CRPL-F69

IONOSPHERIC DATA

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

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.
- R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
- R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.
- R26. The Ionosphere as a Measure of Solar Activity.
- R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
- R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
- R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
- R33. Ionospheric Data on File at IRPL.
- R34. The Interpretation of Recorded Values of *fEs*.
- R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

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.)

*Items bearing this symbol are distributed only by U. S. Navy. They are issued under one cover as the DNC–14 series.

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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.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 33 and figures 1 to 65 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

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

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

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

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

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

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

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

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

United States Army Signal Corps:
- Okinawa I.

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

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

a. Differences in scaling records when spread echoes are present.

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

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

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

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

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

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

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

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

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

Month	Predicted Sunspot No.					
	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		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	

IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in tables 34 to 45 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 and Terminology; Conventions for Determining Median Values." Beginning with September 1949, the data are taken at a new location, Ft. Belvoir, Virginia.

IONOSPHERE DISTURBANCES

Table 46 presents ionosphere character figures for Washington, D. C., during April 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.

Tables 47 through 53 list the sudden ionosphere disturbances observed at Ft. Belvoir, Virginia, April 1950; Brentwood and Somerton, England, April 1950; Platanos, Argentina, March 1950; Riverhead, New York, April 1950; Hong Kong, China, February 1950; Point Reyes, California, April 1950; and Lindau/Harz, Germany, March 1950, respectively.

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, March 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.

OBSERVATIONS OF THE SOLAR CORONA

Tables 55 through 57 give the observations of the solar corona during April 1950 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 58 through 60 list the coronal observations obtained at Sacramento Peak, New Mexico, during March 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 55 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 56 gives similarly the intensities of the first red (6374A) coronal line; and table 57, the intensities of the second red (6704A) coronal line; all observed at Climax in April 1950.

Table 58 gives the intensities of the green (5303A) coronal line; table 59, the intensities of the first red (6374A) coronal line; and table 60, the intensities of the second red (6704A) coronal line; all observed at Sacramento Peak in March 1950.

The following symbols are used in tables 55 through 60: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

AMERICAN AND ZÜRICH PROVISIONAL RELATIVE SUNSPOT NUMBERS

Table 61 presents the daily American relative sunspot number, R_A, computed from observations communicated to CRPL by observers in America and abroad. Beginning with the observations for January 1948, a new method of reduction of observations is employed such that each observer is assigned a scale-determining "observatory coefficient," ultimately referred to Zürich observations in a standard period, December 1944 to September 1945, and a statistical weight, the reciprocal of the variance of the observatory coefficient. The daily numbers listed in the table are the weighted means of all observations received for each day. Details of the procedure are given in the Publication of the Astronomical Society of the Pacific, issued February 1949, in an article entitled "Reduction of Sunspot-Number Observations." The American relative sunspot number computed in this way is designated R_A. It is noted that a number of observatories abroad, including the Zürich observatory, are included in R_A. The scale of R_A was referred specifically to that of the Zürich relative sunspot numbers in the standard comparison period; since that time, R_A is influenced by the Zürich observations only in that Zürich proves to be a consistent observer and receives a high statistical weight. In addition, this table lists the daily provisional Zürich sunspot numbers, R_Z.

PRELIMINARY MEAN K-INDICES, PRELIMINARY INTERNATIONAL CHARACTER FIGURES, MAGNETICALLY SELECTED DAYS, PLANETARY INDICES

Table 62 gives preliminary mean K-indices, Kw, preliminary international character figures, C, Kp, and final magnetically selected days from magnetic observatories widely distributed over the Earth's surface. The selected days are preferentially derived using the four magnetic criteria: C-figures, sums of the eight daily mean K-indices, the greatest daily K-index, and the sums of the squares of the eight daily K-indices.

Kp is designed to measure solar particle-radiation by its magnetic effects at eleven observatories between geomagnetic latitudes 47 and 63 degrees. 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. This bulletin has tables of Kp for 1945-48. Current tables of Kp appear in the Journal of Geophysical Research.

These tables have been furnished by the courtesy of the Committee on Characteristics of Magnetic Disturbance, ATME, IUGG. The majority of the world's magnetic observatories have cooperated in supplying the data. The Meteorological Office, De Bilt, Holland, has efficiently assembled and compiled the summary tables. The Chairman of the Committee has compiled Kp to supply the need of research workers in the ionospheric field for a specific index of solar particle-activity. Tables of Kp will ultimately be available from January 1, 1937, the beginning date for serious ionospheric records.

TABLES OF IONOSPHERIC DATA

Table 1

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.7						2.7
01	(300)	(5.5)						(2.7)
02	300	5.2						2.7
03	300	(4.8)						(2.7)
04	300	(4.4)						(2.7)
05	290	(4.3)						(2.8)
06	270	5.3	---	---	(120)	2.0		3.0
07	260	6.4	230	---	110	2.6		3.0
08	300	6.9	230	(4.4)	110	3.0		3.0
09	310	7.6	220	(4.8)	110	3.3		2.9
10	320	8.3	210	(5.0)	110	3.5		2.8
11	330	8.6	210	(5.2)	100	3.6		2.8
12	320	8.8	220	(5.3)	110	(3.7)		2.8
13	330	9.0	220	(5.2)	110	3.7		2.8
14	310	9.0	230	(5.1)	110	3.6		2.8
15	310	9.0	230	(5.0)	110	3.4		2.8
16	300	8.8	230	4.7	110	3.2		2.8
17	280	8.9	250	---	110	2.8		2.8
18	270	(9.0)	---	---	(120)	2.1		(2.9)
19	250	(8.8)						(2.9)
20	240	(7.7)						(2.8)
21	(260)	(6.8)						(2.8)
22	(280)	(6.1)						(2.7)
23	(290)	(5.9)						(2.7)

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) March 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	(4.5)					1.9	(2.6)
01	300	(4.1)					2.1	(2.6)
02	295	(3.7)					2.3	(2.6)
03	300	(3.4)					2.0	(2.6)
04	300	(3.1)					2.2	(2.6)
05	295	2.9					2.0	(2.7)
06	265	3.7			---	---	2.2	(2.8)
07	245	5.4	---	---	130	2.0	2.5	3.1
08	245	6.6	230	---	115	2.3	2.4	3.1
09	250	7.4	225	---	110	2.6		3.0
10	260	8.2	220	4.2	110	2.9		3.0
11	255	8.8	220	4.4	110	3.0		3.0
12	250	9.6	220	---	105	3.1		3.0
13	250	9.6	225	---	105	3.1		3.0
14	250	9.5	220	---	105	3.0		3.0
15	240	9.4	225	---	110	2.8		3.0
16	240	9.0	235	---	110	2.6	3.1	3.1
17	240	8.7	250	---	120	2.2	2.8	3.1
18	235	8.4			125	1.9	2.3	3.1
19	230	7.8			---	---	2.2	3.0
20	235	7.1						(3.0)
21	245	6.0						2.8
22	250	5.4						(2.7)
23	270	(4.9)						(2.6)

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

Table 3

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.6						2.6
01	280	5.2						2.6
02	270	4.9						2.6
03	280	4.4						2.6
04	280	4.0						2.6
05	280	3.8						2.6
06	250	4.9			150	2.0		2.9
07	250	6.6			130	2.4		3.0
08	250	7.3			---	---		3.0
09	250	8.5			---	---		3.0
10	260	9.5			---	---		3.0
11	260	9.9			---	---		3.0
12	260	9.3			---	---		2.9
13	260	9.9			---	---		2.9
14	250	9.6			---	---		2.9
15	260	9.8			---	---		2.9
16	250	9.5			---	---		3.0
17	250	9.0			130	2.3		3.0
18	240	8.0						2.9
19	230	7.6						2.9
20	240	7.0						2.8
21	250	6.6						2.7
22	270	6.3						2.6
23	270	5.8						2.6

Time: 75.0°W.
Sweep: 0.8 Mc to 14.0 Mc in 1 minute.

Table 4

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.6						2.7
01	290	4.5					2.6	2.7
02	290	4.4					2.7	2.8
03	290	4.5					2.8	2.7
04	290	4.2					2.7	2.8
05	290	4.3					2.8	2.8
06	280	4.7						2.8
07	250	6.5	---	---	130	2.2	2.8	3.2
08	240	8.2	240	---	120	2.7		3.2
09	260	9.2	230	4.7	120	3.2	3.8	3.2
10	270	9.9	220	4.6	120	3.5		3.0
11	300	10.6	220	4.8	120	3.7		3.0
12	280	11.1	220	4.8	120	3.8		3.0
13	300	11.4	230	5.0	120	3.7		3.0
14	280	11.2	230	4.8	120	3.6		3.0
15	270	10.9	240	---	120	3.5		3.0
16	250	10.6	240	---	120	3.2	3.7	3.0
17	240	10.2			120	2.6		3.1
18	240	9.2			140	1.9		3.2
19	220	7.6					2.3	3.1
20	230	6.5						3.0
21	240	5.9						3.0
22	260	5.4						2.9
23	280	4.9						2.8

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

Table 5

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.1						2.7
01	280	5.0						2.7
02	270	4.9						2.7
03	260	4.8						2.7
04	280	4.5						2.7
05	290	4.4						2.7
06	280	4.7						2.8
07	240	7.0			120	2.2		3.2
08	240	8.7	---	---	110	2.7		3.2
09	240	9.7	220	---	110	3.2		3.1
10	260	10.7	210	---	110	3.5	3.3	3.0
11	280	11.0	210	5.2	110	3.6		3.0
12	280	11.7	220	---	110	3.8		2.8
13	280	11.8	220	---	110	3.8		2.8
14	280	11.7	220	---	110	3.6		2.8
15	240	11.3	230	---	110	3.4		2.8
16	240	11.2	230	---	110	3.0	4.1	2.9
17	240	10.8			110	2.5	3.6	3.0
18	230	10.0			---	---	3.0	3.1
19	220	8.4					2.4	3.1
20	230	6.6						2.9
21	260	5.8						2.8
22	260	5.6						2.8
23	280	5.2						2.7

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

Table 6

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.6						2.8
01	300	5.3						2.8
02	300	5.2						2.8
03	300	4.7						2.8
04	300	4.6						2.8
05	320	4.1						2.8
06	300	4.8						2.9
07	260	7.4			---	---		3.1
08	270	9.1	240	---	---	---		3.1
09	280	10.0	250	-	120	---		3.0
10	290	10.5	240	---	---	---		2.9
11	300	11.0	240	---	---	---		2.9
12	300	11.6	240	---	---	---		2.8
13	300	11.8	250	---	---	---		2.9
14	300	11.9	250	---	---	---		2.9
15	290	11.5	260	---	---	---		2.9
16	290	11.3	260	---	120	3.1		2.9
17	270	10.7	270	---	130	2.6		2.9
18	250	10.0						3.0
19	240	8.5						3.0
20	260	7.0						2.9
21	290	6.1						2.9
22	290	6.0						2.8
23	300	6.0						2.8

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

Table 7

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	(9.9)						(3.0)
01	240	9.0						3.1
02	230	(8.0)						3.1
03	230	7.4						3.1
04	200	5.5						3.3
05	240	4.3						3.1
06	250	3.7						3.0
07	240	6.9		---		2.3		3.2
08	240	(9.3)		---		3.0		(3.3)
09	240	(10.5)		---		3.5		(3.1)
10	250	(12.5)		---		---		(3.0)
11	290	(14.0)		---		---		(3.0)
12	280	(14.0)		---		---		(3.0)
13	300	15.0		---		---		2.9
14	300	(15.5)		---		---		(3.0)
15	290	(15.5)		---		---		(2.9)
16	270	(15.0)		---		---	2.9	(3.0)
17	250	15.0		---		---	3.1	3.0
18	240	15.0		---		2.5		3.1
19	230	(14.2)					2.5	(3.0)
20	220	(14.0)						(3.0)
21	210	(14.0)						(3.1)
22	230	(12.2)						(3.0)
23	230	(11.0)						(3.1)

Time: 135.0°E.
Sweep: 1.0 Mc to 24.0 Mc in 1 minute.
*Data for 1 through 22 only.

Table 8

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	7.3						2.9
01	260	6.2						3.0
02	260	5.0						3.0
03	260	3.7						3.0
04	320	3.2						2.8
05	320	2.8						2.6
06	360	3.0						2.5
07	270	6.4			160	2.2		3.0
08	250	8.8	---	---	130	2.8		3.0
09	280	10.2	250	4.0	120	3.2		2.9
10	300	11.4	240	5.0	120	3.5		2.7
11	320	12.1	240	5.1	120	3.7		2.6
12	330	13.1	230	5.2	120	3.8		2.7
13	330	14.1	230	5.2	120	3.8		2.7
14	340	14.5	230	5.2	120	3.7		2.7
15	330	14.9	240	(5.0)	120	3.5		2.7
16	310	14.8	250	(4.8)	120	3.2		2.8
17	280	14.4	260	---	130	2.8		2.8
18	260	13.3			160	(2.2)		2.9
19	250	12.2					2.0	2.9
20	250	11.5					1.9	2.8
21	250	9.8						2.7
22	270	8.5						2.8
23	280	8.0						2.9

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

Table 9

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	8.0						2.8
01	270	7.5						2.8
02	260	6.9						2.9
03	240	5.9						3.0
04	260	4.9						2.9
05	---	4.5						2.8
06	---	4.4						2.8
07	250	7.3		---				3.0
08	250	8.9		---		3.0		3.1
09	270	10.2		---		3.4		3.0
10	280	11.5		4.8		3.6		2.9
11	290	12.1		5.0		---		2.9
12	300	12.5		5.2		---		2.9
13	300	(13.0)		(5.2)		---	(5.0)	(2.8)
14	300	12.7		5.0		---	4.6	2.8
15	290	12.5		4.8		3.7		2.8
16	280	12.2		---		3.5	4.0	2.9
17	260	11.6		---		---	3.9	2.9
18	250	11.0		---				2.9
19	250	10.0						2.8
20	260	8.5						2.9
21	280	(8.0)						2.7
22	300	7.6						2.7
23	290	8.0						2.7

Time: 60.0°W.
Sweep: 2.9 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) March 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	10.4						3.2
01	220	9.0						3.4
02	220	7.4						3.4
03	220	5.6						3.3
04	240	4.6						3.2
05	260	3.6						2.9
06	260	4.4						3.0
07	220	7.8			120	---	3.0	3.4
08	220	9.6	220	---	120	3.1	3.6	3.4
09	240	11.4	220	5.0	120	3.5	4.0	3.2
10	250	12.2	210	5.1	110	3.8	4.2	3.2
11	260	13.2	210	5.3	110	4.0	4.4	3.1
12	270	13.4	220	5.3	110	4.0	4.5	3.1
13	270	13.7	220	5.4	110	4.0	4.4	3.0
14	270	13.5	220	5.2	110	3.9	4.5	3.0
15	260	13.4	220	5.1	110	3.7	4.8	3.0
16	250	13.0	220	4.8	120	3.3	4.4	3.0
17	240	12.5	220	4.5	120	2.8	4.0	3.0
18	230	11.8					3.2	3.0
19	230	11.4					3.0	3.0
20	240	11.0						3.0
21	240	10.4						2.9
22	250	10.0						3.0
23	250	10.4						3.1

Time: 60.0°W.
Sweep: 1.8 Mc to 15.7 Mc, manual operation.

Table 11

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	(10.1)					3.2	(3.0)
01	220	8.4					3.3	3.0
02	230	5.9					3.2	3.1
03	230	5.7					3.2	3.1
04	230	4.7					2.9	3.2
05	240	3.6					2.8	3.2
06	270	5.6				---	3.0	3.0
07	250	9.1				2.6	4.8	3.0
08	220	11.3	230	---		3.2	9.3	2.9
09	280	12.1	220	5.3		---	11.8	2.6
10	300	12.4	210	5.4		---	12.8	2.4
11	290	11.3	200	5.3		---	12.8	2.3
12	300	11.2	200	5.3		---	13.1	2.4
13	290	11.3	200	5.2		---	12.8	2.3
14	270	11.8	200	5.0		---	12.6	2.7
15	250	12.2	200	---		---	11.2	2.4
16	220	12.3				3.1	10.6	2.4
17	250	12.4				2.6	8.3	2.3
18	290	12.2				1.7	3.2	2.2
19	370	10.8						2.1
20	380	(11.8)						(2.3)
21	300	(11.6)						(2.5)
22	260	(11.6)					2.8	(2.8)
23	240	(11.0)					3.2	(3.0)

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

Table 12

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.9					2.6	2.6
01	310	3.6					2.6	2.5
02	310	3.8					2.8	2.6
03	310	3.4					2.6	2.5
04	300	3.1					2.4	2.6
05	295	3.0					2.6	2.7
06	290	3.2					2.4	2.6
07	270	5.2			190	1.8	2.6	3.0
08	230	7.5	---	---	120	2.2	2.7	3.2
09	230	8.8	230	3.1	120	2.6	2.6	3.1
10	240	9.8	220	3.6	120	2.9	2.8	3.1
11	240	10.4	230	3.8	110	3.0	2.7	3.1
12	240	10.1	225	3.8	110	3.0		3.0
13	230	9.8	230	3.7	120	3.0		3.1
14	240	10.1	240	3.7	120	2.7	2.8	3.0
15	250	10.2	250	3.0	120	2.4	2.7	3.0
16	230	9.4			130	2.1	2.8	3.1
17	220	7.9			230	1.7	2.6	3.0
18	240	7.0					2.1	2.9
19	250	5.9					2.1	2.9
20	270	4.9						2.8
21	290	4.1						2.7
22	295	4.0					2.2	2.6
23	300	3.8					2.2	2.6

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

Table 13

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.0					1.4	2.5
01	310	4.0						2.5
02	300	4.0					1.4	2.5
03	300	4.2						2.6
04	290	4.0						2.7
05	270	3.6						2.7
06	280	3.6	---	---	---	E		2.8
07	260	6.6	---	---	110	2.0		3.0
08	260	8.7	240	---	100	2.5	3.0	(3.1)
09	260	10.0	220	---	100	3.0	3.4	3.0
10	250	10.7	240	---	100	3.1	3.7	(3.0)
11	270	11.0	230	---	100	3.3		3.0
12	280	10.9	240	---	110	3.4		3.0
13	270	10.3	230	---	100	3.3		3.0
14	260	10.1	240	---	110	3.1		3.0
15	270	9.4	---	---	110	2.9		3.0
16	260	8.7	250	---	110	2.4	2.3	(3.0)
17	250	7.8	240	---	100	1.7		3.0
18	240	6.4						2.8
19	250	5.4						2.8
20	270	4.9						2.8
21	300	4.3						2.6
22	310	4.2						2.6
23	310	4.1						2.5

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

Table 14

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.9						2.7
01	300	3.9						2.8
02	300	3.9						2.7
03	270	4.2						2.9
04	240	3.8						2.9
05	270	3.4						2.7
06	270	3.6			---	E		2.9
07	230	6.9	---	---	120	2.0		3.3
08	220	9.0	---	---	120	2.6		3.3
09	240	9.8	220	---	110	3.0		3.2
10	240	10.7	230	---	110	3.3		3.2
11	240	10.9	220	---	110	3.4		3.1
12	250	11.4	230	---	110	3.4		3.1
13	260	10.9	230	---	110	3.3		3.1
14	250	10.4	230	---	110	3.2		3.1
15	240	9.9	220	---	110	3.0		3.2
16	230	9.6	---	---	110	2.6		3.2
17	220	8.2			110	1.9		3.2
18	210	6.6						3.2
19	230	6.0						3.1
20	230	4.9						3.0
21	250	4.2						2.9
22	290	3.8						2.8
23	300	4.0						2.7

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

Table 15

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.9					1.7	2.9
01	280	3.8					1.8	2.9
02	270	4.0					1.8	2.9
03	250	4.1					2.2	3.1
04	220	3.4					2.0	3.0
05	270	3.1					2.0	2.8
06	280	3.4			---	E		2.9
07	230	7.2	---	---	120	2.2		3.4
08	220	8.7	---	---	110	2.7		3.4
09	220	9.9	220	---	100	3.2		3.3
10	240	10.8	230	---	100	3.4		3.2
11	250	11.7	220	---	100	3.6		3.2
12	250	11.4	220	---	100	3.6		3.2
13	250	11.4	230	---	100	3.6		3.2
14	240	10.9	240	---	110	3.4		3.2
15	230	10.2	230	---	100	3.2		3.2
16	230	9.8	220	---	100	2.6	3.2	3.3
17	220	7.9			110	2.0		3.3
18	220	7.0					2.1	3.2
19	230	5.9					2.0	3.0
20	230	5.2					1.6	3.1
21	250	4.5						3.0
22	270	4.0						2.9
23	280	4.0						2.8

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

Table 16

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.7						2.8
01	300	4.8						2.7
02	290	4.4						2.8
03	260	4.1						3.0
04	260	3.9						3.0
05	280	3.2						2.8
06	310	3.0						2.7
07	280	5.2			120	1.7		3.0
08	250	8.2	---	---	120	2.5		3.2
09	250	9.8	240	---	110	3.0		3.2
10	250	11.2	240	---	110	3.4	4.0	3.1
11	270	12.0	230	---	110	3.6	4.4	3.1
12	290	12.3	240	---	110	3.6	4.4	3.0
13	290	12.2	240	---	110	3.6	4.6	3.0
14	280	12.1	220	--	110	3.5	4.5	2.9
15	270	12.0	240	---	110	3.3	4.2	3.0
16	270	11.5	240	---	110	3.0	3.7	3.0
17	250	11.3	---	---	120	2.6	3.4	3.1
18	240	9.8			120	1.8	2.7	3.1
19	220	8.0					2.7	3.0
20	240	6.6					2.5	2.9
21	250	6.6						3.0
22	250	5.8						2.9
23	280	5.0						2.7

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

Table 17

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	6.0					1.6	2.9
01	(260)	5.5						2.9
02	250	5.0						2.9
03	250	4.5						2.9
04	---	4.0						2.8
05	(250)	3.9						2.8
06	250	5.1			---	(1.8)		3.0
07	250	7.1	240	---	120	(2.6)		3.1
08	280	8.0	230	---	110	(3.2)		3.0
09	300	9.0	220	4.9	110	(3.4)	3.6	2.8
10	320	9.9	210	5.1	110	(3.7)	4.0	2.8
11	320	10.6	200	5.2	110	(3.9)	4.0	2.7
12	320	11.0	210	5.2	110	---	4.0	2.8
13	320	11.4	220	5.3	110	---		2.7
14	340	11.1	220	5.3	110	(3.7)	4.0	2.7
15	320	11.2	220	5.1	110	(3.7)	4.0	2.8
16	300	10.9	230	---	110	(3.5)	3.7	2.8
17	280	10.0	230	---	110	(3.0)	3.4	2.9
18	250	10.0	250	---	120	(2.4)	2.7	2.9
19	240	9.4			110	---	2.0	3.0
20	240	8.3					3.0	2.9
21	250	7.8					1.6	3.0
22	(250)	6.6					2.0	2.9
23	260	6.2						2.8

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

Table 18

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.2					1.7	2.8
01	(270)	4.8					2.0	2.8
02	280	4.6					2.1	2.8
03	(270)	4.5					2.2	2.8
04	(260)	4.4						2.8
05	(260)	4.2						2.8
06	280	4.3			---	---		2.8
07	250	6.0	---	---	120	(2.2)		3.1
08	260	7.7	240	---	110	2.9		3.0
09	300	8.6	230	---	110	(3.2)		2.8
10	310	9.2	220	4.8	110	(3.6)	3.7	2.8
11	320	10.1	220	5.1	110	---	3.9	2.8
12	320	10.4	220	5.2	110	---	4.4	2.7
13	340	10.9	---	5.2	110	---	4.0	2.7
14	330	10.8	(220)	5.3	110	---	3.8	2.7
15	340	10.6	220	5.3	110	(3.6)	3.9	2.8
16	310	10.6	230	5.0	110	(3.6)	3.7	2.8
17	290	10.0	230	---	110	3.3	3.4	2.9
18	(270)	9.6	240	---	110	2.8	3.2	2.9
19	250	9.2	250	---	120	2.2	2.6	3.0
20	240	8.3			110	---	2.1	3.0
21	240	7.2					2.0	3.0
22	240	6.4						2.9
23	(250)	5.6						2.9

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

Table 19

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	7.1					2.0	2.6
01	280	6.6					1.9	2.6
02	270	6.2					2.2	2.7
03	270	5.7					2.5	2.7
04	270	5.2					2.4	2.7
05	270	5.0				1.2	1.8	2.8
06	260	5.8	260	---		1.6	2.7	3.0
07	280	6.8	250	4.0		2.6	2.8	3.1
08	270	7.6	240	4.7		3.0	3.6	3.1
09	290	8.0	230	4.8		3.3	3.9	3.1
10	290	8.4	220	4.9		3.5	3.9	3.0
11	310	8.6	230	5.2		3.6	4.0	2.9
12	330	8.4	230	5.3		3.6	3.9	2.9
13	310	8.5	230	5.4		3.7	3.8	2.9
14	320	8.7	240	5.2		3.6	4.2	2.8
15	310	8.7	240	5.0		3.5	4.0	2.9
16	300	8.6	240	4.9		3.3		2.9
17	280	8.5	250	4.5		2.9	3.3	2.9
18	270	8.6	260	3.6		2.4	2.8	2.9
19	260	8.8				1.5	2.8	2.9
20	250	8.6					3.0	2.8
21	260	8.1					4.9	2.7
22	260	7.6					3.4	2.7
23	280	7.3					2.9	2.6

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

Table 20

Barotonga I. (21.3°S, 159.8°W) January 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	9.2					4.0	2.8
01	280	8.9					4.0	2.8
02	290	8.2					3.5	2.8
03	300	8.0					3.1	2.8
04	300	7.3					3.3	2.8
05	300	7.4					3.5	2.8
06	290	7.8	---	---	---	---	3.5	2.8
07	260	10.2	240	5.2	110	2.7	4.0	2.9
08	280	10.7	240	5.3	110	3.3	4.5	2.8
09	320	11.0	250	6.5	110	3.5	5.0	2.7
10	350	11.6	260	6.5	110	3.8	6.0	2.6
11	350	13.1	260	6.9	110	3.9	5.0	2.7
12	360	13.2	300	6.5	110	3.9	4.6	2.7
13	350	13.6	270	6.7	110	4.0	4.5	2.8
14	350	13.6	260	6.5	110	4.0	4.6	2.8
15	340	13.1	260	6.2	110	3.8	5.0	2.8
16	340	12.7	250	5.7	110	3.6	5.0	2.8
17	310	11.3	250	5.7	110	3.2	5.1	2.8
18	290	10.7	260	5.9	---	2.6	4.7	2.9
19	300	10.0					4.1	2.8
20	330	9.8					4.5	2.6
21	330	9.8					4.2	2.6
22	310	9.8					3.7	2.7
23	300	9.8					3.7	2.8

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

Table 21

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	9.0					4.3	2.8
01	250	8.2					4.0	2.9
02	250	6.9					4.0	2.8
03	280	6.5					4.0	2.7
04	300	6.0					3.0	2.7
05	280	6.0			140	1.7	2.6	2.8
06	250	6.5	250	4.0	120	2.5	3.3	3.0
07	300	7.0	240	4.5	110	3.0	4.2	2.9
08	300	7.7	230	5.0	110	3.5	4.0	2.8
09	340	8.3	220	5.5	110	3.7	4.4	2.8
10	330	9.3	---	5.5	100	---	6.4	2.8
11	330	10.0	230	5.5	100	4.0	5.9	2.8
12	350	10.0	210	5.6	100	4.0	5.0	2.7
13	350	10.0	220	5.5	100	4.1	4.4	2.7
14	340	10.0	220	5.5	100	4.0	4.3	2.7
15	330	10.0	220	5.4	110	3.7	4.2	2.8
16	300	9.2	230	5.0	100	3.5	4.1	2.9
17	270	8.5	240	4.3	110	3.0	4.2	2.9
18	250	8.0	---	---	---	2.2	4.0	2.8
19	270	7.8					4.3	2.7
20	300	8.0					4.4	2.7
21	300	8.0					4.1	2.7
22	300	8.6					4.2	2.7
23	300	8.5					4.0	2.7

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

Table 22

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	6.7					5.2	2.8
01	290	6.3					3.7	2.7
02	300	5.8					3.3	2.7
03	290	5.3					3.2	2.7
04	280	5.0					3.3	2.7
05	300	5.0	---	---			3.0	2.7
06	270	5.5	260	3.4		2.1	2.5	2.9
07	320	6.1	240	4.2		2.8	3.2	2.8
08	350	7.0	240	4.8		3.3	3.9	2.8
09	350	7.3	230	5.1		3.5	4.4	2.8
10	400	7.8	230	5.2		3.6	4.5	2.7
11	360	8.4	240	5.3		3.6	5.1	2.7
12	380	8.4	240	5.4		3.6	4.4	2.7
13	380	9.3	240	5.4		3.6	4.4	2.7
14	380	9.3	240	5.3		3.7	4.4	2.6
15	380	8.8	240	5.2		3.8	4.6	2.7
16	360	8.3	240	5.0		3.4	4.4	2.7
17	340	7.7	250	4.8		3.1	4.0	2.7
18	270	7.4	240	---		2.5	3.7	2.8
19	280	7.4					3.4	2.7
20	270	7.3					3.4	2.8
21	290	7.2					3.1	2.7
22	290	7.1					3.3	2.7
23	290	7.0					3.3	2.7

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

Table 23

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	7.9					3.8	2.8
01	250	7.4					3.8	2.8
02	250	6.6					3.3	2.7
03	260	5.6					2.8	2.7
04	280	5.1					2.6	2.7
05	290	4.8			(120)	1.3	2.9	2.8
06	250	5.5	---	---	110	2.2	3.5	2.9
07	(310)	6.2	240	4.3	100	3.0	3.8	3.0
08	330	6.9	220	(4.6)	100	3.4	4.0	3.0
09	350	7.6	210	5.0	100	3.6	6.2	2.9
10	340	8.0	200	5.3	100	3.8	7.0	2.8
11	340	8.3	200	5.4	100	3.9	7.0	2.8
12	350	8.8	(200)	5.6	100	4.0	7.5	2.8
13	350	8.3	(200)	5.5	100	3.9	6.3	2.8
14	350	8.2	200	5.4	100	3.9	6.6	2.8
15	350	8.4	220	5.4	100	3.7	5.4	2.8
16	330	8.3	220	5.1	100	3.5	4.0	2.9
17	300	8.1	220	(4.6)	100	3.2	4.0	2.9
18	(250)	8.1	240	---	110	2.5	3.5	2.9
19	250	8.0			120	1.6	3.9	2.8
20	250	7.8					3.6	2.7
21	(280)	8.0					4.0	2.7
22	290	8.0					4.0	2.6
23	280	8.0					3.5	2.7

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

Table 24

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	7.2					3.2	2.6
01	290	6.7					3.5	2.8
02	280	6.5					3.2	2.6
03	280	6.0					3.0	2.6
04	290	5.5					2.8	2.6
05	280	5.5	---	---		1.5	3.5	2.7
06	320	6.3	250	4.2		2.4	3.2	2.8
07	340	7.0	250	4.6		2.9	3.8	2.8
08	330	7.8	250	4.9		3.3	4.3	2.8
09	330	8.3	230	5.0		3.5	5.0	2.8
10	320	8.4	250	5.2		3.7	4.6	2.9
11	360	8.7	220	5.5		3.7	6.2	2.8
12	340	8.8	240	5.5		3.7	4.8	2.7
13	370	8.2	240	5.5		3.7	5.4	2.7
14	370	8.3	240	5.5		3.7	4.9	2.7
15	350	8.0	240	5.4		3.6	4.1	2.7
16	340	8.3	240	5.0		3.4	4.4	2.7
17	330	8.3	240	4.7		3.1	4.2	2.8
18	300	8.2	250	4.1		2.7	4.1	2.8
19	280	8.3	260	3.0		1.8	3.8	2.8
20	280	8.4					3.9	2.7
21	280	8.4					4.2	2.6
22	290	8.1					3.9	2.8
23	280	7.7					3.2	2.5

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

Table 25

Rarotonga l. (21.3°S, 159.8°W) December 1949

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00	280	9.2					3.3	2.8
01	290	8.7					3.5	3.0
02	300	8.5					2.9	2.8
03	290	8.2						2.9
04	300	7.8					2.9	2.8
05	290	7.3					3.2	2.9
06	270	7.9	---	---	---	2.4	3.1	2.9
07	260	10.2	---	---	110	3.0	3.9	2.9
08	280	10.7	250	6.0	100	3.6	4.4	2.8
09	330	11.2	240	6.7	110	3.8	4.5	2.7
10	360	12.2	260	7.0	110	3.9	4.4	2.6
11	370	13.2	260	6.8	100	4.0		2.7
12	380	13.8	300	7.0	110	4.0		2.8
13	350	13.6	280	8.5	110	4.0		2.8
14	360	13.2	280	6.9	110	4.0	5.0	2.7
15	380	12.6	280	6.5	110	3.8	4.6	2.8
16	370	13.1	250	6.4	110	3.5	4.9	2.7
17	370	12.4	260	5.9	110	3.1	4.5	2.7
18	310	9.9	280	5.7	---	2.5	4.3	2.7
19	330	9.2	---	---			4.4	2.6
20	350	9.4	---	---			3.7	2.6
21	340	9.2					4.1	2.6
22	330	9.9					4.2	2.7
23	310	9.7					3.8	2.8

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

Table 26

Brisbane, Australia (27.5°S, 153.0°E) December 1949

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00	270	9.0					4.4	2.8
01	280	8.5					4.4	2.7
02	290	8.4					4.0	2.7
03	290	8.0					3.3	2.7
04	270	7.6					3.5	2.7
05	260	7.5	---	---	150	2.0	3.1	2.8
08	250	8.2	240	4.4	110	2.8	3.6	2.8
07	300	9.0	240	5.3	110	3.3	4.1	2.8
08	310	9.7	240	5.5	110	3.6	4.4	2.8
09	320	10.0	240	5.6	110	3.9	4.3	2.8
10	330	10.1	220	6.0	110	4.0	4.5	2.7
11	360	10.5	210	6.0	110	4.1	5.6	2.6
12	360	10.5	220	6.0	100	4.1	6.0	2.7
13	350	10.5	220	6.0	110	4.0	4.4	2.7
14	350	10.5	220	5.8	100	3.9	4.2	2.7
15	340	10.3	230	5.6	110	3.8	4.4	2.7
16	340	9.7	240	5.4	110	3.5	3.8	2.7
17	290	9.0	250	4.8	110	3.0	4.0	2.7
18	270	8.5			130	2.2	4.2	2.7
19	300	9.0					4.0	2.7
20	320	9.0					4.4	2.7
21	300	9.6					4.6	2.7
22	300	9.5					5.6	2.8
23	280	9.6					4.8	2.8

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

Table 27

Canberra, Australia (35.3°S, 149.0°E) December 1949

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00	260	8.2					4.2	2.7
01	260	7.5					3.8	2.6
02	280	7.0					3.6	2.6
03	280	6.9					3.5	2.6
04	280	6.5			---	E	2.8	2.6
05	260	6.6	---	---	110	1.9	3.0	2.7
06	270	7.1	250	4.4	100	2.6	3.6	2.8
07	300	7.8	240	5.0	100	3.2	4.8	2.8
08	320	8.4	240	5.4	100	3.6	5.7	2.8
09	340	8.6	240	5.5	100	3.8	6.2	2.7
10	360	9.0	220	5.6	100	4.0	7.0	2.7
11	340	9.3	235	5.7	100	4.0	6.8	2.6
12	360	9.3	240	6.0	100	4.0	6.5	2.6
13	360	9.4	240	5.6	100	4.0	6.0	2.6
14	360	9.4	240	5.6	100	4.0	5.0	2.7
15	350	9.3	230	5.5	100	3.9		2.7
16	330	9.0	230	5.5	100	3.5	3.9	2.7
17	300	8.5	240	5.0	100	3.2	3.9	2.7
18	270	8.4	250	(4.0)	100	2.6	4.0	2.7
19	270	8.4			130	1.8	3.1	2.7
20	290	8.6					3.6	2.6
21	300	9.0					4.0	2.6
22	290	9.2					4.0	2.7
23	260	9.0					3.9	2.7

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

Table 28

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

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	---	(5.0)	230	---	110	2.4		(3.0)
07	---	(8.5)	230	---	100	2.8		(3.2)
08	(320)	(6.3)	220	---	100	3.1		(2.8)
09	(270)	---	210	---	100	---	3.6	---
10	(250)	---	210	---	100	(3.6)	4.4	---
11	300	---	200	---	100	---	4.1	---
12	300	(9.2)	200	---	100	---	4.0	---
13	(300)	---	200	---	100	---	3.8	---
14	300	---	230	---	100	---	3.6	---
15	(300)	---	230	---	100	---	3.5	---
16	(300)	(8.7)	230	---	100	3.0		(2.9)
17	270	(9.4)	250	---	100	2.4		(3.0)
18	245	(8.3)	---	---	100	---		(3.0)
19	230	---	---	---				(3.0)
20	230	(9.4)						(2.9)
21	235	(7.3)						(2.7)
22	250	---						(2.6)
23								

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

Table 29

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

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00	(320)	8.2						2.8
01	(320)	6.0						2.8
02	(300)	5.8						2.8
03	(280)	5.4						2.8
04	---	5.3						2.6
05	---	5.1			---			2.8
06	---	5.8	---	---	---			3.2
07	(280)	7.2	230	---	---			3.2
08	260	7.4	230	---	---			3.1
09	290	7.1	225	---	115		3.9	3.0
10	250	8.4	220	---	110		3.9	3.0
11	270	8.3	220	---	110		4.4	3.0
12	(325)	9.0	220	---	105		4.6	2.9
13	(330)	9.4	225	---	105		4.4	2.9
14	(320)	9.2	230	---	110		3.8	2.9
15	(280)	9.2	230	---	120			2.9
16	(260)	8.9	230	---	---		3.4	3.0
17	260	9.0	240	---	---			3.0
18	240	9.0	230	---	---			3.0
19	230	8.9			---			3.0
20	230	8.0						2.9
21	240	7.3						2.8
22	(280)	6.4						2.7
23	(295)	6.3						2.8

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

Table 30*

Guam l. (13.6°N, 144.9°E) September 1949

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00		(12.6)						(3.0)
01		(12.3)						(3.1)
02		(10.4)						(3.0)
03		7.8						3.0
04		7.0						3.3
05		(6.2)						3.1
06		6.0						3.1
07		8.8						3.2
08		10.5						2.9
09		(11.5)						(2.6)
10		(12.3)						(2.4)
11		(12.8)						(2.3)
12		(12.5)						(2.3)
13		(12.6)						(2.3)
14		(13.0)						(2.4)
15		(14.0)						(2.4)
16		(14.2)						(2.4)
17		(13.6)						(2.4)
18		(12.9)						(2.4)
19		(12.1)						(2.2)
20		(12.0)						(2.4)
21		(12.1)						(2.6)
22		(12.4)						(2.7)
23		(12.2)						(2.8)

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.
*Supersedes corresponding columns in table 9, page 1], F63.

Table 31

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	270	6.2	235	---	110	2.6	3.8	3.1
07	290	6.7	230	---	110	2.9	4.0	3.1
08	295	7.1	220	4.7	110	3.2	4.3	(3.1)
09	300	7.3	220	5.0	110	3.4	4.2	3.0
10	310	7.8	210	(5.0)	100	3.5	4.4	3.0
11	310	8.0	210	5.1	105	3.3	4.1	2.9
12	330	8.0	230	5.0	110	3.6	4.0	2.9
13	325	7.6	220	5.4	105	3.8	4.2	2.8
14	325	7.9	220	5.0	110	3.5	4.0	2.8
15	310	8.2	225	4.9	100	(3.4)	3.8	2.8
16	300	8.1	235	4.7	100	3.2	3.8	2.9
17	295	8.1	240	---	110	2.9	4.0	2.9
18	270	8.2	260	---	110	2.4	2.6	3.0
19	260	8.3	260	---	110	E	2.9	3.0
20	240	8.1					2.9	(3.0)
21	260	7.6						(2.8)
22	280	6.4						(2.7)
23								

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

Table 32

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	6.1						2.7
01	---	5.9						2.8
02	---	5.7						2.8
03	---	(5.4)						2.8
04	---	5.0						2.8
05	---	6.0			---			2.9
06	250	5.9	---	---	---			3.2
07	285	(6.6)	225	---	110		3.8	3.2
08	290	(6.8)	220	4.4	110		4.1	3.2
09	300	7.2	215	4.7	110		4.8	3.0
10	290	7.9	210	4.8	110		4.4	3.0
11	330	7.9	220	5.1	105		4.4	3.0
12	330	8.0	210	5.0	105		3.9	2.9
13	330	7.8	220	5.1	105			2.9
14	330	8.3	215	5.0	110		(3.5)	2.9
15	310	8.0	225	4.8	110		4.0	3.0
16	300	8.3	230	---	110		3.8	3.0
17	300	8.2	230	4.2	120		3.5	3.0
18	270	8.3	235	---	---		3.4	3.0
19	250	(8.4)			---			3.0
20	240	8.1						3.0
21	---	7.3						2.8
22	---	6.8						2.8
23	---	6.4						2.7

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

Table 33

Oslo, Norway (60.0°N, 11.0°E) December 1948

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	440	2.0						
01	450	1.9						
02	430	2.0						
03	400	2.0						
04	360	2.0						
05	330	2.1						
06	320	2.3						
07	310	2.3						
08	275	3.4						
09	235	5.6						
10	230	(7.8)			---	2.0	3.3	
11	225	(8.9)			135	2.1	2.2	
12	220	(>9.0)			130	2.2	2.4	
13	220	(>9.0)			130	2.2	2.3	
14	220	(>9.0)			135	2.1	2.4	
15	215	(>8.2)			---	E	2.3	
16	215	(>7.0)						
17	225	(6.2)						
18	225	(5.0)						
19	250	3.5						
20	300	2.6						
21	340	2.3						
22	400	2.1						
23	405	1.9						

Time: 15.0°E.
Sweep: 1.8 Mc to 10.0 Mc in 5 minutes, automatic operation.

TABLE 34

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

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	(320)S	300	300	300	(310)S	320	280	310	300	300	300	290	310	300	300	300	250H	270K	240K	240K	260K	300K	(310)SK
2	(360)SK	(400)SK	400K	400K	330K	310K	300	270	340	320	330	300	300	300	310	300	300	260	270	230	270	290	300	300
3	290	300	300	280	310	300	290	260K	300K	470K	460K	[480]CK	510K	490K	470K	350K	400K	270HK	280K	270K	280	310	300	300
4	300	320	(350)S	(350)S	(370)S	(380)S	300	270	290	310	330	320	310	300	280	280	230H	240H	270	250	250	270	(280)S	(280)S
5	(310)S	(320)S	300	280	[320]S	(350)S	300	270	410	[400]T	390	420	370	340	310	300	310	260H	280	220	250	(260)S	(260)S	270
6	(270)S	(330)S	(370)S	320	(320)S	300	300	370	350	350	300	300	310	320	300	330	300	280	280	250	240	270	290	290
7	300	(300)S	300	300	290	290	270	260	300	300	300	310	300	340	330	310	300	250	260	240	240	(260)S	280	290
8	280	(300)S	290	290	(310)S	300	270	230	220	300	320	360	350	330	320	310	300	250	250	250	240	(250)S	280	(280)S
9	(270)S	(280)S	(290)S	C	C	C	C	C	C	220	320	330	320	300	300	300	300	240	270	240	240	(260)S	280	300
10	(300)S	310	300	250	(240)S	230	240	240	260	290	300	280	330	300	300	270	300	250H	250	230	(230)S	(240)S	(280)S	(300)S
11	290	(270)S	(270)S	(270)S	270	270	260	240	230	270	320	310	310	310	300	300	300	230	(250)A	(240)A	(260)A	(260)S	(290)S	(280)S
12	(280)S	(310)S	(300)S	(240)S	300	(280)S	250	250	230	220	(300)B	300	310	300	(300)B	(280)B	240H	250	250	(250)A	240	(270)S	(300)S	(310)S
13	300	(280)S	(270)S	(270)S	(270)S	(280)S	270	250	270	300	300	300	300	290	270H	290Δ	250Δ	260	270	240	230	(250)S	(270)S	(300)S
14	(290)S	(300)S	300	280	250	(250)S	250	240	(270)B	(260)B	280	290	300	300	300	290	300	(280)A	(270)A	230	230	250	(260)S	(290)S
15	300	(310)S	(310)S	360	300	290	270K	250K	330K	340K	410K	390K	400K	370K	370K	340K	340K	320K	280	(270)A	260	270	280	290
16	300	290	300	300	300	290	270	300	290HK	360K	370K	430K	420K	410K	400K	370K	370K	310K	260HK	270K	250K	290K	300	300
17	300	300	300	290	280	280	270	310	320	360	360	350	350	370	350	370	330	300	270	240	240	260	(280)S	(310)S
18	300	(280)S	290	270	300	(310)S	270	270	350K	340K	370HK	430K	400K	400K	430K	400K	370K	300K	270	250	(240)S	(270)S	(300)S	(330)S
19	(330)S	(320)S	300	300	300	300	270	240H	300	290	320	360	350	330	310	300	290	250	270	260	260	270	270	(280)S
20	300	(360)S	(320)S	300	280	290	270	260	230H	310H	300	310H	310	310	300	340	300	240	260	230	(240)S	(250)S	(280)S	(290)S
21	(300)S	270	270	290	(280)S	300	270	330	370	370	370	350	320	310	310	310	300	280	240	240	230	(240)S	(270)S	(290)S
22	(290)S	(280)S	(280)S	270	270	(280)S	260	240H	270	330	310	310	310	330	310	310	310	280	250	250	230	(230)S	(270)S	(300)S
23	300	300	(300)S	(330)S	300	300	270	290	300	290	310	390	350	340	330	350	330	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	290H	300	290	330	350	330	300	300	300	280	260	250	(270)S	(270)S	280
25	280	300	300	300	290	280	270H	280	300	280	C	C	310	310	300	300	300	300	260	(250)A	230	270	270	290
26	290	290	290	280	270	270	270	240	300	310	340	360	350	350	300H	330	310	280	250	260	240	250	270	300
27	300	290	300	280	270	260	250	230	220H	300	310	330	300	330	360	330	250H	290	260	240	230	230	(270)S	(300)S
28	[300]C	300	300	300	300	300	300K	330K	310K	360K	470K	470K	470K	400K	460K	400K	360K	350K	300K	280K	250	(250)S	300	(270)S
29	280	300	300	300	290	280	260K	380K	390K	380K	410K	410K	430K	400K	430K	410K	400K	340K	310K	270K	280	(270)SK	(280)SK	(310)SK
30	350K	300K	330K	320K	(350)SK	300K	230HK	220K	600K	540K	410K	370K	350	400	350	340	330	330	270	270	270	(280)A	280	280
31																								
Median	300	(300)	300	300	300	290	270	260	300	310	320	330	320	330	310	310	300	280	270	250	240	(260)	(280)	(290)
Count	29	29	29	28	28	28	28	28	28	30	29	29	30	30	30	30	30	29	29	29	29	29	29	29

Δ RECORDS FROM STERLING, VA.

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), April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.3F	(5.9)S	(5.8)S	5.3	4.9	(4.2)J	4.8	6.6	7.9	8.9	(9.0)S	(10.2)J	10.3	9.8	9.8	9.8	(10.0)S	(10.7)S	(11.2)SK	K(10.1)JS	(8.5)SK	K(6.7)SF	(6.1)SK	(5.6)JK
2	5.5FK	K(4.8)PF	[4.3]FK	(3.7)FK	(3.5)FK	(3.0)FK	3.5F	4.8F	5.9F	6.9F	8.0F	8.4F	10.0	9.5	9.6	9.2	9.1	8.7	9.3	(8.6)S	(7.5)JF	6.8F	6.0F	5.8F
3	(5.3)SF	4.8F	4.3F	3.9F	3.2F	3.0F	4.0F	5.2FK	5.2FK	(5.5)SF	5.7K	[6.0]CK	6.0K	6.5K	6.6K	6.9K	7.2K	7.5K	(7.3)SK	(7.3)SK	6.5	(6.0)S	5.8	5.3
4	5.1	(4.7)J	4.4F	(3.4)JF	(3.1)F	(3.2)F	4.5F	(6.2)SF	7.2	8.6	(8.7)S	9.6F	10.6F	10.5	9.9	9.3	8.5	8.2	(8.3)S	(8.8)F	(7.9)S	(6.9)S	(6.0)SF	5.8F
5	5.6F	5.2V	5.2V	4.9F	(4.0)JV	(3.1)F	(3.1)SF	4.5F	5.4	[5.8]T	(6.2)S	7.2	7.7	8.2	(9.1)S	(9.5)S	9.6	(9.5)S	(10.5)SV	(9.4)S	(9.4)SF	7.4F	6.5F	6.2F
6	5.0F	(4.5)F	3.5F	3.5F	3.3F	3.7F	4.0F	4.8F	6.3	6.7	8.0	8.6	8.8	9.0	(9.0)S	8.8	8.8	(8.5)S	9.0	8.6	(7.2)S	(6.0)JS	(6.0)S	(5.8)SF
7	5.6	5.1F	4.6F	(4.7)F	(4.2)F	(3.8)SF	4.4F	(6.6)F	7.5	8.4	8.5	8.7	7.8	8.8	9.0	8.9	8.6	9.0	9.2	(9.3)S	8.-	(6.6)S	(6.1)S	5.8
8	5.6	5.2	5.2F	(4.2)SF	(3.8)SF	3.7F	(5.2)ZF	6.7FZ	7.3F	7.8	8.3	8.5	(9.3)S	10.0	10.0	10.0	9.7	9.8	9.3	(8.8)S	(7.9)JS	(7.5)S	(6.8)SF	(6.5)F
9	6.4F	6.2F	5.6F	C	C	C	C	C	C	8.8	9.3	9.2	10.3	10.6	10.2	9.9	9.7	(9.5)S	(9.6)S	(9.5)S	8.8	7.8F	(7.1)SF	(7.1)JS
10	6.8	6.8F	6.8	6.6F	5.7F	(4.7)SF	5.7F	7.6F	9.2F	9.9	10.1	10.2	10.6	10.7	10.6	[illegible]	10.3	10.5	(10.4)S	(9.7)JS	(8.8)S	(7.7)S	(7.7)JS	(7.3)S
11	(7.2)S	(7.0)F	6.8F	6.0F	5.8F	5.3F	(6.2)SF	7.2	7.6	8.0	8.7	9.9	10.3	10.3	10.5	10.4	(10.1)S	(9.8)S	(9.5)S	(9.3)S	(8.5)S	(7.9)JS	(7.3)S	(7.7)JS
12	(6.8)SF	(6.3)SF	(6.1)S	(5.4)S	(5.7)S	(5.9)S	(6.0)SV	6.6	(7.6)S	8.6Z	9.7	10.6	10.9	10.7	10.3	10.1	9.9	10.0	10.0	(9.3)S	9.5	7.5	(6.9)S	(7.6)JS
13	7.2	(6.6)S	6.0	5.5	4.8	(4.4)S	5.3	6.4	7.3	8.4	9.7	10.4	(10.2)S	10.2	10.2	(9.6)PΔ	(9.6)PΔ	9.8	(10.0)S	(9.5)S	(8.2)S	(7.2)S	(6.8)S	(6.5)S
14	(6.2)S	(5.9)JS	(5.8)JS	(5.8)SS	(5.3)SF	(4.8)SF	6.3F	7.4F	8.5	9.0	9.4	10.0	10.3	(10.2)S	(10.1)S	10.0	(10.0)J	10.0	(10.2)JS	(9.7)S	(8.2)SF	(7.5)SF	(6.9)SF	(6.7)SF
15	(5.9)JS	(5.3)SF	4.5F	(4.2)F	(4.8)F	4.7F	5.3FK	5.5FK	6.1K	6.5K	6.8K	7.4K	7.5K	7.7K	7.5K	7.5K	7.4K	7.5K	(7.9)JS	(7.7)J	(7.1)S	(6.5)SF	(5.7)SF	5.2F
16	5.1F	4.5F	(3.9)SF	(3.8)SF	(3.4)SF	(3.7)SF	5.4F	6.3	6.6K	6.0K	(6.2)JK	6.3K	6.4K	K(7.1)JS	7.3K	7.2K	(6.9)SK	6.9K	7.0K	6.3K	6.3FK	5.5FK	5.5F	5.6F
17	(5.6)SF	(5.4)SF	5.3F	5.0F	4.5F	(4.3)S	5.2F	(5.8)SF	6.5F	6.9	7.4	7.7	8.2	8.6	8.9	8.6	8.7	8.6	8.5	(8.1)S	(7.4)SF	(6.5)SF	(5.7)SF	(5.7)SF
18	5.7F	5.6F	5.1F	4.7F	(4.0)SF	(4.0)S	5.7	6.4	6.6K	7.2K	(6.7)SK	K(6.5)JS	6.7K	7.2K	7.0K	7.2K	7.7K	7.8K	8.3	8.3	(7.7)S	(6.7)S	(5.8)SF	(5.5)SF
19	(5.2)SF	5.0F	4.8F	(4.0)SF	3.4F	3.7F	5.3	6.8	7.6	8.0	8.7	8.8	9.5	10.0	9.9	9.0	8.7	8.6	(8.6)-	8.6	8.5	(7.7)SP	(7.4)SP	(6.7)JS
20	6.4	5.6	(5.8)JS	(5.8)JS	(4.9)JS	(4.4)S	5.1	6.3	7.0	8.4	9.0	9.2	9.3	9.3	9.7	8.6	(9.2)S	(9.5)S	(9.7)Se	9.8	(7.7)JS	(6.9)SF	(6.2)SP	(6.0)S
21	(5.7)JS	(5.5)SP	(4.9)S	(4.2)JS	(4.0)S	(3.4)JS	5.4	(5.7)SZ	(6.1)SJ	6.2	(7.1)S	7.8	8.6	8.6	8.3	8.7	8.7	8.9	(8.8)SP	8.5	(7.5)S	(6.6)S	(5.9)SP	5.7
22	5.5	5.3	5.0	(4.7)S	4.3	4.3	(5.8)S	6.8	7.3	7.5	8.6	9.4	9.1	9.2	9.0	9.0	9.0	9.0	(9.0)S	8.8	8.3	6.6F	(6.1)SF	(6.0)SF
23	(5.8)SF	(5.5)SF	4.8F	(4.7)SF	(4.9)SF	4.6F	5.6F	6.6F	(6.8)SF	6.9V	7.7	7.6	8.5	8.7	8.4	8.1	8.4	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	7.8	8.6	7.6	8.5	8.5	8.8	9.1	8.8	8.3	8.2	8.5	(7.7)SF	(6.9)SF	(6.7)SF	(6.0)SF
25	(5.9)SF	(5.8)SF	5.5	5.3	(4.4)SF	(4.3)VF	5.8	6.7	7.1V	8.2	C	C	7.5	9.7	9.5	9.1	8.9	7.0	(9.0)S	9.0	7.9	(7.5)S	(6.9)SF	(6.6)S
26	(6.3)SF	(5.8)JF	(5.7)JF	(5.5)SF	(5.1)SF	(4.9)F	5.5	6.1	6.7	7.4	7.7	7.8	8.3	7.9	8.0	8.4	8.4	8.2	(7.9)S	8.0	(7.5)S	(6.2)SF	(6.0)SF	(5.7)SF
27	(5.4)SF	(5.3)SF	4.7F	4.8F	4.8F	(5.0)SF	6.0F	6.7	7.4	8.0	8.7	1.0	(8.4)S	9.0	9.2	9.2	(9.1)JS	(9.0)JS	(9.3)S	(9.0)SZ	(7.0)SF	(6.8)SF	(6.2)SF	(5.8)SF
28	[5.6]C	(5.5)SF	(5.4)JF	(5.1)S	(4.3)JS	4.3	5.8K	6.0VK	(6.2)SK	6.1K	K(5.7)JF	6.4FK	6.4K	7.4K	6.9K	7.5K	(7.7)SK	7.9K	(8.6)SK	K(7.4)SP	(7.5)SF	(7.0)SP	(6.8)SP	6.2
29	6.3	(5.6)JS	(5.4)JS	(5.2)S	(4.9)JS	(4.4)JS	5.0K	5.6K	(6.2)VK	(6.1)VK	6.6K	6.6FK	6.8FK	7.0FK	K(6.8)SF	6.8K	(7.0)SK	K(6.8)SP	(6.9)SK	K(6.5)SP	K(6.3)SF	(5.8)SK	(5.9)SK	K(5.7)SP
30	(5.5)SK	(5.4)PK	(5.0)SK	4.8K	K(4.0)JS	3.8FK	K(4.0)JZ	(4.6)FK	K(5.0)SF	(5.5)SK	6.4FK	7.4FK	K(7.0)JS	7.5F	7.6	[7.7]T	(7.8)P	7.6F	(7.4)S	(6.9)SP	(6.7)S	(6.2)SF	(5.8)SF	(5.9)SF
31																								
Median	5.7	(5.5)	5.2	(4.8)	(4.4)	(4.3)	5.3	6.4	6.9	7.6	8.3	8.6	8.8	9.0	9.0	9.0	8.8	8.9	(9.0)	(8.8)	(7.7)	(6.8)	(6.1)	(5.9)
Count	29	29	29	28	28	28	28	28	28	30	29	29	30	30	30	30	30	29	29	29	29	29	29	29

Δ RECORDS FROM STERLING, VA.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 36

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

Form adopted June 1946

IONOSPHERIC DATA

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

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Scaled by: B. E. B.

Calculated by: By. H.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(60)S	(6.0)S	57	(50)SJ	(4.5)J	(45)JF	57	6.9	(8.1)J	(88)ST	9.5	106	100	98	100	95	(103)JS	(114)S	(112)SK	(93)SK	K(7.6)SF	(65)SK	K(58)SF	(52)JK
2	(53)FK	(48)FK	(31)FK	(32)FK	(3.3)FK	25FK	44F	5.3F	6.5F	7.4F	8.5F	9.3	9.7	9.5	9.6	9.3	90	92	(94)S	F(76)JS	72F	(6.7)SF	58F	54F
3	48F	44F	(42)SF	3.3F	33F	33F	49F	56FK	55FK	58K	59K	[60]CK	62K	66K	68K	70K	7.2K	(74)SK	(73)SK	67K	(60)S	58	(57)JS	(52)S
4	(5.0)S	(4.7)JF	44F	(34)JF	(31)F	32F	57F	64F	7.5	84	(9.3)S	105F	10.4F	101	94	(87)S	8c	8.0	86	80	(77)S	(66)SF	(59)SF	58F
5	5.6F	52V	5.2F	45	35	(31)JS	(4.4)SP	(5.1)H	54F	[6.0]T	66	(7.6)J	(7.9)S	82	(92)S	9.4	(97)S	(99)S	(108)S	(96)S	80	70F	(68)JF	(58)JF
6	47F	(36)F	35F	3.6F	(33)F	36F	45	(56)Z	(62)J	73	80	87	(91)S	(9.1)JS	88	90	87	8.5	90	(79)S	(61)S	(61)S	58F	(56)S
7	52F	4.8F	(45)JF	(45)F	(39)F	39F	(58)S	70	83	84	86	9.0	88	[8.9]M	90	88	8.7	(92)S	(93)S	86	(7.1)JS	65	(58)S	5.8
8	53	5.2F	4.7	(39)JS	3.7F	(40)SF	(6.4)ZF	7.3F	75	7.8	83	89	98	10.0	99	98	97	97	(9.2)S	(84)S	(7.6)SF	(7.1)SF	(68)SF	(66)SF
9	62F	58F	54F	C	C	C	C	C	C	8.8	[9.2]M	98	10.5	105	10.1	9.7	97	(95)S	98	(90)S	82F	72F	(72)S	(69)JS
10	(68)S	68F	68F	62F	52F	47F	66F	85F	92F	(101)S	102	10.4	109	(106)S	104	(101)S	(103)S	(106)S	(102)JS	(93)S	[82]C	(7.6)JS	(75)S	(73)S
11	(7.1)SP	6.9F	61F	6.0F	(5.6)SF	(5.6)SF	66	7.4	78	83	92	10.0	101	104	10.5	10.4	100	97	(97)S	(9.0)S	(84)S	(7.6)S	(75)SF	(7.3)SF
12	(64)SF	(63)SF	(54)S	(55)S	(58)S	60	(63)S	(73)S	78	9.4	10.0	(10.6)S	110	105	10.1	10.0	99	99	(97)S	(88)S	(76)JS	(70)SP	(7.0)SP	(7.1)JS
13	(68)S	6.5	(58)JS	52	45	4.7	(59)JS	68	79	88	100	(10.2)S	106	100	(99)P	(96)PΔ	(9.4)TΔ	(10.0)J	(10.0)S	(90)S	(7.7)S	(7.1)S	(67)S	(65)S
14	62	60	(58)JS	(5.8)S	(5.0)SF	50F	(68)SF	79	90	9.0	98	10.3	(10.3)S	(100)JS	10.1	(100)S	100	(100)S	(10.0)JS	8.8F	F(78)JS	(72)SF	(6.6)SF	6.5
15	(56)SF	52F	(38)F	(48)F	4.7F	5.1F	53FK	K(58)JS	64K	6.7K	69K	7.4K	7.7K	77K	76K	[7.5]CK	7.4K	77K	(76)S	73	68	F(60)JS	(5.3)F	(51)SF
16	4.8F	44F	(3.9)JF	(38)F	(3.4)SF	(43)SF	56F	6.5Z	(6.6)HK	(6.3)PK	6.4K	66K	7.0K	K(71)JS	7.2K	(70)SK	(70)SK	67K	6.7K	63FK	KF(58)JS	K(55)SF	56	[56]C
17	(57)SF	54F	(54)SF	48F	4.2F	4.6F	53F	6.3F	64F	7.2	7.6	80	85	88	88	85	87	8.6	84	(76)S	(69)SF	(58)SF	(5.7)SF	(57)SF
18	(57)F	53F	51F	(42)SF	(3.7)SF	46	(64)S	6.4	70K	(6.8)SK	K(65)JS	6.9K	(69)SK	K(69)JS	(7.1)SK	7.5K	(7.8)JK	(79)SK	(81)P	(83)S	(7.2)JS	(62)JS	(58)SF	(52)SF
19	(52)SF	(49)SF	(45)SF	3.8F	3.4F	(4.2)JF	6.2	7.0	(7.8)P	8.2	8.5	90	97	99	9.4	90	8.4	(89)S	8.8	8.7	(78)SP	(7.4)SP	(70)S	66
20	(59)JS	(56)J	(57)JS	(54)JS	4.6	4.6	(58)S	6.6	76	(8.8)ZH	9.2	92	94	91	8.1	8.8	(93)S	(96)SP	(98)JS	84	(75)JS	65	(61)SP	(57)JS
21	(56)S	(53)JS	(44)JS	(41)JS	(39)JS	(4.5)SP	54Z	(6.0)JS	(63)S	68	7.8	84	87	88	88	86	88	88	89	(79)S	(70)S	(6.2)S	(58)SP	5.6
22	55	(51)S	48	45	(4.1)JS	49	64	70	70	80	(91)JS	94	90	92	90	89	90	90	(90)S	(88)S	(74)F	(62)SF	(60)SF	(59)SF
23	(57)SF	53F	(48)SF	(48)SF	(4.7)SF	4.9F	6.1F	(66)SF	71	(7.1)H	(75)J	85	86	86	81	81	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	7.3	83	85	8.6	82	87	(90)S	89	85	82	84	8.3	(75)SF	(68)SF	(67)SF	(58)SF
25	(56)SF	(58)S	[54]C	51F	(4.1)SF	(50)SV	62	7.2	7.6	8.0	C	C	95	96	9.2	(9.0)S	8.8	(90)S	(91)S	8.4	(7.6)S	(73)S	(66)S	(66)S
26	63	F(58)JS	(55)SF	(52)SF	5.0F	(51)S	(5.8)JS	6.3F	6.8F	7.4	7.9	7.9	81	8.1	(82)S	84	8.4	(80)S	(79)S	(8.0)S	(6.8)SF	(62)SF	(58)SF	(54)SF
27	(53)SF	(51)SF	48F	49F	4.5F	54F	6.5	70	7.9	84	(87)JS	(8.8)S	(89)S	92	94	9.3	(9.1)JS	(93)JZ	(9.3)SP	(88)S	F(7.2)JS	(66)SF	F(60)SP	[5.8]C
28	(56)SF	F(5.7)JS	54	(47)S	(43)S	50	62K	(60)VK	6.2FK	(58)SK	60K	66K	(70)SK	(7.0)SK	7.3K	7.6K	K(7.7)JS	7.8K	(76)SK	K(7.6)SF	(6.7)SV	(67)SP	(66)SP	(65)P
29	(61)JS	55	(5.4)S	(50)S	4.8	44	55HK	63K	6.3K	K(5.9)JV	K(6.4)FH	(7.1)SK	K(7.0)SF	(70)FK	6.8K	K(6.8)JS	(7.0)SK	6.7K	(65)SK	K(64)SP	KF(66)SP	5.5FK	K(59)SP	(55)SK
30	(57)SK	(50)SK	(5.1)SK	K(4.0)JS	K(3.7)JS	(4.0)SK	KH(4.2)JF	K(4.9)SF	[5.4]TK	(6.0)SK	K(6.5)SP	[7.0]TK	7.4F	7.9	T	T	76F	(7.6)S	(7.3)S	(68)S	(66)JS	(59)SF	(5.8)SF	5.7F
31																								
Median	(56)	53	(51)	(4.8)	(42)	4.6	58	66	7.1	7.9	85	88	90	91	90	8.9	8.8	(90)	(90)	(84)	(74)	(66)	(60)	(58)
Count	29	29	29	28	28	28	28	28	29	30	29	29	30	30	29	29	29	29	29	29	29	29	29	29

Δ RECORDS FROM STERLING, VA

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 37

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

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), April (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.

Calculated by: By H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	240	220	220	220^{H}	230	230	230	220	230	Q	Q^{K}					
2							220	Q	250	220	220	220	200^{H}	230	230	230	250	Q	Q					
3							Q	Q^{K}	250^{K}	220^{K}	210^{K}	$[200]^{C}_{K}$	220^{K}	230^{K}	240^{K}	260^{K}	240^{K}	Q^{K}	Q^{K}					
4							Q	Q	250	230	230	230	220	210	230	220	Q	Q	Q					
5							Q	Q	250	$[240]^{T}$	220	200^{H}	230	220	250	230	230	Q	Q					
6							Q	270	250	230	200^{H}	210	220	200	230	230	230	240	Q					
7							Q	Q	230	230	210	200	200	200^{H}	220	230	230	Q	Q					
8							Q	Q	Q	210	220	200^{H}	210	$(230)^{S}$	230	230	230	Q	Q					
9							C	C	C	Q	220	200	230^{H}	220	230	230	220	Q	Q					
10							Q	Q	230	210	230	220	210^{H}	230	230	210	230	Q	Q					
11							Q	Q	Q	210	200^{H}	220	$(230)^{S}$	220	250	230	240	Q	Q					
12							Q	Q	Q	Q	B	230	240	220	B	B	Q	Q	Q					
13							Q	Q	230	220	210	200	200^{H}	200	210	230^{Δ}	Q^{Δ}	Q	Q					
14							Q	Q	B	B	200	200^{H}	$[210]^{S}$	220	220	220	240	A	Q					
15							Q^{K}	Q^{K}	230^{K}	230^{K}	220^{H}_{K}	230^{H}_{K}	$[230]^{S}_{K}$	230^{K}	230^{K}	230^{K}	230^{K}	A^{K}	Q					
16							Q	230	Q^{K}	210^{K}	220^{H}_{K}	210^{K}	220^{K}	230^{K}	230^{K}	230^{K}	230^{H}_{K}	250^{K}	Q^{K}					
17							Q	230	230	210^{H}	220	210^{H}	$(230)^{S}$	220	240	240^{H}	230	250	Q					
18							Q	230	230^{K}	200^{K}	200^{H}_{K}	220^{K}	210^{K}	230^{K}	240^{K}	270^{K}	230^{K}	250^{K}	Q					
19							Q	Q	220	230	200	260	230	220	230	230	220	Q	Q					
20							Q	Q	Q	200	240	220	210	220	230	230	240	Q	Q					
21							Q	230	230	220	220^{H}	210^{H}	200	210	230	220	230	250	Q					
22							Q	Q	230	210	200^{H}	200	230^{H}	200	200^{H}	220	230	240	Q					
23							Q	240^{H}	230	230	210^{H}	200	210	210	240	230	230	M	M					
24							M	M	M	220	200	200	220	200	230^{H}	230	A	A	A					
25							Q	260	230	220	C	C	200^{H}	200^{H}	220	220	220	250	Q					
26							Q	Q	210	200	210	210	200	230	210	230	240	240	Q					
27							Q	Q	Q	250	220	200^{H}	200	220	200^{H}	220^{H}	250	240	Q					
28							270^{K}	230^{K}	250^{K}	210^{K}	190^{H}_{K}	220^{K}	230^{K}	220^{K}	250^{H}_{K}	240^{K}	230^{H}_{K}	250^{K}	270^{K}					
29							Q^{K}	250^{K}	210^{K}	210^{H}_{K}	210^{K}	210^{K}	220^{K}	230^{K}	$(250)^{S}_{K}$	220^{H}_{K}	230^{K}	260^{H}_{K}	270^{K}					
30							Q^{K}	Q^{K}	200^{K}	220^{K}	210^{K}	210^{K}	230	230	230	230	230	230	Q					
31																								
Median							—	230	230	220	210	210	220	220	230	230	230	250	—					
Count							2	9	21	27	28	29	30	30	27	29	26	12	2					

Δ RECORDS FROM STERLING, VA.

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

foFl (Characteristic), Mc (Unit), April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	(3.7)P	(4.6)P	(4.6)P	L	L	L	L	L	L	Q	Q K					
2							F	Q	L	L	L	L	(5.1)P	L	L	L	L	Q	Q					
3							Q	Q K	L K	4.7 K	4.8 K	[5.0] CK	4.9 K	4.8 K	4.9 K	5.0 K	(4.9)PK	Q K	Q K					
4							Q	Q	L	L	L	L	(5.3)P	(5.1)P	(5.0)P	L	Q	Q	Q					
5							Q	Q	(4.4)P	[4.6]T	(4.8)P	(5.1)P	(5.3)T	(5.2)P	L	L	L	Q	Q					
6							Q	L	(4.4)P	(4.9)P	L	(5.0)P	(5.0)P	L	(4.9)P	L	L	L	Q					
7							Q	Q	L	L	(5.0)P	(5.0)P	(5.3)P	L	(5.1)P	L	L	Q	Q					
8							Q	Q	Q	L	(5.4)P	(6.0)P	(5.6)P	(5.5)P	L	L	L	Q	Q					
9							C	C	C	Q	L	L	L	(5.1)P	L	L	L	Q	Q					
10							Q	Q	L	L	L	L	L	L	L	L	L	Q	Q					
11							Q	Q	Q	L	L	L	L	(5.5)P	L	L	L	Q	Q					
12							Q	Q	Q	Q	B	L	L	(5.2)P	B	B	Q	Q	Q					
13							Q	Q	L	L	L	L	L	R	(4.9)P	L Δ	Q Δ	Q	Q					
14							Q	Q	B	B	L	L	L	L	L	L	L	A	Q					
15							Q K	Q K	L K	L K	(5.1)PK	5.2 K	(5.3)BK	(5.4)PK	(5.4)PK	L K	L K	L K	Q					
16							Q	L	Q K	5.0 K	5.0 K	4.9 K	4.9 K	(5.1)PK	5.0 K	5.0 K	4.7 K	L K	Q K					
17							Q	L	(4.6)P	4.9	(5.0)P	(5.4)P	(5.3)P	(5.0)P	(5.1)P	(5.1)P	L	L	Q					
18							Q	L	L K	L K	(4.8)PK	5.0 K	(5.1)PK	5.0 K	5.0 K	(5.0)PK	L K	L K	Q					
19							Q	Q	L	L	L	(5.6)P	L	L	(5.1)P	L	L	Q	Q					
20							Q	Q	Q	(4.5)H	L	(5.2)P	(5.1)P	L	L	L	L	Q	Q					
21							Q	L	(4.4)P	(4.8)P	(5.2)P	(5.6)P	(5.3)P	L	L	L	L	L	Q					
22							Q	Q	L	(5.2)P	(5.2)P	L	L	(4.9)H	(5.3)P	(5.0)P	L	L	Q					
23							Q	L	L	L	L	(5.4)P	(5.3)P	(5.4)P	(5.1)P	(5.3)P	(4.6)P	M	M					
24							M	M	M	(4.5)P	R	4.8	L	(5.3)P	L	L	L	L	L					
25							Q	L	L	(4.5)H	C	C	L	(5.3)P	(4.9)P	(5.2)P	L	L	Q					
26							Q	Q	L	(4.9)P	(5.3)P	L	(5.4)P	L	(5.0)P	(5.2)P	L	L	Q					
27							Q	Q	Q	L	L	(5.6)P	(5.5)P	(5.4)P	(5.7)P	(5.2)P	L	L	Q					
28							L K	L K	(4.6)PK	5.0 HK	5.0 K	5.0 K	5.1 K	5.1 K	(5.3)PK	5.0 K	4.8 K	(4.4)FK	L K					
29							Q K	L K	(5.2)PK	4.9 K	(5.1)PK	5.0 K	5.2 FK	5.2 K	5.2 K	5.0 K	4.6 K	L K	L K					
30							Q K	Q K	4.5 K	(4.8)SK	5.1 K	(5.5)PK	L	(5.5)P	(5.4)P	L	L	L	Q					
31																								
Median							—	—	(4.4)	(4.8)	(5.0)	(5.2)	(5.3)	(5.2)	(5.1)	(5.0)	4.7	—	—					
Count									8	15	15	18	18	19	18	11	5	1						

Δ RECORDS FROM STERLING, VA

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 39

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

IONOSPHERIC DATA

Form adopted June 1946

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

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by B.E.B.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by By H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								110	100	100	100	100	$(100)^B$	100	$(110)^B$	$(120)^B$	110	110	120^K					
2							120	110	100	100	100	100	100	$(110)^B$	110	110	110	110	$(130)^S$					
3								110^K	100^K	100^K	110^K	$[100]^C_K$	$(110)^B_K$	100^K	110^K	110^K	100^K	110^K	$(120)^S_K$					
4								110	110	$(100)^A$	100	$(100)^A$	$(120)^A$	$(100)^A$	$(110)^B$	100	110	110	$(150)^B$					
5							$(130)^S$	120	110	$[110]^T$	110	110	110	110	110	110	110	110	$(130)^S$					
6							$(130)^S$	110	110	110	110	110	$(110)^B$	$(100)^S$	100	$(100)^S$	100	100						
7							$(120)^S$	110^H	110	110	$[100]^B$	100	100	100	$(110)^B$	$(100)^A$	$(100)^A$	$(100)^A$	$(130)^S$					
8							$(110)^A$	$(110)^A$	110	100	100	$(100)^B$	100	$[100]^B$	$(110)^B$	110	110	110	$(120)^S$					
9							C	C	C	110	110	110	$(120)^B$	$(120)^B$	$(120)^B$	110	110	110	$(120)^S$					
10							$(140)^S$	120	110	$(110)^A$	$(110)^A$	$(120)^B$	$(110)^B$	110	110	110	110	110	$(120)^S$					
11							$(120)^A$	$(110)^A$	$(110)^A$	110	100	$(110)^B$	$(110)^B$	110	110	$(110)^B$	$(110)^B$	$(120)^B$	$(120)^A$					
12							$(150)^S$	$(120)^S$	$(110)^S$	110	$[100]^E$	100	$(110)^B$	$(110)^S$	B	B	$(120)^B$	110	$(120)^S$					
13							$(130)^S$	120	120	110	110	$(100)^A$	$(100)^A$	$(100)^A$	$(100)^A$	110^{Δ}	100^{Δ}	$(110)^A$	130					
14							C	120	B	B	110	110	$[110]^B$	110	100	$(110)^B$	120	$(110)^A$	$(120)^A$					
15							$(130)^S_K$	$(110)^B_K$	$[110]^B_K$	$(110)^B_K$	110^K	B^K	B^K	$(110)^B_K$	$(110)^B_K$	110^K	110^K	$(110)^A_K$	$(110)^A$					
16							120	110	$(120)^B_K$	110^K	$(110)^A_K$	$(110)^A_K$	110^K	A^K	B^K	B^K	110^K	110^K	$(120)^B_K$					
17							$(130)^S$	$(110)^A$	$(110)^A$	$(110)^A$	$(100)^A$	$(110)^A$	$(110)^B$	100	110	$[110]^B$	110	110	120					
18							$(120)^A$	$(110)^A$	110^K	110^K	110^K	$(110)^A_K$	$[110]^B_K$	110^K	110^K	$[120]^C_K$	120	110^K	$(120)^S$					
19							$(120)^S$	110	110	110	110	110	110	110	100	110	110	110	120					
20							$(130)^S$	110	110	110	110	110	110	110	120	110	110	110	$(120)^S$					
21							$(130)^S$	110	110	110	110	110	110	100	$(100)^A$	$(110)^A$	110	$(110)^A$	120					
22							$(130)^S$	110	110	110	110	110	$(100)^A$	$(100)^A$	$(110)^A$	110	110	110	$(120)^S$					
23							120	110	110	110	110	100	100	100	110	110	110	M	M					
24							M	M	M	110	110	100	100	100	110	110	120	110	$(120)^A$					
25							120	110	110	110	C	C	100	$(110)^S$	110	110	110	120	120					
26							$(120)^A$	120	110	110	110	100	100	100	100	110	110	110	120					
27							120	110	110	110	110	$(110)^B$	110	$(110)^B$	110	110	110	110	110					
28							$(110)^A_K$	$(120)^B_K$	110^K	$(110)^A_K$	$(110)^A_K$	100^K	B^K	B^K	B^K	110^K	100^K	110^K	110^K					
29							$(110)^A_K$	$(110)^A_K$	110^K	110^K	$(100)^A_K$	$(100)^A_K$	110^K	110^K	100^K	110^K	$(100)^S_K$	$(100)^A_K$	$(110)^A_K$					
30							120^K	110^K	110^K	100^K	100^K	100^K	110	110	110	110	110	(110)	$(100)^A$					
31																								
Median							(120)	110	110	110	110	100	110	110	110	110	110	110	(120)					
Count							24	28	27	29	29	28	28	28	27	28	30	29	28					

Δ RECORDS FROM STERLING, VA.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ · Automatic ☒

Form adopted June 1946

TABLE 40

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

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), April (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.

Calculated by: By. H.

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

Δ RECORDS FROM STERLING, VA

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 41

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

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit), April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	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	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
3	38/110	24Y/120	G	G	G	G	G	G	G	G	G	C	G	G	G	G	G	G	G	G	G	35Y/100	G	G
4	G	G	G	G	G	G	G	G	G	30/100	G	34/100	35/100	32/100	G	G	G	G	G	G	G	G	G	G
5	G	G	G	G	G	G	G	G	G	T	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	25/100	28/100	22/100	G	G	G	G	G	G
8	G	G	G	G	G	26Y/110	18/110	24/110	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
9	G	G	G	C	C	C	C	C	C	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
10	G	G	G	G	G	G	G	G	G	33/110	36/110	G	G	G	G	G	G	G	G	21 S/(120)	G	G	G	G
11	G	G	G	G	G	G	16/120	26/110	30Y/110	G	G	G	G	G	G	G	G	G	39/120	23/120	35/120	27/120	G	G
12	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34/110	G	G	G	G
13	G	G	G	G	G	G	G	G	G	G	G	31/100	30/100	24/100	23/100	G Δ	G Δ	44/130	G	G	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	49/120	51/120	35Y/120	36/110	G	G	G
15	G	G	28Y/130	G	G	G	G	G	G	G	G	G	G	G	G	G	G	45/120	47/110	77/10	G	(40)S/110	35/110	17/110
16	G	3.2/110	30/120	29/120	G	G	G	G	G	G	46/110	47Y/110	G	37/110	G	G	G	G	G	G	G	31/110	38/110	17/110
17	G	G	G	14/110	25Y/110	25Y/110	G	22/110	26/110	30/110	33/100	25/110	G	G	G	G	G	G	G	G	G	G	G	G
18	G	G	G	G	G	G	18/120	25/110	G	G	G	29/110	G	G	G	G	G	G	32/130	G	G	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	20/120	G	G	G	G
21	G	G	G	G	G	G	G	G	G	G	G	G	G	G	22/100	31/110	G	38/120	G	G	G	G	G	G
22	G	G	G	G	G	G	G	G	G	G	G	G	39/100	34/100	28/110	G	G	39/120	G	G	G	G	G	23Y/110
23	24Y/110	24/110	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	G	G	G	G	G	G	G	47/130	42/120	(3.8)S/120	G	G	G	G	G
25	G	G	G	13/150	G	G	G	G	G	G	C	C	G	G	G	G	G	G	G	56Y/110	G	G	G	G
26	G	G	G	G	G	G	68Y/120	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	30Y/110
27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	48/120	G	G	18/110	G	G	G	G
28	C	G	G	18/110	30Y/110	35/110	24/110	G	G	46/110	34/110	G	G	G	G	G	G	G	G	G	G	G	G	G
29	26Y/110	G	G	G	28Y/110	14/130	8.3/110	39/110	G	G	3.1/100	28/100	G	G	G	G	G	17/100	19/110	G	G	G	G	G
30	G	G	G	G	G	14/140	G	G	G	G	G	G	G	G	G	G	38/120	33/110	18/100	G	G	63/110	G	G
31																								
Median	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	28	29	29	28	28	28	27	28	28	29	29	28	30	30	30	29	30	29	29	29	29	29	29	29

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

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Δ RECORDS FROM STERLING, VA

TABLE 42

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

IONOSPHERIC DATA

Form adopted June 1946

(M1500)F2 (Characteristic) ; ____ (Unit) April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.6F	(1.6)S	(1.7)S	1.7	1.6	(1.6)J	1.6	1.6	1.7	1.7	(1.7)S	(1.8)J	1.9	1.9	1.8	1.8	(1.8)S	(1.6)S	(1.8)SK	K(1.9)JS	(1.9)SK	K(1.8)JF	(1.5)SK	(1.5)JK
2	1.3FK	K(1.4)PF	F K	(1.6)EK	(1.6)FK	(1.8)FK	1.9F	2.0F	1.9F	1.9F	1.8F	1.9F	1.9	1.8	1.8	1.8	1.8	1.8	1.8	(1.9)S	(1.7)JF	1.6F	1.8F	1.7F
3	(1.8)SF	1.7F	1.7F	1.8F	1.7F	1.9F	2.0F	1.9FK	2.1FK	S(1.6)FK	1.6K	C K	1.6K	1.6K	1.6K	1.6K	1.6K	1.7K	(1.8)SK	(1.8)SK	1.7	(1.7)S	1.6	1.7
4	1.7	(1.6)J	1.5F	(1.6)JF	(1.6)F	(1.7)F	1.8F	(2.0)SF	2.1	1.9	(1.8)S	1.8F	1.8F	1.9	2.0	2.0	2.0	2.0	(1.9)S	(2.0)S	(1.9)S	(1.8)S	(1.8)SF	1.7F
5	1.6F	1.7V	1.7V	1.9F	(1.8)JV	(1.8)F	(1.9)JF	2.0F	1.7	T	(1.6)S	1.7	1.8	1.7	(1.8)S	(1.8)S	1.8	(1.8)S	(1.8)SY	(1.9)S	(2.0)SF	1.8F	1.8	1.8F
6	1.8F	(1.7)F	1.7F	1.7F	1.8F	1.8F	1.9F	1.9F	1.7	1.9	1.8	1.8	1.9	1.9	(1.9)S	1.8	1.9	(1.8)S	1.9	2.0	(1.9)S	(1.8)JS	(1.8)S	(1.7)SF
7	1.7	1.7F	1.7F	(1.7)F	(1.9)F	(1.9)SF	2.0F	(2.1)F	2.0	2.1	2.0	1.9	1.9	1.8	1.9	1.8	1.8	1.9	2.0	(2.0)S	2.0	(1.8)S	(1.8)S	1.7
8	1.8	1.7	1.9F	(1.8)SF	(1.7)SF	1.8F	(2.1)ZF	2.1ZF	2.1F	2.1	2.0	1.8	(1.8)S	1.8	1.8	1.8	1.8	1.9	1.9	(2.0)S	(1.9)JS	(1.8)S	(1.8)SF	(1.8)F
9	1.8F	1.8F	1.8F	C	C	C	C	C	C	2.0	1.9	1.8	1.8	1.9	1.8	1.9	1.8	(1.9)S	(1.9)S	(1.9)S	1.8	1.9F	(1.8)SF	(1.7)JS
10	1.6	1.6F	1.7	1.8F	1.9F	(2.0)SF	2.2F	2.1F	2.2F	2.0	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.9	(2.0)S	(1.9)JS	(1.9)S	(1.8)S	(1.8)JS	(1.8)S
11	(1.8)S	(1.9)F	1.8F	1.9F	1.9F	1.9F	(2.1)SF	2.1	2.1	2.0	1.9	1.9	1.9	1.8	1.8	1.8	(1.9)S	(1.7)S	(2.0)S	(1.9)S	(1.8)S	(1.8)JS	(1.8)S	(1.8)JS
12	(1.8)SF	(1.7)SF	(1.6)S	(1.5)S	(1.6)S	(1.8)S	(2.0)SY	2.0	(2.0)S	1.9Z	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	(1.9)S	1.8	1.7	(1.6)S	(1.7)JS
13	1.8	(1.8)S	1.8	1.8	1.9	(1.8)S	2.0	2.0	1.9	2.0	1.9	1.9	(1.8)S	1.9	1.9	(1.7)PΔ	(2.0)PΔ	1.8	(2.0)S	(2.0)S	(2.0)S	(1.8)S	(1.8)S	(1.7)S
14	(1.8)S	(1.7)JS	(1.7)JS	(1.8)JS	(1.9)SF	(2.0)SF	2.2F	2.2F	2.1	1.9	1.9	1.9	1.9	(1.9)S	(1.9)S	1.9	(1.9)J	1.9	(2.0)JS	(2.0)S	(1.9)SF	(1.8)SF	(1.8)SF	(1.9)SF
15	(1.7)JS	(1.6)SF	1.7F	(1.6)F	(1.8)F	1.9F	2.1FK	2.0FK	1.9K	1.8K	1.7K	1.8K	1.7K	1.8K	1.7K	1.8K	1.8K	1.8K	(1.9)JS	(1.8)S	(1.8)S	(1.8)SF	(1.8)SF	1.8F
16	1.8F	1.8F	(2.0)SF	(1.8)SF	(1.8)SP	(1.8)SF	2.2F	2.0	2.0K	1.9K	(1.8)JK	1.7K	1.7K	J(1.7)SK	1.8K	1.8K	(1.8)SK	1.8K	1.9K	[illegible]K	1.9FK	1.7FK	1.7F	1.7F
17	(1.8)SF	(1.8)SF	1.7F	1.8F	1.8F	(1.9)SF	2.0F	(2.0)JF	1.9F	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.9	(1.9)S	(1.8)SF	(1.8)SF	(1.7)SF	(1.6)SF
18	1.7F	1.8F	1.8F	1.9F	(1.8)SF	(1.7)S	1.9	2.2	1.7K	2.0K	(1.8)SK	J(1.7)SK	1.7K	1.7K	1.7K	1.7K	1.7K	1.9K	1.9	1.9	(1.8)S	(1.8)JS	(1.8)SF	(1.6)SF
19	(1.7)SF	1.7F	1.7F	(1.7)SF	1.7F	1.8F	2.1	2.1	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.8	(1.8)S	1.8	1.8	(1.8)SP	(1.8)SP	(1.7)JS
20	1.6	1.5	(1.5)JS	(1.7)JS	(1.8)JS	(1.8)S	1.9	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.8	(1.9)S	(1.8)S	(2.0)SP	2.0	(1.8)JS	(1.8)SP	(1.8)SP	(1.7)S
21	(1.7)JS	(1.8)SP	(1.8)S	(1.8)JS	(1.7)S	(1.8)JS	2.0	(1.9)SZ	(1.9)JS	1.8	(1.8)S	1.9	2.0	2.0	2.0	2.0	2.0	2.0	(2.0)SP	2.1	(2.0)S	(1.9)S	(1.8)SP	1.8
22	1.8	1.8	1.8	(1.9)S	1.9	1.9	(2.1)S	2.2	2.1	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	(2.0)S	2.0	2.0	2.0F	(1.8)SF	(1.8)SF
23	(1.7)SF	(1.7)SF	1.7F	(1.7)SF	(1.8)SF	1.8F	2.0F	2.1F	(2.0)SF	1.9V	1.9	1.7	1.6	1.8	1.8	1.8	1.8	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	1.9	2.0	2.0	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.8	(1.9)EF	(1.8)SF	(1.8)SF	(1.8)SF
25	(1.8)SF	(1.7)SF	1.6	1.7	(1.8)SF	(1.8)YF	2.1	2.1	2.0V	2.1	C	C	1.9	1.8	1.9	1.9	1.9	1.9	(1.9)S	1.9	1.9	(1.9)S	(1.8)SF	(1.8)S
26	(1.7)SF	(1.7)JF	(1.8)JF	(1.8)SF	(2.0)SF	(1.9)F	2.1	2.0	2.0	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.9	1.9	(1.9)S	1.9	(1.9)S	(1.9)SF	(1.9)SF	(1.8)SF
27	(1.8)SF	(1.8)SF	1.9F	1.9F	1.9F	(2.0)SF	2.2F	2.1	2.0	2.0	2.0	1.9	(1.9)S	1.8	1.8	1.8	(1.8)JS	(1.9)JS	(1.9)S	(2.0)SZ	(2.0)SF	(1.9)SF	(1.8)SP	(1.8)SF
28	C	(1.8)SF	(1.9)JF	(1.8)S	(1.8)JS	1.8	2.0K	2.0VK	(2.0)SK	1.9K	S(1.6)FK	1.7FK	1.6K	1.8K	1.6K	1.7K	(1.8)SK	S1.8K	(1.8)SK	S(1.9)PK	(1.9)SF	(1.7)SP	(1.8)SP	1.7
29	1.9	(1.8)JS	(1.8)JS	(1.8)S	(1.8)JS	(1.8)JS	2.0K	1.8K	(1.8)YK	(1.8)YK	1.7K	1.7FK	1.6FK	1.7FK	S(1.6)FK	1.7K	(1.6)SK	S(1.9)PK	(1.9)K	S(1.9)PK	S(1.8)SK	(1.8)SK	(1.7)SK	S(1.6)PK
30	(1.5)SK	(1.7)PK	(1.6)SK	1.7K	J(1.7)SK	1.8FK	(1.9)ZK	(2.0)FK	S(1.5)FK	(1.5)SK	1.8FK	1.9FK	(1.8)JS	1.7F	1.8	T	(1.8)P	1.8F	(1.9)S	(1.9)SP	(1.8)S	(1.8)SF	(1.8)SF	(1.8)SF
31																								
Median	1.8	(1.7)	1.7	(1.8)	(1.8)	(1.8)	2.0	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	(1.9)	(1.9)	(1.9)	(1.8)	(1.8)	(1.7)
Count	28	29	28	28	28	28	28	28	28	29	29	28	30	30	30	29	30	29	29	29	29	29	29	29

Δ RECORDS FROM STERLING, VA.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 43

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

IONOSPHERIC DATA

Form adopted June 1946

(M3000)F2 (Characteristic), ____ (Unit), April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	24 F	(24) S	(26) S	25	24	(24) J	24	24	25	26	(26) S	(27) J	29	29	28	28	(26) S	(25) S	(27) J K	K(29) J S	(28) S K	K(27) J F	(23) S K	(23) J K
2	21 F K	K(22) P F	F K	(24) F K	(25) F K	(27) F K	29 F	30 F	29 F	28 F	28 F	29 F	29	27	27	27	27	27	27	(29) S	(27) J F	25 F	27 F	27 F
3	(28) S F	26 F	26 F	28 F	25 F	29 F	30 F	30 F K	31 F K	K(25) S F	25 K	C K	24 K	25 K	25 K	24 K	25 K	27 K	(27) S K	(28) S K	26	(26) S	24	26
4	26	25 J	24 F	(25) J F	(25) F	(25) F	28 F	(30) S F	31	29	(27) S	27 F	28 F	29	30	30	30	29	(29) S	(29) S	(28) S	(28) S	(28) S F	26 F
5	25 F	27 V	27 V	29 F	(27) J V	(28) F	(29) J F	29 F	27	T	(25) S	25	28	27	(26) S	(27) S	26	(26) S	(28) S V	(28) S	(30) S F	27 F	28 F	27 F
6	28 F	(26) F	26 F	27 F	27 F	27 F	29 F	29 F	28	29	28	28	28	29	(28) S	28	28	(27) S	28	29	(28) S	(27) J S	(28) S	(26) S F
7	26	25 F	26 F	(26) F	(29) F	(28) S F	30 F	(31) F	30	30	29	29	29	28	28	28	28	28	29	(30) S	30	(28) S	(27) S	26
8	27	27	28 F	(28) S F	(26) S F	27 F	(32) Z F	31 Z F	31 F	31	30	28	(27) S	28	28	28	28	29	30	(31) S	(28) J S	(27) S	(28) S F	(28) F
9	28 F	28 F	27 F	C	C	C	C	C	C	29	28	27	28	28	28	28	28	(29) S	(29) S	(29) S	28	29 F	(27) S F	(25) J S
10	25	25 F	26	28 F	28 F	(30) S F	32 F	32 F	33 F	31	30	28	28	28	28	28	28	29	(30) S	(29) J S	(28) S	(28) S	(28) J S	(27) S
11	(28) S	(28) F	28 F	29 F	29 F	29 F	(31) S F	31	31	30	29	29	28	29	27	28	(29) S	(29) S	(29) S	(28) S	(28) S	(28) J S	(27) S	(28) J S
12	(27) S F	(26) S F	(25) S	(23) S	(25) S	(28) S	(30) S V	30	(30) S	29 Z	29	29	28	28	29	29	28	29	30	(30) S	28	27	(25) S	(26) J S
13	26	(27) S	27	27	28	(27) S	30	30	29	30	29	29	(28) S	29	29	(29) P Δ	(30) P Δ	28	(30) S	(30) S	(30) S	(27) S	(27) S	(26) S
14	(27) S	(27) J S	(27) J S	(28) J S	(30) S F	(30) S F	32 F	32 F	31	29	29	29	28	(29) S	(29) S	29	(29) J	29	(29) J S	(30) S	(28) S F	(28) S F	(27) S F	(28) S F
15	(27) J S	(25) S F	26 F	(24) F	(27) F	30 F	32 F K	29 F K	29 K	28 K	27 K	27 K	27 K	27 K	27 K	27 K	27 K	28 K	(28) J S	(28) S	(27) S	(28) S F	(27) S F	27 F
16	28 F	27 F	(30) S F	(27) S F	(27) S F	(28) S F	32 F	30	30 K	29 K	(27) J K	26 K	26 K	K(25) J S	26 K	26 K	(27) S K	28 K	29 K	27 K	28 F K	27 F K	26 F	26 F
17	(27) S F	(28) S F	27 F	28 F	28 F	(28) S F	31 F	(31) J F	29 F	28	27	28	28	26	26	26	26	26	29	(29) S	(27) S F	(27) S F	(25) S F	(25) S F
18	26 F	27 F	27 F	28 F	(27) S F	(26) S	30	32	29 K	28 K	(28) S K	K(26) J S	26 K	26 K	26 K	25 K	26 K	29 K	29	28	(29) S	(27) J S	(27) S F	(25) S F
19	(25) S F	26 F	25 F	(26) S F	27 F	28 F	31	32	30	29	29	27	27	27	28	28	28	27	(28) S	28	27	(27) S P	(27) S P	(27) J S
20	25	22	(23) J S	(26) J S	(27) J S	(27) S	29	30	29	30	29	30	30	30	29	27	(28) S	(28) S	(30) S P	31	(28) J S	(28) S P	(27) S P	(26) S
21	(26) J S	(28) S P	(28) S	(27) J S	(26) S	(27) J S	30	(29) S Z	(28) J S	27	(28) S	29	29	29	29	29	29	29	(30) S P	30	(30) S	(28) S	(27) S P	27
22	27	28	28	(28) S	28	28	(31) S	33	31	30	29	28	27	28	28	28	28	28	(30) S	29	30	30 F	(28) S F	(27) S F
23	(27) S F	(27) S F	26 F	(26) S F	(27) S F	28 F	30 F	33 F	(30) S F	28 V	29	26	27	28	27	28	27	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	29	29	30	29	27	28	28	28	29	28	27	(29) S F	(28) S F	(27) S F	(28) S F
25	(27) S F	(26) S F	25	26	(27) S F	(27) V F	31	31	30 V	32	C	C	29	28	28	29	28	29	(29) S	29	29	(28) S	(27) S F	(27) S
26	(27) S F	(27) J F	(28) J F	(27) S F	(29) S F	(29) F	31	30	30	31	29	27	28	28	28	28	29	28	(28) S	28	(29) S	(29) S F	(29) S F	(27) S F
27	(27) S F	(27) S F	29 F	29 F	30 F	(30) S F	32 F	31	30	30	29	28	(28) S	28	27	27	(27) J S	(28) J S	(28) S	(29) S Z	(30) S F	(28) S F	(27) S P	(27) S F
28	C	(27) S F	(28) J F	(27) S	(28) J S	28	31 K	30 V K	(31) S K	28 K	K(25) S F	25 F K	25 K	27 K	25 K	26 K	(27) S K	27 K	(28) S K	K(28) S P	(29) S F	(26) S P	(26) S P	26
29	29	(27) J S	(27) J S	(27) S	(27) J S	(27) J S	30 K	29 K	(27) V K	(28) V K	27 K	26 F K	25 F K	26 F K	K(25) S F	26 K	(25) S K	K(28) S P	(28) S K	K(29) S P	K(27) S F	(28) S K	(26) S K	K(25) S P
30	(24) S K	(26) P K	(24) S K	26 K	K(26) J S	27 F K	K(28) J Z	(30) F K	K(23) S F	(24) S K	28 F K	28 F K	(27) J S	26 F	28	T	(28) P	27 F	(28) S	(28) S P	(27) S	(28) S F	(28) S F	(27) S F
31																								
Median	2.7	(2.7)	2.7	(27)	(27)	(28)	30	30	30	2.9	2.8	28	28	28	28	28	28	28	(2.9)	(29)	(2.8)	(28)	(2.7)	(2.7)
Count	28	29	28	28	28	28	28	28	28	29	29	28	30	30	30	29	30	29	29	29	29	29	29	29

Δ RECORDS FROM STERLING, VA.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

TABLE 44

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

IONOSPHERIC DATA

Form adopted June 1946

(M3000)F1 (Characteristic), ______ (Unit), April (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.

Calculated by: By. H.

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

Δ RECORDS FROM STERLING, VA

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 45

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

IONOSPHERIC DATA

(M1500)E (Characteristic), ____ (Unit), April (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.

Calculated by: By. H.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								38	39	42	(43)P	41	(38)B	[illegible]	39	40	38H	41	36HK					
2							41	36	40	39	(41)P	(40)P	(41)P	40	40	39	40	40	38					
3								40K	39K	41K	42K	CK	(41)PK	39K	39K	(40)PK	42A	42A	36K					
4								41	41	39	41	(41)A	(42)A	(43)P	(41)B	42	42	40	36					
5							39	39	42	T	(43)P	(42)F	(39)P	(42)P	40	42H	42	42	38					
6							38	37	39	41	39	(42)S	B	(40)B	41	39	39	40						
7							43	39	41	42	(41)B	(42)F	(41)P	(41)P	40	40	40	36	39					
8							37	38	40	41	42	40	(39)B	B	(40)B	40	(39)P	(40)F	39					
9							C	C	C	42	37	(39)B	(39)B	(39)B	39	40	42	39	(40)S					
10							35	39	42	43	A	42	40	42	42	40	41	39	40					
11							34	A	(41)A	44	41	42	(41)B	(40)P	(40)P	41	41	40	42					
12							39	40	42	41	B	41	40	(41)S	B	B	43	39	38					
13							(40)P	38	39	(43)S	43	40	(39)P	40	42	39Δ	41Δ	39	42					
14							C	39	B	B	44	42	B	(41)P	38	(40)B	40	39	(40)A					
15							(39)BK	41K	BK	(39)PK	41K	BK	BK	(41)BK	(41)BK	39K	39K	39K	(43)A					
16							42	42	41K	45K	42K	43K	44K	AK	BK	BK	39K	40K	39K					
17							39	(39)A	(41)P	A	(38)A	(41)B	(39)B	41	(38)P	B	(39)F	39	37					
18							39	A	40K	42K	(40)PK	(40)SK	BK	41K	41K	CK	41K	41K	39					
19							40	40	42	(44)F	42	43	(44)P	(40)P	40	39	39	41	38					
20							38	39	40	42	(42)P	43	40	41	41	41	41	40	39					
21							36	39	41	40	42	40	41	41	41	41	40	37	39					
22							38	37	39	39	41	41	A	38	40	41	41	39	42					
23							40	37	41	41	41	41	41	42	39	37	38	M	M					
24							M	M	M	40	39	41	(42)P	(41)P	(41)P	40	41	39	41					
25							40	39	40	42	C	C	(39)P	38	39	40	39	40	38					
26							(40)A	42	41	40	(43)P	42	43	42	39	41	39	41	41					
27							38	(39)P	38	40	41	(41)B	(42)S	41	40	(42)P	39	39	41					
28							AK	40K	(41)PK	43K	AK	(39)PK	BK	BK	39K	39K	40K	42K	39K					
29							AK	42K	42K	43K	40K	41K	(41)SK	41K	(39)SK	(40)SK	(40)SK	42K	39K					
30							36K	40K	39K	(41)SK	39K	40K	41	40	41	42	41	(39)A	41					
31																								
Median							39	39	41	41	41	41	(41)	41	40	40	40	40	39					
Count							22	26	26	27	26	27	24	27	28	26	30	29	28					

Δ RECORDS FROM STERLING, VA.

Sweep 1.0 Mc to 25.0 Mc in 0.5 min

Manual ☐ Automatic ☒

Table 46

Ionospheric Storminess at Washington, D. C.

April 1950

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	1	2300	----	4	4
2	4	2	----	1100	4	3
3	1	6	1200	----	3	3
4	3	1	----	0100	4	3
5	2	3			5	4
6	2	1			4	3
7	2	2			3	2
8	1	2			2	2
9	1	0			2	2
10	1	2			2	2
11	1	2			2	2
12	1	3			4	2
13	1	2			3	1
14	1	1			2	2
15	2	4	1100	2300	4	3
16	3	4	1300	----	2	2
17	2	2	----	0300	2	2
18	1	4	1300	2300	3	3
19	3	0			3	3
20	2	1			3	2
21	1	2			1	1
22	1	1			1	1
23	2	0			3	3
24	#	3			5	3
25	2	2			3	2
26	1	2			2	1
27	2	1			0	2
28	2	4	1100	----	3	2
			----	0100		
29	1	4	1100	----	2	3
30	4	3	----	1700	5	3

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

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

----Dashes indicate continuing storm.

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

Table 47

Sudden Ionosphere Disturbances Observed at Washington, D. C.

April 1950

1950 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
April 1	1539	1615	Ohio, D. C.	0.2	Solar flare*** 1547
3	1959	2005	Ohio, D. C.	0.2	Solar flare**** 2005
5	1701	1725	Ohio	0.2	Solar flare*** 1705
7	1453	1510	Ohio, D. C., England, New Brunswick	0.05	
8	1735	1820	Ohio, D. C.	0.0	
10	1140	1220	England	0.02	
10	1315	1350	Ohio, D. C., England	0.05	
11	1959	2130	Ohio, D. C., England, New Brunswick	0.0	Terr.mag.pulse** 2004-2030 Solar flare*** 2004
12	1334	1355	England	0.2	
12	1450	1550	Ohio, D. C., England, New Brunswick	0.0	Solar flare*** 1457
12	1839	2120	Ohio, D. C., England, New Brunswick	0.0	Solar flare*** 1853
13	1102	1120	England	0.1	
13	1722	1800	Ohio, D. C., England	0.01	Solar flare*** 1724
13	2025	2040	Ohio, D. C., England	0.05	Solar flare*** 2029
13	2155	2210	Ohio, D. C.	0.2	

1950 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
April 14	1240	1320	Ohio, D. C., England	0.01	
14	1335	1435	Ohio, D. C., England	0.0	Terr.mag.pulse** 1335-1350
14	1649	1720	Ohio, D. C., England	0.0	Solar flare*** 1649
14	1755	1810	Ohio, D. C.	0.1	Solar flare*** 1756
15	1246	1340	Ohio, D. C.	0.1	
15	1511	1530	Ohio, D. C., England, New Brunswick	0.2	
15	1555	1630	Ohio, D. C., England, New Brunswick	0.03	
15	1640	1720	Ohio, D. C., England, New Brunswick	0.0	
17	1915	2005	Ohio, D. C.	0.1	
18	1305	1350	Ohio, D. C.	0.2	
18	1903	1920	Ohio, D. C.	0.3	
18	1940	2010	Ohio, D. C.	0.2	
26	1751	1805	Ohio, D. C., England	0.05	Terr.mag.pulse** 1749-1755 Solar flare*** 1747
27	1625	1650	Ohio, D. C., England	0.03	Solar flare*** 1625
30	1712	1720	Ohio, D. C., England	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 April 10 at 1140; on April 12 at 1334; on April 13 at 1102; and on April 26 at 1751.

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

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

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

Table 48

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 9	0703	0810	Brentwood	Bahrein I., Belgian Congo, Eritrea, French Equatorial Africa, India, Iran, Kenya, Madagascar, Palestine, Southern Rhodesia, Switzerland, U.S.S.R.	
9	0705	0815	Somerton	China, India, Union of S. Africa	
10	1143	1200	Brentwood	Austria, Bahrein I., Canary Is., Iran, Palestine, Spain, Switzerland, Syria, Turkey, U.S.S.R.	
10	1142	1210	Somerton	Australia, Union of S. Africa	
10	1320	1345	Brentwood	Barbados, Spain, Switzerland	
12	1457	1520	Brentwood	Barbados, Belgian Congo, Bulgaria, Canary Is., Chile, Colombia, Greece, Iran, Madagascar, Palestine, Portugal, Spain, Switzerland, Thailand, Turkey, Uruguay, U.S.S.R., Venezuela	Solar flare** 1457
12	1456	1535	Somerton	Argentina, Australia, Brazil, Canada, Gold Coast, New York, Union of S. Africa	Solar flare** 1457
12	1845	1930	Brentwood	Barbados, Chile, Colombia, Venezuela	Solar flare** 1853
12	1900	1930	Somerton	Canada, New York	Solar flare** 1853
13	1105	1115	Brentwood	Bahrein I., Barbados, Belgian Congo, Bulgaria, Canary Is., Chile, Greece, Iran, Kenya, Malta, Palestine, Portugal, Spain, Switzerland, Trans-Jordan, U.S.S.R., Zanzibar	
13	1104	1120	Somerton	Argentina, Australia, Brazil, Union of S. Africa	
April 14	1243	1315	Brentwood	Austria, Bahrein I., Barbados, Belgian Congo, Canary Is., Chile, Colombia, Greece, India, Iran, Kenya, Malta, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Thailand, Turkey, Uruguay, U.S.S.R., Yugoslavia, Zanzibar	
14	1242	1315	Somerton	Aden, Argentina, Australia, Brazil, Canada, Ceylon, China, Egypt, Gold Coast, India, New York, Union of S. Africa	
14	1335	1405	Somerton	Aden, Argentina, Australia, Brazil, Canada, Ceylon, Egypt, Gold Coast, India, New York, Union of S. Africa	Terr.mag. pulse* 1335-1350
15	1255	1310	Brentwood	Afghanistan, Bahrein I., Barbados, Belgian Congo, Canary Is., Chile, Colombia, Greece, Iran, Madagascar, Malta, Palestine, Spain, Switzerland, Syria, Uruguay, Yugoslavia, Zanzibar	
15	1254	1315	Somerton	Aden, Argentina, Australia, Brazil, Canada, Ceylon, Egypt, Gold Coast, India, New York, Union of S. Africa	
15	1655	1725	Brentwood	Barbados, Colombia, Uruguay	
18	1033	1045	Brentwood	Bahrein I., Greece, Kenya, Madagascar, Malta, Palestine, Portugal, Southern Rhodesia, Syria, Trans-Jordan, Turkey, U.S.S.R.	

*As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.
**Time of observation at the High Altitude Observatory, Boulder, Colorado.

Table 49

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

1950 Day	GCT		Location of transmitters
	Beginning	End	
March 19	1400	1700	New York

Table 50

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

1950 Day	GCT		Location of transmitters	Other phenomena
	Beginning	End		
April 10	1330	1430	Argentina, California, Canada, England, Italy, Morocco, Panama	
11	2010	2040	Argentina, California, Canada, Cuba England, Greece, Guatemala, Italy, Morocco, Panama	Terr.mag.pulse* 2004-2030 Solar flare** 2004
12	1455	1545	Argentina, Brazil, California, Canada, Cuba, England, Finland, Greece, Italy, Morocco, Panama, Sweden, Switzerland	Solar flare** 1457
12	1905	1930	Argentina, Brazil, California, Canada, Chile, Cuba, Ecuador, England, Finland, Greece, Italy, Morocco, Panama, Sweden, Switzerland	Solar flare** 1853
14	1249	1325	Canada, England, Italy, Morocco	
14	1340	1400	Canada, England, Italy, Morocco, Union of S. Africa	Terr.mag.pulse* 1335-1350
15	1255	1345	Argentina, Canada, England, Italy, Morocco, Panama	

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

**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 at Hong Kong, China

1950 Day	GCT Beginning	GCT End	Location of transmitters
February 15	0630	0720	China, Chosen, French Indo-China, Japan, Philippine Is., Thailand
17	0125	0210	California, China, Japan, Philippine Is., Thailand
26	0727	0735	China, England, Philippine Is.

Table 52

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
April 11	2005	2200	Australia, China, Hawaii, Japan, New York, Philippine Is.	Terr.mag.pulse* 2004-2030 Solar flare** 2004
12	0430	0500	China, Chosen, Japan, Java, Philippine Is.	
12	1850	2245	Australia, China, Hawaii, Japan, Philippine Is.	Solar flare** 1853

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

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

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*
March 1950				
10	0935	0955	München**, Berlin***	0.09
19	1025	1035	München**, Lindau#	0.2
27[1]	1015	1052	München**, Berlin***, Lindau#	

*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.

[1]Slow increase of attenuation.

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)
March 1950

Day	North Atlantic quality figure, Half day GCT (1)	(2)	CRPL* Warning, Half day GCT (1)	(2)	CRPL Forecasts (J-reports)**	North Pacific quality figure, Half day GCT (1)	(2)	Geomagnetic K_{Ch}, Half day GCT (1)	(2)
1	7	6				6	7	3	1
2	5	6				6	7	3	2
3	7	6				6	7	2	1
4	7	6				6	6	1	2
5	7	6				6	6	2	2
6	7	6				6	6	3	2
7	5	6	U	U		5	6	(4)	2
8	6	7	U			6	7	2	2
9	7	7				6	6	3	1
10	7	7					6	2	1
11	7	7				6	7	0	1
12	7	7				6	7	1	2
13	7	6			X	6	7	1	2
14	7	7			X	6	7	3	3
15	7	7	U			6	7	(4)	2
16	7	6				6	7	2	1
17	7	7				7	7	2	2
18	7	7				6	7	2	1
19	5	(3)		W		5	5	(5)	(5)
20	6	6	W			5	6	1	2
21	5	5		U		5	5	3	3
22	5	6	U			5	6	(4)	3
23	5	6	U	U		6	7	2	2
24	5	5	W	W		6	6	4	2
25	5	6	W		X	6	6	3	2
26	6	6				6	6	1	2
27	5	6	W	W		6	5	(4)	(4)
28	5	6	U			5	6	3	1
29	7	6				6	7	3	2
30	6	6				6	6	3	1
31	6	6				6	5	2	(4)

Score:	Warning N.A.	Warning N.P.	Forecast N.A.	Forecast N.P.
H	6	4	0	0
(M)	0	0	0	0
M	0	0	1	0
G	46	46	55	56
O	10	12	6	6

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast. ( ) broadcast for one-quarter day. Blanks signify N.
**In addition to dates marked X, the following were designated as probable disturbed days on forecast more than eight days in advance of said dates: March 1,2,19,20 and 21.

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

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

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

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

Scoring by half day according to following table:

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

Table 55a

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

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Apr. 2.7	-	-	-	-	-	-	-	-	2	3	6	10	13	14	12	11	12	12	10	9	10	11	15	17	14	11	9	2	-	-	-	-	-	-	-	-	-
4.9	-	-	-	-	-	-	-	4	4	10	11	11	9	9	11	12	11	11	13	11	11	13	15	12	9	7	6	3	2	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	1	2	3	4	11	14	14	12	11	13	17	16	16	17	19	15	14	15	14	13	8	9	8	5	5	4	3	3	2	2	3	1	2
7.6	-	-	-	-	2	2	5	9	11	11	9	8	9	12	23	25	23	19	15	14	8	6	5	5	3	5	4	3	4	2	2	-	-	-	-	-	-
8.7a	X	X	X	-	2	1	1	3	4	4	4	2	3	11	18	17	15	14	11	10	9	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	X
10.9a	X	X	X	-	-	-	-	-	-	-	-	-	5	10	8	8	9	11	6	3	5	-	-	-	-	-	-	-	-	-	-	4	3	2	-	-	X
13.0	-	-	-	-	-	-	4	3	2	9	9	10	13	14	12	15	18	17	13	13	13	8	3	4	4	4	4	2	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	3	4	4	6	9	13	13	15	15	14	14	13	14	12	4	2	3	5	4	3	4	4	2	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	3	5	7	7	10	13	17	15	18	16	15	13	11	11	8	5	7	9	9	8	8	5	3	4	4	3	4	3	3	-	-
17.9	-	-	-	-	-	2	2	2	4	10	12	13	13	14	10	10	11	12	11	10	8	10	11	6	5	4	4	3	3	3	1	2	2	1	1	-	-
19.7	-	-	-	-	-	-	-	2	2	5	6	5	4	9	10	10	9	8	10	9	9	12	12	10	5	2	-	-	-	-	-	-	-	-	-	-	-
20.6*	-	-	-	3	3	2	4	7	6	8	8	5	9	12	12	12	13	12	11	10	10	20	17	12	6	3	4	2	2	-	-	-	-	-	-	-	-
21.6	-	-	-	-	2	2	2	1	3	3	2	2	7	14	12	11	14	14	13	13	15	17	22	18	11	9	5	2	-	-	-	-	-	-	-	-	-
22.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	7	5	9	9	11	9	10	12	13	14	11	4	2	-	-	-	-	-	-	-	-	-	X	X
24.0	-	-	-	-	-	-	-	-	4	4	4	5	9	11	10	11	12	11	12	11	10	12	12	12	9	4	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	2	11	9	10	18	19	19	19	23	27	15	13	11	11	10	12	10	7	2	-	-	-	-	-	-	-	-	-	-
26.6	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
27.9a	X	X	X	X	X	X	X	X	X	X	X	X	X	5	6	8	6	6	6	2	3	2	5	2	-	-	-	-	-	-	-	-	-	-	-	X	X
28.7	-	-	-	-	-	-	-	-	-	2	4	8	11	12	12	13	11	14	10	9	9	11	13	12	8	10	7	3	-	-	-	-	-	-	-	-	-
29.7	-	-	-	1	1	1	1	2	3	3	9	12	16	19	18	20	17	13	10	9	10	12	16	15	12	12	5	3	2	1	-	-	-	-	-	-	-
30.6	-	-	-	-	-	2	2	2	2	3	9	13	14	15	16	20	19	12	9	10	10	13	20	22	16	11	9	4	2	-	-	-	-	-	-	-	-

Note: Observation low weight: Apr. 2.7 at N25 - N70 and S90; Apr. 4.9 at N75 - N90; Apr. 14.6 at S15 - S20.

Table 56a

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

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Apr. 2.7	2	2	-	-	-	-	-	-	-	-	-	-	-	8	9	3	4	5	1	2	3	10	9	8	-	-	-	-	-	-	-	-	-	-	-	-	-
4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	13	4	4	2	3	4	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	4	4	3	3	3	2	2	3	-	-	-	-	-	-	3	18	10	11	13	3	4	8	6	5	3	1	-	-	1	-	-	-	-	-	2	1	-
7.6	-	-	-	-	3	3	2	-	-	-	-	-	-	-	3	8	11	14	7	4	3	9	5	9	4	3	2	1	-	-	-	-	-	-	-	-	-
8.7a	X	X	X	-	-	-	-	-	-	-	-	-	-	-	2	5	8	8	3	2	2	4	1	1	2	2	-	-	-	-	-	-	-	-	-	-	X
10.9a	X	X	X	-	-	-	-	-	-	-	-	-	-	-	5	-	5	10	8	-	-	7	3	-	-	-	-	-	-	-	-	-	-	-	-	-	X
13.0	-	-	-	-	-	3	1	2	3	-	-	-	-	-	-	9	13	14	9	15	9	3	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	4	3	3	3	2	-	-	-	-	4	6	12	13	9	12	4	4	2	-	-	-	-	3	-	-	-	-	-	-	-	-	-
14.6	3	3	3	3	4	4	3	3	1	-	1	2	2	2	4	12	12	15	10	8	4	4	4	6	-	-	-	5	-	-	-	-	-	-	-	-	-
17.9	2	2	1	3	2	2	2	1	-	-	-	1	1	7	4	-	-	-	-	-	3	6	9	6	4	1	2	-	-	-	-	-	-	-	-	-	-
19.7	-	1	2	2	1	-	-	-	-	-	1	4	4	1	-	-	3	2	-	-	-	9	10	6	-	-	-	2	2	-	-	-	-	-	-	-	-
20.6*	2	2	4	2	2	2	2	2	1	1	3	8	8	3	2	8	9	5	2	3	11	20	18	12	9	3	4	5	6	5	4	2	2	3	3	2	2
21.6	3	3	3	3	3	3	-	-	-	4	3	7	8	-	-	4	7	13	5	11	12	16	13	12	9	10	8	4	4	-	-	-	-	-	-	-	-
22.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	-	2	-	-	-	-	4	3	8	8	8	6	-	-	-	-	-	-	-	-	-	-	X	X
24.0a	-	-	-	2	2	-	-	-	-	-	-	-	-	-	4	4	3	3	8	4	5	7	8	9	5	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	2	1	3	2	4	3	4	5	3	8	4	14	13	8	10	7	3	1	2	7	8	9	4	2	1	-	-	-	-	-	-	-	-	-
26.6	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
27.9a	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	7	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
28.7	-	-	-	-	3	2	-	-	-	-	-	2	10	6	6	11	13	19	10	5	-	3	8	5	2	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	2	3	4	2	2	3	2	3	10	9	2	2	17	20	18	8	9	3	10	14	11	-	-	-	-	-	-	4	-	-	3	2	-	-
30.6	-	-	-	-	-	-	-	-	-	2	3	4	5	3	2	19	18	12	5	8	6	11	13	10	-	-	-	2	3	3	-	-	-	-	-	-	-

Note: Observation low weight: Apr. 2.7 at N30 - N70 and S85 - S90; Apr. 4.9 at N75 - N90.

Table 55b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Apr. 2.7	-	-	-	-	2	2	1	2	1	2	4	5	5	6	9	11	11	9	7	7	11	13	14	16	13	12	11	11	6	4	2	2	-	-	-	-	-
4.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5	10	9	10	11	11	9	9	9	9	10	5	3	3	3	3	-	-	-	-	-	-
5.8a	2	2	2	2	2	2	2	2	4	4	4	7	4	3	5	13	14	14	15	18	18	15	16	19	17	13	10	10	10	7	6	6	4	1	1	-	-
7.6	-	-	-	-	1	-	2	2	1	1	2	-	3	7	9	14	15	12	12	15	12	12	14	16	15	11	9	[illegible]	8	8	5	3	2	-	-	-	-
8.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13.0	-	-	-	-	-	-	-	-	-	-	4	3	8	6	8	7	6	7	9	14	15	15	11	11	14	12	10	8	6	2	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	-	3	9	8	8	10	10	9	6	9	11	12	12	13	12	10	10	5	2	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	4	5	8	11	11	11	15	13	9	10	11	12	12	12	15	15	14	12	7	4	2	2	-	-	-	-	-	-
17.9	-	-	-	-	-	-	-	-	5	4	5	10	14	18	23	17	13	11	10	11	11	12	11	12	11	11	11	12	9	7	6	3	1	-	-	-	-
19.7	-	-	-	-	-	-	-	1	2	2	3	4	7	9	11	13	12	11	10	12	14	15	13	15	13	11	11	12	10	9	3	1	-	-	-	-	-
20.6*	-	-	-	-	-	-	2	3	3	4	5	8	10	12	14	11	13	12	12	20	27	31	31	16	12	11	12	13	14	12	10	7	4	2	-	-	-
21.6	-	-	-	-	-	-	1	4	4	3	3	3	6	5	3	2	4	5	12	14	18	25	23	15	14	12	9	10	9	9	5	3	-	-	-	-	-
22.7a	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	3	4	8	10	12	12	9	9	4	-	-	-	-	-	-	-	-	-	X	X
24.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	9	10	10	10	9	7	4	3	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	1	4	5	4	5	6	3	4	6	6	2	3	5	11	11	14	18	25	24	25	20	15	11	11	10	9	6	2	-	-	-	-	-
26.6a	X	X	X	5	4	5	4	4	-	-	-	-	-	-	-	-	4	6	9	12	11	11	11	10	7	8	-	X	X	X	X	X	X	X	X	X	X
27.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.7	-	-	-	-	-	3	4	3	2	2	4	3	2	3	2	2	4	4	5	8	9	9	11	11	12	10	11	8	4	3	2	-	-	-	-	-	-
29.7	-	-	1	3	3	2	3	4	3	4	5	5	8	5	4	5	6	5	6	9	9	11	15	17	13	15	14	9	8	3	4	1	1	-	-	-	-
30.6	-	-	-	3	4	4	3	5	5	5	5	8	9	9	10	11	10	9	9	8	9	13	14	15	14	14	13	10	9	5	3	2	2	-	-	-	-

Note: Observation low weight: Apr. 2.7 at S75 - S90; Apr. 17.9 at S30.

Table 56b

Coronal observations at Climax, Colorado (6374Å), 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																																					
Apr. 2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	[illegible]	8	2	-	-	-	-	-	-	-	3	1	2	3	2
4.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	2	3	3	2	3	3	3	3	1	2	4	8	7	1	1	3	3	-	-	3	14	11	13	3	1	-	-	4	5	9	6	6	4
7.6	-	-	-	-	2	2	2	2	4	3	3	3	3	4	5	5	10	6	7	5	3	3	2	5	12	11	4	2	2	-	-	-	2	4	3	-	-
8.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13.0	-	-	-	-	-	-	-	-	-	-	2	3	8	5	5	4	4	5	8	7	5	10	18	3	5	7	10	5	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	1	3	3	2	2	3	5	4	4	5	3	5	15	6	3	3	-	5	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	2	2	2	2	2	3	3	3	3	3	4	8	5	11	4	4	14	14	13	9	5	5	6	7	4	2	1	-	-	-	-	2	3
17.9	-	-	-	-	-	-	-	-	2	3	3	1	4	8	12	11	7	3	-	3	4	4	3	-	-	-	1	-	-	-	-	-	-	-	-	3	2
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	16	5	7	10	-	-	-	-	-	-	1	1	-	-	2	-	-
20.6*	2	1	2	1	1	-	-	3	1	-	-	-	-	-	-	-	-	-	1	13	17	12	16	7	-	-	-	-	-	-	-	3	2	3	2	3	2
21.6	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	4	3	2	6	10	14	10	10	8	-	-	-	-	-	-	2	2	-	-	-	2	3
22.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	3	3	4	3	-	4	7	13	5	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X
24.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	8	7	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	6	6	4	9	14	13	12	8	4	4	-	-	-	-	2	2	-	-	-	-	-
26.6a	X	X	X	X	-	-	-	-	-	-	-	-	-	-	3	2	2	2	5	6	4	3	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X
27.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	5	3	2	1	1	1	2	4	2	-	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	10	4	-	-	-	2	3	4	3	-	-	-	-	-	-	-	-	-	3	3	-

Note: Observation low weight: Apr. 2.7 at S70 - S90.

Table 57a

Coronal observations at Climax, Colorado (6704A), 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	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	1	1	2	1	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	1	3	3	2	1	1	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	1	1	-	2	2	-	-	-	2	1	4	5	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	X	X	X	-	-	-	-	-	-	-	-	-	-	2	4	4	3	2	2	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	X
10.9a	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	1	2	3	3	5	4	3	3	2	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	1	1	1	1	3	2	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.9	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6*	-	-	-	-	-	-	-	1	1	2	-	-	2	2	-	1	1	1	1	2	1	1	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-
21.6	-	2	2	3	1	-	-	-	-	2	3	-	-	-	1	2	3	2	2	2	3	4	3	3	2	-	-	2	-	-	-	-	-	-	-	-	-
22.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	-	4	3	2	-	-	4	5	-	2	2	3	2	2	2	-	-	-	-	-	-	-	-	X
24.0a	-	-	-	-	-	-	-	3	3	2	2	2	1	-	-	-	2	1	2	2	3	2	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	1	1	4	4	4	4	2	1	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6	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
27.9a	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	2	1	2	3	2	3	2	2	2	-	-	-	3	3	2	2	1	-	-	-	-	-	-	-	-	-

Note: Observation low weight: Apr. 2.7 at N35 - N70 and S75 - S90; Apr. 4.9 at N75 - N90.

Table 57b

Coronal observations at Climax, Colorado (6704A), 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	1	-	-	-	-	-	-	-	-	-	-
4.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	1	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-
7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1	1	1	2	3	3	2	1	1	-	-	-	-	-	-	-	-	-
8.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	1	1	2	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	2	2	2	1	2	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	1	2	2	3	2	2	-	-	-	-	-	-	-	-	-
17.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	3	2	1	1	1	2	2	2	2	2	2	1	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	2	2	2	3	3	2	2	2	2	1	1	1	-	-	-	-	-	-	-
20.6*	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	4	5	7	6	4	4	4	2	3	2	1	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	4	3	2	1	1	1	1	-	-	-	-	-	-	-
22.7a	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	2	3	3	2	3	4	1	-	1	2	-	-	-	-	-	-	-	-	-	-	X
24.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	4	3	3	2	2	-	-	-	-	-	-	-	-	-	-
26.6a	X	X	X	X	-	-	-	-	-	2	-	-	-	2	1	2	2	-	-	1	2	1	1	-	-	-	-	X	X	X	X	X	X	X	X	X	X
27.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	1	1	1	1								
30.6	-	-	-	-	-	-	-	2	2	-	1	1	-		[illegible]																						

Table 58a

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																																					
Mar. 3.8	7	3	1	-	-	-	-	-	3	-	3	9	12	26	25	36	36	28	21	15	15	22	36	35	20	16	15	10	4	5	6	4	4	2	-	1	3
4.7	3	-	-	-	-	-	-	-	-	2	4	8	14	14	22	35	36	34	24	18	15	25	29	34	19	15	15	13	7	4	2	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	3	2	-	3	8	13	35	40	39	31	30	21	21	32	33	26	16	18	15	10	7	4	2	-	-	-	2	2	4
7.7	-	-	-	-	-	-	-	-	4	3	3	9	12	13	17	27	20	16	16	17	18	23	22	26	24	15	10	8	5	2	-	-	-	-	-	-	-
8.8	2	1	-	-	-	-	2	2	4	5	9	16	11	13	13	15	17	20	23	16	19	20	20	26	20	15	10	7	7	5	8	5	4	4	4	1	-
9.7	1	1	-	-	-	-	-	4	5	8	12	13	9	9	12	14	18	30	33	15	21	16	19	18	17	13	10	9	9	6	7	8	6	6	4	3	-
11.7	3	2	-	1	1	2	2	2	4	8	13	8	13	13	15	12	37	36	36	29	18	13	13	14	13	10	9	6	4	5	3	6	7	9	4	-	-
13.7	-	-	-	-	-	-	2	4	9	9	11	11	11	25	36	40	40	37	27	15	12	12	13	12	10	8	6	3	4	7	6	8	7	6	5	5	-
15.7	-	-	-	-	-	-	-	5	7	7	9	12	14	18	21	23	22	18	16	11	14	10	10	9	10	9	10	10	8	7	4	6	9	9	8	4	-
17.7	-	3	4	5	5	4	2	6	9	10	13	14	23	37	30	38	26	26	32	25	15	12	10	12	10	14	16	11	8	5	9	7	9	9	7	5	2
20.8	-	-	-	-	-	-	-	7	7	10	13	14	15	16	12	14	15	15	15	15	13	18	18	14	10	4	4	4	4	-	3	5	5	2	-	-	-
21.9	-	-	-	-	-	-	3	4	7	7	8	16	13	9	10	13	17	22	21	13	18	22	27	13	11	3	-	-	-	-	-	-	-	-	-	-	-
22.7	3	2	2	3	3	4	9	8	9	6	13	18	13	18	17	22	31	37	21	18	17	29	20	13	12	6	4	3	2	2	3	3	4	2	-	-	-
23.7	-	-	-	-	3	2	3	9	4	5	10	11	13	18	26	21	18	20	14	13	12	26	25	13	10	-	-	-	-	-	-	-	-	-	-	-	-
24.7	3	3	-	1	3	4	4	5	7	10	9	13	16	29	33	28	23	19	18	15	14	34	27	14	9	3	5	3	2	2	-	2	2	2	1	2	-
28.7a	-	-	-	-	-	-	-	-	-	14	12	13	16	17	18	27	29	29	27	21	15	9	10	9	4	8	6	-	-	-	-	-	-	-	-	-	-
29.7	3	3	-	-	-	-	-	-	4	17	16	16	33	36	33	35	39	35	33	18	16	13	14	14	17	16	10	7	5	2	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	3	8	7	10	13	16	16	15	16	11	13	10	13	12	14	15	12	10	9	3	3	-	-	-	-	-	-	-	-

Note: Observation low weight: Mar. 17.7 at S15 - S30; Feb. 31.7 at N35 - S75.

Table 59a

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

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Mar. 3.8	6	3	4	5	4	-	3	4	3	3	2	2	5	13	2	3	16	12	10	9	12	10	19	13	13	11	4	2	4	5	4	5	4	4	3	3	2
4.7	7	5	3	4	2	1	4	3	2	-	3	2	4	-	2	27	13	7	5	9	4	12	13	13	5	3	3	3	6	5	7	6	2	-	-	-	-
5.7	9	6	5	4	2	2	2	1	1	1	-	-	-	-	13	16	13	13	11	17	1	9	14	13	9	6	-	-	8	4	-	-	-	2	3	2	-
7.7	6	6	9	4	4	3	4	7	5	5	4	2	-	6	7	7	12	12	4	5	-	9	14	14	10	7	5	4	4	-	-	-	3	2	3	-	2
8.8	5	4	3	4	2	2	2	2	2	3	4	2	2	4	2	9	11	6	10	2	1	3	14	13	13	2	1	-	-	-	-	-	-	-	4	2	1
9.7	5	5	4	3	4	3	3	3	3	3	-	-	-	-	2	12	11	11	9	4	4	-	5	14	5	3	2	1	-	-	-	-	-	-	1	-	-
11.7	2	1	2	4	9	3	-	4	4	-	-	-	-	4	9	7	18	11	13	12	4	2	1	1	-	-	-	3	3	-	-	-	-	2	2	3	2
13.7	4	3	3	5	4	4	4	3	2	3	3	2	-	4	10	5	3	14	12	-	4	2	3	2	3	3	3	-	2	2	1	2	-	-	-	-	-
15.7	3	3	4	4	4	3	4	3	3	3	-	-	2	-	13	-	-	2	3	5	2	4	-	-	4	-	-	-	2	4	-	-	-	-	-	-	-
17.7	8	7	9	7	7	5	6	4	2	-	2	-	5	10	-	-	3	13	9	10	7	6	4	14	4	1	2	2	5	8	7	4	5	5	4	2	2
20.8	4	2	6	4	3	-	-	-	-	-	-	-	2	-	-	-	4	4	2	2	-	10	8	-	-	-	-	-	2	2	-	-	-	1	3	2	-
21.9	3	3	-	-	2	2	-	-	-	-	-	-	-	2	-	-	-	2	11	4	2	11	11	-	-	-	3	4	4	3	-	5	2	-	-	-	-
22.7	5	4	4	4	5	3	3	-	-	1	3	9	3	3	-	-	-	12	4	-	3	11	17	4	-	3	4	4	4	5	4	3	3	3	3	3	4
23.7	2	2	3	-	-	-	-	-	1	-	4	4	-	-	2	-	-	10	-	-	-	13	5	6	-	3	-	3	3	4	4	4	2	1	3	2	-
24.7	4	4	1	5	2	3	-	2	-	-	9	-	-	-	3	2	4	4	-	-	4	22	11	5	3	4	4	4	4	2	2	2	1	-	-	2	4
28.7	4	8	7	4	4	6	4	-	3	4	9	13	-	14	14	5	4	15	18	6	7	6	-	-	5	4	5	2	-	-	-	-	-	-	-	-	-
29.7	8	4	9	4	7	6	5	3	3	5	-	13	18	27	13	5	15	18	21	12	5	9	10	10	10	8	6	3	5	3	3	5	3	2	3	3	2
31.7	5	3	2	1	-	-	-	-	-	5	11	11	9	9	4	5	17	-	-	3	5	10	7	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: Mar. 3.8 at N60 - N70 and N85; Mar. 4.7, Mar. 5.7, Mar. 7.7, Mar. 8.8, Mar. 9.7, Mar. 11.7 at N65 - N70; Mar. 13.7 at N60 - N70; Mar. 15.7 at N65 - N70; Mar. 17.7 at N60 - N65; Mar. 21.9 at N65; Mar. 22.7 at N60 - N70; Mar. 28.7 at S05 - S30; Mar. 31.7 at N35 - S75.

Table 60a

Coronal observations at Sacramento Peak, New Mexico (6704A), 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																																					
Mar. 3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	1	-	-	-	2	1	1	2	2	-	-	1	1	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	2	3	-	-	2	1	2	3	2	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	1	-	-	-	-	-	-	-	-
8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1	4	3	5	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	6	4	6	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	1	-	1	1	1	2	2	3	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	4	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	2	-	-	-	-	-	-	1	1	1	1	1	2	2	2	4	4	3	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Observation low weight: Mar. 7.7 at N65 - N70; Mar. 11.7 at N65 - N70; Mar. 13.7 at N05; Mar. 28.7 at S05 - S30; Mar. 31.7 at N35 - S75.

[illegible]

[illegible] ([illegible]A), 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																																					
Mar. 3.8	3	2	1	2	2	–	3	5	5	5	[illegible]	11	13	14	10	13	15	14	20	20	30	39	41	37	35	21	18	17	17	12	11	9	7	5	8	9	7
4.7	–	–	–	–	–	2	8	7	4	4	11	13	10	[illegible]	12	14	18	21	20	17	32	26	28	31	35	23	16	17	15	12	11	8	4	5	4	4	3
5.7	4	–	–	–	–	4	6	7	6	7	12	13	5	13	14	20	21	20	13	15	15	17	19	31	29	20	25	23	14	15	13	10	8	3	2	2	–
7.7	–	–	–	–	–	–	–	7	5	8	11	10	5	10	9	13	16	20	20	14	14	16	17	16	18	18	16	17	14	14	11	10	3	–	–	–	–
8.8	–	–	–	–	–	1	4	6	5	6	6	7	8	10	10	17	15	34	26	[illegible]	39	34	40	31	31	27	21	17	17	13	9	9	4	4	3	3	2
9.7	–	–	–	–	–	–	–	4	4	4	6	5	5	8	6	10	13	17	20	16	29	22	32	34	39	28	17	15	14	9	6	5	3	2	3	3	1
11.7	–	–	–	–	–	–	–	4	4	4	2	–	–	11	16	27	32	19	20	27	33	30	36	35	26	20	17	13	11	–	–	3	3	2	3	3	3
13.7	–	–	–	–	–	–	–	–	–	–	–	1	[illegible]	[illegible]	37	37	26	27	29	40	38	35	35	37	40	35	17	15	16	3	–	–	–	–	–	–	–
15.7	–	–	–	–	–	–	–	–	–	–	–	5	8	11	14	16	17	17	18	28	26	32	36	37	39	33	29	15	3	–	–	–	–	–	–	–	–
17.7	2	–	–	–	–	–	–	–	2	2	4	4	9	12	34	27	38	18	17	16	20	28	35	39	34	28	30	10	4	–	–	–	–	–	–	–	–
20.8	–	–	–	–	–	–	–	3	4	6	10	8	10	11	17	18	19	17	15	13	12	14	16	17	15	11	8	9	8	5	–	–	–	–	–	–	–
21.9	–	–	–	–	–	–	–	2	2	[illegible]	4	6	[illegible]	14	[illegible]	20	24	[illegible]	14	14	15	17	21	16	13	13	14	13	12	12	12	9	–	–	–	–	–
22.7	–	–	–	–	–	3	4	10	9	7	6	9	14	21	25	32	3	27	17	23	27	28	18	16	15	16	15	14	17	14	11	7	2	4	1	–	3
23.7	–	–	–	–	–	4	7	4	5	4	4	9	12	14	14	16	18	15	15	19	16	30	25	14	12	12	11	11	11	9	9	6	–	–	–	–	–
24.7	–	–	–	–	–	7	8	8	6	7	11	11	11	16	20	17	15	14	20	31	34	42	43	34	21	25	17	16	16	14	12	10	7	8	3	4	3
28.7a	–	–	–	–	–	–	–	3	3	3	3	4	4	5	5	10	13	10	11	12	13	15	18	22	26	17	14	11	9	8	8	5	–	–	2	–	–
29.7	–	–	2	3	3	4	6	5	6	3	4	6	8	9	8	10	10	11	16	15	16	23	27	28	39	26	20	14	17	16	11	9	4	4	3	5	3
31.7	–	–	–	–	–	–	–	3	3	–	–	5	10	9	11	10	15	17	16	14	12	16	15	24	22	20	21	15	14	10	9	–	–	–	–	–	–

Note: Observation low weight: Mar. 13.7 at S60 – S75; Mar. 23.7 at S55 – S75; Mar. 31.7 at S10 – S35.

Table 59b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1950																																					
Mar. 3.8	2	2	3	3	2	3	4	6	3	4	1	3	1	–	–	2	7	8	4	6	[illegible]	19	33	17	6	9	8	9	–	–	–	4	4	5	4	6	6
4.7	–	–	2	1	–	4	3	3	–	4	–	–	–	–	–	3	7	9	3	8	13	25	13	9	10	4	3	2	–	–	–	3	3	4	5	8	7
5.7	–	–	–	–	1	1	9	3	3	2	–	–	–	–	–	5	13	4	4	5	11	14	4	7	5	3	3	2	–	–	3	–	4	5	5	7	9
7.7	2	–	–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	7	13	3	2	6	–	–	–	–	–	–	–	–	–	–	2	2	5	4	6
8.8	1	2	1	–	–	–	5	2	2	4	2	1	1	2	2	2	3	10	–	3	11	11	5	11	–	4	4	2	1	1	–	–	2	5	4	4	5
9.7	–	–	–	–	–	–	3	3	3	3	3	2	–	–	–	3	3	12	8	–	9	15	–	4	3	–	2	2	2	3	–	3	3	5	7	6	5
11.7	2	–	2	–	–	–	4	4	7	4	–	4	2	3	4	6	6	13	8	10	11	9	3	1	3	4	3	4	4	–	2	3	2	–	4	3	2
13.7	–	–	–	–	–	–	4	3	3	2	–	–	2	–	19	10	–	8	9	7	14	3	–	10	13	10	10	14	7	–	–	–	–	–	5	4	4
15.7	–	–	–	–	–	2	2	3	2	2	1	2	3	9	12	10	12	11	3	13	5	13	11	13	14	15	17	4	1	2	1	1	–	–	3	3	3
17.7	2	3	3	2	2	2	2	4	–	2	3	4	3	14	9	13	11	8	9	3	4	6	23	28	17	9	10	9	6	2	2	4	3	3	7	5	8
20.8	–	–	–	–	–	–	1	2	–	–	–	–	–	–	–	–	13	6	–	4	9	10	8	4	2	2	2	–	–	–	–	–	–	–	2	3	4
21.9	–	–	–	–	–	–	–	–	–	5	–	–	–	–	–	8	7	4	3	4	4	4	11	14	8	3	–	–	–	2	–	–	–	–	3	4	3
22.7	4	–	2	–	2	3	3	4	4	4	–	–	–	–	–	5	5	16	4	–	4	10	22	14	4	–	–	–	–	4	2	2	3	–	4	5	5
23.7	–	–	2	1	–	–	–	–	–	–	–	–	–	–	–	3	2	4	–	–	3	14	18	3	–	–	–	2	–	–	–	–	–	–	–	–	2
24.7	4	2	2	3	3	2	1	3	3	–	–	–	–	2	3	7	4	–	–	–	4	20	21	10	–	–	–	–	–	1	2	3	–	5	3	3	4
28.7	–	–	–	–	–	3	–	–	–	–	–	–	–	–	2	3	7	10	4	–	5	–	–	–	16	–	–	–	5	4	4	4	5	9	10	7	4
29.7	2	–	–	–	–	3	–	2	2	2	1	–	–	4	3	2	6	11	15	11	9	8	–	–	15	3	3	–	1	2	3	10	5	7	10	10	8
31.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	8	13	11	12	7	3	5	–	–	4	4	–	–	–	–	4	2	2	5	6	5

Note: Observation low weight: Mar. 13.7 at S55 – S75; Mar. 23.7 at S55 – S75.

Table 60b

Coronal observations at Sacramento Peak, New Mexico (6704A), 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																																					
Mar. 3.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	2	3	4	4	5	2	2	1	–	–	–	–	–	–	–	–	–
4.7	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	3	3	4	3	2	3	1	1	–	–	–	–	–	–	–
5.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	2	2	2	1	–	–	–	–	–	–	–	–	–
7.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–
8.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	–	–	–	1	3	1	2	–	–	–	–	–	–	–	–	–	–	–	–
9.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	2	2	2	2	3	3	2	1	–	–	–	–	–	–	–	–	–	–
11.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	2	3	1	–	2	2	2	2	2	–	–	–	–	–	–	–	–	–	1
13.7	–	–	–	–	–	–	–	–	–	–	–	–	–	1	3	4	3	4	3	4	4	4	2	3	5	4	3	2	1	–	–	–	–	–	–	–	–
15.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4	3	3	2	2	–	–	–	–	–	–	–	–	–	–	–	–
17.7	–	–	–	–	–	–	–	–	–	–	1	–	–	2	–	–	2	1	–	–	–	1	1	2	2	1	1	–	–	–	–	–	–	–	–	–	–
20.8	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–
21.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2	–	–	–	–	–	3	1	–	–	–	–	–	–	–	–	–	–	–	–
22.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	1	1	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–
23.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	3	4	5	3	–	–	–	–	–	–	–	–	–	–	–
24.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	2	4	4	3	–	–	1	–	–	–	–	–	–	–	–	–	–
28.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1	4	3	3	–	–	–	–	–	–	–	–	–	–
29.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	–	–	2	1	2	3	3	2	–	–	–	–	–	–	–	3	2
31.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	3	2	–	–	–	2	–	–	–	–	–	–	–

Note: Observation low weight: Mar. 13.7 at S55 – S75; Mar. 22.7 at S55 – S75.

Table 61

American and Zürich Provisional Relative Sunspot Numbers

April 1950

Date	R_A*	R_Z**	Date	R_A*	R_Z**
1	92	72	17	132	128
2	131	80	18	109	77
3	174	122	19	101	88
4	194	133	20	87	100
5	178	136	21	90	85
6	160	139	22	85	70
7	145	151	23	136	96
8	124	114	24	157	128
9	125	120	25	178	138
10	105	109	26	174	142
11	90	88	27	180	119
12	102	91	28	196	160
13	115	95	29	198	153
14	138	80	30	201	154
15	144	100			
16	145	126	Mean:	139.5	113.1

*Combination of reports from 44 observers; see page 9.

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

Table 62

Preliminary values of mean K-indices, Kw, from 32 Observatories;

Preliminary values of International Character-Figures, C;

Geomagnetic planetary three-hour-range indices, Kp;

Final magnetically selected days for March 1950

Gr. Day 1950	Values Kw	Sum	C	Values Kp	Sum	Final Sel. Days
1	3.2 2.1 2.0 2.8 2.3 1.0 1.2 1.1	15.7	0.5	4-3-3-3+ 2o1o1o1o	17+	Five
2	1.5 2.2 2.5 2.3 1.9 2.3 0.8 0.9	14.4	0.5	2-3o3o3- 2-2+1-1-	16-	Quiet
3	1.9 1.2 1.5 1.6 2.2 2.7 1.1 1.0	13.2	0.3	2+1+2o2- 2+3-1o1o	14+	
4	0.5 0.7 1.0 1.9 2.5 1.8 1.7 1.7	11.8	0.3	0+1o1+2o 3-2-2-1+	12o	4
5	0.4 1.1 1.8 2.5 1.9 1.0 1.3 2.0	12.0	0.4	1-1+2+3- 2o1o1o2-	13-	10
						11
6	2.7 2.9 1.9 2.3 1.9 3.0 3.3 3.5	21.5	0.9	3+4-2+2+ 2o3o3o4-	23+	12
7	3.6 3.2 3.9 3.6 3.2 2.0 2.0 1.9	23.4	1.1	4o4+5o4o 4-2+2-2-	27-	18
8	2.3 0.7 1.4 1.3 1.6 1.4 1.3 2.5	12.5	0.4	2+1-2-1o 1+1+1o2o	11+	
9	2.3 1.8 1.8 1.8 2.2 2.0 1.2 0.8	13.9	0.5	3-3-2o2- 2+2o1-0+	14+	
10	1.7 1.1 1.2 1.8 1.2 1.4 0.9 0.3	9.6	0.2	2o1+1+2+ 1-1o0+0+	9+	
						Five
11	0.3 0.2 0.6 1.0 1.2 0.9 1.7 2.1	8.0	0.1	0+0o0+1- 1+1-1+2o	7-	Dist.
12	1.0 1.0 0.8 1.4 1.9 2.2 1.3 1.0	10.6	0.2	1+1+1-2- 2o2+1o1-	11o	
13	0.3 0.8 0.8 0.9 1.4 2.1 2.8 0.9	10.0	0.4	0o1-1-1o 1+2o3-0+	9-	15
14	1.3 1.6 2.5 2.9 2.6 2.9 3.8 1.4	19.0	1.0	1o2-3-3o 2+3-4o1o	18+	19
15	4.5 5.0 2.9 2.2 2.5 1.8 2.0 1.3	22.2	1.2	5o6-3+2o 3-2-2-1-	23-	21
						22
16	1.1 2.4 2.5 1.7 1.2 1.9 1.1 0.6	12.5	0.4	1+3+3o2- 1+2o1o1-	14+	27
17	1.0 0.7 1.7 2.5 2.0 0.6 1.1 2.6	12.2	0.5	1+1+2+3- 2-0+1-2+	13-	
18	1.3 1.3 2.2 1.4 0.5 0.9 1.8 1.4	10.8	0.2	2-1+3-1+ 0+1-1+1-	10o	
19	2.1 3.6 5.4 6.1 6.0 6.2 4.4 2.6	36.4	1.9	3-4o7-7+ 7+7+5o3-	43o	
20	2.2 1.4 1.4 0.6 1.4 2.9 3.5 2.0	15.5	0.9	2+2-2-0+ 1o3o4-2o	16-	
						Ten
21	1.8 2.9 2.5 4.3 3.8 4.2 4.2 2.7	26.4	1.3	2+4-3-5o 4+5o4+3o	30+	Quiet
22	3.3 4.0 3.2 3.4 2.7 2.2 3.2 3.4	25.4	1.1	4o5o4o4- 3-2+3+4-	29-	
23	2.2 1.5 1.4 1.7 2.3 1.8 0.9 2.3	14.1	0.4	2+2-1+2- 2o1+0+2o	13-	3
24	4.6 3.8 3.8 2.3 2.4 2.4 1.9 1.8	23.0	1.1	5+5-5o3- 3o2+2o2o	27o	4
25	2.2 3.8 2.8 0.8 1.1 1.2 2.3 1.3	15.5	0.6	3-5-4-1o 1-1o2o1+	17o	5
						8
26	1.7 0.7 0.5 2.2 1.8 1.4 1.9 3.5	13.7	0.5	2o1o1-3- 2o1+2-4-	15o	10
27	4.5 4.0 2.9 3.7 3.0 4.4 4.5 4.3	31.3	1.4	5o5o4-5- 3+5-5o5o	36+	11
28	1.9 1.9 2.1 3.4 2.6 1.3 0.7 2.0	15.9	0.6	2+3-3-4o 3-1o0+2o	18-	12
29	1.8 2.2 3.9 3.3 2.7 2.6 2.1 1.7	20.3	0.9	2-3-4+4- 3o3-2o1+	21+	13
30	1.9 1.6 1.8 2.1 2.2 2.5 1.0 0.3	13.4	0.4	2+2+2+2+ 2o3-1-0+	15o	16
31	0.2 0.8 3.2 3.1 4.0 4.2 2.9 3.9	22.3	1.1	0o1o4-3+ 4+5-3-4+	24o	18
Mean	1.98 2.19 2.26 2.06 2.01 2.35 2.23 1.90	2.12	0.69			

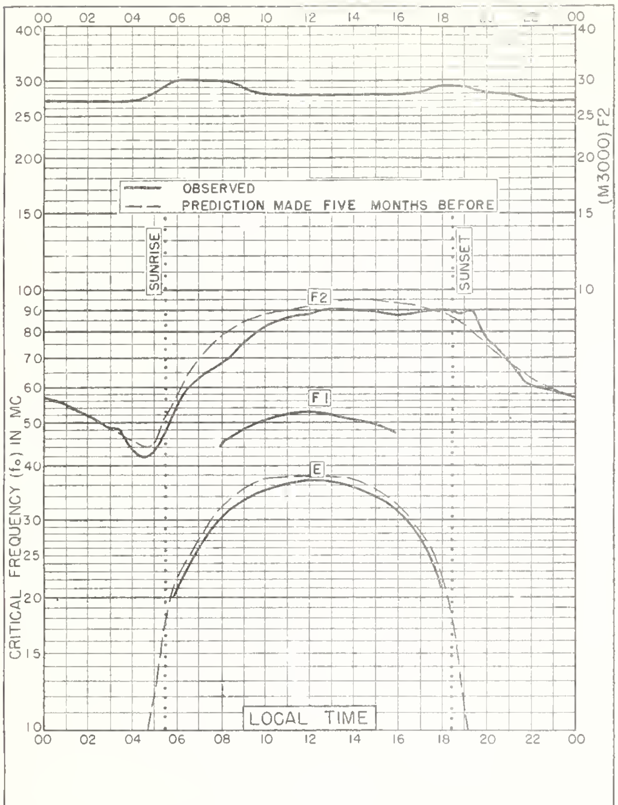


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W APRIL 1950

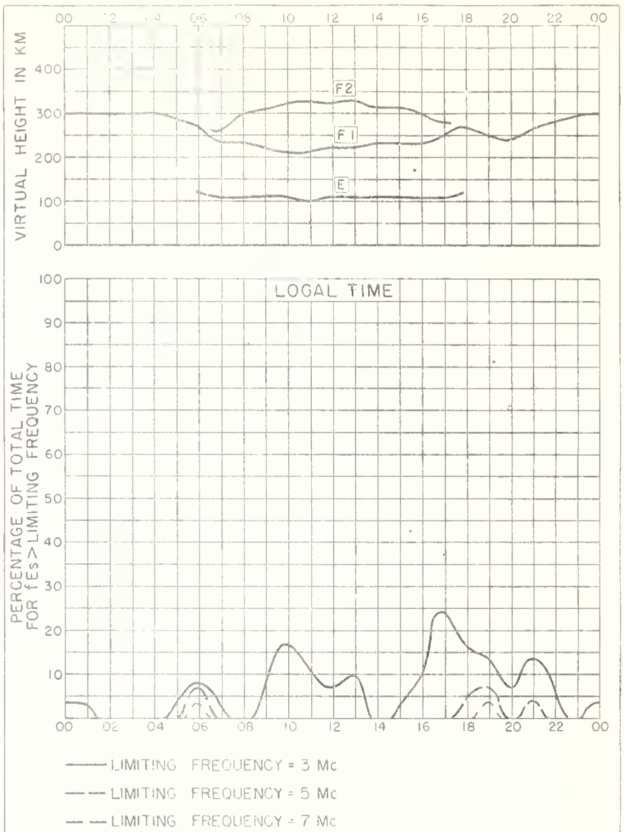


Fig. 2. WASHINGTON, D. C APRIL 1950

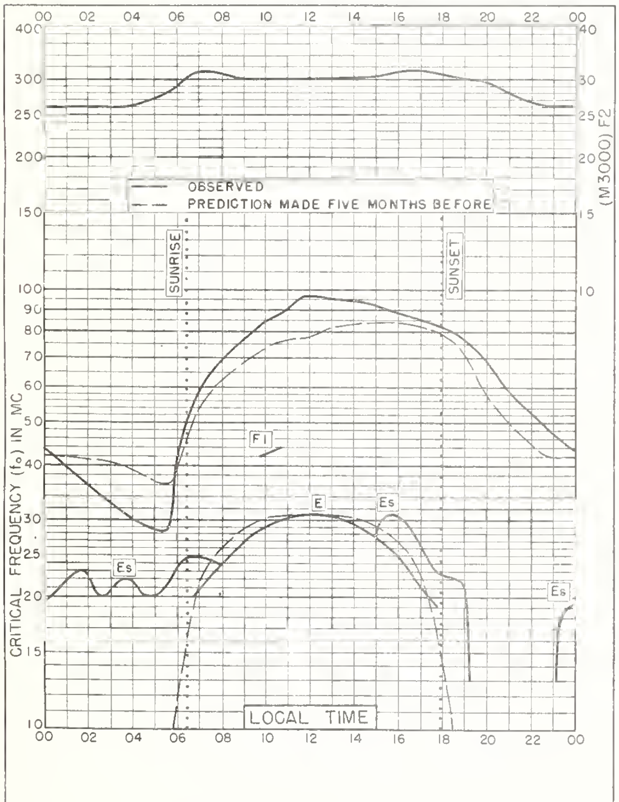


Fig. 3. OSLO, NORWAY
60. 0°N, 11. 0°E MARCH 1950

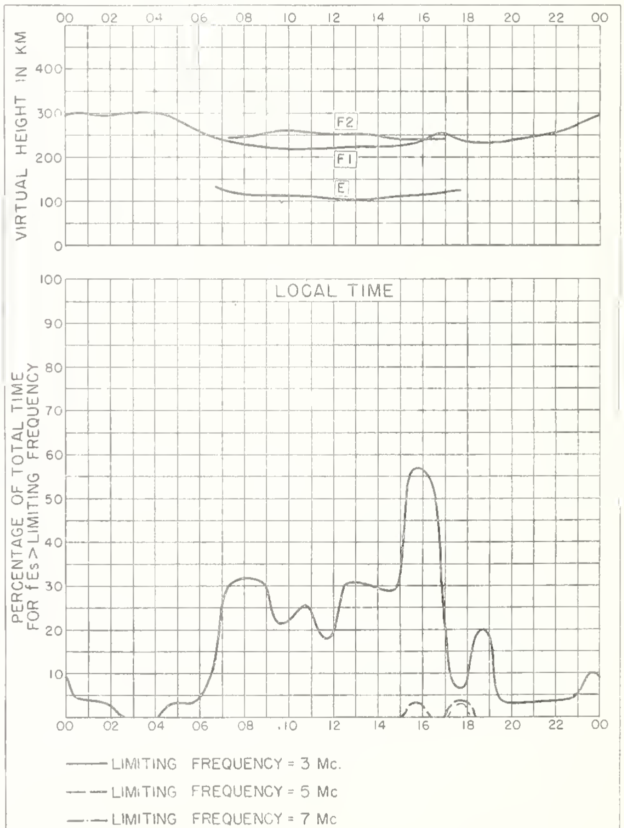


Fig. 4. OSLO, NORWAY MARCH 1950

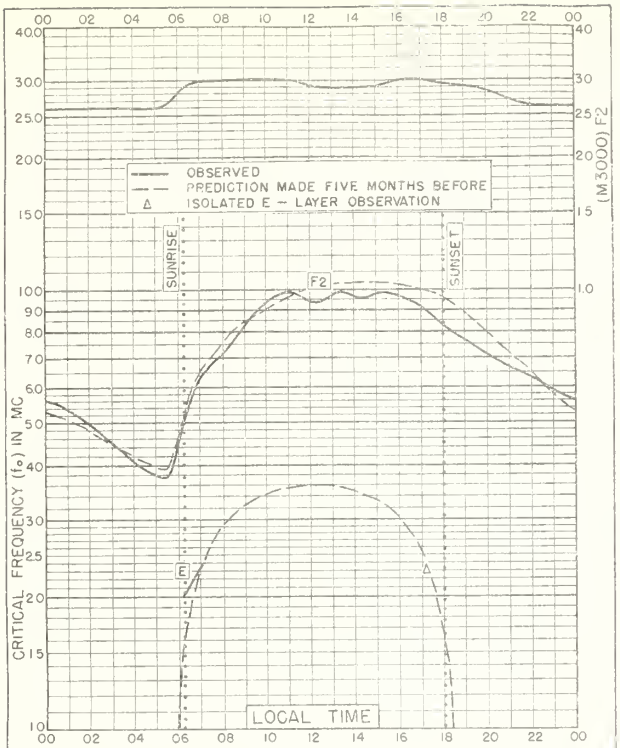


Fig. 5. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W MARCH 1950

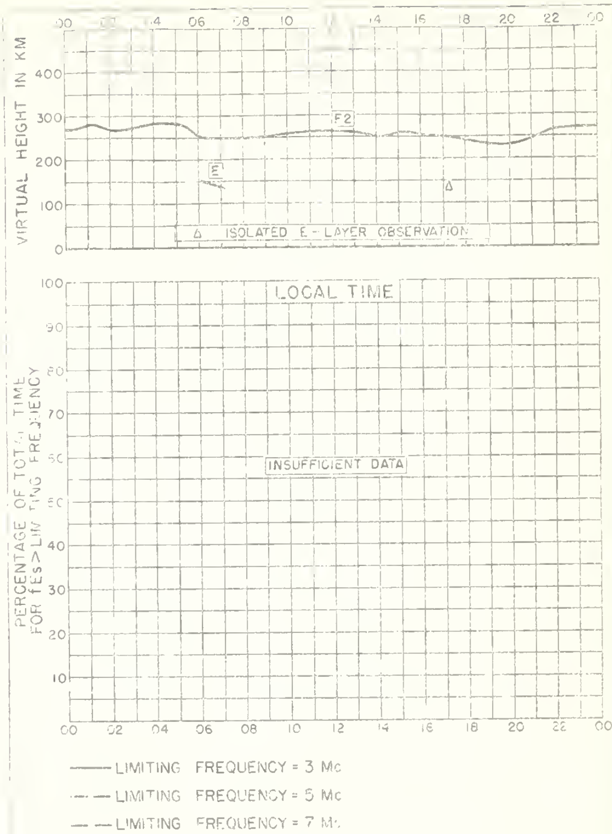


Fig. 6. BOSTON, MASSACHUSETTS MARCH 1950

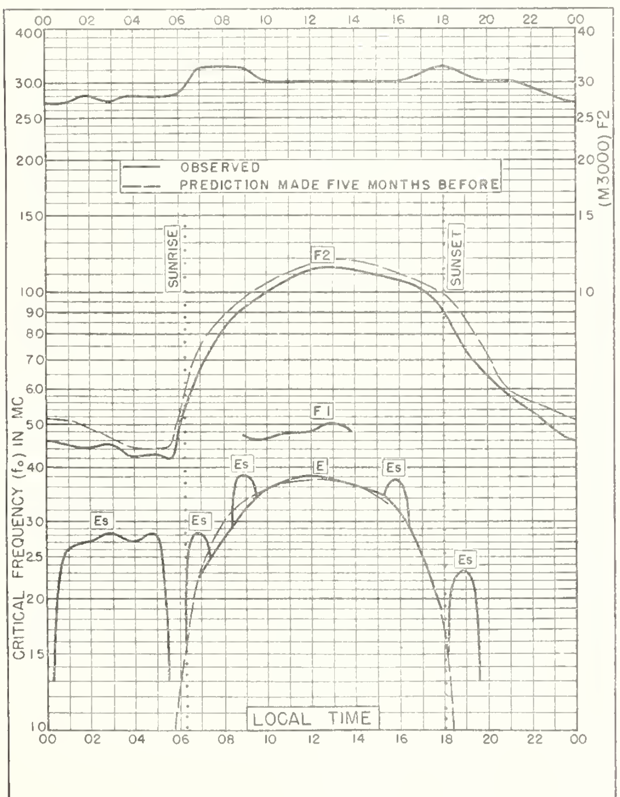


Fig. 7. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W MARCH 1950

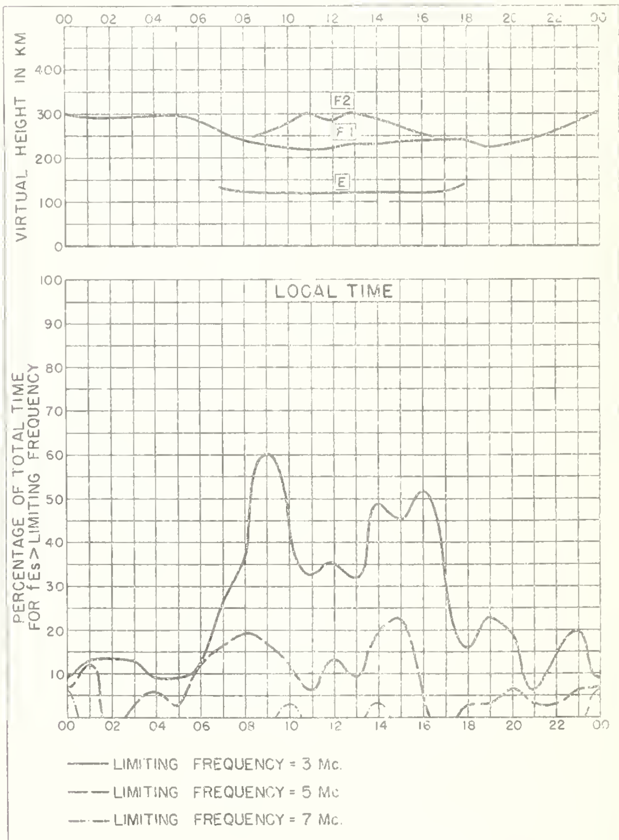


Fig. 8. SAN FRANCISCO, CALIFORNIA MARCH 1950

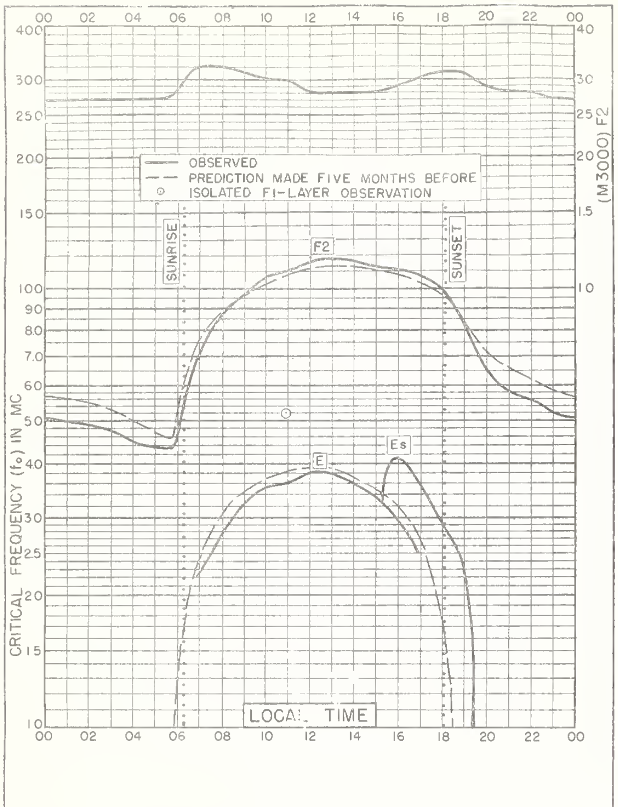


Fig 9. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MARCH 1950

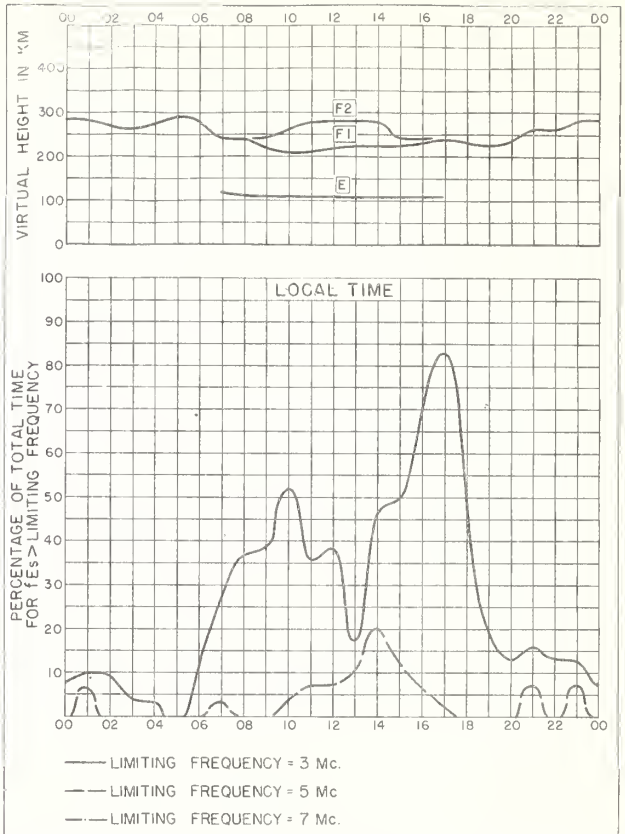


Fig. 10. WHITE SANDS, NEW MEXICO MARCH 1950

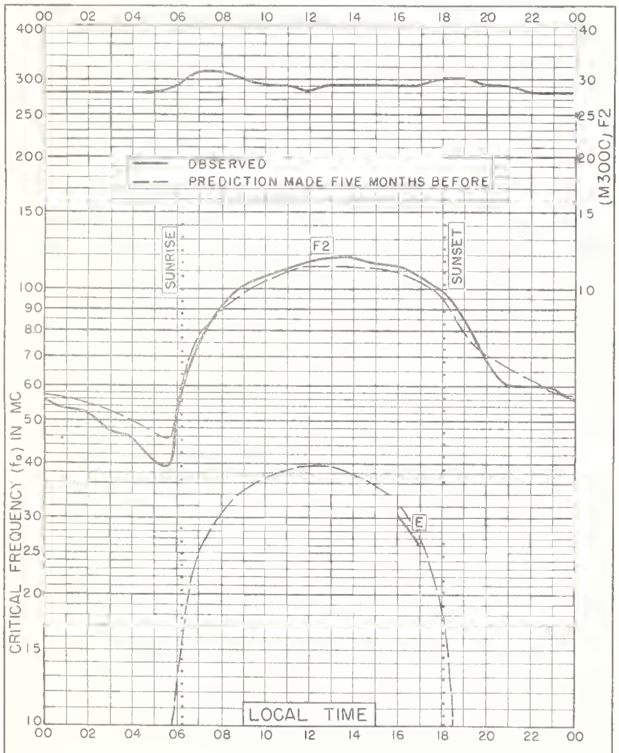


Fig. 11. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W MARCH 1950

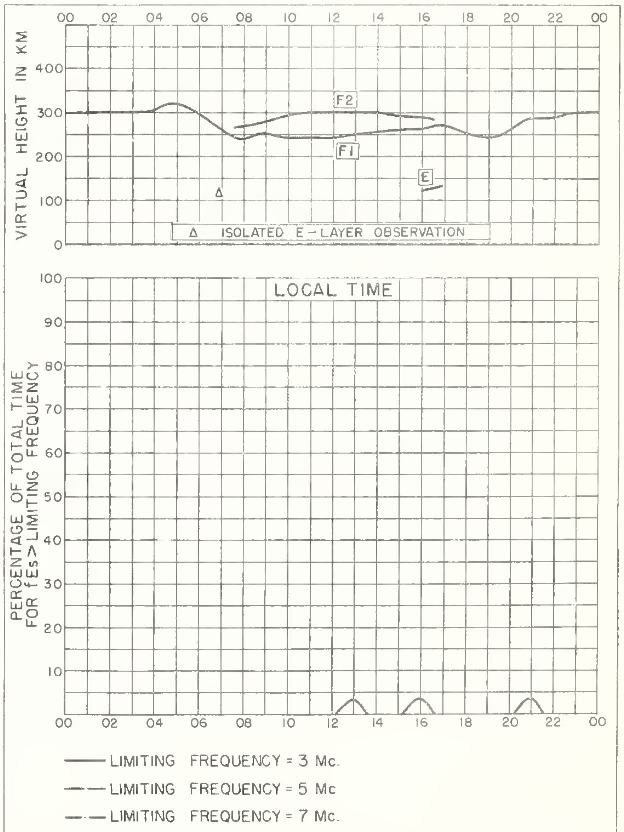


Fig. 12. BATON ROUGE, LOUISIANA MARCH 1950

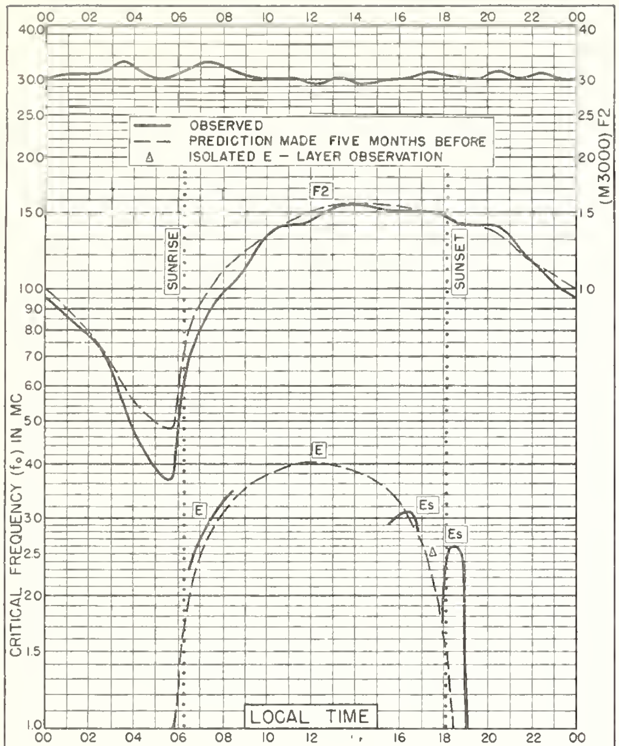


Fig. 13. OKINAWA I.
26.3°N, 127.7°E MARCH 1950

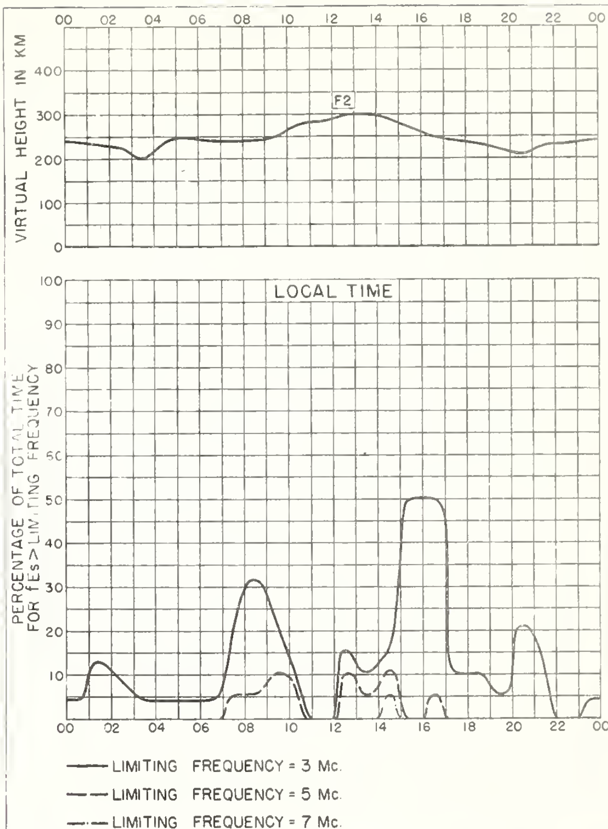


Fig. 14. OKINAWA I. MARCH 1950

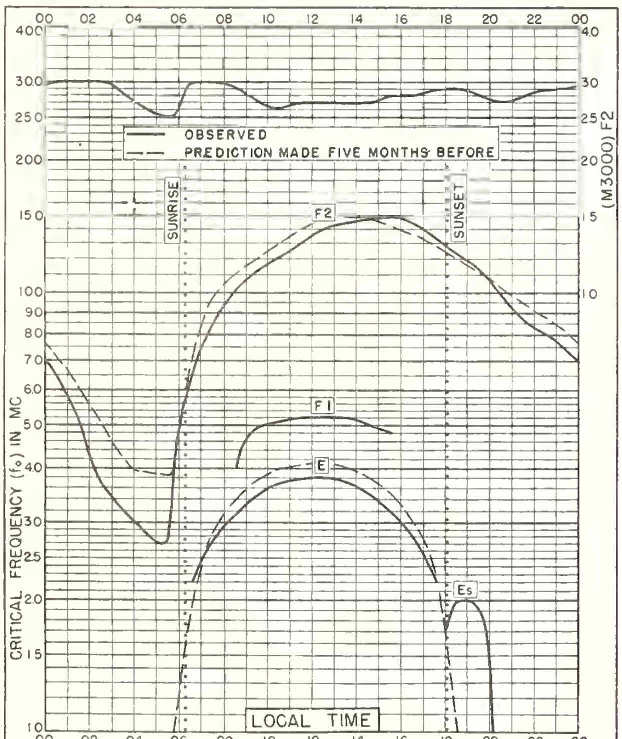


Fig. 15. MAUI, HAWAII
20.8°N, 156.5°W MARCH 1950

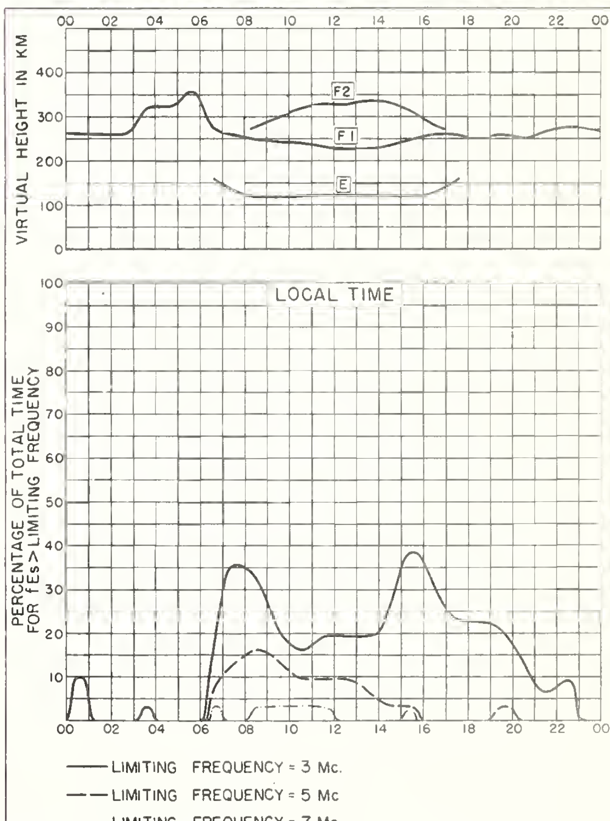


Fig. 16. MAUI, HAWAII MARCH 1950

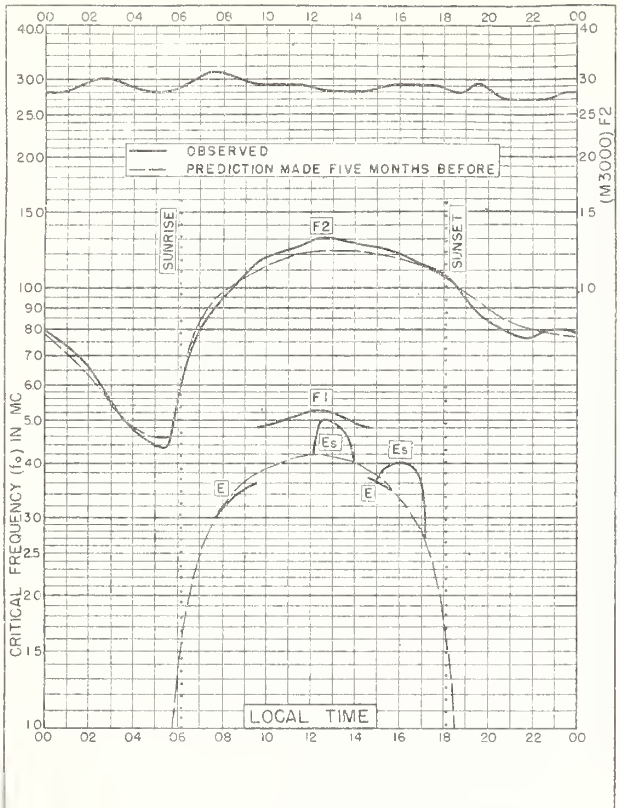


Fig. 17. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W MARCH 1950

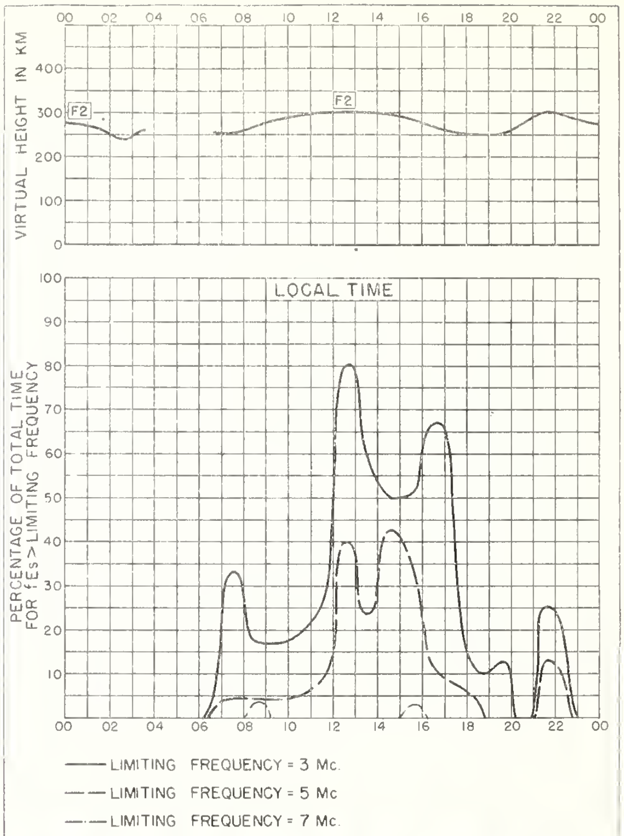


Fig. 18. SAN JUAN, PUERTO RICO MARCH 1950

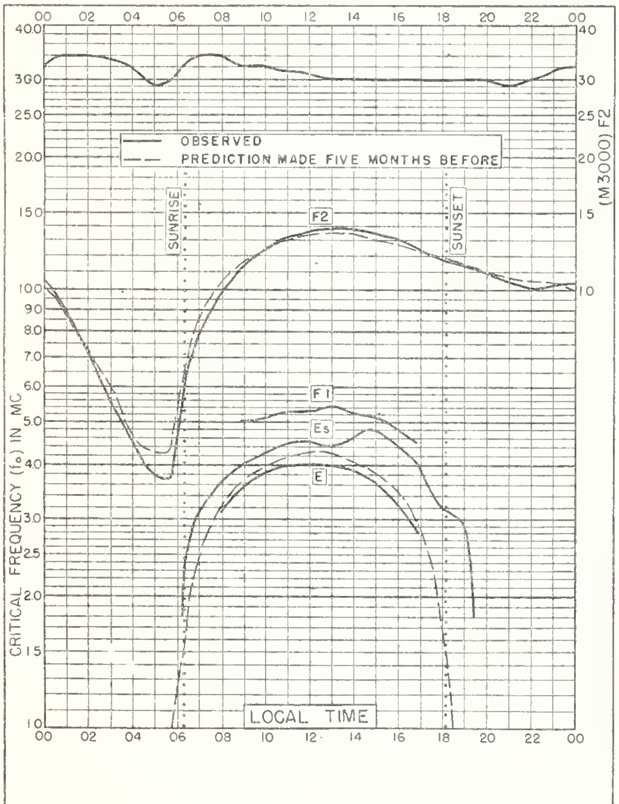


Fig. 19. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W MARCH 1950

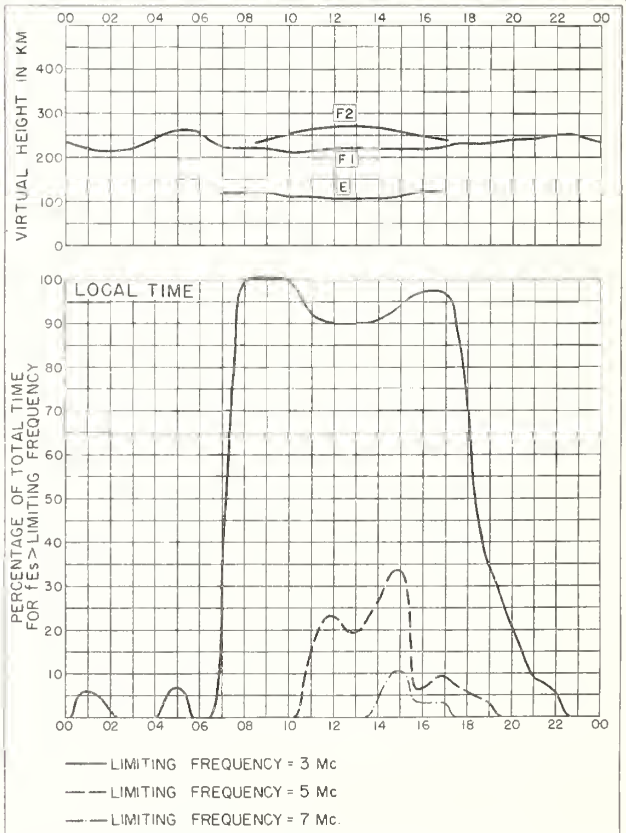


Fig. 20. TRINIDAD, BRIT. WEST INDIES MARCH 1950

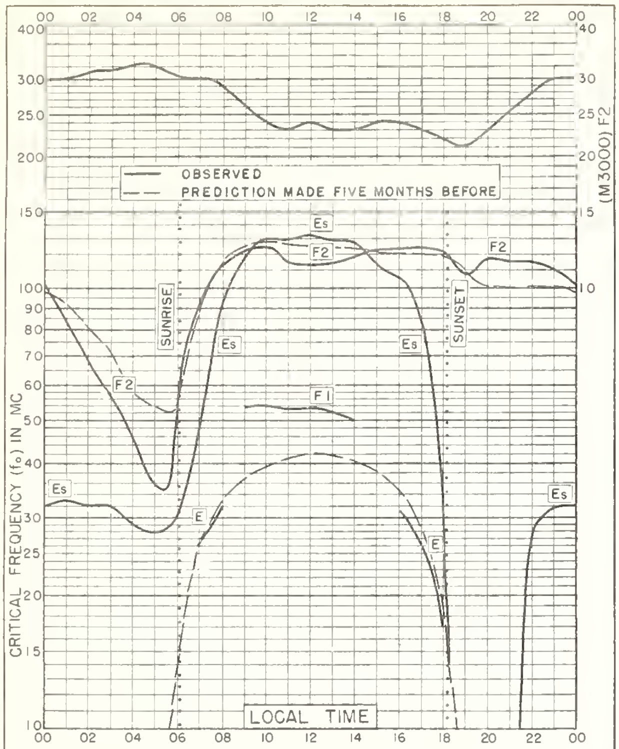


Fig. 21. HUANCAYO, PERU
12.0°S, 75.3°W MARCH 1950

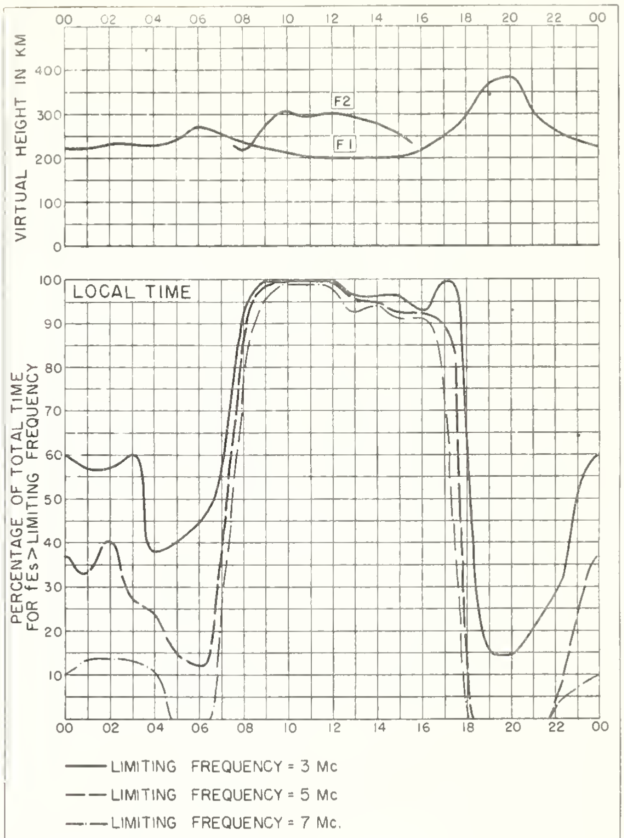


Fig. 22. HUANCAYO, PERU MARCH 1950

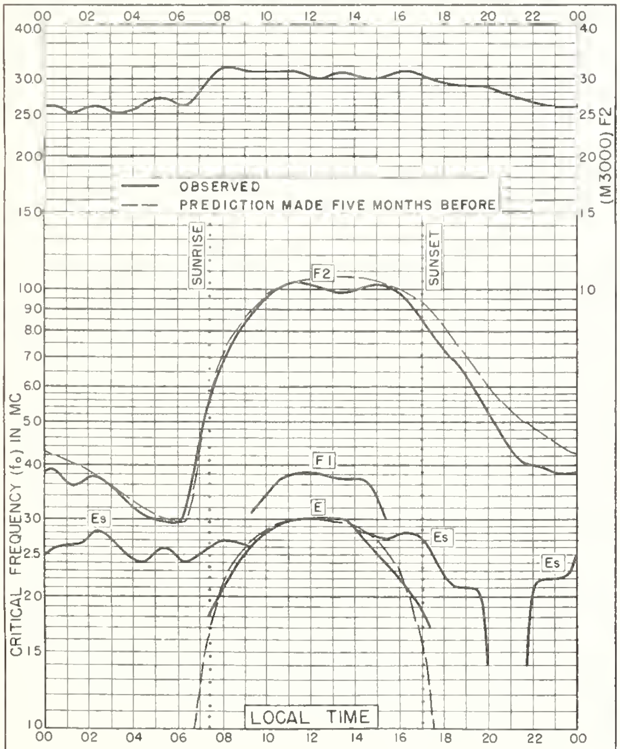


Fig. 23. De BILT, HOLLAND
52.1°N, 5.2°E FEBRUARY 1950

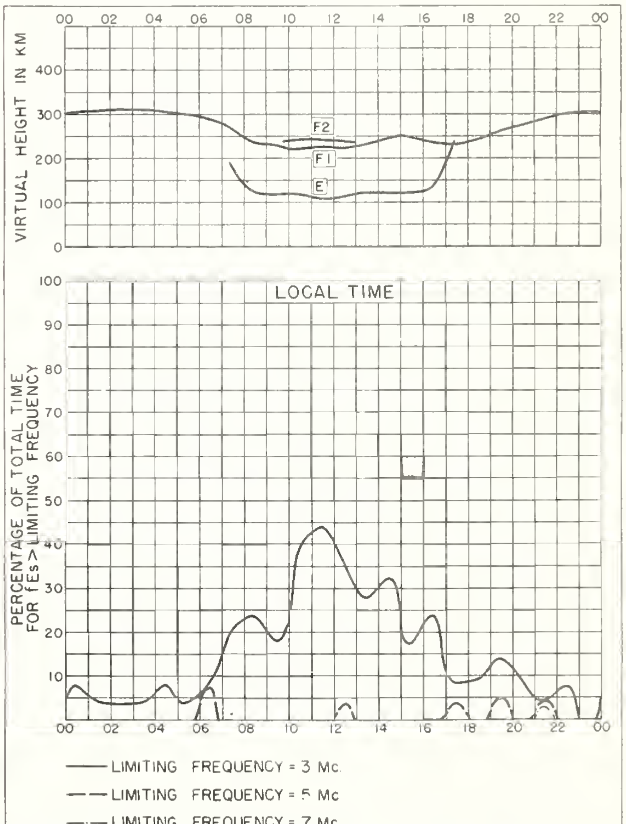


Fig. 24. De BILT, HOLLAND FEBRUARY 1950

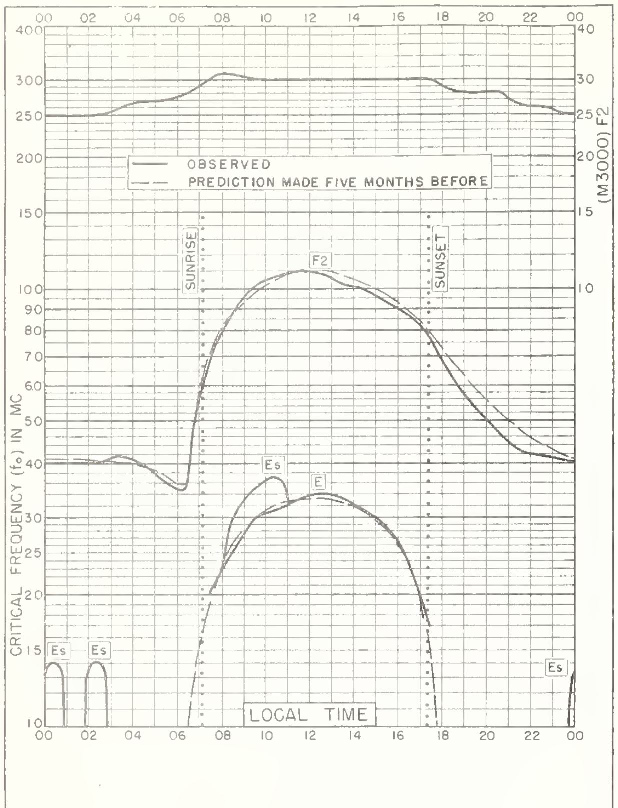


Fig. 25. WAKKANAI, JAPAN
45.4°N, 141.7°E FEBRUARY 1950

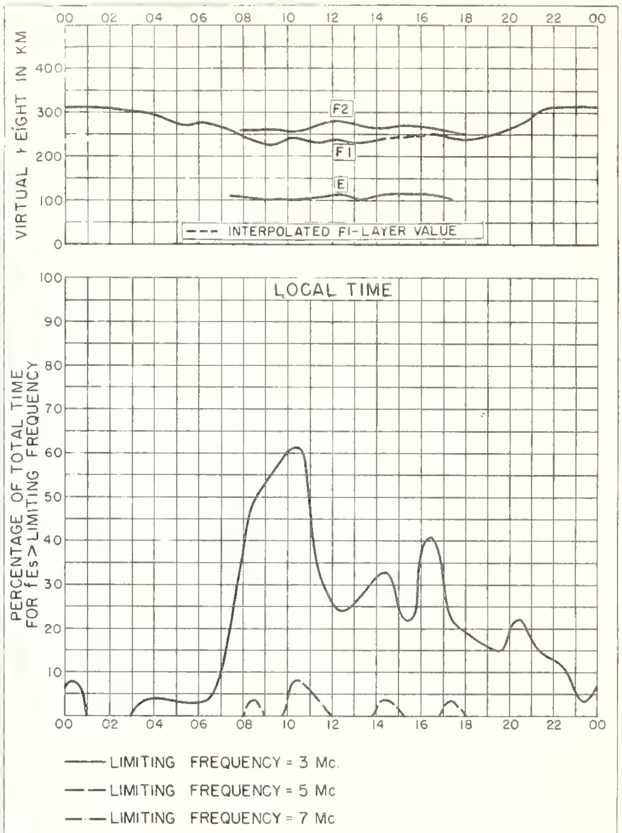


Fig. 26. WAKKANAI, JAPAN FEBRUARY 1950

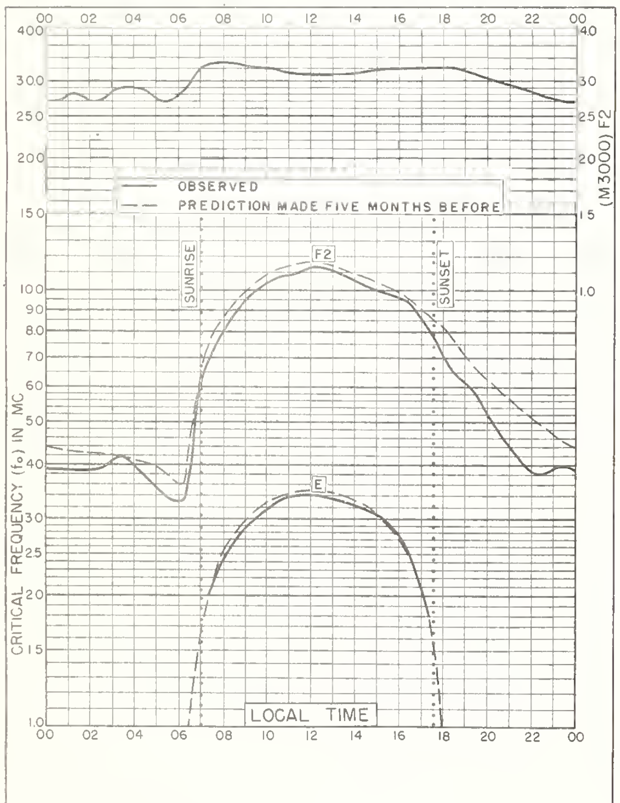


Fig. 27. AKITA, JAPAN
39.7°N, 140.1°E FEBRUARY 1950

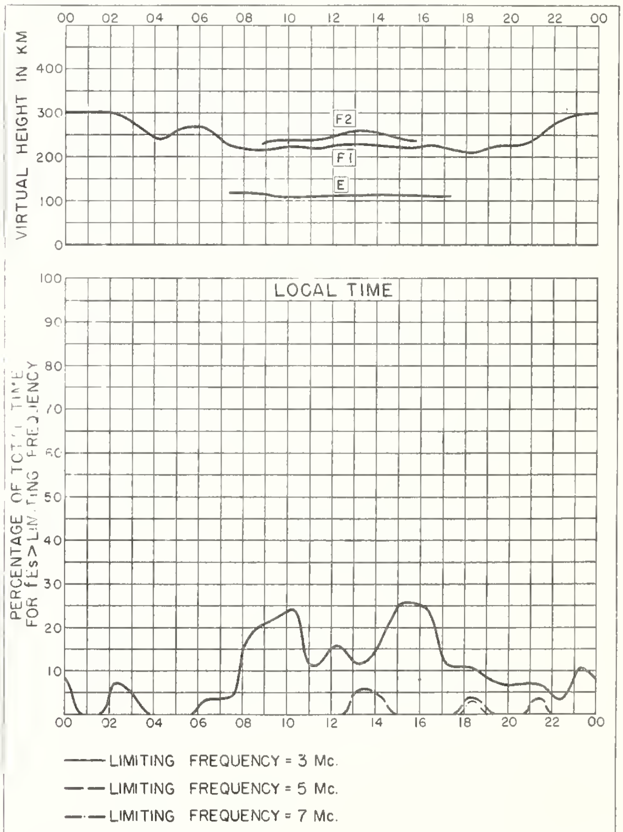


Fig. 28. AKITA, JAPAN FEBRUARY 1950

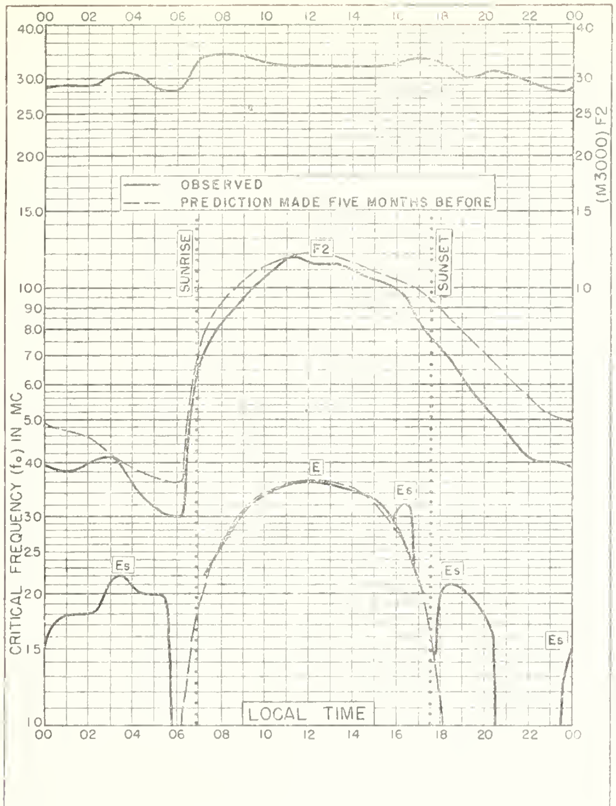


Fig. 29. TOKYO, JAPAN
35.7°N, 139.5°E FEBRUARY 1950

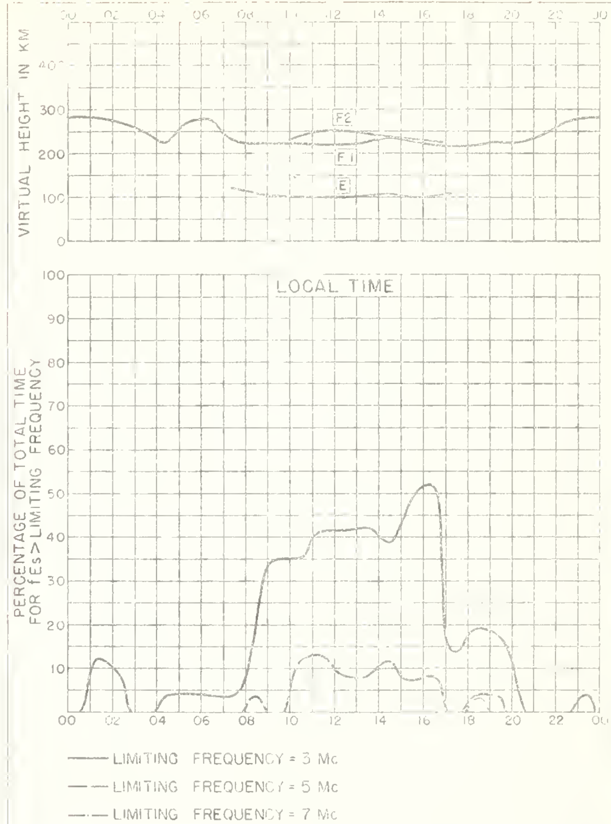


Fig. 30. TOKYO, JAPAN FEBRUARY 1950

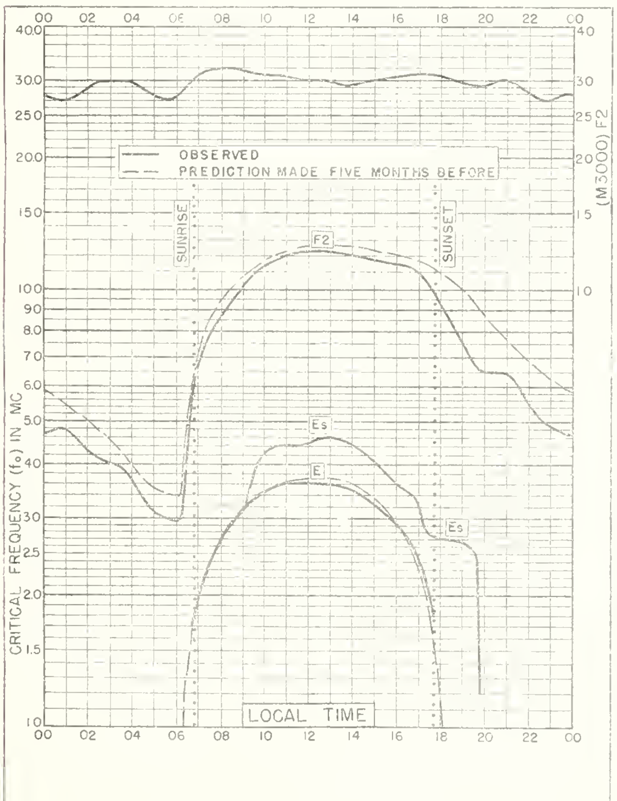


Fig. 31. YAMAGAWA, JAPAN
31.2°N, 130.6°E FEBRUARY 1950

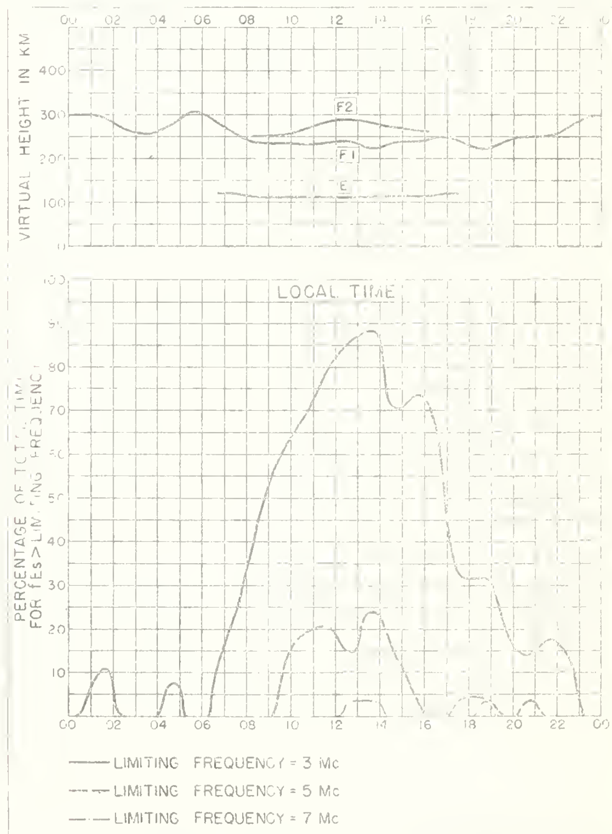


Fig. 32. YAMAGAWA, JAPAN FEBRUARY 1950

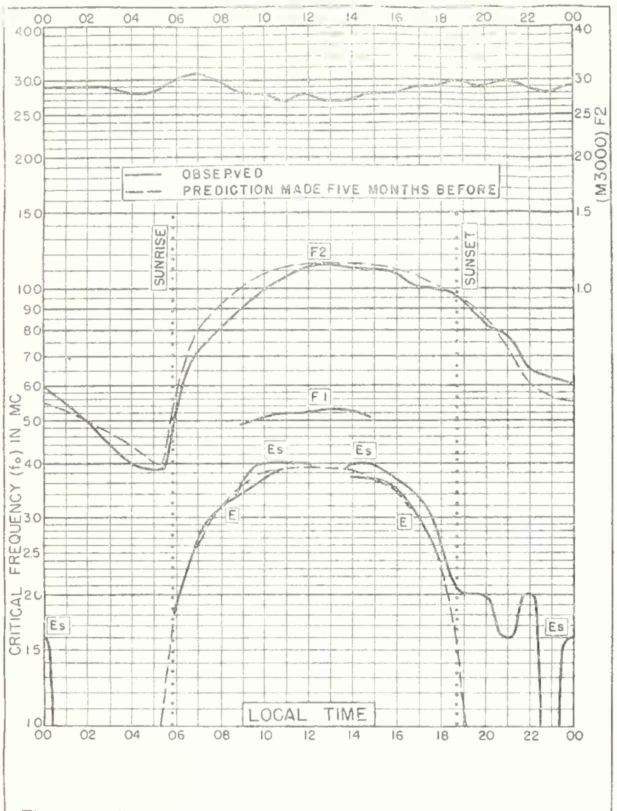


Fig. 33. JOHANNESBURG, U. OF S. AFRICA
26. 2°S, 28. 0°E FEBRUARY 1950

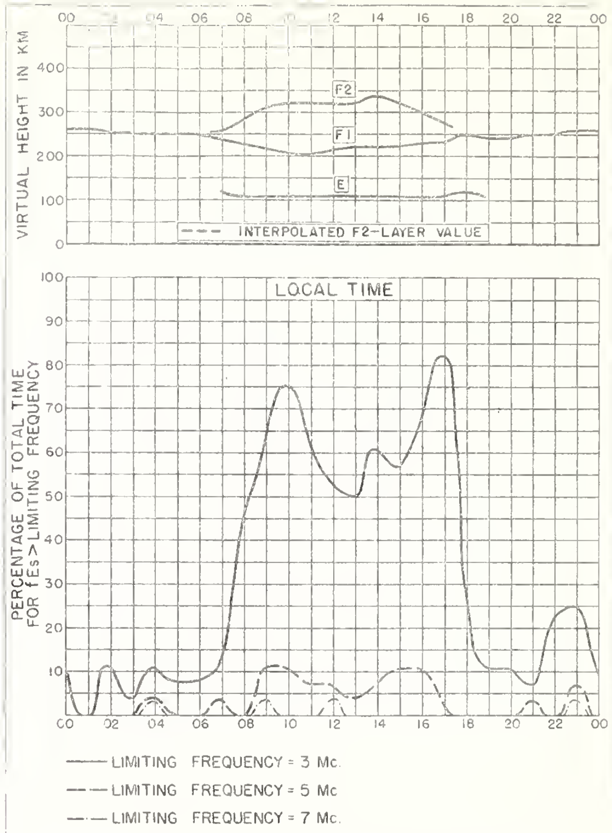


Fig. 34. JOHANNESBURG, U. OF S. AFRICA FEBRUARY 1950

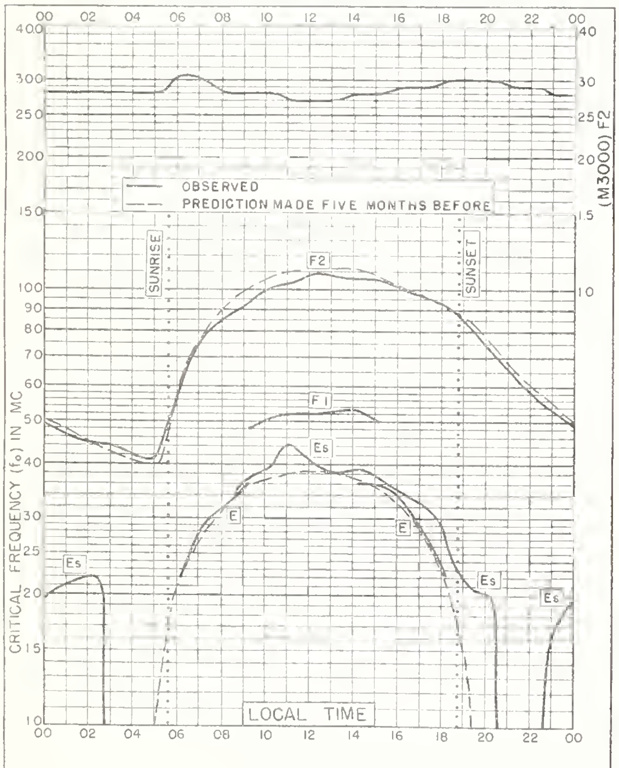


Fig. 35. CAPETOWN, U OF S. AFRICA
34. 2°S, 18. 3°E FEBRUARY 1950

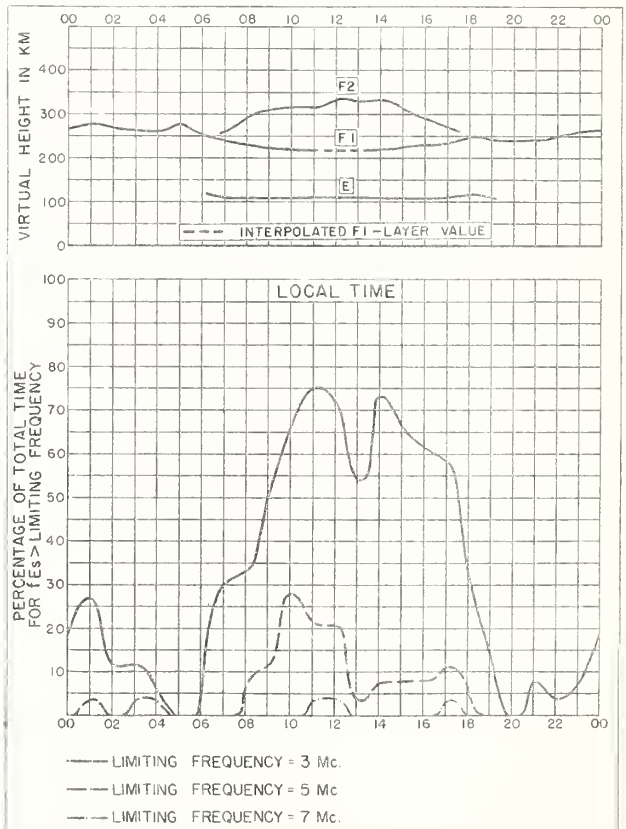


Fig. 36. CAPETOWN, U. OF S. AFRICA FEBRUARY 1950

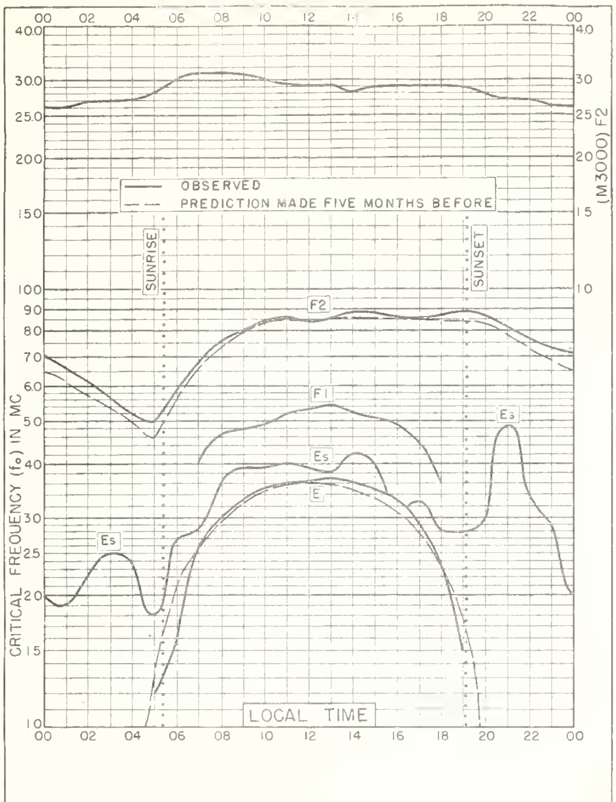


Fig. 37. CHRISTCHURCH, N. Z.
43.5°S, 172.7°E FEBRUARY 1950

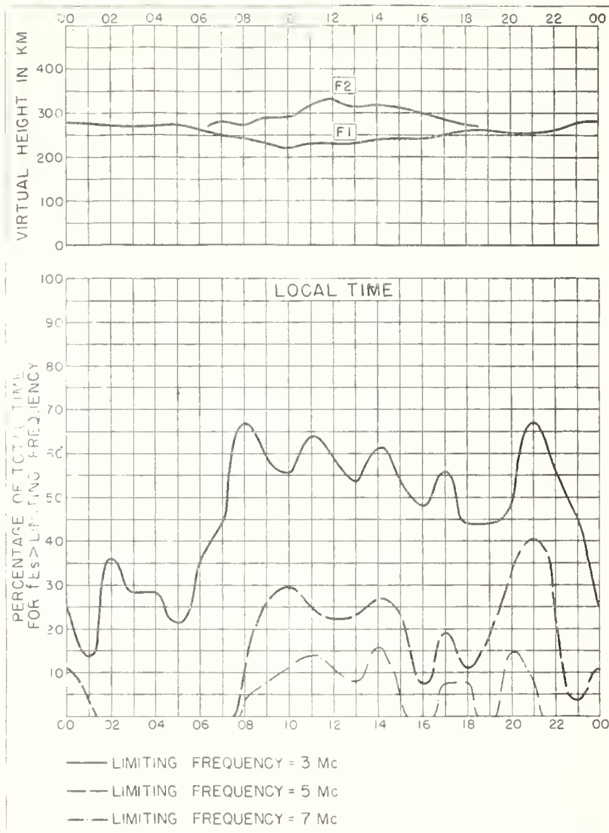


Fig. 38. CHRISTCHURCH, N. Z. FEBRUARY 1950

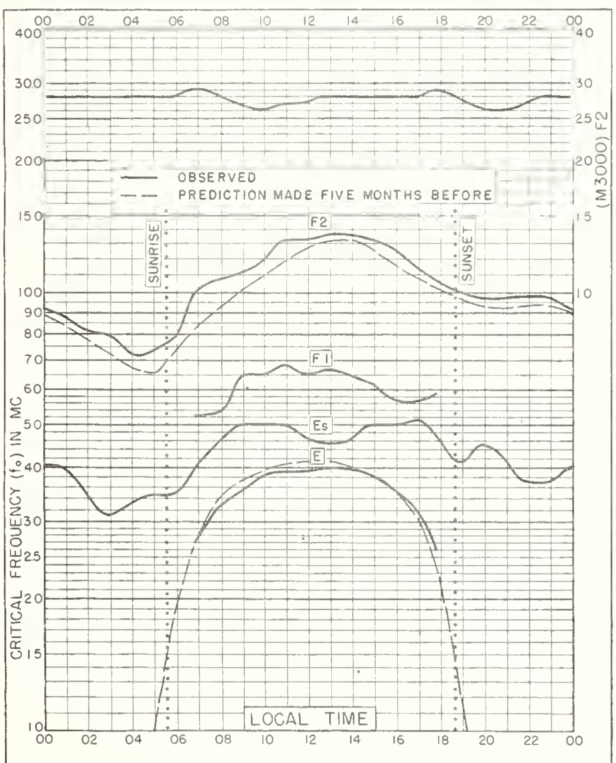


Fig. 39. RAROTONGA I.
21.3°S, 159.8°W JANUARY 1950

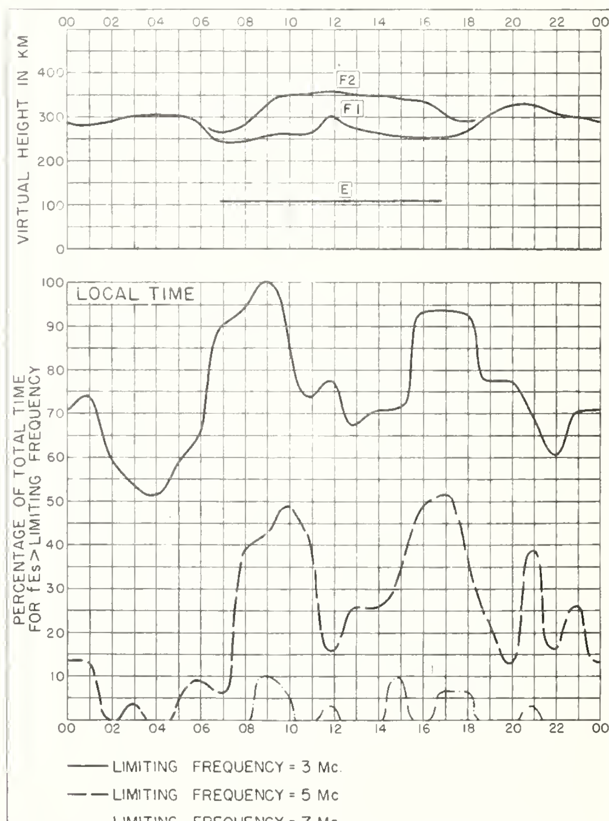


Fig 40. RAROTONGA I. JANUARY 1950

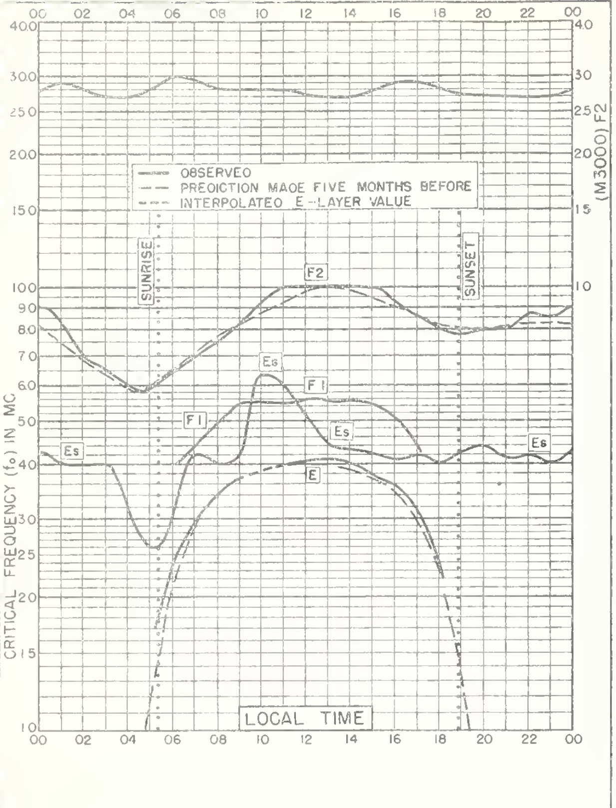


Fig. 41. BRISBANE, AUSTRALIA
27.5°S, 153.0°E JANUARY 1950

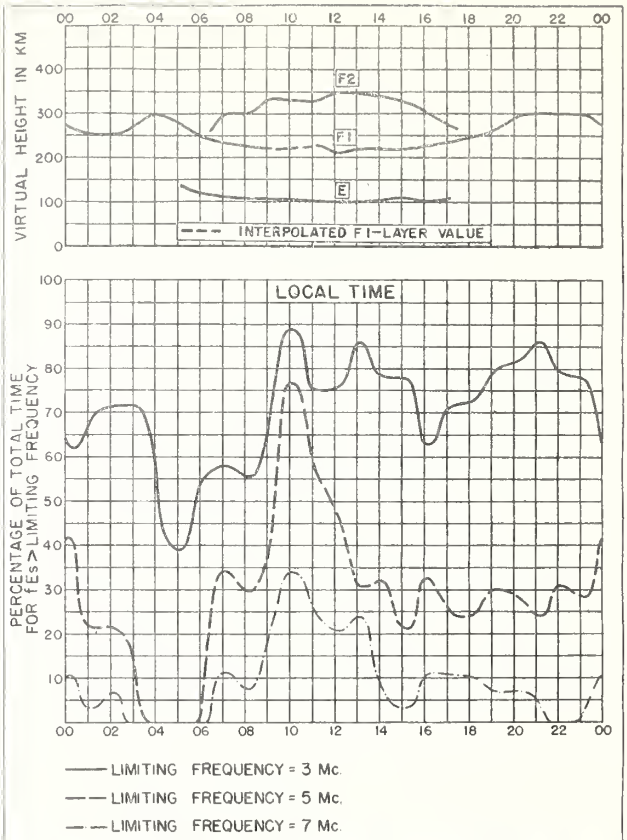


Fig. 42. BRISBANE, AUSTRALIA JANUARY 1950

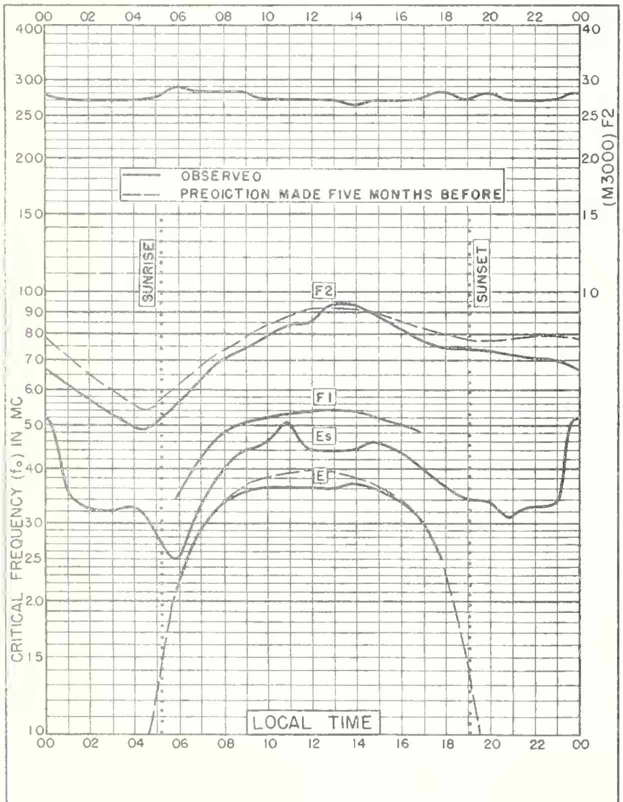


Fig. 43. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E JANUARY 1950

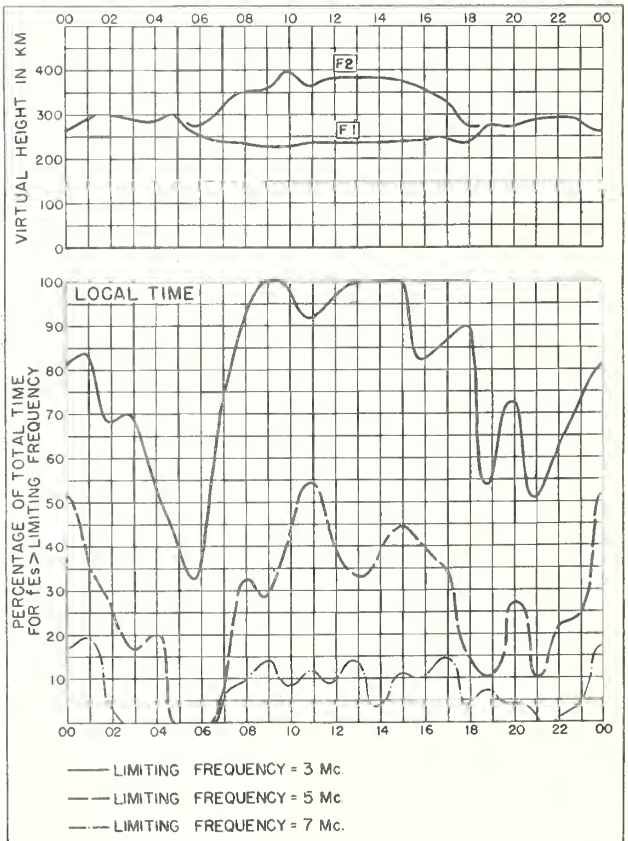


Fig. 44. WATHEROO, W. AUSTRALIA JANUARY 1950

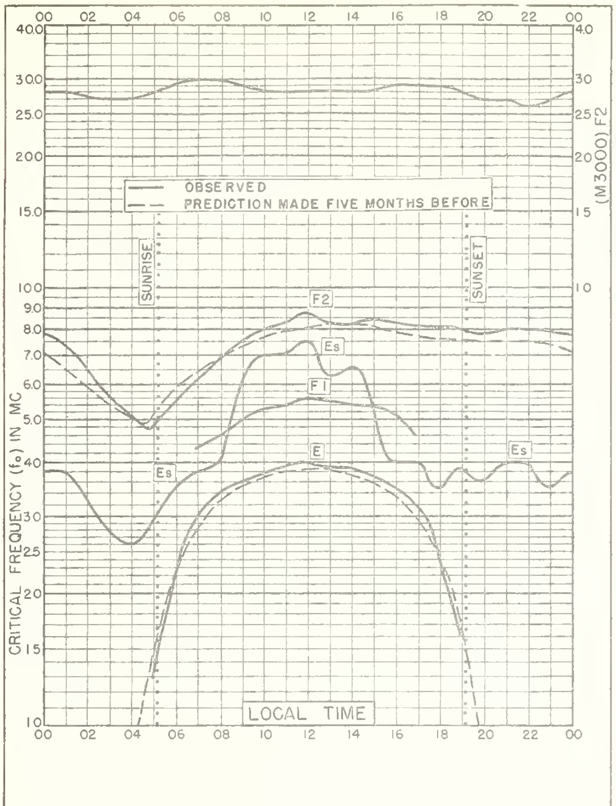


Fig. 45. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JANUARY 1950

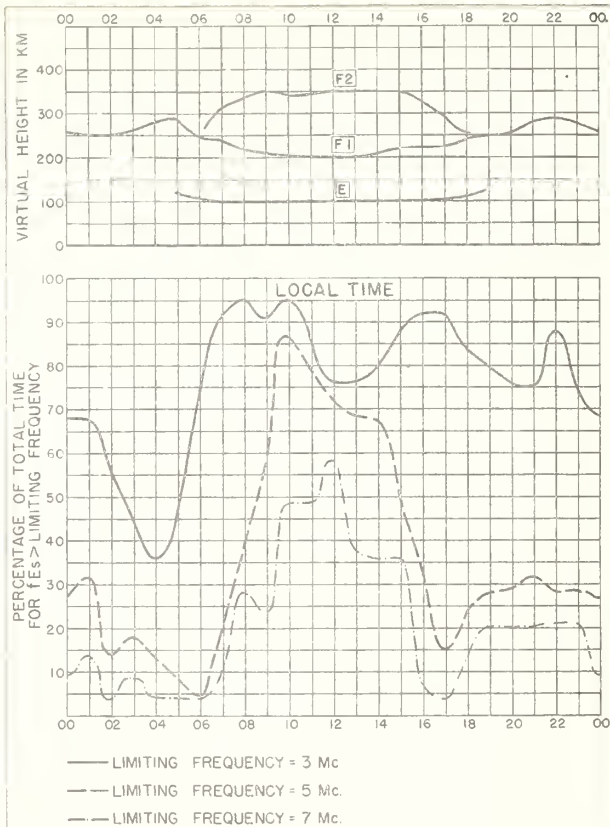


Fig. 46. CANBERRA, AUSTRALIA JANUARY 1950

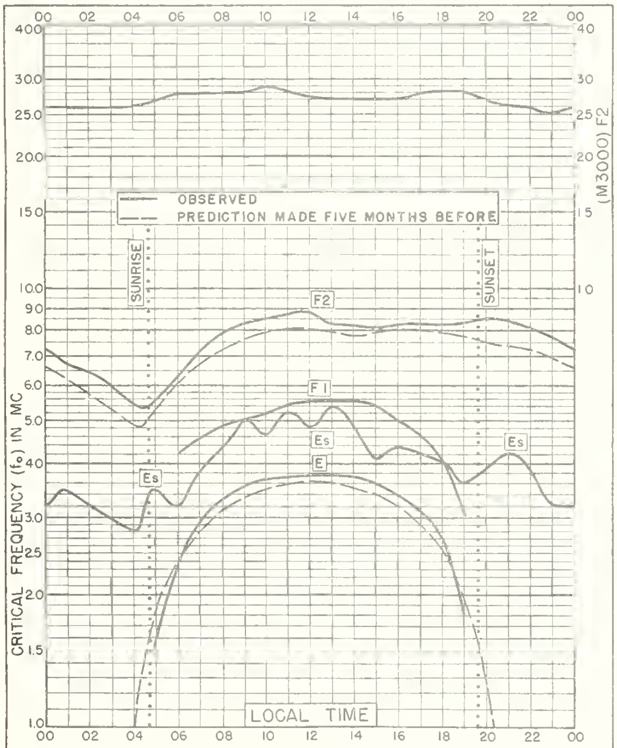


Fig. 47. CHRISTCHURCH, N. Z.
43.5°S, 172.7°E JANUARY 1950

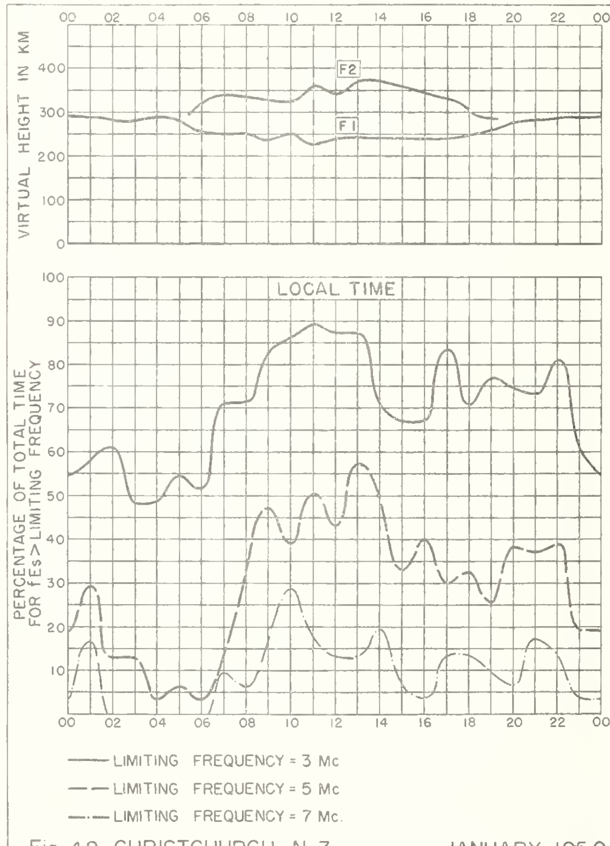


Fig. 48. CHRISTCHURCH, N. Z. JANUARY 1950

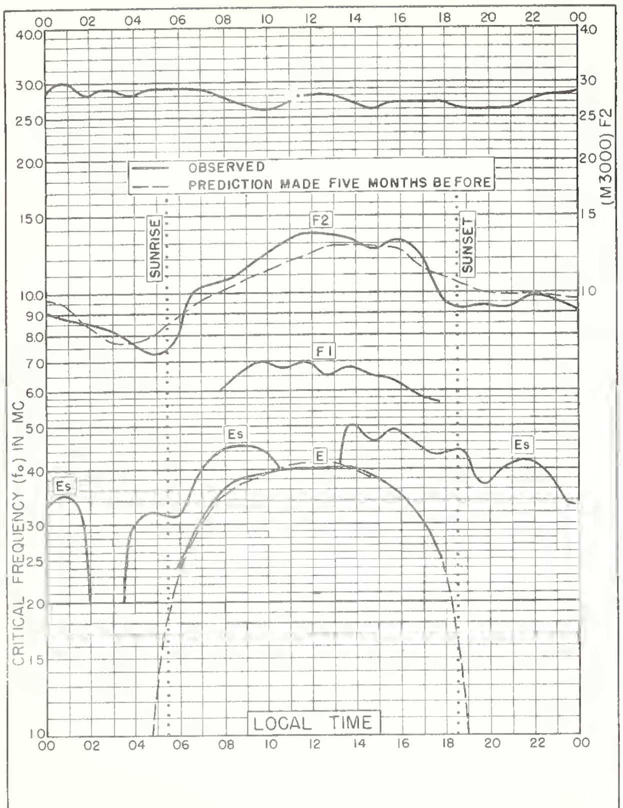


Fig. 49. RAROTONGA I.
21.3°S, 159.8°W DECEMBER 1949

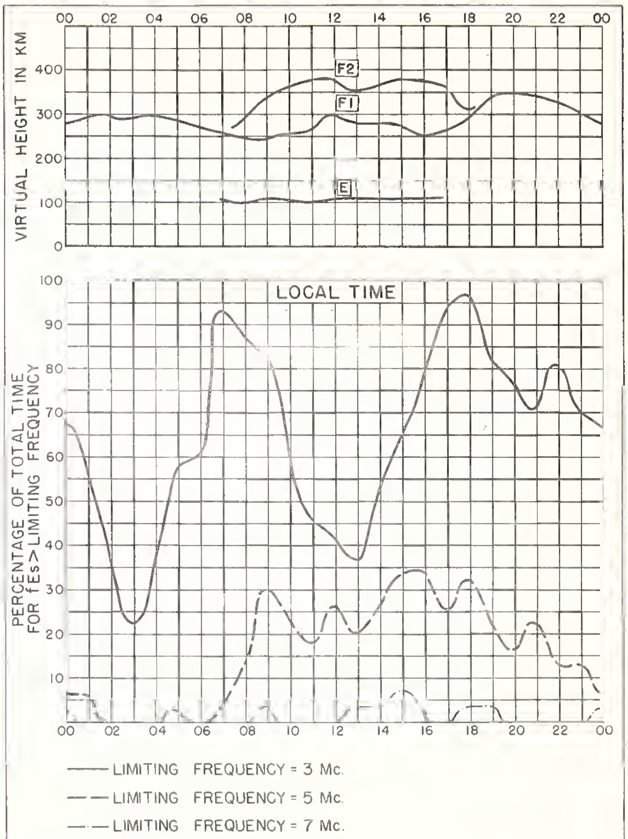


Fig. 50. RAROTONGA I. DECEMBER 1949

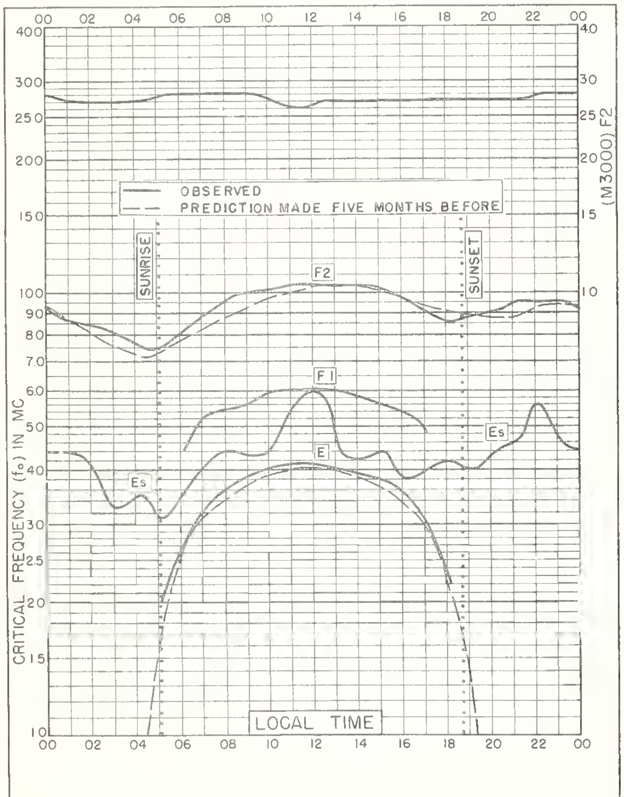


Fig. 51. BRISBANE AUSTRALIA
27.5°S, 153.0°E DECEMBER 1949

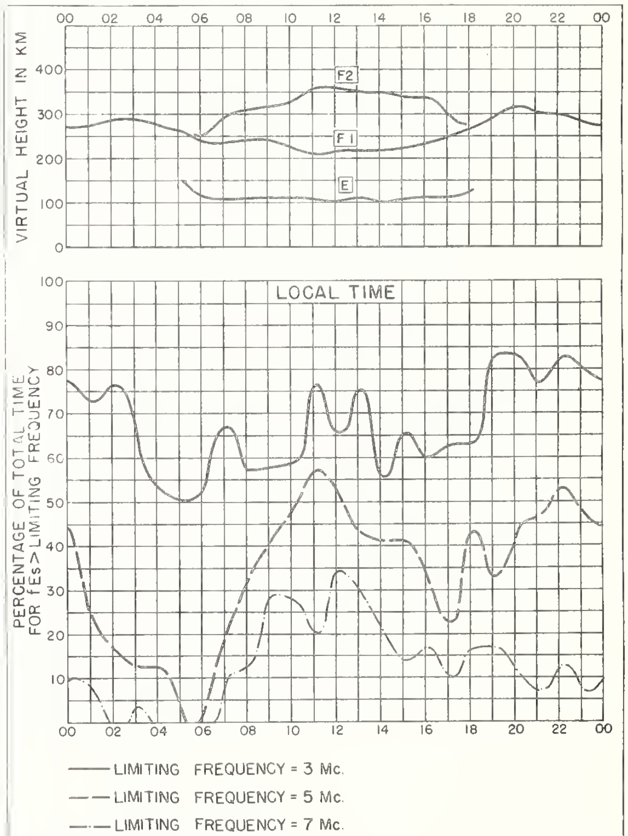


Fig. 52. BRISBANE, AUSTRALIA DECEMBER 1949

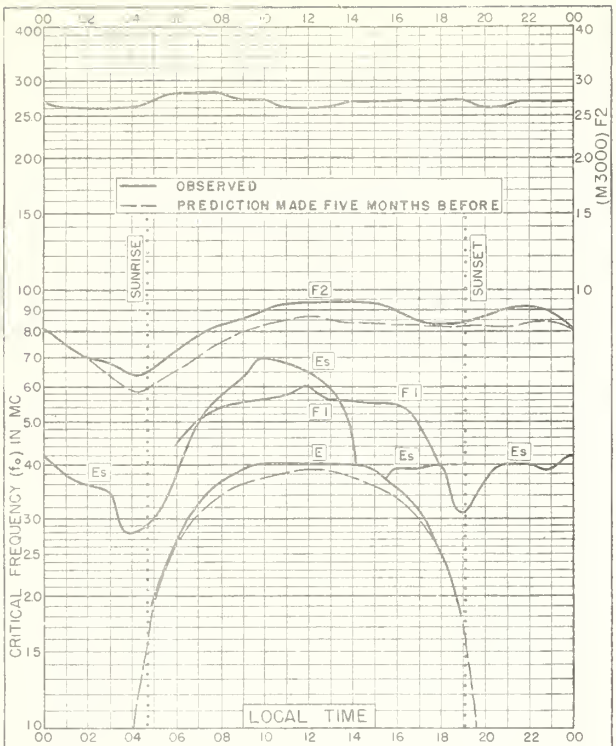


Fig. 53. CANBERRA, AUSTRALIA
35.3°S, 149.0°E DECEMBER 1949

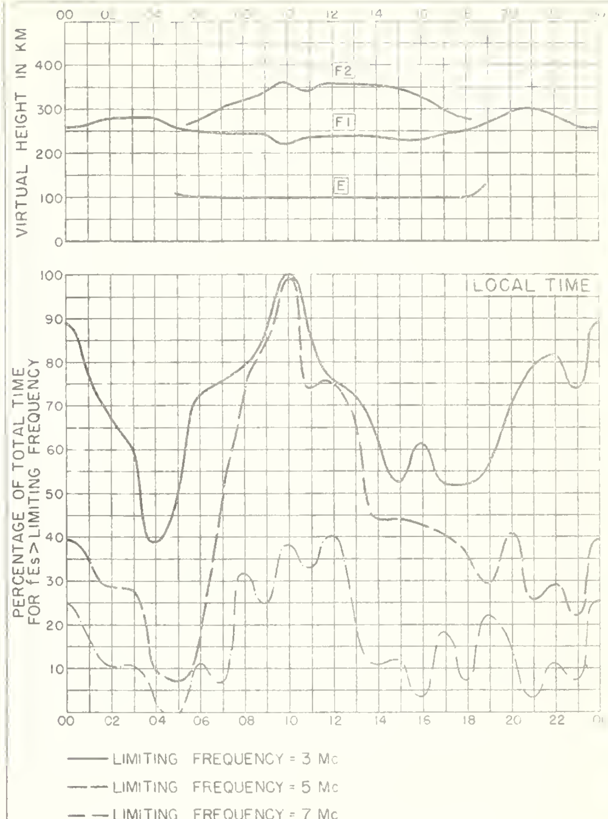


Fig. 54. CANBERRA, AUSTRALIA DECEMBER 1949

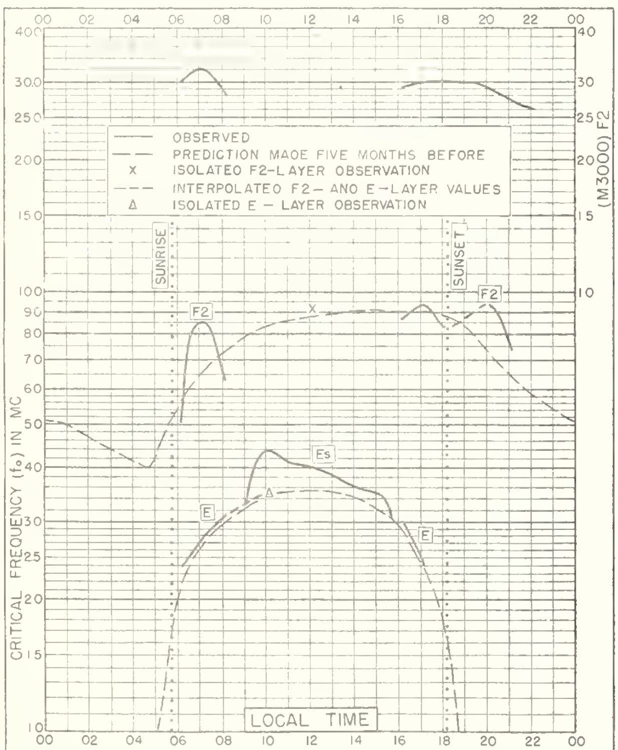


Fig. 55. BAGNEUX, FRANCE
48.8°N, 2.3°E SEPTEMBER 1949

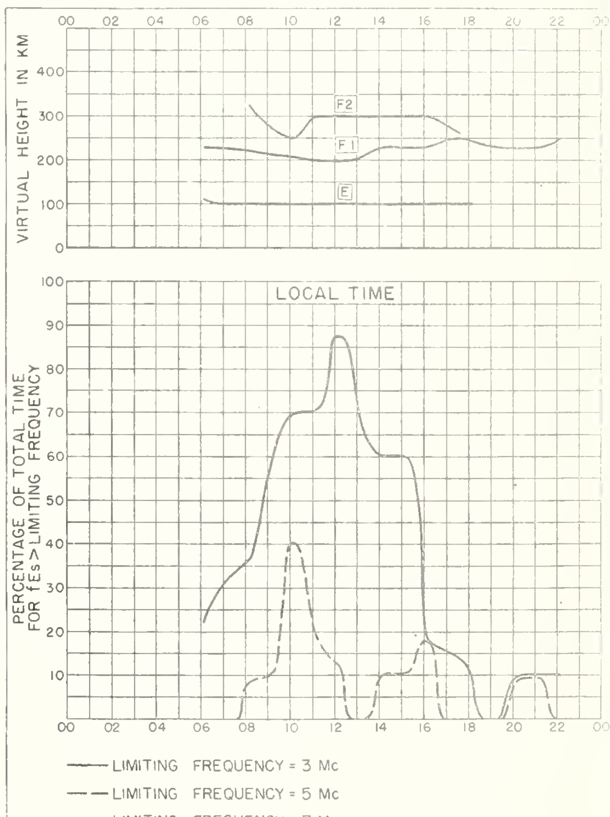


Fig. 56. BAGNEUX, FRANCE SEPTEMBER 1949

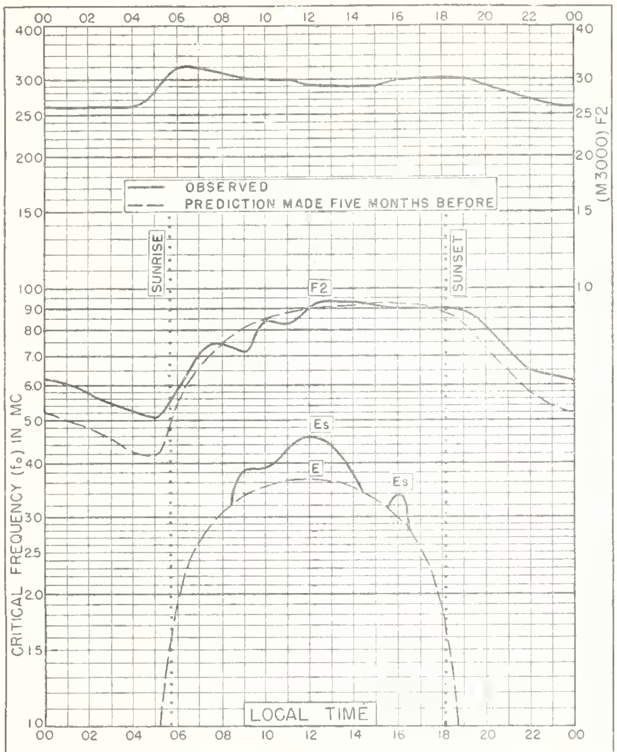


Fig. 57. POITIERS, FRANCE
46.6°N, 0.3°E SEPTEMBER 1949

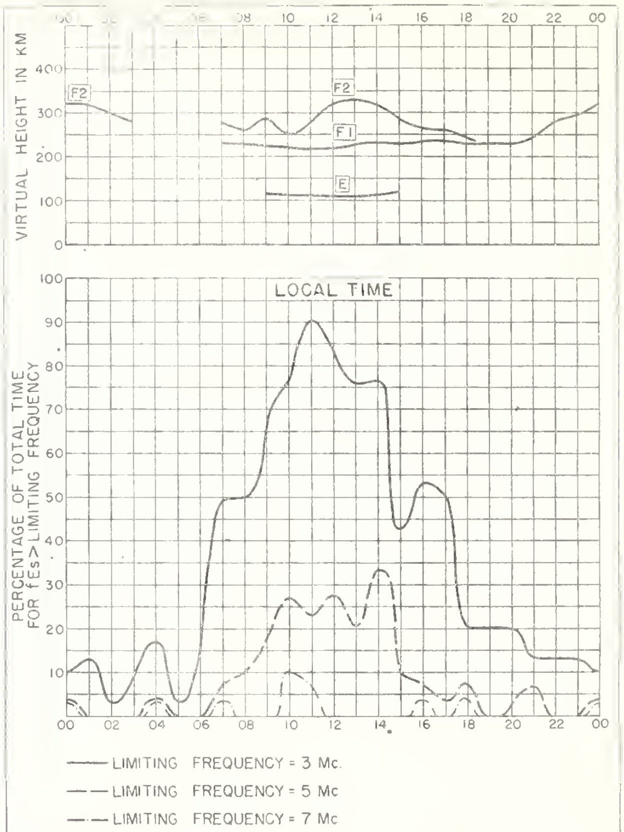
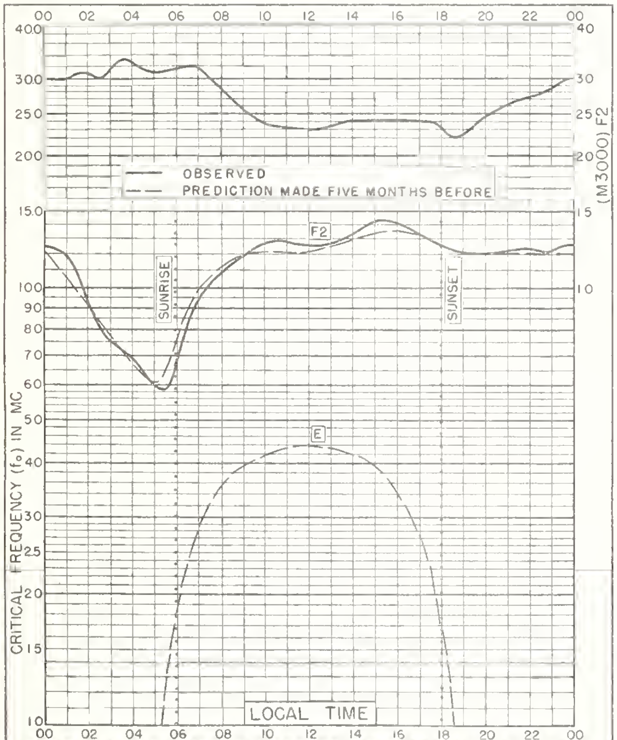


Fig. 58. POITIERS, FRANCE SEPTEMBER 1949



GRAPHS IN THIS FIGURE SUPERSEDE CORRESPONDING GRAPHS IN FIGURE 17 OF CRPL—F63

Fig. 59. GUAM I.
13.6°N, 144.9°E SEPTEMBER 1949

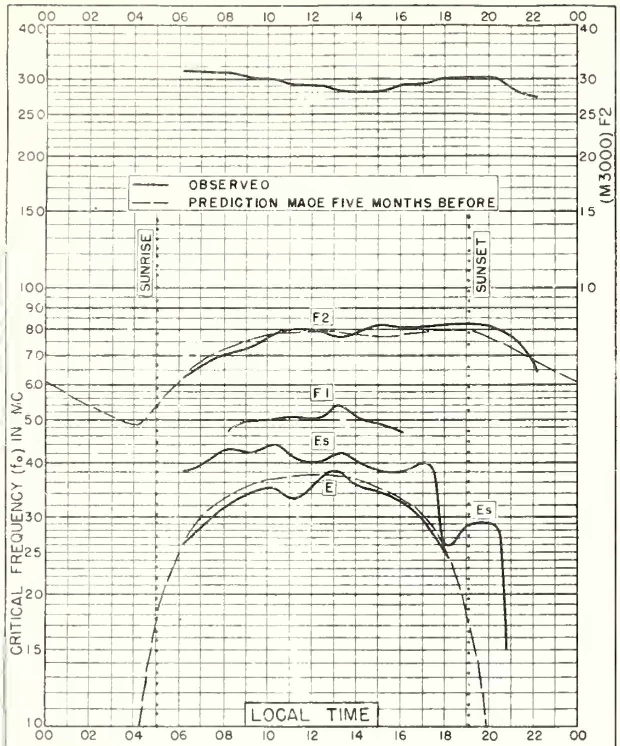


Fig 60. BAGNEUX, FRANCE
48.8°N, 2.3°E AUGUST 1949

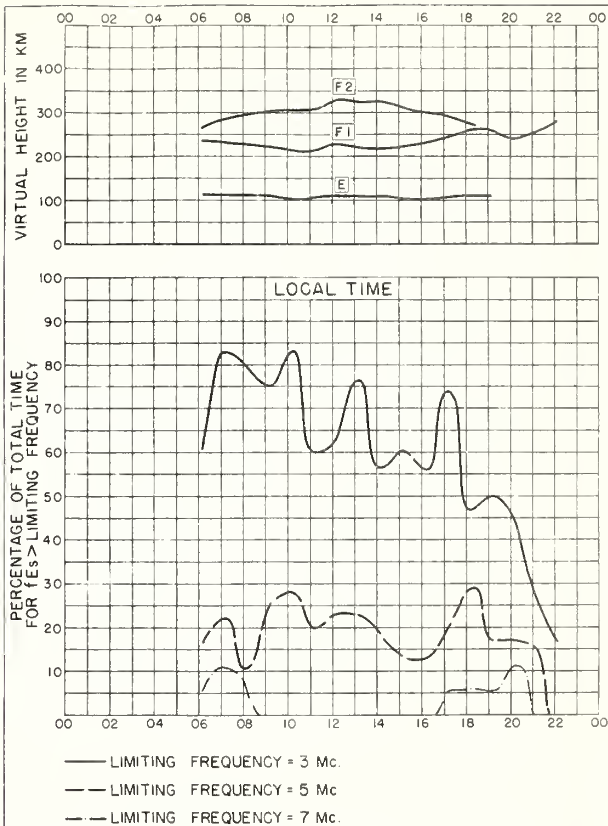


Fig. 61. BAGNEUX, FRANCE AUGUST 1949

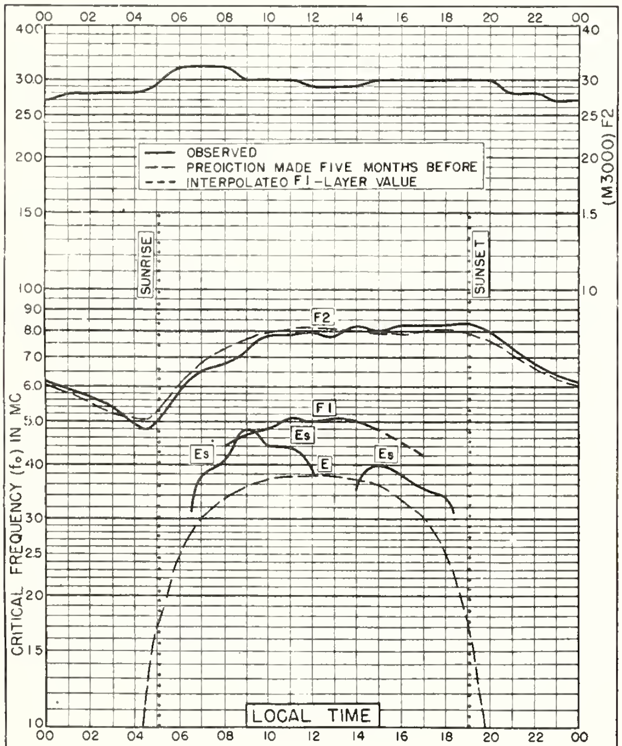


Fig. 62. POITIERS, FRANCE
46.6°N, 0.3°E AUGUST 1949

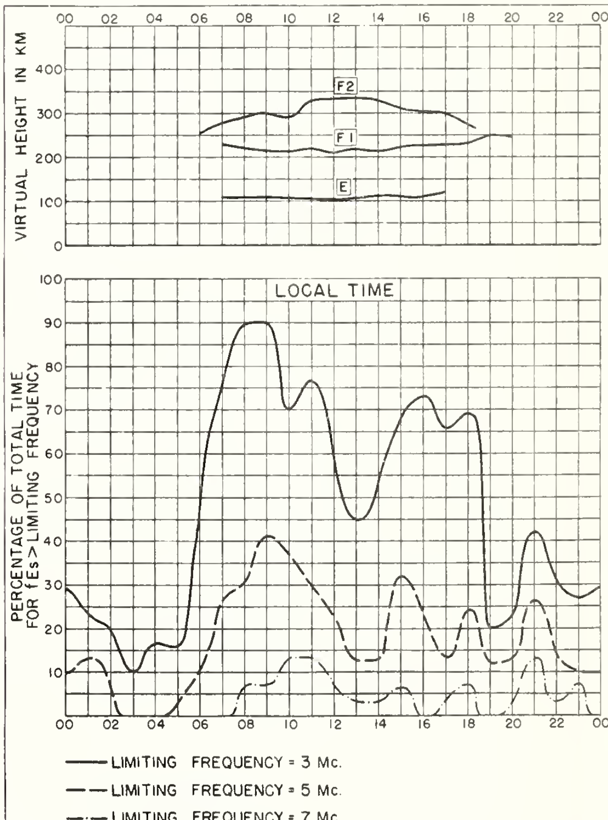


Fig. 63. POITIERS, FRANCE AUGUST 1949

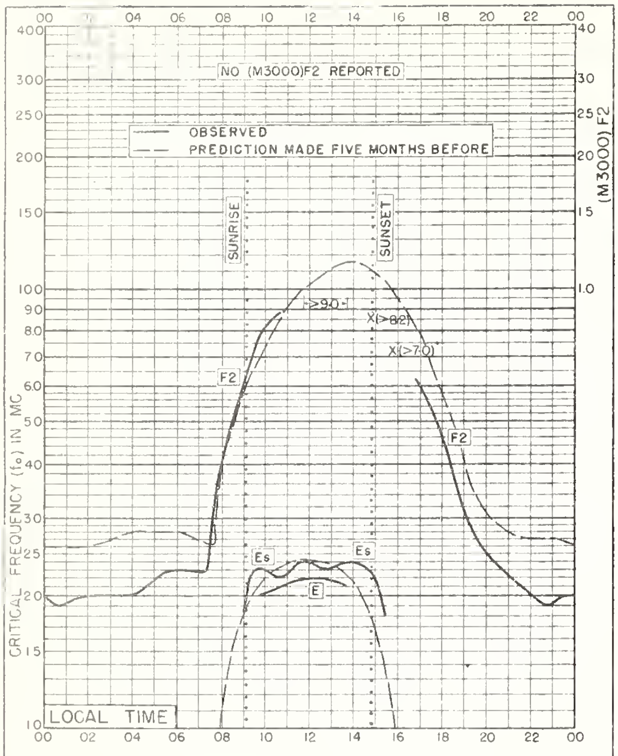


Fig. 64. OSLO, NORWAY
60. 0°N, 11. 0°E DECEMBER 1948

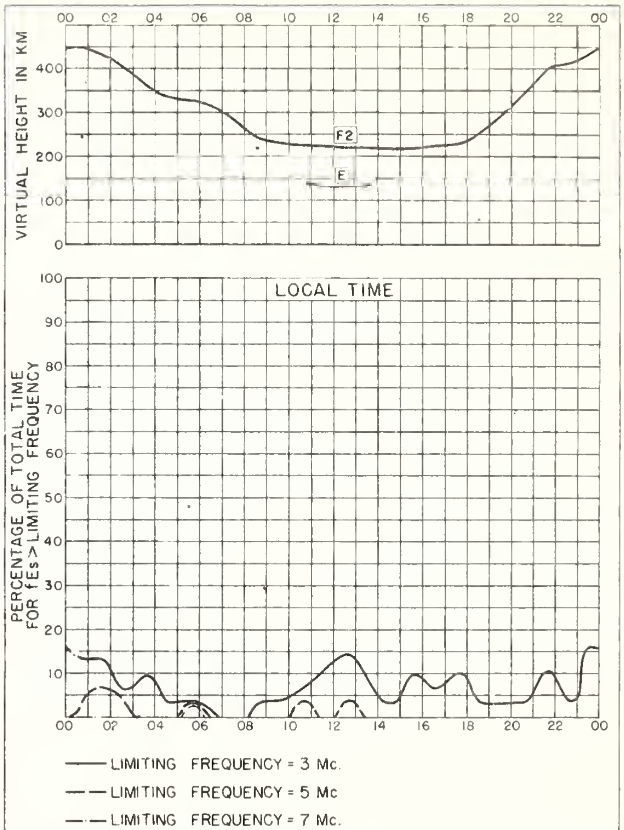


Fig. 65. OSLO, NORWAY DECEMBER 1948

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