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FOR OFFICIAL USE

IONOSPHERIC DATA

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

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, 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 Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

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.

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 in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T 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 usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

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

Values missing because of G are counted:

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

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

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Month	Predicted Sunspot Number									
	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		15	33	53	86	108	114	126	85	38
November		16	38	52	87	112	115	124	83	36
October		17	43	52	90	114	116	119	81	23
September		18	46	54	91	115	117	121	79	22
August		18	49	57	96	111	123	122	77	20
July		20	51	60	101	108	125	116	73	
June		21	52	63	103	108	129	112	67	
May		22	52	68	102	108	130	109	67	
April		24	52	74	101	109	133	107	62	
March	11	27	52	78	103	111	133	105	51	
February	12	29	51	82	103	113	133	90	46	
January	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 54 and figures 1 to 108 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:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina
Decepcion I.

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Port Lockroy

Defence Research Board, Canada:
Baker Lake, Canada

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

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway
Tromso, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa
Nairobi, Kenya (East African Meteorological Department)

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):

- Anchorage, Alaska
- Guam I.
- Huancayo, Peru (Instituto Geofisico de Huancayo)
- Maui, Hawaii
- Panama Canal Zone
- Point Barrow, Alaska
- Puerto Rico, W. I.
- San Francisco, California (Stanford University)
- Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 55 through 66 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 67 presents ionosphere character figures for Washington, D. C., during March 1954, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

SUDDEN IONOSPHERE DISTURBANCES

Table 68 shows that no sudden ionosphere disturbances were observed at Ft. Belvoir, Virginia, during the month of March 1954.

RADIO PROPAGATION QUALITY FIGURES

Tables 70a and 70b give for February 1954 the radio propagation quality figures for the North Atlantic area, the relevant CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qa, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Qa-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Qa-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

These radio propagation quality figures, Qa, are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and U. S. Information Agency. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table. (These forecasts and quality indices are prepared by the North Atlantic Radio Warning Service, the CRPL forecasting center at Ft. Belvoir, Virginia.)

Table 69 gives for February 1954 the radio propagation quality figures for the North Pacific area, the relevant CRPL advance and short-term forecasts, and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qp, separately for each of three 9-hour intervals of the Greenwich day, viz., 03-12, 09-18 and 18-03 UT (Universal Time or GCT).
(b) whole-day radio quality indices for each Greenwich day. These are derived from the same basic data as the 9-hour indices, separately reduced.
(c) short-term forecasts, issued daily at 02, 09 and 18 hours UT.
(d) advance forecasts, issued semiweekly (CRPL-Jp reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole day quality indices.

These radio quality indices, Qp, refer to radio propagation on optimum frequencies over moderately long transmission paths in the North Pacific area. Typical paths are Anchorage (Alaska) to Seattle, or Anchorage to Tokyo. The indices are derived from reports submitted regularly by communications agencies of the U. S. Army and Air Force, and by Aeronautical Radio, Inc. The method of derivation of Qp differs from that of Qa. For Qp, each reported index is converted into a deviation (usually) from the 3-monthly mean for that index, in units of the standard deviation. These deviations are averaged for all reports for a given 9-hour period. The average is then put on the 1 to 9 Q-scale with an assumed standard deviation of 1.25 and assumed means of 5.33, 5.33, and 6.00, respectively, for the 03-12, 09-18 and 18-03 periods, and 5.67 for the whole day period. (These forecasts and quality indices are prepared by the North Pacific Radio Warning Service, the CRPL forecasting center at Anchorage, Alaska.)

These quality figures are, in effect, a consensus of reported radio propagation conditions. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

OBSERVATIONS OF THE SOLAR CORONA

Tables 71 through 73 give the observations of the solar corona during March 1954, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 74 through 76 list the coronal observations obtained at Sacramento Peak, New Mexico, during March 1954, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. 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 71 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 72 gives similarly the intensities of the first red (6374A) coronal line; and table 73, the intensities of the second red (6702A) coronal line; all observed at Climax in March 1954.

Table 74 gives the intensities of the green (5303A) coronal line; table 75, the intensities of the first red (6374A) coronal line; and table 76, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in March 1954.

The following symbols are used in tables 71 through 76: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 77 lists the daily provisional Zürich relative sunspot number, R_Z, for March 1954, as communicated by the Swiss Federal Observatory.

OBSERVATIONS OF SOLAR FLARES

Table 78 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

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

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

INDICES OF GEOMAGNETIC ACTIVITY

Table 79 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Kp is available from 1937 to date as noted in F108.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

Table 1

Washington, D. C. (38.7°N, 77.1°W) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(290)	2.5						3.0
01	(280)	2.5						3.0
02	280	2.5						3.0
03	270	2.3						3.1
04	270	2.3						3.1
05	(280)	2.2						3.1
06	(270)	2.4						3.2
07	250	3.7	240	---	120	1.8		3.4
08	280	4.5	220	3.5	110	2.3	2.2	3.4
09	300	4.8	220	3.7	110	2.6	2.4	3.2
10	330	5.0	210	4.0	110	2.7		3.2
11	330	5.2	200	4.1	110	2.9		3.2
12	310	5.5	200	4.1	110	3.0	2.2	3.2
13	320	5.4	210	4.1	110	3.0		3.2
14	310	5.5	210	4.0	110	2.9		3.2
15	300	5.4	220	3.9	110	2.8		3.2
16	290	5.3	230	3.6	120	2.5		3.3
17	260	5.1	240	---	120	2.1		3.3
18	240	4.9	---	---				3.3
19	240	4.4						3.2
20	250	3.8						3.2
21	270	3.3						3.0
22	270	3.0						3.0
23	(280)	2.7						3.0

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

Table 2

Tromso, Norway (69.7°N, 19.0°E) — February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.4	---
01	---	---					4.9	---
02	---	---					4.8	---
03	---	---					4.3	---
04	---	(1.6)					3.2	---
05	---	(1.5)					2.9	(3.0)
06	---	---					3.0	---
07	---	1.8					2.9	(3.0)
08	245	2.6			---	---	2.8	3.4
09	240	3.4	---	---	---	---	2.1	3.4
10	240	3.8	230	---	---	---	2.6	3.4
11	240	4.0	240	---	---	---	1.8	3.4
12	240	4.2	235	---	---	---	2.7	3.5
13	230	4.1	225	---	---	---	2.7	3.5
14	225	3.8	230	---	---	---	2.7	3.4
15	230	3.7	---	---	---	---	2.9	3.4
16	245	3.0			---	---	2.9	3.3
17	(240)	2.4					2.8	(3.2)
18	(250)	(2.0)					4.1	(3.2)
19	---	---					4.1	---
20	---	---					4.2	---
21	---	---					4.5	---
22	---	---					4.4	---
23	---	---					4.3	---

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Anchorage, Alaska (61.2°N, 149.0°W) — February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(330)	(2.5)					1.7	(3.0)
01	310	2.0					2.5	3.0
02	(370)	(1.9)					2.8	(2.9)
03	(350)	(2.0)					2.4	(2.8)
04	(320)	(1.9)					2.7	(3.0)
05	(360)	(1.8)					1.8	(2.8)
06	---	---					2.4	---
07	<340	2.0						2.9
08	260	2.8	---	---	120	1.6		3.3
09	250	3.6	230	---	120	1.7		3.3
10	270	3.9	230	3.0	120	2.0		3.3
11	270	4.2	230	3.3	120	2.2		3.3
12	280	4.2	220	3.3	120	2.2		3.2
13	270	4.6	220	3.3	120	2.2		3.3
14	260	4.6	230	3.1	120	2.0		3.4
15	250	4.6	240	---	130	(2.0)		3.4
16	240	4.4	---	---	140	1.8		3.3
17	230	3.9			---	---		3.3
18	240	3.2						3.2
19	250	2.1						3.2
20	(250)	(1.8)						(3.0)
21	---	---						---
22	---	---					2.8	---
23	---	---					2.4	---

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

Table 4

Oslo, Norway (60.0°N, 11.1°E) — February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(1.7)						---
01	(300)	(1.7)						(3.0)
02	(290)	(1.8)						(2.9)
03	(290)	(1.6)						(3.0)
04	---	(1.4)						(3.0)
05	---	(1.4)						---
06	---	---					(3.1)	---
07	(250)	1.9						3.1
08	240	3.0			---	---		3.4
09	235	3.8	230	---	120	1.7	2.5	3.4
10	245	4.4	215	3.2	120	2.0	2.8	3.4
11	245	4.6	220	3.4	120	2.0	2.6	3.5
12	250	4.7	215	3.4	120	2.2	2.3	3.5
13	250	4.9	215	3.4	125	2.2	2.2	3.5
14	240	4.9	220	3.2	125	2.1	2.4	3.5
15	240	4.7	230	---	135	1.9		3.5
16	230	4.4	235	---	---	---		3.5
17	230	4.0			---	---		3.4
18	240	3.4						3.2
19	250	2.6						3.1
20	250	2.3						3.1
21	---	1.9						3.1
22	---	(1.7)						---
23	---	(1.7)						---

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 5

Upsala, Sweden (59.8°N, 17.6°E) — February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	(1.7)						(2.9)
01	320	1.7						(2.9)
02	340	1.8						2.9
03	320	1.7						3.0
04	(300)	1.6						(3.0)
05	---	(1.4)					2.0	---
06	---	(1.3)						---
07	255	2.1			---	E		3.0
08	235	3.2	225	---	---	E	1.7	3.5
09	240	4.0	215	2.8	120	1.8	2.0	3.5
10	240	4.4	225	3.1	115	1.9	2.0	3.5
11	240	4.8	230	3.3	115	2.1		3.5
12	250	4.8	225	3.4	115	2.2		3.5
13	250	5.0	215	3.4	115	2.1		3.4
14	240	4.9	225	3.1	130	2.0		3.5
15	235	4.6	230	2.8	125	1.8		3.5
16	225	4.2	---	---	---	(1.5)		3.5
17	225	3.8			---	E		3.4
18	235	3.0						3.2
19	250	2.4						3.1
20	255	2.0						3.0
21	(265)	1.8						3.0
22	(310)	1.7						(2.9)
23	(290)	(1.7)						(2.8)

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 6

Graz, Austria (47.1°N, 15.5°E) — February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0						
01	290	3.0						
02	290	2.9						
03	290	2.9						
04	285	2.8						
05	280	2.4						
06	280	2.2						
07	230	3.2						
08	210	4.3	---	---				
09	210	5.0	210	3.4				
10	220	5.0	200	3.6				
11	250	5.0	200	3.8				
12	240	5.7	200	3.9				
13	240	5.1	200	3.8				
14	230	5.0	200	3.6				
15	230	5.0	205	3.5				
16	210	5.0	---	---				
17	200	4.6						
18	235	3.8						
19	270	3.3						
20	260	3.0						
21	280	2.9						
22	290	2.9						
23	280	2.9						

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 7

San Francisco, California (37.4°N, 122.2°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	(3.0)					2.2	(3.2)
01	(260)	(3.0)					2.2	(3.2)
02	(260)	(3.0)						(3.3)
03	(250)	(2.9)						(3.3)
04	(240)	(3.0)						3.2
05	(250)	2.8						3.3
06	(250)	(2.8)						(3.3)
07	240	(3.6)					2.8	(3.4)
08	240	5.3	230	---	120	(1.9)	2.9	3.5
09	260	5.7	230	---	120	(2.5)	3.3	3.4
10	270	5.8	220	(3.9)	120	(2.8)	3.6	3.3
11	270	6.0	220	(4.0)	(110)	(2.9)	3.7	3.4
12	280	6.4	210	(4.0)	110	(3.0)	3.3	3.2
13	270	6.4	240	(4.1)	(120)	(3.0)	3.7	3.3
14	270	6.1	220	(4.0)	(110)	(3.0)	3.6	3.4
15	260	5.8	230	(3.8)	120	(2.8)	2.6	3.5
16	250	5.5	230	---	120	(2.4)	2.2	3.4
17	230	5.1	230	---	---	---	2.0	3.5
18	220	4.0						3.5
19	(240)	3.0					2.4	3.3
20	250	2.7					2.8	3.3
21	(250)	2.5					2.8	3.2
22	(260)	2.8					2.8	3.2
23	(260)	3.0					2.6	3.1

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 8

White Sands, New Mexico (32.3°N, 106.5°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2						3.0
01	270	3.2						3.0
02	270	3.4						3.0
03	260	3.4						3.0
04	240	3.4						3.2
05	240	3.2						3.2
06	270	3.0						3.0
07	240	4.0	---	---	---	---		3.4
08	250	5.2	220	2.8	120	2.2	2.5	3.5
09	270	5.5	220	3.6	120	2.5	3.2	3.3
10	280	6.1	220	4.1	120	2.8	2.9	3.3
11	280	6.2	220	4.2	120	2.9	3.2	3.2
12	280	6.6	210	4.2	120	3.0	3.0	3.2
13	280	6.7	220	4.2	120	3.0	3.0	3.2
14	280	6.5	220	4.0	120	2.9	3.1	3.3
15	270	6.0	220	3.9	120	2.8	3.7	3.4
16	250	5.9	230	3.5	120	2.4	3.4	3.4
17	240	5.4	---	---			3.0	3.5
18	220	4.6					2.5	3.4
19	240	3.3					2.4	3.3
20	250	2.9					2.4	3.2
21	270	2.9					2.6	3.1
22	270	3.0						3.0
23	280	3.2						3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 9

Okinawa I. (26.3°N, 127.8°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1						3.1
01	260	3.0						3.2
02	250	3.1						3.2
03	240	3.1						3.5
04	220	3.0						3.6
05	---	---						---
06	---	---						---
07	220	4.3	---	---				3.6
08	240	5.6	230	---	---	---	2.9	3.6
09	260	6.5	220	---	---	2.7	3.2	3.5
10	260	7.0	210	4.1	110	3.0	3.8	3.5
11	260	8.2	210	4.2	---	---	4.5	3.5
12	270	8.2	200	4.3	---	---	4.0	3.3
13	270	9.0	200	4.3	---	---	4.0	3.3
14	250	9.0	210	4.2	---	---	3.9	3.5
15	250	8.5	210	4.0	---	---	3.6	3.6
16	240	6.8	210	---	---	---	3.2	3.6
17	230	5.8			---	---	3.0	3.6
18	210	5.2						3.6
19	220	4.2						3.6
20	240	3.5						3.3
21	250	3.4						3.4
22	240	3.4						(3.2)
23	280	3.0						(3.0)

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

Table 10

Formosa, China (25.0°N, 121.5°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.3						2.9
01	260	3.3						3.0
02	260	3.0						3.1
03	240	3.0						3.4
04	240	2.5						3.2
05	260	2.0						3.0
06	280	1.9						2.9
07	240	4.4			140	1.8		3.5
08	240	5.6	230	---	120	2.4		3.4
09	270	6.5	240	4.0	110	2.7		3.3
10	280	7.1	240	4.2	110	3.0		3.3
11	280	8.4	230	4.3	110	3.2	4.1	3.4
12	270	9.0	210	4.4	110	(3.2)	4.2	3.3
13	280	10.1	220	4.4	110	(3.2)	4.1	3.3
14	270	11.0	225	4.3	110	3.2	4.2	3.4
15	260	10.8	220	4.0	110	2.8	4.0	3.4
16	240	9.0	220	3.8	110	---	3.7	3.4
17	240	7.2			---	---	3.2	3.7
18	220	6.0					2.4	3.5
19	225	5.0					2.4	3.4
20	240	4.2					2.2	3.2
21	240	4.0					1.9	3.3
22	240	3.5					1.7	3.3
23	260	3.1						3.1

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 11

Maui, Hawaii (20.8°N, 156.5°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0					2.4	3.1
01	260	2.9					1.6	3.2
02	260	2.8					1.4	3.3
03	240	2.7					1.5	3.4
04	230	1.9						3.5
05	240	1.8					1.5	3.5
06	280	1.6					2.0	3.0
07	260	3.5					2.0	3.2
08	260	5.2	250	---	120	2.1	3.4	3.4
09	300	6.3	230	(4.1)	120	2.6	4.0	3.1
10	310	7.8	230	4.2	120	2.9	4.5	3.1
11	310	8.6	220	4.3	120	3.1	5.6	3.1
12	300	9.8	210	4.4	120	3.1	4.8	3.0
13	300	10.7	200	4.4	120	3.2	4.4	3.0
14	290	10.6	200	4.4	(120)	(3.0)	4.7	3.0
15	280	10.0	240	4.2	120	2.9	4.4	3.3
16	260	8.5	240	4.0	(120)	2.8	4.0	3.3
17	240	7.4	240	---	120	2.4	3.9	3.5
18	230	5.6			140	1.6	3.8	3.6
19	230	3.8					4.2	3.4
20	(240)	3.0					4.0	3.2
21	280	2.6					3.2	3.0
22	290	2.8					2.2	3.0
23	290	2.7					1.8	3.1

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

Table 12

Puerto Rico, W. I. (18.5°N, 67.2°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.6						3.0
01	260	3.8						3.0
02	260	3.9						3.0
03	230	4.1						3.3
04	230	4.0						3.3
05	220	3.5						(3.4)
06	230	3.0						3.2
07	220	3.8						3.5
08	230	5.1	220	---	110	2.0		3.6
09	250	5.4	230	---	110	2.6	2.9	3.5
10	280	6.1	220	4.1	110	2.9	3.0	3.4
11	270	6.6	210	4.2	110	3.1	3.0	3.4
12	280	6.7	220	4.3	110	3.2	3.4	3.3
13	280	6.8	210	4.3	110	3.2	3.4	3.2
14	270	7.1	220	4.2	110	3.1	3.4	3.4
15	260	6.8	210	4.1	110	2.9	3.3	3.4
16	260	6.4	220	3.9	110	2.7	3.9	3.4
17	250	6.4	230	---	110	2.4	3.4	3.5
18	230	6.0	---	---	---	---	2.9	3.5
19	210	5.2					2.6	3.5
20	210	3.9						3.5
21	240	3.2						3.1
22	280	3.2						3.0
23	260	3.6						3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Panama Canal Zone (9.4°N, 79.9°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.0					2.2	3.3
01	230	3.0					1.9	3.4
02	240	2.9						3.5
03	220	(2.5)						3.4
04	240	2.4					3.0	(3.2)
05	260	2.4					3.0	3.2
06	280	(2.5)					3.0	3.1
07	240	4.4			---	---	2.7	3.5
08	260	5.4	230	---	110	2.4	3.1	3.4
09	290	6.0	220	4.2	110	2.8	3.3	3.2
10	310	6.9	220	4.3	110	3.0	3.8	3.1
11	300	8.0	220	4.3	110	(3.2)	3.9	3.2
12	300	7.7	210	4.3	110	(3.3)	4.0	3.0
13	320	8.2	220	4.4	110	3.3	4.0	3.0
14	300	8.6	220	4.3	110	3.2	4.4	3.1
15	300	9.3	230	4.3	110	3.0	4.2	3.1
16	270	9.6	240	4.0	110	2.8	4.3	3.3
17	250	8.6	240	(3.7)	120	2.4	4.2	3.5
18	220	6.6					3.9	3.6
19	220	4.4					3.3	3.4
20	240	3.4					3.2	3.4
21	240	3.0					2.8	3.3
22	300	2.4					1.8	3.0
23	300	2.8						2.9

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

Table 14

Huancayo, Peru (12.0°S, 75.3°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.7						3.2
01	260	5.0					2.8	3.3
02	260	4.2					4.4	3.4
03	250	2.8					4.4	3.3
04	260	2.4						(3.3)
05	270	2.0					4.2	(3.3)
06	260	3.3			---	<1.0	4.8	3.1
07	(280)	6.0	230	---	110	2.2	5.0	3.4
08	(290)	7.2	220	---	110	2.7	8.8	3.2
09	320	8.0	210	4.2	110	---	11.0	3.0
10	340	8.2	210	4.3	110	---	11.4	2.8
11	360	8.2	200	4.3	110	---	11.6	2.6
12	360	8.0	200	4.3	110	---	11.4	2.6
13	360	7.6	200	4.3	110	3.3	11.6	2.6
14	340	8.1	200	4.2	110	---	11.4	2.6
15	320	8.5	200	4.1	110	---	10.8	2.8
16	(300)	8.2	200	4.0	110	---	10.0	2.8
17	(280)	8.5	200	---	110	2.5	8.2	2.8
18	250	8.5			120	(1.8)	5.1	2.8
19	250	8.3						3.0
20	270	7.5					3.6	3.0
21	250	7.2					4.4	3.2
22	250	6.8					4.4	3.2
23	280	6.3						3.1

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

Table 15

Point Barrow, Alaska (71.3°N, 156.8°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8					7.0	3.2
01	310	(2.8)					7.0	(3.3)
02	290	(2.6)					7.0	(3.3)
03	310	(2.6)					5.2	(3.2)
04	300	(2.3)					4.3	3.3
05	(320)	2.6					3.9	(3.2)
06	---	(3.2)					4.6	---
07	---	---					4.6	---
08	---	---					4.8	---
09	---	---					4.7	---
10	(300)	2.3					3.9	(3.3)
11	260	3.2					3.4	3.4
12	250	3.4					3.2	3.4
13	250	3.7					2.8	3.4
14	250	3.8					2.4	3.5
15	240	3.4					2.3	3.4
16	250	3.1					2.4	3.4
17	270	2.6					2.2	3.4
18	300	2.0					2.7	(3.4)
19	(310)	2.1					3.0	(3.4)
20	(310)	2.4					3.7	(3.3)
21	310	3.1					4.1	(3.2)
22	340	3.2					4.8	3.1
23	(340)	(2.9)					5.4	(3.2)

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

Table 16

Tromso, Norway (69.7°N, 19.0°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.9	---
01	---	---					3.8	---
02	(315)	(2.2)					3.8	(3.0)
03	(315)	(1.8)					3.7	(3.0)
04	280	1.6					2.8	3.1
05	285	1.6					2.9	3.2
06	(290)	1.5					2.6	3.2
07	---	<1.6					2.8	(3.0)
08	---	(1.6)					2.9	(3.0)
09	240	2.2			140	1.2	1.6	3.3
10	225	3.1			140	1.2	1.6	3.4
11	220	3.8			130	1.4	1.6	3.5
12	220	4.1			---	---	2.6	3.5
13	215	4.0			---	---	2.7	3.4
14	220	3.4			(140)	(1.3)	2.7	3.4
15	215	2.8			140	1.1	2.7	3.4
16	220	2.2			---	---	2.6	3.3
17	---	(1.8)					2.8	(3.1)
18	---	---					3.0	---
19	---	---					4.2	---
20	---	---					3.9	---
21	---	---					4.2	---
22	---	---					4.8	---
23	---	---					3.8	---

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 17

Kiruna, Sweden (67.8°N, 20.3°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(305)	(2.5)					3.7	(3.2)
01	(300)	(2.1)					3.2	(3.4)
02	(320)	(2.0)					2.2	(3.4)
03	(335)	(2.0)					2.0	(3.2)
04	(310)	(2.2)					2.1	(3.3)
05	(310)	(2.2)					(1.2)	(3.5)
06	---	---						---
07	---	---						---
08	---	---						---
09	250	2.2						3.6
10	230	3.7						3.5
11	230	4.1						3.6
12	220	4.2						3.6
13	220	4.0						3.6
14	220	3.8						3.6
15	225	3.2						3.6
16	(220)	2.9						3.5
17	---	---					(3.9)	---
18	---	---					(3.9)	---
19	---	---					4.0	---
20	---	---					4.0	---
21	---	---					4.0	---
22	(330)	(3.1)					4.0	(3.2)
23	(290)	(2.5)					3.7	(3.3)

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 18

De Bilt, Holland (52.1°N, 5.2°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 260	3.0						3.0
01	< 260	3.0						3.1
02	260	3.1						3.1
03	< 260	2.8						3.1
04	250	2.4						3.2
05	240	2.3						3.3
06	(235)	2.0						3.3
07	230	2.2						3.3
08	220	4.0			---	E		3.6
09	220	5.0	220	2.6	130	2.0		3.7
10	230	5.2	220	3.0	120	2.2		3.7
11	235	5.4	210	3.3	120	2.3		3.7
12	225	5.4	220	3.3	120	2.3		3.7
13	230	5.5	220	3.1	130	2.2		3.7
14	230	5.0	---	---	125	2.1		3.6
15	220	4.8	---	---	130	1.8		3.6
16	210	4.3						3.5
17	230	3.6						3.5
18	240	3.0						3.4
19	240	2.6						3.3
20	(240)	2.4						3.2
21	< 260	2.6						3.2
22	(240)	2.8						3.2
23	< 260	2.8						3.1

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 19

Schwarzenburg, Switzerland (46.8°N, 7.3°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.1						3.3
01	250	3.1						3.4
02	250	3.1						3.4
03	250	3.1						3.4
04	220	3.0						3.5
05	220	2.6						3.6
06	220	2.4						3.6
07	210	2.4						3.7
08	200	3.2						4.0
09	200	4.6				2.0		4.0
10	200	5.3				2.2		4.0
11	200	5.5				2.4		4.0
12	200	5.6				2.5		4.0
13	200	5.4				2.5		4.0
14	200	5.2				2.4		4.0
15	200	5.2				2.2		4.0
16	200	4.8				2.0		4.0
17	200	4.5						4.0
18	200	3.5						3.8
19	210	3.2						3.7
20	200	3.1						3.8
21	230	3.0						3.5
22	260	3.0						3.4
23	250	3.0						3.4

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 20

San Francisco, California (37.4°N, 122.2°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	(2.9)					2.4	(3.2)
01	(250)	(2.9)					2.3	(3.3)
02	(240)	(2.8)						(3.4)
03	(250)	(2.9)						(3.4)
04	(240)	(3.0)						(3.4)
05	(240)	(2.7)						(3.[illegible])
06	(250)	(2.7)					2.0	(3.3)
07	(240)	(3.0)					2.5	(3.5)
08	230	4.6	---	---	---	---	(2.6)	3.6
09	240	5.0	220	---	120	(2.3)	3.1	3.6
10	250	5.6	220	4.0	110	(2.7)	3.6	3.4
11	260	6.2	220	---	110	(2.9)	3.8	3.4
12	250	6.4	220	---	110	(2.9)	3.6	3.5
13	250	6.0	220	---	110	(2.9)	3.6	3.5
14	250	5.8	220	---	110	(2.8)	3.5	3.5
15	240	5.6	220	---	110	(2.6)	3.6	3.5
16	230	5.2	220	---	(120)	(2.2)	2.8	3.6
17	220	4.3	---	---				3.6
18	220	3.0						3.4
19	(230)	(2.6)					2.4	3.5
20	(230)	2.4					2.6	3.6
21	(250)	2.2					2.2	3.2
22	(270)	2.5					2.4	3.2
23	(260)	2.8					2.4	3.2

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 21

Formosa, China (25.0°N, 121.5°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.6						2.9
01	270	2.8						3.0
02	240	2.8					1.9	3.2
03	240	2.8						3.2
04	220	2.3					1.6	3.2
05	260	2.0					1.8	3.1
06	280	1.7						3.0
07	240	4.0			160	1.7	2.0	3.5
08	240	5.4	240	3.4	120	2.2		3.3
09	280	6.8	240	3.9	120	2.7	2.7	3.4
10	260	7.9	230	4.1	110	3.1	4.3	3.4
11	280	8.4	220	4.2	110	3.2	4.3	3.3
12	280	10.2	220	4.2	---	---	4.2	3.2
13	270	11.5	220	4.2	---	---	4.2	3.4
14	250	9.8	220	4.2	---	---	3.9	3.5
15	240	7.7	220	3.8	---	---	3.8	3.5
16	240	6.4	220	(3.5)	110	(2.2)	3.7	3.5
17	220	5.5			110	1.9	3.5	3.7
18	220	4.4					3.3	3.5
19	240	4.2					3.2	3.2
20	240	4.1					2.8	3.2
21	240	3.4					2.7	3.4
22	240	2.7					1.8	3.2
23	280	2.5					1.8	2.9

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 22

Guam I. (13.6°N, 144.9°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.7					1.7	3.3
01	250	2.8						3.2
02	250	2.5						3.4
03	240	2.1					1.3	3.5
04	260	1.4					1.6	3.4
05	---	E					1.6	3.3
06	---	E					1.6	(3.3)
07	(250)	3.7	240	---	130	1.3	2.0	3.4
08	(270)	5.5	230	---	110	2.2	2.4	3.2
09	310	6.8	210	---	100	2.6	4.2	2.9
10	330	7.2	200	4.0	100	2.9	5.7	2.7
11	350	6.6	200	4.1	100	3.0	4.7	2.7
12	350	6.6	180	4.2	100	3.1	5.1	2.6
13	340	6.8	180	4.2	100	3.1	5.0	2.7
14	330	7.2	200	4.1	110	3.0	4.5	2.8
15	310	7.6	220	4.0	100	2.9	5.2	3.0
16	280	7.8	220	---	110	2.7	4.0	3.2
17	260	7.6	230	---	110	2.3	3.8	3.4
18	230	7.2	---	---	---	---	3.1	3.5
19	220	6.1					2.9	3.5
20	220	5.4					3.1	3.5
21	230	5.0					2.7	3.3
22	220	4.3					2.0	3.5
23	230	3.1						3.4

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

Table 23

Leopoldville, Belgian Congo (4.3°S, 15.3°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4						2.3
01	255	3.0						2.4
02	250	2.8						2.4
03	260	2.6					1.7	2.5
04	240	2.6					1.8	2.5
05	245	3.3					2.4	2.6
06	270	5.0	230	---	115	2.1	3.0	2.6
07	305	5.4	220	4.0	110	2.6	3.2	2.4
08	360	6.0	210	4.1	110	3.0	3.0	2.2
09	400	6.9	210	4.2	105	3.2	3.0	2.1
10	400	7.8	200	4.2	110	3.3		2.0
11	400	8.1	200	4.4	110	3.4	2.9	2.0
12	370	9.2	210	4.3	110	3.4	2.6	2.2
13	330	9.5	210	4.2	110	3.2	2.6	2.2
14	345	8.8	210	4.1	110	3.0	3.0	2.2
15	370	8.1	210	4.0	110	2.8	3.0	2.1
16	340	8.0	240	3.7	115	2.3	3.0	2.2
17	290	8.1	250	---	---	---	2.7	2.2
18	250	8.0					2.6	2.3
19	280	7.0					1.9	2.2
20	250	7.4						2.4
21	230	7.6						2.7
22	210	5.4						2.7
23	235	4.0						2.3

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 24

Huancayo, Peru (12.0°S, 75.3°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(4.4)					3.5	(3.2)
01	260	(3.3)					3.9	(3.3)
02	260	(2.9)						(3.3)
03	260	(2.5)						(3.4)
04	260	(2.0)					3.6	---
05	260	<1.0					4.4	---
06	250	3.9			130	1.5	2.9	3.2
07	(270)	5.9	230	---	110	2.3	7.4	3.3
08	320	7.0	220	4.0	110	2.8	9.6	3.1
09	340	7.2	200	4.2	100	---	11.6	2.8
10	380	7.1	200	4.2	100	---	11.6	2.5
11	400	6.6	200	4.3	100	---	11.6	2.5
12	400	6.6	200	4.3	100	---	11.8	2.5
13	380	6.8	190	4.3	100	---	11.5	2.6
14	370	7.4	190	4.2	110	3.3	11.2	2.6
15	360	7.6	190	4.1	100	3.1	9.6	2.7
16	330	7.7	200	---	110	2.8	9.1	2.8
17	(240)	7.7	220	---	110	2.5	6.0	2.9
18	250	7.6			120	1.8	4.9	2.9
19	250	7.4						3.0
20	270	6.5						3.0
21	300	5.8						2.9
22	320	(5.6)						(3.0)
23	300	(5.2)						(3.1)

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

Table 25

Buenos Aires, Argentina (34.5°S, 58.5°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	(4.9)					3.4	(3.0)
01	280	(4.7)					3.2	(3.0)
02	240	4.4					3.1	3.1
03	240	3.4					2.9	3.2
04	290	(3.0)					2.8	(3.0)
05	250	3.6			120	1.6	1.8	3.3
06	250	4.7	220	---	110	2.1	3.5	3.3
07	300	5.0	220	---	110	2.5	3.7	3.2
08	320	5.4	220	4.0	110	3.0	4.3	3.1
09	390	5.9	210	4.1	100	3.1	4.4	2.9
10	390	6.4	200	4.2	100	3.2	4.3	2.8
11	390	7.6	210	4.3	100	3.4	4.6	2.8
12	360	8.1	200	4.3	100	3.3	4.3	2.9
13	340	8.7	200	4.3	---	---	5.0	2.9
14	320	9.4	---	(4.2)	---	---	4.3	3.0
15	300	9.8	210	4.0	---	---	4.0	3.1
16	270	9.7	220	3.8	---	---	3.8	3.3
17	260	8.3	220	---			3.7	3.4
18	250	6.6	210	---				3.4
19	240	5.4						3.3
20	260	5.4						3.2
21	300	4.9						3.0
22	310	4.8						2.9
23	300	(4.8)					2.7	(3.0)

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 26

Decepcion I. (63.0°S, 60.7°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.1	---	---			2.0	(3.2)
01	270	5.1	---	---			2.0	(3.2)
02	280	5.2	---	---				(3.3)
03	280	5.6	190	3.1				(3.1)
04	270	5.4	---	---			2.0	(3.2)
05	280	5.2	---	3.2			3.0	(3.2)
06	270	5.2	---	---			3.4	(3.2)
07	260	5.0	---	---			4.6	(3.4)
08	---	---					5.0	---
09								
10	---	---					5.2	---
11	---	---					5.6	---
12	---	---	---	---			5.5	---
13	---	---					5.4	---
14	---	---					5.1	---
15	---	---					5.3	---
16	---	---					5.2	---
17	---	5.6					5.0	---
18	250	5.2					4.6	(3.3)
19	270	6.1	---	---			4.6	(3.1)
20	280	5.6	---	---			3.5	(3.3)
21	270	5.4	---	---			3.4	(3.2)
22	260	5.2	---	---			2.6	(3.2)
23	270	5.2	---	---			2.6	(3.2)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 27

Baguio, P. I. (16.4°N, 120.6°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	3.2						3.4
01	260	2.8						3.2
02	240	2.8						3.4
03	220	2.8						3.5
04	200	1.6						3.5
05	---	E						---
06	270	2.3						3.2
07	230	5.2			120	1.9		3.5
08	270	6.3	220	---	110	2.4		3.3
09	290	7.5	210	4.0	110	2.8	3.5	3.2
10	300	8.4	200	4.1	110	2.9	3.8	3.0
11	320	8.7	200	4.2	110	3.0	3.5	3.0
12	320	8.9	200	4.2	110	3.1	4.2	2.9
13	310	9.1	200	4.2	110	3.1	4.5	3.0
14	290	9.1	200	4.1	110	3.0	4.3	3.1
15	280	8.8	220	---	110	(2.7)	4.3	3.2
16	250	8.6	220	---	110	2.3	4.4	3.3
17	220	8.6			---	---	3.2	3.4
18	210	7.4					3.0	3.4
19	210	6.0					2.8	3.4
20	230	5.0					2.8	3.2
21	250	4.6						3.2
22	240	4.4						3.3
23	230	4.0						3.4

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 28

Johannesburg. Union of S. Africa (26.2°S, 28.1°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.7						3.0
01	260	3.7						3.1
02	250	3.5					1.7	3.1
03	250	3.3					2.1	3.2
04	250	3.0						3.2
05	250	3.1					1.8	3.2
06	250	4.4	230	3.0	120	1.9	2.6	3.3
07	300	5.0	220	3.8	110	2.5	3.2	3.2
08	340	5.6	220	4.1	110	2.9	3.6	3.0
09	340	5.8	210	4.2	110	3.2	3.4	3.0
10	350	6.4	200	4.3	110	3.3	3.8	2.9
11	340	7.2	200	4.4	110	3.4	3.6	2.9
12	320	7.6	200	4.5	110	3.4	3.8	2.9
13	310	7.6	200	4.4	110	3.4		3.0
14	320	7.2	210	4.4	110	3.3		3.0
15	300	7.0	210	4.2	110	3.2	3.6	3.0
16	250	6.7	220	4.0	110	3.0	3.2	3.2
17	280	6.6	210	3.7	110	2.6	3.2	3.1
18	250	6.5	220	3.2	120	2.1	2.8	3.2
19	240	6.0			---	---	2.6	3.2
20	240	5.8						3.2
21	230	5.0					1.9	3.2
22	240	4.2						3.2
23	250	3.9						3.0

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

Table 29

Capetown, Union of S. Africa (34.2°S, 18.3°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.5					1.6	2.9
01	280	3.5					1.9	2.9
02	270	3.4					1.8	3.0
03	260	3.4					1.8	3.0
04	250	3.3					1.7	3.1
05	250	3.1					1.6	3.1
06	250	4.3	240	---	130	1.8	2.2	3.3
07	300	4.8	230	3.6	120	2.2	3.0	3.1
08	340	5.4	230	3.9	120	2.7	3.4	3.0
09	340	5.8	220	4.1	110	3.0	3.5	2.9
10	350	6.0	210	4.2	110	3.2	3.4	2.9
11	340	6.1	210	4.3	110	3.3		2.9
12	340	6.7	200	4.4	110	3.4		2.9
13	340	6.7	200	4.4	110	3.4	3.7	2.9
14	330	6.7	210	4.3	110	3.3	3.6	3.0
15	320	6.6	220	4.2	110	3.2	3.6	3.0
16	320	6.3	220	4.1	110	3.1		3.1
17	300	5.9	220	3.9	110	2.8	3.0	3.1
18	290	5.8	220	3.6	120	2.5	3.0	3.2
19	250	5.6	230	3.0	120	1.9	2.6	3.2
20	240	5.4					2.0	3.2
21	230	4.8						3.2
22	240	4.0					1.6	3.1
23	260	3.7						3.0

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

Table 30

Buenos Aires, Argentina (34.5°S, 58.5°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(5.1)					4.2	(2.9)
01	280	4.9					3.4	3.0
02	270	4.7					4.1	3.0
03	260	(4.3)					4.0	(3.0)
04	270	3.8			---	---	2.8	3.0
05	240	4.6			120	1.7	2.4	3.1
06	280	5.2	230	---	110	2.2	4.5	3.1
07	310	5.8	230	---	100	2.6	5.1	3.0
08	340	6.2	220	4.1	110	3.0	5.1	2.9
09	370	6.8	200	4.2	100	(3.0)	4.5	2.7
10	400	7.7	200	4.3	100	(3.1)	4.6	2.8
11	370	8.5	200	4.4	100	(3.3)	5.1	2.8
12	360	9.0	200	4.4	---	---	4.0	2.9
13	330	9.9	200	4.3	---	---	4.2	2.9
14	300	10.1	200	4.3	---	---	4.0	3.1
15	280	9.6	210	4.1	---	---	3.5	3.2
16	280	8.5	220	3.9	100	(3.0)	4.0	3.2
17	280	7.8	230	---	---	---	3.6	3.2
18	270	7.5	230	---			4.2	3.3
19	250	7.3					3.0	3.3
20	260	(6.4)					3.6	(3.0)
21	280	5.6					3.2	2.9
22	300	5.6					3.7	2.9
23	310	(5.3)					3.8	(2.8)

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 31

Decepcion I. (63.0°S, 60.7°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.6						(3.2)
01	270	6.4						(3.2)
02	270	6.4						(3.2)
03	270	6.6						(3.2)
04	270	6.8					2.5	(3.2)
05	270	6.8					3.0	(3.2)
06	280	6.7					4.0	(3.2)
07	280	6.5					5.5	(3.2)
08	—	6.3					6.4	(3.4)
09	—	—						—
10	—	(5.8)					6.8	—
11	(280)	(5.8)					6.8	(3.4)
12	—	—					6.8	—
13	—	—					6.9	—
14	—	—					6.9	—
15	—	—					6.8	—
16	(280)	(5.8)					6.6	(3.4)
17	300	5.6					5.4	(3.3)
18	280	5.6					4.5	(3.3)
19	280	5.8					4.0	(3.2)
20	270	6.2					2.2	(3.2)
21	260	6.3						(3.2)
22	260	6.4						(3.2)
23	260	6.4						(3.2)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 32

Wakkanai, Japan (45.4°N, 141.7°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2					2.3	3.0
01	250	3.3					2.5	3.1
02	270	3.2					2.3	3.0
03	260	3.3					2.1	3.1
04	250	3.2					2.0	3.2
05	230	3.1					2.2	3.3
06	240	2.7						3.3
07	220	4.6			---	---	2.4	3.5
08	230	5.7	230	---	120	2.2	3.0	3.6
09	230	6.4	220	3.7	120	2.4	3.4	3.5
10	240	6.7	230	3.8	110	2.5	3.5	3.5
11	240	7.4	220	3.8	110	2.7	3.2	3.5
12	230	7.0	220	3.8	110	2.7	3.4	3.6
13	240	6.4	220	3.7	110	2.5	3.0	3.5
14	230	6.0	230	3.1	120	2.4	2.8	3.6
15	220	5.8	---	---	120	2.1	2.8	3.6
16	210	5.2					2.8	3.5
17	220	3.5					2.5	3.4
18	250	3.0					2.4	3.3
19	250	3.0					2.4	3.3
20	250	3.0						3.2
21	270	3.0						3.1
22	280	3.1						3.0
23	270	3.0						3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 33

Akita, Japan (39.7°N, 140.1°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.2					2.3	2.9
01	280	3.4					2.6	2.9
02	270	3.4					2.6	2.9
03	260	3.2					2.5	3.0
04	250	3.2					2.4	3.1
05	240	2.8					2.5	3.2
06	250	3.0					2.0	3.1
07	220	5.0	---	---	120	1.8	2.8	3.5
08	230	6.1	220	3.0	120	2.2	3.5	3.6
09	240	6.6	220	(3.6)	110	2.4	4.2	3.6
10	250	7.0	220	3.8	110	2.6	4.4	3.5
11	250	7.2	220	4.0	110	2.7	4.2	3.4
12	250	7.3	220	3.8	110	2.7	4.2	3.5
13	250	6.5	220	3.7	110	2.7	4.0	3.5
14	240	6.4	240	(3.6)	110	2.5	4.1	3.5
15	230	5.8	240	3.2	120	2.2	3.8	3.6
16	220	5.4			---	—	3.5	3.6
17	210	3.8					3.3	3.4
18	240	3.1					2.6	3.2
19	240	3.2					2.4	3.2
20	250	3.0					2.4	3.1
21	260	3.0					2.8	3.0
22	270	3.1					2.4	2.9
23	300	3.2					2.8	2.9

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 34

Tokyo, Japan (35.7°N, 139.5°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1					2.8	3.0
01	270	3.1					2.7	3.0
02	260	3.2					2.6	3.0
03	250	3.2					2.8	3.1
04	240	3.2					2.6	3.2
05	220	2.6					2.8	3.1
06	240	3.0					2.5	3.1
07	220	5.4	220	---	130	1.8	2.7	3.5
08	230	6.2	220	3.4	120	2.3	3.0	3.5
09	240	6.5	220	3.8	110	2.6	4.0	3.4
10	240	7.2	220	4.0	110	2.8	4.0	3.4
11	240	7.3	220	4.0	110	2.9	4.4	3.4
12	250	7.5	220	4.1	110	2.9	4.3	3.4
13	240	7.1	230	4.0	110	2.8	4.1	3.4
14	240	6.9	230	3.8	120	2.6	3.6	3.4
15	230	6.4	220	3.4	120	2.4	3.5	3.5
16	220	5.5	---	---	120	1.8	2.9	3.5
17	210	4.0					3.0	3.4
18	240	3.0					3.0	3.2
19	240	3.2					2.6	3.2
20	240	3.0					2.4	3.2
21	250	2.8					2.5	3.0
22	280	2.9					2.4	3.0
23	280	3.0					2.6	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 35

Yamagawa, Japan (31.2°N, 130.6°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						2.9
01	300	3.0						2.9
02	280	3.0					2.0	3.0
03	280	3.0					2.1	3.0
04	250	2.9					1.7	3.2
05	280	2.5					1.9	3.0
06	290	2.4					2.2	3.0
07	240	4.4	---	---	---	---	1.8	3.4
08	240	5.8	240	---	130	2.1	2.6	3.5
09	250	6.3	230	3.8	110	2.4	3.4	3.4
10	270	6.8	240	4.0	110	2.7	3.6	3.4
11	270	7.2	240	4.1	110	2.8	3.8	3.4
12	270	7.3	230	4.3	110	2.9	4.0	3.4
13	270	8.6	220	4.2	110	2.8	3.9	3.3
14	260	8.5	240	4.1	110	2.8	3.8	3.4
15	250	7.7	240	3.8	110	2.6	3.5	3.5
16	240	6.2	230	3.1	120	2.2	3.4	3.6
17	220	5.1	---	---	---	---	3.0	3.6
18	230	3.7					2.6	3.5
19	260	2.9					2.2	3.1
20	260	3.1					2.0	3.0
21	250	2.9						3.2
22	290	2.7						3.0
23	300	2.7						2.9

Time: 135.0°E.
Sweep: 0.8 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 36

Nairobi, Kenya (1.3°S, 36.8°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	7.3						3.6
01	230	4.3						3.1
02	260	4.4						3.1
03	260	4.4						3.0
04	230	4.2						(3.3)
05	220	3.3					1.7	(3.4)
06	240	3.2					1.8	3.2
07	240	5.6	230	—	120	---	2.8	3.4
08	280	6.7	220	4.0	110	2.6	2.9	3.2
09	310	7.3	210	4.3	110	3.0		3.0
10	340	8.5	200	4.4	110	3.2	3.4	2.9
11	360	9.1	200	4.5	110	—		2.9
12	350	9.8	---	4.5	110	---		2.9
13	350	9.8	---	(4.5)	110	---		2.9
14	350	9.9	200	4.4	110	—		2.8
15	350	9.8	210	4.4	110	3.1		2.8
16	350	9.8	210	4.2	110	2.8	3.4	2.8
17	300	9.5	230	3.8	110	2.4	3.0	2.9
18	(250)	9.6	---	---	---	---	3.2	2.9
19	270	9.0					2.7	3.0
20	280	8.2					2.6	2.9
21	290	8.0					1.6	2.9
22	260	8.8						3.1
23	220	10.1						3.6

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 37

Baguio, P.I. (16.4°N, 120.6°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	6.0						3.1
01	240	6.1						3.2
02	220	6.0						3.[illegible]
03	220	3.8						3.[illegible]
04	240	2.4						3.3
05	—	E						(2.3)
06	240	4.2					2.5	3.4
07	230	6.5			120	2.2	3.5	3.6
08	(260)	7.2	220	---	110	2.7	4.1	3.3
09	300	8.2	210	---	110	2.9	4.5	3.0
10	320	9.4	210	---	110	3.1	4.9	2.[illegible]
11	320	9.6	200	4.3	110	3.2	4.8	2.6
12	330	9.1	200	4.4	110	3.3	4.6	2.4
13	330	9.2	200	(4.3)	110	3.2	5.0	[illegible].6
14	320	9.8	210	4.2	110	3.1	4.6	[illegible].7
15	290	11.0	230	—	110	2.9	4.0	3.0
16	260	11.0	230	—	110	(2.5)	4.2	3.2
17	240	10.6			—	—	3.4	3.3
18	230	10.2					3.0	3.3
19	220	9.0					2.8	3.3
20	220	8.1					3.2	3.2
21	240	7.5						3.1
22	260	6.9						3.0
23	270	6.2						3.0

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 38

Baker Lake, Canada (64.3°N, 96.0°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.9			---	---	6.0	3.0
01	280	2.8			---	---	6.0	3.0
02	280	2.6			---	E	6.0	3.0
03	300	2.4			---	E	4.4	2.9
04	300	2.3			---	---	4.0	2.9
05	290	2.3			---	1.8	4.0	2.9
06	300	2.7	---	---	120	1.8	2.6	2.9
07	350	3.2	250	3.0	120	2.2	3.8	2.9
08	G	< 3.6	230	3.2	110	2.6	3.4	G
09	530	< 3.7	250	3.5	110	2.8	3.4	2.5
10	700	3.9	240	3.7	110	2.9	3.1	G
11	480	4.0	250	3.8	110	3.0	3.5	2.5
12	460	4.2	240	3.8	110	2.9		2.6
13	400	4.5	230	3.7	110	2.9		2.8
14	400	< 4.7	230	3.7	110	2.8		2.8
15	380	4.5	240	3.7	110	2.8		2.8
16	370	4.3	240	3.5	110	2.6		2.8
17	300	4.3	240	3.3	120	2.5	4.0	2.9
18	280	4.0	260	---	130	2.0	5.0	2.9
19	280	3.6			140	1.9	6.1	3.0
20	260	3.4			130	1.8	6.6	2.9
21	270	3.3			---	---	9.2	2.9
22	280	3.2			---	---	8.0	2.9
23	280	2.9			---	E	8.0	2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 39

Baguio, P.I. (16.4°N, 120.6°E) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.3						2.9
01	270	5.0						3.2
02	230	5.0						3.4
03	240	3.4					1.7	(3.4)
04	260	2.6					2.7	3.2
05	(220)	E					2.7	3.3
06	240	4.4					2.4	3.4
07	230	6.6			110	2.2	4.2	3.5
08	(280)	6.9	210	—	110	2.6	5.6	3.2
09	(300)	8.1	200	—	110	3.0	5.4	2.8
10	330	8.7	210	—	110	3.2	5.6	2.6
11	340	9.1	210	—	110	3.3	5.3	2.5
12	360	9.0	200	—	110	(3.3)	5.2	2.5
13	350	9.2	190	—	110	3.3	4.8	2.6
14	350	9.9	200	—	110	3.2	5.1	2.8
15	320	10.7	210	—	110	3.0	4.4	3.0
16	290	11.2	220	—	110	2.6	5.0	3.1
17	250	11.6	—	—	—	—	4.2	3.2
18	240	10.8					4.0	(3.3)
19	220	9.0					3.4	3.2
20	230	7.5					2.5	3.1
21	250	7.0						3.0
22	300	6.4					2.8	2.8
23	320	5.6						2.8

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 40

Wakkanai, Japan (45.4°N, 141.7°E) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.0					3.3	3.0
01	280	3.8					2.9	2.9
02	280	3.6					3.0	2.9
03	270	3.6					2.8	3.0
04	260	3.6					2.8	3.0
05	250	3.8	260	3.0	130	1.5	3.3	3.0
06	310	4.3	240	3.4	120	2.1	3.8	3.1
07	320	5.0	230	3.8	110	2.6	4.6	3.1
08	310	6.2	240	4.0	110	2.8	5.6	3.2
09	310	5.3	220	4.2	110	3.0	5.5	3.2
10	390	5.0	220	4.3	110	3.1	5.0	3.0
11	380	5.0	220	4.4	110	3.1	5.2	2.9
12	350	5.2	220	4.3	110	3.3	4.7	3.0
13	380	5.1	220	4.3	110	3.0	5.3	2.9
14	390	5.0	230	4.2	110	3.0	6.0	2.9
15	350	5.0	230	4.0	110	3.0	5.0	2.9
16	330	6.0	250	3.9	110	2.8	4.6	3.0
17	300	5.0	250	3.6	120	2.3	4.8	3.1
18	290	5.0	250	—	130	1.8	4.9	3.1
19	270	5.5					4.5	3.0
20	270	5.7					4.6	3.0
21	270	5.8					3.3	3.0
22	260	5.0					3.4	3.0
23	270	4.4					3.2	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 41

Akita, Japan (39.7°N, 140.1°E) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.7					4.4	3.0
01	280	3.7					4.3	2.9
02	280	3.6					3.5	2.9
03	270	3.6					3.0	2.9
04	260	3.5					3.1	2.9
05	260	3.5	250	2.4	130	1.3	3.1	3.0
06	320	4.3	250	3.4	120	2.0	3.9	3.0
07	300	5.2	240	3.6	110	2.5	4.6	3.2
08	290	5.6	220	4.0	110	2.7	5.4	3.3
09	290	5.7	210	4.2	110	2.9	5.4	3.3
10	310	5.4	210	4.3	110	3.0	6.2	3.1
11	340	5.2	200	4.3	110	3.0	5.7	3.1
12	370	5.4	220	4.2	110	3.0	5.1	3.0
13	370	5.3	220	4.2	110	3.0	5.4	2.9
14	350	5.4	230	4.2	110	3.0	5.4	3.0
15	340	5.4	230	4.0	110	2.9	5.0	3.0
16	310	5.4	240	3.8	110	2.7	5.3	3.1
17	300	5.3	240	3.5	110	2.3	5.1	3.1
18	290	5.5	260	3.0	—	1.8	4.4	3.1
19	260	6.0					4.6	3.1
20	260	5.6					5.4	3.0
21	260	5.6					4.5	3.0
22	260	4.6					4.3	2.9
23	270	4.2					4.5	3.0

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 42

Tokyo, Japan (35.7°N, 139.5°E) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.9					4.0	3.0
01	280	3.4					4.0	3.0
02	270	3.5					3.0	3.0
03	270	3.4					3.3	3.0
04	270	3.2					3.0	3.0
05	260	3.5	---	---	---	---	3.2	3.1
06	260	4.5	240	3.4	120	2.0	3.5	3.2
07	280	5.6	230	3.7	110	2.3	4.4	3.2
08	280	5.8	220	4.0	110	2.7	4.9	3.3
09	300	5.6	210	4.2	110	2.9	5.2	3.2
10	330	5.6	210	4.3	110	3.0	6.5	3.0
11	330	5.5	210	4.2	110	3.0	5.9	3.1
12	340	5.6	200	4.4	110	3.2	5.1	3.0
13	340	5.8	220	4.3	110	3.2	6.0	3.0
14	330	5.8	220	4.2	110	3.0	5.3	3.0
15	330	5.9	230	4.2	110	3.0	5.0	3.0
16	300	5.7	240	3.9	110	2.6	5.0	3.1
17	290	5.8	240	3.6	120	2.3	5.0	3.1
18	270	6.0	260	3.0	---	---	4.5	3.1
19	250	6.7					4.5	3.2
20	240	6.0					4.0	3.2
21	260	5.3					4.5	3.0
22	280	4.4					4.8	3.0
23	270	4.1					4.5	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 43

Yamagawa, Japan (31.2°N, 130.6°E) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.9					4.4	2.9
01	310	3.8					4.0	2.8
02	300	3.6					3.5	3.0
03	300	3.0					3.0	3.0
04	310	3.0					2.8	2.9
05	300	3.2					3.2	3.0
06	260	3.7	——	——	——	1.5	3.2	3.1
07	280	5.4	250	3.4	120	2.1	4.2	3.3
08	270	5.7	240	3.9	110	2.6	5.0	3.4
09	300	5.3	210	4.1	110	2.8	5.4	3.2
10	350	5.5	220	4.2	110	3.0	5.8	3.1
11	350	5.6	220	4.3	110	3.1	5.8	3.0
12	360	5.9	210	4.3	110	3.2	6.4	2.9
13	350	6.3	220	4.4	110	3.2	6.6	3.0
14	360	6.2	220	4.3	110	3.3	5.2	2.9
15	350	6.6	240	4.2	110	3.0	5.5	3.0
16	320	6.4	240	4.0	110	2.9	4.9	3.0
17	300	6.7	240	3.8	110	2.6	5.2	3.2
18	280	7.0	250	3.3	110	2.1	5.8	3.2
19	260	6.4			——	——	5.8	3.3
20	250	6.0					4.5	3.2
21	260	4.8					3.9	3.1
22	290	4.1					3.9	3.0
23	300	3.9					4.2	2.9

Time: 135.0°E.
Sweep: 0.8 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 44

Wakkanai, Japan (45.4°N, 141.7°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.5					4.5	2.9
01	300	4.2					5.0	2.9
02	280	4.1					3.6	2.9
03	270	4.0					3.4	2.9
04	290	3.8					3.4	3.0
05	290	4.1	250	3.3	120	1.8	3.6	3.0
06	350	4.6	260	3.5	110	2.3	5.0	3.0
07	350	5.0	230	3.9	110	2.7	5.8	3.0
08	320	5.8	230	4.0	110	3.0	6.2	3.1
09	420	4.8	——	4.1	110	3.1	6.4	2.8
10	380	5.2	240	4.2	110	3.2	6.9	2.8
11	380	5.3	200	4.2	110	3.2	6.6	2.8
12	420	4.8	230	4.3	110	3.2	6.5	2.7
13	420	4.9	240	4.2	110	3.2	5.5	2.8
14	430	4.8	240	4.2	110	3.2	5.4	2.7
15	380	4.9	240	4.0	110	3.0	6.3	2.8
16	350	5.0	240	3.9	110	2.8	6.4	2.9
17	350	4.8	250	3.6	110	2.4	6.6	3.0
18	300	6.3	250	3.4	120	2.0	5.5	3.0
19	290	5.6					5.5	3.0
20	270	5.9					5.6	3.0
21	280	5.7					5.5	3.0
22	270	5.2					4.5	2.9
23	280	4.9					4.7	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 2 minutes.

Table 45

Akita, Japan (39.7°N, 140.1°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.2					4.3	2.8
01	290	4.0					4.5	2.9
02	280	4.0					4.2	2.9
03	280	3.6					4.1	2.8
04	270	3.4					3.5	2.9
05	300	3.7	250	2.9	120	1.5	3.3	3.0
06	320	4.4	250	3.4	110	2.3	4.3	3.0
07	300	5.4	250	3.6	110	2.5	5.6	3.2
08	340	5.0	260	3.9	110	2.8	6.8	3.1
09	340	5.2	220	4.0	110	3.0	7.1	3.1
10	340	5.3	230	4.1	110	3.0	6.5	3.0
11	470	5.2	210	4.1	110	3.1	6.4	2.8
12	360	5.2	230	4.1	110	3.1	6.5	3.0
13	380	5.2	230	4.1	110	3.0	5.8	2.9
14	380	5.0	220	4.0	110	3.0	5.2	2.9
15	370	5.0	230	3.9	110	2.9	5.0	2.9
16	350	5.0	230	3.8	110	2.8	5.5	2.9
17	350	5.0	250	3.5	110	2.4	7.0	3.0
18	310	5.2	250	3.2	120	1.9	5.8	3.0
19	270	5.9	——	——			5.6	3.1
20	260	5.7					4.2	3.1
21	280	5.1					5.3	3.0
22	280	4.6					4.3	2.9
23	280	4.4					4.4	2.8

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 46

Tokyo, Japan (35.7°N, 139.5°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.2					4.0	3.0
01	280	4.0					3.8	2.9
02	280	3.6					3.8	2.9
03	290	3.6					3.2	2.9
04	260	3.6					3.0	3.0
05	250	3.7	250	2.4	——	——	3.0	3.1
06	310	4.6	240	3.4	120	2.0	2.9	3.2
07	300	5.6	240	3.8	110	2.5	5.3	3.2
08	300	5.6	220	4.0	110	2.8	6.8	3.2
09	310	5.6	220	4.2	110	3.1	6.1	(3.2)
10	340	5.6	210	4.2	110	3.2	7.0	(3.0)
11	——	——	210	——	110	3.3	6.7	——
12	340	5.7	230	4.2	110	3.3	6.5	(3.0)
13	360	5.7	220	4.3	110	3.2	6.8	2.9
14	360	5.3	220	4.2	110	3.1	6.4	3.0
15	340	5.8	240	4.0	110	3.0	6.9	2.9
16	320	6.0	240	3.9	110	2.8	6.3	3.0
17	300	5.8	230	3.5	110	2.4	7.0	3.0
18	290	6.1	250	3.2	120	1.9	5.5	3.0
19	250	6.5					4.5	3.2
20	250	6.0					4.0	3.1
21	260	4.8					4.2	3.1
22	290	4.4					4.0	2.9
23	280	4.0					4.0	2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 47

Yamagawa, Japan (31.2°N, 130.6°E) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.8					3.8	3.1
01	290	4.1					4.0	(3.0)
02	260	4.1					4.3	3.0
03	260	3.8					3.4	3.1
04	260	3.6					3.0	3.2
05	260	3.4					2.8	3.2
06	240	4.0	240	——	110	1.8	3.5	3.3
07	270	5.1	240	3.6	100	2.2	4.2	3.3
08	260	5.4	230	3.9	100	2.6	5.0	3.4
09	300	5.3	210	4.1	100	3.0	5.7	3.3
10	350	5.2	220	4.2	100	3.1	6.2	3.1
11	380	5.3	210	4.3	110	3.2	6.0	3.0
12	350	5.5	200	4.3	110	3.3	6.0	3.0
13	320	5.4	200	4.3	100	3.4	5.2	3.1
14	350	5.9	220	4.2	100	3.3	5.8	2.9
15	340	6.4	220	4.1	100	3.2	5.6	3.0
16	320	6.8	200	3.9	100	3.0	5.5	3.1
17	300	6.6	220	3.7	100	2.7	5.6	3.1
18	270	6.8	250	3.5	110	2.3	4.9	3.2
19	240	6.3	230	——	110	1.9	4.8	3.3
20	240	5.5					4.6	3.3
21	250	4.8					4.3	3.1
22	260	4.5					3.8	3.1
23	290	4.2					4.0	3.0

Time: 135.0°E.
Sweep: 0.8 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 48*

Port Lockroy (64.8°S, 63.5°W) July 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.1						2.9
01	280	2.2						3.0
02	270	2.1						3.0
03	275	2.0						2.9
04	270	2.0						3.0
05	250	2.0						3.1
06	230	1.6					1.1	3.2
07	230	1.5						(3.2)
08	(250)	1.7					1.6	(3.1)
09	225	2.7					3.0	3.4
10	220	3.5					3.1	3.5
11	215	3.7					3.5	3.5
12	215	4.0					4.2	3.6
13	210	4.0					2.3	3.6
14	215	3.8					2.8	3.5
15	220	3.6					1.7	3.5
16	225	3.1					1.3	3.3
17	230	2.5						3.2
18	240	2.0						3.2
19	265	1.8						(3.1)
20	280	1.7						2.9
21	290	1.8					2.0	2.8
22	290	2.0					2.1	2.9
23	290	2.0						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

Table 49*

Port Lockroy (64.8°S, 63.5°W) — June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.2						2.8
01	285	2.2						2.9
02	275	2.2						2.9
03	265	2.3						3.0
04	260	2.2						3.0
05	250	2.1					1.2	3.2
06	235	1.9					2.0	3.1
07	225	1.7					1.2	3.2
08	225	1.6					2.0	---
09	230	2.2					2.3	(3.6)
10	220	3.4					3.3	3.6
11	215	3.7					3.7	3.6
12	210	3.8					3.1	3.7
13	210	4.0					3.9	3.7
14	216	3.8					3.1	3.6
15	230	3.3					2.3	3.6
16	225	2.8					2.2	(3.4)
17	230	2.2					1.7	(3.3)
18	250	1.9						3.0
19	250	1.8					1.9	3.0
20	270	1.7						2.9
21	290	1.8					1.4	2.8
22	286	1.9						2.8
23	290	2.1						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

Table 50

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) — May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.7						3.1
01	270	2.8					1.9	3.0
02	250	2.8					1.8	3.1
03	250	2.8						3.1
04	240	2.8					1.4	3.3
05	240	2.6						3.1
06	240	2.5					3.0	3.2
07	220	4.7			---	1.8		3.5
08	230	5.8	220	2.8	120	2.3		3.6
09	250	6.3	210	3.9	110	2.7		3.4
10	260	6.8	210	4.1	110	2.9		3.4
11	260	6.8	210	4.2	110	3.1	3.6	3.4
12	270	6.8	210	4.2	110	3.1	3.6	3.4
13	270	6.4	210	4.2	110	3.1	3.8	3.3
14	270	6.5	200	4.0	110	3.0	3.7	3.3
15	260	6.7	220	3.9	110	2.8	3.4	3.3
16	240	6.6	230	3.4	120	2.4	3.1	3.4
17	220	5.8			120	1.9	2.6	3.6
18	220	4.8						3.4
19	220	3.2					1.9	3.4
20	240	3.1						3.2
21	230	3.5						3.3
22	230	3.0						3.4
23	240	2.9						3.2

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

Table 51

Capetown, Union of S. Africa (34.2°S, 18.3°E) — May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.6						3.0
01	270	2.8						3.0
02	260	2.7						3.0
03	260	2.9						3.0
04	250	3.0						3.0
05	240	2.9						3.2
06	240	2.6						3.1
07	230	2.5						3.2
08	220	4.8	---	---	140	1.8		3.5
09	230	5.6	220	3.0	120	2.3		3.6
10	250	6.0	220	3.7	110	2.7		3.5
11	250	6.4	210	4.0	110	2.9	3.3	3.4
12	260	6.7	210	4.1	110	3.0	3.4	3.3
13	260	6.4	200	4.1	110	3.0		3.2
14	270	6.9	210	4.0	110	2.9	3.4	3.2
15	260	7.0	220	3.8	120	2.8	3.2	3.3
16	240	7.0	220	3.6	120	2.4	2.6	3.4
17	220	6.0	230	2.4	120	2.0		3.4
18	210	4.8					1.9	3.5
19	220	3.1					1.8	3.3
20	250	3.1					1.6	3.2
21	230	3.0						3.3
22	230	2.9						3.4
23	240	2.6						3.3

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

Table 52*

Port Lockroy (64.8°S, 63.5°W) — May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.2						2.8
01	300	2.3						2.8
02	285	2.3						2.8
03	280	2.4						2.9
04	270	2.3						2.9
05	265	2.3						3.1
06	230	2.2						3.2
07	220	2.0					0.8	(3.3)
08	230	2.1					1.4	3.3
09	210	3.6					1.4	3.5
10	205	4.4					2.2	3.6
11	210	4.8					1.9	3.7
12	205	4.9						3.7
13	205	4.8						3.8
14	205	4.6						3.7
15	210	4.3					1.8	3.7
16	215	3.6					1.6	3.6
17	225	3.6					1.3	3.5
18	230	2.7						3.4
19	255	2.2						(3.0)
20	265	2.2						3.0
21	295	2.1						2.9
22	300	2.1						2.8
23	310	2.2						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

Table 53*

Port Lockroy (64.8°S, 63.6°W) — April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9						2.7
01	285	2.9						2.8
02	290	2.7						2.8
03	275	2.7						2.8
04	276	2.7						2.8
05	265	2.6						2.9
06	250	2.6					1.0	3.0
07	230	3.6					1.8	3.3
08	216	4.6			(110)	(1.6)	2.0	3.6
09	216	5.6			(110)	(1.9)	3.0	3.7
10	215	6.0			(105)	(2.1)	3.4	3.7
11	216	6.4			(115)	(2.1)	3.0	3.8
12	220	6.6			(105)	(2.1)	1.7	3.7
13	215	6.3			(110)	(2.3)	2.6	3.8
14	215	6.1			(105)	(2.2)	1.8	3.8
15	210	5.6			(110)	(2.0)		3.8
16	210	5.2			(115)	(2.0)	1.4	3.7
17	216	6.2					1.4	3.6
18	225	4.8					1.4	3.6
19	235	4.0						3.2
20	255	3.5						3.1
21	270	3.1						2.9
22	280	3.0						2.8
23	300	2.9						2.8

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.
*Average values except foF2 and fEs, which are median values.

Table 54*

Port Lockroy (64.8°S, 63.6°W) — March 1953#

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---						
01		---						
02		---						
03		---						
04		---						
05		---						
06		---						
07		---						
08		(4.3)					(3.8)	
09		(4.2)					(3.7)	
10		---					(3.2)	
11		---					(6.3)	
12		(6.0)					4.3	
13		---						
14		(6.6)						
15		(5.1)						
16		(4.8)						
17		(6.0)						
18		(5.4)						
19		(6.4)						
20		(5.6)					(3.1)	
21		(4.4)					(2.0)	
22		(4.3)						
23		(4.1)						

Time: 60.0°W.
Sweep: 1.1 Mc to 16.0 Mc, manual operation, March 1st through 13th; 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation, March 30 and 31.
*Average values except foF2 and fEs, which are median values.
#No observations made, 14th through 29th.

TABLE 55

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

IONOSPHERIC DATA

Form adopted June 1946

h'F2 (Characteristic), Km (Unit), March (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Scaled by: F. J. Mc C., J. W. P.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

Calculated by: F. J. McC., J. W. P.

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	300	280	280	270	270	280	270	230	240	[260]M	270	280	300	270	300	260	250	240	230	210	230	(270)S	(240)S	(260)S
2	270	(280)S	280	(290)S	(250)S	(240)S	[240]S	250	240	350	330	370	340	310	330	[320]M	270	250	230	240	(260)S	(300)S	[300]A	(290)S
3	S	S	(300)S	260	260	(250)S	(260)S	240	240	(300)L	270	290	310	290	290	300	(270)L	240	230	250	260	270	280	270
4	270	280	(280)S	(300)S	290	S	S	260A	(270)L	290	330	350	290	290	320	290	280	270	230	240	230	280	290	290
5	280	270	260	270	260	(270)S	[290]S	240	260	270	300H	300	290	270	290H	280	280	250	230	250	(260)S	270	(270)S	(280)S
6	(280)S	(280)S	(270)S	(260)S	(280)S	(260)S	(290)S	240	260	300	280	[290]A	300	[300]N	290	270	270	260	240	(230)S	240	280	(280)S	(260)S
7	(300)A	(300)A	(280)S	(290)A	250	240	270	250	270	250H	280	320	290	310H	290	270	270	250	230	230	(260)S	(270)S	(280)S	[290]S
8	290	(270)S	270	260	(240)S	(270)S	(270)S	260	270	(320)L	310H	300	270	270	290	280	270	250	240	230	240	240	260	270
9	(280)S	280	290	300	250	[270]S	(290)S	250	(250)L	G	G	320	330	350	320	290	290	250	230	(340)S	A	A	S	S
10	S	S	(260)S	(260)S	230	(280)S	(280)S	250	280	270	300	320	280	310	280	280	260	260	240	240	(250)S	(260)S	(240)S	(270)S
11	(310)S	(300)S	(280)S	(300)S	(290)S	(300)S	[280]S	250	310	280	320	280	310	280	330	290	280	[260]M	240	240	240	240	250	(270)S
12	(300)S	300	290	280	270	(270)S	(260)S	230	280	310	330	340	320	320	310	320	290	290	250	240	250	240	250	260
13	(270)S	(300)S	290	260	240	(250)S	(260)S	240	280	290	300	360H	290	290	310	300	280	250	240	(240)S	(250)S	270	250	270
14	(290)S	(260)S	280	(300)S	(310)S	280	270	250	(280)L	350	350	350	350	340	310	290	280	(260)L	240	250	270	(270)S	(270)S	(270)S
15	(290)S	(240)S	(270)S	[320]A	300	280	[270]S	(260)L	270	270	(320)H	[340]C	370H	290	C	C	C	260	250	240	230	260	260	(290)S
16	(290)S	(300)S	(300)S	E	E	E	(280)S	(260)L	(290)L	300	320	360	300	320	300	310	300	260	240	230	240	250	260	(280)S
17	(280)S	(280)S	(290)S	270	250	(280)S	(250)S	240	(280)L	280	290	300	300	330	310	290	290	250	240	240	270	(290)S	270	250
18	(280)S	(290)S	(270)S	270	(270)S	(290)S	(280)S	(270)L	(420)S	400	400	340	340	320	300	320	300	260	250	240	(250)S	(270)S	290	(300)S
19	(310)S	(300)S	280	(280)S	C	C	C	260	270	360H	360	390	340	350	340	310	290	260	240	(240)A	(250)S	(270)S	(260)S	(270)S
20	(280)S	(280)S	250	270	270	(300)S	(270)S	(290)L	380H	340	330	310	300	320	310	280	290	260	240	250	240	270	290	(270)S
21	(260)S	260	280	270	280	280	290	(340)L	L	G	440	370	380	340	310	340	330	280	250	240	(240)S	(280)S	280	(300)S
22	[300]S	(300)S	270	(270)S	260	(290)S	270	240	280	360	330	320	310	310	300	300	370	260	240	250	220	(270)S	280	S
23	S	(300)S	(290)S	(280)S	(270)S	[280]S	(290)S	240	G	470	G	G	450	410	410K	450K	440K	350K	280K	260K	260K	260K	240K	(300)SK
24	(310)SK	SK	SK	S	(310)S	[300]S	(300)S	G	G	L	340	380	400	350	360	310	300	270	240	270	260	(270)S	(300)S	(310)S
25	(280)S	(260)S	(250)S	(270)S	S	E	(290)S	(300)L	380	350	350	340	320	330	340	340	310	280	350	240	220	(250)S	(260)S	(290)S
26	(290)S	(330)S	290	270	250F	[250]S	250	250	300	300	330	320	320	320	330	300	300	270	230	220	230	(250)S	300	(310)S
27	(300)S	280	270	240	(270)S	(310)S	260	250	280	290	300	290	300	310	290	300	280	250	230	220	(220)S	250	(270)S	(300)S
28	(320)S	(310)S	(290)S	260	250	250	240	240	250	310	300	330	330	310	300	280	270	260	(270)A	C	C	C	C	C
29	270	280	280	270	270	(290)S	250	260	270H	280H	300	310	290	A	A	(350)A	300	[270]A	(240)A	(230)A	260	260	260	250
30	280	270	280	250	250	260	230K	230K	290HK	310HK	350HK	350HK	GK	430K	420K	400K	380K	300	(290)L	270	240	250	(240)S	(280)S
31	S	S	S	S	S	(300)S	(240)S	(280)L	(370)H	G	G	G	G	G	550	430	390	320	260	250	260	270	270	310
Median	(290)	(280)	280	270	270	(280)	(270)	250	280	300	330	330	310	320	310	300	290	260	240	240	250	270	270	(280)
Count	27	27	29	29	28	29	29	31	30	30	31	31	31	30	29	30	30	31	31	30	29	29	29	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 56

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

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), March (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1° W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. McC., J.W.P.

Calculated by: F. J. McC., J.W.P.

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	2.4F	2.3F	2.5F	2.5F	2.6	2.6F	2.5	3.9	4.3	[4.7]M	5.1	5.4	5.5	5.4	5.4	5.4	5.2	5.0	5.2	4.4	3.5	3.0	2.9	2.7
2	2.5	2.7F	2.6F	(2.9)F	(3.0)F	(2.4)F	(1.8)F	3.3	3.6	4.3	4.7	4.7	4.8	5.0	5.0	[5.0]M	4.9	4.6	4.2	3.1	2.5F	2.3	2.5	2.4
3	(2.0)S	2.2	2.4	2.5	2.8	2.4F	2.2	4.1	4.7	5.0	5.0	5.4	5.8V	6.0JS	5.4	5.0	5.0	5.0	4.6S	3.9S	3.5	3.4	3.3	3.2
4	3.1S	2.9	2.4	2.0	2.1	(1.8)FS	1.8	3.5	(4.6)SF	5.0	4.8	5.0	5.7	5.4	5.1JS	5.2	5.4	5.3	5.2S	4.3S	3.6	3.2S	2.6	2.7
5	2.9	3.1S	2.9	2.7	2.5S	2.1F	2.0	3.4	4.5	4.9	5.0H	5.8	5.8	5.7	5.5H	5.6	6.0	5.6	4.9	4.3	3.9	3.6	3.1	2.8
6	2.8	(3.0)FH	2.5	2.3F	2.4F	2.3F	(2.1)F	3.4	4.3	4.7	5.3	(4.9)A	5.8	[5.4]N	5.7	5.6	5.0	5.1	4.9	4.0	3.5	2.8	2.9	2.8
7	(2.5)S	2.6F	2.8F	2.8	(2.7)F	2.6	2.0F	4.1	4.9	5.2H	5.6	5.4	5.8	(5.8)H	5.4	5.7	5.4	5.4	4.7	4.5	3.4F	(2.9)FS	(2.6)F	(2.4)F
8	(2.5)F	(2.2)F	(2.5)F	(2.9)F	2.6F	2.3	2.4	3.5	4.5	4.5	(4.2)H	5.2	5.6	5.2	5.2	5.2	5.2	5.0	4.9	4.9	4.3	3.5	3.0	2.6
9	2.6	2.6	2.5	2.3	2.3	(1.6)JS	(1.9)S	3.0	3.6	<3.6G	<3.9G	4.7	4.9	4.8	5.4	6.2	5.4	5.0	4.1	3.0	(2.6)A	[2.2]A	(1.9)A	1.9
10	1.9	1.8	2.0	1.9	2.2	2.0	2.3	3.9	4.7	5.0	5.1	5.8	6.2	5.3	6.2	5.6	5.8	5.2	5.9	4.7	4.2	3.8	3.5	3.0
11	2.7	2.7	2.6	2.3	2.2	(1.9)S	1.9	3.5	4.3	5.0	5.0	5.5	5.5	5.8	5.2	5.2	5.2	[5.1]M	5.0	4.5	4.2	3.6	3.0	2.2
12	2.1	2.1	2.4	2.4	2.4	2.3	2.2	3.6	4.3	4.8	5.0	5.4	5.4	5.4	5.4	5.0	5.4	5.0	4.9	4.2	3.8	3.5	3.1	2.9
13	2.5	(2.4)FS	2.6F	(2.8)F	(2.8)FS	(2.2)FS	(2.5)S	4.1	4.9	4.8	5.1	5.5H	6.5	6.2	6.2	5.7	6.2	6.0	4.8	5.2	4.4	4.1	3.8	3.2
14	2.7	2.7	2.2FS	(2.1)PS	2.4	2.4	2.4	3.4	3.8	4.3	4.7	5.1	5.4	6.8	6.0	5.4	5.0	4.9	4.9	4.2	3.8	3.3	3.1	2.8
15	2.6	2.7	2.2	[2.0]A	(2.2)S	(1.9)S	(2.1)FS	3.8	4.5	5.4	(5.0)H	[5.1]C	5.2H	5.6	C	C	C	5.2	5.3	5.3	4.3	3.8	3.1	2.8F
16	2.5F	2.5F	(2.5)FS	E	E	E	(2.1)F	3.9	4.3	5.1	4.6	5.1	5.8	5.5	5.6	5.4	5.3	5.2	5.0	4.0	3.8FS	3.3FS	(2.7)FS	(2.6)FS
17	2.5FS	(2.5)FS	(2.5)FS	(2.3)FS	2.4FS	(2.2)FS	(2.6)FS	4.2	4.8	5.6	5.8	6.0	6.2	5.7	6.4	6.7	6.4	6.0	5.2	5.6	3.7	3.9	3.8	3.4
18	2.9	2.8F	2.3F	2.3F	2.0F	2.1F	2.5F	(3.4)JS	(3.8)PS	4.2	4.3	4.9	5.0	5.4	5.7	5.4	5.5	5.0	4.4	4.0	3.2	2.8	2.6	2.3
19	2.1	1.9	2.0	(2.0)F	C	C	C	4.1	4.5	4.7H	4.8	5.0	5.4	5.3	5.7	5.4	5.2	5.2	4.7	4.3	(3.9)S	3.6	3.2	2.8
20	2.5	2.5	2.5	2.4	2.4F	2.4	(2.6)S	3.7	(4.2)H	4.5	5.2	5.5	5.8	5.8	6.1	6.3	5.6	5.6	5.3	5.4	4.5	3.4	3.2	3.2
21	2.8	2.5	2.3	2.1	2.2	2.2	2.5	3.5	3.7	<3.1G	4.3	4.7	4.8	5.0	5.2	4.9	5.0	5.0	4.7	4.7	3.4	2.9	2.7	2.4
22	2.2	2.2	2.5	(2.5)S	2.3	2.3F	2.6	3.7	4.2	4.7	5.2	5.6	5.8	5.8	5.9	5.8	5.0	6.2	5.4	5.0	4.5	2.8	2.4	2.2
23	2.2F	2.1F	(2.0)F	2.0F	1.9	1.8JS	2.4	3.2	<3.7G	4.0	<3.7G	<3.9G	4.3	4.4	4.5K	4.2K	4.2K	4.3K	3.8K	4.0K	3.7K	(3.3)SK	3.1K	2.8K
24	2.6K	2.4K	(1.8)FK	[1.8]S	1.7	1.6JS	(2.3)S	<3.3G	<3.6G	4.2	4.7	4.7	4.9	5.2	5.5	5.6	5.3	4.9	4.3	3.7	3.5	3.0	(2.7)S	(2.7)PS
25	(3.0)FS	(2.8)PF	[2.6]FS	F S	F S	E	2.4	4.0	4.7	4.8	4.7	5.0	5.2	5.2	5.1	5.0	5.0	(5.1)S	4.9	4.8	(4.1)S	3.0	2.6FS	(2.5)FS
26	2.4	(2.4)PF	2.4F	[2.3]F	(2.2)PF	(2.0)PF	(2.8)PF	4.4	4.9	5.0	5.3	5.8	5.8	6.0	5.6	6.3	6.3	6.6	6.1	5.0	3.7	2.8	2.5FS	2.6FS
27	2.5	2.5	2.4	2.3	2.0	2.0	3.1	4.7	5.5	6.0	5.8	5.5	5.4	5.9	6.2	6.1	6.7	6.9	6.4	4.9	3.3	2.8	2.4	2.2
28	2.1	2.2	2.2	2.3	2.3	2.3F	3.1	4.1	4.6	5.0	5.2	5.3	5.5	5.8	6.0	6.2	6.2	6.0	5.6	C	C	C	C	C
29	2.8	2.8	2.7	2.5	2.3	2.4	3.1	4.5	5.0H	5.0H	5.0	5.3	(5.1)P	A	A	5.4	5.7	5.8	5.6	5.3	4.7	4.1	3.8	3.5
30	3.1	3.1	2.9	3.1	2.8	2.7	3.3K	K(4.1)JS	4.9HK	5.0HK	5.0HK	4.8HK	<4.2GK	4.6K	4.5K	4.3K	4.6K	5.0	4.8	5.4	5.5	3.8	(3.1)PS	(2.2)S
31	(1.9)PS	(1.7)JF	[1.7]FS	(1.7)JF	(2.0)PS	(2.3)FS	(2.7)PF	(3.4)JF	3.8H	<4.0G	<4.0G	<4.0G	<4.1G	<4.1G	4.1	4.2	4.2	4.2	4.0	3.7	3.3F	3.0F	2.7F	2.2F
Median	2.5	2.5	2.5	2.3	2.3	2.2	2.4	3.7	4.5	4.8	5.0	5.2	5.5	5.4	5.5	5.4	5.3	5.1	4.9	4.4	3.8	3.3	3.0	2.7
Count	31	31	31	30	29	30	30	31	31	31	31	31	31	30	29	30	30	31	31	30	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 57

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), March (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.McC., J.W.P.

Calculated by: F.J.McC.,J.W.P.

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	22F	25F	26	26	(28)JF	25	27	43	50	[52]M	54	56	55	54H	55	52	50	50	50	39S	(33)S	29	(28)S	26
2	25	28	(29)F	(31)F	[26]FH	(21)F	24	36	40G	43	46	49	47	50	50	50	47	47	36	30	24	25	25	22F
3	19	24	25	27F	27	23	30	44	50	53	55	50	60	58	51P	52	40	47	47	38	34	33	32S	31
4	32	27	22	19S	20F	19	25	41	46S	50	48	54	59	52	52	52	54	55	48JS	43	30	29	26	28
5	31	29	28	26	22	19F	27	41	43	48	54	55	55	57	55	56H	60	52	45	42	37	(32)S	28	28
6	27F	28F	25F	(25)F	23	21JF	27	41	45H	49	49	53	58	54	57	50	50	52	46	37	30	28	29	26
7	25F	(27)S	27JH	26F	24	21F	30	47	50	50H	52	58	(52)H	60	56	58	56	51	45	37	(32)S	(27)F	(25)F	(24)F
8	(23)F	(24)F	(26)F	(27)F	25F	24	30	40	42	52	49H	55	54	52	54	53	48	49	48	48	40	31	28	26
9	25	26	23	24	21	(18)S	25	32	38	40JS	40G	(44)H	47	51	55	54H	54	46	56	20	A	A	[illegible]	19
10	18	19	19	21	19	20	31	45	49	52	50	60	58	59	59	58	54	50	41	45	40	37	30	28
11	27	27	(24)S	23	22F	18	27	38	48	48	51	53	55	54	57	52	52	[5[illegible]]M	50	[illegible]	38	30	25	21
12	20	24	24	24	24	22	30	38	45	49	52	53	50	56	51	52	50	50	49	40	35	33	30	27
13	(23)A	(23)PF	27F	(25)FS	24F	(23)FS	33	43	53	50	55	60	60	61	58	58	62	53	(47)JS	49	43	44	37	31
14	27	23F	(20)FS	21	24	23	31	37	39	46	48H	50	55	60	58	51	47	51	46	30	36	34	31	28
15	25	22	(20)PS	21	(20)PS	(19)PS	31JS	44	48	56	50	C	C	C	C	55	(57)T	50	50	47	37	35	30	27F
16	25F	(24)F	25F	E	E	E	32	44	45	50	58H	55	54	54	53	53	55	44	47	53	35FS	30F	26FS	26FS
17	25FS	(22)FS	(24)FS	(22)FS	(22)FS	(23)FS	37	46	50	55	58	63	59	60	66	64	62	58	51	52	34	35	36	27
18	27	25	23F	22F	(21)FS	(21)JF	32	37	39	(43)PS	45	51	51	54	55	55	54	47	42	36	31	27	[illegible]	21
19	20	20	21	19F	C	C	C	46	45	48F	47	53	54F	55	55	54	51	50	45	42	37	35	30JS	24
20	24	25	27	24F	23	24	32	40	45H	47	(52)H	56	57	62	63	60	57	54	49	47	40	33	31	30
21	27	24	22	21	22	22	31	38	36G	41	45	48	50	52	50	49	50	50	44	38	32	28	25	23
22	22	24	25	24	23	22F	34	41	45	50	54	58	60	61	52	52	58	58	47	55	32	26	22	22
23	23F	22	(21)F	20	19	18	29	37	35G	38G	35G	41	45	44	43A	41A	42K	42K	41A	43K	37K	33	26A	27A
24	24A	20FA	(16)FA	15JS	16JS	(17)FS	25	34G	36G	43	42	48	53	53	50	53	52	49	38	37	32	27	(26)S	(30)JF
25	(29)PF	(27)PF	(24)FS	FS	E	FS	33	45	48	[illegible]	48	48	51	51	50	50	51	52	47	49JS	(34)S	27JF	(25)JF	(24)FS
26	FS	(25)FS	(24)FS	[23]F	22FF	(21)FF	28F	47	50	51	56	56	[illegible]	[60]C	[illegible]	[illegible]	67	[illegible]	56	43	33	26	25FS	24
27	25	25	25	21	19	22	43	48	55	58	56	52	58	62	62	65	68	68	59	40	27	[illegible]	25	22
28	21	22	24	23	23	23	37	44	45	[illegible]	5[illegible]	55	57	58	60	63	60	59	60	C	C	C	C	C
29	28	27	26	24	23	25	40	47	52	45	[illegible]	55	52	A	A	54	58	[57]A	57	50	55	39	36	32
30	31	29JS	30	30	26	27	42A	45K	49K	46H	49K	43K	46PH	48K	(45)PS	44K	49K	49	49	58	(46)FS	35	23	20
31	[19]S	(19)PF	FS	FS	(21)FS	(24)PF	(29)F	(38)H	(43)H	41G	40G	41G	42	41G	42	42	42	41	38	35F	30F	28F	24F	(21)F
Median	25	25	24	23	22	22	31	41	45	48	49	53	55	54	55	53	54	50	47	42	34	30	26	[illegible]
Count	30	31	30	29	30	29	30	31	31	31	31	30	30	29	29	31	31	31	31	30	29	27	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 58

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

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), March (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.McC., J.W.P.

Calculated by: F.J.McC., J.W.P.

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 59

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

Form adopted June 1946

IONOSPHERIC DATA

foF1 (Characteristic), Mc (Unit), MARCH (Month), 19 54

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F. J. Mc C., J. W. P.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: F. J. Mc C., J. W. P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	M	4.0	4.1^{H}	4.1	4.1	4.0	3.8	L	Q						
2								L	L	3.7	3.9^{H}	4.0	4.0	4.0^{H}	3.9	[3.8]^{A}	3.5	L						
3								Q	L	(3.7)^{L}	3.9	4.0^{H}	4.1	4.0	4.0^{H}	3.9	L	Q						
4								Q	L	3.7^{F}	3.9^{H}	4.1^{H}	4.1^{H}	4.1^{H}	4.0	3.8	3.5^{H}	L						
5								Q	L	L	(4.0)^{F}	4.0	4.0	4.1	4.0	[3.8]^{L}	3.5	L						
6								Q	L	3.6	3.7	[3.8]^{L}	4.0	[4.0]^{H}	4.0	3.8^{H}	L	L						
7								Q	L	3.6	(3.9)^{F}	4.0	4.1	4.3	4.1	3.7^{H}	L	L						
8								Q	L	L	4.0	4.0	4.2^{H}	4.2^{H}	4.1	3.8^{L}	L	L						
9								Q	L	3.6	3.9	3.9^{K}	4.0^{H}	3.9	4.0	3.7	3.5^{H}	L						
10								Q	L	3.7	4.0	4.0	4.1^{H}	4.1	4.0	3.8	L	L						
11								Q	(3.3)^{L}	3.7	4.0^{H}	4.0^{H}	4.1	4.1^{H}	4.0	(3.9)^{L}	L	M						
12								Q	L	3.7	4.0^{K}	4.1^{H}	4.2^{H}	4.0	4.0	3.8	3.5	(3.0)^{L}						
13								Q	L	(3.7)^{L}	4.0^{H}	4.1^{H}	4.0^{H}	(4.2)^{H}	4.1	3.8	3.6	L						
14								Q	L	(3.6)^{H}	3.9	4.0	4.1	4.0	3.9	3.8	(3.5)^{L}	L						
15								L	L	3.7	4.0	[4.1]^{C}	4.2	4.2	C	C	C	L						
16								L	L	3.8	4.0^{H}	4.1^{H}	4.1	4.2	4.1	3.9	L	L						
17								L	L	3.8	4.0	4.2	4.2^{H}	4.1^{H}	4.1	4.0	L	L						
18								L	3.4	3.7^{H}	3.8^{H}	3.9	4.1^{H}	4.0^{H}	4.0^{H}	3.9^{H}	3.5	L						
19								L	L	3.9^{H}	(4.1)^{H}	4.1	(4.2)^{H}	4.2	4.1	4.0	L	L						
20								L	3.8^{H}	3.9^{H}	4.0	[illegible]	4.2	4.2^{H}	4.2^{H}	4.0^{H}	3.5	L						
21								(3.0)^{L}	3.5	3.7	3.8	4.0	4.1	4.1	4.1^{H}	(3.9)^{S}	3.7	L						
22								Q	3.5	4.0	4.1	4.1	4.2	4.2^{H}	(3.8)^{H}	4.0	3.7	L						
23								Q	3.7	3.7	3.9^{H}	3.9	3.9	3.9	3.4^{K}	3.8^{K}	3.6^{K}	3.3^{K}						
24								3.3	(3.6)^{S}	3.7^{H}	3.9	4.1	4.1^{H}	4.0	4.0^{H}	3.9	3.6	L						
25								L	L	3.8	3.9	4.1	4.2	4.1	4.0^{H}	(3.9)^{A}	(3.7)^{L}	L	L					
26								L	L	L	3.9	4.1^{H}	4.2^{H}	4.2^{H}	4.1^{H}	4.0	3.7	L	L					
27								Q	L	(3.8)^{L}	4.0	4.3	4.2^{H}	4.2^{H}	4.0^{H}	4.0	3.8^{F}	L	Q					
28								L	L	3.8	4.1	4.3^{H}	4.3^{H}	4.3	4.2	4.1^{A}	3.5	A						
29								L	L	3.9^{H}	4.2^{H}	4.1^{A}	A	A	A	A	A	A	A					
30								L^{K}	3.6^{HK}	3.9^{HK}	[illegible]	[illegible]	4.2^{HK}	(4.1)^{HK}	4.0^{K}	3.9^{HK}	3.6^{HK}	(3.3)^{L}	L					
31								L	(3.4)^{H}	4.0^{H}	(4.0)^{F}	4.0^{H}	4.1^{H}	4.0^{H}	3.9^{H}	3.8^{H}	[illegible]	3.2	L					
Median								—	3.5	3.7	4.0	4.1	4.1	4.1	4.0	3.9	3.6	—	—					
Count								2	9	27	[illegible]	31	30	30	29	29	19	4						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 60

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

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), March (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M^c C., J.W.P.,

Calculated by: F.J.M^c C., J.W.P.,

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 61

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

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), March (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. McC., J.W.P.

Calculated by: F. J. McC., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	A	M	A	3.0	3.0	2.9	2.9	2.6	(2.4)^{A}	1.9						
2								S	2.0	2.4	2.7	2.9	(3.0)^{P}	3.0	(2.9)^{B}	[2.6]^{M}	2.4	A						
3								A	A	(2.5)^{A}	2.7	(2.8)^{H}	2.7	(2.7)^{P}	2.7	[2.7]^{A}	2.4	(1.8)^{A}						
4								A	A	2.3	(2.4)^{A}	2.8^{F}	A	A	A	2.7	2.5	2.0						
5								S	A	A	A	A	A	2.9	[2.8]^{B}	2.8	2.5	2.1						
6								S	A	A	A	A	A	3.0	[2.9]^{A}	(2.8)^{A}	2.5	2.0						
7								S	2.1^{H}	A	A	(3.0)^{P}	[3.0]^{A}	3.0	3.0^{H}	2.8	2.5	A						
8								S	(2.6)^{P}	2.6	2.8	[2.4]^{A}	3.0	3.1	[3.0]^{B}	2.8	2.6	2.1						
9								S	2.2	2.5^{H}	[2.7]^{A}	(2.9)^{M}	(2.1)^{P}	2.9	[2.8]^{A}	2.7	2.4	2.0						
10								A	2.2	2.4	2.6^{A}	2.7	A	A	(2.9)^{P}	(2.8)^{P}	2.6	2.1						
11								1.7	2.2^{H}	2.6	2.9	2.9	A	A	2.9	2.8	2.5	M						
12								S	A	B	(2.6)^{P}	(3.0)^{P}	[2.9]^{A}	(2.8)^{P}	2.8^{H}	2.8^{H}	2.5^{F}	(2.0)^{A}						
13								S	(2.3)^{S}	(2.7)^{S}	B	B	3.0^{H}	3.0^{H}	(3.1)^{B}	2.8	2.5	2.1						
14								(1.9)^{S}	2.5^{H}	(2.3)^{A}	[2.6]^{A}	2.9	(3.0)^{A}	3.0^{H}	2.9	2.8	2.5	2.0^{A}						
15								(1.8)^{H}	A	2.6	(2.8)^{C}	[2.7]^{C}	3.0	C	C	C	C	2.1						
16								1.9	A	(2.6)^{F}	3.0	3.0	3.2	3.2	3.1	2.9	2.5	S						
17								A	A	2.6^{H}	2.7	3.0^{H}	(3.1)^{P}	3.0	3.0^{H}	2.9^{H}	2.6	2.1						
18								(1.6)^{J}	(2.4)^{H}	(2.6)^{H}	[2.8]^{B}	2.9	3.0^{H}	3.0^{H}	2.7	2.8	(2.5)^{A}	A						
19								A	A	(2.6)^{S}	2.9	(3.0)^{A}	3.1	A	A	(2.9)^{P}	(2.5)^{F}	2.2^{H}						
20								(1.8)^{P}	2.4^{H}	2.6^{H}	2.7	[2.9]^{A}	3.1	(3.1)^{P}	3.0^{H}	2.8	2.6	2.1						
21								(1.8)^{P}	[2.2]^{A}	2.7	3.0	3.1	3.1	3.1	3.0	A	A	2.1						
22								A	2.3	2.7	2.8	3.0	3.1	3.1	3.0	2.8	2.5	2.1						
23								1.9	2.4	2.7	2.9	(3.0)^{P}	3.1	3.0	(2.9)$^{A}_{K}$	2.8^{K}	[2.4]$^{A}_{K}$	[illegible]^{K}						
24								2.0	2.4	2.7^{H}	2.8	2.9	3.0	2.9	2.8	(2.7)^{P}	2.5^{H}	([illegible])^{A}						
25								A	2.3	(2.6)^{A}	[2.8]^{F}	(2.9)^{A}	(3.0)^{A}	2.9	2.9	2.7^{H}	(2.6)^{A}	[illegible]	S					
26								S	2.4	2.7^{H}	2.8^{H}	(3.0)^{A}	(3.0)^{P}	(3.1)^{H}	[3.0]^{A}	(2.8)^{A}	(2.6)^{F}	2.1^{H}	S					
27								1.8	2.3	2.5^{H}	2.7^{H}	(2.9)^{F}	(2.9)^{P}	[3.1]^{A}	[3.0]^{A}	2.8	(2.6)^{F}	2.1	S					
28								1.9	2.4^{H}	2.5^{H}	2.7	2.7	2.9	3.0	3.0	2.9	2.5	2.2	S					
29								1.9	2.3^{H}	2.4	(2.5)^{P}	3.0^{H}	3.1^{H}	3.0	3.0^{H}	(2.9)$^{P}_{K}$	2.6	2.2	S					
30								S^{K}	(2.6)$^{P}_{K}$	[2.4]$^{A}_{K}$	(2.7)$^{B}_{K}$	B^{K}	A^{K}	(3.0)$^{P}_{K}$	2.9^{K}	2.8^{K}	2.5^{K}	2.0^{H}	A					
31								A	(2.3)^{P}	2.4^{H}	2.8	2.8^{H}	2.9	3.0	(2.9)^{P}	[2.6]^{A}	2.4	2.1^{H}	S					
Median								1.8	2.3	2.6	2.7	2.9	3.0	3.0	2.9	2.8	2.5	2.1						
Count								12	21	26	26	27	25	26	28	29	29	[illegible]						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 62

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

IONOSPHERIC DATA

Form adopted June 1946

Es (Characteristic), Mc,KM (Unit), March (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F.J. McC., J.W.P.,

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: F.J. McC.,J.W.P.,

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	E	E	E	E	E	E	E	G	3.0/120	M	26/110	G	G	G	G	G	35Y/130	2.2/130	1.9/120	E	E	E	E	E
2	E	E	E	E	E	E	E	G	G	24/110	G	G	G	G	G	M	38Y H/110	24/120	E	E	E	E	21/110	3.0/110
3	E	E	E	E	E	E	E	19/120	33Y/110	2.7/120	23/120	2.6/110	22/110	2.0/110	G	2.8 H/110	3.0/130	2.4 H/110	E	E	E	23Y/110	E	E
4	24/100	22/110	E	25/100	E	E	E	3.3/120	21/120	24/120	36Y/120	23/110	43/110	3.6/110	38/100	G	G	18/110	E	E	E	E	E	E
5	E	E	E	49Y/110	E	E	E	G	32/120	39Y/110	4.8/110	37/110	3.7/100	G	2.4/110	G	G	G	E	E	E	18/110	22/100	27/110
6	E	E	E	E	23/110	E	24/110	G	24/110	2.6/110	38/110	60/100	66 H/100	74/130	4.2/100	2.7/100	G	G	E	E	E	E	E	3.1/110
7	30/110	4.0/110	38/110	37/110	2.8/110	E	E	G	G	2.9/110	32/110	G	42/100	G	G	G	G	20/100	E	E	E	E	E	E
8	E	E	E	E	E	E	E	G	G	2.7/120	38Y/110	3.9/110	G	G	G	G	G	G	E	E	23/120	2.3/110	2.2/110	E
9	E	E	E	E	E	E	E	G	2.3/130	G	2.9/110	G	G	G	28/110	G	G	G	E	E	39/110	6.6/110	50 H/110	E
10	E	E	E	E	E	E	E	1.7/140	G	2.9/120	40Y/120	40Y/110	30/110	28/110	G	31/120	G	G	E	E	E	E	E	E
11	E	E	E	E	E	E	E	G	G	G	G	28/110	2.7/110	2.8/110	3.0/120	G	G	M	E	E	E	24/110	30/110	E
12	E	E	24/110	E	E	E	E	G	22/110	G	G	G	30/120	3.0/120	30/130	G	G	21/120	E	E	E	E	2.7/120	3.5/110
13	3.8/110	3.1Y/120	3.0/120	2.7Y/120	E	30Y H/140	2.8/110	G	G	G	G	G	G	G	G	23/110	G	G	F	E	E	E	29/120	E
14	21/120	2.3/110	E	2.2/120	(24)S/110	2.2/120	E	G	G	28Y/120	3.2/110	G	2.9/110	G	G	G	G	G	E	E	E	E	E	E
15	E	E	25Y/110	2.8Y/110	2.7/110	E	E	G	23/120	23/110	G	C	G	C	C	C	C	G	E	E	E	23/120	E	3.2/110
16	E	E	E	E	E	E	E	G	2.4/130	25/120	G	G	G	G	G	G	G	G	18/130	E	E	E	E	E
17	E	E	E	E	E	E	22/130	1.9/120	2.3/120	G	G	G	G	G	G	G	G	G	(1.2)S/130	28/120	E	E	E	E
18	E	E	E	E	E	E	E	G	2.3/120	G	G	G	G	G	G	G	34Y/130	21/120	E	E	22Y/120	27Y/120	2.3Y/120	E
19	E	E	E	E	C	C	C	17/130	31Y/120	23/110	G	33/130	G	35Y/120	3.1/110	G	G	G	F	32/120	E	E	E	E
20	E	E	E	E	E	37Y/120	40Y/110	G	G	G	G	31Y/110	G	G	G	G	G	G	E	E	E	E	E	24/110
21	E	E	E	E	E	E	E	G	35Y/110	36Y/110	G	G	G	G	G	70Y H/110	24/120	G	F	28/110	22/110	2.7/110	E	E
22	E	E	E	E	E	E	E	1.8/120	2.2/110	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
23	E	E	E	E	E	E	28/130	G	G	G	G	G	3.5/120	35/130	35/130	G	31/120	G	E	E	E	E	E	E
24	E	E	E	E	E	E	2.3/130	G	G	G	G	36/130	G	G	G	G	G	21/130	E	E	E	2.3/120	E	E
25	E	E	45Y/120	E	E	E	E	31/120	G	5.0/120	41Y H/110	44/120	3.3/110	28/120	3.4Y/120	66/120	29Y (120)S	G	G	23/130	E	E	E	E
26	E	E	E	E	E	E	E	G	26/120	27/120	3.0/120	3.0/110	G	3.3Y H/130	3.0/110	2.7/110	G	G	1.7/130	E	E	E	E	E
27	E	E	E	E	E	25/130	E	23/130	25/130	28/120	35/130	36Y H/120	33Y/120	3.0/130	3.1/110	G	G	24/140	1.5/130	E	E	E	E	E
28	E	E	E	E	E	39Y/120	E	22/140	G	G	36/140	G	38/140	48/130	G	G	4.0/140	34/130	3.4/120	C	C	C	C	C
29	E	E	E	E	24/120	26/120	E	21/140	3.7/120	4.0/120	34/130	3.2/130	50/130	7.0/130	76/120	5.8/120	4.7/120	66/120	8.0/120	38/120	3.3/120	6.0/110	2.9/110	2.3/110
30	E	E	E	E	E	E	E	33/110	3.6/110	28/110	G	G	3.1Y/110	G	G	3.0/140	2.8/140	39/120	32/120	2.1/120	E	E	E	E
31	E	E	E	E	E	E	E	2.0/130	G	2.5/120	G	3.2/130	31/130	4.7/100	G	3.0/120	G	G	22/130	E	2.4/120	E	E	3.8/110
Median	**	**	**	**	**	**	**	**	22	24	**	**	2.2	**	**	**	**	**	**	**	**	**	**	**
Count	31	31	31	31	30	30	30	31	31	30	31	30	31	30	30	29	30	30	31	30	30	30	30	30

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 63

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ____ (Unit), March (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J. Mc C., J.W.P.

Calculated by: F.J. Mc C., J.W.P.

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	2.1^{F}	2.1^{F}	2.0^{F}	2.0^{F}	2.0	2.0^{F}	2.5	2.5	2.3	M	2.4	2.4	2.3	2.4	2.3	2.4	2.4	2.3	2.4	2.3	2.1	2.0	2.2	2.2
2	2.1	2.1^{F}	2.0^{F}	(2.0)^{F}	(2.0)^{F}	(2.3)^{F}	(2.3)^{F}	2.4	2.4	2.1	2.1	2.4	2.2	2.3	2.2	M	2.3	2.4	2.4	2.1	2.2^{F}	2.0	2.0	2.1
3	(2.0)^{S}	2.0	2.0	2.1	2.0	2.2^{F}	2.2	2.5	2.3	2.1	2.0	2.3	2.1^{L}	(2.2)^{S}	2.4	2.3	2.3	2.5	2.4^{S}	2.1^{S}	2.1	2.0	2.0	2.0
4	2.0^{S}	2.0	2.0	2.1	1.9	(2.1)$^{F}_{J}$	1.9	2.4	(2.4)$^{J}_{S}$	2.3	2.1	2.1	2.3	2.2	(2.3)$^{J}_{S}$	2.4	2.3	2.3	2.4^{S}	2.1^{S}	2.3	2.1^{S}	2.0	2.0
5	2.0	2.1^{S}	2.1	2.0	2.2^{S}	2.1^{F}	2.0	2.2	2.4	2.3	2.2^{H}	2.2	2.4	2.4	2.1^{H}	2.3	[illegible]	2.3	2.4	2.0	2.0	2.0	2.1	2.0
6	2.0	(2.0)$^{F}_{H}$	2.1	2.2^{F}	2.2^{F}	2.3^{F}	(2.2)^{F}	2.3	2.4	2.3	2.4	A	2.3	N	2.3	2.4	2.3	2.4	2.2	2.2	2.2	2.1	2.0	2.1
7	(2.1)^{S}	2.0^{F}	2.0^{F}	2.1	(2.4)^{F}	2.3	2.3^{F}	2.4	2.3	2.3^{H}	2.3	2.2	2.3	(2.3)^{H}	2.3	2.4	2.2	2.4	2.3	2.3	2.1^{F}	(2.1)$^{F}_{S}$	(2.0)^{F}	(2.1)^{F}
8	(2.0)^{F}	(2.2)^{F}	(2.0)^{F}	(2.0)^{F}	2.2^{F}	2.1	2.2	2.4	2.4	2.1	(2.2)^{H}	2.3	2.2	2.5	2.4	2.3	2.4	2.2	2.2	2.2	2.1	2.2	2.2	2.1
9	2.1	2.0	1.9	1.9	2.2	J^{S}	(2.1)^{S}	2.3	2.3	G	G	2.3	2.3	2.1	2.2	2.2	2.2	2.4	2.4	2.0	(2.1)^{A}	A	(2.0)^{A}	1.9
10	2.0	2.1	2.2	2.1	2.4	2.2	2.1	2.3	2.4	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.2	2.1
11	1.9	1.9	2.0	1.9	2.1	(2.2)^{S}	2.1	2.3	2.2	2.3	2.2	2.4	2.2	2.4	2.1	2.3	2.3	M	2.3	2.2	2.2	2.3	2.2	2.2
12	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.5	2.4	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.4	2.2	2.1	2.1	2.1	2.2	2.1
13	2.1	(1.9)$^{F}_{S}$	2.0^{F}	(2.2)^{F}	(2.2)$^{F}_{S}$	(2.2)$^{F}_{S}$	(2.2)^{S}	2.4	2.3	2.3	2.2	2.0^{H}	2.2	2.1	2.2	2.1	2.2	2.4	2.2	2.1	2.1	2.0	2.1	2.0
14	2.0	2.1	2.0$^{F}_{S}$	(1.9)$^{F}_{S}$	1.9	2.0	2.1	2.3	2.4	2.1	2.1	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.3	2.0	2.0	1.9	2.0	1.9
15	2.0	2.3	2.2	A	(1.8)^{S}	(2.1)^{S}	(2.0)$^{F}_{S}$	2.2	2.4	2.4	(2.1)^{H}	C		2.3	C	C	C	2.3	2.2	2.2	2.2	2.0	2.1	2.0^{F}
16	2.0^{F}	2.0^{F}	(2.0)$^{F}_{S}$	E	E	E	(2.1)^{F}	2.3	2.3	2.3	2.2	2.0	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.1	2.2$^{F}_{S}$	2.0$^{F}_{S}$	(2.1)$^{F}_{S}$	(2.1)$^{F}_{S}$
17	2.0$^{F}_{S}$	(2.0)$^{F}_{S}$	(2.0)$^{F}_{S}$	(1.9)$^{F}_{S}$	2.0$^{F}_{S}$	(2.0)$^{F}_{S}$	(2.2)$^{F}_{S}$	2.4	2.2	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.3	2.2	1.9	1.9	1.9	2.2
18	2.1	2.0^{F}	2.2^{F}	2.1^{F}	2.0^{F}	2.0^{F}	2.2^{F}	(2.3)$^{J}_{S}$	(1.9)$^{J}_{S}$	2.0	2.0	2.1	2.1	2.2	2.2	2.1	2.2	2.3	2.3	2.2	2.1	2.0	2.0	2.0
19	1.9	1.9	2.1	(2.1)$^{P}_{F}$	C	C	C	2.3	2.4	2.0^{H}	2.1	2.0	2.1	2.1	1.9	2.1	2.2	2.2	2.3	2.1	(2.0)^{S}	2.0	2.0	2.1
20	2.0	2.0	2.1	2.1	2.1^{F}	1.9	(2.1)^{S}	2.2	(2.0)^{H}	2.1	2.1	2.2	2.3	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	1.9	1.9	2.1
21	2.1	2.1	2.1	1.9	2.0	1.9	2.1	2.1	2.0	G	1.9	2.0	2.0	2.0	2.3	2.1	2.0	2.3	2.3	2.2	2.2	1.9	2.0	2.0
22	1.9	2.0	2.0	(2.1)^{S}	2.1	2.2^{F}	2.2	2.3	2.3	2.0	2.2	2.2	2.2	2.1	2.3	2.3	1.9	2.2	2.2	2.1	2.4	2.0	2.0	1.8
23	1.9^{F}	1.9^{F}	(2.0)^{F}	2.0^{F}	2.1	S	2.1	2.2	G	1.7	G	G	1.8	1.9	1.9^{K}	1.8^{K}	1.8^{K}	2.0^{K}	1.9^{K}	2.0^{K}	1.9^{K}	(2.0)$^{S}_{K}$	2.0^{K}	1.9^{K}
24	1.9^{K}	2.0^{K}	(2.0)$^{F}_{K}$	S	1.9	S	(2.1)^{S}	G	G	1.9	2.1	2.0	1.9	2.1	1.9	2.1	2.1	2.3	2.4	1.9	2.1	2.0	(1.9)^{S}	(1.9)^{S}
25	(1.9)^{S}	(2.1)$^{P}_{F}$	F^{S}	F^{S}	F^{S}	E	2.1	2.2	2.3	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	(2.3)^{S}	2.2	2.2	(2.2)^{S}	2.1	2.1$^{E}_{S}$	(2.0)^{S}
26	2.0	(1.9)$^{F}_{F}$	2.0^{F}	F	(2.2)$^{P}_{F}$	(2.1)$^{P}_{F}$	(2.4)$^{P}_{F}$	2.4	2.2	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.4	2.3	2.2	2.1	2.1^{S}	1.9^{S}
27	2.0	2.0	2.0	2.3	2.1	1.9	2.2	2.4	2.3	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.2	2.4	2.4	2.3	2.2	2.0	2.0	2.0
28	1.9	2.0	2.0	2.0	2.2	2.1^{F}	2.4	2.4	2.5	2.2	2.3	1.9	2.1	2.2	2.1	2.2	2.2	2.2	2.3	C	C	C	C	C
29	2.1	2.0	2.0	1.9	2.1	1.9	2.3	2.4	2.1^{H}	2.3^{H}	2.3	2.3	(2.4)^{F}	A	A	2.1	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.2
30	2.0	2.1	2.0	2.1	2.2	2.1	2.4^{K}	(2.6)$^{J}_{S}$^{K}	2.2$^{H}_{K}$	2.2$^{H}_{K}$	2.1$^{H}_{K}$	2.1$^{H}_{K}$	G^{K}	1.9^{K}	1.9^{K}	2.0^{K}	1.9^{K}	2.2	2.0	2.0	2.2	2.2	(2.3)$^{J}_{S}$	(2.0)^{S}
31	(1.9)$^{P}_{L}$	F^{S}	F^{S}	F^{S}	S	(2.0)$^{F}_{S}$	(2.2)$^{P}_{F}$	(2.2)$^{P}_{F}$	2.0^{H}	G	G	G	G	G	1.6	1.9	1.9	2.1	2.2	2.2	2.1^{F}	2.1^{F}	2.1^{F}	2.1^{F}
Median	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.0	2.0	2.0
Count	31	30	29	25	27	25	30	31	31	30	31	29	30	29	29	29	30	30	31	30	30	29	30	30

* FACTOR MISSING · MANUAL SWEEP

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 64

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

IONOSPHERIC DATA

(M3000)F2, ______ (Characteristic) (Unit), March (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F.J.Mc C., JWP

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: F.J.Mc C. JWP

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.2 F	3.1 F	29 F	30 F	3.1	3.0 F	33	3.6	34	M	3.4	3.5	3.3	3.5	33	34	35	33	34	34	3.1	30	3.2	32
2	31	31 F	3.0 F	(3.0) F	(3.0) F	(3.3) F	(34) F	3.5	34	31	3.1	35	33	33	32	M	33	34	34	31	3.2 F	3.0	30	31
3	(30) S	31	3.0	31	3.0	32 F	32	36	33	31	30	34	31 V	(3.2) JS	35	34	33	36	34 S	31 S	31	31	30	30
4	3.0 S	30	3.0	31	2.9	(3.1) JF	2.9	34	(34) JS	34	32	31	34	3.3	(33) JS	34	33	33	34 S	3.2 S	3.3	3.1 S	2.9	30
5	30	31 S	3.0	30	32 S	3.1 F	2.9	32	3.5	34	32 H	3.2	34	35	31 H	3.4	33	33	35	3.0	3.0	3.0	31	30
6	30	(30) FH	3.2	32 F	3.2 F	3.3 F	(3.2) F	3.3	34	34	34	A	3.3	N	33	34	3.3	33	3.2	3.2	3.2	3.1	3.0	3.1
7	(3.0) S	3.0 F	30 F	3.1	(35) F	34	3.3 F	3.5	34	33 H	3.3	3.2	33	(3.3) H	33	34	3.2	34	3.3	33	31 F	(3.1) FS	(3.0) F	(30) F
8	(30) F	(32) F	(30) F	(30) F	31 F	31	3.2	3.5	35	32	(33) H	34	35	36	34	34	35	32	3.3	3.2	3.2	3.3	3.2	3.1
9	30	30	2.9	2.9	33	S	(3.1) S	34	33	G	G	33	33	3.1	32	3.2	3.2	34	35	30	(3.1) A	A	(2.9) A	29
10	30	3.1	32	31	35	35	3.1	3.4	3.4	33	3.4	3.3	3.3	32	33	33	34	33	3.2	31	31	3.0	3.3	3.1
11	2.8	2.9	2.9	28	3.1	(32) S	3.1	34	33	34	32	34	32	35	32	34	34	M	3.4	3.2	3.2	3.3	3.3	3.2
12	3.0	30	31	31	31	32	3.3	3.6	3.5	33	3.2	3.1	32	3.2	33	32	3.3	3.2	32	31	31	3.2	3.2	31
13	32	(29) FS	30 F	(33) F	(33) FS	(33) FS	(3.3) S	35	33	34	33	30 H	3.2	32	33	32	3.2	35	32	31	31	30	3.1	3.0
14	30	31	3.0 FS	(28) PS	29	30	3.1	34	34	31	31	30	30	30	3.1	33	33	32	33	30	30	2.9	3.0	2.9
15	2.9	33	32	A	(27) S	(31) S	(30) FS	33	34	3.5	(32) H	C	C *	33	C	C	C	3.4	32	3.2	3.2	3.0	31	30 F
16	3.0 F	3.0 F	(30) FS	E	E	E	(31) F	34	34	3.4	3.2	3.0	33	32	33	33	3.3	34	34	3.1	32 FS	30 FS	(31) FS	(31) FS
17	3.0 FS	(30) FS	(30) FS	(29) FS	3.0 FS	(30) FS	(3.2) FS	3.5	3.3	35	34	33	3.2	31	3.1	3.2	3.2	3.4	34	32	2.9	28	29	32
18	31	3.0 F	32 F	32 F	30 F	30 F	3.2 F	(3.4) JS	(2.8) PS	30	30	32	32	3.2	3.3	3.1	33	34	33	32	3.1	30	3.0	30
19	2.9	29	31	(31) PF	C	C	C	33	35	3.0 H	31	3.0	31	3.1	2.9	32	3.3	3.3	3.3	3.1	(3.0) S	2.9	3.0	3.1
20	30	30	31	31	31 F	2.9	(32) S	32	(30) H	32	32	3.3	3.3	3.1	32	33	3.3	34	3.3	3.2	3.2	2.9	2.9	31
21	32	3.1	31	29	3.0	29	31	3.2	29	G	2.8	3.0	3.0	30	3.3	3.1	3.0	3.3	3.3	3.2	3.2	2.9	30	30
22	29	30	30	(31) S	31	3.2 F	32	34	34	30	3.2	32	32	3.2	33	3.3	2.8	3.2	3.2	31	3.4	3.0	3.0	2.7
23	2.8	28 F	(29) F	2.9 F	3.1	S	31	3.2	G	2.7	G	G	28	28	2.8 K	2.7 K	2.7 K	3.0 K	2.9 K	3.0 K	2.8 K	(3.0) SK	3.0 K	29 K
24	2.8 K	2.9 K	(3.0) FK	S	2.8	S	(31) S	G	G	28	32	31	28	31	29	3.1	3.1	3.4	34	29	3.1	3.0	(28) S	(29) PS
25	(29) FS	(32) PF	F S	F S	F S	E	31	3.3	34	3.1	3.2	32	3.3	3.1	31	3.1	31	(3.4) S	33	3.3	(33) S	3.1	32 FS	(3.0) FS
26	30	(29) PF	30 F	F	(3.3) PF	(3.1) PF	(35) PF	35	32	33	3.1	3.1	3.1	3.1	3.1	3.2	31	3.3	35	34	3.2	3.1	31 FS	2.9 FS
27	3.0	30	3.0	3.4	3.1	2.9	33	34	34	33	3.2	3.3	34	3.3	33	3.2	3.2	3.5	3.4	34	3.2	3.0	3.0	2.9
28	28	3.0	30	30	32	32 F	3.5	35	36	3.2	3.4	31	31	3.2	3.1	3.3	3.3	33	33	C	C	C	C	C
29	3.1	30	30	29	3.1	29	3.3	35	3.1 H	33 H	34	3.3	(35) P	A	A	31	3.2	3.3	34	3.3	3.2	3.2	31	3.2
30	2.9	3.1	2.9	3.1	32	3.1	35 K	K(3.7) JS	3.3 HK	33 HK	31 HK	32 HK	G K	2.9 K	28 K	30 K	2.9 K	32	2.9	2.9	32	3.2	(33) PS	(3.0) S
31	(28) PS	F S	F S	F S	S	(3.0) FS	(3.2) PF	(33) PF	30 H	G	G	G	G	G	2.5	2.8	2.9	3.1	3.3	3.2	32 F	3.2 F	3.2 F	3.2 F
Median	3.0	30	30	3.1	3.1	3.1	3.2	34	34	3.2	32	3.2	3.2	3.2	3.2	32	33	3.3	3.3	3.2	3.2	3.0	3.0	3.0
Count	31	30	29	25	27	25	30	31	31	30	31	29	30	29	29	29	30	30	31	30	30	29	30	30

* FACTOR MISSING · MANUAL SWEEP

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

(M3000)F1, ______ (Unit), March (Month), 1954
(Characteristic)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

Form adopted June 1946

TABLE 65

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

IONOSPHERIC DATA

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J. McC., J.W.P.

Calculated by: F.J. McC., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	M	3.8	3.9H	3.6	3.6	3.8	3.7	L	Q						
2								L	L	3.5	3.6H	3.6	3.7	4.0H	3.7	M	3.8	L						
3								Q	L	(3.7)L	3.7	3.8H	3.7	3.8	3.8H	3.6	L	Q						
4								Q	L	3.6F	3.7H	3.7H	3.8H	3.7H	3.6	3.7	3.7H	L						
5								Q	L	L	(3.6)H	3.7	3.7	3.7	3.7	L	3.8	L						
6								Q	L	3.7	4.0	A	3.8	N	3.7	3.7H	L	L						
7								Q	L	3.9	(3.7)H	3.6	3.7	3.7	3.7	4.2H	L	L						
8								Q	L	L	3.7	3.8	3.7H	3.7H	3.8	3.6L	L	L						
9								Q	L	3.6	3.8	4.0H	3.9H	4.0	3.5	3.6	3.6H	L						
10								Q	L	3.7	3.6	3.9	3.7H	3.7	3.7	3.8	L	[illegible]						
11								Q	(3.6)L	3.6	3.6H	3.7H	3.8	3.7H	3.7	(3.6)L	L	M						
12								Q	L	3.7	3.5H	3.8H	3.7H	3.9	3.8	3.8	3.7	(3.8)L						
13								Q	L	(3.8)L	3.7H	3.8H	3.9H	(3.7)H	3.8	3.8	3.7	L						
14								Q	L	(3.6)H	3.6	3.7	3.6	3.7	3.6	3.6	(3.8)L	L						
15								L	L	3.8	3.6	C	A	3.6	C	C	C	L						
16								L	L	3.6	3.7H	3.6H	3.6	3.6	3.8	3.7	L	L						
17								L	L	3.6	3.9	3.8	3.6H	3.7H	3.6	3.5	L	L						
18								L	3.8	3.6H	3.7H	3.7	3.6H	3.7H	3.6H	3.6H	3.6	L						
19								L	L	3.7H	(3.6)H	3.7	(3.6)H	3.6	3.7	3.5	L	L						
20								L	3.4H	3.6H	3.7	(4.0)H	3.9	3.6H	3.5H	3.6H	3.8	L						
21								(3.6)L	3.7	3.8	3.9	3.8	3.8	3.9	3.5H	(3.6)S	3.5	L						
22								Q	3.8	3.7	3.7	3.6	3.6	3.7H	(4.0)H	3.5	3.4	L						
23								Q	3.3	3.7	4.0H	3.7	3.8	3.8	3.7K	3.5K	3.4K	3.4K						
24								3.2	(3.4)S	3.8H	3.7	3.7	3.7H	3.8	3.5H	3.6	3.7	L						
25								L	L	3.6	3.9	3.7	3.7	3.7	3.8H	A	(3.6)L	L	L					
26								L	L	L	3.9	3.8H	3.7H	3.7H	3.6H	3.5	3.6	L	L					
27								Q	L	(3.7)L	3.8	3.8	3.9H	3.9H	3.8H	3.7	3.7H	L	Q					
28								L	L	3.8	3.6	3.7H	A	A	3.7	3.6H	3.8	A						
29								L	L	3.6H	3.6H	3.7H	A	A	A	A	A	A	A					
30								L	3.7HK	3.6HK	3.8HK	3.9K	3.7HK	(3.9)HK	3.8K	3.6H	3.5HK	(3.6)L	L					
31								L	(3.6)H	4.0H	(3.8)F	4.0H	3.7K	3.8H	3.9H	3.7H	3.4	3.7	L					
Median								—	3.6	3.7	3.7	3.8	3.7	3.7	3.7	3.6	3.7	—	—					
Count								2	[illegible]	27	31	29	28	28	29	26	[illegible]	4						

* FACTOR MISSING MANUAL SWEEP

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 66

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

IONOSPHERIC DATA

(M1500)E, ____ (Characteristic) (Unit) March (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J. Mc C., J.W.P.

Calculated by: F.J. Mc C., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	A	M	A	4.1	4.0	4.2	4.3	4.3	(4.2)^{A}	4.2						
2								S	4.2	4.2	4.3	3.8	(4.0)^{P}	3.9	(4.2)^{P}	M	4.2	A						
3								A	A	(4.5)^{A}	4.1	(4.2)^{H}	4.3	(4.3)^{P}	4.3	A	4.3	(4.3)^{A}						
4								A	A	4.5	(4.5)^{A}	4.3^{H}	A	A	A	4.3	4.3	4.3						
5								S	A	A	A	A	A	4.3	B	4.2	4.1	4.0						
6								S	A	A	A	A	A	4.2	A	(4.1)^{A}	4.2	4.3						
7								S	4.0^{H}	A	A	(4.1)^{P}	A	4.0	4.0^{H}	4.3	4.0	A						
8								S	(3.9)^{P}	3.9	4.1	A	4.1	4.2	B	4.4	4.0	4.1						
9								S	4.1	4.1^{H}	A	(4.2)^{P}	(4.2)^{P}	4.2	A	4.0	4.1	4.1						
10								A	3.8	4.2	4.2^{H}	4.2	A	A	(4.1)^{P}	(4.1)^{F}	4.1	4.1						
11								3.9	4.1^{H}	4.3	4.1	3.9	A	A	4.0	4.0	4.0	M						
12								S	A	B	(4.4)^{P}	(4.4)^{P}	A	(4.3)^{P}	4.2^{H}	4.2^{H}	4.2^{F}	(4.3)^{A}						
13								S	(4.3)^{S}	(4.3)^{S}	B	B	4.3^{H}	4.1^{H}	(4.2)^{B}	4.2	4.1	4.3						
14								(4.1)^{S}	4.2^{H}	(4.5)^{A}	A	4.1	A	4.2^{H}	4.1	4.2	4.2	4.3^{H}						
15								(4.3)^{H}	A	4.2	C	C	*	C	C	C	C	4.3						
16								4.3	A	(4.0)^{P}	3.9	4.0	4.0	4.0	4.0	4.0	4.1	S						
17								A	A	4.2^{H}	4.3	4.2^{H}	(4.2)^{P}	4.2	4.2^{H}	4.1^{H}	4.2	4.2						
18								S	(4.1)^{H}	(4.2)^{H}	B	4.2	4.2^{H}	4.1^{H}	4.2	4.2	(4.2)^{A}	A						
19								A	A	(4.1)^{S}	4.0	(4.3)^{A}	4.2	A	A	(4.2)^{F}	(4.3)^{P}	4.1^{H}						
20								(4.4)^{P}	4.2^{H}	4.2^{H}	4.3	A	4.3	(4.3)^{F}	4.1^{H}	4.3	4.3	4.3						
21								(4.1)^{P}	A	4.1	4.4	4.1	4.2	4.0	4.3	A	A	4.0						
22								A	4.1	4.0	4.3	4.1	4.3	4.3	4.1	4.3	4.5	4.0						
23								4.3	4.1	4.1	4.2	4.1	4.3	4.3	4.3^{K}	(4.2)$^{P}_{K}$	A^{K}	4.3$^{H}_{K}$						
24								4.2	4.1	4.1^{H}	4.2	4.2	4.2	4.2	4.2	(4.2)^{P}	4.1^{H}	(4.1)^{A}						
25								A	4.3	(4.4)^{A}	A	(4.4)^{A}	(4.4)^{A}	4.3	4.3	4.3^{H}	(4.5)^{A}	(4.2)^{P}	S					
26								S	4.3	4.3^{H}	4.4^{H}	(4.3)^{A}	(4.3)^{F}	(4.3)^{A}	A	(4.3)^{H}	(4.2)^{P}	4.2^{H}	S					
27								4.3	4.3	4.4^{H}	4.3^{H}	(4.3)^{P}	(4.2)^{P}	A	A	4.2	(4.2)^{P}	4.1	S					
28								4.1	4.2^{H}	4.2^{H}	4.3	4.3	4.2	4.2	4.2	4.3	4.3	4.3	S					
29								4.1	4.3^{H}	4.5	(4.5)^{F}	4.2^{H}	4.2^{H}	4.2	4.3^{H}	(4.3)^{F}	4.3	4.4	S					
30								S^{K}	(4.4)$^{P}_{K}$	A^{K}	(4.3)$^{F}_{K}$	B^{K}	A^{K}	(4.3)$^{P}_{K}$	4.2^{K}	4.2^{K}	4.1^{K}	4.3^{H}	A					
31								A	(4.3)^{P}	4.4^{H}	4.3	4.3^{H}	4.3	4.3	(4.4)^{F}	A	4.4	4.3^{H}	S					
Median								4.2	4.2	4.2	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2						
Count								11	20	25	21	24	21	23	22	26	25	26						

* FACTOR MISSING · MANUAL SWEEP

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 67

Ionospheric Storminess at Washington, D. C.

March 1954

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			2	2
2	2	3			4	2
3	2	0			2	2
4	2	2			3	2
5	1	1			3	2
6	1	2			2	2
7	2	1			4	3
8	1	2			3	3
9	2	3			3	3
10	1	1			2	2
11	2	1			4	3
12	2	2			3	3
13	1	2			2	3
14	2	1			4	4
15	1	1			5	3
16	2	2			3	3
17	2	1			3	4
18	2	2			4	2
19	3	2			2	3
20	2	1			4	4
21	1	1			3	2
22	2	1			3	3
23	2	4	0200	----	4	4
24	3	2	----	0100	4	3
25	1	2			3	2
26	2	0			4	3
27	2	1			3	2
28	2	0			3	1
29	1	1			2	2
30	1	4	0600	1600	3	3
31	4	5			3	2

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

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

----Dashes indicate continuing storm.

Table 68

Sudden Ionosphere Disturbances Observed at Washington, D. C.

March 1954

No sudden ionosphere disturbances were observed during the month of March.

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 69

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

February 1954

Day	North Pacific 9-hourly quality figures: 03 to 12	09 to 18	18 to 03	Short-term forecasts issued at: 02	09	18	Whole day quality index	Advance forecasts (J_p- reports) for whole day; issued in advance by: 1-4 days	4-7 days	8-25 days
1	6	5	6	6	(4)	5	6	6	6	
2	5	5	6	5	5	6	5	6	6	
3	6	6	6	6	5	6	6	5	5	
4	6	5	5	5	5	7	5	6	5	
5	5	6	6	6	6	6	5	6	6	
6	5	5	6	5	6	7	5	6	6	
7	6	5	6	6	6	7	6	6	6	
8	6	5	6	5	6	7	6	5	6	
9	6	5	6	6	6	6	6	[illegible]	6	
10	6	6	6	6	6	7	7	6	6	
11	6	6	6	6	6	6	6	6	6	
12	5	5	6	6	6	7	6	7	7	
13	5	5	6	6	5	7	5	6	7	
14	6	6	7	5	5	6	7	6	6	
15	6	5	6	5	5	6	6	(4)	(4)	x
16	6	6	6	5	5	6	6	(4)	(4)	x
17	6	5	6	5	5	6	6	(4)	(4)	x
18	5	5	5	5	5	6	5	5	5	
19	5	5	5	5	5	6	5	5	5	
20	(4)	(4)	5	5	(4)	6	(4)	5	6	
21	6	5	(4)	5	5	5	5	6	6	
22	5	5	6	5	5	6	5	6	6	
23	5	5	5	5	5	(4)	5	6	6	
24	6	5	6	5	(4)	6	[illegible]	(4)	6	
25	5	5	5	5	5	6	5	5	6	
26	5	(4)	(3)	5	5	5	(4)	5	6	
27	(4)	(3)	5	(4)	(3)	(4)	(3)	(4)	5	
28	(4)	(4)	6	(4)	(4)	5	5	([illegible])	(4)	x

Score:

		02	09	18	1-4 days	4-7 days
Quiet Periods	P	14	14	10	6	9
	S	11	10	15	14	12
	U	0	0	1	1	1
	F	0	0	0	4	3
Disturbed Periods	P	2	3	0	0	0
	S	1	1	1	3	0
	U	0	0	1	0	1
	F	0	0	0	0	2

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

Table 70a

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

February 1954

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	(2)
1	6	(4)	6	5	6	5	6	5	5	7	6		3	3
2	5	5	6	5	5	(4)	6	6	5	5	7		3	3
3	5	(4)	5	5	6	5	5	6	5	5	6		(4)	2
4	(4)	(4)	6	6	6	(4)	6	6	(4)	6	6		3	1
5	5	(4)	7	6	5	5	6	6	6	6	6		1	1
6	5	5	6	6	5	5	7	7	6	6	6		2	0
7	6	5	7	6	5	5	7	6	6	6	6		1	1
8	6	6	6	6	6	6	7	6	6	6	6		2	2
9	5	5	6	6	6	6	6	6	6	6	6		2	2
10	6	5	7	6	6	5	6	6	6	6	6		2	2
11	6	6	6	6	6	5	7	6	6	7	6		3	3
12	5	5	6	6	6	5	7	7	6	6	7		2	2
13	6	6	7	7	6	6	7	7	6	6	7		2	1
14	6	6	7	6	6	6	7	7	6	6	6		1	2
15	6	5	6	6	6	6	6	5	6	5	5		3	(4)
16	(4)	(4)	6	5	(4)	(4)	6	5	(4)	(4)	(4)	x	3	(4)
17	(3)	(3)	6	6	(4)	(4)	6	5	(4)	(4)	(4)	x	(4)	3
18	(4)	(4)	6	6	(4)	(3)	6	6	(4)	(4)	(4)	x	3	3
19	5	(4)	5	6	(4)	(4)	5	5	5	(4)	5		2	2
20	5	(3)	6	6	5	5	5	6	5	5	6		3	2
21	6	(4)	6	5	6	5	6	5	5	6	6		3	(4)
22	(3)	(2)	(4)	(4)	(4)	(2)	(4)	(4)	(3)	6	6		(4)	(4)
23	(2)	(2)	6	5	(3)	(2)	(4)	(4)	(3)	7	7		(4)	3
24	(3)	(3)	5	5	(4)	(3)	5	5	(4)	(4)	7		3	3
25	(3)	(3)	6	6	(3)	(3)	5	5	(4)	(4)	7		2	2
26	(4)	(3)	5	5	5	(4)	5	6	(4)	5	5		(4)	(4)
27	(3)	(3)	5	6	(4)	(3)	5	5	(4)	5	6		(4)	(4)
28	(3)	(4)	5	5	(4)	(3)	5	6	(4)	5	6		3	2
Score:														
Quiet Periods				P	12	7	18	14		12	9			
				S	5	4	3	13		4	7			
				U	0	0	0	0		1	1			
				F	0	0	1	0		0	0			
Disturbed Periods				P	3	8	1	1		5	3			
				S	7	8	0	0		3	1			
				U	0	1	0	0		0	0			
				F	1	0	0	0		3	7			

Scales:
Q-scale of Radio Propagation Quality
(1) - useless
(2) - very poor
(3) - poor
(4) - poor to fair
5 - fair
6 - fair to good
7 - good
8 - very good
9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geqslant 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Scoring: (beginning October 1952)
P - Perfect: forecast quality equal to observed
S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were $\geqslant 5$, or both $\leqslant 5$
F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

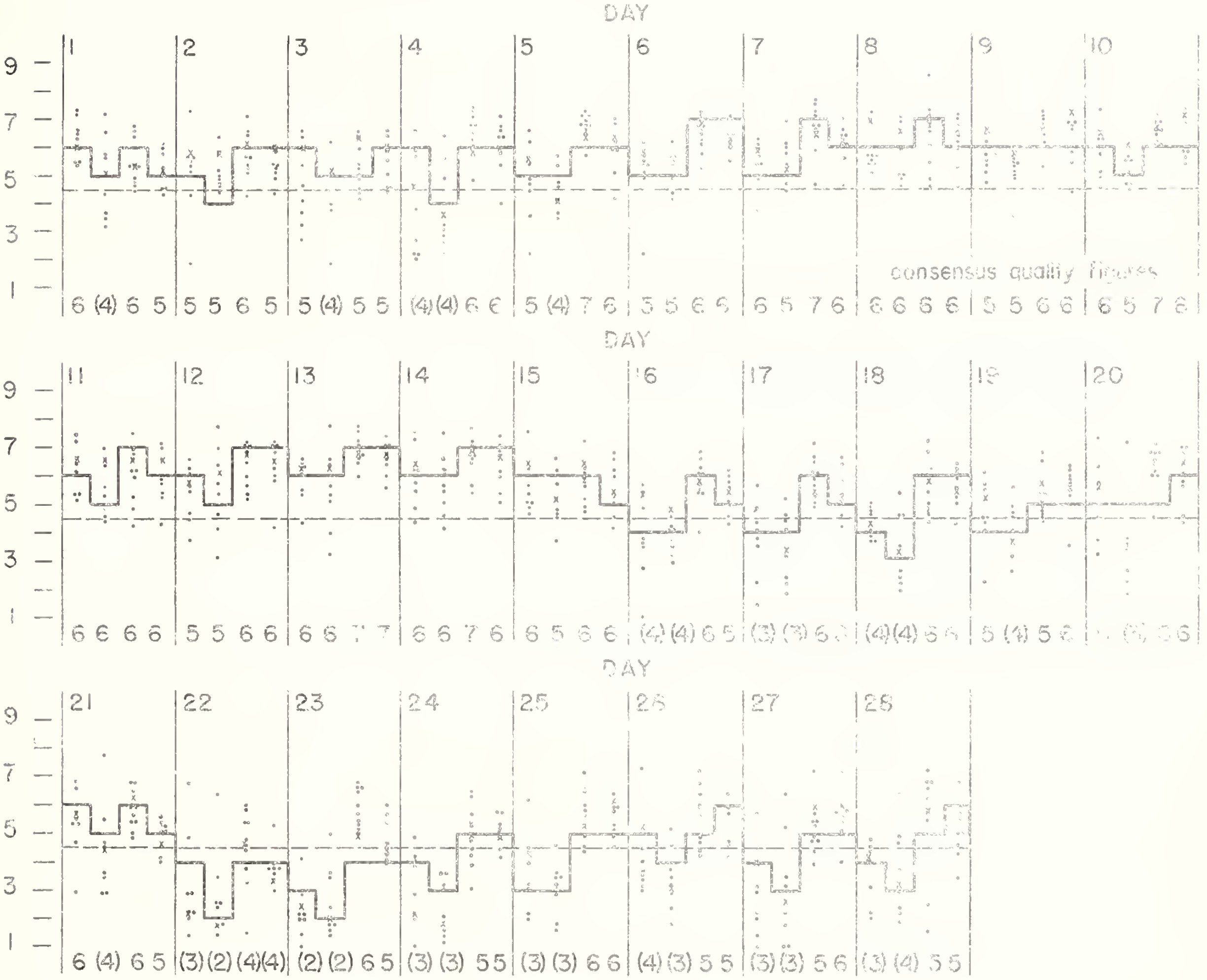
Table 70b

Short-Term Forecasts—February 1954

— forecast

• individual reports of quality (adjusted to CRPL scale)

x CRPL observation (not in consensus)



Outcome of Advance Forecasts (1 to 4 days ahead) — February 1954

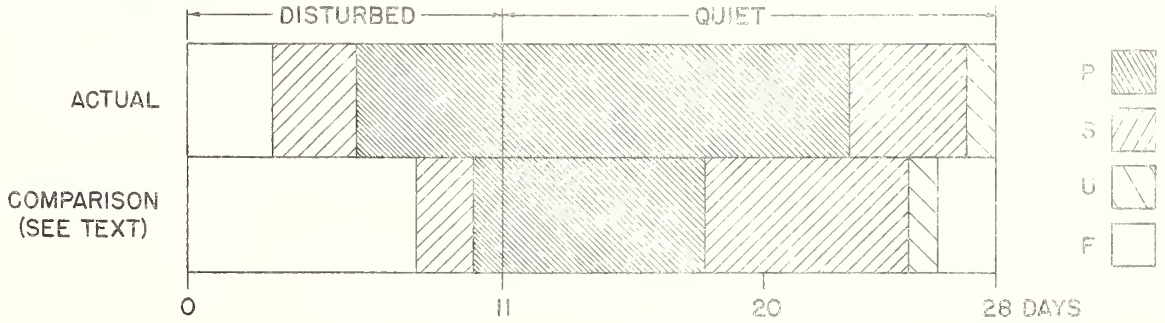


Table 71a

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

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 3.7	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	1	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8	-	-	-	-	-	-	1	1	2	2	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	1	1	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	1	-	-	-	-	-	-	-
7.9	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	1	-	-	-	-	-	-	-	-	-	-	-
23.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
26.6a	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 72a

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

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 3.7	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	3	3	2	2	4	5	5	4	4	4	3	1	1	1	1	1	1	1	1	1	2	3
4.7	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	4	5	5	5	5	5	1	1	2	2	2	2	2	2	2	2	2	2
5.8	3	3	3	3	1	1	1	1	1	2	1	1	2	5	4	2	3	4	5	6	5	5	5	5	5	3	3	3	1	1	1	1	1	1	3	3	2
6.8	3	3	3	2	2	1	1	1	2	3	2	1	1	6	5	5	5	6	6	11	6	5	5	7	6	5	5	2	2	1	1	2	3	2	1	2	3
7.9	2	2	2	3	2	1	1	1	1	1	1	1	3	4	5	3	4	5	5	5	3	3	3	4	3	3	2	1	1	1	1	1	1	1	1	2	3
11.0	2	2	2	2	2	2	1	1	1	1	1	2	2	3	2	3	2	2	4	3	3	3	3	1	1	1	1	1	1	1	1	1	1	2	2	2	2
13.9	2	2	2	2	1	1	1	1	1	1	2	2	2	3	2	3	3	3	3	3	4	3	2	3	4	2	3	3	3	2	2	2	2	3	3	3	3
14.7	2	2	2	1	1	1	1	1	1	1	1	2	2	3	3	3	3	4	4	5	5	3	4	4	4	4	3	3	2	1	1	1	1	2	2	2	2
15.7a	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	3	2	3	3	2	3	3	3	3	3	3	2	1	1	1	1	1	1	2	2
17.7	2	2	2	2	1	1	1	2	1	1	1	2	3	2	3	3	2	2	3	3	2	3	4	4	9	6	3	2	1	1	1	1	1	1	1	1	2
23.7a	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	4	3	3	4	3	3	3	3	3	3	3	2	2	X	X	X	X	X	X	X	X	X
26.6a	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	2	2	2	2	2	2	1	1	1	1	1	2	2	3	3	4	4	3	3	4	4	3	5	3	3	3	2	2	1	1	1	1	1	1	2	2	2
31.8a	2	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2	2	3	3	3	3	3	3	3	3	2	1	1	1	1	1	1	1	1	2	2	2

Table 73a

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

The 6702A coronal line was not visible on any of the observation dates in March.

Table 71b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	2	4	5	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8	-	-	-	-	-	-	-	-	-	-	1	2	6	8	8	1	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	1	2	2	3	2	1	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	-	-	-	-	-	-	-
7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
11.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	1	3	6	2	1	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X
26.6a	-	-	-	-	-	-	-	-	-	-	X	X	X	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 72b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 3.7	3	2	3	2	2	2	1	1	1	3	4	7	7	8	12	11	6	9	9	5	6	6	6	5	5	5	4	2	1	1	1	1	1	2	2	2	2
4.7	2	2	2	2	2	2	2	2	1	1	6	5	4	14	15	8	5	5	6	5	4	5	5	5	5	5	4	3	2	1	1	1	1	1	2	2	2
5.8	2	2	2	2	2	2	2	2	3	4	5	3	9	14	15	6	5	5	6	5	5	5	5	8	9	8	6	6	3	2	2	2	2	3	3	3	3
6.8	3	3	2	3	2	2	2	2	2	2	2	2	3	14	14	9	8	9	9	8	8	9	8	10	9	6	6	3	2	2	3	3	2	3	3	3	3
7.9	3	X	X	X	1	1	1	1	1	1	1	1	1	3	4	2	2	3	3	3	4	4	5	4	4	3	5	3	1	1	1	2	2	2	2	2	2
11.0a	2	2	2	2	2	2	1	1	1	1	1	1	1	3	4	4	5	4	4	4	4	3	3	2	2	1	1	1	1	1	1	1	2	2	2	2	2
13.9	3	2	2	2	1	1	1	1	1	1	2	2	2	4	3	3	3	3	3	4	3	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	2
14.7	2	2	2	1	1	1	1	1	1	2	3	4	4	3	3	4	3	4	5	3	3	3	4	3	1	1	1	1	1	1	1	1	1	2	2	2	2
15.7	2	2	2	1	1	1	1	1	1	1	1	2	3	3	3	4	3	3	3	2	3	3	3	2	2	2	1	1	2	1	2	1	1	1	1	1	2
17.7	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2
23.7	X	X	X	X	X	X	1	1	1	1	1	2	2	3	4	4	12	13	4	5	3	3	4	3	3	3	2	1	1	X	X	X	X	X	X	X	X
26.6a	-	-	-	-	-	-	-	-	-	-	X	X	X	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	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	2
31.8a	2	2	1	1	1	1	1	1	1	1	3	3	3	3	3	3	4	3	4	3	3	3	3	3	4	3	1	1	1	2	2	2	2	2	2	1	2

Table 73b

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

The 6702A coronal line was not visible on any of the observation dates in March.

Table 74a

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

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 1.7	-	-	-	-	-	-	2	2	3	4	3	2	3	2	2	-	-	-	-	-	-	-	2	3	4	3	2	3	3	3	2	2	-	-	-	-	-
4.9	-	-	-	-	-	-	2	2	3	3	3	3	4	4	3	2	2	2	2	2	3	2	2	2	2	2	2	3	3	2	2	-	-	-	-	-	-
5.8	-	-	-	-	-	-	2	2	3	3	3	3	4	4	3	3	2	3	2	2	2	2	2	3	2	2	2	2	2	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	2	2	3	2	3	3	3	2	3	2	3	4	2	2	2	2	2	2	3	3	4	3	3	3	2	-	-	-	-	-	-
7.7	-	-	-	-	-	-	2	2	2	3	3	2	3	3	3	3	2	3	2	2	2	3	3	3	3	2	3	2	2	-	-	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	3	3	3	4	4	3	3	3	4	3	3	-	-	-	-	-	-	-	-
17.8	-	-	-	-	-	-	-	-	-	3	3	2	2	2	2	2	2	3	3	2	-	-	2	3	5	4	4	3	2	-	-	-	-	-	-	-	-
25.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	3	2	3	3	4	3	3	3	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	2	3	2	3	2	2	2	2	3	3	3	3	2	2	2	3	3	3	3	4	3	3	3	2	-	-	-	-	-
27.7	-	-	-	-	-	-	-	2	3	3	2	3	3	2	3	3	3	3	3	2	3	4	2	2	2	2	3	4	5	4	3	2	-	-	-	-	-
31.7	-	-	-	-	-	-	-	2	4	4	3	4	3	3	3	3	2	3	2	2	2	2	-	2	2	2	3	3	3	2	2	3	2	-	-	-	-

Table 75a

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

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 1.7	3	5	4	5	3	4	3	5	3	4	3	4	5	3	8	11	14	15	14	11	10	9	13	12	12	13	11	3	4	3	5	3	2	3	3	4	4
4.9	5	4	4	3	3	3	3	2	3	4	3	3	4	5	6	5	8	9	10	11	14	11	12	11	10	8	4	3	3	2	2	2	2	2	3	4	4
5.8	2	3	3	2	3	2	2	2	2	3	4	2	3	4	5	4	3	4	6	7	8	8	7	5	6	6	5	4	3	2	2	-	2	3	3	4	3
6.7	3	2	3	2	2	3	2	2	2	4	5	4	4	8	9	10	10	11	12	13	12	6	6	5	8	7	7	5	4	3	2	2	3	3	3	3	2
7.7	2	2	3	2	3	2	2	2	2	2	3	2	2	5	6	8	10	8	11	13	10	7	5	6	7	5	4	5	3	3	2	2	-	3	3	3	3
14.8a	-	-	-	-	-	-	-	-	-	3	4	4	4	3	3	3	2	3	3	4	4	3	3	3	3	2	3	3	3	4	2	2	-	-	-	-	-
17.8	3	3	2	2	-	-	2	2	-	2	2	3	5	4	3	4	3	4	5	4	4	4	5	11	14	5	3	3	-	-	3	2	3	3	3	4	3
25.8a	3	2	2	2	-	-	-	2	2	2	3	3	3	3	2	3	2	5	3	3	3	3	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-
26.7	4	4	4	3	2	2	2	3	3	4	5	8	7	7	8	9	11	14	13	13	11	10	9	8	6	6	6	5	4	5	4	3	3	2	3	5	4
27.7	3	4	4	3	4	3	2	3	3	5	6	7	8	7	9	14	13	12	11	11	11	13	12	11	11	12	11	5	4	3	2	2	3	3	4	5	4
31.7	4	3	5	4	3	3	3	2	3	2	3	4	3	5	8	6	7	8	9	10	12	11	10	8	11	10	8	5	4	3	2	3	3	2	3	3	4

Table 76a

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

The 6702A coronal line was not visible on any of the observation dates in March.

Table 74b

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

Date GCT	Degrees south of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	Degrees north of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 1.7	-	-	-	-	-	-	-	-	-	2	2	2	3	2	2	3	3	3	3	2	2	3	3	3	3	3	4	4	3	3	3	2	-	-	-	-	-
4.9	-	-	-	-	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	2	2	2	-
5.8	-	-	-	-	-	-	-	-	-	2	2	3	3	4	8	11	10	5	4	3	2	3	2	3	3	2	2	3	3	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	2	3	2	3	3	3	3	4	4	3	3	2	3	2	2	2	2	2	2	2	3	3	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	2	2	3	3	4	4	3	2	3	2	3	3	3	2	2	2	2	2	3	2	2	2	3	2	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	2	2	3	3	3	3	3	3	3	2	3	-	-	-	-	-	-	-	-	-	-
17.8a	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	2	2	2	-	-	-	2	3	3	4	4	4	3	3	2	-	-	-	-	-	-	-
25.8a	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	2	3	2	2	3	2	3	3	3	4	3	3	4	4	3	2	2	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	2	2	3	2	2	-	-	2	3	-	2	3	3	2	3	2	3	3	3	3	2	3	3	4	2	2	-	-
27.7	-	-	-	-	-	-	-	2	2	3	2	3	3	3	2	2	3	3	2	3	2	3	2	3	3	4	5	4	5	4	4	4	3	2	-	-	-
31.7	-	-	-	-	-	-	-	2	2	2	2	2	3	4	3	2	3	3	2	2	2	2	2	2	2	3	4	5	5	4	3	2	2	-	-	-	-

Table 75b

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

Date GCT	Degrees south of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	Degrees north of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Mar 1.7	4	4	3	3	3	3	2	2	2	3	5	8	9	7	10	10	11	12	8	9	8	6	5	7	12	13	13	5	3	2	3	2	3	3	3	4	3
4.9	4	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	4	6	5
5.8	3	2	2	2	2	-	2	2	2	2	3	3	2	8	9	14	7	6	8	7	6	5	5	6	7	9	8	4	3	2	-	2	2	3	3	3	2
6.7a	2	3	3	2	2	3	-	2	2	2	3	2	3	6	10	8	5	6	7	7	8	6	6	5	6	7	5	4	3	3	-	-	-	-	3	4	3
7.7	3	2	2	3	2	2	2	2	2	3	3	2	4	8	9	8	7	6	6	6	7	8	7	7	7	8	6	4	2	2	2	2	-	2	3	4	2
14.8a	-	-	-	-	-	-	-	-	-	-	2	2	3	-	2	2	3	3	2	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8a	3	2	2	-	2	3	3	2	3	3	4	3	5	4	3	4	5	5	4	4	4	3	4	3	2	2	2	2	2	2	3	2	3	2	2	2	3
25.8a	-	-	-	-	-	-	-	-	-	2	2	3	2	2	3	2	3	5	4	5	4	4	4	3	2	2	3	-	-	-	-	-	-	-	-	3	3
26.7	4	3	[illegible]	4	4	2	2	[illegible]	2	3	5	[illegible]	6	7	[illegible]	11	10	11	13	14	13	11	10	8	5	5	3	2	2	2	-	2	3	3	3	3	4
27.7	4	4	3	4	[illegible]	3	[illegible]	[illegible]	[illegible]	4	5	5	6	8	[illegible]	7	6	8	9	8	7	[illegible]	7	6	6	6	5	4	4	2	3	3	2	3	4	3	3
31.7	4	2	2	[illegible]	3	2	[illegible]	[illegible]	[illegible]	2	3	5	6	6	[illegible]	7	6	7	10	[illegible]	9	[illegible]	7	7	8	8	6	4	3	3	3	2	3	3	2	3	4

Table 76b

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

The 6702A coronal line was not visible on any of the observation dates in March.

Table 77

Zürich Provisional Relative Sunspot Numbers

March 1954

Date	R_Z*	Date	R_Z*
1	8	17	42
2	11	18	39
3	9	19	29
4	7	20	23
5	0	21	17
6	0	22	12
7	0	23	7
8	0	24	7
9	0	25	0
10	0	26	0
11	0	27	0
12	8	28	0
13	17	29	0
14	22	30	0
15	36	31	0
16	40	Mean:	10.8

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

Table 78

Solar Flares, March 1954

No solar flares were reported for the month of March.

Table 79

Indices of Geomagnetic Activity for February 1954

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1954	C	Values Kp three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	1.1	2-	4+	4+	4-	4-	4-	3+	4-	28+	Five
2	1.0	4o	3+	3-	3+	4o	3o	1+	3+	25o	Quiet
3	0.9	4-	2+	4o	4o	3+	2+	3-	4-	26o	
4	0.4	3o	3+	3+	2o	1o	2o	3-	1+	18-	5
5	0.3	1+	1+	1+	2o	1o	2-	2o	3-	13+	6
											7
6	0.0	1o	2-	2-	1o	1-	0+	0+	1-	8o	8
7	0.2	1o	1o	1o	0+	1-	1-	2o	2+	9o	12
8	0.3	3-	2-	0+	1+	2+	0+	2+	2-	13-	
9	0.4	2o	1o	2o	2-	2+	3o	2o	1-	15-	
10	0.4	1o	2+	3o	1+	3o	1+	2+	2o	16+	
11	0.9	4+	3o	1+	2-	2-	2o	3+	4+	22-	Five
12	0.2	3-	1-	2-	1-	1o	1o	2-	2o	11+	Disturbed
13	0.4	2o	2-	2-	3-	2o	1o	1o	2o	14o	15
14	0.7	0+	0+	1+	3-	3-	3o	3o	2+	16-	22
15	1.4	1o	5-	3+	5o	5o	5+	4-	4-	32-	23
											26
16	1.2	4o	4+	3-	2-	3+	4+	4+	4+	29o	27
17	1.3	5o	4o	3-	4-	4+	4+	4o	3o	31o	
18	1.0	2+	3-	2+	4+	3o	3+	4+	2-	24o	
19	0.8	1+	2o	5-	3o	3o	2+	3-	2+	21+	
20	0.3	2+	1+	2-	2o	2+	2+	2o	2-	16-	
21	1.6	1+	2+	2o	3+	4-	5o	6-	6-	29o	Ten
22	1.5	6o	5+	4o	4-	4o	3+	4-	5-	35-	Quiet
23	1.3	5-	4+	4-	3+	3o	4+	4-	4+	31+	5
24	0.8	3o	1-	3-	3+	4-	3o	3o	3+	23-	6
25	0.6	2o	2+	2-	3-	1+	3-	3-	3o	18+	7
											8
26	1.4	2+	3-	4o	6+	4o	4o	5o	5o	33+	9
27	1.3	4o	3+	5-	4o	3+	6-	2+	4+	32-	10
28	0.8	4+	2+	3-	2+	3+	3o	2+	3-	23o	12
											13
Mean:	0.80										14
											20

GRAPHS OF IONOSPHERIC DATA

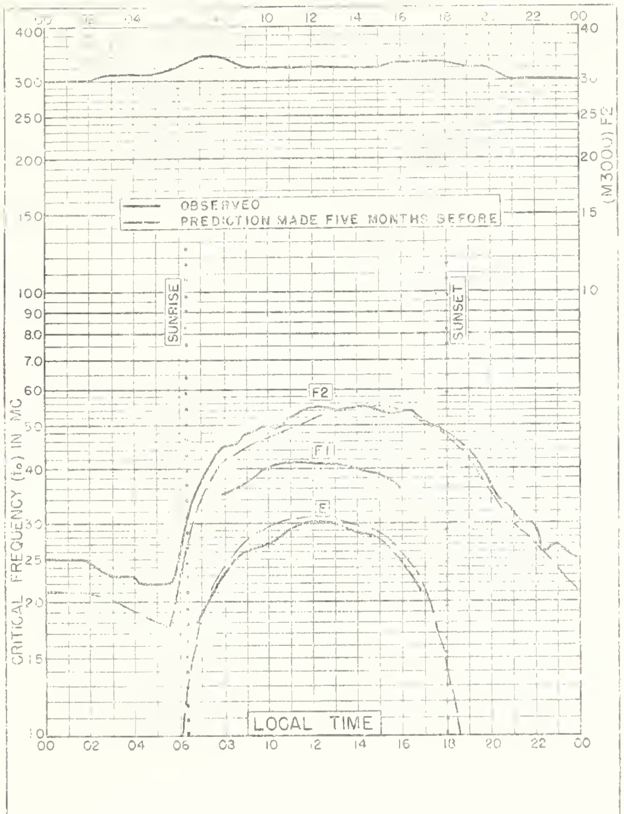


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W MARCH 1954

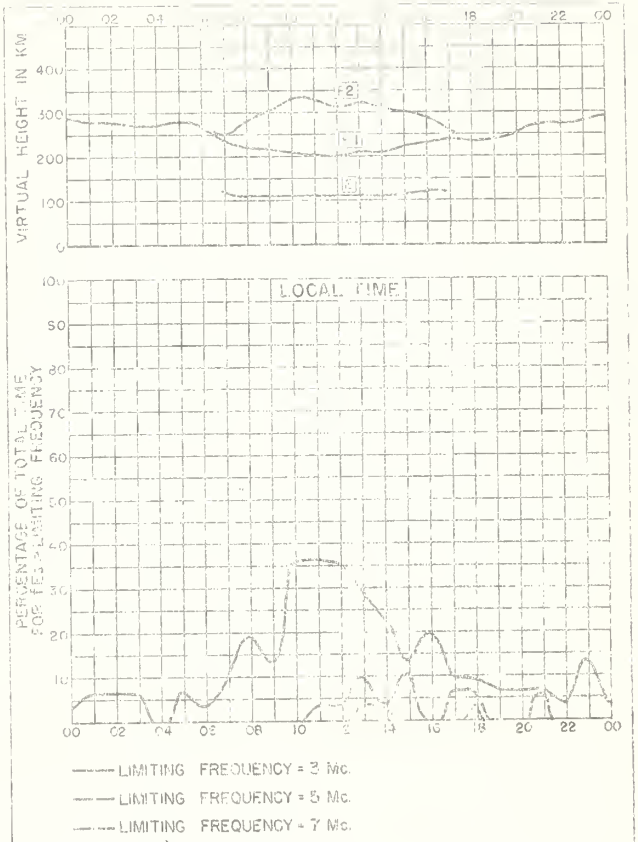


Fig. 2. WASHINGTON, D. C. MARCH 1954

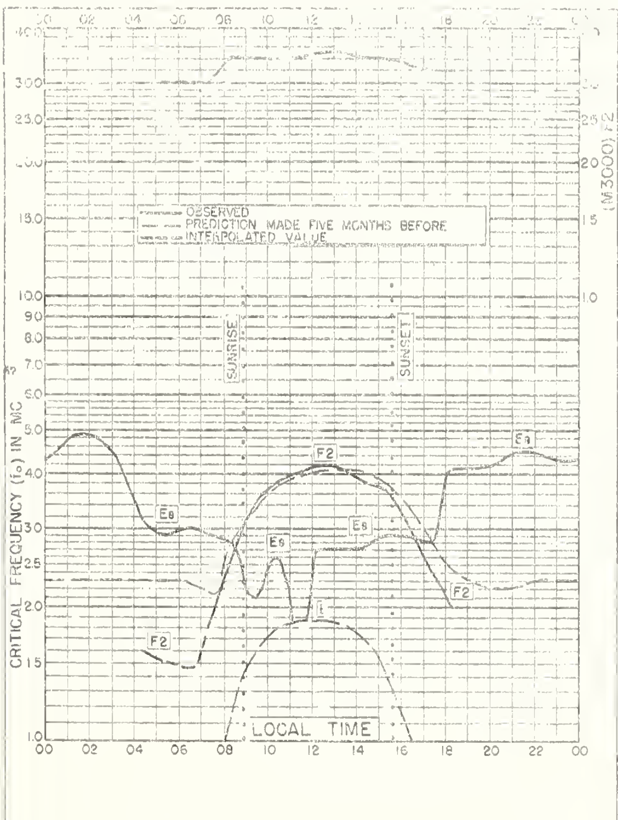


Fig. 3. TROMSO, NORWAY
69.7°N, 19.0°E FEBRUARY 1954

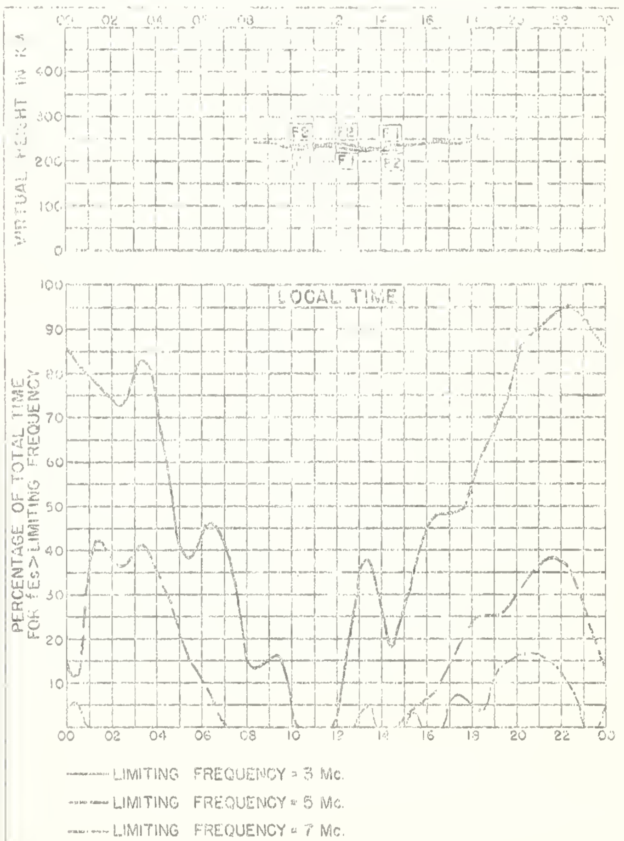


Fig. 4. TROMSO, NORWAY FEBRUARY 1954

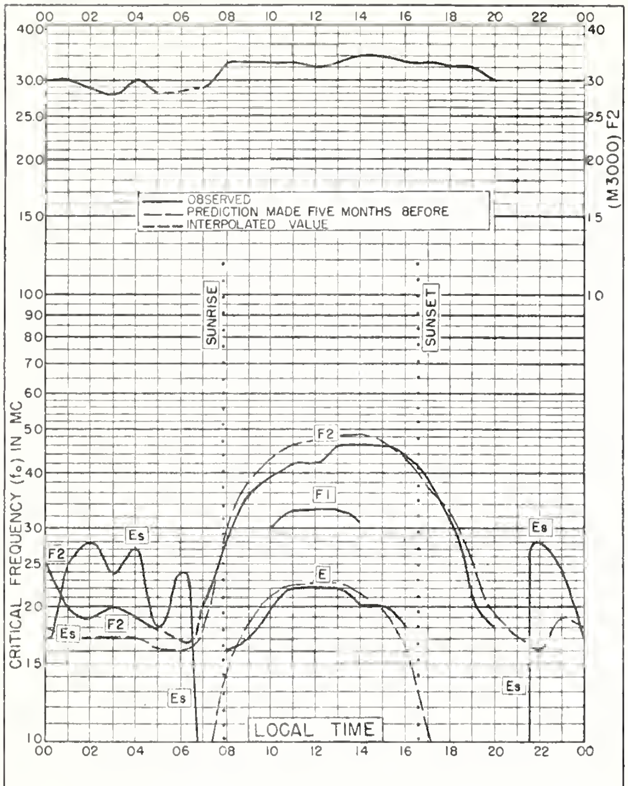


Fig. 5. ANCHORAGE, ALASKA
61.2°N, 149.9°W FEBRUARY 1954

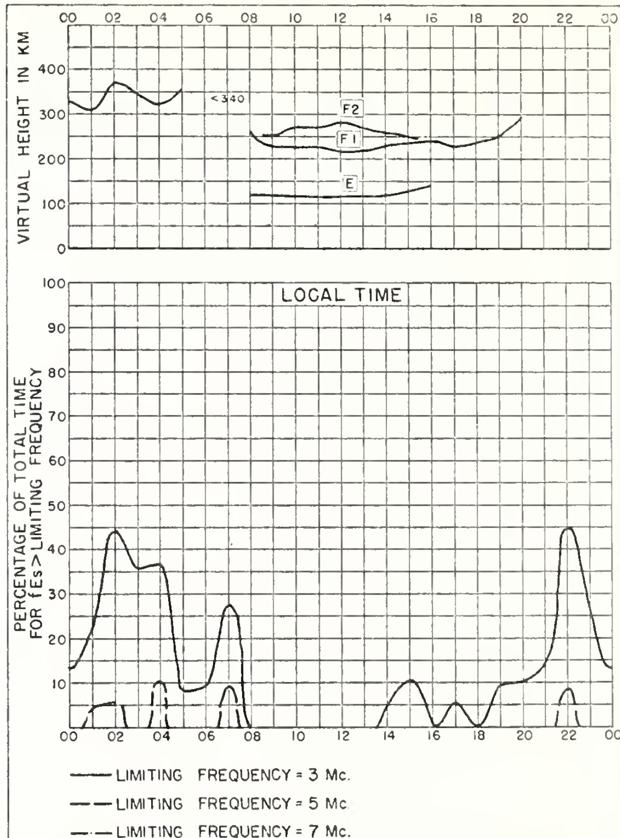


Fig. 6. ANCHORAGE, ALASKA FEBRUARY 1954

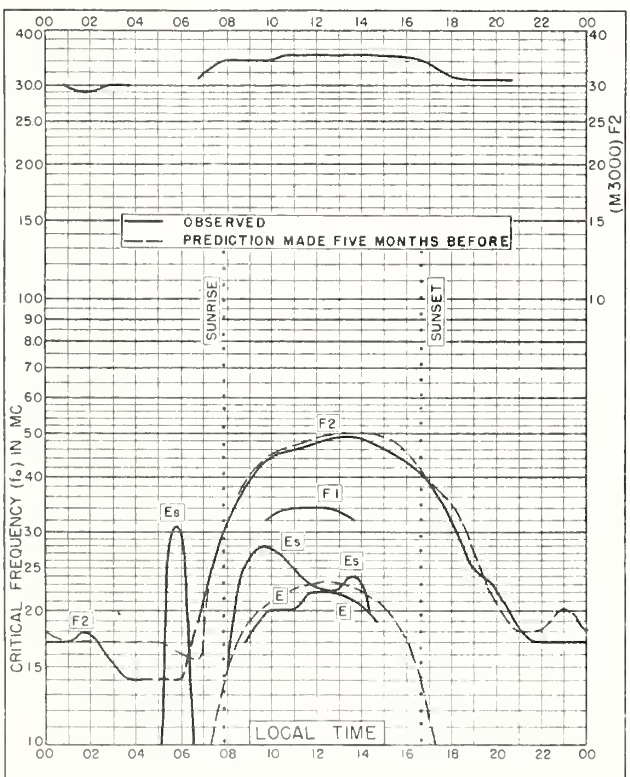


Fig. 7. OSLO, NORWAY
60.0°N, 11.1°E FEBRUARY 1954

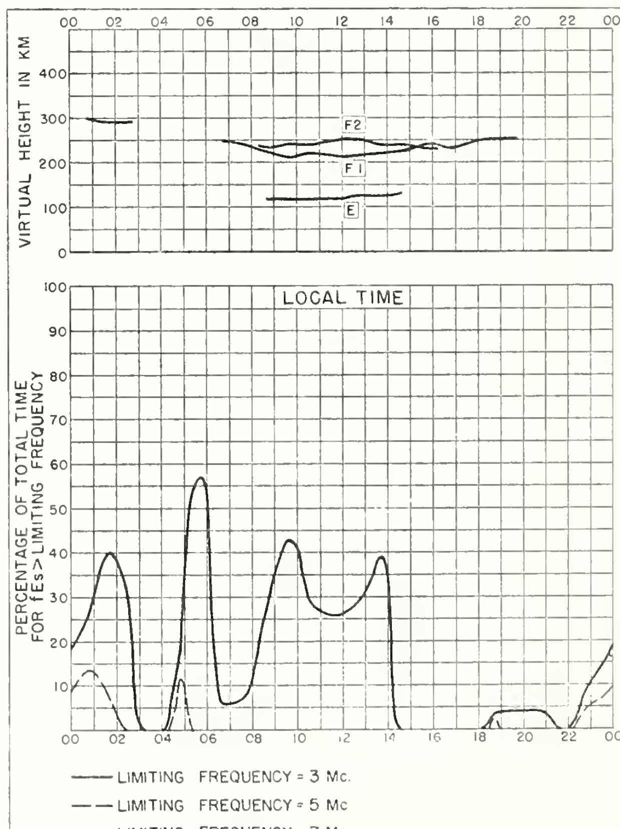


Fig. 8. OSLO, NORWAY FEBRUARY 1954

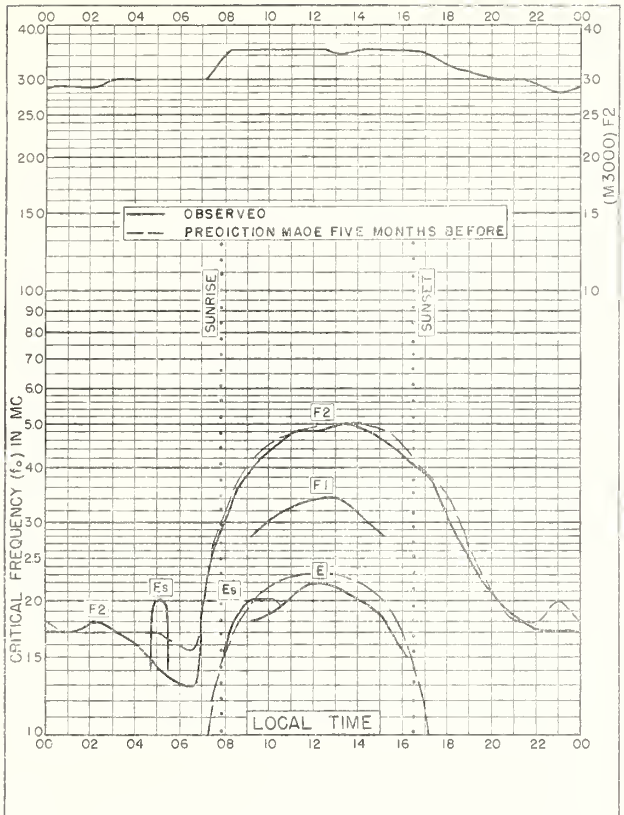


Fig. 9. UPSALA, SWEDEN
59.8°N, 17.6°E FEBRUARY 1954

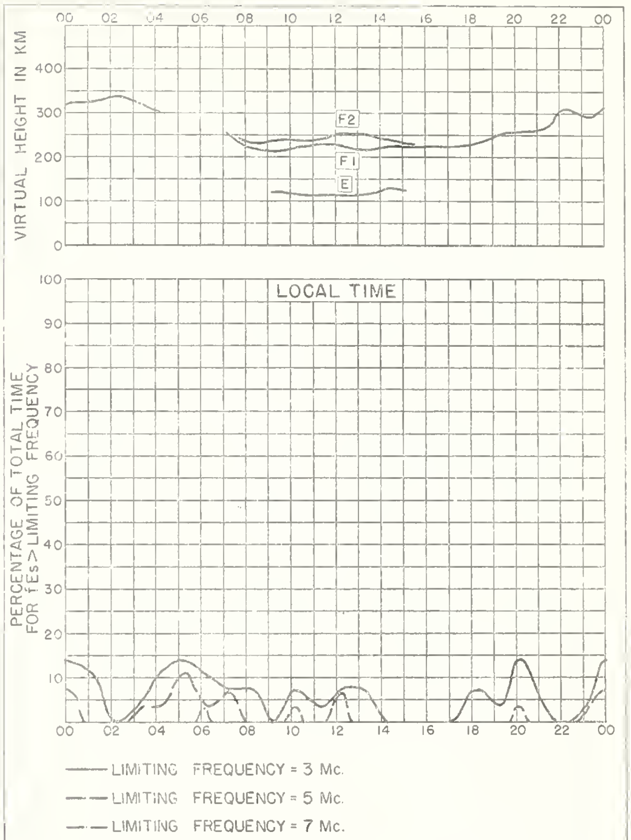


Fig. 10. UPSALA, SWEDEN FEBRUARY 1954

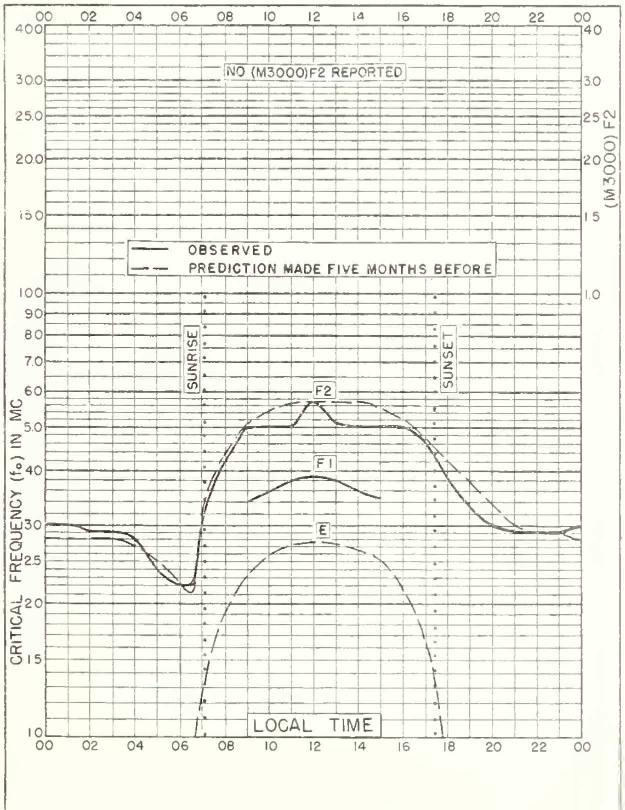


Fig. 11. GRAZ, AUSTRIA
47.1°N, 15.5°E FEBRUARY 1954

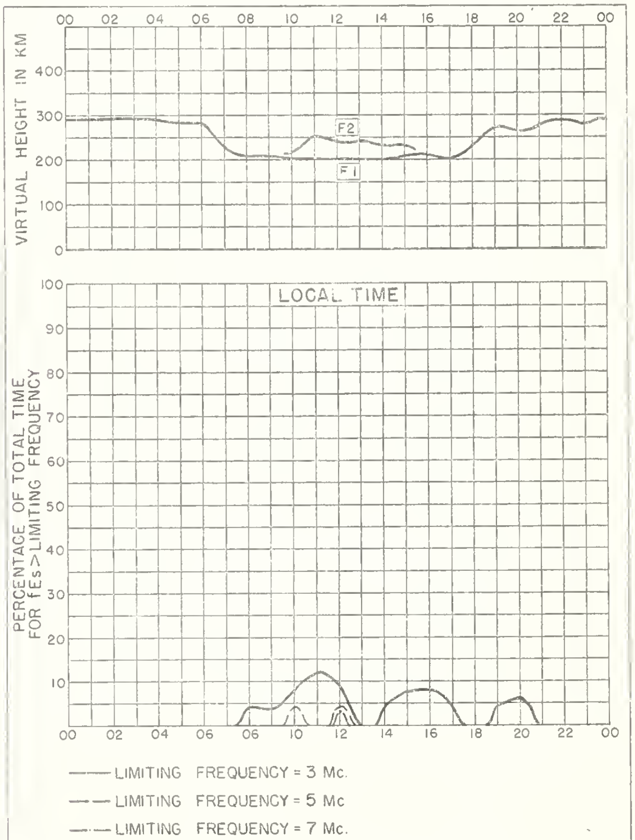


Fig. 12. GRAZ, AUSTRIA FEBRUARY 1954

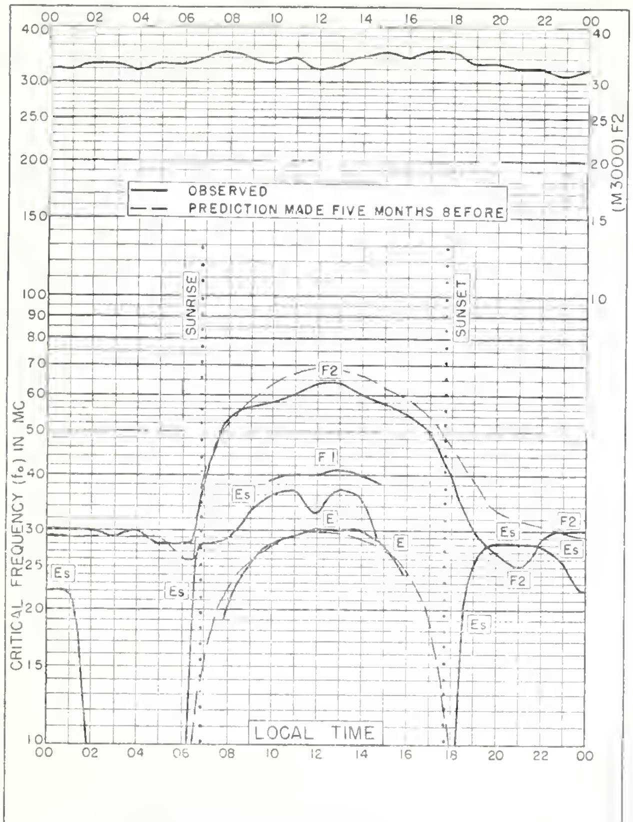
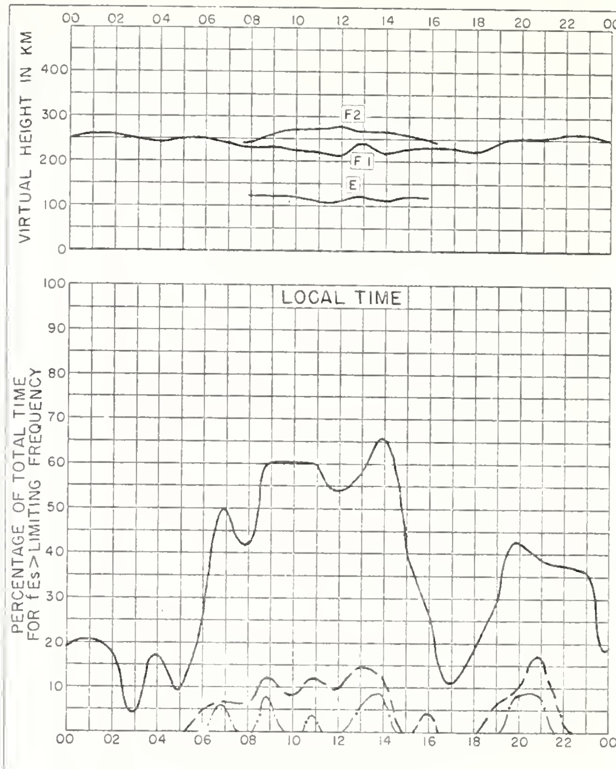


Fig. 13. SAN FRANCISCO, CALIFORNIA
37.4° N, 122.2° W FEBRUARY 1954



FEBRUARY 1954
Fig. 14. SAN FRANCISCO, CALIFORNIA

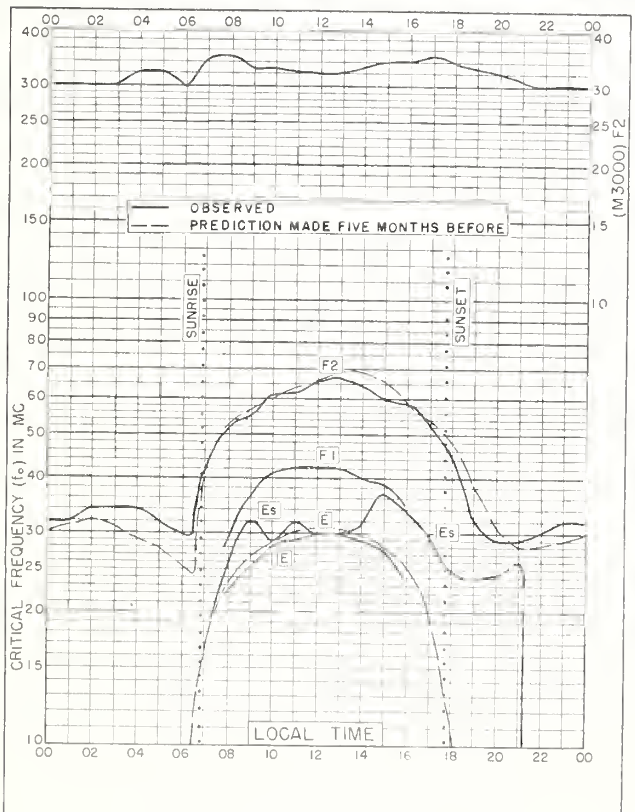
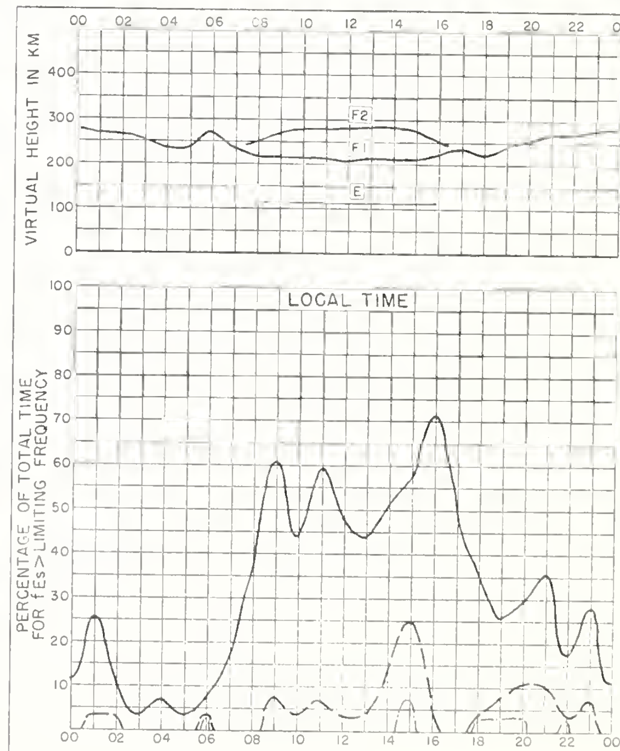


Fig. 15. WHITE SANDS, NEW MEXICO
32.3° N, 106.5° W FEBRUARY 1954



FEBRUARY 1954
Fig. 16. WHITE SANDS, NEW MEXICO

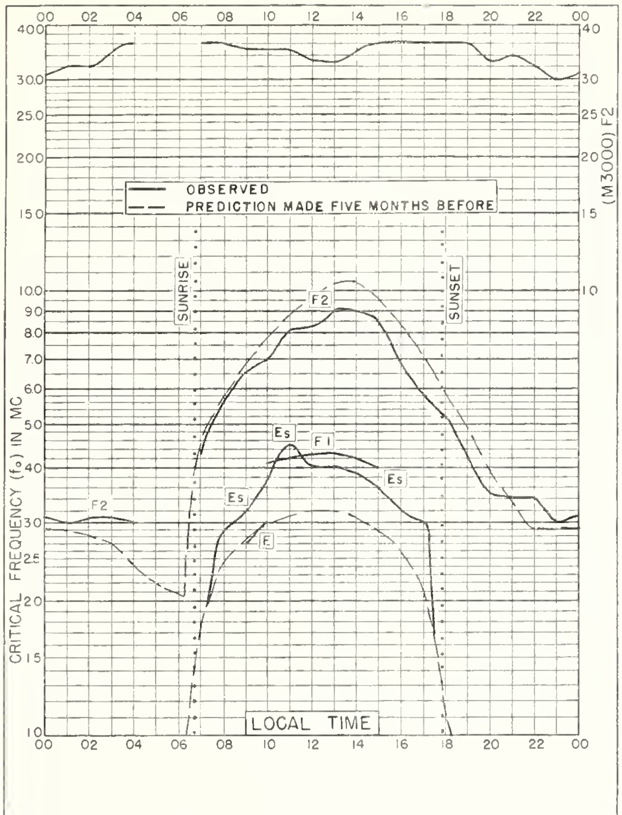


Fig. 17. OKINAWA I.
26.3°N, 127.8°E FEBRUARY 1954

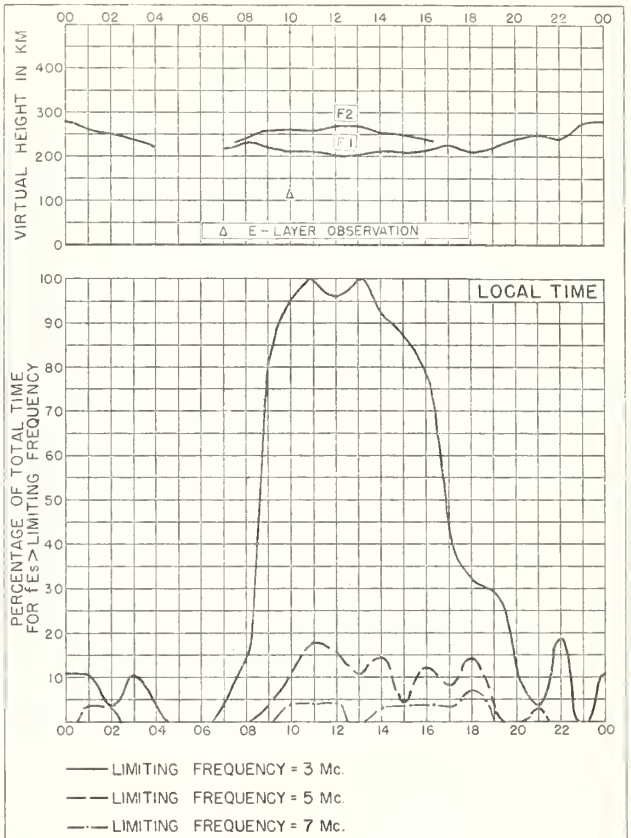


Fig. 18. OKINAWA I. FEBRUARY 1954

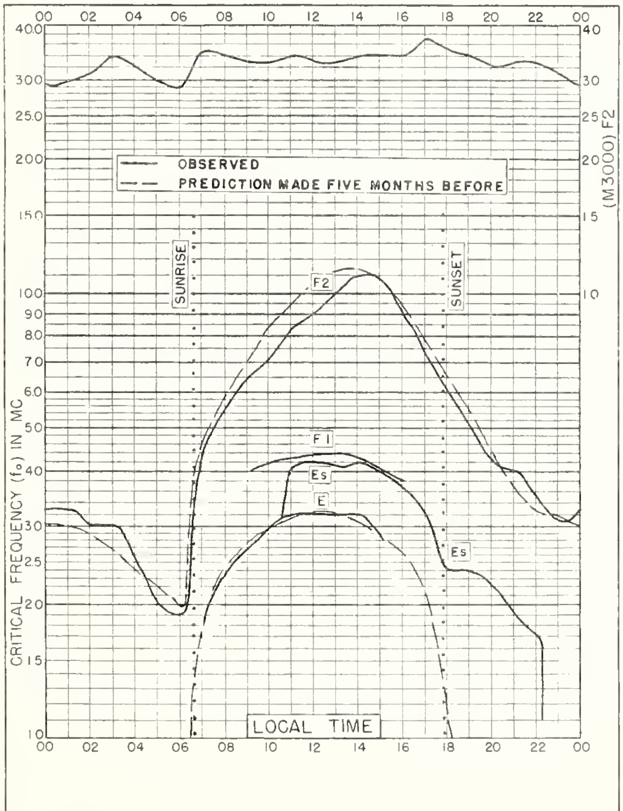


Fig. 19. FORMOSA, CHINA
25.0°N, 121.5°E FEBRUARY 1954

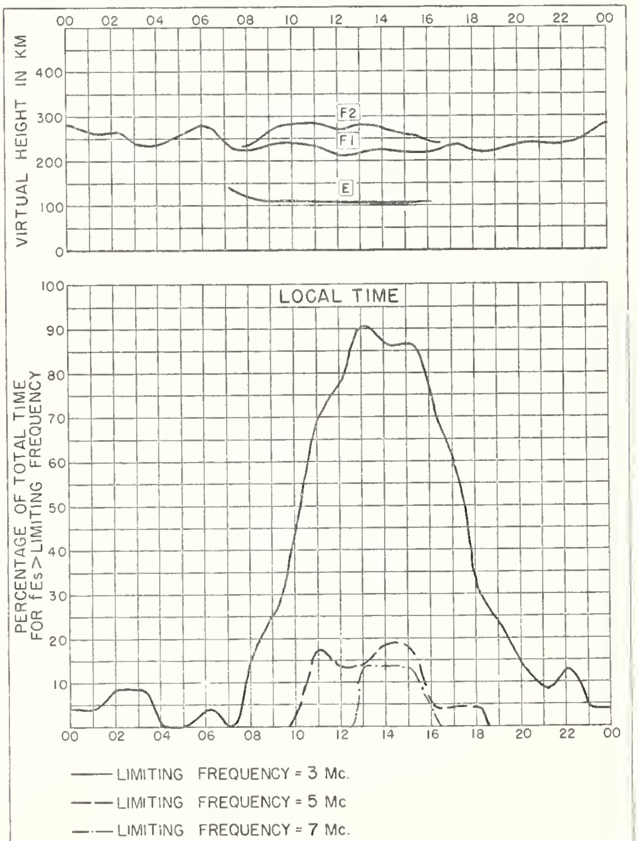


Fig. 20. FORMOSA, CHINA FEBRUARY 1954

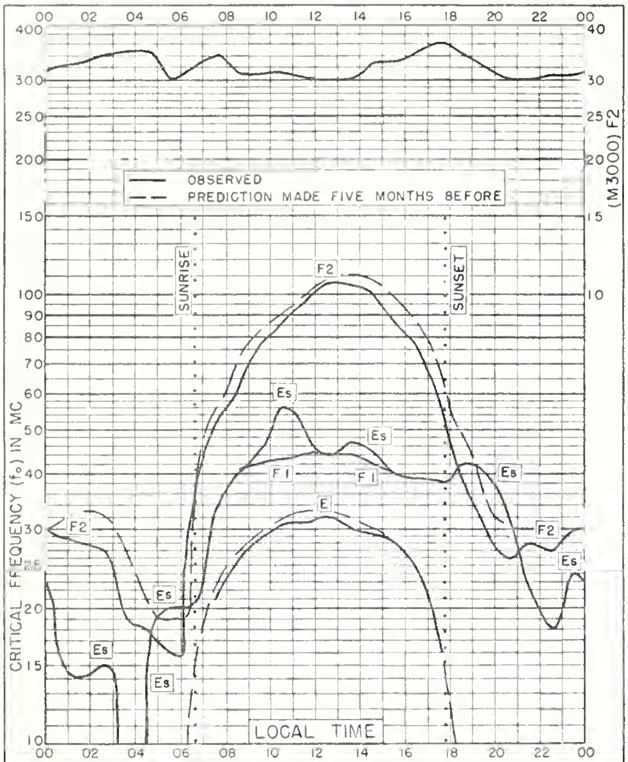


Fig. 21. MAUI, HAWAII
20.8°N, 156.5°W FEBRUARY 1954

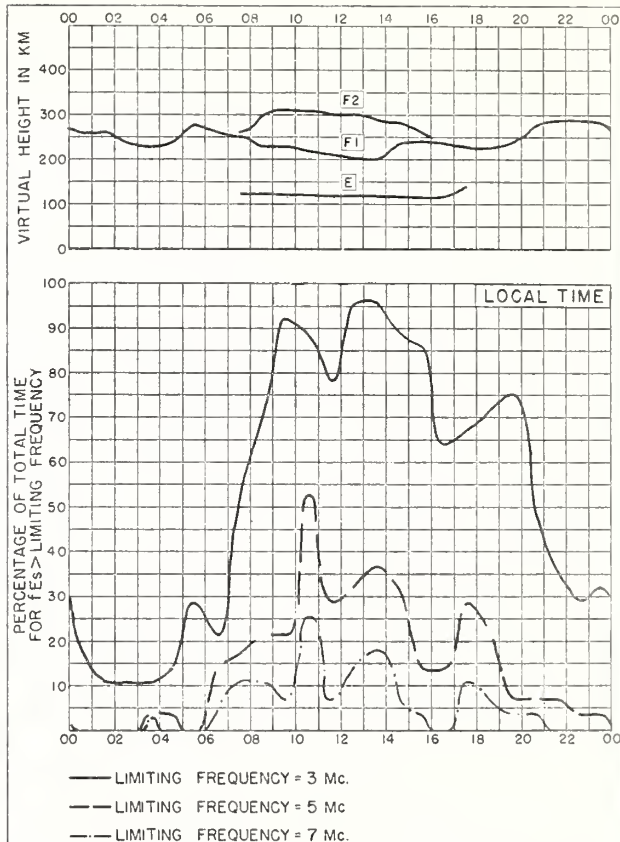


Fig. 22. MAUI, HAWAII FEBRUARY 1954

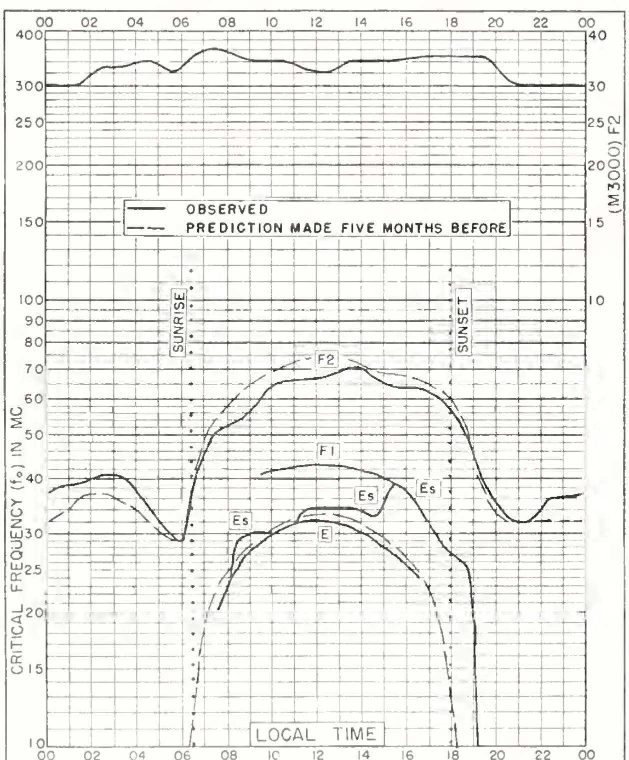


Fig. 23. PUERTO RICO, W. I.
18.5°N, 67.2°W FEBRUARY 1954

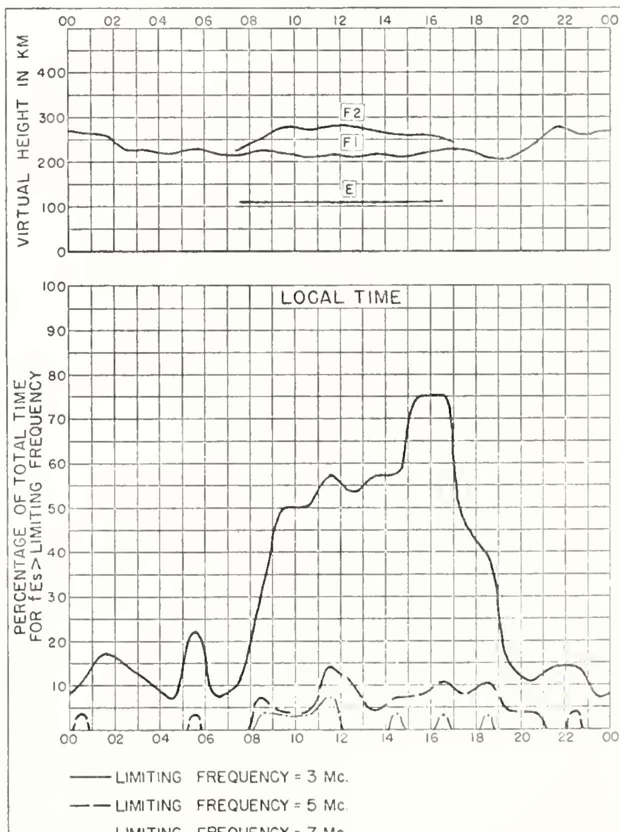


Fig. 24. PUERTO RICO, W. I. FEBRUARY 1954

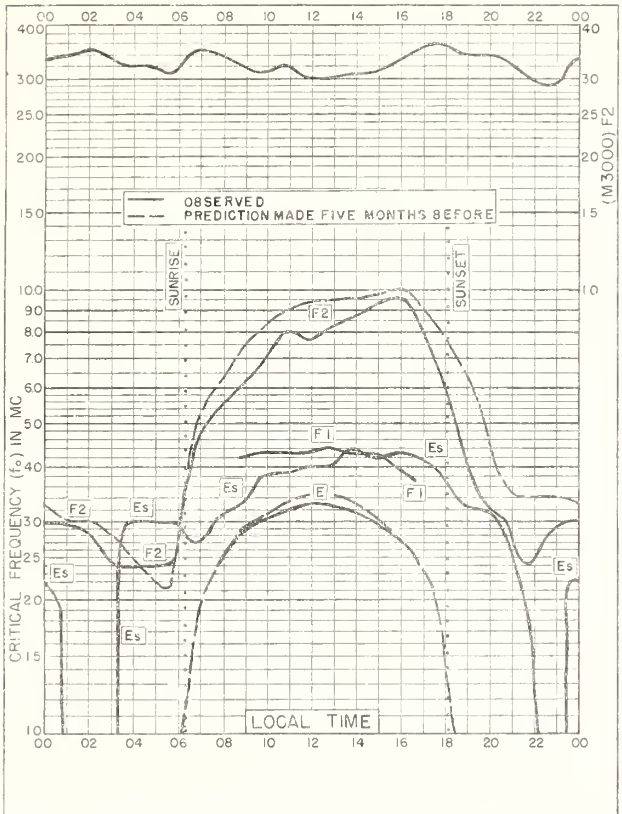
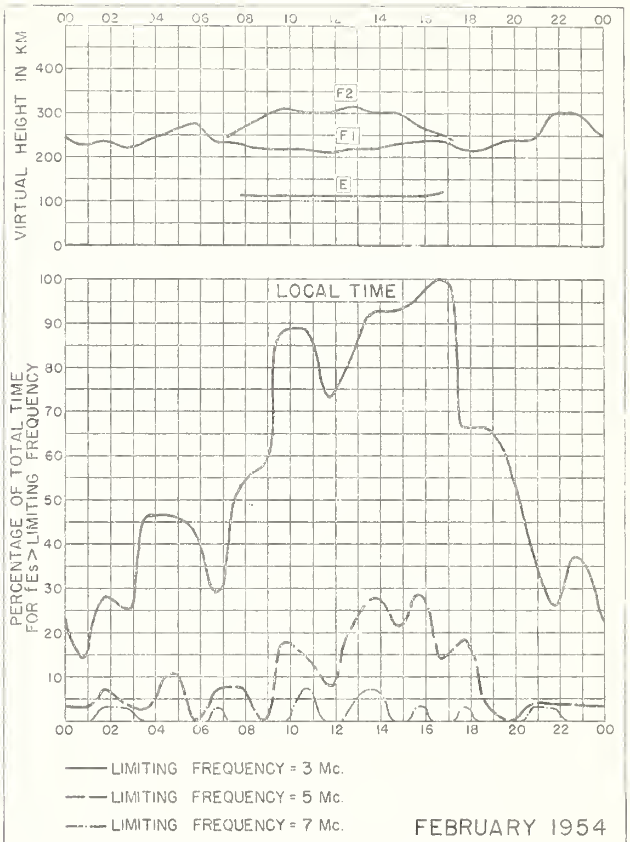


Fig. 25. PANAMA CANAL ZONE
9.4°N, 79.9°W FEBRUARY 1954



FEBRUARY 1954
Fig. 26. PANAMA CANAL ZONE

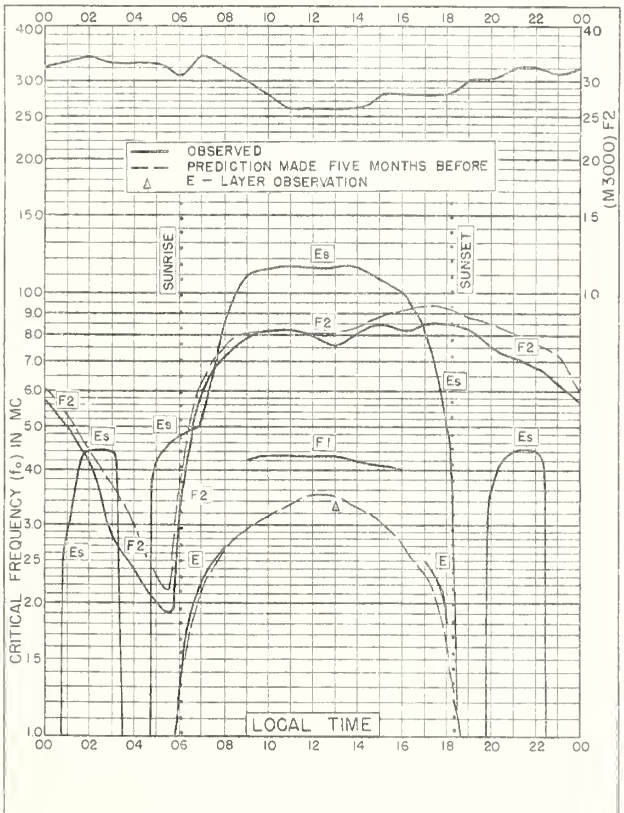


Fig. 27. HUANCAYO, PERU
12.0°S, 75.3°W FEBRUARY 1954

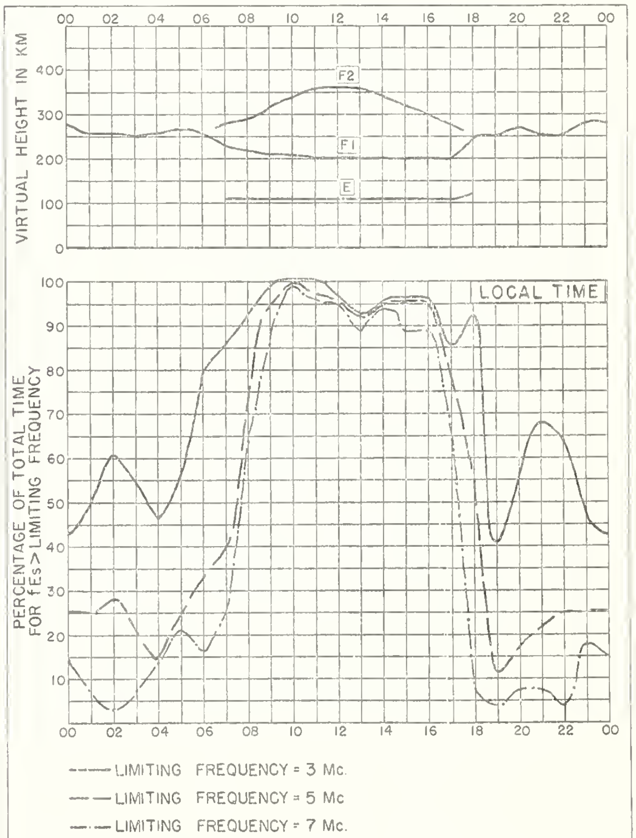


Fig. 28. HUANCAYO, PERU FEBRUARY 1954

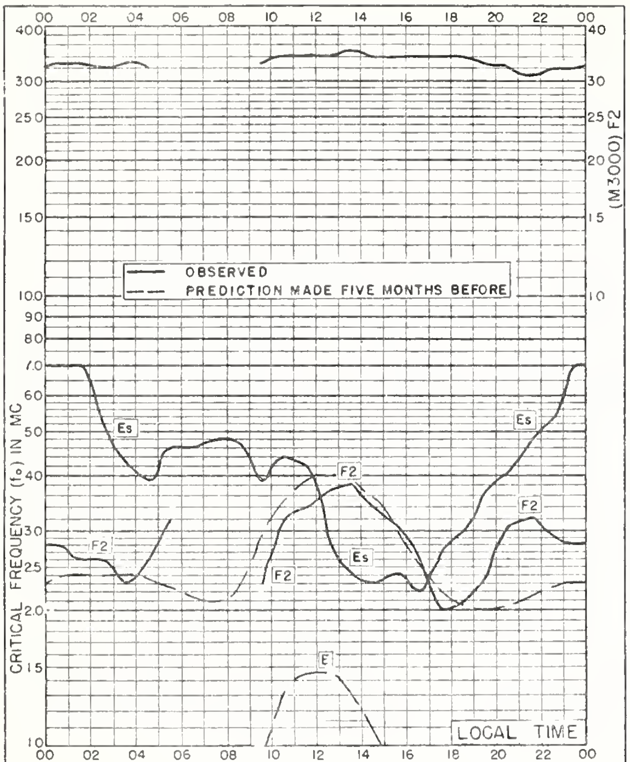
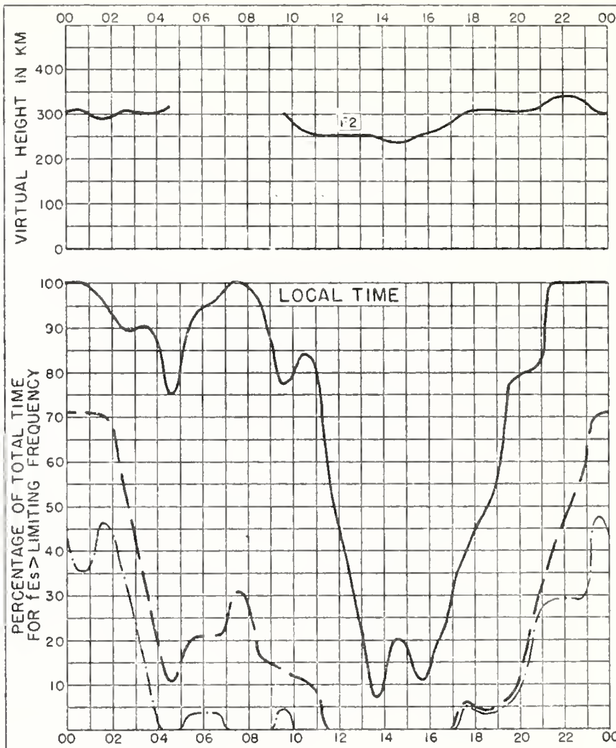


Fig. 29. POINT BARROW, ALASKA
71.3°N, 156.8°W JANUARY 1954



—— LIMITING FREQUENCY = 3 Mc.
— — LIMITING FREQUENCY = 5 Mc
—·— LIMITING FREQUENCY = 7 Mc.

JANUARY 1954

Fig. 30. POINT BARROW, ALASKA

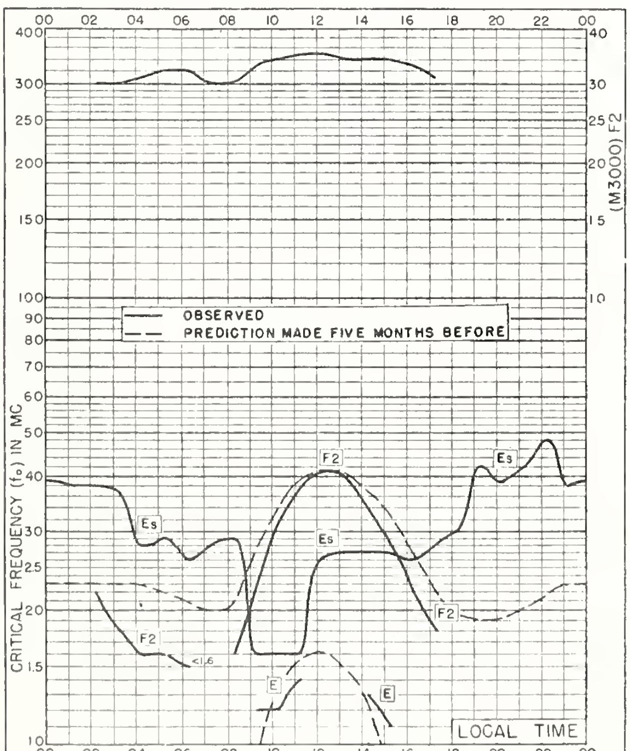


Fig. 31 TROMSO, NORWAY
69.7°N, 19.0°E JANUARY 1954

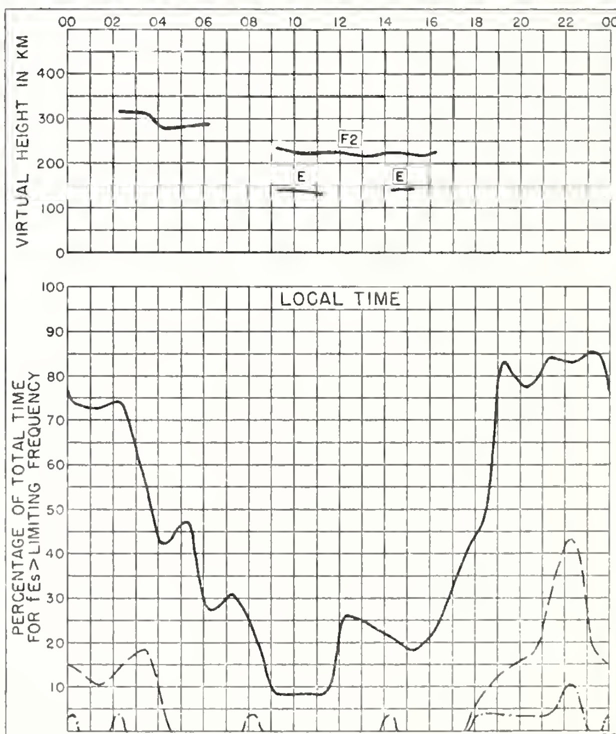


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Fig. 32. TROMSO, NORWAY JANUARY 1954

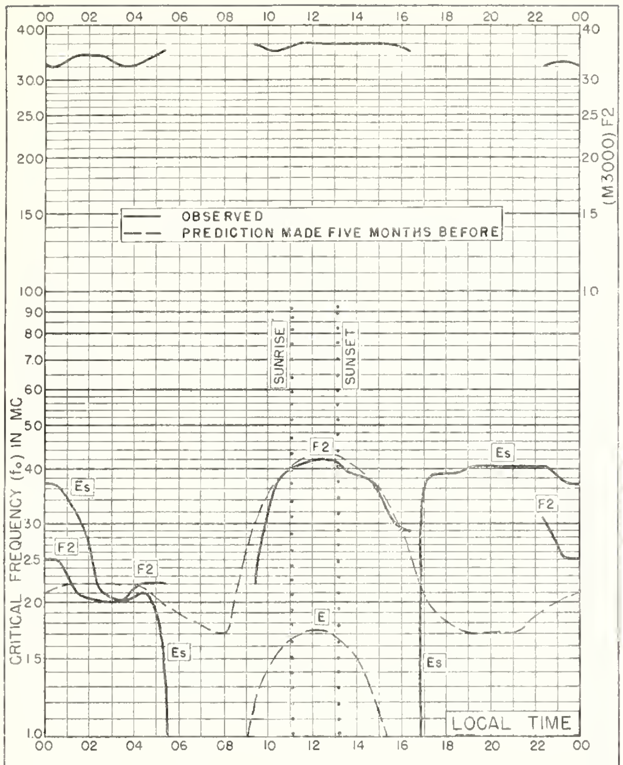


Fig. 33. KIRUNA, SWEDEN
67.8°N, 20.3°E JANUARY 1954

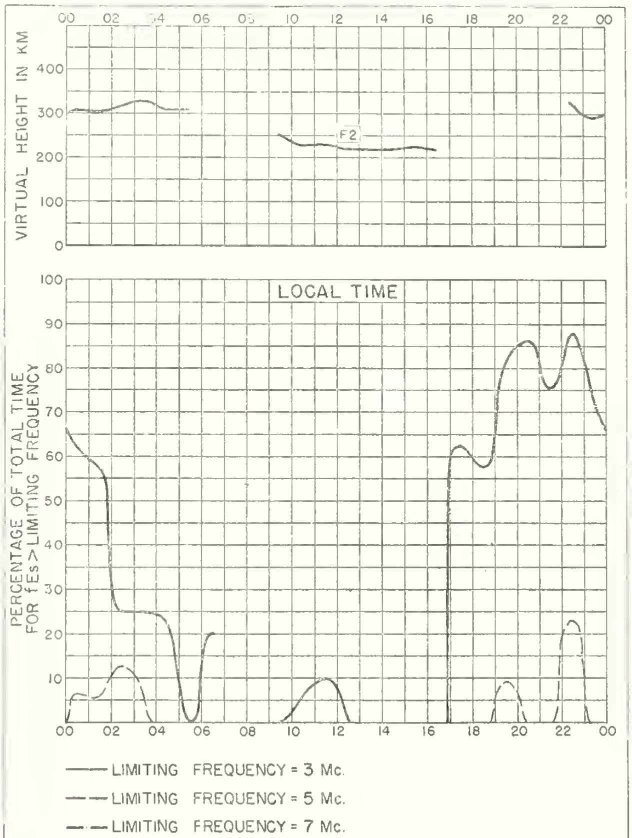


Fig. 34. KIRUNA, SWEDEN JANUARY 1954

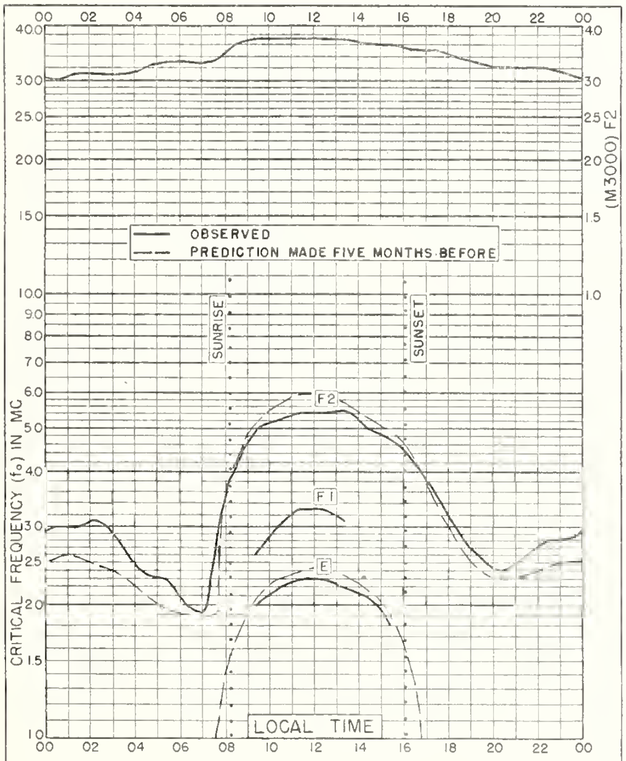


Fig. 35. De BILT, HOLLAND
52.1°N, 5.2°E JANUARY 1954

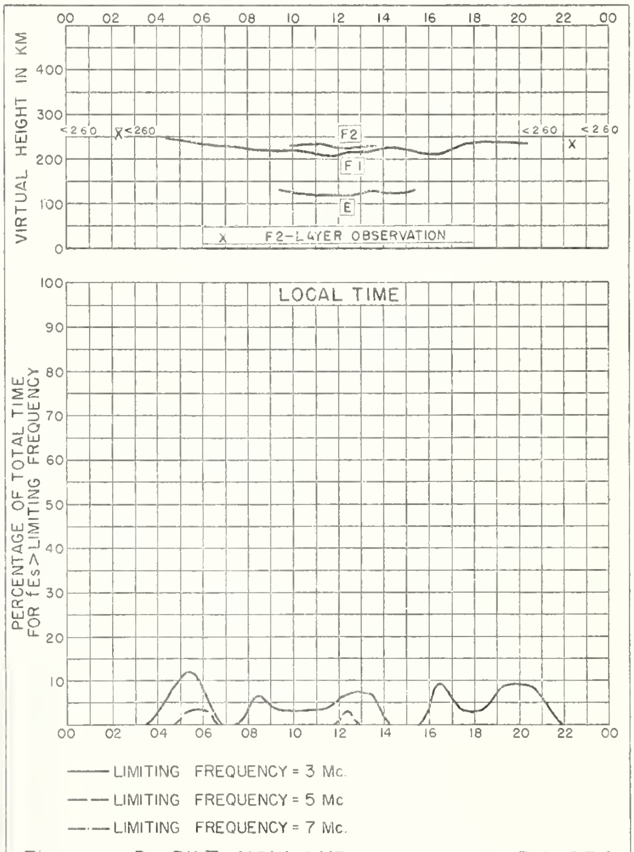


Fig. 36. De BILT, HOLLAND JANUARY 1954

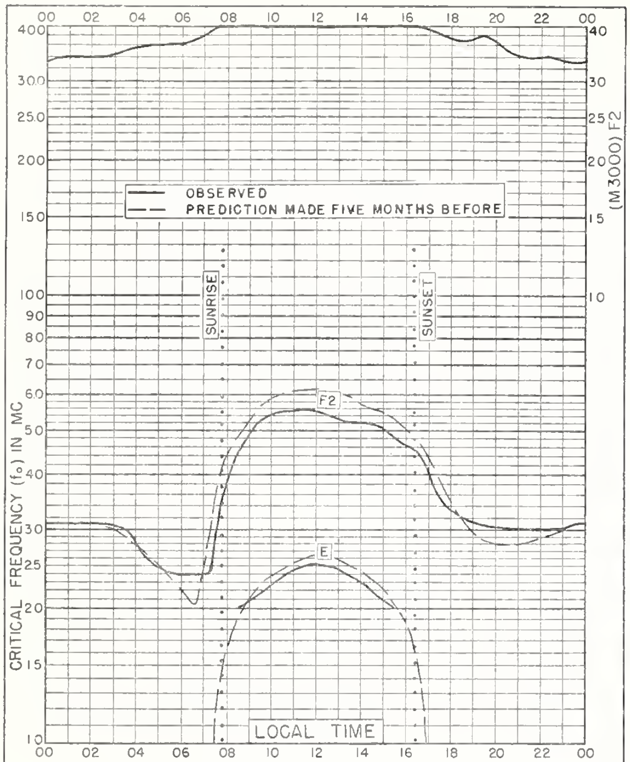


Fig. 37. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E JANUARY 1954

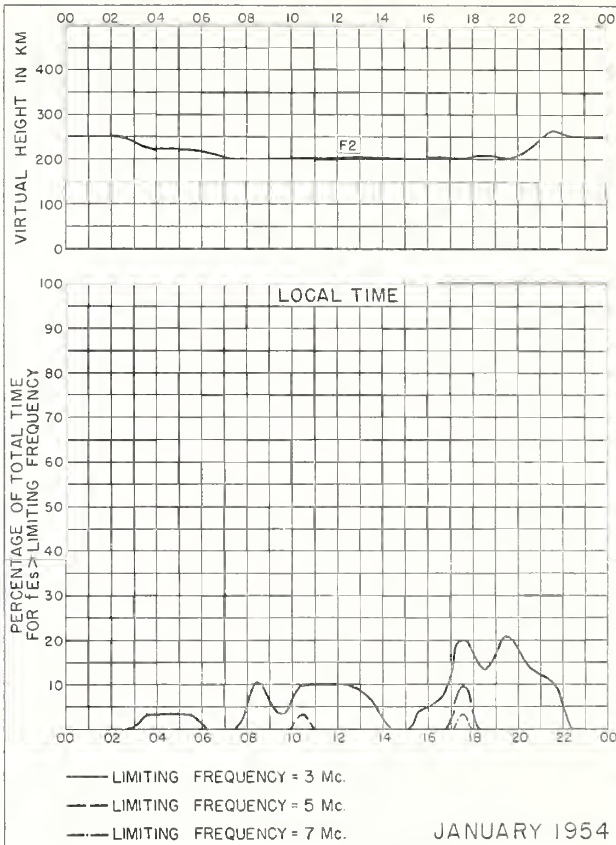


Fig. 38. SCHWARZENBURG, SWITZERLAND

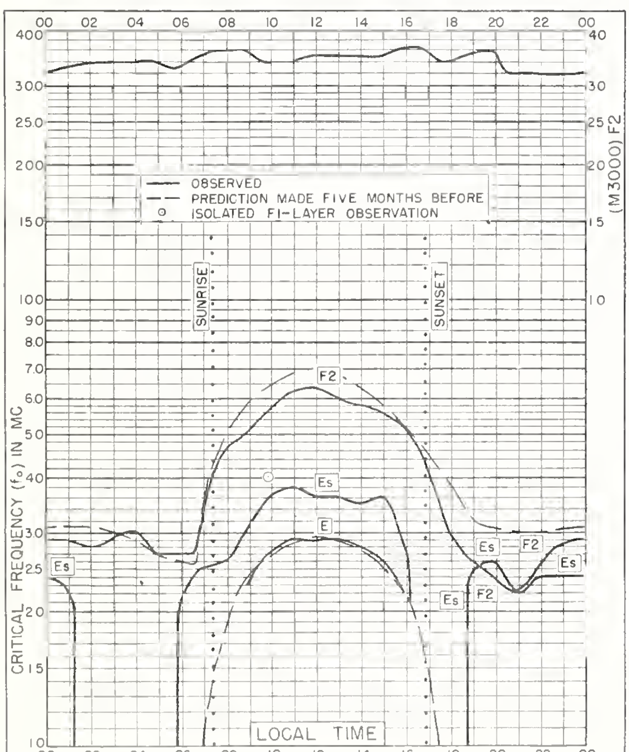


Fig. 39. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JANUARY 1954

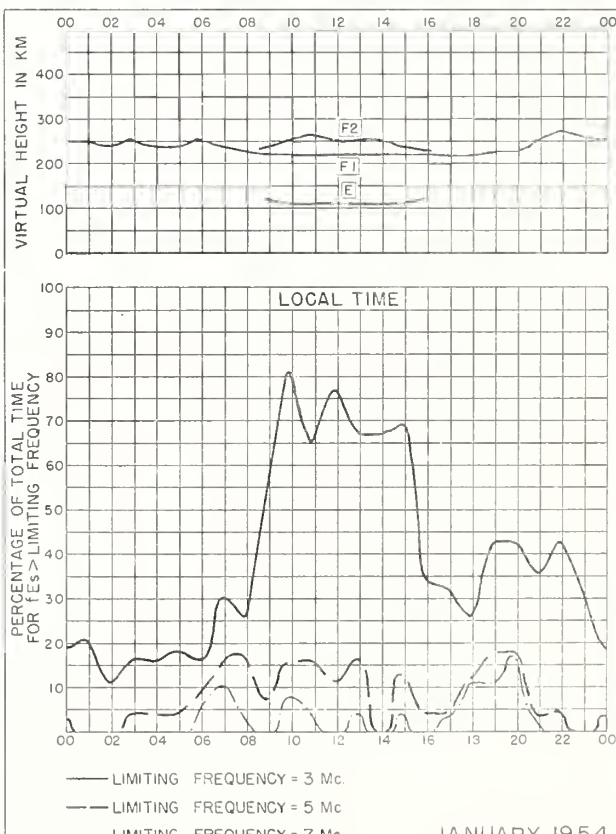


Fig. 40. SAN FRANCISCO, CALIFORNIA

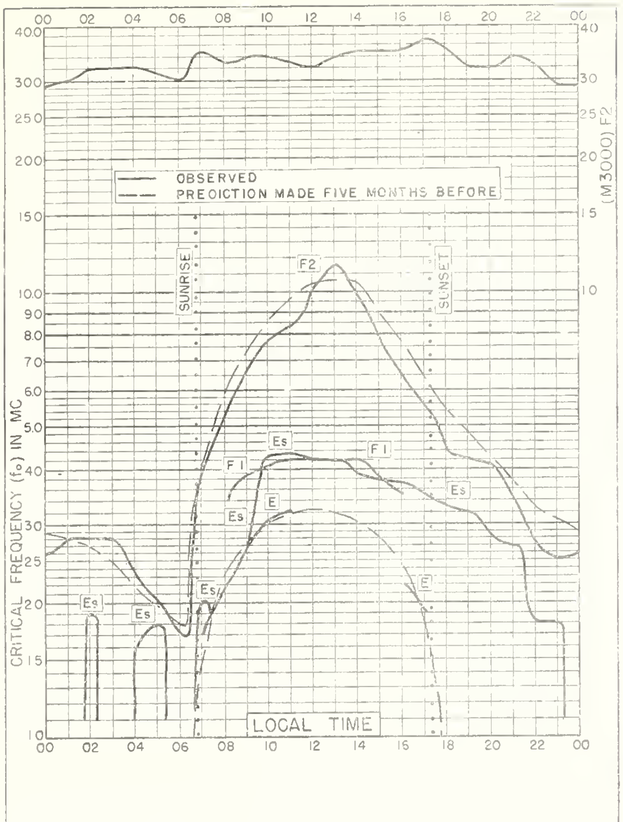


Fig. 41. FORMOSA, CHINA
25.0°N, 121.5°E JANUARY 1954

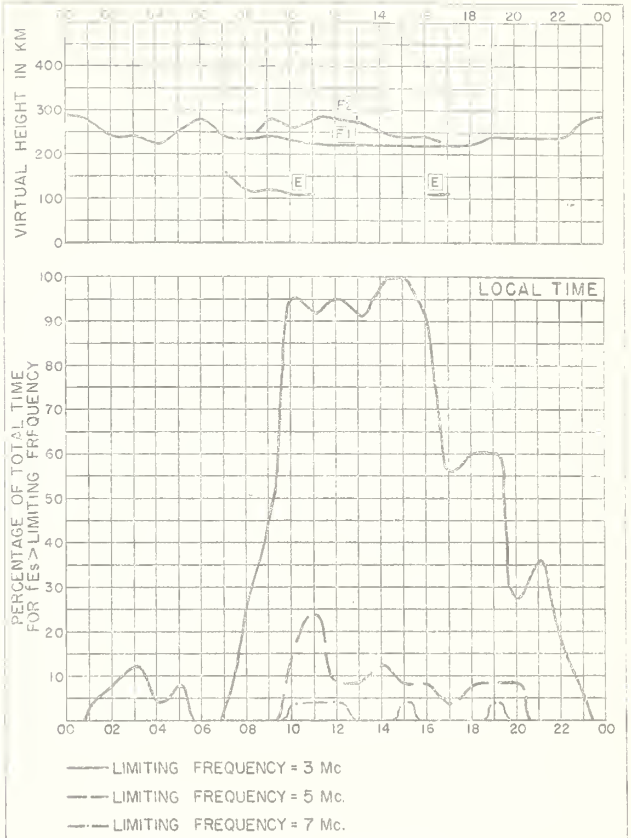


Fig. 42. FORMOSA, CHINA JANUARY 1954

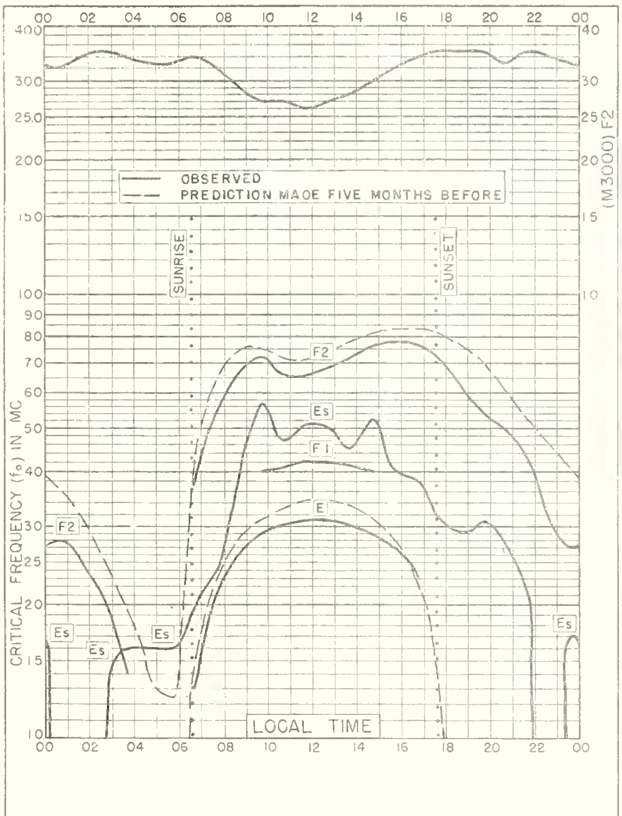


Fig. 43. GUAM I.
13.6°N, 144.9°E JANUARY 1954

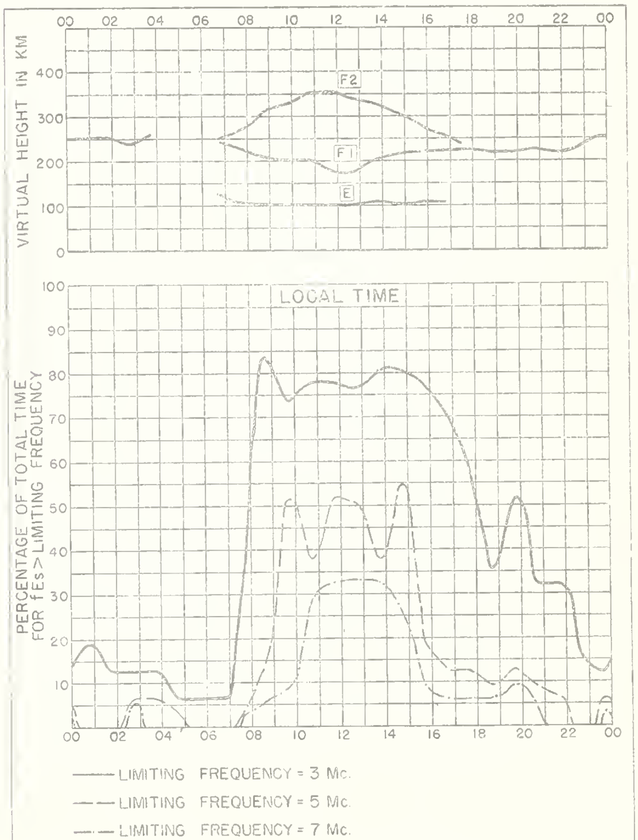


Fig. 44. GUAM I. JANUARY 1954

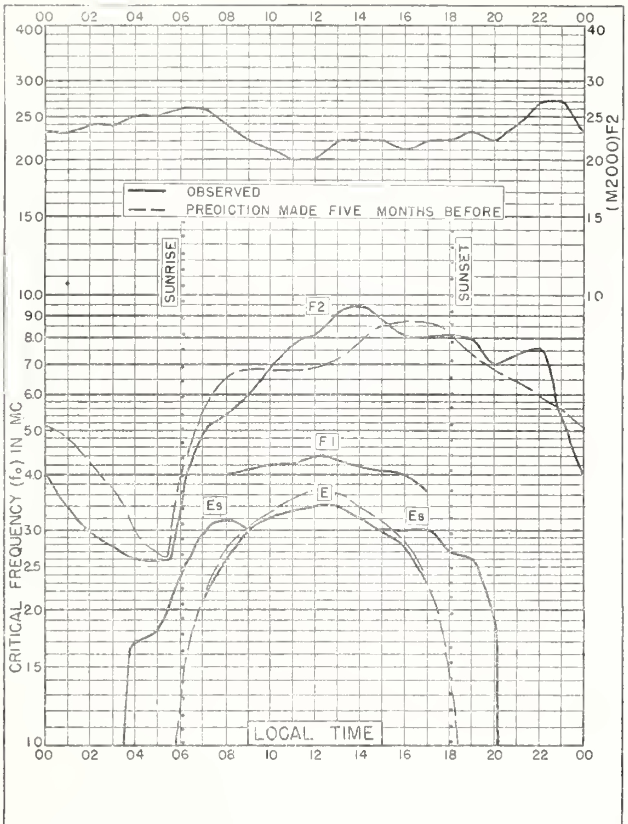
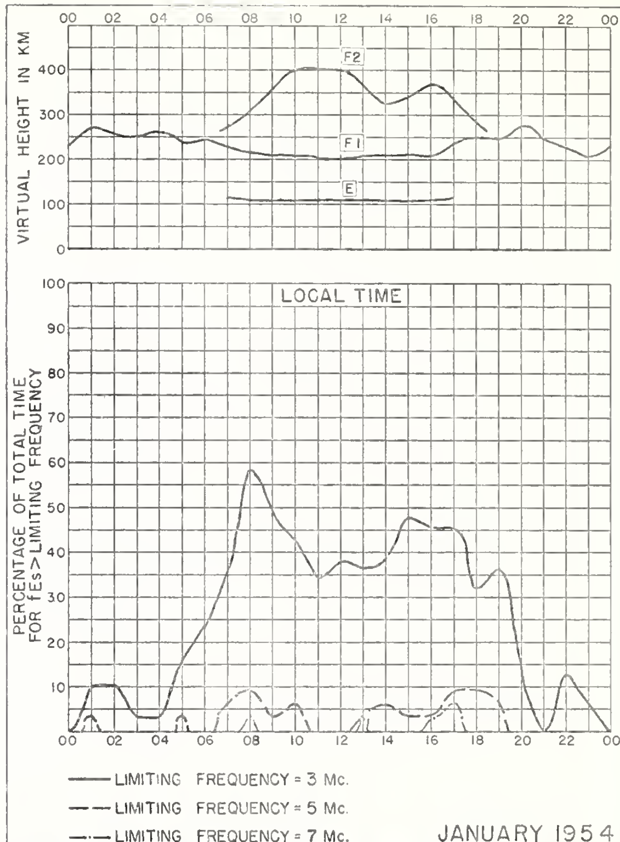


Fig. 45. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E JANUARY 1954



JANUARY 1954
Fig. 46. LEOPOLDVILLE, BELGIAN CONGO

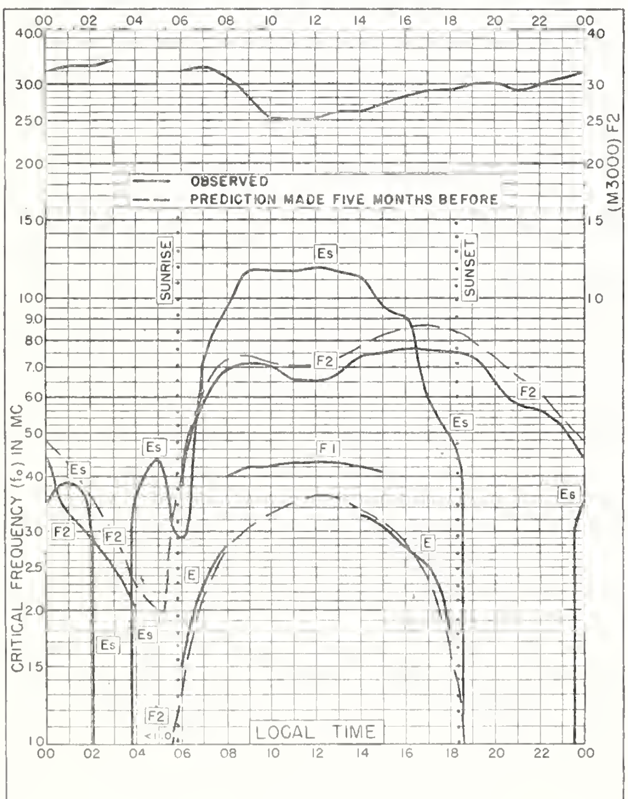


Fig. 47. HUANCAYO, PERU
12.0°S, 75.3°W JANUARY 1954

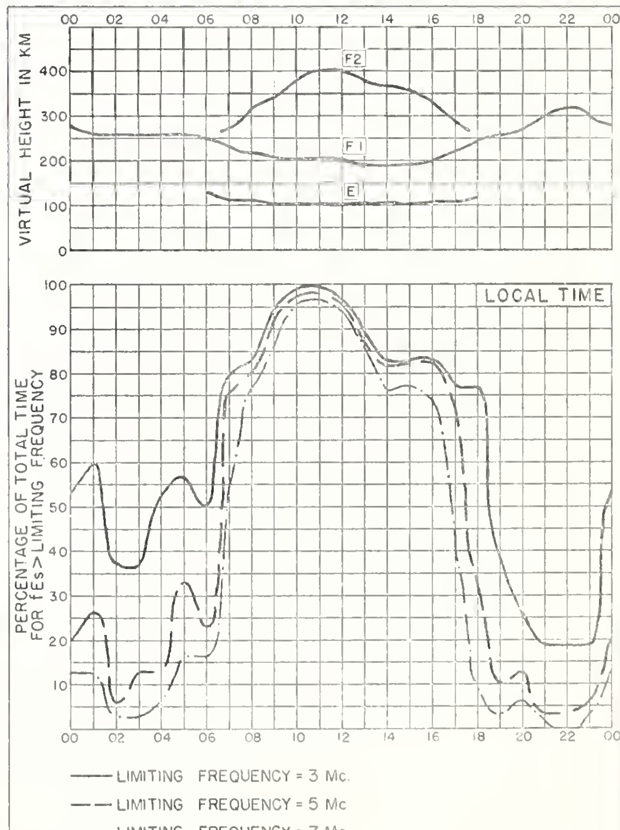


Fig. 48. HUANCAYO, PERU JANUARY 1954

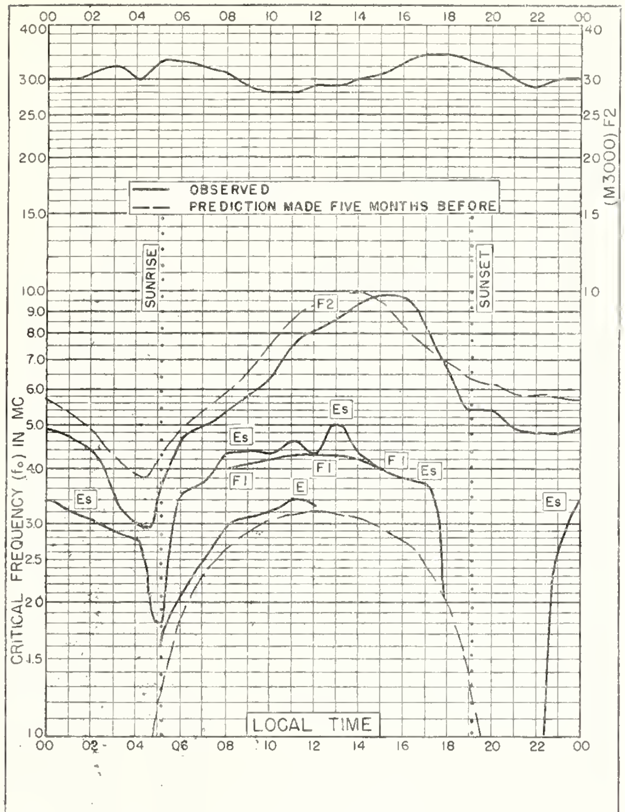
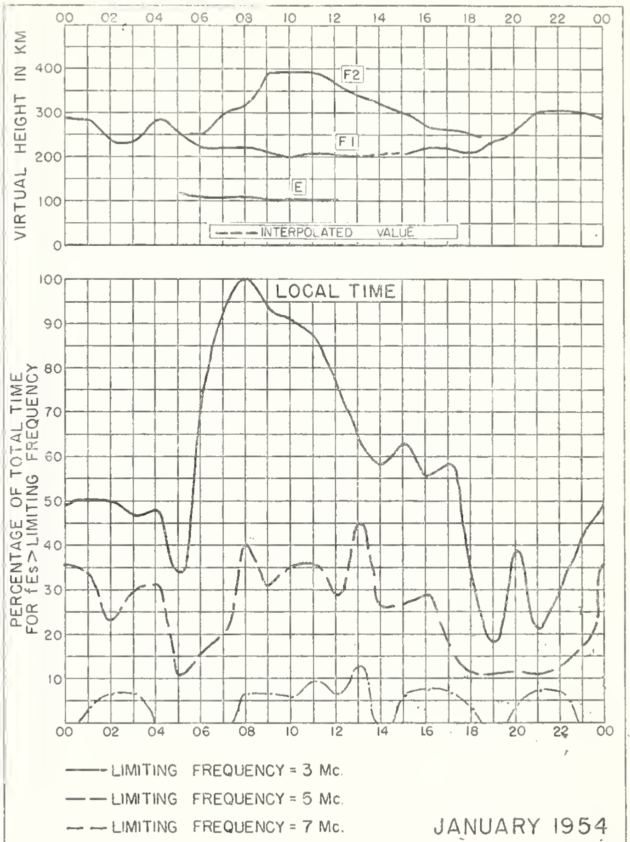


Fig. 49. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W JANUARY 1954



JANUARY 1954
Fig. 50. BUENOS AIRES, ARGENTINA

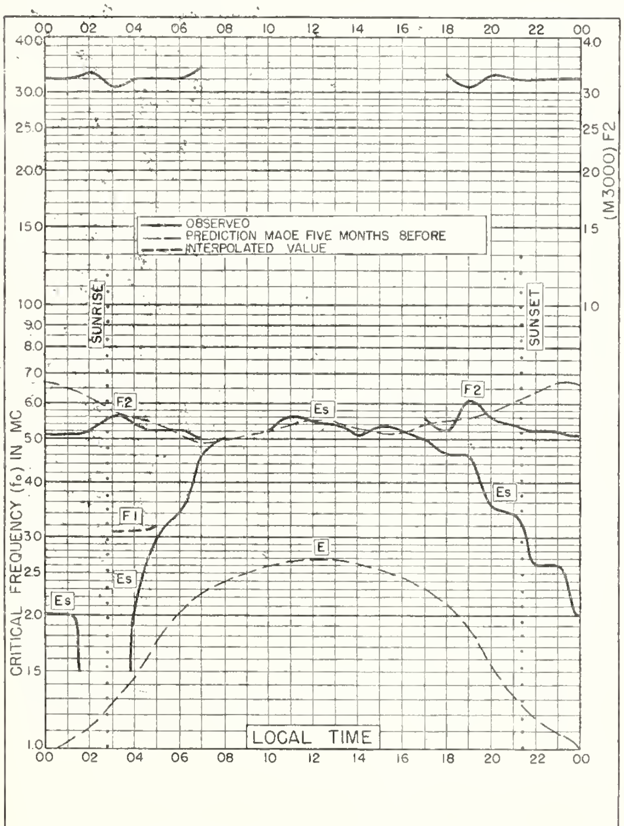


Fig. 51. DECEPCION I.
63.0°S, 60.7°W JANUARY 1954

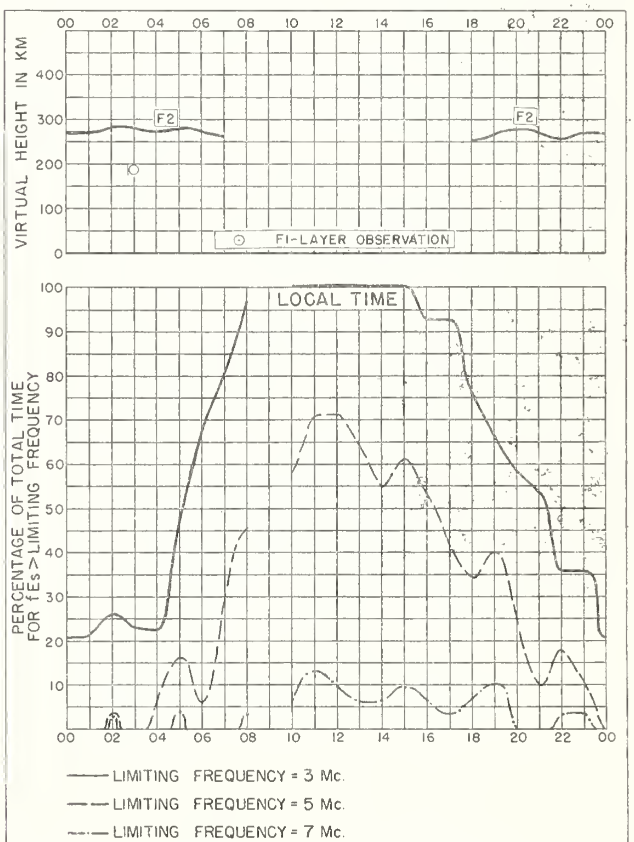


Fig. 52. DECEPCION I. JANUARY 1954

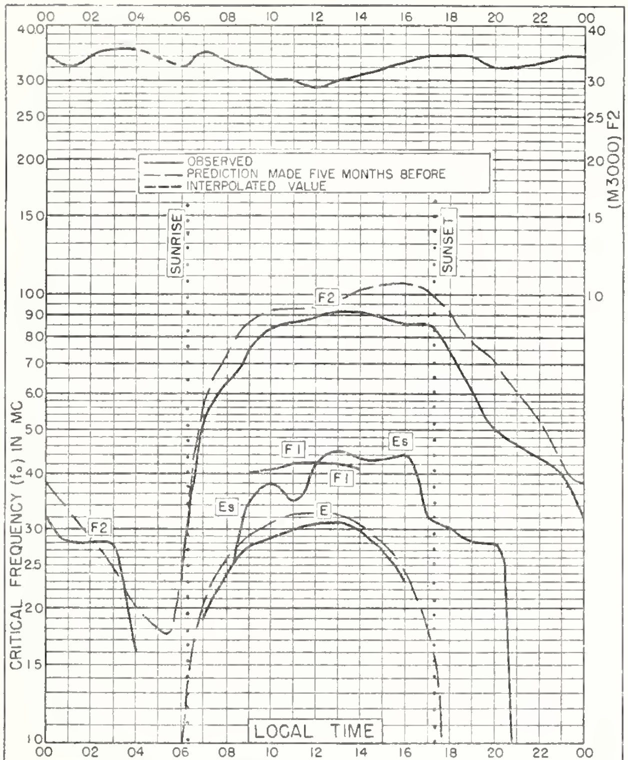


Fig. 53. BAGUIO, P. I.
16.4°N, 120.6°E DECEMBER 1953

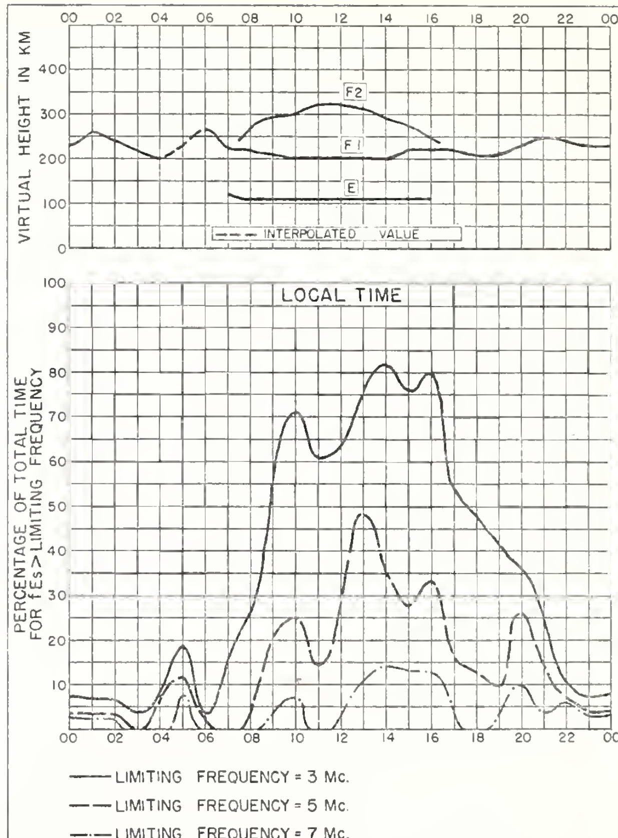


Fig. 54. BAGUIO, P. I. DECEMBER 1953

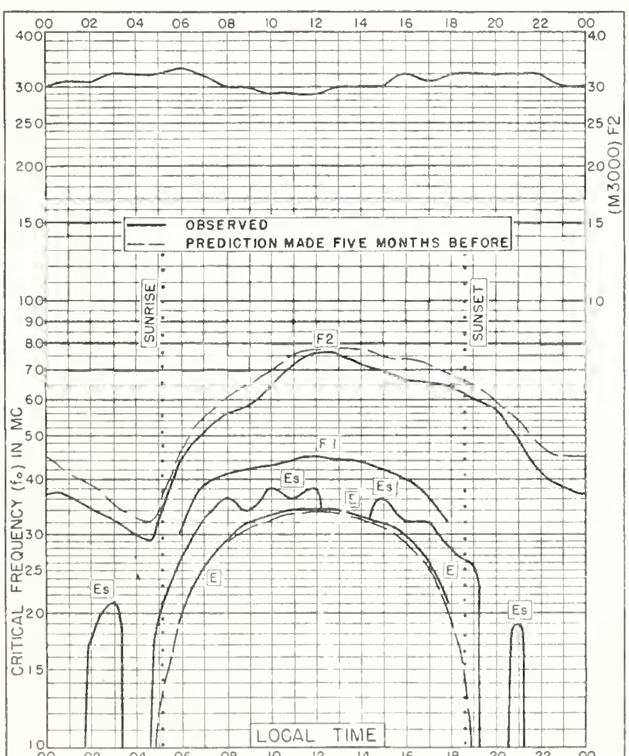
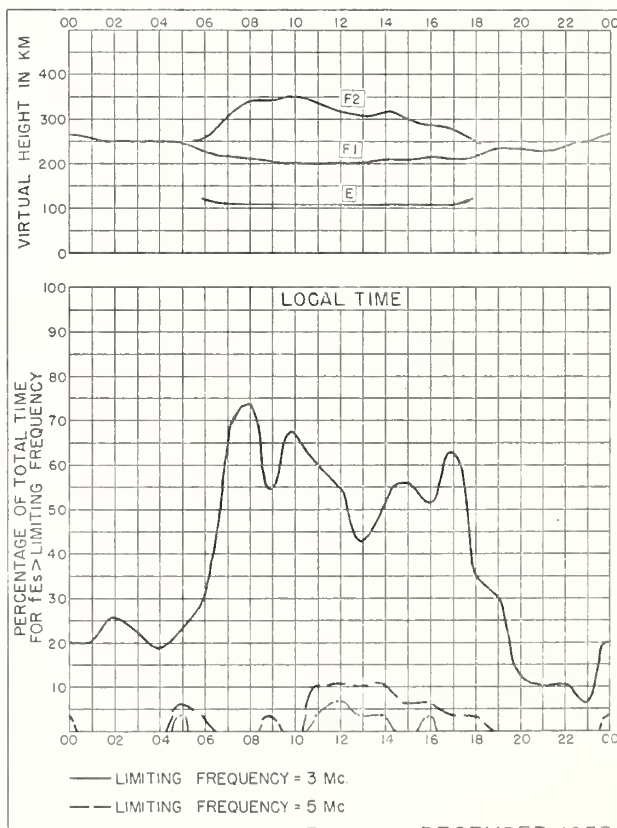


Fig. 55. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E DECEMBER 1953



DECEMBER 1953
Fig. 56. JOHANNESBURG, UNION OF S. AFRICA

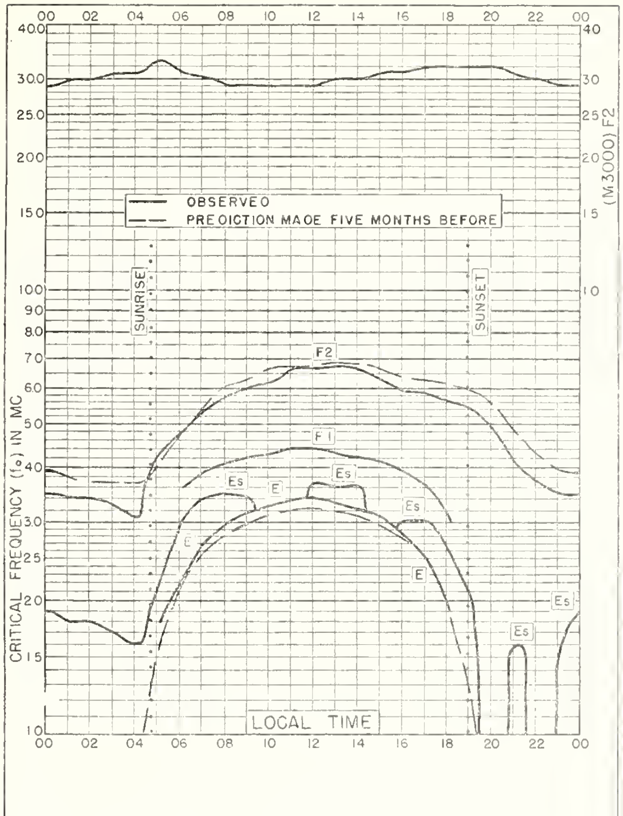
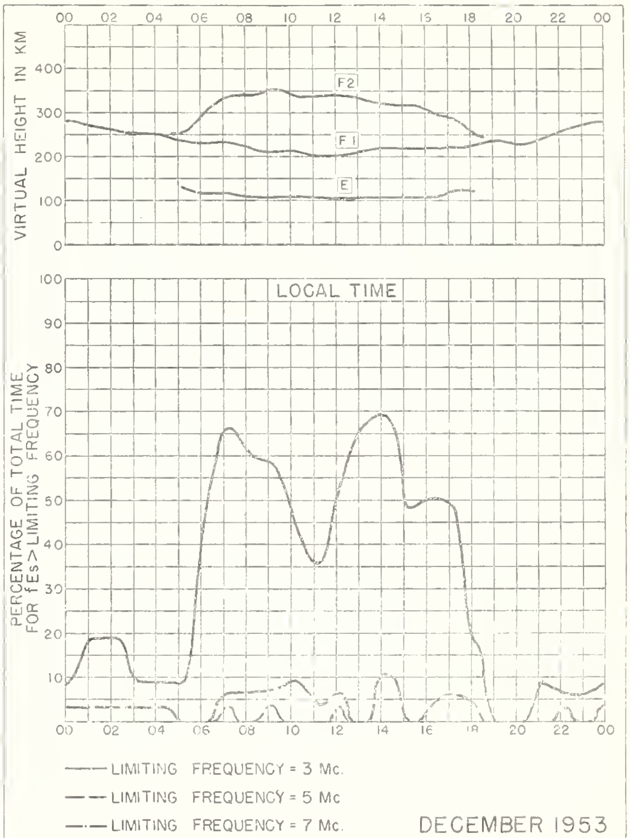


Fig. 57. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E DECEMBER 1953



DECEMBER 1953
Fig. 58. CAPETOWN, UNION OF S. AFRICA

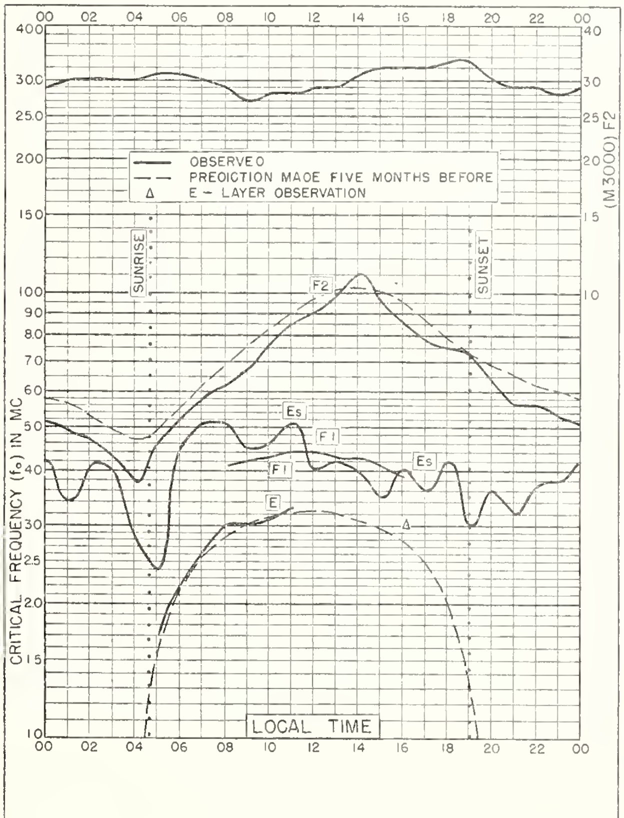
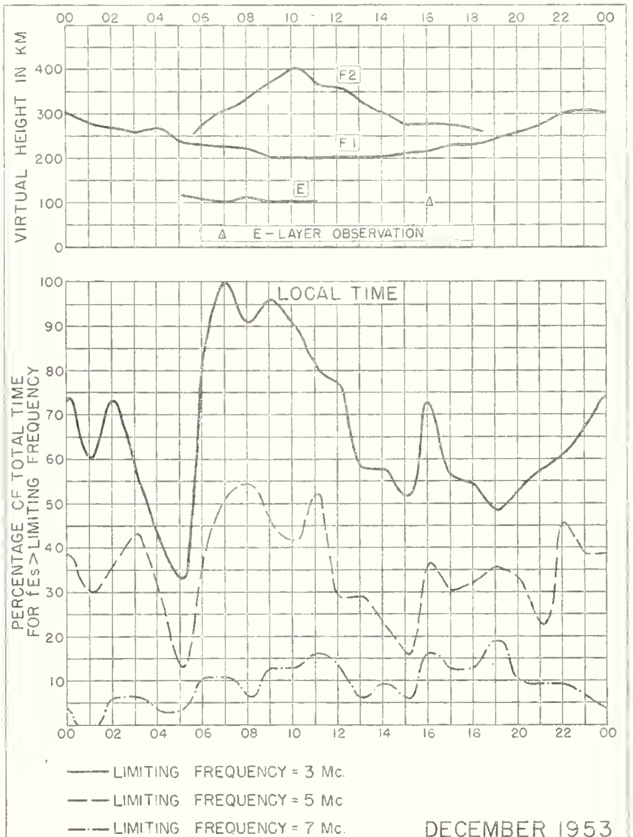


Fig. 59. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W DECEMBER 1953



DECEMBER 1953
Fig. 60. BUENOS AIRES, ARGENTINA

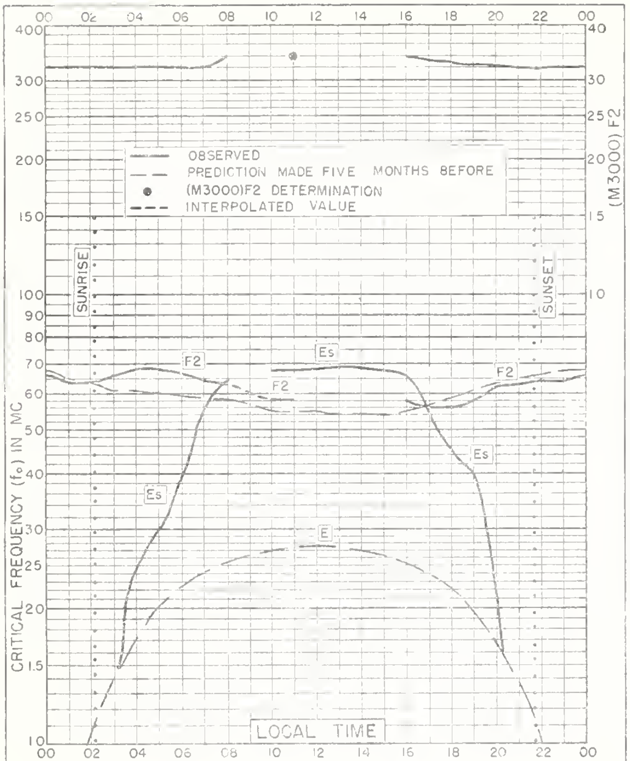


Fig. 61. DECEPCION I.
63.0°S, 60.7°W DECEMBER 1953

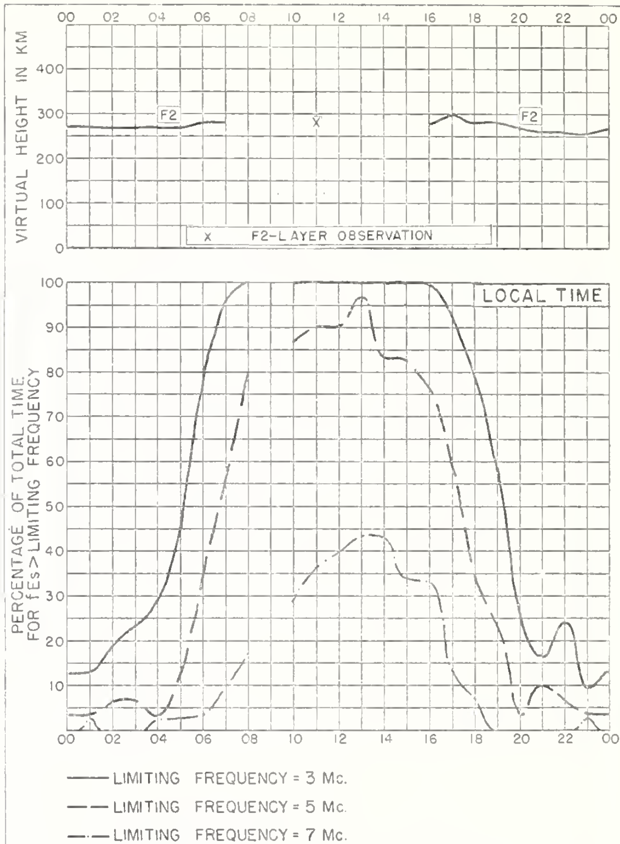


Fig. 62. DECEPCION I. DECEMBER 1953

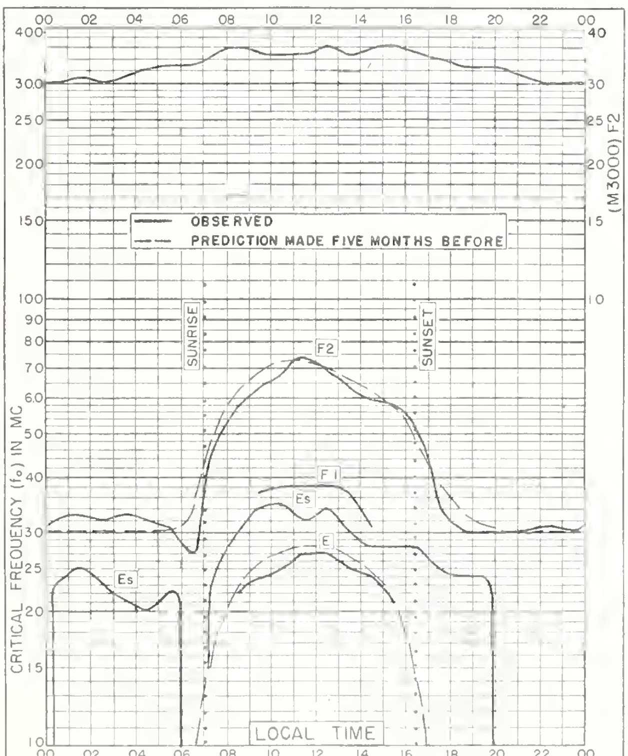


Fig. 63. WAKKANAI, JAPAN
45.4°N, 141.7°E NOVEMBER 1953

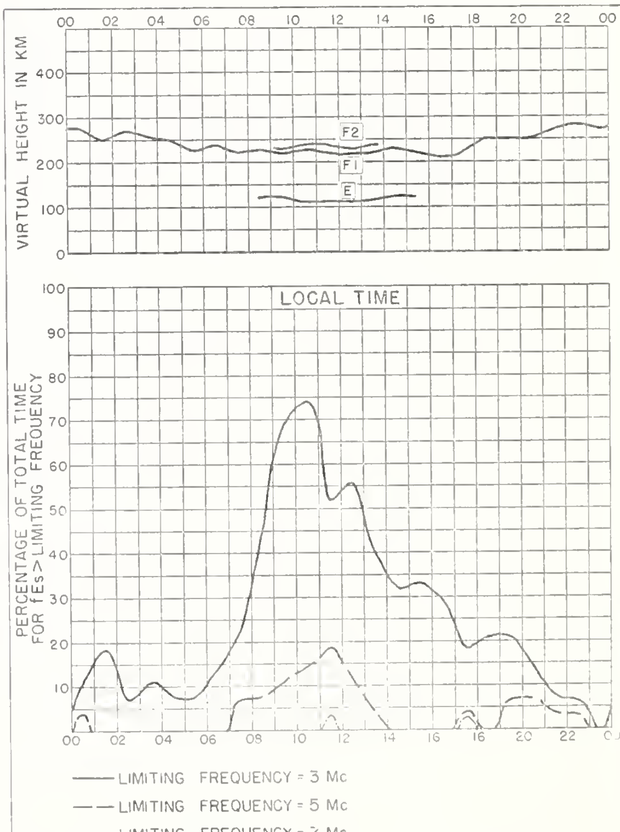


Fig. 64. WAKKANAI, JAPAN NOVEMBER 1953

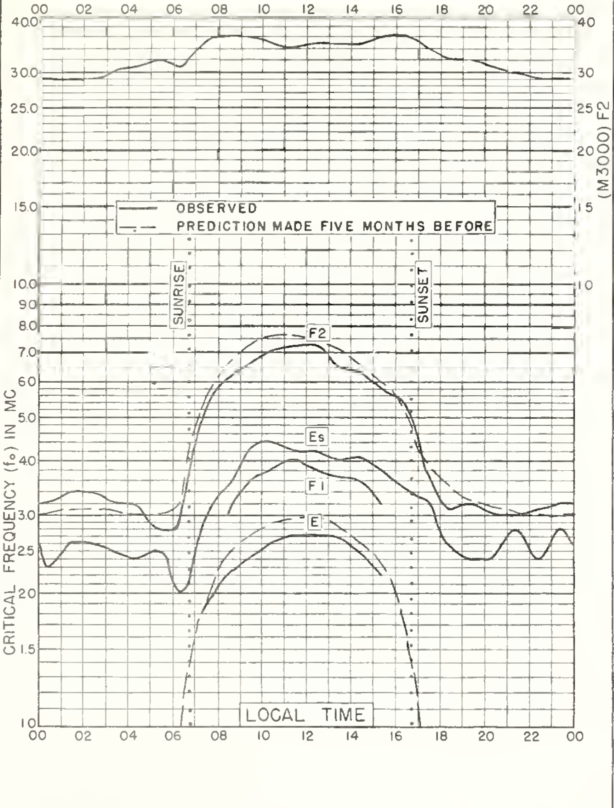


Fig. 65. AKITA, JAPAN
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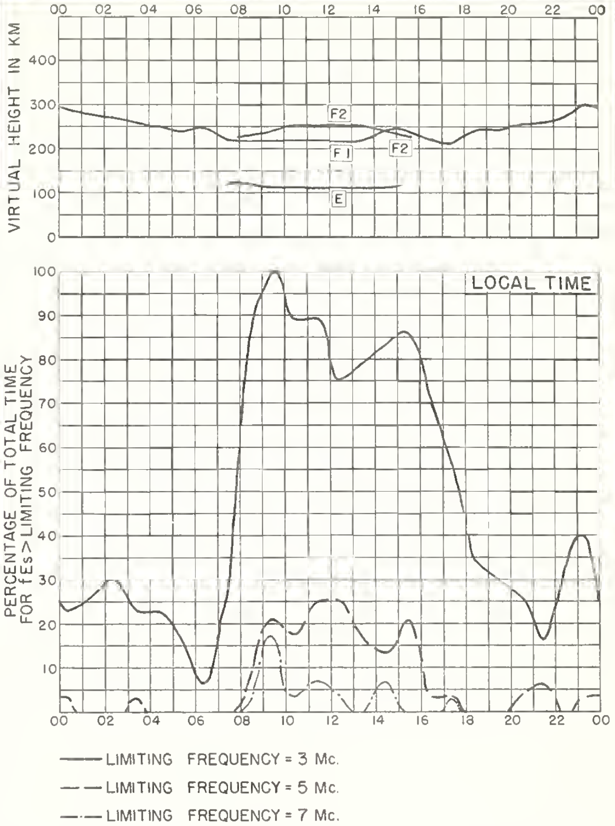
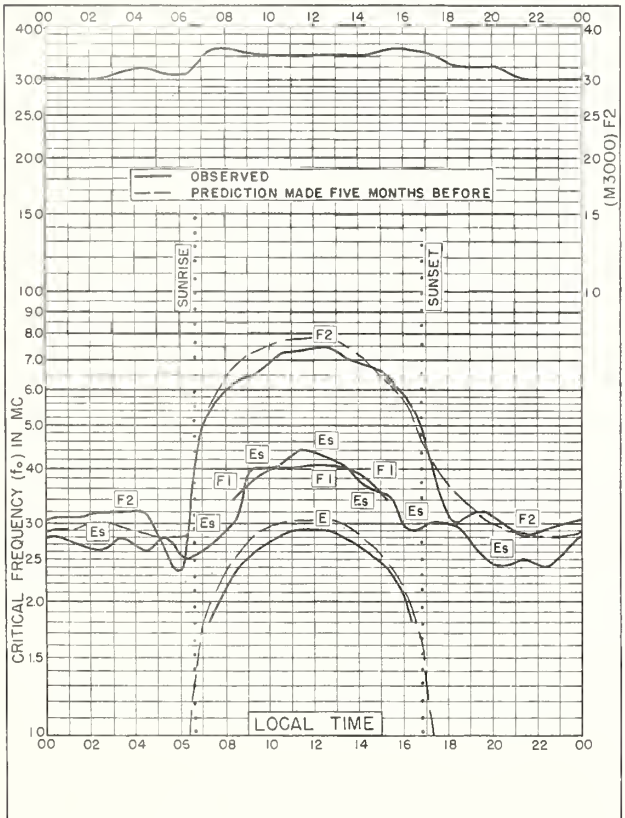


Fig. 66. AKITA, JAPAN NOVEMBER 1953



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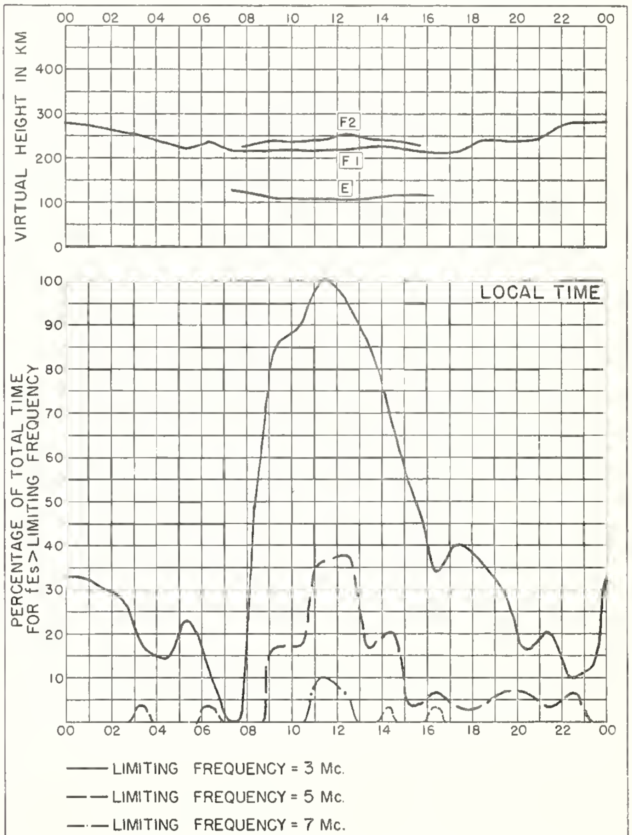

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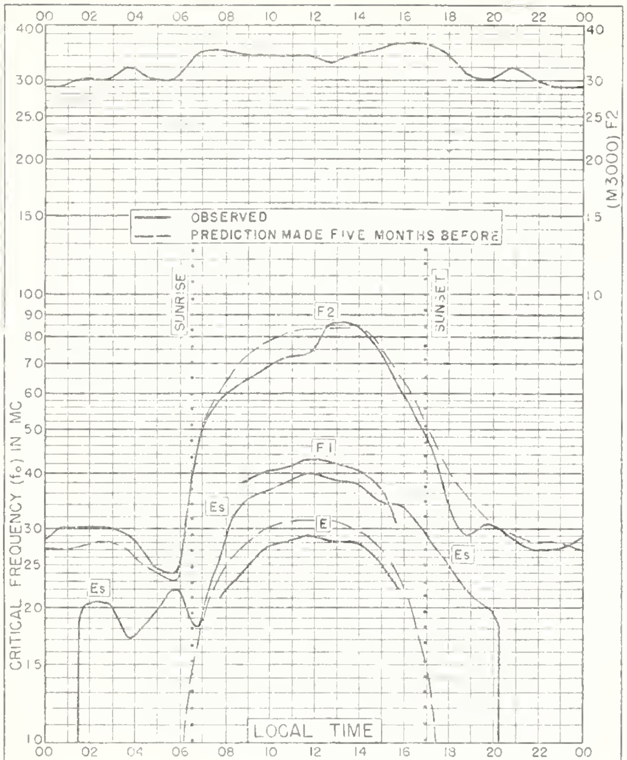

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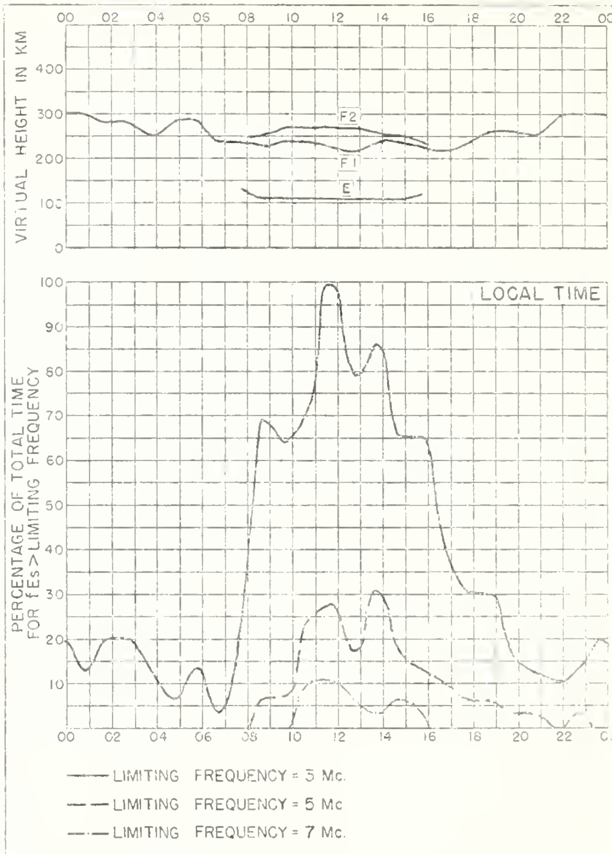

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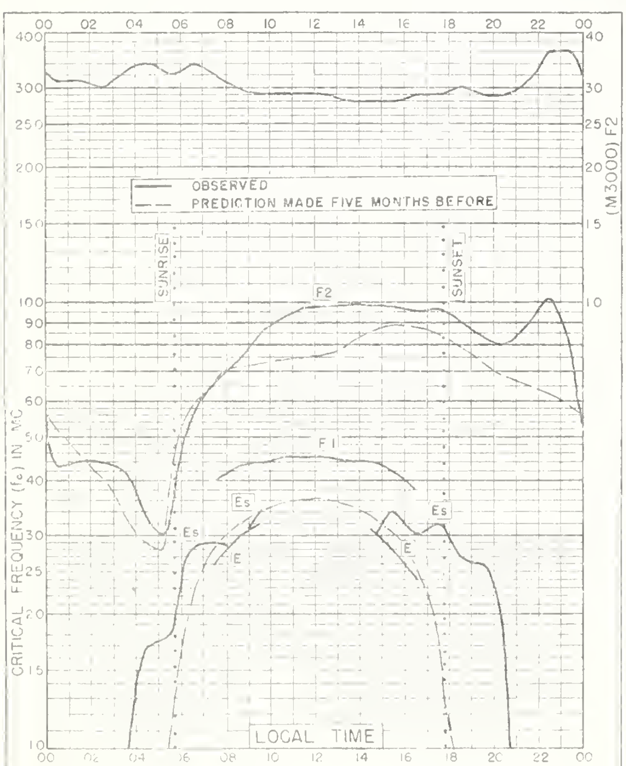

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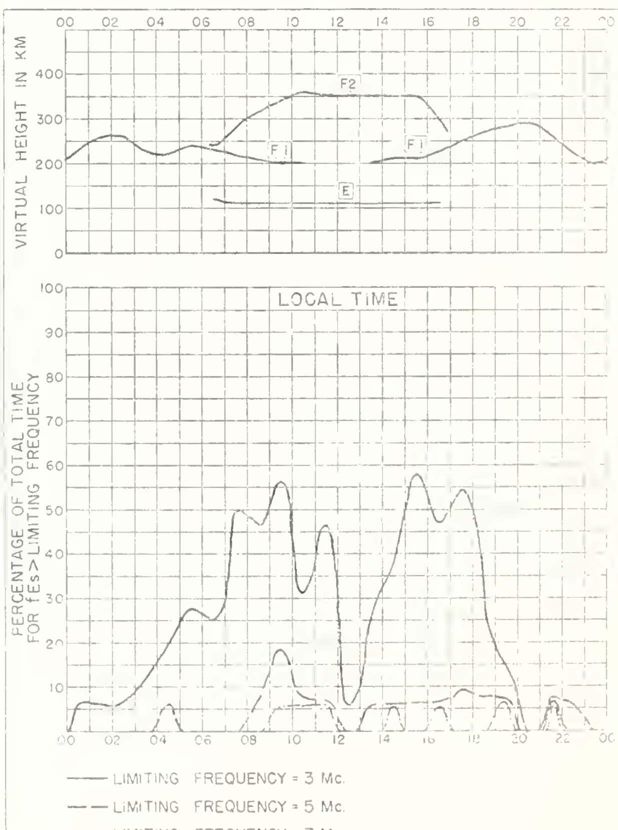

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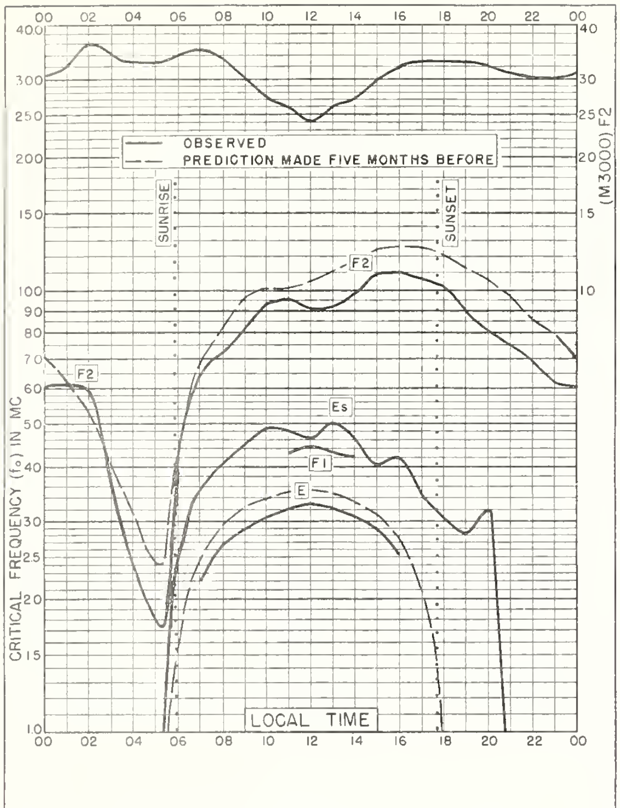

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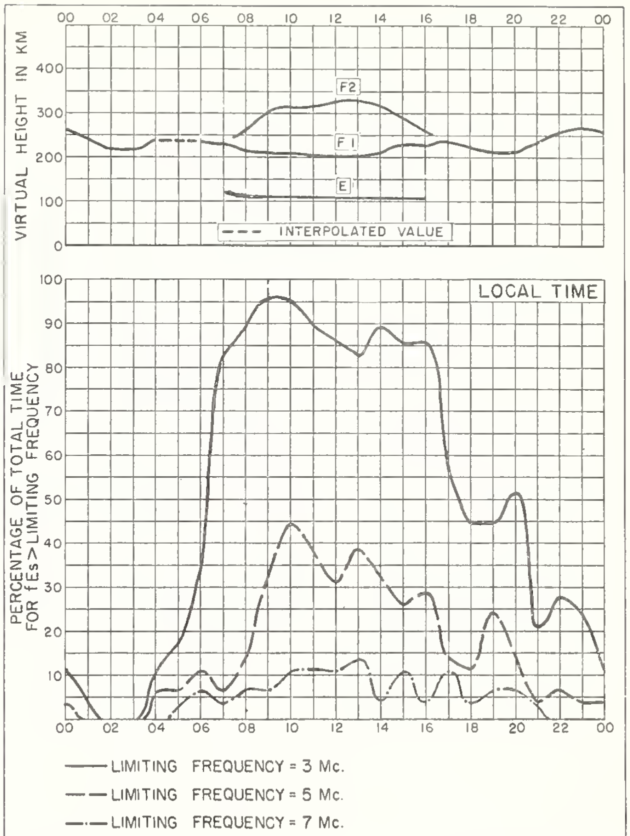

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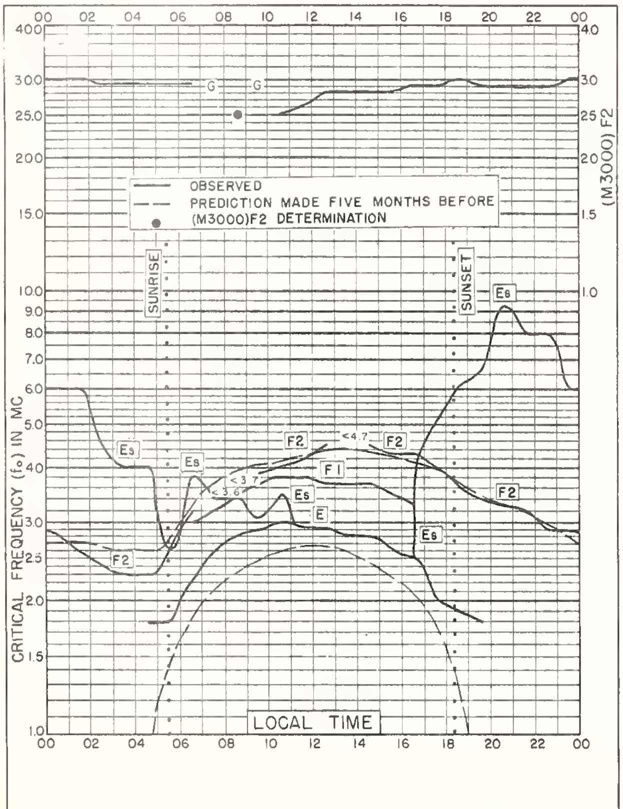

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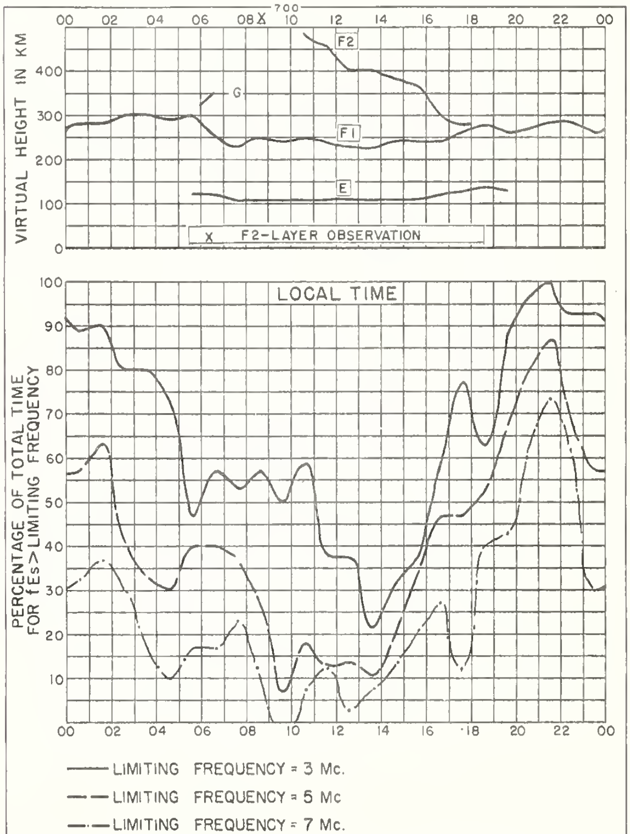

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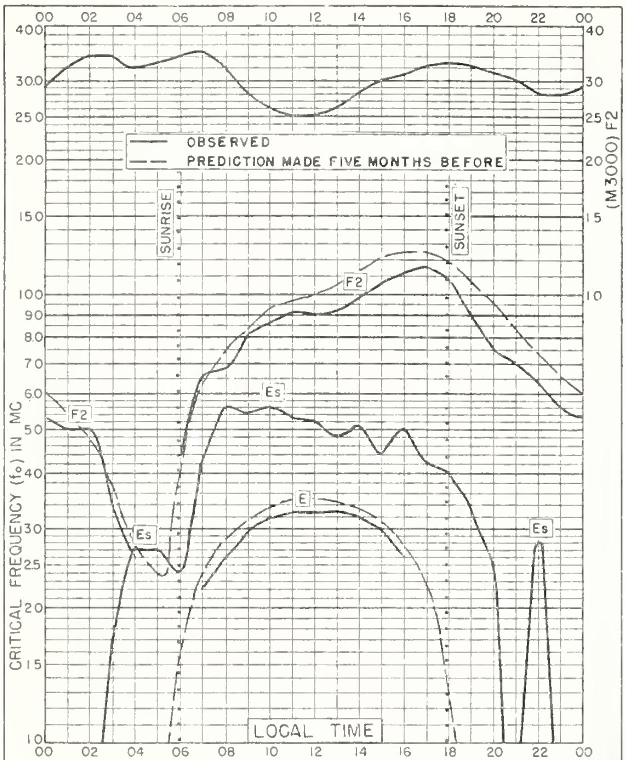

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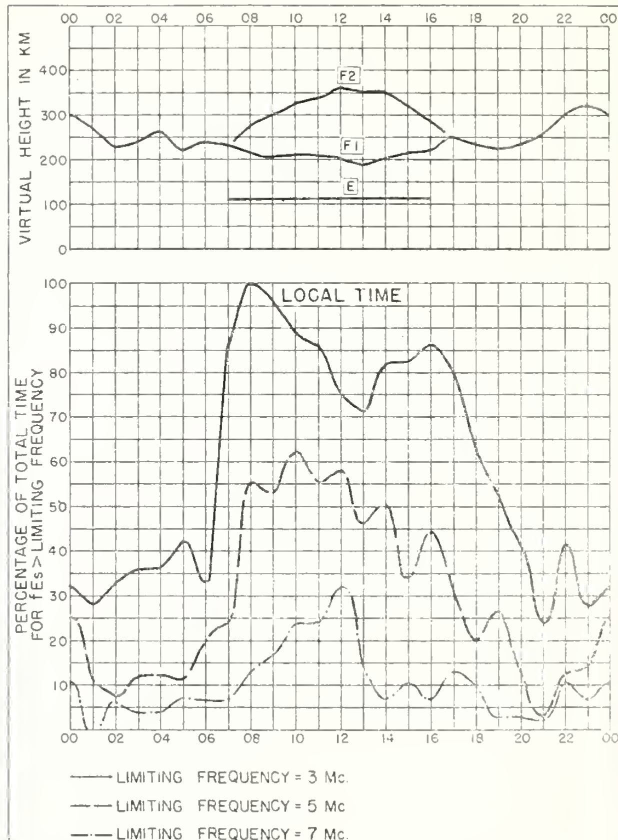

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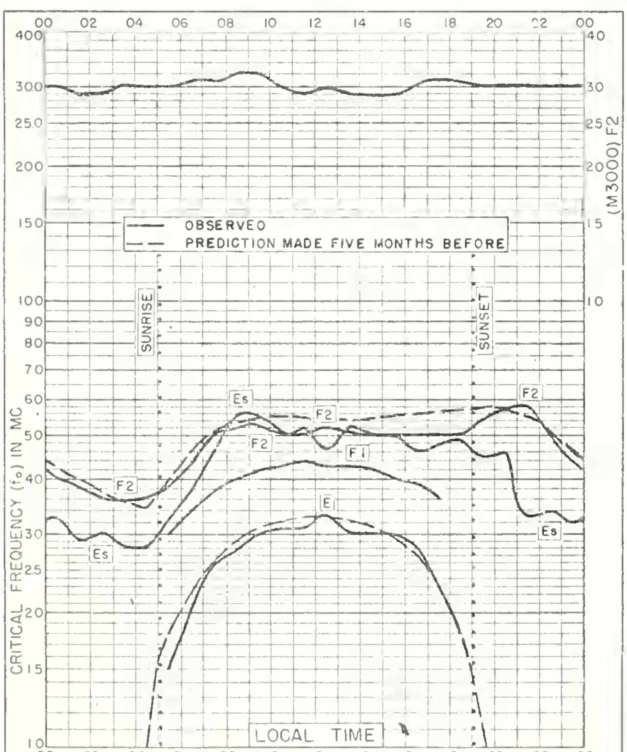

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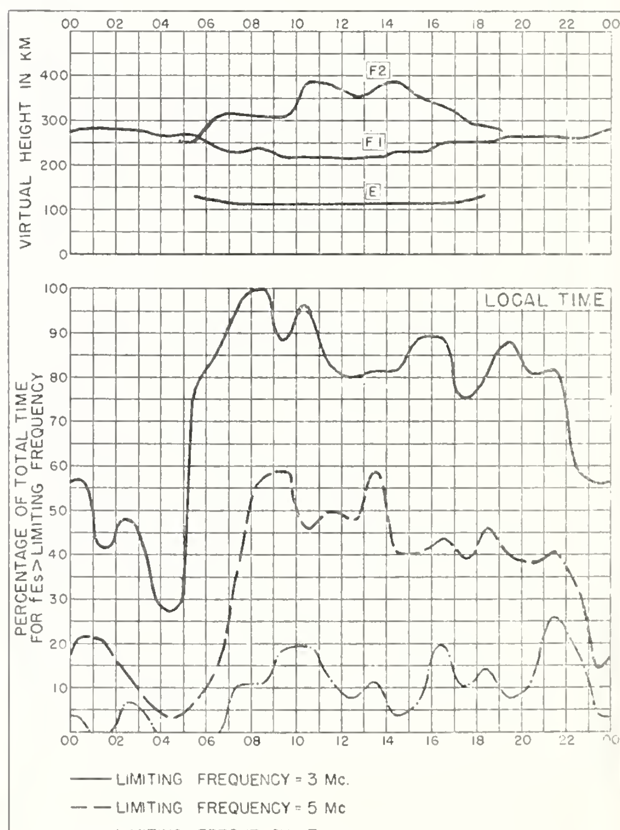

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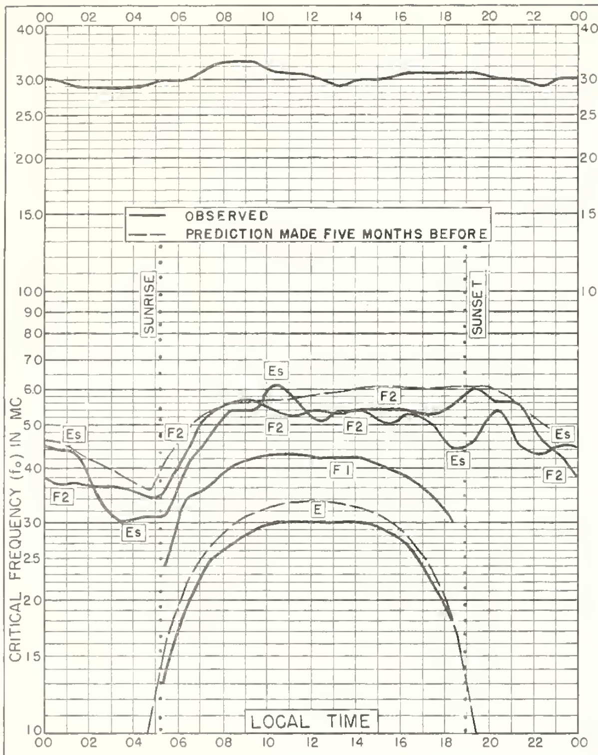

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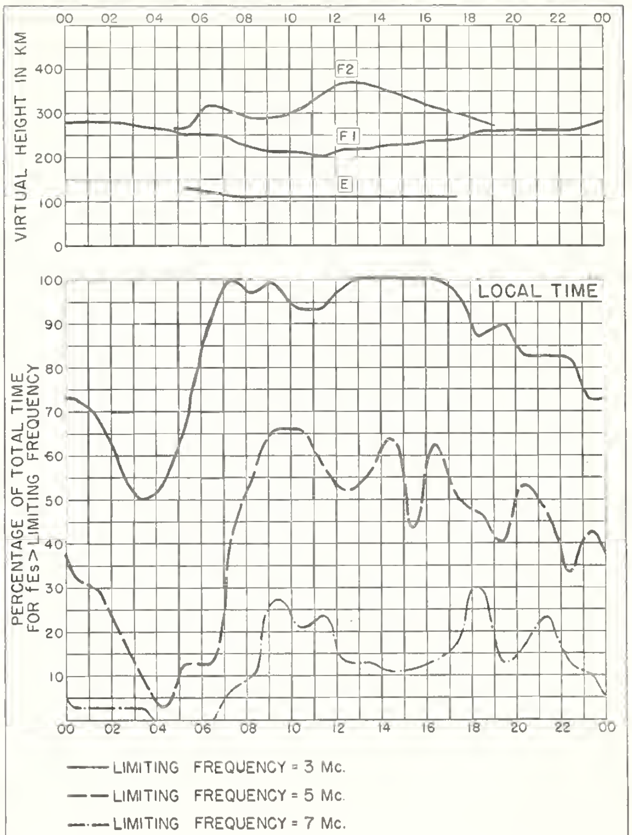

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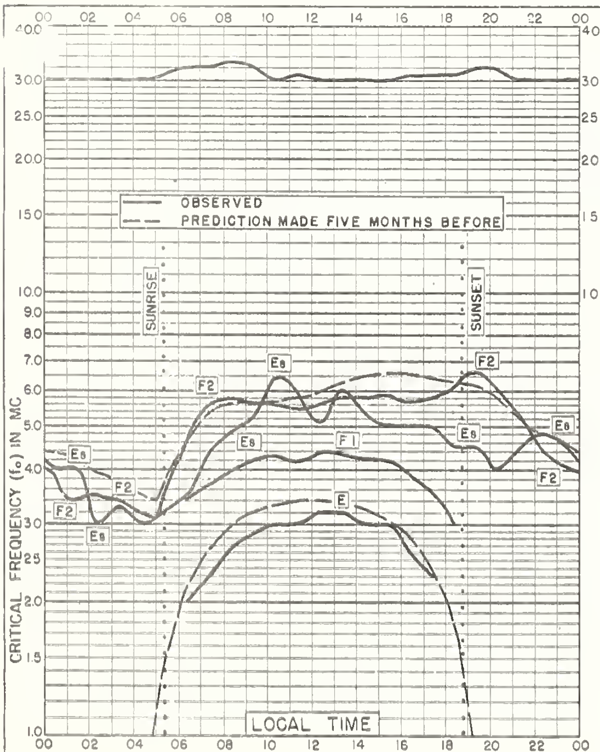

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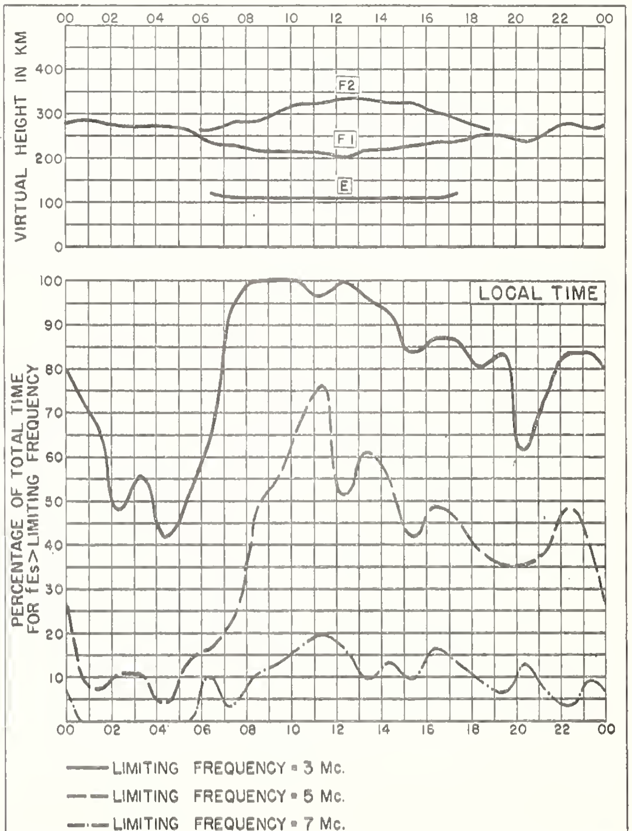

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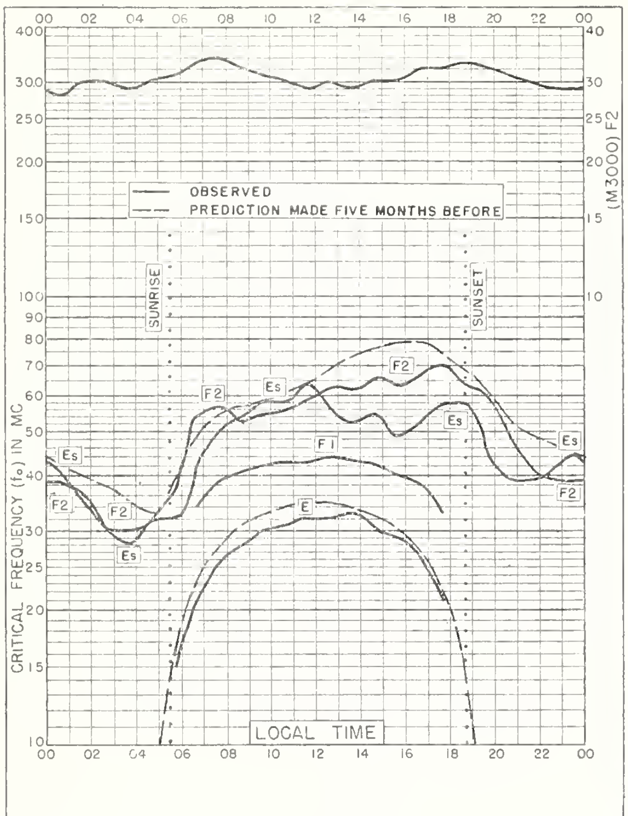

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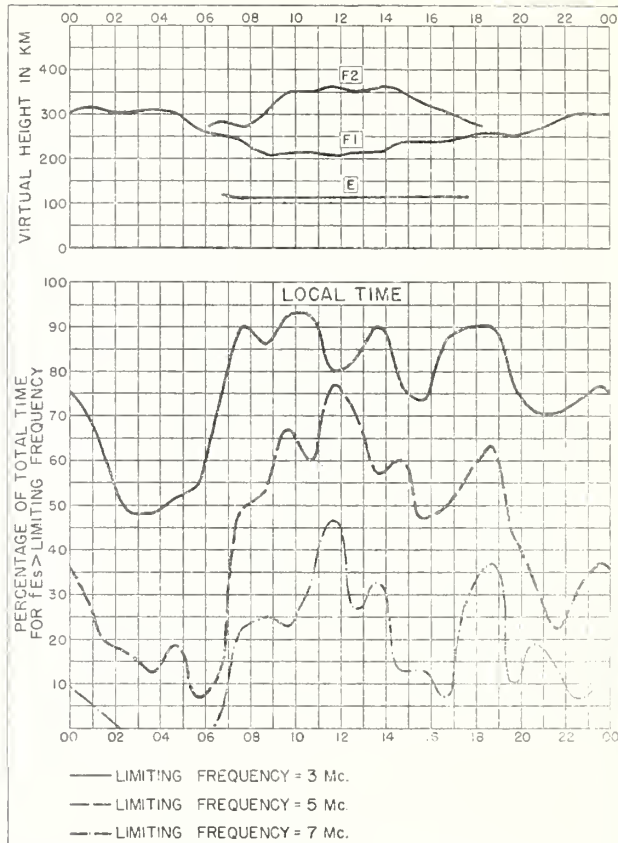

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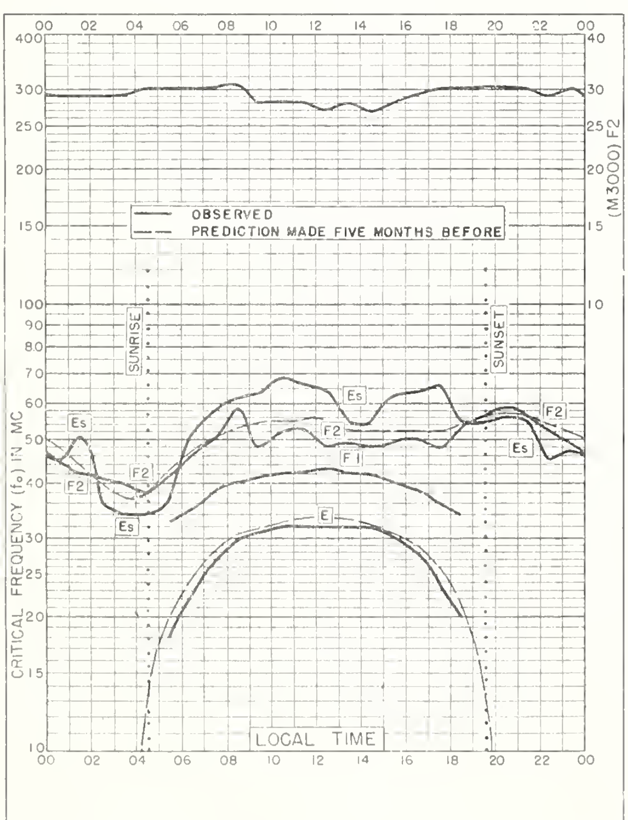

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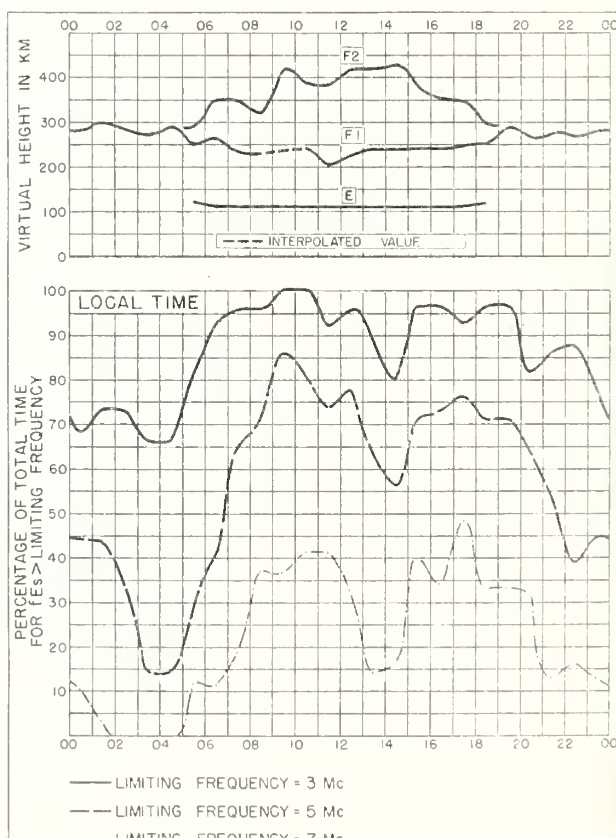

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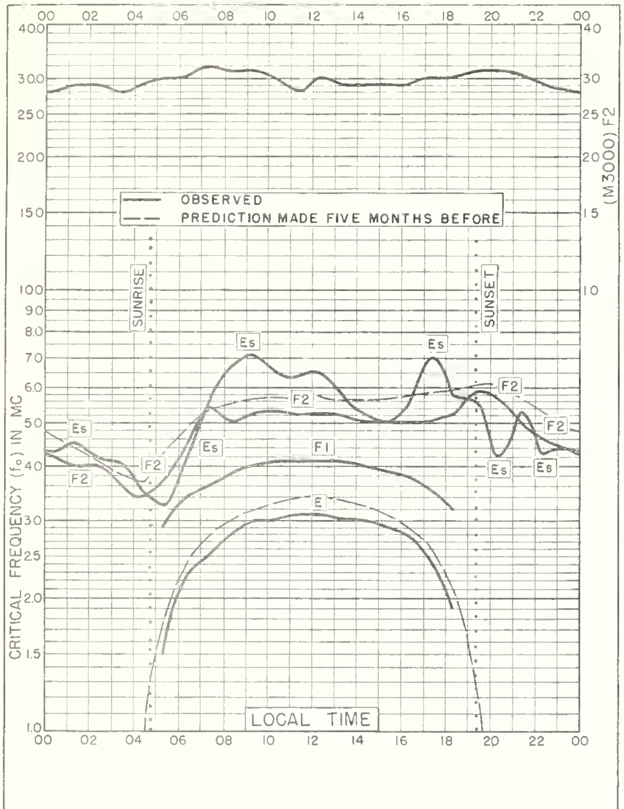

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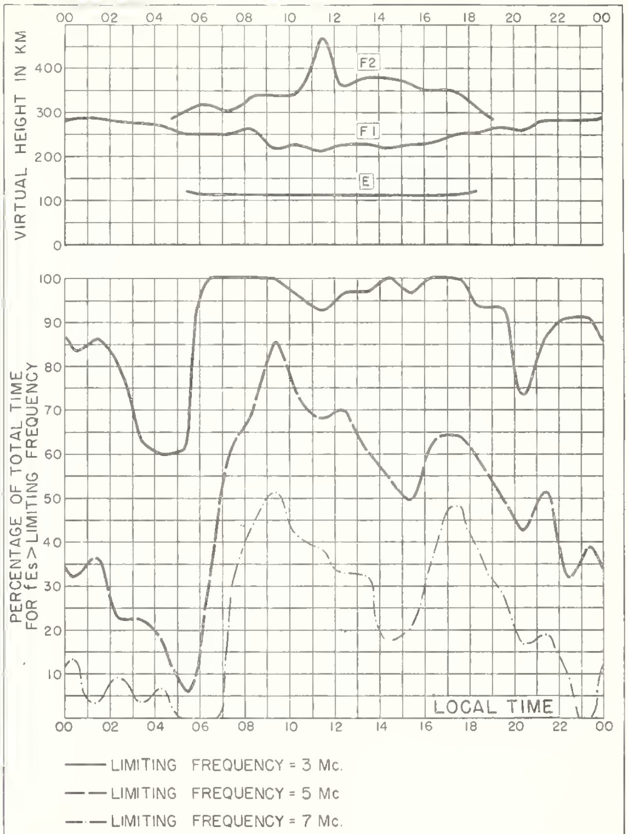

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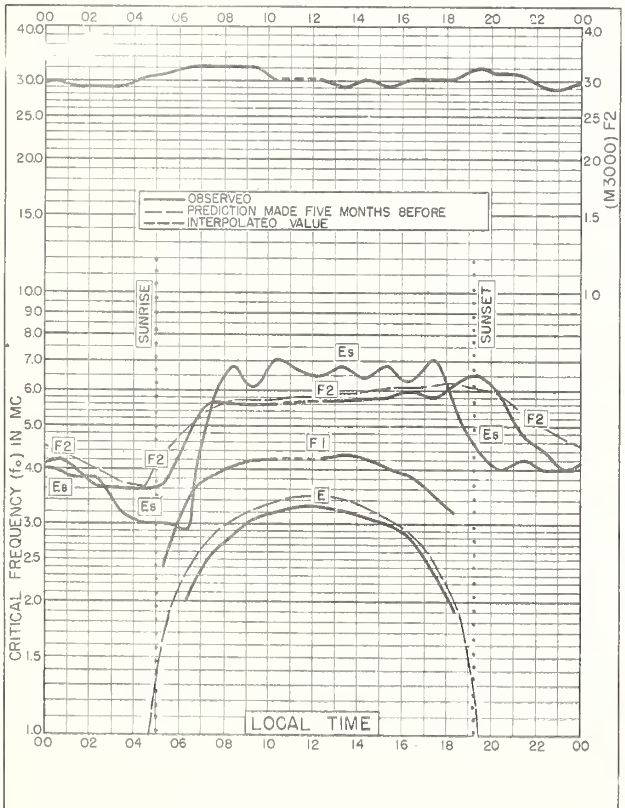

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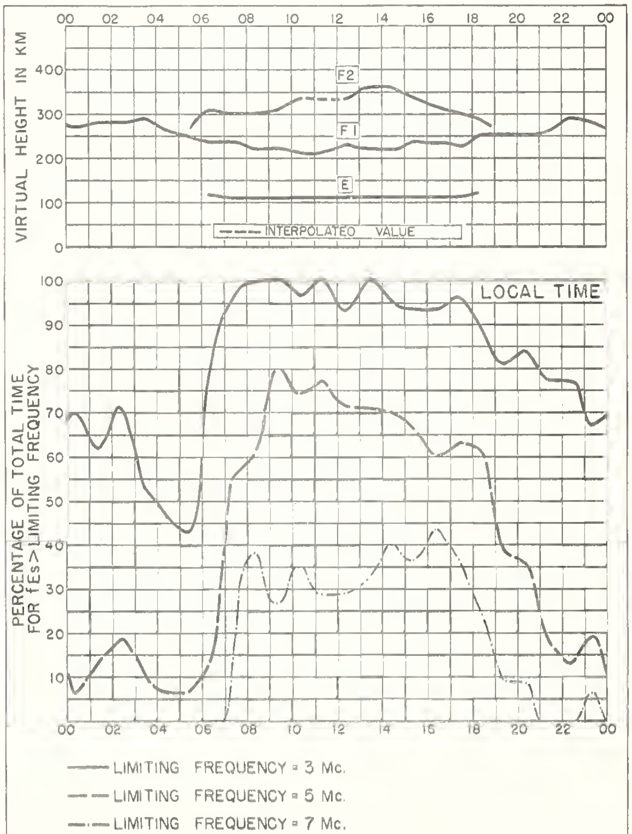

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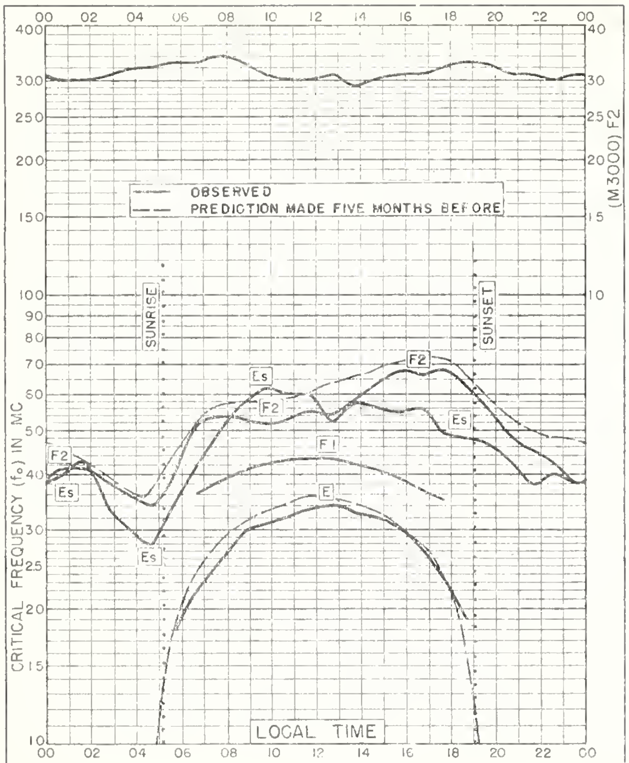

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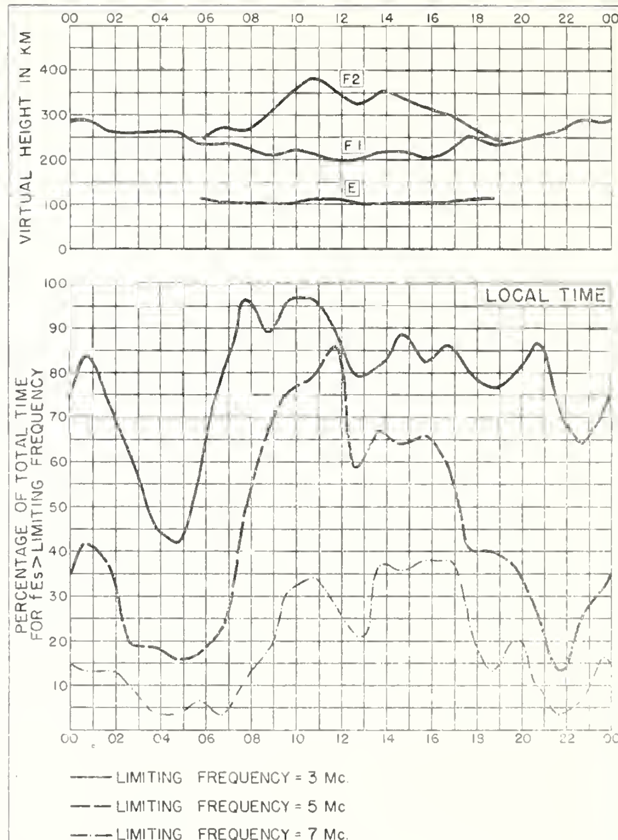

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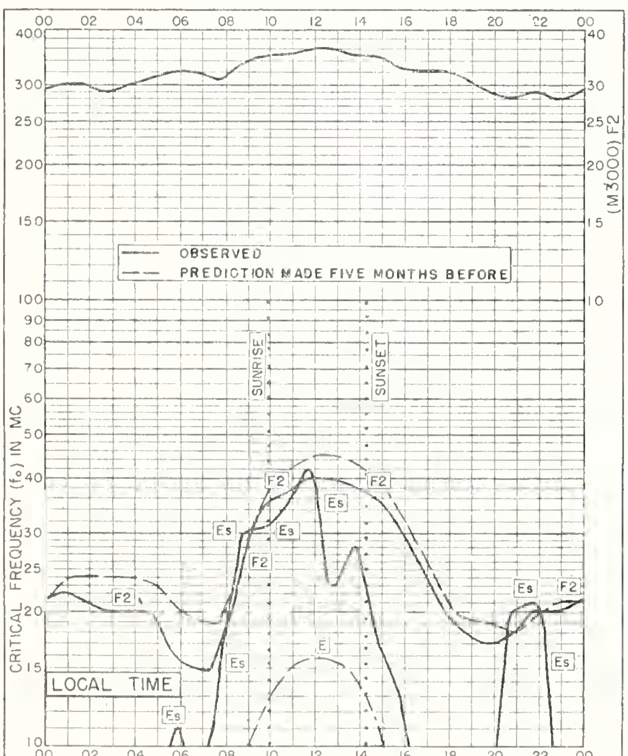

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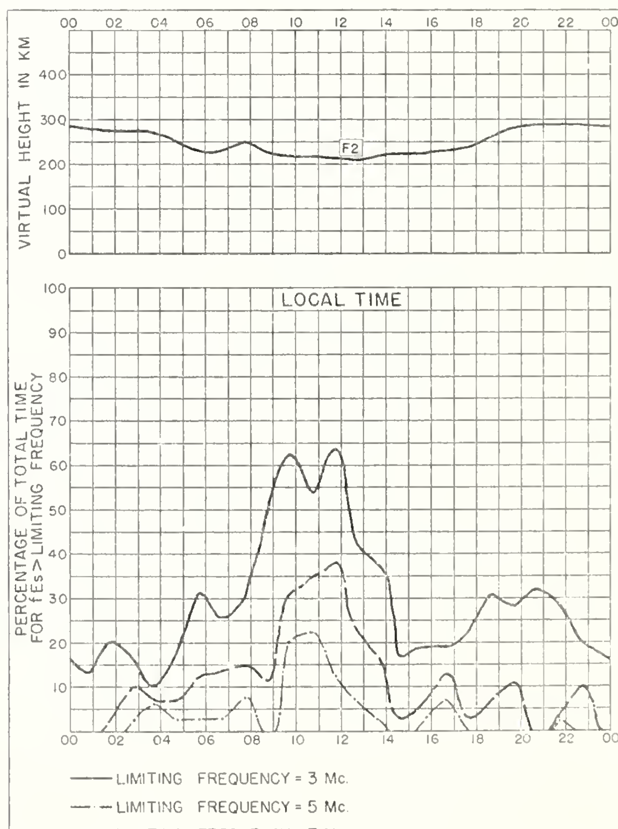

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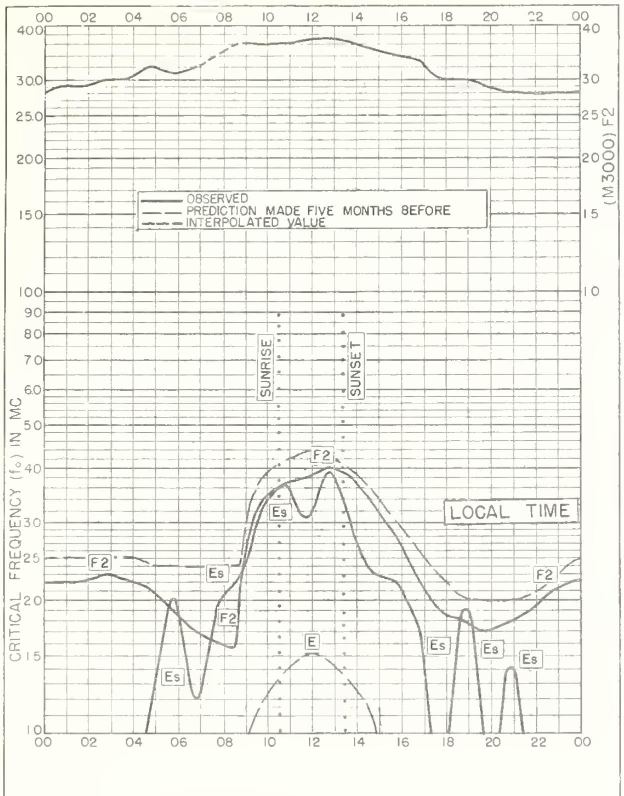

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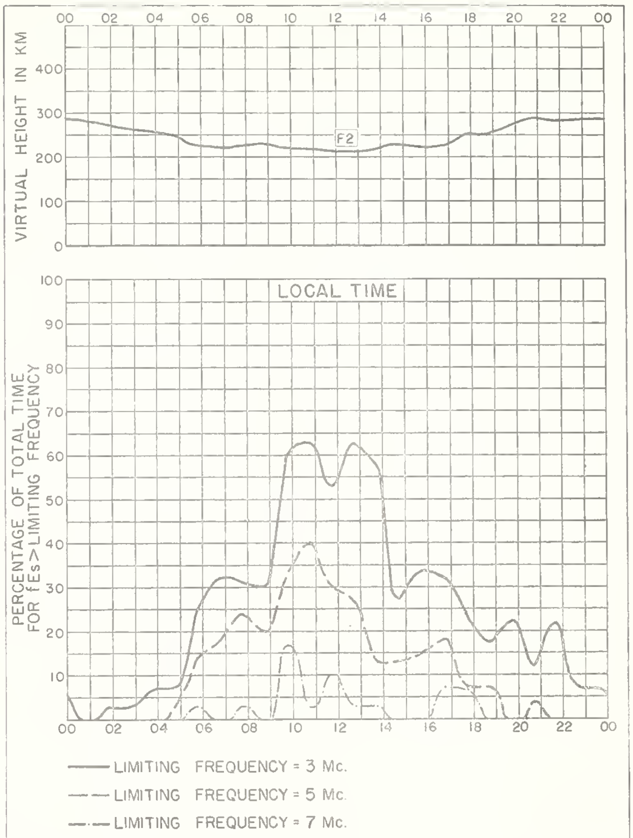

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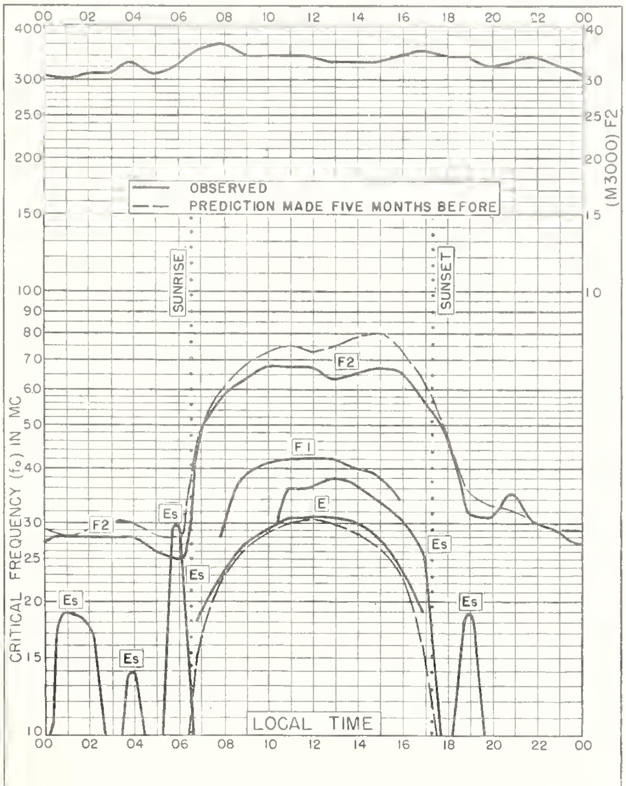

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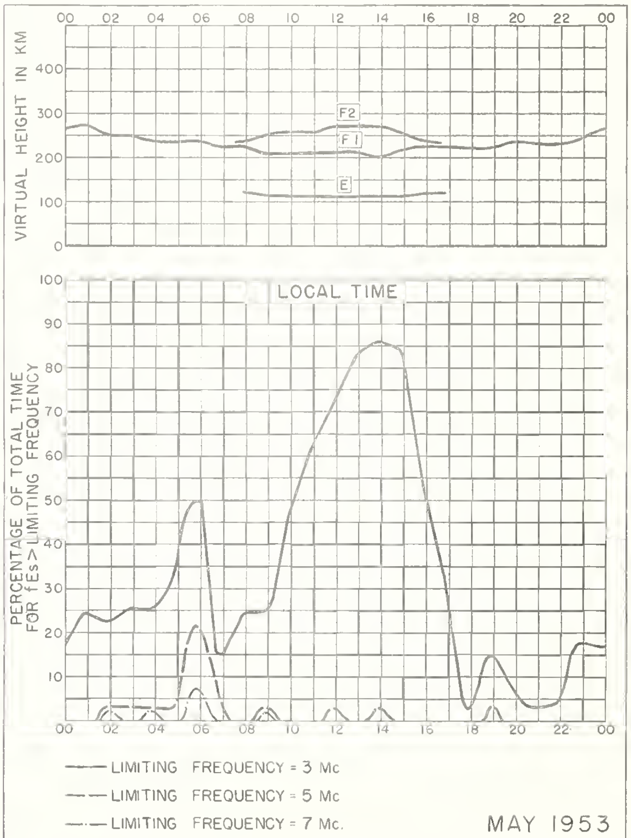

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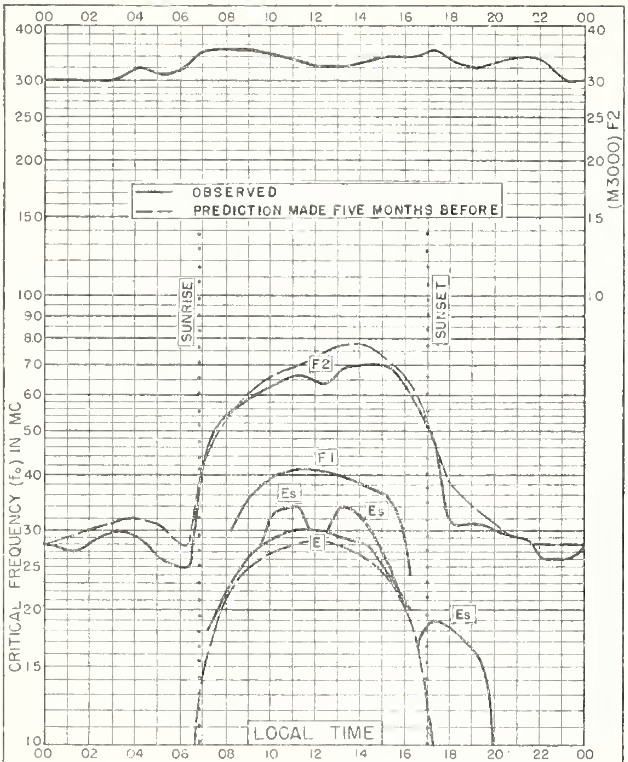

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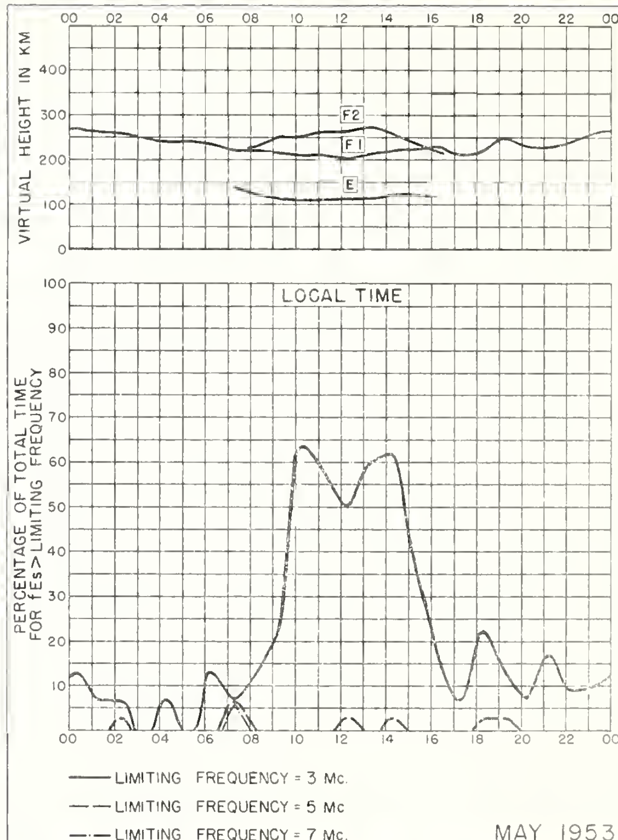

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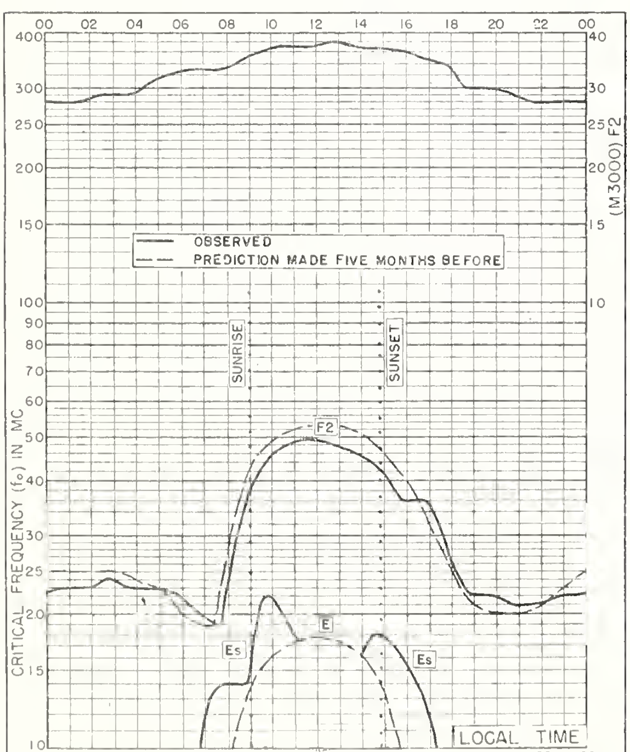

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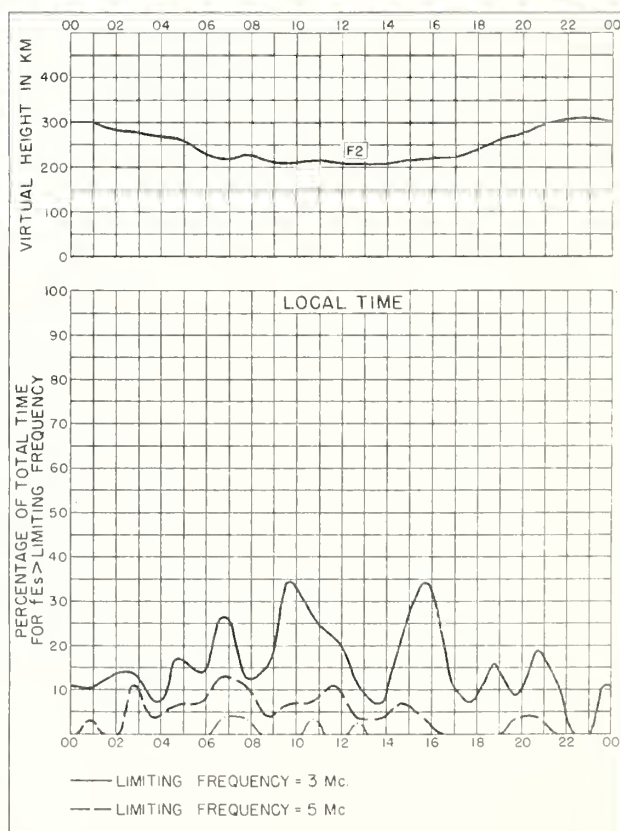

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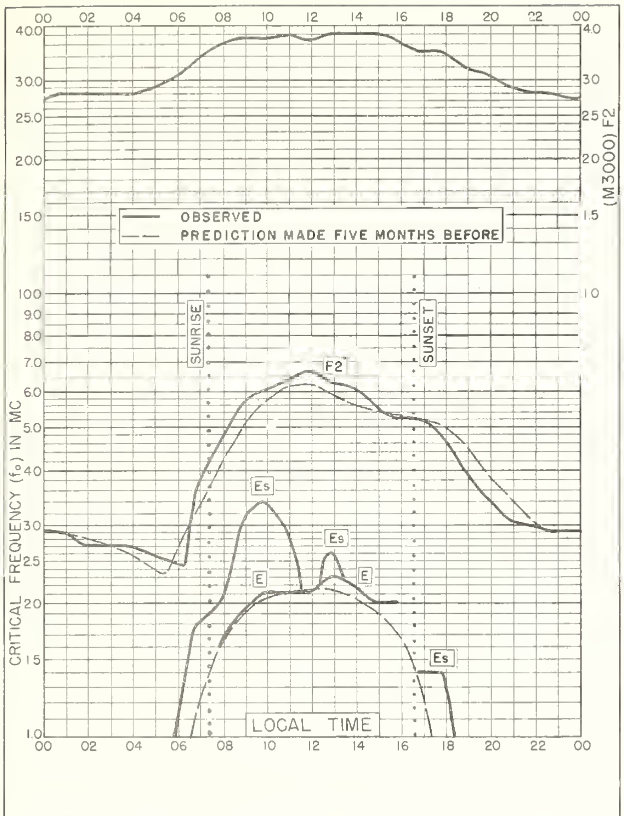

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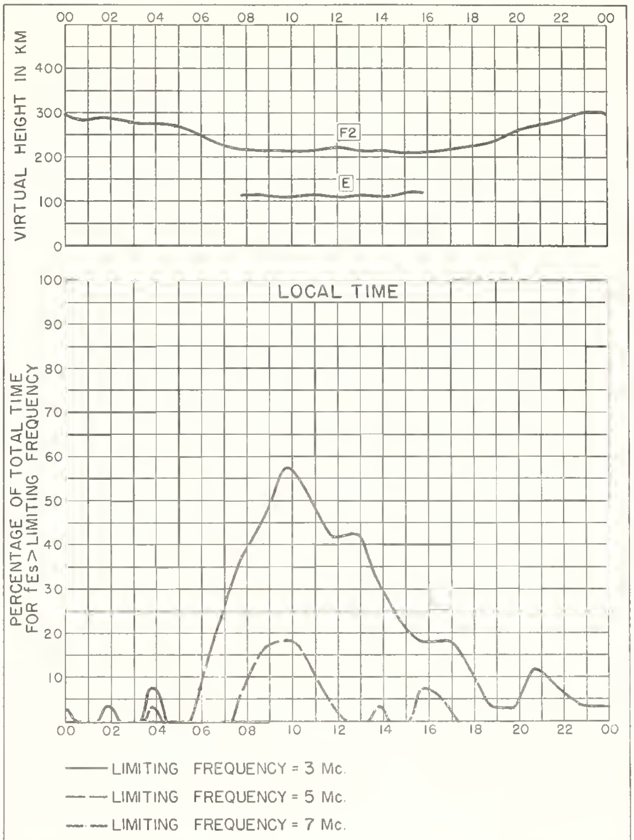

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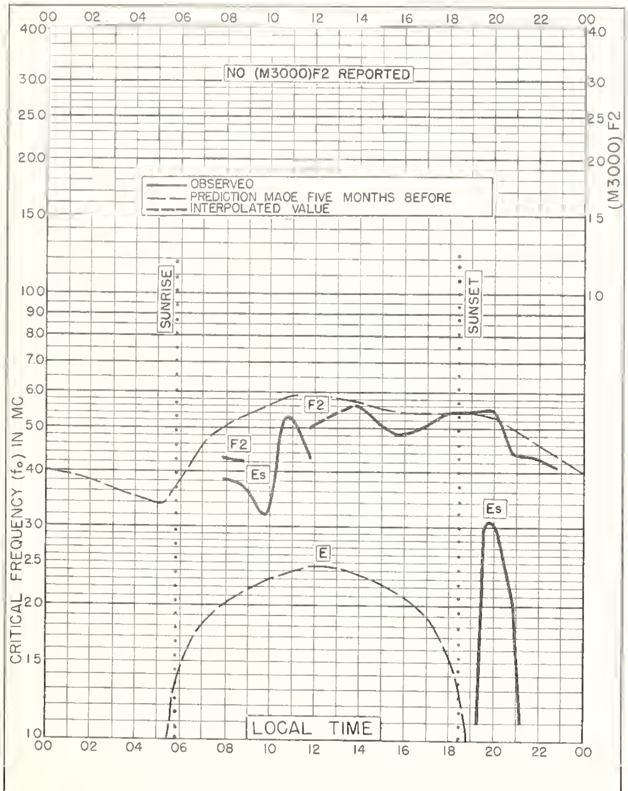

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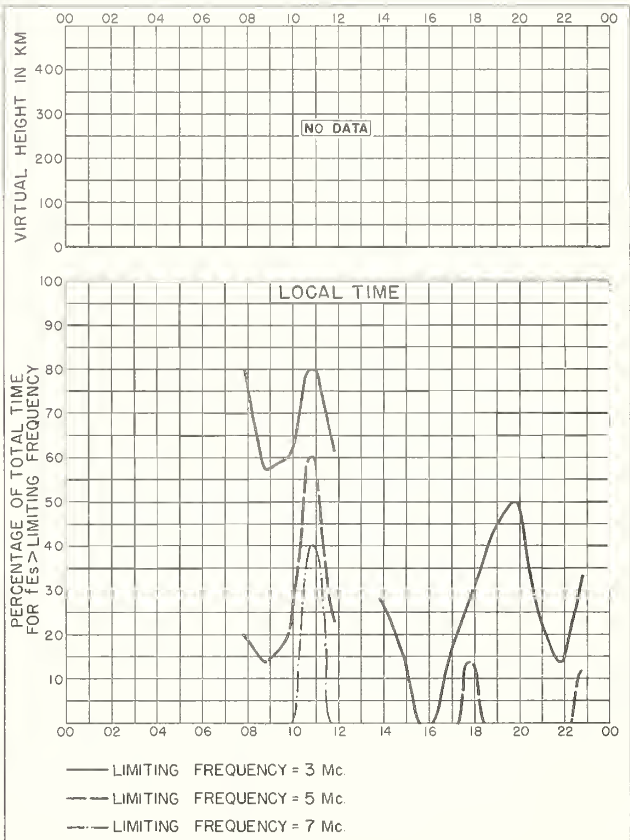

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