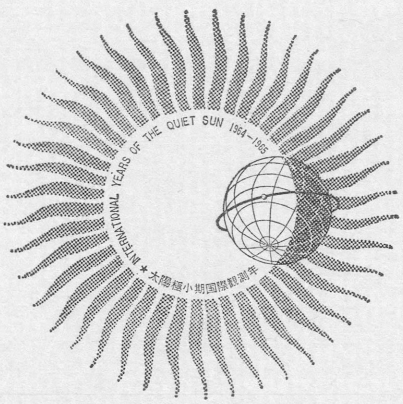
F—202

IONOSPHERIC DATA IN JAPAN

FOR OCTOBER 1965

Vol. 17 No. 10



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Prepared by

THE RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

KOKUBUNJI, TOKYO, JAPAN

F－202

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THE RADIO RESEARCH LABORATORIES

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CONTENTS

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.	Wakkanai-shi, Hokkaido
Akita	39°43.5′N.	140°08.2′E.	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	35°42.4′N.	139°29.3′E.	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	0.5 kW* 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	4.5 m 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 London (commercial circuit), WWV (frequencies 10, 15, 20 Mc broadcast from Washington, D.C.), San Francisco (commercial circuit) and WWVH (frequencies 10, 15 Mc 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 London, 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)
LN.....Various commercial circuits (London)

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

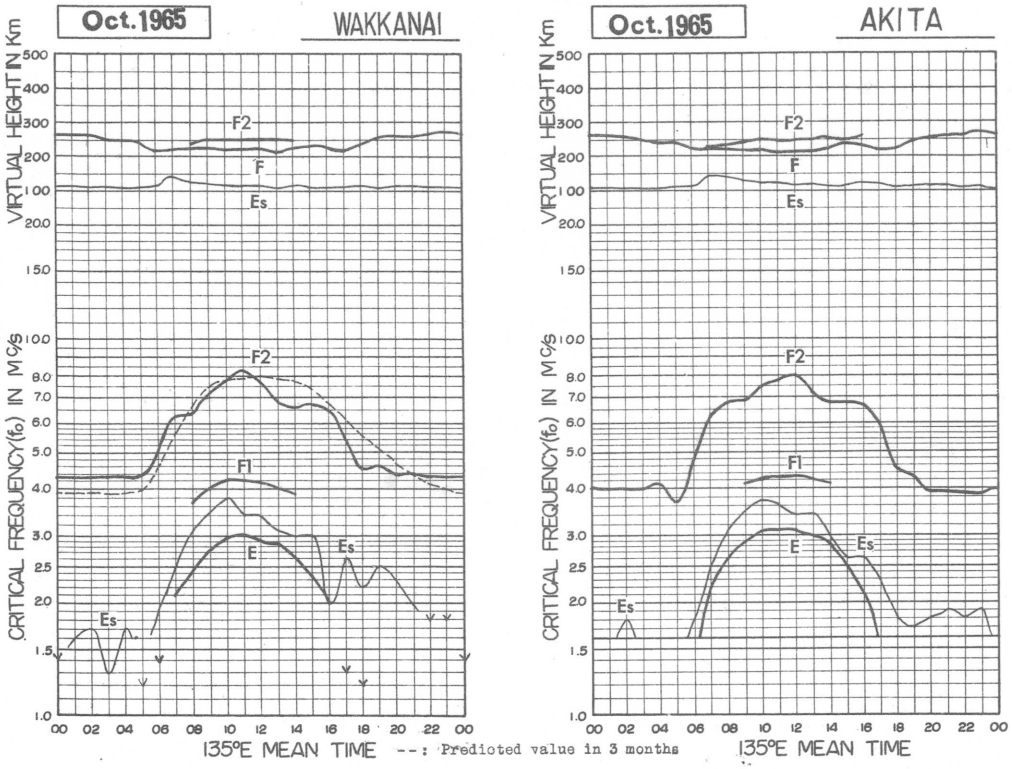
Importances

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

1−	1	1+
2−	2	2+
3−	3	3+

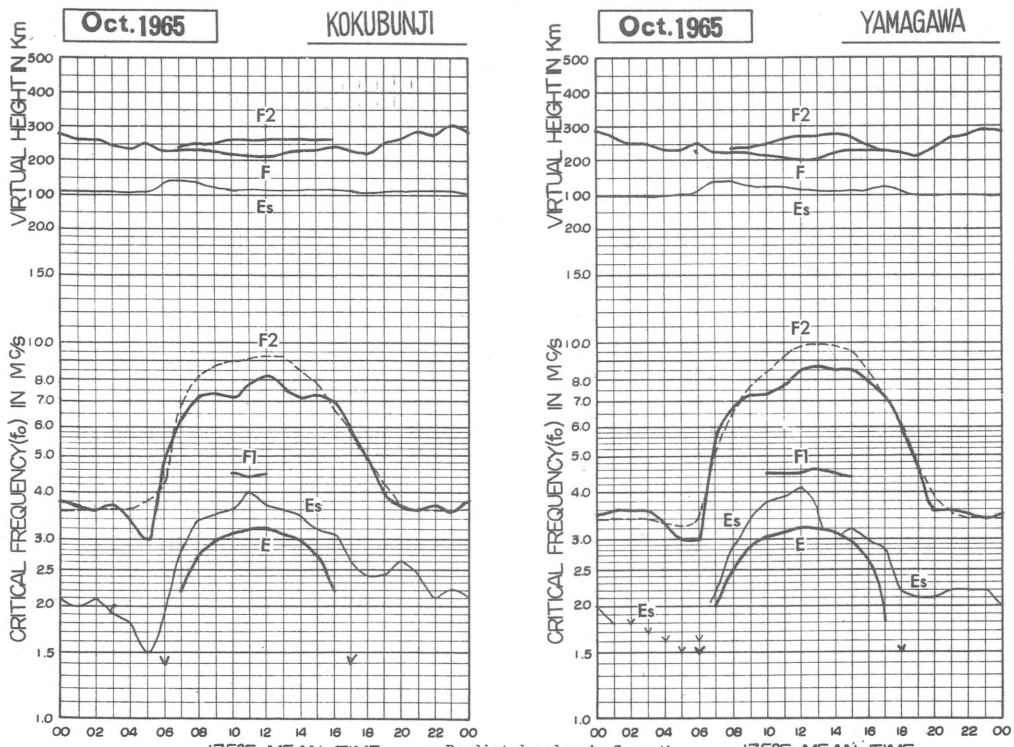
Besides, the time associated phenomena of SID's, that is, solar flare, solar radio noise outburst and crochet (solar flare effect in magnetic record) are given in this table from interchange messages or measurements at Hiraiso.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



--: Predicted value in 3 months advance by R.R.L.

IONOSPHERIC DATA

Oct. 1965 | 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	F	SF	SF	043F	043F	044F	057	065	063	073	079	069	I067C	066	I062C	061H	064	I062C	058	053	C	SF	SF	SF
2	SF	F	F	F	F	F	053	059	067	071	067	070	065	071	065	065	063	065	060	056	043	040	038	037
3	038	036	SF	SF	SF	034	053	053	060	080	081	079	071	063	071	071	065	065	059	056	055	047	040	043
4	043	043	042	043	042	044	057	061	067	077	073	073	074	066	067	062H	063	I058C	051	058	050	043	037	038
5	038	038	040	039	039	035	043	055	059	067	074	072	066	063	062H	067	064	061	056	057	055	048	043	046
6	047	050	053	054	052	047	056	069	072	080	076	073	066	068	070	067	068	057	056	054	053	051	046	047
7	050F	047F	044F	043F	043F	038	053	063	069H	070	081	080	076	069	067	065	067	058	044	046	043	043	044	046
8	043	045	047	048	046	046	059	069	067	075	078	075	079	072	072	068	064	060	050	050	050	050	050	049
9	050	050	051	050	051	049	051	061	061	076H	078	095	093	074	066	070	075	060	050	055	059	058	059	060
10	061	058	067	053	042	039	053	063	C	C	C	C	C	C	C	C	C	054	046	051	051	050	046	SF
11	045F	C	C	C	C	C	C	C	C	C	073	070	083	076	061	060	057	051	051	057	057	054	051	050
12	045	045	048	048	050	050	057	063	063	078	076	081	074	068	063	063	061	066	050	050	048	050	043	043
13	043	043	041	041	043	043	052	057	062	061	077	070	073	064	061	058	058	051	050	049	046	046	046	046
14	046	045	045	043	041	039F	049	063	063	074	079	087	070	064	068	070	067	054	036	033	038	037	I038S	039
15	038	040	036	036	034	034	047	058	066	072	084	084	083	067	062	065	061	054	047	044	043	044	043	045
16	043	043	048	048	050	044	054	063	061	065	083	088	076	063	061	059	057	051	044	046	045	041	043	043
17	044S	SF	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	040	C	C	C	C	C
18	SF	035F	033F	033F	033F	033F	047	063S	058	066	076	077	078	061	061	062	058	057	044	044	043	041	038	038
19	038F	036F	039F	038	039	044	051	060	061	068	083	085	083	069	058H	063	057	053	040	038	037	035	037	U037S
20	037	038F	039F	036F	036F	032	048	068	063	058	068	090	068	064	062	064	067	049	033	033	034	033H	035	035
21	037	038	037	037	036	037	046	054	060	060	069	078	067H	071	057	063	061	053	037	039	041	038	037	038
22	037	038	041F	044	048	047	045	054	062	062	073	083	077	066	073	061	051	049	045	042	047	048	048	049
23	049	044	046	048	051	F	SF	053	065	062	U083S	090	101	095	086	073	082	073	063	057	051F	053F	057	057
24	054	059	061F	078F	060	SF	051	065	077	080	094	094	076	068	077	068	073	063S	040F	SF	F	SF	F	F
25	F	F	SF	F	F	F	050	063	068	078	083	096	090	077	076	072	073	050F	055F	056	055F	050F	053F	053F
26	F	F	SF	SF	SF	F	038S	051	067	083	088	085	083	085	063H	068	066	046	044	043	043	SF	041	045F
27	SF	040F	SF	046F	043F	051F	046	U063S	063	066	078	083	091	068	064	067	068	047	040	037	038	038	041	043
28	043	044	047	044	043F	SF	SF	060	067H	067H	080	084	093	086	086	069	066	044	035	036	038F	SF	SF	SF
29	SF	SF	040F	SF	SF	SF	053	066	079S	084	090	093	092	077	087	078	069	051	037	036	037	037	039	043
30	043F	044F	040F	031F	033F	SF	043F	064	069	076	074	110	094	074	070	078	069	055	040	035	040	040	043	041
31	SF	043F	SF	SF	SF	SF	039	057	I072C	U085S	078	110	080	074	081	071	074	U046S	040	043S	I040A	040	SF	SF
No.	23	24	22	23	23	20	27	29	28	28	29	29	29	29	29	29	29	30	31	29	28	26	26	25
Median	043	043	043	043	043	044	051	063	064	072	078	083	077	068	066	067	065	054	045	046	044	044	043	043
U. Q.	047	045	048	048	050	046	053	064	067	078	083	090	086	074	072	070	069	060	051	056	051	050	048	048
L. Q.	038	038	040	038	039	036	046	057	062	066	074	074	070	065	062	062	061	051	040	038	040	040	038	038
Q. R.	009	007	008	010	011	010	007	007	005	012	009	016	016	009	010	008	008	009	011	018	011	010	010	010

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

The Radio Research Laboratories, Japan

foF2

W 1

IONOSPHERIC DATA

Oct. 1965 | 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									400	400	430	420	I420C	410	I380C									
2									400	410	430	430	L	L	420	U400L								
3									A	I410A	I420A	U420L	430	420	390	U400L								
4										410	420L	420	430	420H	400									
5										410L	420	420	420	420										
6									L	410	430	430	420	400										
7										U420L	420	430	430	420										
8									370L	400	420	420	430	410L	U400L									
9											U440L	410	430	420L										
10									C	C	C	C	C	C	C	C								
11									C	C	U420L	420	420	410	A									
12										U400L	420	410	400	380										
13									350		420	410	400	400	390L									
14										U410L	410	420	420	U400L	400									
15										390	410	410	420	380	A									
16										400L	410	410	410	380										
17									C	C	C	C	C	C	C	C								
18									A	A	A	A	410	400										
19										380	U410L	420	410	400										
20									U370L		410	420L	400	400L	360L									
21									350	U410L	400	400		U400L										
22											A	420	410	400	390	U330L								
23											U420L	420	420	U400L	L									
24										400	I410A	400	410	U380L										
25										400L	410	420	410	400	370									
26											420	I420A	400	U400L										
27											400	U400L		380										
28										U400L	360	410	420L	400	U400L									
29									U400L		U410L	410	410											
30										U400L	410L	U420L	400	U380L										
31											400	400	410											
No.									7	18	27	28	26	26	11	3								
Median									370	400L	420	420	415	400	390	U400L								
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

foF1

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

W 2

IONOSPHERIC DATA

Oct. 1965 | 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							E180S	230	250	290	300	300	I300C	300	I290C	260	210	C	E120S					
2							180	230	280	290	300	305	305	300	300	290	215	E130S	E					
3						E	A	220	260	290	300	300	290	255	290	270	215	120						
4						E	A	230	A	A	A	310	320	305	300	270	200	C	E110S					
5						E	A	I220A	280	300	300	300	310	300	I290A	255	R	A	E180S					
6						E	A	A	A	A	I310A	310	300	I300A	I285A	A	A	A	E130S					
7						E	A	225	270	300	300	305	300	300	275	205	110	E						
8							E130S	215	260	290	300	300	300	290	I260A	I235A	200	A						
9							E120S	215	255	290	300	300	I290A	295	I260A	235	200	E150S						
10							140	220	C	C	C	C	C	C	C	C	C	E						
11							C	C	C	C	300	300	290	I275A	I240A	210	A	E150S						
12							E160S	215	A	A	A	A	A	A	255	230	200	E140S						
13							E160S	215	245	280	300	300	300	290	265	240	180	E160S						
14							E150S	215	255	285	285	300	285	A	A	A	A	E120S						
15							E	200	245	270	295	295	A	A	A	A	A	A						
16							A	210	250	275	285	A	A	A	A	A	190	E140S						
17							C	C	C	C	C	C	C	C	C	C	C	C						
18							A	205	250	275	270	I280A	I290A	295	285	250	200	E110S						
19							A	A	245	265	300	300	I280A	250	265	A	A							
20							E160S	200	245	275	285	290	290	275	255	A	A	E130S						
21							E130S	A	230	270	290	300	250	270	215	180	A							
22							E150S	200	245	270	285	270	250	I240A	265	A	A							
23				E			E	200	240	275	285	I285A	295	280	I275A	265	170							
24			E	E	E		E	205	245	270	290	300	275	250	A	A	A							
25							A	195	230	280	A	A	A	A	245	I220A	A							
26							E110S	210	245	265	285	A	A	A	250	230	E190S							
27							E140S	190	235	250	I270A	A	A	A	A	A	A							
28							E140S	195	235	270	A	A	295	275	245	A	A							
29							E150S	195	235	250	A	285	A	A	245	A	A							
30							E150S	190	I230A	255	265	250	I235A	I240A	225	215	175							
31							E120S	195	I240C	255	A	A	A	A	245	200	E160S							
No.			1	2	1	5	20	26	25	25	23	22	21	20	24	18	15	12	5					
Median			E	E	E	E	E140S	210	245	275	295	300	290	285	260	235	200	E130S	E120S					
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

foE

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

W 3

IONOSPHERIC DATA

Oct. 1965 | 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	E015S	E	E	E	E	E	E018S	030	030	G	G	G	C	G	C	015G	G	C	E012S	E016S	C	E013S	E016S	E012S
2	E	E	E	E	E	E	G	028	G	G	G	G	G	023G	020G	025G	G	020	027	020	E012S	020	E012S	E016S
3	J031	J060	J038	021	E	E	022	037	050	041	J052	038	038	032	G	G	G	028	040	J042	J053	021	J043	J030
4	E012S	E	015	E	E	E	019	G	032	033	043	G	G	G	G	G	G	C	021	030	J031	E017S	E015S	E012S
5	E012S	E	E	E	E	E	020	030	033	031	027G	G	023G	G	030	031	G	018	E018S	E015S	E016S	E015S	E013S	E018S
6	E013S	E	016	016	J043	J049	J051	J046	037	032	040	040	036	031	030	036M	J033	J031	020	J029	J023	E014S	021	E012S
7	E011S	E	038	E	023	J019	J024	G	015G	027G	032	020G	G	G	031	028	023	020	E016S	021	E012S	E018S	E016S	E015S
8	E013S	E	E	E	E	E	022	029	033	035	G	G	G	034	033	025	019G	J025	J023	J021	E017S	J023	E017S	E012S
9	E011S	E	E	E	E	E012S	020	026	036	033	040	041	038	G	033	030	G	E015S	E018S	E012S	E012S	J024	E012S	E012S
10	E015S	E	013	E	E	E012S	020	027	C	C	C	C	C	C	C	C	C	J033	E016S	E018S	020	J025	J023	021
11	J050	C	C	C	C	C	C	C	C	C	040	025G	025G	040	J043	040	023	E015S	020	J032	020	J035	E017S	J030
12	J031	J036	J025	013	018	E012S	E016S	025	029	J078	038	J035	040	J043	023G	028	G	E014S	E017S	J040	J043	J043	J038	J031
13	J035	J027	J023	J026	J023	021	E016S	G	030	034	G	020G	G	024G	G	G	G	E016S	E015S	E017S	E012S	E018S	E012S	E017S
14	E012S	E	E	E	E	E	E015S	G	030	033	035	037	036	031	033	J038	J035	J025	020	J030	J023	E018S	E020S	E017S
15	E012S	E	J025	E	017	E013S	016	023	030	035	037	034	038	J051	J050	033	J031	J030	J040	J025	J024	E020S	E018S	E016S
16	E014S	016	J030	J043	J036	J025	018	026	031	038	J044	039	J033	J043	043	J033	G	E014S	030	J023	J026	J023	E018S	E016S
17	E012S	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	024	C	C	C	C	C
18	E011S	J023	J023	J026	021	021	020	G	039	050	J046	044	043	G	G	G	G	E011S	E012S	J036	J024	J035	J024	J025
19	022	018	J019	J020	J026	J025	J025	027	031	J032	J050	033	J032	029	G	033	J046	J032	J020	016	J021	J020	E013S	J020
20	E013S	J015	026	022	022	022	E016S	028	033	038	J039	035	J030	G	022G	030	J032	031	J038	J026	J023	015	017	E012S
21	E012S	E	E	E	E	E012S	J020	J025	031	G	033	034	040	032	038	032	J065	J051	J028	J030	J033	018	027	J023
22	E015S	018	E	020	J020	E012S	E015S	G	030	035	038	038	035	J050	G	029	030	019	J023	J021	E020S	E015S	E016S	E012S
23	E017S	E	E	E	E	E	020	036	043	046	047	036	G	G	031	G	G	J044	022	E012S	J021	E013S	E017S	E
24	E015S	J043	E	E	E	E	014	G	031	035	045	040	038	043	038	033	021	027	J035	J052	J084	J051	J036	J043
25	J043	J080	J031	J036	043	020	021	G	030	035	038	031	040	J040	040	J043	J043	036	J036	040	J027	J023	J031	020
26	J020	J030	J043	J030	025	E	020	026	034	036	034	051	035	033	G	020G	E019S	E013S	E012S	J031	020	J033	018	J023
27	J073	J073	J026	013	J025	019	E014S	G	G	033	034	040	034	032M	J032	030	J033	J033	J023	E018S	J031	J043	J031	J024
28	E012S	020	015	E	E	E	E014S	G	G	047	031	J031	024G	G	G	033	J026	J026	J028	J021	023	022	E015S	J028
29	020	J027	018	J025	023	J019	E015S	G	032	050	J044	G	J050	031	G	030M	020	J028	J025	023	J023	E016S	E015S	022
30	E014S	018	017	020	014	022	022	G	J033	037	032	032	030	033	031	G	026	J023	E011S	019	J030	E015S	J031	J030
31	J053	J083	J030	J036	J043	E012S	016	024	C	041	040	040	J045	J043	G	020G	E016S	J026	J083	J063	J053	J034	J034	E012S
No.	31	30	29	29	29	29	29	29	27	28	29	29	28	29	28	29	29	28	31	30	29	30	30	30
Median	E014S	016	017	013	017	E012S	019	025	031	035	038	034	034	031	030	030	020	026	022	J025	J023	020	E018S	E018S
U. Q.	E022	027	026	023	025	020	020	028	033	040	044	040	038	040	033	033	032	031	028	031	030	025	027	024
L. Q.	E012	E	E	E	E	E	E016	G	030	032	032	G	G	G	G	G	G	E017	E017	018	020	E016	E015	E012
Q. R.							D004		003	008	012							D014	J011	013	010	D009	D012	D012

foEs

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

The Radio Research Laboratories, Japan

W 4

IONOSPHERIC DATA

Oct. 1965 | f_bEs | 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	S						S	G	G				C		C	015G		C	S	S	C	S	S	S
2								G						022G	020G	020G		G	026	016	S	015	S	S
3	020	019	015	E			020	018	020	041	043	038	G	G				G	040	025	020	016	016	018
4	S		012				018		030	031	032							C	017	026	020	S	S	S
5	S						020	027	023	025	025G		022G		029	G		017	S	S	S	S	S	S
6	S		012	015	021	033	036	046	034	032	038	028	027G	030	030	038	030	030	018	018	016	S	017	S
7	S		018		018	017	020		015G	015G	023	020G			G	G	G	017	S	E018S	S	S	S	S
8	S						G	G	G	G				G	030	024	018G	020	018	019	S	018	S	S
9	S					S	G	G	036	G	G	G	035		030	G		S	S	S	S	020	S	S
10	S		E013S			S	G	G	C	C	C	C	C	C	C	C	C	017	S	S	017	016	017	017
11	023	C	C	C	C	C	C	C	C	C	039	024G	024G	034	040	036	021	S	019	023	018	020	S	019
12	020	025	021	012	015	S	S	G	028	035	032	031	033	030	020G	018G		S	S	020	031	025	019	020
13	021	020	012	020	020	021	S		020	G		020G		022G				S	S	S	S	S	S	S
14	S						S		G	G	G	G	G	030	027	035	024	016	017	017	019	S	S	S
15	S		020		018	S	G	G	017	020G	G	G	036	033	040	027	024	023	025	017	020	S	S	S
16	S	015	022	020	028	021	015	G	G	G	037	031	032	030	032	030		S	030	021	020	019	S	S
17	S		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	020	C	C	C	C	C
18	S	013	015	014	015	019	013		037	049	042	043	038					S	S	024	021	018	020	016
19	016	015	013	014	021	025	021	021	G	026G	020G	G	030	G		026	036	016	020	E016S	017	018	S	020
20	S	012	020	015	019	013	S	014	G	G	020G	020G	G		022G	023	021	017	030	019	020	015	018	S
21	S					S	E013S	023	G	019G	G	G	G	G	G	G	050	045	E016S	019	029	015	016	E014S
22	S	012		018	013	S	S		G	020G	038	G	G	032		025	022	018	017	018	S	S	S	S
23	S						018	032	036	037	G	031			030			020	016	S	E015S	S	S	
24	S	028					014		G	G	043	037	G	036	027	025	018	E013S	030	020	027	035	020	015
25	035	014	020	016	032	020	014		G	G	030	030	034	035	G	022	021	018	020	025	020	020	020	E014S
26	015	018	022	020	017		017	G	G	G	G	047	032	030		015G	S	S	S	020	016	020	015	019
27	019	022	018	012	E	015	S			G	030	032	030	030	031	028	028	029	021	S	027	034	020	018
28	S	013	012				S			023	030	030	023G			023	018	020	020	019	017	020	S	019
29	018	014	012	016	012	016	S		G	G	034		037	030		024	017	022	022	020	020	S	S	E012S
30	S	014	014	014	012	E017S	E015S		024	037	G	G	030	027	G		G	018	S	019	018	S	017	016
31	025	027	021	032	014	S	G	G	C	G	030	030	030	030		018G	S	016	032	020	A	024	019	S
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

f_bEs

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

The Radio Research Laboratories, Japan

W 5

IONOSPHERIC DATA

Oct. 1965 | 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	E015S	E	E	E	E	E	E018S	015	012	017	017	018	C	020	C	011	015	C	E012S	E016S	C	E013S	E016S	E012S
2	E	E	E	E	E	E	012	017	017	012	020	020	016	016	015	012	017	E013S	E	E	E012S	E011S	E012S	E016S
3	E	E	E	E	E	E	E	010	011	012	018	019	017	017	017	017	012	011	010	E012S	E011S	010	E011S	E011S
4	E012S	E	E	E	E	E	012	011	012	012	013	017	018	015	E018C	013	012	C	E011S	E017S	E011S	E017S	E015S	E012S
5	E012S	E	E	E	E	E	E	E	012	012	017	013	012	015	018	012	012	011	E018S	E015S	E016S	E015S	E013S	E018S
6	E013S	E	E	E	E	E	E	E	013	017	012	012	017	017	012	011	E	E	E013S	E016S	E014S	E014S	E015S	E012S
7	E011S	E	E	E	E	E	E	011	010	011	011	011	011	017	015	011	E	E	E016S	E018S	E012S	E018S	E016S	E015S
8	E013S	E	E	E	E	E	E013S	012	012	017	017	020	018	018	012	011	011	E	E015S	E013S	E017S	E015S	E018S	E012S
9	E011S	E	E	E	E	E012S	E012S	011	011	013	019	017	013	017	017	012	011	E015S	E018S	E012S	E012S	010	E012S	E012S
10	E015S	E	E	E	E	E012S	011	013	C	C	C	C	C	C	C	C	C	E	E016S	E018S	E	E012S	E	E
11	E016S	C	C	C	C	C	C	C	C	C	018	015	013	018	017	012	011	E015S	E012S	E011S	E013S	E011S	E017S	E012S
12	E011S	E	E	E	E	E012S	E016S	011	012	013	017	018	015	017	012	011	012	E014S	E017S	E012S	E011S	E012S	E012S	E016S
13	E013S	E	E	E	E	E012S	E016S	012	011	011	011	011	012	012	016	012	012	E016S	E015S	E017S	E012S	E018S	E012S	E017S
14	E012S	E	E	E	E	E	E015S	012	011	011	011	013	017	011	015	013	011	E012S	E012S	E015S	E015S	E018S	E020S	E017S
15	E012S	E	E	E	E	E013S	E	011	011	010	017	018	016	012	011	010	011	010	E012S	E012S	E012S	E020S	E018S	E016S
16	E014S	E	E	E	E	E011S	E	011	011	018	012	012	012	012	018	011	011	E014S	E012S	E013S	E016S	E012S	E018S	E016S
17	E012S	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	010	C	C	C	C	C
18	E011S	E	E	E	E	E	010	010	010	017	012	012	015	017	011	012	011	E011S	E012S	E012S	E017S	E013S	E014S	E011S
19	E012S	E	E	E	E	E	E	011	011	012	011	017	017	017	013	011	011	010	E012S	E016S	E011S	E012S	E013S	E012S
20	E013S	E	E	E	E	E	E016S	011	012	011	011	011	017	011	011	011	015	E013S	E015S	E015S	E016S	E012S	010	E012S
21	E012S	E	E	E	E	E012S	E013S	E	011	011	010	017	017	E	017	011	E	E011S	E016S	E015S	E015S	E012S	E011S	E014S
22	E015S	E	E	E	E	E012S	E015S	E	011	012	011	011	011	012	012	011	010	E012S	E013S	E012S	E020S	E015S	E016S	E012S
23	E017S	E	E	E	E	E	E	E	010	011	012	016	012	012	011	011	011	E	E011S	E012S	E015S	E013S	E017S	010
24	E015S	E012S	E	E	E	E	E	011	011	010	013	011	018	012	012	011	010	E013S	E011S	E014S	E012S	E012S	E015S	E013S
25	E012S	E	E	E	E	E	E	E	E	011	012	017	013	011	011	011	011	010	E011S	E012S	E012S	E012S	E011S	E014S
26	E011S	E	E	E	E	E	E011S	011	011	011	011	011	012	011	010	E	E019S	E013S	E012S	E011S	E012S	E013S	E	E012S
27	E011S	E	E	E	E	E011S	E014S	011	011	010	012	013	015	011	011	E	E	E	E015S	E018S	E015S	E011S	E011S	E011S
28	E012S	E	E	E	E	E	E014S	012	011	011	012	012	012	013	012	011	011	E	E	E012S	E012S	E016S	E015S	E012S
29	E011S	E	E	E	E	E	E015S	011	010	012	012	012	012	016	011	011	010	E015S	E014S	E012S	E012S	E016S	E015S	E012S
30	E014S	E	E	E	E	E017S	E015S	011	011	013	012	013	012	011	012	012	011	E011S	E011S	E	E015S	E015S	E012S	E 15S
31	E012S	E	E	E	E	E012S	E012S	011	C	011	012	017	013	012	014	012	E016S	E	E011S	E011S	E011S	E012S	E012S	E012S
No.	31	30	29	29	29	29	29	29	27	28	29	29	28	29	28	29	29	28	31	30	29	30	30	30
Median	E012S	E	E	E	E	E	E012S	011	011	012	012	013	014	013	012	011	011	E011S	E012S	E012S	E012S	E013S	E014S	E012S
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

Oct. 1955 | 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	F	SF	SF	330F	320F	335F	345	360	340	355	355	360	I345C	340	I345C	330H	335	I335C	330	310	C	SF	SF	SF
2	SF	F	F	F	F	F	365	345	375	350	350	355	325	335	340	350	345	340	320	340	295	285	305	295
3	295	280	SF	SF	SF	345	355	375	340	345	345	350	330	335	330	350	340	340	315	315	310	320	295	290
4	305	300	285	280	290	315	355	340	355	330	355	330	350	360	330	325H	335	I335C	320	315	315	315	310	295
5	305	290	295	310	325	335	350	370	360	335	345	345	355	345	325H	325	340	340	320	325	315	320	305	300
6	300	305	295	325	340	320	325	350	345	345	355	340	355	335	330	335	345	330	315	330	315	315	300	310
7	300F	320F	315F	310F	290F	310	350	350	350H	325	345	350	345	350	355	330	345	355	320	320	300	290	290	300
8	305	290	290	290	315	325	355	375	355	335	345	330	340	335	335	350	345	345	305	295	280	300	300	305
9	295	295	300	295	335	335	370	355	345	335H	335	335	350	345	340	335	350	365	290	295	305	295	300	310
10	325	300	335	340	310	310	355	365	C	C	C	C	C	C	C	C	C	350	320	305	325	310	305	SF
11	310F	C	C	C	C	C	C	C	C	C	340	335	345	330	350	345	350	335	315	300	305	330	320	315
12	315	310	315	310	310	300	345	365	345	355	350	345	345	350	350	320	325	345	315	315	315	320	325	300
13	300	290	290	295	300	310	360	370	370	345	330	370	340	355	355	345	340	335	310	320	320	310	305	300
14	320	315	330	305	315	310F	325	350	345	350	340	365	350	310	350	340	355	345	320	305	300	295	I295S	290
15	310	320	330	320	330	295	355	360	360	330	340	335	355	335	340	345	355	350	340	305	300	315	315	310
16	295	310	315	320	320	320	355	365	355	340	345	370	350	350	340	345	350	335	325	320	330	315	300	300
17	300S	SF	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	325	C	C	C	C	C
18	SF	305F	310F	305F	305F	320F	360	365S	360	345	340	340	345	360	340	355	350	350	315	325	300	310	330	305
19	305F	315F	295F	315	310	340	365	350	375	350	355	340	335	340	335H	350	370	365	330	320	315	315	310	U320S
20	305	315F	320F	320F	320F	325	350	370	385	365	340	350	370	365	340	335	360	370	325	325	330	305H	310	315
21	310	315	320	320	315	320	370	355	370	355	360	350	330H	350	350	350	360	350	325	310	340	315	325	315
22	310	310	300F	320	345	355	355	370	355	355	355	335	350	335	355	360	370	335	335	300	300	300	310	315
23	305	300	305	295	295	F	SF	360	355	325	U325S	315	315	340	335	350	330	330	325	335	320F	315F	305	300
24	295	305	305	335F	315	SF	340	325	325	375	345	350	360	350	365	355	355	335S	350F	SF	F	SF	F	F
25	F	F	SF	F	F	F	345	350	340	335	325	335	335	325	335	335	340	335F	315F	305	315F	315F	315F	310F
26	F	F	SF	SF	F	SF	360S	370	360	335	350	335	325	360	345H	355	365	350	335	300	325	SF	315	310F
27	SF	300F	SF	325F	325F	350F	350	U365S	350	355	335	320	350	350	330	350	355	345	325	310	315	305	295	285
28	300	305	325	305	300F	SF	SF	355	360H	330H	340	335	345	335	340	360	360	350	325	335	300F	SF	SF	SF
29	SF	SF	300F	SF	SF	SF	355	365	330S	355	355	345	355	340	345	360	365	335	350	310	315	310	305	300
30	300F	330F	360F	285F	305F	SF	325F	360	335	370	325	345	355	350	345	340	360	340	365	315	335	300	300	310
31	SF	300F	SF	SF	SF	SF	345	360	I365C	U365S	335	345	355	350	350	345	350	U350S	350	330S	I315A	305	SF	SF
No.	23	24	22	23	23	20	27	29	28	28	29	29	29	29	29	29	29	30	31	29	28	26	26	25
Median	305	305	310	310	315	320	355	360	355	345	345	345	345	345	340	345	350	340	325	315	315	310	305	305
U. Q.																								
L. Q.																								
Q. R.																								

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

The Radio Research Laboratories, Japan

M(3000) F2

W 7

IONOSPHERIC DATA

Oct. 1965 | 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									400	400	380	400	I400C	390	I395C									
2									405	390	395	395	L	L	375	U380L								
3									A	A	A	A	390	380	385	U390L								
4										415	410L	400	390	400H	400									
5										390L	400	400	400	380										
6									L	395	I390A	390	400	375										
7										U380L	380	390	390	385										
8									405	395	400	405	375	390L	U395L									
9											U385L	395	395	400L										
10									C	C	C	C	C	C	C	C								
11									C	C	U390L	385	380	390	A									
12										U375L	385	395	400	415										
13									400		380	395	400	400	385L									
14										U390L	390	380	380	U400L	395									
15										385	385	390	385	400	A									
16										400L	375	400	390	420										
17									C	C	C	C	C	C	C	C								
18									A	A	A	A	390	400										
19										400	U400L	370	405	410										
20									U405L		390	400L	410	410L	415									
21									400	U400L	390	390		U400L										
22											A	385	390	400	385	U390L								
23											U380L	380	380	U400L	L									
24										370	I400A	I400A	390	U390L										
25										400L	390	380	390	395	410									
26											380	I390A	400	U400L										
27											400	U415L		410										
28										U415L	425	405	400L	400	U395L									
29									U400L		U390L	400	I390A											
30										A	U410L	U405L	400	U400L										
31											420	380	415											
No.									7	16	26	27	26	26	11	3								
Median									400	395L	390	395	390	400	395	U380L								
U. Q.																								
L. Q.																								
Q. R.																								

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

M(3000) F1

The Radio Research Laboratories, Japan

W 8

18

IONOSPHERIC DATA

Oct. 1965 | 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									250	245	240	245	I250C	260	I250C									
2									235	250	250	250	L	275	270	260								
3									250	250	260	245	270	270	275	260								
4										250	240	250	250	260	265									
5										260	245	250	250	260										
6									245	245	245	250	250	250										
7										265	250	250	250	250										
8									235	255	250	250	260	250	260									
9											260	260	240	250										
10									C	C	C	C	C	C	C	C								
11									C	C	260	250	250	250	245									
12										250	250	250	240	250										
13									270		250	230	250	245	245									
14										235	260	250	245	260L	260									
15										260	250	250	240	250	250									
16										250	260	230	240	230										
17									C	C	C	C	C	C	C	C								
18									240	250	225	230	250	245										
19										250	250	260	260	230										
20									225		225	240	235	240	240									
21									230	250	245	250		250										
22											240	250	245	245	240	230								
23											280	245	260	245	250									
24										260	250	250	235	260										
25										250	250	250	245	250	255									
26											250	250	255	240										
27											250	260		235										
28										220	245	250	235	245	250									
29									250		250	250	245											
30										225	260	250	225	235										
31											225	250	225											
No.									10	19	29	29	26	27	14	3								
Median									240	250	250	250	250	250	250	260								
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

19

IONOSPHERIC DATA

Oct. 1965 | 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	265	250	250	245	225	215	230	215	215	210	200	I205C	200	I210C	220H	250	I240C	225	245	I255C	255	300	295
2	275	265	260	260	250	250	215	220	235	200	205	205	190	200H	230	235	245	230	250	215	250	300	275	295
3	300	350	300	250	225	220	215	210	I230A	A	A	A	220	200	240	240	245	225	I245A	260	260	225	255	290
4	260	250	260	260	250	260	220	225	225H	215	200	205	200	200H	215	225H	235	I230C	240	260	245	245	260	265
5	280	280	270	245	220	210	215	225	240	225	245	240	215	210	200H	240	240	230	230	225	245	225	250	275
6	290	260	255	250	225	A	A	A	A	225	I225A	225	225	200	215H	240H	250	I245A	240	245	250	250	250	265
7	260	240	245	240	250	245	220	225	235H	225	225	220	220	205	200	240	245	220	225	250	250	285	295	270
8	250	275	270	270	245	240	215	225	225	225	215	210	200	210	240	225H	240	225	250	280	295	280	260	250
9	255	260	250	250	225	220	215	225	220	220H	235	235	225	210	210H	240	235	210	230	270	250	265	280	250
10	250	250	230	200	210	245	215	225	C	C	C	C	C	C	C	C	C	220	250	275	245	250	265	260
11	300	C	C	C	C	C	C	C	C	C	I230A	225	220	230	I230A	I240A	225	220	250	280	250	250	245	250
12	275	300	270	245	250	245	210	220	210	250	230	210	215	200	210	230	240	225	220	255	I270A	250	240	260
13	275	295	275	290	280	260	220	215	210	225	210	215	200	210	215	225	235	230	230	245	250	250	270	260
14	250	250	230	225	240	260	220	230	215	230	220	240	220	210	225	I250A	235	215	225	265	300	300	310	275
15	270	250	250	245	240	250	210	220	235	220	240	220	245	205	I225A	250	225	225	240	245	280	255	260	260
16	240	250	270	250	260	245	215	220	220	230	245	220	205	200	245	240A	235	225	260A	250	240	255	275	280
17	265	260	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	235	C	C	C	C	C
18	275	280	260	275	270	250	210	215	A	A	A	A	240	210	225	240	225	215	245	265	260	250	250	265
19	275	275	275	255	265	245	225	215	210	215	215	200	225	215	220H	240	235A	210	235	230	255	255	255	270
20	255	270	275	240	260	220	230	220	220	210	205	260	235	210	215	230	235	210	A	270	255	270H	285	275
21	260	250	250	250	245	245	205	220	220	220	220	200	230H	245	250	245	A	A	220	250	265A	250	260	270
22	260	285	265	250	225	210	210	215	225	225	I235A	220	215	220	240	225	210	215	230	240	280	280	270	250
23	230	235	250	270	260	225F	200	205	235	230	220	225	220	210	250	245	240	230	220	215	245	250	270	270
24	260	290A	245	220	205	235	230	250	240	245	I240A	I240A	235	I235A	235	235	225	215	I230A	275	280A	I240A	250	255F
25	I280A	250	300	260	I250A	210	205	220	225	225	225	225	215	240	225	220	220	210	260	260	240	260	255	250
26	260	280	295	300	275	200	210	215	250	250	220	I210A	205	215	235H	230	215	215	245	270	255	250	250	260
27	255	290	260	240	225	220	220	200	215	230	210	200	185H	210	240	240	220	235	245	240	300	I300A	290	290
28	275	275	240	230	250	225	210	210	230H	215	200	225	235	210	230	220	220	215	250	255	290	300	315	290
29	290	260	225	250	275	250	220	215	220	230	235	200	I245A	200H	240H	225	215	210	245	260	255	280	280	280
30	270	250	210	265	250	240	225	220	225	I220A	205	220	215	220	240	235	215	210	205	260	250	270	265	260
31	315A	310A	260	I245A	215	225	230	210	I225C	225	210	205	220	230	225H	225	215	200	I245A	245	I275A	280	270	275
No.	31	30	29	29	29	28	28	28	26	26	27	27	29	29	29	29	28	29	30	30	30	30	30	30
Median	265	265	260	250	250	240	215	220	225	225	220	220	220	210	225	235	235	220	240	255	255	255	265	270
U. Q.																								
L. Q.																								
Q. R.																								

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

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Oct. 1965 | $h'Es$ 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	S	E	E	E	E	E	S	145	120	G	G	G	C	G	C	105	G	C	S	S	C	S	S	S
2	E	E	E	E	E	E	G	150	G	G	G	G	G	105	100	105	G	135	120	125	S	125	S	S
3	110	110	110	115	E	E	110	120	115	115	110	110	110	110	G	G	G	140	115	110	110	110	110	105
4	S	E	105	E	E	E	115	G	115	110	110	G	G	G	G	G	G	C	110	105	105	S	S	S
5	S	E	E	E	E	E	105	105	110	105	105	G	105	G	110	110	G	105	S	S	S	S	S	S
6	S	E	105	105	105	110	105	105	105	105	100	100	120	105	105	105	105	100	105	105	100	S	100	S
7	S	E	105	E	105	105	105	G	105	105	100	100	G	G	115	110	110	105	S	105	S	S	S	S
8	S	E	E	E	E	E	145	140	125	120	G	G	G	110	105	105	105	100	100	100	S	105	S	S
9	S	E	E	E	E	S	160	160	130	120	115	115	110	G	115	125	G	S	S	S	S	110	S	S
10	S	E	100	E	E	S	150	150	C	C	C	C	C	C	C	C	C	110	S	S	110	110	105	105
11	110	C	C	C	C	C	C	C	C	C	120	105	105	110	110	110	110	S	110	110	110	105	S	105
12	105	105	105	105	105	S	S	125	115	110	105	105	105	105	105	160	G	S	S	115	115	110	110	110
13	105	105	105	105	105	105	S	G	105	120	G	105	G	105	G	G	G	S	S	S	S	S	S	S
14	S	E	E	E	E	E	S	G	150	125	120	115	115	110	105	105	105	110	110	105	105	S	S	S
15	S	E	105	E	105	S	160	155	145	120	115	120	110	105	105	105	105	105	100	105	105	S	S	S
16	S	105	110	105	105	110	110	150	125	120	110	110	105	105	105	105	G	S	110	105	105	100	S	S
17	S	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	115	C	C	C	C	C
18	S	110	110	110	110	105	110	G	120	115	110	110	110	G	G	G	G	S	S	120	115	115	110	110
19	110	110	105	105	105	105	100	105	125	130	130	120	115	125	G	115	105	100	110	110	105	105	S	110
20	S	110	110	110	105	105	S	105	150	135	120	120	125	G	110	105	105	105	110	105	105	100	100	S
21	S	E	E	E	E	S	105	105	120	G	125	125	115	125	110	110	105	105	110	125	120	110	100	110
22	S	110	E	110	105	S	S	G	105	125	115	110	110	110	G	110	105	100	115	100	S	S	S	S
23	S	E	E	E	E	E	150	145	130	120	120	110	G	G	110	G	G	115	120	S	110	S	S	E
24	S	110	E	E	E	E	160	G	145	140	125	120	115	110	110	110	115	120	110	110	110	110	110	115
25	110	105	105	105	105	105	105	G	125	125	105	105	105	105	125	115	110	110	110	105	105	105	105	105
26	105	110	110	110	110	E	160	150	150	140	125	110	105	105	G	105	S	S	S	115	110	110	110	105
27	110	110	105	105	110	105	S	G	G	120	115	105	105	105	100	100	100	100	100	S	110	105	110	110
28	S	105	105	E	E	E	S	G	G	110	125	105	105	G	G	105	105	105	105	105	100	100	S	110
29	110	110	105	105	105	105	S	G	135	115	110	G	105	105	G	105	105	105	105	105	105	S	S	100
30	S	105	105	105	105	105	105	G	105	115	115	110	110	110	115	G	140	125	S	120	120	S	110	110
31	110	110	110	110	110	S	155	155	C	120	110	110	110	105	G	110	S	120	110	110	110	110	110	S
No.	10	16	19	15	16	11	19	17	24	25	25	23	22	20	18	23	16	21	21	23	22	18	13	14
Median	110	110	105	105	105	105	110	145	120	120	115	110	110	105	110	105	105	105	110	105	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

Oct. 1965 | 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								h	c							1								
2								h						1	1	1		h	c2	f		f		
3	f2	f2	f2	f			1	c1	c1	c	c2	c2	c	c				h	f4	f3	f2	f	f2	f2
4			f2				1		1	1	1								1	f2	f			
5							1	1	1	1	1		1		r	c		1						
6			f	f	f2	14	12	12	13	1	12	1c	c1	12	1	12	12	12	1	f	f		f	
7			f2		f2	12	12		1	1	1	1			c	c	c	1		f				
8							h	h	c	c				c	1	1	1	1	f	f		f		
9							h	h	h	c	c	c2	12		1	c						f2		
10			f				h	h										1			f	f	f	f
11	f3										c2	1	12	12	12	c2	1		f	f2	f	f2		f2
12	f2	f3	f2	f	f			c	1	12	12	1	12	1	1	h1				f2	f2	f2	f2	f2
13	f2	f2	f	f	f	f			1	c		1		1										
14									h	c	c	c	c	1	1	12	12	1	f	f	f			
15			f2		f		h	h	h1	c1	c	c	1	12	12	12	12	12	f	f	f			
16		f	f2	f2	f2	f3	1	h	c	c	c	12	12	12	12	12			f2	f	f	f		
17																			f					
18		f	f	f	f	f2	1		c	c2	c2	12	1							f	f	f2	f2	f
19	f	f	f	f	f2	f2	12	1	c	c1	c1	c	1	c		12	12	f	f	f	f	f		f
20		f	f2	f	f2	f		1	h	h	c1	c1	c		1	12	14	1	f2	f	f	f	f	
21							1	1	c		c1	c	c	c1	c2	c	13	f2	f	f	f2	f	f	f
22		f		f2	f				1	c1	c	c2	c	1		12	1	f	f	f			
23							h	h	h	c	c	1			12			f2	f		f			
24		f4					h		h	h	c	c2	c2	c2	12	12	1	c	f2	f2	f2	f3	f2	f
25	f6	f2	f2	f2	f2	f2	1		c	c	12	1	12	12	c	1	1	f	f2	f2	f2	f2	f2	f
26	f	f2	f2	f2	f2		h	h	h	h	c	13	12	1		1				f	f	f	f	f2
27	f2	f2	f2	f	f					c	1	12	1	12	12	13	12	f3	f		f2	f3	f2	f
28		f	f							1	c1	1	1			1	1	f2	f2	f	f	f		f
29	f	f	f	f	f	f			h	c	1		12	12		1	1	f2	f	f	f2			f
30		f	f	f	f	f	1		1	c2	c	c	1	1	c		h	f		f	f		f2	f
31	f	f3	f2	f2	f		h	h		c2	1	1	1	12		1		f	f2	f2	f3	f2	f2	
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

Types of Es

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

IONOSPHERIC DATA

Oct. 1965 | 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	040	FS	037F	036F	035F	032F	052	066	075	072	081	064	070	073	062	062	068	069	062	050	041	FS	FS	FS
2	FS	FS	FS	FS	FS	034F	052	066	060	064	070	067H	069	073	071	067	068	064	061	051	034	034	034	036
3	035	036	036S	039	034	027	043	070	062	073	072	078	074	069	068	076	076S	074R	055	049	049	045	045	045
4	043	041	041	041	041	040	060	071R	071	070	075	072	074	065	065	060	069	080	066	049	042	039	039	039S
5	036	036	036	040	039	026	046	053	062	058	069	073	066	069	060	065	071S	071	059	050	050	049	040	041S
6	040	041	042	044	042	028	049	065	076	068	071	071	075	063	063	071	067	067	058	050	044	040	040	040
7	040	040	039	035	032	035	054	066	072	067	074	078	086	074	063	065	073S	063	049	043	040	038	039	041
8	I041R	041	040	041	042S	040S	052	071	I068R	I070R	076	076	072	074	068	070	069	058	055	044	047	046	I046R	046F
9	046S	045S	044	044	049	037	046	063	069	070	083	092	094	077	077	070	076	063	044	049	FS	052F	FS	FS
10	FS	061F	051	044	036	036	051	067	075	066	076	079	083	079	080	073	062	059	I050A	049	050	047	046	046S
11	046	046	042	043	043	040S	048	060	062	069	075	077	084	072	066	062	060	056	046	050	053	051F	FS	046
12	041	043	046	045	047	043	060	065	072	071	080	074V	079	062	065	067	069	070	058	044	045	044	043	041
13	040	039	039	039	039	039	054	064	072	060	070	073	066	067	060	061	057	060	046	043	041	042	041	041
14	041	040	039	037	035	031	047	063S	069	073	076	077	080	059	068	067	069	056	041	029	031	034S	033S	035S
15	036	038	034	029	027	029F	043	061	068	067	075	086	074	071	067	066	067	059	I042A	040	036	039F	FS	039F
16	FS	FS	042	045	043	041S	051	I066R	066	066	075	088	073	061	058	066	060	060	050	042	039	039	040	041
17	042S	043	044	043	041	040	053R	059	065	077	072	071	072	071	060	063	068	060	037	030	031	032	032	034F
18	036F	033	032	032	032	030	052	061	065	065	073	I076R	075	067	062	066	055	059	045	046	044	040	039	036
19	035	036	036	037	040	042	050	060	074S	065	066H	083	090	069	059	065	058	051	044	039	030	032	033	034
20	035	034	035	034	032	031	045	060	066	063	060	C	C	C	069	065	056	058	039	029	034	031	034S	I034R
21	036S	035	035	034	034	034	043	053	065	064	065	070	072	061	066	063	062	056	043	038	036	036R	036	035
22	037	036	037	039	042	038	044	052	067	069	071	081	074	066	073	068	052	043	038	036	I037R	040	040	I039R
23	036	041	045	044	045	I047R	043	060	061	069	081	107	093	088	092	081	080	074R	072	062	043S	FS	FS	051R
24	I052R	057S	058S	057	059	042	052	075	I096R	107	097R	089	097	071H	074	086	068	055	043	043	I039R	FS	036	036F
25	FS	FS	FS	FS	059F	FS	FS	057	072	081	081	088	I094R	074	086	076	061	056	051	051R	FS	FS	I041R	I044R
26	045R	047	051R	052F	FS	043S	045	061	I064R	069	093	I100R	096	079	075	071	062	055	037	041	041	042	040	039
27	037	040	039	036	043	040	039	060H	066	071	067H	088	085	080R	071	068	065	067	034	035	033	037	036	036S
28	I040R	040	043	040	041	038	045	065	070	066H	065H	081	096	090	093	081	061	049	035	039	039	I040R	FS	FS
29	040F	041F	041	025	028	032S	043	066	077S	069H	089	089	089H	085	081	076S	072	047	032	033	036	036S	FS	037S
30	042S	044S	025	029	031	035S	046	062	068	I072R	072	089	100	070	079	078	077	054	039	034	039	036	FS	FS
31	FS	FS	FS	FS	043	F	040	061	065	084	091	087	098	096	090	084	I064A	046	034	033	034	032	034S	FS
No.	26	26	28	28	29	29	30	31	31	31	31	30	30	30	31	31	31	31	31	31	29	27	23	26
Median	040	040	040	040	041	037	048	063	068	069	075	078	080	071	068	067	067	059	045	043	039	039	039	039
U. Q.	042	043	044	044	043	040	052	066	072	072	081	088	093	077	077	076	069	067	055	049	044	044	041	041
L. Q.	036	036	036	036	034	032	044	060	065	066	070	073	073	067	063	065	061	055	039	036	035	036	034	036
Q. R.	006	007	008	008	009	008	008	006	007	006	011	015	020	010	014	011	008	012	016	013	009	008	007	005

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foF2

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

A 1

IONOSPHERIC DATA

Oct. 1965 | 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	430L	420L	450L	430	L	L	L	L							
2									L	430L	450L	L	460H	450H	420	L								
3								A	400L	410L	L	460	450	LH	420	L	L							
4								L	L	420L	L	430L	450	430L	410	L	L							
5									L	L	420L	450H	L	430L	L	L	A							
6									L	L	420	430L	450	420L	L	LH								
7									L	420L	440	L	450	430L	L	L	L							
8									L	L	L	430L	430L	420L	410L	L								
9									L	L	I420A	I440A	LH	L	L	L								
10									L	L	I420A	I430A	L	420L	L	L								
11									L	A	A	430	430L	L	L	L								
12								270L	L	420L	430	430	L	420L	L	L								
13									L	L	430	430L	430	L	400	350L								
14									L	410L	430L	420	L	L	410L	L								
15									L	L	420	L	420L	A	A	L								
16										410L	420	420	LH	400L	LH	L								
17								280	L	400	410	L	400	L	L									
18									L	A	420	L	LH	410L	400L	L								
19								L	L	L	LH	420	LH	380L	L	L								
20									L	410L	420L	C	C	C	380L	L								
21									L	L	420L	390	420L	410	400	L								
22									L	L	I400A	I420A	420L	LH	A	A								
23									A	L	I410A	I410A	L	A	L	L								
24									L	L	A	L	A	A	430L	L								
25									L	410L	420	420L	450	LH	L	L								
26										450L	L	I420A	L	370	L	L								
27										L	420L	430	L	L	L	A								
28									A	380L	400	420H	420L	410	400L	L								
29									L	410L	410	L	L	400	L									
30									L	L	400	420	400	L	L									
31										L	420	A	L	L	A	A								
No.								2	1	14	24	22	16	15	11	1								
Median								275L	400L	410L	420	430	430	420L	410L	350L								
U. Q.																								
L. Q.																								
Q. R.																								

foF1

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

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A 2

IONOSPHERIC DATA

Oct. 1965 | 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							185	245	I270A	295	305	315	320	310	300	280	245	A						
2							185	240	270	300	I305A	315	320	315	300	280	I230A	A						
3							A	230	260	295	305	310	315	305	295	270	225	E						
4							E180B	235	280A	305	315	I320A	325	320	300	270	I220A	E						
5							190	230	265	295	310	315	315	305	A	A	A	E						
6							E	230	265	305	315	I330A	330A	A	A	250	A	E						
7							E	245	265	295	310	315	320	310A	300	A	A	E						
8							180	235	270	300	305	310	315	A	A	255	205	E						
9							E170B	225	260	300	305	310	310	I310A	295	260	225	E180B						
10							E170B	240	275	300	305	310	315	I310A	A	A	A	A						
11							E	230	270	300	305	310A	A	A	A	250	210	E						
12							E180B	220	270	295	305	310	310	300	280	240	210	E						
13							E170B	235H	260	285	300	I305A	I305A	300	290	245	195	E						
14							E	I225A	I270A	300	310A	I310A	300	295	A	A	205	E						
15							E	I220A	260	285	300	A	A	A	A	A	A	E						
16							E	230	260	290	300A	I305A	A	A	280	245	210A	E						
17							E	220	260	A	A	A	A	I290A	270	245	210	E						
18							E	215	A	A	305	I310A	310	300	280	250	200							
19							E	210	I260A	I300A	I300A	A	A	A	A	A	190							
20							E	A	255	I290A	I305A	C	C	C	255	230	A							
21								200	245	280	290	300	305	30C	280	I250A	A							
22								205	250	280	I290A	295	305	A	A	A	A							
23							E	215	250	285	295	A	A	A	A	250	180							
24								A	255	280	300	310	305	300	I295A	I250A	210							
25							E	210	240	I270A	I280A	I295A	295	285	275	245	205							
26							E	205	250	280	285	290	300	300	275	245	185							
27								200	255	280	I295A	305	A	A	A	A	A	E						
28								205	245	I275A	I290A	A	A	A	A	240	E170B							
29								200	255	I270A	I285A	305	I305A	A	A	A	A							
30								A	A	A	A	A	A	A	A	245	A							
31								190	245	270	290	A	A	A	A	A	A							
No.							22	28	29	28	29	23	20	17	16	21	19	15						
Median							E	220	260	290	305	310	310	300	285	250	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

25

IONOSPHERIC DATA

Oct. 1965 | 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	E	J012E	J017	E	E	E	G	027	030	032	G	G	G	G	023G	J023G	029	J024	020	J016E	E	E	E	E
2	E	E	E	E	E	E	G	031	J098	033	J037	G	G	038	G	G	028	023	E	E	J013E	J018	E	J024
3	E	J018	J017	J023	J018	J018	026	J053	J062	J055	J051	G	G	G	G	029	026	J029	E	J059	J035	J030	J059	J023
4	J016E	E	J013E	E	J013E	E	E018B	027	J030	G	035	036	G	G	G	G	024	019	J016E	E	J012E	E	J023	J024
5	E	J028	J018	J016E	J013E	E	G	027	031	034	037	033	035	036	J033	J029	J040	020	E	E	018	E	019	E
6	J018	J016E	J023	J019	J015E	E	E	026	030	035	040	J036	036	J033	J030	024G	J028	J025	J018	J015E	J020	J020	J013E	E
7	E	E	E	J012E	J016E	J019	J019	G	030	035	035	036	036	034	032	029	023	J015E	J012E	J030	J018	E	E	E
8	E	E	E	E	E	E	019	026	031	036	035	033	G	034	031	026	022	J022	J030	J012E	J017	J019	E	E
9	E	J012E	J017	J013E	J018	J018	E017B	030	032	039	J049	J049	G	J063	G	G	G	E018B	J023	J019	E	J019	J015E	J034
10	J013E	J013E	J042	J023	J020	E	018	026	039	039	J043	J051	038	036	J050	J037	J050	J066	J073	J063	J029	J029	J018	J016E
11	J016E	E	J012E	J015E	E	J012E	J013E	J027	030	J045	J050	037	J040	036	033	G	J026	025	J029	J018	J029	J018	E	E
12	E	E	E	E	E	E	E018B	025	032	030	J041	J035	G	J060	G	G	J026	E	E	E	E	J044	J030	J050
13	J024	J025	J025	J019	J030	J028	J018	G	031	034	033	037	033	G	G	G	G	J018	J013E	J017	J018	J019	J017	E
14	J015E	E	J015E	J013E	E	J018	E	025	033	038	036	035	G	G	029	028	G	E	J016E	J019	J030	J030	J013E	E
15	E	E	E	J015E	E	J017	022	027	034	039	040	036	J042	J051	040	J043	J028	J028	J051	E	E	J016E	E	E
16	E	E	E	J033	J017	E	E	025	032	040	035	035	J034	J037	G	030	031	J029	J029	J032	J023	E	E	J026
17	J028	J012E	E	E	E	E	E	G	031	032	036	J041	032	J030	023G	G	025	024	J017	J020	J036	J036	J022	J019
18	E	J030	J017	J017	E	E	J018	G	035	J050	J040	J043	G	023G	G	G	022	E	J021	J029	J031	J031	J029	J018
19	J016E	J025	J023	J017	E	J015E	E	G	029	J040	037	J034	034	032	J031	025	J028	J031	J049	E	J022	J019	J016E	J018
20	J016E	E	E	E	J024	J030	J031	J030	028	033	035	C	C	C	024G	024	J026	J050	J028	J022	J018	J015E	J017	E
21	J013E	J016E	E	E	E	E	J017	G	G	035	039	032	035	032	032	031	030	J019	J029	J029	J025	E	J018	J018
22	J037	J016E	J013E	J012E	J013E	E	J013E	024	030	038	J058	J047	J040	J044	J060	J070	J052	E	E	J011E	J014E	J018	J021	E
23	J029	E	J011E	E	E	E	J023	030	038	036	J050	J065	J040	J042	036	G	G	J015E	J028	J025	J018	J018	J015E	J020
24	J018	J013E	025	J012E	J012E	J017	J013E	025	032	J045	J052	J051	J073	J046	035	J042	J024	J019	J017	J033	J018	J026	J023	J023
25	J021	J029	J018	J017	J019	J018	018	G	029	J030	034	035	J033	G	030	G	J023	019	J015E	J016E	J015E	E	E	J035
26	J015E	E	J023	J015E	E	E	E	025	031	033	036	J063	023G	G	J028	026	G	J035	E	E	E	J031	J041	J033
27	J035	J028	J020	J016E	J018	E	J013E	024	029	035	037	036	035	031	J039	J040	J040	J036	J018	J017	E	J020	J050	J040
28	J046	J023	J019	J018	J017	J028	J026	J034	036	033	J052	J041	J041	J041	029	026	019	J028	J026	J023	J018	J013E	E	J013E
29	J028	J024	J018	J017	J018	J016E	J025	G	027	033	J041	G	J040	J033	J036	J035	J034	J051	J017	J019	J018	J030	J024	E
30	J015E	J013E	018	J015E	J013E	E	E	025	J036	J036	029	031	032	035	037	J029	J021	J019	E	E	J016E	E	J026	J018
31	J025	J038	J025	J021	J050	J026	E	G	G	031	035	J063	J060	J053	J042	J034	J064	J029	J020	J013E	J017	J050	J050	J063
No.	31	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31
Median	E	E	017	E	E	E	017	025	031	035	037	036	034	034	030	026	026	J023	J018	J017	J018	J019	J017	J018
U. Q.	024	024	020	017	018	018	019	027	034	039	043	043	040	042	036	031	030	029	028	025	023	030	024	024
L. Q.	E	E	E	E	E	E	E	G	030	033	035	033	G	G	G	G	022	018	E	E	E	E	E	E
Q. R.									004	006	008	010					008	011						

foEs

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

The Radio Research Laboratories, Japan

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IONOSPHERIC DATA

Oct. 1965 | 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			E					027	029	031					023G	019G	029	021	018					
2								029	018	032	034			G			027	021				E		E
3		E	E	018	E	E	021	040	029	031	034					029	025	021		038	018	017	027	017
4							B	025	G		033	033					U024R	019					018	018
5		018	E					027	030	032	033	033	034	033	031	027	040	020			018		018	
6	E		019	018				026	030	034	038	035	035	033	030	024G	025	019	E		E	E		
7						E	018		029	033	034	035	035	034	031	029	023			021	E			
8							019	026	031	035	034	033		033	030	024	022	020	E		E	017		
9			E		E	E	B	027	031	039	046	045		032				B	019	E		017		E
10			017	E	E		018	026	034	036	042	047	036	035	035	036	025	028	A	028	018	025	E	
11								E	030	045	049	035	033	034	031		E	019	018	018	021	E		
12							B	024	028	028	029	028		020			E					018	021	018
13	E	017	020	017	E	020	018		030	032	032	034	032					E		E	018	018	017	
14						E		024	031	036	033	034			028	027				E	019	018		
15						E	021	026	031	035	040	035	039	043	040	035	026	017	A					
16				E	E			024	028	036	034	035	031	035		030	027	027	027	021	018			E
17	018								028	031	034	033	031	030	022G		023	021	E	019	024	E	E	E
18		025	E	E			E		034	043	040	040		023G			022		017	018	021	E	018	E
19		017	018	E					028	037	032	032	032	031	030	025	018	017	022		017	E		E
20					E	018	018	024	027	032	033	C	C	C	024G	024	021	040	021	018	E		U017R	
21							E			034	039	032	G	032	031	027	023	E	E	E	E		E	E
22	018							024	029	036	043	042	033	031	048	054	045					E	E	
23	E						020	028	035	032	044	063	032	042	034				E	E	E	E	E	E
24	E		E			E		024	030	037	043	035	062	043	031	031	023	E	E	E	E	019	019	018
25	E	021	E	E	E	E	E		028	028	031	030	027		G		G	E						023
26			E					024	029	030	034	062	022G		022	026		035				020	020	021
27	E	E	018		E			024	027	032	032	035	035	031	036	036	030	035	018	E		018	028	024
28	033	019	E	E	E	E	E	027	036	031	032	037	034	031	029	026	019	E	027	018	E			
29	E	E	E	E	E		017		027	032	031		033	032	029	030	021	018	E	E	E	018	022	
30			E					023	028	030	029	030	032	033	034	027	019	E					E	E
31	020	018	E	018	E	E				031	033	060	038	036	042	033	A	E	E		E	018	017	019
No.																								
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

Oct. 1965 | 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	017	E	E	017	017	018	017	018	E	E	E	017	E	E	E	E	E	E
2	E	E	E	E	E	E	017	E	E	017	017	017	017	017	017	017	E	E	E	E	E	E	E	E
3	E	E	E	E	E	E	017	E	017	017	017	018	018	017	018	017	E	E	E	E	E	E	E	E
4	E	E	E	E	E	E	018	E	017	017	018	017	017	017	017	E	E	E	E	E	E	E	E	E
5	E	E	E	E	E	E	017	E	E	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	E	017	017	E	E	017	017	017	E	E	E	E	E	E	E	E	E
7	E	E	E	E	E	E	E	E	017	017	017	018	018	017	017	E	E	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	017	017	E	017	017	017	017	E	017	E	E	E	E	E	E	E
9	E	E	E	E	E	E	017	E	E	017	E	017	E	017	017	017	E	018	E	E	E	E	E	E
10	E	E	E	E	E	E	017	017	E	017	017	017	017	018	E	E	017	017	E	017	E	E	E	E
11	E	E	E	E	E	E	E	E	017	E	017	E	017	017	018	E	E	E	E	017	E	E	E	E
12	E	E	E	E	E	E	018	E	017	017	017	017	017	E	017	E	E	E	E	E	E	E	E	E
13	E	E	E	E	E	E	017	E	E	017	017	017	E	017	017	E	E	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	E	017	017	E	017	017	E	E	E	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	017	E	017	017	017	E	017	017	E	E	E	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	E	E	017	017	017	017	E	017	E	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	017	017	017	E	017	E	E	E	E	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	E	017	E	017	017	017	017	017	017	E	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	017	017	017	C	C	C	017	E	017	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	E	E	017	017	017	017	019	017	017	E	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	E	E	017	017	017	017	017	E	E	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	017	E	E	017	017	017	017	017	017	017	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	E	E	E	E	E	E	017	E	E	E	E	E	E	E	E	E	E
25	E	E	E	E	E	E	E	E	E	E	E	E	017	017	E	E	E	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	E	E	017	E	017	017	017	E	E	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	E	E	017	017	E	017	E	E	E	E	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	E	017	017	017	017	017	E	E	017	E	E	E	E	E	E	E
29	E	E	E	E	E	E	E	017	E	E	017	017	017	017	017	017	E	E	E	E	E	E	E	E
30	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	E	E	E	E	E	E	E	E
31	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	E	E	E	E	E	E	E	E
No.	31	31	31	31	31	31	31	31	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31
Median	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	E	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

The Radio Research Laboratories, Japan

A 6

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IONOSPHERIC DATA

Oct. 1965 | 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	300	FS	335F	340F	350F	345F	355	350	355	360	370	340	345	350	325	335	330	340	355	350	340	FS	FS	FS
2	FS	FS	FS	FS	FS	320F	365	370	365	360	340	345H	335	335	335	335	350	335	345	345	310	270	275	290
3	290	305	295S	335	325	320	350	370	360	350	340	335	325	355	330	340	340S	350R	340	295	305	300	295	310
4	310	305	295	295	305	310	355	360R	360	350	355	340	345	345	335	320	315	350	350	315	320	310	305	295S
5	305	300	310	315	340	300	370	365	365	355	345	350	355	345	340	325	330S	345	340	300	315	320	300	300S
6	290	290	295	310	375	290	325	355	360	360	360	315	340	340	325	335	345	345	345	325	320	305	310	310
7	315	315	310	310	315	290	350	355	360	345	340	340	345	355	335	330	340S	350	345	320	320	285	285	305
8	I305R	295	300	305	315S	315S	345	360	I365R	I320R	340	345	345	345	340	340	345	345	340	300	305	290	I290R	295F
9	310S	310S	300	305	325	350	350	360	360	325	335	330	335	345	330	335	340	365	320	295	FS	300F	FS	FS
10	FS	340F	340	340	310	310	345	365	355	355	335	335	335	335	340	350	360	340	I325A	295	310	305	315	315S
11	310	310	315	310	330	335S	355	365	355	365	345	340	340	365	340	345	345	335	320	305	315	335F	FS	315
12	320	310	330	305	320	315	365	355	360	355	340	335V	355	325	335	340	355	345	345	305	325	320	320	320
13	320	305	305	300	310	300	350	365	370	365	355	360	350	345	335	340	350	345	340	310	305	305	305	310
14	305	305	315	320	340	300	345	340S	350	355	345	345	360	340	335	350	360	355	350	315	295	285S	285S	295S
15	300	325	350	325	310	305F	350	350	365	355	350	355	345	350	335	340	350	355	I330A	325	320	320F	FS	310F
16	FS	FS	315	310	325	315	350	I350R	360	355	350	350	370	335	325	345	350	350	350	325	320	300	315	310
17	305S	300	305	305	310	315	350R	355	365	365	365	355	345	360	330	335	360	360	370	310	320	295	300	300F
18	315F	310	305	315	320	325	365	375	380	355	360	I350R	350	355	350	370	365	355	320	320	320	315	325	325
19	305	320	300	315	335	350	360	370	365S	365	320H	335	350	365	345	355	360	355	340	330	315	315	290	295
20	315	305	330	330	315	325	345	370	345	380	355	C	C	C	345	360	360	360	350	305	295	315	295S	I300R
21	305S	315	330	315	305	345	350	360	360	360	355	330	340	345	345	365	360	360	365	325	325	315R	320	305
22	325	310	305	320	340	350	350	365	355	365	350	350	350	365	345	370	360	355	345	335	I310R	300	315	I310R
23	340	315	310	295	300	I340R	355	385	355	320	315	335	325	320	335	345	350	340	335	360	295S	FS	FS	305R
24	I295R	285S	310S	305	365	305	325	315	I320R	325	340R	310	345	315H	325	345	355	365	335	335	I320R	FS	335	295F
25	FS	FS	FS	FS	355F	FS	FS	350	350	345	340	330	I345R	340	345	355	345	345	320	325R	FS	FS	I310R	I305R
26	305R	305	275S	300F	FS	335S	345	360	I360R	320	330	I330R	335	330	350	355	360	365	310	305	310	320	315	315
27	310	300	315	320	350	335	335	350	365	355	315H	340	340	335R	355	355	355	320	340	315	305	325	315	285S
28	I305R	305	310	325	325	330	335	370	370	355H	350H	315	335	325	335	365	365	320	315	300	285	I295R	FS	FS
29	310F	315F	345	295	295	300S	340	340	355S	335H	345	325	335H	345	345	345S	380	360	320	305	310	330S	FS	310S
30	320S	355S	305	295	310	315S	360	375	375	I360R	340	330	330	345	345	350	365	370	330	310	300	320	FS	FS
31	FS	FS	FS	FS	365	F	340	380	345	350	360	335	335	340	340	365	I360A	345	330	315	295	310	305S	FS
No.	26	26	28	28	29	29	30	31	31	31	31	30	30	30	31	31	31	31	31	31	29	27	23	26
Median	310	310	310	310	325	315	350	360	360	355	345	340	345	345	335	345	355	350	340	315	310	310	305	305
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

M(3000) F2

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

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IONOSPHERIC DATA

Oct. 1965 | 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	380L	385L	385L	400	L	L	L	L							
2									L	390L	390L	L	375H	380H	365	L								
3								A	385L	375L	L	365	365	LH	375	L	L							
4								L	L	385L	L	395L	370	390L	375	L	L							
5									L	L	385L	375H	L	365L	L	L	A							
6									L	L	405	395L	380	380L	L	LH								
7									L	390L	385	L	380	390L	L	L	L							
8									L	L	L	395L	400L	380L	375L	L								
9									L	L	I390A	I390A	LH	L	L	L								
10									L	L	I395A	I395A	L	365L	L	L								
11									L	A	A	375	375L	L	L	L								
12								435L	L	400L	405	400	L	400L	L	L								
13									L	L	380	385L	385	L	375	390L								
14									L	390L	370L	375	L	L	365L	L								
15									L	L	380	L	380L	A	A	L								
16										385L	375	380	LH	395L	LH	L								
17								420	L	380	415	L	445	L	L									
18									L	A	395	L	LH	385	385L	L								
19								L	L	L	LH	405	LH	400L	L	L								
20									L	390L	400L	C	C	C	385L	L								
21									L	L	370L	410	375L	375	370	L								
22									L	L	I390A	I400A	380L	LH	A	A								
23									A	L	I380A	I390A	L	A	L	L								
24									L	L	A	L	A	A	345L	L								
25									L	385L	380	375L	360	LH	L	L								
26										370L	L	I370A	L	395	L	L								
27										L	420L	410	L	L	L	A								
28									A	410L	395	400H	380L	385	390L	L								
29									L	395L	385	L	L	395	L									
30									L	L	405	390	390	L	L									
31										L	365	A	L	L	A	A								
No.								2	1	14	24	22	16	15	11	1								
Median								430L	385L	390L	390	390	380	385L	375L	390L								
U. Q.																								
L. Q.																								
Q. R.																								

M(3000)F1

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

The Radio Research Laboratories, Japan

A 8

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IONOSPHERIC DATA

Oct. 1965 | 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	245	240	255	265	265	240L	265	265							
2									230	245	260	245	290	290	280	270								
3								240	250	245	260	280	290	250	295	260	245							
4								235	235	245	245	265	270	260	275	250	270							
5									240	240	255	260	255	280	250	250	260							
6									230	245	250	255	265	255	250	260								
7									240	255	280	260	260	250	255	255	250							
8									225	240H	270	255	270	275	265	250								
9									240	250	270	255	255	255	275	250								
10									230	245	265	260	260	255	260	240								
11									240	245	255	275	250	240	270	245								
12								230	240	245	275	245	245	265	250	260								
13									230	240	250	245	245	250	260	250								
14									240	245	255	250	245	250	285	255								
15									240	250	260	240	250	245	265	250								
16										250	250	240	235	250H	245	250								
17								230	240	245	240	235	245	245	245									
18									230	240	245	245	245	260	260	245								
19								220	235	240	260H	250	245	245	245	245								
20									235	235	245	C	C	C	265	245								
21									245	235	240	260	255	265	265	235								
22									235	245	240	245	235	240	255	240								
23									230	255H	275	245	265	250	255	240								
24									270	245	235	245	240	230H	295	250								
25									235	235	265	255	255	245	250	225								
26										280	255	250	240	255	240	245								
27										235	245	260	240	250	255	250								
28									220	230	230	275	250	250	245	235								
29									240	240	245	235	240	260	250									
30									235	240	245	245	240	245	250									
31										240	240	240	250	245	245	235								
No.								5	27	31	31	30	30	30	31	28	5							
Median								230	235	245	250	250	250	250	255	250	260							
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

Oct. 1965 | $h'F$ 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	275	260	245	245	235	240	220	240	230	205H	215	200	195	200H	210	245	245	245	215	210	225	275	290	290
2	280	265	260	270	255	260	215	225	225	200	205	190	200	185H	245	245	245	245	220	205	240	330	325	295
3	295	290	290	245	225	235	210	I230A	230	205	195	220	225	195H	220	245	240	235	205	I250A	255	255	I260A	245
4	250	255	275	275	260	265	240	230	215	200	195	200	210	200	205	240	250	240	210	225	235	255	260	280
5	270	290	285	255	220	275	225	225	235	220	200H	210H	240	205	230	205	I245A	240	220	245	245	235	255	270
6	290	290	285	245	200	285	240	230	230	225	205	205	215	220	205	200H	240	240	215	230	240	245	270	270
7	275	255	250	245	250	260	230	235	230	220	225	210	220	225	200	235	245	225	215	245	240	290	285	280
8	255	285	280	275	245	240	220	235	235	210	220	200	210	200	220	230	245	230	225	245	255	280	270	280
9	270	255	275	260	240	205	210	230	220	I230A	I220A	I200A	180H	200H	210	215H	240	215	225	255	270	270	290	255
10	270	245	220	220	230	245	225	230	235A	230	I220A	I220A	230	230	220	I230A	230	230	I240A	I255A	265	280	250	245
11	255	255	240	255	240	235	210	215	230	I230A	I225A	220	210	230	210	215	235	230	240	265	245	245	230	230
12	230	255	245	245	240	240	230	200	215	200H	195	200H	180H	195	200	250	240	235	220	240	240	240	255	240
13	245	265	285	290	270	280	215	225	225	220	215	205	215	205	205	200H	235	235	215	245	255	255	290	275
14	265	250	245	250	230	290	240	220	235	235	215	220	200H	225	190H	240	235	215	210	250	I295A	I305A	320	300
15	280	245	220	235	245	285	220	240	240	245	I230A	215H	A	A	I235A	240	240	220	I230A	240	250	255	260	275
16	260	255	245	250	225	240	220	215	240	230A	210	220	205H	220	195H	245	240	235	230	235	230	250	250	245
17	265	255	255	265	265	255	220	210	230	200	200	190	180	240	205	230	240	210	205	I240A	I265A	290	310	285
18	255	I275A	290	270	255	255	220	220	I215A	I205A	I210A	I195A	180H	230	225	240	225	220	220	245	250	245	245	265
19	260	275	300	265	245	210	210	215	220	I220A	200	215	190	200	225	245	225	215	225	230	235	260	280	285
20	260	270	250	240	280	250	220	230	225	220	220	C	C	C	230	230	220H	235	220	275A	275	250	290	290
21	280	245	255	245	255	235	220	230	240	240	I220A	200	200H	205	230	240	225	210	215	225	250	265	250	260
22	265	275	275	250	240	215	215	220	230	I215A	I235A	I240A	220	185H	240	A	A	205	215	235	290	280	265	250
23	240	260	250	270	270	245	205	210	I220A	240	I230A	I220A	210	I210A	I235A	240	230H	220	225	215	215	285	260	260
24	260	270	235	225	205	250	245	245	240	240A	I230A	220	I250A	I235A	210	240A	225	210	215	245	250	270	245	295
25	255	275	255	240	205	245	210	230	235	205H	200	195H	220	200	230	235	215	215	230	225	235	245	245	I270A
26	265	265	270	270	245	210	220	220	235	225H	240H	I220A	200	200	205H	230	205H	225	245	260	270	255	260	260A
27	265	270	260	255	230	210	210	220H	230	235	225	200	240	245	I240A	I235A	225	220	230	240	275	260	I280A	335
28	I300A	290	255	240	240	245	225	215	I225A	220	200	220A	225	215	240	240	210	215	I240A	255	290	295	290	295
29	275	240	215	E280E	290	255	210	235	230	215	205	230	230	220	195H	225	210	200	225	245	280	295	I300A	285
30	250	205	E290E	270	275	250	210	210	225	215	205	200H	210	235	230A	240	220	200	210	250	245	260	260	255
31	270A	255	240	220	205	235	225	210	225	230	220	A	A	245A	A	A	I215A	200	230	230	245	270A	255	255
No.	31	31	31	31	31	31	31	31	31	31	31	29	28	29	30	29	30	31	31	31	31	31	31	31
Median	265	260	255	250	240	245	220	225	230	220	215	210	210	210	220	240	235	220	220	245	250	260	260	270
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

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IONOSPHERIC DATA

Oct. 1965 | 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	E	E	100	E	E	E	G	140	135	120	G	G	G	G	100	100	145	100	120	E	E	E	E	E
2	E	E	E	E	E	E	G	140	105	140	105	G	G	130	G	G	145	135	E	E	E	125	E	120
3	E	110	110	110	105	130	140	130	120	120	115	G	G	G	G	E170G	140	120	E	110	110	110	105	105
4	E	E	E	E	E	E	B	145	125	G	125	110	G	G	G	G	150	140	E	E	E	E	105	100
5	E	105	100	E	E	E	G	160	150	145	130	E145G	130	125	115	120	120	145	E	E	105	E	100	E
6	100	E	105	105	E	E	E	155	145	130	125	100	120	105	105	105	100	100	100	E	100	100	E	E
7	E	E	E	E	E	105	105	G	140	140	135	130	125	125	130	120	115	E	E	105	105	E	E	E
8	E	E	E	E	E	E	160	145	140	125	120	125	G	115	110	105	155	105	105	E	100	100	E	E
9	E	E	105	E	110	110	B	150	145	125	120	120	G	100	G	G	G	B	130	135	E	115	E	110
10	E	E	110	125	140	E	155	155	140	130	125	120	120	120	105	110	110	105	110	110	105	105	110	E
11	E	E	E	E	E	E	E	105	150	130	115	120	120	115	110	G	105	105	105	110	110	105	E	E
12	E	E	E	E	E	E	B	135	135	115	110	105	G	105	G	G	100	E	E	E	E	110	105	110
13	110	110	105	110	105	105	105	G	140	125	125	120	120	G	G	G	G	135	E	105	105	105	105	E
14	E	E	E	E	E	100	E	160	145	135	125	120	G	G	130	130	G	E	E	110	105	105	E	E
15	E	E	E	E	E	105	100	155	140	130	125	110	105	125	130	100	105	100	95	E	E	E	E	E
16	E	E	E	110	100	E	E	160	140	120	120	115	110	110	G	145	135	120	120	110	110	E	E	110
17	105	E	E	E	E	E	E	G	130	110	110	100	105	105	105	G	140	135	105	105	105	105	110	115
18	E	100	105	100	E	E	110	G	125	120	120	110	G	105	G	G	150	E	135	110	110	120	110	115
19	E	105	105	110	E	E	E	G	125	115	125	100	120	120	115	115	110	105	105	E	110	110	E	105
20	E	E	E	E	105	125	100	100	145	130	120	C	C	C	105	145	105	100	100	100	100	E	100	E
21	E	E	E	E	E	E	105	G	G	140	130	140	125	125	120	120	140	130	110	105	105	E	105	110
22	110	E	E	E	E	E	E	170	145	130	105	120	125	115	110	110	110	E	E	E	E	100	105	E
23	100	E	E	E	E	E	145	140	130	140	125	110	110	120	115	G	G	E	120	115	120	100	E	105
24	105	E	110	E	E	115	E	145	140	130	120	120	115	120	130	115	120	115	110	105	115	115	110	110
25	110	105	105	105	105	110	150	G	150	120	110	115	110	G	145	G	135	120	E	E	E	E	E	105
26	E	E	125	E	E	E	E	170	140	145	140	120	105	G	100	155	G	145	E	E	E	110	110	110
27	105	105	105	E	110	E	E	170	145	135	125	120	115	110	100	100	100	100	105	105	E	110	105	105
28	105	105	105	100	100	105	115	130	125	125	120	120	120	115	115	120	145	105	105	100	110	E	E	E
29	105	110	105	105	105	E	105	G	140	120	115	G	110	110	110	105	110	115	115	120	115	125	115	E
30	E	E	105	E	E	E	E	135	120	115	120	115	115	125	120	125	115	120	E	E	E	E	120	110
31	105	105	105	105	125	130	E	G	G	150	130	110	110	110	110	110	105	135	115	E	120	115	105	105
No.	11	10	17	11	11	11	13	22	29	30	30	26	21	23	23	21	26	24	19	17	20	20	17	17
Median	105	105	105	105	105	110	110	145	140	130	120	120	115	115	110	115	120	120	110	110	110	110	105	110
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

Oct. 1965 | 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			f					h2	h	h					12	12	h3 12	12	f2					
2								h	1 h	h2	c2			h			h 12	h3				f2		f
3		f2	f2	f2	f2	f	h2	h4	h	h2	h2					h	h2	h2		f2	f2	f3	f3	f2
4								h	h		h	c					h2 12	h 1					f	f
5		f	f					h	h	h	h	h	h	h	h	h	h3	h			f2		f	
6	f		f2	f4				h2	h	h 1	h2 12	12	h 12	12	12	13	13	12	f		f	f2		
7						f2	12		h	h2	h2	h	h2	h2	h	h2	c3			f3	f			
8							h	h2	h2	h2	h2	h		h3	c2	14	h	13	f2		f	f		
9			f2		f2	f		h2	h2 1	h2	h2	h3		1 h					f3	f		f2		f3
10			f	f	f		h	h2	h2	h2	h2	h2	h2	h2	14	c2	c4	13	f4	f3	f2	f4	f	
11								1	h	h3	h2	h2	h	h2	c2		1	1	f	f	f3	f		
12								h2	h	c	12	1		1			1					f2	f2	f2
13	f	f2	f3	f2	f	f3	1		h3	h2	h2	h2 1	h 1					h		f2	f2	f2	f2	
14						f		h2	h2	h2	h2	h2			h 12	h				f	f2	f		
15						f	12	h3	h2	h2	h3	c2	c3	h2 12	h2 12	14	13	13	f4					
16				f2	f			h2	h2	h2	h2	h2	c2	c2		h2	h3	h2	f3	f2	f2			f2
17	f2								h2	h2	c2 12	12	c3	12	12		h3	h2 1	f	f	f3	f3	f2	f2
18		f4	f	f			1		h2	h3	h3	13		1			h		f2	f	f2	f2	f2	f
19		f2	f3	f					h2 13	h2 12	h	1	h	h	h2	h2	1 h2	f	f2		f	f		f
20					f2	f f2	12	1 h2	h2	h	h				12	h 1	12	f3	f2	f2	f		f	
21							f			h2	h2	h	h	h	h2	h2	h2	f	f	f	f2		f	f
22	f3							h2	h2	h2	1 h2	h3	h2	h2	c3	14	16					f	f	
23	f						h3	h3	h2	h2	h3	c3	c2	h2	c2				f2	f	f	f		f2
24	f		f2			f		h2	h2 12	h2 13	h2 12	h2	h3	h3	h2	c4	h2	f	f	f3	f2	f2	f2	f3
25	f2	f5	f2	f2	f	f	h		h	h	c2	h	12		h 1		h2	f						f2
26			f f					h2	h	h	h2	h2	1		12	h		f4 f				f3	f3	f4
27	f2	f2	f2		f			h	h	h2	h2	h2	h2	c2 12	13	13	12	13	f	f		f2	f2	f3
28	f4	f2	f2	f	f	f2	f	h3	h3	h2	h2 1	h2	h2	h 12	h2 12	h3 12	h	f	f2	f2	f2			
29	f4	f	f	f	f2		f		h	h3	h2		c2	c3	c2	13	12	f f2	f	f	f2	f2	f2	
30			f					h3	h2	h3	h	h2	h2	h2	h2	h2	c2	f					f2	f2
31	f7	f6	f3	f3	f	f				h2	h	c3	c2	c2	c3	17	14	f	f		f	f2	f2	f2
No.																								
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

Oct. 1965 | **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	038	U037S	036	033	032	025	050	064	U077S	076R	071	071	069R	U075R	066	065	079S	U077S	065S	059S	034	031	033S	035
2	036S	037S	035	034	033	031	054	U063S	064	063	067	073R	073R	U078R	U075R	076	072	U074S	064	042S	U031S	032	033	035S
3	036S	036	036	043	028	025	050	064S	065	U074R	066R	U077R	U079R	U077R	U071R	U075R	079	U081S	057	044	041F	045S	046	046
4	042	041	040	041	037	038	059	I071S	U079R	073	071R	072R	081	070	065	062	068	086S	091S	035	036	036	037	036
5	036	035	035	038	034S	025	048	055	U071R	060	062	070R	078	J077R	069	J064R	072	U079S	059	047	049	044	037	037
6	037	038	J039S	042	026	026	049	J073S	069	068	067	072	079R	066	060	069	074S	I080S	071	044	038	036	037	035
7	035	036	037	032	028	029	051	071S	071S	066	067	J080R	089	J076R	066	070	072	J075S	061	041	037	035	035	036
8	038	036	036	036	036	032	055	065	J078S	067	067	080	076R	073	070	073S	I075S	069S	056	045S	043S	044	044	U041S
9	044	042S	042	045	044	034	046	060	U080S	068	084	084	087	085	085R	081S	070S	066S	052	A	042	044S	U042F	U040S
10	U046S	U057S	043	033	029F	028S	050	066	U081S	075S	U076S	073	083	084	079	081	069	061	054	045	046S	U045S	U045S	045
11	044	042S	041	041S	039	034	050	062	C	070	068	079R	090	073	064	067	064	060	046	046	047	I048S	045S	042
12	043	042	041	042	042	039	051	U072S	080S	080	072	074R	U062R	066	068	072S	075S	U072S	062S	044	045	042	036	036S
13	C	C	C	C	C	C	C	C	C	066	069	071	064	062	063	061	062	060	048	037	039	037	038	039
14	038	039	035	036	031	027	049S	067S	U075S	J073S	C	073	085	067	068	074	068	060	040	028	031	033	033	034
15	034	034	033	026	025F	024	044	059	072	070	070	082	070	073	J071R	069	069	066	046	038	034	F	F	F
16	038F	J038F	037	037F	034F	030F	045	062	S	C	C	C	C	C	060	064	070	066	055	A	035	034F	U033F	035F
17	038F	039	039	J040R	040	037F	050	064	S	071R	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	059	054	052	044	042	036S	039	032
19	U035S	036	036	037	043	040	048	065	073S	058	063	091	081	067	071	068	058	051	046	037	032	032	030	033
20	033	034	032	032	031	032	044	057	073	082	071	064	067	078	071	066	057	051	045	027	031	032	032	033
21	033	036S	033	032	031	030	042	057	063	073S	070	068	072S	060	065	073S	062S	A	049	032	033	033	035	035
22	034	034	U034S	035	038S	033	049	056	060	069	071	069	081	066	066	063	057	047	035	034	034	U035S	U036S	036
23	033	036S	036S	037	U040S	F	043	054	063R	073	C	J102R	J100R	083	086	087	075	080S	J079S	050	A	F	F	F
24	050F	050	U051S	044F	048	033	048	071	101	104	J101R	089	J102R	J079R	074	095	J077S	057	049	044	038	040S	037F	033F
25	033	034	037	F	039F	F	044F	059	082	079	066	087	094	086	084	078S	062	058	047	045	043	040	040	036
26	038F	F	F	044F	046F	034F	043	060	071S	062	083	111	093	073	091	073	064	053	034	039	039S	040	040S	038
27	035	036	036	036	040	027	039	058	068	J078R	076R	085	082	084	086	068	071	057	033	035	032	034	F	U037F
28	I037A	038F	038F	041	034	034	046	062	079	J075R	076	075	096	098R	099R	087R	065	043	043	040	040S	039F	F	F
29	040S	039	F	025	028	030	044	064	J078S	073S	082	091	093	090	086	084	U072S	053S	031	033	035S	035S	033S	034S
30	041S	037S	023	025	025	028	044S	061	U064S	068	071	090	092	090	085	086	083	056	033	032	036S	034S	038S	U040S
31	F	F	U044F	051S	U034S	030S	041	U064S	070S	086	090	097	094	097S	U101S	092	066	048S	032	035	035	032	033	035S
No.	28	27	27	28	29	27	29	29	26	29	26	28	28	28	29	29	30	29	30	28	29	28	26	27
Median	038	037	036	037	034	030	048	063	072	073	071	078	082	076	071	073	070	060	049	040	037	036	037	036
U. Q.	040	039	040	042	040	034	050	066	079	076	076	088	092	084	085	081	074	074	059	044	042	041	040	039
L. Q.	035	036	035	033	030	027	044	059	068	068	067	072	074	068	066	066	064	054	043	035	034	034	033	035
Q. R.	005	003	005	009	010	007	006	007	011	008	009	016	018	016	019	015	010	020	016	009	008	007	007	004

foF2

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

The Radio Research Laboratories, Japan

K 1

IONOSPHERIC DATA

Oct. 1965 | 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	L	R	L	L	L	L	L	A						
2									L	L	L	L	L	L	L	L	L							
3								L	L	L	L	R	L	L	L	L								
4								L	L	L	L	LH	L	L	L	LH	L							
5									L	L	450	430	U460L	L	L	L	L							
6								L	L	L	L	R	470L	LH	L	400L	L							
7									L	L	L	460L	U460L	L	L	L	L							
8									L	L	L	410L	450L	440L	L	L	L							
9						L	L		L		A	L	450L	L	LH	L	L							
10								L	L	L	A	L	L	L		L	L	A						
11									C	LH	A	460L	L	L	L	LH	A							
12								L	L	L	450L	430L	L	L	L	LH	L							
13							C	C	C	L	440L	L	LH	L	LH	L								
14									L	U410L	L	U450L	LH		L	L								
15									L	U430L	430L	A	A	A	L	L								
16									L	C	C	C	C	C		L								
17									L	L	C	C	C	C	C	C	C	C						
18							C	C	C	C	C	C	C	C	C	C								
19									L	L	L	U510L	A	L	A	A								
20									L	L	U430L	A	430L	430L	L	L								
21									L	L	A	A	420L	LH	L	L								
22								290L	L	L	450L	U440L	420L	410L	U370L	L	L								
23										L	C	L	420L	L	A	A								
24									L	L	L	L	L	L	L	L								
25									L	L	L	430L	LH	L	LH	L								
26											L	L	L	L	L									
27										L	L	U450L	L		L	L								
28										L	A	A	440L	L	L									
29									L		L	A	460L	420L	420L	A	A							
30										L	450L	410	420L	L	A	A								
31									L	U420L	L	L	A	A	A									
No.								1		3	7	11	12	4	2	1								
Median								290L		U420L	450L	440L	445L	425L	U395L	400L								
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

foF1

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

K 2

IONOSPHERIC DATA

Oct. 1965 | 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							185	245	275	I300R	325R	335R	A	R	315R	285R	240R	A						
2							R	I250R	280	315R	A	A	R	330R	R	A	I240R	E170B						
3							E150B	240R	285	R	R	I330A	I335R	330	320	290	240	A						
4							R	I250R	310	325	A	R	345	335	315R	295R	210	E150B						
5							E140B	245	280	320	I325A	340	335	A	A	A	A	185						
6							E140B	230	280	305	325	I330R	A	A	A	280R	240	A						
7							A	230	285	310	325	325	325	315	305	255	A	A						
8							A	230	290	305	310	A	R	310	A	A	A	A						
9						E140B	E130B	235	280	A	A	R	A	330	300	270	R	A						
10							175	220	285	305	315	320	A	A	A	A	A	A						
11							E130B	215	C	305	R	A	A	R	R	A	A	E150B						
12							E140B	220	280	I305A	320	335R	330R	I320R	300	I260R	225R	E150B						
13							C	C	C	305	A	A	U315A	A	295R	I265A	230	A						
14							A	205	I270R	295	I325C	325	320	315	300	280	230	A						
15							E140B	230A	270	290	315	315	315R	A	A	255	220	A						
16							E140B	215	270	C	C	C	C	C	300	270	230	E150B						
17							E140B	I230A	I260A	A	C	C	C	C	C	C	C	C						
18							C	C	C	C	C	C	C	C	C	C	210	A						
19							A	225	265	285	I300A	305	A	A	A	A	A	E150B						
20							E140B	230	270	290	U310A	A	A	A	A	250	180	E150B						
21							E120B	210	260	290	305	315	320	305	290	260	210	E130B						
22							E170B	A	260R	290	305	310	315R	I310A	A	A	190	E150B						
23							E130B	220	270	300	I305C	305	I300A	310	I295A	A	A	E130B						
24							E130B	A	A	A	A	A	A	A	A	A	A	E130B						
25							E160B	200	250	U300A	A	A	A	A	285	280	210	E130B						
26							E130B	205	255	285	295	310	310	310	290	265	210	E120B						
27							E140B	210	270	295	310	310	I305A	305	280	260	A	A						
28							E140B	I220A	260	285	305	A	A	A	A	A	A	E130B						
29							E110B	180	240	280	300	A	A	A	A	A	A	E130B						
30							E150B	A	A	A	A	305	310	310	A	A	A	E130B						
31							E130B	205	260R	290	A	A	A	A	A	A	A	E130B						
No.						1	23	26	26	24	18	16	14	14	14	16	16	18						
Median						E140B	E140B	220	270	300	310	320	320	310	300	270	220	E140B						
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

K 3

IONOSPHERIC DATA

Oct. 1965 | 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	019	020	E015B	E	E012B	E013B	023	028	034	033	G	G	037	035	036	032	031	J041	J041	J025	E015S	E014S	E015S	E013B
2	E013B	E013B	E012B	E013B	E013B	E015B	023	033	034	033	034	035	G	036	G	J038	033	021	018	022	J040	J020	J019	E015S
3	E015S	021	J021	024	J018	020	022	031	J054	035	033	034	037	G	034	033	033	J035	J023	J021	J033	J035	J026	J019
4	J021	023	022	E012B	E013B	019	021	029	J030G	G	035	G	G	G	G	G	019G	021	019	019	E013B	E014S	E013B	E015S
5	E014S	E015S	022	021	E013B	E014B	G	032	034	035	036	030G	G	035	033	J032	J030	024	E013B	J023	J018	E012B	E012B	024
6	022	018M	E015B	E013B	018M	021M	023M	030	035	039	040	043	J035	034	033	G	031	022	J025	J025	J020	024M	021	E015S
7	019	E014B	018	018	018	021M	030	G	032	036	038	040	039	038	035	033	027	021	023M	024	J031	022	021M	E014S
8	E015S	E015S	E012B	J018	E	E012B	J022	G	G	046	046	J039	038	038	034	J035	J035	J038	J027	J037	J031	024	E016S	021
9	E011B	021	024	022	018	E014B	E013B	025	037	044	046	044	035	036	032	G	019G	J026	J038	J059	J023	J032	J025	J051
10	J030	J029	018	E011B	E011B	E012B	020	031	033	038	J062	040	J039	J038	J041	J041	J039	J064	J051	J040	J051	J041	J029	J025
11	023	025	J021	023	J018	022	021	G	C	032	045	035	035	G	036	J028	J055	J053	J030	J024	J021	J031	J028	022
12	024	J019	J019	019	E011B	E012B	019	025	G	032	G	028G	G	G	G	021G	J026	J025	021	E015S	E013B	E013B	024	J039
13	C	C	C	C	C	C	C	C	C	033	034	035	J031G	034	J029G	J026G	G	016	020	019	E013B	E015S	017	023
14	J025	022	018	020	019	016	019	G	032	G	C	G	G	G	039	J040	J037	J037	J027	J023	J031	E013B	J034	E015S
15	E012B	E015S	E	E011B	E	E011B	E014B	030	034	044	040	J044	045	J044	045M	023G	017G	034M	033	J024	J030	E015S	J018	E014S
16	018	020	024M	E	019	E	E014B	029	035	C	C	C	C	C	037	J038	031	019	J040	J058	J081	023	021	022
17	021M	J034	J024	020M	019	E011B	E014B	J027	J032	032	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	033	J026	J020	E015S	J027	J037	J044	J031
19	J026	E012B	E013B	J028	J024	J030	J023	019G	032	033	J037	J054	J044	J038	J035	J056	J031	J030	J028	J038	J038	024	J030	J030
20	J030	020	J025	J026	019	J032	J024	018G	033	037	J040	J058	037	J033	035	023G	J026	J024	024M	019	E015S	J025	E015S	E014S
21	E012B	E011B	E011B	E012B	J020	019	E012B	G	033	J033	047	J049	037	033	G	033	J052	J085	J021	J028	J031	023	020	E013B
22	021	020	019	022	022	020	E017B	J031	034	J038	036	J040	040	037	J035	J030	023	021	J038	J023	021	024	J018	E015S
23	E013B	020	J022	E013B	E	E013B	J025	032	036	035	C	041	J041	042	041	J042	J029	J028	J025	J091	044M	J036	J048	J032
24	J045	J026	J025	023	019	018	J018	J039	J039	041	J045	J044	J039	J039	J039	J036	J029	J025	024	024	J040	J038	024M	J047
25	033M	018	019	019	018	E011B	E016B	028	033	J024G	034	J035	036	J035	J026G	G	019G	E013B	J023	J026	J028	032M	025M	023
26	E015S	032	J024	E012B	E013B	E011B	E013B	G	031	036	035	036	035	J027G	J029G	G	023	J034	020	J024	J025	J026	J025	J023F
27	031M	J034	J031	J032	023	E012B	E014B	033	035	037	036	036	J044	J040	036	J025G	J035	033	J025	J026	016	J030	J030	J032
28	J054	033F	J034	J026	J026	J060	J048	029	035	J040	J052	J113	J042	J039	035	029	J040	J029	J038	J038	J026	023	E014S	J030
29	J045	J031	J027	J024	024M	020	J019	025	030	J041	J047	J052	036	J038	J056	J072	J041	022	J029	J026	023	E013S	J019	J029
30	J027	019	J022	018	020	022	023	J027	J036	J030	036	G	036	040	J043	J085	J040	J030	023	J021	J024	J025	J021	020
31	E014S	E011B	E013B	E011B	E011B	E013B	E013B	G	G	G	036	J040	J047	J076	J062	J038	J023	E013B	023	J019	J029	020	023	J023
No.	29	29	29	29	29	29	29	29	28	29	26	28	28	28	29	29	30	30	30	30	30	30	30	30
Median	021	020	021	019	018	015	019	028	034	035	036	040	037	036	035	J032	J031	J026	J024	J024	J026	024	J021	022
U. Q.	028	026	024	023	020	020	023	031	035	038	045	044	040	038	039	038	035	034	030	028	031	031	026	030
L. Q.	E014	E015	E015	E013	E012	E012	E014	G	032	032	035	034	035	033	G	G	023	021	021	021	020	E015	018	E015
Q. R.	D014	D011	D009	D010	D008	D008	D009		003	006	010	010	005	005			012	013	009	007	011	D016	008	D015

The Radio Research Laboratories, Japan

foEs

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

K 4

IONOSPHERIC DATA

Oct. 1965 | **f_bEs** | 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	E	E	B		B	B	023	027	032	033			035	034	035	031	029	038	E041R	015	S	S	S	B
2	B	B	B	B	B	B	021	030	032	033	034	E035R		E036R		037	032	021	016	E	025	016	015	S
3	S	E	020	E	E	E	021	028	030	032	E033R	E034R	030		033	032	032	032	E	E	020	020	019	E
4	018	E	E	B	B	E	018	028	E030G		034						016G	017	E	E	B	S	B	S
5	S	S	E	E	B	B		030	033	035	035	023G		035	033	031	026	G	B	018	E	B	B	017
6	E	E	B	B	E	E	G	029	034	037	038	041	035	032	032		029	020	018	018	018	017	E	S
7	U019S	B	E	E	E	E	018		032	035	038	039	039	036	034	033	026	019	021	E	018	E	E	S
8	S	S	B	E		B	021			034	044	038	036	037	033	033	028	026	018	029	E031S	017	S	015
9	B	E	014	015	E	B	B	E025S	035	038	045	042	E035R	035	032		E019G	024	021	A	016	017	020	020
10	014	023	E	B	B	B	018	027	031	032	057	038	E039R	037	040	027	032	040	026	024	026	026	016	018
11	E	016	016	013	013	E	018		C	032	E045R	E035R	035		030	028	041	032	017	017	016	017	020	016
12	E	016	016	E	B	B	018	025		031		E028G				E021G	025	016	E	S	B	B	E	017
13	C	C	C	C	C	C	C	C	C	033	034	035	E030G	032	025G	E025R		016	E	E	E	S	017	E
14	020	E	018	E	E	014	018		032						038	034	036	035	025	016	017	B	022	S
15	B	S		B		B	B	029	033	040	040	044	044	044	038	022G	016G	026	022	E	020	S	E	S
16	E	E	014		E		B	028	034	C	C	C	C	C	037	038	030	019	028	A	015	014	E	E
17	E	E	015	E	E	B	B	026	030	030	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	031	017	E	S	022	028	018	017
19	E	B	B	014	014	015	016	E019R	028	032	033	040	044	035	030	045	029	025	025	021	020	E	013	015
20	015	E	015	E	E	014	G	016G	029	037	034	045	034	031	030	021G	G	G	E	E	S	019	S	S
21	B	B	B	B	E	E	B		033	031	047	E049R	037	032		029	035	A	015	021	017	E	E	B
22	E	E	E	E	E	E	B	025	033	035	034	E040R	036	036	033	028	021	G	016	017	E	E	015	S
23	B	E	E	B		B	020	028	033	033	C	038	033	035	041	041	028	016	014	039	A	018	030	019
24	032	013	014	014	E	E	G	025	035	035	035	038	031	037	032	029	022	017	E	E	025	016	E	025
25	025	E	E	E	E	B	B	026	029	G	034	033	032	031	026G		018G	B	020	015	E	021	018	S
26	S	025	E	B	B	B	B		031	034	035	036	035	026G	025G		022	028	E	E	020	015	018	E
27	026	029	025	029	017	B	B	032	034	037	032	034	038	040	034	022G	034	025	019	016	014	025	018	015
28	A	022	021	016	018	020	034	025	032	035	050	056	039	033	028	025	025	022	023	017	016	E	S	017
29	018	020	025	E	E	E	016	022	028	038	038	044	033	031	034	043	037	G	E	E	015	S	E	015
30	015	E	015	E	E	E	G	022	028	030	031		035	033	040	078	E040R	027	013	015	016	016	016	E
31	S	B	B	B	B	B	B				033	038	045	069	062	033	021	B	015	016	E	E	E	013
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

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

K 5

IONOSPHERIC DATA

Oct. 1965 | **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	E014S	E015S	015	010	012	013	015	015	016	017	020	022	016	018	017	014	014	013	014	012	E015S	E014S	E015S	013
2	013	013	012	013	013	015	015	017	016	017	017	025	017	019	022	018	017	017	014	E017S	013	013	013	E015S
3	E015S	013	011	010	011	014	015	015	017	018	017	023	018	018	021	015	016	013	014	E015S	E014S	013	E014S	E015S
4	E014S	E015S	014	012	013	014	014	015	016	017	019	021	025	021	019	017	014	015	014	013	013	E014S	013	E015S
5	E014S	E015S	014	015	013	014	014	014	016	017	014	015	021	016	015	015	016	014	013	012	013	012	012	E015S
6	E015S	014	015	013	012	014	014	016	015	015	016	018	016	016	016	016	014	012	011	012	E015S	012	E014S	E015S
7	E015S	014	013	013	011	012	011	015	015	015	018	018	025	015	016	015	014	012	010	012	011	011	E014S	E014S
8	E014S	E015S	012	011	010	012	012	014	015	015	016	017	017	022	015	015	014	014	012	E014S	012	E014S	E016S	013
9	011	013	011	010	010	014	013	014	017	016	018	020	019	018	015	015	015	014	013	E015S	E015S	011	011	013
10	012	011	011	011	011	012	013	015	016	017	019	020	023	017	016	016	016	014	013	013	E014S	013	011	013
11	011	013	013	010	010	013	013	015	C	018	020	017	019	020	018	015	015	015	E015S	E015S	013	E014S	E014S	013
12	E014S	013	015	013	011	012	014	014	016	016	019	021	016	016	016	014	015	015	013	E015S	013	013	E015S	013
13	C	C	C	C	C	C	C	C	C	016	022	015	020	015	017	015	015	014	014	E015S	013	E015S	E014S	012
14	E015S	E015S	013	014	013	013	011	012	014	016	C	020	017	016	016	015	014	012	013	013	013	013	013	E015S
15	012	E015S	010	011	010	011	014	015	015	014	016	016	016	014	017	015	014	012	012	E015S	E015S	E015S	012	E014S
16	013	013	010	010	011	010	014	014	015	C	C	C	C	C	015	015	015	015	E015S	013	011	012	012	011
17	013	013	013	011	011	011	014	015	013	016	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	015	013	014	E015S	E015S	012	E014S	E014S
19	E015S	012	013	013	010	012	012	013	013	015	015	014	014	015	016	016	014	015	011	013	011	E014S	011	011
20	013	011	010	011	010	010	014	012	015	015	015	013	014	016	015	015	013	015	E015S	E015S	E015S	E015S	E015S	E014S
21	012	011	011	012	010	015	012	015	016	015	019	016	015	015	016	017	015	013	012	013	011	E015S	E015S	013
22	E014S	013	011	011	011	013	017	014	014	015	015	015	016	016	020	015	013	015	012	013	013	E015S	013	E015S
23	013	013	013	013	010	013	013	013	014	015	C	017	018	016	018	014	013	013	011	012	013	012	013	011
24	013	010	010	010	010	011	013	011	015	015	016	015	019	015	014	015	014	013	E015S	E015S	E015S	E015S	E014S	E014S
25	E015S	013	012	011	010	011	016	013	014	015	016	018	017	017	015	015	013	013	E014S	E013S	E014S	E015S	E013S	E015S
26	E015S	012	012	012	013	011	013	015	014	016	018	016	016	015	014	016	014	012	E015S	E015S	E013S	E013S	E015S	E013S
27	011	010	011	013	011	012	014	014	014	016	015	017	016	016	015	013	014	011	E015S	E015S	011	E015S	E013S	011
28	E015S	011	010	011	010	011	014	014	014	016	016	015	015	016	016	014	014	013	012	011	E015S	012	E014S	011
29	012	010	011	013	010	011	011	011	014	014	016	017	016	017	014	015	015	013	E014S	E015S	011	E013S	E013S	010
30	E013S	013	013	010	012	011	015	013	014	016	016	017	017	016	015	014	013	013	011	011	E014S	011	011	E015S
31	E014S	011	013	011	011	013	013	012	014	014	017	016	017	015	016	015	014	013	011	011	E013S	E015S	E013S	011
No.	29	29	29	29	29	29	29	29	28	29	26	28	28	28	29	29	30	30	30	30	30	30	30	30
Median	E014S	012	012	011	011	012	014	014	015	016	016	017	017	016	016	015	014	013	012	E013S	012	E013S	E013S	E013S
U. Q.																								
L. Q.																								
Q. R.																								

f-min

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

IONOSPHERIC DATA

Oct. 1965 | 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	295	U305S	305	305	335	320	345	345	U340S	335R	335	330	315R	U330R	325	315	320S	U325S	340S	335S	305	280	280S	270
2	290S	300S	300	295	290	305	335	U365S	355	330	335	330R	310R	U310R	U310R	330	320	U330S	340	325S	U285S	270	275	280S
3	265S	290	295	330	340	300	355	330S	330	U365R	325R	U320R	U330R	U325R	U330R	U320R	335	U335S	345	320	275F	280S	305	305
4	300	295	295	280	295	290	305	I350S	U350R	350	330R	330R	335	345	325	315	325	330S	345S	355	290	290	285	290
5	285	285	285	310	335S	295	340	360	U340R	350	315	325R	320	J325R	335	J315R	320	U340S	335	300	310	315	295	270
6	270	270	J305S	345	325	290	345	J355S	335	355	335	325	330R	335	345	310	320S	I320S	345	335	290	305	295	285
7	290	305	310	310	285	310	350	365S	350S	350	320	J325R	335	J330R	330	325	345	J335S	360	325	300	270	275	280
8	285	280	280	280	310	300	365	340	J345S	345	330	335	330R	310	325	320S	I340S	350S	320	320S	295S	285	295	U295S
9	290	295S	275	300	335	315	350	335	U350S	330	320	315	315	315	320R	345S	325S	330S	340	A	280	275S	U280F	U280S
10	U285S	U315S	335	330	280F	285S	340	330	U335S	335S	U325S	325	315	335	320	340	325	335	335	290	290S	U285S	U300S	300
11	300	295S	285	295S	320	310	340	345	C	335	330	325R	330	325	320	335	325	340	315	300	305	I320S	320S	285S
12	310	300	305	300	315	300	330	U345S	350S	345	340	340R	U335R	350	320	325S	325S	U335S	335S	330	305	320	315	300S
13	C	C	C	C	C	C	C	C	C	360	335	345	325	320	340	320	345	340	325	310	290	295	285	305
14	290	310	290	305	325	280	335S	335S	U335S	J345S	C	315	325	320	320	325	340	345	335	305	275	270	270	265
15	290	315	330	310	325F	275	360	345	345	355	340	350	335	320	J325R	335	340	355	340	315	305	F	F	F
16	295F	J315F	295	295F	295F	285F	355	355	S	C	C	C	C	C	335	325	345	350	360	A	305	280	U280F	285F
17	285F	305	305	J300R	290	290F	350	345	S	365R	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	340	325	335	300	300	320S	305	295
19	U285S	295	295	295	320	340	350	345	350S	335	315	335	335	340	325	335	345	340	345	320	310	295	280	275
20	305	320	310	310	320	295	365	350	355	350	350	340	335	335	350	350	370	350	360	280	305	290	280	280
21	290	305S	305	305	320	325	335	360	350	340S	350	340	325S	320	315	345S	345	A	360	290	290	305	305	295
22	295	300	U295S	305	340S	325	355	365	345	340	335	330	345	325	330	330	340	340	325	300	280	U295S	U270S	310
23	290	295S	305S	305	U290S	F	345	345	325R	325	C	J330R	J340R	315	315	320	320	340S	J340S	350	A	F	F	F
24	280F	280	U330S	325F	335	300	310	310	340	335	J350R	305	J325R	J315R	310	340	J360S	355	325	335	295	310S	280F	285F
25	285	295	295	F	335F	F	315F	355	340	355	350	315	340	335	335	360S	370	345	315	310	300	300	285	280
26	265F	F	F	300F	320F	295F	320	350	340S	335	300	325	345	315	340	340	345	340	325	295	280S	280	305S	310
27	280	285	305	305	350	335	335	345	350	J345R	340R	325	330	315	335	340	340	365	305	290	280	275	F	U290F
28	I270A	265F	285F	330	310	290	350	355	340	J360R	330	320	315	325R	330R	355R	350	330	320	300	300S	255F	F	F
29	300S	305	F	280	285	305	335	345	J350S	330S	320	330	340	320	335	335	U345S	340S	335	290	270S	290S	280S	275S
30	300S	350S	285	290	295	295	340S	345	U365S	330	325	330	325	340	330	340	355	355	345	320	285S	285S	290S	U280S
31	F	F	U310F	330S	U325S	305S	325	U335S	325S	330	335	325	310	320S	U340S	340	345	340S	290	295	295	300	290	290S
No.	28	27	27	28	29	27	29	29	26	29	26	28	28	28	29	29	30	29	30	28	29	28	26	27
Median	290	300	300	305	320	300	340	345	345	345	330	330	330	325	330	335	340	340	335	310	295	290	285	285
U. Q.																								
L. Q.																								
Q. R.																								

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

The Radio Research Laboratories, Japan

M(3000) F2

K 7

IONOSPHERIC DATA

Oct. 1965 | 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	L	R	L	L	L	L	L	A						
2									L	L	L	L	L	L	L	L	L							
3								L	L	L	L	R	L	L	L	L								
4								L	L	L	L	LH	L	L	L	LH	L							
5									L	L	400	400	U370L	L	L	L	L							
6								L	L	L	L	R	360L	LH	L	365LH	L							
7									L	L	L	365L	U350L	L	L	L	L							
8									L	L	L	405L	370L	370L	L	L	L							
9						L	L		L		A	L	395L	L	LH	L	L							
10								L	L	L	A	L	L	L		L	L	A						
11									C	LH	A	360L	L	L	L	LH	A							
12								L	L	L	365L	385L	L	L	L	LH	L							
13							C	C	C	L	380L	L	LH	L	LH	L								
14									L	U370L	L	U375L	LH		L	L								
15									L	U370L	380L	A	A	A	L	L								
16									L	C	C	C	C	C		L								
17									L	L	C	C	C	C	C	C	C	C						
18							C	C	C	C	C	C	C	C	C	C								
19									L	L	L	U390L	A	L	A	A								
20									L	L	U375L	A	395L	370L	L	L								
21									L	L	A	A	390L	LH	L	L								
22								405L	L	L	355L	U365L	400L	380L	U400L	L	L								
23										L	C	L	380L	L	A	A								
24									L	L	L	L	L	L	L	L								
25									L	L	L	370L	LH	L	LH	L								
26											L	L	L	L	L									
27										L	L	U375L	L		L	L								
28										L	A	A	365L	L	L									
29									L		L	A	350L	370L	365L	A	A							
30										L	370L	385	390L	L	A	A								
31									L	U370L	L	L	A	A	A									
No.								1		3	7	11	12	4	2	1								
Median								405L		U370L	375L	375L	375L	370L	U380L	365L								
U. Q.																								
L. Q.																								
Q. R.																								

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

M(3000) F1

IONOSPHERIC DATA

Oct. 1965 | 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	235	260	265	280	285	280	280	260	250						
2									250	255	275	260	310	295	295	260	260							
3								250	255	245	250	290	270	280	285	285								
4								230	235	250	285	275	270	260	285	280	280							
5									250	250	275	300	300	285	275	285	275							
6								240	240	250	270	285	280	260	260	280	260							
7									250	250	280	290	260	260	260	285	255							
8									240	255	255	260	275	280	270	275	250							
9						255	220		245		265	275	275	275	275	255	230							
10								245	250	250	265	260	295	260		255	255	245						
11									C	260	280	275	255	260	260	265	260							
12								250	240	245	250	255	250	250	285	270	260							
13							C	C	C	245	275	260	255	265	260	255								
14									250	250	C	290	290		305	260								
15									245	250	255	250	260	280	300	260								
16									250	C	C	C	C	C		290								
17									250	235	C	C	C	C	C	C	C	C						
18							C	C	C	C	C	C	C	C	C	C								
19									250	240	290	260	250	250	290	250								
20									245	240	240	250	255	255	250	240								
21									240	230	230	250	255	245	255	245								
22								210	240	250	265	250	255	270	260	250	225							
23										275	C	260	250	290	260	250								
24									250	225	225	240	250	240	260	250								
25									250	235	245	285	255	260	250	225								
26											320	280	240	250	255									
27										250	255	260	250		250	250								
28										245	260	260	300	260	260									
29									245		250	250	245	260	255	245	220							
30										260	260	255	250	260	255	280								
31									250	260	245	250	275	285	255									
No.						1	1	6	23	26	26	28	28	26	27	26	13	2						
Median						255	220	240	250	250	260	260	260	260	260	260	260	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

K 9

IONOSPHERIC DATA

Oct. 1965 | 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	275	260	250	250	225	245	225	230	240	220	205	210	205	200	230	230	260	A	E255R	210	245	295	305	305
2	275	250	250	250	260	265	230	220	225	205	200	200	200	230	260	260A	255	250	215	230	E350A	330	325	305
3	305	270	275	230	200	260	230	235	230	210	200	210	230	230	225	245	250	230	210	230	305	325A	265	260
4	255	260	280	270	265	290	230	230	225	210	200	195H	210	210	220	210H	255	250	210	200	270	265	275	290
5	280	295	285	250	205	270	225	230	235	225	200	205	200	230	230	225	245	245	210	250	250	245	250	310
6	310	305	275	225	240	275	240	245	230	225	240	250	200	200H	230	205H	255	245	210	220	250	270	275	300
7	300	255	250	240	250	255	240	240	235	230	210	210	220	210	220	240	250A	240	205	210	250	290	310	300
8	300	300	300	260	240	240	230	220	230	240	E255A	205	205	230	230	250	255	230	230	255	320S	280	270	280
9	270	250	285	260	220	220	160H	225	250	E255A	A	E255A	205	225	200H	230	225	225	230	A	300	305	300	335
10	280	235	205	225	250	260	225	230	230	230	I230A	230	240	245	E260A	230	230	I230A	250	280	300A	305A	270	265
11	260	260	270	260	230	225	220	230	C	230H	I240A	225	215	205	230	220H	I250A	230	230	260	265	250	245	265
12	250	255	255	260	230	250	230	230	225	210	210	205	210	220	200	190H	250	230	215	215	250	230	250	295
13	C	C	C	C	C	C	C	C	C	215	215	210	200H	210	185H	205	250	230	215	230	275	270	300	275
14	280	235	290	250	275	310	245	230	230	220	I220C	205	200H	250	280A	255	245	245A	240	250	310	305	E360A	305
15	275	250	220	245	225	305	240	240	245	E250A	245	A	I245A	I250A	260A	250	245	220	240	240	260A	300	255	305
16	260	250	255	250	225	220	240	240	250	C	C	C	C	C	260A	260	240	225	230	I240A	250	260	260	260
17	260	260	260	270	260	260	240	225	205	230	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	235	225	215	255	255	265	255	260
19	275	275	260	260	245	225	215	230	220	220	230	225	I230A	240	230	I250A	240	240	250	250	260	260	290	305
20	280	240	250	245	240	250	205	210	245	240	225	I200A	195	200H	220	220	210	220	200	250	260	280	300	300
21	280	245	225	250	250	210	205	210	225	E250A	A	A	190	165H	250	230	225	I225A	210	250	280	255	250	260
22	270	260	265	250	220	210	210	200	220	230	200H	240	210	220	210	230	230	220	245	255	280	280	275	250
23	280	270	230	250	265	265	210	215	250	245	C	230	230	250	I250A	I250A	240	210	205	250A	A	300	310	290
24	310A	250	220	220	200	250	245	240	240	230	220	210	200	220	230	245	210	205	205	210	290	250	245	310A
25	E320A	255	255	230	190	240	230	225	225	210	235	200	200H	205	230H	230	205	210	240	250	250	280	300	255
26	295	340A	290	250	245	200	225	230	230	230	240	230	240	210	250	250	220	240A	210	260	300	300	250	250
27	E340A	340A	300A	310	220	200	205	230	240	E250A	230	225	230	270	250A	220	240	210	250	260	290	E340A	290	300
28	A	310	300	250	240	300A	E240A	220	240	E250A	A	A	245	240	240	245	220	240	260	250	260	310	300	300
29	300	250	250	300	280	250	245	225	240	250A	230	I220A	210	210	230	I220A	I215A	210	215	270	275	270	300	325
30	250	205	325	275	280	270	230	220	230	225	210	205	210	255	A	A	225	215	205	270	255	260	300	300
31	270	265	250	220	200	230	230	230	215	205H	230	230	A	A	A	230	215	205	255	255	260	260	270	260
No.	28	29	29	29	29	29	29	29	28	29	24	25	27	27	27	28	30	29	30	29	29	30	30	30
Median	280	260	260	250	240	250	230	230	230	225	220	210	210	220	230	230	240	230	215	250	260	280	275	300
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

IONOSPHERIC DATA

Oct. 1965 | **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	105	110	B	E	B	B	160	135	130	125	G	G	110	125	130	180	150	120	115	115	S	S	S	B
2	B	B	B	B	B	B	160	150	130	150	110	110	G	185	G	115	140	135	100	105	110	115	115	S
3	S	115	110	110	110	110	145	140	130	120	115	110	160	G	155	145	130	115	115	110	110	110	110	110
4	110	110	105	B	B	130	155	150	115	G	115	G	G	G	G	G	100	130	105	100	B	S	B	S
5	S	S	110	105	B	B	G	150	140	140	115	100	G	115	120	125	110	105	B	125	125	B	B	100
6	100	100	B	B	105	105	105	145	140	125	125	115	110	110	110	G	155	140	100	100	100	100	100	S
7	100	B	110	105	105	100	100	G	145	130	130	120	120	125	125	115	115	110	105	105	105	105	105	S
8	S	S	B	B	E	B	150	G	G	125	120	120	125	120	115	110	110	110	110	105	100	100	S	105
9	B	110	110	110	110	B	B	160	145	130	120	120	115	175	185	G	115	105	115	115	110	120	110	110
10	110	105	105	B	B	B	170	145	130	125	120	120	120	110	120	110	110	110	110	105	110	110	110	110
11	110	105	100	100	105	105	155	G	C	145	120	120	110	G	110	110	110	110	110	110	110	110	105	110
12	105	105	105	110	B	B	140	150	G	115	G	110	G	G	G	105	155	110	105	S	B	B	115	110
13	C	C	C	C	C	C	C	C	C	130	120	105	105	110	120	115	G	150	105	100	B	S	100	105
14	105	105	105	105	105	105	140	G	150	G	C	G	G	G	150	145	140	130	120	110	105	B	105	S
15	B	S	E	B	E	B	B	155	145	130	130	125	130	105	105	105	105	100	100	100	120	S	105	S
16	100	100	110	E	105	E	B	150	140	C	C	C	C	C	150	135	140	125	115	110	110	110	110	110
17	110	110	100	100	100	B	B	115	115	115	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	130	105	105	S	110	105	115	110
19	110	B	B	110	110	110	110	110	130	120	100	115	110	110	115	110	110	100	105	105	105	105	105	105
20	105	100	100	100	100	100	100	100	110	110	105	100	100	100	100	100	100	105	090	095	S	100	S	S
21	B	B	B	B	100	100	B	G	150	125	115	110	110	115	G	130	120	110	105	105	100	100	100	B
22	100	100	110	100	100	100	B	145	140	120	130	120	125	110	120	115	150	110	110	110	110	105	110	S
23	B	110	110	B	E	B	150	150	135	130	C	115	115	125	115	115	115	105	100	100	100	100	100	100
24	100	100	100	100	100	100	100	100	100	100	110	100	110	110	110	110	100	100	100	100	100	100	100	100
25	100	100	100	100	100	B	B	150	140	100	110	110	110	110	110	G	105	B	130	115	105	105	100	100
26	S	100	105	B	B	B	B	G	155	145	140	140	150	105	100	G	145	115	100	100	105	110	105	110
27	105	105	105	100	100	B	B	150	150	140	130	130	115	120	115	100	100	100	145	125	110	110	110	105
28	105	100	100	105	105	110	110	110	140	120	125	115	115	115	105	105	105	105	100	100	100	115	S	110
29	110	105	105	110	105	110	110	135	140	120	120	110	110	115	115	115	110	105	115	120	115	S	110	115
30	110	110	110	105	110	115	140	120	115	120	110	G	130	130	115	115	115	110	115	115	110	110	110	110
31	S	B	B	B	B	B	B	G	G	G	120	110	115	115	115	115	115	B	115	115	125	120	115	115
No.	19	21	21	17	18	14	18	22	25	26	24	24	23	23	25	24	29	28	29	28	25	22	24	20
Median	105	105	105	105	105	105	140	145	140	125	120	115	115	115	115	115	115	110	105	105	110	110	110	110
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

Oct. 1965 | 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	f	f					h	h	h2	h			1	h	h1	h1	h12	c213	f4	f				
2							h	h	h	h	1	1		h		12	h2	h	f	f	f3	f	f2	
3		f2	f2	f2	f	f	h2	h2	h	c	1	1	h		h	h	h3	13	f	f	f2	f2	f2	f
4	f2	f	f			f	h	h	c		1						1	h	f	f				
5			f	f				h2	h2	h	c	1		c1	c1	h1	12	1		f	f			f
6	f	f			f	f2	1	h2	h	h2	h	c	1	1	1		h212	h213	f2	f2	f	f2	f	
7	f		f	f2	f	f2	13		h1	h	h1	c	c	h	h	c	c2	12	f2	f	f2	f	f2	
8				f			h2			h	c2	c	h	c	1	12	13	12	f2	f3	f4	f2		f
9		f	f2	f2	f			h	h	h	c2	c	1	h	h		1	12	ff2	f4	f	f3	f6	f4
10	f2	f3	f				h	h2	h2	h	c3	c	c	12	11	12	12	12	f3	f2	f3	f2	f3	f3
11	f2	f2	f2	f2	f2	f3	h1			h	c2	c	1		12	12	12	13	f2	f2	f2	f	f3	f
12	f2	f2	f2	f			h	h		1		1				1	h1	1	f				f	f7
13										h	c	12	1	1	c	1		h	f	f			f	f
14	f2	f	f	f	f	f	h2		h2						h	h2	h21	h412	f4	f2	f2		f2	
15								h212	h21	h2	h2	h2	h21	12	12	12	1	13	f3	f	f3		f	
16	f	f	f2		f			h2	h2						h1	h2	h2	h2	f3	f3	f3	f2	f	f
17	f	f2	f2	f2	f			c2	c21	c														
18																	h2	1	f		f3	f4	f2	f
19	f2			f2	f	f2	1	1	h212	c	1	c1	c212	c2	c	c2	c2	13	f3	f3	f3	f2	f2	f2
20	f2	f	f2	f	f	f2	1	1	c	c2	c	13	c2	12	12	12	1	1	f	f		f3		
21					f	f			h2	h2	c2	c2	c	c		h	c3	12	f	f3	f2	f	f	
22	f2	f	f	f2	f	f		h21	h2	c2	h2	c	h	1	12	1	h12	1	f2	f2	f	f2	f2	
23		f	f				h	h2	h2	h1		c	c	c	c2	c3	c3	1	f	f4	f3	f3	f4	f3
24	f4	f2	f3	f2	f	f	1	15	13	13	c12	12	c1	c1	c	c2	12	1	f	f	f3	f2	f	f3
25	f4	f	f	f	f			h	h21	1	1	12	1	1	1		1		f2	f2	f2	f4	f3	f2
26		f4	f						h212	h2	h	h	h1	12	12		h	c31	f	f	f3	f3	f2	f
27	f4	f6	f4	f4	f			h3	h2	h2	h	h2	c2	c	c2	12	14	13	f2f	ff	f	f4	f3	f2
28	f5	f4	f2	f4	f5	f3	12	12h2	c212	c212	h2	c2	c	c	12	1	13	13	f3	f2	f2	f		f2
29	f2	f4	f3	f2	f2	f3	12	h2	h	c2	c	13	1	1	12	14	13	1	f	f	f		f	f2
30	f	f	f3	f	f2	f	h	c2	12	1	1		h	h	12	13	14	16	f	f2	f2	f2	f2	f
31											1	12	12	14	12	13	12		f2	f	f2	f2	f2	f2
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

Types of Es

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

IONOSPHERIC DATA

Oct. 1965 | h_pF_2 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	340	U310S	305	300	260	280	255	255	U260S	255R	265	280	300R	U285R	305	300	285S	U285S	260S	260S	300	345	365S	345
2	330S	320S	305	320	330	305	260	U230S	250	265	280	265R	315R	U305R	U300R	275	275	U270S	260	275S	U350S	390	380	365S
3	370S	340	330	275	275	320	250	260S	270	U245R	275R	U290R	U285R	U300R	U295R	U305R	270	U260S	250	280	370F	350S	310	305
4	320	320	345	340	335	335	310	I255S	U250R	250	285R	280R	290	265	300	300	300	275S	245S	240	330	330	330	340
5	340	345	330	295	260S	325	255	250	U255R	250	290	300R	300	J290R	290	J300R	300	U250S	260	325	305	300	320	360
6	370	370	J330S	260	275	310	255	J245S	255	255	280	285	280R	265	260	310	280S	I260S	250	260	310	310	330	350
7	335	320	300	300	350	300	255	250S	255S	260	300	J300R	280	J285R	290	300	270	J275S	245	260	305	360	360	355
8	350	350	355	340	300	310	250	250	J255S	260	275	275	290R	305	290	300S	I280S	265S	290	270S	330S	340	330	U335S
9	330	325S	350	320	265	275	245	260	U260S	270	295	300	300	305	300R	270S	270S	260S	255	A	350	360S	U335F	U355S
10	U340S	U275S	250	275	330F	330S	255	265	U265S	255S	U280S	285	305	280	300	270	280	260	275	335	335S	U345S	U325S	320
11	325	330S	330	325S	280	320	255	250	C	270	280	295R	280	285	275	280	280	265	295	320	310	I295S	275S	330
12	300	300	305	330	280	310	265	U265S	250S	255	260	265R	U265R	250	300	290S	280S	U270S	265S	265	310	285	290	330S
13	C	C	C	C	C	C	C	C	C	250	280	265	275	305	260	290	265	255	275	295	335	340	350	330
14	325	295	330	305	275	360	275S	260S	U255S	J265S	C	300	300	300	305	295	260	255	260	300	365	360	380	380
15	325	300	260	290	270F	350	250	250	255	250	270	260	280	300	J305R	290	260	250	260	300	315	F	F	F
16	335F	J300F	340	330F	360F	350F	250	250	S	C	C	C	C	C	260	300	260	255	245	A	310	350F	U320F	340F
17	320F	325	315	J320R	340	325F	260	250	S	240R	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	255	275	270	310	315	280S	300	310
19	U335S	330	330	310	275	255	255	250	255S	250	300	290	260	260	295	260	250	260	250	290	300	325	350	350
20	310	295	300	300	295	360	240	245	250	250	250	255	270	280	250	250	245	260	240	340	315	320	340	350
21	330	310S	305	305	290	280	260	245	250	280S	255	250	275S	280	275	250S	245S	A	235	310	340	315	310	330
22	320	310	U310S	320	255S	275	245	230	250	270	280	260	255	300	285	265	255	255	275	310	345	U335S	U355S	295
23	335	325S	300S	325	U315S	F	245	260	285R	290	C	J295R	J260R	305	300	290	290	260S	J260S	250	A	F	F	F
24	350F	350	U290S	295F	260	320	300	300	270	255	J250R	350	J300R	J280R	300	260	J240S	250	270	270	310	300S	340F	340F
25	345	320	320	F	250F	F	300F	250	260	250	250	305	290	290	290	245S	230	250	300	305	320	310	345	340
26	360F	F	F	320F	300F	300F	300	250	255S	260	345	295	250	305	270	250	250	270	285	320	340S	340	310S	305
27	350	340	300	310	250	255	250	250	260	J260R	270R	295	290	300	260	260	260	250	300	305	350	350	F	U345F
28	I350A	360F	340F	270	290	340	250	250	255	J250R	275	300	310	300R	290R	250R	250	275	300	305	330S	400F	F	F
29	310S	300	F	340	315	300	275	245	J250S	260S	270	265	270	290	275	265	U240S	235S	255	325	340S	320S	345S	370S
30	300S	235S	350	325	325	330	265S	245	U235S	275	270	280	280	280	275	A	245	245	240	275	330S	330	335S	U350S
31	F	F	U300F	270S	U275S	275S	260	U265S	265S	275	270	275	300	305S	U270S	255	250	250S	320	320	330	310	335	330S
No.	28	27	27	28	29	27	29	29	26	29	26	28	28	28	29	28	30	29	30	28	29	28	26	27
Median	335	320	315	310	280	310	255	250	255	255	275	285	280	290	290	280	260	260	260	300	330	330	335	340
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

h_pF_2

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

K 13

IONOSPHERIC DATA

Oct. 1965 | 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	050	U060S	050	055	045	070	050	045	U050S	045R	045	050	045R	U060R	050	050	060S	U040S	065S	045S	055	070	065S	090
2	070S	075S	060	055	065	060	045	U060S	050	045	045	065R	045R	U050R	U055R	065	055	U055S	055	050S	U050S	060	070	080S
3	080S	070	065	050	070	055	060	050S	050	U040R	050R	U055R	U055R	U045R	U040R	U040R	060	U060S	055	045	070F	060S	040	050
4	055	055	055	060	055	060	050	I050S	U055R	050	050R	050R	045	045	045	050	045	055S	065S	050	070	070	065	060
5	060	055	065	050	060S	075	050	045	U050R	050	070	040R	045	J055R	040	J055R	045	U070S	060	075	050	050	080	060
6	080	080	J070S	045	070	090	045	J050S	065	050	045	050	065R	045	055	040	050S	I080S	050	060	090	090	070	055
7	065	075	050	055	050	060	045	020S	045S	040	050	J050R	045	J030R	060	050	035	J055S	050	050	090	100	080	085
8	055	065	060	070	060	060	040	055	J050S	055	050	045	050R	045	050	050S	I040S	040S	040	055S	055S	065	055	U055S
9	060	060S	055	055	050	070	055	060	U045S	050	040	045	050	050	045R	040S	050S	050S	050	A	050	070S	U065F	U065S
10	U070S	U055S	055	055	070F	075S	045	045	U045S	050S	U050S	045	050	050	045	050	060	060	045	050	065S	U055S	U050S	055
11	050	055S	050	050S	065	055	050	050	C	050	065	055R	050	050	055	050	050	040	040	040	055	I050S	050S	065
12	050	055	055	050	055	050	045	U055S	050S	050	045	045R	U065R	055	050	045S	050S	U045S	050S	035	045	050	055	050S
13	C	C	C	C	C	C	C	C	C	035	045	040	050	045	045	040	035	045	045	045	050	050	050	050
14	050	045	060	050	045	070	055S	060S	U045S	J045S	C	050	045	050	045	050	055	055	060	060	075	090	070	070
15	075	050	050	055	070F	060	050	055	050	045	055	040	040	050	J050R	030	050	045	060	050	050	F	F	F
16	065F	J050F	060	060F	040F	055F	045	050	S	C	C	C	C	C	055	045	040	040	045	A	040	050F	U090F	065F
17	085F	060	055	J070R	060	075F	040	050	S	020R	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	045	040	045	045	050	060S	050	040
19	U060S	050	045	045	045	045	045	045	040S	055	060	030	055	050	050	060	050	050	050	050	060	070	055	070
20	050	055	050	055	050	040	055	055	040	045	045	060	050	025	055	050	035	045	040	070	045	080	060	050
21	070	080S	050	065	050	060	040	030	050	040S	040	055	045S	055	055	045S	050S	A	050	060	060	045	050	055
22	065	060	U055S	055	050S	050	040	055	050	055	045	055	045	030	045	050	050	050	040	040	050	U065S	U075S	065
23	065	055S	065S	040	U055S	F	055	050	045R	050	C	J050R	J055R	055	060	060	060	045S	J045S	050	A	F	F	F
24	050F	060	U050S	045F	080	080	050	050	035	065	J050R	050	J050R	J075R	055	050	J030S	045	070	060	090	050S	060F	060F
25	060	075	080	F	060F	F	050F	050	050	030	050	060	040	030	030	050S	050	055	045	045	080	085	055	060
26	085F	F	F	075F	050F	050F	050	050	045S	080	055	045	065	045	045	050	050	070	055	080	065S	065	040S	045
27	070	060	050	085	050	050	050	050	040	J040R	035R	045	055	060	050	045	040	030	050	090	075	090	F	U055F
28	I090A	090F	060F	050	060	055	050	045	045	J050R	060	050	045	050R	040R	045R	050	065	045	075	070S	090F	F	F
29	045S	050	F	065	090	055	040	055	J045S	045S	050	055	050	055	045	045	U060S	060S	050	065	060S	060S	060S	055S
30	070S	055S	055	070	055	060	040S	055	U050S	050	050	050	045	050	045	A	050	045	060	045	070S	065S	060S	U060S
31	F	F	U060F	055S	U050S	075S	055	U045S	065S	050	040	050	050	040S	U050S	050	045	045S	040	040	065	055	065	065S
No.	28	27	27	28	29	27	29	29	26	29	26	28	28	28	29	28	30	29	30	28	29	28	26	27
Median	065	060	055	055	055	060	050	050	050	050	050	050	050	050	050	050	050	050	050	050	060	065	060	060
U. Q.																								
L. Q.																								
Q. R.																								

ypF2

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

The Radio Research Laboratories, Japan

K 14

IONOSPHERIC DATA

Oct. 1965 | 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	I032S	J034S	036S	S	024S	A	030S	C	C	091S	066S	079S	088	087	J080S	J081S	083	087S	081S	062S	I035S	030	I032S	032S
2	S	S	S	S	J031S	U027R	I039S	J063S	062S	I070S	I071S	J077S	094S	J102S	I108R	114	092S	J080S	073S	S	S	A	S	I035S
3	I035S	I037S	J040S	I040S	026	I022S	I031S	062S	080S	071S	I069S	070S	J081S	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	J084	068S	074S	096S	094S	J066S	067S	J079S	I093C	I092S	I067S	032S	I036S	040S	I039S
5	I040S	I039C	039S	I041S	C	C	C	061C	I066C	C	C	C	083	102	078	081	083	087S	075S	J065S	045S	038	037S	I032S
6	I033S	I033S	037S	I046S	028	023	J032S	063S	066	072	066S	071	073S	072S	062	066	073S	086	I083S	062S	038S	I037S	S	S
7	034S	035S	I033S	J032S	031S	026	I033S	055	J064S	073S	069	075S	085	077	080	072S	068	084S	074S	050S	034S	031S	I032S	J034S
8	U035S	J034S	034	U033S	038	029	033	061S	067S	080	089S	I070C	083	081S	080	086	085	I080S	I071S	055	035S	I036S	038S	040S
9	041S	041S	J041S	042S	048S	I032S	032	J056S	071S	081	082	080	095	103	J099S	107	083	U073S	060	I046S	045S	J046S	I045S	U044S
10	I047S	052S	040S	J036S	034	028	035S	058	I072S	084	J071S	076	099	109	091	J094S	101S	J081S	068S	054S	047S	J044S	I043S	041S
11	039	I040S	036	038	J042S	032S	J030S	055S	065	074	068	071	094S	086	081	083	084	072S	I069S	048S	043	J042S	038	036
12	039S	040	037S	039	038	033	035	060S	082S	086	084	065	073S	085H	090	084S	083	088S	I077S	I071S	047S	037	035S	031
13	032S	030	028	029	032S	I032S	I038S	J063S	069S	072S	073	061	068	075	079	073S	067	062S	056	J045S	J032S	035	035S	036
14	036S	037S	029S	033S	027S	024	J028S	U060S	S	070	075	069	070S	080	J096S	092S	U073S	J062S	053	039S	A	A	J030S	031S
15	033S	J035S	J032S	030	029	020	026S	054	067	I074S	071	073	068	078	070	074	J075S	072S	061	041	029	027S	I029S	I031S
16	S	S	034	037S	I034S	025	J027S	053	J066S	I077S	074S	067	076	078	066	071	079	072S	070S	U046S	031S	S	A	S
17	J035S	J035S	J033S	034S	036S	J035S	035S	062S	077S	068S	062	086	082	081	088	090	087	I077S	063	042	031S	034S	034S	033
18	034	036S	036	038	037S	039S	030S	051S	069S	066S	069	076S	081	079	066	J074S	068S	059	062	042	035	034S	033S	I032A
19	033S	J034S	035	I039S	041	027	028	053	060S	060	082	082	086	079	092S	087	066	061	054	044	036	034S	J033S	033
20	033	036	031	030S	031	033S	029	J051S	J065S	068	080S	C	C	C	C	C	064S	057	J046S	I043S	037	041S	J042S	J036S
21	035S	J036S	039S	031S	J033S	032	J026S	047	062S	069	081	078	069	069	075S	070S	U071S	067	058	037	031	031	033S	034S
22	J036S	J034S	J034S	034	034S	034S	028	J048S	055S	J074S	071S	075S	067	068	J075S	073S	073S	053	049S	040S	032S	U035S	035	033S
23	037S	036S	036S	031S	J033S	034S	I031S	044S	056	070	J091S	101S	102	082	I094S	J101S	U092S	U093S	J078S	062	038	U030S	036S	I035S
24	I036S	J041S	I043 S	032S	035S	031S	035S	U062S	090S	102	082	094S	094S	115	108	108	U093S	J063S	U070S	058	039	I038S	035S	I029A
25	J031S	034S	034S	037S	040	S	027S	052	U073S	081	070	084	102	J099S	082	084	J066S	I069S	J064S	042	045S	033	I031S	031S
26	J033S	I033S	034S	035S	J037S	030S	025S	055	068	063	089S	104	J099S	090	105	J102S	065	067S	048	037S	039S	038S	S	S
27	S	U035S	I037S	039S	I032S	026	024	047	059	075S	090	U093S	090S	091	109	J103S	088	066	J054S	034S	J032S	031S	036S	034
28	I033A	034	036S	039S	033S	032	029S	056	S	I068S	082	079S	086	101	097S	101S	I074S	057	047	050	043	041	I043S	041
29	I042S	047S	026	F	031S	032S	035S	057	067	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	086S	U093S	084	U090S	J105S	109	J100S	I075S	040	J032S	J032S	J031S	I031S	I032S
31	I036S	037	039	036S	027	025	J024S	053S	070	084	092S	109	J096S	106	128	143	105	I076S	049	039S	038S	I040S	I034S	J034S
No.	26	27	28	26	28	26	28	28	26	28	29	28	29	28	28	28	29	29	29	28	27	26	25	26
Median	035S	036S	036S	036S	033S	030	030S	056S	067S	074	074	076	085	086	085	085S	079S	072S	063S	046S	036S	036S	035S	034S
U. Q.	037	039	038	039	037	032	034	061	071	081	083	085	094	100	098	102	088	082	074	056	043	038	038	036
L. Q.	033	034	034	032	031	026	028	052	064	070	069	071	074	078	076	074	070	062	054	040	032	031	032	032
Q. R.	004	005	004	007	006	006	006	009	007	011	014	014	020	022	022	028	018	020	020	016	011	007	006	004

foF2

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 1

IONOSPHERIC DATA

Oct. 1965 | 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								C	C	L	L	490	470	480	U470L	440	L	L						
2									L	L	L	L	470	L	L	430	L	L						
3										L	450	U450L	L	C	C	C	C	C						
4								C	C	440	450	L	480	470	U450L	470	L	L						
5								C	C	C	C	C	470	470	470	450	L	L						
6									L	430	L	470	460	460H	L	L	L	L						
7										L	450	470	460	460	450	L	L	L						
8									L	L	L	C	450	460	L	L	L	A						
9									L	L	U460L	470	LH	470	U480H	U450L	L							
10									L	L	L	A	450	450H	460	L	L							
11									L	L	L	U470L	450	450	L	L	L							
12									L	L	450H	450	470	460	450	L	L	A						
13										L	450	L	470	L	440	L	L	A						
14									L	L	430	430	A		U460L	L	L	A						
15									L	L	A	440	LH	430	420	L	L							
16										L	L	440	LH	L	L	420	A	A						
17									L	420	410	440	420	420	430	U430L	L	A						
18									L	L	L	440	LH	L	U420L	L	L	A						
19									L	L	430	440	440	LH	460L	L	L	A						
20									L	L	440	C	C	C	C	C	L	A						
21									L	L	430	A	A	L	440	A	A							
22									L	L	440	440	440	410	440	L	L	A						
23										L	L	460	440	L	L	L	L							
24									L	L	L	L	440	U500L	L	L	A	A						
25										L	U460L	460	450	U460L	L	LH								
26										L	U470L	450	450	420	L	L	L							
27										L	L	450	440	L	U440L	LH	L							
28										L	L	L	L	A	L	L	L							
29										C	C	C	C	C	C	C	C	C						
30								C	C	C	430	A	A	L	L	L	A	A						
31										L	L	L	460L	A	L	L	L							
No.										3	15	18	20	16	16	7								
Median										430	450	450	450	460	450	440								
U. Q.																								
L. Q.																								
Q. R.																								

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

foF1

IONOSPHERIC DATA

Oct. 1965 | 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							E140S	C	C	300	R	320R	I340R	340	I315R	I305R	280R	R	E150S					
2							E160S	210	260	I300R	I320R	I345R	E410B	350R	R	A	A	A	E150S					
3							E170S	215	260	300R	I320R	B	R	C	C	C	C	C	C					
4							C	C	C	A	I325R	335R	I340R	R	R	R	E300C	E340C	E160S					
5							C	E580C	C	C	C	C	R	R	R	R	270R	A	E150S					
6							E160S	205H	265	300R	320	R	I335R	I335R	320R	I295R	I265R	A	E150S					
7							E160S	220H	265	295R	315	320R	330R	325	I310R	300	255	E150S	E150S					
8							E150S	215	270	300	320	I320C	325	A	A	R	255	A	E150S					
9							E160S	210	270H	295	315	A	A	A	R	R	270	210	E150S					
10							E150S	200	270	295	310R	315	I320A	I320A	320R	300R	270	A	E160S					
11							E150S	210H	260	300	315	320R	I320R	R	R	R	260	210	E160S					
12							E160S	A	I260A	300	U310R	I315R	I320R	320R	I305R	300R	260	210	E150S					
13							E150S	200	245	280	I310R	310	I315A	I320R	R	A	A	200	E150S					
14							E150S	200	I255H	290R	305	315R	R	R	R	300	260	185	E150S					
15							E150S	210	250	290	I305R	315	320R	320	I305R	280	260	220H	E150S					
16							E150S	180	260	285H	300H	305	315	320R	I325R	300R	265	I195A	E150S					
17							E150S	180	250	I285A	I315R	320R	320	320R	310R	290R	265H	190	E150S					
18							E160S	200	250	290	R	R	R	R	R	A	A	A	E150S					
19							E150S	180	250H	280	300	320	320	R	A	275	A	A	E150S					
20							E150S	E150S	250	A	A	C	C	C	C	C	260	A	E150S					
21							E150S	180	260H	290	305R	310R	310	310	310	300	240	170	E150S					
22							E150S	200H	260	280	300	300	310	I305A	A	A	A	A	E150S					
23							E150S	180	250	285	300	305	A	A	315	I295R	250	E150S	E150S					
24							E160S	E150S	250	I285A	I300A	I315A	I320A	I315A	I310A	A	A	A	E150S					
25							E150S	210H	250H	285	300	310	315R	315	310	290R	245H	E170S	E150S					
26							E150S	E150S	240H	280	I300A	315	320R	315R	310R	295	250	A	E150S					
27							E150S	180	250H	285	300	310	310	315	305	290	245	E150S	E150S					
28							E150S	200H	250	285	300	320	320	315	305	I290A	230	E150S	E150S					
29							E150S	170	235	C	C	C	C	C	C	C	C	C	C					
30							C	C	C	C	A	310	320H	315	305	275	200	E150S	E150S					
31							E160S	E160S	240	270	290R	A	R	305	I285A	265	I235R	E160S	E150S					
No.							28	27	27	26	25	23	22	19	17	18	23	17	29					
Median							E150S	200	250	290	305	315	320	320	310	295	260	180	E150S					
U. Q.																								
L. Q.																								
Q. R.																								

foE

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 3

IONOSPHERIC DATA

Oct. 1965 | 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	E015S	E016S	E018S	E014B	E017B	021M	J022	C	C	J049	031G	J039	027G	038	G	G	033	030	018	J026	J023	E018S	E017S	E015S
2	E016S	E017S	E015S	E017B	E016B	E017S	E016S	026	029	038	038	033G	E041B	G	G	J039	J031	029	027	J032	J042	J062	J022	J022
3	J022	024M	E016S	E017B	E015B	S	E017S	028	034	035	043	040	047	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	030	028G	027G	035	025G	E027C	025G	E030C	E034C	E016S	E020C	E016C	E015C	E021C	E016C
5	E018C	C	E024C	E028C	C	C	C	E058C	C	C	C	C	030G	025G	028G	023G	026G	027	J022	J018	E019S	E015S	E016S	023M
6	E017S	020M	E015S	E016B	E016B	E015S	E016S	026	029	035	034	033G	025G	028G	027G	022G	028G	J029	020	E016S	E015S	E017S	E016S	E016S
7	E015S	E017S	E015S	E016B	E014B	E015S	E016S	G	030	035	038	044	042	040	034	034	029	024	019	J015S	J020	J022	E015S	020M
8	E015S	E015S	E015S	E011B	E014B	E015S	E015S	023	033	040	045	C	J044	035	032	028G	025G	060M	J028	J051	J022	J020	J018	020M
9	J021	J020	E015B	J020	021M	E015S	E016S	025	030	034	035	035	035	J042	031G	030G	G	025	J023	J043	029M	J033	J022	J019
10	J026	E015S	E016B	E015B	E016B	E015S	E015S	023	030	035	043	J054	038	033	026G	028G	022G	024	E016S	E015S	E016S	E015S	J051	J022
11	J027	J018	E015B	E014B	E015B	E015S	E015S	023	030	033	040	044	041	034	026G	028G	024G	G	E016S	J021	021	J022	J021	J019
12	E015S	E015S	J020	E016B	E015B	E015S	E016S	J023	028	G	G	G	025G	025G	025G	022G	030	031	021	J021	022M	022M	018M	018M
13	E015S	E015S	J041	J022	022M	018M	E015S	024	031	036	039	042	035	021G	030G	031	031	028	J019	J016S	E015S	J027	021	E015S
14	021M	J019	021M	E013B	E015B	E015S	E015S	G	028	G	035	023G	053	037	039	035	030	032	E015S	023	J034	J033	J022	J024
15	J019	E015S	E014B	E015B	E	E014S	E015S	026	038	041	048	041	037	036	G	G	033	028	022	023	E017S	E015S	019	027
16	J019	E015S	E015S	E015B	E015B	E014S	J015S	023	029	039	042	037	033	039	020G	041	039	J040	J043	J039	J033	J023	053	J033
17	J020	E015S	E015B	E	E015B	E015S	E015S	G	029	033	G	G	025G	025G	038	032	034	028	J020	E016S	E015S	E015S	E016S	E015S
18	J019	J026	J021	J023	J019	E016S	022M	G	026	032	025G	J031G	030G	028G	026G	J034	J039	J028	J023	J020	021M	J024	J024	J034
19	J034	J030	022M	J039	E014B	E015S	E015S	G	019G	022G	033	025G	045	J022G	J036	034	J029	J024	020M	E015S	022M	030	023M	J029
20	J051	022M	J019	021	E	021M	E015S	J023	028	032	036	C	C	C	C	C	J031	J045	092M	J041	029	022	J032	J026
21	E015S	E015S	E014B	E012B	019M	E015S	022M	J022	029	031	042	J054	J055	038	045	043	J047	J033	J027	021M	J019	E015S	024M	J018
22	E015S	E015S	E014B	E015B	E015B	E015S	J016S	G	030	033	J046	J040	041	J036	J053	J040	J041	J057	J024	J021	021M	E015S	J020	J022
23	J022	J018	E015B	E015B	019M	E015S	E015S	024	029	031	039	040	J046	J051	035	023G	020G	J021	029	J032	J023	J023	J035	J033
24	J031	J023	J033	022M	020M	J023	J018	022	029	037	J034	J047	J041	J036	J032	J035	J046	J026	J031	J030	022M	J051	J023	J031
25	J022	J039	J026	J026	J029	J020	E015S	G	029	035	038	037	J045	035	G	G	G	G	022	J020	J020	J030	J027	J020
26	J023	J018	J019	J018	J020	021	E015S	020	027	031	J034	037	037	025G	021G	019G	027	J029	J028	036M	021M	J060	J032	J045
27	J051	E019S	029	J020	J031	022M	022M	021	028	039	043	041	J044	J045	034	032	027	017	022M	E015S	022M	020M	E016S	J023
28	J036	J023	J024	J032	J023	021M	J026	G	028	036	026G	J054	042	J054	037	038	J046	J029	J030	023M	J021	J041	J022	J024
29	J023	J023	J019	019M	J023	J021	022M	019	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	J039	J050	J051	039	J053	J052	J053	044M	J029	J021	J029	J018S	J030	025M
31	E016S	022M	024M	021M	025M	E015S	E016S	J018	G	029	033	039	041	J058	036	J045	G	019	E015S	021	E015S	J032	J022	J018
No.	29	28	29	29	28	27	28	28	27	28	29	27	29	28	28	28	29	29	29	29	29	29	29	29
Median	J020	018	E018	E017B	E016B	E015S	E016S	022	029	034	038	039	041	036	G	032	030	028	022	J021	021	J022	J022	J022
U. Q.	024	022	022	022	020	021	018	024	030	036	042	044	044	039	036	036	036	032	028	031	023	031	026	026
L. Q.	E016	E015	E015	E015	E015	E015	E015	G	028	031	033	G	G	G	G	G	G	024	019	016	E018	E016	E018	018
Q. R.	D008	D007	D007	D007	D005	D006	D003		002	005	009							008	009	015	D005	D015	D008	008

The Radio Research Laboratories, Japan

foEs

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Oct. 1965 | fbEs | 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	S	B	B	A	021	C	C	039	E031R	038	E027R	038			G	030	018	026	023	S	S	S
2	S	S	S	B	B	S	S	026	029	026	038	E033R	B			036	031	029	027	030	E042S	A	E022S	017
3	020	E	S	B	B	S	S	027	032	034	040	040	035	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	E030R	E028R	E027R	G	E025R	C	024G	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	E030R	E025R	E028R	023G	023G	026	020	017	S	S	S	E
6	S	016	S	B	B	S	S	025	E029R	034	G	E033R	E025R	E028R	026G	020G	020G	029	020	S	S	S	S	S
7	S	S	S	B	B	S	S		030	034	038	043	040	039	034	033	029	022	017	S	E	016	S	E
8	S	S	S	B	B	S	S	G	030	039	044	C	041	035	032	E028R	023G	051	018	042	020	017	016	E
9	016	E	B	E	016	S	S	G	030	034	034	035	034	039	E031R	E030R		G	020	030	017	018	017	E
10	017	S	B	B	B	S	S	G	G	034	042	052	038	E033R	026G	028G	021G	024	S	S	S	S	E	020
11	016	E	B	B	B	S	S	G	G	G	039	042	037	E034R	E026R	E028R	023G		S	016	E	017	016	016
12	S	S	E	B	B	S	S	023	028				E025R	025G	023G	022G	030	030	018	019	018	017	016	E
13	S	S	E	015	013	E	S	023	030	034	039	040	035	021G	E030R	E031R	030	027	E019R	S	S	021	E	S
14	E	E	E	B	B	S	S		028		034	022G	050	E037R	038	035	029	032	S	019	A	A	020	018
15	016	S	B	B		S	S	G	031	039	046	040	036	034			032	026	021	021	S	S	017	019
16	016	S	S	B	B	S	S	023	029	037	041	035	033	038	020G	035	038	036	043	018	E	E	A	025
17	E	S	B		B	S	S		028	030			025G	024G	038	032	034	027	G	S	S	S	S	S
18	016	020	017	019	018	S	G		G	031	023G	E031R	E030R	E028R	022G	032	032	024	021	018	E	018	020	A
19	021	018	E	019	B	S	S		017G	020G	G	023G	033	E022R	025	032	025	020	G	S	E	026	E	018
20	E	E	014	014		E	S	G	G	032	033	C	C	C	C	C	030	031	027	E041S	023	016	017	E
21	S	S	B	B	014	S	016	G	029	031	040	048	052	037	041	043	042	032	024	E	E	S	E	E
22	S	S	B	B	B	S	S		028	033	038	036	038	035	032	031	031	020	016	017	E	S	E	E
23	019	015	B	B	015	S	S	023	029	030	037	035	039	035	032	023G	018G	020	021	017	020	018	021	E033S
24	E	017	030	013	011	016	G	G	028	030	033	034	037	032	032	031	037	022	029	030	022	023	020	A
25	016	022	021	020	024	E020S	S		029	034	035	034	043	033					022	017	016	026	025	020
26	016	018	016	015	015	E	S	020	027	G	032	036	037	023G	020G	018G	027	025	028	023	E	018	018	019
27	018	S	E	018	031	E	016	020	028	038	041	039	040	038	032	031	G	G	G	S	E	E	S	021
28	A	E	016	021	019	E	018		028	034	023G	042	039	045	036	037	029	029	G	E	E	031	019	018
29	017	018	E	E	015	018	016	G		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	032	049	050	035	041	038	050	041	028	019	E	S	026	E
31	S	E	E	E	E	S	S	G		029	G	037	035	058	035	032		017	S	020	S	032	020	016
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

fbEs

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 5

IONOSPHERIC DATA

Oct. 1965 | 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	E016S	E018S	014	017	E019S	E014S	C	C	016	023	023	019	031	018	016	016	016	E015S	E016S	E015S	E018S	E017S	E015S
2	E016S	E017S	E015S	017	016	E017S	E016S	016	016	023	015	023	041	024	025	024	019	016	E015S	E016S	E016S	E015S	E015S	E016S
3	E016S	E016S	E016S	017	015	S	E017S	E016S	016	016	020	034	023	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	016	016	023	021	022	E027C	019	E030C	E034C	E016S	E020C	E016C	E015C	E021C	E016C
5	E018C	C	E024C	E028C	C	C	C	E058C	C	C	C	C	023	022	018	016	016	E015S	E015S	E016S	E019S	E015S	E016S	E018S
6	E017S	E015S	E015S	016	016	E015S	E016S	015	015	016	015	019	020	017	016	015	015	E015S	E015S	E016S	E015S	E017S	E016S	E016S
7	E015S	E017S	E015S	016	014	E015S	E016S	E015S	015	015	018	015	015	023	023	016	016	E015S	E015S	E015S	E015S	E015S	E015S	E015S
8	E015S	E015S	E015S	011	014	E015S	E015S	015	015	016	018	C	019	017	016	015	015	E015S	E015S	E015S	E015S	E016S	E015S	E016S
9	E015S	E015S	015	015	E	E015S	E016S	E015S	015	015	015	016	018	021	019	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
10	E015S	E015S	016	015	016	E015S	E015S	015	013	015	015	016	020	022	022	017	015	E015S	E016S	E015S	E016S	E015S	E015S	E015S
11	E015S	E015S	015	014	015	E015S	E015S	015	015	015	018	019	020	022	021	018	016	015	E016S	E015S	E015S	E016S	E015S	E014S
12	E015S	E015S	015	016	015	E015S	E016S	E015S	015	015	016	017	019	017	015	015	015	E015S	E015S	E015S	E016S	E016S	E015S	E015S
13	E015S	E015S	E015S	E	E	E015S	E015S	E014S	015	015	016	015	015	016	015	015	013	E015S	E015S	E015S	E015S	E015S	E015S	E015S
14	E015S	E015S	E015S	013	015	E015S	E015S	E015S	015	015	019	017	018	018	016	017	015	015	E015S	E015S	E015S	E015S	E015S	E015S
15	E015S	E015S	014	015	E	E014S	E015S	E015S	014	015	016	015	016	016	017	016	015	E015S	E015S	E015S	E017S	E015S	E015S	E015S
16	E015S	E015S	E015S	015	015	E014S	E015S	E015S	016	015	015	015	019	016	015	015	017	017	E015S	E015S	E015S	E015S	E015S	E015S
17	E015S	E015S	015	E	015	E015S	E015S	E015S	015	015	015	018	015	019	017	015	016	E015S	E015S	E016S	E015S	E015S	E016S	E015S
18	E015S	E015S	015	015	E	E016S	E016S	E015S	015	015	015	017	017	016	015	015	015	E014S	E015S	E015S	E015S	E015S	E015S	E015S
19	E014S	E015S	015	015	014	E015S	E015S	E015S	015	015	015	015	015	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E014S
20	E015S	E014S	E	E	E	E014S	E015S	E015S	015	015	015	C	C	C	C	C	015	E015S	E015S	E015S	E015S	E015S	E015S	E014S
21	E015S	E015S	014	012	E	E015S	E015S	E015S	015	015	014	015	017	016	019	018	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
22	E015S	E015S	014	015	015	E015S	E015S	E014S	015	015	015	015	015	015	014	015	014	015	E015S	E015S	E016S	E015S	E016S	E015S
23	E015S	012	015	015	E	E015S	E015S	E014S	015	015	015	016	015	017	018	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
24	E015S	E014S	015	E	E	E015S	E016S	E015S	015	015	015	015	015	015	015	014	015	E015S	E015S	E015S	E015S	E015S	E015S	E014S
25	E015S	E015S	015	E	E	E014S	E015S	E015S	014	015	015	015	015	015	015	015	015	E017S	E015S	E015S	E015S	E015S	E015S	E016S
26	E015S	E016S	014	E	E	E015S	E015S	E015S	015	015	015	015	015	016	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
27	E015S	E019S	015	015	015	E015S	E015S	E015S	015	015	015	015	017	015	015	015	015	E015S	E015S	E015S	E015S	E014S	E016S	E015S
28	E015S	E015S	015	E	E	E015S	E015S	E015S	015	015	015	015	016	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E014S
29	E015S	E015S	E015S	014	E	E015S	E015S	E015S	013	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	015	016	016	016	016	016	016	E015S	E015S	E015S	E015S	E016S	E016S	E015S
31	E016S	E016S	E016S	012	E	E015S	E016S	E016S	E015S	016	015	016	015	015	016	015	015	E016S	E015S	E015S	E015S	E015S	E015S	E015S
No.	29	28	29	29	28	27	28	28	27	28	29	27	29	28	28	28	29	29	29	29	29	29	29	29
Median	E015S	E015S	014	014	014	E015S	E015S	E015S	015	015	015	016	017	016	016	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
U. Q.																								
L. Q.																								
Q. R.																								

f-min

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 6

IONOSPHERIC DATA

Oct. 1965 | 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	I305S	J295S	330S	S	335S	A	335S	C	C	370S	320S	325S	330	315	J315S	J310S	325	340S	350S	350S	I355S	280	I280S	280S
2	S	S	S	S	J325S	U295R	I330S	J365S	355S	I355S	I330S	J275S	310S	J295S	I310R	335	320S	J340S	355S	S	S	A	S	I275S
3	I305S	I305S	J315S	I350S	370	I265S	I310S	325S	365S	360S	I345S	300S	J295S	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	J365S	345S	300S	320S	340S	J325S	310S	J315S	I340C	I350S	I365S	295S	I285S	285S	I290S
5	I285S	I290C	305S	I310S	C	C	C	C	I370C	C	C	C	305	340	315	320	325	345S	335S	J355S	355S	290	295S	I285S
6	I280S	I280S	285S	I350S	335	305	J295S	355S	335	345	350S	325	330S	345S	325	315	320S	335	I350S	360S	315S	I320S	S	S
7	295S	295S	I310S	J315S	305S	310	I330S	365	J360S	340S	335	325S	340	325	330	325S	325	345S	345S	360S	325S	290S	I275S	J280S
8	U285S	J295S	295	U305S	315	315	335	360S	350S	345	360S	I330C	325	320S	305	320	335	I335S	I345S	335	305S	I285S	275S	280S
9	295S	290S	J305S	310S	340S	I340S	310	J340S	345S	360	340	305	300	315	J310S	325	350	U350S	345	I320S	265S	J300S	I300S	U295S
10	I315S	345S	330S	J310S	345	290	300S	360	I340S	305	J350S	315	310	340	310	J315S	335S	J345S	350S	335S	300S	J305S	I300S	295S
11	295	I290S	305	315	J345S	345S	J335S	365S	355	365	340	325	320S	325	300	310	335	335S	I345S	335S	290	J280S	315	305
12	295S	320	300S	310	315	315	315	340S	355S	360	365	360	315S	295H	310	310S	325	340S	I330S	I345S	345S	320	310S	295
13	300S	300	290	285	315S	I300S	I330S	J355S	360S	350S	355	345	310	310	320	340S	345	345S	340	J355S	J295S	290	290S	300
14	295S	325S	280S	305S	350S	295	J310S	U335S	S	335	360	360	300S	290	J315S	350S	U340S	J360S	340	335S	A	A	J275S	265S
15	290S	J315S	J325S	325	345	270	300S	370	350	I360S	355	345	330	340	315	325	J335S	350S	360	355	325	295S	I290S	I290S
16	S	S	310	325S	I335S	325	J295S	355	J365S	I360S	365S	345	330	325	320	315	355	345S	365S	U370S	260S	S	A	S
17	J325S	J300S	J315S	295S	300S	J325S	315S	350S	370S	355S	365	330	340	310	325	320	350	I360S	365	360	290S	295S	285S	305
18	295	305S	305	290	325S	345S	335S	355S	360S	350S	335	335S	335	340	330	J325S	355S	355	355	330	310	305S	305S	I285A
19	265S	J280S	310	I335S	370	335	325	365	370S	335	345	345	325	305	325S	345	350	370	345	330	310	295S	J305S	305
20	290	320	340	300S	325	345S	305	J340S	J340S	345	350S	C	C	C	C	C	345S	355	J325S	I350S	290	275S	J275S	J295S
21	290S	J290S	330S	320S	J320S	330	J325S	340	340S	335	350	360	335	320	355S	330S	U340S	375	380	340	305	290	300S	295S
22	J290S	J310S	J310S	310	340S	355S	340	J355S	345S	J355S	350S	360S	350	325	J330S	330S	355S	360	345S	330S	290S	U295S	285	275S
23	270S	290S	330S	295S	J310S	295S	I345S	360S	355	315	J320S	325S	345	290	I305S	J325S	U325S	U345S	J335S	340	315	U300S	265S	I280S
24	I280S	J295S	I350S	330S	315S	295S	310S	U330S	340S	365	330	310S	305S	330	325	325	U355S	J335S	U345S	345	335	I320S	325S	I280A
25	J305S	270S	295S	305S	350	S	295S	315	U355S	370	335	320	330	J345S	320	335	J355S	I340S	J350S	300	315S	305	I295S	295S
26	J295S	I285S	275S	315S	J350S	365S	290S	365	355	300	320S	335	J325S	310	330	J345S	355	360S	330	295S	310S	290S	S	S
27	S	U300S	I290S	280S	I305S	335	300	350	355	335S	345	U335S	335S	310	330	J340S	350	365	J345S	335S	J285S	290S	300S	320
28	I300A	295	305S	360S	305S	330	310S	355	S	I355S	345	325S	325	325	320S	345S	I370S	360	320	340	295	295	I285S	280
29	I300S	360S	300	F	300S	315S	315S	375	360	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	335S	U345S	340	U320S	J325S	355	J350S	I370S	330	J310S	J295S	J300S	I290S	I290S
31	I280S	295	330	340S	315	340	J285S	340S	355	345	325S	310	J325S	310	315	315	345	I335S	350	310S	290S	I310S	I305S	J305S
No.	26	27	28	26	28	26	28	27	26	28	29	28	29	28	28	28	29	29	29	28	27	26	25	26
Median	295S	295S	310S	310S	325S	320	310S	355S	355S	350	345	330	325	320	320	325S	345S	345S	345S	340S	305S	295S	290S	290S
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

M(3000) F2 | Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation | Y 7

IONOSPHERIC DATA

Oct. 1965 | 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								C	C	L	L	355	380	360	U365L	345	L	L						
2									L	L	L	L	380	L	L	355	L	L						
3										L	A	U385L	L	C	C	C	C	C						
4								C	C	380	395	L	375	360	U380L	340	L	L						
5								C	C	C	C	C	380	350	360	355	L	L						
6									L	395	L	380	390	385H	L	L	L	L						
7										L	380	360	370	370	360	L	L	L						
8									L	L	L	C	375	350	L	L	L	A						
9									L	L	U370L	365	LH	360	U335H	U335L	L							
10									L	L	L	A	380	375H	370	L	L							
11									L	L	L	U360L	375	375	L	L	L							
12									L	L	365H	395	380	350	355	L	L	A						
13										L	A	L	365	L	365	L	L	A						
14									L	L	370	395	A		U335L	L	L	A						
15									L	L	A	410	LH	385	380	L	L							
16										L	L	410	LH	L	L	355	A	A						
17									L	395	390	395	405	450	360	U370L	L	A						
18									L	L	L	415	LH	L	U380L	L	L	A						
19									L	L	370	390	395	LH	350L	L	L	A						
20									L	L	370	C	C	C	C	C	L	A						
21									L	L	A	A	A	L	A	A	A							
22									L	L	385	375	395	465	365	L	L	A						
23										L	L	370	380	L	L	L	L							
24									L	L	L	L	395	U340L	L	L	A	A						
25										L	U370L	370	A	U370L	L	LH								
26										L	U360L	360	380	380	L	L	L							
27										L	L	375	395	L	U385L	LH	L							
28										L	L	L	L	A	L	L	L							
29										C	C	C	C	C	C	C	C	C						
30								C	C	C	395	A	A	L	A	L	A	A						
31										L	L	L	370L	A	L	L	L							
No.										3	12	18	19	16	15	7								
Median										395	370	380	380	370	365	355								
U. Q.																								
L. Q.																								
Q. R.																								

M(3000) F1 | Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Oct. 1965 | 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								C	C	240	275	290	270	280	275	290	270	250						
2									235	245	285	320	280	295	275	265	255	245						
3										230	250	275	315	C	C	C	C	C						
4								C	C	230	250	305	275	255	255	320	275	245						
5								250	I230C	C	C	C	315	260	280	280	255	250						
6									240	240	265	280	275	270	280	280	280	250						
7										250	265	290	265	285	275	270	265	245						
8									230	255	245	I260C	280	275	305	270	250	255						
9									245	240	250	300	290	275	280	265	240							
10									245	240	245	290	290	250	275	270	250							
11									230	240	255	300	280	255	275H	280	250							
12									235	240	235	245	305	290	280	265	270	235						
13										240	245	265	300	280	270	250	250	230						
14									230	245	250	245	300		285	240	240	230						
15									245	245	255	250	280	270	270	270	260							
16										245	230	255	280	250	280	285	245	235						
17									220	225	235	265	240	270H	270	270	240	225						
18									230	230	250	255	270	260	255	260	240	225						
19									220	255	260	245	265	265	280	245	245	225						
20									245	240	250	C	C	C	C	C	240	225						
21									240	270	250	245	255	275	255	275	245							
22									225	250	250	240	240	255	275	275	235	220						
23										270	265	270	245	280	290	270	250							
24									250	230	240	250H	265	290	260	250	230	225						
25										235	255	280	260	245	250	250								
26										240	285	260	250	245	260	240	225							
27										270	250	250	245	280	255	240	230							
28										225	250	260	255	270	245	240	225							
29										C	C	C	C	C	C	C	C	C						
30								C	C	C	250	245	245	280	265	250	235	215						
31										240	250	250	245	290	280	240	220							
No.								1	17	28	29	28	29	27	28	28	28	18						
Median								250	235	240	250	260	270	270	275	270	245	230						
U. Q.																								
L. Q.																								
Q. R.																								

h'F2

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 9

IONOSPHERIC DATA

Oct. 1965 | 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	270	280	240	210	215	A	E255A	C	C	A	210	200	180H	195H	200H	230	240	E250A	230	205	215	330	335	300
2	300	275	240	230	240	E250S	245	220	220	220	210	200	240	250	255	240	240	245	220	220	A	A	A	315
3	315	275	245	210	175	S	265	240	230	230	E230A	225	275	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	215	205	200	185	245	200	210H	245	I250C	220	200	E230C	275	E285C	280
5	E305C	I280C	E300C	E275C	C	C	C	C	C	C	C	C	200	250	220	240	225	250	225	220	200	255	250	310
6	325	315	280	220	200	E215S	265	220	215	215	205	205	195	180	230	220	230	I250A	225	205	230	245	255	270
7	280	280	245	250	230	250	230	220	225	225	220	E275A	220	225	205	215	225	250	220	200	230	270	325	320
8	300	280	285	270	240	225	245	220	220	E240A	A	C	E225A	205	200	225	240	I235A	230	E250A	230	300	310	290
9	270	255	270	250	205	200	255	220	225	220	190H	195H	190	230	215	225	220	235	210	250	290	280	275	290
10	280	240	220	230	220	255	250	220	225	235	I235A	A	210	190	205	195H	225	230	225	215	245	235	240	295
11	290	250	250	255	230	200	210	210	225	230	240	E270A	215	200	200	200H	240	240	225	210	255	275	225	265
12	255	235	250	250	240	235	245	235	220	225	205	195	195	175H	290H	230	240	I240A	225	220	200	245	240	275
13	255	255	315	285	250	250	240	220	225	225	A	210	200	190	245	245	240	I245A	225	210	260	300	275	275
14	270	225	280	255	205	300	270	230	230	225	205	205	I210A	280H	270	E250A	240	I230A	220	220	A	A	E330A	325
15	295	250	235	245	210	E300S	275	225	240	A	A	225	205	250	200	265	260	230	210	215	240	E270S	290	E305A
16	290	245	270	230	210	215	265	230	235	240	A	195	190	245	270	250	A	A	230	205	E255A	E310S	A	E320A
17	260	250	265	255	255	235	240	230	225	205	205	190	190H	200	265	240H	I250A	I230A	205	205	275	255	275	275
18	275	275	275	290	245	220	235	210	215	200H	220H	195	180	270	225	220	I230A	I225A	215	205	230	260	270	I290A
19	E350A	330	250	[illegible]	200	205	215	215	230	220	195H	220	200H	180	220H	230	220	I195A	220	215	235	E280A	275	295
20	280	245	210	250	240	220	250	220	230	230	220	C	C	C	C	C	230	I225A	260	A	300	280	275	265
21	275	265	230	245	240	230	265	220	235	225	A	A	A	205	A	A	A	230	205	200	240	280	290	275
22	270	260	255	245	240	220	225	205	I225A	250	225	215	215	180	180H	240	E235A	I225A	215	220	250	280	275	E295S
23	305	280	235	225H	270	260	180	220	240	230	245	210	E225A	200	200H	240	235	230	220	200	230	275	340	I320A
24	300	280	E235A	210	225	260	250	240	225	225	220	205	200	180H	240	235H	I220A	I225A	225	220	220	250	250	A
25	320	315	280	270	220	A	275	225	230	225	210	190H	I210A	190H	225	205H	220	225	210	240	240	E265A	E285A	290
26	280	300	290	265	240	200	E230S	220	230	210	220H	225	220	200	200H	230	225	225	230	E250A	250	250	255	260
27	315	285	295	270	225	225	E280S	210	220	240	I240A	E240A	220	215	195H	220H	230	205	210	210	E265S	290	270	265
28	I315A	285	275	225	250	240	E240A	220	230	225	210	E250A	240	A	240	I225A	225	210	220	225	250	E320A	285	300
29	275	200	E250S	290	270	245	240	210	225	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	195H	A	A	200	A	250	A	A	260	250	275	250	E340A	310
31	290	275	245	220	255	240	325	220	230	225	220	225	205H	I210A	220H	240	225	210	200	230	270	E300A	285	275
No.	29	29	29	29	28	25	28	27	27	26	24	24	27	27	26	27	26	27	29	28	27	27	27	28
Median	285	275	250	250	235	230	250	220	225	225	210	205	200	200	220	230	230	230	220	210	240	265	275	290
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

h'F

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Oct. 1965 | 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	S	S	S	B	B	140	125	C	C	120	105	120	100	120	G	G	150	145	125	105	105	S	S	S
2	S	S	S	B	B	S	S	140	130	120	120	110	B	G	G	105	105	130	120	100	100	100	100	105
3	100	100	S	B	B	S	S	135	130	130	125	125	125	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	105	105	110	125	105	C	110	C	C	S	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	105	105	105	100	100	140	100	100	S	S	S	100
6	S	100	S	B	B	S	S	140	140	125	E125G	115	100	100	100	100	100	100	125	S	S	S	S	S
7	S	S	S	B	B	S	S	G	135	130	125	120	125	120	125	120	115	110	105	S	100	100	S	100
8	S	S	S	B	B	S	S	140	125	120	115	C	110	115	105	105	105	100	100	100	100	100	095	100
9	100	105	B	100	100	S	S	140	150	130	125	110	105	100	100	100	G	120	115	110	110	110	105	105
10	105	S	B	B	B	S	S	160	150	130	120	115	110	110	110	110	105	125	S	S	S	S	105	100
11	100	100	B	B	B	S	S	150	140	140	125	120	115	125	110	110	110	G	S	105	100	105	105	100
12	S	S	100	B	B	S	S	120	110	G	G	G	105	100	100	100	150	130	115	100	095	095	095	095
13	S	S	105	100	100	100	S	140	125	120	120	110	110	100	110	110	150	130	100	S	S	100	100	S
14	100	100	100	B	B	S	S	G	145	G	125	105	130	145	170	145	155	125	S	135	125	105	100	100
15	100	S	B	B	E	S	S	150	140	130	125	125	125	125	G	G	175	145	125	120	S	S	105	100
16	100	S	S	B	B	S	S	155	150	125	120	120	130	135	100	145	130	125	115	115	115	115	115	105
17	100	S	B	E	B	S	S	G	130	115	G	G	105	100	170	170	150	140	115	S	S	S	S	S
18	100	100	100	095	095	S	095	G	150	125	100	100	100	100	100	100	100	100	100	100	100	100	100	100
19	105	100	100	100	B	S	S	G	100	100	125	100	135	100	100	120	100	095	100	S	105	100	100	105
20	115	100	100	100	E	100	S	100	150	140	130	C	C	C	C	C	140	120	115	100	100	130	120	125
21	S	S	B	B	105	S	100	100	155	150	125	120	115	120	120	140	130	125	120	100	115	S	105	100
22	S	S	B	B	B	S	S	G	150	120	110	110	110	110	105	105	105	100	105	100	110	S	100	100
23	100	100	B	B	100	S	S	150	150	150	125	120	110	105	115	105	100	100	115	115	100	100	110	110
24	115	100	100	100	100	100	100	150	120	120	105	105	100	100	100	100	100	100	100	100	095	110	105	105
25	105	100	100	100	100	100	S	G	140	125	120	120	120	130	G	G	G	G	120	100	100	100	100	100
26	100	100	100	100	100	100	S	130	150	150	105	135	125	100	100	100	130	120	110	110	100	105	105	105
27	110	S	105	100	100	100	105	150	150	120	120	120	120	120	125	125	125	120	100	S	100	100	S	110
28	110	110	105	105	105	105	105	G	150	130	100	120	120	120	120	120	110	110	100	100	120	115	105	105
29	105	105	105	105	100	100	105	150	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	105	115	125	130	115	110	110	110	105	105	105	S	105	105
31	S	105	100	105	100	S	S	120	G	130	140	125	125	110	115	115	G	120	S	110	S	100	105	105
No.	18	15	13	12	12	9	7	19	25	26	27	25	28	27	23	25	25	26	24	21	21	19	22	24
Median	100	100	100	100	100	100	105	140	140	125	120	120	115	110	110	110	110	120	110	100	100	100	105	100
U. Q.																								
L. Q.																								
Q. R.																								

h'Es

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 11

IONOSPHERIC DATA

Oct. 1965 | 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						f	c3			c	1	c 1	1	c			h 1	h	c	f f	f2f			
2								h	h	c	c	1				12	1	h 12	c2	f2	f3	f2	f2	f2
3	f	f						h2	h	h2	h	h	h											
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8								h	h	h3	c		c2	c	1	1	12	15	1	f4	f	f	f2	f
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30											12	c2	h2	h	e2	e3	e5	e5	c2	f	f2	f	f5	f
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Q. R.																								

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

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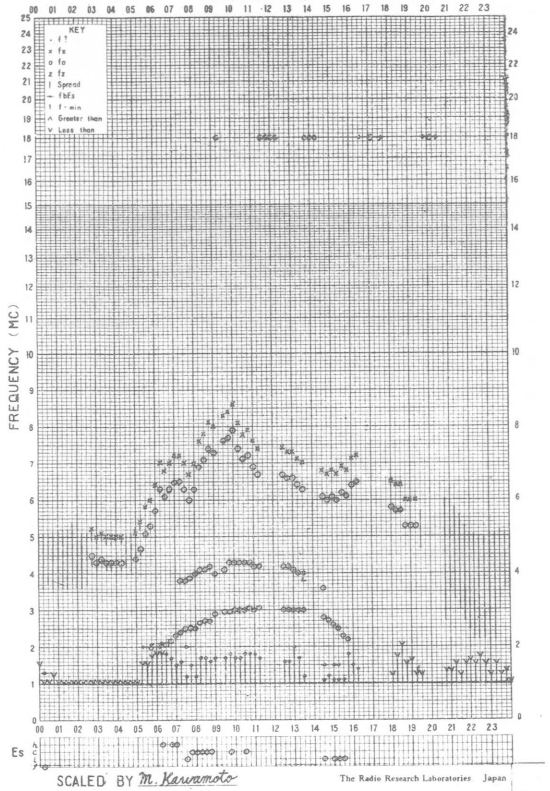
STATION WAKKANAI 135° E MEAN TIME DATE OCT. 1.1965



SCALED BY M. Kawamoto The Radio Research Laboratories Japan

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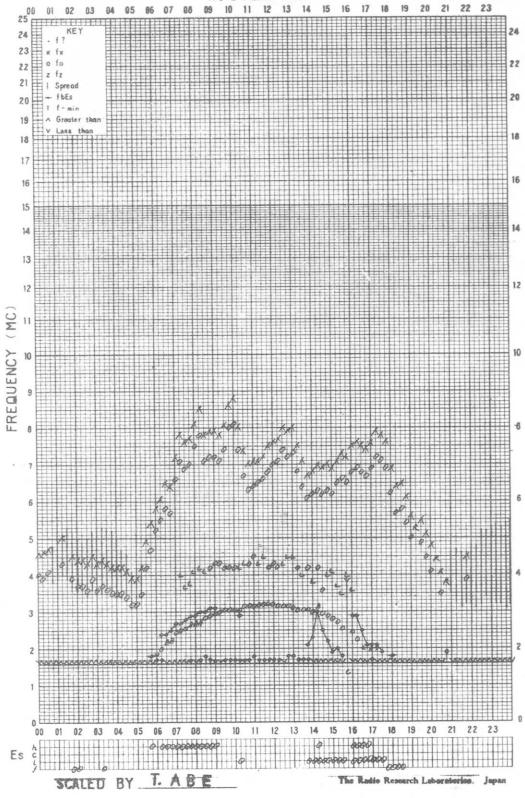

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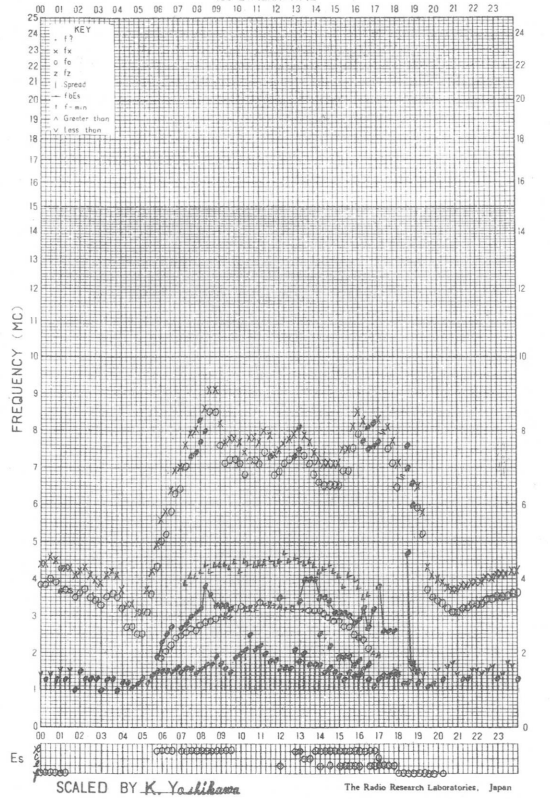

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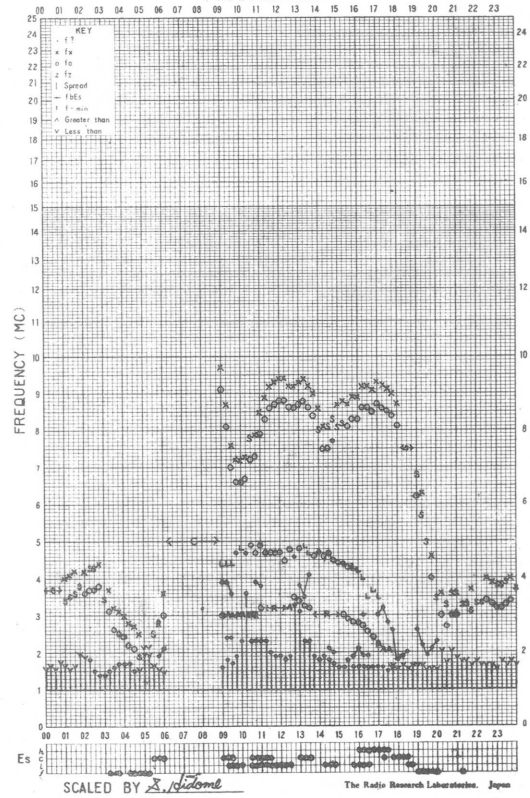

SCALED BY S. Nidome The Radio Research Laboratories. Japan

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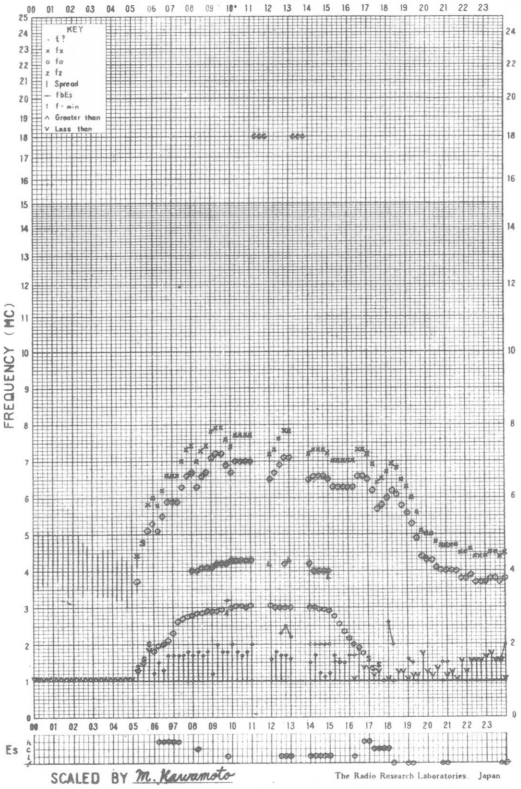

SCALED BY M. Kawamoto

The Radio Research Laboratories, Japan

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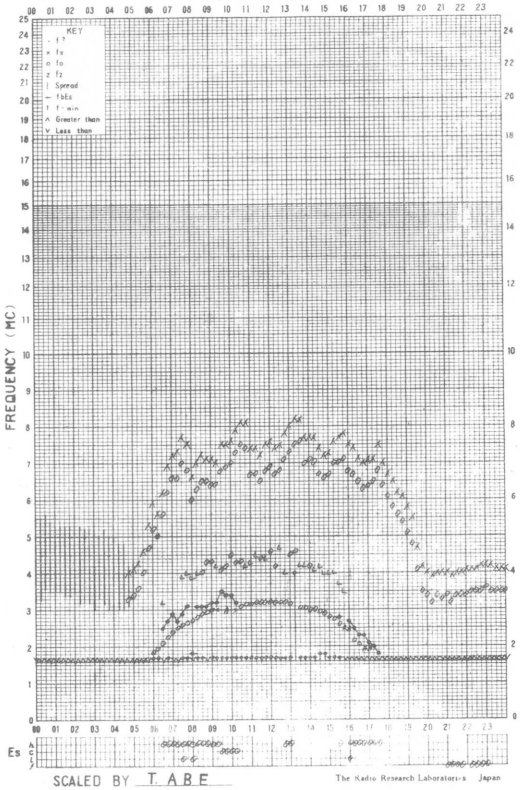

SCALED BY T. ABE

The Radio Research Laboratories, Japan

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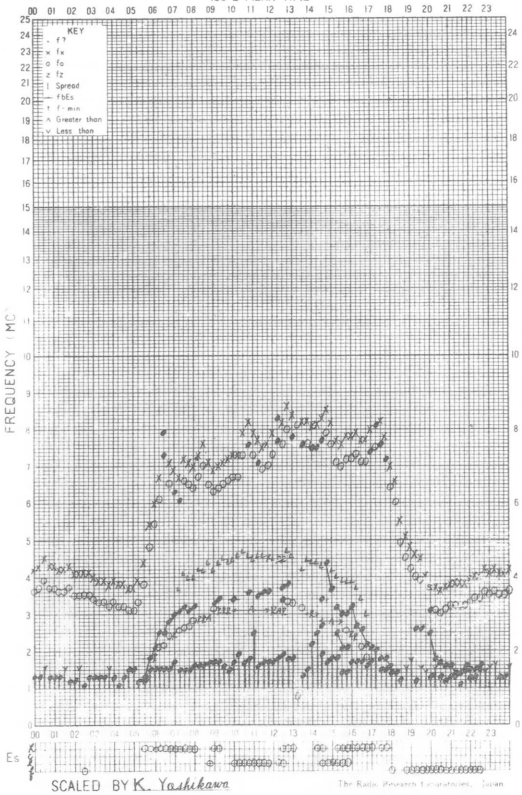

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The Radio Research Laboratories, Tokyo

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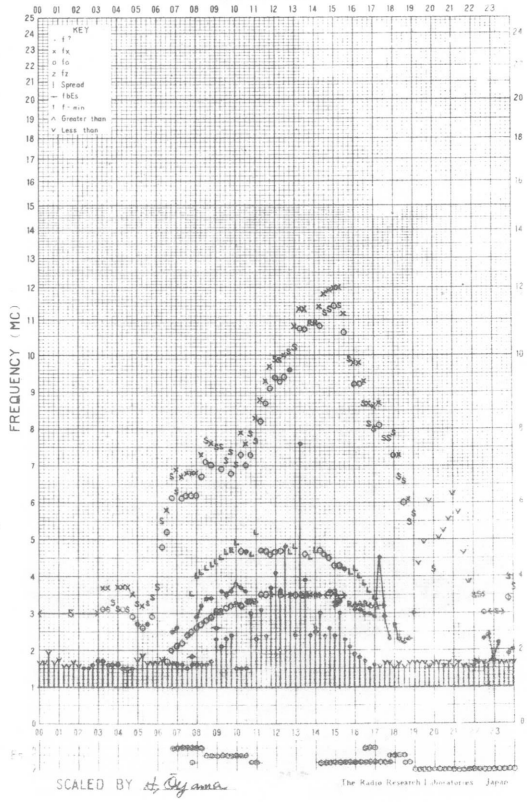

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The Radio Research Laboratories, Japan

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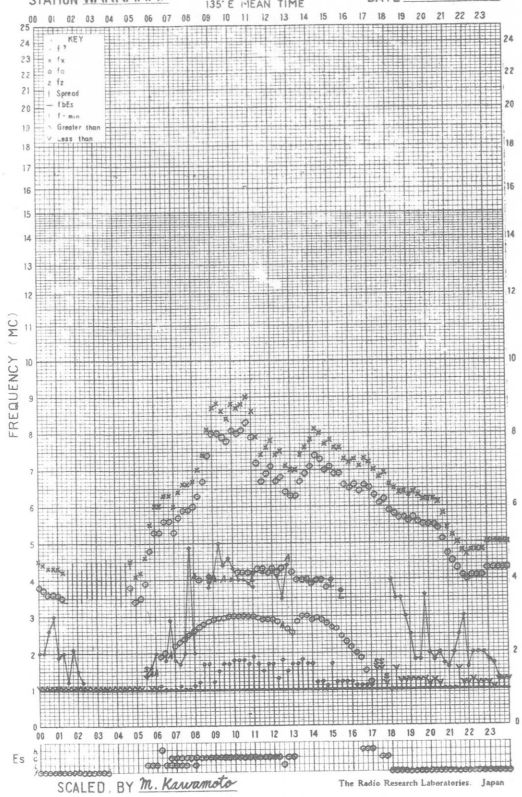

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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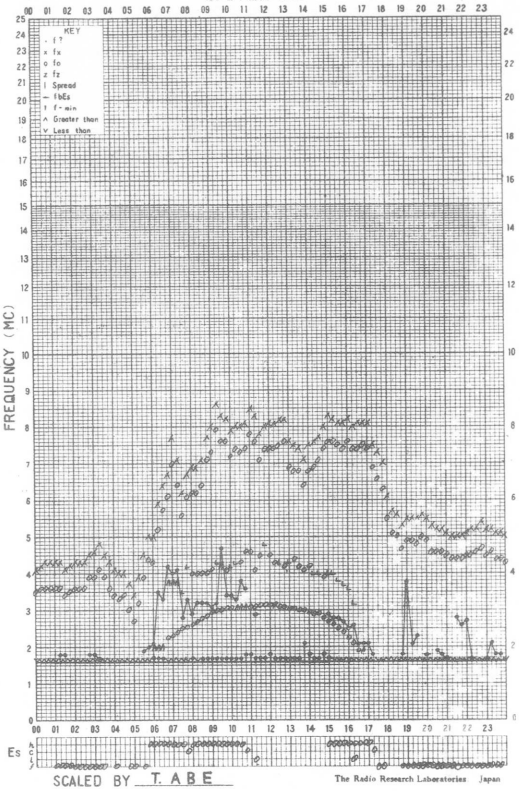

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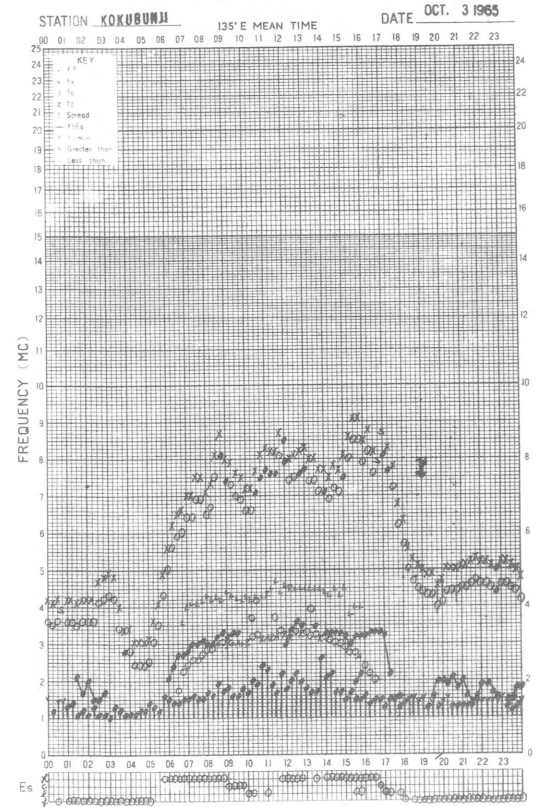

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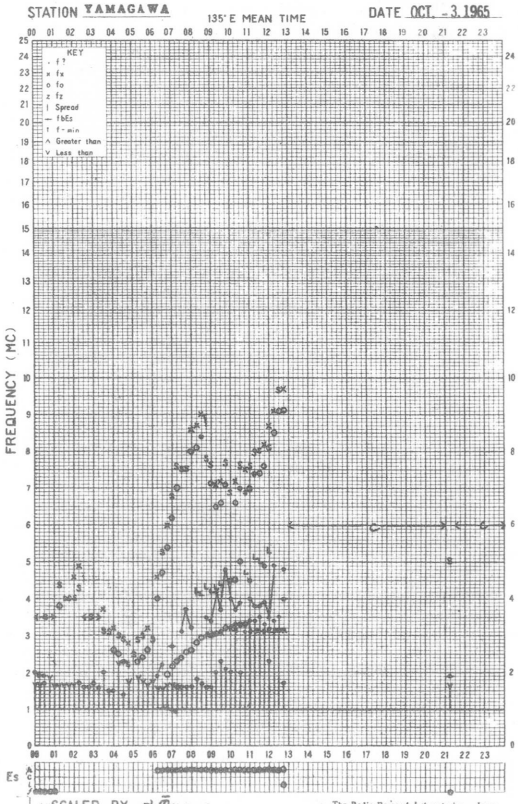

SCALED BY [illegible] The Radio Research Laboratories. Japan

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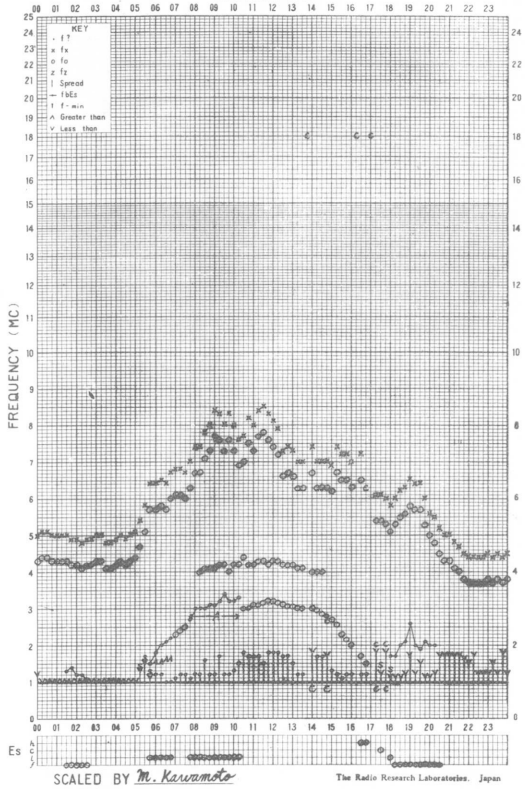

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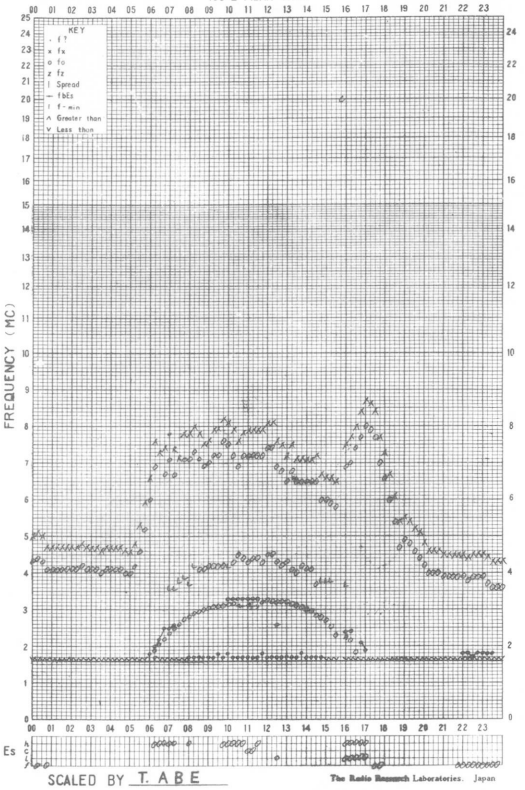

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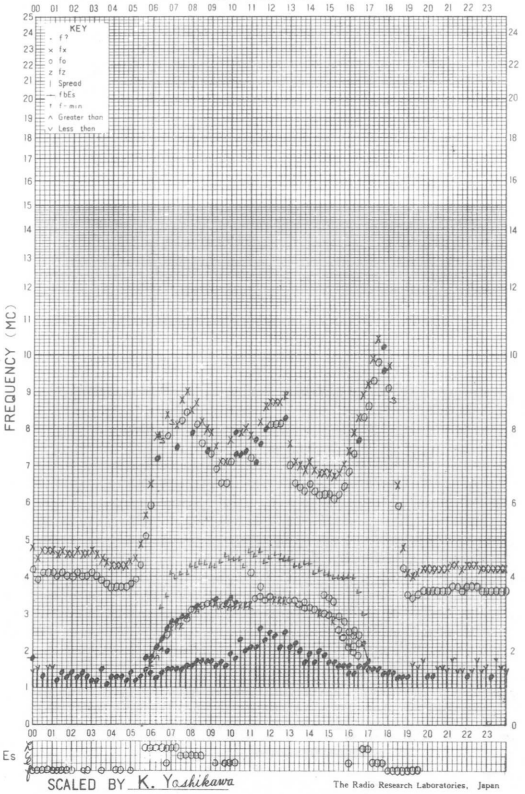

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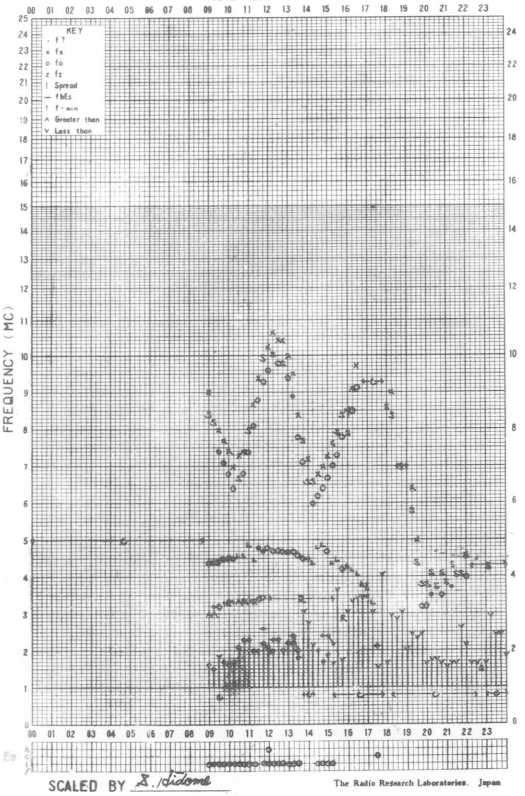

SCALED BY S. Kidome The Radio Research Laboratories, Japan

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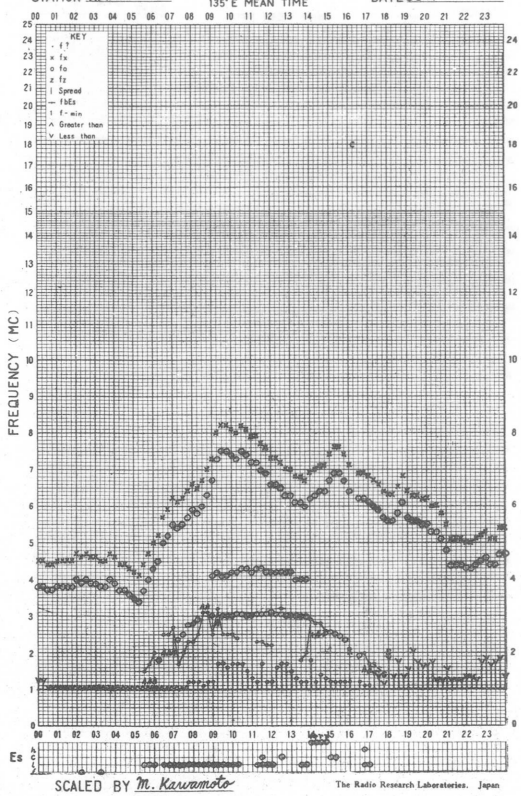

SCALED BY M. Kawamoto

The Radio Research Laboratories, Japan

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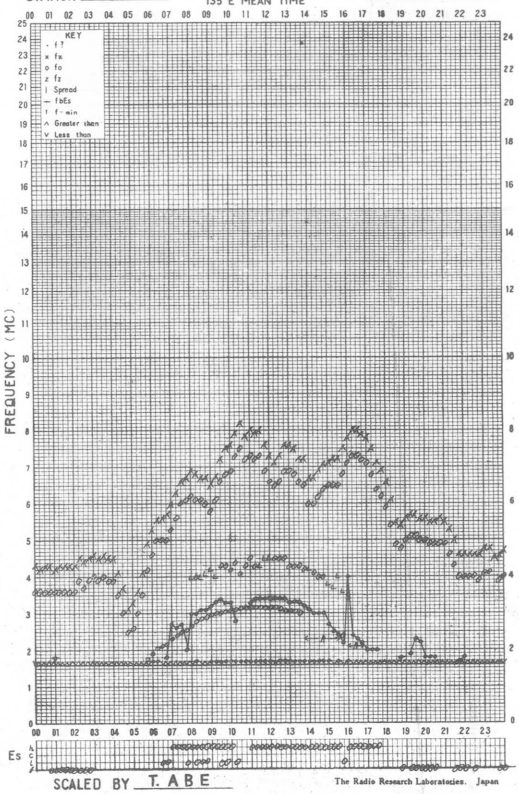

SCALED BY T. ABE

The Radio Research Laboratories, Japan

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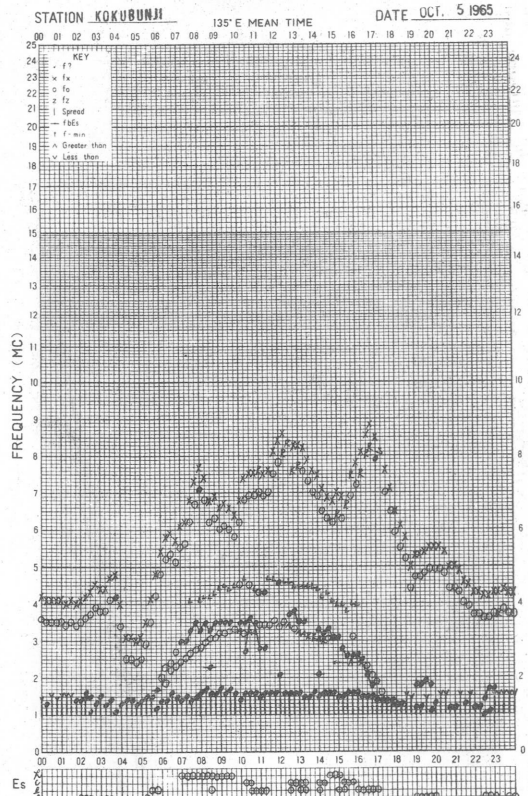

SCALED BY T. Koizumi

The Radio Research Laboratories, Japan

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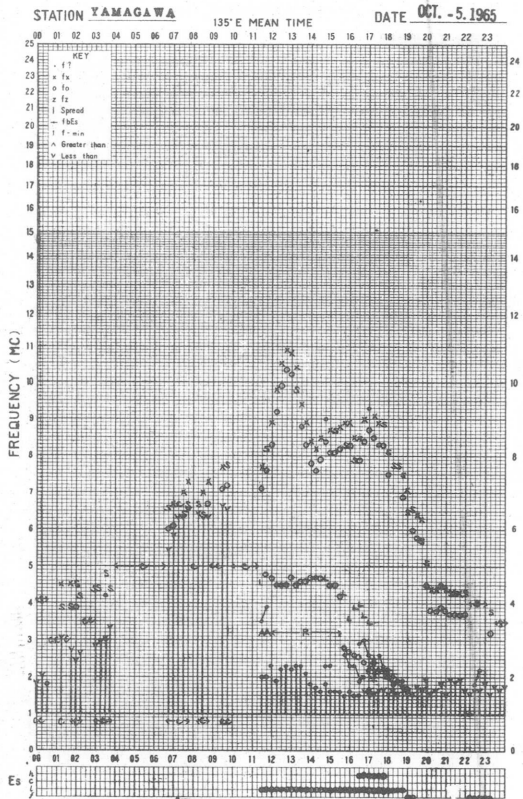
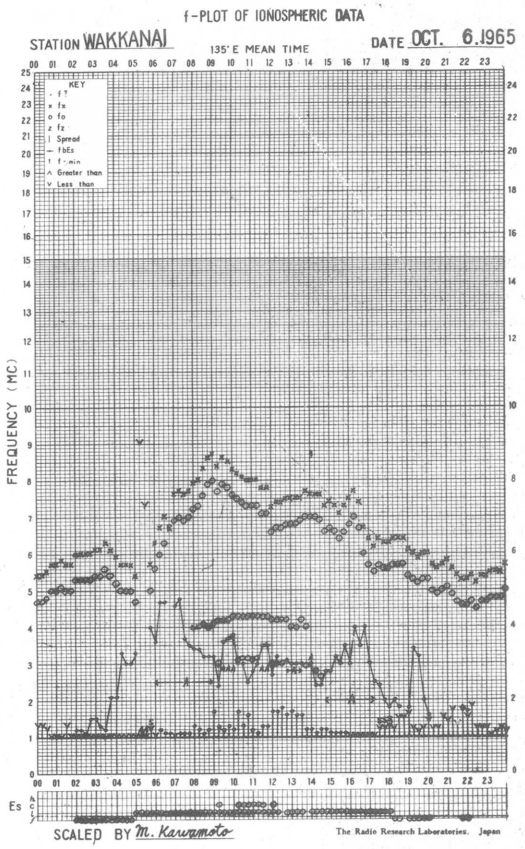


SCALED BY S. Kidome

The Radio Research Laboratories, Japan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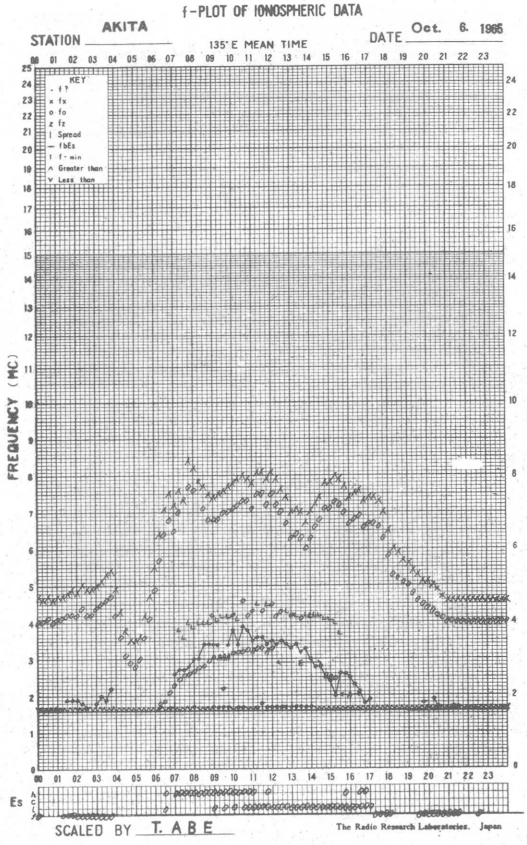
SCALED BY M. Kawamoto
The Radio Research Laboratories, Japan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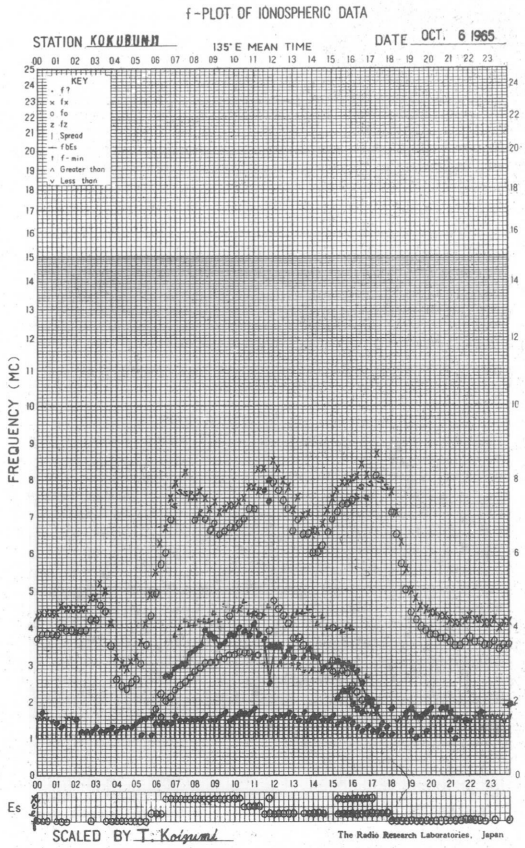
SCALED BY T. ABE
The Radio Research Laboratories, Japan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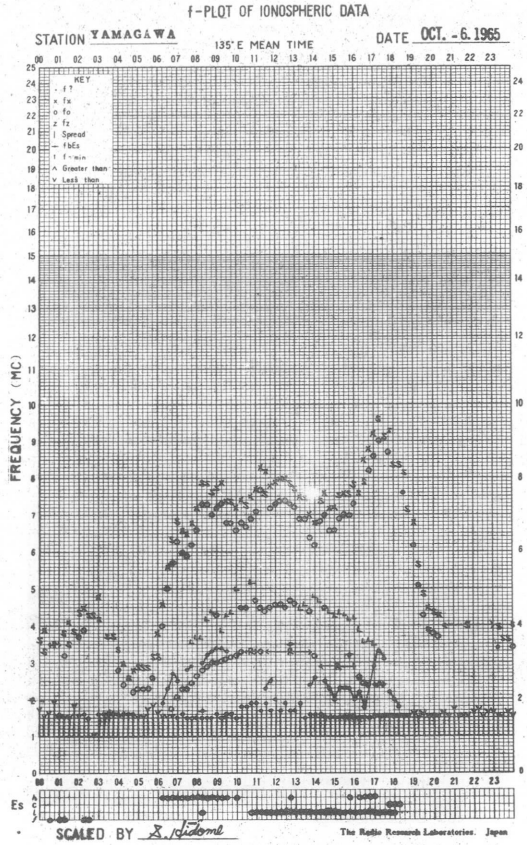
SCALED BY T. Koizumi
The Radio Research Laboratories, Japan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SCALED BY S. Sidomi
The Radio Research Laboratories, Japan

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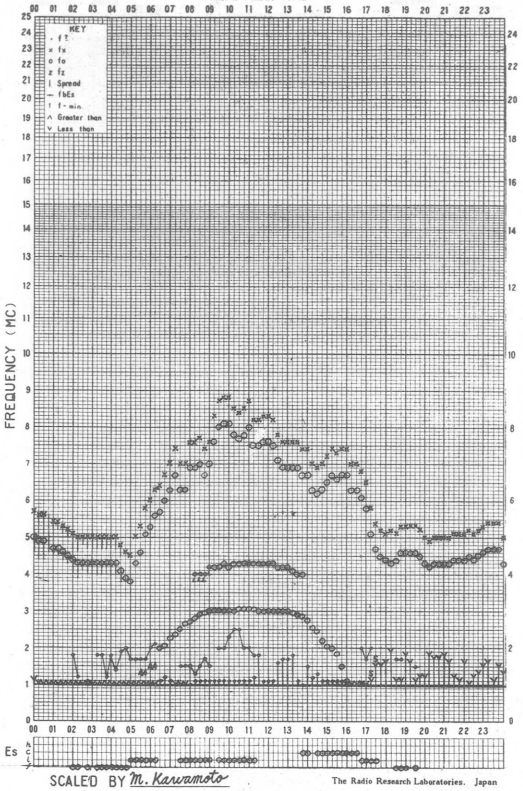

SCALED BY M. Kawamoto The Radio Research Laboratories, Japan

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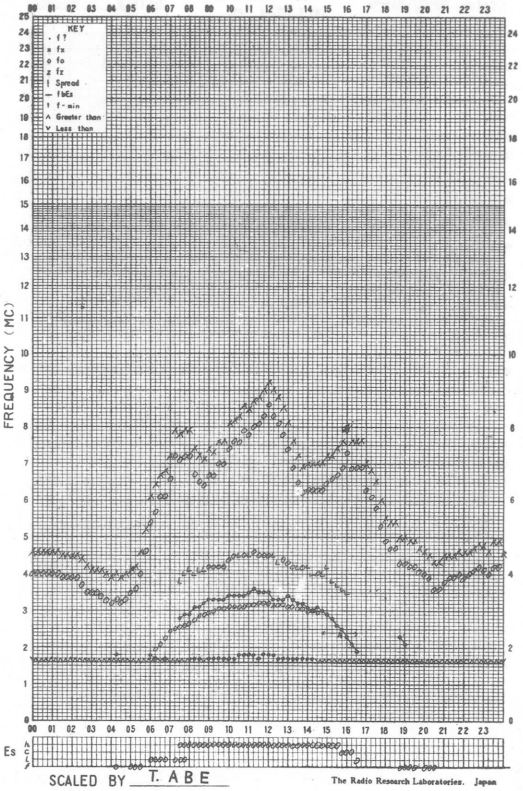

SCALED BY T. ABE The Radio Research Laboratories, Japan

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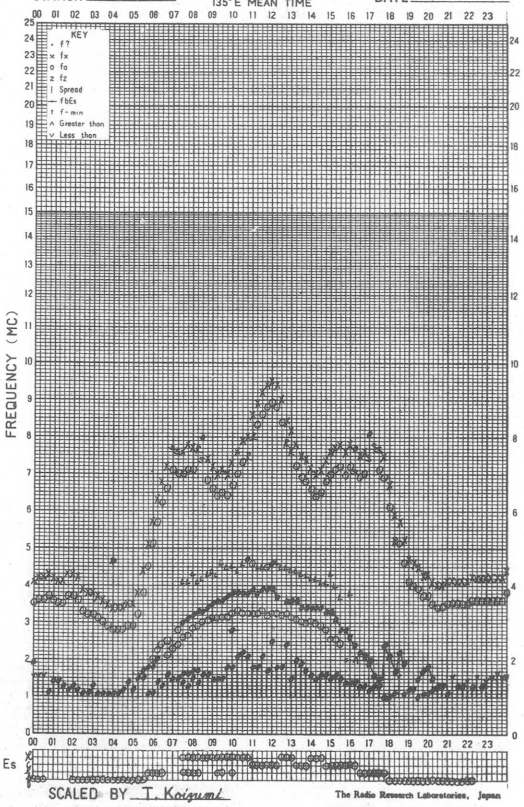

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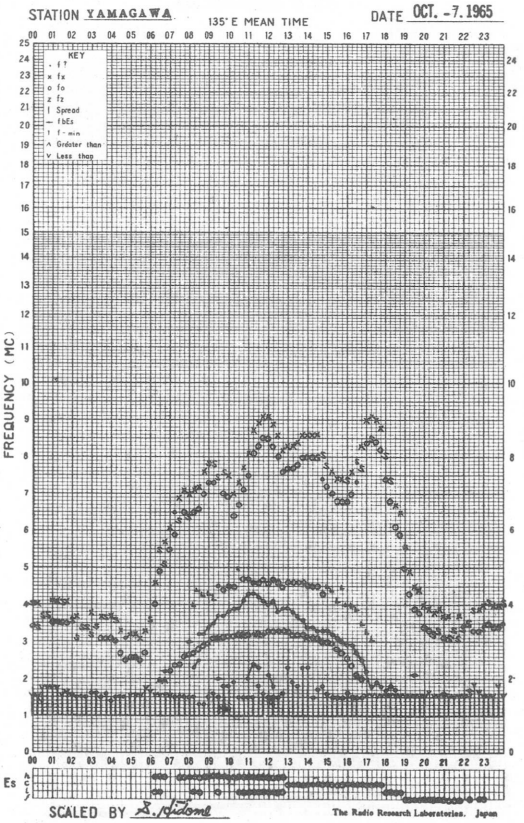

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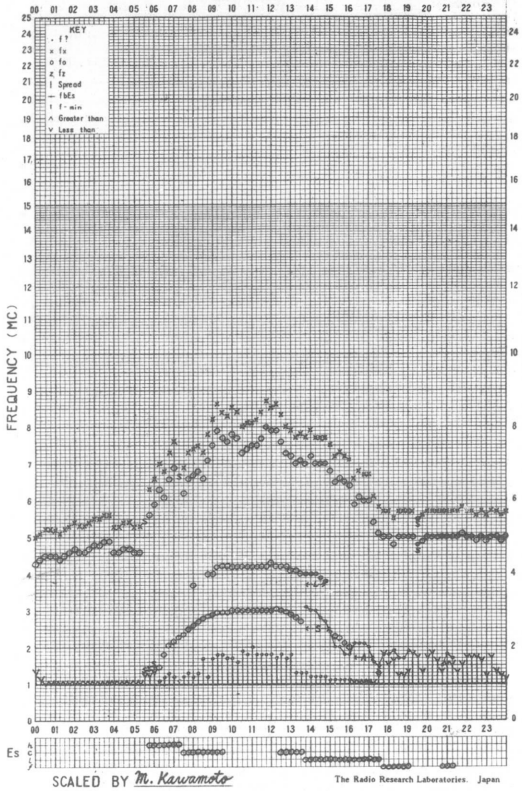

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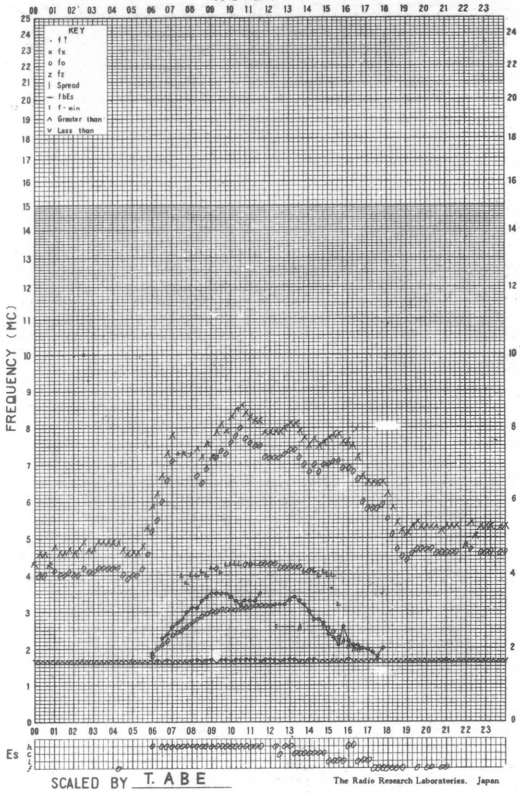

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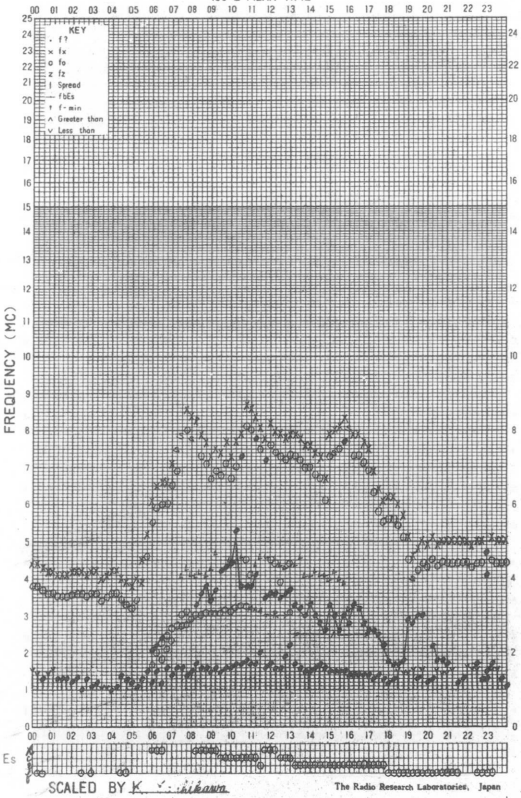

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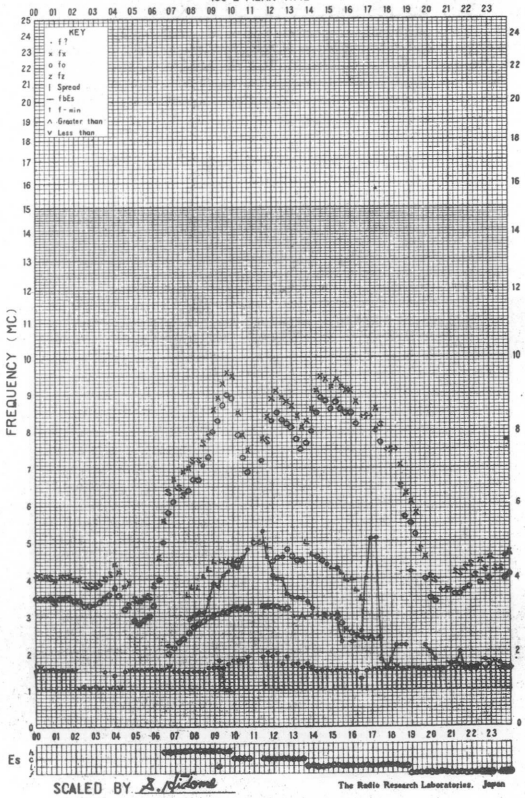

SCALED BY S. Midorne The Radio Research Laboratories. Japan

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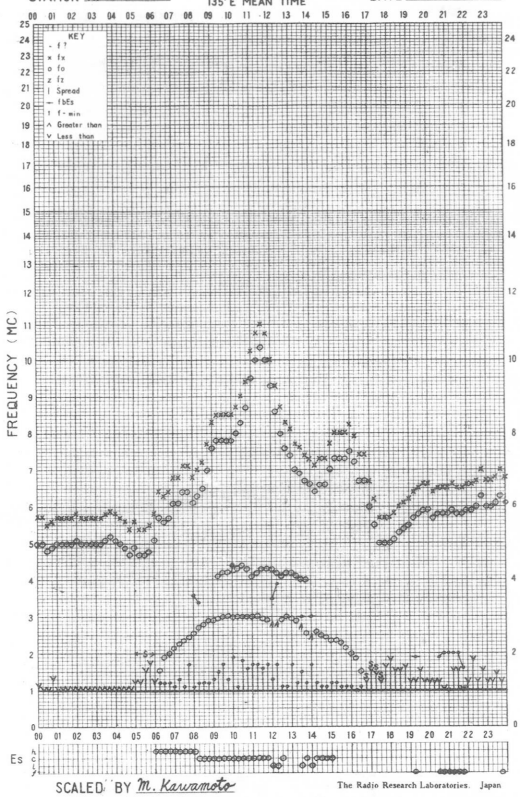

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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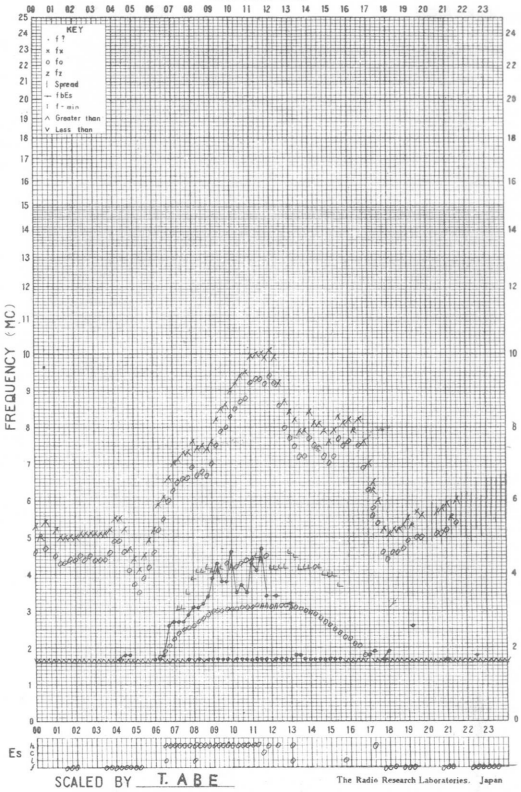

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The Radio Research Laboratories. Japan

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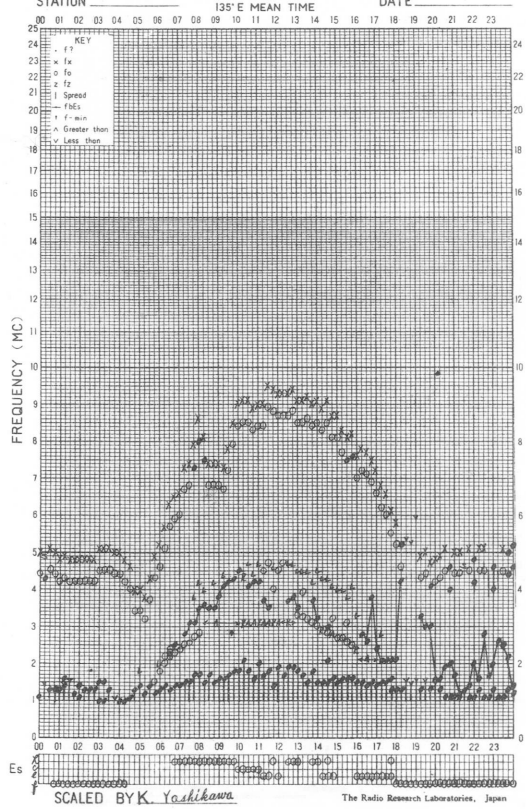

SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

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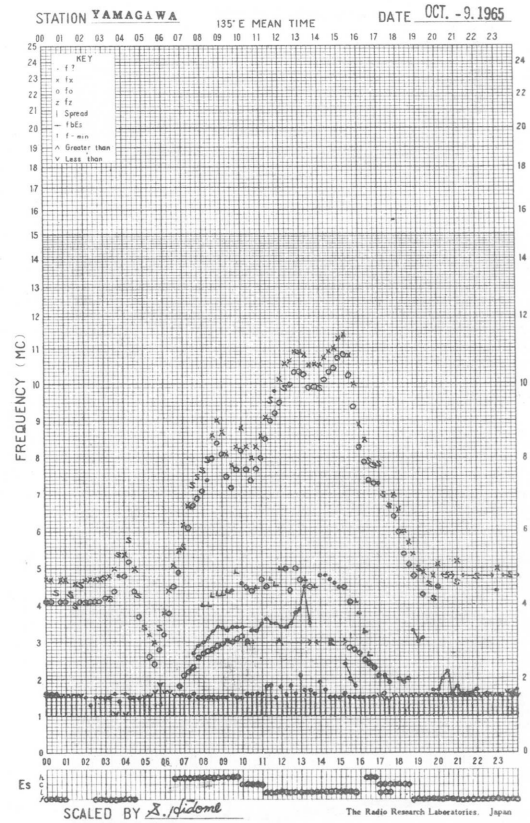
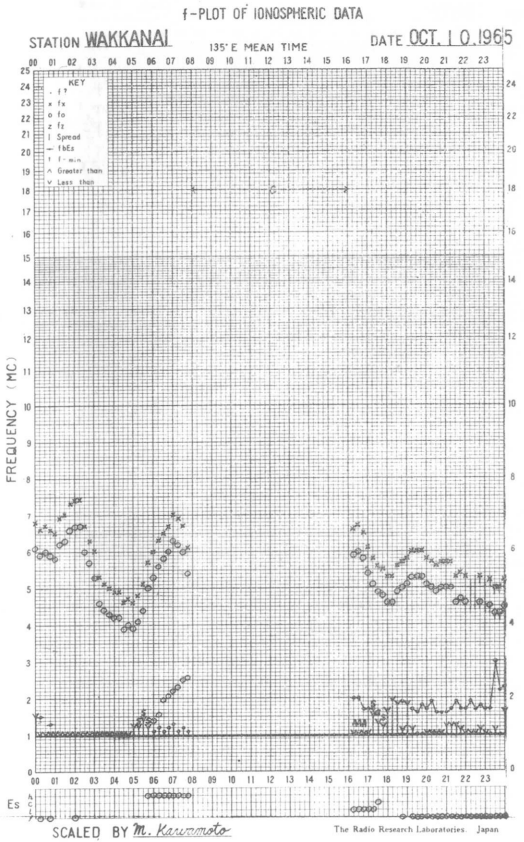
STATION YAMAGAWA 135°E MEAN TIME DATE OCT. -9. 1965



SCALED BY S. Kidomé

The Radio Research Laboratories. Japan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STATION WAKKANAI
135°E MEAN TIME
DATE OCT. 10.1965
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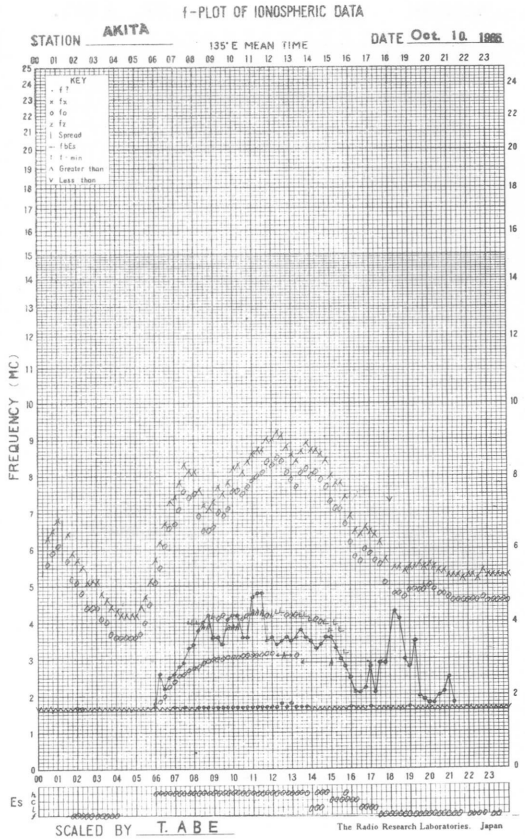
SCALED BY M. Kawamoto
The Radio Research Laboratories. Japan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DATE Oct. 10. 1965
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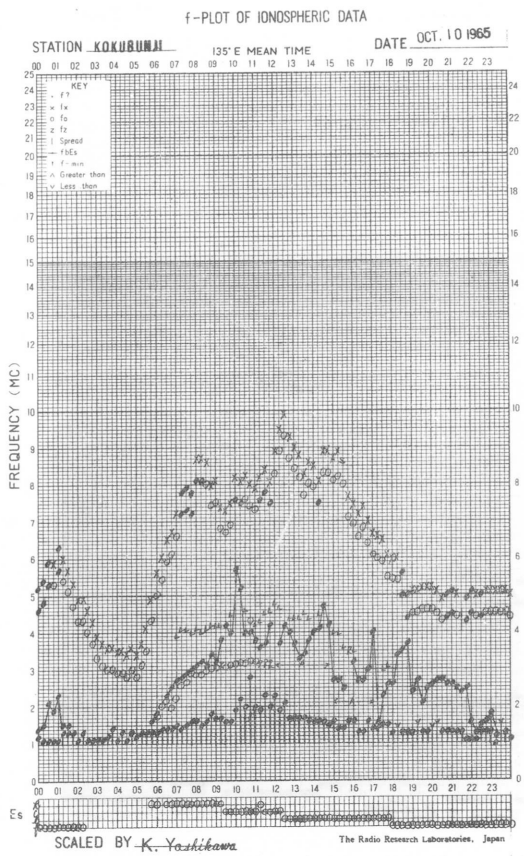
SCALED BY T. ABE
The Radio Research Laboratories. Japan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DATE OCT. 10 1965
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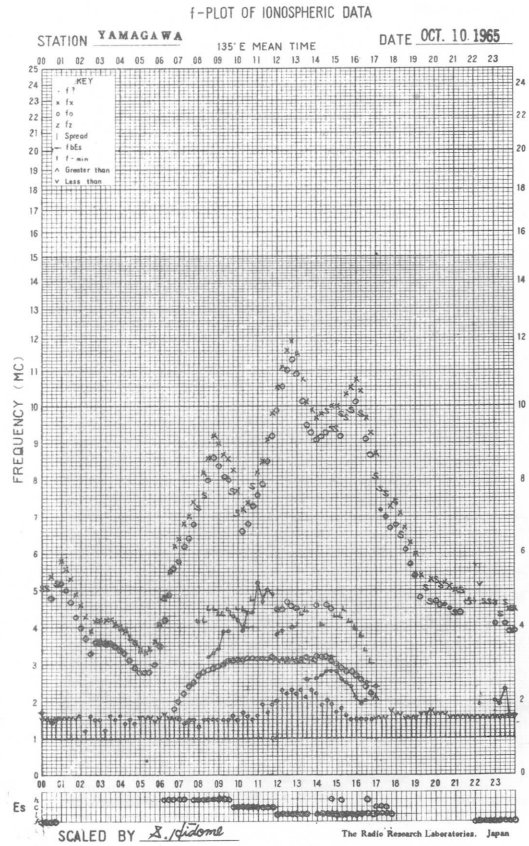
The Radio Research Laboratories. Japan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135°E MEAN TIME
DATE OCT. 10.1965
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FREQUENCY (MC)
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SCALED BY S. Ichidome
The Radio Research Laboratories. Japan

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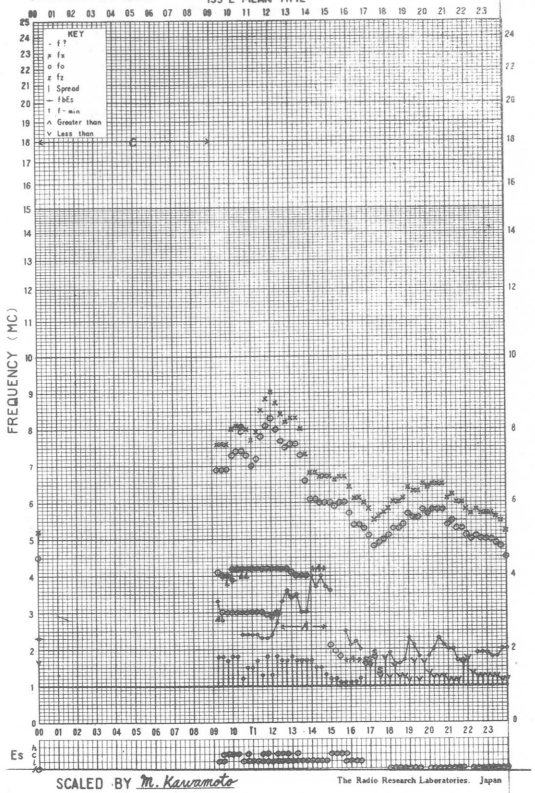
STATION WAKKANAI 135° E MEAN TIME DATE OCT. 11.1965



SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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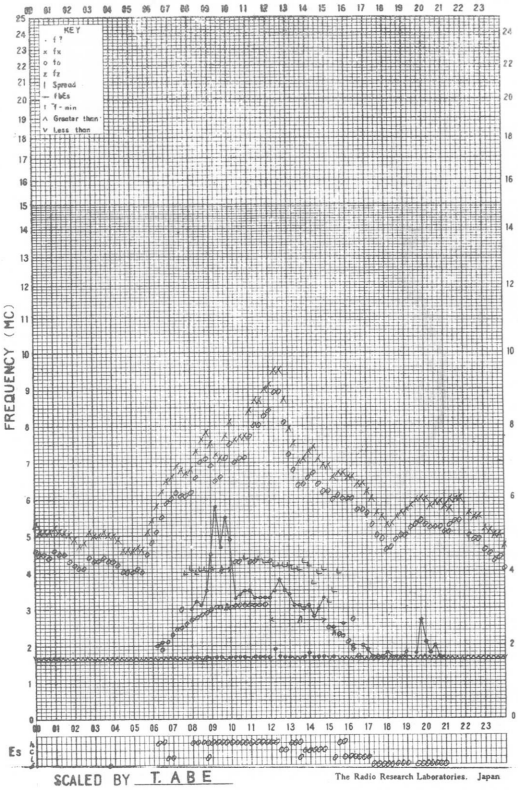

SCALED BY T. A B E The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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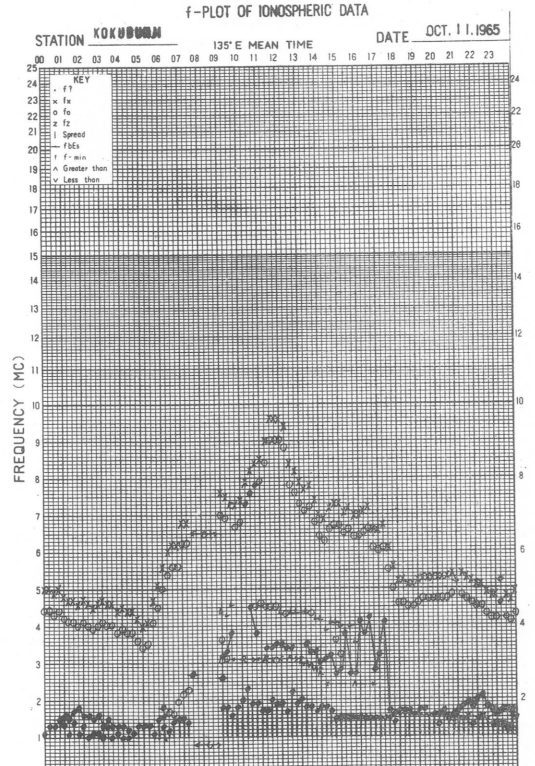

SCALED BY K. Yoshikawa The Radio Research Laboratories. Japan

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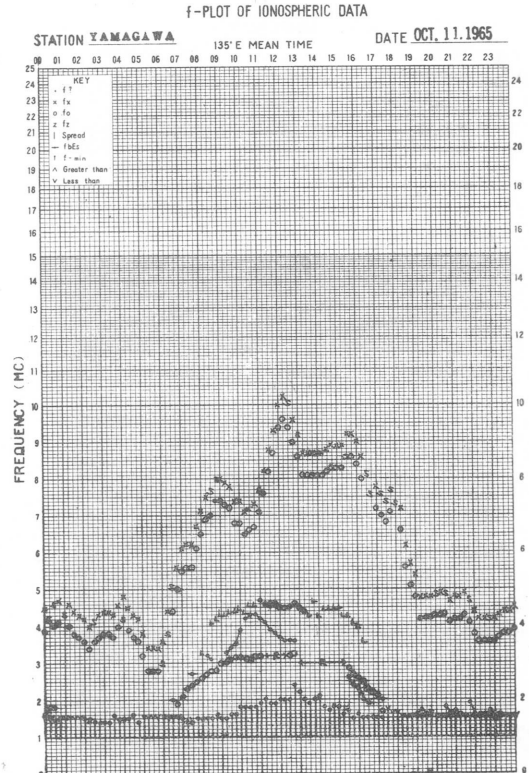

SCALED BY S. Kitami The Radio Research Laboratories. Japan

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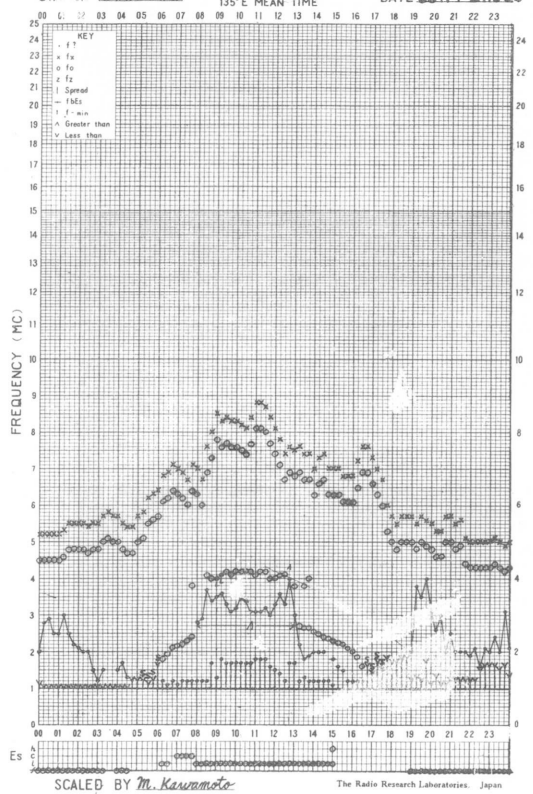

SCALED BY M. Kawamoto The Radio Research Laboratories, Japan

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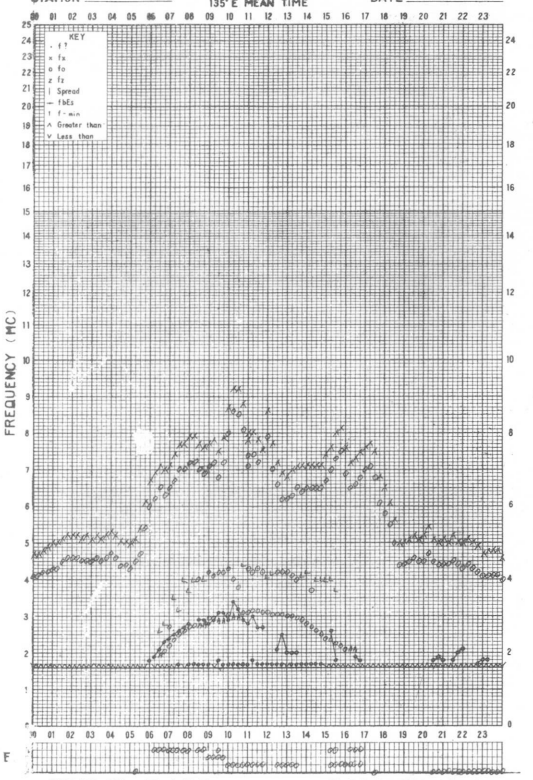

SCALED BY T. ABE The Radio Research Laboratories, Japan

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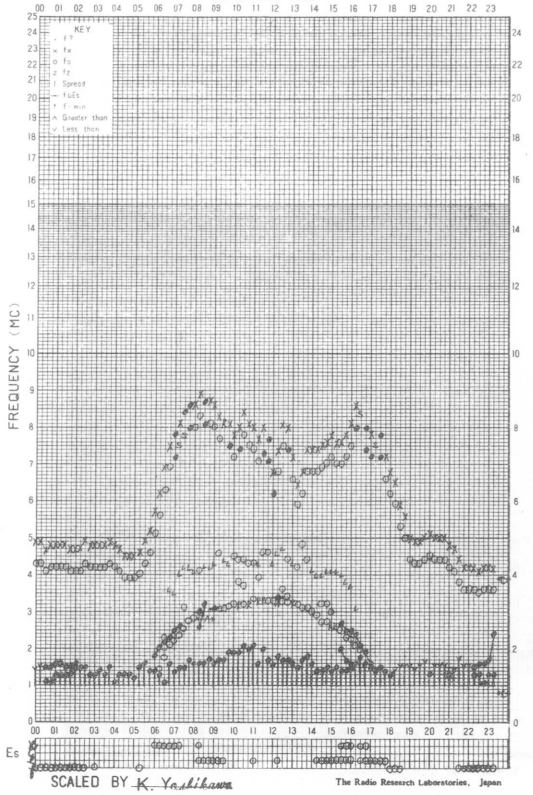

SCALED BY K. Yoshikawa The Radio Research Laboratories, Japan

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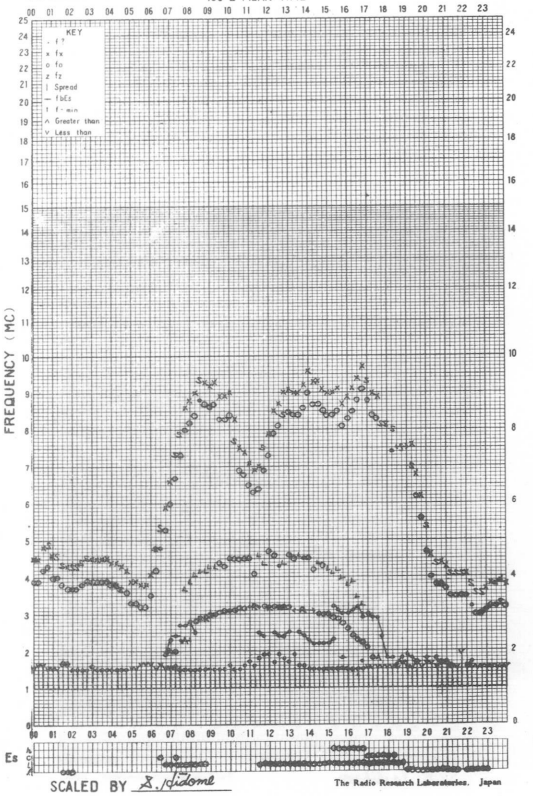

SCALED BY S. Kidome The Radio Research Laboratories, Japan

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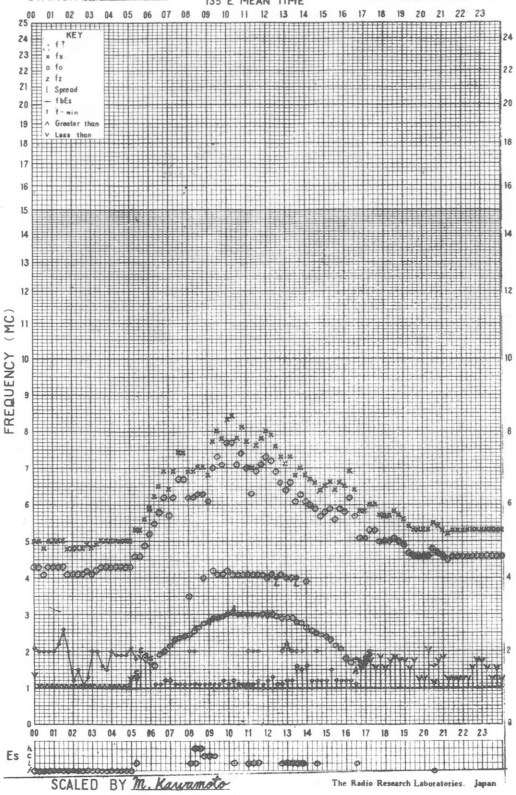

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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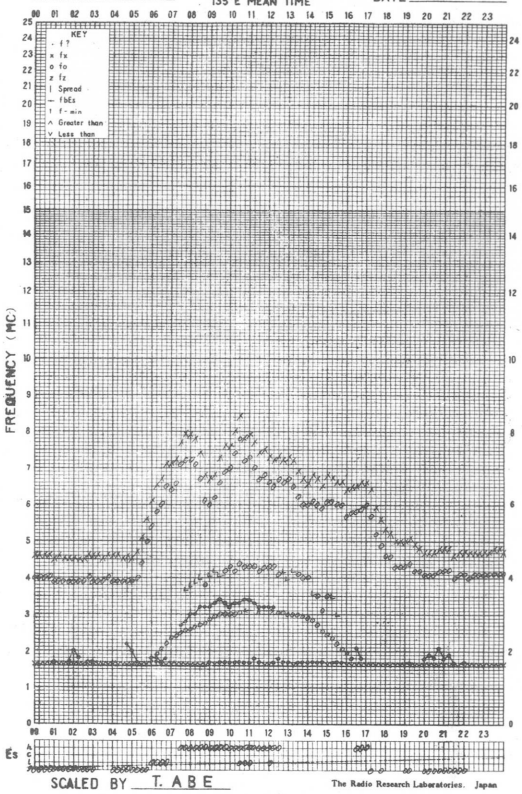

SCALED BY T. ABE The Radio Research Laboratories. Japan

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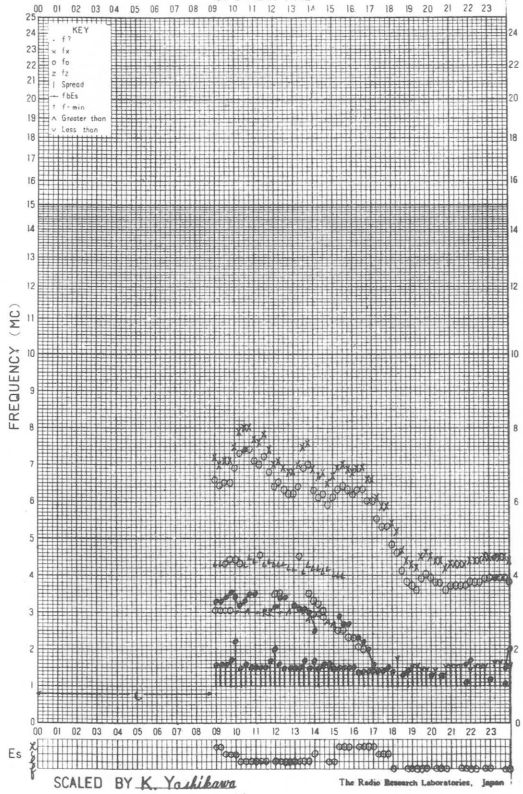

SCALED BY K. Yoshikawa The Radio Research Laboratories, Japan

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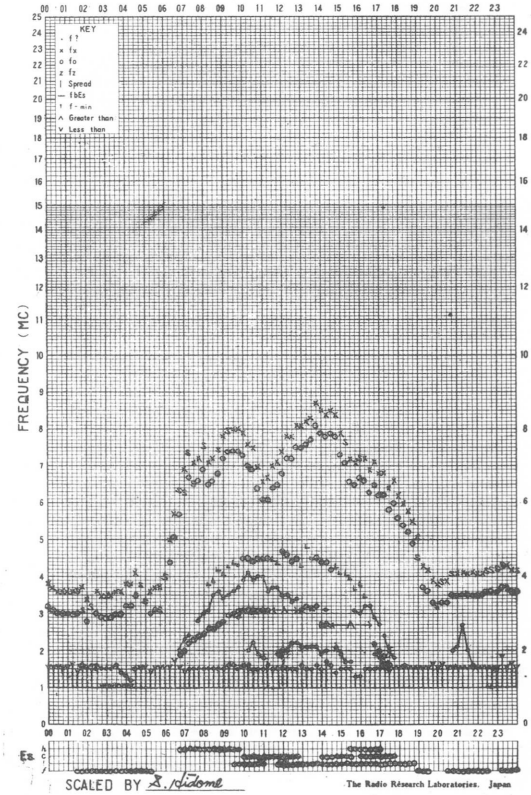

SCALED BY S. Fidome The Radio Research Laboratories. Japan

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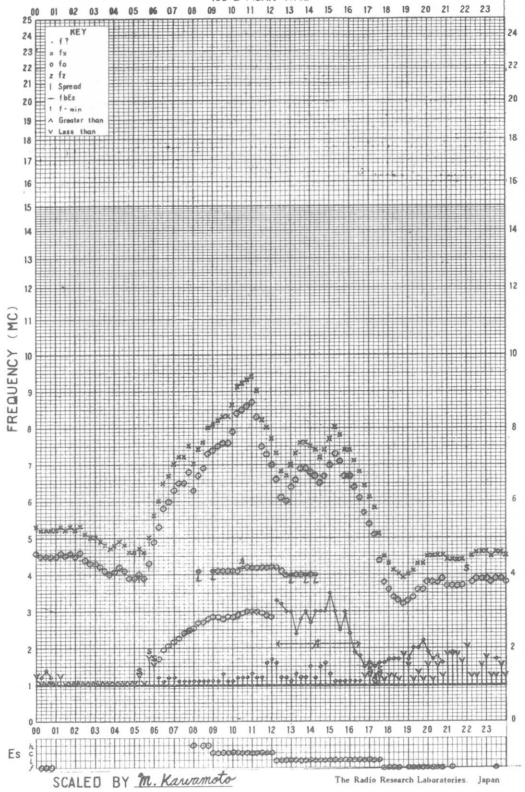

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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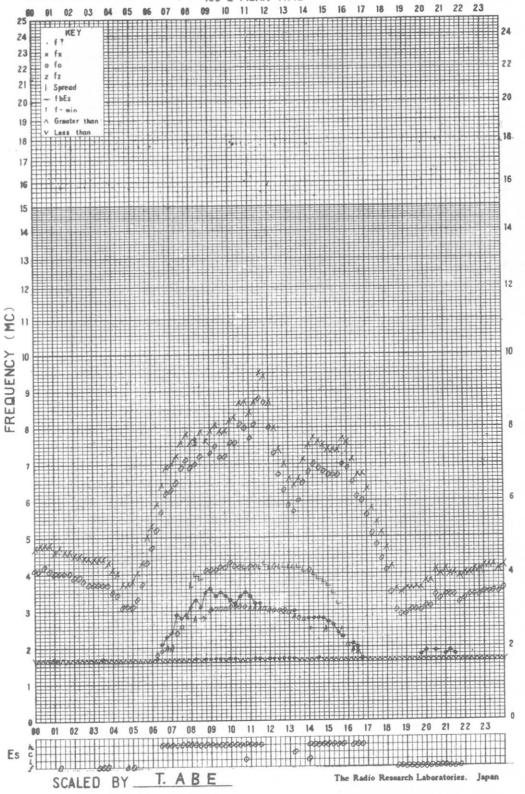

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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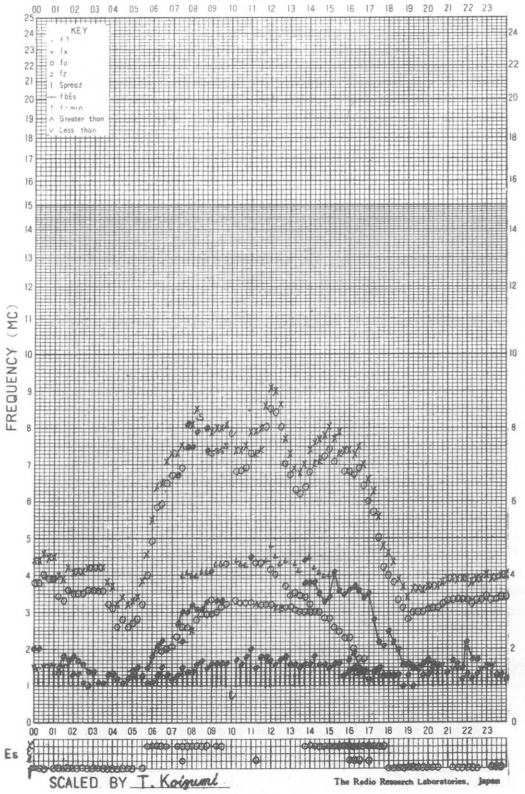

SCALED BY T. Koizumi

The Radio Research Laboratories. Japan

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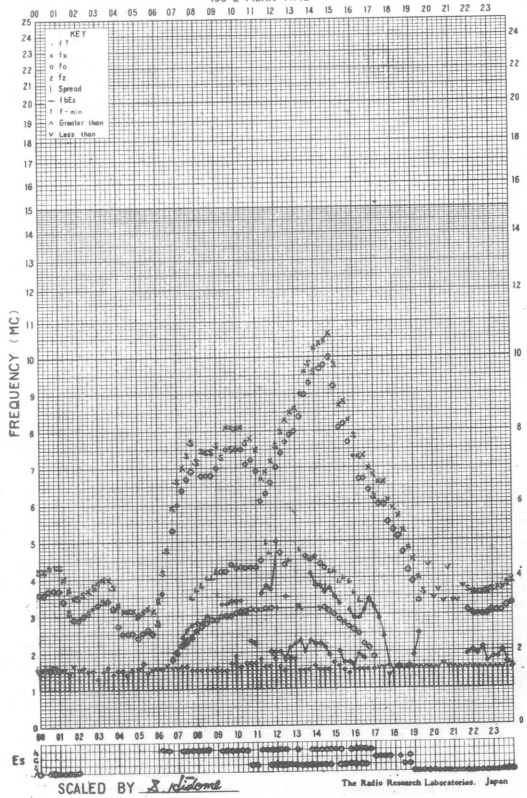

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The Radio Research Laboratories. Japan

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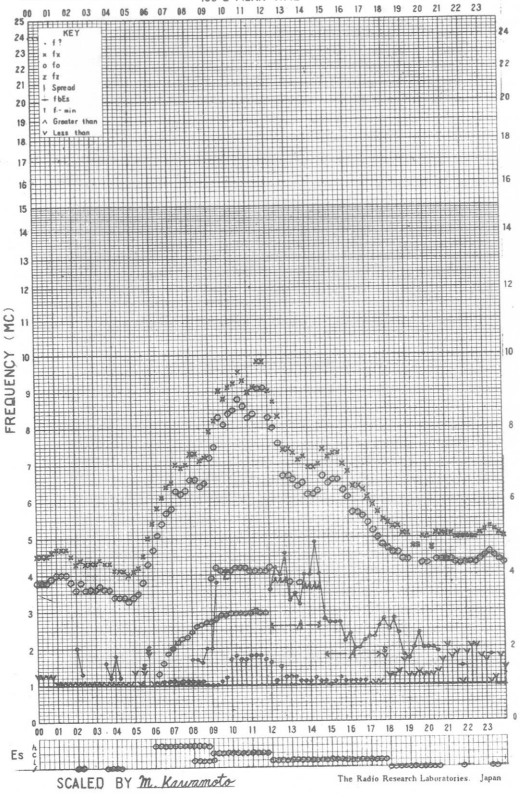

SCALED BY M. Kawamoto

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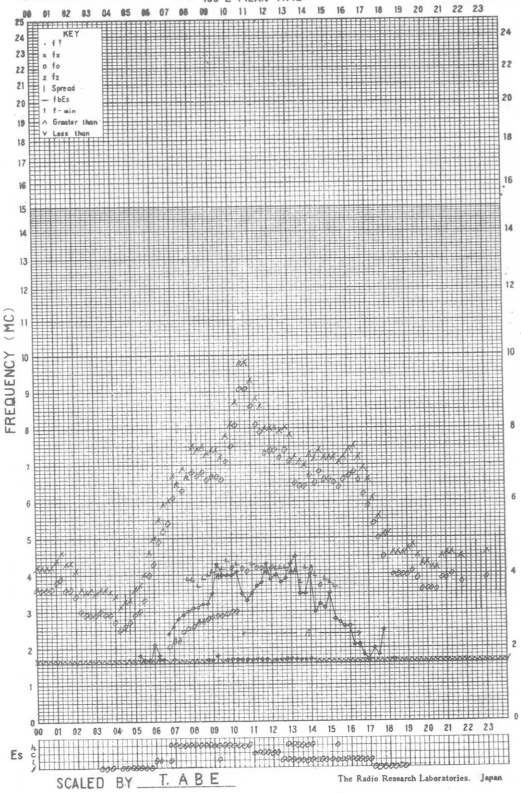

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The Radio Research Laboratories. Japan

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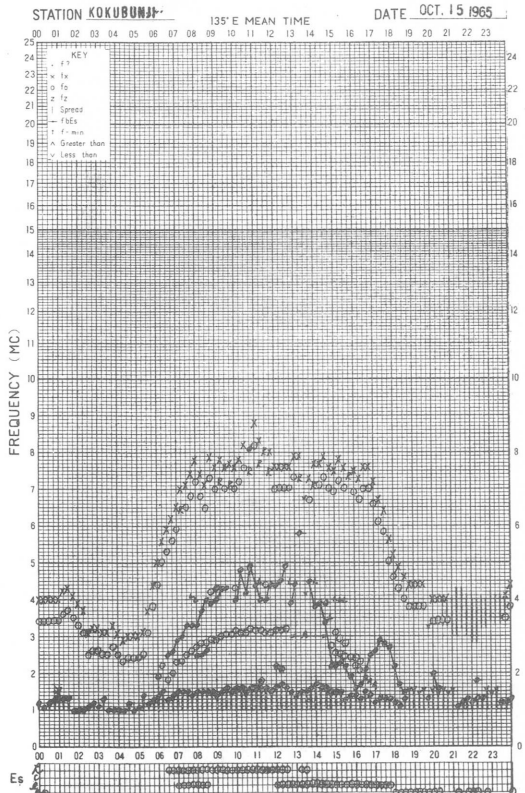

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The Radio Research Laboratories. Japan

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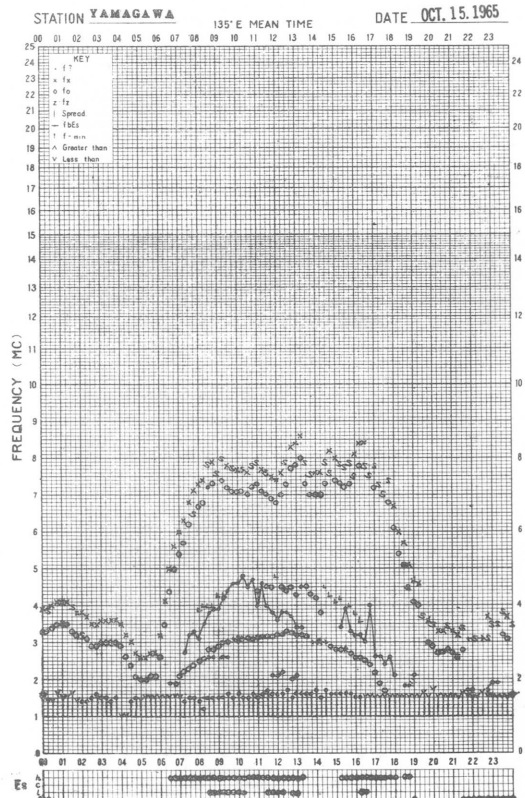

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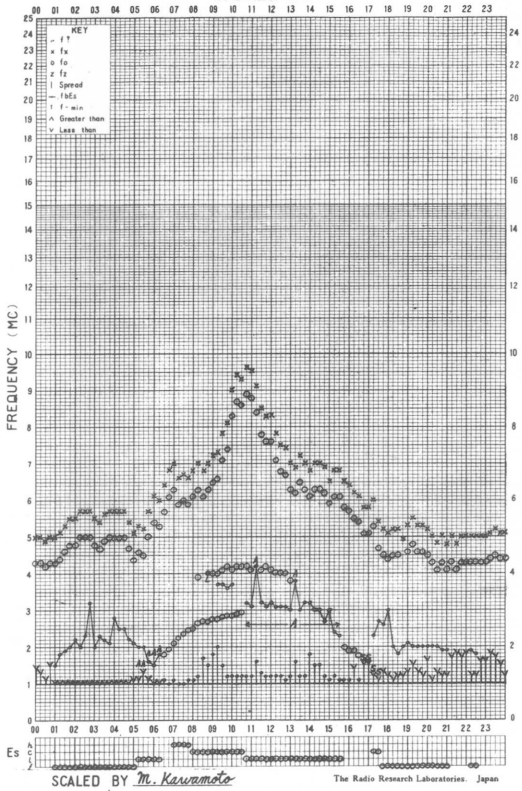

SCALED BY M. Kawamoto

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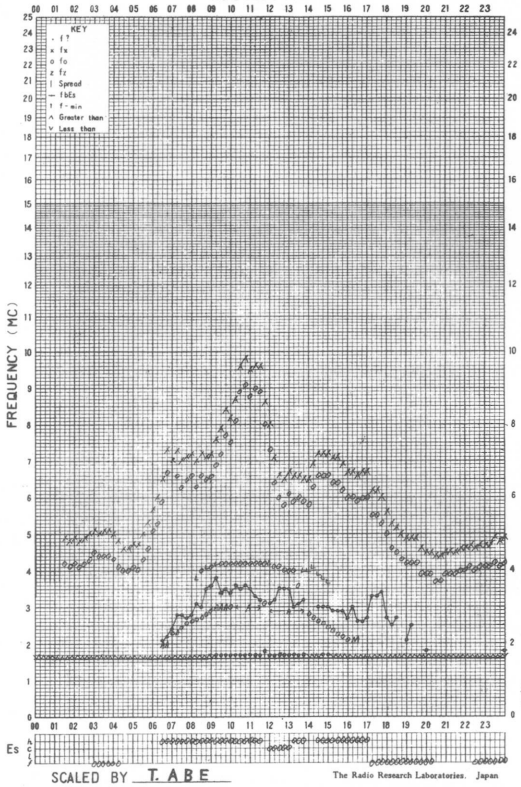

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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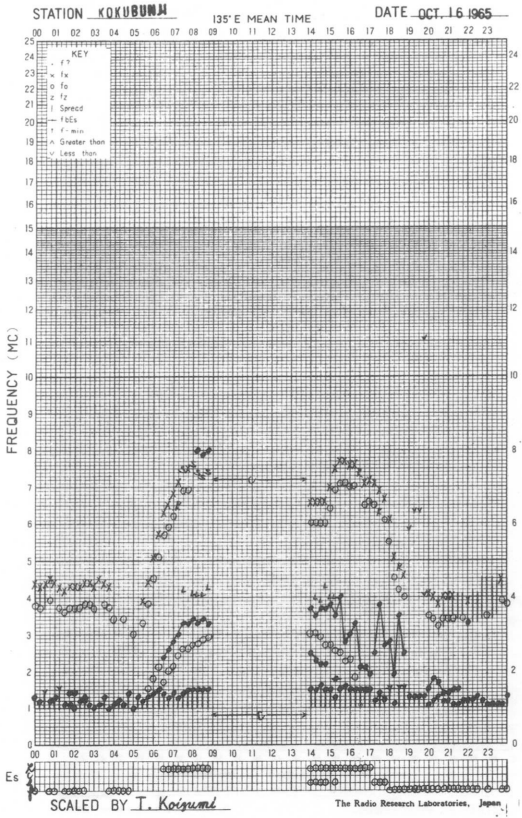

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The Radio Research Laboratories. Japan

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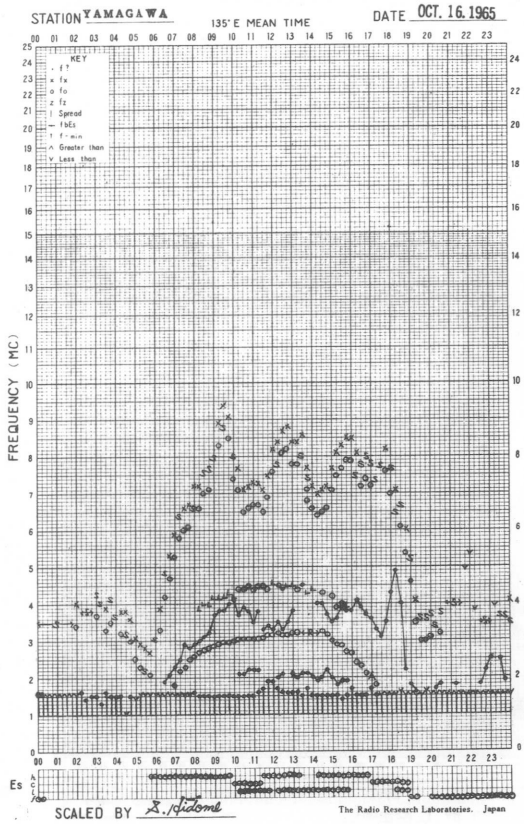

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The Radio Research Laboratories. Japan

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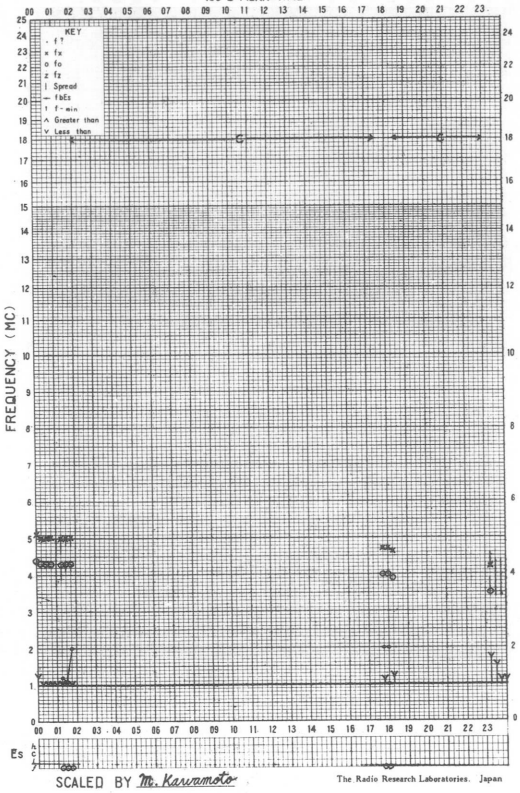

SCALED BY M. Kawamoto

The Radio Research Laboratories, Japan

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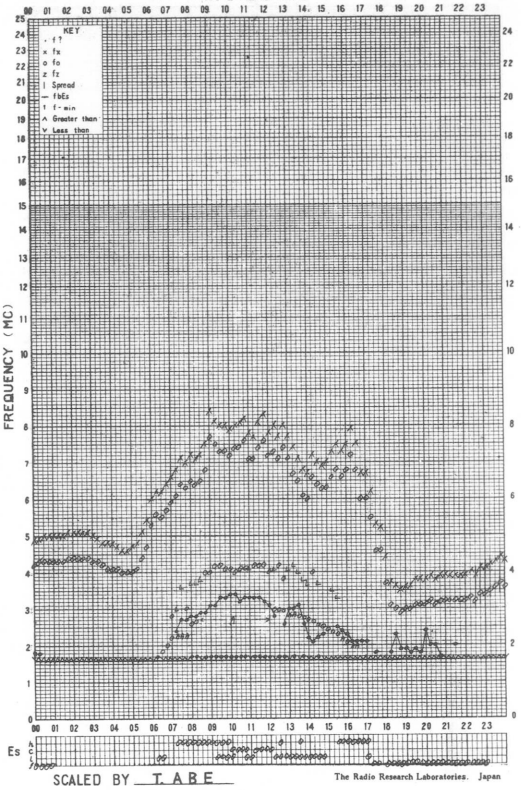

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The Radio Research Laboratories, Japan

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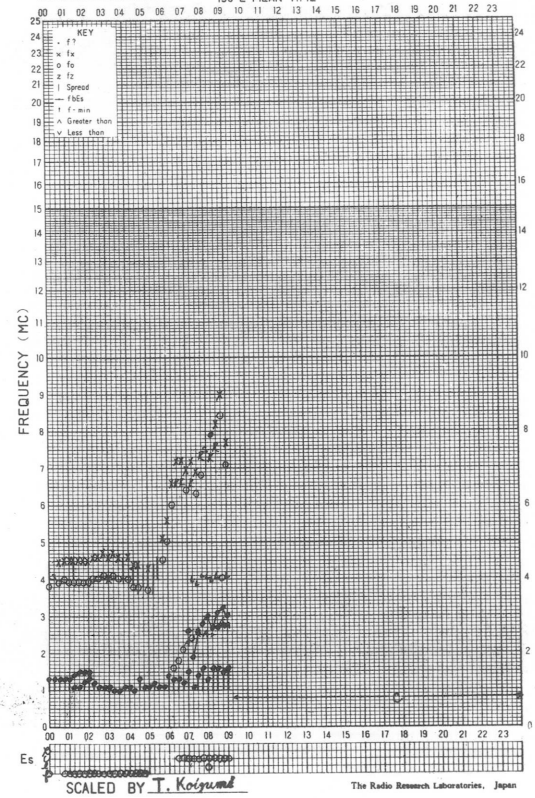

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The Radio Research Laboratories, Japan

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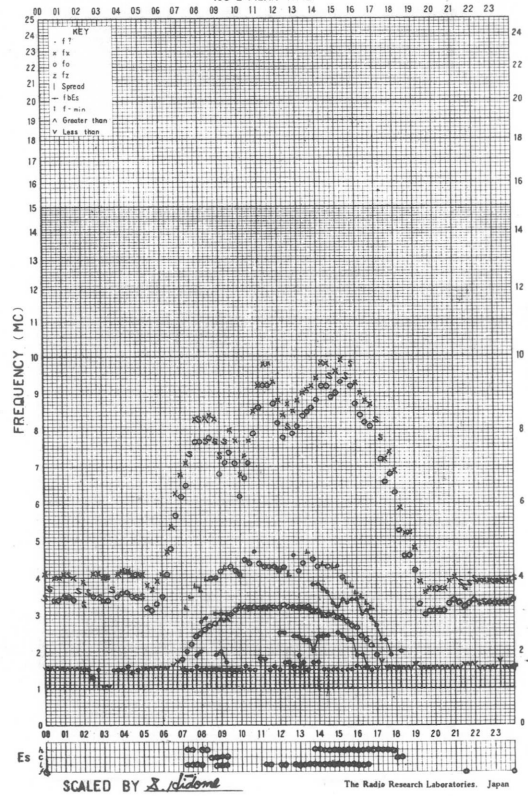

SCALED BY S. Sidomi

The Radio Research Laboratories, Japan

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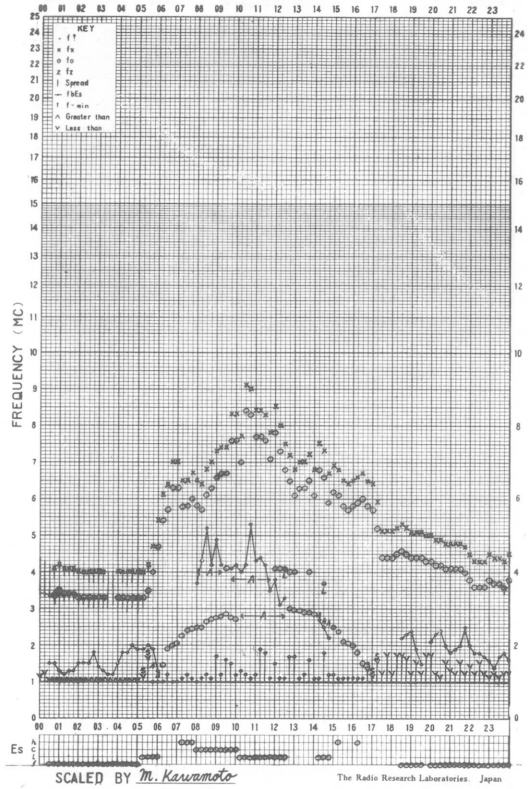

SCALED BY M. Kawamoto The Radio Research Laboratories, Japan

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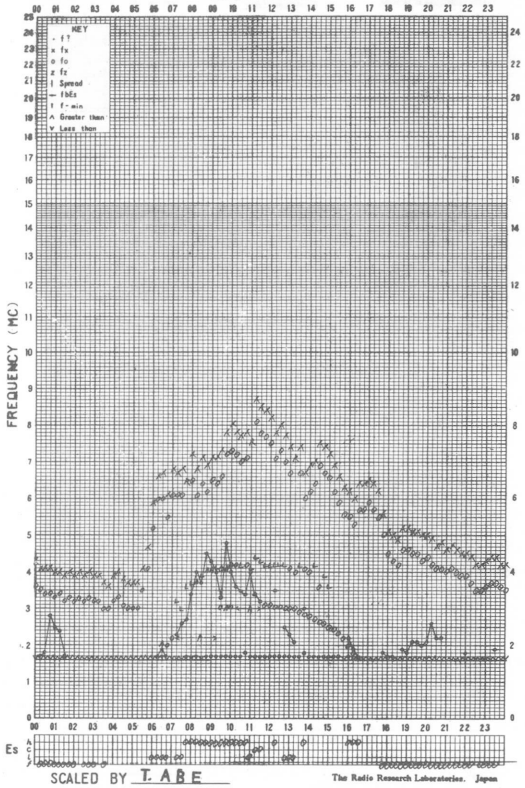

SCALED BY T. ABE The Radio Research Laboratories, Japan

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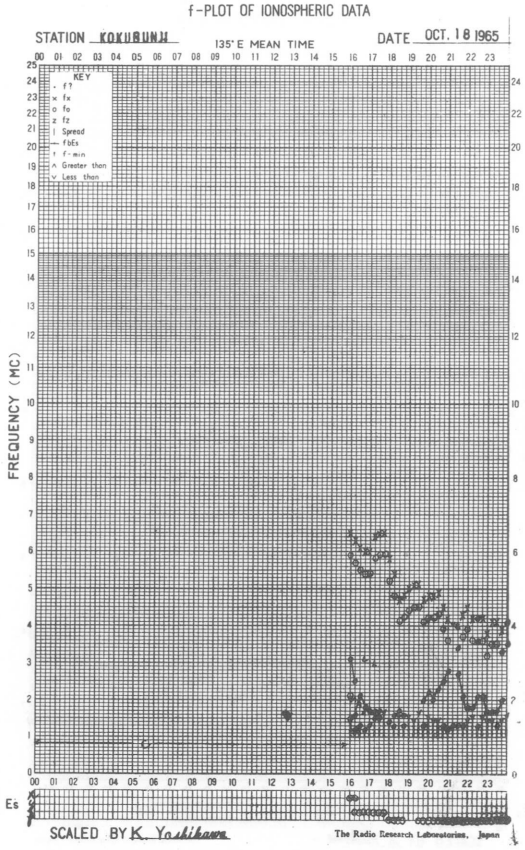

SCALED BY K. Yoshikawa The Radio Research Laboratories, Japan

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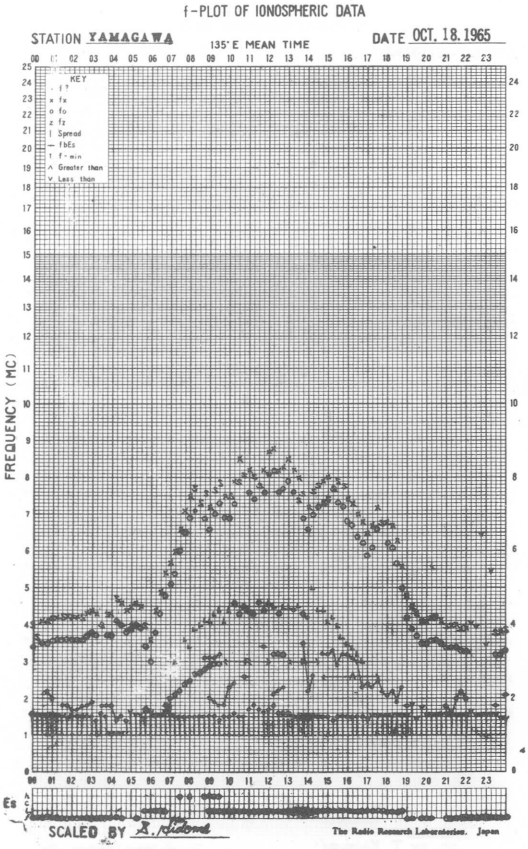

SCALED BY R. Nishimi The Radio Research Laboratories, Japan

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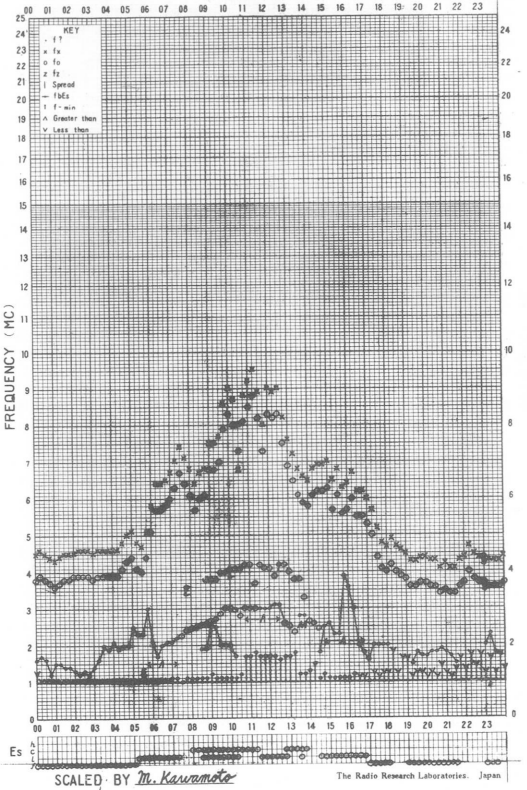

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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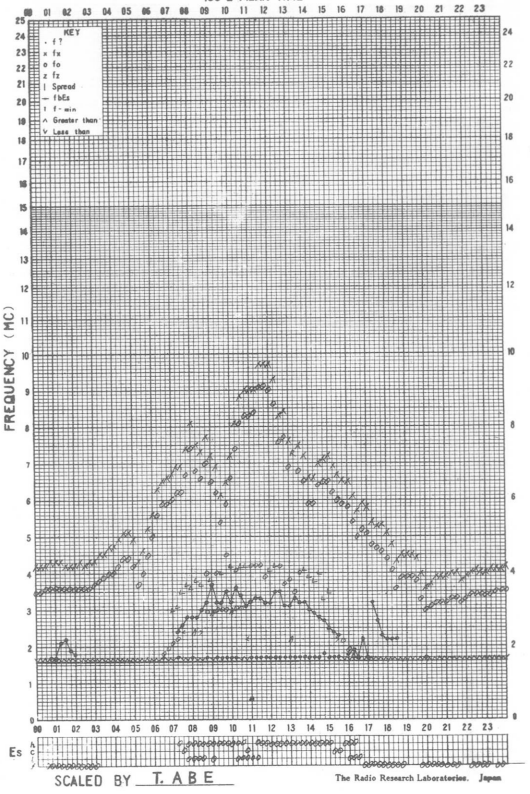

SCALED BY T. ABE The Radio Research Laboratories. Japan

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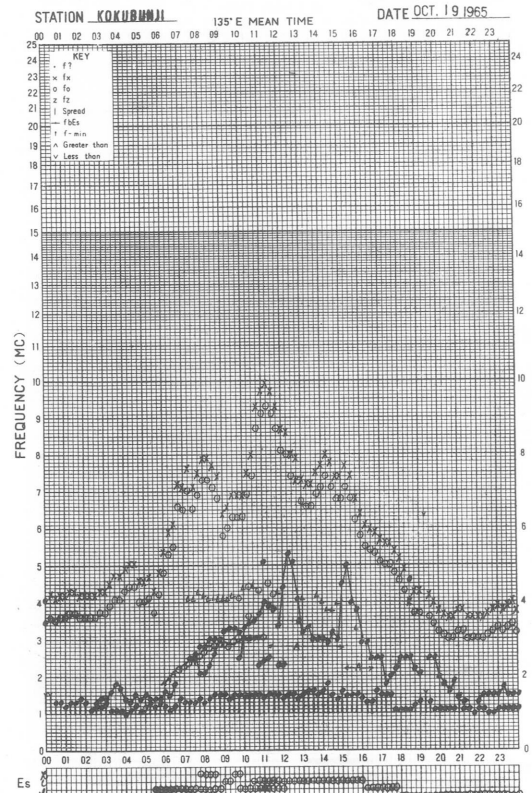

SCALED BY T. Kobyama The Radio Research Laboratories, Japan

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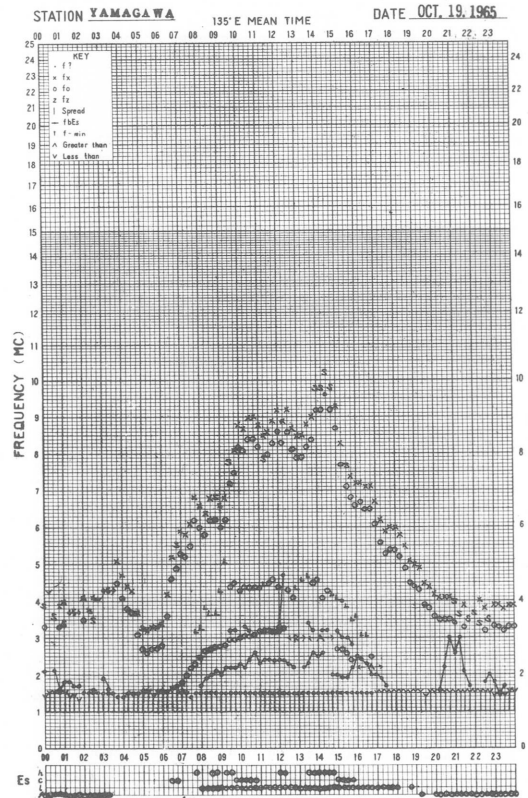

SCALED BY S. Shiono The Radio Research Laboratories. Japan

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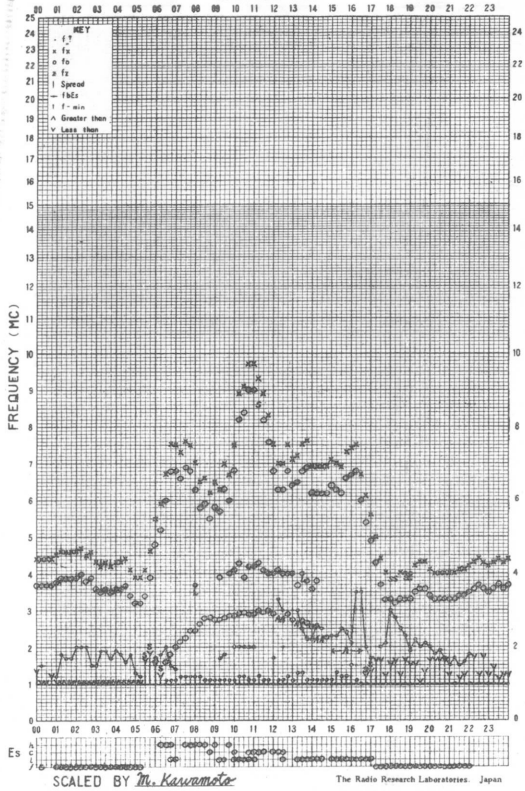

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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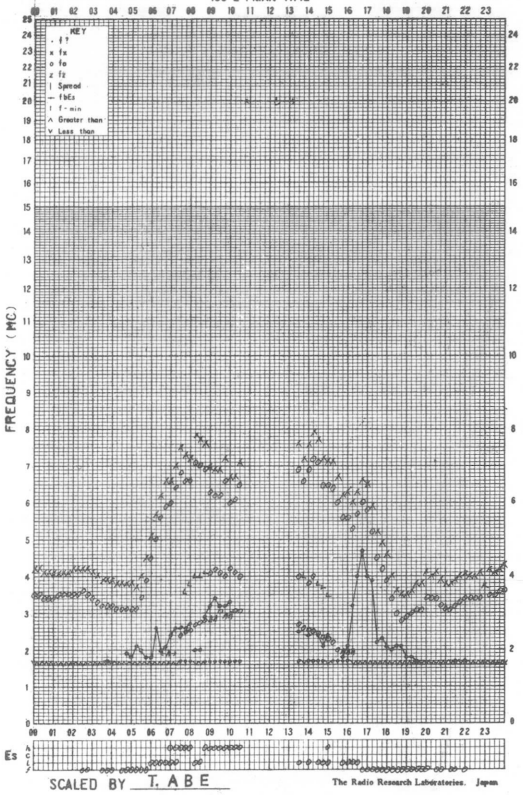

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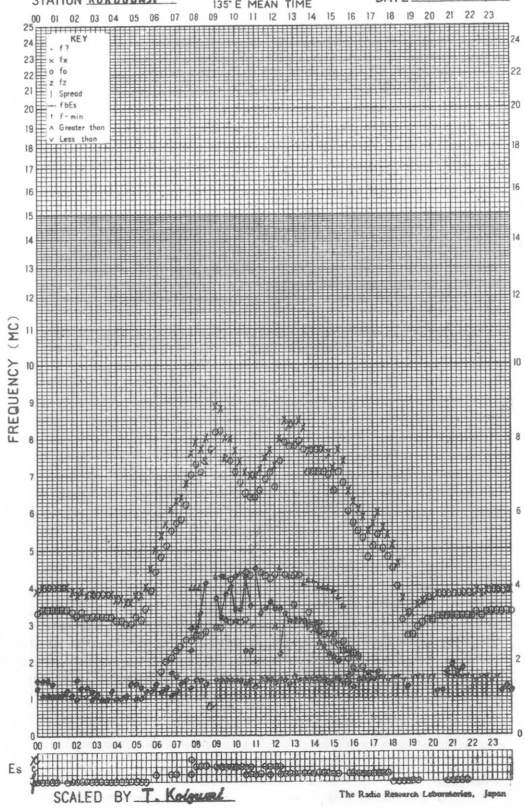
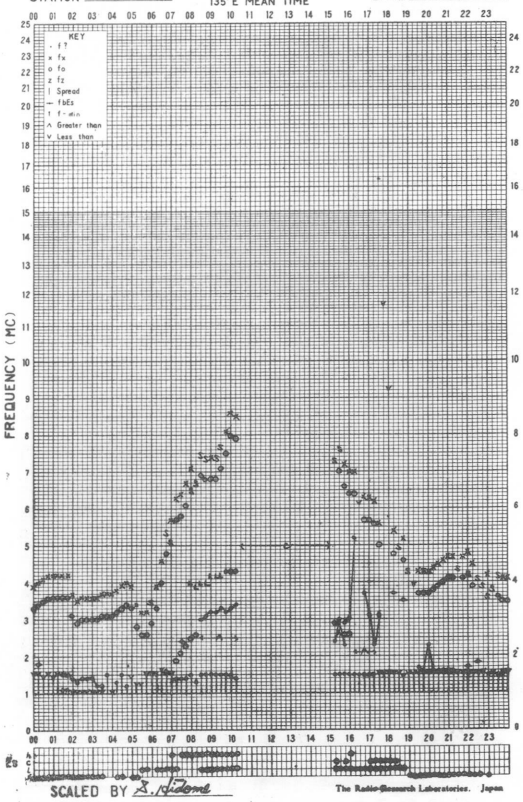


SCALED BY T. Kobayashi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE OCT. 20. 1965



SCALED BY S. Midorikawa The Radio Research Laboratories. Japan

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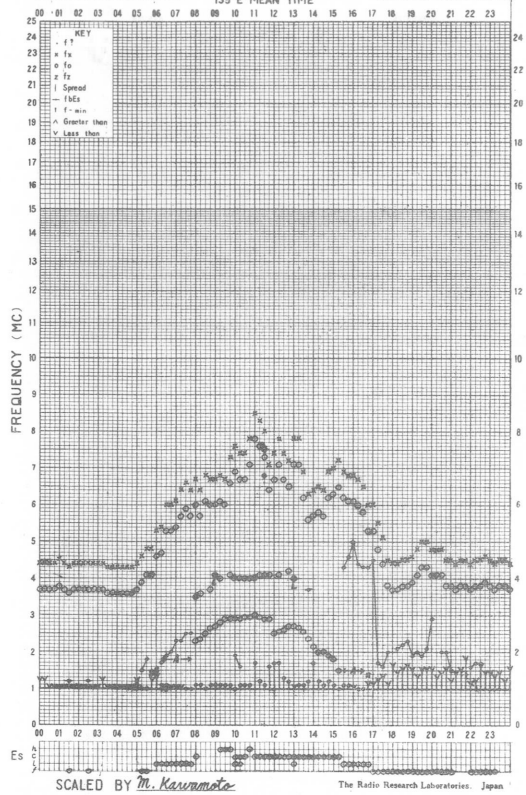

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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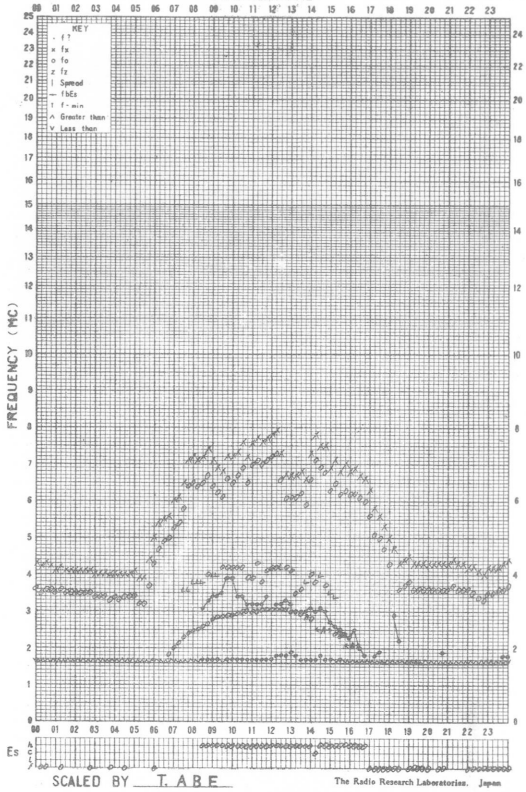

SCALED BY T. ABE The Radio Research Laboratories. Japan

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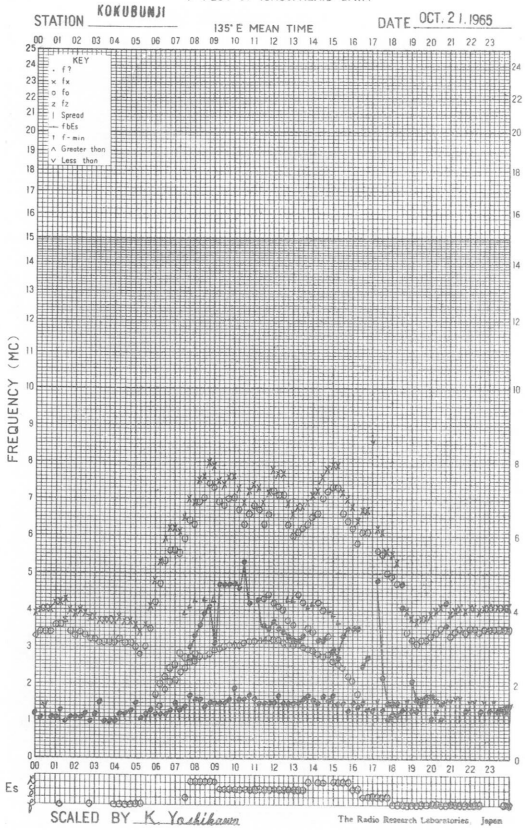

SCALED BY K. Yoshikawa The Radio Research Laboratories. Japan

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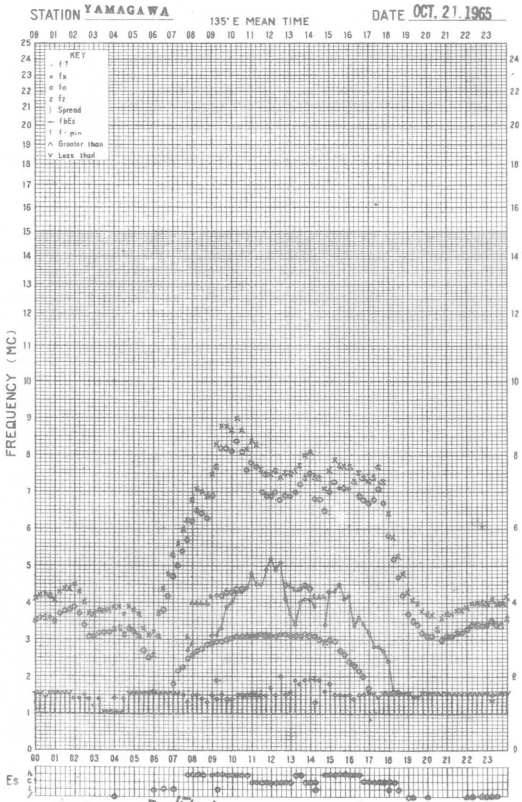

SCALED BY S. Midorikawa The Radio Research Laboratories. Japan

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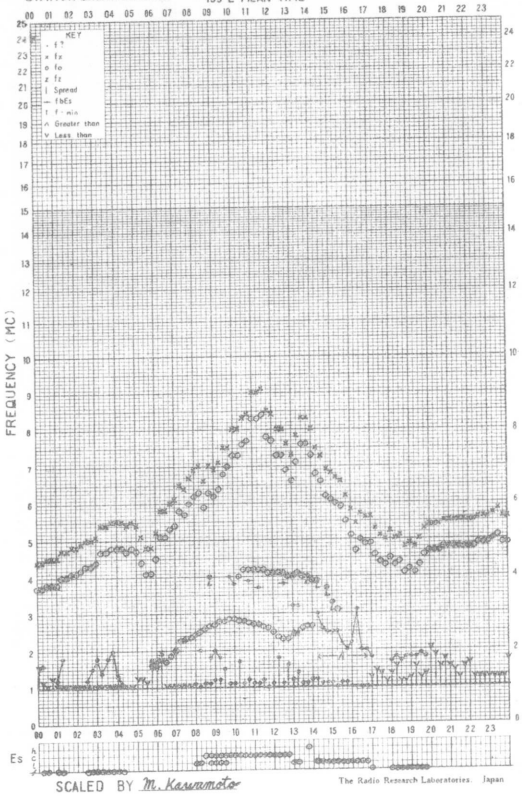

SCALED BY M. Kasumoto

The Radio Research Laboratories. Japan

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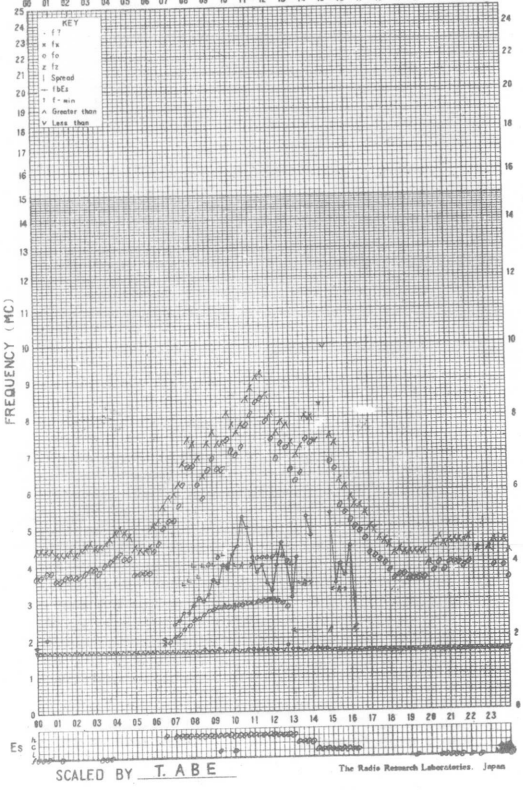

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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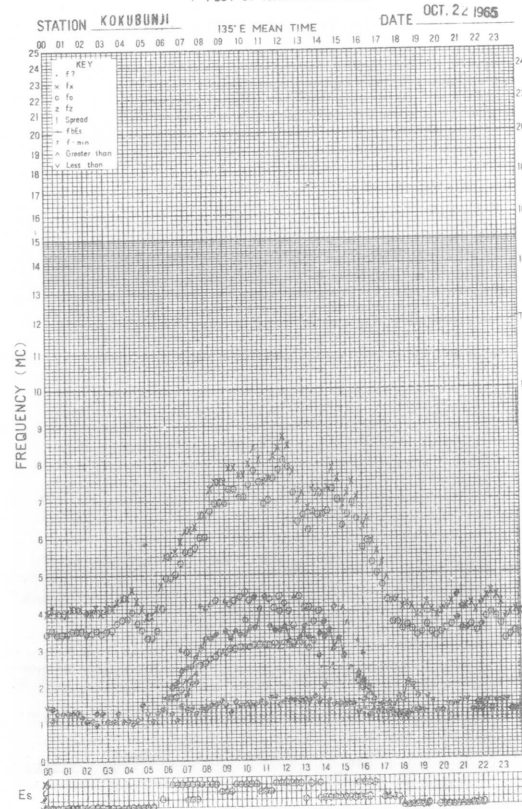

SCALED BY ~~K. Yoshikawa~~

The Radio Research Laboratories. Japan

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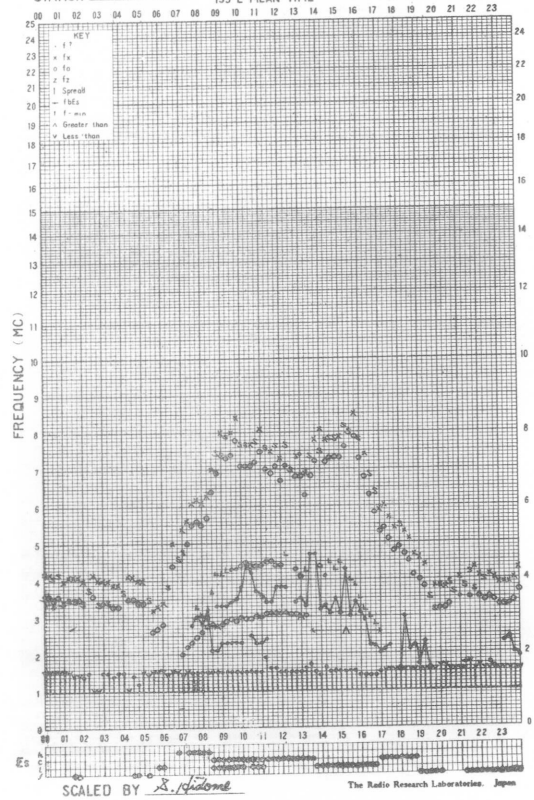

SCALED BY S. Sidomi

The Radio Research Laboratories. Japan

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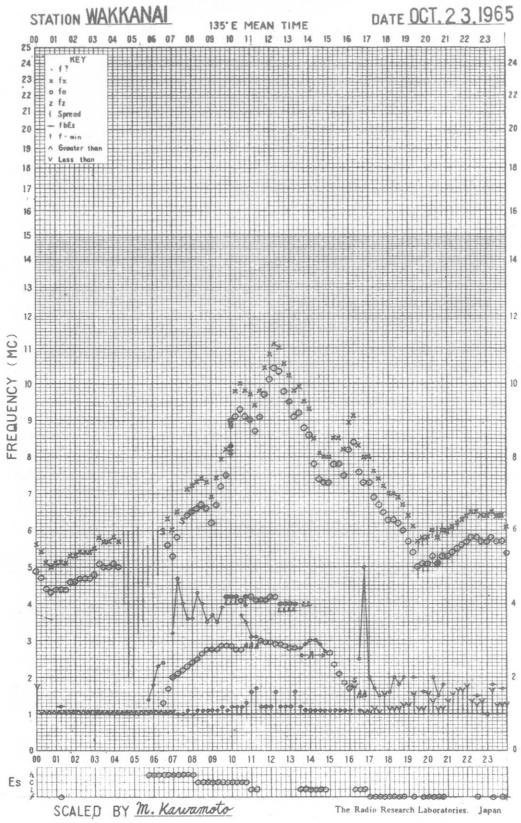

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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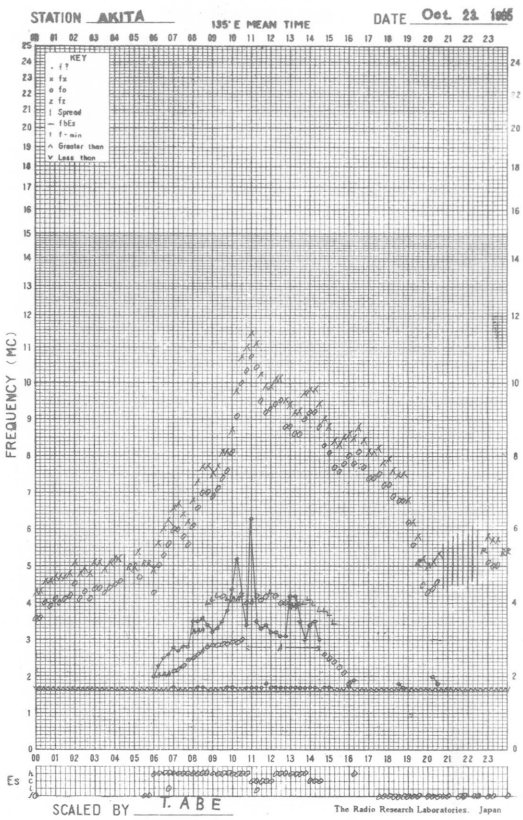

SCALED BY I. ABE The Radio Research Laboratories. Japan

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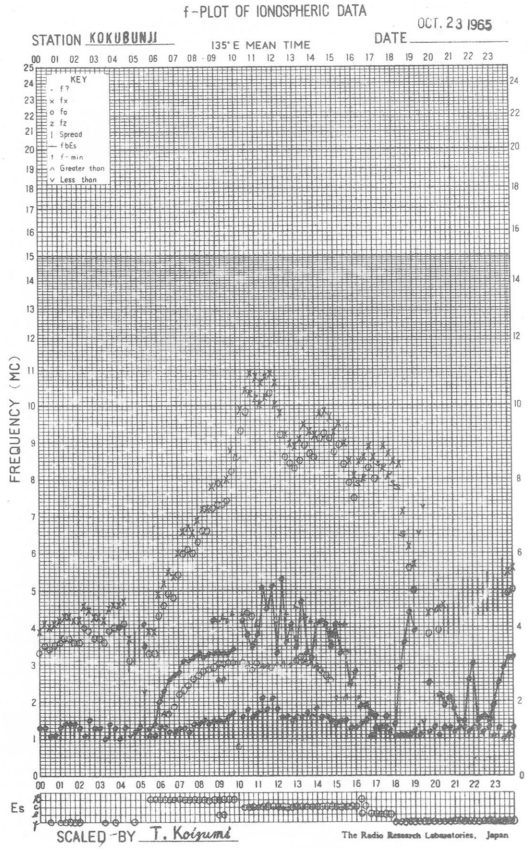

SCALED BY T. Koizumi The Radio Research Laboratories, Japan

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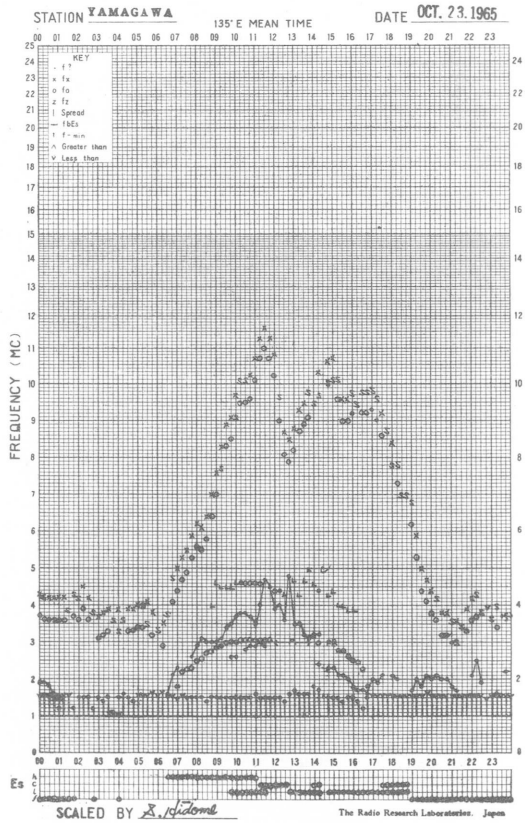

SCALED BY A. Ichiome The Radio Research Laboratories. Japan

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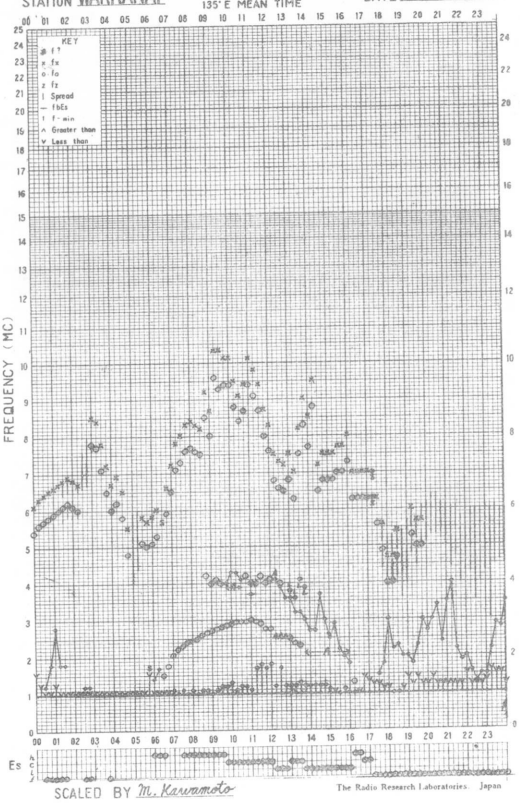

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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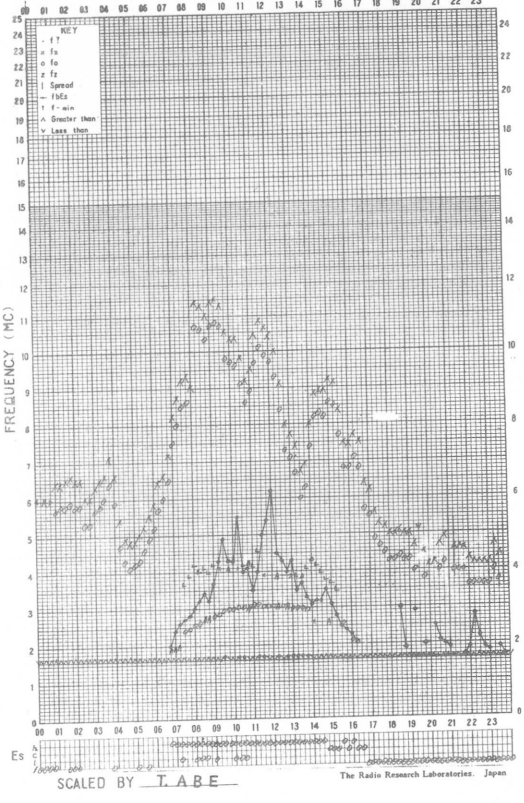

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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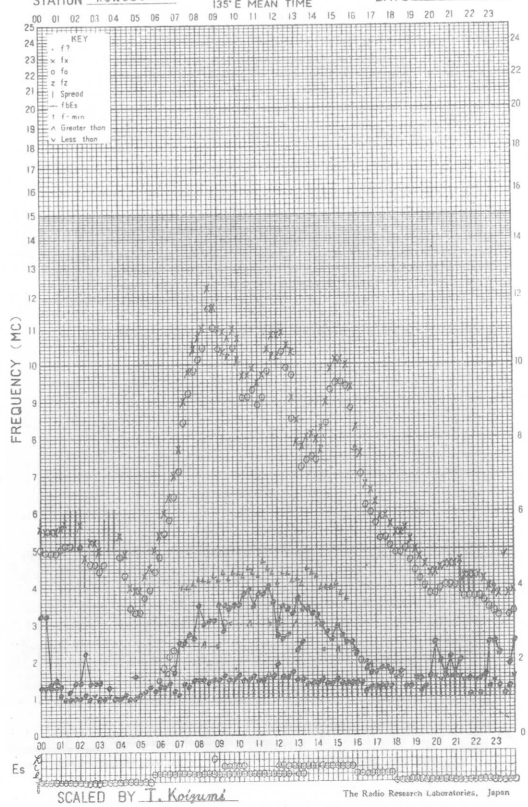

SCALED BY T. Koizumi

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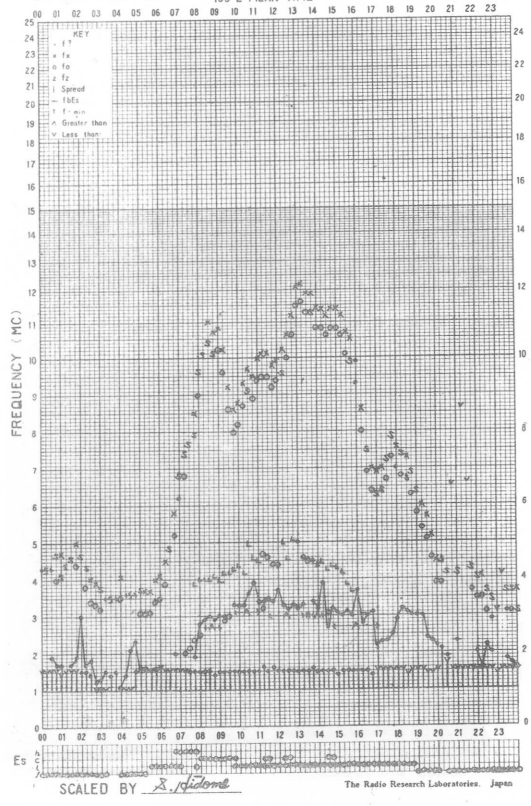

SCALED BY S. Sidomi

The Radio Research Laboratories. Japan

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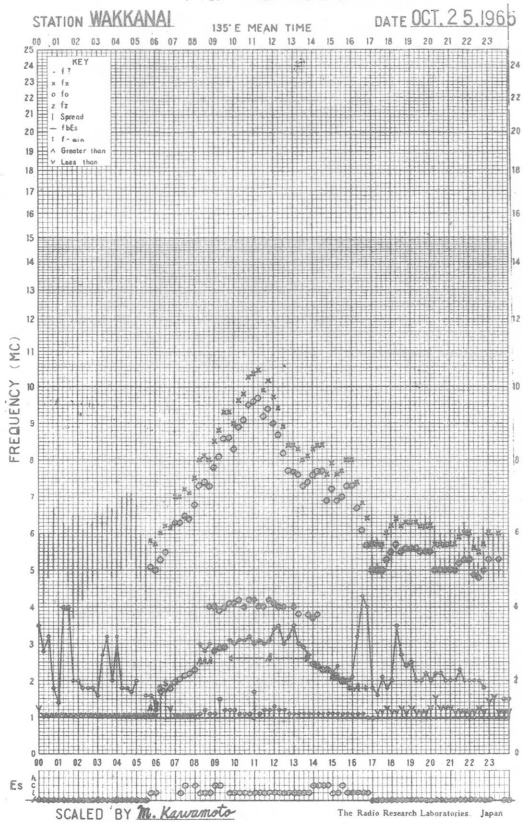

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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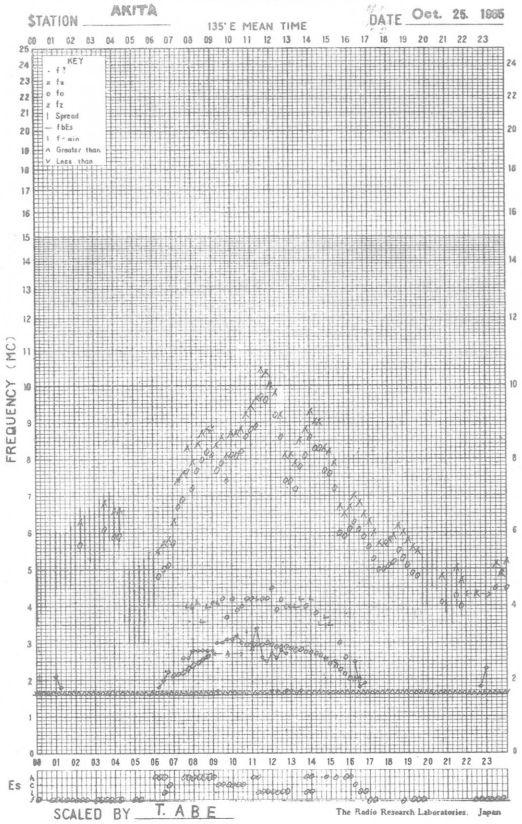

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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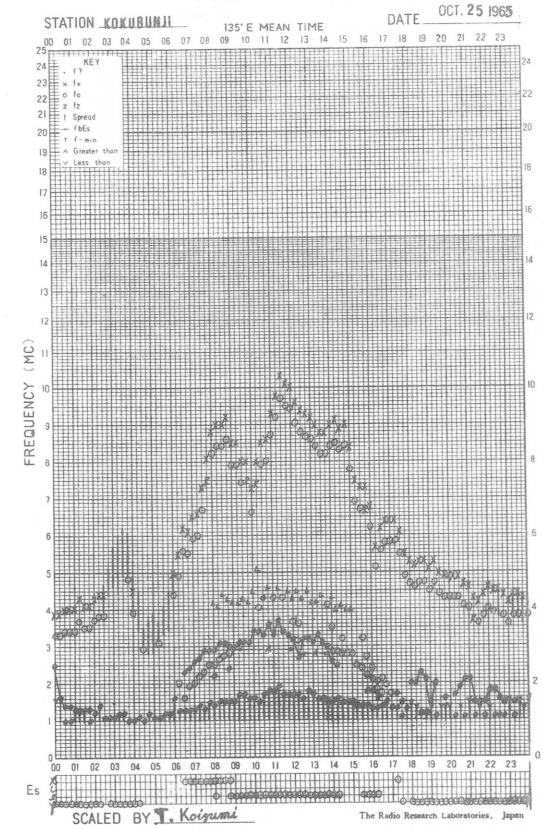

SCALED BY T. Koizumi

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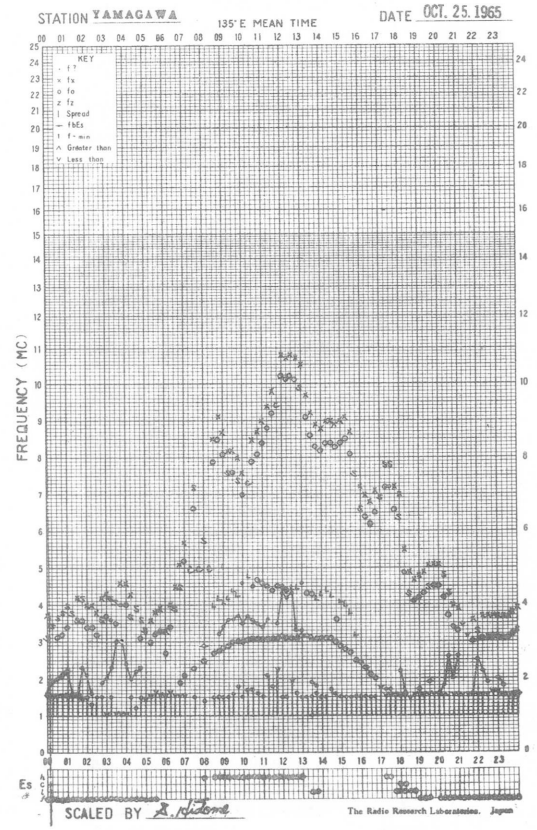

SCALED BY A. Ishidome

The Radio Research Laboratories. Japan

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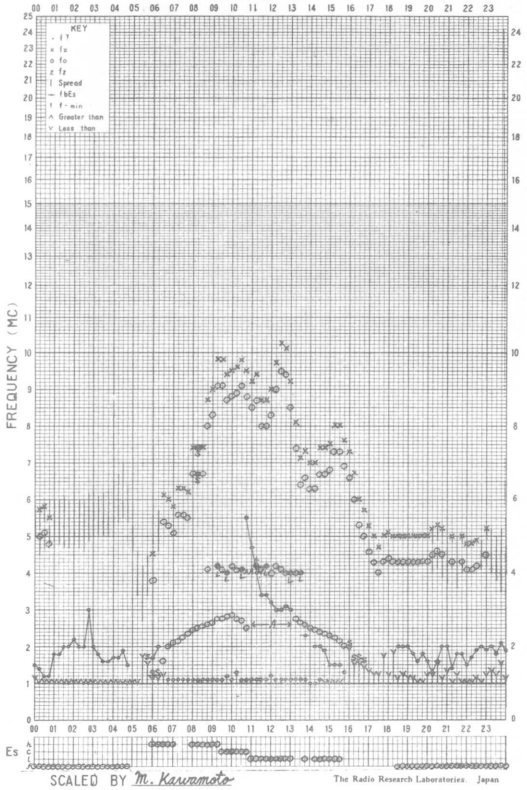

SCALED BY M. Kawamoto The Radio Research Laboratories, Japan

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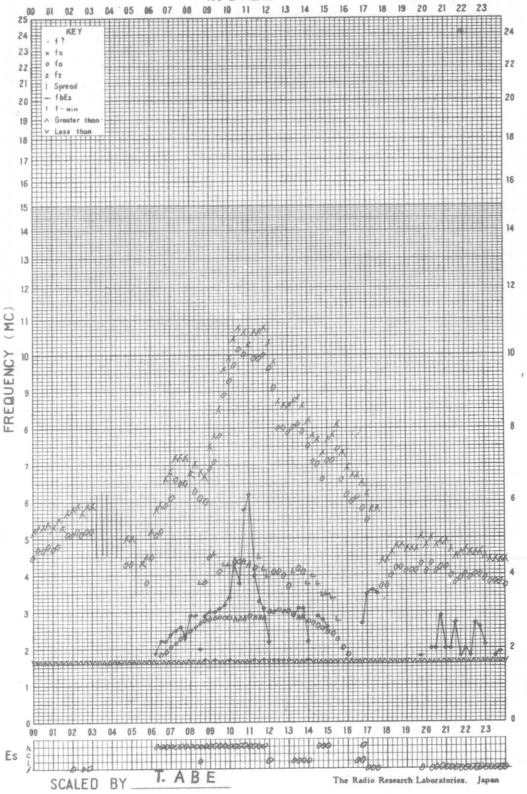

SCALED BY T. ABE The Radio Research Laboratories, Japan

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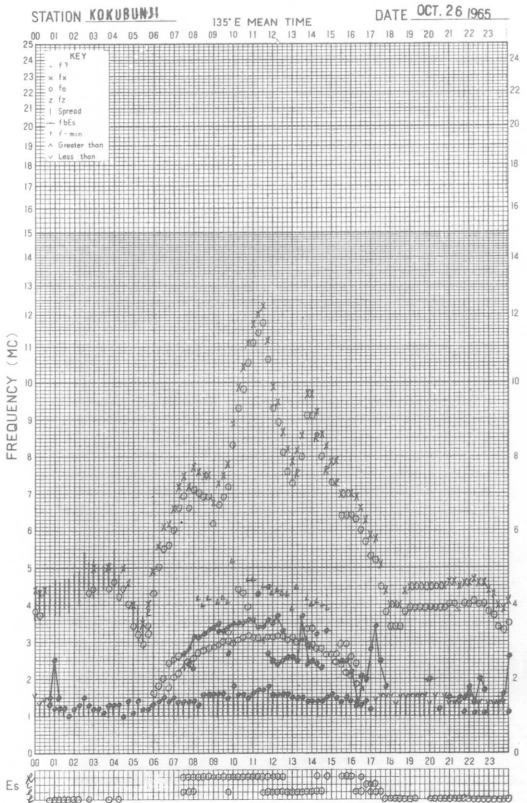

SCALED BY T. Koizumi The Radio Research Laboratories, Japan

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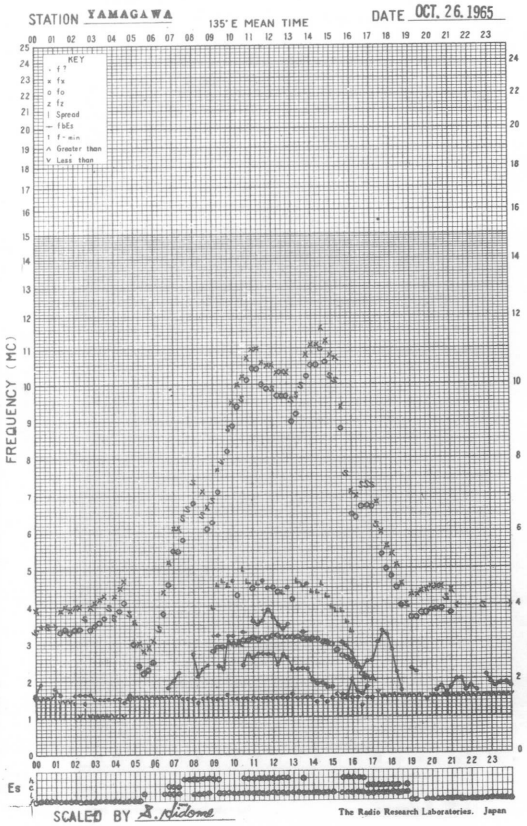

SCALED BY S. Kidome The Radio Research Laboratories, Japan

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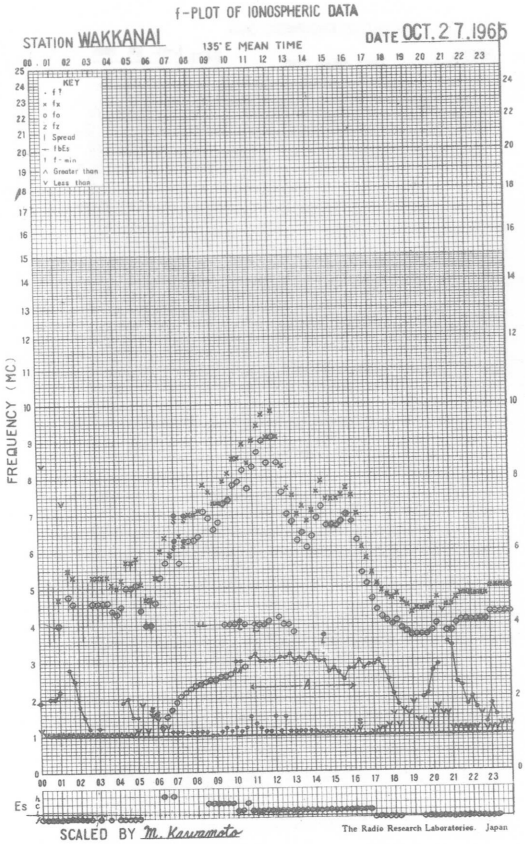

SCALED BY M. Kasumoto

The Radio Research Laboratories. Japan

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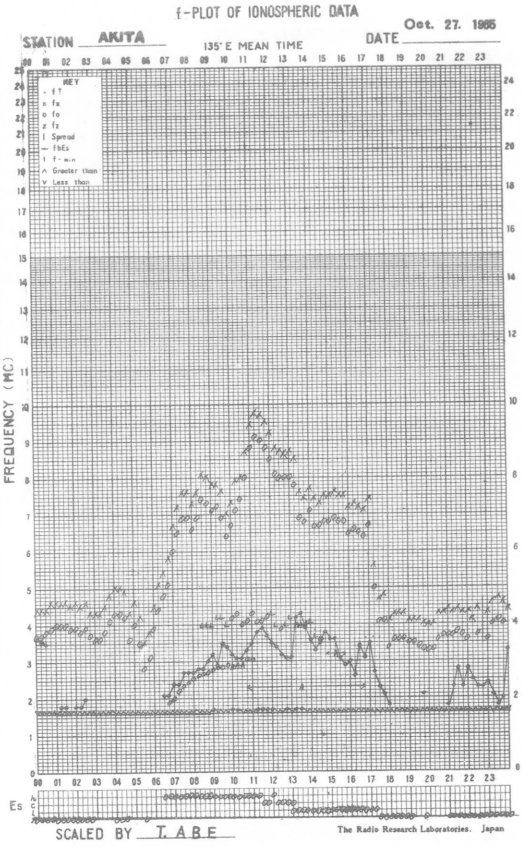

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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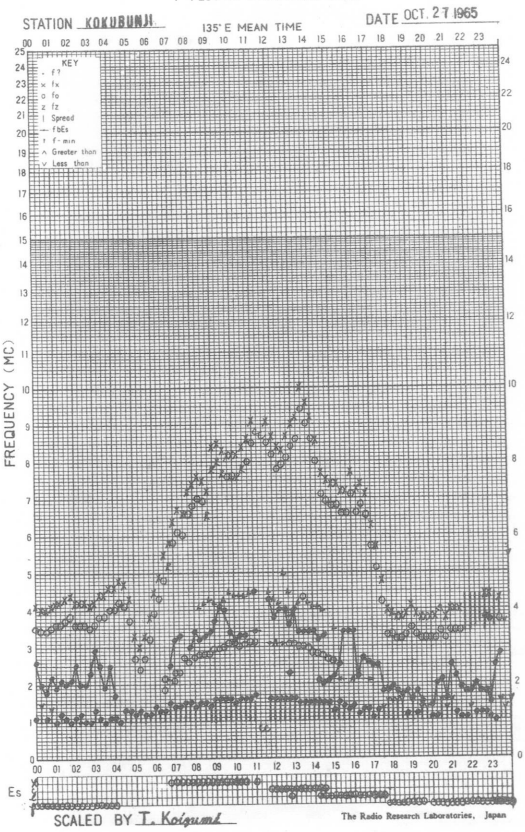

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The Radio Research Laboratories, Japan

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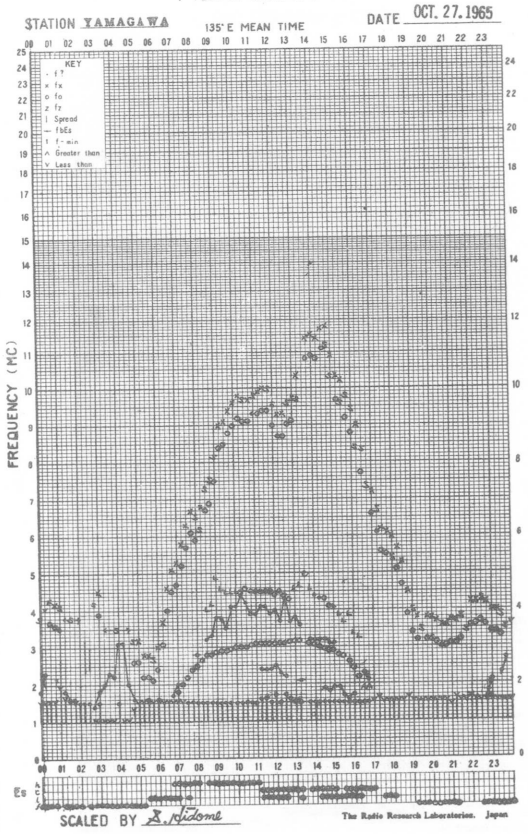

SCALED BY K. Ishimoto

The Radio Research Laboratories. Japan

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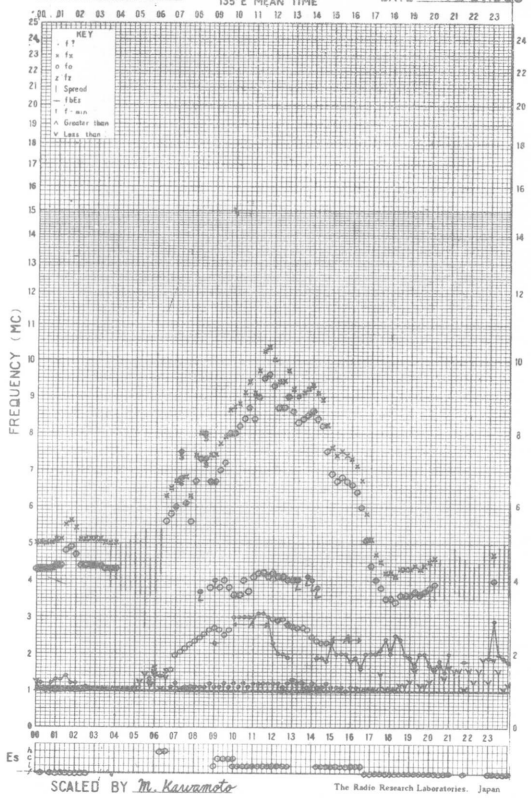

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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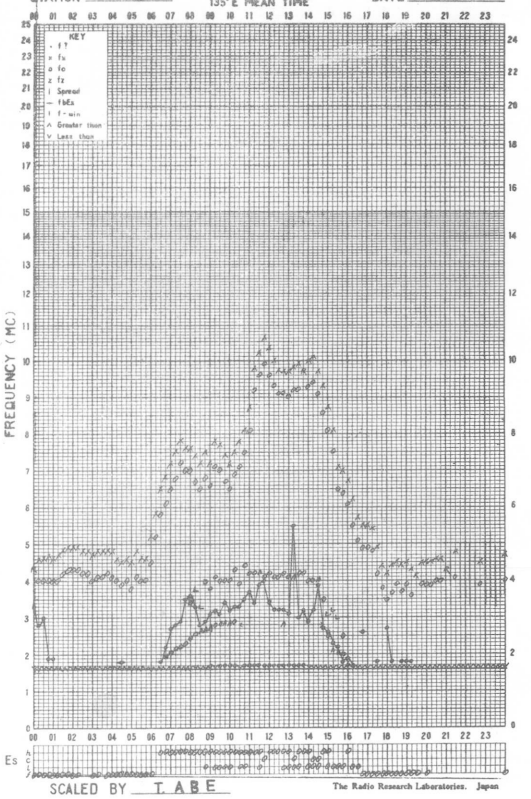

SCALED BY T. ABE The Radio Research Laboratories. Japan

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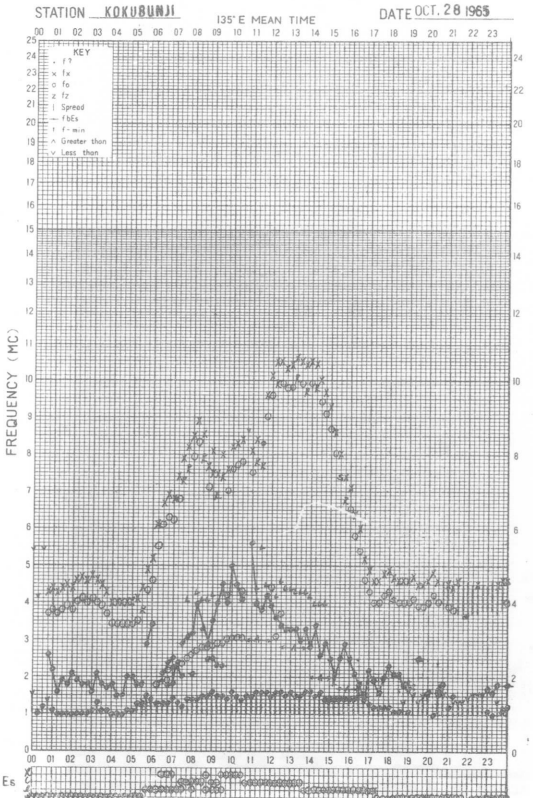

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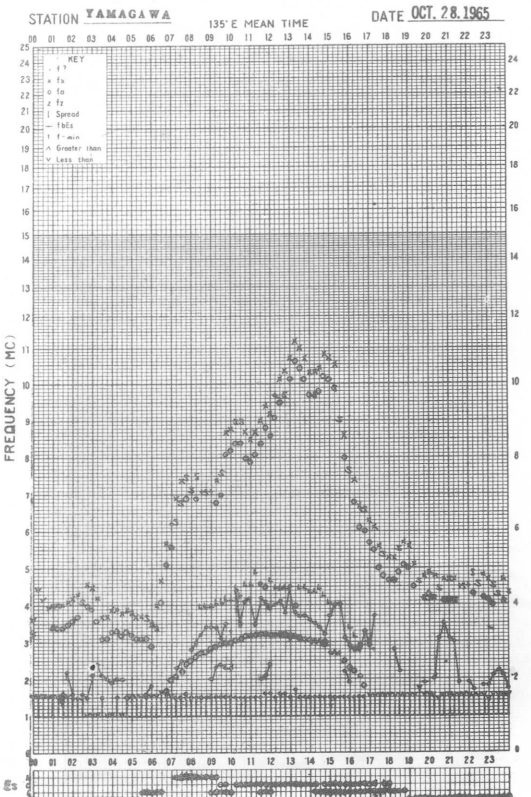

SCALED BY I. Nidome The Radio Research Laboratories. Japan

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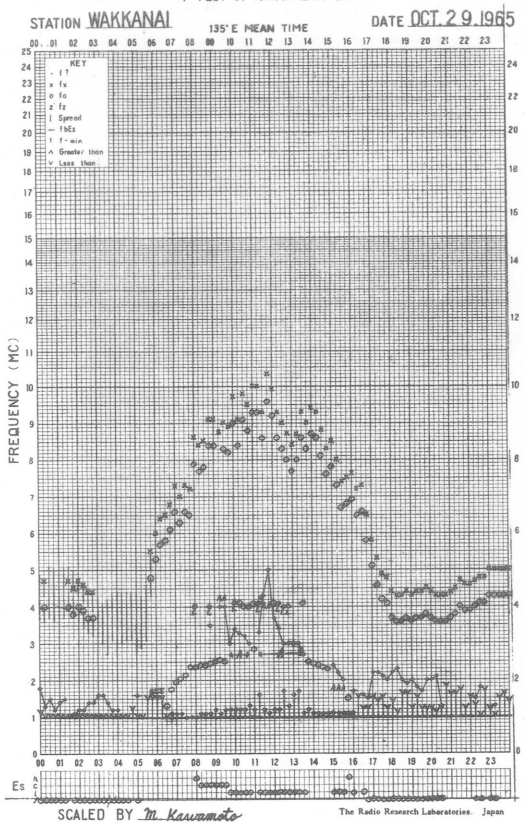

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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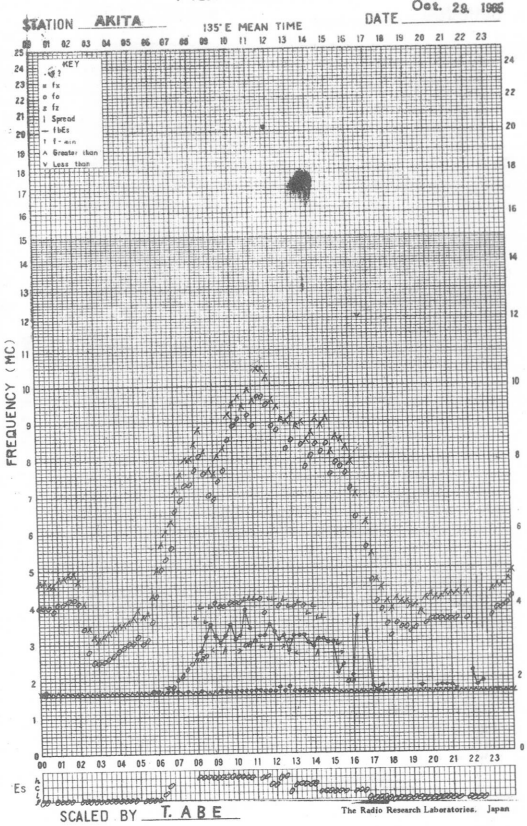

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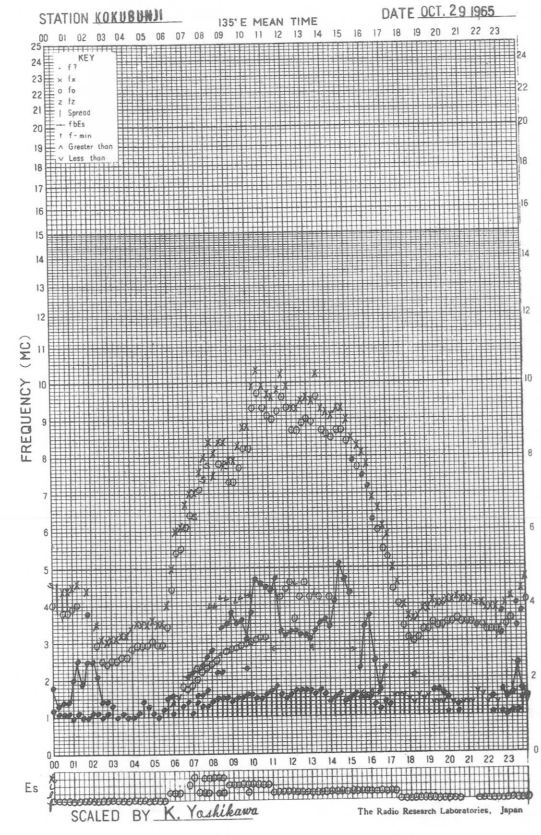

SCALED BY K. Yoshikawa The Radio Research Laboratories, Japan

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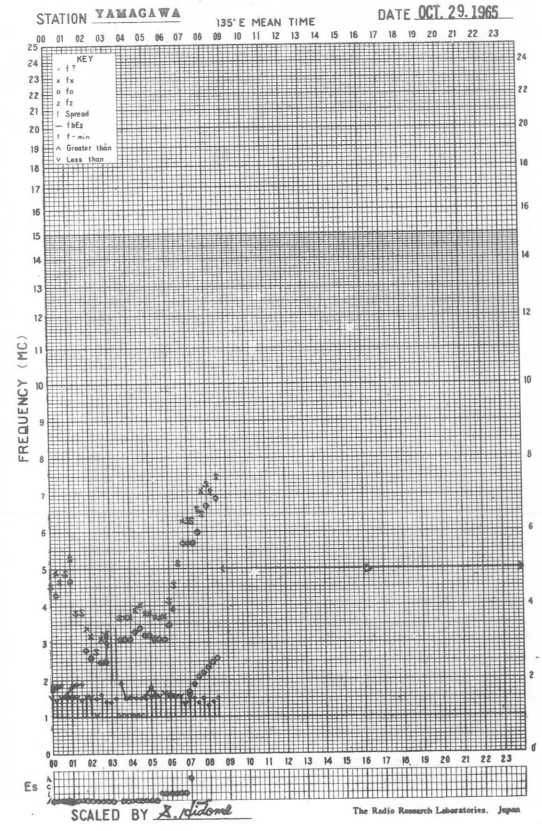

SCALED BY S. Kitami The Radio Research Laboratories. Japan

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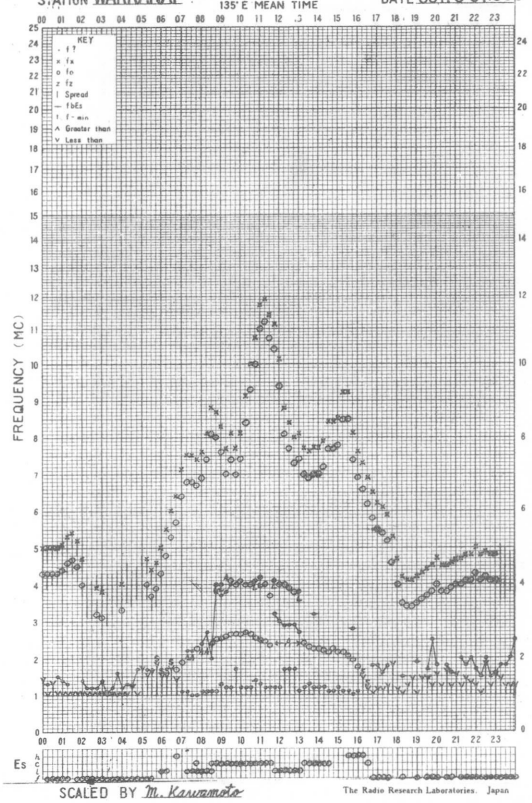

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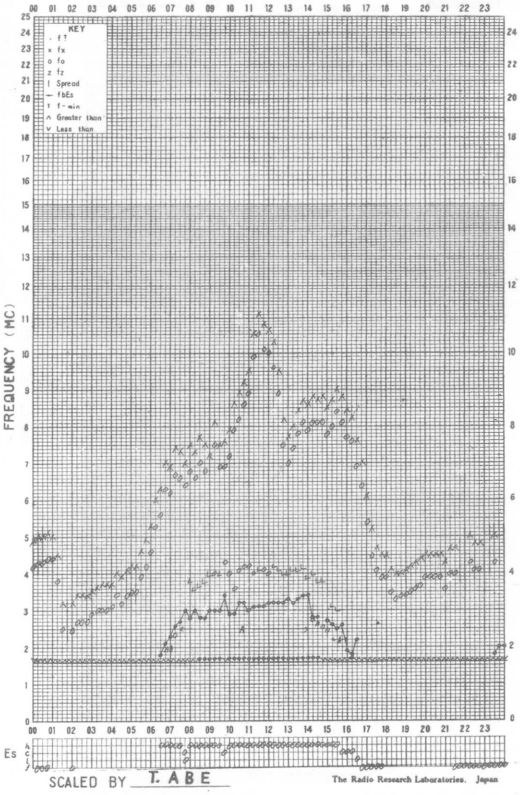

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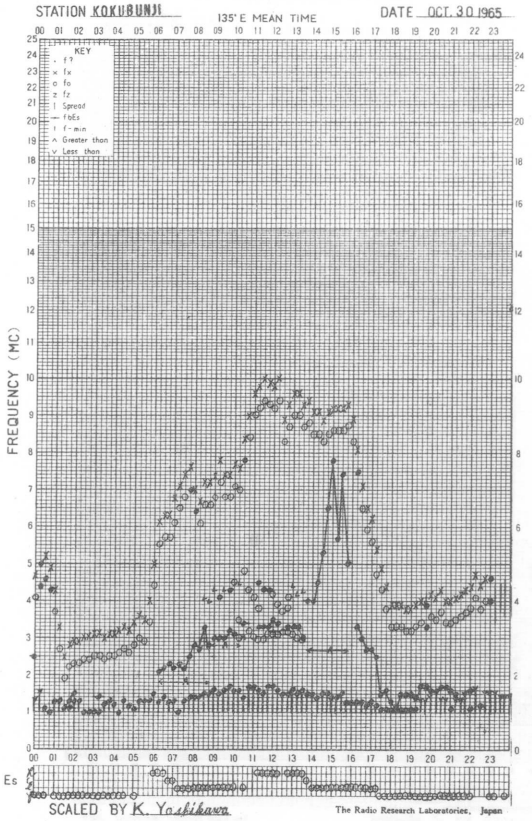

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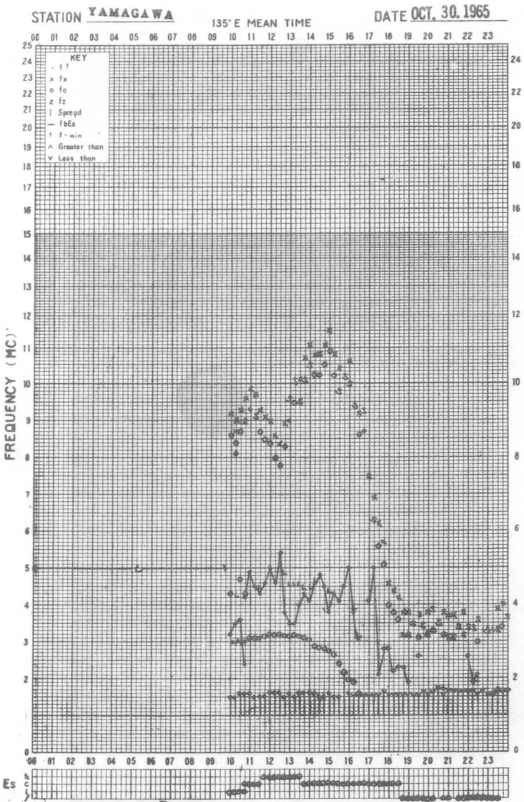

SCALED BY [illegible] The Radio Research Laboratories, Japan

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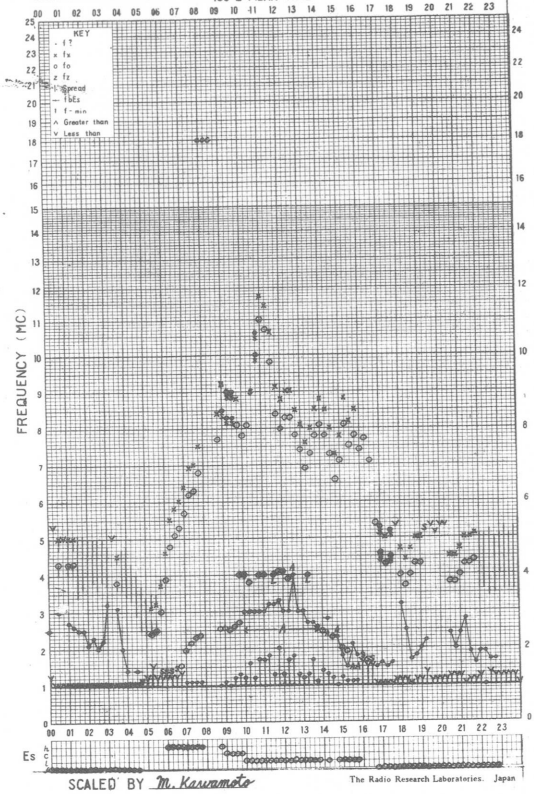

SCALED BY M. Kawamoto

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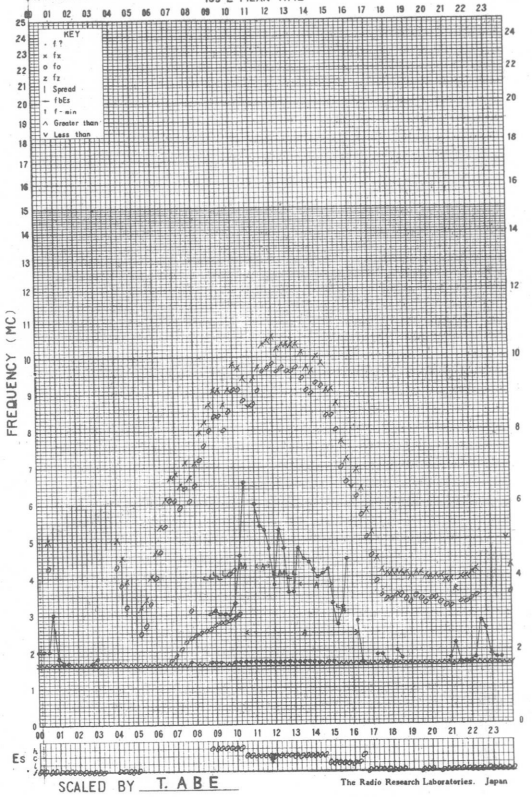

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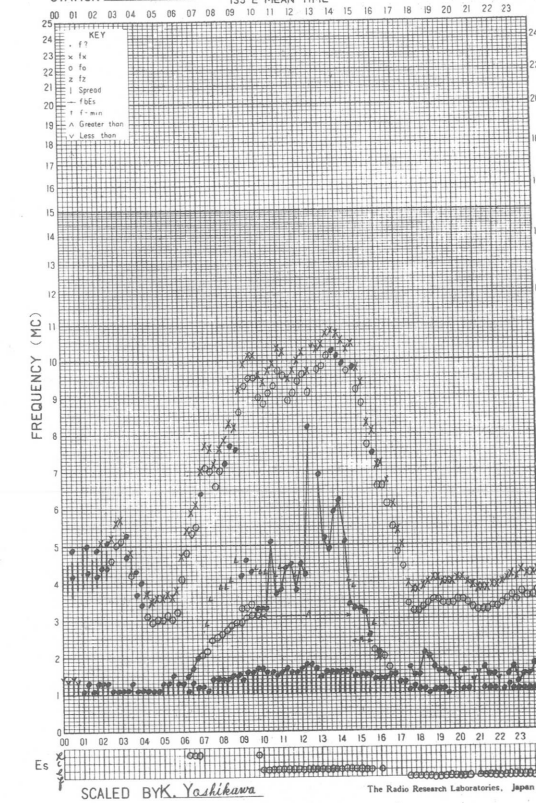

SCALED BY K. Yoshikawa

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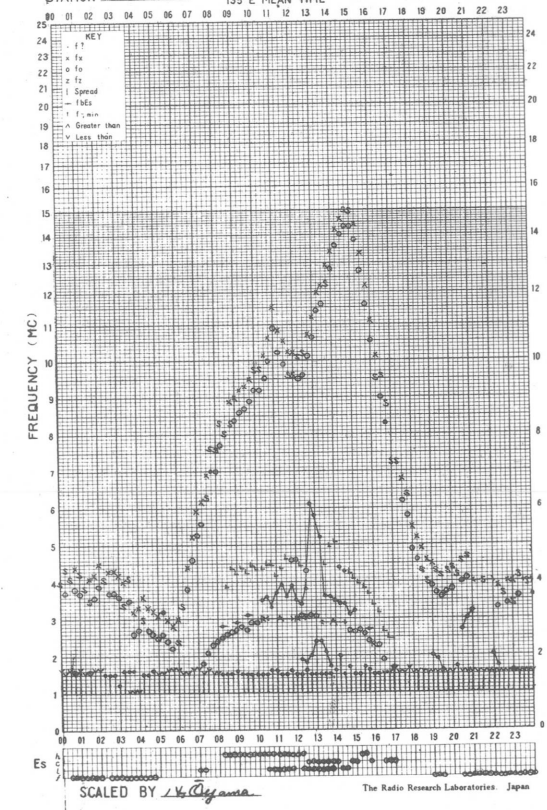
f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE OCT. 31. 1965



SCALED BY Y. Ogawa

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SOLAR RADIO EMISSION

Flux Density and Variability

Month: October 1965.
Observing station: Hiraiso
Frequency: 200 Mc/s

	Flux density 10^{-22} Wm^{-2}(c/s)$^{-1}$					Variability 0 to 3				
UT Date	00-03	03-06	06-09	21-24	Day	00-03	03-06	06-09	21-24	Day
1	10	9	9	-	9	1	0	0	-	0
2	8	13	14	13	11	0	1	1	0	1
3	10	10	9	8	10	0	0	0	0	0
4	11	9	8	9	9	1	0	0	0	0
5	8	7	8	8	8	0	0	0	0	0
6	8	8	7	7	8	0	0	0	0	0
7	7	9	8	8	8	0	0	0	0	0
8	8	7	6	8	7	0	0	0	0	0
9	8	8	(7)	9	8	0	0	(0)	0	0
10	8	8	8	8	8	0	0	0	0	0
11	8	8	8	7	8	0	0	0	0	0
12	8	9	(8)	10	8	0	0	(0)	0	0
13	10	7	(7)	(10)	9	0	0	(0)	(0)	0
14	9	10	(10)	8	10	0	1	(0)	0	0
15	8	7	6	9	7	0	0	0	0	0
16	9	9	8	(11)	9	0	0	0	(0)	0
17	11	10	9	10	10	0	0	0	0	0
18	10	10	9	-	9	0	0	0	-	0
19	6	8	7	8	7	0	0	0	0	0
20	9	9	8	9	9	0	0	0	0	0
21	9	9	9	9	9	0	0	0	0	0
22	9	8	7	8	8	0	0	0	0	0
23	9	8	7	10	8	0	0	0	0	0
24	9	8	8	9	9	0	0	0	0	0
25	9	8	8	7	8	0	0	0	0	0
26	(7)	7	(7)	-	7	(0)	0	(0)	-	0
27	9	9	8	(8)	9	0	0	0	(0)	0
28	8	8	8	(10)	8	0	0	0	(0)	0
29	9	9	(10)	(10)	9	0	0	(0)	(0)	0
30	10	10	9	(10)	10	0	0	0	(0)	0
31	9	9	(9)	10	9	0	0	(0)	0	0

Note No observation during the following periods:

13th	2050-	2300	27th	2050-	2300
15th	2050-	2300	28th	0200-	0300
18th	2050-	2400	28th	2050-	2300
25th	2050-	2200	29th	2050-	2300
26th	0000-	0200	30th	2050-	2300
26th	0700-	2400	31st	2050-	2200

SOLAR RADIO EMISSION

Flux Density

Month: October 1965.
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	25	25	26	24	25
2	26	26	29	25	29
3	27	26	26	24	26
4	26	27	28	29	26
5	26	27	27	24	27
6	25	23	25	23	24
7	23	23	22	25	23
8	25	26	25	27	25
9	28	27	24	28	27
10	25	25	25	26	26
11	25	25	27	27	26
12	25	28	26	26	26
13	26	26	25	26	26
14	25	28	24	25	26
15	25	25	24	27	25
16	25	24	23	25	25
17	24	25	22	25	24
18	26	25	24	25	25
19	27	27	(26)	24	26
20	25	24	(22)	23	24
21	25	24	(24)	(24)	24
22	25	25	(23)	24	25
23	24	23	(23)	23	23
24	24	22	(23)	24	23
25	25	24	(24)	24	24
26	25	24	(23)	27	24
27	24	23	(22)	24	24
28	25	24	(24)	26	24
29	25	25	(25)	26	25
30	25	26	(25)	26	25
31	29	27	(24)	27	27

Note No observation during the following periods:

21st 2050- 2300
31st 0500- 0600

Distinctive Event

(single-frequency observations)

Month: October 1965.
Observing station: Hiraiso
Normal observing period: 2050 - 0810 (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	200	0412	0415	7	C	>650	229	
2	500	0413	0414	11	C	>460	30	
14	200	0506	0520	19	C	213	55	
14	500	0505	0507.5	10	C	27	5	
14	500	0517	0519	8	C	10	7	

Measurement of H.F. Field Strength (Upper Side-band of A3A)

Oct. 1965 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	-15	<-28s	<-36s	<-23s	<-17s	<-11s	< 9s	<-21s	<-17s	<-18s	<-17s	<-17s	<-15s	<-37s	<-37s	<-37s	<-37s	<-37s	<-36s	<-36s	-22	< 8s	-14	-14
2	- 7	-20	<-30s	<-18s	<-38s	<-21s	<-23s	<-27s	<-22s	<-17s	<-12s	<-29s	S	<-21s	<-25s	<-31s	<-36s	<-36s	-25	-26	-14	1	- 2	-18
3	-11	-21	<-20s	-20	-14	<-16s	< 6s	<-16s	<-15s	<-13s	<-17s	C	S	S	<-24s	<-36s	<-36s	<-36s	<-36s	-19	- 7	- 8	-10	
4	- 6	- 4	<-20s	<-25s	<-21s	<-22s	<-25s	<-19s	<-18s	<-15s	<-20s	<-18s	S	<-29s	<-31s	<-36s	<-36s	<-36s	<-29s	<-36s	-29	<-21s	-16	-17
5	-13	<-29s	<-37s	<-23s	<-20s	S	-32	<-28s	<-24s	<-27s	<-35s	<-36s	-10	-20	-28	- 9	-14	-10	- 9	-11	-11	- 4	- 1	- 6
6	- 3	- 9	<-29s	<-21s	< 9s	<-20s	<-36s	<-27s	<-27s	<-27s	<-35s	<-35s	-24	-19	-20	-28	-22	<-36s	-28	-36	-15	- 7	6	- 2
7	- 9	<-24s	<-32s	-19	< 9s	<-13s	<-14s	<-14s	<-17s	<-20s	<-21s	<-14s	S	-19	- 4	S	<-37s	-13	<-37s	- 3	- 5	0	2	2
8	2	- 7	- 8	<-37s	C	< 9s	S	<-15s	<-18s	<-18s	<-20s	<-21s	S	-13	-12	-13	- 9	- 4	- 7	- 6	- 5	-11	- 6	-12
9	- 6	-18	<-27s	<-25s	< 9s	< 8s	S	<-17s	<-18s	<-18s	<-23s	S	-12	-19	-13	-18	-16	-11	-13	-14	- 6	- 5	- 8	-11
10	- 2	-11	-34	-19	< 8s	< 8s	<-10s	<-17s	<-16s	<-11s	C	<-17s	-12	-19	-14	-19	-17	-12	-14	-14	- 5	- 4	- 8	-11
11	- 6	-18	-30	<-23s	<-11s	<-13s	S	<-17s	<-17s	<-19s	<-20s	<-16s	S	-18	-11	-19	-18	-12	- 9	-10	-16	- 4	- 8	- 3
12	- 2	-22	<-30s	<-29s	<-10s	< 4s	S	<-17s	<-20s	<-16s	<-21s	<-15s	S	(-15)s	-24	-26	-29	-31	-20	-19	-18	< 6s	- 8	-11
13	-11	-24	C	C	< 8s	< 4s	S	<-16s	<-18s	<-18s	<-19s	<-18s	S	<-19s	-29	-21	-21	-17	-30	C	C	C	(-10)c	- 6
14	- 7	<-23s	<-31s	<-22s	< 9s	< 6s	S	<-15s	<-15s	<-15s	<-17s	<-21s	<-23s	-17	<-27s	-27	-27	-31	-26	-10	-11	0	1	2
15	- 2	<-27s	<-25s	<-29s	<-16s	<-14s	< 5s	<-11s	<-15s	<-18s	<-23s	<-19s	-25	-16	- 9	-15	-14	-12	- 2	-12	- 9	C	<-27s	-15
16	-19	<-19s	<-26s	<-22s	<-18s	< 0s	< 8s	< 6s	<-10s	<-10s	S	<-18s	-28	-25	-28	-15	-16	-17	-12	-13	-16	- 1	1	2
17	- 7	<-19s	<-34s	<-20s	< 9s	<-12s	<-11s	<-15s	<-15s	<-16s	<-22s	<-35s	<-28s	<-30s	<-30s	-27	<-34s	<-34s	-27	- 5	- 7	- 5	- 4	0
18	- 7	<-31s	<-23s	<-20s	< 6s	<-12s	S	<-14s	<-17s	<-19s	<-18s	<-15s	(-36)c	(-37)c	<-34c	<-37s	<-30s	<-32s	<-32s	-19	3	2	2	
19	<-27s	<-24s	<-24s	-21	< 1s	< 2s	S	<-15s	<-16s	<-20s	S	<-27s	<-34s	<-34s	<-34s	<-34s	C	-30	C	C	(-29)c	C	C	C
20	- 4	C	C	C	C	<-19s	C	C	C	<-33s	C	<-21s	<-34s	<-34s	<-34s	<-34s	<-34s	<-34s	<-31s	C	(-10)c	(0)c	(- 3)c	- 5
21	-27	-13	-15	<-19s	< 3s	< 9s	C	<-15s	<-15s	<-15s	<-21s	<-23s	-31	-19	-16	-19	-17	-17	-14	- 4	- 8	-11	3	0
22	C	-25	<-24s	<-24s	< 8s	<-10s	< 9s	C	<-16s	<-21s	<-29s	<-22s	-25	-14	- 9	-12	-24	-19	-14	-18	- 3	0	- 5	- 5
23	- 5	-20	<-27s	<-28s	<-11s	< 5s	S	<-14s	<-17s	<-10s	<-12s	<-23s	<-35s	-34	-25	-21	-29	<-14s	-28	- 7	<-36s	<-18s	- 4	- 1
24	<-21s	<-28s	<-31s	<-26s	< 9s	<-11s	S	<-15s	<-17s	<-17s	<-15s	C	<-37s	-21	-19	<-36s	-28	-27	-19	(-19)s	-11	-14	(-17)s	<-36s
25	-10	<-20s	<-21s	C	C	C	C	C	C	C	C	C	-31	-18	-20	-26	<-27s	<-27s	-14	-11	< 6s	- 2	- 1	8
26	1	<-14s	<-27s	<-20s	< 7s	< 5s	< 6s	<-14s	<-17s	<-28s	<-20s	<-16s	<-21s	-22	-11	-21	-20	-12	-15	-20	(- 9)c	- 4	- 4	< 6s
27	- 9	-23	<-22s	-21	C	C	S	<-14s	<-15s	<-26s	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	(- 7)c	C	(-25)c	(- 9)c	(-24)c	C	(- 9)c	(-13)c	(-25)c	(-25)c	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	<-10s	<-31s	-15	-10	C	S	<-12s	<-15s	<-16s	<-17s	<-14s	(-36)c	(-34)c	(-30)c	<-35s	-11	<-35s	<-35s	<-35s	-23	- 1	-10	-10
30	-13	-19	-15	- 6	<-16s	< 7s	S	<-12s	<-13s	<-17s	<-34s	<-18s	<-35s	-24	-23	-19	-24	-21	-22	-23	-33	-13	-10	- 6
31	- 4	-18	- 8	- 1	< 4s	< 5s	S	<-13s	<-17s	<-22s	<-17s	<-15s	-24	- 7	- 7	- 9	-14	-25	-25	-10	< 7s	-16	- 8	- 4
Median	- 7	(-20)s	<-27s	<-22s	< 9s	<-10s	<-10s	<-15s	<-17s	<-18s	<-20s	<-18s	<-28s	(-20)s	-24	-24	-24	(-26)s	-24	-14	(-13)s	- 5	- 6	- 6
Med. Count	28	30	28	28	27	27	13	28	29	30	25	25	21	28	29	28	28	29	28	26	28	26	28	28
Upper decile	- 2	(- 7)c	-15	-15	< 4s	< 2s	< 5s	<-11s	(-13)c	<-11s	<-15s	<-15s	-12	-14	- 9	-12	-14	-11	- 9	- 5	- 5	0	2	2
Lower decile	<-21s	<-28s	<-34s	(-29)c	(-20)c	<-21s	<-36s	<-27s	<-22s	<-27s	<-34s	<-35s	(-36)c	<-34s	<-34s	<-36s	<-36s	<-36s	<-36s	<-36s	(-29)c	<-16s	-16	<-17s

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

Oct. 1965 — 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	- 6	1	2	3	19	14	-16	≤15s	≤17s	≤16s	≤ 7s	≤ 6s	≤33s	≤37s	≤37s	≤37s	≤37s	≤31s	≤26s	- 4	-12	- 4	0	-
2	C	- 2	8	11	16	12	-14	-14	≤10s	≤12s	≤13s	≤30s	≤14s	≤24s	≤21s	≤29s	≤31s	-21	- 2	- 9	- 2	1	0	- 1
3	- 1	1	- 1	12	15	9	4	-10	≤12s	≤13s	≤ 9s	≤ 3s	≤ 4s	≤ 5s	≤ 7s	≤36s	≤36s	-26	-21	4	3	2	- 2	- 3
4	13	19	4	8	19	- 6	-11	-12	-13	≤13s	≤ 9s	≤24s	≤28s	≤24s	≤31s	≤36s	≤36s	≤36s	≤ 4s	- 3	5	5	0	- 2
5	- 2	0	3	10	13	- 8	9	- 3	-11	≤27s	≤35s	≤36s	≤36s	≤25s	≤36s	≤37s	-26	-11	-13	- 3	3	0	0	- 2
6	- 3	3	3	13	18	14	7	- 7	- 1	- 3	-32	-27	≤32s	≤35s	≤14s	≤36s	≤37s	S	≤33s	- 4	5	2	- 1	1
7	3	6	3	11	13	16	-11	≤12s	≤10s	≤10s	< 0s	≤31s	≤33s	S	≤ 5s	S	≤37s	≤37s	≤29s	1	- 1	5	1	0
8	- 3	4	10	(8)c	19	- 8	-12	≤11s	≤11s	≤ 2s	≤19s	≤15s	-12	-17	≤19s	≤33s	-31	-23	≤ 6s	- 3	2	3	- 2	0
9	0	1	8	14	17	13	15	- 7	12	≤17s	≤ 9s	≤ 5s	≤15s	≤19s	≤24s	≤36s	≤36s	≤26s	≤31s	-10	- 1	3	- 9	- 4
10	- 3	2	7	15	14	- 9	≤ 5s	- 7	- 5	≤ 9s	≤ 8s	< 2s	≤15s	≤19s	≤24s	≤33s	≤33s	≤26s	≤30s	-10	2	4	- 9	- 4
11	2	3	4	9	17	19	-10	-10	≤12s	≤12s	≤ 3s	< 1s	≤ 8s	≤ 2s	< 3s	≤35s	-25	-16	-22	-19	5	3	6	3
12	3	5	8	16	17	20	- 6	-11	≤ 8s	≤ 5s	≤ 8s	< 2s	≤ 8s	≤ 9s	≤32s	≤35s	≤34s	-26	-22	- 2	1	7	1	0
13	2	2	C	18	16	18	- 5	- 1	≤10s	≤12s	≤14s	< 1s	≤23s	≤ 9s	≤34s	≤32s	≤33s	≤35s	≤36s	C	C	C	10	4
14	≤15s	3	≤31s	12	19	- 3	≤11s	≤ 8s	≤ 8s	≤ 1s	≤15s	≤22s	≤26s	≤22s	≤27s	≤35s	≤34s	-26	-18	- 9	7	3	3	6
15	5	4	11	13	18	- 5	- 6	≤ 6s	- 2	≤16s	≤26s	≤11s	≤29s	≤31s	≤30s	≤30s	≤32s	- 6	-31	-12	C	C	3	1
16	7	14	13	14	11	16	6	2	≤ 1s	≤ 7s	≤ 4s	≤19s	≤32s	≤33s	≤33s	≤31s	≤32s	-30	-26	- 4	8	3	5	0
17	0	≤22s	≤15s	26	22	- 3	≤ 7s	≤ 5s	≤ 3s	≤15s	≤22s	-27	-25	-28	≤32s	≤35s	≤34s	-20	-27	- 8	6	10	8	6
18	2	3	7	16	14	- 1	≤ 8s	≤10s	≤12s	≤32s	≤18s	≤19s	(-31)c	≤34c	≤34c	≤32s	≤30s	≤32s	≤32s	- 4	10	7	0	- 2
19	1	5	6	11	26	22	≤ 8s	≤13s	≤10s	≤10s	< 10s	≤33s	≤34s	≤34s	≤34s	C	C	≤32s	C	(-14)c	C	C	C	C
20	- 5	C	C	C	C	C	C	C	≤33s	≤33s	≤27s	≤21s	≤34s	≤34s	≤34s	≤34s	≤34s	≤34s	≤31s	(-16)c	(9)c	(6)c	C	6
21	2	5	7	1	15	(- 2)c	≤ 5s	≤ 3s	≤ 5s	≤26s	≤17s	≤26s	≤31s	≤34s	≤23s	≤32s	≤33s	-22	- 9	6	0	5	0	0
22	5	9	10	19	24	- 5	≤ 7s	≤13s	≤ 9s	≤26s	-27	≤21s	≤34s	≤34s	≤34s	≤35s	-34	-14	-12	14	4	3	(3)s	- 8
23	(5)c	8	10	20	17	≤ 7s	≤ 6s	≤ 3s	≤ 2s	- 7	< 0s	≤28s	≤35s	≤35s	≤27s	≤35s	≤29s	4	6	-30	3	3	7	6
24	2	9	8	18	13	≤12s	≤ 5s	≤ 6s	≤ 6s	≤ 5s	C	≤37s	≤26s	≤36s	≤36s	≤27s	-24	S	- 4	- 8	12	6	5	- 2
25	3	9	15	C	C	C	C	C	C	C	C	C	≤31s	≤23s	≤26s	≤29s	≤24s	-12	2	- 6	2	3	3	- 1
26	3	7	15	16	15	- 7	≤ 3s	≤11s	≤19s	≤28s	≤11s	≤15s	≤28s	≤33s	≤33s	≤34s	≤30s	-12	- 9	-12	12	4	- 1	2
27	2	4	7	C	C	C	- 9	≤ 9s	≤15s	≤26s	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	≤18)c	C	(9)c	(15)c	(10)c	(- 6)c	(1)c	≤ 9)c	≤ 6)c	≤25)c	≤17)c	C	C	C	C	C	C	C	C	C	C	C	C	C
29	4	9	(13)c	16	12	- 3	- 1	≤ 6s	(- 8)s	≤15s	≤12s	≤19s	≤34)c	≤34)c	(-35)c	≤35s	≤35s	≤35s	≤35s	≤35s	8	5	3	7
30	8	11	12	11	≤ 5s	5	- 4	≤ 7s	≤ 6s	≤34s	≤34s	≤23s	≤35s	≤35s	≤35s	≤35s	≤34s	- 3	≤34s	≤34s	3	6	5	6
31	9	11	11	17	14	2	≤ 7s	≤10s	≤18s	≤11s	≤18s	≤15s	≤34s	≤34s	≤22s	≤35s	-18	- 6	6	5	5	9	6	5
Median	2	4	7	14	16	- 2	(- 7)s	≤ 9s	(-10)c	≤13s	≤14s	≤20s	≤31s	≤32s	≤31s	≤35s	≤33s	(-26)s	(-24)s	- 7	4	4	1	0
Med. Count	30	29	29	28	28	28	29	29	30	30	28	28	29	28	29	27	28	27	28	28	26	26	27	28
Upper decile	8	11	13	19	22	19	7	- 3	≤ 2s	≤ 3s	≤ 3s	< 1s	≤ 8s	≤ 9s	≤ 7s	≤29s	≤24s	- 6	2	5	10	7	7	6
Lower decile	- 6	0	- 1	8	11	≤ 8s	≤12s	≤13s	≤18s	≤32s	≤32s	≤33s	≤35s	≤35s	≤36s	≤36s	≤37s	≤35s	≤34s	-30	- 1	1	- 2	- 4

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Oct. 1965	World Day Index	L. N. 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	4-	C C C	(4) - - 4	4 (4) 4 3	4 3 - (4)	N N N N			
2	4o	↑ ↑ ↑	4 - - 4	4 4 4 4	4 3 - (4)	N N N N			
3	4+		4 - - 4	4 5 5 4	5 (5) - 4	N N N N			
4	3+		4 - - 3	4 4 3 3	4 3 - 4	N N N N			
5	4o		(3) - (5) 5	3 4 4 3	4 (4) - (4)	N N N N			
6	4-		5 - - 4	3 4 4 3	4 4 - 4	N N N N			
7	4o		(4) - (4) 5	4 5 C 3	4 4 - (4)	N N N N	0859	---	77γ
8	5-		(5) - (5) 5	4 4 5 4	4 5 - (4)	N N N N	0200	21xx	
9	4o		(4) - (5 4)	(4 4) 5 3	(5) 5 - (4)	N N N N			
10	4+		5 - (5) 5	3 4 4 5	4 4 - (4)	N N N N			
11	5-		(4) - (5) 5	4 4 5 5	4 (4) - 4	N N N N			
12	4o		4 - - 4	4 5 (4 4)	4 (4) - 4	N N N N			
13	4-		4 - - 3	3 (4) 4 4	4 4 - (4)	N N N N			
14	4-		3 - - 4	(4 4) 4 4	(4) 3 - 4	N N N N			
15	4o		4 - (4) 4	4 4 4 4	4 5 - 4	N N N N			
16	4o		3 - (4) 5	4 4 4 4	5 5 - 4	N N N N			
17°	4-		4 - - 4	(4) 4 4 (3)	4 5 (4) 4	N N N N			
18	4-		3 - - 4	4 4 4 4	4 4 (4) 4	N N N N			
19°	4o		4 - - 5	3 4 4 C	4 (3) - 4	N N N N			
20	4-		4 - - 4	3 4 4 4	5 4 - 4	N N N N			
21	4+		(4) - (5) 5	4 4 5 4	4 5 - 5	N N N N			
22	4+		4 - (5) 5	4 4 5 4	(5 5) - (4)	N N N N	0125	---	59γ
23	4o		(4) - - 4	4 4 4 4	(4 4) - (5)	N N N N	---	24xx	
24	4o		3 - - (4)	4 4 4 5	4 C - (5)	N N N N			
25	5-		4 - - (4)	5 5 5 4	(4 3) - 4	N N N N			
26	4o		4 - (4) 5	4 4 4 4	4 3 - 4	N N N N			
27	4o		4 - - (4)	4 C C C	4 (4) - 5	N N N N			
28	4o		4 - (4) 4	5 (4) C (4)	(4) 4 - 4	N N N N			
29	4o		4 - - 3	4 4 4 5	(4) 4 - 4	N N N N			
30	5-	↓ ↓ ↓	5 - - 4	5 5 4 4	4 4 - 4	N N N N			
31	4+	C C C	(5) - (5) 5	4 4 4 4	5 4 - 5	N N N N			

IQSY GEOALERT and ADALERT (Western Pacific Region)

* = MAGSTORM

∘ = MAGCALME

△ = COSMIC EVENT

( ) = Regular World Day

C(= artificial accident

\- = impossible to evaluate

--- = continuing magnetic storm

( ) = inaccurate

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Oct. 1965	S W F									Correspondence		
	Drop-out Intensities (db)						Start-time	Duration	Type	Imp.	Flare	Solar Noise	Mag.
	WS	SF	HA	TO	LN	SH							
2				-		14	04.15	14	S	1		x	

IONOSPHERIC DATE IN JAPAN FOR OCTOBER 1965
第 17 巻　第 10 号

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