CRPL-F72

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		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 40 and figures 1 to 80 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:

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

French Ministry of Naval Armaments (Section for Scientific Research):
Dakar, French West Africa
Fribourg, Germany

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

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

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

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

Radio Wave Research Laboratories, National Taiwan 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)
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 41 to 52 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 53 presents ionosphere character figures for Washington, D. C., during July 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.

SUDDEN IONOSPHERE DISTURBANCES

Tables 54 through 59 list the sudden ionosphere disturbances observed at Ft. Belvoir, Virginia, July 1950; Brentwood and Somerton, England, July 1950; Point Reyes, California, July 1950; Colombo, Ceylon, May 1950; Riverhead, New York, July 1950; and Lindau/Harz, Germany, June 1950, respectively.

RADIO PROPAGATION QUALITY FIGURES

Table 60 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, June 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 61 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 62 through 64 give the observations of the solar corona during July 1950 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 65 through 67 list the coronal observations obtained at Sacramento Peak, New Mexico, during June 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 62 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 63 gives similarly the intensities of the first red (6374A) coronal line; and table 64, the intensities of the second red (6702A) coronal line; all observed at Climax in July 1950.

Table 65 gives the intensities of the green (5303A) coronal line; table 66, the intensities of the first red (6374A) coronal line; and table 67, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in June 1950.

The following symbols are used in tables 62 through 67: 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.

OBSERVATIONS OF SOLAR FLARES

Table 68 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 69 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.

Table 1

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	5.2					3.0	2.8
01	280	4.8						2.9
02	280	4.5					2.5	2.9
03	280	3.9					2.3	2.9
04	280	3.5					2.6	2.9
05	280	3.7			(120)	(1.7)	1.8	3.0
06	300	4.7	230	3.5	(110)	2.3	4.3	3.0
07	380	5.3	230	4.2	110	2.7	4.1	2.9
08	360	5.7	220	4.5	110	3.1	4.8	2.9
09	370	5.9	200	4.6	100	3.3	5.4	2.9
10	380	6.0	200	4.8	(100)	3.4	6.8	2.8
11	400	6.0	200	4.8	(100)	3.5	5.4	2.8
12	420	6.0	200	4.8	(100)	3.6	5.5	2.7
13	400	6.1	200	4.8	(100)	3.5	5.1	2.7
14	380	6.2	200	4.8	(100)	(3.5)	4.2	2.8
15	400	6.4	210	4.7	(110)	3.4	4.6	2.8
16	360	6.4	220	4.6	110	3.2		2.8
17	340	6.6	220	4.3	110	3.0		2.8
18	300	6.8	240	(3.8)	110	2.5	3.8	2.9
19	270	6.9			(120)	1.7	4.2	2.9
20	260	(7.1)					3.5	(2.9)
21	270	(6.6)					3.8	(2.8)
22	280	(6.0)					3.0	(2.8)
23	290	(5.5)						(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) — June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.5					2.4	(2.8)
01	280	6.2					2.7	(2.8)
02	280	5.8					2.9	(2.8)
03	295	5.9	275	2.5	150	1.5	3.3	(2.7)
04	300	5.9	260	3.2	120	1.9	3.5	2.8
05	330	6.1	230	3.8	110	2.3	3.4	2.8
06	360	6.0	230	4.1	105	2.6	3.5	2.8
07	340	6.4	220	4.4	105	2.9	3.6	2.8
08	360	6.4	210	4.7	100	3.1	3.7	2.8
09	350	7.0	205	4.8	100	3.3	3.8	2.8
10	335	6.9	205	4.9	100	3.3	4.8	2.8
11	350	6.7	205	5.0	100	3.4	5.0	2.9
12	380	6.6	200	5.0	100	3.4	3.9	2.8
13	365	6.6	200	5.0	100	3.4	4.0	2.8
14	370	6.7	200	5.0	100	3.4	3.8	2.8
15	350	6.5	210	5.0	100	3.3	3.8	2.8
16	355	6.4	210	4.7	100	3.2	3.8	2.9
17	350	6.5	215	4.5	105	3.0	3.6	2.9
18	310	6.7	230	4.3	105	2.8	3.6	2.9
19	305	6.8	240	3.9	110	2.4	3.6	3.0
20	265	6.8	245	(3.3)	115	2.0	3.9	3.0
21	260	7.0	---	---	120	1.6	3.4	(3.0)
22	250	6.7			---	---	2.4	(2.9)
23	260	6.8					2.1	(2.8)

Time: 15.0°E.
Sweep: 1.3 Mc to 14.0 Mc in 8 minutes, automatic operation; supplementary recorder, 1.6 Mc to 10.0 Mc.

Table 3

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	5.9					4.4	2.8
01	300	5.6					3.0	2.8
02	300	5.4					2.8	2.7
03	290	5.1					2.9	2.8
04	300	4.8					3.1	2.8
05	300	5.0	---	---	---	---	3.2	2.8
06	340	5.7	250	3.7	120	2.3	3.7	2.9
07	380	6.2	240	4.4	120	2.8	5.0	2.8
08	380	6.6	230	4.6	120	3.9	5.3	2.7
09	400	7.1	210	4.8	120	3.9	5.2	2.7
10	420	7.1	210	5.0	120	4.0	5.5	2.6
11	410	7.3	210	5.0	120	4.0	5.4	2.6
12	410	7.4	220	5.0	120	4.0	5.6	2.6
13	380	7.6	230	5.0	120	4.0	4.8	2.6
14	380	7.5	220	5.0	120	3.8		2.8
15	350	7.4	230	4.9	120	3.9		2.8
16	340	7.2	240	4.7	120	3.6	4.4	2.9
17	340	7.2	240	4.5	120	2.9	4.4	2.9
18	300	7.4	240	4.0	120	2.5	4.1	3.0
19	260	7.2					3.8	3.1
20	240	6.8					3.6	3.0
21	260	6.6					3.8	2.9
22	280	6.0					5.3	2.8
23	300	5.8					4.9	2.8

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

Table 4

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.0					4.2	2.6
01	290	5.9					3.5	2.7
02	280	5.7					3.8	2.7
03	280	5.4					3.0	2.7
04	280	5.1					3.2	2.7
05	280	5.0	---	---	---	---	4.3	2.8
06	240	5.9	240	---	120	(2.3)	5.2	2.8
07	330	6.7	230	4.4	(110)	(2.8)	5.6	2.7
08	330	7.4	220	4.7	110	(3.1)	6.4	2.7
09	340	7.6	210	4.9	110	(3.4)	5.7	2.7
10	380	7.8	210	5.1	110	(3.7)	5.7	2.6
11	400	8.0	210	5.2	110	(3.8)	5.4	2.5
12	400	8.2	220	5.2	110	(3.9)	5.5	2.6
13	380	8.7	220	5.2	110	(3.9)	5.0	2.6
14	360	8.6	220	5.1	110	3.8	5.4	2.6
15	360	8.4	220	5.0	110	3.6	5.4	2.6
16	340	8.3	220	4.8	110	3.3	5.0	2.7
17	320	8.1	240	4.4	110	(3.0)	4.8	2.8
18	300	8.0	240	---	(110)	(2.4)	4.2	2.8
19	260	8.0					3.8	2.9
20	240	7.7					3.0	2.9
21	270	6.8					3.6	2.7
22	280	6.0					3.9	2.7
23	300	6.0					3.6	2.6

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

Table 5

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.1						2.7
01	310	6.0						2.8
02	320	5.6						2.8
03	320	5.2						2.8
04	320	4.8						2.8
05	310	4.7						2.9
06	300	5.8	270	---	---	---		2.9
07	330	6.4	240	---	130	2.8	4.0	2.8
08	360	6.6	240	4.8	120	(3.2)	4.5	2.8
09	390	7.7	230	5.0	120	(3.4)	4.3	2.7
10	390	8.0	230	5.1	120	(3.5)	4.2	2.7
11	410	8.2	230	5.2	120	(3.6)		2.6
12	420	8.2	230	5.2	---	(3.5)		2.6
13	430	8.7	250	5.2	---	(3.5)		2.6
14	390	8.7	260	5.1	---	(3.6)		2.7
15	380	8.6	270	4.9	120	(3.5)		2.6
16	370	8.4	250	4.7	120	3.3		2.7
17	350	8.2	260	---	120	(3.0)		2.7
18	310	8.3	270	---	130	---	3.9	2.8
19	280	8.0					3.2	2.8
20	280	7.6					3.7	2.8
21	290	7.0						2.8
22	300	6.4						2.7
23	320	6.0						2.7

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

Table 6

Maui, Hawaii (20.8°N, 156.5°W) — June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	8.6						2.8
01	280	8.4						2.9
02	260	8.0						3.0
03	260	7.0						3.0
04	260	6.2						2.9
05	280	6.0						2.8
06	260	6.3			130	---		2.9
07	240	6.6	230	---	120	(2.7)	4.0	2.8
08	340	7.8	220	4.9	110	(3.0)	5.2	2.6
09	390	8.6	210	4.9	110	3.4	4.9	2.4
10	420	9.3	210	5.1	110	3.6	5.3	2.4
11	410	10.0	210	5.2	110	3.7	5.6	2.5
12	400	10.6	210	5.2	110	(3.8)	5.4	2.6
13	370	11.2	210	5.2	110	(3.8)	4.6	2.6
14	360	11.6	210	5.1	110	3.8	5.0	2.7
15	350	11.8	220	5.0	110	3.6	5.0	2.8
16	320	11.9	220	4.8	110	3.4	4.9	2.9
17	300	12.0	230	4.4	110	3.0	4.4	2.9
18	270	11.4	240	---	110	(2.3)	3.9	3.0
19	260	10.4					3.2	3.0
20	260	9.8					3.0	2.9
21	280	9.3					2.7	2.8
22	290	9.2						2.8
23	300	8.8						2.8

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

Table 7

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	9.4						2.8
01	240	8.9						2.9
02	250	8.0						2.8
03	250	(7.3)						2.8
04	260	7.2						2.8
05	250	6.4						2.9
06	240	6.2						2.9
07	230	(7.2)		---				(2.9)
08	280	8.1		4.7		(3.3)	4.2	2.9
09	300	8.8		5.0		3.5	4.4	2.9
10	330	9.5		5.3		---	4.1	2.8
11	330	10.0		(5.3)		---	5.0	2.8
12	320	10.5		5.3		---	4.9	2.9
13	(340)	(11.2)		(5.2)		---	5.3	(2.7)
14	300	11.5		5.3		---	5.6	2.8
15	300	11.7		5.1		3.7	5.2	2.9
16	290	11.3		4.9		3.5	4.9	3.0
17	280	(10.2)		---		---	4.6	2.8
18	250	10.0		---			4.2	2.8
19	240	(9.8)						(2.8)
20	260	(9.4)						(2.8)
21	260	(9.2)						(2.8)
22	270	(9.3)						(2.8)
23	270	9.4						2.8

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

Table 8

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	10.5						3.2
01	230	9.4						3.1
02	240	8.5						3.1
03	240	8.0						3.2
04	220	7.4						3.2
05	240	6.9						3.2
06	240	6.4			100	1.8	2.6	3.1
07	220	7.4	210	---	100	2.6	3.4	3.2
08	250	8.0	200	4.7	100	3.2	4.3	3.0
09	300	8.8	200	5.1	100	3.6	4.6	2.8
10	320	9.8	200	5.2	100	3.8	4.8	2.7
11	340	10.8	220	5.3	100	3.9	5.0	2.8
12	340	11.4	210	5.3	100	4.0	5.1	2.8
13	320	12.0	200	5.2	100	3.9	5.2	2.9
14	320	12.4	210	5.2	100	3.8	5.5	2.9
15	320	12.2	200	5.1	100	3.6	5.0	2.9
16	300	12.2	220	5.0	100	3.3	5.4	2.9
17	270	11.6	220	4.4	100	2.8	4.4	2.9
18	240	11.2	---	---	100	2.3	4.1	2.9
19	260	10.8					4.2	2.9
20	270	10.9					3.0	2.8
21	260	11.4					2.0	2.9
22	260	11.3					2.3	3.0
23	240	11.0					2.0	3.1

Time: 60.0°W.
Sweep: 1.2 Mc to 18.0 Mc, manual operation.

Table 9

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.0						3.0
01	230	6.6						3.0
02	220	6.1						3.1
03	240	5.4						3.1
04	230	4.8						3.1
05	240	4.0						3.1
06	290	4.4			100	1.2	3.0	2.9
07	240	7.0			100	2.3	4.3	2.9
08	270	8.6	230	4.9	100	2.9	4.9	2.8
09	300	9.0	210	5.0	100	---	8.7	2.5
10	310	9.0	210	5.1	100	---	10.6	2.5
11	320	8.8	200	5.0	100	---	10.7	2.4
12	320	8.7	200	5.0	100	---	10.8	2.4
13	320	8.8	200	5.0	100	---	10.8	2.4
14	310	8.9	200	4.8	100	---	10.7	2.4
15	300	8.9	210	4.8	100	---	9.9	2.4
16	240	8.9	230	4.8	100	2.7	6.2	2.4
17	250	9.1			100	2.0	4.2	2.5
18	300	8.8						2.4
19	300	8.4						2.4
20	280	8.4						2.5
21	250	8.4						2.7
22	230	7.8						2.8
23	230	7.3						2.9

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

Table 10

DeBilt, Holland (52.1°N, 5.2°E) May 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	6.2					2.3	2.5
01	310	5.7					2.3	2.5
02	300	5.4					2.7	2.6
03	305	5.2					2.7	2.6
04	300	5.4	300	2.9	175	1.8	3.3	2.7
05	300	5.9	250	3.5	120	2.1	3.6	2.8
06	310	6.2	230	4.0	105	2.6	3.9	2.8
07	340	6.9	220	4.5	100	3.0	4.6	2.8
08	350	6.9	220	4.7	100	3.2	4.7	2.8
09	350	7.3	220	5.0	100	3.4	4.6	2.8
10	385	7.6	210	5.0	100	3.5	4.9	2.7
11	380	7.6	220	5.2	100	3.5	4.7	2.7
12	390	7.3	210	5.2	100	3.5	4.6	2.7
13	350	7.6	220	5.0	100	3.5	4.2	2.7
14	360	7.6	220	4.9	100	3.4	4.2	2.7
15	325	8.0	225	4.8	100	3.3	3.9	2.8
16	310	7.9	235	4.5	105	3.1	4.0	2.8
17	300	8.2	240	4.1	105	2.7	4.0	2.8
18	285	8.4	250	3.5	110	2.3	3.6	2.8
19	280	8.2	---	---	---	1.8	3.0	2.9
20	270	7.7					2.7	2.8
21	280	7.1					2.2	2.7
22	290	6.9					2.2	2.6
23	300	6.4					2.1	2.6

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

Table 11

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.1					2.0	
01	290	5.9					2.2	
02	300	5.5					2.2	
03	290	5.2					2.1	
04	280	5.0	---	---	---	E	2.5	
05	270	5.5	270	---	110	1.8	3.2	
06	270	5.9	250	3.9	100	2.4	4.2	
07	310	6.2	230	4.2	100	2.8	4.4	
08	330	6.6	220	4.6	100	3.1	4.5	
09	360	7.0	220	4.7	100	3.3	4.7	
10	350	7.4	210	4.9	100	3.4	4.9	
11	340	7.6	210	5.0	100	3.5	4.6	
12	370	7.7	220	5.1	100	3.6	4.6	
13	360	7.6	210	5.1	100	3.6	5.2	
14	360	7.6	220	5.1	100	3.5	4.6	
15	320	7.6	220	4.9	100	3.4	4.1	
16	310	7.8	220	4.8	100	3.3	4.0	
17	290	7.8	230	4.4	100	3.0	3.5	
18	260	8.0	250	---	100	2.6	3.6	
19	260	8.3	---	---	100	2.1	3.7	
20	250	8.1			---	E	3.0	
21	250	7.7					2.6	
22	260	7.1					2.5	
23	280	6.7					2.2	

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

Table 12

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07								
08	280	9.4	240	4.9	120	3.3	5.4	3.0
09	300	9.8	240	5.8	120	3.5	5.6	2.8
10	320	11.8	250	5.8	120	4.0	5.8	2.9
11	330	12.8	220	5.8	120	3.3	5.4	2.5
12	320	14.3	220	6.1	110	3.8	4.8	2.8
13	320	14.4	210	6.0	120	3.6	5.0	2.7
14	320	14.4	240	5.7	120	3.7	5.2	2.8
15	320	14.4	220	5.4	120	4.0	4.8	2.9
16	320	14.4	240	5.7	120	3.8	4.7	2.9
17	280	14.4	240	4.9	120	3.1	4.7	3.2
18	280	14.4	---	5.6	120	---	5.4	3.2
19	260	14.4					4.5	3.2
20								
21								
22								
23								

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

Table 13

Guam I. (13.6°N. 144.9°E) May 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(10.9)						(2.7)
01	260	(10.7)						(2.9)
02	250	9.8						3.0
03	250	9.3						3.1
04	240	8.3					4.0	3.1
05	230	6.2					4.0	3.1
06	250	6.7			---	---	5.5	3.0
07	250	8.4	---	---	110	2.9	7.3	3.0
08	250	9.5	220	---	110	(3.2)	8.8	2.9
09	260	10.2	220	---	110	(3.5)	8.5	2.6
10	300	10.8	220	---	110	3.8	8.8	2.5
11	320	11.1	220	---	110	(4.0)	8.5	2.4
12	340	12.0	220	5.3	110	(4.0)	8.8	2.5
13	340	(12.6)	210	---	110	(4.0)	8.7	(2.4)
14	340	12.8	220	---	110	3.9	7.0	2.4
15	340	(13.0)	220	---	110	3.7	4.9	(2.5)
16	340	(13.0)	230	---	110	3.4	6.0	(2.4)
17	250	(13.0)	240	---	110	2.9	7.0	(2.4)
18	270	(13.0)			120	---	6.2	(2.4)
19	310	(12.4)					4.6	(2.4)
20	350	(11.6)					1.7	(2.2)
21	360	(11.1)						(2.3)
22	350	(10.8)					3.6	(2.4)
23	320	(10.4)					2.1	(2.5)

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

Table 14

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.9						2.8
01	(300)	3.0						2.8
02	(280)	3.0						2.9
03	(260)	3.1						3.0
04	(250)	3.0						3.0
05	(230)	3.0					1.9	2.9
06	(240)	3.0						2.9
07	230	6.7			---	2.1		3.3
08	230	9.1	---	---	110	2.7		3.4
09	240	10.3	220	---	110	(3.1)		3.2
10	250	11.4	220	---	110	3.4		3.2
11	250	11.3	220	---	110	(3.6)		3.1
12	250	11.4	220	---	110	(3.6)	3.7	3.0
13	260	11.5	220	---	110	3.6	3.8	2.9
14	260	11.5	220	4.3	110	(3.6)	3.6	2.9
15	250	11.8	230	---	110	(3.2)	3.7	2.9
16	240	11.4	230	---	120	(2.8)	3.0	3.0
17	230	11.0			100	2.1		3.1
18	220	9.7			---	---		3.2
19	220	7.3						3.2
20	230	5.7						3.2
21	230	4.4						3.3
22	230	3.2						3.2
23	(260)	3.0						2.9

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

Table 15

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.6						2.8
01	(280)	2.8						2.8
02	(300)	2.8						(2.8)
03	(380)	(3.0)						(2.8)
04	(280)	(3.1)						(2.9)
05	(270)	(3.1)						(3.0)
06	(250)	(3.0)						2.9
07	(240)	(3.1)			---	E		3.0
08	220	6.5			130	(2.1)		3.4
09	230	8.7	240	---	110	(2.7)		3.4
10	240	(10.0)	230	---	110	(3.1)		(3.3)
11	240	(10.5)	220	---	110	(3.4)		(3.2)
12	240	(11.1)	220	---	110	(3.5)		(3.2)
13	240	(11.0)	230	---	110	---		(3.1)
14	250	(11.6)	230	---	110	(3.4)		(3.0)
15	250	(12.0)	240	---	110	(3.2)		(3.0)
16	240	(11.9)	240	---	110	(3.0)		(3.1)
17	230	(10.9)			120	2.4		(3.1)
18	220	(10.0)			110	(1.8)		(3.2)
19	210	7.5			---	---		3.2
20	220	5.4						3.3
21	220	(3.8)						3.4
22	(240)	(2.8)						(3.3)
23	(260)	(2.6)						(3.1)

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

Table 16

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.3					2.2	2.6
01	300	7.2					2.2	2.6
02	280	7.0						2.7
03	270	6.7						2.7
04	270	6.2						2.6
05	280	6.6			150	1.6		2.8
06	240	8.4			120	2.4		3.1
07	230	9.2	---	---	110	3.0		3.1
08	250	9.6	240	---	110	3.3		3.0
09	260	10.5	230	---	110	3.5		3.0
10	260	11.0	230	---	110	3.6		2.9
11	290	11.6	220	---	110	3.7		2.8
12	290	12.2	220	---	110	---		2.8
13	300	12.0	240	---	110	3.6		2.8
14	290	12.0	240	---	110	3.6		2.8
15	290	11.7	250	---	110	3.4		2.9
16	260	11.6	240	---	110	3.1		3.0
17	250	11.0	---	---	110	2.7		3.0
18	250	10.7			120	1.9	2.4	3.0
19	240	9.4					2.8	3.0
20	250	8.0					2.4	2.8
21	280	7.4					2.6	2.7
22	290	7.6					2.4	2.6
23	300	7.5					2.3	2.6

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) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	7.5					2.4	2.8
01	280	7.4					2.2	2.8
02	260	7.0					2.2	2.9
03	250	6.6					2.0	2.8
04	260	6.2					2.0	2.7
05	260	6.5	---	---	120	1.4		2.9
06	230	8.3	---	---	100	2.4		3.2
07	230	9.4	---	---	100	2.9		3.3
08	230	9.9	220	---	100	3.4		3.2
09	250	10.5	220	---	100	3.5	4.8	3.1
10	260	11.4	210	---	100	3.7	4.5	2.9
11	280	12.2	210	---	100	3.8	4.8	2.9
12	290	12.6	220	---	100	3.8	4.6	2.9
13	290	12.7	220	---	100	3.8	4.6	2.9
14	280	12.6	220	---	100	3.6		2.9
15	280	12.6	220	---	100	3.5		3.0
16	260	12.2	230	---	100	3.2	3.8	3.0
17	240	11.8	---	---	100	2.6	3.5	3.1
18	230	11.2			110	1.9	3.2	3.2
19	220	9.2					3.0	3.2
20	230	7.9					2.6	3.0
21	270	7.4					2.4	2.7
22	290	7.8					2.0	2.8
23	290	7.8					2.4	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) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	8.6					3.0	2.7
01	300	8.4					2.2	2.8
02	280	8.4					2.6	2.8
03	270	7.5					2.4	2.9
04	270	6.4					2.2	2.8
05	280	5.8						2.8
06	280	7.0			150	1.8		3.0
07	250	8.9			120	2.6		3.2
08	250	9.6	230	---	120	3.2	4.1	3.1
09	260	10.3	240	---	110	3.4	4.6	2.9
10	270	11.2	230	---	110	3.7	4.9	2.8
11	300	12.4	230	---	110	3.8	4.9	2.8
12	320	13.2	240	---	110	3.9	4.8	2.8
13	300	13.7	240	---	110	3.8	5.0	2.8
14	300	14.0	240	---	120	3.8	4.4	2.6
15	300	13.9	240	---	110	3.6	4.8	2.8
16	290	13.9	240	---	110	3.4	4.2	2.8
17	280	13.4	260	---	120	3.0	4.0	2.9
18	270	12.9	---	---	110	2.3	3.4	3.0
19	250	11.7	---	---	---	1.7	3.4	3.0
20	240	9.8					3.2	2.8
21	270	9.0					2.6	2.7
22	300	8.8					2.4	2.6
23	310	8.6					2.8	2.7

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

Table 19

Formosa, China (26.0°N, 121.0°E) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07								
08	280	12.4	220	5.8	100	3.3	3.9	2.7
09	280	13.3	230	6.1	100	3.9	4.3	2.8
10	300	14.3	220	6.2	100	3.8	4.6	2.7
11	300	14.4	200	6.1	100	3.8	4.4	2.8
12	320	14.4	200	6.4	100	3.9	3.9	2.8
13	320	14.4	200	5.8	100	3.9	4.4	2.9
14	280	14.4	200	6.0	100	4.0	4.5	3.0
15	300	14.4	200	6.4	100	3.9	4.4	3.0
16	300	14.4	240	5.6	100	4.0		3.2
17	260	14.4	200	6.0	100	3.4	3.2	3.3
18	240	14.4	---	---	100	---	3.0	3.3
19	240	14.3	---	---	---	---	2.7	3.3
20								
21								
22								
23								

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

Table 20

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.1					2.7	2.8
01	270	5.1					2.9	2.8
02	260	5.1					2.8	2.9
03	250	4.9					3.0	3.0
04	240	4.4					2.8	3.0
05	250	4.2					2.5	2.8
06	250	4.2					2.4	2.9
07	240	7.0				2.0		3.4
08	240	9.5	240	---		2.7	3.2	3.4
09	250	10.7	230	4.8		3.1	3.4	3.3
10	250	11.2	230	4.8		3.3	3.7	3.2
11	250	11.5	220	4.8		3.3	3.8	3.1
12	260	11.6	220	4.8		3.4	3.8	3.1
13	270	11.8	230	4.9		3.4	3.6	3.0
14	260	11.8	240	5.0		3.3	3.6	3.0
15	260	11.8	240	4.2		3.3	3.3	3.0
16	240	11.4	240	---		2.8	3.2	3.0
17	240	10.8				2.1	3.0	3.1
18	220	9.6					2.4	3.1
19	230	8.1					2.9	3.1
20	240	7.2					2.6	3.0
21	240	6.0					2.9	3.0
22	250	5.5					2.4	2.9
23	250	5.2					2.9	2.8

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

Table 21

Christchurch, New Zealand (43.6°S, 172.7°E) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.6					2.0	2.6
01	300	5.5					2.2	2.6
02	290	5.3					2.2	2.6
03	290	5.2					1.6	2.7
04	280	5.2					1.8	2.7
05	260	4.7					2.7	2.8
06	260	4.2				---	1.8	2.9
07	240	6.2	---	---		1.6	2.0	3.2
08	250	8.2	240	3.8		2.4		3.2
09	250	9.7	240	4.3		2.8		3.2
10	250	10.2	230	4.4		3.2	3.5	3.1
11	250	10.8	230	4.7		3.3		3.0
12	260	11.0	230	4.8		3.3		3.0
13	250	11.2	230	4.7		3.3		3.0
14	250	10.8	240	4.6		3.2	3.4	3.0
15	250	10.6	240	4.1		3.0	3.1	3.0
16	250	10.6	250	3.5		2.5	2.8	3.0
17	240	10.2				1.9	2.0	3.0
18	240	9.4				1.4	2.0	3.0
19	250	8.2					1.7	2.9
20	250	7.4					1.5	2.8
21	260	6.6					1.8	2.8
22	270	6.4					1.8	2.8
23	270	6.0					1.3	2.7

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

Table 22

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	7.8						3.0
01	300	8.0						2.9
02	300	7.8						2.9
03	280	7.4						3.0
04	300	7.8						2.9
05	280	6.7					2.9	3.0
06	290	7.6	---	---			2.5	3.1
07	250	9.3	250	5.5	110	2.3	3.3	3.1
08	250	10.7	240	6.0	110	2.9	3.8	3.3
09	250	10.9	240	5.4	110	3.5	3.9	3.2
10	290	11.2	240	6.0	110	3.6	4.4	3.1
11	290	11.3	240	6.3	110	3.8	4.3	3.1
12	300	11.6	250	6.1	110	3.9	4.6	3.1
13	300	11.8	250	6.3	110	4.0	4.4	3.1
14	300	11.8	250	5.8	110	3.8	4.3	3.0
15	300	11.8	250	5.8	110	3.7	4.5	3.0
16	290	11.2	250	5.5	110	3.5	4.6	3.0
17	300	11.3	250	5.6	110	3.1	4.4	3.0
18	260	10.3	260	---	---	---	3.8	3.2
19	270	10.2	---	---			3.6	3.1
20	270	9.5	---	---			3.5	3.1
21	270	9.2					2.9	3.0
22	280	8.2						3.0
23	280	9.0						2.9

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

Table 23

Delhi, India (28.6°N, 77.1°E) February 1950 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.0						3.0
01	320	4.7						
02	---	---						
03	---	---						
04	---	---						3.0
05	300	4.3						
06	300	5.0						
07	280	6.8						
08	280	8.9						3.2
09	300	10.5						
10	300	11.8						
11	300	12.5						
12	320	13.2						3.0
13	320	13.2						
14	310	13.5						
15	300	13.2						
16	300	12.8						3.0
17	300	12.0						
18	300	11.3						
19	300	10.9						
20	300	9.2						3.0
21	320	7.8						
22	320	6.8						3.1
23	320	5.8						

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

Table 24

Bombay, India (19.0°N, 73.0°E) February 1950 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	270	7.4						
08	360	10.6						2.9
09	390	12.4						
10	420	13.2						
11	420	13.9						
12	420	14.2						2.7
13	---	---						
14	(420)	(13.9)						
16	420	14.2						
16	420	14.0						2.7
17	420	14.0						
18	420	13.9						
19	390	13.9						
20	390	13.8						2.7
21	390	12.7						
22	(390)	(11.9)						2.9
23	---	---						

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

Table 25

Madras, India (13.0°N, 80.2°E) February** 1950

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	9.3						
08	390	10.5						2.8
09	420	11.2						
10	480	11.4						
11	480	11.4						
12	480	11.4						2.5
13	480	11.3						
14	480	11.4						
15	480	11.7						
16	500	12.2						2.5
17	480	12.3						
18	480	12.2						
19	480	12.1						
20	480	12.0						2.7
21	(480)	(11.7)						
22	(480)	(11.2)						2.6
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 6 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 26

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	7.0						
08	420	9.8						
09	450	9.9						
10	480	10.7						
11	510	10.9						
12	540	11.0						
13	540	11.4						
14	540	11.2						
15	570	11.3						
16	540	11.4						
17	580	11.6						
18	600	11.2						
19	600	11.0						
20	600	10.0						
21	(600)	(10.4)						
22								
23								

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

Table 27

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.6					1.6	2.6
01	320	3.6						2.6
02	320	3.6					1.2	2.5
03	320	3.6						2.6
04	300	3.6						2.6
05	290	3.3						2.7
06	280	3.3	---	---	---	E		2.9
07	260	5.6	---	---	110	1.5	1.8	3.0
08	240	7.8	320	---	100	2.2	2.4	(3.1)
09	250	9.7	230	---	110	2.7		3.1
10	250	10.8	240	---	100	3.0		(3.1)
11	260	10.6	230	---	100	3.2		(3.1)
12	250	10.2	240	---	110	3.2		(3.0)
13	260	9.8	220	---	110	3.1		(3.0)
14	270	9.7	250	---	110	3.0		(3.0)
16	260	9.0	240	---	110	2.6		(3.0)
16	230	7.7	---	---	100	2.1		3.1
17	240	6.4	---	---	---	1.2	1.6	3.0
18	250	5.6					1.6	3.0
19	250	4.6					1.6	2.9
20	280	3.6					2.0	2.8
21	300	3.6						2.7
22	310	3.6						2.6
23	300	3.7						2.6

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

Table 28

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						2.7
01	300	3.7						2.7
02	290	3.6						2.8
03	280	3.5						2.8
04	280	3.5						2.8
06	280	3.3						2.7
06	250	3.3			---	E		3.0
07	230	6.0	---	---	120	1.6		3.1
08	220	8.4	210	---	120	2.4		3.4
09	230	9.6	220	---	110	3.0		3.3
10	240	10.9	220	---	110	3.2		3.2
11	230	11.2	220	---	110	3.3		3.2
12	240	10.7	230	---	110	3.4		3.2
13	230	10.3	220	---	110	3.2		3.2
14	230	9.6	230	---	110	3.1		3.2
15	230	9.5	220	---	110	2.8		3.2
16	220	8.4	220	---	110	2.3		3.3
17	220	7.0	---	---	110	1.7		3.2
18	220	6.2						3.1
19	230	5.2						3.1
20	230	4.0						3.0
21	280	3.5						2.8
22	290	3.7						2.8
23	290	3.7						2.8

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

Table 29

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5					2.2	2.9
01	280	3.6					2.4	2.9
02	270	3.6					2.4	2.9
03	250	3.4					2.2	2.9
04	250	3.3					2.0	2.8
05	280	3.2					1.7	2.8
06	240	3.4	---	---	---	E	1.8	3.1
07	210	6.4	---	---	130	1.8	2.4	3.4
08	220	8.6	---	---	100	2.4	3.0	3.6
09	220	10.0	220	---	100	3.0	3.5	3.4
10	220	11.5	220	---	100	3.2	3.5	3.3
11	230	12.0	210	---	100	3.4		3.3
12	240	11.4	220	---	100	3.6	3.6	3.2
13	240	11.1	220	---	100	3.4	3.6	3.2
14	240	10.1	220	---	100	3.2	3.4	3.3
15	230	9.8	220	---	100	2.8	3.2	3.3
16	220	8.8	---	---	100	2.3	2.6	3.4
17	210	7.4	---	---	110	1.8	2.8	3.3
18	210	6.4					2.6	3.2
19	220	5.4					2.6	3.3
20	220	4.4					2.3	3.2
21	240	3.7						2.9
22	270	3.6						2.8
23	260	3.7						2.9

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

Table 30

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.8					1.8	2.8
01	300	3.7					1.7	2.8
02	300	3.6						2.7
03	300	3.6						2.8
04	280	3.3						2.9
05	300	3.0						2.8
06	300	3.0			---	E		2.7
07	280	4.4	---	---	---	1.3	1.9	2.9
08	250	8.2	---	---	120	2.2	2.6	3.2
09	250	10.2	230	---	110	2.9	3.7	3.2
10	250	11.1	230	---	110	3.2	3.8	3.1
11	270	12.1	230	---	110	3.6	4.5	3.1
12	270	13.0	230	---	110	3.6	4.2	3.0
13	280	13.0	230	---	110	3.6	4.2	3.0
14	280	12.3	240	---	110	3.4	4.3	2.9
16	280	11.7	240	---	110	3.2	4.2	3.0
16	260	11.2	240	---	110	2.8	3.6	3.0
17	250	10.4	---	---	120	2.1	3.1	3.1
18	230	9.0					3.0	3.1
19	230	7.4					2.4	3.1
20	240	7.0					2.4	3.1
21	240	5.9						3.0
22	260	4.5						2.9
23	290	4.2						2.8

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

Table 31

Delhi, India (28.6°N, 77.1°E) — January 1950 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0						3.0
01	300	4.1						
02	---	---						
03	---	---						
04	---	---						3.3
05	280	4.4						
06	280	5.1						
07	270	6.3						
08	260	8.5						3.4
09	280	10.0						
10	280	11.5						
11	280	12.0						
12	300	12.7						3.0
13	300	12.8						
14	300	12.8						
15	300	12.2						
16	300	12.2						3.1
17	280	10.6						
18	280	9.8						
19	270	7.8						
20	280	7.5						3.2
21	280	6.0						
22	280	5.6						
23	300	4.8						

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

Table 32

Bombay, India (19.0°N, 73.0°E) — January 1950 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	300	7.5						
08	360	10.6						2.8
09	390	11.9						
10	430	12.9						
11	430	13.4						
12	480	14.1						2.6
13	---	---						
14	480	14.6						
15	480	14.6						
16	480	14.6						2.6
17	480	14.7						
18	450	14.5						
19	420	13.9						
20	420	13.7						2.6
21	390	12.9						
22	390	11.7						2.8
23	360	11.1						

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

Table 33

Madras, India (13.0°N, 80.2°E) — January 1950 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	9.7						
08	390	10.7						2.8
09	420	12.1						
10	480	12.2						
11	480	12.0						
12	480	11.8						2.5
13	510	11.8						
14	510	11.9						
15	510	11.9						
16	540	12.2						2.8
17	510	12.2						
18	510	13.0						
19	520	12.0						
20	430	(11.9)						2.6
21	---	(11.5)						
22	---	(11.2)						
23								

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

Table 34

Tiruchy, India (10.8°N, 78.8°E) — January 1950

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	6.8						
08	420	9.4						
09	420	10.2						
10	510	10.6						
11	500	10.2						
12	540	10.4						
13	540	10.4						
14	540	10.3						
15	(540)	(11.4)						
16	590	11.2						
17	600	11.2						
18	600	10.8						
19	600	10.1						
20	600	10.2						
21	560	10.0						
22	---	---						
23								

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

Table 35

Fribourg, Germany (48.1°N, 7.8°E) — December 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.7					2.2	2.7
01	310	3.7					2.1	2.7
02	310	3.8					2.2	2.8
03	290	3.7						2.8
04	275	3.6					3.0	2.9
05	250	3.4					1.9	3.0
06	235	3.2					2.1	2.9
07	240	3.9						2.9
08	220	7.8			---	E	2.3	3.4
09	220	10.6			126	2.2	2.0	3.4
10	220	11.5			115	2.7	2.7	3.3
11	220	11.8			115	2.9		3.3
12	220	11.7			115	3.0	2.0	3.2
13	225	11.6			115	2.8		3.2
14	225	11.4			115	2.6		3.2
15	220	11.0			120	2.2	2.4	3.3
16	220	9.9			---	E	2.2	3.3
17	215	8.2					2.0	3.3
18	220	6.1						3.2
19	225	5.0					2.6	3.2
20	240	4.2					2.1	3.1
21	260	3.9					2.2	2.9
22	290	3.8						2.8
23	290	3.7					1.9	2.8

Time: Local.
Sweep: 1.6 Mc to 17.6 Mc in 10 minutes, automatic operation.

Table 36

Dakar, French West Africa (14.6°N, 17.4°W) — December 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255							
01	250							
02	240	(7.0)						
03	255	6.8						
04	280	6.2						
05	260	4.7					3.3	
06	290	5.6	---	---			4.0	
07	255	10.2	---	---	140	2.3	4.1	
08	270	13.9	255	---	125	3.0	4.7	
09	280	16.0	245	---	120	3.4	5.6	
10	310	14.5	235	---	120	3.7	5.0	
11	350	14.3	235	---	120	3.9	4.7	
12	395	(>14.7)	250	---	120	4.0	4.8	
13	(380)	14.6	235	4.4	120	3.9	4.8	
14	(415)	(>14.3)	240	---	120	3.7	4.5	
15	(390)	(>14.3)	250	---	120	3.4	4.8	
16	315	(>14.3)	270	---	120	2.9	4.5	
17	280	(>14.3)	---	---	130	2.2	4.5	
18	320	(>14.3)			---	E	5.0	
19	360	(>14.0)					4.0	
20	300	---					3.8	
21	275	---					3.9	
22	260	---					2.8	
23	260							

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 37

Fribourg, Germany (48.1°N, 7.8°E) November 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.3					2.1	2.7
01	300	4.2					2.2	2.6
02	315	4.2					2.3	2.6
03	310	3.9					2.3	2.6
04	275	3.8					2.0	2.8
05	260	3.4						2.8
06	270	3.4						2.6
07	240	6.0			---	E		2.9
08	230	9.1			125	1.9	3.0	3.2
09	230	11.6			115	2.5	3.7	3.2
10	230	12.5			110	2.9	3.8	3.1
11	225	12.9			110	3.1	3.8	3.1
12	225	12.8			110	3.1	3.3	3.1
13	230	12.6			110	3.1	2.7	3.0
14	235	12.8			110	2.9		3.0
15	230	12.3			120	2.5	2.5	3.1
16	225	11.4			135	1.7	2.4	3.1
17	215	9.7					2.3	3.1
18	225	8.0					2.2	3.0
19	230	6.4					1.7	3.0
20	240	5.4					2.2	2.9
21	270	4.8					2.2	2.8
22	285	4.5					2.1	2.7
23	305	4.2						2.6

Time: Local.
Sweep: 1.6 Mc to 17.6 Mc in 10 minutes, automatic operation.

Table 38

Dakar, French West Africa (14.6°N, 17.4°W) November 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	---						
01	250	---					2.4	
02	250	---						
03	250	6.6						
04	265	5.0						
05	280	4.6						
06	306	7.1			---	---	3.8	
07	280	12.4			135	2.6	4.0	
08	280	14.8	266	---	130	3.2	4.2	
09	290	15.8	260	---	125	3.6	4.5	
10	350	16.2	250	---	130	3.9	4.6	
11	(380)	16.5	250	---	130	4.1	4.6	
12	(380)	15.4	250	---	130	4.1		
13	400	(16.6)	250	---	130	4.0		
14	410	(16.2)	250	---	125	3.7	4.3	
15	406	(17.0)	265	---	130	3.6	3.7	
16	305	(16.8)	270	---	130	3.0	4.6	
17	300	---			---	2.2	4.3	
18	360	---					4.2	
19	400	---					4.0	
20	320	---					3.8	
21	295	---					3.9	
22	270	---					3.6	
23	250	---					3.2	

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 39

Fribourg, Germany (48.1°N, 7.8°E) October 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	5.0					2.0	2.9
01	300	4.9					2.5	2.9
02	320	4.8					2.5	2.9
03	330	4.6					2.3	2.8
04	290	4.3					2.4	3.0
05	270	4.0					2.4	3.1
06	260	5.0	---	---	---	---	2.3	3.2
07	240	7.2	---	---	130	2.0	2.6	3.5
08	230	9.7	---	---	115	2.6	3.8	3.4
09	236	10.3	230	---	110	2.9	4.0	3.4
10	240	11.7	226	---	110	3.2	4.3	3.2
11	240	12.2	230	---	110	3.2	4.4	3.2
12	230	12.0	230	---	110	3.2	4.2	3.3
13	230	11.8	230	---	105	3.3	3.4	3.1
14	240	12.0	---	---	110	3.1	3.8	3.1
15	235	12.0	---	---	115	2.9	2.6	3.2
16	240	11.8	---	---	115	2.4	3.2	3.4
17	230	10.2			110	1.9	3.1	3.4
18	240	9.6					2.6	3.3
19	230	8.2					2.5	3.3
20	240	6.6					2.6	3.2
21	260	5.8	---	---			2.2	3.0
22	280	5.6					2.3	3.0
23	290	5.2					2.7	2.9

Time: Local.
Sweep: 1.6 Mc to 17.6 Mc in 10 minutes, automatic operation.

Table 40

Dakar, French West Africa (14.6°N, 17.4°W) October 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	---						
01	(265)	---						
02	(240)	---						
03	(256)	---						
04	(260)	(6.5)						
05	(250)	4.9						
06	(230)	8.0					4.0	
07	(250)	12.6			125	2.6	4.0	
08	(260)	14.9	---	---	125	---	4.0	
09	(300)	16.0	240	---	120	3.7		
10	(310)	16.6	---	---	125	---		
11	---	17.0	---	---	125	---		
12	(360)	(17.0)	230	---	125	4.1		
13	(380)	17.0	250	---	125	---		
14	(350)	16.8	---	---	120	---		
16	---	16.8	270	---	130	---	4.1	
16	(325)	16.7	270	---	120	---	3.8	
17	(280)	(16.4)	---	---	---	---	4.5	
18	(345)	(15.8)	---	---			4.2	
19	(370)	---					4.0	
20	(330)	---					3.0	
21	(300)	---					3.6	
22	(300)	---						
23	(270)	---						

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

TABLE 41

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

Form adopted June 1946

IONOSPHERIC DATA

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

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

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	290	(270)S	250	(280)S	[260]S	240H	370	460H	380	390	380	380	410	510	480	400	360	370	310	270	(250)A	(290)A	[290]A	300
2	(300)S	300	(270)S	270	260	270	[290]L	310	370	350	350	400	C	C	C	C	370H	340	(320)A	270	A	A	A	290
3	(270)S	280	250	270	260	250	240	350	360	350	350	340	340	380	380	410	390K	320K	310K	280KH	250K	270K	290K	270K
4	300K	300	300	270	(230)S	320	380	420	410	380	400H	360	480	420	380	400	310	310	310	280	260	290	300	300
5	250	270	270	270	300	290	350	400	400	430	400	430	400	550	500	400	380	350	300	260	250	(280)S	(290)S	290
6	260	260	260	240	290	300	330	390	500	400	A	A	460	420	370	360	(370)A	320	280	[260]A	250	270	260	260
7	(270)S	300	270	280	280	280	370	320	330	340	400	350	360	380	390	360	350	320	280	260	220	(220)S	260	270
8	(260)S	280	290	290	A	A	(300)A	350	410	[460]A	510	400	430	410	370	380	330	360	290	250	230	270	280	(300)S
9	270	290	270	260	270	250	230	300	290	280	310	320	360	370	350	340	320	300	300	270	[240]A	250	270	260
10	280	270	260	280	260	(260)A	310	390	360	340	510	350	410	[400]C	400	390	360	360	300	[300]A	(290)A	240	270	270
11	270	270	280	280	290	280	280	300	370	A	N	390	450	400	490K	400K	330K	360K	320K	280K	250K	300K	(310)KS	220K
12	310K	(300)KS	(360)KS	(320)KS	300K	280K	GK	GK	GK	GK	GK	GK	GK	GK	GK	AK	550KH	520K	420K	310K	280K	290K	(300)KS	230K
13	300K	(280)KS	290K	300K	[300]KB	(300)KS	GK	660K	530K	GK	GK	GK	550K	GK	440K	GK	460K	400K	310K	(270)KS	260K	270K	AK	AK
14	AK	AK	300K	300K	270K	270K	300K	250	350	370	420	400	430	430H	420	390	320	340	310	270	250	230	290	(280)S
15	300	270	270	290	280	300	370	390	C	C	390	410	[450]C	490	400	400	390	340	310	(290)A	260	290	270	270
16	300	300	300	290	280	[320]C	320	G	480H	A	A	390	[420]A	440	370H	420	410	310	300	280	(290)A	[280]A	(280)A	(300)A
17	270	A	A	300	280	270	290	[310]A	330	300	310	400	320	390	370	420	350	400	300	260	(280)A	280	[290]A	300
18	(270)A	250	260	(260)S	(290)A	290	280	270	330	330	330	340H	400	340	360	340	340	310	290	270	250	270	270	[270]C
19	220	(260)S	(250)S	240	290	270	220	310	310	330	370	400	370	370	380	360	380	350	310	270	(280)A	(260)A	260	260
20	260	260	260	250	(270)B	260	240	340	330	330	360	390	410	400	380	400	[360]A	330	(310)A	A	A	A	300	(310)A
21	300	300	280	270	270	280	360	390	380	370	350	370	360	350	[360]A	370	(270)A	330	290	[270]A	(260)A	(290)A	280	270
22	290	300	(320)A	(290)A	[290]A	(300)A	320	390	380	400	[420]A	450	400	450	430H	420	350	330	[300]A	(280)A	[280]A	(290)A	(280)A	260
23	300	270	270	280	280	280	300	280	340	360H	350	400	360	360	320	370	320	310	290	(260)A	240	250	(290)A	(300)S
24	300K	(310)KS	300K	(500)KS	280K	300K	300K	380K	320K	480K	380K	440K	460K	460K	450K	450K	370K	370K	300K	270K	250K	270K	[280]KA	290K
25	360K	(370)KS	340K	370K	(400)KS	350K	400K	GK	GK	GK	GK	GK	GK	GK	GK	670K	780K	500K	420K	300K	270K	290K	300K	(310)KA
26	310K	300K	300K	300K	300K	290K	280K	380K	370K	400K	(390)KA	500K	470K	C	C	450H	410H	C	C	380	240	(270)A	(320)A	(300)A
27	(310)A	300	270	270	(310)A	280	[290]A	300	310	320	420	490	460	400	420	400	400	380	300	A	A	300	(280)S	300
28	290	290	(270)S	280	290	290	240	380H	300	400H	380	330	390	C	C	370	310	300	300	280	250	(260)A	[280]A	290
29	300	(280)S	(290)A	300	290	280	360	[340]L	320	350	360	370	490	370	330	370	330	310	290	270	(260)A	240	270	290
30	300	300	280	270	(270)A	280	200H	410K	400KH	340K	[470]KH	600KH	470KH	460KH	490KH	470K	400K	[350]KA	290K	(270)KA	290K	270K	260K	AK
31	AK	A	(290)A	(280)A	280	(300)S	290	290	360	380	470	380	410	400	370	350	360	340	300	(290)A	260	250	280	270
Median	290	280	280	280	280	280	300	380	360	370	380	400	420	400	380	400	360	340	300	270	260	270	280	290
Count	29	28	30	31	30	30	31	31	30	28	28	30	30	28	28	29	31	30	30	29	28	29	29	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 42

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), July (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	(48)SF	(42)SV	(38)SP	30	(25)S	36	46V	52	6.0	(59)S	60	(59)S	(58)JS	56	56F	61	62	6.1	6.4	(66)S	(67)S	(63)S	(60)S	(58)SF
2	(57)SF	(56)SF	(49)SF	(4.9)SF	40	(40)S	47	46	(61)JS	64	62	5.9	C	C	C	C	63	65	68	73	(71)S	66	(58)JS	(55)SF
3	(54)SF	(52)SF	(47)SF	(42)S	33F	3.9	48	54F	58	(63)S	65	69	68	67	67	68	(76)PK	94K	(100)PK	(108)PK	103FK	(98)JK	69FK	7.0ZK
4	6.0FK	52F	50F	(49)R	(40)JV	37	43	(4.7)JS	54	(61)J	(60)H	64	60	64	66	66	70	68	66V	67	(73)S	66	63	65
5	6.2	5.6Z	45	39	(37)J	38	47	52	57	56	(6.0)S	(57)S	(57)S	54	55	(60)S	63	66	7.1	(70)S	(62)SP	(58)S	(56)SH	54F
6	5.3F	46F	43F	3.5F	32F	3.7	(4.7)S	48	49	5.6	A	A	59	6.1	(65)S	66	(64)S	67	(66)S	(69)S	(7.4)S	(7.3)SF	(65)S	6.0F
7	50F	4.7F	45F	38F	32F	36F	4.6F	5.4F	6.0	62V	6.0	(6.3)H	66	66	6.7	7.1	69	73	7.6	(8.2)SP	(81)S	(64)SP	(60)S	5.6
8	50F	43	(4.1)JS	(4.0)JS	33F	37F	(4.5)A	5.0	(51)H	5.8	(5.9)H	6.0	60	6.2	62	64	65	6.7	66	66	69	66	(63)S	(6.0)S
9	60	55	50	49	(4.1)JS	(40)SJ	47	(6.1)V	6.8	(68)H	68	69	7.1	68	7.0	(72)S	72	73	72	77	(77)S	79	(7.4)S	(70)SF
10	(67)S	62F	53F	48F	4.2V	(41)JF	4.7F	5.0F	58F	57	(61)F	6.3F	5.8F	[6.0]C	6.2F	[illegible]	(6.2)S	6.4	70	63	(68)S	6.6	(6.0)SF	(60)SF
11	5.3F	48F	(4.1)SF	36F	34F	(3.9)JF	(50)S	5.4	50	A	N	60	5.8	6.1	59K	66K	72K	7.7K	(8.9)SK	K(95)SP	K(9.5)SZ	K(84)SF	5.8FK	K(5.0)JF
12	40FK	K(3.7)JV	[30]FK	(2.4)FK	(2.4)FK	29FK	A<35GF	<3.6GK	<41GK	<4.2GK	<44GK	<4.5GK	K<(4.5)GB	<4.6GK	<4.4GK	4.8K	(4.7)SK	4.7K	5.0K	K(51)SP	(54)SK	(56)SK	K(5.6)SP	[4.8]SK
13	(36)JK	34K	28FK	2.6FK	[22]BK	(27)SK	K<3.3GF	(3.9)VK	4.4FK	<4.3GK	<4.5GK	<4.5GK	4.9K	<4.6GK	5.4K	<4.5GK	5.2K	5.7K	6.1K	(59)SK	(59)SK	(55)SK	K(4.8)SF	K4.3SF
14	K(43)SF	K(4.3)SF	3.8FK	3.7FK	33FK	3.5FK	4.7	5.0	(5.5)S	5.6	5.5	60	5.7	5.8	(59)S	6.1	6.4	6.4	6.7	7.2F	6.8F	(5.9)SF	(5.7)SF	5.5F
15	56F	52F	5.2F	4.5F	3.8ZF	40	(40)F	4.5	[49]C	[5.4]C	5.8	(5.3)F	(5.2)J	5.4	6.0	6.0	6.0	6.2	6.2	6.3	68F	(6.0)S	58F	5.4F
16	(50)SF	4.6F	(41)SF	(3.9)JF	(3.9)S	[43]C	(45)J	<(4.2)GJ	5.0H	A	A	(6.0)A	[5.9]A	58	5.9	(5.7)R	5.8H	6.0	6.0	(6.1)S	(6.4)JA	(5.9)S	(56)S	5.4F
17	5.2F	4.8F	4.7F	4.3F	40F	40	51	[55]A	[5.7]N	6.7	66	6.3F	6.5	6.4	(62)JS	6.0	6.4	6.1	6.5	6.4	5.9	(6.0)S	(5.8)S	5.7
18	58	49	4.6F	38F	3.4	38	50F	6.0	(5.9)H	6.4	6.7	6.6	6.6	(6.6)S	6.7	(66)S	7.0	6.9	7.0	(7.1)SP	(7.1)S	(6.8)S	(6.2)SP	C
19	(62)S	57	(5.1)S	(3.9)SF	3.6F	41	5.3	5.9	65F	69	65	6.6	6.9	6.7	6.8	6.9	6.5	6.5	7.1	7.3	73	6.8	6.5	5.7
20	56	4.9	45	42	3.7F	41F	58H	6.7	66	6.5	6.2	64	6.5	6.4	6.5	(63)S	[6.4]A	(6.6)S	6.8	(66)SJ	(7.2)S	(6.4)S	(6.1)SF	(5.8)SF
21	5.7F	(4.9)F	4.8F	4.5F	(3.9)F	3.7F	4.4F	54	5.6	6.4	68	7.1	7.2	7.3	[7.3]A	7.3	7.5	7.7	7.8	7.6F	(7.3)S	66	(62)VS	(5.6)SF
22	(5.1)SF	4.9	48F	(4.2)JF	[3.8]A	(34)S	4.7	5.3	5.5	57F	[5.7]A	(5.7)H	(6.0)H	6.1	6.1	6.6	(6.8)S	6.9	6.6	(6.8)S	(7.2)S	6.6	6.3	(5.9)SP
23	58	5.4	48	4.3	4.0	(40)S	50	5.7	6.0	6.2H	6.4	64	6.9	6.9	6.9	72	7.5	7.3	7.5	7.3	(72)S	6.8	(61)S	5.7
24	56K	(45)SK	(4.7)SK	K(4.4)JS	4.8K	K(41)JS	45K	5.4K	5.2HK	5.4K	6.0K	6.4K	(63)SK	6.0K	6.2K	6.9K	8.0K	8.9K	100K	8.6K	90K	6.9K	K(5.8)SF	(4.5)FK
25	K(39)SF	K(2.9)SF	K[2.8]SF	(2.7)FK	K[2.7]SF	(27)FK	32FK	<3.7GK	<4.0GK	<42GK	K(4.2)GS	K<(4.4)GS	<4.5GK	K<4.4GF	K<4.5FG	(4.5)FK	K(4.5)SF	(4.7)SK	(4.8)SK	5.2FK	45FK	K(44)SF	K(4.0)SF	K(3.9)JS
26	K(3.8)SF	3.2FK	3.0FK	28FK	2.5FK	3.4K	4.7K	(5.2)HK	59K	5.8K	5.4K	5.2K	(5.5)SK	C	C	(5.5)SH	(5.8)S	C	C	6.4	6.4	(57)JS	(5.2)SF	4.7F
27	45F	4.4F	(4.1)SF	3.5F	3.3F	4.7F	5.2F	5.9	6.4	66	(58)S	5.8	6.1	6.0	5.8	(5.7)JS	5.6	5.8	6.1	5.9	(6.3)SF	(6.4)S	(6.0)S	(5.2)SF
28	(52)SF	51F	4.2F	3.5F	3.4	35	47	5.4	67	(6.4)PH	64V	6.8	6.9	C	C	7.2	7.0	7.1	7.0	7.5	79	74	(5.9)S	54
29	5.2F	46F	4.5	(3.9)JF	3.5	3.5	4.5	54	6.3	6.7	6.6	6.6	(6.1)H	7.0	7.0	68	7.4	7.4	7.1	7.3	7.4	(68)S	(57)S	(5.2)S
30	4.8	49	49V	49	(4.2)SF	3.6F	4.4	5.1K	[5.4]NK	(5.8)HK	[5.6]NK	5.3K	(5.3)HK	5.4K	5.4FK	54FK	5.8FK	5.8FK	6.4FK	5.8FK	60FK	58FK	5.3FK	K(4.9)SF
31	49FK	4.8F	(4.4)SF	(39)JS	3.3F	(34)S	4.7	5.5	5.9	5.8	5.5	6.0	6.1	6.4	6.5	6.3	6.0	6.1	6.6	71	(7.6)S	7.0	(6.1)S	(5.4)S
Median	52	4.8	4.5	39	3.5	37	4.7	5.3	5.7	5.9	6.0	6.0	6.0	6.1	6.2	64	6.4	6.6	6.8	69	(7.1)	(6.6)	(6.0)	(55)
Count	31	31	31	31	31	31	31	31	31	29	28	30	30	28	28	30	31	30	30	31	31	31	31	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 43

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), July (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	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	(4.3)SF	(4.1)SZ	(3.3)SF	2.8	2.8	4.2	(5.0)S	5.4	6.0	5.8	6.1	(5.5)S	5.7	(5.6)S	5.8	6.2	6.2	6.4	6.7	6.8	6.5	(6.3)S	6.0F	(5.9)SF
2	(5.4)SF	(5.5)SF	4.8F	(4.2)JF	(3.8)SF	4.5	5.3	[5.8]A	6.2	(6.0)JH	(5.8)H	5.9	C	C	C	6.3	6.5	6.5	(7.1)S	7.3	6.8	[6.2]A	(5.6)SP	(5.5)SP
3	P(5.2)SF	(4.7)SF	(4.3)SF	3.7F	(3.5)SF	4.4	5.4	(5.8)JS	5.8	6.7	6.4	6.9	6.3	6.8	6.8	7.3	8.3K	10.0K	10.6K	K(10.2)SP	K(8.8)SF	K(7.8)VF	K(7.2)VF	6.0FK
4	5.8FK	5.0F	(5.0)R	4.5V	3.6V	4.1	4.5	(5.1)P	5.8	(6.2)P	6.4	6.1	6.6	6.6	6.6	7.0	7.0	6.6	6.8	7.1	7.0	6.4	(6.2)S	(6.4)S
5	5.9F	(5.1)J	(4.2)S	(3.7)J	(3.6)J	4.2	4.9	5.4	5.9	5.8	5.6	5.7H	(5.5)S	5.5	(5.8)S	(6.1)S	6.4	6.7	(7.2)S	6.5	(5.8)VS	(5.7)SF	5.4F	(5.5)SF
6	5.3F	4.5FV	3.9F	3.3F	3.3	4.2	4.7	5.1H	5.4	A	A	5.7	(6.3)S	(6.3)S	6.5	(6.3)A	6.7	6.7	6.7	(7.3)S	(7.2)S	(7.2)S	(6.4)S	(5.5)SF
7	5.0F	4.7F	(4.5)F	3.4F	[3.7]S	(4.0)JF	5.3F	5.5F	6.0F	6.0	6.0	6.3F	6.4	6.6	6.9	7.0	7.2	7.8	(8.0)S	(8.3)S	7.5	(6.0)S	(5.9)S	5.6
8	4.6F	4.2	(4.1)JS	3.8F	3.3F	4.1	4.7	5.1	5.7	5.7	6.1	5.8	6.8H	6.2	6.2	6.6	6.6	6.6	6.6	6.8	6.6	(6.6)S	(6.1)JS	5.9
9	F(5.5)JS	5.2	4.9F	4.3F	3.8	4.6H	5.4V	6.3H	(7.0)JS	(6.9)SH	6.9	7.0	(6.8)A	(7.0)S	7.2	7.2	7.4	7.2	7.5	7.6	7.8	(7.6)S	(7.5)S	6.8F
10	6.6F	5.8F	5.1F	4.7F	3.7F	4.5F	4.8F	5.2F	[5.8]A	[5.9]A	[6.2]F	5.6F	6.0F	6.1F	(6.1)S	6.0	6.3	6.6	6.6	(6.6)JA	7.0	(6.0)JF	6.0F	5.3F
11	4.8F	4.8F	3.8F	3.5F	3.3F	(4.4)SF	4.7F	(5.3)F	A	A	5.3	5.9	5.8F	(5.9)JS	6.2K	(6.8)SK	7.0K	8.0K	(9.5)SK	(8.8)SK	(9.0)SK	K(6.3)SF	K(6.4)SF	4.7FK
12	4.0FK	(3.2)RK	2.4FK	2.4FK	SK(2.5)JF	3.2FK	<3.5GK	<3.9GK	<4.1GK	<4.3GK	<4.5GK	BK	<4.5GK	<4.3GK	<(4.4)GK	4.7HK	4.7K	4.7K	5.1K	5.2K	(5.2)SK	5.4K	K(5.6)SF	(4.0)SK
13	3.8FK	(3.2)RK	FK(2.5)SJ	FK(2.2)JS	(2.2)SK	(3.0)SK	<3.3GK	<3.8GK	4.7FK	<4.4GK	<4.5GK	<4.7GK	<4.6GK	<4.6GK	5.1K	K(4.9)JS	5.2K	(6.0)SK	6.0K	(5.8)SK	(5.9)SK	K(5.3)SF	4.6FK	[4.3]AK
14	K(4.4)SF	3.8FK	3.5FK	3.7FK	3.2FK	4.3FK	5.0K	5.1F	5.4F	5.0F	5.6F	6.0	5.6	(6.0)JS	(5.9)S	6.2	6.3	6.4	7.0F	7.3F	(6.8)JF	(5.7)SF	5.8F	5.4F
15	5.7F	5.4	4.7F	4.0F	3.7F	(4.3)J	4.5	4.6	(5.2)JP	(5.5)P	5.7	5.0	5.2	(5.5)S	6.1	(6.0)S	6.2	6.3	6.2	6.6	6.3	F(5.9)JS	5.7	(5.1)S
16	5.2	4.5F	4.0F	4.0	3.5F	4.0	(4.4)F	(4.9)P	A	A	5.9	[5.8]A	5.8	5.8	(5.7)R	[5.9]M	6.0	(5.9)S	(6.0)S	(6.1)JS	(6.2)SP	(5.8)S	5.3F	5.4F
17	5.0F	(4.7)SF	4.4F	(4.4)S	3.7F	4.7	(5.2)F	5.8	5.6	(6.2)R	[6.4]N	(6.4)S	6.4	6.2	(5.9)S	6.2	6.2	6.5	(6.6)S	(6.0)S	(6.0)S	(5.8)S	(5.8)S	(5.6)SF
18	5.0F	4.7F	(4.4)SF	3.7F	3.3F	4.5	(5.7)H	[6.0]N	5.8	6.4	(6.5)H	(6.6)H	6.9	6.6	(6.6)VS	6.8	7.1	6.9	(6.8)VS	(7.0)S	(7.0)S	(7.0)S	(6.4)S	(6.2)S
19	6.0	5.5	4.6F	(3.8)SF	3.8F	(4.7)SP	(5.4)R	6.6	6.6	6.8	6.6	6.6	6.7	6.8	6.9	6.7	6.6	6.8	7.3	7.2	7.0	6.7	6.3	5.7
20	5.2	4.5	4.4	3.9	3.7F	4.8	6.0	6.8V	6.8	6.1	(6.1)S	6.4	6.3	(6.3)S	(6.2)S	[6.4]A	6.6	[6.7]A	(6.3)JS	(6.9)JS	(6.5)S	(6.4)S	(5.8)SF	5.9F
21	(5.5)F	4.9F	4.7F	3.9F	(3.5)SF	4.0F	4.9	5.8	6.0	6.3H	(7.1)S	7.1	7.3	7.0F	(7.1)S	7.5	(7.7)J	7.8	7.8	(7.6)SP	(6.6)S	(6.3)S	(6.1)JS	5.2F
22	5.0	4.9	(4.6)SF	(3.6)F	[3.9]A	4.2	5.1	5.4	(5.3)H	(6.1)S	5.6	(5.8)S	(5.8)S	6.2	6.2	6.6	6.8	6.9	6.6	(7.0)S	(7.0)VS	(6.6)S	(6.2)JS	5.7
23	5.8	5.2F	4.6	4.2	3.9	5.4	5.5	5.6	6.2	(6.6)R	6.5	6.6	6.6	6.9	(7.0)S	7.3	7.4	7.4	7.6	(7.2)S	7.0	6.6	(5.9)S	5.8
24	5.3K	4.6FK	4.7K	4.5K	(4.5)SK	4.3K	4.6K	(4.7)HK	4.6K	4.5K	5.9K	6.3K	6.0K	6.3K	6.1K	(7.4)SK	8.5K	(9.6)SK	(9.5)SK	8.8K	(7.5)RK	K(6.0)SF	5.8FK	4.1FK
25	(3.7)FK	(2.9)FK	(2.7)FK	[2.7]FK	2.7FK	3.1FK	3.4FK	<3.8GK	<4.0GK	<4.2GK	<4.3GK	<4.5GK	<4.5GK	<4.5GK	<4.5GK	K(4.6)SF	[4.6]SK	(4.6)SK	(5.0)SK	K(5.0)SF	4.6FK	4.2FK	FK(4.0)JS	K(3.8)SF
26	3.5FK	3.1FK	3.0FK	2.7FK	2.6FK	(4.3)SK	4.9K	(5.4)HK	[5.8]AK	[5.6]NK	5.4K	<5.0GK	(5.6)SK	C	C	5.7H	C	C	C	6.6	(6.2)S	[5.6]A	(4.9)SF	(4.5)SF
27	4.4F	4.3F	4.0F	3.4F	3.4F	(5.0)A	[5.6]A	(6.1)S	6.1V	6.2	5.8	5.9	6.2	5.7	(5.9)S	(5.8)JS	5.8	6.0	5.9	(5.9)SF	(6.3)S	(6.3)S	5.3F	5.2F
28	5.1F	4.8F	3.9	3.4F	3.2F	(4.1)S	4.9	6.2	(6.8)P	6.7	6.8	(6.5)S	C	C	C	[7.1]C	7.1	(6.9)S	[7.3]C	7.8	7.2	7.0	5.6	5.3
29	5.2F	4.6	F(4.0)JS	3.8F	3.3F	3.9	5.2	5.9	6.6	6.5	6.5	6.5	6.6	7.0	6.7	6.7	7.5	7.2	6.9	(7.5)S	(7.2)S	6.4	(5.3)S	4.8
30	4.8	4.9V	5.0V	4.8	3.6F	(4.8)JS	4.6V	5.6K	K(5.8)JS	5.6K	<4.7GK	5.3FK	5.1K	5.4HK	5.4K	5.6K	(5.9)SK	6.2FK	FK(5.8)JS	K(5.8)SF	6.0FK	K(5.8)SF	K(5.2)SF	4.8FK
31	4.8FK	(4.5)SF	4.2F	3.6F	3.2F	4.2	5.4	5.6	5.8	5.5V	(5.7)H	(6.6)S	6.4	6.3	6.4	6.2	6.4	(6.3)S	6.7	7.4	(7.4)S	(6.5)S	(5.8)S	5.1
Median	5.1	4.7	4.3	3.7	3.5	4.3	4.9	5.4	5.8	6.0	6.0	6.0	6.2	6.2	6.2	6.3	6.6	6.6	6.8	(7.0)	(6.8)	(6.3)	(5.8)	5.4
Count	31	31	31	31	31	31	31	31	29	28	30	30	29	28	28	31	30	30	30	31	31	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 44

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

IONOSPHERIC DATA

Form adopted June 1946

h'F1 (Characteristic), Km (Unit), July (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							240	220	210	200	210	200H	200H	200H	A	A	220	220H	A					
2							230	[220]A	210	200	200	190	C	C	C	C	210	A	A					
3							Q	230	[220]A	(210)A	200	200	200H	200	190	200	220K	220K	220K					
4							A	240	220H	[210]A	200	200	200H	220	[220]A	220	[220]A	210	210H					
5							250	220	210	(220)A	(210)A	200H	(210)A	210	190	200	(210)S	(230)S	230					
6							230	200	200H	A	A	A	(200)A	(200)A	A	A	A	220	A					
7							230	230	220	A	A	200	180	200H	210	200H	210	210	250					
8							A	A	A	A	210	200	200	190H	200	200H	200	220H	230					
9							Q	200	[210]A	(210)A	200	A	A	A	(200)A	(210)A	200	230	240					
10							230	A	A	A	(220)A	(200)A	A	C	200	210	210	A	A					
11							A	A	(230)A	A	A	220	(200)B	A	A K	200K	230K	220HK	230K					
12							260K	240K	210HK	230K	200HK	180HK	[210]BK	230HK	[240]AK	(250)AK	(260)AK	230K	230K	B K				
13							250K	270K	(230)AK	200K	200K	(210)AK	210K	230K	220K	220K	210K	220K	A K					
14							(230)AK	[230]A	230H	(210)A	A	A	A	(210)A	(220)A	210	200	220H	220					
15							220	210H	200H	210	200H	200	210	200	200H	A	A	230	A					
16							A	210H	A	A	A	A	A	A	200H	200H	220	200	A					
17							A	A	A	A	(190)A	A	A	190	(200)S	200	220	220	A					
18							250	230	220	220	220	210	200	200	210H	230	[220]A	220	A					
19							(200)A	230	(230)A	(200)A	200	200	(220)A	(240)A	200	200	200H	220	250					
20							Q	240	A	A	(210)A	(210)A	200H	210	210H	A	A	A	A					
21							A	(250)A	230	A	A	210	(230)A	A	A	210	A	A	A					
22							A	A	A	A	A	A	A	200	200H	210	230	230	A					
23							220	240	210H	200H	200H	200	210	200	[200]A	200	200	230	240					
24							230K	210HK	220K	200K	200K	210K	220K	210K	210K	210HK	220K	220K	240K					
25							210HK	210HK	220HK	200HK	200K	200K	200HK	210K	200HK	220K	200HK	220K	240K					
26							220K	A K	A K	A K	A K	210K	A K	C	C	A	A	C	C					
27							Q	A	220	230	200	200	210	200H	220	220	220	230	A					
28							Q	220	230	260H	190H	[200]A	(200)A	C	C	210	220	210	240					
29							230	230	[220]A	200	220	200	[210]A	220	230	200H	200	220	230					
30							Q	210HK	200HK	200K	N K	A K	A K	200K	200K	200HK	230K	A K	A K					
31							250	250	(250)A	200	[210]A	220	A	A	A	220	210	210	260					
Median							230	230	220	200	200	200	200	200	200	210	220	220	240					
Count							18	24	24	20	22	24	21	22	13	25	26	25	16					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 45

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

IONOSPHERIC DATA

Form adopted June 1946

foFl (Characteristic), Mc (Unit), July (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							L	4.5	(4.4)P	4.6	(4.8)H	4.7	4.9	4.9	4.8	4.7	4.6	(4.5)P	L					
2							L	L	(4.5)J	4.7	4.7	(4.8)H	C	C	C	C	(4.5)H	4.5	A					
3							Q	(4.4)P	(4.7)P	4.7	4.8	4.9	5.0	4.9	5.0	4.7	4.7K	4.5K	3.9K					
4							A	4.0	(4.4)P	[4.6]A	(4.7)P	4.7	5.0	5.0H	4.8	[4.6]S	(4.5)J	(4.3)P	L					
5							(3.9)P	4.3H	4.5H	4.6	4.7H	4.7H	(4.8)S	4.8H	4.7F	(4.7)S	(4.6)S	4.2	L					
6							(3.7)P	4.2	4.5	4.7	A	A	(4.8)S	4.9	4.9	A	A	(4.4)P	L					
7							3.8F	4.2	4.4	4.7	4.9	5.0	4.8	(4.8)S	(4.8)S	(4.7)H	4.6	4.3H	L					
8							A	(4.3)P	(4.4)A	4.6	5.0H	4.9	4.8	4.8	4.8H	4.7	(4.7)H	4.6	L					
9							Q	(3.8)P	[4.2]A	4.9	(4.8)H	(4.9)H	5.1	5.0	4.9	4.9	(4.8)P	(4.4)P	L					
10							L	4.2	A	A	4.9	4.9	4.9	[4.9]C	4.9	4.8	4.6H	4.5	A					
11							A	4.0	4.4	A	N	4.7	(4.8)B	[4.8]A	4.8K	4.7K	4.5K	4.2K	(3.9)SK					
12							3.5FK	3.6K	4.1K	4.2K	4.4K	4.5K	(4.5)BK	4.6HK	4.4K	(4.4)AK	4.3K	4.1K	3.8K	LK				
13							3.3FK	3.7K	4.0K	4.3K	4.5K	4.5K	4.7K	4.6K	4.5K	4.5K	4.3K	4.2K	(3.8)PK					
14							LK	A	4.4	4.6	4.7	4.8	4.9	4.7	(4.9)S	4.6	4.6F	4.4	L					
15							3.5	(4.2)P	[4.3]C	4.4	4.7	4.7	(4.7)P	4.7	4.7	4.7	4.5	4.4	L					
16							(3.5)P	(4.2)J	4.5	A	A	4.6	[4.7]A	4.8	4.7	(4.9)H	4.7	3.9	(3.7)P					
17							L	A	(4.4)A	[4.6]A	(4.7)F	(4.9)F	[4.8]F	4.8F	(4.8)S	4.9	4.4	L	L					
18							L	L	4.7	4.6	(4.6)S	[4.8]N	5.0	(4.9)H	4.9	4.9	4.8	4.3	L					
19							(2.8)A	(4.5)P	4.8	4.7	4.9H	5.2	5.0	4.8	4.9	4.8	4.9	4.3	(3.9)P					
20							Q	(4.5)P	4.7	4.8	4.9	(5.0)H	5.0	5.1	(5.0)H	(4.8)H	A	L	L					
21							3.0	(4.4)P	(4.7)P	4.8	(4.7)J	5.2H	(5.4)H	5.0	[5.0]A	(5.0)H	A	A	A					
22							L	4.2	4.5	4.7	[4.8]A	5.0	5.0	5.0	5.0	4.8	4.6	4.3	A					
23							L	L	4.6	4.8	5.0H	5.0	(5.0)H	(5.0)H	5.0	5.0	4.7	(4.3)P	L					
24							LK	4.2K	4.2K	4.5K	(5.4)HK	5.0K	5.0K	4.8K	5.1K	4.8K	4.6K	4.2K	LK					
25							3.0K	3.7K	4.0K	4.2K	(4.2)SK	(4.4)SK	4.5K	4.4FK	4.5FK	(4.4)SK	(4.2)SK	(4.1)SK	(3.8)SK					
26							LK	AK	4.5K	4.5K	4.6K	4.7K	(4.8)SK	C	C	(4.7)A	(4.5)H	C	C					
27							Q	L	4.6	4.8	4.8	(4.8)P	4.7	4.9	4.8	(4.8)S	4.6	4.4	L					
28							Q	4.1	4.6	(5.2)H	5.0	(4.9)A	5.0	C	C	(4.9)S	(4.8)P	(4.2)P	L					
29							L	L	4.5	4.7	4.9	4.9	(5.2)S	5.0	4.8	4.9	4.8H	(4.3)P	L					
30							Q	4.4HK	4.4HK	4.5K	[4.6]NK	4.7FK	4.7FK	4.8K	4.8HK	4.6K	4.4K	AK	LK					
31							L	L	4.5	4.4	4.9	4.7	4.8	(5.0)S	4.8	4.7	4.5	4.3	L					
Median							3.5	4.2	4.5	4.6	4.8	4.8	4.8	4.8	4.8	4.7	4.6	4.3	(3.8)					
Count							10	22	30	28	28	30	30	28	28	29	28	26	7					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 46

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

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), July (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						A	(110)A	100	100	100	100	100	(100)A	(100)A	(100)A	(100)A	(100)A	(110)A	(100)A	(110)A				
2						A	(100)A	(100)A	100	100	(100)A	100	C	C	C	C	100	100	110	(100)A				
3						A	(110)A	110	110	110	100	(100)A	100	(100)A	(100)A	(100)A	BK	SK	SK					
4							110	110	100	(100)A	(100)A	(100)A	(100)A	(100)A	(100)A	(100)A	(110)A	110	110					
5						(120)S	(110)A	(110)A	100	(110)A	(100)A	(100)A	(110)A	(110)A	(110)A	110	[110]S	110	(110)A	(120)S				
6							(110)A	(110)A	110	110	(110)A	(110)A	100	(100)A	110	110	110	[110]B	(120)A	(120)B				
7						A	120	110	(120)A	(110)A	(110)A	100	110	100	100	100	110	110	110	(120)S				
8						A	(110)A	110	100	100	100	(100)A	(100)A	(100)A	100	110	110	110	110	(120)S				
9						110	(110)A	110	100	100	100	100	(110)A	(100)A	(100)A	(110)A	(110)A	(110)A	110	(120)A				
10						(100)A	110	110	110	100	(100)A	(100)A	(100)A	[100]C	100	110	110	[110]S	110	(110)A				
11						A	110	100	(110)A	(110)A	(110)A	(110)A	[110]B	(110)A	100K	(110)KA	100K	100K	110K					
12						AK	(110)KA	100K	100K	100K	110K	100K	(110)KB	100K	(100)KA	(110)KA	110K	110K	110K					
13						SK	(100)KA	110K	100K	100K	100K	(100)KA	(100)KA	100K	100K	100K	110K	110K	110K	(120)KA				
14						AK	(110)KA	(110)A	100	(100)A	100	(100)A	(110)A	(110)A	(110)A	110	(120)S	(120)B	120					
15							(110)A	110	110	(110)A	(100)A	(110)A	(110)A	100	(110)A	(120)A	110	[120]B	(120)A	(120)A				
16						C	(120)A	110	100	[100]A	(110)A	(110)A	(100)A	(100)A	[110]B	(120)A	(120)B	110	110	(120)S				
17							(110)A	(110)A	(110)A	100	(100)A	(100)A	(100)A	110	(100)A	(100)A	110	100	110	(120)A				
18						(120)A	120	110	110	(110)A	(110)A	(110)A	(110)A	(100)A	(100)A	(100)S	110	(110)A	(110)A	(110)A				
19						(120)A	(110)A	(110)A	110	(110)A	(110)A	110	100	(110)A	110	(110)A	110	110	120	120				
20							130	120	110	(110)A	100	100	100	(110)A	(110)B	(120)A	(110)A	110	(120)S					
21							130	120	110	(110)A	(110)A	110	(110)A	(110)A	(110)A	(110)A	110	(110)A	(110)A	(110)A				
22							120	110	110	100	100	(110)A	(110)A	(100)A	(100)A	(100)A	110	110	120	(110)A				
23						130	(120)S	110	100	100	100	100	100	100	100	(110)A	(100)A	(110)A	(110)A					
24							110K	(110)KA	110K	110K	110K	110K	110K	(100)KA	(100)KA	100K	110K	110K	110K	SK				
25						SK	110K	110K	(110)KA	(110)KA	(110)KA	(100)KA	(110)KS	100K	110K	110K	110K	110K	120K	SK				
26							(110)KA	100K	100K	(100)KA	100K	100K	100K	C	C	110	(110)A	C	C	S				
27							120	(120)B	110	(110)A	(110)A	110	(110)A	(100)A	(100)A	(100)A	100	100	110	(110)A				
28							110	110	110	110	(110)A	110	(110)A	C	C	(100)A	(100)A	(110)A	110	S				
29							(110)A	(110)A	(110)A	100	100	100	(100)A	(110)A	110	110	110	110	110	(120)A				
30							110	110K	100K	(100)KA	(100)KA	(100)KA	(100)KA	100K	100K	(100)KA	100K	(100)KA	BK					
31							(110)A	110	(110)A	110	(110)A	(110)A	(110)A	(110)A	(110)A	110	110	110	110					
Median						(120)	(110)	110	110	100	(100)	(100)	(100)	(100)	(100)	(110)	110	110	110	(120)				
Count						6	31	31	31	31	31	31	30	28	28	30	30	29	28	18				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 47

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

IONOSPHERIC DATA

Form adopted June 1946

foE (Characteristic), Mc (Unit), July (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						A	(2.3)^{A}	2.8	3.2	3.3	3.5	3.5	3.4	A	A	A	A	A	A	A				
2						A	(2.4)^{A}	2.8	(3.3)^{A}	(3.4)^{A}	[3.4]^{A}	3.5	C	C	C	C	3.2	3.1	2.6	A				
3						A	2.4	2.8	3.1	3.1	A	A	A	S	3.5	[3.4]^{A}	3.2^{K}	S^{K}	S^{K}					
4							2.2	2.7	2.9	A	A	A	A	A	A	A	A	(2.9)^{A}	2.4					
5						1.8	(2.3)^{A}	2.8	3.2	(3.3)^{A}	A	A	(3.3)^{A}	3.4	[3.3]^{A}	3.3	(3.2)^{S}	(3.0)^{S}	A	S				
6							(2.2)^{S}	[2.7]^{A}	3.2	3.3	3.3	3.3	3.6	3.5	(3.4)^{A}	(3.3)^{A}	(3.2)^{A}	3.0	2.5	1.8				
7						A	2.3	2.8	3.2	3.3	(3.3)^{A}	3.5	(3.6)^{B}	(3.4)^{P}	3.4	(3.3)^{F}	3.3	3.0	2.5	(1.6)^{S}				
8						A	2.3	2.8	3.1	3.3	3.4	A	A	(3.5)^{B}	3.7	3.5	3.2	3.0	2.6	1.7				
9						(1.6)^{F}	(2.3)^{A}	(2.9)^{A}	(3.2)^{A}	3.4	3.5	3.5	A	A	A	A	A	3.1	2.7	1.7				
10						A	2.3^{F}	3.0	3.2	3.4	3.4	A	A	C	3.6	3.5	(3.4)^{F}	3.0	2.7	A				
11						A	2.2	2.7	2.9	[3.1]^{A}	3.3	(3.4)^{A}	B	A	(3.7)$^{A}_{K}$	(3.4)$^{K}_{A}$	3.3^{K}	(2.8)$^{S}_{K}$	(2.5)$^{S}_{K}$					
12						A^{K}	A^{K}	2.6^{K}	3.0^{K}	3.2^{K}	3.5^{K}	(3.5)$^{B}_{K}$	[3.4]$^{B}_{K}$	3.3^{K}	[3.3]$^{A}_{A}$	3.3^{K}	3.3^{K}	3.0^{K}	2.3^{K}					
13						(1.7)$^{S}_{K}$	2.3$^{F}_{K}$	2.6^{K}	3.0^{K}	(3.2)$^{A}_{K}$	(3.4)$^{A}_{K}$	A^{K}	A^{K}	3.6$^{F}_{K}$	(3.5)$^{P}_{K}$	3.3^{K}	3.2^{K}	2.8^{K}	2.5^{A}	A^{K}				
14						A^{K}	2.3^{K}	2.8	3.0	[3.2]^{A}	(3.5)^{A}	A	A	A	A	3.4	3.2	2.9	2.5					
15							A	2.7	3.2	[3.3]^{A}	(3.4)^{A}	A	A	3.5	A	A	3.2	2.9	2.5	A				
16						C	A	2.6	3.0	[3.2]^{A}	3.4	[3.4]^{A}	3.5	3.3	(3.3)^{B}	[3.2]^{A}	3.2	3.1^{F}	(2.5)^{F}	1.7				
17							A	2.6	(2.9)^{A}	3.3	(3.3)^{A}	A	A	A	A	A	3.2	3.0	2.5	A				
18						A	2.3	2.8	3.1	3.3	3.5	3.5	A	A	A	3.5	3.4	3.0	2.5	A				
19						A	A	A	A	A	A	3.8	A	A	3.5	[3.5]^{A}	3.3	3.2	2.5	S				
20							2.2	3.0	3.1	3.3	(3.3)^{A}	(3.3)^{A}	3.4	A	A	3.6	3.3	3.1	(2.6)^{S}					
21							2.1	2.7	3.1	3.3	(3.3)^{A}	3.6	3.6	3.5	(3.4)^{A}	[3.3]^{A}	3.3	(3.0)^{A}	2.5	A				
22							2.3	2.8	3.1	3.3	3.4	3.6	(3.6)^{A}	A	A	3.5	3.2	3.0	(2.7)^{A}	A				
23						1.6	2.2	2.9	3.1	3.3	3.6	3.6	3.7	3.6	(3.5)^{A}	A	A	A	2.6					
24							2.2^{K}	(2.7)$^{A}_{K}$	3.0^{K}	3.4^{K}	[3.4]$^{A}_{K}$	3.4^{K}	A^{K}	A^{K}	A^{K}	3.3^{K}	3.2^{K}	2.9^{K}	2.4^{K}	(1.6)$^{S}_{K}$				
25						(1.7)$^{S}_{K}$	2.1^{K}	2.5^{K}	A^{K}	A^{K}	A^{K}	A^{K}	3.6^{K}	3.5^{K}	3.4^{K}	3.3^{K}	3.1^{K}	(2.6)$^{A}_{K}$	2.4^{K}	1.8^{K}				
26							(2.1)$^{A}_{K}$	(2.6)$^{A}_{K}$	(2.8)$^{A}_{K}$	[3.1]$^{A}_{K}$	(3.4)$^{A}_{K}$	3.5^{K}	3.6^{K}	C	C	3.5	3.2	C	C	(1.5)^{S}				
27							2.3	2.7	3.0	3.1	3.3	3.3	[3.4]^{A}	(3.6)^{A}	3.5	3.5	3.3	2.9	2.4	A				
28							2.2	2.6	3.0	3.2	A	A	A	C	C	3.4	3.3	2.9	2.4	S				
29							2.2	2.7	3.1	3.3	(3.4)^{A}	3.5	(3.6)^{A}	[3.6]^{A}	3.5	3.4	3.2	(3.0)^{F}	2.4	A				
30							2.2	2.5^{K}	3.0^{K}	3.1^{K}	(3.2)$^{A}_{K}$	A^{K}	A^{K}	(3.6)$^{F}_{K}$	(3.5)$^{F}_{K}$	3.3^{K}	3.2^{K}	2.8^{K}	2.3^{K}					
31							A	2.7	3.0	3.4	3.4	3.4	A	A	A	A	3.2	2.8	2.3					
Median						(1.7)	2.3	2.7	3.1	3.3	3.4	3.5	3.6	3.5	(3.5)	3.4	3.2	3.0	2.5	1.7				
Count						5	25	30	29	28	25	19	14	14	17	23	27	27	27	8				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 48

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

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), July (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	3.1 110	G	1.4 110	(3.0)S 100	3.0Y 100	1.7 100	5.8Y 110	5.8 120	G	G	5.4 110	5.0 110	5.0 100	6.6 100	6.6 100	5.6 100	4.4 100	4.1 110	5.5 100	4.2 110	4.3 110	5.8 110	5.4 100	6.6 100
2	(6.0)S 100	3.9 100	1.8 120	(2.8)S 110	3.8Y 110	1.9 100	2.4 100	4.5 100	8.6 110	3.6 120	3.8 100	G	C	C	C	C	G	4.4 130	8.8 110	5.0 110	5.3 110	11.6 110	10.0 100	7.7 100
3	(6.4)S 110	3.8 110	3.7Y 110	(3.2)S 110	2.6Y 110	1.8 110	2.0 110	4.1 120	4.9Y 120	8.2 120	7.3 120	7.2 100	9.5 110	3.0 100	3.3 100	5.0 100	G	G	G	G	G	G	G	G
4	G	G	G	G	G	G	6.5 130	G	G	5.1 100	3.7 100	4.2 100	3.6 100	4.0 100	5.3 100	3.7 100	4.8Y 110	3.4 120	G	G	G	G	G	G
5	G	G	G	G	G	G	3.3 110	2.0 110	G	5.4 110	17.7Y 100	5.6 100	23.0 110	4.7Y 110	4.4Y 110	G	G	G	2.5 (110)S	G	2.5 110	G	G	G
6	2.6Y 120	2.8Y 120	G	G	G	G	6.6 110	4.2 110	4.2Y 120	8.2 120	11.0 110	9.6 110	5.0 120	7.2 100	10.6 120	6.6 120	8.0 120	G	4.3 120	5.7 110	2.8Y 120	G	G	G
7	G	G	3.0 110	2.3 110	8.1 120	2.3 120	3.4 130	G	4.4Y 120	5.4 110	9.5 110	G	G	G	G	G	G	G	G	G	1.8 110	2.6Y 110	2.5Y 110	G
8	G	G	G	1.7 110	2.8Y 110	5.7 100	7.2 110	5.9 120	8.8Y 100	6.5 110	8.8 130	5.0 100	4.7Y 100	3.3 100	G	G	G	G	G	3.0 120	1.8 120	(3.6)S 120	G	2.7Y 110
9	2.3 110	G	G	G	G	G	3.8 110	4.1 120	5.9 110	6.2 110	G	5.2 110	12.8 110	8.3 100	4.8 100	4.4Y 110	3.3 110	3.7Y 110	3.8 120	5.2 110	8.7 110	5.3Y 110	3.6 110	5.2 110
10	4.4 110	(3.7)S 100	3.3Y 100	10.3Y 100	G	2.8Y 100	G	5.3 120	7.6 110	11.4 110	10.5 100	7.0 100	5.3 100	C	G	G	G	4.9 120	5.9 120	9.5 110	13.0 110	12.6 110	G	2.3 110
11	2.3Y 110	G	3.7 110	2.7Y 100	5.3 110	4.3 120	7.6 120	5.6 110	10.2 110	11.8 110	9.8 110	5.5 110	G	9.7 110	5.5Y 110	5.8 110	G	G	G	G	G	2.0 190	G	G
12	G	G	3.6Y 100	G	G	1.8 120	9.4Y 100	G	G	G	G	7.3Y 100	G	3.7 100	5.2Y 100	6.0 110	7.0Y 110	G	(3.8)S 120	G	G	(2.8)S 110	G	G
13	G	G	G	G	G	G	5.5Y 100	3.7Y 120	4.4 110	7.6 110	5.4 110	6.6 100	6.0 100	G	G	G	G	G	4.3 120	2.4 120	2.5 110	3.0 110	5.3 110	6.0 110
14	(7.3)S 100	7.0 100	4.5Y 100	5.2 100	7.0 100	1.8 130	6.0Y 110	6.0 110	8.8F 110	9.4 100	9.4F 110	7.4 100	6.9 110	9.0 110	6.0 110	G	G	G	G	G	G	G	(2.5)S 110	G
15	(2.7)S 110	2.4 110	3.1Y 100	G	G	G	4.3 110	G	G	3.6 110	6.8Y 100	5.6 110	3.9 110	G	5.6Y 110	7.2 120	6.7 130	G	4.2 120	5.0 120	3.1Y 120	4.3 110	G	G
16	(3.8)S 110	G	G	G	4.3 110	C	5.3 120	7.6 120	10.0 110	13.8 110	8.0 110	5.8 110	11.9 100	7.0 100	G	3.9 120	G	G	4.2 120	4.5 120	13.0 110	9.0 110	9.0 100	4.3 100
17	3.5 100	6.7 100	4.7 100	6.6 100	4.0F 100	2.0 110	4.5 110	9.4 110	7.8 110	5.9Y 120	4.9 100	9.5 100	8.6 100	4.4F 100	(3.7)S 100	(4.8)S 100	G	3.4 130	5.2 120	3.7 120	(4.0)S 120	(2.1)S 120	(4.8)S 110	G
18	3.0 110	G	G	G	2.7 120	1.8 120	3.6 130	3.2 120	3.5 120	4.6Y 110	5.3Y 110	5.3 110	(6.4)S 110	5.1 100	5.6Y 100	(11.4)S 130	7.2 120	9.1Y 110	9.7 110	9.4 110	(5.6)S 110	3.2Y 100	G	G
19	6.3Y 100	2.8 100	2.2 100	2.3 100	G	2.8Y 120	5.6F 110	6.3F 110	5.0F 120	3.4 110	3.7 110	G	5.4 110	5.8 110	3.9 120	6.0Y 110	G	G	3.0 130	4.4 130	(7.0)S 120	(7.0)S 110	2.8 110	G
20	G	G	G	2.9 130	G	2.2Y 140	G	G	7.8 130	5.6 110	5.2 110	4.8 110	5.0Y 110	5.4 110	5.4 110	7.8Y 120	13.8 110	11.6 130	8.2 120	(11.4)S 120	(6.8)S 120	(6.0)S 120	6.8 120	6.6 120
21	3.2 120	7.4 110	5.0 100	3.0 110	3.2Y 110	3.0 130	3.7Y 120	6.6 140	4.7 120	9.2 110	9.2 110	22.0Y 140	5.6 110	6.1 110	12.4 110	7.6F 110	9.4 120	10.4 110	9.0 110	8.2 110	5.1 110	5.0 110	3.5Y 110	3.7 140
22	(2.7)S 110	3.6Y 120	7.0 120	7.9 120	6.4 100	3.0 130	3.8 130	4.2Y 120	7.6 120	4.7 120	9.8 110	5.4Y 110	6.0 110	5.9 100	3.7 100	4.1 100	G	G	5.0 130	6.0 110	7.0 110	(6.0)S 110	6.0 110	G
23	6.0F 110	4.3 130	G	G	G	G	G	16.6Y 130	G	4.9 120	6.3Y 130	8.4Y 140	4.9 120	6.4Y 110	6.4 110	7.6F 110	4.3Y 100	3.0F 110	2.2 110	4.8 100	2.7Y 100	2.4 100	3.6 110	3.1 110
24	3.3 110	G	2.5Y 110	G	G	G	4.5Y 140	3.2 110	G	3.8 120	7.6Y 120	3.9 120	4.0Y 120	5.3F 100	3.5F 100	G	G	G	G	G	G	(5.2)S 170	3.6 160	G
25	G	G	G	G	G	G	G	G	5.4Y 110	6.4Y 110	6.8F 110	7.0F 100	8.0 130	G	4.0Y 100	G	G	4.4F 120	G	G	(3.5)S 150	3.8Y 130	2.0Y 130	3.6 130
26	4.0 120	4.0 120	3.8 130	1.1 120	G	3.2Y 120	5.4 110	5.0 110	7.6 100	6.0Y 110	4.7Y 120	1.1 120	7.5Y 120	C	C	8.0 120	9.0 110	C	C	G	3.0Y 120	(5.8)S 110	7.3 110	5.6 100
27	5.4 110	(5.6)S 120	6.3 130	3.3 120	4.3 120	2.0 120	10.3 110	8.4 110	4.1 120	3.4 110	5.7 110	G	3.8 110	3.4 100	3.1 100	3.0 100	G	G	4.1Y 120	5.3 110	4.4 110	3.9 110	G	G
28	G	G	G	5.0Y 110	G	G	G	G	G	3.5 120	6.4 110	6.4 100	5.0 110	C	C	3.0 100	3.0 100	5.8Y 110	G	3.3 120	2.8Y 110	(4.2)S 110	5.8 110	G
29	G	G	2.8Y 100	2.4Y 110	9.8Y 100	3.0Y 100	3.7F 110	3.3 110	4.8 110	5.2 110	5.8F 110	5.4 110	6.1 100	4.2 110	G	G	6.6Y 100	3.6 120	G	3.3 120	5.6 110	3.8 110	(4.8)S 110	5.2 100
30	4.4 100	2.7 100	6.8Y 110	7.8Y 100	(3.5)S 100	16.9Y 130	13.6Y 120	3.6Y 120	G	5.6 100	9.0 100	5.0F 100	5.8F 100	G	G	6.0Y 100	G	6.2 100	4.5 120	9.8 110	6.0 110	7.6F 120	7.0F 110	7.4F 110
31	7.1F 100	(5.9)S 100	5.6F 100	4.0 100	(7.5)S 100	G	3.4Y 110	4.1 120	5.6Y 110	4.3 120	6.8 110	5.0 110	9.0 110	11.0 110	(5.8)S 110	4.8 100	G	G	G	4.5 110	(5.2)S 110	G	G	G
Median	3.0	**	2.5	2.3	2.6	1.8	4.3	4.1	4.8	5.4	6.8	5.4	5.5	5.1	4.2	4.6	**	**	3.8	4.2	3.5	3.8	3.0	**
Count	31	31	31	31	31	30	31	31	31	31	31	31	30	27	28	30	31	30	30	31	31	31	31	30

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 49

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

Form adopted June 1946

IONOSPHERIC DATA

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

National Bureau of Standards (Institution)

Observed at Washington, D. C.

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

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

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	(2.0)SF	(1.9)SV	(1.9)SP	1.8	(1.8)S	1.9	2.0	1.7	1.9	(1.9)S	1.9	(1.9)S	(1.9)JS	1.6	1.7F	1.8	1.9	1.8	1.9	(2.0)S	(2.0)S	(1.9)S	(1.8)S	(1.8)SF
2	(1.8)SF	(1.9)SF	(1.9)SF	(2.0)SF	1.9	(2.0)S	1.9	2.0	(2.0)JS	2.0	2.0	1.9	C	C	C	C	1.9	1.8	1.9	2.1	(2.0)S	1.9	(2.0)JS	(1.9)SF
3	(1.8)SF	(1.9)SF	(2.0)SF	(2.0)S	2.0F	2.1	2.1	1.9F	1.9	(1.9)S	1.9	1.9	2.0	1.8	1.8	1.7	(1.7)FK	1.8K	(1.9)PK	(1.8)PK	1.8FK	(1.9)JK	1.7FK	1.8ZK
4	1.8FK	1.7F	1.8F	(2.0)R	(1.8)JV	1.9	1.9	(1.7)JS	1.8	(1.8)J	(1.7)H	2.0	1.6	1.7	1.9	1.8	2.0	1.9	1.8V	1.8	(1.9)S	1.8	1.7	1.7
5	1.8	1.8Z	1.8	1.8	(1.8)J	1.8	1.9	1.8	1.8	1.8	(1.8)S	(1.8)S	(1.9)S	1.6	1.6	(1.8)S	1.9	1.9	1.9	(2.1)S	(2.0)SP	(1.8)S	(1.8)SH	1.8F
6	1.9F	2.0F	1.9F	1.9F	1.9F	1.9	(2.0)S	1.9	1.7	1.9	A	A	1.7	1.8	(1.8)S	1.8	(2.0)S	1.9	(2.0)S	(1.9)S	(1.9)S	(1.9)SF	(1.9)S	1.9F
7	1.8F	1.8F	2.0F	1.9F	1.9F	2.0F	2.0F	2.0F	2.0	2.1V	1.8	(1.9)H	2.0	1.9	1.8	1.8	1.8	1.9	1.9	(2.0)SP	(2.1)S	(1.9)SP	(1.9)S	1.9
8	2.0F	1.9	(1.8)JS	(1.9)JS	1.9F	2.0F	(2.2)A	2.0	(1.8)H	A	(1.6)H	1.8	1.7	1.8	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	(1.9)S	(1.8)S
9	1.8	1.8	1.8	1.9	(2.0)JS	(2.0)JS	2.6	(2.1)V	2.1	(2.2)H	2.1	2.0	1.8	1.9	1.9	(1.8)S	1.9	2.0	1.9	2.0	(1.8)S	1.9	(1.9)S	(2.0)SF
10	(1.9)S	1.9F	2.0F	1.9F	2.0V	(1.8)JF	2.1F	F	2.0F	2.1	(2.1)F	1.9F	1.7F	C	1.8F	1.9	(1.8)S	1.9	2.0	1.9	(2.0)S	1.9	(1.8)SF	(2.0)SF
11	1.9F	1.9F	(2.0)FS	1.9F	1.9F	(2.1)JF	(2.1)S	2.2	2.0	A	N	1.8	1.7	1.8	1.6K	1.8K	1.9K	1.7K	(1.7)SK	K(1.9)SP	K(1.8)SZ	K(1.8)SF	1.7FK	K(2.2)JF
12	1.6FK	K(1.6)VJ	FK	(1.9)FK	(1.9)FK	2.0FK	GK	GK	GK	GK	GK	GK	GK	GK	GK	AK	(1.5)SK	1.6K	1.7K	K(1.9)SP	(2.0)SK	(1.8)SK	K(1.8)SP	SK
13	(1.7)JK	2.0K	1.9FK	1.9FK	BK	(2.0)SK	GK	(1.4)JK	1.4FK	GK	GK	GK	1.6K	GK	1.7K	GK	1.7K	1.8K	2.0K	(1.9)SK	(2.0)SK	(1.9)SK	K(2.0)SF	K(1.9)SF
14	K(1.9)SF	K(1.9)SF	1.8FK	1.8FK	2.0FK	2.1FK	2.1K	2.0	(2.0)S	2.0	1.7	1.9	1.8	1.7	(1.7)S	1.8	1.9	1.9	1.9	2.0F	2.0F	(1.9)SF	(1.8)SF	1.8F
15	1.8F	2.1F	1.9F	2.0F	(1.9)ZF	1.9	(2.1)F	2.0	C	C	1.9	(1.9)P	(1.5)J	1.7	1.8	1.8	1.9	1.9	1.9	1.9	2.0F	(1.8)S	1.9F	1.9F
16	(1.9)SF	1.9F	(1.8)SF	(1.9)JF	(1.9)S	C	(2.0)J	G	1.6H	A	A	(1.8)A	A	1.7	1.9	(1.7)R	1.8H	2.0	2.0	(2.0)S	(2.0)JA	(1.9)S	(1.8)S	1.8F
17	1.9F	1.9F	1.9F	1.9F	2.0F	1.9	2.1	A	N	2.2	2.1	1.8F	1.9	1.9	(1.8)JS	1.7	1.9	1.8	2.0	2.0	1.9	(1.8)S	(1.7)S	1.8
18	1.9	1.9	1.9F	1.9F	1.9	1.9	2.1F	2.2	(2.0)H	2.0	2.0	2.0	1.8	(2.0)S	1.9	(2.0)S	1.9	2.0	2.0	(2.0)SP	(1.9)S	(1.8)S	(1.8)SP	C
19	(1.9)S	1.9	(2.0)S	(2.0)SF	1.9F	2.1	2.1	1.9	2.0F	2.0	2.0	1.7	1.9	1.9	1.8	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9
20	1.8	1.8	1.8	1.9	1.9F	2.0F	1.8H	1.9	2.0	2.0	1.9	1.9	1.8	1.8	1.8	(1.7)S	A	(1.8)S	1.9	(1.8)SJ	(1.9)S	(1.9)S	(1.8)SF	(1.7)SF
21	1.8F	(1.8)F	1.9F	1.8F	(1.8)F	1.9F	1.9F	1.9	1.8	1.9	1.9	1.8	1.8	1.9	A	1.8	1.9	1.8	2.1	1.9F	(2.0)S	1.8	(1.9)JS	(1.8)SF
22	(1.8)SF	1.8	1.9F	(2.0)JF	A	(2.0)S	2.1	1.9	2.0	1.8F	A	(1.8)H	(2.0)H	1.7	1.8	1.8	(1.9)S	1.9	1.9	(1.9)S	(1.9)S	1.8	1.8	(1.9)SP
23	1.8	1.9	1.8	1.9	1.8	(2.0)S	2.0	2.1	2.0	1.9H	1.9	1.8	2.0	1.8	1.8	1.8	2.0	1.9	2.0	2.0	(1.8)S	1.9	(1.8)S	1.8
24	1.8K	(1.7)SK	(1.8)SK	K(1.8)JS	1.9K	K(1.9)JS	2.1K	1.8K	2.0HK	1.7K	1.8K	1.6K	(1.6)SK	1.7K	1.6K	1.6K	1.8K	1.7K	1.8K	1.9K	1.9K	1.7K	K(1.7)SF	(1.8)FK
25	K(1.6)SF	K(1.6)SF	SFK	(1.7)FK	SFK	(1.9)FK	1.9FK	GK	GK	GK	GK	GK	GK	GK	GK	FK	FK	(1.6)SK	(1.6)SK	1.9FK	1.8FK	K(1.8)SF	K(1.8)SF	K(1.8)JS
26	K(1.8)SF	1.9FK	1.9FK	1.8FK	1.8FK	2.0K	2.2K	(1.9)HK	1.9K	1.8K	1.9K	1.7K	(1.7)SK	C	C	(1.6)SH	(1.7)S	C	C	1.7	2.1	(1.9)JS	(1.9)SF	1.8F
27	1.8F	1.9F	(1.9)SF	1.9F	1.9F	1.6F	2.3F	2.1	2.1	2.1	(1.8)S	1.6	1.7	1.8	1.8	(1.8)JS	1.8	1.9	2.0	1.9	(1.9)SF	(1.8)S	(1.9)S	(1.8)SF
28	(1.8)SF	1.9F	1.9F	1.9F	1.9	1.9	2.1	1.9	2.0	(1.7)PH	1.8V	1.9	1.9	C	C	1.8	2.0	2.0	2.0	2.0	2.0	1.9	(2.0)S	1.8
29	1.8F	1.9F	1.9	(1.8)JF	2.0	2.0	1.9	1.8	2.0	1.9	1.9	1.8	(1.6)H	1.8	2.0	1.9	1.9	1.9	2.0	1.9	1.9	(1.9)S	(2.0)S	(1.9)S
30	1.7	1.8	1.8V	2.0	(1.9)SF	1.9F	2.2	1.9K	NK	(2.1)HK	NK	1.4K	(1.7)HK	1.6K	1.5FK	1.7FK	(1.8)FK	1.9FK	2.0FK	1.9FK	2.0FK	1.9FK	2.0FK	K(1.9)SF
31	1.8FK	1.9F	(1.9)SF	(2.0)VS	1.9F	(2.0)S	2.0	2.2	2.0	1.8	1.7	1.9	1.8	1.8	1.8	1.9	1.8	1.9	1.8	1.9	(1.9)S	2.0	(1.8)S	(1.8)S
Median	1.8	1.9	1.9	1.9	1.9	2.0	2.1	1.9	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	(1.9)	(1.9)	(1.8)	(1.8)
Count	31	31	29	31	28	30	31	29	28	27	26	30	29	27	27	28	29	30	30	31	31	31	31	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 50

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

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ____ (Unit), July (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	(30)SF	(29)SV	(2.9)SP	27	(28)S	29	30V	26	2.8	(28)S	28	(29)S	(29)JS	25	25F	28	29	28	2.8	(30)S	(30)S	(29)S	(28)S	(28)SF
2	(28)SF	(29)SF	(29)SF	(31)SF	29	(30)S	29	30	(30)JS	3.0	3.0	28	C	C	C	C	2.9	28	29	31	(30)S	29	(31)JS	(2.8)SF
3	(28)SF	(29)SF	(31)SF	(29)S	30F	31	31	29F	2.8	(30)S	2.9	29	30	27	28	26	(26)PK	27K	(29)PK	(28)PK	28FK	(30)JK	26FK	27ZK
4	2.7FK	2.6F	28F	(31)R	(28)JV	28	28	(26)JS	28	(2.8)J	(27)H	30	25	27	2.8	27	29	29	28V	28	(28)S	2.7	27	26
5	2.7	28Z	27	27	(28)J	28	29	28	28	2.7	(28)S	(27)S	(2.8)S	2.4	25	(28)S	28	2.8	29	(31)S	(30)SP	(28)S	(28)SH	28F
6	29F	30F	28F	29F	29F	29	(3.0)S	29	27	29	A	A	27	2.7	(2.8)S	28	(30)S	30	(30)S	(28)S	(29)S	(29)SF	(29)S	29F
7	27F	28F	29F	29F	29F	30F	3.0F	3.1F	3.1	30V	2.8	(2.9)H	29	29	2.8	28	2.8	29	29	(2.9)SP	(3.1)S	(28)SP	(28)S	2.9
8	30F	28	(28)JS	(2.8)JS	30F	3.0F	(32)A	3.0	(28)H	A	(2.5)H	2.7	26	2.7	28	28	2.9	29	3.0	2.9	2.9	2.8	(28)S	(27)S
9	28	27	28	29	(29)JS	(3.1)JS	37	(3.1)V	3.0	(33)H	30	30	28	2.8	29	(2.8)S	2.8	3.0	2.8	3.0	(2.8)S	28	(2.9)S	(29)SF
10	(29)S	29F	30F	28F	30V	(27)JF	3.1F	F	3.0F	3.1	(3.1)F	30F	2.6F	C	2.8F	28	(29)S	2.9	30	29	(2.9)S	2.9	(28)SF	(3.0)JF
11	2.9F	29F	(3.0)SF	2.9F	29F	(3.1)JF	(32)S	3.2	3.0	A	N	28	26	2.8	2.5K	2.7K	2.8K	2.6K	(27)SK	K(2.8)SP	K(2.6)SF	K(27)SF	2.7FK	K(3.3)JF
12	26FK	K(24)JV	FK	(2.8)FK	(29)FK	31FK	GK	GK	GK	GK	GK	GK	GK	GK	GK	AK	(2.3)SK	24K	2.6K	K(2.9)SF	(3.0)SK	(2.7)SK	K(28)SF	SK
13	(2.6)JK	30K	2.9FK	2.8FK	BK	(2.9)SK	GK	(21)JK	2.2FK	GK	GK	GK	2.5K	GK	2.6K	GK	26K	2.7K	2.9K	(2.9)SK	(29)SK	(29)SK	K(3.0)SF	K(2.8)SF
14	K(28)SF	K(28)SF	2.8FK	27FK	3.0FK	3.1FK	3.1K	3.0	(3.0)S	3.0	2.6	2.8	2.7	2.7	(27)S	2.8	2.8	2.9	2.9	3.0F	3.0F	(2.9)F	(2.7)SF	2.9F
15	27F	32F	30F	3.1F	(29)ZF	28	(3.1)F	3.0	C	C	2.8	(29)P	(2.3)J	2.6	2.8	2.7	28	2.9	2.9	29	3.1F	(28)S	2.9F	2.9F
16	(28)SF	2.8F	(2.7)SF	(29)JF	(2.9)S	C	(3.0)J	G	2.4H	A	A	(28)A	A	2.7	2.8	(2.6)R	28H	3.0	3.0	(3.0)S	(3.1)JA	(29)S	(2.8)S	2.8F
17	29F	29F	2.8F	2.8F	3.0F	28	3.2	A	N	3.3	3.2	2.7F	2.9	28	(2.8)JS	2.7	2.8	2.8	3.0	3.1	2.9	(2.7)S	(2.6)S	2.8
18	29	29	2.9F	2.9F	2.9	2.9	3.2F	32	(2.9)H	3.1	3.0	29	2.8	(29)S	2.9	(3.0)S	2.9	2.9	3.0	(3.0)SP	(2.9)S	(28)S	(2.8)SP	C
19	(2.9)S	3.0	(3.0)S	(3.0)SF	28F	3.1	3.2	2.9	29F	2.9	2.9	27	2.9	2.8	28	2.9	2.8	2.8	2.8	2.9	2.8	28	29	2.8
20	29	28	28	2.9	2.8F	3.0F	28H	2.9	2.9	3.0	2.9	28	27	2.8	2.8	(27)S	A	(28)S	29	(2.7)SV	(28)S	(28)S	(2.8)SF	(2.7)SF
21	26F	(2.7)F	2.9F	2.7F	(2.8)F	2.9F	3.0F	2.9	2.8	2.8	2.8	2.7	2.8	2.9	A	2.7	2.8	29	3.1	29F	(3.0)S	2.8	(29)JS	(28)SF
22	(2.7)SF	2.7	2.9F	(31)JF	A	(29)S	3.0	2.8	2.9	28F	A	(28)H	(3.0)H	26	27	27	(2.9)S	2.8	2.9	(2.9)S	(2.9)S	2.7	2.8	(28)SP
23	2.7	29	27	28	2.8	(3.0)S	3.0	3.1	3.1	2.9H	2.9	2.8	2.9	2.7	2.7	2.8	3.0	2.8	3.0	3.0	(2.8)S	28	(2.8)S	28
24	2.7K	(26)SK	(2.7)SK	K(2.7)JS	2.9K	K(2.9)JS	3.1K	2.8K	3.1HK	2.6K	2.8K	2.5K	(2.5)SK	2.6K	2.5K	2.5	27K	2.5K	2.8K	2.8K	2.8K	2.6K	K(2.7)SF	(2.8)FK
25	K(2.5)SF	K(24)SF	SFK	(2.6)FK	SFK	(2.9)FK	28FK	GK	GK	GK	GK	GK	GK	GK	GK	FK	FK	(25)SK	(2.5)SK	2.9FK	2.8FK	K(2.8)SF	K(2.7)SF	K(2.7)JS
26	K(27)SF	29FK	2.9FK	2.8FK	28FK	3.0K	3.2K	(2.9)HK	29K	28K	3.0K	2.6K	(26)SK	C	C	(2.4)SH	(26)S	C	C	2.6	3.0	(2.8)JS	(2.8)SF	2.8F
27	2.8F	2.9F	(29)SF	2.9F	2.9F	2.4F	3.4F	3.2	3.1	3.0	(2.8)S	2.5	2.6	2.8	2.7	(2.8)JS	27	28	3.0	2.9	(2.9)SF	(2.7)S	(28)S	(2.7)SF
28	(27)SF	2.9F	2.9F	2.9F	2.8	2.9	3.0	2.8	3.0	(2.7)PH	2.7V	2.9	28	C	C	2.8	3.0	3.0	2.9	3.0	3.0	3.0	(3.1)S	2.8
29	28F	28F	2.9	(2.8)JF	2.9	30	2.9	2.7	3.0	2.8	2.9	28	(2.5)H	2.7	2.9	28	2.9	3.0	3.1	2.9	3.0	(2.9)S	(3.0)S	(2.9)S
30	2.7	2.7	28V	3.0	(28)FS	3.0F	3.2	2.8K	NK	(3.1)HK	NK	2.2K	(2.6)HK	2.4K	2.2FK	2.6FK	2.7FK	2.9FK	3.1FK	2.9FK	3.0FK	2.8FK	3.0FK	K(2.9)SF
31	2.8FK	2.9F	(2.9)SF	(2.9)JS	2.9F	(3.0)S	3.0	3.3	3.0	2.8	2.6	2.9	28	2.7	2.8	29	2.8	2.8	2.8	2.8	(2.9)S	2.9	(28)S	(2.7)S
Median	28	2.9	29	2.9	2.9	3.0	3.0	2.9	2.9	29	2.8	2.8	2.7	2.7	2.8	2.8	2.8	2.8	2.9	29	(29)	(2.8)	(2.8)	(28)
Count	31	31	29	31	28	30	31	29	28	27	26	30	29	27	27	28	29	30	30	31	31	31	31	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 51

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

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), July (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							L	3.3	(3.6)P	3.7	(3.8)H	3.9	3.9	3.9	3.6	3.6	3.4	(3.3)P	L					
2							L	L	(3.7)J	3.8	4.0	(4.2)H	C	C	C	C	(3.6)H	3.4	A					
3							Q	(3.4)P	(3.4)P	3.6	3.7	3.8	4.0	3.9	3.6	3.6	3.4K	3.3K	3.3K					
4							A	3.5	(3.4)P	A	(3.8)P	3.8	3.5	3.8H	3.5	S	(3.6)J	(3.6)P	L					
5							(3.2)P	3.4H	3.5H	3.8	3.6H	4.0H	(3.9)S	3.9H	3.8F	(3.7)S	(3.7)S	3.8	L					
6							(3.3)P	3.3	3.6	A	A	A	(3.8)S	3.6	A	A	A	(3.4)P	L					
7							3.2F	3.4	3.7	A	A	3.8	4.0	(3.9)S	(3.8)S	(3.6)H	3.5	3.4H	L					
8							A	(3.4)P	A	A	3.6H	3.9	4.0	3.6	3.8H	3.8	(3.6)H	3.6	L					
9							Q	(3.7)P	A	3.6	N	A	A	3.8	3.6	3.6	(3.3)P	(3.6)P	L					
10							L	3.4	A	A	3.6	3.9	3.7	C	3.7	3.7	3.9H	3.4	A					
11							A	A	3.6	A	N	3.8	B	A	3.5K	3.8K	3.6K	3.5K	(3.3)SK					
12							3.1FK	3.6K	3.4K	3.7K	3.6K	4.0K	(3.8)BK	3.5HK	AK	(3.7)AK	3.6K	3.4K	3.2K	LK				
13							3.4FK	3.3K	3.8K	4.0K	3.9K	4.0K	3.8K	3.9K	3.9K	3.8K	3.7K	3.3K	AK					
14							LK	A	3.6	3.7	A	3.8	3.7	4.1	(3.7)S	3.8	3.5F	3.5	L					
15							3.7	(3.5)P	C	4.0	3.6	4.2	(4.1)P	4.0	3.4	3.6	A	3.4	L					
16							(3.4)P	(3.3)J	3.8	A	A	A	A	A	4.0	(3.3)H	3.4	4.0	(3.6)P					
17							L	A	A	A	(4.2)F	F	F	4.1F	(3.9)S	3.7	3.9	L	L					
18							L	L	3.5	3.9	(3.9)S	N	3.7	(4.0)H	3.7	3.6	A	3.7	L					
19							(3.9)A	(3.5)P	3.5	3.6	3.7H	3.6	3.8	3.8	3.7	3.8	3.5	3.5	(3.5)P					
20							Q	(3.3)P	3.4	3.6	3.7	(3.7)H	3.6	3.6	(3.6)H	A	A	L	L					
21							3.7	(3.2)P	(3.4)P	3.6	(3.6)J	3.5H	A	3.8	A	(3.6)H	A	A	A					
22							L	3.3	3.5	A	A	3.0	3.7	3.8	3.6	3.6	3.7	3.6	A					
23							L	L	3.4	3.8	3.3H	3.8	(3.6)H	(3.8)H	3.7	3.4	3.4	(3.5)P	L					
24							LK	3.1K	3.8K	3.9K	(3.3)HK	3.5K	3.6K	3.7K	3.5K	3.5K	3.4K	3.5K	LK					
25							3.4K	3.3K	3.5K	3.6K	(4.1)SK	(3.6)SK	3.6K	4.0FK	3.8FK	(3.7)SK	(3.6)SK	(3.4)SK	(3.3)SK					
26							LK	AK	3.6K	3.6K	AK	3.8K	(3.7)SK	C	C	A	(3.7)H	C	C					
27							Q	L	3.3	3.6	3.7	(3.7)P	4.0	3.6	3.6	(3.5)S	3.5	3.3	L					
28							Q	3.4	3.4	(3.4)H	3.7	A	3.7	C	C	(3.6)S	(3.6)P	(3.6)P	L					
29							L	L	3.3	3.7	3.6	3.7	A	3.6	3.7	3.6	3.3H	(3.6)P	L					
30							Q	3.2HK	3.4HK	4.0K	NK	3.8FK	AK	3.8K	3.6HK	3.5K	3.6K	AK	LK					
31							L	L	3.7	3.8	A	3.8	A	(3.4)S	3.5	3.6	3.7	3.5	L					
Median							3.4	3.4	3.5	3.7	3.7	3.8	3.8	3.8	3.7	3.6	3.6	3.5	(3.3)					
Count							10	21	26	22	21	25	22	25	25	26	26	26	6					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 52

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)E (Characteristic), ____ (Unit), July (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: 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						A	(3.9)A	4.0	4.0	4.2	4.1	4.1	4.1	A	A	A	A	A	A	A				
2						A	(3.7)A	A	(4.1)A	(4.2)A	A	4.2	C	C	C	C	4.2	3.7	4.0	A				
3						A	3.9	4.1	4.2	4.4	A	A	A	S	4.2	A	4.1K	SK	SK					
4							4.3	4.0	4.1	A	A	A	A	A	A	A	A	(4.1)A	3.6					
5						3.8	(3.8)A	3.9	4.0	(4.1)A	A	A	(4.2)A	4.1	A	4.1	(4.1)S	(4.0)S	A	S				
6							(4.2)S	A	4.3	4.2	4.2	4.2	4.0	5.0	(4.1)A	(4.0)A	(4.1)A	3.9	4.0	3.9				
7						A	3.9	3.9	3.9	4.0	(4.2)A	4.2	(4.0)B	(4.2)P	4.1	(3.9)F	3.9	4.0	4.0	(4.2)S				
8						A	4.3	4.0	4.0	4.2	4.2	A	A	(4.1)B	4.0	4.0	4.1	4.0	4.0	3.9				
9						(3.8)F	(4.1)A	(4.1)A	(4.1)A	4.1	4.0	4.1	A	A	A	A	A	4.0	3.8	4.1				
10						A	4.0F	4.0	4.2	4.1	4.1	A	A	C	4.0	4.0	(3.9)F	4.0	3.8	A				
11						A	4.0	3.9	4.3	A	4.2	(4.3)A	B	A	(4.0)AK	(4.1)AK	4.1K	(4.3)SK	(4.0)SK					
12						AK	AK	4.2K	4.0K	4.1K	4.1K	(4.1)BK	BK	4.2K	AK	4.2K	4.0K	4.1K	4.3K					
13						(4.1)SK	3.9FK	4.2K	4.2K	(4.3)AK	(4.3)AK	AK	AK	4.2FK	(4.3)PK	4.2K	4.0K	4.1K	4.0K	AK				
14						AK	3.8K	4.0	4.3	A	(4.3)A	A	A	A	A	4.3	4.0	4.1	4.0					
15							A	4.1	4.1	A	(4.2)A	A	A	4.1	A	A	4.0	4.1	4.0	A				
16						C	A	4.2	4.3	A	4.3	A	4.3	4.3	(4.2)B	A	4.1	4.1F	(4.0)F	4.2				
17							A	4.2	(4.3)A	4.6	(4.5)A	A	A	A	A	A	4.4	4.0	4.0	A				
18						A	3.7	4.1	4.2	4.4	4.3	4.3	A	A	A	4.0	4.1	4.3	4.1	A				
19						A	A	A	A	A	A	4.0	A	A	4.3	A	4.2	3.7	3.8	S				
20							4.0	3.7	4.2	4.2	(4.2)A	(4.3)A	4.4	A	A	3.9	3.6	3.9	(3.8)S					
21							4.3	4.1	4.2	4.2	(4.3)A	4.2	4.2	4.3	(4.1)A	A	4.0	(4.0)A	4.0	A				
22							4.2	3.9	4.2	4.2	4.4	4.2	(4.2)A	A	A	4.0	4.1	4.0	(3.7)A	A				
23						3.9	4.1	3.8	4.2	4.2	4.2	4.2	4.1	4.2	(4.1)A	A	A	A	3.9					
24							3.7K	(4.0)AK	4.2K	3.8K	AK	4.2K	AK	AK	AK	4.0K	4.1K	3.9K	4.1K	(4.0)SK				
25						(4.1)SK	4.0K	4.2K	AK	AK	AK	AK	4.2K	4.3K	4.1K	4.2K	4.1K	(4.2)AK	3.8K	3.7K				
26							(4.2)AK	(4.2)AK	(4.3)AK	AK	(4.2)AK	4.1K	4.2K	C	C	4.1	4.1	C	C	S				
27							4.2	4.1	4.3	4.2	4.2	4.2	A	(4.0)A	4.0	4.0	4.1	4.1	4.0	A				
28							4.0	4.2	4.3	4.1	A	A	A	C	C	4.1	4.2	4.1	4.2	S				
29							3.6	4.0	4.1	4.2	(4.4)A	4.3	(4.3)A	A	4.2	4.2	4.1	(4.0)F	4.2	A				
30							4.0	4.2K	4.0K	4.3K	(4.4)AK	AK	AK	(4.4)FK	(4.3)FK	4.2K	4.2K	4.0K	4.0K					
31							A	4.1	4.5	4.4	4.3	4.4	A	A	A	A	4.2	4.3	4.3					
Median						(3.9)	4.0	4.1	4.2	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0				
Count						6	26	28	29	23	23	18	12	13	16	17	27	27	27	7				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 53

Ionospheric Storminess at Washington, D. C.

July 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	2	3	###	0300	3	3
2	2	***			2	2
3	1	3	2100	----	1	4
4	4	1	----	0600	4	3
5	1	3			3	3
6	1	2			3	3
7	1	1			2	3
8	2	1			2	2
9	2	1			3	2
10	1	2			2	3
11	1	3	1900	----	2	4
12	4	#	----	----	6	3
13	4	4	----	----	5	3
14	4	2	----	1200	3	3
15	2	3			3	2
16	2	2			3	2
17	2	1			3	2
18	1	1			2	2
19	0	1			1	2
20	0	1			2	2
21	2	3			2	2
22	2	2			3	2
23	1	1			1	1
24	4	4	0500	----	4	3
25	5	#	----	----	5	2
26	4	4	----	##	1	2
27	3	2			2	3
28	2	2			2	2
29	2	0			2	2
30	2	4	1200	----	3	3
31	4	1	----	0600	3	3

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

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

***No readable record. Refer to table 42 for detailed explanation.

----Dashes indicate continuing storm.

#No I-figure owing to insufficient data. Conditions probably disturbed.

##Time of ending unknown because of lack of record.

###Storm began at 1500 GCT on June 29, 1950.

Table 54

Sudden Ionosphere Disturbances Observed at Washington, D. C.

July 1950

1950 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
July 12	1604	1700	Ohio, D. C., England	0.0	Terr.mag.pulse** 1608-1620 Solar flare*** 1620
15	1829	1905	Ohio, D. C., England	0.1	
17	1335	1400	Ohio, D. C., England	0.1	
17	2110	2120	Ohio, D. C.	0.2	
18	1312	1340	Ohio, D. C., England	0.1	Solar flare*** 1320
21	1315	1340	Ohio, D. C., England	0.3	Terr.mag. pulse** 1313-1320 Solar flare*** 1315
22	1548	1605	Ohio, D. C., England	0.05	Solar flare*** 1550
29	1720	1840	Ohio, D. C., England	0.0	

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

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

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

Table 55

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1950 Day	GCT		Receiving station	Location of transmitters	Other phenomena
	Beginning	End			
July 12	1610	1620	Brentwood	Austria, Barbados, Canary Is., Colombia, New York, Portugal, Thailand, Uruguay, Venezuela, Yugoslavia	Terr.mag.pulse* 1608-1620 Solar flare** 1620
12	1610	1630	Somerton	Argentina, Brazil, Canada, New York	Terr.mag.pulse* 1608-1620 Solar flare** 1620
21	1314	1335	Somerton	Argentina, Brazil, Canada, New York	Terr.mag.pulse* 1313-1320 Solar flare** 1315

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

Table 56

Sudden Ionosphere Disturbances Reported by RCA Communications, Inc.,

as Observed at Point Reyes, California

1950 Day	GCT		Location of transmitters
	Beginning	End	
July 13	0200	0400	Australia, China, French Indo-China, Hawaii, Japan, Java, Philippine Is.
19	0040	0100	Australia, China, Hawaii, Japan, Java, Philippine Is.

Table 57

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief

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

1950 Day	GCT		Location of transmitters	Other phenomena
	Beginning	End		
May				
3	0940	1035	England	Solar flare* 0950 Solar flare** 0956
5	0615	0650	China, England	
22	0945	1030	England	Solar flare*** 0937

Time of observation:
*Meudon Observatory, France.
**Stockholm Observatory, Sweden.
***Prague Observatory, Czechoslovakia.

Table 58

Sudden Ionosphere Disturbances Reported by RCA Communications, Inc.,

as Observed at Riverhead, New York

1950 Day	GCT		Location of transmitters	Other phenomena
	Beginning	End		
July				
12	1608	1640	Argentina, California, Canada, England, Italy, Morocco, Panama	Terr.mag.pulse* 1608-1620 Solar flare** 1620

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

Table 59

Sudden Ionosphere Disturbances Reported by Institut für Ionosphärenforschung,

as Observed at Lindau, Harz, Germany

Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
June 1950					
8	1200	1210	Lindau***, München**	0.2	
20	1230	1300	Lindau***, München**	0.1	

*Ratio of received field intensity during SID to average field intensity before and after, for station Voice of America, 6078.9 kilocycles, 400 kilometers distant.

**Station Voice of America, 6078.9 kilocycles.

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

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.

Table 60

Provisional Radio Propagation Quality Figures

(Including Comparisons with CRPL Warnings and Forecasts)
June 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)	Geo-magnetic K_{Ch} Half day GCT (1)	(2)
1	5	5				5	6	3	3
2	6	6				7	6	3	2
3	6	6			X	7	6	2	3
4	5	6			X	7	7	3	2
5	7	7				7	6	3	2
6	(4)	5		W		6	6	(5)	(4)
7	5	6	U			8	7	1	2
8	7	6				8	7	1	3
9	5	5	W	W		7	6	(4)	3
10	(4)	5	U			7	7	3	3
11	6	6				7	7	2	2
12	7	7				7	7	2	2
13	7	6				7	7	2	2
14	6	7				7	7	2	2
15	7	6			X	6	6	2	1
16	8	6			X	7	7	1	3
17	6	6		U	X	7	6	3	3
18	6	6	U	(U)	X	7	6	3	2
19	7	6				8	7	1	2
20	7	6				8	7	1	2
21	7	6				8	7	2	2
22	6	6				8	6	3	3
23	6	5			X	8	7	3	(4)
24	(3)	5	W	W		7	6	(5)	3
25	5	5	U			6	5	3	2
26	6	5				6	6	3	2
27	7	7				7	6	1	2
28	7	6				7	7	2	1
29	7	5				7	6	2	(4)
30	(3)	(4)	W	W		6	6	(5)	3

Score:	Warning N.A.	Warning N.P.	Forecast N.A.	Forecast N.P.
H	6	0	0	0
(M)	0	0	0	0
M	1	0	5	0
G	46	47	41	46
O	7	13	14	14

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

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

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

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

Scoring by half day according to following table:

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

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

**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: June 19, 20, and 24.

Table 61

American and Zürich Provisional Relative Sunspot Numbers

July 1950

Date	R_A*	R_Z**	Date	R_A*	R_Z**
1	80	70	17	115	96
2	68	58	18	99	83
3	59	58	19	111	102
4	58	66	20	127	130
5	63	75	21	129	108
6	101	88	22	139	125
7	104	98	23	133	115
8	90	77	24	136	108
9	86	67	25	130	96
10	96	68	26	150	118
11	92	78	27	144	112
12	81	68	28	142	110
13	88	67	29	134	112
14	92	98	30	117	106
15	90	75	31	91	100
16	100	89	Mean:	104.7	91.0

*Combination of reports from 43 observers; see page 8.

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

Table 62a

Coronal observations at Climax, Colorado (5303A), 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. 1.6	-	-	-	-	-	-	-	-	-	2	4	4	5	7	10	13	12	9	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.6	-	-	-	-	-	-	-	-	1	3	3	4	7	5	6	9	10	4	3	3	2	2	3	7	9	6	3	4	3	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	3	4	4	5	5	6	4	2	-	2	3	7	10	11	8	3	2	3	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	2	3	4	3	3	4	4	5	4	3	3	4	-	8	10	9	10	9	4	4	3	-	-	-	-	-	-	-	-	-
6.6	-	-	-	-	-	-	-	2	3	4	3	3	2	5	4	4	3	2	2	3	4	10	13	13	10	4	6	4	2	-	-	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	-	-	-	2	3	4	10	9	10	6	4	-	4	4	7	9	4	3	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	3	4	2	1	6	9	12	14	17	15	11	8	4	4	5	11	12	11	10	8	7	4	2	4	3	1	-	-	-	-	-
11.7	X	X	X	X	X	X	X	X	2	3	5	9	13	18	14	17	16	13	9	6	9	9	7	5	5	4	5	3	X	X	X	X	X	X	X	X	X
12.6	1	1	2	-	1	1	3	3	3	3	4	9	11	12	11	18	14	12	10	8	8	5	6	4	1	2	3	2	2	-	-	2	-	-	-	-	-
13.6	-	1	1	1	2	1	3	3	4	4	5	3	9	11	11	16	19	16	14	11	9	10	10	9	2	-	3	4	3	3	3	3	3	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	2	2	4	4	4	7	13	14	12	9	8	4	5	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	3	3	5	9	10	13	14	13	7	5	9	10	8	8	3	-	-	-	-	X	X	X	X	X	X	X	X
16.7a	-	-	-	-	-	-	-	-	-	-	-	3	4	6	10	12	12	10	7	5	6	9	8	8	4	4	2	-	-	-	-	-	-	-	-	-	-
17.6a	X	X	X	X	X	X	X	1	-	2	4	5	5	8	12	14	15	13	13	9	8	9	10	12	5	3	4	-	-	X	X	X	X	X	X	X	X
18.6a	-	1	2	2	2	2	2	3	4	5	5	8	6	7	12	14	17	17	13	11	11	11	13	14	10	5	3	2	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	2	3	2	4	7	9	9	7	5	9	12	13	14	10	9	12	14	13	11	7	5	5	3	3	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	3	3	3	4	4	6	5	7	9	10	10	8	6	4	9	12	7	4	4	3	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	2	2	3	4	4	5	5	5	4	9	9	11	11	13	9	8	8	7	9	7	4	2	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	2	4	4	3	5	4	3	9	7	9	10	9	9	9	12	9	5	2	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	3	4	4	6	6	7	8	11	13	12	7	10	10	10	12	9	4	4	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	5	5	9	8	9	8	11	11	12	9	7	5	6	8	9	5	3	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	2	4	7	6	4	5	9	10	12	14	11	8	5	4	4	4	5	3	3	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	2	3	2	3	5	8	11	12	12	10	4	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	3	3	4	4	4	7	9	12	11	9	3	3	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	2	2	2	-	-	-	-	2	3	2	2	2	4	5	9	11	13	14	12	12	13	15	4	2	2	2	-	-	-	2	2	2	2	-	-	-	-
29.6	-	-	-	-	-	-	-	3	2	-	-	2	3	3	8	9	10	10	10	9	12	12	12	4	3	2	2	-	2	2	-	-	-	-	-	-	-
30.8	X	X	X	X	X	X	-	-	-	-	-	-	-	3	3	4	3	3	4	2	4	4	4	2	-	-	-	-	X	X	X	X	X	X	X	X	X
31.7	-	-	-	2	2	2	3	3	3	4	4	4	4	5	4	6	6	4	6	4	8	11	15	14	13	8	5	3	3	-	-	-	-	-	-	-	-

Table 63a

Coronal observations at Climax, Colorado (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. 1.6	-	-	-	-	-	-	-	-	-	-	-	5	6	6	-	11	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	5	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	13	9	11	10	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	7	-	-	-	-	-	-	-	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	8	12	10	9	8	4	5	-	-	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
11.7	X	X	X	X	X	X	X	X	-	-	-	-	-	-	4	4	6	-	-	-	-	-	-	3	-	-	-	-	X	X	X	X	X	X	X	X	X
12.6	-	2	1	-	1	1	1	3	3	3	1	3	2	3	1	4	6	4	-	-	-	-	-	4	4	5	2	-	-	3	-	3	-	-	-	2	2
13.6	-	-	-	3	-	1	3	4	3	2	2	3	3	2	3	6	10	5	5	10	-	3	1	-	3	4	3	4	-	2	-	-	1	1	-	3	2
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	6	7	14	11	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	8	8	12	4	-	3	8	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X
16.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	9	3	4	4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.6a	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	2	6	13	4	5	9	11	8	6	3	2	-	-	-	X	X	X	X	X	X	X	X
18.6a	2	3	3	3	3	-	-	4	2	-	-	-	-	-	-	3	2	9	13	5	12	13	14	10	10	5	3	2	2	3	-	-	-	-	-	-	-
19.6	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	3	3	10	4	12	19	14	13	9	3	3	-	-	4	3	3	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	9	3	4	4	11	14	8	8	5	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	4	5	3	3	4	5	8	8	2	2	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	4	5	3	-	4	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	10	7	3	-	5	9	4.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	12	10	3	-	-	9	7	3	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	5	3	3	3	4	7	12	5	3	3	3	2	2	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	3	3	3	-	-	-	10	3	3	4	3	2	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	9	4	3	3	3	7	3	4	4	4	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	11	6	10	8	9	5	3	4	4	2	3	-	-	-	-	-	-	-	-	-
29.6	2	2	2	-	-	-	-	-	-	-	4	2	3	2	3	-	5	4	2	3	12	10	8	4	4	2	-	2	-	-	-	-	-	-	-	-	-
30.8	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	5	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
31.7	2	2	-	-	-	-	-	2	-	3	5	5	4	2	-	-	-	-	2	3	5	10	13	9	4	-	2	2	2	2	-	-	-	2	2	3	3

Table 62b

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																																					
Jul. 1.6	-	-	-	-	-	-	-	-	-	-	-	2	3	4	6	6	6	3	9	13	13	11	10	8	4	4	3	5	5	2	-	-	-	-	-	-	-
3.6	-	-	-	-	-	-	-	-	3	3	4	2	4	6	10	13	12	9	10	11	15	16	19	12	8	9	7	6	4	3	3	2	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	4	6	9	12	13	11	7	11	13	13	16	14	12	8	8	6	10	3	-	X	X	X	X	X	X	X
5.7	-	X	X	X	X	X	X	X	-	-	-	-	-	3	3	5	7	4	4	5	4	5	6	3	3	3	-	-	-	-	X	X	X	X	X	X	-
6.6	-	-	-	-	-	-	-	-	-	-	-	2	3	4	9	10	8	5	7	10	11	13	10	8	5	6	7	6	7	4	3	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	-	-	-	3	3	3	4	3	4	8	6	4	3	4	8	9	8	5	2	1	1	-	-	-	X	X	X	X	X	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	3	5	6	7	7	7	6	7	11	15	15	13	9	7	7	11	11	4	-	-	-	-	-	-	-
11.7	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
12.6	-	-	-	1	1	2	-	-	1	1	1	2	4	10	7	5	6	7	14	18	25	31	34	17	13	10	8	9	10	8	3	1	1	-	-	-	-
13.6a	-	-	-	-	-	2	1	2	1	1	2	3	3	3	4	5	5	5	12	16	21	22	32	18	15	9	5	7	9	4	4	2	-	1	1	-	1
14.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	4	5	16	13	13	12	10	4	5	3	-	-	-	-	-	-	-	-	-	-
15.8	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	-
16.7	-	-	-	-	-	3	3	2	5	4	6	8	9	8	4	3	8	10	2	5	4	5	7	10	5	4	3	3	-	-	-	-	-	-	-	-	-
17.6	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
18.6a	-	-	-	-	-	5	5	4	2	5	10	12	13	20	19	15	10	8	4	4	4	4	7	9	10	8	6	4	3	2	2	-	-	-	-	-	-
19.6	-	-	-	-	3	3	3	4	2	4	10	10	13	17	20	18	10	5	5	6	7	8	9	11	12	9	9	4	2	4	2	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	4	4	11	15	15	15	10	4	4	5	4	7	8	7	8	9	4	4	4	2	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	3	5	10	15	14	14	14	10	5	9	10	13	14	17	13	12	11	5	4	4	4	2	-	-	-	-	-
22.6	-	-	-	-	-	3	3	3	2	3	6	7	9	10	11	12	12	9	5	5	9	10	13	16	11	10	5	4	4	5	3	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	3	4	9	6	8	10	11	9	9	6	4	9	16	14	13	9	4	4	3	3	3	5	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	3	4	3	3	5	5	7	5	5	6	9	9	13	13	12	11	3	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	3	4	5	6	7	6	6	10	12	13	13	12	10	8	6	3	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	3	3	3	1	3	3	4	6	9	11	12	13	8	6	4	2	5	4	3	-	-	-	-	-	-	-
27.6	X	X	X	X	X	X	-	-	-	2	3	3	3	-	3	4	4	5	4	5	9	13	9	5	3	-	2	3	3	3	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	2	4	4	6	8	7	9	9	9	14	18	17	10	5	3	2	1	3	4	2	3	2	-	-	-	2
29.6	-	-	-	-	-	-	-	-	-	-	-	3	7	9	10	10	13	10	12	11	12	16	17	16	9	4	4	3	2	2	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	5	10	10	14	12	7	6	5	7	8	8	6	3	4	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	3	8	11	14	20	15	15	15	27	30	18	14	12	9	9	10	7	4	3	-	-	-	-	-	-	-

Note: Observation low weight: July 14.7 at S45-S90 and N50-N90.

Table 63b

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																																					
Jul. 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	6	3	12	16	10	9	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.6	-	-	-	-	-	-	-	-	-	-	-	-	4	5	7	13	13	-	9	13	12	7	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	3	11	17	11	11	9	4	12	7	5	4	-	-	-	-	-	-	-	X	X	X	X	X	X	X
5.7	-	X	X	X	X	X	X	X	-	-	-	-	-	-	10	8	4	-	-	5	10	7	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-
6.6	-	-	-	-	-	-	-	-	-	-	-	-	2	4	8	4	4	-	-	2	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	-	8	-	-	4	4	2	-	-	-	-	-	-	-	-	X	X	X	X	X	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	6	4	-	-	7	-	-	2	10	10	3	9	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	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
12.6	1	1	1	1	-	-	2	1	1	3	4	4	4	8	7	5	11	9	4	2	14	15	15	4	3	-	-	1	-	2	3	2	-	-	-	2	-
13.6a	2	2	1	2	2	2	3	2	3	2	3	3	4	7	5	4	5	7	5	4	9	13	12	5	2	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	9	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	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
16.7	-	-	-	-	-	-	-	-	-	-	4	-	-	2	-	5	8	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.6	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
18.6a	-	-	-	-	-	-	-	-	4	4	4	3	6	9	13	10	9	3	-	-	-	4	4	5	4	4	-	3	-	-	2	-	-	-	2	2	2
19.6	-	-	-	3	5	3	-	4	5	5	4	4	4	5	5	9	4	3	2	-	-	-	2	5	5	5	2	2	2	2	-	-	-	-	2	2	2
20.8	-	-	-	-	-	-	-	-	4	4	2	-	-	4	11	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	2	4	2	-	-	-	3	8	8	5	3	-	4	10	9	7	4	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	3	2	2	2	4	2	-	2	5	10	8	8	5	4	9	12	12	13	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	4	3	2	5	13	8	12	4	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	·2	2	2	-	-	3	4	6	8	4	2	4	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	3	-	-	-	4	14	10	4	3	5	-	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	10	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	8	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	3	3	2	2	4	3	-	4	11	13	6	10	8	-	-	-	-	-	-	-	-	-	-	-	3	-	-
29.6	-	-	-	-	-	-	-	-	3	3	4	9	9	10	5	5	5	4	5	5	3	5	4	2	2	-	-	-	-	-	-	-	-	-	2	2	2
30.8	-	-	-	-	-	-	-	-	-	-	-	-	3	3	11	5	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	3	3	2	2	2	4	5	4	3	2	2	5	6	9	15	20	18	11	-	12	11	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2

Note: Observation low weight: July 14.7 at S45-S90 and N50-N90.

Table 64a

Coronal observations at Climax, Colorado (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																																					
Jul. 1.6	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	3	1	-	-	-	-	2	2	3	1	-	-	-	-	-	-	-	-	-	-	-	-
11.7	X	X	X	X	X	X	X	X	-	-	-	1	3	3	3	2	3	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
12.6	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	4	3	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.6	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	4	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	2	2	1	1	3	3	3	5	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X
16.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.6a	X	X	X	X	X	X	X	-	-	-	-	2	2	-	2	1	1	2	1	-	2	-	3	3	2	-	-	-	-	X	X	X	X	X	X	X	X
18.6a	-	-	-	-	-	-	-	-	-	-	-	3	2	2	2	3	4	4	4	4	4	3	3	3	2	3	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	2	2	2	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	2	2	3	3	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	2	2	4	2	2	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	2	2	2	4	4	4	4	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	2	1	2	3	3	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	3	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	4	5	4	4	3	3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	3	3	4	4	4	3	3	2	3	4	-	-	-	-	-	-	-	-	-	-	-
30.8	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	2	3	2	1	2	2	3	2	1	1	-	-	-	-	-	-	-	-	-

Table 65a

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																																					
Jun. 2.8	-	-	-	-	-	-	-	-	10	10	10	11	12	12	23	30	35	38	36	25	20	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	8	8	9	11	13	17	25	20	15	12	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	4	5	5	8	12	14	15	18	27	34	39	41	38	25	14	18	15	12	12	10	9	8	8	6	5	4	4	3	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	8	10	12	18	24	24	27	31	25	18	12	10	9	8	10	14	9	8	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	7	7	9	16	14	16	15	18	16	11	10	9	6	13	15	14	13	11	12	10	7	4	-	7	7	5	3	-	-
8.6	-	-	-	-	3	3	3	5	9	11	10	12	14	16	17	15	14	13	10	10	9	8	14	13	14	11	15	14	7	7	5	7	8	4	-	-	-
9.8	-	-	-	-	-	-	4	6	9	10	11	13	15	15	15	13	13	11	12	10	10	11	25	24	19	16	17	14	11	9	5	4	4	8	-	-	-
10.7	-	-	-	-	-	-	-	3	8	9	5	10	11	12	16	15	13	12	10	10	12	16	24	22	18	15	10	8	4	3	-	-	3	3	3	-	-
11.8	-	-	-	-	-	-	-	4	5	6	6	7	9	12	18	17	12	10	9	5	6	13	17	25	13	11	10	9	5	3	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	5	6	8	9	9	11	13	23	25	20	14	15	11	9	14	16	27	20	14	15	10	8	3	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	2	3	5	6	7	9	14	23	22	21	18	17	18	9	9	11	15	16	14	13	9	3	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	3	3	3	-	-	5	16	15	14	13	12	12	11	10	10	13	12	11	8	8	3	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	5	6	18	15	16	18	17	13	12	12	12	12	11	10	5	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	3	5	9	9	8	11	12	13	18	20	17	15	13	12	10	9	10	9	3	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	3	3	5	10	9	9	11	13	14	17	16	18	17	13	12	10	11	10	10	10	3	-	-	-	-	-	-	-	-	-	-
18.9	-	-	-	-	-	-	-	-	-	4	4	5	6	10	10	11	13	12	12	10	10	9	10	11	10	8	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	5	7	9	11	13	14	17	33	37	34	31	26	18	12	11	13	12	9	5	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	5	7	7	10	11	11	12	14	15	18	20	23	13	10	9	10	5	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	5	10	13	12	12	10	9	8	14	13	12	9	9	10	9	7	5	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	2	4	7	17	17	15	14	13	13	14	22	19	17	16	20	15	13	10	9	8	7	3	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	8	13	14	12	13	18	22	20	25	24	22	23	18	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 64b

Coronal observations at Climax, Colorado-(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. 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
3.6	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	2	1	-	-	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	2	1	-	-	1	3	2	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X
5.7	-	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-
6.6	-	-	-	-	-	-	-	-	-	-	-	2	1	1	1	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	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
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	1	3	7	4	11	6	3	3	2	2	1	2	-	-	-	-	-	-	-
13.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	10	5	3	1	2	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	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	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.6	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
18.6a	-	-	-	-	-	-	-	-	-	-	-	2	3	4	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	1	3	5	4	5	3	-	-	-	-	-	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	-	-	-	3	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	4	2	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	4	2	3	2	2	3	3	3	4	3	2	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	5	2	3	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	4	3	3	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: July 14.7 at S45-S90 and N50-N90.

Table 65b

Coronal observations at Sacramento Peak, New Mexico (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																																					
Jun. 2.8	-	-	-	-	-	-	-	-	-	-	-	5	7	10	14	21	21	22	21	18	31	31	30	17	13	12	5	6	7	10	5	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	15	12	10	10	10	11	11	12	12	11	10	8	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	-	-	-	5	8	11	16	28	30	21	15	13	16	20	25	35	28	21	21	22	23	16	14	7	4	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	13	14	16	13	-	14	15	18	21	26	20	17	16	15	15	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	3	7	9	11	14	12	13	15	17	27	25	25	24	19	20	22	20	18	14	10	-	-	-	-	-	-
8.6	-	-	-	-	4	5	5	-	-	-	-	4	10	10	10	11	11	12	17	22	30	30	28	25	24	25	25	23	22	15	12	5	-	-	-	-	-
9.8	-	-	-	-	-	-	-	-	-	-	-	-	8	10	11	12	13	12	12	11	12	22	19	14	15	19	17	16	16	17	10	-	-	-	-	-	-
10.7	-	-	-	-	-	2	3	-	-	-	-	-	3	6	9	13	13	12	11	11	13	14	13	14	14	14	13	14	13	4	3	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	-	5	7	9	13	13	15	12	12	13	14	13	13	12	12	12	12	12	9	3	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	5	9	13	15	17	26	25	23	19	26	23	20	14	8	12	14	14	12	7	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	10	13	14	19	25	24	26	22	23	16	9	5	13	15	10	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	7	13	25	28	26	23	24	23	18	13	9	8	10	12	5	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	9	8	6	16	27	33	30	30	33	18	14	11	8	15	12	5	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	10	16	23	23	40	37	28	13	13	11	10	10	10	5	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	5	8	9	16	20	38	30	22	17	10	9	7	6	4	3	-	-	-	-	-	-
18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	9	12	17	15	14	14	13	9	5	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	3	4	3	4	9	12.	13	13	23	26	17	13	9	9	8	8	12	17	15	19	13	12	12	11	10	7	3	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	7	8	9	12	18	14	12	11	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	3	5	10	13	12	16	17	16	14	12	5	-	-	6	11	13	10	10	8	6	4	3	3	-	-	-	-	-
24.7	-	-	-	-	-	-	3	4	4	6	9	14	19	20	30	35	38	17	11	12	12	13	15	22	25	17	14	13	12	11	12	11	3	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	4	5	7	9	13	9	9	14	13	13	15	14	16	16	17	8	4	-	-	-	-	-	-	-	-

Table 66a

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																																					
Jun. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	11	8	6	12	15	14	8	4	3	5	4	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	10	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	2	-	-	-	-	2	3	4	5	2	-	-	-	3	6	11	9	12	6	3	12	5	2	3	7	2	2	-	-	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	9	10	12	2	3	5	4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	9	7	3	-	-	1	10	4	3	1	-	-	-	-	-	1	1	1	1	1	-
8.6	3	1	1	1	1	2	1	1	1	1	1	1	1	1	1	3	4	1	2	-	-	-	8	4	-	-	4	3	2	1	1	-	-	1	1	1	1
9.8	1	1	1	-	-	-	-	-	-	-	-	-	1	1	4	7	5	1	1	-	-	1	12	5	9	1	-	1	1	1	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	1	3	3	20	8	-	1	1	2	6	9	5	4	5	2	2	1	1	-	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	17	7	-	-	1	2	11	9	4	1	-	-	1	1	1	-	-	-	-	-	-	-
12.8	-	-	-	-	1	1	-	-	-	-	-	-	-	3	12	17	16	12	7	6	-	11	9	5	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	1	1	1	1	-	-	-	-	-	4	5	10	13	12	8	3	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	9	11	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	5	14	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	2	2	2	1	1	-	-	-	-	-	-	-	-	2	17	2	1	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	3	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	1	17	13	12	20	5	-	3	6	7	4	1	4	1	1	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	12	13	17	26	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	1	1	1	1	1	1	1	-	-	1	2	1	-	-	-	3	-	3	-	-	2	10	-	1	1	1	-	1	1	1	1	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	9	9	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 67a

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																																					
Jun. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	5	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	5	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	2	6	3	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 66b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Jun. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	6	7	15	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	8	8	5	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	4	-	-	-	-	-	4	10	12	6	8	5	4	11	12	12	4	3	3	-	-	-	-	-	-	2	4	4	3	2
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	6	10	9	6	8	9	9	7	-	8	8	6	-	-	-	-	-	-	-	-	3	4	3	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	11	8	7	12	10	16	13	14	1	-	-	-	-	-	-	-	-	-	-	-	-
8.6	1	1	1	1	1	1	1	1	1	1	1	1	1	-	4	10	8	8	8	13	16	20	2	9	1	1	-	5	1	-	-	-	1	2	3	4	3
9.8	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	8	1	1	1	-	10	17	10	14	1	-	1	1	-	-	-	-	-	2	2	1
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	3	5	1	-	-	-	-	-	-	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	5	4	-	1	2	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	13	6	8	10	17	5	14	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	4	12	10	8	9	10	12	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	1	5	4	1	1	9	14	15	10	9	8	4	1	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	3	5	4	10	9	12	11	11	12	12	12	7	1	-	-	-	-	1	2	2	2	2	3	3	-
16.7	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	1	5	11	1	-	1	8	12	12	1	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	1	8	1	-	-	10	13	7	-	-	-	-	-	-	-	-	-	-	-	-	-
18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	21	10	6	4	1	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	12	8	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	1	3	2	1	1	1	5	14	8	12	3	-	5	2	2	13	8	4	3	1	-	-	-	-	-	1	1	1	1
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	10	11	1	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 67b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Jun. 2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-
9.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	3	1	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
18.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-

Table 68

Outstanding Solar Flares, April 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 (GCT)	Relative Area of Max (Tenths)	Importance	SID Observed
Boulder	Apr 1			40	530	N14	E36	1616	10	3		Yes
McMath	" 3	2005				N28	W38				2	Yes
Boulder	" 4			35	220	S06	W33	2118	12	5		
"	" 5			40	610	N29	W22	1710	20	4		Yes
"	" 7			10	260	N02	E73	1922	15	6		
Wendelstein	" 8	0548	0633		873**	N13	E70	0551			1-2	
McMath	" 8	1510				N15	E68				1+	
Boulder	" 10			45	400	N18	E43	1935	15	3		
"	" 11			< 35	380	N18	E43	0000	10	3		
"	" 11			200	940	N15	E26	2020	20	4		Yes
"	" 12			< 25	2200	N15	E26	0003	15	3		
"	" 12	1456	1605	69	1600	N06	E09	1457	30	4		Yes
"	" 12	1550	1611	27	200	N11	E07	1555	10	2		
Wendelstein	" 12	----	1608		194**	N17	E16	1556			1	
Boulder	" 12	1713	1739	20	396	N13	E03	1724	15	3		
"	" 12	1844	2303	259	2800	N14	E14	1856	25	6		Yes
"	" 12	2345	2405	20	154	N16	E06	2350	20	3		
"	" 13	1515	1528	13	265	N14	E05	1521	5	2		
"	" 13	1605	1623	18	135	N09	E01	1614	9	0		
"	" 13	1724	1737	13	70	N14	E00	1726	7	0		Yes
"	" 13	1729	1740	11	75	N13	E07	1731	8	8		Yes
"	" 13	1752	1804	12	140	N12	E03	1754	8	3		
"	" 13	1850	1912	22	176	N15	E02	1856	8	0		
"	" 13	2008	2020	12	176	N18	E04	2012	6	0		
"	" 13	2009	2054	45	180	N12	E00	2029	12	1		Yes
"	" 13	2029	2054	25	320	N08	E04	2030	9	0		Yes
"	" 13	2159	2222	23	430	N11	E01	2202	10	1		Yes
"	" 14	1433	1456	--	770	N13	W11	1433	10	2		
"	" 14	1527	1552	25	95	N16	W13	1530	7	5		
"	" 14	1605	1620	15	115	N16	W15	1607	6	3		
"	" 14	1649	1719	30	200	N14	W12	1652	8	1		Yes
"	" 14	1652	1720	28	150	N13	W12	1700	6	0		
"	" 14	1756	1801	5	66	N11	W11	1758	5	0		Yes
"	" 14	1800	1811	11	150	N14	W12	1800	8	2		Yes
"	" 14	1814	1836	12	110	N13	W11	1814	6	0		
"	" 14	1857	1923	26	66	N15	W13	1905	9	5		
McMath	" 15	1442				N19*	E58*				1-	
Boulder	" 16	2237	2246	9	135	N07	W53	2237	5	0		
"	" 16	2240	2245	5	45	N14	W41	2241	7	3		
"	" 20	1805	1900	55	858	S04	W07	1825	8	1		
"	" 21	1725	1744	19	220	S13	E48	1739	6	0		
Wendelstein	" 22	0614	0626	12	291**	S16	E47	0618			1	
Boulder	" 26	1528	1537	11	100	S11	E16	1530	8	0		
"	" 26	1615	1619	4	154	S11	E04	1616	6	0		
"	" 26	1619	1626	7	130	S12	E15	1622	5	0		
"	" 26	1632	1640	8	165	S11	E15	1634	10	0		
Wendelstein	" 26	----	1644		145**	S11	E14	1633			1	
Boulder	" 26	1747	1758	11	304	S11	E15	1750	20	1		Yes
"	" 27	1625	1640	15	770	S15	W26	1633	10	1		Yes

*Longitude and latitude of calcium plage in which solar flare was observed.
**Area corrected for foreshortening.

Table 69

Indices of Geomagnetic Activity for June 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	2.5 2.7 2.1 3.2 2.5 3.9 1.9 3.4	22.2	0.8	2+3o2+4- 3-5-2-4-	24o	Five
2	4.1 4.0 2.0 1.9 1.2 2.7 2.5 3.9	22.3	1.0	4+4+2+2- 1-3-3o5-	24-	Quiet
3	2.6 2.5 1.8 3.4 3.4 3.4 3.1 2.2	22.4	0.8	3o3-2-4- 4o4-3o3-	24+	
4	1.9 2.7 1.7 0.9 2.1 2.3 1.2 1.1	13.9	0.4	2+3o2o1- 2o2+1o1o	14+	7
5	2.6 2.1 2.3 2.0 1.8 1.8 1.9 1.9	16.4	0.5	3-2+3-2o 1+2o2-2-	16+	13 15
6	3.7 4.6 3.9 3.6 4.4 4.9 3.2 2.5	30.8	1.3	4-5+4+4o 5+6o3+3-	35-	19
7	1.9 0.9 0.8 1.6 1.9 1.8 0.9 0.7	10.5	0.2	2o1-1-1+ 2o2-1-1-	10-	20
8	0.9 0.6 0.8 1.6 1.9 2.0 2.3 3.6	13.7	0.5	1-0+1o1+ 2-2o2o4o	13o	
9	3.9 4.3 2.5 3.4 3.6 2.6 2.6 2.9	25.8	1.0	5-5+3-4o 4o3o3o3+	30o	
10	3.7 3.7 2.8 3.4 3.1 2.7 2.8 2.7	24.9	0.8	4o4-3+4o 3+3-3+3o	27+	
11	3.1 1.5 1.4 1.7 1.8 1.8 1.5 2.2	15.0	0.5	3o2-2o1+ 2o2-1o2+	15o	Five
12	2.2 1.2 2.2 1.9 2.1 1.6 2.1 1.8	15.1	0.4	2+1+3-2o 2o1+2+2-	16-	Dist.
13	1.1 0.9 1.2 1.1 1.2 0.8 1.0 0.8	8.1	0.0	1o1-1+1o 1o0+1-1-	7-	
14	1.3 1.9 1.9 1.6 1.7 1.6 1.2 0.8	12.0	0.2	1o2o2o1+ 2-1+1o1o	11+	6
15	1.4 1.1 1.1 1.2 1.0 0.8 0.8 0.9	8.3	0.0	1+1o1o1+ 1o0+0+1-	7o	9 24
16	0.5 0.4 0.4 1.1 1.5 2.5 2.9 1.6	10.9	0.4	0+0o0o1o 2-3-4-1+	11-	29
17	2.2 3.6 2.9 2.2 2.1 2.9 2.5 2.1	20.5	0.6	2+4o3o2+ 2+3o3o3-	23-	30
18	1.7 2.2 2.3 2.1 1.1 1.7 1.4 0.6	13.1	0.4	2o2+3o2+ 1o2-1+1o	15-	
19	1.6 1.6 0.7 0.8 0.9 1.6 1.6 1.0	9.8	0.2	2-2-1-1- 1-1+2-1-	9o	
20	0.6 0.9 0.8 1.1 1.6 1.8 1.7 1.2	9.7	0.2	0+1o1-1o 2-2o2-1+	10-	Ten Quiet
21	0.8 1.2 0.7 1.2 1.1 3.0 2.2 2.7	12.9	0.4	1-2-0+1o 1o3+2+3+	14-	
22	1.7 2.7 2.1 2.9 3.1 2.4 2.0 2.3	19.2	0.6	2-3o2o3o 4-2+2o2+	20o	7
23	2.8 2.4 1.5 2.1 2.0 2.0 4.7 4.5	22.0	1.2	3+3-2-2+ 2o2o6-5+	25o	13
24	4.3 5.3 4.8 4.6 4.0 2.4 3.6 2.9	31.9	1.6	5-6+6o5o 5-2+4o3o	36o	14
25	3.1 2.1 3.3 3.6 2.6 1.6 2.4 3.6	22.3	0.9	3+2+4-5- 3o1+3-4-	25-	15 16
26	3.6 2.9 1.5 2.0 2.0 1.2 1.7 1.6	16.5	0.7	4o3o2o2- 2+1-1+1+	16+	18
27	1.1 0.9 1.1 1.2 1.8 2.3 1.8 1.8	12.0	0.3	1o1o1+1o 2-2o2-2-	11+	19
28	2.1 1.2 1.2 1.7 1.1 0.8 1.1 1.3	10.5	0.2	2o1+1o2- 1o0+1-1o	9o	20
29	0.8 1.1 1.8 2.4 4.0 5.2 4.9 4.7	24.9	1.5	1o1+2-2- 5-6o6o6-	28o	27
30	4.9 5.6 2.8 2.8 3.1 3.5 2.9 3.4	29.0	1.4	6o7-3o3+ 4-4o3+4-	34-	28
Mean	2.29 2.29 1.88 2.14 2.19 2.32 2.21 2.22	2.19	0.63			

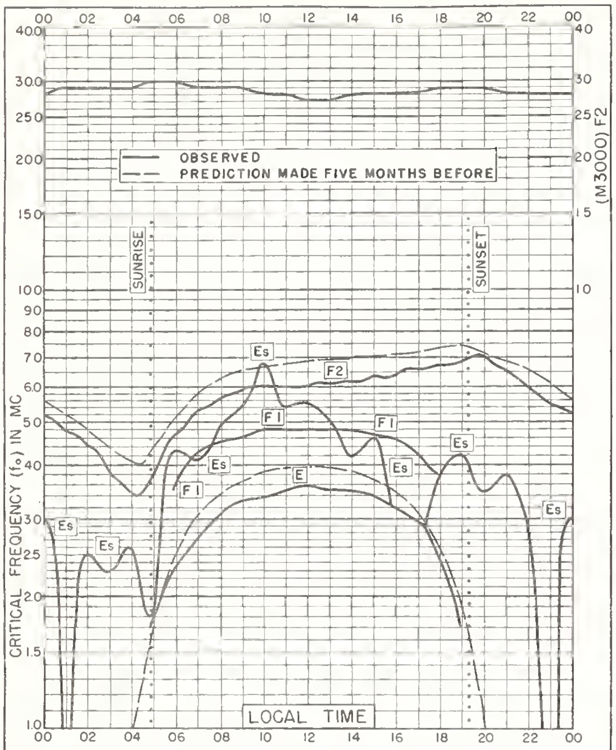

Fig 1. WASHINGTON, D. C
38.7°N, 77.1°W
JULY 1950

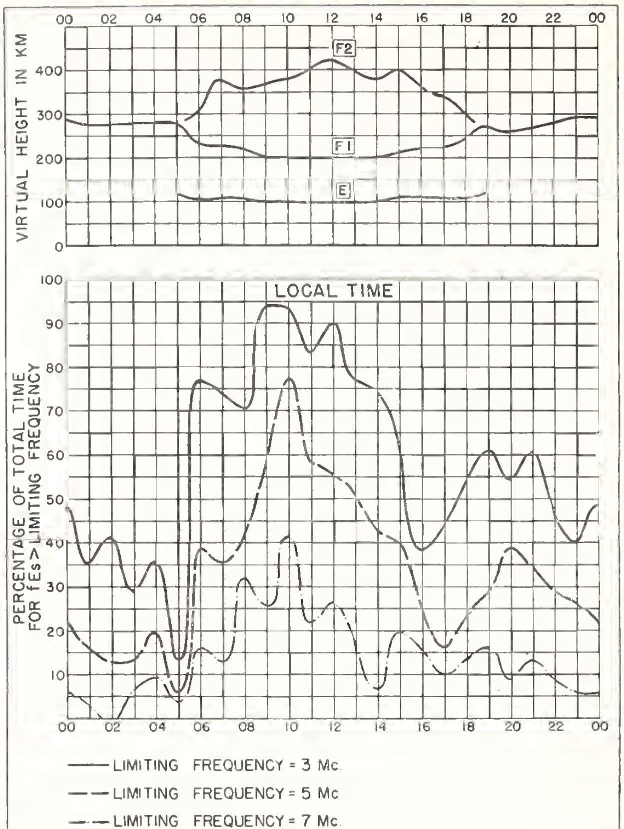

Fig. 2 WASHINGTON, D.C.
JULY 1950

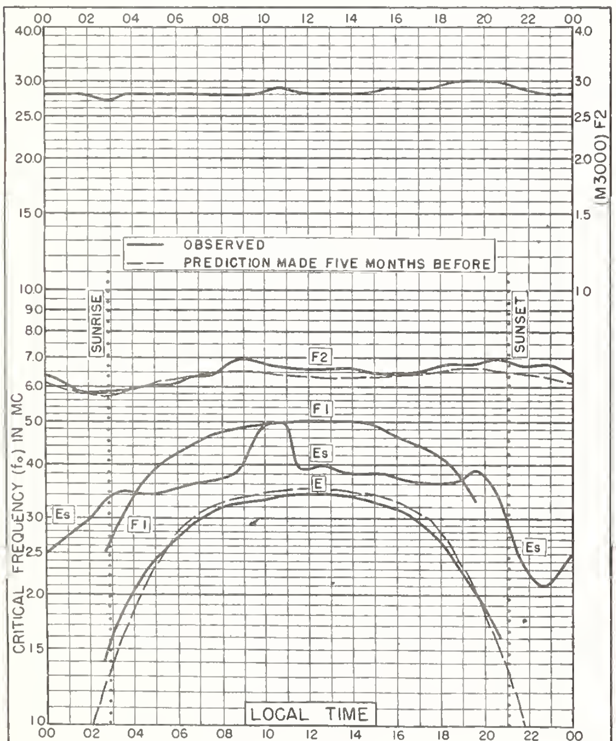

Fig. 3. OSLO, NORWAY
60.0°N, 11.0°E
JUNE 1950

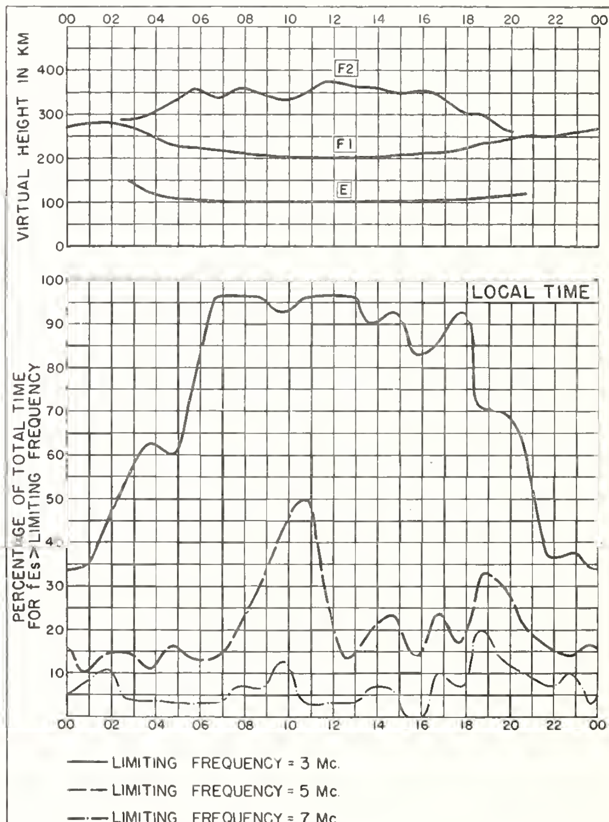

Fig. 4. OSLO, NORWAY
JUNE 1950

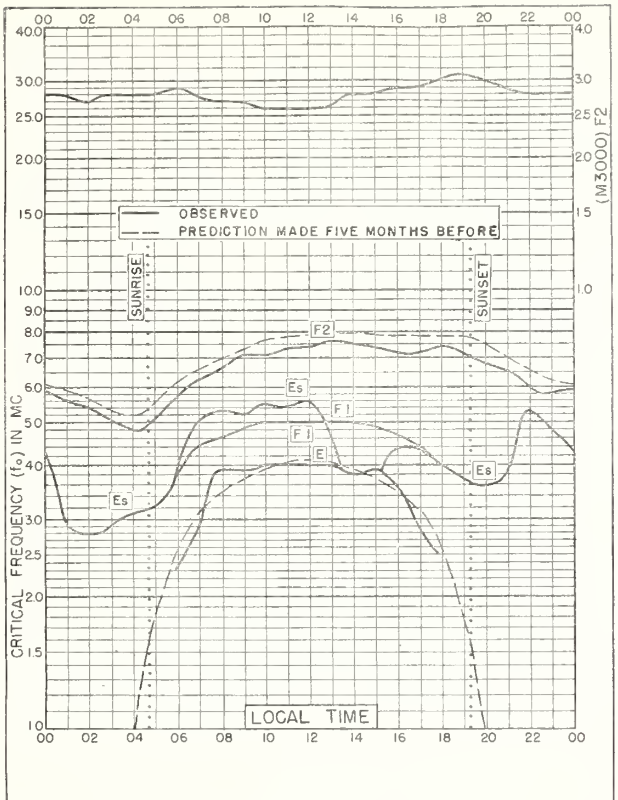

Fig 5. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JUNE 1950

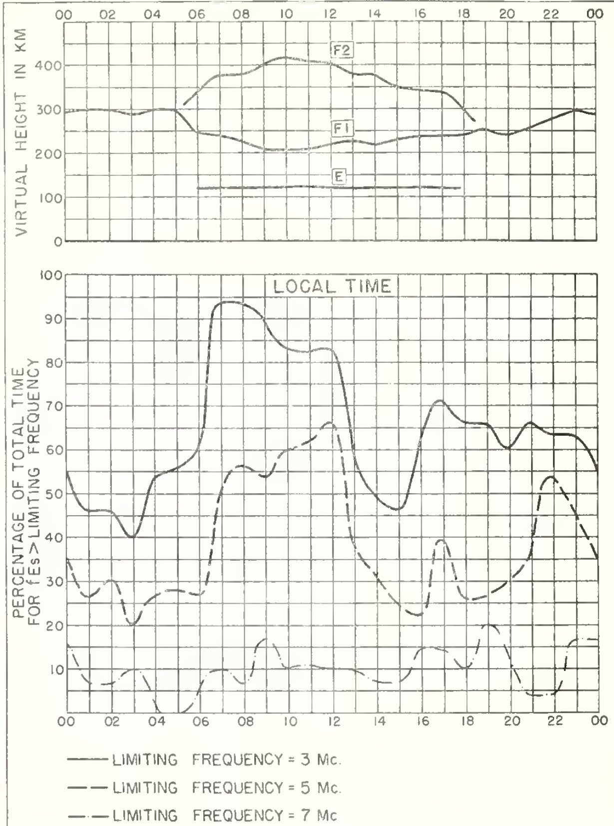

Fig 6 SAN FRANCISCO, CALIFORNIA JUNE 1950

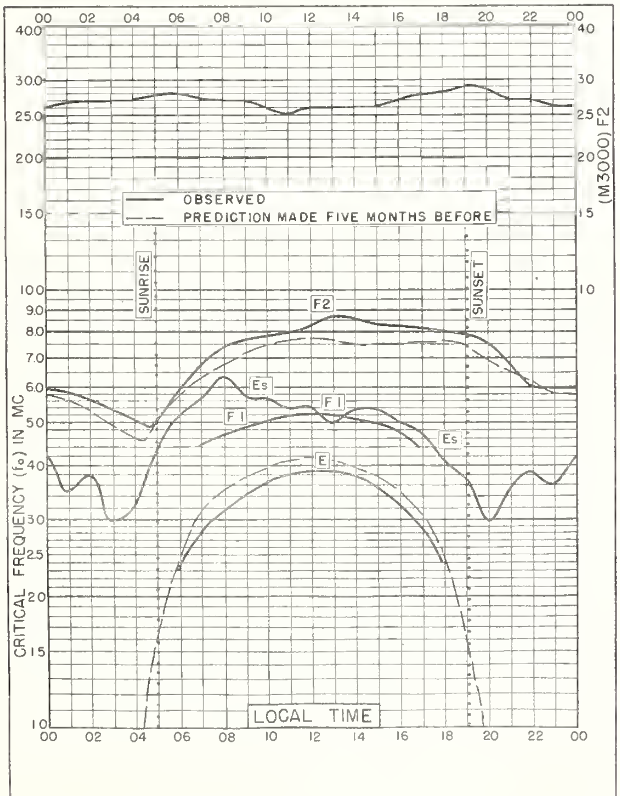

Fig. 7. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JUNE 1950

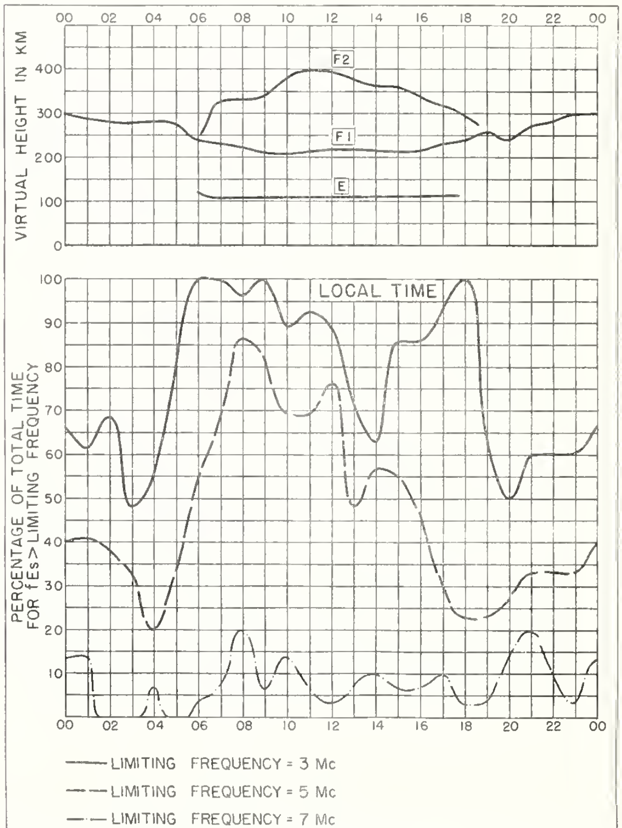

Fig 8. WHITE SANDS, NEW MEXICO JUNE 1950

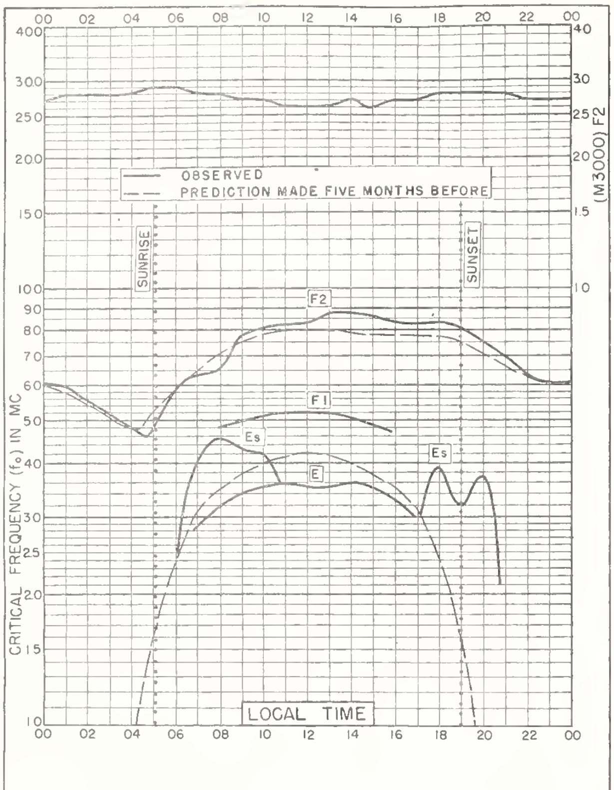

Fig. 9 BATON ROUGE, LOUISIANA
30.5°N, 91.2°W JUNE 1950

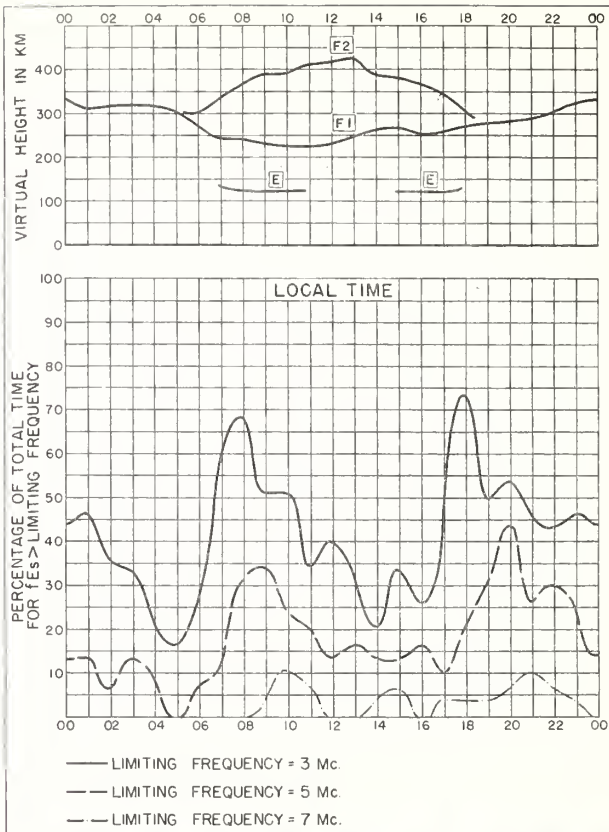

Fig 10. BATON ROUGE, LOUISIANA JUNE 1950

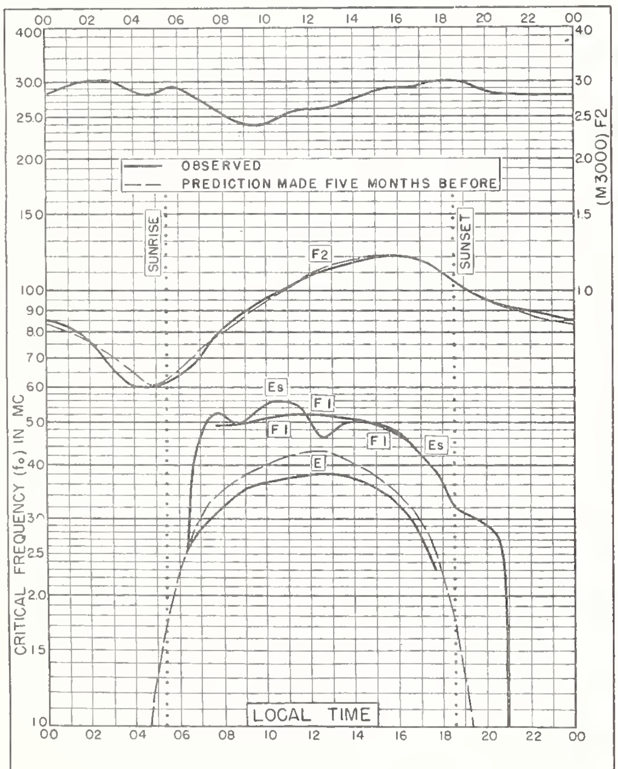

Fig 11. MAUI, HAWAII
20.8°N, 156.5°W JUNE 1950

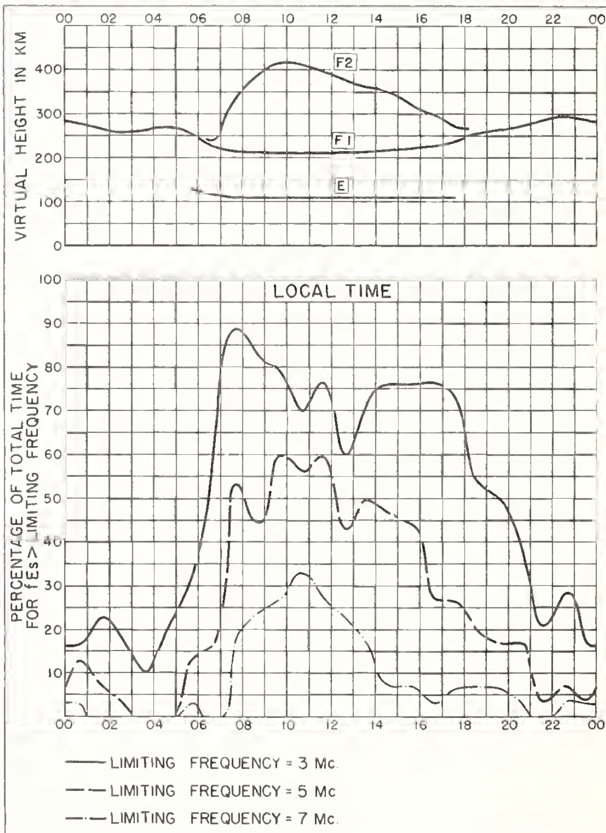

Fig. 12. MAUI, HAWAII JUNE 1950

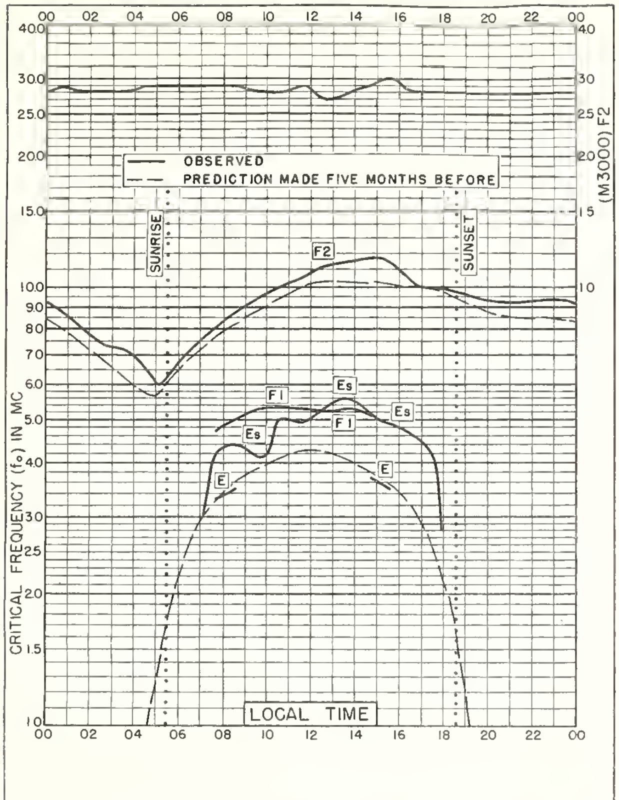

Fig. 13. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W JUNE 1950

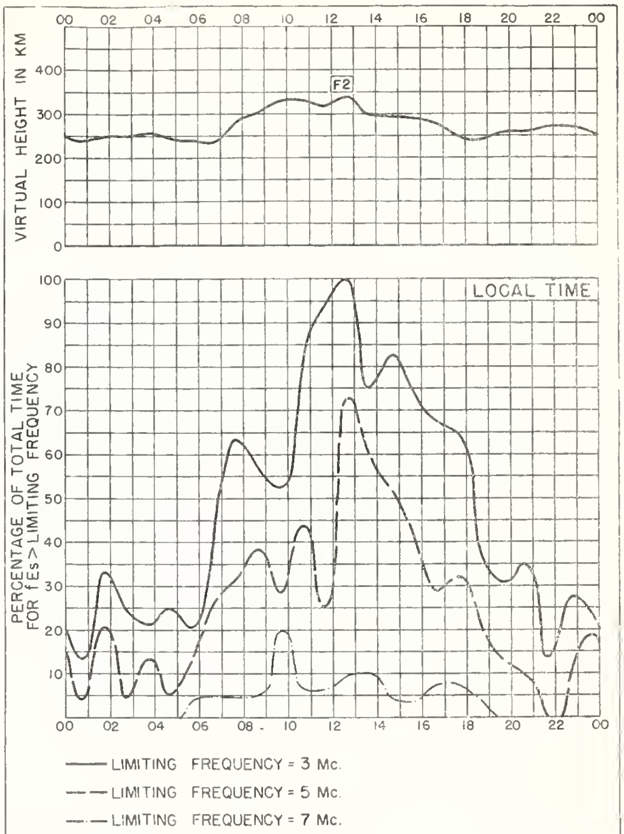

Fig. 14. SAN JUAN, PUERTO RICO JUNE 1950

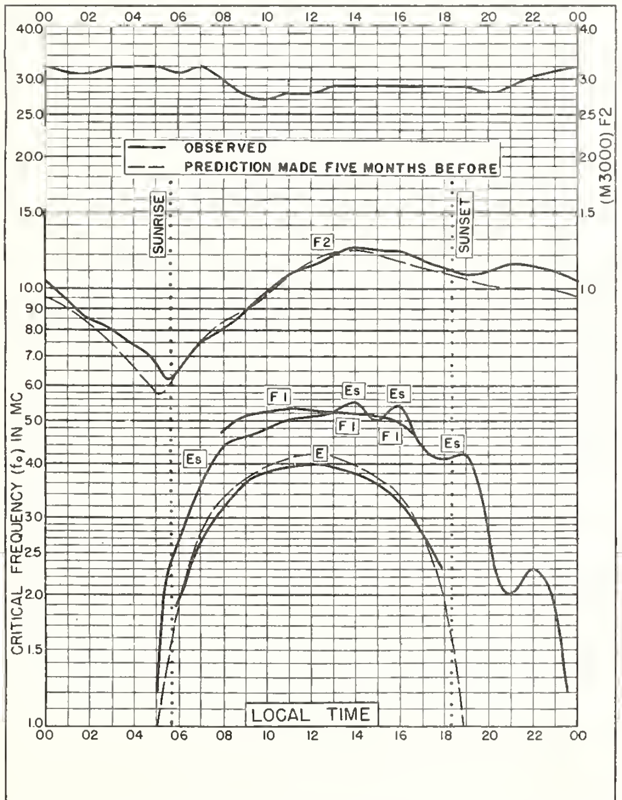

Fig. 15. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W JUNE 1950

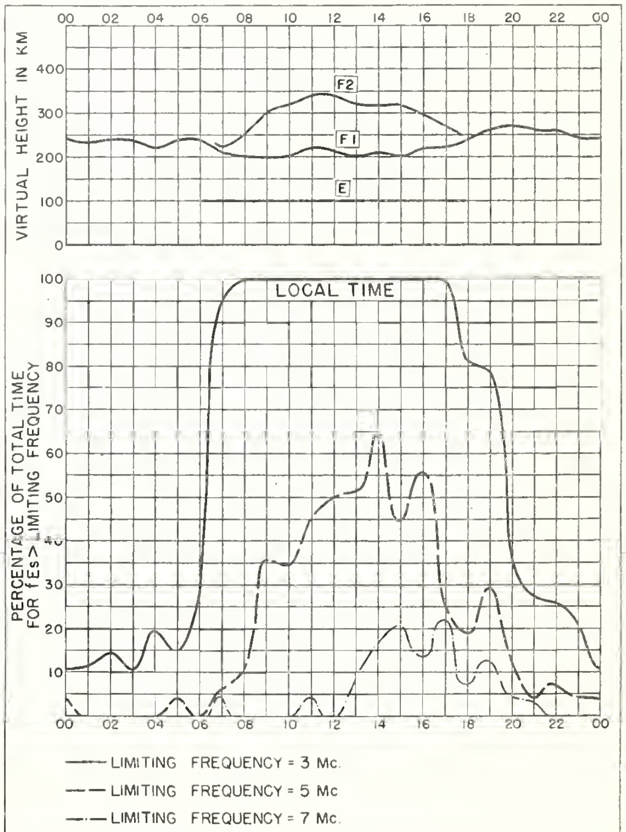

Fig. 16. TRINIDAD, BRIT. WEST INDIES JUNE 1950

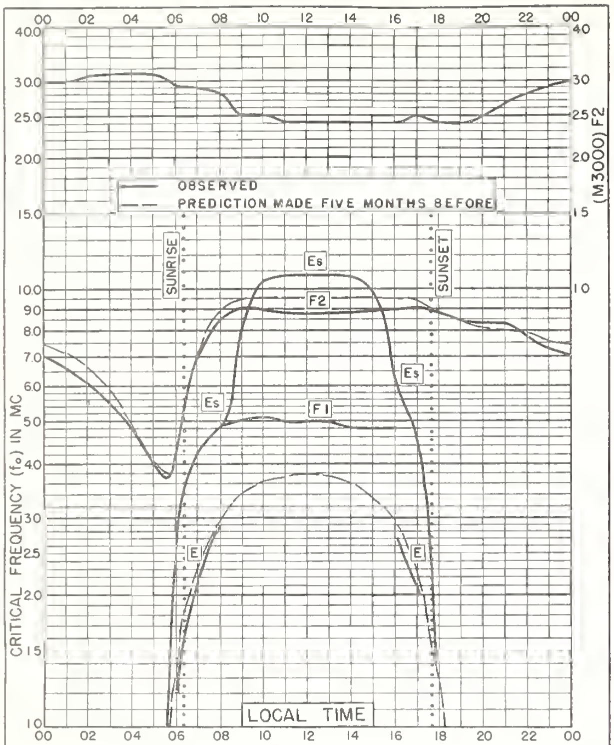

Fig. 17 HUANCAYO, PERU
12.0°S, 75.3°W JUNE 1950

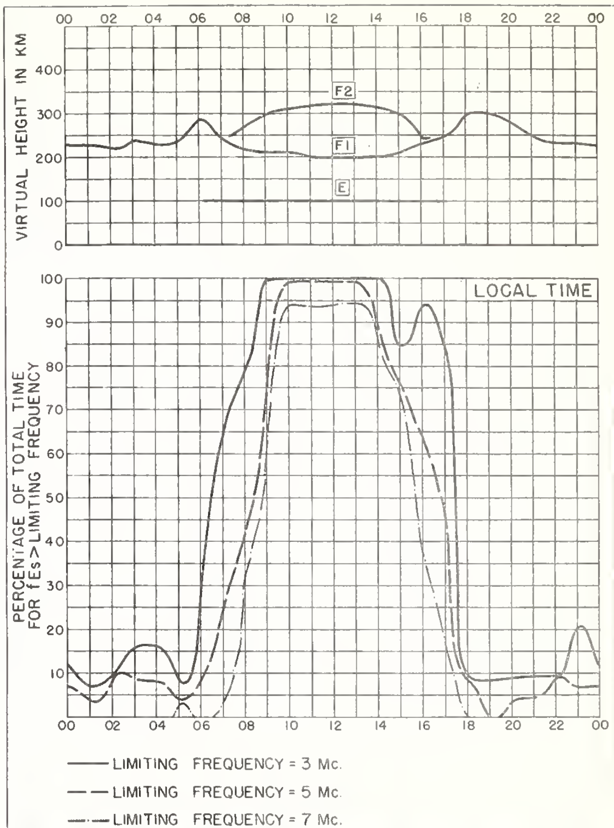

Fig. 18. HUANCAYO, PERU JUNE 1950

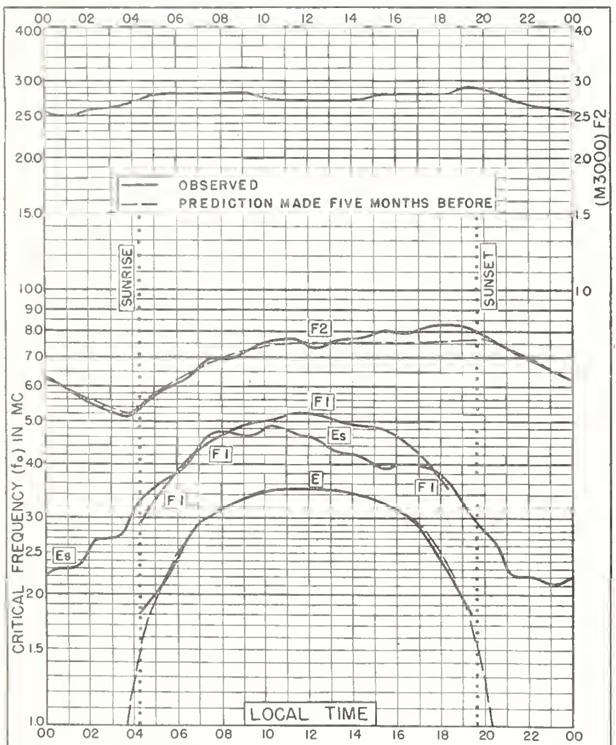

Fig. 19. DeBILT, HOLLAND
52.1°N, 5.2°E MAY 1950

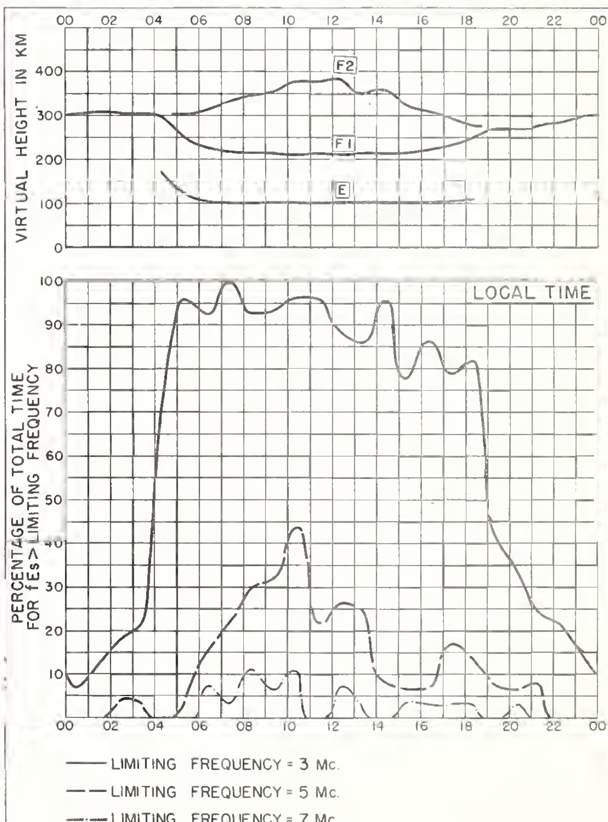

Fig. 20. DeBILT, HOLLAND MAY 1950

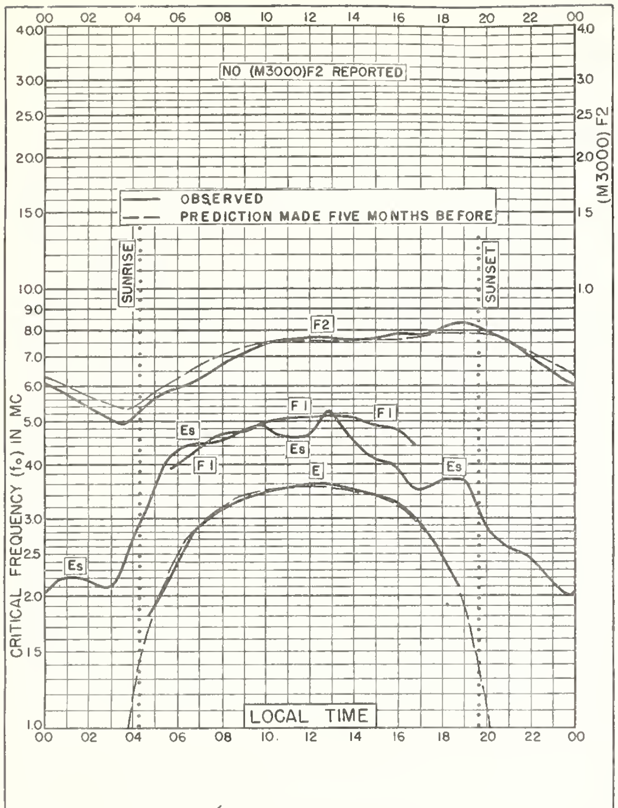

Fig. 21. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E MAY 1950

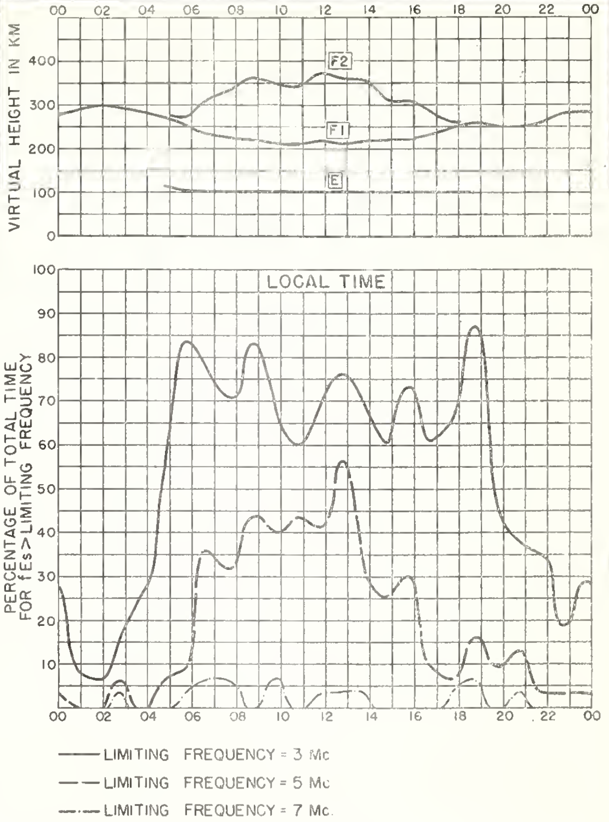

Fig. 22. LINDAU/HARZ, GERMANY MAY 1950

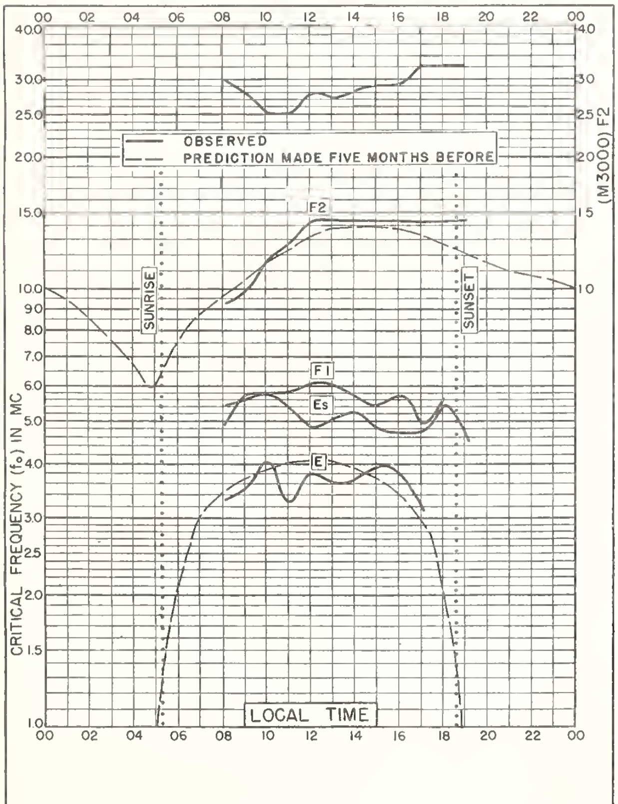

Fig. 23. FORMOSA, CHINA
25.0°N, 121.0°E MAY 1950

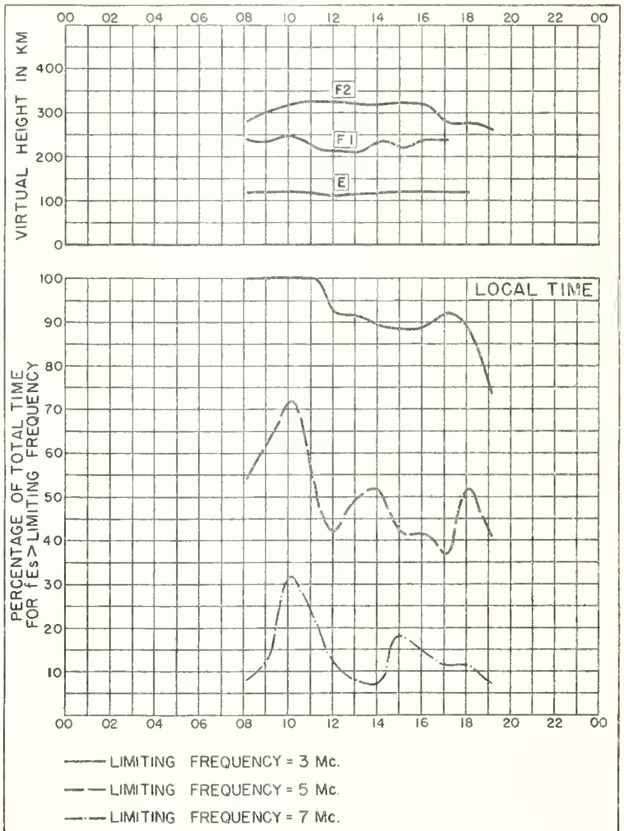

Fig. 24. FORMOSA, CHINA MAY 1950

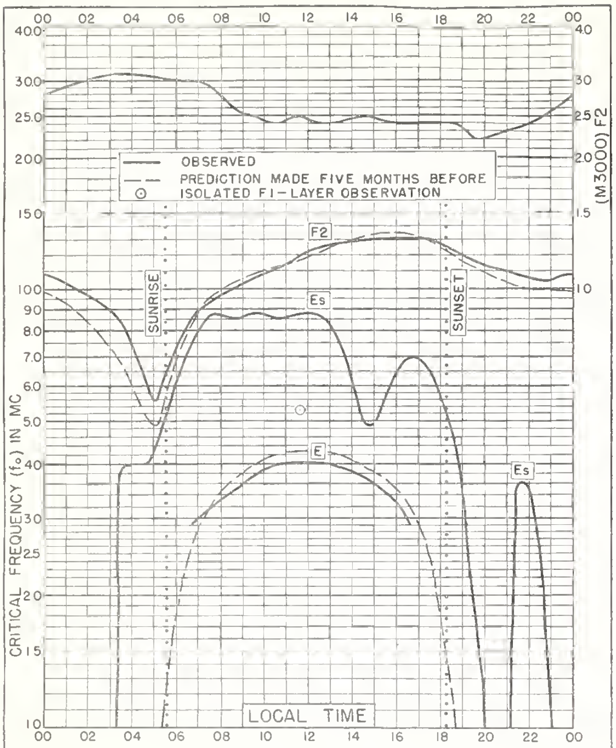

Fig 25. GUAM I
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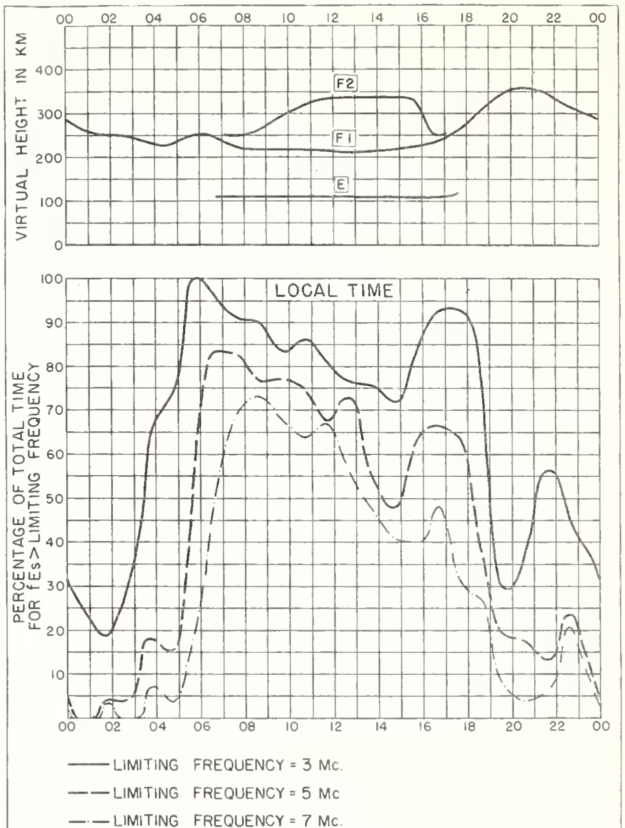

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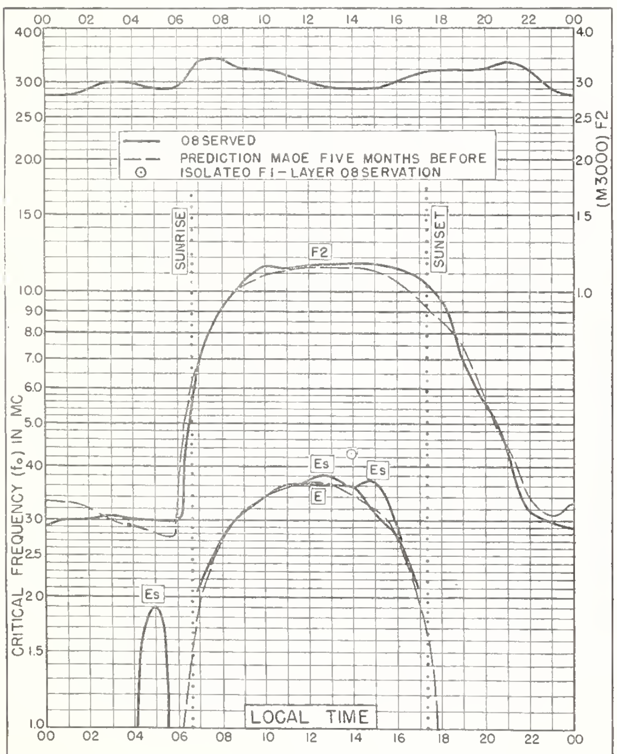

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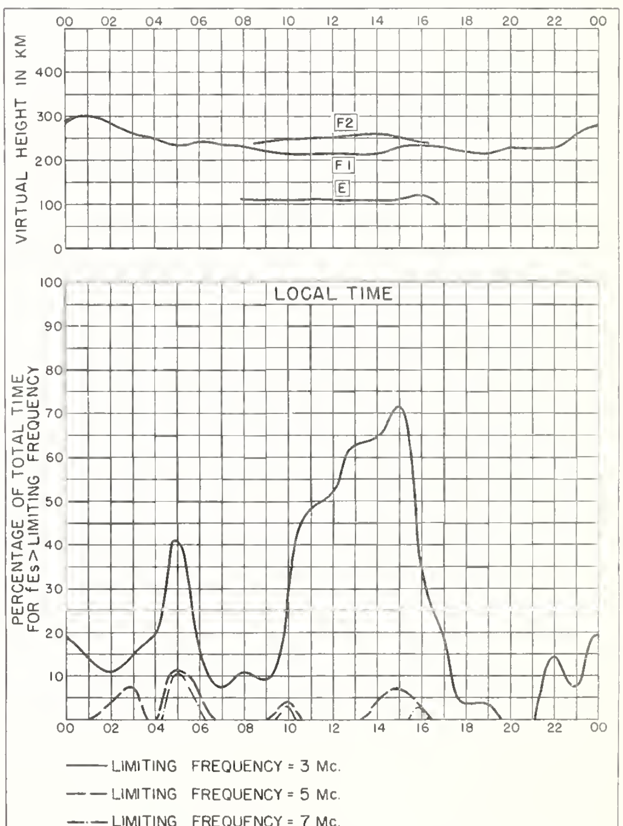

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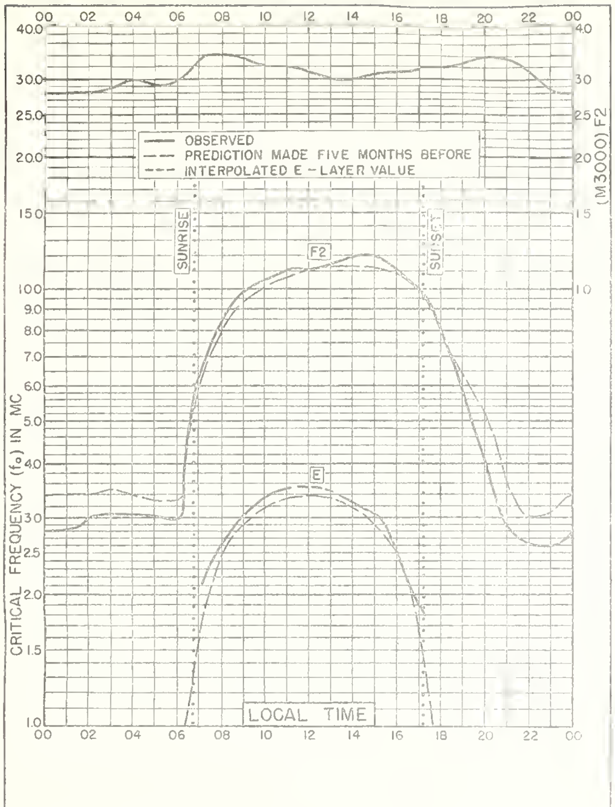

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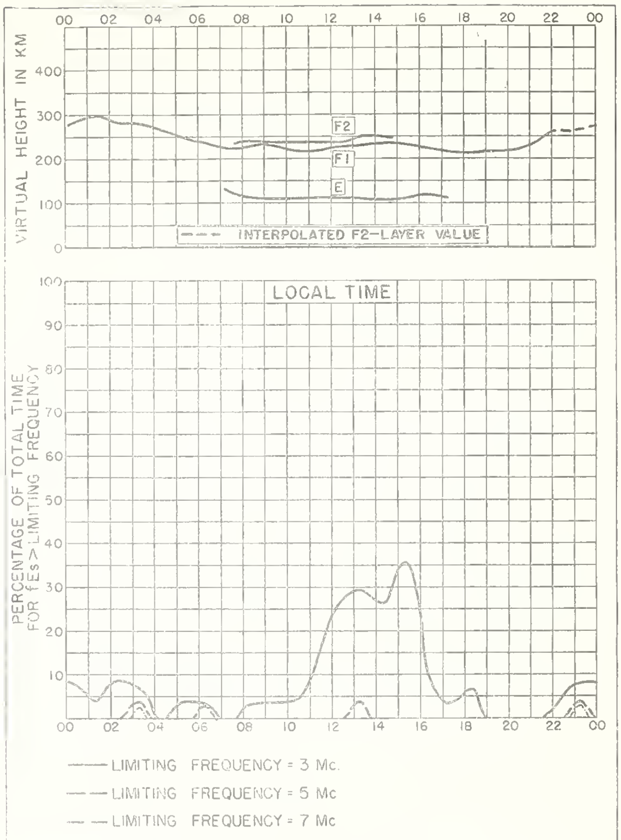

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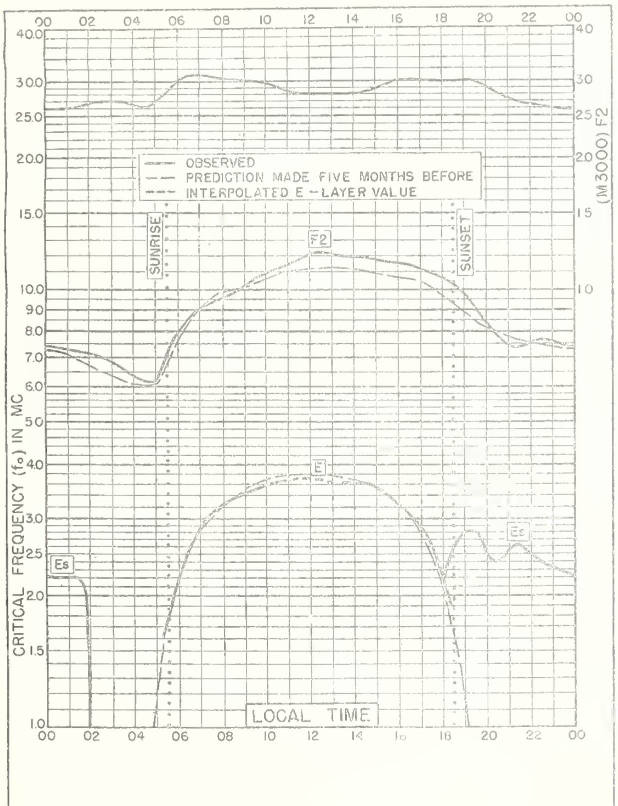

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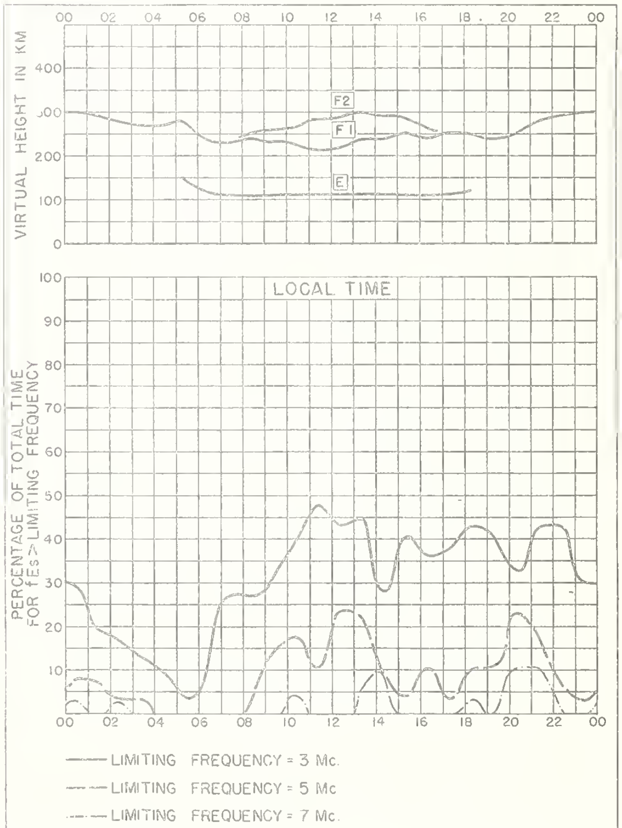

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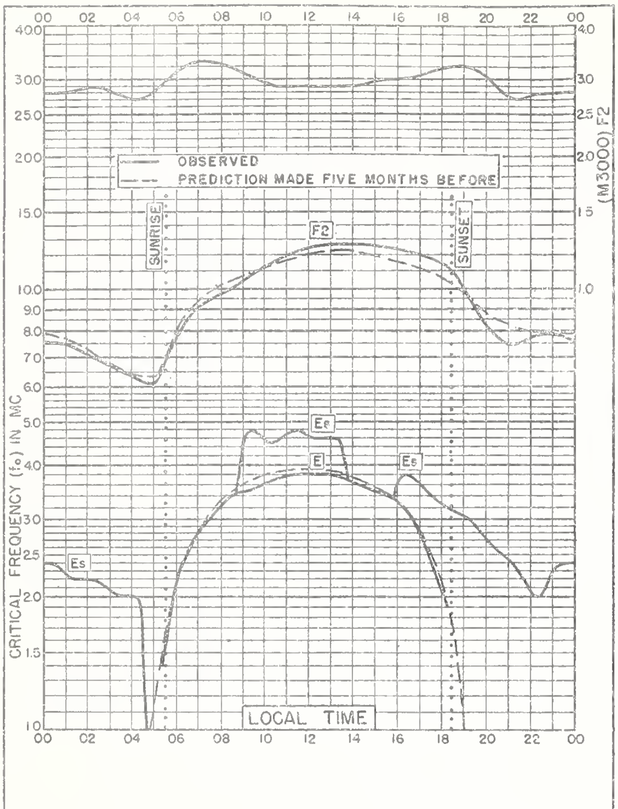

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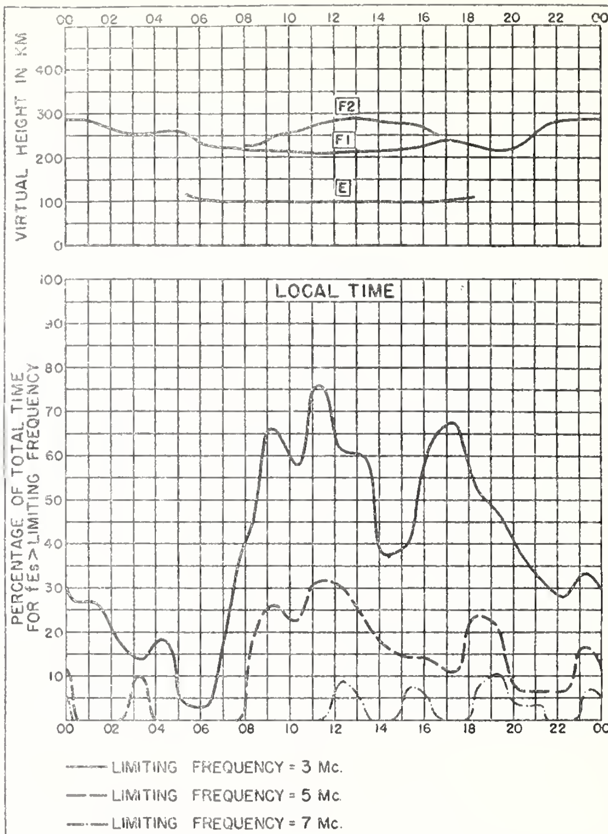

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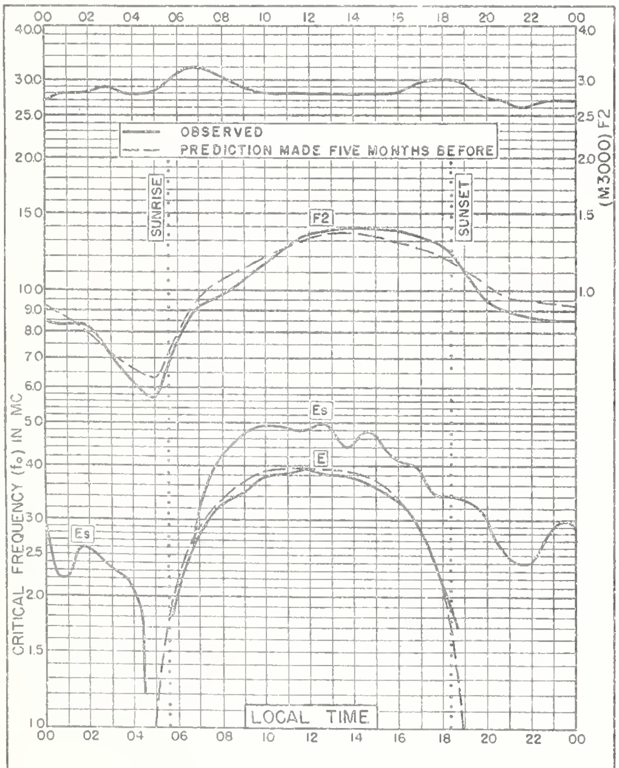

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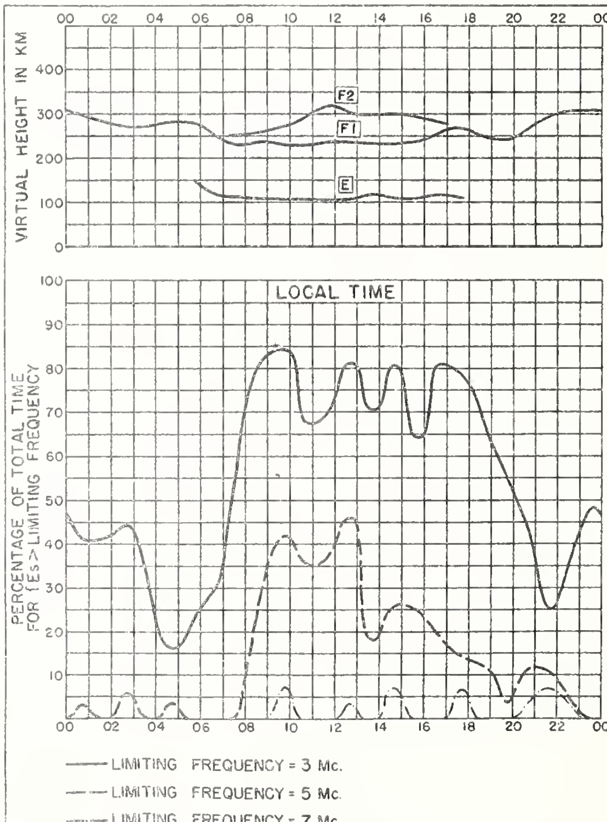

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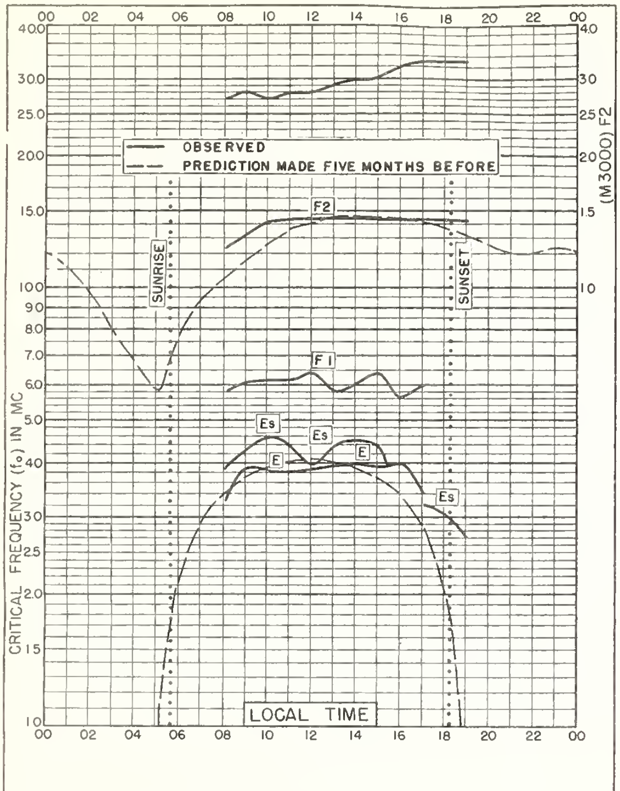

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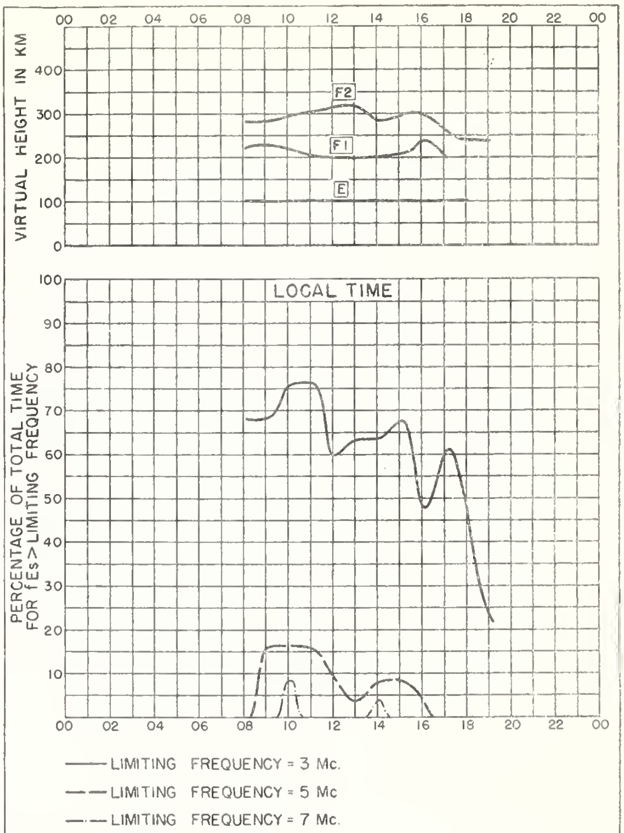

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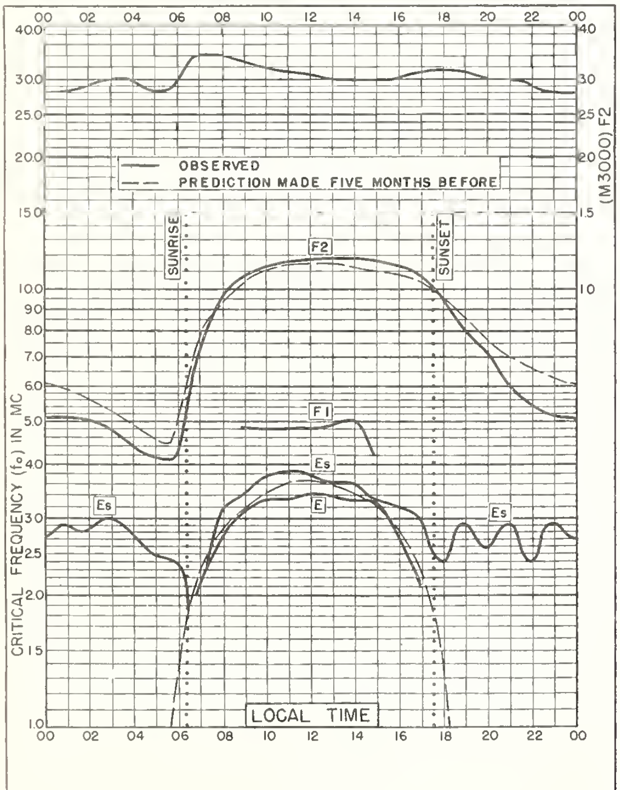

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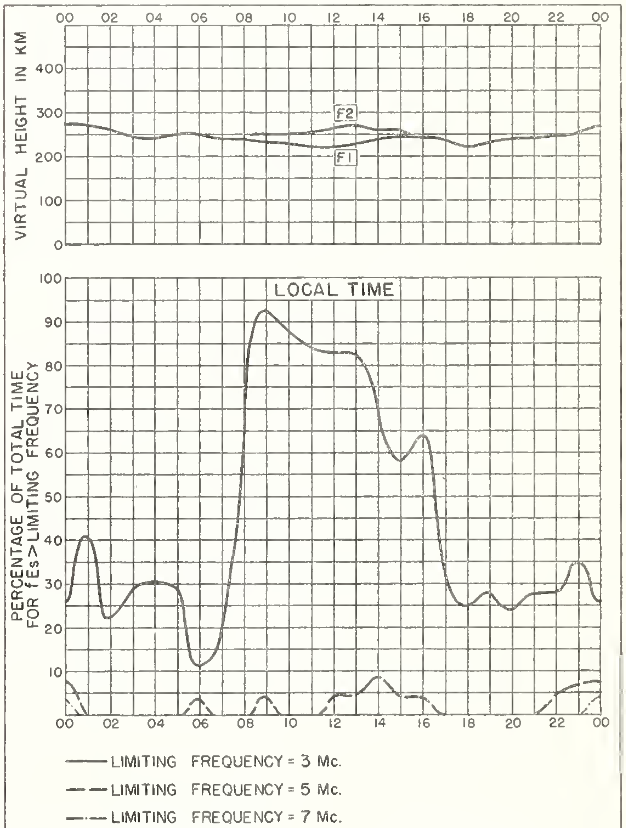

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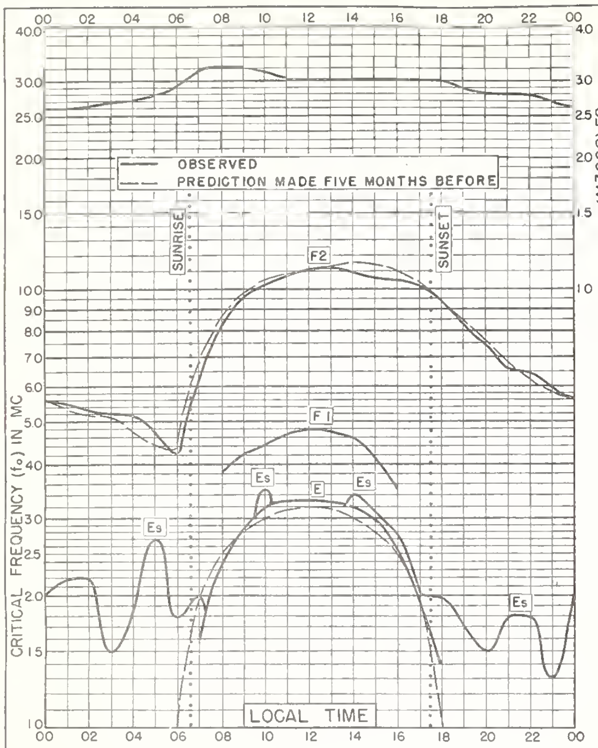

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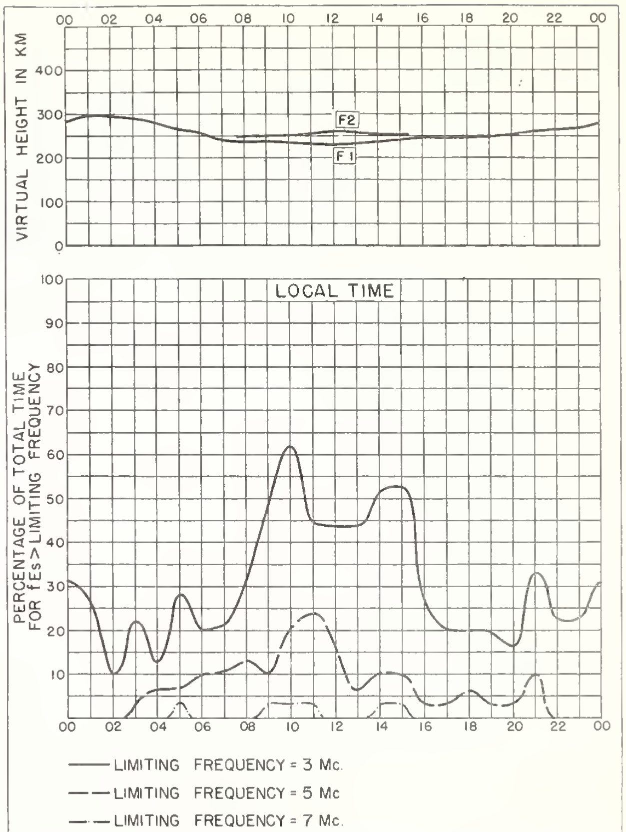

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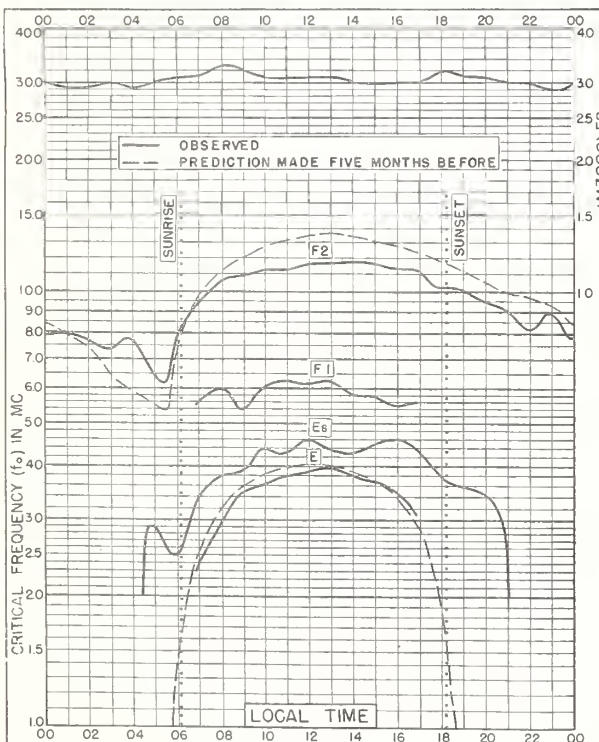

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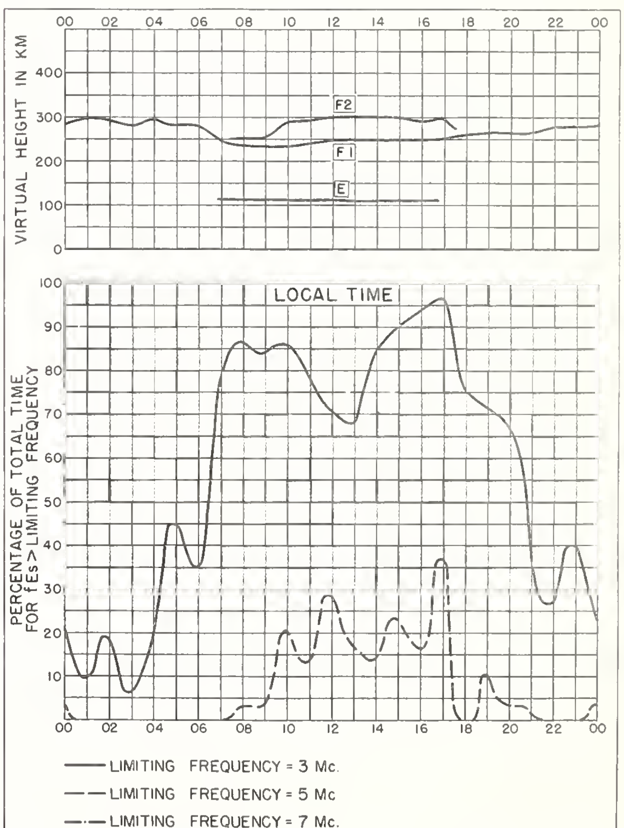

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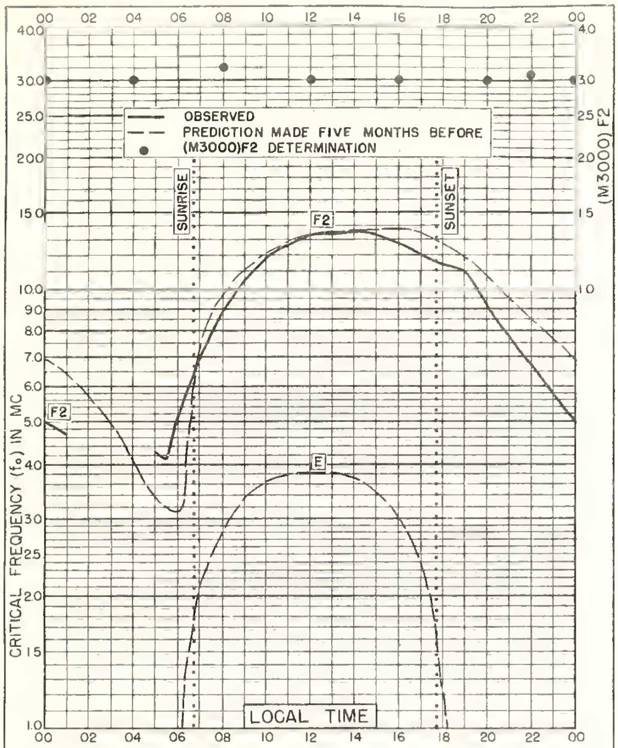

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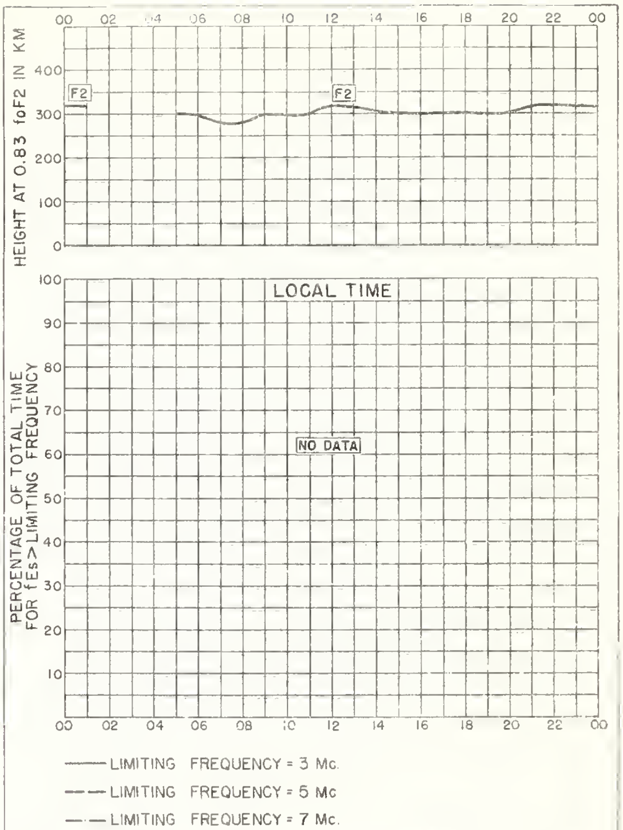

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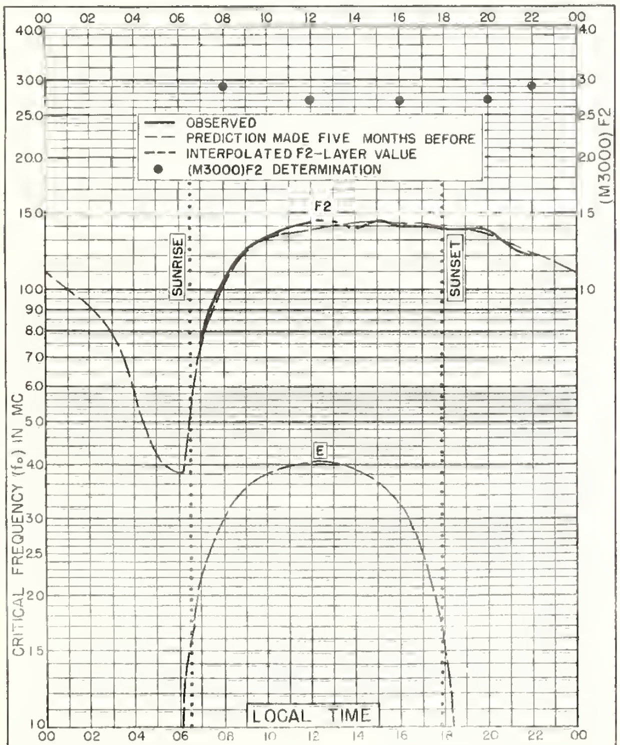

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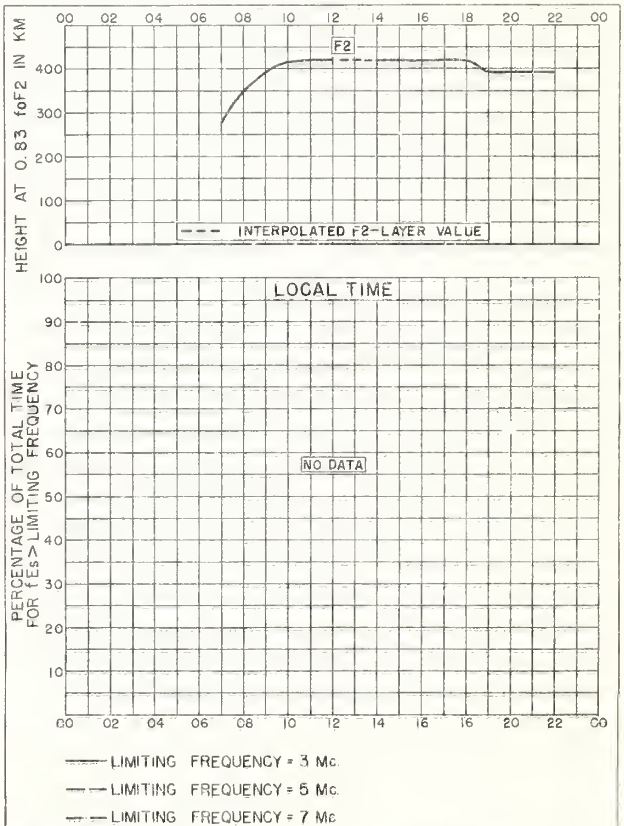

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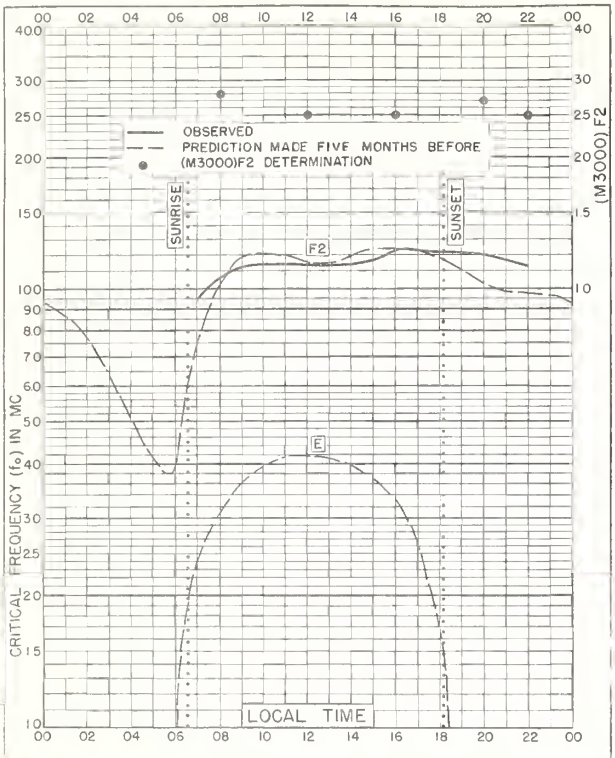

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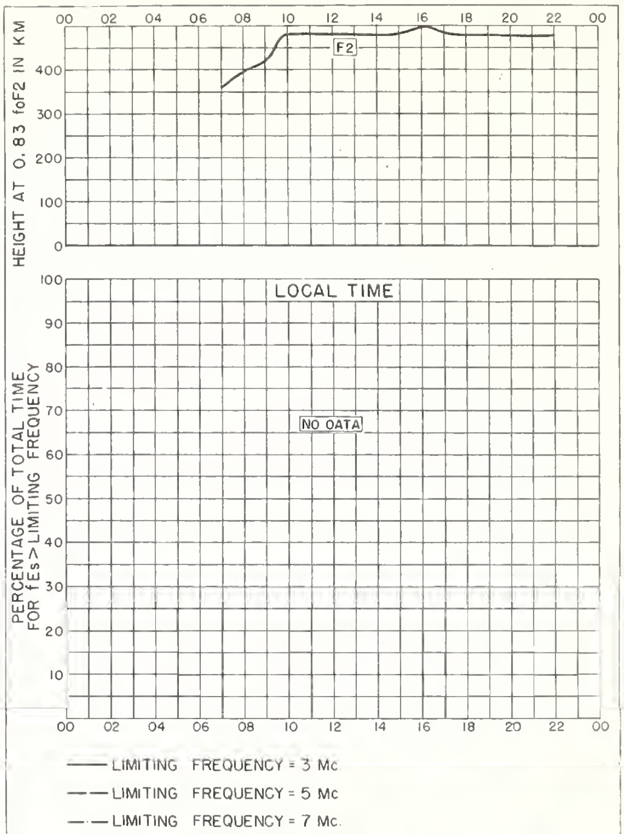

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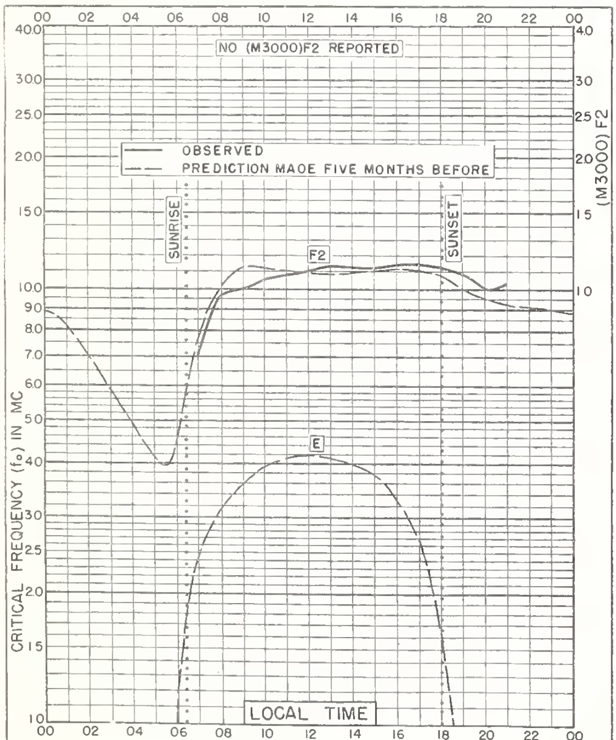

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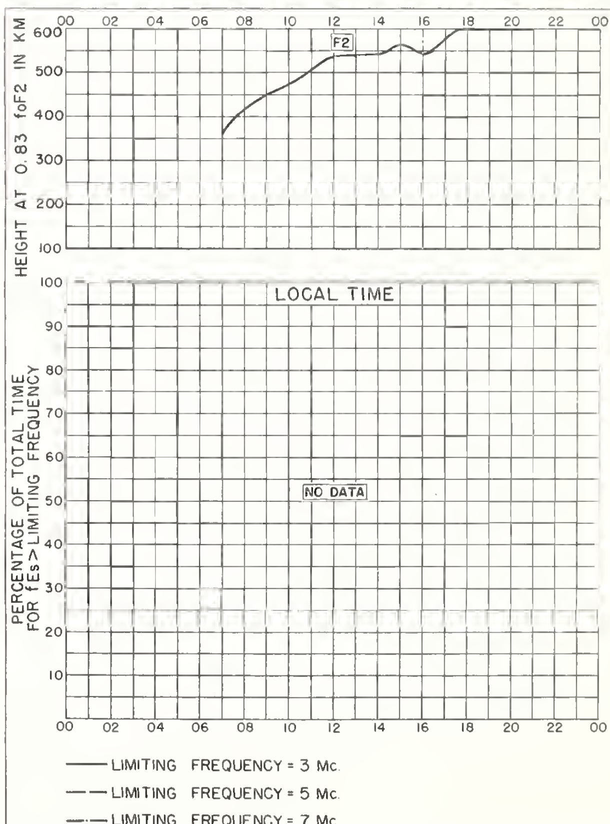

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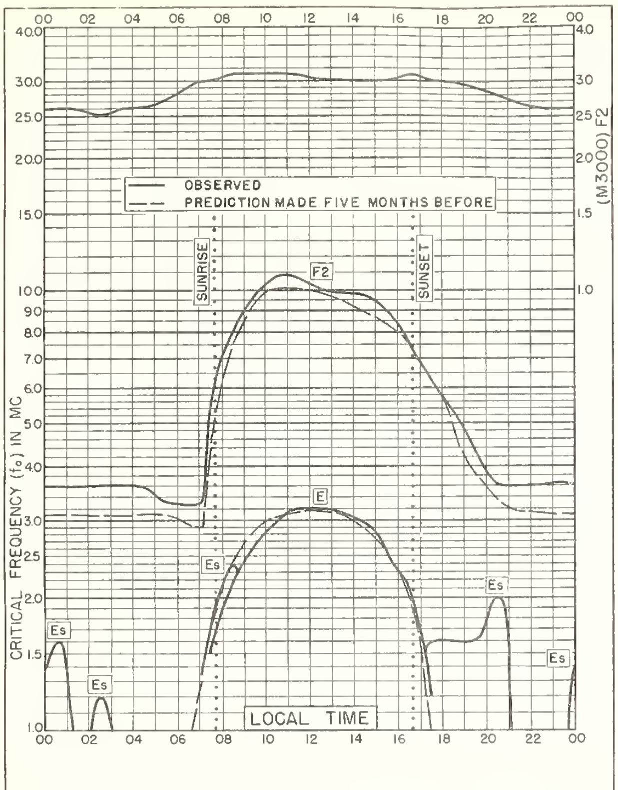

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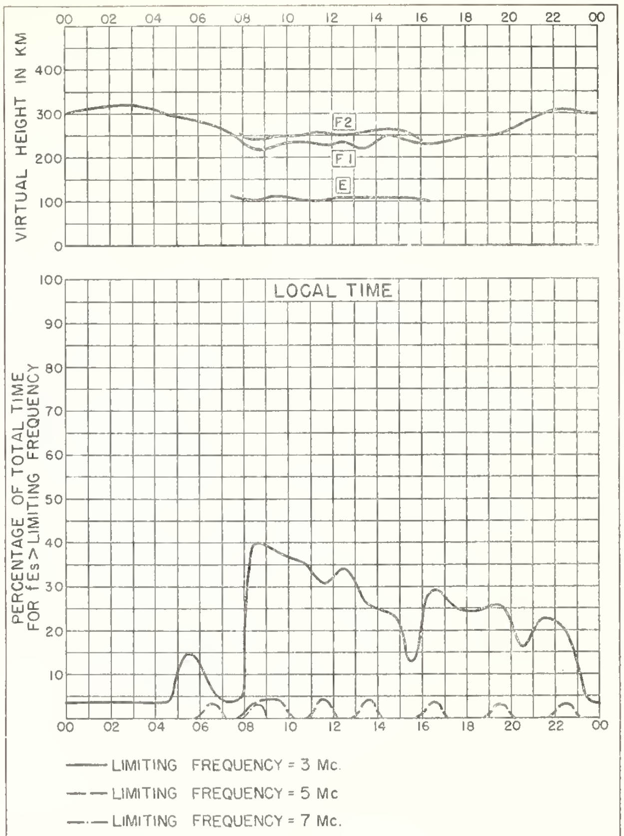

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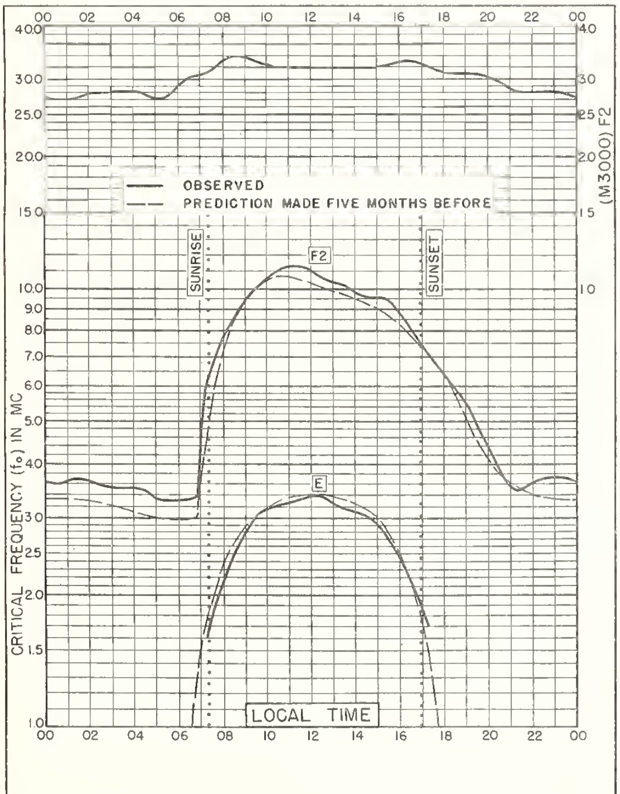

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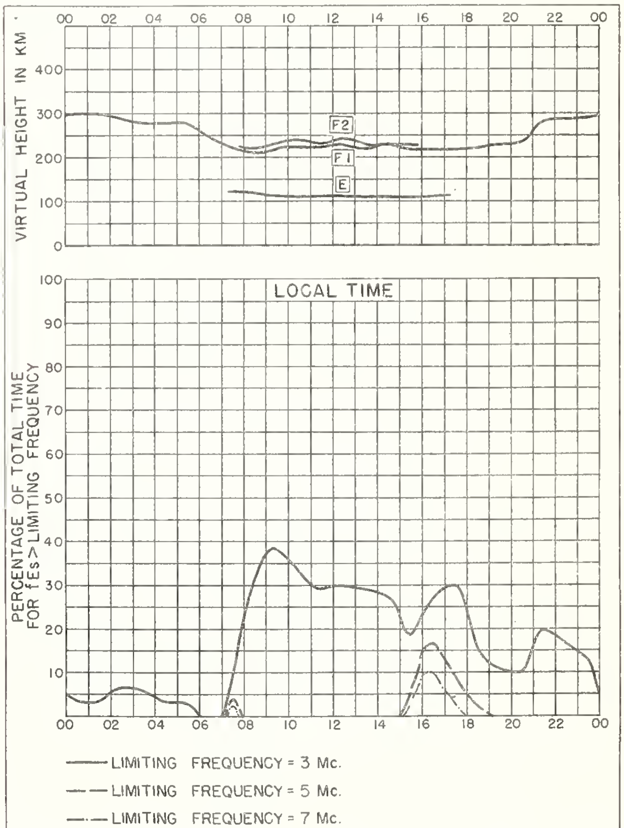

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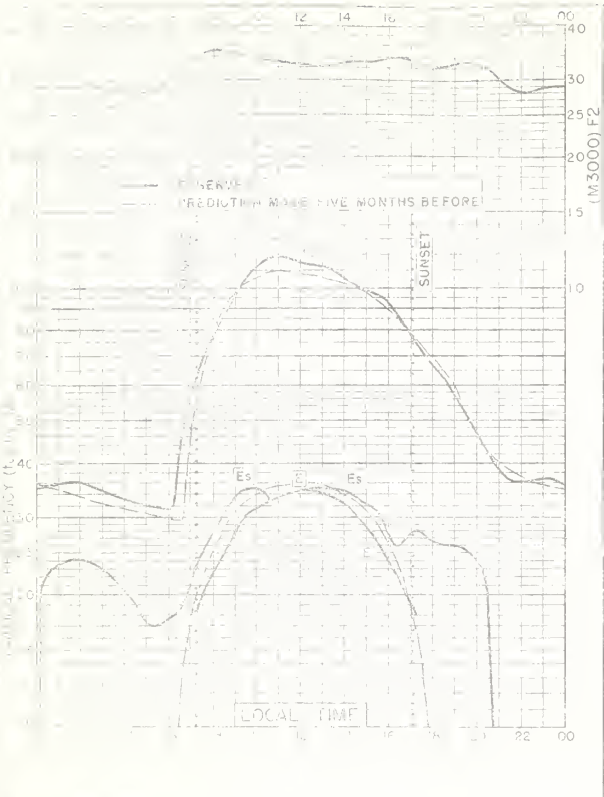

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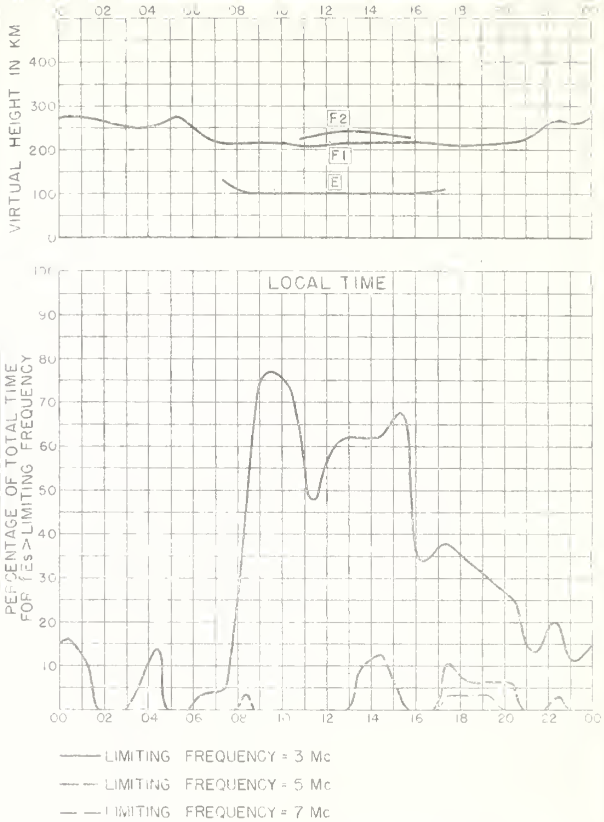

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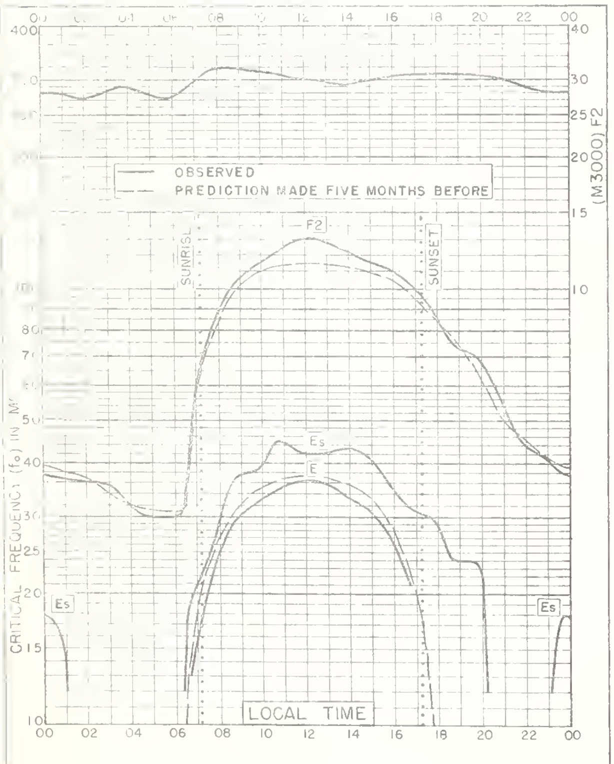

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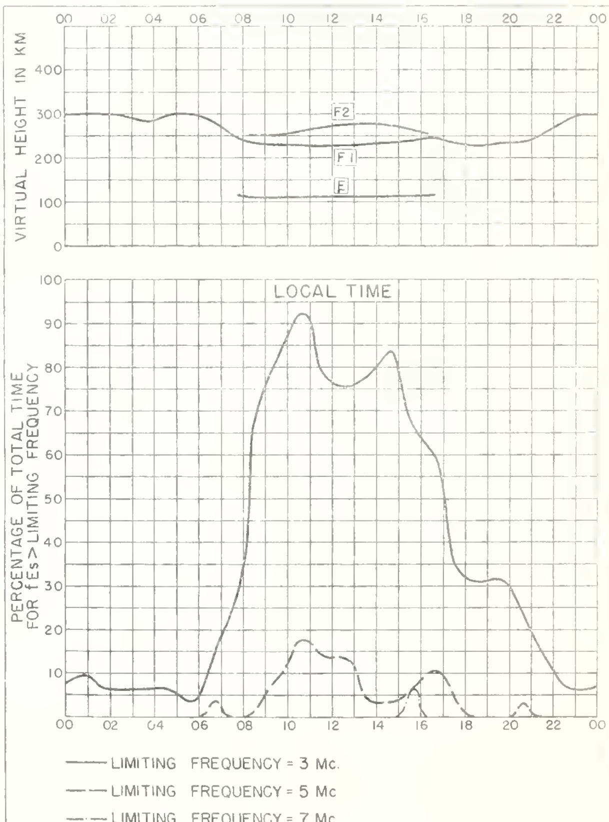

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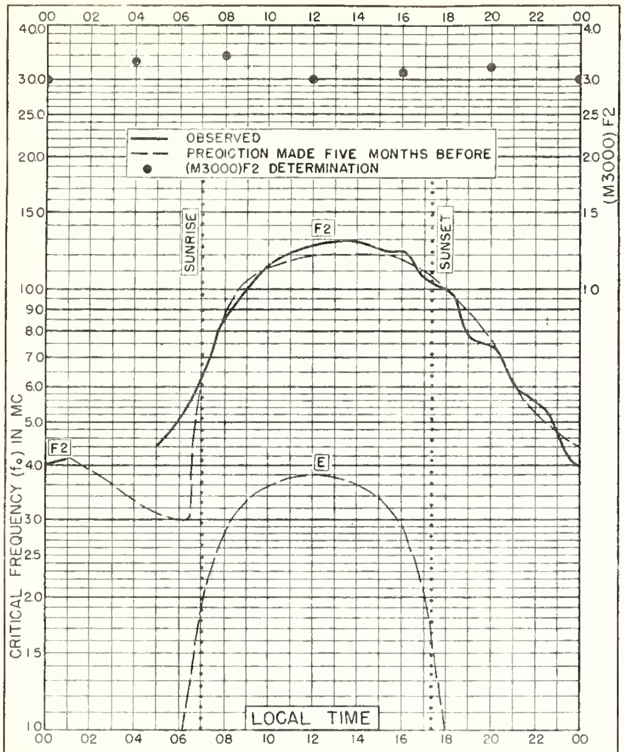

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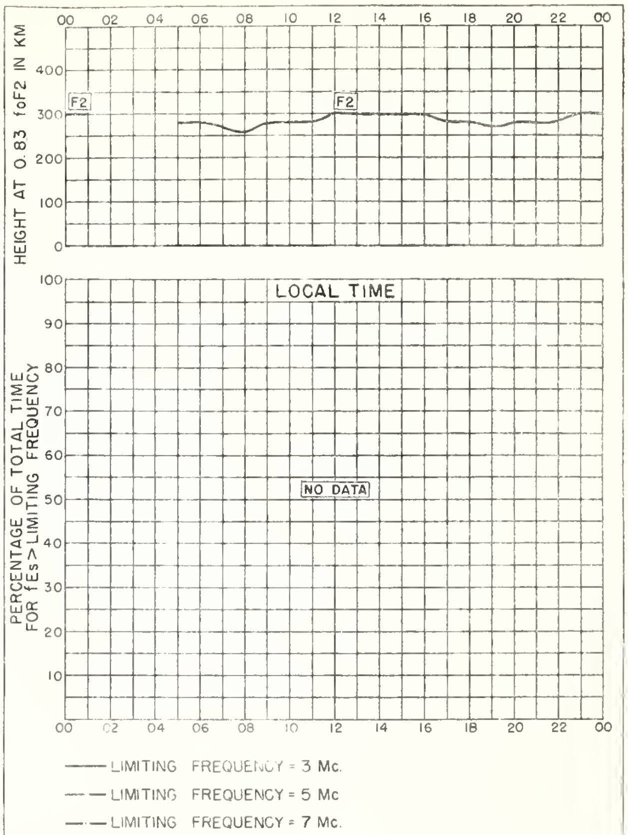

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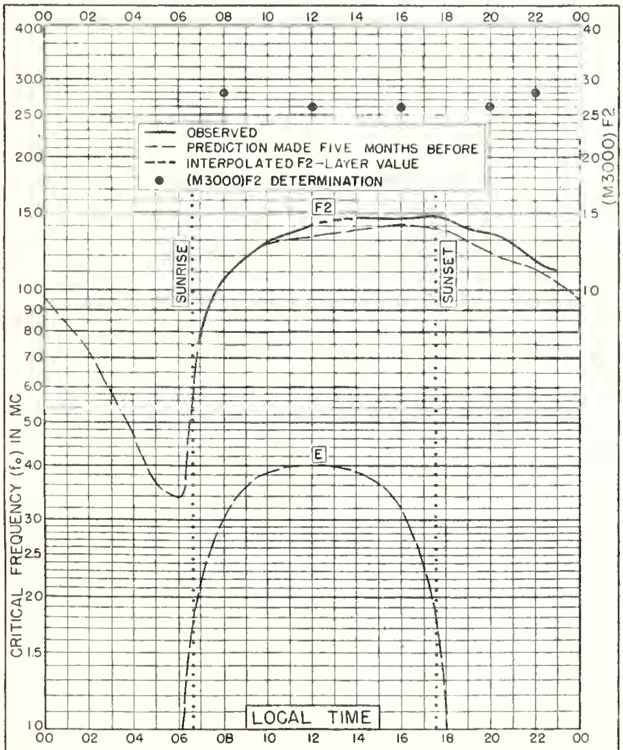

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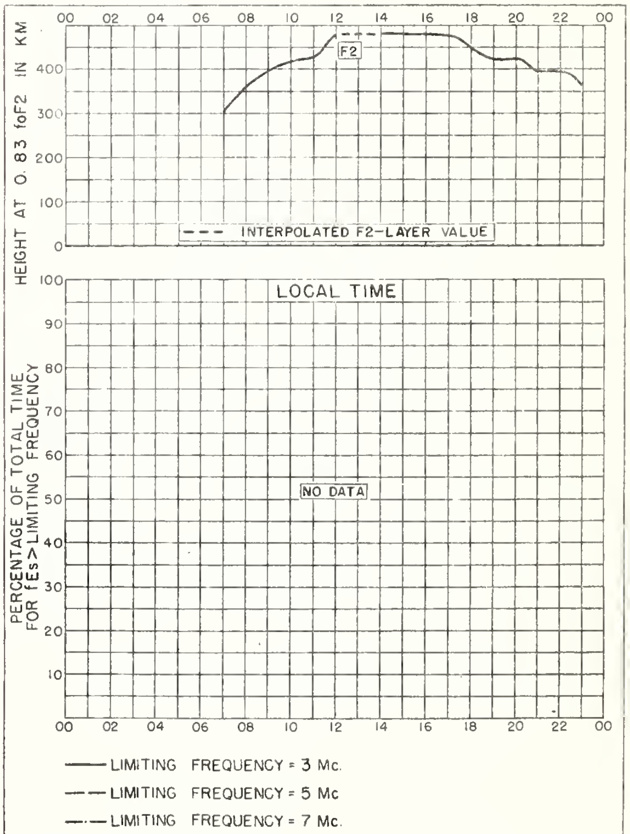

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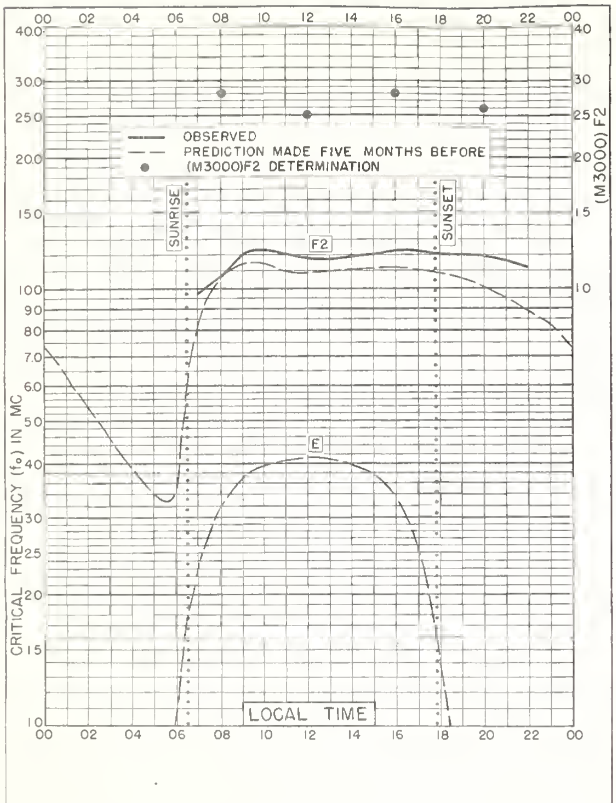

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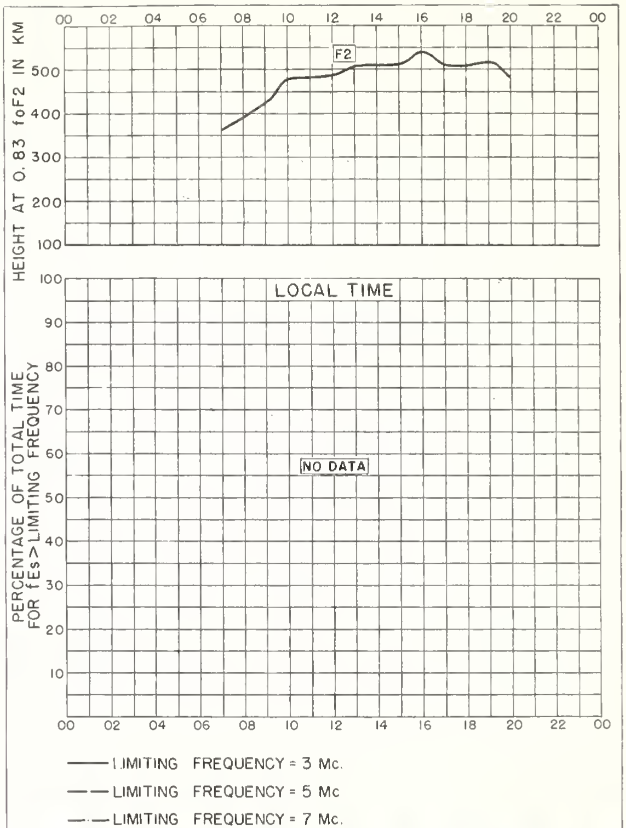

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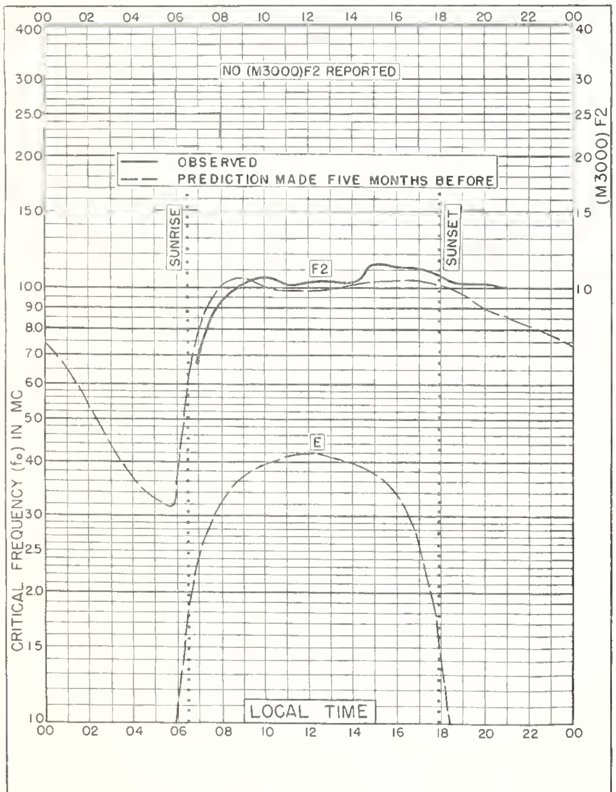

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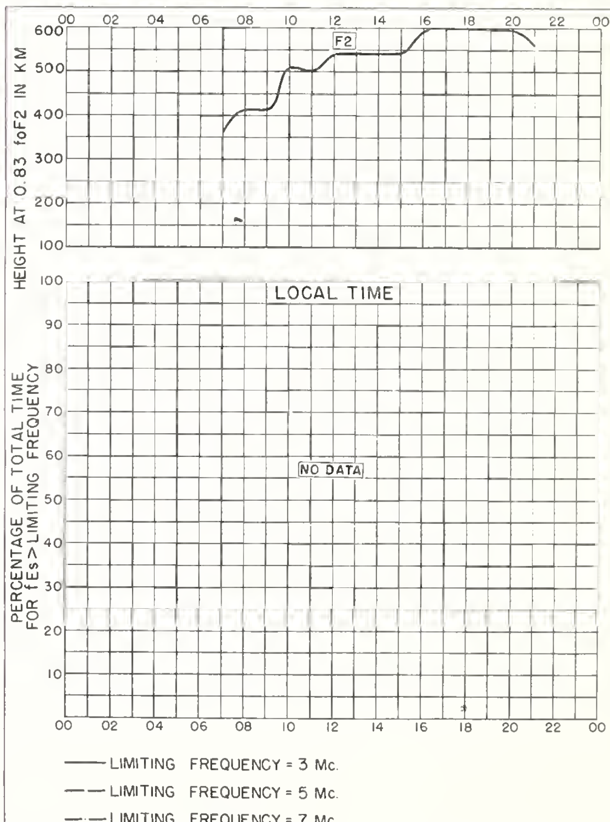

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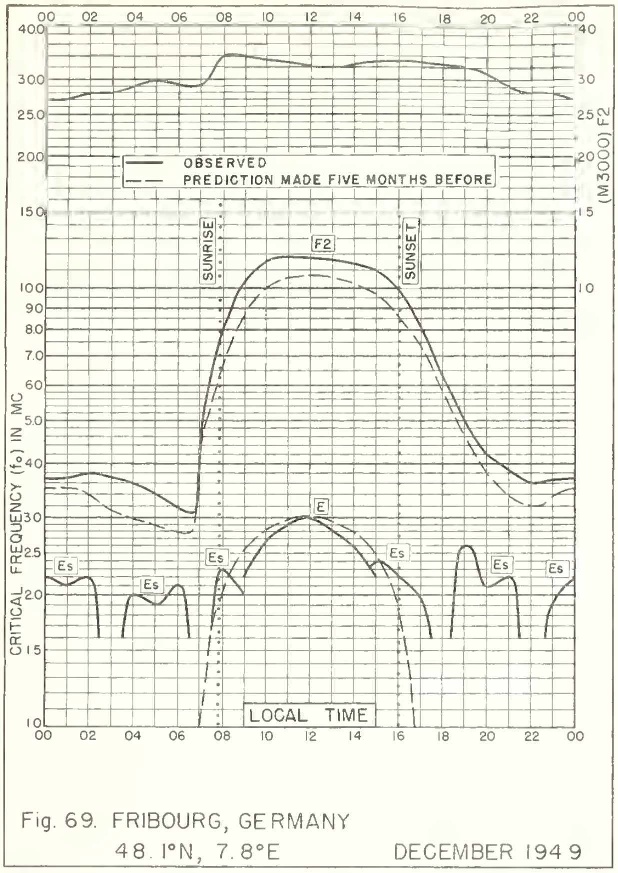

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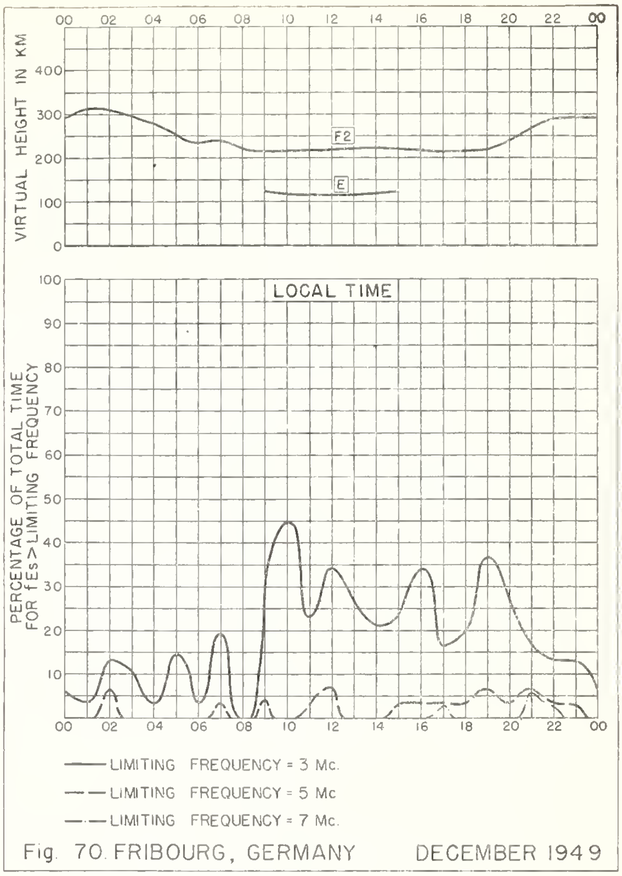

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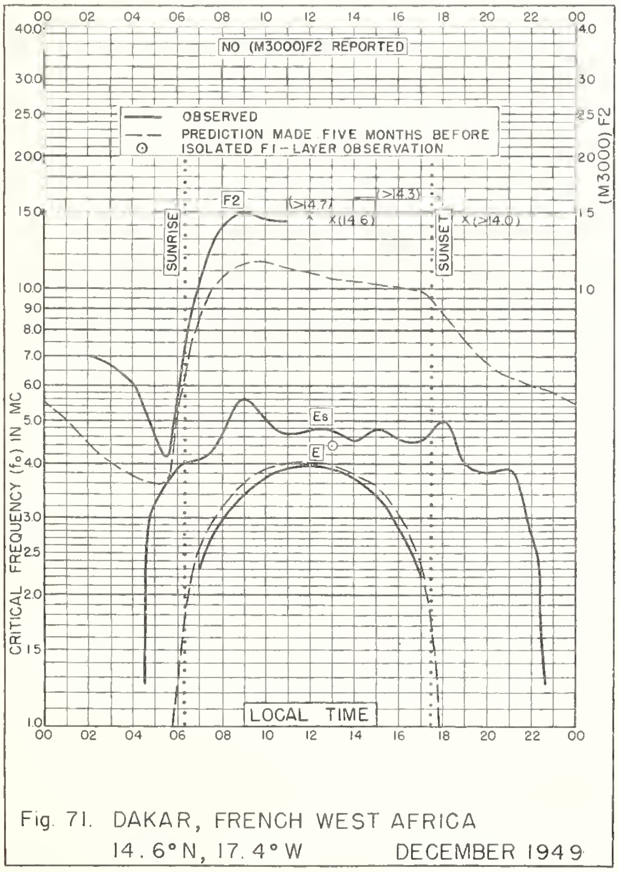

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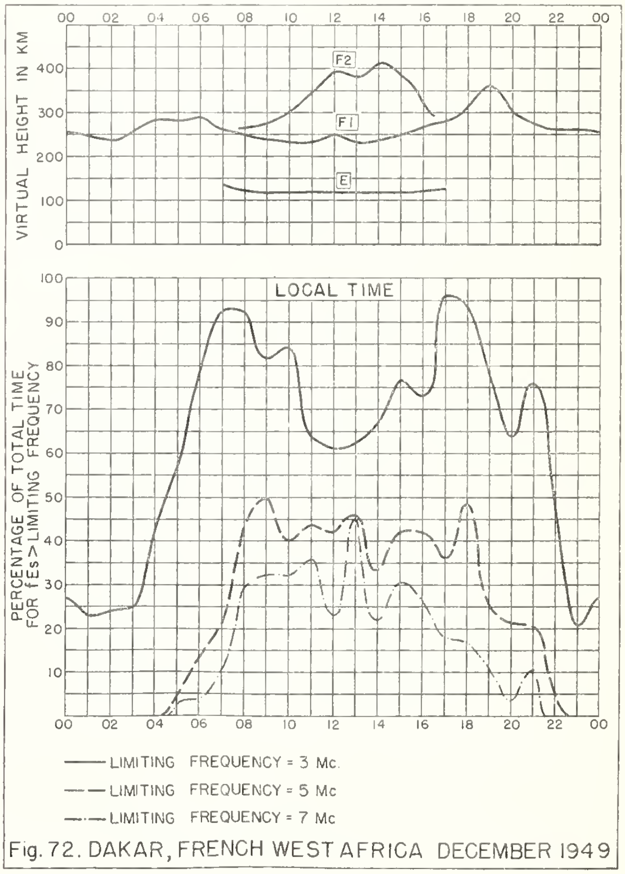

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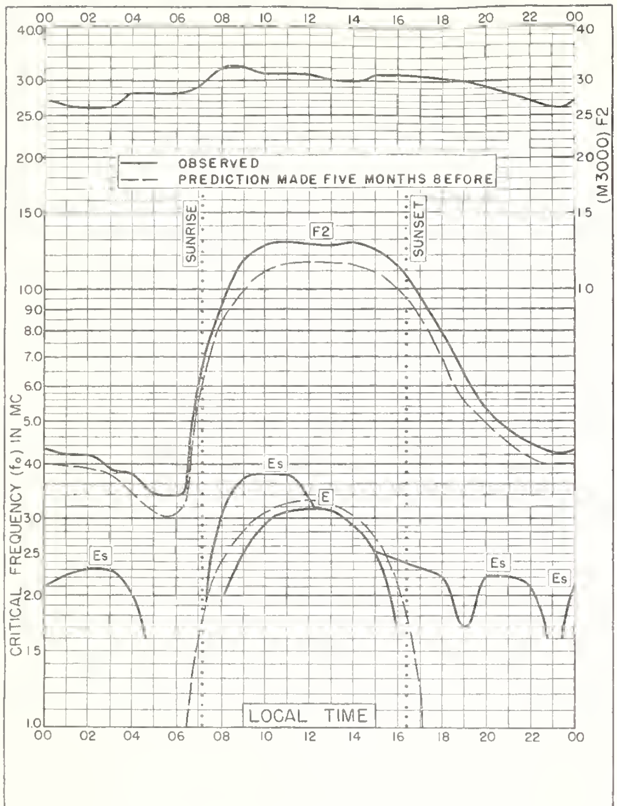

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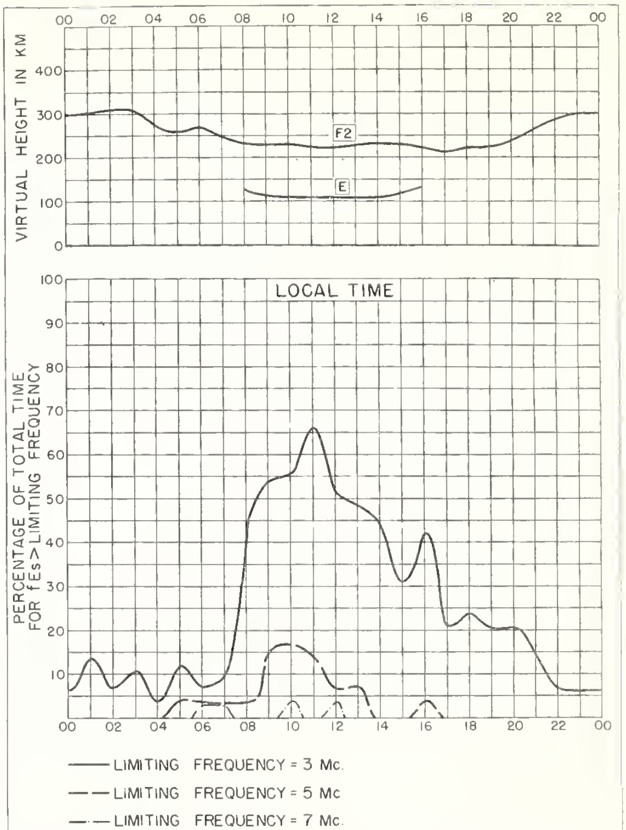

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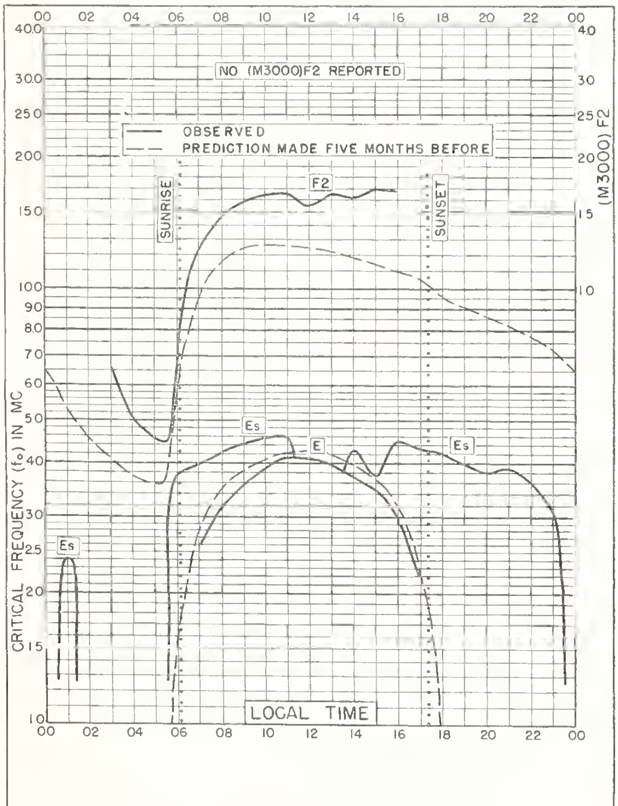

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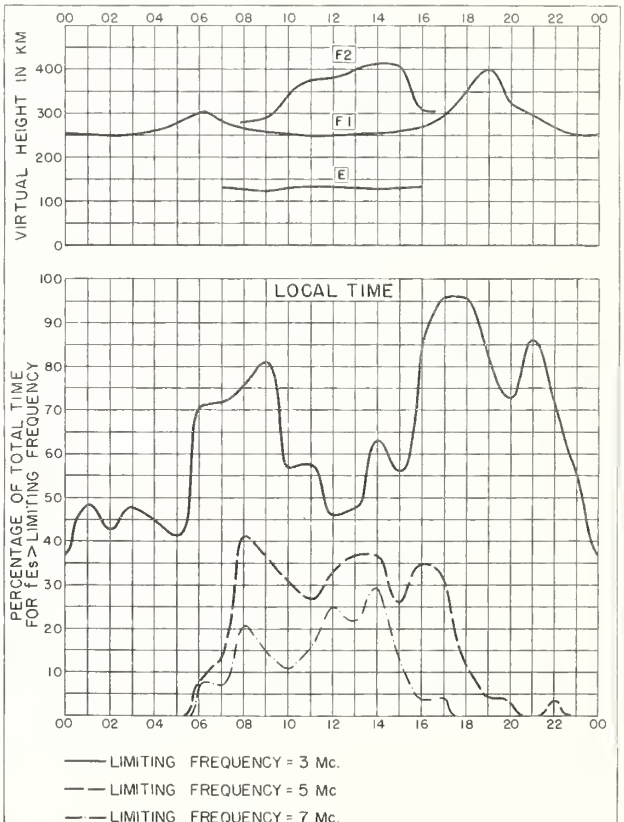

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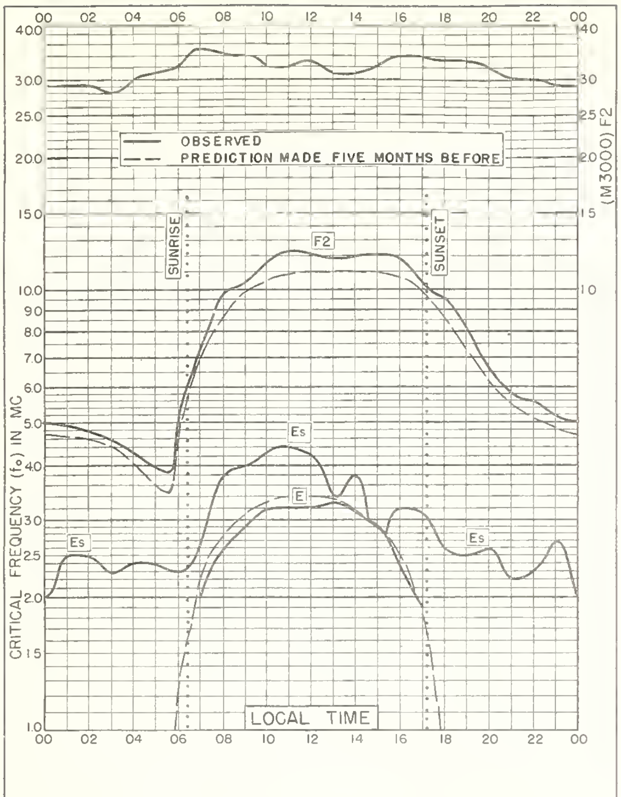

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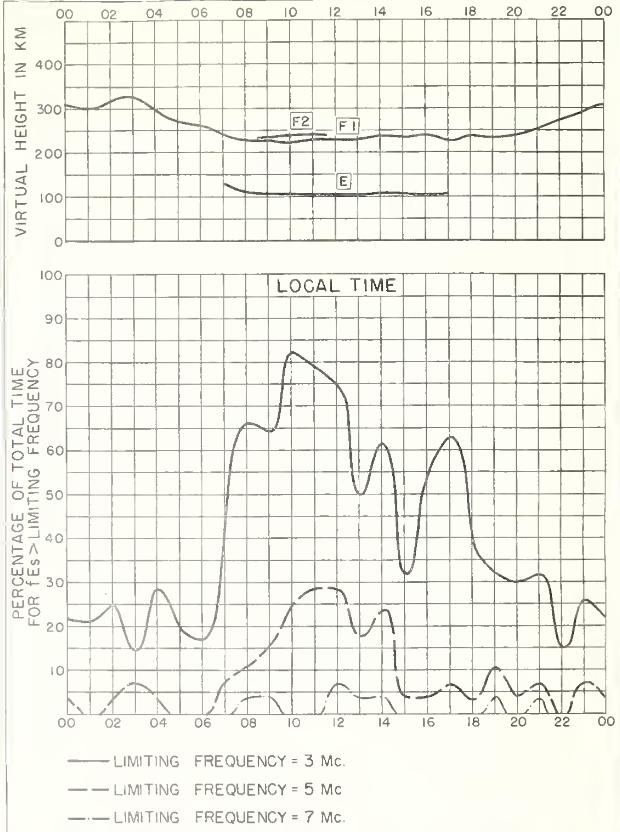

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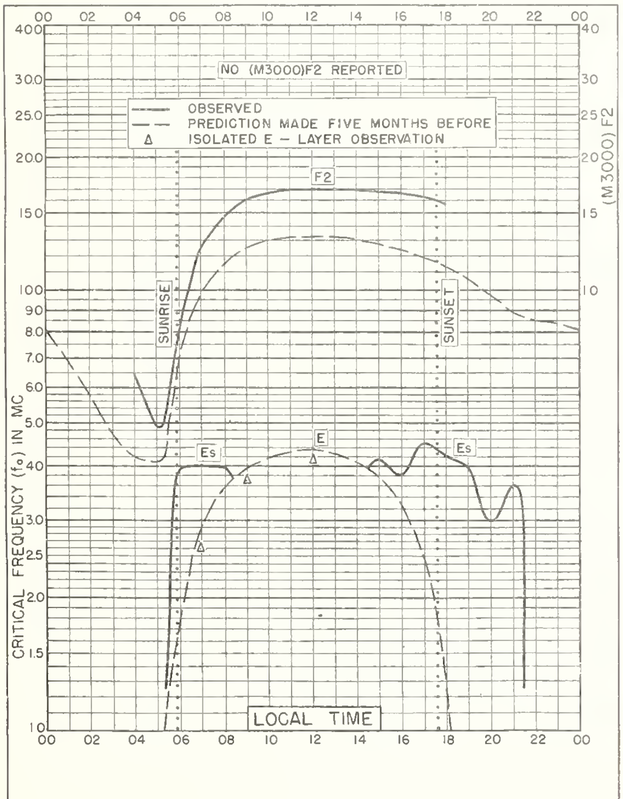

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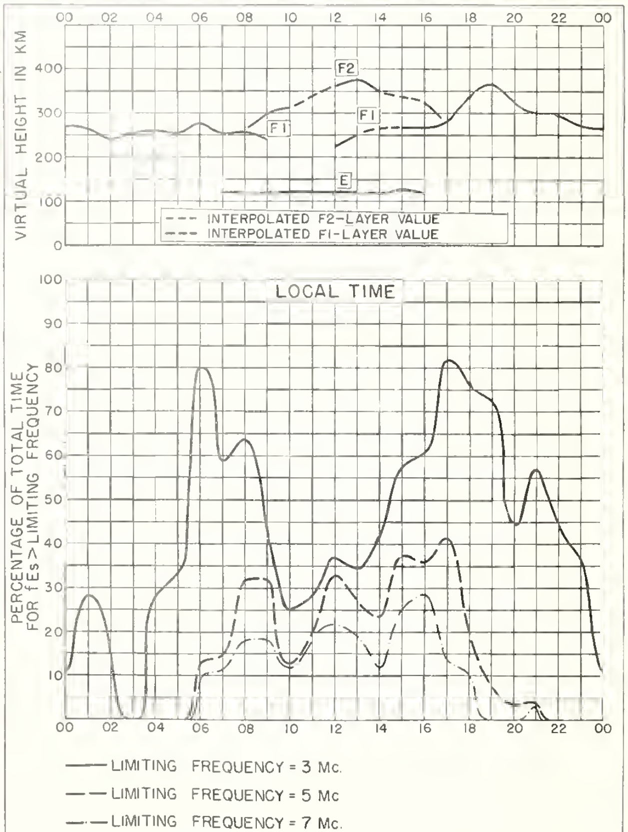

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[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

Daily:

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.
IRPL–G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL–R. Nonscheduled reports:
- R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies
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- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
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