0606        | 0655 | 0620    |

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IONOSPHERIC DATA IN JAPAN FOR SEPTEMBER 1984

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