F—213

IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 1966

Vol. 18 No. 9

Issued in January 1967

Prepared by

THE RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

KOKUBUNJI, TOKYO, JAPAN

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CONTENTS

	Page
Site of the radio wave observatories	2
Symbols and Terminology	2
Graphs of Ionospheric Data	9
List of Median Values	10
Tables of Ionospheric Data at Wakkanai	13
Tables of Ionospheric Data at Akita	25
Tables of Ionospheric Data at Kokubunji	37
Tables of Ionospheric Data at Yamagawa	51
f-plot of Ionospheric Data	63
Data on Solar Radio Emission	93
Radio Propagation Conditions	96

SITE OF THE RADIO WAVE OBSERVATORIES

Ionospheric observation is carried out at the following four observatories in Japan.

	Latitude	Longitude	Site
Wakkanai	45°23.6′N.	141°41.1′E.	Midori-cho, Wakkanai-shi, Hokkaido
Akita	39°43.5′N.	140°08.2′E.	Tegata Sumiyoshi-cho, Akita-shi, Akita-ken
Kokubunji	35°42.4′N.	139°29.3′E.	Nukuikita-machi, Koganei-shi, Tokyo-to
Yamagawa	31°12.1′N.	130°37.1′E.	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

Solar radio emission and radio propagation conditions are observed at Hiraiso Radio Wave Observatory.

	Latitude	Longitude	Site
Hiraiso	36°22.0′N.	140°37.5′E.	Isozaki-machi, Nakaminato-shi, Ibaraki-ken

SYMBOLS AND TERMINOLOGY

A. IONOSPHERE

All symbols and terminology in the table of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction," 1961.

Terminology

f_0F2, f_0F1, f_0E — The ordinary wave critical frequency for the $F2$, $F1$ and E layers, respectively.

f_0E_s — The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.

f_bE_s — The lowest ordinary wave frequency at which the E_s layer begins to become transparent. This is usually determined from the minimum frequency at which reflections from layers at greater heights are observed.

f-min — The frequency below which no echoes are observed.

$M(3000)F2$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.

$M(3000)F1$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F1$ layer.

$h'F2$ — The minimum virtual height, $h'F2$, refers to the highest, most stable stratification observed in the F region and can only be scaled when such stratification is present.

$h'F$ — The natural and most significant F region virtual height parameter is that for lowest F region stratification. This will be denoted by $h'F$. Thus $h'F$ is identical with the current $h'F2$ when F region stratification is absent, e.g., at night, and with the current $h'F1$ when $F1$ stratification is present.

$h'E_s$ — The lowest virtual height of the trace used to give the f_0E_s.

$hpF2$ — The virtual height of the $F2$ layer measured on the ordinary

wave branch at a frequency equal to $0.834 f_0F2$.

ypF2 The semi-thickness of the *F2* layer deduced from a parabolic fit to the "nose" of the electron density distribution with height and based on the observed *h'f* trace. (The difference between *hpF2* and the virtual height at $0.969 f_0F2$).

a. 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. Used in a qualifying sense, see below.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range. Used in a qualifying sense, see below.

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.

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.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Intermittent trace.

Z Third magneto-ionic component present.

b. Qualifying Letters

The following letters are entered in the first column before a numerical

value on the monthly tabulation sheets.

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.

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-ionic component.

c. Description of Standard Types of E_s

The eight standard types of E_s are identified by corresponding lower case letters: *f, l, c, h, q, r, a, s.* These letters suggest the names flat, low, cusp, high, equatorial, retardation, auroral and slant, respectively. It is strongly emphasized that these names are not restrictive. The letter '*n*' is used to designate any E_s trace that does not correspond to any of the eight types.

f An E_s trace which shows no appreciable increase of height with frequency. The trace is usually relatively solid at most latitudes. This classification may only be used at night; apparently flat E_s traces observed in the daytime are classified according to their virtual hight: *h* or *l*.

l A flat E_s trace at or below the normal *E* layer minimum virtual height in the day or below the night *E* layer minimum virtual height at night.

c An E_s trace showing a relatively symmetrical cusp at or below f_0E. This is usually continuous with the normal *E* trace, although when the deviative absorption is large, part or all of the cusp may be missing. (Usually a daytime type.)

h An E_s trace showing a discontinuity in height with the normal *E* layer trace at or above f_0E. 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. The spread is most pronounced at the upper edge of the trace. (This type is common in daytime in the vicinity of the magnetic equator.)

r An E_s trace showing an increase in virtual height at the high frequency end similar to group retardation but which is non-blanketing over part or all of its frequency range. This is distinguished from the usual group retardation (as in the case of an occulting thick *E* layer) by the lack of group retardation in the *F* layer traces at corresponding frequencies and the lack of complete blanketing.

a An E_s having a well defined flat or gradually rising lower edge with stratified and diffuse (spread) traces present above it. These

sometimes extend over several hundred kilometers of virtual height.

s A diffuse E_s trace which rises steadily with frequency and usually emerges from another type E_s trace. The rising trace alone is classified as '*s*'; the horizontal trace is classified separately. At high latitudes the slant trace usually starts to rise from a horizontal E_s trace such as E_s-*l* or E_s-*f*, at frequencies which grealy exceed the *E* layer critical frequency, whereas at low latitudes it usually rises from E_s-*q*, E_s-*c*, or E_s-*h* at frequencies near the regular *E* critical frequency. Type *s* is never used to determine f_0E_s and $h'E_s$. The slant trace is sometimes observed to start at f_0E without echoes clearly identifiable as E_s echoes being seen.

n The designation '*n*' is used to denote an E_s trace which cannot be classified into one of the standard types. When a trace appears to be intermediate between any two classes a choice should be made whenever possible even if it is uncertain. '*n*' should be used sparingly.

d. Multiple Reflections from E_s

When the ionogram shows the presence of multiple reflections from E_s the number of traces seen should be recorded after the letter indicating the type.

B. SOLAR RADIO EMISSION

Solar radio observations are carried out on 200 and 500 Mc/s at Hiraiso Radio Wave Observatory.

Antennas are a broadside array of 6×4 doublets for 200 Mc/s and a parabolic reflector of 5 meter for 500 Mc/s, each having the total power receiver.

Observations are feasible almost from sunrise to sunset.

a. Time and Unit

The time is expressed as U.T.

The unit is 10^{-22} $W \cdot m^{-2} \cdot (c/s)^{-1}$ for both components of polarization.

b. 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 Mc/s 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 flux level is counted.

c. Distinctive Events

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.

Starting time and *Time of maximum* are given to nearest minute in general, but to nearest a tenth minute for short intense occurrences or clear commencements.

Duration is given in minutes and to nearest a tenth minute, if short or clear.

Descriptive type is denoted by the following symbols:

S =Simple rise and fall of intensity;
C =Complex variation of intensity,
C+=Prolonged broad-band enhancement of radiation, generally of spectral type IV;
F =Group of bursts: multiple peaks probably belonging to the same event, but separated by relatively short period of quietness;
RF=More or less irregular rise and fall of intensity, at metric or decimetric wavelengths;
e =Sudden beginning of burst with steep rise of intensity;
E =Steep rise of intensity of continuum background;
p.i.=post-burst increase;
onset storm=clear-cut beginning of a noise storm.

Peak intensity is the flux density of the highest peak reached during the occurrence, measured above the pre-burst level.

Mean intensity is the flux density averaged over the burst's duration, measured above the pre-burst level; therefore, multiplying the duration, the total energy of the occurrence can be estimated.

C. RADIO PROPAGATION CONDITIONS

a. Field Intensities of WWV and WWVH

Field intensity observations of WWV and WWVH transmitted from Washington D.C. and Hawaii, respectively, are carried out at Hiraiso Radio Wave Observatory. In order to avoid interferences with several standard frequency waves on the same frequency, the upper side-band of 440 c/s is picked up by the use of a narrow band pass filter of ± 40 c/s bandwidth.

Tabulated *field intensity* is the average of peak value of the incident upper side-band field intensity in dB above one microvolt per meter. Tne *duration* of observation is two minutes for WWV and three minutes for WWVH following the time indicated in universal time on the table.

Particulars of the transmitter and receiver are summarized in the following tables:

Transmitter

	WWV	WWVH
Location	Washington, D.C. Long. 76°51′ W Lat. 39°00′ N	Maui, Hawaii Long. 156°28′ W Lat. 20°46′ N
Power	3 kW for the upper side-band	0.5kW * for the upper side-band
Antenna	$\lambda/2$ vertical	$\lambda/2$ vertical
Distance	10050 km	6270 km

* Reduced from the carrier power of 2 kW with amplitude modulation of 100%.

Receiver

Antenna	4.5m vertical rod
Bandwidth	±40 c/s for the upper side-band
Calibration	each half hour

Descriptive symbols are as follows:

C: Measurement influenced by, or impossible because of, any non-propagational reasons.

S: Measurement influenced by, or impossible because of, interferences or atmospherics.

( ): Unaccurate measurement influenced by interferences, atmospherics, or non-propagational reasons.

<: Less than the following figure.

b. Radio Propagation Quality Figures

Radio propagation quality figures are usually expressed on the scale that ranges from one to five as follows:

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

The tabulated circuits contain Hamburg (commercial circuit), WWV (frequencies 10, 15, 20Mc broadcast from Washington, D.C.), San Francisco (commercial circuit) and WWVH (frequencies 10, 15Mc broadcast from Hawaii), which are received at Hiraiso Radio Wave Observatory near Tokyo.

Warnings of radio propagation broadcast from JJY station are expressed in three grades:

N=normal
U=unstable
W=disturbed

The letter W expresses disturbed condition expected to be during the following 12 hours after issue. The letter U and N means also unstable or normal conditions, respectively.

Whole day radio quality indices are the averages of the 6-hourly indices of Hamburg WWV and S. F.

Start- and end-time of principal geomagnetic storms closely correlated to radio propagation conditions are tabulated from observations at Kakioka.

c. Sudden Ionospheric Disturbance (S. I. D.)

The data of short wave fade-out (SWF) are preparated from the field intensity records on following circuits received at Hiraiso. Characteristics of the phenomenon are classified as follows.

Circuits and Drop-out intensity

WS.....WWV 20 Mc, 15 Mc and 10 Mc (Washington)
SF.....Various commercial circuits (San Francisco)
HA.....WWVH 15 Mc and 10 Mc (Hawaii)
TO.....JJY 15 Mc and 10 Mc (Tokyo)
SH.....BPV 15 Mc and 10 Mc (Shanghai)
HB .....Various commercial circuits(Hamburg)

Start-time and Duration, Types and Importances are described from the data of a circuit whose Drop-out Intensity is underlined. Drop-out Intensities of 10 Mc ('), 15 Mc (none) and 20 Mc (").

Start-times and Durations

Types

S : sudden drop-out and gradual recoverly
Slow: slow drop-out taking 5 to 15 minutes and gradual recoverly
G : gradual disturbances; fade irregular in both drop-out and recoverly

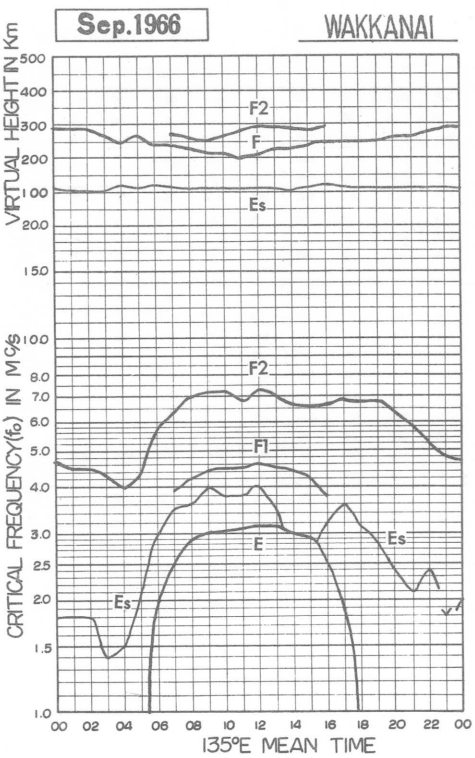
Importances

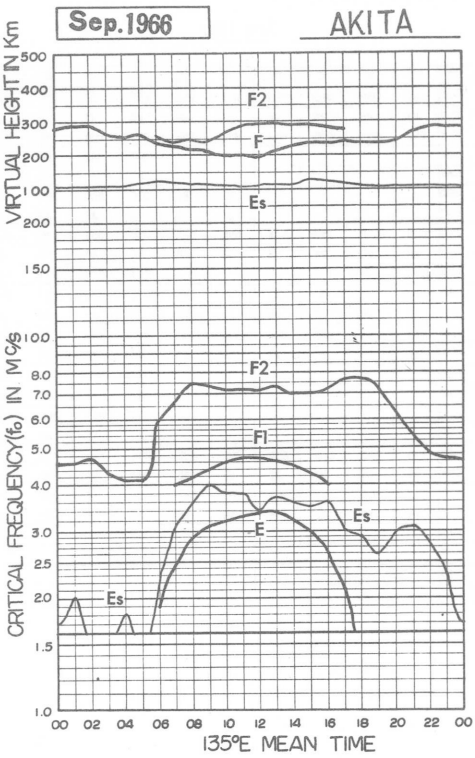
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out;

1−	1	1+
2−	2	2+
3−	3	3+

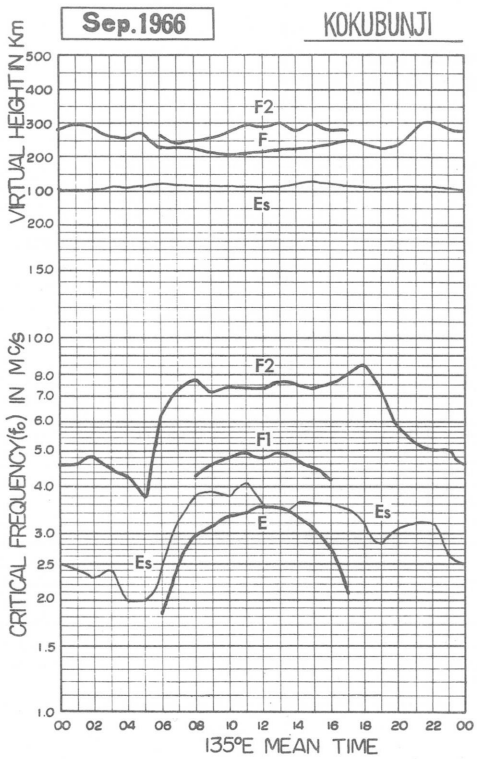
Besides, the time associated phenomena of SID's, that is, solar flare, solar radio noise outburst and crochet (solar flare effect in magnetic record) are given in this table from interchange messages or measurements at Hiraiso.

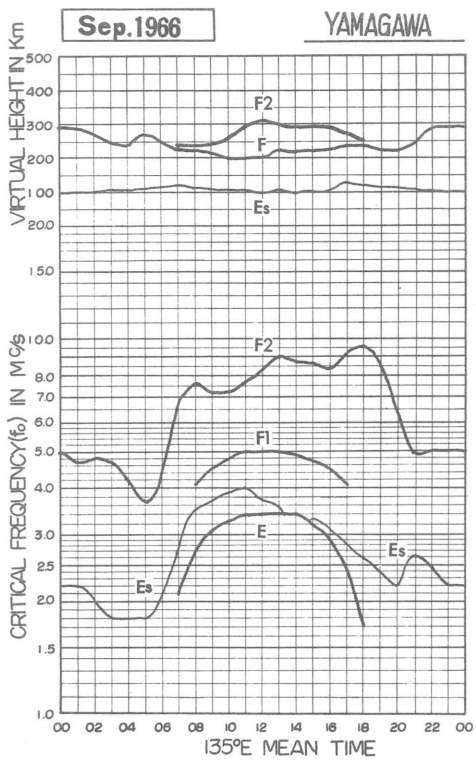
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: WAKKANAI

Sep. 1966

135° E Mean Time (G.M.T. +9h)

CHAR	HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	047	045	045	043	040	043	058	063	070	072	072	068	073	070	067	066	066	069	068	068	064	058	052	048
	CNT	25	25	24	26	21	27	26	27	26	26	28	28	28	28	27	28	27	28	28	28	27	26	25	24
	Q R	012	011	010	012	012	009	011	014	016	014	019	011	014	008	009	013	012	010	012	010	013	010	010	010
foF1	MED							340	390	420	440	450	450	460	450	440	420	380	U350L						
	CNT							2	7	19	24	22	25	25	27	24	18	6	1						
foE	MED	E				E	E	200	250	290	300	305	310	315	315	300	295	250	190	E	E				
	CNT	2				2	19	16	22	23	21	22	21	19	21	22	22	22	15	13	1				
foEs	MED	018	018	018	014	015	021	030	035	036	040	038	038	040	035	G	G	032	036	J031	J028	J024	021	024	E018S
	CNT	28	28	28	28	28	28	27	27	26	28	28	29	29	29	28	27	28	28	28	27	28	28	28	28
	Q R	D010						011	015	014	012							014	013	027	037	027	D017	D018	D009
f-min	MED	E0128	E	E	E	E	E	012	012	017	018	018	018	018	018	017	014	E	E	E	E	E	E0128	E0138	E0158
	CNT	28	28	28	28	28	28	27	27	26	28	29	29	29	29	28	28	28	28	28	27	28	28	28	28
M (3000) F2	MED	285	285	285	290	300	310	335	340	335	345	335	315	320	320	320	320	320	325	315	310	300	300	290	280
	CNT	25	25	24	26	21	27	26	27	26	27	28	28	28	28	27	28	27	28	28	28	27	26	25	24
M (3000) F1	MED							U330A	390	390	385	390	390	370	370	370	375	365	U370L						
	CNT							2	6	19	24	22	25	24	26	23	18	4	1						
h'F2	MED							365	275	260	250	260	280	295	295	290	285	295	280						
	CNT							2	11	23	25	26	28	27	27	25	20	11	4						
h'F	MED	290	290	290	270	250	270	240	240	235	220	215	200	205	225	230	240	250	250	250	250	260	260	275	290
	CNT	26	26	27	27	27	28	27	25	24	27	25	25	25	28	26	26	25	25	25	26	26	26	27	28
h'Es	MED	110	105	105	105	120	115	120	115	110	110	110	110	110	110	105	110	120	115	110	110	110	110	110	110
	CNT	15	17	18	16	16	18	25	22	22	24	21	22	22	20	17	16	24	28	27	23	20	20	19	13
hpF2	MED																								
	CNT																								
ypF2	MED																								
	CNT																								

IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: AKITA

Sep. 1966

135° E Mean Time (G.M.T. +9h)

CHAR	HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	046	046	047	043	041	041	060	067	075	074	071	071	071	073	070	070	072	076	076	073	062	054	048	047
	CNT	24	24	26	26	27	27	29	28	27	27	28	28	29	30	30	30	30	27	26	26	27	23	18	23
	Q R	012	010	011	010	008	010	009	010	013	017	018	014	012	014	011	013	013	010	011	016	013	014	011	009
foF1	MED							250	400L	420	440	460	470	470	460	450	430	400L							
	CNT							1	5	14	20	26	27	27	28	23	15	11							
foE	MED						E	190	250	290	310	320	330	335	340	320	300	260	210	E					
	CNT						4	5	20	15	15	16	16	20	21	23	24	25	12	10					
foEs	MED	J017	J020	E	E	J018	E	023	031	J036	J040	J038	J038	034	037	036	035	036	J030	J029	J026	J030	J031	J028	J023
	CNT	29	29	29	29	29	29	29	30	30	28	29	28	30	29	30	29	30	30	29	28	30	30	29	29
	Q R							010	009	016	022	018	011					012	016	038	028	033	026	016	020
f-min	MED	E	E	E	E	E	E	E	E	017	017	018	018	018	018	017	017	017	E	E	E	E	E	E	E
	CNT	29	29	29	29	29	29	29	30	30	28	29	28	30	29	30	30	30	30	29	28	30	30	29	29
M (3000) F2	MED	295	290	290	300	305	305	335	340	340	345	335	330	320	320	320	320	320	325	325	320	310	295	300	295
	CNT	24	24	26	26	27	27	29	28	27	27	28	28	29	30	30	30	30	27	26	26	27	23	18	23
M (3000) F1	MED							405	370L	380	390	390	385	380	370	360	360	360L							
	CNT							1	5	14	20	24	26	26	27	23	15	11							
h'F2	MED							260	240	250	245	260	285	295	295	290	290	280	275						
	CNT							8	26	28	27	28	28	29	30	30	30	28	13						
h'F	MED	280	290	290	265	255	260	240	230	215	210	200	200	195	210	225	240	240	245	240	240	245	265	280	280
	CNT	27	28	29	29	29	29	28	27	24	23	24	26	28	28	26	25	25	27	28	29	29	28	27	27
h'Es	MED	105	105	105	105	105	115	120	115	110	110	105	105	105	110	110	135	125	120	110	110	105	105	105	105
	CNT	15	16	13	13	15	12	23	27	29	26	27	23	20	23	20	23	29	30	26	25	24	26	24	21
hpF2	MED																								
	CNT																								
ypF2	MED																								
	CNT																								

IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: KOKUBUNJI

Sep. 1966

135° E Mean Time (G.M.T.+9h)

CHAR	HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	046	046	048	045	043	038	062	073	077	072	074	074	074	076	075	074	075	080	085S	073S	057	052	050	050
	CNT	27	26	27	25	23	25	25	25	23	25	26	27	27	28	27	28	28	26	27	25	26	26	27	27
	Q R	012	011	013	007	009	006	010	018	019	015	016	013	009	015	010	013	013	013	018	018	009	012	012	007
foF1	MED								420L	430L	460L	480L	490L	480L	490L	470L	450L	420L							
	CNT								2	7	12	17	20	19	23	16	11	6							
foE	MED							185	250	300	315	335	340	350	350	335	310	270	210						
	CNT							18	23	21	21	20	18	16	19	20	24	24	18						
foEs	MED	025	024	023	024	020	020	025	J032	J038	039	038	041	036	G	036	036	036	J035	J032	J028	J031	J032	J032	J026
	CNT	27	28	27	26	26	25	25	26	25	26	28	29	29	29	28	27	28	27	29	28	28	28	29	29
	Q R	008	D023	014	D021	D017	D009	014	013	020	031					011		015	032	026	018	018	028	018	020
f-min	MED	014	013	013	012	013	013	015	015	017	018	022	020	021	022	017	017	016	014	014	013	013	014	014	014
	CNT	27	28	27	26	26	25	25	26	25	26	28	29	29	29	28	28	28	27	29	28	28	28	29	29
M (3000) F2	MED	285	280	285	300	295	285	330	340	340	330	320	315	315	310	315	310	315	320	325S	330S	305	285	280	285
	CNT	27	26	27	25	23	25	25	25	23	24	26	27	27	28	27	28	27	26	27	25	25	26	27	27
M (3000) F1	MED								350L	380L	380L	385L	375L	370L	355L	345L	350L	350L							
	CNT								2	7	12	17	20	19	23	16	11	6							
h'F2	MED							260	245	250	255	275	295	290	300	280	295	280	280	275					
	CNT							8	25	24	25	26	27	27	28	27	28	26	16	3					
h'F	MED	280	295	290	260	255	270	230	230	225	210	205	205	210	225	225	235	240	250	245	225	240	285	300	285
	CNT	28	27	27	25	25	26	22	22	20	22	23	26	25	27	25	25	23	19	25	28	26	26	27	27
h'Es	MED	105	105	105	110	110	115	120	115	115	115	115	110	110	110	120	130	125	115	115	110	110	110	110	105
	CNT	24	20	21	17	18	17	22	24	24	20	21	22	19	13	22	23	28	27	28	27	27	28	25	25
hpF2	MED	355	350	340	315	320	340	270	260	260	270	290	310	305	310	305	310	305	300	290S	275S	300	360	360	350
	CNT	27	26	25	25	22	25	24	23	20	21	25	25	24	26	25	27	27	25	26	25	24	25	27	26
ypF2	MED	060	060	060	055	060	060	050	050	050	050	050	045	050	045	050	050	050	050	050S	050S	055	060	060	060
	CNT	27	26	25	25	22	25	24	23	20	21	25	25	24	26	25	27	27	25	26	25	24	25	27	26

IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: YAMAGAWA

Sep. 1966

135° E Mean Time (G.M.T.+9h)

CHAR	HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	050	047	048	047	042	037	044	066	076	072	072	077	083	090	087	086	084	092	096S	U086S	063	049	050	050
	CNT	29	28	29	29	30	28	29	28	30	30	30	30	29	29	30	30	30	30	30	29	26	27	28	29
	Q R	010	008	009	008	009	010	008	010	015	014	013	015	011	019	018	017	011	014	012	014	016	011	007	010
foF1	MED								370	410	450	480	500	500	500	490	470	450	410						
	CNT								1	6	25	24	23	24	26	28	24	18	10						
foE	MED								210	270	310	325	340	340	340	340	320	290	240	170					
	CNT								23	23	18	17	14	15	18	20	22	25	26	10					
foEs	MED	J022	J022	J020	018	018	018	021	028	J035	037	039	J040	037	036	G	033	031	028	026	J024	J022	J026	J025	J022
	CNT	30	30	30	30	30	30	30	30	30	29	30	30	29	29	30	29	30	30	30	30	30	30	30	30
	Q R	010	015	D012	D016	D011	D006	D009	007	013	014	016							006	016	008	014	021	D029	016
f-min	MED	E015S	E015S	E014S	012	011	E015S	E015S	015	015	015	018	019	019	020	018	017	015	015	014	E015S	E015S	E015S	E015S	E015S
	CNT	30	30	30	30	30	30	30	30	30	29	30	30	29	29	30	30	30	30	30	30	30	30	30	30
M (3000) F2	MED	280	290	290	310	305	290	310	350	350	350	320	310	305	295	310	310	310	315	330S	U330S	330	280	280	280
	CNT	29	28	29	29	30	28	29	28	30	30	30	30	29	29	30	30	30	30	30	29	25	27	28	29
M (3000) F1	MED									370	370	370	360	360	355	345	345	340	340						
	CNT									5	23	21	21	22	23	25	23	18	10						
h'F2	MED								240	240	245	260	290	305	300	290	290	290	275	250					
	CNT								10	27	29	29	29	29	29	30	30	30	28	11					
h'F	MED	290	290	275	250	240	270	250	230	225	215	200	200	200	225	220	225	230	240	240	225	220	250	290	295
	CNT	30	29	30	30	29	30	29	29	26	27	28	28	24	25	27	27	26	26	28	29	28	27	28	29
h'Es	MED	100	100	100	105	105	110	115	120	115	110	105	105	100	105	100	100	105	130	120	110	110	105	105	100
	CNT	26	24	17	16	18	18	19	27	28	25	27	28	24	25	27	26	26	29	27	27	26	25	22	24
hpF2	MED																								
	CNT																								
ypF2	MED																								
	CNT																								

IONOSPHERIC DATA

Sep. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	059F	F	054F	053F	F	050	057	061	071	071	063	062	069	071	065	068	068	065	069	I075C	079	083	053	055
2	048	050	046	043	038	040	050	057	I053A	057	058	058	058	057	063	I061B	058	060	I058A	061	056	060	057	046
3	045	I043A	044	040F	038F	043	060	075	077	069	052	062	063	058	065	061	062	060	064	073	081	072	061	047
4	043	043F	035	038	F	044	044	047	048	W	054H	073	073	071	070	062	071	054	050	058	052	050	050	050F
5	050F	050F	F	A	A	038	045	060	I061A	067	052H	069	077	070	067	I062A	A	060	064	071	063	F	F	F
6	F	045F	043F	043F	F	038	050	057	069	058	I057B	060	064	063	066	063	064	070	079	068	063	063	F	F
7	051F	040F	041	040	036	038	050	063	061	072	079	068	061	064	063	061	062	060	066	073	067	055	047	049
8	050	048	044	043	037	036F	045H	057	057	I061A	066	060	063	068	060	057	060	063	068	073	074	071	052	050
9	044	045	051	037	040	042	045	049	048	A	A	A	A	A	A	048	049	051	053	058	049	042	036	036
10	037	034	033	035	033	033	043	054	058	058	056	051	057	057	055	055	056	058	055	054	053	050	048	043
11	042	040	040	038	033	037	050	045	C	C	C	C	C	C	C	C	C	063	068	068	067	053	050	043
12	040	038	036	036	038	041	053	063	072	062	057	058	063	065	062	059	060	067	074	073F	F	F	F	F
13	032F	036F	F	037F	036F	041	058	061	066	065	068	066	060	063	066	064	063	070	081	080	066	042	035	037
14	037	037	036	037	036	040	061	068	070	068	064	065	066	067	062	061	061	064	071	078	073	060	040	036
15	036	036	036	035	035	039	061	060H	078	072	066	069	070	068	065	061	064	068	083	081	077	061	044	041
16	040	038	039	040	040	041	055	063	065	071	065	067	067	071	069	067	063	073	080	073	074	058	052	050
17	050	049	050	047	046	044	059	073	062	071	070	067	075	074	073	073	063	070	070	065	063	058	054	056
18	052	049	050	053	050	050	061	062	070	081	077	067	074	067	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	080	076	076	074	067	066	076	070	073	081	071	066	060	057	057
20	051	053	053	050	047	048	069	071	078	080	078H	077	080	072	070	076	076	070	073	064	064	067	061	057
21	055	055	055	054	048	044	068	078	091	090H	083	075	080	080	080	075	073	071	066	063	066	063	059	059
22	056	056	054	050	047	048	068	074	074	083	084	074	073	074	071	074H	075	077	077	074	070	063	058	054
23	053	053	051	050	048	050	058	067	081	086	083	075	068H	077	080	073	078	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	I076A	080	I080A	080	083	075	074	073	073	066	066	064	060	056F
25	052F	049F	F	051F	051F	043F	051	058	073	078	087	083	089	077	074	075	079	075	080	072	054	055	053	F
26	F	F	F	045F	F	045F	063	065	077	085	081	074	080	078	076	068	066	071	068	067	058	054	050	048
27	041	044	043	F	F	5F	F	072	075	075	075	I072A	073	077	078	080	083	071	069	063	062	057	047	048
28	046	051	050	051	055	054	C	C	C	084	079H	068	078	071	079	074	083	085	062	046	047	050	051F	047F
29	F	F	049F	048	F	048	I061A	074	079	081	080	082	081	070	071	070	074	067	062	053	057	056	058	046
30	047	047	047	048	047	050	064	070H	073	086	076H	I080A	076	074	067	062	070	074	067	063	058	051	048	046
31																								
Count	25	25	24	26	21	27	26	27	26	26	28	28	28	28	27	28	27	28	28	28	27	26	25	24
Median	047	045	045	043	040	043	058	063	070	072	072	068	073	070	067	066	066	069	068	068	064	058	052	048
U.Q.	052	050	050	050	048	048	061	071	077	081	079	075	078	074	074	074	074	072	076	073	070	063	058	054
L.Q.	040	039	040	038	036	039	050	057	061	067	060	064	064	066	065	061	062	062	064	063	057	053	048	044
Q.R.	012	011	010	012	012	009	011	014	016	014	019	011	014	008	009	013	012	010	012	010	013	010	010	010

foF2

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 1

IONOSPHERIC DATA

Sep. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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									430	450	480	470	490	490	440	430								
2							340	A	A	A	450	460	460	460	450	B	B	A						
3								400	420	430		480	450H	500	450	440	A	U350L						
4									440H	420	430	430	440	440	440	420	380							
5								A	A	430		490	460	460	A	A	A	A						
6								A	430	430	B	460	460	470	450H	430L	I410A							
7								390	410	440	450	460	500H	450	440	420L	400							
8								400	410	I440A	460	440	460	440	I430A	400	370							
9								I370A	A	A	A	A	A	A	A	410	370	A						
10							340	A	420	430	440	440	440	440	440	430	390L							
11									C	C	C	C	C	C	C	C	C							
12									A	430	460	450	440	450	430		A							
13									420	450	450	440	480H	450	450	400								
14									430	460H	460	450	460	480	430	430								
15									420	440	440	500	470	450	440									
16								380L	410	430	430	430	450	470	430	400								
17								400L	I410A	440	430	460	470	460	430	400								
18									420L	450	460	440	480H	440	C	C	C	C						
19							C	C	C	440	480	470	480	470	440	440								
20									400	450	470	450	480	460	460L	440								
21											490H	470	470	470	440L									
22									400	440	460	450	470	420	410L									
23									430	440	450H	450		I450A	440	420L		C						
24							C	C	C	C	A	A	A	I460A	440		A							
25										U440L	I470A	460	470											
26									400L	430L	450	450	460H	470L	420	400L								
27									440L	440L	A	A	A	430		400	A							
28							C	C	C	430	430	440	440	450L	440L	410L								
29								360	410	430	440	440L	440	430	400									
30										A	A	A	440	430	400									
31																								
Count							2	7	19	24	22	25	25	27	24	18	6	1						
Median							340	390	420	440	450	450	460	450	440	420	380	U350L						
U.Q.																								
L.Q.																								
Q.R.																								

foF1

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 2

IONOSPHERIC DATA

Sep. 1966 | foE | 0.01 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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						130	205	250	290	I310B	325	340	A	A	A	A	A	230	S					
2					E	120	205	250	295	305	305	A	A	A	A	B	B	A	A					
3						125	205	240	290	285	300	300	A	A	A	A	A	A	S	S				
4	E					115	200	220	250	260	300	315	325	315	I315B	310	265	I220A	145	E				
5						120	200	255	285	300	305	310	315	320	I305A	300	260	190	E					
6						A	205	250	290	A	B	A	A	310	315	300	280	180	E					
7						E	B	A	A	A	A	I320A	325	320	310	290	245	205	A					
8					E	A	A	A	280	300	I300A	A	A	A	A	A	265	180	E					S
9						E	190	235	280	300	300	305	300	295	270	295	250	200	E					
10						S	190	230	285	300	310	315	I310A	I305A	300	270	250	A	A					
11						E	170	225	C	C	C	C	C	C	C	C	C	200	S					
12						A	A	A	A	A	A	A	300	300	305	300	250	190	E					
13						S	S	230	260	A	A	A	305	315	305	300	260	180	E					
14						A	I200A	270	295	I295A	I285A	300	I320A	I310A	300	295	260	200	S					
15						S	S	215	I260A	I305A	315	335	320	320	300	295	250	190	E					
16						A	170	225	255	270	310	310	315	320	310	295	245	180	E					
17	E					E	150	220	250	285	320	I320A	I320A	325	315	295	A	A	A					
18						E	A	A	300	310	I315A	315	A	A	C	C	C	C	C					
19						C	C	C	C	A	A	A	A	A	A	A	250	A	A					
20						S	205	270	300	315	335	340	I335B	330	330	305	A	A	A					
21						E	200	260	300	I305A	A	A	A	320	305	I295A	260	A	A					
22						E	A	265	300	315	310	I325A	325	310	300	300	250	A	S					
23						E	S	270	295	305	305	310	315	315	305	280	250	C	C					
24						C	C	C	C	C	315	320	305	300	285	280	245	180	E					
25						E	170	230	280	300	310	305	A	A	A	A	A	A	E					
26						E	180	250	290	295	A	A	A	A	300	295	230	140	E					
27						E	S	250	290	300	305	300	295	300	300	280	220	S	E					
28						E	C	C	C	A	I295A	300	300	300	300	280	215	A	S					
29						E	A	A	A	A	300	300	300	315	290	275	220	S	S					
30						E	A	250	285	300	280	I280A	I285A	I290A	300	270	220	S						
31																								
Count	2				2	19	16	22	23	21	22	21	19	21	22	22	22	15	13	1				
Median	E				E	E	200	250	290	300	305	310	315	315	300	295	250	190	E	E				
U. Q.																								
L. Q.																								
Q. R.																								

foE

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 3

IONOSPHERIC DATA

Sep. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	J030	E	013	014	E	G	030	J053	040	E036B	G	G	040	037	034	031	033	031	040	C	J053	J050	J024	E015S
2	E011S	J023	J030	013	015	033	033	J065	061M	051	036	041	040	036	040	B	E040B	J045	143	J061	J075	J063	068	J024
3	J063	J050	J043	J030	E	021	034	J043	054	J044	041	051	043	040	034	033	J053	J043	J030	023	030	020	E014S	E017S
4	015	023	016	018	014	020	023	028	033	031	G	025G	G	G	E040B	G	G	024	020	E	015	E016S	J026	J043
5	J041	J040	J021	J043	J043	038	035	J053	070	053	043	038	040	043	J071	068M	163	J066	J100	J065	J070	J053	J035	J031
6	019	J023	J025	016	018	J031	036	040	040	045	B	038	J051	041	G	035	J045	J043	J080	J025	J033	021	J051	J063
7	J025	E	J025	E	015	024	025	J043	035	J040	037	040	G	G	025G	024G	025G	020G	021	E013S	E013S	E016S	021	E018S
8	E017S	E011S	E	E	015	022	J031	J031	026G	J071	J050	053	J055	J055	J065	J063	038	J055	J051	J055	016	J024	EC16S	E015S
9	E	020	022	J025	J024	J030	030	J043	053	050	121	061	050M	J073	J064	G	G	044	053	J028	J055	J029	E015S	E015S
10	J023	E	019	015	J028	J036	J035	J043	039	035	G	G	033	033	G	G	030	033	J023	J023	024	021	018	E016S
11	E017S	E	E	E	021	021	038	J041	C	C	C	C	C	C	C	C	C	035	J063	J069	J033	034	J033	E016S
12	J024	J023	J023	J040	020	020	030	J043	J046	J053	J060	040	040	035	G	038	044	J055	J086	J080	J065	J060	J038	025
13	J026	018	E	E	E	E015S	024	G	033	036	035	036	G	G	G	G	031	037	018	021	J040	E012S	024	E017S
14	028	024	020	E	E	016	023	G	G	040	J060	G	040	034	040	G	G	030	024	E015S	E012S	E016S	E016S	E016S
15	E018S	E	E	E	E	E015S	030	030	036	034	G	025G	028G	026G	023G	G	037	025	031	033	E016S	020	J025	J031
16	E017S	019	E	E	E	021	031	G	G	031	028G	G	G	G	G	035	033	023	J031	015	E	J030	J025	E
17	E	E	E	E	E	021	025	030	053	G	G	036	035	G	G	027G	J035	J041	J025	E014S	E017S	E	J040	E017S
18	E017S	E014S	E012S	E	E	E	025	030	037	G	J041	G	043	041	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	034	037	040	065	J043	J043	034	024G	024	030	018	J020	E012S	021	E016S
20	E013S	E	E	E	E	E015S	024	035	G	G	G	G	E040B	G	G	G	032	029	018	017	E	023	E017S	J020
21	E	E	E	E	E	E	038	037	073	061	040	J063	040	G	025G	J031	028	039	023	019	E016S	E017S	E015S	E011S
22	E017S	E	J023	J021	016	J024	J021	040	036	039	039	036	G	G	023G	018G	040	J035	025	021	E018S	E015S	E016S	E016S
23	024	019	E	016	E	E	E020S	030	040	040	037	038	043	048	043	G	033	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	J121	J063	J113	053	033	G	055	J035	J043	J030	J025	J023	J040	J021
25	J021	018	015	J023	E	E	020	G	034	041	048	040	J061	J070	J120	J095	032	042	J035	J055	J054	020	020	J021
26	E014S	018	J024	J021	018	E	G	G	G	035	J073	J040	038	J051	038	G	030	J043	J051	J061	J031	J035	J031	J025
27	J023	J040	J031	J025	J028	J031	026	030	036	048	J063	J101	J068	035	G	041	J064	J045	J043	J043	J043	J021	J025	J035
28	J033	J020	020	E	016	E	C	C	C	035	033	038	G	G	G	034	057	032	J030	J031	J043	J043	053	J033
29	J040	016	015	J024	J036	J037	J081	041	031	J035	G	G	022G	028G	025G	025G	023	024	E017S	J035	021	J032	E018S	E017S
30	E017S	J025	J030	J023	J033	J026	J035	020G	032	044	051	J081	045	033	G	G	028	J043	J035	042	J023	J021	E016S	J025
31																								
Count	28	28	28	28	28	28	27	27	26	28	28	29	29	29	28	27	28	28	28	27	28	28	28	28
Median	018	018	018	014	015	021	030	035	036	040	038	038	040	035	G	G	032	036	J031	J028	J024	021	024	E018S
U.Q.	026	023	024	023	020	028	035	043	046	046	050	046	048	043	040	035	042	043	051	055	043	033	034	025
L.Q.	E016	E	E	E	E	E	024	028	032	034	G	G	G	G	G	G	028	030	024	018	016	E016	E016	E016
Q.R.	D010						011	015	014	012							014	013	027	037	027	D017	D018	D009

foEs

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | f_bE_s | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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			G	053	G	B			037	035	034	031	028	G	G	C	018	018	018	S
2	S	017	018	011	012	022	030	040	A	044	G	035	038	035	033	B	B	041	A	048	050	052	050	022
3	035	A	040	018		020	033	G	040	040	G	039	035	035	034	031	040	027	022	021	027	018	S	S
4	015	021	016	017	012	G	G	G	G	G		025G			B			023	G		012	S	020	028
5	035	031	019	A	A	030	G	047	A	040	G	G	G	G	050	A	A	045	054	040	057	036	025	017
6	016	017	020	013	015	023	018G	038	G	034	B	034	035	G		G	042	030	017	011	016	018	017	017
7	S		015		015	020	025	030	030	034	036	035			024G	022G	020G	018G	016	S	S	S	017	S
8	S	S			E	019	022	027	026G	A	041	037	037	036	050	031	033	051	040	020	016	018	S	S
9		019	022	025	022	022	027	040	041	A	A	A	A	A	A			043	045	025	033	020	S	S
10	015		018	S	012	016	027	040	G	G			032	031			G	030	020	017	E017S	E017S	017	S
11	S				020	020	034	040	C	C	C	C	C	C	C	C	C	G	S	018	020	020	023	S
12	017	017	017	020	012	018	021	030	041	040	042	035	G	G		G	042	043	040	040	040	031	018	017
13	018	016				S	023		G	033	034	035					G	G	017	016	018	S	018	S
14	017	015	013			015	022			034	040	035	034	034	037			G	023	S	S	S	S	S
15	S					S	028	G	030	G		025G	028G	026G	023G		034	017G	029	027	S	016	020	018
16	S	012				016	G			031	028G					033	029	022	020	013		025	021	
17						017	G	G	043			034	034			026G	025	040	025	S	S		023	S
18	S	S	S				021	030	028		040		036	034	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	034	036	035	032	040	034	030	022G	023	027	018	017	S	018	S
20	S					S	G	G					B				027	028	015	012		019	S	017
21							G	024G	050	040	035	042	035		025G	030	018	021	018	018	S	S	S	S
22	S		016	012	E	017	020	022	026	G	G	035			019G	018G	020G	032	023	020	S	S	S	S
23	S	018		E			S	G	G	G	G	G	G	048	042		025G	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	A	048	A	050	G		040	040	020	021	019	020	018	019
25	018	012	013	014			G		G	040	047	G	039	040	036	030	025	022	015	040	032	E017S	017	020
26	S	012	015	012	017					G	035	034	033	042	G		G	G	030	021	025	033	020	024
27	020	027	E	018	013	018	022	G	G	G	048	A	064	G		G	064	030	041	030	022	020	017	034
28	017	018	E		012		C	C	C	032	032	G				030	015G	020	E015S	025	032	017	022	027
29	020	013	012	022	018	020	A	026	029	033			022G	027G	024G	024G	020	G	S	029	020	025	S	S
30	S	018	022	019	019	018	028	020G	G	044	050	A	043	032			G	032	033	037	022	019	S	021
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

f_bE_s

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 5

IONOSPHERIC DATA

Sep. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	E	E	012	020	022	036	023	020	020	020	017	017	017	011	E014S	C	E	E	E	E015S
2	E011S	E	E	E	E	E	011	012	017	018	019	018	020	020	018	B	040	017	E	E	E	E	E	E011S
3	E	E	E	E	E	E	E	E	011	017	020	020	020	020	020	016	E	E	E013S	E012S	E	E	E014S	E017S
4	E	E	E	E	E	E	016	013	017	017	020	019	019	018	040	019	017	011	E	E	E	E016S	E	E
5	E	E	E	E	E	E	012	018	018	018	020	020	020	019	018	018	018	015	E	E	E	E	E016S	E016S
6	E	E	E	E	E	E	E	011	020	017	B	017	020	018	018	017	E	E	E	E	E015S	E	E	E
7	E017S	E	E	E	E	E	018	017	017	020	019	020	017	017	013	E	E	E	E	E013S	E013S	E016S	E012S	E018S
8	E017S	E011S	E	E	E	E	E	E	011	017	018	017	018	017	017	E	E	E	E	E	E	E017S	E016S	E015S
9	E	E	E	E	E	E	E	E	011	018	017	018	017	018	017	011	E	E	E	E	E016S	E	E015S	E015S
10	E	E	E	E	E	E015S	011	013	017	018	018	018	012	017	012	012	011	E	E	E	E017S	E017S	E	E016S
11	E017S	E	E	E	E	E	012	017	C	C	C	C	C	C	C	C	C	011	E016S	E017S	E	E	E015S	E016S
12	E014S	E	E	E	E	E	017	017	017	019	020	017	018	020	017	018	E	E016S	E	E	E	E	E	E
13	E016S	E	E	E	E	E015S	E017S	012	017	018	019	020	020	017	017	011	017	E011S	E	E017S	E	E012S	E016S	E017S
14	E	E	E	E	E	E	012	E	017	012	017	019	018	012	011	020	017	E016S	E011S	E015S	E012S	E016S	E016S	E016S
15	E018S	E	E	E	E	E015S	E016S	E	017	020	017	018	019	019	011	017	E	E	E	E015S	E016S	E	E	E015S
16	E017S	E	E	E	E	E	012	012	012	018	018	017	018	018	018	017	012	E	E	E	E	E013S	E	E
17	E	E	E	E	E	E	E	017	018	018	017	018	017	018	018	012	E	E	E	E014S	E017S	E	E017S	E017S
18	E017S	E014S	E012S	E	E	E	E	012	018	019	020	020	020	018	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	018	017	017	017	017	018	015	E	E	E	E	E	E012S	E	E016S
20	E013S	E	E	E	E	E015S	011	019	017	019	017	018	040	026	020	018	012	E	E	E	E	E	E017S	E
21	E	E	E	E	E	E	E	011	011	018	018	017	018	018	017	012	E	E	E	E	E016S	E017S	E015S	E011S
22	E017S	E	E	E	E	E	E	E	012	012	018	015	017	020	E	E	E	E	E017S	E016S	E018S	E015S	E016S	E016S
23	E016S	E	E	E	E	E	E020S	012	017	017	017	018	017	018	012	017	E	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	017	017	018	017	013	012	017	011	E	E	E	E	E	E
25	E	E	E	E	E	E	013	016	017	018	018	018	017	018	012	011	E	011	E	E017S	E012S	E017S	E	E
26	E014S	E	E	E	E	E	E	012	017	018	018	017	017	018	012	011	E	011	E	E015S	E	E	E	E
27	E016S	E	E	E	E	E	E018S	013	018	017	018	017	017	011	017	017	012	E014S	E	E016S	E016S	E016S	E016S	E012S
28	E	E	E	E	E	E	C	C	C	012	017	018	011	019	018	E	E	E	E015S	E016S	E012S	E012S	E	E
29	E	E	E	E	E	E	E	011	012	018	013	017	017	012	011	E	E	E018S	E017S	E	E	E015S	E018S	E017S
30	E017S	E	E	E	E	E	E018S	011	017	017	017	012	017	017	017	012	016	E012S	E	E	E016S	E015S	E016S	E
31																								
Count	28	28	28	28	28	28	27	27	26	28	29	29	29	29	28	28	28	28	28	27	28	28	28	28
Median	E012S	E	E	E	E	E	012	012	017	018	018	018	018	018	017	014	E	E	E	E	E	E012S	E013S	E015S
U.Q.																								
L.Q.																								
Q.R.																								

f-min

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 6

IONOSPHERIC DATA

Sep. 1966 | M(3000) F2 | 0.01 | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	290F	F	280F	300F	F	320	320	330	330	350	305	305	305	310	310	320	310	310	305	I295C	290	330	280	285
2	275	280	285	260	270	275	280	330	I315A	300	345	310	280	310	300	I315B	310	315	I305A	290	295	285	305	310
3	285	I280A	280	300F	290F	300	310	325	340	350	345	280	320	300	310	310	305	310	290	290	300	280	290	275
4	275	270F	255	255	F	365	325	360	240	W	250H	260	275	295	285	305	325	300	285	285	275	260	260	260F
5	280F	270F	F	A	A	290	320	335	I335A	345	345H	300	320	345	330	I310A	A	315	315	310	290	F	F	F
6	F	275F	280F	280F	F	315	320	335	350	370	I330B	300	330	310	325	315	315	330	330	325	300	295	F	F
7	275F	280F	295	295	315	310	315	335	300	325	335	355	290	330	320	330	325	315	320	315	315	305	285	280
8	270	290	290	280	295	280F	320H	320	335	I315A	320	305	315	340	320	335	315	310	310	280	300	310	275	280
9	275	290	330	250	275	285	305	305	300	A	A	A	A	A	A	310	305	315	320	325	305	305	280	280
10	295	295	275	285	285	275	280	320	330	315	335	315	315	325	310	310	320	330	330	290	285	305	315	270
11	280	290	290	295	325	325	345	I345A	C	C	C	C	C	C	C	C	C	330	310	310	330	320	300	280
12	285	290	300	305	310	315	335	335	360	370	345	315	315	330	325	335	315	330	315	335F	F	F	F	F
13	275F	280F	F	300F	305F	335	350	340	350	360	355	350	305	295	310	315	315	315	320	335	340	300	285	295
14	295	285	280	295	315	315	345	355	345	330	360	325	335	315	315	315	325	330	310	320	330	335	300	280
15	290	290	280	285	290	305	360	335H	345	345	340	U300C	315	340	325	315	315	310	310	315	315	330	290	280
16	275	295	275	285	300	330	350	365	335	360	325	330	330	340	335	345	300	315	315	305	320	310	290	285
17	280	285	285	285	285	320	340	355	355	350	335	330	335	320	330	320	335	330	315	310	300	300	285	300
18	290	280	280	285	310	320	345	340	335	355	350	335	325	330	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	340	325	340	340	305	320	315	325	315	320	310	335	285	285	300
20	285	285	290	280	285	300	350	340	350	350	315H	310	335	325	300	320	320	315	315	285	295	285	295	280
21	275	275	290	300	315	280	325	320	330	335H	335	325	325	320	325	320	320	325	315	295	290	290	280	290
22	275	290	315	300	300	295	355	325	330	325	355	340	330	325	315	325H	320	325	315	315	315	295	295	290
23	285	290	295	285	290	285	345	345	345	350	350	315	300H	310	325	325	335	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	I305A	315	I310A	315	330	315	325	325	315	305	300	285	290	290F
25	290F	265F	F	295F	320F	325F	355	345	330	335	335	325	335	320	320	320	315	330	325	335	300	290	285	F
26	F	F	F	290F	F	300F	335	355	340	340	335	335	325	320	340	325	320	330	325	300	310	315	280	300
27	295	285	265	F	F	SF	F	345	335	345	335	I315A	315	310	320	325	335	325	320	300	305	305	295	280
28	285	295	300	290	310	310	C	C	C	350	325H	325	340	320	320	325	330	340	355	285	270	285	280F	275F
29	F	F	285F	290	F	315	I330A	340	355	340	340	315	335	330	335	335	335	330	325	290	285	305	310	295
30	285	275	300	295	300	300	340	345H	335	350	340H	I330A	330	340	345	325	330	325	330	335	315	295	300	285
31																								
Count	25	25	24	26	21	27	26	27	26	27	28	28	28	28	27	28	27	28	28	28	27	26	25	24
Median	285	285	285	290	300	310	335	340	335	345	335	315	320	320	320	320	320	325	315	310	300	300	290	280
U. Q.																								
L. Q.																								
Q. R.																								

M(3000) F2 Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 7

IONOSPHERIC DATA

Sep. 1966 | M(3000) F1 0.01 | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N Long. 141° 41.1'E

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									370	380	375	385	365	365	365	375								
2							I330A	A	A	A	375	380	380	370	365	B	B	A						
3								380	I370A	I395A		355	380H	340	355	355	A	U370L						
4									320H	360	355	365	350	350	I340B	355	370							
5								A	A	385		370	375	370	A	A	A	A						
6								A	355	395	B	390	395	365	360H	370L	A							
7								385	390	365	375	370	345H	365	375	380L	375							
8								375	390	I380A	390	410	400	365	I380A	385	A							
9								A	A	A	A	A	A	A	A	360	350	A						
10							330	A	355	380	385	410	410	365	365	350	360L							
11									C	C	C	C	C	C	C	C	C							
12									A	420	I395A	405	400	375	370		A							
13									400	400	380	410	370H	385	360	390								
14									395	380H	390	395	370	355	370	365								
15									380	395	395	350	360	380	365									
16								395L	400	395	395	395	370	360	370	375								
17								390L	I410A	410	420	390	355	370	380	385								
18									405L	380	380	400	375H	390	C	C	C	C						
19							C	C	C	390	375	375	375	375	375	365								
20									400	380	400	400	360	390	370L	370								
21											385H	I390A	370	360	385L									
22									400	410	390	400	385	405	400L									
23									370	385	380H	400		A	A	400L		C						
24							C	C	C	C	A	A	A	I380A	385		A							
25										I380A	I385A	385	370											
26									400L	395L	390	400	370H	I390A	380	400L								
27									385L	385L	A	A	A	370		380	A							
28							C	C	C	380	395	400	385	380L	370L	390L								
29								390	390	385	410	385L	400	375	390									
30										A	A	A	A	395	400									
31																								
Count							2	6	19	24	22	25	24	26	23	18	4	1						
Median							U330A	390	390	385	390	390	370	370	370	375	365	U370L						
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F1 Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

IONOSPHERIC DATA

Sep. 1966 | h'F2 km | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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									280	265	290	300	320	320	290	300								
2							350	300	I295A	370	290	345	410	350	340	I290B	300	285						
3								260	260	260		395	310	375	320	320	300	280						
4									550L	W	545H	385	350	340	330	320	280							
5								290	I285A	265		350	300	270	300	I300A	A	280						
6								275	260	250	I295B	310	295	330	300	280L	295							
7								260	280	290	270	260	370	295	295	270	280							
8								295	265	A	290	295	330	290	315	275	290							
9								350	380	A	A	A	A	A	A	360	330	335						
10							380	315	295	300	300	350	350	320	345	340	295							
11									C	C	C	C	C	C	C	C	C							
12									245	250	280	295	300	290	295		295							
13									250	250	255	270	325	280	315	280								
14									250	275	260	300	295	315	300	300								
15									250	250	260	325	300	290	295									
16								240	265	250	275	280	295	275	285	260								
17								245	250	250	260	300	275	295	270	260								
18									250	250	245	250	290	270	C	C	C	C						
19							C	C	C	260	280	265	270	300	270	290								
20									245	250	270	280	285	270	235	290								
21											250	260	275	290	270									
22									245	245	250	250	255	250	260L									
23									250	250	250	260		300	270	260		C						
24							C	C	C	C	I290A	280	I280A	300	265		255							
25										255	260	270	270											
26									255	250	260	260	270	280	260	240								
27									270	260	250	I290A	I280A	295		270	250							
28							C	C	C	250	250	250	265	295L	280	265								
29								260	245	265	250	270	250	250	265									
30										245	250	I260A	250	250	250									
31																								
Count							2	11	23	25	26	28	27	27	25	20	11	4						
Median							365	275	260	250	260	280	295	295	290	285	295	280						
U.Q.																								
L.Q.																								
Q.R.																								

h'F2

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 9

IONOSPHERIC DATA

Sep. 1966 | h'F | km | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	260	305	270	250	245	250	240	I240A	240	250	215	200	200	225	220	225	250	250	260	I270C	270	240	230	295
2	295	300	300	290	300	350	I280A	I265A	I245A	I225A	205	200	230	225	215	B	B	A	A	A	A	A	A	250
3	A	A	A	250	250	270	275A	250	I245A	I210A	230	220	190H	215	215	240	I255A	250	280	280	275	260	255	270
4	300	310	360	340	300	230	260	240	230H	245	240	230	245	225	I250B	250	260	270	275	260	260	325	315	365
5	A	A	260	A	A	350A	270	A	A	250A	220H	210	230	260	A	A	A	A	A	A	A	A	300	290
6	305	300	305	265	220	265	250	I245A	240	220	I210B	200	190	245	210H	240	I245A	270	250	225	250	260	280	275
7	265	290	250	250	230	270	250	245	225	210	215	205	210H	200	225	225	235	245	250	245	240	245	280	300
8	315	275	285	260	245	290	230H	230	235	I205A	245	185	190	250	I255A	250	I260A	I270A	I260A	290	260	245	250	300
9	290	295	245	I370A	345	320	280	A	A	A	A	A	A	A	A	250	245	I265A	I255A	240	300A	260	295	300
10	285	275	305	290	290	290	275	I265A	240	215	210	200	190	200	240	225	245	260A	240	260	290	260	250	300
11	295	280	265	250	260	260	I250A	I235A	C	C	C	C	C	C	C	C	C	275	240	250	250	250	280	275
12	290	300	310	290	250	240	230	250	I235A	210	I195A	200	195	215	235	245	A	A	A	I230A	I235A	275	255	290
13	330	295	300	275	245	235	225	230	220	205	200	190	210	195	215	225	240	275	245	230	225	205	310	290
14	295	300	295	265	250	250	235	240H	210	200H	250	195	200	215	260	225	245	265	260	240	225	225	220	300
15	300	290	290	285	270	270	240	220H	220	205	200	200	200	210	240	240	I255A	260	255	250	250	220	255	285
16	300	290	300	270	250	235	240	220	210	200	200	215	215	225	220	240	250	260	250	245	230	245	280	250
17	275	275	270	260	250	270	240	230	I215A	200	200	195	200	250	220	225	240	I255A	250	245	250	250	300	270
18	275	300	295	270	235	240	230	220	215	230	230	200	190H	225	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	210	205	200	250A	215	230	250	240	250	245	245	250	250	275	280
20	290	275	250	260	260	275	240	240	220	230	220	210	260	225	235	240	250	250	230	250	265	270	260	300
21	270	300	280	250	240	295	235	250	I250A	230H	225H	I235A	205	210	245	240	250	245	240	250	275	260	295	260
22	300	270	260	245	250	275	235	230	220	230	220	205	210	215	215	230H	250	I255A	250	245	245	250	260	275
23	290	295	260	250	275	275	225	240	250	245	210H	200	235H	I240A	I250A	240	250	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	A	A	A	I220A	235	245	I250A	I245A	250	250	275	270	275	250
25	260	285	290	270	225	200	220	215	240	I240A	I230A	215	245	250A	250	225	245	245	240	I245A	270A	275	265	290
26	275	280	295	270	275	250	240	240	220	210	225	200	200H	I250A	225	230	240	250	250A	270	270	I270A	290	285
27	275	320	320	300	300	275	225	235	250	250	A	A	A	235	245	225	I235A	245A	I250A	275A	270	260	250	I295A
28	300	280	250	280	250	250	C	C	C	220	200	200	190	240	250	250	250	225	205	305A	360A	275	330	315
29	300	275	270	305	260	250	I255A	240	240	225	200	195	210	210	220	235	240	230	230	300A	280	275	240	250
30	275	300	300	290	270	250	240	235	240	I225A	A	A	A	210	215	240	250	245	240A	I250A	260	260	250	305
31																								
Count	26	26	27	27	27	28	27	25	24	27	25	25	25	28	26	26	25	25	25	26	26	26	27	28
Median	290	290	290	270	250	270	240	240	235	220	215	200	205	225	230	240	250	250	250	250	260	260	275	290
U.Q.																								
L.Q.																								
Q.R.																								

h'F Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | h'Es | km | 135° E Mean Time (G.M.T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	E	105	105	E	G	120	115	115	B	G	G	110	110	110	110	110	125	120	C	115	110	110	S
2	S	105	100	125	125	125	120	110	110	110	115	110	110	110	110	B	B	105	110	100	110	110	105	105
3	105	105	105	105	E	120	120	115	110	110	110	110	105	105	100	100	100	100	110	120	115	110	S	S
4	145	130	125	125	125	125	135	115	110	110	G	105	G	G	B	G	G	105	125	E	115	S	110	110
5	105	110	110	115	115	115	120	115	110	110	110	115	110	115	110	110	110	115	110	110	115	110	110	110
6	110	105	100	100	100	105	125	115	115	110	B	110	110	115	G	150	115	110	110	110	125	100	110	110
7	110	E	100	E	125	120	125	110	110	110	105	105	G	G	100	100	100	100	100	S	S	S	110	S
8	S	S	E	E	135	105	105	105	105	110	110	110	105	105	105	105	140	115	120	120	125	110	S	S
9	E	125	125	125	125	135	125	120	120	115	110	110	110	110	110	G	G	125	115	115	110	110	S	S
10	110	E	125	100	120	110	115	115	120	110	G	G	105	105	G	G	150	125	100	100	100	100	115	S
11	S	E	E	E	120	125	115	110	C	C	C	C	C	C	C	C	C	115	115	110	110	110	110	S
12	105	105	105	100	105	100	110	110	105	100	110	110	115	120	G	140	120	110	110	110	110	110	105	150
13	150	100	E	E	E	S	125	G	115	110	110	110	G	G	G	G	125	115	110	110	110	S	110	S
14	100	100	100	E	E	110	110	G	G	110	110	G	110	110	115	G	G	125	110	S	S	S	S	S
15	S	E	E	E	E	S	110	115	110	105	G	105	105	105	105	G	130	125	110	110	S	105	105	105
16	S	100	E	E	E	115	115	G	G	105	105	G	G	G	G	130	125	120	110	110	E	105	105	E
17	E	E	E	E	E	120	110	110	110	G	G	110	110	G	G	105	105	100	100	S	S	E	100	S
18	S	S	S	E	E	E	115	110	105	G	105	G	105	100	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	110	105	105	105	105	100	105	100	100	100	100	100	S	110	S
20	S	E	E	E	E	S	150	125	G	G	G	G	B	G	G	G	110	110	110	105	E	105	S	100
21	E	E	E	E	E	E	135	125	120	110	105	105	105	G	105	100	100	100	100	100	S	S	S	S
22	S	E	105	105	125	105	105	125	130	120	115	110	G	G	100	100	110	105	100	100	S	S	S	S
23	100	100	E	110	E	E	S	145	125	120	120	115	120	115	115	G	160	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	110	110	110	110	115	G	120	120	115	110	110	110	110	110
25	110	110	105	100	E	E	125	G	120	110	110	115	110	105	105	110	105	130	115	115	110	110	110	110
26	S	105	100	105	100	E	G	G	G	110	110	105	105	105	115	G	135	120	110	110	110	110	110	110
27	110	105	105	105	120	120	140	140	125	115	110	110	110	120	G	135	120	115	110	110	110	110	110	110
28	110	105	105	E	105	E	C	C	C	110	110	115	G	G	G	145	125	120	125	115	110	110	110	110
29	105	105	110	110	110	110	110	110	105	105	G	G	105	105	105	100	100	130	S	100	100	100	S	S
30	S	100	105	105	100	100	100	105	145	120	110	105	105	105	G	G	145	120	115	115	110	110	S	110
31																								
Count	15	17	18	16	16	18	25	22	22	24	21	22	22	20	17	16	24	28	27	23	20	20	19	13
Median	110	105	105	105	120	115	120	115	110	110	110	110	110	110	105	110	120	115	110	110	110	110	110	110
U.Q.																								
L.Q.																								
Q.R.																								

h'Es

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 11

IONOSPHERIC DATA

Sep. 1966 | Types of Es | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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			c	c2	c				1	1	1	1	1	c	c2		f2	f	f	
2		f2	f2	f	c	c2	c2	c2	c2	c2	c	1	1	1	1			12	c314	f4	f3	f4	f4	f2
3	f2	f4	f4	f2		c	c3	c2	c2	c2	c	c2	1	1	12	12	12	1	c2	c	f4	f		
4	h	f2	f	f	f	c	h	c	c	c		1						1	c		f		f2	f3
5	f3	f6	f2	f4	f4	c2	c	c2	c3	c	c	c	c	c	12	c4	c4	c4	c2	f3	f4	f3	f2	f
6	f	f2	f2	f2	f	13	c 1	c2	c	1		1	1	c		h	c2 1	c21	c2	f	f	f	f2	f2
7	f		f		f	c	c	1	1	1	12	1			1	1	1	1	1				f	
8					1	1	1	1	1	c2	c2	1	12	12	13	1	h	c4	c3	f2	f	f		
9		f	f f	f3	f2	c2	c2	c3	c3	c2	c3	c2	c3	c4	c2			c3	c5	f2	f2	f2		
10	f		f	f	f	c	c2	c3	c	c			1	1			h	c 1	12	f2	f	f	f	
11					f f	c	c2	c2										c2	c2	f2	f2	f2	f2	
12	f	f2	f2	f2	f	1	1	12	13	12	12	1	c	c		h	c2	c4	c3	f2	f2	f3	f2	f
13	f	f					c		c	1	1	1					c	c2	1	f	f2		f	
14	f	f	f			1	1			1	12		1	1	c 1			c2	c2					
15							c2	c	1	1		1	1	1	1		c	c	c3	f2		f	f2	f2
16		f				1	c			1	1					h	c	c	c2	f		f2	f2	
17						c	c	c	c2			1	1			1	12	14	15				f2	
18							12	1	1		1		1	1										
19										1	1	1	12	12	12	1	1	1	12	f	f		f2	
20							h	c									1	12	1	f		f		f
21							h	c 1	c 1	1	1	12	1		1	12	1	12	1	f				
22			f	f	f	12	1	c 1	c 1	c	c	1			1	1	1	13	1	f				
23	f	f		f				h	c	c	c	c	c	c2	c2		h 1							
24											c4	c2	c4	c	c		c2	c3	c2	f	f2	f2	f3	f2
25	f2	f2	f	f2			c		c	c	c2	c	12	12	12	1	1	h 1	c	f2	f3	f	f	f2
26		f	f2	f2	f					c	12	1	1	12	c		h	c2	c3	f3	f	f4	f2	f3
27	f2	f4	f2	f2	f2	c2	h	h	c	c	c2	c3	c3	c		h	c4	c2	c4	f3	f4	f2	f	f3
28	f2	f	f		f					1	1	c				h 1	c 1	c 1	c	f4	f4	f2	f2	f2
29	f2	f	f2	f2	f2	12	14	1	12	12			1	1	1	1	1	c		f3	f	f2		
30		f	f3	f2	f2	1	12	1	h	c	c3	13	1	1			h	c3	f4	f2	f4	f2		f2
31																								
Count																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

Types of Es

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 12

IONOSPHERIC DATA

Sep. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	061F	F	FS	F	041S	046	066	066	069	079	067Z	066	067	074	075	076	073	081	086R	I082C	078S	076	FS	059F
2	060F	F	051	044	043	040	056	064	A	A	071	066	062	062	067H	I070B	066	A	A	A	064	RS	A	A
3	I044A	I042A	042	I041R	036	039	I056A	077	079	058	056	058	064	067	063	067	067	069	075	075	FS	FS	FS	072S
4	058	052	FS	039	I040R	F	040	050H	051H	057	072	096	103	101	107	073	073	069	062	063	051	046	050	051
5	F	054S	061	FS	I038A	034F	062	061H	065	076	066	I064A	I066A	071	I066A	I065A	065	069	073	072	063S	054S	F	FS
6	F	046	045	042	038	034	061	066	I070A	I067A	057	I064A	070	062	070	I070A	070	077	I083R	080	069	I069R	F	062S
7	057F	051	048	050	041	038	060	061	065	074	089	070	065	070	067	064	065	070	076	076	064	045	044	042
8	042	041	040	038	035	034	052	062	067H	067	065	072	064	073	067H	064	062	069	079	076	073S	070	FS	059F
9	062	I053R	I056R	FS	F	FS	054	A	A	A	A	A	A	I053A	I052A	050	I050A	053	I058A	057	I046A	I040A	I038R	I035R
10	038	038	036	035	035	033	051	058	067S	I068C	058	053	053	057	060	053	060	059	063	061	053	049	046	045S
11	042	042	037	038	039	036	047	066R	060H	I062A	060	062	062	062	059	059	058	065	077	I077R	058	A	FS	A
12	RS	FS	034	039	035S	035S	051	075	078	056	061	057	067	064	063	067	062	066	085	085	057	FS	FS	044
13	041	043	041	039	039	037	055	062	075	066	065H	065	068	064	065	065	072	078	089	082	062	I035R	036	037
14	037	038	037	036	037	040	066	064	075	069	064	069	066	069	068	065	065	072	077	I082R	I074R	041	039	039
15	040S	039S	037	036	036	037	062	068	081	069	062	063	071	070	070	063	064	070	090	091	069	054	046	047
16	044	043	040	042	041	044	061	074S	064	067	066	074	072	I070C	076	068	068	077	R	R	072	054	048	047S
17	047S	048	048S	046	045	046	058	071	078	070	064	I069C	071	079	078	077	I072R	I076R	I072R	I066R	061	052	044	051
18	048R	I048R	I048R	047R	046	041	054	066	073	084	071	074	071	073	069	079	075	070	069	074R	I072R	I065R	I055R	I053R
19	052	I052R	055	052	044	041	J059R	064	081	084	079	078R	079R	I073R	071	071	084	079S	I084R	072R	056R	054S	056	I056R
20	055	053	I052R	I050R	043	045	I062R	080R	080R	I078R	073	072	078	084	069	070	I075R	I072R	074	RS	RS	J052R	I053R	J051R
21	054	054	I060R	063	040	041	064	I076R	087	093	082	U086R	079	082	077	U078R	070	R	C	C	063	RS	C	C
22	C	C	C	C	C	C	C	R	R	C	C	C	079	075	075	074	084	084	082	079	I069R	060	056	053
23	052	051	053	050	049	046	065	073	086	084	084	068	072	081	086	084	078	RS	R	074	062	054	FS	FS
24	F	RS	051	049	054	046	061	069	075	I072R	072S	085	084	091	088	084	I083R	I084R	I076R	063	FS	061F	FS	FS
25	054	FS	FS	I062R	050	042	048	I064R	074S	086	081	081	084	090	084	080	083	084	J085R	I067R	I050A	RS	A	RS
26	RS	I046R	I047R	048S	FS	049S	I064R	I070R	J079R	091	091	087	076	085	079	078	075	077	I075A	I066R	060S	056F	057	046
27	043	042	038	042	045	046	I066R	080	076	083	085	079	072	081	089	090	082	I081R	077	066	059	FS	051S	047
28	046	046	049	047	050	049	065	086	102	086	071	073	075	078	078	082	086	092	070	041	044	044	046	044
29	044	040	044	042	046	036	054	077S	I085R	086	087	081	094	073	076	071	079	078	064	054	055	055	055	048
30	044	046	047	048	048	051	061	068	076	086	082	076	078	084	072	068	071	077	076	059	056	051	048	045
31																								
Count	24	24	26	26	27	27	29	28	27	27	28	28	29	30	30	30	30	27	26	26	27	23	18	23
Median	046	046	047	043	041	041	060	067	075	074	071	071	071	073	070	070	072	076	076	073	062	054	048	047
U.Q.	054	052	051	049	046	046	063	074	080	084	082	078	078	081	078	078	078	079	083	079	069	060	055	053
L.Q.	042	042	040	039	038	036	054	064	067	067	064	064	066	067	067	065	065	069	072	063	056	046	044	044
Q.R.	012	010	011	010	008	010	009	010	013	017	018	014	012	014	011	013	013	010	011	016	013	014	011	009

foF2

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 1

IONOSPHERIC DATA

Sep. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	L	440	I480A	480L	500	500	490H	460L	460	430L	L						
2							L	A	A	A	480	470	500L	490H	470	B	A	A						
3							A	400	420	440	460	460L	480L	I460A	I450A	I430A	I410A	A						
4							L	I350A	L	460	470H	450	470	480L	I440R	420L	400L							
5							L	A	L	A	470A	I480A	I480A	A	A	A	A							
6								L	A	A	A	A	480	L	450	I430A	410L	L						
7								A	L	450	460	470	470	470	450	420	400L	L						
8							250	400L	420L	I440A	470H	450	480	450	430	430	420L	A						
9							A	A	A	A	A	A	A	I420A	A	A	A	A						
10							L	A	A	C	I460A	460	460	450	430	L	400L	L						
11								390L	420L	I440A	460	470H	460H	470	450L	L	420	L						
12								L	I420A	440L	460H	450	450	460H	450	430L	L	L						
13								L	420	430	450L	480	470	460	450L	450	400L	L						
14							L	L	400	440L	460L	470	490	470	450	430	400	L						
15								400L	L	450	460	480	470	460	460	420	L	L						
16								L	420L	450	470	470L	470	I460C	450L	440L	L	L						
17								L	L	LH	L	I470C	L	460L	450	L	L							
18								LH	420H	L	450	470L	L	480L	L	440	L							
19								L	430L	460	470	460L	470L	460	460	450L	400							
20									L	450	460	460L	480	480	470L	L	L							
21								L	L	440	470L	490	470	460L	430	A								
22								L	430	C	C	C	470L	460L	L	L	L							
23									L	L	460	460	470L	460L	L	L	L							
24								LH	L	L	480L	480	470	480L	470L	A	L							
25								L	L	410	460	460	460	460L	440L	L	L							
26								L	410	430L	460L	460	450L	470	420	420L								
27								L	420L	430L	460H	460L	460H	460	460L	L	L							
28								L	420H	440	430	450L	460L	460L	L	L	L							
29								L	A	430L	460	480L	450	450L	430L	410L	L							
30								L	L	430	460	460	470	460L	L	L	L							
31																								
Count							1	5	14	20	26	27	27	28	23	15	11							
Median							250	400L	420	440	460	470	470	460	450	430	400L							
U.Q.																								
L.Q.																								
Q.R.																								

foF1

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 2

IONOSPHERIC DATA

Sep. 1966 | foE | 0.01 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	A	250	290	310	320	A	A	I355A	345	315	275	I235A	B					
2						E	A	260	295	A	A	A	A	I350A	A	B	B	A	A					
3						E	A	255	A	A	A	A	I330A	I325A	325	A	A	215	E					
4							A	235	I265A	I275A	I305A	I320A	330	340	I335B	310	265	225	E					
5							A	I250A	I280A	295	A	A	I325A	345	340	315	270	215	E					
6							A	I255A	280	I290A	I310A	A	A	A	A	I305A	280	A	E					
7							A	A	A	A	A	A	340	340	325	290	255	205	E					
8							180	245	285	I310A	325	I340A	I350A	350	325A	300	260	210	E					
9						E	205	240	280	310	325	330A	I330A	I330A	320	290	260	215	E					
10							B	245	275	C	A	A	A	A	A	A	255	A	E					
11							A	A	A	A	A	A	A	A	320	295	260	A	E					
12							A	A	A	A	A	A	325	I330A	315	300	265	A						
13							A	240	A	A	I320A	335	340	340	325	300	265	A	E					
14							A	255	A	I315A	I330A	A	A	A	I315A	295	255	190						
15							A	230	A	A	A	I325A	335	340	320	300	260	205						
16							I190A	240	A	A	A	325	I330RS	I335C	320	300	260	A						
17							A	A	A	A	A	C	A	A	A	305	265	A						
18							B	A	A	A	A	325	I330A	335	330	310	270	A						
19							A	A	A	A	335	350	I350A	I350A	340	305	I270A	210						
20							B	280	315	325	I330A	I340A	345	345	330	325	285	A						
21							B	260	295	320	I345R	355	350	A	A	A	A	A						
22							C	245	305	C	C	C	A	325	320	305	270	A						
23							A	245	290	310	I320A	I325A	340	345	A	A	250	A						
24							B	A	A	315	325A	330A	345	A	A	A	A	195						
25							R	255	290	320	340	345	I345R	345	320	290	250	A						
26							B	250	I280A	315	A	A	A	A	310R	280	225	E						
27							205	250	295	310	I315A	I320A	325	330R	320	290	A	A						
28							A	A	A	310	320	325	335	335	320	285	245	A						
29							A	A	A	A	I315R	I320A	330	330	315	275	I235A	A						
30							E	A	A	A	A	A	R	R	315	285	245	A						
31																								
Count						4	5	20	15	15	16	16	20	21	23	24	25	12	10					
Median						E	190	250	290	310	320	330	335	340	320	300	260	210	E					
U. Q.																								
L. Q.																								
Q. R.																								

foE

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 3

IONOSPHERIC DATA

Sep. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	J068	J035	J025	J023	J018	J019	027	J035	J045	J061	J050	J044	J037	041	G	038	031	030	E018B	C	J032	J053	J040	J034
2	J013E	J030	J027	J030	J026	J030	030	J064	J140	J081	J059	J060	J050	J043	J049	B	J060	J074	J137	J160	J060	J113	J063	J079
3	J061	J074	J034	J053	J042	028	J062	J037	J046	J053	J052	J044	037	J057	J045	J064	J053	J056	J061	J025	J032	J023	J030	J020
4	E	J025	J031	J020	J038	J033	026	029	J032	J040	J039	J035	026G	G	E039B	G	G	026	J023	J024	J029	J026	J033	J050
5	J050	J039	J061	J036	J056	J030	J029	J063	J048	J063	J052	J072	J079	J059	J080	J080	J059	J073	J063	J061	J040	J040	J032	J039
6	J053	J035	J021	J017	J018	J018	J038	J035	J084	J073	J059	J076	034	J050	J062	J079	J041	J076	J078	J063	J043	J041	J035	J018
7	J018	J013E	E	E	E	J016E	J030	J042	J037	J060	J050	J048	G	029G	G	022G	027	024	J021	J018	J015E	J018	J023	J016E
8	J015E	J015E	E	J015E	J016E	J018	G	028	J070	J053	037	J042	J039	J050	035	G	035	J046	J035	J028	J028	J024	J064	J028
9	J023	J027	J028	J019	J025	023	J034	J064	J060	J067	J078	J064	J070	J091	J061	J043	J065	J043	J068	J038	J067	J055	J033	J021
10	E	E	E	E	E	E	J033	J045	J051	C	J067	J044	J053	J037	J034	J043	029	J029	J022	J025	J022	J016E	J014E	E
11	J016E	J018	J013E	J028	E	E	023	029	J035	J085	J034	J036	J034	J049	G	036	032	J031	E	J030	J014E	J063	J037	J042
12	J043	J036	J046	J016E	J016E	E	025	031	J065	J037	J054	J032	J034	035	036	038	J041	J050	J064	J063	J076	J030	J039	J026
13	J017	J016E	J013E	E	J038	J021	J026	030	J043	J040	033	G	G	G	G	G	J040	J028	J038	J018	J029	J026	J031	J023
14	E	E	E	E	E	E	022	G	033	J034	J037	041	041	039	J035	G	036	027	J019	J048	J035	J018	J021	J017
15	E	E	E	J028	J048	E	024	035	J035	J053	J048	J036	J035	J035	G	034	036	030	J060	J020	J043	J033	E	E
16	E	E	E	E	J015E	J025	024	J038	032	J034	J033	G	G	C	G	032	029	026	J047	J023	J017	J014E	J020	J014E
17	E	E	E	J015E	E	E	J032	J034	031	J033	034	C	J038	J035	J037	G	031	J024	J018	J021	J025	J017	E	J019
18	E	E	E	E	E	E	E018B	027	029	J034	038	J034	J034	G	036	034	031	J025	E	E	J012E	J053	J035	J034
19	J027	J032	J023	J016E	J013E	E	020	027	033	J041	G	J046	J036	J038	J036	J043	J042	J035	J038	J028	E	E	J023	J037
20	J022	E	E	E	E	E	022	G	G	G	J037	J035	G	037	G	035	034	J035	J023	J016E	J023	J022	E	J020
21	J020	E	E	E	E	E	021	030	J053	036	032G	G	032G	J043	J035	J045	J047	J035	C	C	J017	J016E	C	C
22	C	C	C	C	C	C	C	031	033	C	C	C	034	037	037	034	030	025	J023	J048	J031	J032	J030	E
23	J019	J028	J025	J016E	J018	E	022	033	039	J038	038	037	G	040	036	035	032	029	J025	J028	E	J035	J024	J033
24	E	J060	J038	J037	J050	E	E020B	028	036	J046	J053	J050	G	035	J050	J051	J053	J029	J029	J039	J050	J052	J028	J048
25	J028	J020	E	E	J032	J035	G	G	031	035	035	G	G	G	G	G	030	J028	J039	J023	J051	J032	J060	J038
26	E	J028	J012E	J027	J023	E	E020B	031	033	J042	J050	J040	J039	J042	J036	032	029	J028	J095	J050	J050	J045	J024	J030
27	J018	J023	J035	J028	J033	E	G	026	031	039	034	J039	034	038	036	J040	J043	J052	J023	J080	J061	J037	J018	J015E
28	J021	J025	J018	J019	J024	J015E	022	J037	J040	G	G	G	G	G	039	037	J040	J036	J024	J019	J028	J018	J016E	E
29	E	E	E	E	E	J024	022	J065	J047	J031	J030G	J036	G	J026G	G	033	J036	024	J029	J016E	J015E	J018	J017	E
30	E	E	E	E	E	E	019	026	030	032	034	033	G	G	033	033	030	J029	J026	J025	J078	J044	J020	J035
31																								
Count	29	29	29	29	29	29	29	30	30	28	29	28	30	29	30	29	30	30	29	28	30	30	29	29
Median	J017	J020	E	E	J018	E	023	031	J036	J040	J038	J038	034	037	036	035	036	J030	J029	J026	J030	J031	J028	J023
U.Q.	025	031	028	028	032	024	030	037	048	056	052	045	038	043	039	043	042	043	060	048	050	044	035	036
L.Q.	E	E	E	E	E	E	020	028	032	034	034	034	G	G	G	G	030	027	022	020	017	018	019	E
Q.R.							010	009	016	022	018	011					012	016	038	028	033	026	016	020

foEs

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Sep. 1966 | f_bEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	029	029	017	017	017	017	027	032	042	056	040	041	037	036		034	G	029	B	C	018	032	035	028
2		017	018	021	022	024	028	061	A	A	044	038	045	038	037	B	059	A	A	A	030	026	021	A
3	A	A	019	034	026	021	A	033	040	040	038	042	035	053	045	053	045	055	042	022	020	E	E	018
4		024	021	E	034	025	023	028	031	035	035	035	026G		B			023	019	021	020	020	022	021
5	036	035	041	038	A	018	027	050	040	059	047	A	A	052	A	A	052	034	045	022	024	027	028	018
6	019	020	E	E	017	017	036	034	A	A	050	A	U034R	038	040	A	038	030	026	035	025	E	E	E
7	E						029	041	034	035	034	038		019G		022G	027	G	020	017		E	018	
8						E		027	035	047	035	037	038	G	034		033	040	021	E	017	019	048	025
9	018	018	E	E	E	E	030	A	A	A	A	A	A	A	A	042	A	033	A	029	A	A	034	E
10							023	042	049	C	052	042	038	034	034	037	028	027	020	020	E			
11		017		018			023	027	033	A	E034R	034	034	035		036	032	029		E		A	025	A
12	032	017	018				023	030	047	034	034	U032R	031	034	035	034	036	028	023	E	029	021	030	018
13	E				E	E	024	027	030	033	033						031	022	022	E	E	025	E	E
14							021		032	033	034	037	038	036	034		035	025	018	047	E	E	018	E
15				019	E		024	031	031	036	035	035	029	026		031	035	025	033	E	018	020		
16						022	023	035	030	033	033			C		031	027	023	047	022	E		019	
17							026	027	031	033	E034R	C	037	035	034		027	021	E	018	020	017		018
18								027	029	034	036	031	034		036	034	031	023				045	030	031
19	024	031	018				U020R	027	033	041		032	036	036	029	026	029	022	025	024			019	E
20	022						022				037	035		037		035	032	033	022		019	021		018
21	020						E021R	028	038	036	E032R		U032RG	043	035	045	032	035	C	C	E	C	C	C
22	C	C	C	C	C	C	C	031	033	C	C	C	034	035	037	032	029	024	018	022	023	024	029	
23	E	017	017		017		022	031	035	038	038	037		038	035	033	029	023	024	023		E	023	027
24		022	017	023	019		B	026	033	038	036	045		U035R	035	045	030	021	023	018	032	E	022	040
25	019	E			E032R	025			030	034	035						027	024	019	018	A	030	A	019
26		E		021	E		B	026	032	040	033	034	034	034	028	024	023	022	A	030	020	019	019	023
27	E	E	019	E	E			026	031	037	034	035	034	038	036	040	037	040	018	026	038	021	E	
28	017	019	E	E	E		022	033	031						039	036	040	028	020	017	022	E		
29						021	020	024	046	032	030G	036		026G		031	028	023	023			E	017	
30							019	024	030	032	033	033			033	032	028	028	023	023	024	022	018	030
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

f_bEs

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 5

IONOSPHERIC DATA

Sep. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	E	E	E	E	017	022	020	026	023	021	E	E	E	E	018	C	E	E	E	E
2	E	E	E	E	E	E	017	E	017	018	019	019	022	020	017	B	031	017	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	017	017	018	019	018	017	018	017	E	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	017	017	018	018	018	020	023	039	022	017	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	E	017	019	019	019	019	018	017	017	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	E	E	017	018	017	017	018	018	018	E	017	E	E	E	E	E	E
7	E	E	E	E	E	E	E	017	017	017	018	018	022	017	017	017	E	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	017	017	017	018	017	017	017	018	017	017	E	E	E	E	E	E	E
9	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E
10	E	E	E	E	E	E	018	017	017	C	018	018	017	017	E	E	E	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	017	019	018	017	018	017	E	E	E	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	E	017	017	017	018	017	017	017	E	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	017	017	018	017	018	018	017	017	E	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	E	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	E	017	017	017	018	017	E	E	E	E	E	E	E	E	E	E
16	E	E	E	E	E	E	017	017	E	018	018	019	019S	C	017	017	017	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	019	019	018	C	018	018	018	018	E	E	E	E	E	E	E	E
18	E	E	E	E	E	E	018	E	017	018	018	019	018	018	018	018	017	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	017	018	018	018	018	019	018	017	017	017	E	E	E	E	E	E	E
20	E	E	E	E	E	E	019	018	018	018	018	017	E023C	E028C	019	018	017	E	E	E	E	E	E	E
21	E	E	E	E	E	E	018	017	E	019	018	018	018	019	017	017	017	017	C	C	E	E	C	C
22	C	C	C	C	C	C	C	019	019	C	C	C	018	018	017	017	017	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	017	018	017	017	E	017	017	E	E	E	E	E	E	E	E	E
24	E	E	E	E	E	E	020	E	017	017	017	018	022	021	019	017	017	E	E	E	E	E	E	E
25	E	E	E	E	E	E	017	017	018	019	018	018	024	018	018	017	E	E	E	E	E	E	E	E
26	E	E	E	E	E	E	020	017	017	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E
27	E	E	E	E	E	E	017	E	018	017	018	019	018	018	017	017	017	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	017	017	018	018	017	017	017	E	017	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	017	017	017	017	017	E	E	E	017	017	E	E	E	E	E	E
30	E	E	E	E	E	E	E	017	017	017	017	018	022	017	019	017	017	E	E	E	E	E	E	E
31																								
Count	29	29	29	29	29	29	29	30	30	28	29	28	30	29	30	30	30	30	29	28	30	30	29	29
Median	E	E	E	E	E	E	E	E	017	017	018	018	018	018	017	017	017	E	E	E	E	E	E	E
U.Q.																								
L.Q.																								
Q.R.																								

f-min

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Sep. 1966 | M(3000) F2 | 0.01 | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	280F	F	FS	F	320S	305	340	350	335	340	335Z	305	305	315	310	315	315	310	315R	I310C	305S	295	FS	290F
2	295F	F	295	280	295	280	300	320	A	A	310	330	315	290	315	I330B	325	A	A	A	300	RS	A	A
3	I295A	I275A	295	I300R	310	285	I310A	345	365	350	310	300	310	315	315H	320	315	315	295	270	FS	FS	FS	295S
4	295	265	FS	270	I315R	F	320	330H	300H	310	260	265	280	290	295	315	310	325	310	305	335	255	260	265
5	F	275S	305	FS	I280A	275F	340	330H	335	340	360	I335A	I300A	320	I320A	I320A	315	335	315	320	320S	290S	F	FS
6	F	285	290	310	315	300	330	350	I355A	I350A	340	I325A	335	315	320	I330A	325	320	I325R	325	290	I305R	F	295S
7	305F	300	300	310	305	305	335	335	315	310	330	340	310	330	330	320	315	325	320	330	335	280	290	270
8	290	290	295	295	320	315	325	330	330H	350	330	330	315	325	325H	340	325	315	315	310	305S	295	FS	275F
9	295	I275R	I290R	FS	F	FS	350	A	A	A	A	A	A	I300A	I310A	295	I305A	315	I330A	320	I330A	I285A	I275R	I275R
10	280	285	290	295	290	285	325	315	330S	I345C	325	340	285	305	320	315	315	320	320	320	310	300	285	285S
11	300	310	295	320	315	340	340	340R	335H	I330A	320	330	325	305	320	315	310	315	315	I330R	310	A	FS	A
12	RS	FS	300	310	320S	315S	335	350	370	370	330	335	330	325	320	335	325	325	330	340	335	FS	FS	310
13	305	295	305	325	305	330	340	345	350	365	300H	305	330	325	310	315	315	330	335	340	360	I280R	295	305
14	300	280	305	305	315	325	355	340	345	365	360	330	310	320	315	315	315	325	320	I325R	I345R	330	295	295
15	300S	285S	290	285	295	300	345	345	375	355	350	315	325	320	325	315	310	310	315	335	325	295	300	295
16	285	290	280	295	320	325	350	370S	355	360	335	325	325	I325C	345	325	325	325	R	R	335	315	305	300S
17	295S	290	290S	310	305	315	340	350	365	360	315	I320C	310	325	335	325	I335R	I330R	I330R	I330R	330	310	310	300
18	305R	I300R	I300R	310R	335	335	335	350	335	355	340	340	325	330	320	325	335	330	315	295R	I310R	I325R	I300R	I285R
19	300	I290R	310	310	335	315	J320R	330	335	350	325	335R	325R	I330R	320	305	305	320S	I330R	325R	310R	285S	255	I270R
20	280	280	I295R	I315R	300	295	I320R	350R	340R	I345R	345	325	320	320	320	315	I320R	I330R	340	RS	RS	J325R	I315R	J310R
21	265	280	I285R	335	320	270	330	I350R	330	340	325	U330R	320	315	320	U320R	320	R	C	C	290	RS	C	C
22	C	C	C	C	C	C	C	R	R	C	C	C	335	330	315	335	330	325	325	320	I325R	295	305	300
23	290	290	280	295	290	300	335	340	350	335	350	355	315	315	315	325	320	RS	R	315	325	310	FS	FS
24	F	RS	285	285	300	285	340	335	335	I335R	340S	310	305	315	320	320	I330R	I325R	I325R	325	FS	290F	FS	FS
25	295	FS	FS	I320R	340	320	340	I335R	335S	345	335	315	315	320	315	315	315	325	J330R	I325R	I300A	RS	A	RS
26	RS	I290R	I290R	305S	FS	300S	I335R	I345R	J340R	330	330	295	315	320	320	330	335	330	I330A	I320R	295S	280F	310	300
27	295	295	275	290	275	310	I340R	355	340	350	340	330	325	320	325	335	330	I335R	325	320	305	FS	290S	300
28	285	295	285	290	300	290	325	340	345	345	335	340	320	335	325	320	325	340	345	295	285	275	285	295
29	290	290	275	290	305	310	330	335S	I340R	335	335	315	330	340	330	330	330	345	330	315	295	295	310	305
30	300	285	290	295	295	295	345	340	355	350	340	335	330	335	325	335	325	340	340	315	310	315	300	290
31																								
Count	24	24	26	26	27	27	29	28	27	27	28	28	29	30	30	30	30	27	26	26	27	23	18	23
Median	295	290	290	300	305	305	335	340	340	345	335	330	320	320	320	320	320	325	325	320	310	295	300	295
U. Q.																								
L. Q.																								
Q. R.																								

M(3000) F2 Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 7

IONOSPHERIC DATA

Sep. 1966 | M(3000) F1 0.01 | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N Long. 140° 08.2'E

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	L	I365A	I365A	380L	380	370	350H	355L	360	360L	L						
2							L	A	A	A	330	365	345L	350H	360	B	A	A						
3							A	360	I370A	400	405	385L	385L	I370A	I355A	I360A	I355A	A						
4							L	I390A	L	355	355H	355	345	325L	I350R	365L	365L							
5							L	A	L	A	A	A	A	A	A	A	A							
6								L	A	A	A	A	375	L	340	I350A	360L	L						
7								A	L	385	365	370	365	360	360	370	365L	L						
8							405	370L	375L	I390A	380H	405	375	395	360	355	350L	A						
9							A	A	A	A	A	A	A	A	A	A	A	A						
10							L	A	A	C	A	385	395	380	355	L	345L	L						
11								360L	400L	I390A	390	385H	375H	360	350L	L	355	L						
12								L	I380A	395	400H	400	405	385H	365	355L	L	L						
13								L	370	400	405L	375	385	370	365L	345	370L	L						
14							L	L	395	395L	320L	405	370	380	355	365	400	L						
15								395L	L	380	390	390	375	375	350	360	L	L						
16								L	400L	385	385	380L	365	I370C	355L	345L	L	L						
17								L	L	LH	L	I385C	L	370L	380	L	L							
18								LH	375H	L	400	375L	L	360L	L	365	L							
19								L	375L	395	395	395L	380L	375	365	345L	375							
20									L	380	390	385L	375	360	370L	L	L							
21								L	L	385	380L	365	375	375L	375	A								
22								L	390	C	C	C	385L	380L	L	L	L							
23									L	L	390	395	390L	370L	L	L	L							
24								LH	L	L	385L	375	380	360L	370L	A	L							
25								L	L	385	385	380	385	370L	375L	L	L							
26								L	380	395L	380L	390	390L	370	385	365L								
27								L	385L	395L	390H	380L	375H	370	355L	L	L							
28								L	380H	390	420	395L	380L	375L	L	L	L							
29								L	A	395L	375	360L	380	380L	370L	365L	L							
30								L	L	385	395	390	385	370L	L	L	L							
31																								
Count							1	5	14	20	24	26	26	27	23	15	11							
Median							405	370L	380	390	390	385	380	370	360	360	360L							
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F1 Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Sep. 1966 | h'F2 km | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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							250	240	260	290	255	325	345	305	290	290	305	270						
2							290	A	A	A	315	285	325	355	315	I295B	I300A	A						
3							A	250	240	260	330	315L	335	310	295	320	295	I285A						
4							280L	I260A	255	345	440	355	300	330	285	270	290							
5							275	I240A	280	290	250	I280A	I300A	310	I305A	I295A	285							
6								240	I250A	I240A	280	I295A	295	310H	325	I295A	285	270						
7								250	300	290	280	270	310	295	295	290	290	280						
8							255	290	270	265	300	295	310	300	290	290	300	280						
9							245	A	A	A	A	A	A	I380A	I380A	355	I340A	260						
10							270	290	280	I275C	315	305	370L	345	310	305	295	275						
11								250	250	I290A	340	295	310	335	320	305	320	275						
12								240	230	235	300	280	295	295	290	290	275	260						
13								240	250	250	270H	320	305	290	300	310	285	265						
14							240	240	260	245	240	280	325	315	300	300	285	275						
15								250	225	255	245	325	290	305	300	295	270L	280						
16								230	235	240	280	290	295	I280C	270	300	280	270						
17								225	225	230	300L	I300C	315	285	280	270	270							
18								230	265	235	250	280	285	295	285	280	260							
19								245	245	245	260	275	295	285	300	275	280							
20									240	240	260	280	305	270	295	290	280							
21								240	260	250	280	285	290	285	275	285								
22								240	255	C	C	C	260	265	280	255	260							
23									245	245	240	240	310H	295	275	255	245							
24								230	250	235	260	290	260	280	280	265	255							
25								240	250	255	255	280	280	280	270	255	255							
26								240	255	255	245	280	265	280	260	255								
27								245	250	240	260	260	290	290	280	255	255							
28								255	235	230	240	255	280	265	280	265	250							
29								250	240	240	255	305	255	255	255	285	240							
30								220	235	240	255	245	270	260	255	260	255							
31																								
Count							8	26	28	27	28	28	29	30	30	30	28	- 13						
Median							260	240	250	245	260	285	295	295	290	290	280	275						
U. Q.																								
L. Q.																								
Q. R.																								

h'F2 Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 9

IONOSPHERIC DATA

Sep. 1966 | h'F | km | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	305	335	260	245	245	260	240	225	A	A	220	200	195	190H	200H	230	240	250	250H	I250C	245	285	285	310
2	245	295	275	295	275	315	245	A	A	A	A	235	I225A	230H	240	B	A	A	A	A	270	290	I245A	A
3	A	A	300	I265A	280	280	I260A	225	I225A	210	190	230	185H	I215A	A	A	A	I255A	290A	305	300	290	250	275
4	255	330A	330A	315	I270A	I250A	210	240	200	230	210	235	220	235	I235B	240	260	255	255	260	240	355	355	360
5	340	350	275	I255A	I320A	305	240	I225A	A	A	A	A	A	A	A	A	A	250	255	240	245	285	320	290
6	305	295	295	245	230	290	240	235	A	A	A	A	195	205	A	A	A	A	245	240	285	255	240	255
7	260	255	265	255	240	280	245	I240A	230	200	195	245	225	200H	210	215	240	250	245	230	215	245	300	325
8	295	300	290	285	245	250	220	240	255	I210A	205	200	220	190	230	230	255	I250A	255	255	255	270	I280A	300
9	280	290	270	320	315	330	A	A	A	A	A	A	A	A	A	A	A	A	A	255	I250A	I290A	I310A	305
10	305	295	290	295	265	320	255	A	A	C	A	230	195	190	215	I240A	225	I235A	245	235	240	260	295	280
11	285	255	280	265	235	230	240	210	215	I195A	200	185H	185H	205	215	250	240	255	245	220	210	A	A	A
12	A	315	305	260	240	250	240	245	I235A	205	190H	190H	190	180H	230	240	I240A	245	240	210	230	290	320	255
13	265	280	275	255	240	245	235	235	210	210	195	205	190	200	205	245	250	235	240	220	205	I260A	300	270
14	285	290	290	270	265	250	235	230	200	190H	180H	195	215	195	215	240	240A	250	245	245	215	205	290	295
15	280	300	290	300	290	280	240	225	210	205	200	200	200	220	225	220	I240A	250	255	220	230	245	265	260
16	280	285	290	280	235	240	240	I225A	205	205	195	190	225	I220C	225	210	240	260	255	240	225	235	275	270
17	290	285	290	260	260	255	235	220	215	220	190	I200C	220	200	205	230	230	250	235	240	235	250	280	295
18	270	295	295	270	225	230	220	215H	200H	230	200	190	190	205	240	240	230	240	240	240	240	260	I280A	310
19	290	300	285	250	220	245	225	225	220	240	200	195	195	235	220	245	245	240	240	240	240	275	290	280
20	300	290	260	245	260	290	235	240	230	220	215	190	210	210	235	240	250	245	240	240	260	270	255	280
21	310	305	275	220	250	300	240	230	I235A	215	205	205	215	I220A	210	I225A	240	255	I245C	I250C	270	270	C	C
22	C	C	C	C	C	C	C	235	210	C	C	C	195	230	240	235	250	245	240	220	235	250	275	265
23	285	280	280	265	270	290	225	230	240	235	205	190	190H	230	245	230	235	240	230	225	230	260	340	330
24	265	300	290	300	255	300	200H	200H	210	235	200	I240A	220	225	255	I230A	240	240	240	230	I280A	280	280	I260A
25	270	300	290	245	I230A	260A	225	235	220	205	220	210	240	220	240	245	240	240	240	225	A	A	A	290
26	270	260	270	260	260	270	235	230	200	I220A	190	195H	195H	210	220	240	245	240	I240A	240	250	290	255	255A
27	260	270	375A	300	300	255	225	240	220	210	190	215	190H	240	240	I240A	I255A	245	230	235	255	255	280	255
28	290	285	285	260	245	255	240	240	215	205	200	190	190	185H	240	I245A	I240A	235	205	215	300A	315	290	270
29	275	285	300	290	255	240	245	230	I215A	205H	195	205	195	220	220	210	240	230	220	240	260	260	245	240
30	270	290	290	260	255	270	220	215	230	210	215	195	180	190H	225	225	245	235	225	235	250	240	265	I265A
31																								
Count	27	28	29	29	29	29	28	27	24	23	24	26	28	28	26	25	25	27	28	29	29	28	27	27
Median	280	290	290	265	255	260	240	230	215	210	200	200	195	210	225	240	240	245	240	240	245	265	280	280
U.Q.																								
L.Q.																								
Q.R.																								

h'F

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 10

IONOSPHERIC DATA

Sep. 1966 | h'Es | km | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	100	105	110	115	115	110	105	105	105	115	110	G	140	130	130	B	C	110	105	105	105
2	E	125	105	100	100	115	130	115	110	110	110	105	105	110	105	B	120	110	110	105	105	105	105	105
3	105	100	105	105	105	135	115	110	110	110	110	110	105	105	110	110	100	125	115	115	110	105	105	105
4	E	135	130	105	100	120	120	120	110	110	105	105	105	G	B	G	G	125	115	110	110	110	110	105
5	105	105	105	125	120	125	105	110	110	105	105	105	105	120	120	115	110	110	105	105	105	105	105	105
6	100	100	100	105	105	105	125	115	110	110	110	110	105	125	110	115	120	110	110	110	110	110	105	100
7	100	E	E	E	E	E	115	110	110	110	110	105	G	100	G	100	145	130	100	100	E	100	110	E
8	E	E	E	E	E	110	G	140	120	120	120	120	110	140	130	G	135	115	120	120	120	110	105	105
9	105	105	100	100	105	140	130	120	115	110	110	110	110	110	135	130	125	130	120	115	115	115	110	110
10	E	E	E	E	E	E	120	115	110	C	105	105	105	105	105	100	145	100	100	100	100	E	E	E
11	E	105	E	120	E	E	115	115	110	105	105	105	105	105	G	130	125	115	E	110	E	110	105	105
12	105	105	120	E	E	E	160	140	110	105	105	105	105	125	145	135	125	110	105	105	105	105	105	100
13	100	E	E	E	115	115	115	110	110	105	105	G	G	G	G	G	115	105	110	125	105	105	100	100
14	E	E	E	E	E	E	110	G	110	105	105	155	150	150	110	G	130	130	100	110	105	105	100	100
15	E	E	E	110	105	E	115	110	105	105	100	105	105	100	G	135	130	120	110	110	110	105	E	E
16	E	E	E	E	E	115	120	110	110	105	105	G	G	C	G	155	140	125	110	105	105	E	105	E
17	E	E	E	E	E	E	110	105	110	105	110	C	110	105	105	G	120	115	105	100	105	105	E	110
18	E	E	E	E	E	E	B	130	105	105	105	105	105	G	E160G	145	130	115	E	E	E	105	105	100
19	100	100	100	E	E	E	125	130	120	110	G	105	105	105	105	100	100	130	100	100	E	E	110	110
20	105	E	E	E	E	E	150	G	G	G	100	105	G	130	G	150	135	125	120	E	105	105	E	105
21	100	E	E	E	E	E	140	145	125	135	105	G	105	100	100	100	100	100	C	C	100	E	C	C
22	C	C	C	C	C	C	C	140	140	C	C	C	115	155	165	140	130	130	115	100	100	105	105	E
23	100	105	105	E	100	E	150	130	125	120	115	110	G	165	160	145	130	130	110	115	E	110	105	105
24	E	105	105	105	110	E	B	140	115	115	120	110	G	110	105	105	105	120	110	105	115	120	110	105
25	105	105	E	E	110	110	G	G	140	110	125	G	G	G	G	G	135	125	120	115	110	115	110	110
26	E	105	E	105	105	E	B	120	110	110	110	105	105	105	105	105	125	125	115	110	110	110	110	110
27	105	105	105	105	105	E	G	140	140	120	120	110	140	170	150	135	120	115	110	105	105	105	105	E
28	105	105	105	105	105	E	155	110	105	G	G	G	G	G	145	140	125	120	115	105	100	100	E	E
29	E	E	E	E	E	105	105	105	105	105	100	100	G	100	G	140	130	115	110	E	E	105	105	E
30	E	E	E	E	E	E	E170G	130	130	115	110	110	G	G	150	145	135	125	110	110	110	110	105	105
31																								
Count	15	16	13	13	15	12	23	27	29	26	27	23	20	23	20	23	29	30	26	25	24	26	24	21
Median	105	105	105	105	105	115	120	115	110	110	105	105	105	110	110	135	125	120	110	110	105	105	105	105
U.Q.																								
L.Q.																								
Q.R.																								

h'Es

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 11

IONOSPHERIC DATA

Sep. 1966 | Types of Es | 135° E Mean Time (G.M.T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	f4	f2	f2	f	c2	c2	c3	c2	c2	c2	c	c	c		h2	h	h2			f3	f3	f3	f4
2		f2	f2	f3	f2	c3	h2	c2	c5	c2	c2	c2	c2	c	c2		h	c3	c3 13	f3	f3	f4	f3	f5
3	f3	f2	f3	f4	f4	h2	c3	c3	c3	c2	c2	c3	12	12	c2	c2 12	13	c3	c2	f3	f5	f2	f2	f3
4		f3	f2 f	f	f2	f4	c2	c2	c	c2	c	12	1					h	c2	f2	f2	f4	f3	f4
5	f5	f4	f4	f2 f2	f4	f2	13	c4	c3	c3	c3	c4	c3	h2	h3	h4	c2	c4	14	f5	f4	f3	f4	f3
6	f2	f3	f2	f2	f	f2	h3	c3	c3	c4	c2	c3	1	h 12	12	h2 c2	h2	c2	c2	f6	f2	f2	f3	f
7	f2						c2	c3	c2	c2	c2	12		1		12	h	h 12	12	f2		f2	f2	
8						f		h	h2	h2 1	h	h	c	h	h		h2	c3	c2	f2	f4	f3	f2	f3
9	f3	f2	f2 f	f2	f2	h	h3	h5	h3	c3	c5 1	c3	c5	c4	h3	h2	h2	h4	c6	f7	f3	f6	f5	f2
10							c2	c3	c2		c3	c2	12	12	c2	14	h 1	15	13	f3	f			
11		f		f2 f2			c2	c2	c2	c2	c2	c2	c2	c2		h2	h2	c3 12		f		f4	f3	f5
12	f4	f3	f2 f3				h2 12	h c2	c3 1	c2	c2	c2	1	h 1	h 1	h2	h2	c4	f2	f	f2	f2	f3	f2
13	f2				f2	f2	c	c2	c	1	1						h2	12	13	f	f	f3	f2	f2
14							1		c2	c2	c2	h 1	h 12	h 1	c2		h4	h2 1	f2	f4	f	f	f2	f
15				f2	f2		c2	c3	c2	12	1	12	12	1		h2	h3	c3	f2	f	f2	f2		
16						f3	c2	c2	c2	c2	12					h	h	h3	f4	f3	f		f2	
17							c2	c2	c	c2	c2		c2	c2	c		h	c2	f2	f2	f2	f		f2
18								h 12	c2	c	1	1	1		h	h	h	c2				f3	f3	f3
19	f2	f3	f2				c	h	c2	c		1	1	12	1	1	12	h2	f2	f			f2	f
20	f						h				1	1		h		h	h2	h3	f6		f2	f2		f
21	f						h	h	h	h	1		12	12	12	12	12	12			f			
22								h	h				c	h	h	h	h	h2 1	f	f3	f2	f2	f4	
23	f2	f2	f2		f		h	h2	h2	h2	c2	c2		h	h 1	h	h2	h2	f2	f2		f2	f3	f5
24		f4	f2	f2	f3			h	c2	h	h	c2		c	12	13	14	c 12	f2 f2	f	f2	f2	f2	f3
25	f2	f			f2	f3			h	c	h						h2	h3	f	f	f2	f3	f3	f2
26		f		f2	f			h	c2	c2	c2	12	12	12	12	12	h3	c2	f3	f3	f3	f3	f3	f8
27	f2	f2	f3	f2	f2			h	h	h2	h	c	h	h	h	h2	c3	c3	f2	f3	f3	f3	f2	
28	f3	f3	f2	f2	f3		h2 1	c3	c2						h	h2	h2	c3	f3	f2	f2	f2		
29						f5	1	12	13	12	12	12		12		h2 1	h3	c2	f3			f2	f	
30							h	h2	h	c	c2	c			h	h	h	c2	f2	f3	f2	f2	f2	f3
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

Types of Es

Sweep 1.6 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	U064S	U058S	056	055	046	043S	070	077	065	R	073	071	071	077	081	082	091	U086S	U106S	U095S	U078S	U064S	U065S	I057A
2	F	U056S	U060S	047	042	039	066R	066	A	054	074	083	069	070	U076R	I073A	074	066	I070A	072S	U075S	U060S	049S	050S
3	U048S	046S	I048A	U046S	A	035S	055	086	061R	I060A	062	064R	070	066	072	070	072	078	U084S	U075S	078S	U079S	U076S	U074S
4	064	057	051	044S	045S	U037S	043	I053A	064	068	U080R	109	113	118	127	097	085	085	079S	067	054	040S	044S	048S
5	050	A	057	A	A	032S	062S	056	I060A	J073R	083R	A	U065R	066	069	072	067	072	U079S	U074S	064S	056S	U052S	051
6	044S	F	048	U045S	037	036S	067	076	070	067	A	070	U073R	068	067	U076R	076	A	I092A	S	I060A	U055F	U055F	053S
7	U053S	044	045S	U045S	042S	037	056	063	065	083	081	081	U077R	073	074S	069S	070	U076S	089S	U077S	050	040	U041S	041
8	040S	041	039	041	035	032	053R	061	J079S	067R	064	071	074R	067	075	065	063	I070A	J084S	S	063S	064S	059S	U057S
9	U055F	052R	055	054	050	044S	U064S	058	A	A	A	A	A	057	056	054	J053A	060	U062S	053	A	A	A	A
10	035	036S	035	035	032R	I033C	051	057Z	C	067	060R	058	I058R	058	061	058	059	060	U073S	U073S	054R	045	046	047
11	U044S	046	038	043	037	033	053R	073S	061	056	I061A	065	A	A	A	059	063	I069A	083	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	057	064	063	071	068	069	069	073	092S	U093S	051	I040A	U043S	050
13	043	044	048	C	C	C	C	C	C	065	C	071	070	070	C	C	C	C	U101S	087S	049	034	034	036
14	035	036	036	035	035	040	C	067	068	068	063	061	066	U067R	075	072	071	075	088S	U085S	062S	I041A	042	042
15	042	U039S	037	038	036	037	065	087	078	I062C	059	062	071	074	073	065	067	078	U100S	096	053	047	044	047
16	043	041	041	040	043	038	066	U072S	072	068	068	075R	074R	077	067	067	071	075	093S	U095S	064S	049	048	047
17	045	045	045	045	046	042	062S	078	077	072	064	070R	078	074	080	080	078S	J083S	079	068	057	050	039	048
18	048	048	048	048	045	038	058	066	078	084	072	075	073	073	075	U076R	080	072	073	I074S	J068S	058	U046S	U050S
19	C	C	C	C	C	C	C	C	C	C	U075R	074	077	084	071	075	086	U099S	088	069S	051	052	052	052S
20	051	051	052	048	040	040	071S	081	092	080	077R	072	079R	090	077	071	U074S	081	086	U082S	060	057	060S	056
21	056	056	061	067S	032	033	062	U078S	084	085	078	092	092	086	077	078	082	U081S	092	U073S	058	059S	059	060S
22	061	060S	052	052	046Z	047	069	U086S	084	081	U076R	J080R	075R	080R	076R	081	090	092	089	078S	062	056	057	056
23	056	053	052	050	048	048	071	084	092	090	079	074R	U073R	083	086	092	079	082	085	068S	057	055	U051R	U050S
24	U054S	U050S	050	051	U050R	042S	060S	069	077	I078A	I080R	084	094	093	092	090	088	091	087	066	056	056	055F	054
25	051	050	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	039	039
26	I040C	039	039	042	037F	038F	064	082	085	090	093	090	085	092	091	086	J084R	C	U074S	066S	054	J053S	J052R	044
27	046	I045A	042F	043F	F	F	066	076S	075	079	086	088	080	086	099	088	J078S	J082S	J083S	S	A	I047A	050	047
28	045	044	045	045	045	047	062	J090R	117	078	068	074	079	080	J076R	084	090	094	S	046	043	043	041	043
29	042	040	039	041	043	037	055	J072S	090	090	087	089	100	080	071	074	080	092	064	057	054	J052R	055	049
30	039	040	043	045	U043F	048	064	S	074	070	080	080	078	083	081	J079S	J073S	083	S	060	I056A	A	A	A
31																								
Count	27	26	27	25	23	25	25	25	23	25	26	27	27	28	27	28	28	26	27	25	26	26	27	27
Median	046	046	048	045	043	038	062	073	077	072	074	074	074	076	075	074	075	080	085S	073S	057	052	050	050
U.Q.	054	052	052	049	046	042	066	082	084	082	080	083	079	084	081	082	083	085	092	084	063	057	055	054
L.Q.	042	041	039	042	037	036	056	064	065	067	064	070	070	069	071	069	070	072	074	066	054	045	043	047
Q.R.	012	011	013	007	009	006	010	018	019	015	016	013	009	015	010	013	013	013	018	018	009	012	012	007

The Radio Research Laboratories, Japan

foF2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

K 1

IONOSPHERIC DATA

Sep. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	L	A	A	A	A	490L	500	510L	480L	A	A						
2							L	420L	A	A	A	490L	A	500L	A	B	B	A						
3							A	A	A	A	490L	490	510	A	490L	450L	430L	A	A					
4								A	L	500L	500L	U510L	A	490L	B	L	L	L						
5							A	A	A	A	A	A	A	R	A	A	A	A	A					
6								A	430L	510L	A	A	U490L	480L	R	470L	430L	A	A					
7							A	A	L	460L	480L	490L	I490R	480L	480	A	400L	L						
8							L	420L	450L	470	480L	480L	U470L	490L	450L	L	A	A						
9								A	A	A	A	A	A	450	450L	A	A	A						
10							L	A	C	L	480L	A	480L	460	460L	430L	A	L						
11								L	430L	A	A	A	A	A	A	440L	A	A						
12							C	C	C	C	460L	480L	490L	470L	470L	450L	420L	L						
13							C	C	C	440L	C	500	480	470L	C	C	C	C						
14							C	L	L	440	450	480	R	500L	480L	450L	L	A						
15							A	L	430L	C	L	470L	480L	480	440	440L	L	L						
16								L	420L	450L	470L	490L	460L	480L	L	L	L	L						
17								L	L	440L	470L	U520L	470L	500L	480L	430L	400L							
18								L	440L	450	480L	490L	460	520L	490L	L	L							
19								C	C	C	480L	U510L	510L	500L	450L	470L	L							
20								L	L	L	480	480L	I520R	500L	500L	430L	L	L						
21								L	L	L	450L	U520L	490	500L	470L	L	L							
22								L	L	480L	480	I500R	480	490L	460L	L	410L	L						
23								L	L	470L	460	490	U500L	500L	L	L	L							
24									420L	A	L	540L	A	L	L	L								
25								C	C	C	C	C	C	C	C	C	C	C						
26								L	L	440L	L	L	L	U500L	L	L	L	C						
27								L	L	L	U480L	480L	U480L	U490L	460L	L	A							
28								L	L	L	L	L	L	U500L	L	L	L							
29								L	L	L	L	L	U480L	L	L	L	L							
30								L	L	L	470L	450L	L	L	L	L								
31																								
Count								2	7	12	17	20	19	23	16	11	6							
Median								420L	430L	460L	480L	490L	480L	490L	470L	450L	420L							
U. Q.																								
L. Q.																								
Q. R.																								

foF1 | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 2

IONOSPHERIC DATA

Sep. 1966 | foE | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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						B	A	280	300	325	325	345	I365A	380	350	330	285	225	B					
2						B	190	270	300	I320A	345	340	A	A	350	B	B	265	B					
3						B	185	245	285	A	A	A	R	A	A	I325R	295	230	B					
4						B	185	240	295	305	A	A	A	A	B	330	I300A	240	B					
5						B	I210A	255	275	I310A	335	A	A	370	345	315	280	265	B					
6						B	A	260	295	315	330	I340A	A	A	A	330	295	A	B					
7						B	175	225	300	I320A	A	A	A	360	325	I315A	275	220	B					
8						B	A	A	A	315	I340R	I335R	I340R	345	340	305	265	210	B					
9						B	185	255	290	325	335	335	345	345	335	310	275	210	B					
10						C	175	235	C	A	A	A	A	A	A	A	260	A	B					
11						B	B	230	275	290	310	A	A	A	A	A	265	200	B					
12						C	C	C	C	C	A	A	R	I340R	335	295	280	180	B					
13						C	C	C	C	A	C	A	350	I350R	C	C	C	C	B					
14						B	C	A	300	290	325	I340A	I360R	R	A	300	275	A	B					
15						B	190	A	300	C	R	A	I350R	350R	320	305	265	I210A	B					
16						B	175	230	255	310	325	I350R	340	355	330	310	270	200	B					
17						B	A	250	290	I330R	310	320	A	R	345	320	275	A	B					
18						B	195	I260R	310	330	I340A	I340R	360	360	340	315	265	210	B					
19						C	C	C	C	C	A	A	I360A	355	330	A	A	220	B					
20						B	190	255	315	345	365	370	R	B	340	325	290	210	B					
21						B	200	270	310	335	I345A	350	360	355	335	I315A	A	A	B					
22						B	185	250	300	340	350	I355R	360	350	335	315	275	200	B					
23						B	I195A	235	300	315	335	350	350	345	330	310	240	200	B					
24						B	195	240	305	310	I320A	340	A	R	A	290	A	A	B					
25							C	C	C	C	C	C	C	C	C	C	C	C	C					
26							165	I250R	A	A	335R	345	I340R	320R	A	285	260	C	B					
27							B	240	300	310	I325R	340	340	325	320	290	250	A	B					
28							160	270	I295R	320	I340R	345	350	350	315	285	260	170	B					
29							A	I240A	A	A	A	I320A	335	335	310	280	250	A	B					
30							160	255	A	305	310	R	R	325	320	300	270	A	S					
31																								
Count							18	23	21	21	20	18	16	19	20	24	24	18						
Median							185	250	300	315	335	340	350	350	335	310	270	210						
U.Q.																								
L.Q.																								
Q.R.																								

The Radio Research Laboratories, Japan

foE

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

K 3

IONOSPHERIC DATA

Sep. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	J060	J054	J042	J054	J044	J059	J034	J042	J070	J075	062	J065	061	G	G	036	058	J060	J083	023	026	J064	J061	J074
2	J068	J059	J052	J026	J023	E015B	J032	J042	J121	J074	065	049	J093	J052	J069	B	061	J089	J117	J061	J110	J057	J057	J052
3	J062	084	J060	042	J060	022	J042	J105	J090	J123	J109	047	G	J063	J043	G	036	J061	J054	J072	024	J033	J034	J033
4	J030	J024	060	J030	020	J031	030	J082	J042	037	061	J042	049	037	E054B	G	J033	035	J033	J034	J036	J030	J037	027
5	025	J060	J062	J065	J110	J037	J054	J044	087M	J069	J061	073	050	048	066	055	J056	J063	J050	J050	J040	J041	J043	J043
6	J029	027	023	026	020	025	J044	J041	J042	J044	088M	064	043	046	043	031G	J041	J146	J133	J054	J084	J053	J030	J026
7	026	E014B	J025	J029	E013B	020	J044	J042	J045	J051	J043	J043	043	G	G	J055	030	030	J029	024	025	026	024	J024
8	022	026	026	023	025	J020	J031	J042	J038	035	G	044	036	G	039	041	J043	J069	J032	J026	025	J025	J037	J051
9	024	J029	J028	022	022	020	J038	J053	J075	J104	J107	069M	072M	039	044	049	J065	J041	J031	J037	J075	J057	J057	J054
10	J025	J024	J023	J034	J030	C	021	J055	C	J064	J061	J057	062	J042	J043	J043	J047	J031	J025	J027	J035	J027	023	E013B
11	E013B	E012B	023	J100	E013B	J020	023	029	060	058	J076	J068	J107	J090	J075	J040	J055	J067	J035	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	J037	040	G	G	036	037	J039	J034	J028	J041	J033	J053	J038	J024
13	J024	024	020	C	C	C	C	C	C	J041	C	J041	G	G	C	C	C	C	J028	J028	J026	J041	J042	J027
14	020	020	E013B	E013B	021	020	C	J031	J034	034	G	041	043	G	J043	039	J044	J037	J038	J029	J032	J054	J042	J026
15	J055	J070	J027	025	E014B	J020	J041	J031	G	C	G	J037	G	G	034	034	029	J030	J026	J056	J030	J041	E014B	E014B
16	021	E014B	E015B	E012B	023	J024	J030	J031	037	G	025G	G	023G	025G	G	034	032	028	018	024	J043	J034	J025	J028
17	J029	J024	J025	J025	023	023	J034	J031	J040	G	J042	048	048	G	030G	G	031	023	J038	025	022	J028	J035	E015S
18	E016S	E014B	E012B	E013B	019	E013B	G	025G	026G	G	J040	G	G	G	G	033	030	025	E014B	E013B	022	020	J038	J043
19	C	C	C	C	C	C	C	C	C	C	037	044	037	031G	037	J040	035	024	J031	025	020	025	021	024
20	020	020	E013B	E012B	E013B	E014B	024	G	034	044	G	G	G	E042B	G	035	034	J036	J055	J042	J038	021	J028	J024
21	021	E015S	020	E012B	E011B	E015B	023	032	034	048	032G	G	G	028G	025G	J039	J041	J028	J028	J026	022	021	023	022
22	E013B	020	020	E013B	E012B	E013B	025	033	034	G	G	J030G	040	039	037	039	032	J030	021	021	E014B	J030	J031	J025
23	025	023	023	E015B	E013B	E014B	025	032	035	037	G	G	G	G	038	033	030	023	025	021	020	020	E013B	023
24	026	J036	J057	J042	J039	E015B	G	029	039	J088	J043	033G	J069	G	034	028G	030	J043	J059	J042	J038	J022	E011B	E014B
25	J037	E012B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	J029	J074
26	C	J038	023	J022	J039	J025	016G	J024G	J039	034	G	032G	030G	G	J033	J026G	031	C	J019	J049	J046	J058	J041	J033
27	J025	047M	J030	J041	J037	J054	023	030	J029G	G	030G	G	032G	G	035	037	J047	J030	J041	J031	J083	J050	J032	023
28	J025	020	J016	023M	J018	023M	022M	028	029G	G	031	G	G	G	036	031	J032	J038	J035	J028	J027	J031	J025	J023
29	J021	E014B	E014B	E013B	E013B	J019	018	J032	J026	J034	039	037M	022G	G	034	G	034	J022	J022	J028	J026	021	E013B	J016
30	016	E014B	E014B	E015B	J019	E015B	G	G	029	033	033	032	G	019G	035	036	047	J039	J066	J022	J057	068M	049M	J074
31																								
Count	27	28	27	26	26	25	25	26	25	26	28	29	29	29	28	27	28	27	29	28	28	28	29	29
Median	025	024	023	024	020	020	025	J032	J038	039	038	041	036	G	036	036	036	J035	J032	J028	J031	J032	J032	J026
U.Q.	029	037	030	034	030	024	036	042	052	064	061	048	050	040	043	040	047	060	052	042	042	053	042	043
L.Q.	021	E014	016	E013	E013	E015	022	029	032	033	G	G	G	G	032	G	032	028	026	024	024	025	024	023
Q.R.	008	D023	014	D021	D017	D009	014	013	020	031					011		015	032	026	018	018	028	018	020

foEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	023	027	030	021	015	022	027	035	056	066	053	055	042			035	051	047	072	015	017	019	042	A
2	043	035	028	013	014	B	025	036	A	045	059	044	057	044	065	B	055	052	A	017	046	052	023	020
3	E	030	A	030	A	G	041	053	056	A	044	039		057	040		034	046	053	042	E	027	026	024
4	018	018	028	025	E	025	026	A	036	037	041	041	044	034	B		032	025	028	020	030	024	018	016
5	015	A	052	A	A	024	054	044	A	063	057	A	E050R	E048R	058	047	053	061	049	047	040	021	028	027
6	023	020	014	016	E	015	026	041	037	043	A	062	040	040	040	031G	033	A	A	027	A	042	018	017
7	018	B	022	019	B	015	041	040	044	041	042	040	041			053	029	026	024	E	E	015	015	015
8	016	017	015	015	014	019	027	029	034	034		042	E036R		038	038	042	A	028	014	015	021	026	046
9	015	018	019	014	E	G	036	052	A	A	A	A	A	039	043	047	052	040	027	037	A	A	A	A
10	020	016	017	022	026	C	020	048	C	042	039	054	041	040	033	040	044	029	018	026	026	016	E	B
11	B	B	014	E	B	015	023	027	037	054	A	053	A	A	A	036	047	A	026	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	037	039			036	033	036	027	018	015	016	029	026	023
13	016	016	016	C	C	C	C	C	C	038	C	041			C	C	C	C	016	015	017	016	026	023
14	015	E	B	B	E	G	C	E031R	033	034		038	042		039	035	040	033	028	027	018	A	017	022
15	015	022	022	016	B	016	040	030		C		037			034	034	029	028	022	039	016	021	B	B
16	E	B	B	B	013	022	025	026	034		025G		023G	025G		032	031	026	016	014	034	022	016	016
17	017	021	018	022	014	G	023	028	033		041	044	045		030G		030	022	023	016	E	015	014	S
18	S	B	B	B	E	B		025G	026G		024					033	030	025	B	B	015	E	E	024
19	C	C	C	C	C	C	C	C	C	C	E037R	038	E037R	031G	036	033	030	024	028	015	E	E	E	016
20	015	015	B	B	B	B	023		034	039				B		034	034	023	043	041	017	E	027	017
21	E	S	E	B	B	B	022	029	033	040	032G			028G	025G	037	030	026	026	018	016	016	E	E
22	B	E	E	B	B	B	025	030	033			030G	038	039	036	039	031	025	G	016	B	021	023	E
23	017	013	E	B	B	B	025	029	033	036					038	033	029	023	016	E	E	015	B	E
24	015	E	015	027	027	B		029	036	A	039	029G	053		034	022G	029	025	026	034	026	015	B	B
25	E	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E	015
26	C	016	014	015	026	013	014G	024G	029	033		031G	E030R		031	025G	G	C	018	030	020	020	019	020
27	020	A	025	027	022	018	020	026	025G		E030R		025G		034	034	045	020	022	025	A	A	026	E
28	016	E	014	E	E	E	G	026	E029R		E031R				035	031	030	033	023	026	022	016	023	E
29	E	B	B	B	B	E	016	028	E026R	032	034	035	022G		033		G	022	017	025	021	E	B	E
30	E	B	B	B	E	B			029	033	033	E032R		E019R	035	033	038	034	064	E	A	A	A	A
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

foEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 5

IONOSPHERIC DATA

Sep. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	014	010	012	012	011	013	015	016	017	026	027	029	029	024	022	019	015	014	015	012	011	013	011	012
2	012	014	011	011	012	015	014	015	017	021	024	022	018	017	016	B	055	023	015	014	E016S	E015S	014	014
3	E016S	E016S	014	011	012	014	015	015	018	018	019	020	019	023	019	016	015	014	014	011	014	E015S	012	014
4	014	012	011	012	011	012	014	016	017	018	027	025	027	022	054	024	018	015	013	014	011	011	013	012
5	011	E015S	012	011	011	013	015	017	017	020	024	028	025	025	027	018	018	018	012	014	014	013	013	013
6	E015S	012	011	015	014	014	014	017	018	020	024	027	026	027	017	018	019	016	015	014	013	014	014	012
7	013	014	014	014	013	013	015	019	019	018	023	017	023	022	019	016	017	016	014	012	014	013	014	013
8	014	012	013	011	011	011	014	015	017	018	019	026	024	028	022	018	016	015	013	013	013	011	013	012
9	014	012	012	011	013	013	014	015	017	019	017	023	023	019	020	017	016	015	013	013	014	013	E016S	013
10	013	013	011	012	013	C	014	014	C	017	017	017	018	018	018	017	015	012	012	011	013	012	014	013
11	013	012	013	013	013	013	017	015	017	018	017	019	019	019	016	017	015	012	013	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	022	023	024	024	017	017	017	014	014	013	011	013	012	013
13	013	014	014	C	C	C	C	C	C	017	C	018	020	023	C	C	C	C	012	011	012	013	013	014
14	014	013	013	013	014	016	C	017	018	018	023	023	018	021	020	017	014	013	016	014	012	012	014	014
15	011	014	014	013	014	013	013	014	016	C	017	017	E019C	018	016	016	016	014	013	013	013	014	014	014
16	E016S	014	015	012	011	011	014	015	016	017	016	024	019	017	017	016	014	014	013	012	013	014	013	013
17	013	013	011	013	011	014	015	013	017	024	027	023	022	018	018	018	017	014	013	013	014	013	013	E015S
18	E016S	014	012	013	011	013	015	016	017	023	021	018	023	026	022	023	017	015	014	013	011	014	014	E015S
19	C	C	C	C	C	C	C	C	C	C	026	028	027	026	017	015	015	014	014	013	014	E016S	013	013
20	014	014	013	012	013	014	015	017	019	024	023	026	029	042	026	020	016	015	014	014	013	014	014	E015S
21	013	E015S	013	012	011	015	015	017	017	022	017	025	022	018	017	017	015	015	013	013	012	014	E016S	014
22	013	013	012	013	012	013	015	015	016	019	026	016	017	017	016	016	017	014	015	014	014	012	E015S	014
23	013	011	013	015	013	014	015	017	016	018	017	019	017	023	017	015	016	017	014	014	013	014	013	013
24	014	011	014	012	014	015	016	015	016	014	016	018	017	015	015	015	014	013	013	014	010	011	011	014
25	011	012	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E015S	013
26	C	013	013	012	012	012	012	013	015	014	023	020	022	020	015	014	014	C	014	013	013	013	014	013
27	E015S	013	014	010	014	011	014	014	014	016	022	020	016	015	016	015	014	014	013	E015S	014	E015S	E015S	E015S
28	E015S	014	013	015	014	014	014	014	015	016	021	016	018	022	015	014	016	014	013	011	E015S	014	E015S	E015S
29	E015S	014	014	013	013	014	013	014	015	016	021	020	018	022	015	015	015	014	016	E015S	E015S	E015S	013	E015S
30	E015S	014	014	015	015	015	015	015	015	018	015	016	021	015	015	015	016	015	E015S	E014S	E015S	E015S	E015S	E015S
31																								
Count	27	28	27	26	26	25	25	26	25	26	28	29	29	29	28	28	28	27	29	28	28	28	29	29
Median	014	013	013	012	013	013	015	015	017	018	022	020	021	022	017	017	016	014	014	013	013	014	014	014
U.Q.																								
L.Q.																								
Q.R.																								

f-min

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 6

IONOSPHERIC DATA

Sep. 1966 | M(3000) F2 0.01 | **135° E Mean Time** (G. M. T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	U290S	U295S	305	310	295	300S	330	355	335	R	325	330	315	310	300	310	305	U325S	U315S	U335S	U340S	U295S	U285S	I300A
2	F	U290S	U315S	315	285	280	320R	295	A	285	290	330	305	300	U305R	I305A	320	305	I330A	300S	U305S	U335S	280S	270S
3	U280S	275S	I280A	U335S	A	265S	305	350	295R	I340A	305	325R	295	310	315	310	305	305	U320S	U295S	270S	U285S	U295S	U305S
4	285	275	270	265S	290S	U315S	335	I320A	315	280	U250R	285	285	285	300	310	300	315	320S	305	345	250S	260S	270S
5	275	A	315	A	A	270S	345S	315	I320A	J320R	340R	A	U330R	295	305	320	320	305	U340S	U335S	325S	285S	U280S	295
6	275S	F	290	U310S	305	270S	340	340	350	335	A	295	U330R	330	295	U315R	310	A	I330A	S	I310A	U300F	U290F	300S
7	U300S	300	280S	U300S	300S	285	315	340	300	325	320	310	U315R	315	310S	320S	315	U315S	335S	U355S	330	285	U285S	260
8	275S	285	275	300	330	290	305R	325	J320S	320R	290	305	320R	300	330	305	310	I310A	J325S	S	305S	275S	280S	U265S
9	U295F	290R	280	280	265	280S	U335S	310	A	A	A	A	A	285	315	295	A	320	U330S	345	A	A	A	A
10	265	285S	275	275	260R	I270C	325	310Z	C	305	320R	340	I295R	295	315	305	310	310	U315S	U330S	305R	260	270	285
11	U290S	300	285	305	325	305	330R	330S	335	355	I315A	300	A	A	A	315	310	I310A	325	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	320	295	295	315	320	310	320	315	320S	U350S	345	I280A	U280S	290
13	280	285	300	C	C	C	C	C	C	330	C	315	325	315	C	C	C	C	U330S	355S	365	275	270	290
14	285	260	255	295	305	310	C	355	345	345	315	330	315	U300R	315	320	315	320	315S	U330S	360S	I290A	265	265
15	285	U295S	290	310	290	280	330	345	345	I350C	315	315	310	310	315	315	305	305	U330S	355	340	295	285	285
16	290	285	285	290	315	325	355	U350S	350	315	325	320R	320R	325	300	310	315	315	325S	U340S	340S	280	270	275
17	275	280	290	310	315	300	320S	345	355	345	340	300R	305	310	310	310	300S	J335S	330	325	310	295	270	285
18	285	280	300	310	330	305	345	335	340	340	345	310	310	310	320	U315R	325	320	310	I320S	S	330	U280S	U265S
19	C	C	C	C	C	C	C	C	C	C	U340R	310	305	325	315	300	310	U330S	340	335S	275	275	275	285S
20	280	280	295	315	270	275	340S	330	355	360	320R	300	320R	320	325	315	U305S	310	310	U325S	295	295	290S	280
21	265	270	305	340S	295	275	325	U345S	340	335	310	315	320	320	320	305	315	U310S	335	U335S	300	295S	270	285S
22	285	310S	285	305	295Z	300	340	U355S	350	330	U340R	J350R	320R	320R	315R	310	315	330	325	335S	330	300	270	285
23	290	295	290	300	285	270	340	345	350	345	355	320R	U315R	305	300	335	335	325	335	340S	290	285	U285R	U285S
24	U285S	U305S	280	290	U305R	275S	345S	315	340	A	I330R	310	310	300	305	305	320	330	340	320	270	265	275F	295
25	275	260	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	265	280
26	I265C	280	285	290	275F	280F	330	350	350	320	330	315	305	310	310	320	J335R	C	U340S	330S	285	J275S	J285R	290
27	295	I280A	265F	275F	F	F	345	340S	335	315	315	320	310	300	315	330	J320S	J330S	J325S	S	A	I270A	280	280
28	285	275	285	310	300	295	310	J320R	360	370	310	335	330	315	J315R	310	320	340	S	325	255	265	295	280
29	270	275	265	295	315	330	345	J330S	335	340	320	310	330	325	325	335	310	345	325	320	290	J295R	295	325
30	280	275	245	300	U285F	295	330	S	350	325	325	335	310	315	320	J340S	J325S	335	S	330	I300A	A	A	A
31																								
Count	27	26	27	25	23	25	25	25	23	24	26	27	27	28	27	28	27	26	27	25	25	26	27	27
Median	285	280	285	300	295	285	330	340	340	330	320	315	315	310	315	310	315	320	325S	330S	305	285	280	285
U. Q.																								
L. Q.																								
Q. R.																								

M(3000) F2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 7

IONOSPHERIC DATA

Sep. 1966 | M(3000) F1 | 0.01 | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	L	A	A	A	A	370L	370	335L	350L	A	A						
2							L	350L	A	A	A	345L	A	345L	A	B	B	A						
3							A	A	A	A	370L	380	345	A	340L	350L	340L	A	A					
4								A	L	320L	330L	U330L	A	335L	B	L	L	L						
5							A	A	A	A	A	A	A	R	A	A	A	A	A					
6								A	390L	355L	A	A	U380L	375L	R	360L	355L	A	A					
7							A	A	L	365L	360L	375L	I370R	365L	345	A	350L	L						
8							L	350L	345L	380	405L	390L	U395L	360L	370L	L	A	A						
9								A	A	A	A	A	A	350	320L	A	A	A						
10							L	A	C	L	350L	A	380L	365	335L	360L	A	L						
11								L	380L	A	A	A	A	A	A	355L	A	A						
12							C	C	C	C	405L	365L	375L	375L	350L	350L	350L	L						
13							C	C	C	400L	C	370	370	370L	C	C	C	C						
14							C	L	L	400	415	410	R	350L	335L	330L	L	A						
15							A	L	365L	C	L	380L	385L	345	335	355L	L	L						
16								L	380L	380L	380L	350L	365L	355L	L	L	L	L						
17								L	L	400L	400L	U360L	350L	360L	355L	350L	365L							
18								L	380L	390	380L	395L	385	340L	345L	L	L							
19								C	C	C	385L	U385L	365L	350L	370L	330L	L							
20								L	L	L	385	375L	I360R	350L	355L	360L	L	L						
21								L	L	L	395L	U355L	365	360L	360L	L	L							
22								L	L	360L	390	I370R	390	360L	380L	L	350L	L						
23								L	L	355L	390	390	U370L	355L	L	L	L							
24									380L	A	L	350L	A	L	L	L								
25								C	C	C	C	C	C	C	C	C	C	C						
26								L	L	385L	L	L	L	U350L	L	L	L	C						
27								L	L	L	U375L	390L	U355L	U345L	345L	L	A							
28								L	L	L	L	L	L	U360L	L	L	L							
29								L	L	L	L	L	U355L	L	L	L	L							
30								L	L	L	380L	400L	L	L	L	L								
31																								
Count								2	7	12	17	20	19	23	16	11	6							
Median								350L	380L	380L	385L	375L	370L	355L	345L	350L	350L							
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F1 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | h'F2 km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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							255	230	270	305	280	280	290	310	325	300	280	275						
2							265	280	I275A	330	340	270	315	330	325	I310B	300	295						
3							315	240	E375A	A	330	305	330	305	300	300	285	290	275					
4								I290A	255	370	420	325	310	310	275	260	290	260						
5							265	270	I335A	310	275	A	280	365	330	295	290	315	255					
6								230	245	275	A	E355A	290	280	355	300	280	I300A	I290A					
7							270	225	300	260	275	290	285	300	280	300	275	280						
8							260	275	265	260	335	315	285	315	275	305	270	I300A						
9								330	A	A	A	A	A	370	335	350	385	280						
10							260	300	C	350	315	300	I375R	375	310	315	305	300						
11								250	260	250	I325A	330	A	A	A	315	290	A						
12							C	C	C	C	275	305	350	300	300	295	280	275						
13							C	C	C	260	C	305	280	300	C	C	C	C						
14							C	225	245	260	290	285	300	335	300	295	285	265						
15							255	230	250	I240C	280	300	310	305	275	295	300	275						
16								225	230	265	280	300	285	275	280	265	280	275						
17								250	225	230	260	330	285	290	300	280	275							
18								245	245	245	255	300	265	310	300	300	260							
19								C	C	C	255	300	320	285	275	310	275							
20								245	235	230	275	275	300	275	275	275	285	255						
21								260	250	250	260	280	275	280	270	295	265							
22								225	250	250	255	260	275	275	275	280	270	250						
23								230	230	250	230	265	280	300	295	265	250							
24									250	I255A	260	300	300	300	260	280								
25								C	C	C	C	C	C	C	C	C	C	C						
26								245	250	260	255	255	300	300	260	260	245	C						
27								250	250	250	275	270	290	300	260	250	250							
28								255	240	220	250	260	275	300	290	260	250							
29								250	250	250	250	275	260	250	250	255	260							
30								245	220	245	255	255	280	260	260	255								
31																								
Count							8	25	24	25	26	27	27	28	27	28	26	16	3					
Median							260	245	250	255	275	295	290	300	280	295	280	280	275					
U.Q.																								
L.Q.																								
Q.R.																								

h'F2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 9

IONOSPHERIC DATA

Sep. 1966 | h'F | km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	280	310	290	260	265	265	235	230	A	A	A	I250A	210	210	250H	230	A	A	270	225	220	250	320	I320A
2	290	335	275	235	280	290	240	245	A	A	A	220	I225A	265	I250A	B	B	A	A	250	300	290	305	310
3	285	345	I325A	260	I260A	300	A	A	A	A	230	205	225	I230A	235	225	250	A	A	320	310	310	300	275
4	230	305	300	355	260	265	230	I250A	240	265	225	220	A	210	B	250	250	250	255	250	230	410	360	310
5	300	I320A	335	A	A	340	A	A	A	A	A	A	A	A	A	A	A	A	A	260	250	300	340	280
6	305	310	275	255	225	290	230	I225A	230	230	A	A	215	230	255	210H	230	A	A	210	A	360	270	260
7	250	245	300	260	255	270	I250A	I230A	265	235	250	215	230	205	225	I220A	225	240	245	210	200	265	305	330
8	315	300	290	255	235	265	225	230	225	205	180	200	200	225	225	250	A	A	255	225	240	295	295	E400A
9	265	290	285	275	315	305	235	A	A	A	A	A	A	255	285	A	A	A	250	230	A	A	A	A
10	325	295	290	315	E365A	I300C	250	A	C	250	225	I220A	210	230	220	275	I265A	250	260	230	245	265	310	280
11	275	255	270	260	230	260	240	230	220	I215A	I225A	I240A	A	A	A	240	I250A	I255A	250	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	185	205	210	210	225	230	250	250	245	215	205	300	335	275
13	280	285	260	C	C	C	C	C	C	210	C	200	205	230	C	C	C	C	240	215	200	315	365	305
14	295	295	275	260	255	260	C	220	210	205	185	175	260	225	220	245	285	A	255	230	215	I310A	305	315
15	280	300	290	280	275	305	A	230	215	I210C	190	180H	195	210	225	230	240	260	250	225	210	275	290	275
16	275	290	290	260	235	245	220	225	220	205	205	195	225	220	225	230	230	250	250	220	220	270	260	295
17	310	315	280	255	245	230	230	225	225	205	215	235	285A	230	225	225	225	255	225	220	215	255	300	300
18	275	295	275	260	210	230	230	225	215	210	195	180H	190H	225	225	235	235	250	235	230	225	220	275	330
19	C	C	C	C	C	C	C	C	C	C	210	195	190	220	225	230	240	245	225	215	220	300	295	280
20	270	275	255	225	275	285	245	235	230	230	205	210H	210	240	240	230	240	240	265	240	240	280	275	270
21	315	305	265	210	250	310	230	210	230	235	205	220	210	205	210	255	250	255	230	225	245	275	300	300
22	275	260	260	230	240	265	215	230	220	210	205	205	200	220	210	250	230	250	230	225	220	260	310	280
23	275	255	255	260	260	290	230	230	225	210	205	210	200H	230	245	240	235	245	230	220	235	260	280	290
24	295	265	300	300	285	305	215	215	225	I230A	205	200	I190A	230	230	245	250	250	245	245	275	300	280	255
25	260	300	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	310	290
26	I295C	280	260	250	310	260	230	230	210	200	195	245	230	225	225	230	245	C	225	240	260	350	255	300
27	290	A	350A	350	310	290	230	225	225	205	200	195	220	200	245	245	I250A	245	250	210	I245A	A	300	280
28	260	280	290	250	250	255	250	245	225	205	205	200	195	245	245	245	245	230	220	250	345	320	300	270
29	260	300	310	260	250	220	220	225	225	205	205	200	205	220	230	245	225	240	205	250	290	255	250	225
30	255	300	295	260	255	260	220	225	210	205	200	190	180H	230	235	235	E250A	240	E260A	225	I245A	I260A	A	A
31																								
Count	28	27	27	25	25	26	22	22	20	22	23	26	25	27	25	25	23	19	25	28	26	26	27	27
Median	280	295	290	260	255	270	230	230	225	210	205	205	210	225	225	235	240	250	245	225	240	285	300	285
U.Q.																								
L.Q.																								
Q.R.																								

h'F | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 10

Sep. 1966 | h'Es km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N Long. 139° 29.3'E

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	110	110	110	120	115	115	115	115	115	115	G	G	160	120	115	115	105	105	110	110	110
2	110	105	105	120	125	B	125	120	115	115	115	115	115	115	115	B	125	120	120	115	110	110	110	105
3	105	105	105	110	110	120	120	115	115	110	110	110	G	105	105	G	125	120	115	115	115	110	105	105
4	105	105	105	105	130	120	120	115	115	115	115	110	110	110	B	G	110	125	115	115	115	115	110	115
5	110	110	110	110	105	105	115	115	115	115	115	115	125	130	125	120	120	115	115	115	110	110	110	110
6	105	110	110	110	110	110	125	125	115	115	115	115	110	110	110	110	120	115	115	110	115	115	110	110
7	105	B	120	120	B	120	115	115	115	115	115	115	115	G	G	105	145	125	115	105	105	110	110	110
8	115	115	115	110	115	115	115	110	110	130	G	115	120	G	145	130	125	120	120	115	120	115	115	110
9	110	120	125	130	105	155	125	120	120	115	115	115	115	160	130	125	120	120	120	115	115	115	115	110
10	110	105	100	110	110	C	125	115	C	115	115	110	110	110	110	110	130	105	105	105	105	105	105	B
11	B	B	105	105	B	125	160	125	120	110	110	110	110	105	105	105	120	115	110	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	110	110	G	G	160	120	125	115	115	110	110	110	110	105
13	105	105	105	C	C	C	C	C	C	110	C	110	G	G	C	C	C	C	110	110	110	110	110	105
14	105	105	B	B	110	110	C	115	115	115	G	110	155	G	110	140	125	110	105	100	100	110	115	105
15	105	110	110	110	B	125	120	115	G	C	G	110	G	G	160	130	135	120	115	105	110	110	B	B
16	100	B	B	B	125	115	115	115	115	G	105	G	105	105	G	155	125	120	115	115	115	110	105	100
17	100	100	105	105	110	115	115	120	115	G	115	115	110	G	110	G	145	105	105	105	105	110	110	S
18	S	B	B	B	110	B	G	110	110	G	105	G	G	G	G	180	150	125	B	B	110	105	110	105
19	C	C	C	C	C	C	C	C	C	C	115	110	110	110	110	105	105	100	100	105	105	100	105	105
20	100	100	B	B	B	B	140	G	140	125	G	G	G	B	G	160	130	125	115	115	115	105	100	100
21	100	S	100	B	B	B	150	140	130	110	110	G	G	105	105	100	100	100	100	100	100	100	100	110
22	B	105	105	B	B	B	145	135	130	G	G	100	130	130	140	130	130	120	100	100	B	105	110	110
23	105	105	105	B	B	B	130	130	125	125	G	G	G	G	125	170	150	140	125	105	105	110	B	110
24	115	110	110	110	115	B	G	150	125	110	110	110	105	G	105	105	145	100	100	100	100	110	B	B
25	120	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	110	110
26	C	105	105	105	105	105	110	110	110	110	G	105	105	G	105	105	130	C	115	110	110	110	105	105
27	105	105	105	105	105	105	145	140	110	G	105	G	105	G	160	145	125	110	105	105	105	105	105	105
28	105	105	100	105	105	105	105	110	105	G	105	G	G	G	150	150	135	115	110	110	100	100	100	100
29	100	B	B	B	B	105	105	100	105	105	100	100	100	G	190	G	150	120	105	100	100	100	B	100
30	100	B	B	B	105	B	G	G	120	120	120	110	G	100	150	145	125	115	110	110	110	110	110	105
31																								
Count	24	20	21	17	18	17	22	24	24	20	21	22	19	13	22	23	28	27	28	27	27	28	25	25
Median	105	105	105	110	110	115	120	115	115	115	115	110	110	110	120	130	125	115	115	110	110	110	110	105
U.Q.																								
L.Q.																								
Q.R.																								

h'Es

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 11

IONOSPHERIC DATA

Sep. 1966 | Types of Es | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	f5	f4	f3	f2	14	c2	c2	c2	c2	c2	c2	1			h	c3	c3	13	f	f2	f3	f6	f5
2	f5	f4	f2	f	f2		h2	c3	c2	c2	c2	c	12	1	12		h	c2	c2	f2	f3	f3	f4	f2
3	f2	f3	f7	f2	f7	c	14	c4	c3	13	12	1		12	12		h2	c4	13	f5	f	f7	f4	f5
4	f3	f2	f3	f2	f	16	c3	c3	c2	c	1	12	12	1			12	h	13	f4	f2	f4	f2	f2
5	f2	f3	f5	f7	f4	14	13	c3	c3	13	12	13	h12	h	h2	c2	c2	c2	16	f7	f7	f4	f5	f6
6	f3	f7	f2	f	f	1	h1	h21	c2	c2	c2	12	1	12	12	12	c	13	14	f6	f5	f7	f4	f3
7	f		f2f	ff2		c2	c4	c2	c2	12	1	1	1			12	h	h2	13	f	f	f2	f	f2
8	f	f2	f2	f2	f2	12	13	12h	13h	h		c	c		h	h	h2	c4	c3	f	f	f4	f6	f5
9	f2	f2	f6	f2	f	h	h6	c4	c4	c2	c2	c2	c2	h	h2	h2	c2	c4	14	f6	f7	f7	f4	f6
10	f3	f2	f2f	f3	f6		h2	c3		12	1	1	12	12	12	13	h2	14	14	f5	f2	f2	f	
11			f	f		h	h	h	c2	c2	c2	12	12	12	13	12	c3	c4	13					
12											1	1			h	c	h2	c2	12	f	f	f2	f3	f2
13	f2	f	f2							12		1							12	f	f	f2	f3	f2
14	f	f			f2	1		13	12	c		1	h		1	h2	h2	14	15	f5	f4	f3	f2	f6
15	f2	f3	f2	f2		h2	c4	12				1			h	h	h2	c212	13	f3	f	f3		
16	f				f	15	12	c	c2		1		1	1		h	h21	c2	1	f	f3	f4	f2	f2
17	f2	f3	f2	f3	f	1	12	c	c		c	12	1		1		h	12	12	f	f	f2	f2	
18					f			1	1		12					h	h	h2			f	f	f2	f2
19											1	12	1	1	12	1	1h	1h2	14	f	f	f2	f	f2
20	f2	f					h2		h	h						h	h	h2	14	f6	f3	f	f2	f2
21	f2		f				h	h	h	1	1			1	1	13	12	13	14	f2	f2	f2	f	f
22		f	f				h2	h2	h			1	h1	h	h	h	h2	c1	1	f		f3	f2	f2
23	f2	f2	f				h2	h	h2	h					h	h	h2	h	h	f	f	f		f
24	ff2	f2	f2	f2	f3			h	h2	c2	c2	1	12		12	12	h12	12	13	f4	f4	f2		
25	f																						f2	f2
26		f2	f	f2	f5	f2	1	1	1	12		1	1		12	1	h		12	f3	f3	f3	f3	f3
27	f3	f5	f4	f4	f4	f4	h2	h2	1		1		1		h	h	h3	12	13	f4	f4	f3	f3	f2
28	f2	f	f	f	f	f2	1	1	1		1				h	h	h2	c2	12	f3	f3	f2	f3	f2
29	f					f	12	12	1	12	12	1	1		h		h	c2	1	f2	f2	f		f
30	f				f				c	h	h1	c		1	h	h	h2	c2	14	f	f3	f3	f4	f4
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

Types of Es

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | h_pF2 | km | 135° E Mean Time (G. M. T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	U355S	U345S	335	315	320	295S	275	250	A	R	310	285	310	325	335	315	320	U305S	U295S	U275S	U280S	U330S	U370S	I335A
2	F	U360S	U310S	300	345	375	285R	320	A	345	340	275	315	345	A	I320A	300	305	I300A	320S	U330S	A	365S	380S
3	U370S	370S	A	U255S	A	370S	330	265	A	A	335	310R	345	A	305	325	310	315	U310S	U365S	405S	U370S	U355S	U325S
4	335	375	375	380S	325S	U290S	255	A	280	385	U450R	390	370	355	315	315	330	295	285S	310	260	450S	415S	385S
5	370	A	A	A	A	360S	A	280	A	A	285R	A	A	R	A	305	305	A	U275S	U275S	270S	370S	U370S	335
6	375S	F	345	U305S	290	375S	255	245	260	285	A	A	U300R	290	360	U310R	310	A	A	S	A	U370F	U345F	325S
7	U320S	325	335S	U325S	325S	325	285	245	315	280	295	305	U300R	310	300S	310S	310	U315S	275S	U255S	245	335	U365S	385
8	380S	350	370	315	270	315	315R	300	J280S	275R	335	330	310R	335	285	325	295	I320A	J295S	S	325S	370S	360S	A
9	U345F	345R	365	370	400	370S	U260S	A	A	A	A	A	A	375	350	A	A	300	U275S	265	A	A	A	A
10	365	335S	335	365	A	I370C	275	310Z	C	A	320R	A	R	375	315	315	325	315	U315S	U275S	300R	380	385	355
11	U330S	320	330	310	275	310	275R	260S	265	250	A	330	A	A	A	325	300	I310A	295	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	280	330	R	310	310	310	300	315	295S	U260S	245	I370A	U340S	335
13	355	335	320	C	C	C	C	C	C	270	C	310	290	310	C	C	C	C	U270S	255S	225	380	385	330
14	355	370	350	315	310	305	C	255	260	265	305	300	310	U350R	315	305	305	295	300S	U275S	235S	I330A	335	390
15	335	U320S	325	335	335	370	270	255	265	I250C	285	310	315	310	280	310	320	315	U290S	265	255	355	365	330
16	330	345	350	330	285	280	240	U235S	250	295	300	305R	300R	280	320	305	305	315	290S	U270S	250S	340	360	365
17	370	360	330	285	295	285	270S	275	230	255	270	335R	300	315	310	305	305S	J275S	270	275	295	330	380	365
18	355	365	345	310	265	290	255	265	265	260	265	310	310	320	310	U310R	280	280	295	I290S	S	275	U345S	U385S
19	C	C	C	C	C	C	C	C	C	C	U265R	320	330	300	300	330	315	U280S	260	270S	350	375	375	345S
20	345	350	325	285	370	365	270S	250	255	245	300R	320	315R	295	295	305	U325S	300	300	U275S	320	350	330S	370
21	395	380	325	255S	320	370	270	U285S	280	270	305	310	300	305	300	310	305	U310S	280	U275S	330	350S	385	370S
22	340	325S	340	315	330Z	325	265	U250S	265	270	U265R	J280R	295R	300R	305R	315	300	280	280	275S	270	325	375	360
23	345	325	335	320	345	370	270	260	255	265	255	305R	U300R	320	325	285	265	280	270	270S	335	330	U355R	U365S
24	U370S	U330S	360	330	U325R	370S	255S	295	270	A	I280R	310	310	315	310	305	295	280	260	295	350	390	360F	320
25	350	370	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	380	350
26	I380C	345	330	310	350F	350F	250	250	255	300	285	300	305	310	300	300	J265R	C	U255S	260S	320	J390S	J340R	330
27	320	I350A	390F	360F	F	F	250	260S	250	295	300	300	305	325	300	295	J295S	J270S	J295S	S	A	I360A	340	350
28	340	350	340	305	310	320	305	J290R	250	230	290	290	295	300	J300R	300	260	255	S	280	400	390	350	345
29	355	370	390	325	300	250	260	J280S	280	260	290	300	300	290	290	270	305	255	280	300	345	J325R	320	300
30	345	360	360	320	U330F	340	250	S	250	275	290	270	305	300	295	J280S	J280S	260	S	260	I300A	A	A	A
31																								
Count	27	26	25	25	22	25	24	23	20	21	25	25	24	26	25	27	27	25	26	25	24	25	27	26
Median	355	350	340	315	320	340	270	260	260	270	290	310	305	310	305	310	305	300	290S	275S	300	360	360	350
U. Q.																								
L. Q.																								
Q. R.																								

h_pF2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 13

IONOSPHERIC DATA

Sep. 1966 | ypF2 km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	U050S	U060S	065	055	055	060S	050	045	A	R	045	045	045	040	045	050	055	U045S	U055S	U050S	U050S	U050S	U060S	I060A
2	F	U050S	U045S	050	065	050	055R	060	A	060	055	060	070	045	A	I050A	040	065	I050A	055S	U055S	A	050S	060S
3	U070S	055S	A	U050S	A	065S	050	055	A	A	055	045R	050	A	050	050	045	055	U045S	U050S	045S	U050S	U035S	U045S
4	070	055	070	070S	050S	U065S	050	A	050	060	U050R	055	075	070	080	065	050	040	055S	050	045	055S	055S	060S
5	065	A	A	A	A	075S	A	075	A	A	040R	A	A	R	A	045	045	A	U045S	U055S	055S	060S	U045S	065
6	060S	F	055	U055S	075	065S	050	060	040	060	A	A	U040R	045	035	U045R	045	A	A	S	A	U045F	U060F	055S
7	U060S	055	070S	U060S	070S	060	065	060	065	055	050	065	U050R	055	050S	055S	035	U040S	050S	U045S	055	065	U055S	065
8	045S	055	055	035	060	055	060R	045	J055S	050R	065	040	040R	045	050	050	055	I050A	J055S	S	050S	055S	055S	A
9	U050F	050R	055	065	075	055S	U060S	A	A	A	A	A	A	030	030	A	A	050	U050S	050	A	A	A	A
10	045	060S	070	070	A	I060C	060	070Z	C	A	040R	A	R	030	040	045	050	060	U035S	U045S	045R	065	060	050
11	U055S	055	055	055	050	045	050R	040S	050	050	A	045	A	A	A	045	050	I050A	055	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	065	050	R	045	040	045	045	045	045S	U040S	055	I050A	U060S	065
13	045	065	050	C	C	C	C	C	C	055	C	045	055	045	C	C	C	C	U060S	045S	055	050	065	065
14	050	050	065	055	055	050	C	045	045	040	040	045	040	U050R	050	050	050	050	060S	U055S	060S	I055A	065	070
15	065	U060S	075	050	075	060	045	050	040	I040C	060	050	050	045	050	040	050	055	U050S	045	045	070	045	065
16	070	055	055	065	055	050	040	U050S	045	040	050	050R	055R	045	055	045	045	040	055S	U050S	055S	065	075	070
17	050	050	055	065	050	065	060S	050	055	045	045	055R	050	040	060	045	045S	J050S	050	060	055	065	065	060
18	060	060	055	055	035	055	045	040	050	040	035	040	050	040	045	U040R	050	050	055	I055S	S	050	U060S	U065S
19	C	C	C	C	C	C	C	C	C	C	U045R	045	045	050	050	055	045	U060S	055	040S	075	075	055	060S
20	060	065	070	065	065	065	055S	065	045	055	050R	045	045R	055	050	045	U055S	050	050	U050S	050	050	060S	055
21	060	070	055	055S	065	065	055	U045S	050	055	070	045	050	045	045	055	050	U040S	050	U045S	055	045S	055	060S
22	065	055S	060	045	045Z	055	040	U045S	040	050	U040R	J035R	040R	050R	050R	040	055	035	045	055S	060	050	055	060
23	065	060	065	055	055	060	045	040	045	045	040	045R	U050R	045	050	060	065	055	045	040S	065	065	U055R	U050S
24	U055S	U055S	070	055	U055R	075S	045S	045	055	A	I050R	045	050	080	090	090	060	060	050	055	050	065	090F	075
25	095	085	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	070	055
26	I080C	060	070	090	090F	070F	055	050	045	050	060	080	075	070	080	060	J070R	C	U050S	085S	085	J060S	J065R	070
27	075	I060A	070F	070F	F	F	050	045S	055	060	060	050	060	075	055	055	J060S	J075S	J050S	S	A	I095A	070	055
28	065	095	060	050	080	075	045	J060R	025	030	070	060	050	055	J055R	055	090	050	S	065	095	060	070	070
29	085	080	060	070	055	070	085	J060S	050	060	060	070	045	060	055	050	050	050	065	050	060	J075R	075	050
30	060	070	080	070	U070F	060	085	S	045	070	055	050	065	060	050	J030S	J045S	045	S	070	I095A	A	A	A
31																								
Count	27	26	25	25	22	25	24	23	20	21	25	25	24	26	25	27	27	25	26	25	24	25	27	26
Median	060	060	060	055	060	060	050	050	050	050	050	045	050	045	050	050	050	050	050S	050S	055	060	060	060
U.Q.																								
L.Q.																								
Q.R.																								

ypF2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Sep. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	I077S	I066S	056	051	062	073S	076	080	079	079	081	083	087	098	096S	107	123	I116S	078S	057	060	I059S
2	058	057	057	055	045	I044S	053S	066	075	074S	I081A	I085S	081	081	I085A	I090B	084	077	082S	I092S	S	S	052	I053S
3	I054S	055	I052S	049	037	F	044	080	070S	059	I063A	070	080	082	090	087	086	095	097S	082	S	S	S	082S
4	I078S	060	059	050	057	S	S	A	I054A	064	084	I105S	118	131S	138	117	I105S	118	I116S	I079S	049	I044A	045	048
5	047	049	054	051	I029A	029	038	056	I075A	J095S	086	074	I084H	I076A	084	I085A	I087A	095	090S	084S	078	064S	063	I064S
6	I062S	060S	057	051	047	046	062S	074	067	066	J072S	074	077	078	076	084	092	I092S	I096S	S	S	I056S	I054S	056
7	I059S	I061S	I055S	054F	049	036	041	064	073S	078	071	077	094	092	086	091	083	092	I097S	086S	062	045	043S	043
8	047	047	048	046	036	033	J042S	J064S	075S	069	066	068	079	078	083	085	084	080	I079S	I075S	I071S	065	063S	058
9	058	059	051	056	I047S	052	U063S	I071S	I071S	I066S	056H	074S	087	089	J078S	065	073S	074S	I072S	I058A	A	A	A	A
10	036S	I035A	032	I031S	030	030	035S	055	067	069	070	I063A	055	060	066	067	067	072	I086S	I095S	I074S	042S	043S	048S
11	047	044	043	043	035	028	039	060	064	I070C	060S	064	062	069	072	066	068	076	079	079	I065S	049	047	I049A
12	050F	047F	048	047	042	025	039	065	071S	059	057	069	086	J077S	081	J074S	071	J079S	089S	I090S	065	049	I052S	I058S
13	065S	S	S	FS	045	040	048	060F	I076S	066	069	080	080	082	080	080	094S	109	J097S	086	I074S	I044A	I040A	038S
14	039	039	041S	039	042	028	042S	081	072S	066S	060	068	083	087	089	085	089S	092	097S	I090S	I072S	045	I045S	I050S
15	J046S	045S	I047S	J046S	037	I037S	J043S	080	J096S	067	067	J075S	082	083	079	070	072	092	106	I090S	062	044S	I046S	046
16	047S	045S	044	042S	043	044S	042	064S	076S	068	069	070	083	092	083	077S	075	084	J095S	086S	J063S	047	045	I043S
17	I044S	047S	045	047	045S	037	046	080S	068	065	064	078	085	094	094	094	098	094	088	I082S	I065S	051	050	050
18	051	051	052	051	050	031	039	I064S	077	078	072	070	076R	087	094	088	082	082	J095S	098S	I076S	048	045	047
19	045	045S	J045S	049	042	030	045	I067S	068	078	081	075S	081	090	093	087	101	115	102S	I068S	060	049	050	050
20	050	049	051	051	040	040	044	083	092	089	072	075	079	092	098	080	081	J099S	107S	J097S	I076S	058	062	I062S
21	060	060	060	069	036	032	039	070	087	081	080	088	C	C	078	I076S	085	096S	I099S	I082S	061	057	056	055
22	I053S	051	051	047	046	036	J044S	071	085	079	075	077	077	093S	087	082	084	095S	108	J102S	069	050	050	050
23	050S	047	044	043S	043	039	049	074S	078	092	072	079	088	102	107	098	088	092S	100	082S	063	056	051S	J052S
24	052	050	048	050	050	044	053	J066S	064	069	083	091	098	107	107	106	098	100	109	I090S	053	J052S	J053S	054
25	053	050	049	054	035	028F	038	066S	087	095	081	090	103	114	110	098	J098S	110	105	086	055	042	042	044
26	I046S	045	043S	040S	034	031S	I040S	066	092S	102	084	093	096	112	119	108	090	088S	093S	066S	052	051	049	047
27	047S	I045S	044S	I043S	044	J041S	050	I065S	085	075	075	095S	106	109	113	102S	084	087	J096S	J096S	038	038S	040S	041S
28	042	042	040	044	037	037	I046S	S	110	080	074S	083	088	095S	088	087	093S	087	092	I065S	049	J050S	052	050S
29	048	046	043	046	045	038	I041S	I068S	086	096S	080	094	109	102	080	078	082	J098S	J097S	067	056	048	047	046
30	042	041	040	041	041	038	045	082	083	069	074	083	084	100	104	095S	083	090	090S	I074S	059	045	039	040
31																								
Count	29	28	29	29	30	28	29	28	30	30	30	30	29	29	30	30	30	30	30	29	26	27	28	29
Median	050	047	048	047	042	037	044	066	076	072	072	077	083	090	087	086	084	092	096S	U086S	063	049	050	050
U.Q.	056	053	053	051	046	040	048	074	085	080	080	085	091	101	098	095	093	098	102	091	072	056	052	056
L.Q.	046	045	044	043	037	030	040	064	070	066	067	070	080	082	080	078	082	084	090	077	056	045	045	046
Q.R.	010	008	009	008	009	010	008	010	015	014	013	015	011	019	018	017	011	014	012	014	016	011	007	010

foF2 | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 1

IONOSPHERIC DATA

Sep. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	L	L	500	530	540	530	520	470	A	A	A					
2									460	460	I490A	A	A	A	A	B	A	A	A					
3								370	410	440	I510A	A	500	A	500	470	450	420L	A					
4									A	520L	540	470	530	500	I490B	480	470	L						
5									A	A	480	I490A	500	A	A	A	A	A	A					
6								L	I390A	470	L	510	I510A	490	510	480	440	420	A					
7								L	A	460	L	510	490	500	490	470	450	420	A					
8									L	440	510	470	480	490	480	460	430	390						
9								L	A	I440A	450	480	470	I470A	470	A	A	A						
10									420	440	I460A	I470A	A	480	450	460	440	410	L					
11								L	410	I450C	460	500	480	480	470	460	440	400	L					
12								A	400L	430	470	490	490	500	470	460	450L	410	L					
13									A	450	510	480	500L	500	490	470	450	L	A					
14								L	L	450	L	500	480	500	490	480	440	L						
15								L	A	460	L	L	480	500	480	470	450	L	L					
16									L	440	510	L	520	500	490	480	460	L						
17									L	430	L	510	500	500	520	490	460	390L						
18									L	460	480	510	L	530	500	480	460L	L						
19									L	470	490	510	540	510	500	490	470	380						
20									L	L	490	540	550	540	470	480	450	430						
21									L	470	500	510	C	C	470	L	L	L						
22									L	460L	470	530	520	500	490	L	L	L						
23									L	460	470	540	540	500	480	500	L	L						
24										440L	L	L	550	510	530L	460	L	L						
25									L	L	470	500	520	500	500	470	450	L						
26									L	L	480	L	LH	520	500	460	440L	L						
27									L	460L	470L	510	500	500	480	490	L	L						
28									L	450L	510	490	510	490	500	L	L							
29									L	460	460	500	480	460	460	500	L	L						
30								L	L	450	460	LH	LH	500	500	460L	L							
31																								
Count								1	6	25	24	23	24	26	28	24	18	10						
Median								370	410	450	480	500	500	500	490	470	450	410						
U.Q.																								
L.Q.																								
Q.R.																								

foF1

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Sep. 1966 | foE | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	210	280	315	A	A	A	A	A	A	A	A	A					
2							S	230	280	320	320	A	B	A	A	B	B	A	A					
3							S	200	A	A	A	A	A	A	A	A	295	260	A					
4							S	210	260	A	A	A	A	A	B	B	R	A	195					
5							S	220	260	A	A	A	A	A	345H	330	300H	255H	170					
6							S	A	A	AH	A	350H	350	350	340H	320H	300H	I265A	A					
7							S	220	270	305	320	A	A	R	R	I325A	300	260	180					
8							S	A	A	R	R	A	A	I355R	340	315H	290H	250	170					
9							S	210	270	310	320	320	I340R	I350R	I335R	320H	290H	240	160					
10							S	200	250	A	A	A	A	A	A	A	A	A	160					
11							S	210	260	C	A	A	A	A	A	A	290	240	A					
12							S	A	A	A	A	A	A	A	A	R	300	250	A					
13							A	230H	A	A	A	A	A	A	A	A	A	240H	S					
14							S	230	280	310	A	A	A	I350A	350	320	295	250	155					
15							S	I185A	I255A	I305A	I320A	330R	340	I340R	325	310	290	240	A					
16							S	A	285	300	I325A	350	340	340	330	310	290	240	A					
17							S	A	A	A	A	A	R	I350R	340	325	300	250	A					
18							S	230H	280H	320	350	I350R	I350R	350	340	I325A	290	250	160					
19							S	230	280	320	320	350	350	350R	350	325	300	260	170					
20							S	210	280	320	340	R	A	B	R	340	310	260	170					
21							S	240	290	320	340	A	C	C	I350R	340	305	250	S					
22							S	220	280	310	I340R	350	350	350	350	325	290	240	S					
23							S	210	270	305	325	340	340	340	330	310	290	245	S					
24							S	230	280	310	I330A	350	340	340R	340	310	285	240	S					
25							S	230H	290	A	A	A	340	I340A	330	310	290	240	S					
26							S	A	A	A	325	335	340	340R	320	305	280	230	S					
27							S	A	250	300	330	330	340	340	330	300	280	230	S					
28							S	210	260	290	320	I330A	340	330	325	310	280	230	S					
29							S	200	260	295	310	I335R	I340A	340	325	I305A	270	220	S					
30							S	200	250	290	325	330	330	330	325	315	290	230	S					
31																								
Count								23	23	18	17	14	15	18	20	22	25	26	10					
Median								210	270	310	325	340	340	340	340	320	290	240	170					
U.Q.																								
L.Q.																								
Q.R.																								

foE

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 3

IONOSPHERIC DATA

Sep. 1966 | **foEs** | 0.1 Mc | **135° E Mean Time** (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	J030	J033	J023	J022	023	E015S	E015S	024	031	J045	J060	J056	J044	J058	J044	J058	J050	J052	J059	J056	J046	J051	J044	J028
2	023	016	E014B	E012B	E012B	E015S	020	032	J037	J044	J097	J117	J122	075	134	B	051	J058	070	J046	J051	050M	082	J050
3	J051	J035	J037	J053	J034	J022	E015S	J054	J035	036	176	J058	055	J058	054	036	026G	033	J036	J034	J036	J060	J052	J033
4	J022	J030	J027	J029	J022	J035	J038	J066	087	J051	J051	J096	J056	J054	E058B	E040B	028G	025	024	J030	J048	J053	J054	J050
5	J022	J051	J043	J052	J035	019	J026	J029	106	J086	073M	J097	J049	J098	J065	J091	J106	J052	J052	J035	J034	J026	J021	J034
6	J058	J023	J021	E015B	E	E014S	E015S	J035	J050	J046	J043	J067	J063	J054	047	042	038	029	J046	J030	J055	J034	J040	J050
7	J047	J034	J033	022	019	J068	J031	026	J064	J065	042	052	045	033G	028G	J064	026G	028	030	J022	026	E015S	E015S	J030
8	020	018	J020	J020	J019	E012B	E015S	J025	J039	030G	032G	J041	037	040	043	046	038	028	030	022	020	J025	J029	021
9	021	J033	J030	E016B	J015	J018	E015S	032	J041	J068	049	J046	048	J063	045	051	J050	J054	J054	J067	J053	J058	J052	J056
10	038M	J053	J054	039	J031	J029	J022	031	031	038	J061	068	J050	J050	034	033	J036	J030	020	021	J022	J023	J021	J018
11	021	E013B	E015S	022	E012B	E015S	E015S	025	030	C	J036	J044	J039	J043	J035	J033	031	031	J030	J028	J022	J036	J051	J052
12	J020	J032	J033	J038	J029	015	021	J057	J086	037	J038	J039	039	J039	037	030G	J031	J031	J022	023	J028	J030	J034	J025
13	J023	J030	E015S	J029	J031	021	J024	G	J060	J048	034	J042	037	041	036	038	036	028	029	J030	J062	J054	J054	J027
14	J022	J019	E015S	E012B	E015B	J015	J024	G	G	G	034	J063	J044	043	038	G	038	034	J040	J027	J022	J063	028	J044
15	J026	J029	E015S	E013B	E015B	021	J041	J046	J061	J040	J043	036	G	033G	030G	028G	031	027	027	J027	J025	J022	J026	J029
16	J022	024	E015S	E014B	014	J021	J022	J045	J032	G	033	033G	J035	J030G	028G	027G	031	028	J026	J023	J026	J042	J052	J051
17	J031	J033	J023	J026	J026	J021	E015S	028	044	J046	J056	037	G	G	031G	024G	G	G	019	022	020	021	E015S	E015S
18	E015S	020	J022	J018	E015B	E015S	022	026	G	027G	031G	031G	031G	031G	033G	J034	020G	028	020	022	019	E015S	E015S	E015S
19	E015S	J020	E015B	E	E	E015S	J022	G	J032	036	042	026G	027G	028G	024G	023G	G	028	022	J021	J020	J020	022	019
20	E015S	E015S	E015S	E	E012B	E015S	E015S	026	034	039	G	034G	036	E042B	029G	029G	034	J038	028	J025	022	021	J027	022
21	024	022	E015S	E012B	018	019	E015S	026	032	035	037	J046	C	C	027G	021G	023G	030	026	J017	E015S	E015S	E015S	E015S
22	E014S	E015S	E014S	E	E012B	E014S	E015S	026	031	033	032G	G	040	037	040	038	032	031	021	E015S	E015S	E015S	E015S	J022
23	J019	E014S	020	E013B	E014B	E014S	021	028	035	038	035	026G	024G	026G	J030G	023G	J029G	027	J021	021	E015S	J038	021	E015S
24	018	020	E014S	E012B	E011B	E015S	E015S	026	J042	040	J047	033G	G	029G	028G	027G	G	028	E015S	J022	023	021	E015S	021
25	020	E015S	E015S	E015B	017	J027	023	J029	J031	J035	J043	J041	J036	J036	031G	024G	031	027	E015S	E015S	E015S	E015S	E014S	023
26	021	E015S	J047	J030	021	J021	J031	J029	J040	J033	033	J033G	027G	027G	029G	J030G	030	027	019	J034	J022	J033	J024	J022
27	J040	J041	J023	J025	J045	J053	J026	J043	030	G	G	G	G	G	G	G	030	025	E015S	E015S	J018	J026	J027	E015S
28	J050	J042	J027	J019	023	021	021	029	J040	035	034	035	G	G	G	034	035	034	J027	J036	J034	J022	021	021
29	020	018	J021	J029	J022	J028	042M	025	029	031	J040	J033G	J047	031G	030G	J033	J028	025	019	J022	022	J022	J020	018
30	023	019	E015S	E015B	E	018	016	023	027	G	G	031G	029G	030G	026G	034	G	030	J041	J024	J026	J025	E015S	E015S
31																								
Count	30	30	30	30	30	30	30	30	30	29	30	30	29	29	30	29	30	30	30	30	30	30	30	30
Median	J022	J022	J020	018	018	018	021	028	J035	037	039	J040	037	036	G	033	031	028	026	J024	J022	J026	J025	J022
U.Q.	030	033	027	029	023	021	024	032	044	046	049	056	048	052	042	038	036	033	036	030	034	042	044	034
L.Q.	020	018	E015	E013	E012	E015	E015	025	031	032	033	G	G	G	G	G	G	027	020	022	020	021	E015	018
Q.R.	010	015	D012	D016	D011	D006	D009	007	013	014	016							006	016	008	014	021	D029	016

foEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 4

IONOSPHERIC DATA

Sep. 1966 | f_bEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	024	021	020	018	016	S	S	G	031	044	041	047	040	050	042	040	050	050	034	042	032	040	030	016
2	E	E	B	B	B	S	018	031	035	043	A	055	075	056	A	B	E051R	052	045	031	040	031	035	047
3	034	017	E	020	020	E	S	033	030	034	A	052	041	050	040	036	023G	G	032	028	036	053	034	022
4	017	020	020	017	020	035	E038S	A	A	045	040	040	034	040	B	B	E028R	E025R	024	024	044	A	016	030
5	E	015	021	016	A	017	024	G	A	056	040	060	040	A	060	A	A	052	041	035	033	020	E	024
6	031	019	020	B		S	S	029	042	039	041	045	062	048	046	041	G	028	045	E	022	031	032	026
7	024	031	030	020	016	018	016	G	043	041	041	037	040	E033R	028G	044	021G	G	029	016	E	S	S	030
8	016	E	E	016	015	B	S	024	030	E030R	E032R	037	E037R	040	042	045	035	G	030	020	E	016	027	E
9	018	022	015	B	014	017	S	027	039	E068S	042	043	045	061	045	049	048	045	054	A	A	A	A	A
10	026	A	022	020	018	021	021	030	031	034	059	A	046	041	034	033	036	030	020	019	E	E023S	020	E
11	017	B	S	021	B	S	S	G	G	C	034	039	039	036	035	033	G	030	026	017	020	022	018	A
12	016	018	021	019	029	014	018	040	034	031	034	035	037	039	034	E030R	027	021	020	E	022	018	020	023
13	020	021	S	017	031	E	021		044	040	034	040	036	041	036	037	033	028	029	024	041	A	A	021
14	019	017	S	B	B	S	019				034	036	043	041	G		036	031	039	U026A	E	028	018	E
15	E	018	S	B	B	E	018	029	043	033	033	027		E033R	030G	027G	G	G	026	017	019	016	E	022
16	E	E	S	B	012	016	020	025	023		E033R	023G	033	028G	028G	027G	G	G	025	016	E	018	030	017
17	027	018	016	021	018	E	S	026	033	033	042	037			031G	024G			018	016	E	E	S	S
18	S	E	019	015	B	S	G	G		027G	030G	031G	E031R	031G	031G	034	019G	G	G	E	E	S	S	S
19	S	E	B			S	G		G	035	041	026G	027G	028G	024G	023G		G	021	E	E	018	E	E
20	S	S	S		B	S	S	G	032	038		E034R	E036R	B	029G	029G	G	031	027	024	E	E	016	E
21	E	E	S	B	012	E	S	G	G	G	037	039	C	C	E027R	021G	023G	G	025	E	S	S	S	S
22	S	S	S		B	S	S	G	G	G	E032R		039	G	040	G	G	G	018	S	S	S	S	017
23	E	S	E	B	B	S	G	G	033	035	G	026G	024G	025G	026G	023G	022G	G	G	E	S	024	E	S
24	E	E	S	B	B	S	S	G	039	G	042	032G		029G	028G	025G		G	S	017	E	E	S	E
25	E	S	S	B	E	E	G	G	026	032	034	039	031	035	031G	024G	022	G	S	S	S	S	S	E
26	E	S	032	020	E	015	019	025	027	031	030	030G	027G	027G	028G	028G	G	G	017	022	E	016	E	E
27	023	E041S	016	020	020	018	G	041	G								G	G	S	S	E	E	E	S
28	024	017	016	015	013	E	G	G	032	G	G	034				G	034	032	024	029	016	016	E	E
29	E	E	E	017	016	026	021	G	G	G	028	E033R	047	031G	029G	032	024	G	019	020	E	020	E	E
30	E	E	S	B		E	G	G	E027R			031G	029G	030G	026G	G		030	040	021	021	017	S	S
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

f_bEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 5

IONOSPHERIC DATA

Sep. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	E015S	E015S	E	E	E	E015S	E015S	015	017	022	021	023	024	024	021	019	020	013	015	E015S	E015S	E015S	E015S	E015S
2	E015S	E015S	014	012	012	E015S	E015S	015	015	017	018	022	034	020	020	B	042	020	014	E015S	E015S	E015S	E015S	E015S
3	E015S	E015S	E014S	E	E	E015S	E015S	015	015	016	019	018	021	018	017	017	015	014	014	E014S	E015S	E015S	E015S	E015S
4	E015S	E015S	011	E	011	E015S	E014S	014	017	017	018	020	023	025	058	040	022	018	017	E015S	E015S	E015S	E015S	E015S
5	E015S	E013S	013	E	012	012	E015S	015	016	017	020	021	023	031	021	018	016	015	015	E015S	E015S	E015S	E015S	E015S
6	E015S	E013S	010	015	E	E014S	E015S	016	016	016	019	020	022	021	020	017	016	016	015	E015S	E015S	E015S	E015S	E015S
7	E015S	E015S	E015S	015	014	E015S	E015S	015	015	020	020	022	019	019	022	018	015	015	016	E015S	E015S	E015S	E015S	E015S
8	E015S	E015S	013	013	E	012	E015S	015	017	016	019	022	022	023	021	018	015	015	016	E015S	E015S	E014S	E016S	E015S
9	E015S	E015S	012	016	E	E014S	E015S	014	015	015	017	018	017	015	018	017	015	012	015	E015S	E015S	E015S	E015S	E015S
10	E015S	E015S	E	014	E	E015S	E015S	015	015	015	016	016	019	020	017	020	016	015	015	E015S	E015S	E015S	E015S	E015S
11	E015S	013	E015S	015	012	E015S	E015S	015	015	C	018	017	019	020	017	015	015	013	014	E015S	E015S	E015S	E015S	E015S
12	E014S	E015S	012	014	014	011	013	015	014	016	017	021	022	020	024	019	015	014	014	E016S	E015S	E015S	E015S	E015S
13	E015S	E015S	E015S	013	E	E015S	012	015	015	016	019	022	022	022	021	016	016	014	E015S	E015S	E015S	E015S	E015S	E015S
14	E015S	E015S	E015S	012	015	E014S	E014S	015	015	015	017	017	019	020	018	016	015	015	E015S	E015S	E015S	E015S	E015S	E015S
15	E015S	E015S	E015S	013	015	E015S	E015S	012	013	015	015	017	017	018	018	017	015	012	011	E015S	E014S	E015S	E015S	E015S
16	E015S	E015S	E015S	014	E	E015S	E015S	012	015	015	016	020	019	017	018	017	015	015	012	E015S	E015S	E014S	E015S	E015S
17	E015S	E015S	E014S	E	011	E015S	E015S	015	015	017	018	022	023	024	019	018	015	017	015	E015S	E015S	E015S	E015S	E015S
18	E015S	E015S	E014S	011	015	E015S	E015S	015	015	019	019	022	022	021	020	016	015	012	015	E014S	E015S	E015S	E015S	E015S
19	E015S	E015S	015	E	E	E015S	E015S	015	015	015	019	020	019	022	020	017	018	015	015	E016S	E015S	E015S	E015S	E015S
20	E015S	E015S	E015S	E	012	E015S	E015S	015	016	019	019	022	029	042	027	022	016	015	014	E015S	E015S	E015S	E014S	E015S
21	E015S	E015S	E015S	012	E	E015S	E015S	015	015	015	018	021	C	C	018	017	015	012	E015S	E015S	E015S	E015S	E015S	E015S
22	E014S	E015S	E014S	E	012	E014S	E015S	015	014	015	017	018	017	017	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
23	E015S	E014S	E014S	013	014	E014S	E015S	015	015	015	016	016	016	017	015	015	015	015	E016S	E015S	E015S	E015S	E014S	E015S
24	E015S	E014S	E014S	012	011	E015S	E015S	015	015	015	015	016	019	023	018	016	015	015	E015S	E015S	E015S	E015S	E015S	E015S
25	E015S	E015S	E015S	015	012	E015S	E015S	015	015	015	017	016	016	018	015	017	015	015	E015S	E015S	E015S	E015S	E014S	E015S
26	E015S	E015S	E015S	013	014	E	E015S	012	015	015	016	016	016	017	016	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
27	E015S	E015S	E	011	E	E015S	E015S	015	015	015	015	016	016	016	016	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
28	E015S	E015S	011	E	E	E016S	E015S	015	015	015	016	016	016	016	016	015	015	013	E015S	E015S	E015S	E015S	E015S	E015S
29	E015S	E014S	E015S	E	E	E014S	E015S	015	015	015	015	015	015	017	015	015	015	011	E015S	E015S	E015S	E015S	E015S	E015S
30	E015S	E014S	E015S	015	E	E015S	E015S	015	015	015	015	016	016	021	016	015	015	014	E015S	E015S	E015S	E015S	E015S	E015S
31																								
Count	30	30	30	30	30	30	30	30	30	29	30	30	29	29	30	30	30	30	30	30	30	30	30	30
Median	E015S	E015S	E014S	012	011	E015S	E015S	015	015	015	018	019	019	020	018	017	015	015	014	E015S	E015S	E015S	E015S	E015S
U.Q.																								
L.Q.																								
Q.R.																								

f-min

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 6

IONOSPHERIC DATA

Sep. 1966 | M(3000) F2 | 0.01 | **135° E Mean Time** (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	I285S	I295S	305	315	340	350S	315	315	330	315	290	295	285	305	300S	300	325	I340S	325S	265	285	I275S
2	275	265	290	315	290	I275S	305S	340	320	325S	I295A	I315S	295	280	I305A	I315B	325	310	300S	I305S	S	S	270	I285S
3	I280S	305	I295S	310	300	F	295	355	355S	370	I310A	300	305	295	310	310	300	315	320S	295	S	S	S	280S
4	I285S	270	270	260	295	S	S	A	I305A	255	240	I275S	270	290S	300	285	I280S	295	I310S	I330S	A	I255A	260	270
5	260	270	315	355	I300A	275	310	350	I345A	J340S	360	310	I320H	I280A	305	I320A	I320A	315	320S	320S	310	295S	285	I280S
6	I280S	280S	300	295	280	285	335S	355	365	335	J345S	320	325	320	305	310	315	I310S	I315S	S	S	I265S	I255S	270
7	I280S	I295S	I310S	315F	305	280	315	330	335S	350	310	300	315	315	300	310	305	310	I340S	335S	340	300	285S	260
8	275	285	295	305	320	305	J330S	J355S	345S	365	320	310	305	295	310	305	320	325	I315S	I305S	I290S	280	285S	260
9	280	305	275	305	I275S	275	U305S	I310S	I340S	I335S	330H	290S	300	310	J310S	315	320S	330S	I330S	I315A	A	A	A	A
10	255S	I260A	265	I285S	300	305	295S	330	330	320	345	I330A	310	290	310	330	310	295	I315S	I330S	I340S	265S	255S	270S
11	280	295	285	325	315	325	335	355	355	I350C	305S	300	300	305	305	310	310	315	315	330	I330S	285	275	I285A
12	295F	300F	300	315	360	325	315	340	350S	360	335	295	315	J295S	320	J310S	315	J310S	325S	I330S	340	285	I285S	I285S
13	280S	S	S	FS	320	315	325	340F	I345S	350	305	325	305	305	300	300	300S	330	J340S	325	I350S	I275A	I280A	275S
14	280	280	280S	285	320	335	310S	360	365S	365S	325	285	305	295	310	305	315S	315	325S	I325S	I340S	310	I280S	I285S
15	J300S	280S	I280S	J295S	285	I290S	J305S	350	J385S	300	290	J290S	300	310	315	315	305	315	340	I350S	340	275S	I280S	285
16	300S	290S	295	290S	315	365S	335	360S	340S	355	320	300	305	315	315	320S	315	325	J330S	345S	J335S	280	270	I280S
17	I280S	290S	290	300	335S	285	310	375S	375	365	305	310	300	300	300	300	315	320	320	I325S	I340S	295	290	275
18	275	280	290	310	365	330	315	I350S	355	370	335	320	290R	290	315	305	315	315	J325S	340S	I350S	300	275	290
19	290	290S	J290S	315	355	305	335	I355S	355	345	330	320S	295	295	305	290	295	330	355S	I340S	315	285	280	280
20	280	270	295	335	300	280	305	350	350	380	335	310	305	295	325	315	285	J305S	325S	J340S	I320S	265	275	I280S
21	270	285	300	335	365	265	310	345	345	345	315	320	C	C	300	I300S	295	315S	I330S	I330S	310	270	270	275
22	I290S	295	300	320	315	285	J295S	340	355	355	350	325	300	310S	310	305	310	315S	335	J345S	350	280	280	290
23	300S	300	295	280S	295	270	305	345S	345	355	335	305	290	295	310	320	320	325S	335	340S	315	285	285S	J290S
24	290	290	275	310	300	275	320	J355S	350	320	315	295	295	300	300	310	310	320	335	I345S	310	J280S	J285S	295
25	310	285	285	335	325	295F	305	345S	335	355	310	310	300	305	310	305	J310S	325	335	350	325	275	265	275
26	I290S	300	305S	315S	305	325S	I315S	340	335S	335	335	300	285	295	315	325	335	330S	345S	335S	280	295	275	280
27	285S	I295S	275S	I275S	290	J295S	320	I325S	335	345	305	305S	310	295	310	315S	320	320	J335S	J365S	370	265S	280S	280S
28	285	285	300	315	300	285	I300S	S	365	365	320S	315	305	315S	310	310	330S	330	335	I330S	280	J280S	290	280S
29	290	280	280	305	330	320	I310S	I335S	350	330S	315	310	320	335	330	310	310	J325S	J340S	330	325	290	280	305
30	290	295	280	300	305	275	310	365	375	345	340	325	310	310	315	315S	325	325	345S	I340S	330	315	270	285
31																								
Count	29	28	29	29	30	28	29	28	30	30	30	30	29	29	30	30	30	30	30	29	25	27	28	29
Median	280	290	290	310	305	290	310	350	350	350	320	310	305	295	310	310	310	315	330S	U330S	330	280	280	280
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 7

IONOSPHERIC DATA

Sep. 1966 | M(3000) F1 | 0.01 | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	L	L	345	A	345	A	345	350	A	A	A					
2									350	A	A	A	A	A	A	B	A	A	A					
3								A	380	385	A	A	380	A	340	350	355	335L	A					
4									A	290L	295	355	320	325	B	345	320	L						
5									A	A	365	I360A	370	A	A	A	A	A	A					
6								L	A	370	A	355	I345A	A	A	355	340	345	A					
7								L	A	370	L	355	370	355	345	345	350	350	A					
8									L	385	355	380	375	345	345	A	350	360						
9								L	A	A	375	355	A	A	A	A	A	A						
10									340	365	A	A	A	365	365	345	340	320	L					
11								L	370	I360C	390	360	370	355	360	345	340	330	L					
12								A	375L	395	380	370	370	340	360	350	335L	340	L					
13									A	375	355	385	360L	360	350	345	350	L	A					
14								L	L	380	L	380	395	340	345	335	345	L						
15								L	A	370	L	L	375	350	355	345	340	L	L					
16									L	390	355	L	345	350	345	345	330	L						
17									L	410	L	355	360	360	330	335	335	355L						
18									L	385	385	355	L	330	340	350	325L	L						
19									L	365	380	370	350	355	340	345	320	355						
20									L	L	365	355	345	335	360	355	350	325						
21									L	365	360	360	C	C	380	L	L	L						
22									L	370L	380	360	365	365	345	L	L	L						
23									L	370	385	355	350	360	355	340	L	L						
24										375L	L	L	330	355	325L	350	L	L						
25									L	L	380	375	345	360	340	345	335	L						
26									L	L	370	L	LH	330	340	355	340L	L						
27									L	370L	380L	355	360	360	355	335	L	L						
28									L	375L	355	360	355	350	340	L	L							
29									L	370	370	345	A	370	370	340	L	L						
30								L	L	375	390	LH	LH	340	340	370L	L							
31																								
Count									5	23	21	21	22	23	25	23	18	10						
Median									370	370	370	360	360	355	345	345	340	340						
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F1 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Sep. 1966 | h'F2 km | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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								225	240	270	275	280	290H	315	340	300	290	300	255					
2									290	280	I300A	280	I290A	330	I340A	I300B	300	280	275H					
3								240	230	240	A	310	325	300	305	290	300	275	250					
4									A	L	390	310	340	315	280	280	295	290						
5									A	265	240	300	275	I340A	330	I300A	I295A	275	250					
6								235	230	270	255	300	300	295	325	305	280	275	250					
7								245	255	250	300	320	300	290	305	290	300	275	250					
8									250	240	300	290	300	310	305	290	280	265						
9								250	255	I275A	265	340	320	300	295	300	290	265						
10									280	285	290	A	325	360	320	290	305	300	275					
11								240	240	I260C	270H	325	315	335	315	310	300	280	250					
12								240	235	240	275	340	300	320	290	300	290	285	250					
13									240	250	325	290	305	300	320	310	300	260	240					
14								240	230	235	250	345	310	325	300	300	280	270						
15								245	225	255	250	290	305	305	290	300	305	280	250					
16									235	240	305	300	320	290	290	280	295	275						
17									215	240	255	310	310	310	310	295	280	260						
18									245	230	250	275	350	325	290	290	275	275						
19									230	260	265	270	330	310	300	305	300	250						
20									240	230	255	300	310	335	280	290	300	285						
21									240	245	270H	280	C	C	270	340	295	280						
22									245	245	250	275	290	300	285	300	290	275						
23									245	240	240	300	310	300	280	280	270	260						
24										240	260	270L	320	290	300	280	270	260						
25									260	235	250H	290	295	280	280	275	270	250						
26									255	250	240	290	300	300	280	255	255	255						
27									250	240	250H	300	295	300	265	280	255	255						
28									230	225	275	280	290	275	275	285	255							
29									245	245	245	290	260	245	245	300	285	245						
30								235	230	240	250	280	280	295	280	260	255							
31																								
Count								10	27	29	29	29	29	29	30	30	30	28	11					
Median								240	240	245	260	290	305	300	290	290	290	275	250					
U.Q.																								
L.Q.																								
Q.R.																								

h'F2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 9

IONOSPHERIC DATA

Sep. 1966 | h'F | km | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	325	255	250	245	230	230	240	225	215	I225A	220	I215A	200	I240A	240	250	A	A	I210A	230	215	350	315	300
2	285	300	275	225	260	300	250	245	225	A	A	A	A	A	A	B	A	A	A	250	240	225	E355A	E355A
3	E340A	290	275	255	250	315	275	I240A	215	205	I205A	I215A	200H	I235A	240	225	225	240	I260A	250	330	E375A	290	280
4	250	290	310	340	275	250	A	A	A	E340A	250	250	225	250	I250B	250	225	250	265	230	A	A	355	350
5	330	340	270	225	A	340	270	235	A	A	230	I235A	220	A	A	A	A	A	A	245	250	225	295	280
6	300	300	275	250	260	280	250	225	I210A	220	E250A	E250A	A	A	I230A	200	230	225	I250A	240	205	310	340	325
7	290	270	280	245	225	250	250	240	I225A	I230A	225	210	205	200	225	I225A	225	245	I240A	225	205	250	290	E350A
8	310	290	260	250	220H	260	240	230	225	200	195	190	200	250	270	I240A	245	230	255	240	255	255	275	310
9	310	260	300	250	280	250	250	230	A	A	I220A	E260A	A	A	A	A	A	A	250	A	A	A	A	A
10	E375A	A	E370A	340	300	290	270	240	225	205	A	A	A	225	200	225	235	245	250	230	210	E360S	350	300
11	290	255	275	250	220	245	225	240	215	I200C	195H	200	200	225	215	230	230	240	I240A	230	225	250	325	I300A
12	275	300	290	260	230	230	250	I230A	225	200	195	190	185	220	210	230	230	230	240	230	205	250	290	300
13	295	300	240	225	250	230	240	220	I225A	225	195	200	190	225	205	230	245	230	I235A	230	230	A	A	E300H
14	300	300	290	270	245	215	255	240	225	210	200	190H	200	260	240	230	245	250	250	225	205	240	295	280
15	275	300	270	250	250	300	255	240	A	195	180	180	180H	230	220	225	225	240	I250A	220	205	280	295	325
16	270	270	270	270	240	200	240	230	205	200H	200	200	205	200	230	220H	230	230	250	225	215	240	E350A	325
17	305	300	290	275	225	260	255	220	225	205	220	200	190H	240	220	220	230	240	245	230	210	230	250	295
18	300	295	300	260	200	220	240	230	240	225	200	200	200	240	240	215	240	235	250	230	200	210	290	275
19	295	290	275	245	205	275	240	225	225	225	210	200	195	200	200H	230	240	235	230	220	240	245	300	300
20	295	300	275	230	225	300	265	240	240	230	210	215H	200H	230	225	240	230	250	245	225	220	250	300	290
21	305	295	260	225	200	325	280	225	230	225	215	210	C	C	215	215H	245	250	240	225	220	255	290	295
22	270	250	245	230	220	265	250	225	230	225	215	210	200	200	250	240	250	245	250	225	205	245	290	290
23	250	250	270	275	260	290	255	220	230	220	200	190H	190H	190	220	205H	225	245	240	210	225	280	275	275
24	265	250	285	245	240	275	245	225	215	215	E240A	210	195	225	220	195H	250	240	240	220	225	275	280	280
25	270	280	275	230	200	275	265	240	240	230	205	200	190	180H	200H	225	235	240	230	210	205	280	310	300
26	270	250	E300A	250	240	260	250	230	240	215H	205	200	185H	180H	190H	230	225	240	230	215	240	275	290	275
27	300	I300A	300	310	290	270	250	230	225	215	200	200	200	200	200H	210H	230	240	240	225	190	315	310	295
28	325	300	275	250	240	275	270	245	230	205	200	200	200	200	190H	240	250	250	230	245	250	300	255	275
29	275	290	305	255	230	E250A	250	240	225	215	205	195	A	200	200H	195H	225	240	230	225	225	260	275	250
30	265	270	295	270	245	290	260	235	225	205	200	200H	180H	170H	230	235	230	250	230	220	220	235	265H	295
31																								
Count	30	29	30	30	29	30	29	29	26	27	28	28	24	25	27	27	26	26	28	29	28	27	28	29
Median	290	290	275	250	240	270	250	230	225	215	200	200	200	225	220	225	230	240	240	225	220	250	290	295
U.Q.																								
L.Q.																								
Q.R.																								

h'F

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 10

IONOSPHERIC DATA

Sep. 1966 | **h'Es** km | **135° E Mean Time** (G. M. T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	105	110	120	S	S	125	125	110	110	110	110	105	105	100	100	100	100	100	100	100	100	100
2	100	100	B	B	B	S	135	125	120	115	110	105	110	110	105	B	105	100	100	100	110	110	110	110
3	110	110	105	110	105	110	S	110	110	110	105	100	100	100	100	130	100	130	120	110	110	110	105	100
4	100	100	100	100	100	120	120	115	110	110	110	105	105	105	B	B	105	105	130	115	110	105	105	105
5	100	115	120	120	100	125	120	120	115	110	110	105	105	125	125	120	110	110	110	105	105	100	100	100
6	100	100	100	B	E	S	S	110	105	105	110	120	120	120	120	115	115	115	110	110	105	100	100	105
7	100	095	095	095	095	115	115	130	115	110	110	110	105	100	100	100	100	135	115	100	110	S	S	110
8	095	100	110	110	105	B	S	105	110	105	100	100	100	150	140	130	125	150	120	115	125	120	110	100
9	100	105	105	B	130	125	S	120	115	110	110	110	140	135	140	125	120	120	115	110	110	110	110	105
10	100	100	100	105	105	110	115	115	120	110	105	100	100	100	105	105	100	100	125	115	110	100	100	100
11	100	B	S	100	B	S	S	125	125	C	100	100	100	100	105	105	E150G	130	120	100	100	110	110	110
12	105	100	100	105	105	125	115	110	105	110	105	105	105	105	100	105	100	100	120	120	105	100	100	100
13	100	100	S	105	105	125	110	G	105	105	105	105	105	105	105	105	105	125	110	105	100	100	100	100
14	100	100	S	B	B	S	105	G	G	G	110	105	105	155	150	G	130	125	115	110	110	110	105	110
15	115	105	S	B	B	130	110	110	100	100	100	100	G	100	100	100	E150G	135	115	105	105	105	105	095
16	095	100	S	B	120	115	110	105	105	G	100	105	100	100	100	100	150	135	100	110	110	105	100	105
17	100	100	100	100	105	105	S	120	115	115	105	105	G	G	100	100	G	G	120	100	100	100	S	S
18	S	105	100	100	B	S	100	155	G	105	100	100	100	100	100	100	100	150	120	100	100	S	S	S
19	S	105	B	E	E	S	120	G	120	115	110	105	105	105	105	100	G	140	120	100	110	100	100	100
20	S	S	S	E	B	S	S	130	125	125	G	105	100	B	100	105	150	130	120	115	115	100	110	105
21	100	100	S	B	110	105	S	150	140	140	130	100	C	C	100	100	100	150	130	125	S	S	S	S
22	S	S	S	E	B	S	S	150	140	140	105	G	135	150	155	150	150	135	120	S	S	S	S	100
23	100	S	100	B	B	S	150	135	125	125	120	105	100	100	100	100	100	145	100	100	S	105	105	S
24	105	100	S	B	B	S	S	150	120	120	110	105	G	105	105	100	G	140	S	095	095	100	S	100
25	095	S	S	B	110	110	130	100	105	105	105	100	100	100	100	100	100	130	S	S	S	S	S	105
26	100	S	105	105	110	110	105	105	105	105	100	100	100	100	100	100	150	140	120	110	110	105	105	105
27	105	105	105	105	105	105	105	105	110	G	G	G	G	G	G	G	E150G	150	S	S	105	105	105	S
28	105	100	100	100	100	100	140	115	115	115	115	110	G	G	G	150	140	125	115	110	110	110	100	100
29	100	095	100	100	100	100	100	150	135	130	100	100	100	100	100	100	100	140	120	100	095	095	100	100
30	100	100	S	B	E	100	100	125	125	G	G	105	100	100	100	170	G	130	115	110	110	110	S	S
31																								
Count	26	24	17	16	18	18	19	27	28	25	27	28	24	25	27	26	26	29	27	27	26	25	22	24
Median	100	100	100	105	105	110	115	120	115	110	105	105	100	105	100	100	105	130	120	110	110	105	105	100
U. Q.																								
L. Q.																								
Q. R.																								

h'Es Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 11

IONOSPHERIC DATA

Sep. 1966 | Types of Es | **135° E Mean Time** (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	f4	f3	f2	f6	f			h2	h	c	c	c2	c	12	12	12	14	14	15	f3	f3	f3	f3	f2
2	f2	f					h	h2	h2	c2	c3	c3	c3	c2	13		1	13	12	f3	f2f5	f2f2	f4f2	f3
3	f4	f4	f2	f3	f3	f2		c4	1	1	13	12	12	13	1 h	h 12	1	h 13	c212	f3	f7	f3	f4	f4
4	f3	f2	f3	f2	f2	f4	c4	c3	c3	c4	c2	12	1	1			1	1	h	f7	f7	f5	f4	f5
5	f2	f2f	f4	f f2	f3	f	c4	c	c3	c2	1	13	1	h21	h2	h4	c4	c3	c3	f3f	f7f	f2	f	f5
6	f3	f2	f2					c3	c3	12	1	h2	h2	h	c	c	c	c2	c3	f	f2	f3	f3	f3
7	f2	f2	f3	f	f	f2	c2	h	c2	c2	c2	1	1	1	1	13	1	h 1	c2	f	f f			f2
8	f	f	f	f	f			12	12h	1	1	1	1	h 1	h	h	h2	h	c2	f2	f	f2	f2	f
9	f	f2f	f2		f	f		c3	c2	c3	c2	c2	h 1	h21	h 1	h2	h2	c5	c2	f2	f7	f5	f7	f3
10	f6	f3	f3	f2f2	f f	f f	c4	c5	c	c	c3	13	12	12	1	1	12	12	h	f	f f	f3	f2	f2
11	f			f				h2	h		1	12	1	1	1	1	h 1	h213	c212	f	f2	f2f	f2f2	f2f
12	f	f2	f4	f2	f2	f	c2	c3	c2	1	1	1	1	1	1	1	1	1	c	f	f4	f2	f2	f2
13	f	f2		f3	f5	f	15		13	12	1	12	1	1	1	1	12	h	c	f4	f3	f3	f3	f4
14	f3	f2				f	15				1	1	1	h21	h 1		h	c 1	c5	f4	f f	f2	f2	f2
15	f f2	f2f2				f	c2	c3	13	12	12	1		1	1	1	h	h 1	c41	f3	f3	f2	f f	f2
16	f	f2			f	f3	12	13	1		12	1	1	1	1	1	h 12	h 12	12	f f2	f f	f2	f3	f2
17	f3	f2	f2	f4	f2	f		c2	c2	c	12	1			1	1			c	f	f	f		
18		f	f2	f			1	h		1	1	1	1	1	1	12	1	h 1	c	f	f			
19		f					c		c	c2	c	1	1	1	1	1		h	c	f f	f	f2	f	f
20								h	h	h		1	1		1	1	h 1	h3	c2	f2f	f f	f	f2	f
21	f2	f			f	f		h	h	h 1	h 1	12			1	1	1	h 1	h	f				
22								h	h	h	1		h 1	h 1	h	h	h	h2	c					f2
23	f2		f				h	h2	h2	h 1	h 1	1	1	1	1	1	12	h 12	1	f		f3	f2	
24	f2	f3						h3	h3	c	12	1		1	1	1		h2		f2	f2	f		f
25	f				f	f2	h	1 h2	13	12	12	12	12	12	12	1	12	h2						f
26	f2		f3	f4	f	f3	17	13	13	12	12	1	1	1	1	12	h	h2	c2	f4	f2	f3	f	f2
27	f3	f4	f7	f4	f6	f7	16	17	c2								h	h2			f	f2	f2	
28	f2	f2	f3	f2	f4	f2	h	c3	c3	c2	c	c				h	h2	h3	c2	f7	f3	f3	f	f
29	f	f	f2	f3	f5	f7	15	h21	h213	h 1	12h	12	13	12	12	13	14	h312	c 1	f6	f3	f3	f	f
30	f	f				f	1	h	h2			1	1	1	1	h		h2	c3	f3	f4f	f f2		
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

Types of Es

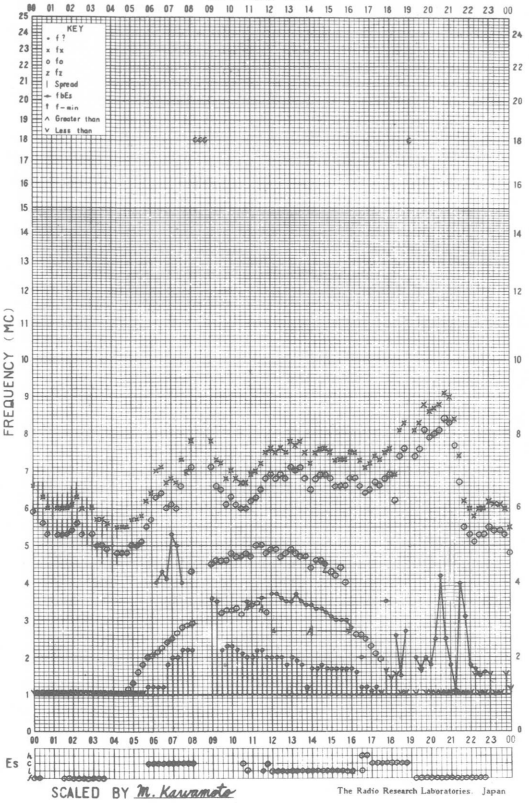
Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 12

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE SEP. 1, 1966.

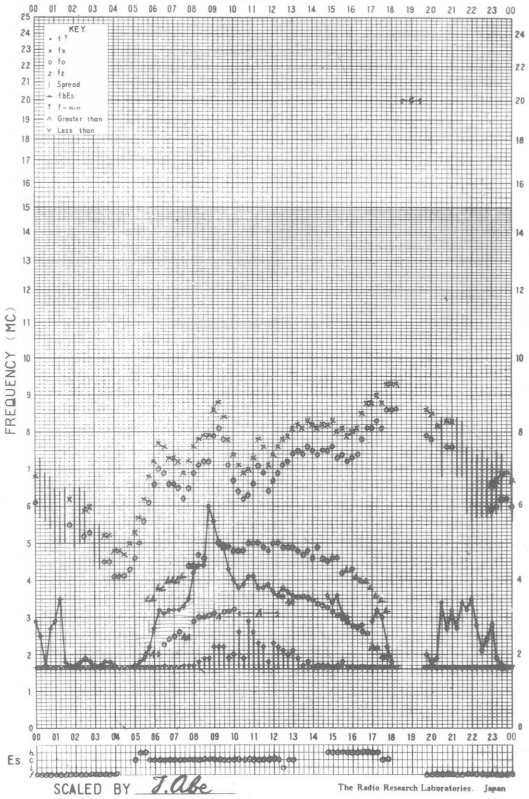


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Sep. 1. 1966

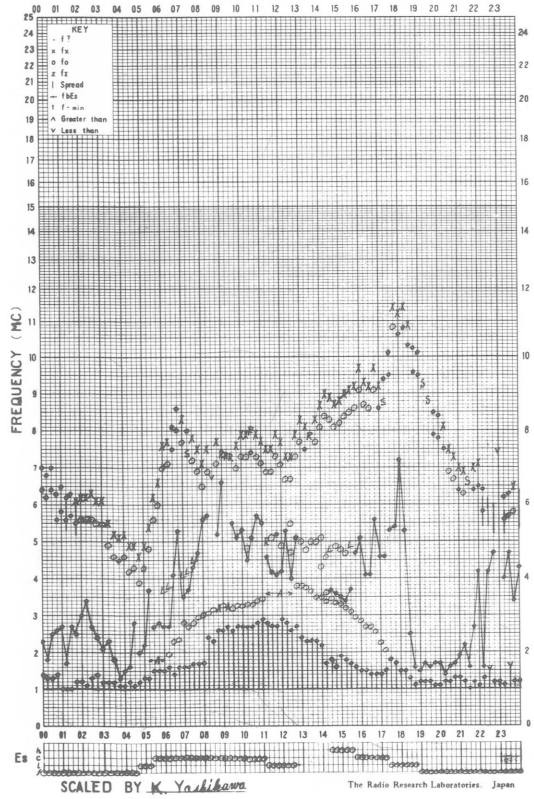


SCALED BY J. Abe

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 1. 1966

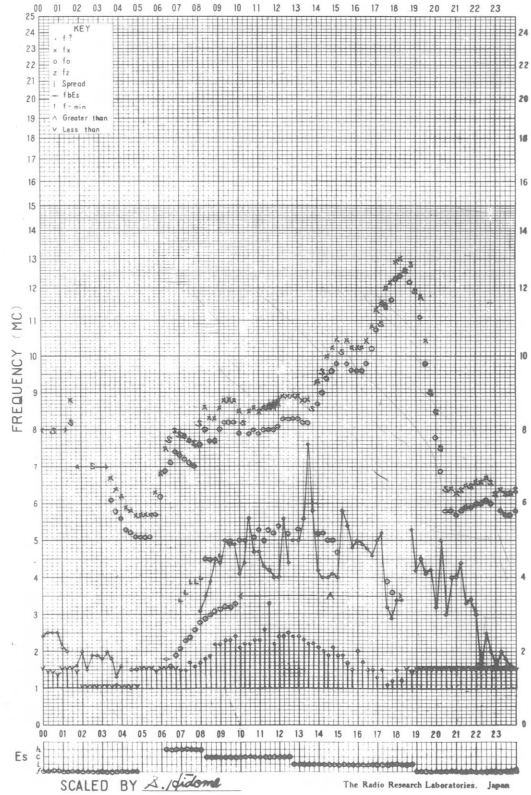


SCALED BY K. Yashikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE SEP. 1. 1966

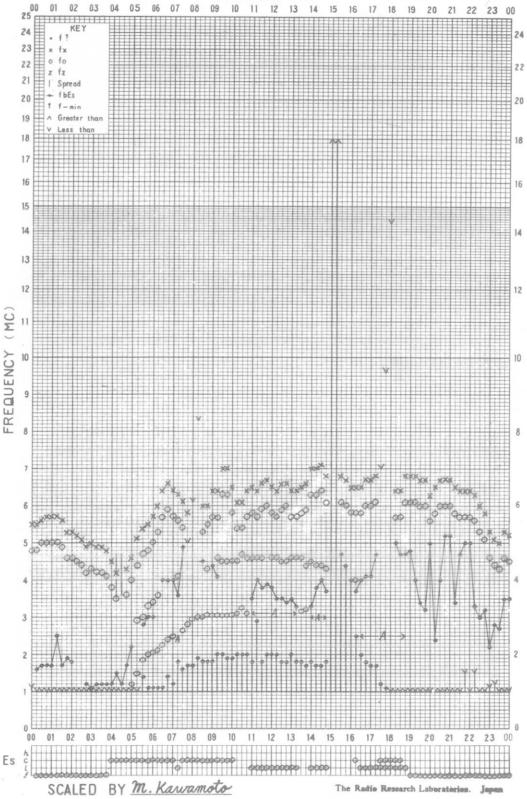


SCALED BY S. Sidome

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE SEP. 2, 1966

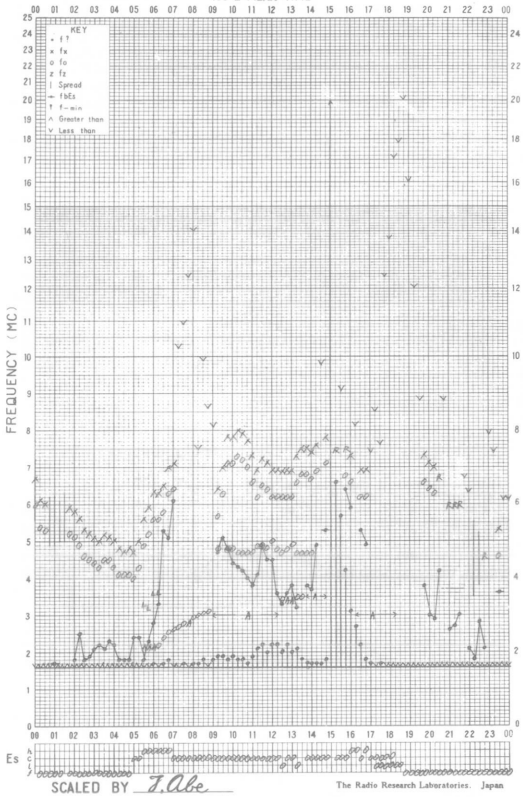


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Sep. 2 1966

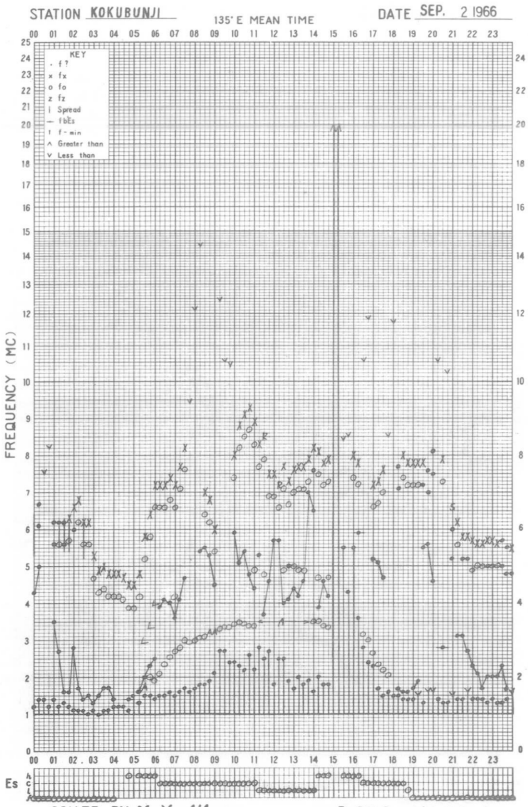


SCALED BY T. Abe

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 2 1966



SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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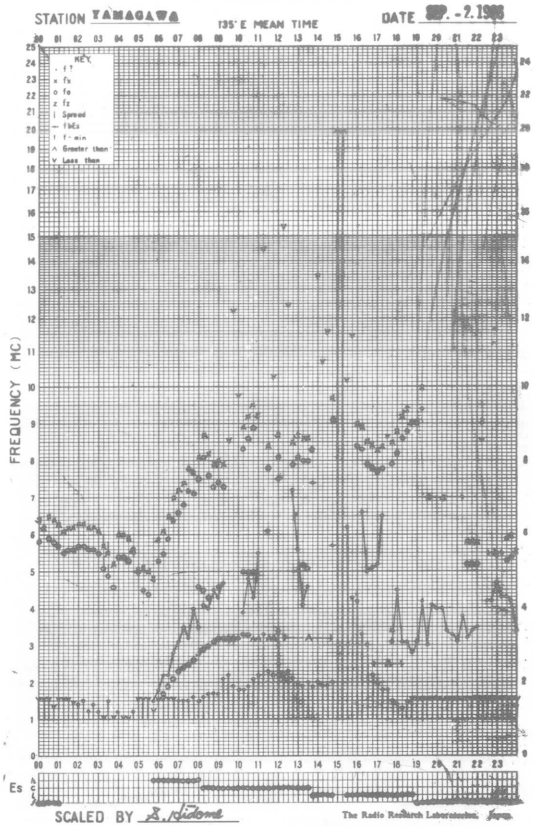
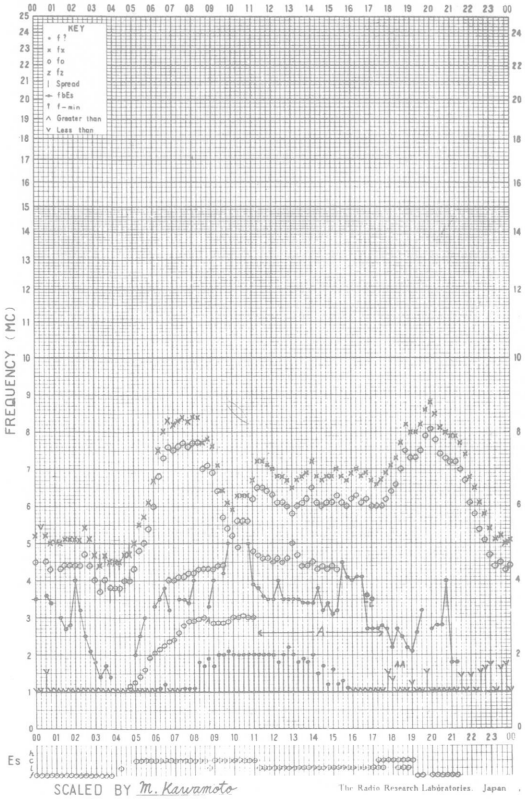


SCALED BY S. Nitome

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE SEP. 3, 1966

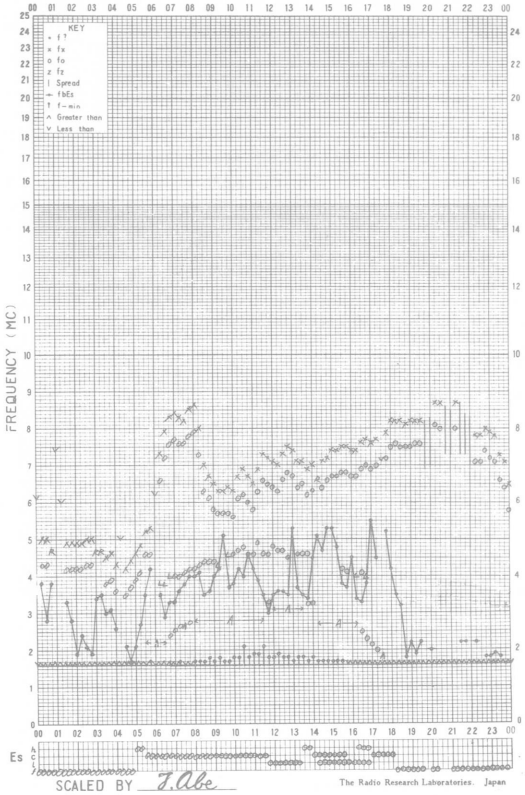


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Sep. 3, 1966

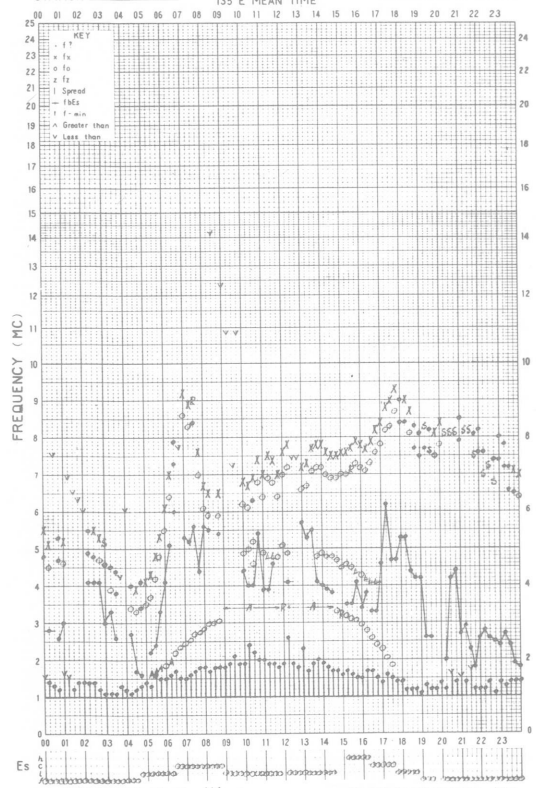


SCALED BY T. Abe

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 3 1966

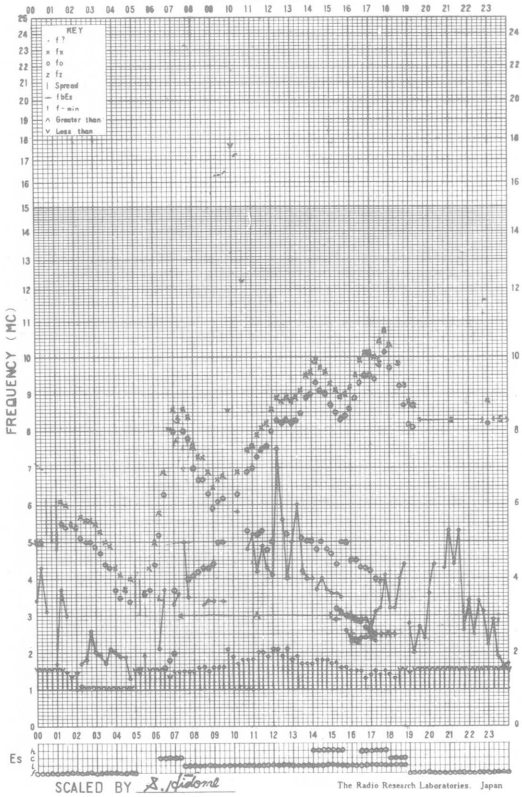


SCALED BY K. Yashikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE SEP. -3. 1966



SCALED BY S. Shibano

The Radio Research Laboratories. Japan

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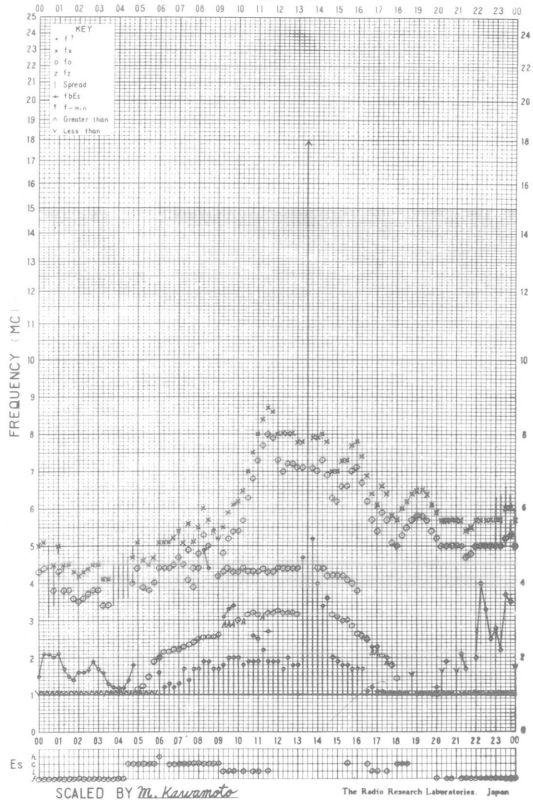

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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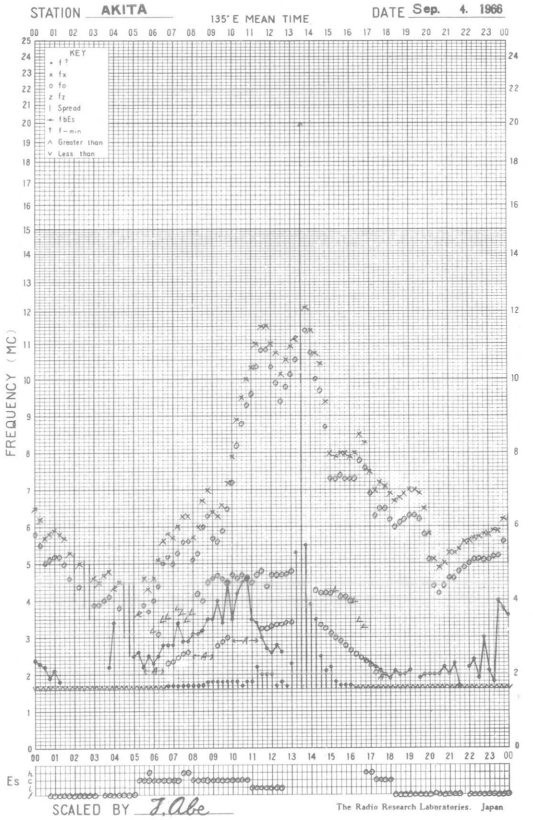

SCALED BY T. Abe

The Radio Research Laboratories. Japan

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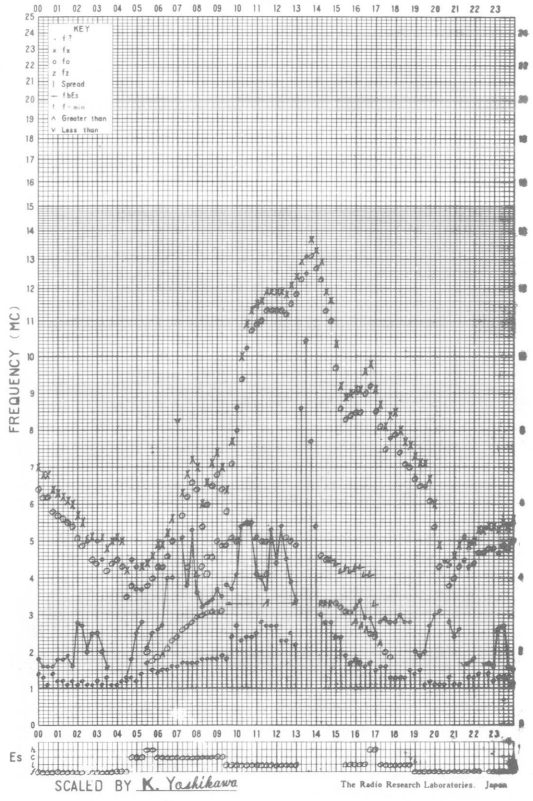

SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

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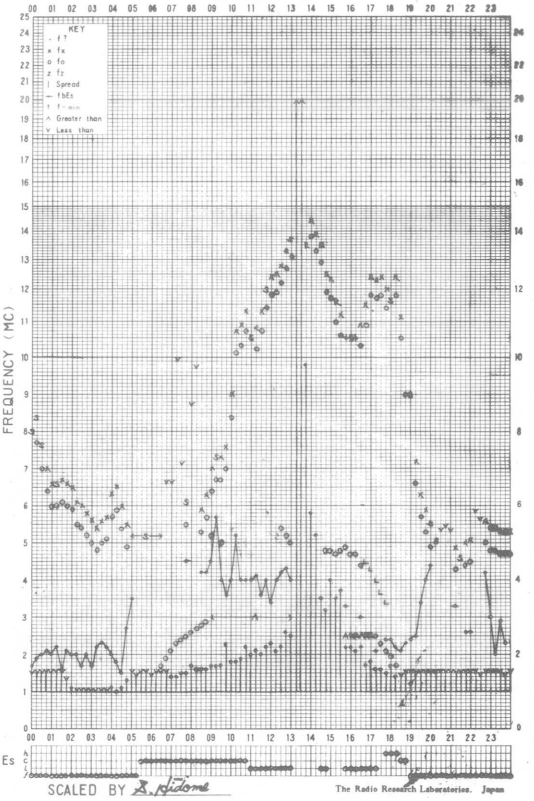

SCALED BY S. Nitoma

The Radio Research Laboratories. Japan

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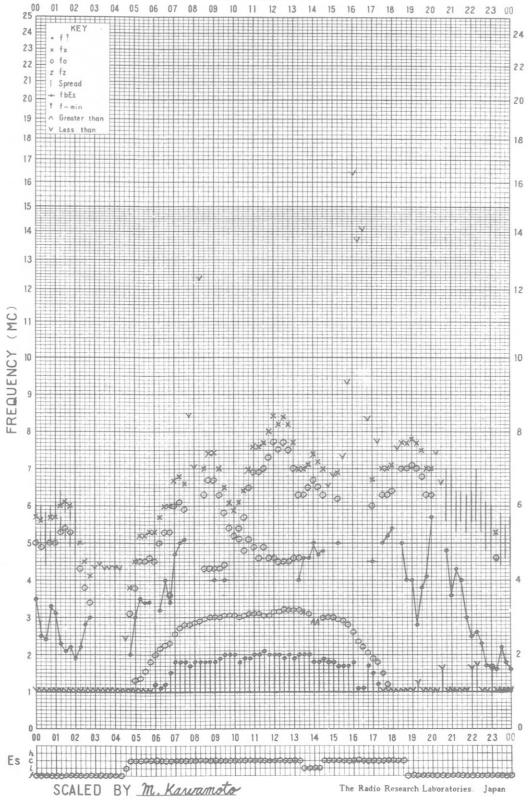
STATION WAKKANAI 135°E MEAN TIME DATE SEP. 5, 1966



SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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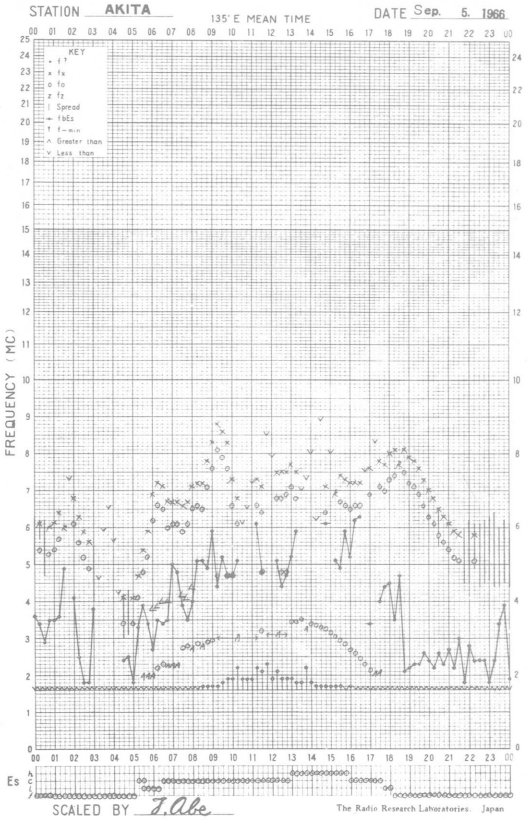

SCALED BY T. Abe

The Radio Research Laboratories. Japan

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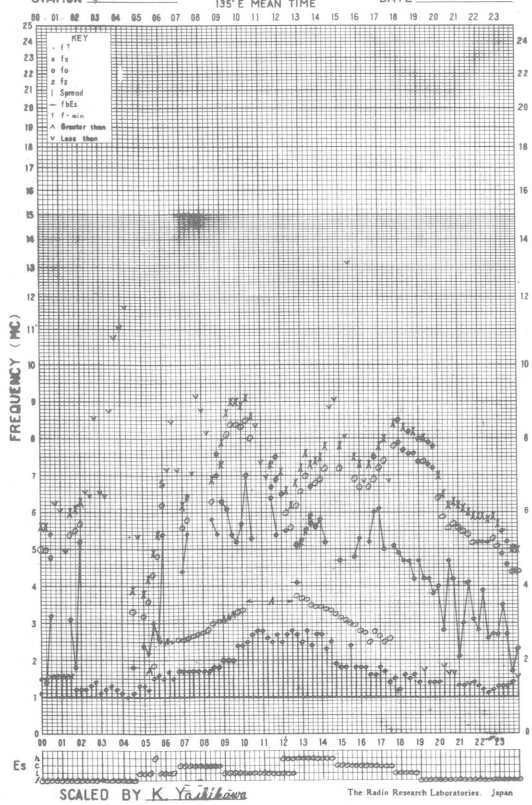

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The Radio Research Laboratories. Japan

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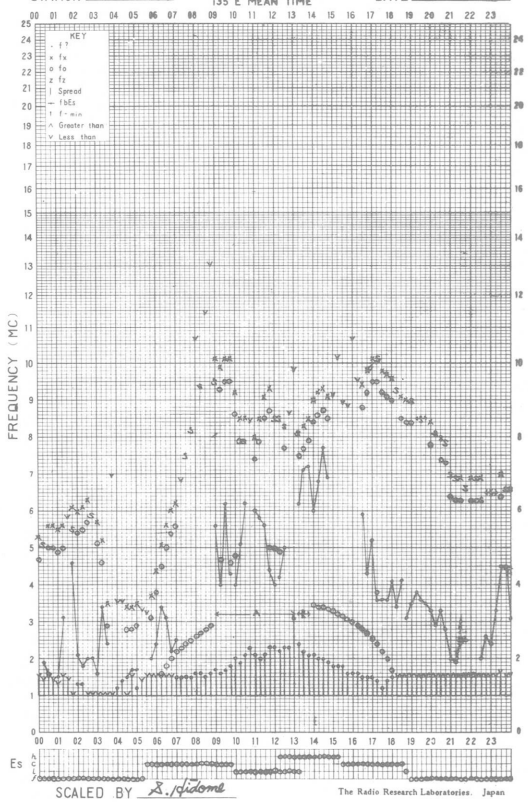

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The Radio Research Laboratories. Japan

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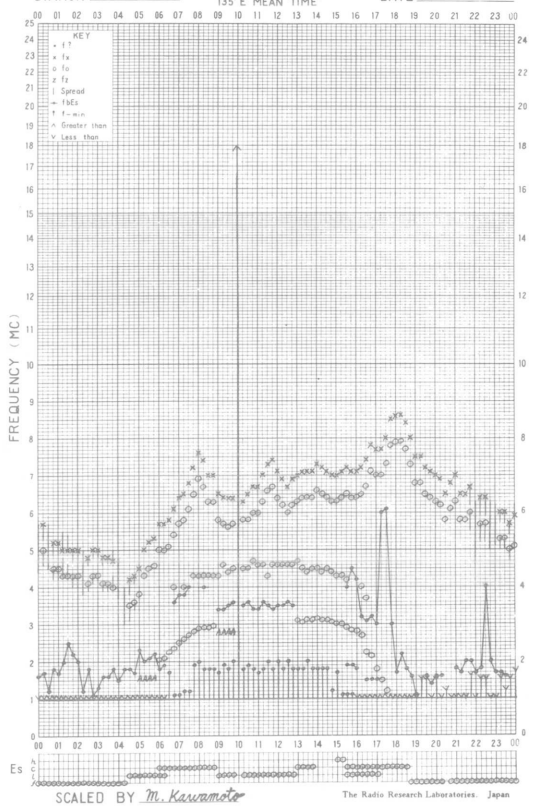

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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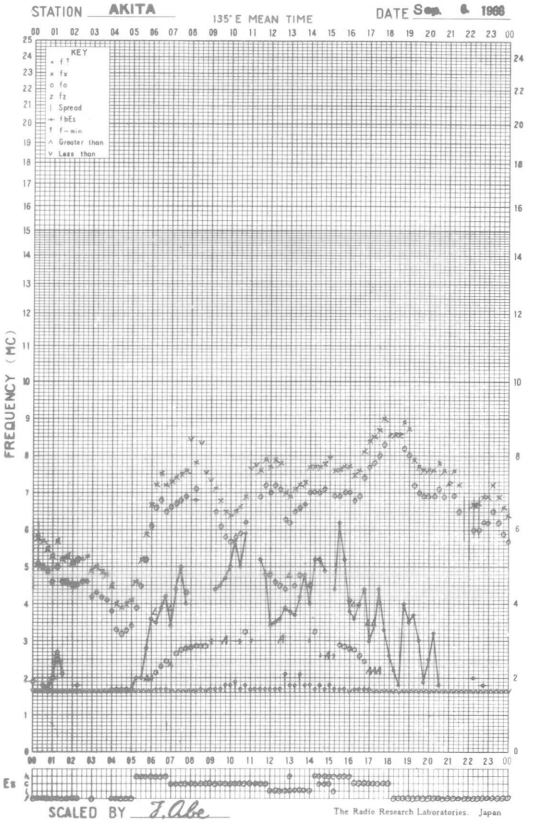

SCALED BY T. Abe

The Radio Research Laboratories. Japan

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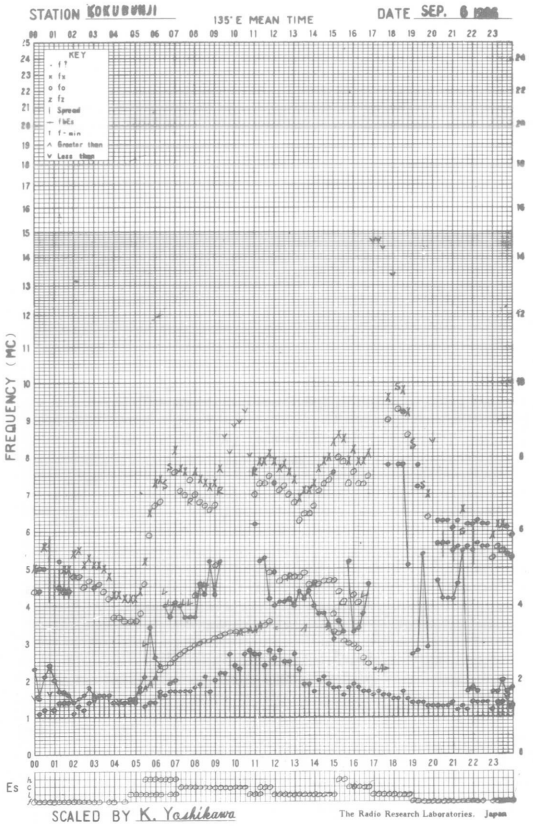

SCALED BY K. Yashikawa

The Radio Research Laboratories. Japan

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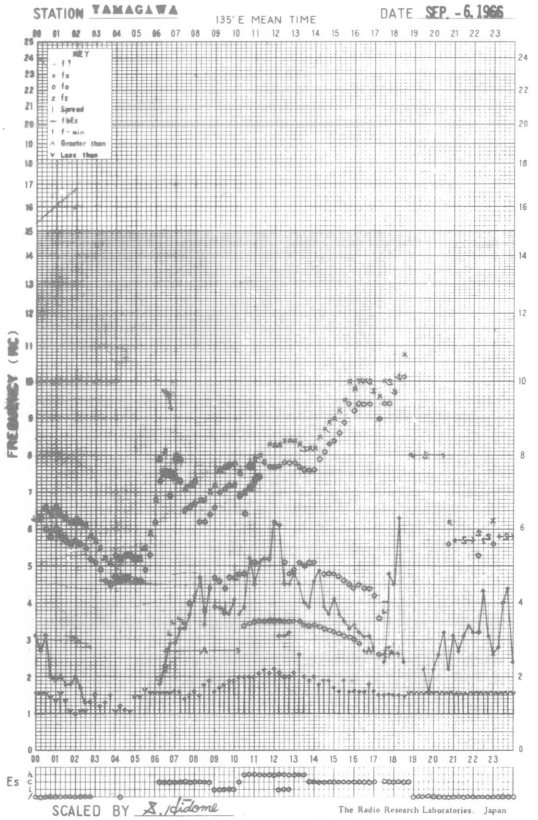

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The Radio Research Laboratories. Japan

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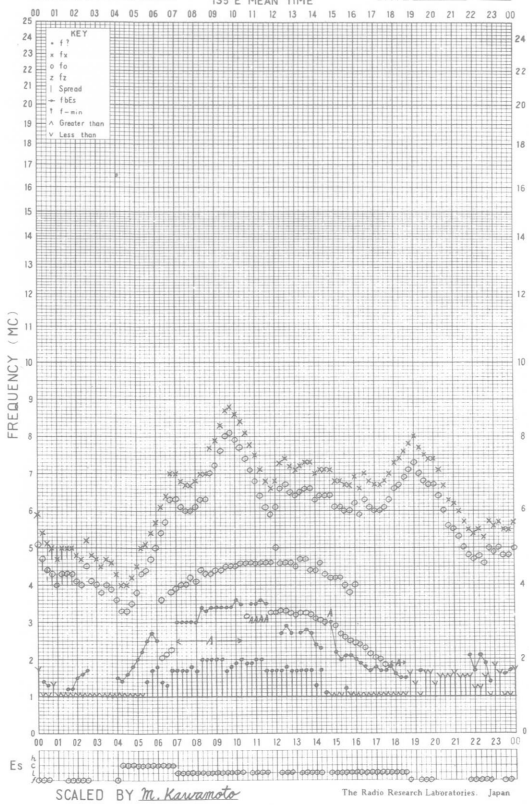

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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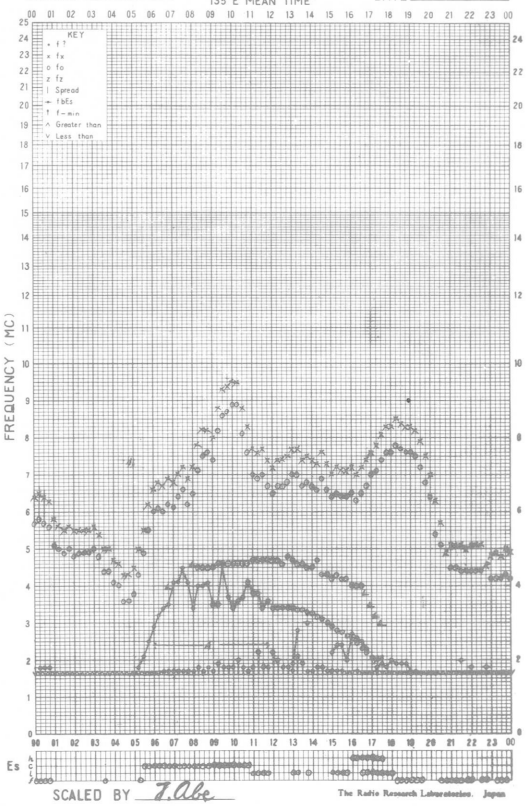

SCALED BY T. Abe

The Radio Research Laboratories. Japan

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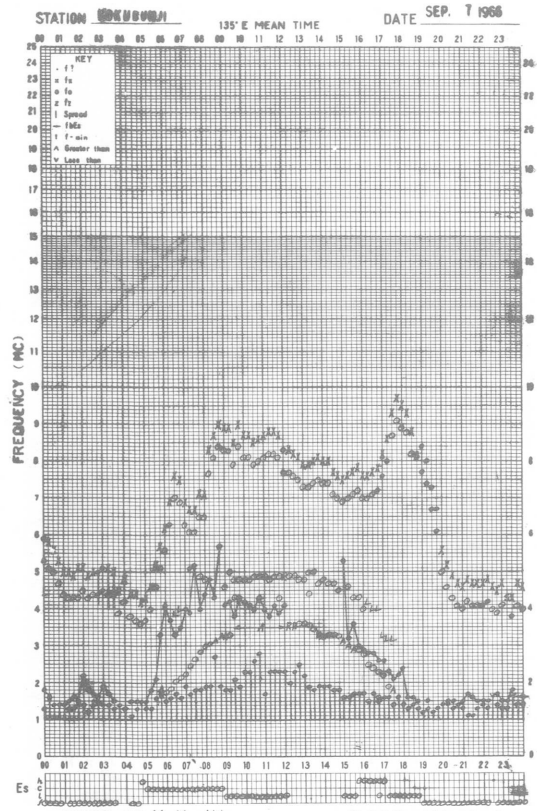

SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

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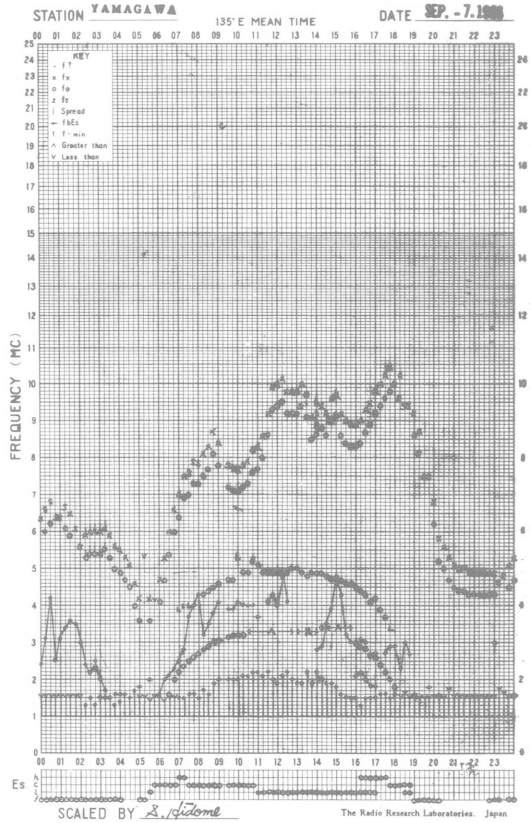

SCALED BY S. Shitome

The Radio Research Laboratories. Japan

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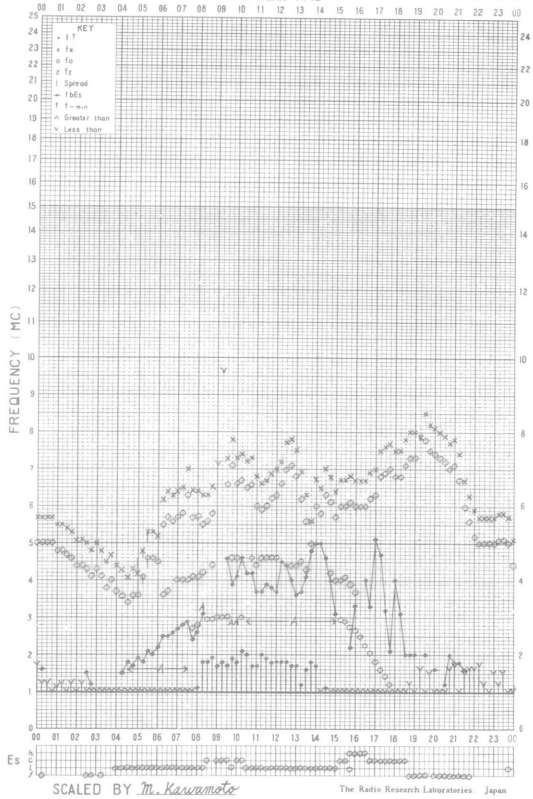

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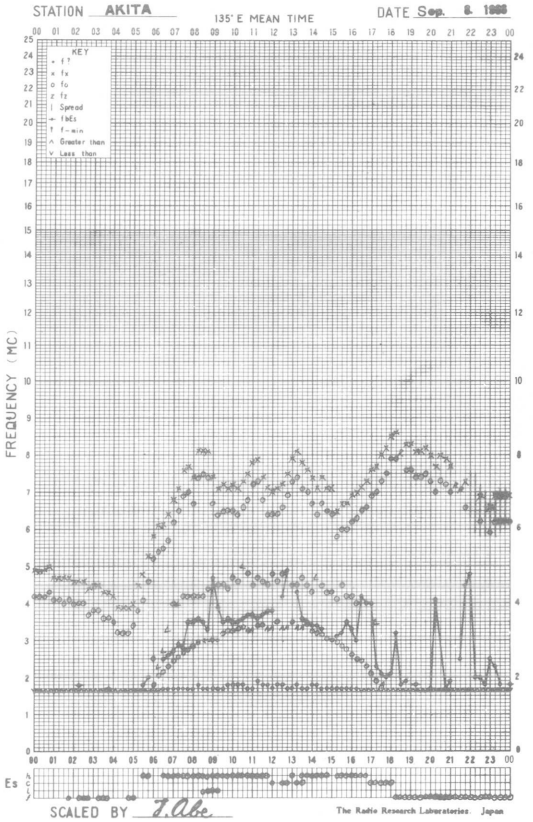

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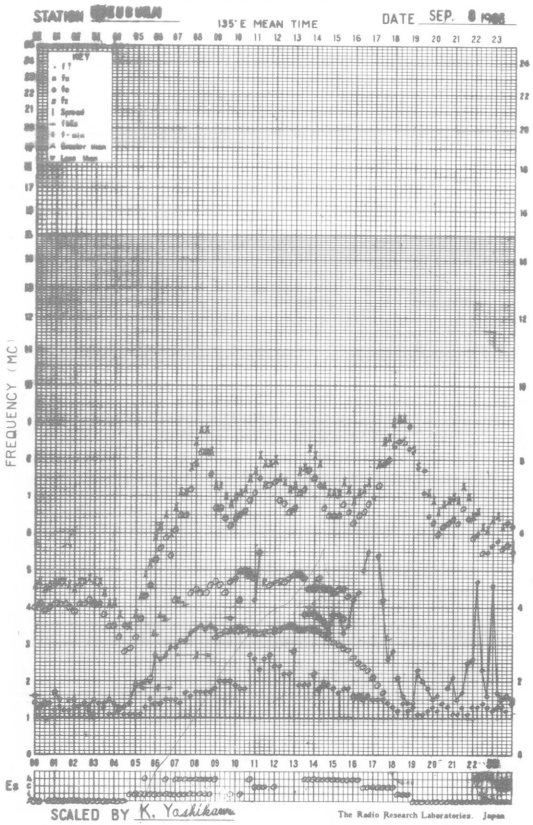

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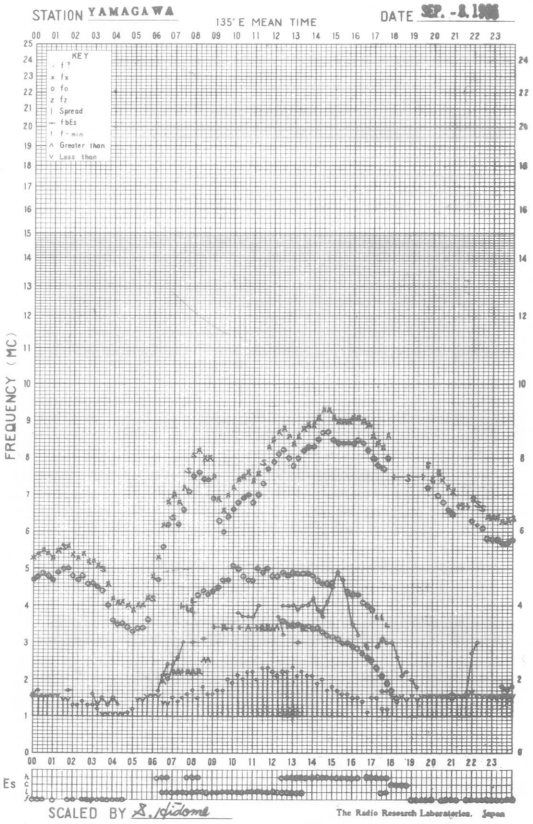

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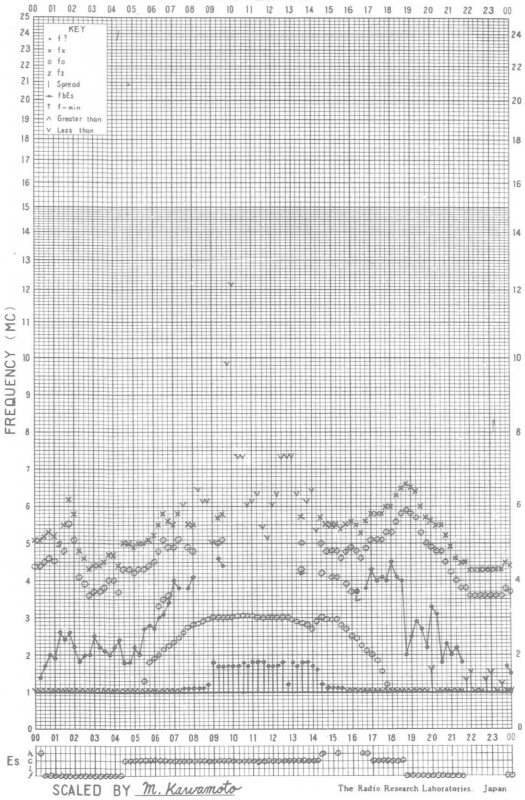

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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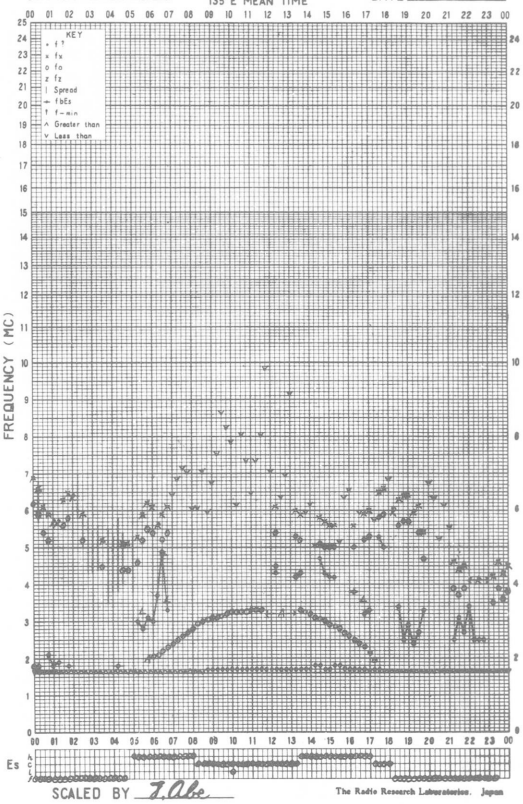

SCALED BY I. Abe The Radio Research Laboratories. Japan

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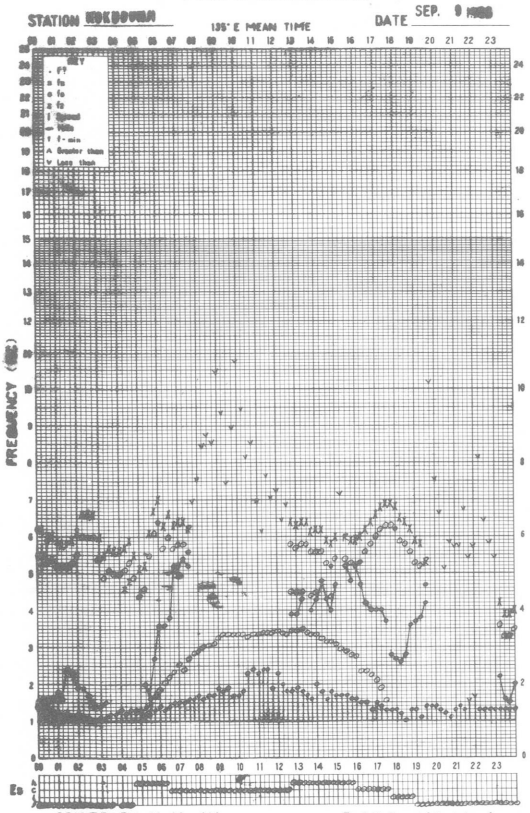

SCALED BY K. Yashikawa The Radio Research Laboratories. Japan

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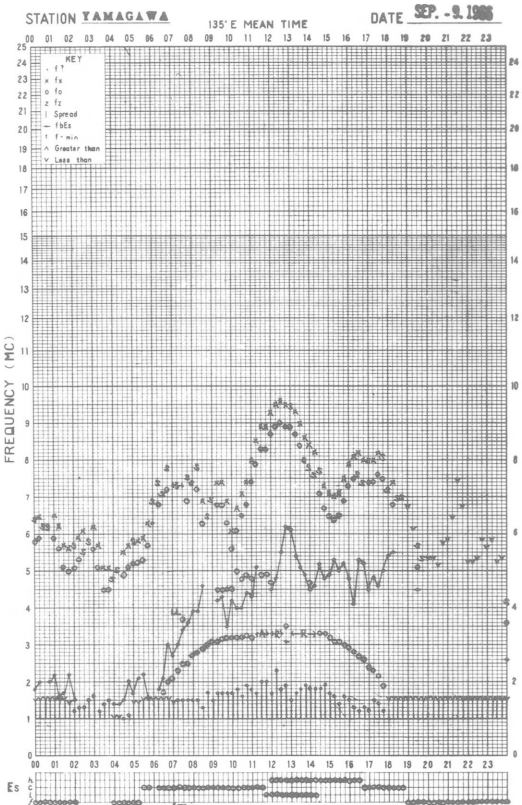

SCALED BY A. Ishioma The Radio Research Laboratories. Japan

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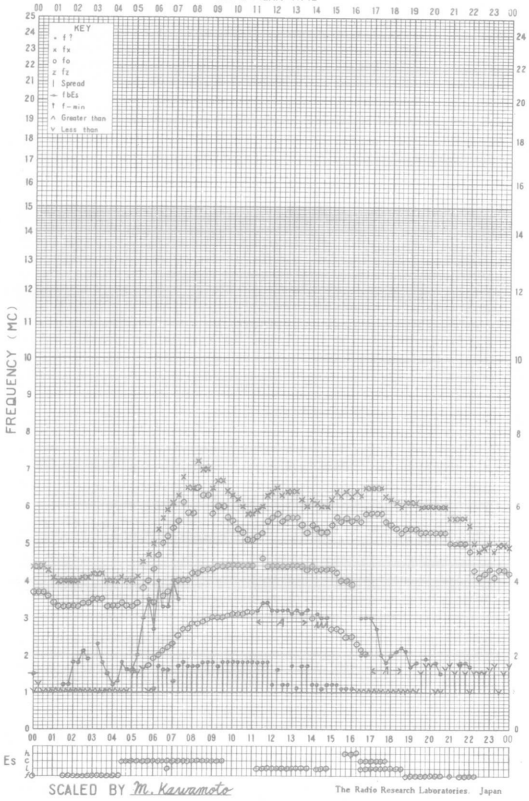

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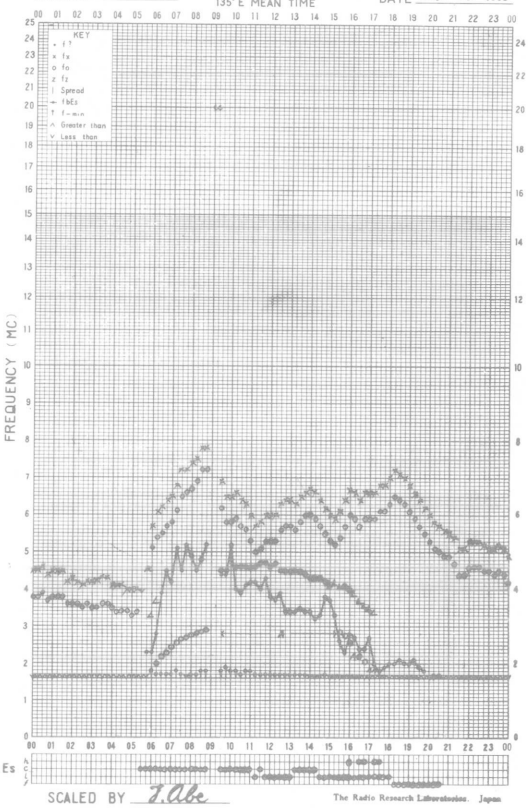

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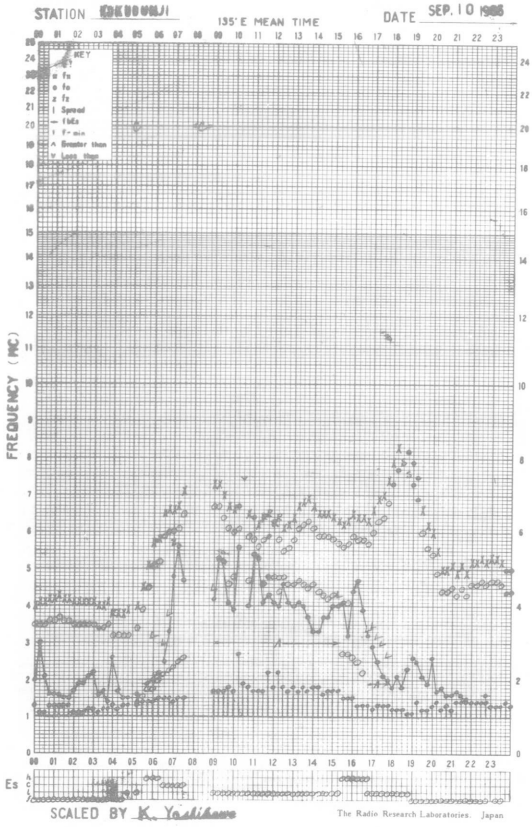

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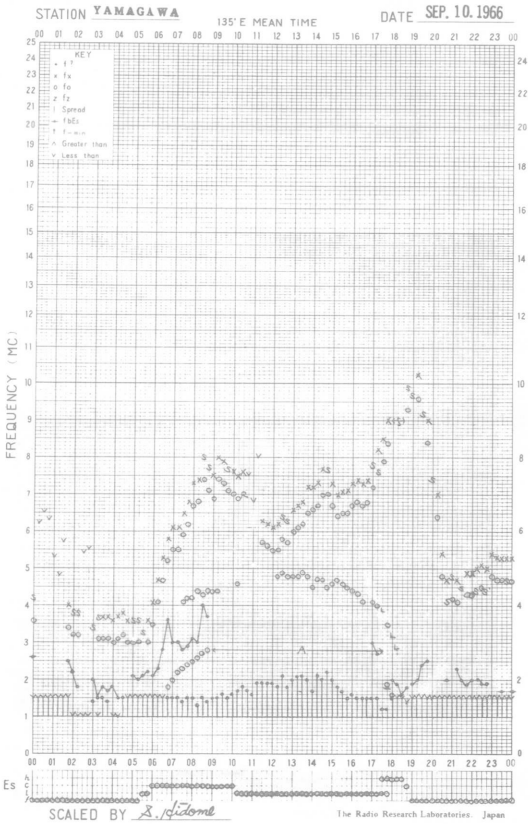

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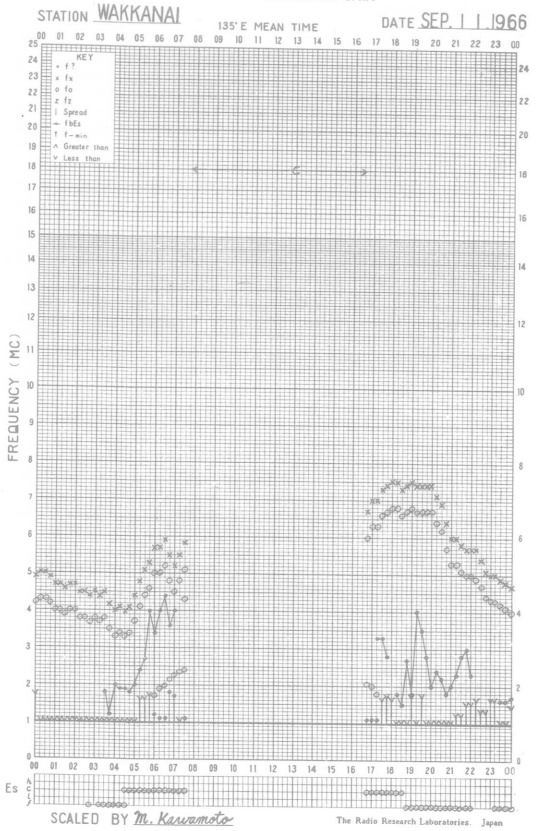

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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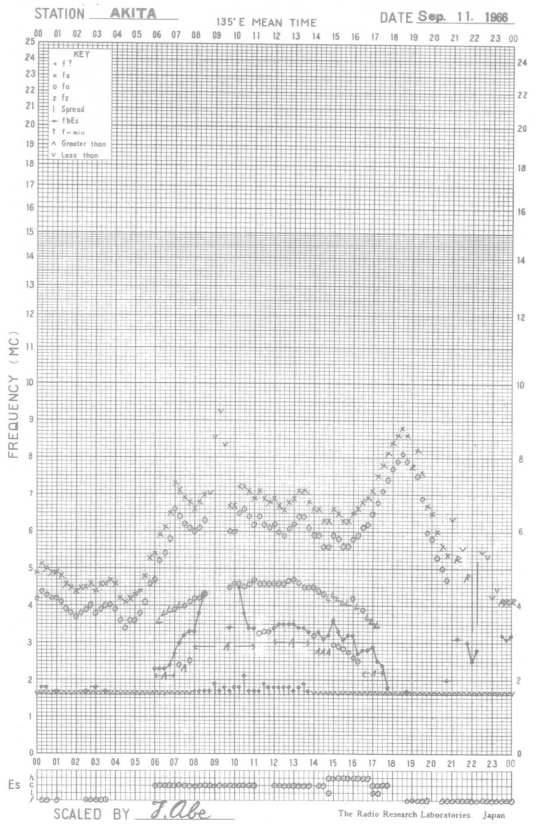

SCALED BY T. Abe The Radio Research Laboratories. Japan

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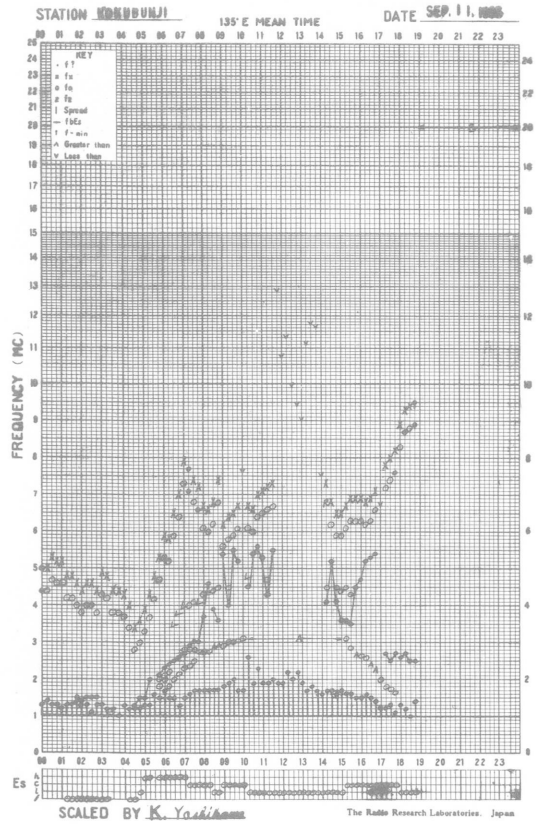

SCALED BY K. Yoshikawa The Radio Research Laboratories. Japan

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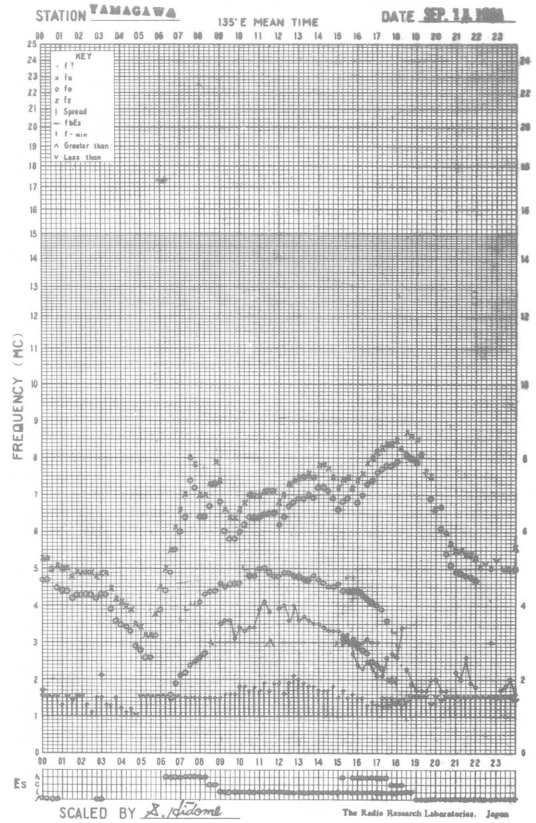

SCALED BY S. Kitsumi The Radio Research Laboratories. Japan

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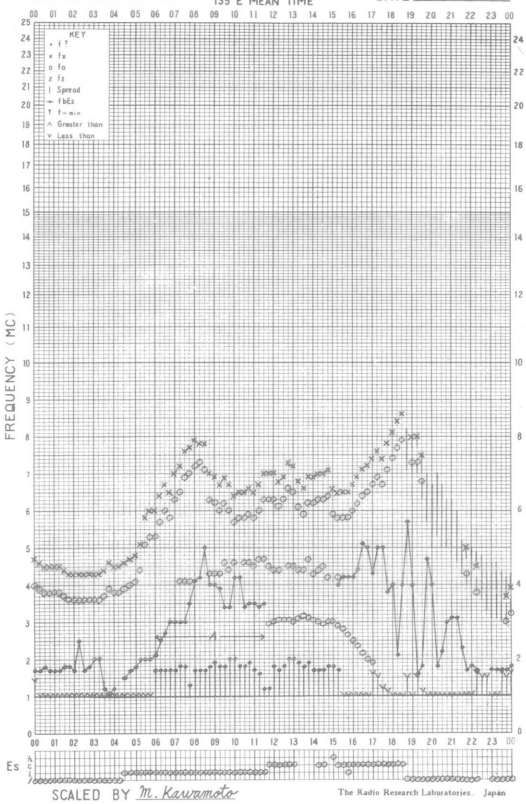

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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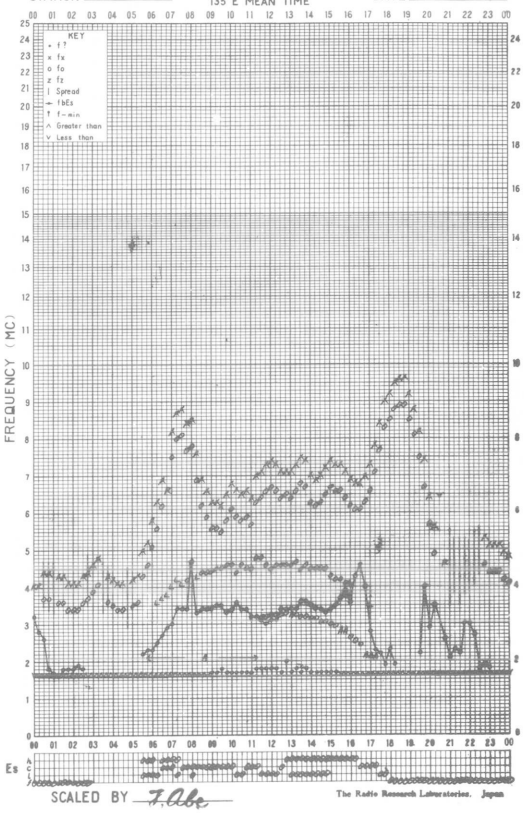

SCALED BY T. Abe The Radio Research Laboratories. Japan

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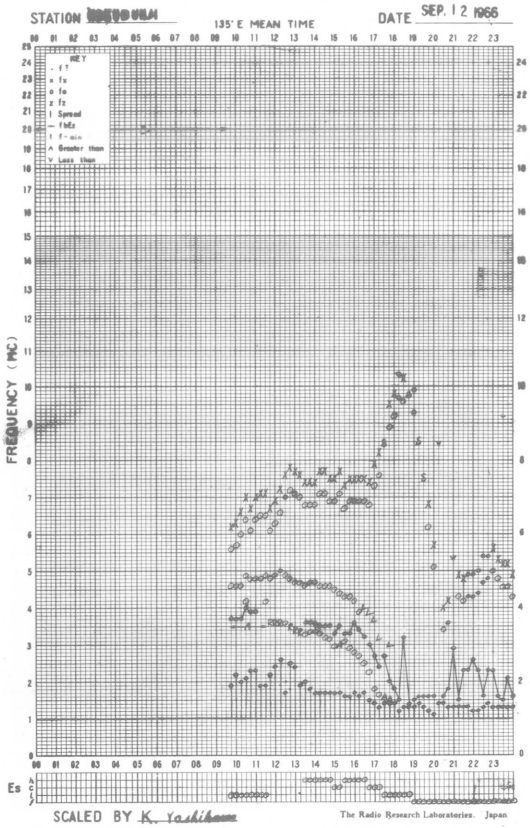

SCALED BY K. Yoshikawa The Radio Research Laboratories. Japan

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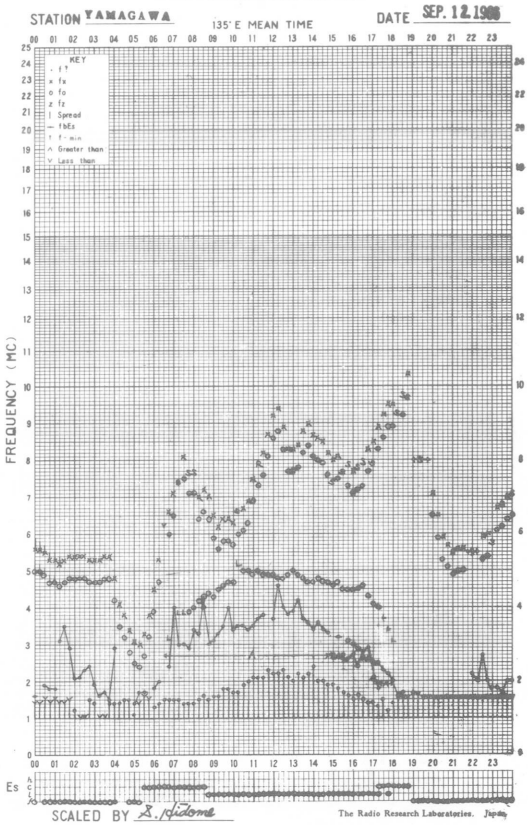

SCALED BY S. Kidome The Radio Research Laboratories. Japan

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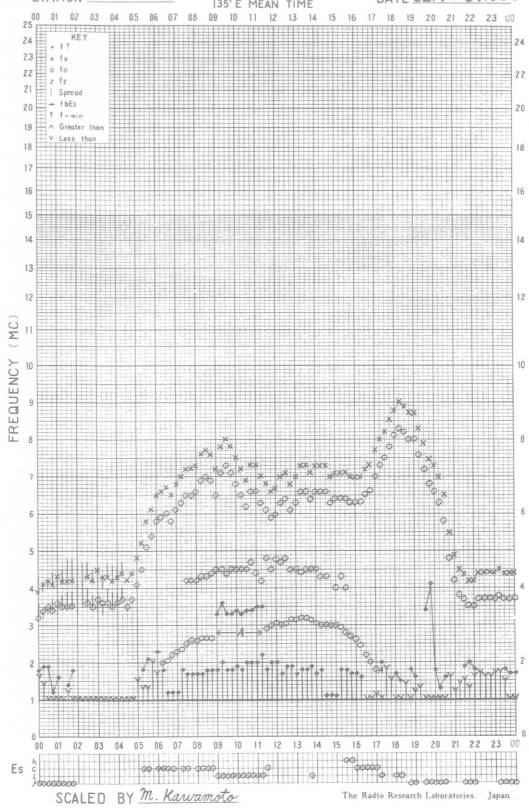

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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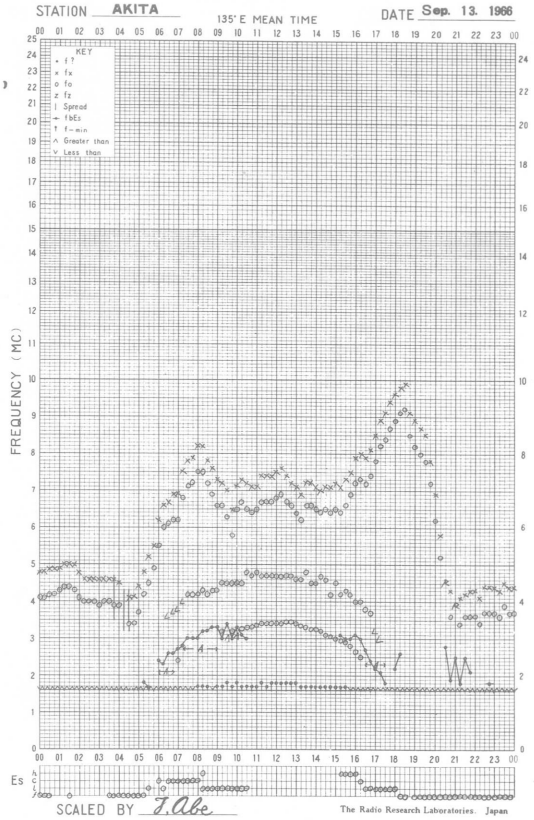

SCALED BY T. Abe

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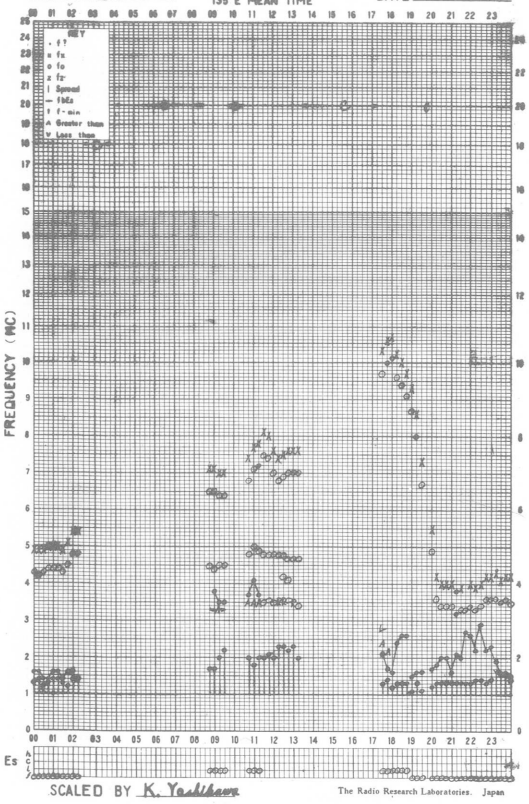

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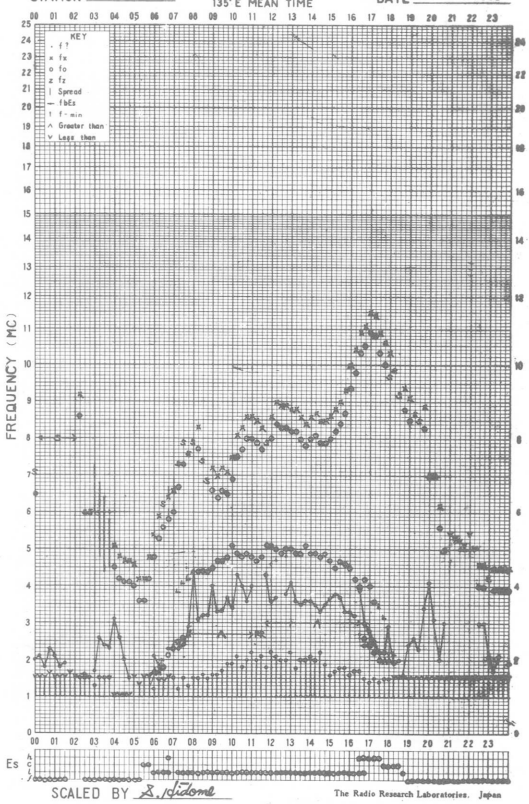

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The Radio Research Laboratories. Japan

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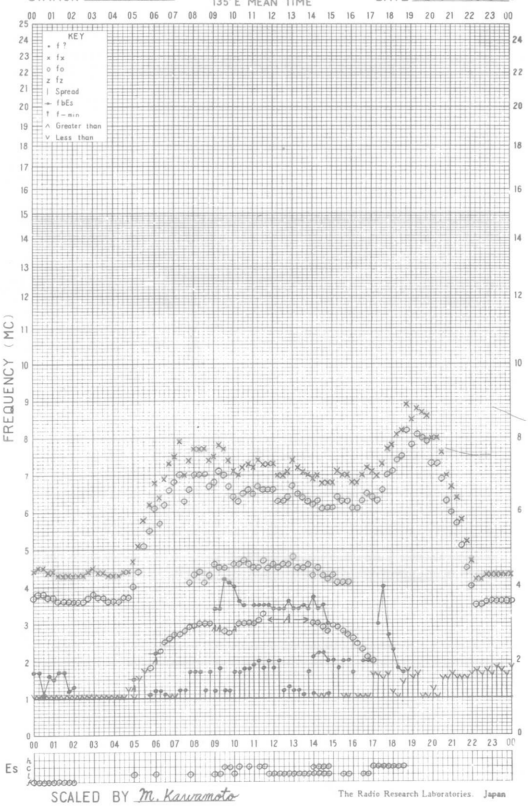

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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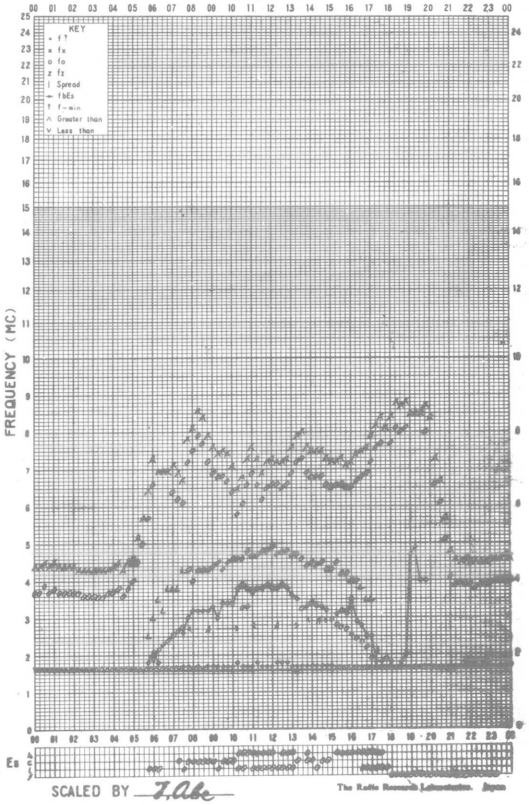

SCALED BY T. Abe The Radio Research Laboratories. Japan

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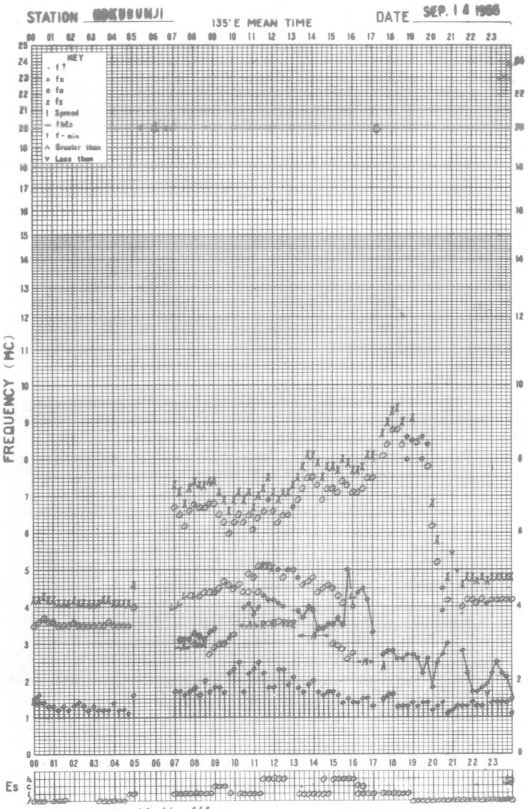
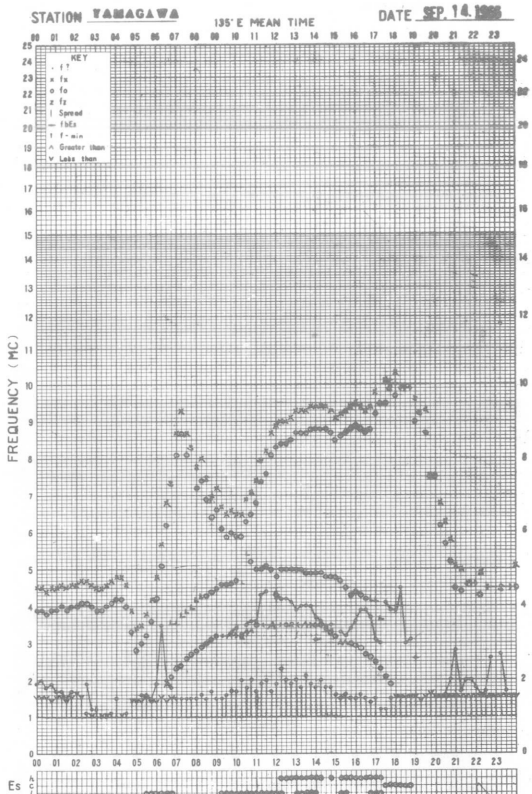


SCALED BY K. Yashikawa The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE SEP. 14. 1966



SCALED BY S. Kitami The Radio Research Laboratories. Japan

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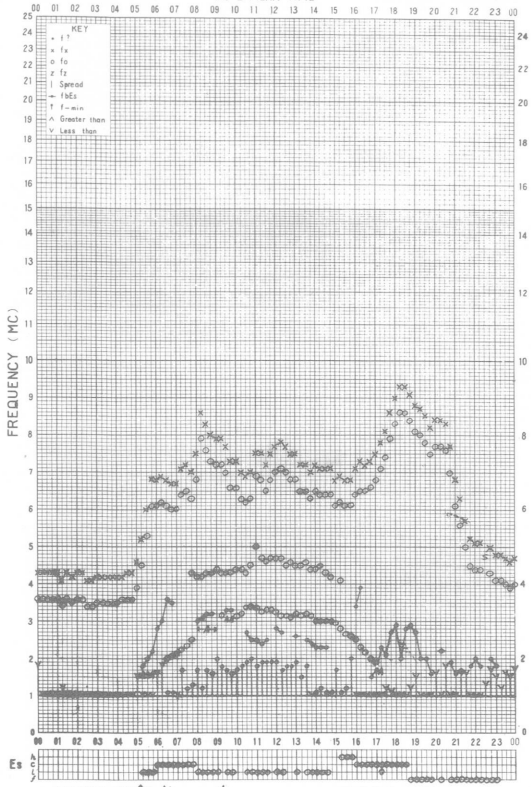

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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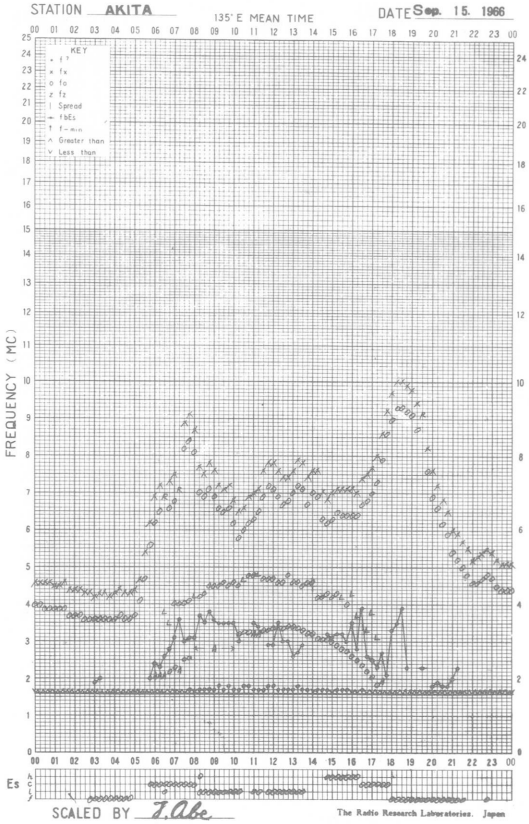

SCALED BY I. Abe The Radio Research Laboratories. Japan

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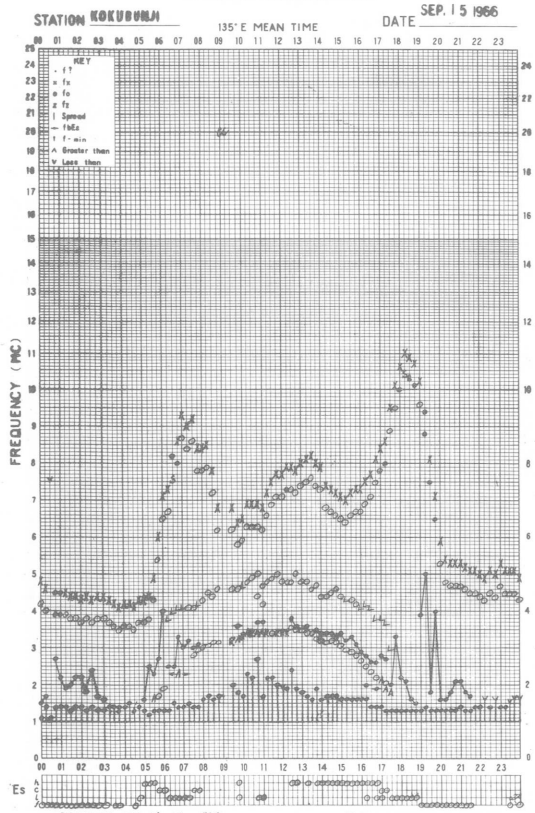

SCALED BY K. Yoshikawa The Radio Research Laboratories. Japan

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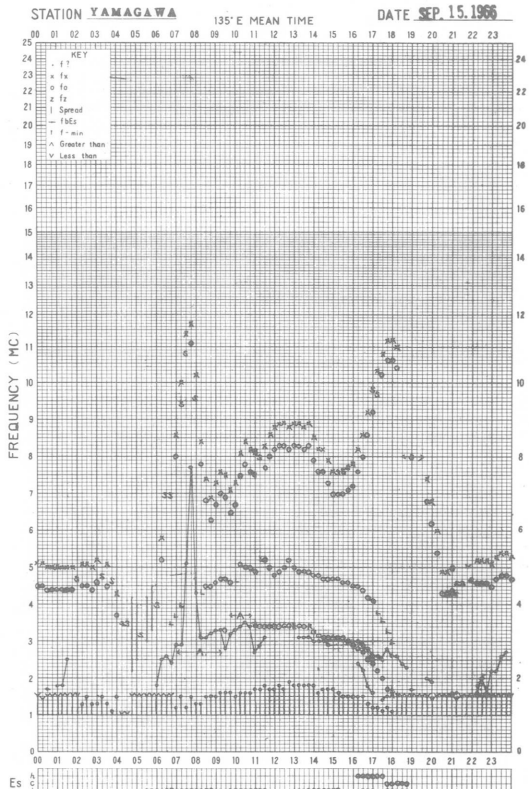

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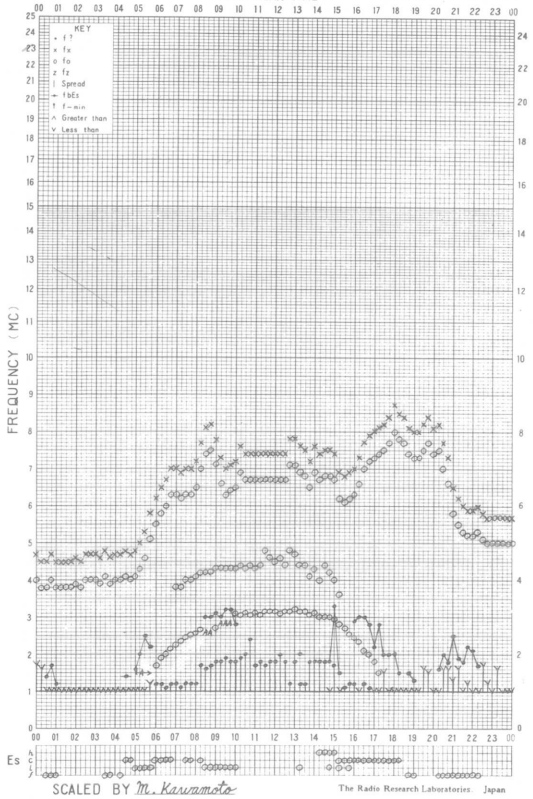

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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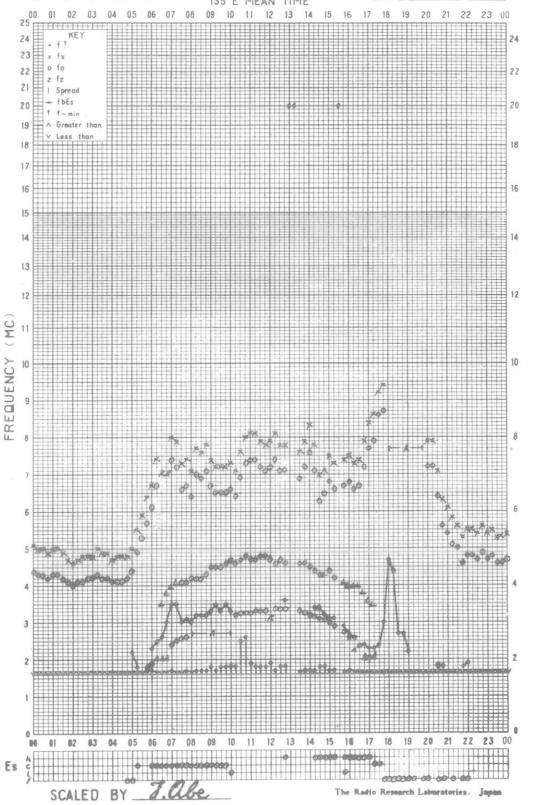

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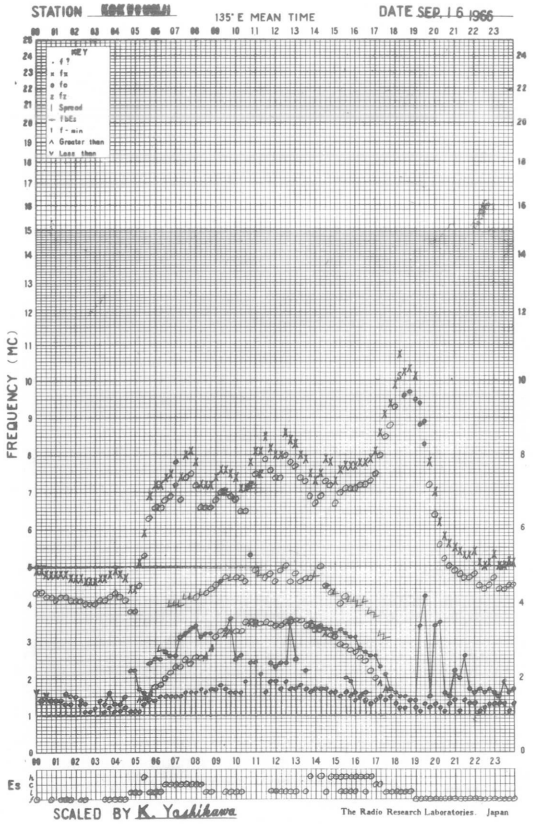

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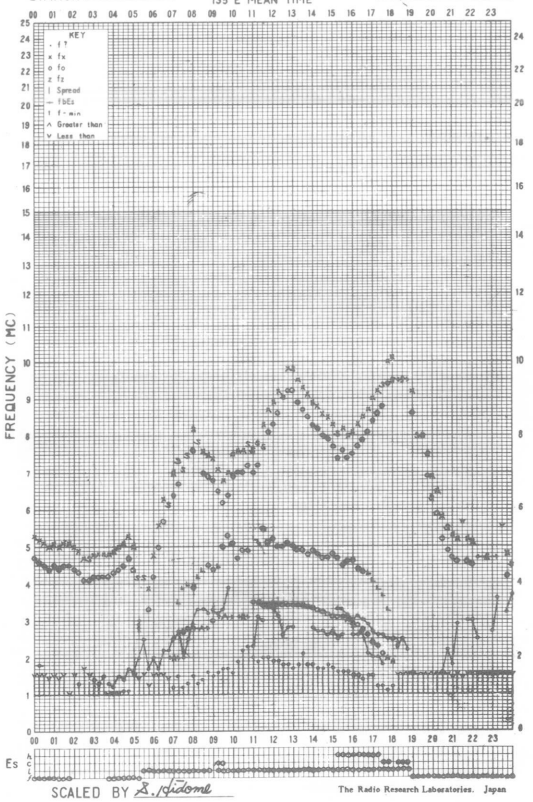

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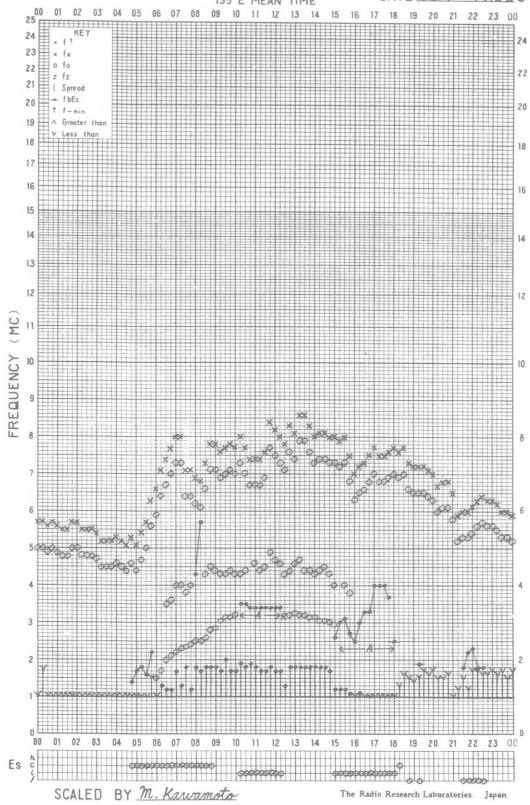

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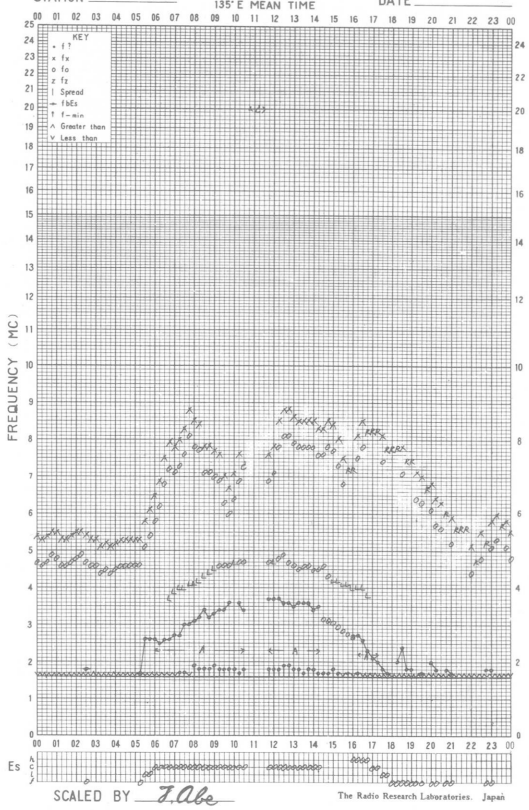

SCALED BY I. Abe The Radio Research Laboratories. Japan

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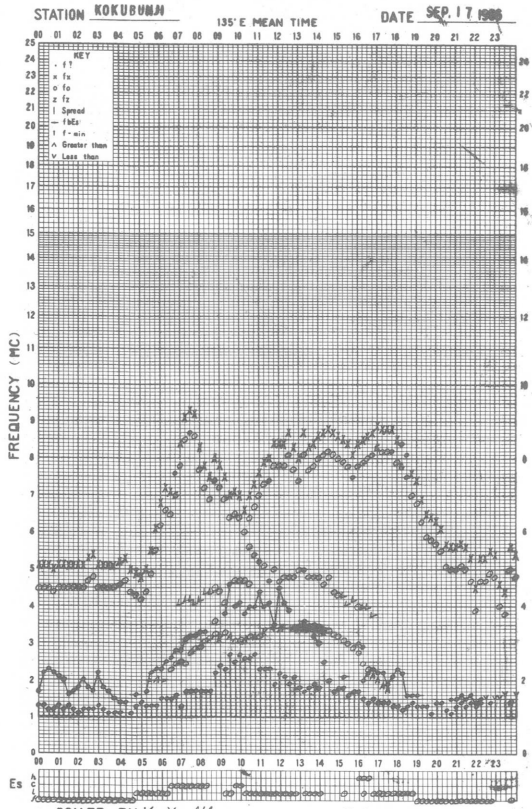

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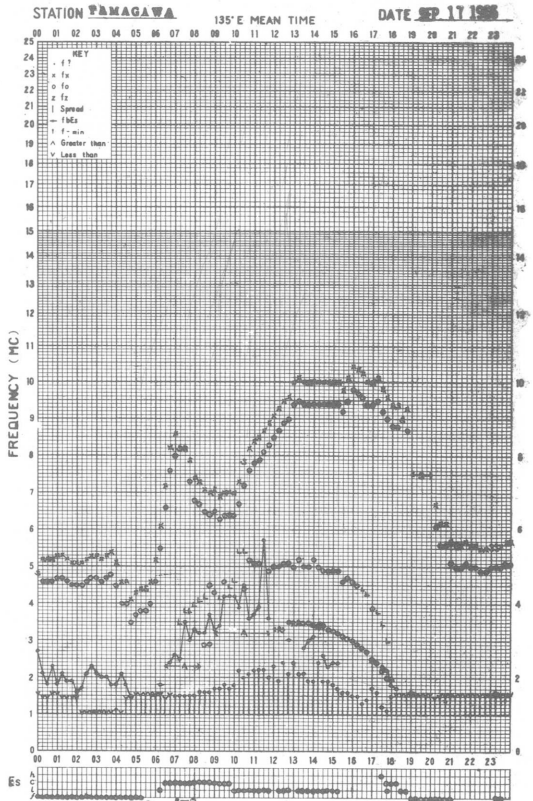

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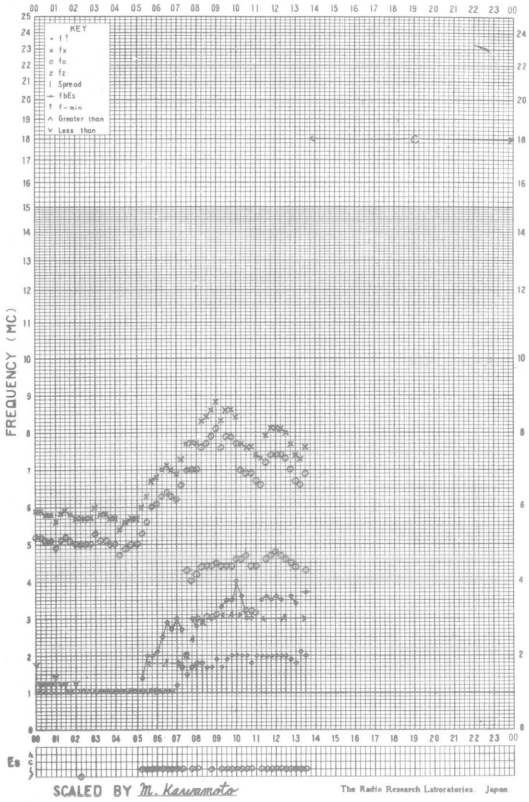

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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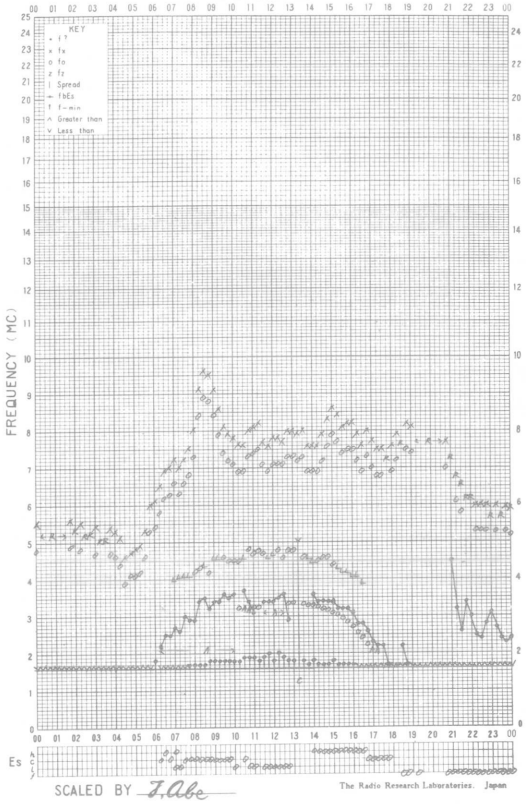

SCALED BY T. Abe

The Radio Research Laboratories. Japan

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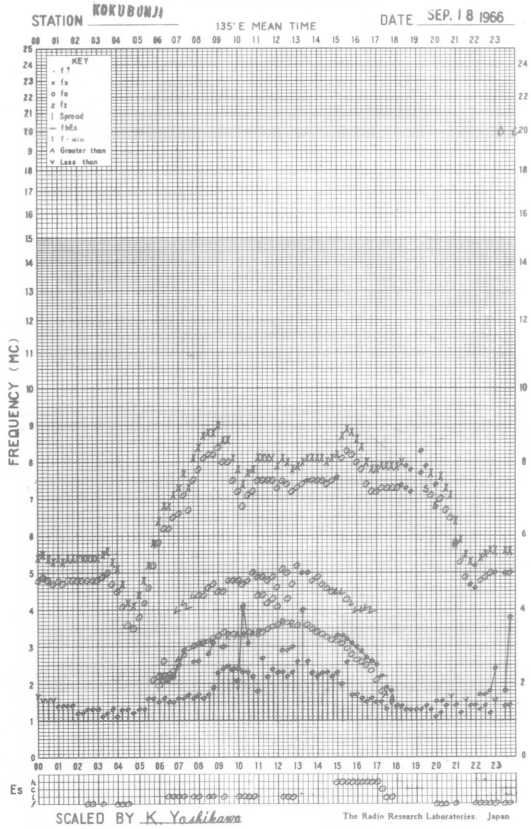

SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

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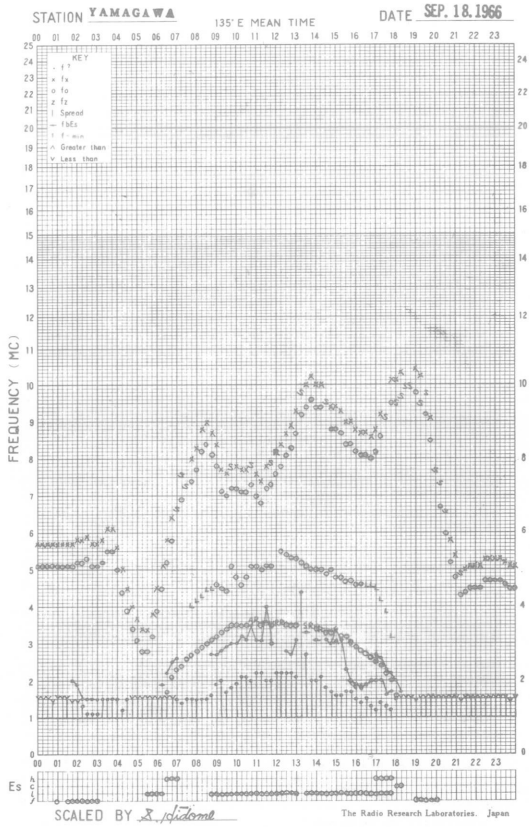

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The Radio Research Laboratories. Japan

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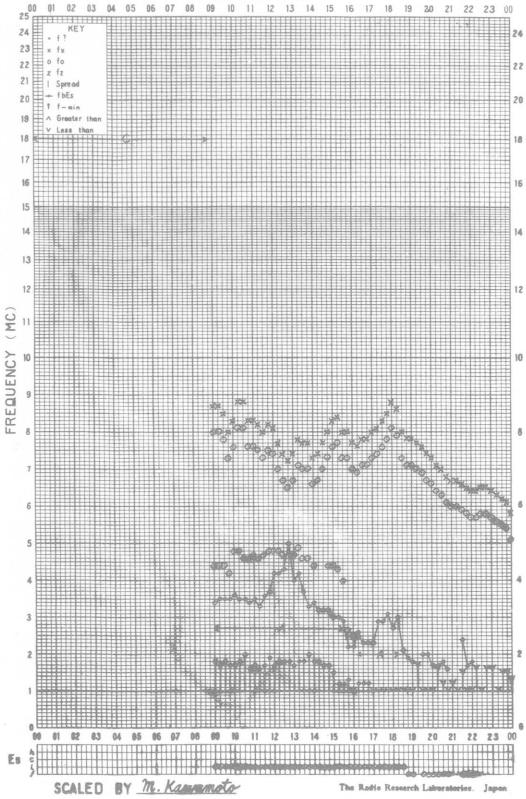

SCALED BY M. Kammoto The Radio Research Laboratories. Japan

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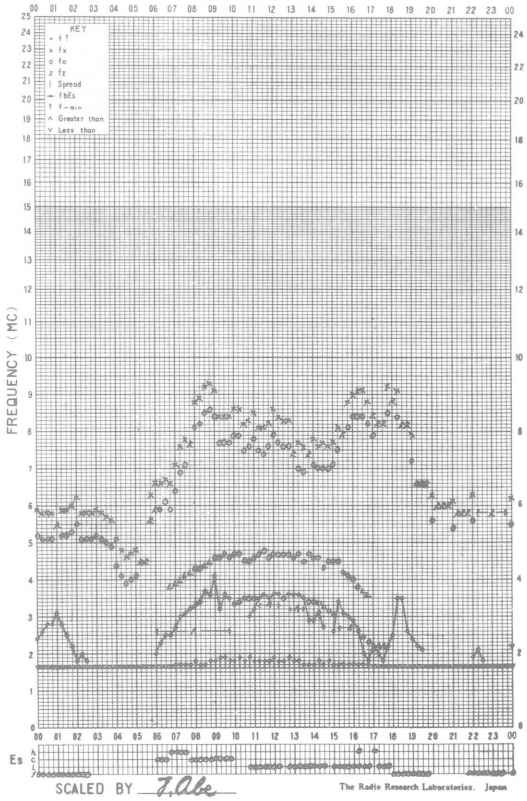

SCALED BY T. Abe The Radio Research Laboratories. Japan

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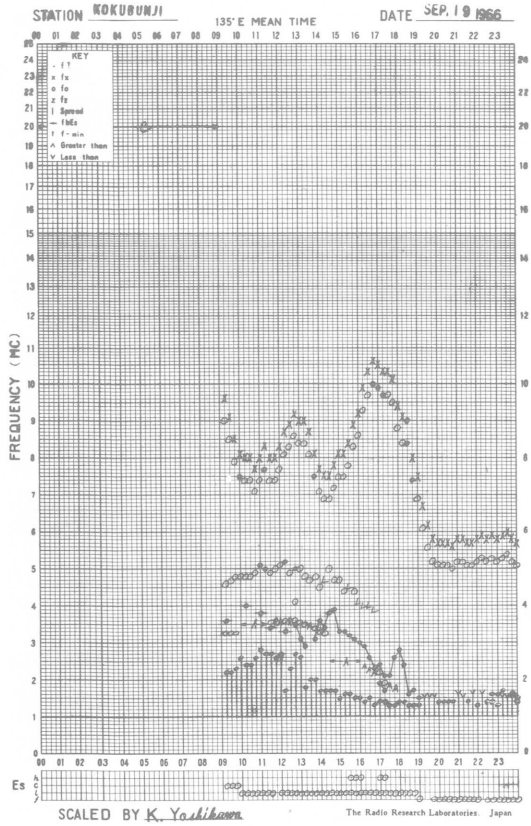

SCALED BY K. Yoshikawa The Radio Research Laboratories. Japan

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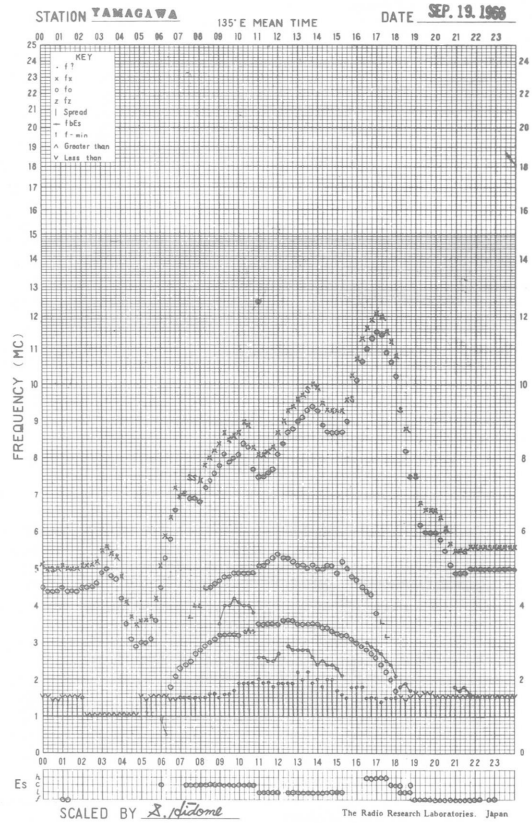

SCALED BY S. Kidoma The Radio Research Laboratories. Japan

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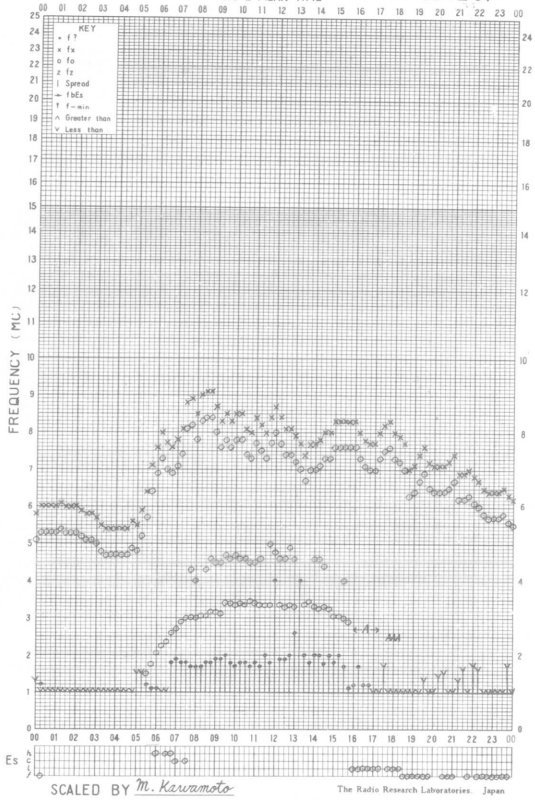

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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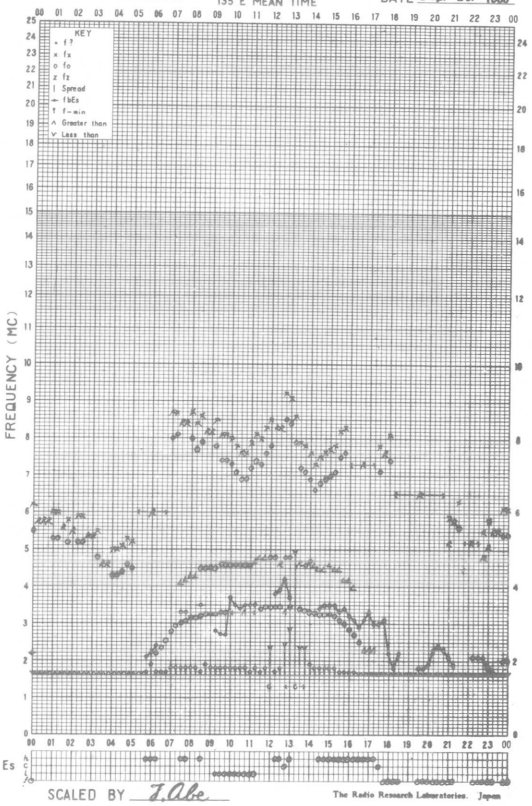

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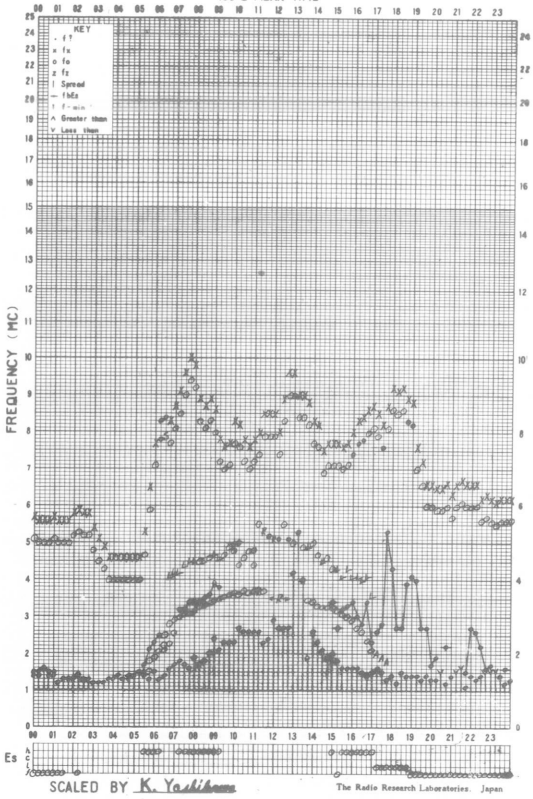

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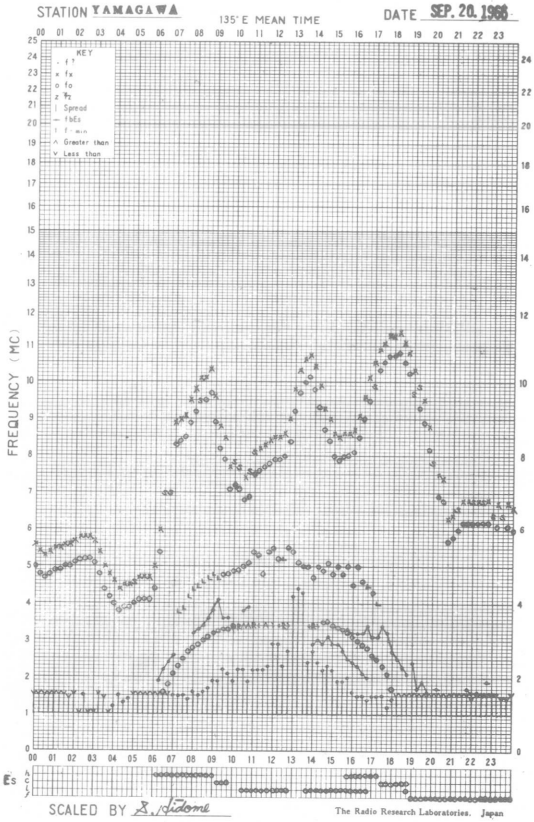

SCALED BY S. Sitomi The Radio Research Laboratories. Japan

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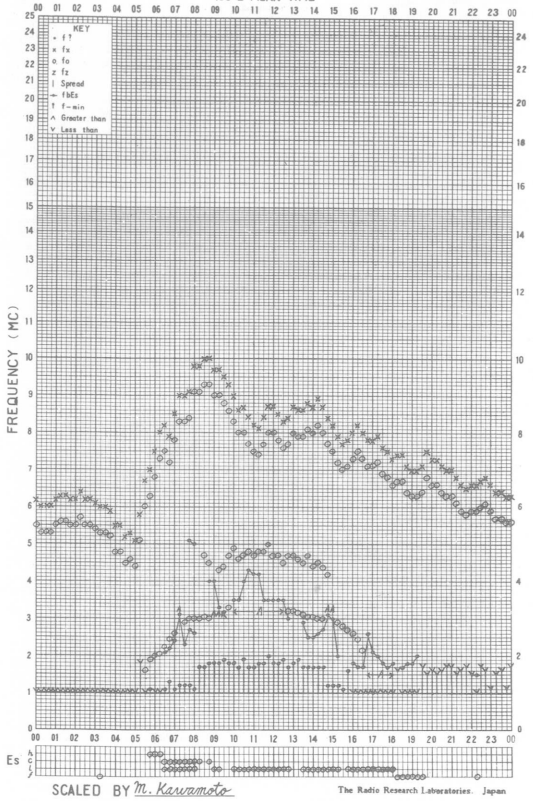

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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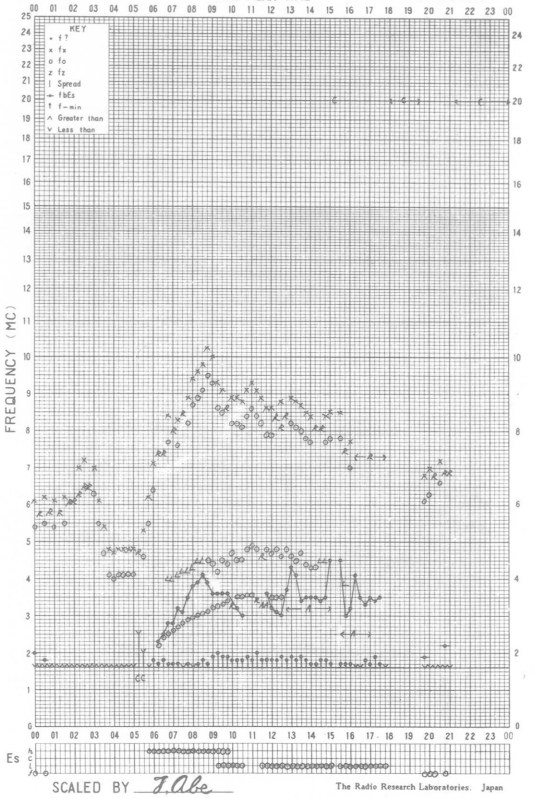

SCALED BY T. Abe The Radio Research Laboratories. Japan

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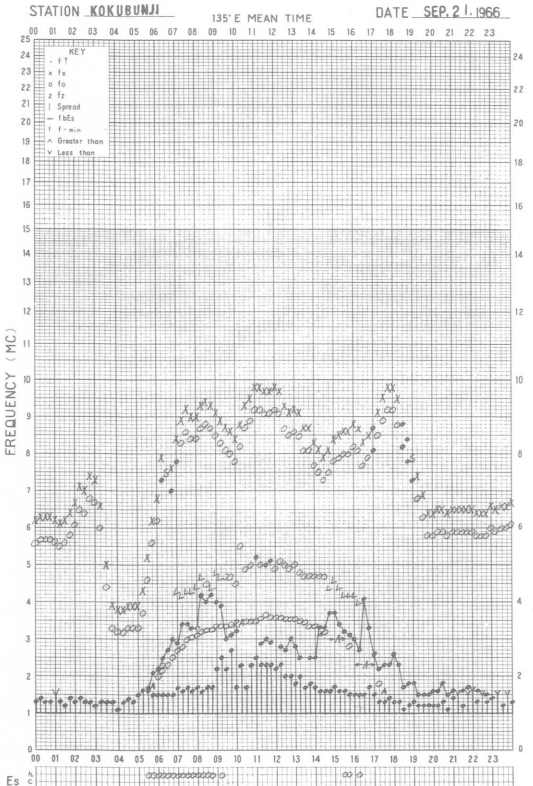

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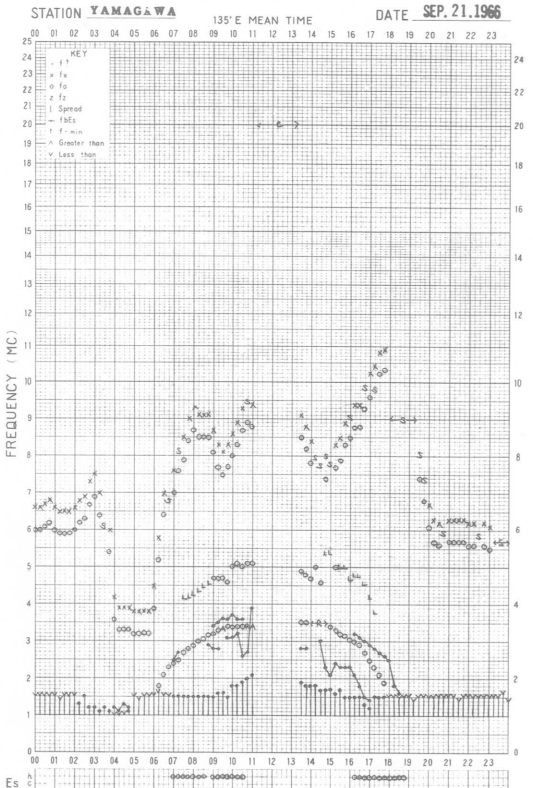

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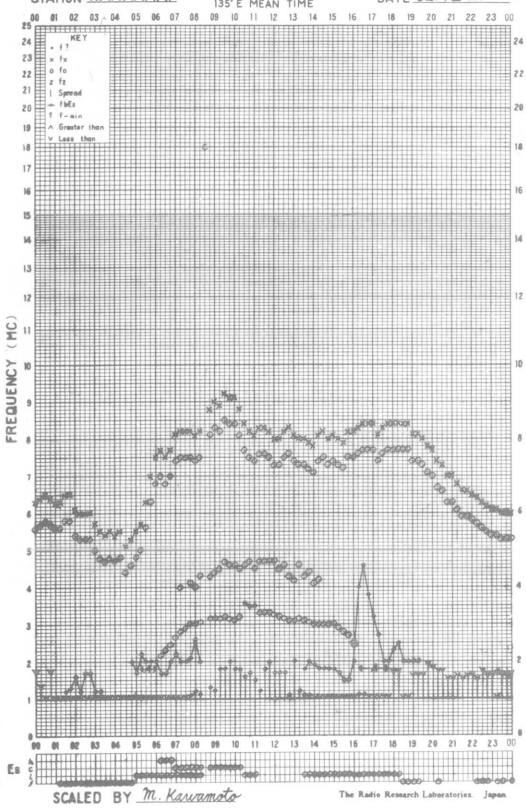

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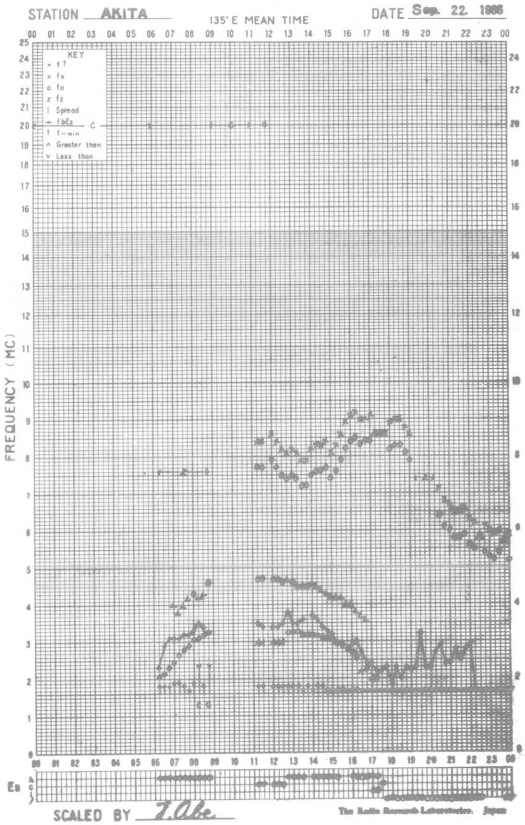

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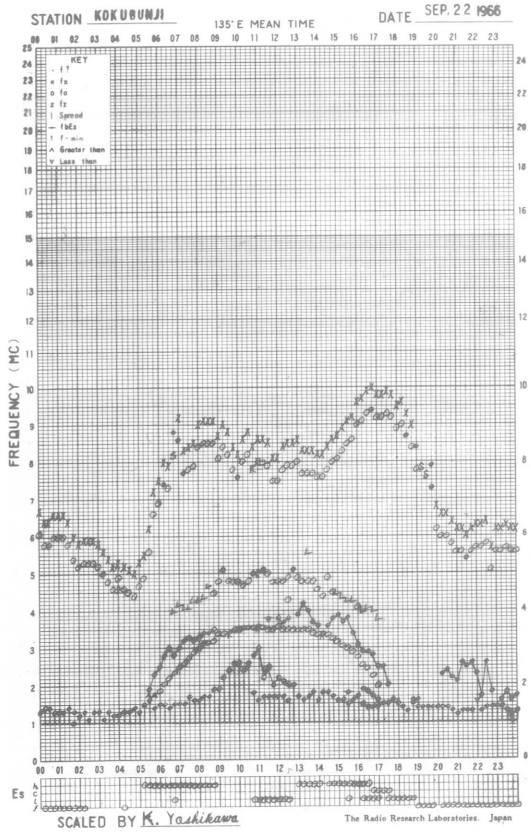

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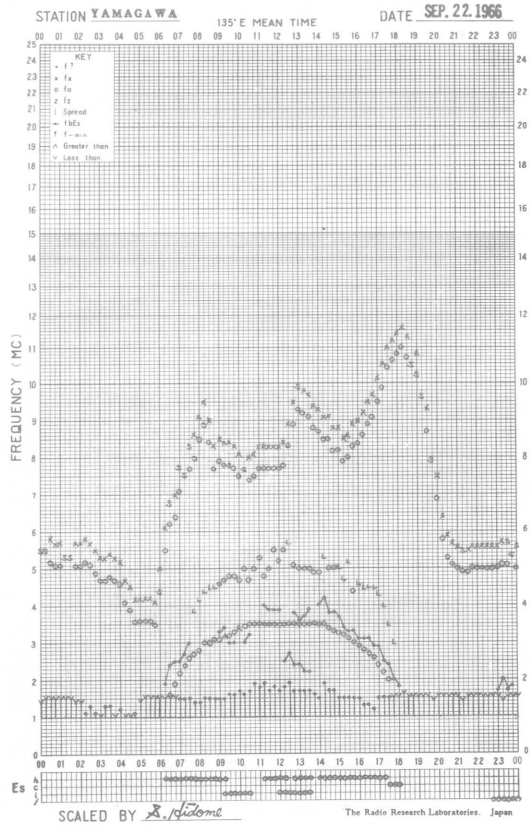

SCALED BY S. Shitome The Radio Research Laboratories. Japan

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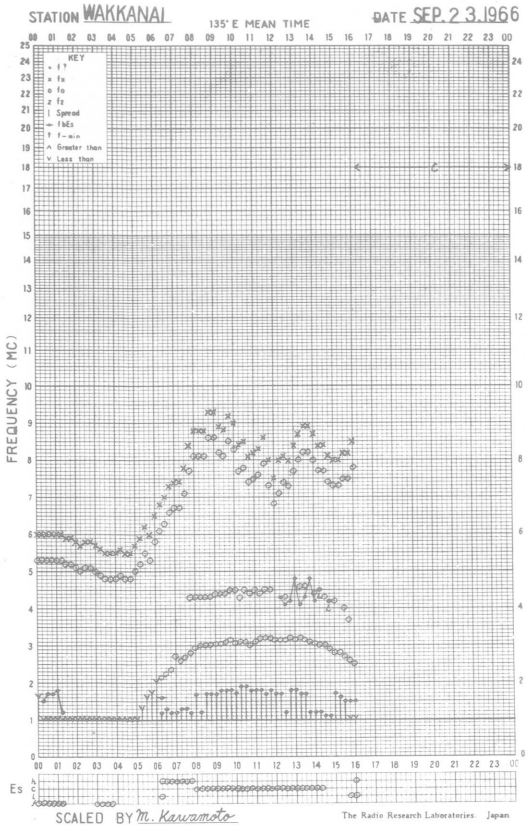

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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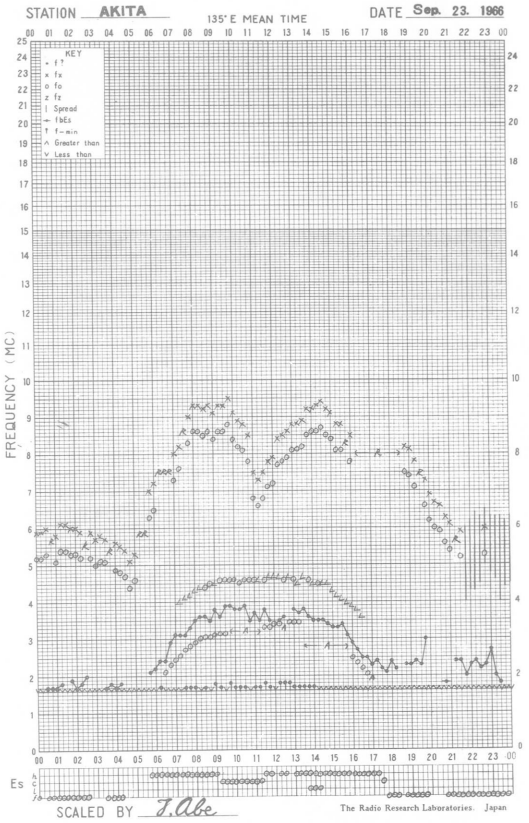

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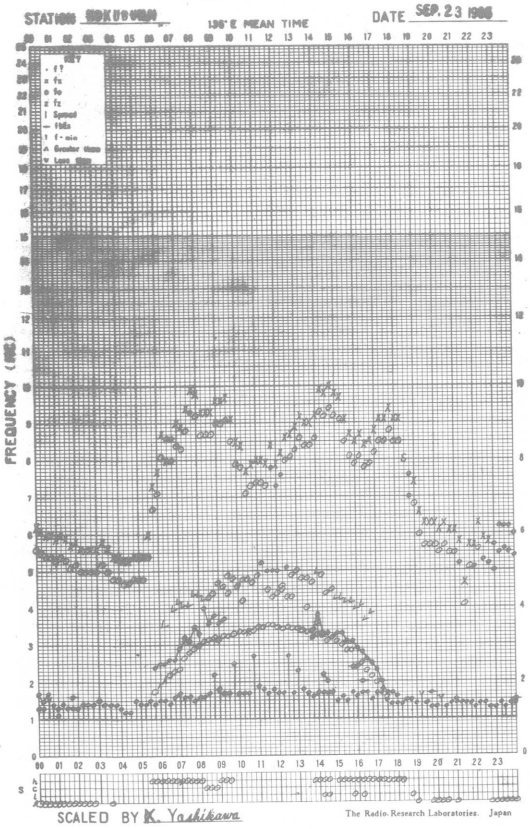

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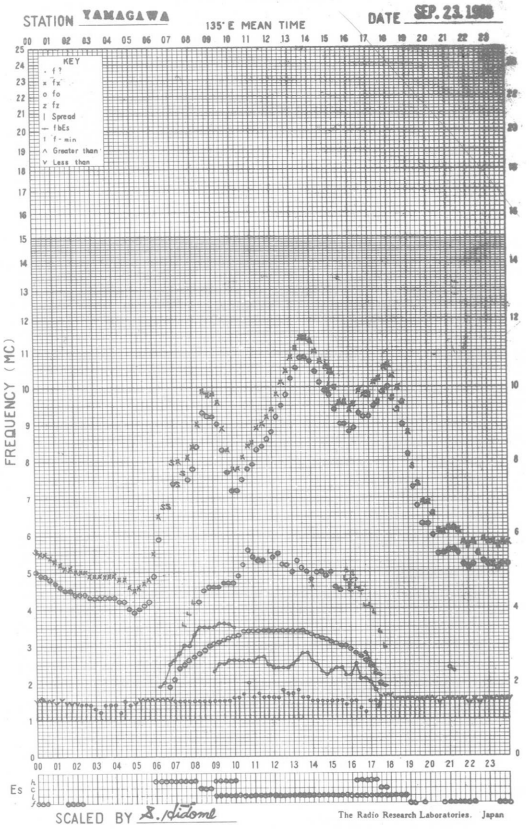

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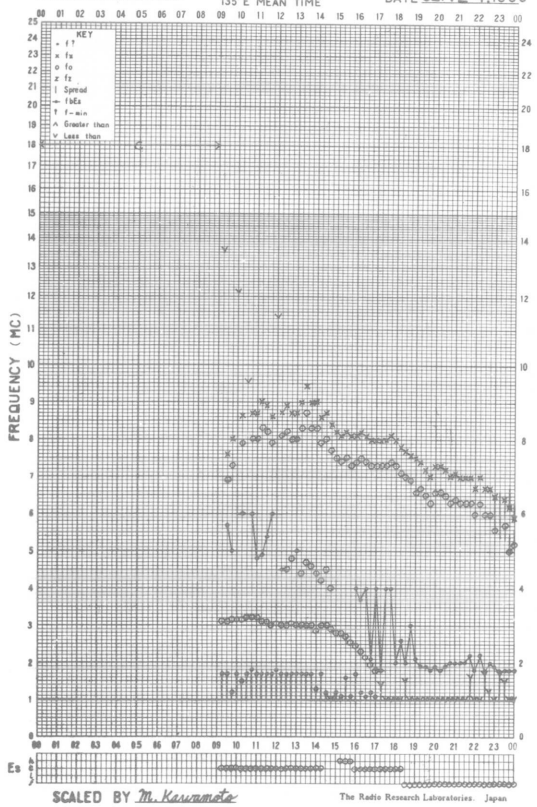

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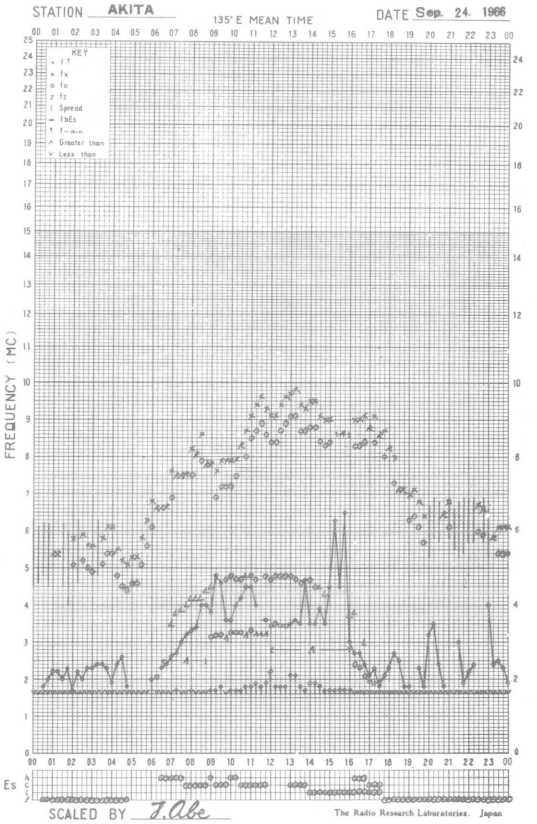

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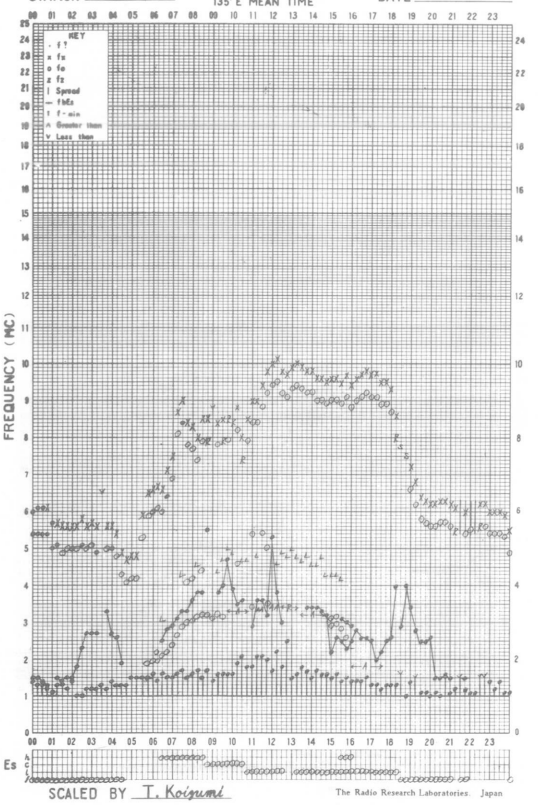

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The Radio Research Laboratories. Japan

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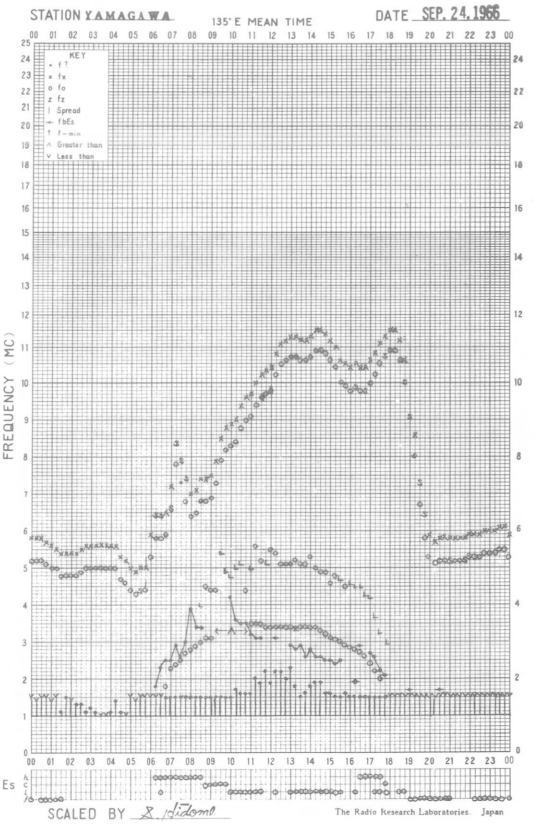

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The Radio Research Laboratories. Japan

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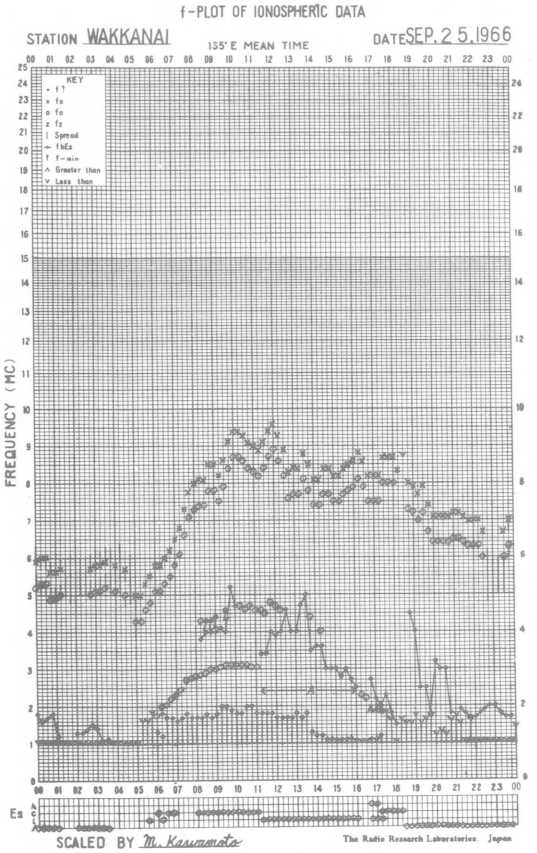

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The Radio Research Laboratories. Japan

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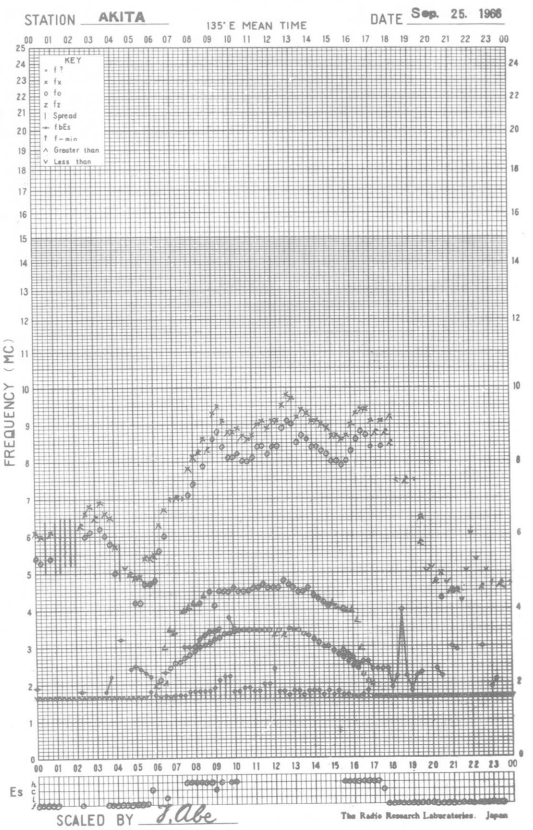

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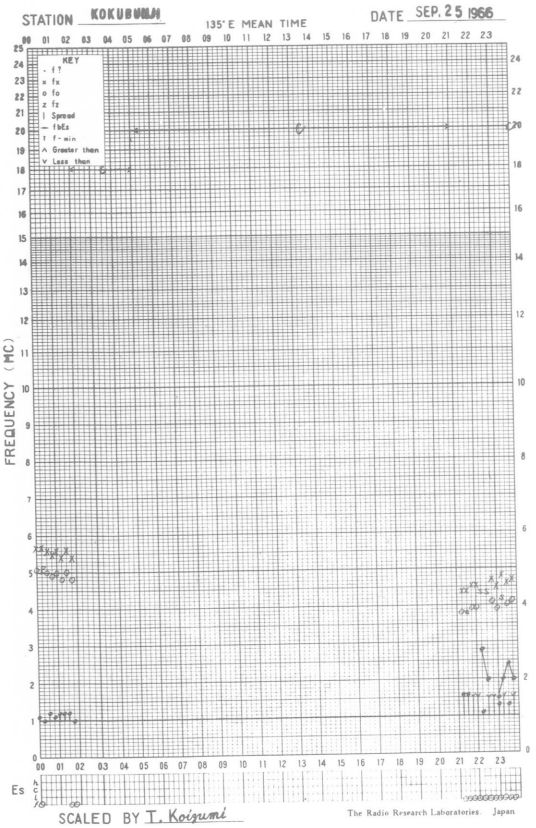

SCALED BY T. Koizumi

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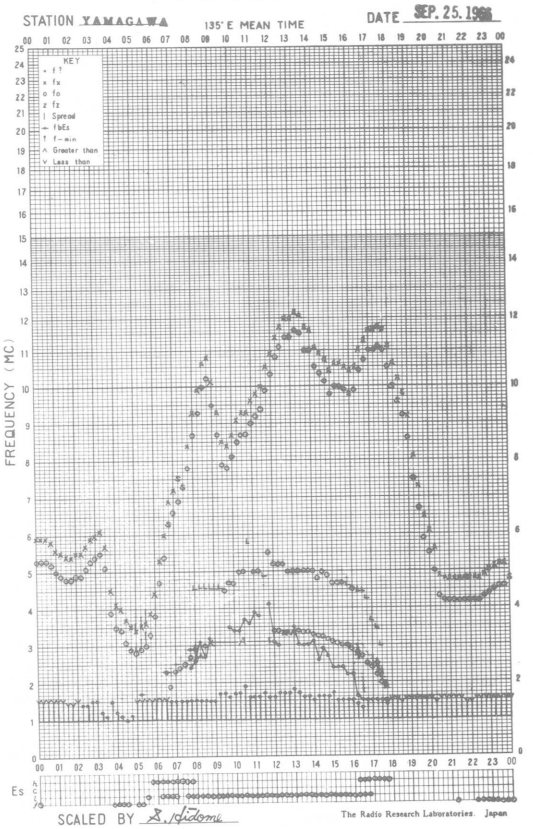
f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE SEP. 25. 1966

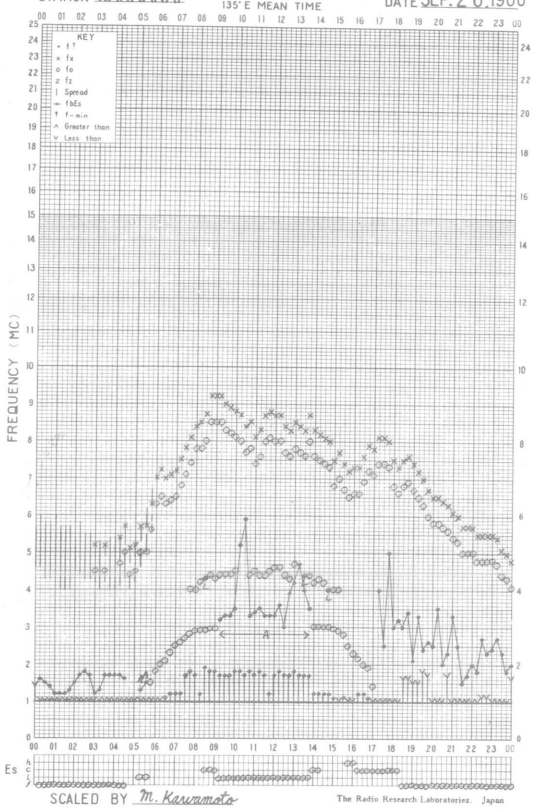


SCALED BY S. Hidomi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

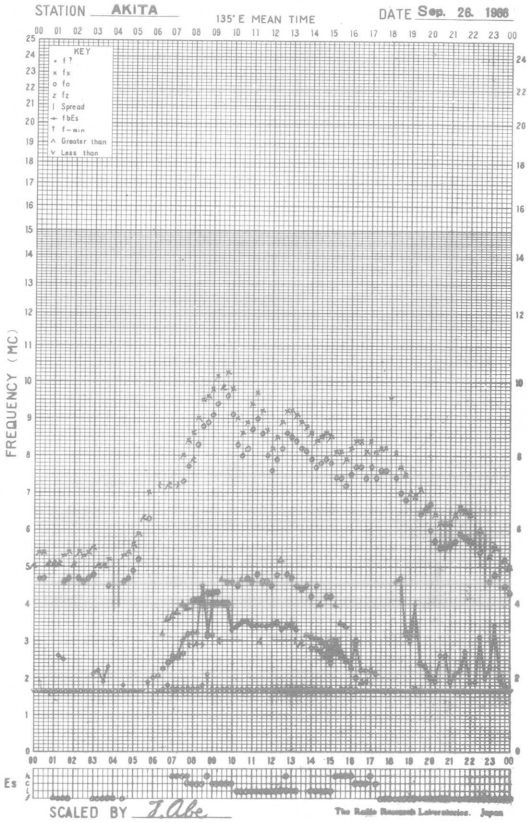
STATION WAKKANAI 135° E MEAN TIME DATE SEP. 26. 1966



SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

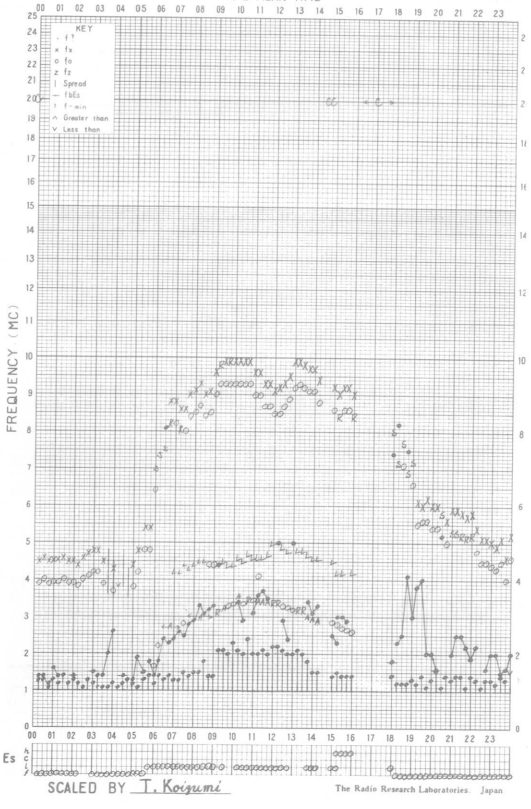
STATION AKITA 135° E MEAN TIME DATE Sep. 26. 1966



SCALED BY T. Abe The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

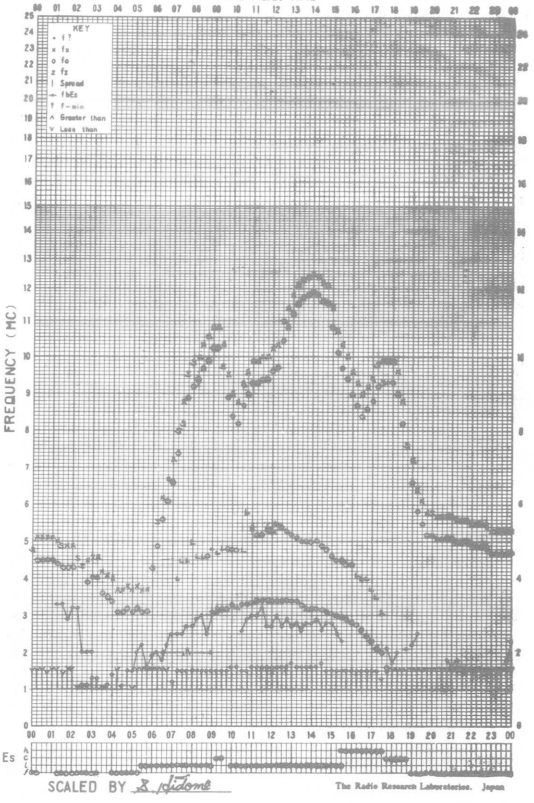
STATION KOKUBUNJI 135° E MEAN TIME DATE SEP. 26 1966



SCALED BY T. Koizumi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

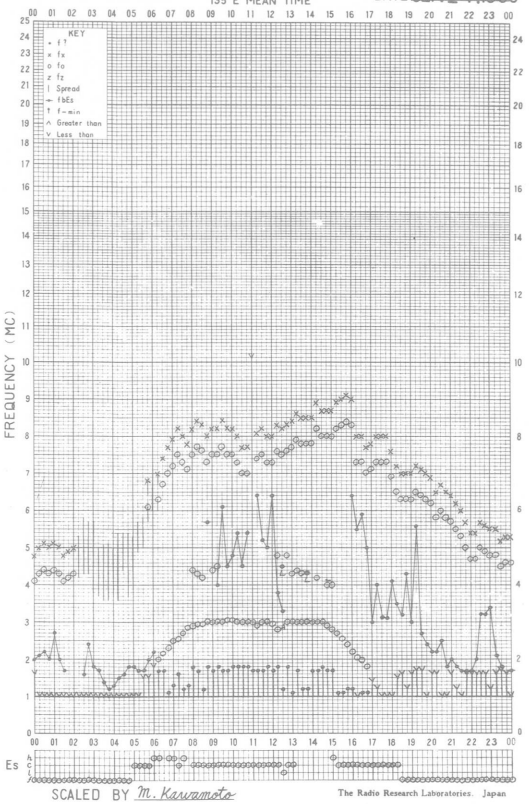
STATION YAMAGAWA 135° E MEAN TIME DATE SEP. 26. 1966



SCALED BY S. Shibuya The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE SEP. 27, 1966

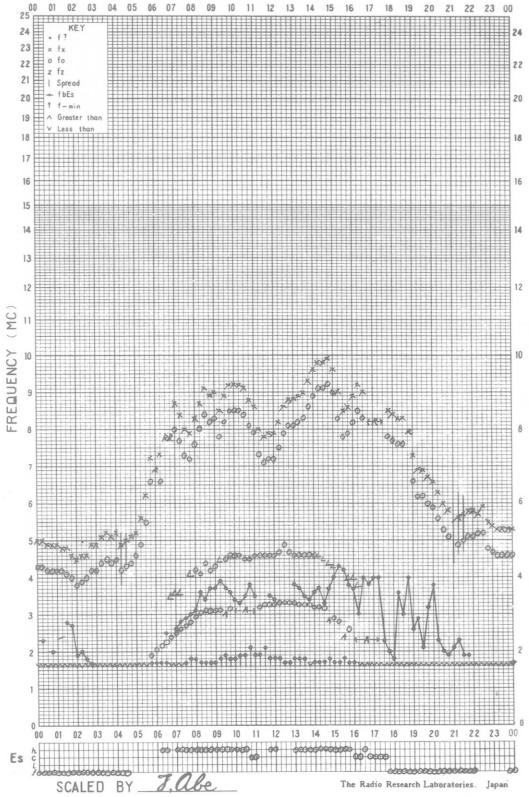


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Sep. 27. 1966

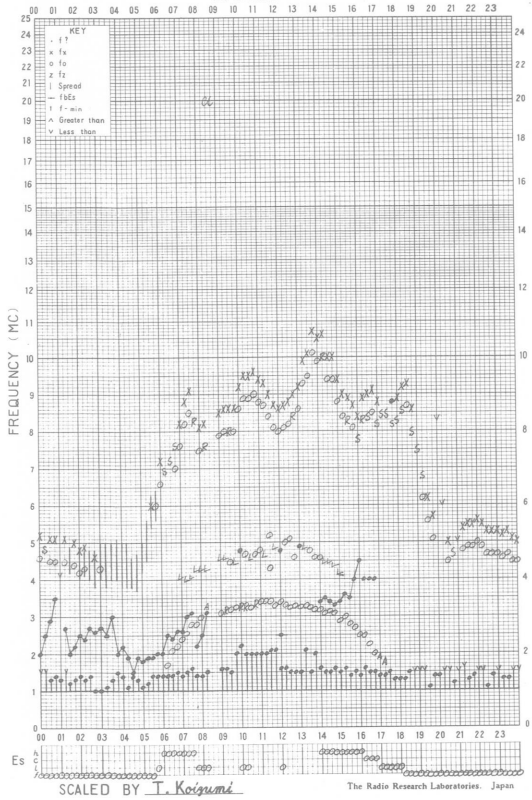


SCALED BY T. Abe

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 27 1966

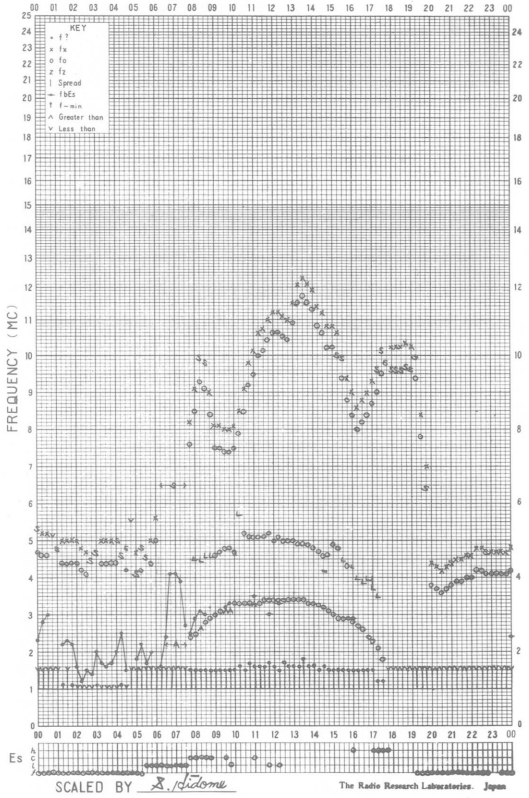


SCALED BY T. Koizumi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE SEP. 27. 1966

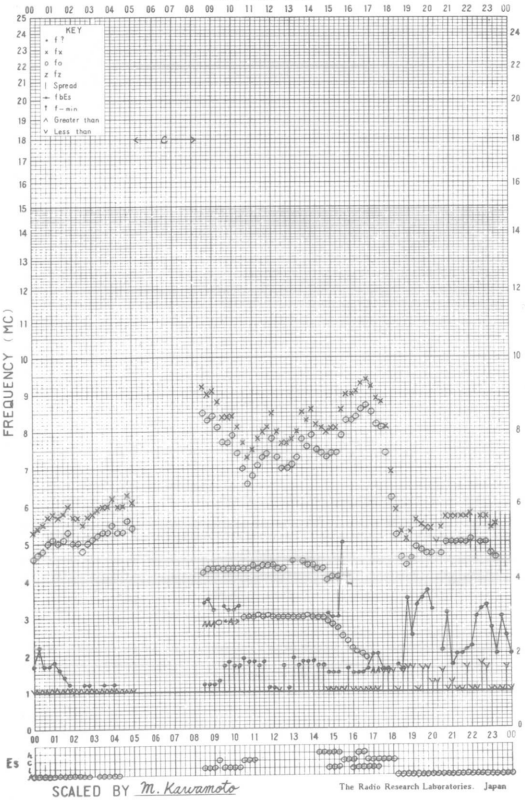


SCALED BY S. Sidome

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE SEP. 28. 1966

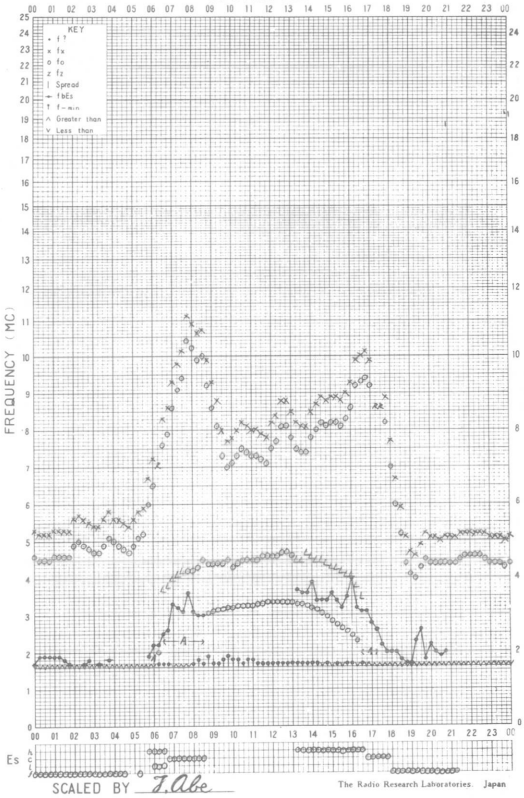


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Sep. 28. 1966

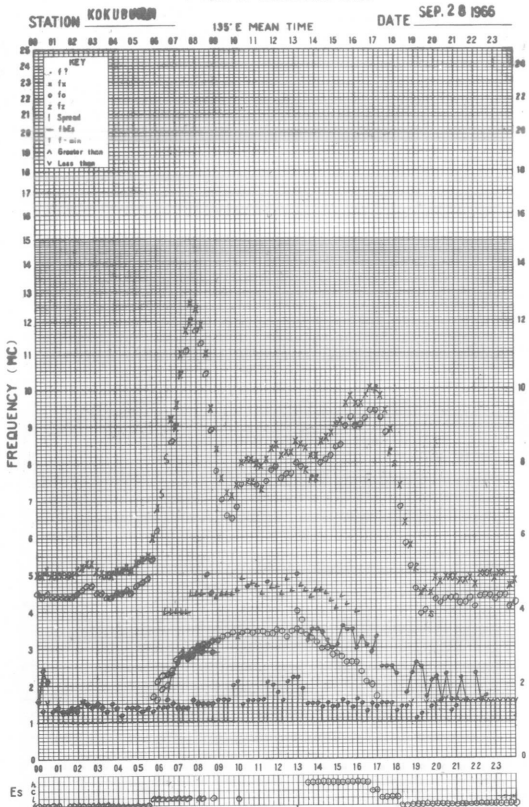


SCALED BY T. Abe

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 28 1966

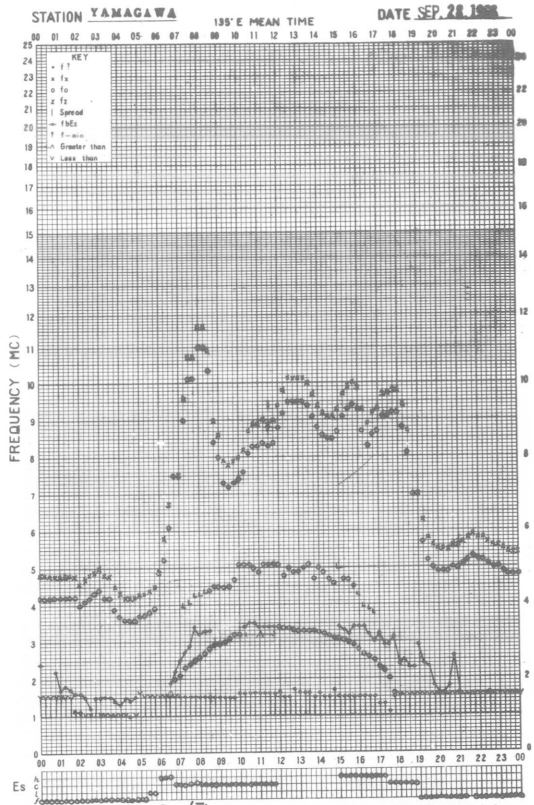


SCALED BY T. Koizumi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE SEP. 28. 1966

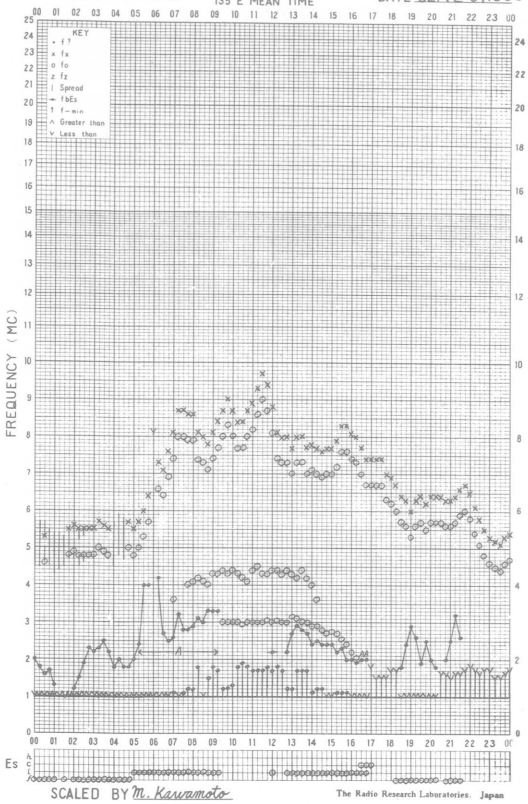


SCALED BY S. Ishioma

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

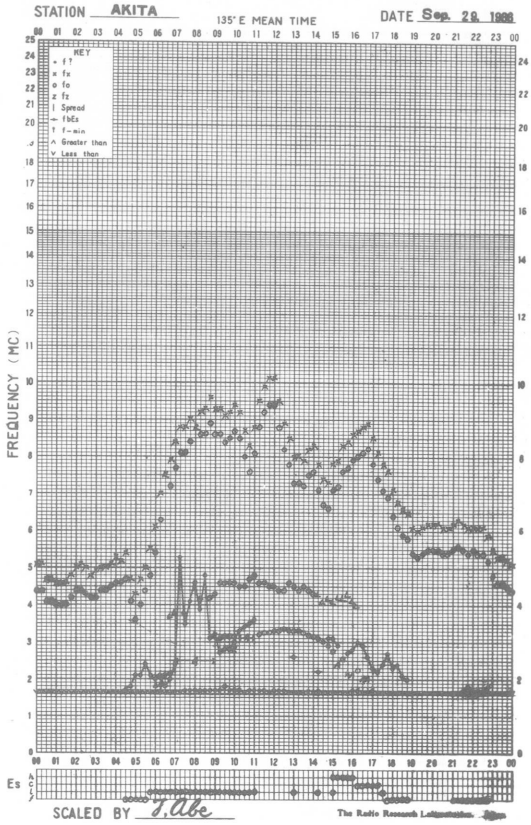
STATION WAKKANAI 135°E MEAN TIME DATE SEP. 29. 1966



SCALED BY M. Kasuyamoto The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

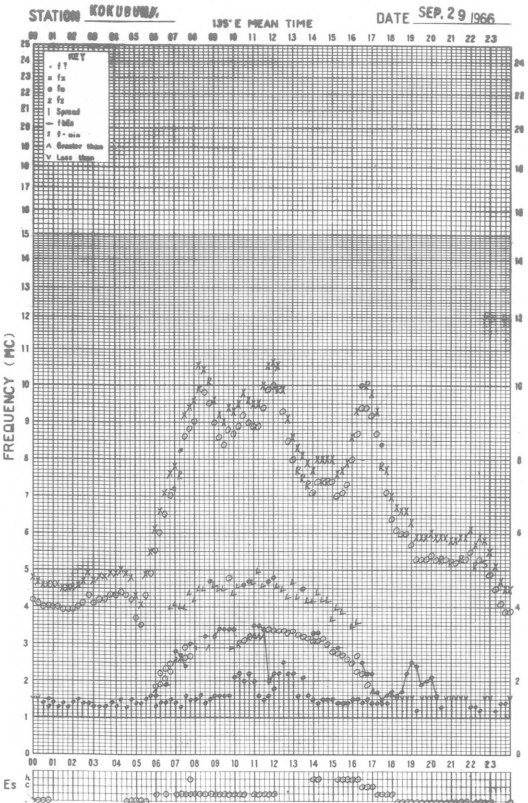
STATION AKITA 135°E MEAN TIME DATE Sep. 28. 1966



SCALED BY T. Abe The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

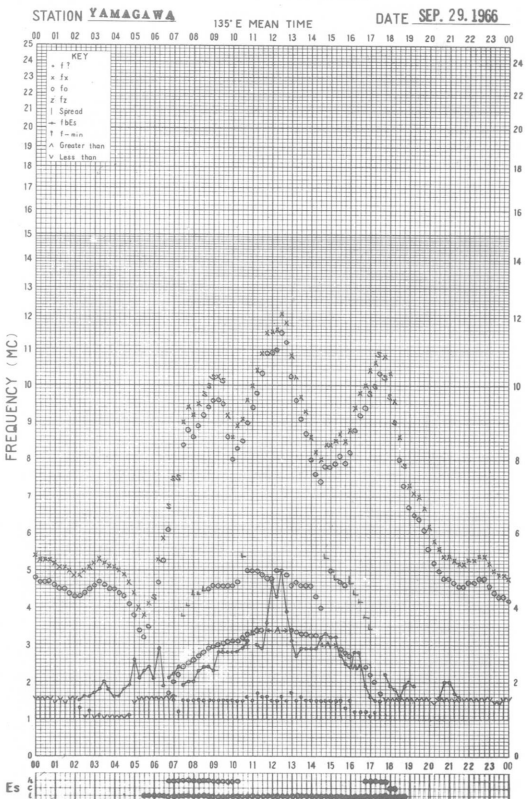
STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 29 1966



SCALED BY T. Koizumi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

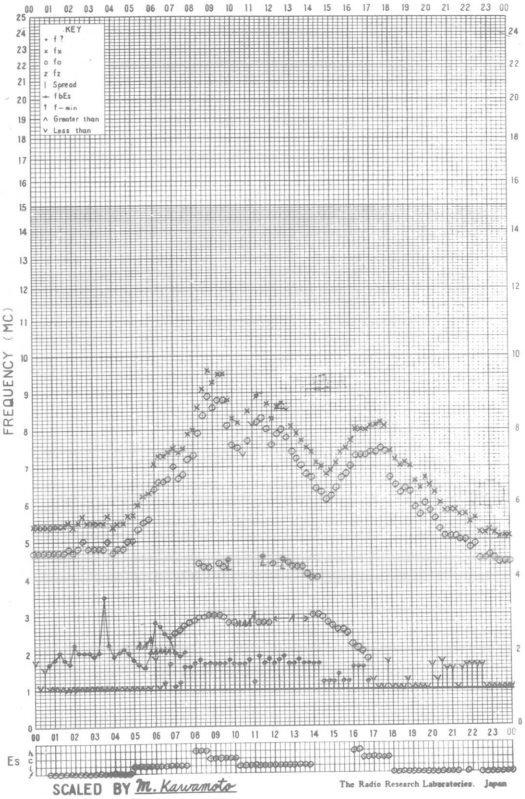
STATION YAMAGAWA 135°E MEAN TIME DATE SEP. 29. 1966



SCALED BY S. Nitoda The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE SEP. 30. 1966

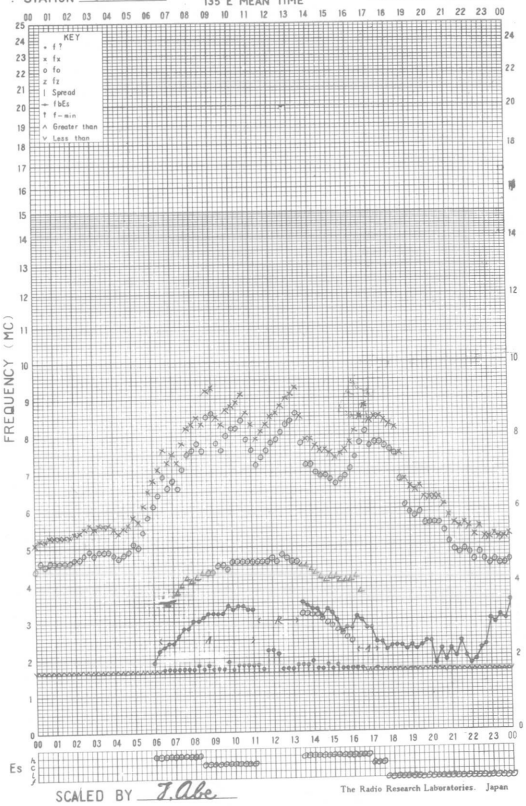


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Sep. 30. 1966

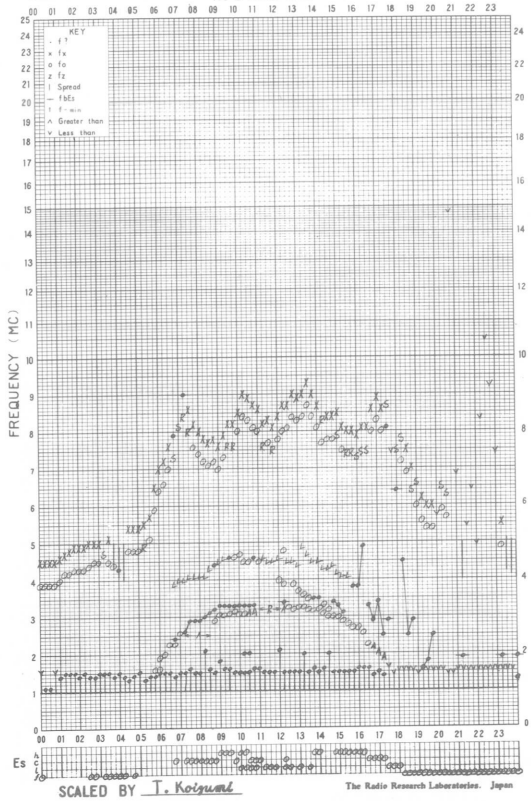


SCALED BY T. Abe

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE SEP. 30 1966

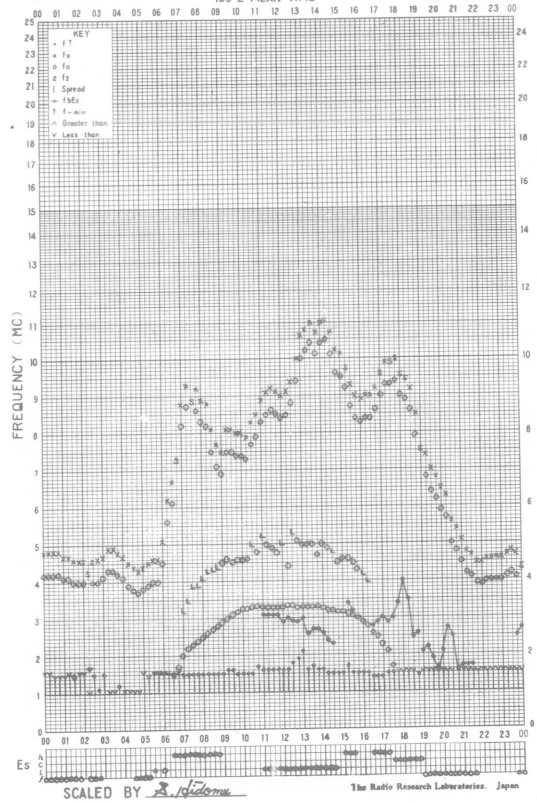


SCALED BY T. Koizumi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE SEP. 30. 1966



SCALED BY A. Sidorov

The Radio Research Laboratories. Japan

SOLAR RADIO EMISSION

Flux Density and Variability

Month: September 1966
Observing station: Hiraiso
Frequency: 200 Mc/s

	Flux density $10^{-22}Wm^{-2}(c/s)^{-1}$					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	38	20	15	12	25	2	1	1	1	1
2	11	11	9	8	10	1	1	2	0	1
3	8	8	8	8	8	0	0	0	0	0
4	7	9	10	7	8	0	2	0	0	1
5	8	8	8	8	8	0	0	0	0	0
6	7	8	8	7	8	0	0	0	0	0
7	7	7	7	7	7	0	0	0	0	0
8	7	7	7	8	7	0	0	0	0	0
9	7	8	8	9	8	0	0	0	0	0
10	9	9	10	10	9	0	0	0	0	0
11	9	9	10	8	9	0	0	0	0	0
12	9	8	8	9	9	0	0	0	0	0
13	10	8	7	-	9	0	0	0	-	0
14	9	7	7	8	8	0	0	0	0	0
15	8	9	10	-	8	0	0	0	-	0
16	8	7	10	11	8	0	0	0	0	0
17	11	10	10	11	11	0	0	0	1	0
18	11	11	12	16	11	0	0	0	2	0
19	12	12	12	16	13	1	1	1	1	1
20	16	16	11	29	15	1	1	1	2	1
21	13	10	10	11	16	0	0	0	0	1
22	9	9	9	8	9	0	0	0	0	0
23	7	8	7	9	8	1	0	0	1	0
24	9	9	9	(-)	9	0	0	0	(-)	0
25	10	10	8	8	9	0	0	0	0	0
26	7	9	10	10	8	0	0	0	1	0
27	9	8	8	9	9	0	0	0	0	0
28	8	8	8	8	8	0	0	0	0	0
29	7	9	10	9	8	0	0	0	0	0
30	(9)	-	8	9	9	(0)	-	0	0	0

Note No observations during the following periods:

13th 2020- 2400 24th 2020- 2340
15th 2020- 16th 0020 30th 0120- 0600

SOLAR RADIO EMISSION

Flux Density

Month: September 1966
Observing station: Hiraiso Frequency: 500 Mc/s

Flux density 10^{-22} $Wm^{-2}(c/s)^{-1}$

UT	00-03	03-06	06-09	21-24	Day
Date					
1	27	25	28	26	27
2	28	28	-	26	27
3	26	25	27	27	26
4	26	25	27	25	26
5	25	26	26	23	25
6	24	24	25	23	24
7	23	24	24	23	24
8	23	22	24	23	23
9	23	23	23	24	23
10	26	24	24	23	24
11	24	24	23	24	24
12	26	26	27	27	26
13	29	28	29	29	28
14	29	28	29	29	29
15	29	28	29	-	29
16	27	26	29	31	27
17	31	31	33	31	31
18	32	32	32	34	32
19	32	31	32	31	32
20	32	33	32	37	32
21	31	31	31	28	33
22	29	28	29	28	28
23	28	27	27	26	27
24	29	30	28	-	28
25	32	29	29	28	30
26	29	29	28	27	28
27	29	28	28	27	28
28	28	29	28	25	28
29	27	26	25	25	26
30	26	25	25	24	25

Note No observations during the following periods:

14th 0100- 0200
15th 2020- 2400
24th 2020- 2400

Distinctive Events

(single-frequency observations)

Month: September 1966
Observing station: Hiraiso
Normal observing period: 2020 - 0850 (sunrise to sunset)

Date	Frequency	Starting time	Time of maximum	Duration	Type	Flux density $10^{-22}Wm^{-2}(c/s)^{-1}$		Remarks
	Mc/s	UT	UT	minutes		peak	mean	
2	500	0547	-	9	C	>1120	>265	1st part
		0556	0559	35	C	540	160	2nd part
		0634.5	0658	64.5	C	95	50	3rd part
	200	0552	-	7	C	>1960	>570	1st part
		0559	0603.5	32	C	820	140	2nd part
		0631	0708	70	C	85	40	3rd part
3	200	0456.6	0457	0.5	C	>2090	>270	
4	500	0413.5	0418	26.5	C	736	81	
		0501.5	0506	18	C	60	35	
		0532	0542	38	C	60	34	
	200	0413.5	-	15.5	C	>1910	>270	
		0432	0502	46	C	75	60	
17	500	2356.5	2358	2.5	C	127	23	
	200	2357.5	2357.9	1.2	C	1680	40	
18	200	2020 ~ 2240			storm			
19	200	0547	0547.2	1	C	1650	140	
		2020 (SR) ~ 20th		0850	storm			
20	500	0208.4	0208.4	3	F	535	-	
	200	0344.5	0345.4	2	C	790	120	
	500	0636.4	0636.8	0.6	C	810	160	
	200	2020 (SR) ~ 21st		0100	storm			
21	500	0243	0243.4	2	C	355	33	
		0427?	0427.5	1?	C	740	147	
23	500	0018	0018.4	0.6	C	140	28	
	200	0017.6	0018	1	C	>1680	>135	
		2046	2046.3	0.9	C	850	140	

Measurement of H.F. Field Strength (Upper Side-band of WWV)

Sept. 1966 Frequency: 15 Mc/s, Bandwidth: ±40 c/s, Receiving Antenna: Rod (4.5 m) Measured at Hiraiso

UT Date	0015	0115	0215	0315	0415	0515	0615	0715	0815	0915	1015	1115	1215	1315	1415	1515	1615	1715	1815	1915	2015	2115	2215	2315
1	-20	-28	-15	-16	-14	S	<-23s	<-24s	<-17s	<-13s	- 7	<-11s	<- 2s	- 8	-21	<-21s	<-28s	<-36s	<-35s	<-35s	-19	-18	S	-26
2	-29	-12	-21	<-34s	<-16s	<- 9s	<-30s	-18	<-18s	<-11s	<-12s	<-11s	<-10s	-17	<-21s	<-11s	<-21s	<-16s	<-14s	<-36s	<-36s	<-17s	<-17s	<-18s
3	<-30s	<-34s	<-33s	-23	<-10s	<-19s	<-19s	<-16s	<-16s	<- 8s	<-14s	<-10s	<- 8s	<-13s	<- 9s	<-25s	<-37s	<-37s	<-31s	<-37s	-29	-22	<-29s	<-33s
4	<-27s	<-37s	<-19s	<-20s	C	<-18s	<-33s	<-20s	<-20s	<-11s	<- 5s	<-11s	<-35s	<-27s	<-33s	<-30s	<-36s	<-36s	<-19s	<-33s	-35	-22	<-22s	<-14s
5	<-25s	-28	-26	-23	-18	<-23s	<-17s	<-20s	<-20s	<-16s	<-13s	<-11s	<-19s	<-22s	<-22s	<-23s	<-23s	<-23s	<-23s	<-24s	-22	<-19s	<-17s	<-23s
6	<-19s	<-20s	<-21s	<-21s	<-14s	-21	<-35s	<-32s	<-24s	<-18s	<-16s	<-21s	<-22s	<-22s	<-24s	<-16s	<-25s	<-37s	<- 7s	-25	-16	-17	S	<-12s
7	<-21s	-22	-14	<-31s	<-17s	<-21s	<-34s	<-23s	<-25s	<-10s	<-18s	<-18s	-23	<-37s	<-37s	<-37s	<-37s	<-37s	<-30s	<-34s	<-36s	-20	<-16s	<-16s
8	-27	-22	-12	-24	<-19s	<-20s	<-23s	<-21s	<-17s	<-12s	<-10s	<- 8s	<- 9s	<-26s	<-16s	<-26s	<-21s	<-35s	<-23s	<-37s	-22	-17	<-13s	S
9	<-35s	<-16s	<-21s	<-23s	<-23s	<-12s	<-38s	<-36s	<-28s	<-22s	<-11s	<-20s	<-20s	<-29s	<-29s	<-38s	<-37s	<-37s	<-32s	<-32s	-27	<-20s	<-15s	<-20s
10	-13	-18	<-36s	<-20s	<-13s	<-18s	<-27s	<-33s	<-30s	<-20s	<- 8s	<-27s	<-25s	<-19s	<-20s	<-35s	<-36s	<-36s	<-10s	<-35s	<-35s	-11	-17	-10
11	<-18s	<-16s	<-33s	<-32s	<-25s	<-29s	<-14s	<-17s	<-19s	<-14s	S	<-11s	<-11s	<-21s	<-20s	<-20s	<-36s	<-37s	<-16s	<-37s	-26	-21	-19	-16
12	<-30s	-21	-18	-22	<-21s	<-26s	<-22s	<-26s	<-24s	<-10s	<- 8s	<-10s	-16	-20	<-29s	<-29s	<-19s	<-17s	<-12s	<-38s	-19	-14	-12	-16
13	-22	-13	-14	-21	<-19s	S	<-19s	<-22s	<-22s	<- 9s	<- 8s	< 3s	<-23s	<-32s	<-32s	<-33s	<-33s	<-33s	<-33s	-33	-33	<-15s	-18	-17
14	-21	-24	-18	-15	-17	<-21s	<-30s	<-30s	<-17s	<-13s	<-14s	<- 2s	-13	<-33s	<-33s	<-33s	<-33s	<-34s	<-34s	<-35s	<-36s	-16	-18	<-20s
15	<-16s	-21	-17	-18	<-14s	<-17s	-23	<-23s	-16	<-11s	<-14s	<-19s	<-23s	<-20s	<-24s	<-30s	<-20s	<-35s	<-21s	<-35s	-22	-22	<- 4s	< 4s
16	<-16s	<-34s	<-28s	<-30s	<-14s	<-16s	<-16s	<-23s	<-14s	<- 7s	<- 8s	<- 8s	<-10s	<-21s	<-10s	-14	-19	-21	- 8	<-26s	<-27s	<- 1s	<- 7s	<-10s
17	-22	-14	<-35s	<-11s	<-17s	<-18s	<-22s	<-18s	<-18s	<- 5s	<-13s	<- 6s	-17	-31	-26	-31	-24	-22	<-16s	<-34s	-22	<-14s	< 8s	<-13s
18	<-25s	-22	-14	<-27s	<-34s	<-33s	<-24s	<-24s	<-22s	<-15s	<-12s	<- 8s	- 6	-11	-10	-18	-24	<-35s	<-11s	<-11s	-18	<- 5s	<-10s	-13
19	<-21s	-10	-15	-20	-17	<-21s	-25	-20	<-18s	<-11s	<-16s	<-17s	-16	-13	- 7	- 6	-16	-13	-14	(-34)s	-15	<- 2s	<- 3s	- 8
20	-18	-11	-12	<-31s	<-30s	<-19s	<-20s	-19	<-13s	<- 8s	<-11s	- 9	<- 8s	-21	<-20s	-10	<-20s	<-28s	<-16s	<-34s	<-35s	<- 9s	-13	-20
21	-17	-18	-13	<-25s	<-11s	<-18s	-28	-22	-25	<-13s	<- 7s	<-25s	<-15s	<-30s	-12	-19	-12	-14	<- 9s	<-34s	-20	- 5	- 9	-12
22	- 7	- 9	- 8	-19	-19	<-17s	-20	<-19s	<-17s	<-10s	<- 5s	< 1s	<- 4s	-12	(-13)s	-14	-14	- 7	-16	(-31)s	-13	<- 6s	<- 8s	<-13s
23	-20	-15	- 8	<-13s	<-28s	<-20s	<-19s	<-17s	<-17s	-11	<- 5s	<- 9s	-16	-10	-12	-17	-22	-19	<- 8s	<- 3s	-16	<-10s	< 1s	-12
24	- 9	-11	-19	-24	<-14s	<-11s	<-19s	<- 8s	-11	<- 6s	<- 3s	< 5s	<- 5s	-18	-10	-18	<-34s	-14	- 4	-11	- 8	(- 3)s	- 6	- 2
25	0	- 9	- 8	-17	(-12)s	- 8	-17	-17	<-15s	<-13s	<- 3s	<- 6s	-17	-20	-27	<-29s	<-29s	<-34s	<-16s	<-34s	-11	- 6	-10	- 8
26	- 6	<-27s	<-28s	<-29s	<- 3s	<-12s	<-16s	<-16s	<-13s	<- 8s	<- 6s	< 4s	-14	-15	-11	-26	<-35s	-13	-13	<-36s	- 9	<- 5s	-10	<-10s
27	< 8s	<- 4s	-23	<-29s	<-10s	<-12s	<-19s	<-19s	<-12s	<- 7s	<- 6s	<- 2s	-21	-23	<-30s	<-36s	<-36s	-17	-14	- 5	-24	- 3	- 7	- 9
28	<-27s	- 5	-16	<-19s	-15	<-14s	<- 8s	<-19s	<-15s	<-12s	<-14s	<-15s	<-21s	-22	-23	<-17s	<-36s	-18	<-10s	- 7	-16	- 9	3	-12
29	<-19s	- 4	-25	<-25s	<-12s	<-13s	<-19s	<-19s	<-14s	<- 5s	<-11s	<-18s	<-25s	-13	<-31s	<-37s	<-37s	<-37s	<-33s	-29	-23	-20	-20	-13
30	-12	- 3	<-14s	<-28s	<- 9s	<- 8s	<- 9s	<- 8s	<-11s	<- 2s	<-10s	<- 4s	<-12s	<-16s	<-20s	<-17s	<-17s	-15	<-11s	<-35s	-13	- 5	- 6	-11
Median	(<-21)s	(-18)s	(-18)s	<(-23)s	<-16s	<-18s	<-21)s	<-20s	<-17s	<(-11)s	<-10s	<-10s	<-16s	(-21)s	<-21s	<-24)s	<-27)s	<-31)s	<-16s	<-34)s	-22	(<-16s	(<-14s	(<-15s
Median Count	30	30	30	30	29	28	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	28	29
Upper decile	<- 6s	<- 4s	- 8	<-15s	<-10s	<- 9s	<-14s	<-16s	<-12s	<- 5s	<- 5s	< 3s	<- 5s	-11	<-10s	<-11s	-16	-13	<- 8s	<- 7s	-11	<- 3s	< 1s	<- 8s
Lower decile	<-30s	<-34s	<-33s	<-31s	<-28s	<-26s	<-34s	<-32s	<-25s	<-18s	<-16s	<-21s	<-25s	<-32s	<-33s	<-37s	<-37s	<-37s	<-33s	<-37s	<-36s	<-22s	<-20s	<-23s

Measurement of H.F. Field Strength (Upper Side-band of WWVH)

Sept. 1966 Frequency: 15 Mc/s, Bandwidth: ±40 c/s, Receiving Antenna: Rod (4.5 m) Measured at Hiraiso

UT Date	0045	0145	0245	0345	0445	0545	0645	0745	0845	0945	1045	1145	1245	1345	1445	1545	1645	1745	1845	1945	2045	2145	2245	2345
1	S	-11	- 2	7	14	16	21	13	14	11	<- 9s	- 2	0	- 4	<-18s	- 2	<-35s	9	- 4	- 1	4	- 2	- 1	- 7
2	- 8	- 1	1	5	12	15	- 6	2	0	- 1	2	- 6	<-11s	- 1	<-27s	<-25s	<-18s	1	<-10s	- 7	0	1	- 7	- 7
3	- 6	- 4	4	1	7	16	15	21	20	16	14	9	14	10	-12	<-15s	<-37s	<-26s	<-23s	5	- 1	3	- 1	- 2
4	- 4	1	2	7	-21	6	12	15	15	5	1	- 8	9	-11	6	8	1	13	1	1	1	- 3	- 9	- 9
5	-10	- 5	- 4	- 1	5	14	16	6	1	1	- 6	<-15s	<-22s	<-22s	<-22s	<-23s	<-23s	<-23s	<-11s	- 9	- 3	1	- 4	- 9
6	- 9	- 5	1	3	7	13	17	12	9	-10	<-13s	<-22s	<-28s	-23	<-28s	<-20s	<-31s	-19	<- 5s	- 6	- 1	- 4	- 3	- 5
7	- 1	2	- 2	0	18	14	10	-14	(- 5c	- 4	<-13s	-20	-14	<-37s	<-37s	<-37s	<-37s	-16	6	0	- 1	0	- 4	(- 2c
8	-10	- 1	- 2	5	11	12	15	4	10	14	5	2	<- 7s	<-17s	<-22s	<-22s	<-35s	<-31s	<-34s	- 9	- 1	- 8	<-13s	-16
9	-22	-17	- 5	- 5	1	6	4	2	1	- 4	<-11s	<-21s	<-23s	<-29s	<-29s	<-37s	<-37s	-32	- 4	-19	- 3	3	- 5	(- 7c
10	- 3	- 3	- 1	3	12	15	13	16	-15	-14	<- 8s	<-31s	<-32s	<-25s	<-28s	<-27s	<-36s	<-36s	<-11s	3	0	0	6	- 5
11	- 5	- 3	2	8	12	13	16	5	4	4	- 1	- 1	<-11s	<-20s	<-21s	<-28s	<-37s	1	2	- 4	- 2	0	- 3	-11
12	0	- 3	- 4	4	12	12	15	-17	-13	<-14s	<- 9s	<-25s	<-20s	<-20s	<-31s	<-27s	<-25s	S	<- 9s	- 4	2	- 3	0	- 3
13	- 4	- 2	1	5	15	19	15	-10	- 7	<-10s	- 7	<-25s	<-23s	<-32s	<-32s	<-33s	<-33s	-17	-30	2	3	- 5	- 3	-13
14	-10	- 1	2	3	14	13	18	3	1	- 6	6	<-18s	<-24s	<-33s	<-33s	<-33s	<-33s	- 5	- 8	- 3	2	- 2	- 4	- 9
15	- 9	- 3	- 3	8	9	21	18	-10	-11	<-11s	<-14s	<-23s	<-19s	<-23s	<-29s	<-28s	<-30s	<-28s	<-19s	- 6	1	- 4	2	-11
16	- 7	- 4	- 2	7	18	14	- 2	-10	11	5	18	- 7	<- 8s	<-21s	<-11s	<-23s	<-23s	4	<- 7s	7	10	2	4	- 3
17	-10	-11	- 1	3	12	15	13	4	<-12s	<-14s	<-12s	<-23s	<-24s	<-34s	<-24s	<-35s	<-34s	11	- 6	4	- 1	- 7	< 4s	-12
18	-10	- 6	2	9	8	13	15	11	8	14	18	22	9	20	<-31s	<-34s	<-34s	-21	<- 9s	- 3	- 3	- 7	- 7	-11
19	- 9	- 6	- 1	13	12	14	14	-10	- 9	3	<-16s	<-30s	-16	-23	<-21s	<-17s	-26	<-33s	<-20s	- 5	0	<- 7s	<-12s	<-12s
20	<-14s	- 6	3	- 1	3	6	14	- 4	- 7	18	17	<-13s	2	- 8	<-23s	<-21s	-23	7	<-13s	- 2	- 7	- 4	- 8	-11
21	(-10c	-10	0	5	14	16	5	9	- 5	14	- 4	<-11s	<-21s	<-26s	<-20s	<-14s	-23	12	<-12s	1	2	- 4	-10	- 9
22	- 2	- 5	0	13	17	31	8	- 8	- 7	0	- 3	<-15s	<-12s	3	-20	<-23s	<-26s	<-28s	<-24s	2	4	- 1	- 3	- 6
23	- 7	- 4	- 1	12	14	17	17	14	- 7	2	6	-27	<-15s	-23	<-23s	<-25s	<-33s	2	<- 5s	- 8	3	- 4	- 6	- 7
24	- 2	2	4	9	20	22	27	11	27	21	< 0s	<-12s	13	15	<-20s	<-26s	<-33s	6	4	- 1	4	0	- 3	- 6
25	- 6	0	3	15	19	18	18	- 4	-11	<-18s	<- 8s	<-31s	<-27s	<-31s	<-35s	<-29s	-27	10	7	7	5	(1s	- 4	- 7
26	- 3	1	8	18	11	18	10	- 8	<-10s	<-13s	<- 1s	<-24s	<-19s	<-25s	<-30s	<-29s	<-35s	-12	-13	- 4	4	- 2	- 8	- 7
27	< 4s	- 2	8	8	27	23	7	- 5	- 1	<- 5s	<- 7s	<-21s	<-32s	<-17s	<-32s	<-36s	<-36s	-28	-14	- 2	3	4	- 2	- 2
28	- 2	0	2	8	10	1	- 8	- 4	-10	<-10s	<-14s	<-26s	<-22s	<-24s	<-32s	<-32s	<-36s	<-22s	<- 8s	4	8	6	- 2	- 3
29	- 2	4	5	8	16	6	-10	- 8	- 8	<-12s	<-16s	<-31s	-23	<-19s	<-37s	<-37s	<-37s	-24	3	- 3	5	0	- 1	- 5
30	- 7	- 3	6	10	18	14	- 5	- 6	<- 7s	<- 7s	<- 6s	<-16s	<-18s	<-34s	<-16s	<-17s	<-17s	1	- 8	4	- 2	2	1	- 4
Median	(- 7s	- 3	1	7	12	14	14	2	- 5	- 3	<- 6s	<-19s	<-19s	<-23s	<-26s	<-27s	<-33s	-16	<- 9s	- 2	1	- 2	(- 3s	- 7
Median Count	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30
Upper decile	<- 1s	2	6	13	19	22	18	15	15	16	17	2	9	10	<-12s	<-14s	<-18s	11	4	5	5	3	< 4s	- 2
Lower decile	<-10s	-11	- 4	- 1	3	6	- 6	-10	<-12s	<-14s	<-14s	<-31s	<-28s	<-34s	<-35s	<-37s	<-37s	<-32s	<-24s	- 9	- 3	- 7	<-10s	<-12s

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Sept. 1966	Whole Day Index	H B 06 12 18 / 12 18 24	W W V 00 06 12 18 / 06 12 18 24	S F 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Warning 00 06 12 18 / 06 12 18 24	Principal magnetic storms Start	End	ΔH
1	3+	3 (3) 4	3 - - 2	3 4 (4) 3	3 4 3 4	U N N N			
2	3-	3 3 2	3 - - 1	3 3 (4) 3	4 4 3 4	N N U U	0823	---	284γ
3	2+	(3 2) 2	2 - - 1	3 3 3 3	4 4 4 3	U U W W	---	---	
4	2+	(3) C C	2 - - 1	3 2 3 3	4 4 4 4	W U W W	---	24xx	
5	3o	4 3 4	1 - - 1	3 4 3 3	4 4 4 3	U N N N			
6	3o	(3) 3 4	1 - - 2	4 3 (3) 3	3 4 3 4	N N N N			
7	3o	C 3 3	1 - - 3	3 3 4 4	4 4 4 4	N N N N			
8	3o	C 3 3	3 - - 1	4 4 3 3	4 4 4 3	N N N N			
9	3-	C (3 3)	1 - - 2	3 3 3 3	3 (3) 3 3	N N N N			
10	3+	C (4 4)	2 - - 2	3 4 (4) 3	4 4 (4) 3	N N N N			
11	3+	C (4 4)	1 - - 3	3 4 4 3	4 4 4 4	N N N N			
12	4-	4 4 4	3 - - 3	4 4 (4) 3	4 4 4 4	N N N N			
(13)	4-	4 4 4	3 - - 3	4 4 4 4	4 4 4 3	N N N N			
(14)	4-	4 3 4	3 - - 4	4 4 4 4	4 4 4 4	N N N N	1511	---	88γ
(15)	4-	4 3 4	4 - - 3	4 4 4 4	4 4 4 4	N N N N	---	13xx	
16	4-	4 4 4	3 - - (2)	4 4 4 4	4 4 4 4	N N N N			
17	4o	4 4 4	3 - - (4)	4 4 (4) 4	4 4 4 4	N N N N			
18	4o	5 4 4	4 - (4) 4	4 (4 4) 4	4 5 4 4	N N N N			
19	5-	5 4 4	5 - (5) 4	4 5 5 4	4 4 4 4	N N N N			
20	4+	4 4 4	4 - - 4	4 4 5 5	4 4 4 4	N N N N			
21	4+	4 4 4	4 - (4) 4	4 5 5 5	4 4 4 4	N N N N			
22	5-	4 4 4	4 - (4) 5	5 5 5 5	4 4 4 4	N N N N			
23	4o	5 4 3	4 - (4) 4	5 4 (4) 4	4 4 4 4	N N N N	0856	---	67γ
24	4+	5 4 4	4 - - 5	5 3 (4) 4	4 5 4 4	N N N N	---	---	
25	4o	4 5 4	4 - - 4	4 3 3 4	4 4 4 4	N N N N	---	12xx	
26	4-	(4) 4 4	3 - - 4	4 4 3 4	4 4 4 4	N N N N			
27	4-	4 3 4	(3) - - 4	4 4 3 4	4 3 3 4	N N N N			
28	4-	3 4 4	4 - - 4	4 3 (4) 4	4 3 3 4	N U U U			
29	3+	3 3 3	3 - - 3	4 3 4 4	4 4 3 4	N N N N			
30	4o	3 4 4	4 - - 4	4 4 4 4	4 4 4 4	N N N N			

IQSY GEOALERT and ADALERT (Western Pacific Region)

* = MAGSTORM

o = MAGCALME

Δ = COSMIC EVENT

( ) = Regular World Day

\- = impossible to evaluate

( ) = inaccurate

C = artificial accident

--- = continuing magnetic storm

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Sept. 1966	S W F									Correspondence		
	Drop-out Intensities (db)						Start-time	Dura-tion	Type	Imp.	Flare	Solar Noise	Mag.
	WS	SF	HA	TO	HB	SH							
02		50	40'		>30		05.49	61	S	3+	x	x	x
			42				04.12	73	S	3+			
04		54	35			-					x	x	
			>20'										
14					14		10.16	43	S	1			
19					18		12.08	20	S	1+	x	x	
21					20		09.31	9	S	2-	x		

IONOSPHERIC DATA IN JAPAN FOR SEPTEMBER 1966

第18巻 第9号

1967年1月20日 印刷
1967年1月25日 発行

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東京都小金井市貫井北町4の573
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