IONOSPHERIC DATA

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1949, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Fifth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Stockholm, 1948, and given in detail on pages 2 to 10 of the report CRPL-F53, "Ionospheric Data," issued January 1949.

For symbols and terminology used with data prior to January 1949, see report IRPL-C61, "Report of International Radio Propagation Conference, Washington, 17 April to 5 May, 1944," previous issues of the F series, in particular, IRPL-F5, CRPL-F24, F33, F50, and report CRPL-7-1, "Preliminary Instructions for Obtaining and Reducing Manual Ionospheric Records."

Following the recommendations of the Washington (1944) and Stockholm (1948) conferences, beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

In addition to the conventions for the determination of medians given in Appendix 5 of Document No. 293 E of the Stockholm conference, which are listed on pages 9 and 10 of CRPL-F53, the following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given on pages 2-9 of CRPL-F53 (Appendixes 1-4 of Document No. 293 E referred to above).

a. For all ionospheric characteristics:

Values missing because of A, B, C, F, L, M, N, Q, R, S, or T (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (no Es reflections observed, the equipment functioning normally otherwise) are counted as equal to or less than the median foE, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number						
	1951	1950	1949	1948	1947	1946	1945
December		86	108	114	126	85	38
November		87	112	115	124	83	36
October		90	114	116	119	81	23
September		91	115	117	121	79	22
August		96	111	123	122	77	20
July		101	108	125	116	73	
June		103	108	129	112	67	
May		102	108	130	109	67	
April		101	109	133	107	62	
March		103	111	133	105	51	
February		103	113	133	90	46	
January	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 49 and figures 1 to 95 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Canberra, Australia
- Hobart, Tasmania

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
- Watheroo, Western Australia

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
Domont, France
Poitiers, France

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Tiruchy (Tiruchirapalli), India

Radio Regulatory Commission, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Radio Wave Research Laboratories, National Taiman University, Taipeh, Formosa, China:
Formosa, China

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.
Christchurch, New Zealand
Rarotonga, Cook Is.

Norwegian Defense Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

United States Army Signal Corps:
Okinawa I.

National Bureau of Standards (Central Radio Propagation Laboratory):
Baton Rouge, Louisiana (Louisiana State University)
Boston, Massachusetts (Harvard University)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
San Francisco, California (Stanford University)
San Juan, Puerto Rico (University of Puerto Rico)
Trinidad, British West Indies
Washington, D. C.
White Sands, New Mexico

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 50 to 61 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D. C.

Table 62 presents ionosphere character figures for Washington, D. C., during January 1951, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Table 63 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, December 1950, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day Cheltenham, Maryland, geomagnetic K-figures.

The radio propagation quality figures are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner basically the same as that described in IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued February 1, 1946. The scale conversions for each report are revised for use with the data beginning January 1948, and statistical weighting replaces what was, in effect, subjective weighting. Separate master distribution curves of the type described in IRPL-R31 were derived for the part of 1946 covered by each report; data received only since 1946 are compared with the master curve for the period of the available data. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal

of the departure from linearity. The half-daily radio propagation quality figure, beginning January 1948, is the weighted mean of the reports received for that period.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question. Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic, or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half day in either of the two general areas.

RELATIVE SUNSPOT NUMBERS

Table 64 lists the daily provisional Zurich relative sunspot numbers, R_Z^*, as communicated by the Swiss Federal Observatory. The American sunspot numbers which in the past were included in this table are now being prepared on a slower schedule and therefore do not appear in this issue.

OBSERVATIONS OF THE SOLAR CORONA

Table 65 through 67 give the observations of the solar corona during January 1951 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 68 through 70 list the coronal observations obtained at Sacramento Peak, New Mexico, during January 1951, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command research and development contract administered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 65 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 66 gives similarly the intensities of the first red (6374A) coronal line; and table 67, the intensities of the second red (6702A) coronal line; all observed at Climax in January 1951.

Table 68 gives the intensities of the green (5303A) coronal line; table 69, the intensities of the first red (6374A) coronal line; and table 70, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in January 1951.

The following symbols are used in tables 65 through 70: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

OBSERVATIONS OF SOLAR FLARES

Table 71 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U.S. Naval, Wendelstein, Kanzel, and High Altitude at Boulder, Colorado. The remainder report to Meudon (Paris), and the data are taken from the Paris URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Boulder, Colorado are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 72 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary mean 3-hourly K-indices, Kw; (2) preliminary international character-figures, C; (3) geomagnetic planetary three-hour-range indices, Kp; (4) magnetically selected quiet and disturbed days.

Kw is the arithmetic mean of the K-indices from all reporting observatories for each three hours of the Greenwich day, on a scale 0 (very quiet) to 9 (extremely disturbed). The C-figure is the arithmetic mean of the subjective classification by all observatories of

each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 to 9, expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5 + is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44 and 1949, in these CRPL-F reports, F65-67; for 1950, monthly in F68 and following issues. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles Kw, C and selected days. The Chairman of the Committee computes the planetary index.

SUDDEN IONOSPHERE DISTURBANCES

Tables 73, 74, and 75 list the sudden ionosphere disturbances observed at Fort Belvoir, Virginia, January 1951; at Riverhead, New York, January 1951; and Lindau/Harz, Germany, November 1950, respectively.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) January 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.7						2.9
01	290	2.7						2.9
02	290	2.9						2.8
03	280	3.0						2.9
04	260	3.2						3.0
05	250	3.0						3.0
06	260	2.7						3.0
07	250	3.1						3.1
08	230	5.4	---	---	110	2.0		3.4
09	240	6.5	230	---	110	2.4	4.7	3.3
10	250	7.8	220	---	110	2.7	2.4	3.3
11	250	8.2	230	---	110	3.0		3.3
12	250	8.4	210	---	110	3.0		3.2
13	260	8.3	210	---	110	3.0		3.2
14	260	8.1	220	---	110	2.8		3.2
15	250	7.8	220	---	110	2.6		3.2
16	240	7.5	220	---	110	2.2		3.2
17	230	7.1			---	---		3.2
18	230	6.3						3.2
19	230	5.1						3.2
20	240	3.9						3.1
21	260	3.2						3.0
22	280	3.0						2.9
23	(280)	2.8						2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Oslo, Norway (60.0°N, 11.0°E) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	(1.9)						---
01	350	(1.8)						(2.9)
02	330	(1.6)						(2.8)
03	320	1.8					1.5	(2.9)
04	320	1.7					1.6	(2.9)
05	320	1.7					1.4	3.0
06	300	1.7						3.0
07	300	1.8						3.1
08	260	(2.3)						(3.2)
09	220	(4.3)					1.7	3.4
10	220	5.4			---	---	2.2	3.5
11	220	6.0	---	---	---	(2.1)	2.4	3.6
12	220	6.6	---	---	---	(2.2)	2.5	3.6
13	220	6.5	---	---	---	(2.2)	2.4	3.6
14	220	6.2			---	---	2.4	3.6
15	210	5.6			---	---	1.9	3.5
16	220	(5.0)						3.4
17	220	(4.2)						3.3
18	220	2.8						3.4
19	270	2.4						3.2
20	300	1.9						(3.0)
21	(350)	(1.8)						3.1
22	340	1.8						(3.0)
23	350	(1.7)						---

Time: 15.0°E.
Sweep: 1.3 Mc to 14.0 Mc in 8 minutes. automatic operation.

Table 3

De Bilt, Holland (52.1°N, 5.2°E) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.6					2.6	3.0
01	290	(2.8)					2.7	3.0
02	300	(2.5)					2.5	3.0
03	300	(2.3)					2.8	2.9
04	300	(2.2)					3.0	(2.9)
05	280	(2.0)					2.8	3.1
06	260	(2.0)					2.8	(3.0)
07	270	(2.6)			---	E	2.4	(3.1)
08	220	4.5			140	1.9	2.5	3.4
09	200	6.4			120	2.2	3.0	3.5
10	210	7.0	---	---	110	2.4	3.0	3.6
11	220	7.3	200	3.3	120	2.5	2.7	3.5
12	---	7.6	210	---	120	2.5	3.1	3.5
13	210	7.2	---	---	120	2.4	3.0	3.5
14	210	6.9			120	2.3	3.0	3.5
15	200	6.4			160	1.9	2.9	3.5
16	200	5.5			---	E	2.8	3.4
17	220	4.2					2.9	3.3
18	200	3.3						3.3
19	270	3.0						3.1
20	220	2.6						3.0
21	300	(2.5)						3.0
22	300	(2.8)					2.0	2.9
23	300	(2.8)					2.4	2.8

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 7 minutes. automatic operation.

Table 4

Boston, Massachusetts (42.4°N, 71.2°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.6						3.0
01	280	2.4						3.0
02	270	2.6						3.0
03	250	2.8						3.0
04	240	2.8						3.2
05	230	2.6					2.5	3.2
06	260	2.4					3.0	3.0
07	230	3.7						3.2
08	200	6.4			110	2.2		3.5
09	200	7.3	200	2.9	110	2.4		3.4
10	210	8.4	200	3.6	100	2.7		3.4
11	210	8.9	200	4.0	110	2.8		3.4
12	220	8.5	200	3.8	110	2.9		3.4
13	220	8.6	210	3.8	110	2.8		3.4
14	220	8.6	210	3.4	110	2.6		3.3
15	210	8.6			100	2.4		3.4
16	200	8.0						3.4
17	200	6.4						3.3
18	220	5.5						3.3
19	220	4.3						3.3
20	240	3.5						3.2
21	260	2.9						3.1
22	280	2.8						3.0
23	280	2.7						3.0

Time: 75.0°W.
Sweep: 0.8 Mc to 15.0 Mc in 1 minute.

Table 5

San Francisco, California (37.4°N, 122.2°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.2)					2.8	3.1
01	280	3.0					2.8	3.1
02	300	2.9					2.3	3.0
03	290	3.0						3.0
04	280	3.0						3.0
05	280	3.0						3.0
06	280	(3.2)						3.1
07	240	(4.0)						3.1
08	220	6.6			120	(2.2)		3.5
09	230	7.4	---	3.9	120	(2.6)	2.8	3.4
10	230	7.6	210	4.3	120	(3.1)		3.4
11	230	8.5	(220)	4.2	120	(3.2)		3.3
12	240	9.4	210	---	110	---		3.3
13	240	8.7	---	---	120	---		3.3
14	240	8.6	---	---	110	(2.9)		3.3
15	230	8.0	---	---	110	2.7		3.4
16	220	7.6			110	---	2.8	3.4
17	220	6.2					3.0	3.4
18	220	4.3					3.0	3.4
19	240	3.0					2.8	3.3
20	260	2.7					2.7	3.4
21	280	(2.6)					2.8	3.2
22	290	(2.8)					2.8	3.0
23	300	3.1					2.9	3.0

Time: 120.0°W.
Sweep: 1.3 Mc to 18.0 Mc in 4 minutes.

Table 6

White Sands, New Mexico (32.3°N, 106.5°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5					4.4	3.0
01	260	3.5					3.9	3.0
02	260	3.5					4.3	3.0
03	260	3.5					4.3	3.0
04	260	3.4					3.8	3.0
05	260	3.2					3.9	3.0
06	260	3.1					3.0	3.0
07	240	4.8	---	---	---	---	3.1	3.2
08	230	7.1	---	---	(120)	(2.4)	4.3	3.3
09	240	7.7	220	---	(110)	(2.7)	4.9	3.3
10	240	8.3	220	---	(110)	(3.0)	5.2	3.3
11	250	8.7	220	---	(110)	(3.2)	5.1	3.2
12	260	9.2	220	---	110	(3.3)	5.5	3.2
13	260	9.5	230	---	(110)	(3.2)	5.5	3.1
14	250	9.3	230	---	(110)	(3.0)	5.6	3.2
15	240	8.6	230	---	(110)	(2.8)	5.5	3.2
16	230	7.9	---	---	(110)	(2.3)	5.3	3.3
17	220	7.1			---	---	4.7	3.3
18	220	4.6					3.9	3.3
19	230	(3.6)					4.8	(3.2)
20	(250)	(3.0)					5.6	3.1
21	(270)	2.8					3.8	3.0
22	280	3.2					4.0	3.9
23	280	3.5					3.8	2.8

Time: 105.0°W.
Sweep: 0.8 Mc to 14.0 Mc in 2 minutes.

Table 7

Okinawa I. (26.3°N, 127.7°E) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	3.1						2.9
01	(270)	3.2						3.0
02	(240)	3.3						3.1
03	(250)	(3.0)						(3.2)
04	(230)	3.0						3.0
05	(270)	(2.5)						(2.9)
06	(270)	(2.7)						3.0
07	230	5.7			(140)	(2.0)		3.3
08	240	7.4	230	---	110	(2.6)		3.4
09	250	9.0	230	---	100	2.9	2.9	3.4
10	240	10.7	220	---	(110)	3.1		3.4
11	260	10.3	220	---	(110)	(3.2)	3.4	3.2
12	350	11.4	210	---	110	(3.3)	3.6	3.2
13	250	12.0	220	---	(110)	(3.3)	3.7	3.2
14	250	12.0	220	---	(110)	(3.2)	3.3	3.2
15	240	11.2	220	---	110	2.9	3.4	3.3
16	220	9.4	220	---	110	(2.4)	3.1	3.4
17	210	8.2			---	---	2.6	3.4
18	(200)	6.8					2.8	3.4
19	(220)	6.2						3.2
20	220	6.3						3.2
21	(220)	5.4						3.3
22	(220)	4.7						3.3
23	(240)	(3.2)						(3.0)

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds, automatic operation.

Table 8

Maui, Hawaii (20.8°N, 156.5°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.6						2.8
01	250	4.1					1.3	3.0
02	230	4.0						3.2
03	220	3.0						3.4
04	240	(2.5)					1.9	3.2
05	280	(2.0)					2.7	2.8
06	300	2.2					2.4	2.9
07	260	4.6			150	1.8	2.4	3.1
08	240	7.3	230	---	110	2.4	4.1	3.3
09	270	9.7	220	---	110	2.9	5.6	3.2
10	260	11.3	220	4.5	110	3.1	5.8	3.3
11	270	11.2	210	4.8	100	3.3	4.8	3.2
12	260	11.4	210	4.8	110	3.4	4.9	3.1
13	270	12.2	200	4.7	(110)	3.4	4.7	3.1
14	260	12.4	220	4.6	110	3.2	4.5	3.2
15	250	11.8	230	4.3	(110)	3.0	4.2	3.2
16	240	10.8	230	---	110	2.7	4.8	3.4
17	220	8.5			120	2.2	4.9	3.5
18	210	6.0					4.8	3.5
19	210	4.8					4.5	3.5
20	230	4.2					2.8	3.1
21	220	4.7					2.2	3.2
22	230	4.6					2.2	3.2
23	240	4.0					1.5	3.3

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 9

San Juan, Puerto Rico (18.4°N, 66.0°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	4.5						3.8
01	210	4.7						2.9
02	200	(4.7)						2.9
03	190	(4.6)						(3.0)
04	---	4.0						2.7
05	---	3.6						2.8
06	---	3.8						2.8
07	200	(5.8)						(3.3)
08	250	7.8		---		(3.0)		3.3
09	250	8.9		4.8		3.1		3.3
10	270	9.2		5.0		3.3		3.2
11	270	8.9		4.9		---		3.2
12	270	8.7		4.8		---	3.7	3.2
13	240	(9.0)		4.8		---		(3.2)
14	250	9.3		4.5		3.4	4.4	3.2
15	250	9.0		4.2		3.2	3.8	3.2
16	250	8.9		---		---	3.9	3.2
17	220	8.6						3.3
18	190	(6.9)						(3.4)
19	190	(5.5)						3.3
20	(180)	4.4						3.0
21	(200)	(4.0)						(2.8)
22	(220)	4.0						2.8
23	210	4.2						2.8

Time: 60.0°W.
Sweep: 2.8 Mc to 13.0 Mc in 9 minutes, automatic operation; supplemented by manual operation.

Table 10

Guam I. (13.6°N, 144.9°E) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	5.8					1.8	3.2
01	230	6.0					1.6	3.2
02	240	5.4						3.2
03	240	4.4						3.3
04	240	3.8						3.2
05	240	3.0					1.5	3.1
06	260	2.7					1.6	3.0
07	260	5.7			130	1.8		3.3
08	270	8.6	240	---	110	2.5		3.2
09	280	10.2	220	---	110	(2.9)	4.0	3.1
10	290	10.6	210	4.6	110	(3.1)	4.4	2.7
11	300	10.2	200	4.6	110	3.3	4.8	2.6
12	300	9.8	200	4.7	110	(3.3)	5.0	2.6
13	320	9.8	200	---	110	3.4	4.3	2.6
14	310	10.2	210	---	110	3.2	4.2	2.7
15	290	10.8	220	---	110	(3.1)	4.6	2.8
16	280	11.0	230	---	110	2.8	5.4	3.0
17	250	11.0	240	---	120	2.3	4.0	3.1
18	240	10.6			---	---	3.9	3.2
19	240	10.0					3.1	3.1
20	240	9.3					3.4	3.0
21	240	8.6					3.4	3.1
22	230	8.2					4.0	3.2
23	230	6.9					2.3	3.2

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Trinidad, British West Indies (10.6°N, 61.2°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.4						3.2
01	240	4.2						3.3
02	240	3.9						3.4
03	240	3.6						3.4
04	260	3.1						3.1
05	260	3.4						3.2
06	250	3.6					2.2	3.2
07	220	6.3			120	2.2	3.0	3.6
08	240	8.0	220	4.1	120	2.8	3.6	3.6
09	250	9.0	220	4.5	120	3.2	3.8	3.6
10	260	9.0	210	4.8	120	3.4	4.2	3.5
11	260	9.0	210	4.9	120	3.5	4.5	3.4
12	280	9.0	210	5.0	120	3.6	4.7	3.3
13	270	9.8	210	4.9	120	3.6	4.7	3.3
14	270	9.4	200	4.8	120	3.4	4.6	3.2
15	260	9.2	220	4.6	120	3.3	4.4	3.3
16	250	8.8	230	4.0	120	2.9	4.4	3.3
17	230	8.8	---	---	110	2.3	4.0	3.4
18	220	7.6					3.7	3.4
19	220	6.4					3.4	3.4
20	230	4.8					3.2	3.4
21	260	4.2					3.1	3.2
22	270	4.0					2.5	3.0
23	270	4.0						3.0

Time: 60.0°W.
Sweep: 1.2 Mc to 19.5 Mc, manual operation.

Table 12

Huancayo, Peru (12.0°S, 75.3°W) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	---					4.8	---
01	310	(3.7)					4.8	(2.8)
02	300	(4.2)					4.7	(3.1)
03	280	(3.6)					4.8	(3.2)
04	260	(3.2)					4.8	3.2
05	270	(3.4)					4.8	(2.9)
06	250	6.4			110	2.1	4.8	3.1
07	280	8.5	230	---	110	2.8	7.8	3.1
08	300	9.4	220	4.7	110	3.1	10.7	2.9
09	310	10.2	210	4.8	110	3.4	12.0	2.6
10	330	10.3	210	4.9	110	(3.6)	12.1	2.4
11	360	10.1	210	4.9	110	---	12.2	2.4
12	360	9.3	200	4.9	110	---	12.2	2.4
13	360	9.5	200	4.8	110	---	12.0	2.4
14	340	9.6	200	4.7	110	---	11.4	2.5
15	320	10.0	210	4.7	110	3.2	10.6	2.5
16	300	10.6	210	---	110	2.9	8.4	2.6
17	250	10.6			110	2.5	7.7	2.6
18	280	10.6			110	1.6	3.4	2.6
19	290	10.2					3.2	2.6
20	300	(9.0)					3.2	2.6
21	320	(8.1)					3.2	(2.5)
22	360	(7.6)					3.2	(2.6)
23	320	(6.8)					3.4	(2.7)

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 13

Lindau/Harz, Germany (51.6°N, 10.1°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9					2.7	2.7
01	290	2.9					2.7	2.8
02	300	2.8					2.8	2.8
03	300	2.9					2.8	2.8
04	280	2.5					2.8	2.9
05	270	2.7					2.8	3.0
06	260	2.0					2.7	3.1
07	250	3.0			---	E	2.8	3.0
08	220	5.2			130	1.6	3.4	3.3
09	210	6.7			100	2.0	3.4	3.4
10	220	7.2			100	2.4	3.8	3.4
11	220	8.0			100	2.6	3.9	3.4
12	220	8.2			100	2.6	4.4	3.4
13	220	7.4			100	2.5	4.5	3.3
14	220	7.8			100	2.4	3.8	3.4
15	220	7.6			110	2.1	3.6	3.4
16	210	6.6			140	1.6	3.5	3.4
17	210	6.2			---	E	3.1	3.3
18	220	5.5					2.8	3.2
19	220	4.8					2.8	3.2
20	230	3.4					2.3	3.2
21	280	2.8					2.4	3.0
22	300	2.8					2.5	2.8
23	300	2.9					2.3	2.8

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 14

Wakkanai, Japan (45.4°N, 141.7°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.5						2.7
01	310	3.4					1.3	2.7
02	320	3.4					1.4	2.6
03	310	3.4						2.7
04	300	3.4						2.9
05	280	3.4						2.9
06	280	3.6						3.0
07	240	6.3	---	---	110	1.8	2.4	3.2
08	230	7.7	---	---	110	2.2		3.2
09	250	8.8	240	---	120	2.7		3.2
10	270	9.1	240	---	110	2.8		3.2
11	250	9.2	250	---	110	3.0		3.2
12	250	8.9	240	---	110	2.9		3.2
13	250	8.6	230	---	110	2.9		3.3
14	250	8.0	250	---	110	2.6		3.3
15	240	7.8	---	---	110	2.3		3.3
16	220	6.6	---	---	110	1.9	2.5	3.2
17	240	5.2					2.6	3.1
18	260	4.3					1.8	3.1
19	280	3.6					2.4	3.0
20	280	3.5					2.2	2.9
21	300	3.4					1.4	2.8
22	320	3.5					2.2	2.7
23	310	3.4						2.7

Time: 135.0°E.
Sweep: 1.0 Mc to 14.0 Mc in 15 minutes, manual operation.

Table 15

Akita, Japan (39.7°N, 140.1°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.4					2.8	2.8
01	300	3.5					2.4	2.8
02	300	3.4					2.4	2.8
03	290	3.4					2.2	2.9
04	270	3.5					2.0	3.0
05	250	3.4					1.7	2.9
06	250	3.7					1.9	3.1
07	220	6.8	---	---	120	1.9	2.8	3.4
08	220	8.2	220	---	110	2.4	3.0	3.4
09	230	8.8	220	---	110	2.6		3.4
10	230	9.0	220	---	110	2.9		3.3
11	250	10.4	220	---	110	3.0		3.3
12	250	9.7	220	---	110	3.0	3.4	3.3
13	240	8.8	230	---	110	2.9		3.3
14	240	8.7	230	---	110	2.8	3.3	3.4
15	230	8.4	230	---	110	2.4	3.4	3.4
16	220	7.2	210	---	---	1.9	3.3	3.4
17	220	5.3					3.2	3.4
18	230	4.3					3.1	3.2
19	250	3.7					3.0	3.1
20	260	3.6					2.6	3.1
21	270	3.4					2.2	3.0
22	300	3.4					2.4	2.8
23	300	3.4					2.4	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 16

Tokyo, Japan (35.7°N, 139.5°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6					2.6	2.8
01	280	3.4					2.4	2.9
02	280	3.4					2.6	2.8
03	270	3.5					2.3	3.0
04	250	3.5					2.4	3.2
05	250	3.2					2.4	3.0
06	230	3.8					2.0	3.2
07	220	7.2	---	---	120	2.1	2.7	3.5
08	220	8.5	---	---	100	2.6	3.4	3.5
09	230	9.2	210	---	100	2.7	3.6	3.5
10	230	10.2	220	---	100	3.0	3.6	3.4
11	240	10.4	210	---	100	3.1	3.8	(3.4)
12	240	10.0	220	---	100	3.1	3.6	3.4
13	240	9.4	220	---	100	3.1	4.0	3.4
14	230	9.2	220	---	100	2.9	3.9	3.4
15	220	8.3	220	---	100	2.5	3.6	3.5
16	220	7.5	---	---	100	2.0	3.2	3.5
17	210	5.8					3.2	3.5
18	230	4.2					2.8	3.2
19	230	4.0					2.8	3.2
20	240	3.7					2.6	3.1
21	250	3.5					2.6	3.1
22	290	3.6					2.5	2.9
23	280	3.5					2.2	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 17

Yamagawa, Japan (31.2°N, 130.6°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.3					2.2	2.8
01	280	3.4					1.8	3.0
02	280	3.5					2.0	2.9
03	280	3.4					1.7	3.0
04	260	3.5					1.8	3.1
05	280	3.0					1.6	2.9
06	270	3.2					1.2	2.9
07	240	5.7			110	1.6	2.2	3.2
08	230	7.7	230	---	110	2.4	2.7	3.5
09	250	8.7	220	---	110	2.8	3.0	3.4
10	250	9.6	230	---	110	3.0	3.8	3.3
11	260	10.2	230	---	100	3.2	4.4	3.3
12	260	10.1	220	4.6	110	3.3	4.4	3.2
13	260	11.0	230	---	110	3.2	4.4	3.2
14	260	11.2	240	---	110	3.2	4.4	3.3
15	250	10.6	240	---	110	3.0	4.0	3.3
16	250	9.6	230	---	110	2.6	4.0	3.4
17	230	8.1	240	---	---	1.9	3.2	3.4
18	220	6.3					3.2	3.4
19	240	4.9					3.0	3.2
20	240	4.7					2.8	3.2
21	250	4.3					2.4	3.1
22	260	3.8					2.4	3.1
23	280	3.4					2.4	2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 18.5 Mc in 15 minutes, manual operation.

Table 18

Baton Rouge, Louisiana (30.5°N, 91.2°W) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	3.6						2.8
01	320	3.6						2.9
02	320	3.6						2.9
03	320	3.8						2.9
04	300	3.6						3.0
05	340	3.4						2.9
06	330	3.5						2.9
07	270	6.0						3.1
08	270	7.8	260	---	120	(2.7)		3.2
09	290	8.7	260	---	130	3.0		3.1
10	290	8.9	250	---	120	3.2		3.1
11	290	9.5	240	---	130	(3.4)		3.0
12	290	9.1	250	---	120	(3.4)		3.0
13	290	9.4	260	---	120	(3.4)		3.0
14	290	9.6	270	---	120	3.2		3.0
15	280	9.0	270	---	130	(3.0)		3.0
16	270	8.5	---	---	130	(2.6)		3.1
17	260	7.6						3.1
18	270	5.4						3.1
19	280	4.0						3.0
20	290	3.5						3.1
21	320	3.2						3.0
22	330	3.4						2.8
23	320	3.6						2.9

Time: 90.0°W.
Sweep: 2.05 Mc to 14.1 Mc in 5 minutes, automatic operation.

Table 19

Formosa, China (25.0°N, 121.0°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07								
08	200	9.0	180	3.9	100	3.0	3.3	3.9
09	200	9.4	180	4.3	100	3.0	3.4	3.9
10	240	10.8	190	4.8	100	3.2	3.9	3.8
11	240	12.5	200	4.6	100	3.3	4.2	3.6
12	240	12.8	180	4.7	100	3.2	4.2	3.7
13	240	12.6	200	4.6	100	3.2	4.2	3.7
14	240	13.5	200	4.7	100	3.1	4.3	3.7
15	230	13.7	200	4.6	100	3.2	4.2	3.7
16	200	13.8	---	---	100	3.0	3.8	3.9
17	200	12.0	---	---	---	---	3.4	4.0
18	200	10.2	---	---			3.2	3.9
19	200	8.6	---	---			2.7	3.7
20								
21								
22								
23								

Time: 120.0°E.
Sweep: 2.5 Mc to 14.5 Mc in 15 minutes, manual operation.

Table 20

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.7					2.0	2.9
01	270	4.5					1.8	2.9
02	260	4.2					1.6	2.9
03	260	3.9					1.8	2.9
04	250	3.6					1.7	2.9
05	270	4.0			---	---		3.0
06	240	5.6	240	---	120	(2.1)		3.2
07	270	6.6	230	4.0	110	(2.7)	3.0	3.1
08	320	7.4	220	4.4	110	(3.1)	3.5	2.9
09	310	8.2	210	4.6	110	(3.4)	3.6	2.8
10	320	8.6	200	4.8	110	3.5	3.7	2.8
11	330	9.0	210	4.9	110	---	3.8	2.8
12	320	9.2	210	5.0	110	---		2.8
13	330	9.4	210	4.9	110	(3.7)	3.8	2.8
14	320	9.4	220	4.8	110	(3.6)		2.8
15	310	9.0	220	4.6	110	3.4	3.6	2.9
16	300	8.9	220	4.4	110	3.0	3.3	2.9
17	280	9.0	230	3.9	110	2.6	2.9	3.0
18	250	9.2	250	---	120	(2.0)	2.1	3.1
19	230	8.8						3.1
20	230	7.0						3.1
21	240	5.8					1.8	3.0
22	260	5.0						2.9
23	280	4.7					1.9	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 21

Capetown, Union of S. Africa (34.2°S, 18.3°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(290)	4.1					2.0	2.8
01	(290)	4.1					2.3	2.8
02	(290)	4.0					2.2	2.8
03	(270)	4.0					2.2	2.8
04	(260)	3.7					1.9	2.9
05	280	3.4					1.6	2.8
06	250	4.8	---	---	---	1.9		3.0
07	280	6.0	240	---	120	(2.4)		3.0
08	310	6.8	220	4.3	110	(2.9)		2.8
09	320	7.8	220	4.6	110	(3.2)	3.5	2.8
10	320	8.2	210	4.8	110	(3.4)	3.8	2.8
11	340	8.6	210	4.9	110	(3.5)	4.0	2.7
12	330	8.8	220	5.0	110	(3.6)	4.0	2.7
13	340	9.2	210	5.0	110	---	3.6	2.8
14	320	9.4	220	4.9	110	(3.6)	3.6	2.8
15	310	9.2	220	4.8	110	(3.5)	3.2	2.8
16	310	9.2	220	4.5	110	(3.2)	3.3	2.9
17	290	8.8	220	4.1	110	3.0	2.6	2.9
18	270	8.5	240	---	110	2.5		3.0
19	250	8.1	250	---	---	1.8		3.1
20	230	7.0					1.4	3.0
21	230	5.9						3.1
22	(250)	4.9					1.6	3.0
23	(270)	4.4					2.0	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 22

Lindau/Harz, Germany (51.6°N, 10.1°E) October 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					2.0	2.7
01	310	3.3					2.1	2.7
02	300	3.3					2.2	2.8
03	300	3.0					2.0	2.7
04	290	2.9					2.0	2.8
05	290	2.2					2.0	2.9
06	280	2.6					2.8	3.0
07	250	4.3	---	---	---	E	3.2	3.2
08	240	5.4	220	---	100	2.2	3.3	3.3
09	250	6.6	210	3.8	100	2.5	3.4	3.3
10	260	7.0	210	4.0	100	2.7	3.6	3.2
11	240	7.3	210	4.0	100	2.9	3.6	3.0
12	240	8.1	210	4.2	100	2.9	3.9	3.2
13	240	8.7	210	4.2	100	2.8	3.6	3.2
14	240	8.0	210	3.9	100	2.8	3.4	3.2
15	230	8.0	220	---	100	2.6	3.5	3.2
16	230	7.6	230	---	100	2.2	3.4	3.3
17	220	7.0	---	---	---	E	2.7	3.3
18	230	6.2	---	---	---	E	2.8	3.7
19	230	5.6	---	---			2.6	3.7
20	230	4.8					2.3	3.0
21	250	3.8					2.0	2.9
22	270	3.5					2.2	2.8
23	300	3.3					2.0	2.7

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 23

Watheroo, W. Australia (30.3°S, 115.9°E) October 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.5					2.5	2.8
01	260	4.4					2.5	2.9
02	260	4.2					2.5	2.9
03	260	3.9					2.5	2.8
04	280	3.5					2.6	2.9
05	280	3.6					2.4	2.9
06	260	4.9					2.2	3.3
07	260	5.9	240	3.8		2.5	2.7	3.3
08	280	6.8	230	4.3		3.0	3.2	3.2
09	310	6.8	220	4.7		3.2	3.6	3.1
10	330	7.4	220	4.8		3.4	3.7	3.0
11	320	7.8	220	4.9		3.5	4.0	3.0
12	320	8.6	220	5.0		3.5	3.8	2.9
13	320	8.6	220	4.8		3.4	3.6	3.0
14	300	9.1	230	4.8		3.3	3.5	3.0
15	290	8.0	230	4.6		3.3	3.3	3.0
16	280	7.8	240	4.3		3.0	3.2	3.1
17	260	7.2	240	3.7		2.4	2.8	3.2
18	250	7.0					2.0	3.2
19	240	7.0					2.4	3.0
20	240	6.0					2.1	3.0
21	260	5.3					2.4	2.9
22	270	5.0					2.4	2.8
23	270	4.9					2.4	2.8

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 24

Rarotonga I. (21.3°S, 159.8°W) September 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.0						3.0
01	260	6.0						3.1
02	270	5.7						3.0
03	260	5.0						3.0
04	300	4.1						3.0
05	300	4.2						2.9
06	300	4.2						3.0
07	250	7.1	230	4.1	110	2.3	3.5	3.2
08	280	8.8	240	4.8	110	2.9	4.0	3.1
09	280	9.4	220	5.0	110	3.2	4.5	3.1
10	290	10.9	220	5.1	110	3.4	4.7	3.2
11	280	10.2	230	5.0	110	3.5	4.6	3.2
12	270	9.8	210	5.0	110	3.6	4.5	3.2
13	300	9.4	210	5.0	100	3.6	4.6	3.1
14	280	9.1	230	5.0	110	3.4	4.6	3.1
15	300	9.2	230	5.0	110	3.3	4.4	3.0
16	300	8.6	240	4.5	110	3.4	4.3	3.1
17	260	8.5	250	5.2	---	---	4.0	3.0
18	260	7.9	---	---	---	---	3.8	3.2
19	250	7.8			---	---	3.4	3.1
20	250	7.6					3.2	3.2
21	260	6.8					3.1	3.1
22	280	6.0						3.0
23	290	5.4						3.0

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 25

Brisbane, Australia (27.5°S, 153.0°E) September 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.8						3.0
01	240	4.6						3.1
02	230	4.2						3.2
03	230	3.6						2.9
04	260	3.5					2.0	2.8
05	280	3.5						2.8
06	250	4.7			150	2.1		3.2
07	250	6.6	240	4.0	110	2.5		3.3
08	270	7.5	230	4.3	100	2.9		3.3
09	270	8.2	220	4.5	100	3.2		3.3
10	280	8.2	210	4.7	100	3.4		3.2
11	280	8.4	200	4.8	100	3.5		3.2
12	270	8.1	200	4.7	100	3.5		3.2
13	280	7.6	200	4.6	100	3.5		3.2
14	260	7.4	200	4.5	100	3.4		3.2
15	260	7.0	200	4.3	100	3.1		3.2
16	250	6.7	210	3.8	100	2.8		3.2
17	240	6.6	---	---	130	2.2		3.2
18	230	6.3						3.1
19	240	6.3						2.9
20	260	5.8						2.9
21	280	6.5						2.9
22	260	5.5						2.9
23	250	5.2						3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 26

Canberra, Australia (35.3°S, 149.0°E) September 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(4.1)					2.0	(3.0)
01	250	(4.0)					2.4	(3.0)
02	240	(4.0)					2.2	3.0
03	240	(3.6)					2.5	3.0
04	250	(3.3)					2.3	3.0
06	260	(3.1)						2.9
06	250	3.5			---	(<1.3)	2.6	3.0
07	240	5.4	---	---	110	2.1	2.6	3.4
08	275	6.0	225	4.0	100	2.6		3.3
09	280	6.6	210	4.5	100	3.1		3.2
10	290	7.0	200	4.5	100	3.3		3.2
11	290	7.6	200	4.5	100	3.4		3.2
12	280	7.9	200	4.5	100	3.4	3.3	3.2
13	270	7.7	200	4.6	100	3.4	3.1	3.3
14	270	7.0	200	4.5	100	3.3		3.3
15	270	7.0	200	4.1	100	3.1		3.2
16	250	6.6	210	3.6	110	2.8		3.2
17	230	6.2	216	---	110	2.2	2.5	3.2
18	230	6.2			---	(<1.5)		3.1
19	240	5.6						3.0
20	250	5.4						3.0
21	250	(5.1)						2.9
22	250	(4.8)					2.1	(2.9)
23	260	(4.2)						(2.9)

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconde.

Table 27

Hobart, Tasmania (42.8°S, 147.4°E) September 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0						3.0
01	250	2.6						3.0
02	260	2.4						3.0
03	250	2.2					2.0	3.0
04	240	2.0						3.1
05	260	1.8						3.0
06	260	2.6			---	E		3.1
07	230	4.3	---	---	110	2.0		3.4
08	230	6.0	210	4.0	100	2.5		3.4
09	260	5.5	200	4.3	100	2.8		3.4
10	280	6.2	200	4.4	100	3.0		3.3
11	280	6.7	200	4.6	100	3.1		3.2
12	290	6.8	200	4.5	100	3.2		3.3
13	270	7.1	200	4.5	100	3.2		3.3
14	270	6.9	200	4.4	100	3.1		3.3
15	250	6.8	200	4.2	100	3.0		3.4
16	250	6.5	200	3.8	100	2.6		3.4
17	220	6.0	220	3.0	110	2.1		3.3
18	230	6.0			---	E		3.2
19	220	5.7						3.1
20	230	5.0						3.0
21	240	4.5						3.1
22	250	3.8						3.0
23	250	3.2						3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconde.

Table 28

Christchurch, New Zealand (43.5°S, 172.7°E) September 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6					1.2	2.8
01	280	3.4						2.9
02	280	3.2					1.6	2.9
03	260	2.7						3.1
04	(280)	2.0					1.8	3.0
05	290	2.0						3.0
06	280	3.3				1.4	1.9	3.1
07	260	4.8	250	3.2		2.0	2.4	3.3
08	280	5.3	240	3.8		2.5	2.8	3.2
09	310	5.6	230	4.3		2.9	3.4	3.1
10	330	5.9	220	4.4		3.0	3.5	3.1
11	300	6.4	230	4.5		3.2	3.4	3.2
12	310	6.6	230	4.6		3.2	3.5	3.1
13	300	6.8	230	4.5		3.2		3.1
14	290	6.8	230	4.4		3.1	3.0	3.2
15	280	6.5	240	4.2		2.9	2.8	3.2
16	270	6.3	240	3.7		2.5	2.5	3.2
17	250	6.0	250	2.9		1.9	2.0	3.2
18	250	6.7						3.0
19	260	6.4						2.8
20	280	6.0						2.8
21	290	4.8						2.8
22	290	4.4						2.8
23	280	4.1						2.8

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 29

Delhi, India (28.6°N, 77.1°E) August 1950

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.9						3.3
01	320	5.8						
02	---	---						
03	---	---						
04	280	5.0						3.2
05	280	5.0						
06	280	5.9						
07	280	7.0						
08	280	7.7						3.3
09	300	8.0						
10	320	8.5						
11	340	9.5						
12	340	10.5						2.3
13	340	11.3						
14	320	11.6						
15	320	11.9						
16	320	11.0						3.0
17	300	10.7						
18	300	10.3						
19	280	9.3						
20	280	8.4						3.2
21	300	7.4						
22	320	6.5						
23	320	6.2						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 30

Bombay, India (19.0°N, 73.0°E) August 1950

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	270	7.6						
08	330	8.9						3.0
09	360	9.3						
10	420	10.2						
11	420	10.8						
12	450	11.6						2.6
13	460	12.2						
14	480	12.6						
15	480	12.8						
16	480	13.0						2.5
17	480	13.0						
18	480	12.8						
19	450	12.0						
20	420	10.6						2.6
21	420	9.3						
22	420	8.2						2.7
23	420	7.8						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 31

Madras, India (13.0°N, 80.2°E) August 1950

Time	* foF2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	8.2						
08	390	9.0						2.8
09	420	9.7						
10	450	9.6						
11	480	9.4						
12	480	9.4						2.5
13	480	10.0						
14	500	10.4						
15	500	10.9						
16	500	11.3						2.5
17	480	12.0						
18	450	12.1						
19	420	11.6						
20	420	10.6						2.7
21	420	10.0						
22	380	9.1						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**average values; other columns, median values.

Table 32

Tiruchy, India (10.8°N, 78.8°E) August 1950

Time	* foF2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	7.6						
08	420	9.5						
09	480	9.8						
10	480	9.1						
11	480	9.0						
12	610	9.2						
13	540	9.7						
14	540	9.8						
15	(510)	(9.7)						
16	480	10.5						
17	480	10.7						
18	480	11.0						
19	480	10.4						
20	480	10.4						
21	480	10.5						
22	450	10.2						
23	---	---						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 6 minutes, manual operation.
*Height at 0.83 foF2.

Table 33

Rarotonga I. (21.3°S, 159.8°W) August 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.7						3.1
01	280	4.2						3.0
02	260	4.3						3.0
03	270	4.2						3.1
04	290	3.9						3.0
05	300	3.7			---	---		2.9
06	290	4.1	---	---	---	---	2.8	3.0
07	250	6.4	250	---	---	---	3.3	3.2
08	250	8.2	250	4.6	110	3.2	4.1	3.2
09	250	9.1	220	4.8	110	3.3	4.5	3.2
10	260	9.8	210	4.9	110	3.4	4.6	3.2
11	260	9.4	240	5.0	110	3.5	4.6	3.2
12	270	8.8	220	5.5	100	3.5	4.7	3.2
13	280	9.1	210	5.3	110	3.7	4.8	3.2
14	280	9.1	250	5.4	110	3.4	4.7	3.2
15	300	8.9	240	5.4	110	3.2	4.3	3.1
16	280	8.7	250	5.0	110	3.0	4.4	3.1
17	260	8.5	250	5.1	110	3.0	4.2	3.1
18	260	8.3	250	4.6	120	3.0	3.6	3.1
19	250	7.5	250	4.4	---	---	3.5	3.1
20	250	6.6					3.1	3.1
21	250	6.2						3.2
22	260	6.0						3.1
23	270	5.0						3.1

Time: 157.6°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 34

Delhi, India (28.6°N, 77.1°E) July 1950

Time	* foF2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.0						3.0
01	320	6.9						
02	---	---						
03	---	---						
04	---	6.1						3.2
05	320	6.1						
06	300	6.7						
07	300	7.5						
08	300	8.2						3.1
09	320	8.7						
10	320	9.4						
11	340	9.9						
12	360	10.4						2.9
13	340	10.4						
14	340	10.7						
15	340	10.8						
16	340	10.8						3.0
17	320	10.3						
18	320	9.9						
19	320	9.4						
20	330	8.8						
21	320	8.0						3.2
22	320	7.8						
23	320	7.3						3.3

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 35

Bombay, India (19.0°N, 73.0°E) July 1950

Time	* foF2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	---	---						
07	270	7.5						
08	330	8.3						3.0
09	360	8.6						
10	390	9.3						
11	420	9.7						
12	450	10.4						2.5
13	480	10.9						
14	480	11.5						
15	480	12.0						
16	480	12.6						2.3
17	480	13.0						
18	480	12.8						
19	420	11.9						
20	420	10.5						2.6
21	420	9.1						
22	420	8.2						2.6
23	420	7.1						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 36

Madras, India (13.0°N, 80.2°E) July 1950

Time	* foF2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	8.5						
08	360	9.1						2.7
09	420	9.5						
10	480	9.6						
11	480	9.8						
12	500	10.0						2.5
13	610	10.2						
14	500	10.5						
15	480	10.7						
16	480	11.1						2.5
17	480	11.5						
18	450	11.2						
19	450	10.9						
20	420	10.2						2.7
21	390	(9.5)						
22	360	(8.9)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 37

Tiruchy, India (10.8°N, 78.8°E) July 1950

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	7.9						
08	420	9.4						
09	450	9.6						
10	480	9.4						
11	480	9.4						
12	480	9.3						
13	480	9.6						
14	510	9.5						
15	540	10.2						
16	480	10.8						
17	480	11.0						
18	480	11.0						
19	450	10.7						
20	420	9.6						
21	420	9.0						
22	390	8.6						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 38

Domont, France (49.0°N, 2.3°E) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.2						2.6
01	300	6.0						2.7
02	300	6.4						2.7
03	(300)	5.0						2.6
04	290	4.7						2.7
05	250	4.8	280	(1.8)	---	E		2.9
06	230	6.0	220	(2.3)	100	2.2		3.1
07	250	6.8	220	3.6	100	2.8		3.0
08	290	7.6	200	---	100	3.1		3.0
09	280	8.3	200	---	100	3.3		2.9
10	290	8.6	200	---	100	3.4		2.9
11	300	9.6	200	---	100	3.4		2.9
12	290	9.8	200	---	100	3.4		2.9
13	300	9.6	200	---	100	3.5		2.8
14	300	9.6	220	---	100	3.4		3.0
15	280	9.6	210	---	100	3.3		3.0
16	(280)	9.6	220	---	100	3.1		3.0
17	240	9.7	220	---	100	2.7		3.0
18	230	9.4	240	---	100	2.1		3.0
19	230	8.6	---	---	100	2.1		3.0
20	220	7.6						2.9
21	230	6.9						2.7
22	260	6.4						2.7
23	300	6.4						2.6

Time: 0.0°.
Sweep: 1.5 Mc to 16.0 Mc in 1 minute 30 seconds.

Table 39

Poitiers, France (46.6°N, 0.3°E) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.6						2.6
01	320	6.4						2.6
02	300	6.0						2.6
03	300	5.5						2.6
04	300	5.3						2.7
05	280	5.0						2.8
06	260	6.1	---	---				3.1
07	260	6.8	230	---				3.1
08	280	7.6	230	4.5				2.9
09	280	8.5	220	4.6				2.9
10	300	9.0	220	4.8				2.8
11	300	9.0	220	4.9				2.8
12	300	9.2	220	5.0				2.8
13	310	9.6	230	---				2.8
14	300	9.4	230	(5.3)				2.8
15	290	9.6	230	---				2.9
16	280	9.5	230	---				2.8
17	270	9.6	240	---				3.0
18	260	9.5	240	---				3.0
19	250	8.8						3.0
20	260	7.5						2.8
21	280	7.2						2.7
22	300	6.7						2.6
23	330	6.6						2.5

Time: 0.0°E.
Sweep: 3.1 Mc to 11.8 Mc in 1 minute 15 seconds.

Table 40 (supersedes Table 10, CRPL-F68)

Guam I. (13.6°N, 144.9°E) February 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	(10.4)					4.0	3.0
01	230	10.4					4.0	3.1
02	220	(10.0)						(3.2)
03	210	6.6						(3.2)
04	230	5.5						3.1
05	230	4.8					2.0	3.1
06	240	4.1					3.0	3.0
07	260	6.4			140	1.8	4.0	3.1
08	240	9.2	---	---	110	2.8	4.7	3.0
09	260	11.3	220	---	100	3.3	5.4	2.8
10	270	12.0	210	---	100	3.6	4.8	2.6
11	280	12.5	200	4.8	100	3.8	4.6	2.5
12	280	11.8	200	4.9	110	3.9	4.5	2.4
13	290	11.9	200	4.8	100	3.9	4.6	2.4
14	300	(12.0)	300	---	100	3.6	4.7	2.4
15	300	(12.4)	210	---	110	3.6	4.4	(2.4)
16	(280)	(13.1)	220	---	110	3.2	4.7	(2.5)
17	240	(13.5)	240	---	110	2.9	4.2	(2.6)
18	260	(13.3)			---	---	5.0	(2.7)
19	290	(13.0)					3.4	2.5
20	310	(12.6)						(2.4)
21	280	(12.2)						(2.6)
22	250	(11.9)					2.2	(2.7)
23	240	(11.0)					4.2	(2.9)

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 41*

Campbell I. (52.5°S, 169.2°E) June 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	270	(2.9)					2.0	---
06								
07	(260)	3.2					2.1	---
08	230	5.4			---	1.8	2.5	3.2
09	230	7.0		---	120	2.2	2.5	3.3
10	230	7.9		---	110	2.4	2.8	3.3
11	230	8.7		---	110	2.6	3.4	3.2
12	230	9.1		---	110	2.7	3.8	3.2
13	230	9.3		---	120	2.7	3.5	3.2
14	240	9.1		---	120	2.4	3.0	3.2
15	230	9.0		---	140	2.0	2.7	3.2
16	220	7.6		---	---	1.6	2.1	3.1
17	220	6.6			---	---	2.1	3.1
18	230	5.8					2.1	3.0
19	250	4.7					2.2	(3.0)
20								
21	(280)	(3.7)					2.0	---
22								
23	(320)	(4.2)					2.9	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 42*

Campbell I. (52.5°S, 169.2°E) June 1948

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	260	4.2					3.0	(2.8)
06								
07	250	(4.0)					2.8	(2.8)
08	230	6.8			---	1.8	3.8	3.1
09	220	9.0			110	2.2	4.0	3.2
10	220	10.8			110	2.6	4.0	3.2
11	230	11.8			120	2.7	3.9	3.1
12	230	12.0			110	2.8	4.0	3.1
13	220	12.1			120	2.7	3.9	3.1
14	230	11.4			120	2.5	3.8	3.1
15	230	10.9			150	2.1	3.5	3.1
16	220	10.0			---	E	2.9	3.0
17	220	8.3					2.8	3.0
18	230	7.0					2.3	2.9
19	250	6.0					2.4	2.9
20								
21	250	4.9					2.6	2.8
22								
23	(270)	4.3					4.0	(2.7)

Time: 165.0°E.
Sweep: 1.0 Mc to 16.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 43*

Campbell I. (52.5°S, 169.2°E) June 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	260	---					2.9	---
06								
07	250	(4.2)					2.8	(2.8)
08	240	6.5			---	1.8	3.1	3.0
09	240	9.2			120	2.3	2.9	3.1
10	230	10.4			120	2.6	2.9	3.1
11	230	11.8			120	2.8	3.1	3.1
12	240	12.0			120	2.8	2.9	3.1
13	240	12.3			120	2.8		3.0
14	240	12.3			120	2.6	2.9	3.1
15	230	11.8			130	2.1	2.9	3.1
16	230	10.5			---	E	2.2	3.0
17	230	9.0						2.9
18	250	7.4					2.4	2.8
19	250	(7.1)					2.2	(2.8)
20								
21	260	(5.8)					2.9	(2.8)
22								
23	300	---					2.9	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 44*

Campbell I. (52.5°S, 169.2°E) June 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05		3.5						(2.9)
06								
07		2.5						(2.9)
08		4.8						3.1
09		6.3						3.1
10		7.7						3.1
11		7.6						3.2
12		8.1						3.2
13		8.2						3.1
14		8.5						3.1
15		7.9						3.2
16		7.0						3.0
17		6.0						3.0
18		4.8						2.9
19		4.4						(2.7)
20								
21		(3.7)						(2.6)
22								
23		(3.1)						---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 45*

Campbell I. (52.5°S, 169.2°E) November 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	250	5.2	---	---	120	2.2	2.5	3.0
06								
07	300	6.1	220	4.4	110	2.8	3.0	3.0
08	315	6.6	225	4.5	115	3.0	3.2	3.0
09	315	7.1	220	4.7	110	3.2	3.3	3.0
10	315	7.1	215	4.8	110	3.2	3.4	2.9
11	310	7.2	220	4.8	115	3.2	3.3	2.9
12	320	7.2	210	4.9	115	3.3	3.6	2.9
13	315	7.4	215	4.8	115	3.2	3.2	2.9
14	320	7.2	220	4.8	110	3.2		2.9
15	315	7.3	225	4.5	115	3.0	3.0	2.9
16	305	7.2	230	4.2	120	2.8	2.9	2.9
17	285	7.6	245	4.0	120	2.5	2.9	2.8
18	255	8.0	250	3.5	135	2.0	2.8	2.8
19	255	8.0	---	---			2.8	2.8
20								
21	260	7.6					2.4	2.7
22								
23	270	5.7					2.8	2.7

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 46*

Campbell I. (52.5°S, 169.2°E) October 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	250	4.0			---	1.9	1.8	2.9
06								
07	260	5.4	230	4.0	110	2.5	2.4	3.0
08	300	6.0	220	4.2	110	2.8		3.1
09	300	6.4	215	4.5	105	3.0		3.0
10	305	6.6	210	4.5	110	3.0		3.0
11	305	6.7	210	4.6	110	3.1		2.9
12	310	7.1	220	4.6	110	3.2		3.0
13	310	6.8	220	4.5	110	3.1		3.0
14	305	6.6	220	4.4	110	3.0		3.0
15	300	6.8	230	4.2	110	2.8		3.0
16	275	7.0	235	4.0	110	2.6		3.0
17	250	6.7	240	3.4	120	2.2		3.0
18	250	6.8			---	1.8	1.9	2.9
19	250	7.3						2.9
20								
21	260	(6.2)						(2.8)
22								
23	280	(5.0)					2.2	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 47*

Campbell I. (52.5°S, 169.2°E) September 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	(300)	2.6						2.8
06								
07	230	4.5	---	---	110	2.0	2.0	3.3
08	240	5.2	200	3.6	105	2.4		3.2
09	265	5.5	200	4.0	105	2.6		3.3
10	280	5.8	200	4.1	100	2.8		3.2
11	290	5.9	200	4.2	100	2.8		3.2
12	280	6.1	200	4.2	105	3.0		3.2
13	275	6.2	200	4.2	105	2.9		3.3
14	270	6.1	205	4.0	105	2.8		3.2
15	260	6.1	205	3.7	105	2.6		3.2
16	235	6.1	210	3.3	110	2.1		3.2
17	230	5.8	---	---	---	1.8	1.8	3.2
18	220	5.4						3.1
19	235	5.1						2.9
20								
21	255	(4.2)						2.9
22								
23	280	(3.1)						2.8

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 48*

Campbell I. (52.5°S, 169.2°E) June 1945

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	370	---					3.1	---
06								
07	(350)	---					3.1	---
08	230	4.2					2.4	3.3
09	220	5.3			---	---	2.9	3.4
10	230	6.0	205	3.1	130	2.3	3.0	3.4
11	235	6.4	220	3.4	125	2.5	3.0	3.4
12	240	6.3	225	3.5	125	2.5	3.1	3.4
13	230	5.9	220	3.4	125	2.4	3.0	3.4
14	235	6.4	220	2.9	130	2.2	2.5	3.3
15	225	6.2			---	---	2.1	3.4
16	225	5.4						3.3
17	240	4.6						3.2
18	255	3.9						3.0
19	280	3.2						2.8
20								
21	330	(2.8)					3.0	(2.7)
22								
23	370	---					3.3	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.
*Observations taken on a 16-hour working schedule.

Table 49*

Hourly Monthly Medians of foF2 and (M3000)F2

Guam I. (13.6°N, 144.9°E) 1949

TIME	October 1949		November 1949		December 1949	
	f°F2	(M3000)F2	f°F2	(M3000)F2	f°F2	(M3000)F2
00	(12.8)	(2.9)	11.3	3.0	9.1	3.0
01	13.2	(3.0)	10.5	3.1	8.8	3.1
02	10.8	3.2	9.1	3.2	7.4	3.2
03	8.4	3.1	7.2	3.2	5.6	3.1
04	7.3	3.0	5.8	3.1	4.6	3.0
05	6.2	3.0	5.1	3.0	4.2	3.0
06	6.3	3.0	5.1	2.8	3.5	3.0
07	10.3	3.0	9.2	3.1	7.5	3.0
08	12.8	2.9	12.4	3.0	11.6	3.0
09	(14.0)	(2.6)	14.3	2.9	13.8	2.8
10	(14.0)	(2.4)	14.8	2.5	13.2	2.6
11	(13.2)	(2.3)	14.4	2.3	11.9	2.3
12	12.9	2.3	13.0	2.2	11.6	2.2
13	(13.6)	(2.4)	13.0	2.2	11.4	2.3
14	(14.4)	(2.5)	13.3	2.3	12.2	2.4
15	(15.3)	(2.5)	13.8	2.3	12.8	2.5
16	(>15.5)	(2.5)	14.4	2.4	13.4	2.5
17	(>15.0)	(2.5)	14.4	2.4	13.4	2.6
18	(15.2)	(2.4)	14.3	2.4	13.3	2.6
19	(>14.4)	(2.2)	13.6	2.4	13.2	2.6
20	(>14.0)	(2.4)	(13.0)	(2.3)	12.8	2.6
21	(>13.8)	(2.4)	(12.9)	(2.5)	11.8	2.8
22	(13.1)	(2.7)	12.9	2.7	10.6	3.0
23	(12.9)	(2.8)	12.2	2.8	10.1	3.0

Time: 150.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

*Corrections to previously published values in CRPL-F64 through 66. In these issues, corresponding changes should be made in the graphs of these data.

TABLE 50

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(280)S	(280)S	300	300	300	280	230	220	210H	200H	240	250	270	280	250	270	240	230	230	230	(270)S	280	290	(310)A
2	280	290	300	280	260	230	270	(240)A	230	260	240	240	250	[260]L	270	240	250	220	230	250	240	250	(280)S	(280)S
3	(300)S	(320)S	300	280	270	260	(270)S	270	230	240	250	250	260	260	240	250	240	230	240	250	B	B	B	B
4	S	(300)B	(290)S	S	A	A	A	(300)S	230	240	250	250	250	(250)L	260	250	240	230	230	[240]A	(260)A	(280)S	A	S
5	S	S	A	A	270	250	240	[240]S	230	230	240	240	260	250	280	260	(250)A	250	(240)A	(230)A	(250)A	(260)S	S	S
6	A	S	(320)A	A	A	(240)A	[260]A	(270)A	230	240	250	240	260	260	260	250	250	230	240	230	(230)S	(300)S	(300)S	(300)S
7	(300)S	(290)S	(280)S	280	(270)A	A	A	A	230	(240)A	270	250	240	250	(250)L	260	240	230	230	240	A	S	S	S
8	S	(280)S	A	A	A	A	(250)A	(280)A	230	240	240	260	(250)L	270	270	260	240	240	230	230	(220)S	(280)S	[290]S	(300)S
9	S	S	290	270	250	260	270	280	230	250	240	260	260	260	250	250	250	240	230	220	260	280	270	290
10	290	300	290	280	270	250	250	270	240	230	280	250	260	290	270	270	250	230	240	240	270	290	260	280
11	A	A	300	290	260	250	260	260	240	240	250	250	270	270	260	260	260	240	240	230	240	270	270	280
12	270	280	290	260	250	290	280	270	250	240	270	260	260	270	260	250	230	230	240	220	270	300	290	300
13	290	290	270	250	290	290	280	270	240	260	240	260	250	270	270	260	230	220	230	230	240	290	290	[300]S
14	300	290	290	280	270	240	270	250	230	270	260	270	240	280	260	260	230	250	220	240	240	240	270	280
15	280	300	290	280	270	270	240	260	260	260	270	260	250	270	280	260	240	260	240	220	280	260	A	A
16	300	300	300	300	270	230	[260]A	280	230	240	250	280	260	270	280	260	250	240	240	230	(270)S	300	(290)S	(310)S
17	[300]M	(300)S	320	280	270	270	(280)S	260	230	250	250	260	[270]C	260	260	[260]L	250	220	260S	240	240	S	S	S
18	S	S	290	290	290	270	260	260	230	(200)H	250	260	250	240	250	210	220	210	210	210	210	[260]S	(300)S	(250)S
19	(300)S	(280)S	C	C	C	(260)S	(260)S	230	210	220	250	230	240	250	230	240	230	230	240	230	230	(260)B	(250)B	[260]B
20	260	270	260	260	(260)B	220	(240)S	230	200	220	(230)L	230	260	(240)L	230	240	220	210	210	230	B	S	S	S
21	S	S	S	S	250	230	220	220	210	210	260K	250K	270K	250K	230K	230K	210K	210	210	230	260	280	260	240
22	270	250	280	300	240	270	[260]S	250	230	C	C	270	280	270	250	260	230	230	210	220	220	(240)S	(260)S	(280)S
23	S	S	280	280	250	250	260	230	210H	[210]M	250	250	250	270	250	250	(230)A	220	220	210	A	A	270S	260S
24	280	[280]S	270	260	220	(270)S	[260]S	250	220	210	250	240	240	[240]L	250	230	230	220	210	210	220	230	(300)S	290
25	290	290	290	260	240	240	250	230	220	220	230	250	240	250	240	240	240	220	200	210	220	230	(240)S	(240)S
26	S	S	(270)S	(260)S	(240)S	250	240	220	210	210	240	240	260	260	[260]L	260	250	230	200	200	240	270	A	A
27	(270)S	[270]S	(270)S	(250)S	250	240	240	250	220	220	[230]L	240	240	240	260	250	230	240	210	230	220	230	(260)S	270
28	270	260	250	(240)S	240	(230)S	(240)S	250	220	220	[240]L	260	250	260	260	250	230	220	200	210	200	230	S	S
29	270	S	C	C	C	C	C	C	C	220	240	250	250	250	270	250	230	220	210	210	210	230	280	(260)A
30	(270)S	[260]A	260	270	250	240	260	230	200	210	220	250	230	[260]C	[260]L	250	230	220	220	210	220	250	240	300
31	330	340	370	290	230	S	290	270	230	240	290	270	270	280	270	270	250	220	230	230	240	(290)S	320	(300)S
Median	280	290	290	280	260	260	260	260	230	240	250	250	260	260	260	250	240	230	230	230	240	260	280	(280)
Count	21	22	26	24	26	26	28	29	30	30	30	31	31	31	31	31	31	31	31	31	27	26	22	22

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Monual ☐ Automatic ☒

TABLE 51

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Lang 77.1°W

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

75°W Mean Time

Calculated by: L.H.E., B.E.B., McC., By.H.

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	(3.5)^{S}	(3.3)^{S}	3.3^{F}	3.5^{F}	(3.9)$^{S}_{F}$	[4.4]$^{S}_{F}$	(4.2)$^{S}_{F}$	3.9	(5.9)^{H}	6.5^{H}	7.8	8.2	8.0	8.7	8.8	8.0	7.7	7.9	6.8	(5.1)^{S}	4.3	4.2	3.9	3.8
2	3.8^{F}	4.3^{F}	4.4^{F}	4.8^{F}	5.4	4.9	4.0^{F}	3.6^{F}	6.6^{Z}	8.2	10.0^{F}	8.5	8.4	8.3	8.7	7.7^{F}	8.1	7.4	6.8	5.6	5.0	3.9	(3.3)^{J}	3.2^{J}
3	(3.2)^{J}	3.3	3.8	3.8^{F}	4.3^{F}	4.3^{F}	3.5$^{J}_{F}$	3.1^{J}	5.5	6.9	9.3	9.6	8.6	8.3	7.6	7.7	7.0	6.8	6.4	5.5	3.9	[3.4]^{B}	[3.1]^{B}	[2.8]^{B}
4	2.5	[2.5]^{B}	(3.1)$^{J}_{F}$	2.5	(3.5)^{A}	3.2	[3.8]^{A}	2.5^{F}	5.5	7.0^{F}	8.4	8.0	7.5^{F}	7.8^{F}	7.9	7.6	7.0	(7.4)^{S}	6.0^{F}	4.4^{F}	3.2^{F}	2.7^{F}	(2.7)^{A}	2.2^{F}
5	2.2^{F}	2.2^{J}	[2.2]^{A}	[2.4]^{A}	2.8^{F}	3.0^{F}	2.6^{F}	2.5^{F}	5.2^{F}	6.4^{F}	8.4^{F}	(8.4)^{S}	8.2^{F}	7.2^{F}	7.6^{F}	8.1	6.9^{F}	8.4	7.3	4.7	3.4	2.9	(2.4)^{S}	2.3
6	[2.2]^{A}	2.2$^{J}_{S}$	2.3^{F}	[2.8]^{A}	(3.3)^{A}	3.3	2.9$^{J}_{S}$	3.1	5.7	7.2	8.0	7.6^{F}	8.6	8.6	8.2	7.6	6.8	6.2	(6.0)$^{S}_{F}$	5.7^{F}	3.4	2.6^{J}	(2.4)^{S}	(2.4)$^{S}_{F}$
7	2.7^{F}	3.0^{F}	3.2^{F}	3.1^{F}	3.5	[2.8]^{A}	(2.1)$^{P}_{A}$	2.6	5.4^{F}	6.0^{F}	(7.8)^{F}	8.2^{F}	8.1	7.2^{F}	7.2^{F}	7.4	7.2	6.8	5.4	4.6^{F}	(3.0)^{S}	(2.9)$^{S}_{A}$	(2.8)^{S}	(3.0)^{S}
8	3.3	3.1	2.9^{F}	2.7^{F}	2.7^{F}	3.2	3.5^{F}	3.3^{F}	6.0^{F}	7.8	8.4^{F}	8.8	9.4	9.6	9.6^{Z}	9.4	7.8^{J}	(7.7)^{S}	(7.0)^{S}	(5.6)^{S}	3.3^{F}	3.2^{F}	(2.9)$^{J}_{S}$	2.6$^{J}_{S}$
9	[2.6]^{S}	(2.6)^{S}	3.3^{F}	4.2^{F}	3.6^{F}	3.0^{F}	2.7^{F}	3.1^{F}	(5.6)^{F}	7.2	8.1	9.0	8.4^{Z}	7.4	7.3	7.6	7.5	7.4	6.2^{F}	4.7^{F}	3.5	3.5	3.6	3.3
10	3.4^{F}	3.2^{F}	3.4^{F}	3.8	3.9^{V}	3.9	3.5	3.1	6.2	6.9	8.1	9.9	8.7	8.5	8.9	9.0	10.0	8.1	6.2	5.5	4.8	4.7	4.8	5.2
11	5.0	3.2	3.8	3.9^{F}	4.5^{F}	4.1^{F}	3.9	3.3^{F}	5.1^{V}	7.0	7.6	8.2	9.2	9.2	9.6	8.3	9.3	9.5	7.6	6.6	4.5	4.7^{F}	4.7^{F}	4.5^{F}
12	4.2^{F}	(3.8)^{F}	3.9^{F}	(4.2)^{F}	4.2^{F}	3.6^{F}	3.6^{F}	2.8$^{F}_{S}$	4.7	6.5	7.4	8.8	8.6	8.4	8.1	7.6	7.3	6.5	5.7^{F}	4.7^{F}	3.0	3.2	3.4^{S}	3.2^{F}
13	3.3^{F}	3.5^{F}	3.6^{F}	3.6^{F}	2.8^{F}	2.7^{F}	2.7^{F}	3.2^{V}	5.0	7.1	7.5	8.0	7.5	7.5	7.9	7.9	7.5	6.4	6.3	4.7	3.5^{J}	2.9	2.6^{J}	2.4$^{J}_{F}$
14	2.6$^{J}_{F}$	3.0^{F}	2.5^{F}	2.4^{F}	3.1^{F}	2.8^{F}	2.3^{F}	2.4^{F}	5.0$^{Z}_{F}$	6.0^{F}	7.7^{F}	8.0	7.7	7.2^{F}	7.8	7.5	6.6	7.1^{S}	6.5	5.6^{F}	4.3^{F}	3.9$^{J}_{S}$	3.1^{F}	3.3^{V}
15	2.9^{F}	2.7^{F}	2.8^{F}	3.1^{F}	3.4^{F}	5.6^{F}	3.2^{F}	2.6^{F}	5.0^{F}	6.8	7.0	7.5	7.4	6.7^{V}	7.4	7.2	6.3	6.6	7.2	5.1	4.0^{S}	3.6	[2.9]^{A}	2.8$^{J}_{F}$
16	2.8^{F}	[2.3]^{F}	(1.8)$^{J}_{F}$	2.3^{F}	3.1^{F}	2.7^{F}	3.1^{F}	2.6^{F}	4.6	6.2^{F}	6.4	7.3	7.4^{F}	6.8^{F}	7.5	7.8	(6.2)^{S}	6.0	5.4	3.8	2.7^{J}	(2.2)^{S}	2.2	2.2
17	(2.3)$^{J}_{F}$	2.3^{F}	2.5$^{J}_{F}$	3.5	3.7	3.0^{F}	2.8^{F}	3.2	4.8	6.3	6.0	7.3	[6.8]^{Q}	6.7	5.9	6.0	6.5	5.5^{S}	4.1	4.3^{S}	2.9^{V}	2.3	2.1	2.2
18	2.3^{F}	1.9^{F}	2.0^{S}	2.1	2.3^{F}	2.5^{F}	2.7$^{F}_{S}$	2.8^{S}	4.7	5.3^{H}	5.8^{H}	7.2	7.3	6.6	6.4	5.5	5.8	5.7	(5.2)^{S}	4.1	3.0	2.1	2.2	2.5^{F}
19	2.2^{F}	2.7^{F}	C	C	[2.2]^{C}	2.4^{F}	2.6^{F}	3.0^{F}	(4.8)^{S}	5.1^{V}	6.6	7.4^{H}	8.4^{F}	6.8^{F}	6.6	6.6	6.4	(5.8)$^{S}_{F}$	6.6^{F}	(6.6)^{S}	4.8	4.2	3.1	(2.8)$^{D}_{J}$
20	2.8	3.1	3.2	3.2^{J}	3.1^{S}	3.0	2.5^{S}	3.0^{S}	5.2	5.8	6.4	7.6	7.4	8.0	7.6	7.0	6.2	5.6	5.2^{J}	5.1	3.2^{J}	2.1	2.2	2.4
21	2.3	2.2	2.2	2.1^{F}	2.2^{F}	2.5^{F}	2.6^{F}	3.3	5.2	5.6	7.5^{K}	8.5^{K}	10.0^{K}	10.4^{K}	10.2^{K}	8.6^{F}	7.1^{K}	6.0	5.2	4.5	4.1	4.4	4.7	4.2
22	4.0^{J}	3.7	2.9^{V}	2.7^{F}	[2.6]^{F}	2.5^{F}	2.5^{F}	3.2	4.7	C	C	6.6	7.0	7.3	7.4	7.3	6.3	7.1	6.3	5.8^{S}	4.3	3.1^{F}	3.0^{F}	2.2^{F}
23	1.8^{F}	1.9^{F}	2.3$^{J}_{F}$	2.4^{F}	2.4^{F}	2.3^{F}	2.1^{F}	2.6$^{J}_{F}$	5.1^{F}	[5.9]^{A}	(7.4)^{F}	8.6^{F}	8.4^{F}	8.8	8.5	8.5	8.1	7.0	6.1	4.7^{F}	[3.0]^{A}	(2.7)$^{J}_{A}$	2.8	2.7
24	2.5^{J}	2.4	2.6^{F}	2.8^{F}	2.6^{F}	2.1^{F}	2.1^{F}	2.8^{F}	5.4$^{F}_{Z}$	5.7$^{F}_{V}$	8.0^{F}	8.0	7.5^{F}	7.8$^{F}_{Z}$	8.4^{F}	7.6	8.1	6.9	5.4^{F}	4.6$^{F}_{J}$	3.7$^{F}_{S}$	2.5^{F}	2.3^{F}	2.4^{F}
25	2.4^{F}	2.5$^{F}_{J}$	2.6$^{F}_{J}$	2.8^{F}	2.6^{F}	2.4^{F}	2.7^{F}	3.4^{F}	5.8	6.5^{S}	7.8^{F}	8.0	8.6	8.7^{F}	8.1	8.0	(8.1)^{S}	(7.0)$^{S}_{J}$	6.2	4.9$^{J}_{S}$	3.7$^{J}_{F}$	3.0^{F}	2.8$^{S}_{F}$	2.7$^{J}_{F}$
26	2.4$^{J}_{F}$	2.3^{F}	2.6$^{F}_{S}$	3.0^{F}	3.0$^{J}_{F}$	2.8^{F}	2.9$^{J}_{F}$	3.4	6.0	6.2^{F}	7.7	9.0	8.9	9.4	9.4^{S}	10.2	10.6$^{S}_{J}$	10.3	8.8	5.1	4.1^{F}	3.6^{F}	3.3	(3.3)^{A}
27	3.2^{V}	2.4^{F}	2.5^{F}	(2.7)^{F}	3.2^{F}	3.2^{F}	3.2^{F}	3.5^{F}	6.1	7.0	8.4	10.0	9.7	9.6	9.2	9.4	8.4	8.7	7.7	6.6	5.7	4.7^{F}	3.8^{F}	3.8^{F}
28	3.8^{F}	4.0$^{J}_{F}$	3.9$^{F}_{S}$	(3.3)^{F}	(3.3)^{F}	3.1^{F}	2.7^{F}	3.4^{F}	6.2^{F}	6.8^{F}	8.1^{F}	9.9	9.1	9.2	9.2	10.6	10.2	10.0	7.8^{J}	5.8	4.0^{F}	3.1	2.8	2.7
29	2.7^{F}	2.4^{F}	C	C	C	C	C	C	C	7.0	8.4	9.7	9.2	9.2$^{F}_{Z}$	10.0	9.8^{S}	9.3^{S}	9.0	8.8$^{S}_{F}$	7.2	4.2^{F}	3.3^{F}	3.0^{F}	3.0^{F}
30	2.7^{F}	2.5^{F}	2.8^{F}	2.6^{F}	2.5^{F}	2.5^{F}	2.6^{F}	3.7^{F}	6.1^{F}	7.3^{F}	8.3^{F}	10.1^{F}	10.1^{F}	[10.0]^{C}	10.5^{F}	10.5$^{J}_{S}$	10.5$^{J}_{S}$	9.9^{S}	9.2^{S}	6.9$^{J}_{S}$	(6.0)$^{J}_{F}$	4.6^{F}	4.4$^{J}_{S}$	3.9$^{J}_{F}$
31	3.5$^{J}_{F}$	2.8^{F}	3.0^{F}	[3.4]^{F}	(3.8)^{F}	[2.6]^{F}	2.4^{F}	3.4^{F}	5.6^{F}	6.7	8.0	9.0^{F}	9.1	8.5^{F}	8.6^{F}	8.5$^{F}_{S}$	9.0^{F}	7.5^{F}	7.4^{F}	6.1^{F}	4.4^{F}	3.7$^{F}_{S}$	4.2$^{F}_{V}$	4.7
Median	2.7	2.7	2.9	3.0	3.2	3.0	2.7	3.1	5.4	6.5	7.8	8.2	8.4	8.3	8.1	7.8	7.5	7.1	6.3	5.1	3.9	3.2	3.0	2.8
Count	31	31	29	29	30	30	30	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

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TABLE 52

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(3.4)^{S}	(3.5)$^{S}_{F}$	3.2^{F}	3.8^{F}	4.0^{F}	(4.8)$^{S}_{F}$	[4.8]^{N}	4.8^{H}	(6.0)^{S}	7.4	7.8	8.1	8.2	9.2	8.3	7.8	(8.0)^{S}	7.4	6.0	4.6	4.1	4.0	3.8	3.8
2	4.1^{F}	4.5^{F}	4.3^{F}	5.2^{F}	5.3^{F}	4.4^{F}	3.6^{F}	4.7^{F}	7.1	9.9	8.9	8.5	7.8	8.4	8.3	8.1	8.0	7.2	(6.2)^{S}	5.4	4.5	3.6^{J}	3.2	3.0
3	(3.3)^{J}	3.7$^{J}_{F}$	3.9^{F}	4.0^{F}	4.3^{F}	4.3	2.9^{J}	4.4	6.5	7.8	9.8	8.8	9.0	8.0	7.4	7.6	7.0	6.8	6.0	4.3	[3.6]^{B}	(3.3)^{P}	[3.0]^{B}	(2.7)^{B}
4	2.4	3.0^{J}	2.2^{J}	2.7^{J}	(3.2)^{A}	A	A	4.2	6.4	7.9^{Z}	8.0	8.1^{F}	7.8^{F}	8.1	8.2	(6.8)^{S}	(7.2)^{S}	6.8^{F}	5.1	4.0$^{J}_{S}$	(2.9)^{A}	2.5	2.3	2.2
5	2.3^{J}	2.0^{F}	[2.3]^{A}	2.6^{F}	3.1^{F}	3.0^{F}	(1.9)$^{F}_{S}$	(5.3)^{S}	6.4	8.2^{F}	8.5^{F}	8.1	7.6	7.6	8.0^{F}	7.4	8.0	(7.4)^{S}	5.6	3.8	[3.3]^{A}	2.8	2.3	2.2
6	[2.2]^{A}	2.2^{F}	2.5	(3.2)^{A}	3.4^{F}	3.0	2.7$^{J}_{S}$	4.4	6.4	7.8	8.0^{F}	7.8^{F}	8.8	8.8	8.2	6.8	(6.6)^{S}	5.8$^{F}_{S}$	(6.2)^{S}	4.2^{F}	2.8	(2.5)^{S}	2.3	2.4^{F}
7	2.9^{F}	3.2^{F}	2.8^{F}	3.2^{F}	3.6^{F}	2.6	2.1^{F}	4.4^{F}	(6.0)^{F}	8.3	7.6	8.2	7.6	7.4	7.6	7.0^{F}	6.0^{F}	(6.2)^{S}	4.5^{F}	(4.0)^{S}	[3.0]$_{S}$	[2.8]^{S}	(3.0)^{S}	3.0
8	3.3	3.1	(3.0)^{F}	3.0^{F}	2.8^{F}	(3.6)$^{S}_{F}$	(3.6)$^{S}_{A}$	5.0^{F}	[6.9]^{M}	8.8	8.2	9.2	9.2^{F}	9.6	9.6	8.6	(7.2)^{S}	(7.3)^{S}	(6.8)^{S}	4.6^{F}	3.0^{J}	3.0$^{J}_{F}$	(2.9)$^{J}_{S}$	[2.4]$^{S}_{F}$
9	[2.6]^{S}	(2.7)$^{S}_{F}$	3.8^{F}	3.7^{F}	3.3^{F}	2.8$^{J}_{F}$	2.7^{F}	4.5^{F}	6.6^{F}	7.6	9.1	8.8^{F}	8.2	7.9	7.6	7.5	7.3	7.0	5.7^{F}	4.0^{F}	3.5	3.5	3.4	3.3
10	3.1$^{F}_{J}$	3.3^{F}	3.6	(3.9)^{S}	4.0	3.9^{S}	(3.0)$^{J}_{S}$	4.6	6.3	7.0	9.6	9.7	8.0	9.0	9.1	10.0	9.4	6.5	6.2	4.9	4.7	4.8	4.7	5.0
11	4.1	3.4	3.6^{F}	4.5^{F}	4.7^{F}	4.0^{F}	3.3^{F}	4.0	5.7	6.8	8.3	8.7	9.5	9.1	9.0	8.7	9.7	9.1	7.5	5.7	4.6	4.8^{F}	5.0$^{S}_{E}$	4.7^{V}
12	4.1^{F}	3.9^{F}	(4.0)^{F}	4.7^{V}	3.8^{F}	3.5^{F}	2.7^{S}	3.7	5.6	7.0	8.6	8.8	8.7	8.2	8.0	7.5	6.9	6.0^{S}	5.5^{F}	3.4^{F}	3.0	3.4^{J}	3.5^{J}	3.2^{F}
13	(3.5)$^{S}_{F}$	3.8^{F}	3.3^{F}	2.9^{F}	2.7^{F}	2.7^{F}	2.9	4.0	5.7^{V}	7.1	7.7	8.0	7.6	7.2	8.0	7.9	7.2	6.0	5.6	4.2	3.0	2.6^{J}	2.5^{J}	2.8^{F}
14	2.7	2.5^{F}	2.2^{F}	(2.5)^{F}	3.0^{F}	[2.5]$^{S}_{F}$	2.0^{F}	3.8^{F}	5.2^{F}	6.9^{F}	7.5$^{Z}_{F}$	8.2	7.1^{F}	7.4	7.7	6.8	6.7	6.9^{S}	5.7^{F}	4.8	4.0	3.6	3.0^{F}	3.1^{F}
15	2.5^{F}	2.8^{F}	2.9^{F}	3.3^{F}	3.3^{F}	3.3^{F}	2.7^{F}	3.5^{J}	4.8	6.4	7.5	7.2	6.9	6.8	6.9^{H}	6.8	6.3	7.0^{S}	6.3	3.9^{S}	4.0^{S}	3.2	2.6^{F}	2.8$^{J}_{F}$
16	2.6^{F}	[2.0]^{F}	1.9^{F}	(2.6)^{F}	3.1^{F}	2.5^{F}	F	3.8	5.0	5.8^{F}	6.7	7.8	7.3	7.5	7.7	6.6	5.8	6.2	4.4^{J}	2.9^{J}	2.3^{J}	2.3$^{J}_{F}$	(2.2)^{J}	2.2^{P}
17	^{P}(2.1)$^{J}_{F}$	2.1$^{J}_{F}$	2.9^{F}	3.6$^{J}_{F}$	3.1^{F}	3.0	2.8	4.2^{J}	5.6	6.2	7.0	7.2	6.5	6.2	5.6	6.4	5.5	4.8^{S}	4.3	4.0^{S}	2.5^{J}	2.1	2.2	^{J}2.3$^{S}_{F}$
18	2.1^{F}	1.9	(2.0)^{S}	2.1^{F}	2.4^{F}	2.5^{F}	(2.6)$^{S}_{J}$	4.0^{S}	5.3	5.1^{H}	6.6^{J}	7.4	6.6^{H}	6.6	(6.0)^{S}	(5.2)^{S}	5.9	5.4	(4.7)^{S}	(3.7)^{S}	2.3	1.9	2.2^{V}	2.2^{F}
19	2.4^{F}	C	C	2.2^{J}	[2.3]^{C}	2.5^{F}	2.8^{F}	4.1^{F}	5.0	6.6	7.1^{F}	6.9	6.8	6.8^{F}	6.5	6.4	(6.1)^{S}	6.4	(6.7)^{S}	5.7	4.4	3.9^{J}	(2.8)^{B}	(2.9)^{B}
20	3.0	3.2	3.2^{J}	3.2^{J}	3.1^{J}	2.8	2.5^{J}	4.2	5.5	6.0	7.0	7.0	8.0	8.2	7.2	6.7	6.3	6.1	5.3	4.5	(2.5)^{P}	2.1	2.3	2.3
21	2.2	2.1	2.2^{F}	2.1^{F}	2.4^{F}	2.5^{F}	2.7	4.5	5.7	6.4	8.1^{K}	8.4^{K}	10.4^{K}	10.1^{K}	[9.4]$^{C}_{K}$	8.0^{K}	7.0^{K}	5.8	4.7^{F}	4.2^{F}	4.3	4.7^{S}	4.9	4.0^{S}
22	3.7	3.4^{V}	2.5^{F}	2.8^{F}	(2.5)^{F}	2.7$^{J}_{F}$	2.5	3.9$^{J}_{S}$	C	C	6.7	7.1	7.1	7.4	6.7	6.8^{S}	6.6	7.4^{S}	5.7^{S}	4.9	3.3^{F}	2.7$^{J}_{F}$	2.5^{F}	2.1^{F}
23	1.9^{F}	2.2^{F}	2.3^{F}	2.4^{F}	2.4^{F}	2.2^{F}	2.0^{F}	3.9$^{J}_{F}$	[5.6]^{M}	6.2$^{F}_{Z}$	7.2^{F}	8.8^{F}	8.1	9.0	8.2	8.5	7.6	6.7^{S}	6.0^{S}	3.8^{F}	(2.7)^{A}	2.7^{S}	2.9	2.5
24	2.3	2.4	2.6^{F}	2.8^{F}	2.3^{F}	2.1^{F}	2.2^{F}	4.3^{F}	5.7^{S}	(7.0)^{S}	8.6^{F}	8.0^{F}	7.3$^{F}_{Z}$	8.2	7.5^{F}	7.9	7.4^{F}	6.4	5.2^{F}	4.6^{F}	3.0$^{F}_{S}$	2.3^{F}	2.4^{F}	2.4^{F}
25	2.5^{F}	2.7^{F}	2.7^{F}	2.7^{F}	2.4^{F}	2.5^{F}	2.9^{F}	4.7	6.0	6.6	7.7^{F}	8.6^{F}	8.2^{F}	8.1$^{F}_{Z}$	8.2	(8.0)^{S}	(7.6)^{S}	7.2^{S}	5.3^{S}	4.3^{S}	3.3^{S}	3.1$^{F}_{S}$	2.7^{F}	(2.5)$^{S}_{F}$
26	2.3^{F}	2.5^{F}	2.8^{F}	3.1^{F}	3.0^{F}	2.8$^{J}_{F}$	2.8$^{J}_{F}$	4.7^{F}	6.5	7.2	8.5	8.5	9.0	8.6	(10.2)^{S}	10.0	10.8$^{S}_{J}$	(10.0)^{S}	6.8$^{S}_{J}$	4.4^{F}	3.5^{F}	3.2^{F}	[3.3]^{B}	(3.5)$^{S}_{F}$
27	3.2$^{V}_{F}$	2.6^{F}	2.5^{F}	3.4^{F}	3.4	3.1^{F}	3.0^{V}	5.1^{F}	7.3	7.0	9.4	8.9	9.8	9.4	9.2	9.8	8.2	8.6	6.6	6.3	4.8$^{J}_{F}$	4.2	3.8^{F}	3.8^{F}
28	4.0$^{F}_{J}$	(3.9)$^{F}_{J}$	(3.2)^{F}	(3.3)^{F}	3.1^{F}	2.8^{F}	2.5^{F}	5.0^{F}	6.5^{F}	7.2^{F}	9.7	9.7	9.4	9.3	10.0	10.4	9.3	(9.4)^{S}	6.4	5.0	3.4	2.9	[2.8]^{A}	2.6
29	2.4^{F}	C	C	C	C	C	C	C	7.8^{J}	9.2^{P}	9.1	9.6	9.1^{F}	9.3^{Z}	10.0	9.2^{S}	9.1^{S}	7.8^{S}	5.7^{F}	(3.5)$^{S}_{F}$	3.2	(3.1)$^{S}_{F}$	9.0^{F}
30	2.5^{F}	2.7^{F}	2.6^{F}	2.6^{F}	2.5^{F}	2.6^{F}	2.7^{F}	(5.6)$^{S}_{F}$	6.8^{F}	8.0^{F}	9.0	10.0	9.8	10.5	10.7$^{J}_{S}$	10.8	10.0	10.0$^{J}_{S}$	8.0$^{J}_{S}$	6.8$^{F}_{S}$	4.9^{F}	^{J}4.5$^{S}_{F}$	3.8^{F}	3.8$^{J}_{S}$
31	3.6$^{J}_{F}$	2.5^{F}	[3.2]^{F}	[3.6]^{F}	2.6^{F}	2.7^{F}	2.6^{F}	4.9^{F}	6.2	7.0^{F}	8.4^{Z}	9.1	8.9	9.0	9.5^{F}	9.0^{S}	8.5^{F}	7.2^{F}	6.5^{F}	5.7^{F}	3.6	3.8$^{F}_{E}$	4.6^{F}	4.9^{F}
Median	2.6	2.7	2.8	3.2	3.1	2.8	2.7	4.4	6.0	7.0	8.1	8.4	8.1	8.2	8.2	7.8	7.2	6.9	6.0	4.4	3.4	3.2	2.9	2.8
Count	31	29	29	30	30	29	28	30	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 53

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), January (Month), 1951

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

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										Q	230	240	200^{H}	230	230	(230)^{S}								
2										240	210^{H}	[210]^{A}	210	200	(250)^{A}	Q								
3										Q	220	210	200	230	230	Q								
4										Q	B	A	A	230	230	250								
5										Q	(240)^{A}	[240]^{A}	(230)^{A}	230	A	B								
6										240	230	230	210	240	240	240								
7										Q	220	(240)^{A}	250	[240]^{B}	220	(260)^{B}								
8										240	230	230	210	200^{H}	230	B								
9										230	200^{H}	230	210	200^{H}	220	250								
10										Q	210^{H}	240	210	200	230	240	240							
11										240	220	220	240	240	240	250								
12										Q	230	240	220^{H}	230	220	220								
13										240	230	210	230	210	210	240								
14										200^{H}	[200]^{B}	210	200	210	210	240								
15										220	230	230	210	220	230	230								
16										Q	230	220	230	210	210^{H}	220	230							
17										230	210	210	[210]^{C}	210	210	200								
18										Q	220	200^{H}	220	210	220	210	210							
19									(220)^{B}	190	200	230	200	200	210	(200)^{A}								
20										220	210	A	A	A	A	B								
21										Q	200$^{H}_{K}$	220^{K}	220^{K}	210^{K}	200^{K}	220^{K}								
22										C	C	190^{H}	[200]^{B}	210	210	220	220							
23										M	230	200^{H}	200^{H}	210^{H}	230	210								
24										Q	210^{H}	210	200	200^{H}	200	220	220							
25										Q	220	210	220	200	200^{H}	210	210							
26										200	200^{H}	230	230^{H}	200	210^{H}	220^{H}	240							
27										210	200	230	200	200^{H}	220^{H}	(230)^{A}								
28										B	220	230	200	200	230	230	A							
29										Q	210	230	210	200	210	210								
30										Q	Q	210	210	200	210	220	220							
31										240	220^{H}	240	220	220	220	230	240							
Median									—	230	220	230	210	210	220	220	220							
Count									1	14	28	29	29	30	29	26	9							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Monual ☐ Automatic ☒

TABLE 54

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

foF1 (Characteristic), Mc (Unit), January (Month), 1951

IONOSPHERIC DATA

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Lang 77.1°W

75°W Mean Time

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

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										Q	L	L	L	L	L	L										
2										L	L	L	L	L	L	Q										
3										Q	L	L	L	L	L	Q										
4										Q	L	A	A	L	L	L										
5										Q	L	L	L	L	L	L										
6										L	L	L	L	L	L	L										
7										Q	L	L	L	L	L	L										
8										L	L	L	L	L	L	L										
9										L	L	L	L	L	L	L										
10										Q	L	L	L	L	L	L	L									
11										L	L	L	L	L	L	L										
12										Q	L	L	L	L	L	L										
13										L	L	L	L	L	L	L										
14										L	L	L	L	L	L	L										
15										L	L	L	L	L	L	L										
16										Q	L	L	L	4.0	3.8H	3.3	L									
17										L	L	3.9	C	L	L	L										
18										Q	L	L	L	4.0	L	L	L									
19									L	L	L	L	L	4.1	3.9	L										
20										L	L	L	A	L	L	B										
21										Q	L K	L K	L K	L K	L K	L K										
22										C	C	L	L	4.2	L	L	L									
23										M	L	L	L	L	L	L										
24										Q	L	L	L	L	L	L	L									
25										Q	L	L	L	L	L	L	L									
26										L	L	L	L	L	L	L	L									
27										L	L	L	L	L	L	L										
28										L	L	L	L	L	L	L	L									
29										Q	L	L	L	L	L	L										
30										Q	Q	L	L	C	L	L	L									
31										L	L	L	L	L	L	L	L									
Median									—	—	—	—	—	—	—	—	—									
Count												1		4	2	1										

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 55

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										(110)S	B	B	B	B	B	(110)A								
2										110	[110]B	(110)A	(110)A	(100)A	(100)A	(110)S	B							
3									120	120	(120)A	(110)A	(120)A	120	130	[130]B	130							
4										B	B	B	(110)A	(110)A	(120)S	(110)A	(110)A							
5										(130)A	(110)A	(110)A	(110)A	B	A	B	A							
6									B	130	[120]A	120	120	B	B	B	B							
7										A	A	S	B	B	B	B								
8										120	120	130	120	[120]S	(120)S	[120]B	(130)B							
9										A	100	S	A	(120)S	120	A	A							
10									S	120	120	120	110	110	120	110	(130)B							
11										A	120	[120]B	120	(130)S	120S	120S	(120)B							
12									B	120	120	120	120	110	110	110	110							
13										110	110	110	110	110	110	110	120							
14									S	B	B	B	B	110	110	110	[120]A							
15									A	120	120	120	120	110	110'	120	(100)A							
16										A	(120)A	(130)A	(120)A	120	100	120	(130)B							
17									A	A	(120)A	110	[110]C	110	110	[110]B	110H							
18									(120)A	120	120	110	110	110	120	110	(110)A							
19										110	100	110	110	120	(100)A	A	B							
20										120	110	100	(100)B	100	100	A	A							
21									S	100	100K	100K	100K	100K	100K	100K	120K							
22									110	C	C	100	[100]B	100	100	100	100							
23									S	[110]M	100M	110	(110)A	(100)A	110	110	(100)A							
24									(110)S	(100)A	100	100	(110)A	110	110	110	110							
25									100	(110)A	(110)A	100	100	100	100	100	(110)A							
26										(100)A	(100)A	(110)B	100	100	100	100	100							
27									120	(120)A	110	(110)A	100	100	100	(110)A	110							
28									(100)A	[100]B	100	B	B	100	100	100	(100)A							
29									C	S	100	B	B	110	100	110	110	S						
30									110	110	110	A	A	[100]C	100	A	A							
31									100	[100]A	110	110	110	110	110	110	120	S						
Median									110	110	110	110	110	110	110	110	110	—						
Count									9	22	26	23	24	27	27	24	22							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 56

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

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	B	B	B	B	B	A								
2										2.7	B	A	A	2.9	[2.6]A	2.4	(2.1)S							
3									1.8	(2.4)A	A	A	A	3.0	3.0	2.6	2.3							
4										B	B	2.8	A	A	2.5	A	A							
5										A	A	A	A	B	A	B	A							
6									B	(2.2)S	[2.4]A	2.6	3.0	B	B	B	B							
7										A	A	S	B	B	B	B								
8										2.6	2.7	3.0	3.0	(3.0)S	(2.8)S	[2.5]B	2.2							
9										A	(2.7)S	3.0	(3.0)A	(3.1)S	S	A	A							
10									2.1	2.5S	2.9	3.1	3.1	3.0	2.9	2.5	(2.2)S							
11										A	2.8S	3.0	3.1	3.1	3.0	2.8	2.2							
12									B	2.5	2.8	3.0	3.1	3.3	2.8P	2.6P	2.0							
13										2.4H	2.8	2.9	3.0	3.0	2.8	2.4	2.0							
14									S	2.2	B	B	(2.9)B	2.8	2.6	(2.4)P	[2.0]A							
15									A	2.4	2.8	2.9	3.0	2.9	2.8	2.4	2.1H							
16										2.5	2.6	2.8	3.0	2.8	2.6	2.3	2.0H							
17									A	2.5	2.7	2.9	[2.9]C	2.9	2.6	[2.4]B	2.1H							
18									A	2.3	2.5	2.8	3.0	2.8	2.6	2.4	2.0							
19										2.5	2.6	2.9	3.0	3.0	2.7	A	B							
20										2.4	2.6	2.7	[2.9]B	2.9	2.6	A	A							
21									1.8	2.3	2.7K	2.8K	3.0K	2.9K	2.8K	2.4K	2.2K							
22									2.0	C	C	2.9F	[2.9]B	2.9	2.8	2.7	2.3							
23									1.8	[2.3]M	2.9	[3.0]A	3.1	3.1	3.0	2.7H	A							
24									2.0	2.5	2.8F	3.1	3.2	3.1H	3.0	2.8	2.2							
25									2.0H	2.5H	3.0	3.1	3.1	3.1	3.0	2.6	1.9							
26										A	2.7	3.0	3.1	3.2	3.0	2.5	2.0							
27									2.1	[2.4]A	2.8	[3A]A	3.1	3.1	3.0	[2.7]A	2.4							
28									A	B	2.9	3.1	3.1	3.2	3.1	2.7	A							
29									C	2.4	2.6	2.9	3.1	3.1	2.9	2.9	2.5	1.9						
30									2.0	2.4	2.6	A	A	[3.0]C	3.0	2.6	A							
31									1.9	[2.4]A	2.9	3.0	3.1	3.1	2.9	2.7	2.4	1.9						
Median									2.0	2.4	2.7	3.0	3.0	3.0	2.8	2.6	2.2	—						
Count									10	22	23	24	24	26	26	23	20	2						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 57

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W — 75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By H., McC.

Calculated by: L.H.E., B.E.B., McC., By H.

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	4.0 110	3.1 110	E	E	E	E	E	E	E	G	G	G	G	G	G	3.5Y 110	E	E	E	E	E	E	3.3Y 110	3.2 110
2	E	E	E	E	2.8Y 110	E	E	3.2Y 110	2.1 110	G	G	5.3 110	3.7 110	2.7 100	3.2 100	G	G	E	E	E	3.0Y 100	E	E	E
3	E	E	2.8 110	2.4 110	2.4 110	E	(5.6) S 110	E	G	4.5 130	3.3 120	(3.1) S 110	3.0 120	G	6.4Y 110	G	G	E	E	E	E	B	B	B
4	E	E	E	3.7Y 120	4.0 120	4.8 110	7.3 100	E	2.0 130	G	G	5.9 120	9.8 F 110	4.0 110	G	3.1 110	(4.0) S 110	E	2.9Y 120	(4.0) S 120	(6.0) S 120	E	6.0 120	E
5	E	E	5.0 F 130	7.2 120	2.9Y 130	E	1.9 120	5.0Y 130	E	3.0 130	6.0Y 110	5.2 110	6.8Y 110	G	4.0 120	G	3.4 120	E	5.6 120	(3.8) S 120	9.1 F 120	E	E	1.8 120
6	4.7 120	3.1 120	2.6 120	10.0 120	6.8 120	5.0 F 110	3.6 110	E	G	2.7 130	2.7 130	G	G	G	G	G	G	1.7 120	E	1.9Y 130	E	E	E	E
7	E	E	E	3.3 130	8.2 F 120	9.2 120	6.0 110	(6.0) S 110	3.2 120	6.0 110	4.5 110	3.3Y 110	G	G	G	G	E	E	E	8.0 120	3.2 110	4.0 100	3.0 100	3.3 110
8	3.1 120	2.8 [12.0] S	3.0Y 120	3.7 120	3.5 110	5.2 130	8.0 120	4.8 120	3.6 120	G	4.2 120	G	G	G	G	G	G	E	E	E	E	E	3.9 120	3.0 110
9	3.5 110	5.6Y 100	2.5 100	E	1.7 120	7.3 110	E	2.6 110	3.5 110	3.5Y 100	G	G	2.9 120	G	G	3.1 110	2.9 120	3.2 120	3.1 110	E	3.1 110	E	E	E
10	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	3.1 130	4.9Y 120
11	5.6 120	5.0 110	3.9 110	3.1 110	E	E	E	3.3 130	2.4 130	4.2Y 130	G	G	G	5.6 100	G	G	G	E	E	E	3.4Y 120	3.0 120	E	E
12	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
14	E	E	3.0Y 100	E	E	E	E	E	G	G	G	G	G	G	G	G	2.3 F 120	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	2.8Y 110	G	1.10 110	G	G	G	G	G	2.0 100	E	E	E	3.0 110	E	4.2 100	3.5 100
16	2.8 100	2.6 100	2.1 100	E	E	E	3.3 110	2.8 110	E	3.3 100	2.0 100	1.9 100	2.3 100	G	G	G	G	E	E	E	E	E	E	E
17	E	E	E	2.4 110	E	2.5Y 110	2.2Y 110	2.0 110	3.1Y 110	3.4 110	7.0Y 100	G	C	G	G	G	G	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E	E	2.8Y 120	G	G	G	G	G	2.0 100	2.7Y 100	1.8 100	E	2.8Y 100	E	E	E	E	E
19	E	E	C	C	C	E	E	E	E	G	G	G	2.3 100	2.8 100	3.9 100	G	G	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	E	G	G	4.8 100	5.1 100	4.8 100	4.5 100	3.0 100	3.6 100	3.0 100	E	2.7 100	E	E	E	E
21	E	E	E	E	E	7.3 100	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	G	C	C	G	G	G	G	G	G	E	E	E	E	E	E	E
23	E	E	E	E	E	2.8 100	2.4 100	2.3 100	G	M	G	3.2 130	2.1 100	1.9 100	G	3.8 120	8.2 100	4.9 110	3.3 110	6.3 F 120	6.4 F 120	5.4 F 110	2.4 110	E
24	E	E	E	E	E	E	E	E	G	3.7 120	G	G	2.3 100	G	4.3 120	4.0 120	3.3 110	E	3.2 100	2.7 100	E	E	E	E
25	E	E	E	E	E	E	2.3 110	2.1 100	2.5 100	1.8 100	2.1 100	1.8 100	G	G	G	3.8 120	2.3 110	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	E	4.3Y 100	4.0 100	G	G	G	G	G	G	E	3.0 100	E	E	2.6Y 130	8.4 110	(5.0) S 100
27	E	E	E	E	E	E	E	E	G	3.5Y 120	3.9 120	3.5 110	G	G	8.6Y 110	2.7 110	G	E	E	E	E	E	E	E
28	E	E	E	E	E	2.2 110	E	E	2.2 100	G	3.7 120	G	G	G	G	G	2.7 100	E	E	E	E	E	3.1 120	3.8 120
29	E	E	C	C	C	C	C	C	C	G	G	9.0Y 120	G	G	G	G	G	G	E	E	E	E	E	2.9Y 130
30	2.5 120	4.2 110	E	E	E	2.5 100	2.9 100	E	G	G	4.3 110	2.9 100	4.8 100	C	G	2.5 100	2.6 100	2.7 100	2.2 100	1.8 100	E	E	E	E
31	E	E	E	E	E	E	E	E	G	1.0 100	2.4 100	G	G	G	G	G	G	G	E	E	E	E	E	E
Median	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	31	31	29	29	29	30	30	30	30	29	30	31	30	30	31	31	31	31	31	31	31	30	30	30

** MEDIAN fEs LESS THAN MEDIAN foE OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 58

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 (Characteristic), — (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Long. 77.1°W 75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.0)S	(2.0)S	1.9F	1.9F	(1.9)SF	5F	(2.0)SF	2.2	(2.4)M	2.3H	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.1	(2.1)S	1.9	1.9	1.9	1.8
2	1.9F	2.0F	1.8F	1.9F	2.0	2.0	2.0F	2.1F	2.2Z	2.2	2.3F	2.3	2.3	2.0	2.1	2.1F	2.2	2.1	2.1	2.0	2.1	2.0	(2.0)J	(2.0)J
3	(1.9)J	1.8	1.9	1.9F	1.9F	2.0F	(2.1)JF	(2.1)J	2.3	2.3	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.0	B	B	B
4	1.9	B	(2.0)JF	1.9	(1.9)A	2.2	A	2.1F	2.2	2.3F	2.4	2.3	2.3F	2.1F	2.1	2.3	2.0	(2.3)S	2.2F	2.2F	2.1F	2.0F	(1.9)A	1.9F
5	1.9F	(1.8)J	A	A	1.9F	2.0F	2.0F	1.9F	2.3F	2.3F	2.3F	(2.3)S	2.3F	2.1F	2.1F	2.2	2.1F	2.1	2.2	2.2	2.1	2.0	(1.9)S	1.8
6	A	(1.8)JS	1.8F	A	(2.0)A	2.2	(2.1)JS	2.0	2.3	2.3	2.3	2.3F	2.2	2.2	2.1	2.2	2.2	2.1	(2.2)SF	2.4F	2.2	(1.9)J	(2.1)S	(1.9)SF
7	1.7F	1.9F	2.0F	1.9F	2.0	A	(2.1)PA	2.0	2.4F	2.3F	(2.3)F	2.3F	2.4	2.2F	2.2F	2.2	2.4	2.2	2.2	2.2F	(2.0)S	SA	(1.9)S	(1.9)S
8	2.0	2.0	1.9F	2.0F	1.9F	1.8	2.1F	2.0F	2.4F	2.4	2.3F	2.1	2.1	2.1	2.2Z	2.2	(2.3)J	(2.1)S	(2.3)S	(2.3)S	2.2F	1.9F	(2.1)JS	(1.9)JS
9	S	(1.8)S	1.9F	2.0F	2.0F	2.1F	2.0F	1.9F	(2.3)F	2.2	2.3	2.3	2.3Z	2.3	2.2	2.3	2.3	2.3	2.3F	2.2F	2.1	2.0	2.0	2.0
10	2.0F	2.0F	1.9F	1.9	1.9V	2.0	2.0	2.0	2.4	2.1	2.2	2.3	2.3	2.0	2.0	2.0	2.1	2.2	2.0	2.1	1.9	1.9	1.9	2.0
11	2.2	1.8	1.9	1.9F	2.0F	1.9F	2.1	2.0F	2.1V	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.3	2.2	2.3	1.9	2.0F	2.0F	1.9F
12	2.0F	(1.9)F	1.9F	(2.1)F	1.9F	1.9F	1.9F	2.0FS	2.3	2.4	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1F	2.3F	2.0	1.9	1.9S	1.8F
13	2.0F	2.0F	2.0F	2.1F	2.0F	1.9F	2.0F	2.0V	2.3	2.1	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	(2.1)J	1.8	(2.0)J	(1.9)JF
14	(1.9)JF	2.0F	1.9F	1.9F	2.1F	2.1F	2.0F	2.1F	2.5ZF	2.3F	2.3F	2.3	2.3	2.1F	2.2	2.2	2.2	2.1S	2.2	2.2F	2.2F	(2.2)JS	2.0F	1.9V
15	1.9F	1.9F	2.0F	1.9F	2.0F	2.1F	2.3F	2.3F	2.4F	2.3	2.3	2.3	2.4	2.1V	2.1	2.2	2.2	2.1	2.2	2.3	1.9S	2.1	A	(1.9)JF
16	1.9F	F	(2.0)JF	1.8F	2.2F	2.1F	2.2F	2.2F	2.4	2.3F	2.2	2.1	2.2F	2.1F	2.1	2.3	(2.2)S	2.1	2.1	2.3	(2.1)J	(1.9)J	2.1	2.0
17	(1.9)PS	2.0F	(1.8)JF	1.9	2.0	2.0F	2.0F	2.2	2.4	2.3	2.2	2.3	C	2.3	2.4	2.1	2.4	2.2S	2.0	2.2S	2.1V	2.0	1.9	1.9
18	2.0F	1.9F	1.9S	1.9	1.9F	2.2F	2.2FS	(2.1)J	2.3	2.6H	2.2H	2.3	2.4	2.4	2.4	2.4	2.5	2.4	(2.3)S	2.3	2.4	2.0	2.0	2.3F
19	1.9F	2.0F	C	C	C	2.0F	2.0F	2.3F	(2.5)S	2.3V	2.3	2.3H	2.4F	2.3F	2.5	2.3	2.2	(2.1)SF	2.1F	(2.3)S	2.3	2.1	2.2	(2.1)PS
20	2.1	2.1	2.0	(2.1)J	(2.1)J	2.3	(2.2)J	(2.2)J	2.7	2.5	2.2	2.5	2.3	2.1	2.3	2.4	2.4	2.2	(2.2)J	2.4	(2.5)J	2.0	2.0	2.1
21	2.1	2.0	2.1	2.2F	2.2F	2.2F	2.1F	2.2	2.5	2.4	2.2K	2.1K	2.0K	2.2K	2.3K	2.3K	2.4K	2.3	2.2	2.1	2.0	1.9	2.0	2.1
22	(2.0)J	2.0	1.9V	1.9F	F	2.0F	2.0F	2.0	2.3	C	C	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2S	2.3	2.1F	2.2F	2.0F
23	2.0F	2.0F	(1.9)JF	1.9F	2.1F	2.1F	2.1F	(2.2)JF	2.4F	M	(2.3)F	2.2F	2.2F	2.2	2.3	2.1	2.3	2.3	2.2	2.4F	A	A	2.0	2.1
24	(2.0)J	2.0	2.0F	2.0F	2.3F	1.9F	2.0F	2.2F	2.5F	2.4VF	2.3F	2.4	2.1F	2.2ZF	2.3F	2.2	2.4	2.4	2.2F	(2.2)JF	(2.3)JF	2.2F	1.9F	1.9F
25	1.9F	(1.9)FS	(1.9)FS	2.0F	2.2F	2.0F	2.0F	2.2F	2.6	2.5S	2.4F	2.3	2.3	2.3F	2.3	2.3	(2.3)S	(2.2)JS	2.2	(2.4)JS	(2.3)JF	2.2F	2.0SF	(1.9)JF
26	2.0SF	1.9F	1.9FS	2.0F	(2.2)JF	2.1F	(2.2)JF	2.3	2.5	2.6F	2.4	2.4	2.2	2.1	1.9S	2.1	(2.1)SJ	2.1	2.3	2.3	2.1F	1.9F	1.9	(1.9)A
27	2.0V	1.9F	2.0F	(2.0)F	2.1F	2.1F	2.1F	2.1F	2.4	2.3	2.1	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2F	1.9F	2.0F
28	1.9F	(2.0)JF	(2.0)FS	(2.0)F	(2.1)F	2.1F	2.0F	2.1F	2.4F	2.4F	2.1F	2.2	2.2	2.2	2.1	2.2	2.2	2.1	(2.2)J	2.2	2.3F	2.1	1.9	2.1
29	1.9F	1.9F	C	C	C	C	C	C	C	2.3	2.3	2.3	2.2	2.2ZF	2.2	2.1S	2.2S	2.2	2.2SF	2.4	2.2F	2.1F	1.9F	2.1F
30	2.1F	2.1F	1.9F	2.0F	2.2F	2.2F	2.1F	2.3F	2.5F	2.4F	2.2F	2.3F	2.1F	C	2.1F	(2.1)JS	(2.1)JS	2.1S	2.1S	(2.1)JS	(2.1)JF	1.9F	(2.0)JS	(1.8)JF
31	(1.7)JF	1.6F	1.6F	F	(2.2)F	F	1.9F	1.9F	2.2F	2.2	2.1	2.1F	2.1	2.1F	2.1F	1.9FS	2.0F	2.1F	2.1F	2.1F	2.0F	(1.8)FJ	1.6V	1.7
Median	2.0	2.0	1.9	1.9	2.0	2.1	2.0	2.1	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.0	2.0	1.9
Count	29	29	28	26	28	27	29	30	30	29	30	31	30	30	31	31	31	31	31	31	30	28	29	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 59

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ____ (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W — 75°W Meon Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

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	(3.0)^{S}	(3.0)^{S}	2.8^{F}	2.9^{F}	(2.8)$^{S}_{F}$	5^{F}	(3.1)$^{S}_{F}$	3.2	(3.5)^{H}	3.4^{H}	3.3	3.2	3.1	3.1	3.2	3.2	3.2	3.1	3.1	(3.1)^{S}	2.8	2.9	2.8	2.8
2	2.9^{F}	2.9^{F}	2.8^{F}	2.8^{F}	3.0	3.0	3.0^{F}	3.1^{F}	3.3^{Z}	3.2	3.4^{F}	3.3	3.3	3.0	3.1	3.1^{F}	3.2	3.2	3.1	3.0	3.1	3.0	(3.0)^{J}	(2.9)^{J}
3	(2.8)^{J}	2.7	2.8	2.9^{F}	2.9^{F}	3.0^{F}	(3.2)$^{J}_{F}$	(3.1)^{J}	3.4	3.3	3.2	3.3	3.2	3.1	3.2	3.2	3.2	3.2	3.1	3.2	3.0	B	B	B
4	2.9	B	(3.0)$^{J}_{F}$	2.9	(2.9)^{A}	3.2	A	3.1^{F}	3.2	3.3^{F}	3.5	3.3	3.3^{F}	3.1^{F}	3.1	3.3	3.1	(3.3)^{S}	3.3^{F}	3.2^{F}	3.1^{F}	3.0^{F}	(2.8)^{A}	2.8^{F}
5	2.8^{F}	(2.7)^{J}	A	A	2.8^{F}	3.0^{F}	3.0^{F}	2.9^{F}	3.3^{F}	3.3^{F}	3.4^{F}	(3.4)^{S}	3.3^{F}	3.1^{F}	3.1^{F}	3.3	3.2^{F}	3.1	3.3	3.2	3.1	3.0	(2.9)^{S}	2.8
6	A	(2.8)$^{J}_{S}$	2.8^{F}	A	(3.0)^{A}	3.3	(3.1)$^{J}_{S}$	3.0	3.3	3.3	3.3	3.3^{F}	3.2	3.2	3.2	3.3	3.2	3.1	(3.3)$^{S}_{F}$	3.4^{F}	3.2	(2.8)^{J}	(3.1)^{S}	(2.8)$^{S}_{F}$
7	2.8^{F}	2.9^{F}	2.9^{F}	2.9^{F}	3.0	A	(3.1)$^{P}_{A}$	2.9	3.5^{F}	3.3^{F}	(3.3)^{F}	3.4^{F}	3.4	3.2^{F}	3.2^{F}	3.2	3.5	3.2	3.3	3.2^{F}	(3.0)^{S}	5^{A}	(2.8)^{S}	(2.9)^{S}
8	2.9	3.0	2.9^{F}	3.0^{F}	2.9^{F}	2.8	3.1^{F}	3.0^{F}	3.4^{F}	3.4	3.3^{F}	3.2	3.1	3.1	3.2^{Z}	3.2	(3.3)^{J}	(3.1)^{S}	(3.3)^{S}	(3.3)^{S}	3.2^{F}	2.8^{F}	(3.0)$^{J}_{S}$	(2.9)$^{J}_{S}$
9	5	(2.7)^{S}	2.8^{F}	3.1^{F}	3.0^{F}	3.1^{F}	2.9^{F}	2.9^{F}	(3.3)^{F}	3.2	3.3	3.3	3.3^{Z}	3.3	3.2	3.3	3.3	3.3	3.3^{F}	3.2^{F}	3.1	3.0	3.0	3.0
10	3.0^{F}	3.0^{F}	2.9^{F}	2.8	2.9^{V}	3.0	3.0	3.0	3.5	3.1	3.2	3.3	3.3	3.0	3.0	3.0	3.1	3.2	3.0	3.1	2.8	2.8	2.9	3.0
11	3.2	2.7	2.9	2.9^{F}	3.0^{F}	2.9^{F}	3.1	3.0^{F}	3.1^{V}	3.2	3.2	3.2	3.1	3.2	3.2	3.1	3.1	3.3	3.2	3.3	2.8	3.0^{F}	2.9^{F}	2.9^{F}
12	3.0^{F}	(2.8)^{F}	2.8^{F}	(3.1)^{F}	2.8^{F}	2.8^{F}	2.8^{F}	3.0$^{F}_{S}$	3.3	3.4	3.2	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2^{F}	3.3^{F}	3.0	2.8	2.8^{S}	2.7^{F}
13	3.0^{F}	2.9^{F}	3.0^{F}	3.1^{F}	2.9^{F}	2.9^{F}	3.0^{F}	2.9^{V}	3.3	3.1	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	(3.1)^{J}	2.8	(2.9)^{J}	(2.8)$^{J}_{F}$
14	(2.9)$^{J}_{F}$	2.9^{F}	2.8^{F}	2.8^{F}	3.1^{F}	3.1^{F}	3.0^{F}	3.2^{F}	3.6$^{Z}_{F}$	3.3^{F}	3.4^{F}	3.3	3.4	3.2^{F}	3.2	3.3	3.2	3.2^{S}	3.2	3.2^{F}	3.2^{F}	(3.2)$^{J}_{S}$	3.0^{F}	2.9^{V}
15	2.8^{F}	2.8^{F}	2.9^{F}	2.9^{F}	3.0^{F}	3.0^{F}	3.3^{F}	3.3^{F}	3.4^{F}	3.4	3.3	3.3	3.4	3.1^{V}	3.1	3.2	3.2	3.1	3.2	3.3	2.8^{S}	3.1	A	(2.9)$^{J}_{F}$
16	2.9^{F}	F	(2.9)$^{J}_{F}$	2.7^{F}	3.2^{F}	3.2^{F}	3.2^{F}	3.3^{F}	3.4	3.3^{F}	3.2	3.1	3.2^{F}	3.0^{F}	3.1	3.3	(3.2)^{S}	3.1	3.1	3.4	(3.1)^{J}	(2.9)^{J}	3.1	2.9
17	(2.9)$^{P}_{S}$	3.0^{F}	(2.8)$^{J}_{F}$	2.9	3.0	3.0^{F}	3.0^{F}	3.2	3.5	3.3	3.2	3.4	C	3.4	3.4	3.2	3.4	3.2^{S}	3.0	3.2^{S}	3.1^{V}	3.0	2.8	2.9
18	3.0^{F}	2.9^{F}	2.8^{S}	2.9	2.9^{F}	3.2^{F}	3.3$^{F}_{S}$	(3.2)^{J}	3.4	3.7^{H}	3.1^{H}	3.3	3.4	3.5	3.4	3.4	3.6	3.4	(3.3)^{S}	3.4	3.5	3.0	3.0	3.3^{F}
19	2.9^{F}	2.9^{F}	C	C	C	3.0^{F}	3.0^{F}	3.3^{F}	(3.5)^{S}	3.3^{V}	3.3	3.3^{H}	3.4^{F}	3.4^{F}	3.6	3.4	3.2	(3.1)$^{S}_{F}$	3.1^{F}	(3.3)^{S}	3.3	3.1	3.2	(3.1)$^{P}_{S}$
20	3.1	3.1	3.0	(3.1)^{J}	(3.0)^{J}	3.4	(3.2)^{J}	(3.2)^{J}	3.8	3.5	3.2	3.6	3.3	3.1	3.3	3.4	3.5	3.2	(3.3)^{J}	3.4	(3.5)^{J}	3.0	3.0	3.0
21	3.1	2.9	3.0	3.2^{F}	3.2^{F}	3.2^{F}	3.1^{F}	3.2	3.6	3.4	3.3^{K}	3.1^{K}	3.0^{K}	3.3^{K}	3.4^{K}	3.4^{K}	3.5^{K}	3.4	3.2	3.1	2.9	2.8	2.9	3.1
22	(3.0)^{J}	3.0	2.9^{V}	2.8^{F}	F	3.0^{F}	2.9^{F}	2.9	3.4	C	C	3.2	3.2	3.2	3.3	3.3	3.2	3.1	3.2	3.2^{S}	3.4	3.1^{F}	3.2^{F}	2.9^{F}
23	3.0^{F}	3.0^{F}	(2.8)$^{J}_{F}$	2.9^{F}	3.1^{F}	3.1^{F}	3.1^{F}	(3.2)$^{J}_{F}$	3.4^{F}	M	(3.3)^{F}	3.3^{F}	3.2^{F}	3.2	3.3	3.1	3.3	3.3	3.2	3.4^{F}	A	A	3.0	3.1
24	(3.0)^{J}	2.9	3.0^{F}	3.0^{F}	3.4^{F}	2.9^{F}	3.0^{F}	3.2^{F}	3.6$^{F}_{Z}$	3.4$^{V}_{F}$	3.3^{F}	3.4	3.1^{F}	3.3$^{F}_{Z}$	3.4^{F}	3.3	3.4	3.4	3.2^{F}	(3.2)$^{F}_{J}$	(3.4)$^{F}_{S}$	3.3^{F}	2.9^{F}	2.9^{F}
25	2.9^{F}	(2.9)$^{F}_{J}$	(2.8)$^{F}_{J}$	3.0^{F}	3.2^{F}	3.0^{F}	3.0^{F}	3.2^{F}	3.6	3.6^{S}	3.5^{F}	3.3	3.3	3.3^{F}	3.4	3.3	(3.4)^{S}	(3.3)$^{S}_{F}$	3.3	(3.4)$^{J}_{S}$	(3.2)$^{J}_{F}$	3.2^{F}	3.0$^{S}_{F}$	(2.8)$^{J}_{F}$
26	3.0$^{S}_{F}$	2.9^{F}	2.8$^{S}_{F}$	3.0^{F}	(3.2)$^{J}_{F}$	3.1^{F}	(3.2)$^{J}_{F}$	3.3	3.6	3.6^{F}	3.4	3.4	3.2	3.1	2.8^{S}	3.1	(3.0)$^{S}_{J}$	3.1	3.3	3.3	3.0^{F}	2.8^{F}	2.8	(2.8)^{A}
27	3.0^{V}	2.9^{F}	3.0^{F}	(3.0)^{F}	3.1^{F}	3.1^{F}	3.0^{F}	3.1^{F}	3.4	3.4	3.1	3.4	3.1	3.1	3.1	3.1	3.0	3.0	3.3	3.0	3.2	3.2^{F}	2.9^{F}	2.9^{F}
28	2.9^{F}	(3.0)$^{J}_{F}$	(2.9)$^{F}_{J}$	(3.0)^{F}	(3.1)^{F}	3.1^{F}	3.0^{F}	3.1^{F}	3.5^{F}	3.4^{F}	3.1^{F}	3.2	3.1	3.2	3.1	3.2	3.2	3.1	(3.3)^{J}	3.2	3.3^{F}	3.0	2.9	3.0
29	2.8^{F}	2.8^{F}	C	C	C	C	C	C	C	3.3	3.3	3.4	3.1	3.2$^{F}_{L}$	3.2	3.1^{S}	3.3^{S}	3.2	3.2$^{S}_{F}$	3.4	3.2^{F}	3.1^{F}	2.9^{F}	3.0^{F}
30	3.1^{F}	3.0^{F}	2.8^{F}	2.9^{F}	3.2^{F}	3.2^{F}	3.1^{F}	3.4^{F}	3.6^{F}	3.4^{F}	3.2^{F}	3.3^{F}	3.1^{F}	C	3.1^{F}	(3.1)$^{J}_{S}$	(3.1)$^{J}_{S}$	3.1^{S}	3.1^{S}	(3.1)$^{J}_{S}$	(3.1)$^{J}_{F}$	2.8^{F}	(3.0)$^{J}_{S}$	(2.8)$^{J}_{F}$
31	(2.6)$^{J}_{F}$	2.5^{F}	2.4^{F}	F	(3.1)^{F}	F	2.8^{F}	2.8^{F}	3.1^{F}	3.2	3.1	3.1^{F}	3.0	3.0^{F}	3.0^{F}	2.9$^{F}_{S}$	3.0^{F}	3.1^{F}	3.1^{F}	3.0^{F}	3.0^{F}	(2.7)$^{F}_{S}$	2.5$^{F}_{V}$	2.6
Median	2.9	2.9	2.8	2.9	3.0	3.0	3.0	3.1	3.4	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.9	2.9
Count	29	29	28	26	28	27	29	30	30	29	30	31	30	30	31	31	31	31	31	31	30	28	29	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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TABLE 60

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By.H., McC.

Calculated by: L.H.E., B.E.B., McC., By.H.

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										Q	L	L	L	L	L	L								
2										L	L	L	L	L	L	Q								
3										Q	L	L	L	L	L	Q								
4										Q	L	A	A	L	L	L								
5										Q	L	L	L	L	L	L								
6										L	L	L	L	L	L	L								
7										Q	L	L	L	L	L	L								
8										L	L	L	L	L	L	L								
9										L	L	L	L	L	L	L								
10										Q	L	L	L	L	L	L	L							
11										L	L	L	L	L	L	L								
12										Q	L	L	L	L	L	L								
13										L	L	L	L	L	L	L								
14										L	L	L	L	L	L	L								
15										L	L	L	L	L	L	L								
16										Q	L	L	L	3.7	3.7"	3.8	L							
17										L	L	3.8	C	L	L	L								
18										Q	L	L	L	3.7	L	L	L							
19									L	L	L	L	L	3.9	4.0	L								
20										L	L	L	A	L	L	B								
21										Q	L[K]	L[K]	L[K]	L[K]	L[K]	L[K]								
22										C	C	L	L	3.5	L	L	L							
23										M	L	L	L	L	L	L								
24										Q	L	L	L	L	L	L	L							
25										Q	L	L	L	L	L	L	L							
26										L	L	L	L	L	L	L	L							
27										L	L	L	L	L	L	L								
28										L	L	L	L	L	L	L	L							
29										Q	L	L	L	L	L	L								
30										Q	Q	L	L	C	L	L	L							
31										L	L	L	L	L	L	L	L							
Median									—	—	—	—	—	—	—	—	—							
Count												1		4	3	1								

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 61

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M1500)E (Characteristic), (Unit) January (Month), 1951

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: B.E.B., L.H.E., By H., McC.

Calculated by: L.H.E., B.E.B., McC., By H.

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	B	B	B	B	B	A										
2										4.1	B	A	A	4.2	A	4.3	(3.8)S									
3									4.3	(4.2)A	A	A	A	4.2	4.2	3.9	3.9									
4										B	B	4.3	A	A	4.2	A	A									
5										A	A	A	A	B	A	B	A									
6									B	(4.3)S	A	4.2	4.2	B	B	B	B									
7										A	A	S	B	B	B	B										
8										4.2	4.1	4.1	4.1	(3.9)S	(3.8)S	B	4.0									
9										A	(4.0)S	3.9	(4.0)A	(4.2)S	S	A	A									
10									3.6	4.0S	4.1	4.2	4.1	4.1	4.1	4.2	(3.9)S									
11										A	4.1S	4.1	4.1	4.1	4.1	3.8	4.2									
12									B	4.0	4.0	4.0	4.1	4.2	4.2P	4.3P	4.2									
13										3.6H	3.8	4.0	4.1	4.2	4.1	4.2	4.1									
14									S	3.9	B	B	(4.2)B	4.2	4.2	(4.0)P	A									
15									A	4.0	3.8	4.0	4.1	4.1	4.1	4.2	3.6H									
16										3.4	3.9	4.1	4.0	4.2	4.3	4.2	4.2H									
17									A	3.6	3.9	4.1	C	4.1	4.3	B	4.0H									
18									A	4.1	4.1	4.0	4.0	4.1	4.3	4.2	4.1									
19										4.1	3.8	4.2	4.1	4.2	4.3	A	B									
20										4.3	4.3	4.4	B	4.3	4.3	A	A									
21									4.1	4.3	4.4K	4.4K	4.4K	4.5K	4.5K	4.5K	4.2K									
22									4.3	C	C	4.3F	B	4.5	4.4	4.1	4.1									
23									S	M	4.0	A	4.0	4.4	4.5	4.3H	A									
24									4.0	4.3	4.2F	4.2	4.3	4.4H	4.4	4.5	4.6									
25									4.0H	4.1H	4.0	4.1	4.2	4.2	4.4	4.5	4.6									
26										A	4.5	4.1	4.6	4.4	4.5	4.6	4.6									
27									4.1	A	4.3	A	4.4	4.5	4.6	A	4.2									
28									A	B	4.3	4.1	4.2	4.2	4.3	4.5	A									
29									C	4.4	4.5	4.3	4.1	4.2	4.4	4.3	4.3	3.7								
30									4.0	4.6	4.7	A	A	C	4.3	4.4	A									
31									4.5	A	4.1	4.2	4.5	4.6	4.6	4.2	4.1	3.6								
Median									4.1	4.1	4.1	4.1	4.1	4.2	4.3	4.2	4.1	—								
Count									9	19	22	22	21	25	25	20	19	2								

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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Table 62

Ionospheric Storminess at Washington, D. C.

January 1951

Day	Ionospheric character* 00-12 GCT	12-24 GCT	Principal storms Beginning GCT	End GCT	Geomagnetic character** 00-12 GCT	12-24 GCT
1	2	2			2	2
2	3	1			3	3
3	2	1			3	2
4	2	2			2	1
5	3	3			2	2
6	3	2			2	1
7	2	2			1	1
8	1	3			2	2
9	2	2			3	1
10	2	2			1	3
11	3	1			3	3
12	2	2			4	3
13	2	2			4	2
14	2	3			3	3
15	2	3			3	3
16	3	3			2	3
17	3	3			3	1
18	3	3			1	1
19	3	3			2	3
20	1	2			2	1
21	3	4	1500	---	1	4
22	4	4	---	2200	4	5
23	3	2			4	3
24	1	2			2	2
25	2	1			2	1
26	1	3			2	3
27	1	0			4	3
28	1	3			3	3
29	2	3			3	2
30	1	3			2	3
31	3	3			5	3

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 63

Provisional Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings and Forecasts)
December 1950

Day	North Atlantic quality figure	CRPL* Warning	CRPL Forecasts (J-reports)	North Pacific quality figure	Geomagnetic K_{Ch}
	Half day GCT (1) (2)	Half day GCT (1) (2)		Half day GCT (1) (2)	Half day GCT (1) (2)
1	(4) 5	W U		(3) 5	2 1
2	(4) (4)	U		(3) 6	3 3
3	(4) 5			(4) 6	2 2
4	5 5			6 5	1 1
5	5 5			5 5	2 2
6	5 6			(4) 5	3 2
7	5 6	W	X	(4) 5	3 2
8	5 6		X	5 6	2 2
9	5 7		X	5 7	2 1
10	5 6			5 6	2 1
11	6 5			(4) 5	2 1
12	6 5			(4) (4)	3 (4)
13	(4) (4)	U W		5 (3)	(4) 3
14	5 (4)	W (U)	X	(3) (4)	3 (4)
15	(3) 5	U U	X	(3) (4)	2 2
16	(4) 5	U U		(4) 6	3 2
17	5 5			5 6	2 2
18	5 (4)			(4) 5	2 2
19	(4) (4)	U U		(4) 6	3 2
20	5 5	U		5 6	2 3
21	5 6			5 6	1 1
22	5 5	W	X	(4) (4)	2 (4)
23	(3) 5	W W	X	(3) 5	(5) 3
24	(3) (4)	W W	X	(3) (4)	(4) (4)
25	(3) (4)	W W	X	(3) (4)	(4) 3
26	(3) (4)	W W	X	(4) 5	(5) 3
27	(3) (4)	W W	X	(4) 5	(4) 3
28	(4) (4)	W U		(4) 6	3 2
29	(4) (4)	U		5 6	3 1
30	6 5			5 6	2 2
31	5 5	U		(4) 5	2 1

Score:	Warning N.A.	Warning N.P.	Forecast N.A.	Forecast N.P.
H	25	22	11	14
(M)	1	2	0	0
M	4	7	14	13
G	28	25	26	27
O	4	6	11	8

Scales:
Quality Figures
(1)- Useless
(2)- Very poor
(3)- Poor
(4)- Poor to fair
5 - Fair
6 - Fair to good
7 - Good
8 - Very good
9 - Excellent

Geomagnetic K_{Ch} - 0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis.

Symbols:
W Disturbed conditions expected
U Unstable conditions expected
N No disturbance expected
X Probable disturbed date

Scoring:
H Storm ($Q \leq 4$) hit
(M) Storm severer than predicted
M Storm missed
G Good day forecast
O Overwarning

Scoring by half day according to following table:

	Quality Figure ≤3	4	5 ≥ 6
W	H	H	O O
U	(M)	H	H O
N	M	M	G G
X	H	H	O O

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast. ( ) broadcast for one-quarter day. Blanks signify N.

Table 64

Zürich Provisional Relative Sunspot Numbers

January 1951

Date	R_Z*	Date	R_Z*
1	32	17	20
2	22	18	25
3	32	19	43
4	42	20	39
5	42	21	38
6	64	22	38
7	71	23	60
8	75	24	80
9	60	25	100
10	57	26	104
11	54	27	101
12	25	28	106
13	17	29	112
14	26	30	124
15	12	31	111
16	14	Mean:	56.3

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Note: The American sunspot numbers for January will appear in a later issue of this bulletin.

Table 65a

Coronal observations at Climax, Colorado (5303A), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 2.9	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	-	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9	-	-	-	-	3	3	3	3	5	5	5	8	8	8	10	10	8	5	3	5	8	12	10	5	3	3	3	3	-	-	-	-	-	-	-	-	-	-
7.7[a]	-	-	-	-	-	3	3	5	8	5	5	8	8	8	10	10	10	3	3	5	5	5	8	5	5	3	3	3	2	2	2	2	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	3	3	5	8	8	8	8	8	10	12	12	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	3	3	5	8	8	8	8	8	8	8	8	5	5	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	3	3	3	8	17	15	15	25	15	17	25	31	22	15	12	3	3	-	-	-	-	-	-	-	-	-	-	-
23.8[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	12	15	20	25	20	15	12	10	5	3	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	3	3	3	5	8	8	15	20	18	15	12	8	5	25	31	28	25	15	10	5	3	3	3	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	3	3	3	5	15	12	10	10	5	3	5	10	15	15	20	10	5	3	-	-	-	-	-	-	-	-	-	-	-	-

Table 66a

Coronal observations at Climax, Colorado (6374A), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	5	5	12	8	15	5	2	3	2	3	3	2	3	2	2	3	3	3
7.7[a]	5	3	3	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	8	14	14	15	10	8	5	3	3	5	8	5	3	3	3	3	3	3	3	3
9.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10.7	3	2	2	3	2	3	3	5	3	3	5	5	5	3	5	5	10	12	12	12	10	10	8	8	10	5	5	3	8	8	5	5	3	3	3	3	3	3
12.7	-	-	-	-	-	-	-	-	3	3	3	3	5	3	3	3	3	5	12	10	8	8	5	5	5	3	8	5	3	5	5	5	3	3	3	3	3	3
13.7	3	2	2	2	2	2	3	3	3	5	3	3	3	2	2	2	2	5	5	3	3	5	5	5	3	3	3	2	2	2	2	2	2	2	2	2	2	2
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-
21.7	3	3	3	3	3	3	3	3	3	3	3	3	3	5	10	3	15	12	10	10	12	12	10	5	5	10	8	5	5	10	5	3	3	3	3	3	3	3
23.8[a]	5	3	3	3	3	3	3	3	3	3	3	3	3	3	8	15	12	15	20	20	10	12	3	3	2	3	8	5	8	5	3	3	2	2	2	2	2	2
25.7	3	2	2	2	2	2	2	2	2	-	-	-	12	25	8	10	8	10	5	8	12	10	8	3	2	3	3	3	3	3	8	5	3	3	3	3	3	3
26.7	3	3	3	3	3	3	3	3	3	3	-	3	17	15	3	10	5	8	8	10	10	10	10	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-

Table 65b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	8	8	8		8	8	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9[a]	-	-	-	-	-	-	-	-	-	3	3	3	5	8	8	8	12	12	10		12	20	15	15	10	8	3	5	3	3	3	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	3	3	3	3	8	8	10	12	12	12		12	20	18	15	12	12	8	5	5	5	3	3	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	3	3	3	8	8	10	8	8	5	5		5	5	8	10	5	5	3	3	3	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	3	3	3	5	8	10	12	15	25	25	20	18	13		12	15	22	22	17	15	12	5	3	3	3	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	3	3	3	3	5	8	12	15	15	15	10		5	5	10	15	20	15	12	10	5	3	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	3	3	3	3	3	5	8	15	17	15	15	10		8	12	15	20	15	12	12	8	5	3	3	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	3	3	3	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	3	3	3	5	8	10	10	10	5	3		3	5	5	8	5	8	5	5	5	5	3	3	-	-	-	-	-	-
23.8[a]	-	-	-	3	3	3	3	3	3	3	3	3	5	5	3	3	3	3	3		3	8	12	15	12	5	3	3	3	3	-	-	-	-	-	-	3	3
25.7	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		15	15	12	12	5	3	3	3	3	3	3	-	-	-	-	-	-	-
26.7	-	-	-	-	-	3	3	3	3	3	3	3	3	5	5	5	5	8	3		3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-

Table 66b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9[a]	3	3	3	2	2	2	2	3	3	3	3	3	3	2	3	2	2	2	2		2	10	5	10	2	2	2	2	2	2	2	2	2	2	3	3	3
7.7	-	-	-	-	-	2	2	2	3	3	3	2	2	3	2	2	3	3	2		2	8	10	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5
9.7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	3	3		3	3	8	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	3	3	3	3	3	3	2	3	5	3	3	-	-	2	5	3	3	5	8		8	15	15	2	2	2	2	2	2	2	2	2	3	3	3	3	5	3	3
12.7	3	5	3	3	3	3	3	3	3	3	-	-	-	-	3	14	8	3	3		3	8	15	5	14	12	2	2	2	2	2	2	2	-	-	-	-	-
13.7	2	2	3	3	3	3	3	3	2	2	-	-	3	3	12	8	8	3	5		3	3	5	8	5	2	-	-	-	-	-	-	-	2	2	3	3
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	3	3	3	3	3	3	3	5	5	5	3	3	3	3	5	5	5	10	8		10	5	5	8	-	-	-	-	-	-	3	3	3	3	3	3	3	3
23.8[a]	2	2	2	2	2	3	3	3	2	2	2	2	2	2	3	5	8	10	5		15	20	15	15	8	3	3	2	-	-	-	-	-	2	2	2	2	2
25.7	3	3	3	3	3	3	5	5	3	3	-	3	5	3	3	8	10	8	15		20	25	15	17	8	3	3	3	3	3	3	3	3	3	3	3	3	3
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3		5	5	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-	3

Table 67a

Coronal observations at Climax, Colorado (6702), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	3	3		3	3	3	5	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8a	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3		3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	-	-		2	3	3	3	5	5	3	2	2	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	2	2	2		2	2	3	3	5	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-

Table 68a

Coronal observations at Sacramento Peak, New Mexico (5303), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 4.8	-	-	-	-	-	3	5	8	8	8	5	8	8	10	20	15	13	12		10	8	8	10	17	20	3	3	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	3	3	5	8	8	10	8	8	8	8	12	12	12	10		8	8	12	10	20	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	3	5	8	8	8	5	8	8	5	5	8	10	8		8	8	8	10	12	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	3	3	3	3	8	8	5	5	3	8	10	10	8	5		3	5	8	8	8	5	3	3	3	3	3	3	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	3	5	8	5	5	5	5	8	8	5	5		3	3	3	3	5	8	3	3	3	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	2	2	2	2	2	2	2	3	3	3	2	2		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.8	-	-	-	-	-	-	-	-	3	3	5	8	8	8	8	15	38	12		17	17	15	12	12	10	10	3	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	3	5	8	10	8	8	8	12	25	12		10	12	13	15	10	10	8	3	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	3	5	8	10	8	5	5	10	15	15	12		12	12	12	10	5	5	5	3	3	2	-	-	-	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	3	5	8	5	5	5	8	10	17	15	15		10	10	12	10	8	8	5	5	2	2	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	3	5	8	8	5	5	8	12	15	15	20		14	14	18	20	15	15	12	5	3	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	3	3	3	3	3	5	8	8	10	15	17	20		15	17	20	22	15	12	12	-	-	-	-	-	-	-	-	-	-	-	-	-
23.0	-	-	-	-	-	-	-	-	-	-	-	3	3	5	12	15	25	28		22	20	22	28	28	18	12	8	3	3	3	3	-	-	-	-	-	-	-	-
24.9a	-	-	-	-	-	-	-	-	-	-	-	3	3	8	10	15	12	5		5	8	12	15	15	15	13	3	3	3	-	-	-	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-	-	-	3	5	8	8	15	12	15	10	5		8	10	10	15	20	15	12	5	3	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	3	8	8	12	15	12	12	8		8	10	15	20	25	18	12	5	3	-	-	-	-	-	-	-	-	-	-	-
27.9	-	-	-	-	-	-	-	-	3	8	8	10	10	12	15	12	12	8		3	5	8	8	10	10	5	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	3	5	8	8	8	10	12	15	20	35	15	8		8	5	5	8	8	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-

Table 67b

Coronal observations at Climax, Colorado (6702Å), west limb

Date GCT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	3	2	2	2	2	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 68b

Coronal observations at Sacramento Peak, New Mexico (5303Å), west limb

Date GCT	Degrees south of the solar equator																			0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 4.8	-	-	-	-	-	-	-	-	-	-	-	-	3	8	12	10	10	14	15	12	12	12	13	12	8	8	8	10	10	8	3	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	3	3	10	10	8	8	10	10	12	12	15	12	12	10	8	8	10	5	3	3	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	3	3	3	3	5	5	8	10	10	10	12	15	15	15	12	8	5	5	3	3	3	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	3	3	3	5	5	8	10	10	12	12	12	20	28	15	15	10	8	8	5	5	3	3	3	-	-	-	-	-	-
8.?	-	-	-	-	-	-	-	-	-	-	3	3	5	8	10	13	12	12	10	10	15	12	12	10	5	5	3	3	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	3	3	5	8	10	12	15	12	12	15	12	15	20	15	10	5	5	3	-	-	-	-	-	-	-	-	-	-
16.8	-	-	-	-	-	-	-	-	-	-	-	3	5	5	8	12	10	15	3	5	12	15	25	31	20	12	8	8	8	8	5	5	3	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	3	3	5	12	8	5	8	8	12	12	15	15	10	5	5	3	5	10	5	3	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	5	5	8	10	13	15	12	12	12	12	15	18	15	15	10	8	8	10	10	8	5	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	3	3	3	5	5	10	12	10	5	5	5	8	12	10	10	10	5	5	5	5	5	5	5	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	3	3	8	10	10	8	5	3	5	8	8	8	8	5	5	5	5	5	5	5	3	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	3	3	3	5	8	5	3	-	-	-	-	-	-	-	-	3	3	5	5	3	3	-	-	-	-	-	-
23.0	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	8	-	-	3	5	8	13	12	13	8	5	5	5	5	5	3	-	-	-	-	-	-	-
24.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	12	15	12	10	8	-	-	-	-	-	-	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	5	8	8	5	5	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	5	5	5	5	5	5	5	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-
27.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	8	8	8	5	5	5	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	5	8	12	10	10	10	13	17	14	8	5	3	3	3	3	-	-	-	-	-	-	-	-

Table 69a

Coronal Observations at Sacramento Peak, New Mexico (6374A), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 4.8	3	3	2	2	-	-	-	-	-	-	-	2	2	2	2	3	5	3	3	3	3	10	8	12	2	2	3	-	-	-	2	2	2	2	2	2	2	2
5.7	2	2	2	2	2	2	2	-	-	-	-	-	-	2	2	2	3	3	-	-	-	10	3	10	8	3	3	2	2	2	-	-	-	-	-	-	-	-
6.8	2	2	2	2	2	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	2	10	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	2	2	2	-	-	-	3	2	2	2	2	2	2	2	2	2	2	10	8	8	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8.7	2	2	2	2	2	-	-	-	-	-	-	2	2	2	2	2	2	3	8	5	10	8	5	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	3	2	2	-	-	-	-	-	-	3	3	2	2	2	-	-	-
16.8	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	3	12	10	5	8	12	5	2	2	2	2	-	-	-	-	2	2	2	2	2	2	2	2
17.7	1	1	1	1	1	2	2	2	1	1	1	1	2	2	2	2	3	12	3	3	12	3	2	2	2	1	1	1	1	1	2	2	2	2	2	2	2	2
18.7	-	-	-	2	2	3	3	3	2	2	-	-	-	2	2	2	3	8	2	3	10	3	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2
19.7	2	2	2	2	2	2	2	2	-	-	-	-	-	2	2	2	2	3	5	3	5	8	5	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2
20.7	2	3	2	2	3	3	3	3	3	2	2	2	2	3	3	10	2	8	5	2	8	5	3	3	3	2	3	5	3	3	3	2	2	2	3	2	2
21.7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	8	10	5	5	3	8	10	5	3	2	2	2	2	3	3	2	2	2	2	2	2	2	2
23.0	3	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3	3	5	12	3	12	12	8	10	2	2	3	3	3	3	2	2	2	2	-	-	-
24.9a	-	-	-	-	-	-	2	2	2	2	-	-	-	-	10	10	8	8	5	3	5	5	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	3	5	5	5	2	5	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	2	2	2	2	2	3	3	3	3	3	-	-	-	3	10	10	5	3	3	2	3	8	5	5	2	3	3	3	3	3	3	3	3	3	3	3	3	3
27.9	-	-	-	-	-	-	-	-	-	-	-	2	2	3	10	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-
29.7	2	2	2	2	2	2	2	2	2	2	-	-	-	-	2	10	2	-	2	2	3	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-

Table 70a

Coronal Observations at Sacramento Peak, New Mexico (6702A), east limb

Date GCT	Degrees north of the solar equator																			0°	Degrees south of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																						
Jan. 4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
23.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
24.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 69b

Coronal Observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																				0°	Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5				5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90		
1951																																									
Jan. 4.8	2	2	2	2	2	2	2	3	3	3	2	2	2	2	3	3	2	10	5			2	2	10	2	2	-	-	-	-	-	-	3	3	3	3	2	2	3		
5.7	-	-	2	2	2	3	2	2	3	5	3	2	3	3	3	3	3	3	3			2	3	2	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2		
6.8	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	2	2	2	-			-	3	3	2	-	-	-	-	-	-	3	3	3	2	2	2	2	2		
7.7	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	2	3	3	1			1	3	10	8	3	3	2	2	2	2	2	2	2	2	-	3	-	-		
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2			2	2	2	2	2	2	2	2	2	-	-	2	2	2	2	2	2	2		
9.7	-	-	-	-	-	2	2	2	2	2	2	3	3	2	2	2	2	3	2			2	2	2	12	10	-	-	2	-	-	-	-	-	-	-	-	-	-		
16.8	2	2	2	1	1	1	1	1	1	2	2	2	2	8	2	8	5	3	1			1	1	12	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-		
17.7	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	8	5	3	3			3	3	3	3	5	2	2	-	-	-	-	-	-	1	1	1	1	1		
18.7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	8	5	5	2	2			3	5	3	3	2	2	2	-	-	-	-	-	2	2	2	2	2	-		
19.7	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	5	8	2	2			3	3	3	2	2	2	2	-	-	-	-	-	-	2	2	2	2	2		
20.7	2	2	3	2	2	2	2	3	2	2	2	2	2	5	5	8	3	3	2			5	5	2	-	-	-	-	-	-	-	-	-	2	2	3	3	2		
21.7	2	2	2	3	3	3	3	3	3	3	3	2	2	2	3	3	3	5	8			5	3	3	3	3	3	-	-	-	-	-	-	2	2	2	2	2		
23.0	-	-	-	-	-	-	-	3	3	3	2	2	2	2	2	3	8	8	5			3	10	8	10	5	2	-	-	-	-	-	2	2	3	3	3	3	3		
24.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			12	15	8	10	3	2	2	2	2	-	-	-	-	-	-	-	-	-		
25.9	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3			10	10	8	5	3	3	-	-	-	-	-	-	-	-	-	-	-	-		
26.7	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	3	3	5			10	10	8	8	3	3	2	2	2	2	2	2	2	2	2	2	2	2		
27.9	-	-	-	-	-	-	-	2	2	2	2	-	-	-	3	3	3	2	2			2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-		
29.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	8	10			3	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2		

Table 70b

Coronal Observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																				0°	Degrees north of the solar equator																		
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5				5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90		
1951																																									
Jan. 4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-		
7.7	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2			2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-		
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-		
16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2			2	2	3	3	3	3	3	2	2	2	2	-	-	-	-	-	-	-		
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-		
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-		
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-		
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
21.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
23.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
24.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-		
25.9	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
27.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-		
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Table 71

Outstanding Solar Flares, December 1950

Observatory	Date 1950	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) (of) (Visible) (Hemisph)	Position Longitude Diff (Deg)	Position Latitude (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
Boulder	Dec. 5	1925	1950	25	40	W32	N17	1930	8	8		
"	" 6	2005	2018	13	90	E48	S14	2010	8	7		
"	" 8	2058	2123	25	340	E52	N21	2108	10	7		
"	" 9	1710	1750	--	80	W34	N06	1711	6	8		
"	" 14	1740	1800	--	250	W24	N16	1747	12	3		

Table 72

Indices of Geomagnetic Activity [illegible]

Preliminary values of mean K-indices, Kw, from 35 observatories;
Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1950	Values Kw	Sum	C	Values Kp	Sum	Final Sel. Days
1	1.0 2.2 2.0 1.2 1.6 1.5 1.2 0.7	11.4	0.2	1o 3o 2+ 1+ 1+ 1+ 1+ 0+	12o	Five
2	1.1 2.4 1.6 1.6 1.7 3.5 2.7 2.1	16.7	0.7	2- 3+ 2o 2- 2o 3+ 3- 2+	19o	Quiet
3	1.6 1.5 1.3 1.9 1.7 1.4 2.3 2.9	14.6	0.5	2o 2- 2- 2+ 2- 1+ 2+ 3o	16o	
4	0.3 1.1 0.9 0.9 1.3 2.0 2.2 1.9	10.6	0.2	0o 2- 1o 1- 1o 2o 2+ 2-	10+	1
5	1.8 0.7 1.5 1.6 1.9 3.0 3.1 2.0	15.6	0.7	2o 0+ 2- 2- 2+ 3o 3o 2-	16-	4
						11
6	2.2 1.9 3.3 4.1 3.1 2.6 1.9 2.1	21.2	0.9	2+ 2+ 4+ 4+ 3o 3- 2o 2o	23o	21
7	3.1 2.4 1.9 1.5 2.1 1.9 3.0 2.7	18.6	0.6	4- 3o 2o 1+ 2o 2o 3o 3-	20-	31
8	1.1 1.3 1.3 2.9 2.6 3.3 2.8 3.0	18.3	0.8	1+ 1+ 1+ 3o 3o 3+ 3o 3o	19+	
9	2.6 2.6 2.3 1.6 2.0 1.1 1.4 1.5	15.1	0.4	3o 3+ 3o 2- 2o 1+ 1o 1o	16+	
10	1.5 2.1 1.9 1.7 2.0 1.9 2.7 1.9	15.7	0.6	2o 3o 3- 2o 2o 2- 3- 2-	18-	
11	1.3 1.3 0.8 1.1 0.8 0.9 1.1 0.5	7.8	0.0	1+ 2o 1o 1+ 1- 1- 1o 0+	8+	Five
12	0.6 3.4 3.8 2.9 1.9 3.1 5.0 4.3	25.0	1.4	0+ 4- 4+ 3o 2o 3+ 5o 4+	26o	Dist.
13	4.7 3.9 3.6 3.4 3.4 3.6 5.2 4.9	32.7	1.6	5+ 5- 5- 4- 4- 4- 5+ 5+	36+	
14	4.5 4.1 1.7 1.9 1.4 3.1 5.4 4.9	27.0	1.4	6- 5o 2- 2o 1+ 3+ 6o 6-	31-	13
15	2.0 1.7 2.1 2.3 2.2 2.2 3.4 2.7	18.6	0.7	2+ 3- 3- 2+ 3- 2+ 4- 3-	21+	14
						22
16	2.3 2.9 1.7 3.0 2.3 1.4 1.6 1.9	17.1	0.4	3- 4- 2+ 3+ 3- 1+ 1+ 2o	19+	23
17	1.1 1.1 1.2 2.9 1.1 1.0 2.0 1.9	12.3	0.3	1+ 2- 2- 3+ 1o 1o 2o 2-	14-	24
18	2.5 0.9 1.1 1.7 1.9 3.1 4.3 2.2	17.7	0.9	3o 1o 1o 2- 2+ 3o 4+ 2o	18+	
19	3.0 2.0 2.2 1.7 2.0 3.0 3.5 1.7	19.1	0.7	3+ 3- 3- 2o 2o 3o 4- 2-	21o	
20	0.8 1.1 0.9 2.2 1.3 2.0 3.1 4.5	15.9	0.8	1o 1+ 1o 3- 1o 2+ 3+ 5o	18-	Ten
						Quiet
21	2.5 1.7 1.0 1.6 1.1 0.6 1.3 1.0	10.8	0.2	3+ 2o 1+ 2o 1+ 0+ 1+ 1-	12+	
22	0.5 1.2 0.9 2.4 4.2 4.9 5.6 4.2	23.9	1.6	1- 2- 1o 3- 4o 5o 6+ 5-	26o	
23	4.4 3.9 4.4 3.8 3.5 3.7 2.8 3.6	30.1	1.3	5o 5- 6- 4+ 4o 4- 3- 4+	34+	1
24	3.3 3.0 3.3 3.7 3.4 5.8 4.3 3.6	30.4	1.5	4o 4- 4+ 4o 4- 6+ 5- 4o	35-	3
25	4.0 3.3 3.2 3.7 4.0 4.0 4.1 3.8	30.1	1.3	5- 4o 4+ 4+ 4+ 4+ 4+ 4o	34+	4
						9
26	3.8 3.1 3.7 4.2 3.3 3.8 3.6 2.9	28.4	1.2	4+ 4o 5- 5o 4- 4o 4- 3o	32+	11
27	2.6 3.0 3.0 3.4 2.6 2.7 3.2 3.5	24.0	1.0	3o 4- 4+ 4- 3o 3- 3+ 4o	28-	17
28	2.6 2.0 2.3 2.4 2.5 2.5 2.0 1.7	18.0	0.5	3o 3- 3o 3o 3- 2+ 2+ 2-	21-	21
29	1.8 1.6 1.7 2.0 0.8 1.3 1.7 2.1	13.0	0.2	2+ 2+ 2+ 3- 1- 1+ 2- 2o	15+	29
30	2.0 0.7 1.2 1.6 1.6 2.4 2.6 2.6	14.7	0.5	2+ 0o 1o 2o 2o 2+ 3- 3-	15o	30
31	0.7 0.5 1.2 0.9 0.7 1.0 0.9 2.0	7.9	0.1	1o 0+ 2- 1+ 1o 1o 1o 2o	9+	31
Mean	2.17 2.03 2.13 2.90 2.08 2.32 2.53 2.62	2.35	0.75			

Table 73

Sudden Ionosphere Disturbances Observed at Washington, D. C.

January 1951

1951 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
January 22	1620	1800	Ohio, D. C., Colombia, England, New Brunswick	0.0	Terr.mag.pulse** 1625-1705
23	1830	1920	Ohio, D. C., Colombia	0.1	
27	1928	2020	Ohio, D. C., Colombia	0.2	

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

Table 74

Sudden Ionosphere Disturbances Reported by RCA Communications, Inc., as Observed at Riverhead, New York

1951 Day	GCT Beginning	GCT End	Location of transmitters
January 22	1625	1715	Argentina, California, Canada, England, Italy, Morocco, Panama

Table 75

Sudden Ionosphere Disturbances Reported by Institut für Ionosphärenforschung, as Observed at Lindau, Harz, Germany, November 1950

Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*
November 28	1130	1145	München**, Frankfurt***	0.3

*Ratio of received field intensity during SID to average field intensity before and after, for station München, 6161 kilocycles, 400 kilometers distant.

**Station Bayern. Rundfunk 6161 kilocycles, 400 kilometers distant.

***Station Hessen. Rundfunk 6190 kilocycles, 190 kilometers distant.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

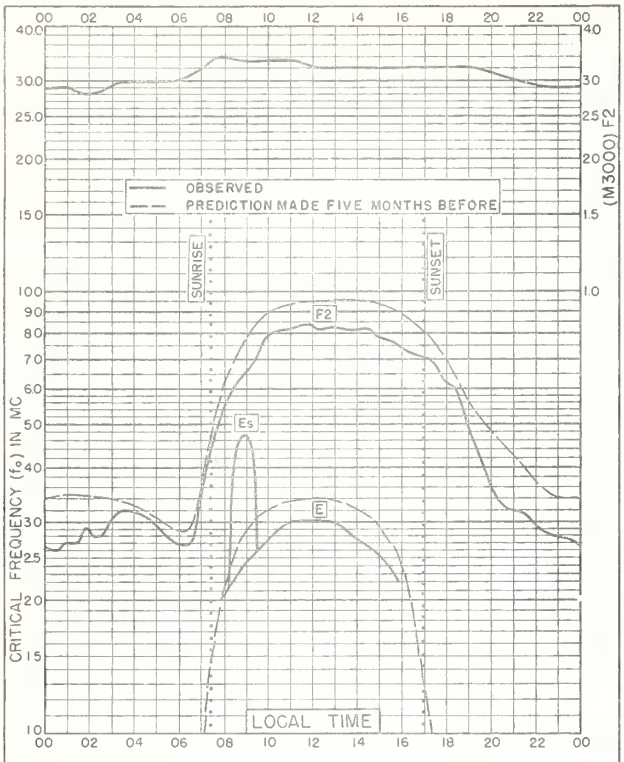

Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W JANUARY 1951

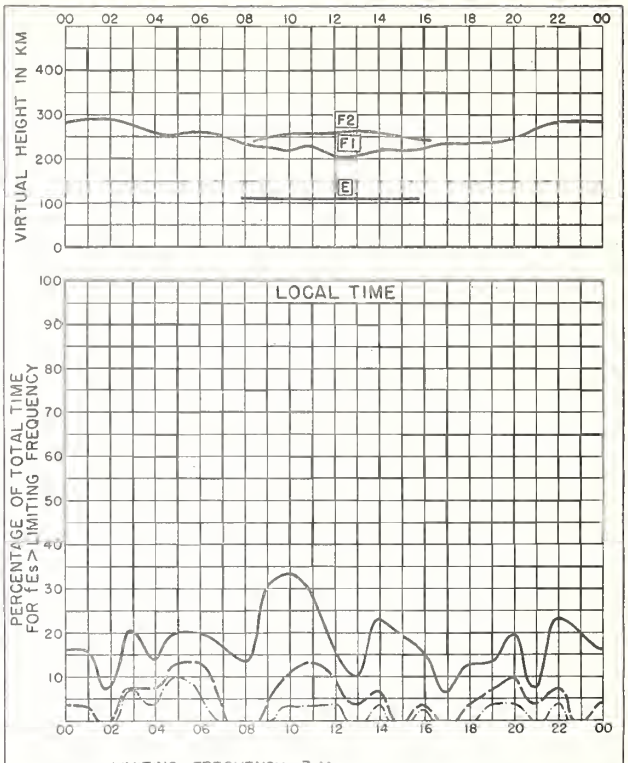

Fig. 2. WASHINGTON, D. C. JANUARY 1951

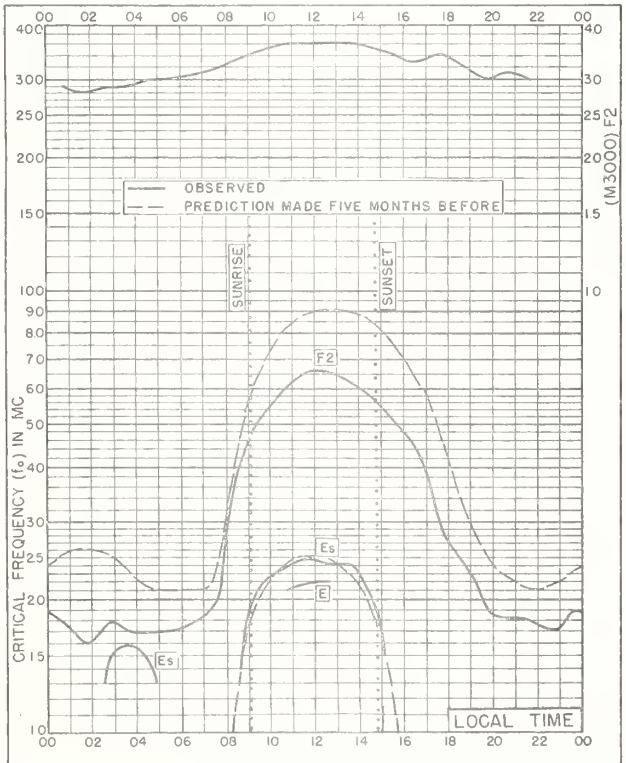

Fig. 3. OSLO, NORWAY
60.0°N, 11.0°E DECEMBER 1950

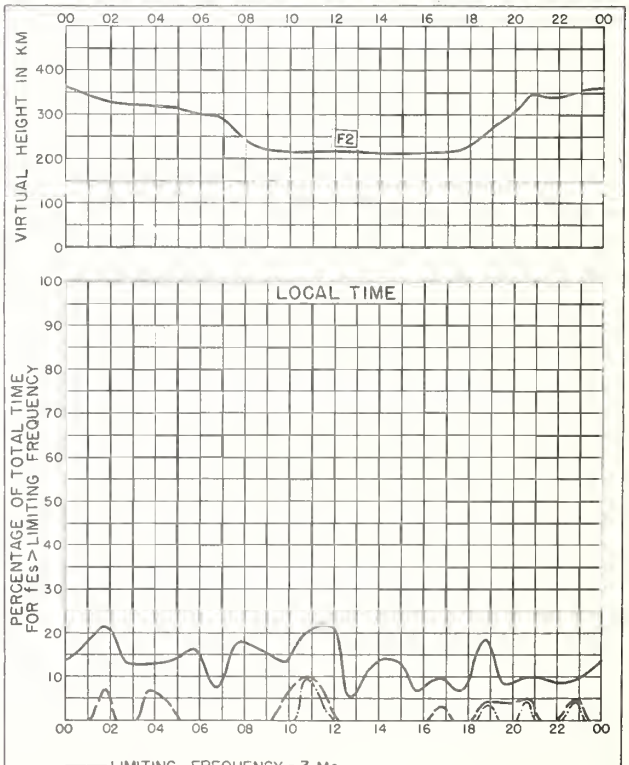

Fig. 4. OSLO, NORWAY DECEMBER 1950

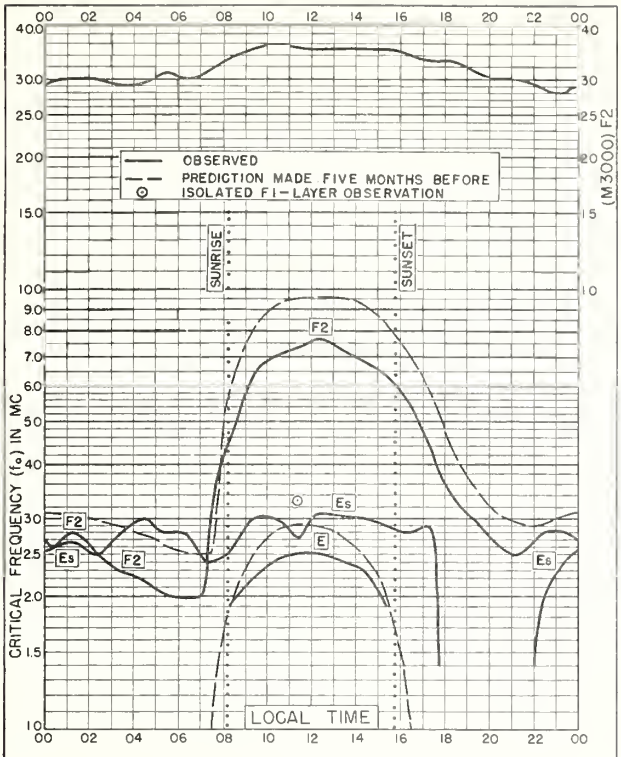

Fig. 5. De BILT, HOLLAND
52.1°N, 5.2°E DECEMBER 1950

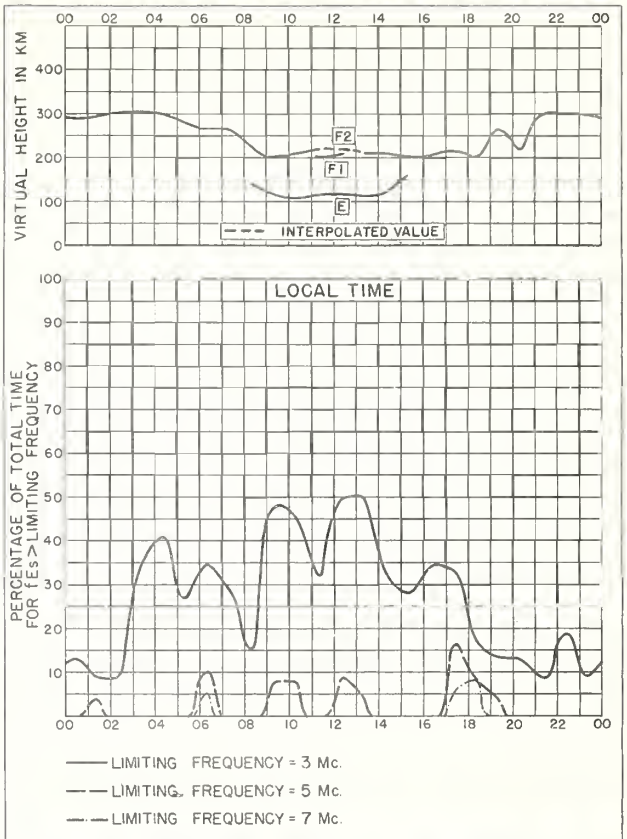

Fig. 6. De BILT, HOLLAND DECEMBER 1950

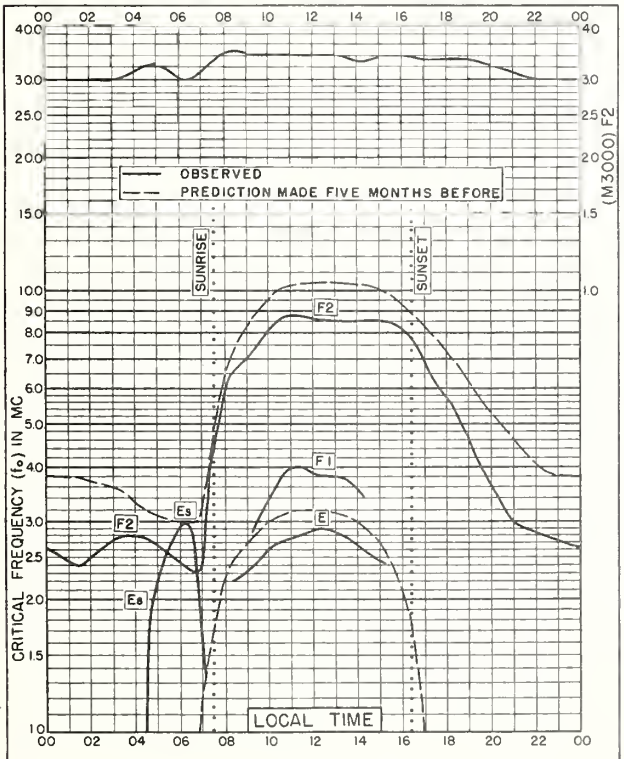

Fig. 7. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W DECEMBER 1950

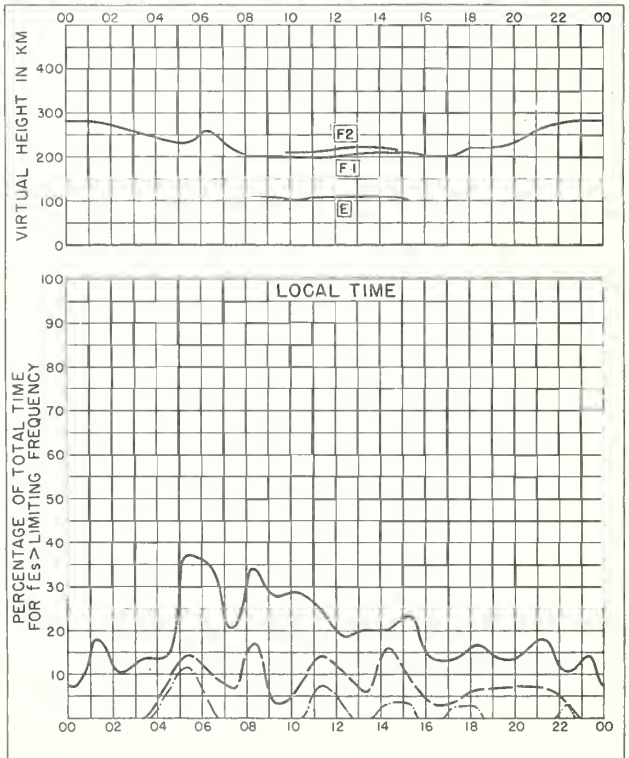

Fig. 8. BOSTON, MASSACHUSETTS DECEMBER 1950

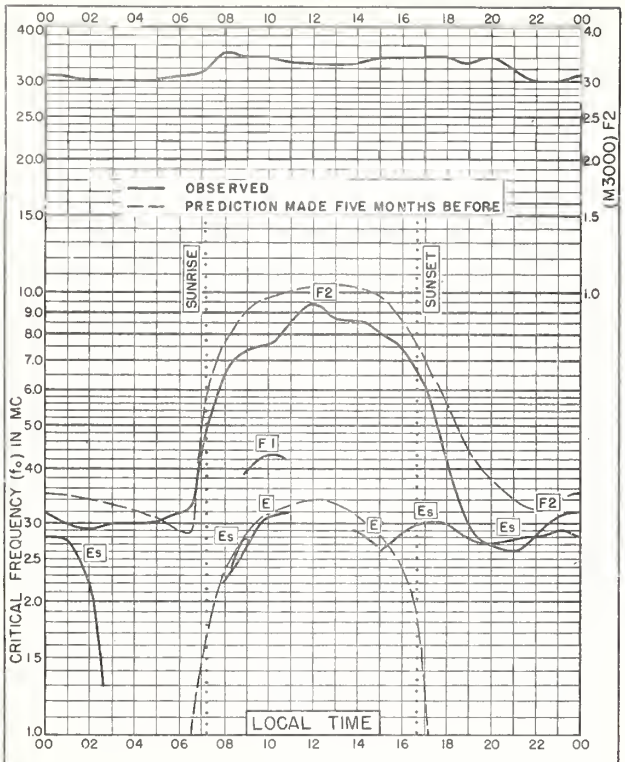

Fig. 9. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W DECEMBER 1950

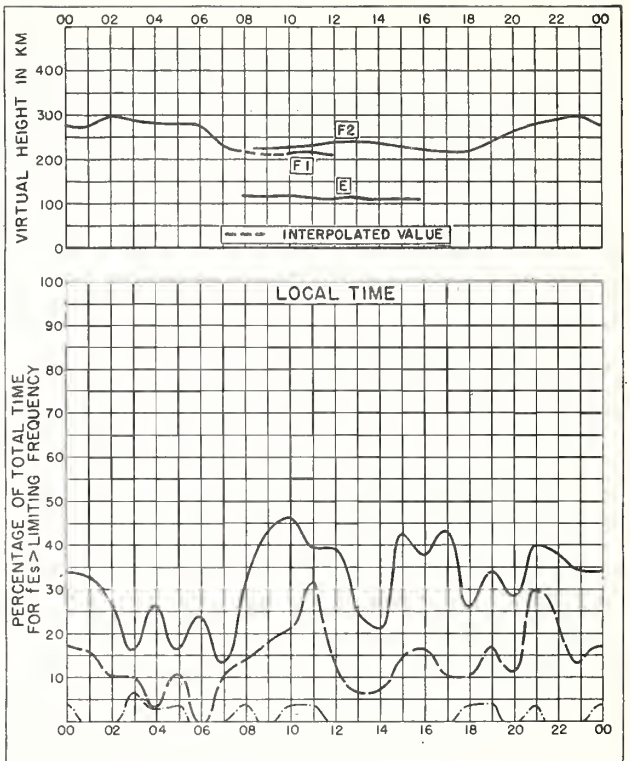

Fig. 10. SAN FRANCISCO, CALIFORNIA DECEMBER 1950

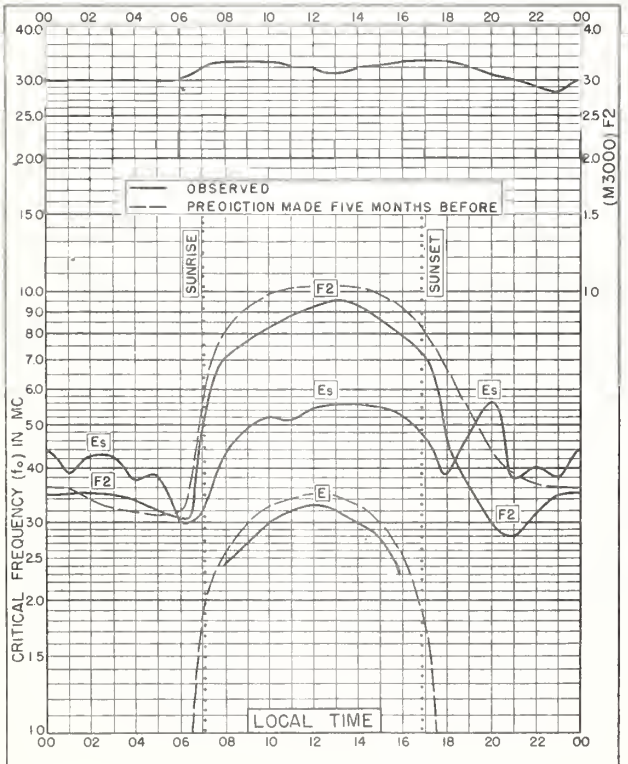

Fig. 11. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W DECEMBER 1950

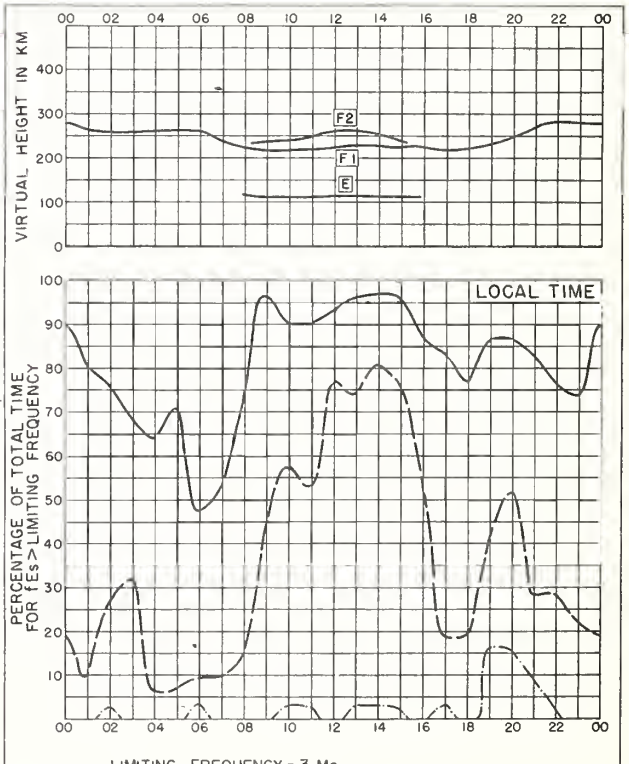

Fig. 12. WHITE SANDS, NEW MEXICO DECEMBER 1950

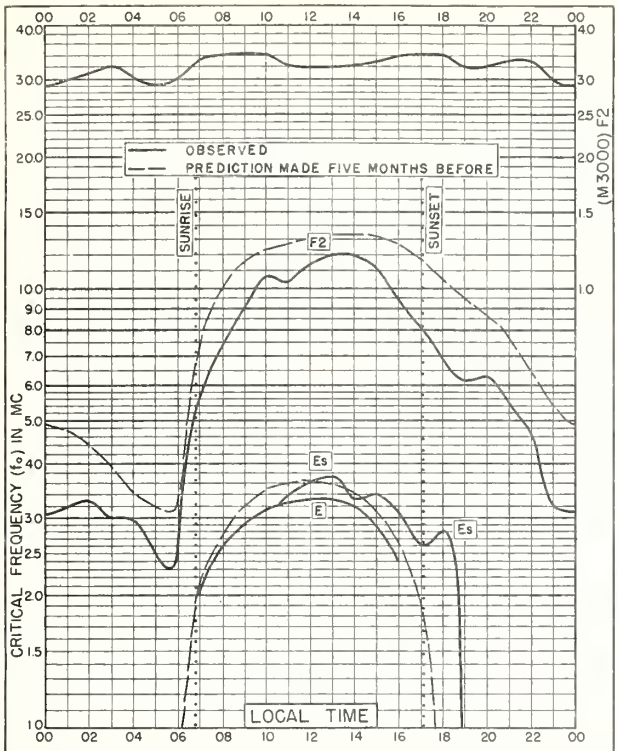

Fig. 13. OKINAWA I.
26.3°N, 127.7°E DECEMBER 1950

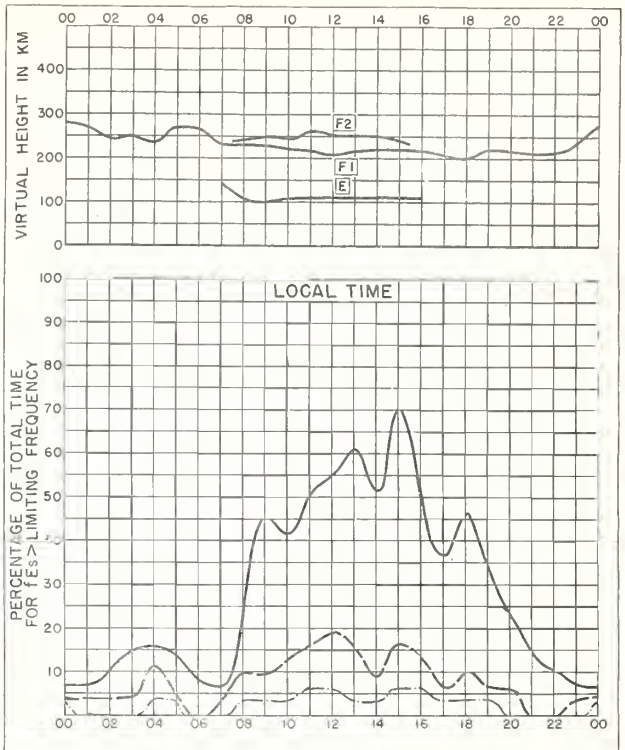

Fig. 14. OKINAWA I. DECEMBER 1950

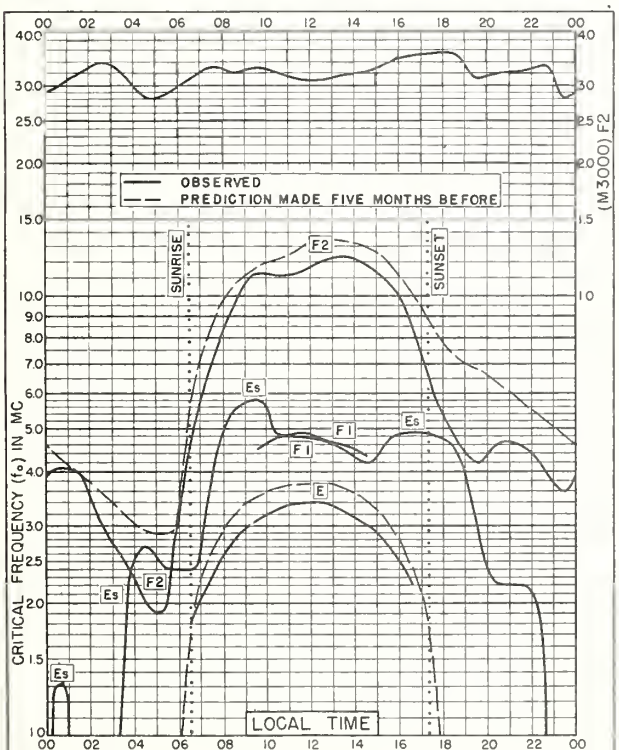

Fig. 15. MAUI, HAWAII
20.8°N, 156.5°W DECEMBER 1950

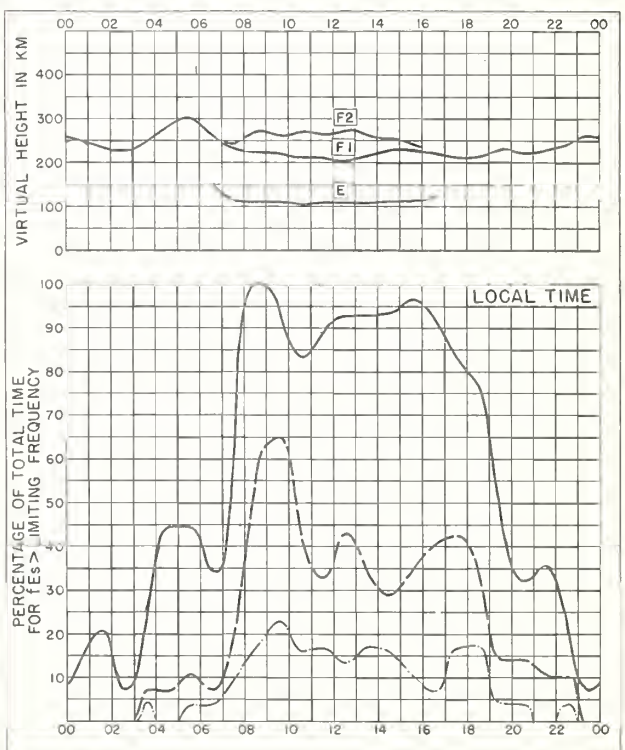

Fig. 16. MAUI, HAWAII DECEMBER 1950

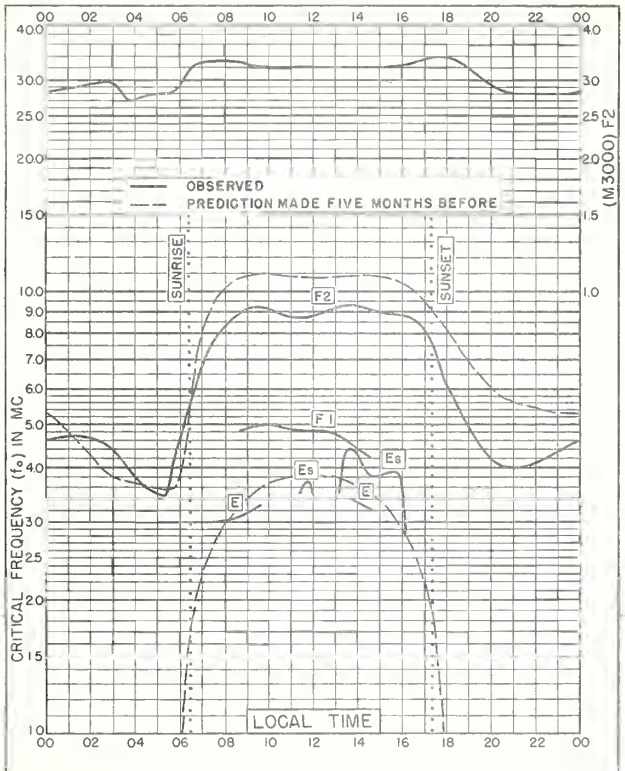

Fig. 17. SAN JUAN, PUERTO RICO
18.4°N, 66.0°W DECEMBER 1950

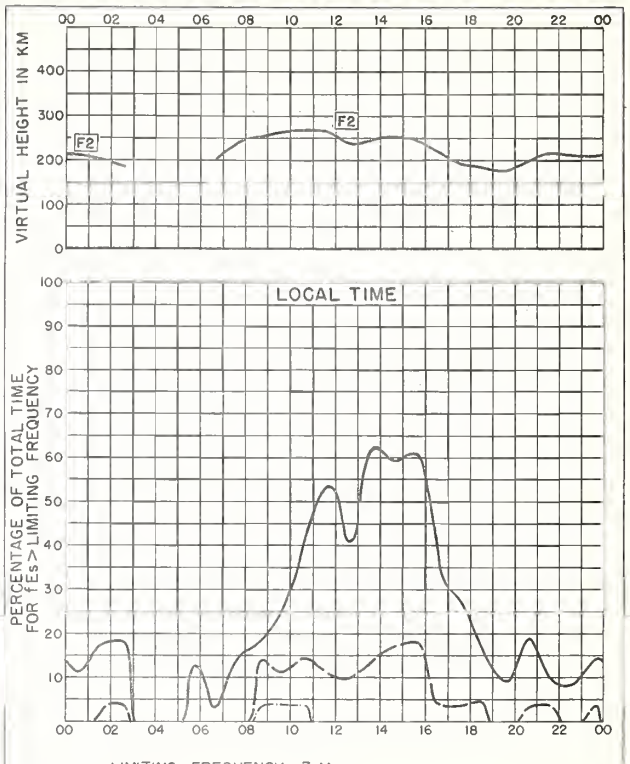

Fig. 18. SAN JUAN, PUERTO RICO DECEMBER 1950

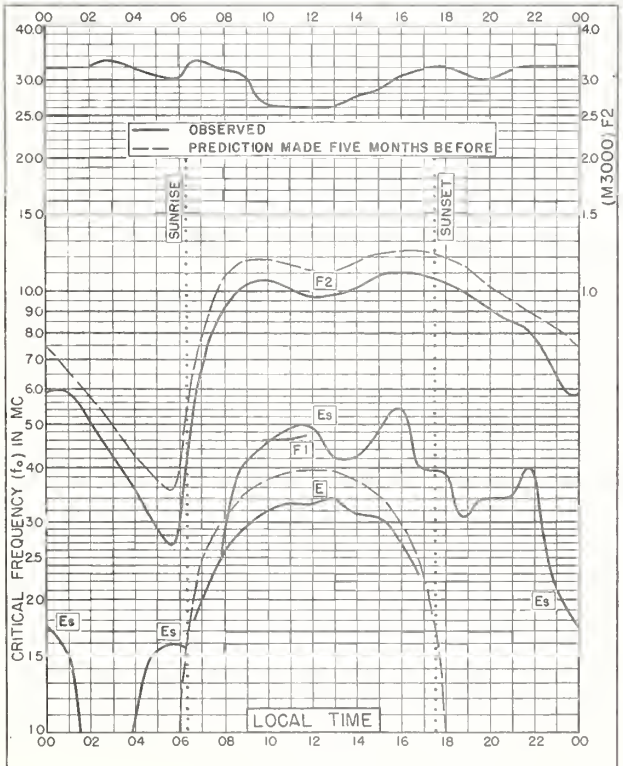

Fig. 19. GUAM I.
13.6°N, 144.9°E DECEMBER 1950

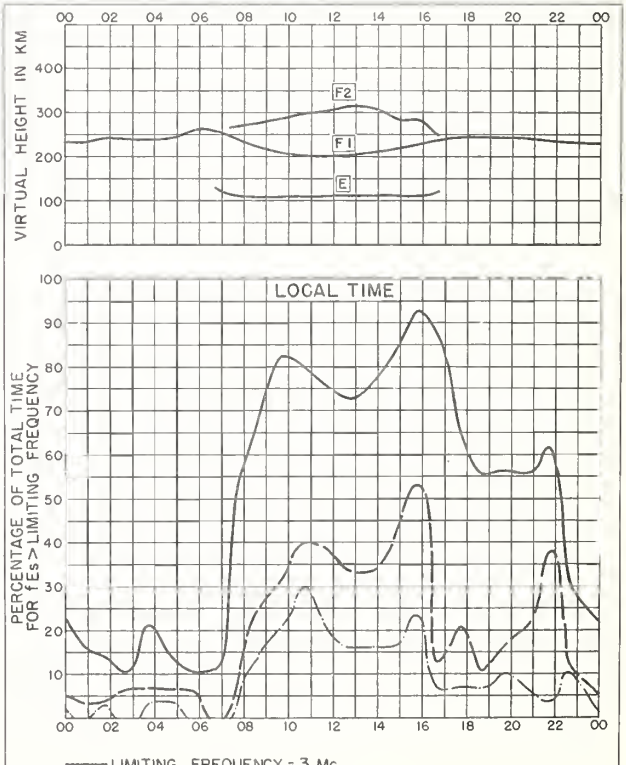

Fig. 20. GUAM I. DECEMBER 1950

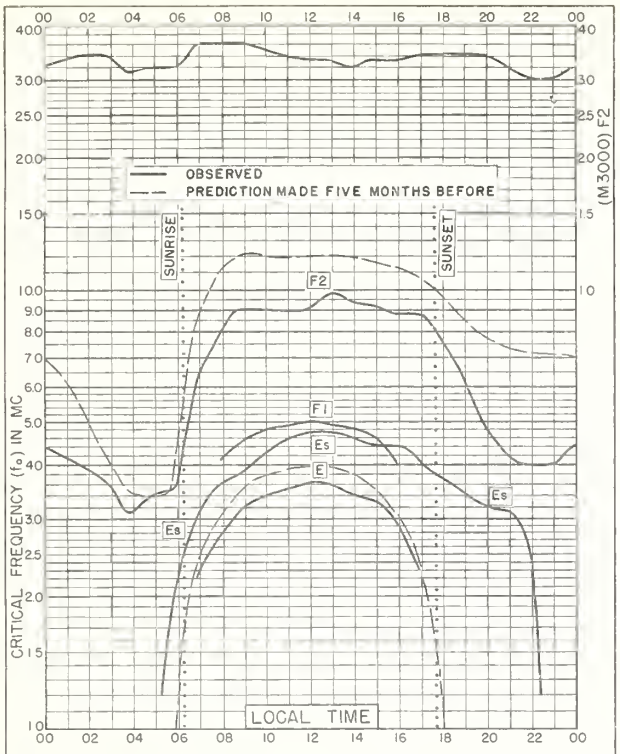

Fig. 21. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W DECEMBER 1950

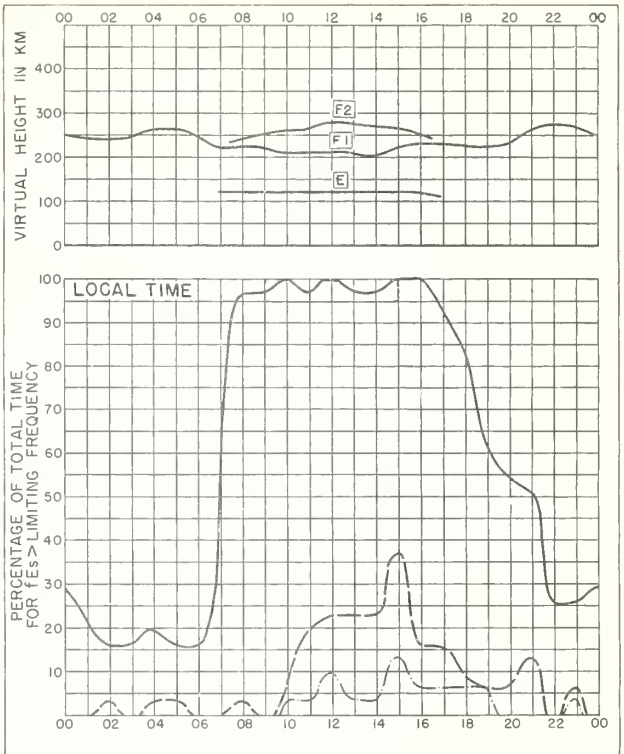

Fig. 22. TRINIDAD, BRIT. WEST INDIES DECEMBER 1950

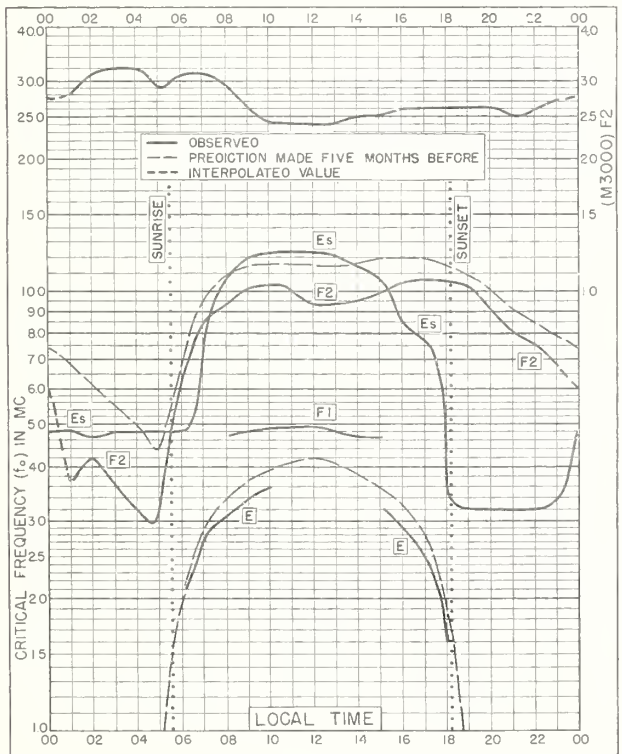

Fig. 23. HUANCAYO, PERU
12.0°S, 75.3°W DECEMBER 1950

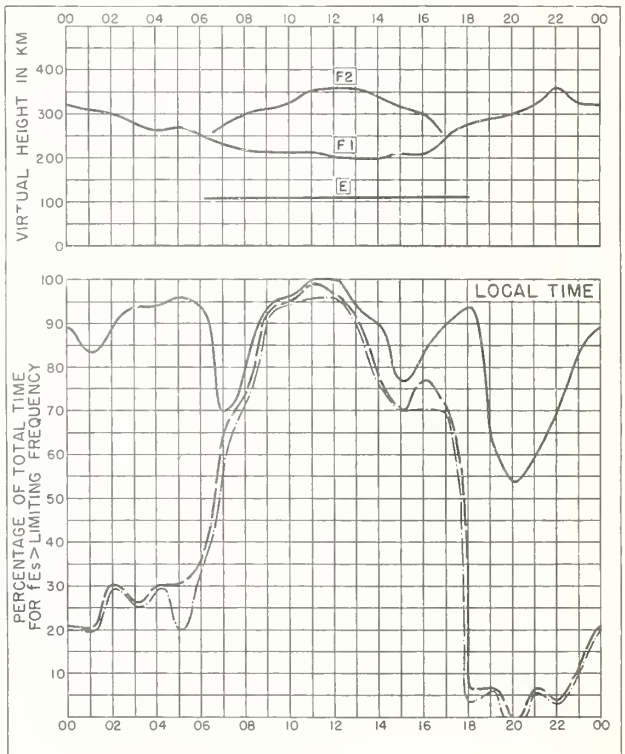

Fig. 24. HUANCAYO, PERU DECEMBER 1950

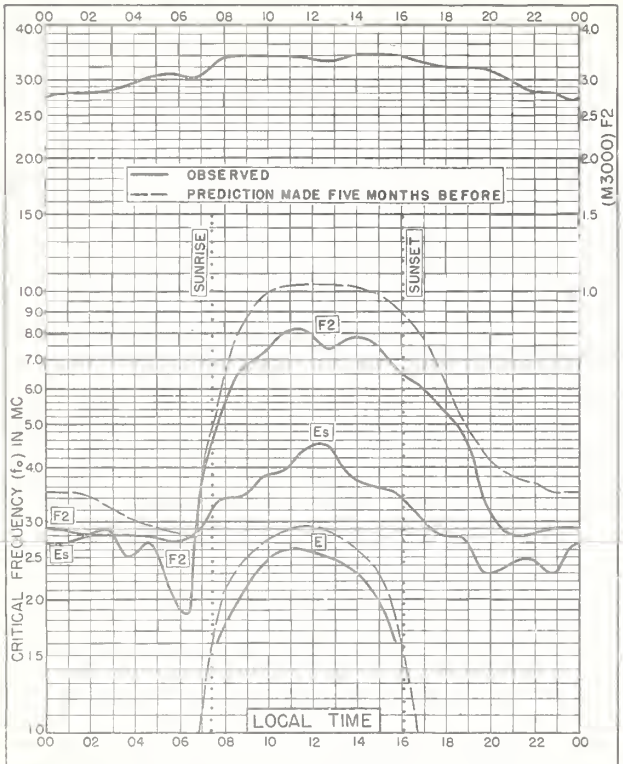

Fig. 25. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E NOVEMBER 1950

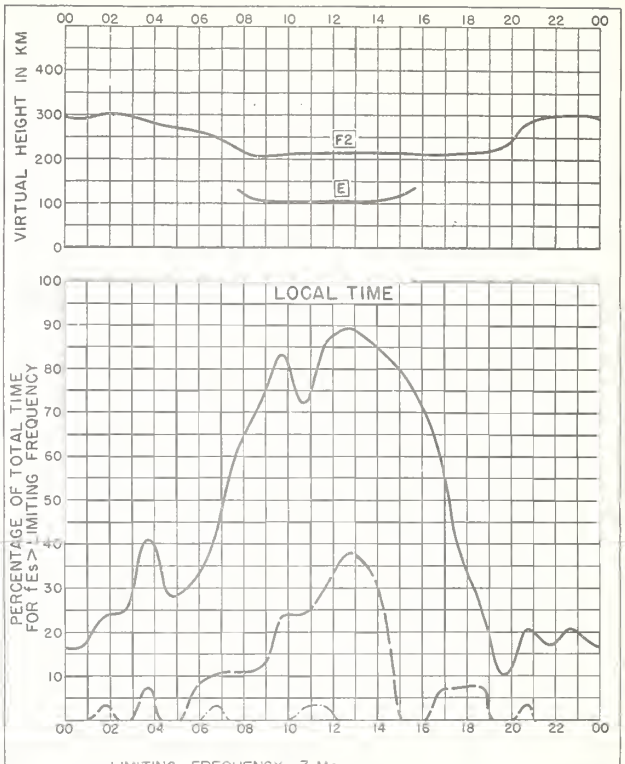

Fig. 26. LINDAU/HARZ, GERMANY NOVEMBER 1950

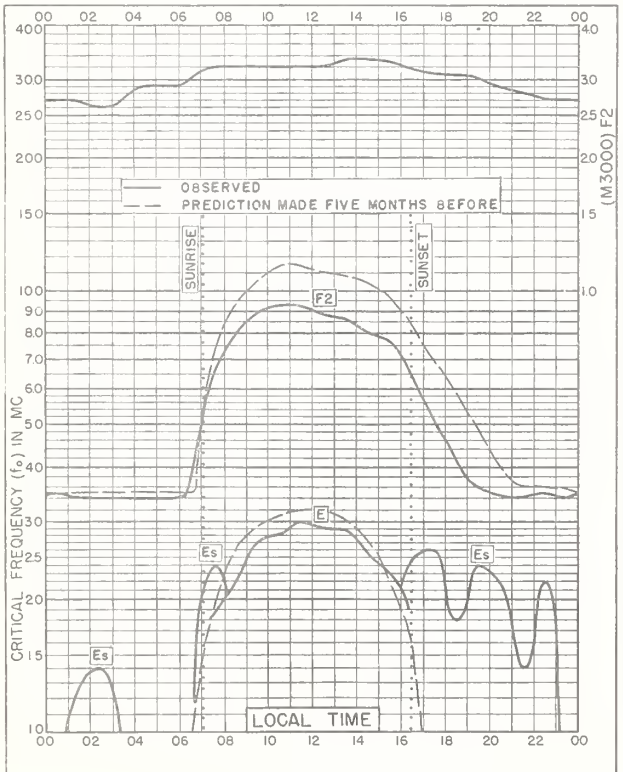

Fig. 27. WAKKANAI, JAPAN
45.4°N, 141.7°E NOVEMBER 1950

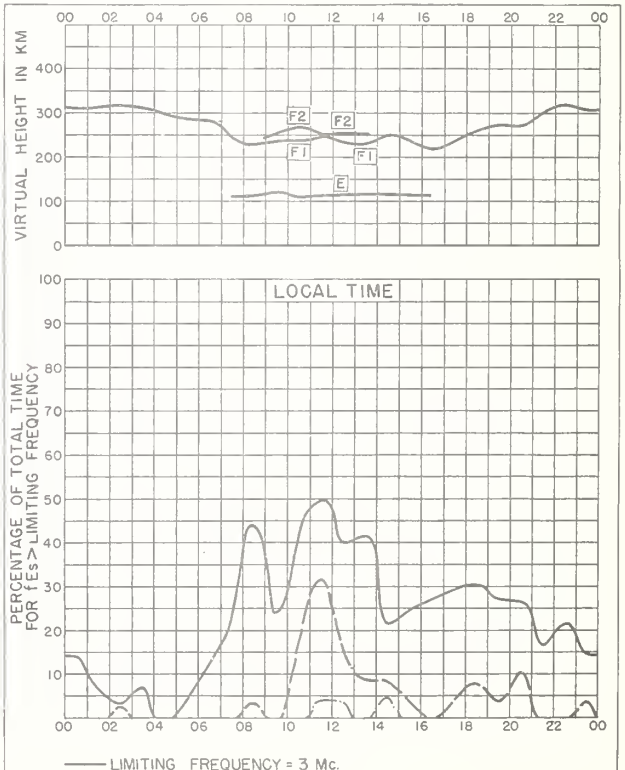

Fig. 28. WAKKANAI, JAPAN NOVEMBER 1950

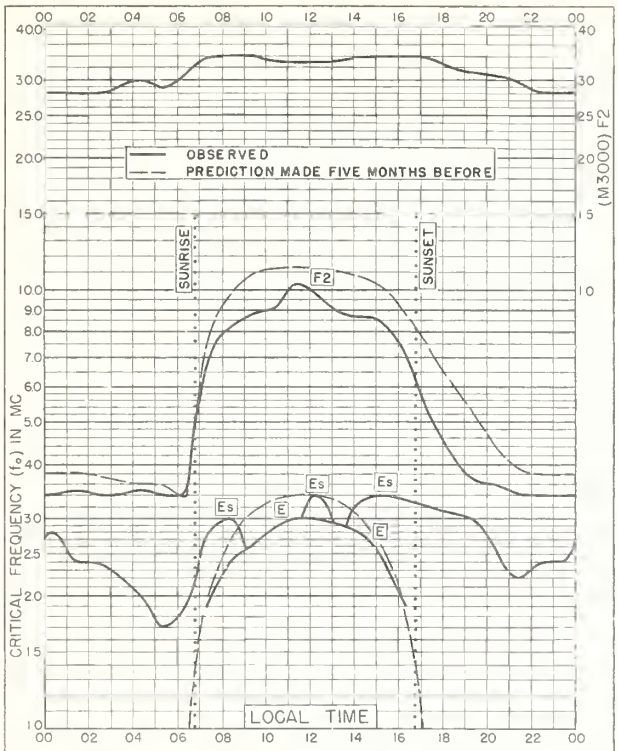

Fig. 29. AKITA, JAPAN
39.7°N, 140.1°E NOVEMBER 1950

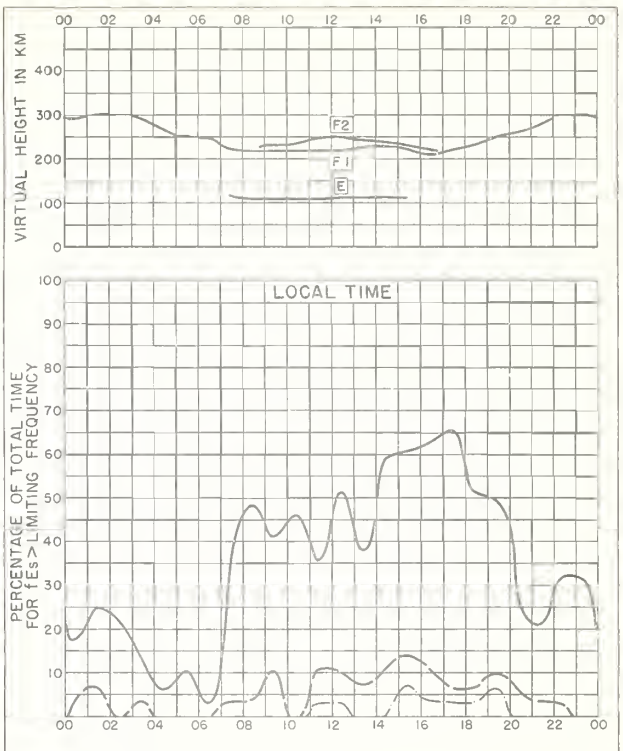

Fig. 30. AKITA, JAPAN NOVEMBER 1950

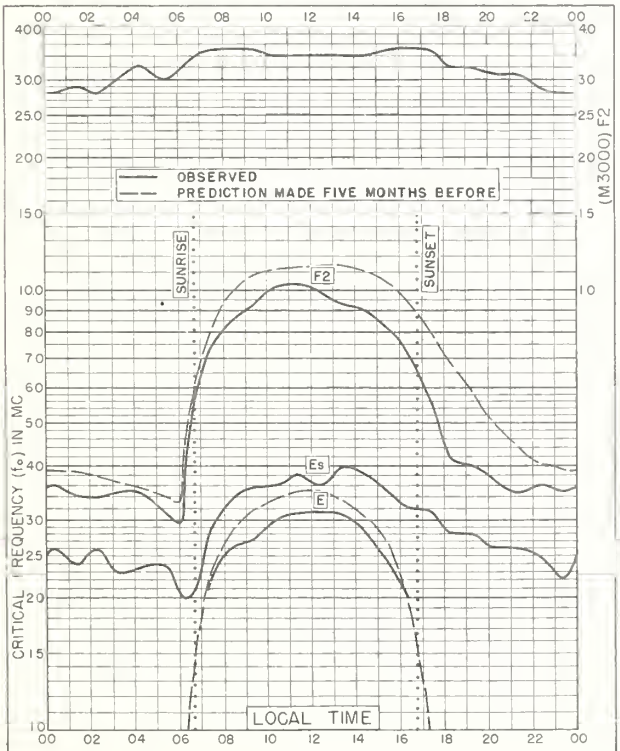

Fig. 31. TOKYO, JAPAN
35.7°N, 139.5°E NOVEMBER 1950

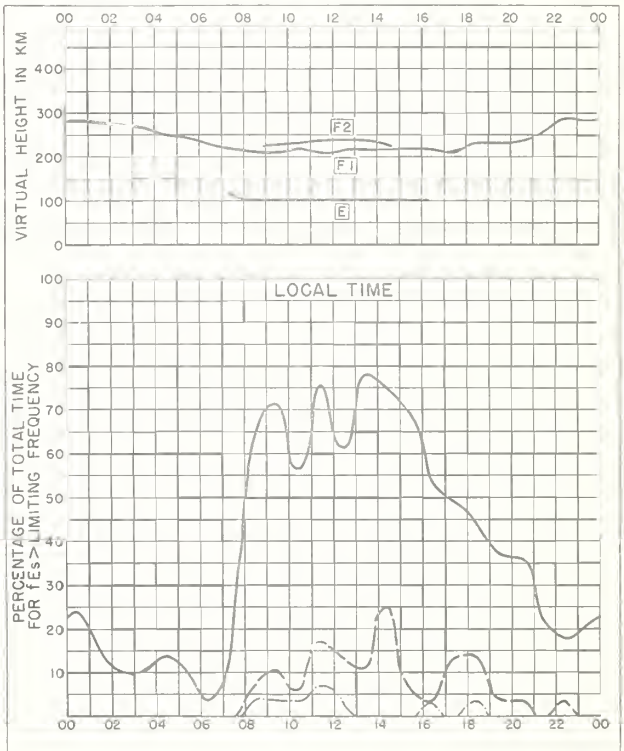

Fig. 32. TOKYO, JAPAN NOVEMBER 1950

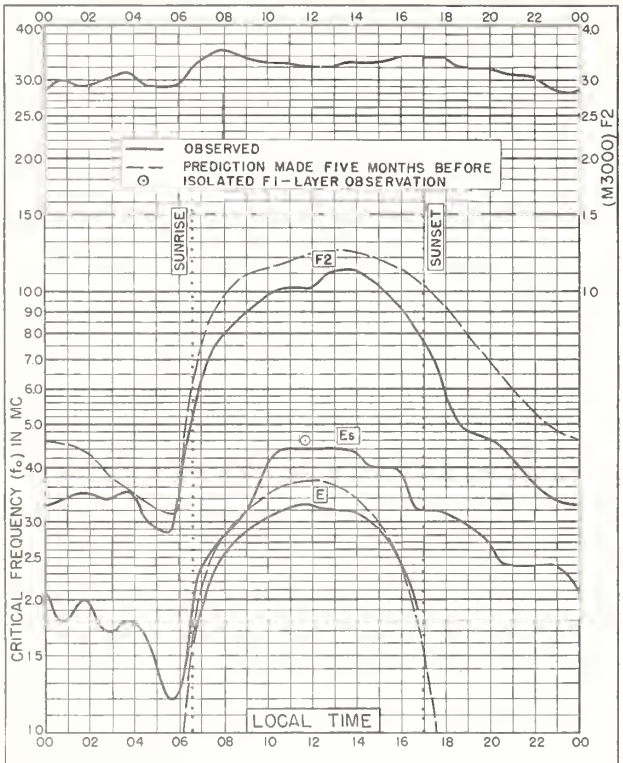

Fig. 33. YAMAGAWA, JAPAN
31.2°N, 130.6°E NOVEMBER 1950

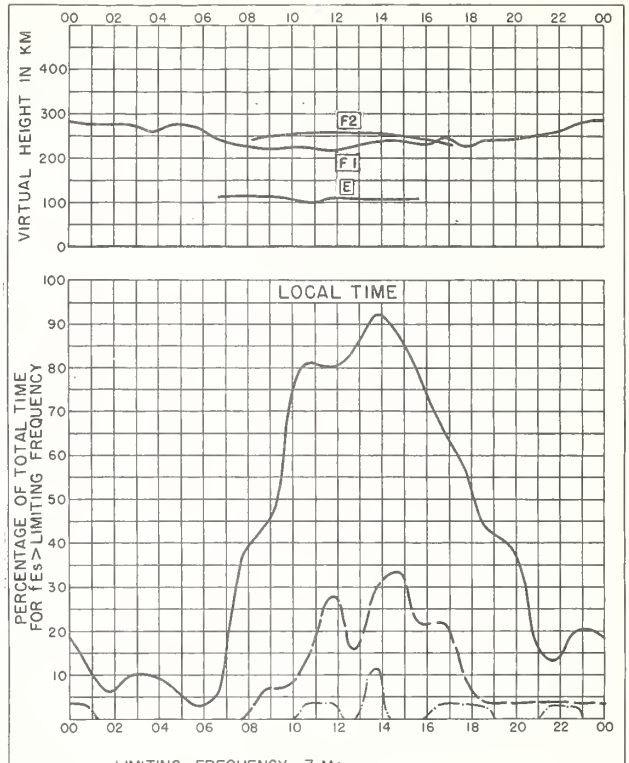

Fig. 34. YAMAGAWA, JAPAN NOVEMBER 1950

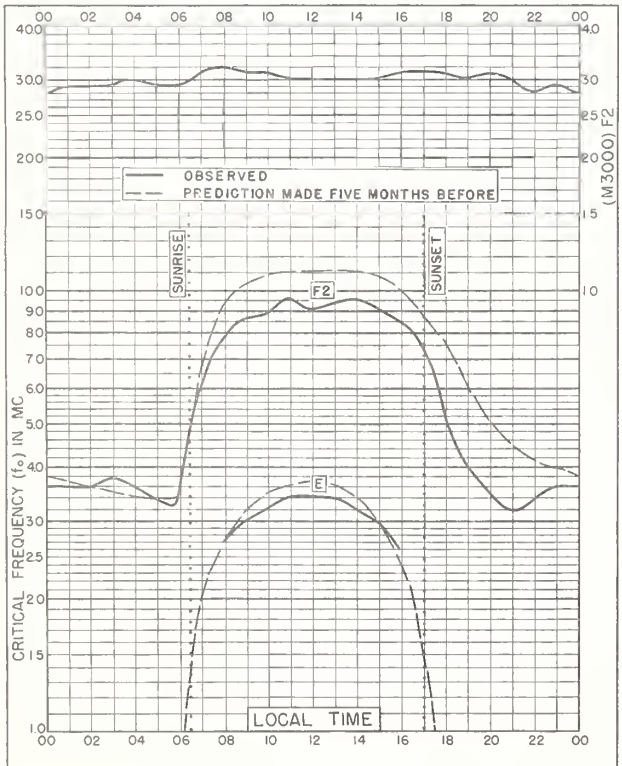

Fig. 35. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W NOVEMBER 1950

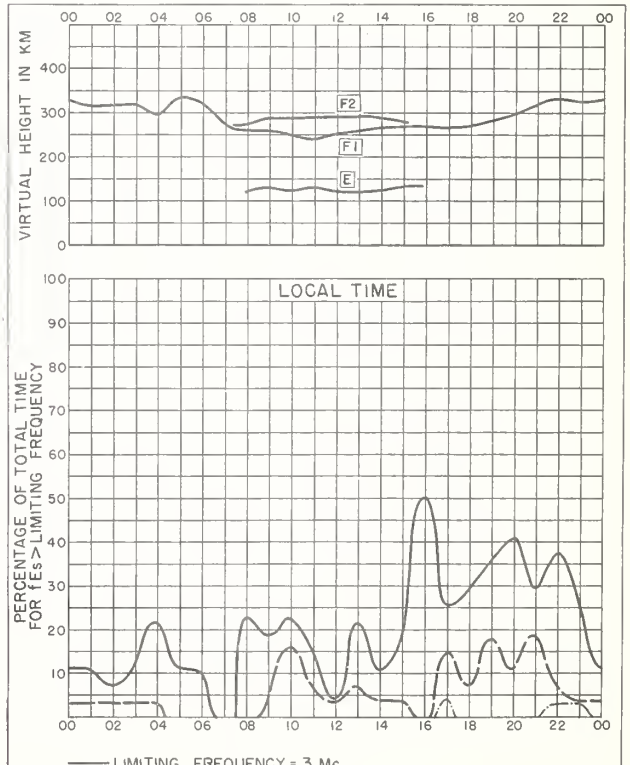

Fig. 36. BATON ROUGE, LOUISIANA NOVEMBER 1950

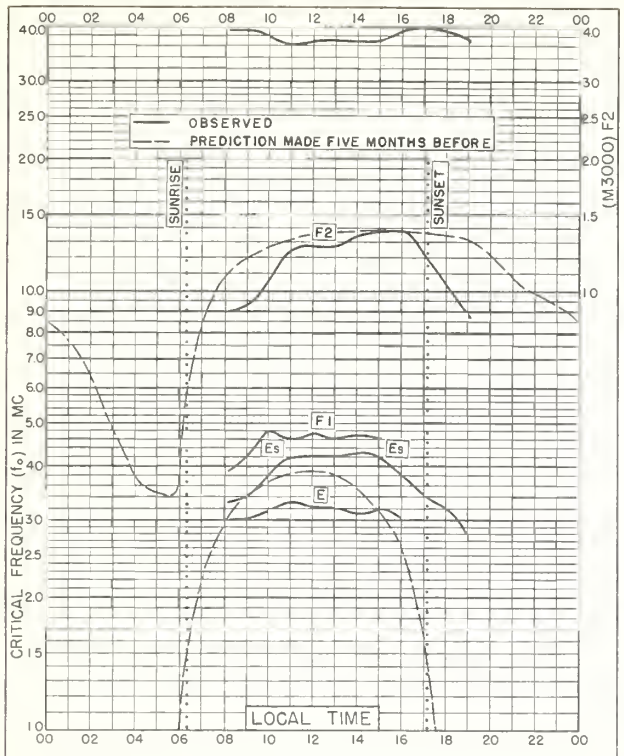

Fig. 37. FORMOSA, CHINA
25.0°N, 121.0°E NOVEMBER 1950

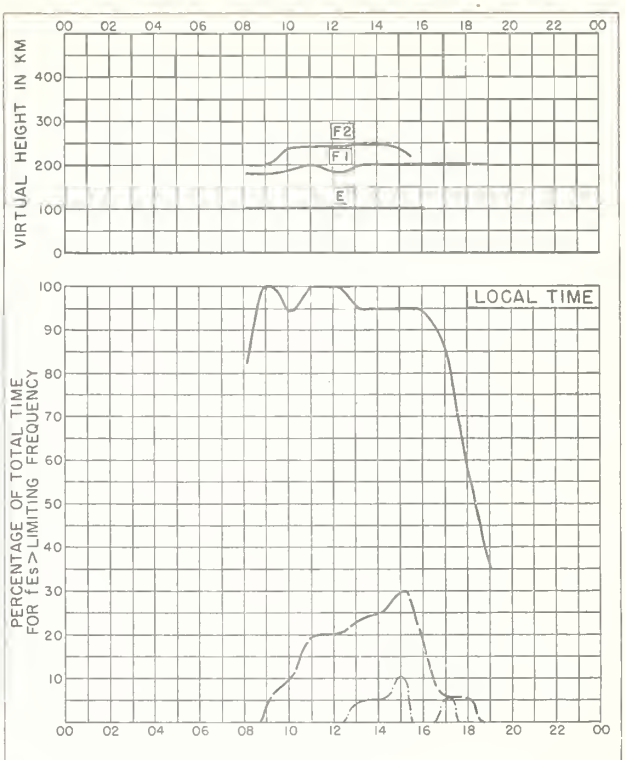

Fig. 38. FORMOSA, CHINA NOVEMBER 1950

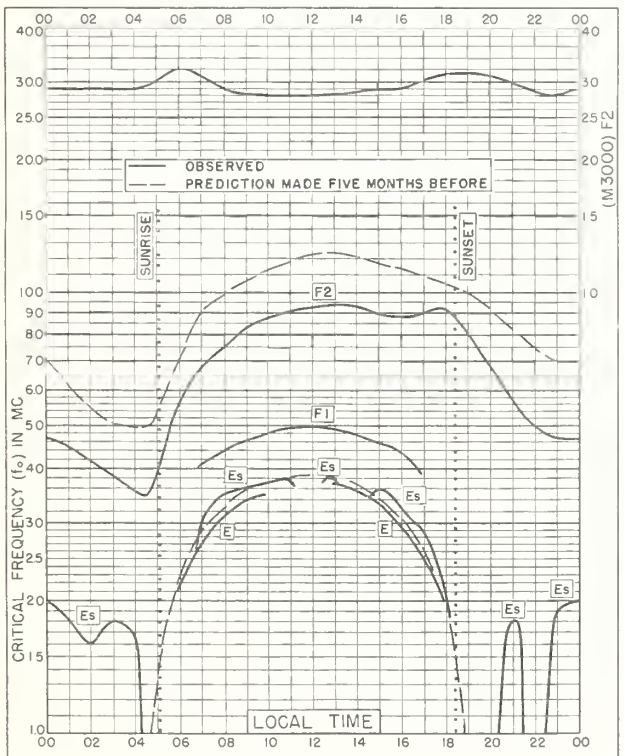

Fig. 39. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.1°E NOVEMBER 1950

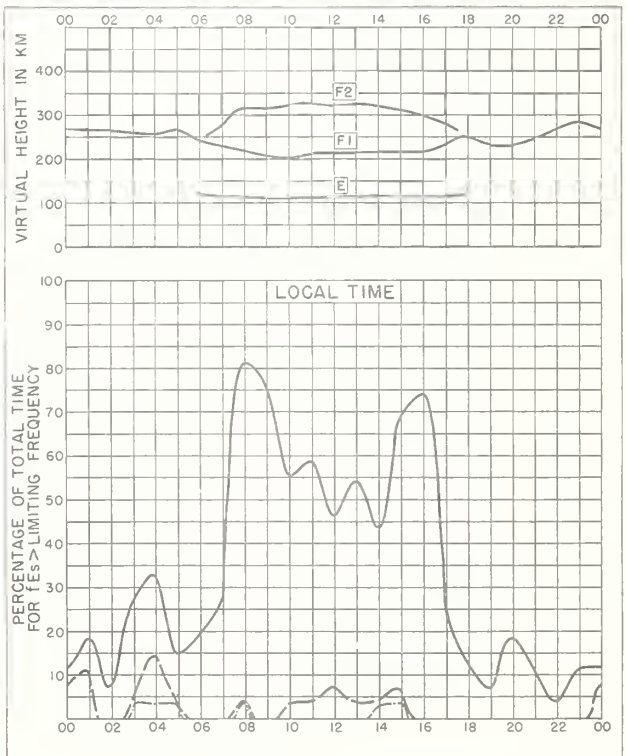

Fig. 40. JOHANNESBURG, U. OF S. AFRICA NOVEMBER 1950

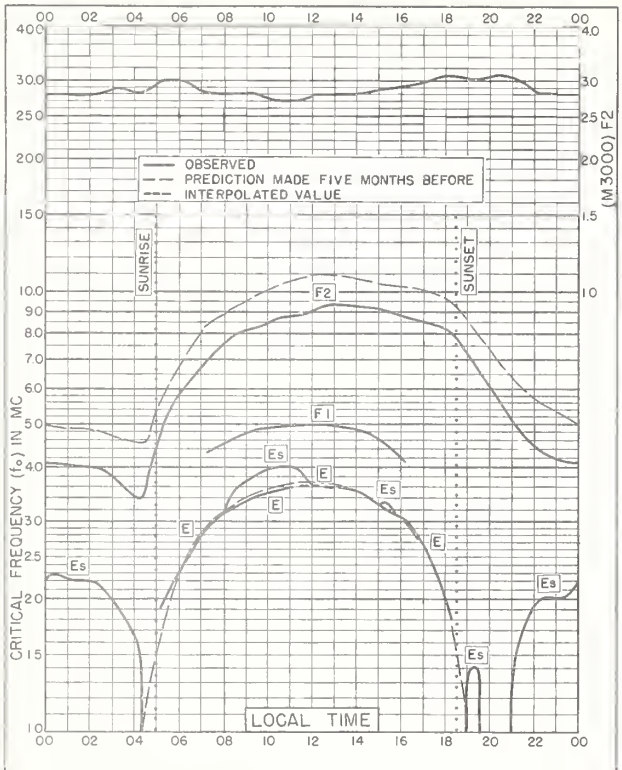

Fig. 41. CAPETOWN, U. OF S. AFRICA
34.2°S, 18.3°E NOVEMBER 1950

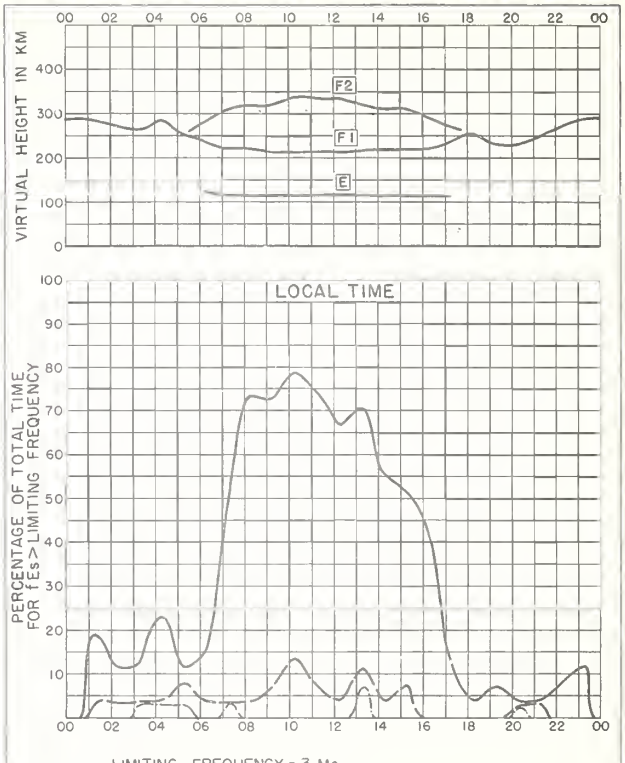

Fig. 42. CAPETOWN, U. OF S. AFRICA NOVEMBER 1950

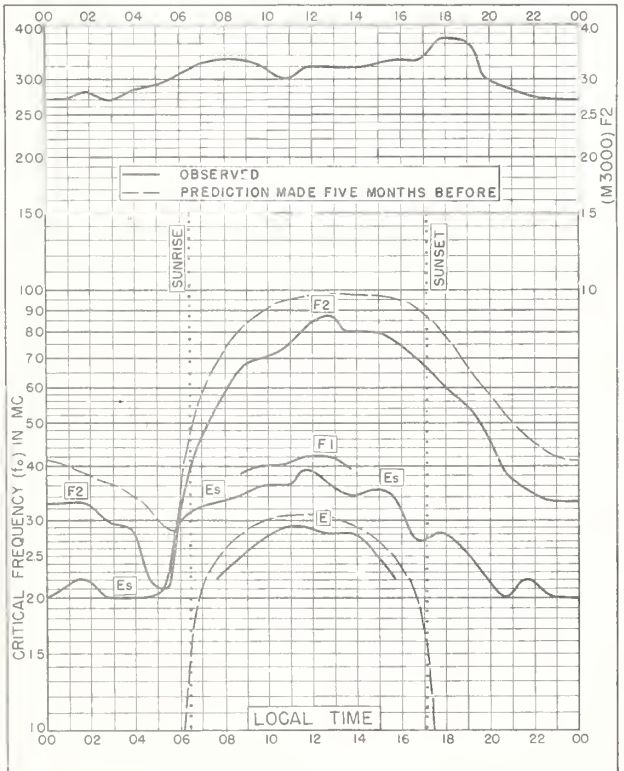

Fig. 43. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E OCTOBER 1950

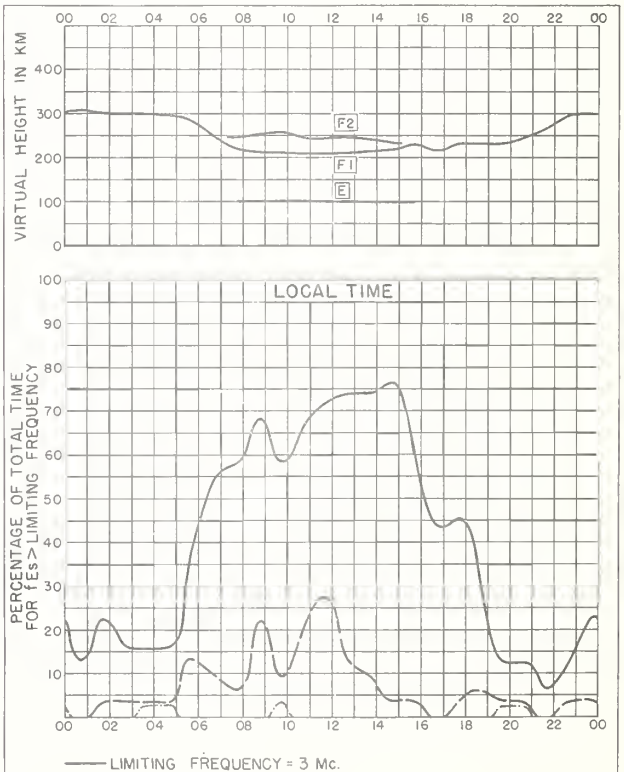

Fig. 44. LINDAU/HARZ, GERMANY OCTOBER 1950

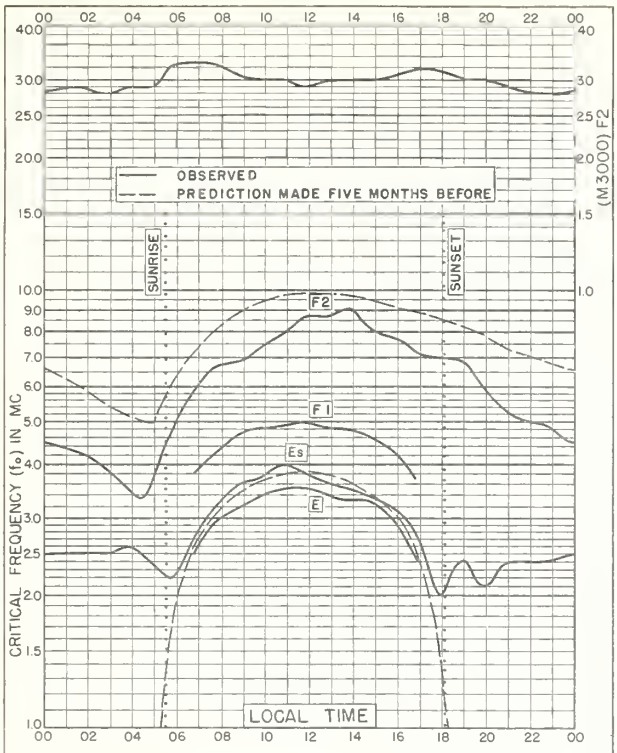

Fig. 45. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E OCTOBER 1950

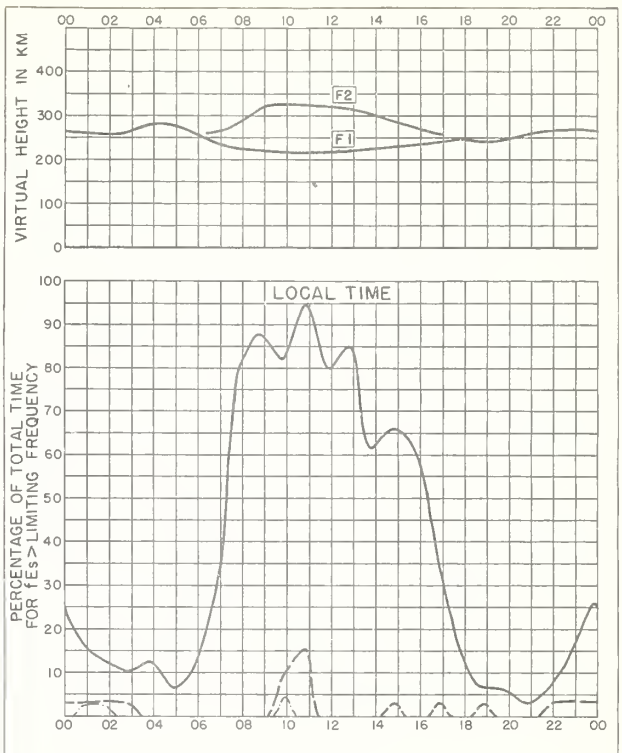

Fig. 46. WATHEROO, W. AUSTRALIA OCTOBER 1950

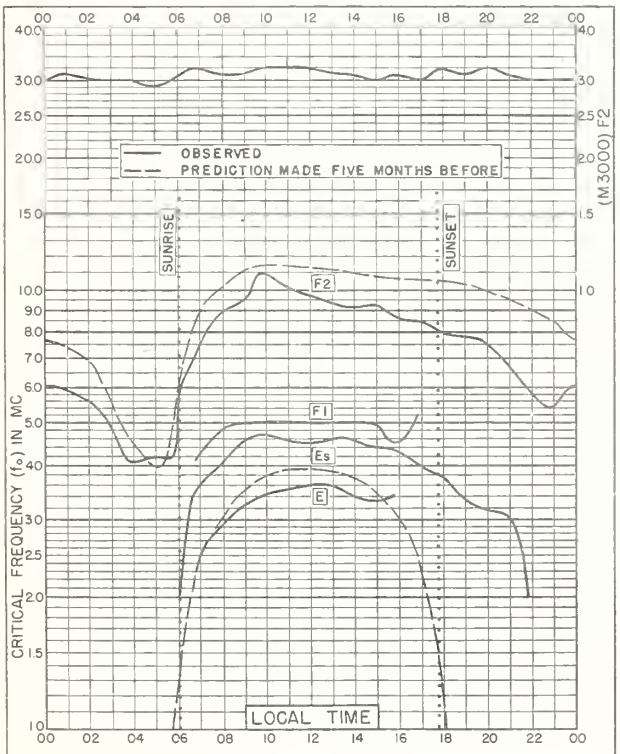

Fig. 47. RAROTONGA I.
21.3°S, 159.8°W SEPTEMBER 1950

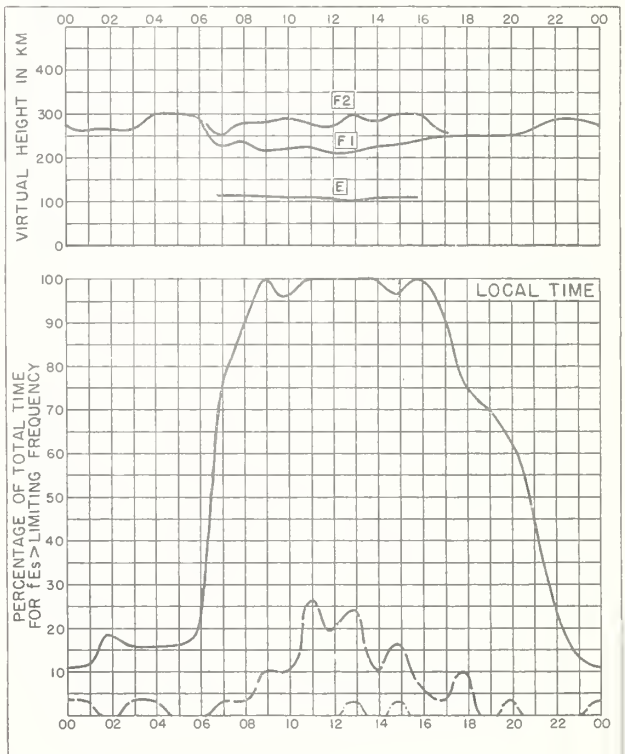

Fig. 48. RAROTONGA I. SEPTEMBER 1950

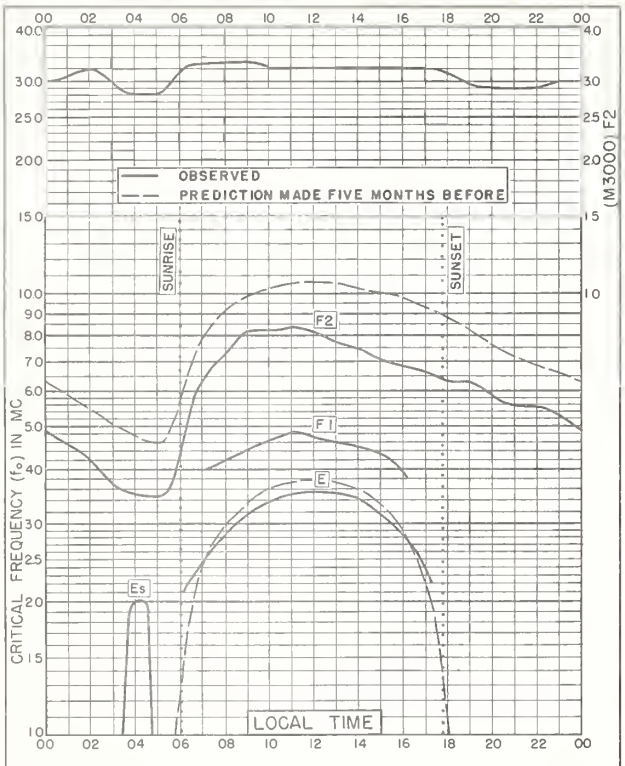

Fig. 49. BRISBANE, AUSTRALIA
27.5°S, 153.0°E SEPTEMBER 1950

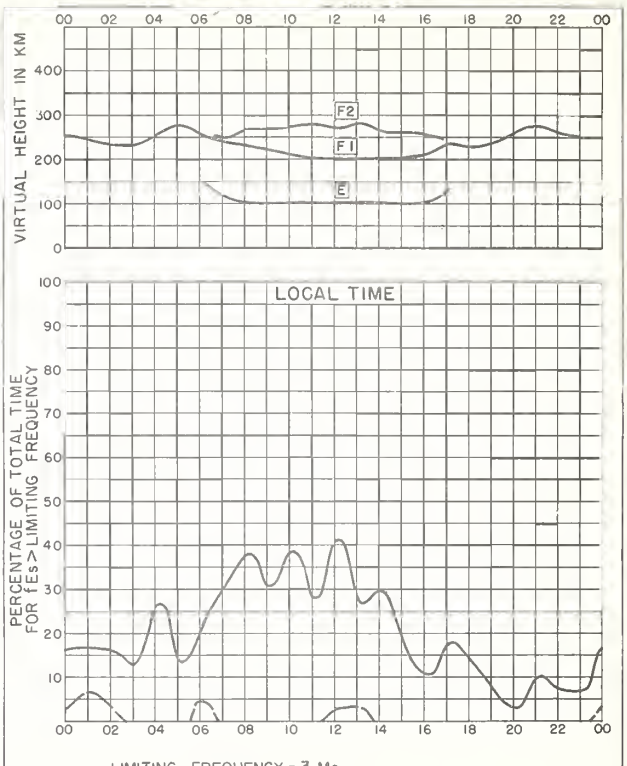

Fig. 50. BRISBANE, AUSTRALIA SEPTEMBER 1950

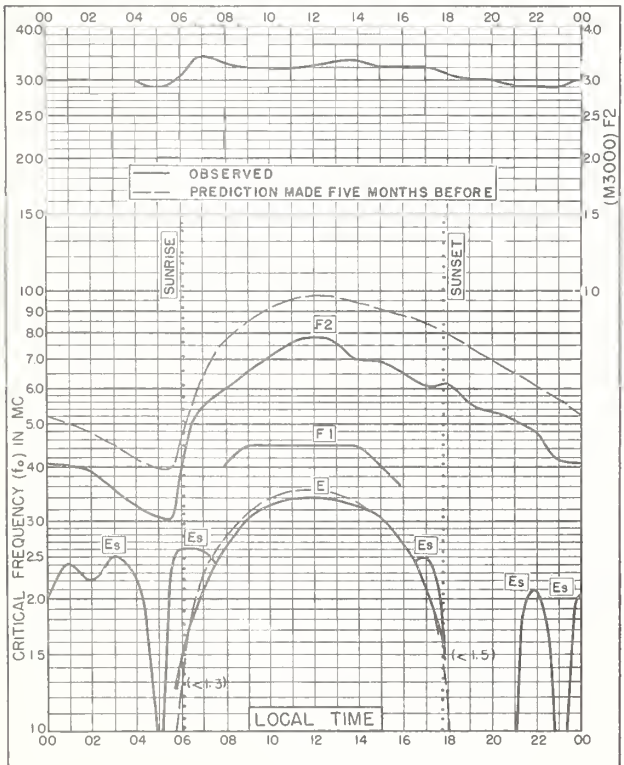

Fig. 51. CANBERRA, AUSTRALIA
35.3°S, 149.0°E SEPTEMBER 1950

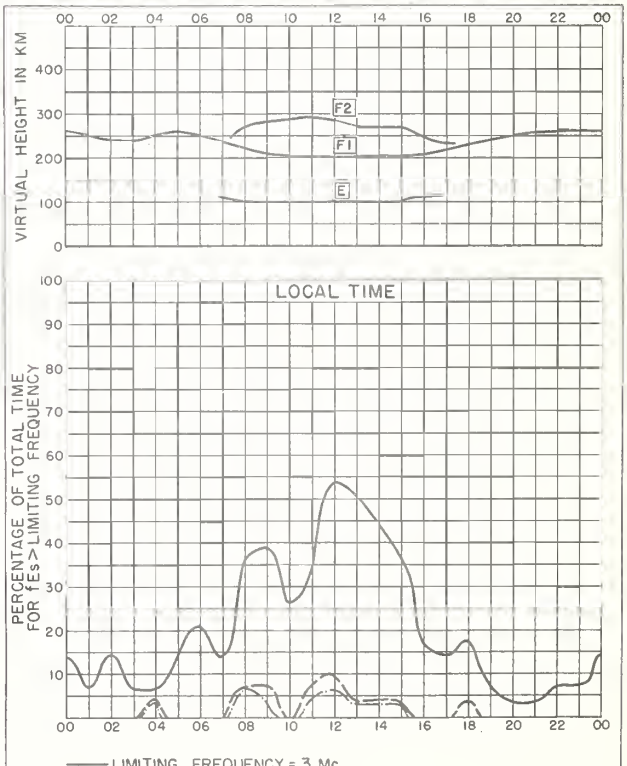

Fig. 52. CANBERRA, AUSTRALIA SEPTEMBER 1950

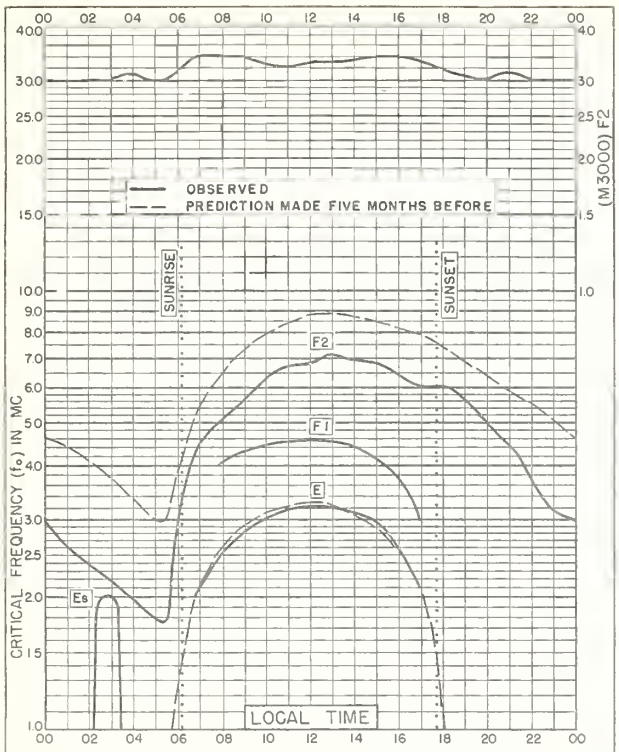

Fig. 53. HOBART, TASMANIA
42.8°S, 147.4°E SEPTEMBER 1950

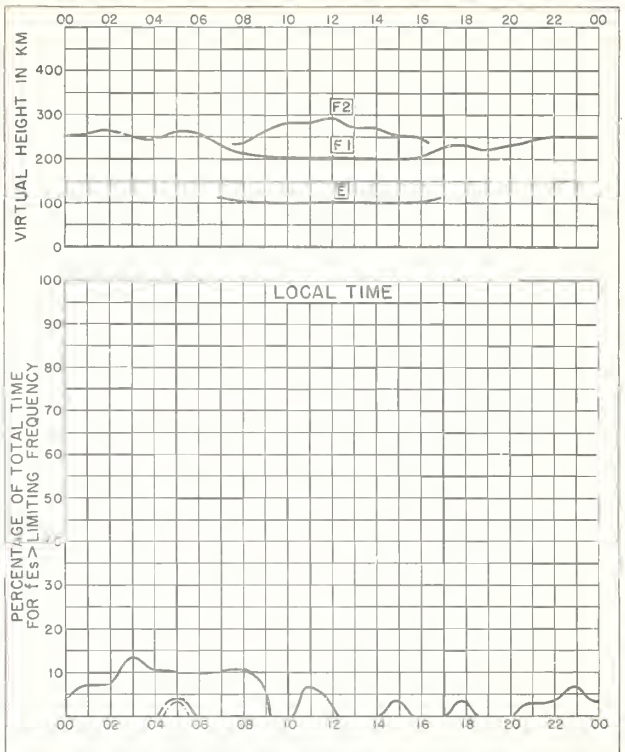

Fig. 54. HOBART, TASMANIA SEPTEMBER 1950

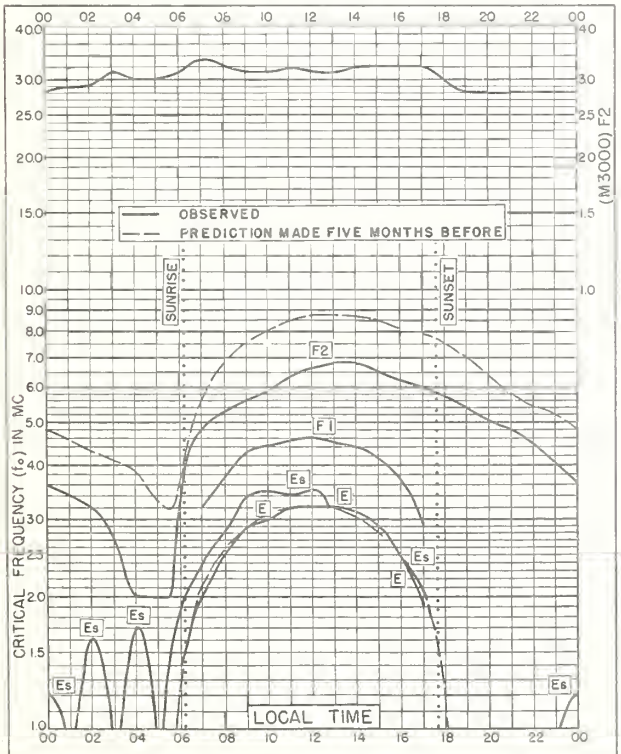

Fig. 55. CHRISTCHURCH, N. Z.
43.5°S, 172.7°E SEPTEMBER 1950

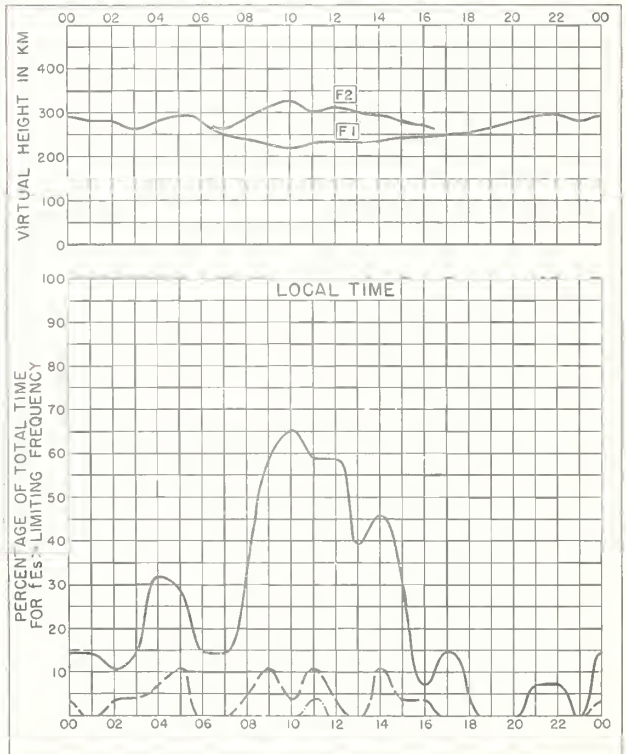

Fig. 56. CHRISTCHURCH, N. Z. SEPTEMBER 1950

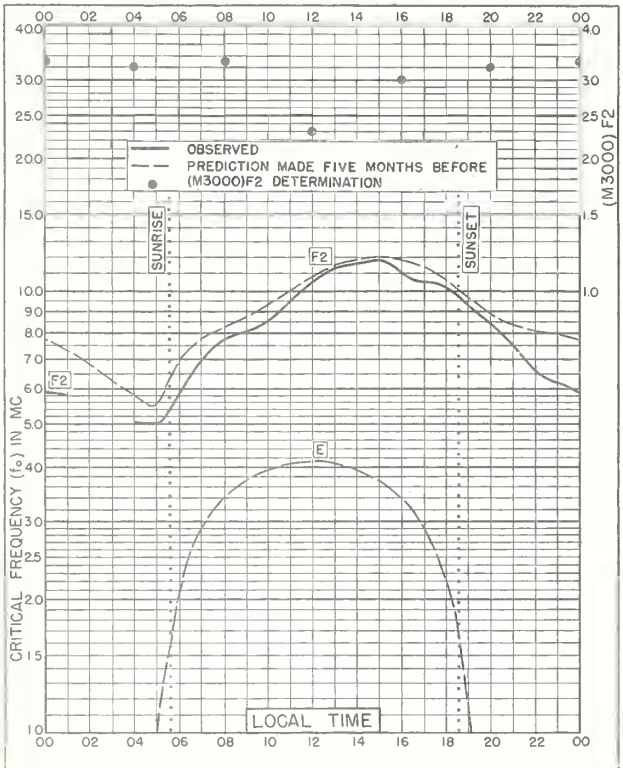

Fig. 57. DELHI, INDIA
28.6°N, 77.1°E AUGUST 1950

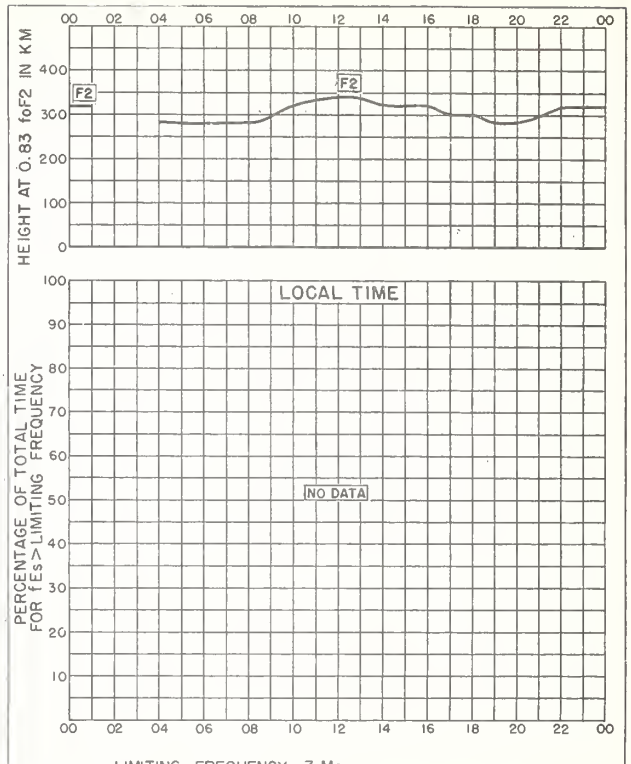

Fig. 58. DELHI, INDIA AUGUST 1950

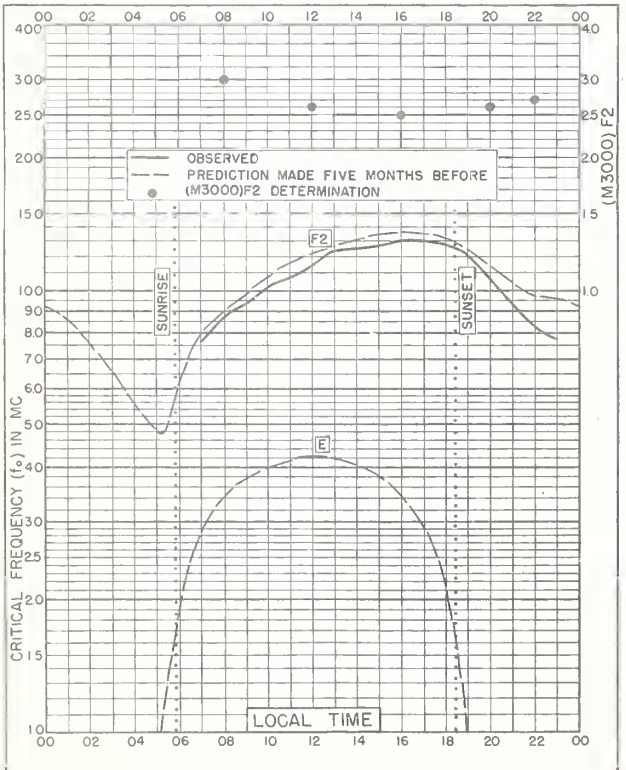

Fig. 59. BOMBAY, INDIA
19.0°N, 73.0°E AUGUST 1950

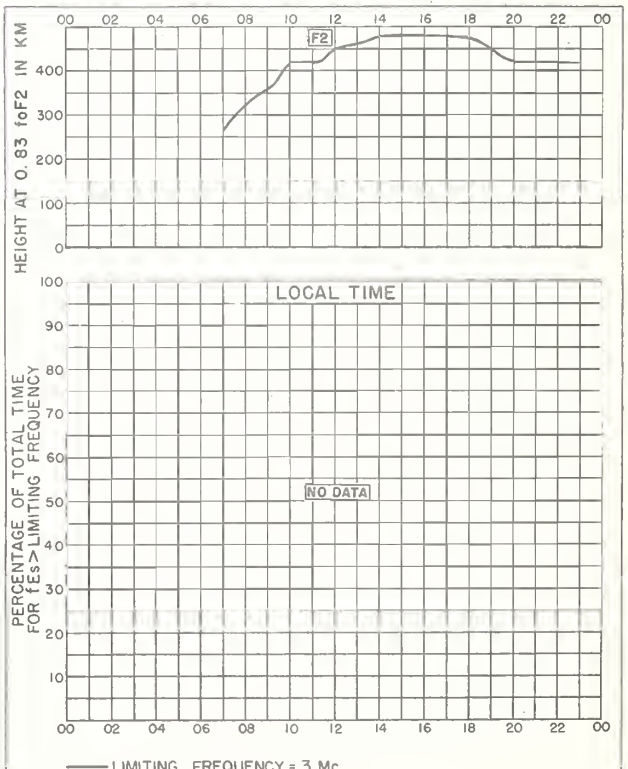

Fig. 60. BOMBAY, INDIA AUGUST 1950

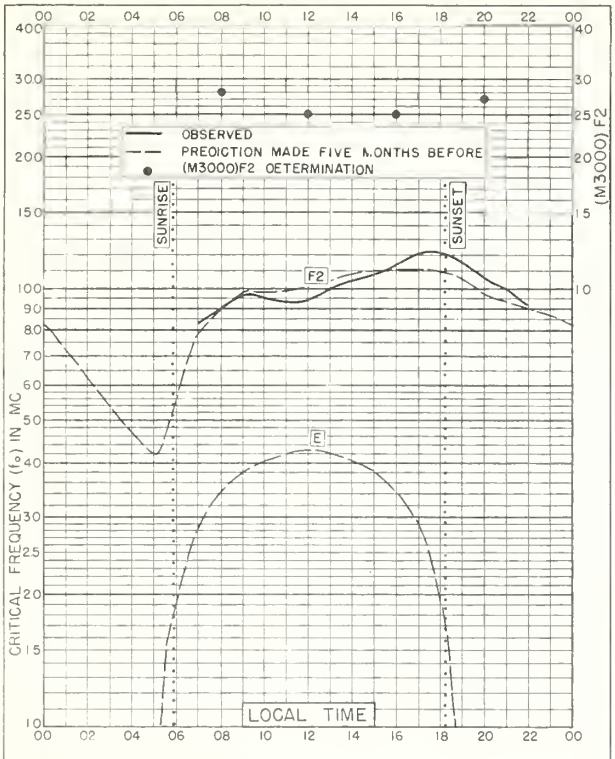

Fig. 61. MADRAS, INDIA
13.0°N, 80.2°E AUGUST 1950

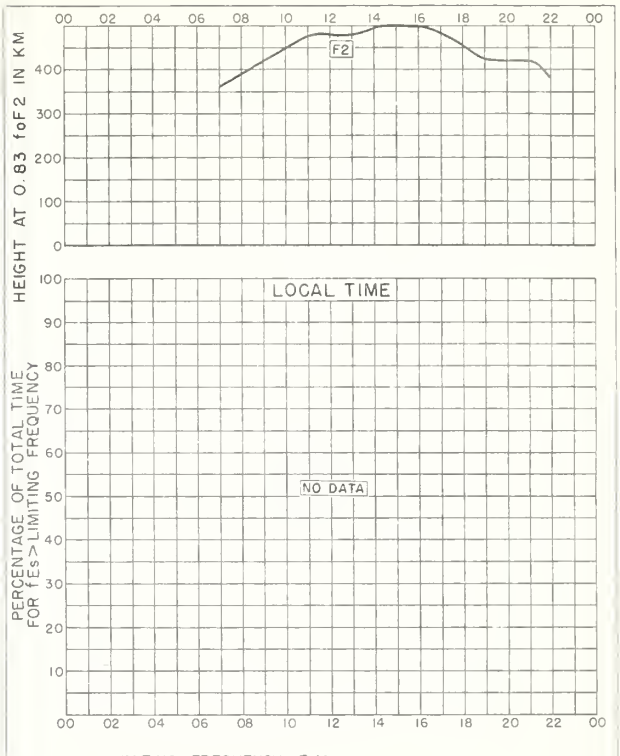

Fig. 62. MADRAS, INDIA AUGUST 1950

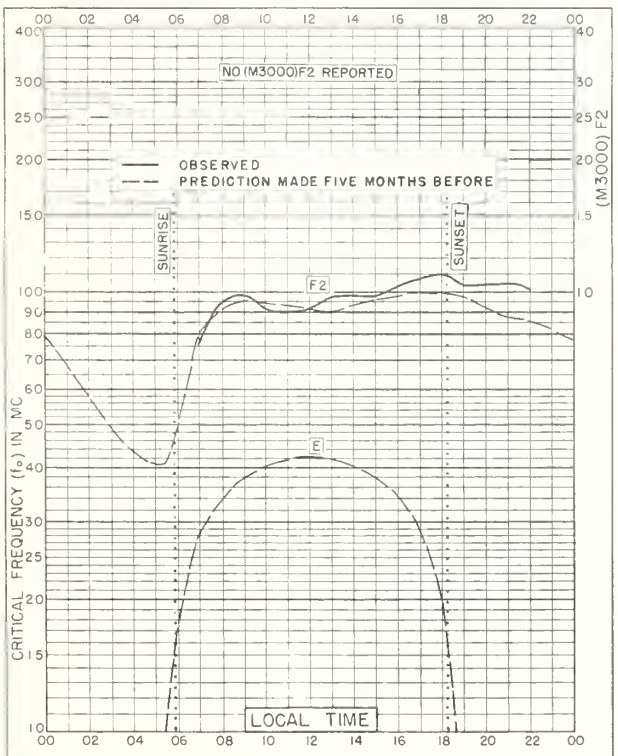

Fig. 63. TIRUCHY, INDIA
10.8°N, 78.8°E AUGUST 1950

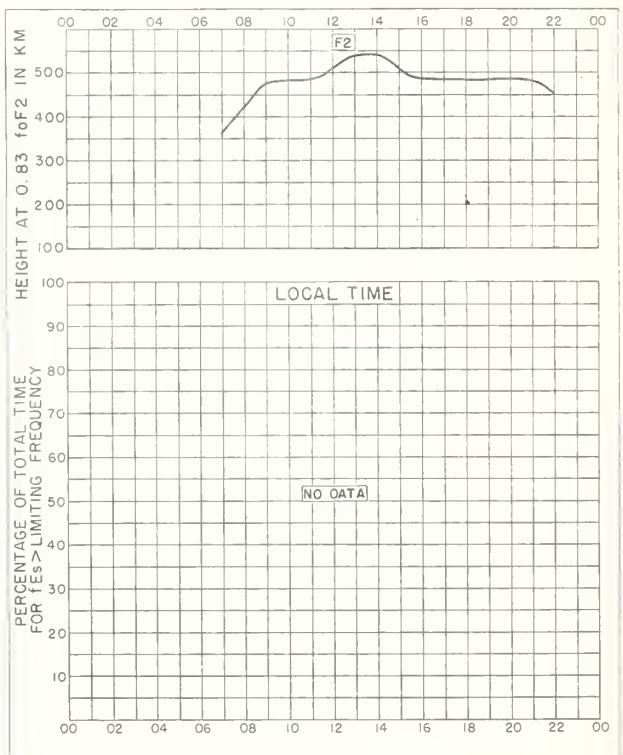

Fig. 64. TIRUCHY, INDIA AUGUST 1950

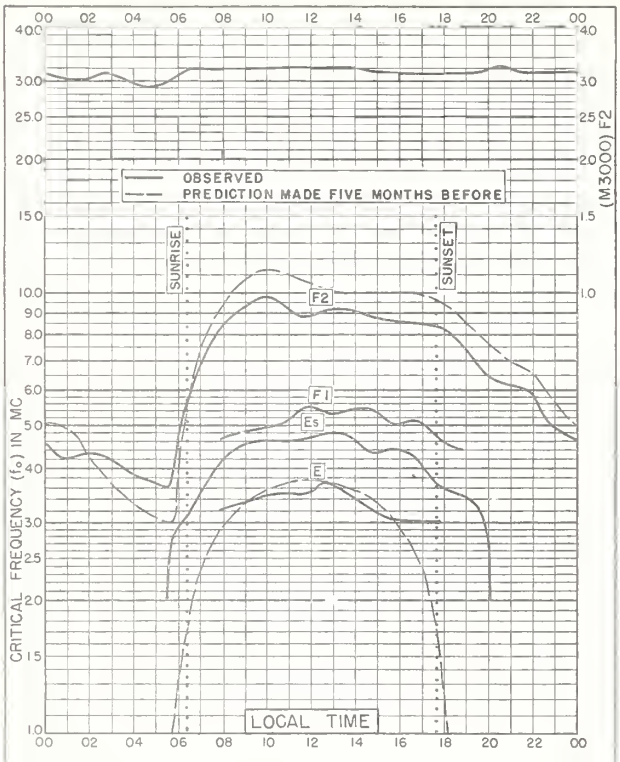

Fig. 65. RAROTONGA I.
21.3°S, 159.8°W AUGUST 1950

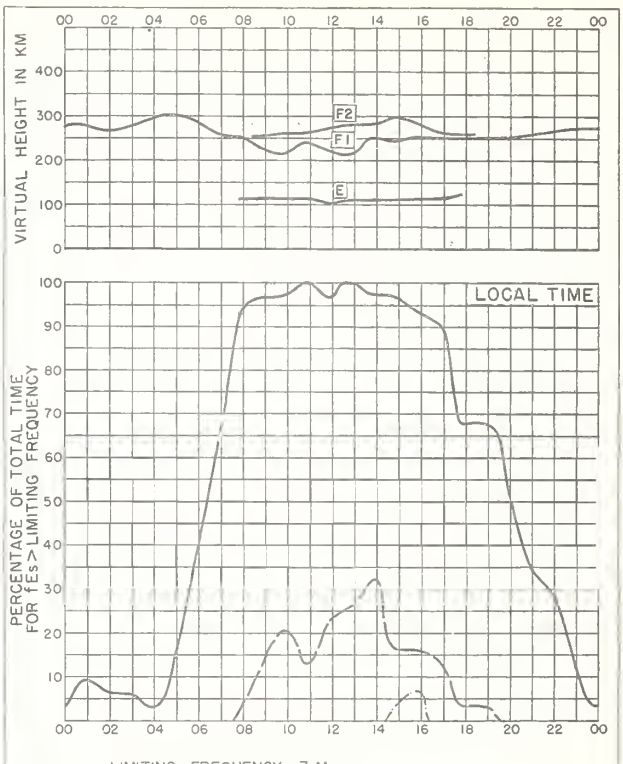

Fig. 66. RAROTONGA I. AUGUST 1950

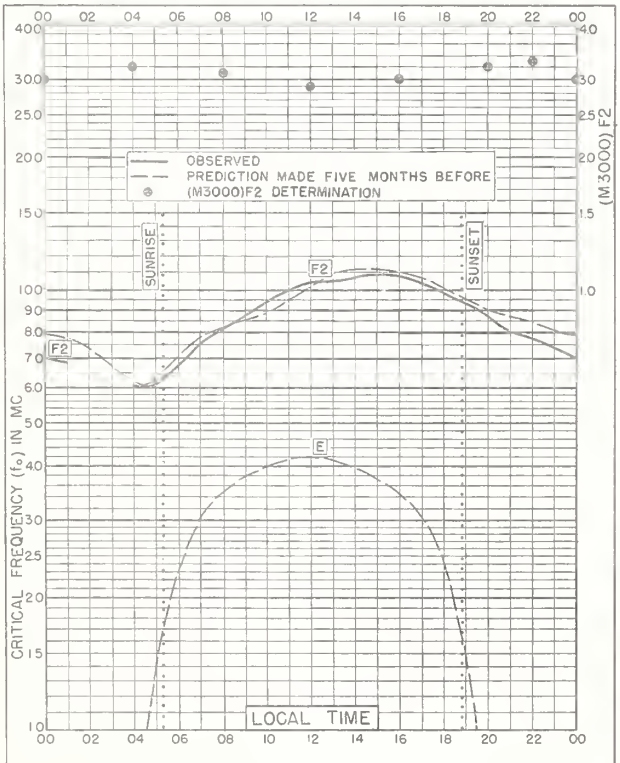

Fig. 67. DELHI, INDIA
28.6°N, 77.1°E JULY 1950

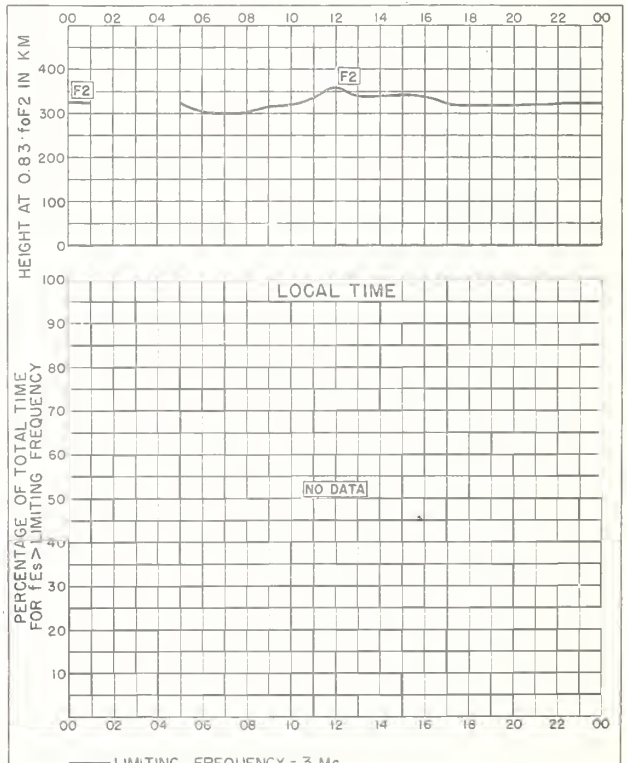

Fig. 68. DELHI, INDIA JULY 1950

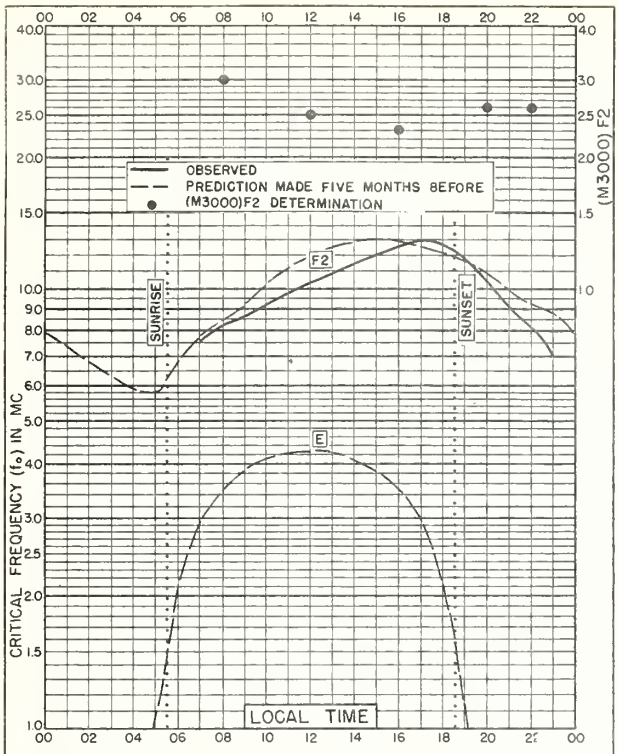

Fig. 69. BOMBAY, INDIA
19.0°N, 73.0°E JULY 1950

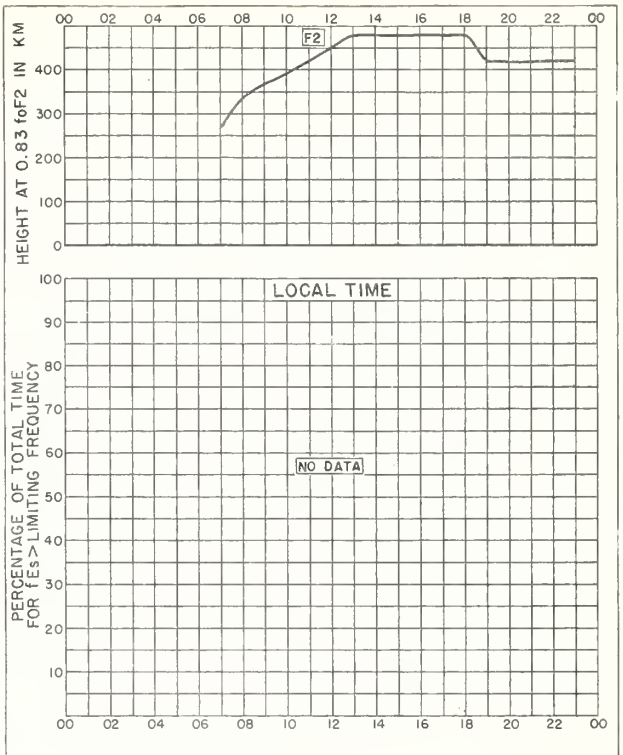

Fig. 70. BOMBAY, INDIA JULY 1950

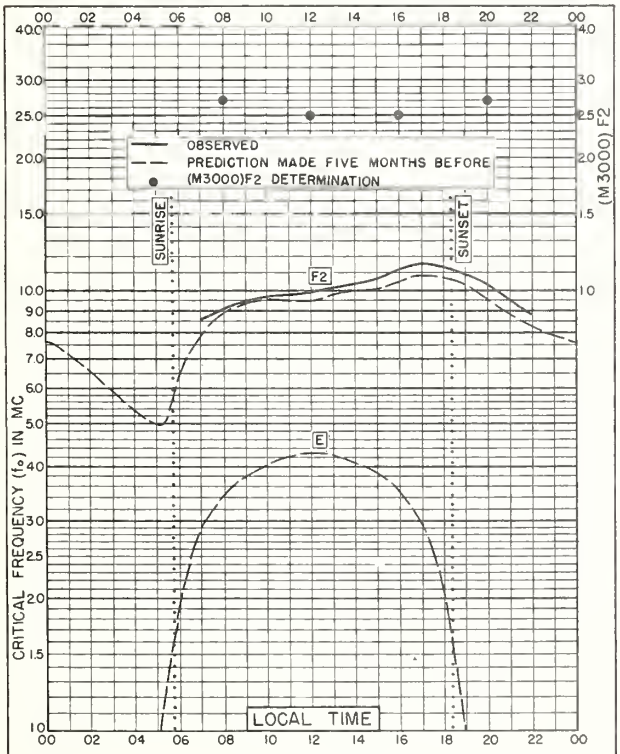

Fig. 71. MADRAS, INDIA
13.0°N, 80.2°E JULY 1950

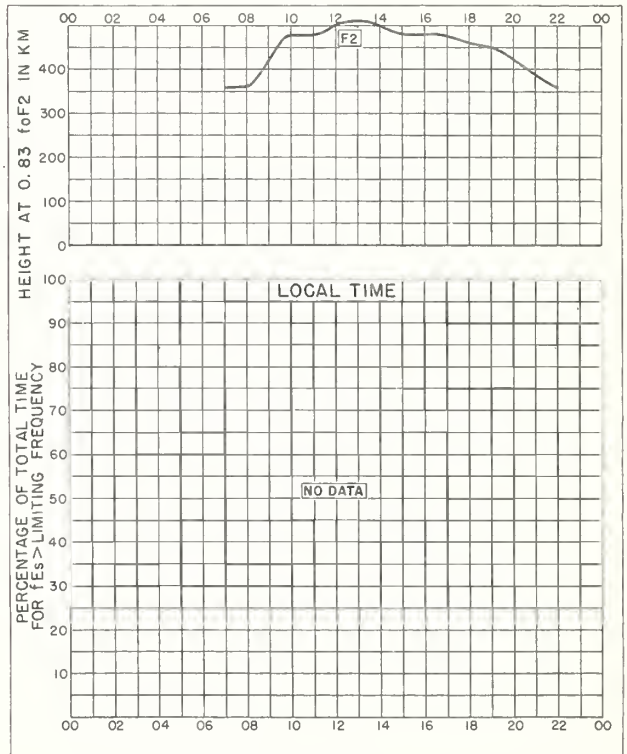

Fig. 72. MADRAS, INDIA JULY 1950

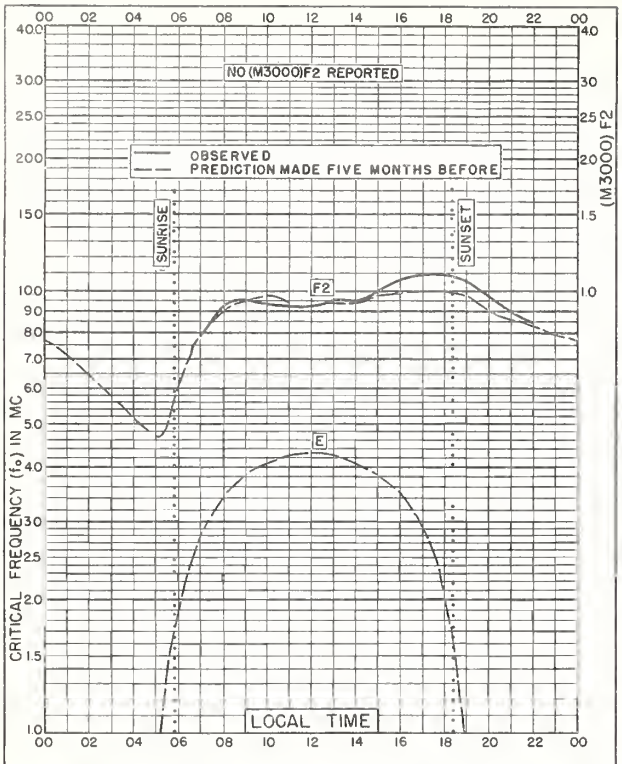

Fig. 73. TIRUCHY, INDIA
10.8°N, 78.8°E JULY 1950

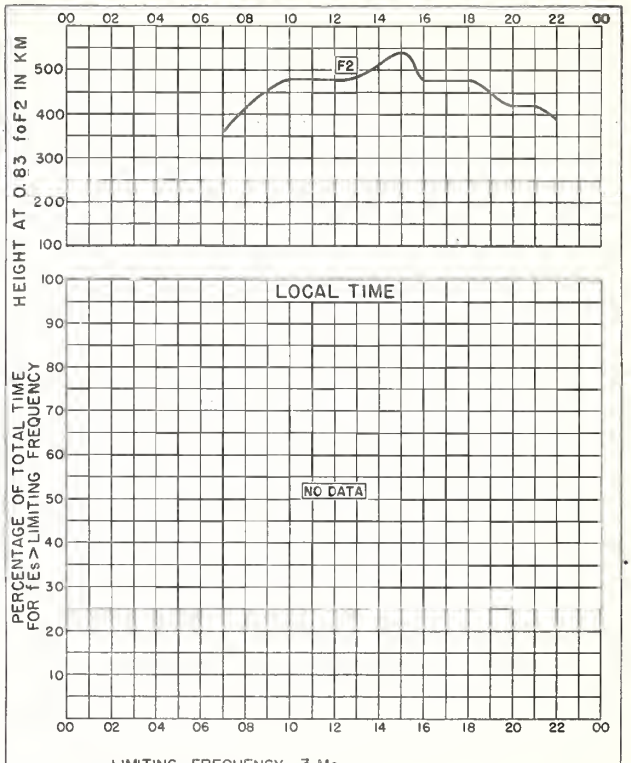

Fig. 74. TIRUCHY, INDIA JULY 1950

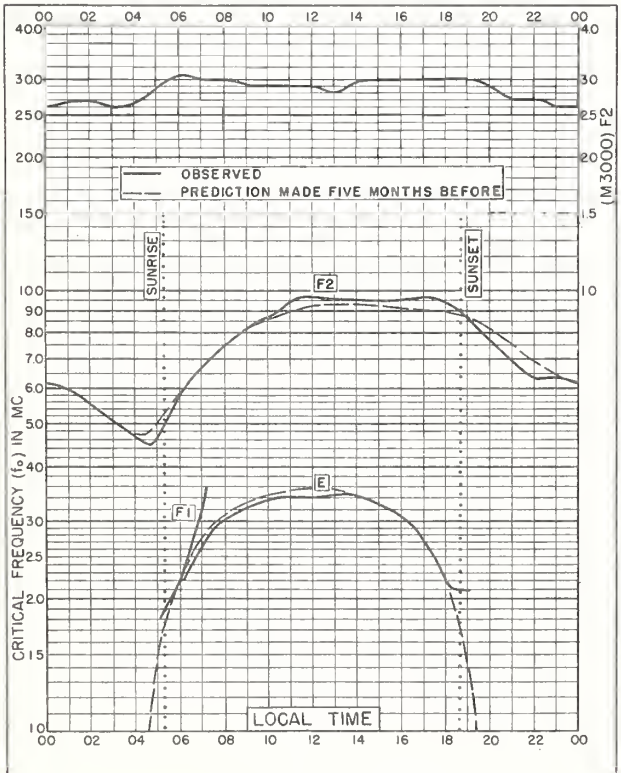

Fig. 75. DOMONT, FRANCE
49.0°N, 2.3°E APRIL 1950

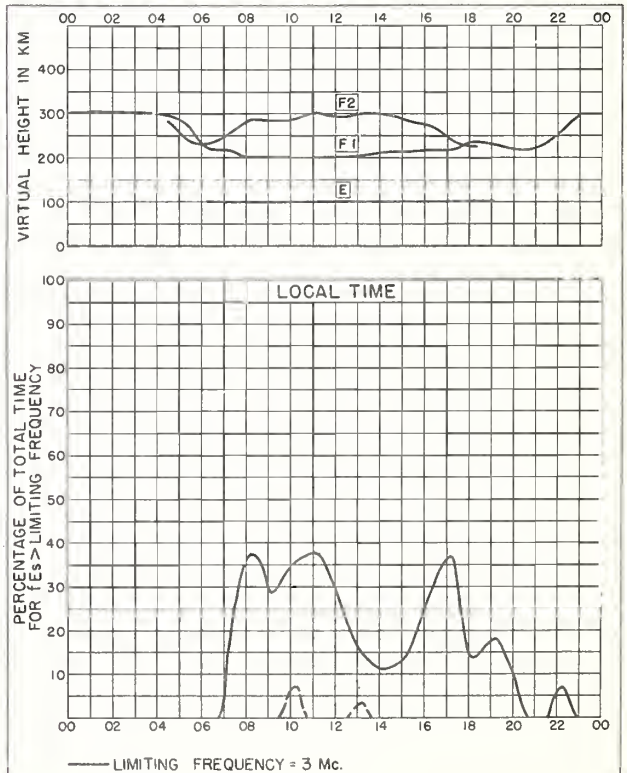

Fig. 76. DOMONT, FRANCE APRIL 1950

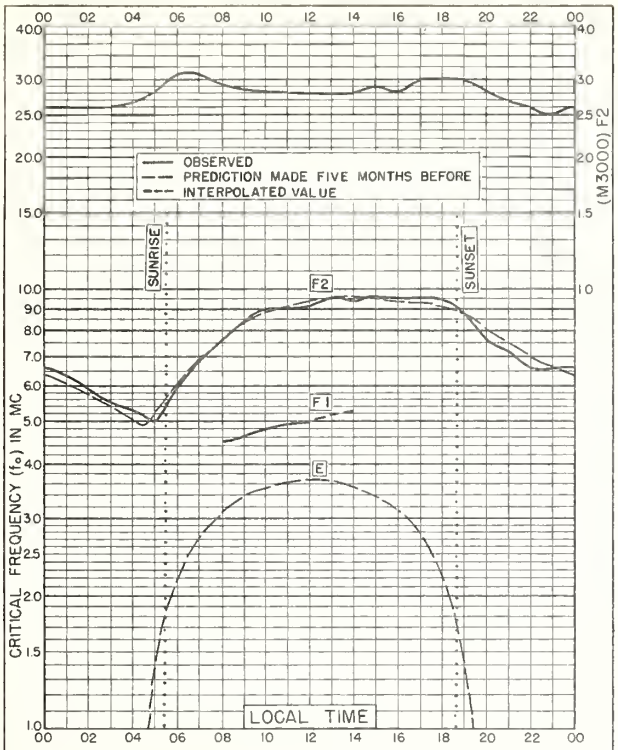

Fig. 77. POITIERS, FRANCE
46.6°N, 0.3°E APRIL 1950

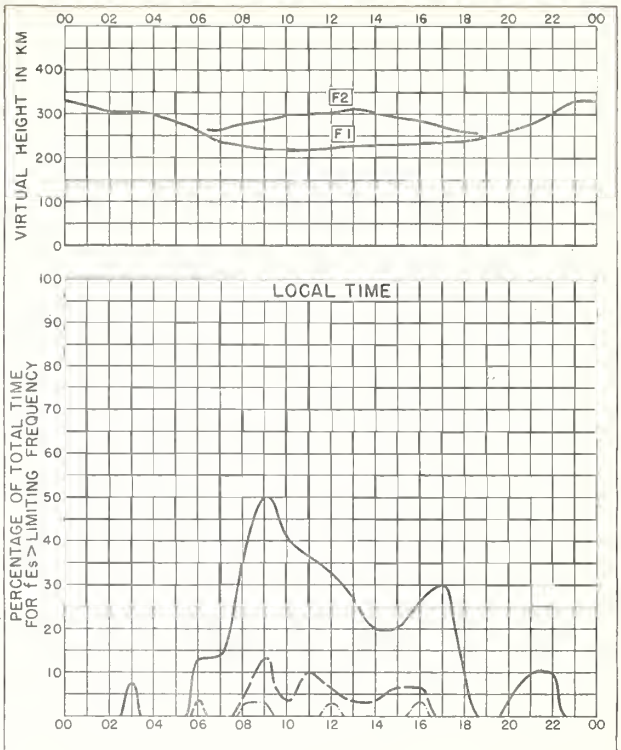

Fig. 78. POITIERS, FRANCE APRIL 1950

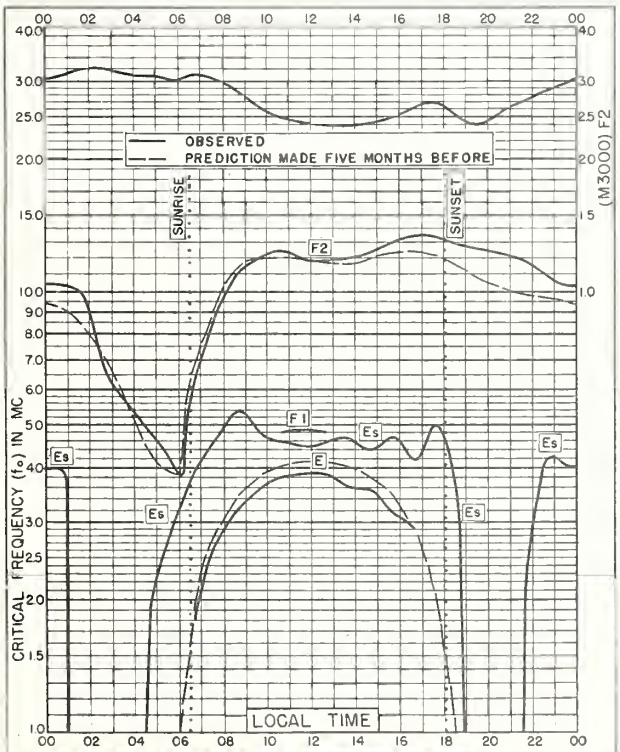

Fig. 79. GUAM I.
13.6°N, 144.9°E FEBRUARY 1950

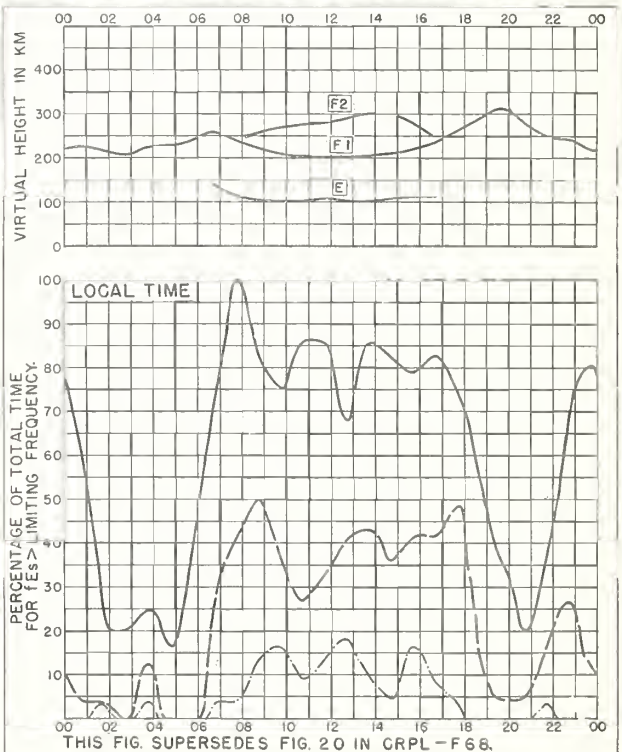

Fig. 80. GUAM I. FEBRUARY 1950

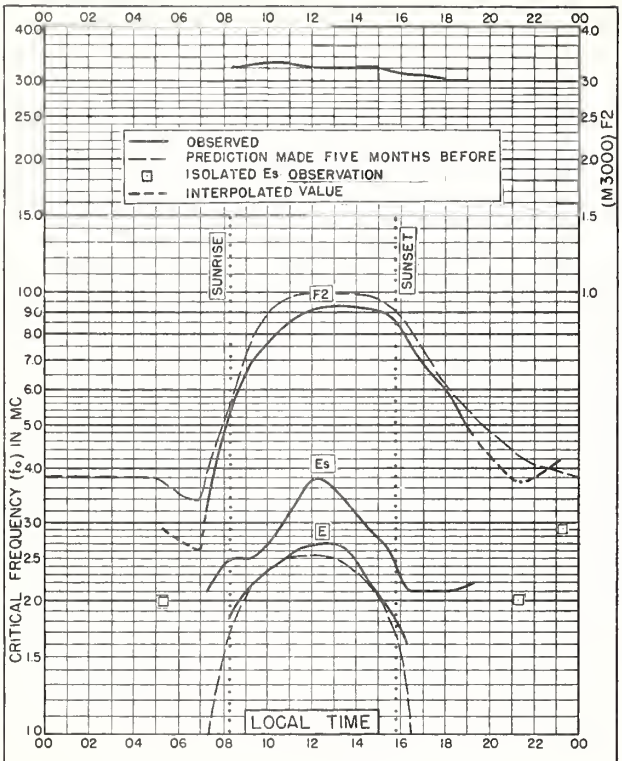

Fig. 81. CAMPBELL I.
52.5°S, 169.2°E JUNE 1949

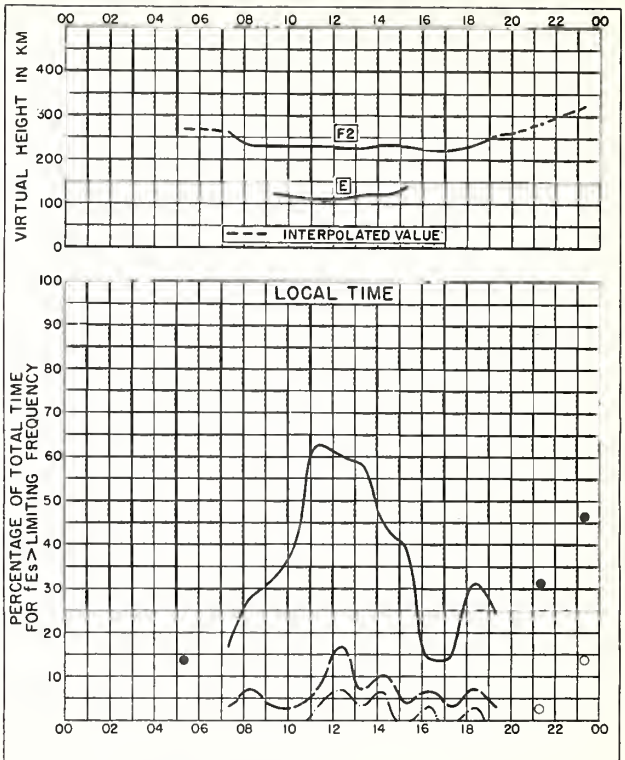

Fig. 82. CAMPBELL I. JUNE 1949

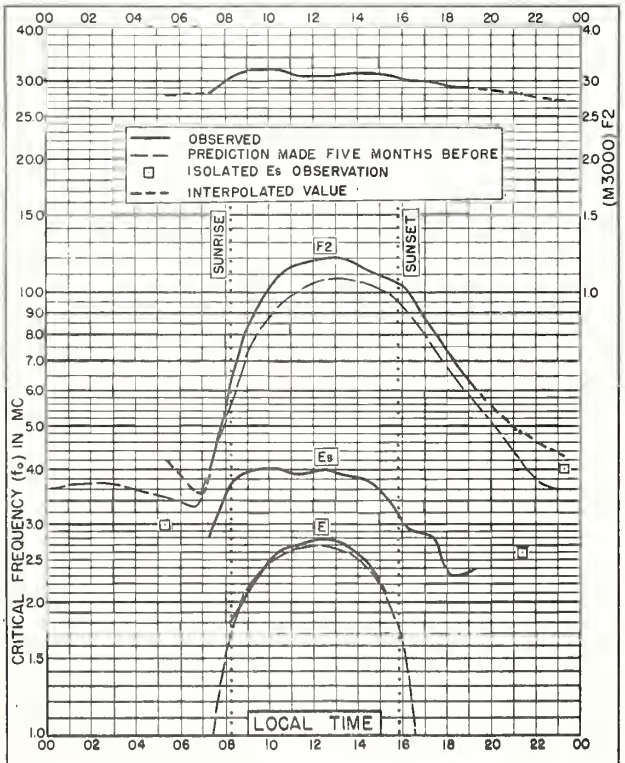

Fig. 83. CAMPBELL I.
52.5°S, 169.2°E JUNE 1948

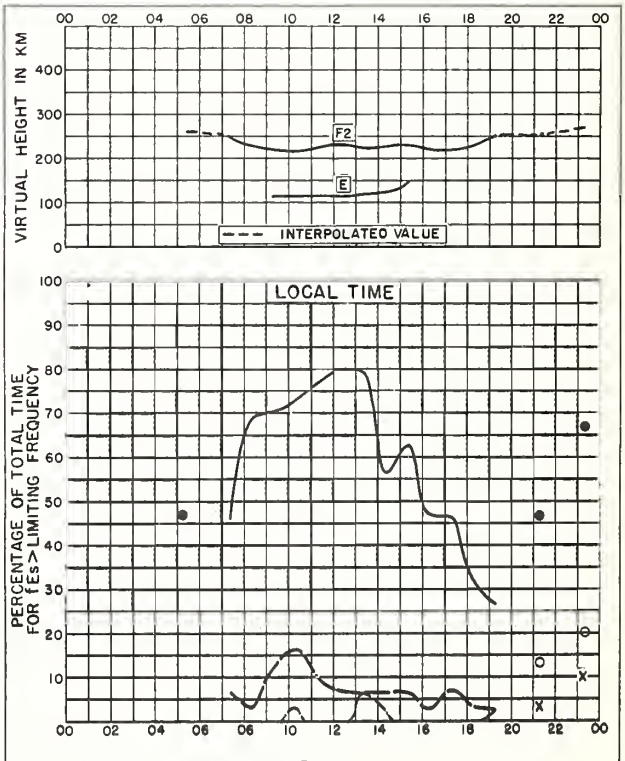

Fig. 84. CAMPBELL I. JUNE 1948

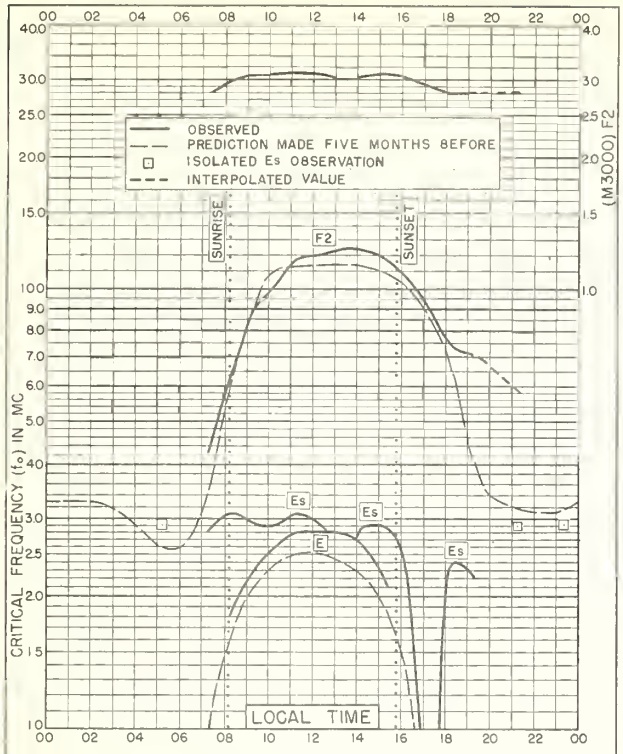

Fig. 85. CAMPBELL I.
52.5°S, 169.2°E JUNE 1947

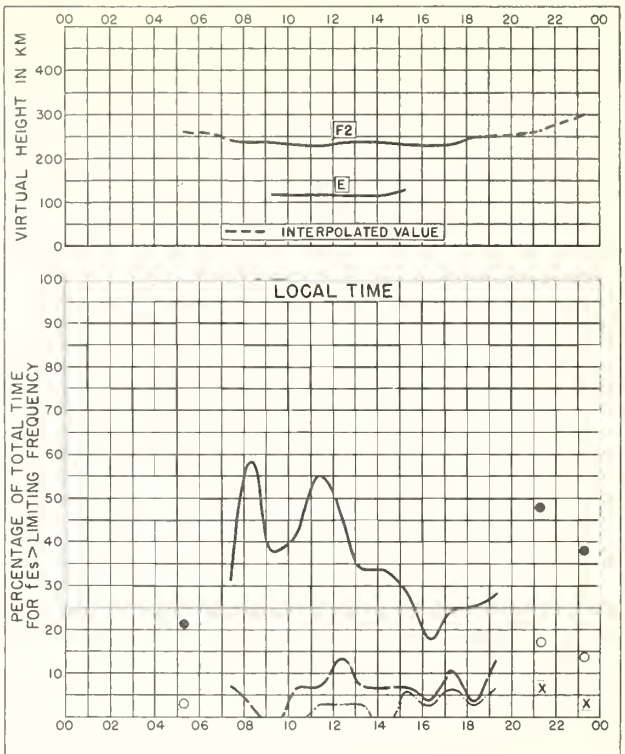

Fig. 86. CAMPBELL I. JUNE 1947

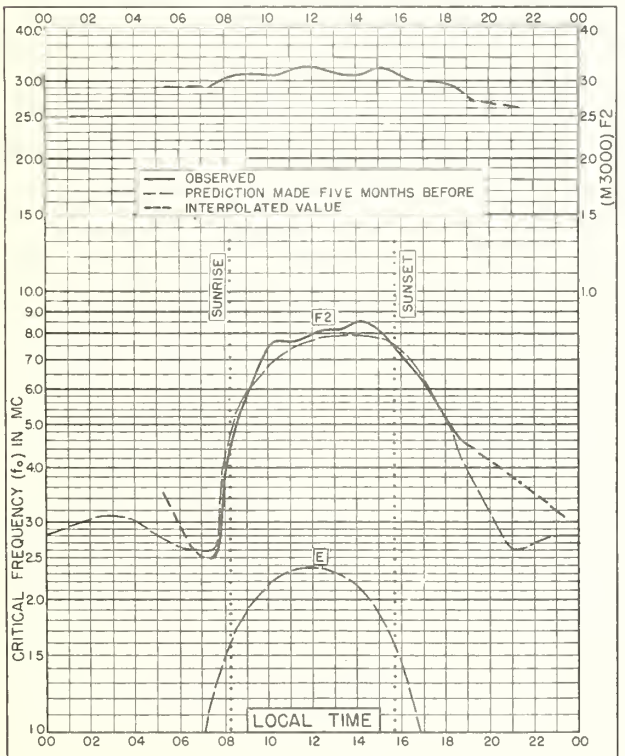

Fig. 87. CAMPBELL I.
52.5°S, 169.2°E JUNE 1946

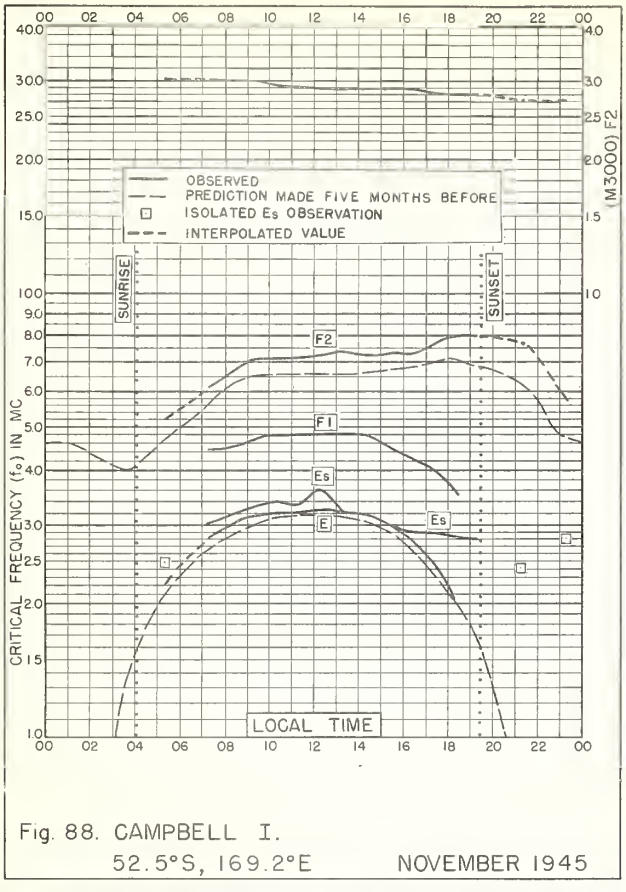

Fig. 88. CAMPBELL I.
52.5°S, 169.2°E NOVEMBER 1945

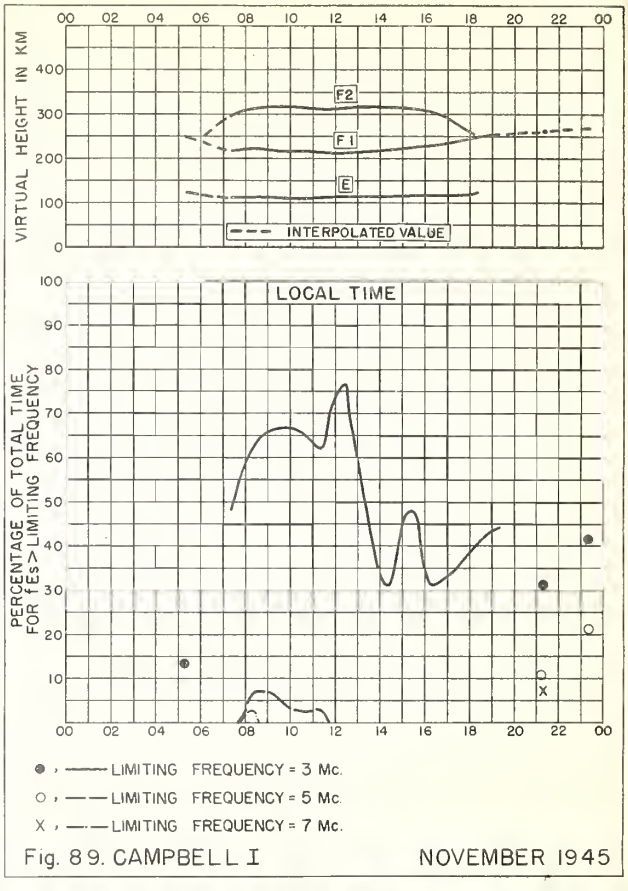

Fig. 89. CAMPBELL I NOVEMBER 1945

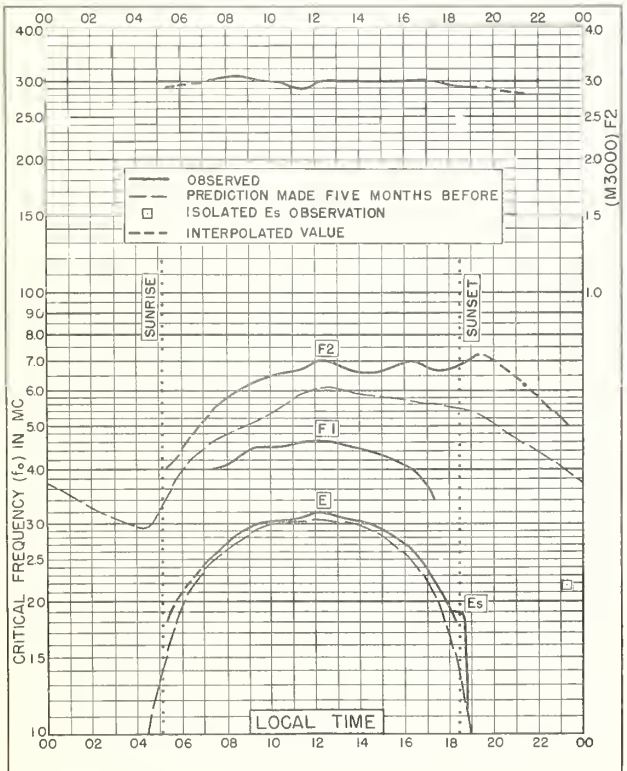

Fig. 90. CAMPBELL I.
52.5°S, 169.2°E OCTOBER 1945

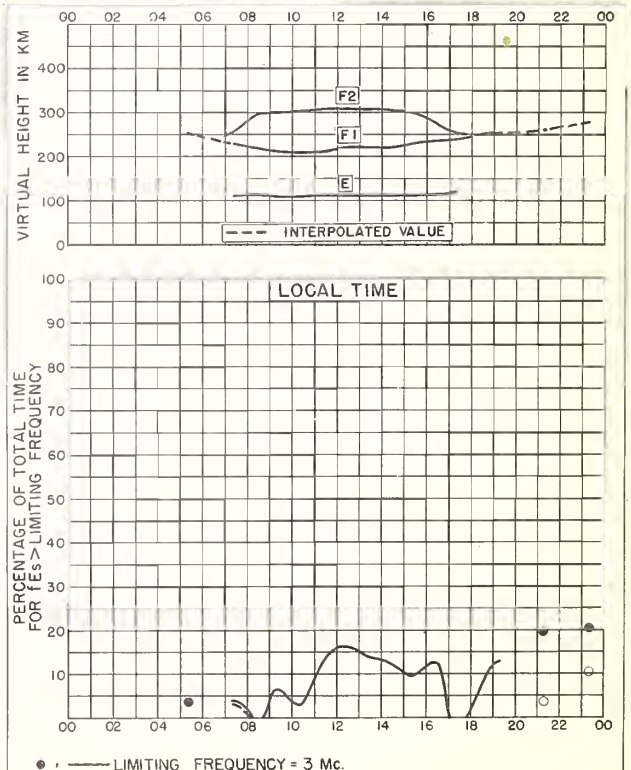

Fig. 91. CAMPBELL I. OCTOBER 1945

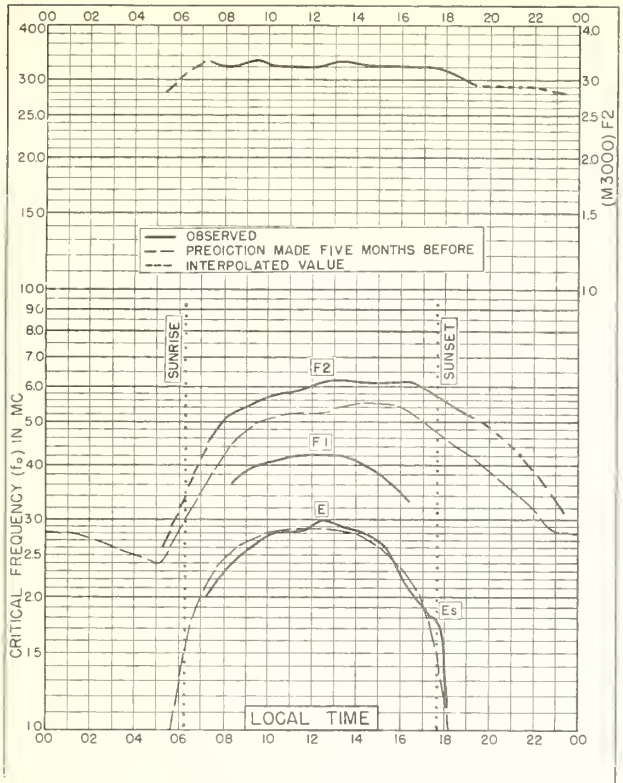

Fig. 92. CAMPBELL I.
52.5°S, 169.2°E SEPTEMBER 1945

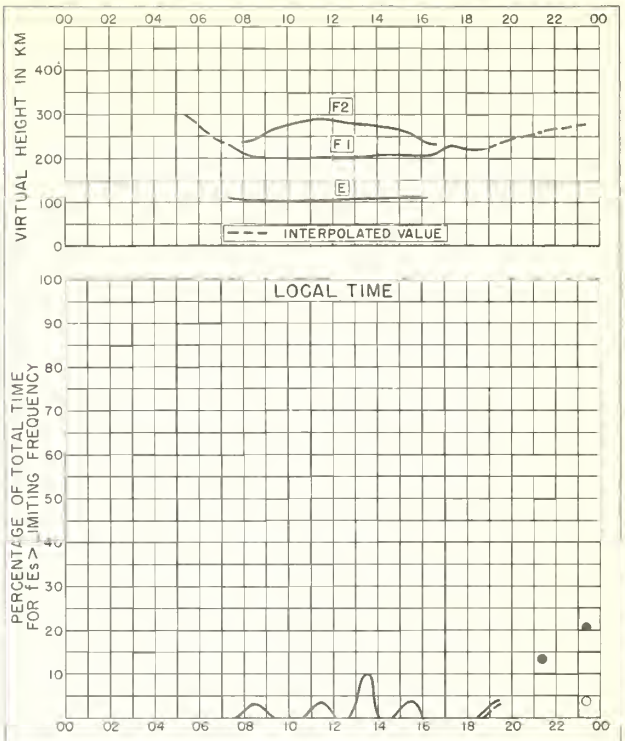

Fig. 93. CAMPBELL I. SEPTEMBER 1945

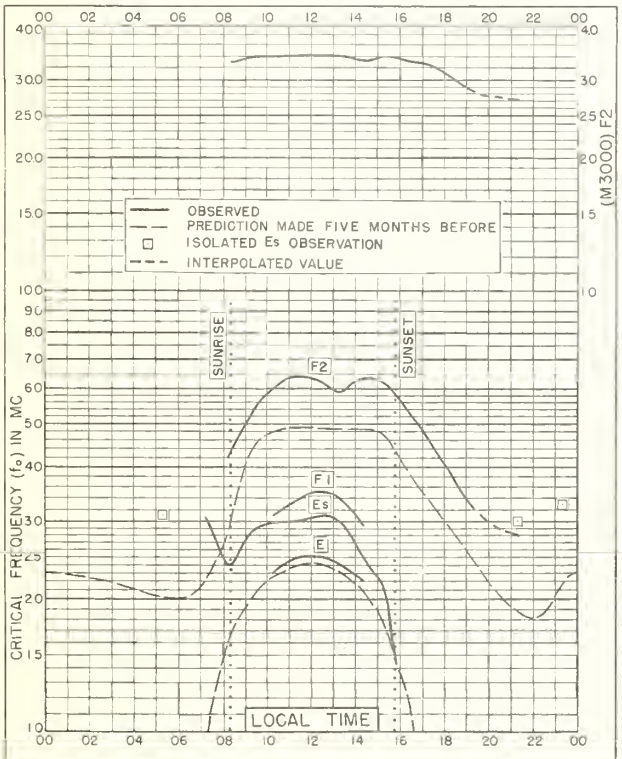

Fig. 94. CAMPBELL I.
52.5°S, 169.2°E JUNE 1945

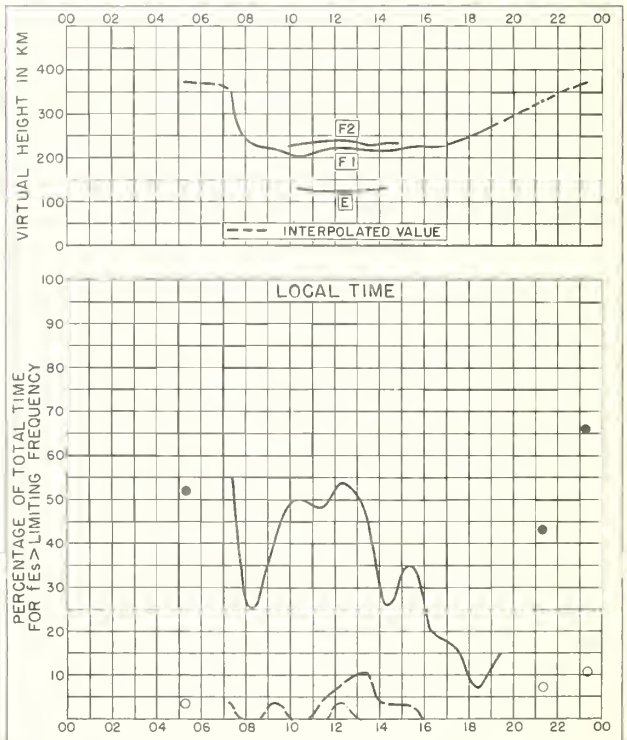

Fig. 95. CAMPBELL I. JUNE 1945

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CRPL and IRPL Reports

[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

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Semimonthly:

CRPL–Ja. Semimonthly Frequency Revision Factors for CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL–D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499– , monthly supplements to TM 11–499; Dept. of the Navy, DNC 13 ( ) series.)

CRPL–F. Ionospheric Data.

Quarterly:

*IRPL–A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.

*IRPL–H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.

IRPL–G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.

IRPL–R. Nonscheduled reports:

- R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
- R5. Criteria for Ionospheric Storminess.
- **R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- **R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
- **R12. Short Time Variations in Ionospheric Characteristics.
- R14. A Graphical Method for Calculating Ground Reflection Coefficients.
- **R15. Predicted Limits for *F*2-Layer Radio Transmission Throughout the Solar Cycle.
- **R17. Japanese Ionospheric Data—1943.
- R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
- **R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
- **R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.
- R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
- **R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.
- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- **R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
- **R33. Ionospheric Data on File at IRPL.
- **R34. The Interpretation of Recorded Values of *fEs*.
- R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

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