CRPL-F73

IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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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. See CRPL-F38, page 9.

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.

Values missing because of W are counted:
1. For foF2, as equal to or less than the median when it is apparent that h'F2 is unusually high; otherwise, values missing because of W are omitted from the median count.
2. For h'F2, as equal to or greater than the median.

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 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 foFl, 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'Fl, foFl, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'Fl and foFl 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					
	1950	1949	1948	1947	1946	1945
December		108	114	126	85	38
November		112	115	124	83	36
October		114	116	119	81	23
September		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	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 38 and figures 1 to 76 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, West Australia

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

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

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

Radio Regulatory Agency, Tokyo, Japan:
- Akita, Japan
- Tokyo, Japan
- Wakkanai, Japan
- Yamagawa, Japan

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

New Zealand Department of Scientific and Industrial Research:
- Christchurch, New Zealand (Canterbury University College Observatory)
- Rarotonga I.

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

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 39 to 50 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 a new location, Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D. C.

Table 51 presents ionosphere character figures for Washington, D. C., during August 1950, 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 52 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, July 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 53 presents the daily American relative sunspot number, R_A, computed from observations communicated to CRPL by observers in America and abroad. Beginning with the observations for January 1948, a new method of reduction of observations is employed such that each observer is assigned a scale-determining "observatory coefficient," ultimately referred to Zürich observations in a standard period, December 1944 to September 1945, and a statistical weight, the reciprocal of the variance of the observatory coefficient. The daily numbers listed in the table are the weighted means of all observations received for each day. Details of the procedure are given in the Publication of the Astronomical Society of the Pacific, issued February 1949, in an article entitled "Reduction of Sunspot-Number Observations." The American relative sunspot number computed in this way is designated R_A. It is noted that a number of observatories abroad, including the Zürich observatory, are included in R_A. The scale of R_A was referred specifically to that of the Zürich relative sunspot numbers in the standard comparison period; since that time, R_A is influenced by the Zürich observations only in that Zürich proves to be a consistent observer and receives a high statistical weight. In addition this table lists the daily provisional Zürich sunspot numbers, R_Z.

OBSERVATIONS OF THE SOLAR CORONA

Tables 54 through 56 give the observations of the solar corona during August 1950 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 57 through 59 list the coronal observations obtained at Sacramento Peak, New Mexico, during July 1950, 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 54 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 55 gives similarly the intensities of the first red (6374A) coronal line; and table 56, the intensities of the second red (6702A) coronal line; all observed at Climax in August 1950.

Table 57 gives the intensities of the green (5303A) coronal line; table 58, the intensities of the first red (6374A) coronal line; and table 59, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in July 1950.

The following symbols are used in tables 54 through 59: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

Coronal tables in this series through F69, May 1950, designated the nominal wave length of the far red coronal line as 6704A; however, 6702A appears to be a more reliable value and is used in later issues. The two are found almost interchangeably in the literature.

Table 60 gives details of the Sacramento Peak observations from February 1950 through June 1950. The first column lists the Greenwich date of observations; the next eight columns give the threshold or lowest observable intensity of 5303A for each spectrum plate centered at astronomical position angles 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°, respectively; the last two columns indicate the observer and the person responsible for the intensity estimates of the observation. This table is a continuation of table 1 of CRPL-1-4, and appears in the F series regularly at intervals of six months.

OBSERVATIONS OF SOLAR FLARES

Table 61 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 projected area, 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 62 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 63 through 68 list the sudden ionosphere disturbances observed at Fort Belvoir, Virginia, August 1950; Lindau/Harz, Germany, July 1950; Barbados, B.W.I., July 1950; Point Reyes, California, August 1950; Colombo, Ceylon, July 1950; and Singapore, Malay States, May 1950, respectively.

Table 1

Washington, D. C. (38.7°N, 77.1°W) — August 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.6						2.8
01	290	4.3						2.8
02	260	4.0						2.9
03	280	3.6						2.9
04	280	3.2						2.9
05	280	(3.0)						2.9
06	250	4.1	250	—	120	2.0		3.1
07	300	5.0	230	4.0	110	2.5		3.2
08	350	5.6	220	4.3	110	2.9	3.9	3.0
09	330	5.9	200	4.5	110	3.1	5.4	3.0
10	350	6.0	200	4.6	110	3.3	3.9	2.9
11	390	5.9	200	4.7	110	(3.3)	4.9	2.9
12	370	6.1	200	4.8	100	3.4	3.5	2.8
13	380	6.1	200	4.8	100	3.4		2.8
14	360	6.3	210	4.8	100	3.3		2.8
15	350	6.6	210	4.7	110	3.3		2.9
16	330	6.8	220	4.5	110	3.0		2.9
17	300	6.6	230	4.1	110	2.8		3.0
18	280	6.7	250	—	110	2.3		3.0
19	250	(6.8)			—	—		(3.0)
20	250	(6.6)						(3.0)
21	260	(5.9)						(2.9)
22	280	(5.3)					2.6	(2.9)
23	290	4.8						2.8

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) — July 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	(5.9)					2.4	(2.8)
01	280	(5.6)					2.4	(2.8)
02	270	5.3					2.3	2.8
03	270	4.6	---	---	---	---	2.7	(2.8)
04	305	5.1	250	3.0	125	1.6	2.8	2.9
05	340	5.3	240	3.5	110	2.1	3.1	2.9
06	330	5.6	225	3.9	110	2.5	2.8	2.8
07	350	5.8	220	4.2	105	2.8	3.2	2.9
08	355	6.0	215	4.4	100	3.0	3.4	2.9
09	365	6.1	210	4.7	100	3.1	3.5	2.9
10	355	6.2	205	4.7	100	3.2	3.6	2.9
11	360	6.2	205	4.8	100	3.3	3.9	2.9
12	360	6.3	205	4.9	100	3.3	3.7	2.9
13	380	6.4	205	4.9	100	3.3	3.5	2.9
14	370	6.2	210	4.8	100	3.3	3.5	2.9
15	350	6.1	205	4.8	100	3.3		2.9
16	350	6.1	205	4.6	105	3.2	3.3	2.9
17	325	6.2	215	4.4	105	2.9	3.3	3.0
18	310	6.3	225	4.2	105	2.7	3.5	3.0
19	285	8.4	230	3.8	110	2.4	3.4	3.0
20	260	6.5	250	3.4	120	2.0	2.8	3.0
21	260	6.6			125	1.6	2.2	3.0
22	255	(6.5)					2.1	2.9
23	255	(6.3)						(2.9)

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

Table 3

Boston, Massachusetts (42.4°N, 71.2°W) — July 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.9						2.8
01	290	4.7						2.8
02	290	4.1						2.8
03	280	3.7					2.4	2.8
04	280	3.3			---	---		2.9
05	250	4.3	---	---	130	2.0	2.2	3.0
06	280	4.9	230	4.0	120	2.4	3.0	3.0
07	350	5.4	220	4.0	110	2.9	3.4	2.9
08	360	5.6	220	4.4	110	3.1	3.5	3.0
09	380	6.1	210	4.6	120	3.4	3.7	3.0
10	390	6.0	220	4.7	110	3.4	3.6	3.0
11	380	6.3	210	4.8	110	3.4	3.6	2.9
12	390	6.2	220	4.7	120	3.5	4.0	2.9
13	400	6.3	220	4.7	120	3.4	3.8	2.7
14	380	6.3	220	4.7	120	3.4	3.8	2.8
15	360	6.3	220	4.5	120	3.4		2.8
16	350	6.5	220	4.3	120	3.1		2.8
17	320	6.5	230	3.9	120	2.8	3.1	2.9
18	280	6.5	240	3.3	120	2.4	2.9	3.0
19	250	6.8			---	---	3.3	3.0
20	260	6.8					2.8	2.9
21	260	6.4					2.7	2.8
22	270	5.8					2.8	2.8
23	290	5.6						2.8

Time: 75.0°W.
Sweep: 0.5 Mc to 18.0 Mc in 1 minute.

Table 4

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2					3.2	2.8
01	300	5.0					3.0	2.8
02	300	4.8					3.1	2.8
03	300	4.4					2.9	2.8
04	300	4.4					3.8	2.7
05	300	4.2					2.9	2.8
06	330	5.2	240	3.7	120	2.2	3.8	2.9
07	350	6.0	240	4.3	120	2.8	5.0	2.9
08	340	6.3	220	4.6	120	3.0	5.4	2.8
09	380	6.8	200	4.8	120	---	5.6	2.8
10	370	6.6	200	4.9	120	3.7	5.1	2.8
11	400	6.7	200	5.0	120	---	5.5	2.7
12	390	6.8	200	5.0	120	---	5.4	2.7
13	380	7.1	200	5.0	120	---	5.0	2.7
14	380	7.4	210	5.0	120	---	5.3	2.8
15	360	7.3	220	4.8	120	3.6	4.9	2.8
18	340	7.4	230	4.7	120	3.1	4.6	2.8
17	320	7.2	240	4.4	120	2.9	4.5	2.9
18	300	7.0	240	4.0	120	2.5	4.3	3.0
19	260	7.0					3.9	3.1
20	250	6.9					3.1	3.0
21	260	6.4					4.3	3.0
22	280	5.6					3.6	2.8
23	300	5.4					3.4	2.8

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

Table 5

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2					4.4	2.7
01	300	5.3					3.9	2.7
02	290	5.0					3.8	2.7
03	280	4.9					3.5	2.7
04	280	4.4					3.9	2.7
05	290	4.4					3.1	2.7
08	280	5.4	(240)	---	(110)	(2.2)	4.9	2.9
07	360	6.2	220	4.2	(110)	(2.7)	5.2	2.8
08	340	7.0	220	4.6	110	(3.0)	5.8	2.8
09	340	7.2	210	4.8	(110)	(3.3)	6.2	2.7
10	380	7.1	200	5.0	110	(3.6)	6.1	2.6
11	400	8.9	210	5.1	110	(3.7)	5.8	2.6
12	400	7.4	200	5.1	(110)	(3.8)	5.4	2.6
13	390	7.7	210	5.1	110	3.9	5.1	2.6
14	350	7.7	210	4.9	(110)	(3.8)	5.2	2.7
15	360	7.4	220	4.8	110	3.6	4.4	2.7
18	340	7.5	220	4.7	110	3.3	4.8	2.7
17	330	7.4	240	4.4	110	2.9	4.8	2.8
18	290	7.5	260	---	(110)	(2.3)	4.8	2.9
19	260	7.8					4.1	3.0
20	240	7.1					3.3	2.9
21	280	8.4					2.9	2.8
22	270	5.7					3.3	2.8
23	290	5.5					3.9	2.7

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

Table 6

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.5						2.8
01	320	5.2						2.8
02	310	5.0						2.8
03	300	4.7						2.8
04	300	4.2						2.8
05	300	4.4						2.9
06	300	5.5	270	---	---	---		3.0
07	340	6.0	260	4.1	120	(2.8)		3.0
08	360	6.6	240	4.6	120	3.2	5.3	2.8
09	380	6.8	240	4.8	120	(3.4)	4.6	2.8
10	410	7.0	230	5.0	120	(3.4)	4.9	2.7
11	410	7.0	250	5.0	(120)	(3.5)	4.4	2.7
12	410	7.6	230	5.1	120	(3.5)	4.1	2.7
13	420	7.5	240	5.0	---	(3.5)		2.6
14	410	7.6	240	5.0	---	(3.5)		2.7
15	390	7.9	260	4.8	120	(3.4)		2.7
16	370	7.6	260	4.6	120	3.3		2.8
17	340	7.6	260	---	120	(3.0)	4.2	2.8
18	310	7.6	270	---	120	---	3.6	2.9
19	290	7.6					3.6	2.9
20	280	7.3					4.6	2.9
21	290	6.2					3.6	2.8
22	300	6.0					4.1	2.8
23	320	5.6						2.8

Time: 90.0°W.
Sweep: 2.12 Mc to 14.1 Mc in 5 minutes, automatic operation.

Table 7

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.4					2.8	2.7
01	300	7.4					2.3	2.8
02	280	7.1					2.3	2.8
03	300	6.4						2.8
04	290	6.1					2.4	2.8
05	300	5.6					2.1	2.8
06	270	5.5	---	---	---	---	2.1	3.0
07	250	6.3	230	(4.7)	120	(2.5)	3.9	3.0
08	310	6.9	220	4.9	110	(3.0)	5.3	2.7
09	390	7.6	220	4.9	110	(3.3)	5.8	2.4
10	430	8.3	220	5.1	110	(3.6)	6.1	2.4
11	450	9.2	210	5.1	110	3.8	5.7	2.4
12	410	9.9	210	5.1	110	3.8	4.8	2.5
13	390	10.4	220	5.1	110	3.8	4.9	2.6
14	380	10.7	220	5.0	110	3.7	4.9	2.6
15	370	11.0	230	4.9	110	3.6	4.5	2.7
16	340	11.4	230	4.8	110	3.3	4.7	2.8
17	310	11.7	240	4.5	120	3.0	4.7	2.9
18	280	11.2	250	---	120	2.4	4.1	3.0
19	260	10.3					3.9	3.0
20	260	9.6					2.9	2.9
21	260	8.5					2.6	2.8
22	300	8.0					2.3	2.7
23	310	7.6					2.4	2.7

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

Table 8

San Juan, Puerto Rico (18.4°N, 66.1°W) July 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	8.7						2.8
01	230	(8.2)						3.0
02	230	7.2						3.0
03	240	6.3						3.0
04	240	6.1						2.9
05	240	5.6						2.9
06	240	5.6						3.0
07	240	(6.5)		---		---	3.7	2.9
08	280	7.4		4.5		3.3	4.7	2.9
09	300	8.0		4.8		3.4	4.6	2.9
10	330	8.8		4.9		(3.6)	4.9	2.8
11	340	9.4		(5.0)		---	4.9	2.7
12	330	10.2		5.2		---	4.8	2.8
13	300	(10.5)		(5.0)		(3.8)	4.8	(2.8)
14	300	10.8		5.0		3.8	5.0	2.8
15	300	10.3		4.8		3.6	4.8	2.8
16	300	10.2		4.7		3.4	4.5	2.9
17	270	(9.8)		4.2		3.1	4.1	(2.9)
18	250	(9.4)						(2.9)
19	230	(9.0)						3.0
20	240	(8.7)						(2.8)
21	260	8.4						2.8
22	270	(8.3)						2.8
23	270	(8.5)						(2.8)

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

Table 9

Guam I. (13.6°N, 144.9°E) July 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.8					3.9	2.6
01	320	5.4					3.8	2.6
02	320	6.0					4.0	2.7
03	310	5.5					2.2	2.8
04	270	5.1					3.9	3.0
05	240	4.5					2.4	3.1
06	250	5.1			120	---	4.1	3.2
07	240	6.8	240	---	(110)	2.5	5.0	3.1
08	270	8.0	220	---	110	3.0	7.2	3.1
09	300	8.0	220	---	110	(3.4)	8.6	2.7
10	350	8.7	200	---	(110)	(3.6)	9.0	2.5
11	360	9.0	220	5.0	110	3.7	8.2	2.4
12	400	9.5	210	(5.2)	110	3.8	8.1	2.3
13	410	9.9	220	(5.2)	110	(3.8)	7.3	2.3
14	390	10.6	210	(5.1)	110	(3.7)	5.0	2.5
15	370	10.9	210	5.0	110	3.6	5.7	2.5
16	350	11.7	230	---	110	3.3	6.6	2.6
17	320	11.7	240	---	110	2.9	6.0	2.6
18	260	(11.6)			---	---	6.2	2.6
19	280	(11.3)					4.0	(2.6)
20	300	10.4					3.9	2.6
21	320	(9.4)					3.6	2.6
22	330	8.7					3.8	2.5
23	350	7.3					3.9	2.6

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

Table 10

Trinidad, Brit.West Indies (10.6°N, 61.2°W) July 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	9.5						3.1
01	230	9.2						3.2
02	230	8.2						3.2
03	230	7.3						3.2
04	220	6.8						3.2
05	230	6.4						3.2
06	240	6.2			100	1.8	2.4	3.3
07	220	6.5	---	---	100	2.6	3.4	3.3
08	250	7.4	210	4.7	100	3.1	4.2	3.2
09	320	8.1	200	5.1	100	3.5	4.4	2.9
10	340	8.8	200	5.2	100	3.7	4.6	2.7
11	350	10.0	200	5.2	100	3.9	5.0	2.7
12	340	10.7	200	5.2	100	3.9	5.0	2.8
13	320	11.4	210	5.3	100	3.9	5.1	2.9
14	320	11.6	200	5.1	100	3.8	5.1	3.0
15	300	12.0	200	5.0	100	3.6	5.3	3.0
16	280	11.4	200	4.8	100	3.3	5.0	3.0
17	280	10.8	210	4.4	100	2.9	5.3	3.0
18	250	10.5	---	---	---	---	4.8	3.0
19	250	10.0					4.1	3.0
20	270	10.4					3.6	2.9
21	270	10.4					3.0	3.0
22	230	10.4					2.6	3.0
23	250	10.1					1.9	3.0

Time: 60.0°W.
Sweep: 1.2 Mc to 19.8 Mc, manual operation.

Table 11

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	6.4					2.2	3.1
01	230	5.7					2.3	3.1
02	230	5.8					2.8	3.1
03	240	5.0					2.3	3.2
04	240	4.0					2.6	3.1
05	260	3.7					3.2	3.1
06	300	3.9			100	1.3	3.1	2.9
07	250	6.4			100	2.3	5.9	3.0
08	290	8.3	220	4.6	100	2.9	10.2	2.8
09	310	8.8	220	4.9	100	---	12.0	2.6
10	330	8.4	220	4.9	100	---	12.2	2.4
11	350	8.2	210	5.0	100	---	12.1	2.4
12	360	8.1	210	5.0	100	---	12.2	2.4
13	360	8.4	210	4.9	100	---	12.0	2.4
14	360	8.5	210	4.8	100	---	12.0	2.3
15	320	8.4	210	4.7	100	---	12.0	2.4
16	320	8.6	220	4.6	100	2.8	11.8	2.4
17	260	8.6			100	2.2	6.0	2.4
18	300	8.1			100	---	2.3	2.4
19	320	7.5						2.4
20	300	7.6						2.5
21	260	7.4						2.7
22	230	6.8						2.9
23	230	6.5					2.4	3.0

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

Table 12

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.2						2.7
01	290	5.9					2.4	2.7
02	295	5.3					2.8	2.6
03	290	5.4	---	---	---	---	3.2	2.7
04	300	5.6	270	3.0	---	1.9	3.4	2.8
05	300	6.0	230	3.8	100	2.3	3.9	2.8
06	320	6.5	220	4.2	100	2.7	4.0	2.9
07	350	7.0	210	4.6	100	3.0	4.6	2.8
08	340	7.0	215	4.8	100	3.2	4.7	3.0
09	340	7.0	200	4.8	100	3.4	4.8	2.9
10	380	7.0	210	4.8	100	3.4	5.0	2.8
11	340	6.7	210	4.9	100	3.5	4.6	(2.9)
12	400	6.7	200	5.0	100	3.6	4.7	2.8
13	385	6.6	205	4.9	100	3.5	4.0	2.7
14	360	7.0	215	4.9	100	3.5	4.8	2.8
15	335	6.9	215	4.8	100	3.4	4.0	2.8
16	320	6.9	230	4.7	105	3.2	4.8	2.8
17	305	6.9	230	4.2	100	2.8	5.0	2.9
18	300	7.2	245	3.8	105	2.4	5.0	2.9
19	280	7.7	---	---	115	2.0	3.8	3.0
20	270	7.3				---	3.4	2.9
21	270	7.2					2.6	2.8
22	280	7.0					2.4	2.7
23	290	6.7						2.7

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

Table 13

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	6.4					2.7	
01	270	6.7					2.2	
02	280	6.7					2.6	
03	280	5.6					2.8	
04	280	5.8	280	---	---	E	2.8	
05	290	5.8	250	3.4	100	1.9	3.4	
06	290	6.4	230	3.9	100	2.6	3.8	
07	320	6.5	220	4.3	100	2.9	4.5	
08	320	7.0	220	4.6	100	3.1	6.2	
09	330	7.1	210	4.8	100	3.3	5.0	
10	350	7.0	210	4.9	100	3.4	6.0	
11	360	6.8	210	5.0	100	3.6	5.5	
12	360	6.9	210	5.0	100	3.6	5.4	
13	350	6.8	210	5.0	100	3.6	5.6	
14	360	6.8	210	4.9	100	3.6	5.6	
15	340	6.8	210	4.8	100	3.4	5.2	
16	330	6.7	210	4.8	100	3.3	4.6	
17	320	6.8	220	4.5	100	3.0	4.4	
18	300	7.1	230	4.1	100	2.7	4.6	
19	270	7.4	250	---	100	2.2	4.4	
20	260	7.6	---	---	110	1.6	4.2	
21	260	7.4					3.5	
22	250	7.2					3.1	
23	270	6.9					2.8	

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

Table 14

Wakkanai, Japan (46.4°N, 141.7°E) June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.6					3.6	2.6
01	300	7.1					3.4	2.6
02	300	6.8					3.4	2.7
03	300	8.6					3.4	2.6
04	300	6.5	300	---	100	1.6	2.8	2.6
06	290	7.1	270	---	110	2.3	3.5	2.7
06	320	7.6	260	4.4	100	2.8	4.6	2.7
07	320	7.8	260	4.7	100	3.1	5.2	2.8
08	320	7.4	270	4.8	100	3.4	5.8	2.8
09	340	7.0	260	6.1	100	3.5	6.5	2.9
10	380	7.2	250	5.1	100	3.6	6.2	2.7
11	400	7.2	240	6.1	100	3.6	6.4	2.7
12	400	7.0	230	6.2	100	3.6	5.8	2.7
13	400	7.2	250	5.2	100	3.6	5.6	2.6
14	400	7.3	240	6.1	100	3.5	5.6	2.7
16	370	7.4	240	6.0	100	3.4	4.8	2.7
16	360	7.4	240	4.7	100	3.2	5.0	2.7
17	340	7.6	260	4.4	100	3.0	6.4	2.8
18	300	7.6	260	---	100	2.4	5.0	2.8
19	290	7.8	---	---	100	1.6	5.0	2.8
20	280	7.8					4.8	2.8
21	300	7.7					4.2	2.7
22	300	7.7					4.1	2.7
23	300	7.6					3.8	2.7

Time: 136.0°E.
Sweep: 1.0 Mc to 14.0 Mc in 15 minutes, manual operation.

Table 15

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.1						2.8
01	280	5.8						2.8
02	280	5.1						2.8
03	280	4.6						2.9
04	275	4.1						2.8
06	250	5.0	---	---	130	2.2		3.0
06	300	6.6	230	4.1	120	2.8		3.0
07	330	6.2	225	4.4	120	3.0	3.4	3.0
08	335	6.4	225	4.7	120	3.2	3.6	3.0
09	355	6.8	220	4.8	116	3.4	3.8	2.9
10	350	6.8	210	5.0	120	3.6	3.9	2.9
11	370	7.0	215	5.1	120	3.4	4.1	2.8
12	370	7.0	220	6.0	120	3.6		2.8
13	360	7.1	220	5.0	120	3.5		2.9
14	370	7.1	220	4.9	120	3.5	3.2	2.8
15	360	8.9	220	4.7	120	3.4		2.8
18	356	7.0	230	4.5	120	3.2	3.1	2.8
17	320	7.1	230	4.1	120	2.9	3.2	2.9
18	270	7.3	250	---	120	2.6	3.6	3.0
19	260	7.2			---	---		3.0
20	260	6.9						2.9
21	270	7.0						2.8
22	280	8.8						2.7
23	280	6.3						2.8

Time: 75.0°W.
Sweep: 0.5 Mc to 18.0 Mc in 1 minute.

Table 16

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	8.0					4.3	2.7
01	290	7.8					4.0	2.7
02	290	7.4					3.6	2.7
03	280	7.0					3.6	2.7
04	290	6.7					3.4	2.7
05	260	7.2	220	---	120	3.0	3.2	2.8
06	290	8.2	240	---	110	2.8	4.0	2.9
07	300	8.4	240	(4.4)	110	3.0	6.2	3.0
08	300	8.4	250	---	110	3.4	6.6	3.0
09	310	7.8	---	5.2	110	3.6	7.0	3.0
10	340	7.5	---	5.1	110	3.7	6.6	2.8
11	370	7.6	250	5.2	110	3.8	6.8	2.8
12	370	8.0	---	5.4	110	---	6.2	2.7
13	360	8.6	---	5.2	110	3.7	7.1	2.7
14	340	8.7	240	6.0	110	3.6	6.0	2.8
16	330	8.8	260	6.0	110	3.5	6.3	2.8
18	330	8.9	240	4.6	110	3.3	6.2	2.9
17	300	8.7	240	4.4	110	3.0	6.1	2.9
18	300	8.7	260	---	120	2.3	6.4	2.9
19	270	8.4					4.6	2.8
20	290	8.2					5.0	2.8
21	300	8.3					4.9	2.7
22	300	8.3					5.1	2.8
23	300	8.2					5.1	2.7

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

Table 17

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(8.1)					5.4	2.8
01	270	(8.0)					4.7	(2.9)
02	270	7.2					4.8	2.9
03	260	7.2					3.6	2.9
04	270	6.8					3.3	2.9
06	250	7.0	---	---	110	2.0	3.6	3.0
06	240	8.6	230	---	100	2.6	3.7	3.1
07	260	8.6	240	---	100	3.1	5.2	3.1
08	290	8.2	230	---	100	3.4	6.2	3.1
09	300	8.0	240	---	100	3.8	7.1	3.1
10	310	7.6	220	5.0	100	3.7	8.6	2.9
11	350	8.2	230	6.4	100	3.8	9.0	2.8
12	340	8.6	230	5.5	100	3.8	7.2	2.8
13	340	9.3	240	5.4	100	3.8	7.6	2.8
14	320	9.4	220	5.2	100	3.7	7.4	2.9
15	300	9.6	230	5.0	100	3.6	7.0	3.0
16	300	9.6	240	4.7	100	3.2	6.2	3.0
17	280	9.6	240	---	100	2.8	5.6	3.0
18	260	9.0	---	---	100	2.2	5.5	3.0
19	240	8.7					5.6	3.1
20	260	7.6					4.6	2.9
21	300	7.8					4.4	2.8
22	300	8.1					4.5	2.8
23	290	(8.0)					4.8	(2.8)

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

Table 18

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	9.1					4.8	2.7
01	300	8.9					5.4	2.8
02	290	8.7					4.6	2.9
03	300	8.0					4.6	2.8
04	280	7.4					3.8	2.8
05	280	7.2					3.8	2.8
06	270	7.9	---	---	120	2.2	3.8	3.0
07	270	8.6	250	---	110	2.8	4.5	3.1
08	280	8.3	250	---	110	3.3	5.7	3.0
09	300	7.8	240	---	110	3.6	7.0	2.9
10	320	7.8	250	5.2	110	3.7	7.1	2.7
11	380	8.4	220	6.6	110	3.8	7.3	2.6
12	380	9.6	240	5.4	110	4.0	6.8	2.6
13	380	10.2	240	6.2	110	4.2	6.4	2.7
14	360	10.9	240	5.1	110	3.8	8.8	2.7
16	330	11.0	240	5.0	110	3.7	6.4	2.8
16	320	11.3	240	5.0	110	3.4	6.0	2.8
17	300	11.1	240	---	110	3.2	6.6	2.8
18	300	10.6	250	---	110	2.6	6.6	2.9
19	280	9.5	250	---	110	(2.0)	5.2	2.8
20	280	8.8					6.2	2.8
21	300	8.8					6.0	2.7
22	300	8.8					4.5	2.7
23	320	9.2					4.7	2.6

Time: 135.0°E.
Sweep: 1.2 Mc to 18.6 Mc in 15 minutes, manual operation.

Table 19

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	9.4					4.7	3.0
01	250	9.6					4.6	3.0
02	240	9.4					4.9	3.1
03	260	8.8					3.7	3.1
04	270	8.4						3.0
05	240	8.4						3.4
06	250	8.8	---	---			4.5	3.2
07	250	7.8	---	---	---	---	4.6	3.3
08	320	8.4	240	5.0	120	3.4	5.1	3.2
09	320	8.4	210	5.0	100	3.4	6.0	3.0
10	400	9.6	210	5.6	100	3.7	5.8	2.7
11	360	11.2	220	5.7	100	3.8	6.4	2.5
12	360	11.8	230	6.4	100	3.9	5.2	2.6
13	400	12.7	220	6.0	100	4.1	5.6	2.7
14	360	14.3	220	5.8	100	4.0	5.0	2.8
15	320	14.4	240	8.6	100	3.9	5.6	2.8
16	320	14.4	240	6.4	100	4.0	4.8	2.9
17	300	14.3	240	4.8	100	4.0	4.6	3.1
18	280	14.4	240	---	100	3.8	4.4	3.2
19	280	14.3	---	---	---	---	4.6	3.0
20	280	10.5					4.0	2.9
21	300	9.5					4.0	2.8
22	310	9.5					4.3	2.7
23	300	10.5					4.2	2.7

Time: 120.0°E.
Sweep: 2.5 Mc to 14.5 Mc in 16 minutes, manual operation.

Table 20

Guam I. (13.6°N, 144.9°E) June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	(9.4)					3.0	---
01	320	(8.4)					4.0	(2.7)
02	300	(8.0)					2.5	(2.9)
03	280	7.2						2.8
04	250	8.7						2.9
05	220	6.3					4.0	3.2
06	250	6.9			140	2.0	4.3	3.1
07	240	7.8	---	---	110	(2.6)	6.8	3.1
08	240	8.5	220	---	110	---	8.6	2.9
09	(270)	8.7	220	---	110	3.4	8.8	2.7
10	330	9.2	220	---	110	3.6	8.8	2.6
11	380	9.6	220	(5.3)	110	3.8	8.4	2.4
12	380	10.4	210	5.3	110	(3.9)	8.7	2.3
13	380	10.9	210	6.3	110	3.8	8.3	2.4
14	380	11.2	220	(5.2)	110	(3.8)	6.0	2.4
15	370	11.6	210	5.1	110	3.6	6.8	2.4
16	(350)	11.8	230	---	110	3.3	7.8	2.4
17	(310)	12.0	230	---	110	2.9	7.0	2.4
18	280	12.0			---	---	7.6	(2.5)
19	290	(11.3)					5.8	(2.5)
20	320	(10.6)					3.9	(2.5)
21	350	(9.8)					3.9	(2.4)
22	360	9.1					2.8	(2.4)
23	360	(8.2)					3.5	(2.5)

Time: 160.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 21

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	2.7						3.0
01	(280)	2.7					1.8	2.9
02	(280)	2.7						2.9
03	(260)	2.8						2.9
04	(270)	2.8					1.8	3.0
05	(260)	2.7						2.9
06	(250)	2.7						3.0
07	230	5.3			---	1.8		3.4
08	230	7.4	220	3.0	120	2.6		3.4
09	240	8.2	220	3.7	110	2.9		3.3
10	250	8.8	220	4.3	110	(3.2)		3.3
11	260	9.4	210	4.5	110	3.4		3.2
12	260	8.8	210	4.6	110	(3.6)		3.2
13	250	8.7	200	4.4	110	3.4	3.6	3.2
14	260	8.6	220	---	110	3.3	3.6	3.1
15	250	9.0	230	---	110	3.1	3.6	3.2
16	240	9.0	230	---	110	2.7	3.0	3.2
17	230	8.0			(120)	2.0	2.4	3.3
18	210	6.2					1.5	3.3
19	220	3.7					1.8	3.3
20	240	3.0					1.8	3.2
21	(250)	3.0					1.8	3.1
22	250	3.3						3.2
23	240	2.9						3.1

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

Table 22

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	(2.3)						(3.0)
01	---	(2.6)						(2.8)
02	(280)	2.6						2.9
03	(280)	(2.6)						(2.9)
04	(280)	(2.7)						(2.9)
05	(260)	(2.8)						(3.1)
06	(260)	(2.4)						(2.9)
07	(250)	(2.5)						(3.0)
08	230	5.2			---	(2.0)		3.3
09	230	6.9	230	---	120	(2.6)		3.4
10	(240)	8.0	230	---	110	(3.0)		3.4
11	250	(8.6)	230	---	110	(3.2)		(3.4)
12	250	8.4	220	---	110	(3.4)		3.2
13	260	8.9	230	---	110	(3.6)		3.2
14	260	(9.1)	230	---	110	(3.3)	3.4	(3.1)
15	260	9.2	220	---	110	3.1	3.2	3.1
16	240	(9.2)	240	---	110	(2.9)		(3.2)
17	230	8.2	---	---	110	2.3		3.3
18	210	6.4			110	---		3.3
19	(230)	(3.9)						(3.2)
20	240	3.1					1.6	3.2
21	(240)	(3.0)					1.9	(3.3)
22	(240)	2.7						3.2
23	(250)	(2.4)						3.1

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

Table 23

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2					3.0	2.8
01	290	3.3					3.0	2.8
02	290	3.3					3.2	2.8
03	280	3.3					1.8	2.9
04	280	3.2					2.6	2.9
05	260	3.0					2.8	3.0
06	250	2.7					3.0	3.0
07	260	3.3				---		3.0
08	230	6.0				1.7	2.9	3.4
09	230	7.2	230	3.4		2.4	3.2	3.4
10	230	7.7	230	(3.9)		2.8	3.8	3.4
11	240	7.9	230	(4.1)		2.9	3.6	3.3
12	250	8.1	220	4.1		3.0	4.2	3.4
13	240	8.8	240	(4.1)		2.9	3.5	3.3
14	240	9.6	240	(3.9)		2.7	3.3	3.3
15	230	8.0	230	(3.3)		2.4	3.3	3.3
16	230	7.8				1.7	3.0	3.3
17	220	6.6				---	2.6	3.2
18	240	5.8					2.6	3.1
19	240	5.1					2.0	3.1
20	250	4.5					2.4	3.0
21	250	3.9					2.8	3.0
22	270	3.7					1.4	2.9
23	280	3.3					2.4	2.8

Time: 172.6°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 24

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.3					2.8	2.6
01	310	7.1					2.6	2.6
02	310	6.9					2.1	2.6
03	300	6.5					2.2	2.6
04	320	6.5			120	1.3		2.6
05	300	7.1	---	---	110	2.2	2.4	2.7
06	290	7.6	300	4.6	110	2.7	3.6	2.8
07	340	7.3	270	4.8	100	3.2	3.3	2.7
08	330	7.5	270	5.0	100	3.4	4.8	2.8
09	320	7.6	260	5.0	100	3.6	6.2	2.8
10	380	7.6	260	5.2	100	3.6	6.3	2.7
11	370	7.9	250	5.2	100	3.6	6.5	2.7
12	360	8.2	250	5.3	100	3.6	4.8	2.7
13	380	7.9	230	5.0	100	3.6	5.0	2.7
14	360	7.9	250	6.1	100	3.6	6.0	2.7
15	360	8.1	270	5.0	100	3.4	4.4	2.7
16	300	8.1	280	4.8	100	3.3	3.8	2.8
17	290	8.3	280	---	110	2.7	4.1	2.8
18	290	8.3	280	---	110	2.2	4.3	2.7
19	300	7.8					3.8	2.8
20	300	7.6					3.6	2.7
21	300	7.7					3.6	2.6
22	300	7.6					3.2	2.6
23	300	7.5					2.4	2.6

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

Table 25

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.8					3.0	2.7
01	300	7.8					3.2	2.7
02	300	7.4					3.1	2.7
03	300	7.2					3.2	2.6
04	300	7.0					2.8	2.7
05	260	7.8	---	---	120	2.0	2.8	2.9
06	250	8.8	250	---	110	2.6		3.0
07	270	8.9	240	---	110	3.1	3.6	3.0
08	290	8.7	240	---	110	3.5	4.4	3.0
09	300	8.2	220	---	110	3.6	5.0	2.9
10	300	8.6	230	---	110	3.6	5.6	2.8
11	340	9.2	240	5.5	110	---	6.3	2.8
12	340	9.8	240	5.4	110	3.7	5.8	2.8
13	330	9.4	250	5.4	110	3.7	5.6	2.8
14	320	9.7	230	5.2	110	3.6	5.3	2.8
15	310	9.7	240	4.9	110	3.5	4.4	2.9
16	300	9.7	250	---	110	3.3	5.0	2.9
17	300	9.6	250	---	110	2.9	4.4	2.9
18	270	9.3	250	---	120	2.2	3.6	2.9
19	270	8.0					4.3	2.9
20	270	8.3					4.4	2.7
21	300	8.1					4.4	2.7
22	300	8.2					4.2	2.7
23	300	7.8					4.4	2.6

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

Table 26

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	7.8					4.5	2.8
01	280	8.0					3.3	2.8
02	260	7.4					2.9	2.8
03	270	7.0					2.8	2.8
04	260	6.8					2.8	2.8
05	230	7.6	---	---	110	2.0	2.3	3.1
06	220	8.7	---	---	100	2.6		3.3
07	240	8.8	220	---	100	3.0	4.2	3.2
08	250	8.6	230	---	100	3.4	5.0	3.1
09	280	8.4	220	---	100	3.6	5.4	3.0
10	300	9.4	210	5.5	100	3.7	5.0	2.9
11	310	10.0	220	5.4	100	3.8	5.4	2.9
12	300	10.2	230	5.4	100	---	5.4	2.9
13	300	10.6	220	5.4	100	3.8	5.8	2.9
14	300	10.6	220	---	100	3.7	4.8	2.9
15	300	10.9	220	---	100	3.6	5.0	3.0
16	270	10.5	230	---	100	3.2	4.8	3.0
17	250	10.0	240	---	100	2.8	4.5	3.1
18	250	9.8	240	---	100	2.2	3.9	3.1
19	240	(8.9)					4.6	3.0
20	250	8.2					4.5	2.9
21	280	7.7					4.3	2.8
22	280	8.0					4.4	2.8
23	300	8.0					4.4	2.8

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

Table 27

Yamagawa, Japan (31.2°N, 130.8°E) May 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	9.0					4.8	2.7
01	310	8.8					4.6	2.7
02	300	8.2					4.0	2.8
03	290	7.7					3.8	2.8
04	290	7.1					3.4	2.8
05	280	7.3					3.1	2.8
06	280	7.8	---	---	120	2.1	3.1	3.1
07	250	8.7	250	---	110	2.8	4.4	3.1
08	280	8.8	240	---	110	3.3	5.2	3.0
09	290	9.1	240	---	110	3.5	6.4	2.8
10	300	9.6	230	---	110	3.8	6.8	2.7
11	320	10.7	240	5.6	110	3.8	6.2	2.7
12	350	11.4	240	5.7	110	4.0	6.6	2.7
13	340	11.8	260	5.6	110	4.1	6.6	2.7
14	320	12.4	250	5.4	110	3.8	5.8	2.7
15	330	12.2	250	5.4	110	3.7	6.2	2.8
16	310	12.6	250	---	110	3.5	5.6	2.8
17	300	11.7	260	---	110	3.2	5.4	2.9
18	290	11.2	260	---	110	2.6	5.2	2.9
19	280	10.5	---	---	110	1.8	5.0	2.9
20	280	9.6					5.0	2.8
21	290	8.9					5.4	2.7
22	300	8.8					5.2	2.6
23	310	8.8					5.0	2.6

Time: 135.0°E.
Sweep: 1.2 Mc to 18.5 Mc in 15 minutes, manual operation.

Table 28

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	7.6						2.8
01	270	7.2						2.8
02	280	8.7						2.9
03	270	6.4						2.9
04	260	5.8						2.9
05	280	5.2						2.9
06	270	5.8						2.8
07	250	8.4	---	---	---	---	3.2	3.0
08	250	11.3	---	---	110	3.3	3.9	3.0
09	250	13.0	230	7.6	110	3.4	4.2	3.0
10	250	13.8	220	5.2	110	3.6	4.5	2.9
11	250	13.4	210	6.0	110	3.7	4.5	2.9
12	280	12.5	250	6.1	110	3.7	4.8	2.9
13	290	13.0	250	6.0	110	3.6	4.7	2.8
14	290	13.3	250	6.3	110	3.5	4.6	2.7
15	300	13.0	250	8.0	110	3.5	4.5	2.7
16	280	13.4	250	5.9	110	3.1	4.5	2.7
17	250	13.0	---	---	110	2.5	3.9	2.8
18	250	10.4	---	---	---	---	3.4	3.0
19	250	9.0	220	4.8	---	---	3.2	3.0
20	250	9.7	---	---			2.8	2.9
21	250	8.4	---	---				3.0
22	250	8.4						3.0
23	250	8.0						3.0

Time: 157.5°W.
Sweep: 2.0 Mc to 18.0 Mc, manual operation.

Table 29

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.7					2.4	2.9
01	250	4.8						2.8
02	260	4.8						2.8
03	270	4.5					3.0	2.8
04	250	4.3					2.0	2.8
05	250	4.2					2.2	2.8
06	250	4.9			—	(<1.5)		3.0
07	230	8.0			130	2.3	3.6	3.3
08	230	9.6	---	---	110	2.9	3.5	3.3
09	240	10.6	230	4.5	105	3.3	3.6	3.2
10	250	10.9	220	4.6	105	3.5		3.2
11	250	10.8	210	5.0	105	3.5		3.1
12	250	10.5	210	5.0	100	3.6	3.8	3.1
13	250	10.2	220	4.8	105	3.6	3.6	3.0
14	250	10.9	220	4.5	105	3.3	3.7	3.0
15	240	10.8	220	4.5	110	3.1	3.6	3.0
16	230	10.8			110	2.7	3.7	3.1
17	220	9.8			—	(<1.7)	3.5	3.1
18	210	7.7					3.3	3.0
19	230	8.5					3.0	2.9
20	240	8.0						3.0
21	240	5.3						2.9
22	250	5.3					2.8	2.8
23	260	5.0					3.0	2.8

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

Table 30

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0					3.0	2.8
01	270	4.0					2.7	2.8
02	270	4.0					2.9	2.7
03	270	4.0					2.9	2.8
04	260	4.1					3.0	2.9
05	240	3.6					2.6	2.9
06	250	3.6					3.0	2.9
07	240	5.6				1.6	2.0	3.4
08	240	8.2				2.5	3.2	3.5
09	250	9.6	230	4.2		3.0	3.2	3.3
10	280	10.8	230	4.6		3.2		3.3
11	260	11.3	230	4.7		3.3	3.6	3.2
12	260	10.8	230	4.8		3.4	3.7	3.1
13	270	11.0	240	4.9		3.3	3.7	3.0
14	270	11.4	230	4.7		3.2		3.1
15	260	11.0	240	4.0		3.1	3.3	3.1
16	240	10.8				2.6	3.2	3.1
17	230	10.0				1.8	3.2	3.1
18	210	8.6					2.8	3.2
19	210	6.3					2.8	3.1
20	230	5.3					2.4	3.2
21	240	4.3					2.4	3.0
22	250	4.2					2.3	2.9
23	270	4.0					2.4	2.8

Time: 120.0°E.
Sweep: 18.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 31

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.6					2.8	2.9
01	250	4.6					2.8	2.9
02	260	4.3					2.8	2.8
03	270	4.2					3.1	2.9
04	260	4.4					2.6	2.9
05	230	4.1					2.8	3.0
06	240	3.9			---	E	2.5	3.0
07	220	6.9			(110)	1.8	3.1	3.3
08	220	8.2	---	---	100	2.5	3.5	3.4
09	230	9.4	220	(3.9)	100	3.0	3.8	3.3
10	240	10.0	210	(4.5)	100	3.3	3.6	3.3
11	240	11.0	210	4.5	100	3.4	3.5	3.3
12	235	10.5	200	4.5	100	3.4	3.8	3.1
13	240	11.0	200	4.5	100	3.4	3.9	3.1
14	240	11.2	210	4.3	100	3.2	4.0	3.1
15	240	11.0	210	4.0	100	3.0	3.8	3.1
18	220	10.6	---	---	100	2.5	3.6	3.2
17	210	9.6			(110)	1.8	3.4	3.2
18	210	8.2			---	(1.5)	3.2	3.1
19	230	7.0					2.9	3.1
20	230	5.8					3.0	3.0
21	240	5.0					2.8	3.0
22	250	4.8					3.0	2.9
23	250	4.4					2.6	2.9

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

Table 32

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.5					2.5	2.7
01	290	4.2					2.8	2.7
02	280	4.1					2.4	2.7
03	280	3.8					2.0	2.8
04	280	3.6					2.0	2.8
06	260	3.4					2.1	2.9
06	250	2.9					2.0	2.9
07	250	4.6				1.4	2.6	3.1
08	240	7.2	---	---		2.0	2.9	3.3
09	240	8.5	240	3.6		2.6	3.4	3.3
10	240	9.1	240	4.2		3.0	3.5	3.3
11	250	9.5	240	4.4		3.1	3.5	3.2
12	250	10.0	230	(4.4)		3.2	3.8	3.1
13	250	10.4	240	4.4		3.1	3.7	3.1
14	250	10.4	240	4.1		2.9	3.7	3.1
15	240	10.0	240	3.6		2.6	3.3	3.1
16	230	9.7	---	---		1.9	2.8	3.1
17	230	8.6				1.4	3.0	3.1
18	240	7.4					2.7	3.0
19	250	6.6					2.7	3.0
20	250	6.5					2.4	2.9
21	260	5.1					1.5	2.8
22	270	4.8					2.4	2.8
23	290	4.5					2.5	2.7

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

Table 33

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	8.3						2.8
01	270	8.4						2.8
02	280	7.8						2.8
03	280	7.8						2.8
04	290	7.4					2.6	2.8
06	280	6.6					2.9	2.9
08	260	6.6	---	---	---	---	3.1	2.9
07	250	10.3	---	---	120	2.6	3.6	3.0
08	250	12.5	---	---	110	2.9	4.6	3.1
09	250	13.8	220	5.6	110	3.4	5.0	3.0
10	250	14.0	220	6.7	110	3.6	5.0	2.9
11	250	14.3	230	6.4	110	3.8	5.2	2.8
12	250	13.8	220	6.1	110	3.8	4.6	2.9
13	290	13.8	220	6.2	110	3.8	4.5	2.8
14	290	14.1	230	5.9	110	3.7	4.8	2.8
15	300	14.0	250	5.9	110	3.5	4.6	2.8
16	290	13.3	250	6.2	110	3.2	4.0	2.8
17	250	14.0	250	6.7	---	---	3.9	2.9
18	250	13.4	---	---	---	---	4.0	2.9
19	250	12.6	250	7.0	---	---	3.6	2.9
20	250	11.8					3.6	2.8
21	250	11.1					3.1	2.8
22	250	9.8						2.9
23	250	9.6					2.8	2.8

Time: 167.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 34

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.0					2.8	2.7
01	270	6.1					2.1	2.8
02	260	6.1					1.4	2.8
03	240	5.8					1.6	3.0
04	240	6.0						2.8
06	240	4.6					1.2	2.9
06	240	5.4			---	1.7		3.1
07	240	8.6			110	2.5		3.3
08	230	10.1	---	---	110	3.0	3.5	3.2
09	250	11.0	220	4.6	110	3.3	3.6	3.1
10	250	11.4	220	6.0	110	3.6	4.1	3.1
11	250	11.5	210	5.0	110	3.7	4.2	3.0
12	250	11.3	210	6.3	110	3.7	4.0	2.9
13	265	11.8	220	5.4	110	3.7	4.0	2.9
14	260	12.2	220	6.0	110	3.6	3.4	2.9
16	250	11.7	230	5.0	110	3.3		2.9
18	240	11.2	---	---	110	2.8		3.0
17	230	10.8			140	2.2	3.4	3.0
18	220	9.6					3.1	3.0
19	230	8.1					2.7	2.8
20	240	7.5					2.4	2.8
21	250	7.2						2.9
22	250	7.0					2.6	2.8
23	270	6.5					2.8	2.8

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

Table 35

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.8					2.7	2.7
01	270	5.7					2.9	2.7
02	270	5.7					2.5	2.8
03	250	5.4					2.8	2.9
04	240	5.2					2.7	2.9
05	240	4.7					2.8	2.9
06	240	4.2			---	E	2.6	3.0
07	220	6.8			100	2.2	3.0	3.3
08	230	8.5	230	---	100	2.7	3.6	3.2
09	230	10.0	220	4.1	100	3.1	3.8	3.2
10	240	11.0	210	4.6	100	3.3	3.7	3.1
11	240	11.5	210	4.5	100	3.5	3.6	3.1
12	250	11.4	200	4.6	100	3.6	3.8	3.1
13	250	11.8	210	4.5	100	3.6	3.5	3.0
14	250	11.8	220	4.4	100	3.4	4.0	3.0
16	240	11.5	220	4.4	100	3.2	3.5	3.0
18	230	11.0	230	---	100	2.7	3.6	3.0
17	230	10.4			110	2.3	3.6	3.1
18	220	9.7			---	E	3.0	3.0
19	220	8.0					3.2	3.0
20	230	7.3					3.0	3.0
21	240	6.8					3.0	2.9
22	240	6.3					2.9	2.8
23	250	6.0					3.2	2.8

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

Table 36

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.9						2.7
01	280	4.8					2.1	2.7
02	270	4.4					2.1	2.7
03	260	4.5					2.1	2.8
04	250	3.8					2.1	2.9
05	240	3.6					1.6	3.0
06	250	3.3						2.9
07	240	5.0			120	1.8	2.0	3.2
08	230	7.0			110	2.4		3.2
09	240	6.5	230	4.1	100	2.9		3.0
10	250	(7.2)	220	4.5	100	3.0		(2.9)
11	260	(6.7)	210	4.6	100	3.3		(2.8)
12	260	(7.5)	220	4.6	100	3.3	2.1	(2.7)
13	250	---	220	4.8	100	3.3		---
14	240	---	220	4.3	100	3.2		---
16	230	---	230	4.0	100	3.0	2.1	---
16	230	---	---	- -	100	2.7	2.1	---
17	230				120	2.1	2.0	---
18	220	(8.0)			---	E	2.0	(2.9)
19	220	7.2					1.5	(3.0)
20	230	6.6					1.6	2.9
21	230	6.1						2.9
22	250	5.5						2.8
23	270	5.0						2.7

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

Table 37

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	8.0					2.1	2.7
01	270	5.4					2.7	2.7
02	270	5.2					2.5	2.7
03	270	4.8					2.7	2.8
04	270	4.3					2.5	2.8
05	250	3.8					2.8	2.9
08	260	4.3			---	E	2.1	3.1
07	240	5.8	---	---	110	2.2	2.1	3.2
08	250	8.5	230	4.2	100	2.8		3.2
09	270	7.0	220	4.6	100	3.1	2.5	3.0
10	280	(6.8)	200	4.7	100	3.3	3.0	(3.0)
11	290	(8.8)	200	4.8	100	3.3	3.0	(2.8)
12	290	(7.2)	210	5.0	100	(3.3)	3.2	(2.9)
13	300	(6.8)	210	4.9	100	3.3	3.4	(2.9)
14	280	(6.8)	220	4.7	---	3.3	2.9	(2.8)
15	270	(8.8)	220	4.6	100	3.2	2.7	(2.9)
18	250	7.0	220	4.3	100	3.0	2.5	(2.8)
17	240	(7.0)	230	3.8	100	2.6	2.0	(2.9)
18	240	(6.9)	---	---	120	2.1	2.1	(2.9)
19	230	7.3					2.1	(2.9)
20	240	7.3					2.1	2.8
21	240	6.8					2.1	2.8
22	260	6.4					2.8	2.7
23	260	8.2					2.6	2.7

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

Table 38

Poitiers, France (48.6°N, 0.3°E) January 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(4.2)						---
01	---	(4.0)						---
02	---	(3.9)						---
03	---	(3.9)						---
04	---	(3.6)						---
05	---	(3.2)						---
06	---	(3.2)						---
07	---	4.0			---	E		(2.8)
08	230	7.1			---	E		3.4
09	220	8.8			---	---		(3.2)
10	225	9.5			---	---		---
11	230	10.0	---	---	---	---		---
12	230	(9.8)	200	3.6	---	3.2		---
13	230	9.9	200	3.3	---	---		---
14	230	9.9	---	---	---	---		---
15	230	9.7			---	---		---
16	225	8.8			---	E		3.2
17	230	7.8			---	E		3.2
18	240	6.6						3.1
19	250	5.4						3.0
20	240	4.6						(2.9)
21	---	4.1						(2.8)
22	---	4.2						(2.7)
23	---	4.0						(2.7)

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

TABLE 39

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

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	(300)S	300	(270)A	(270)S	270	250	A	A	310	360	340	330	370	330	350	310	300	260	(240)A	[260]A	280	300	290
2	280	300	290	280	(270)S	300	[340]L	380	370	390	500	[460]	420	410	410	390	340	320K	290K	250K	230K	270K	300K	330K
3	310K	300K	290K	260K	(270)KS	300K	250K	[320]KL	400K	470K	500K	400K	500K	590KH	500K	(450)KS	380K	330K	320K	280	250	(260)S	A	A
4	300	300	[290]A	290	(280)S	290	240	310	380H	400H	380	410	500	420	420	400	370	320	(320)A	270	250	240	250	(270)S
5	(270)S	280	(270)B	260	(280)S	250	220	300	300	300	300	350	320	350	330	340	330	310	280	250	(260)A	250	(260)S	(250)S
6	(270)S	280	250	280	[290]A	300	290	360	330	380	350	410	390	380	370	340	350	330	300	260	250	250	(300)A	(290)A
7	300	380	300	260	(270)S	(300)S	300	370	350	370	440	[420]M	[400]KB	440K	350K	380K	350K	320K	310K	270K	300KF	400K	(320)KS	300K
8	370K	BK	BK	BK	BK	BK	300K	280K	GK	GK	GK	GK	GK	GK	GK	GK	470K	260K	[280]KA	(290)KA	(260)KS	280K	270K	260K
9	300K	(310)KS	(350)KS	EK	BK	(310)KS	(250)KB	GK	GK	480K	520K	500K	370K	430K	470K	380K	410K	380K	320K	260K	260K	270K	260K	300K
10	300K	(290)KB	280K	300K	300K	(300)KS	GK	GK	GK	GK	510K	420K	400K	500K	550K	630K	450K	370K	340K	280K	[250]KA	220K	AK	AK
11	(310)KS	(280)KS	(270)KS	(300)KS	[300]KB	(300)KS	GK	GK	GK	550K	400K	GK	600K	GK	510K	460K	400K	370K	300K	290K	260K	[270]KA	280K	(300)KS
12	300K	280K	250K	270K	SK	SK	240K	250K	500K	330K	310K	400K	400K	450K	460K	430K	350K	330K	280	260	250	260	280	300
13	300	300	280	280	260	(280)S	240	310	290	290	320	340	320	320	350	320	330	[290]A	(260)A	[250]A	240	[260]A	(270)A	(300)A
14	(280)A	[270]A	260	A	B	260	A	A	350	320	490K	510K	450K	370K	410K	390K	380K	330K	300K	[280]KM	260K	280	290	280
15	300	300	300	270	300	290	250	220	300	280	290	340	320	300	350	330	320	280	270	250	230	220	(250)A	300
16	290	280	290	290	280	260	240	280	260	300	290	350	320	330	330	320	300	280	270	240	(250)A	230	(280)A	(250)S
17	(250)S	270	(250)S	280	280	260	260	320	300	300	300	320	300	330	340	230	210	290	(270)B	230	[230]M	230	(300)B	(220)B
18	A	A	(330)B	(300)B	(300)B	(300)A	250	350	350	360	420	450	370	410	370K	360K	330K	300K	(280)K	270K	230K	270K	(270)KS	(320)KS
19	310K	320K	340K	320K	320K	330K	300K	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	MK	BK	BK	BK	BK	BK
20	BK	BK	BK	BK	BK	BK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	450K	[360]KL	280K	280K	290K	290K	(300)KA
21	300K	290K	300K	310K	(370)KS	300K	240K	[240]L	250	300	270	280	360	330	350	300	290	270	240	230	240	(270)A	280	290
22	270	270	250	250	280	300	270	400	G	420	400	410	430	400	400	340	310	300	300	250	250	(280)A	(280)A	270
23	280	290	280	250	250	[260]B	(270)B	280	300	330	330	310	370	390	360	360	350	310	280	250	250	270	280	280
24	270	260	250	260	270	270	250	240	280	300	290	350H	300	330	310	310	300	280	260	230	230	230	270	290
25	270	(280)S	290	270	250	270	240	280	260	300	[300]L	350	340	350	310	300	310	290	250	290	230	240	230	280
26	280	280	260	240	270	(250)S	240	260	260	300	320	300	300	310	310	300	300	280	260	240	230	(230)A	260	(270)S
27	290	(280)S	260	260	230	240	240	220	280	280	290	300	330	320	320	310	300	280	260	240	220	230	(260)S	270
28	280	290	270	280	290	(270)S	240	290	250	280	300	300	320	330	340	320	320	290	C	C	C	C	C	270
29	(300)B	(320)B	320	290	280	(280)S	250	230	360	[360]M	350	380	390	380	360	350	340	300	270	250	250	220	260	(300)B
30	(320)B	290	(310)B	300	280	(300)S	260	280	M	M	370	390	500	370	380	350	330	300	250	250	230	(280)B	300	300
31	(330)F	300	280	220	280	280	250	230	280	280	300	340	340	340	310	320	300	280	260	240	250	A	A	220
Median	300	290	280	280	280	280	250	300	350	330	350	390	370	380	360	350	330	300	280	250	250	260	280	290
Count	29	28	29	28	26	28	30	29	29	30	31	31	31	31	31	31	31	31	29	29	29	28	26	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 40

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

IONOSPHERIC DATA

Form adopted June 1946

foF2 (Characteristic), Mc (Unit), August (Month), 1950

Observed at Washington, D.C.

Lat. 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	4.9	4.8F	4.7F	(4.2)J	3.7F	3.7F	4.6	[5.2]A	5.9	7.1	7.4	7.0	7.8	7.4	8.1	7.8	8.3	7.8	9.0	(8.2)S	(7.4)A	5.8	5.4	5.4V
2	5.0F	4.5F	4.3F	3.8	3.1	3.0	4.0	4.8	5.2	5.6	(5.3)S	[5.6]C	6.0	6.0	6.2	(6.6)S	6.8	7.2K	7.9K	7.9K	(6.6)SK	5.3K	(4.7)SK	4.2K
3	4.2K	(4.0)SK	(4.0)SK	3.8K	2.9FK	(2.8)SK	4.1K	4.7K	5.0K	5.3K	5.4K	5.7K	(5.4)BK	(5.1)HK	5.4K	(5.6)SK	5.9K	(6.1)SK	6.0K	6.3	(6.0)SF	(5.0)SF	(4.8)SF	(3.9)SF
4	(4.2)JF	3.7F	3.5F	3.1F	(2.7)SF	2.8F	4.0	4.6	(5.0)H	(5.1)H	(5.3)H	(5.3)H	5.2	5.8	5.7	(6.0)S	5.8	6.0	5.9	6.4	(6.3)S	(6.2)S	5.6	5.0F
5	4.7F	4.5F	4.1F	4.0F	(3.5)F	(3.5)SF	4.5H	5.9	6.6	7.6	7.1	7.0	7.3	7.2	7.0	(7.2)S	(7.2)S	7.8	(8.6)S	(8.4)S	(8.2)S	6.9	6.0	(5.6)S
6	5.2	4.8F	4.2F	3.8	3.4	3.8	4.2	5.1V	5.6	5.9	6.3	5.9H	6.1	6.1	6.3	6.2	6.1	6.5	6.7	6.6	6.8	6.4	6.0	5.2
7	4.9	4.8	4.4	4.1	(3.4)F	(3.5)F	4.4	5.4	5.8	(5.9)P	6.0V	[6.0]N	(6.0)BK	7.1K	7.7K	7.5K	8.4K	8.8K	(9.0)SK	K(11.0)PS	(9.0)FK	K(6.6)FP	K[6.1]FN	K(5.6)FZ
8	K(2.9)JP	BK	BK	BK	BK	BK	2.9K	3.4K	<4.7GK	<4.0GK	K<4.4HG	GK(4.3)HS	<4.3GK	<4.4GK	<4.4GK	<4.3GK	4.8K	4.6K	4.8K	(5.0)SK	(5.3)FK	(4.9)FK	(4.7)FK	K(4.1)SF
9	3.3FK	2.7K	K(2.4)JB	EK	BK	SBK	3.8K	<4.0GK	<4.0GK	(4.9)PK	K(5.0)SF	K(5.3)SP	6.0K	5.4K	5.6FK	5.8K	5.6K	5.8K	K(6.4)SF	7.0K	(6.8)SK	K(6.0)SF	(5.3)FK	4.4K
10	(4.2)JK	4.4K	3.9K	3.5VK	3.3K	2.7FK	<3.7GK	<3.6GK	<4.1GK	<4.3GK	[5.2]SK	5.3K	5.4K	K(5.0)SF	4.8K	4.8K	5.4K	5.5K	5.5K	(6.2)PK	K(6.0)PS	4.7K	4.2K	(3.9)SK
11	3.9K	3.8K	3.1K	2.9VK	2.5K	K(2.3)JP	<3.6GK	<4.0GK	<4.3GK	K(4.7)JF	5.2K	<4.5GK	(5.0)FK	<4.5GK	(5.0)SK	5.2K	5.4K	(5.4)SK	5.7K	(5.9)SK	(6.2)SK	(5.3)FK	K(5.0)VF	4.7K
12	4.7K	4.7K	4.4VK	3.0K	K(2.0)JS	[2.8]SK	K(3.7)JS	4.2K	(4.7)FK	5.4K	5.3FK	5.5K	[5.6]NK	5.6K	5.6K	5.6K	6.0K	6.0K	6.4	(6.4)S	(6.4)S	(5.3)SF	(4.9)F	(4.4)SF
13	3.8F	3.9F	3.4F	(3.1)FP	2.8	(2.7)PS	4.2	5.2	6.0	(6.7)S	6.8	6.8	7.0	7.0	6.9	7.5	7.5	7.6	7.6	(7.8)S	7.3	(6.4)SF	(5.8)S	(5.0)FP
14	4.9F	4.8F	4.2F	3.7F	(3.2)J	S	A	A	(5.5)S	6.0	5.5K	5.4K	(5.3)PK	[5.4]NK	5.4K	5.6K	5.5FK	5.6FK	5.6FK	[6.0]MK	6.4FK	5.9V	5.4F	4.8
15	4.3F	4.0	3.8	3.6	3.1	(3.2)SP	4.5	5.2	6.7	7.4	7.2	(7.2)JV	(6.8)V	6.6	6.6	6.8	7.0	7.1	(7.3)SP	(7.4)S	7.5	(5.8)SF	(4.8)SP	(4.1)JS
16	4.5	(4.2)JS	4.0	3.9	3.4	(3.3)S	4.6	5.8	6.6	7.4	6.8	7.3	7.6	7.5	7.7	7.6	7.8	7.4	(7.3)S	(7.8)S	(7.3)S	(6.7)S	(5.9)S	(5.4)S
17	(5.0)S	4.7	4.2	3.8	3.3	3.2	4.0	5.0	6.1	6.8	(6.8)P	7.2	7.2	7.2	7.1	7.2	7.6	7.6	(7.1)P	(7.4)P	[6.7]M	(6.0)PS	5.7	5.3
18	(4.6)A	(4.2)JS	4.3F	4.0F	(3.5)BJ	3.3F	(4.1)V	4.9	5.6	5.6	5.6	5.9	6.3	6.3	6.9K	(7.2)SK	7.4K	8.0K	8.7K	(8.3)SK	7.8K	7.0K	5.3K	(5.2)SK
19	(5.0)SK	4.0FK	(2.9)FK	(2.5)FK	(2.5)FK	K(2.5)SF	3.3FK	<3.6GK	<3.8GK	K(4.0)FG	<4.1GK	<4.3GK	<4.1GK	K(4.0)SG	<4.2GK	K(4.1)SG	<3.9GK	K(4.0)BG	MK	BK	BK	BK	BK	BK
20	BK	BK	BK	BK	BK	BK	<2.6GK	<3.2GK	<3.7GK	K(3.9)SG	<4.1GK	<4.3GK	<4.4GK	<4.4GK	<4.3GK	<4.2GK	<4.0GK	4.5K	4.5K	4.6FK	4.7FK	4.5FK	3.9FK	3.4FK
21	3.2FK	2.8FK	K(2.6)FS	2.1K	1.8FK	(2.4)SK	3.9FK	5.3F	(6.2)FV	[6.3]N	(6.2)FH	6.3	6.6F	7.5F	7.5	8.0	8.0F	7.7	7.6	(6.8)SF	6.6F	5.6F	(5.0)FS	4.8F
22	4.8F	4.5F	3.8F	3.2F	(2.5)SF	2.4F	3.5	(4.3)B	<4.3G	(5.0)S	5.3	(5.3)S	5.4F	5.8F	6.0F	6.2F	6.1	5.9	6.2F	(6.2)S	(5.8)SF	5.3F	(4.9)SF	4.3F
23	4.2F	3.8F	3.4F	3.1F	2.8F	[3.0]B	(4.5)P	6.1	5.9	5.7H	(6.3)S	6.0	6.1	5.9	6.3	6.3	6.4	6.6	6.5	(6.7)S	(6.4)S	(5.9)S	5.6	5.3F
24	5.0F	(4.5)SF	4.1	3.6F	3.3F	(3.1)SF	5.0F	5.5F	6.4F	7.1	7.3	(7.4)H	7.6	7.8	7.6	7.4	7.3	7.4	7.8	7.6	(7.2)S	(6.1)S	5.2	4.9F
25	4.6F	4.3F	(3.9)SF	3.8F	3.3F	3.0F	4.7F	5.9	6.6	(6.5)S	6.4V	(6.9)VH	7.0	7.2F	7.2	7.0	7.0	7.4	(7.2)S	(7.6)S	(7.4)S	(6.6)S	(5.4)SF	4.8
26	4.7F	4.6F	4.2F	3.7F	3.3F	3.0F	4.7F	6.4	6.9	6.9	7.2	7.9	7.8	(7.9)S	8.0	7.6	7.5	7.5	7.1	7.6	(7.9)S	(6.4)F	5.8F	(5.2)S
27	(5.3)SF	(4.8)SF	4.6F	4.3F	3.8F	3.2F	4.4	5.6	7.0	7.9	7.4	7.0	7.0	7.2	7.1	7.4	7.7	7.8	7.8	(8.1)S	(7.7)S	K(6.0)S	(5.8)S	5.2
28	4.7	4.5	4.1F	3.8	3.7F	3.5F	4.4	5.7	6.3V	6.3V	7.0H	7.0	6.9	6.8	6.7	7.3	7.3	7.7	C	C	C	C	C	(3.9)JF
29	2.8F	(2.5)B	[2.5]F	(2.5)SF	(2.4)S	(2.4)P	(3.8)JS	(4.4)P	4.7	[5.1]M	5.5	5.6	6.0	6.1	(5.8)S	6.2	(6.4)S	6.4	(6.2)S	(6.4)S	(6.2)S	5.5	(4.0)SP	(3.6)JB
30	3.5	3.0	(2.7)BJ	2.4	2.4	(2.2)SP	(4.0)S	4.7	[4.9]M	[5.2]M	5.2	5.4	5.2	5.9	5.8	6.1	6.2	5.9	5.8	(5.9)S	5.3F	(4.4)FP	(4.0)FP	(3.6)FP
31	(3.0)PF	(3.4)F	3.1F	(2.9)FP	2.8F	2.8F	4.6F	(6.0)V	6.6	6.8	6.6H	6.4	6.6	7.3	7.5	7.0	(7.0)P	6.4	6.1	(6.1)S	6.4	5.9	5.1	4.4
Median	4.6	4.3	4.0	3.6	3.2	(3.0)	4.1	5.0	5.6	5.9	6.0	5.9	6.1	6.1	6.3	6.6	6.8	6.6	6.7	(6.8)	(6.6)	(5.9)	(5.3)	4.8
Count	30	29	29	29	28	27	30	30	31	31	31	31	31	31	31	31	31	31	29	29	29	29	29	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 41

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), August (Month), 1950

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	4.8	(4.6)S	(4.6)S	42	3.5F	(41)S	4.9	(56)SA	66	7.1	7.8	7.3	7.4	76	8.0	(8.0)S	(85)S	85	84	76	(60)S	5.5	5.5	5.2F
2	4.6F	4.6F	4.2	34	3.0	3.5	44	52	52	[54]C	[56]C	5.8	58	64	6.3	69	(6.8)S	7.5K	K(7.7)JS	(7.1)SK	K(5.7)JS	K(4.9)JS	K(4.3)JS	K(4.2)JS
3	(4.2)SK	(4.0)SK	K(4.0)JS	3.3K	26K	3.4K	4.4K	50K	52K	5.7K	5.7K	(5.0)BK	(5.5)SK	(54)SK	(5.6)SK	K(5.9)VS	62K	(60)SK	(6.1)SK	6.2F	54F	5.0F	[44]C	(39)SF
4	(4.1)SF	3.6F	[3.3]S	3.0F	2.4F	26	4.5	(48)VS	52	52	54	52H	5.7	59	58	(60)S	61	(58)S	(6.2)S	(6.3)S	(6.4)S	59	(52)S	47F
5	45F	44F	4.1F	4.1	3.3	42	(5.3)SH	(60)J	7.2	7.4	(7.0)S	69	70	73	(7.2)S	(71)S	75	80	(84)S	8.4	75	(60)SF	59	54
6	5.0	48F	42	(3.4)P	33	37	(46)S	5.3	5.8	6.1	(5.8)S	(6.0)S	(60)S	(64)S	62	(62)S	63	6.3	68	7.0	69	(6.0)S	56	50
7	50	47F	44F	39	3.2	38	48	54	58H	60H	58	62	66K	74K	78K	75K	89K	9.4K	K(10.4)PS	(10.6)PK	[7.5]FK	(45)FK	K(4.0)FP	[4.7]FK
8	SK	BK	BK	BK	BK	K(3.3)PF	42K	46K	<4.0GK	(4.2)PK	(4.3)BK	<4.3GK	<(45)GK	<4.5GK	<44GK	4.7FK	49K	46K	(4.9)SK	50FK	K(50)FS	4.7FK	K(4.4)FS	K(38)SF
9	K(3.0)JF	25K	K(1.9)JH	EK	BK	31FK	[3.7]BK	4.3K	48K	K(4.7)PF	K(5.1)FS	5.8K	K(57)SF	(52)FK	5.8K	57K	58K	62K	(69)SK	72K	K(63)SF	K(60)SF	(46)SK	(40)SK
10	43K	3.9K	36K	3.3K	(2.9)SK	3.1K	<3.4GK	<39GK	<46GK	S<K(42)GJ	(52)SK	K(5.4)SF	(5.3)FK	[4.9]SK	(5.0)FK	51K	55K	54K	(59)SK	(66)SK	60K	HK(42)JS	[4.4]AK	K(3.7)SA
11	40K	3.6K	(30)JK	K(2.7)JV	(2.1)JK	3.1FK	<40GK	42A	[46]CK	50K	[50]BK	4.9K	50K	5.0K	(5.0)SK	53K	54FK	(5.6)SK	55K	(60)SK	K(60)SF	K(50)SF	K(50)SF	(4.5)KS
12	4.6K	4.8K	4.5FK	2.5K	BK(19)JS	(33)SK	(39)FK	4.7K	[48]SK	K(50)SF	56K	5.1K	(52)SK	(58)SK	(5.5)SK	60K	62K	64K	(6.3)S	66	56F	(4.8)SF	(45)F	(4.3)SF
13	3.8	3.5F	3.3	(30)FP	(24)PF	(38)S	4.7	58	6.8	6.5	67	7.0	70	67	75	7.6	7.7	76	[78]A	(8.0)S	74	(6.0)V	(5.4)F	(52)F
14	(4.7)F	[44]F	(42)VF	3.6	30	(3.7)S	A	A	5.7	57	52K	54K	55K	54K	56K	56K	4.4FK	K56SF	[6.1]MK	66K	60FK	F(5.6)VS	5.0	4.5
15	(40)P	38	36	34	30	39	49	54	7.4	7.3	69	71	69	6.8	7.0	(69)S	72	7.2	(7.2)S	7.5	(68)SV	F(5.0)SP	4.6	46
16	(4.2)JS	(42)J	3.9	36	32	3.9	(52)F	65	7.4	7.5	69	7.5	[7.5]M	76	77	77	(7.5)S	7.3	(73)S	(7.7)S	(72)S	(62)JS	(5.5)S	5.3
17	46	43	39	35	3.1	35	44V	56	65	69V	6.7	69	7.1	72	73	7.2	(7.5)P	73	7.3	M	M	5.9	5.5	5.1
18	4.6	(4.4)JB	4.1	3.8	[37]A	36	46	5.2	59	56	5.9	62	61	66	7.0K	75K	7.5K	80K	8.8K	86K	K(71)SP	(66)SK	5.4K	(5.2)HK
19	45FK	K(31)JF	29FK	[2.7]BK	K(25)FP	K(3.0)SF	[33]BK	<36GK	<40GK	<40GK	<41GK	<41GK	<42GK	<42GK	<40GK	<40GK	BK	BK	MK	BK	BK	BK	BK	BK
20	BK	BK	BK	BK	BK	BK	<30GK	<34GK	<38GK	<4.0GK	<42GK	<4.3GK	<44GK	CK	<42GK	<42GK	4.4K	44K	45FK	4.7FK	4.7FK	K(4.3)SF	K(3.7)JF	33FK
21	30FK	2.7FK	FK(2.4)JS	19K	(18)BK	(33)FK	K(4.7)SF	5.4F	(59)SF	(67)H	(61)F	(62)F	72F	76	7.9F	8.0	77	76	7.4F	(6.7)SF	(62)AF	(5.2)SF	48F	49F
22	4.6F	40F	3.5F	2.8F	(23)SF	31F	[38]B	(45)B	(48)S	53	(52)FS	(56)S	57	60F	60F	63F	62F	61	6.2F	(60)S	(56)SF	49F	46F	42F
23	(4.0)SF	35F	3.2F	2.0F	25F	(3.5)B	50F	5.8F	56H	(58)S	(58)H	(60)JH	(58)JS	63	(62)S	64	6.6	66	6.6	65	(6.0)S	(60)SP	54	5.2
24	(4.8)S	(43)SP	38F	34F	3.1F	41	56F	65	68F	72	72	80	7.5	77	7.4	73	74	7.6	(78)S	(77)S	(65)S	57	(50)SF	(49)SF
25	(43)SF	(4.0)SF	3.7F	3.5F	31F	37F	55	62	64H	64	68V	6.7	7.2	72	(70)S	70	72	74	(7.5)S	(76)S	(69)S	(6.0)S	(5.2)SF	(47)SF
26	46F	44F	(40)SP	(35)SF	3.0F	3.8F	56	72	68V	68F	75	78V	79	80	76	77	7.8	73	75	(7.8)S	(72)S	(58)SF	(55)SF	(50)JS
27	(51)SF	4.7F	45F	4.2F	33F	36F	5.0	62	7.4	77	(72)S	69	7.0	7.3	73	7.4	78	78	80	(81)S	68	(58)JS	(55)S	50
28	4.4	(44)S	4.0	38F	3.5F	37F	(47)B	6.3	69V	67	72	66	(68)S	66	7.1	(7.1)S	77	67	C	C	C	C	C	[3.4]S
29	(26)B	(25)F	(2.1)F	2.5F	23	(3.0)B	39	(44)H	M	M	57	(55)S	60	62	6.0	62	61	64	6.2	66	(60)S	45	(3.8)S	3.6
30	(3.3)JB	28F	2.5F	(2.3)JB	(2.2)JB	3.0	42	4.7	[50]M	53	5.3	53	55	56	(60)JS	61	6.2	60	5.7	(6.0)S	4.8F	(3.8)JF	(3.6)JF	(34)F
31	(31)JF	34F	3.1F	2.8	(2.7)FP	32F	52	64	6.3	(66)H	64	6.4	6.9	75	(7.1)B	68	68	64	(6.1)S	(64)S	6.4	54	(49)S	(4.2)S
Median	44	4.0	38	3.4	3.0	3.5	46	54	58	59	58	6.0	60	6.5	63	68	6.8	66	(6.9)	(6.8)	(6.2)	(5.5)	(50)	(4.6)
Count	29	29	29	29	28	30	30	30	30	30	31	31	31	30	31	31	30	30	29	28	28	29	29	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O 702519

TABLE 42

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

IONOSPHERIC DATA

Form adopted June 1946

h'F1 (Characteristic), Km (Unit), August (Month), 1950

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	A	A	200	(210)A	200	200	200	[220]A	(250)A	(230)A	A	A					
2							240H	240	210	A	A	C	200	210	220	220	(230)A	(240)SK	240K					
3							QK	230K	200HK	220K	200K	190HK	200HK	200HK	200HK	AK	AK	220HK	270K					
4							Q	220	200H	200	190	200	190	(220)B	200	200	200	A	Q					
5							Q	240	200	200	180H	(200)H	200	190H	200	200	230	230H	Q					
6							250	240	[230]A	(220)A	200	190H	190	200	200	(240)A	200	210	250					
7							250	220	210	200	200	200	200K	220K	230K	200K	220K	230K	250K					
8							QK	QK	230K	220K	210HK	200HK	(210)AK	210K	210K	210HK	230K	QK	AK					
9							QK	230K	210K	190HK	200K	200K	200K	(170)HK	(230)HK	210K	230K	220K	240K					
10							260K	250K	230K	210K	(220)AK	210K	210K	200K	200K	200HK	(250)BK	220K	260K					
11							270K	[250]BK	230K	200K	190K	190K	180K	190HK	230K	210HK	230HK	230K	230K					
12							QK	200K	210K	220K	200K	200HK	190HK	200HK	220K	210K	220K	230K	250					
13							Q	220	200	190	200	210	(210)A	[220]A	(220)A	(230)H	A	A	A					
14							A	A	A	240	200K	190K	200HK	200HK	[200]AK	(200)AK	(220)AK	AK	AK					
15							Q	Q	220	230	(200)H	(200)H	200	190	210	210	220	230	230					
16							Q	230	A	A	200	190	230	200	250	230	[220]A	220	250					
17							Q	250	(250)A	(260)A	(220)A	200	180H	(170)H	200H	200	220	B	B					
18							Q	220	230	200	200	200H	200	210H	210HK	210HK	220K	230K	230K					
19							QK	270K	260K	210K	(170)HK	180HK	200HK	210K	200K	240K	260K	BK	MK					
20							BK	BK	(260)SK	250K	170HK	240K	210K	200HK	200K	210K	230K	240K	270K					
21							QK	200H	200	200	190	180	190	200	220	220	210	210	Q					
22							Q	(220)B	220	200	200H	200	210	200	200	200	220	220	(260)B					
23							Q	240	230	210	(210)A	200	[200]A	(200)S	220	220	220	240	240					
24							Q	Q	210	(210)A	190H	190H	180	200	230	210	210	240	S					
25							Q	230	230	200	210	180H	210	(200)A	220	210	210	210	Q					
26							Q	230	220	200	200	(200)A	210	210	210	220	220	A	A					
27							Q	Q	(220)A	200	200	200	200	200H	210	210	210H	230	D					
28							Q	[240]B	220	190	190	180H	200	220	220	200H	220	230	C					
29							Q	Q	200H	[200]H	200H	220	220	200	200	220	(230)S	250	250					
30							Q	230	M	M	200H	200	180H	200	210	220	230	240	Q					
31							Q	Q	(210)A	210	(200)H	200	200	210	210H	210	220	(220)A	230					
Median							250	230	220	200	200	200	200	200	210	210	220	230	250					
Count							5	22	27	28	30	30	31	31	31	30	29	23	16					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

Form adopted June 1946

TABLE 43

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

IONOSPHERIC DATA

foFl (Characteristic), Mc (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1°W

75°W. Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	A	A	(4.8)P	(5.1)P	5.0	5.0	5.0	4.8	4.9	4.8F	A	A					
2							L	(3.9)S	4.3	4.6	(4.7)A	[4.8]C	4.8	4.9	4.9	4.7	4.6	4.3K	LK					
3							QK	LK	4.3K	4.5K	4.6K	4.6K	4.7K	4.7K	(4.2)KS	4.8K	4.5K	(4.4)KP	LK					
4							Q	(4.1)P	4.2H	4.4	4.5	4.7	4.6	5.0	4.7	4.7	4.4	A	Q					
5							Q	L	4.2	4.8H	4.6	5.1	5.0	4.9	4.9	4.8	4.5	4.4	Q					
6							L	4.2	4.3	4.7	4.8	5.0	5.0	5.0	4.7	4.6	4.6	L	L					
7							L	3.9V	4.4	4.7	4.8	[4.8]N	4.8K	(5.0)KP	4.6K	4.8KH	4.6KH	(4.6)KP	3.6K					
8							QK	QK	4.7K	4.0K	4.4KH	(4.3)KS	4.3K	4.4K	4.4K	4.3K	4.3K	QK	AK					
9							QK	4.0K	4.0K	4.4K	4.5K	4.6K	4.6K	4.6K	4.6K	4.5K	4.5K	4.1K	LK					
10							3.7K	3.6K	4.1K	4.3K	4.5K	4.5K	4.6K	4.5K	4.5K	4.3K	4.2K	3.9K	(3.5)KP					
11							3.6K	4.0K	4.3K	4.3KH	4.3K	4.5K	4.5K	4.5K	4.5K	4.5K	4.3K	3.9K	LK					
12							QK	(2.7)KS	4.2K	4.4K	4.6K	4.6K	[4.6]KN	4.7KH	4.7K	4.4K	4.3K	(4.1)KP	L					
13							Q	4.0	4.4	4.8	4.9	4.8	5.0	[4.9]A	4.8P	4.7	A	A	A					
14							A	A	5.3	4.4	4.5K	4.7K	4.7K	4.5K	4.5K	4.5K	4.4K	4.2KP	AK					
15							Q	Q	L	4.7	4.8	(5.2)H	4.9	4.8	4.8	4.7	4.5	4.1P	3.1					
16							Q	L	4.5P	A	L	5.0	5.0	4.7	5.0	(4.9)P	A	L	L					
17							Q	4.0	(4.4)P	4.4	4.7	4.7	4.9	5.0	(4.9)H	4.8	4.5	B	B					
18							Q	4.1P	4.3	4.5	4.7	4.9	4.8	4.9	(4.8)KH	4.7K	4.5K	LK	LK					
19							QK	3.6K	3.8K	(4.0)KF	4.1K	4.3K	4.1K	(4.0)KS	4.2K	(4.1)KS	3.9K	(4.0)KB	QK					
20							2.6K	3.2K	3.7K	(3.9)KS	4.1K	4.3K	4.4K	4.4K	4.3K	4.2K	4.0K	4.0K	LK					
21							QK	L	(4.3)P	4.6	4.7	4.7	5.0	4.7F	5.0	4.8	(4.5)P	L	Q					
22							Q	(3.8)B	(4.3)F	(4.3)S	4.6	4.6	4.8	5.0	4.8	4.6F	4.4	4.1	L					
23							Q	L	4.4	4.7	(4.5)H	(4.9)H	5.0	4.8	4.8	4.7	4.5	4.3P	L					
24							Q	Q	L	(4.5)P	(4.8)P	(5.1)H	5.0	5.1H	4.9	(4.7)P	(4.5)P	L	L					
25							Q	L	L	4.6	[5.0]L	5.3	5.1	(5.1)P	5.0	4.6	(4.6)P	L	Q					
26							Q	L	L	L	(5.2)P	5.0	5.0	5.0	(5.0)P	(4.8)P	L	L	L					
27							Q	Q	L	4.7	4.8	5.0	(4.9)P	5.0	4.8	4.8P	4.5	L	Q					
28							Q	L	4.3	[4.4]L	4.6	4.8	5.0	4.9P	4.8P	4.7	4.4P	L	C					
29							Q	Q	4.0	[4.3]M	4.6	4.7	4.7	4.7	4.5	4.5	4.4	(4.3)P	L					
30							Q	L	M	M	4.5	4.6	4.7	4.7	4.5	4.4	4.2	(3.8)P	Q					
31							Q	Q	L	4.5P	4.5	4.6	4.8	4.5	4.5	4.5	(4.2)P	L	L					
Median							—	4.0	4.3	4.5	4.6	4.7	4.8	4.8	4.8	4.7	4.5	4.1	—					
Count							3	14	23	28	30	31	31	31	31	31	28	16	3					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

Form adopted June 1946

TABLE 44

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

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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							(140)A	120	(110)A	(110)A	(100)A	110	100	(100)A	(100)A	(100)A	100	(100)A	(110)A					
2							110	110	120	(110)A	(110)A	[100]C	100	(100)A	110	110	(110)A	110K	110K	SK				
3							(120)SK	110K	100K	(100)AK	(100)AK	(100)AK	100K	110K	100K	(110)SK	120K	110K	(120)BK	(120)A				
4							110	(110)A	(100)A	(100)A	(100)A	(100)A	(100)A	[100]B	100	110	110	110	110					
5							(120)S	120	120	100	110	110	110	100	110	110	110	110	120					
6								110	110	110	110	100	110	110	110	100	(100)A	110	100					
7							(110)A	110	(110)A	(110)A	110	(110)A	110K	110K	110K	110K	110K	120K	120K					
8							120K	120K	110K	110K	110K	110K	110K	(100)SK	110K	110K	110K	110K	110K					
9							BK	110K	110K	110K	110K	110K	100K	110K	110K	110K	110K	120K	120K					
10							(120)AK	110K	110K	(110)AK	110K	110K	110K	110K	110K	110K	110K	BK	BK					
11							(110)AK	(110)BK	120K	100K	110K	100K	100K	100K	110K	110K	100K	110K	120K	130K				
12							120K	110K	110K	110K	(110)BK	110K	[100]BK	100K	110K	100K	110K	110K	110	(110)A				
13							130	110	110	110	110	110	(110)A	(120)A	(110)A	110	110	(110)A	B					
14							A	(120)A	(100)A	100	(100)AK	(100)AK	(100)AK	(100)AK	(100)AK	(100)AK	(100)AK	120K	120K					
15							S	100	(110)A	(100)A	100	100	110	[110]B	110	110	120	110	120					
16								110	110	(110)A	(110)A	110	100	110	(110)A	(110)B	100	120	A					
17								110	110	100	[100]B	(100)A	110	100	100	110	120	B	B					
18							110	110	110	110	110	110	100	(100)A	(100)AK	(100)AK	110K	110K	(120)BK					
19							110K	(110)AK	110K	BK	BK	(110)BK	(110)BK	110K	100K	(110)SK	100K	BK						
20							BK	BK	(110)AK	(100)SK	(110)SK	110K	(120)AK	(110)AK	100K	110K	110K	BK	BK					
21							120	120	120	(110)B	(110)A	(110)A	110	110	110	110	110	B						
22								B	120	(110)A	110	100	[100]B	(110)B	(100)A	120	120	B	B					
23							B	B	110	110	110	110	(100)A	(100)A	100	100	(110)S	110	B					
24								B	110	100	(100)A	(100)A	(100)A	(100)A	(100)S	(110)S	(110)S	110	110					
25							120	110	110	[110]S	B	(110)A	(110)A	(100)A	100	100	(110)A	110						
26							(120)S	110	110	100	(100)A	(100)A	(100)A	(100)A	110	110	110	(110)B	(110)A					
27							120	110	110	100	(100)A	100	(100)A	100	100	100	110	110	110					
28							B	B	(120)B	110	100	(100)A	100	100	100	100	(100)B	110	C					
29							(120)B	110	B	M	(100)A	[100]B	(100)A	B	B	(120)S	120	110	B					
30							120	120	M	M	100	100	100	110	120	120	120	B	B					
31							(130)S	110	110	110	(110)A	110	110	100	(100)B	(110)B	110	110	B					
Median							120	110	110	110	110	110	100	100	100	110	110	110	110	—				
Count							20	26	29	28	29	31	31	30	30	31	31	24	17	3				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 45

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

Form adopted June 1946

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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							2.2	2.6	3.0	3.1	[3.2]A	3.4	3.5	A	A	A	3.2	(2.6)A						
2							2.1	2.6	3.1	(3.2)A	A	C	3.7	(3.6)A	3.6	[3.4]A	A	2.8K	2.4K	(1.7)PK				
3							1.9K	2.5K	2.7K	[3.0]AK	(3.2)AK	[3.4]AK	3.5K	3.4K	3.4K	3.4K	3.2K	2.9K	2.3K					
4							N	A	A	A	A	A	A	B	3.4	3.3	3.1	2.9	2.5					
5							2.0	2.7	3.0	(3.2)P	3.3	A	A	3.7	3.6	3.5	3.3	2.9	2.3					
6							A	2.7	2.9	(3.1)P	3.1	3.3	[3.3]A	3.4	3.1	2.9	A	A	2.4					
7							A	2.7	A	A	3.3	[3.4]A	3.4K	3.6K	3.6K	3.4K	3.2K	2.9K	2.3FK					
8							2.0K	3.1K	3.9K	3.3K	3.4K	(3.4)AK	(3.5)AK	3.3K	3.4K	3.3K	3.0K	2.5K	2.4K					
9							BK	2.4K	2.9K	[3.1]AK	3.2K	3.5K	3.6K	3.5K	3.3K	3.4FK	3.2K	2.8K	2.4					
10							AK	2.6K	3.0K	[3.1]AK	3.2K	[3.3]AK	3.4K	3.5K	3.3K	3.3K	3.1K	BK	BK					
11							2.2K	(2.2)BK	2.9K	BK	BK	(3.3)BK	(3.4)BK	3.4K	3.5K	3.3K	3.2K	2.9K	2.4K	2.0K				
12							(2.1)SK	[2.5]AK	2.9K	3.1K	3.3K	3.1K	[3.1]BK	3.2K	3.1K	3.2K	3.0K	2.8K	2.3	A				
13							2.2	(2.6)F	2.8	3.0	(3.4)B	(3.8)B	A	A	A	(3.3)B	3.1	(2.9)P	B					
14							A	(2.4)A	[2.6]A	2.8	AK	AK	AK	AK	3.4PK	AK	AK	2.8K	2.2K					
15							A	(2.5)A	[2.8]A	3.2	3.3	3.2	3.4	[3.4]B	3.5	3.3	3.1	2.8	2.2					
16								2.6	3.0	2.1	A	A	3.6	A	A	B	A	2.9	A					
17								2.5	(3.0)A	3.0	B	A	3.3	3.6	3.3	3.3	3.0	B	B					
18							(2.0)A	2.6	3.1	3.2	(3.3)A	A	A	3.6	3.4K	3.3K	3.1K	(3.0)PK	(2.2)BK					
19							2.0K	(2.7)AK	3.0K	BK	BK	(3.3)BK	(3.4)BK	(3.3)SK	3.3K	3.1K	AK	BK						
20							BK	BK	AK	(3.1)SK	3.1K	(3.3)BK	AK	AK	3.3K	3.2K	3.0K	[2.7]BK	2.4					
21							2.2K	2.5	2.8	B	A	A	3.6	(3.5)A	3.3	3.3	3.1	B						
22								B	A	A	3.3	3.3	[3.3]B	3.3	[3.2]A	3.2	(3.0)A	B	B					
23							B	B	3.0	3.2	3.3	(3.4)A	A	A	(3.3)A	[3.2]F	(3.0)S	2.6	B					
24								B	3.0	(3.3)A	A	A	A	(3.5)F	3.3	3.3	3.0	F	S					
25							1.9	2.5	(2.9)B	[3.3]S	B	A	A	A	3.3	3.3	[3.0]A	(2.8)F						
26							(1.8)A	2.4	2.7	3.0	A	A	(3.6)A	3.5	3.4	3.3	3.1	2.5	A					
27							1.9	(2.3)A	(2.6)A	A	A	3.5	[3.5]A	3.5	3.4	3.3	3.0	(2.5)A	(1.7)A					
28							B	B	2.7	[3.0]A	3.3	(3.3)A	3.6	3.4	3.3	(3.1)S	[2.8]B	2.6	C					
29							(1.7)B	2.4	(2.6)B	[2.9]M	3.2	[3.3]B	(3.4)B	B	B	(3.1)S	(2.9)S	2.5	B					
30							1.7	2.3	M	M	3.2	(3.3)P	3.3	(3.2)P	3.3	3.1	2.9	B	B					
31							1.8	2.4	(2.8)A	3.1	[3.2]A	(3.4)A	3.3	(3.4)F	(3.1)B	(3.1)B	2.9	2.4	B					
Median							2.0	2.5	2.9	3.1	3.3	(3.3)	3.4	3.4	3.3	3.3	3.0	2.8	2.3	—				
Count							17	25	26	23	19	20	22	22	27	28	26	23	15	2				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 46

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

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), August (Month), 1950

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., McC.

Calculated by: McC., B.E.B.

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	G	G	G	(5.2)F/100	G	G	3.3/140	10.0/110	8.4/110	8.0F/110	8.0F/100	64Y/120	G	46/100	80F/100	8.2/100	96F/110	10.0/100	86F/110	8.0/100	11.2/110	58/110	32/110	5.0/110
2	52/110	G	G	G	(6.5)S/120	G	G	G	G	64Y/110	88/110	C	G	38/100	G	3.7/110	36/110	G	G	G	G	G	54Y/110	G
3	2.5/160	23/170	2.4/150	G	G	66/110	66Y/130	G	3.9/110	4.7Y/100	5.8/100	70/100	G	G	70/160	70/140	46Y/130	G	G	4.3/120	31Y/110	70/130	70/110	54/110
4	3.5/110	36F/110	48/110	6.6Y/110	11.9/100	G	G	3.3Y/110	38Y/100	4.1Y/100	4.1Y/100	4.3Y/100	39/100	G	G	74Y/100	3.8/130	96Y/120	(6.7)S/110	(3.0)S/110	G	G	G	G
5	G	G	G	G	G	G	G	8.0/150	10.4/120	90/130	G	3.1/110	35/110	G	G	G	G	G	43/130	(4.0)S/120	4.3/120	35/110	24/110	G
6	G	G	G	G	3.1/110	18/130	2.2/130	(4.0)S/120	5.2/110	50/110	46/120	5.0/110	42/110	47/120	4.6/110	(6.0)S/100	60Y/100	30/110	G	3.0/100	G	G	42/120	38/120
7	(3.3)S/110	G	G	G	G	G	22/110	54/110	(3.8)S/110	43Y/110	G	64Y/110	G	G	G	G	G	G	G	G	G	G	G	G
8	G	B	B	B	B	B	G	G	G	52Y/110	G	5.2/110	40Y/110	4.6/110	37/110	G	G	4.2Y/150	64/120	41/110	G	G	G	(4.8)S/170
9	34/150	8.0Y/130	G	G	B	G	50Y/100	G	36/120	82/110	G	7.2Y/150	G	G	40/120	39/120	G	G	G	G	G	G	G	G
10	G	G	G	G	G	16/120	18.5Y/120	64Y/100	5.4/120	(4.0)S/110	8.0/100	(6.4)S/110	G	G	44Y/110	G	G	G	G	20/130	4.2/110	G	(4.8)S/110	50/110
11	24/120	G	G	G	G	G	17.0Y/100	G	G	7.0Y/120	G	G	86Y/130	G	G	G	G	G	G	G	30/110	60/110	G	G
12	G	G	G	G	6.2Y/130	70/130	G	18.0/100	6.6/120	G	G	G	G	G	G	G	G	G	3.7Y/120	34/110	33/110	28Y/110	G	32/110
13	G	G	2.9/110	38Y/100	G	(23.5)Y/170	G	10.0/110	10.0Y/110	(7.0)S/130	G	G	47Y/110	71/120	50/110	G	60/130	7.6/110	60/120	11.6/110	6.6/110	70/110	25/110	(5.2)S/100
14	3.5/100	4.2/100	18/110	40/110	G	G	60/120	80/120	70/100	9.0Y/100	50/100	5.0/100	50/100	33/100	38/100	4.3/100	4.6/100	44/100	45/110	M	32/110	32/120	32/110	G
15	G	G	G	2.6Y/110	28/110	18.5/100	(2.1)S/130	(4.0)S/110	58Y/110	30/110	G	G	54/130	G	G	G	G	G	G	G	G	G	6.8F/110	(4.0)S/110
16	3.0/100	G	G	G	2.7/110	5/110	34/120	3.8/120	4.8/110	60/110	54F/110	(6.4)S/110	G	36/110	43/110	35Y/110	42/100	34/100	29/100	(2.0)S/120	(5.2)S/110	(2.5)S/110	(4.8)S/110	G
17	G	G	G	G	G	G	32Y/100	3.0/120	4.3/110	54/100	3.9/110	50/100	G	G	G	G	G	G	G	G	G	G	G	27Y/110
18	6.4F/110	50/110	G	G	G	(5.0)S/100	G	G	42Y/120	45/110	47/110	36/110	86Y/130	2.8/100	3.2/100	24/100	18/100	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	3.8/110	G	G	G	G	G	G	G	G	32/130	G	M	5.2/130	69/130	B	B	B
20	B	B	B	B	B	B	G	G	(8.2)S/110	G	88Y/130	G	34/120	12.8/110	9.0/110	G	G	G	G	3.0Y/120	43/120	55Y/120	30Y/110	29/100
21	1.8/110	G	12/100	G	G	G	G	G	G	68/110	66/110	8.2Y/110	58Y/110	66Y/130	G	G	G	G	2.9Y/120	G	(8.3)S/110	60/100	G	G
22	1.7/100	(2.8)S/100	15/110	15/110	G	20/120	G	G	3.3/120	72/110	G	G	G	G	68/110	70/100	30/110	G	G	G	24/110	(6.0)S/110	(5.0)S/110	G
23	G	G	G	G	G	B	G	G	G	67Y/130	5.0/100	60/110	54/100	(4.0)S/100	18.5Y/120	37/110	G	G	G	G	G	G	9.9Y/110	G
24	G	G	G	G	G	G	2.0/140	G	G	48/110	5.8/100	48/100	11.0/100	3.2/100	G	G	G	G	G	G	G	G	18/110	30/110
25	G	G	15Y/110	G	G	G	G	G	G	(6.0)S/120	G	36/110	35Y/110	5.1Y/100	G	G	59Y/110	G	37Y/110	3.3/110	16/110	G	G	G
26	G	G	G	G	G	G	26/110	3.4Y/120	4.0/110	80Y/110	4.1Y/100	5.1/100	64F/100	6.0Y/100	G	G	G	44/110	25/110	G	G	28/110	26Y/110	G
27	G	G	G	G	G	G	G	48Y/120	4.2/110	34/110	59F/100	70Y/100	38/100	5.3Y/110	G	51Y/100	G	4.3F/110	50Y/110	(3.8)S/110	G	28Y/100	26/100	3.0/100
28	5.0/110	G	G	G	G	G	G	G	G	40Y/110	G	3.1/100	17.5Y/160	G	74Y/120	G	G	G	C	C	C	C	C	G
29	G	G	3.3/100	G	23/110	G	G	G	G	M	3.1/100	2.8/100	2.5/100	G	G	G	G	G	G	G	G	G	G	G
30	G	G	G	G	G	G	G	G	M	M	G	G	G	G	G	22/100	G	G	G	G	G	G	3.2/110	G
31	3.0Y/110	G	G	G	G	G	G	G	3.9Y/110	10.0Y/130	36/110	23.0/150	G	G	G	G	G	G	G	G	G	58/110	(4.7)S/110	2.6Y/110
Median	**	**	**	**	**	**	**	**	3.9	54	3.9	49	3.5	**	**	**	**	**	**	**	**	**	2.6	**
Count	30	29	29	29	28	27	31	31	30	29	31	30	31	31	31	31	31	31	29	29	30	29	29	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 ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702510

TABLE 47

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ______ (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	1.8	1.7F	1.8F	(1.9)J	1.8F	1.9F	2.1	A	A	2.0	1.9	1.9	1.9	1.8	1.9	1.8	2.0	1.9	2.0	(2.1)S	(2.0)A	1.9	1.8	1.8V
2	1.9F	1.8F	1.9F	1.9	1.8	1.9	1.9	1.9	1.9	1.9	(1.7)S	C	1.8	1.8	1.7	(1.8)S	1.9	1.9K	1.9K	2.1K	(2.3)SK	1.9K	(1.9)SK	1.7K
3	1.7K	(1.8)SK	(1.8)SK	1.9K	1.9FK	(2.0)SK	2.0K	1.8K	1.8K	1.7K	1.6K	1.8K	(1.6)BK	(1.5)HK	1.6K	(1.7)SK	1.8K	(2.0)SK	1.8K	2.0	(2.0)SF	(2.0)SF	(1.8)SF	(1.9)SF
4	(1.8)JF	1.8F	1.8F	1.9F	(2.0)SF	2.1F	2.1	2.2	(1.8)H	(1.7)H	(1.8)H	(1.8)H	1.7	1.8	1.8	(1.8)S	1.9	2.0	1.9	2.1	(1.9)S	(1.9)S	2.0	1.8F
5	1.8F	1.8F	1.8F	1.9F	(2.0)F	(2.1)SF	2.0H	2.1	2.1	2.0	2.1	2.0	2.1	1.9	2.0	(2.0)S	(1.9)S	1.9	(2.0)S	(2.1)S	(2.0)S	2.0	1.8	(1.9)S
6	1.8	1.8F	1.8F	1.8	1.8	1.8	2.1	1.8V	1.8	1.9	1.9	1.6H	1.8	1.8	1.9	2.0	1.8	2.0	1.9	2.0	1.9	2.0	1.9	1.8
7	1.8	1.9	1.8	1.9	(1.9)F	(1.9)F	2.0	1.9	2.1	(2.0)P	1.7V	N	(1.6)BK	1.6K	1.8K	1.8K	1.8K	1.7K	(1.8)SK	K(1.9)PS	(1.7)FK	K(1.5)FP	NFK	K(1.7)FZ
8	K(1.7)PJ	BK	BK	BK	BK	BK	2.1K	2.3K	GK	GK	GK	GK	GK	GK	GK	GK	1.7K	2.1K	AK	(1.9)SK	(1.8)FK	(1.3)FK	(1.8)FK	K(2.0)SF
9	1.8FK	1.8K	K(1.6)JB	EK	BK	SBK	1.9K	GK	GK	(1.6)PK	K(1.6)SF	K(1.6)SF	1.9K	1.8K	1.6FK	1.9K	1.7K	1.7K	K(2.0)SF	1.9K	(1.9)SK	K(1.7)SF	(1.9)FK	1.8K
10	(1.7)SK	1.9K	1.8K	1.7VK	1.8K	1.9FK	GK	GK	GK	GK	SK	1.8K	1.8K	K(1.6)FS	1.6K	1.4K	1.7K	1.8K	1.8K	(1.9)PK	K(1.9)PS	2.1K	1.9K	(1.8)SK
11	1.7K	1.8K	1.9K	1.9VK	1.9K	K(2.0)JP	GK	GK	GK	K(1.6)JF	1.7K	GK	(1.5)FK	GK	(1.4)SK	1.8K	1.8K	(1.8)SK	1.9K	(1.9)SK	(1.9)SK	(1.9)FK	(1.8)VK	1.7K
12	1.8K	1.9K	1.8VK	1.9K	K(1.7)JS	SK	K(2.1)JS	2.1K	(1.7)FK	2.0K	1.7FK	1.9K	NK	1.7K	1.6K	1.7K	1.9K	1.9K	2.0	(2.0)S	(2.0)S	(1.8)SF	(1.8)F	(1.8)SF
13	1.8F	1.8F	1.9F	(1.9)FP	2.0	(2.0)PS	2.3	2.2	2.1	(2.1)S	2.1	2.0	2.1	2.1	1.9	2.1	2.0	2.0	2.1	(2.0)S	2.1	(2.0)SF	(2.0)S	(1.9)FP
14	1.9F	1.9F	2.0F	2.0F	(2.0)J	S	A	A	(2.0)S	2.0	1.6K	1.6K	(1.8)PK	NK	1.9K	1.9K	1.8FK	2.0FK	1.9FK	MK	2.0FK	1.9V	1.8F	1.9
15	1.7F	1.8	1.7	1.8	1.9	(1.9)PS	2.2	2.3	2.1	2.3	2.1	(1.9)JV	(2.1)V	2.1	2.0	2.0	2.0	2.1	(2.1)SB	(2.0)S	2.1	(2.1)SF	(1.9)SP	(1.9)JS
16	1.8	(1.9)JS	1.9	1.9	1.9	(2.0)S	2.3	2.2	2.3	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	(2.1)S	(2.0)S	(2.1)S	(2.0)S	(1.9)S	(1.9)S
17	(2.0)S	1.9	2.1	1.9	2.0	1.9	2.1	2.0	2.1	2.2	(2.2)P	2.1	2.1	2.0	1.9	1.9	2.0	2.0	(2.0)P	(2.0)P	M	(1.9)PS	1.8	1.9
18	A	A	1.6F	1.8F	(2.0)BJ	1.8F	(2.2)V	1.9	2.0	2.0	1.8	1.7	1.9	1.7	1.9K	(1.9)SK	1.9K	1.9K	1.7K	(1.9)SK	1.9K	1.9K	1.7K	(1.5)SK
19	(1.8)SK	1.8FK	(1.7)FK	(1.9)FK	K(1.9)FS	K(1.9)SF	1.9FK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	MK	BK	BK	BK	BK	BK
20	BK	BK	BK	BK	BK	BK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	1.7K	2.0K	1.9FK	1.9FK	1.9FK	1.9FK	1.9FK
21	1.9FK	1.9FK	K(1.9)SF	1.8K	1.7FK	(2.0)SK	2.0FK	2.2F	(2.3)VF	N	(2.3)FH	2.2	1.8F	2.0F	1.9	2.0	2.1F	2.2	2.1	(2.1)SF	1.9F	1.9F	(1.9)SF	1.9F
22	2.0F	2.1F	2.1F	2.1F	(2.0)SF	2.0F	2.2	(1.9)B	G	(1.9)S	1.9	(1.8)S	1.7F	1.7F	1.8F	2.1F	2.1	2.0	2.1F	(2.1)S	(2.0)SF	1.9F	(1.9)SF	1.9F
23	1.9F	1.9F	2.1F	2.1F	2.1F	B	(2.1)P	2.1	2.5	2.1H	(2.0)S	2.0	1.9	1.9	2.0	1.9	2.0	2.0	2.1	(2.1)S	(2.0)S	(1.9)S	1.9	1.9F
24	1.9F	(2.0)SF	2.0	1.9F	2.0F	(1.9)SF	2.4F	2.3F	2.1F	2.1	2.3	(1.8)H	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	(2.1)S	(2.0)S	1.9	1.9F
25	1.9F	1.9F	(1.9)SF	2.0F	2.0F	2.1F	2.3F	2.3	2.4	(2.3)S	1.9V	(2.0)VH	1.9	2.0F	2.1	2.0	2.0	2.1	(2.1)S	(2.1)S	(2.0)S	(2.1)S	(2.0)SF	1.9
26	1.9F	2.0F	2.0F	2.0F	2.1F	2.0F	2.4F	2.4	2.4	2.1	2.1	2.1	2.0	(2.0)S	2.1	2.1	2.0	2.0	2.0	2.1	(2.1)S	2.1F	1.9F	(1.9)S
27	(1.9)SF	(1.9)SF	2.0F	2.0F	2.2F	2.1F	2.1	2.2	2.2	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	(2.1)S	(2.1)S	(2.0)S	(1.9)S	1.9
28	1.9	1.9	2.0F	1.8	1.9F	2.0F	2.2	2.2	2.4V	2.1V	2.2H	2.2	2.0	2.0	1.9	2.0	1.9	2.0	C	C	C	C	C	(1.6)JF
29	1.9F	(1.8)B	F	(2.0)SF	(1.9)S	(2.0)P	(2.4)JS	(2.3)P	2.0	M	2.1	1.9	1.9	1.9	(1.9)S	1.9	(1.9)S	2.0	(2.1)S	(2.0)S	(1.9)S	2.3	(1.8)SP	(2.0)JB
30	1.9	2.0	(2.0)BJ	2.0	2.0	(1.9)SP	(2.1)S	2.2	M	M	2.0	2.0	1.7	2.0	1.9	1.9	2.1	2.1	2.0	(2.0)S	2.1F	(2.0)FP	(1.9)FP	(1.8)FP
31	(2.0)PF	(1.9)F	2.0F	(1.8)FP	2.0F	1.9F	2.3F	(2.3)V	2.2	2.2	2.0H	1.9	1.9	1.8	2.0	2.0	(2.1)P	2.1	2.1	(2.0)S	2.0	2.0	2.0	2.0
Median	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.9	1.9	1.9	2.0	2.0	(2.0)	(2.0)	(1.9)	(1.9)	1.9
Count	29	28	28	29	28	25	30	29	29	28	30	29	30	30	31	31	31	31	28	28	28	29	28	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 48

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

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ____ (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	28	25F	28F	(3.0)J	28F	29F	31	A	A	31	28	29	29	27	28	27	30	28	30	(31)S	(30)A	28	2.7	28V
2	29F	28F	30F	28	28	29	28	29	29	29	(25)S	C	27	27	2.6	(27)S	28	29K	30K	3.2K	(34)SK	28K	(29)SK	26K
3	26K	(2.7)SK	(27)SK	29K	29FK	(29)SK	30K	28K	28K	27K	25K	28K	(25)BK	(23)HK	25K	(26)SK	28K	(29)SK	28K	30	(30)SF	(30)SF	(27)SF	(29)SF
4	(28)JF	2.7F	28F	30F	(30)SF	32F	31	32	(2.7)H	(26)H	(28)H	(28)H	2.5	28	28	(28)S	29	30	29	30	(28)S	(29)S	3.0	28F
5	28F	29F	28F	28F	(29)F	(31)SF	31H	32	32	30	31	30	31	28	29	(30)S	(29)S	29	(30)S	(30)S	(30)S	29	28	(28)S
6	27	28F	28F	27	27	29	31	2.7V	3.1	29	29	2.7H	28	29	29	3.0	29	29	28	30	29	30	3.0	28
7	28	28	2.7	29	(29)F	(24)F	33	26	31	(30)P	27V	N	(24)BK	2.5K	27K	27K	27K	26K	(2.7)SK	K(28)PS	(25)FK	K(23)FP	NFK	K(2.7)FZ
8	K(2.7)PJ	BK	BK	BK	BK	BK	31K	34K	GK	GK	GK	GK	GK	GK	GK	GK	26K	31K	AK	(28)SK	(2.7)FK	(27)FK	(28)FK	K(29)SF
9	2.7FK	2.6K	K(2.4)JB	EK	BK	BSK	29K	GK	GK	(26)PK	K(25)SF	K(2.4)SF	28K	28K	2.7FK	28K	2.7K	27K	K(28)SF	29K	(29)SK	K(29)SF	(28)FK	27K
10	(26)JK	30K	28K	26VK	28K	30FK	GK	GK	GK	GK	SK	2.7K	28K	K(26)SF	24K	23K	26K	28K	28K	(29)PK	K(29)PS	31K	29K	(27)SK
11	26K	27K	29K	28VK	28K	K(29)JP	GK	GK	GK	K(25)JF	29K	GK	(2.3)FK	GK	(25)SK	2.7K	26K	(28)SK	3.0K	(29)SK	(30)SK	(29)FK	K(28)VF	27
12	2.8K	30K	27VK	28K	K(25)JS	SK	K(30)JS	31K	(26)FK	31K	26FK	29K	NK	27K	26K	2.7K	30K	29K	3.1	(3.1)S	(30)S	(2.7)SF	(2.9)F	([illegible])SF
13	26F	25F	29F	(2.9)FP	30	(3.0)PS	3.1	33	31	(3.1)S	32	30	30	30	29	30	30	30	32	(32)S	32	(3.0)SF	(31)S	(2.7)FP
14	29F	28F	29F	29F	(30)J	S	A	A	(29)S	32	26K	2.4K	(27)PK	NK	3.0K	29K	29FK	20FK	2.9FK	MK	30FK	29V	28F	29
15	26F	28	26	2.8	29	(30)PS	33	34	30	34	32	(28)JV	(30)V	30	30	29	30	32	(3.1)SP	(30)S	3.0	(3.1)SF	(29)SP	(2.9)JS
16	28	(29)JS	28	2.9	29	(30)S	33	33	34	30	29	30	30	28	29	30	29	3.1	(31)S	(30)S	(31)S	(2.9)S	(3.0)S	(2.9)S
17	(3.0)S	29	3.1	29	30	28	3.2	3.2	3.1	33	(33)P	31	31	31	2.8	29	30	3.1	(29)P	(3.0)P	M	(3.0)PS	28	2.8
18	A	A	26F	28F	(30)BJ	2.9F	(3.2)V	30	30	30	27	25	29	27	28K	(28)SK	28K	28K	2.8K	(29)SK	2.9K	28K	2.6K	(2.4)SK
19	(28)SK	28FK	(27)FK	(28)FK	(28)FK	K(2.8)SP	29FK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	MK	BK	BK	BK	BK	BK
20	BK	B	BK	BK	BK	BK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	GK	26K	29K	2.9FK	28FK	2.9FK	2.9FK	31FK
21	28FK	29FK	K(29)SF	28K	25FK	(29)SK	31FK	32F	(34)VF	N	(34)FH	33	27F	30F	29	3.1	3.1F	32	32	(32)SF	29F	29F	(2.9)SF	2.9F
22	30F	32F	3.1F	3.2F	(29)SF	30F	32	(28)B	G	(29)S	28	(2.8)S	27F	2.7F	2.7F	3.0F	31	30	31F	(3.1)S	(29)SF	3.0F	(29)SF	28F
23	29F	29F	31F	32F	32F	B	(3.1)P	32	33	31H	(30)S	3.1	3.0	29	3.0	3.0	30	30	3.1	(31)S	(3.0)S	(28)S	29	29F
24	30F	(29)SF	2.9	2.9F	30F	(2.9)SF	35F	33F	3.1F	32	33	(2.7)H	3.0	3.0	30	30	3.0	30	31	3.1	(3.1)S	(3.0)S	28	29F
25	29F	28F	(29)SF	29F	3.0F	3.1F	33F	33	3.4	(3.2)S	2.7V	(29)VH	2.8	3.0F	3.1	3.0	30	3.1	(31)S	(31)S	(30)S	(3.0)S	(2.9)SF	28
26	29F	29F	30F	3.0F	31F	3.1F	34F	34	35	3.1	30	30	3.0	(3.0)S	3.0	3.1	3.0	3.1	3.0	3.1	(3.1)S	3.0F	28F	(2.8)S
27	(29)SF	(29)SF	3.0F	30F	3.2F	3.1F	3.1	32	32	3.1	32	3.1	30	3.0	2.9	2.9	30	3.1	3.1	(30)S	(3.1)S	(3.0)S	(29)S	29
28	28	28	29F	28	29F	30F	32	32	34V	32V	32H	32	3.0	3.0	29	3.0	2.9	3.0	C	C	C	C	C	(2.5)JF
29	2.9F	(28)B	F	(3.0)SF	(28)S	(3.0)P	(34)JS	(33)P	30	M	31	29	29	28	(29)S	29	(2.9)S	30	(3.0)S	(30)S	(2.9)S	33	(2.8)SP	(30)JB
30	2.8	30	(30)BJ	30	29	(2.9)SP	(3.0)S	3.2	M	M	3.1	2.9	26	2.9	29	29	3.0	3.1	3.0	(3.0)S	31F	(2.9)FP	(2.9)FP	(2.8)FP
31	(3.0)PF	(28)F	29F	(28)FF	2.9F	28F	33F	(32)V	32	3.2	29H	29	2.8	2.8	30	3.0	(31)P	3.1	3.1	(3.0)S	3.0	3.0	2.9	2.9
Median	28	28	29	2.9	29	29	3.1	32	3.0	3.0	29	29	2.8	2.8	28	2.9	29	3.0	30	(3.0)	(3.0)	(2.9)	(29)	2.8
Count	29	28	28	29	28	25	30	29	29	28	30	29	30	30	31	31	31	31	28	28	28	29	28	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 49

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

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B.E.B.

Calculated by: B.E.B., McC.

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	A	A	(35)P	(35)P	3.6	38	3.6	3.7	3.6	3.4F	A	A					
2							L	(34)S	3.7	A	A	C	3.7	36	36	34	34	3.3K	LK					
3							QK	LK	35K	38K	3.8K	41K	3.6K	3.6K	(36)SK	33K	3.5K	(33)PK	LK					
4							Q	(3.4)P	3.6H	39	40	3.8	4.1	3.6	38	3.7	3.6	A	Q					
5							Q	L	40	45H	39	3.7	38	39	37	35	36	34	Q					
6							L	3.6	A	3.6	3.7	38	38	3.8	3.8	38	3.5	L	L					
7							L	35V	3.6	36	39	N	3.1K	(36)PK	39K	36HK	3.5HK	(30)PK	3.3K					
8							QK	QK	38K	38K	38HK	K(3.9)SH	38K	4.1K	40K	37K	3.5K	Q	AK					
9							QK	33K	37K	39K	3.8K	3.7K	3.9K	3.7K	39K	38K	34K	34K	LK					
10							2.9K	29K	35K	27K	34K	37K	38K	38K	40K	3.8K	3.4K	3.3K	(3.4)PK					
11							3.1K	3.2K	34K	3.8HK	44K	42K	33K	3.7K	3.8K	36K	35K	36K	LK					
12							QK	(44)SK	37K	3.8K	39K	41K	NK	37HK	37K	41K	37K	(36)PK	L					
13							Q	38	36	3.8	3.7	39	34	A	38P	3.4	A	A	A					
14							A	A	2.8	4.1	40K	39K	38K	40K	46K	48K	36K	AK	AK					
15							Q	Q	L	36	3.7	(3.6)H	38	40	37	34	36	3.7P	3.9					
16							Q	L	A	A	L	38	30	38	34	(36)P	A	L	L					
17							Q	35	(34)P	A	38	40	3.8	3.6	(3.8)H	3.5	3.7	B	B					
18							Q	34P	3.5	39	38	37	40	37	(36)HK	35K	34K	LK	LK					
19							QK	34K	33K	(3.7)FK	3.8K	3.7K	38K	(40)SK	36K	(36)SK	35K	(32)BK	QK					
20							BK	3.2K	33K	(36)SK	3.4K	38K	39K	41K	4.1K	38K	37K	3.3K	LK					
21							QK	L	(40)P	3.9	43	41	38	38F	35	36	(36)P	L	Q					
22							Q	(3.5)B	(37)F	(40)S	37	38	37	36	3.5	37F	3.7	37	L					
23							Q	L	34	38	(4.3)H	(3.8)H	A	37	3.6	37	36	3.5P	L					
24							Q	Q	L	(45)P	(48)P	(51)H	50	51H	49	(47)P	(45)P	L	L					
25							Q	L	L	36	L	34	36	(34)P	35	36	(34)P	L	Q					
26							Q	L	L	L	(3.2)P	34	35	36	(35)P	(34)P	L	L	L					
27							Q	Q	L	36	3.7	3.6	(3.7)P	36	35	3.5P	35	L	Q					
28							Q	L	3.7	L	3.7	3.8	35	3.5P	3.6P	3.5	3.4P	L	C					
29							Q	Q	35	M	35	36	36	35	36	34	35	(34)P	L					
30							Q	L	M	M	3.6	38	38	3.6	36	35	3.4	(36)P	Q					
31							Q	Q	L	35P	39	3.9	3.6	3.7	3.5	35	(36)P	L	L					
Median							—	34	36	38	3.8	3.8	38	3.7	3.7	36	35	34	—					
Count							2	14	21	24	28	29	29	30	31	31	28	15	3					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

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TABLE 50

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)E (Characteristic), ____ (Unit), August (Month), 1950

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., B. E. B.

Calculated by: B.E.B, McC.

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							4.1	3.9	4.3	4.5	A	4.2	4.3	A	A	A	4.1	(4.2)A	A					
2							3.9	4.2	4.2	(4.2)A	A	C	4.1	(4.2)A	4.2	A	A	4.0K	3.8K	(4.1)PK				
3							4.2K	4.3K	4.4K	AK	(4.4)AK	AK	4.3K	4.3K	4.1K	4.1K	3.9K	3.9K	4.3K	A				
4							N	A	A	A	A	A	A	B	4.1	4.4	3.9	4.0	4.0					
5							4.0	4.1	4.0	(4.3)P	4.4	A	A	3.8	3.9	3.7	3.9	4.1	3.9					
6							A	3.9	4.1	(4.2)P	4.5	4.1	A	4.1	4.3	4.3	A	A	3.8					
7							A	2.7	A	A	3.3	A	3.4K	3.6K	3.6K	3.4K	3.2K	2.9K	2.3FK					
8							2.0K	3.1K	3.9K	3.3K	3.4K	(3.4)AK	(3.5)AK	3.3K	3.4K	3.3K	3.0K	2.5K	2.4K					
9							BK	4.2K	4.1K	AK	4.6K	4.1K	4.2K	4.3K	4.2K	4.3FK	4.1K	4.1K	4.2K					
10							AK	3.8K	3.8K	AK	4.2K	AK	4.4K	4.3K	4.6K	4.2K	4.2K	BK	BK					
11							4.1K	(4.1)BK	4.3K	BK	BK	(4.4)BK	(4.4)BK	4.1K	4.0K	3.9K	3.8K	4.1K	3.7K	4.0K				
12							(3.9)SK	AK	4.0K	4.5K	4.2K	4.2K	BK	4.4K	4.7K	4.4K	4.2K	3.9K	3.9					
13							4.4	(5.0)F	4.6	6.0	(4.8)B	(4.7)B	A	A	A	(4.9)B	4.5	(4.5)P	B					
14							A	(4.4)A	A	4.3	AK	AK	AK	AK	4.1PK	AK	AK	4.1K	4.1K					
15							A	(4.0)A	A	4.2	4.2	4.4	4.1	B	4.1	4.2	4.2	4.1	4.1					
16								4.2	4.3	4.2	A	A	4.2	A	A	B	A	4.0	A					
17								4.4	(4.3)A	4.3	B	A	4.2	3.9	4.0	4.2	4.3	B	B					
18							(3.5)H	4.2	4.2	4.4	(4.4)A	A	A	4.2	3.9K	4.0K	4.1K	(3.8)PK	(4.0)BK					
19							4.0K	(4.0)AK	4.0K	BK	BK	(4.2)BK	(4.1)BK	(4.1)SK	4.2K	4.2K	AK	BK						
20							BK	BK	AK	(4.1)SK	4.5K	(4.2)BK	AK	AK	4.2K	4.2K	4.0K	BK	3.8K					
21							3.8K	4.4	4.3	B	A	A	4.3	(4.3)A	4.3	4.3	4.2	B						
22								B	A	A	4.3	4.2	B	4.2	A	4.1	(4.0)A	B	B					
23							B	B	4.3	4.2	4.5	(4.4)A	A	A	(4.2)A	F	(4.0)S	4.2	B					
24								B	4.2	(4.3)A	A	A	A	(4.5)F	4.5	4.3	4.2	F	S					
25							3.8	4.1	(4.3)B	S	B	A	A	A	4.2	4.1	A	(4.2)F						
26							(4.0)A	4.2	4.3	4.4	A	A	(4.2)A	4.3	4.3	4.3	4.5	4.4	A					
27							4.1	(4.3)A	(4.4)A	A	A	4.3	A	4.3	4.1	4.1	3.9	(4.1)A	(4.4)A					
28							B	B	4.4	A	4.4	(4.5)A	4.0	4.3	4.3	(4.3)S	B	4.2	C					
29							(4.1)B	4.0	(4.2)B	M	4.2	B	(4.2)B	B	B	(4.4)S	(4.3)S	4.6	B					
30							4.4	4.4	M	M	4.3	(4.4)P	4.4	(4.1)P	4.2	4.2	4.1	B	B					
31							3.9	4.1	(4.3)A	4.5	A	(4.6)A	4.5	(4.4)F	(4.4)B	(4.5)B	4.2	4.3	B					
Median							4.0	4.2	4.3	4.3	4.4	(4.2)	4.2	4.2	4.2	4.2	4.1	4.1	3.9	–				
Count							17	24	24	17	17	16	18	21	26	26	24	22	15	2				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 51

Ionospheric Storminess at Washington, D. C.

August 1950

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	1	3			3	3
2	2	2	2200	----	2	3
3	4	4	----	2400	4	3
4	2	3			3	2
5	1	3			1	2
6	0	2			2	3
7	2	4	1700	----	4	5
8	5	6	----	----	6	3
9	4	4	----	----	5	4
10	4	4	----	----	4	4
11	4	5	----	----	4	4
12	4	4	----	2300	5	3
13	2	1			3	3
14	1	4	1500	----	3	4
15	2	2	----	0200	4	2
16	2	3			3	2
17	0	2			2	1
18	2	3	1900	----	2	3
19	4	6	----	----	5	7
20	#	6	----	----	9	3
21	4	2	----	1200	3	2
22	0	3			1	2
23	1	1			2	2
24	0	3			1	1
25	1	2			2	1
26	1	3			1	1
27	1	1			1	2
28	1	1			2	3
29	3	3			3	3
30	3	3			3	3
31	2	1			2	2

*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.

#No I-figure owing to insufficient data; conditions probably severely disturbed.

Table 52

Provisional Radio Propagation Quality Figures

(Including Comparisons with CRPL Warnings and Forecasts)
July 1950

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

Score:	Warning N.A.	Warning N.P.	Forecast N.A.	Forecast N.P.
H	12	6	0	0
(M)	0	0	0	0
M	0	1	7	4
G	45	44	45	48
O	5	11	10	10

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

**In addition to dates marked X, the following were designated as probable disturbed days on forecast more than eight days in advance of said dates: July 6, 7, 27 and 28.

Thru error the "W" was broadcast by WWV from 2010 July 8 to 2009 July 9.

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 ≤ 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

Table 53

American and Zürich Provisional Relative Sunspot Numbers

August 1950

Date	R_A*	R_Z**	Date	R_A*	R_Z**
1	104	94	17	135	106
2	128	110	18	134	93
3	113	106	19	148	114
4	104	84	20	129	113
5	97	90	21	119	103
6	103	83	22	128	95
7	104	76	23	142	115
8	90	72	24	118	103
9	99	70	25	117	92
10	100	75	26	91	77
11	93	70	27	66	76
12	121	74	28	67	55
13	106	84	29	85	58
14	92	68	30	72	58
15	100	80	31	81	54
16	124	93	Mean:	106.8	85.2

*Combination of reports from 44 observers; see page 8.

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

Table 54a

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
1950																																					
Aug. 1.6	-	4	6	6	8	7	5	5	5	6	7	8	9	9	9	8	8	7	6	6	8	12	21	20	12	8	7	5	5	4	4	4	3	3	3	3	3
2.6	-	-	-	-	-	-	-	3	3	5	8	7	7	7	7	4	4	6	6	4	6	10	15	17	12	8	3	3	-	-	3	3	3	-	-	-	-
3.8	-	-	-	-	-	-	3	4	6	7	8	10	12	12	12	9	6	4	4	5	7	12	14	15	12	8	6	5	4	4	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	5	6	10	6	-	-	-	5	8	10	10	10	9	6	-	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	3	3	3	3	5	13	15	15	14	11	8	6	4	4	6	7	3	5	5	4	3	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	4	5	5	6	7	8	10	13	14	12	9	4	4	4	4	4	3	3	3	3	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	3	3	3	4	5	5	8	10	14	16	13	9	5	4	4	5	3	-	-	-	3	3	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	3	4	4	4	4	5	9	15	20	18	12	7	6	5	5	4	4	3	3	3	-	-	-	-	-	-	-	-	-
12.6	2	2	2	2	2	2	2	1	1	3	5	9	13	14	15	15	15	14	15	12	11	10	6	5	4	2	2	1	2	2	2	2	1	-	-	-	-
13.6	-	-	-	-	-	-	-	2	2	3	5	7	10	13	15	17	21	27	25	20	23	28	18	12	6	3	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	2	2	3	4	5	7	9	11	13	15	16	13	18	22	23	24	7	3	2	-	-	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	4	5	6	9	12	11	10	10	12	15	20	14	7	4	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	3	3	4	6	5	3	3	4	8	8	6	5	8	14	17	15	10	4	3	-	-	-	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	7	9	12	12	10	8	7	6	6	6	7	9	12	9	11	6	-	-	-	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	4	4	5	6	11	17	13	15	13	9	5	7	10	14	17	20	16	13	9	6	4	-	-	-	-	-	-	-	-	-	-
19.7a	X	-	-	-	-	-	-	-	-	9	10	11	12	11	9	-	-	-	-	-	10	11	9	-	-	X	X	X	X	X	X	X	X	X	X	X	X
20.7	-	-	-	-	-	-	-	-	6	6	6	8	10	12	12	10	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	3	4	6	8	9	11	14	15	16	16	12	8	8	8	6	4	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	9	9	10	11	14	15	14	12	10	9	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	9	10	10	10	10	10	9	12	12	15	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8	X	X	X	X	X	X	X	-	-	3	3	4	6	10	10	9	11	9	8	15	20	13	10	9	8	X	X	X	X	X	X	X	X	X	X	X	X
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	7	10	12	10	7	5	-	5	7	5	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	4	4	5	6	9	9	6	5	5	4	4	4	5	13	20	18	9	6	4	3	3	2	2	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	3	3	3	4	5	6	6	4	3	3	3	3	3	3	6	12	7	3	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	3	5	8	6	4	3	3	4	5	4	5	6	8	6	3	3	-	-	-	-	-	-	-	-	-

Table 55a

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
1950																																					
Aug. 1.6	-	-	-	-	-	-	-	-	-	-	-	2	2	2	1	1	-	-	1	1	3	10	12	6	2	2	1	1	-	-	1	1	2	2	1	1	-
2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	4	8	1	-	-	-	1	2	2	2	2	1	1	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	1	-	1	3	1	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	1	1	1	-	1	1	3	1	5	1	1	1	1	2	1	1	-	-	-	-	-	-	-	-	-	-	1	2
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	4	2	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
12.6	2	3	2	1	1	1	1	2	6	2	2	1	2	2	1	1	2	6	5	4	2	4	2	2	1	2	2	1	1	2	2	1	1	1	2	2	2
13.6	3	1	1	1	1	1	2	2	5	4	1	-	-	-	-	1	2	8	6	1	12	15	4	2	2	2	1	1	2	2	2	1	1	1	1	1	1
14.7	2	2	1	1	1	1	1	1	3	3	1	1	-	1	1	2	4	8	4	4	11	12	16	12	3	1	1	1	1	3	2	1	1	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	2	12	2	9	4	2	-	-	-	-	-	2	2	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	9	11	6	2	1	-	-	-	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	3	5	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	1	11	2	1	4	5	2	1	-	1	9	12	9	6	1	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	8	6	3	2	3	3	2	2	1	1	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8	X	X	X	X	X	X	X	-	-	1	1	2	2	1	1	1	4	1	1	8	1	2	1	-	-	X	X	X	X	X	X	X	X	X	X	X	X
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	1	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	1	9	4	1	-	-	-	-	1	1	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 54b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	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
1950																																					
Aug. 1.6	3	3	-	-	-	-	-	-	-	-	3	3	7	11	13	20	15	13	12	17	25	15	12	10	6	9	9	7	4	4	-	-	-	-	-	-	-
2.6	-	-	-	-	-	-	-	-	-	-	-	-	4	7	8	15	12	8	8	12	15	12	8	7	7	7	6	5	3	3	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	5	6	9	10	10	10	10	9	10	12	12	13	11	9	6	5	4	4	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	6	6	6	7	8	10	10	8	8	8	8	8	8	9	7	6	6	6	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	-	-	-	-	4	4	4	6	7	7	7	8	9	11	15	13	11	10	6	5	6	4	3	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	4	4	8	12	13	15	14	12	9	6	5	5	4	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	-	5	5	5	5	7	8	8	10	9	7	15	18	18	15	11	9	6	5	5	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	3	4	4	5	6	9	15	16	14	18	15	16	17	18	17	13	9	5	4	3	3	3	-	-	-	-	-	-	-
12.6	-	-	-	-	-	3	3	3	4	3	4	4	4	7	12	15	13	15	12	10	4	9	9	5	4	3	-	-	-	-	-	-	-	-	-	-	2
13.6	-	-	-	2	3	3	4	6	7	9	10	12	13	13	16	19	17	13	12	10	6	4	6	7	4	3	2	2	2	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	2	2	3	6	10	15	18	20	15	12	7	5	5	5	5	5	5	5	4	3	2	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	5	6	8	12	13	15	14	9	6	4	4	4	4	5	5	5	4	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	4	4	4	5	6	9	12	16	17	16	12	10	5	5	5	5	5	5	7	7	6	5	4	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	4	4	5	6	7	12	9	6	5	5	5	6	7	7	7	6	5	4	4	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	3	4	6	8	12	13	14	15	7	3	4	6	11	10	9	7	6	5	5	5	5	-	-	-	-	-	-	-
19.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	8	7	5	7	10	10	12	12	15	14	10	6	5	5	5	5	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	6	15	25	25	21	17	15	11	8	7	5	4	4	4	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	17	18	18	12	10	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	10	12	14	10	9	-	-	-	-	-	-	-	-	-	-	-	-
24.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
27.8	-	-	-	-	-	-	-	-	-	-	-	-	3	4	10	13	15	11	6	9	10	12	12	10	5	3	3	2	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	3	5	11	18	20	14	12	15	17	18	16	12	8	6	4	3	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	5	6	5	4	5	8	6	8	5	4	3	2	2	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	3	6	10	12	11	8	6	5	5	5	5	5	5	5	-	-	-	-	-	-	-	-	-	-	-

Table 55b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	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
1950																																					
Aug. 1.6	-	-	-	-	-	-	-	-	-	2	3	2	4	5	11	14	17	5	3	5	8	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6	-	-	-	-	-	-	-	-	-	-	-	1	1	3	6	10	12	3	1	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	1	1	2	1	1	1	2	4	11	1	-	-	1	3	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	1	1	1	1	1	2	10	1	-	-	1	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	-	-	1	1	1	1	1	2	2	5	1	-	1	2	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	1	1	3	2	2	4	2	2	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6	2	1	1	-	-	-	-	-	-	-	1	2	2	2	3	1	3	3	5	3	11	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	1	2	2	1	4	3	5	12	4	5	8	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.6	2	2	2	2	2	2	3	3	2	1	-	-	-	-	1	3	1	6	8	7	6	2	1	-	-	-	-	-	-	-	1	1	-	1	2	2	2
13.6	1	1	1	2	2	2	3	2	1	1	2	2	2	1	8	12	6	2	2	1	2	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	3
14.7	-	-	-	-	-	1	2	1	-	1	1	1	2	1	11	8	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	1	2	2	1	1	1	1	4	1	1	2	2	1	1	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	1	3	2	1	-	-	1	4	7	7	4	2	1	1	6	1	-	-	-	-	-	1	2	2	1	-	-	-	-
19.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	2	2	1	1	1	4	1	1	2	2	2	4	4	3	1	1	-	-	-	-	-	-	-	-	-	-	1	2
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
27.8	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	3	4	2	1	1	1	6	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	1	1	1	-	-	-	-	1	5	11	6	1	1	1	3	4	3	2	1	2	2	1	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 56a

Coronal observations at Climax, Colorad^ (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
1950																																					
Aug. 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-
2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	2	1	-	-	1	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	1	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8	X	X	X	X	X	X	X	-	-	-	-	-	-	1	1	2	2	1	1	3	2	1	1	-	-	X	X	X	X	X	X	X	X	X	X	X	X
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 57a

Coronal observations at Sacramento Peak, New Mexico (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
1950																																					
Jul. 2.8	-	-	-	-	-	-	-	-	3	4	5	7	9	12	13	15	16	13	8	8	5	7	5	9	4	7	8	9	8	6	6	5	3	2	-	-	-
3.7	-	-	-	-	-	-	-	-	-	4	6	8	13	12	13	14	15	12	9	5	10	10	10	12	14	13	9	8	4	4	3	-	-	-	-	-	-
8.7	-	-	-	-	-	4	11	13	12	9	11	16	22	34	35	37	30	17	14	15	24	37	40	28	18	17	18	12	10	9	8	7	9	4	3	-	-
13.9	-	-	-	-	-	3	3	4	5	7	8	9	9	11	15	26	39	30	21	16	14	16	15	11	7	-	-	3	4	3	5	5	-	-	-	-	-
14.6	-	-	4	4	4	4	5	6	6	8	9	9	9	13	15	28	36	20	17	15	12	14	14	10	8	4	-	-	-	2	3	4	-	-	-	-	-
15.7	-	-	-	-	-	-	3	3	4	6	6	7	11	13	15	18	25	17	13	13	13	14	13	12	10	4	4	-	-	-	-	-	-	-	-	-	-
16.9	-	-	-	-	-	-	4	8	5	7	11	12	14	13	18	29	28	24	20	15	12	17	20	16	14	11	8	-	-	-	-	-	-	-	-	-	-
17.8	-	-	-	-	3	3	5	4	5	9	14	13	13	13	26	30	29	27	22	17	13	15	17	27	13	11	8	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	3	2	6	7	9	10	13	14	14	12	18	30	33	28	22	18	25	20	25	32	14	13	9	2	-	-	-	-	-	-	-	-	-
19.8	-	-	-	2	3	6	9	9	9	12	14	14	14	14	12	22	29	28	23	15	18	30	28	18	13	11	10	8	4	X	X	X	X	X	X	X	X
20.9	-	-	-	-	-	3	4	6	8	9	10	10	12	12	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
25.8	-	-	-	-	-	2	3	-	3	14	16	11	14	18	26	37	38	31	26	13	10	9	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26.9	-	-	-	-	-	-	-	-	4	8	10	9	12	14	15	26	34	25	19	12	4	4	3	5	9	8	4	4	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	3	6	10	10	10	12	14	26	25	40	24	19	14	12	14	13	11	10	9	3	4	3	2	-	-	-	-	-	-	-
29.6	2	2	1	-	2	2	4	4	6	6	4	6	9	9	16	14	15	14	18	14	25	22	24	15	10	9	8	6	8	6	3	2	2	2	2	-	-

Table 56b

Coronal observations at Climax, Colorado (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
1950																																					
Aug. 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	1	2	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 57b

Coronal observations at Sacramento Peak, New Mexico (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
1950																																					
Jul. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	2	7	14	13	18	12	12	13	20	23	20	20	12	12	11	9	9	3	3	2	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	5	9	15	20	27	15	14	16	20	35	37	23	13	14	13	11	4	3	-	-	-	-	-	-	-
8.7										4	5	9	10	11	14	21	38	25	16	25	33	31	35	34	16	17	22	27	26	15	12	12	5	2	-	-	-
13.9	-	-	3	3	2	3	4	4	4	4	4	5	7	6	7	8	10	10	11	22	26	36	39	23	14	15	13	11	11	11	9	4	-	-	-	-	-
14.6	-	-	-	2	3	4	4	5	3	4	6	7	6	6	6	8	10	11	12	20	33	36	33	27	14	12	14	12	9	9	5	3	2	3	-	-	-
15.7	-	-	-	-	-	3	5	5	4	7	7	10	9	7	4	6	13	15	12	13	14	30	20	16	14	12	11	9	5	4	3	3	-	-	-	-	-
16.9a	-	-	-	-	-	-	-	3	4	5	4	11	11	13	8	8	10	15	12	8	10	14	14	13	11	8	8	5	4	4	3	2	2	-	-	-	-
17.8	-	-	-	-	-	-	4	4	5	11	14	14	16	20	18	14	15	14	13	8	10	13	13	13	13	12	10	8	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	2	3	5	4	3	4	14	14	18	27	33	36	18	12	11	11	11	11	13	14	13	13	13	10	4	3	-	-	-	-	-	-	-
19.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4	4	3	2	-	-	-	-	-
20.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	7	5	5	3	-	-	-	-	-
25.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	9	5	4	4	2	-	-	-
26.9	-	-	-	-	-	-	-	-	-	-	3	2	3	4	5	9	11	11	13	14	23	22	24	20	13	12	10	10	11	11	8	5	5	4	2	-	-
27.6	-	-	-	-	-	-	-	4	3	4	4	3	4	5	9	13	14	13	15	17	26	35	42	17	11	10	8	11	13	11	9	8	4	5	4	3	-
29.6	-	-	-	-	-	-	2	2	2	2	-	-	4	10	14	14	14	14	14	18	22	31	34	34	20	10	5	5	5	8	9	5	7	7	4	4	2

Table 58a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	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
1950																																					
Jul. 2.8	-	-	-	-	-	-	-	-	-	-	-	3	3	2	-	-	-	8	11	-	-	8	2	2	3	3	-	-	3	3	3	4	4	3	2	3	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	10	5	5	4	3	3	7	5	3	-	-	-	-	-	-	-	-	-	-
8.7	2	1	2	4	3	4	3	2	-	-	-	-	5	15	18	15	14	4	2	2	6	9	8	4	3	-	-	-	3	2	2	3	3	3	2	3	3
13.9	2	4	4	3	4	3	3	9	11	3	-	4	6	5	5	10	13	11	12	11	5	3	3	2	4	5	4	3	-	5	2	1	-	-	-	-	-
14.6	-	4	2	2	1	-	1	3	3	-	4	1	2	2	3	10	13	16	13	12	5	4	3	2	3	2	2	1	3	4	2	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	2	1	4	3	2	3	3	11	5	13	8	4	5	7	4	3	-	-	-	3	2	2	4	2	-	-	-	-	-
16.9	-	-	4	3	-	2	-	3	2	3	2	4	-	-	4	4	8	15	12	4	5	11	11	4	2	4	4	-	-	-	-	-	-	-	-	-	-
17.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	17	11	7	13	12	10	9	7	-	-	-	4	4	3	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	9	13	4	10	18	15	17	10	4	4	4	-	4	4	-	-	-	-	-	-
19.8	2	4	3	2	3	5	7	3	-	1	-	-	-	-	4	2	4	5	11	9	14	28	26	22	13	8	5	3	-	X	X	X	X	X	X	X	X
20.9	1	3	2	3	3	2	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
25.8	-	2	2	3	4	3	-	1	2	-	-	-	-	-	3	4	13	13	9	3	8	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26.9	2	2	-	2	5	3	2	2	2	3	2	-	-	-	2	8	15	10	8	7	7	5	4	7	8	11	5	3	3	-	-	-	-	-	-	-	-
27.6	3	3	2	4	2	2	2	2	2	1	3	2	2	3	-	-	22	15	4	5	8	12	9	4	9	9	9	4	5	3	3	3	2	4	3	3	2
29.6	2	2	2	2	2	3	1	3	2	2	3	3	2	-	-	1	4	4	3	2	9	9	10	3	3	2	3	2	-	-	-	-	-	-	-	-	-

Table 59a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	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
1950																																					
Jul. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	4	2	-	-	-	2	3	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	4	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.9	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	4	2	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
19.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	-	-	-	-	-	-	X	X	X	X	X	X	X	X
20.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
25.8	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	4	5	4	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
26.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	4	4	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 58b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	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
1950																																					
Jul. 2.8	-	-	-	-	-	-	-	-	2	2	2	2	2	3	6	13	15	13	9	15	17	15	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	3	3	3	-	-	3	5	11	17	18	21	2	14	18	13	11	-	-	-	-	-	-	3	4	5	-	-	-	-	-
8.7	3	2	3	3	3	3	4	4	4	5	4	3	4	3	3	6	17	5	4	5	13	14	10	-	-	-	-	-	-	-	3	2	2	2	2	2	2
13.9	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	-	-	6	7	4	9	14	16	4	5	-	-	-	4	3	3	2	2	1	-	4	2
14.6	-	-	-	-	-	2	2	3	3	2	-	3	2	3	3	3	3	4	2	3	12	17	12	-	-	-	-	-	5	4	-	4	4	1	2	-	-
15.7	-	-	-	-	-	2	5	3	3	3	3	3	-	-	2	3	8	15	-	7	-	14	10	-	2	-	4	3	-	-	-	-	-	-	-	-	-
16.9a	-	-	-	-	-	-	2	2	2	3	5	5	3	5	3	6	9	13	14	2	3	5	4	-	-	-	-	-	-	-	-	4	3	2	-	-	-
17.8	-	-	-	-	-	3	1	2	3	4	4	3	2	3	8	9	14	5	-	-	4	4	3	-	3	2	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	3	3	-	3	4	5	4	4	-	4	3	9	15	9	4	-	-	3	2	-	4	2	1	3	3	-	-	-	-	-	-	-	-	-
19.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	2	2	2	-	3	2	3	3	2
20.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	-	3	2	3	3	2	2	1
25.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	2	2	2	3	4	3	3	-
26.9	-	-	-	-	-	-	-	-	-	-	-	3	2	2	10	9	8	8	9	10	10	23	10	2	-	4	-	-	-	-	-	-	1	2	2	1	2
27.6	3	1	2	2	3	1	3	3	3	3	4	4	3	5	4	4	5	5	-	8	11	15	15	4	2	3	3	2	3	4	3	3	4	2	2	3	3
29.6	-	-	2	2	-	2	3	3	3	4	4	4	6	9	4	4	10	3	3	5	10	6	6	4	2	-	-	2	3	4	2	2	-	2	1	2	2

Table 59b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	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
1950																																					
Jul. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	2	2	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	3	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	3	4	2	-	-	2	2	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
16.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-
20.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-
25.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
26.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table [illegible]

Particulars of Observ[illegible]to Peak, N[illegible]
February-June 1950

Date GCT	Greenline threshold intensity at								Obs.	Meas.
	0°	45°	90°	135°	180°	225°	270°	315°		
1950										
Feb. 1.7	10	8	10	11	10	11	11	11	C	S
2.9	--	--	--	--	12	14	12	12	C	S
3.7	11	11	11	12	10	10	10	10	C	S
4.7	9	10	10	9	10	9	10	10	C	S
5.9	11	10	11	13	12	13	13	13	C	S
6.8	8	7	8	10	9	11	10	10	Ra	S
7.7	9	8	9	11	11	11	10	10	Ra	S
8.9	8	6	7	7	8	8	7	7	C	S
14.9	8	7	7	8	[illegible]	9	8	8	C	S
15.9	9	9	9	10	10	11	10	10	C	S
16.9	9	9	10	11	10	10	10	11	C	S
17.9	10	[illegible]	10	10	11	11	11	11	C	S
18.9	12	12	[illegible]	13	14	14	14	14	C	S
21.8	8	7	7	13	8	8	8	9	Ra	S
22.8	9	8	8	8	9	9	9	9	C	S
23.9	11	11	10	11	10	10	10	9	Ra	S
24.7	7	7	7	8	8	8	8	8	Ra	S
25.8	5	5	5	7	6	6	7	11	C	S
27.9	>15	14	14	13	>15	15	15	15	C	S
28.7	11	9	>15	>15	7	11	12	12	C	S
Mar. 3.8	5	5	4	4	5	5	5	4	C	S
4.7	7	7	6	6	6	6	6	5	C	S
5.7	7	6	6	6	5	6	6	6	C	S
7.7	8	8	7	7	10	11	10	9	C	S
8.8	5	5	4	4	5	5	6	5	Ra	S
9.7	4	5	5	4	4	4	5	5	C	S
11.7	4	4	4	4	5	5	5	5	Ra	S
13.7	6	5	5	5	6	6	5	12	C	S
15.7	7	8	7	6	6	7	7	7	C	S
17.7	5	6	6	5	5	5	5	6	C	S
20.8	10	9	8	8	[illegible]	10	10	9	C	S
21.9	8	9	9	9	11	10	10	10	C	S
22.7	4	5	4	5	4	5	5	5	C	S
23.7	10	11	11	11	10	11	13	14	C	S
24.7	3	4	4	4	5	5	5	5	C	S
28.7	11	12	11	10	11	12	12	12	Ra	S
29.7	6	6	5	5	5	7	6	6	C	S
31.7	9	14	11	>15	10	11	11	10	C	S
Apr. 2.7	8	8	8	8	9	10	10	9	C	S
3.9	8	7	9	11	10	8	10	9	C	S
4.9	13	14	14	>15	>15	>15	15	15	C	S
9.7	9	8	13	9	10	9	10	9	C	S
10.7	4	4	4	5	5	4	4	4	C	S
11.8	12	11	9	9	11	11	11	13	C	S
13.8	7	7	7	8	8	7	7	7	C	S
14.7	7	6	5	6	5	5	6	6	C	S
15.8	7	6	6	7	6	5	5	6	C	S
16.8	6	6	6	7	7	9	6	7	C	S
17.7	4	4	4	5	4	5	4	4	C	S
18.7	6	5	6	6	7	6	6	5	C	S

Date GCT	Greenline threshold intensity at								Obs.	Meas.
	0°	45°	90°	135°	180°	225°	270°	315°		
1950										
Apr. 19.8	11	11	11	13	12	13	15	13	C	S
20.7	7	7	8	9	9	8	8	7	C	S
21.7	[illegible]	8	8	8	10	9	9	8	C	S
23.6	[illegible]	12	[illegible]	[illegible]	>15	>15	14	13	C	S
24.7	10	9	9	10	8	11	12	13	C	S
26.8	7	6	7	9	9	9	9	7	C	S
27.7	7	7	6	6	8	7	7	8	Ra	S
28.7	>15	13	12	12	14	12	11	10	C	S
29.7	5	5	5	5	6	6	6	6	Ra	S
30.6	6	6	5	6	7	6	6	5	C	S
May 1.9	13	11	11	13	15	14	13	13	Ra	Ro
2.7	6	6	6	7	7	6	6	4	C	Ro
3.7	--	--	--	--	8	8	7	7	C	Ro
5.7	8	7	8	10	9	8	7	6	C	Ro
6.7	5	6	[illegible]	6	7	7	6	5	Ra	Ro
7.6	[illegible]	7	7	7	8	7	8	8	C	Ro
9.7	7	6	6	6	-	-	-	-	C	Ro
11.7	11	10	10	11	11	11	11	12	Ra	Ro
13.7	8	8	9	13	11	9	10	8	C	Ro
15.7	10	10	11	13	14	12	10	8	C	Ro
16.8	14	13	13	>15	14	14	13	13	Ra	Ro
17.7	11	12	14	>15	15	14	>15	11	C	[illegible]
18.7	7	7	8	8	8	7	8	7	Ra	Ro
25.6	10	8	9	6	8	8	10	9	Ra	Ro
27.8	12	11	12	15	15	13	12	11	Ra	[illegible]
28.8	10	9	11	12	12	11	10	9	Ra	[illegible]
29.7	10	9	9	9	11	10	9	8	Ra	Ro
30.6	6	6	5	6	7	7	7	6	Ra	Ro
Jun. 2.8	11	11	10	11	10	10	10	10	Ra	E/Ro
5.0	11	11	12	13	13	12	12	13	[illegible]	E/Ro
5.6	5	5	4	5	5	5	5	4	[illegible]	E/Ro
6.8	7	7	7	10	11	11	11	12	Ra	E/Ro
7.7	11	9	8	7	8	8	7	7	Ra	E/Ro
8.6	7	7	7	6	7	7	6	6	Ra	E/Ro
9.8	9	9	9	10	11	9	13	12	Ra	E/Ro
10.7	7	6	6	8	8	8	8	6	Ra	E/Ro
11.8	12	11	10	10	11	10	10	11	Ra	E/Ro
12.8	9	7	8	8	8	8	8	7	Ra	E/Ro
13.8	8	7	8	8	10	8	8	7	Ra	E/Ro
14.7	9	8	9	10	10	9	8	8	C	E/Ro
15.7	10	8	9	8	10	9	8	8	Ra	E/Ro
16.7	9	8	9	9	10	10	10	9	Ra	E/Ro
17.7	9	8	9	10	11	9	9	8	Ra	E/Ro
18.9	13	13	13	15	15	14	13	12	C	E/Ro
20.8	11	9	7	7	7	8	8	8	Ra	E/Ro
21.9	13	12	11	13	15	14	15	15	Ra	E/Ro
23.8	9	11	10	14	14	12	14	11	C	E/Ro
24.7	6	6	6	6	8	6	7	6	Ra	E/Ro
28.7	12	11	11	12	13	12	12	12	Ra	E/Ro

C = Cook
E = Evans
Ra = Ramsey
Ro = Roberts
S = Schnable

Table 61

Outstanding Solar Flares, May 1950

Observatory	Date 1950	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) (of Sun's) (Disk)	Position Longitude (Deg)	Position Latitude (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Max (Tenths)	Importance	SID Observed
Boulder	May 1	1827	1902		910	E25	N14	1845	15	5		Yes
McMath	" 1	1850				E23	N15				2	Yes
Meudon	" 3	0950				E05	N15				3	Yes
Stockholm	" 3	0956				E05	N15					Yes
Boulder	" 3	1705	1750		130	W05	N14	1716	8			Yes
"	" 3	2207			190	E04	N16					
Wendelstein	" 5	0548	0711		1309*	W27	N13	0611			2	Yes
Boulder	" 5	1720	1815		504	W27	N18	1744	15	3		Yes
"	" 5	1935	2000	25	242	W32	N17	1950	9	6		Yes
Wendelstein	" 6	1242	1248		679*	E79	N04				2	
McMath	" 6	1330				W41	N16				2	Yes
Wendelstein	" 6	1340	1343		145*	W43	N12				1	Yes
Boulder	" 6	1400	1435		485	W43	N13	1403	8	3		Yes
McMath	" 6	1450				W40	S11				1	Yes
Boulder	" 6	1635	1720	45	176	E73	N07	1638	12	4		
"	" 6	1730	1750		132	E76	N08	1740	8	5		
"	" 8	203[illegible]	2135		508	E46	N03	2042	10	4		Yes
Wendelstein	" 9	0520	0554		242*	W74	N18	0525			2-	
Boulder	" 9	1520	2124		1480	E43	N08	2102	20	5		
"	" 10	1505	1800	175	478	E22	N06	1552	15	6		
Meudon	" 11	0937				E15	N05				1	
Boulder	" 12	1457	1510	13	632	E00	N07	1459	10	3		
"	" 12	1630	1945		695	E03	N03	1700	8	3		
Wendelstein	" 12	1748	1758		339*	E04	N05				1	
Boulder	" 13	1735	1815		398	W13	N04	1744	10	2		
"	" 13	1815	1900		468	W11	N05	1816	10	5		
"	" 16	1950	2020	30	176	W64	S03	2003	6	7		
"	" 18	1620	1840		176	E30	S14	1655	8	5		
"	" 18	1900	1955		353	E30	S14	1912	8	4		
McMath	" 19	1210				E36	S14				1 +	Yes
Boulder	" 19	1430	1443	13	202	E23	S14	1435	10	5		
Wendelstein	" 20	0647	0703		436*	E84	N08	0651			1 +	
"	" 20	0654	0711	17	291*	E35	S18	0658			1	
"	" 20	0724	0754	30	242*	E84	N08	0728			1-2	
Boulder	" 20	1349	1440		164	E79	N12	1352	14	5		
"	" 20	1510	1535		708	E26	S14	1512	15	6		
McMath	" 20	1624				E85	N10				1	
Boulder	" 20	1805	2020	135	1430	E24	S15	1811	20	4		Yes
McMath	" 20	1816				E26	S17				2 +	Yes
"	" 20	1816				E85	N10				1	Yes
Boulder	" 20	2040	2140		154	E79	N12	2001	10	6		
"	" 20	2140	2300	80	198	E79	N12	2210	10	6		
Wendelstein	" 21	0641	0704		291*	E70	N09				1	
Boulder	" 21	1545	1635	50	110	E17	S16	1550	8	6		
"	" 21	1745	1815	30	220	E15	S20	1758	8	7		Yes
"	" 21	2105	2150	45	203	E65	N08	2118	15	4		
"	" 21	2340	2400	20	248	E56	N09	2345	15	7		
Wendelstein	" 22	0736	0801	25	242	E55	N05	0744			2	
"	" 22	0933	1018	45	485	E55	N07	0938			1-2	Yes
Prague	" 22	0937				E15	N15				3	Yes
Boulder	" 22	1350	1445	55	662	E51	N06	1404	25	8		Yes
McMath	" 22	1357	----			E54	N09	1407			2 +	Yes
Boulder	" 22	1600	1615	15	177	E49	N09	1607	10	6		Yes
"	" 22	1640	1805	85	354	E49	N14	1706	10	6		Yes
"	" 22	2040	2105	25	266	E43	N11	2044	15	5		Yes
"	" 22	2200	2345	105	464	E49	N14	2217	35	7		Yes
Wendelstein	" 23	1352	1409	17	242*	E35	N08	1357			1	Yes
Boulder	" 23	1355	1435	40	243	E43	N08	1359	15	5		Yes
"	" 23	1457	1531	34	221	E33	N07	1505	10	6		
"	" 23	1525	1535	10	176	E38	N10	1526	8	4		
"	" 23	1625	1645	20	198	E34	N08	1630	10	4		
"	" 23	2025	2155	90	418	E37	N08	2032	10	3		
"	" 23	2155	2212	17	176	E29	N07	2201	15	8		Yes
"	" 30	2255	2340	45	356	E23	N05	2305	10	5		
"	" 31	1805	2345		398	E13	N04	1845	15	1		

*Area corrected for foreshortening.

Table 62

Indices of Geomagnetic Activity for July 1950

Preliminary values of mean K-indices, Kw, from 34 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	3.4 1.7 2.0 2.1 2.9 2.3 1.9 3.1	19.4	0.6	4o2-2o2o 3+2+2-3+	20+	Five
2	1.5 2.4 1.4 1.1 1.4 1.5 1.8 1.7	12.8	0.2	2-3-2-1- 1o1+1+2-	12o	Quiet
3	0.9 1.1 0.8 1.7 2.7 3.0 3.6 4.7	18.5	0.9	0+1-1-1+ 3-3+4+5o	18+	
4	4.9 4.3 3.2 1.7 2.3 2.9 3.4 3.3	26.0	1.3	6o5o3+1+ 3-3+4-4o	29+	17
5	3.6 2.8 1.4 2.4 3.0 2.6 2.6 3.1	21.5	0.7	4o3+1+3- 3+3-3+3+	24o	18
						19
6	2.8 1.9 2.5 2.8 2.4 2.7 1.7 1.7	18.5	0.5	3o2-3-3- 2+3o1+2-	18+	23
7	2.5 2.1 1.4 2.3 2.2 2.3 1.9 3.1	17.8	0.5	3-2+1+2+ 2o2+2o4-	19-	26
8	2.1 1.5 2.0 1.7 2.4 1.9 0.6 0.4	12.6	0.3	2o1+2o2- 3-2-0+0+	12o	
9	2.1 3.3 3.1 1.9 3.0 2.7 2.5 1.6	20.2	0.7	2o4-4-2- 3+3-2+1+	21-	
10	1.1 0.9 1.7 2.5 2.3 2.5 1.8 2.1	14.9	0.5	1+1+2-2+ 2+3+2-2+	16+	
11	3.2 1.5 1.3 2.8 4.4 3.2 4.0 4.9	25.3	1.3	4-2-1o3o 5+4-5o6o	29+	Five
12	5.7 5.1 3.1 4.6 3.2 3.2 2.9 2.9	30.7	1.4	7o6+4-5+ 3+3+3o3+	35+	Dist.
13	3.7 3.5 2.9 4.3 4.2 2.4 2.7 1.8	25.5	1.1	5-4o3o5o 5-3-3o2-	29-	
14	2.1 1.7 2.8 2.3 1.9 2.0 2.3 2.9	18.0	0.6	2o2-3+2+ 2o2+3-3+	20-	4
15	2.9 2.5 2.5 1.8 2.3 2.2 2.5 2.1	18.8	0.6	3o3-3-2- 2+2+3-2+	20-	11
						12
16	2.2 2.4 2.0 3.2 1.6 1.4 1.3 1.6	15.7	0.5	2o3-2+4o 1+1o1o2-	16o	24
17	2.3 1.1 2.1 1.5 1.3 1.3 1.7 1.0	12.3	0.2	3-1-3-2- 1+1+2o1+	14-	25
18	1.8 1.2 1.4 1.3 1.9 1.8 0.8 1.0	11.2	0.2	2o1o1+1+ 2o2-1-1o	11o	
19	1.6 0.8 0.6 1.0 2.1 2.2 1.3 1.4	11.0	0.3	2-1-0+1- 2o2o1-1+	9+	
20	1.7 2.4 1.2 1.6 1.5 1.1 2.3 1.5	13.3	0.3	2-2+1o2- 1+1o2+2-	13o	
						Ten
21	1.9 1.0 1.2 2.2 2.7 2.1 2.9 2.5	16.5	0.6	2-1-1-2+ 3o2o3o3o	16+	Quiet
22	2.7 2.7 2.4 3.1 2.2 1.4 2.0 1.1	17.6	0.6	3o3o2+3+ 2o1+2-1o	18-	
23	1.0 1.1 1.0 0.8 0.6 0.9 0.6 0.8	6.8	0.0	1o1o1o0+ 0+0+0+0+	5-	2
24	3.0 4.0 3.4 4.5 2.5 3.1 4.0 4.5	29.0	1.4	3o5o4o5+ 2o3o5o5o	32+	8
25	4.8 4.9 4.7 3.3 3.8 2.9 2.6 2.1	29.1	1.4	6o6+5+4- 4+3o3-2o	33+	10
						16
26	1.2 1.0 0.9 1.1 1.5 1.4 1.9 1.7	10.7	0.2	1-1-1o1o 2-1+2o2o	10+	17
27	0.9 1.6 1.6 2.9 3.6 1.9 1.9 1.9	16.3	0.6	1-1o2-3- 4o2-2-2-	15o	18
28	3.7 3.1 1.2 1.3 1.2 1.3 1.0 2.6	15.4	0.6	4o3+1+1- 1o1+1o3-	15+	19
29	2.4 2.1 1.5 2.3 2.1 2.1 2.8 2.6	17.9	0.6	3-2o1+2+ 2o2+3o3-	18+	20
30	2.5 2.3 1.1 3.3 3.0 2.1 2.4 1.7	18.4	0.6	3-3-1-3+ 3+2o3-2-	19o	23
31	2.6 3.2 1.4 1.5 1.9 2.9 2.7 3.1	19.3	0.6	3-3+1+2- 2o3+3+3+	21o	26
Mean	2.54 1.93 2.39 2.21 2.30 2.29 2.17 2.27	2.26	0.64			

Table 63

Sudden Ionosphere Disturbances Observed at Washington, D. C.

August 1950

1950 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
August 2	1547	1610	Ohio, D. C., England, New Brunswick	0.03	Solar flare** 1545 Solar flare*** 1548 Solar flare**** 1520
2	2200	2230	Ohio, D. C., New Brunswick	0.1	Solar flare** 2205
3	1322	1355	Ohio, D. C., England	0.03	
3	1620	1720	Ohio, D. C., New Brunswick	0.05	Solar flare** 1625
4	2335	2350	Ohio, D. C.	0.05	Solar flare** 2338
13	2155	2215	Ohio, D. C., New Brunswick	0.3	
15	1752	1810	D. C., England	0.2	Solar flare** 1745
18	1440	1510	England	0.2	
29	1816	1850	Ohio, D. C., England	0.05	Solar flare** 1820
30	1827	1840	Ohio, D. C., England	0.3	Solar flare** 1816

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station GLH, 13525 kilocycles, received in New York, 5340 kilometers distant, was used for the SID on August 15 and 18.

**Time of observation at the High Altitude Observatory, Boulder, Colorado, except on August 4, which is the time of maximum brightness.

***Time of observation at Meudon Observatory, France.

****Time of observation at McMath-Hulbert Observatory, Pontiac, Michigan.

Table 64

Sudden Ionosphere Disturbances Reported by Institut für Ionospharenforschung, as Observed at Lindau, Harz, Germany

Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
July 1950					
12	1612	1620	Lindau##, Munchen**, Frankfurt***, Norddeich#	0.1	
17	1331	1400	Lindau##, Munchen**, Frankfurt***, Norddeich#	0.2	
18	1316	1335	Lindau##, München**, Frankfurt***, Norddeich#	0.1	
19	0934	1010	Lindau##, Munchen**, Frankfurt***	0.1	
21	1310	1325	Lindau##, Munchen**, Norddeich#	0.1	
22	1105	1125	Lindau##, Munchen**	0.5	
27	0938	1010	Munchen**, Norddeich#	0.1	Terr.mag.pulse### 0950-1000
29	0710	0725	Lindau##, Munchen**, Frankfurt***, Norddeich#	0.3	

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

**Station München, 6161 kilocycles.

***Station Frankfurt, 6190 kilocycles, 190 kilometers distant.

#Station Norddeich, 4760 kilocycles, 275 kilometers distant.

##Lindau station, 1780 kilocycles, pulse, transmitter and receiver at Lindau.

###As observed at Lindau.

Table 65

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief

Cable and Wireless, Ltd., as Observed in Barbados, B.W.I.

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
July 12	1610	1640	British Guiana, Canada, Florida, Jamaica, Trinidad	Terr.mag.pulse* 1608-1620 Solar flare** 1620
13	2225	2235	Australia	
29	1510	1535	England	

*As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.
**Time of observation at McMath-Hulbert Observatory, Pontiac, Michigan.

Table 66

Sudden Ionosphere Disturbances Reported by RCA Communications, Inc.

as Observed at Point Reyes, California

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
August 1	0018	0125	Australia, China, Hawaii, Japan, Java, New York, Philippine Is.	
4-5	2333	0045	Australia, China, Hawaii, Japan, Java, New York, Philippine Is.	Solar flare* 2338

*Time of maximum brightness at the High Altitude Observatory, Boulder, Colorado.

Table 67

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed at Colombo, Ceylon

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
July 12	1610	1640	England	Terr.mag.pulse* 1608-1620 Solar flare** 1620
14	0455	0505	China, Japan, India	
24	1740	1925	England	

*As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.
**Time of observation at McMath-Hulbert Observatory, Pontiac, Michigan.

Table 68

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wirless, Ltd., as Observed in Singapore, Malay States

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
May 5	0607	0655	China, Netherlands East Indies	Solar flare* 0548

*Time of observation at Wendelstein Observatory, Germany.

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.

GRAPHS OF IONOSPHERIC DATA

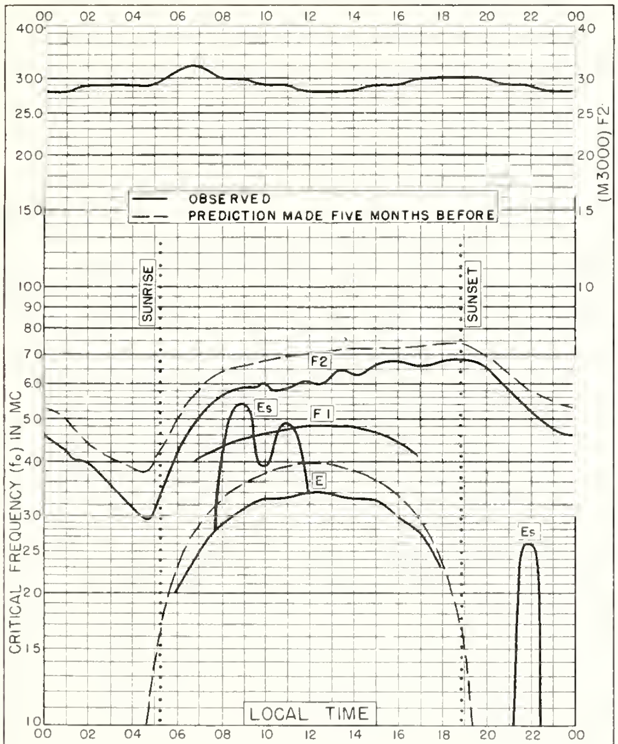


Fig. 1 WASHINGTON, D.C.
38.7°N, 77.1°W AUGUST 1950

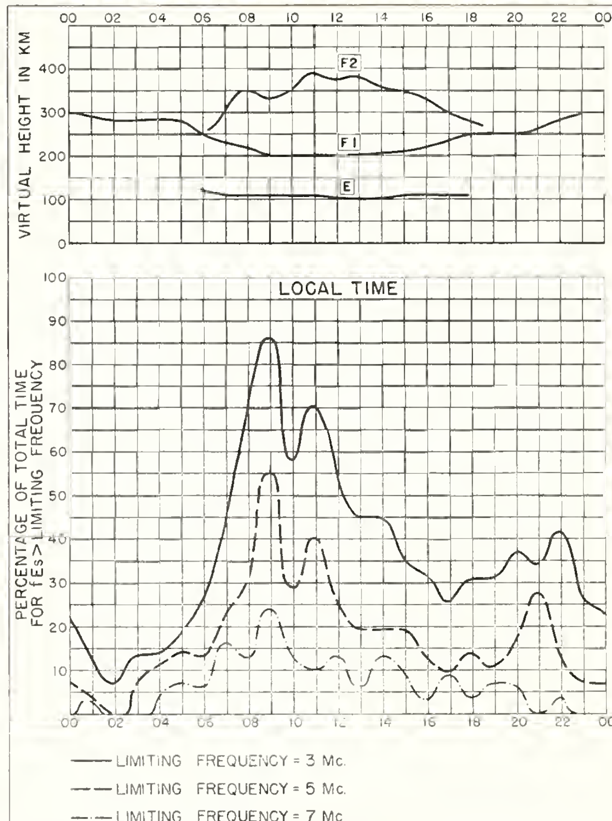


Fig 2. WASHINGTON, D.C. AUGUST 1950

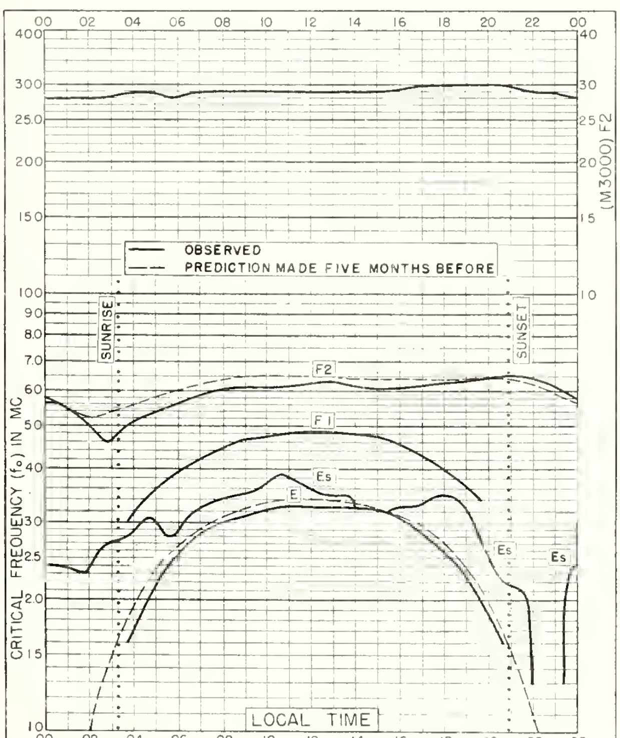


Fig. 3. OSLO, NORWAY
60.0°N, 11.0°E JULY 1950

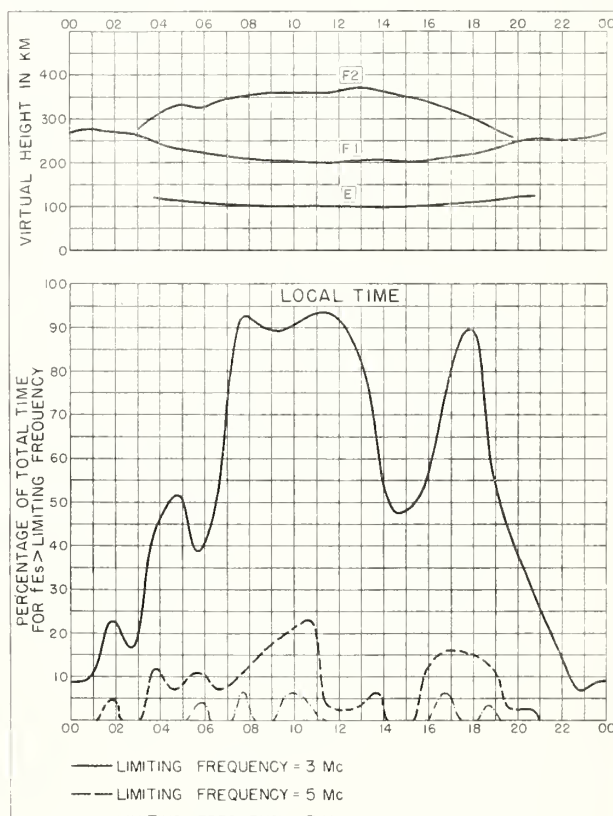


Fig. 4. OSLO, NORWAY JULY 1950

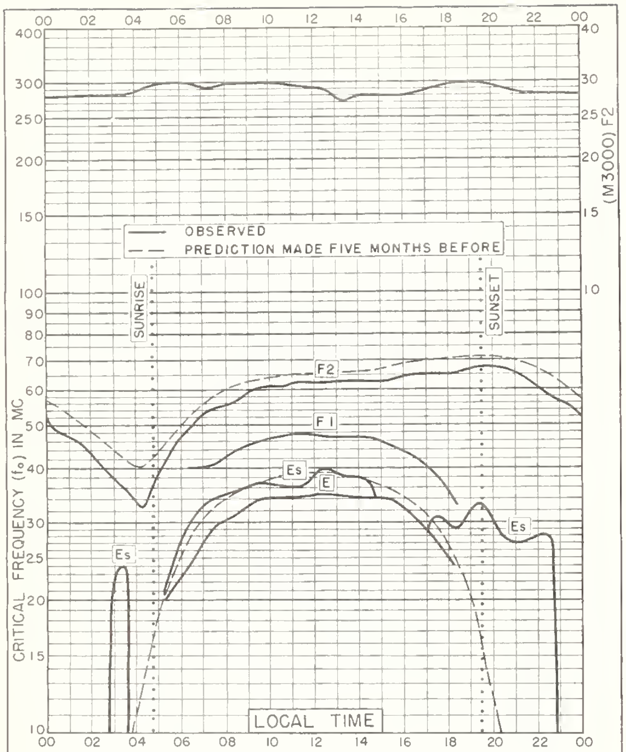


Fig. 5. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W JULY 1950

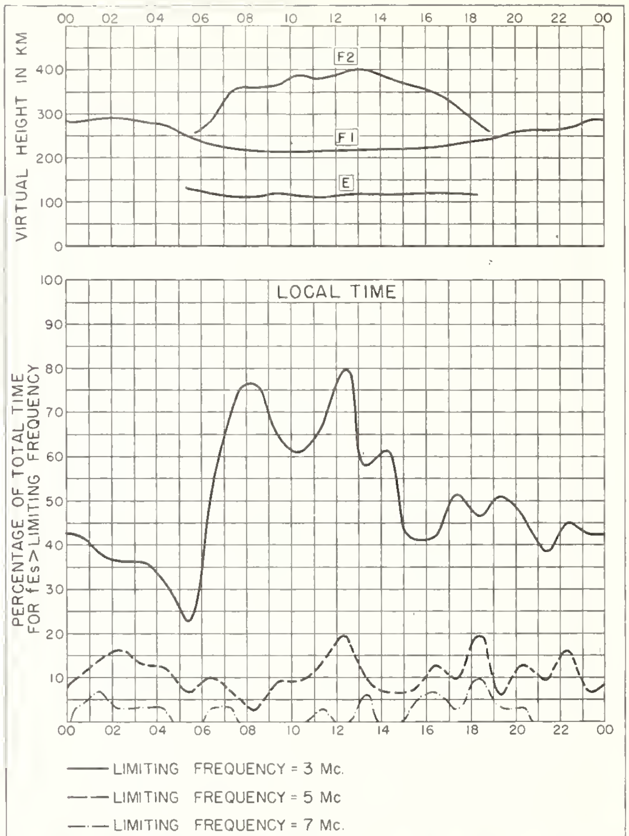


Fig. 6. BOSTON, MASSACHUSETTS JULY 1950

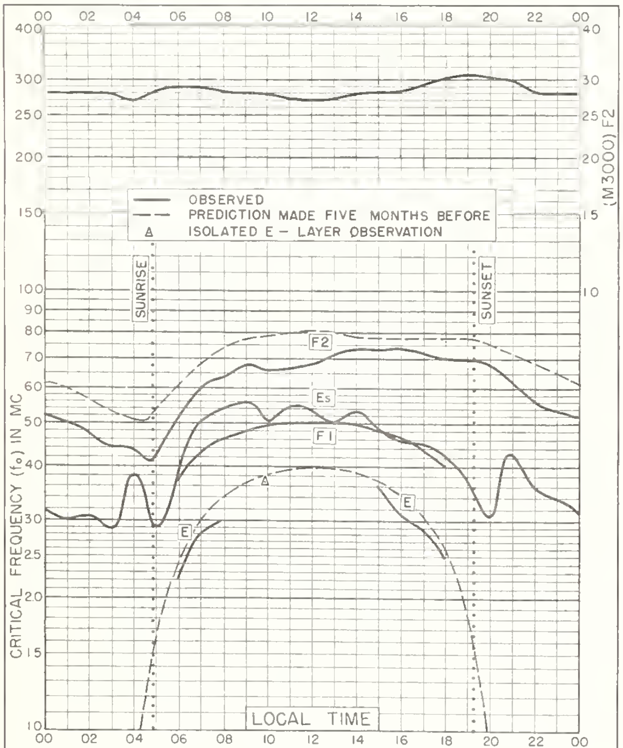


Fig. 7. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JULY 1950

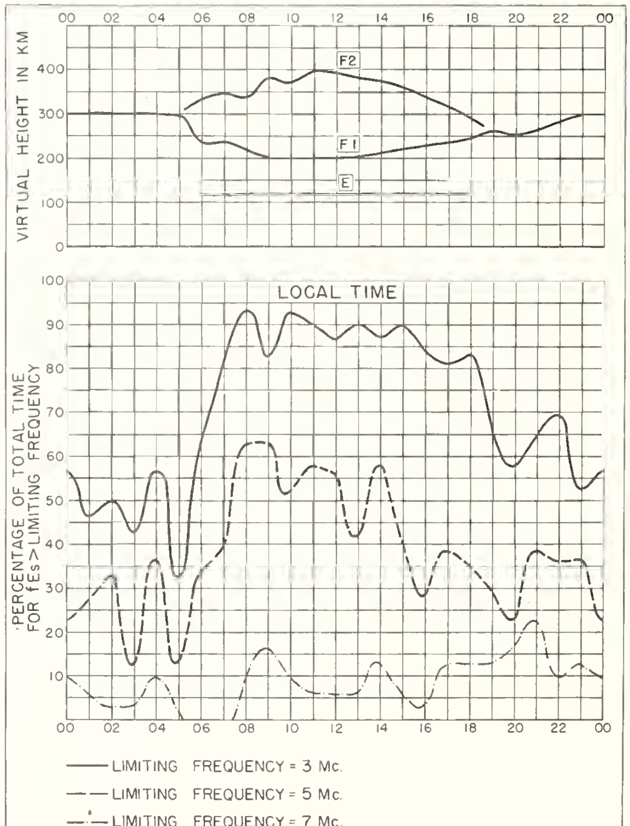


Fig. 8. SAN FRANCISCO, CALIFORNIA JULY 1950

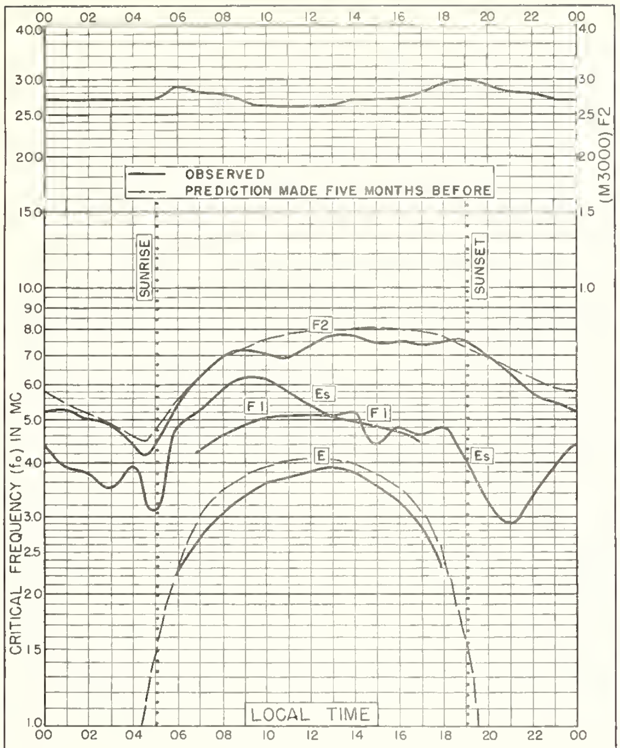


Fig. 9. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JULY 1950

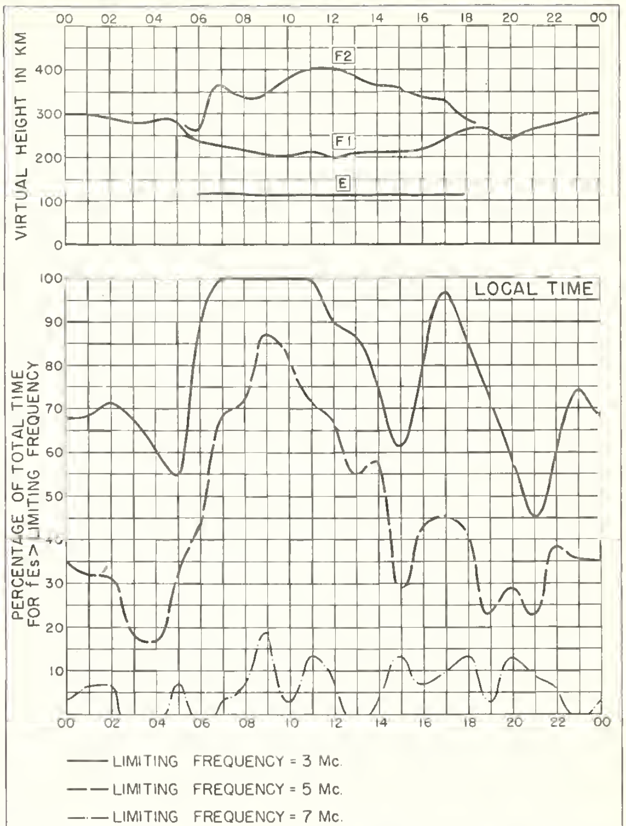


Fig. 10. WHITE SANDS, NEW MEXICO JULY 1950

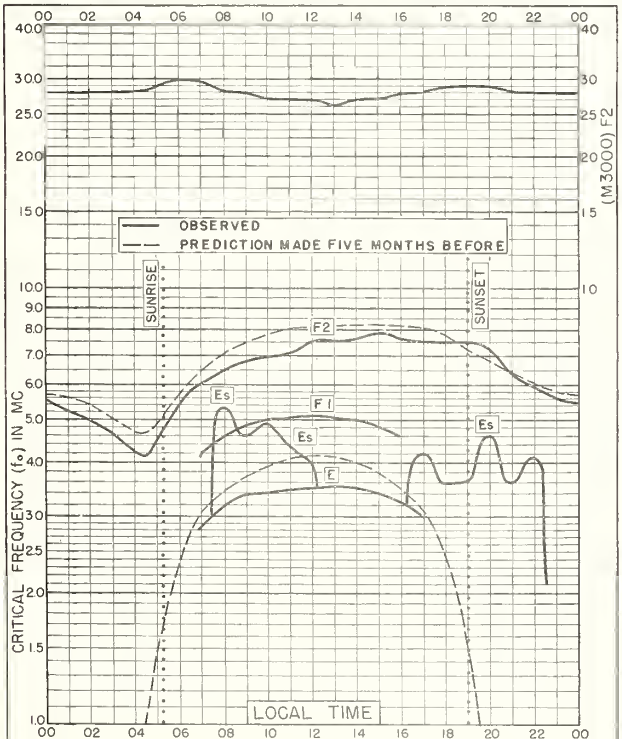


Fig. 11. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W JULY 1950

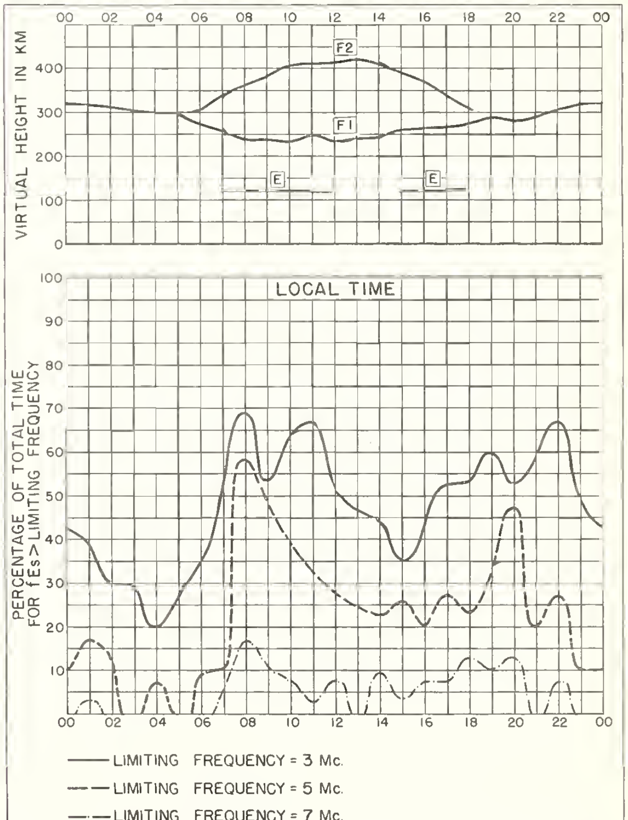


Fig. 12. BATON ROUGE, LOUISIANA JULY 1950

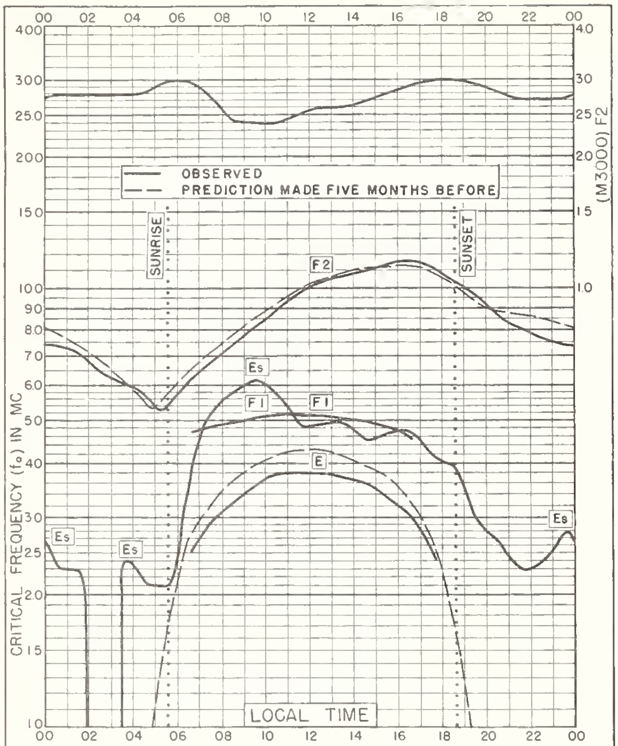


Fig. 13. MAUI, HAWAII
20.8°N, 156.5°W JULY 1950

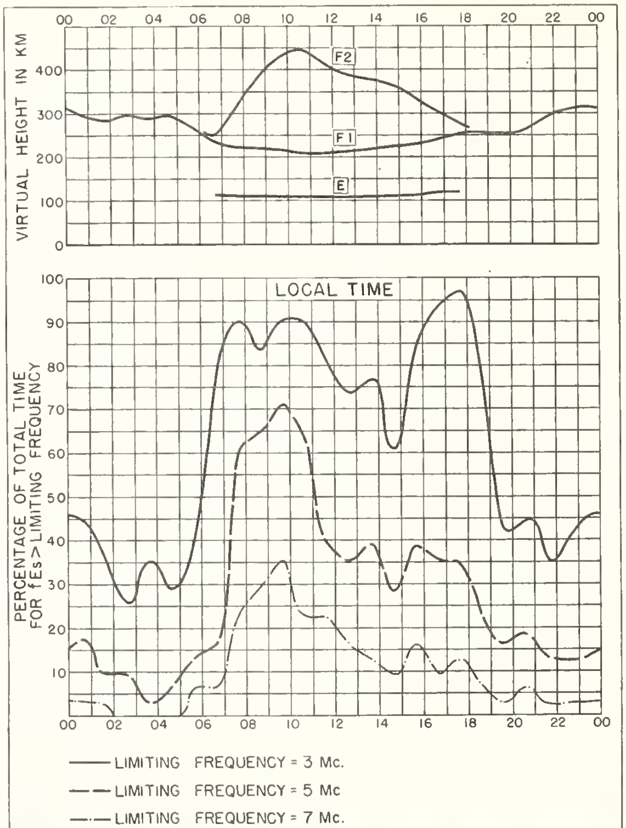


Fig. 14. MAUI, HAWAII JULY 1950

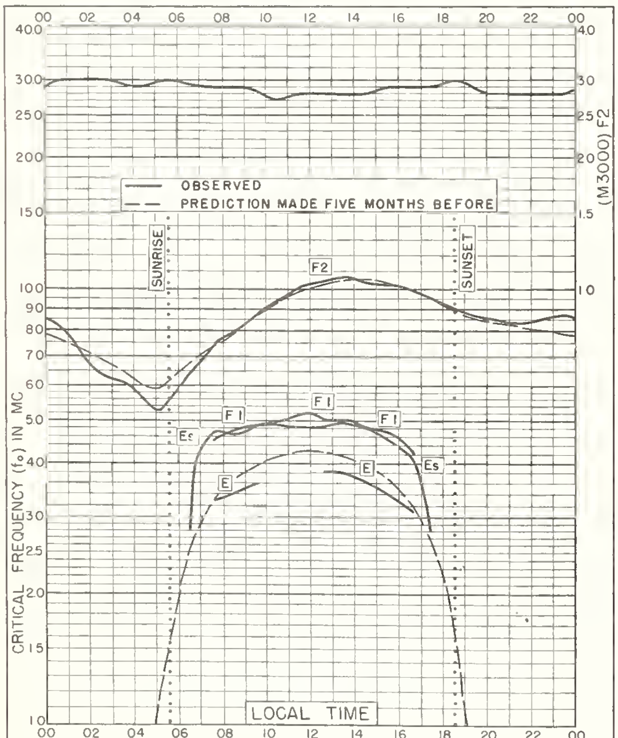


Fig. 15. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W JULY 1950

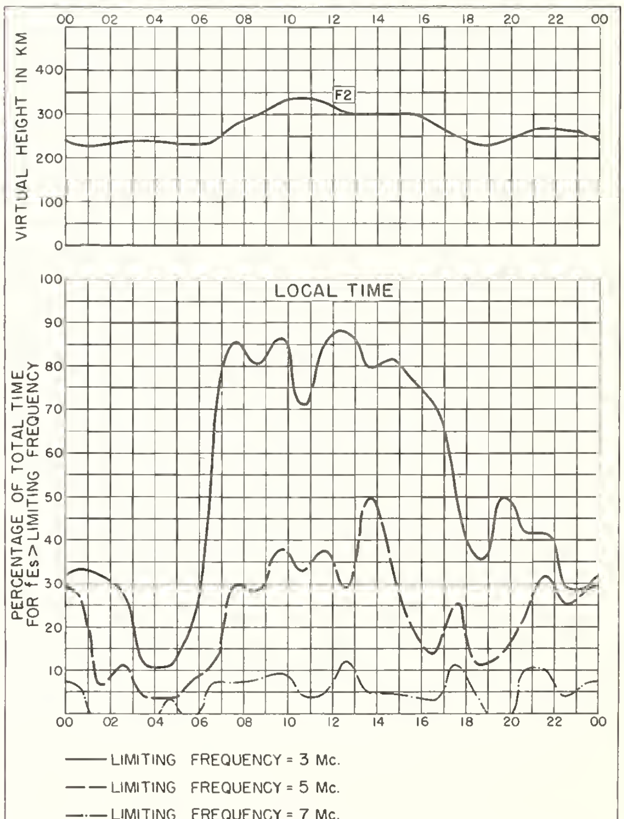


Fig. 16. SAN JUAN, PUERTO RICO JULY 1950

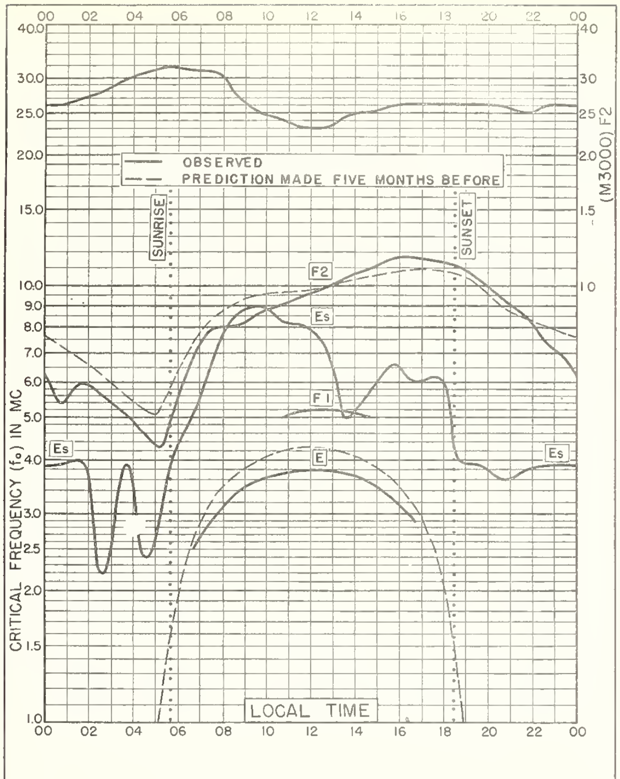


Fig. 17. GUAM I.
13.6°N, 144.9°E JULY 1950

Fig. 18. GUAM I. JULY 1950

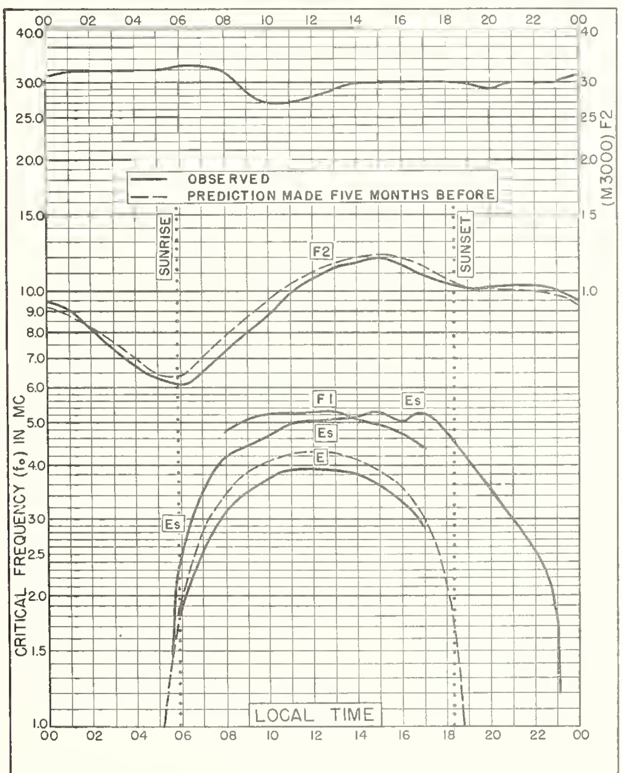


Fig. 19. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W JULY 1950

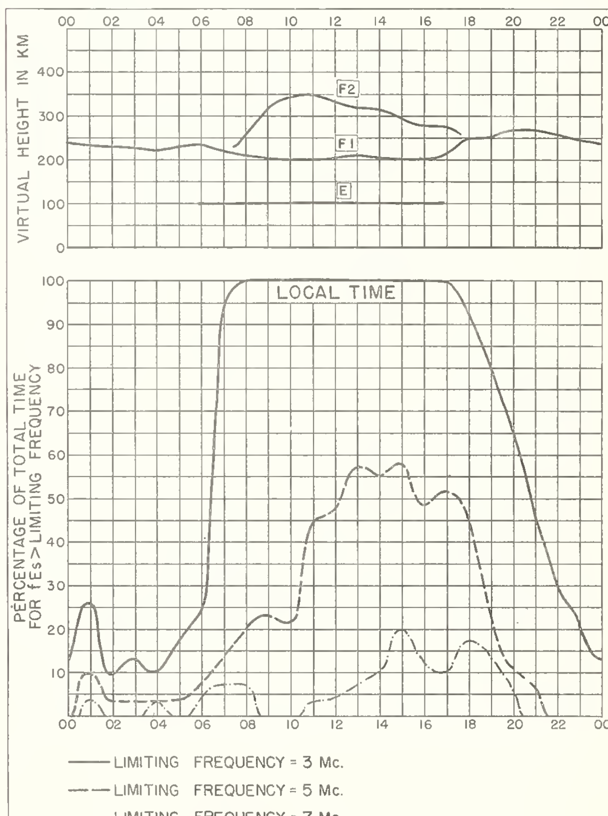


Fig. 20. TRINIDAD, BRIT. WEST INDIES JULY 1950

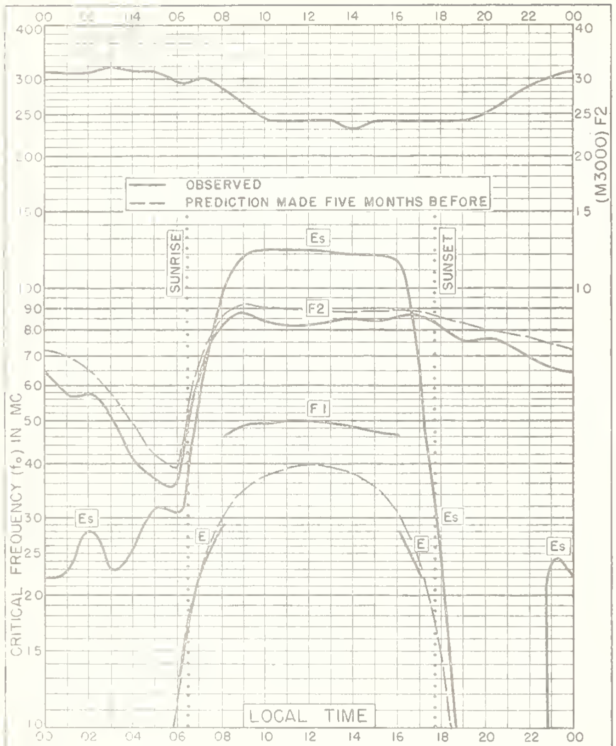


Fig. 21. HUANCAYO, PERU
12.0° S, 75.3° W JULY 1950

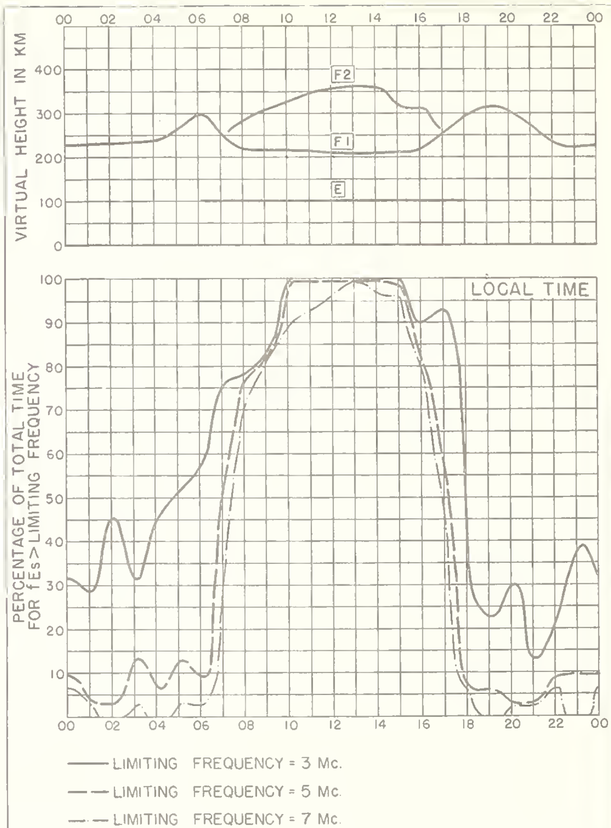


Fig. 22. HUANCAYO, PERU JULY 1950

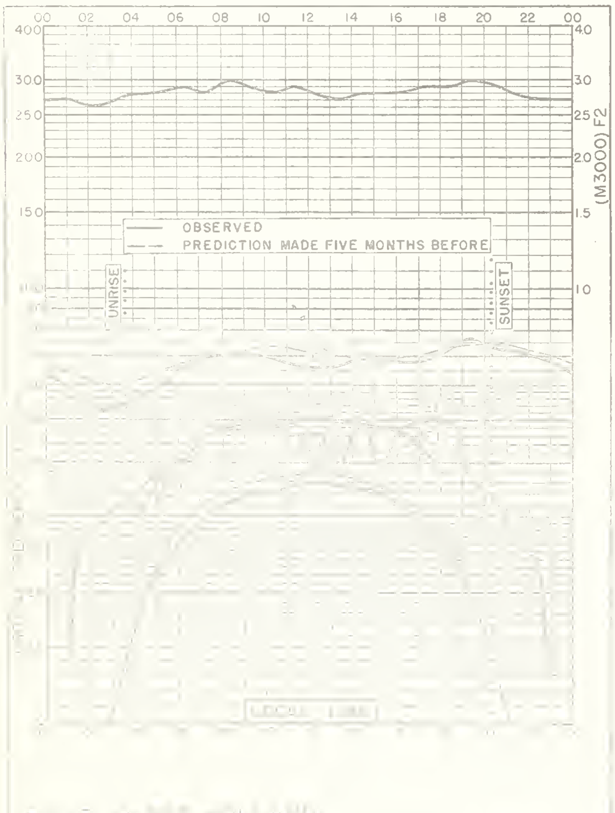


Fig. 23. De BILT, HOLLAND
[illegible] JUNE 1950

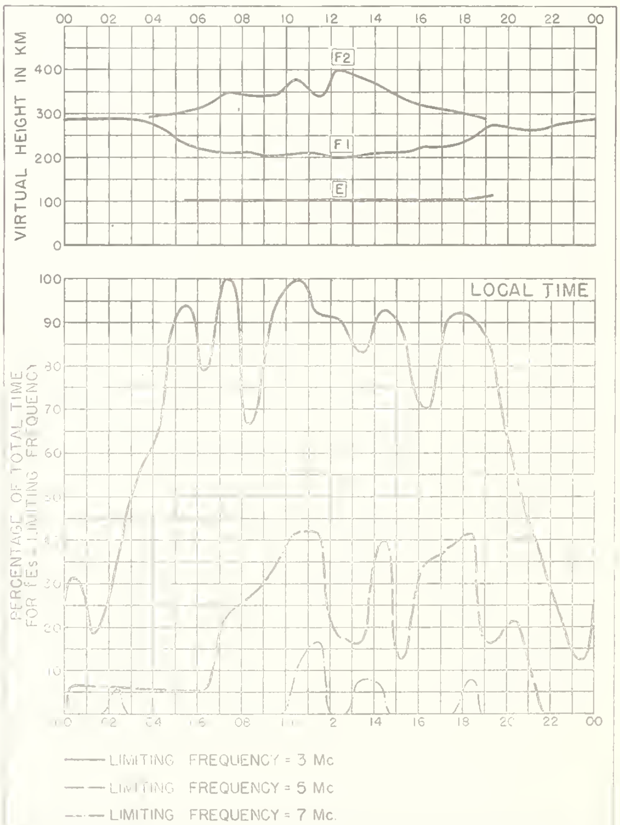


Fig. 24. De BILT, HOLLAND JUNE 1950

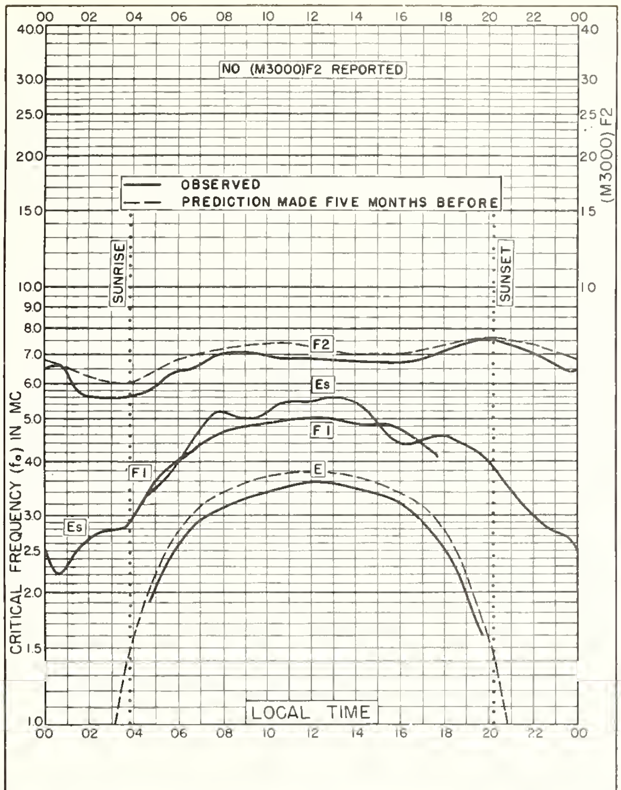


Fig. 25. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E JUNE 1950

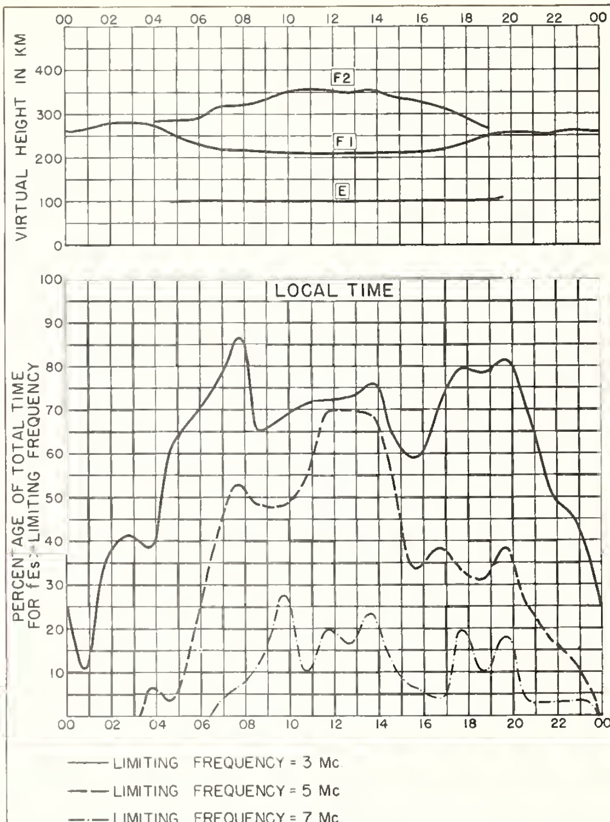


Fig. 26. LINDAU/HARZ, GERMANY JUNE 1950

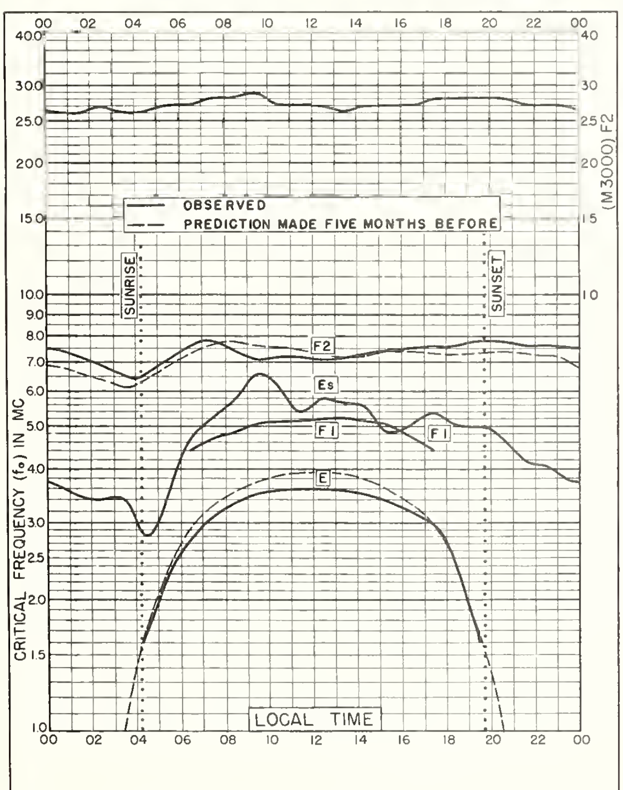


Fig. 27 WAKKANAI, JAPAN
45.4°N, 141.7°E JUNE 1950

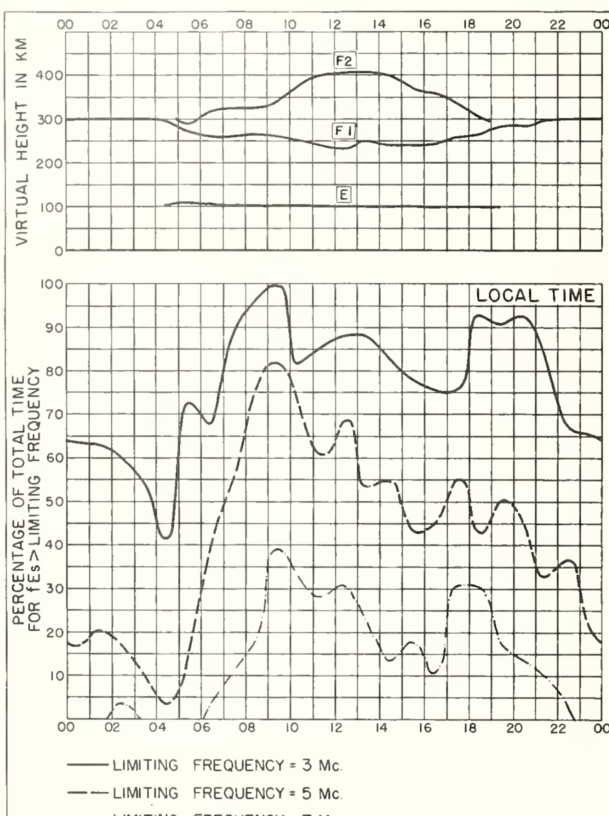


Fig. 28. WAKKANAI, JAPAN JUNE 1950

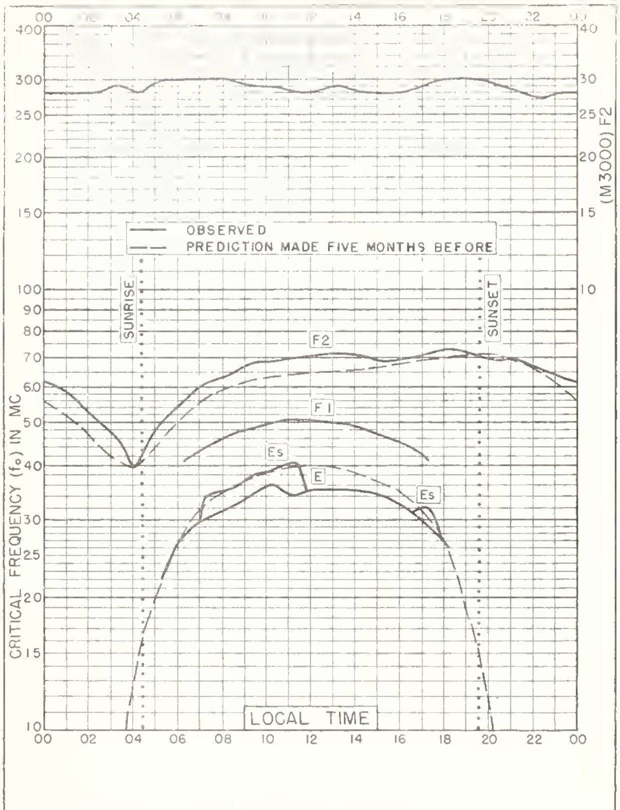


Fig. 29. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W JUNE 1950

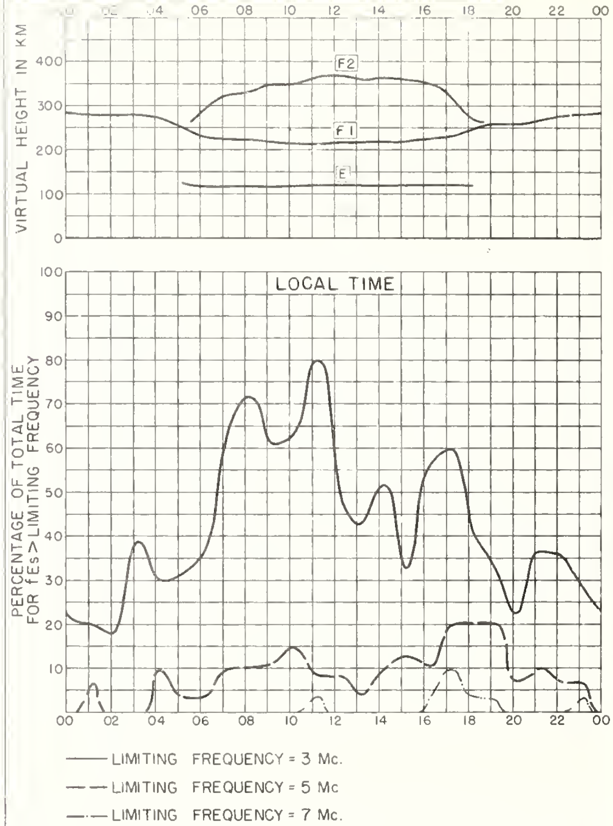


Fig. 30. BOSTON, MASSACHUSETTS JUNE 1950

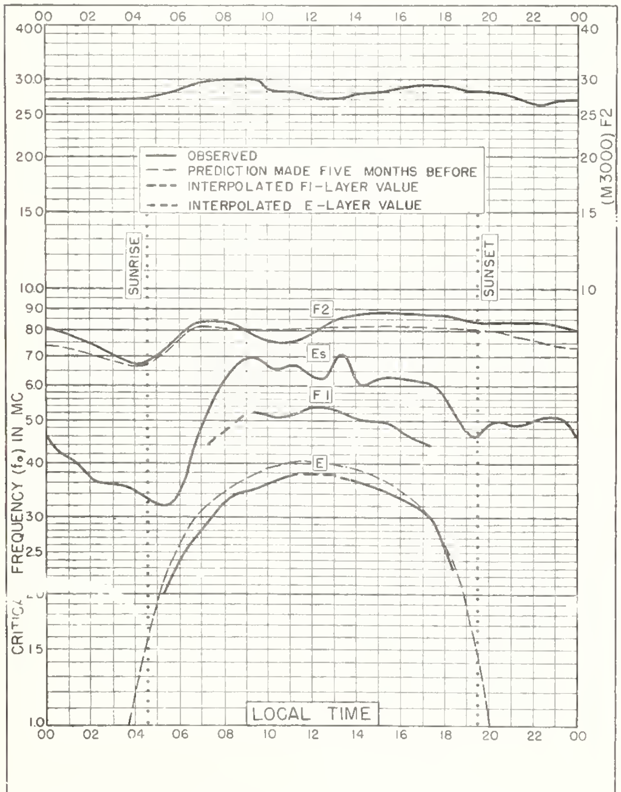


Fig. 31. AKITA, JAPAN
39.7°N, 140.1°E JUNE 1950

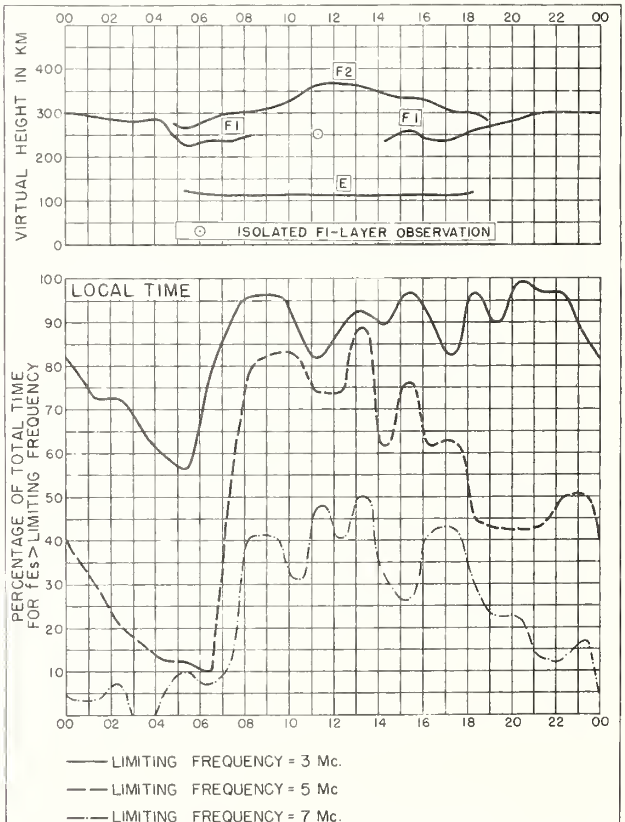


Fig. 32. AKITA, JAPAN JUNE 1950

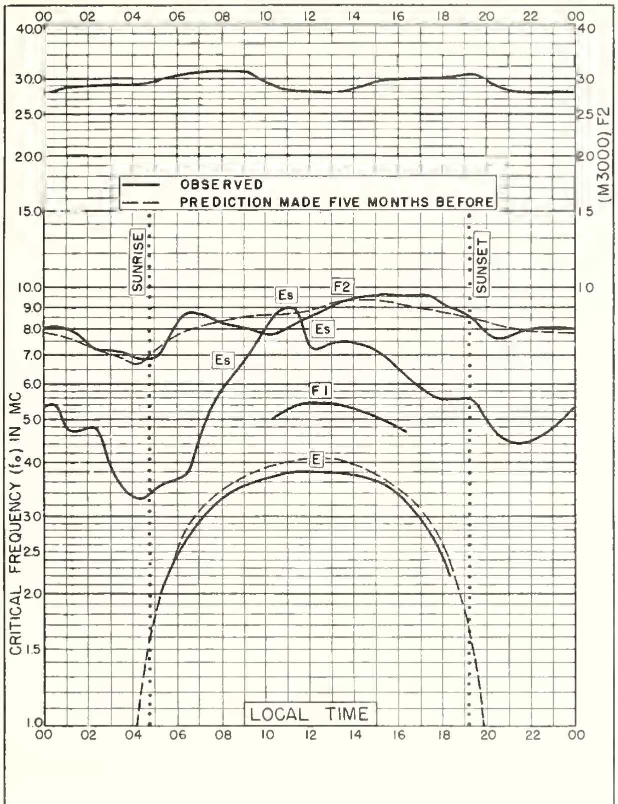
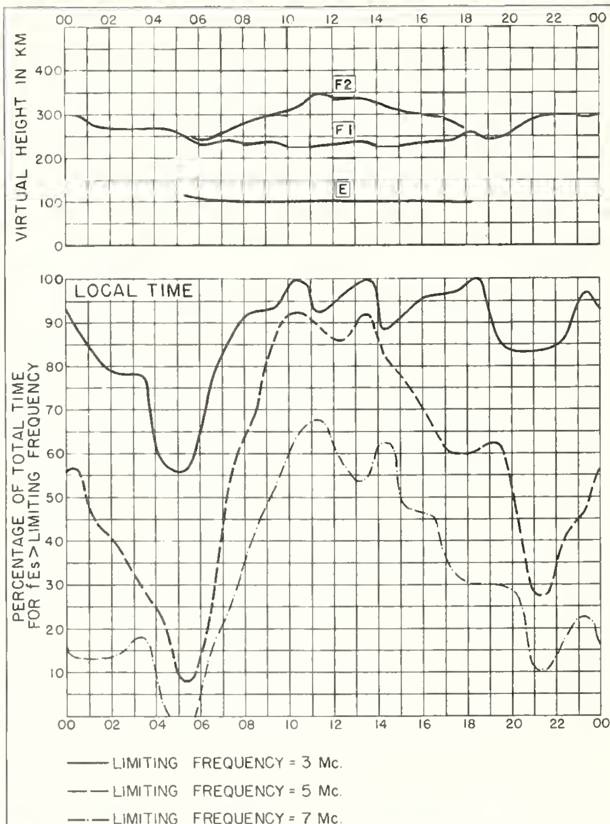


Fig. 33. TOKYO, JAPAN
35.7°N, 139.5°E JUNE 1950



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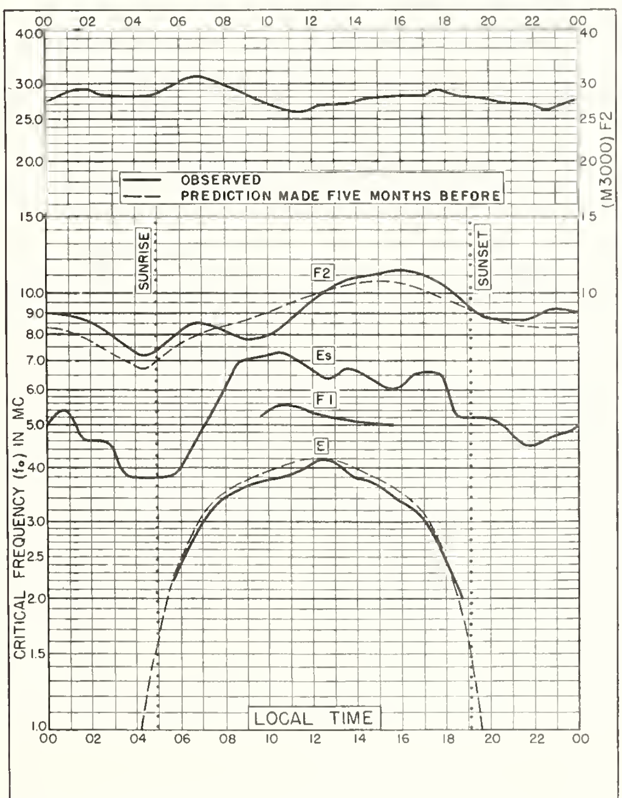

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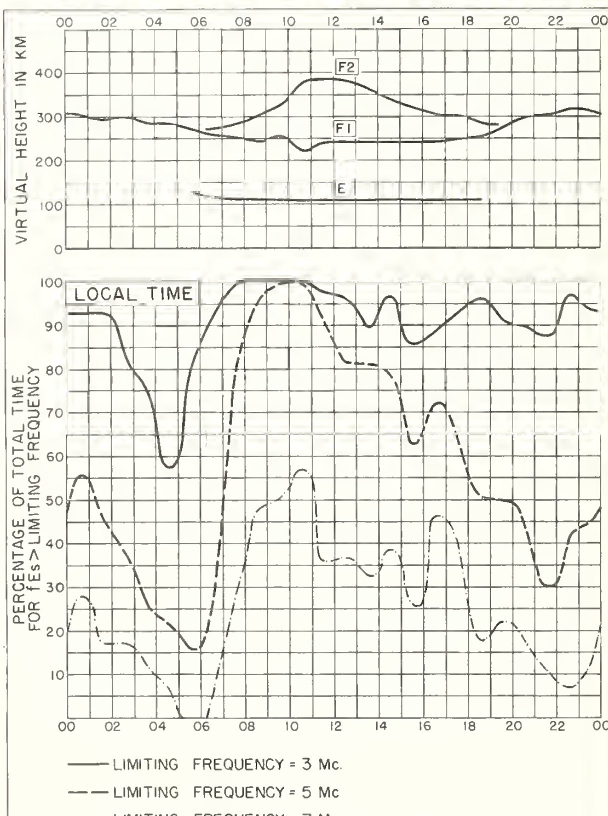

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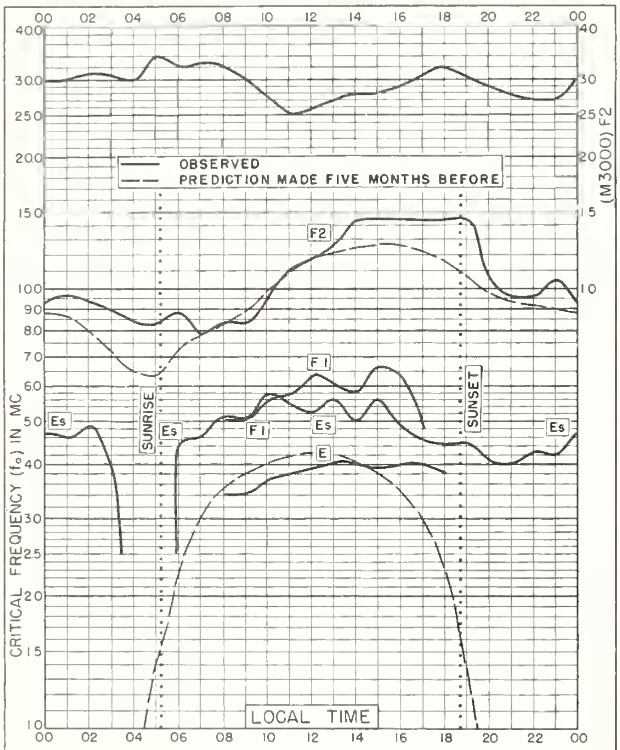

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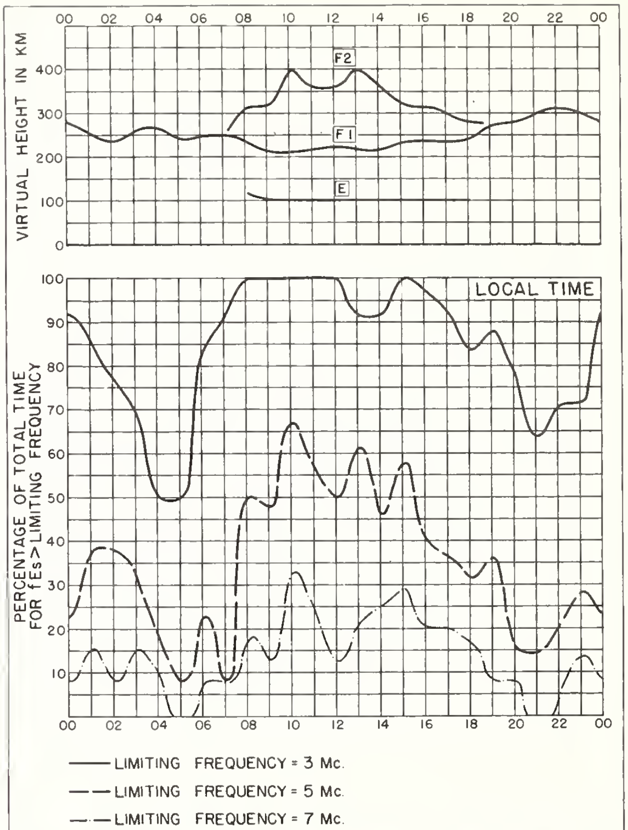

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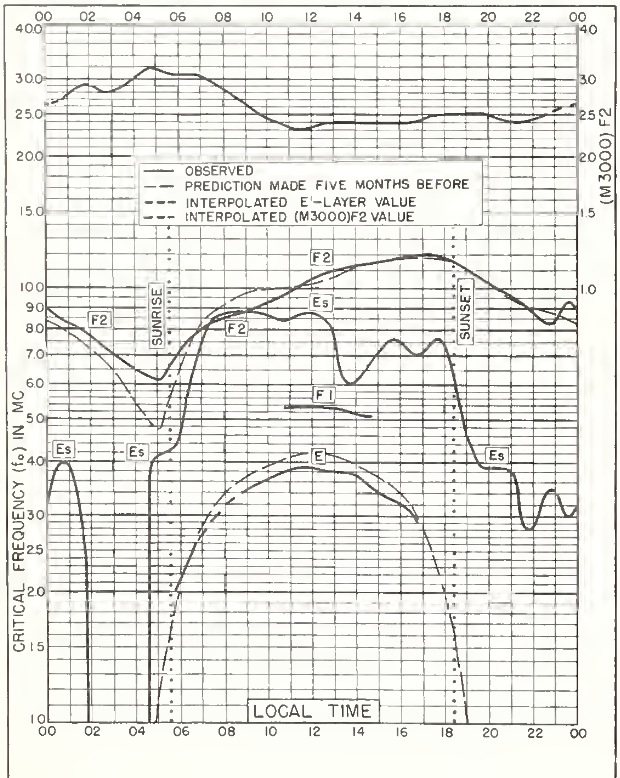

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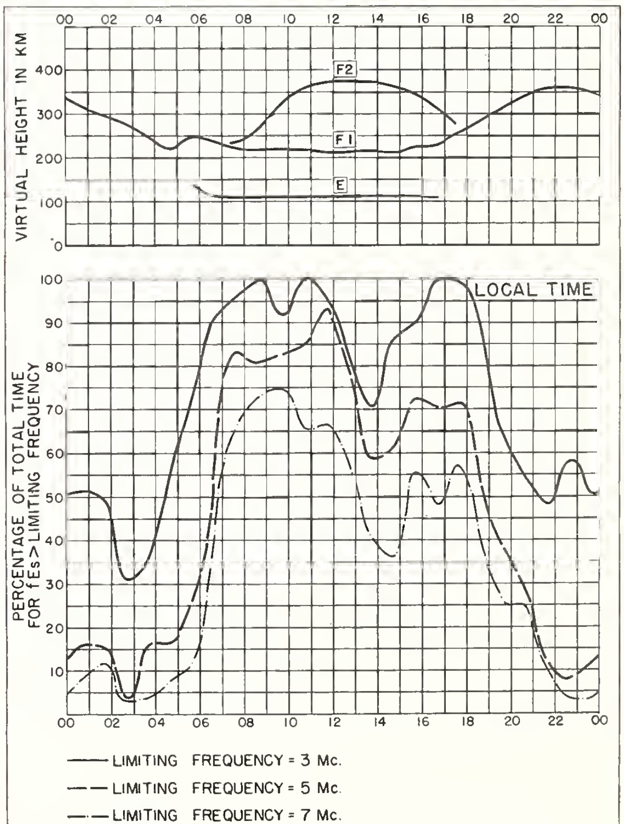

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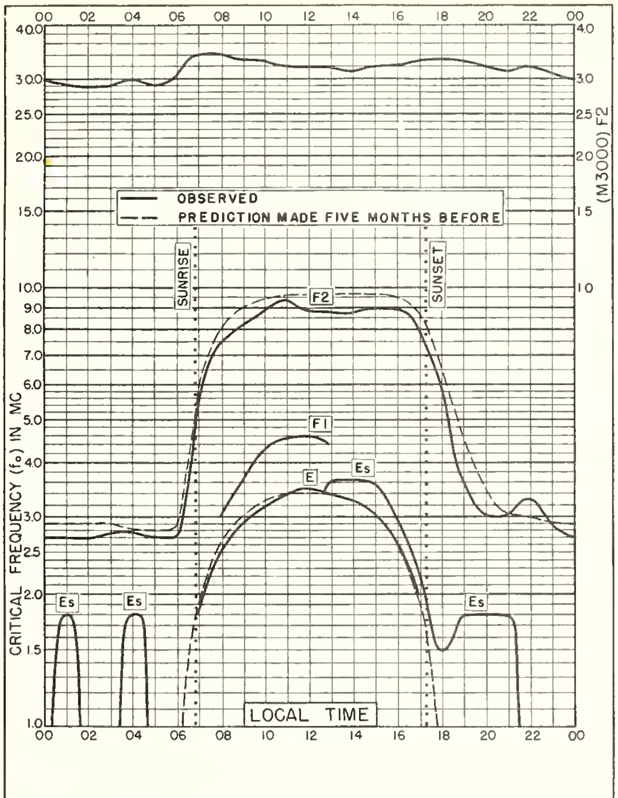

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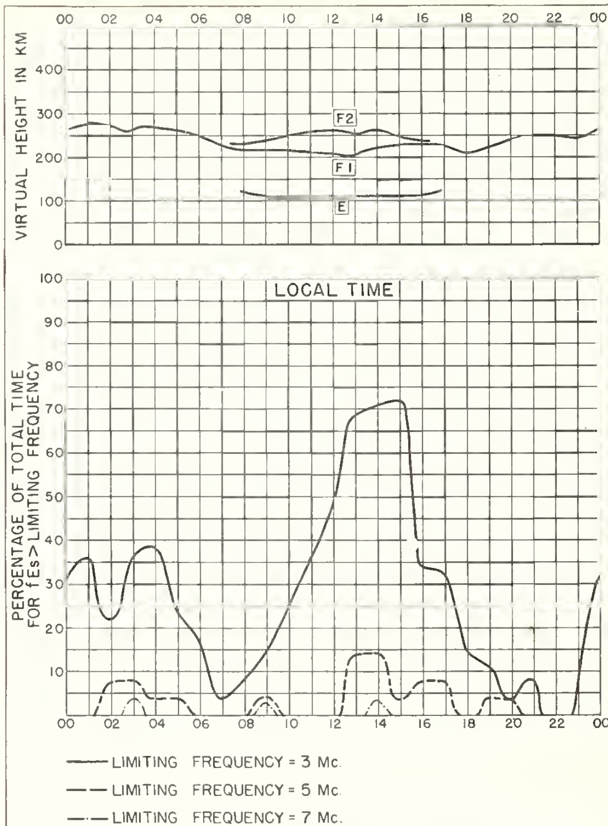

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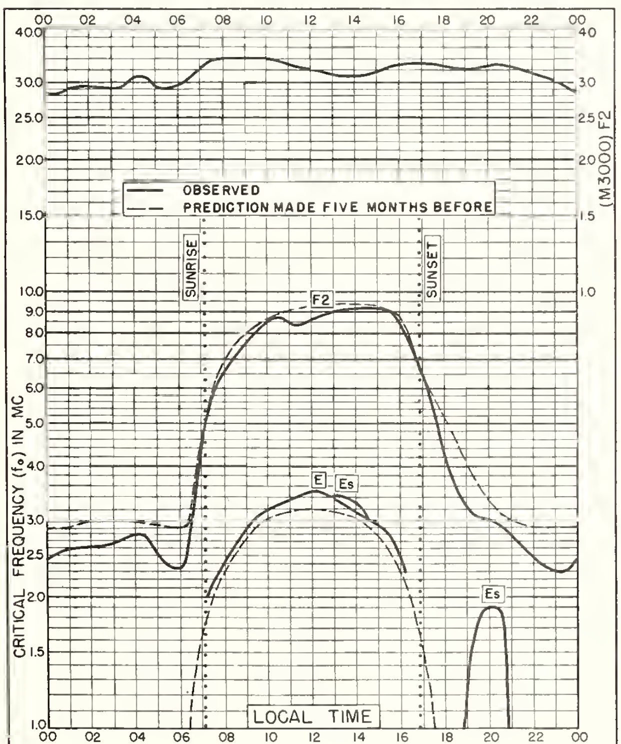

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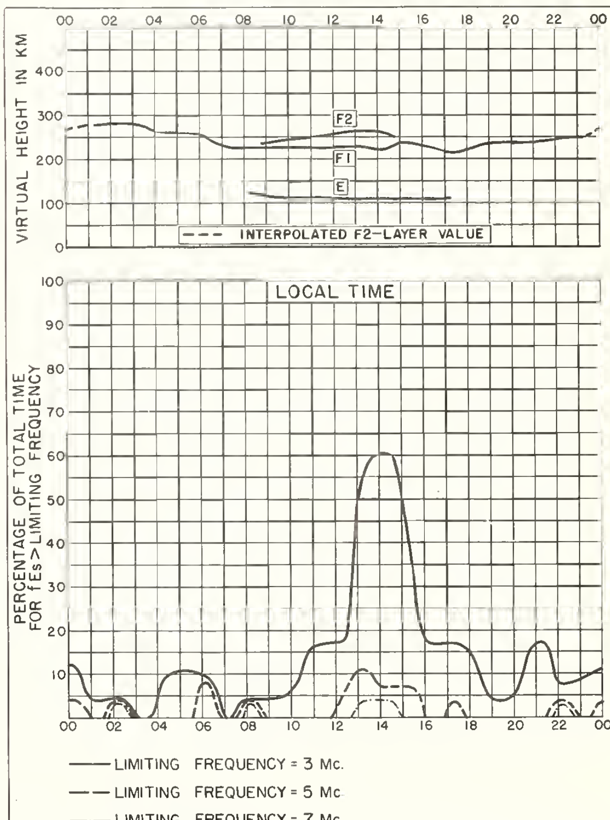

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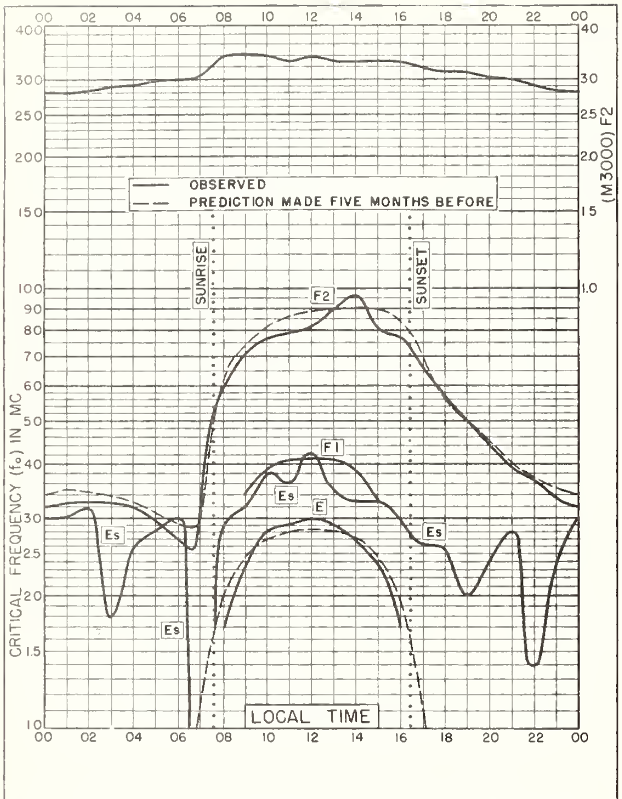

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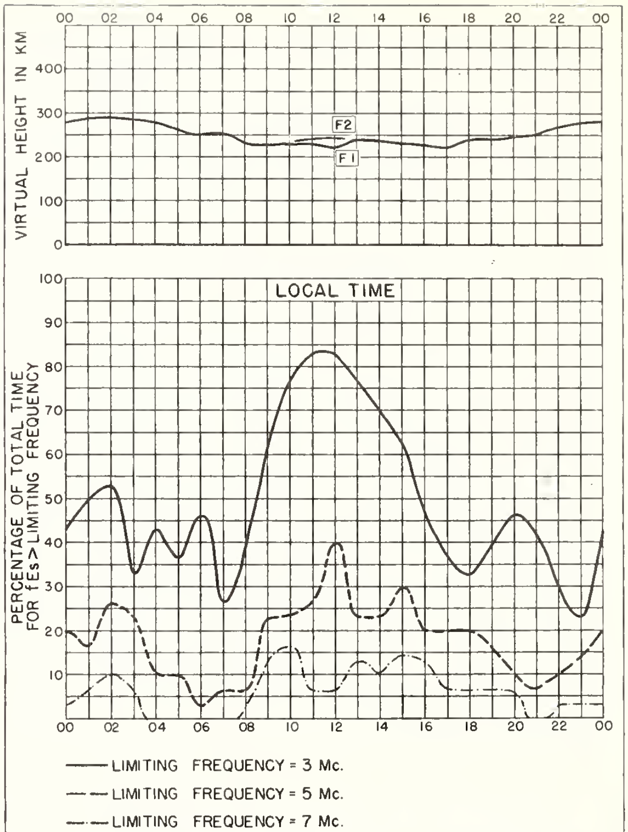

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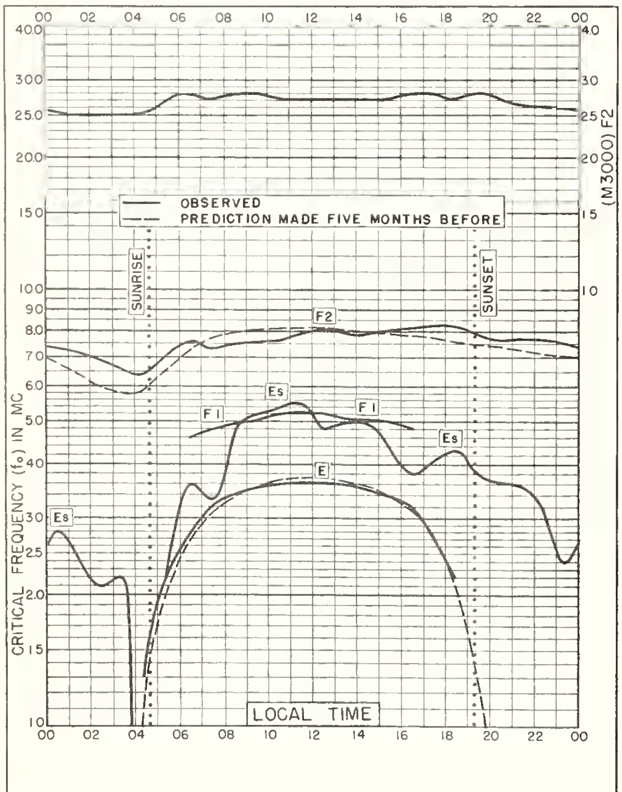

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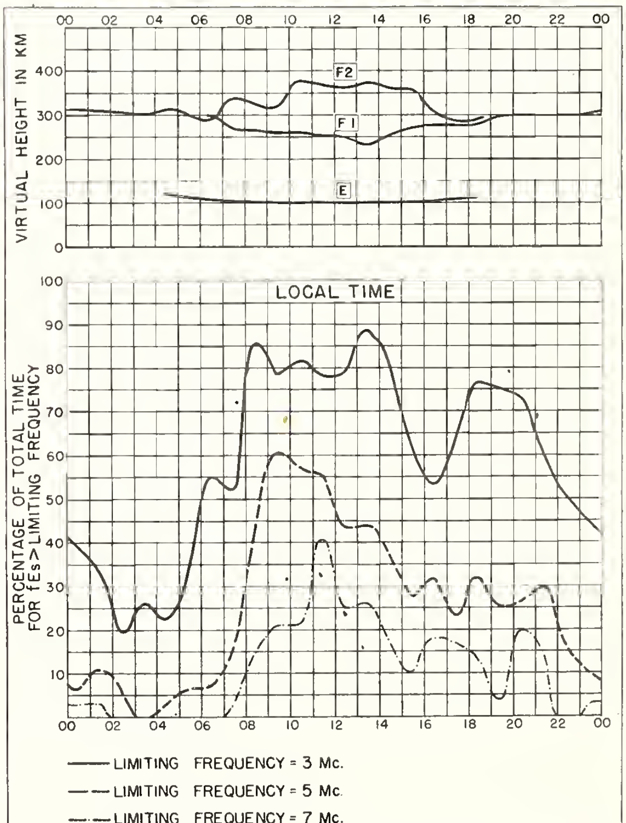

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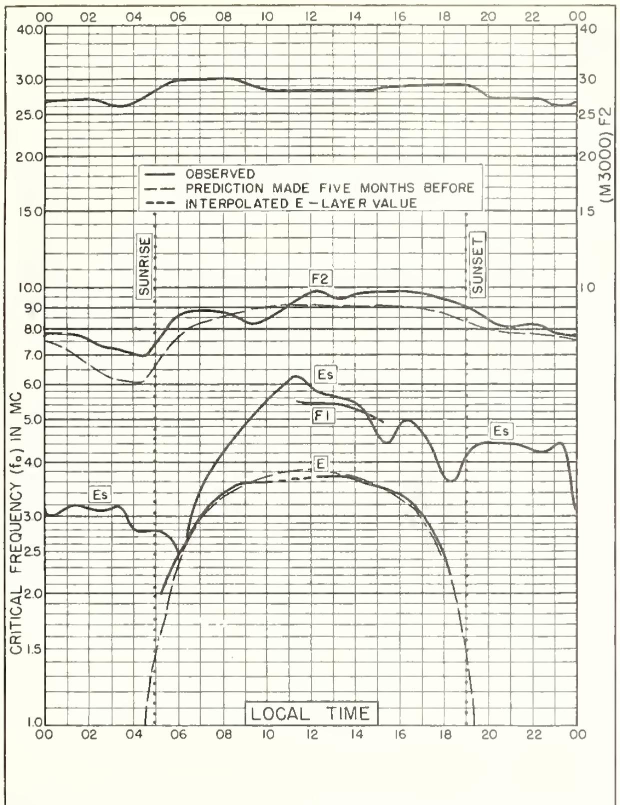

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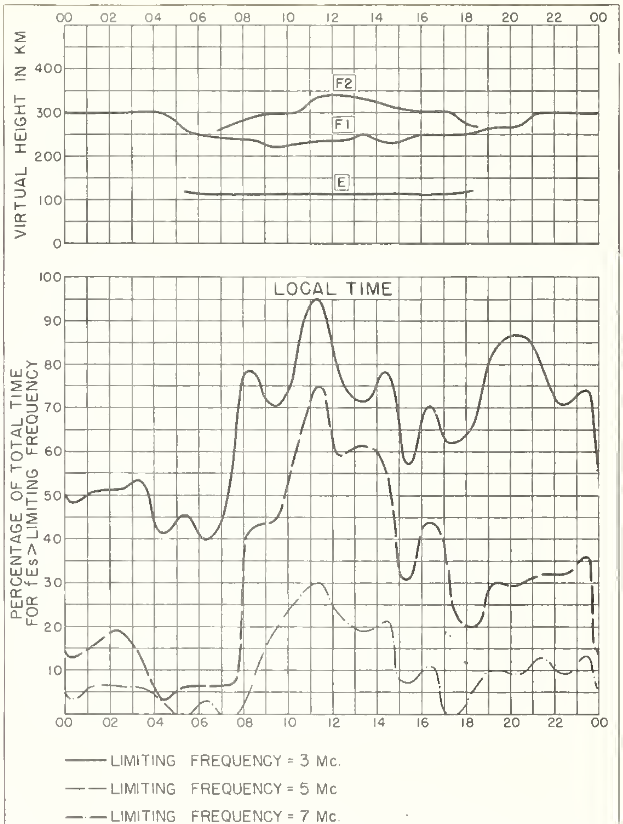

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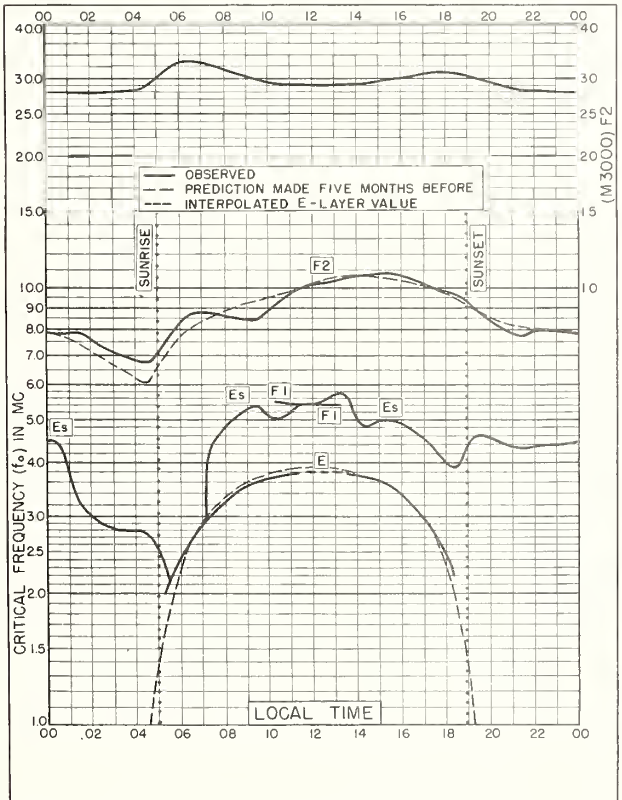

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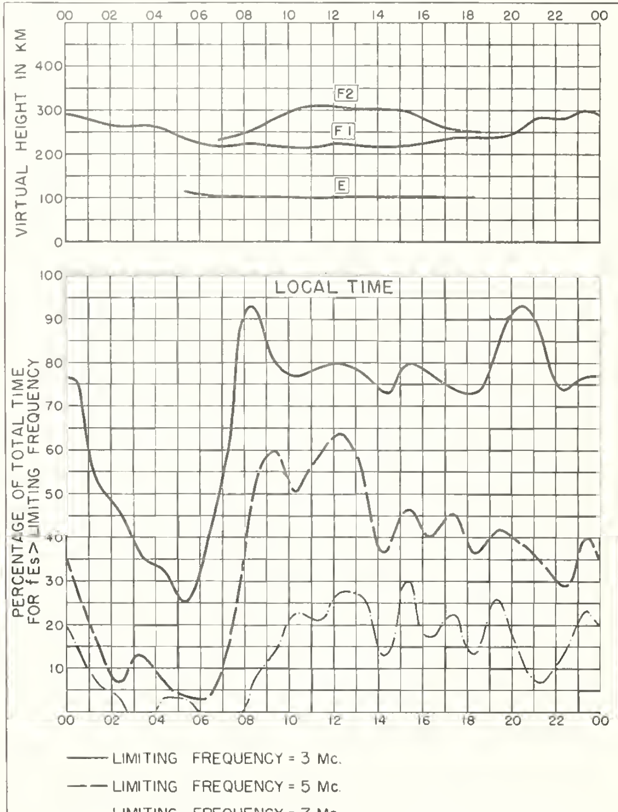

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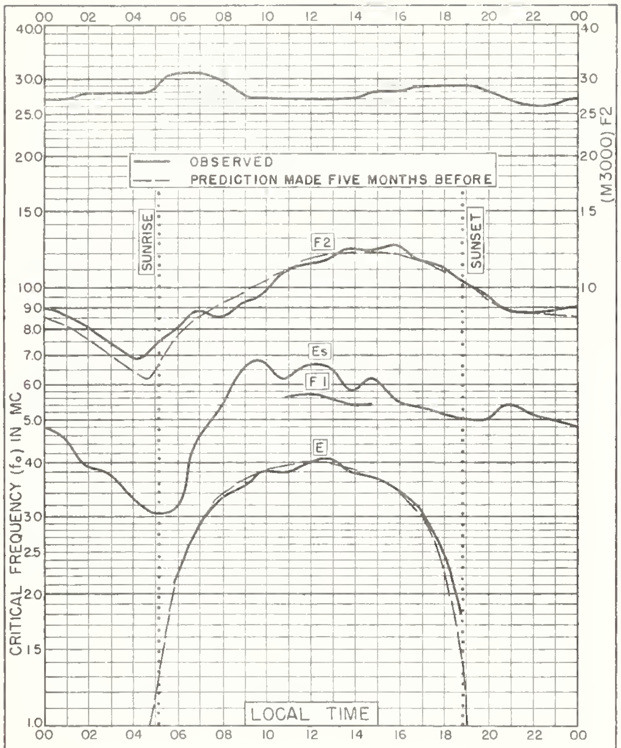

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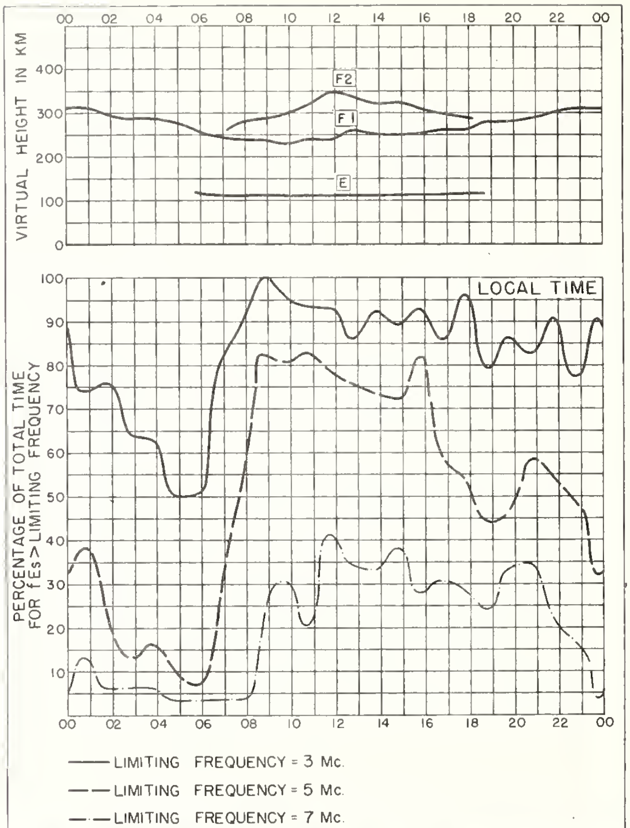

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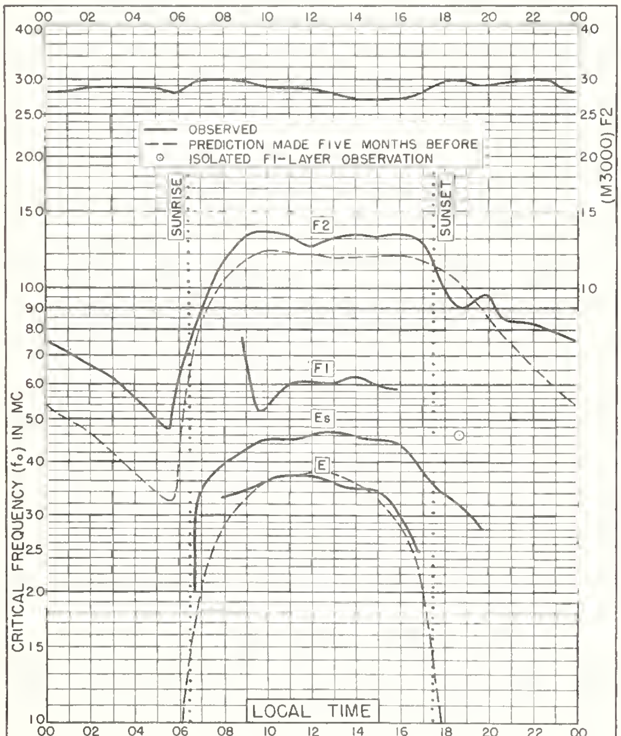

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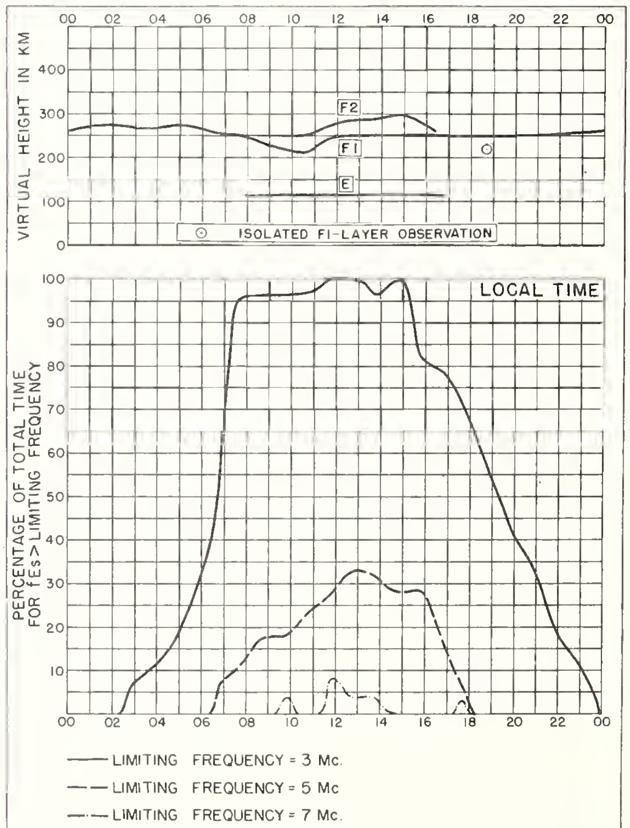

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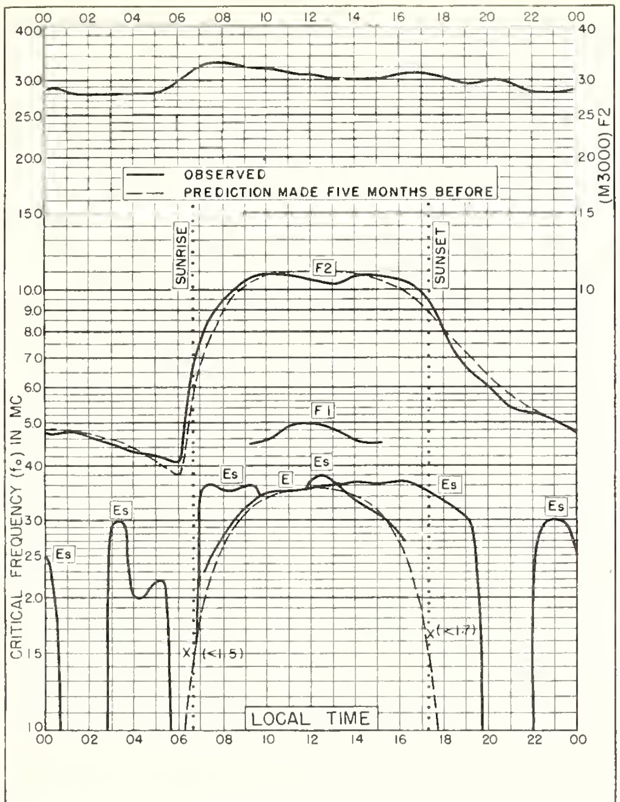

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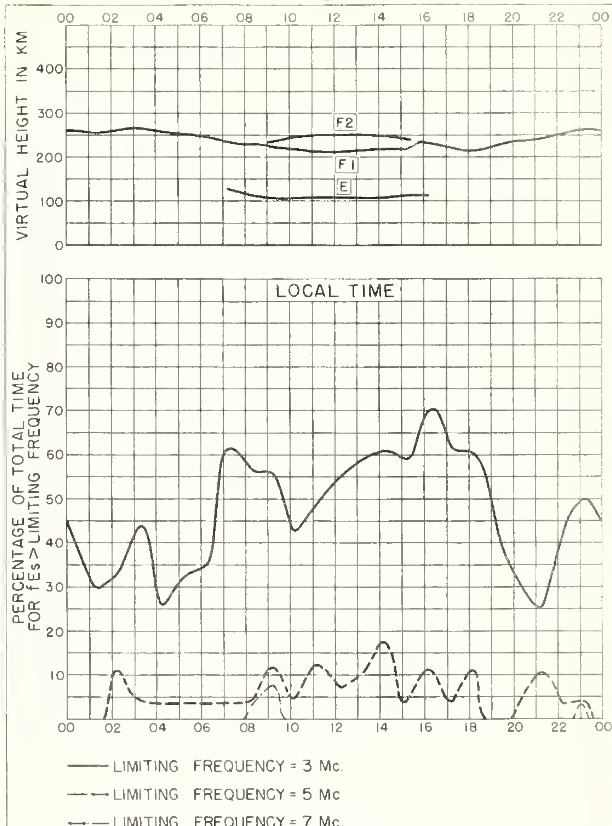

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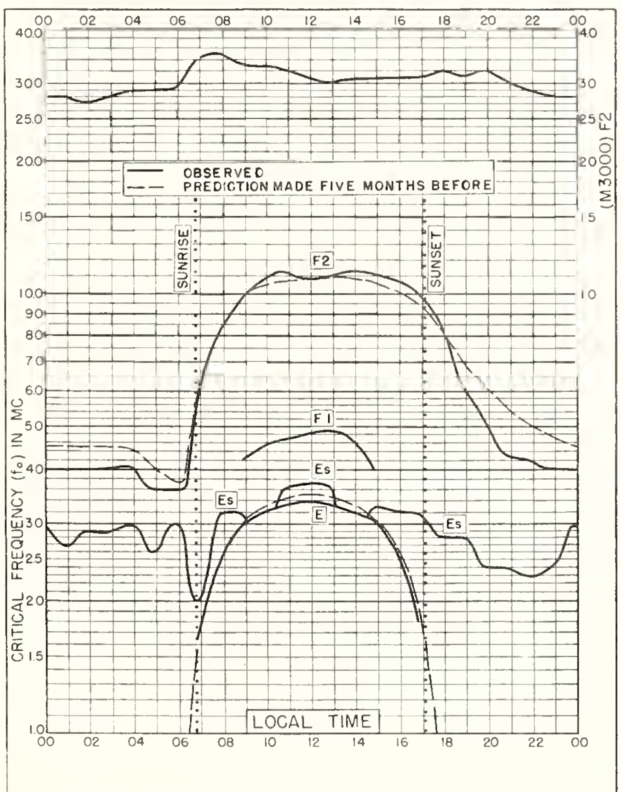

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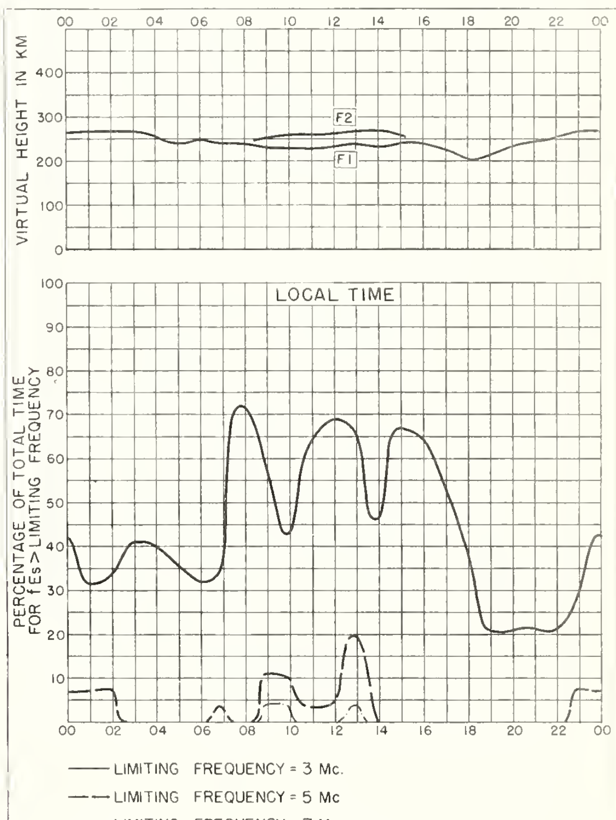

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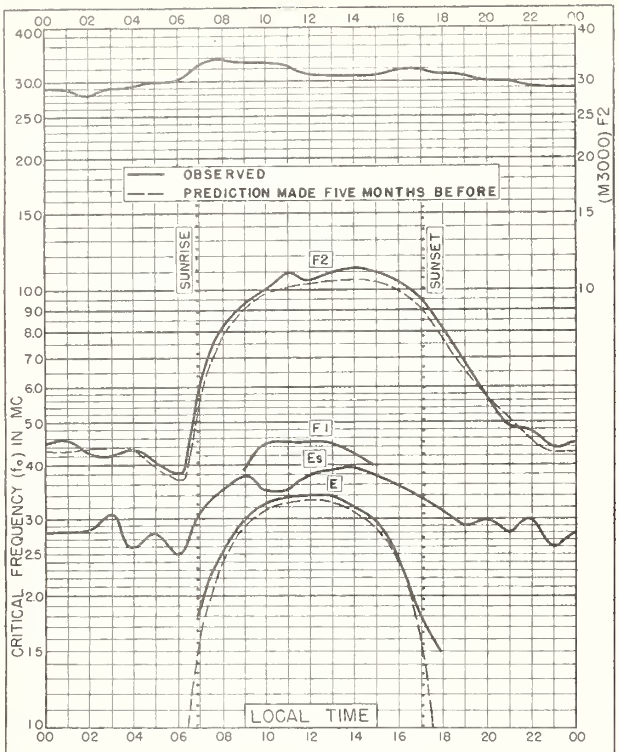

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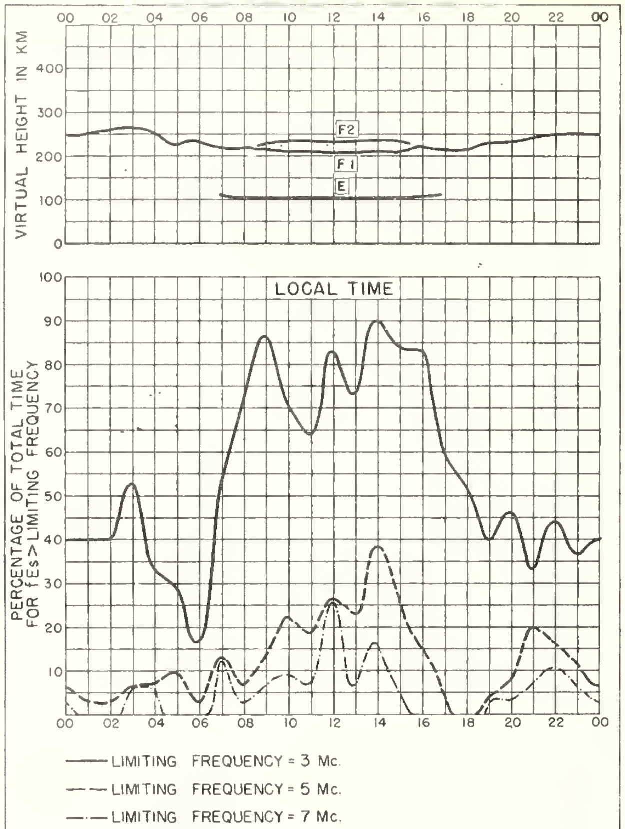

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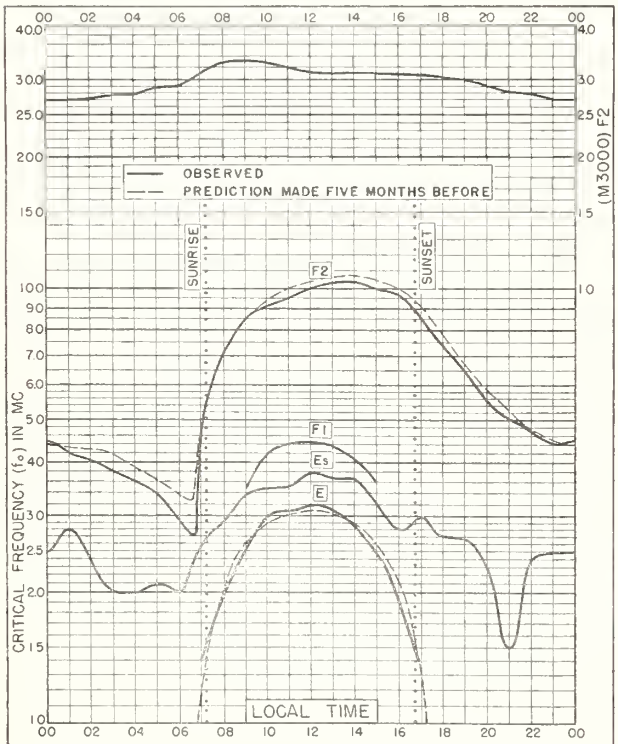

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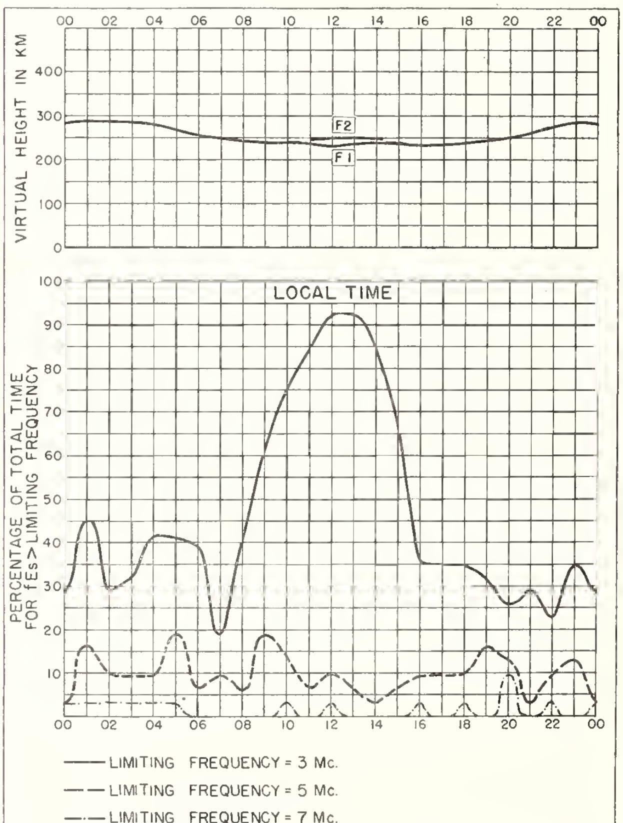

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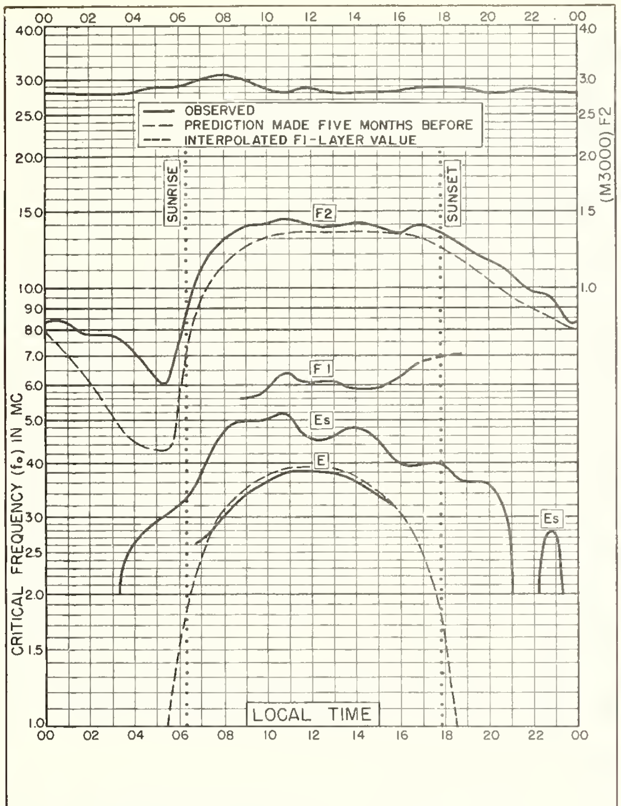

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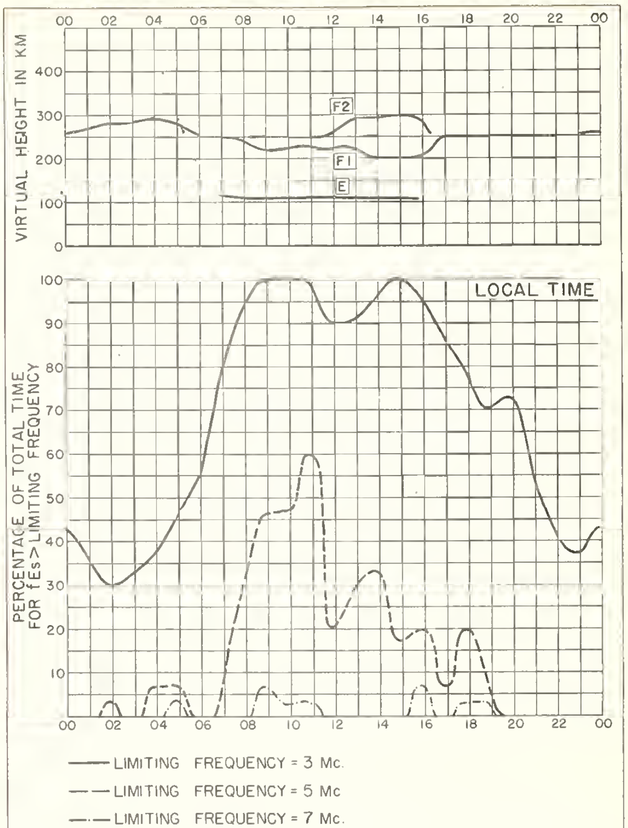

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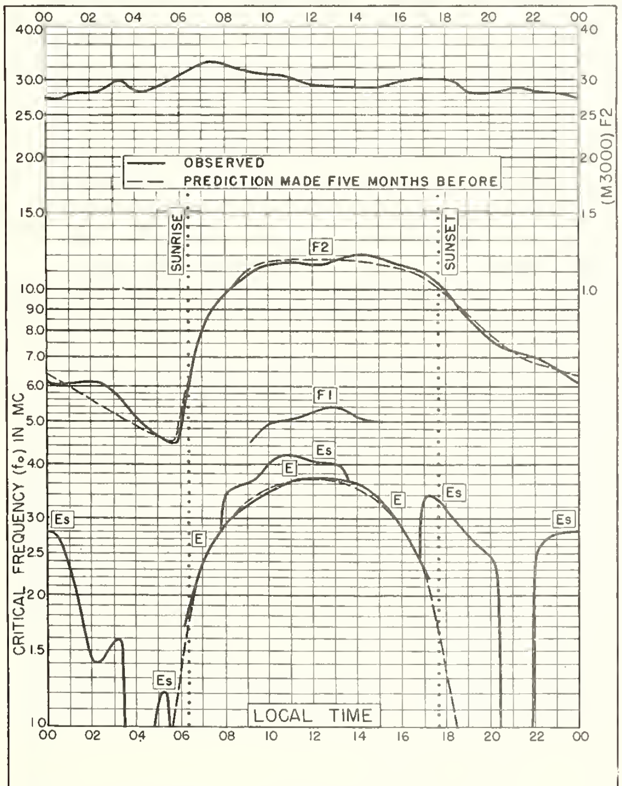

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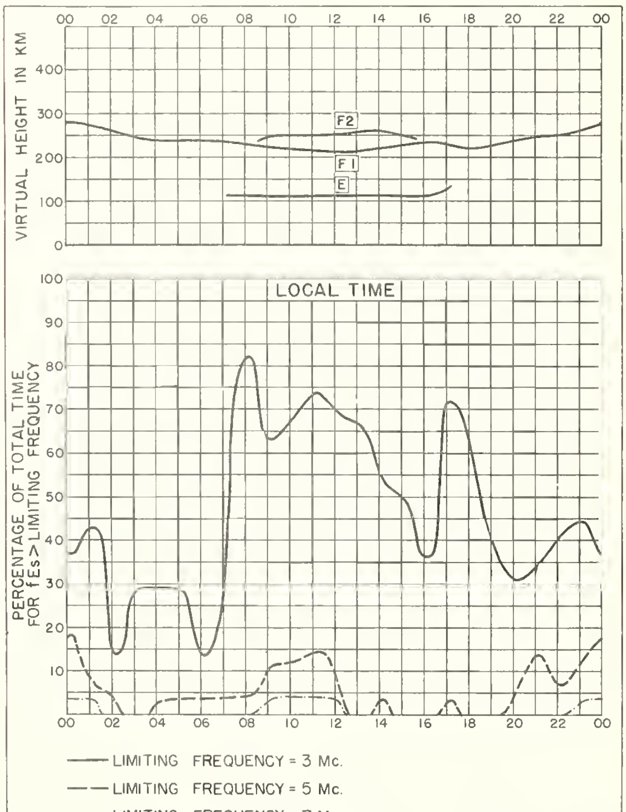

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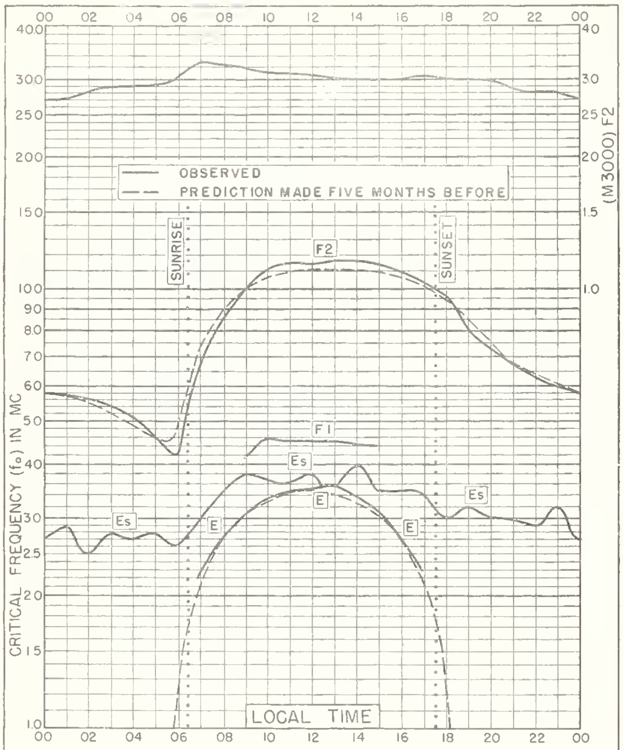

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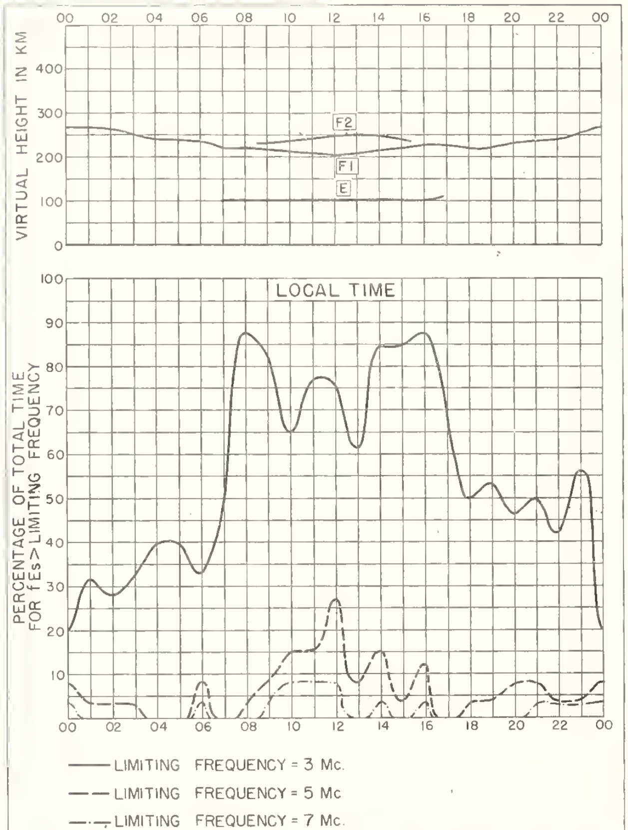

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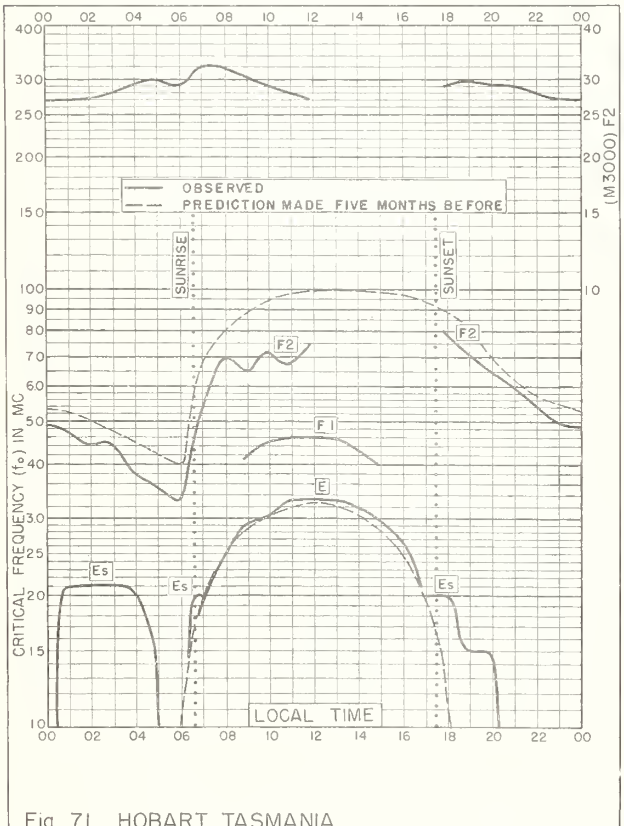

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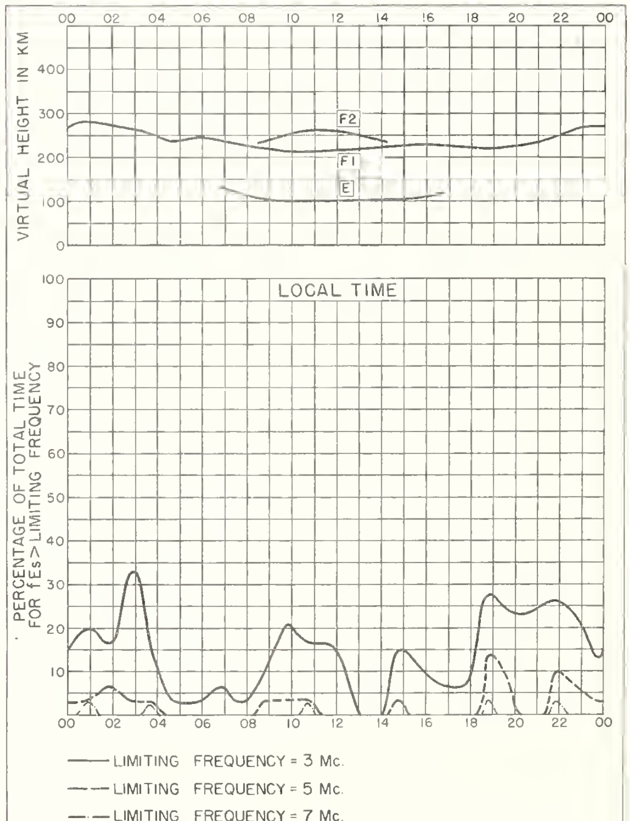

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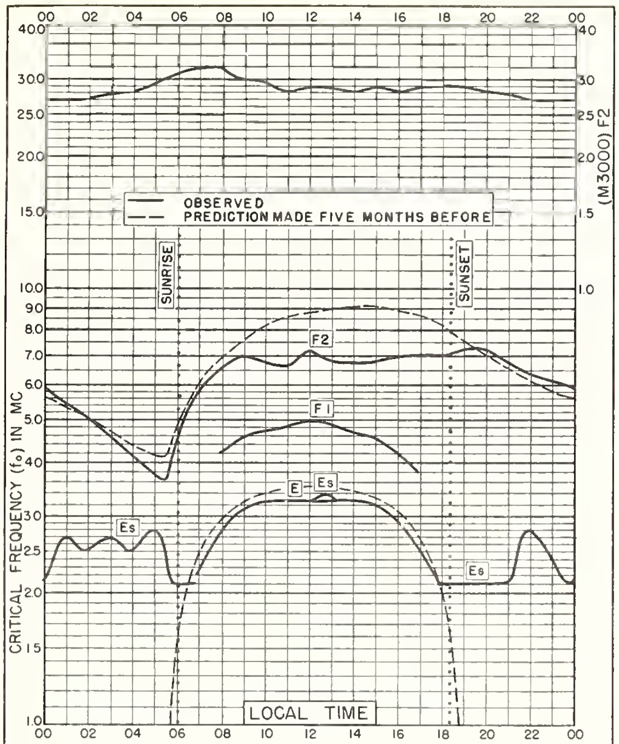

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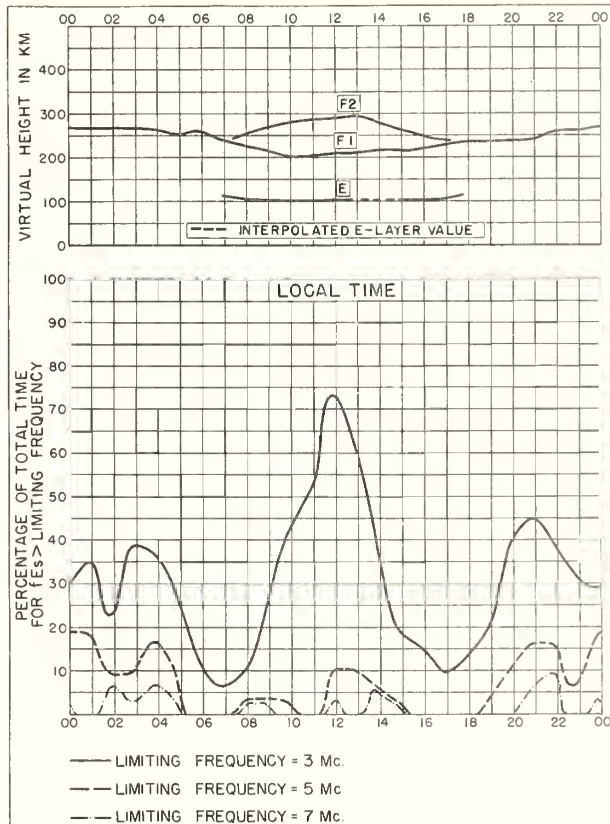

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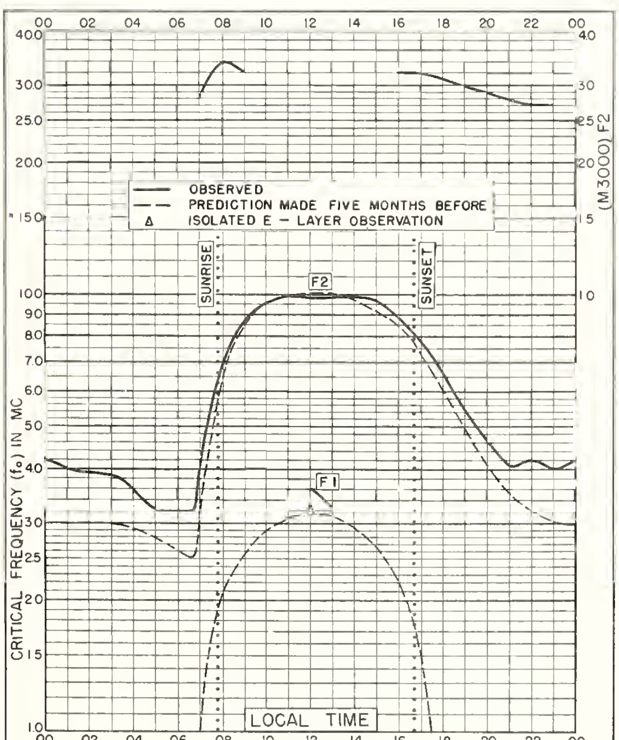

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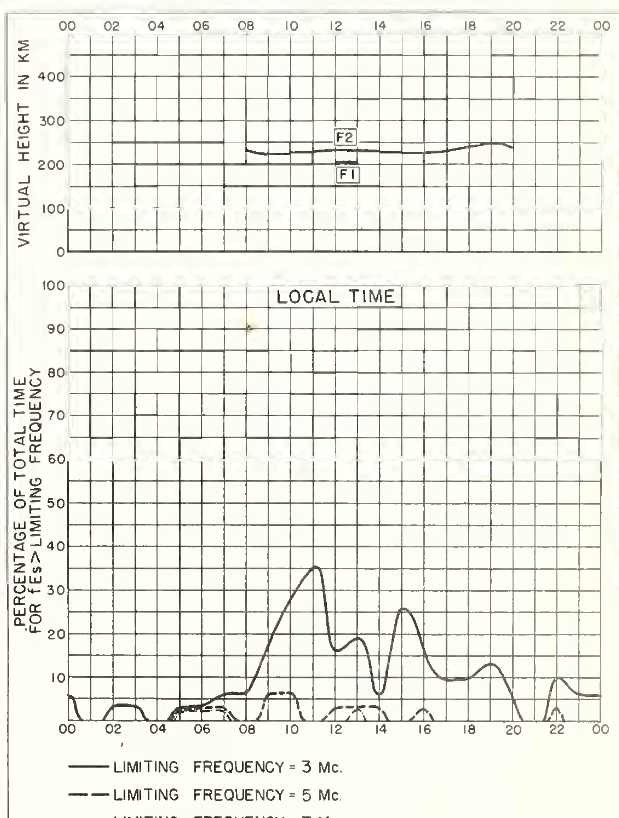

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Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:
CRPL–J. Radio Propagation Forecast (of days most likely to be disturbed during following month).

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–13–1 ( ), monthly supplements to DNC–13–1.)
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.
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T2. Radar coverage and weather. (Superseded by JANP 102.)
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