IONOSPHERIC DATA

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CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 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.

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

University of Graz:
Graz, Austria

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

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Fort Chimo, Canada
Ottawa, Canada
Prince Rupert, Canada
Resolute Bay, Canada
St. John's, Newfoundland
Winnipeg, Canada

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

Danish National Committee of URSI:
Godhavn, Greenland

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

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

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

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

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

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

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Christchurch, New Zealand
Rarotonga, Cook Is.

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

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

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

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

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Baton Rouge, Louisiana (Louisiana State University)
Fairbanks, Alaska (Geophysical Institute of University of Alaska)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 to 84 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 85 presents ionosphere character figures for Washington, D. C., during April 1953, 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.

Tables [illegible] give for [illegible] propagation quality figures for the North Atlantic area. CRPL [illegible] short-term forecasts, a summary [illegible] activity index and sundry explanations, specifically as follows:

(a) [illegible] quality figures, appearing [illegible] interval of the [illegible] day, viz., 00-06, [illegible] hours UT (Universal time or GCT).

(b) [illegible] quality indices (beginning [illegible] index is a weighted average of the four quarter-day [illegible] rounding off, with full weight given to quality groups 1 and 2. This procedure tends to give whole-day indices suitable for [illegible] with whole-day advance forecasts which designate whenever [illegible] days when significant disturbances or unusually quiet conditions [illegible]

(c) short-term forecasts, issued by CRPL [illegible] hours (nominally one hour before 00h, 06h, 12h, 18h 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 [illegible] by the Cheltenham Magnetic Observatory of the U. S. [illegible] Survey.

(f) illustrations of the comparison of short-term forecasts and [illegible]figures.

(g) illustration of the outcome of advance forecasts (1 to 4 or 8 days ahead) and for comparison the outcome of a type of [illegible] forecast. For the latter the frequency for each quality figure is determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the [illegible] current month in proportion to the frequencies [illegible] month.

The radio propagation quality figures are [illegible] traffic data reported to CRPL by American Telephone and Telegraph Company, Radio and Telegraph Company, RCA Communications Inc., [illegible], British Admiralty Signal and [illegible] establishments and the following services of the U. S. government:— [illegible] Coast Guard, Navy, Army Signal [illegible] State Department. The method of calculation, summarized below, is [illegible] described in a 1946 report, [illegible] now out of print. Beginning [illegible] figures for January 1952, only reports of radio transmissions [illegible] Atlantic paths closely approximating New York-London are included in the computation of quality. Observations of selected ionospheric characteristics [illegible] though strongly correlated with radio communication quality, and traffic reports for paths such as New York-Stockholm or New York-Tangier, previously included in the quality-figure determination with [illegible] weight, have been left out of the present calculations inasmuch as a sufficient number of homogeneous reports [illegible] available.

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 [illegible] indices are then adjusted to the 1 to 9 quality-figure scale by a conversion chart 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 coverted 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 quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. 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.

Note. The North Pacific quality figures, which were published through October 1952, have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF THE SOLAR CORONA

Tables 87 through 89 give the observations of the solar corona during April 1953, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 90 through 92 list the coronal observations obtained at Sacramento Peak, New Mexico, during April 1953, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 87 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 88 gives similarly the intensities of the first red (6374A) coronal line; and table 89, the intensities of the second red (6702A) coronal line; all observed at Climax in April 1953.

Table 90 gives the intensities of the green (5303A) coronal line; table 91, the intensities of the first red (6374A) coronal line; and table 92, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in April 1953.

The following symbols are used in tables 87 through 92: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 93 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 94 continues the new series of American relative sunspot numbers, $R_{A'}$. Beginning with 1951, the observations collected by the Solar Division, AAVSO, have been reduced according to a new procedure, such that only high quality observations of experienced observers are combined into $R_{A'}$. Observatory coefficients for each of the 28 selected observers were recomputed on data for 1948-1950, years when there was a wide range of solar activity. Otherwise, the procedure is that outlined in Publication of the Astronomical Society of the Pacific, 61, 13, 1949. The scale of the American numbers in 1951 differs from that of the reports for earlier years because of these changes, and the new series is designated $R_{A'}$ rather than R_A. The American relative sunspot numbers appear monthly in these pages as communicated by the Solar Division.

OBSERVATIONS OF SOLAR FLARES

Table 95 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, Kansel 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 96 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 four criteria: (1) C; (2) the sum of the eight Kp's; (3) the greatest Kp; and (4) the sums 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. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44

and 1949, in these CRPL-F reports, F65-67; for 1950, monthly in F68 and following issues. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. At the meeting of ATME held in Brussels in August 1951, it was decided that the computation of Kw would be discontinued after the month of December 1951 since Kp is available from January 1, 1940. Kw, therefore, no longer appears in these reports.

SUDDEN IONOSPHERE DISTURBANCES

Table 97 shows the sudden ionosphere disturbances observed at Washington, D. C., April 1953.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.0						3.0
01	270	2.7						3.0
02	260	2.4						3.0
03	270	2.4						3.0
04	260	2.0						3.0
05	(280)	2.1						3.0
06	250	3.2	230	---	(110)	1.7		3.2
07	280	3.9	230	3.4	110	2.2	2.4	3.2
08	350	4.4	220	3.7	100	2.5		3.0
09	340	4.6	200	4.0	100	2.8		3.0
10	360	4.8	200	4.2	100	3.0		3.0
11	350	5.0	190	4.2	100	3.1		3.0
12	360	5.2	200	4.3	100	3.2		3.0
13	340	5.4	200	4.2	100	3.1		3.0
14	330	5.4	210	4.1	100	3.1		3.1
15	320	5.5	210	4.0	100	3.0		3.1
16	300	5.6	220	3.9	100	2.8		3.1
17	280	5.4	220	3.5	110	2.4		3.2
18	260	5.3	240	---	110	1.9	2.1	3.2
19	240	5.6						3.2
20	230	5.0						3.1
21	240	4.2						3.1
22	260	3.6						3.0
23	270	3.2						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) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.3	---
01	---	---					3.6	---
02	---	---					4.0	---
03	---	---					4.0	---
04	---	---					3.2	---
05	(295)	(2.7)					3.2	3.0
06	(270)	2.6	---	---	---	---	1.7	3.1
07	(250)	3.2	265	---	---	1.7	1.8	3.2
08	---	3.8	235	---	---	1.9	1.7	3.4
09	---	4.0	230	---	---	---		3.4
10	(315)	4.2	230	---	120	2.2		3.3
11	(295)	4.4	230	3.5	110	2.3		3.2
12	285	4.4	220	3.5	110	2.3		3.4
13	290	4.2	220	3.4	115	2.2		3.1
14	270	4.2	230	3.3	120	2.1	1.4	3.2
15	255	4.1	240	---	115	2.0	1.4	3.3
16	250	3.8	230	---	130	1.8	1.6	3.4
17	250	3.4	---	---	140	1.6	2.4	3.2
18	250	3.2			125	(1.3)	3.2	3.2
19	(250)	(3.2)			---	---	4.2	(3.1)
20	(280)	(2.6)					3.9	(3.1)
21	---	---					4.1	---
22	---	---					3.4	---
23	---	---					3.6	---

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

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					6.3	---
01	---	---					6.2	---
02	---	---					6.1	---
03	---	---					6.4	---
04	---	---					5.8	---
05	---	---				---	5.2	---
06	---	(2.8)				---	(2.6)	(3.1)
07	---	(3.2)	---	---		---		(3.2)
08	---	(3.5)	---	---		---		(3.3)
09	(290)	3.8	---	---		---		(3.2)
10	< 300	4.0	---	3.5		---		(3.2)
11	(310)	(4.2)	---	---		---		(3.1)
12	(300)	(4.3)	---	---		---		(3.2)
13	(280)	(4.4)	---	---		---		(3.4)
14	280	4.5	---	---		---		3.2
15	270	4.5	---	---		---		3.2
16	(250)	4.5	---	---		---		3.3
17	240	4.2						3.4
18	250	3.8						3.2
19	(250)	(3.5)						(3.1)
20	---	---					5.2	---
21	---	---					6.0	---
22	---	---					6.0	---
23	---	---					5.7	---

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

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(320)	(2.1)					2.7	(2.9)
01	(310)	(2.2)					2.3	(2.8)
02	(380)	(2.4)					1.9	(2.8)
03	(340)	(2.2)					2.1	(2.8)
04	(330)	(2.1)					1.8	(2.8)
05	(320)	(2.0)					2.6	(2.8)
06	300	2.4			---	---		3.1
07	240	3.2	230	---	120	1.7		3.3
08	270	3.5	220	3.2	120	2.1		3.2
09	460	3.8	220	3.4	120	2.4		2.7
10	340	4.0	210	3.6	120	2.5		3.0
11	350	4.3	200	3.7	120	2.6		3.1
12	310	4.4	210	3.7	120	2.7		3.1
13	320	4.6	225	3.7	110	2.8		3.2
14	320	4.4	220	3.6	110	2.6		3.1
15	290	4.3	230	3.5	110	2.5		3.2
16	280	4.4	230	3.4	120	2.3		3.2
17	250	4.2	240	---	---	---		3.3
18	250	3.9	---	---	---	---		3.3
19	250	3.3						3.1
20	250	2.9						3.1
21	260	2.4						3.2
22	(260)	2.0						(3.2)
23	(300)	(2.0)						(3.0)

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

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(2.7)					5.5	---
01	---	(2.7)					4.8	(3.0)
02	---	---					4.7	---
03	---	---					4.9	---
04	---	---					5.4	---
05	---	---					5.1	---
06	(280)	(2.5)					4.4	(3.3)
07	240	3.4	---	---	---	---	2.5	3.4
08	(240)	(3.7)	220	---	110	2.1	2.0	3.3
09	(280)	(4.0)	200	3.4	100	(2.4)		3.3
10	300	4.3	220	3.6	100	(2.5)		3.1
11	(330)	4.4	(220)	3.7	100	2.5		3.1
12	(360)	4.4	210	3.7	100	2.6		3.0
13	370	4.4	210	3.7	100	2.6		3.0
14	340	4.5	210	3.6	100	2.5		3.1
15	320	4.3	220	3.5	100	2.4	2.9	3.1
16	300	(4.2)	240	(3.4)	110	2.2	3.3	(3.2)
17	280	(4.0)	230	---	---	---	4.2	(3.0)
18	280	(4.0)					7.2	(3.1)
19	(280)	(3.5)					5.6	(3.0)
20	(280)	(3.4)					6.4	(2.9)
21	(270)	(3.2)					6.6	(3.0)
22	---	(3.2)					7.4	(2.7)
23	(300)	(2.8)					5.3	(2.8)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 6

Oslo, Norway (60.0°N, 11.1°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(340)	(1.8)					1.9	(2.9)
01	330	(1.8)					2.0	2.8
02	340	1.6					2.5	2.8
03	340	1.4					2.3	2.8
04	310	1.5					1.8	2.8
05	310	1.8					1.9	2.9
06	280	2.2	---	---	145	1.6	1.2	3.0
07	260	3.0	240	---	125	1.7	2.6	3.4
08	250	3.6	235	3.4	120	1.9	2.7	3.4
09	250	3.8	220	3.5	115	2.2	2.9	3.4
10	300	4.2	210	3.6	115	2.4	2.8	3.3
11	300	4.3	205	3.7	115	2.4	2.8	3.3
12	315	4.6	205	3.7	115	2.6	2.8	3.4
13	300	4.7	210	3.8	115	2.5	2.8	3.3
14	290	4.8	215	3.7	115	2.4	2.8	3.4
15	275	4.8	220	3.6	120	2.4	2.7	3.4
16	250	4.6	235	---	120	2.2		3.4
17	245	4.6	240	---	130	1.8	2.1	3.4
18	245	4.2	260	---	140	1.6	1.8	3.2
19	240	4.2	---	---				3.2
20	245	3.6						3.2
21	255	2.8						3.2
22	280	2.1						3.1
23	320	2.0						3.0

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

Table 7

Uppsala, Sweden (59.8°N, 17.6°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	1.0					2.0	2.8
01	310	1.0					2.3	2.8
02	305	1.0					2.3	(2.8)
03	290	1.1					3.1	2.7
04	280	1.1					2.6	2.8
05	300	1.7			---	E	2.8	2.9
06	270	1.7			---	E	2.3	3.2
07	245	3.1	220	2.6	125	1.7	2.6	3.3
08	270	3.0	220	3.2	120	2.0	2.2	3.3
09	300	4.0	220	3.5	120	2.2	2.3	3.5
10	320	4.5	225	3.6	120	2.4		3.3
11	295	4.7	225	3.7	115	2.4		3.3
12	300	4.1	210	3.3	115	2.5		3.3
13	310	4.3	235	3.8	115	2.4		3.2
14	280	4.9	235	3.6	120	2.3		3.3
15	275	4.8	230	3.4	120	2.2		3.3
16	250	4.6	230	3.1	125	2.0		3.4
17	245	4.4	245	(2.7)	130	1.6		3.3
18	245	4.0	---	---	---	E		3.2
19	250	3.3			---	E	1.9	3.1
20	250	3.3						3.1
21	265	3.4						3.0
22	290	2.2						3.0
23	315	1.8					2.0	2.9

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

Table 8

Adak, Alaska (51.9°N, 176.5°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 300	3.0						2.8
01	300	3.0						2.9
02	295	2.9						2.9
03	280	2.9						2.9
04	285	2.7						3.0
05	260	2.8						3.0
06	260	3.4			120	1.6		3.2
07	250	4.0	240	---	120	1.9		3.3
08	260	4.4	240	3.7	120	2.3		3.2
09	287	4.7	240	3.8	120	2.5		3.1
10	295	4.5	230	3.9	120	2.7		3.0
11	290	4.5	230	4.0	120	2.8		3.1
12	295	5.1	220	4.0	120	2.8		3.1
13	290	4.9	220	4.0	120	2.8		3.2
14	280	5.7	230	3.8	120	2.7		3.2
15	270	5.8	240	3.7	120	2.5		3.3
16	260	5.5	240	---	120	2.2		3.3
17	270	5.6	250	---	120	1.8		3.4
18	290	4.6			---	---		3.2
19	280	3.9						3.1
20	290	3.8						3.1
21	290	3.0						3.0
22	300	2.9						3.0
23	280	2.9						2.8

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 9

Graz, Austria (47.1°N, 15.5°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.4						
01	300	3.9						
02	300	3.8						
03	300	3.6						
04	290	3.5						
05	280	3.2						
06	255	3.0						
07	270	3.3						
08	280	4.3	300	3.5				
09	250	4.0	290	3.6		(2.7)		
10	270	4.1	300	3.9	100	2.9		
11	270	5.2	300	4.0	100	3.0		
12	285	5.1	300	4.1	110	3.0		
13	270	5.3	300	4.0	110	3.0		
14	265	5.2	300	4.0	110	3.0		
15	260	5.2	290	3.8	100	2.8		
16	230	5.0	210	3.6				
17	230	5.0						
18	210	5.0						
19	240	4.4						
20	250	3.9						
21	265	3.6						
22	300	3.2						
23	300	3.9						

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

Table 10

San Francisco, California (37.4°N, 122.2°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.0)						(3.1)
01	(250)	(2.9)						(3.2)
02	(250)	(3.0)						3.1
03	(250)	2.9						(3.2)
04	250	(2.9)						(3.2)
05	260	(2.9)						(3.2)
06	(250)	(2.9)						(3.2)
07	250	3.3	270	---	120	(2.0)		3.4
08	270	4.3	250	(3.6)	110	(2.3)	2.0	3.4
09	280	4.0	250	(3.9)	110	(2.6)	2.2	3.3
10	290	4.3	270	(4.0)	100	(2.7)	2.8	3.2
11	300	4.3	270	(4.1)	105	3.0	2.5	3.2
12	300	5.0	270	4.2	110	(3.0)	2.4	3.2
13	300	5.0	280	4.2	110	3.1	2.2	3.2
14	300	5.7	280	4.1	110	(3.0)	2.3	3.3
15	290	5.5	270	(4.0)	110	(2.8)	2.2	3.3
16	270	5.7	280	(3.8)	110	(2.6)		3.4
17	240	6.0	220	---	110	2.1		3.5
18	220	5.6						3.5
19	(210)	(3.8)						3.4
20	(200)	(3.8)						(3.3)
21	(250)	(2.9)						(3.1)
22	(250)	(2.9)						(3.0)
23	(250)	(3.0)						(3.1)

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

Table 11

White Sands, New Mexico (32.3°N, 106.5°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.1						3.1
01	260	3.1						3.1
02	250	3.0						3.1
03	250	3.1						3.1
04	260	2.8						3.1
05	260	2.9						3.1
06	260	3.2						3.2
07	250	4.5	230	---	120	2.0		3.4
08	260	5.2	220	3.7	110	2.3		3.4
09	280	5.6	200	4.0	100	2.6	2.2	3.4
10	300	5.6	190	4.2	100	2.8	2.3	3.2
11	320	5.8	190	4.2	100	3.0	2.4	3.1
12	310	6.2	190	4.3	100	3.1	2.3	3.1
13	300	6.6	200	4.2	100	3.1		3.2
14	290	6.4	200	4.2	110	3.0		3.3
15	290	5.8	210	4.0	100	2.8		3.3
16	280	5.6	220	3.9	110	2.6		3.3
17	240	5.5	230	---	110	2.1		3.4
18	220	5.2						3.5
19	210	4.0						3.5
20	240	3.1						3.3
21	260	2.5						3.1
22	270	2.9						3.1
23	290	3.2						3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 12

Baton Rouge, Louisiana (30.5°N, 91.2°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4						3.1
01	270	3.3						3.1
02	260	3.1						3.1
03	250	3.0						3.2
04	260	2.9						3.1
05	260	2.9						3.2
06	260	3.1						3.2
07	280	4.5	240	---	130	2.0		3.4
08	280	5.0	220	3.7	110	2.3	3.1	3.4
09	300	5.4	210	4.0	110	2.7	4.0	3.3
10	310	5.5	200	4.1	110	2.9	3.8	3.1
11	320	5.6	200	4.2	110	3.1	3.8	3.1
12	310	6.1	200	4.2	110	3.1	3.6	3.2
13	310	6.3	210	4.2	110	3.1		3.1
14	300	6.4	210	4.2	110	3.0	3.6	3.2
15	300	6.1	220	4.1	110	2.9		3.3
16	280	6.0	230	3.8	110	2.6	3.5	3.3
17	260	6.0	230	---	120	2.1	3.0	3.4
18	230	5.5						3.5
19	220	4.6						3.5
20	230	3.3						3.4
21	270	3.0						3.1
22	270	3.0						3.0
23	270	3.1						3.1

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 13

Okinawa I.(26.3°N, 127.8°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						3.0
01	270	3.7					1.8	3.0
02	260	3.6					1.6	3.2
03	250	3.6						3.4
04	240	3.0						3.3
05	250	2.4						3.3
06	250	3.1						3.2
07	230	5.2	240	---	120	1.9	2.0	3.6
08	250	6.0	230	---	120	2.4	3.0	3.5
09	280	6.8	220	---	120	2.8	3.8	3.4
10	280	7.6	220	(4.4)	120	3.0	3.8	3.3
11	300	8.9	210	4.4	120	3.1	3.6	3.1
12	300	9.7	200	(4.4)	120	3.2	4.0	3.1
13	290	10.7	210	4.5	120	3.1	4.0	3.2
14	280	11.3	220	4.4	120	3.1	2.3	3.2
15	270	10.8	220	---	120	2.9	3.7	3.3
16	250	10.0	220	---	120	2.7	2.2	3.4
17	240	9.1	230	---	120	2.2	3.0	3.4
18	230	7.6					2.3	3.5
19	220	6.1					2.1	3.3
20	220	5.0					2.2	3.2
21	250	4.1					2.1	3.0
22	280	3.7					1.9	3.0
23	300	3.7					2.0	2.9

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

Table 14

Maui, Hawaii (20.8°N, 156.6°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2						3.1
01	240	3.2						3.2
02	230	3.2						3.4
03	220	2.6						3.4
04	240	3.2						3.2
05	250	2.3						3.1
06	270	2.1			---	---		3.0
07	240	4.5	---	---	120	1.7		3.5
08	(260)	5.8	230	---	110	2.4		3.3
09	310	6.8	220	(4.3)	110	2.8		3.1
10	320	8.0	210	4.4	110	3.1	3.9	2.9
11	320	9.0	210	4.5	110	3.2	4.1	3.0
12	310	10.1	200	4.5	110	3.3	4.1	3.0
13	300	10.9	200	4.6	110	3.3	3.8	3.0
14	290	11.3	200	4.5	110	3.2	3.8	3.1
15	270	10.7	210	4.4	110	3.1	3.8	3.2
16	260	10.1	220	4.1	110	2.8	3.1	3.3
17	250	8.6	230	---	110	2.4	2.9	3.3
18	230	7.2	230	---	120	1.8	2.4	3.4
19	220	5.2					2.3	3.3
20	230	4.8					1.8	3.3
21	240	3.9					1.6	3.3
22	250	3.4						3.1
23	250	3.3						3.1

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

Table 15

Puerto Rico, W.I. (18.5°N, 67.2°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.6						3.1
01	260	3.6						3.1
02	240	3.7						3.3
03	220	3.8						3.6
04	220	3.2						3.5
05	220	3.0						3.4
06	240	2.7			---	---		3.2
07	220	4.3	210	---	110	1.8		3.7
08	230	5.2	210	---	100	2.3		3.7
09	260	5.7	210	4.1	100	2.8		3.4
10	300	6.3	210	4.4	100	3.0		3.2
11	290	7.2	220	4.5	100	3.2		3.3
12	280	7.8	220	4.5	100	3.3		3.2
13	270	8.7	210	4.5	100	3.3		3.3
14	270	8.3	220	4.5	100	3.3		3.3
15	270	7.8	210	4.3	100	3.1		3.4
16	260	7.5	220	4.1	100	2.9		3.4
17	250	7.6	220	---	100	2.5	3.9	3.5
18	220	7.3	220	---	100	---	3.1	3.5
19	210	6.2					2.4	3.5
20	210	4.9						3.4
21	220	3.8						3.3
22	260	3.4						3.0
23	280	3.6						3.0

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

Table 16

Guam I. (13.6°N, 144.9°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	6.2						3.1
01	260	6.1						3.1
02	250	5.4						3.3
03	240	4.8						3.4
04	240	3.7						3.4
05	240	3.0						3.5
06	240	2.3					1.6	3.4
07	240	5.3			130	1.7	2.0	3.6
08	260	6.8	220	3.8	110	2.4		3.5
09	280	8.0	210	4.2	110	2.8		3.3
10	310	8.4	200	4.3	110	3.1		2.9
11	320	9.0	200	4.4	110	3.2		2.5
12	320	8.6	200	4.5	110	3.3	3.7	2.5
13	330	8.5	190	4.4	110	3.3		3.5
14	340	8.6	180	4.4	110	3.2		2.6
15	320	9.0	210	4.3	110	3.0	3.4	2.8
16	300	10.0	230	4.2	110	2.9	4.1	3.0
17	270	10.4	230	---	120	2.5	3.4	3.1
18	250	10.4			---	---	3.0	3.2
19	250	10.1						3.1
20	250	9.2						3.1
21	230	9.0						3.3
22	220	7.7						3.3
23	240	6.8						3.1

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

Table 17

Panama Canal Zone (9.4°N, 79.9°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2						2.8
01	250	3.6						3.2
02	220	3.4						3.6
03	220	2.6						3.2
04	250	2.3					1.6	3.0
05	260	2.3						3.0
06	280	2.4						2.8
07	250	4.8	---	---	130	1.8	2.0	3.3
08	280	5.6	220	---	110	2.5		3.1
09	320	6.6	230	4.4	110	2.9	3.5	2.9
10	330	8.1	210	4.5	110	3.2	3.7	2.8
11	340	9.1	200	4.5	110	3.4	3.9	2.8
12	330	9.9	200	4.5	110	3.4	3.6	2.8
13	320	10.4	210	4.5	110	3.5	3.8	2.8
14	320	10.6	230	4.5	110	3.4	4.4	2.9
15	310	11.3	220	4.4	110	3.2	4.2	2.9
16	280	12.0	240	4.2	110	2.9	4.3	3.1
17	250	11.8	230	(4.0)	110	2.5	4.0	3.3
18	230	9.4			---	---	3.3	3.4
19	220	7.4					3.0	3.2
20	240	5.6					3.2	3.1
21	250	4.3					2.8	3.0
22	270	3.7					2.5	2.8
23	300	3.6					1.9	2.8

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

Table 18

Anchorage, Alaska (61.2°N, 149.9°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					(1.5)	---
01	(330)	(2.8)					1.4	(2.7)
02	(305)	(2.7)					1.9	(2.9)
03	(315)	(2.6)						(2.9)
04	(310)	(2.6)					2.0	(2.8)
05	(310)	(2.6)					3.4	(2.8)
06	(305)	(3.0)					2.9	(2.9)
07	300	2.0						2.9
08	230	3.2			110	1.6		3.4
09	220	4.0	200	---	110	1.8		3.4
10	220	4.7	210	---	110	2.2		3.5
11	230	5.4	210	---	110	2.3		3.5
12	240	5.4	200	3.4	110	2.4		3.5
13	220	5.6	210	---	110	2.3		3.5
14	230	5.6	210	---	110	2.2		3.4
15	230	5.6	220	---	120	2.1		3.6
16	215	5.0	---	---	130	1.8		3.4
17	210	4.3						3.4
18	220	3.6						3.4
19	220	2.6						3.3
20	250	1.8						3.2
21	---	(1.7)						(3.2)
22	---	(1.6)					1.5	(3.0)
23	(320)	(2.1)						(3.1)

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

Table 19

Churchill, Canada (58.8°N, 94.2°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(290)	(2.7)			120	2.6	7.0	—
01	275	2.7			—	—	6.0	—
02	(260)	< 2.6			—	2.2	6.0	—
03	(270)	2.8			120	2.7	5.3	—
04	(330)	3.0			110	3.0	3.2	—
05	(300)	< 3.0			110	3.2		—
06	(320)	3.2			100	3.3	3.8	—
07	(330)	< 3.2			110	3.8	4.3	—
08	320	3.4			110	3.0	4.3	3.2
09	275	4.0	—	—	110	2.8		3.4
10	280	4.6	230	—	110	2.4		3.3
11	290	5.0	230	3.4	120	2.5		3.3
12	295	5.0	230	3.5	120	2.6		3.3
13	300	5.0	220	3.5	120	2.5		3.3
14	290	5.4	220	3.4	120	2.5		3.3
15	290	5.4	230	3.2	120	2.3		3.4
16	265	5.4	240	—	120	2.0		3.3
17	265	4.8	—	—	120	1.9		3.4
18	285	3.8			110	2.4		3.1
19	295	3.4			120	2.3	3.7	(3.2)
20	300	3.3			110	2.8	4.2	(2.9)
21	300	3.0			110	3.0	5.4	(2.9)
22	300	3.0			120	2.8	6.1	—
23	280	(2.8)			120	2.1	7.2	—

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 20

Prince Rupert, Canada (54.3°N, 130.3°W) February 1953

Time	h'F2	foF2	h'F1	fo. .	h'E	foE	fEs	(M3000)F2
00	270	1.6						—
01	270	1.5						—
02	280	1.4						—
03	280	1.3						—
04	300	1.4						—
05	290	1.5					1.0	—
06	300	1.6						—
07	300	1.9			—	—		—
08	250	2.8	—	—	110	1.4	0.9	3.3
09	230	4.0	210	—	110	1.9		3.4
10	240	4.8	210	3.3	110	2.2		3.4
11	250	5.3	210	3.5	110	2.4		3.4
12	250	5.8	210	3.7	110	2.6		3.3
13	260	6.1	200	3.7	110	2.5		3.4
14	250	5.9	220	3.6	110	2.5		3.5
15	240	6.0	230	3.5	110	2.5		3.5
16	230	5.7	240	—	110	2.2		3.5
17	230	5.3			120	1.8		3.6
18	220	4.1			—	—		3.4
19	230	3.5						3.3
20	220	2.4						(3.4)
21	230	1.7						—
22	280	1.6						—
23	270	1.6						—

Time: 120.0°W.
Sweep: (Day) 1.0 Mc to 10.0 Mc in 15 seconds.
(Night) 0.5 Mc to 4.0 Mc in 15 seconds.

Table 21

De Bilt, Holland (52.1°N, 5.2°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 260	(3.0)						3.0
01	< 270	(3.0)						3.0
02	265	(2.8)						3.0
03	270	(2.8)						3.1
04	270	2.4						3.1
05	< 270	2.1						(3.2)
06	< 230	(2.0)						(3.2)
07	210	3.7			---	E		3.5
08	210	4.5	200	2.8	110	1.9		3.6
09	210	5.0	200	3.2	110	2.2		3.5
10	225	5.2	200	3.5	105	2.4		3.5
11	230	5.9	205	3.6	110	2.6		3.6
12	230	5.6	200	3.7	105	2.6		3.6
13	230	5.4	200	3.6	105	2.6		3.6
14	230	5.6	210	3.5	110	2.4		3.5
15	220	5.6	210	3.0	110	2.2		3.5
16	210	5.2	---	—	130	1.9		3.6
17	205	4.7			---	E		3.4
18	210	4.2						3.4
19	220	3.9						3.4
20	230	3.0						3.2
21	240	3.0						3.2
22	< 250	2.8						3.1
23	< 260	(2.8)						3.0

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

Table 22

Winnipeg, Canada (49.9°N, 97.4°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	2.4						—
01	330	2.4						—
02	340	2.2					2.8	—
03	320	2.2						—
04	360	(2.6)					3.0	—
05	380	(2.5)					4.0	—
06	380	(2.4)					3.2	—
07	320	2.4					3.1	—
08	240	3.3	—	—	—	1.8		3.3
09	230	4.3	220	—	120	2.1		3.4
10	250	4.8	210	3.6	120	2.4		3.4
11	260	5.3	220	3.8	110	2.6		3.4
12	270	5.9	210	3.8	120	2.8		3.3
13	270	6.0	220	3.8	110	2.7		3.3
14	260	6.0	220	3.8	110	2.7		3.3
15	260	6.0	220	3.6	110	2.5		3.3
16	250	5.9	230	—	120	2.3		3.4
17	230	5.5	240	—	120	1.9		3.4
18	220	4.7						3.3
19	230	3.4						3.3
20	250	2.8						(3.2)
21	260	2.3						(3.1)
22	300	2.0						—
23	320	2.1						—

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 23

St. John's, Newfoundland (47.6°N, 52.7°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.1						2.9
01	320	2.0						2.9
02	300	2.0						3.0
03	300	1.8						3.0
04	300	1.8						3.0
05	260	1.6						3.0
06	290	1.8						3.0
07	240	3.4	—	—	120	1.8	1.6	3.3
08	240	4.4	230	3.2	120	2.1		3.4
09	250	4.8	210	3.4	110	2.4		3.4
10	260	5.0	200	3.7	110	2.7		3.4
11	260	5.3	210	3.9	110	2.8		3.4
12	270	5.4	200	3.9	110	2.8		3.4
13	270	5.4	200	3.8	110	2.8		3.4
14	260	5.6	220	3.6	110	2.6		3.4
15	260	5.6	230	3.3	120	2.3		3.4
16	240	5.4	240	3.0	120	1.9		3.4
17	230	4.9			—	E		3.3
18	240	4.5						3.2
19	240	3.9						3.2
20	240	3.2						3.0
21	280	2.5						3.0
22	300	2.2						2.9
23	300	2.0						3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 24

Schwarsenburg, Switzerland (46.8°N, 7.3°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.0						3.3
01	260	3.1						3.3
02	260	3.2						3.3
03	260	3.2						3.3
04	260	3.2						3.3
05	250	2.8						3.4
06	235	2.4						3.5
07	210	2.6						3 6
08	200	4.2			—	—		3.9
09	200	5.0			100	2.2		4.0
10	200	5.2			100	2.4		3.9
11	200	5.6			100	2.6		3.8
12	215	5.8			100	2.8		3.7
13	215	5.8			100	2.8		3.8
14	200	5.5			100	2.7		3.8
15	200	5.4			100	2.6		3.8
16	200	5.4			100	2.3		3.9
17	200	5.2			100	2.0		3.9
18	200	4.6						3.8
19	200	3.9						3.6
20	205	3.7						3.6
21	210	3.5						3.8
22	230	2.9						3.5
23	240	2.9						3.5

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

Table 25

Ottawa, Canada (45.4°N, 75.7°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	1.9						3.0
01	(310)	2.0						3.1
02	---	1.9						(3.2)
03	---	1.7						---
04	---	1.8						(3.1)
05	---	1.8						(3.1)
06	(300)	1.9						(3.1)
07	250	2.8						3.3
08	230	4.3	220	---	110	2.0		3.5
09	250	5.0	220	3.4	110	2.4		3.5
10	260	5.0	200	3.6	110	2.7		3.4
11	270	5.4	210	3.8	110	2.8		3.4
12	280	5.6	200	3.9	110	2.8		3.3
13	270	6.0	200	3.8	110	2.9		3.4
14	270	6.0	210	3.8	110	2.8		3.3
15	260	6.0	220	3.6	110	2.6		3.4
16	240	6.0	220	---	110	2.3		3.4
17	230	5.1	---	---	---	1.9		3.4
18	220	4.6						3.3
19	230	4.0						3.3
20	240	3.0						3.3
21	250	2.6						3.2
22	(280)	2.4						3.2
23	(280)	2.0						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 26

Formosa, China (25.0°N, 121.5°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4					1.8	2.9
01	260	3.2					1.8	3.0
02	275	3.2					1.8	3.0
03	240	3.5					2.1	3.4
04	220	2.7					2.2	3.2
05	240	2.1					2.2	3.1
06	280	2.4					2.0	2.8
07	240	4.7	---	---	130	1.8		3.6
08	240	6.0	230	---	120	2.4		3.4
09	280	6.8	230	4.1	110	2.8	3.1	3.4
10	280	8.6	220	4.3	120	3.0	3.6	3.3
11	280	9.4	210	4.4	(120)	3.2	3.8	3.2
12	280	10.4	200	4.4	(120)	3.3	4.2	3.2
13	280	11.8	200	4.4	120	3.2	4.0	3.2
14	280	13.0	220	4.4	(120)	3.2	4.0	3.3
15	270	11.9	230	4.2	(120)	2.9	4.1	3.5
16	240	9.1	220	3.9	(120)	2.6	3.7	3.5
17	240	8.2	210	---	(120)	2.2	3.1	3.7
18	210	6.3					2.6	3.5
19	220	5.3					2.4	3.3
20	220	4.8					2.4	3.0
21	240	4.5					2.2	3.1
22	240	3.9					2.0	3.1
23	260	3.3					2.2	3.1

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

Table 27

Leopoldville, Belgian Congo (4.3°S, 15.3°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	235	4.1						2.1
01	260	3.8						2.1
02	250	3.6						2.1
03	255	3.3					1.5	2.2
04	250	3.0					2.0	2.3
05	250	3.5			---	---	2.0	2.4
06	250	5.8	245	---	120	2.1	2.5	2.6
07	275	6.4	225	4.2	115	2.8	3.0	2.4
08	300	6.8	220	4.3	115	3.1		2.2
09	330	7.6	215	4.4	115	3.3		2.0
10	350	8.5	200	4.6	110	3.5		2.0
11	360	9.2	200	4.6	110	3.6		2.0
12	370	10.6	200	4.6	115	3.6		2.0
13	350	10.8	200	4.5	115	3.4	3.8	2.0
14	350	11.0	200	4.4	115	3.2	3.4	2.0
15	335	10.4	230	4.2	115	2.9	3.2	2.0
16	305	10.6	240	---	120	2.4	3.0	2.0
17	265	10.2	250	---	---	---	2.4	2.0
18	255	10.0					2.2	2.1
19	260	10.0						2.1
20	250	10.0						2.2
21	220	10.8						2.5
22	205	9.9						2.6
23	200	5.8						2.5

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

Table 28

Huancayo, Peru (12.0°S, 75.3°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(6.6)						(3.0)
01	270	(6.4)						(3.1)
02	250	5.2						3.2
03	250	3.9						3.3
04	250	2.7						3.3
05	250	2.2						3.3
06	250	3.5			---	---		3.1
07	(260)	6.4	230	---	110	2.2	4.8	3.3
08	(290)	7.6	210	---	110	2.8	8.4	3.1
09	320	8.2	200	4.3	110	---	11.4	2.8
10	350	8.2	200	4.4	110	---	12.0	2.6
11	370	8.0	200	4.4	110	---	12.2	2.5
12	370	7.8	200	4.4	110	---	12.0	2.6
13	360	8.1	200	4.4	110	---	12.0	2.6
14	350	8.2	200	4.3	110	---	11.6	2.6
15	320	9.0	200	4.2	110	3.1	11.0	2.6
16	(300)	9.3	200	---	110	---	10.5	2.7
17	(270)	9.1	210	---	110	---	7.5	2.7
18	250	9.1			120	---	5.6	2.7
19	260	8.8						2.8
20	280	8.0						2.7
21	270	7.2						2.8
22	270	7.8						2.9
23	300	7.4						(3.0)

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

Table 29

Resolute Bay, Canada (74.7°N, 94.9°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.5						2.9
01	280	2.6						2.9
02	270	2.6						3.0
03	280	2.5						3.0
04	(280)	2.5						3.0
05	270	2.5						2.9
06	280	2.5						3.0
07	270	2.8						3.0
08	280	3.0						2.8
09	260	3.5						2.9
10	280	3.3	---	---				3.0
11	260	3.5						3.0
12	260	3.5						3.0
13	260	4.0						3.0
14	260	4.0						2.9
15	250	3.4						3.0
16	260	3.3						3.0
17	260	3.4						2.9
18	260	3.2						2.9
19	270	3.0						2.8
20	260	2.8						2.9
21	280	2.7						2.9
22	280	2.5						2.9
23	290	2.5						2.9

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

Table 30

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.2			---	E	7.2	3.0
01	290	2.4			---	E	5.1	3.0
02	270	2.3			---	E	7.0	2.9
03	260	2.3			---	E	6.0	2.9
04	260	2.0			---	E	4.0	2.9
05	270	2.3			---	E	4.5	2.8
06	260	2.4	---	---	120	1.7	4.0	2.9
07	260	2.6	---	---	110	1.8	4.0	3.0
08	240	2.9	---	---	100	1.8	6.0	3.0
09	240	3.4	---	---	100	2.0	5.2	3.0
10	260	3.7	---	---	100	2.3	4.3	2.9
11	270	4.3	---	---	100	2.6	3.8	3.0
12	270	4.7	---	---	100	2.6	3.4	3.0
13	260	4.8	---	---	100	2.5	2.8	3.0
14	250	5.2	---	---	110	2.2	3.0	3.0
15	250	4.3	---	---	110	2.2	3.0	3.0
16	250	4.0	---	---	110	2.1	4.0	3.0
17	260	3.5	---	---	110	2.2	4.4	3.0
18	250	3.5	---	---	120	1.9	4.5	2.9
19	260	3.2	---	---	120	1.9	4.0	3.0
20	250	3.0	---	---	120	1.7	4.3	3.0
21	250	2.9	---	---	---	E	7.0	2.9
22	250	2.7	---	---	---	E	6.6	3.0
23	250	2.2			---	E	7.0	2.9

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

Table 31

Churchill, Canada (58.8°N, 94.2°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8			140	2.4	5.1	2.8
01	(280)	2.5			120	2.2	5.7	(3.0)
02	(280)	2.5			120	2.3	4.0	—
03	290	2.4			120	2.3		(3.0)
04	—	< 2.4			110	2.8		—
05	—	< 3.0			110	3.0	3.0	—
06	—	—			110	3.2	3.5	—
07	—	—			110	3.4	4.0	—
08	(340)	< 3.0			110	3.0	3.5	(3.0)
09	280	3.8			110	2.6		3.0
10	260	4.6	—	—	110	2.8		3.2
11	260	5.5	—	—	—	2.2		3.3
12	270	5.7	—	—	110	2.4		3.2
13	280	5.8	—	—	120	2.4		3.0
14	280	6.0	—	—	120	2.2		3.1
15	260	6.0			120	(2.1)		3.0
16	240	5.5			120	2.2		3.0
17	270	4.7			120	2.4		3.0
18	300	3.8			120	2.4		2.8
19	300	3.2			110	2.6		2.9
20	300	3.0			110	2.6		2.9
21	300	3.3			120	2.8		3.0
22	300	< 3.0			120	2.5	5.4	(2.8)
23	280	3.0			140	2.7	4.1	(3.0)

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 32

Fort Chimo, Canada (58.1°N, 68.3°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8			100	2.8	5.0	3.0
01	300	3.0			110	2.8	4.5	3.0
02	300	3.2			100	2.5	3.8	3.0
03	(300)	< 3.5			100	3.1		(2.9)
04	(320)	< 3.4			100	3.2		(3.0)
05	(300)	< 3.2			100	3.1	4.0	(2.9)
06	—	< 2.7			100	3.0	4.2	—
07	(300)	< 2.9			100	2.9	4.2	—
08	260	3.7			100	2.3		3.2
09	260	4.9	—	—	100	2.6		3.2
10	250	5.4	220	—	100	2.6		3.2
11	260	5.7	240	—	100	2.5		3.2
12	260	5.8	220	—	110	2.5		3.1
13	270	5.7	—	—	110	2.5		3.0
14	250	5.8	—	—	100	2.5		3.0
15	260	5.1	—	—	100	2.4		3.1
16	290	4.0			100	2.5		3.0
17	320	3.5			100	2.5		3.0
18	300	3.3			100	2.8		3.0
19	300	<3.1			100	2.6		2.9
20	300	3.0			100	2.8	5.2	3.0
21	300	2.9			110	2.7	5.2	3.0
22	310	3.0			110	2.7	4.5	(2.9)
23	300	3.0			100	3.0	5.0	(3.0)

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

Table 33

Prince Rupert, Canada (54.3°N, 130.3°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	1.5						(2.7)
01	300	1.6					1.6	(2.8)
02	320	1.7					3.0	2.5
03	310	1.8					4.0	(2.8)
04	320	2.0					3.7	(2.7)
05	320	1.9					3.0	(2.6)
06	320	1.9					1.9	2.7
07	320	1.8						2.8
08	300	1.8						3.8
09	270	3.5	—	—	—	1.7	2.1	3.1
10	260	4.4	—	—	120	2.0		3.2
11	270	5.2	250	—	130	2.2		3.2
12	270	5.5	250	3.4	120	2.4		3.2
13	280	5.9	250	3.4	120	2.4		3.1
14	270	5.9	230	—	120	2.3		3.2
15	260	5.6	230	—	130	2.1		3.2
16	240	5.1	—	—	130	1.8		3.2
17	240	4.5			—	1.5		3.1
18	240	3.3						3.1
19	250	2.1						3.0
20	300	1.6						(2.9)
21	(280)	1.6					3.0	—
22	310	1.6					3.3	—
23	340	1.7						—

Time: 120.0°W.
Sweep: (Day) 1.0 Mc to 10.0 Mc in 15 seconds.
(Night) 0.5 Mc to 4.0 Mc in 15 seconds.

Table 34

Lindau/Harz, Germany (51.6°N, 10.1°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	2.6					2.2	3.1
01	260	2.6					2.4	3.1
02	260	2.8					2.2	3.0
03	260	2.5					2.2	3.1
04	260	2.1					2.2	3.1
05	260	2.0					2.2	3.2
06	260	2.0					2.5	3.2
07	260	2.0					2.5	3.2
08	220	3.6					2.5	3.4
09	210	5.2			—	E	3.0	3.6
10	215	5.8			120	2.1	3.1	3.5
11	220	6.4			115	2.4	3.2	3.6
12	220	6.4			115	2.4	3.4	3.6
13	225	6.2			115	2.4	3.4	3.6
14	220	6.0			120	2.3	3.4	3.6
15	220	5.8			125	2.0	4.2	3.6
16	210	5.4			—	E	3.1	3.6
17	210	4.4					2.5	3.5
18	225	3.4					2.3	3.4
19	230	2.8					2.2	3.4
20	275	2.4					2.2	2.1
21	280	2.6					2.0	3.0
22	275	2.5					2.2	3.1
23	275	2.5					2.0	3.1

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

Table 35

Winnipeg, Canada (49.9°N, 97.4°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.4						2.9
01	320	2.4			—	—		3.0
02	330	2.6			—	—	3.0	3.0
03	320	2.4			—	—	3.1	3.0
04	330	2.4			—	—	3.2	2.9
05	330	2.3			—	—	3.2	(2.9)
06	320	2.2			—	—	3.5	(3.0)
07	300	2.4			—	—		3.0
08	270	2.7			—	—		3.2
09	240	4.1	240	—	130	1.9		3.4
10	240	5.0	230	—	120	2.2		3.4
11	260	5.2	230	3.5	120	2.3		3.4
12	260	5.8	220	3.6	120	2.5		3.4
13	260	6.0	220	3.5	120	2.6		3.4
14	250	6.2	230	3.5	120	2.4		3.4
15	250	6.0	230	—	120	2.2		3.4
16	240	5.6	230	—	120	2.1		3.4
17	230	5.4						3.4
18	230	4.0						3.3
19	240	3.0						3.3
20	260	2.4						3.2
21	290	2.4						3.2
22	300	2.2						3.1
23	320	2.3						3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 36

St. John's, Newfoundland (47.6°N, 52.7°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	1.9						3.0
01	330	2.0						3.0
02	300	2.0					2.8	3.0
03	280	2.0					2.7	3.0
04	280	2.0					3.0	3.0
05	280	1.8					2.8	(3.1)
06	(280)	1.6				E		3.3
07	240	2.9	—	—	—	1.8		3.4
08	230	4.8	230	—	140	2.3		3.4
09	240	5.5	230	3.2	120	2.5		3.4
10	250	6.0	220	3.6	120	2.6		3.4
11	240	6.5	220	3.6	120	2.7		3.4
12	250	6.2	220	3.7	120	2.6		3.4
13	240	6.3	230	3.5	120	2.3		3.4
14	240	6.0	230	3.2	120	2.0		3.3
15	240	5.9	240	2.9	120	E		3.3
16	230	5.7	—	—	—			3.2
17	230	5.2	—	—				3.2
18	240	4.3	—	—				3.1
19	250	3.4						3.0
20	250	3.0						3.0
21	280	2.3						3.0
22	300	2.0						3.0
23	310	2.0						

Time: 60.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 37

Ottawa, Canada (45.4°N, 75.7°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	2.0						3.0
01	(300)	2.0						3.0
02	(300)	2.0						3.0
03	300	2.1						3.0
04	280	2.1					2.2	3.0
05	(270)	2.0						(3.1)
06	(270)	2.0						(3.2)
07	(280)	2.0						3.2
08	240	3.9	---	---	120	1.8		3.3
09	240	5.3	220	---	120	2.2		3.3
10	250	5.8	220	---	120	2.6		3.4
11	270	5.8	220	---	120	2.8		3.4
12	270	6.3	220	3.7	120	2.8		3.3
13	270	6.2	220	---	120	2.7		3.3
14	270	6.1	220	---	120	2.7		3.3
15	250	5.9	230	---	120	2.4		3.3
16	240	5.9	---	---	120	2.0		3.3
17	230	5.2						3.3
18	230	4.8						3.2
19	240	3.8						3.2
20	260	2.9						3.1
21	270	2.6						3.1
22	270	2.3						3.0
23	290	2.2						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 38

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.6						3.2
01	240	3.4						3.3
02	220	2.9						3.4
03	210	2.0					1.5	3.3
04	240	1.8					1.6	3.2
05	(280)	(1.8)					1.7	(3.0)
06	310	1.9						2.9
07	240	5.3			120	1.8		3.3
08	(230)	7.2	220	---	110	2.4	3.0	3.2
09	300	8.4	210	(4.2)	110	2.7	3.7	3.1
10	310	8.5	200	4.3	110	3.0	4.0	2.7
11	330	8.2	190	4.3	110	3.1	4.1	2.5
12	360	8.3	180	4.4	110	(3.2)	4.0	2.5
13	330	8.6	200	4.3	110	3.2	4.0	2.7
14	310	9.0	200	(4.2)	110	3.0	4.0	3.0
15	280	9.2	220	(4.2)	110	2.8	3.9	3.1
15	250	9.1	220	---	110	2.5	3.8	3.3
17	230	8.5			120	2.0	4.0	3.4
18	220	7.7					2.7	3.5
19	220	5.7					2.6	3.2
20	230	6.4					2.3	3.2
21	230	5.4						3.3
22	240	4.4						3.2
23	250	4.0						3.2

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

Table 39

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.8					2.1	2.9
01	260	3.7					2.8	3.0
02	250	3.2					2.3	3.1
03	240	3.0					2.4	3.1
04	250	2.7					2.0	3.0
05	260	2.7					2.0	3.0
06	240	4.1	230	---	140	1.8	2.5	3.2
07	310	5.0	230	3.9	110	2.4	3.4	3.1
08	320	5.9	220	4.1	110	2.9	3.8	3.0
09	340	6.0	200	4.4	110	3.1	4.0	2.9
10	350	6.3	200	4.4	110	3.4	4.0	2.9
11	350	6.9	200	4.5	110	3.5	4.0	2.9
12	350	7.0	200	4.5	110	3.5	4.0	2.8
13	350	7.0	200	4.6	110	3.5	4.0	2.9
14	340	7.2	210	4.5	110	3.4	3.9	2.9
15	320	7.2	200	4.3	110	3.3	4.0	3.0
15	300	6.8	210	4.2	110	3.1	3.7	3.1
17	290	6.1	210	4.0	110	2.8	3.6	3.1
18	260	5.5	220	3.5	120	2.3	3.1	3.2
19	250	5.3	---	---	---	1.7	2.6	3.2
20	250	5.3					1.9	3.0
21	250	4.8					2.0	3.1
22	270	4.1					1.6	3.0
23	280	3.9					2.6	2.9

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

Table 40

Watheroo, W. Australia (30.3°S, 115.9°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.5					3.6	3.0
01	250	3.6					3.5	3.0
02	240	3.3					3.6	2.9
03	250	3.1					3.1	3.0
04	255	3.1					3.0	3.0
05	260	2.9					3.0	2.9
06	250	3.6	250	2.2		1.8	3.1	3.3
07	275	4.4	240	3.7		2.3	3.9	3.3
08	330	5.5	220	4.0		2.9	4.3	3.2
09	325	5.7	210	4.4		3.1	4.3	3.2
10	(335)	5.2	200	---		3.2	4.3	(3.1)
11	355	5.4	210	---		3.3	4.5	2.9
12	330	5.2	---	---		3.3	4.7	(2.8)
13	330	(5.3)	---	4.6		3.2	4.7	(3.0)
14	320	(6.5)	---	4.4		3.2	4.2	(3.1)
15	300	5.2	200	4.4		3.2	4.4	3.1
16	300	5.0	210	4.3		3.1	4.0	3.2
17	300	5.0	220	4.0		2.9	3.8	3.2
18	270	5.6	220	3.5		2.3	3.7	3.1
19	250	---	---	---		1.7	3.5	---
20	250	(5.8)					3.3	(2.9)
21	270	(3.8)					3.5	(3.1)
22	260	(3.7)					3.3	(3.0)
23	260	(4.2)					3.8	(3.0)

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 41

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.8					2.6	2.9
01	280	3.7					2.2	2.9
02	260	3.5					2.4	3.0
03	260	3.3					2.3	3.0
04	260	3.1						3.0
05	260	2.8						2.9
06	250	3.9	---	---	---	---		3.1
07	300	5.0	240	3.6	120	2.2	2.8	3.1
08	330	5.5	230	4.0	110	2.7	3.5	2.9
09	360	5.8	220	4.2	110	3.0	3.7	2.9
10	380	6.0	210	4.3	110	3.3	3.7	2.8
11	350	6.4	210	4.5	110	3.4	4.2	2.9
12	360	6.8	200	4.6	110	3.4	4.1	2.8
13	350	6.8	(200)	4.6	110	3.5	4.0	2.8
14	350	6.8	200	4.5	110	3.4	4.0	2.9
15	340	6.8	200	4.5	110	3.4		2.9
16	320	6.5	220	4.3	110	3.2	3.5	3.0
17	310	5.9	220	4.1	110	3.0	3.7	3.0
18	290	5.5	230	3.9	110	2.7	3.1	3.2
19	260	5.1	230	3.0	120	2.1	2.6	3.2
20	240	5.0					2.5	3.2
21	240	4.8						3.1
22	260	3.8						3.0
23	280	3.5					2.0	2.9

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

Table 42

Resolute Bay, Canada (74.7°N, 94.9°W) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.7						3.0
01	260	2.5						2.9
02	260	2.5						2.9
03	260	2.5						3.0
04	260	2.5						2.9
05	270	2.9						2.8
06	250	2.4						2.9
07	250	2.8						2.9
08	250	2.9						2.9
09	260	3.0						2.9
10	250	2.8						2.9
11	260	3.5						2.9
12	240	3.4						2.9
13	250	3.7						2.9
14	250	3.2						3.0
15	240	3.5						2.9
16	250	3.2						2.8
17	260	3.2						2.9
18	260	3.2						2.8
19	260	3.3						2.8
20	270	3.0						2.9
21	250	3.0						2.8
22	260	2.8						2.9
23	260	2.9						2.9

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

Table 43

Wakkanai, Japan (45.4°N, 141.7°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.0					2.2	2.7
01	320	3.0					1.6	2.7
02	320	3.0					1.6	2.7
03	320	3.0						2.7
04	310	3.0						2.8
05	280	3.0						2.9
06	280	2.7						2.9
07	270	3.8					2.8	3.0
08	270	5.6	---	---	120	1.6		3.2
09	270	6.5	240	---	120	2.3		3.1
10	280	7.6	260	3.6	120	2.5		3.1
11	270	7.8	260	3.6	120	2.6		3.2
12	270	6.7	---	---	110	2.6		3.2
13	280	6.6	---	---	120	2.6		3.1
14	270	6.1	---	---	120	2.2		3.1
15	260	5.6			120	1.8		3.2
16	250	4.4					2.2	3.2
17	270	2.6					2.8	2.9
18	280	2.7					1.6	3.0
19	300	2.6					2.4	2.9
20	300	2.8					2.7	2.8
21	300	2.9					2.2	2.8
22	300	2.8					2.6	2.7
23	320	3.0					1.9	2.7

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

Table 44

Akita, Japan (39.7°N, 140.1°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.1					2.6	3.0
01	300	3.2					2.5	2.9
02	290	3.2					2.4	2.9
03	280	3.0					2.4	2.9
04	270	2.9					2.3	3.0
05	270	2.8					2.3	3.0
06	250	2.8					2.3	3.3
07	230	4.4			---	---	2.6	3.4
08	230	5.8	---	---	120	2.0	3.3	3.4
09	230	6.6	220	3.1	110	2.5	3.5	3.5
10	250	7.4	230	3.8	110	2.7	3.5	3.4
11	250	7.7	230	3.9	110	2.8	3.5	3.5
12	250	6.8	230	3.8	110	2.8	3.4	3.4
13	240	6.4	230	3.7	110	2.7	3.5	3.5
14	240	6.2	230	3.3	120	2.5	3.4	3.4
15	240	6.0	---	---	120	2.2	3.2	3.5
16	220	5.1			140	1.7	3.1	3.5
17	230	3.7					2.5	3.3
18	250	3.2					3.2	3.3
19	250	3.1					3.2	3.4
20	250	3.2					3.2	3.2
21	260	3.0					3.2	3.1
22	300	2.8					2.7	2.9
23	300	3.0					2.5	2.8

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 6 minutes, automatic operation.

Table 45

Kokubo, Japan (35.7°N, 139.5°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.6	2.9
01	300	2.8					2.5	2.9
02	280	3.0					2.5	2.8
03	270	3.0					2.5	2.9
04	260	3.0					2.5	3.0
05	270	2.8					2.5	2.9
06	270	2.8					2.5	3.1
07	230	5.2			---	---	2.5	3.4
08	230	6.2	220	---	130	2.2	2.8	3.5
09	250	6.5	230	3.8	120	2.6	4.0	3.4
10	250	7.0	230	4.0	110	2.8	3.8	3.4
11	250	7.2	230	4.1	110	3.0	3.7	3.4
12	250	7.4	230	4.1	120	3.0	3.6	3.4
13	250	7.1	230	4.0	110	2.8	3.5	3.4
14	240	6.4	230	3.6	110	2.6	3.2	3.4
15	240	6.2	240	---	120	2.3	3.0	3.4
16	220	5.6			---	---	3.0	3.5
17	220	4.1					2.8	3.3
18	250	3.3					2.6	3.1
19	250	3.1					2.6	3.2
20	260	3.0					2.5	3.0
21	260	2.7					2.6	3.0
22	300	2.7					2.6	2.8
23	300	2.7					2.5	2.9

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

Table 46

Yamagawa, Japan (31.2°N, 130.6°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.6					2.4	3.1
01	300	2.5					2.3	3.0
02	300	2.7					2.4	3.1
03	280	2.8					2.3	3.1
04	250	2.8					2.2	3.2
05	280	2.5					2.3	3.2
06	280	2.5					2.3	3.2
07	240	3.5			---	---	2.3	3.4
08	230	(4.9)	---	---	120	2.0	2.6	(3.4)
09	240	6.3	220	3.5	100	2.5	3.4	3.5
10	250	7.0	210	4.0	100	2.8	3.5	3.5
11	250	7.4	210	4.1	100	3.0	3.6	3.5
12	250	7.6	210	4.2	100	3.0	3.4	3.4
13	250	7.9	220	4.2	100	3.0	3.5	3.4
14	250	7.1	220	4.0	100	2.9	3.6	3.5
15	250	6.8	230	3.5	100	2.5	3.5	3.5
16	230	6.4	---	---	110	2.1	3.5	3.5
17	210	5.1			---	---	3.2	(3.6)
18	220	3.5					2.9	3.5
19	250	3.2					2.8	3.3
20	250	3.4					2.5	3.3
21	250	3.0					2.4	3.2
22	250	2.8					2.3	3.3
23	270	2.8					2.4	3.2

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 2 mimutes.

Table 47

Rarotonga I.(21.3°S, 159.8°W) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	8.0					4.1	3.1
01	250	7.0					3.7	3.2
02	280	6.7					3.6	2.9
03	300	6.1					3.4	2.8
04	300	5.9					3.0	2.9
05	280	5.8					3.1	2.8
06	260	5.6	---	---	---	2.0	3.4	3.0
07	240	7.2	---	---	110	2.5	3.6	3.0
08	300	8.1	240	4.5	110	3.0	4.3	3.0
09	330	8.7	220	4.8	110	3.2	4.6	3.0
10	330	9.7	220	4.7	110	3.4	4.8	2.9
11	310	10.1	210	4.6	110	3.5	4.8	2.9
12	310	9.4	200	4.8	110	3.5	4.6	3.0
13	330	9.8	200	4.8	110	3.5	4.6	3.0
14	330	9.4	220	4.7	110	3.5	4.5	2.9
15	320	9.3	210	4.6	110	3.3	4.5	3.0
16	320	9.0	240	4.4	110	3.1	4.8	2.9
17	300	8.9	240	4.4	110	2.7	5.0	3.0
18	270	8.8	---	3.8	---	2.1	4.5	2.9
19	280	8.1	---	---			3.9	2.9
20	300	8.1					4.0	2.8
21	310	8.1					4.7	2.8
22	300	7.8					4.1	2.9
23	280	7.7					4.0	2.9

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

Table 48

Buenos Aires, Argentina (34.5°S, 58.5°W) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.0					4.2	2.8
01	290	6.1					3.7	2.9
02	270	5.6					3.7	2.9
03	270	5.2					2.8	2.9
04	300	5.0					2.4	2.9
05	250	5.0	---	---	---	---	2.5	3.1
06	280	5.4	230	---	110	2.4	4.2	3.0
07	310	6.4	220	---	110	2.7	5.0	2.9
08	360	8.6	220	4.4	100	3.0	4.5	2.7
09	400	7.2	210	4.5	100	3.2	4.6	2.6
10	400	8.3	210	4.6	100	(3.4)	4.6	2.6
11	380	9.4	210	4.6	100	(3.5)	4.8	2.7
12	360	9.7	200	4.6	100	3.6	4.5	2.8
13	320	10.1	200	4.5	100	(3.5)	4.4	2.9
14	300	10.2	210	4.5	100	3.4	4.5	2.9
15	300	9.7	210	4.3	100	3.2	4.3	3.0
16	300	8.7	210	4.1	110	3.0	4.0	3.0
17	290	8.2	220	3.9	100	2.8	4.0	3.1
18	280	7.8	250	---	---	---	3.7	3.1
19	280	7.3	---	---			3.0	3.0
20	300	6.8					4.1	2.8
21	310	6.8					4.1	2.8
22	320	(8.4)					4.3	(2.7)
23	310	6.1					4.0	2.7

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

Table 49

Christchurch, New Zealand (43.6°S, 172.7°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2					3.9	2.8
01	280	4.7					3.4	2.9
02	280	4.2					3.7	3.0
03	280	3.7					2.9	2.9
04	290	3.5					2.4	2.9
05	270	4.1	---	---		1.7	3.0	3.2
06	290	4.5	250	3.6		2.3		3.1
07	340	5.0	240	4.0		2.7	4.4	3.0
08	340	5.5	240	4.3		3.0	4.9	3.0
09	340	5.7	240	4.4		3.2	5.0	3.0
10	350	6.0	220	4.5		3.3	4.7	3.0
11	330	6.4	220	4.5		3.4	4.6	3.0
12	330	6.6	230	4.6		3.4	4.6	3.0
13	330	6.5	220	4.5		3.3	4.4	2.9
14	340	6.4	230	4.5		3.2	4.4	3.0
15	350	6.3	220	4.4		3.2	3.4	2.9
16	340	6.3	230	4.3		3.0		3.0
17	320	6.2	240	4.0		2.7		3.0
18	300	6.0	270	3.6		2.3		2.9
19	270	6.4	260	2.8		1.7		2.9
20	270	6.8				---		2.9
21	280	6.4					2.8	2.8
22	280	6.0					3.4	2.8
23	290	5.7					3.6	2.8

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 50

Deception I. (63.0°S, 60.7°W) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01	270	5.0						3.3
02	300	4.8						3.1
03	280	3.9						3.2
04								
05	(250)	(3.7)					3.3	(3.5)
06								
07	---	---					(2.8)	---
08								
09	---	---						---
10								
11	---	---						---
12								
13	---	---						---
14								
15	---	---						---
16								
17	---	---					(4.2)	---
18								
19	(260)	(3.9)					3.8	(3.4)
20								
21	270	4.2						3.2
22	300	4.7						3.1
23	300	5.0						3.3

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

Table 51

Delhi, India (28.6°N, 77.1°E) November 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.4						
01	300	2.4						
02	300	2.3						
03	---	---						
04	280	2.8						
05	280	2.9						
06	270	3.4						
07	240	6.0						
08	240	7.5						
09	240	7.8						
10	240	8.9						
11	240	8.6						
12	240	7.8						
13	260	8.9						
14	250	9.0						
15	260	9.0						
16	240	7.4						
17	250	6.0						
18	260	4.6						
19	270	3.9						
20	280	3.2						
21	280	3.0						
22	280	2.8						
23	290	2.5						

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

Table 52

Bombay, India (19.0°N, 73.0°E) November 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	270	8.4						
08	300	8.8						
09	330	9.2						
10	360	9.8						
11	360	10.6						
12	390	11.6						
13	390	12.4						
14	390	13.0						
15	390	13.1						
16	360	12.2						
17	330	11.2						
18	300	9.9						
19	280	8.2						
20	300	6.8						
21	300	6.2						
22	300	6.0						
23	300	5.6						

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

Table 53

Madras, India (13.0°N, 80.2°E) November 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	330	6.7						
08	360	8.0						
09	390	8.6						
10	420	8.8						
11	420	9.0						
12	420	9.0						
13	420	9.2						
14	420	9.8						
15	420	10.2						
16	420	10.6						
17	420	10.6						
18	390	10.3						
19	390	9.4						
20	390	8.2						
21	360	7.6						
22	330	7.2						
23								

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

Table 54

Tiruchy, India (10.8°N, 78.8°E) November 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	5.0						
07	420	6.8						
08	480	8.2						
09	480	8.4						
10	480	8.6						
11	510	8.5						
12	510	8.8						
13	510	9.1						
14	510	9.4						
15	510	9.8						
16	480	9.8						
17	480	9.5						
18	480	9.2						
19	480	8.6						
20	450	8.5						
21	420	8.1						
22	400	7.8						
23								

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

Table 55

Rarotonga I. (21.3°S, 159.8°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	7.3					3.3	3.0
01	250	6.8					3.0	3.1
02	260	5.8					3.0	3.0
03	290	5.2					2.7	2.9
04	290	5.2					2.5	2.9
05	290	5.0					2.4	2.9
06	250	6.2	---	---	---	---	2.8	3.1
07	260	7.6	240	4.1	110	2.6	4.4	3.1
08	290	8.6	240	4.4	110	3.0	4.1	3.1
09	300	9.5	220	4.6	110	3.2	4.5	3.1
10	300	9.8	220	4.7	110	3.4	4.5	3.0
11	300	10.3	210	4.8	110	3.5	4.9	3.1
12	300	11.2	210	4.7	110	3.5	4.5	3.0
13	300	11.4	220	4.7	110	3.5	4.6	3.0
14	300	11.3	210	4.7	110	3.4	4.5	3.0
15	300	10.6	230	4.5	110	3.2	4.4	3.0
16	300	9.8	240	4.3	110	3.0	4.0	3.0
17	300	9.2	250	4.3	110	2.6	4.0	3.0
18	270	8.5	---	---	---	---	4.2	3.0
19	270	8.2					4.0	2.9
20	300	7.7					3.8	2.8
21	300	7.5					3.7	2.9
22	280	7.3					3.5	3.0
23	280	7.0					3.1	3.0

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

Table 56

Buenos Aires, Argentina (34.5°S, 58.5°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	5.7					4.0	2.8
01	290	6.1						2.9
02	270	5.8						3.0
03	240	5.3					4.0	3.1
04	270	4.9					3.3	3.0
05	240	5.3					2.5	3.2
06	230	5.8	230	---	110	2.4	4.2	3.3
07	280	6.3	220	---	110	2.8	3.9	3.2
08	300	6.5	220	---	110	3.0	4.2	3.0
09	310	7.6	220	4.5	100	3.2	4.5	2.9
10	330	8.2	220	4.6	110	3.3	4.6	2.8
11	370	9.2	220	4.6	100	(3.5)	4.6	2.8
12	330	10.2	210	4.6	110	(3.4)	4.5	2.9
13	300	11.1	220	4.6	100	3.4	4.7	3.1
14	300	11.2	200	4.6	100	3.2	5.0	3.1
15	280	11.4	220	4.4	110	3.1	4.4	3.2
16	270	10.4	220	---	---	---	4.0	3.3
17	260	9.4	220	---	---	---	3.8	3.3
18	260	8.4	240	---			3.4	3.4
19	250	7.4					2.8	3.2
20	280	6.8					3.4	3.0
21	300	6.2					3.2	2.9
22	310	6.0					4.0	2.8
23	310	5.8					3.8	2.9

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

Table 57

Christchurch, New Zealand (43.6°S, 172.7°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.2					3.0	2.9
01	260	4.6					2.7	3.0
02	260	3.8					2.8	3.0
03	260	3.2					3.1	3.0
04	270	2.9					3.2	3.0
05	260	3.7	---	---		1.5	3.2	3.2
06	270	4.4	250	3.6		2.2	4.3	3.3
07	300	4.8	230	4.0		2.6	4.4	3.2
08	320	5.4	230	4.2		2.9	5.1	3.1
09	340	5.8	220	4.4		3.1	6.4	3.0
10	320	6.0	220	4.4		3.2	6.2	3.1
11	340	6.4	220	4.5		3.3	5.7	3.1
12	320	6.4	210	4.5		3.3	6.2	3.1
13	310	6.4	220	4.5		3.3	5.0	3.1
14	320	6.2	230	4.4		3.2	4.4	3.2
15	310	6.0	220	4.3		3.1	4.4	3.1
16	300	5.9	230	4.2		2.8	4.4	3.1
17	280	5.9	240	3.7		2.4	4.0	3.1
18	270	6.0	260	3.2		1.9		3.1
19	260	6.0				1.3		3.0
20	270	6.4					3.0	2.9
21	270	6.2					3.5	2.9
22	270	5.8					3.7	2.9
23	270	5.6					3.2	2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 58

Decepcion I. (63.0°S, 60.7°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.9						3.1
01								
02	300	4.6						3.0
03	300	4.4						3.1
04	270	3.8	250	2.7				3.2
05								
06	(270)	(4.4)	---	---			3.2	(3.2)
07								
08	---	---					3.8	---
09								
10	---	---					(4.0)	---
11								
12	---	---						---
13								
14	---	---	---	---			(3.5)	---
15								
16	(280)	(4.6)						(3.4)
17								
18	280	4.0	---	---			2.5	3.2
19								
20	270	3.9	---	---				3.3
21	280	4.2	---	---				3.2
22	280	4.7						3.2
23								

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

Table 59

Rarotonga I. (21.3°S, 159.8°W) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.2						3.0
01	250	6.0						3.1
02	< 250	4.5						3.0
03	290	4.0						2.8
04	300	4.2						2.8
05	< 300	4.1						2.8
06	260	5.5	---	---	---	---	2.7	3.2
07	250	7.2	240	4.0	115	2.5	3.4	3.2
08	270	7.6	240	4.2	110	2.9	4.0	3.2
09	290	8.0	220	4.5	110	3.1	4.1	3.2
10	300	8.3	220	4.6	110	3.3	4.5	3.1
11	300	9.1	220	4.7	110	3.5	4.4	3.1
12	290	9.8	210	4.8	110	3.5	4.6	3.2
13	290	9.6	210	4.7	110	3.4	4.5	3.2
14	290	9.0	210	4.6	110	3.3	4.3	3.1
15	300	8.5	220	4.4	110	3.1	4.2	3.0
16	300	8.3	230	4.4	110	2.9	4.1	3.0
17	280	8.9	240	4.0	110	2.4	3.6	3.1
18	270	8.8	---	---	---	---	3.5	3.0
19	250	7.8					3.7	3.0
20	260	7.4					2.8	2.9
21	280	7.0						2.9
22	300	6.4						2.9
23	300	6.2						2.9

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

Table 60

Buenos Aires, Argentina (34.5°S, 58.5°W) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2					3.2	2.8
01	300	5.2					3.6	2.9
02	280	5.3					2.4	3.1
03	230	5.3						3.2
04	240	4.5						3.2
05	250	4.6						3.1
06	220	5.6	---		---	---	3.4	3.5
07	230	6.1	210		110	2.5	3.9	3.4
08	270	6.8	220		110	3.0	3.9	3.2
09	300	7.6	210		110	3.1	4.1	3.0
10	300	8.9	210		110	3.2	4.3	2.9
11	310	10.2	200		110	(3.4)	4.5	2.9
12	300	11.4	200		---	---	4.5	3.0
13	300	12.0	200		---	(3.4)	4.2	3.0
14	290	12.2	220		110	3.2	4.1	3.2
15	270	12.4	220		100	3.0	3.6	3.2
16	260	11.6	230		100	2.8	3.4	3.4
17	250	11.4	230		---	---	2.8	3.3
18	240	10.4						3.4
19	220	9.0						3.4
20	270	6.9						3.2
21	290	6.0						2.8
22	300	5.9						2.9
23	300	5.5					2.4	2.8

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

Table 61

Christchurch, New Zealand (43.6°S, 172.7°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.4						2.9
01	280	2.9					1.8	2.9
02	270	2.6					2.2	3.0
03	270	2.3					1.5	3.0
04	270	2.1					2.2	3.0
05	280	2.6	---	---		1.1		3.1
06	260	3.5	240	---		1.8	3.5	3.2
07	280	4.1	240	3.6		2.3	4.4	3.2
08	350	4.6	230	4.0		2.7	4.4	3.1
09	360	5.0	220	4.2		2.8	4.4	3.0
10	350	5.4	220	4.3		3.0	4.5	3.1
11	360	5.4	210	4.4		3.2	4.3	3.0
12	330	5.5	220	4.4		3.2	4.4	3.1
13	340	5.5	220	4.3		3.2		3.1
14	330	5.6	230	4.3		3.0	4.4	3.0
15	320	5.5	230	4.2		2.8	4.3	3.1
16	300	5.4	230	3.9		2.6	3.7	3.1
17	280	5.3	250	3.4		2.2		3.1
18	270	5.3	270	2.3		1.7		3.1
19	250	5.3	---	---		---		3.0
20	260	5.2	---	---				2.9
21	260	4.5						2.9
22	280	4.0					2.4	2.9
23	280	3.6						2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 62

Decepcion I. (63.0°S, 60.7°W) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6						3.2
01								
02	300	3.6						3.1
03								
04	260	3.4						3.3
05	250	3.3						3.5
06	240	3.3						3.5
07								
08	---	---					3.0	---
09								
10	---	---						---
11								
12	---	---						---
13								
14	---	---						---
15								
16	(280)	(4.4)						(3.2)
17								
18	250	3.4						3.6
19	250	3.5						3.4
20	250	3.6						3.4
21								
22	260	3.6						3.4
23								

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

Table 63

Rarotonga I. (21.3°S, 159.8°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 260	5.8						3.0
01	260	5.4						3.1
02	250	4.4						3.1
03	260	3.8						3.0
04	300	3.5						2.9
05	300	3.6						2.8
06	< 280	3.6						2.8
07	250	6.7	220	2.3	120	2.2	2.9	3.1
08	270	8.4	230	4.2	110	2.6	3.4	3.2
09	270	8.9	230	4.4	110	3.0	3.8	3.3
10	270	9.4	230	4.5	110	3.2	4.0	3.3
11	270	8.8	220	4.6	110	3.4	4.3	3.3
12	290	8.5	210	4.6	110	3.4	4.1	3.2
13	290	8.3	210	4.6	110	3.4	4.4	3.1
14	290	8.0	200	4.5	110	3.2	4.3	3.2
15	300	7.7	220	4.5	110	3.0	4.0	3.1
16	290	7.8	230	4.2	110	2.9	3.9	3.0
17	260	8.0	240	3.1	110	2.3	3.7	2.9
18	260	7.4	---	---	---	---	3.4	3.0
19	260	7.0					3.4	3.0
20	260	6.8					3.1	3.0
21	280	6.4					2.6	3.0
22	270	6.1						3.0
23	270	6.0						2.9

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

Table 64

Christchurch, New Zealand (43.6°S, 172.7°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8						3.0
01	280	2.8						3.0
02	270	2.5						3.0
03	260	2.1					2.8	3.0
04	260	1.8					1.8	3.0
05	(270)	1.8					3.0	2.9
06	270	2.7				1.3		3.1
07	260	4.0	260	---		1.9	2.8	3.3
08	280	4.6	240	3.7		2.3	3.6	3.2
09	320	5.1	230	4.1		2.7	3.6	3.2
10	330	5.3	230	4.2		2.8	4.1	3.1
11	320	5.8	220	4.3		3.0	4.2	3.1
12	310	5.8	220	4.3		3.1	4.3	3.1
13	300	5.9	230	4.3		3.1		3.2
14	280	5.8	230	4.2		2.9		3.2
15	300	5.8	230	4.0		2.7		3.2
16	270	5.7	230	3.6		2.3	3.4	3.2
17	260	5.3	250	2.8		1.8		3.2
18	240	5.0	---	---				3.1
19	260	4.8						2.9
20	270	4.5						2.9
21	280	3.9						2.9
22	280	3.7						2.9
23	280	3.2						2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 65

Godhavn, Greenland (69.2°N, 53.5°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(3.4)	---	---	---	---	1.5	(3.2)
01	260	(3.3)	---	---	---	---		(3.1)
02	280	(3.3)	---	---	---	---		(3.0)
03	(270)	(3.4)	(250)	---	---	---	1.8	(3.0)
04	(280)	(3.3)	240	(2.9)	---	---	1.7	(3.1)
05	270	(3.3)	(210)	(2.9)	110	1.8	2.2	(3.2)
06	(270)	(3.2)	(220)	3.3	100	2.1	2.7	(3.2)
07	(260)	< 3.4	(210)	3.4	100	2.4	3.8	(3.4)
08	---	(4.4)	200	(3.7)	100	2.6	3.5	(3.1)
09	(360)	(4.6)	220	(3.8)	100	(2.8)	3.7	(3.1)
10	(350)	(5.0)	210	(4.0)	100	2.9	4.1	(3.0)
11	(380)	(5.0)	210	(4.0)	100	3.0	2.8	(3.0)
12	380	(4.9)	200	(4.0)	100	3.0		(3.1)
13	(360)	(5.0)	210	(4.0)	100	(3.0)		---
14	430	(4.8)	210	4.0	100	2.8	2.4	(2.8)
15	380	(4.6)	210	3.8	100	2.8	2.1	(2.9)
16	410	(4.4)	210	3.8	100	2.7		(3.0)
17	370	(4.5)	210	3.7	100	2.5	3.0	(3.0)
18	370	(4.3)	220	3.6	100	2.4	2.1	(3.0)
19	320	(4.2)	230	3.4	110	2.2	2.6	(3.1)
20	(300)	(4.0)	230	(3.2)	---	---	> 2.6	(3.1)
21	260	(3.8)	230	---	---	---		(3.2)
22	260	(3.6)	240	---	130	1.7		(3.1)
23	260	(3.7)	---	---	---	---	1.4	(3.2)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 66

Fribourg, Germany (48.1°N, 7.8°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	4.1						2.8
01	270	3.8						2.8
02	< 275	3.5						2.7
03	< 285	3.2						2.8
04	280	3.2	---	---				2.8
05	315	4.0	240	3.0	< 115	1.7	2.2	2.9
06	330	4.6	230	3.5	107	2.2	2.3	3.0
07	332	4.9	225	4.0	105	2.5	2.4	3.0
08	355	5.3	225	4.1	100	2.8	3.0	3.0
09	365	5.2	210	4.3	100	3.0	2.8	3.0
10	380	5.4	210	4.4	99	3.1	3.2	2.8
11	370	5.4	205	4.4	102	3.2	3.4	2.8
12	342	5.7	210	4.4	103	3.2	3.4	3.0
13	340	5.8	225	4.5	101	3.2	3.2	2.9
14	350	5.7	215	4.4	103	3.2	3.2	2.9
15	320	5.9	220	4.3	105	3.0	2.8	3.0
16	320	6.0	225	4.2	105	2.8		3.0
17	305	6.2	240	4.0	105	2.5		3.0
18	290	6.0	250	3.5	110	2.2	1.9	3.0
19	255	6.6	250	---	---	1.6	2.0	3.0
20	240	6.8						3.0
21	240	6.0						3.0
22	235	5.3						2.8
23	255	4.6						2.8

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

Table 67

Godhavn, Greenland (69.2°N, 53.5°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.0)						(3.0)
01	270	(3.0)						(3.0)
02	265	(2.9)					2.3	(3.0)
03	270	(2.8)					4.2	(2.9)
04	280	(2.8)					2.7	(3.0)
05	270	(2.8)			110	---	2.2	(3.1)
06	(260)	(3.0)			110	(1.9)	5.2	(3.3)
07	280	(3.3)	220	---	110	2.2	5.4	(3.3)
08	---	(3.3)	(220)	---	110	(2.4)	5.2	---
09	---	(4.2)	220	3.5	110	2.6		---
10	(420)	(4.3)	220	(3.6)	100	2.7		---
11	(360)	(4.6)	215	3.7	100	2.8		(2.9)
12	(360)	(4.8)	220	3.8	100	2.8		(3.0)
13	(370)	(4.8)	220	(3.7)	105	(2.8)	3.3	---
14	(410)	(4.3)	220	3.7	100	2.7		(3.0)
15	(375)	(4.4)	220	3.6	100	2.7		(3.1)
16	350	(4.3)	220	3.6	100	2.5		(3.0)
17	385	(4.3)	230	3.4	100	2.4		(2.9)
18	290	4.1	230	3.3	110	2.2		3.1
19	260	4.0	240	---	---	1.9		3.2
20	260	(3.7)	---	---	---	---		(3.2)
21	250	(3.5)	---	---	---	---	1.3	(3.1)
22	250	(3.3)			---	---		(3.1)
23	(260)	(3.2)					2.4	(3.0)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 68

Fribourg, Germany (48.1°N, 7.8°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6						2.7
01	295	3.3					1.7	2.7
02	< 290	3.0						2.7
03	295	2.8						2.7
04	270	2.7					1.8	2.8
05	270	2.9			---	E		3.0
06	260	4.0	245	3.2	120	1.8	2.3	3.2
07	310	4.4	235	3.6	115	2.3	2.4	3.2
08	340	4.6	225	4.0	110	2.7	2.9	3.0
09	355	5.1	220	4.3	105	2.9	3.2	3.0
10	320	5.7	210	4.4	105	3.1	3.2	3.1
11	335	5.8	225	4.4	110	3.2	3.3	3.0
12	335	6.0	220	4.5	105	3.2	3.4	3.0
13	340	6.0	230	4.5	105	3.2	3.3	3.0
14	315	6.2	225	4.4	110	3.0	3.2	3.1
15	305	6.0	230	4.3	105	3.0	3.0	3.2
16	295	6.2	230	4.0	110	2.8	3.1	3.2
17	275	6.0	240	3.7	110	2.4	2.1	3.2
18	260	6.4	250	---	120	1.9	1.9	3.1
19	250	6.4					1.9	3.1
20	245	5.6					1.8	3.0
21	250	4.7						3.0
22	270	4.1						2.8
23	285	3.8						2.7

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

Table 69

Poitiers, France (46.6°N, 0.3°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6					1.7	2.9
01	290	3.6					1.7	2.9
02	290	3.3					1.7	2.8
03	< 270	3.0					1.8	2.9
04	255	2.8					1.9	2.9
05	255	3.0	---	---	---	---	2.2	3.1
06	255	3.8	240	2.3	120	1.9	2.0	3.4
07	265	4.4	220	3.7	110	2.4		3.4
08	275	4.6	205	3.8	110	2.7		3.3
09	310	5.3	205	4.2	106	2.9	2.4	(3.3)
10	305	5.5	200	4.4	105	3.0	3.0	3.2
11	300	5.8	200	4.5	105	3.1	3.2	3.2
12	335	5.8	195	4.5	105	3.2	3.5	3.2
13	310	6.1	210	4.5	105	3.1	3.3	3.1
14	305	6.0	215	4.5	105	3.0	3.4	3.2
15	300	6.2	220	4.3	110	2.9	2.7	3.2
16	295	6.2	220	4.0	110	2.7	2.7	3.2
17	280	6.0	230	3.8	115	2.3	2.1	3.2
18	255	6.2	245	---	< 125	1.8	2.1	3.2
19	245	5.8					2.1	3.3
20	230	5.2						3.1
21	245	4.6					1.9	3.1
22	270	4.0					1.8	3.0
23	< 285	3.7					1.8	2.8

Time: 0.0°.
Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 70

Casablanca, Morocco (33.6°N, 7.6°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	4.0					2.0	2.7
01	< 300	4.0					1.9	2.8
02	(300)	4.0						2.9
03	< 260	3.8						3.0
04	< 250	3.4						3.0
05	< 250	3.2	---	---	---	---		3.0
06	< 250	3.8	---	---	130	1.6		3.3
07	250	4.8	240	(3.4)	120	2.1		3.6
08	250	5.3	220	3.8	110	2.6		3.5
09	300	5.7	220	(4.2)	105	2.9		3.3
10	310	6.2	205	(4.4)	105	3.1		3.2
11	305	6.6	200	(4.5)	100	3.2		3.2
12	300	6.9	(200)	4.7	105	(3.3)		3.1
13	< 325	7.6	200	(4.6)	100	(3.3)		3.1
14	300	8.4	215	(4.6)	105	(3.3)		3.1
15	290	8.3	225	(4.4)	105	(3.1)		3.2
16	280	8.6	225	(4.4)	105	2.9		3.2
17	270	8.4	240	4.1	110	2.5		3.3
18	250	7.9	240	3.4	120	2.0		3.3
19	230	7.8	---	---	---	---	2.2	3.3
20	< 225	6.4					2.1	(3.3)
21	< 210	4.7					2.2	2.9
22	(300)	4.2					2.2	2.7
23	< 300	4.1					2.0	2.8

Time: 0.0°.
Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

Table 71

Dakar, French West Africa (14.6°N, 17.4°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.6					3.2	2.6
01	280	4.6					2.7	3.0
02	240	4.4					3.4	3.2
03	240	4.0					3.5	3.2
04	230	3.2					3.3	3.3
05	280	2.3					3.4	3.2
06	240	4.6			---	1.8	3.3	3.4
07	250	6.4	230	---	115	2.4	3.0	3.4
08	270	7.6	230	---	110	2.9	3.5	3.2
09	300	8.4	225	4.6	105	3.2	3.5	3.1
10	310	9.2	215	4.8	105	3.5	3.7	2.8
11	345	10.8	215	4.8	105	3.6		2.8
12	325	12.0	205	4.8	100	3.6		2.8
13	315	12.4	200	4.8	102	3.6		< 2.9
14	335	12.6	215	4.8	101	3.4		2.8
15	305	> 13.1	225	4.6	105	3.2	3.2	2.9
16	285	13.9	220	---	105	2.9	3.5	3.0
17	260	12.4	235	---	115	2.4	4.1	3.0
18	240	> 11.6	---	---	---	---	3.5	3.0
19	250	10.2					3.5	2.9
20	300	7.4						2.7
21	330	6.1						2.6
22	330	5.2					2.5	2.6
23	330	5.0					2.5	2.6

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

Table 72

Dakar, French West Africa (14.6°N, 17.4°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	8.0						2.9
01	250	7.9						3.2
02	250	6.2						3.4
03	220	4.5						3.5
04	240	2.9						3.2
05	285	2.4					2.0	3.0
06	270	3.3			---	E		3.0
07	250	6.7	240	---	115	2.2	2.2	3.3
08	280	8.6	235	(4.3)	111	2.7	3.2	3.3
09	290	9.7	225	4.4	109	3.1	3.2	3.2
10	310	11.0	220	4.6	111	3.3		3.0
11	320	12.0	210	4.7	113	3.5	2.6	3.0
12	320	11.7	210	4.7	113	3.5		(2.9)
13	325	12.2	210	4.6	111	(3.5)		2.9
14	315	13.0	210	4.6	111	3.4	2.9	3.0
15	300	12.5	225	4.4	110	3.2	3.2	3.2
16	280	12.0	230	4.2	111	2.8	3.1	3.1
17	260	11.6	240	---	117	2.4	3.1	3.0
18	250	11.0	250	---	---	E	3.2	2.9
19	270	10.8					2.9	2.8
20	290	9.8						2.8
21	290	9.0						2.8
22	310	8.4						2.7
23	290	7.6						2.8

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

TABLE 73

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

Form accepted June 1946

IONOSPHERIC DATA

hF2 (Characteristic), Km (Unit), April (Month), 1953

Observed at Washington, D.C.

Lot 38.7°N, Long 77.1°W — 75° W Mean Time

National Bureau of Standards (Institution)

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(290)S	(280)S	(280)S	(260)S	260	(280)S	260	[330]L	410	(540)HK	G K	G K	G K	480 K	500 K	440 K	380 K	[320]LK	(270)LK	250 K	270	290	300	(300)S
2	280	(290)S	(300)S	270	(300)S	[280]S	260	(310)L	(320)L	300	300	330	300	350	320	320	300	270	250	240	240	270	270	280N
3	260	250	260	(280)S	250	[250]S	250	(250)L	340	330	350	330	330	320	310	310	310	280	250	240	260	270	280	280
4	250	250	(260)S	S	S	S	270	240	340	310	310	320	330	300	300	300	300	270	250	230	230	250	280	(280)S
5	(300)S	300	[300]S	(290)S	S	A	250	240	310	310	290	300	340	330	320	300	280	250N	250	230	220	250	(270)S	280
6	280	270	250	260	270	[250]S	230	(340)L	350	310	310	330	330	310	310	300	290	250	250	230	240	230	(270)S	(280)A
7	(270)S	(270)S	260	250	280	(300)S	270	270	290	296	280	290	[300]M	320	290	290	290	260	230	230	230	240	240	250
8	250	250	(250)S	250	(260)S	[270]S	240	300	370	330H	350	350	390H	350H	360	330	[300]C	280H	260	220	230	(250)A	250	(270)S
9	(280)S	(300)S	[290]S	(280)S	S	S	240	220	(400)S	450	470	380	370	340	360	330	300	270	250	220	220	250	280	300
10	300	(300)S	S	S	280	(270)S	240	220	350	420	380	700	370	330	330	340	320	[280]A	250	230	230	240	240	280
11	(280)S	S	S	S	S	S	250K	220KH	G K	G K	G K	700 K	540 K	440 K	350 K	400 K	310 K	300 K	270 K	240 K	240 K	(250)S	270	270
12	260	270	270	280	S	S	240	240	(380)H	340H	290	350	310	310	320	300	280	250	240	230	230	250	270	(300)A
13	270	270	250	230	240	[240]S	240H	250H	250	310	360	350H	330	300	330	310	270	260	230	230	230	240	240	250
14	260	240	250	230	230	(290)S	230	250	280	300	300	290	340	320	300	300	270	270	240	220	220	230	230	250
15	240	250	250	240	230	[220]L	220	[280]L	330	340	350	340	330	290	320	300	310	270	250	230	230	25	270	270
16	270	270	250	240	S	S	250K	L K	G K	G K	G K	G K	G K	400 K	G K	520 K	G K	400 K	240 K	250 K	250 K	(260)SK	(280)SK	(270)SK
17	S K	S K	(290)SK	(300)SK	(300)SK	[270]S	240	230	290	410	400	360	330	360	310	300	300	280	260	230	220	230	[250]A	270
18	270	(270)S	260	(270)S	S	S	250	G	G	480	400	380	(450)H	400	350	340	310 K	300 K	260 K	230 K	240 K	250 K	(270)SK	(280)SK
19	(290)SK	(300)SK	260 K	S K	S K	S K	(270)LK	G K	G K	G K	G K	G K	G K	G K	G K	G K	G K	400 KH	340 K	260 K	250 K	260 K	260 K	300 K
20	(270)SK	(280)SK	(300)SK	(300)SK	(320)SK	[300]S	270	250	310	L	G	330	400	390	380	380	310	300	310	250	230	230	250	280
21	(270)S	(290)S	(270)S	S	S	S	250	G	G	G	350	350	380	340	310	290	280	270	250	240	(230)A	240	(250)A	[260]A
22	270	(260)S	S	S	(300)S	(300)S	270K	380 K	G K	G K	G K	G K	G K	G K	470 K	420 K	380 K	360 K	310 K	260 K	240 K	220 K	230 K	(250)SK
23	[280]SK	(300)SK	S K	S K	S K	S K	250 K	G K	G K	G K	G K	G K	G K	400 K	350 K	370 K	360 K	310 K	(270)LK	240 K	(250)AK	230 K	(260)SK	(270)SK
24	(290)SK	(290)SK	(290)SK	A K	C K	A K	G K	G K	G K	530 K	430 K	450 K	550 K	470 K	420 K	350 K	350 K	320 K	(260)AK	[260]AK	(250)A	240	(250)A	280
25	280	280	270	[280]A	(290)A	280	230	290	(500)H	G	G	G	G	480	400	420	350	320	270	250	230	230	230	250
26	250	A	S	260	270	(280)S	230	G	G	410	(460)H	440	440	450	420	380	370	370	350	250	230	230	240	(250)A
27	A	A	270	(290)A	[290]S	(290)S	250	(410)H	320	340	310	330	350	320	310	300	310	280	260	240	230	220	230	250
28	250	250	250	260	250	(290)S	250	320	300	290	330	320H	340	310	330	310	300	280	270	240	220	220	240	280
29	270	270	270	270	260	260	230	260	290	290	300	330	350	310	320	310	300	290	260	230	220H	210H	240	250
30	(260)	260	(250)S	270	260	270	230	260	280H	260H	310	300H	340	320	300	300	300	250	250	230	220	240	(260)A	240
31																								
Median	270	270	260	270	260	(280)	250	280	350	340	360	350	360	340	330	320	300	280	260	240	230	240	260	270
Count	28	26	25	22	19	19	30	29	30	29	30	30	30	30	30	30	30	30	30	30	30	30	31	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O - 702319

TABLE 74

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), April (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat. 38.7° N, Long 77.1° W

75° W Mean Time

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

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

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	2.7	2.5	2.5	2.6	2.5	2.2	2.7	3.6	(4.1)^{S}	(4.2)$^{H}_{K}$	<4.1$^{G}_{K}$	<4.1$^{G}_{K}$	<4.1$^{G}_{K}$	4.5^{K}	4.3^{K}	4.4^{K}	4.3^{K}	4.0^{K}	4.1^{K}	(3.7)$^{S}_{K}$	(3.7)^{S}	3.5$^{J}_{S}$	(3.1)^{S}	2.7^{F}
2	(2.6)$^{S}_{F}$	(2.5)$^{J}_{S}$	(2.4)$^{S}_{F}$	2.4^{F}	1.6$^{J}_{S}$	[2.1]^{F}	2.7	3.9	4.3	5.1	5.4	5.3	5.6	5.3	5.8	5.7	5.8	5.6	5.4	(5.2)^{S}	5.0	(4.9)^{S}	(4.0)^{S}	3.7^{H}
3	3.8	3.4$^{S}_{F}$	3.2$^{J}_{F}$	2.7^{Z}	2.4	2.3	3.1	4.0	4.5	4.8	4.8	5.6	5.9	5.9	6.0	5.8	5.8	5.8	5.8	5.8	6.0	4.9	4.9	4.9
4	3.9	4.0	2.4	2.0	1.7$^{J}_{S}$	1.7$^{J}_{S}$	3.0	4.2	4.8	5.4	5.5	5.9	6.2	6.6	6.5	6.8	6.4	6.8	6.6	6.2	4.7	3.8	3.1	2.7
5	2.6	2.4	2.3	2.1$^{J}_{A}$	1.9	1.9	3.3	4.3	4.9	5.5	6.2	5.8	5.8	6.0	6.0	6.0	6.0	5.8^{H}	6.0	5.9	(5.0)^{S}	(4.1)^{S}	(3.6)$^{S}_{F}$	(3.9)^{S}
6	3.6	3.5	2.9	2.7	2.3	1.9$^{S}_{S}$	3.0	3.9	4.6	5.4	5.4	6.0	6.0	6.2	6.4	6.8	7.0	6.8	6.2	5.8$^{S}_{S}$	(5.4)^{S}	4.4	2.9$^{S}_{S}$	3.1
7	(3.0)^{S}	2.9$^{S}_{S}$	2.8^{F}	2.4	2.3^{F}	2.3	3.1	4.5	5.5	5.8	6.2	6.3	[6.2]^{M}	6.0	6.8	6.5	6.2	6.4	6.4	6.2	5.8	(5.2)^{S}	4.4	4.3
8	3.9	3.5	3.1	3.0	2.6	2.5	3.5	4.3	4.5	4.8^{H}	4.9	5.0	5.1^{H}	5.4^{H}	5.2	5.4	[5.3]^{C}	5.4^{H}	5.7	5.6	5.3	4.2	3.4	3.0
9	2.5	2.4	2.2	2.0$^{J}_{S}$	2.0	2.0	3.2	3.8	3.9	4.2	4.4	4.9	4.9	5.2	5.3	5.4	5.6	5.6	5.8	5.8	4.4	(3.9)$^{J}_{S}$	(3.2)^{S}	(3.0)$^{J}_{S}$
10	(2.6)$^{J}_{S}$	(2.5)$^{J}_{S}$	(2.6)$^{J}_{S}$	(2.4)$^{J}_{S}$	(2.7)^{S}	2.2	3.3	3.9	4.5	4.6	4.8	4.5	5.3	5.4	5.3	5.0	5.0	5.1	6.4	5.4	4.6^{F}	3.8^{F}	(3.0)$^{J}_{S}$	(2.9)$^{J}_{S}$
11	2.7	2.0	1.7$^{J}_{S}$	1.8$^{J}_{S}$	1.8$^{J}_{S}$	1.8$^{J}_{S}$	2.8^{K}	3.3$^{F}_{K}$	<3.5$^{G}_{K}$	<3.8$^{G}_{K}$	<4.0$^{G}_{K}$	4.5^{K}	4.5^{K}	4.8^{K}	5.0^{K}	4.6^{K}	5.0^{K}	4.7^{K}	4.7^{K}	4.5^{K}	^{K}(4.0)$^{J}_{S}$	(3.5)^{S}	[3.4]^{S}	(3.3)$^{J}_{S}$
12	(3.2)$^{J}_{S}$	(3.0)$^{J}_{S}$	(2.7)$^{J}_{S}$	(2.7)^{S}	S	S	3.4$^{J}_{S}$	(3.9)^{S}	(4.3)^{H}	4.5^{H}	5.1	4.8	(5.4)^{S}	5.8	5.5	5.8	5.8	5.6	5.2	5.1	4.2	(3.6)^{S}	(3.1)^{S}	3.0
13	3.0	2.8	(3.0)^{S}	(2.2)^{S}	(2.2)^{S}	1.9	3.5^{H}	4.8^{H}	5.2	5.0	5.2	5.4^{H}	5.8	6.0	5.7	5.8	6.0	5.8	5.5	5.2	(4.8)^{S}	(4.4)^{S}	3.8$^{J}_{S}$	3.4
14	(3.4)^{S}	3.2	2.8^{F}	2.5$^{J}_{S}$	2.0^{F}	2.2	3.7	4.6	5.0	5.2	5.5	5.4	5.2	5.3	5.7	5.6	5.8	5.8	5.6	5.8	5.0	4.2	3.8	3.4$^{F}_{S}$
15	3.1^{F}	2.9	2.7^{F}	2.5^{F}	2.3	2.1^{F}	3.5	4.0	4.4	4.5	4.9	5.2	5.7	5.8	5.3	5.7	5.5	5.4	5.2	4.8	(4.7)^{S}	3.7	(3.8)^{S}	3.6
16	3.3	3.0	2.5	2.0$^{J}_{S}$	1.6$^{J}_{S}$	1.8$^{J}_{S}$	3.1^{K}	3.6^{K}	<3.5$^{G}_{K}$	<3.7$^{G}_{K}$	<3.8$^{G}_{K}$	<3.9$^{G}_{K}$	<3.9$^{G}_{K}$	4.4^{K}	<3.8$^{G}_{K}$	4.0^{K}	<3.6$^{G}_{K}$	(3.9)$^{G}_{K}$	3.8^{K}	3.4^{K}	3.5^{K}	3.0^{K}	2.6^{K}	2.4^{K}
17	2.0^{K}	1.9^{K}	1.7^{K}	1.7^{K}	^{K}1.7$^{J}_{S}$	1.9	3.1	3.8	4.4	4.6	4.6	5.0	5.4	5.2	5.6	5.4	5.2	5.[illegible]	5.2	5.3	5.0	(3.8)$^{J}_{S}$	3.2	3.2
18	3.0	2.6	2.4	1.7	1.6$^{J}_{S}$	(1.7)^{S}	2.8	<3.3^{G}	<3.7^{G}	4.1	4.5	4.8	(4.5)^{H}	4.7	4.9	4.8	4.9^{K}	4.5^{F}	4.3^{K}	3.9^{K}	^{K}3.3$^{F}_{S}$	^{K}3.1$^{J}_{S}$	^{K}2.7$^{F}_{S}$	^{K}2.5$^{F}_{S}$
19	^{K}2.5$^{J}_{S}$	2.3$^{F}_{K}$	--.3$^{F}_{K}$	(2.0)$^{F}_{K}$	F$^{S}_{K}$	S^{K}	3.0^{K}	<3.2$^{G}_{K}$	<3.5$^{G}_{K}$	<3.7$^{G}_{K}$	<3.9$^{G}_{K}$	<4.0$^{G}_{K}$	<4.0$^{G}_{K}$	<3.9$^{G}_{K}$	<3.9$^{G}_{K}$	<3.8$^{G}_{K}$	<3.6$^{G}_{K}$	3.8$^{H}_{K}$	3.8^{K}	3.8^{K}	3.1^{K}	^{K}3.2$^{J}_{S}$	2.0^{K}	2.7$^{F}_{K}$
20	2.7^{K}	2.5^{K}	2.0$^{F}_{K}$	1.7$^{F}_{K}$	^{K}1.7$^{J}_{S}$	2.0	2.8	3.5	4.3	4.2	<3.9^{G}	5.0	4.9	4.9	4.8	4.7	4.9	4.9	4.9	5.8	5.6	4.3	3.6	2.9^{F}
21	2.7^{F}	2.3^{F}	1.8^{F}	1.4$^{J}_{S}$	[1.6]^{F}	1.7$^{J}_{F}$	2.9	<3.3^{G}	<3.6^{G}	<4.0^{G}	4.9	5.2	5.1	5.6	6.1	6.6	5.8	5.5	5.0	6.2	5.2	4.4	3.7	[3.2]^{A}
22	2.8	2.3	2.1^{F}	1.9	1.7	2.1	3.2^{K}	3.7^{K}	<3.7$^{G}_{K}$	<3.9$^{G}_{K}$	<4.1$^{G}_{K}$	<4.1$^{G}_{K}$	<4.1$^{G}_{K}$	<4.0$^{G}_{K}$	4.5^{K}	4.6^{K}	4.5^{K}	4.4^{K}	4.4^{K}	4.8^{K}	5.1^{K}	4.4^{K}	3.5^{K}	2.9^{K}
23	^{K}2.1$^{J}_{S}$	2.0^{K}	^{K}1.7$^{J}_{S}$	^{K}1.5$^{J}_{S}$	^{K}1.4$^{J}_{S}$	1.8^{K}	3.0^{K}	<3.4$^{G}_{K}$	<3.6$^{G}_{K}$	<3.8$^{G}_{K}$	<3.9$^{G}_{K}$	<4.0$^{G}_{K}$	<4.1$^{G}_{K}$	4.8^{K}	5.1^{K}	4.9^{K}	4.8^{K}	4.8^{K}	4.7^{K}	5.5^{K}	5.5^{K}	4.3^{K}	2.8$^{F}_{K}$	^{K}(2.4)$^{F}_{S}$
24	2.3$^{F}_{K}$	2.2$^{F}_{K}$	1.8$^{F}_{K}$	1.9^{K}	C^{K}	A^{K}	<3.4$^{G}_{K}$	<3.7$^{G}_{K}$	<4.0$^{G}_{K}$	4.3^{K}	4.6^{K}	4.8^{K}	4.5^{K}	4.8^{K}	4.8^{K}	5.1^{K}	5.0^{K}	4.7^{K}	4.7^{K}	4.7^{K}	4.9	4.2	3.7	3.3
25	3.0^{F}	3.0	2.8	[2.4]^{A}	2.1^{F}	2.5	3.8	4.4	(4.3)^{H}	<4.0^{G}	<4.2^{G}	<4.2^{G}	<4.3^{G}	4.8	4.9	4.8	4.9	5.0	4.7	4.6^{F}	5.3	4.5^{F}	(3.7)$^{S}_{S}$	3.3^{F}
26	2.8^{F}	(2.7)^{A}	2.2^{F}	2.5^{Z}	2.2^{F}	2.3	3.1	<3.7^{G}	<3.9^{G}	4.4	(4.6)^{H}	4.7	4.7	4.7	4.8	4.8	4.7	4.7	4.1	5.6	5.8	5.0	4.3	3.5
27	[3.1]^{A}	2.7	2.4^{F}	2.4	2.0^{F}	2.2^{F}	3.5	(4.1)^{H}	4.7	5.0	5.2	5.2	5.6	5.9	6.1	6.0	5.8	5.8	6.3	5.8	6.4	5.1	4.2	3.4
28	3.1	2.9	2.8	2.6	2.5	2.5	3.5	4.5	5.2	5.4	5.5	(5.9)$^{J}_{H}$	5.6	5.8	5.8	5.8	5.6	5.6	5.8	5.8	6.0	5.2	3.9$^{J}_{S}$	(3.5)^{S}
29	(3.4)$^{J}_{F}$	3.2^{F}	(2.6)^{F}	(2.5)^{F}	(2.7)$^{J}_{S}$	2.8$^{F}_{S}$	3.4	5.0	5.5	5.8	6.2	5.9	6.0	6.5	6.4	6.1	6.0	6.3	6.2	6.4	(6.3)$^{J}_{S}$	(5.2)$^{J}_{S}$	4.0	3.8$^{J}_{F}$
30	3.5^{F}	3.5^{F}	(3.2)^{S}	2.9$^{J}_{S}$	2.9	2.9$^{J}_{S}$	4.1	5.2$^{J}_{S}$	(5.9)$^{J}_{H}$	(6.8)^{H}	6.5	6.0$^{J}_{H}$	5.8	6.7	7.5	(7.2)^{S}	7.0	7.4	6.6	6.6	5.8	5.2	4.6	3.9$^{J}_{S}$
31																								
Median	3.0	2.7	2.4	2.4	2.0	2.1	3.2	3.9	4.4	4.6	4.8	5.0	5.2	5.4	5.4	5.5	5.6	5.4	5.3	5.6	5.0	4.2	3.6	3.2
Count	30	30	30	30	27	27	31	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1948 O - 703518

TABLE 75

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), April (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

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

Lat 38.7°N, Long 77.1°W — 75° W Mean Time

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

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	2.6	2.5	2.5	2.5 F	2.3	2.2	3.2	3.8	4.2	<3.9 G K	<4.0 G K	<4.2 G H	<4.0 G K	4.4 K	4.3 K	4.3 K	4.2 K	4.1 K J S	4.0 K	(3.5) S K	3.6	(3.1) S	2.9	(2.7) F
2	2.5 S	2.4 F	(2.3) J S	2.3 J S	[1.9] F	1.9	3.2	4.1	4.7	5.0 H	5.4	5.5	5.2	5.5	5.8	5.8	5.8	5.6	5.3	5.0 S F	4.6	4.0 S F	3.9 S J	3.8
3	3.5 S F	(3.3) S	2.9	2.5 J	2.4	2.5	3.6	4.2	4.8	5.0	5.5	5.6	5.8	5.9	6.0	5.8	6.0	5.8	5.6	5.7	(5.2) S	4.7	4.7	4.7
4	3.9	3.3	2.2	1.8 J S	1.6	2.3	3.8	4.3	5.2	5.8	6.2	6.0	6.6	6.4	6.5	6.7	6.8	6.6	6.2	5.2	4.4	3.3	2.8	2.5
5	2.6	2.3 J S	2.2	2.0	1.7	2.5	3.9	4.8	5.1	5.8	6.4	5.8	6.0	5.9	6.0	6.0	6.0	5.8	6.2	5.8	(4.4) S	3.8 S F	3.6 F	3.8
6	3.6	3.2	2.9	2.4	2.1	2.4	3.5	4.2	5.0	5.8	5.9	6.2	6.2	6.4	6.6	6.9	7.0	6.0	6.0	5.6	4.7	4.0 J S	3.2	(3.1) S
7	(2.9) S	(2.7) S	2.8	2.3 F S	2.3	2.5	3.9	4.9	5.8	6.2	6.2	M	M	6.5	6.8	6.2	6.4	6.4	6.4	(6.0) S	5.8	4.9	4.5	4.2
8	3.8	3.3	3.0	2.7	(2.5) S	2.7	3.8	4.3 H	4.6 H	4.9	4.8	5.0	5.4	5.1	5.2	5.2	5.5	5.5	(5.9) S	5.4	5.0	3.9	3.0	2.7
9	2.5	2.4	2.2	2.0	2.0	2.5	3.6	3.9	4.2	<4.0 G	[4.6] C	4.9	5.0	5.1	5.3	5.6	5.5	5.6	5.8	(5.2) S	(3.8) S	3.2 J S	[3.1] S	2.7
10	(2.5) S	(2.5) S	[2.5] S	(2.3) S	2.2	(2.6) J S	4.0	4.2	4.5	4.7	4.8	5.0	5.2	5.4	5.1	5.0	5.0	5.1	5.5	5.0	4.2	(3.6) S	(2.9) J S	2.8
11	2.4	2.0	1.8 J K	1.8	1.6 J S	2.3	(3.2) S K	<3.4 G K	<3.4 G K	<4.0 G K	4.4 K	4.5 K	4.9 K	5.0 K	4.8 K	4.7 K	4.8 K	4.6 K	(4.6) J K	4.2 J S	(3.5) S K	(3.0) J S	(3.0) S	(3.3) J S
12	3.1	(2.9) S	(2.8) S	2	2	(2.4) S	4.0	4.2 J H	(4.5) S H	(4.8) H	4.5 H	(4.6) H	5.6	5.5	5.4	5.8	5.8	5.4	5.0	4.5	(4.0) S	3.4	3.1	3.0
13	2.7	(2.9) J	(2.3) J S	[2.2] S	[2.0] A	2.6	4.0 H	5.2	5.0	4.9 H	5.2	5.6	5.9	5.8	5.8	6.1	5.8	5.6	5.2	5.0	4.6	4.2	3.6	(3.3) S
14	(3.2) S	2.9	2.6	(2.4) V	2.0	3.0	4.2	4.9	5.1	5.6	5.4	5.0	5.2	5.5	5.6	5.9	5.6	5.8	5.6	5.4	4.6	4.1	3.5 F	3.2
15	3.0 F	2.9 F	2.7 F	2.6	2.2	2.8	3.9	4.2	4.5	4.5	4.8	5.4	5.8	5.4	5.4	5.6	5.6	5.3	5.0	(4.8) S	(4.2) S	3.8	3.9	3.6
16	3.3	2.7	2.1	1.7 J S	1.5 J S	2.4	3.3 K	<3.4 G K	<3.7 G K	<3.8 G K	<3.9 G K	<3.9 G K	4.2 K	<3.9 G K	<3.8 G K	<3.7 G K	<3.6 G K	4.1 K	3.7 K	3.5 K	3.5 K	2.9 K	2.3 K	2.2 K
17	K 2.0 S J	1.8 K	1.7 K	1.8 J S K	1.7 J S	2.5	3.6	4.1	4.3	5.0	4.1	5.2	5.3	5.3	5.4	5.4	5.2	5.0	5.4	5.4	(4.3) S	3.6 J S	3.2	3.2
18	2.8	2.3	2.0	(1.6) J S	1.7 J S	2.3	3.1	[3.5] C	4.1	4.5	4.7	4.6 H	4.6 J	4.8 H	4.8	4.9	4.6 K	4.4 K	4.3 K	3.7 K	K 3.6 S J	3.0 K	K 2.5 S J	2.4 K F
19	(2.4) K F	2.4 K F	2.2 K	2.1 K	[2.4] K	(2.8) S K	(3.4) J S	<3.4 G K	K <3.7 H G	<3.8 G K	<4.0 G K	<4.0 G K	<4.0 G K	<3.8 G K	<3.9 G K	<3.7 G K	3.8 K	3.8 K	4.0 K	3.8 K	3.4 K	3.0 K	2.8 K F	2.7 K
20	2.6 K	2.3 K	1.9 K F	1.6 K	1.7 K	2.4	3.2	3.9	4.3	4.8	5.0	4.5	4.8	4.9	4.9	4.7	4.7	4.8	5.2	5.8	4.8	(3.8) S	3.2 F	2.9 F
21	2.6 F	2.1 J F	1.7 S J	1.6 J F	(1.4) J S	2.4	3.2	<3.5 G	<3.7 G	4.5	5.0	5.3	5.6 J S	6.2	6.6	5.8	5.6	5.4	5.2	6.2	4.9	3.9	[3.3] A	2.7 F
22	2.6 F	2.1	2.0	1.8 F	1.7	2.7	3.5 K	<3.6 G K	<3.8 G K	<3.9 G K	<4.1 G K	<4.0 G K	<4.0 G K	4.4 K	4.5 K	4.7 K	4.4 K	4.4 K	4.6 K	4.7 K	4.8 K	3.7 K	3.0 K	2.3 F K
23	2.0 K	1.9 J K	1.7 K	1.5 J S K	<1.0 K E	2.7 K	3.3 K	<3.5 G K	<3.8 G K	A K	<4.0 G K	(4.1) A K	4.8 K	5.0 K	5.0 K	4.9 K	4.9 K	4.9 K	5.0 K	5.6 K	4.7 K	3.3 K F	(2.5) A S K	2.2 J F
24	2.3 F K	1.7 H J F	2.0 K	A K	C K	2.8 K	[3.4] A K	4.0 H K	4.2 H	4.5 K	4.8 K	5.0 K	4.7 K	4.7 K	5.0 K	5.0 K	4.9 K	4.9 K	4.8 K	5.0 K	4.7	3.9	3.5	3.2
25	3.0 F	(2.8) A	2.7 F	(2.4) A	(2.1) S	3.3	3.9	[4.2] C	4.4	<4.2 G H	[4.2] A G	<4.3 G	4.7	4.8 H	4.9	4.9	4.7	4.7	4.6	4.9	5.0 F	(4.2) J	3.2 F	3.0 F
26	2.8 F	2.3 F	2.3 F	2.5 F	2.0 F	2.8	3.7 H	<3.5 G	<4.0 G	[4.5] A	4.6	<4.3 G	4.7	4.6	5.0	4.9	4.7	4.6	5.2	5.8	5.4	4.7	3.9	3.4
27	(3.2) A	2.6	2.3	2.3	2.0 F	2.8	3.8	4.4 H	4.7	5.2	5.2	5.4	5.8	5.8	6.2	5.9	5.8	5.8	5.8	(6.2) S	5.8	4.7	3.8	3.2
28	3.0	2.4	2.2	2.5	2.3	3.1	4.0	4.8	5.4	5.1	5.8	5.8	5.8	5.5	5.8	5.8	5.6	5.6	5.8	(6.2) S	6.0	4.5	(3.8) S	(3.3) S F
29	3.3 F	2.8 F	2.2 F	2.5 F	(2.5) F	3.2	4.4 F	5.4	5.8	6.4	6.2	5.4	6.2	6.5	6.3	6.0	6.1	6.2	6.2	(6.2) S	H (6.2) J S	4.3	4.0 F	(4.0) J F
30	[3.5] F S	3.5 F	3.0	2.4	2.8	3.4	4.5	5.6 H	6.8 H	6.2 J H	6.1 H	5.8	6.4	7.0	7.5	6.7	7.2	6.8	6.8	6.1	5.4	4.9	4.2	3.7
31																								
Median	2.8	2.6	2.3	2.3	2.0	2.6	3.6	4.2	4.5	4.8	4.8	5.0	5.2	5.4	5.4	5.6	5.6	5.4	5.2	5.3	4.6	3.8	3.2	3.2
Count	30	30	30	28	28	30	30	30	30	29	30	29	29	30	30	30	30	30	30	30	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1948 O - 703519

TABLE 76

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

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic) Km (Unit) April (Month), 1953

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, E. J. W.

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								240	210	200^{H}_{K}	225^{H}_{K}	220^{H}_{K}	200^{K}	200^{K}	220^{K}	210^{K}	230^{K}	230^{K}	240^{K}						
2								230	220	200	200	190^{H}	180	190	200	230	220	220	240						
3								230	200	200	200	190	210	210	200^{H}	$(230)^{A}$	220	220	Q						
4								Q	230	220	210	190	200	200	220	220	240	230	Q						
5								230	220	200	180^{H}	200	200	200	220	210	210	220	Q						
6								230	230	210	210	210	200	200	210	220	230	230	Q						
7								240	200^{H}	200	190^{H}	210	$[200]^{M}$	200	210	210	220	$(230)^{A}$	Q						
8								250	210	210	230	200	240	210	210	220	$[210]^{C}$	210	250						
9								Q	220	190	200	220	190	200	220^{H}	210	210	230	240						
10								Q	220	210	200	200^{H}	200^{H}	190	210	200^{H}	220	A	A						
11									190^{K}	210^{K}	200^{K}	200^{K}	190^{H}_{K}	230^{K}	220^{K}	200^{K}	220^{K}	220^{K}	240^{K}	$(250)^{A}_{K}$						
12								L	220	210	210	190	190	200	200	200	200^{H}	220	210						
13							230	200^{H}	240	200	200	190^{H}	200^{H}	190^{H}	210	200	210	230	Q						
14							Q	220	220	220	210	190	190	200	200^{H}	220	220	230	A						
15							Q	210	200	200	200	190	180^{H}	180^{H}	230	210	220^{H}	220	220						
16							Q^{K}	250^{K}	240^{K}	230^{K}	200^{K}	210^{K}	250^{K}	230^{K}	220^{K}	200^{K}	210^{K}	$2[illegible]^{K}$	Q^{K}						
17							Q	210	220	200	200	190	180	220	200	220	200	230	230						
18							Q	230	220	210	210	180	220	210	200^{H}	200	$[220]^{D}$	210^{K}	240^{K}						
19							200^{K}	220^{K}	200^{H}_{K}	200^{H}_{K}	210^{K}	200^{H}_{K}	200^{K}	200^{K}	200^{H}_{K}	200^{K}	220^{K}	220^{H}_{K}	240^{K}						
20							Q	A	240	220	$[200]^{A}$	190^{H}	210	210^{H}	240	230	220	220	230						
21							Q	210	200	210	200^{H}	190	190	210	200	240	220	220	240						
22							210^{K}	220^{K}	210^{K}	210^{K}	200^{H}_{K}	200^{K}	200^{K}	220^{K}	220^{K}	220^{K}	220^{K}	240^{K}	230^{K}						
23							Q^{K}	250^{K}	220^{K}	$(230)^{A}_{K}$	$[220]^{A}_{K}$	200^{K}	200^{K}	200^{K}	220^{K}	210^{K}	220^{K}	230^{K}	240^{K}						
24							A^{K}	A^{K}	210^{H}_{K}	200^{H}_{K}	200^{H}_{K}	200^{H}_{K}	210^{K}	190^{H}_{K}	200^{K}	220^{K}	210^{K}	A^{K}	Q^{K}						
25							A	230	210	A	A	A	200^{H}	200	220	210	200	210	230						
26							Q	210	230	180	$[190]^{A}$	200	190	210	200	210	$[220]^{A}$	$(220)^{A}$	240						
27							230	210	200^{H}	180^{H}	200	170	200	200^{H}	$(230)^{A}$	200	200	220	230						
28							230	230	210	210	200	200^{H}	200^{H}	190	190	210	210	220	230						
29							Q	230	210	200	180	190	190	190	190	210	210	220	230						
30							Q	230	210^{H}	200^{H}	180	180^{H}	190	200	210	210	200	220	220						
31																									
Median							230	230	210	200	200	190	200	200	210	210	220	220	240						
Count							5	24	30	29	29	29	30	30	30	30	30	28	26						

Sweep 1.0 Mc to 2.50 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 702810

TABLE 77

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

Form accepted June 1946

IONOSPHERIC DATA

foF1 (Characteristic), Mc (Unit), April (Month), 1953

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, E. J. W.

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

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								(3.4)L	3.5	3.9 H K	4.1 H K	4.1 H K	4.1 ~	4.0 K	4.0 K	4.0 K	3.8 K	L K	L K					
2								L	3.7	4.1	4.2	4.3 H	4.4	4.3	4.1	4.2	4.0	L	L					
3								L	3.7	4.1	4.3	4.4	4.3	4.3	4.3 H	4.2	4.0	L	Q					
4								Q	3.9	4.1	4.3	4.3	4.4	4.4	4.3	4.2	L	L	Q					
5								L	3.9	4.1	4.3 H	4.4	4.4	4.4	4.3	4.2	3.8	3.4	Q					
6								L	3.7	4.0	4.2	4.4	4.4	4.4	4.4	4.2	3.9	L	Q					
7								L	L	4.2	4.4 H	44	[4.4] M	44	4.4	4.3	4.0	L	Q					
8								L	3.8	4.0	4.2	4.2	4.3	4.3	4.3	4.2	[3.9] C	3.3	L					
9								Q	3.7	3.8	4.1	4.2	4.3	4.1	4.1 H	4.0	3.8	3.5	L					
10								Q	3.8	4.0	4.1	4.2 H	4.2 H	4.2	4.1	4.0 H	3.7	A	A					
11								L K	3.5 K	3.8 K	4.0 K	4.0 H K	4.1 K	4.1 K	4.0 K	3.9 K	3.8 K	3.4 K	L K					
12								L	3.7	4.0	4.0	4.1	4.0	4.0	4.0	4.0 H	3.9	L	L					
13							L	3.1 H	[3.6] L	4.0	4.2	4.3 H	4.3 H	4.1 H	4.1	4.0	3.8	L	Q					
14							Q	L	3.7	4.1	4.2	4.2	4.2	4.2	4.0 H	4.0	3.7	L	A					
15							Q	L	3.8	4.0	4.1	4.2	4.3 H	4.1 H	4.1	3.9	3.8 H	L	L					
16							Q K	L K	3.5 K	3.7 K	3.8 K	3.9 K	3.9 K	3.9 K	3.8 K	3.7 K	3.6 K	3.3 K	Q K					
17							Q	L	3.7	3.8	4.1	4.1	4.2	4.2	4.1	4.0	3.7	L	L					
18							Q	3.3	3.7	3.8	4.0	4.0	4.2	4.1	4.0 H	3.9	[3.8] B K	3.3 K	L K					
19							L K	3.2 K	3.5 H K	3.7 H K	3.9 K	4.0 H K	4.0 K	3.9 K	3.9 H K	3.8 K	3.6 K	3.4 H K	2.9 K					
20							Q	A	3.6	[3.8] L	(3.9) A	4.2 H	(4.1) B	4.1 H	4.0	4.0	3.7	3.4	3.0					
21							Q	3.3	3.6	4.0	4.1 H	4.3	4.3	4.2	4.1	4.0	3.9	L	L					
22							L K	3.5 K	3.7 K	3.9 K	4.1 H K	4.1 K	4.1 K	4.0 K	4.0 K	4.0 K	3.7 K	3.5 K	3.0 K					
23							Q K	3.4 K	3.6 K	3.9 K	[3.9] A K	4.0 K	4.1 K	4.1 K	4.1 K	4.0 K	3.9 K	3.6 K	L K					
24							(3.4) A K	[3.7] A K	4.0 H K	4.0 H K	4.2 H K	4.2 H K	4.3 K	4.4 H K	4.2 K	4.1 K	4.0 K	3.7 K	Q K					
25							A	L	3.9	[4.0] A	4.2	[4.2] A	4.3 H	4.3	4.3	4.1	3.9	3.6	L					
26							Q	3.7	3.9	4.0	4.1	4.3	4.3	4.2	4.1	4.1	4.0	3.7	3.2					
27							2.4	3.8	4.0 H	4.1 H	4.4	4.4	4.4	4.4 H	4.3	4.3	4.2	3.6	L					
28							L	3.7	4.0	4.2	4.3	4.5 H	4.5 H	4.5	4.4	4.3	4.1	L	L					
29							Q	L	4.0	4.3	4.4	4.6	4.6	4.5	4.5	4.3	4.2	4.3	L					
30							Q	3.3	4.2 H	4.3 H	4.6	4.5 H	4.5	4.5	4.4	4.4	3.9	L	L					
31																								
Median							—	3.4	3.7	4.0	4.2	4.2	4.3	4.2	4.1	4.0	3.9	3.5	—					
Count							2	12	2.9	3.0	30	30	30	30	30	30	29	15	4					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1948 O - 702519

TABLE 78

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

Form adopted June 1946

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), April (Month), 1953

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., E.J.W.

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

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE, 1948 O - 703518

TABLE 79

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

Form accepted June 1946

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), April (Month), 1953

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

National Bureau of Standards (Institution)

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

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

75°W Mean Time

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)H	2.2	(2.5)AK	2.9HK	[3.0]BK	3.0HK	(3.1)AK	3.0K	2.9K	(2.7)DK	2.3K	1.9K					
2								2.1	2.5H	2.8H	(3.0)P	[3.1]B	(3.2)B	3.1	3.0	3.0	2.8	2.3H	1.8					
3								2.2	2.5	(2.8)P	3.0	(3.2)P	[3.2]B	3.2	3.2	3.0	2.9	2.5	S					
4								2.1	2.5	(2.6)A	(2.8)P	[2.9]B	(3.0)B	B	B	3.0	2.7	2.4	A					
5								2.3	2.5H	2.8H	3.0	3.1	(3.2)P	[3.2]B	3.2	3.0	2.7	2.2	B					
6								2.2	2.5	2.8	3.0	3.1	3.2	3.1	3.1	3.0	2.8	2.5	A					
7								2.2H	2.6	2.8	3.0	3.1	[3.2]M	3.2	3.1	3.0	2.8	2.4	A					
8								A	2.5	2.9	3.0	3.3	3.3	3.2	3.2	3.1	[2.8]C	2.4	1.8					
9								2.2	2.6	2.4	3.1	3.2	3.2	3.2	3.1	3.0	2.7	2.4	1.7					
10								2.2	2.6	[2.8]A	3.0	3.1	3.2	3.1	3.1	(3.0)A	2.8	(2.4)A	A					
11								2.1K	2.5K	2.8K	[3.0]AK	3.1K	3.1K	3.1K	3.0K	2.9K	2.6K	2.3K	1.8K					
12							1.6H	2.2	2.6	2.8	(3.0)A	3.1	3.3	3.2	3.1	A	A	A	1.8					
13							S	A	2.5	2.9	3.0	[3.1]A	3.1	3.1	3.0	2.9	2.7	2.3	1.7					
14							(1.7)S	2.1	2.5	2.8H	2.8	(3.2)A	(3.2)P	3.1	3.0	2.9	2.7	2.3	A					
15							S	2.1H	2.5	2.8	2.9	(3.1)A	3.2	3.2	3.1	2.9	2.7	2.3	1.7					
16							S K	A K	2.6HK	A K	A K	2.9K	3.0K	3.0K	3.0K	2.8K	2.6K	2.2K	S K					
17							S	A	(2.5)A	2.8	3.0	3.1	3.1	(3.1)A	3.0	2.9	2.7	A	A					
18							S	A	2.5	(2.6)P	(2.9)P	(2.9)P	A	B	B	2.8	[2.6]BK	2.2K	1.6K					
19							S K	2.1HK	2.4K	2.7K	2.7K	2.8K	[3.0]BK	(3.1)PK	3.0K	2.9K	2.6K	2.2K	1.9K					
20							1.7	(2.2)A	2.5	A	A	(3.3)B	(3.1)B	(3.0)A	3.0	2.9	2.6	2.2	1.8					
21							1.7	[2.1]A	2.5	2.9	2.9	(3.0)P	3.1	3.0	3.0	2.8	2.7	2.4	1.8					
22							A K	2.2K	2.5K	2.9K	(3.0)PK	[3.0]AK	3.1K	3.1K	3.1K	3.0K	2.9K	(2.3)AK	1.9K					
23							1.8K	2.4HK	2.6K	2.8K	[2.9]AK	3.0K	3.1K	2.9K	[3.0]AK	3.0K	2.9K	2.5K	1.9K					
24							A K	2.4K	A K	A K	3.1K	A K	A K	(3.2)PK	3.0K	3.0K	2.9K	2.5K	1.9K					
25							A	A	2.8	3.0	3.1	A	A	A	3.1	3.1H	3.0	2.7	2.0					
26							A	2.4F	2.8	[3.0]A	(3.2)P	3.2	3.2	A	A	A	A	A	2.0					
27							(1.9)A	2.4	2.8	3.0	[3.2]A	3.3	3.3	3.4	[3.2]A	(3.0)A	[2.8]A	2.5	2.1					
28							A	2.4	(2.7)A	3.0	3.2	3.3	3.3	(3.2)P	3.2	(3.0)A	2.9	(2.5)A	2.0					
29							A	2.4	2.7	3.0	3.1	A	A	A	A	3.1	2.9	2.5	2.0					
30							S	2.4	2.8	3.0	3.1	3.2	3.3	3.3	[3.2]A	(3.0)S	2.9	2.6	1.9					
31																								
Median							1.7	2.2	2.5	2.8	3.0	3.1	3.2	3.1	3.1	3.0	2.8	2.4	1.9					
Count							6	24	29	27	28	27	26	25	26	28	28	27	21					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 80

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

Form accepted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), April (Month), 1953

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., E.J.W.

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

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	2.3Y/120	E	E	E	E	G	G	2.6/120	G	G	3.3/120	3.3/120	G	G	G	G	G	2.4/110	E	E	E	E
2	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	2.4/110	E	E	E	E
3	E	E	E	E	E	E	2.4/110	G	G	G	G	G	G	G	G	4.5Y/120	G	G	G	E	E	E	E	E
4	E	E	E	E	E	E	E	G	2.3/110	2.9/110	G	G	G	G	G	G	G	G	2.8Y/100	E	E	E	2.6/100	2.4/100
5	E	2.2/110	2.6/110	2.3/110	2.2/110	2.5/110	E	G	3.6Y/120	3.0/110	G	G	G	G	G	G	G	G	G	E	E	E	E	E
6	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	3.8Y/120	3.5Y/120	2.4Y/100	E	2.4Y/110	E	E	2.6/110
7	E	E	E	E	E	3.8Y/110	E	2.3/120	4.0/110	3.4Y/120	3.8/110	G	M	4.4Y/120	G	G	3.8/120	3.7Y/120	4.1/120	2.4/120	3.1/110	2.4Y/110	E	E
8	E	E	2.2Y/110	2.2/110	E	E	E	8.0Y/130	G	G	7.2/110	3.9Y/110	G	G	G	4.2Y/120	C	G	G	E	E	3.5/100	E	E
9	E	E	E	E	E	7.6Y/110	E	G	G	G	G	G	G	G	G	G	G	G	2.9Y/120	E	E	E	E	E
10	E	E	E	E	E	E	E	E	G	3.4Y/120	3.7/110	G	3.5/110	G	G	3.9Y/120	3.6Y/110	5.2/110	5.1/110	3.2/110	E	E	E	E
11	E	E	E	E	E	E	E	3.5Y/130	G	G	3.8Y/100	G	G	G	G	4.2/110	3.0/110	3.5/120	3.3/120	2.4/120	E	E	E	E
12	E	E	E	E	E	E	G	3.2Y/130	4.9/110	G	3.4/120	G	G	7.0Y/100 H	4.3Y/120	5.0/110	4.8/110	3.5/110	2.1/110	3.5Y/110	E	E	E	2.8Y/100
13	E	E	E	E	2.5Y/130	2.4/120	1.9/110	3.0Y/120	3.6Y/120	4.2/120	G	3.6/110	G	G	3.0/110	G	G	G	3.0/120	E	2.7/110	2.4/110	2.7/110	E
14	E	E	E	E	E	E	G	3.2/120	3.7Y/120 H	G	G	3.5/110	G	G	G	G	3.7/120	3.8/110	3.7/110	3.0/110	E	E	E	E
15	2.2/110	2.3/110	E	E	E	E	G	G	2.7/120	G	G	3.6/110	G	G	3.4/120	G	G	3.4Y/130	3.0/120	1.8/130	3.6/110	E	E	E
16	E	E	E	E	E	E	G	2.4/100 H	G	2.7/100	2.8/100	G	G	G	G	7.0Y/110	G	G	3.0Y/120	2.6/110	E	E	E	E
17	E	E	E	E	E	5.0Y/120	2.4Y/110	6.8Y/110 H	10.5/100	G	G	G	G	3.4/130	G	6.6Y/120	G	2.6/130	3.2/120	2.9/110	E	2.8/110	3.8/100	E
18	E	E	E	E	E	E	1.8/120	2.2/120	G	G	G	G	3.2/110	G	G	G	G	G	2.0/130	E	E	E	E	2.3/110
19	E	E	3.9/130	E	E	E	G	2.4/130	G	G	G	G	G	G	3.1/120	4.2Y/120	3.7Y/120	G	G	E	E	E	E	E
20	E	E	E	E	E	E	G	2.4/110	G	3.9Y/130	4.7/100	3.9Y/110	G	4.1Y/100	G	4.2Y/130	G	G	G	E	E	E	E	E
21	E	E	E	E	E	E	G	2.5/110	G	G	G	G	G	5.2/100	G	G	4.2/130	2.8/130	3.0/120	5.4/110	4.4/110	E	3.5/110	6.6/100
22	8.2Y/110	3.0/110	2.7/120	3.2/120	9.0/110	E	2.1/120	G	G	G	7.2Y/130	3.0/110	G	3.5/120	G	G	G	2.5/120	G	E	E	E	E	E
23	E	E	E	E	E	E	G	G	3.0/120	4.1/110	5.6/100	3.5/110	4.4Y/100	4.4/100	4.0Y/100	G	G	G	G	E	4.3/110	3.0/110	3.1/110	3.7Y/120
24	E	E	2.4Y/110	3.2/100	C	3.7/110	4.0/120	5.0/110	4.0Y/110	3.3/120	G	4.3/110	3.2/100	G	G	G	G	4.3/120	4.5/110	4.7/110	3.5/110	4.7/110	3.9/100	3.0/110
25	5.0/100	6.8/100	7.4Y/100 H	5.4/100	4.2 H/100	3.6/100	3.6Y/100	3.7Y/110	4.0Y/120	4.7/110	5.0/110	5.0/100	3.7/100 H	3.4/110	G	G	G	G	2.1/120	1.9/110	E	E	1.8/100	3.7/100
26	6.8/100	7.4/100	2.5/100	E	E	E	2.0/100	3.2Y/110	2.8/100	3.2/110	4.7Y/100	4.6Y/100	3.7/100	4.1/100	3.8/100	3.2/100	4.4/100	4.0/100	G	1.7/110	E	E	E	3.8/100
27	4.3/100	3.0/100	2.3/100	2.7/100	E	2.9Y/110	2.9Y/110	4.2Y/110	8.4Y/110	4.1/110	4.4/110	3.9/100	G	3.8/110	5.3/100	4.4Y/110	4.2/100	G	G	2.9Y/110	E	2.3Y/120	E	2.6/110
28	E	E	E	E	E	2.4/120	2.0/120	2.7/120	6.8Y/120	G	3.5/120	G	G	G	G	3.9/100	3.9/100	2.8Y/100	2.4Y/100	1.8/120	E	E	4.6/100	3.9/100
29	2.4/100	E	E	E	E	2.5/120	2.2/130	G	G	G	G	4.2Y/110	4.2Y/100	4.4/100	5.0/100	G	G	3.8/100	G	E	E	E	E	E
30	2.4/100	3.1/100	2.6/100	E	E	E	3.0Y/130	3.5Y20	4.0/110	4.5/100	3.2/110	G	G	G	3.7/120	G	G	G	G	E	E	3.2/110	4.6/110	3.2Y/110
31																								
Median	**	**	**	**	**	**	**	2.4	**	**	**	**	**	**	**	**	**	**	2.1	**	**	**	**	**
Count	30	30	30	29	30	30	30	30	30	30	30	30	29	30	30	30	29	30	30	30	30	30	30	30

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 703818

TABLE 81

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

Form adopted June 1946

IONOSPHERIC DATA

(MI500)F2 (Characteristic), ____ (Unit), April (Month), 1953

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., E. J. W.

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.0	(2.0) S	(1.6) H K	G K	G K	G K	1.8 K	1.7 K	1.9 I	2.0 K	2.0 K	2.1 K	(2.0) S K	(1.9) S	(1.9) J S	(1.9) S	1.9 F
2	(2.0) S F	(1.9) J S	(2.0) S F	2.0 F	(2.0) J S	F	2.2	2.2	2.2	2.3	2.3	2.1	2.3	2.0	2.1	2.1	2.1	2.2	2.2	(2.2) S	2.1	(2.0) S	(2.0) S	1.9 H
3	2.0	2.0 S F	(2.1) J F	2.1 E	2.0	2.0	2.2	2.3	2.1	2.2	2.1	2.6	2.1	2.1	2.2	2.1	2.1	2.2	2.3	2.0	2.1	2.0	1.9	1.9
4	1.9	2.1	2.0	1.9	(1.8) J S	(1.9) J S	2.2	2.3	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.0	2.0	2.0
5	1.9	1.9	2.0	(2.1) J H	1.9	1.9	2.1	2.1	2.3	2.2	2.2	2.6	2.1	2.1	2.1	2.3	2.2	2.2 H	2.2	2.1	(2.1) S	(2.0) S	(1.8) S F	(2.1) S
6	1.9	1.9	2.0	2.0	2.0	(1.9) J S	2.1	2.0	1.9	2.2	2.1	2.0	2.1	2.2	2.1	2.1	2.2	2.3	2.3	(2.1) J S	(2.1) S	2.1	(2.0) J S	2.0
7	(2.0) S	(2.0) J S	1.9 F	2.0	2.0 F	1.9	2.1	2.3	2.2	2.2	2.3	2.3	M	2.1	2.2	2.3	2.2	2.3	2.2	2.2	2.0	(2.1) S	2.0	2.0
8	2.1	2.1	2.0	2.1	2.0	2.1	2.2	2.3	2.0	1.9 H	2.1	2.1	1.9 H	2.0 H	2.0	2.1	C	2.2 H	2.2	2.1	2.1	2.2	2.0	2.0
9	1.9	2.0	2.0	(1.9) J S	1.9	2.4	2.2	2.2	2.1	1.9	1.8	2.0	2.0	2.1	2.0	2.1	2.2	2.2	2.3	2.4	2.3	(2.0) J S	(1.9) S	(1.9) J S
10	(1.9) J S	(1.9) J S	(1.9) J S	(2.1) J S	(1.9) S	2.0	2.2	2.3	2.0	1.9	2.0	1.4	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2 F	2.1 F	(2.1) J S	(2.0) J S
11	1.9	1.9	(2.0) J S	(1.9) J S	(2.2) J S	(2.0) J S	2.3 K	2.4 F K	G K	G K	G K	1.4 K	1.6 K	1.8 K	2.0 K	1.9 K	2.1 K	2.1 K	2.1 K	2.0 K	J (2.2) K S	(2.0) S	S	(1.9) J S
12	(2.0) J S	(1.9) J S	(2.0) J S	(2.0) J S	S	S	(2.3) J S	(2.4) S	(2.5) H	2.1 H	2.4	2.0	(2.2) S	2.2	2.1	2.2	2.2	2.3	2.3	2.3	2.3	(2.0) S	(2.0) S	2.0
13	2.0	2.0	(2.0) S	(2.1) S	(2.0) S	1.9	2.3 H	2.3 H	2.4	2.2	2.0	1.9 H	2.1	2.1	2.1	2.1	2.3	2.3	2.5	2.2	(2.1) S	(2.2) S	(2.1) J S	2.0
14	(2.1) S	2.1	2.1 F	(2.1) J S	2.2 F	2.0	2.5	2.4	2.4	2.2	2.3	2.3	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.1 F S
15	2.2 F	2.0	2.0 F	2.2 F	2.4	2.1 F	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.3	2.3	2.2	(2.1) S	2.0	(1.9) S	1.9
16	1.9	2.0	2.1	(2.3) J S	(2.0) J S	(1.9) J S	2.1 K	2.1 K	G K	G K	G K	G K	G K	1.9 K	G K	1.1 K	G K	(1.9) S K	2.1 K	2.0 K	2.0 K	1.9 K	2.0 K	2.1 K
17	2.0 K	2.0 K	2.1 K	2.0 K	J (2.0) K S	2.0	2.3	2.3	2.4	1.9	1.9	2.0	2.1	2.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	(2.3) J S	2.0	2.0
18	2.0	2.0	2.2	2.0	(1.9) J S	(1.9) S	2.3	G	G	1.7	2.0	2.0	(1.7) H	1.9	2.1	2.0	2.2 K	2.2 K	2.2 K	2.3 K	F 2.1 K S	J (2.0) K F	S 2.0 K F	2.1 K S
19	J (2.0) K S	2.0 F K	2.2 F K	(2.0) S K	F S K	S K	2.3 K	G K	G K	G K	G K	G K	G K	G K	G K	G K	G K	1.9 H K	1.9 K	2.0 K	2.0 K	J (2.0) K S	2.0 K	1.9 F K
20	2.0 K	2.0 K	2.0 F K	2.0 F K	J (1.8) K S	2.0	2.2	2.3	2.3	2.5	G	2.2	2.0	1.9	2.0	2.0	2.2	2.2	1.9	2.1	2.1	2.0	2.1	1.9 F
21	2.0 F	2.0 F	2.0 F	(1.8) J S	F	(1.8) J F	2.3	G	G	G	2.0	2.1	2.0	2.0	2.1	2.0	2.1	2.3	2.1	2.2	2.3	2.2	2.2	A
22	2.1	2.2	2.0 F	2.0	2.0	2.1	2.0 K	2.0 K	G K	G K	G K	G K	G K	G K	1.8 L	1.9 K	1.9 K	2.0 K	2.0 K	2.0 K	2.1 K	2.2 K	2.3 K	2.0 K
23	J (2.0) K S	2.0 K	J (1.9) K S	J (1.9) K S	J (1.9) K S	2.0 K	2.3 K	G K	G K	G K	G K	G K	G K	1.9 K	2.1 K	2.0 K	2.0 K	2.1 K	2.1 K	2.2 K	2.2 K	2.2 K	2.0 F K	F (2.0) K S
24	2.0 F K	2.0 F K	2.0 F K	2.0 K	C K	A K	G K	G K	G K	1.7 K	1.9 K	1.8 K	1.6 K	1.7 K	1.9 K	2.0 K	2.0 K	2.1 K	2.2 K	2.2 K	2.1	2.2	2.0	2.0
25	2.0 F	2.0	2.0	A	2.1 F	2.1	1.9	2.3	(1.7) H	G	G	G	G	1.7	1.9	1.9	2.1	2.1	2.1	2.0 F	2.1	2.1 F	(2.1) F S	2.1 F
26	2.0 F	(2.0) A	1.9 F	2.0 E	2.0 F	2.1	2.3	G	G	1.9	(1.8) H	1.8	1.8	1.8	1.9	2.0	2.0	1.9	1.9	2.0	2.1	2.1	2.1	2.1
27	A	2.1	2.0 F	2.1	1.9 F	2.0 F	2.1	(1.9) H	2.3	2.2	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.0	2.1	2.1	2.1	2.1
28	2.0	1.9	2.0	2.0	2.1	1.9	2.2	2.2	2.3	2.4	2.1	(2.3) J H	2.0	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	(2.1) J S	(2.0) S
29	(1.9) J F	2.0 F	(1.9) F	(1.9) F	(2.0) F S	2.0 F S	2.4	2.4	2.3	2.3	2.3	2.1	2.0	2.2	2.0	2.1	2.1	2.0	2.2	2.1	(2.3) J S	(2.3) J S	2.1	(2.0) J F
30	1.9 F	2.0 F	(2.0) S	(1.9) J S	2.0	(2.0) J S	2.2	(2.4) J S	(2.1) J H	(2.3) H	2.1	(2.3) J H	2.0	2.0	2.2	(2.0) S	2.0	2.2	2.2	2.3	2.1	2.1	2.1	(2.0) J S
31																								
Median	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.0	2.0
Count	29	30	30	29	26	26	30	30	30	30	30	30	29	30	31	30	29	30	30	30	30	30	29	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 82

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

Form adopted June 1946

IONOSPHERIC DATA

(M 3000)F2 (Characteristic), ____ (Unit), April (Month), 1953

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., E.J.W.

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

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	2.9	3.0	2.9	3.1	3.1	3.1	3.2	3.0	(2.9)^{S}	(2.4)$^{H}_{K}$	G^{K}	G^{K}	G^{K}	2.7^{K}	2.6^{K}	2.8^{K}	3.0^{K}	3.0^{K}	3.1^{K}	(3.0)$^{S}_{K}$	(2.9)^{S}	(2.9)$^{J}_{S}$	(2.9)^{S}	2.9^{F}
2	(3.0)$^{S}_{F}$	(2.8)$^{J}_{S}$	(3.0)$^{S}_{F}$	(3.0)^{F}	(3.0)$^{J}_{S}$	F	3.2	3.2	3.2	3.4	3.4	3.1	3.4	3.0	3.1	3.1	3.1	3.2	3.2	(3.2)^{S}	3.1	(3.0)^{S}	(3.0)^{S}	2.9^{H}
3	3.0	3.0$^{S}_{E}$	(3.1)$^{J}_{E}$	3.1^{Z}	3.0	2.9	3.2	3.4	3.1	3.2	3.1	3.6	3.1	3.1	3.2	3.1	3.1	3.2	3.3	2.9	3.1	3.0	2.8	2.9
4	2.8	3.1	3.0	2.9	(2.7)$^{J}_{S}$	(2.8)$^{J}_{S}$	3.3	3.3	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.0	3.1	3.1	3.2	3.2	3.1	3.0	3.0	3.0
5	2.9	2.9	3.0	(3.1)$^{J}_{A}$	2.8	2.9	3.1	3.1	3.3	3.2	3.2	3.2	3.1	3.1	3.1	3.3	3.2	3.2^{M}	3.2	3.1	(3.1)^{S}	(3.0)^{S}	(2.7)$^{J}_{E}$	(3.1)^{S}
6	2.9	2.9	3.0	3.0	3.0	(2.9)$^{J}_{S}$	3.1	3.0	2.9	3.2	3.1	3.0	3.1	3.2	3.1	3.1	3.2	3.3	3.3	(3.1)$^{J}_{S}$	(3.1)^{S}	3.1	(3.0)$^{J}_{S}$	3.0
7	(3.0)^{S}	(3.0)$^{J}_{S}$	2.9^{F}	3.0	2.9^{F}	2.8	3.1	3.4	3.2	3.2	3.3	3.3	M	3.1	3.2	3.3	3.2	3.3	3.2	3.2	3.0	(3.1)^{S}	3.0	3.0
8	3.1	3.1	3.0	3.1	3.0	3.1	3.2	3.3	3.0	2.8^{H}	3.1	3.1	2.9^{H}	3.0^{H}	3.0	3.1	C	3.2^{H}	3.2	3.1	3.1	3.2	3.0	3.0
9	2.9	2.9	3.0	(2.9)$^{J}_{S}$	2.9	3.5	3.2	3.2	3.1	2.8	2.7	3.0	3.0	3.1	3.0	3.1	3.2	3.2	3.3	3.4	3.3	(3.0)$^{J}_{S}$	(2.8)^{S}	(2.8)$^{J}_{S}$
10	(2.9)$^{J}_{S}$	(2.8)$^{J}_{S}$	(2.9)$^{J}_{S}$	(3.1)$^{J}_{S}$	(2.8)^{S}	3.0	3.2	3.3	3.0	2.8	3.0	2.1	3.0	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.2^{F}	3.1^{F}	(3.1)$^{J}_{S}$	(3.0)$^{J}_{S}$
11	2.9	2.9	(2.9)$^{J}_{S}$	(2.8)$^{J}_{S}$	(3.3)$^{J}_{S}$	(3.0)$^{J}_{S}$	3.3^{K}	3.5$^{F}_{K}$	G^{K}	G^{K}	G^{K}	2.1^{K}	2.4^{K}	2.8^{K}	3.0^{K}	2.9^{K}	3.1^{K}	3.1^{K}	3.1^{K}	3.0^{K}	J(3.2)$^{K}_{S}$	(2.9)^{S}	S	(2.9)$^{J}_{S}$
12	(3.0)$^{J}_{S}$	(2.8)$^{J}_{S}$	(3.0)$^{J}_{S}$	(3.0)^{S}	S	S	(3.3)$^{J}_{S}$	(3.5)^{S}	(3.6)^{H}	3.1^{H}	3.5	3.0	(3.2)^{S}	3.2	3.1	3.2	3.2	3.4	3.3	3.3	3.3	(3.0)^{S}	(3.0)^{S}	3.0
13	3.0	3.0	(3.0)^{S}	(3.1)^{S}	(3.0)^{S}	2.8	3.3^{H}	3.4^{H}	3.5	3.2	3.0	2.9^{H}	3.1	3.1	3.1	3.1	3.3	3.4	3.5	3.2	(3.1)^{S}	(3.2)^{S}	(3.1)$^{J}_{S}$	3.0
14	(3.1)^{S}	3.1	3.1^{F}	(3.1)$^{J}_{S}$	3.2^{F}	3.0	3.5	3.4	3.4	3.3	3.3	3.4	3.1	3.3	3.3	3.2	3.4	3.3	3.4	3.4	3.3	3.3	3.3	3.1$^{F}_{S}$
15	3.2^{F}	3.0	3.0^{F}	3.2^{F}	3.4	3.1^{F}	3.4	3.3	3.2	3.2	3.1	3.1	3.1	3.3	3.1	3.2	3.1	3.3	3.3	3.2	(3.1)^{S}	3.0	(2.9)^{S}	2.9
16	2.9	3.0	3.1	(3.3)$^{J}_{S}$	(3.0)$^{J}_{S}$	(2.9)$^{J}_{S}$	3.1^{K}	3.1^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.9^{K}	G^{K}	2.6^{K}	G^{K}	(2.9)$^{J}_{K}$	3.1^{K}	3.0^{K}	3.0^{K}	2.9^{K}	3.0^{K}	3.1^{K}
17	3.0^{K}	3.0^{K}	3.1^{K}	2.9^{K}	J(3.0)$^{K}_{S}$	3.0	3.3	3.4	3.4	2.8	2.9	3.0	3.1	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	(3.2)$^{J}_{S}$	3.0	3.0
18	3.0	3.0	3.2	3.0	(2.9)$^{J}_{S}$	(2.8)^{S}	3.3	G	G	2.6	3.0	3.0	(2.6)^{H}	2.9	3.1	3.0	3.2^{K}	3.2^{K}	3.2^{K}	3.3^{K}	F3.1$^{K}_{S}$	J(3.0)$^{K}_{F}$	F3.0$^{K}_{S}$	F3.1$^{K}_{S}$
19	J(3.0)$^{K}_{S}$	3.0$^{F}_{K}$	3.2$^{F}_{K}$	(3.0)$^{J}_{K}$	F$^{S}_{K}$	S^{K}	3.4^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.8$^{H}_{K}$	2.9^{K}	3.0^{K}	3.0^{K}	J(3.0)$^{K}_{S}$	3.0^{K}	2.9$^{F}_{K}$
20	3.0^{K}	3.0^{K}	3.0$^{K}_{F}$	3.0$^{F}_{K}$	J(2.7)$^{K}_{S}$	2.9	3.2	3.3	3.4	3.5	G	3.2	3.0	2.9	3.0	3.0	3.2	3.2	2.9	3.1	3.1	3.0	F3.1	2.9^{F}
21	3.0^{F}	3.0^{F}	2.9^{F}	(2.8)$^{J}_{S}$	F	(2.7)$^{J}_{F}$	3.3	G	G	G	3.0	3.1	3.0	3.0	3.1	3.0	3.1	3.3	3.1	3.2	3.4	3.2	3.2	A
22	3.1	3.2	3.0^{F}	3.0	3.0	3.1	3.0^{K}	3.0^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.7^{K}	2.9^{K}	2.9^{K}	3.0^{K}	3.0^{K}	3.0^{K}	3.1^{K}	3.2^{K}	3.3^{K}	3.0^{K}
23	J(3.0)$^{K}_{S}$	3.0^{K}	J(2.8)$^{K}_{S}$	J(2.8)$^{K}_{S}$	J(2.8)$^{K}_{S}$	3.0^{K}	3.3^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	2.9^{K}	3.1^{K}	3.0^{K}	3.0^{K}	3.1^{K}	3.1^{K}	3.2^{K}	3.2^{K}	3.2^{K}	30$^{F}_{K}$	(3.0)$^{K}_{S}$
24	3.0$^{F}_{K}$	3.0$^{F}_{K}$	3.0$^{F}_{K}$	3.0^{K}	C^{K}	A^{K}	G^{K}	G^{K}	G^{K}	2.5^{K}	2.8^{K}	2.7^{K}	2.5^{K}	2.6^{K}	2.8^{K}	3.0^{K}	3.0^{K}	3.1^{K}	3.2^{K}	3.2^{K}	3.1	3.2	3.0	3.0
25	3.0^{F}	3.0	3.0	A	3.1^{F}	3.1	2.8	3.3	(2.6)*	G	G	G	G	2.5	2.9	2.8	3.1	3.1	3.1	3.0^{F}	3.1	3.1^{F}	(3.1)$^{F}_{S}$	3.1^{F}
26	2.9^{F}	(3.0)^{A}	2.9^{F}	3.0^{Z}	3.0^{F}	3.1	3.3	G	G	2.9	(2.7)^{H}	2.7	2.7	2.7	2.8	3.0	3.0	2.9	2.9	3.0	3.0	3.1	3.1	3.1
27	A	3.1	3.0^{F}	3.1	2.9^{F}	3.0^{F}	3.1	(2.9)^{H}	3.3	3.2	3.4	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.0	3.1	3.1	3.1	3.1
28	3.0	2.9	3.0	3.0	3.1	2.9	3.2	3.2	3.3	3.5	3.1	(3.3)$^{J}_{H}$	3.0	3.2	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.2	(3.1)$^{J}_{S}$	(2.9)^{S}
29	(2.8)$^{J}_{E}$	3.0^{F}	(2.8)^{F}	(2.9)^{F}	(2.9)$^{E}_{S}$	3.0$^{F}_{S}$	3.5	3.5	3.4	3.3	3.3	3.1	3.0	3.2	3.0	3.1	3.1	3.0	3.2	3.1	(3.3)$^{J}_{S}$	(3.3)$^{J}_{S}$	3.1	(3.0)$^{J}_{F}$
30	2.9^{F}	3.0^{F}	(3.0)^{S}	(2.8)$^{J}_{S}$	3.0	(3.0)$^{J}_{S}$	3.2	(3.5)$^{J}_{S}$	(3.1)$^{J}_{H}$	(3.3)^{H}	3.1	(3.3)$^{J}_{H}$	3.0	3.0	3.2	(2.9)^{S}	3.0	3.2	3.2	3.3	3.1	3.1	3.1	(3.0)$^{J}_{S}$
31																								
Median	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	3.0	3.1	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.1	3.1	3.0	3.0
Count	29	30	30	29	26	26	30	30	26	31	31	30	29	30	30	29	29	30	30	30	30	30	29	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 83

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

Form accepted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), April (Month), 1953

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., E. J. W.

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

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								(3.5)^{L}	3.8	4.0$^{H}_{K}$	3.8$^{H}_{K}$	3.9$^{H}_{K}$	3.9^{K}	3.7^{K}	3.7^{K}	3.5^{K}	3.5^{K}	L^{K}	L^{K}						
2								L	3.7	3.6	3.9	3.9^{H}	3.8	3.8	3.7	3.5	3.5	L	L						
3								L	3.7	3.6	3.7	3.6	3.9	3.9	3.7^{H}	3.6	3.5	L	Q						
4								Q	3.5	3.6	3.6	3.7	3.6	3.5	3.5	3.6	L	L	Q						
5								L	3.5	3.7	3.6^{H}	3.7	3.7	3.6	3.7	3.5	3.7	3.8	Q						
6								L	3.6	3.6	3.7	3.7	3.7	3.7	3.5	3.4	3.6	L	Q						
7								L	L	3.7	3.5^{H}	3.7	M	3.7	3.5	3.7	3.6	L	Q						
8								L	3.7	3.7	3.9	4.0	3.8	3.7	3.5	3.5	C	3.7	L						
9								Q	3.7	3.9	3.7	3.7	3.7	3.9	3.8^{H}	3.7	3.6	3.7	L						
10								Q	3.5	3.6	4.0	4.0^{H}	3.7^{H}	3.7	3.7	4.2^{H}	3.7	A	A						
11								L^{K}	3.7^{K}	3.8^{K}	3.8^{K}	3.8$^{H}_{K}$	3.6^{K}	3.7^{K}	3.7^{K}	3.7^{K}	3.7^{K}	3.7^{K}	L^{K}						
12								L	3.8	3.6	3.8	4.0	4.0	4.0	3.9	3.7^{H}	3.5	L	L						
13							L	4.0^{H}	L	3.8	3.8	3.8^{H}	3.8^{H}	3.8^{H}	3.9	3.7	3.6	L	Q						
14							Q	L	3.7	3.7	3.8	3.9	3.9	3.6	3.8^{H}	3.6	3.6	L	A						
15							Q	L	3.6	3.7	3.8	3.9	3.8^{H}	4.0^{H}	3.8	3.9	3.6^{H}	L	L						
16							Q^{K}	L^{K}	3.7^{K}	3.8^{K}	3.7^{K}	4.0^{K}	3.9^{K}	3.7^{K}	3.8^{K}	3.8^{K}	3.7^{K}	3.8^{K}	Q^{K}						
17							Q	L	3.7	3.8	3.8	4.0	4.0	3.8	3.8	3.7	3.6	L	L						
18							Q	3.5	3.5	3.8	3.8	3.9	3.7	3.8	3.8^{H}	3.8	B^{K}	3.7^{K}	L^{K}						
19							L^{K}	3.8^{K}	3.7$^{H}_{K}$	3.8$^{H}_{K}$	4.3^{K}	3.8$^{H}_{K}$	4.0^{K}	3.9^{K}	3.8$^{H}_{K}$	3.9^{K}	3.7^{K}	3.5$^{H}_{K}$	3.5^{K}						
20							Q	A	3.5	L	(3.6)^{A}	3.7^{H}	(3.8)^{B}	3.8^{H}	3.6	3.6	3.6	3.6	3.5						
21							Q	3.5	3.7	3.9	3.8^{H}	3.7	3.9	3.7	3.6	3.6	3.6	L	L						
22							L^{K}	3.5^{K}	3.8^{K}	3.8^{K}	3.9$^{H}_{K}$	3.9^{K}	3.9^{K}	3.2^{K}	3.6^{K}	3.6^{K}	3.7^{K}	3.5^{K}	3.5^{K}						
23							Q^{K}	3.5^{K}	3.8^{K}	3.9^{K}	A^{K}	4.1^{K}	3.9^{K}	3.8^{K}	3.7^{K}	3.7^{K}	3.5^{K}	3.5^{K}	L^{K}						
24							(3.4)$^{A}_{K}$	A^{K}	3.7$^{H}_{K}$	3.9$^{H}_{K}$	4.0$^{H}_{K}$	4.0$^{H}_{K}$	3.9^{K}	3.7$^{H}_{K}$	3.8^{K}	3.6^{K}	3.6^{K}	A^{K}	Q^{K}						
25							A	L	3.8	A	A	A	3.9^{H}	3.8	3.8	3.7	3.7	3.6	L						
26							Q	3.5	3.7	4.0	A	4.0	4.0	4.0	4.3	3.7	A	3.5	3.4						
27							3.9	3.6	3.8^{H}	3.9^{H}	4.0	4.0	4.0	3.8^{H}	3.8	4.0	3.6	3.7	L						
28							L	3.6	3.7	3.8	4.0	3.9^{H}	3.9^{H}	3.8	3.7	3.7	3.6	L	L						
29							Q	L	3.7	3.7	3.9	3.8	3.8	3.9	3.7	3.6	3.6	3.7	L						
30							Q	3.8	3.8^{H}	3.8^{H}	3.8	3.9^{H}	3.9	3.8	3.7	3.7	3.8	L	L						
31																									
Median							—	3.5	3.7	3.8	3.8	3.9	3.9	3.8	3.7	3.7	3.6	3.7	—						
Count							2	11	28	28	27	29	29	30	30	30	26	14	4						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U S GOVERNMENT PRINTING OFFICE 1946 O - 703519

TABLE 84

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

Form accepted June 1946

IONOSPHERIC DATA

(M1500) E (Characteristic), _____ (Unit), April (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

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

Lat 38.7° N, Lang 77.1° W

75° W Mean Time

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								(4.2) H	4.5-	(4.5) A K	4.2 H K	B K	4.3 H K	(4.3) A K	4.4 K	4.3 K	(4.2) F K	4.3 K	4.0 K					
2								4.3	4.3 H	4.3 H	(4.1) P	B	(4.3) B	4.3	4.2	4.2	4.2	4.3 H	4.4					
3								4.0	4.1	(4.2) D	4.3	(4.2) P	B	4.2	4.2	4.3	4.2	4.3	5					
4								4.3	4.1	(4.3) A	(4.3) P	B	(4.3) B	B	B	4.2	4.3	4.1	4					
5								4.1	4.2 H	4.3 H	4.3	4.3	(4.2) P	B	4.2	4.2	4.3	4.4	B					
6								4.1	4.2	4.2	4.2	4.2	4.2	4.3	4.3	4.2	4.0	4.2	A					
7								4.0 H	4.3	4.1	4.2	4.2	M	4.2	4.3	4.3	4.3	4.2	A					
8								A	4.2	4.3	4.2	4.3	4.3	4.2	4.1	4.0	C	4.3	4.2					
9								4.3	4.1	4.2	4.2	4.2	4.4	4.2	4.2	4.2	4.3	4.2	4.2					
10								4.2	4.2	A	4.3	4.5	4.3	4.1	4.2	(4.2) A	4.3	(4.3) A	A					
11								4.2 K	4.1 K	4.3 K	A K	4.3 K	4.3 K	4.4 K	4.2 K	4.2 K	4.2 K	4.1 K	4.3 K					
12							4.3 H	4.0	4.1	4.1	(4.0) A	4.2	4.1	4.2	4.1	4	4	A	4.5					
13							S	A	4.3	4.2	4.0	A	4.2	4.3	4.2	4.2	4.3	4.2	4.3					
14							(4.2) S	4.3	4.3	4.4 H	4.6	(4.4) A	(4.4) P	4.2	4.4	4.1	4.3	4.2	A					
15							S	4.2 H	4.3	4.3	4.3	(4.3) A	4.3	4.2	4.2	4.3	4.3	4.3	4.4					
16							S K	A K	4.1 H K	A K	A K	4.3 K	4.4 K	4.3 K	4.2 K	4.3 K	4.1 K	4.3 K	S K					
17							S	A	(4.2) A	4.1	4.1	4.3	4.4	(4.2) A	4.3	4.2	4.1	1	A					
18							S	A	4.2	(4.3) P	(4.3) P	(4.3) P	A	B	B	4.3	B K	4.3 K	4.3 K					
19							S K	3.9 H K	4.1 K	4.3 K	4.3 K	4.3 K	B K	(4.3) F K	4.3 K	4.2 K	4.2 K	4.3 K	3.5 K					
20							4.3	(4.3) A	4.3	1	A	(4.2) B	(4.4) B	(4.4) A	4.3	4.3	4.3	4.4	4.1					
21							4.3	A	4.3	4.4	4.2	(4.2) P	4.3	4.4	4.3	4.2	4.0	4.3	4.4					
22							A K	4.3 K	4.3 K	4.2 K	(4.3) P K	A K	4.2 K	4.2 K	4.3 K	4.1 K	4.3 K	(4.3) A K	4.2 K					
23							4.3 K	4.0 H K	4.0 K	4.3 K	A K	4.4 K	4.4 K	4.4 K	A K	4.4 K	4.2 K	4.3 C	4.1 K					
24							A K	4.1 K	A K	A K	3.9 K	A K	A K	(4.2) P K	4.3 K	4.2 K	4.2 K	4.3 K	4.3 K					
25							A	A	4.3	4.3	4.3	A	1	A	4.2	4.3 H	4.3	4.4	4.4					
26							A	4.3 C	4.3	A	(4.4) P	4.5	4.6	A	A	A	A	A	4.1					
27							(4.3) A	4.4	4.4	4.4	A	4.1	4.5	4.4	A	(4.4) A	A	4.4	4.1					
28							A	4.4	(4.4) A	4.5	4.3	4.4	4.4	(4.3) P	4.3	(4.2) A	4.4	(4.2) A	4.1					
29							A	4.3	4.5	4.5	4.6	A	A	A	A	4.4	4.3	4.4	4.4					
30							S	4.3	4.4	4.3	4.4	4.4	4.3	4.4	A	(4.3) S	4.4	4.4	4.3					
31																								
Median							4.3	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.3	4.3	4.3					
Count							0	23	29	25	25	22	23	24	23	25	25	21	21					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 85

Ionospheric Storminess at Washington, D. C.

April 1953

Day	Ionospheric character* 00-12	12-24 GCT	Principal storms Beginning GCT	End GCT	Geomagnetic character** 00-12 GCT	12-24 GCT
1	1	5	1400	----	4	2
2	2	2	----	0100	3	2
3	1	2			3	2
4	1	3			4	3
5	2	2			2	2
6	1	3			3	1
7	1	3			1	2
8	1	1			2	2
9	1	2			2	2
10	3	2			3	3
11	2	4	1100	----	3	3
12	2	2	----	0200	3	2
13	1	1			3	3
14	0	2			2	2
15	0	2			3	2
16	1	5	1100	----	4	4
17	4	1	----	1000	3	3
18	2	3	2100	----	3	2
19	4	6	----	----	3	3
20	4	2	----	1000	5	3
21	3	3			3	4
22	2	5	1100	----	3	4
23	4	4	----	----	4	3
24	4	4	----	----	2	3
25	2	3	----	0100	2	3
26	1	3			3	3
27	2	1			3	3
28	1	2			3	2
29	2	3			2	2
30	1	3			3	3

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

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

----Dashes indicate continuing storm.

Table 86a

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

March 1953

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 days 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)	Half day (2)
1	(3)	(3)	6	5	(4)	(4)	5	(4)	(4)	(4)	6		3	2
2	(3)	(3)	(3)	(2)	(4)	(3)	(3)	(2)	(3)	5	6		(5)	(4)
3	(2)	(3)	(4)	5	(2)	(2)	(4)	5	(3)	6	6		(4)	2
4	(3)	(3)	6	6	(4)	(3)	5	5	(4)	(4)	6		2	2
5	(4)	(4)	6	6	(4)	(4)	5	5	5	5	7		2	2
6	5	(4)	7	6	5	(4)	6	5	5	5	7		1	3
7	(4)	(4)	6	6	5	(3)	5	5	5	5	6		(4)	2
8	(4)	(4)	6	5	(4)	(3)	6	6	(4)	6	6		2	3
9	(2)	(3)	6	5	(3)	(2)	5	(4)	(3)	6	6		(4)	3
10	(3)	(2)	6	5	(4)	(3)	5	5	(4)	6	6		3	3
11	(4)	(3)	7	7	5	(3)	6	6	5	(4)	6		2	1
12	(4)	(4)	7	6	5	5	7	6	5	5	6		2	1
13	5	(4)	7	7	6	5	7	7	6	6	6		0	1
14	5	5	7	7	6	(4)	6	6	6	6	6		3	3
15	5	(4)	6	6	6	(4)	6	6	5	6	5		3	2
16	5	(4)	7	6	6	(4)	6	7	6	5	5		3	2
17	6	(4)	6	7	5	(4)	6	7	6	5	5		2	1
18	6	(4)	7	6	6	5	6	6	6	6	6		1	2
19	5	5	7	6	6	(4)	6	6	6	6	6		3	3
20	6	5	7	6	5	5	6	5	6	5	5		2	2
21	(4)	(2)	6	5	5	(3)	5	(4)	(4)	5	5		(4)	(4)
22	(3)	(3)	6	(4)	(4)	(2)	5	(4)	(4)	(4)	(4)	X	(4)	3
23	(3)	(2)	(4)	(4)	(4)	(3)	(4)	(3)	(3)	(3)	(3)	X	(5)	(4)
24	(3)	(2)	5	(4)	(3)	(2)	(4)	(4)	(3)	(3)	(3)	X	(5)	(4)
25	(2)	(3)	(4)	(4)	(3)	(2)	(4)	(4)	(3)	(3)	(3)	X	(4)	(4)
26	(2)	(2)	5	5	(3)	(2)	5	5	(3)	(3)	(4)	X	3	(4)
27	(3)	(2)	6	5	(4)	(3)	5	(4)	(4)	(4)	5		(4)	2
28	(4)	(3)	6	6	(4)	(3)	5	5	(4)	(4)	5		(4)	3
29	(3)	(2)	7	7	(4)	(4)	5	5	5	(3)	5		3	3
30	5	(4)	6	6	(4)	(4)	6	6	5	(3)	5		3	3
31	(4)	(3)	7	6	5	(4)	6	6	5	(4)	5		2	2

Score:

Quiet periods	P	2	1	7	11	8	8	
	S	8	2	19	14	6	6	
	U	0	0	1	1	2	2	
	F	0	0	0	0	0	0	
Disturbed periods	P	5	12	4	4	9	4	
	S	16	15	0	1	1	4	
	U	0	1	0	0	1	0	
	F	0	0	0	0	4	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; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis

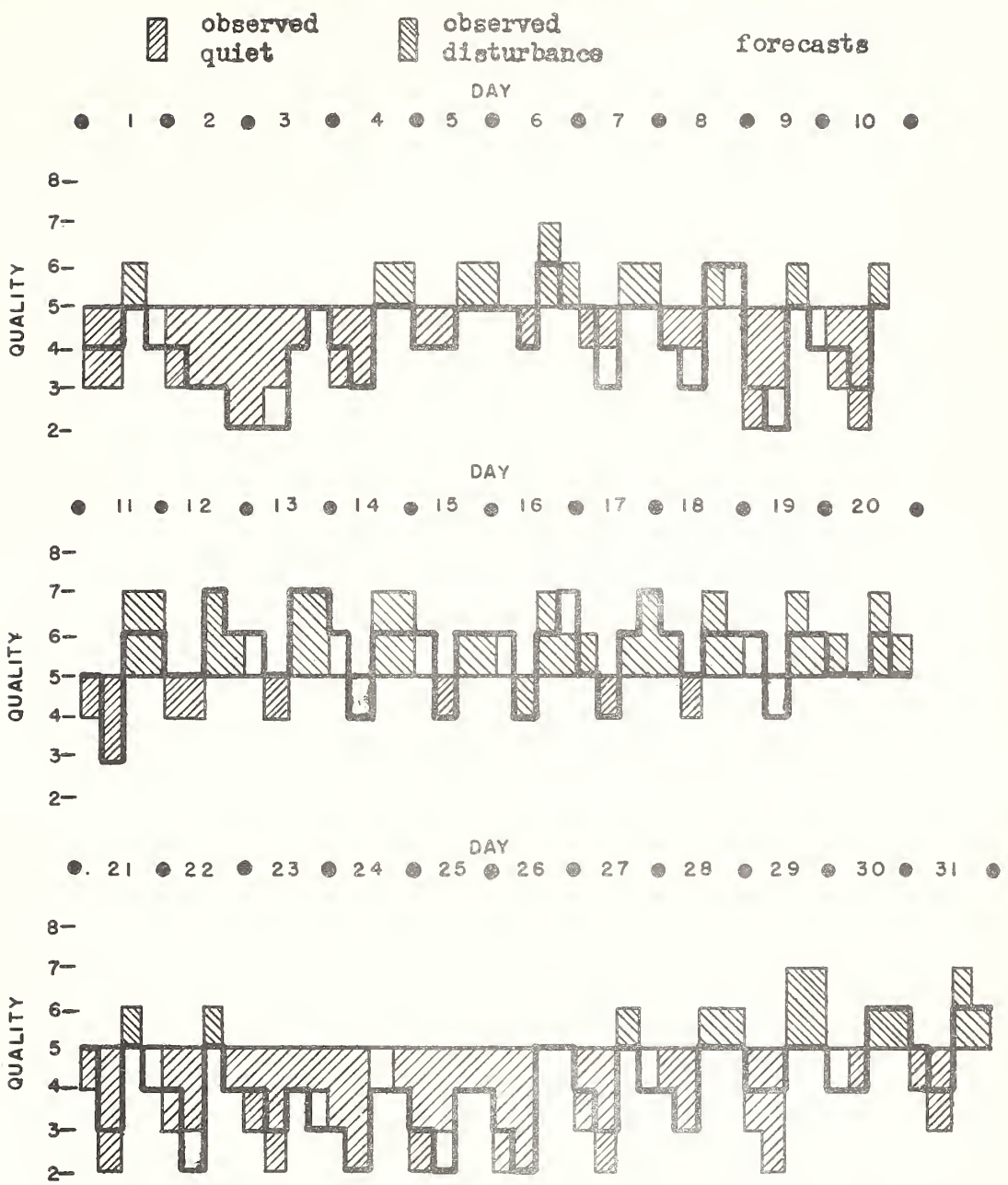
Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 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 86b

Short-Term Forecasts--March 1953



Outcome of Advance Forecasts (1 to 4 days ahead)--March 1953

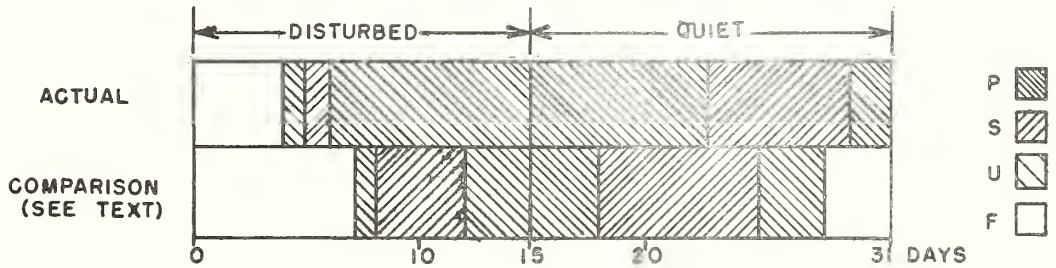


Table 87a

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

Date GCT	Degrees north of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	00	Degrees south of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																				
Apr. 1.7a	-	-	-	-	2	2	3	4	1	-	-	-	-	-	-	-	-	2	2	2	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-
8.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15.7	-	-	-	-	-	-	-	-	-	2	3	3	3	3	4	5	3	3	3	3	3	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	2	3	4	4	3	3	3	5	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	3	6	8	10	9	7	6	7	7	6	4	2	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	1	1	1	1	2	2	2	2	3	3	3	5	10	14	10	6	4	3	3	2	1	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	2	3	3	4	4	4	5	5	5	7	8	9	9	15	17	18	16	14	6	4	2	2	2	2	2	2	-	-	-	-	-	-	-
26.8	-	-	-	-	-	-	-	-	2	2	2	2	3	3	4	6	7	7	8	8	8	7	2	2	2	2	2	1	1	-	-	-	-	-	-	-

Table 88a

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

Date GCT	Degrees north of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	00	Degrees south of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																				
Apr. 1.7a	3	3	3	3	3	2	2	2	2	5	3	3	3	3	3	3	4	5	5	6	6	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3
3.8a	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4	5	2	2	3	3	2	2	2	2	2	2	3	3	3	3
5.8a	3	3	3	3	2	2	2	2	2	2	3	3	2	4	3	3	4	4	3	4	5	4	4	5	5	5	3	3	3	3	3	3	3	3	3	3
8.0a	2	2	2	1	1	1	1	1	1	1	2	3	2	2	2	3	3	3	4	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2
10.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15.7	3	3	3	3	2	2	2	2	2	3	3	3	4	4	4	5	3	3	3	5	6	4	5	4	3	3	3	2	2	2	2	2	2	3	3	3
19.6	3	3	3	3	3	2	2	2	2	2	2	2	2	4	5	6	7	7	6	6	5	5	7	9	7	6	5	4	4	2	2	2	2	2	3	3
22.7	3	3	3	3	-	-	-	-	-	-	-	-	-	-	2	6	4	4	2	5	3	3	2	2	3	2	2	2	2	2	2	2	2	3	3	3
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	12	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	3	3
25.6	4	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	17	19	3	3	5	5	4	4	3	2	2	2	2	2	2	2	3	3	3
26.8	3	3	3	2	1	1	1	1	1	1	1	1	2	2	2	2	2	5	6	5	3	4	5	5	4	2	1	1	1	1	1	1	2	3	3	3

Table 89a

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

Date GCT	Degrees north of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	00	Degrees south of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																				
Apr. 1.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.8	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-

Table 87b

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
1953																																					
Apr. 1.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	3	6	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4	3	-	-	-	-	-	-	-	-	-	-
8.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	3	3	3	2	2	2	-	-	-	-	-	-	-	-
10.0a	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	2	6	15	9	9	8	6	6	5	5	5	3	3	3	4	3	2	-	-	-	-	X
15.7a	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	4	4	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	2	2	2	1	1	1	1	1	1	1	2	2	2	3	4	4	4	3	3	3	3	3	3	3	2	2	2	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	2	2	3	4	1	1	2	2	2	2	2	2	2	2	2	3	3	3	-	-	-	-	-	-	-	-
25.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	-	-	-	-	-	-
26.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	2	-	-	-	-	-	-	-

Table 88b

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
1953																																					
Apr. 1.7a	3	3	3	3	3	3	3	3	3	3	3	3	3	3	6	7	5	3	2	2	2	2	2	4	2	3	3	2	2	2	2	2	3	3	3	3	3
3.8	3	3	3	3	3	3	3	2	2	2	2	2	2	2	3	2	1	1	2	1	2	11	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5.8a	3	3	3	3	3	3	3	2	2	2	2	2	3	3	4	5	4	2	2	3	4	3	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3
8.0a	2	2	2	2	2	2	2	2	2	2	2	2	3	4	3	3	3	4	3	2	2	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10.0a	X	X	X	X	X	X	X	X	X	2	2	2	2	2	2	2	10	12	5	7	5	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	X
15.7a	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	4	5	5	6	4	4	4	4	4	4	3	4	5	3	2	2	2	2	2	3	3	3
19.6	3	3	3	3	3	3	2	2	3	3	3	4	4	5	5	5	4	4	4	4	3	3	3	3	3	3	2	2	2	2	2	2	3	3	3	3	3
22.7a	3	3	3	3	3	2	2	2	2	2	2	2	4	5	4	4	5	5	3	3	3	3	3	5	5	4	4	4	4	4	3	3	3	3	3	3	3
24.7a	3	3	3	3	3	3	2	2	2	2	2	3	3	3	3	3	3	4	4	4	3	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-
25.6a	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	5	6	7	7	7	4	4	4	4	4	4	4	3	3	2	2	2	2	2	2	4	4
26.8a	3	3	3	3	3	3	2	2	2	3	4	4	4	5	5	5	5	5	5	5	5	5	4	3	2	2	2	2	2	2	2	2	2	2	3	3	3

Table 89b

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

Date GCT	Degrees south of the solar equator																				0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
Apr. 1.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.0a	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	X	X	X	X			
15.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90a

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

Date GCT	Degrees north of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	00	Degrees south of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																				
Apr. 1.9a	-	-	-	-	-	-	-	-	-	4	4	4	4	5	4	4	5	5	5	4	4	5	4	4	5	5	5	4	4	4	4	5	4	4	3	3	-
2.8a	2	2	-	-	-	-	2	3	4	3	3	3	2	3	2	2	3	2	2	2	2	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	2
6.7a	2	-	-	-	-	-	2	2	2	-	2	2	2	2	2	2	3	2	2	3	3	2	3	2	2	2	-	2	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	2	2	3	3	3	3	3	3	3	3	2	2	3	4	3	3	3	4	4	3	4	3	3	2	2	-	-	-	-	-	-
8.7a	2	2	-	-	-	2	-	-	2	3	3	2	3	4	4	4	4	3	3	2	2	2	3	2	2	-	-	-	3	2	3	3	-	-	-	-	-
9.7a	2	-	-	-	-	-	-	-	2	3	4	3	3	2	2	2	-	-	3	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	3	2	2	-	-	-	2	3	3	3	3	4	4	3	3	4	2	2	3	3	3	2	2	2	3	3	3	2	2	2	2	-	-	-	-	-	-
12.7	-	-	2	2	2	3	3	4	5	7	5	4	5	4	4	3	3	2	2	3	2	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	3	4	4	3	3	2	3	4	8	5	4	3	2	3	2	3	3	3	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	4	4	3	4	4	5	3	3	4	4	3	3	3	3	3	3	-	-	-	-	-
15.7a	2	-	-	-	-	-	-	-	-	2	3	3	3	2	2	2	2	2	2	3	3	4	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-
16.7	3	3	2	2	2	4	3	2	2	2	2	3	3	3	3	4	5	5	3	3	3	2	2	2	2	3	3	3	3	3	3	2	-	-	-	-	-
17.7a	-	-	-	-	-	-	2	2	2	3	3	4	4	3	3	4	4	4	3	3	4	4	4	3	3	3	3	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	2	2	2	2	2	3	3	3	4	3	4	5	4	3	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	3	2	2	2	3	3	3	3	4	4	4	4	3	3	3	4	4	3	3	3	2	2	2	3	3	2	3	3	3	3	3	2	-	-	-	-	-
20.8a	2	2	2	-	-	-	-	2	2	3	3	2	2	3	3	4	5	8	7	5	3	3	2	3	2	3	3	2	2	3	2	2	-	-	-	-	-
24.7	-	-	-	-	-	-	-	2	3	3	3	3	4	5	8	9	11	25	32	26	20	16	13	8	5	3	4	3	2	-	-	-	-	-	-	-	-
25.7	2	-	-	-	-	2	3	3	3	3	2	3	4	5	4	4	5	14	15	16	16	14	11	4	3	3	3	2	2	2	2	2	2	-	-	-	-
26.8a	2	3	3	-	3	3	3	2	3	3	3	2	3	3	3	4	5	4	5	4	3	2	-	3	3	4	3	2	2	-	3	2	2	3	4	4	2

Table 91a

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

Date GCT	Degrees north of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	00	Degrees south of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																				
Apr. 1.9a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	3	-	3	3	4	3	4	4	3	-	-	3	3	-	-	-	-	-	-	-	-	-
2.8a	2	3	2	3	2	-	-	2	3	4	4	3	2	3	3	3	3	4	5	4	5	5	3	3	4	4	5	5	3	2	3	3	2	2	3	3	2
6.7a	2	3	2	2	2	2	-	2	2	3	3	2	3	2	-	2	2	3	2	3	4	3	4	4	4	3	2	3	3	2	2	3	2	-	3	2	2
7.7a	2	3	3	4	2	3	3	3	3	3	2	3	4	3	4	4	3	3	4	3	4	2	3	4	3	3	3	2	2	2	-	2	-	-	-	2	2
8.7a	3	2	3	3	2	2	3	3	3	3	5	6	4	3	3	4	5	4	5	5	4	6	5	5	5	4	4	3	3	3	2	3	2	3	3	2	2
9.7a	2	2	3	3	2	3	3	3	3	3	5	4	4	5	5	5	5	4	4	5	5	5	5	4	7	4	3	4	3	4	2	2	3	2	2	2	2
10.7a	4	3	3	3	2	2	3	-	2	2	5	8	6	7	6	6	5	4	5	5	8	7	6	4	5	5	4	4	2	3	2	2	2	3	3	2	3
12.7	5	4	4	4	3	4	2	2	2	3	3	5	4	4	5	6	5	5	7	7	8	7	7	7	7	4	5	4	3	2	2	2	2	4	3	3	3
13.7	5	4	3	4	4	3	2	3	3	3	4	5	4	5	7	8	7	11	13	11	12	11	12	8	5	5	6	5	4	3	2	2	2	2	3	4	4
14.7a	-	-	-	-	-	-	-	-	2	3	3	3	2	3	4	5	5	6	5	5	5	6	4	4	4	5	4	4	4	3	3	3	3	3	3	3	4
15.7a	2	3	3	2	2	2	2	-	-	2	3	3	3	4	4	5	7	3	5	6	9	8	7	8	6	5	3	4	3	4	3	3	3	3	3	2	3
16.7	4	3	2	3	3	2	3	3	3	4	4	4	6	8	6	5	5	7	4	5	6	8	7	6	5	4	3	3	3	2	2	3	2	3	3	2	3
17.7a	3	2	3	3	-	-	2	2	2	2	2	3	3	2	3	2	3	3	2	2	3	2	3	3	2	2	2	3	2	2	3	2	2	3	3	3	3
18.7	5	3	2	3	3	3	2	3	3	3	4	5	4	3	4	6	14	13	11	10	9	8	8	9	6	4	5	5	5	5	4	4	4	-	3	2	3
19.7a	3	3	2	2	3	3	3	3	3	3	-	-	2	3	3	5	4	5	5	5	5	4	5	4	4	4	4	3	2	2	3	2	2	-	3	-
20.8a	2	2	2	2	3	-	2	-	2	2	2	3	2	-	3	3	5	8	5	4	3	3	4	5	8	4	3	2	-	3	-	3	2	2	3	3	3
24.7	3	3	2	2	2	2	3	2	-	-	-	-	2	2	2	2	3	20	23	16	2	3	5	3	2	2	-	2	2	3	-	-	2	-	2	3	3
25.7	3	2	3	3	3	2	3	2	2	-	-	2	-	2	-	2	2	6	15	14	-	2	3	3	3	-	-	2	-	2	2	-	2	3	2	2	3
26.8a	-	2	2	-	2	-	-	-	3	-	-	3	2	2	-	2	3	5	6	4	-	3	2	2	3	2	2	3	-	-	-	-	2	-	-	3	3

Table 92a

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

Date GCT	Degrees north of the solar equator 90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	00	Degrees south of the solar equator 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																				
Apr. 1.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	5	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90b

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
1953																																				
Apr. 1.9a	-	-	-	-	2	3	3	3	3	3	3	3	3	4	4	4	4	4	3	3	3	2	2	2	2	-	-	-	2	2	-	-	3	3	-	-	-
2.8a	2	2	2	2	2	2	2	-	-	2	3	3	2	3	3	3	4	4	3	4	5	4	5	5	4	3	3	3	2	2	2	-	-	-	-	2	2
6.7a	-	-	-	-	-	-	-	-	2	2	3	3	3	2	2	2	2	2	2	2	3	3	3	3	4	4	3	3	2	2	-	-	-	-	3	2
7.7a	-	-	-	-	-	3	5	4	4	4	3	3	3	4	3	3	3	4	4	3	8	10	5	5	4	5	4	4	3	3	3	2	-	-	-	-	-
8.7	-	2	2	3	3	3	3	3	3	2	3	3	4	3	3	4	5	11	10	5	11	16	15	10	8	9	5	4	3	3	3	2	3	3	3	3	2
9.7	-	-	-	-	-	-	-	2	3	3	3	2	3	3	3	4	9	19	26	14	14	16	13	12	11	11	8	5	4	3	3	3	3	3	3	2	2
10.7	-	-	-	-	-	-	2	2	2	2	2	3	3	3	4	6	16	26	32	36	28	20	14	12	12	14	8	3	3	4	4	3	2	2	4	4	3
12.7	-	-	-	-	2	2	2	3	3	3	3	3	4	3	4	5	7	14	28	27	23	19	11	7	8	9	6	5	5	5	4	5	4	3	2	2	-
13.7	-	-	-	-	2	2	3	3	5	4	3	2	3	4	3	5	7	11	16	15	11	8	6	6	5	6	5	5	4	5	8	7	3	2	-	-	-
14.7a	-	-	-	-	2	3	5	4	3	5	5	5	4	3	3	3	2	4	4	4	3	4	3	3	4	3	4	3	4	3	3	2	2	-	-	-	-
15.7a	-	-	-	-	-	-	-	-	2	3	4	3	2	2	2	3	2	2	2	2	-	-	-	3	3	2	3	3	3	4	3	3	3	2	2	2	2
16.7	-	-	-	-	2	2	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3	4	3	2	3	2	2	4	3	4	4	4	5	4	3	3	3
17.7a	-	-	-	-	-	-	-	-	2	3	3	3	2	3	3	3	3	4	3	4	4	3	3	2	-	-	-	-	-	2	3	2	3	3	-	-	-
18.7	-	-	-	-	-	-	-	2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	5	4	4	4	4	3	3	2	-	-
19.7a	-	-	-	-	2	3	2	3	3	3	2	2	2	2	2	2	2	2	3	3	2	2	3	3	4	3	2	2	3	3	2	2	2	2	2	3	3
20.8a	-	-	-	-	-	-	2	2	3	3	3	3	3	2	2	2	2	2	3	3	3	3	2	2	2	2	3	4	4	3	2	2	3	3	2	3	2
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	2	3	3	3	3	3	2	2	2	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	2	3	3	3	3	3	2	2	2	3	3	3	2	2	2	2	3	2	3	2
26.8a	2	2	2	2	2	-	-	3	3	3	2	2	3	-	-	-	-	-	3	3	3	2	3	2	2	2	3	4	3	3	2	2	3	3	3	3	2

Table 91b

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
1953																																				
Apr. 1.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5	4	3	2	3	2	3	2	3	3	3	3	-	-	-	-	-	-	-	-	-
2.8a	2	2	2	2	2	2	3	2	3	2	3	3	2	4	5	5	5	4	3	3	3	5	8	3	3	2	3	4	3	2	2	3	3	3	3	2	2
6.7a	2	2	2	-	2	-	2	2	2	2	2	3	3	4	5	5	4	3	3	3	4	4	3	3	2	2	-	2	2	2	2	-	2	2	2	2	2
7.7a	2	3	3	3	3	3	2	3	2	2	2	3	4	5	4	5	4	5	4	3	3	6	8	5	2	2	-	2	-	2	2	2	-	2	2	2	2
8.7	2	2	2	3	2	2	-	2	2	3	2	5	6	7	5	8	9	14	11	8	5	6	11	-	3	-	2	2	2	2	2	2	2	2	3	3	3
9.7	2	2	2	3	2	-	-	2	2	2	-	3	3	3	3	8	14	13	12	5	13	12	3	-	2	-	3	2	2	-	2	2	3	3	-	2	2
10.7	3	3	2	3	2	2	3	3	4	3	2	3	4	3	5	12	15	14	11	13	16	10	4	-	2	3	2	2	3	2	2	-	2	3	3	2	4
12.7	3	3	3	-	-	-	-	-	3	4	4	3	3	3	5	3	3	4	5	14	16	4	3	4	3	2	3	3	2	2	3	2	3	3	3	3	5
13.7	4	3	3	4	3	2	3	2	2	4	4	5	7	7	8	7	9	11	8	14	10	8	5	4	5	4	4	4	3	2	2	3	2	3	5	4	5
14.7a	4	2	2	3	3	2	-	-	3	2	3	2	3	4	3	3	2	3	4	5	5	3	3	3	2	2	2	3	3	3	3	2	3	3	-	-	
15.7a	3	3	2	3	3	2	2	2	2	2	3	2	3	4	4	5	6	7	8	7	7	6	5	4	4	3	3	5	3	3	2	3	3	2	3	3	2
16.7	3	3	2	3	3	2	2	2	3	3	4	6	5	6	4	4	3	6	5	6	5	4	4	5	5	5	6	4	3	4	2	3	3	3	3	4	4
17.7a	3	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	3	2	3	-	-	2	3	2	3	2	3	-	-	-	-	3	3	2	3
18.7	3	4	2	2	3	3	3	3	2	3	3	4	5	6	6	5	5	10	8	6	5	6	6	5	3	4	5	4	3	4	2	2	3	3	4	5	4	5
19.7a	-	-	-	-	3	2	3	-	-	-	3	3	4	3	3	4	3	3	3	3	3	2	2	4	3	3	3	-	-	3	3	3	3	3	2	2	3
20.8a	3	2	2	-	-	2	2	2	2	2	3	3	4	5	5	4	5	4	4	3	4	5	4	3	4	3	4	-	-	-	2	3	2	2	2	3	2
24.7a	3	3	3	2	3	-	-	-	-	2	2	2	3	3	4	3	6	8	7	5	6	6	5	4	4	3	3	3	-	-	-	-	2	3	3	3	3
25.7a	3	2	3	-	2	2	2	2	-	3	3	3	4	3	3	3	5	5	6	5	5	4	4	5	3	3	3	-	-	-	2	2	-	-	3	3	3
26.8a	3	-	-	-	-	-	-	-	-	3	3	3	2	3	-	2	3	4	3	3	2	3	3	2	2	3	2	-	-	-	-	2	-	2	-	3	-

Table 92b

Coronal observations at Sacramento Peak, New Mexico (6702A), 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
1953																																				
Apr. 1.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	4	3	3	2	-	2	2	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	5	6	4	3	2	2	3	2	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	5	4	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 93

Zürich Provisional Relative Sunspot Numbers

April 1953

Date	R_Z*	Date	R_Z*
1	37	17	0
2	46	18	7
3	48	19	7
4	58	20	0
5	31	21	0
6	31	22	9
7	38	23	27
8	43	24	33
9	30	25	45
10	21	26	57
11	12	27	66
12	0	28	63
13	0	29	57
14	0	30	49
15	0		
16	0	Mean:	27.2

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

Table 94

American Relative Sunspot Numbers

March 1953

Date	$R_{A'}$*	Date	$R_{A'}$*
1	0	17	0
2	0	18	3
3	1	19	11
4	4	20	11
5	0	21	12
6	0	22	11
7	0	23	12
8	2	24	12
9	0	25	3
10	0	26	0
11	0	27	18
12	0	28	21
13	2	29	20
14	7	30	48
15	3	31	44
16	0	Mean:	7.9

*Combination of reports from 28 observers; see page 10.

Table 95

Solar Flares, April 1953

Observatory	Date 1953	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) (of) (Visible) (Hemisph)	Position Latitude (Deg)	Position Longitude Diff (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
Sac.Peak	Apr. 3	2140	2201	21	45	N02	E09	2154	8	8	1 -	
"	3	2210	2250	40	123	N02	E09	2216	12	6	1	
"	4	1850	1926	36	102	N03	W08	1854	14	2	1	
"	4	1850	1858	8	50	N05	W02	1854	12	7	1 -	
"	4	1901	2010	69	136	N04	W05	1912	13	5	1	
Sac.Peak	4	2115	2205	50	125	N03	W08	2135	11	7	1	
McMath	8	1325				N05	W44				1 -	
Sac.Peak	8	1431	1450	19	32	N03	W48	1436	9	8	1 -	
McMath	24	1345				N09	E58				1	
Sac.Peak	29	2050	2130	40	126	N05	E31	2109	10	5	1	

Sac.Peak = Sacramento Peak

Table 96

Indices of Geomagnetic Activity for March 1953

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

Gr. Day 1953	C	Values Kp three-hour interval 1 2 3 4	5 6 7 8	Sum	Final Selected Days
1	0.7	2- 2+ 4- 4o	2o 2o 3o 3o	22-	Five
2	1.8	4+ 5+ 6- 6-	6+ 6+ 6o 5+	45o	Quiet
3	1.3	5- 5+ 4+ 5-	3o 2+ 3o 4-	31o	
4	0.5	4o 2+ 1- 2-	2o 2+ 2o 1o	16o	11
5	0.6	1- 3- 1o 1-	2o 2+ 3+ 3+	16o	12
					13
6	0.5	0+ 1- 2- 2o	2- 2- 1+ 4o	13-	17
7	0.9	5o 3+ 4- 3o	2+ 1o 4- 1+	23+	18
8	1.3	2o 3- 1+ 3-	3- 4+ 5o 7-	27+	
9	1.5	7- 4o 4- 4+	4o 3+ 5- 5-	35+	
10	1.0	5- 4+ 4- 3-	3o 3o 2+ 3-	26+	
11	0.3	3+ 2o 1+ 1+	1o 1- 2- 1+	13-	Five
12	0.2	3- 1+ 1- 1o	1- 1- 1o 1-	9-	Disturbed
13	0.2	0+ 0+ 0+ 1-	0+ 1- 1- 3o	6+	
14	0.7	4- 3- 1+ 1+	2+ 2- 3o 3o	19o	2
15	0.7	2o 1+ 3+ 4+	4o 2o 2- 1o	20-	9
					23
16	0.7	3o 4o 2+ 2o	2o 2- 1+ 3+	20-	24
17	0.1	2o 2- 2+ 1o	0+ 1+ 2- 0+	11-	25
18	0.0	1- 1- 1- 2-	1o 1o 2- 1o	8+	
19	1.0	4o 4o 2+ 3+	3+ 3o 4- 4-	27+	
20	0.7	4- 1- 1+ 2o	1- 1+ 4- 4-	17o	
21	1.4	5o 4+ 4+ 4+	3- 3+ 6o 3o	33o	Ten
22	1.1	5+ 4+ 3+ 3-	3o 2o 4- 4+	29-	Quiet
23	1.4	4+ 5+ 5- 4o	4o 6o 6- 3o	37o	
24	1.8	5- 5+ 6- 5+	4+ 5o 7- 6+	43+	4
25	1.5	5- 5o 5o 4o	5o 5- 5+ 4o	38-	5
					6
26	1.1	3- 4- 3+ 4-	4o 3+ 5- 5-	30o	11
27	1.0	4o 5o 4- 4+	3+ 3- 3o 4-	30-	12
28	1.1	4o 4o 3+ 3+	4- 4o 4- 2+	28+	13
29	0.8	4- 3o 3- 1+	1o 1+ 3o 3+	19+	17
30	0.9	4- 5- 2o 1o	2+ 2o 4o 3o	23-	18
31	0.6	1+ 2- 1o 1+	3- 1o 3- 3+	15o	20
					31
Mean	0.83				

Table 97

Sudden Ionosphere Disturbances Observed at Washington, D. C.

April 1953

1953 Day	GCT* Beginning	GCT* End	Location of transmitters	Relative intensity at minimum**	Other phenomena
April 4	1850	1930	D. C., Mexico	----	Terr.mag.pulse*** 1852-1930 Solar flare**** 1850

*As observed for station XEWW, 9500 kilocycles, 3000 kilometers distant.
**Insufficient data.
***As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.
****Time of observation at Sacramento Peak, New Mexico.
----Insufficient data.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

GRAPHS OF IONOSPHERIC DATA

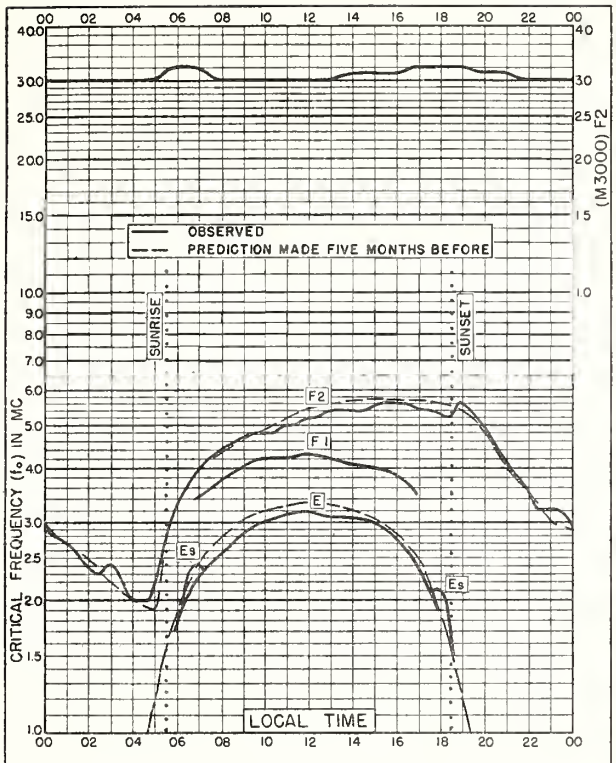


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W
APRIL 1953

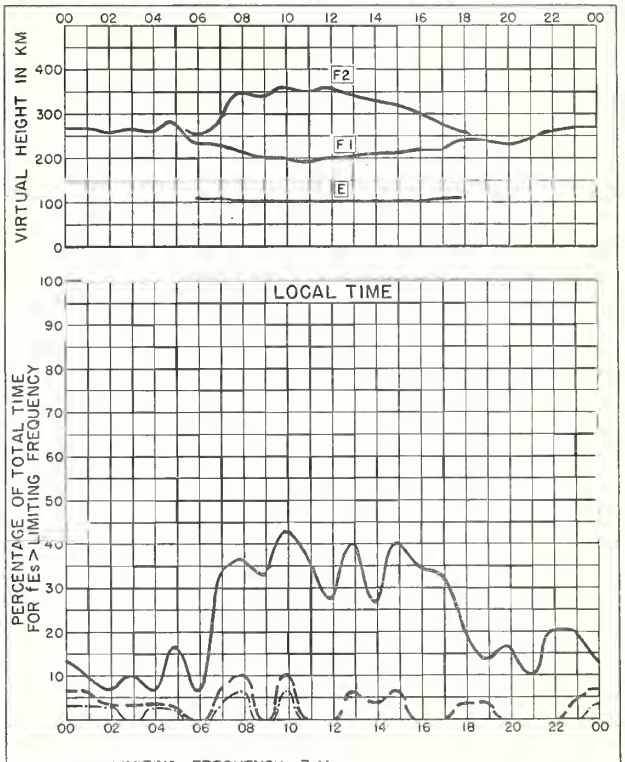


Fig. 2. WASHINGTON, D. C.
APRIL 1953

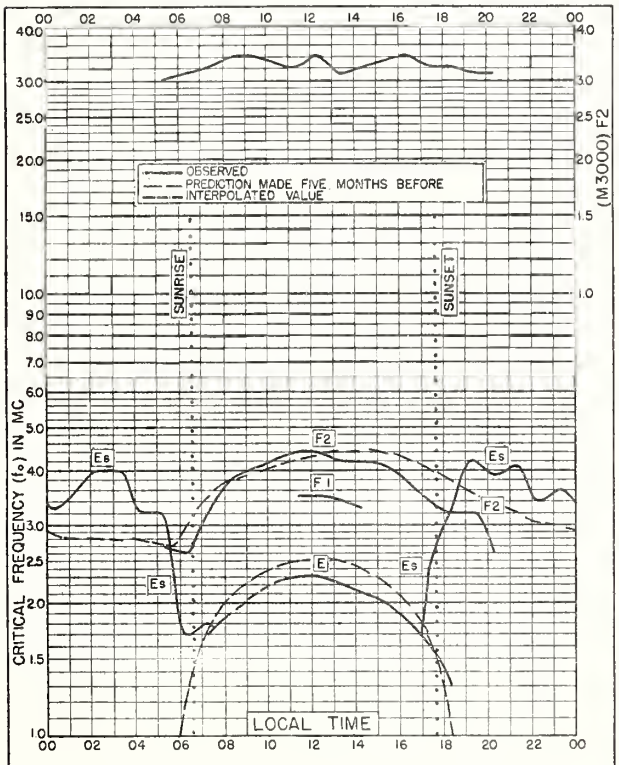


Fig. 3. TROMSO, NORWAY
69.7°N, 19.0°E
MARCH 1953

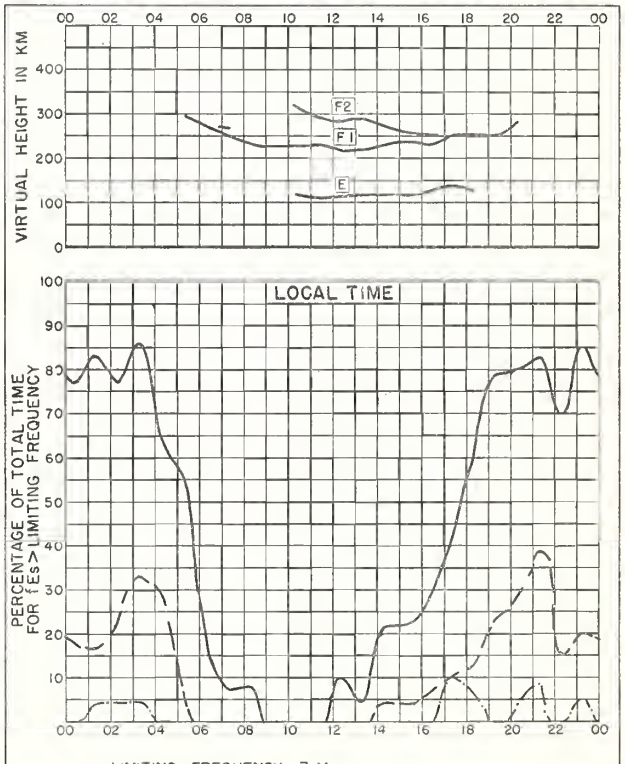


Fig. 4. TROMSO, NORWAY
MARCH 1953

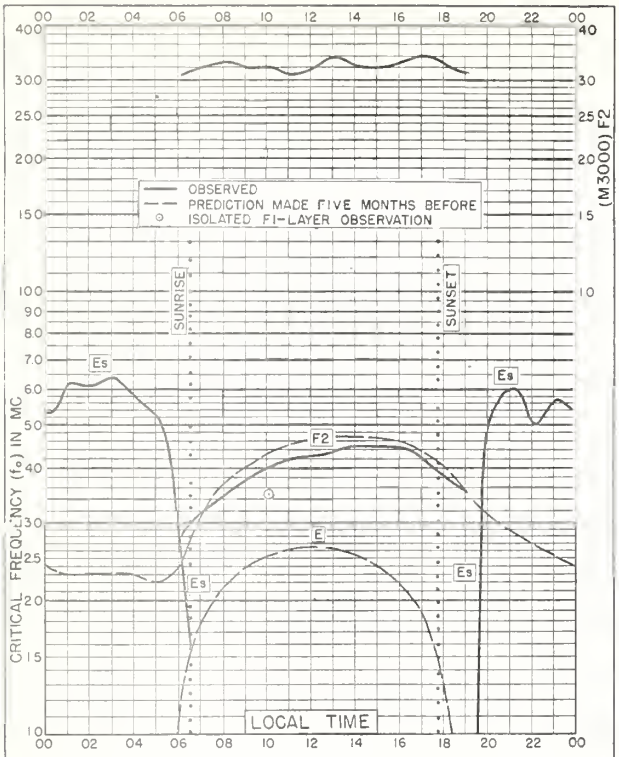


Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W MARCH 1953

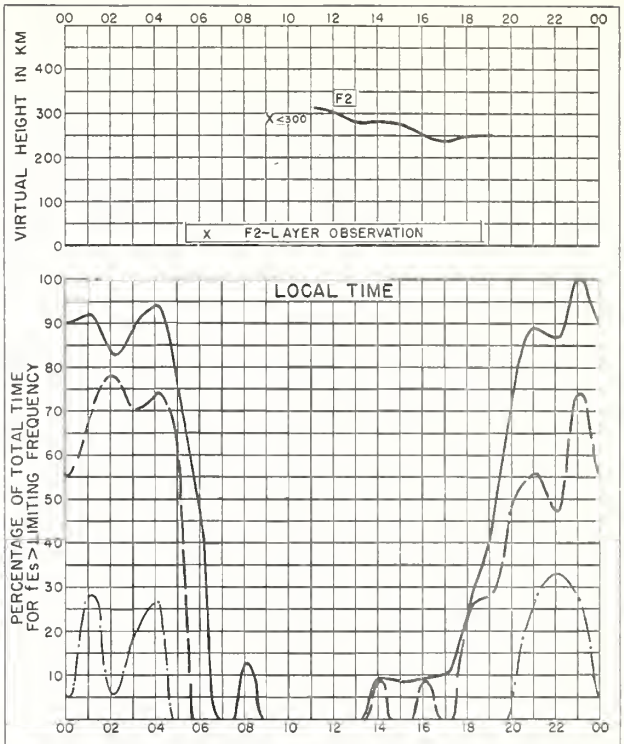


Fig. 6. FAIRBANKS, ALASKA MARCH 1953

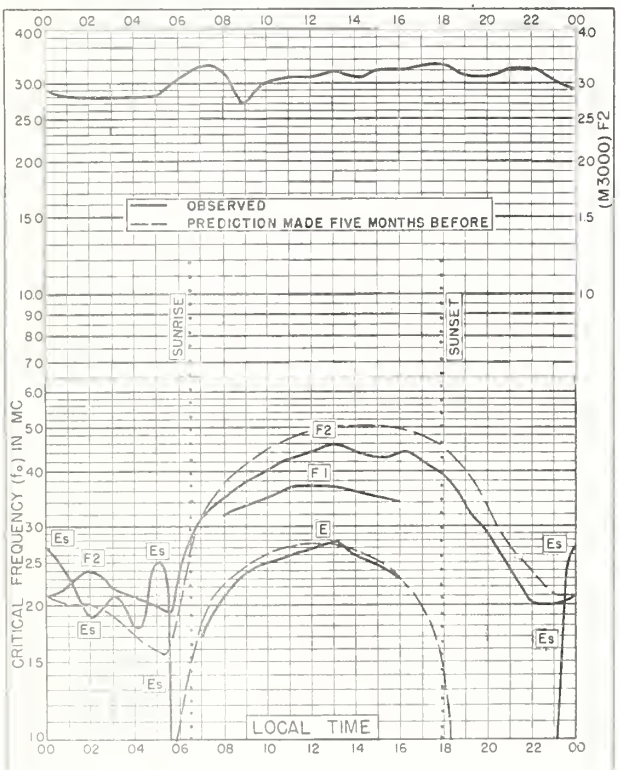


Fig. 7. ANCHORAGE, ALASKA
61.2°N, 149.9°W MARCH 1953

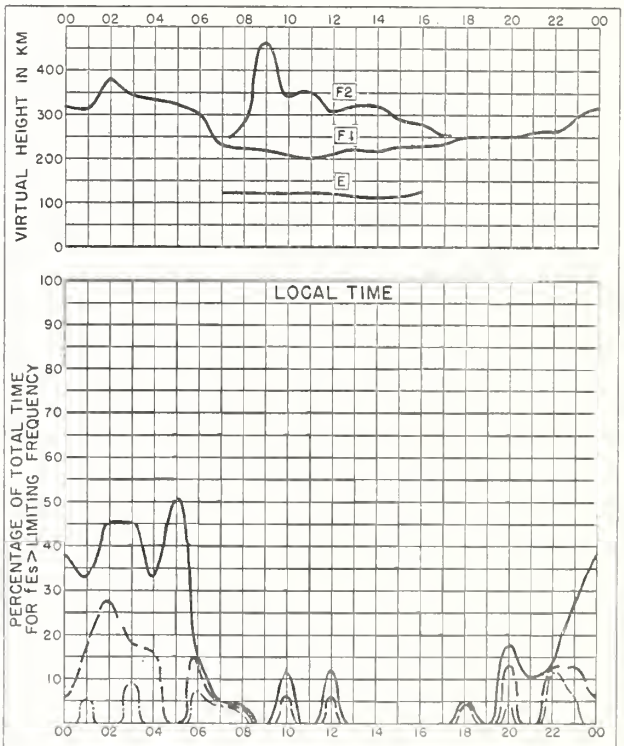


Fig. 8. ANCHORAGE, ALASKA MARCH 1953

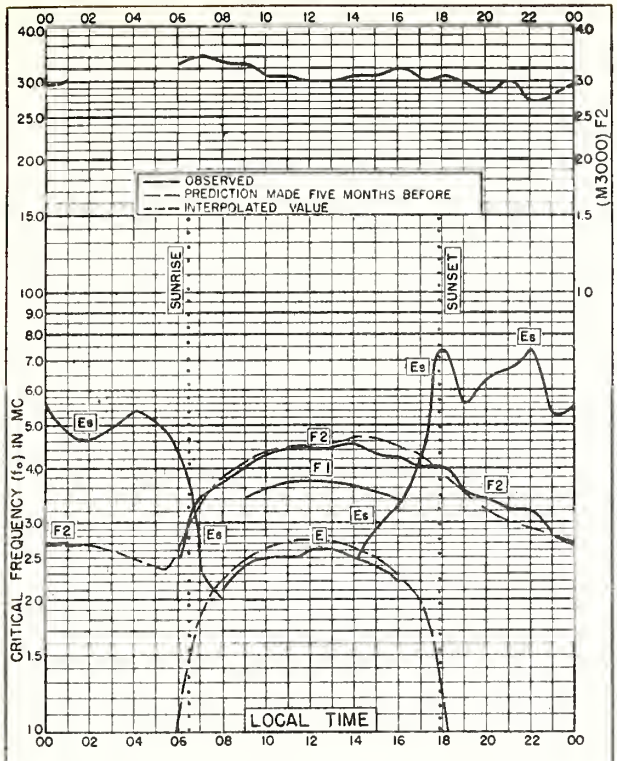


Fig. 9. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W MARCH 1953

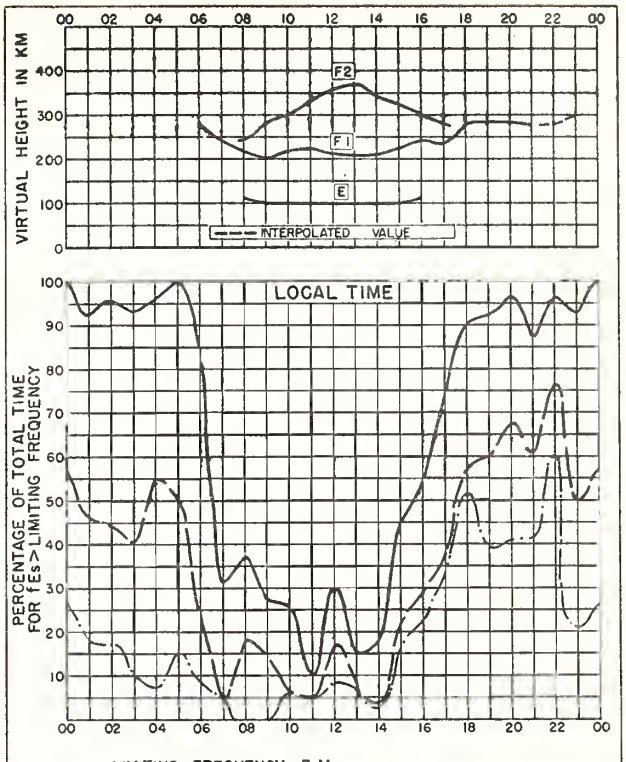


Fig. 10. NARSARSSUAK, GREENLAND MARCH 1953

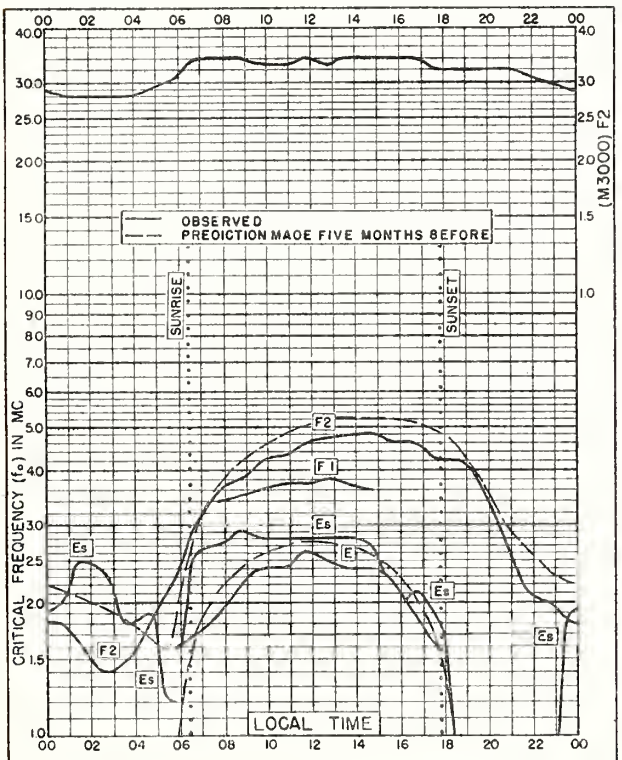


Fig. 11. OSLO, NORWAY
60.0°N, 11.1°E MARCH 1953

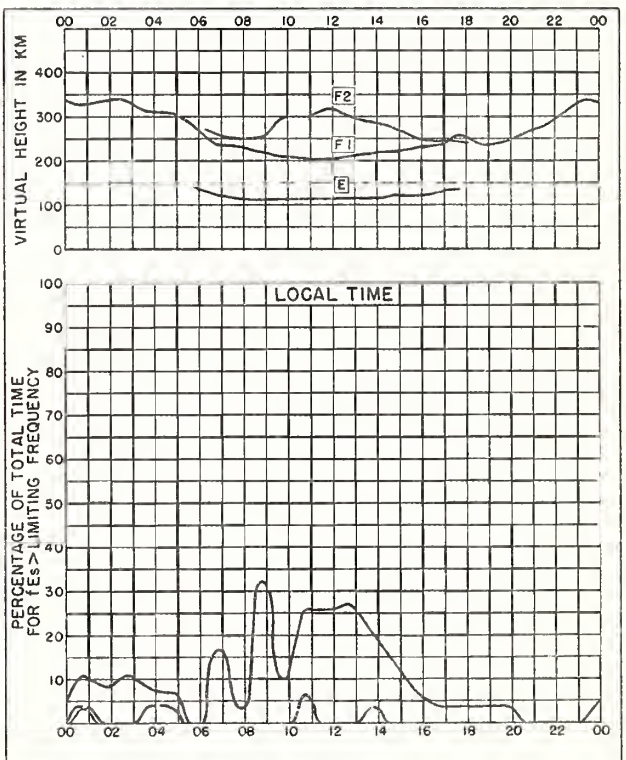


Fig. 12. OSLO, NORWAY MARCH 1953

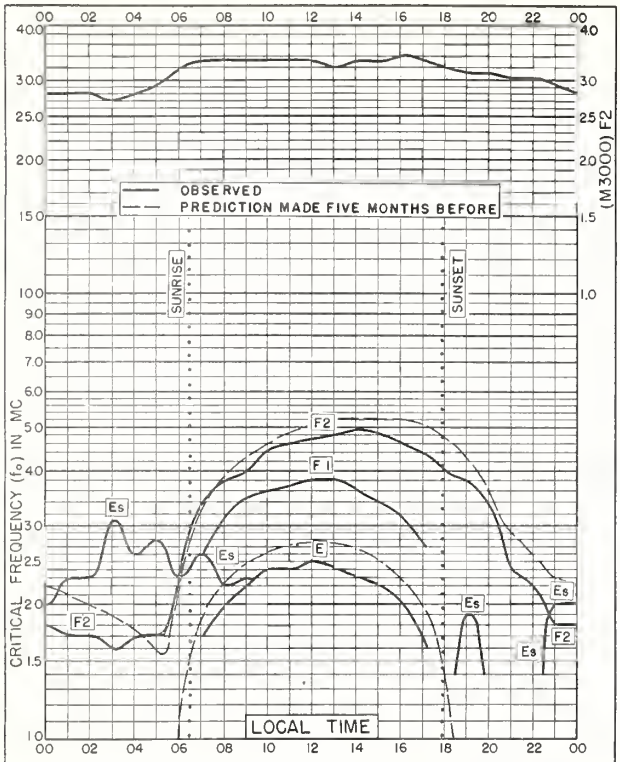


Fig. 13. UPSALA, SWEDEN
59.8°N, 17.6°E MARCH 1953

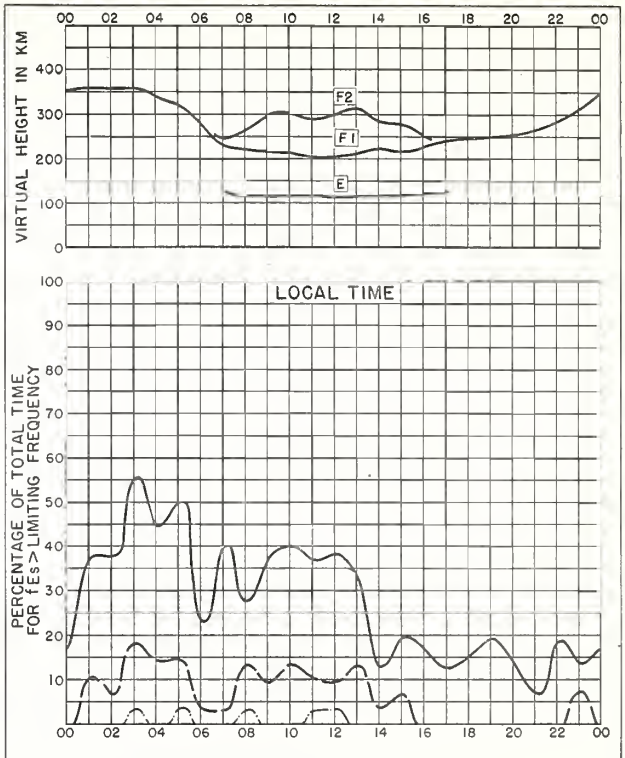


Fig. 14. UPSALA, SWEDEN MARCH 1953

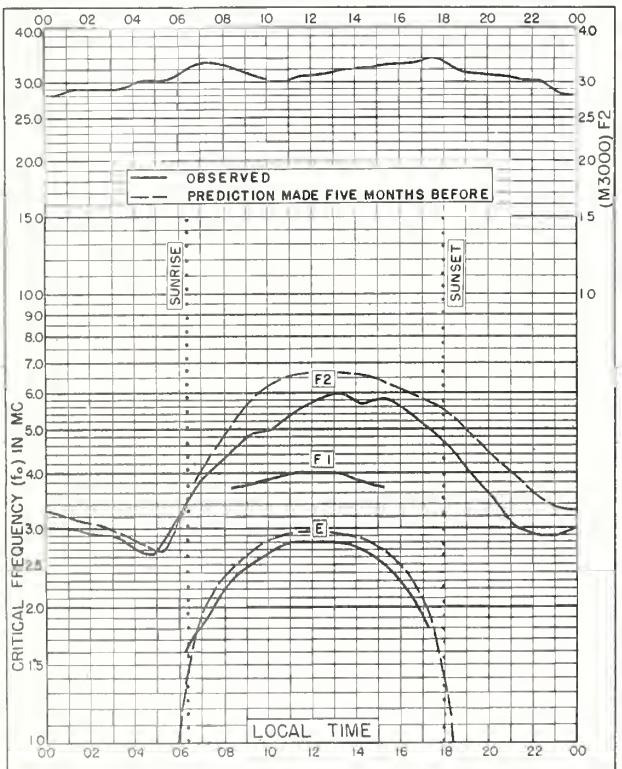


Fig. 15. ADAK, ALASKA
51.9°N, 176.6°W MARCH 1953

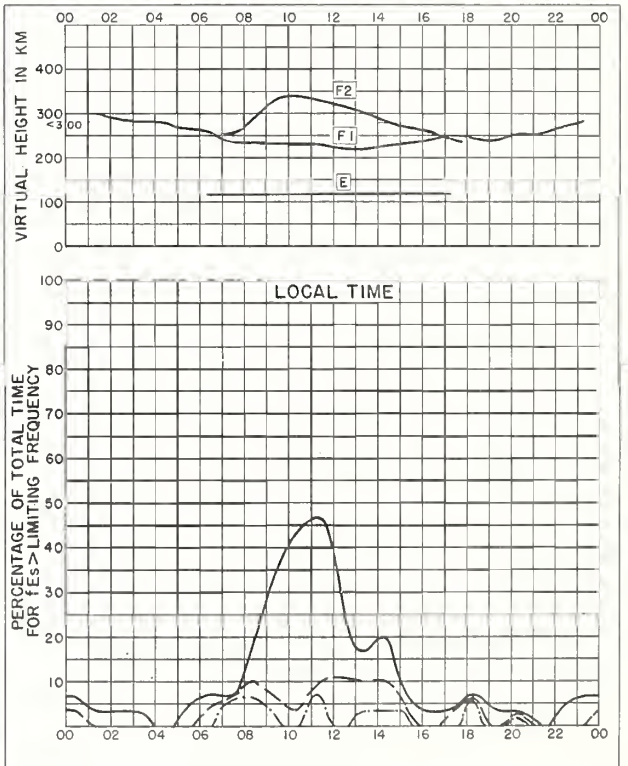


Fig. 16. ADAK, ALASKA MARCH 1953

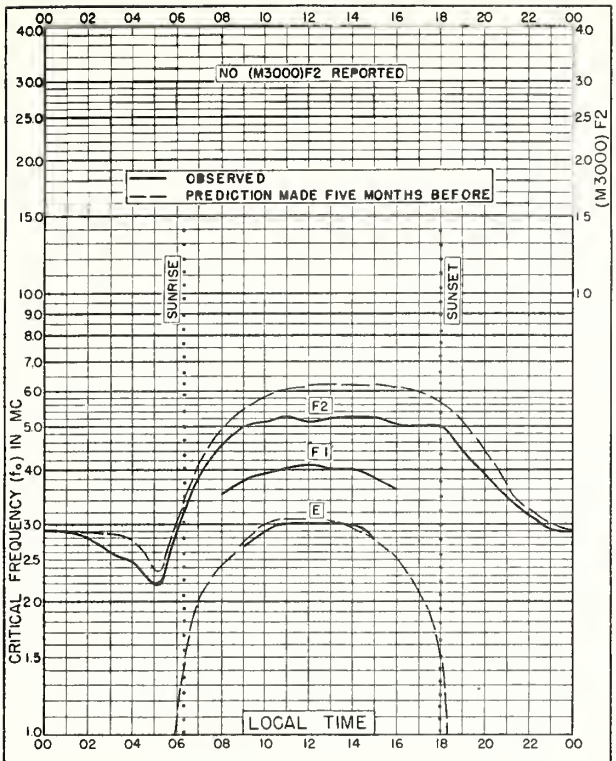


Fig.17. GRAZ, AUSTRIA
47.1°N, 15.5°E MARCH 1953

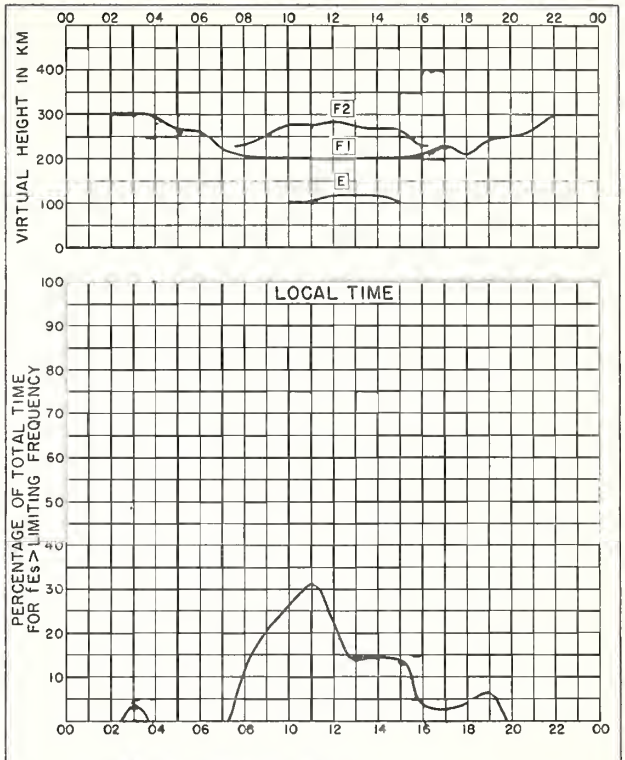


Fig.18. GRAZ, AUSTRIA MARCH 1953

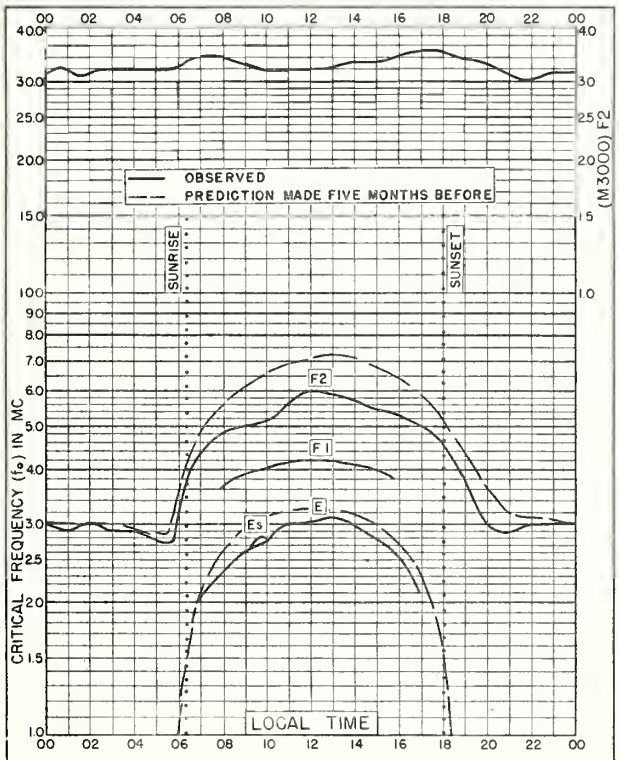


Fig.19. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W MARCH 1953

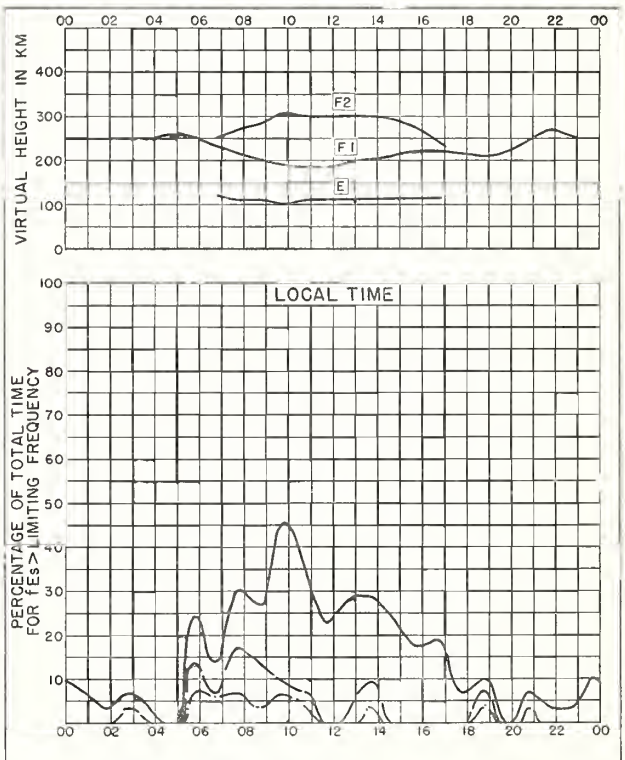


Fig.20. SAN FRANCISCO, CALIFORNIA MARCH 1953

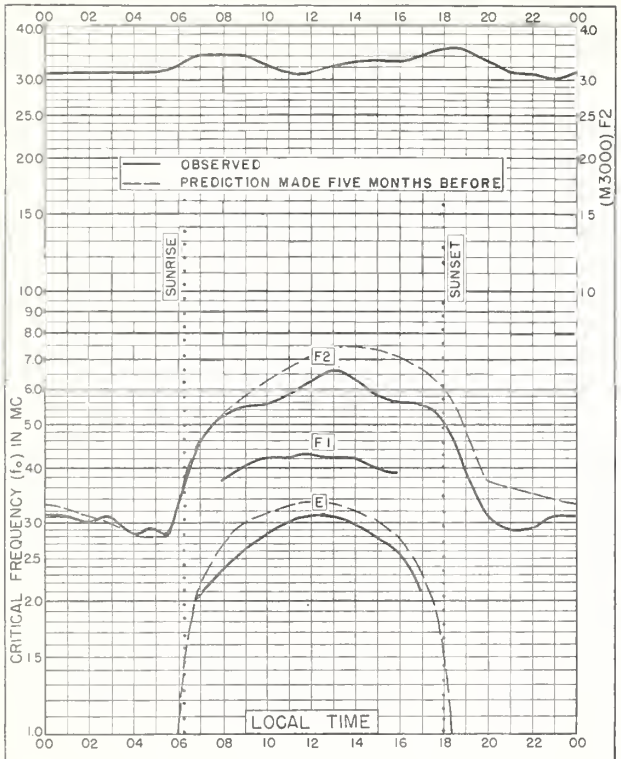


Fig. 21. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MARCH 1953

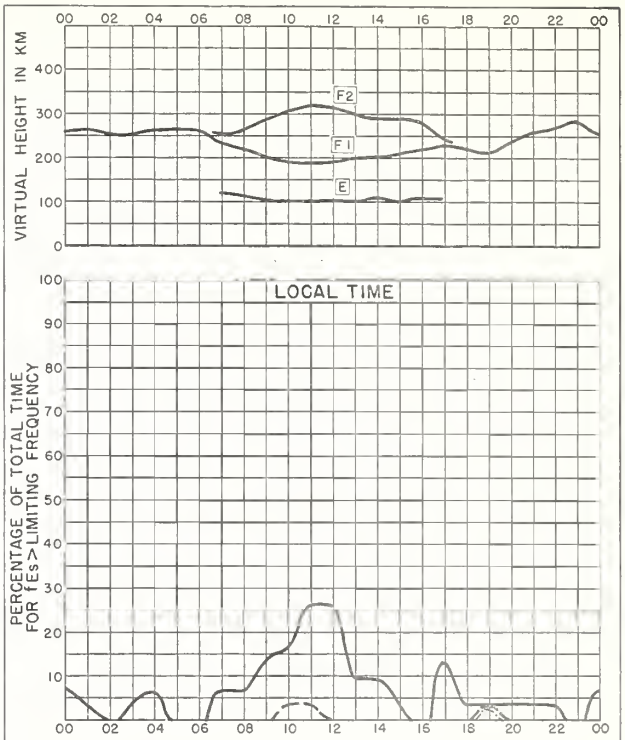


Fig. 22. WHITE SANDS, NEW MEXICO MARCH 1953

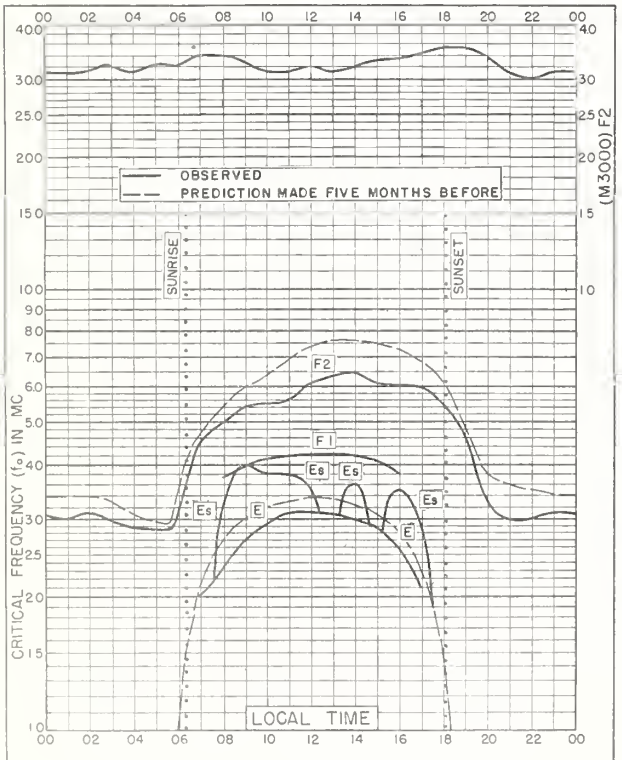


Fig. 23. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W MARCH 1953

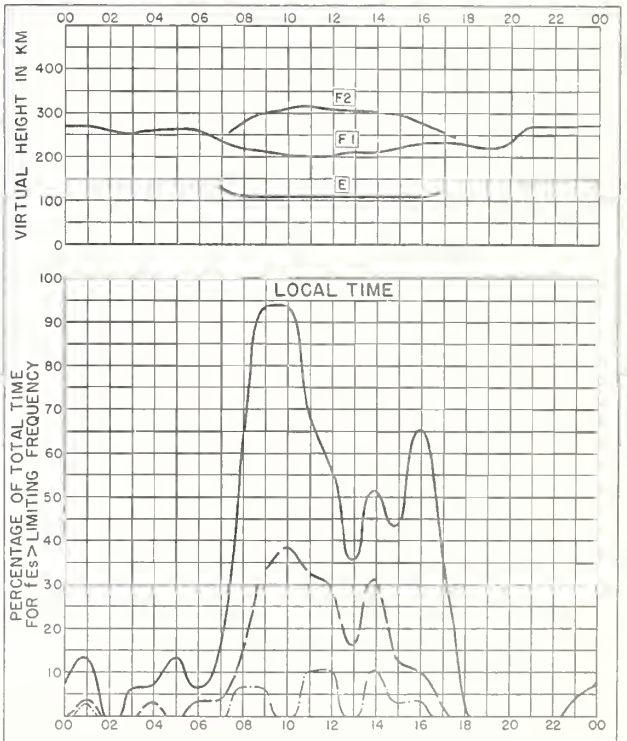


Fig. 24. BATON ROUGE, LOUISIANA MARCH 1953

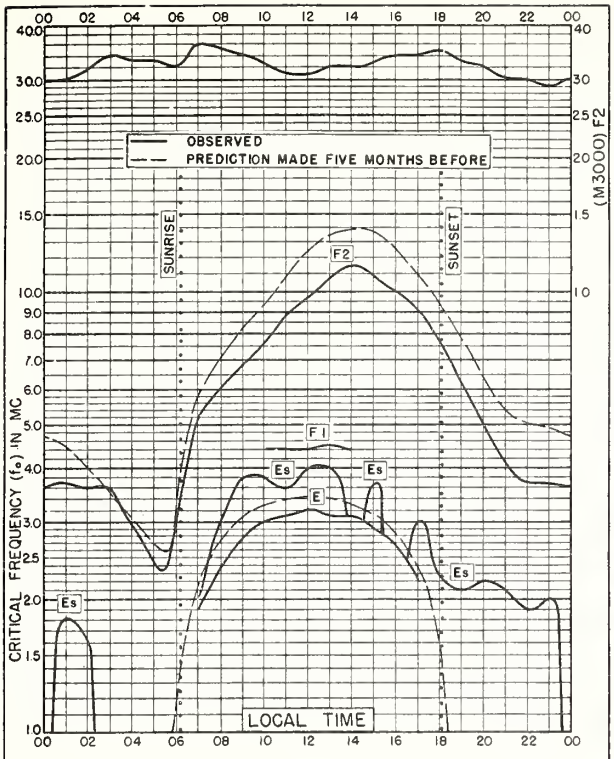


Fig. 25. OKINAWA I.
26.3°N, 127.8°E MARCH 1953

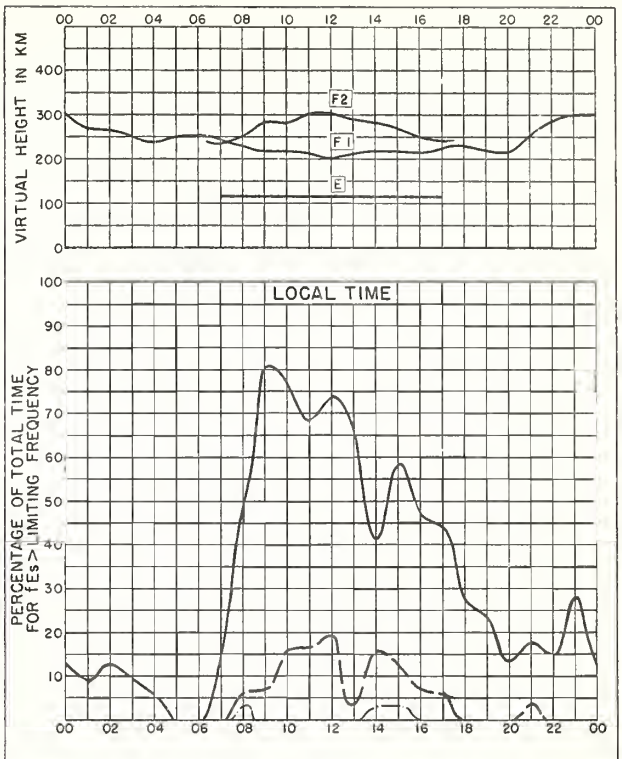


Fig. 26. OKINAWA I. MARCH 1953

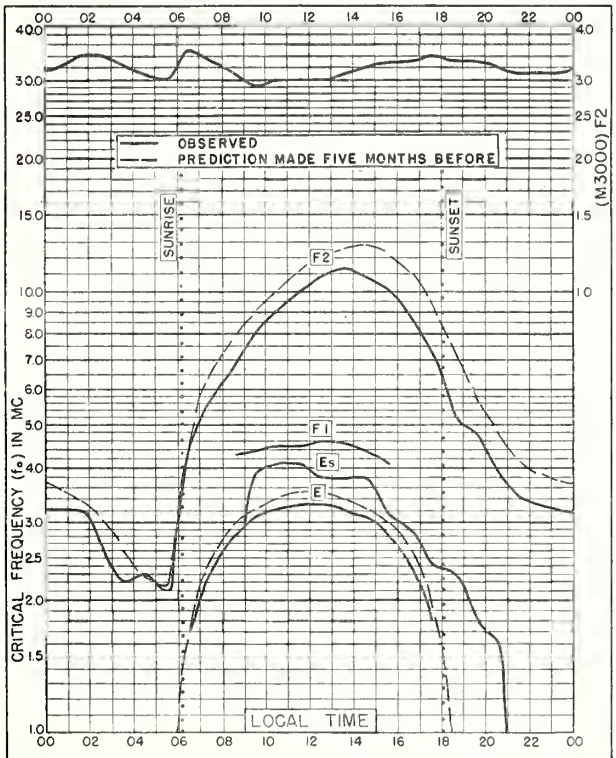


Fig. 27. MAUI, HAWAII
20.8°N, 156.5° W MARCH 1953

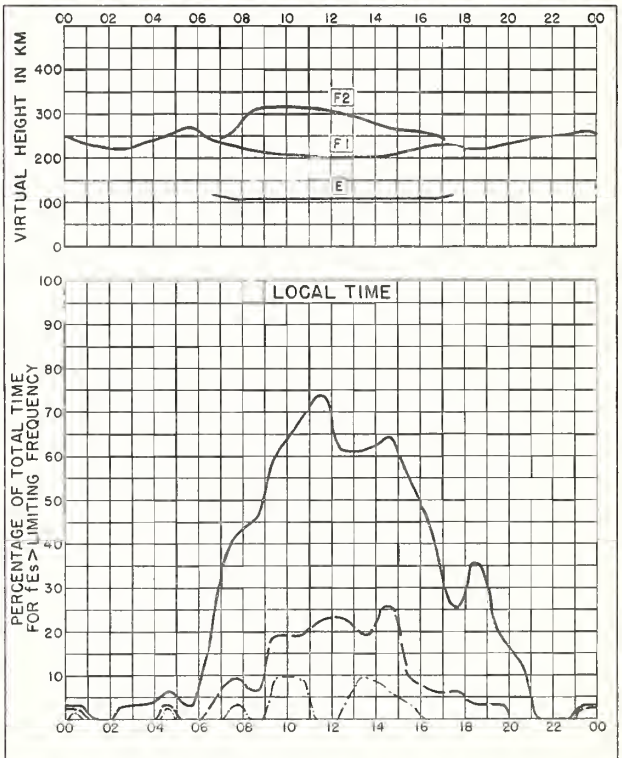


Fig. 28. MAUI, HAWAII MARCH 1953

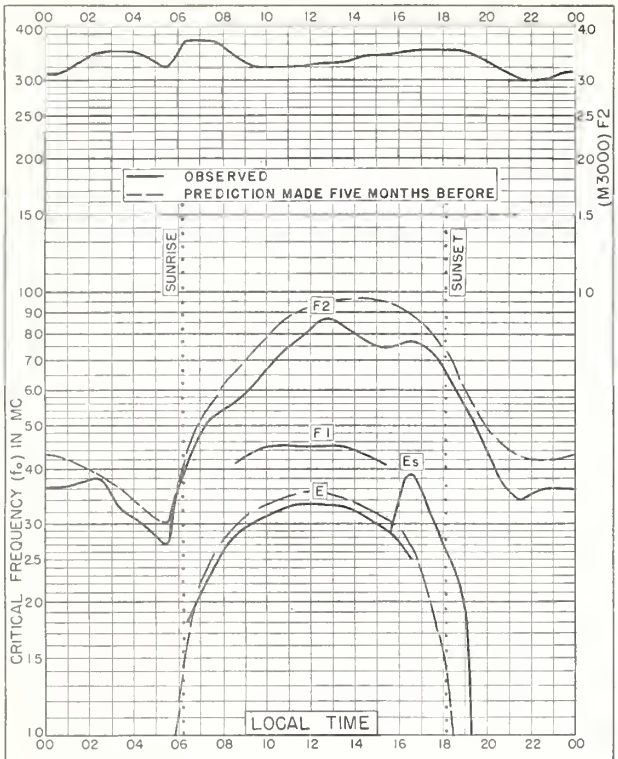


Fig. 29. PUERTO RICO, W.I.
18.5°N, 67.2°W MARCH 1953

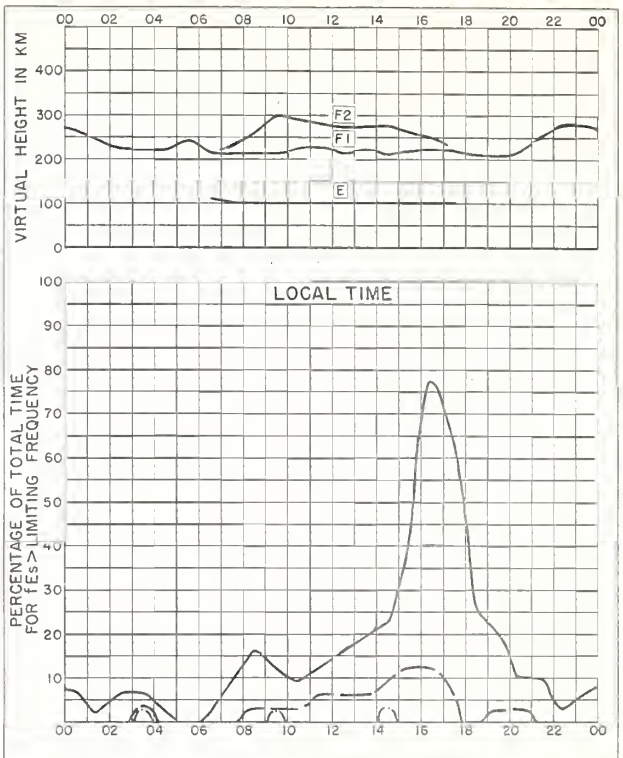


Fig. 30. PUERTO RICO, W.I. MARCH 1953

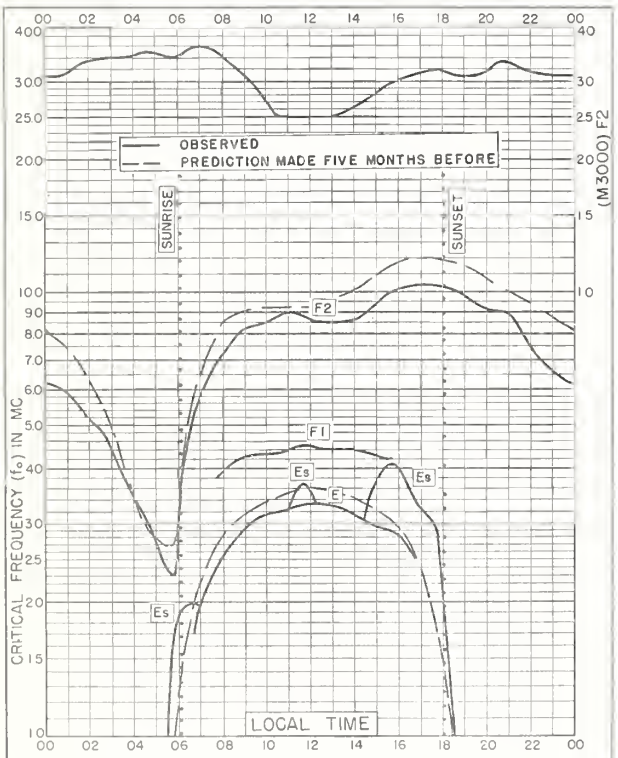


Fig. 31 GUAM I.
13.6°N, 144.9°E MARCH 1953

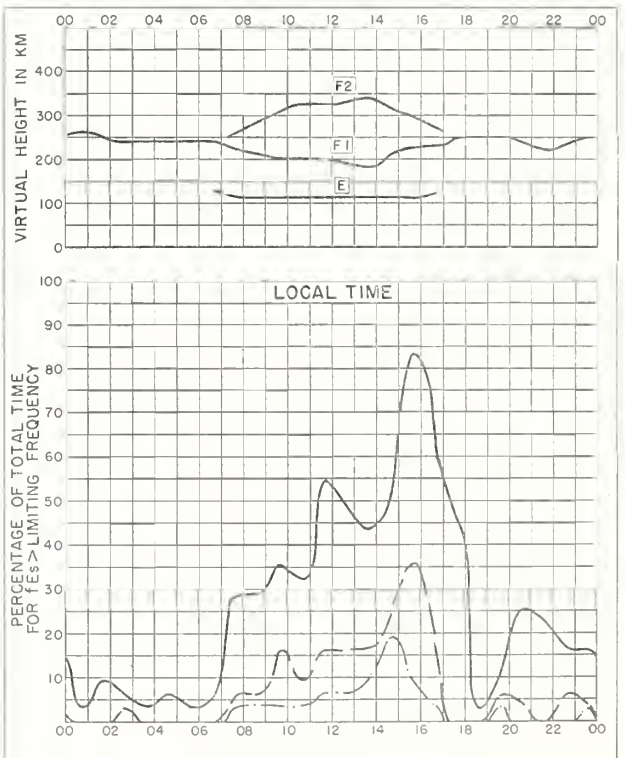


Fig. 32. GUAM I. MARCH 1953

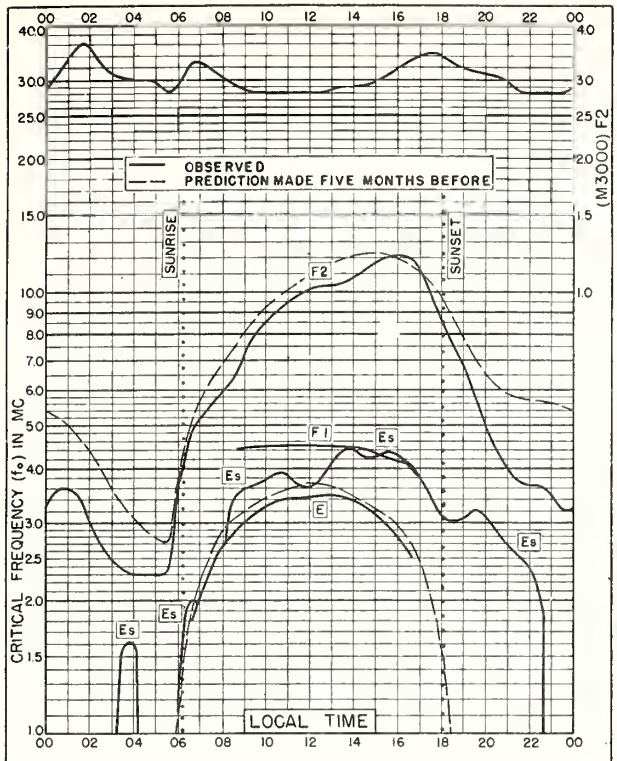


Fig. 33. PANAMA CANAL ZONE
9.4°N, 79.9°W MARCH 1953

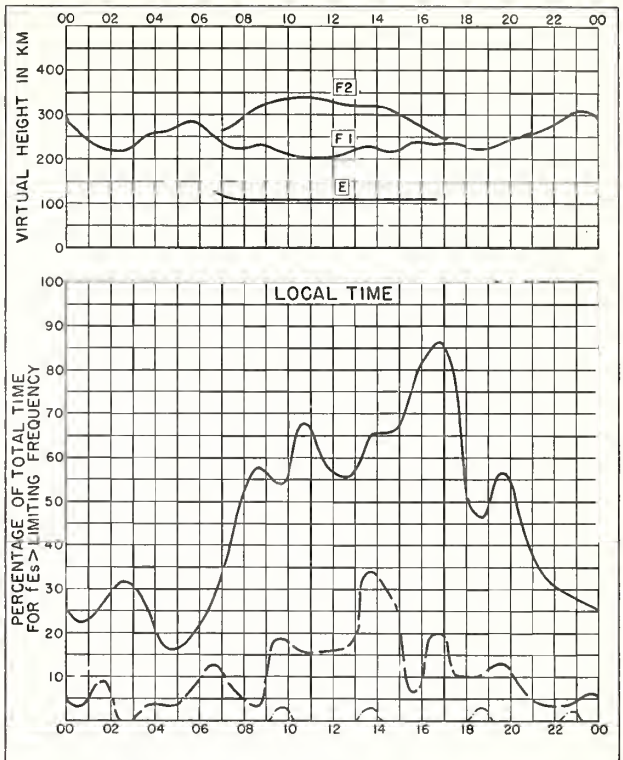


Fig. 34. PANAMA CANAL ZONE MARCH 1953

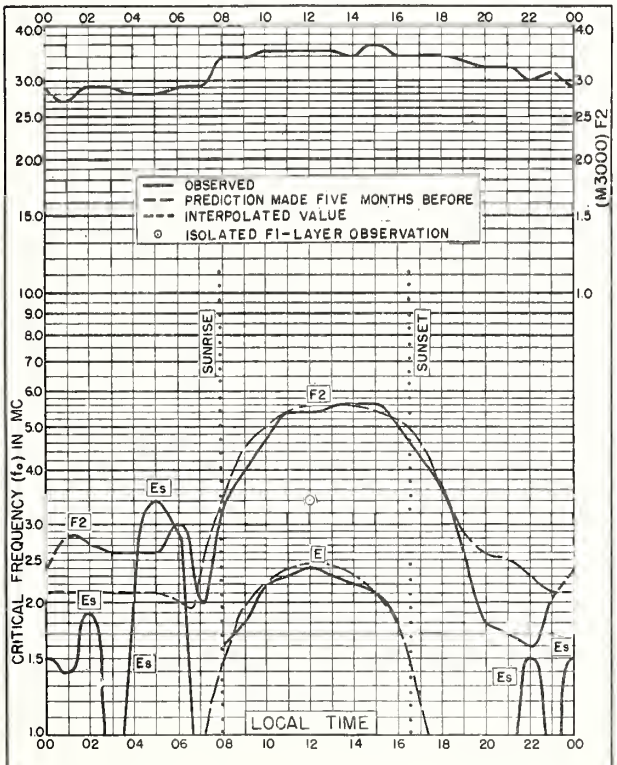


Fig. 35. ANCHORAGE, ALASKA
61.2°N, 149.9°W FEBRUARY 1953

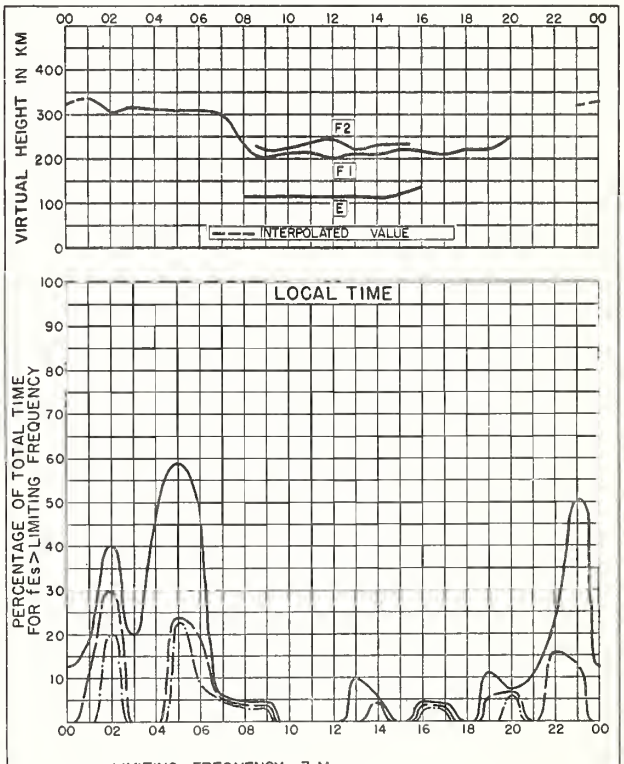


Fig. 36. ANCHORAGE, ALASKA FEBRUARY 1953

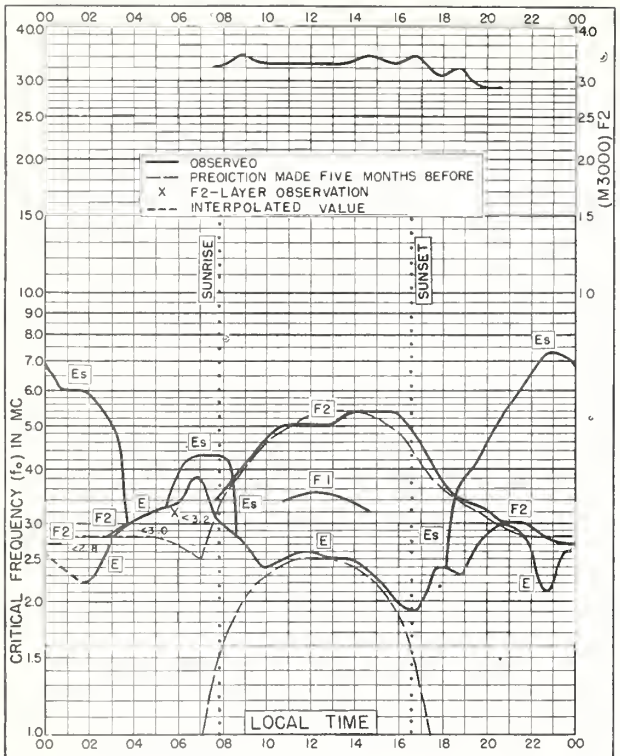


Fig. 37. CHURCHILL, CANADA
58.8°N, 94.2°W FEBRUARY 1953

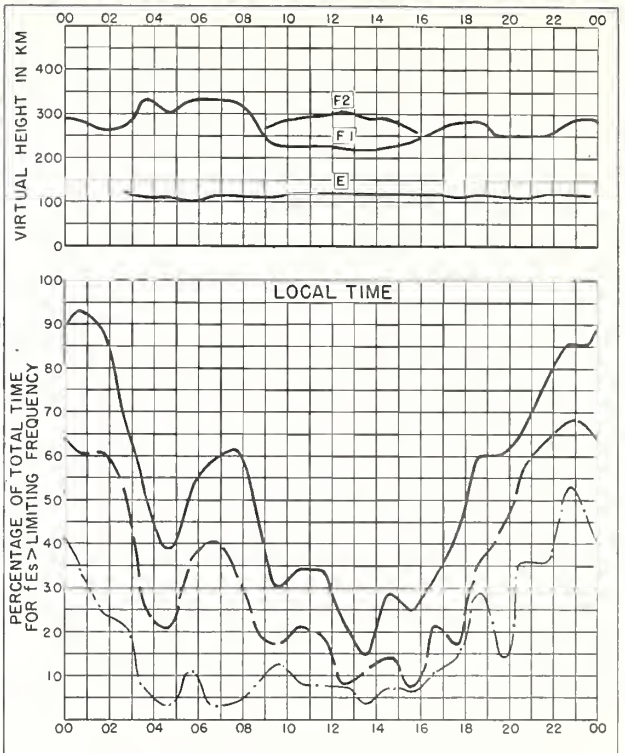


Fig. 38. CHURCHILL, CANADA FEBRUARY 1953

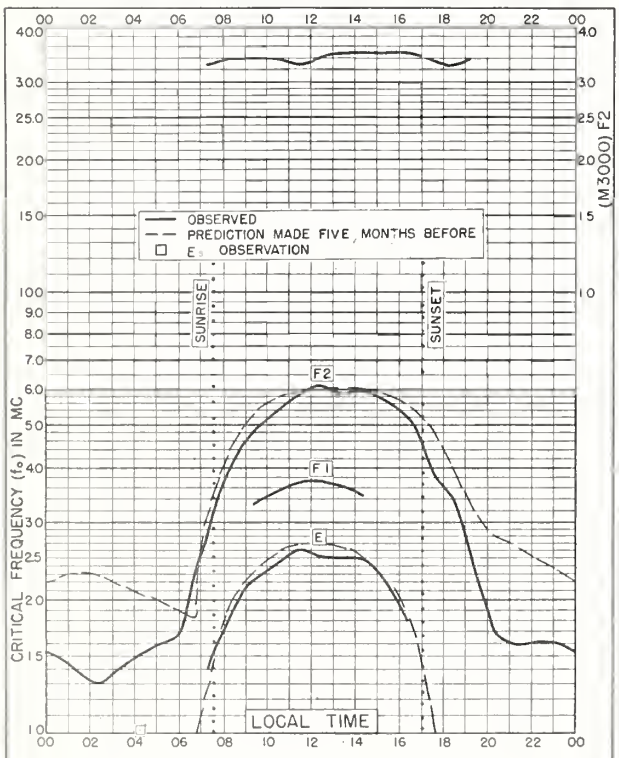


Fig 39. PRINCE RUPERT, CANADA
54.3°N, 130.3°W FEBRUARY 1953

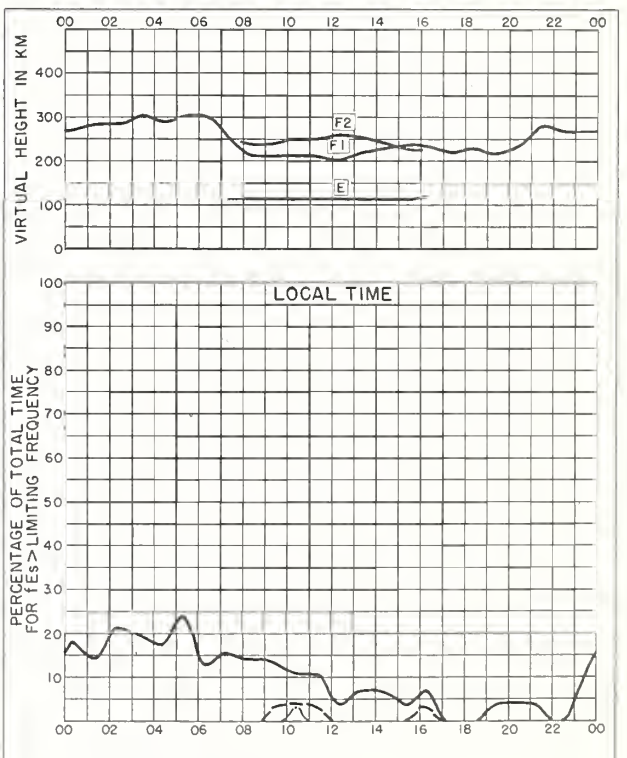


Fig. 40. PRINCE RUPERT, CANADA FEBRUARY 1953

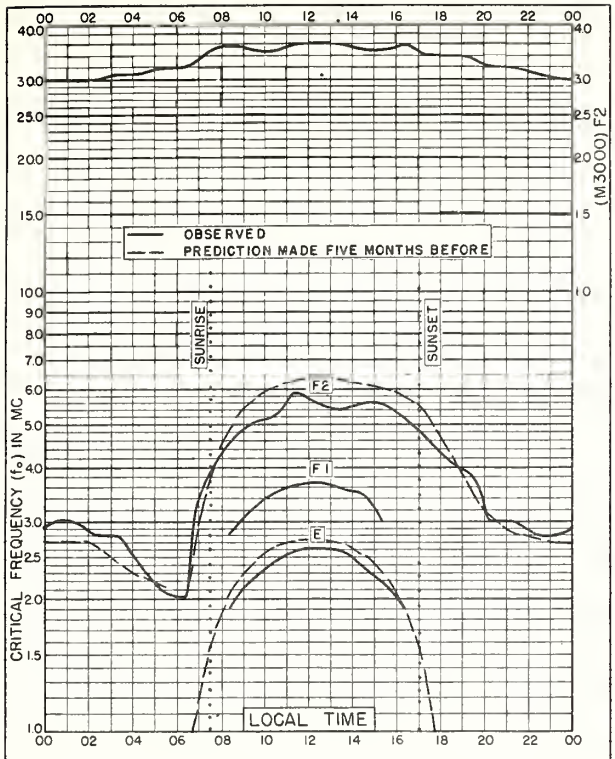


Fig. 41. DE BILT, HOLLAND
52.1°N, 5.2°E FEBRUARY 1953

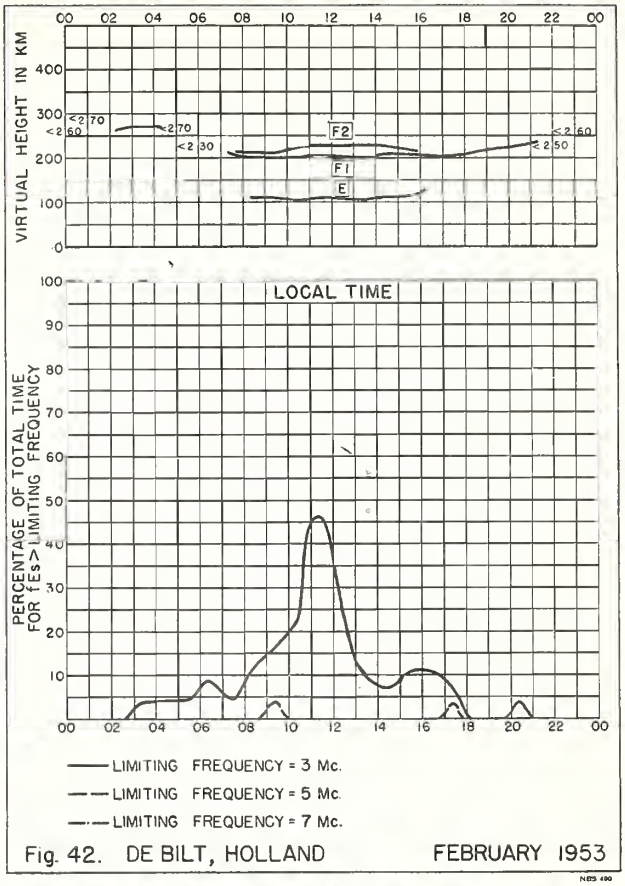


Fig. 42. DE BILT, HOLLAND FEBRUARY 1953

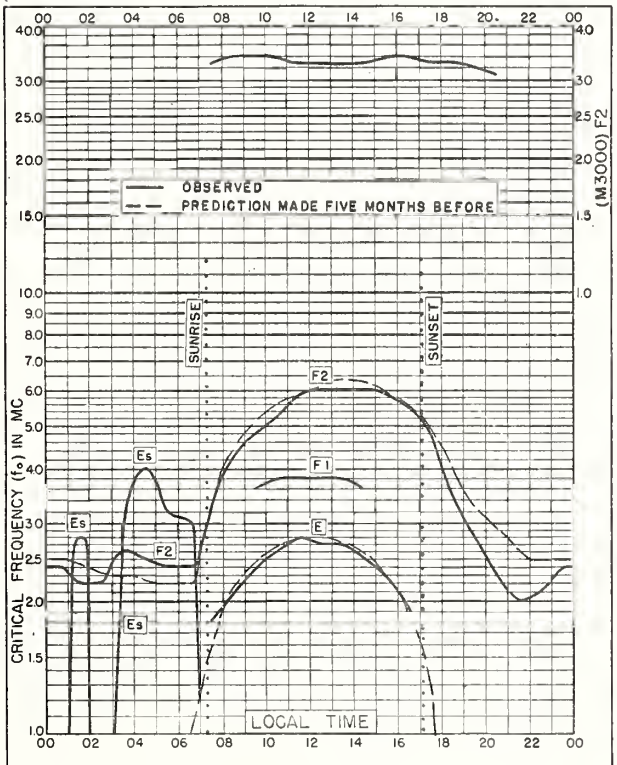


Fig. 43. WINNIPEG, CANADA
49.9°N, 97.4° W FEBRUARY 1953

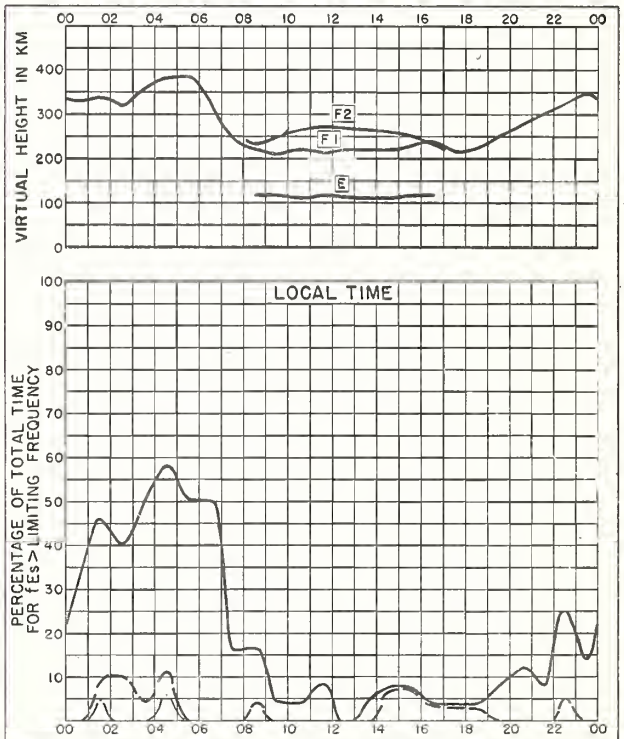


Fig. 44. WINNIPEG, CANADA FEBRUARY 1953

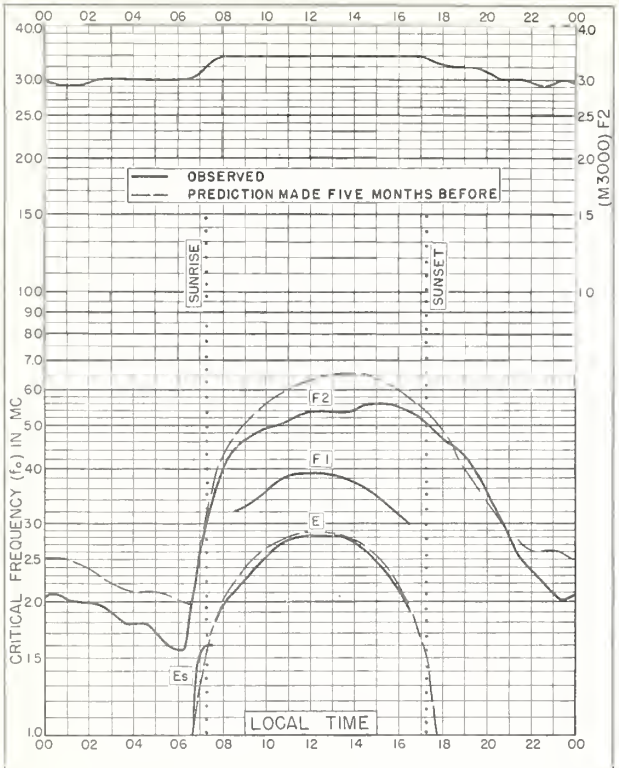
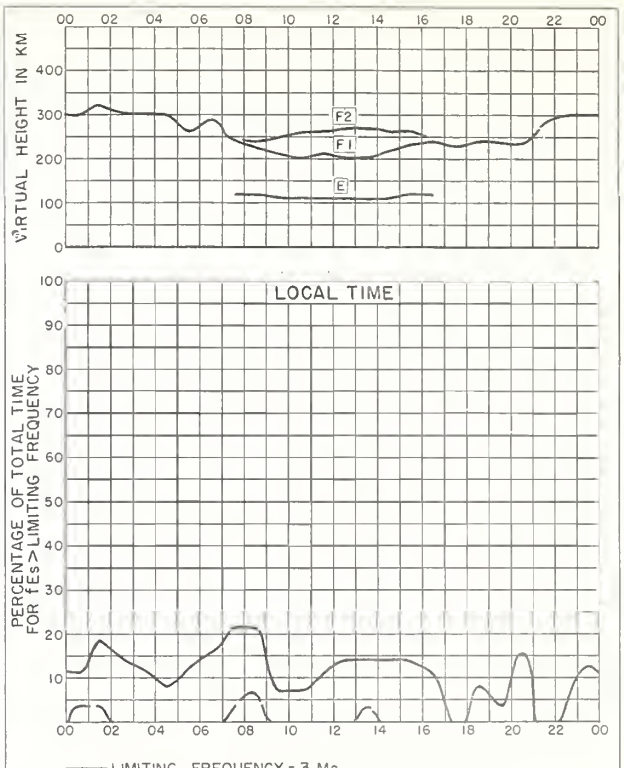


Fig. 45. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W FEBRUARY 1953



FEBRUARY 1953

Fig. 46. ST. JOHN'S, NEWFOUNDLAND

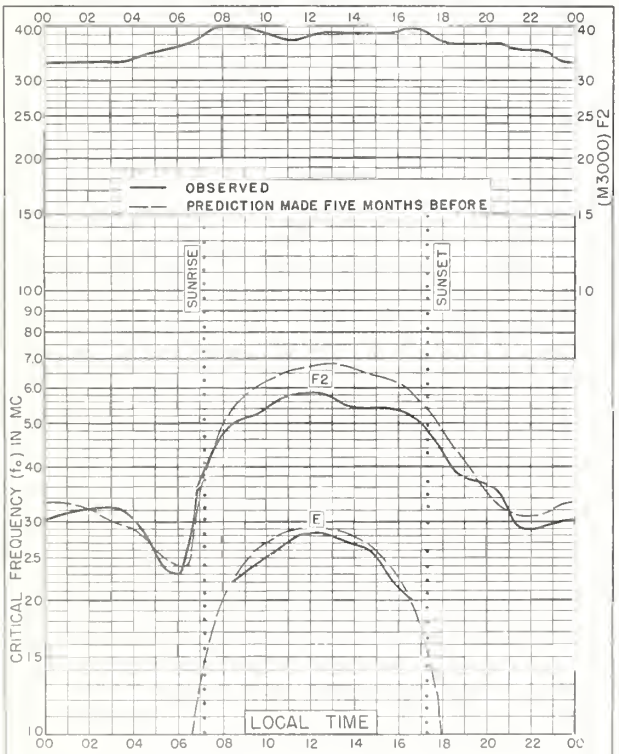
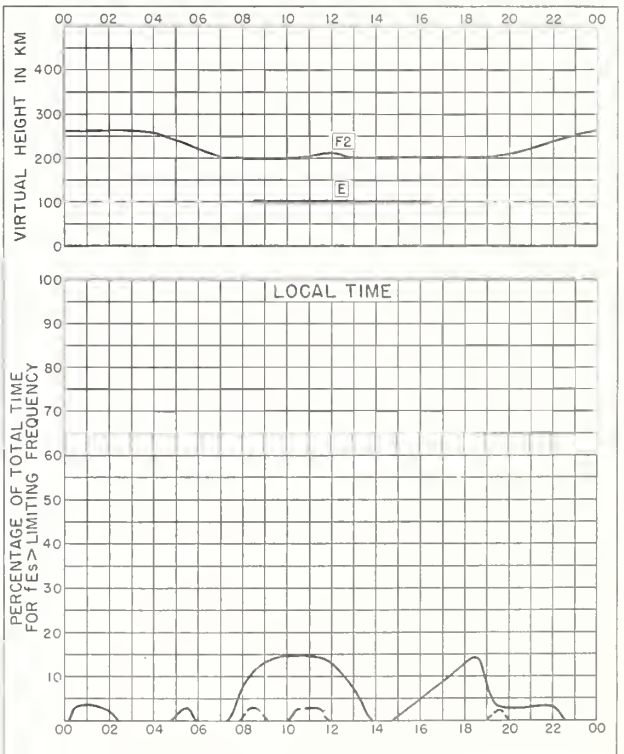


Fig. 47. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E FEBRUARY 1953



FEBRUARY 1953

Fig. 48. SCHWARZENBURG, SWITZERLAND

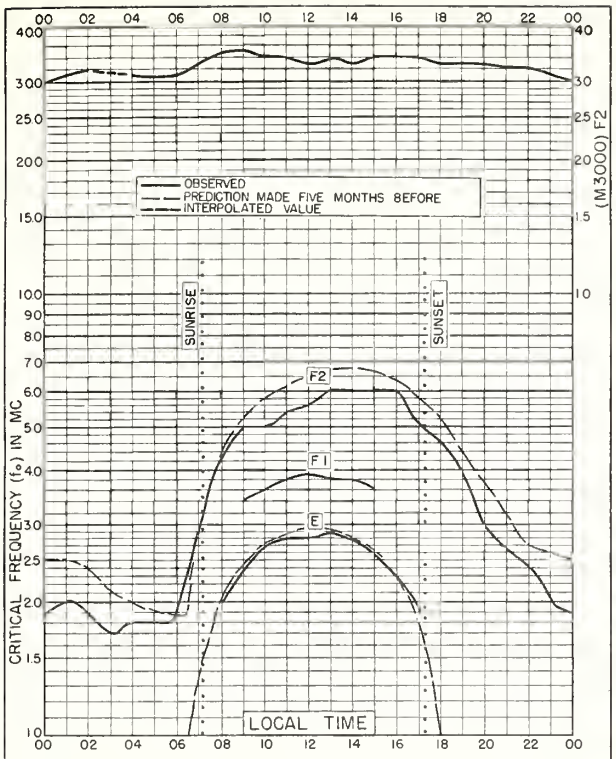


Fig. 49. OTTAWA, CANADA
45.4°N, 75.7°W FEBRUARY 1953

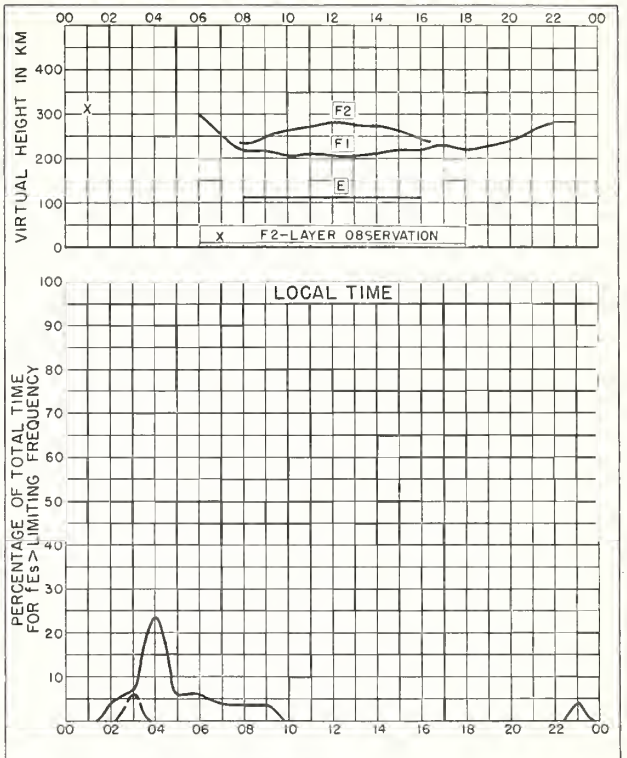


Fig. 50. OTTAWA, CANADA FEBRUARY 1953

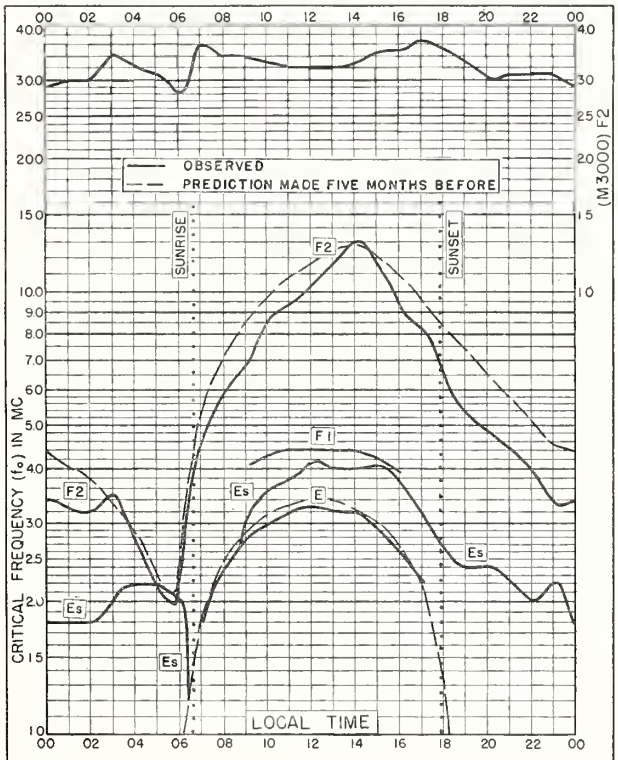


Fig. 51. FORMOSA, CHINA
25.0°N, 121.5°E FEBRUARY 1953

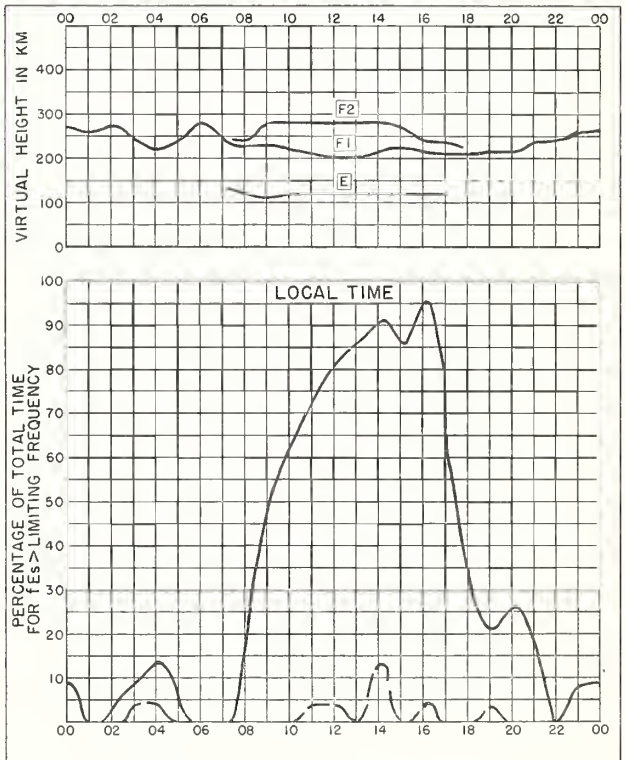


Fig. 52. FORMOSA, CHINA FEBRUARY 1953

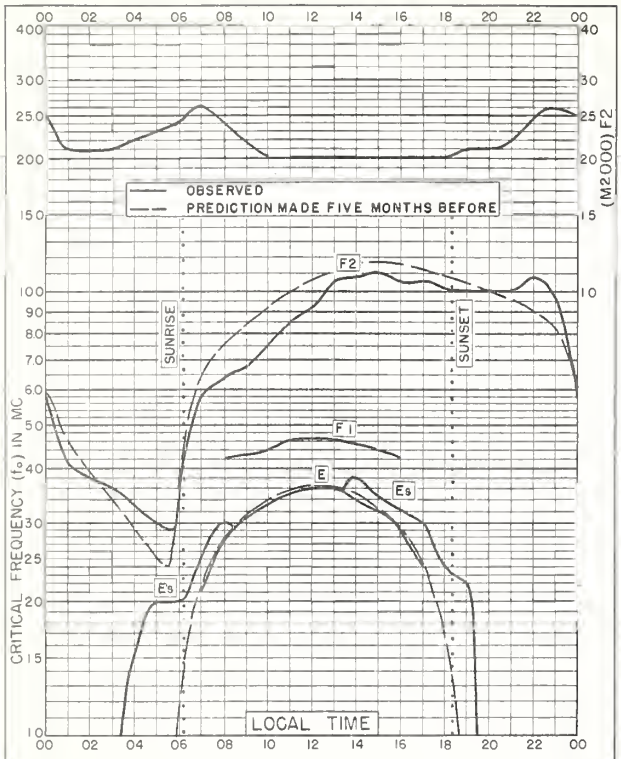
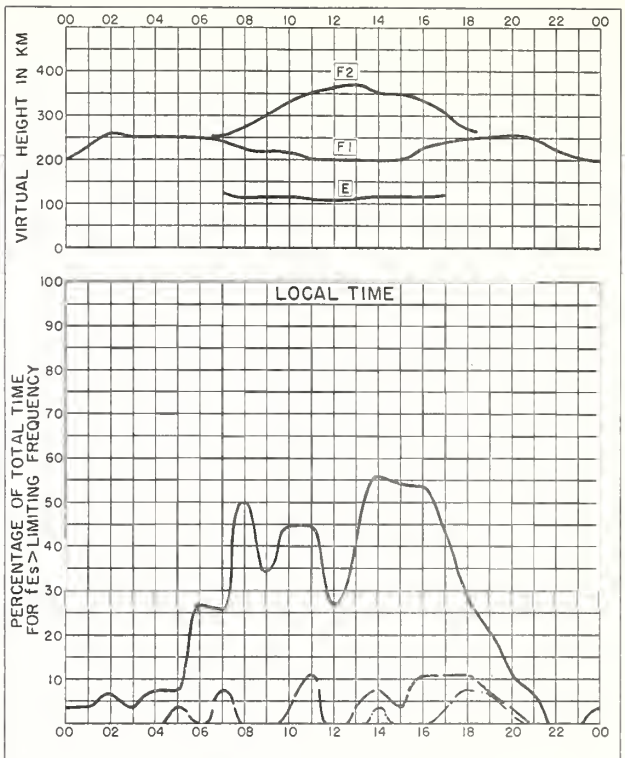


Fig. 53. LEOPOLDVILLE, BELGIAN CONGO
4.3° S, 15.3°E FEBRUARY 1953



FEBRUARY 1953

Fig. 54. LEOPOLDVILLE, BELGIAN CONGO

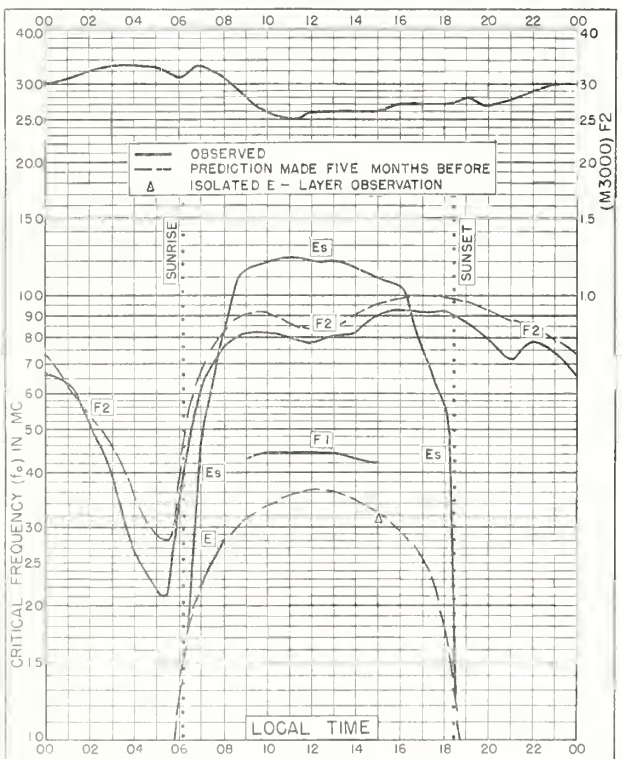


Fig. 55. HUANCAYO, PERU
12.0° S, 75.3°W FEBRUARY 1953

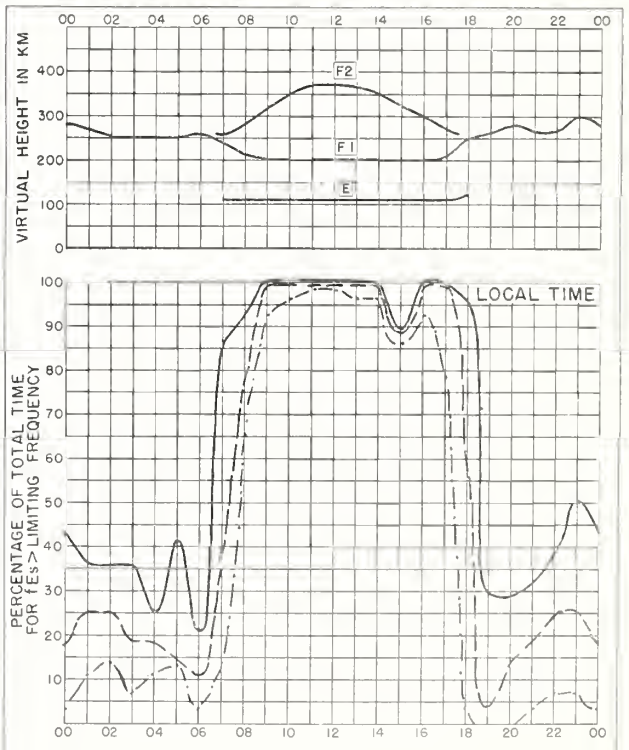


Fig. 56. HUANCAYO, PERU FEBRUARY 1953

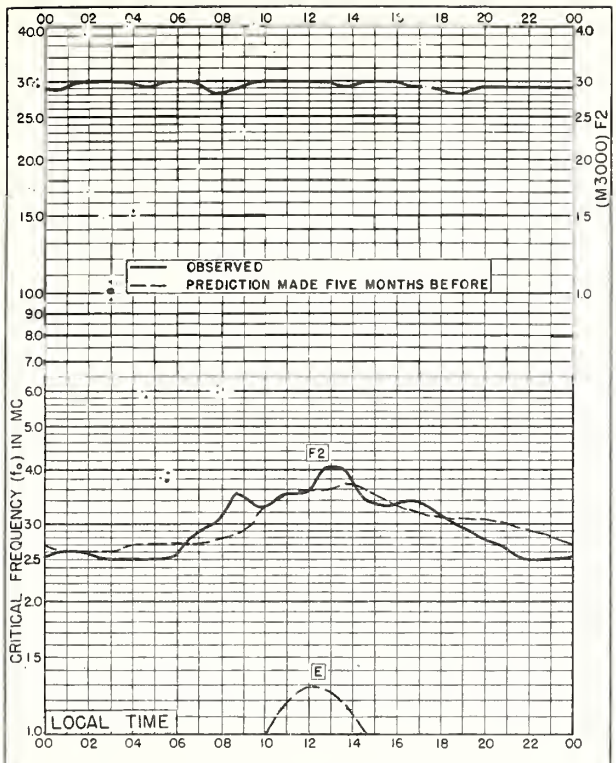


Fig. 57. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JANUARY 1953

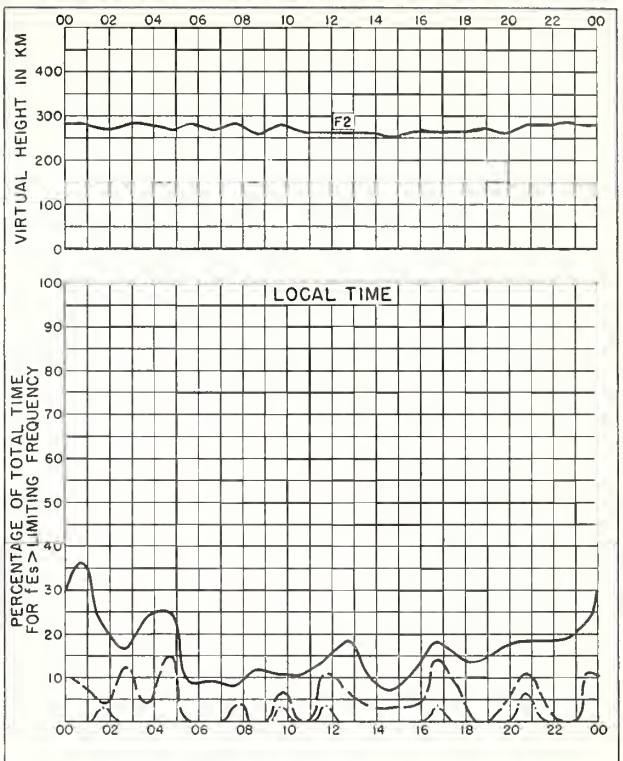


Fig. 58. RESOLUTE BAY, CANADA JANUARY 1953

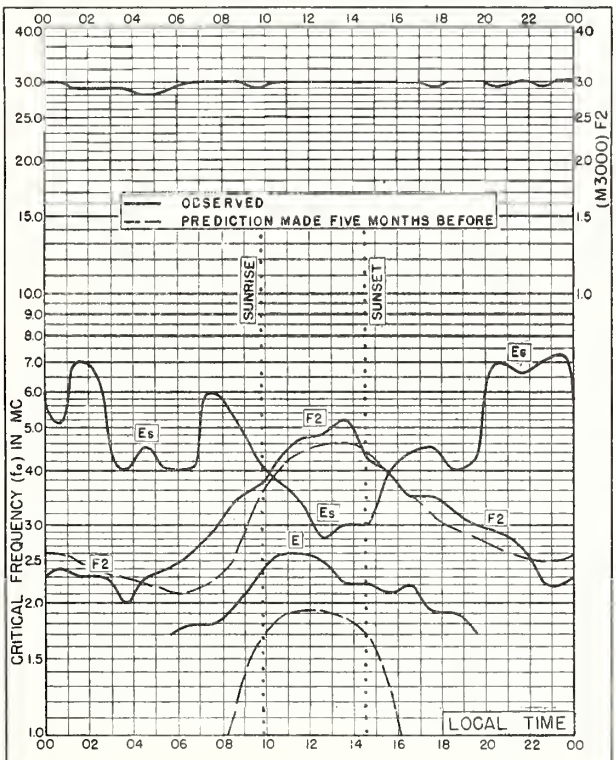


Fig. 59. BAKER LAKE, CANADA
64.3°N, 96.0°W JANUARY 1953

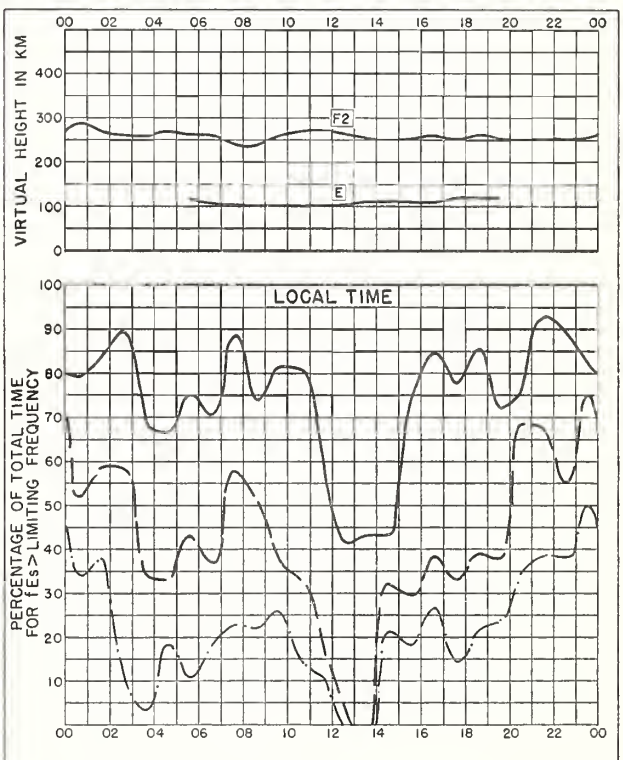


Fig. 60. BAKER LAKE, CANADA JANUARY 1953

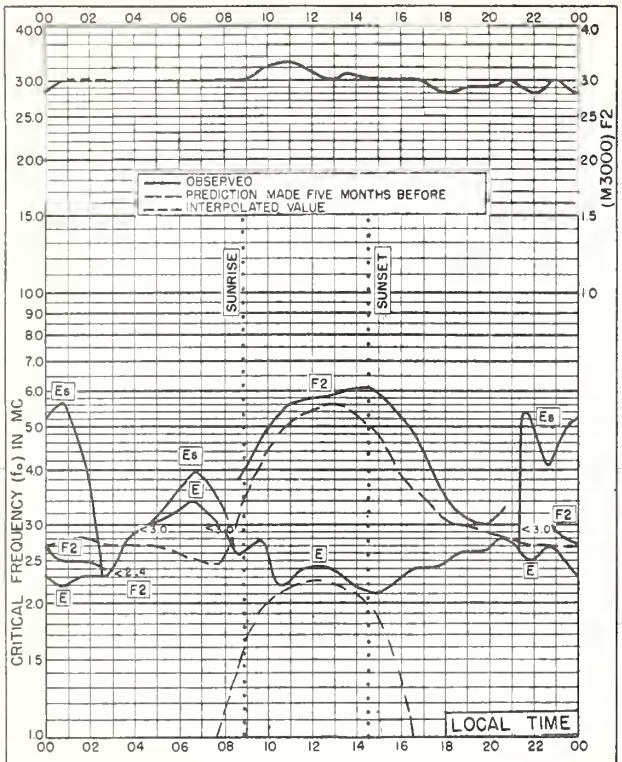


Fig. 61. CHURCHILL, CANADA
58.8°N, 94.2°W JANUARY 1953

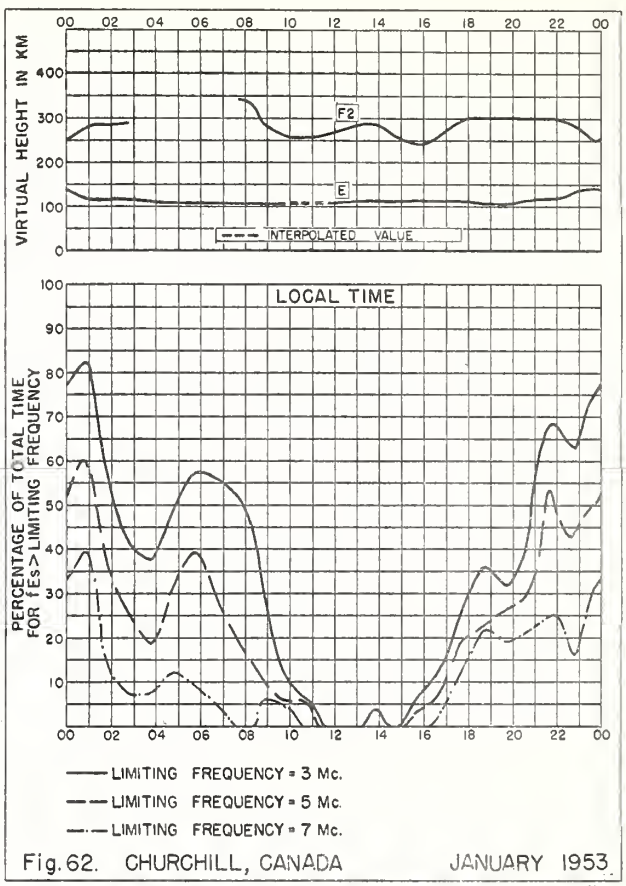


Fig. 62. CHURCHILL, CANADA JANUARY 1953

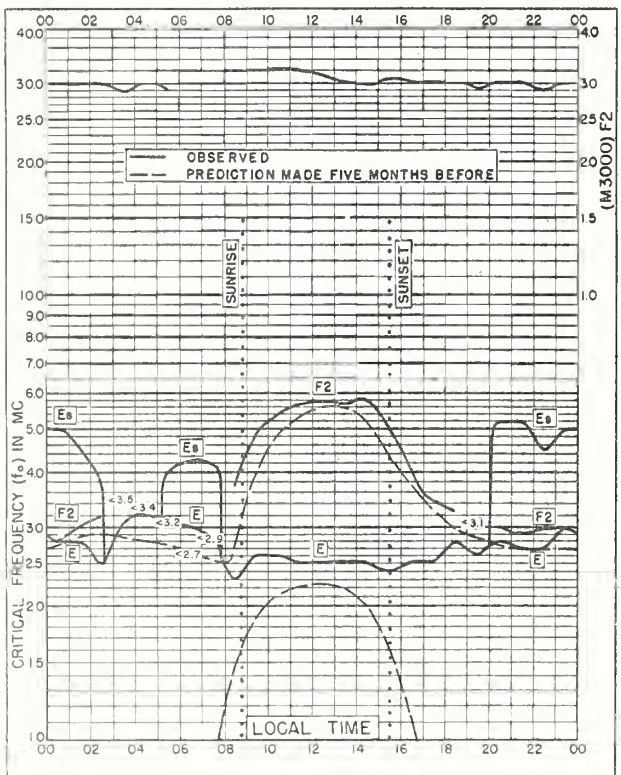


Fig. 63. FORT CHIMO, CANADA
58.1°N, 68.3°W JANUARY 1953

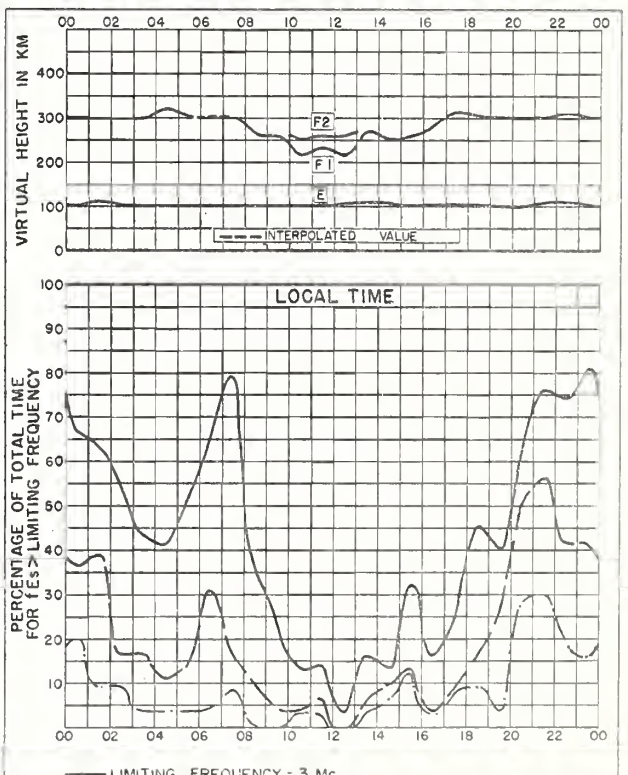


Fig. 64. FORT CHIMO, CANADA JANUARY 1953

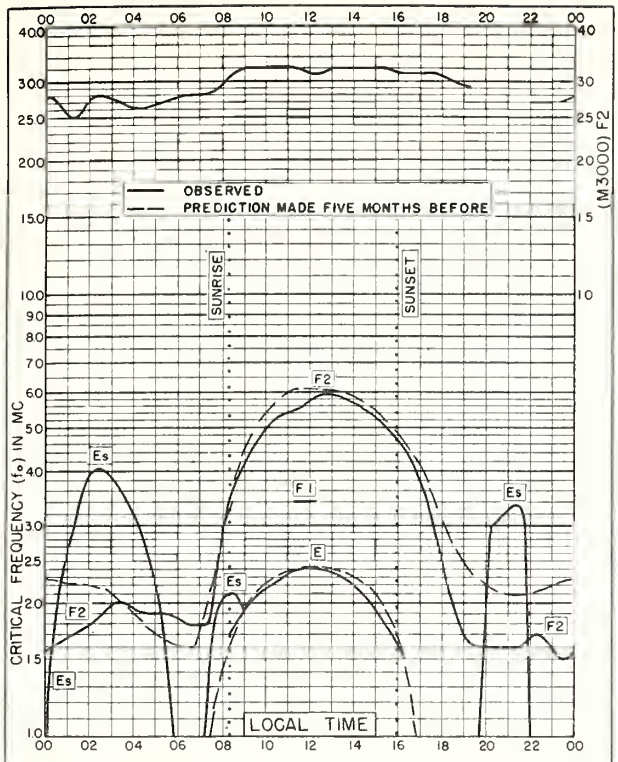


Fig. 65. PRINCE RUPERT, CANADA
54.3°N, 130.3°W JANUARY 1953

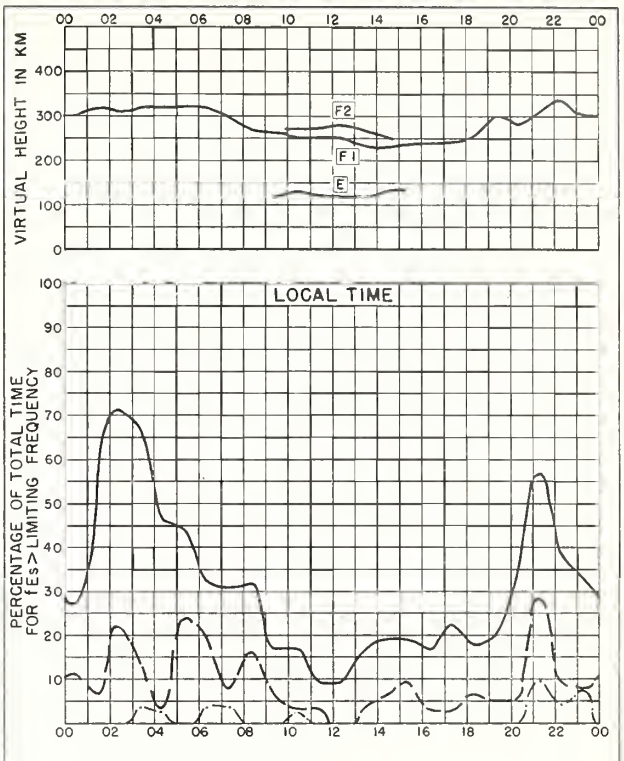


Fig. 66. PRINCE RUPERT, CANADA JANUARY 1953

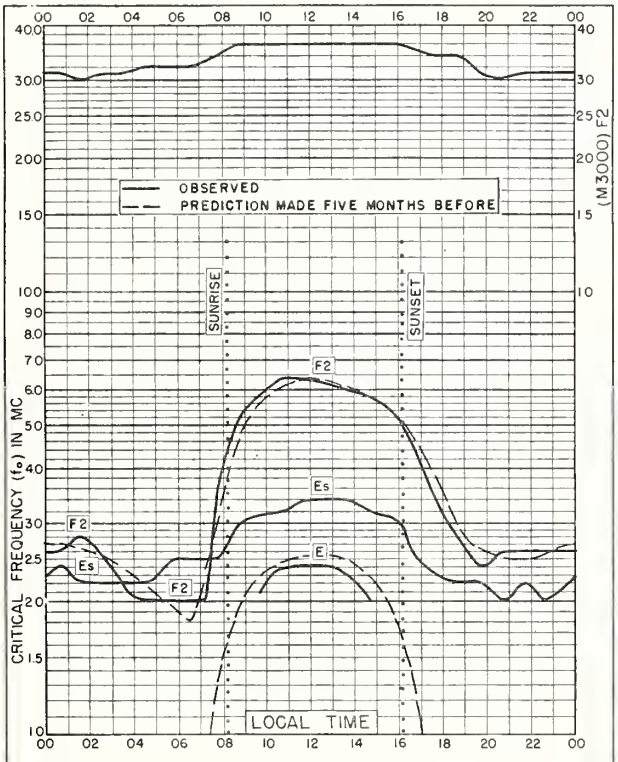


Fig. 67. LINDAU / HARZ, GERMANY
51.6°N, 10.1°E JANUARY 1953

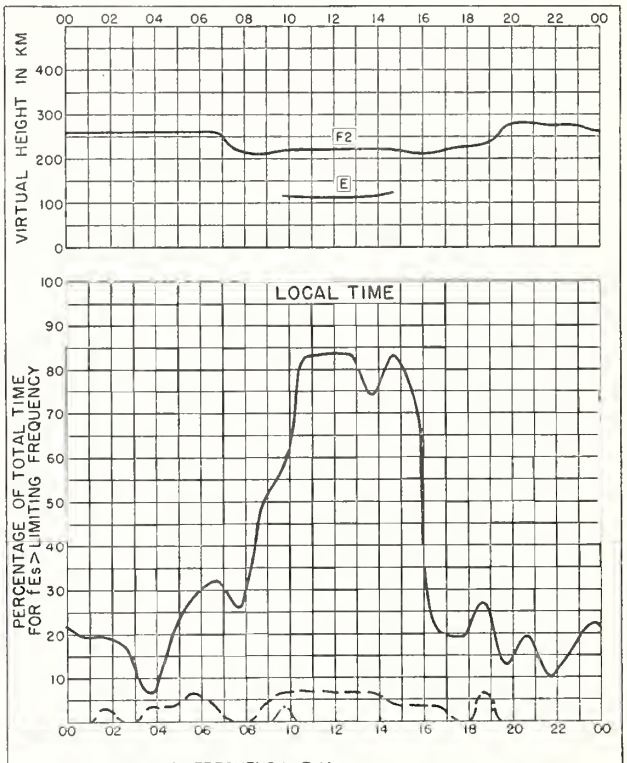


Fig. 68. LINDAU / HARZ, GERMANY JANUARY 1953

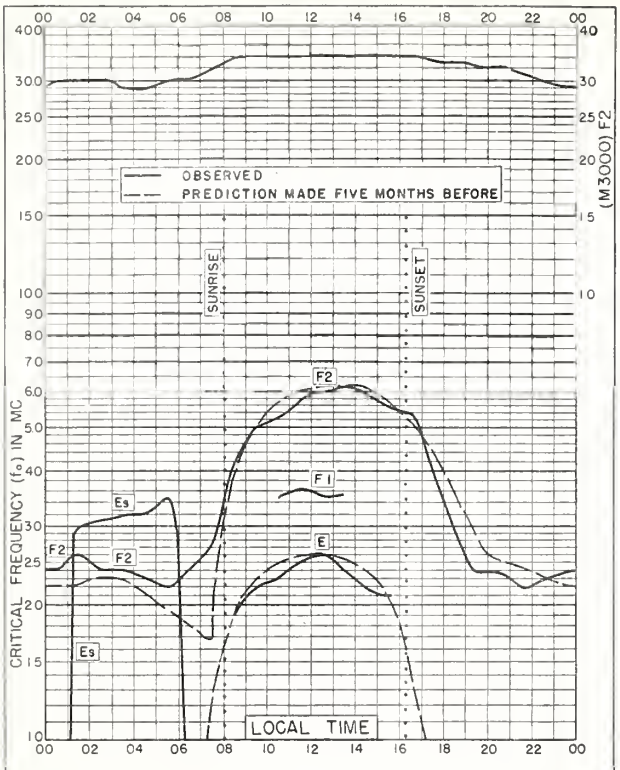


Fig. 69. WINNIPEG, CANADA
49.9°N, 97.4°W JANUARY 1953

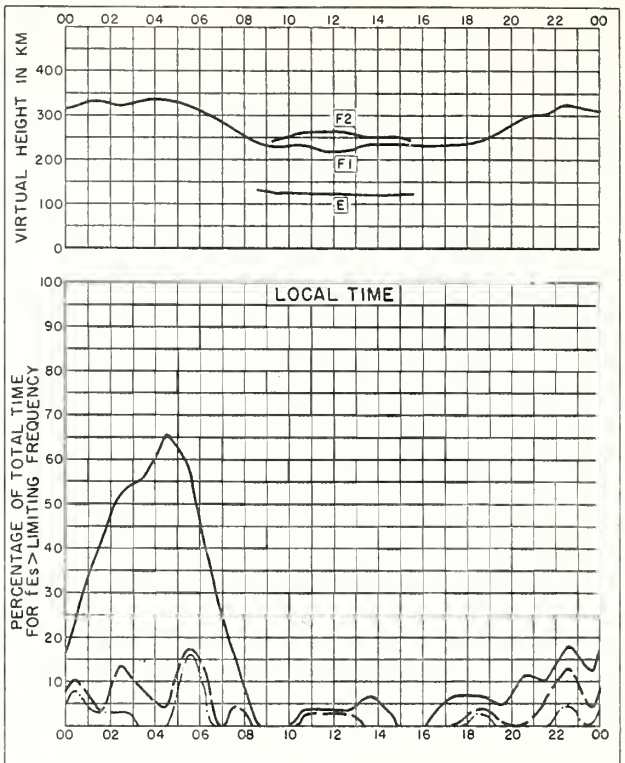


Fig. 70. WINNIPEG, CANADA JANUARY 1953

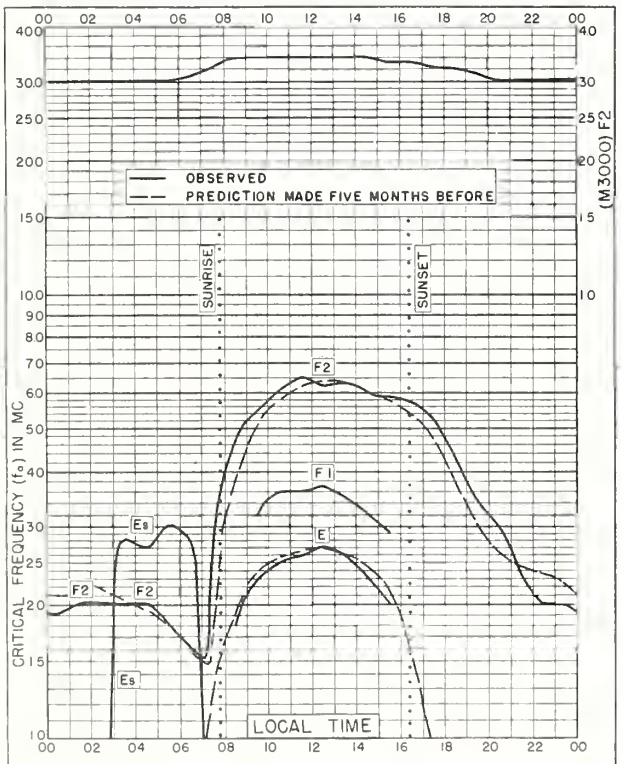


Fig. 71. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JANUARY 1953

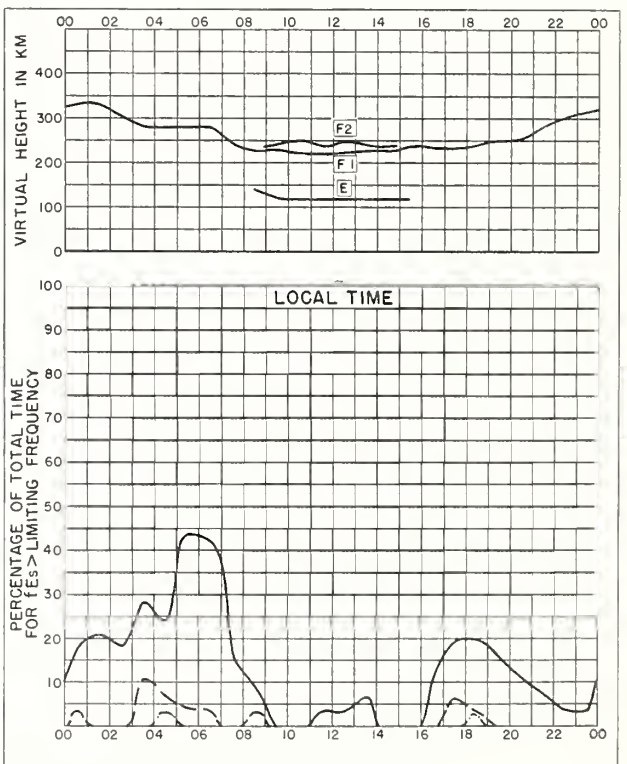


Fig. 72. ST. JOHN'S, NEWFOUNDLAND JANUARY 1953

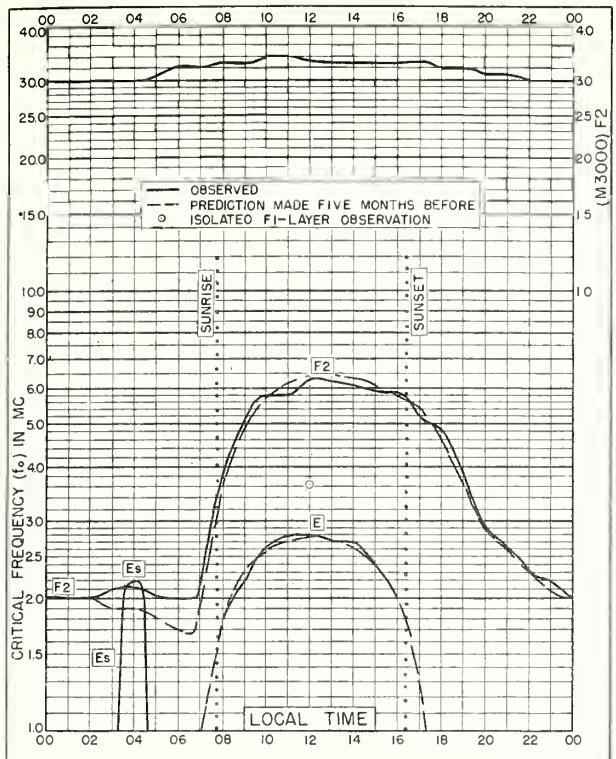


Fig. 73. OTTAWA, CANADA
45.4°N, 75.7°W JANUARY 1953

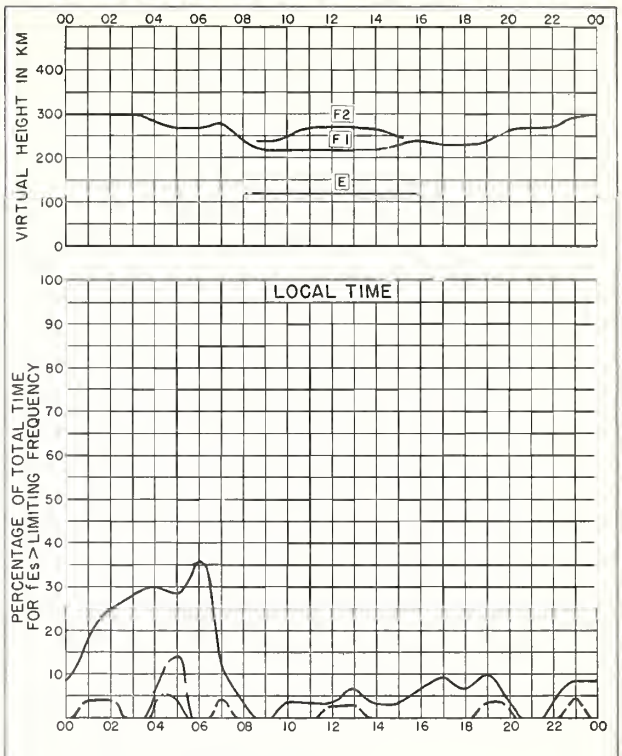


Fig. 74. OTTAWA, CANADA JANUARY 1953

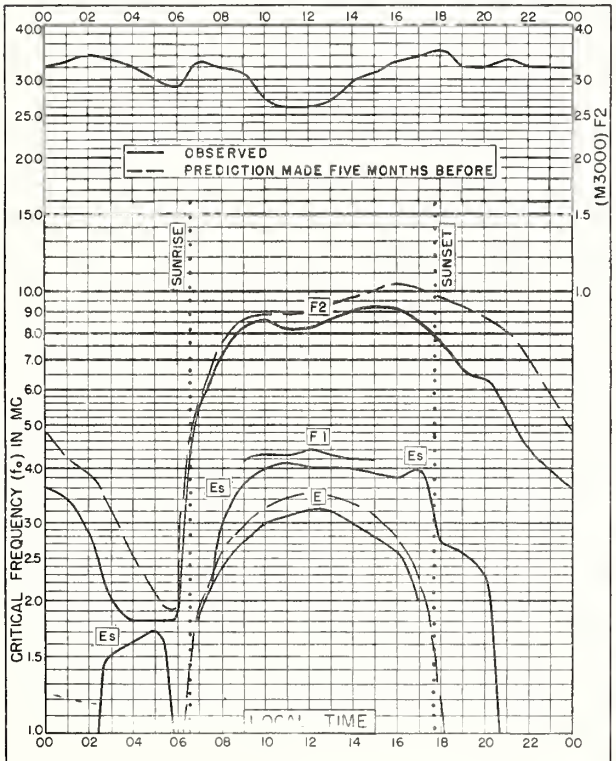


Fig. 75. BAGUIO, P.I.
16.4°N, 120.6°E JANUARY 1953

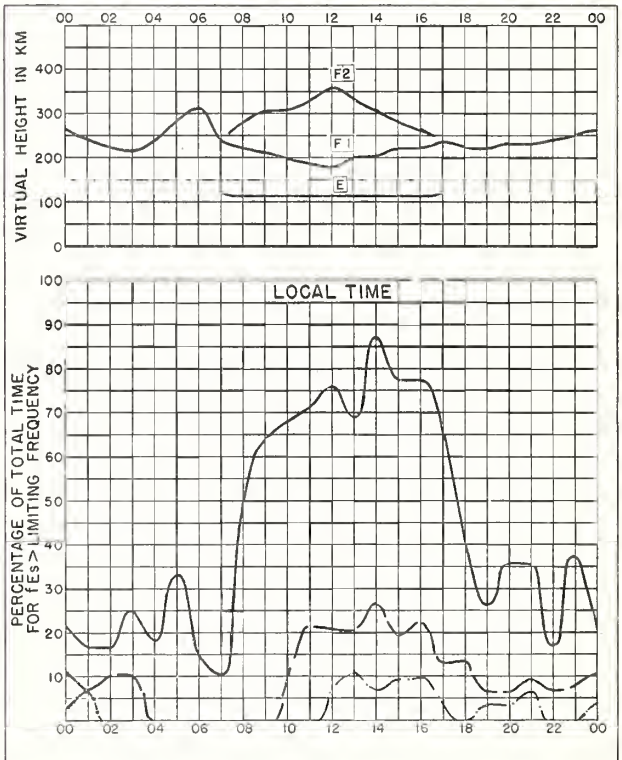


Fig. 76. BAGUIO, P.I. JANUARY 1953

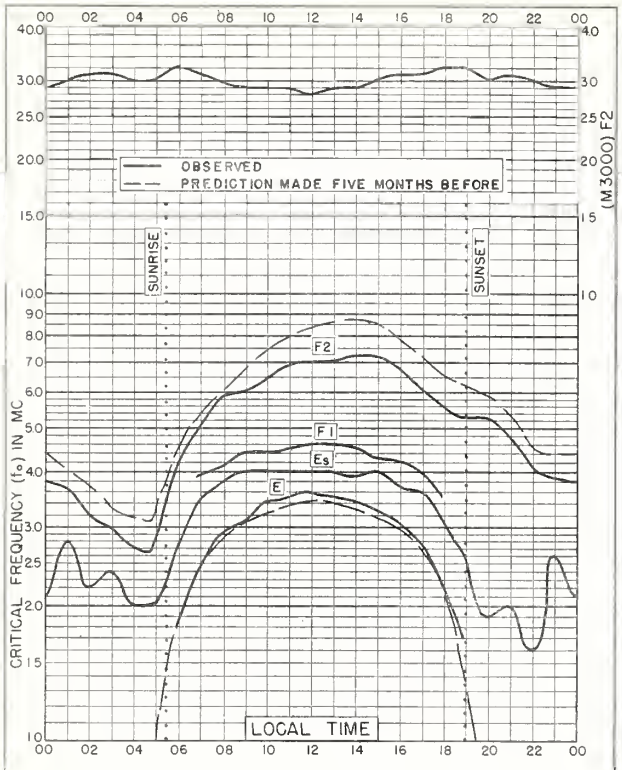
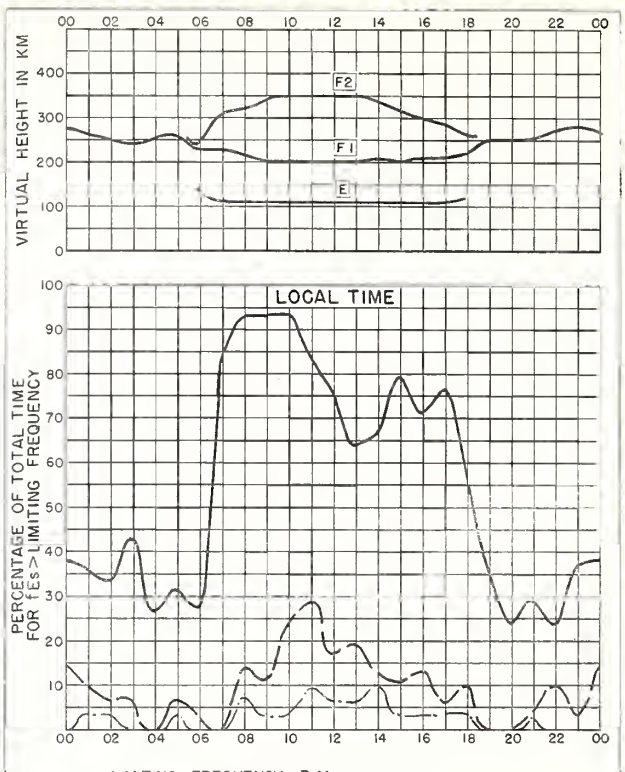


Fig. 77. JOHANNESBURG, U. OF S. AFRICA
26.2° S, 28.1° E JANUARY 1953



JANUARY 1953

Fig. 78. JOHANNESBURG, U. OF S. AFRICA

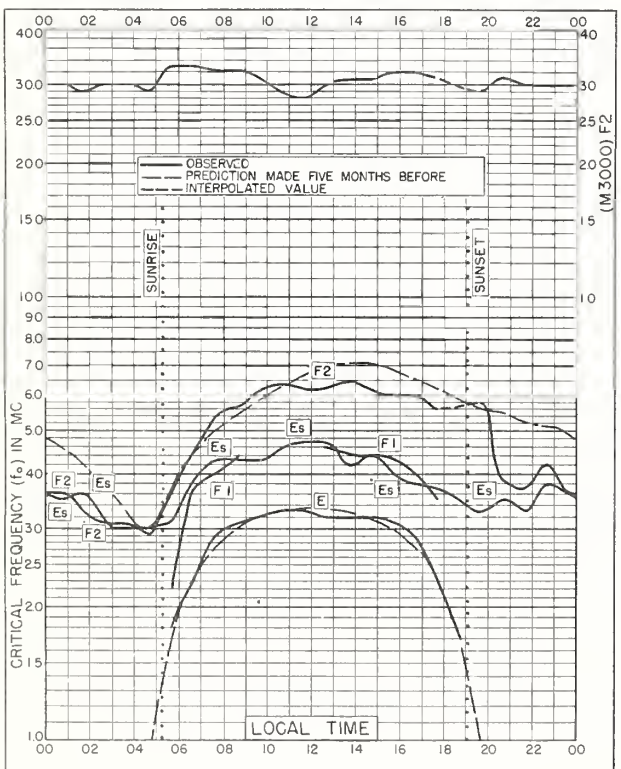


Fig. 79. WATHEROO, W. AUSTRALIA
30.3° S, 115.9° E JANUARY 1953

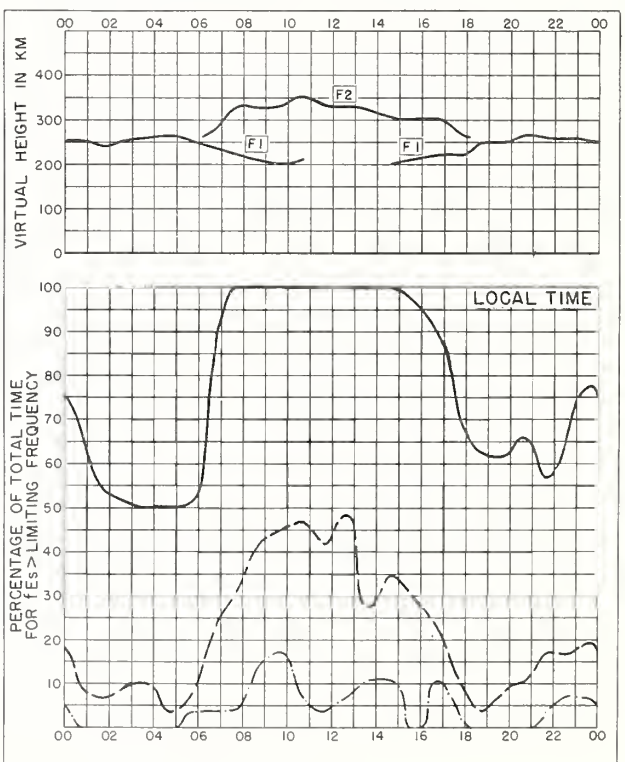


Fig. 80. WATHEROO, W. AUSTRALIA JANUARY 1953

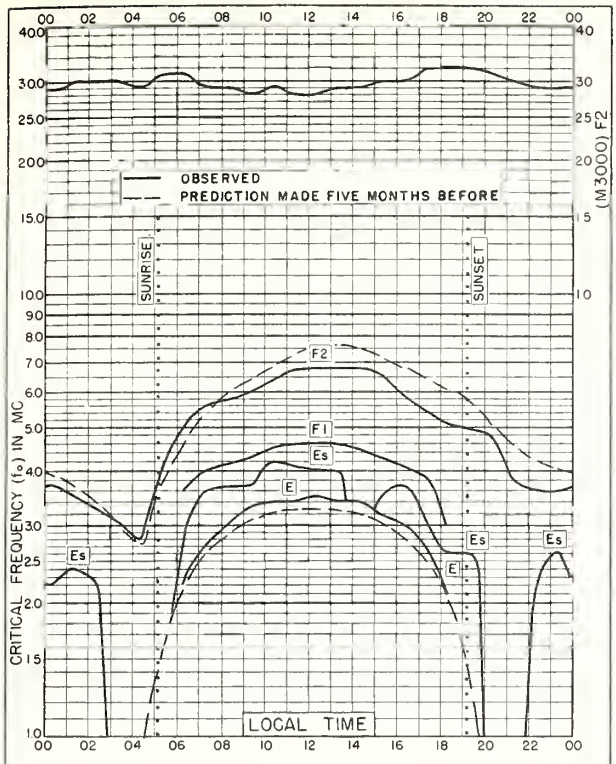


Fig. 81. CAPETOWN, U. OF S. AFRICA
34.2° S, 18.3°E JANUARY 1953

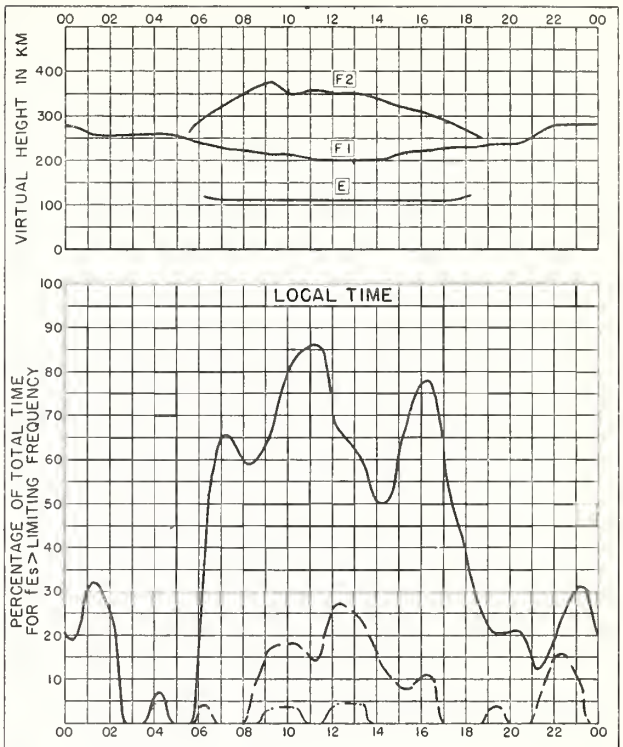


Fig. 82. CAPETOWN, U. OF S. AFRICA JANUARY 1953

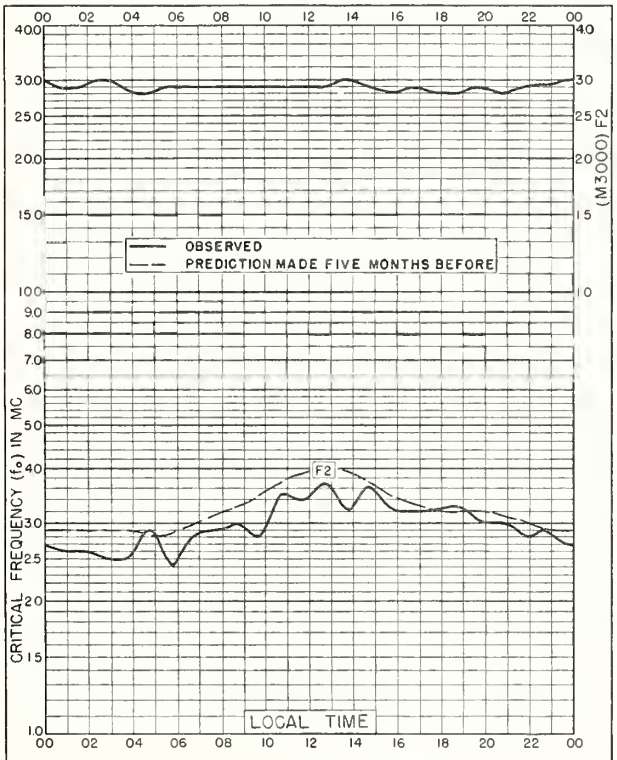


Fig. 83. RESOLUTE BAY, CANADA
74.7°N, 94.9°W DECEMBER 1952

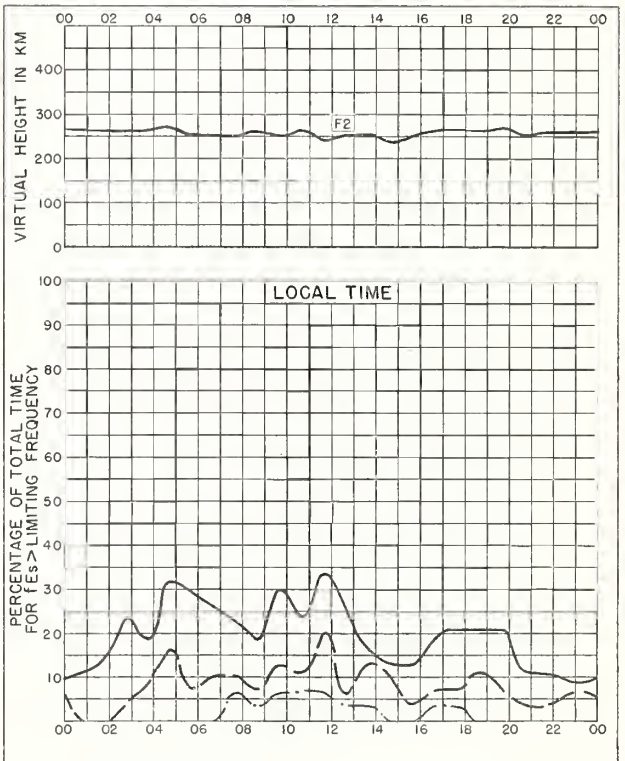


Fig. 84. RESOLUTE BAY, CANADA DECEMBER 1952

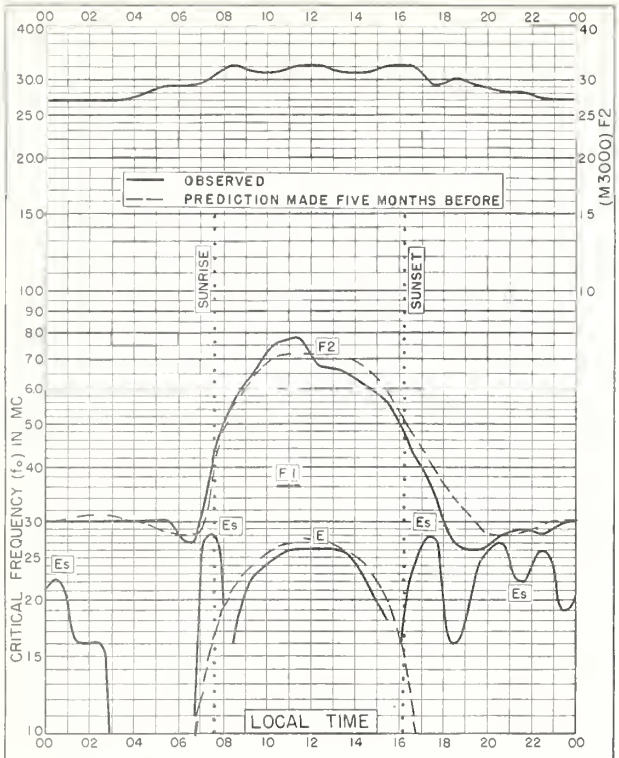


Fig. 85. WAKKANAI, JAPAN
45.4°N, 141.7°E DECEMBER 1952

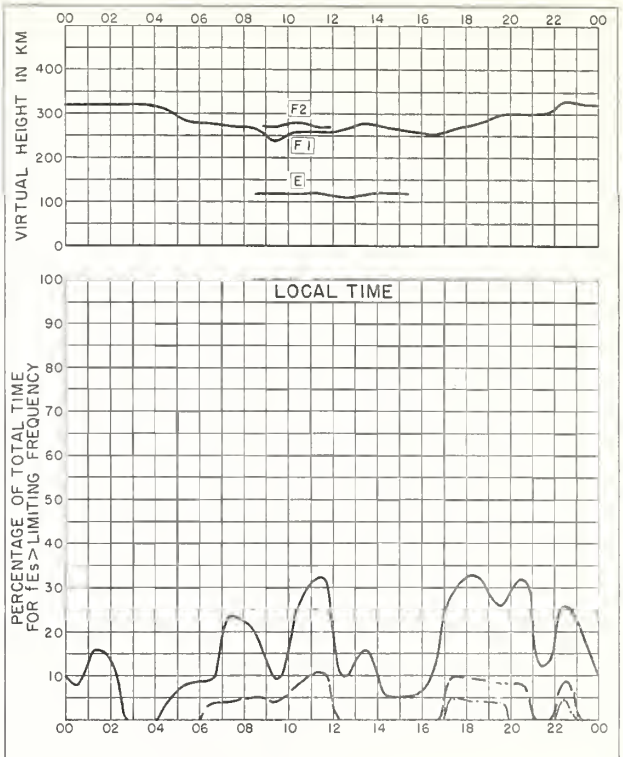


Fig. 86. WAKKANAI, JAPAN DECEMBER 1952

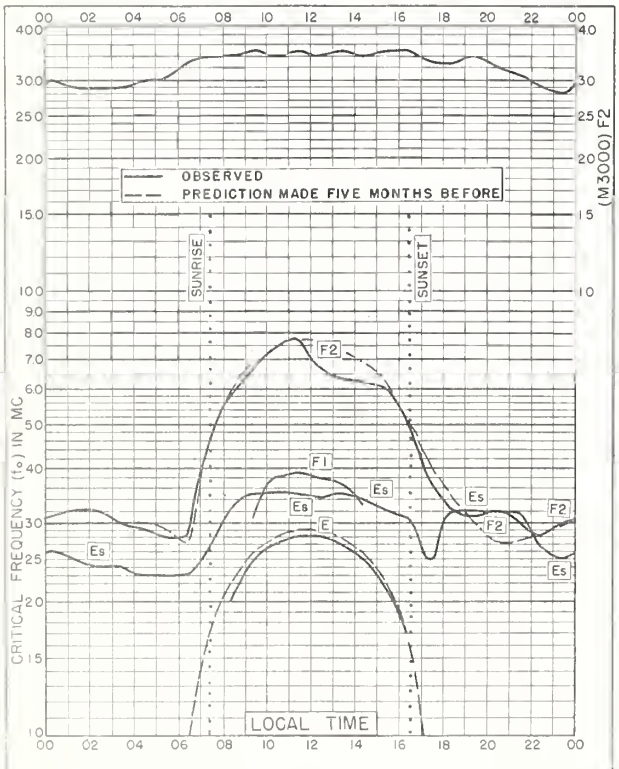


Fig. 87. AKITA, JAPAN
39.7°N, 140.1°E DECEMBER 1952

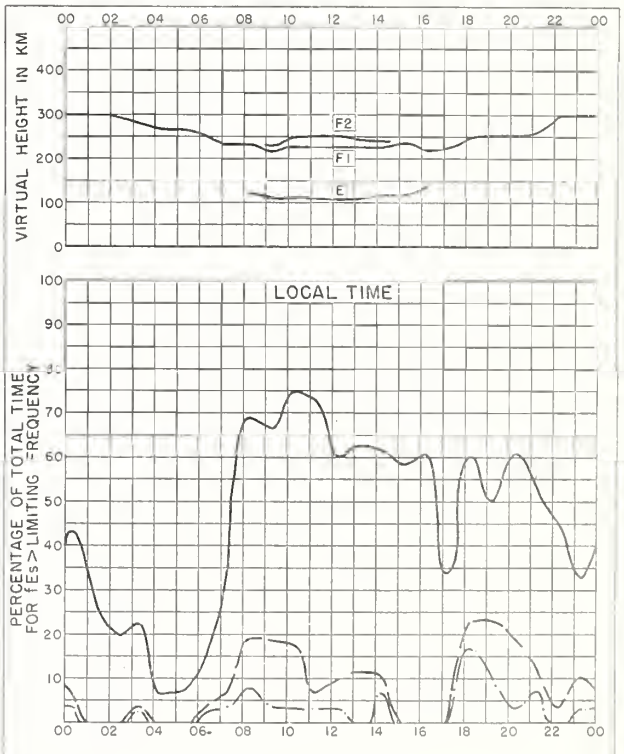


Fig. 88. AKITA, JAPAN DECEMBER 1952

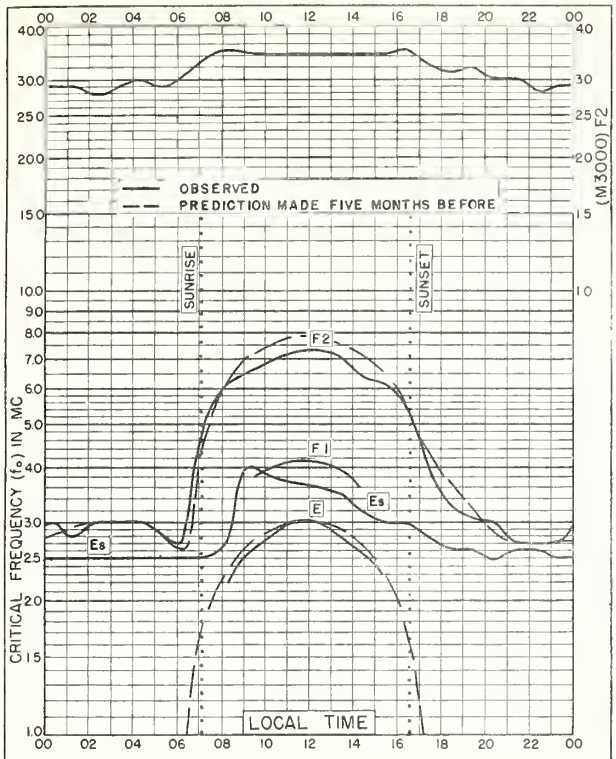


Fig.89. TOKYO, JAPAN
35.7°N, 139.5°E DECEMBER 1952

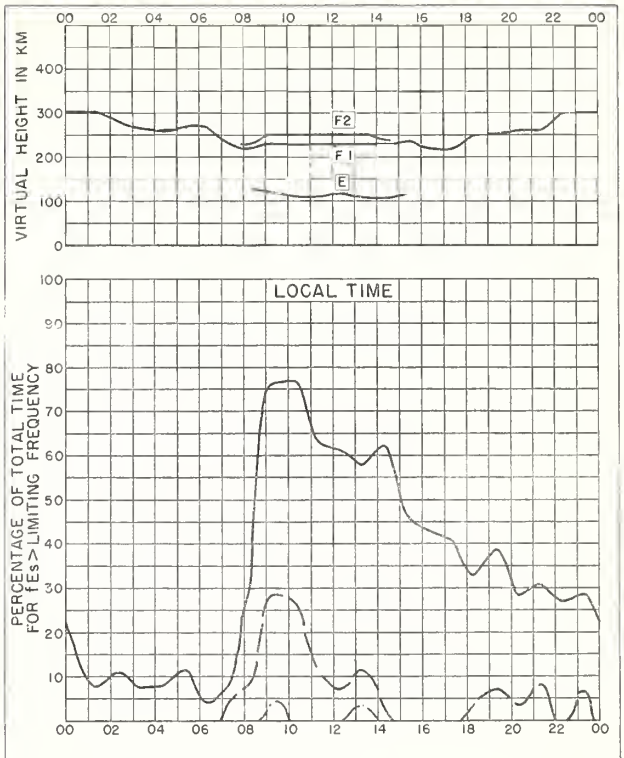


Fig.90. TOKYO, JAPAN DECEMBER 1952

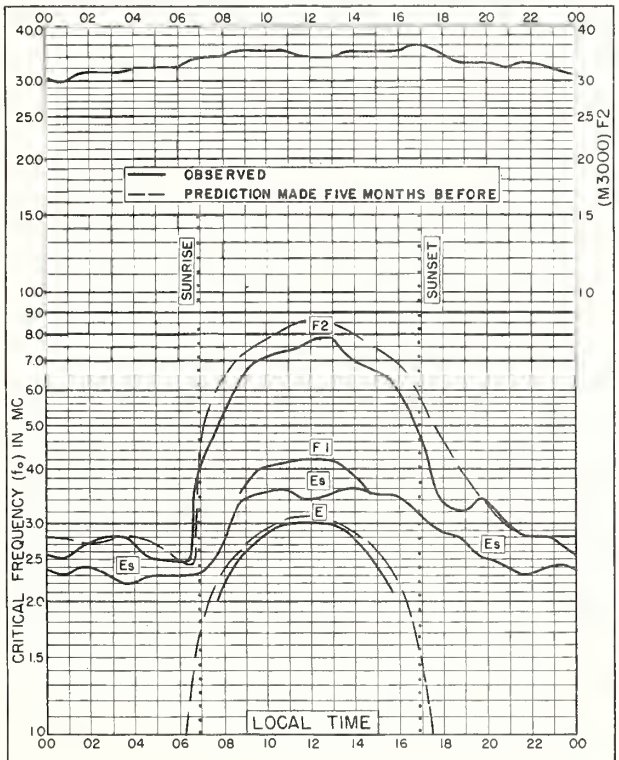


Fig.91. YAMAGAWA, JAPAN
31.2°N, 130.6°E DECEMBER 1952

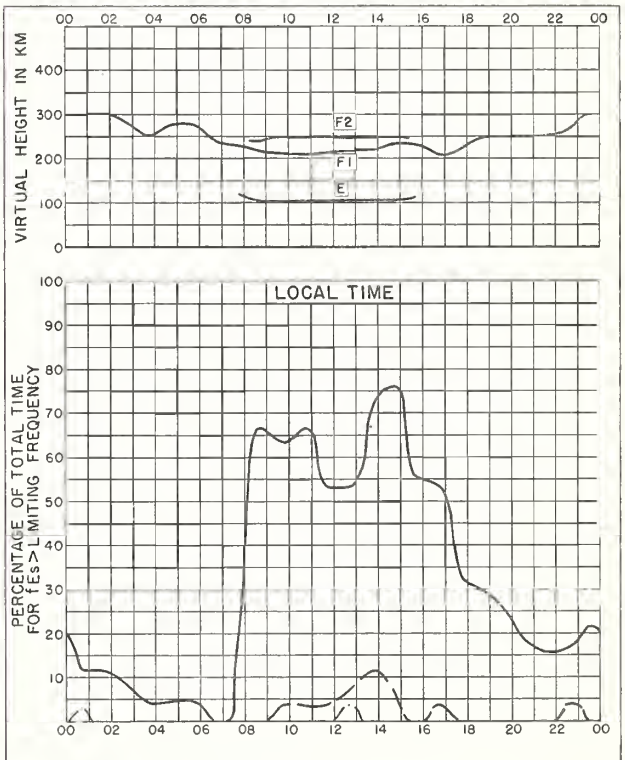


Fig. 92. YAMAGAWA, JAPAN DECEMBER 1952

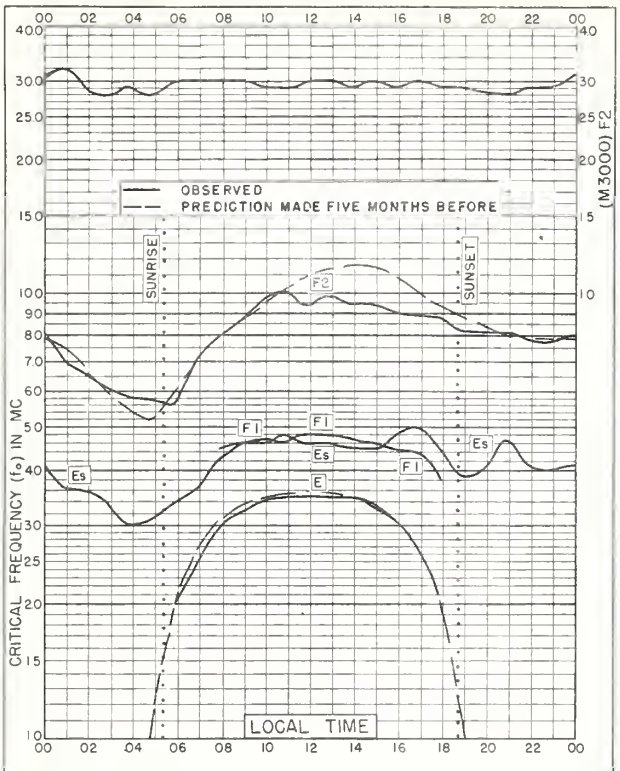


Fig. 93 RAROTONGA I.
21.3°S, 159.8°W DECEMBER 1952

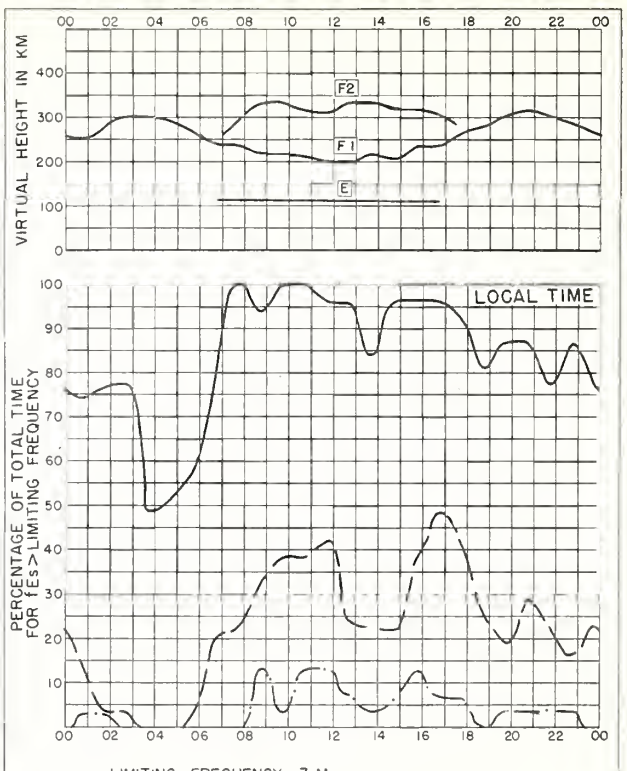


Fig. 94. RAROTONGA. I. DECEMBER 1952

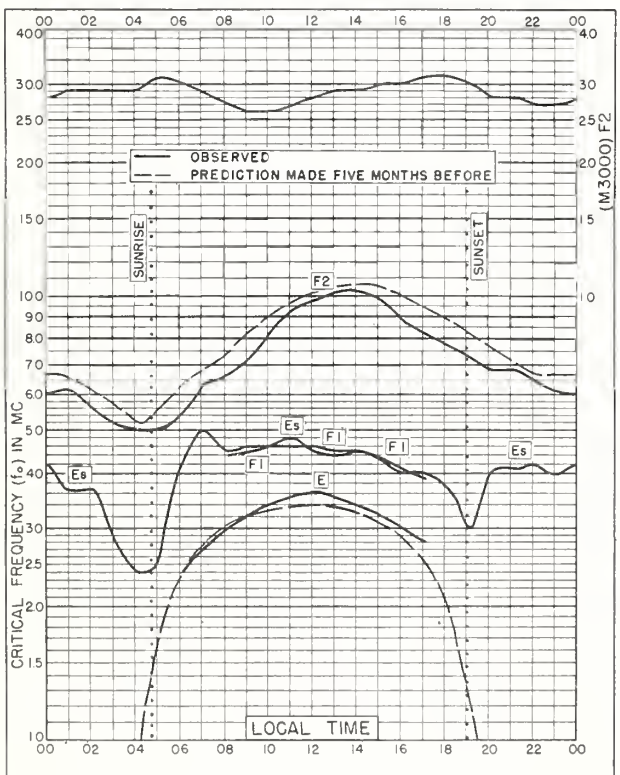


Fig. 95. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W DECEMBER 1952

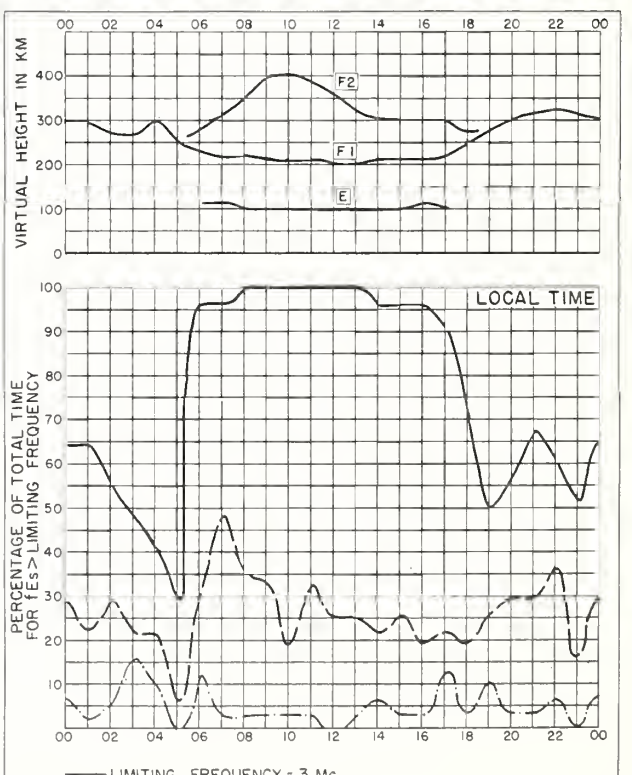


Fig. 96. BUENOS AIRES, ARGENTINA DECEMBER 1952

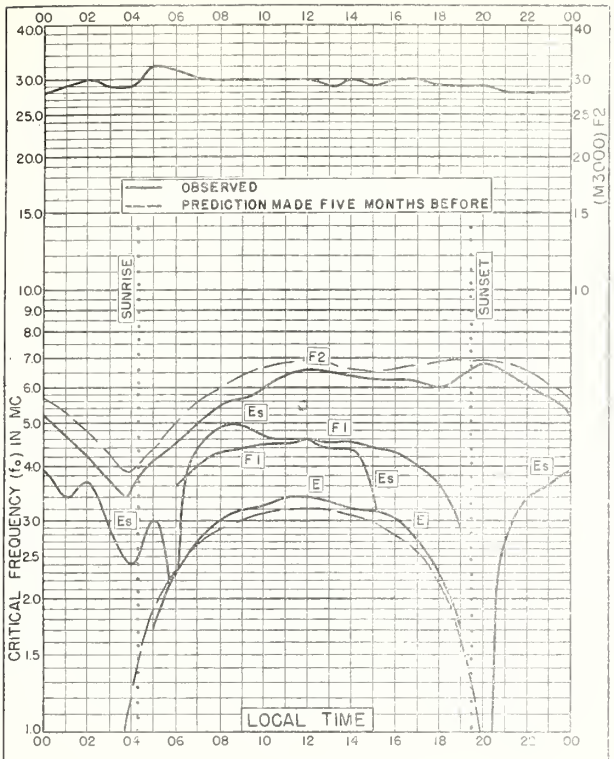


Fig. 97. CHRISTCHURCH, N.Z.
43.6°S, 172.7°E DECEMBER 1952

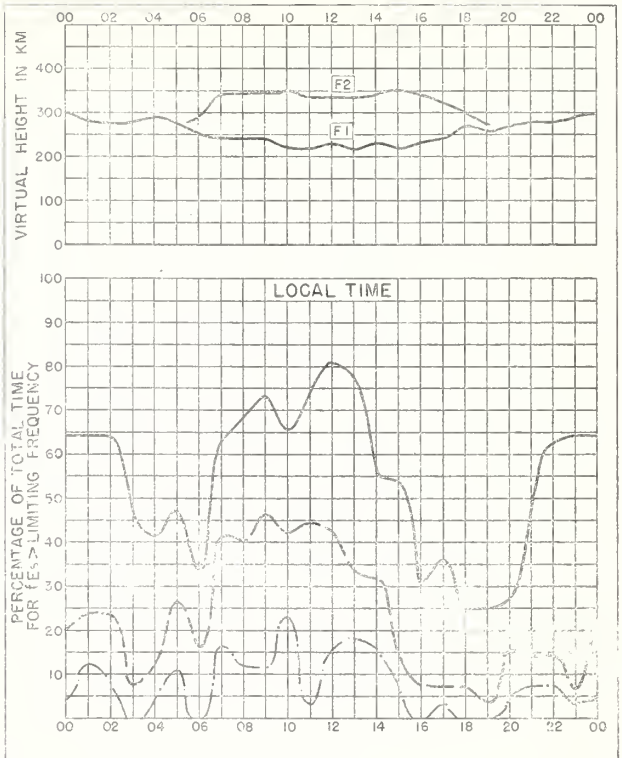


Fig. 98. CHRISTCHURCH, N.Z. DECEMBER 1952

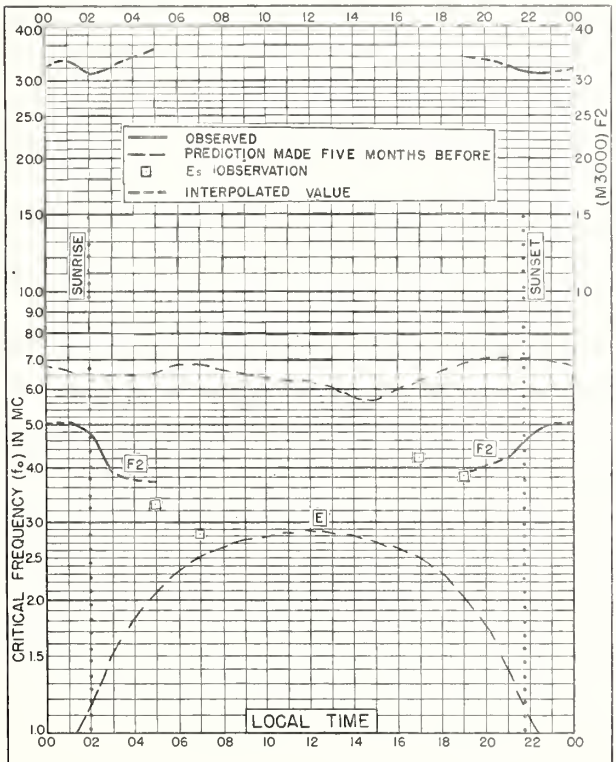


Fig. 99. DECEPCION I.
63.0°S, 60.7°W DECEMBER 1952

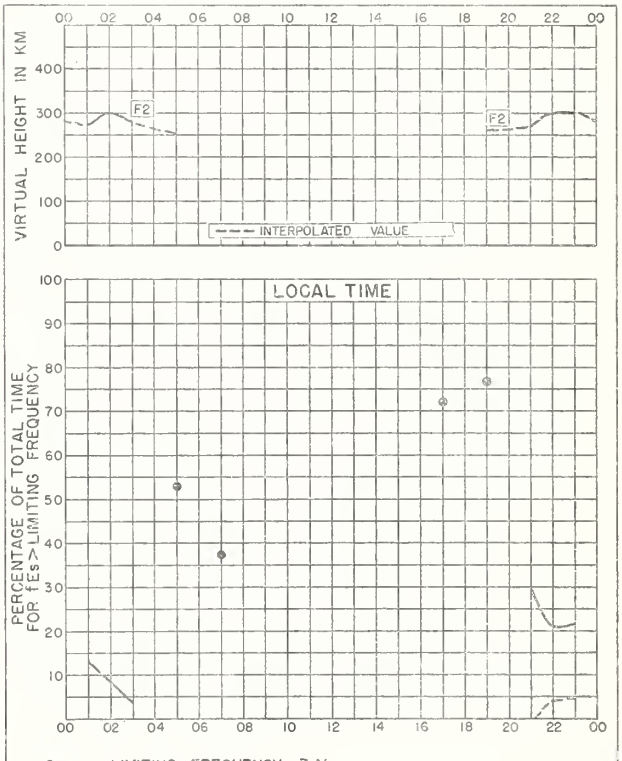


Fig. 100. DECEPCION I. DECEMBER 1952

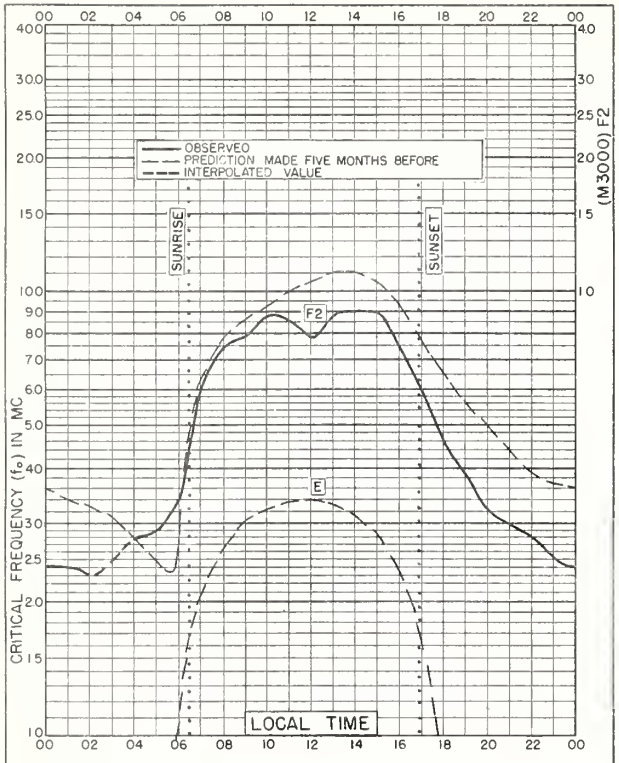


Fig. 101. DELHI, INDIA
28.6°N, 77.1°E NOVEMBER 1952

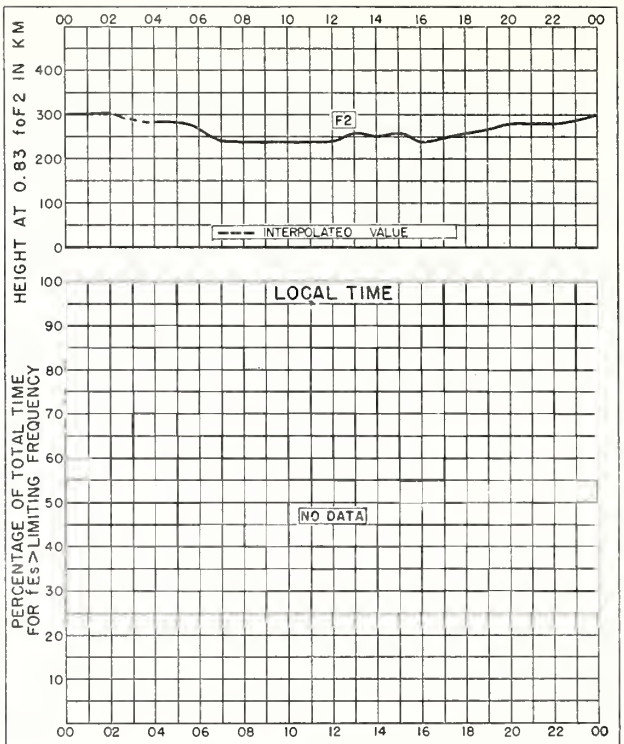


Fig. 102. DELHI, INDIA NOVEMBER 1952

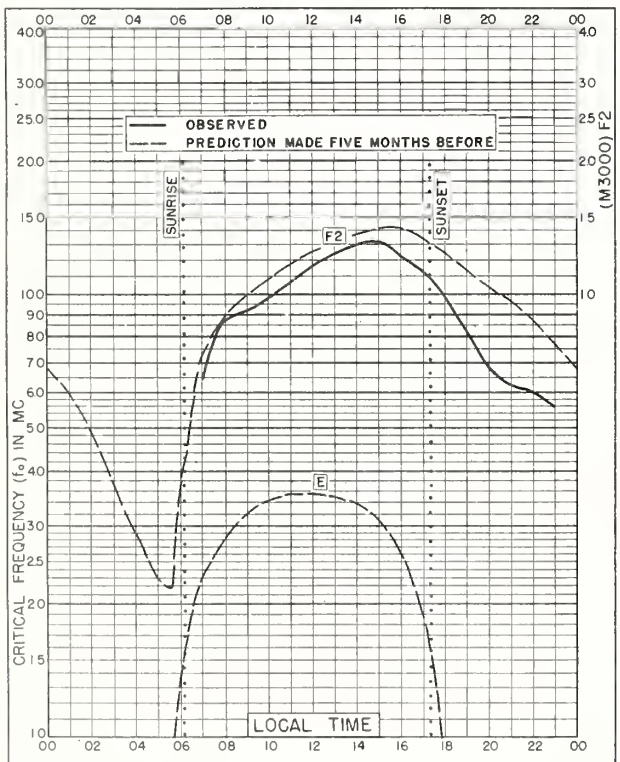


Fig. 103. BOMBAY, INDIA
19.0°N, 73.0°E NOVEMBER 1952

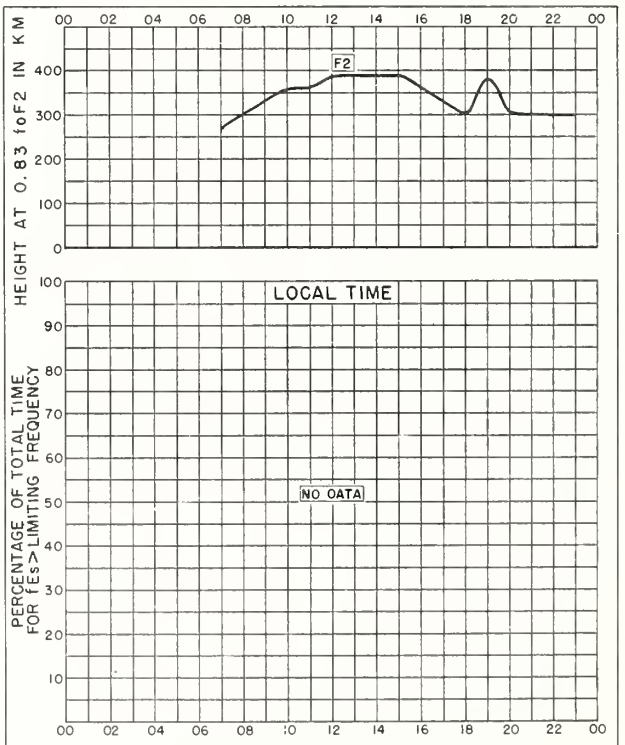


Fig. 104. BOMBAY, INDIA NOVEMBER 1952

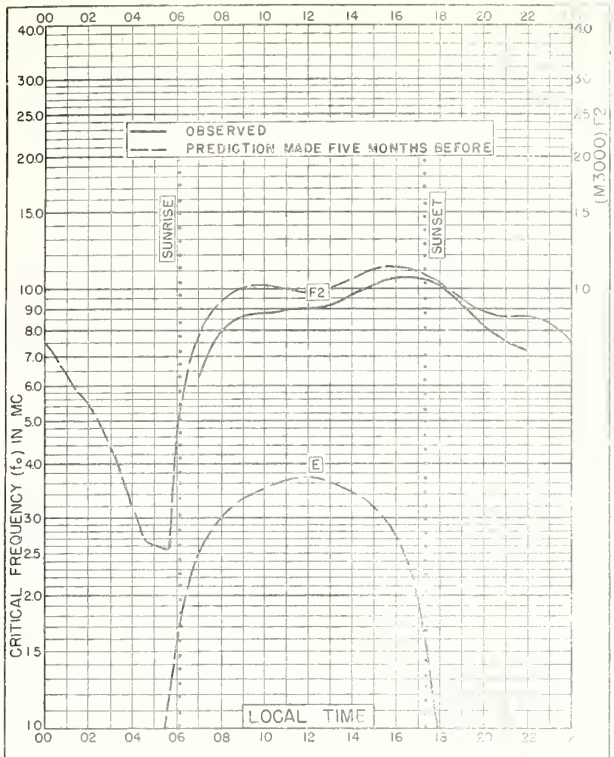


Fig. 105. MADRAS, INDIA
13.0°N, 80.2°E NOVEMBER 1952

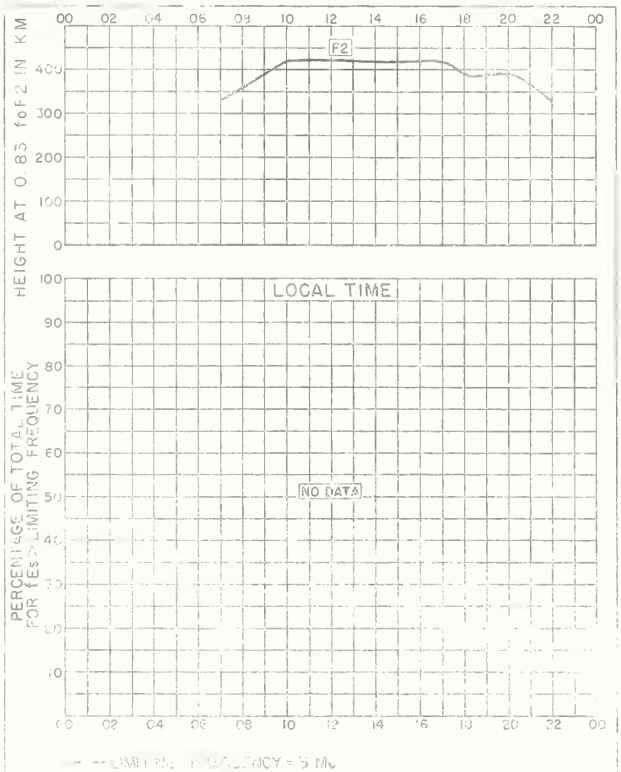


Fig. 106. MADRAS, INDIA NOVEMBER 1952

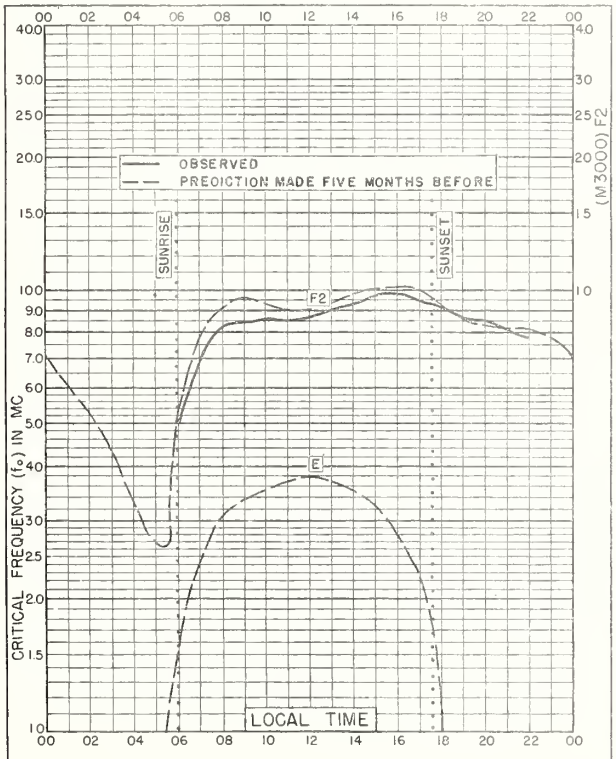


Fig. 107. TIRUCHY, INDIA
10.8°N, 78.8°E NOVEMBER 1952

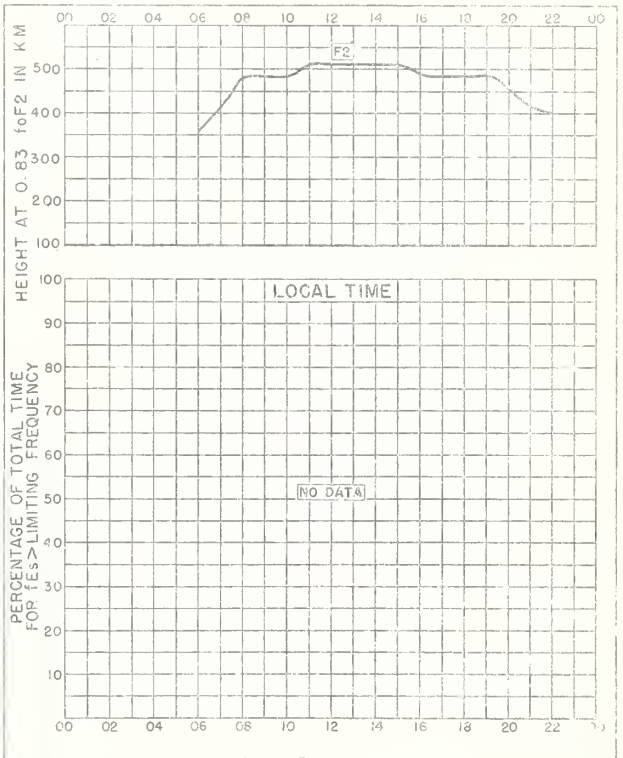


Fig. 108. TIRUCHY, INDIA NOVEMBER 1952

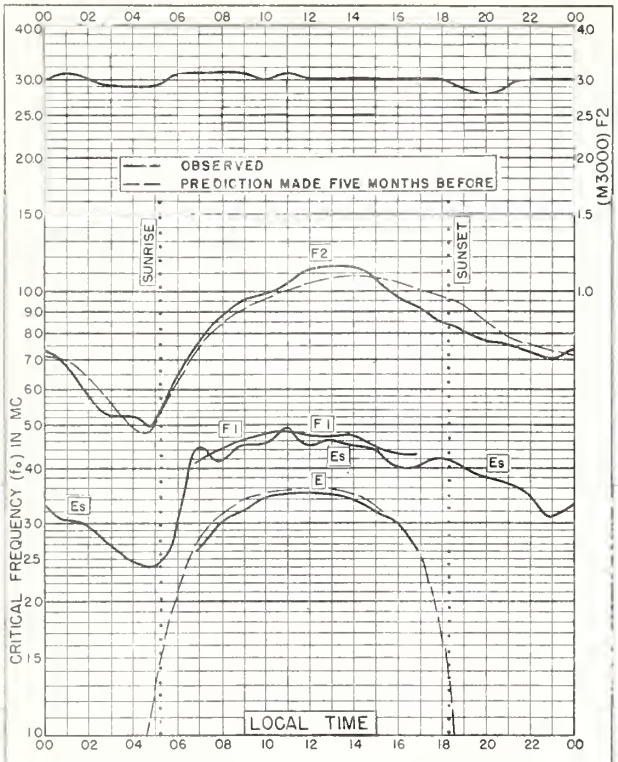


Fig. 109. RAROTONGA I.
21.3° S, 159.8° W NOVEMBER 1952

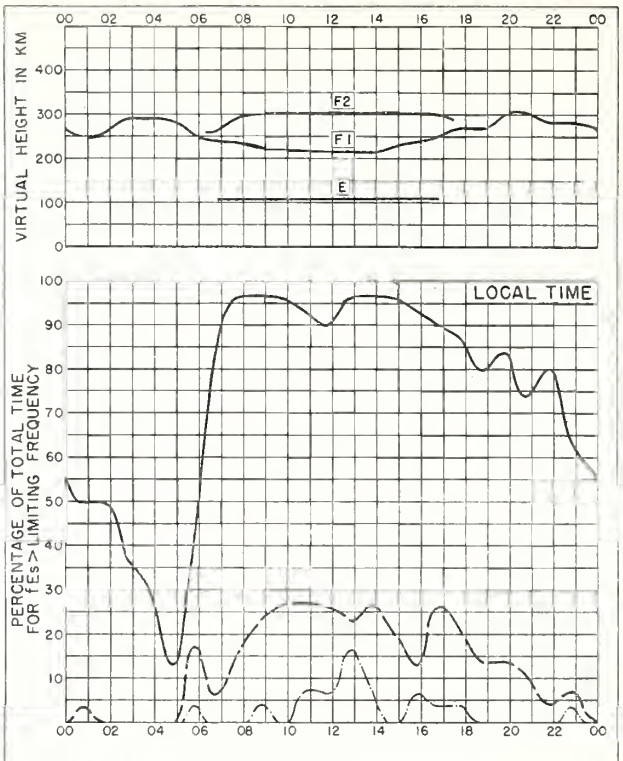


Fig. 110. RAROTONGA I. NOVEMBER 1952

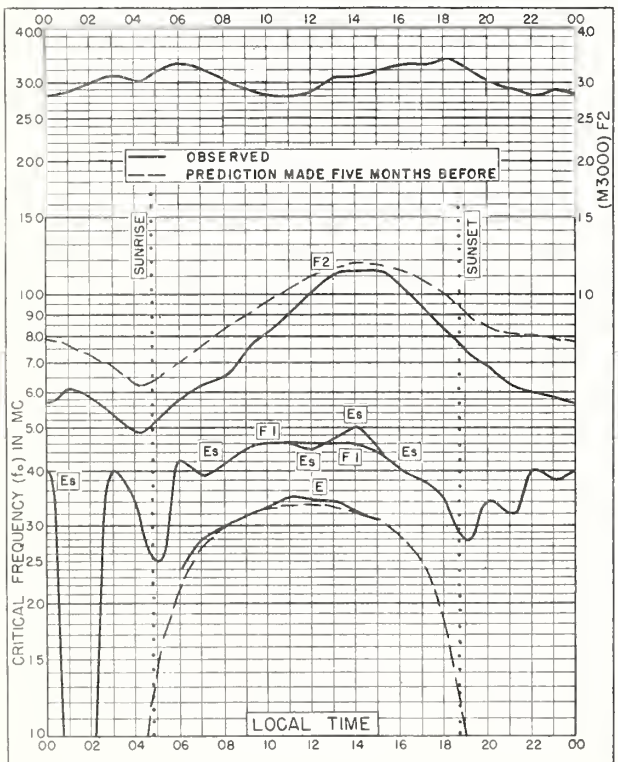


Fig. 111. BUENOS AIRES, ARGENTINA
34.5° S, 58.5° W NOVEMBER 1952

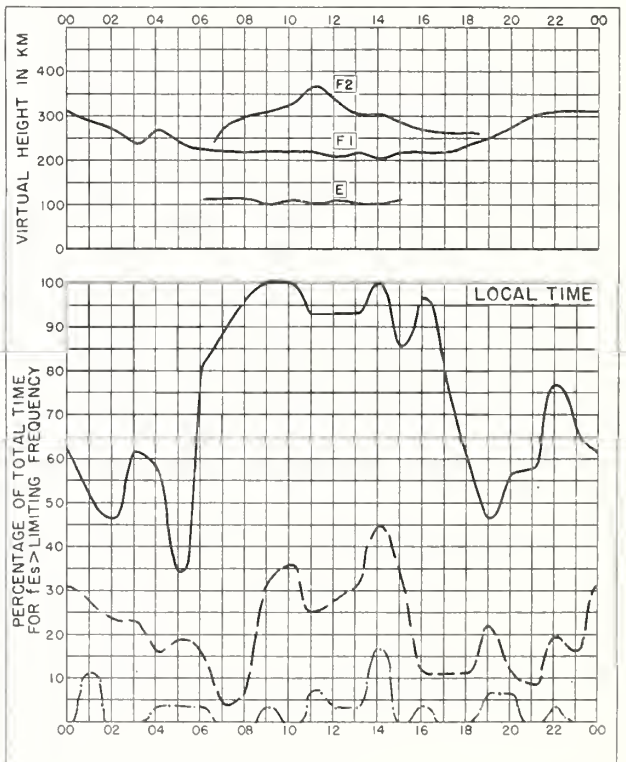


Fig. 112. BUENOS AIRES, ARGENTINA NOVEMBER 1952

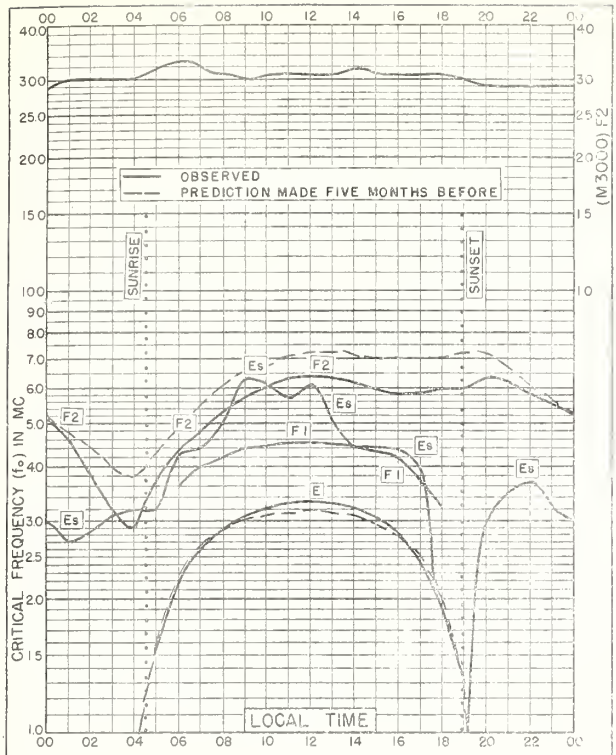


Fig. 113. CHRISTCHURCH, N. Z.
43.6°S, 172.7°E NOVEMBER 1952

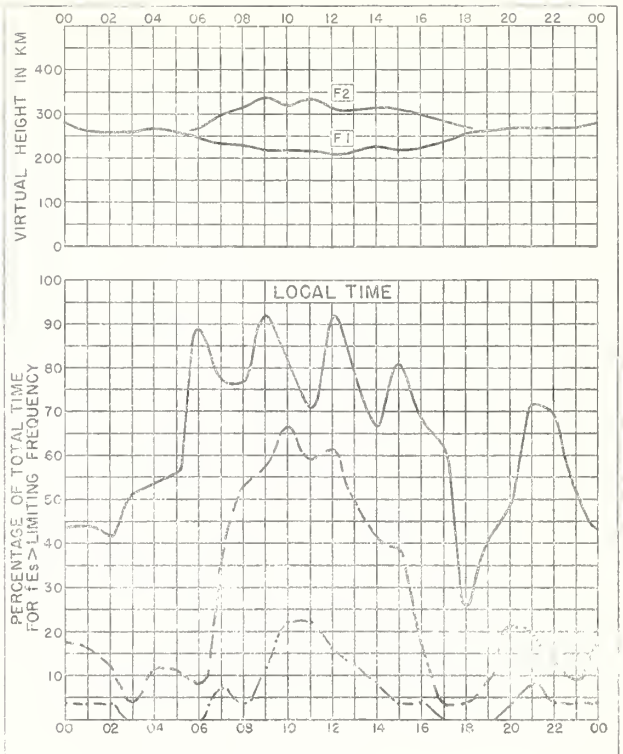


Fig. 114. CHRISTCHURCH, N. Z. NOVEMBER 1952

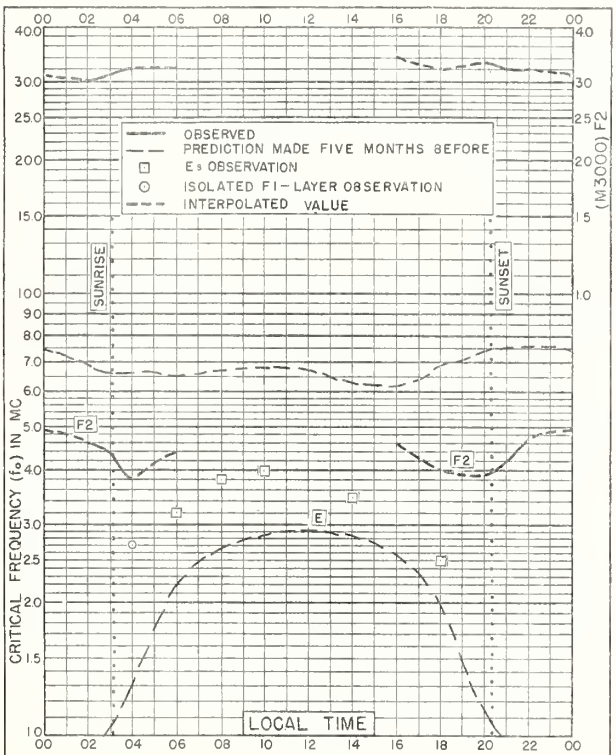


Fig. 115. DECEPCION I.
63.0°S, 60.7°W NOVEMBER 1952

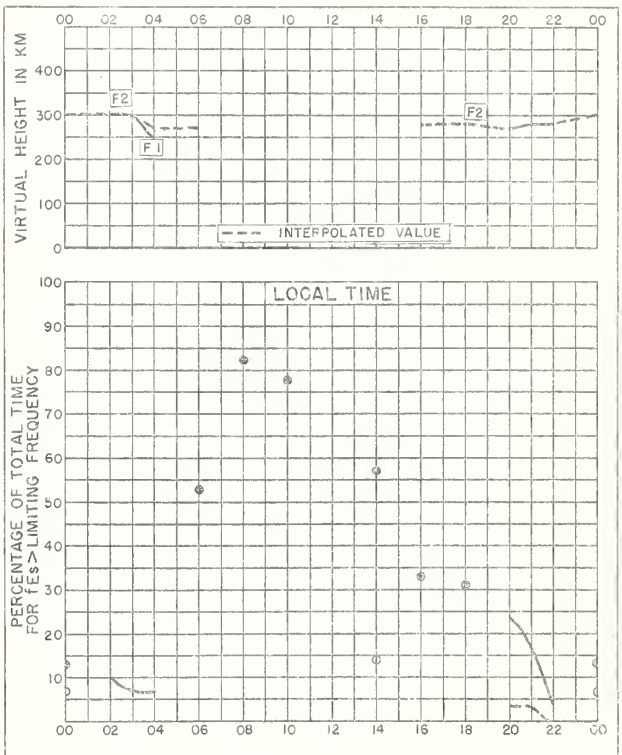


Fig. 116. DECEPCION I. NOVEMBER 1952

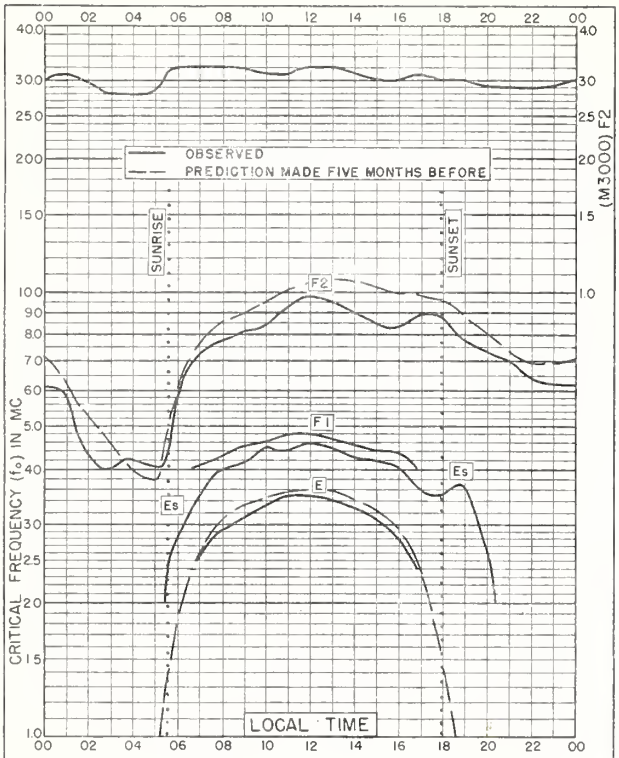


Fig.117. RAROTONGA I.
21.3°S, 159.8°W OCTOBER 1952

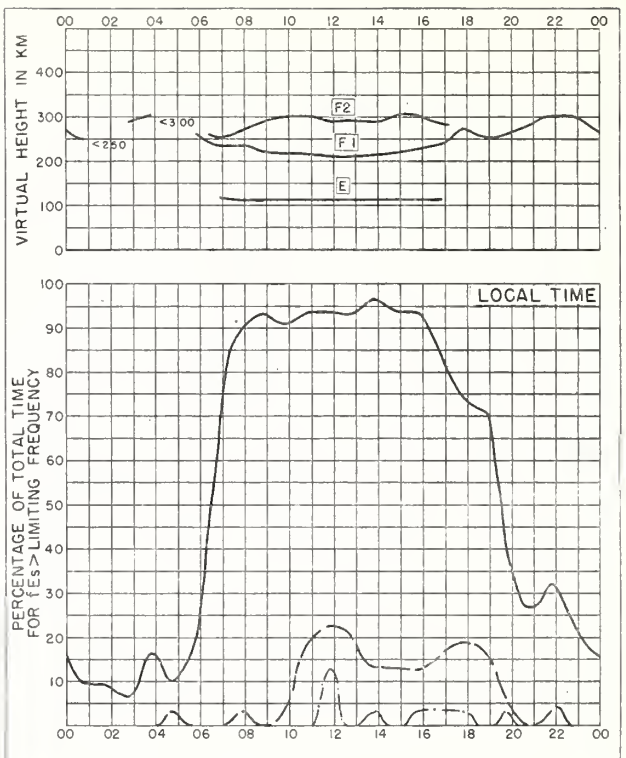


Fig.118. RAROTONGA I. OCTOBER 1952

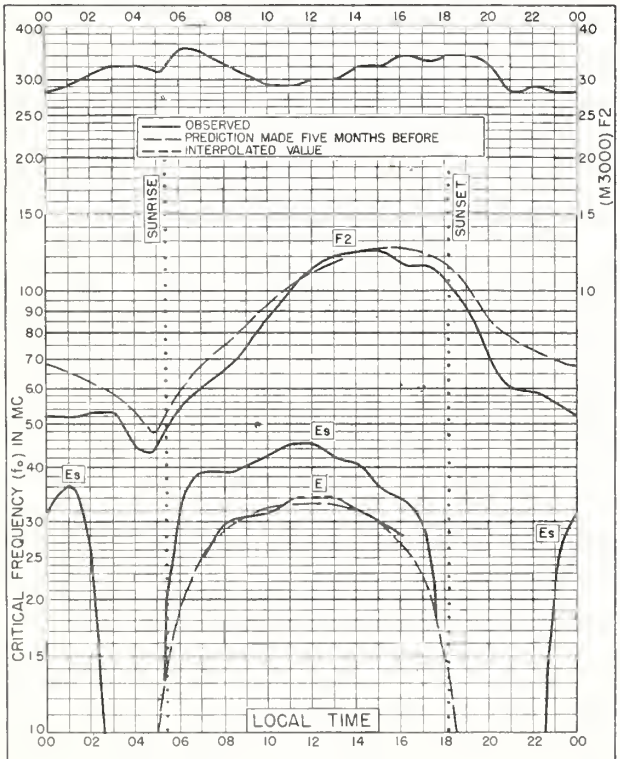


Fig.119. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W OCTOBER 1952

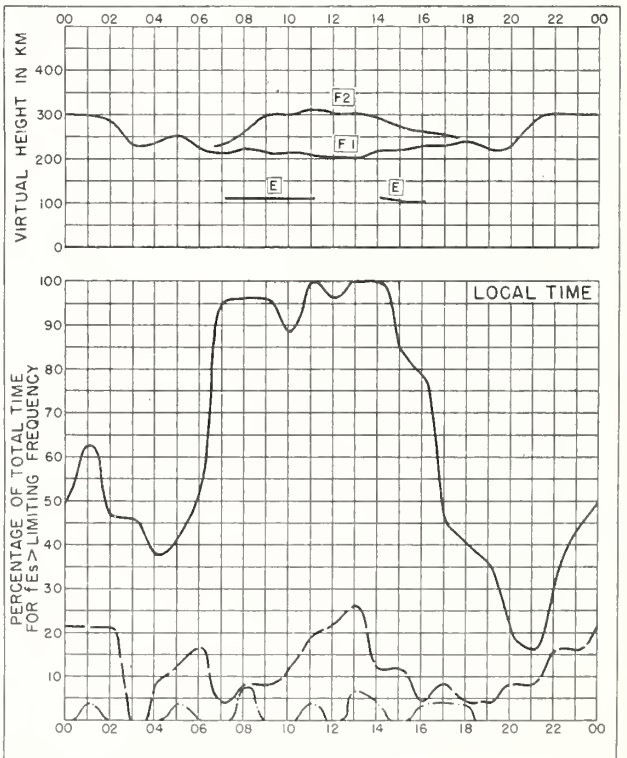
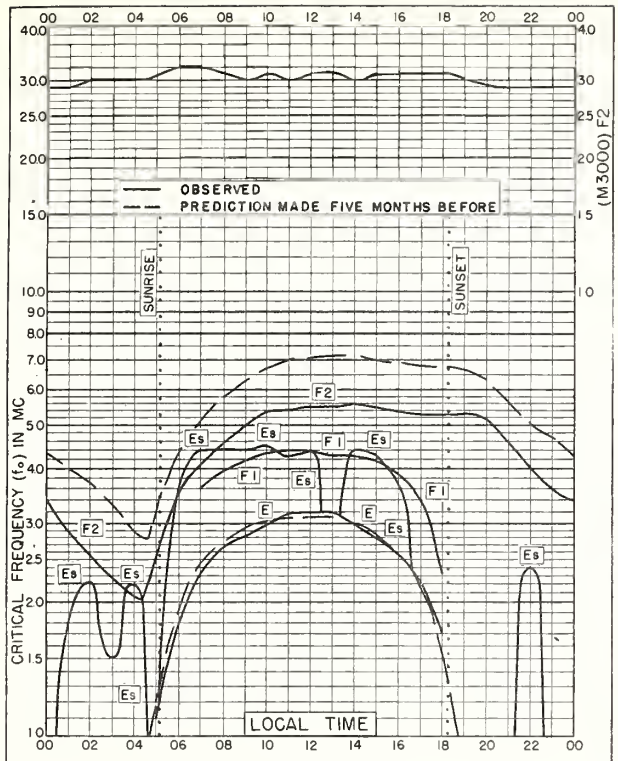


Fig.120. BUENOS AIRES, ARGENTINA OCTOBER 1952



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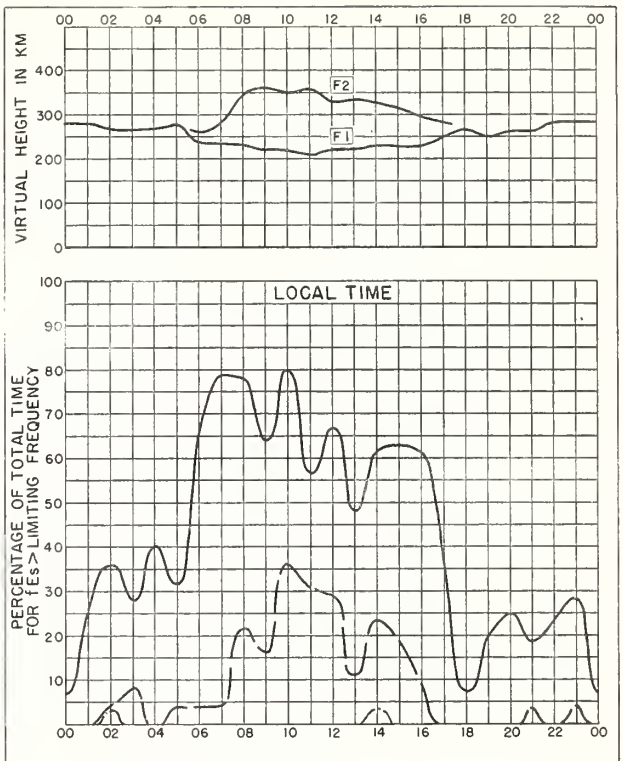

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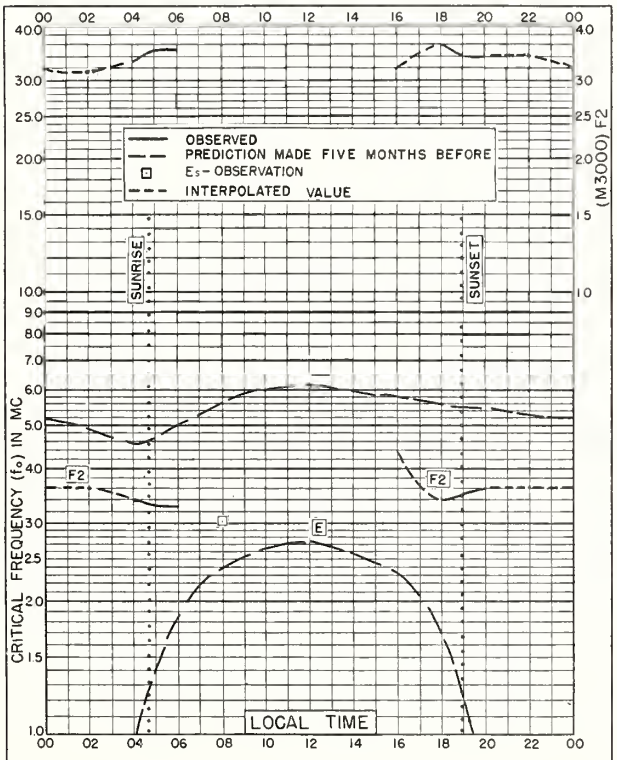

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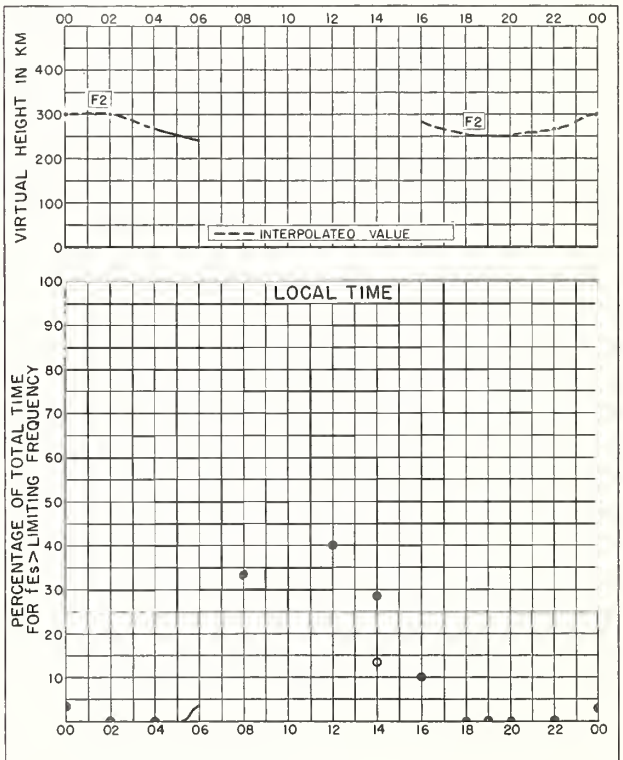

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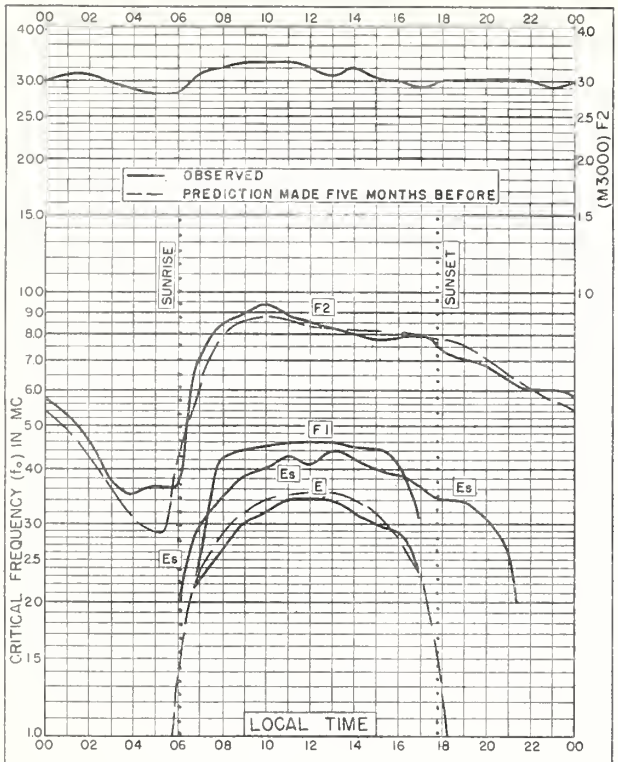

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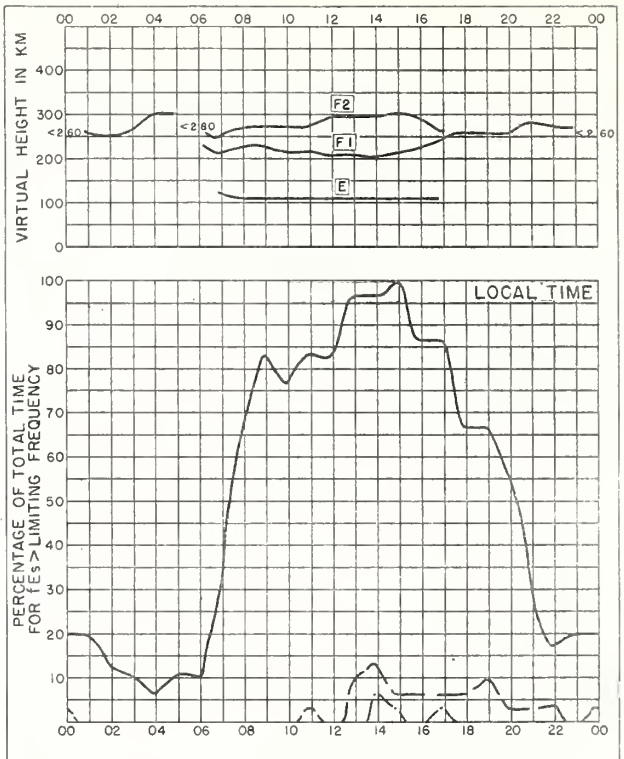

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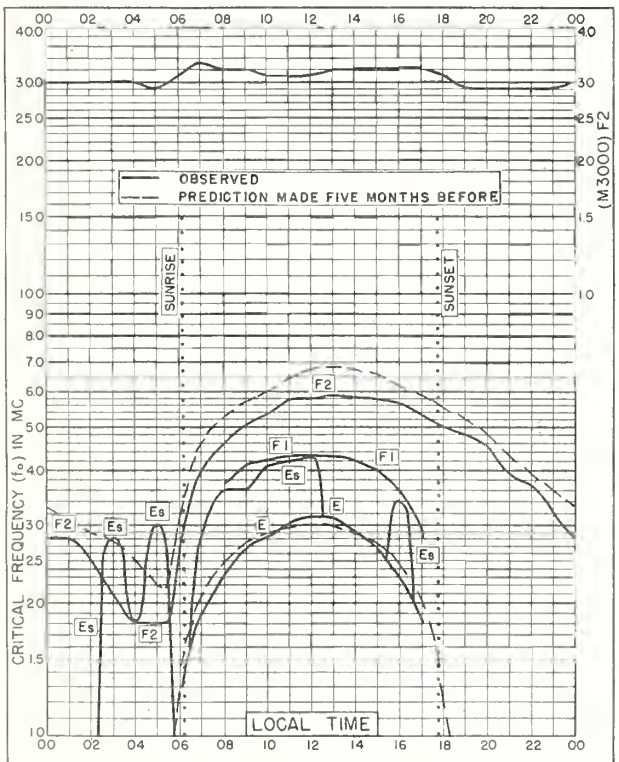

Fig. 127. CHRISTCHURCH, N.Z.
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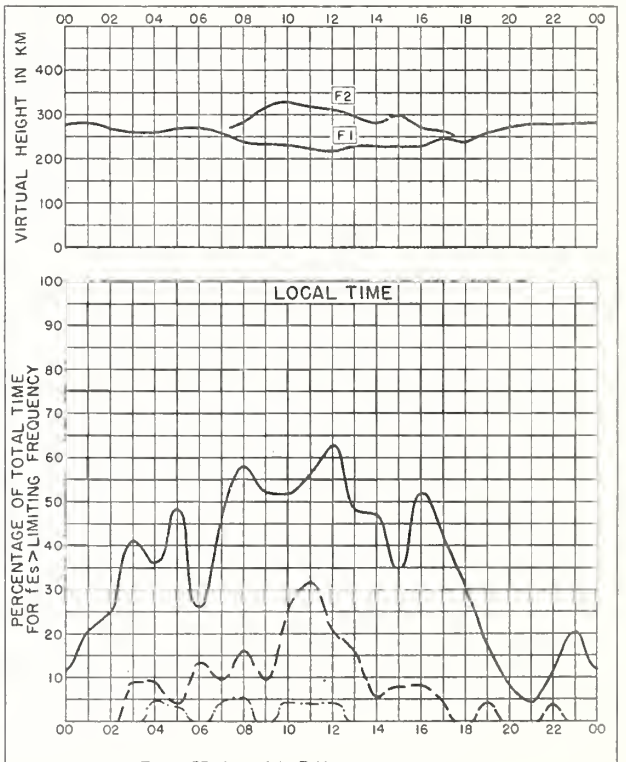

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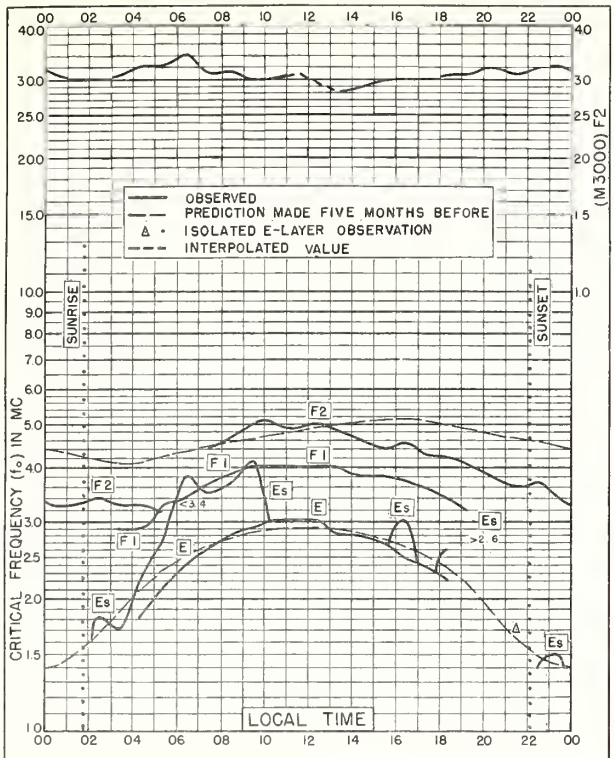

Fig.129. GODHAVN, GREENLAND
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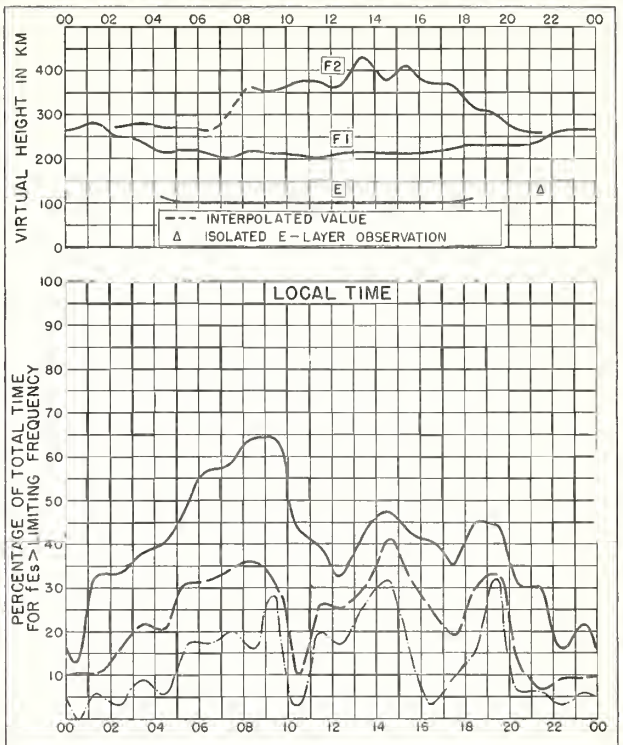

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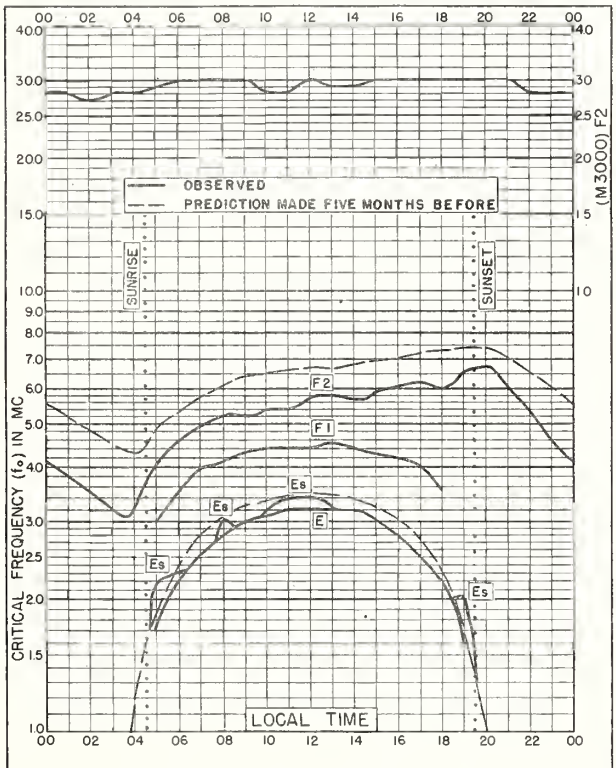

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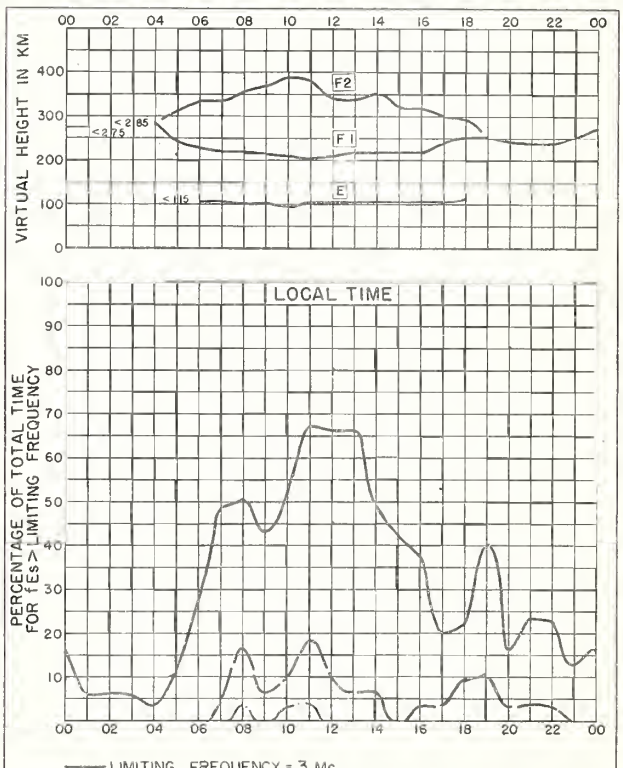

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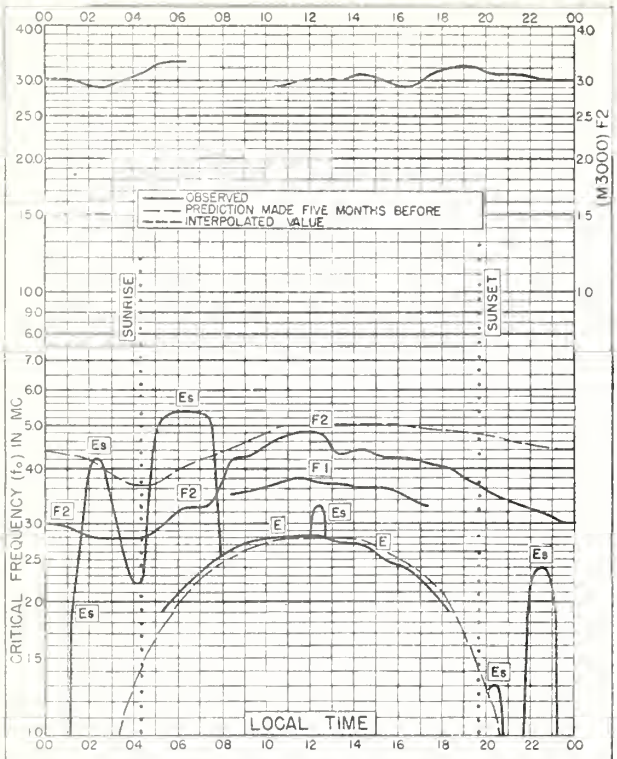

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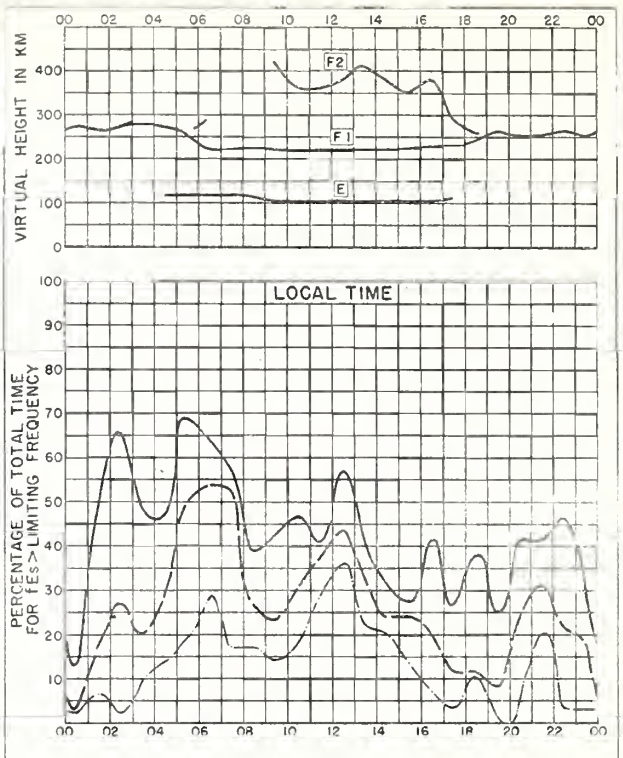

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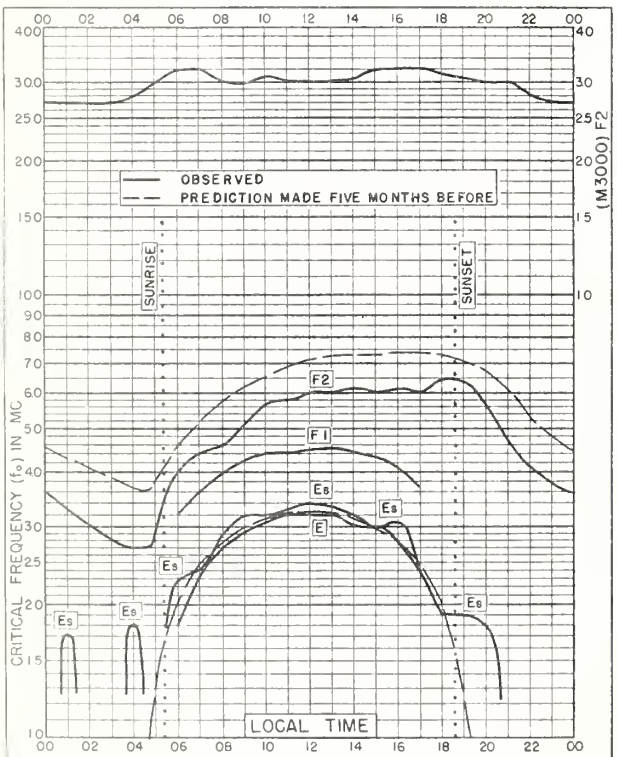

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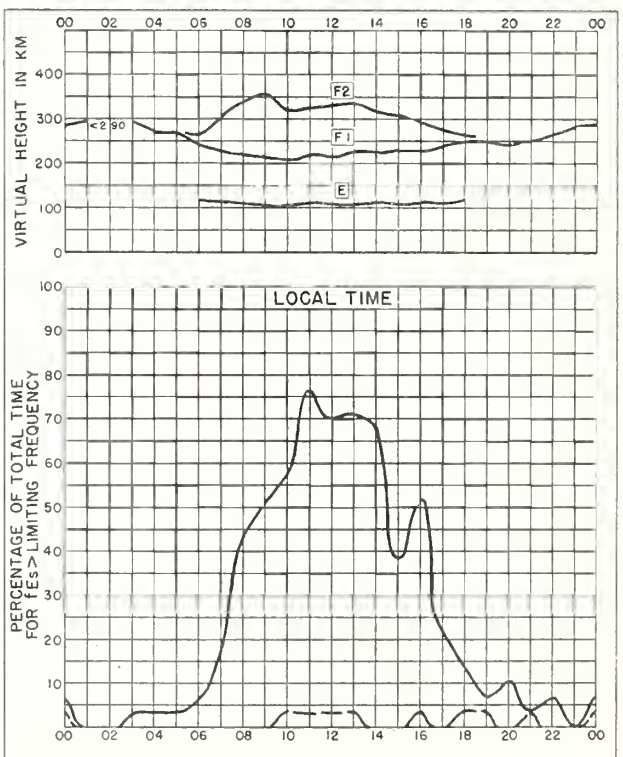

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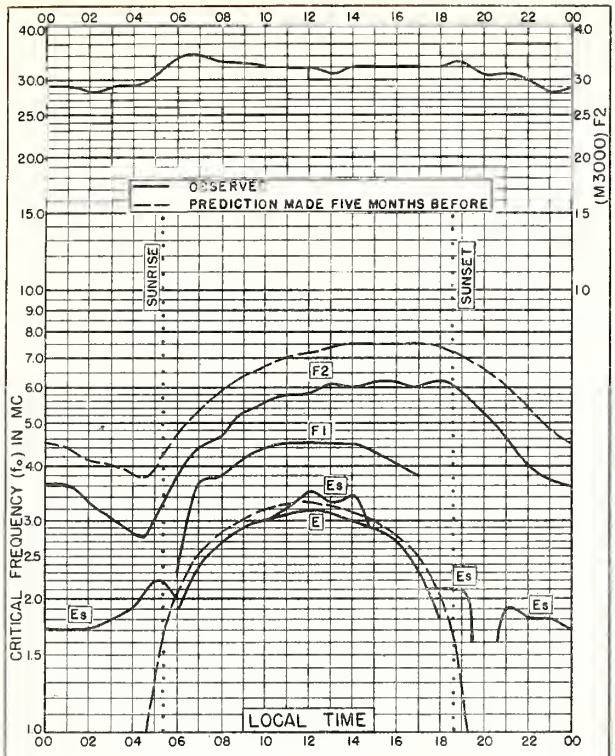

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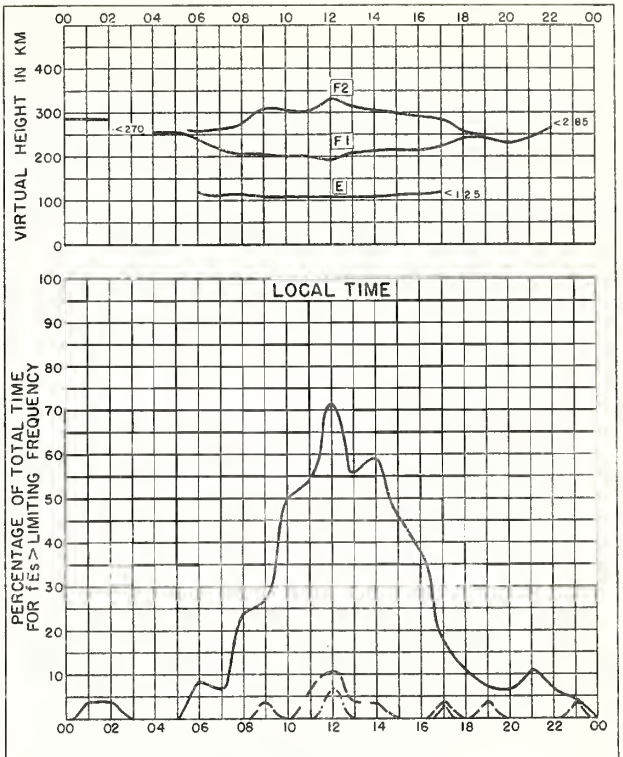

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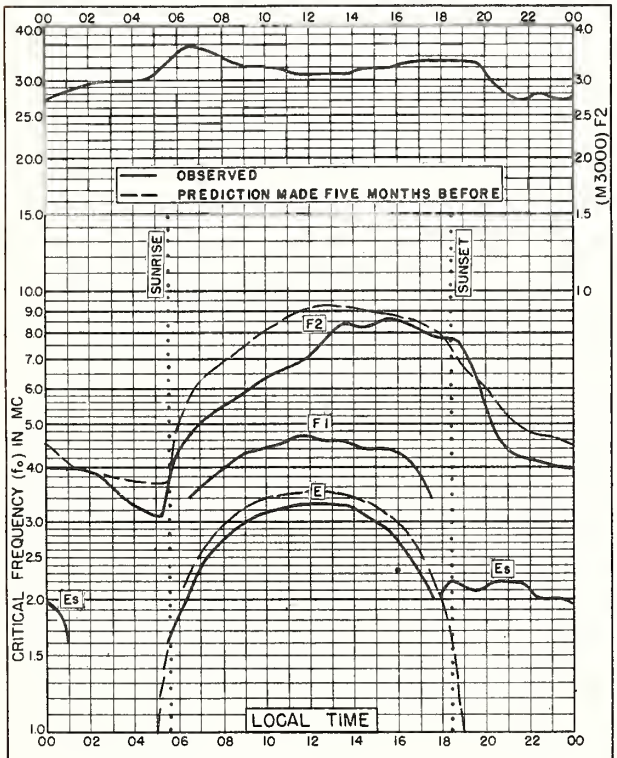

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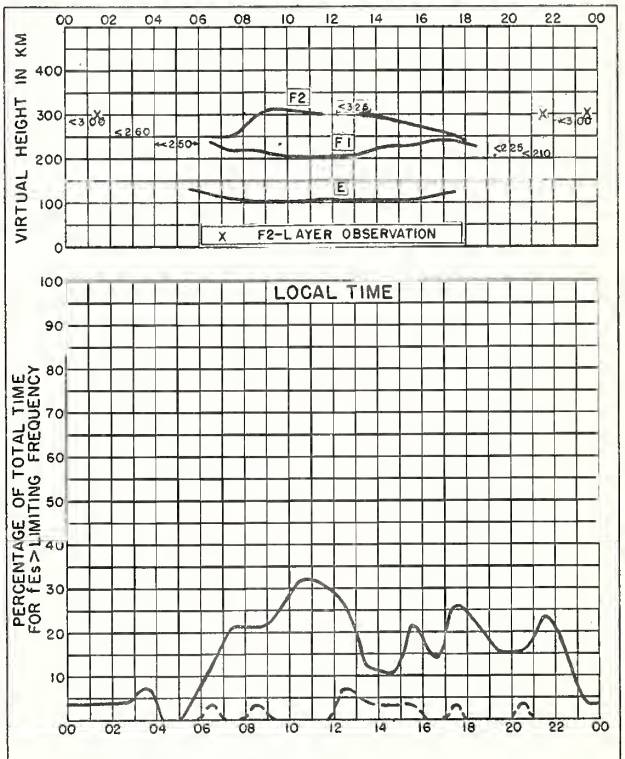

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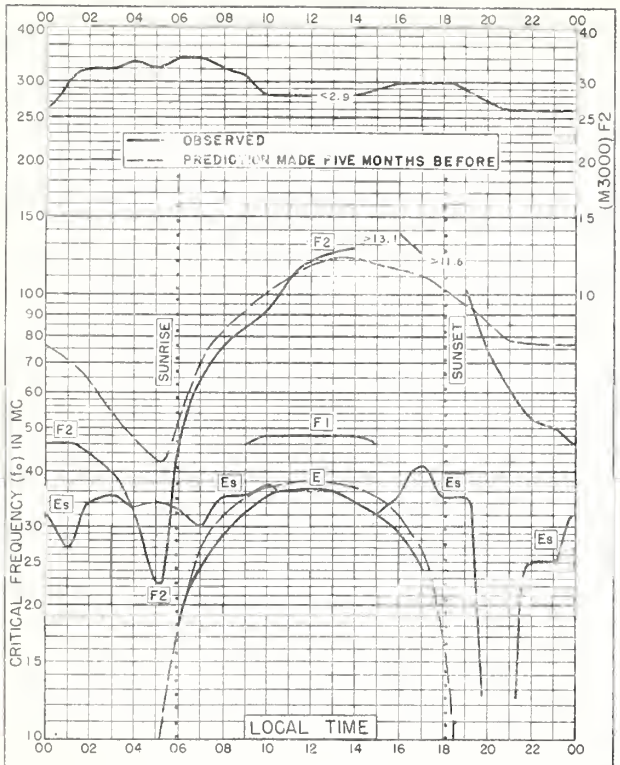

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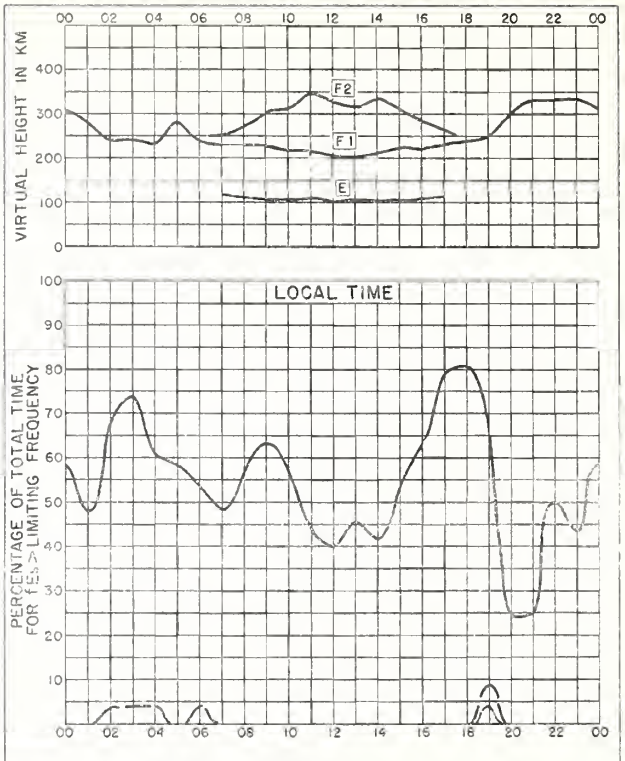

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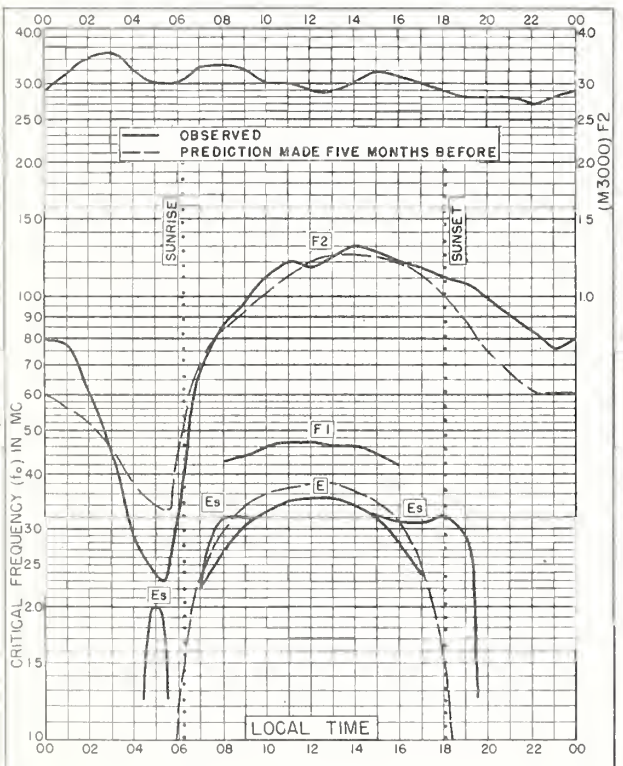

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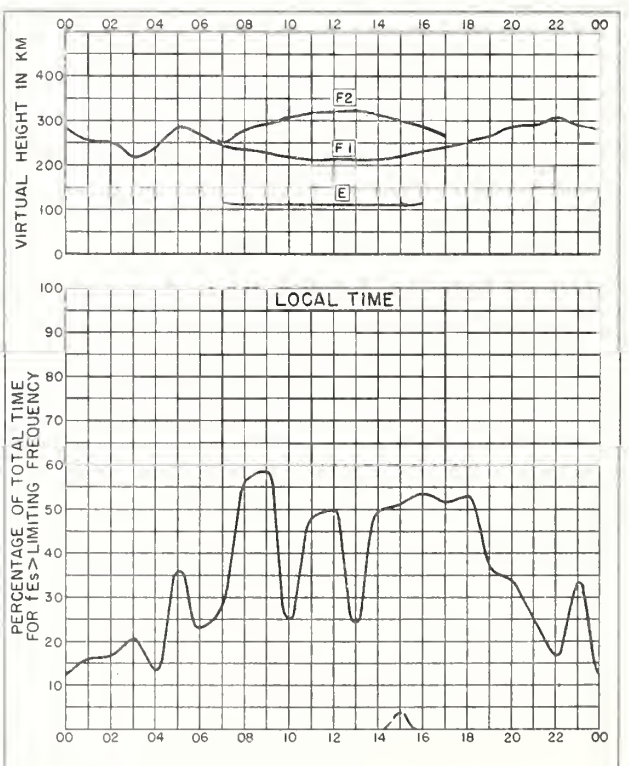

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CRPL and IRPL Reports

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

Daily:

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

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).

CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Navy, DNC 13 ( ) series; Dept. of the Air Force, TO 16-1B-2 series.)

CRPL—F. Ionospheric Data.

*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.

*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.

IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions. (G1, G3, available. Others out of print; see second footnote.)

IRPL—R. Nonscheduled reports:

R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.

R5. Criteria for Ionospheric Storminess.

**R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.

R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.

R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.

R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.

**R11. A Nomographic Method for both Prediction and Observation Correlation of Ionosphere Characteristics.

**R12. Short Time Variations in Ionosphere Characteristics.

R14. A Graphical Method for Calculating Ground Reflection Coefficients.

**R15. Predicted Limits for F2-Layer Radio Transmission Throughout the Solar Cycle.

**R17. Japanese Ionospheric Data—1943.

R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.

**R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)

**R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.

**R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.

**R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.

**R26. The Ionosphere as a Measure of Solar Activity.

R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.

**R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.

**R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.

**R33. Ionospheric Data on File at IRPL.

**R34. The Interpretation of Recorded Values of *fEs*.

**R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

IRPL—T. Reports on tropospheric propagation:

T1. Radar operation and weather. (Superseded by JANP 101.)

T2. Radar coverage and weather. (Superseded by JANP 102.)

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

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

**Out of print; information concerning cost of photostat or microfilm copies is available from CRPL upon request.