CRPL-F70

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 AND TERMINOLOGY; CONVENTIONS FOR DETERMINING MEDIAN VALUES

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 foF1, leading to erroneously high values of monthly averages or median values.

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

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

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

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

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

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

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

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

Month	Predicted Sunspot Number					
	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		108	125	116	73	
June		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 32 and figures 1 to 62 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

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

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

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

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

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

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

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

National Bureau of Standards (Central Radio Propagation Laboratory):
- Baton Rouge, Louisiana (Louisiana State University)
- Boston, Massachusetts (Harvard University)
- 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 33 to 44 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 45 presents ionosphere character figures for Washington, D. C., during May 1950, as determined by the criteria presented 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 46 through 53 list the sudden ionosphere disturbances observed at Ft. Belvoir, Virginia, May 1950; Brentwood and Somerton, England, April and May 1950; Platanos, Argentina, April 1950; Riverhead, New York, May 1950; Point Reyes, California, May 1950; Barbados, British West Indies, April 1950; New York, N. Y., April and May 1950; and Lindau/Harz, Germany, April 1950, respectively.

RADIO PROPAGATION QUALITY FIGURES

Table 54 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, April 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 55 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 56 through 58 give the observations of the solar corona during May 1950 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 59 through 61 list the coronal observations obtained at Sacramento Peak, New Mexico, during April 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 56 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 57 gives similarly the intensities of the first red (6374A) coronal line; and table 58, the intensities of the second red (6702A) coronal line; all observed at Climax in May 1950. In addition data for April 29 and 30 are included in table 58b.

Table 59 gives the intensities of the green (5303A) coronal line; table 60, the intensities of the first red (6374A) coronal line; and table 61, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in April 1950.

The following symbols are used in tables 56 through 61: 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.

INDICES OF GEOMAGNETIC ACTIVITY

Table 62 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary mean 3-hourly K-indices, Kw; (2) preliminary international character-figures, C; (3) geomagnetic planetary three-hour-range indices, Kp; (4) magnetically selected quiet and disturbed days.

Kw is the arithmetic mean of the K-indices from all reporting observatories for each three hours of the Greenwich day, on a scale 0 (very quiet) to 9 (extremely disturbed). The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 to 9, expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44 and 1949, in these CRPL-F reports, F65-F67; 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.

TABLES OF IONOSPHERIC DATA

Table 1

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.8						2.7
01	300	5.4						2.7
02	290	5.2						2.7
03	290	(4.6)						(2.8)
04	290	4.1						2.7
05	280	4.4	---	---	120	1.7		2.9
06	280	5.4	240	---	110	2.2		3.0
07	310	5.9	230	4.3	110	2.8		3.0
08	320	6.4	220	4.6	100	3.1		3.0
09	390	6.5	200	4.8	100	3.3		2.8
10	400	6.6	200	(5.0)	100	3.5	3.4	2.7
11	390	7.0	200	5.2	(100)	3.6	3.6	2.7
12	400	7.2	200	5.2	(100)	3.7	3.4	2.7
13	380	7.4	220	5.2	100	3.7		2.7
14	380	7.6	220	5.1	(100)	3.6		2.7
15	360	7.3	220	5.0	110	3.5		2.7
16	350	7.5	220	4.8	110	3.3		2.8
17	310	7.4	230	4.3	110	3.0		2.8
18	290	(8.0)	240	---	110	2.4		(2.8)
19	270	(7.9)			(120)	1.7		(2.9)
20	250	(7.6)						(2.8)
21	260	(6.9)						(2.8)
22	280	(6.6)						(2.7)
23	290	(6.1)						(2.6)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 2

Oslo, Norway (60.0°N, 11.0°E) — April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	5.2						(2.6)
01	315	4.5						(2.6)
02	310	4.4						(2.6)
03	305	4.0						(2.6)
04	290	3.9						(2.7)
05	275	4.2	---	---	130	1.7	1.4	(2.8)
06	255	5.1	255	---	110	2.2		3.0
07	250	5.7	240	---	110	2.5		2.9
08	295	6.5	230	4.2	105	2.8		2.9
09	305	7.1	226	4.3	105	3.1		2.8
10	300	7.5	220	4.4	105	3.2		2.8
11	325	7.8	220	4.8	105	3.3		2.8
12	336	8.0	215	4.8	105	3.4		2.8
13	310	8.3	225	(4.8)	105	3.3		2.8
14	315	8.5	230	(4.7)	105	3.3		2.8
15	290	8.4	230	4.5	110	3.2		2.8
16	280	8.5	235	---	105	3.0		2.9
17	270	8.4	240	---	110	2.7		2.9
18	250	8.5	250	---	115	2.3		3.0
19	250	8.4			120	1.9		3.0
20	246	7.8			---	---		2.9
21	250	6.8						(2.8)
22	270	6.4						2.6
23	300	6.7						(2.6)

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

Table 3

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	5.7						2.4
01	320	5.5					1.8	2.4
02	315	6.0					1.9	2.4
03	310	4.6					2.4	2.5
04	300	4.3			---	---	2.3	2.6
05	290	5.1			160	1.9	2.8	2.7
06	270	6.3	---	---	115	2.3	2.9	2.9
07	270	6.4	235	3.8	110	2.7	3.0	2.8
08	300	7.8	220	4.8	110	3.1		2.8
09	300	8.1	220	5.0	106	3.3	3.9	2.7
10	300	9.2	210	5.0	110	3.6	3.8	2.7
11	300	9.2	220	5.2	105	3.4	4.0	2.7
12	310	9.0	220	5.2	110	3.6	3.8	2.7
13	300	9.5	220	5.0	106	2.4	3.8	2.7
14	300	9.3	235	5.1	105	3.4		2.7
15	300	9.1	230	4.9	110	3.2	3.0	2.7
16	290	9.5	260	4.6	110	2.9		2.7
17	280	9.6	260	3.9	115	2.5		2.8
18	270	9.3	---	---	140	2.0	2.6	2.8
19	270	8.8			---	---	2.4	2.8
20	270	7.2						2.7
21	300	6.8						2.8
22	300	6.2						2.4
23	320	6.1						2.3

Time: 0.0°.
Sweep: 1.4 Mc to 18.0 Mc in 7 minutes, automatic operation.

Table 4

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.7						2.5
01	290	5.2						2.5
02	290	4.9						2.6
03	295	4.0						2.5
04	290	4.2						2.5
05	280	4.3			120	1.8		2.7
06	250	5.4	---	---	120	2.4		3.0
07	260	5.7	225	---	110	2.9		3.0
08	295	6.4	230	4.8	110	3.1		2.9
09	330	7.6	210	5.0	110	3.5		2.8
10	340	7.8	210	5.2	110	3.7		2.9
11	350	8.0	210	5.0	110	3.7		2.9
12	340	8.3	220	5.1	110	2.8		2.8
13	330	8.3	230	5.1	110	2.8		2.8
14	325	8.3	220	5.1	110	2.4		2.8
15	300	8.2	220	5.0	110	3.3		2.8
16	280	8.4	220	4.3	115	3.1		2.8
17	260	8.8	250	---	120	2.8		2.9
18	250	8.2			130	2.3		2.9
19	230	7.5						(2.8)
20	250	7.1						(2.7)
21	260	6.5						2.8
22	270	6.0						2.6
23	280	6.0						2.8

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

Table 5

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.4						2.6
01	300	5.4					2.4	2.7
02	300	5.2					2.8	2.6
03	280	5.2					2.9	2.8
04	290	4.8					2.9	2.6
05	300	4.7					2.9	2.6
06	260	5.8	---	---	120	2.0	3.0	3.0
07	250	6.8	250	---	120	2.6	3.8	3.0
08	280	7.6	240	4.8	120	3.1	4.4	3.0
09	320	8.8	220	4.8	120	3.4	4.2	2.9
10	340	9.1	220	5.1	120	(3.7)	4.6	2.9
11	350	10.2	230	5.2	120	(3.8)		2.8
12	330	10.4	230	5.4	120	---		2.8
13	320	10.5	220	5.2	120	3.6	4.0	2.8
14	320	10.6	230	5.2	120	3.8		2.9
15	300	10.4	240	5.1	120	3.7		3.0
16	280	10.0	240	---	120	3.4		3.0
17	260	9.2	---	---	120	2.8		3.0
18	250	8.8			120	2.2	2.4	3.2
19	240	8.4						3.2
20	240	7.0						3.0
21	260	6.2						2.8
22	280	5.8						2.8
23	310	5.7						2.6

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

Table 6

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	8.0					2.2	2.6
01	300	6.0					2.3	2.6
02	280	6.7						2.7
03	280	5.6						2.6
04	280	5.4					2.4	2.7
05	280	5.0					2.6	2.7
06	260	6.2			120	(2.1)	2.9	3.0
07	240	7.6	---	---	120	2.6	3.6	3.0
08	230	8.7	---	---	110	3.1	3.9	2.8
09	300	9.4	220	4.9	110	3.4	4.6	2.8
10	300	10.0	220	5.2	110	3.6	3.8	2.8
11	320	10.5	220	5.4	110	3.8		2.7
12	320	11.2	220	5.4	110	3.9		2.7
13	320	11.3	220	5.2	110	3.9		2.7
14	320	11.4	220	5.1	110	3.8		2.7
15	300	11.2	230	---	110	3.6	3.6	2.8
16	240	10.8	---	---	110	3.2		2.8
17	240	10.4	---	---	110	2.7	3.7	2.8
18	240	9.6			120	2.0	3.2	3.0
19	230	8.6					2.6	3.0
20	240	7.0					2.3	2.7
21	260	6.5					2.2	2.6
22	300	6.2						2.5
23	300	6.0						2.5

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

Table 7

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	6.0						2.7
01	330	5.7						2.7
02	320	5.6						2.7
03	300	5.5						2.8
04	300	5.4						2.7
05	290	5.0						2.8
06	280	6.3						3.0
07	280	7.8	250	---	130	2.6		3.0
08	290	8.8	250	---	120	2.9		2.9
09	300	9.5	240	---	120	(3.4)		2.8
10	330	9.9	230	5.3	120	(3.5)		2.7
11	330	10.8	240	5.3	120	.3.6		2.7
12	330	11.0	250	5.5	120	---		2.7
13	330	11.3	240	5.3	120	(3.6)		2.7
14	330	11.1	250	5.3	120	3.6		2.7
15	320	11.1	260	---	120	3.5		2.7
16	300	10.9	260	---	120	3.3		2.8
17	290	10.5	270	---	130	2.8		2.8
18	270	10.1			---	---		2.9
19	260	8.8						2.9
20	260	7.1						2.8
21	290	6.2						2.7
22	320	6.2						2.6
23	340	6.0						2.6

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

Table 8

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	9.0						2.8
01	260	8.4						3.0
02	260	7.4						3.0
03	270	5.8						2.8
04	300	5.1						2.6
05	310	5.0						2.7
06	280	5.5			140	---		2.7
07	250	7.9	---	---	120	2.4		3.2
08	260	9.0	230	---	120	3.1	4.1	2.9
09	280	10.4	230	4.5	110	3.4	4.8	2.7
10	300	11.4	220	(4.9)	110	3.6	4.2	2.6
11	320	12.7	220	(5.3)	110	(3.8)	4.5	2.7
12	330	13.9	220	(5.4)	110	(3.9)		2.7
13	330	14.6	220	(5.4)	110	3.8		2.7
14	320	15.0	230	(5.3)	110	3.8		2.8
15	320	15.1	230	(5.1)	110	3.6	4.3	2.8
16	300	15.0	240	---	110	3.3		2.8
17	280	15.3	250	---	120	2.9	4.0	2.9
18	260	14.9	---	---	130	2.2	3.5	2.9
19	250	13.9					3.3	2.9
20	240	12.5					2.3	2.8
21	260	(11.6)						2.7
22	270	10.5						2.7
23	290	9.3						2.7

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

Table 9

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	9.0						2.7
01	280	8.8						2.9
02	260	8.0						2.9
03	260	7.1						2.9
04	270	6.3						2.8
05	---	6.0						2.8
06	270	6.8						2.8
07	250	8.4		---				3.0
08	250	9.8		---		3.0		3.0
09	270	10.8		---		(3.5)		2.9
10	290	11.4		5.0		---		2.8
11	300	12.4		5.3		---		2.8
12	300	13.0		5.4		---		2.8
13	290	(>13.0)		(5.4)		---		(2.8)
14	300	12.7		5.4		---		2.8
15	300	12.8		5.0		(3.8)		2.8
16	300	12.2		---		3.5		2.8
17	270	11.9				---	3.8	2.8
18	270	11.2						2.8
19	260	10.5						2.8
20	290	9.6						2.7
21	290	(9.3)						(2.7)
22	280	9.2						2.7
23	300	9.5						2.7

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

Table 10

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	11.0						3.2
01	230	9.5						3.2
02	220	8.6						3.2
03	220	7.2						3.1
04	240	6.4						3.1
05	250	5.8						3.0
06	260	6.6			---	---		3.0
07	220	9.0			120	2.6	3.2	3.4
08	230	10.4	220	(4.8)	110	3.2	3.8	3.2
09	250	11.9	200	5.0	100	3.6	4.2	3.1
10	260	12.4	200	5.2	100	3.8	4.3	3.1
11	260	13.2	200	5.4	100	4.0	4.3	3.0
12	280	13.9	200	5.4	100	4.1	4.4	3.0
13	280	14.1	200	6.4	110	4.1	4.4	3.0
14	280	13.9	200	5.3	100	4.0	4.6	3.0
15	260	13.2	200	5.1	100	3.8	4.6	3.0
16	250	13.0	220	4.8	100	3.4	4.4	3.0
17	250	12.7	220	4.6	110	2.9	4.0	3.0
18	240	12.2					3.2	3.0
19	260	11.6					2.8	2.9
20	260	11.6						2.9
21	260	12.0						3.0
22	250	11.6						3.0
23	240	11.3						3.1

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

Table 11

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	8.7					3.2	3.0
01	230	7.8					3.4	3.0
02	240	6.7					3.2	3.1
03	240	6.0					3.2	3.1
04	240	5.5					3.2	3.1
05	240	4.9					3.1	3.0
06	270	6.0			100	1.6	3.2	3.0
07	250	9.5			100	2.6	3.7	3.1
08	240	11.6	220	5.0	100	3.2	9.1	2.8
09	270	12.2	210	5.3	100	---	10.6	2.6
10	280	12.2	210	5.3	100	---	11.0	2.4
11	280	11.3	200	5.3	100	---	12.6	2.3
12	300	11.2	200	5.3	100	---	13.0	2.3
13	290	11.3	200	5.2	100	---	12.6	2.3
14	280	11.6	200	6.2	100	---	12.5	2.3
15	220	11.6	210	---	100	3.3	10.7	2.3
16	240	11.8			100	3.0	10.5	2.3
17	260	12.0			100	2.3	7.8	2.2
18	310	11.5			100	---	3.2	2.2
19	370	10.2						2.1
20	340	10.0						2.2
21	260	9.9					3.2	2.6
22	240	9.8					3.2	2.8
23	230	9.6					3.2	2.9

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

Table 12

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.8					2.0	
01	290	4.8					2.0	
02	290	4.7						
03	290	4.4					2.0	
04	290	4.3						
05	270	3.9						
06	260	3.9			---	E		
07	240	5.8			110	1.7	2.2	
08	230	7.2	230	---	100	2.4	3.4	
09	220	8.4	210	4.1	100	2.8	3.4	
10	230	9.2	205	4.4	100	3.0		
11	260	9.8	200	4.5	100	3.2	3.8	
12	265	10.4	200	4.3	100	3.3		
13	250	10.3	210	4.5	100	3.3		
14	250	10.3	210	4.4	100	3.2		
15	225	9.9	216	4.2	100	3.0		
16	230	9.5	---	---	100	2.8		
17	230	9.2			100	2.3	3.1	
18	230	9.2			125	1.6	2.9	
19	220	8.4					2.4	
20	220	7.2					1.8	
21	230	6.4					2.0	
22	255	5.7						
23	280	5.1					1.9	

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

Table 13

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07								
08								
09	270	12.6	240	5.6	90	3.7	4.0	3.3
10	280	14.0	220	5.8	90	3.8	4.4	3.2
11	270	14.3	200	5.9	90	3.8	4.7	3.2
12	280	14.5	220	6.0	90	4.0	4.5	3.2
13	290	14.5	200	6.2	90	3.9	4.6	3.3
14	280	14.5	220	6.2	90	3.9	4.5	3.3
15	280	14.5	220	6.0	90	3.5	4.0	3.2
16	280	14.5	230	5.0	90	---	3.9	3.4
17								
18								
19								
20								
21								
22								
23								

Time: 120.0°E.
Sweep: 2.5 Mc to 14.5 Mc in 20 minutes, manual operation.

Table 14

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	5.2					1.7	2.9
01	260	5.0						2.9
02	250	4.7						3.0
03	250	4.4						2.9
04	250	3.9						2.9
05	260	3.9						2.8
06	260	5.0			---	---		2.9
07	230	7.7	---	---	120	2.4		3.3
08	250	9.4	230	---	110	3.0	3.2	3.1
09	260	10.3	220	---	110	3.4	3.6	3.0
10	270	11.0	210	4.7	110	3.6	4.0	2.9
11	280	11.6	200	4.9	110	(3.7)	4.0	2.9
12	290	11.9	210	---	110	(3.8)	4.0	2.8
13	290	12.0	210	5.1˚	110	(3.9)	4.1	2.8
14	290	12.0	210	---	110	(3.8)	4.0	2.8
15	290	12.1	220	---	110	3.6	3.9	2.8
16	270	12.0	230	---	110	3.3	3.7	2.9
17	250	11.7	240	---	110	2.8	3.4	2.9
18	230	11.2			100	---	2.7	3.0
19	230	10.2					2.0	3.0
20	230	8.9					2.1	3.0
21	240	7.7					2.1	3.0
22	240	6.9					2.0	3.0
23	250	5.8					2.0	3.0

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) March 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	4.7						2.9
01	(250)	4.4						2.8
02	(260)	4.2						2.7
03	(270)	4.4						2.8
04	(260)	4.4						(2.8)
05	(260)	4.1						(2.9)
06	(250)	(4.1)						(2.8)
07	250	5.9			---	(1.9)		3.1
08	240	8.1	240	---	120	(2.7)		3.2
09	250	9.2	230	---	110	(3.1)		3.1
10	270	10.2	230	---	110	(3.4)	3.7	3.0
11	280	11.1	(220)	---	110	(3.6)	3.9	2.9
12	300	11.8	(220)	---	110	---	4.0	2.8
13	300	(12.0)	240	---	110	---	3.8	(2.8)
14	300	(12.0)	230	---	110	---		(2.8)
15	300	12.0	230	---	110	(3.7)		2.8
16	270	(11.9)	240	---	110	(3.5)		(2.8)
17	260	11.6	240	---	110	(3.1)	3.5	2.9
18	250	(11.2)	250	---	120	(2.5)	2.9	(3.0)
19	230	10.4			110	(1.6)	2.1	3.1
20	220	(9.1)					1.8	(3.0)
21	(230)	7.6						3.0
22	(240)	6.6					1.6	3.0
23	(240)	5.3						3.0

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

Table 16

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.8					2.1	
01	290	3.8					2.0	
02	290	3.8					2.0	
03	300	3.6					2.0	
04	290	3.6					2.0	
05	280	3.2					2.0	
06	260	2.9						
07	250	3.7			---	E	2.0	
08	220	6.4			110	1.8	3.1	
09	210	7.8			100	2.4	3.4	
10	210	9.2			100	2.8	4.2	
11	210	9.7			100	3.0	3.9	
12	220	10.3			100	3.1	4.2	
13	210	9.9			100	3.1	3.4	
14	215	9.6			100	3.0	3.6	
15	215	9.6			100	2.8	4.2	
16	220	9.6			100	2.4	3.8	
17	210	8.7			120	1.8	3.3	
18	205	7.3					3.1	
19	215	6.4					2.6	
20	220	5.4					2.2	
21	240	4.4					2.0	
22	270	4.4					2.0	
23	270	4.1					2.0	

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

Table 17

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.4					2.9	2.7
01	290	6.3					2.8	2.8
02	280	5.9					3.1	2.8
03	280	5.6					2.4	2.7
04	270	5.0					3.4	2.8
05	280	4.7					2.8	2.8
06	270	5.2				1.8		3.1
07	260	6.6	240	3.8		2.4	2.7	3.2
08	280	7.7	250	6.5		3.0	3.5	3.1
09	300	8.5	230	6.9		3.3	3.7	2.9
10	310	8.8	230	5.1		3.5	3.7	2.9
11	330	9.7	240	5.2		3.5	4.1	2.8
12	345	9.7	240	5.4		3.4	4.3	2.7
13	340	10.2	240	5.2		3.6	4.0	2.7
14	340	10.0	240	5.4		3.7	4.0	2.7
15	330	10.1	250	5.2		3.6	3.8	2.7
16	320	10.0	250	4.9		3.4	3.5	2.8
17	300	9.4	260	4.2		3.0	3.4	2.8
18	270	9.0				2.3	3.1	2.9
19	250	8.6					3.0	2.9
20	240	7.7					2.4	2.8
21	270	7.0					2.4	2.7
22	280	6.6					2.3	2.7
23	290	6.3					2.7	2.7

Time: 120.0°E.
Sweep: 15.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 18

Poitiers, France (46.6°N, 0.3°E) December 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(3.9)						2.6
01	---	(4.0)						---
02	---	(3.9)						2.7
03	---	3.8						2.7
04	---	(3.7)						---
05	---	(3.5)						---
06	---	(3.4)						---
07	---	4.3						2.9
08	220	8.2						3.3
09	220	10.0						---
10	225	D						---
11	225	D						---
12	225	D						---
13	230	D						---
14	230	D						---
15	225	(10.4)						---
16	220	9.3						3.2
17	230	8.0						3.2
18	230	6.6						3.1
19	250	5.3						3.2
20	(245)	4.6						3.0
21	---	4.0						2.8
22	---	4.0						2.7
23	---	3.9						2.7

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

Table 19

Delhi, India (28.6°N, 77.1°E) December 1949 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2						3.2
01	300	5.0						
02	---	---						
03	---	---						
04	---	---						3.4
05	280	5.4						
06	280	6.2						
07	280	7.6						
08	280	10.4						3.4
09	260	11.4						
10	300	12.4						
11	300	13.0						
12	310	13.8						3.1
13	320	13.4						
14	320	13.5						
15	320	14.7						
16	320	13.6						3.2
17	300	12.9						
18	290	12.1						
19	280	10.8						
20	280	9.8						3.4
21	280	7.9						
22	280	6.3						
23	280	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 20

Bombay, India (19.0°N, 73.0°E) December 1949 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	330	8.5						
08	390	10.9						2.7
09	420	11.9						
10	480	13.4						
11	(500)	(14.2)						
12	---	(14.5)						2.7
13	---	---						
14	---	(14.7)						
15	---	(15.1)						
16	---	(15.5)						
17	---	(15.4)						
18	(460)	(14.9)						
19	420	(14.2)						
20	440	13.6						2.6
21	450	11.0						
22	450	9.5						2.6
23	460	9.3						

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

Table 21

Madras, India (13.0°N, 80.2°E) December 1949 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	10.4						
08	420	11.6						2.6
09	480	12.7						
10	480	12.3						
11	540	11.6						
12	540	11.7						2.3
13	540	11.9						
14	540	12.4						
15	540	13.6						
16	540	12.5						2.3
17	540	12.6						
18	540	12.1						
19	540	11.6						
20	540	11.4						2.4
21	(480)	(10.5)						
22	---	(10.0)						
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 22

Tiruchy, India (10.8°N, 78.8°E) December 1949

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	8.7						
08	420	10.6						
09	480	10.6						
10	480	11.4						
11	520	11.1						
12	600	11.0						
13	600	11.0						
14	580	11.4						
15	(600)	(11.4)						
16	560	11.5						
17	570	10.8						
18	570	10.4						
19	600	10.0						
20	630	9.6						
21	620	(9.5)						
22	520	9.3						
23								

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

Table 23

Bagneux, France (48.8°N, 2.3°E) November 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	230	5.4			150	1.8		
07	220	(6.6)			145	1.6		
08	220	(8.6)			110	2.2		
09	210	---			110	2.8		
10	220	---			100	3.1		
11	220	---	---	---	110	3.2		
12	220	---	---	---	110	3.2		
13	220	---	---	---	110	3.1		
14	220	---	---	---	110	2.9		
15	220	---			110	2.6		
16	210	---			120	1.9		
17	210	(9.0)			---	E		
18	210	(8.0)						
19	230	5.4						
20	240	4.8						
21	280	4.2						
22	300	(4.3)						
23								

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

Table 24

Poitiers, France (46.6°N, 0.3°E) November 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	4.6						2.6
01	---	4.6						2.6
02	---	(4.4)						(2.4)
03	---	4.1						(2.6)
04	---	(3.9)						(2.8)
05	---	(3.6)						(3.1)
06	---	(3.6)						---
07	250	6.6						3.0
08	230	8.7	220			E		3.3
09	240	D	230			---		---
10	240	D	230			---		---
11	230	D	225			3.2		---
12	240	D	230			3.3		---
13	240	D	230			3.3		---
14	240	D	230			---		---
15	240	D	230			---		---
16	240	D	230			E		---
17	240	9.1	225			E		3.2
18	230	8.0						3.0
19	250	7.0						3.0
20	260	5.5						2.9
21	---	5.0						2.8
22	---	4.8						2.7
23	---	4.5						2.6

Time: 0.0°.
Sweep: 3.1 Mc to 11.6 Mc in 1 minute 15 seconds.

Table 25

Delhi, India (28.6°N, 77.1°E) November 1949

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00	320	6.1						3.1
01	300	5.0						
02	---	---						
03	---	---						
04	---	---						3.3
05	300	6.0						
06	280	6.8						
07	280	8.7						
08	280	10.9						3.2
09	280	12.4						
10	300	13.4						
11	320	13.5						
12	330	14.1						3.0
13	330	14.5						
14	330	14.7						
15	320	(14.5)						
16	320	(14.1)						3.2
17	310	(13.6)						
18	300	12.9						
19	300	12.4						
20	300	10.2						3.3
21	300	9.6						
22	300	7.8						3.1
23	310	6.8						

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

Table 26

Bombay, India (19.0°N, 73.0°E) November 1949

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	340	8.3						
08	440	10.2						2.6
09	460	11.0						
10	500	11.9						
11	---	(12.9)						
12	---	(13.2)						
13	---	---						
14	---	(13.6)						
15	---	(13.5)						
16	---	(13.9)						
17	---	(13.9)						
18	---	(13.5)						
19	510	12.8						
20	480	11.9						2.5
21	460	10.8						
22	420	10.0						2.7
23	420	9.8						

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

Table 27

Madras, India (13.0°N, 80.2°E) November 1949

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	390	10.7						
08	420	12.3						2.5
09	480	(14.0)						
10	(510)	(14.0)						
11	(540)	(14.0)						
12	540	(14.0)						2.3
13	(540)	(14.0)						
14	540	(14.0)						
15	540	(14.0)						
16	540	13.7						2.3
17	540	13.8						
18	540	13.6						
19	540	(12.9)						
20	---	(11.0)						
21	---	(11.0)						
22	---	(11.0)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average valuee; ether columne, median valuee.

Table 28

Tiruchy, India (10.8°N, 78.8°E) November 1949

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	390	10.2						
08	420	11.5						
09	480	12.3						
10	500	12.5						
11	540	12.5						
12	540	12.4						
13	540	12.5						
14	540	12.7						
15	540	12.6						
16	(540)	(12.6)						
17	540	12.0						
18	600	11.9						
19	600	11.7						
20	600	(11.0)						
21	600	(11.0)						
22	(580)	(10.5)						
23								

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

Table 29

Bagneux, France (48.8°N, 2.3°E) October 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07								
08	270	---	220	---	110	2.6		---
09	250	8.7	220	---	110	3.0		(2.8)
10	280	9.8	220	---	110	3.3	3.8	(2.8)
11	270	10.0	220	---	100	3.4		(2.8)
12	300	---	220	---	100	3.4		---
13	280	9.7	220	---	100	3.3		(2.8)
14	290	---	230	---	100	3.0		---
15	---	---	230	---	105	2.7		---
16	240	---	220	---	100	2.4		(2.8)
17	220	8.2	220	---	110	E		(3.0)
18	---	---			---	---		
19								
20								
21								
22								
23								

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

Table 30

Peitiers, France (46.6°N, 0.3°E) October 1949

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	5.3						2.6
01	---	5.0						(2.8)
02	---	5.0						2.6
03	---	(4.8)						2.8
04	---	(4.5)						2.7
05	---	(3.8)						2.8
06	(270)	4.8			---	E		3.0
07	250	7.5	230	---	---	E		3.2
08	240	8.7	230	---	---	---		3.1
09	240	9.8	230	---	---	3.4	3.2	(3.0)
10	240	D	220	---	110	3.4	3.6	(3.0)
11	(235)	D	225	---	110	3.4	3.4	(2.9)
12	240	D	230	---	110	3.3		(2.7)
13	240	D	230	---	110	3.3		---
14	(250)	D	230	---	---	3.3		---
15	250	D	230	---	---	---		---
16	240	D	230	---	---	---		---
17	240	9.5	230	---	---	E		(3.0)
18	240	8.8	---	---				3.0
19	240	7.7						3.0
20	260	6.7						2.8
21	280	5.9						2.8
22	(280)	5.5						2.6
23	---	5.2						2.6

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

Table 31

Oslo, Norway (60.0°N, 11.0°E) November 1948*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---						
01	(450)	(2.1)						
02	---	---					2.8	
03	---	(2.3)					2.4	
04	(385)	(2.0)						
05	(320)	2.4						
06	(310)	2.2						
07	(305)	2.6						
08	260	4.8						
09	240	6.5			---	2.0	2.3	
10	230	8.8			---	2.0	2.2	
11	230	(>9.0)			110	2.3		
12	230	(>9.0)	---	---	130	2.4	2.7	
13	230	(>9.0)	---	---	---	---	2.7	
14	235	(>9.0)			---	2.1	2.7	
15	225	(>9.0)			---	---		
16	225	(8.2)					2.4	
17	230	(6.6)						
18	225	4.6						
19	270	3.4						
20	310	2.3						
21	(360)	(2.4)						
22	(360)	(2.3)						
23	(400)	(2.3)						

Time: 15.0°E.
Sweep: 1.8 Mc to 10.0 Mc in 5 minutes, automatic operation.
*Data scanty prior to November 15.

Table 32

Changes in Lindau/Harz, Germany, Data

Upon receipt of additional information from Lindau/Harz, Germany, the following changes in previously published data appear significant:

Month	Time	foF2	h'F1	h'E	foE	fEs	Previous issue
Feb. 1949	02	4.6					F57
Aug. 1949	04	4.7					F63
	17					4.2	
	18		265				
	19				1.6		
Sept. 1949	01	5.2					F64
	02	5.0					
	08	7.4					
	18			120	1.8		

Form adopted June 1946

TABLE 33

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

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), May (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., By.H.

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	280	290	270	270	260	270	240	240^{H}	310	380	380	350	360	350	330	340	300	300	250	240	230	250	(280)^{S}	300
2	300	(280)^{S}	300	280	C	C	300	260	330^{H}	330	360	310^{H}	360	360	350	360	300	300	260^{H}	290	270^{K}	240^{K}	260^{K}	300^{K}
3	340^{K}	320^{K}	290^{K}	290^{K}	280^{K}	340^{K}	270^{K}	530^{K}	500^{K}	530^{K}	600^{K}	730^{K}	640^{K}	590^{K}	600^{K}	520^{K}	470^{K}	400^{K}	320^{K}	270^{K}	(270)$^{S}_{K}$	(270)^{S}	(280)^{S}	300
4	290	300	280	300	300	310	250	360	320	430	370$^{H}_{K}$	450^{K}	500^{K}	450^{K}	440^{K}	410^{K}	360^{K}	270^{K}	[270]$^{C}_{K}$	270^{K}	C	C	C	300
5	300	300	320	(330)^{S}	(300)^{S}	300	270^{K}	370^{K}	470^{K}	480^{K}	560^{K}	570^{K}	580^{K}	520^{K}	470^{K}	470^{K}	430^{K}	400^{K}	330	280	270	300	280	280
6	270	270	270	300	360	300	260	360	330	370	430	400	430	400	390	370	360	310	280	270	250	300	C	C
7	C	C	C	C	C	C	C	310^{K}	320$^{H}_{K}$	390^{K}	470^{K}	500^{K}	520^{K}	500^{K}	430^{K}	400^{K}	390^{K}	360^{K}	300^{K}	280	270	300	300	290
8	300	300	300	(290)^{S}	300	290	250	280	300	370	350	370	360	360	370	330	320	290^{H}	290	250	240	(240)^{S}	280	290
9	300	300	290	(300)^{A}	270	270	250	270	290	270	200^{H}	310	330	350	360	340	330	300	260^{H}	260	(260)^{S}	260	260	300
10	(320)^{A}	300	300	(280)^{S}	(270)^{S}	300	300	300	290	400	400	390	370	380	380	360	340	330	290	280	270	260	(280)^{S}	290
11	290	300	320	310	300	300	300	330	410	[420]^{C}	420	(430)^{S}	420	400	430	400	360	340	300	270	280	260	270	300
12	300	350	350	310	300	290	280	250	330	330	340	370	360	370	370	320	300	300	(270)^{A}	250	230	240	280	300
13	300	300	300	300	300	290	260	270	300	480	410^{H}	(420)^{S}	390	410	380	390	370	280	300	270	230	230	280	260
14	260	310	300	290	270	280	300	L	510	450^{H}	[410]^{C}	370	420	410	390	370	370	350	300	250	230	260	270	320
15	310	300	260	270	300	280	350	320	320	310	320	330	300	370	350	310	320	260	260	220	[240]^{A}	260	[280]^{A}	(300)^{A}
16	300	280	290	270	290	300	300	330	370^{H}	400	560	400	430	400	380	370	360	320^{H}	300	280	240	250	260	260
17	270	290	270	290	A	A	320	330	320	330	300	380	330	330	330	350	310	320	270	270	(260)^{A}	270	280	(280)^{A}
18	(280)^{A}	290	300	290	290	280	280	260	260	240	300	320	330^{H}	340	310	300	300	270	250	240	230	[260]^{A}	(280)^{A}	270
19	270	250	250	280	270	240	240	260	280	280	300	330	320	310	310	310	300	270	260	250	250	250	(270)^{A}	280
20	270	280	280	(290)^{A}	(280)^{A}	270	230	[260]^{M}	290	300	290	300	360	330	340	340	*320	*280	*280	*270	*270	*270	*270	280
21	250	240	230	260	270	(300)^{A}	(250)^{A}	270	[340]^{A}	400	370	330^{H}	400	400	360	370	350	310	290	270	(280)^{A}	270	270	270
22	290	280	300	300	[280]^{A}	260	240	[270]^{C}	300	320	A	A	A	370	390	330	370	300	310	270	260	250	280^{K}	270^{K}
23	270^{K}	270^{K}	250^{K}	260^{K}	250^{K}	270^{K}	280^{K}	500^{K}	570^{K}	[570]$^{B}_{K}$	580^{K}	530^{K}	550^{K}	540^{K}	620^{K}	490^{K}	490^{K}	420^{K}	300^{K}	280^{K}	260^{K}	(270)$^{S}_{K}$	280^{K}	300^{K}
24	(250)$^{S}_{K}$	300^{K}	310^{K}	(300)$^{S}_{K}$	(290)$^{S}_{K}$	270	260	210	410	460	440	390	430	370	390	370	360	330	270	260	270	(280)^{A}	270	280
25	(280)^{S}	(280)^{S}	280	(290)^{S}	(300)^{S}	270	350	310	310	400	400^{H}	400	440	370	380	360	340	330	(310)^{S}	260	250	250	280	300
26	280	300	280	280	280	280	290	(250)^{H}	[290]^{L}	330	340	290^{H}	320^{H}	330^{H}	330	*330	*320	*310	*280	*240	*240	*280	*(270)^{S}	*300
27	280	280	260	260	290	290	310	330	320	360	450	420	380	450	370	360^{K}	*360^{K}	330^{K}	270$^{H}_{K}$	250^{K}	250^{K}	290^{K}	*(400)$^{S}_{K}$	480$^{H}_{K}$
28	*(530)$^{S}_{K}$	*(470)$^{S}_{K}$	*(440)$^{S}_{K}$	400^{K}	(320)$^{S}_{K}$	320^{K}	G^{K}	*G^{K}	*700^{K}	*G^{K}	*580^{K}	*G^{K}	*750^{K}	*680^{K}	*660^{K}	510^{K}	430^{K}	370^{A}	310^{K}	270^{K}	(220)$^{S}_{K}$	[260]$^{A}_{K}$	(300)$^{A}_{K}$	(320)$^{S}_{K}$
29	(320)$^{S}_{K}$	300^{K}	300^{K}	290^{K}	290^{K}	290^{K}	[370]$^{A}_{K}$	450^{K}	570^{K}	690^{K}	G^{K}	G^{K}	G^{K}	530$^{H}_{K}$	600^{K}	570^{K}	440^{K}	390^{K}	300^{K}	260^{K}	270^{K}	(280)$^{S}_{K}$	270^{K}	290^{K}
30	280^{K}	290^{K}	300^{K}	290^{K}	290^{K}	280^{K}	400$^{H}_{K}$	400$^{H}_{K}$	390^{K}	430$^{H}_{K}$	440^{K}	480	420	370	360	390	350	320	280	250	250	250	260	270
31	(260)^{S}	240	260	270	(300)^{A}	270	300	310	330	300	320	330	390	330	330	320	300	300	290	250	240	(250)^{A}	270	260
Median	280	300	290	290	290	280	280	310	320	390	400	390	400	380	380	360	350	310	290	270	250	260	280	290
Count	30	30	30	30	28	28	30	30	31	31	30	30	30	31	31	31	31	31	31	31.	30	30	29	30

* SWEEPTIME = .25 MIN.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 34

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

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), May (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., By.H.

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

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	5.4F	(5.0)SF	4.6F	(5.0)F	4.6F	(4.8)SF	(6.9)EF	(7.3)S	(7.4)JV	(7.4)P	(7.8)V	8.8	(9.2)S	9.7	9.8	9.6	(9.4)S	(9.0)S	(9.2)S	(8.9)P	(7.5)S	(6.7)S	(6.5)S	(6.1)JS
2	(5.9)S	(5.8)S	5.7	(5.1)S	C	C	6.4	6.9	(7.6)S	8.4	8.7	8.7	(9.9)S	(9.7)S	10.2	10.0	(9.4)S	(9.3)S	(9.7)S	(9.0)SP	K(9.6)SP	(9.0)SK	K(7.7)SP	K(7.0)SP
3	K(7.0)SP	(7.3)SK	(6.4)PK	K(5.7)SV	K(4.5)SP	3.6K	4.6K	4.7FK	5.2FK	5.2FK	5.2K	5.2K	5.3K	5.4K	(5.4)SK	K(5.5)JS	(5.7)SK	6.2K	(6.8)SK	(6.5)SK	(6.6)SK	(6.4)S	(6.0)JS	(5.9)JS
4	5.4	5.2	(4.6)SF	(3.8)F	3.8F	3.7F	5.2F	5.7F	5.8F	(6.2)SF	(6.6)ZK	6.7K	6.8K	6.9K	(7.1)SK	7.0K	7.4K	6.8K	[6.8]CK	(6.8)SK	C	C	C	(5.6)S
5	(5.2)S	4.9	(4.5)S	(4.1)JS	(3.7)JS	3.8	4.7FK	5.2K	5.4K	5.4FK	K(5.4)SF	K(5.4)SF	(5.7)SK	5.9K	(6.3)SK	(6.3)SK	6.4FK	6.4K	6.7	6.5	(6.6)S	(6.5)S	6.3	5.8F
6	5.2F	5.0F	4.8F	(4.2)SF	(4.0)SF	4.1	5.1	5.6F	(5.9)S	6.3	(6.5)P	6.9	7.2	7.8	7.7	7.8	7.9	7.9	8.0	7.9	7.6	(7.4)JS	C	C
7	C	C	C	C	C	C	C	(6.1)JK	6.2K	5.9K	6.0K	6.1K	6.2K	6.3K	6.7K	6.6K	6.6K	6.8K	6.8K	6.8	(6.8)S	6.6F	6.6F	6.0F
8	(5.7)SP	5.4F	(5.3)SF	4.7	4.6	5.0	(5.8)S	6.7	6.8	7.0	7.5	7.8	8.2	8.4	8.6	8.6	8.6	8.6	9.0	8.9	8.3	(7.5)JS	(7.1)S	(6.7)S
9	(6.6)S	6.4	6.4	6.3	(5.7)S	(5.8)S	6.5	7.2	(7.9)J	(7.7)H	8.6V	8.8	(8.7)J	8.7	8.7	8.8	(8.9)S	(9.2)S	(9.4)S	(9.4)S	(8.8)S	(7.6)JS	(6.8)S	(6.5)S
10	6.4	6.4	6.0	(5.7)JS	5.1	5.2F	5.8	6.2	(6.5)JS	[6.8]J	7.0	7.3	7.5	7.4	7.8	7.3	(7.4)J	7.4	(7.5)S	(7.9)S	(8.1)JS	(7.4)S	(7.0)S	(6.8)S
11	(5.8)J	(5.4)JS	(5.2)P	4.5	(4.1)JS	4.2	5.1	(5.3)H	(5.6)S	[5.8]C	(6.0)SF	(6.1)SF	(6.5)SF	6.8	6.8	7.0	(7.0)SJ	6.9	6.9F	(6.8)S	6.6	(6.1)SF	5.4F	4.7F
12	4.4F	(4.2)SF	4.0F	4.0F	3.9F	4.4F	6.0	6.4	7.1	7.8	8.0	7.9	8.2	8.3	8.6	9.2	8.8	(8.3)S	8.5	(8.8)S	(7.9)S	(6.9)SF	6.6F	6.5F
13	6.2F	6.0	5.7	(5.4)S	5.7	5.7	(6.1)V	6.4	6.4	[6.5]R	6.4	6.8V	6.72	6.8	7.0	(7.0)JS	(7.0)J	(7.3)S	(7.4)S	7.9	(7.3)S	(6.0)SJ	(5.7)S	(5.0)S
14	4.9	(4.8)JS	4.8	(4.4)JS	4.0	(3.7)S	4.5	(4.2)S	4.9	5.0	[5.6]C	6.2	6.2	6.5	7.0	7.3	7.2	7.3	(8.2)S	(8.0)JS	7.2	(5.8)JS	5.6	(5.4)JS
15	(5.1)S	(5.4)JS	(4.9)S	(4.4)S	(3.8)S	(4.0)JS	(4.9)JF	5.6F	(5.9)S	(6.9)S	7.2	7.3	7.8	8.2	9.4	10.0	10.4	10.7	9.4	(8.9)S	(7.9)S	(7.3)S	(6.3)S	(6.0)S
16	(5.9)JS	5.6	5.2	(4.6)S	(4.1)JS	(4.0)S	5.0	5.4	5.7	5.8	(5.5)S	(6.2)S	(6.1)S	(6.6)S	(6.6)JS	6.6	6.6	(6.8)S	7.0F	(6.9)S	(6.6)SF	(5.8)SF	(5.3)SF	(4.9)SF
17	(4.5)SF	(4.4)SF	4.2F	3.9F	3.5	(4.0)J	(5.0)JS	5.8	6.8	(6.7)S	(6.8)S	(7.3)S	7.8	7.8	7.6	7.7	7.8	7.7	8.2	8.4	(8.0)S	(7.6)S	7.5	(7.2)S
18	6.7	5.8F	5.7	5.1	4.8	5.0	6.5	7.4	7.8H	[7.9]N	8.0V	8.8	8.9	9.2	9.6	(9.1)JS	8.6	8.6	(8.3)S	(8.5)S	(8.0)S	(7.1)S	(7.1)S	6.9
19	6.6	(5.9)JS	5.5	(5.2)S	4.9	5.2	6.9	7.5	8.0	8.4	8.6	8.9	(9.0)JS	9.4	(9.4)JS	9.4	9.5	9.4	(9.0)S	(8.6)S	(8.0)JS	(7.7)JS	(7.2)S	(6.7)S
20	7.0	6.3	6.2	5.7F	5.5	5.8	6.7	[7.0]N	8.0	7.9	9.2	8.4V	8.8	9.4	9.4	9.2H	*9.2	*(9.4)S	*(9.0)S	*(9.5)S	*(9.0)S	*(8.9)S	*(8.6)S	8.5
21	(8.0)S	7.9	6.4	5.7	5.2	(5.2)S	6.0	6.3	(6.3)S	6.6	(7.0)S	(6.9)H	7.0	7.5	7.3	7.2	7.5	(7.2)S	7.4	(7.1)S	(7.2)S	(6.9)S	6.5	(5.7)S
22	5.6	5.4	5.2	5.0	4.9	5.6	(5.9)S	[7.0]C	7.1	7.5	(7.2)A	(8.1)A	(8.4)A	8.6	7.9	8.4	8.2	(8.8)S	8.2	(7.8)S	(7.5)S	(7.3)S	7.0K	(7.2)SK
23	7.0K	(6.8)SK	(5.9)SK	5.4K	5.2K	(4.8)SK	(5.5)SK	5.1K	(5.3)SK	[5.4]BK	(5.6)SK	5.9K	(5.6)SK	(5.6)KS	5.5K	(5.8)SK	5.9K	6.1K	5.8K	K(6.0)JS	5.8K	(5.6)SK	K(4.9)JS	4.8K
24	4.5FK	K(4.4)SF	K(4.0)SF	K(3.8)SF	K(3.7)SF	4.4	(5.0)S	(5.5)S	5.7	(5.7)S	6.2	6.6	6.6	6.9	6.9	7.0	7.0	6.9	(7.2)S	(7.2)S	7.4	6.9	6.4	(6.1)S
25	(5.5)S	(5.3)S	(4.8)S	(4.4)S	(3.9)S	(4.3)S	(5.2)S	6.3	6.4	6.4H	6.6	7.0	(7.1)S	(7.3)S	7.4	(7.2)S	7.3	(7.2)S	[7.5]S	(7.8)S	(7.6)S	(7.1)JS	(6.9)S	6.5
26	(6.2)S	(6.1)S	(5.9)S	5.2F	4.8	(4.8)S	6.2	[6.4]N	6.6	7.8	8.0	7.7	7.9	8.2	8.6	*8.4	*8.5	*8.4	*8.4	*(8.3)S	*(8.1)SP	K*(7.5)SP	*(6.9)SP	*6.7
27	6.6	6.6	(6.0)S	4.8	4.2	4.4	5.7	5.9	6.6	6.1H	6.4H	7.0	7.9	7.1	7.8	7.6K	*8.9K	10.0K	(9.8)SK	K(9.6)JS	7.7FK	K(6.0)VS	K*(4.0)SP	K(3.9)SF
28	K*(2.2)SF	K*(2.8)SF	K*(2.5)SF	K(2.4)JF	2.5FK	3.3FK	<3.9GK	*<4.0GK	*4.4K	*<4.5GK	*5.1K	*<4.8GK	*5.1K	*5.2K	*5.2K	5.4K	6.2K	6.2K	6.6K	(6.7)SK	(6.1)SK	K(5.8)SF	K(4.9)SF	(4.7)FK
29	4.3FK	4.2FK	3.8FK	3.3FK	2.8K	3.7K	(4.2)FK	(4.6)FK	4.7K	4.8FK	<4.7GK	<4.8GK	<5.2GK	(5.3)HK	5.2K	5.2K	5.4K	5.8K	(5.8)SK	(5.7)SK	5.4K	(5.8)SK	K(5.7)SF	K(5.1)SF
30	K(4.9)SF	K(4.7)SF	4.2FK	K(3.6)SF	3.6FK	(4.0)SK	(4.4)HK	(4.7)HK	5.3K	(5.4)HK	(5.7)HK	(5.8)H	6.3F	6.9	6.6	6.8	(6.8)S	(6.9)JS	(7.0)S	(6.6)S	(6.8)S	(6.7)S	(6.6)S	6.3F
31	(5.9)SF	5.3F	4.8F	4.3F	3.9F	(4.3)SF	5.2	5.8	6.5	(6.6)J	7.2	7.6	7.8	8.4	8.4	8.3	8.2	8.6	(8.5)S	(8.8)S	(8.6)S	(7.6)S	6.7	(6.6)S
Median	5.8	5.4	5.2	(4.6)	4.1	4.4	5.4	5.9	6.4	6.5	6.6	7.0	7.2	7.4	7.6	7.3	7.5	7.4	(8.0)	(7.9)	(7.6)	(6.9)	(6.6)	(6.1)
Count	30	30	30	30	29	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	29	30

* SWEEP TIME = .25 MIN.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 35

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

IONOSPHERIC DATA

Form adopted June 1946

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

National Bureau of Standards (Institution)

Observed at Washington, D.C.

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

Lat 38.7°N, Long 77.1°W

75°W Mean Time

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

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	(5.3)SF	4.7F	4.5F	4.9F	4.3F	5.8	7.3F	(7.5)J	(7.2)V	7.9	(8.3)S	(8.8)JS	9.5	9.8	9.6	(9.5)S	(9.2)SP	(9.3)S	(9.0)S	(8.2)P	(7.1)S	(6.5)SP	(6.4)S	(6.0)SP
2	(6.0)JS	5.8	(5.4)S	4.9	C	C	(6.8)S	7.3	(8.1)P	(8.3)P	8.7	(9.4)SP	9.8	(10.1)S	10.0	(9.8)S	(9.3)S	(9.3)S	(9.8)SP	(9.3)SP	S(9.5)PK	S(7.7)PK	(7.4)SK	S(6.7)PK
3	S(7.1)PK	7.1K	J(6.4)SK	(5.1)PK	S(3.9)PK	4.2K	4.7K	5.0K	5.3K	5.2A	5.2K	5.2K	5.4K	(5.4)SK	(5.5)SK	J(5.6)SK	(5.8)SK	(6.7)SK	(6.7)SK	(6.5)SK	P(6.5)SK	(6.0)SP	(6.0)SP	5.8
4	5.3	(5.2)SP	(4.4)SF	(3.8)F	(3.2)JF	4.6F	(6.1)S	6.2F	6.0	(6.4)S	(6.3)HK	6.6K	(6.9)SK	(7.1)SK	7.0K	(7.2)SK	7.0K	6.8K	CK	CK	S(6.9)PK	C	C	(5.4)S
5	(5.0)S	(4.7)S	(4.3)S	3.9	(3.6)JS	4.5	J(5.0)FK	5.2FK	5.4FK	(5.4)SK	S(5.4)FK	S(5.4)FK	(5.8)SK	(6.1)SK	(6.2)SK	6.4K	6.4K	6.4K	(6.7)S	(6.7)S	(6.7)S	6.4	5.8F	5.4F
6	(5.0)JF	4.7F	4.5F	4.1	3.9F	4.8	5.5	5.9F	6.2F	6.7	6.8	6.9	7.3	7.7	7.8	7.8	8.0	7.8	8.0	(8.0)S	7.4	7.5	C	C
7	C	C	C	C	C	C	C	C	(6.4)HK	[6.0]CK	6.1K	6.2K	6.3K	6.4K	6.5K	6.5K	6.7K	6.7K	6.8K	6.8	6.7	6.6F	(6.2)SF	(5.7)SF
8	(5.6)JF	(5.3)SF	(5.0)S	J(4.5)SF	(4.7)S	(5.5)S	(6.4)S	(7.0)S	(6.7)S	7.2	7.8	8.1	8.3	8.3	8.8	(8.6)S	8.5	(8.8)S	(9.1)S	8.6	(7.9)S	(7.2)SP	(7.0)S	6.6
9	6.4	(6.4)S	(6.3)S	(5.9)JS	(5.7)S	6.0	[6.8]C	(7.5)H	(7.8)H	(8.2)V	(8.7)S	8.6	[8.7]C	8.8	8.8	8.8	9.0	(9.2)S	9.4	(9.2)S	7.9	(7.2)S	6.5	6.4
10	6.4	6.2	(5.8)S	(5.5)S	(5.0)S	5.6	(6.1)JS	(6.3)H	(6.8)S	(6.9)HS	7.2	7.6	7.4	7.4	7.9	7.6	7.4	(7.6)S	(7.6)S	(8.0)J	(7.9)S	(7.4)S	(7.0)JS	(6.0)S
11	5.6	5.3	(4.9)P	4.3	(3.9)S	4.8	5.6	5.8	(5.8)SV	[6.0]C	H(6.3)SF	(6.2)SF	6.8F	6.8F	(6.8)JS	(7.0)JS	(7.0)S	(7.0)JS	6.8F	(6.7)S	6.6F	5.8F	(5.0)SF	4.6F
12	4.3F	4.2F	4.0F	3.9F	(3.8)SF	5.3	(6.4)J	6.6	7.5	7.6F	7.8Z	(8.1)S	8.1	8.3	9.1	9.0	8.5	8.6	(8.6)S	(8.6)S	(7.1)SF	(6.8)FS	6.7F	(6.5)SF
13	6.3F	(5.8)J	5.6	5.8	5.7	(6.1)H	6.3	6.2	(6.5)J	[6.6]A	6.8	(6.7)S	6.6	6.9	(7.0)JS	(7.1)JS	(7.1)J	(7.3)S	7.8	8.1	(6.8)JS	(5.8)JS	(5.5)S	(5.2)S
14	4.8	(4.9)S	(4.5)S	(4.2)S	(3.7)JS	(4.3)S	4.6	5.0	5.0	C	C	5.9	6.4	6.8	(7.0)JS	(7.1)S	7.6	(7.7)S	(8.2)S	(8.0)JS	(6.4)S	(5.7)S	(5.5)S	(5.4)S
15	(5.4)S	(5.3)S	(4.7)S	(4.0)JS	3.6	4.6	5.4F	(5.6)SF	(6.4)S	7.2	7.6	7.7	7.9	(8.8)S	9.8	10.0	(10.9)S	(10.0)JS	(9.8)S	(8.8)S	(7.4)S	(6.7)S	(6.2)S	6.0
16	(5.7)JS	(5.1)SV	(5.0)S	(4.1)JS	(3.9)S	4.6	5.2	5.4	5.5	(5.7)JS	(5.9)JS	(6.3)S	6.4	6.8	6.6	(6.6)S	6.5F	6.5F	6.8F	(7.1)JS	(6.0)SP	(5.6)SF	(5.2)SF	4.5F
17	4.5F	4.4F	(3.8)SV	3.8	3.6	4.5V	5.6	(6.0)S	(6.8)S	(6.8)JS	(6.6)S	7.6	7.8	7.5H	7.5	8.0	7.7	8.0	(8.1)S	(8.5)S	7.9	7.5	7.3	(6.7)S
18	6.5	(5.8)S	5.4	5.0	4.8	(5.8)S	7.1	7.9	(7.9)S	7.9H	8.5	9.0	(8.9)S	9.6	9.7	8.8	(8.8)S	(8.6)S	(8.3)S	(8.4)S	(7.4)S	(7.1)S	(7.0)S	(6.7)S
19	6.3	5.8	5.3	(5.0)S	4.8F	6.4	(7.2)SF	7.8	8.4	(8.1)S	8.8	8.8	9.4	9.4	9.6	9.4	(9.6)S	(9.2)S	(8.8)S	(8.4)S	(7.9)S	(7.6)S	(7.0)S	(6.9)JS
20	6.8	(6.1)JS	5.8F	5.8F	(5.0)SV	6.3	(6.6)H	7.4V	(7.2)S	(8.8)H	8.9	8.5	9.1	9.4	(9.0)JS	(9.2)S	*9.4	*(9.1)S	*(9.2)S	*(9.3)S	*(9.1)S	*(8.6)S	(8.4)S	8.5
21	(8.2)S	(7.1)S	(6.0)J	5.7	5.0	5.5	6.1V	6.4	6.8	(7.0)S	(7.1)S	6.8	(7.0)S	7.7	(7.1)S	7.4	7.3	7.3	(7.2)S	(7.1)S	(7.1)S	(6.6)S	(6.0)S	5.6
22	5.5	5.3	5.0	4.9	5.2	5.8	6.5	7.4	7.6	7.5	(7.6)A	(7.8)A	8.6	8.3	8.8	8.2	8.4	8.4	(8.1)S	(8.0)JS	(7.7)S	(7.0)JS	(7.2)SK	(7.2)SK
23	7.0K	6.4K	(6.0)SK	(5.5)JK	5.2K	5.1K	5.0K	4.9K	5.4K	5.3K	5.6K	(5.8)SK	5.8K	5.6K	[5.8]MK	5.9K	5.9K	(6.0)JK	5.6K	(5.9)SK	J(5.6)SK	J(5.1)SK	S(5.0)FK	(4.6)SK
24	S(4.5)FK	S(4.2)FK	S(3.9)FK	S(3.8)FK	3.8K	4.9	5.2	(5.6)S	(5.7)S	5.9	(6.4)S	(6.3)S	6.8	6.9	7.0	7.0	7.0	7.2	(7.2)S	(7.4)S	7.0	6.5	6.3	5.7
25	(5.5)S	(5.0)S	(4.5)S	(4.1)S	(3.8)S	4.9	5.6	(6.4)S	6.4	6.6	6.8	6.9	7.4	7.4	(7.3)S	7.5	(7.1)S	7.4	(8.0)JS	(7.7)S	(7.5)S	(6.9)S	(6.6)S	(6.5)S
26	(5.9)S	5.6F	5.4F	(4.8)SP	(4.6)S	5.2F	(6.7)S	6.4	(7.3)PJ	7.4V	8.1	7.5	8.0	8.5	*8.4	*8.5	*8.5	*8.6	*8.6	*(8.1)SP	*(7.7)SF	*(7.6)S	*(6.8)SP	*(6.7)S
27	6.5	6.2	5.5	4.4	4.0	5.0	5.8	6.3	6.5	(6.0)H	6.7	7.2	7.4	7.7	8.0	7.8K	*9.3K	10.6K	(10.2)SK	S(8.8)YK	S(7.0)ZK	S(4.9)FK	S(4.2)FK	S(2.3)FK
28	S*(2.6)FK	S*(2.6)FK	*2.6FK	S(2.5)FK	S(2.8)FK	3.7FK	4.0K	*<4.8GK	*<4.3GK	*5.0K	*<4.6GK	*<4.8GK	*5.0K	*5.2K	5.5K	(5.5)SK	6.4K	6.3K	6.6K	(6.7)SK	S(5.8)FK	S(5.5)FK	4.9FK	4.7FK
29	S(4.3)FK	3.9FK	3.5FK	3.1	(3.0)SK	4.1K	4.3K	4.7K	<4.4GK	5.0K	<4.2GK	<4.8GK	S(5.0)JK	<4.8GK	<4.7GK	(5.2)SK	5.6K	5.7K	(5.9)SK	S(5.5)PK	(5.7)SK	(5.7)SK	S(5.4)FK	S(5.2)FK
30	S(4.7)FK	SF(4.2)JK	S(3.9)FK	3.7FK	3.5FK	4.3FK	4.7FK	5.2K	5.4HK	5.7HK	5.8K	6.2H	6.6	6.8	6.8	6.8	(6.8)JS	(7.0)S	(6.9)S	(6.9)S	(6.9)	(6.7)S	6.4	(5.9)JF
31	(5.8)S	(5.2)SF	4.5F	J(3.9)SF	J(3.7)SF	4.7F	5.3H	6.2	(6.3)H	6.8	7.5	7.6	8.1	8.3	8.4	8.3	8.4	8.6	(8.7)S	(8.5)S	(8.1)S	(7.1)S	(6.7)S	(6.3)S
Median	(5.6)	(5.3)	(5.0)	4.4	(3.9)	4.9	5.7	6.2	(6.4)	6.8	6.8	6.9	7.4	7.5	7.5	7.6	7.6	7.7	(8.0)	(8.0)	(7.1)	(6.7)	(6.4)	(6.0)
Count	30	30	30	30	29	29	30	30	31	30	30	31	31	31	31	31	31	31	30	30	31	30	29	30

* SWEEP TIME = .25 MIN.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 36

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

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), May (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., By.H.

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	210	210H	220H	200H	200H	210	230	220H	230	230	Q					
2							250	Q	220	230	220	200H	210H	220H	230	230	230	230	Q					
3							QK	230HK	260HK	210K	200HK	200K	200HK	200K	230K	240K	250K	230HK	280K					
4							Q	230	210	220H	210K	200K	210K	220K	230K	230K	230K	250K	CK					
5							QK	230K	230HK	200K	200K	210K	200K	[230]BK	(260)SK	[250]SK	240K	250K	260					
6							Q	250	240	[260]B	(270)B	200	230H	230	[240]C	(260)S	210	230	240					
7							CK	250K	210K	(200)SK	AK	AK	AK	AK	250K	230K	230K	260K	240K					
8							Q	240	220	210	210	200H	200	230	230	220	240	220	270					
9							Q	230	210	230	Q	S	200	230	220	[220]A	230	230	Q					
10							260	230	260H	200	200H	210	210	220	230	210	220	220	260					
11							250	240	220	[210]C	200	200H	200	230	220	230	240H	230	(240)A					
12							250	220	210	200H	[190]B	190H	210	220	220	210	230	230	Q					
13							240	220	210	(200)H	(200)H	(200)S	200	(220)S	220	220	210H	230	260					
14							240	220	220H	200H	[200]C	(200)A	[210]A	220	230H	230	240	240	260					
15							250	230	210	200H	200	200H	200	210	220	220	220	220	230					
16							A	A	200	(200)H	200H	230	210	210	220	220	220	230	A					
17							230	220	230	200	200H	200	210	230	210	220	220	240	Q					
18							240	230	210	200	200	200	200	(230)S	220	230	220	230	Q					
19							Q	230	220	220	200	200H	200	[220]S	230	230	230	[230]A	230					
20							Q	N	210	200	(200)S	200	(200)A	(200)A	[220]B	230	*200	*220	*230					
21							Q	240	[220]A	210	210H	200H	200	200	[210]A	220	[220]A	230	(230)A					
22							Q	C	220	B	A	A	A	210	220	220H	230	A	A					
23							QK	230K	240K	BK	NK	230HK	(200)SK	230K	210K	[210]SK	220K	230HK	240K					
24							Q	Q	220	200	200	(200)S	220	200	220	220	(200)A	(230)A	A					
25							A	(230)A	210	210	200	200	200	220	210	230H	220H	200	Q					
26							240	220	(210)A	200	(250)A	210	190	200	220H	*200	*210	*230	*260					
27							240	220	220	200	200H	200	210	210	220	210K	*220K	220K	QK					
28						210K	200HK	*200HK	*200HK	*200HK	*210K	*200K	*200K	*200K	*200HK	240K	230K	240K	250K					
29							QK	(260)AK	200K	AK	AK	200K	200K	200K	200K	210K	210HK	220K	AK					
30							230K	220K	200K	200K	200H	200	200	210	210	210	210	230	240					
31							230	(230)A	[220]A	200	200	200	200	200	210	(200)A	(230)A	230	A					
Median							240	230	220	200	200	200	200	220	220	220	220	230	240					
Count							14	25	31	28	26	28	29	30	31	31	31	30	17					

* SWEEP TIME = .25 MIN.

Sweep 1.0 Mc to 25.0 Mc In 0.5 min

Manual ☐ Automatic ☒

TABLE 37

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

IONOSPHERIC DATA

Form adopted June 1946

foFI (Characteristic), Mc (Unit), May (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., By. H.

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	L	(5.6)P	(6.1)P	(5.8)P	[5.7]L	(6.6)P	L	L	L	L	Q					
2							L	Q	L	L	(6.5)S	[5.6]L	(6.8)P	(5.4)P	(5.2)P	L	L	L	Q					
3							Q K	4.3 K	4.5 K	4.6 K	(4.7)PK	4.8 K	(4.8)PK	(4.9)PK	4.8 K	4.7FK	(4.6)PK	L K	L K					
4							Q	L	(4.6)P	4.7	5.0 K	5.1 K	5.3 K	5.1 K	5.1 K	5.1 K	L K	L K	C K					
5							Q K	L K	4.8 K	4.9 K	5.0 K	5.0 K	5.0 K	[5.0]BK	5.0 K	[4.9]BK	(4.8)FK	L K	L					
6							Q	L	4.7	[5.2]B	5.6	5.4	5.4	5.4	5.3	5.1	(6.0)P	L	L					
7							C	L K	4.3 K	4.9 K	5.2 K	[5.2]AK	(5.2)AK	[5.1]K	5.0 K	5.0 K	5.0 K	4.5 K	L K					
8							Q	L	L	5.2	5.5	L	5.5	5.4	5.6	(5.3)P	L	L	L					
9							Q	L	(4.7)P	L	Q	(5.2)P	(5.6)P	L	L	L	(5.2)P	L	Q					
10							L	L	L	5.0	5.1	5.3	5.2	5.3	(5.2)P	(5.0)P	L	L	L					
11							L	4.3	4.6	[4.7]C	(4.8)P	(5.4)P	(5.2)P	5.2	5.4	4.8V	4.8	4.3	L					
12							L	L	L	5.1	5.3	5.7	(5.2)P	5.2	5.1	5.0	(4.9)P	L	Q					
13							L	L	L	(4.8)P	(5.1)H	5.3	5.1	5.2	5.3	5.0	4.9	L	L					
14							L	L	4.5	4.6	[4.7]C	4.8	[4.9]A	5.0	4.9	4.8	(4.9)P	L	L					
15							L	L	L	L	L	L	(5.2)H	5.4	5.0	(5.1)P	(4.8)P	L	L					
16							L	L	4.5	(4.6)S	(5.0)S	4.8	(5.0)S	4.7	(6.0)P	(4.8)P	(4.7)P	(4.5)P	A					
17							L	(4.3)P	4.6	(4.8)P	[4.9]L	(5.0)H	5.3	5.1	4.8	5.0	4.6	L	Q					
18							L	L	L	L	(5.2)F	5.4	4.8	(5.2)P	(4.9)P	4.8	L	L	Q					
19							Q	L	L	L	5.4	(5.3)P	(5.2)H	[5.3]N	5.4	[5.0]L	4.6	L	L					
20							Q	N	(4.9)P	(4.9)P	(4.8)P	(5.1)P	(5.2)P	(5.5)P	(5.6)P	4.7	*L	*L	*L					
21							Q	(4.4)P	[4.6]A	4.9	(5.0)P	5.1	5.2H	5.2	5.1	5.0	4.9	L	L					
22							Q	C	L	B	A	A	A	(5.4)P	(5.3)P	5.0	4.8	L	L					
23							Q K	4.2 K	(4.4)SK	B K	N K	4.9 K	[4.8]NK	(4.7)SK	(4.7)SK	[4.5]SK	(4.3)PK	4.2 K	L K					
24							Q	Q	4.4	4.7	4.8	5.0	5.2	5.2	5.2	5.0	(5.2)P	L	L					
25							L	L	(4.7)P	5.0	5.0	5.2	5.3	(5.0)S	(4.9)H	(4.9)P	L	L	Q					
26							L	L	L	(5.2)P	(5.2)P	[5.2]N	(6.3)H	(5.0)H	5.4	*5.0	*L	*L	*L					
27							L	(4.3)P	4.6	(4.8)P	(5.2)P	5.4	5.2	(5.2)P	5.0	4.9 K	*4.6 K	4.3 K	Q K					
28						2.1 K	3.9 K	*4.0 K	*4.3 K	*4.5 K	*4.7 K	*4.8 K	*4.8 K	*4.8 K	*4.8 K	4.8HK	4.5 K	4.6HK	L K					
29*							Q K	4.2 K	4.4 K	4.6 K	(4.7)AK	4.8FK	5.2HK	4.8 K	4.8 K	4.8 K	4.5 K	4.3 K	3.6 K					
30							3.6 K	(4.0)SK	4.6 K	4.7HK	5.0 K	5.0	5.2	5.0	5.0H	5.1	4.8	L	L					
31							L	L	4.8	[4.8]L	4.9	5.2	5.6	5.2	5.3	(5.1)H	(4.8)S	L	A					
Median						—	—	4.3	4.6	4.8	(5.0)	5.2	5.2	5.2	5.1	5.0	4.8	4.3	—					
Count						1	2	9	20	24	27	28	30	30	29	28	22	7	1					

* SWEEP TIME = .25 MIN.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 38

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

IONOSPHERIC DATA

Form adopted June 1946

h'E (Characteristic), Km (Unit), May (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. – By. H.

Calculated by: By. H. – B.E.B., McC. – H.C.

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

* SWEEPTIME = .25 MIN.

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 39

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

IONOSPHERIC DATA

Form adopted June 1946

foE (Characteristic), Mc (Unit), May (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., By.H.,

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							2.2	2.9	3.2	3.4	3.4	3.7	3.8	3.9	3.6	3.6	3.3	2.9	2.3					
2							2.4	2.8	3.0	3.3	3.5	3.6	3.7	3.7	(3.6)P	3.6	3.3	2.9	2.2					
3							(2.2)PK	2.6K	3.1K	(3.5)PK	(3.5)PK	(3.7)PK	[3.7]BK	3.7K	(3.7)AK	[3.5]AK	(3.3)AK	2.7K	2.4K	1.7K				
4						(1.7)P	2.2	2.9	3.0	[3.3]B	3.6K	3.8K	(4.0)SK	3.9K	3.8K	3.6K	3.5K	3.0K	CK					
5							(2.3)BK	[2.7]AK	(3.1)SK	(3.4)BK	3.7K	3.8K	BK	BK	3.8K	[3.6]BK	3.3K	2.8K	2.4					
6							2.3	(2.8)P	3.1	B	B	A	A	C	C	C	(3.2)P	2.9	2.4					
7							C	(2.8)AK	3.2K	3.5K	[3.6]AK	(3.8)AK	AK	AK	AK	3.6K	3.2K	3.0K	2.4K					
8						S	2.5	2.9	3.3	3.8	3.8	3.9	4.0	(3.7)B	3.6	(3.5)S	[3.2]S	3.0	2.4					
9							2.1	2.8	3.2	3.4	3.6	[3.7]A	3.8	3.8	A	A	3.3	3.0	2.4					
10							2.5	3.0	3.2	3.5	[3.6]A	(3.8)A	3.8	3.8	3.7	3.6	3.0	2.8	2.0					
11							2.0	(2.8)P	3.0	[3.1]C	3.3	3.4	(3.4)A	[3.4]A	3.5	3.4	3.3	2.8	(2.0)A					
12							2.3	2.8	3.2	3.3	[3.5]A	3.7	3.7	(3.6)A	[3.6]A	3.5	3.1	2.9	2.3					
13							2.2	2.8	3.1	3.3	(3.5)A	3.6	3.9	(3.7)P	3.7	3.5	2.9	2.8	2.4	1.7				
14						1.5	2.1	2.7	3.0	3.2	3.5	3.5	[3.6]A	3.7	3.6	3.5	3.3	2.8	2.2					
15							2.0	2.5	3.1	3.4	3.6	3.7	3.8F	3.7	3.5	3.5	3.2	2.8	2.3	1.9				
16							1.9	2.6	2.7	3.0	3.2	3.3	3.6	3.5	3.5	3.4	3.3	2.9	2.2					
17							2.2	2.8	3.1	3.2	3.4	3.8F	[3.8]A	3.7	3.5	3.2	3.3	(3.1)S	2.5					
18							2.3F	2.9	3.2	3.5	A	A	A	A	(3.7)A	3.5	3.0	3.0	2.3	S				
19							(2.4)A	3.0	3.4	3.4	A	A	A	3.8	3.6	3.4	3.3	3.0	2.3	S				
20							2.2	2.9	3.2	3.5	3.5	3.5	A	A	B	3.4	*3.4	*3.0	*S					
21							2.1	A	A	3.3	3.3	(3.6)A	(3.7)P	3.8	3.8	3.7	3.3	3.0	2.4	1.9				
22							A	C	3.1	B	A	(3.6)A	[3.7]A	3.8	B	B	B	3.1	2.6					
23							2.2K	2.9K	3.2K	[3.3]BK	3.4K	3.5K	3.5K	3.8K	3.6K	3.6K	3.3K	3.0K	2.5K					
24							A	2.5	3.1	3.3	A	A	A	A	(3.5)A	3.3	3.3	A	A					
25							(2.1)A	(2.5)A	(3.1)A	(3.6)A	3.7	3.8	[3.8]A	(3.7)A	3.6	[3.4]A	3.3	2.8	S					
26						*1.7	*(2.4)A	*2.8	*3.2	*3.5	*[3.5]A	*3.6	*3.6	*[3.7]A	*(3.8)A	*[3.6]A	*(3.3)F	*3.0	*2.8	*A				
27						S	2.5	2.8	3.2	3.4	[3.5]A	3.6	3.6	[3.6]A	(3.6)B	3.4K	*3.2K	3.0K	2.4K	1.6K				
28						1.8K	2.5K	*[2.8]AK	*(3.1)AK	*[3.2]AK	*3.4K	*[3.6]AK	*3.7A	*3.6K	*3.3K	3.3K	3.1K	3.0K	2.5K	1.8K				
29						1.8K	(2.4)AK	(2.8)AK	3.1K	(3.3)AK	3.3K	3.7K	[3.6]AK	3.6K	3.4K	3.4K	3.2K	2.8K	2.3K	AK				
30						(1.8)FK	2.3K	2.8K	3.0K	3.1K	[3.4]AK	(3.6)A	(3.6)A	[3.6]A	3.5	3.4	3.1	2.9	2.3	1.7				
31						1.7	2.3	2.8	3.1	3.2	3.2	(3.2)A	A	A	A	A	3.3	3.0	2.5	A				
Median						1.7	2.2	2.8	3.1	3.3	3.5	3.6	3.7	3.7	3.6	3.5	3.3	3.0	2.4	1.7				
Count						7	28	29	30	29	26	27	23	24	25	27	30	30	27	7				

* SWEEPTIME = 25 MIN.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 40

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

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Km,Mc (Unit), May (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 - By. H

Calculated by: By. H.-B.E.B., McC.-H.C.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	C	C	G	G	44Y/110	G	G	G	G	G	30/100	28/100	G	G	G	G	G	G	G	G
3	G	G	G	G	G	G	G	G	G	G	G	G	32/100	G	36/100	50/100	31/100	G	G	G	G	G	G	24/110
4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	C	G	C	C	C	29Y/120
5	G	32/110	G	G	G	G	G	33/110	G	G	G	G	G	G	G	48/120	G	G	G	G	G	G	G	G
6	1.7/120	G	25Y/120	G	G	G	G	G	G	G	G	43/120	42/120	C	C	G	G	G	G	G	G	G	C	C
7	C	C	C	C	C	C	C	45/110	G	47/110	64/110	75/100	102Y/100	95Y/100	45/120	G	34/130	G	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	35/120	G	G	G	G	G
9	G	G	G	40/120	24Y/110	G	35/110	G	G	G	G	38/100	G	G	38/110	73/100	G	G	3.8/120	G	G	34Y/110	G	G
10	3.7/100	G	G	G	G	G	G	G	G	G	38/100	4.0/100	31/100	29/100	2.6/100	G	G	G	G	G	G	G	G	G
11	G	G	G	G	G	G	G	G	G	C	G	3.8/100	50Y/110	47Y/100	31/100	G	G	G	45Y/100	47Y/110	30Y/110	G	G	G
12	30Y/100	38/100	3.5/100	G	G	G	G	G	G	G	35Y/110	G	G	33/100	34/100	G	G	G	35Y/120	19/110	19/130	G	G	G
13	G	G	G	G	G	G	G	G	G	G	60Y/110	G	G	G	G	G	G	G	G	G	26/110	G	G	G
14	G	22/130	G	22/120	G	G	G	G	G	G	53/110	50/100	46/110	G	G	G	G	G	G	23/110	G	G	G	G
15	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	68/110	G	52/110	56/110
16	G	2.3/100	G	G	23/120	30/110	39/110	43/110	G	G	G	G	G	G	G	G	G	44/110	43/110	50/110	52/110	G	G	G
17	G	G	G	24V/130	33/120	48/110	3.5/110	G	4.3Y/110	47Y/110	G	G	36/100	G	G	G	G	G	G	44/120	51/110	54/110	39/120	58Y/110
18	52/110	3.5Y/110	36/110	19/110	48Y/110	G	38/120	42/110	43/110	G	56/100	4.0/100	43Y/100	5.0/100	35/100	G	G	G	G	G	24/110	61/100	48/100	G
19	G	G	G	G	G	G	26/110	G	G	G	50Y/100	40Y/100	41/100	G	G	G	G	49/110	36/110	G	2.9/110	G	54/110	36/110
20	(36)S/110	25/130	32/120	4.3/120	42/120	45/120	41/120	4.0/110	4.3/110	4.7/110	G	G	58/100	52/100	G	G	*G	*G	*G	*G	*G	*G	*G	G
21	G	G	G	G	2.2/130	68/110	54/110	46/100	64/100	G	G	35/100	34/100	34/100	G	48Y/120	39Y/120	G	38/110	G	38/120	42Y/120	32/110	24/110
22	26Y/120	25Y/110	28Y/110	34/100	48/100	31Y/100	34Y/100	C	G	44Y/120	86/100	126/100	126/100	G	30/100	30Y/100	G	G	68Y/120	46/120	32Y/120	30/110	G	G
23	G	G	G	G	G	G	G	G	G	B	G	50/100	45/110	G	G	56/100	G	G	G	G	34/130	48/130	7.0/130	38/130
24	4.2/120	5.0/120	68/110	6.0/110	38/120	5.0/120	6.2/110	66/100	3.3/100	3.3/100	37/100	3.8/100	38/100	5.5Y/100	41/100	37Y/110	42Y/110	62/100	45/100	35Y/100	(76)S/100	4.2/110	G	29Y/100
25	G	G	G	G	24Y/100	16(S)/120	39/100	5.3/100	42Y/100	36/100	34/100	43Y/100	48Y/100	35/100	29/100	31/110	30/110	59/100	62/110	42/110	(4.5)S/110	G	33/100	38/100
26	G	*G	25/100*	*G	*G	*G	92Y/100	*G	47/100	46/110	38/100	35Y/100	34Y/100	36/100	37/100	33/100	30/100	66Y/110	51/110	20/110	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	39/100	32/100	G	36/100	G	G	G	G	G	G	G	G	G	G
28	*G	*G	*G	G	G	G	G	80/100	34/100	35/100	36/120	36/100	G	G	G	44/130	G	G	G	G	G	58/110	36/110	G
29	G	24/100	G	14/100	G	G	45/110	41/110	4.3/120	50Y/100	50/100	70/130	37/100	G	29/100	47/110	4.3Y/110	G	40Y/110	22/110	G	G	G	G
30	G	G	G	G	G	G	G	G	G	G	36/100	3.6/100	35/100	35/100	32/100	G	G	G	G	G	G	G	G	G
31	G	G	G	G	58/100	G	G	42Y/100	48/100	3.7/100	40/100	3.8/100	48/100	4.8Y/100	46Y/100	49/100	49/110	G	46/110	34Y/110	16/120	38/110	32Y/100	G
Median	**	**	**	**	**	**	**	**	**	**	3.4	36	34	**	**	**	**	**	**	**	**	**	**	**
Count	30	30	30	30	29	29	30	30	31	29	31	31	31	30	30	31	31	31	30	31	30	30	29	30

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

* SWEEPTIME = 25 MIN

Form adopted June 1946

TABLE 41

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

IONOSPHERIC DATA

(M1500)F2 (Characteristic) ____ (Unit) May (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. – By. H.

Calculated by: By. H. – B.E.B. Mc C. – H.C.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.8F	(1.8)SF	1.8F	(1.9)F	1.9F	(1.9)SF	(1.9)SF	(2.1)S	(1.9)JV	(1.8)P	(1.7)V	1.9	(1.7)S	1.8	1.8	1.8	(1.8)S	(1.9)S	(1.9)S	(2.0)P	(1.8)S	(1.8)S	(1.7)S	(1.7)JS
2	(1.7)S	(1.7)S	1.8	(1.8)S	C	C	2.0	1.9	(2.0)S	1.8	1.9	1.7	(1.8)S	(1.7)S	1.7	1.7	(1.8)S	(1.9)S	(1.9)S	(1.8)JS	K(1.8)PS	(1.9)SK	K(1.7)SP	K(1.5)PS
3	K(1.5)SP	(1.6)SK	(1.7)PK	K(1.7)SV	K(1.7)SP	1.8K	1.8K	1.5FK	1.6FK	1.6FK	1.5K	1.4K	1.5K	1.5K	(1.5)SK	K(1.6)SJ	(1.7)SK	1.6K	(1.8)SK	(1.8)SK	(1.8)SK	(1.8)S	(1.8)JS	(1.8)JS
4	1.8	1.7	(1.9)SF	(2.0)F	1.8F	1.8F	2.0F	1.9F	2.0F	(1.8)SF	(1.9)ZK	1.6K	1.5K	1.6K	(1.6)SK	1.7K	1.8K	1.7K	CK	(1.7)SK	CK	C	C	(1.8)S
5	(1.7)S	1.8	(1.7)S	(1.7)JS	(1.7)JS	1.9	2.0FK	1.8K	1.7K	1.6FK	K(1.5)SF	K(1.5)SF	(1.5)SK	1.6K	(1.6)SK	(1.6)SK	1.7FK	1.7K	1.8	1.8	(1.7)S	(1.7)S	1.7	1.9F
6	1.8F	1.8F	1.9F	(1.8)SF	(1.7)SF	1.8	2.0	1.8F	(2.0)J	1.9	(1.7)P	1.7	1.7	1.7	1.8	1.7	1.8	1.9	1.8	1.8	1.8	(1.7)JS	C	C
7	C	C	C	C	C	C	C	(1.9)JK	2.0K	1.8K	1.7K	1.6K	1.6K	1.6K	1.6K	1.8K	1.8K	1.8K	1.9K	1.8	(1.7)S	1.8F	1.8F	1.8F
8	(1.7)SF	1.8F	(1.8)SF	1.7	1.7	2.0	(2.0)S	2.0	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	(1.8)JS	(1.8)S	(1.8)S
9	(1.7)S	1.7	1.7	1.8	(1.8)S	(1.9)S	2.0	2.2	(2.0)J	(1.9)H	1.9Y	1.9	(1.9)J	1.8	1.8	1.8	(1.8)S	(1.8)S	(1.9)S	(1.9)S	(1.9)S	(1.9)JS	(1.8)S	(1.7)S
10	1.7	1.7	1.7	(1.7)JS	1.7	1.9F	2.1	2.0	(2.0)JS	(1.8)J	1.8	1.8	1.8	1.8	1.8	2.0	(1.8)J	1.9	(1.8)S	(1.8)S	(1.8)SF	(1.8)S	(1.7)S	(1.7)S
11	(1.7)J	(1.7)JS	(1.7)P	1.8	(1.7)JS	1.9	2.0	(1.9)H	(1.7)S	C	(1.8)SF	(1.8)SF	(1.8)SF	1.8	1.7	1.7	(1.8)JS	1.8	1.8F	(1.9)S	1.8	(1.8)SF	1.8F	1.7F
12	1.7F	(1.7)SF	1.8F	1.8F	1.8F	1.9F	2.2	2.1	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.8	1.9	(1.9)S	2.0	(1.9)S	(1.9)S	(1.8)SF	1.7F	1.6F
13	1.7F	1.7	1.6	(1.6)S	1.8	1.9	(2.0)V	2.0	2.0	R	1.5	1.7V	1.8Z	1.7	1.8	(1.8)JS	(1.7)J	(1.8)S	(1.8)S	1.8	(1.9)S	(1.8)SJ	(1.8)S	(1.7)S
14	1.8	(1.6)JS	1.7	(1.8)JS	1.9	(2.0)S	2.0	(2.3)S	1.6	1.7	C	2.0	1.8	1.8	1.8	1.8	1.7	1.8	(1.8)S	(2.0)JS	1.9	(1.9)JS	1.8	(1.7)JS
15	(1.6)S	(1.8)JS	(1.9)S	(1.8)S	(1.7)S	(1.9)JS	(2.0)FJ	2.1F	(2.0)S	(2.1)S	2.2	1.9	1.9	1.7	1.8	1.9	1.8	2.0	1.9	(2.0)S	(2.0)S	(1.9)S	(1.7)S	(1.7)S
16	(1.8)JS	1.8	1.9	(1.8)S	(1.8)JS	(1.9)S	2.1	2.0	1.9	1.9	(1.6)S	(1.8)S	(1.8)S	(1.8)S	(1.8)JS	1.9	1.9	(1.9)S	1.9F	(1.9)S	(1.9)SF	(2.0)SF	(1.9)SF	(1.8)SF
17	(1.8)SF	(1.8)SF	1.9F	1.8F	1.7	A	(1.9)JS	2.0	1.9	(2.1)S	(1.8)S	(1.8)S	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	(1.9)S	(1.9)S	1.9	(1.8)S
18	1.8	1.8F	1.9	1.8	1.9	1.9	2.2	2.0	2.2H	N	1.9V	1.9	1.9	1.9	1.9	(1.9)JS	1.9	1.9	(1.9)S	(1.9)S	(2.0)S	(1.9)S	(1.9)S	1.9
19	1.8	(1.9)JS	1.8	(1.8)S	1.9	2.1	2.3	2.1	2.0	2.1	2.0	2.0	(1.9)JS	1.9	(1.9)JS	1.9	1.9	1.9	(2.0)S	(2.0)S	(1.9)JS	(1.9)JS	(1.9)S	(1.8)S
20	1.8	1.8	1.8	1.8F	1.9	2.0	2.2	N	2.1	2.0	1.9	1.8V	1.8	1.7	1.8	1.8H	*1.8	*(1.9)S	*(1.9)S	*(1.9)S	*(1.8)S	*(1.8)S	*(1.8)S	1.8
21	(1.8)S	2.1	1.8	1.9	1.7	(1.7)S	2.0	1.9	A	1.8	(1.9)S	(1.8)H	1.7	1.8	1.9	1.8	1.9	(1.9)S	1.9	(1.9)S	(1.8)S	(1.9)S	1.9	(1.8)S
22	1.8	1.7	1.8	1.8	1.8	2.1	(2.0)S	C	2.0	2.0	A	A	A	1.8	1.7	1.8	1.7	(1.9)S	1.9	(1.8)S	(1.8)S	(1.8)S	1.7K	(1.8)SK
23	1.8K	(1.8)SK	(1.7)SK	1.8K	1.8K	(1.9)SK	(1.9)SK	1.6K	(1.5)SK	BK	(1.5)SK	1.5K	(1.5)SK	(1.6)SK	1.4K	(1.6)SK	1.6K	1.7K	1.7K	K(1.9)JS	1.9K	(1.7)SK	K(1.8)JS	1.7K
24	1.7FK	K(1.7)SF	K(1.8)SF	K(1.8)SF	K(1.8)SF	2.1	(2.2)S	(1.9)S	1.8	(1.7)S	1.7	1.8	1.8	1.9	1.8	1.8	1.8	1.9	(1.9)S	(1.9)S	1.9	1.9	1.8	(1.9)S
25	(1.8)S	(1.8)S	(1.8)S	(1.8)S	(1.7)S	(1.9)S	(1.9)S	2.0	2.0	1.8H	1.7	1.8	(1.7)S	(1.8)S	1.8	(1.8)S	1.9	(1.8)S	S	(1.9)S	(1.8)S	(1.8)SJ	(1.8)S	1.8
26	(1.7)S	(1.8)S	(1.8)S	1.8F	1.8	(1.9)S	2.1	N	1.8	2.0	1.9	1.8	1.8	1.9	2.0	*1.9	*1.9	*1.9	*1.9	*(2.0)S	*(1.9)SP	*(1.8)SP	*(1.9)SP	*1.7
27	1.7	1.8	(2.0)S	1.8	1.7	1.8	2.0	2.0	2.0	2.0H	1.7H	1.7	1.8	1.6	1.8	1.8K	*1.7K	1.7K	(1.4)SK	K(1.8)JS	1.8FK	K(1.8)SV	K*(1.4)SF	K(1.5)SF
28	K(1.5)SF*	K*(1.6)SF	K(1.5)SF	K(1.6)JF	1.8FK	1.9FK	GK	*GK	*1.4K	*GK	*1.5K	*GK	*1.4K	*1.4K	*1.5K	1.6K	1.7K	1.8K	1.8K	(1.9)SK	(2.0)SK	K(1.9)S	K(1.7)SF	1.6FK
29	1.6FK	1.7FK	1.8FK	1.8FK	1.9K	1.9K	(2.0)FK	(1.7)FK	1.5K	1.4FK	GK	GK	GK	(1.5)HK	1.5K	1.6K	1.8K	1.8K	(1.9)SK	(1.9)SK	1.8K	(1.8)SK	K(1.9)SF	K(1.7)SF
30	K(1.8)SF	K(1.8)SF	1.7FK	K(1.7)SF	1.9FK	(2.0)SK	(1.7)HK	(1.7)HK	1.9K	(1.7)HK	(1.8)HK	(1.5)H	1.7F	1.9	1.8	1.8	(1.9)S	(1.9)JS	(2.0)S	(2.0)S	(1.9)S	(1.8)S	(1.9)S	1.9F
31	(1.9)SF	2.0F	1.9F	1.9F	2.0F	(2.1)SF	2.1	2.1	2.0	(2.1)J	1.9	1.9	1.8	1.9	1.9	1.8	1.9	2.0	(1.9)S	(2.0)S	(2.0)S	(2.0)S	1.8	(1.8)S
Median	1.8	1.8	1.8	(1.8)	1.8	1.9	2.0	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	(1.9)	(1.9)	(1.9)	(1.8)	(1.8)	(1.8)
Count	30	30	30	30	29	28	30	28	30	27	29	30	30	31	31	31	31	31	29	31	30	30	29	30

* SWEEPTIME = 25 MIN

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 42

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

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ____ (Unit), May (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. – By. H.

Calculated by: By. H. – B.E.B., McC. – H.C.

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	2.8F	(2.8)SF	2.8F	(2.9)F	2.8F	(2.9)SF	(2.9)FZ	(3.2)S	(2.9)JV	(2.7)P	(2.6)V	2.8	(2.6)S	2.6	2.8	2.7	(2.8)S	(2.9)S	(2.9)S	(2.9)P	(2.7)S	(2.7)S	(2.6)S	(2.6)JS
2	(2.7)S	(2.7)S	2.7	(2.8)S	C	C	3.1	2.8	(3.0)S	2.8	2.8	2.6	(2.6)S	(2.6)S	2.6	2.6	(2.7)S	(2.8)S	(2.9)S	(2.7)SP	K(2.7)SP	(2.9)SK	K(2.6)PS	K(2.3)PS
3	K(2.3)SP	(2.5)SK	(2.6)PK	K(2.6)SV	K(2.5)SP	2.7K	2.7K	2.3FK	2.5FK	2.4FK	2.3K	2.1K	2.2K	2.3K	(2.3)SK	K(2.4)JS	(2.5)SK	2.6K	(2.7)SK	(2.8)SK	(2.7)SK	(2.7)S	(2.7)JS	(2.7)JS
4	2.7	2.5	(2.8)SF	(3.0)F	2.8F	2.7F	3.0F	2.9F	3.0F	(2.7)SF	(2.9)ZK	2.5K	2.4K	2.5K	(2.5)SK	2.6K	2.6K	2.6K	CK	(2.6)SK	CK	C	C	(2.7)S
5	(2.7)S	2.7	(2.6)S	(2.5)JS	(2.6)JS	2.9	3.0FK	2.8K	2.6K	2.5FK	K(2.3)SF	K(2.3)SF	(2.3)SK	2.4K	(2.5)SK	(2.5)SK	2.5FK	2.6K	2.7	2.8	(2.7)S	(2.6)S	2.7	2.9F
6	2.8F	2.8F	2.9F	(2.7)SF	(2.6)SF	2.7	2.9	2.8F	(3.0)J	3.0	(2.6)P	2.7	2.5	2.6	2.7	2.6	2.8	2.8	2.8	2.8	2.7	(2.6)JS	C	C
7	C	C	C	C	C	C	C	(2.9)JK	3.0K	2.7K	2.6K	2.4K	2.4K	2.5K	2.5K	2.7K	2.7K	2.7K	2.8K	2.8	(2.6)S	2.7F	2.7F	2.7F
8	(2.7)SF	2.7F	(2.8)SF	2.7	2.6	2.9	(2.9)S	3.0	3.1	2.9	2.8	2.8	2.8	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	(2.7)JS	(2.7)S	(2.7)S
9	(2.6)S	2.5	2.7	2.8	(2.8)S	(2.9)S	3.1	3.2	(3.0)J	(2.9)H	2.8V	2.8	(2.8)J	2.8	2.8	2.8	(2.8)S	(2.8)S	(2.8)S	(2.9)S	(2.8)S	(2.8)JS	(2.7)S	(2.6)S
10	2.5	2.5	2.7	(2.6)JS	2.5	2.8F	3.1	2.9	(2.9)JS	(2.8)J	2.7	2.7	2.8	2.8	2.8	3.0	(2.8)J	2.8	(2.8)S	(2.8)S	(2.8)JS	(2.8)S	(2.6)S	(2.6)S
11	(2.7)J	(2.7)JS	(2.7)P	2.8	(2.7)JS	2.9	2.9	(2.9)H	(2.7)S	C	(2.7)SF	(2.7)SF	(2.7)SF	2.7	2.6	2.7	(2.7)JS	2.7	2.8F	(2.8)S	2.7	(2.8)SF	2.7F	2.6F
12	2.6F	(2.6)SF	2.7F	2.7F	2.8F	2.9F	3.2	3.1	2.9	2.9	2.8	2.8	2.7	2.7	2.6	2.7	2.8	(2.8)S	2.9	(2.8)S	(2.8)S	(2.8)SF	2.6F	2.5F
13	2.6F	2.6	2.5	(2.5)S	2.7	2.8	(2.9)V	3.0	3.1	R	2.4	2.6V	2.8Z	2.7	2.8	(2.8)JS	(2.7)J	(2.8)S	(2.8)S	2.8	(2.9)S	(2.8)SJ	(2.7)S	(2.6)S
14	2.7	(2.5)JS	2.6	(2.7)JS	2.9	(3.0)S	3.1	(3.3)S	2.5	2.6	C	3.0	2.7	2.7	2.7	2.7	2.6	2.7	(2.8)S	(2.9)JS	2.9	(2.8)JS	2.7	(2.6)JS
15	(2.5)S	(2.7)JS	(2.9)S	(2.8)S	(2.6)S	(3.0)JS	(3.1)JF	3.1F	(3.0)S	(3.1)S	3.3	2.8	2.8	2.7	2.7	2.8	2.8	3.0	2.9	(3.0)S	(2.9)S	(2.8)S	(2.7)S	(2.6)S
16	(2.7)JS	2.7	2.8	(2.7)S	(2.7)JS	(2.9)S	3.1	3.0	2.8	2.8	(2.4)S	(2.8)S	(2.7)S	(2.7)S	(2.7)JS	2.8	2.8	(2.9)S	2.9F	(2.9)S	(2.9)SF	(3.0)SF	(2.8)SF	(2.8)SF
17	(2.7)SF	(2.7)SF	2.9F	2.8F	2.6	A	(2.8)SJ	3.0	2.9	(3.0)S	(2.8)S	(2.8)S	2.9	2.8	2.7	2.8	2.9	2.9	2.8	2.9	(2.8)S	(2.9)S	2.8	(2.8)S
18	2.8	2.8F	2.8	2.8	2.8	2.9	3.3	3.0	3.1H	N	2.8V	2.8	2.8	2.8	2.9	(2.9)JS	2.8	2.9	(2.9)S	(2.9)S	(3.1)S	(2.8)S	(2.8)S	2.8
19	2.8	(2.9)JS	2.8	(2.8)S	2.9	3.1	3.3	3.1	3.0	3.1	3.0	2.9	(2.8)JS	2.9	(2.8)JS	2.9	2.9	3.0	(3.0)S	(3.0)S	(2.9)JS	(2.9)JS	(2.8)S	(2.7)S
20	2.7	2.7	2.7	2.8F	2.9	3.0	3.3	N	3.1	2.9	2.9	2.7V	2.7	2.7	2.8	2.7	*2.8	*(2.9)S	*(2.9)S	*(2.9)S	*(2.8)S	*(2.7)S	*(2.8)S	2.8
21	(2.8)S	3.1	2.7	2.8	2.6	(2.6)S	3.0	2.9	A	2.7	(2.9)S	(2.7)H	2.7	2.7	2.8	2.8	2.8	(2.9)S	3.0	(2.8)S	(2.8)S	(2.9)S	2.9	(2.8)S
22	2.7	2.6	2.7	2.8	2.7	3.2	(3.0)S	C	3.1	3.0	A	A	A	2.8	2.6	2.8	2.7	(2.8)S	2.8	(2.7)S	(2.7)S	(2.7)S	2.5K	(2.6)SK
23	2.8K	(2.8)SK	(2.7)SK	2.7K	2.7K	(2.9)SK	(2.9)SK	2.4K	(2.3)SK	BK	(2.3)SK	2.4K	(2.3)SK	(2.4)SK	2.2K	(2.5)SK	2.4K	2.6K	2.7K	K(2.9)JS	2.8K	(2.6)SK	K(2.7)JS	2.6K
24	2.5FK	K(2.6)SF	K(2.7)SF	K(2.8)SF	K(2.8)SF	3.1	(3.2)S	(2.9)S	2.8	(2.6)S	2.7	2.8	2.7	2.8	2.7	2.8	2.7	2.8	(2.9)S	(2.9)S	2.9	2.8	2.8	(2.8)S
25	(2.8)S	(2.8)S	(2.7)S	(2.7)S	(2.6)S	(3.0)S	(2.9)S	3.0	3.0	2.7H	2.7	2.7	(2.6)S	(2.7)S	2.7	(2.8)S	2.9	(2.8)S	S	(2.9)S	(2.9)S	(2.7)JS	(2.7)S	2.7
26	(2.6)S	(2.7)S	(2.8)S	2.8F	2.7	(3.0)S	3.1	N	2.8	3.0	2.9	2.8	2.8	2.8	2.9	*2.8	*2.8	*2.8	*3.0	*(3.0)S	*(2.8)SP	*(2.8)SP	*(2.8)SP	*2.6
27	2.6	2.8	(3.0)S	2.7	2.6	2.7	3.0	3.0	3.0	3.0H	2.6H	2.6	2.8	2.5	2.7	2.6K	*2.5K	2.6K	(2.5)SK	K(2.7)JS	2.8FK	K(2.8)SV	K*(2.3)SF	K(2.3)SF
28	K*(2.3)SF	K*(2.4)SF	K*(2.3)SF	K(2.6)FJ	2.7FK	2.9FK	GK	*GK	*2.1K	*GK	*2.3K	*GK	*2.0K	*2.1K	*2.2K	2.5K	2.6K	2.7K	2.8K	(2.9)SK	(3.0)SK	K(2.8)SF	K(2.6)SF	2.5FK
29	2.5FK	2.6FK	2.7FK	2.8FK	2.8K	3.0K	(2.9)FK	(2.6)FK	2.4K	2.1FK	GK	GK	G	(2.4)HK	2.3K	2.4K	2.7K	2.8K	(2.9)SK	(2.8)SK	2.7K	(2.7)SK	K(2.8)SF	K(2.6)SF
30	K(2.8)SF	K(2.7)SF	2.7FK	K(2.6)SF	2.8FK	(2.9)SK	(2.6)HK	(2.7)HK	3.0K	(2.6)HK	(2.8)HK	(2.3)H	2.6F	2.8	2.8	2.7	(2.8)S	(2.9)JS	(3.0)S	(2.9)S	(2.8)S	(2.8)S	(2.8)S	2.9F
31	(2.9)SF	3.0F	2.9F	2.9F	2.9F	(3.1)SF	3.1	3.1	3.0	(3.1)J	2.9	2.9	2.7	2.8	2.9	2.8	2.8	2.9	(2.9)S	(2.9)S	(2.9)S	(3.0)S	2.7	(2.8)S
Median	2.7	2.7	2.7	(2.8)	2.7	2.9	3.0	3.0	3.0	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	(2.8)	(2.9)	(2.8)	(2.8)	(2.7)	(2.6)
Count	30	30	30	30	29	28	30	28	30	27	29	30	30	31	31	31	31	31	29	31	30	30	29	30

* SWEEPTIME = .25 MIN.

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.

IONOSPHERIC DATA

Form adopted June 1946

(M3000) F1 (Characteristic), ____ (Unit), May (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. – By.H.

Calculated by: By. H. – B.E.B., Mc C. – H.C.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	L	(3.2)P	(3.3)P	(3.1)P	L	(3.2)P	L	L	L	L	Q					
2							L	Q	L	L	(3.6)S	L	(3.1)P	(3.4)P	(3.4)P	L	L	L	Q					
3							QK	3.2K	3.4K	3.7K	(3.7)PK	3.8K	(3.5)FK	(3.6)PK	3.6K	3.6FK	(3.3)PK	LK	LK					
4							Q	L	(3.5)P	3.6	3.6K	3.7K	3.5K	3.6K	3.4K	3.3K	LK	LK	CK					
5							QK	LK	3.2K	3.7K	3.7K	3.8K	3.7K	BK	3.5K	BK	(3.3)FK	LK	L					
6							Q	L	3.4	B	3.2	3.5	3.3	3.4	3.4	3.4	(3.3)P	L	L					
7							CK	LK	4.0K	3.5K	AK	AK	AK	AK	3.6K	3.5K	3.4K	3.3K	LK					
8							Q	L	L	3.4	3.4	L	3.4	3.5	3.2	(3.4)P	L	L	L					
9							Q	L	(3.6)P	L	Q	(3.5)P	(3.4)P	L	L	L	(3.4)P	L	Q					
10							L	L	L	3.5	3.5	3.4	3.5	3.6	(3.6)P	(3.5)P	L	L	L					
11							L	3.4	3.4	C	(3.8)P	(3.5)P	(3.4)P	3.5	3.3	3.5V	3.3	3.5	L					
12							L	L	L	3.5	3.4	3.2	(3.6)P	3.6	3.4	3.4	(3.5)P	L	Q					
13							L	L	L	(3.6)P	(3.3)H	3.3	3.5	3.4	3.3	3.4	3.2	L	L					
14							L	L	3.4	3.5	C	3.8	A	3.6	3.5	3.4	(3.3)P	L	L					
15							L	L	L	L	L	L	(3.5)H	3.4	3.5	(3.3)P	(3.3)P	L	L					
16							L	L	3.4	(3.6)S	(3.5)S	3.7	(3.6)S	3.7	(3.5)P	(3.4)P	(3.4)P	(3.3)P	A					
17							L	(3.4)P	3.6	(3.7)F	L	(3.8)H	3.6	3.6	3.7	3.4	3.5	L	Q					
18							L	L	L	L	(3.7)F	3.3	4.0	(3.4)P	(3.7)P	3.6	L	L	Q					
19							Q	L	L	L	3.4	(3.5)P	(3.6)H	N	3.5	L	3.7	L	L					
20							Q	N	(3.5)P	(3.6)P	(3.9)P	(3.7)P	(3.6)P	(3.3)P	B	3.8	*L	*L	*L					
21							Q	(3.4)P	A	3.7	(3.8)P	3.8	3.7H	3.5	3.5	3.6	3.3	L	L					
22							Q	C	L	B	A	A	A	(3.4)P	(3.4)P	3.6	3.4	L	L					
23							QK	3.4K	(3.6)SK	BK	NK	3.6K	NK	(3.8)SK	(3.8)SK	SK	(3.7)PK	3.6K	LK					
24							Q	Q	3.9	3.8	4.0	3.6	3.5	3.5	3.5	3.5	(3.4)P	L	L					
25							L	L	(3.5)P	3.6	3.8	3.5	3.5	(3.7)S	(3.8)H	(3.6)P	L	L	Q					
26							L	L	L	(3.3)P	(3.6)P	N	(3.7)H	(3.8)H	3.3	*3.6	*L	*L	*L					
27							L	(3.5)P	3.5	(3.8)P	(3.5)F	3.4	3.4	(3.4)P	3.6	3.6K	*3.3K	3.3K	QK					
28						4.5K	3.0K	*3.3K	*3.4K	*3.4K	*3.6K	*3.6K	*3.7K	*3.7K	*3.6K	3.4HK	3.3K	3.2HK	LK					
29							QK	3.3K	3.9K	3.8K	(3.6)AK	3.8FK	3.6HK	3.8K	3.8K	3.6K	3.5K	3.6K	3.4K					
30							3.3K	(3.8)S	3.7K	3.7HK	3.6K	3.8	3.5	3.6	3.6H	3.4	3.3	L	L					
31							L	L	3.5	L	3.9	3.7	3.4	3.5	3.4	(3.5)H	(3.5)S	L	A					
Median						—	—	3.4	3.5	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.3	—					
Count						1	2	9	19	21	24	25	26	27	28	25	22	7	1					

* SWEEPTIME = 25 MIN.

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

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

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. – By. H

Calculated by: By. H. – B.E.B, Mc C. – H.C.

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

* SWEEPTIME = .25 MIN.

Table 45

Ionospheric Storminess at Washington, D. C.

May 1950

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	1	3			1	2
2	2	3			2	3
3	4	6	0100	----	4	4
4	2	4	----	0200	3	3
			1500	----		
5	2	5	----	0200	3	2
			1100	2300		
6	2	2			3	2
7	***	4	##	2400	3	2
8	2	1			2	2
9	2	2			1	1
10	2	2			2	2
11	2	3			3	3
12	3	1			2	1
13	2	3			3	3
14	2	3			3	3
15	2	2			4	3
16	2	3			3	2
17	2	2			2	1
18	2	3			1	1
19	0	3			1	1
20	1	3			2	2
21	1	2			2	2
22	2	2			2	4
23	4	5	0300	----	4	4
24	4	2	----	1000	3	2
25	1	2			2	3
26	2	3			4	3
27	1	4	2000	----	3	5
28	7	6	----	----	6	3
29	4	5	----	----	4	3
30	4	3	----	1600	4	3
31	1	2			2	2

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

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

***No readable record. Refer to table 34 for detailed explanation.

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

----Dashes indicate continuing storm.

Table 46

Sudden Ionosphere Disturbances Observed at Washington, D. C.

May 1950

1950 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum #	Other phenomena
May 1	1830	###	Ohio, D. C.	###	Solar flare* 1827
					Solar flare** 1850
3	1710	1730	Ohio	0.3	Solar flare* 1705
4	1412	1435	Ohio, D. C.	0.2	
4	2203	2250	Ohio, D. C.	0.2	
5	1722	1845	Ohio, D. C., England, New Brunswick	0.05	Solar flare* 1720
5	1937	2045	Ohio, D. C., England, New Brunswick	0.0	Solar flare* 1935
6	1330	1455	Ohio, D. C., England	0.0	Solar flare* 1400
					Solar flare** 1330
					Solar flare*** 1340
8	2035	2120	Ohio, D. C. New Brunswick	0.2	Solar flare* 2035
10	1036	1110	England	0.01	
19	1117	1230	England	0.03	
19	1618	1650	Ohio, D. C., England	0.05	
19	1920	1940	Ohio, D. C., England, New Brunswick	0.1	
19	1955	2020	Ohio, D. C., England, New Brunswick	0.05	Terr.mag.pulse## 1951-2015
19	2100	2135	Ohio, D. C., England	0.0	Terr.mag.pulse## 2055-2115
20	1805	####	Ohio, D. C., England	0.02	Solar flare* 1805

1950 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum #	Other phenomena
May 20	1830	2000	Ohio, D. C., England	0.0	Solar flare** 1816
21	1742	1820	Ohio, D. C.	0.1	Solar flare* 1745
22	0940	1005	England	0.01	Solar flare**** 0937
22	1402	1420	Ohio, D. C., England	0.0	Solar flare* 1350
					Solar flare** 1357
22	1600	1625	Ohio, D. C., England, New Brunswick	0.0	Solar flare* 1600
22	1649	1750	Ohio, D. C., England, New Brunswick	0.0	Solar flare* 1640
					Solar flare** 1650
22	2040	2110	Ohio, D. C., England	0.0	Solar flare* 2040
22	2215	2245	Ohio, D. C., England	0.01	Solar flare* 2200
23	1228	1250	Ohio, D. C., England	0.05	
23	1359	1435	Ohio, D. C., England	0.03	Solar flare* 1355
23	2159	2220	Ohio, D. C., England	0.3	Solar flare* 2155
24	1640	1710	Ohio, D. C., England, New Brunswick	0.0	
24	2103	2120	Ohio, D. C.	0.1	
26	1450	1530	Ohio, D.C., England	0.03	
26	2200	2320	Ohio, D. C.	0.1	

#Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station GLH, 13525 kilocycles, received in New York, 5340 kilometers distant, was used for the SID on May 10; on May 19 at 1117; and on May 22 at 0940.

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

###Values not given because of insufficient data.

####Incomplete recovery of SID.

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

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

***Time of observation at Wendelstein Observatory, Germany.

****Time of observation at Prague Observatory, Czechoslovakia.

Table 47

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief, Cable and Wireless, Ltd., as Observed in England

1950 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters	Other phenomena
April 26	1058	1115	Brentwood	Bahrein I., Belgian Congo, Bulgaria, Canary Is., Greece. India, Iran, Kenya, Malta, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, Zanzibar	
27	0937	1005	Brentwood	Belgian Congo, Bulgaria, Canary Is., Greece, India, Israel, Kenya, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, U.S.S.R., Yugoslavia, Zanzibar	
27	0940	1025	Somerton	Argentina, Australia, Ceylon, India, Union of S. Africa	
May 3	0935	1010	Brentwood	Belgian Congo, Canary Is., French Equatorial Africa, Greece, India, Iran, Kenya, Madagascar, Malta, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, U.S.S.R., Yugoslavia, Zanzibar	Solar flare*** 0950 Solar flare*** 0956
3	0940	1045	Somerton	Aden, Argentina, Australia, Brazil, Canada, Ceylon, China, Gold Coast, India, New York, Union of S. Africa	Solar flare** 0950 Solar flare** 0956
5	0920	1025	Brentwood	Belgian Congo, Bulgaria, Canary Is., Greece, Iran, Kenya, Madagascar, Malta, Palestine, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, Turkey, U.S.S.R., Zanzibar	
5	0955	1015	Somerton	Aden, Argentina, Brazil, Ceylon, China, Egypt, Gold Coast, India, Union of S. Africa	
6	0940	1010	Brentwood	Greece, Iran, Malta, Spain, Switzerland, Syria, Trans-Jordan, Turkey	
6	1335	1400	Brentwood	Bahrein I., Barbados, Belgian Congo, Canary Is., Chile, Colombia, Eritrea, Greece, Iran, Malta, Palestine, Portugal, Spain, Switzerland, Thailand, Turkey, Uruguay, U.S.S.R., Venezuela, Yugoslavia, Zanzibar	Solar flare* 1330
6	·1337	1355	Somerton	Argentina, Australia, Brazil, Canada, Ceylon, China, Gold Coast, India, New York, Union of S. Africa	Solar flare* 1330
May 10	0945	1005	Brentwood	Belgian Congo, Bulgaria, Canary Is., Madagascar, Palestine, Southern Rhodesia, Switzerland, Turkey	
10	1042	1105	Brentwood	Austria, Bahrein I., Barbados, Belgian Congo, Bulgaria, Canary Is., Greece, India, Iran, Kenya, Palestine, Portugal Southern Rhodesia, Spain, Switzerland, Trans-Jordan, Turkey, U.S.S.R., Yugoslavia, Zanzibar	
19	0945	1005	Brentwood	Spain, Switzerland, Turkey, Zanzibar	
19	1120	1200	Brentwood	Austria, Bahrein I., Chile, Colombia, Greece, Iran, Kenya, Madagascar, Malta, Palestine, Spain, Switzerland, Syria, Turkey, Uruguay, Yugoslavia	
19	1130	1200	Somerton	Aden, Argentina, Brazil, Ceylon, China, Gold Coast, India, Union of S. Africa	
21	0925	0950	Brentwood	Bulgaria, Spain, Switzerland, Syria, Trans-Jordan	
22	0940	1010	Brentwood	Austria, Belgian Congo, Canary Is., Eritrea, Greece, India, Iran, Kenya, Malta, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Thailand, Trans-Jordan, Turkey, U.S.S.R., Zanzibar	Solar flare***** 0937
22	0940	0955	Somerton	Australia, Brazil, Ceylon, China, Egypt, Gold Coast, India, Malay States, New York, Union of S. Africa	Solar flare***** 0937
22	1139	1155	Brentwood	Chile, India, Iran, Portugal, Spain, Switzerland, Syria, Thailand, Yugoslavia	
22	1402	1415	Brentwood	Barbados, Belgian Congo, Canary Is., Chile, Eritrea, Greece, . Iran, Malta, New York, Portugal, Southern Rhodesia, Spain, Switzerland, Thailand, Uruguay, U.S.S.R., Venezuela, Yugoslavia	Solar flare* 1357 Solar flare**** 1350
22	1402	1410	Somerton	Argentina, Brazil, Canada, China, New York	Solar flare* 1357 Solar flare**** 1350

Time of observation:

*Mc-Math-Hulbert Observatory, Pontiac, Michigan.
**Meudon Observatory, France.
***Stockholm Observatory, Sweden.
****High Altitude Observatory, Boulder, Colorado.
*****Prague Observatory, Czechoslovakia.

Table 48

Sudden Ionosphere Disturbances Reported by International Telephone and Telegraph Corporation, as Observed at Platanos, Argentina

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
April 12	1452	1545	Belgium, Bolivia, Brazil, Chile, Colombia, Cuba, England, France, Germany, Netherlands, New York, Peru, Portugal, Switzerland, Venezuela	Solar flare* 1457
12	1840	1930	Bolivia, Cuba, England, France, Italy, Netherlands, New York, Peru, Spain, Switzerland	Solar flare* 1853
14	1254	1315	Belgium, Bolivia, Brazil, Chile, Cuba, Denmark, England, Germany, Italy, Netherlands, New York, Peru, Switzerland, Venezuela	

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

Table 49

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

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
May 6	1340	1500	Argentina, Canada, England, Italy, Morocco, Panama, Union of S. Africa	Solar flare* 1330
22	1400	1420	Argentina Canada, England, Italy, Morocco, Panama	Solar flare* 1350 Solar flare** 1357

*Time of observation at the High Altitude Observatory, Boulder, Colorado.
**Time of observation at McMath-Hulbert Observatory, Pontiac, Michigan.

Table 47

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief, Cable and Wirelsss, Ltd., as Observed in England

1950 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters	Other phenomena
April 26	1058	1115	Brentwood	Bahrein I., Belgian Oongo, Bulgaria, Canary Is., Greece, India, Iran, Kenya, Malta, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, Zanzibar	
27	0937	1005	Brentwood	Belgian Congo, Bulgaria, Canary Is., Greece, India, Israel, Kenya, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, U.S.S.R., Yugoslavia, Zanzibar	
27	0940	1025	Somerton	Argentina, Australia, Ceylon, India, Union of S. Africa	
May 3	0935	1010	Brentwood	Belgian Congo, Canary Is., French Equatorial Africa, Greece, India, Iran, Kenya, Madagascar, Malta, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, U.S.S.R., Yugoslavia, Zanzibar	Solar flare*** 0950 Solar flare*** 0956
3	0940	1045	Somerton	Aden, Argentina, Australia, Brazil, Canada, Ceylon, China, Gold Coast, India, New York, Union of S. Africa	Solar flare** 0950 Solar flare** 0956
5	0920	1025	Brentwood	Belgian Oongo, Bulgaria, Canary Is., Greece, Iran, Kenya, Madagascar, Malta, Palestine, Southern Rhodesia, Spain, Switzerland, Syria, Trans-Jordan, Turkey, U,S,S.R., Zanzibar	
5	0955	1015	Somerton	Aden, Argentina, Brazil, Ceylon, China, Egypt, Gold Coast, India, Union of S. Africa	
6	0940	1010	Brentwood	Greece, Iran, Malta, Spain, Switzerland, Syria, Trans-Jordan, Turkey	
6	1335	1400	Brentwood	Bahrein I., Barbados, Belgian Oongo, Canary Is., Chile, Colombia, Eritrea, Greeoe, Iran, Malta, Palestine, Portugal, Spain, Switzerland, Thailand, Turkey, Uruguay, U.S.S.R., Venezuela, Yugoslavia, Zanzibar	Solar flare* 1330
6	·1337	1355	Somerton	Argentina, Australia, Brazil, Canada, Ceylon, China, Gold Coast, India, New York, Union of S. Afrioa	Solar flare* 1330
May 10	0945	1005	Brentwood	Belgian Congo, Bulgaria, Canary Is., Madagascar, Palestine, Southern Rhodesia, Switzerland, Turkey	
10	1042	1105	Brentwood	Austria, Bahrein I., Barbadoe, Belgian Congo, Bulgaria, Canary Is., Greece, India, Iran, Kenya, Paleetine, Portugal Southern Rhodesia, Spain, Switzerland, Trans-Jordan, Turkey, U,S,S.R., Yugoslavia, Zanzibar	
19	0945	1005	Brentwood	Spain, Switzerland, Turkey, Zanzibar	
19	1120	1200	Brentwood	Austria, Bahrein I., Chile, Colombia, Greece, Iran, Kenya, Madagascar, Malta, Palestine, Spain, Switzerland, Syria, Turkey, Uruguay, Yugoslavia	
19	1130	1200	Somerton	Aden, Argentina, Brazil, Ceylon, China, Gold Coast, India, Union of S. Africa	
21	0925	0950	Brentwood	Bulgaria, Spain, Switzerland, Syria, Trans-Jordan	
22	0940	1010	Brentwood	Austria, Belgian Congo, Canary Is., Eritrea, Greece, India, Iran, Kenya, Malta, Palestine, Portugal, Southern Rhodeeia, Spain, Switzerland, Syria, Thailand, Trans-Jordan, Turkey, U.S.S,R., Zanzibar	Solar flare***** 0937
22	0940	0955	Somerton	Australia, Brazil, Ceylon, China, Egypt, Gold Coast, India, Malay States, New York, Union of S. Africa	Solar flare***** 0937
22	1139	1155	Brentwood	Chile, India, Iran, Portugal, Spain, Switzerland, Syria, Thailand, Yugoslavia	
22	1402	1415	Brentwood	Barbados, Belgian Congo, Canary Is., Chile, Eritrea, Greece, Iran, Malta, New York, Portugal, Southern Rhodesia, Spain, Switzerland, Thailand, Uruguay, U.S.S.R., Venezuela, Yugoslavia	Solar flare* 1357 Solar flare**** 1350
22	1402	1410	Somerton	Argentina, Brazil, Oanada, China, New York	Solar flare* 1357 Solar flare**** 1350

Time of observation:

*Mc-Math-Hulbert Observatory, Pontiac, Michigan.
**Meudon Observatory, France.
***Stockholm Observatory, Sweden.
****High Altitude Observatory, Boulder, Colorado.
*****Prague Observatory, Czechoslovakia.

Table 48

Sudden Ionosphere Disturbances Reported by International Telephone and Telegraph Corporation, as Observed at Platanos, Argentina

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
April 12	1452	1545	Belgium, Bolivia, Brazil, Chile, Colombia, Cuba, England, France, Germany, Netherlands, New York, Peru, Portugal, Switzerland, Venezuela	Solar flare* 1457
12	1840	1930	Bolivia, Cuba, England, France, Italy, Netherlands, New York, Peru, Spain, Switzerland	Solar flare* 1853
14	1254	1315	Belgium, Bolivia, Brazil, Chile, Cuba, Denmark, England, Germany, Italy, Netherlands, New York, Peru, Switzerland, Venezuela	

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

Table 49

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

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
May 6	1340	1500	Argentina, Canada, England, Italy, Morocco, Panama, Union of S. Africa	Solar flare* 1330
22	1400	1420	Argentina Canada, England, Italy, Morocco, Panama	Solar flare* 1350 Solar flare** 1357

*Time of observation at the High Altitude Observatory, Boulder, Colorado.
**Time of observation at McMath-Hulbert Observatory, Pontiac, Michigan.

Table 50

Sudden Ionosphere Disturbances Reported by RCA Communications, Inc., as Observed at Point Reyes, California

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
May 5	1945	2020	Australia, China, Hawaii, Japan, New York, New Zealand, Philippine Is.	Solar flare* 1935
20	0015	0520	Australia, China, Hawaii, Japan, Java, Philippine Is.	
22	2215	2245	Australia, China, Chosen, Japan, Philippine Is.	Solar flare* 2215

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

Table 51

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief, Cable and Wireless, Ltd., as Observed in Barbados, B.W.I.

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
April 11	2010	2020	Australia, Jamaica	Terr.mag.pulse* 2004-2030 Solar flare** 2004
12	1500	1530	Canada, Peru	Solar flare** 1457
12	1850	1950	Australia, Jamaica, Peru	Solar flare** 1853
14	1242	1315	England, Jamaica, Trinidad	
14	1337	1350	England, Florida, Jamaica, Trinidad, Windward Is.	Terr.mag.pulse* 1335-1350

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

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

Table 52

Sudden Ionosphere Disturbances Reported by Technical Supervisor,

Mackay Radio and Telegraph Company, Inc., as Observed in New York

1950 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
April				
5	0830	1015	Austria, Brazil, Czechoslovakia, Denmark, England, France, Germany, India, Italy, Morocco	
12	1455	1600	Argentina, Austria, Bermuda Is., Bolivia, Brazil, Chile, Colombia, Cuba, Czechoslovakia, Denmark, Dominican Republic, England, Egypt, France, Germany, Haiti, India, Italy, Morocco, Peru, Salvador, Spain, Uruguay	Solar flare* 1457
12	1850	2000		Solar flare* 1853
14	1250	1355		
15	1300	1345		
16	0820	0910		
28	1300	1400		
30	2130	2230		
May				
4	1658	1706		
6	1340	1410		Solar flare** 1330

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

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

Table 53

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
April 1950					
9	0705	0803	Stuttgart##, Lindau#	0.15	
10	1140	1230	Stuttgart##, Lindau#	0.0	
10	1310	1415	Stuttgart ##, Lindau#	0.1	
11	0803	0820	Stuttgart##, Berlin***	0.2	
11	1235	1245	Stuttgart##, Berlin***	0.4	
12	0948	1035	Stuttgart##, Berlin***, Lindau#	0.3	
12	1222	1240	Stuttgart##, Lindau#	0.3	
12	1335	1348	Stuttgart##, Lindau#	0.3	
12	1455	1545	Stuttgart##, Berlin***, Lindau#	0.2	
13	1105	1145	Stuttgart##, Berlin***, Lindau#	0.1	
14	1235	1320	Stuttgart##, Berlin***, Lindau#	0.1	
14	1320	1420	Stuttgart##, Lindau#	0.2	
15	1255	1315	München**, Lindau#	0.0	Terr.mag.pulse### 1245-1330
16	1220	1230	München**, Lindau#	0.1	
18	1315	1335	München**, Lindau#	0.2	
26	1052	1115	München**, Lindau#	0.2	
27	0942	1058	München**, Lindau#	0.17	

*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.

***Station DAB, 3840 kilocycles, 200 kilometers distant.

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

##Station Stuttgart, 6200 kilocycles, 330 kilometers distant.

###As observed 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 54

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

Day	North Atlantic quality figure, Half day GCT (1)	(2)	CRPL* Warning, Half day GCT (1)	(2)	CRPL** Forecast (J-reports)	North Pacific quality figure, Half day GCT (1)	(2)	Geomagnetic K_{Ch}, Half day GCT (1)	(2)
1	(4)	5	U	W		6	(4)	(4)	(4)
2	(4)	5	W	W		5	5	(4)	3
3	5	5	W	W		6	5	3	3
4	5	5	W	W		7	5	(4)	3
5	(4)	5	U	U		5	(4)	(5)	(4)
6	5	5	W	W		6	5	(4)	3
7	5	5	W	(W)		7	6	3	2
8	6	6				7	7	2	2
9	6	6				7	7	2	2
10	6	6				8	8	2	2
11	7	6				7	7	2	2
12	6	5	U	(U)		8	7	(4)	2
13	7	6				7	7	3	1
14	7	5			X	8	8	2	2
15	7	6			X	7	7	(4)	3
16	6	7			X	8	7	2	2
17	7	6			X	7	6	2	2
18	5	6	U	(U)		7	6	3	3
19	6	6	U			7	6	3	3
20	5	6	U		X	7	7	3	2
21	5	6	U	(W)	X	7	7	1	1
22	7	6				8	7	1	1
23	7	6		W		7	6	3	3
24	(4)	6	W	W		7	5	(5)	3
25	6	6	U			7	6	3	2
26	6	7				8	7	2	1
27	7	7				7	6	0	2
28	6	5				8	6	3	2
29	6	6	W		X	7	5	2	3
30	(4)	(4)	W	W	X	6	5	(5)	3

Score:	Warning N.A.	Warning N.P.	Forecast N.A.	Forecast N.P.
H	11	3	2	0
(M)	0	0	0	0
M	0	0	4	2
G	31	31	40	42
O	18	26	14	16

Scales:

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

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

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

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

Scoring by half day according to following table:

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

*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 forecasts more than eight days in advance of said dates: April 23, 24 and 28.

Table 55

American and Zürich Provisional Relative Sunspot Numbers

May 1950

Date	R_A*	R_Z**	Date	R_A*	R_Z**
1	200	144	17	86	61
2	179	146	18	113	79
3	158	111	19	124	86
4	158	106	20	138	89
5	139	129	21	146	92
6	143	139	22	173	112
7	144	130	23	187	128
8	148	121	24	194	162
9	104	108	25	184	142
10	100	105	26	176	134
11	101	101	27	162	131
12	77	71	28	134	121
13	65	69	29	117	109
14	59	60	30	94	86
15	56	47	31	92	72
16	74	57	Mean:	129.8	104.8

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

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

Table 56a

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																																					
May 1.6	-	-	-	1	2	2	3	2	2	5	11	13	14	12	14	14	14	12	13	13	15	16	20	19	14	9	5	3	2	2	-	1	1	2	-	1	-
2.8	-	-	-	3	3	2	1	2	4	9	10	10	9	9	10	10	11	10	9	11	13	13	11	10	7	6	3	2	1	-	-	-	-	-	-	-	-
3.7	-	-	3	1	1	-	-	1	5	11	10	9	9	10	13	15	18	17	16	14	12	13	13	12	10	6	6	4	2	2	-	2	1	-	-	-	-
4.6	-	-	-	2	1	2	2	2	9	10	7	5	4	10	10	14	17	16	11	9	9	9	10	9	7	4	3	2	1	1	1	-	-	-	-	-	-
6.6	-	-	-	-	1	1	3	4	7	10	10	11	12	14	14	20	21	18	15	13	10	6	4	3	4	4	3	4	7	8	6	4	2	3	3	2	4
8.7	-	-	-	3	2	1	3	2	4	4	5	7	9	11	12	13	14	12	11	5	4	5	3	2	1	3	3	2	2	3	3	2	-	-	-	-	-
9.6	-	-	-	1	2	2	1	4	7	5	6	9	13	14	15	20	21	15	10	8	9	4	2	2	1	3	2	4	4	5	2	3	2	2	1	1	1
10.9	-	-	-	-	1	1	3	4	9	9	11	13	22	20	23	20	13	11	10	9	5	4	2	2	4	6	6	7	6	4	4	4	2	3	2	1	-
11.6	-	-	-	1	1	2	4	5	7	10	10	14	17	18	23	15	13	13	10	8	6	-	3	3	4	4	5	5	6	5	4	5	7	4	3	-	-
12.6a	X	X	X	X	X	X	X	X	X	X	X	5	6	8	7	6	6	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X
13.6	-	-	-	2	1	1	5	5	5	9	13	13	14	13	12	10	10	6	8	8	7	5	7	7	4	5	4	4	3	3	3	3	2	3	2	-	1
14.7	-	-	-	-	1	2	4	7	9	10	12	13	14	14	13	10	10	9	9	9	11	22	25	15	10	9	8	8	4	4	5	4	4	4	2	2	-
15.6	-	-	-	3	2	1	3	8	5	5	6	9	9	8	7	5	4	4	4	4	7	12	12	11	5	4	3	2	3	-	-	-	-	-	-	-	-
16.6	-	-	-	1	1	1	4	6	5	8	10	10	7	9	9	7	8	8	10	14	15	28	36	22	11	10	9	8	4	3	2	3	4	3	-	2	-
17.6	-	-	-	1	1	2	4	4	5	9	9	8	6	8	9	11	9	9	11	14	20	28	37	14	13	11	8	4	4	3	3	2	2	2	1	-	-
19.7	-	-	-	1	1	3	3	4	5	9	7	6	10	11	15	16	17	18	15	15	16	18	18	12	9	4	3	4	4	3	3	2	2	1	-	-	-
20.6	-	-	-	-	1	2	2	4	4	4	4	5	9	9	10	11	13	12	10	10	11	13	11	9	7	4	4	2	2	1	-	-	-	-	-	-	-
21.6	-	-	-	1	1	2	2	3	4	6	9	11	12	13	14	15	17	18	16	13	15	16	17	13	12	9	4	1	-	-	-	-	-	-	-	-	-
22.6	-	-	2	2	2	1	2	2	3	7	10	11	12	12	13	14	14	13	13	10	12	13	14	12	11	8	4	1	-	-	-	-	-	-	-	-	-
23.6	-	-	-	2	1	1	2	3	3	7	10	11	12	12	11	13	17	12	9	9	10	13	15	10	9	6	2	1	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	1	2	4	9	10	11	12	12	11	12	11	9	5	4	6	11	12	10	5	4	2	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	1	1	-	1	3	4	9	12	14	19	22	22	19	15	12	9	9	11	13	11	10	8	5	3	2	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	1	2	4	4	5	10	10	9	9	11	12	12	10	10	10	10	11	11	10	7	2	3	2	-	-	-	-	-	-	-	-	-
30.6	-	-	2	2	1	1	2	3	9	10	10	10	10	11	15	15	14	14	15	13	11	9	10	10	6	3	3	2	1	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	3	4	4	3	4	4	10	10	10	11	10	6	2	3	3	2	1	2	1	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: May 6.6 at N65 - N90 and S50 - S90; May 14.7 at N80 - N90; May 16.6 at N35 - N90 and S65 - S90.

Table 57a

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																																					
May 1.6	4	1	1	2	2	2	1	2	2	2	2	2	3	2	3	15	13	6	12	5	3	9	12	9	-	-	4	2	2	1	-	-	-	-	-	-	-
2.8	2	2	3	2	-	3	-	-	-	-	-	-	-	-	2	3	4	2	4	2	2	5	9	3	2	3	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	2	2	1	-	-	-	-	-	-	-	4	3	11	12	4	4	3	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	7	14	6	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6	4	4	3	2	2	4	3	2	2	1	-	-	1	2	1	4	16	17	10	9	6	7	5	9	4	3	2	2	1	-	2	1	2	3	3	3	2
8.7	2	-	-	-	2	3	2	2	-	-	-	-	-	-	2	3	7	7	6	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-
9.6	2	2	2	2	3	1	2	3	2	-	1	1	-	1	2	5	10	9	7	3	5	2	1	2	2	2	-	-	-	-	-	-	-	-	-	-	-
10.9	3	3	3	3	2	-	1	2	-	-	-	-	-	-	-	3	9	12	10	9	3	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-
11.6	4	-	-	2	-	-	-	-	-	-	-	-	-	-	3	3	6	9	12	7	2	3	3	4	4	2	2	2	2	-	-	-	-	-	-	-	-
12.6a	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X
13.6	1	2	3	4	3	2	2	2	1	-	-	-	-	-	-	-	-	-	-	1	2	6	7	7	5	4	2	1	-	-	-	-	-	-	-	-	-
14.7	3	2	1	6	5	3	3	5	-	-	1	1	3	3	2	3	2	3	-	2	6	11	17	18	8	-	2	3	4	3	-	1	3	1	2	2	1
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	8	12	5	-	-	-	-	-	-	-	-	-	-	-	-
16.6	1	-	-	4	3	3	2	2	1	-	-	-	4	2	10	9	5	3	-	7	17	12	15	20	4	-	-	-	-	-	1	1	2	-	2	3	3
17.6	2	2	2	1	3	2	-	-	-	-	-	-	3	1	2	6	7	4	1	9	13	10	18	14	-	2	-	2	3	2	-	-	-	-	-	-	-
19.7	-	3	5	6	4	3	1	2	1	5	4	5	2	2	1	2	8	7	10	10	11	17	10	9	3	4	3	2	2	1	-	-	-	-	-	-	-
20.6	-	-	-	2	2	1	-	-	-	-	-	-	-	-	-	3	13	4	7	4	2	11	7	4	3	-	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	2	2	2	1	-	-	-	-	1	1	1	1	2	5	7	13	10	5	9	10	11	13	8	2	2	2	1	-	-	-	-	-	-	-	-
22.6	-	-	-	2	2	2	2	2	1	1	-	-	-	-	2	6	4	14	5	3	6	6	7	7	7	4	3	2	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	5	4	5	4	4	9	11	7	5	4	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	5	5	3	3	4	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-
26.6	1	1	3	3	2	2	2	-	1	1	1	9	7	2	3	15	8	14	11	3	3	4	4	3	2	3	3	2	3	3	1	2	-	-	-	1	1
29.7	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	1	3	1	2	2	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	2	3	3	2	2	-	-	-	-	-	-	-	-	1	6	8	12	12	12	9	6	2	2	2	1	1	1	1	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	2	8	9	9	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: May 6.6 at N65 - N90 and S55 - S90; May 14.7 at N80 - N90; May 16.6 at N35 - N90 and S75 - S90.

Table 56b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
May 1.6	-	2	1	2	2	3	4	5	4	6	8	9	9	13	14	20	25	14	11	10	11	14	14	16	15	14	13	11	5	4	3	2	1	1	1	1	-
2.8	-	-	-	-	-	3	3	4	3	2	2	3	4	9	11	19	19	12	11	10	10	8	6	8	8	5	5	3	2	4	3	1	-	-	-	-	-
3.7	-	3	-	3	3	1	1	2	2	2	3	2	4	10	13	15	14	11	11	11	10	10	11	10	7	6	6	7	5	4	4	2	1	1	-	-	-
4.6	-	-	-	-	1	2	2	4	3	2	1	3	3	5	11	15	12	12	13	12	12	13	10	7	6	4	4	4	3	3	-	-	-	-	-	-	-
6.6a	4	3	3	1	2	2	-	2	3	3	2	6	13	14	37	35	33	19	18	20	19	19	18	17	15	14	13	11	10	8	3	1	1	-	-	-	-
8.7	-	-	-	-	-	-	2	2	1	1	1	3	9	10	12	12	12	10	11	13	13	12	11	13	13	11	11	8	5	1	-	-	-	-	-	-	-
9.6a	1	1	2	1	-	-	1	1	-	2	3	3	6	6	11	10	13	11	12	14	13	14	17	14	14	13	13	10	8	8	2	2	-	-	2	-	-
10.9a	-	-	3	2	-	1	2	2	3	2	3	5	5	9	13	14	17	15	12	13	17	25	27	20	20	22	24	14	9	6	3	2	1	-	2	-	-
11.6	-	-	-	2	2	2	1	1	2	1	3	4	5	10	13	15	15	13	12	14	15	18	23	22	19	20	21	13	8	3	1	-	-	-	-	-	-
12.6	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
13.6	1	-	-	-	1	1	1	1	1	1	4	4	10	11	15	16	15	11	11	11	13	14	26	23	16	18	18	14	7	5	4	3	2	1	-	-	-
14.7	-	-	-	-	1	1	1	1	2	2	3	6	12	15	27	30	23	17	13	14	14	17	23	18	17	15	15	12	9	6	4	2	2	1	-	-	-
15.6	-	-	-	-	-	-	-	-	-	2	2	5	3	11	13	12	12	10	10	11	10	11	11	9	10	10	9	9	8	3	3	-	-	-	-	-	-
16.6a	-	-	-	-	1	1	2	1	1	1	3	5	7	9	14	14	14	13	14	16	14	18	17	16	13	13	12	13	10	4	1	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	2	2	3	3	4	5	10	11	10	11	13	16	23	30	29	25	20	14	10	9	13	12	.6	-	-	-	-	-	-	-
19.7	-	-	-	2	1	2	3	3	4	4	4	3	4	3	3	3	5	9	15	14	22	27	20	18	17	12	11	12	9	5	3	1	-	-	-	-	-
20.6	-	-	-	1	2	1	1	2	1	3	3	3	4	4	4	3	7	12	13	16	18	18	16	16	12	10	9	10	7	7	4	1	-	-	-	-	-
21.6	-	-	-	2	1	1	1	2	2	3	5	4	4	4	4	5	8	17	14	16	21	25	22	15	13	14	11	9	5	4	3	1	1	-	-	-	-
22.6	-	-	-	-	2	1	3	4	3	3	4	5	2	3	4	5	11	15	14	16	22	25	31	25	13	12	13	9	4	3	2	-	-	-	-	-	-
23.6	-	-	-	-	2	2	3	3	2	3	3	3	2	3	4	4	7	9	9	12	17	19	20	14	11	9	10	7	4	3	1	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	1	2	2	3	3	8	11	12	10	8	8	8	5	5	3	1	-	-	-	-	-	-
26.6	-	1	2	2	2	4	9	8	7	7	8	6	9	8	8	13	13	5	8	8	9	12	11	12	16	16	14	10	8	9	7	4	1	-	-	-	-
29.7	-	-	1	2	2	2	1	3	2	4	3	4	5	12	12	16	14	10	9	9	9	10	11	12	13	9	8	5	4	3	3	1	-	-	-	-	-
30.6	-	-	-	3	4	4	3	2	3	4	6	6	11	13	13	24	18	12	11	10	12	16	17	16	13	12	9	8	7	5	3	2	-	2	-	-	-
31.6	-	-	-	2	2	-	-	-	-	-	2	2	3	4	5	13	14	11	11	10	10	14	13	9	8	5	5	6	7	7	3	3	1	-	-	-	-

Note: Observation low weight: May 14.7 at N35 - N90; May 19.7 at S35 - S90 and N65 - N90; May 24.7 at S40 - S60.

Table 57b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
May 1.6	-	-	-	-	3	-	1	3	4	5	3	2	1	8	14	11	8	3	2	2	10	10	4	4	3	2	1	-	-	-	-	-	2	3	4	4	4
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	10	10	4	3	2	3	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	2
3.7	-	-	-	-	-	-	3	2	3	1	-	1	3	10	15	14	9	4	-	-	-	4	6	2	-	2	9	3	-	-	-	-	-	-	-	-	-
4.6	-	-	-	-	-	-	-	-	-	-	-	2	3	8	8	11	10	8	5	4	-	8	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.6a	2	4	3	4	3	2	5	8	6	4	5	5	6	10	42	23	32	12	13	12	12	13	4	4	2	12	10	5	4	-	4	4	3	3	6	6	4
8.7	-	-	-	-	-	-	-	1	-	-	-	-	2	11	8	12	12	2	10	5	12	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
9.6a	-	-	-	-	-	-	2	1	1	1	-	-	4	11	7	10	13	10	12	12	12	9	8	9	7	6	5	3	2	1	1	-	2	1	1	-	2
10.9a	-	-	-	-	2	3	2	3	4	3	3	3	8	8	9	12	9	7	4	2	10	10	20	8	4	5	9	4	2	2	-	4	5	6	2	2	3
11.6	-	-	2	2	2	2	2	3	3	3	5	5	7	9	11	13	14	11	8	9	12	15	18	5	2	5	9	6	3	2	-	4	2	4	6	4	4
12.6	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
13.6	-	-	-	-	-	-	-	-	-	2	1	1	1	2	14	13	10	5	5	5	5	21	25	14	5	3	9	9	5	-	1	3	3	2	2	2	1
14.7	1	3	2	3	3	3	3	2	2	3	4	2	2	4	27	10	10	2	3	10	10	18	12	4	2	4	8	3	2	1	5	3	4	3	2	2	3
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	9	8	-	-	3	8	8	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6a	3	2	1	-	-	-	2	2	1	3	3	4	4	5	10	10	8	4	5	8	11	9	4	3	2	1	-	-	-	-	-	-	-	-	1	3	1
17.6	-	-	-	-	4	-	2	2	3	4	6	4	5	6	9	6	7	10	12	14	17	9	10	3	3	4	2	1	2	-	-	2	3	4	4	3	2
19.7	-	-	-	-	-	-	-	-	-	2	2	2	4	5	5	9	6	8	13	14	6	7	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	3	3	4	5	6	8	11	5	8	7	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	1	1	3	3	3	2	5	16	14	4	9	6	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	2	2	1	1	-	3	2	1	3	4	4	4	6	15	14	10	11	13	13	2	-	-	2	3	-	-	-	-	2	-	1	1	-
23.6	-	-	-	-	-	-	-	-	-	-	-	2	1	3	3	3	7	7	6	2	4	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	3	1	1	2	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6	1	1	1	1	2	1	-	1	1	2	3	4	4	9	6	8	14	4	3	3	2	2	1	1	2	-	1	1	-	-	3	1	-	1	2	2	1
29.7	-	-	-	-	-	-	-	-	-	-	-	1	1	1	13	13	10	4	2	4	4	6	8	10	7	-	-	-	-	2	3	3	1	-	-	2	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	1	2	10	10	13	15	10	9	11	4	4	9	8	10	-	-	-	-	-	-	-	-	-	-	-
31.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	11	11	-	6	9	9	11	8	3	5	2	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: May 14.7 at N30 - N90; May 19.7 at S35 - S90 and N80 - N90; May 24.7 at S35 - S60.

Table 58a

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																																					
May 1.6	-	-	-	-	-	-	-	-	-	-	-	1	1	3	3	2	2	1	2	3	3	3	4	3	-	-	-	1	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	2	2	1	1	1	2	3	4	3	3	4	3	2	2	2	3	4	2	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	1	2	4	4	6	4	4	5	4	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.6	-	-	-	-	-	-	-	-	2	2	1	2	2	2	3	3	4	3	3	3	-	-	-	1	1	1	1	2	1	-	-	-	-	2	1	1	1
6.6	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	3	4	3	5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	1	1	2	3	2	2	2	2	1	1	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	-	1	2	3	3	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.9	-	-	-	-	-	-	-	-	-	-	1	1	4	4	5	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6	-	-	-	-	-	-	-	-	-	-	1	3	4	4	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.6a	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X
13.6	-	-	-	-	-	-	-	2	2	1	2	2	3	3	3	2	1	1	-	2	1	-	-	2	2	2	1	1	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	1	1	2	3	4	2	1	-	-	-	-	-	2	2	2	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	2	1	3	1	2	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	1	1	3	4	2	2	1	1	-	-	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	3	3	4	4	2	2	1	1	1	2	-	-	-	-	-	-	-	-
19.7	-	1	1	1	1	1	2	2	1	1	1	1	1	3	3	4	3	4	3	3	3	2	3	2	1	1	-	-	2	2	2	1	1	1	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	2	1	1	1	3	1	1	2	2	-	2	3	3	2	1	1	2	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	4	3	3	2	2	2	2	3	3	2	2	2	1	3	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	1	3	3	4	4	4	5	4	4	4	4	3	2	4	3	3	2	2	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	4	5	4	4	4	3	3	4	2	3	2	1	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	2	2	2	2	3	3	4	3	3	3	2	2	2	1	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	1	1	2	1	2	4	3	3	3	2	2	1	1	1	1	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	2	1	2	2	2	2	3	3	3	3	2	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	1	2	1	-	2	2	3	4	6	3	3	3	3	2	2	2	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-
31.6a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	2	3	3	2	2	1	1	1	1	2	2	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: May 6.6 at N65 - N90 and S55 - S90; May 14.7 at N80 - N90; May 16.6 at N40 - N90 and S75 - S90.

Table 59a

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																																					
Apr. 2.7	-	-	-	-	-	2	3	4	6	4	11	13	17	24	26	18	22	18	14	13	14	14	32	27	27	17	11	9	4	5	3	-	-	-	-	-	-
3.9	-	-	-	-	-	-	-	2	4	9	12	17	19	20	13	15	24	16	13	12	13	16	26	25	16	10	7	4	2	-	-	-	-	-	-	-	-
4.9a	-	-	-	-	-	-	-	-	4	5	9	12	12	10	10	13	14	10	10	11	11	14	13	13	11	7	4	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	2	1	4	6	10	10	7	10	12	19	27	35	17	20	27	12	8	5	-	-	-	3	2	6	6	4	3	2	4	4	3	-	-
10.7	1	-	2	1	2	4	3	6	9	12	11	11	14	20	32	15	29	32	20	11	11	13	8	7	9	8	6	5	8	9	9	9	11	10	5	2	1
11.8	-	-	-	-	-	-	-	3	4	4	8	10	11	14	12	12	16	17	10	9	9	1	-	4	2	2	2	-	-	-	-	-	-	4	2	-	-
13.8	-	-	-	-	-	4	4	8	12	13	14	18	27	30	32	31	28	34	18	23	25	13	8	8	11	12	9	11	7	8	9	9	9	10	6	3	1
14.7	-	-	2	-	3	2	4	7	11	11	14	17	34	20	36	31	23	21	12	13	14	5	4	7	10	11	11	9	4	4	6	7	7	5	5	2	3
15.8	-	-	-	-	-	1	2	8	6	10	14	18	23	17	30	22	12	11	10	9	7	5	6	5	11	9	10	11	4	4	3	4	3	6	3	-	-
16.8	-	-	-	2	2	3	5	8	9	11	16	25	30	30	37	17	16	14	13	12	9	12	9	9	11	12	10	10	7	9	6	5	7	6	3	-	-
17.7	-	-	2	2	6	7	9	9	11	13	30	29	27	32	35	14	23	25	21	16	14	17	17	10	11	11	9	10	9	9	9	5	4	4	4	1	-
18.7	-	-	1	-	3	4	8	6	4	7	12	14	12	17	16	11	18	17	15	13	12	21	32	12	10	8	1	4	4	3	3	4	3	2	-	-	-
19.8a	-	-	-	-	-	4	4	6	7	10	11	10	9	11	17	14	14	10	12	14	12	13	17	14	9	8	4	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	3	4	-	2	8	9	9	9	3	4	13	17	13	15	13	14	13	13	20	27	17	9	7	4	3	-	-	-	-	-	-	-	-	-
21.7	2	1	-	1	2	-	4	6	6	9	6	9	14	21	17	15	19	17	18	14	21	22	32	27	24	14	9	3	1	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	2	4	5	9	10	11	13	9	14	15	13	13	15	13	22	17	18	15	7	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	3	8	12	14	14	20	22	18	28	35	36	29	20	18	17	20	25	20	18	12	3	1	-	-	-	-	-	-	-	-
26.8	1	1	-	-	-	-	-	7	12	6	12	17	32	31	22	27	28	22	16	13	11	15	15	14	12	9	6	4	2	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	1	6	9	4	8	14	22	26	22	20	32	22	14	11	10	13	15	16	13	12	11	7	4	2	2	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	2	2	3	4	4	9	12	14	16	13	13	12	7	5	7	10	14	9	11	10	8	4	3	-	-	-	-	-	-	-	-
29.7	1	1	-	-	2	3	3	3	4	7	9	15	20	26	28	26	30	25	17	12	10	14	19	24	24	20	14	9	6	1	-	-	-	-	-	-	-
30.6	-	-	-	-	2	4	4	4	4	5	9	15	17	23	17	24	25	16	13	12	13	14	23	30	25	16	11	7	4	2	1	-	-	-	2	2	-

Table 58b

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																																					
Apr. 29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	1	1	1	1	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	2	2	-	1	1	-	-	1	-	-	-	-	-	-	-	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-
May 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	2	1	2	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	4	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	2	1	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
4.6	1	2	-	-	-	2	2	-	2	2	-	-	-	-	2	3	3	3	2	2	2	2	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
6.6a	-	-	-	-	-	-	-	-	3	2	2	3	3	5	3	3	3	2	2	2	2	4	4	3	3	3	3	3	3	3	-	-	1	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	5	4	4	3	3	2	1	-	-	-	-	-	-	-	-	-
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	2	1	3	4	4	4	4	4	4	3	3	2	1	1	2	-	-	-	-
10.9a	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	2	3	2	2	1	3	4	4	4	4	4	3	3	2	2	1	-	-	-	-	-	-
11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	3	4	4	4	4	4	3	3	2	2	1	1	-	-	-	-
12.6	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
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	3	4	4	3	3	2	2	1	1	-	1	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	1	1	2	2	1	3	2	2	1	2	1	1	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	2	3	3	4	2	2	2	2	-	-	-	-	-	-	-	-	-
16.6a	-	-	-	-	-	2	1	-	-	1	1	1	-	1	1	2	1	1	2	2	3	4	3	3	4	3	3	2	1	2	1	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	3	3	4	5	5	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	4	3	2	2	2	2	2	1	2	1	1	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	3	4	3	4	4	3	2	2	1	1	1	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	4	5	4	4	2	2	2	2	2	1	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	4	6	5	3	2	2	2	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	2	3	3	3	7	6	2	2	2	1	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-
26.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	2	2	3	3	2	2	1	1	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	2	2	2	3	3	3	4	3	2	2	1	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	1	2	2	3	4	4	3	2	1	3	3	4	4	4	3	2	4	4	3	2	1	-	-	-	-	-	-
31.6	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	2	2	2	2	2	3	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: May 14.7 at N30 - N90; May 19.7 at S35 - S90 and N75 - N90; May 24.7 at S35 - S60.

Notes omitted from Table 57b of F69: Observation low weight: Apr 2.7 at S70 - S90; intensity of yellow line (5694A) west limb on Apr. 20.6 - 2 at S03, S04, S05, S06, S07.

Table 59b

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																																					
Apr. 2.7	-	-	-	-	-	-	-	2	3	3	6	10	9	11	10	14	14	14	11	11	12	14	19	29	35	22	23	21	13	10	9	7	2	-	-	-	-
3.9	-	-	-	-	-	-	2	2	2	-	5	5	5	5	4	9	14	17	9	14	16	14	14	16	23	14	14	12	10	8	3	-	-	-	-	-	-
4.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	10	10	11	11	12	13	13	13	12	5	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	1	-	-	-	-	-	11	14	17	18	21	17	22	24	18	23	19	17	13	14	12	12	13	9	4	-	-	-	-	-	-
10.7	1	1	-	-	-	-	-	-	-	-	2	6	9	26	36	38	26	27	38	37	35	37	26	16	21	20	23	17	14	13	8	1	-	-	-	1	1
11.8	-	-	-	-	-	-	-	-	-	-	2	8	9	11	13	12	11	13	15	15	17	20	14	15	15	14	15	12	10	9	2	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	2	3	9	11	13	15	12	13	16	14	14	14	18	26	28	25	32	27	20	17	11	9	5	4	-	-	-	-	-
14.7	3	-	-	-	-	-	1	-	-	7	11	12	14	19	15	18	22	15	13	14	14	17	15	18	25	27	23	15	9	8	4	4	3	2	-	-	-
15.8	-	-	-	-	-	-	-	-	3	6	7	10	14	18	17	22	16	14	13	15	22	15	13	16	26	30	19	14	10	9	4	3	-	-	-	-	-
16.8	-	-	-	-	-	-	-	1	4	8	8	10	13	17	28	28	20	14	12	13	15	17	19	20	27	26	21	18	13	14	9	4	2	2	-	-	-
17.7	-	-	-	-	-	-	-	2	6	9	8	12	15	30	36	37	28	21	17	17	20	18	29	22	34	28	32	31	20	14	11	10	4	2	1	-	-
18.7	-	-	-	-	-	-	2	-	7	6	7	9	12	15	17	17	19	22	14	16	17	19	23	22	24	22	17	20	19	16	12	.7	2	-	-	-	-
19.8	-	-	-	-	-	-	-	4	3.	-	3	9	6	11	12	17	16	15	14	15	16	27	22	29	16	14	15	18	17	14	9	4	-	-	-	-	-
20.7	-	-	-	-	-	4	2	6	8	7	4	10	11	13	17	14	13	14	15	15	30	39	38	36	20	19	18	16	18	15	12	5	-	-	-	-	-
21.7	-	-	-	-	-	-	2	3	3	2	2	4	4	6	9	4	5	8	11	21	25	34	36	26	23	19	14	12	13	14	12	4	1	-	-	-	2
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	7	10	14	15	13	15	13	10	5	5	3	3	2	-	-	-	-	-
24.7	-	-	-	-	-	-	2	4	3	3	4	3	3	4	-	2	8	9	10	13	22	25	28	30	18	22	14	12	11	11	9	4	-	-	-	-	-
26.8	-	-	-	2	3	6	5	6	4	6	2	2	2	6	4	2	7	13	13	14	20	26	20	20	20	20	15	12	12	10	5	4	4	2	2	3	1
27.7	-	-	-	4	4	8	7	4	4	5	3	5	5	6	6	2	9	12	14	12	16	26	25	28	25	23	19	14	13	11	9	5	3	-	-	-	-
28.7a	-	-	-	-	-	3	.4	2	2	3	4	3	3	5	5	4	3	3	8	7	9	12	12	21	18	14	18	12	12	9	8	3	-	-	-	-	-
29.7	-	-	3	2	2	4	5	5	3	5	7	5	7	10	6	6	7	8	4	9	11	13	18	25	28	20	22	14	12	11	5	3	2	3	2	2	1
30.6	-	-	2	2	1	5	7	5	7	9	10	10	12	11	14	13	15	15	13	12	12	15	23	30	25	24	26	18	14	9	9	5	2	1	1	1	-

Note: Observation low weight: Apr. 19.8 at S60 - S90 and N60 - N90.

Table 60a

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																																					
Apr 2.7	5	4	3	3	5	4	6	7	5	7	4	-	4	6	9	14	7	10	6	7	5	10	12	11	9	3	3	2	4	1	-	-	-	-	-	2	1
3.9	2	-	-	-	-	-	-	3	2	3	1	2	3	5	3	-	11	10	4	2	2	4	8	7	4	-	-	-	-	-	-	-	-	-	-	-	-
4.9a	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	6	3	-	-	2	3	8	4	-	-	-	-	-	-	-	-	-	-	-	-
9.7	3	3	-	-	-	4	3	4	-	-	-	-	-	-	3	10	6	13	10	4	-	-	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	4	2	-	2	4	9	9	8	2	2	-	-	-	-	7	2	10	17	14	8	5	9	10	12	1	2	1	2	1	1	-	2	3	3	2	3	2
11.8	-	2	1	-	-	-	2	4	1	-	-	-	-	-	4	2	3	15	10	6	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	3	3	3	2	6	5	3	5	4	-	-	-	2	2	-	9	22	24	12	13	10	9	4	1	2	2	2	3	2	1	-	-	-	1	2	1	-
14.7	6	3	5	3	4	7	8	10	6	4	-	10	3	2	3	13	14	15	12	11	6	2	4	6	2	-	-	3	-	1	1	-	-	3	1	2	-
15.8	4	4	3	2	4	5	7	7	4	3	-	5	1	2	7	9	6	2	1	1	-	1	1	2	1	-	-	-	-	-	-	-	-	1	2	2	1
16.8	4	4	2	4	4	3	5	4	3	1	-	4	-	-	17	2	2	1	-	-	2	3	6	2	2	1	-	2	3	1	1	2	1	2	1	1	-
17.7	2	5	2	6	4	9	8	5	2	1	2	2	3	1	17	3	1	2	2	2	4	2	10	13	4	2	4	2	1	-	2	2	2	2	2	2	2
18.7	3	3	3	4	4	2	4	2	-	-	-	1	2	1	9	6	1	4	1	1	3	4	11	16	4	2	4	2	3	3	4	2	1	3	2	3	1
19.8a	2	3	1	1	-	-	-	3	2	-	2	2	13	7	4	2	7	9	2	2	3	10	14	12	4	2	1	2	3	-	-	-	-	-	-	-	-
20.7	2	2	-	2	1	-	-	-	-	-	-	6	10	8	3	4	9	3	2	4	5	15	14	11	12	5	4	3	2	4	2	3	-	-	-	1	-
21.7	5	3	5	9	8	8	4	3	4	4	10	10	8	10	8	3	9	5	5	14	12	11	18	17	10	9	9	5	4	-	4	3	3	4	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	3	-	-	2	3	1	2	5	4	10	12	8	7	13	14	12	4	-	-	-	-	-	-	-	-	-	-	-
24.7	4	3	2	5	4	3	2	2	3	4	3	3	2	-	12	4	4	5	13	9	4	10	5	10	12	7	5	3	4	3	4	-	-	-	-	-	-
26.8	8	7	8	5	10	4	3	4	3	2	1	9	12	10	13	9	14	12	3	2	5	1	-	12	4	4	2	1	-	5	2	-	-	-	-	3	-
27.7	4	3	2	2	3	4	2	-	-	3	5	10	14	9	10	11	12	13	6	2	3	2	4	4	2	2	3	3	2	3	2	2	-	-	-	-	-
28.7a	4	-	-	-	-	-	-	2	3	-	3	2	8	9	3	10	13	14	10	3	3	-	5	2	-	2	-	-	-	-	-	-	-	-	-	-	-
29.7	8	2	5	4	4	4	4	3	3	3	6	8	9	10	4	11	20	17	10	7	9	4	9	15	4	2	1	2	3	2	2	1	1	3	2	-	-
30.6	6	3	6	4	4	5	4	6	3	4	4	4	6	4	3	13	29	12	8	13	12	14	15	16	3	-	1	4	4	5	3	1	2	3	4	2	2

Table 61a

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																																					
Apr. 2.7	-	1	-	-	-	-	-	-	-	-	2	1	4	2	4	3	-	-	-	-	-	-	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
3.9	-	-	-	-	-	-	-	-	-	2	1	2	2	2	-	-	1	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-
4.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	4	4	3	3	4	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	3	1	2	1	2	2	4	3	4	4	2	1	-	-	2	1	1	1	-	-	2	-	-	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	1	-	-	-	-	-	1	1	1	1	1	1	1	1	6	4	4	3	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	1	1	1	-	1	1	3	4	4	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	2	-	1	-	-	-	-	-	-	-	-	-	2	2	4	2	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.8	1	1	-	-	-	-	1	2	1	1	3	2	2	2	2	1	2	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	2	1	-	-	3	2	2	2	1	2	1	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	-	2	2	1	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
19.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	1	2	2	3	1	3	4	4	3	3	2	2	1	-	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	2	1	1	2	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	4	10	10	5	2	-	-	-	4	5	3	-	-	-	-	-	-	-	-	-	-	-
26.8	-	-	-	-	-	-	1	1	2	1	3	2	3	4	4	3	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	2	1	1	-	-	2	1	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	-	-	3	2	-	2	3	2	3	2	3	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	1	2	1	-	-	2	1	3	3	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.6	1	-	-	-	-	1	1	1	-	1	1	2	1	3	3	4	3	3	1	1	-	2	3	3	5	2	2	2	-	2	2	-	1	-	-	-	-

Table 60b

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

Date GCT	S 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	N 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Apr. 2.7	1	-	2	2	2	2	1	-	-	4	2	-	-	-	-	-	4	4	3	2	-	5	4	3	10	-	5	2	2	-	-	4	3	3	8	7	5
3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	12	3	-	2	3	2	4	7	3	-	2	-	-	-	1	-	-	5	2	2
4.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	3	3	4
9.7	-	-	-	-	-	-	-	1	4	-	-	-	4	6	10	12	11	9	14	12	3	7	3	-	6	9	4	3	3	4	3	2	4	-	2	4	3
10.7	2	2	2	-	-	3	4	4	5	4	2	3	9	10	28	27	20	11	18	11	17	12	2	9	16	5	7	11	9	4	4	3	2	2	3	4	4
11.8	-	-	-	-	-	-	-	-	-	-	-	2	4	12	11	12	9	13	12	10	11	4	10	13	4	3	7	10	4	-	-	-	-	-	-	1	-
13.8	-	1	-	-	-	2	2	4	2	2	4	4	7	8	4	3	12	8	10	9	10	11	26	14	12	6	9	11	4	-	-	2	3	1	4	4	3
14.7	-	-	-	-	2	1	2	3	4	4	4	4	3	2	2	4	7	13	12	5	17	16	15	22	4	4	9	10	10	3	1	1	2	2	2	3	6
15.8	1	1	1	2	1	-	2	3	3	3	3	3	4	4	2	11	12	10	4	4	12	9	13	18	5	9	5	4	4	4	2	1	2	2	1	4	4
16.8	-	-	-	-	-	1	1	2	2	3	3	3	1	1	14	16	14	2	3	9	12	6	4	9	4	5	2	3	3	2	2	-	-	1	3	3	4
17.7	2	2	2	2	1	2	3	3	3	4	9	4	1	9	12	23	10	7	3	10	7	4	3	4	8	5	2	3	2	2	1	2	2	3	4	3	2
18.7	1	-	-	3	2	-	3	3	3	2	2	-	-	7	9	13	11	2	-	1	13	12	6	3	5	3	-	-	-	-	-	-	2	3	4	2	3
19.8	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	1	-	-	-	-	14	18	10	13	-	-	-	-	-	-	-	-	3	7	2	-	2
20.7	-	1	-	2	2	1	-	-	2	-	-	-	-	-	2	7	5	-	-	4	14	15	15	4	1	-	-	-	-	-	-	2	3	2	3	3	2
21.7	-	-	2	-	-	-	-	2	3	-	-	4	2	3	4	7	9	5	8	8	16	17	11	10	-	2	-	1	2	2	3	4	2	2	6	4	5
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	2	-	4	10	10	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	3	-	-	-	-	4	9	7	4	7	5	10	11	8	13	4	3	-	-	-	-	-	-	5	-	3	1	4
26.8	-	3	-	-	-	-	-	-	1	1	-	1	-	-	1	-	5	5	6	4	13	12	4	10	-	2	-	-	-	-	-	10	9	2	5	4	8
27.7	-	-	-	-	-	3	1	-	2	1	1	2	3	2	3	5	5	7	8	10	13	15	9	11	-	-	-	-	-	3	5	4	11	4	5	5	4
28.7a	-	-	-	-	-	-	-	-	-	-	2	-	-	2	3	-	4	7	10	6	5	8	4	2	-	-	-	-	-	-	2	4	4	4	4	6	4
29.7	-	-	-	-	-	-	-	1	4	3	1	-	-	2	4	4	4	7	5	4	3	4	4	10	2	-	-	-	-	2	2	3	5	4	7	9	8
30.6	-	-	-	-	4	1	2	5	4	2	4	2	2	1	4	12	12	12	4	3	2	8	9	2	11	-	1	2	-	2	3	3	6	4	6	7	6

(S = Degrees south of the solar equator; N = Degrees north of the solar equator)

Note: Observation low weight: Apr. 19.8 at S60 - S90 and N55 - N90.

Table 61b

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

Date GCT	S 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	N 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Apr. 2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	2	3	2	2	-	-	-	-	-	-	2	-
3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	2	2	4	2	3	3	4	3	2	1	1	2	1	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	2	1	-	4	5	5	4	4	6	6	6	6	4	4	4	4	3	3	3	1	-	-	-	-	-	-	-
11.8	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	1	1	-	-	2	4	4	2	3	2	3	1	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	1	-	3	4	3	4	4	2	3	3	2	2	1	2	1	1	-	1	1
14.7	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	2	2	1	1	-	-	1	1	3	3	3	2	2	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	2	2	-	-	1	2	2	1	1	2	3	2	1	1	-	1	1	-	-	-	-	2
16.8	-	-	-	-	-	-	-	-	-	1	2	-	-	1	4	3	2	1	1	2	-	-	2	2	3	3	2	1	1	-	-	-	-	-	1	1	1
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	2	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	2	-	-	2	3	3	4	3	2	1	-	-	-	-	-	-	-	-
19.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	-	-	-	-	4	5	5	5	4	2	2	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	1	3	11	11	9	8	6	5	3	2	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	7	9	9	4	4	4	3	2	1	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	3	4	2	2	-	-	-	-	-	-	-	-	-	-
26.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	3	6	9	4	2	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	5	3	5	4	3	2	1	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	1	-	3	5	5	2	-	2	-	-	-	-	3	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	1	1	3	2	3	2	2	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	1	-	-	-	-	2	1	1	2	2	2	-	1	2	2	2	3	2	4	2	-	-	-	1	2	-	-	1	1

(S = Degrees south of the solar equator; N = Degrees north of the solar equator)

Note: Observation low weight: Apr. 19.8 at S60 - S90 and N55 - N90.

Table 62

Indices of Geomagnetic Activity for April 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	4.1 4.5 3.6 2.9 4.1 3.1 4.7 4.3	31.3	1.4	5-6-5-3+ 5-3+5+5o	37-	Five
2	3.9 3.4 4.1 3.2 2.7 3.6 3.6 4.7	29.2	1.2	4+4+5+4o 3o4+4+5+	35o	Quiet
3	3.7 2.8 2.5 3.6 3.3 3.3 4.7 4.4	28.3	1.3	4+3+3o4+ 3+4-5+5+	33-	
4	3.1 3.8 4.0 3.7 2.9 4.2 3.7 3.0	28.4	1.2	3+5o5o4+ 4-5-4o3o	33o	11
5	3.7 3.9 3.7 3.8 4.1 4.4 5.2 4.8	33.6	1.5	4+5o4+5- 5-5+7-6-	41-	14
						21
6	4.0 3.5 3.9 2.9 2.8 2.6 4.1 4.0	27.8	1.0	4+4+5-4- 3+3o5-5-	33-	26
7	3.6 3.2 2.4 2.6 3.1 2.3 2.9 2.1	22.2	0.8	4o4o3o3+ 4-3-3o2o	26-	27
8	2.5 1.4 2.1 1.6 2.0 2.0 1.5 0.8	13.9	0.3	3o2-3-2- 2+2o1+1-	15+	
9	0.8 1.1 1.8 2.3 2.9 2.6 1.6 1.4	14.5	0.4	1-1+2+3- 3+3+1+1o	16o	
10	2.5 3.2 1.1 0.9 2.0 1.4 1.6 2.3	15.0	0.4	3-4o1+1o 2o2-2-2o	16+	
11	1.3 1.8 0.9 1.0 1.4 1.4 2.6 2.5	12.9	0.3	1+3-1+1+ 1+1+3-2+	14+	Five
12	2.5 3.7 3.7 3.6 2.6 1.6 1.4 2.2	21.3	0.8	3-4o5o4+ 3+2o1+2+	25o	Dist.
13	3.6 3.0 1.8 2.3 1.9 0.9 1.1 0.9	15.5	0.5	4+3+2o2+ 2+1+1-1-	17o	
14	0.7 1.3 1.6 1.5 1.5 0.6 1.3 2.5	11.0	0.3	1-1+2o1+ 2-1-1+2+	11+	1
15	1.6 3.2 3.8 3.3 3.6 2.0 1.6 2.8	21.9	0.8	2-4-5o3+ 4+2+1+3-	24+	2
						3
16	1.4 1.1 2.0 1.5 2.0 2.3 2.8 3.4	16.5	0.5	1+1-2+2- 2+3-3-4-	17+	5
17	3.1 2.0 1.3 1.7 2.0 2.6 2.8 2.8	18.3	0.6	3+2+2-2- 2+2+3o3o	20-	30
18	2.5 2.8 2.3 2.3 2.3 2.9 3.3 2.8	21.2	0.8	3-3+3o3- 3-3o4-3o	24o	
19	2.7 2.9 3.6 1.9 3.3 3.6 4.0 3.0	25.0	1.0	3+4o5-2o 4-4+4+3+	30-	
20	3.2 4.4 3.3 1.6 1.0 1.3 3.9 3.5	22.2	1.0	4o6-4o2- 1-1+4+4o	26-	Ten
						Quiet
21	1.7 1.1 0.9 1.1 0.9 0.9 0.7 0.4	7.7	0.0	2-1o1o1+ 1-1+0+0+	8-	
22	0.4 0.6 0.7 3.0 2.0 1.5 0.8 1.2	10.2	0.3	0+0+1-3o 2o1+1-1o	9+	8
23	2.0 3.7 2.9 3.2 3.7 2.8 2.4 3.2	23.9	1.0	2o4-3-4o 4-3o3-4-	25+	9
24	4.2 4.5 4.0 3.1 2.9 3.8 2.4 3.2	28.1	1.2	5-6-5+4- 3o4+3-4-	33o	10
25	1.8 3.0 2.9 2.0 1.3 1.5 0.9 0.6	14.0	0.4	2o4-3+2+ 1+1+1o1-	16-	11
						14
26	1.4 1.9 1.6 1.4 1.0 1.0 0.3 0.5	9.1	0.0	2-2o2-1+ 1o1-0+0+	9o	21
27	0.3 0.4 0.6 0.9 1.3 0.8 2.9 2.4	9.6	0.3	0+0+0+1- 1o0+3o2+	8+	22
28	1.3 1.4 2.0 2.3 2.6 3.0 2.8 3.5	18.9	0.7	1o1+3-2+ 3-3o3o4+	20+	25
29	3.6 1.8 1.1 3.2 2.9 3.6 3.3 2.7	22.2	0.8	4o2o1o3+ 4-4o3+3-	24o	26
30	3.6 4.5 3.4 3.5 3.6 4.2 3.9 2.8	29.5	1.1	4o5+4+4- 4+5o4+3+	34+	27
Mean	2.49 2.66 2.45 2.40 2.46 2.39 2.63 2.62	2.51	0.73			

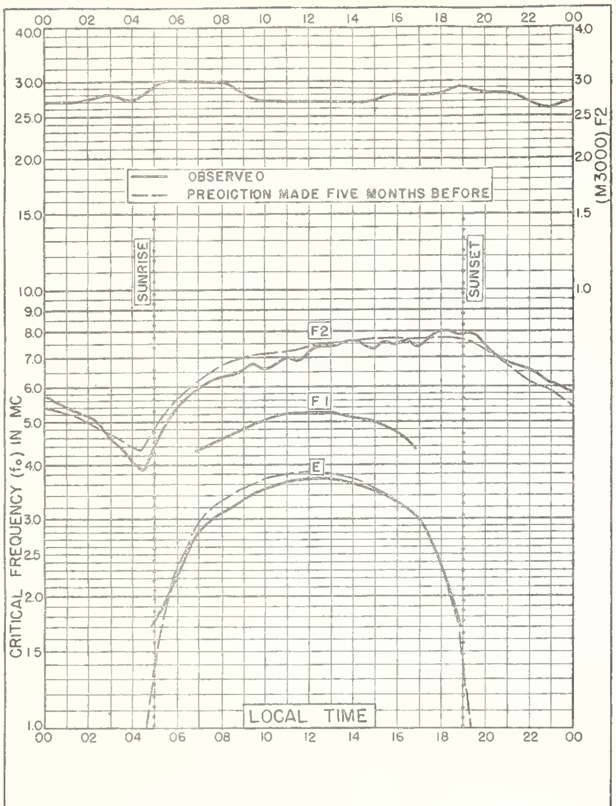

Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W MAY 1950

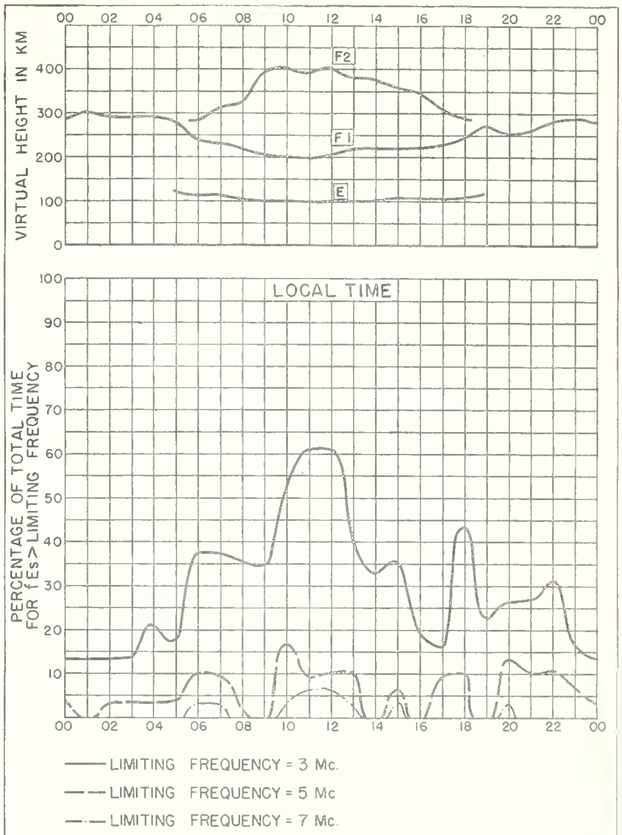

Fig. 2. WASHINGTON, D. C. MAY 1950

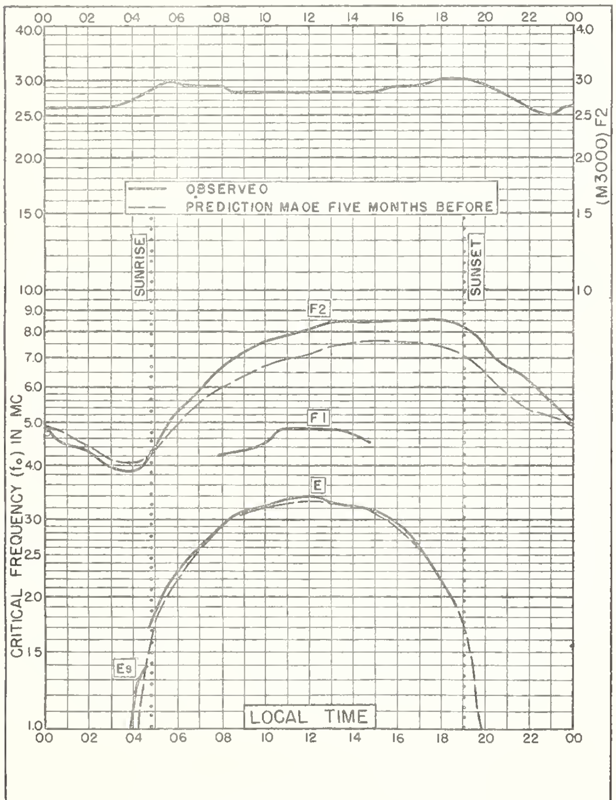

Fig. 3. OSLO, NORWAY
60.0°N, 11.0°E APRIL 1950

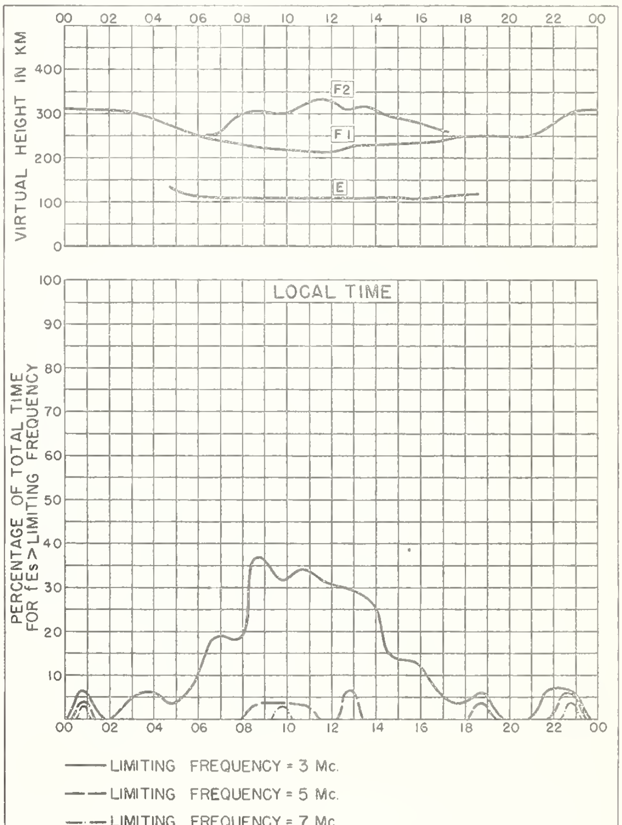

Fig. 4. OSLO, NORWAY APRIL 1950

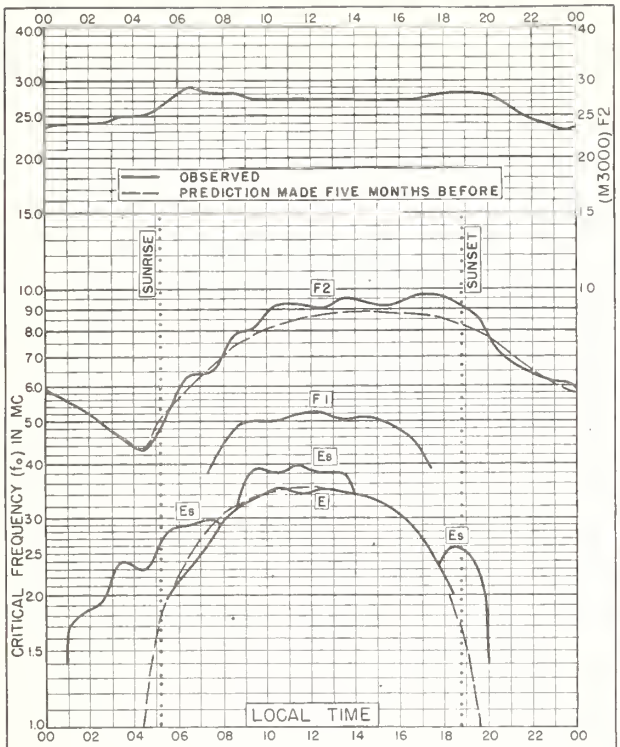

Fig. 5. De BILT, HOLLAND
52.1°N, 5.2°E APRIL 1950

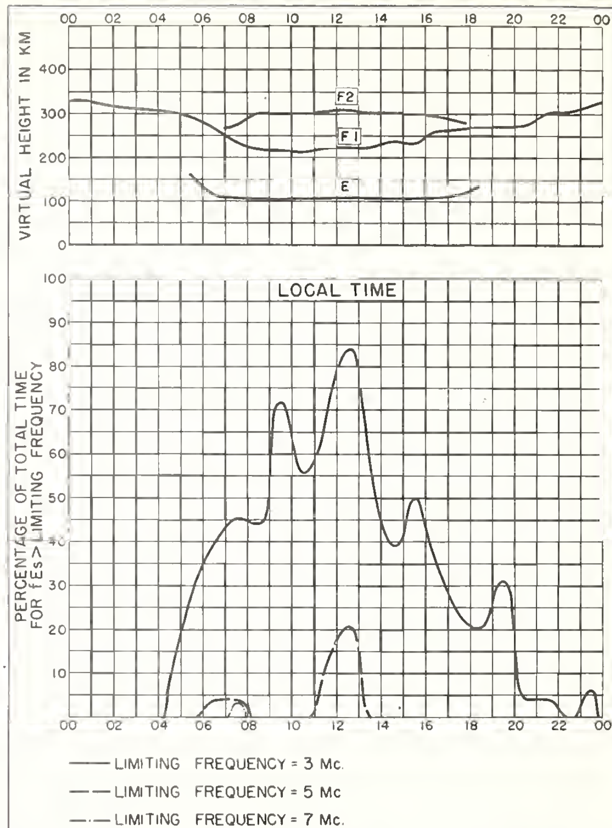

Fig. 6. De BILT, HOLLAND APRIL 1950

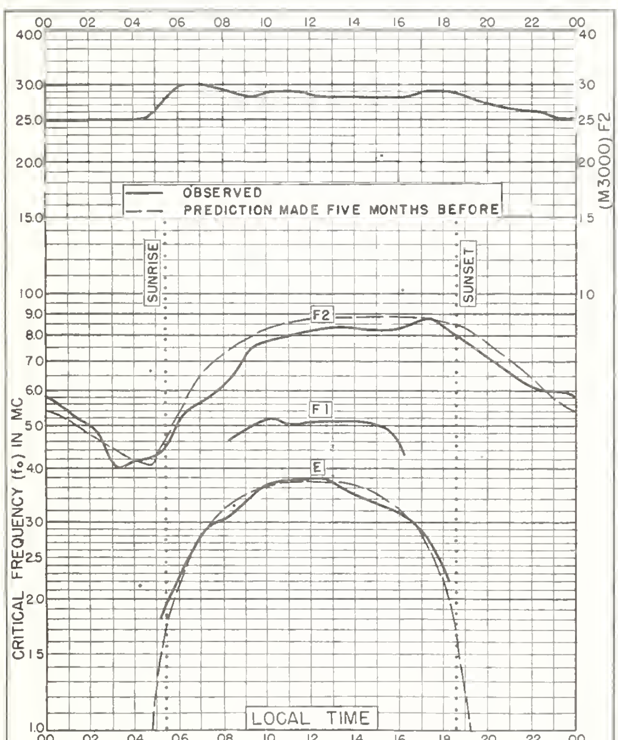

Fig. 7. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W APRIL 1950

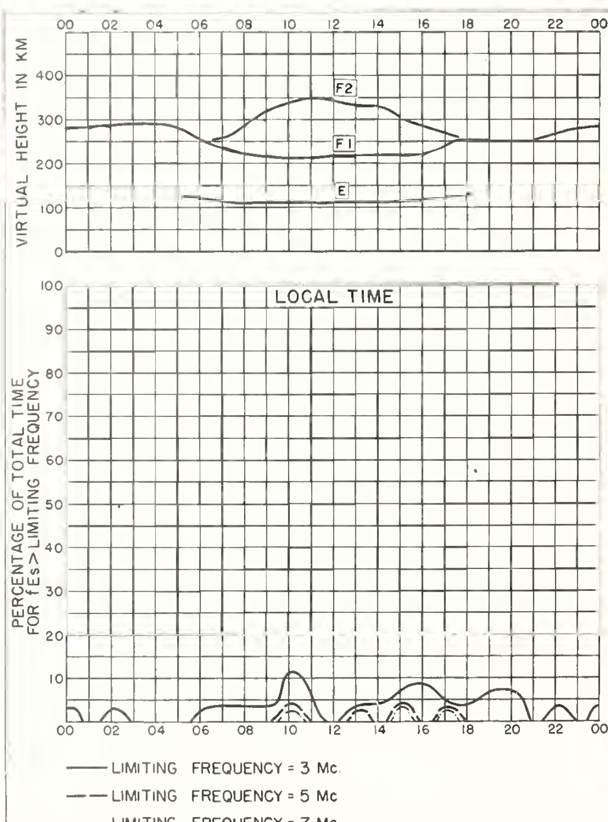

Fig. 8. BOSTON, MASSACHUSETTS APRIL 1950

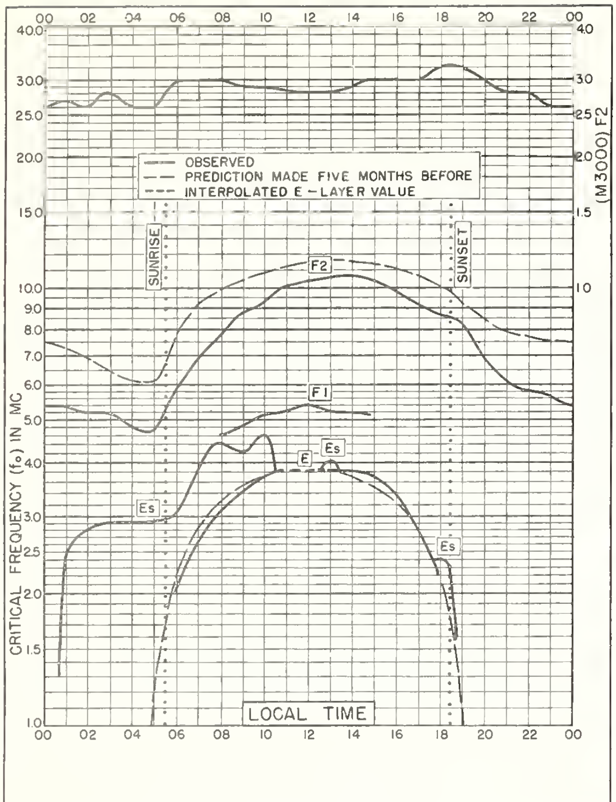

Fig. 9. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W APRIL 1950

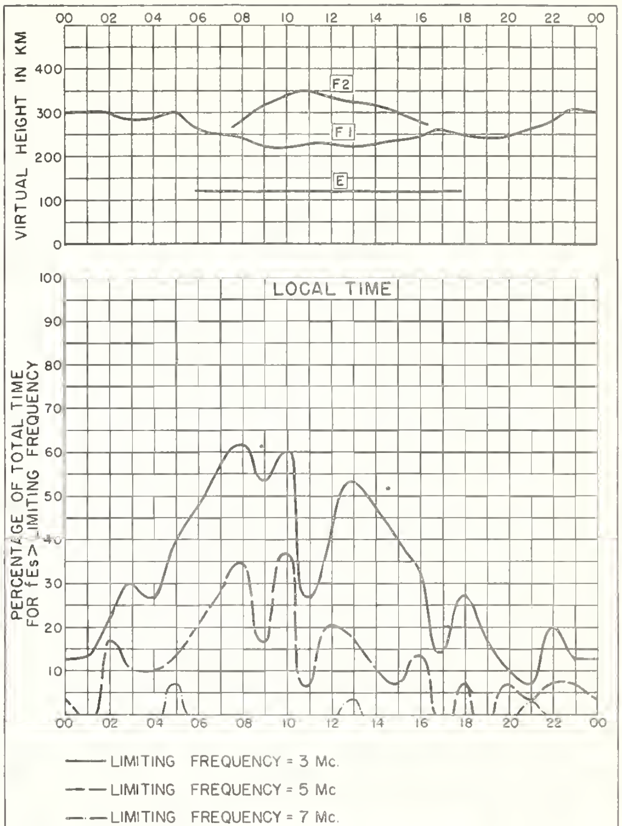

Fig. 10. SAN FRANCISCO, CALIFORNIA APRIL 1950

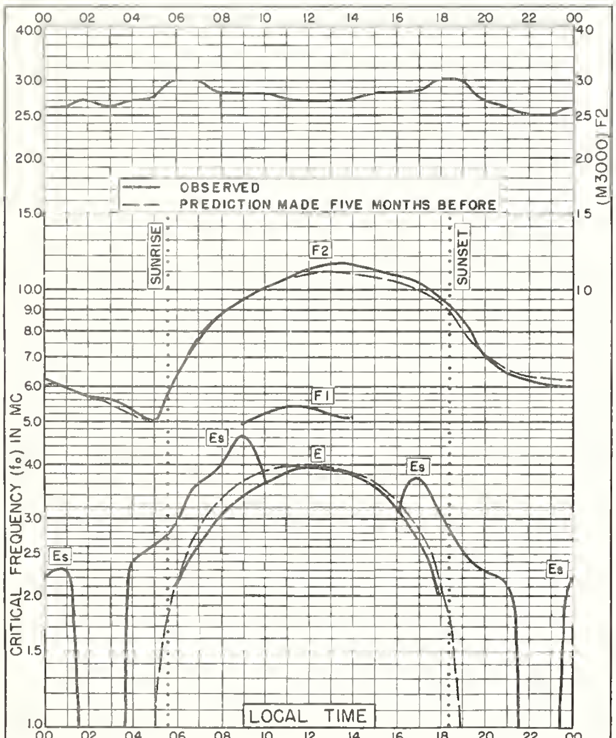

Fig. 11. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W APRIL 1950

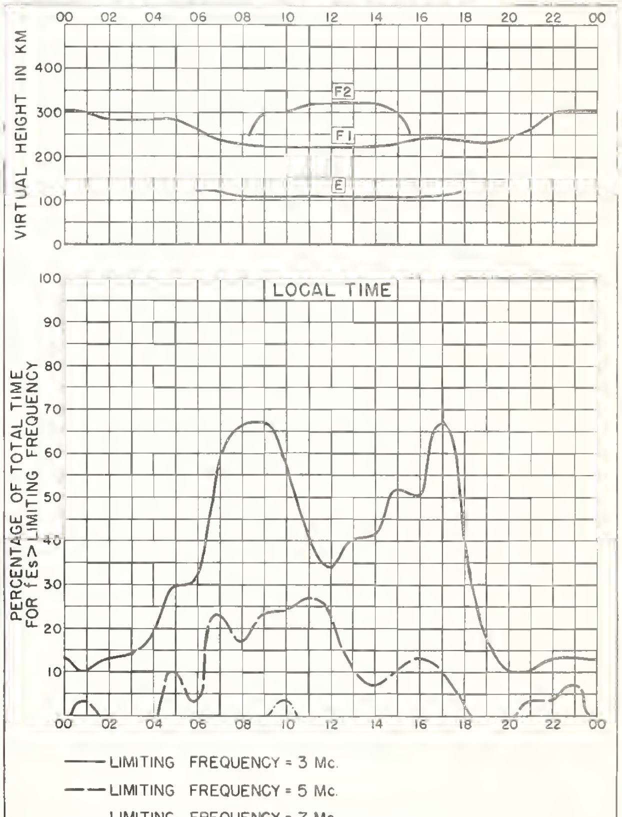

Fig. 12. WHITE SANDS, NEW MEXICO APRIL 1950

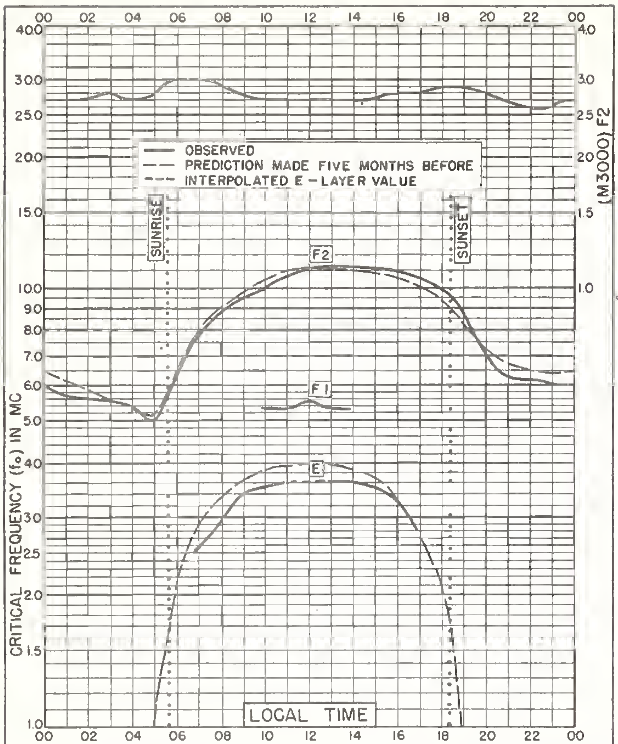

Fig. 13. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W APRIL 1950

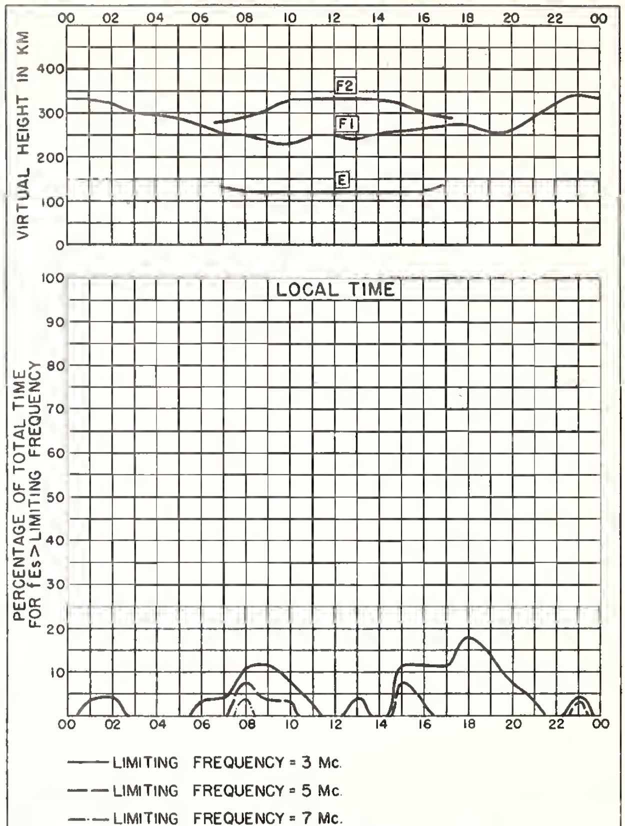

Fig. 14. BATON ROUGE, LOUISIANA APRIL 1950

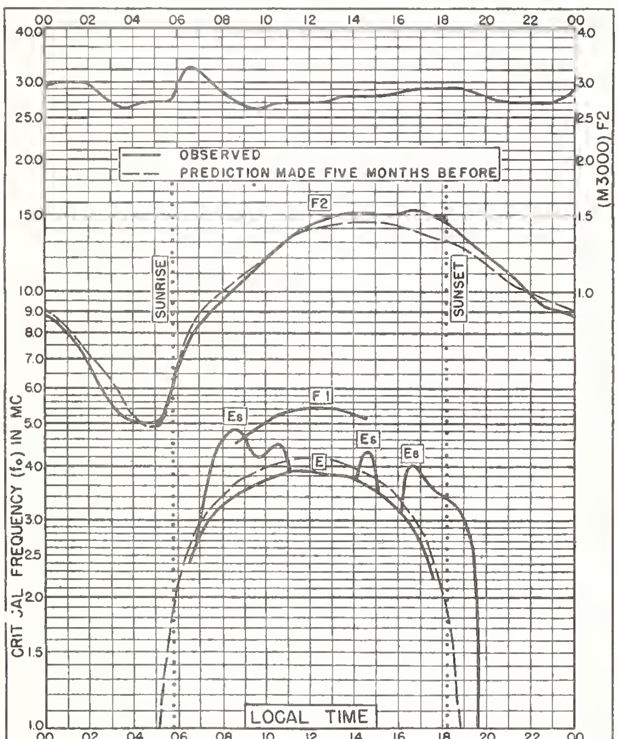

Fig. 15. MAUI, HAWAII
20.8°N, 156.5°W APRIL 1950

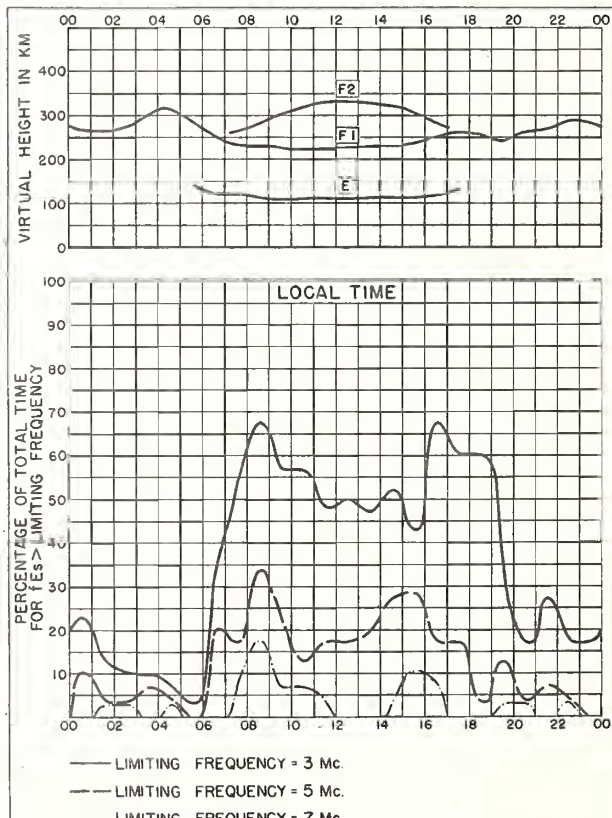

Fig. 16. MAUI, HAWAII APRIL 1950

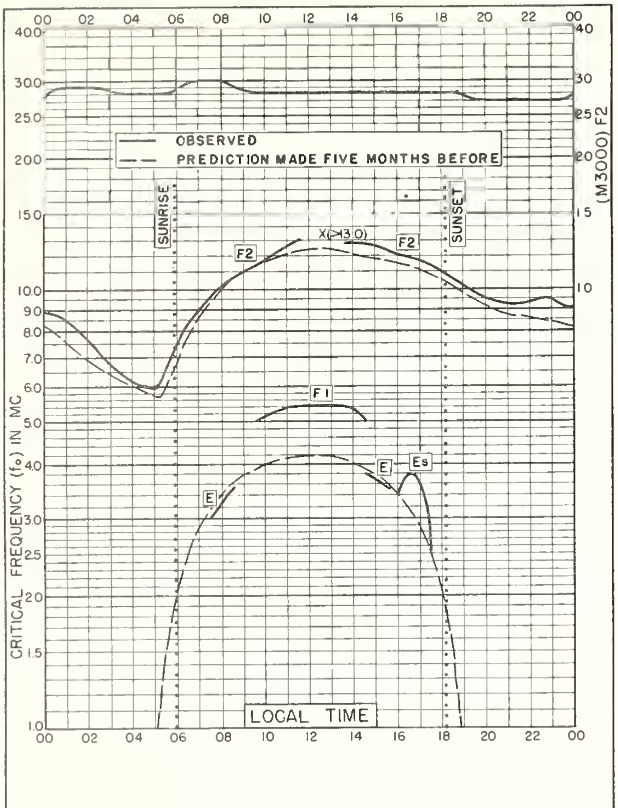

Fig. 17. SAN JUAN PUERTO RICO
18.4°N, 66.1°W APRIL 1950

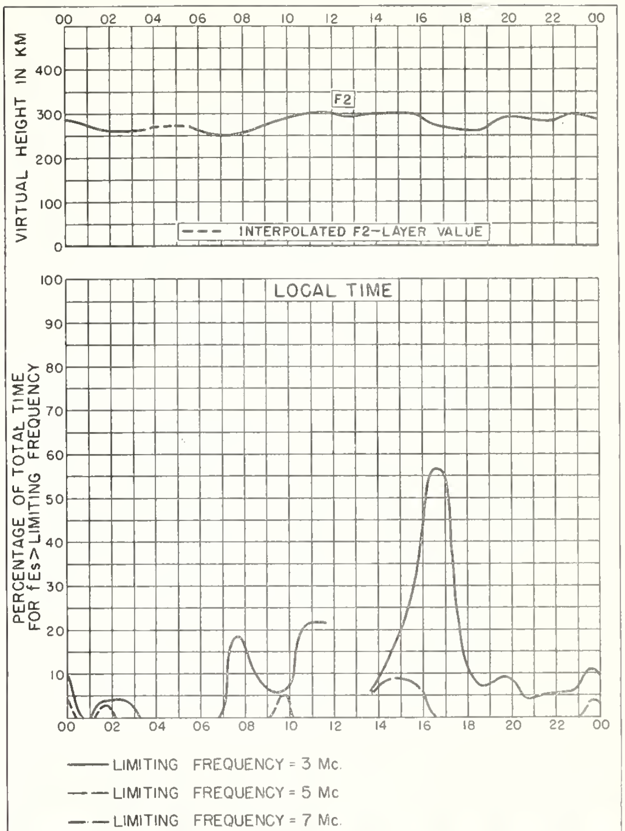

Fig. 18. SAN JUAN, PUERTO RICO APRIL 1950

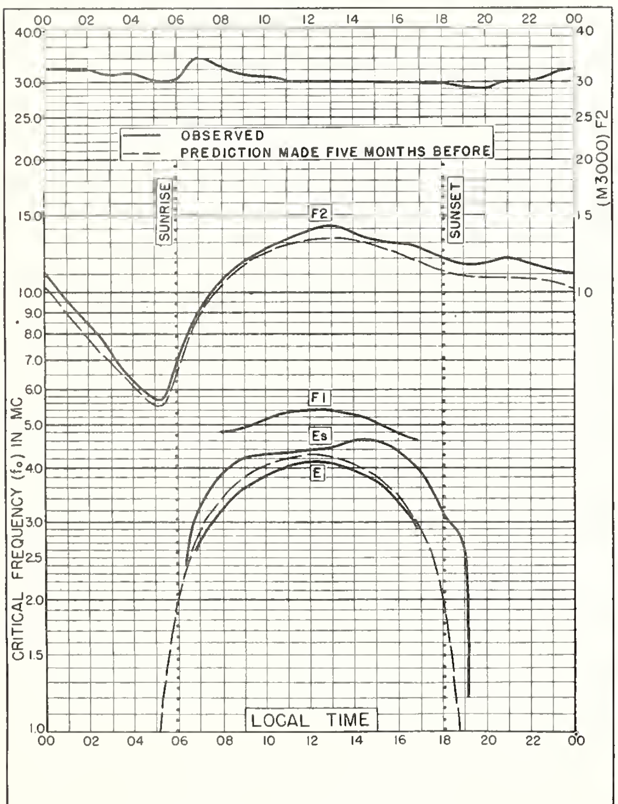

Fig. 19. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W APRIL 1950

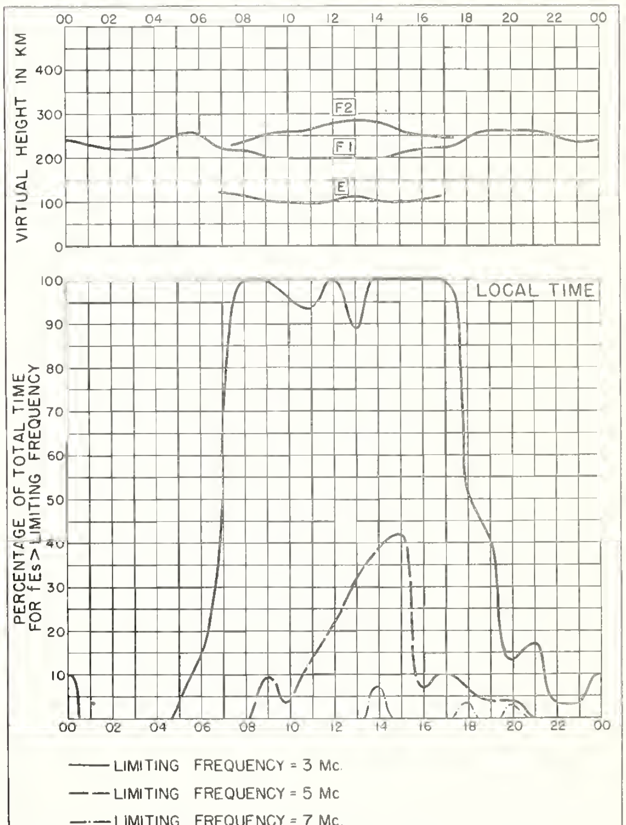

Fig. 20. TRINIDAD, BRIT. WEST INDIES APRIL 1950

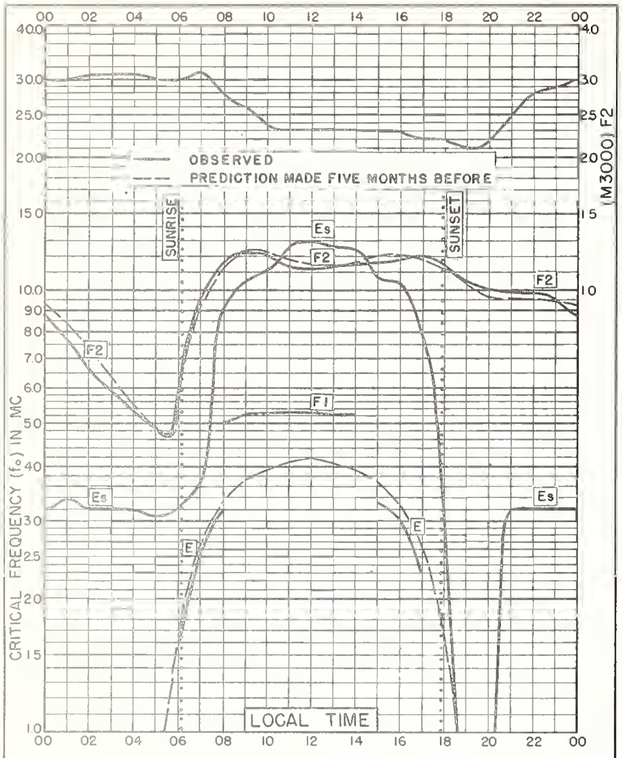

Fig. 21. HUANCAYO, PERU
12.0°S, 75.3°W APRIL 1950

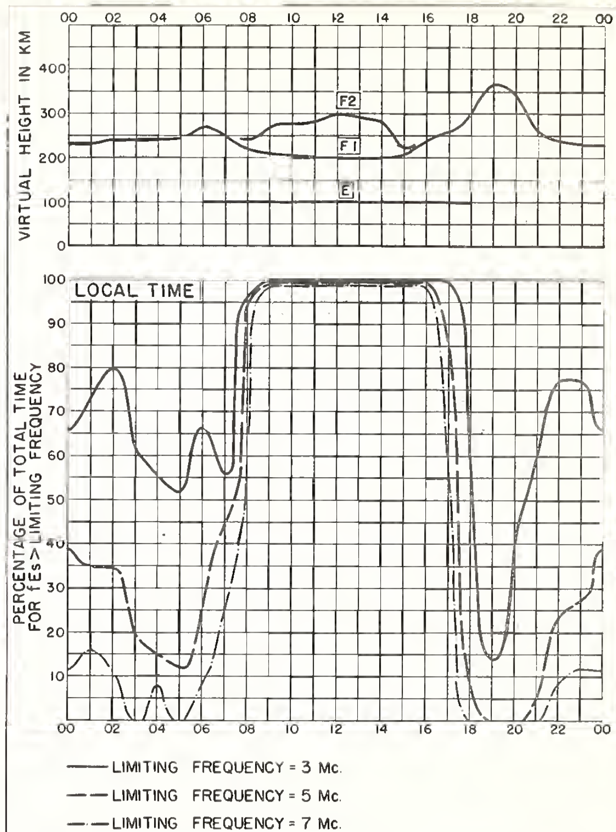

Fig. 22. HUANCAYO, PERU APRIL 1950

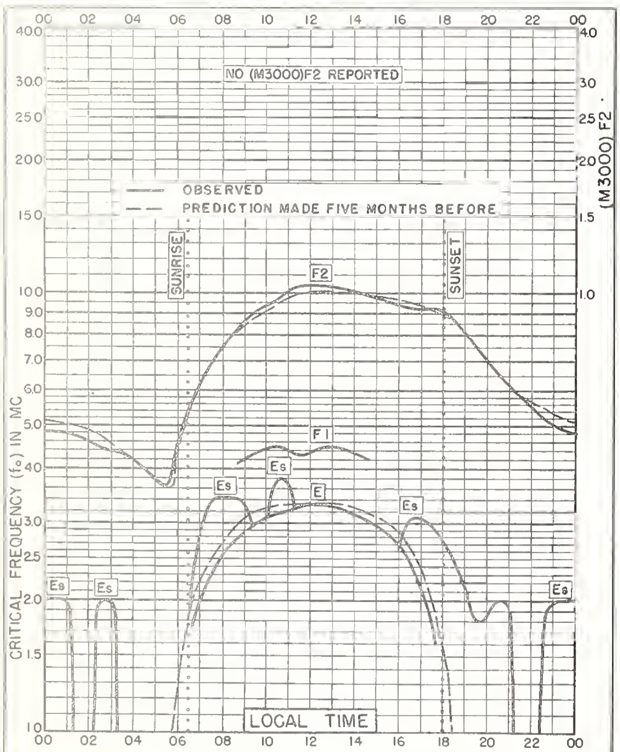

Fig. 23. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E MARCH 1950

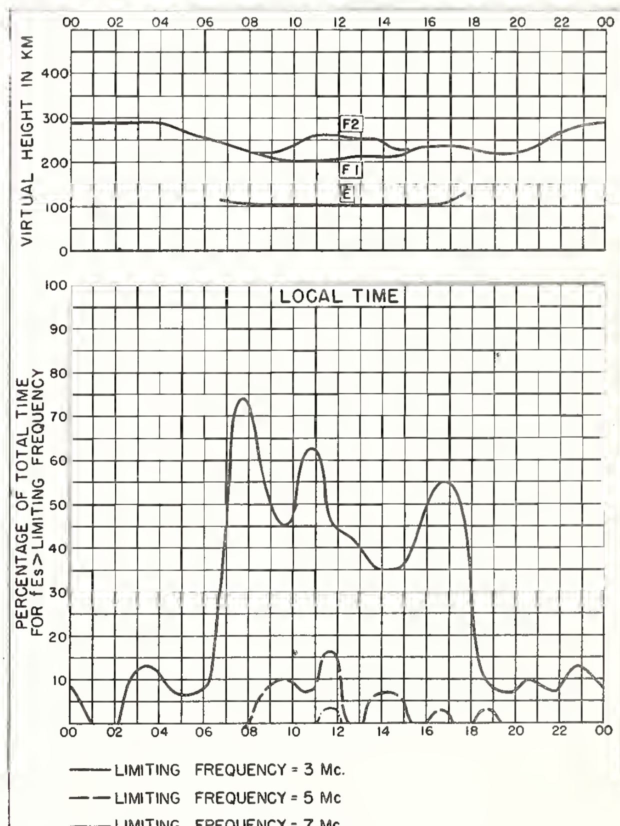

Fig. 24. LINDAU/HARZ, GERMANY MARCH 1950

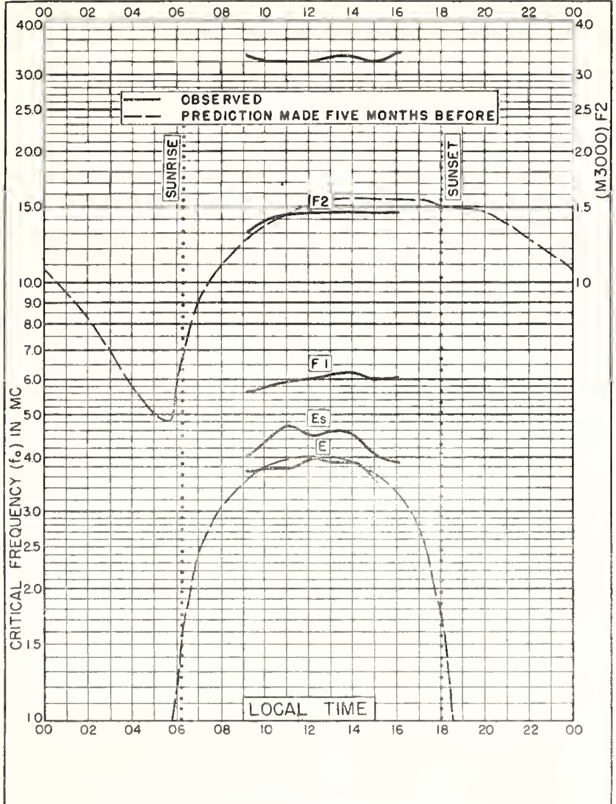

Fig. 25. FORMOSA, CHINA
25. 0°N, 121. 0°E MARCH 1950

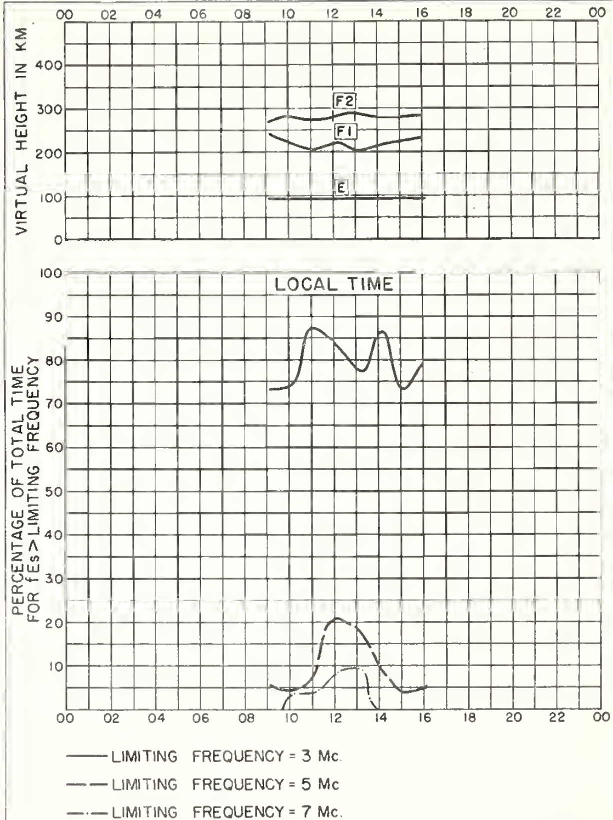

Fig. 26. FORMOSA, CHINA MARCH 1950

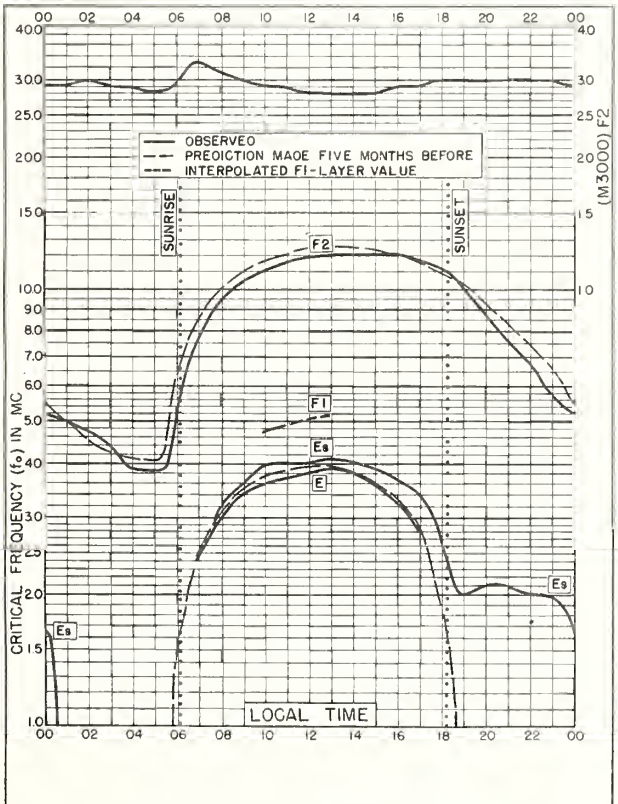

Fig. 27. JOHANNESBURG, U. OF S. AFRICA
26. 2°S, 28. 0°E MARCH 1950

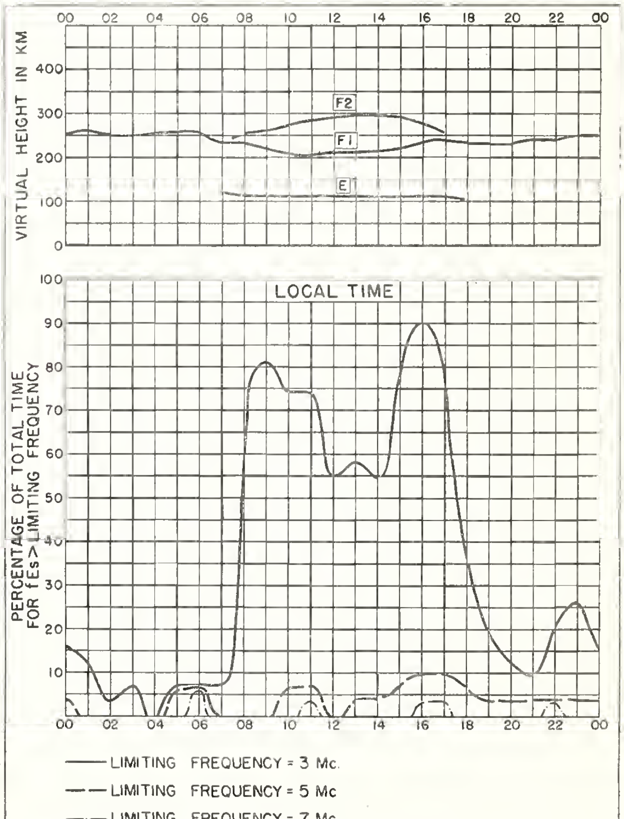

Fig. 28. JOHANNESBURG, U. OF S. AFRICA MARCH 1950

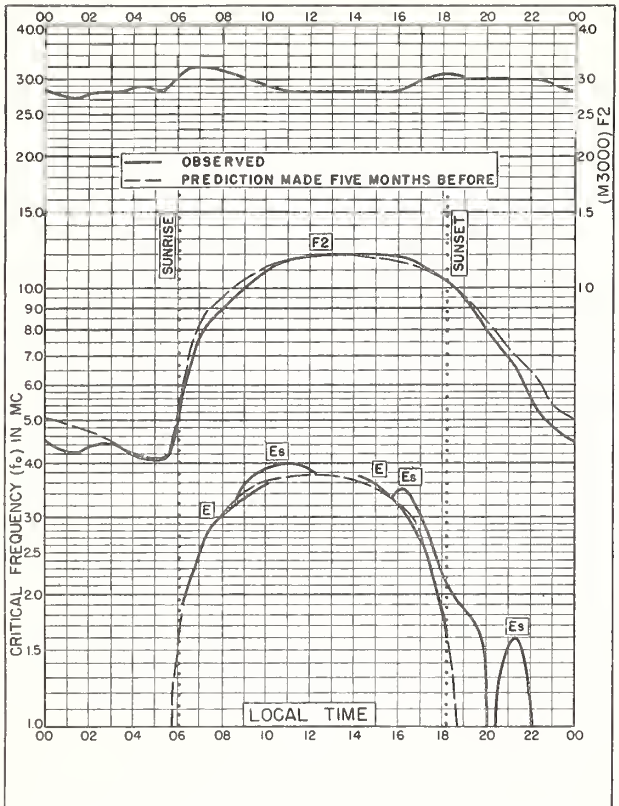

Fig. 29. CAPETOWN, U. OF S. AFRICA
34.2°S, 18.3°E MARCH 1950

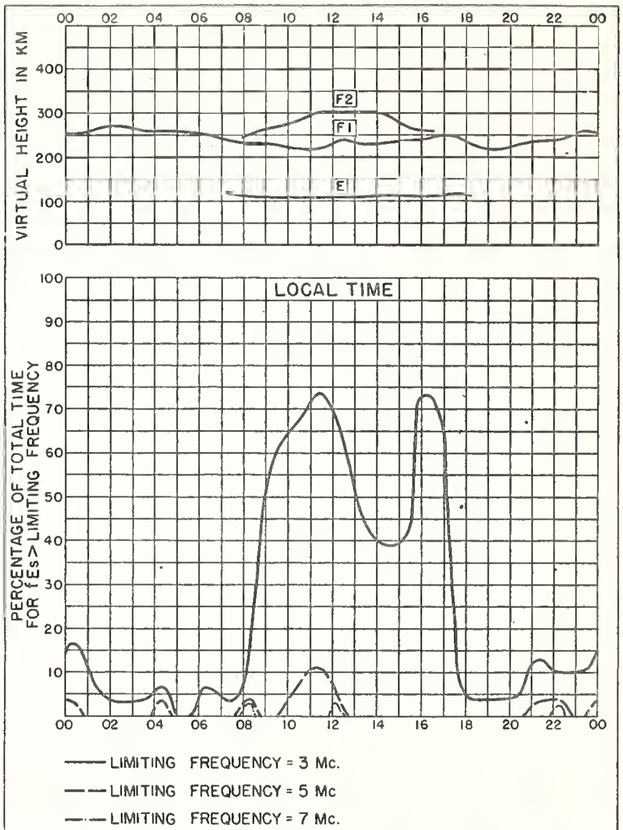

Fig. 30. CAPETOWN, U. OF S. AFRICA MARCH 1950

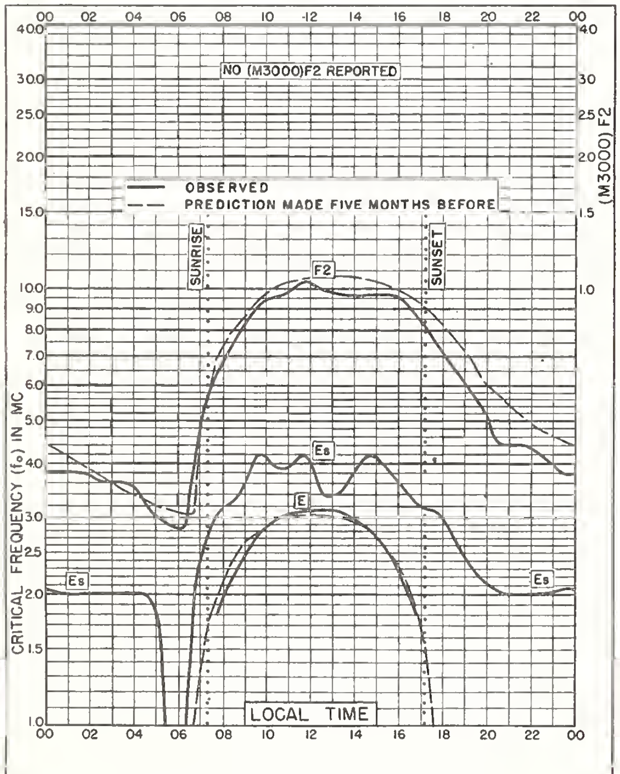

Fig. 31. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E FEBRUARY 1950

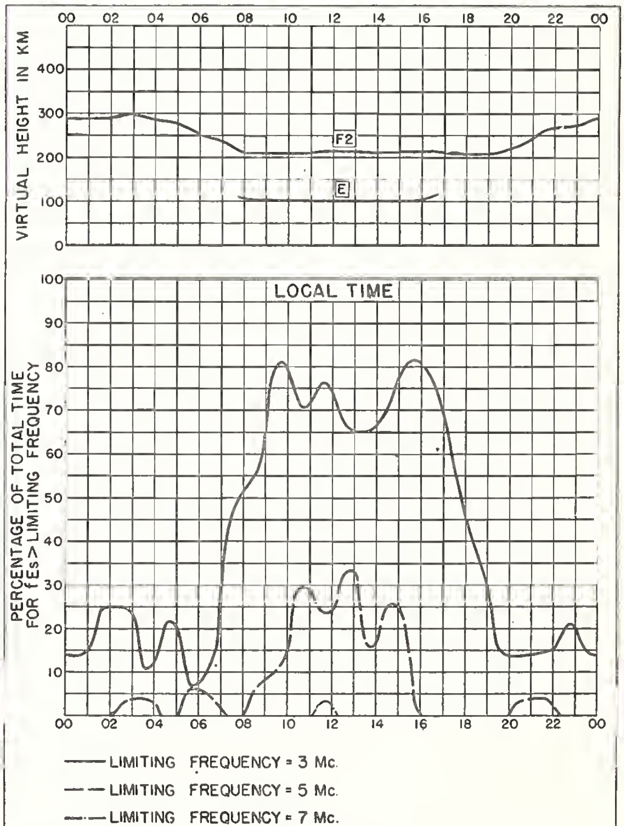

Fig. 32. LINDAU/HARZ, GEMANY FEBRUARY 1950

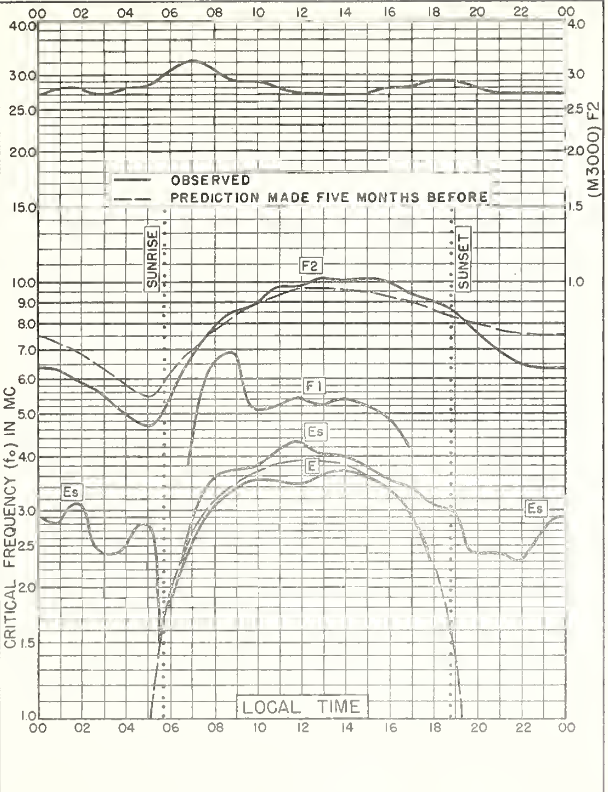

Fig. 33. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E FEBRUARY 1950

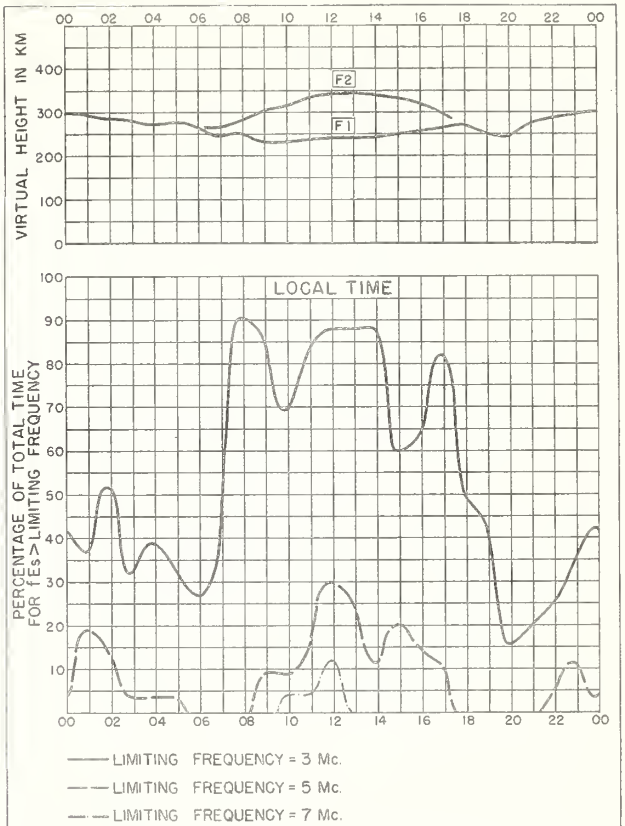

Fig. 34. WATHEROO, W. AUSTRALIA FEBRUARY 1950

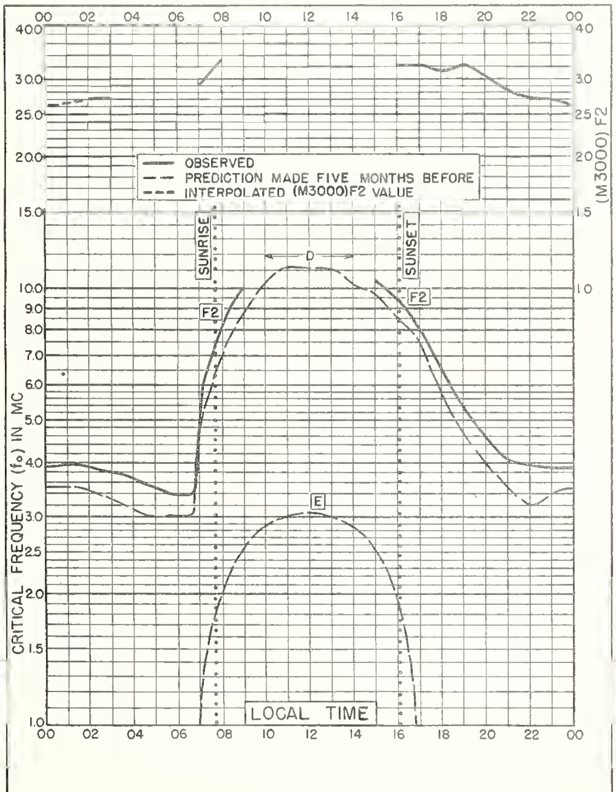

Fig. 35. POITIERS, FRANCE
46.6°N, 0.3°E DECEMBER 1949

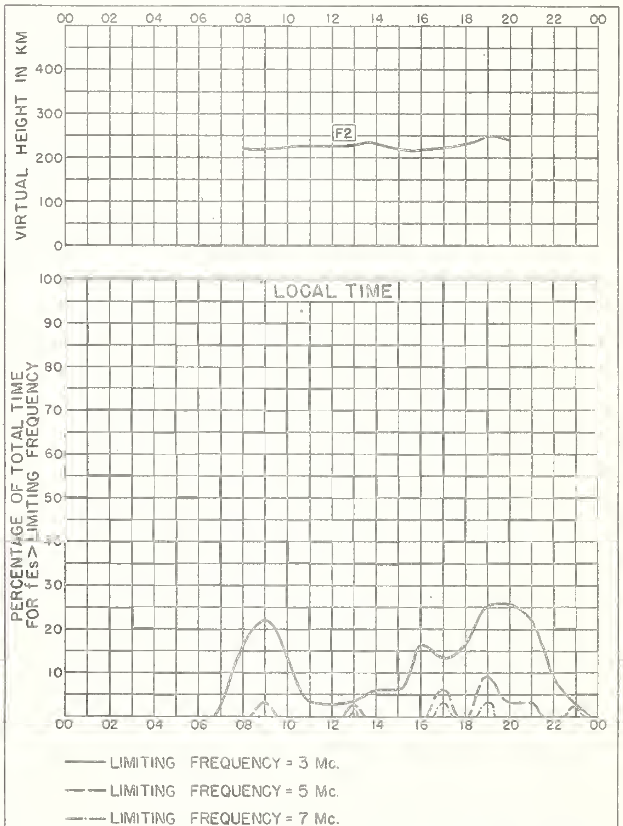

Fig. 36. POITIERS, FRANCE DECEMBER 1949

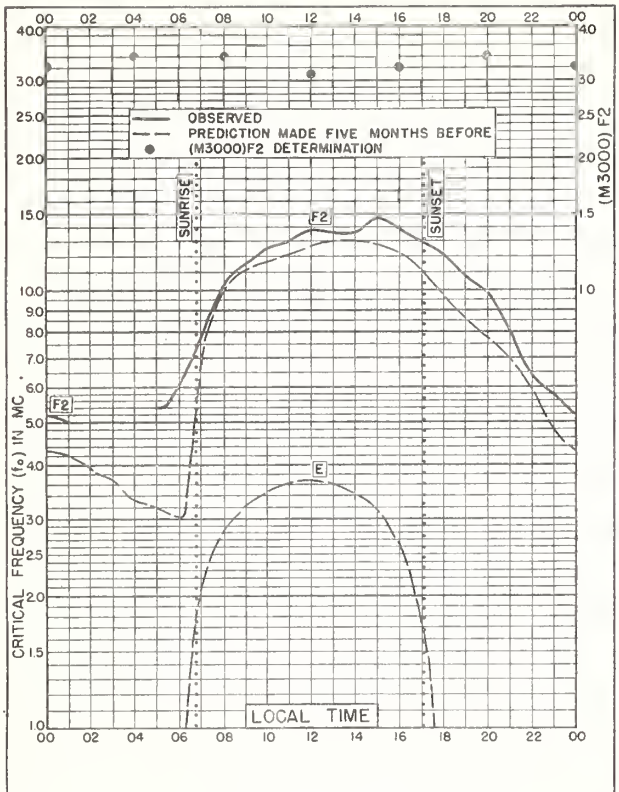

Fig. 37. DELHI, INDIA
28.6°N, 77.1°E DECEMBER 1949

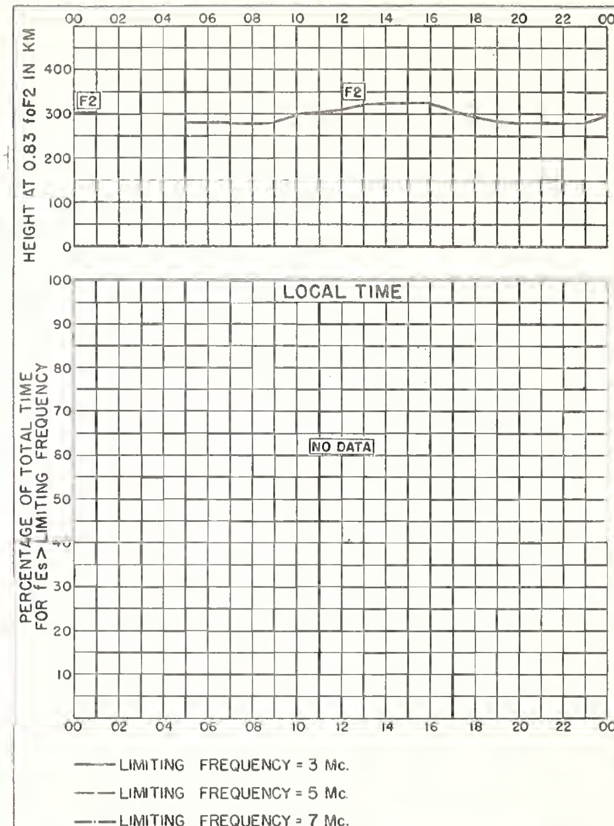

Fig. 38. DELHI, INDIA DECEMBER 1949

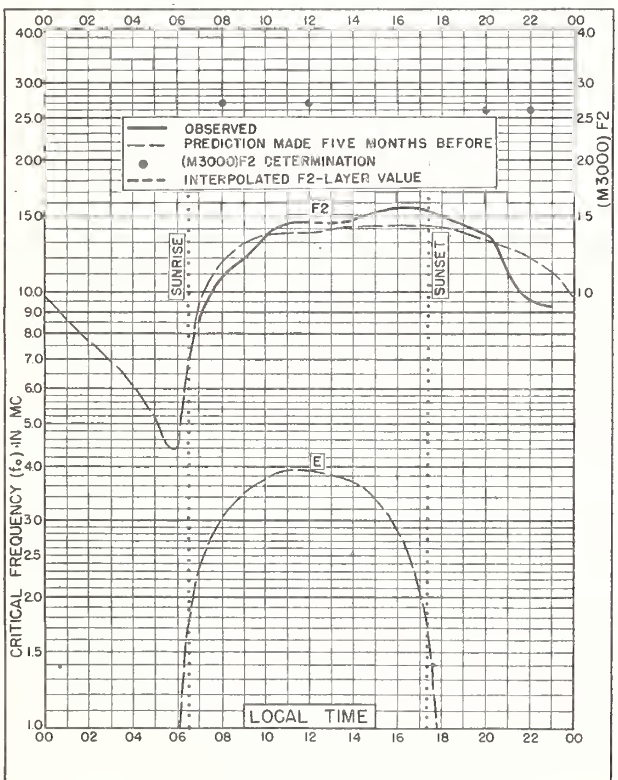

Fig. 39. BOMBAY, INDIA
19.0°N, 73.0°E DECEMBER 1949

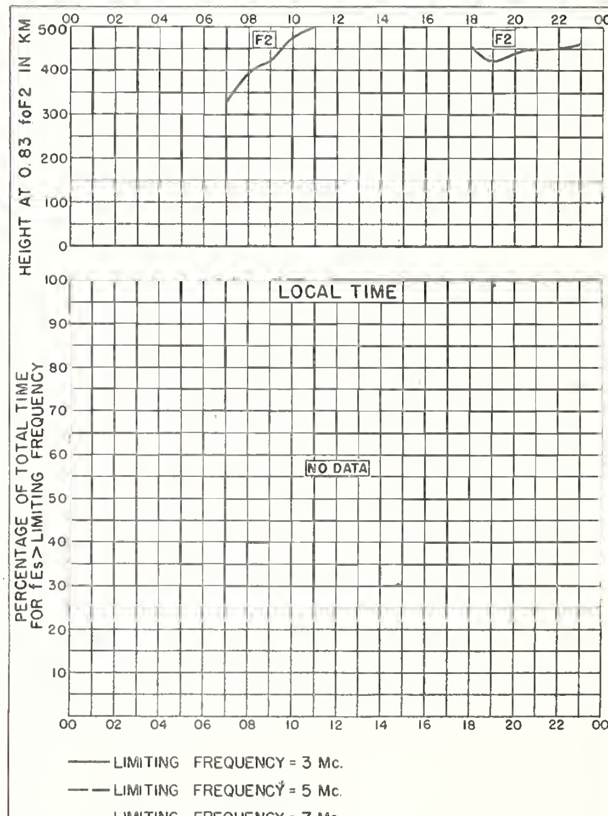

Fig. 40. BOMBAY, INDIA DECEMBER 1949

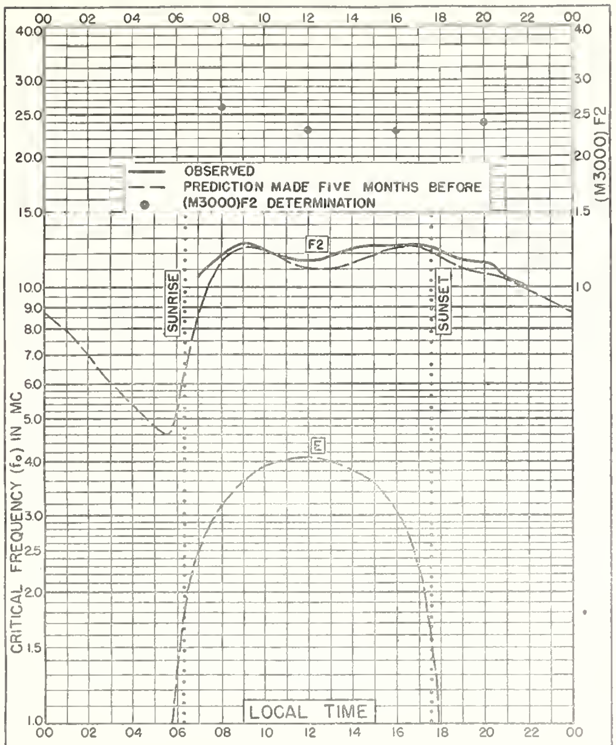

Fig. 41. MADRAS, INDIA
13.0°N, 80.2°E DECEMBER 1949

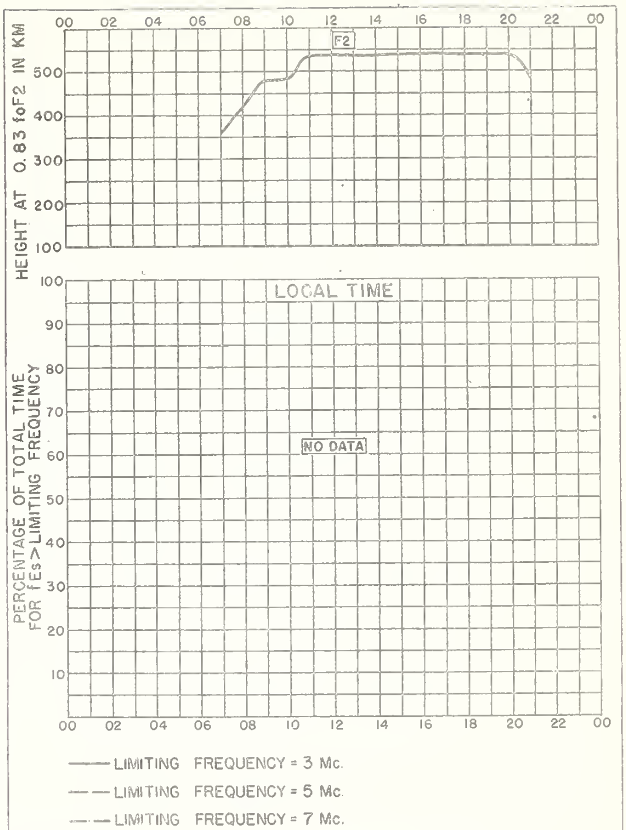

Fig. 42. MADRAS, INDIA DECEMBER 1949

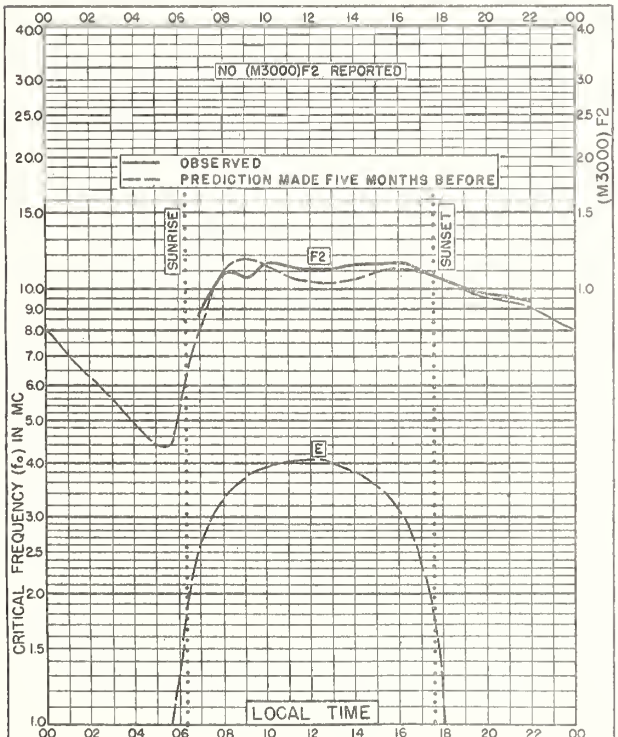

Fig. 43. TIRUCHY, INDIA
10.8°N, 78.8°E DECEMBER 1949

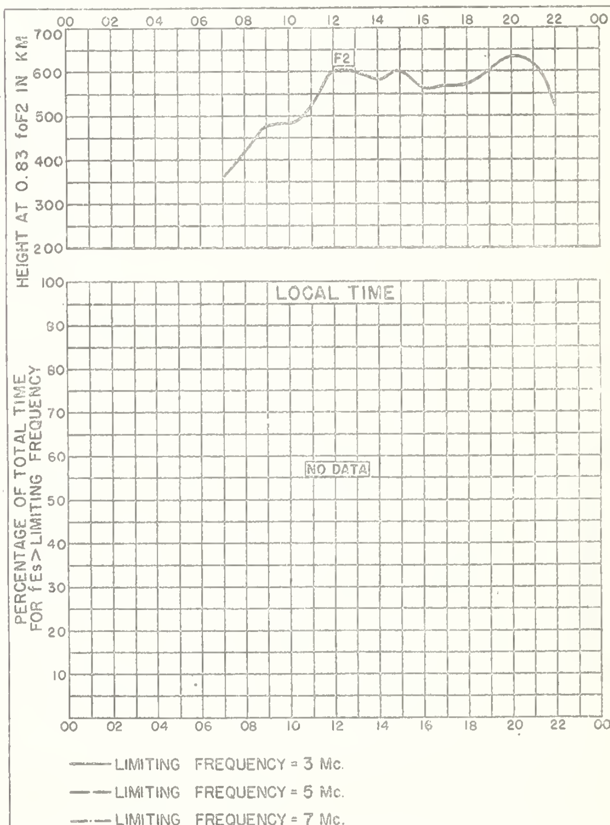

Fig. 44. TIRUCHY, INDIA DECEMBER 1949

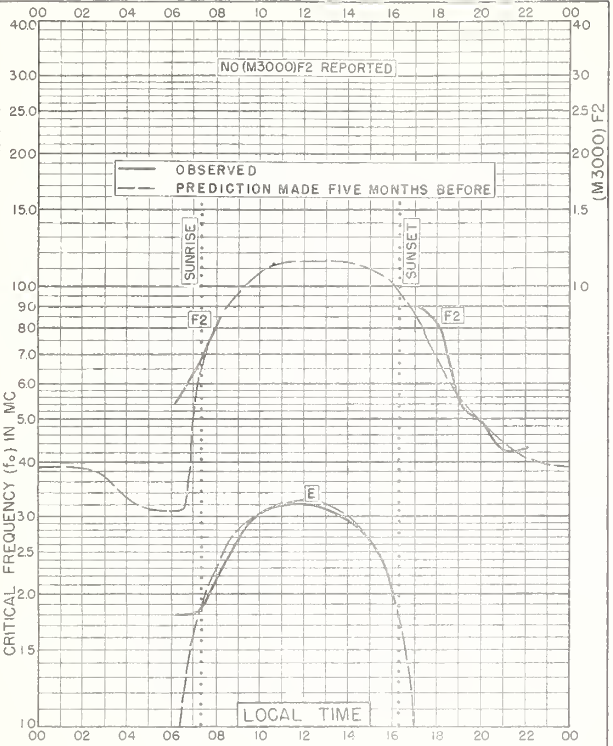

Fig. 45. BAGNEUX, FRANCE
48.8°N, 2.3°E NOVEMBER 1949

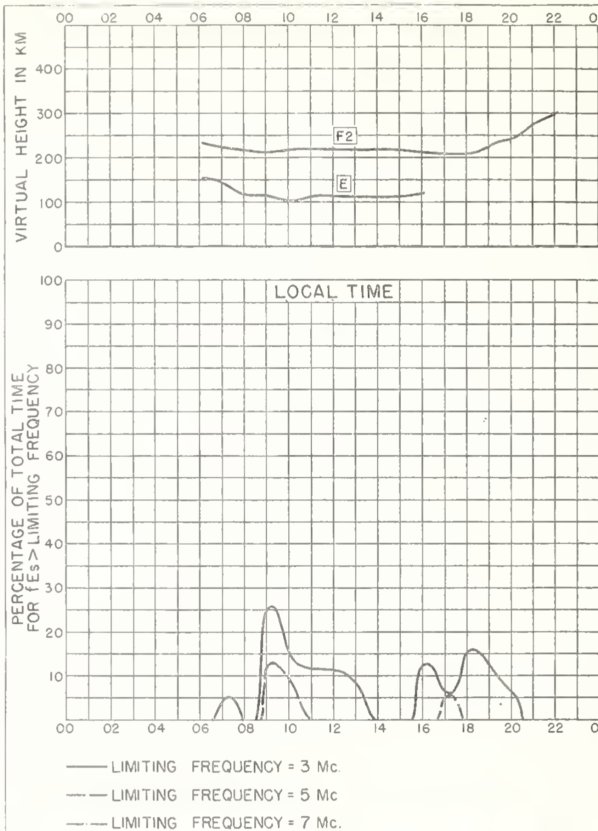

Fig. 46. BAGNEUX, FRANCE NOVEMBER 1949

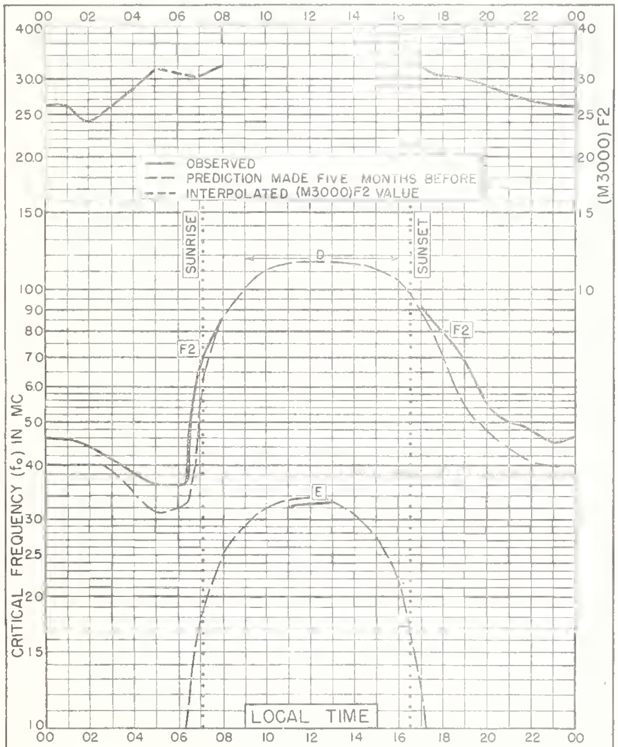

Fig. 47. POITIERS, FRANCE
46.6°N, 0.3°E NOVEMBER 1949

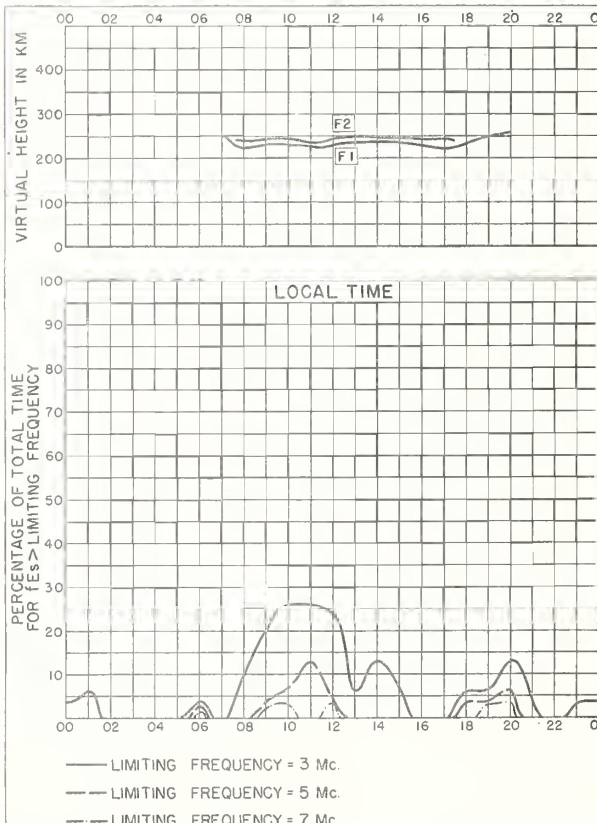

Fig. 48. POITIERS, FRANCE NOVEMBER 1949

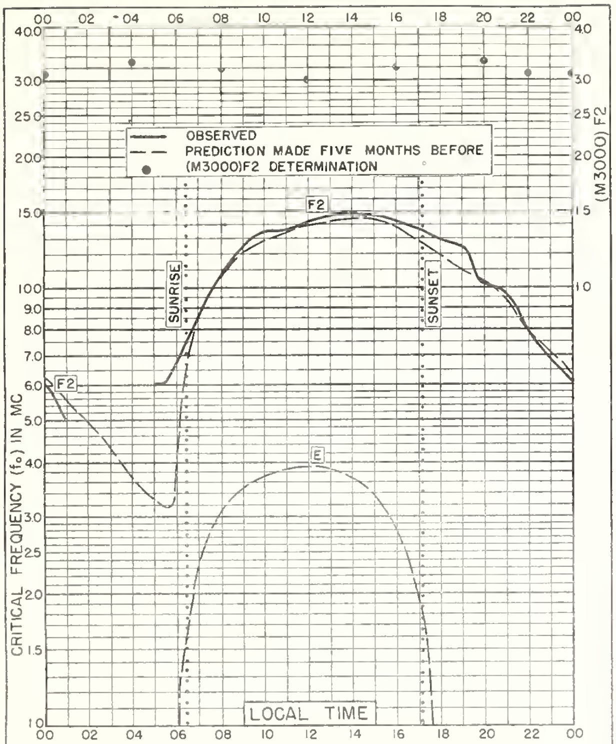

Fig. 49. DELHI, INDIA
28.6°N, 77.1°E NOVEMBER 1949

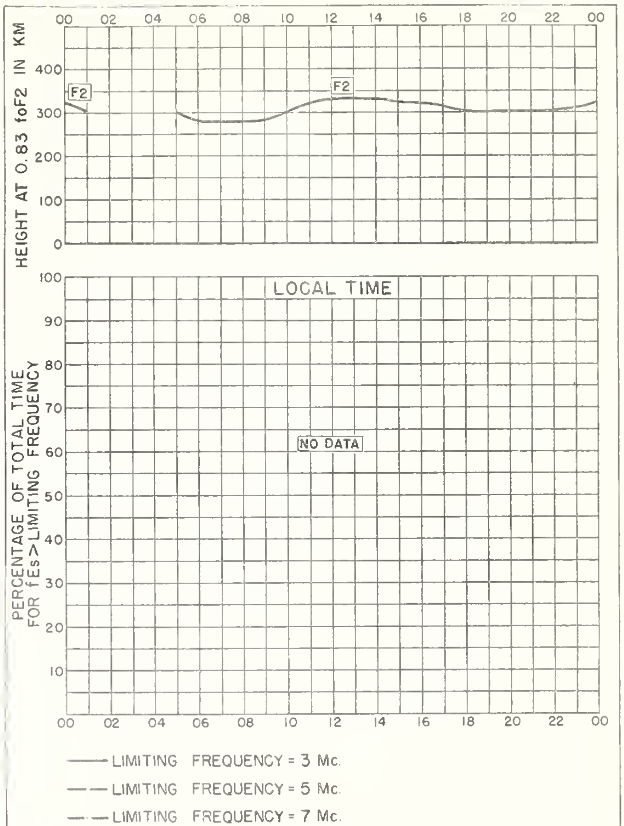

Fig. 50. DELHI, INDIA NOVEMBER 1949

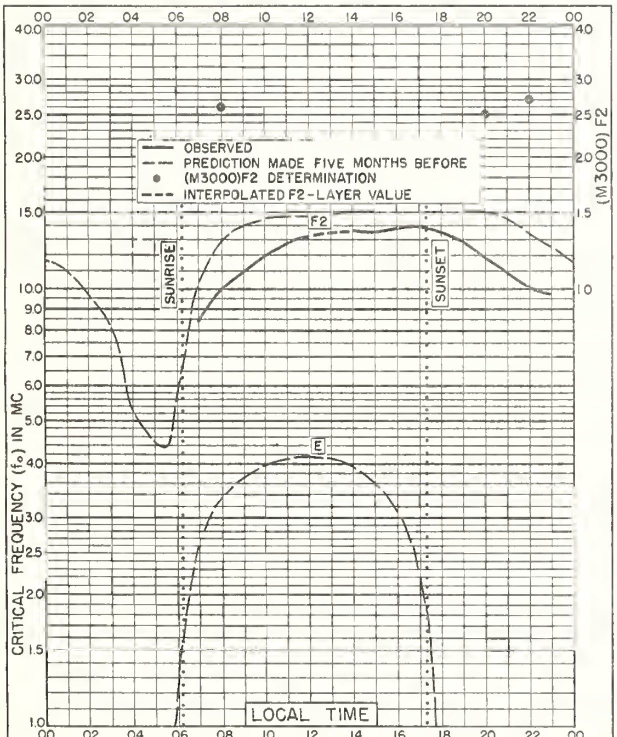

Fig. 51. BOMBAY, INDIA
19.0°N, 73.0°E NOVEMBER 1949

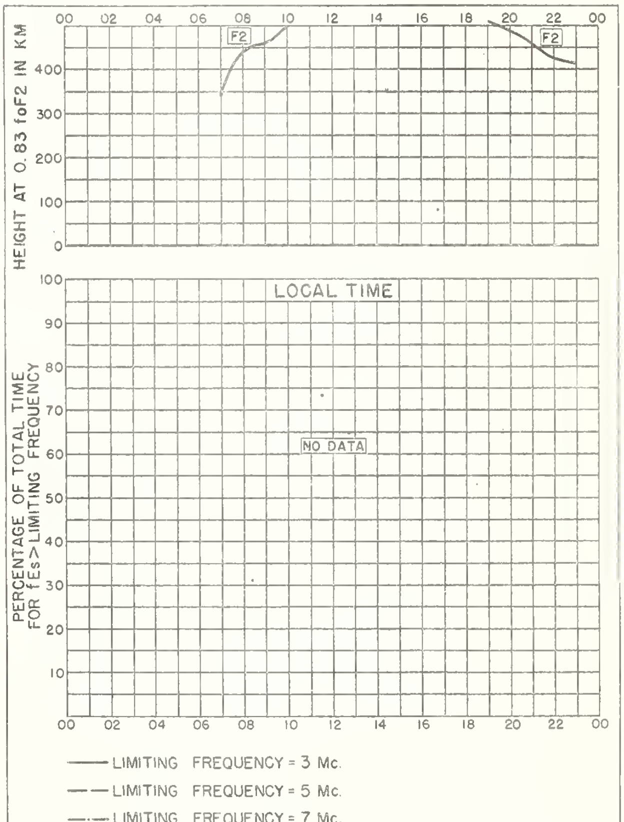

Fig. 52. BOMBAY, INDIA NOVEMBER 1949

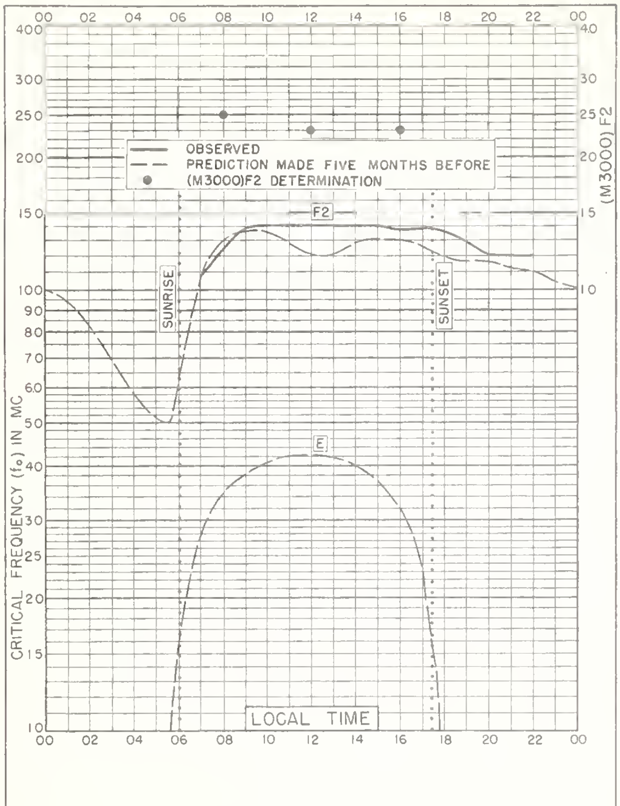

Fig. 53. MADRAS, INDIA
13. 0°N, 80. 2°E NOVEMBER 1949

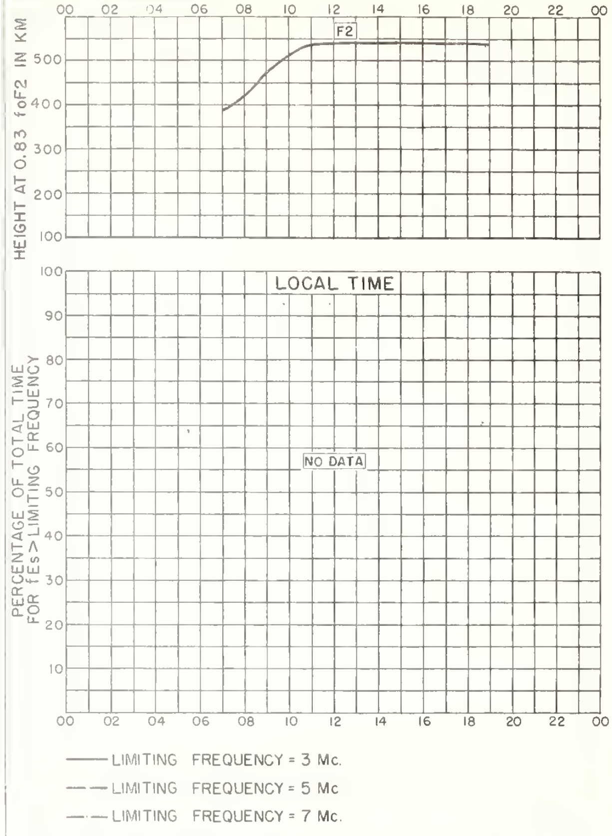

Fig. 54. MADRAS, INDIA NOVEMBER 1949

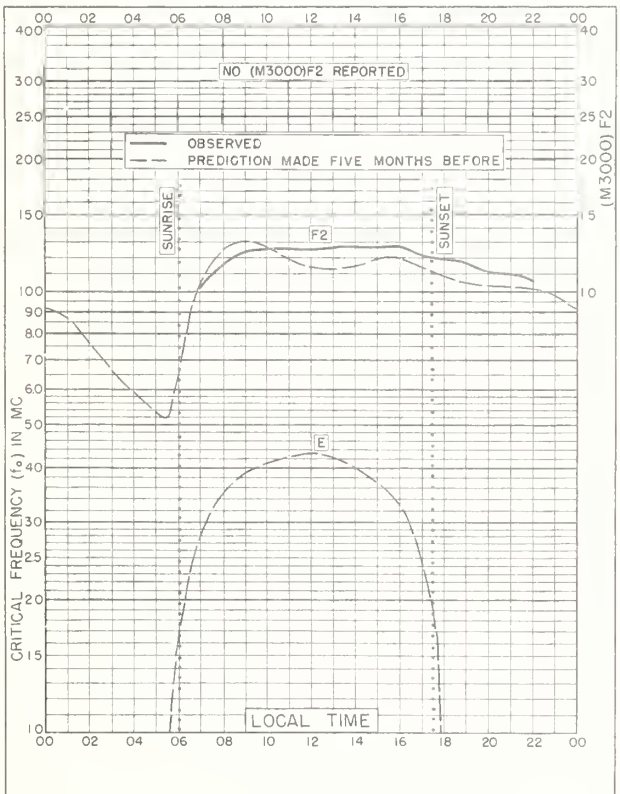

Fig. 55. TIRUCHY, INDIA
10. 8°N, 78. 8°E NOVEMBER 1949

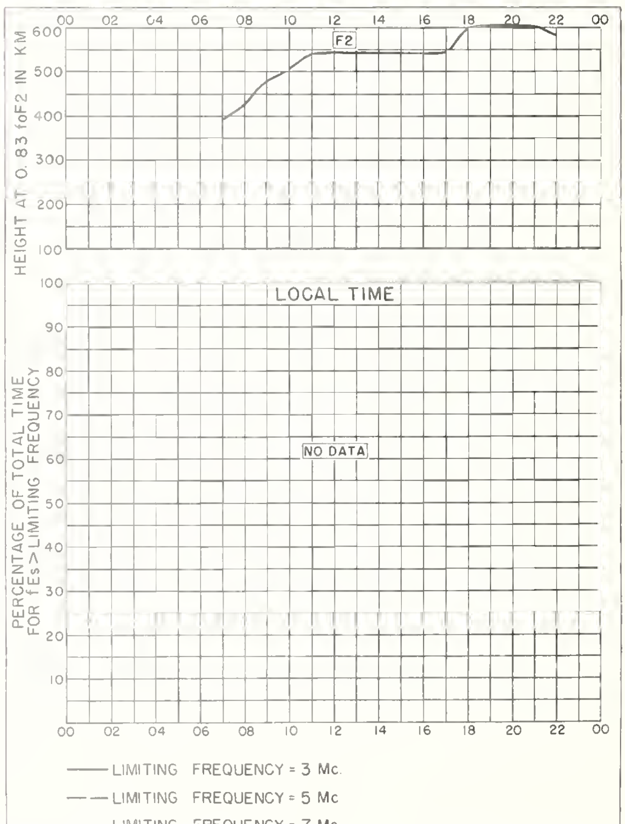

Fig. 56. TIRUCHY, INDIA NOVEMBER 1949

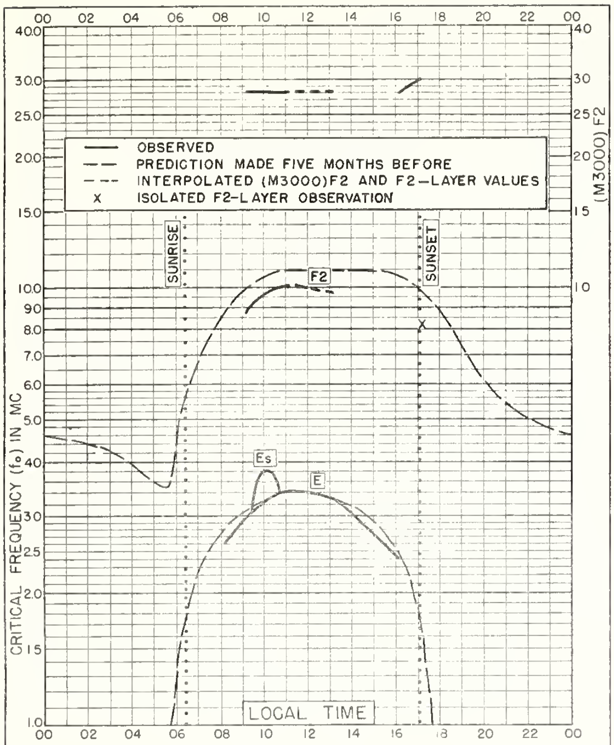

Fig. 57. BAGNEUX, FRANCE
48.8°N, 2.3°E OCTOBER 1949

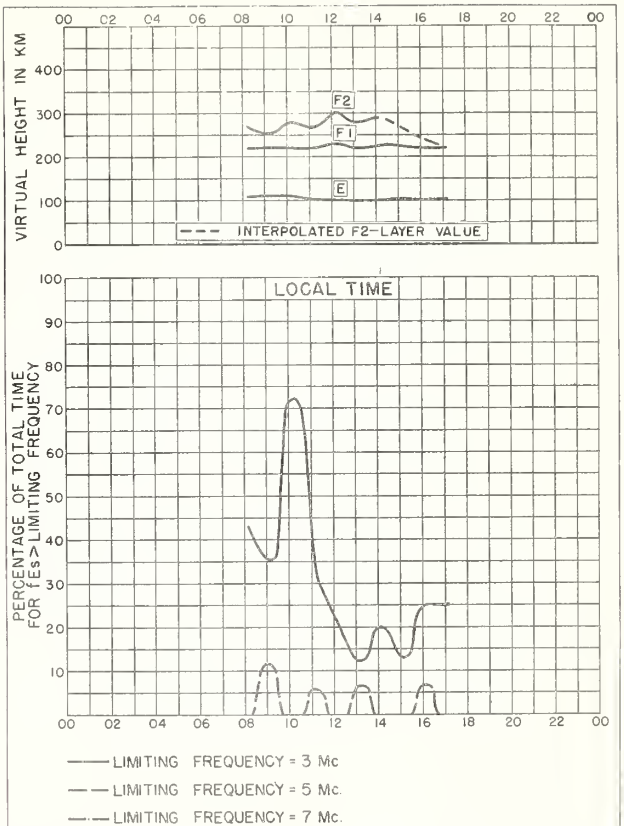

Fig. 58. BAGNEUX, FRANCE OCTOBER 1949

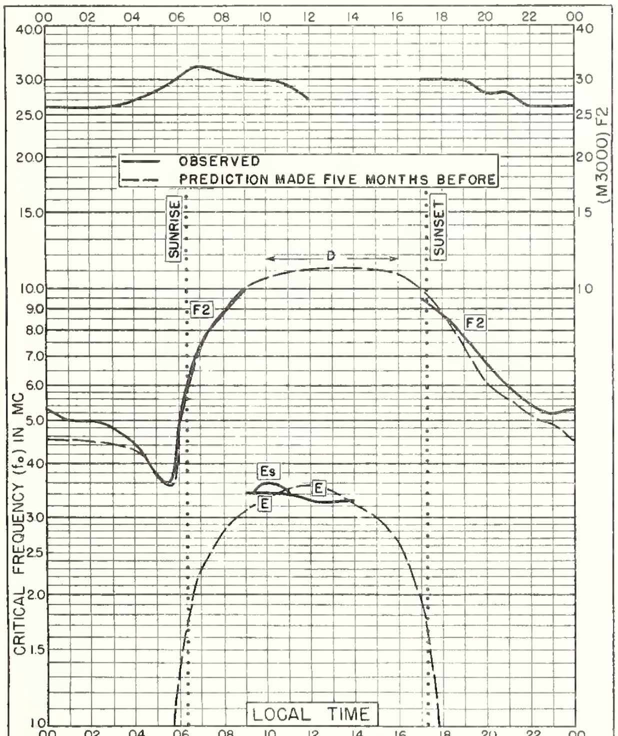

Fig. 59. POITIERS, FRANCE
46.6°N, 0.3°E OCTOBER 1949

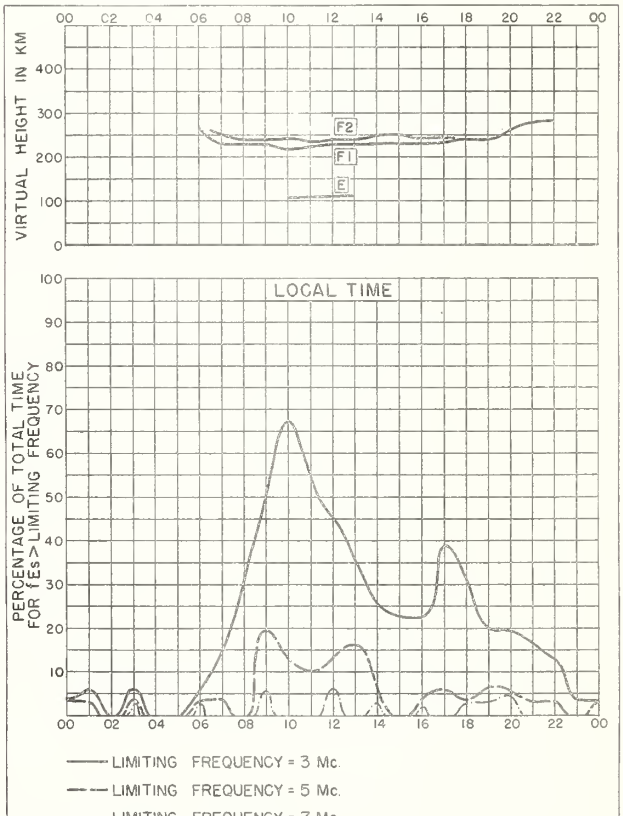

Fig. 60. POITIERS, FRANCE OCTOBER 1949

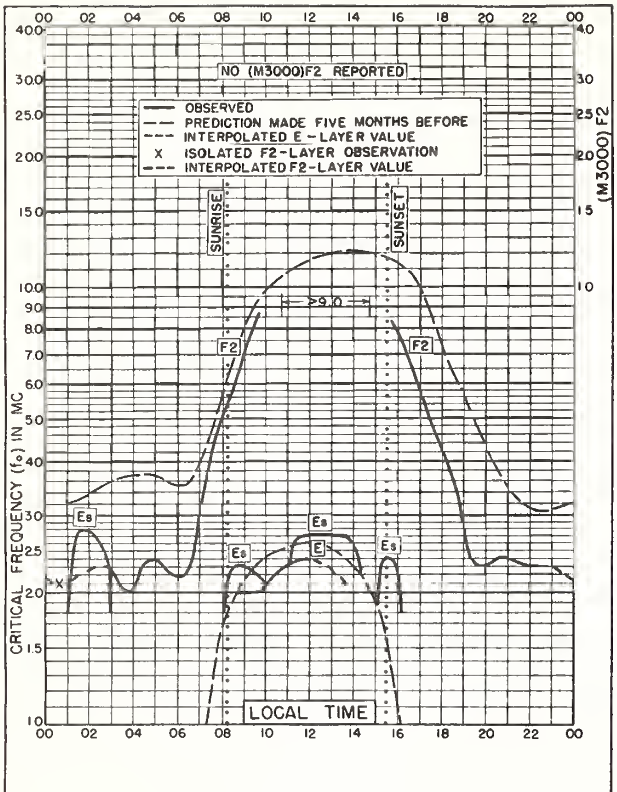

Fig. 61. OSLO, NORWAY
60.0°N, 11.0°E NOVEMBER 1948

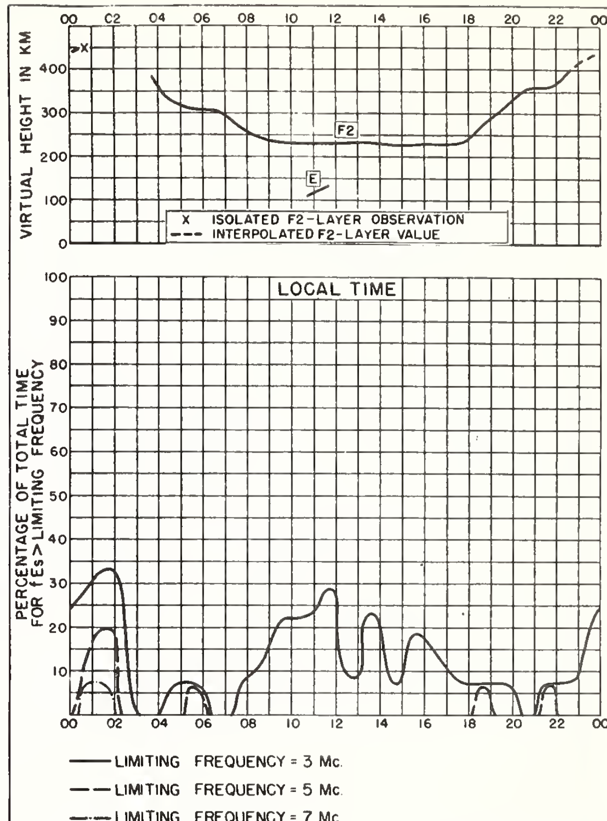

Fig. 62. OSLO, NORWAY NOVEMBER 1948

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CRPL and IRPL Reports

[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.
- R5. Criteria for Ionospheric Storminess.
- R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
- R12. Short Time Variations in Ionospheric Characteristics.
- R14. A Graphical Method for Calculating Ground Reflection Coefficients.
- R15. Predicted Limits for F2-Layer Radio Transmission Throughout the Solar Cycle.
- R17. Japanese Ionospheric Data—1943.
- R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
- R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
- R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.
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- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
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- R34. The Interpretation of Recorded Values of *fEs*.
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IRPL–T. Reports on tropospheric propagation:
- T1. Radar operation and weather. (Superseded by JANP 101.)
- T2. Radar coverage and weather. (Superseded by JANP 102.)

CRPL–T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG–5.)

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