PART A

IONOSPHERIC DATA

ISSUED
JULY 1956

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: foF2 minus foF1 is 0.5 Mc or less (used with (M3000)F2).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of 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; the symbol D, only when it replaces a frequency characteristic.

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.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

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.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

Month	Predicted Sunspot Number										
	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
December		42	11	15	33	53	86	108	114	126	85
November	147	35	10	16	38	52	87	112	115	124	83
October	135	31	10	17	43	52	90	114	116	119	81
September	119	30	8	18	46	54	91	115	117	121	79
August	105	27	8	18	49	57	96	111	123	122	77
July	95	22	8	20	51	60	101	108	125	116	73
June	89	18	9	21	52	63	103	108	129	112	67
May	77	16	10	22	52	68	102	108	130	109	67
April	68	13	10	24	52	74	101	109	133	107	62
March	60	14	11	27	52	78	103	111	133	105	51
February	53	14	12	29	51	82	103	113	133	90	46
January	48	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	72	80

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 60 and figures 1 to 120 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.

Commonwealth of Australia, Department of the Interior:
Macquarie 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:
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Inverness, Scotland
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada

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

French National Center for Telecommunications Studies:
Tananarive, Madagascar

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

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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:
Campbell I.

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

Manila Observatory:
Baguio, P. I.

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

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

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

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey
Okinawa I.

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Point Barrow, Alaska
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 61 through 71 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.

The interpretation of a cell is as follows: U F
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The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foF1 and foE. Thus at a later date it will be possible to register more closely scaled values of these characteristics, whenever such are reported.

Table 1

Washington, D. C. (38.7°N, 77.1°W) June 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.2					3.5	2.80
01	280	5.8					3.3	2.80
02	270	5.3					3.5	2.80
03	280	4.9					3.7	2.80
04	280	4.4					3.9	2.80
05	270	4.4	280	----	129	----	3.0	2.90
06	320	5.1	230	3.80	111	2.40	4.0	2.90
07	380	5.6	220	4.30	105	2.90	5.8	2.80
08	430	5.7	210	4.70	103	3.20	6.4	2.70
09	430	6.1	210	4.90	101	3.40	5.0	2.70
10	420	6.2	200	5.00	101	3.50	6.8	2.70
11	470	6.1	205	5.00	101	3.60	5.0	2.60
12	470	6.2	210	5.20	101	3.80	5.2	2.60
13	460	6.4	205	5.10	101	3.80	5.4	2.60
14	430	6.6	210	5.00	101	3.80	4.8	2.70
15	430	6.6	220	5.00	103	3.60	4.6	2.65
16	400	6.9	220	4.90	105	3.40	5.0	2.70
17	360	7.0	230	4.60	109	3.10	3.6	2.75
18	320	7.2	240	4.10	110	2.60	3.8	2.80
19	280	7.0	260	----	121	1.80	3.4	2.90
20	250	7.4					4.4	2.90
21	260	7.2					3.6	2.80
22	270	6.8					4.9	2.80
23	280	6.4					3.7	2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Upsala, Sweden (59.8°N, 17.6°E) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	5.7						2.7
01	300	5.1						2.7
02	300	5.0			---	E		2.7
03	300	5.0	---	---	---	E		2.7
04	320	5.6	270	3.2	130	1.85	1.8	2.8
05	335	5.9	260	3.75	115	2.25		2.8
06	360	6.3	240	4.2	110	2.7		2.8
07	370	6.6	240	4.6	110	3.0		2.8
08	360	7.1	230	4.8	110	3.2	3.3	2.8
09	350	7.7	230	4.9	110	3.3	3.4	2.8
10	355	7.7	230	5.1	105	3.35		2.8
11	350	7.9	220	5.2	105	3.4		2.8
12	350	7.8	220	5.2	105	3.5		2.8
13	355	8.0	220	5.1	105	3.45		2.8
14	350	7.9	220	5.1	105	3.4		2.8
15	350	7.6	230	5.0	105	3.2		2.8
16	340	7.9	240	4.9	105	3.1		2.8
17	300	7.3	240	4.5	110	2.9		2.9
18	290	7.3	250	4.0	115	2.6	2.8	3.0
19	275	7.3	260	3.5	120	2.1	2.5	2.9
20	260	7.4	---	---	---	1.5	2.0	2.9
21	265	6.9			---	E		2.9
22	280	6.4						2.8
23	290	6.2						2.7

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

Table 3

Adak, Alaska (51.9°N, 176.6°W) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	5.2						2.55
01	310	4.8						2.5
02	310	4.7						2.55
03	330	4.5					1.1	2.55
04	360	4.5	330	(2.8)	---	---	1.7	2.55
05	430	5.4	270	3.6	125	(2.4)	2.4	2.45
06	430	6.2	250	4.1	111	(2.7)	3.0	2.5
07	420	6.8	240	4.3	106	(3.1)	3.3	2.55
08	420	6.6	225	4.7	103	---	4.5	2.6
09	440	6.3	220	4.8	101	---	4.7	2.55
10	445	6.1	215	4.9	101	---	4.5	2.6
11	470	6.2	215	5.0	101	---	4.8	2.55
12	510	6.1	220	5.0	101	---	4.4	2.5
13	460	6.1	220	5.0	101	---	4.0	2.65
14	440	6.2	220	5.0	103	---	3.8	2.6
15	420	6.2	230	4.9	105	(3.4)	4.2	2.65
16	380	6.3	235	4.8	109	(3.2)		2.7
17	340	6.4	250	(4.5)	109	(2.9)	3.0	2.8
18	310	6.5	260	---	115	(2.7)	3.5	2.9
19	280	6.8			130	---	2.8	2.9
20	260	6.6					2.5	2.85
21	270	6.8					2.4	2.7
22	270	6.4					1.5	2.7
23	290	5.8					1.2	2.6

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 4

Graz, Austria (47.1°N, 15.5°E) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.0						
01	330	6.8						
02	320	6.2						
03	325	6.1						
04	300	5.9						
05	275	6.1		(3.2)				
06	270	6.4	250	4.3				
07	295	6.8	250	4.8			4.3	
08	310	7.6	230	4.9			4.8	
09	320	7.9	230	5.1	---	(3.8)	4.9	
10	330	8.4	230	5.1	---	(3.9)	4.4	
11	345	8.8	230	5.2	---	(4.0)	4.0	
12	340	9.0	220	5.3	---	(4.1)	4.1	
13	330	9.0	220	5.2	---	(4.0)	4.0	
14	330	9.4	230	5.2	---	(3.9)	4.0	
15	330	9.2	230	5.1	---	(3.8)	4.0	
16	305	8.8	230	5.1				
17	295	8.5	250	4.7			4.0	
18	255	8.6					4.1	
19	260	8.4					3.7	
20	270	8.3					4.1	
21	270	8.1					3.7	
22	300	7.5						
23	310	7.3						

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

Table 5

Ft. Monmouth, New Jersey (40.3°N, 74.1°W) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	6.2					3.5	2.65
01	290	5.8					3.6	2.70
02	280	5.4					(3.1)	2.70
03	290	(4.9)					(4.0)	2.80
04	290	(4.5)					(2.7)	(2.75)
05	270	4.8	---	---	---	---	1.9	2.95
06	260	5.6	245	3.8	111	2.6	2.4	3.00
07	305	6.2	230	4.3	111	(3.0)	3.2	3.00
08	360	6.4	220	4.7	109	(3.3)	3.5	2.85
09	390	6.8	210	4.9	109	(3.5)	3.6	2.80
10	370	7.0	200	5.1	109	(3.7)	3.8	2.80
11	380	7.0	210	5.2	109	(3.8)	3.9	2.80
12	380	7.3	210	5.4	109	(3.8)	3.8	2.70
13	380	7.2	210	5.4	109	(3.9)	3.6	2.70
14	390	7.4	220	5.3	109	(3.7)	3.9	2.70
15	360	7.6	220	5.0	109	3.5	3.7	2.75
16	325	7.7	220	4.7	109	(3.3)	3.3	2.80
17	320	7.8	240	4.4	115	3.0	3.0	2.80
18	280	8.1	255	---	117	(2.5)	2.6	2.90
19	260	8.1					3.6	2.90
20	250	7.8					2.8	2.80
21	260	7.5					(4.4)	2.80
22	280	7.0					(5.2)	2.80
23	280	(6.6)					3.9	(2.70)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Okinawa I. (26.3°N, 127.8°E) May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	12.6					3.6	2.75
01	270	12.3					4.3	2.90
02	260	10.8					3.8	2.90
03	260	8.7					3.0	2.85
04	260	8.2					2.7	2.80
05	250	7.5					3.4	2.85
06	260	8.0			133	(1.9)	3.3	3.00
07	240	8.6	240	---	114	(2.6)	4.8	3.05
08	(250)	8.8	230	---	111	(3.2)	5.7	2.95
09	---	9.3	225	---	111	(3.5)	7.0	2.80
10	---	10.2	220	---	111	(3.8)	7.0	2.65
11	370	11.2	<220	---	111	(3.9)	7.0	2.55
12	350	12.6	215	---	111	(4.0)	7.2	2.70
13	350	13.4	230	---	111	(4.0)	6.5	2.75
14	350	14.0	230	---	111	(3.9)	6.5	2.70
15	340	14.2	225	---	111	3.7	6.4	2.75
16	330	14.5	230	---	111	(3.5)	5.7	2.80
17	300	14.8	240	---	111	(3.2)	5.6	2.85
18	280	13.7	250	---	117	(2.5)	5.2	2.90
19	260	13.3					4.6	2.90
20	260	12.0					3.8	2.65
21	300	12.4					3.7	2.60
22	320	11.8					3.3	2.55
23	300	12.5					4.1	2.65

Time: 135.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Formosa, China (25.0°N, 121.5°E) — May 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	13.5					3.2	2.8
01	280	12.8					3.2	2.9
02	280	12.4					3.2	2.8
03	---	-----						---
04	---	-----						---
05	---	-----						
06	---	-----						
07	---	-----						---
08	260	9.7	240	---	120	3.4	5.9	2.8
09	(300)	10.5	230	---	120	3.6	6.1	2.7
10	(340)	11.2	---	---	---	---	6.4	2.5
11	360	12.6	---	5.8	---	---	5.8	2.7
12	370	13.5	---	5.9	---	---	5.6	2.7
13	360	14.1	---	5.8	---	---	<5.2	2.7
14	340	15.2	---	---	---	---	<5.2	2.7
15	320	>16.4	240	5.4	---	---	4.5	2.7
16	(300)	>16.2	240	---	120	---	4.0	2.7
17	280	15.9	260	---	---	---	3.9	2.8
18	280	15.3					3.8	2.8
19	280	14.3					3.8	2.9
20	310	>13.7					3.1	2.7
21	320	14.2					2.8	2.6
22	320	>12.8					2.8	2.6
23	300	>13.5					3.0	(2.7)

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

Table 8

Tromso, Norway (69.7°N, 19.0°E) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(5.15)					3.4	(2.40)
01	---	(5.30)					3.4	(2.40)
02	(360)	(4.90)			---	----	2.9	(2.40)
03	(340)	(4.80)			---	----	2.7	(2.45)
04	(300)	5.40			---	----	3.0	2.60
05	---	5.50	---	-----	---	1.85		(2.55)
06	---	6.25	260	-----	115	2.15		(2.75)
07	(450)	6.30	250	-----	110	2.65		(2.70)
08	(445)	6.85	245	-----	110	2.90		2.60
09	---	7.00	245	-----	110	2.90		2.70
10	(380)	7.80	245	5.00	110	3.10		2.70
11	360	8.05	240	4.80	110	3.10	3.1	2.70
12	390	8.45	240	4.70	110	3.10		2.70
13	400	8.30	240	4.70	105	3.10		2.70
14	385	7.90	245	4.55	110	3.05		2.70
15	(380)	7.60	245	-----	110	3.00		2.70
16	(280)	6.70	250	-----	110	2.80		2.70
17	(260)	6.60	255	-----	110	2.60	<2.7	2.90
18	(260)	6.40	---	-----	115	2.35	<3.7	2.90
19	280	6.50			---	-----	4.0	2.80
20	(295)	5.95			---	-----	3.2	2.70
21	(300)	5.60					3.1	(2.70)
22	---	(5.30)					3.2	(2.40)
23	---	(5.20)					3.2	(2.60)

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 9

Fairbanks, Alaska (64.9°N, 147.8°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(4.4)					4.4	(2.60)
01		(5.0)					4.9	(2.60)
02		(4.7)					4.9	(2.55)
03		(4.6)					4.6	(2.60)
04		(5.0)			---	---	4.5	(2.60)
05		(5.5)		---	---	---	4.0	(2.60)
06		(5.4)		(3.6)	111	2.3	2.3	(2.60)
07		(5.4)		(4.0)	111	(2.8)		(2.50)
08		(5.4)		(4.2)	111	2.9		(2.55)
09		(5.8)		(4.4)	111	(3.1)		(2.60)
10		(6.0)		(4.6)	111	(3.2)		(2.60)
11		6.1		(4.6)	111	(3.2)		2.60
12		6.4		(4.7)	111	(3.2)		2.65
13		6.6		(4.8)	111	3.2		2.65
14		6.8		(4.7)	111	(3.2)		2.65
15		6.8		(4.5)	111	(3.0)		2.70
16		7.3		---	111	2.8		2.80
17		(7.0)		---	117	2.5		(2.85)
18		(6.8)		---	116	(2.2)		(2.90)
19		(6.2)		---	123	---	1.8	(3.00)
20		(5.6)			---	---	3.1	(2.90)
21		(5.2)					3.5	(2.90)
22		(5.2)					3.6	(2.80)
23		(4.5)					4.2	(2.70)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Anchorage, Alaska (61.2°N, 149.9°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		3.9						2.45
01		4.0					2.1	2.50
02		3.8					1.1	2.45
03		4.2						2.45
04		4.4						2.45
05		4.5		3.20	137	2.00		2.45
06		5.1		3.60	129	2.30		2.50
07		5.5		4.00	121	2.60		2.50
08		5.9		4.30	119	(2.80)		2.50
09		6.0		4.40	117	(3.00)		2.50
10		6.1		4.60	115	(3.10)		2.55
11		6.4		4.80	115	3.20		2.60
12		6.4		4.80	115	(3.40)		2.50
13		6.4		4.80	115	(3.30)		2.55
14		6.7		4.80	117	(3.10)		2.55
15		7.0		4.80	114	(3.00)		2.65
16		7.0		4.50	119	(2.80)		2.70
17		7.4		----	121	2.50		2.75
18		6.8		----	131	2.10		2.80
19		6.7		----	---	(1.80)		2.80
20		5.8						2.80
21		5.4						2.75
22		4.2						2.70
23		4.1						2.50

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Narsarssuak, Greenland (61.2°N, 45.4°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(4.6)					4.3	(2.70)
01		---					3.8	----
02		---					4.3	----
03		---					4.2	----
04		---			---	---	4.4	----
05		(5.0)			---	---	4.0	(2.90)
06		(5.4)			111	2.5	3.8	(3.00)
07		(5.9)		---	109	2.8	3.2	2.90
08		(6.2)		(4.4)	109	3.0		(2.90)
09		6.2		(4.5)	111	3.2		(2.75)
10		6.6		(4.6)	109	(3.3)		2.70
11		6.8		4.9	109	3.5		2.65
12		(7.0)		(5.0)	109	(3.5)		(2.60)
13		(7.4)		(4.7)	109	(3.4)		(2.70)
14		(7.3)		4.7	108	(3.3)		(2.70)
15		(7.3)		(4.5)	109	3.2		(2.70)
16		(6.7)		(4.5)	109	3.0		(2.80)
17		(6.6)		---	111	2.7	3.0	(2.80)
18		(6.4)		---	115	2.7	4.0	(2.90)
19		(6.0)			123	2.2	4.0	(2.80)
20		---			---	---	4.2	----
21		---					4.8	----
22		---					4.5	----
23		---					4.4	----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Maui, Hawaii (20.8°N, 156.5°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	10.0						2.80
01	270	9.4					2.2	2.85
02	260	8.3						2.90
03	260	6.8					1.8	2.80
04	270	6.4					1.9	2.65
05	270	5.9					2.0	2.70
06	290	6.0	---	---	---	---	3.1	2.75
07	250	8.3	240	---	118	2.4	4.1	3.00
08	250	10.1	230	---	111	3.0	5.6	2.90
09	260	11.2	225	---	109	3.4	5.8	2.70
10	280	12.4	215	5.0	109	3.8	5.6	2.60
11	340	13.2	210	---	109	3.8	5.4	2.60
12	330	14.4	220	---	109	4.0	5.8	2.65
13	350	15.2	230	5.6	109	4.0	5.6	2.70
14	350	15.6	230	(5.9)	109	3.9	4.6	2.70
15	320	15.3	230	5.9	109	3.8	5.3	2.70
16	320	14.9	240	---	109	3.5	5.0	2.70
17	290	14.3	250	---	117	3.0	4.4	2.80
18	260	13.6	---	---	121	2.2	4.2	2.85
19	260	13.2					4.2	2.80
20	260	12.7					4.1	2.70
21	270	12.0					3.8	2.70
22	270	11.2					4.2	2.70
23	280	10.8					2.6	2.80

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Puerto Rico, W. I. (18.5°N, 67.2°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	9.5					(4.1)	2.90
01	270	8.8					3.1	2.95
02	250	8.2					3.3	2.90
03	250	7.0					3.1	2.75
04	270	6.6					(2.8)	2.75
05	290	6.2					(3.4)	2.70
06	280	6.4					(2.2)	2.75
07	240	8.5	270	---	111	<2.5		3.05
08	250	10.0	230	---	109	<3.0		3.05
09	280	11.2	230	4.8	109	3.4		2.95
10	280	12.0	220	5.1	109	<3.8		2.85
11	305	12.3	220	5.3	109	<4.0		2.80
12	305	13.0	220	5.5	109	(4.0)		2.80
13	320	13.1	220	5.4	(111)	(4.0)		2.75
14	320	12.8	220	5.1	112	4.0		2.75
15	305	12.6	230	5.0	111	3.8	4.6	2.70
16	290	12.2	240	---	111	3.4	4.6	2.70
17	250	11.7	240	---	115	<3.0	4.2	2.70
18	250	11.4	265	---			3.4	2.75
19	250	10.7					2.8	2.80
20	270	10.4					3.5	2.75
21	280	9.8					3.5	2.75
22	290	9.5					(3.7)	2.75
23	280	9.8						2.80

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Guam I. (13.6°N, 144.9°E) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	14.4						3.15
01	240	13.0						3.20
02	225	10.0						3.10
03	230	8.8						3.00
04	230	8.2					1.8	3.10
05	230	6.7					2.1	3.10
06	240	6.6					2.5	3.00
07	240	9.3			117	2.20	3.2	3.10
08	---	11.4	230		111	3.00	3.4	2.90
09	---	12.4	220		111	3.40	3.8	2.70
10	---	12.6	<220		111	3.60		2.45
11	---	13.0	210		111	3.80		2.30
12	---	12.6	210		111	(3.80)		2.30
13	---	13.0	215		111	3.90		2.30
14	---	13.4	210		111	3.80		2.30
15	---	13.4	220		111	3.60		2.35
16	---	14.0	230		111	3.30		2.40
17	---	14.0	240		113	2.90		2.45
18	260	13.5	---		121	2.10	2.8	2.50
19	305	12.9					2.1	2.40
20	380	12.4						2.30
21	320	12.1					2.0	2.45
22	290	12.8					2.0	2.65
23	260	13.0					2.1	3.00

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Talara, Peru (4.6°S, 81.3°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	10.5					3.3	2.90
01	230	9.7					3.3	2.90
02	240	9.5						2.95
03	240	8.6						3.05
04	240	7.9					1.5	3.00
05	250	6.6					2.1	3.00
06	250	5.8					2.7	3.00
07	260	8.6			131	2.2	3.8	2.95
08	250	10.9	240	---	119	3.1	4.6	2.85
09	---	11.8	230	---	114	3.5	5.2	2.60
10	---	12.2	220	---	113	3.8	6.6	2.40
11	---	12.0	215	---	111	4.0		2.35
12	---	12.0	210	4.9	111	4.0	5.4	2.25
13	(270)	12.3	210	5.1	109	4.1	5.0	2.20
14	(260)	12.7	200	4.9	109	3.9	5.6	2.25
15	(250)	12.8	210	---	111	3.6	6.0	2.35
16	230	12.8	220	---	111	3.3	6.2	2.35
17	250	12.5			113	2.8	5.5	2.30
18	280	(12.5)					6.2	2.30
19	350	(12.1)					4.5	(2.20)
20	360	(11.7)					4.0	2.30
21	290	(11.6)					4.5	(2.50)
22	240	(11.5)					5.5	(2.80)
23	220	11.2					3.3	2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Huancayo, Peru (12.0°S, 75.3°W) — April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	9.0						3.00
01	220	8.2					3.8	3.00
02	230	7.2					3.6	3.10
03	240	6.7					3.5	3.15
04	240	5.9					2.1	3.10
05	250	5.0						3.15
06	270	6.0					4.8	2.90
07	250	9.6			119	2.5	8.2	3.00
08	(240)	11.8	230	---	111	3.2	10.6	2.85
09	---	13.0	220	---	107	---	12.5	2.60
10	(270)	12.9	210	---	105	---	12.8	2.40
11	---	12.4	200	---	105	---	13.6	2.30
12	---	12.3	200	---	105	---	13.2	2.25
13	(270)	11.8	200	---	105	---	13.2	2.30
14	---	11.8	200	---	103	---	13.0	2.25
15	(210)	11.8	200	---	105	---	12.5	2.25
16	240	11.8	230	---	107	3.2	12.0	2.25
17	260	11.6			111	2.6	9.5	2.25
18	300	11.2			150	1.7		2.25
19	380	10.2						2.15
20	330	9.7						2.35
21	280	9.6						2.60
22	240	9.4						2.85
23	230	9.0						2.95

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Baker Lake, Canada (64.3°N, 96.0°W) — March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.0			---	E	<1.5	2.7
01		4.6			---	E	<1.5	2.7
02		5.0			---	E	<1.3	2.8
03		4.0			---	E	<1.6	2.65
04		3.6			---	E	<1.2	2.8
05		3.7			145	1.2	2.6	2.7
06		3.6			120	1.8	1.8	2.7
07		4.2			120	2.2	2.2	2.85
08		4.6		3.8	110	2.5	2.6	2.95
09		5.0		4.0	110	2.8	2.8	2.95
10		5.4		4.2	110	3.1	3.2	2.65
11		6.0		4.3	110	3.2	3.2	2.8
12		6.8		4.4	110	3.1		2.75
13		8.0		4.3	110	3.1	3.1	2.75
14		8.0		4.2	110	3.1		2.8
15		7.0		4.2	110	2.9	2.9	2.6
16		6.8		4.0	110	2.7		2.7
17		6.5		3.8	115	2.3	2.3	2.8
18		6.1			115	2.0	2.2	2.9
19		5.5			120	1.8	2.0	2.8
20		5.3			125	1.4	2.4	2.7
21		5.1			155	1.2	<2.4	2.8
22		5.2			---	---	3.0	2.7
23		5.0			---	E	3.0	2.75

Time: 90.0°W.
Sweep: March 1 through 6: 0.6 Mc to 15.0 Mc in 16 seconds.
March 7 through 31: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 18

Lindau/Harz, Germany (51.6°N, 10.1°E) — March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	5.0					1.90	2.6
01	305	4.8					2.15	2.7
02	300	4.6					2.15	2.7
03	280	4.4					2.10	2.75
04	280	4.25					2.20	2.7
05	270	3.45					2.10	2.8
06	270	4.0			---	E	2.45	3.0
07	250	5.75	---		120	1.85	2.80	3.3
08	240	7.35	235		110	2.5	3.00	3.3
09	250	8.05	225		100	2.9	3.35	3.2
10	260	9.85	215		100	3.15	3.75	3.2
11	250	10.2	215		100	3.25	3.85	3.2
12	260	10.6	210		100	3.35	3.90	3.1
13	255	10.8	215		100	3.35	3.75	3.2
14	250	10.75	215		100	3.35	3.65	3.2
15	250	10.2	225		100	3.2	3.50	3.2
16	240	10.05	230		105	2.9	3.35	3.2
17	240	10.0	230		110	2.5	3.10	3.2
18	230	9.65			125	1.85	2.75	3.2
19	230	9.0			---	E	2.40	3.2
20	230	7.8					2.40	3.1
21	240	6.8					2.20	2.95
22	270	6.1					1.90	2.8
23	280	5.65					2.15	2.8

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 19

Schwarzenburg, Switzerland (46.8°N, 7.3°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.0						2.9
01	300	5.0						2.9
02	300	5.0						3.0
03	300	4.8						3.0
04	285	4.6						3.05
05	270	4.2						3.2
06	270	4.0						3.2
07	220	5.4			100	2.0		3.5
08	200	7.8			100	2.4		3.55
09	200	9.2			100	2.8		3.5
10	200	9.6			100	3.1		3.5
11	200	10.6			100	3.2		3.5
12	200	11.0			100	3.4		3.5
13	200	11.0			100	3.4		3.5
14	200	11.0			100	3.4		3.45
15	200	11.0			100	3.3		3.5
16	200	10.5			100	3.0		3.4
17	200	10.0			100	2.7		3.5
18	200	10.0			100	2.1		3.5
19	200	9.0						3.5
20	200	8.0						3.5
21	210	6.9						3.4
22	240	6.0						3.3
23	260	6.0						3.1

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

Table 20

Baguio, P. I. (16.4°N, 120.6°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	13.6						3.20
01	230	13.1						3.20
02	220	11.0						3.30
03	220	8.3						3.20
04	230	6.3						3.00
05	240	5.4					2.0	2.95
06	270	6.0					2.6	2.90
07	250	9.1			121	2.4	3.3	3.10
08	240	11.2	235	---	115	3.1	4.0	2.95
09	(270)	12.7	230	---	111	3.5	4.3	2.80
10	---	13.4	220	---	111	(3.8)	4.5	2.60
11	---	13.3	210	---	111	(3.9)		2.40
12	---	12.8	210	---	111	(4.0)		2.30
13	(290)	13.0	205	---	111	(3.9)		2.30
14	---	13.0	220	---	111	(3.8)	3.9	2.40
15	---	13.5	230	---	111	3.5	5.1	2.50
16	240	13.9	240	---	113	3.1	4.2	2.60
17	250	13.7			119	2.6	3.3	2.55
18	280	13.8					1.6	2.50
19	350	13.0						2.35
20	330	(12.9)						(2.55)
21	270	(12.9)					1.7	(2.80)
22	240	13.5						2.90
23	240	13.9						3.05

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Leopoldville, Belgian Congo (4.4°S, 15.2°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	11.0						2.7
01	230	9.5						2.7
02	235	8.0						2.8
03	230	6.9					1.6	2.9
04	220	4.0					1.7	3.1
05	250	5.0	---	---	---	---	2.5	2.8
06	250	8.8	240	---	120	2.6	3.2	2.9
07	255	10.2	230	---	110	3.2	3.4	2.8
08	265	11.0	220	---	110	3.6		2.5
09	300	11.5	220	---	110	3.8		2.4
10	390	13.2	210	---	110	---		2.4
11	400	>13.6	225	---	110	4.0		2.4
12	380	>14.0	230	---	110	4.0		2.4
13	380	15.5	230	---	110	4.0		<2.5
14	365	>14.0	230	---	110	3.6		<2.5
15	360	>14.0	240	---	110	3.3		<2.5
16	335	>14.0	250	---	115	2.6	3.0	2.5
17	310	---	270	---			2.4	<2.8
18	305	---					2.4	<2.7
19	280	>14.0						---
20	225	>14.0						---
21	220	>16.0						<3.0
22	215	>16.0						2.9
23	220	>13.8						2.9

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

Table 22

Talara, Peru (4.6°S, 81.3°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	10.6					3.5	3.00
01	220	9.3					3.6	2.90
02	240	8.4					3.4	3.05
03	230	7.3					3.2	3.15
04	240	5.9					3.0	3.20
05	240	5.0					3.1	3.20
06	240	4.5					3.9	3.10
07	260	7.8			129	2.1	4.2	3.10
08	240	10.8	240	---	117	3.0	6.6	3.00
09	---	12.1	225	---	113	3.5	5.2	2.70
10	---	12.5	215	---	111	3.9	6.2	2.50
11	---	12.5	210	---	111	4.1	3.7	2.35
12	---	12.6	200	---	111	4.1		2.30
13	(270)	12.6	200	5.2	109	4.1		2.25
14	(280)	12.5	200	5.0	109	4.0		2.25
15	(250)	12.6	200	4.6	109	3.7	5.6	2.30
16	---	12.6	210	---	109	3.3	4.4	2.40
17	240	12.6	230	---	111	2.9	3.9	2.40
18	270	(12.4)			125	2.4	3.9	2.40
19	320	(12.4)					3.8	2.35
20	380	12.0					3.3	2.30
21	300	(12.2)					2.4	(2.50)
22	230	(12.0)					3.3	(2.85)
23	210	(11.0)					3.5	2.95

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

Elisabethville, Belgian Congo (11.6°S, 27.5°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	6.1						2.6
01	250	5.6						2.6
02	250	5.2						2.7
03	240	4.2					1.6	2.8
04	260	4.4					1.8	2.7
05	245	8.2	240	---	120	2.3	2.3	3.0
06	250	10.3	230	---	110	3.0	3.4	2.8
07	270	11.1	220	---	110	3.5	3.7	2.7
08	280	>11.7	225	---	110	3.8	4.0	2.6
09	305	12.0	225	---	110	3.9		2.5
10	320	13.0	220	---	110	4.0		2.5
11	340	13.6	230	---	110	4.0		2.5
12	330	13.6	240	---	110	3.9		2.5
13	320	13.6	240	---	110	3.8	4.5	2.5
14	310	13.3	250	---	110	3.4	4.2	2.5
15	305	13.2	250	---	115	2.9	4.0	2.5
16	270	13.0	260	---	---	2.0	3.2	2.5
17	260	13.2					2.8	2.6
18	260	13.3					2.6	2.7
19	235	12.6					2.1	2.7
20	225	>11.5						2.8
21	235	11.0						2.8
22	230	10.0						2.8
23	225	8.8						2.8

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

Table 24

Huancayo, Peru (12.0°S, 75.3°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	9.3						3.00
01	210	8.9					5.4	3.10
02	220	7.4					3.5	3.05
03	230	6.2					4.7	3.20
04	240	5.5					3.6	3.15
05	240	4.8					4.5	3.20
06	270	4.9					4.9	2.95
07	240	9.2	---	---	119	2.6	5.8	3.15
08	---	11.7	225	---	109	3.1	11.0	2.90
09	---	12.9	215	---	109	---	11.9	2.65
10	---	13.4	210	---	109	---	12.5	2.35
11	(280)	12.8	200	5.3	107	---	12.6	2.25
12	280	11.9	200	5.3	105	---	12.8	2.25
13	270	11.8	200	5.2	105	---	12.5	2.25
14	(250)	11.6	200	5.0	105	---	12.5	2.25
15	---	11.7	200	---	105	---	12.1	2.30
16	(220)	12.0	205	---	109	---	11.8	2.30
17	250	11.8	240	---	109	---	9.4	2.30
18	280	11.5			120	---	6.4	2.25
19	360	10.4						2.20
20	370	9.6						2.25
21	300	9.8						2.50
22	250	9.4						2.75
23	220	9.4						2.95

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.6					1.8	2.9
01	260	5.1					1.8	2.8
02	250	4.6					2.0	2.8
03	<250	4.2						2.8
04	<260	4.2						2.8
05	<250	3.8						2.8
06	260	4.8			---	---		2.9
07	240	8.1	240	---	120	2.4		3.2
08	250	9.8	230	4.4	110	3.0		3.2
09	250	11.0	220	4.8	110	3.4	3.9	3.0
10	270	11.6	210	5.1	110	3.6	3.9	2.9
11	270	11.9	210	5.1	110	3.8	4.0	2.8
12	290	12.2	210	5.4	110	3.9		2.8
13	300	12.4	210	5.4	110	4.0		2.8
14	300	12.4	220	5.3	110	3.9		2.7
15	300	12.5	230	5.0	110	3.6		2.8
16	280	12.2	230	4.9	110	3.3	4.2	2.8
17	260	11.9	240	---	110	2.8	3.8	2.9
18	240	11.5			120	2.0	3.1	2.9
19	230	10.7					3.0	3.0
20	230	9.2					2.6	3.0
21	240	8.1					2.2	2.9
22	250	7.2					2.3	2.9
23	250	6.3					2.0	2.9

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

Table 26

Watheroo, W. Australia (30.3°S, 115.9°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.1					2.5	2.7
01	280	6.0					2.5	2.7
02	270	5.8					2.6	2.8
03	260	5.0				---	2.3	2.8
04	260	4.8	---	---		---	2.5	2.8
05	260	4.7	---	---		---	2.5	2.8
06	280	4.9	---	---		1.3	2.0	2.9
07	250	7.2	270	---		2.3	2.4	3.2
08	260	8.0	240	4.5		2.9	3.3	3.1
09	270	9.2	220	4.9		3.3	3.9	3.0
10	270	9.5	210	5.0		3.5	3.9	2.9
11	300	10.0	210	5.3		3.7	4.0	2.9
12	310	10.5	220	5.5		3.8	4.1	2.9
13	300	10.9	220	5.5		3.8	4.1	2.9
14	320	11.0	230	5.3		3.7	4.0	2.8
15	310	10.5	230	5.2		3.6	3.9	2.8
16	280	10.1	240	4.8		3.4	3.9	2.9
17	250	9.2	250	4.5		2.9	3.9	3.0
18	250	8.4	---	---		2.1	2.8	3.0
19	240	8.1					2.7	3.0
20	240	7.3					2.4	2.8
21	250	7.1					2.0	2.8
22	260	6.8					1.6	2.8
23	280	6.2					2.0	2.8

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 27

Capetown, Union of S. Africa (34.2°S, 18.3°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.7					1.7	2.9
01	270	4.4						2.7
02	280	4.2						2.6
03	280	4.0					2.0	2.7
04	270	4.0						2.7
05	250	3.8						2.8
06	270	3.5						2.7
07	250	5.9			140	1.9		3.0
08	250	8.4	240	4.2	120	2.6		3.1
09	250	9.7	230	4.5	110	3.1		3.1
10	260	10.9	220	4.9	110	3.5	3.5	2.9
11	280	11.8	210	5.0	110	3.7	4.0	2.8
12	270	12.1	210	5.1	110	3.8		2.8
13	280	12.3	220	5.2	110	3.8	3.8	2.8
14	280	12.5	230	5.4	110	3.8		2.8
15	280	12.5	230	4.8	110	3.7		2.7
16	270	12.3	240	4.4	110	3.5		2.8
17	260	12.0	240	4.0	110	3.1		2.8
18	250	11.7	250	---	120	2.6	3.0	2.9
19	230	11.1			120	---	2.4	3.0
20	220	9.2					2.0	3.0
21	230	7.7						3.0
22	240	6.7						3.0
23	250	5.4						3.0

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

Table 28

Reykjavik, Iceland (64.1°N, 21.8°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00							4.0	
01							3.7	
02		---					4.0	----
03		---					3.6	----
04		---					3.0	----
05		(3.4)					2.8	(3.00)
06		(3.1)					2.9	----
07		(3.1)						(3.10)
08		(4.1)			---	---		(3.30)
09		5.2			---	---		(3.40)
10		6.0			---	(2.2)		3.40
11		7.0			---	---		3.35
12		7.7			---	(2.6)		3.30
13		(8.0)			120	(2.6)		(3.30)
14		(8.2)		---	113	(2.7)		(3.30)
15		(7.6)			120	---		(3.35)
16		(7.9)			---	---		(3.30)
17		(7.6)			---	---		(3.30)
18		(5.8)						(3.15)
19		(5.2)					4.4	(2.90)
20		---					3.5	----
21		---					3.8	----
22		---					4.0	
23							3.8	

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 29

Lindau/Harz, Germany (51.6°N, 10.1°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.4					2.0	2.9
01	285	3.5					1.9	2.9
02	290	3.4					2.0	2.9
03	275	3.2					2.3	2.9
04	275	3.0					1.8	2.9
05	270	2.7					1.8	3.0
06	265	2.6						3.0
07	255	3.6			---	E	2.2	3.2
08	225	5.9			120	1.7	2.9	3.6
09	225	7.7			110	2.5	2.8	3.5
10	225	8.6			110	2.8	3.4	3.5
11	230	9.4			110	3.0	3.5	3.4
12	230	9.4			110	3.1	3.5	3.3
13	235	9.2			110	3.1	3.8	3.3
14	230	9.4			110	3.0	3.4	<3.5
15	235	9.2			110	2.8	3.3	3.4
16	230	8.8			115	2.5	2.8	3.5
17	220	8.4			120	2.0	2.6	3.5
18	215	7.1			---	E	2.4	3.4
19	220	6.1					2.4	3.45
20	230	4.5					2.4	3.4
21	260	3.6					1.9	3.1
22	280	3.4						3.0
23	300	3.5						2.9

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 30

Wakkanai, Japan (45.4°N, 141.7°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.5						
01	300	4.4						
02	270	4.2						
03	260	4.0						
04	260	3.8						
05	260	3.6						
06	250	3.8						
07	230	6.5						
08	230	8.7						
09	230	9.2						
10	250	10.0						
11	250	10.6						
12	250	10.7						
13	250	10.2						
14	240	9.4						
15	240	9.4						
16	230	8.4						
17	220	7.4						
18	220	6.0						
19	230	5.2						
20	250	4.9						
21	280	4.4						
22	310	4.3						
23	310	4.4						

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 31

Akita, Japan (39.7°N, 140.1°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	4.4					2.4	
01	330	4.4					2.5	
02	300	4.2					2.5	
03	300	4.0					2.5	
04	280	3.7					2.5	
05	310	3.5					2.1	
06	290	3.7						
07	270	6.6					2.2	
08	250	8.1						
09	260	9.7						
10	270	10.3						
11	280	10.9						
12	290	11.3						
13	280	10.4						
14	270	10.2						
15	260	9.6						
16	250	8.6						
17	250	8.0						
18	250	6.5					2.6	
19	260	5.5					2.1	
20	260	5.0					2.2	
21	300	4.7					2.1	
22	330	4.5					2.0	
23	350	4.5					2.4	

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

Table 32

San Francisco, California (37.4°N, 122.2°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(265)	3.4					(2.8)	2.80
01	(265)	3.6					2.2	2.90
02	260	3.6					(2.6)	3.00
03	250	(3.5)						(2.90)
04	<260	3.4					(2.4)	2.90
05	265	3.3						2.75
06	<280	(3.3)					(2.2)	(2.80)
07	245	(4.9)	---	---	---	---		(3.10)
08	230	7.4	235	---	(115)	(2.5)		3.30
09	235	8.6	225	(3.5)	(111)	(3.0)		3.25
10	245	9.4	215	(4.5)	(111)	(3.1)		3.10
11	255	10.2	210	(4.7)	(111)	(3.3)		3.10
12	270	(11.0)	220	(4.8)	(115)	(3.4)		(3.05)
13	250	10.8	215	(4.8)	(114)	(3.6)		3.10
14	260	10.4	215	(4.4)	(111)	(3.4)		3.00
15	250	10.2	220	(4.2)	(113)	(3.2)	3.6	3.05
16	235	10.0	230	---	(115)	(2.8)		3.10
17	225	9.2	---	---	(117)	(2.1)	2.2	3.20
18	220	8.0					3.2	3.20
19	215	6.2					3.1	3.15
20	<230	4.3					4.4	3.25
21	235	3.5					2.6	3.05
22	250	3.3					(2.3)	2.95
23	265	3.4					(2.9)	2.85

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 33

Tokyo, Japan (35.7°N, 139.5°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.5						2.8
01	280	4.6						2.9
02	260	4.0					1.8	3.0
03	240	4.2					2.1	3.1
04	230	3.5						3.0
05	270	3.2						2.8
06	260	3.4						3.0
07	230	7.0	---	---	130	1.9		3.4
08	230	8.1	230	---	110	2.6	3.0	3.4
09	240	10.1	230	4.3	110	3.2	3.6	3.3
10	250	10.3	230	4.7	110	3.4	3.7	3.2
11	260	10.7	230	4.8	110	3.6	4.0	3.1
12	260	11.2	230	4.8	110	3.6	3.7	3.2
13	250	11.0	230	4.8	110	3.5	3.6	3.15
14	250	10.6	230	4.5	110	3.3		3.2
15	250	10.0	230	4.1	110	3.0		3.1
16	240	9.2	230	---	120	2.7	3.0	3.2
17	230	8.6	---	---	130	---		3.3
18	230	6.9						3.1
19	230	5.6						3.1
20	240	5.2						3.0
21	250	4.9						3.0
22	280	4.8						2.8
23	300	4.7						2.8

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

Table 34

Yamagawa, Japan (31.2°N, 130.6°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.8						
01	290	4.6						
02	260	4.4					2.3	
03	250	4.4					2.3	
04	240	4.0					2.3	
05	260	3.2					2.2	
06	290	3.2						
07	250	5.0					2.3	
08	230	7.8						
09	240	9.6						
10	250	10.5						
11	250	11.3						
12	250	12.0						
13	270	12.5						
14	260	12.6						
15	250	12.1						
16	240	11.0						
17	240	10.0						
18	220	9.5					2.3	
19	220	7.3					2.3	
20	240	6.5						
21	230	6.4						
22	250	5.4						
23	290	5.0						

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 35

Nairobi, Kenya (1.3°S, 36.8°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	(13.3)						(3.4)
01	210	9.2						2.8
02	240	9.2						2.9
03	230	9.2						3.0
04	220	8.4						3.1
05	220	6.0						3.2
06	230	4.6					1.9	3.2
07	260	6.7	---	---	130	2.1	2.8	3.1
08	260	9.0	240	4.3	100	3.0	3.7	3.05
09	270	10.0	230	4.9	100	3.5		2.8
10	300	11.3	210	(5.3)	100	4.0		2.6
11	300	12.2	210	5.5	100	4.0		2.6
12	320	12.7	210	5.5	100	---		2.5
13	(340)	13.0	---	---	(100)	---		(2.5)
14	360	13.6	---	5.4	100	---		2.5
15	340	13.9	220	5.5	100	4.0		2.5
16	(330)	13.8	220	5.1	110	3.7		2.55
17	(320)	13.7	240	---	110	3.2		2.5
18	(290)	>12.6	250	---	110	2.6		(2.5)
19	290	>12.0						---
20	350	(12.6)						(2.5)
21	300	---						---
22	260	>13.8						---
23	220	(15.8)						---

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

Table 36

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<280	5.2					1.9	2.8
01	260	5.1					2.1	2.9
02	240	4.7						2.9
03	240	4.2						2.9
04	<250	3.8						2.8
05	250	3.7						2.85
06	250	5.0	---	---	120	1.9		3.1
07	250	7.1	230	3.9	120	2.6	3.1	3.2
08	270	7.9	220	4.6	110	3.1	3.2	3.0
09	290	9.0	220	5.0	110	3.5	4.0	2.9
10	320	10.1	210	5.1	110	3.7	3.9	2.8
11	330	10.8	210	5.4	110	3.9		2.75
12	320	11.1	210	5.4	110	3.9		2.8
13	330	11.2	210	5.4	110	3.9		2.8
14	320	11.2	210	5.3	110	3.9		2.8
15	310	11.1	220	5.1	110	3.7	4.1	2.8
16	300	11.1	220	4.8	110	3.4	4.0	2.9
17	280	10.7	230	4.2	110	3.0	3.8	2.9
18	250	10.6	250	3.3	110	2.4	3.1	3.0
19	230	9.6			---	---	2.0	3.0
20	230	8.1					2.4	3.0
21	240	7.2					2.1	3.0
22	<250	6.2					2.2	2.9
23	260	5.2					2.2	2.8

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

Table 37

Capetown, Union of S. Africa (34.2°S, 18.3°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.5					1.7	2.8
01	<290	4.3					1.7	2.8
02	<280	4.3					1.4	2.8
03	260	4.2						2.8
04	260	4.0						2.8
05	260	3.9						2.8
06	280	4.1			---	---		2.85
07	250	5.8	240	---	120	2.2		3.1
08	270	7.4	240	4.1	120	2.8		3.0
09	290	8.6	230	4.7	110	3.2		2.8
10	320	9.2	220	5.0	110	3.5		2.8
11	320	10.2	210	5.1	110	3.7		2.7
12	320	10.5	210	5.3	110	3.8		2.7
13	330	10.6	220	5.2	110	3.9		2.8
14	320	10.8	220	5.2	110	3.8		2.7
15	320	10.9	230	5.2	110	3.8		2.8
16	310	10.5	230	4.9	110	3.6		2.8
17	300	10.2	230	4.6	110	3.3		2.9
18	270	9.9	240	4.0	110	2.8	3.3	2.9
19	250	9.4	240	3.0	120	2.2	3.0	3.0
20	230	8.4					2.5	3.05
21	230	7.0					2.5	3.0
22	240	6.0					2.0	2.9
23	260	5.0						2.9

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

Table 38

Buenos Aires, Argentina (34.5°S, 58.5°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	9.6					2.1	2.8
01	290	9.8						2.9
02	280	8.7						2.8
03	280	8.3						2.75
04	240	7.6						2.75
05	240	6.7						2.7
06	240	7.7	---	---			2.8	3.0
07	230	9.0	---	---	---	---	3.4	3.1
08	240	8.8	220	---	---	---	3.9	3.0
09	300	9.8	220	---	---	---	4.2	2.7
10	310	10.8	230	---	---	---	4.6	2.7
11	330	11.7	220	---	---	---	3.6	2.7
12	330	13.3	220	---	---	---	4.0	2.8
13	320	13.9	210	---	---	---	3.9	2.8
14	300	13.9	220	---	---	---		2.95
15	300	13.2	220	---	---	---	4.2	3.0
16	290	13.8	220	---	---	---	4.4	2.95
17	270	13.4	(230)	---	---	---	3.8	3.0
18	270	(13.8)	---	---			3.2	(3.0)
19	280	>11.5					3.6	(3.1)
20	280	(10.8)					5.2	(3.0)
21	290	(10.1)					2.9	(2.85)
22	300	10.4						(2.7)
23	300	(10.3)						(2.8)

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 39

Oecepcion I. (63.0°S, 60.7°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.8						3.1
01	320	7.5					2.0	3.0
02	330	7.3					3.0	3.0
03	340	7.3					3.0	3.0
04	320	6.9					3.0	3.1
05	340	7.0					3.0	3.1
06	320	7.0					3.1	3.2
07	300	7.4					3.3	3.3
08	300	7.2					3.6	3.4
09	300	7.6					3.5	3.4
10	300	7.6					4.1	3.4
11	300	7.6					4.2	3.4
12	300	7.6					4.2	3.5
13	300	7.6					3.8	3.5
14	300	7.3					3.9	3.4
15	300	7.2					4.0	3.5
16	300	7.3					3.6	3.5
17	300	7.7					3.8	3.5
18	300	7.9					3.6	3.5
19	300	8.3					3.4	3.5
20	300	8.0					3.0	3.5
21	300	8.3					3.0	3.4
22	300	8.2					2.8	3.3
23	300	8.4						3.2

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

Table 40

Point Barrow, Alaska (71.3°N, 156.8°W) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---					7.0	
01		---					5.8	----
02		---					5.6	----
03		---					4.5	----
04		---					4.3	----
05		---					4.3	----
06		---					4.3	----
07		---					4.3	----
08		---					4.6	----
09		(3.8)					4.4	(2.85)
10		(3.7)					3.7	(2.90)
11		4.7					3.5	3.00
12		(5.3)					2.3	(3.10)
13		(5.9)						3.15
14		6.0						3.10
15		(5.9)						3.05
16		(6.1)						(3.05)
17		(4.8)						(3.00)
18		(3.2)					3.0	(3.00)
19		(3.3)					3.0	(2.85)
20		(3.4)					4.3	(2.90)
21		(3.6)					4.2	----
22		---					4.8	----
23		---					5.0	

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 41

Point Barrow, Alaska (71.3°N, 156.8°W) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	---					5.6	----
01	(280)	---					5.0	----
02	(280)	---					4.6	----
03	(260)	---					4.7	
04	---	---					4.2	
05	(320)	---					4.0	----
06	(300)	---					3.7	----
07	<320	(4.1)					4.2	----
08	310	(3.6)					4.5	----
09	300	(3.0)					4.4	----
10	280	(3.7)					3.9	(3.10)
11	240	(4.4)					3.0	(3.20)
12	240	(5.6)					2.9	(3.10)
13	240	6.0					<2.8	3.20
14	230	(6.3)			---	---	<2.5	(3.30)
15	230	(5.9)					<2.4	(3.20)
16	240	(4.8)					<2.6	(3.15)
17	240	(4.2)					<2.6	----
18	250	(2.9)					2.8	----
19	260	(2.4)					3.5	
20	(310)	---					3.3	----
21	310	---					4.2	----
22	(300)	---					4.0	----
23	(280)	---					5.7	----

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 42*

Inverness, Scotland (57.4°N, 4.2°W) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	(1.9)						---
01	340	(1.9)						(2.5)
02	330	(1.9)						(2.5)
03	315	1.9						(2.6)
04	305	1.9						(2.6)
05	285	2.0						(2.6)
06	275	2.0						---
07	280	(2.0)						---
08	255	(2.9)			(155)	(1.2)		---
09	225	5.6			125	1.7	2.7	---
10	220	6.8			115	2.0	2.8	3.4
11	225	7.7			120	2.2	2.8	3.4
12	230	8.2	(230)		120	2.3	2.7	3.4
13	230	8.0			130	2.2	2.7	3.3
14	230	8.1			130	2.1	2.8	3.3
15	220	7.4			140	1.8	2.0	(3.4)
16	220	6.6						(3.3)
17	230	5.7						(3.2)
18	235	4.2						3.1
19	255	3.0						(3.0)
20	280	2.3						---
21	290	(2.0)						---
22	340	(1.9)						---
23	340	(1.9)					2.3	---

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 43*

Slough, England (51.5°N, 0.6°W) — December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	3.1					2.5	2.6
01	310	3.2					2.6	2.6
02	300	3.1					2.6	2.65
03	285	2.9					2.6	2.7
04	275	2.7					2.7	2.8
05	270	2.6					2.5	2.8
06	265	2.4					2.4	2.95
07	270	2.7					2.6	2.8
08	230	4.9			145	1.6	3.2	3.25
09	225	7.2			130	2.0	3.8	3.3
10	225	8.4			125	2.4	4.2	3.3
11	225	8.8	(225)	(3.7)	125	2.6	4.3	3.3
12	230	8.5	(220)	(3.6)	125	2.7	4.3	3.3
13	230	8.6	(225)	(3.7)	130	2.6	4.2	3.25
14	230	8.7			125	2.4	4.0	3.25
15	225	8.2			130	2.0	3.6	3.25
16	220	6.9			150	1.7	3.2	3.25
17	220	5.8					3.1	3.2
18	230	4.7					2.9	3.2
19	245	3.5					2.7	3.1
20	265	2.8					2.4	2.9
21	310	2.6					2.4	2.65
22	325	2.8					2.4	2.6
23	325	2.9					2.5	2.6

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 44*

Singapore, British Malaya (1.3°N, 103.8°E) — December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	7.3						2.8
01	270	7.2						2.7
02	265	6.9						2.8
03	250	6.5						3.0
04	240	5.3						3.1
05	235	4.6						3.1
06	240	5.2			130	1.4		2.9
07	245	7.3			120	2.5		3.0
08	235	8.3	230		115	3.1		2.6
09		9.1	220		110	3.4		2.2
10		9.5	210		110	3.7	4.5	2.0
11		10.0	205	(5.1)	110	3.8	4.6	2.0
12		10.2	205		110	3.8	4.2	2.0
13	400	10.6	205	(5.1)	110	3.8	4.3	2.1
14		10.9	205		110	3.6	4.0	2.1
15		10.9	215		110	3.4		2.1
16		10.9	230		110	3.0	3.9	2.2
17	255	10.9	245		125	2.4	3.7	2.2
18	290	10.7				1.8	3.4	2.3
19	340	10.0					3.0	2.2
20	360	9.5					2.9	2.3
21	320	9.8					2.3	2.5
22	260	9.6						2.8
23	235	8.5						2.8

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 45

Point Barrow, Alaska (71.3°N, 156.8°W) — November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	---					7.0	
01	(260)	---					6.7	----
02	260	---					5.9	----
03	300	---					5.1	----
04	320	---					4.3	
05	<330	---					4.2	----
06	350	(3.3)					4.3	----
07	(330)	(3.8)					4.3	----
08	<320	(3.3)					4.4	(2.90)
09	280	(4.0)					4.1	(3.10)
10	260	(4.5)					3.6	3.00
11	250	(5.2)			---	---	3.0	(3.10)
12	250	(5.8)			---	---	3.0	3.20
13	240	6.1			---	---	<2.6	3.20
14	230	(6.4)			---	---	<2.5	3.10
15	230	(6.0)					<2.4	3.10
16	230	(5.5)					2.3	3.20
17	230	(4.1)					<2.1	(3.10)
18	250	(3.2)					<2.8	(3.25)
19	<280	(2.6)					2.8	----
20	<300	(2.6)					3.4	(3.00)
21	(310)	---					4.2	
22	(290)	---					5.1	----
23	---	---					5.8	

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 46*

Falkland Is. (51.7°S, 57.8°W) — November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	8.3					1.9	2.6
01	300	7.9						2.6
02	300	7.8						2.6
03	295	7.5						2.6
04	280	7.5	(295)		(130)	1.6		2.6
05	280	8.1	235		125	1.9	2.8	2.6
06	290	8.2	240	(4.2)	115	2.4	3.3	2.6
07	335	8.6	235	(4.6)	110	2.8	4.7	2.7
08	335	8.7	230	4.8	105	3.1	4.9	2.8
09	310	8.6	(225)	5.0	105	3.3	5.4	2.8
10	325	9.0	(215)	5.1	105	3.5	5.4	2.8
11	310	8.8	220	5.1	105	3.6	5.0	2.8
12	320	9.2	225	5.1	100	3.6	4.8	2.9
13	310	8.8	220	5.0	105	3.5	4.8	2.8
14	310	8.6	230	5.0	105	3.5	4.8	2.9
15	305	8.5	235	4.8	105	3.3	4.8	2.9
16	290	8.5	(235)	4.6	110	3.0	5.0	3.0
17	285	8.4	(235)	4.3	110	2.7	4.8	3.0
18	260	8.2	(245)	(3.9)	120	2.3	4.0	3.1
19	260	7.9			(135)	1.8	3.5	2.9
20	275	7.9					3.1	2.8
21	295	8.0					3.8	2.6
22	295	8.2					>3.1	2.6
23	300	8.2					3.6	2.7

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

Table 47*

Port Lockroy (64.8°S, 63.5°W) — October 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	>6.0						(2.6)
01	(285)	5.7						(2.6)
02	290	5.6						(2.6)
03	(285)	5.4						(2.6)
04	(280)	5.3						(2.7)
05	(255)	5.4						(2.8)
06	(280)	>5.8						(2.6)
07	(250)	>6.0						---
08	(245)	>6.4			(110)	(2.6)		---
09	(255)	>6.0			---	---		---
10	(260)	---			---	---		---
11	(270)	---				(3.1)		---
12	(260)	>6.3			---	---		---
13	(255)	>6.7			---	---		---
14	(240)	>6.4			---	---		---
15	(250)	(6.5)				(3.0)		(3.3)
16	(245)	>6.4				(2.8)		(3.2)
17	(260)	6.2				(2.8)		(3.3)
18	(250)	>6.5	(245)	(2.9)		(2.1)		---
19	(265)	---						---
20	(260)	>6.5						---
21	(255)	>6.4						---
22	(265)	---						---
23	(275)	>6.6						---

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

Table 48

Macquarie I. (54.5°S, 159.0°E) — December 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0					3.8	2.8
01	270	3.3					4.0	3.0
02	270	3.2					3.0	2.9
03	270	3.0	---	---	---	---	2.6	3.1
04	260	3.5	240	2.8	100	1.8	2.3	3.2
05	270	4.0	230	3.5	100	2.2	2.5	3.1
06	350	4.5	230	3.8	100	2.5	2.9	3.0
07	330	4.7	230	4.0	100	2.8	3.1	2.95
08	330	5.2	220	4.2	100	3.0	3.3	3.05
09	350	5.3	220	4.3	100	3.1	3.6	2.95
10	340	5.3	210	4.4	100	3.2	3.4	3.0
11	330	5.5	200	4.4	100	3.2	3.5	3.05
12	330	5.5	210	4.4	100	3.2	3.5	3.0
13	330	5.6	210	4.4	100	3.2	3.4	3.0
14	330	5.5	200	4.3	100	3.2		3.0
15	330	5.6	210	4.2	100	3.1		3.0
16	320	5.6	220	4.0	100	3.0		2.9
17	300	5.6	230	3.9	110	2.7	3.3	3.1
18	270	5.6	230	3.6	110	2.4	4.1	3.1
19	250	5.4	240	3.0	120	2.0	4.2	3.1
20	250	5.2	---	---	130	1.6	3.1	3.0
21	240	5.1					3.2	3.0
22	260	4.8					3.0	2.9
23	260	4.2					4.0	2.9

Time: 157.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 49

Macquarie I. (54.5°S, 159.0°E) November 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	3.2					3.2	2.9
01	290	3.4					3.1	3.0
02	270	3.1					2.6	3.1
03	270	2.5					1.9	3.1
04	250	3.1	---	---	---	---		3.2
05	260	3.8	240	3.0	110	2.0		3.2
06	320	4.2	240	3.6	100	2.5		3.1
07	350	4.5	220	3.8	100	2.7		3.05
08	340	4.8	220	4.0	100	3.0	3.0	3.1
09	360	5.0	200	4.1	100	3.0	3.1	3.05
10	330	5.1	200	4.2	100	3.1		3.0
11	320	5.5	200	4.3	100	3.2		3.1
12	320	5.5	200	4.3	100	3.3		3.0
13	320	5.4	200	4.3	100	3.3		3.1
14	340	5.4	200	4.2	100	3.2		3.1
15	330	5.5	210	4.1	100	3.0		3.0
16	310	5.4	220	3.9	100	2.8		3.1
17	290	5.5	220	3.7	100	2.5		3.1
18	260	5.2	240	3.2	100	2.1	2.7	3.15
19	250	5.5	240	2.2	120	1.7	3.0	3.1
20	250	4.8	---	---			3.0	3.1
21	250	3.8					3.0	2.95
22	270	4.0					3.4	3.0
23	290	3.6					4.3	2.95

Time: 157.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 50

Tananarive, Madagascar (18.8°S, 47.8°E) Juoe 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	2.5						3.42
01	230	2.3						3.60
02	250	2.2						3.28
03	240	2.1					1.6	3.44
04	240	1.8					1.6	3.44
05	270	1.9					1.6	3.33
06	260	2.0			---	----	1.7	3.26
07	230	4.0			136	1.90	2.1	3.65
08	250	4.7	230	----	113	2.30	2.9	3.68
09	270	5.2	230	3.90	111	2.70		3.57
10	270	5.3	220	4.10	111	2.90		3.63
11	285	5.2	215	4.20	110	3.00		3.50
12	300	5.0	210	4.20	111	3.10		3.40
13	300	5.1	210	4.10	113	3.05	3.4	3.42
14	275	5.2	220	4.00	111	2.95		3.53
15	270	4.9	220	3.90	113	2.75	3.3	3.46
16	250	4.6	220	----	111	2.40	3.4	3.54
17	230	4.6			---	1.80	3.6	3.62
18	215	4.0					3.2	3.59
19	210	3.1					3.2	3.63
20	230	2.5					2.0	3.20
21	240	3.0					2.0	3.33
22	240	2.8					1.8	3.38
23	235	2.9						3.40

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

Table 51

Tananarive, Madagascar (18.8°S, 47.8°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	2.5						3.40
01	240	2.3						3.20
02	250	2.4						3.21
03	230	2.4					1.6	3.48
04	230	2.0					1.6	3.15
05	255	2.1					1.8	3.20
06	255	2.5					2.0	3.22
07	(240)	5.0	230	----	123	1.80	3.1	3.60
08	245	5.9	225	----	109	2.50	3.3	3.61
09	250	6.4	215	4.00	109	2.80	3.5	3.60
10	255	6.0	210	4.20	109	3.00		3.63
11	270	5.8	210	4.30	109	3.10		3.54
12	270	5.8	215	4.30	109	3.20	3.6	3.52
13	270	5.8	210	4.20	109	3.10	3.2	3.52
14	260	5.7	210	4.10	109	3.00	3.4	3.50
15	260	5.4	210	3.70	107	2.80	3.5	3.56
16	245	5.6	220	----	110	2.50	3.5	3.59
17	220	5.0			---	1.90	3.2	3.63
18	220	4.3					3.2	3.53
19	215	3.4					3.0	3.54
20	225	2.8					3.1	3.28
21	240	3.2					2.4	3.29
22	230	3.3					1.7	3.44
23	220	3.0					1.7	3.51

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

Table 52

Tananarive, Madagascar (18.8°S, 47.8°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0					1.6	3.22
01	230	2.9					1.7	3.37
02	240	2.8					2.0	3.45
03	230	2.6					1.8	3.26
04	250	2.2					1.9	3.05
05	260	2.1					1.8	3.06
06	250	2.8					1.8	3.24
07	250	5.3	235	----	121	2.10	2.4	3.53
08	260	6.3	230	----	111	2.50		3.42
09	275	7.2	225	4.10	111	2.90	3.5	3.38
10	270	8.0	220	4.30	111	3.10		3.36
11	260	8.0	215	4.40	111	3.20		3.46
12	270	6.6	210	4.40	111	3.30		3.44
13	290	6.1	220	4.40	111	3.20		3.31
14	280	7.0	215	4.30	111	3.10		3.36
15	260	7.0	230	4.10	111	2.90	3.1	3.42
16	250	6.1	220	----	115	2.60	3.0	3.51
17	250	5.6	230	----	121	2.10	3.7	3.54
18	225	4.9					3.1	3.47
19	225	4.2					2.1	3.40
20	230	3.4					3.0	3.26
21	250	3.2					1.6	3.18
22	250	3.4					2.0	3.20
23	235	3.3					1.7	3.24

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

Table 53

Tananarive, Madagascar (18.8°S, 47.8°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.6					1.7	3.21
01	240	3.4					2.2	3.27
02	230	3.0					3.1	3.42
03	250	2.6					1.8	3.14
04	270	2.4					1.8	3.05
05	270	2.3					1.8	3.11
06	245	3.2						3.24
07	255	5.2	240	----	119	2.10		3.46
08	280	6.0	235	4.00	115	2.60		3.31
09	290	6.7	225	4.30	113	3.00		3.25
10	305	7.2	220	4.40	113	3.20		3.16
11	310	7.6	220	4.40	115	3.30		3.12
12	310	7.8	220	4.50	115	3.40		3.10
13	300	8.1	225	4.50	115	3.35		3.14
14	290	7.6	225	4.40	115	3.25		3.17
15	290	7.3	230	4.20	113	3.10		3.25
16	275	7.0	230	4.00	115	2.80		3.28
17	255	6.8	240	----	121	2.35	3.2	3.40
18	240	6.2			---	----	2.8	3.39
19	230	5.3					2.5	3.29
20	240	4.7					2.7	3.21
21	250	4.3					2.4	3.15
22	255	4.0					2.0	3.12
23	260	3.9					1.6	3.14

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

Table 54

Tananarive, Madagascar (18.8°S, 47.8°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.0						3.15
01	240	3.9					1.6	3.28
02	240	3.3					1.8	3.24
03	250	2.8					1.8	3.18
04	260	2.6					1.9	3.18
05	250	2.5					1.8	3.18
06	245	3.4			---	E	2.4	3.30
07	265	4.7	240	----	121	2.20	3.0	3.30
08	305	5.4	230	4.00	115	2.70		3.19
09	340	5.7	230	4.20	115	2.95		3.06
10	340	6.2	220	4.30	115	3.20	3.5	2.96
11	340	7.2	220	4.40	115	3.35		2.95
12	335	7.5	220	4.40	115	3.40	1.8	2.96
13	325	7.6	225	4.40	115	3.35	3.8	3.04
14	315	7.7	225	4.30	115	3.30		3.04
15	305	7.4	220	4.20	114	3.10		3.12
16	290	6.8	230	4.00	117	2.85		3.16
17	290	6.6	240	3.80	121	2.45		3.17
18	265	6.6	240	----	---	1.80	3.5	3.24
19	240	6.2					3.0	3.18
20	235	5.6					3.0	3.17
21	250	5.0					2.4	3.07
22	255	4.5						3.04
23	265	4.1					2.0	3.04

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

Table 55

Tananarive, Madagascar (18.8°S, 47.8°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	4.2					2.8	3.19
01	240	3.7					2.9	3.24
02	250	3.0					2.8	3.13
03	255	2.9					2.1	3.23
04	250	2.8					3.0	3.13
05	270	2.6					2.5	3.11
06	---	3.8	240	----	132	1.85	3.0	3.31
07	290	5.0	230	----	121	2.50	3.6	3.26
08	335	5.4	220	4.10	115	2.85	3.8	3.08
09	350	6.0	220	4.30	115	3.20	3.6	2.95
10	340	6.8	210	4.40	115	3.30	4.2	2.94
11	345	7.2	215	4.50	115	3.50	3.8	2.92
12	350	7.7	---	4.60	116	3.55	3.9	2.86
13	350	7.6	---	4.50	115	3.50	3.5	2.84
14	335	8.4	220	4.40	115	3.40	3.7	2.94
15	305	9.3	220	4.30	115	3.20	4.0	3.03
16	285	8.6	220	4.10	115	3.00	3.5	3.17
17	270	7.4	230	3.80	119	2.60	3.5	3.26
18	255	5.7	240	----	---	2.00	3.4	3.26
19	235	5.3					2.4	3.17
20	240	5.2					2.5	3.10
21	250	5.0					2.4	3.15
22	270	4.4					3.0	3.05
23	260	4.2					2.5	3.08

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

Table 56*

Campbell I. (52.5°S, 169.2°E) May 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	290	2.8						2.85
06								
07	240	4.4			---	1.9	1.9	3.15
08	230	4.8	---	---	130	2.0	2.0	3.3
09	220	5.6	---	---	120	2.4		3.3
10	240	6.6	220	3.8	120	2.6		3.3
11	240	7.0	220	3.8	120	2.7		3.3
12	240	7.5	230	4.1	120	2.8		3.3
13	240	7.3	230	4.0	120	2.7		3.3
14	240	7.8	230	3.8	120	2.6		3.3
15	230	7.5	230	---	120	2.2		3.3
16	230	6.9	---	---	---	1.6		3.25
17	220	6.2			---	E		3.2
18	230	5.4						3.1
19	240	4.5						2.9
20								
21	260	4.4						2.9
22								
23	290	4.2					2.1	2.7

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 57*

Campbell I. (52.5°S, 169.2°E) April 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	---	---						---
06								
07	240	5.0	---	---	---	2.2		(3.2)
08	(240)	5.9	240	---	120	2.4		3.2
09	(320)	6.8	240	---	130	2.8		3.2
10	270	7.5	220	4.1	120	3.0		3.2
11	270	7.1	230	4.2	110	3.1		3.25
12	270	7.2	220	4.1	120	3.0		3.1
13	260	7.6	220	4.4	120	3.0		3.1
14	260	7.8	230	4.0	120	2.8		3.15
15	250	7.9	230	---	---	2.5		3.15
16	260	7.5	---	---	---	2.2		3.15
17	(220)	(7.6)			---	---		(3.25)
18	250	(7.2)						(3.1)
19	240	(6.0)						(3.0)
20								
21	(310)	(5.0)						---
22								
23	(350)	E						---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 58*

Campbell I. (52.5°S, 169.2°E) March 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	300	---						---
06								
07	250	4.8	250	---	120	2.4		3.1
08	300	5.3	240	4.1	120	2.8		3.1
09	310	5.7	230	4.4	120	3.0		3.05
10	320	6.2	220	4.5	120	3.2		3.1
11	330	6.2	220	4.5	110	3.3		3.0
12	320	6.4	220	4.5	110	3.4		3.0
13	320	6.5	230	4.6	110	3.4		3.05
14	320	6.3	240	4.4	110	3.2		3.0
15	300	6.5	240	4.2	120	3.0		3.0
16	290	6.6	240	---	120	2.7		3.0
17	260	6.8	250	---	120	2.3		3.0
18	260	7.2			---	2.0		3.0
19	260	7.1			---	---		2.95
20								
21	300	(5.7)						---
22								
23	350	E					2.8	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 59*

Campbell I. (52.5°S, 169.2°E) May 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	280	---						---
06								
07	270	4.3			120	2.1		2.8
08	250	6.2	240	---	120	2.1		3.1
09	250	7.6	240	3.7	110	2.3		3.1
10	250	8.3	240	4.0	120	2.6		3.05
11	250	9.0	240	4.0	110	2.6		3.0
12	250	9.4	240	4.0	110	2.7		3.0
13	250	9.8	240	3.6	110	2.6		3.0
14	250	9.7	240	3.8	110	2.5		3.0
15	240	9.6	250	4.0	110	2.1		3.0
16	240	9.1	240	4.0	120	2.0		3.05
17	240	8.0			110	---		3.2
18	250	6.8						3.2
19	250	5.5						3.1
20								
21	280	---						---
22								
23	300	---					2.2	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 60*

Campbell I. (52.5°S, 169.2°E) April 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	270	---						
06								
07	250	6.4			120	2.0		3.0
08	240	7.3	---	---	120	2.4		3.1
09	240	8.0	230	4.3	110	2.7		3.0
10	250	9.1	220	4.3	110	2.9		2.95
11	250	9.6	230	4.4	110	3.0		2.9
12	250	9.7	230	4.5	110	3.1		2.9
13	250	10.0	240	4.3	110	3.0		2.9
14	250	10.1	240	4.1	110	2.8		2.9
15	250	10.0	250	4.1	110	2.6		2.9
16	250	10.0	---	---	120	2.2		2.9
17	250	9.8			140	1.9		2.9
18	250	8.2						2.9
19	260	7.5						2.8
20								
21	260	6.8						---
22								
23	280	---					3.5	

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

TABLE 61
IONOSPHERIC DATA

foF2, 0.1Mc, June 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	71	64	53	50	48	43	42	50	50	55	55	62	61	62	62	61	61	66	65	66	66	68	64	58
02	55	52	53	51	48	H 49	50	H 55	60	64	70	71	74	72	72	72	74	72	77	78	82	74	72	70
03	69	62	58	51	F 48	47	59	69	67	73	74	U A 71	67	69	71	69	72	72	76	78	72	66	62	62
04	58	55	50	44	F 40	44	58	H 60	A	A	68	66	68	72	72	73	76	76	78	83	75	74	70	68
05	67	62	56	51	51	48	53	62	64	58	58	60	58	62	72	67	72	70	70	I A 70	71	67	64	62
06	58	58	57	57	54	53	61	67	56	62	64	63	60	67	64	64	68	70	69	70	74	74	70	60
07	56	57	51	49	45	47	60	60	U A 59	56	62	60	62	64	I B 66	67	70	71	72	70	73	70	68	66
08	66	60	58	F 52	F 43	44	U H 48	U F 54	56	H 59	66	70	66	70	70	70	70	74	76	74	78	76	69	65
09	62	58	48	39	38	39	50	54	56	56	57	63	58	63	65	65	68	68	64	68	70	U F 72	68	U F 65
10	F 62	U F 62	F 45	U F 42	U F 38	F 42	F 54	61	F 56	62	H 62	57	58	59	69	66	68	68	72	74	70	71	70	68
11	63	62	51	45	42	41	50	55	54	55	57	58	64	64	63	64	65	68	68	70	75	74	68	68
12	62	59	54	49	47	48	53	57	57	68	69	70	75	H 72	78	78	80	80	85	88	88	73	78	70
13	68	62	54	52	44	45	53	F 53	58	60	F 59	60	64	60	59	64	71	76	80	86	74	U S 71	68	64
14	U J 60	56	50	F 48	42	40	F 45	F 50	62	66	H 64	70	H 67	67	67	72	72	79	81	79	78	74	73	69
15	67	65	63	F 47	44	F 47	F 54	F 54	55	58	62	66	62	64	66	69	69	70	75	79	88	80	80	78
16	72	66	58	U A 53	45	44	50	57	65	63	H 65	74	63	68	70	76	76	75	77	76	74	72	72	68
17	64	64	60	56	44	45	54	63	63	62	59	60	63	64	67	71	70	76	79	79	77	70	71	67
18	67	59	54	52	49	48	59	60	U J 60	I A 62	63	60	64	63	64	65	66	68	A	A	A	72	70	68
19	68	63	54	50	45	49	57	60	62	63	64	64	67	68	70	68	68	70	69	68	73	68	64	63
20	62	58	57	53	53	54	63	69	67	65	69	67	70	70	72	70	71	75	79	84	84	75	76	72
21	70	70	60	55	52	50	58	60	64	70	75	72	H 71	72	76	78	78	78	78	U S 80	U S 74	U S 74	70	72
22	70	U F 72	60	52	U F 45	44	50	H 56	58	U J 61	60	60	60	66	66	65	66	69	70	66	69	68	67	62
23	58	55	52	49	44	48	51	55	60	65	66	64	64	64	70	73	85	90	102	82	78	77	58	60
24	59	F 51	F 47	46	39	39	45	48	53	54	E G 50	53	58	55	56	55	55	60	69	67	78	78	69	60
25	F 42	F 37	F 23	U F 28	F 26	F 30	E G 35	E G 38	E G 42	E G 44	E G 47	E G 48	E G 49	E G 49	A	E G 47	53	F 50	55	54	F 53	60	57	55
26	51	46	F 35	35	35	38	45	E G 41	E G 43	48	U R 48	E G 48	55	55	58	57	59	62	68	63	64	68	63	58
27	56	F 49	F 48	40	F 40	38	42	U F 46	49	50	E G 46	E G 47	52	53	H 56	51	A	A	56	53	56	60	F 57	F 54
28	50	50	F 47	F 42	F 39	F 37	51	58	54	F 53	57	F 57	E G 49	56	58	57	58	58	60	F 62	U F 60	U F 66	U F 63	F 58
29	F 58	F 52	F 51	U F 42	F 38	U J 40	40	F 45	F 45	F 52	F 52	F 53	F 56	F 55	56	59	68	63	67	66	70	F 64	U J 68	J 64
30	U F 59	F 54	51	49	44	F 43	48	57	56	64	67	U S 59	U A 56	I A 57	58	56	61	63	66	69	F 60	F 58	U F 61	U F 60
MED	62	58	53	49	44	44	51	56	57	61	62	61	62	64	66	66	69	70	72	70	74	72	68	64
NO	30	30	30	30	30	30	30	30	29	29	30	30	30	30	29	30	29	29	29	29	29	30	30	30

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 62
IONOSPHERIC DATA

foF2, 0.1Mc, June 1956 — 75°W Mean Time

Station: Woshington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2300
01	68	56	50	48	44	43	46	47	U J 50	55	57	61	63	60	61	63	64	66	66	67	67	69	64	57
02	U P 55	54	51	48	49	49	54	59	67	64	70	72	82	70	82	72	72	75	76	80	78	71	70	68
03	68	61	55	50	44	54	67	66	70	73	70	68	69	70	70	71	72	76	76	77	69	64	60	58
04	58	53	50	43	F 40	52	62	A	A	68	69	68	70	72	73	76	76	76	80	80	73	72	67	68
05	64	58	55	52	50	48	61	60	61	57	61	59	59	65	70	I A 70	70	69	74	72	70	68	60	62
06	59	57	57	54	F 51	57	66	F 64	58	63	63	64	64	65	65	67	70	70	69	70	74	70	62	57
07	54	55	50	47	43	54	65	F 60	58	57	59	60	63	63	56	69	70	72	72	73	U S 70	71	68	66
08	63	J 56	56	U F 47	F 42	44	50	54	58	60	68	66	68	70	70	70	72	74	74	76	80	73	68	66
09	60	52	43	36	37	45	52	57	57	56	58	57	62	67	64	66	70	64	65	69	72	70	F 68	U F 59
10	F 60	U J 54	F 41	U F 40	F 37	49	61	59	59	65	62	58	60	60	66	67	70	72	72	72	69	70	69	F 64
11	62	58	48	45	38	45	53	56	56	56	57	60	61	64	64	65	64	70	68	71	J 76	72	70	62
12	59	54	49	49	47	49	53	56	63	66	73	72	76	74	76	78	80	84	88	88	82	74	75	70
13	61	60	54	47	42	50	54	55	F 58	F 58	60	60	61	62	62	68	70	76	86	80	71	70	64	62
14	58	53	F 50	F 45	41	42	F 49	55	63	65	70	70	66	66	67	70	79	78	82	75	74	72	70	69
15	64	66	56	50	F 41	48	52	55	56	63	62	63	66	63	66	66	71	72	75	82	80	84	78	J 77
16	67	65	56	I A 49	44	47	55	61	63	67	68	69	68	71	72	78	75	78	76	76	74	72	72	66
17	62	59	56	47	43	50	58	63	62	63	60	62	J 64	64	68	70	70	76	78	77	72	68	69	67
18	62	60	F 52	50	47	53	61	60	I A 62	63	60	61	64	64	64	65	66	72	76	68	73	72	68	70
19	67	55	52	F 44	F 43	55	60	60	63	61	66	67	69	67	68	65	69	69	68	69	72	68	66	62
20	58	57	56	53	50	59	68	67	65	65	66	69	70	70	68	70	72	76	80	85	82	71	76	70
21	70	66	56	54	49	54	58	64	68	72	75	H 72	70	74	76	78	74	76	J 80	U J 78	74	69	70	U F 72
22	71	F 60	54	48	43	48	54	57	58	60	61	58	62	66	65	66	68	68	68	66	68	70	63	61
23	55	54	50	48	45	49	53	58	63	69	66	64	61	67	68	84	85	93	99	79	74	73	62	60
24	F 59	49	45	43	37	42	F 47	50	55	51	52	55	55	57	56	54	55	66	69	67	78	70	68	F 54
25	F 40	F 25	F 23	F 21	F 29	U F 36	F 42	E G 41	E G 44	E G 46	E G 47	E G 48	E G 49	52	E G 50	53	50	52	F 53	F 53	F 54	F 53	J 56	54
26	F 44	F 38	F 36	F 31	36	F 37	43	46	E G 44	E G 46	F 53	E G 48	55	57	U J 57	60	61	64	66	62	68	68	61	F 53
27	50	F 50	F 45	F 39	F 38	39	F 43	50	48	52	50	E G 48	53	U S 52	55	A	A	58	54	56	60	58	F 54	F 54
28	51	F 48	F 45	F 38	F 35	F 44	55	F 55	56	53	F 58	52	E G 49	57	56	58	59	60	62	U F 61	66	U F 64	U F 60	58
29	55	F 52	47	U J 40	35	45	E G 39	E G 41	49	54	53	58	F 56	56	58	65	J 61	A	A	65	F 70	U F 66	62	F 62
30	U F 59	F 52	52	47	45	44	53	F 55	57	62	64	58	I A 57	56	58	94	63	62	68	F 68	63	F 52	U J 60	58
MED	60	55	50	47	43	48	54	57	58	62	62	61	63	64	66	68	70	72	74	72	72	70	68	62
NO	30	30	30	30	30	30	30	29	29	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 63

IONOSPHERIC DATA

foF1, 0.1 Mc, June 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01						L	390	410	440	470	H 480	490	500	500	500	H 480	490	470	U L 380					
02						Q	L 450	480	490	H 530	500	H 520	520	500	500	470		L	L					
03							A 430	480	500	H 510	I A 520	520	I A 540	H 550	520	H 500	H 440	A						
04						L	L	A	A	A	A	A	A	500	520	510	500	490	L	Q				
05						L	L 430	480	480	520	H 500	H 540	I A 540	530	I A 510	490	440	A	A					
06							L 430	H 470	480	490	500	H 520	520	520	H 520	480	A	A						
07						L	360	U A 410	470	500	500	500	H 520	A	B	510	H 470	460	L					
08							390	U A 430	460	500	490	540	520	540	500	U L 500	490	460	L	Q				
09						290	U L 380	440	460	480	500	520	510	510	500	500	490	U L 440	420	L				
10						Q	400	440	500	500	490	510	I A 500	H 500	H 490	H 520	490	H 480	U L 420	L				
11						L	370	440	H 470	H 470	H 490	H 490	H 500	H 500	490	H 500	H 480	H 440	U L 410	Q				
12							L 430	490	490	510	H 560	H 550	H 520	H 530	H 530	470	H 490	L	L					
13						Q	U L 360	F 500	H 490	F 490	500	500	500	H 500	500	490	H 480	H 450	L	L				
14						Q	F 380	F 450	480	500	500	540	H 530	H 520	H 540	510	500	H 450	L	L				
15						L	L	H 460	470	490	500	H 520	530	H 540	530	H 520	500	I A 480	460	L				
16							L	H 480	H 480	H 590	H 540	H 520	540	H 560	H 560	H 500	500	U L 430	L	L				
17							U L 420	I A 430	480	500	500	520	I A 520	510	530	520	H 500	470	L	L				
18						L	400	H 440	490	I A 490	H 490	H 520	520	520	520	H 520	500	A	A	A				
19							L	L	490	500	500	520	H 550	H 530	H 530	H 530	H 490	H 480	L	L				
20						Q	L	A	A	520	530	540	H 530	H 560	H 540	I B 530	H 520	H 480	340	L				
21							L	U L 470	500	U L 520	530	H 550	H 520	550	540	H 560	510	490	L	L				
22							L	U H 420	480	490	500	500	500	500	H 520	H 500	H 480	470	410	A				
23						L	420	450	H 470	480	H 510	H 530	H 510	H 510	500	H 480	500	450	400	Q				
24							A	450	I B 460	H 470	H 480	490	480	500	H 500	490	F 450	430	L	L				
25							F 350	F 380	420	440	H 470	H 480	490	F 490	I A 480	470	450	440	410	L				
26						280	H 390	410	F 430	450	460	480	H 480	490	490	H 480	460	430	A	L				
27						Q	360	400	430	450	460	H 470	480	480	470	H 480	A	A	400	L				
28						Q	380	H 430	460	480	490	H 490	490	500	480	470	470	500	L	L				
29						320	370	F 430	F 430	F 450	F 470	F 470	H 490	490	500	480	I A 480	470	A					
30							L	420	F 440	H 490	490	H 480	490	I A 490	H 490	480	450	450	380	L				
MED							380	430	470	490	500	500	520	510	500	500	490	460	410					
NO						3	16	27	28	29	29	29	29	29	29	30	29	26	11					

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 64
IONOSPHERIC DATA

foE, 0.1 Mc, June 1956 — 75°W Meon Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Monual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							A	A		U A	U A	A	A		I A									
									300	310	350			370	360	340	320	300	260					
02						S			I A		I A		I A											
							230	280	320	350	360	370	370	370	360	350	330	300	270					
03							A	A	A	U A		A	A			H								
										310	330			380	380	360	330	300	250					
04						S		H												A				
							250	300	320	310	350	360	370	390	380	360	340	310	260					
05						S			I A				I A					H		U A				
							250	300	320	350	350	370	380	390	380	360	350	310	260	150				
06											A	A	A											
							230	280	310	340				390	380	370	340	300	250					
07						S					U A			A	B	A			U A					
							250	290	310	330	350	360					350	320	260					
08										A	A	A	H	I A										
							240	290	300				380	390	380	370	340	300	250	190				
09						S		F						I A				I A						
							220	290	310	330	350	350	350	360	380	370	340	300	250	170				
10						U S		I A					A	A	A	A	U A							
						150	240	280	320	340	350	360					330	310	260	190				
11							A	A			A	A	A	A	A	A		H						
						170			330	350							330	300	260	180				
12							A	U A		U A	A	A	H	I A										
								290	330	350			380	380	370	350	340	300	250	180				
13						S	H	A	A	A		I A			I A			I A		A				
							230				340	360	380	380	360	350	330	300	270					
14						S	U A	U A	I A		U A	A	A	A	A	H		H		A				
							230	300	330	360	360					350	340	310	280					
15							H	A	A				A	A						A				
						170	240			330	360	390			380	360	350	320	270					
16							A	A	A		U A		U S			I A				A				
										350	350	390	380	390	390	380	330	330	280					
17									A	A		I A	U A	U A					A	A				
							230	290			330	360	400	390	380	360	350	310						
18						S				U A	U A			A	U A	H		H		A				
							230	290	320	340	360	370			390	370	340	320	270					
19							A	A			U A	I A	U A							S				
									340	360	370	380	390	380	390	370	350	320	270					
20						A		U A						A	A	B				A				
							250	300	340	360	380	390	380				370	340	290					
21							A	U A	U A				A	A	A	U A	A	A		A				
								310	350	370	390	370				380			280					
22							U A	I A	U A	A	A	A	U A	A	A	U P		I A	H	A				
							250	300	340				400			350	330	300	270					
23						S		H	U A	U A	H	A	A	A	A	F								
							240	280	300	340	350					370	350	310	260	190				
24							A	A	B	A	A	A	H		H	A	A	A	A					
													350	360	390					210				
25							U S	F	H	U S		A	A	A	A	A	A							
							240	290	320	330	330							310	270	180				
26						A		A	A		I A		I A		U A					U S				
							230			340	350	360	370	380	370	340	330	310	260	180				
27						S	H	I A							I A				A	A				
							250	280	320	330	330	350	380	380	380	370	330	300						
28							U S	A	A	U A	I A		A	A	A	A								
						160	230			360	360	370					340	310	260	190				
29						S	U A						A	A	A	A								
							230	280	310	320	330	330					340	300	250					
30							A	A	A	U A	A	A	A	A	A	A	A			A				
										380								310	260					
MED							240	290	320	340	350	360	380	380	380	360	340	310	260	180				
NO						4	21	19	21	25	23	18	15	16	18	21	26	28	27	11				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 65
IONOSPHERIC DATA

fEs, 0.1 Mc, June 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	S	S	S	S	S	G	24	29	70	43	46	46	H 50	56	45	70	74	33	37	37	S	S	33	72
02	S	28	S	S	25	27	33	72	49	80	110	46	50	39	49	50	74	44	52	40	S	31	S	S
03	S	26	39	56	80	60	55	35	47	44	78	94	66	H 120	72	38	63	35	60	58	70	37	42	46
04	S	32	26	48	50	41	38	68	90	120	72	125	74	56	39	110	74	38	36	94	55	43	24	23
05	26	S	22	28	40	17	35	35	H 72	50	H 80	H 74	64	68	58	158	70	G	66	98	60	29	S	32
06	33	24	22	23	S	19	37	86	115	56	70	H 76	45	49	106	84	53	54	58	103	78	31	29	46
07	39	37	22	28	28	31	35	43	96	49	70	50	48	68	49	47	G	39	39	41	76	47	120	70
08	S	S	48	70	27	Y 29	37	80	Y 70	Y 64	54	45	100	47	Y 54	41	52	Y 64	27	23	S	E	S	24
09	S	21	24	32	S	64	33	84	82	46	53	50	40	68	H 70	H 53	41	40	27	34	S	24	S	S
10	S	E	E	S	E	70	30	70	34	72	102	54	80	54	50	48	50	G	G	20	S	S	S	35
11	S	E	E	E	E	74	31	50	43	88	84	54	72	54	48	43	G	G	33	34	31	S	S	S
12	S	S	29	S	28	38	72	68	65	62	72	H 50	72	40	G	G	44	G	29	21	S	S	23	S
13	37	39	35	S	80	42	33	62	94	76	68	50	42	42	41	G	70	33	33	34	13	S	S	S
14	S	S	S	S	S	18	42	120	78	H 188	98	47	76	42	40	41	37	32	40	31	43	35	S	19
15	42	S	S	S	42	G	74	98	48	44	80	42	52	39	57	43	90	57	44	21	30	S	S	29
16	28	49	50	70	90	40	38	45	42	45	47	43	53	74	46	H 50	54	44	37	37	14	S	S	30
17	27	33	37	14	39	44	72	59	63	64	55	70	72	90	G	54	G	43	42	21	S	S	S	S
18	S	31	60	35	S	41	41	57	110	105	50	47	39	H 76	110	43	62	63	115	76	90	80	50	31
19	35	98	64	48	F 45	48	80	108	H 80	92	120	53	64	53	G	100	36	49	39	20	40	31	60	66
20	29	41	40	39	35	34	44	58	66	75	48	49	45	40	47	8	G	G	G	31	31	34	21	S
21	S	S	E	S	E	18	40	H 72	46	46	52	51	54	72	47	105	49	38	31	47	37	29	S	S
22	S	S	S	E	S	18	35	56	60	114	72	46	42	66	48	48	G	35	30	39	44	43	80	21
23	S	S	31	S	S	17	48	39	47	49	47	46	50	50	47	45	G	G	G	20	S	S	28	S
24	S	S	F 38	37	39	36	37	38	8	40	40	47	49	G	39	41	45	33	28	S	S	S	S	S
25	S	S	S	S	S	19	H 46	G	70	45	68	45	52	80	60	39	46	34	30	29	H 68	76	64	39
26	36	47	36	37	S	17	40	35	67	39	58	47	60	42	64	37	46	G	43	22	S	S	S	S
27	S	S	S	S	S	17	Y 68	34	41	49	46	71	47	62	69	50	180	120	158	34	27	S	48	.80
28	52	46	35	44	18	28	44	110	42	40	38	38	39	50	47	36	G	G	43	52	50	39	55	S
29	29	S	S	54	140	17	44	H 49	H 42	47	35	35	36	47	H 78	40	64	70	66	76	45	80	56	40
30	74	33	S	38	H 42	40	46	70	45	45	74	72	78	88	70	74	56	45	42	34	34	80	90	42
MED	35	33	35	37	39	30	40	58	64	50	68	50	52	54	48	46	50	36	38	34	44	36	49	37
NO	13	17	21	19	20	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	20	18	16	18

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 66

IONOSPHERIC DATA

fmin, 0.1 Mc, June 1956 — 75° W Mean Time

Station: Washington, D.C Lat. 38.7°N Lang. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	E S 16	E S 16	22	20	E S 13	18	18	22	17	16	19	22	20	18	E S 16	E S 16	E S 16	20	E S 16	E	E S 15	E S 11	E	E S 16
02	E S 13	E S 16	E S 13	E S 13	E	E S 11	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 17	E S 16	E S 16	E S 15	E S 16	E S 16
03	E S 16	E	E	E S 12	E S 12	E S 11	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	21	20	21	E S 16	E S 16	E S 16	E	E S 16	E S 16	E S 15
04	E S 15	E S 11	E	E	E S 12	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	18	18	E S 16	E S 16	17	E S 16	E S 16	E S 16	E	E S 16	E S 16	E S 16
05	E S 16	E S 16	E S 14	E S 13	E S 12	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	18	18	17	E S 16	E S 16	E S 16	18	E S 16	E S 11	E	E S 16	E S 16	E S 16
06	E S 16	E S 16	E S 16	E S 13	E S 14	E S 16	E S 16	E S 15	E S 16	E S 16	E S 17	E S 17	E S 16	E S 17	E S 17	E S 16	20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 12
07	E S 14	E	E S 12	E	E	E S 16	E S 16	E S 16	E S 16	E S 17	E S 16	E S 17	19	23	47	26	21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E
08	E S 16	E S 11	E	E	E S 12	E S 14	E S 16	E S 16	E S 16	E S 17	20	E S 16	20	E S 16	E S 16	20	E S 16	E S 16	E S 16	E S 16	E S 16	E 16	E S 16	E S 16
09	E S 13	E S 15	E	E S 13	E S 12	E S 11	E S 16	E S 16	E S 13	E S 16	E S 16	E S 16	20	18	E S 17	E S 16	20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 11
10	E S 12	E	E	E S 12	E	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	18	17	18	17	20	16	17	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16
11	E S 16	E	E	E	E	E S 16	E S 16	E S 16	E S 16	E S 16	18	E S 16	E S 17	E S 16	17	18	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16	E S 16	E S 16
12	E S 16	E S 16	E S 13	E S 13	E	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	18	22	18	20	17	E S 16	E S 16	E S 16	E S 16	E S 16
13	E S 13	E S 13	E S 16	E S 13	E	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	22	22	20	17	21	19	19	E S 13	E S 16	E	E S 16	E S 16	E S 16
14	E S 16	E S 14	E S 11	E S 12	E S 13	E S 16	E S 16	E S 16	E S 17	E S 16	17	20	17	19	23	23	17	18	17	16	11	E S 16	E S 16	E S 16
15	E S 15	E S 13	E S 11	E S 13	E S 13	E S 14	E S 16	E S 16	E S 16	E S 17	E S 17	16	21	17	20	19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16
16	E	E	E	E	E	E S 16	E S 16	17	E S 16	E S 16	19	17	21	20	17	17	E S 16	E S 16	E S 16	E	E	E S 16	E S 16	E S 15
17	E S 13	E S 14	E	E	E	E S 13	E	E S 16	E S 16	E S 16	E S 16	17	E S 16	E S 16	E S 17	E S 17	19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15
18	E S 13	E S 15	E	E	E S 12	E S 16	E S 16	E S 16	E S 16	E S 17	E S 17	E S 17	21	21	20	E S 16	23	E S 16	E S 16	E S 15	E S 15	E S 13	E S 16	E S 15
19	E	E S 16	E	E S 12	E	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 17	E S 20	E S 22	21	E S 16	E S 15	E S 15	E S 16	E	E	E S 16	E S 13
20	E S 13	E S 13	E S 13	E S 12	E	E S 16	17	E S 16	E S 16	E S 16	20	18	22	26	25	60	22	18	E S 16	E S 16	E	E S 16	E S 16	E S 16
21	E S 16	E S 16	E	E S 16	E	E S 16	17	E S 16	E S 16	E S 17	22	19	20	25	20	20	19	19	E S 16	E S 16	E S 12	E S 16	E S 16	E S 16
22	E S 12	E S 16	E S 12	E	E S 13	E S 16	E S 16	E S 16	E S 16	E S 17	E S 16	28	27	24	21	21	22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 13
23	E S 16	E S 16	E	E S 11	E S 14	E S 16	E S 16	E S 16	E S 16	E S 17	18	20	20	17	18	17	20	E S 16	E S 16	E S 15	E S 17	E S 16	E S 16	E S 16
24	E S 12	E S 13	E S 12	E S 12	E S 13	E S 12	E S 13	E S 16	50	25	25	22	22	20	20	25	20	21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
25	E S 16	E S 11	E S 12	E S 11	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	21	E S 16	E S 16	22	21	19	19	E S 16	E	E S 15	E S 13	E S 12
26	E S 16	E S 12	E S 12	E S 13	E S 13	E S 16	E S 16	25	E S 16	E S 16	18	E S 16	20	17	19	18	E S 16	19	E S 17	E S 16	E S 16	E S 16	E S 16	E S 11
27	E S 16	E S 13	E S 13	E S 13	E S 13	E S 16	E S 16	E S 16	E S 16	17	E S 16	17	17	17	E S 16	17	17	E S 16	E S 16	E S 16	E	E S 15	E S 15	E S 13
28	E	E	E	E S 11	E S 13	E S 15	E S 16	E S 16	E S 16	17	17	19	19	18	E S 17	22	23	17	E S 16	E S 16	E S 16	E S 11	E S 16	E S 15	E S 16
29	E S 16	E S 16	E S 13	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 17	18	18	18	19	20	21	22	E S 16	E S 16	E	E S 14	E S 13	E S 13
30	E S 13	E S 13	E S 13	E	E S 11	E S 13	E S 16	E S 16	E S 16	17	17	E S 16	E S 16	17	17	20	19	E S 16	E S 16	E S 16	E S 13	E S 16	E S 16	E S 16
MED																								
NO																								

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 67
IONOSPHERIC DATA

h'F2, Km, June 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Lang. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	260	260	290	290	280	L	520	450	580	490	530	450	470	450	430	430	400	340	320	260	250	270	260	240
02	280	300	280	270	270	H 250	270	H 360	430	400	420	390	370	380	370	350	330	310	280	270	250	250	270	280
03	260	250	250	U A 300	270	250	300	310	330	340	310	A 340	370	450	400	380	340	330	290	290	220	260	270	280
04	270	280	270	250	340	290	280	A	A	A	390	A	A	400	260	360	330	320	290	U A 320	270	250	250	270
05	270	270	280	260	280	270	L	370	330	390	490	460	490	500	390	410	370	330	330	I A 300	270	260	250	280
06	280	290	300	270	250	250	280	290	470	410	410	420	480	420	450	L	370	340	290	280	260	260	250	290
07	290	270	250	280	270	390	320	310	450	460	400	480	500	460	I B 430	400	370	350	L	270	U A 260	U A 290	260	280
08	250	270	U A 320	U A 310	310	300	430	U A 470	310	430	390	400	420	410	370	420	400	340	300	250	270	230	240	260
09	260	280	300	320	310	420	U L 320	370	400	460	510	500	520	440	420	400	380	310	340	250	250	250	250	250
10	260	240	230	F 280	280	270	F 320	300	450	440	H 390	530	520	540	380	460	380	370	340	270	230	260	280	280
11	250	250	250	260	280	L	360	380	500	490	560	530	430	450	420	430	400	370	320	260	260	250	260	260
12	260	280	270	270	260	270	L	400	390	360	350	350	370	360	360	360	330	330	L	270	240	220	260	250
13	270	280	250	270	250	250	290	L	430	350	F 460	460	440	510	530	440	380	370	320	250	230	270	280	300
14	280	280	280	290	260	240	L	F 500	390	380	H 420	410	360	470	500	420	430	320	310	260	240	260	290	280
15	280	300	260	270	310	L	L	430	470	490	460	450	530	440	450	430	410	380	320	290	250	240	250	260
16	250	290	A	A	280	270	270	450	350	L	H 370	370	360	U S 430	460	380	340	320	290	270	240	260	270	270
17	270	270	260	220	260	280	U L 340	350	380	440	520	530	460	480	460	390	400	360	300	270	230	250	270	250
18	270	290	280	280	270	L	310	300	U A 410	I A 410	410	610	460	480	480	430	430	390	A	A	A	U A 330	300	280
19	260	U A 300	A	280	290	270	L	L	360	400	430	470	470	470	430	U B 450	410	370	320	290	260	240	260	270
20	270	U A 290	280	290	280	270	300	310	295	390	400	470	410	450	410	U B 410	420	360	320	280	250	230	270	260
21	270	280	280	280	270	270	330	400	390	U L 360	340	340	H 360	420	380	400	340	330	280	300	U A 240	230	280	290
22	270	260	260	250	240	250	L	H 350	430	H 430	550	560	540	440	430	440	420	370	320	260	270	280	U A 300	260
23	290	290	270	280	290	290	370	410	420	410	420	500	450	480	400	430	350	340	300	210	250	250	270	290
24	300	290	300	280	260	270	310	540	480	480	G	630	490	620	500	550	500	450	330	280	290	270	290	280
25	350	360	400	F 420	380	F 300	G	G	G	G	G	G	G	G	A	G	490	450	390	L	260	310	320	280
26	260	280	310	320	310	390	420	G	G	520	550	G	550	530	410	520	410	370	310	L	270	260	260	270
27	310	310	250	300	300	300	520	600	520	530	G	G	560	530	H 450	530	A	A	U L 290	290	260	270	270	280
28	300	280	270	270	280	F 250	380	360	480	F 530	440	470	G	480	440	470	430	410	L	280	U A 250	280	U A 310	260
29	270	270	270	U A 270	310	450	550	510	U F 640	F 510	490	510	500	560	540	490	350	430	U A 360	A	260	U A 300	280	280
30	270	300	270	270	270	260	L	380	470	410	390	410	A	A	420	500	410	380	350	290	250	260	290	280
MED	270	280	270	280	280	270	320	380	430	430	420	470	470	460	430	430	400	360	320	280	250	260	270	280
NO	30	30	28	29	30	26	23	27	29	28	30	29	28	29	29	29	29	29	26	26	29	30	30	30

TABLE 68

IONOSPHERIC DATA

h'F1, Km, June 1956 — 75° W Mean Time

Station: Washingtan, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01						290	230	220	225	205	210	235	205	200	200	200	220	240	240					
02						Q	230	200	215	220	205	200	200	210	230	230	230	225	A					
03							A	220	210	200	190	A 200	210	A 220	225	225	230	240	A					
04						L	240	A	A	A	A	A	A	U A 215	220	215	A	215	240	Q				
05						250	230	230	205	210	220	205	200	A	A	A	230	225	A	A				
06							230	230	210	210	210	200	210	205	205	220	A	A	A					
07						260	240	225	210	200	200	230	205	A	B	220	210	220	230					
08							240	250	U A 220	200	200	220	210	200	220	240	A 240	220	250	Q				
09						325	240	230	215	205	210	215	210	210	215	220	220	225	230	280				
10						Q	245	220	215	200	215	220	210	200	230	240	230	230	230	240				
11						300	210	230	205	190	200	185	190	190	200	205	205	215	240	Q				
12							230	225	230	210	205	190	185	210	190	225	220	210	240	260				
13						Q	215	215	200	210	200	205	180	190	210	230	210	235	250	255				
14						Q	215	210	225	210	185	200	180	180	175	230	235	230	250	255				
15						250	200	200	200	210	215	210	205	185	230	230	220	235	250	260				
16							190	H 215	H 190	H 225	H 190	H 200	H 215	H 190	H 210	H 190	225	230	230	250				
17							200	I A 205	210	200	U A 200	U A 210	I A 220	230	210	215	H 200	220	225	240				
18						265	250	A	A	A	H 190	H 190	200	200	I A 205	H 210	A	A	A	A				
19							A	A	205	U A 210	200	220	I A 210	H 200	200	210	200	210	235	260				
20						Q	265	A	A	A	210	H 200	H 210	H 200	H 215	I B 215	H 215	H 240	230	270				
21							240	220	220	200	220	190	U A 220	U A 250	200	210	210	230	240	A				
22							230	210	U A 230	210	I A 220	230	210	205	180	200	215	230	230	A				
23						280	230	220	H 210	210	H 220	H 205	H 190	H 180	240	H 210	H 240	240	240	Q				
24							A	250	I B 230	H 210	H 200	190	220	235	205	210	H 210	280	260	260				
25							F 250	215	230	200	H 200	H 205	210	210	I A 210	215	220	230	235	260				
26						300	230	220	H 200	200	190	210	H 205	210	I A 220	230	240	225	I A 240	250				
27						Q	250	240	220	205	200	H 180	220	210	220	H 230	A	A	230	260				
28						Q	250	H 220	220	205	205	H 200	200	U A 220	200	210	230	230	A	A				
29						280	U A 230	220	210	250	200	185	215	210	I A 225	240	A	A	A					
30							260	I A 235	210	H 210	U A 215	U A 210	A	A	H 180	U A 220	250	H 230	I A 245	260				
MED						280	230	220	210	210	200	205	210	205	210	220	220	230	240	260				
NO						10	27	26	27	27	29	29	28	27	28	29	25	26	23	15				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 69

IONOSPHERIC DATA

h'E, Km, June 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							111	103	105	107	109	109	105	109	109	103	101	109	109					
02						111	109	105	101	101	101	101	101	101	101	101	105	109	109					
03							109	105	101	101	101	U A 101	U A 101	101	101	107	105	109	109					
04						S 109	107	101	101	101	101	101	101	101	101	101	101	103	109	U S 125				
05						S 109	107	101	101	101	101	101	101	101	101	101	105	H 109	109	U A 115				
06							111	101	101	101	101	U A 101	U A 101	U A 101	101	101	105	109	111					
07						S 109	105	101	101	101	101	101	101	103	B	109	109	109	111					
08							105	105	109	101	109	U A 101	H 101	101	101	105	101	105	109	119				
09						S 111	105	103	101	101	101	101	103	101	U A 101	U A 101	I A 105	109	109	109				
10						131	111	103	101	101	101	101	101	101	101	103	U A 105	109	109	129				
11						U S 129	A	A	103	101	101	101	101	101	101	101	109	H 109	109	121				
12							A	U A 101	101	101	101	101	H 101	101	101	107	109	111	111	U S 135				
13						S 109	H 109	109	105	U A 101	101	101	U A 101	101	U A 101	101	105	109	109	119				
14						S 105	109	103	101	101	101	101	U A 101	U A 101	101	U A 109	105	H 109	109	119				
15						111	H 111	101	101	101	101	U A 101	101	101	101	101	101	107	110	A				
16							111	I A 109	U A 107	103	103	101	U A 107	103	101	103	101	101	111	A				
17							111	109	I A 105	U A 101	101	U A 101	101	101	101	101	105	109	109	A				
18						S 113	105	101	101	101	101	101	101	101	101	H 103	109	H 109	111	A				
19							109	109	101	101	101	101	101	103	103	107	105	109	111	S				
20						A 111	109	101	105	105	101	103	109	109	I B 109	109	109	109	119					
21							111	109	101	101	101	101	101	105	105	107	103	105	111	A				
22							105	103	103	103	101	113	111	109	105	109	109	U A 109	H 115	123				
23						S 109	H 109	103	103	H 105	103	103	101	101	101	101	109	109	109	119				
24							111	105	I B 107	109	109	U A 101	U A 103	101	H 103	105	109	111	111	125				
25							111	105	H 101	103	101	101	107	101	101	109	109	109	119	121				
26						S 111	U C 105	I A 103	101	U A 105	101	105	107	107	109	109	111	117	129					
27						S 111	H 109	101	105	103	101	101	101	101	101	103	109	109	111	A				
28						U S 129	111	109	107	105	103	103	101	101	101	105	109	111	115	125				
29						S 109	105	105	103	101	101	101	101	101	101	H 101	109	111	111					
30							109	109	107	105	U A 105	101	U A 101	A	A	A	A	U A 111	119	125				
MED						129	111	105	103	101	101	101	101	101	101	103	105	109	110	121				
NO						5	28	29	30	30	30	30	30	29	28	29	29	30	30	17				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 70

IONOSPHERIC DATA

(M3000)F2, June 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	290	290	270	270	290	290	240	270	240	255	245	260	255	265	270	270	275	280	280	290	280	270	290	280
02	270	270	280	285	280	300	330	280	270	280	260	280	290	280	285	290	290	290	285	280	290	280	280	270
03	280	290	280	285	300	300	310	305	300	290	295	U A 290	285	260	280	280	285	285	300	300	280	280	270	280
04	280	290	310	300	290	280	300	310	A	A	280	280	U A 260	270	285	280	290	270	295	290	290	280	290	285
05	280	280	270	270	280	280	280	280	310	290	255	265	260	255	280	265	280	270	285	A	310	280	280	270
06	275	265	260	280	290	315	300	320	250	280	270	270	260	270	260	260	270	280	280	290	290	285	290	275
07	270	280	290	280	290	275	300	300	U A 260	270	290	260	260	260	B	280	280	285	300	300	300	280	290	280
08	290	280	270	F 295	F 270	270	U H 270	U F 265	320	U H 270	290	280	270	280	275	270	270	290	280	280	290	290	280	285
09	280	270	260	270	260	265	300	285	285	265	250	245	250	270	275	280	280	290	280	290	280	U F 285	290	U F 280
10	F 290	U F 300	F 300	U F 280	U F 300	F 300	F 290	320	270	270	275	250	250	240	280	255	265	265	290	300	290	270	270	270
11	270	270	280	270	290	270	280	280	255	255	240	240	265	260	275	265	280	270	285	275	290	285	280	275
12	270	280	280	270	280	290	280	280	290	270	295	280	285	280	285	285	290	290	280	290	290	285	265	280
13	280	270	300	280	290	300	300	280	280	280	270	280	270	255	250	260	270	270	280	305	290	U S 285	280	270
14	S	280	280	270	290	300	F 290	F 260	280	290	H 270	270	H 270	250	245	265	260	285	290	295	285	280	260	260
15	260	260	280	F 280	260	270	275	270	260	260	260	260	245	270	260	270	265	265	280	270	275	270	290	290
16	280	270	275	U A 270	290	290	295	270	280	250	H 265	290	305	265	250	270	290	285	300	290	285	280	275	275
17	280	280	300	280	280	300	285	295	285	260	245	250	260	255	245	275	265	270	290	285	270	270	270	280
18	280	270	290	270	280	290	300	310	A	A	280	230	265	255	250	265	265	265	A	A	A	280	280	280
19	290	275	265	290	280	310	300	310	290	270	270	250	250	255	260	260	270	280	280	270	285	275	275	280
20	275	275	270	280	275	280	300	300	290	280	275	255	275	265	270	270	260	275	275	270	290	285	270	270
21	275	285	265	270	280	280	290	270	270	280	300	285	H 285	270	280	270	280	290	290	U S 270	U S 295	U S 280	270	265
22	270	U S 290	270	280	U F 285	300	310	H 300	270	U H 270	245	235	245	260	265	260	265	275	290	285	275	275	280	280
23	275	265	275	275	265	300	280	270	270	275	260	255	270	255	270	260	265	270	280	320	285	270	285	260
24	265	F 275	F 270	270	300	300	300	250	260	265	G	225	255	230	250	240	250	250	270	265	270	270	270	265
25	F 275	F 250	F 250	U F 230	F 270	F 270	G	G	G	G	G	G	G	G	A	G	260	F 265	275	280	F 300	275	280	270
26	295	290	F 280	290	280	280	290	G	G	250	U R 250	G	245	245	285	250	275	280	295	280	275	280	285	270
27	270	F 275	F 300	280	F 275	280	250	U F 230	255	250	G	G	240	250	260	245	A	A	280	280	280	280	F 300	F 290
28	290	290	F 290	F 300	F 290	F 310	290	285	265	F 260	270	265	G	260	270	265	270	290	290	310	U F 315	U F 300	U F 275	U F 280
29	F 290	F 290	F 305	U F 310	F 285	U S 255	240	255	230	260	270	260	F 260	F 240	240	250	290	270	280	300	290	F 285	S	S 265
30	U F 285	F 270	270	280	290	320	280	275	260	270	295	U S 285	U A 260	A	290	250	270	270	270	290	300	300	U F 265	U F 280
MED	280	280	280	280	280	290	290	280	270	270	270	260	260	260	270	265	270	275	280	290	290	280	280	280
NO	29	30	30	30	30	30	30	30	28	28	30	30	30	29	28	30	29	29	29	28	29	30	29	30

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 71

IONOSPHERIC DATA

(M3000)F1, June 1956 — 75°W Mean Time

Station: Woshington,D.C Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Monual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01						L 360		370	380	370	H 390	380	390	A	H 360	H 390	360	340	H 350					
02						Q	L 340		350	370	350	380	360	360	350	350	350	L	A					
03							A 330		H 350	350	H 350	A	U A 380	A	H 345	360	H 350	H 370	A					
04						L	L	A	A	A	A	A	A	U A 380	370	350	A	350	L	Q				
05						L	L 370		360	U A 370	H 370	H 400	H 360	A	A	A	340	350	A	A				
06							U A	U A 370	H 380	370	U A 370	370	380	370	370	H 360	A	A	A					
07						L	350	370	U A 365	390	370	380	360	A	B	360	360	350	L					
08							330	U A 350	U A 370	370	380	350	390	360	380	350	U A 340	340	L	Q				
09						300	340	350	370	380	380	350	380	370	370	360	350	360	340					
10						Q	F 350	360	350	U A 370	U A 380	U A 370	A	H 390	H 360	H 340	345	H 350	U L 340	L				
11						L	340	350	H 370	H 390	H 380	H 410	H 390	H 380	380	H 360	H 350	H 370	U L 350	Q				
12							L	U A 385	340	370	380	H 350	H 365	H 380	H 380	360	390	340	L	L				
13						Q	H 370	H 330	H 360	370	U A 390	U A 390	H 410	H 390	H 370	370	H 340	H 350	L					
14						Q	F 370	370	U A 350	370	390	370	H 390	H 400	H 360	350	340	H 350	L	L				
15						L	H	H 330	380	370	380	H 370	380	H 370	360	H 360	360	A	340	L				
16							H	H 350	H 360	H 320	H 370	H 390	380	H 360	H 360	H 380	360	U L 370	L	L				
17							H 340	A	360	390	390	385	A	380	365	370	H 350	340	L	L				
18						L 350		A	A	A	H 390	H 380	390	380	360	H 360	360	A	A	A				
19							A	A	365	A 360	390	370	H 360	H 380	H 380	H 360	H 370	H 340	L	L				
20						Q	L	A	A	360	370	380	H 400	H 360	H 360	B	H 340	H 335	360	L				
21							L	U L 325	350	U L 350	360	H 370	380	350	370	H 360	350	340	L	L				
22							L	U H 380	350	380	310	390	390	395	H 370	H 360	350	345	350	A				
23						L 320	340		H 350	370	H 370	H 380	H 380	H 380	360	370	350	340	350	Q				
24							A 340		B	370	H 390	410	370	360	H 380	380	H 380	330	L	L				
25							F 340	380	390	400	400	390	390	390	A	385	370	340	340	L				
26						310	360	365	F 380	390	420	400	390	380	360	360	370	340	A	L				
27						Q 340	350	370	380	400	400	380	390	390	380	A	A	360	L					
28						Q	340	H 360	370	390	390	H 390	390	380	390	370	365	330	L	L				
29						280	360	F 360	F 380	F 360	F 390	F 410	380	390	A	360	A	A	A					
30							L	U A 380	F 380	H 380	A 390	H 400	A	A	380	370	370	350	U A 330	L				
MED							345	360	365	370	380	380	380	380	370	360	350	340	350					
NO						3	16	25	26	28	29	28	26	25	26	28	26	24	11					

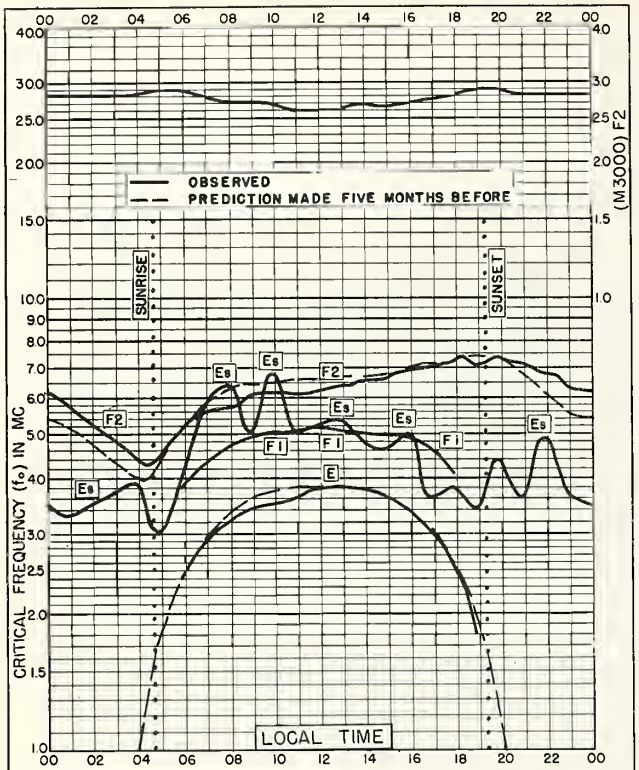


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W JUNE 1956

NBS 503

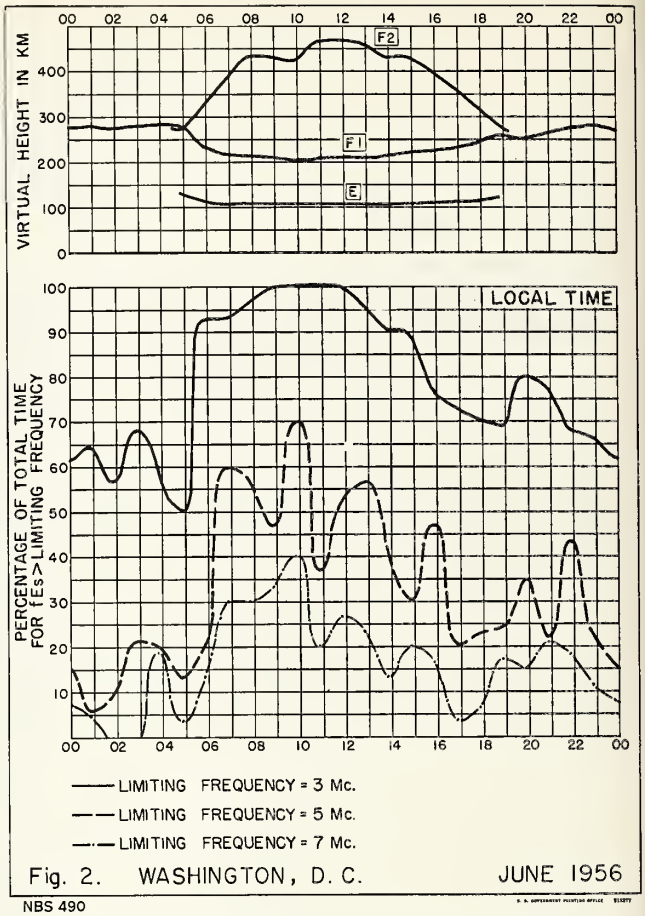


Fig. 2. WASHINGTON, D. C. JUNE 1956

NBS 490

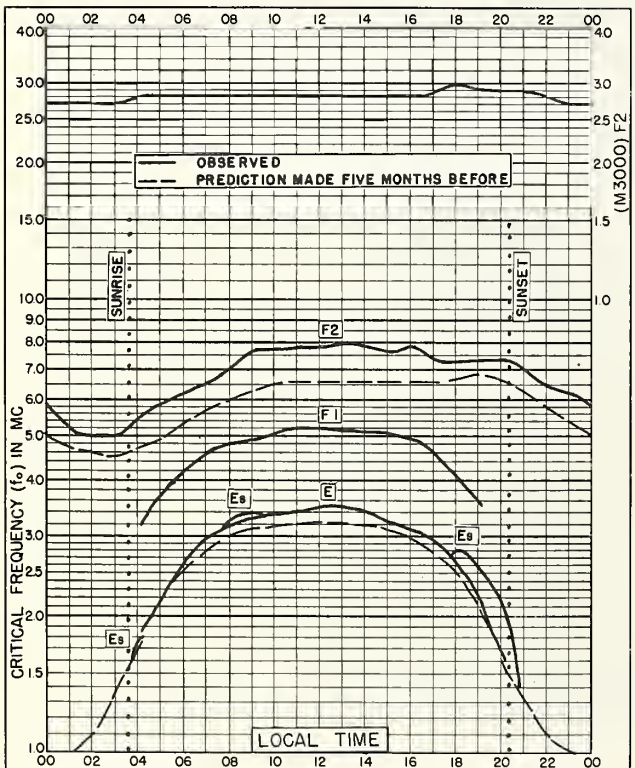


Fig. 3. UPSALA, SWEDEN
59.8°N, 17.6°E MAY 1956

NBS 503

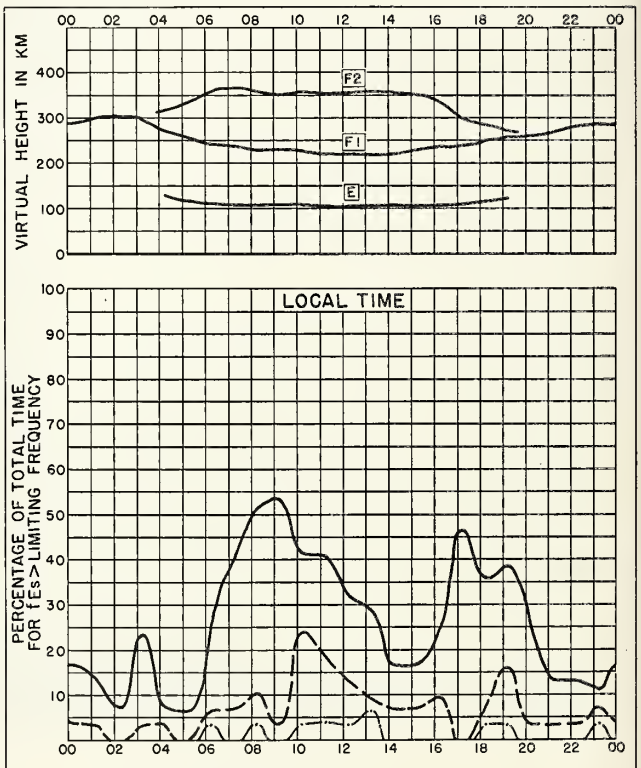


Fig. 4. UPSALA, SWEDEN MAY 1956

NBS 490

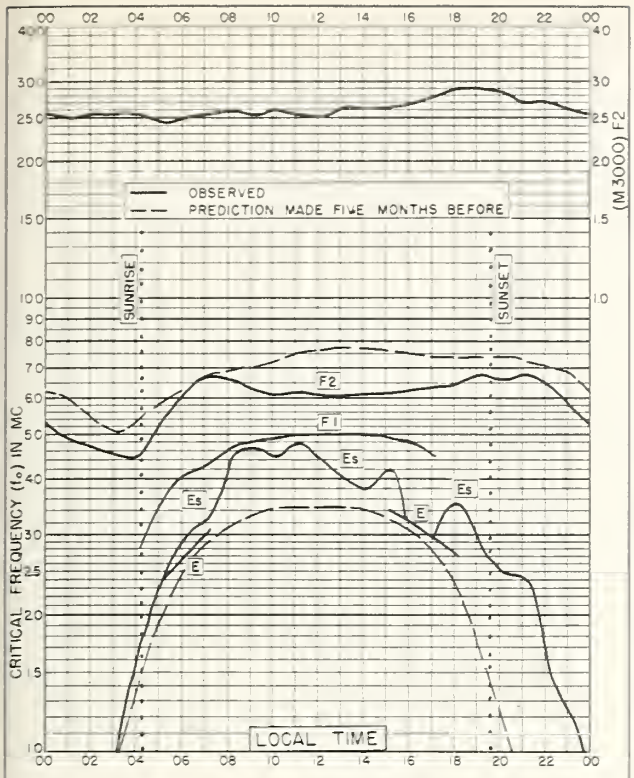


Fig. 5. ADAK, ALASKA
51.9°N, 176.6°W MAY 1956

NBS 503

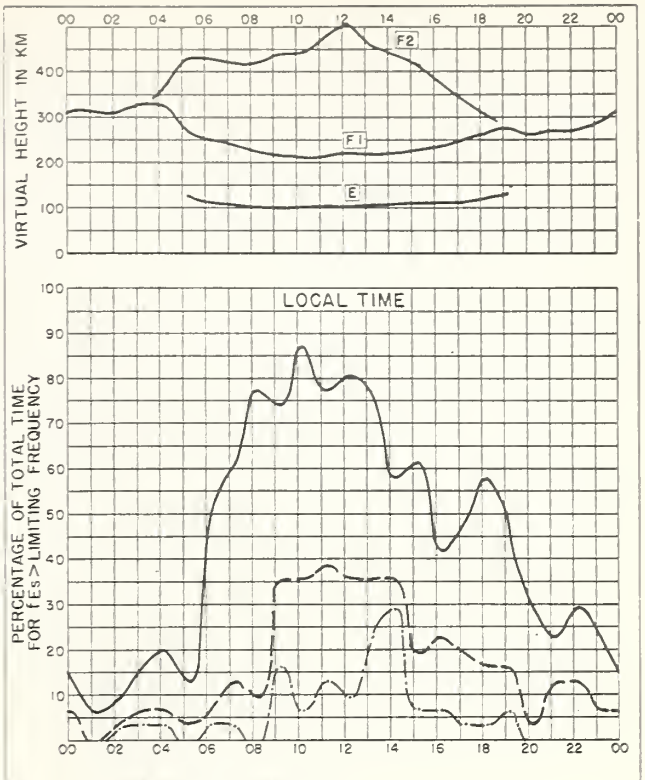


Fig. 6. ADAK, ALASKA MAY 1956

NBS 490

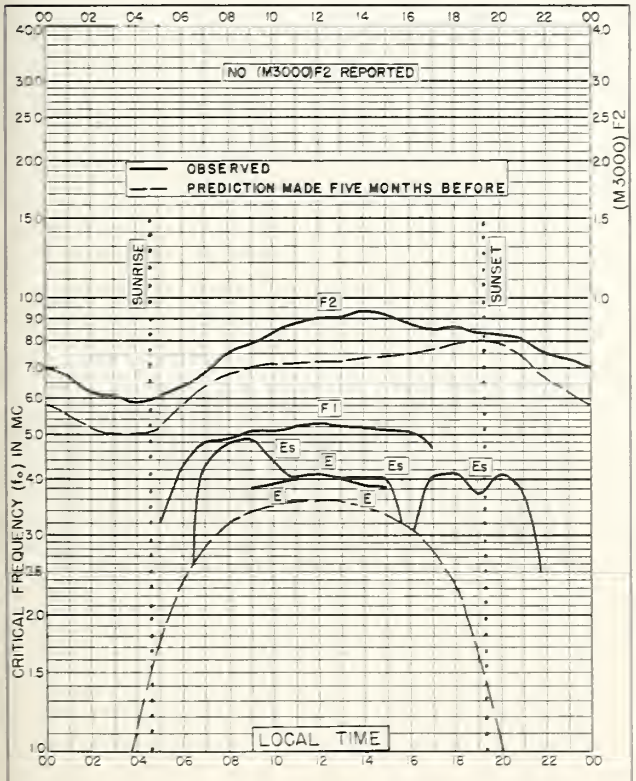


Fig. 7. GRAZ, AUSTRIA
47.1°N, 15.5°E MAY 1956

NBS 503

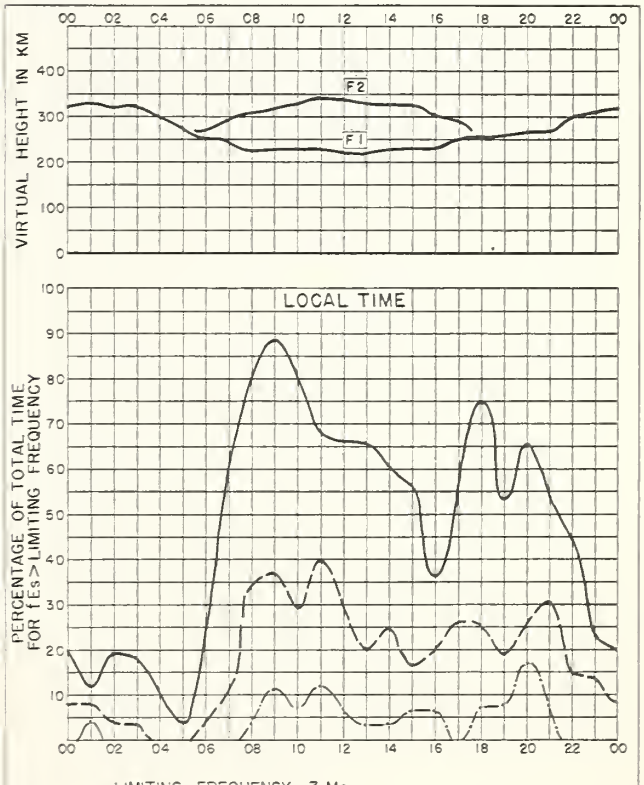


Fig. 8. GRAZ, AUSTRIA MAY 1956

NBS 490

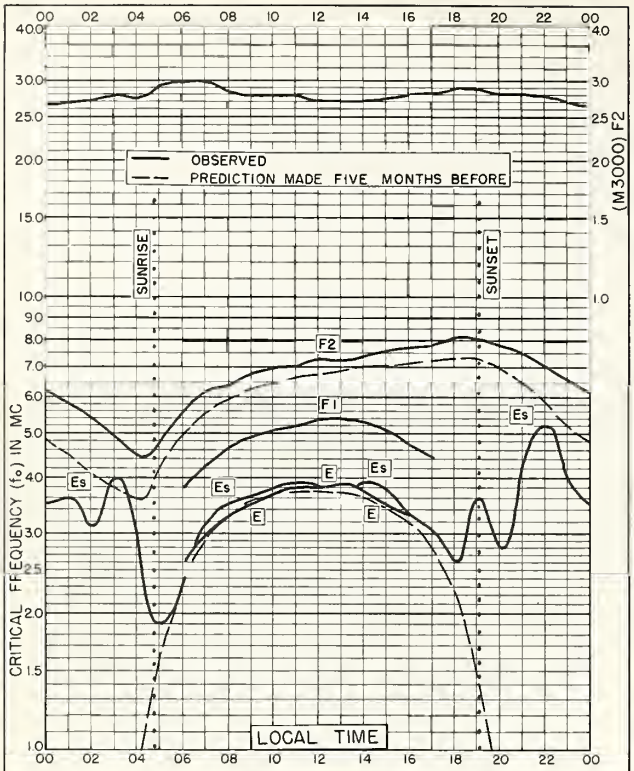


Fig. 9. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W MAY 1956

NBS 503

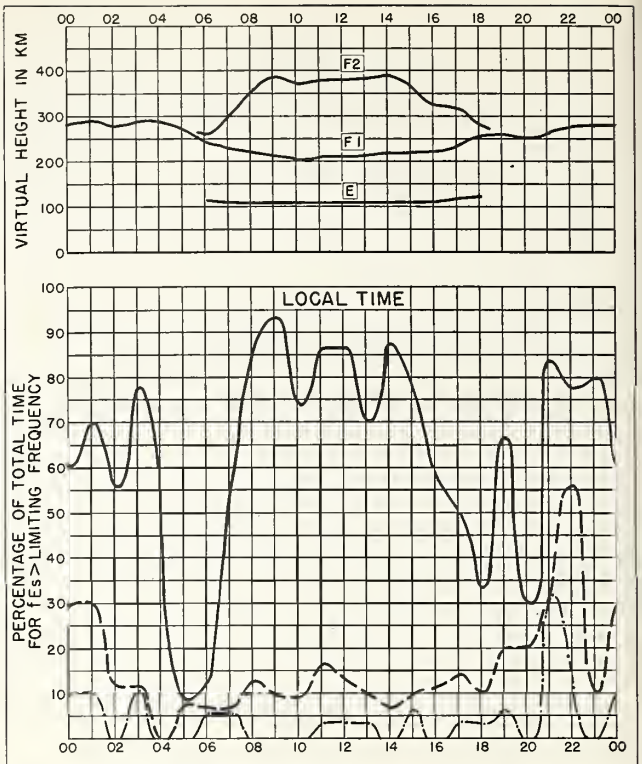


Fig. 10. FT. MONMOUTH, NEW JERSEY MAY 1956

NBS 490

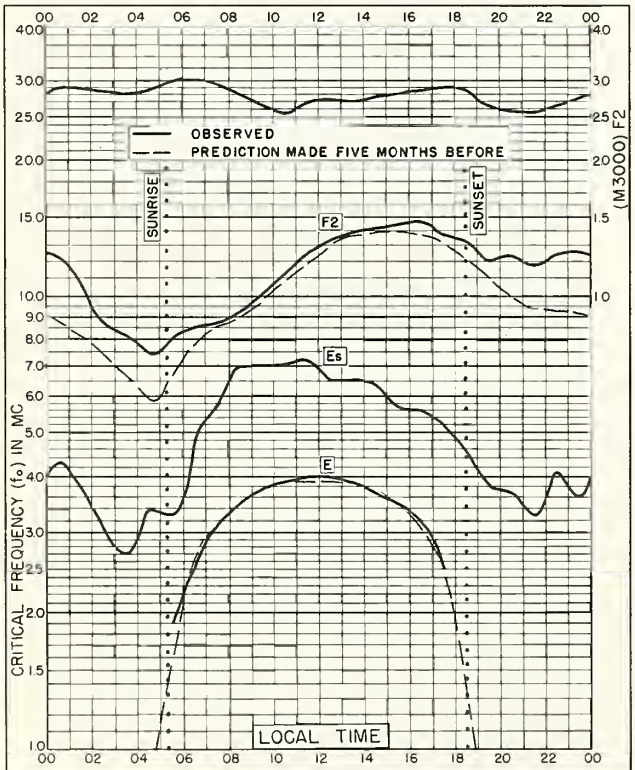


Fig. 11. OKINAWA I.
26.3°N, 127.8°E MAY 1956

NBS 503

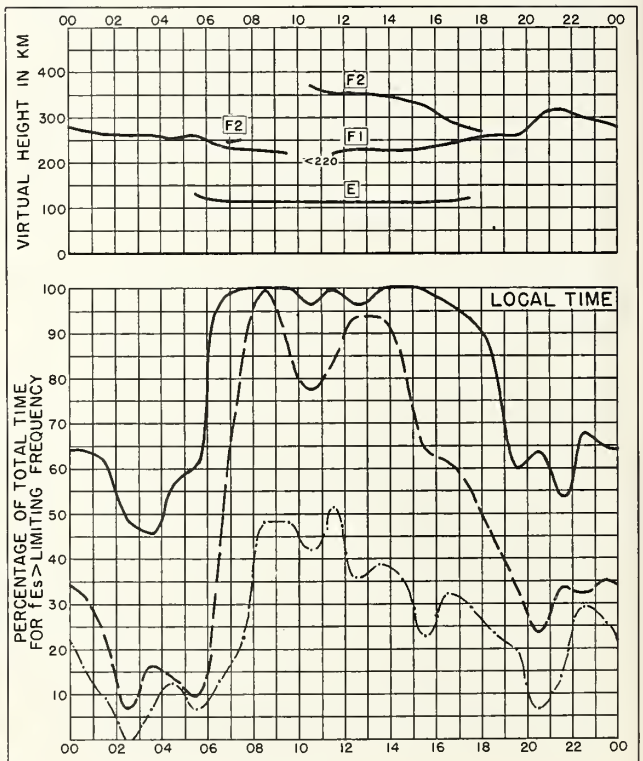


Fig. 12. OKINAWA I. MAY 1956

NBS 490

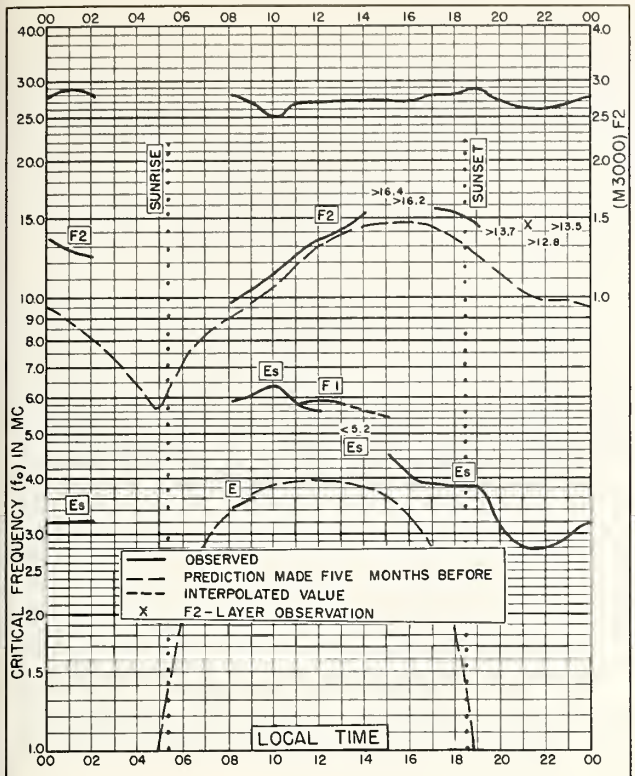


Fig. 13. FORMOSA, CHINA
25.0°N, 121.5°E MAY 1956

NBS 503

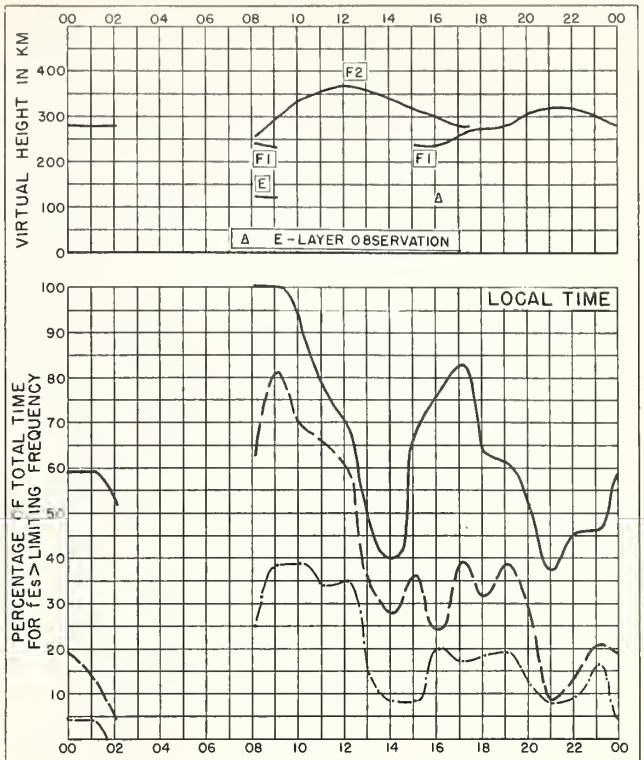


Fig. 14. FORMOSA, CHINA MAY 1956

NBS 490

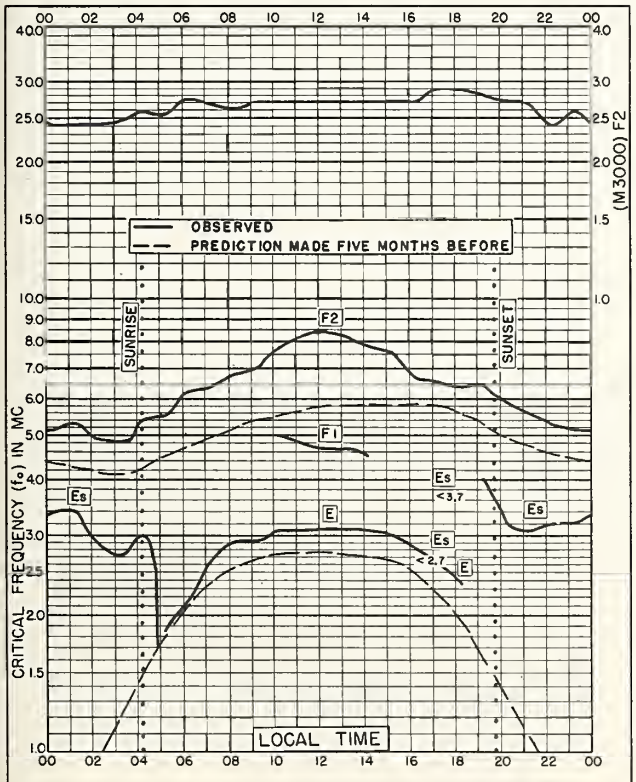


Fig. 15. TROMSO, NORWAY
69.7°N, 19.0°E APRIL 1956

NBS 503

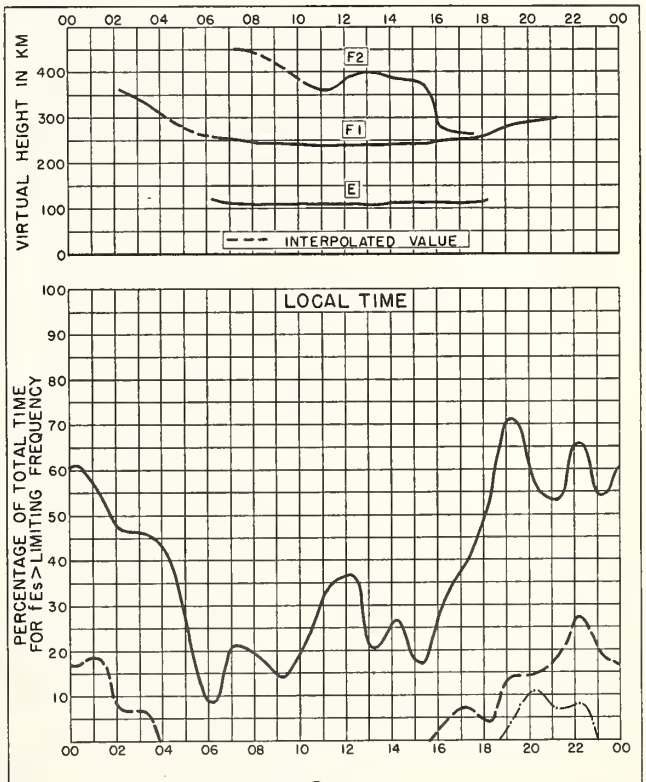


Fig. 16. TROMSO, NORWAY APRIL 1956

NBS 490

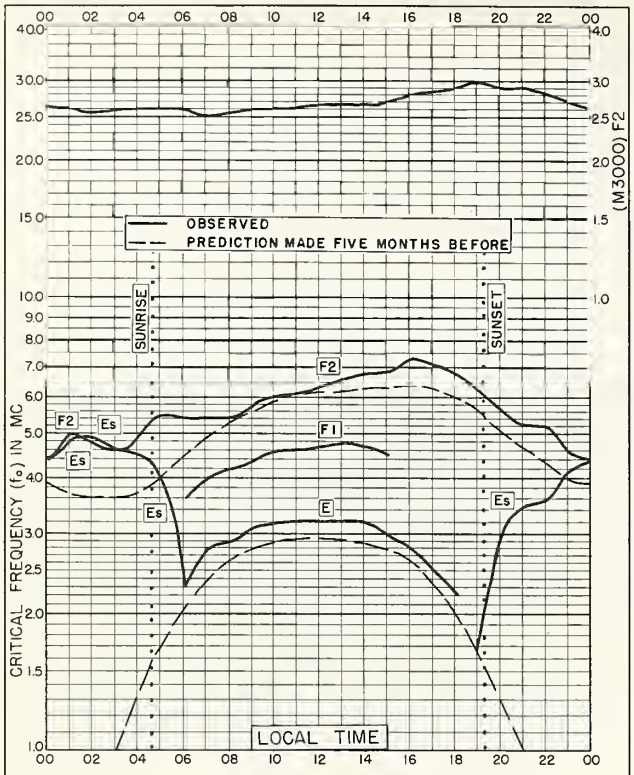


Fig. 17. FAIRBANKS, ALASKA
64.9°N, 147.8°W APRIL 1956

NBS 503

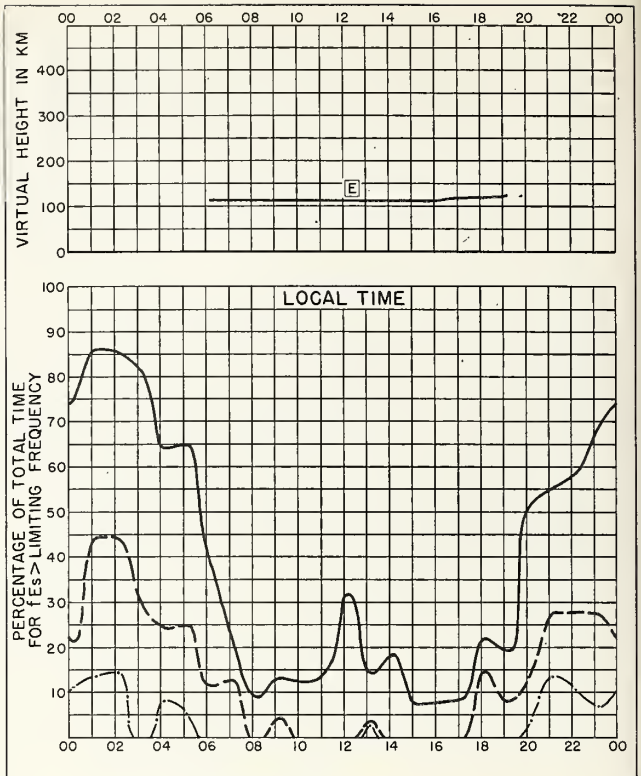


Fig. 18. FAIRBANKS, ALASKA APRIL 1956

NBS 490

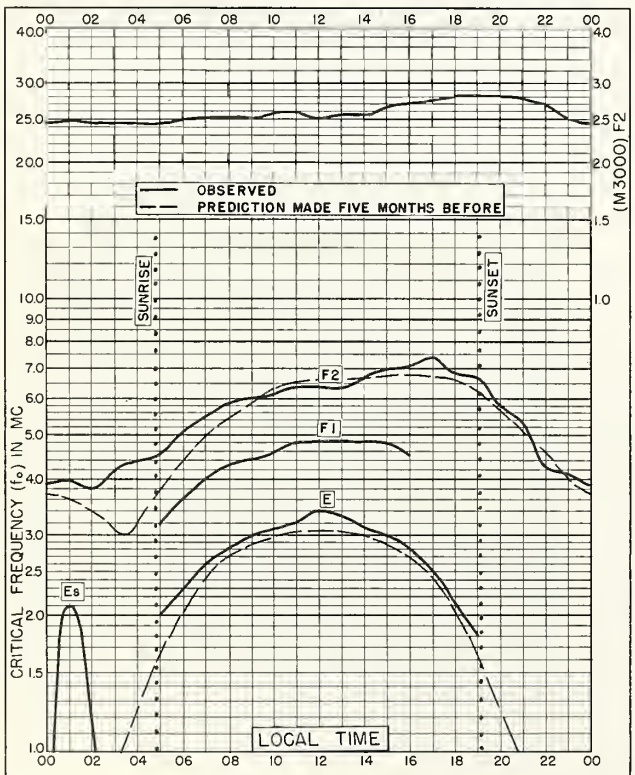


Fig. 19. ANCHORAGE, ALASKA
61.2°N, 149.9°W APRIL 1956

NBS 503

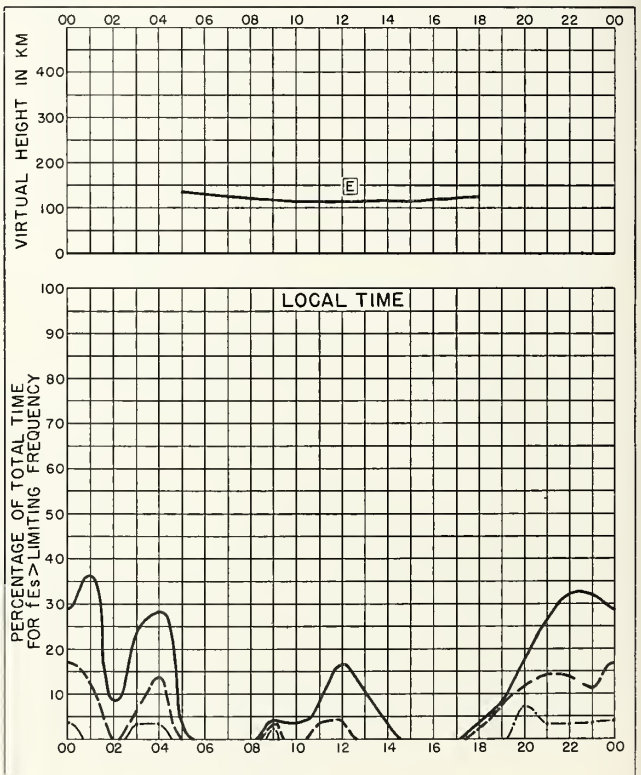


Fig. 20. ANCHORAGE, ALASKA APRIL 1956

NBS 490

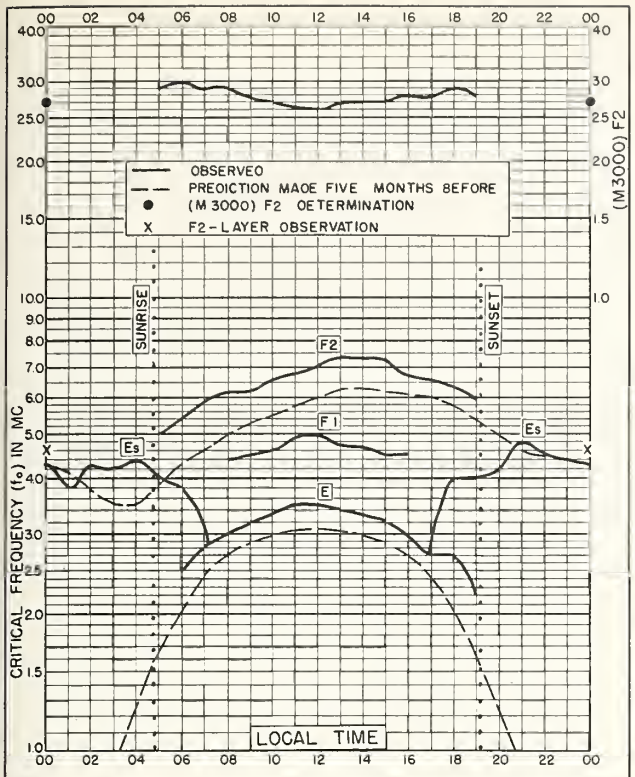


Fig. 21. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W APRIL 1956

NBS 505

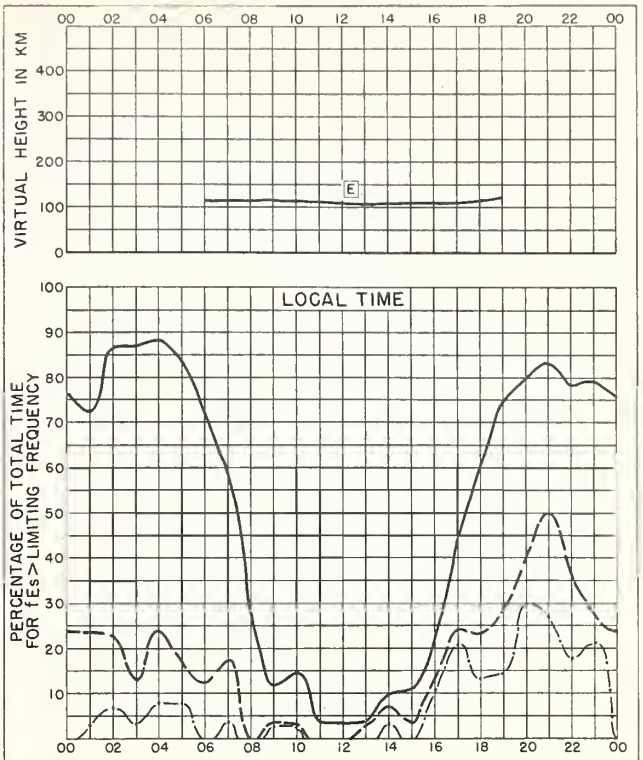


Fig. 22. NARSARSSUAK, GREENLAND APRIL 1956

NBS 490

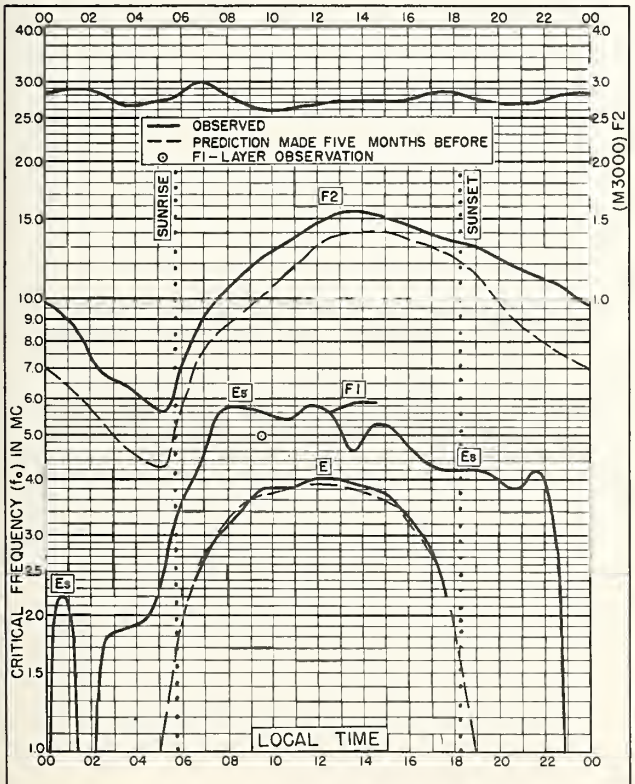


Fig. 23. MAUI, HAWAII
20.8°N, 156.5°W APRIL 1956

NBS 503

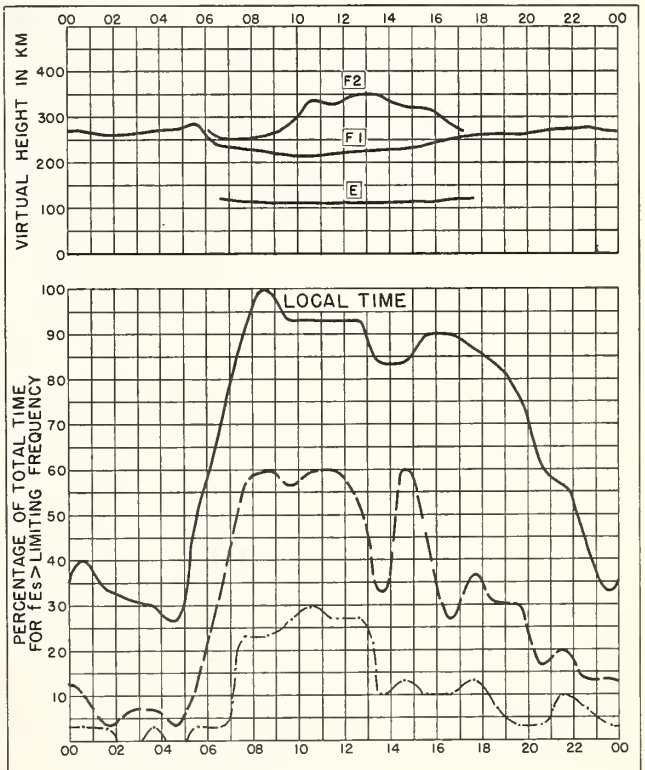


Fig. 24. MAUI, HAWAII APRIL 1956

NBS 490

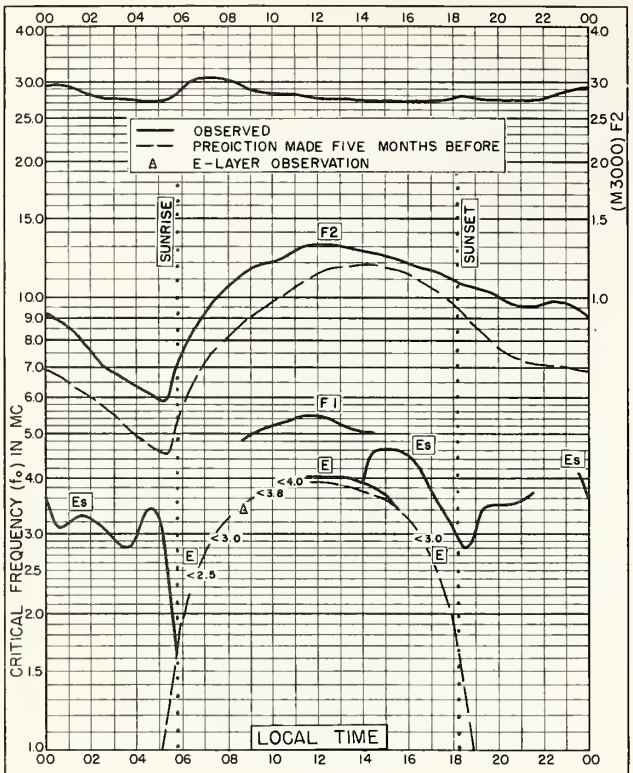


Fig. 25. PUERTO RICO, W.I.
18.5°N, 67.2°W APRIL 1956

NBS 503

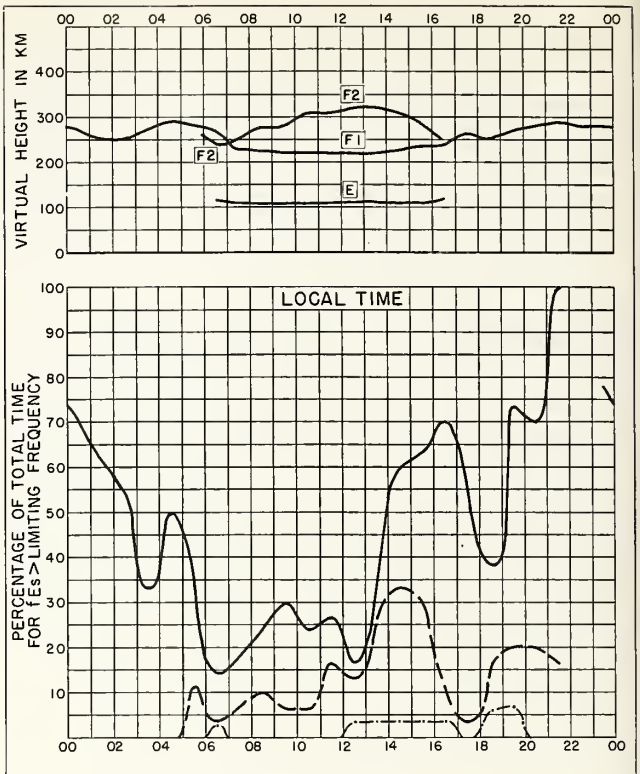


Fig. 26. PUERTO RICO, W.I. APRIL 1956

NBS 490

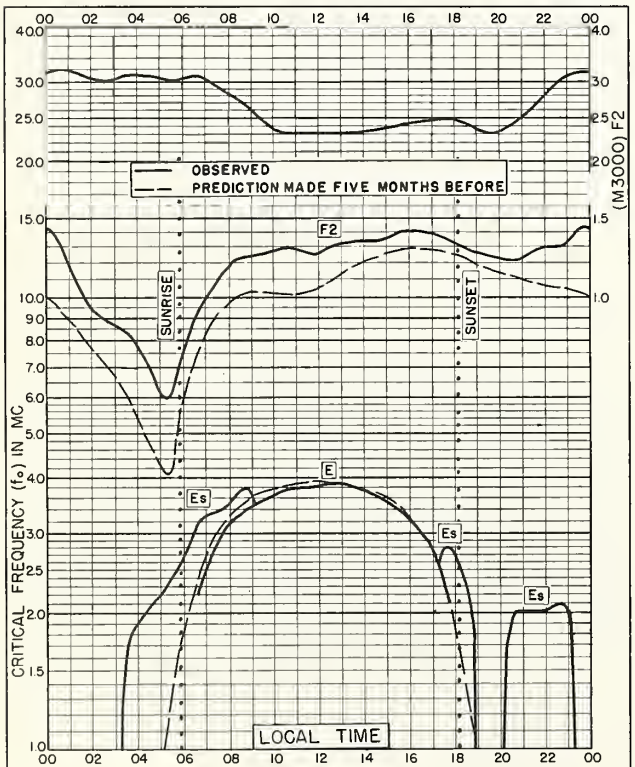


Fig. 27. GUAM I.
13.6°N, 144.9°E APRIL 1956

NBS 503

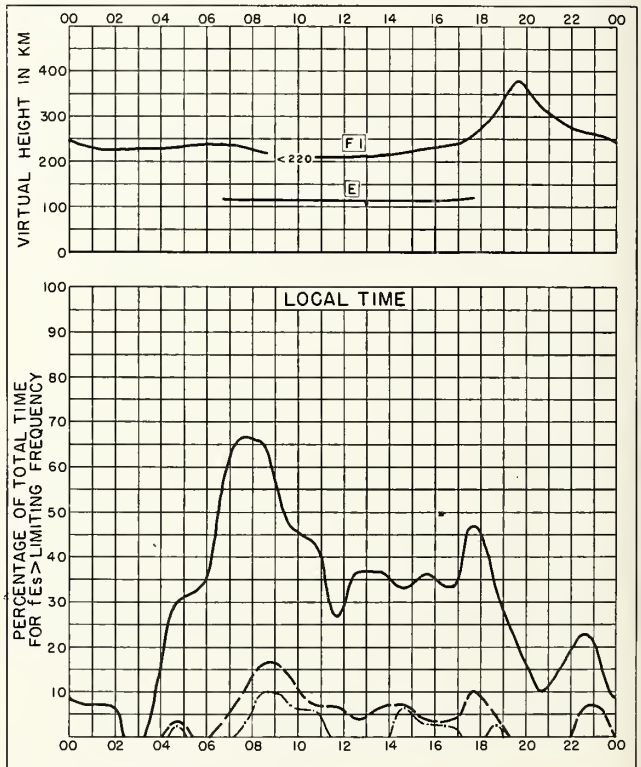


Fig. 28. GUAM I. APRIL 1956

NBS 490

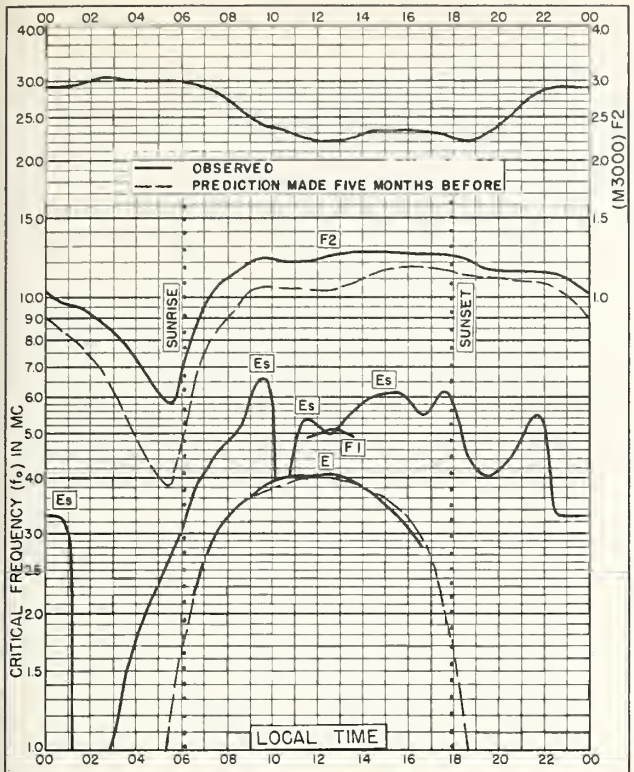


Fig. 29. TALARA, PERU
4.6°S, 81.3°W APRIL 1956

NBS 503

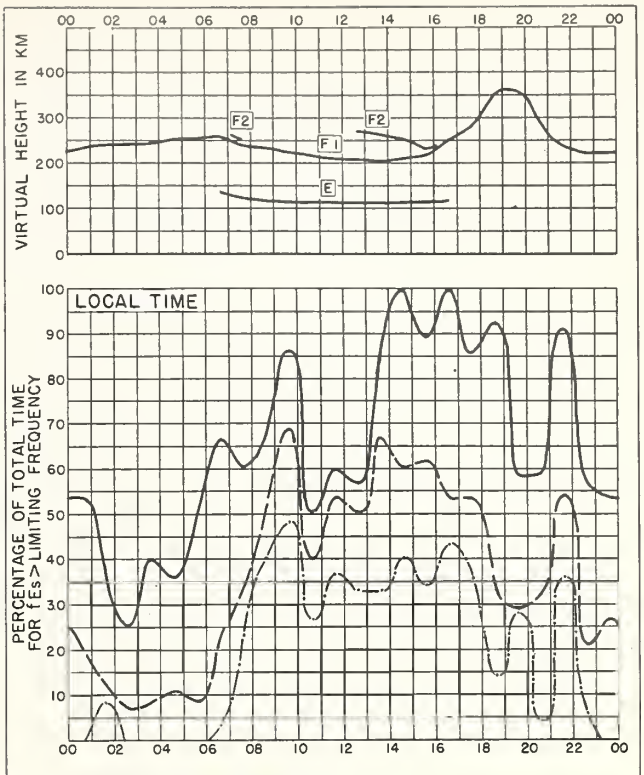


Fig. 30. TALARA, PERU APRIL 1956

NBS 490

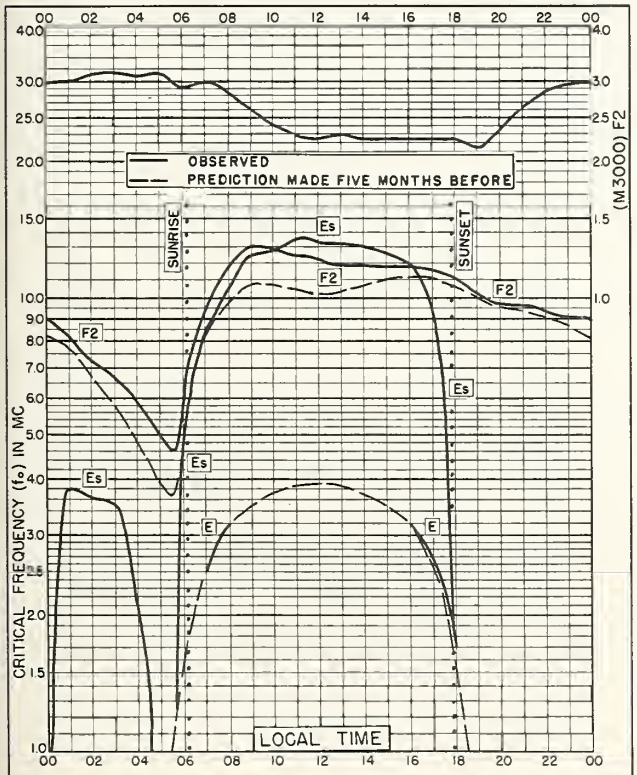


Fig. 31. HUANCAYO, PERU
12.0°S, 75.3°W APRIL 1956

NBS 503

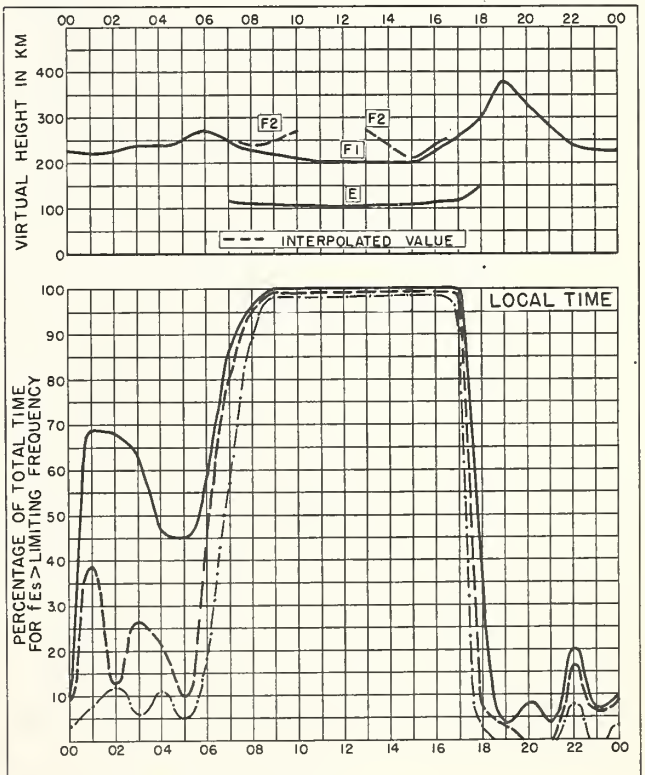


Fig. 32. HUANCAYO, PERU APRIL 1956

NBS 490

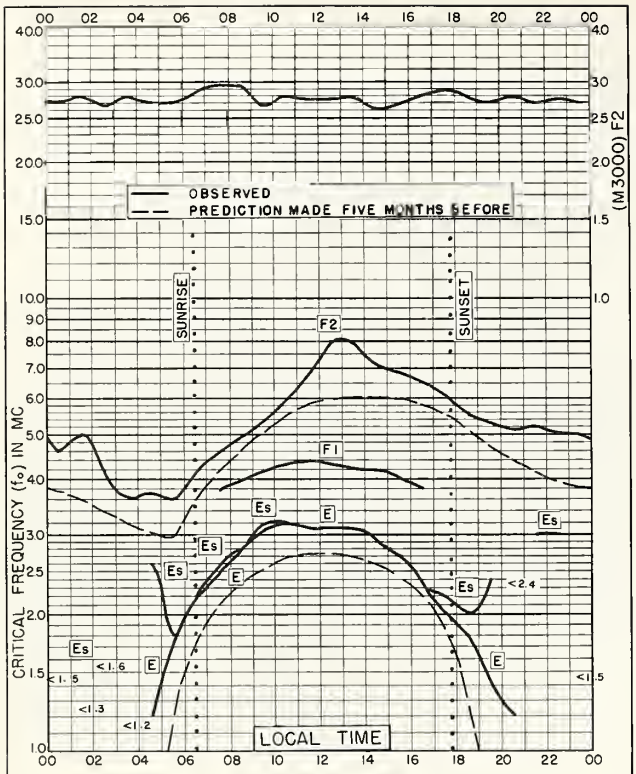


Fig. 33. BAKER LAKE, CANADA
64.3°N, 96.0°W MARCH 1956

NBS 503

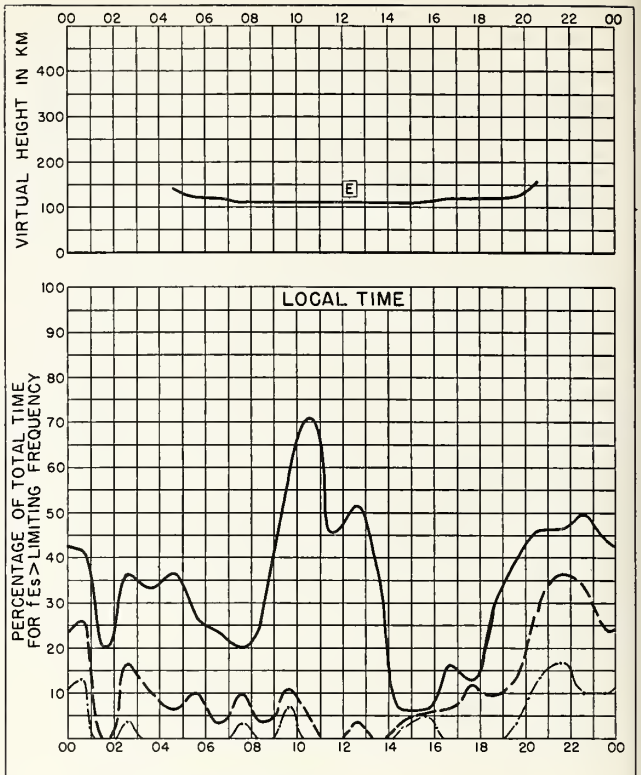


Fig. 34. BAKER LAKE, CANADA MARCH 1956

NBS 490

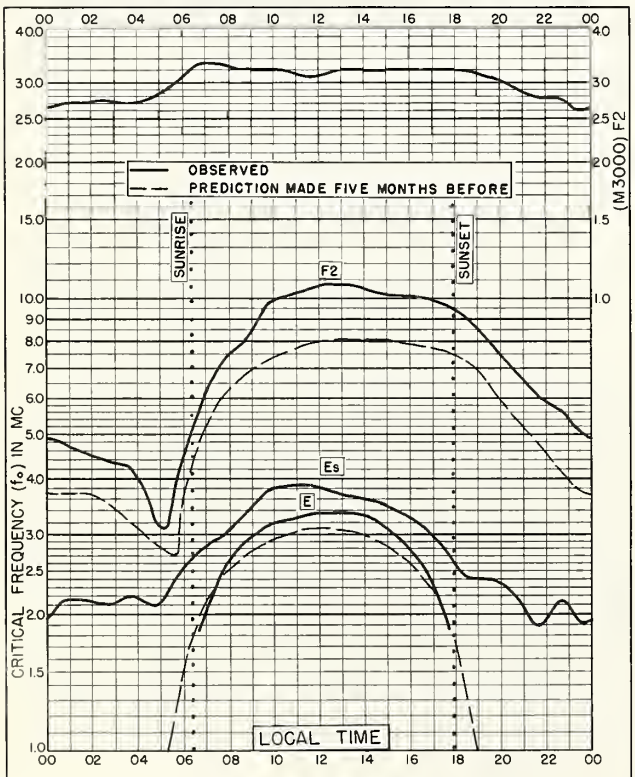


Fig. 35. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E MARCH 1956

NBS 503

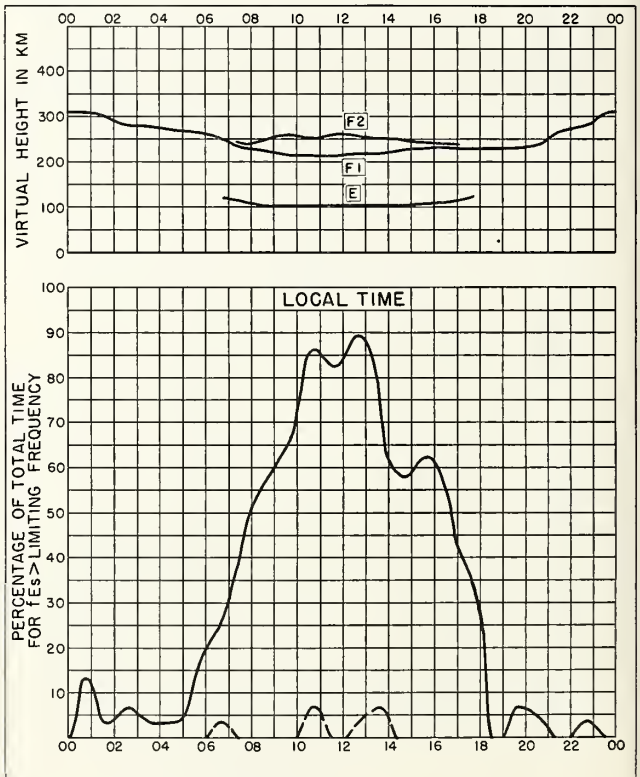


Fig. 36. LINDAU/HARZ, GERMANY MARCH 1956

NBS 490

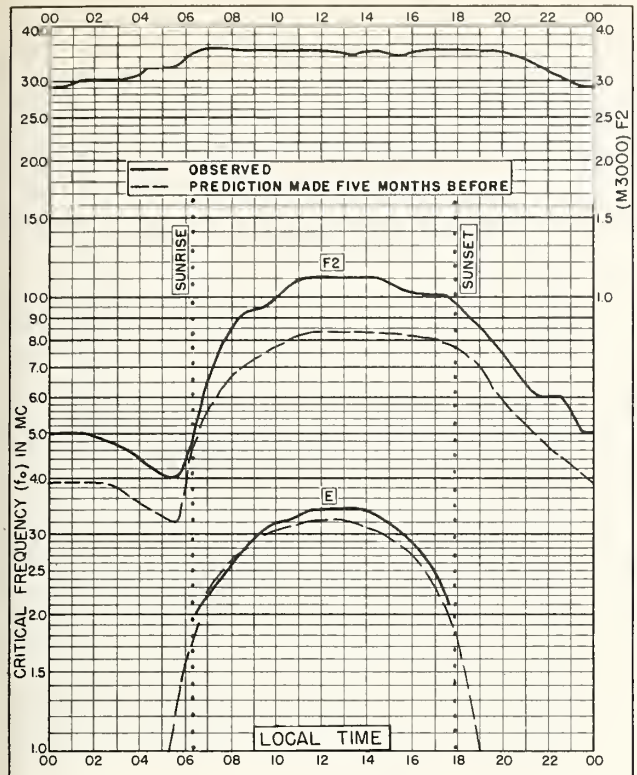
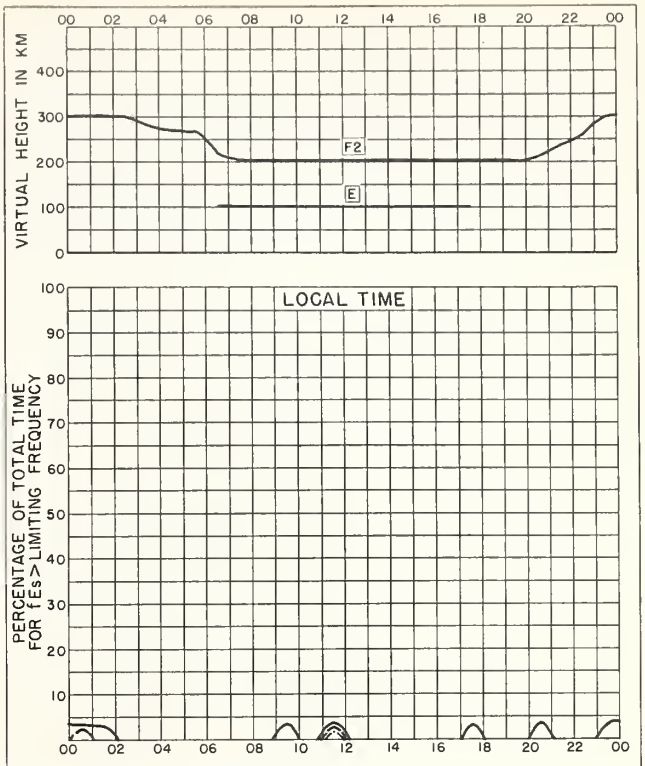


Fig. 37. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E MARCH 1956

NBS 503



MARCH 1956

Fig. 38. SCHWARZENBURG, SWITZERLAND

NBS 490

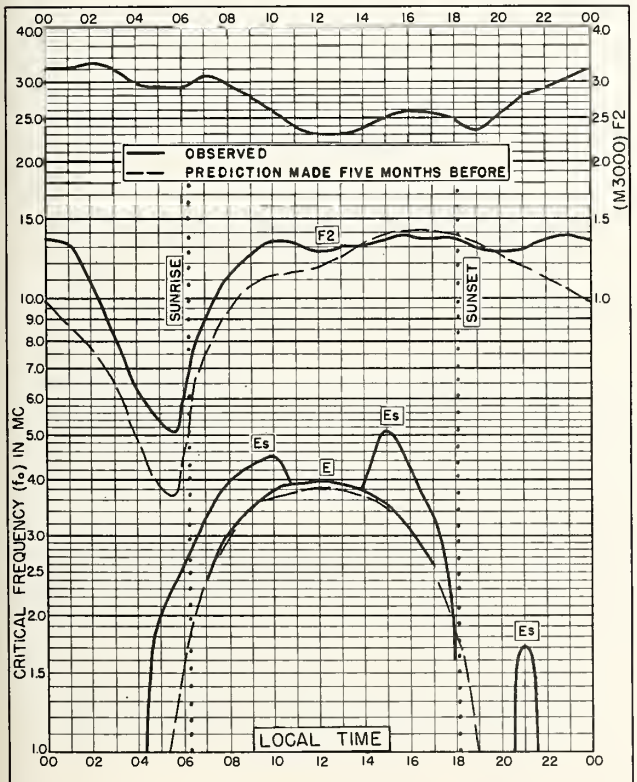


Fig. 39. BAGUIO, P. I.
16.4°N, 120.6°E MARCH 1956

NBS 503

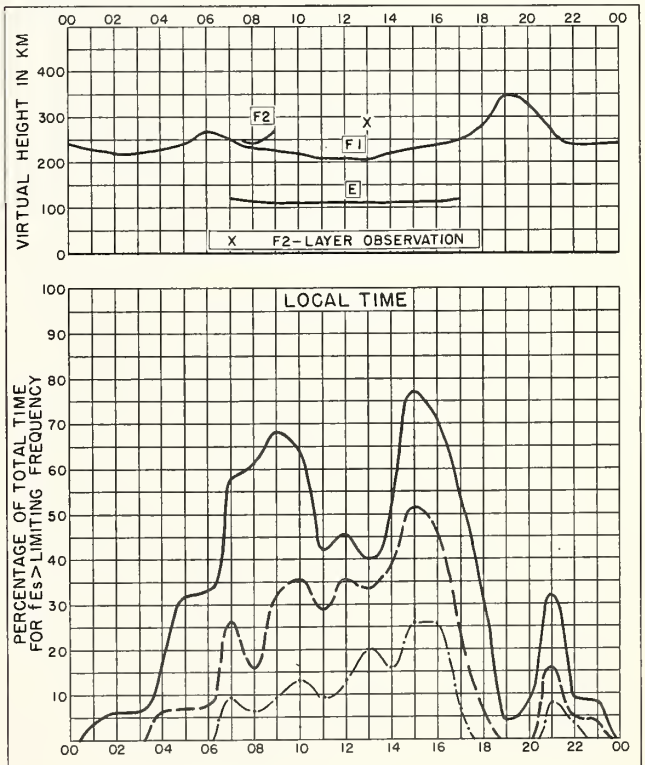


Fig. 40. BAGUIO, P. I. MARCH 1956

NBS 490

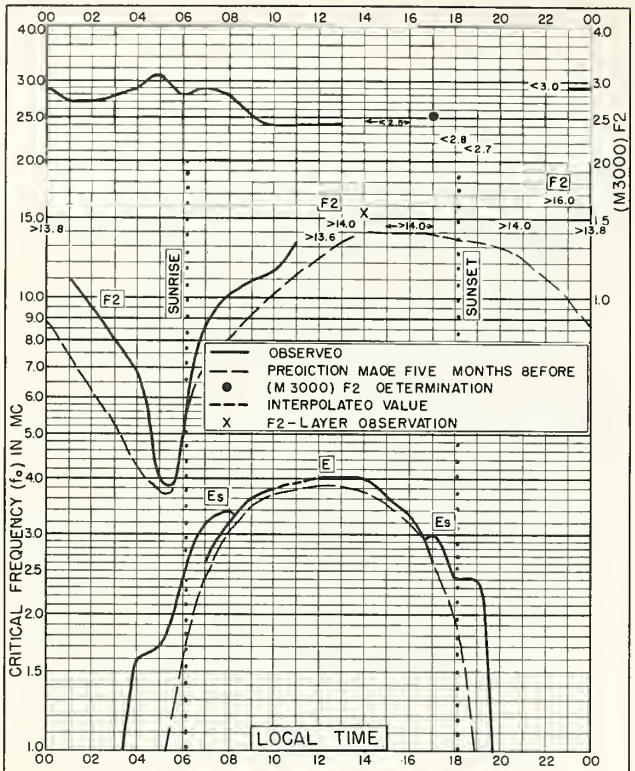


Fig. 41. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E MARCH 1956

NBS 503

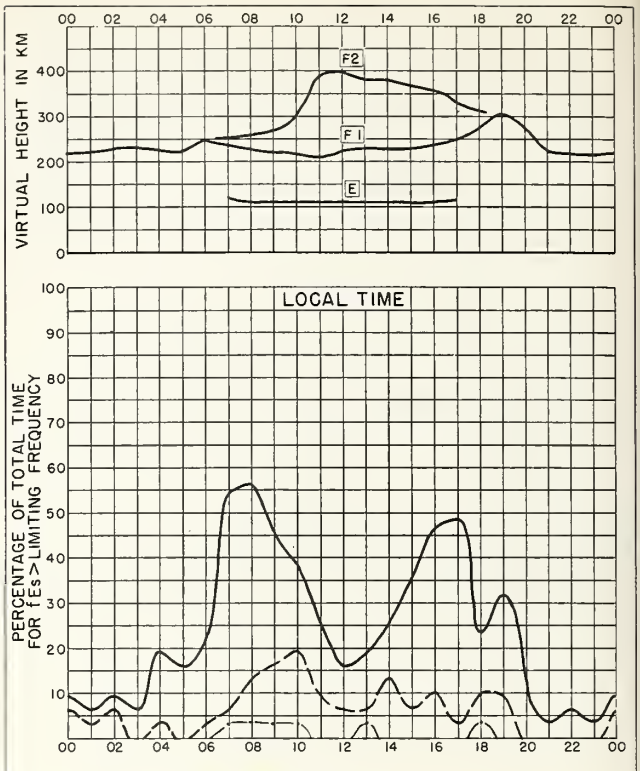


Fig. 42. LEOPOLDVILLE, BELGIAN CONGO
MARCH 1956

NBS 490

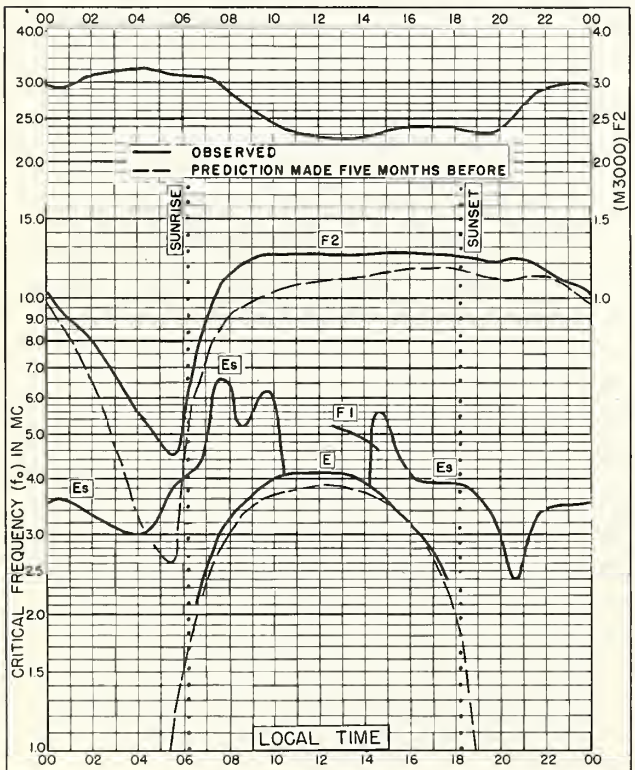


Fig. 43. TALARA, PERU
4.6°S, 81.3°W MARCH 1956

NBS 503

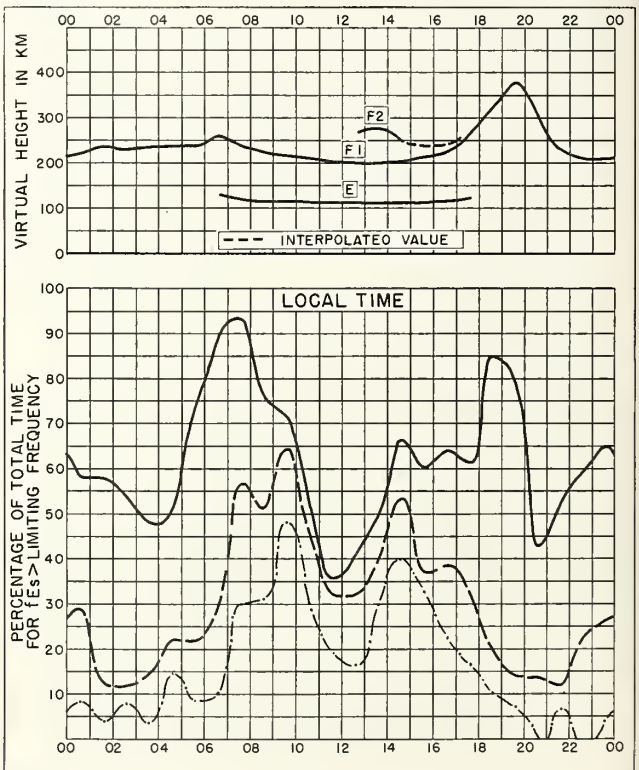


Fig. 44. TALARA, PERU
MARCH 1956

NBS 490

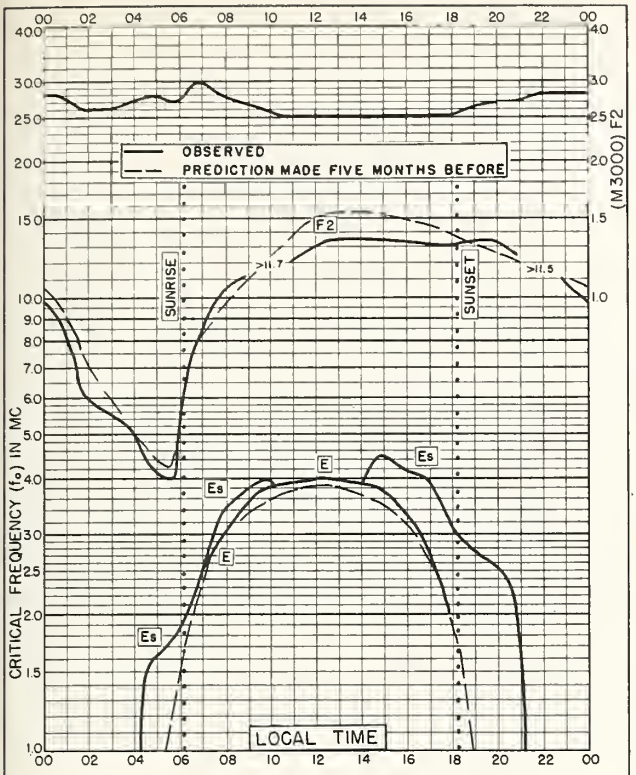
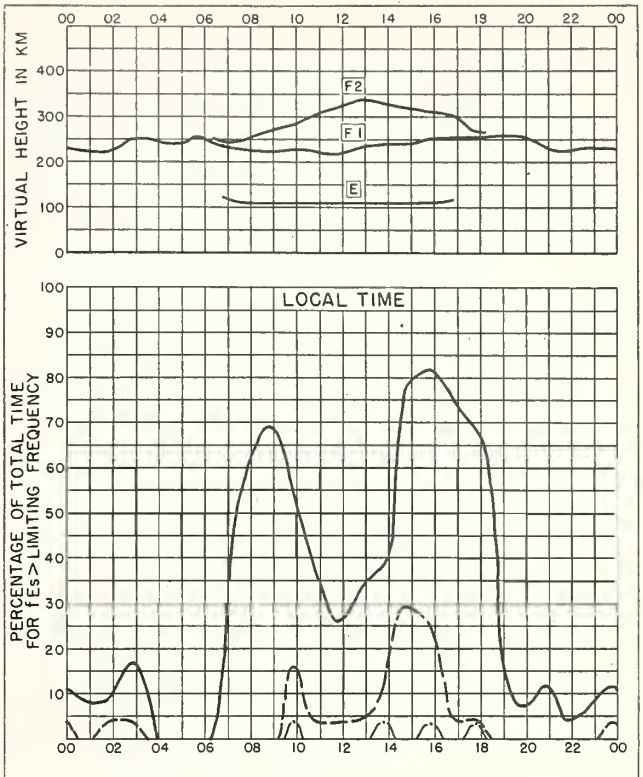


Fig. 45. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E MARCH 1956

NBS 503



MARCH 1956

Fig. 46. ELISABETHVILLE, BELGIAN CONGO

NBS 490

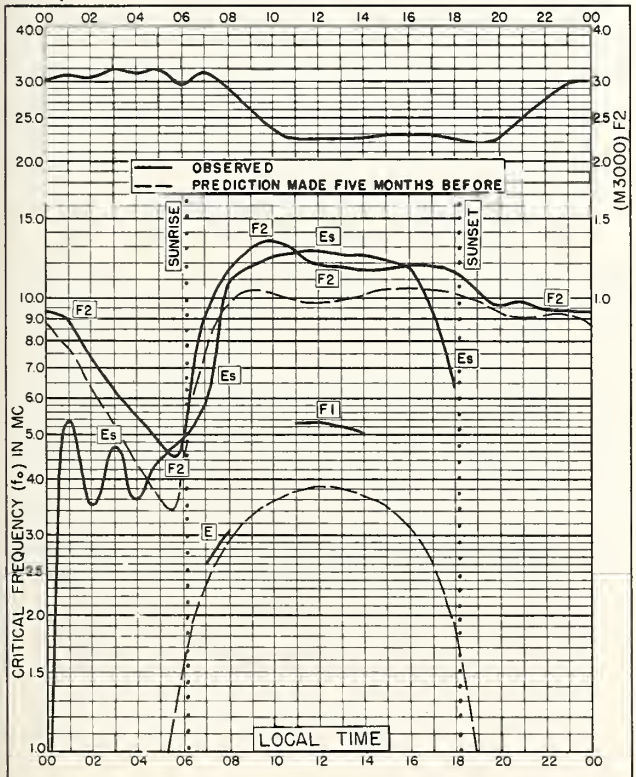


Fig. 47. HUANCAYO, PERU
12.0°S, 75.3°W MARCH 1956

NBS 503

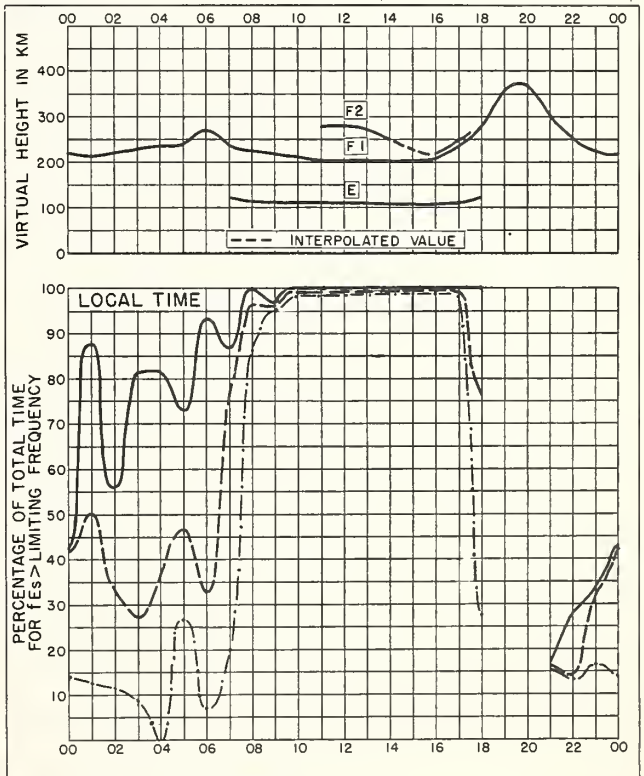


Fig. 48. HUANCAYO, PERU MARCH 1956

NBS 490

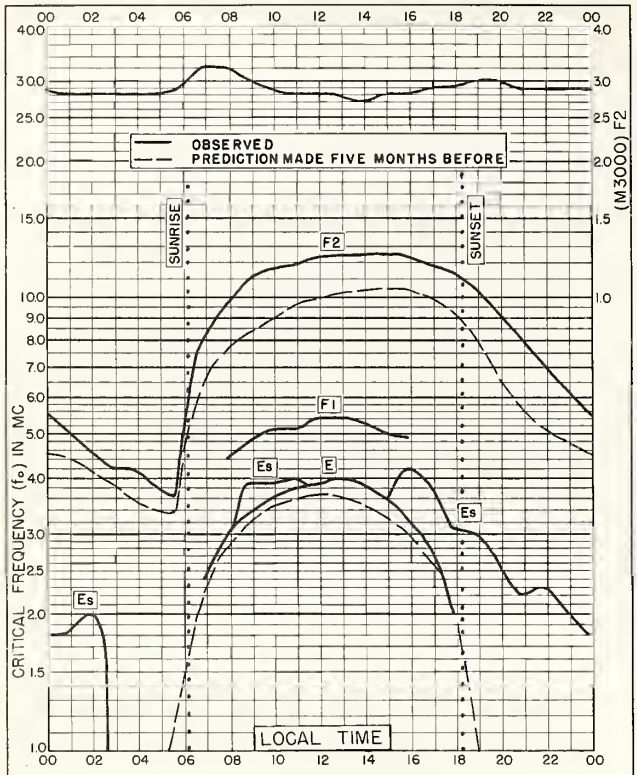
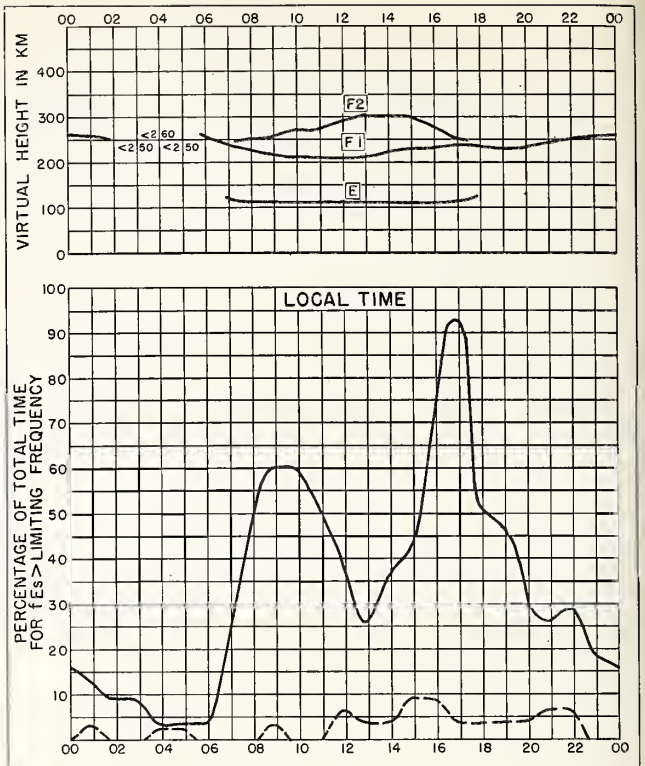


Fig. 49. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E MARCH 1956

NBS 503



MARCH 1956

Fig. 50. JOHANNESBURG, UNION OF S. AFRICA

NBS 490

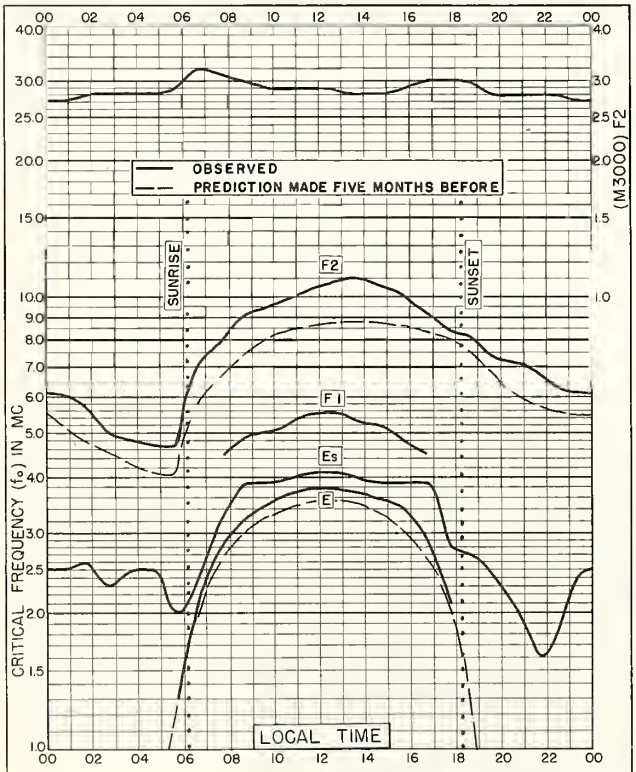
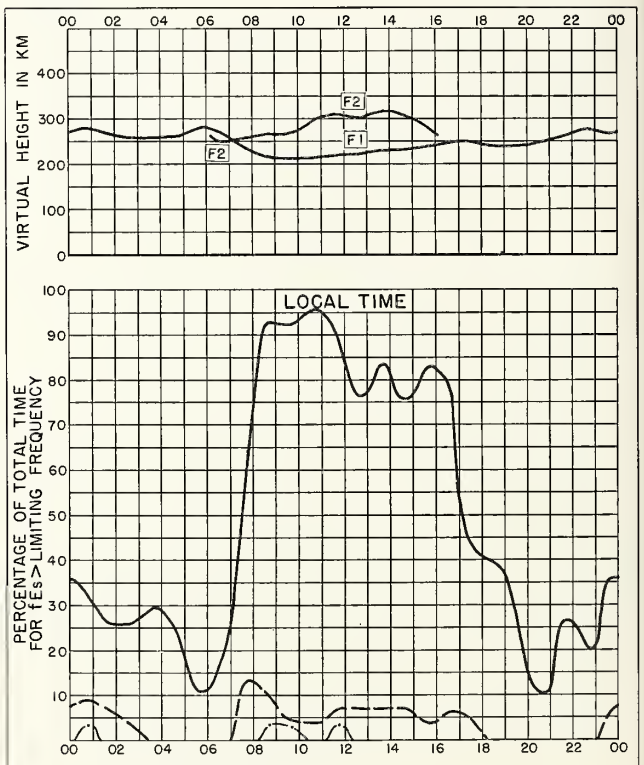


Fig. 51. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E MARCH 1956

NBS 503



MARCH 1956

Fig. 52. WATHEROO, W. AUSTRALIA

NBS 490

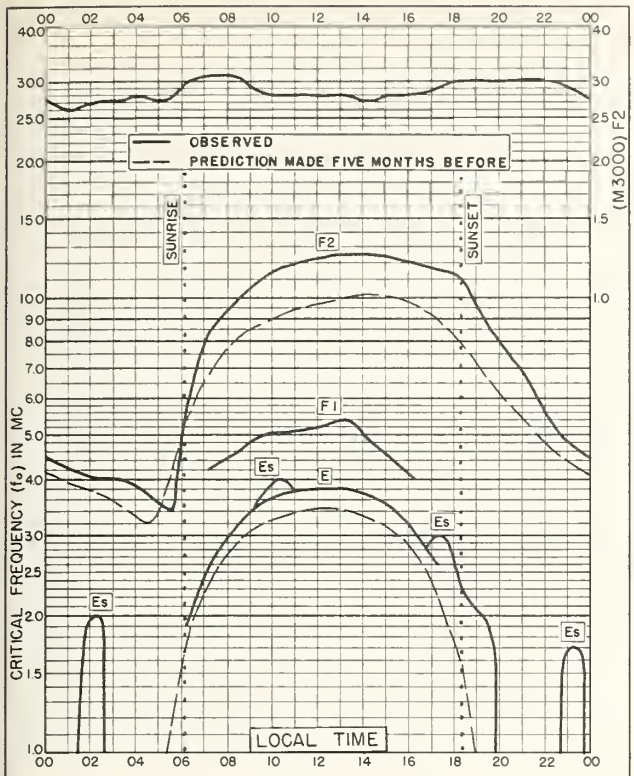
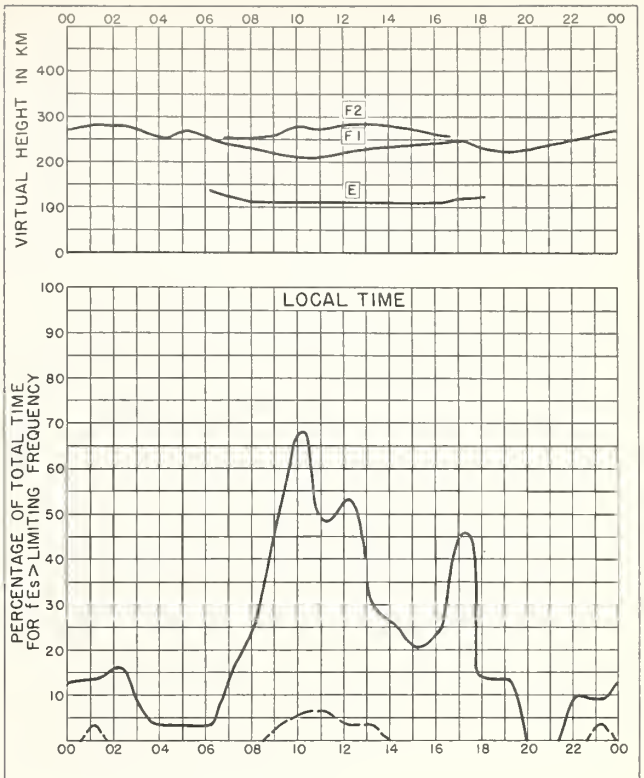


Fig. 53. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E MARCH 1956

NBS 503



MARCH 1956

Fig. 54. CAPETOWN, UNION OF S. AFRICA

NBS 490

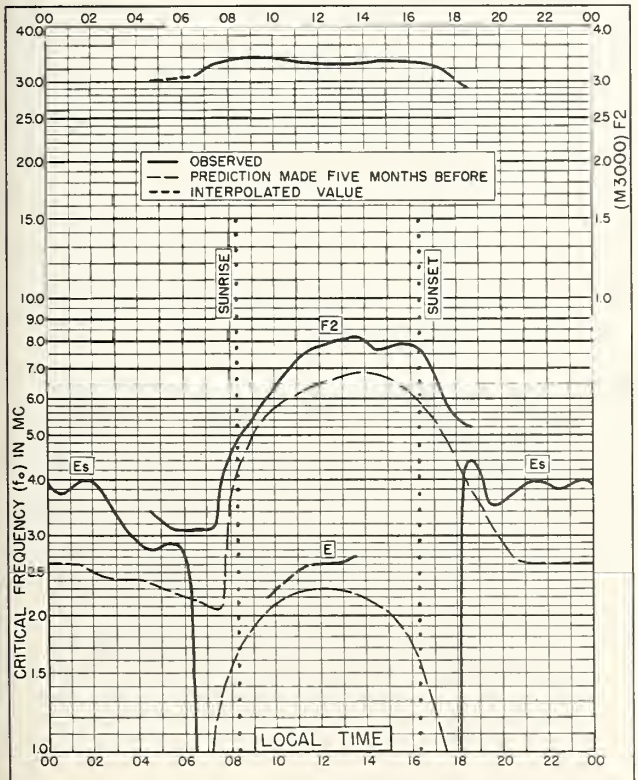


Fig. 55. REYKJAVIK, ICELAND
64.1°N, 21.8°W FEBRUARY 1956

NBS 503

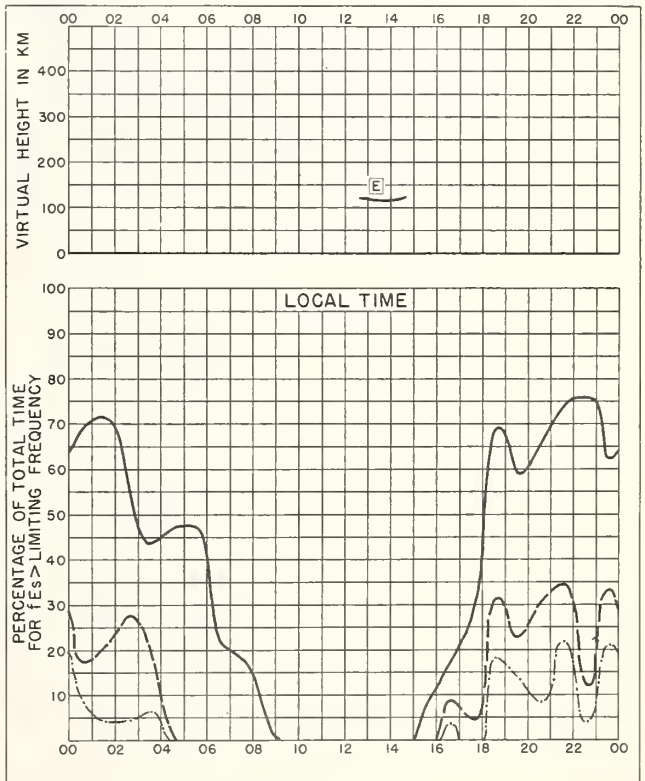


Fig. 56. REYKJAVIK, ICELAND FEBRUARY 1956

NBS 490

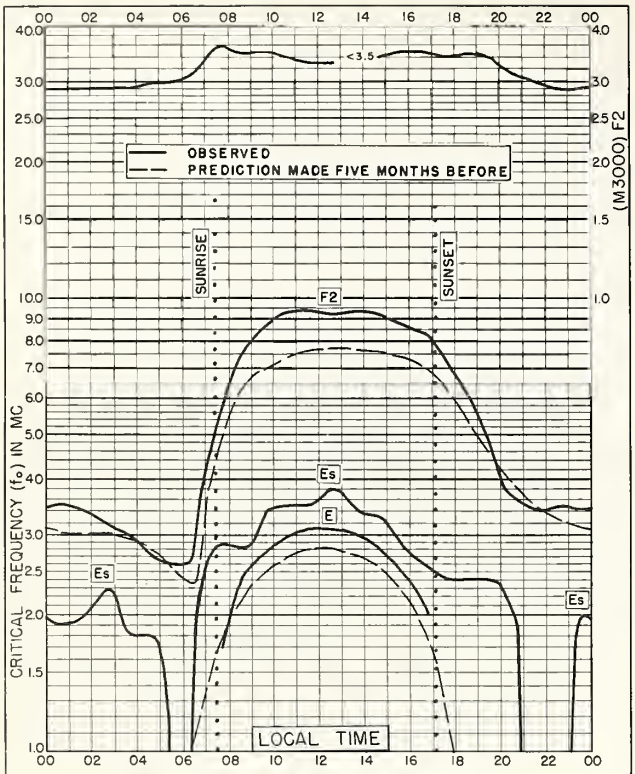


Fig. 57. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E FEBRUARY 1956

NBS 503

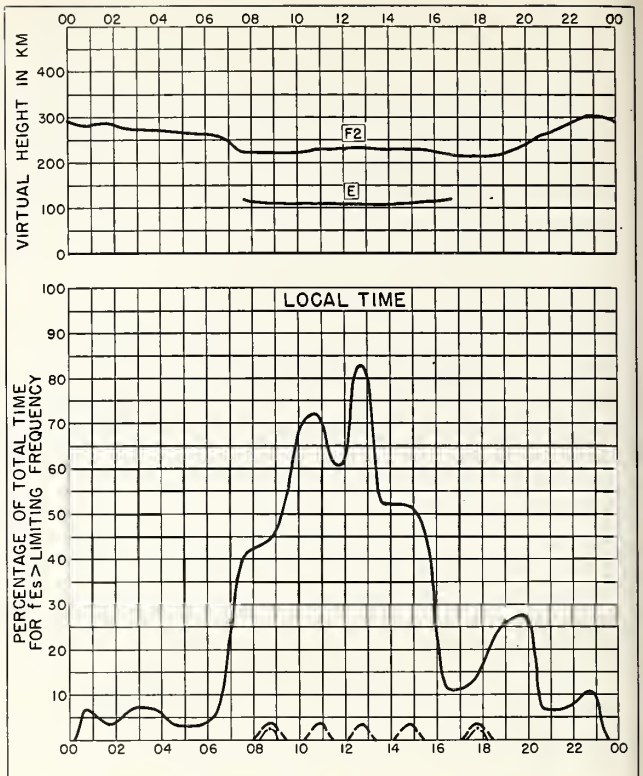


Fig. 58. LINDAU/HARZ, GERMANY FEBRUARY 1956

NBS 490

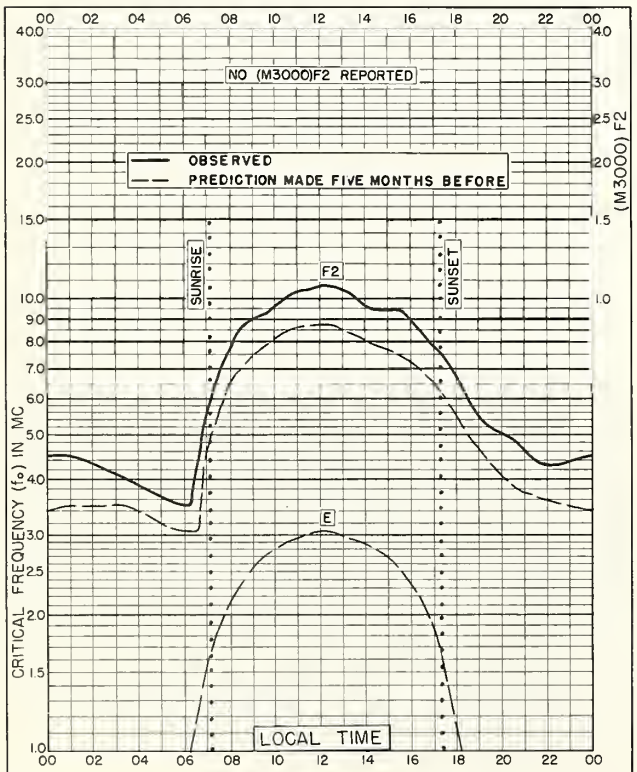


Fig. 59. WAKKANAI, JAPAN
45.4°N, 141.7°E FEBRUARY 1956

NBS 503

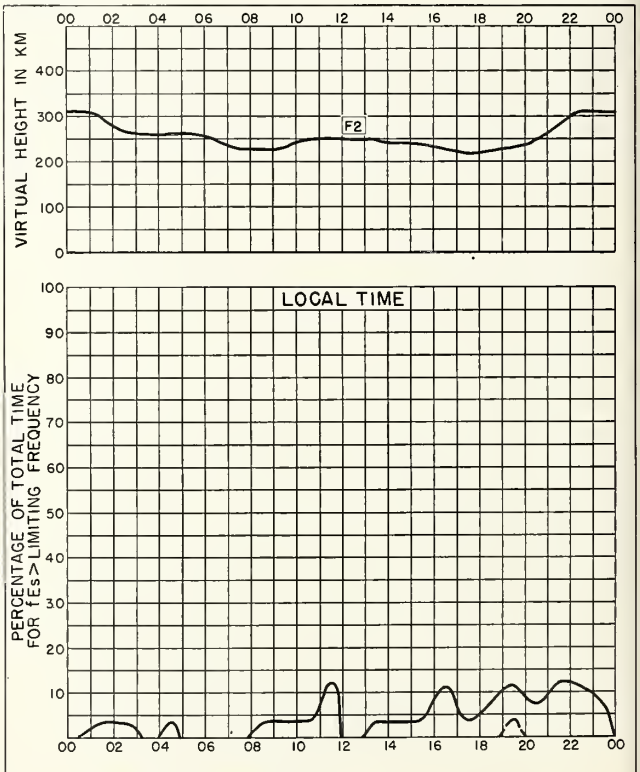


Fig. 60. WAKKANAI, JAPAN FEBRUARY 1956

NBS 490

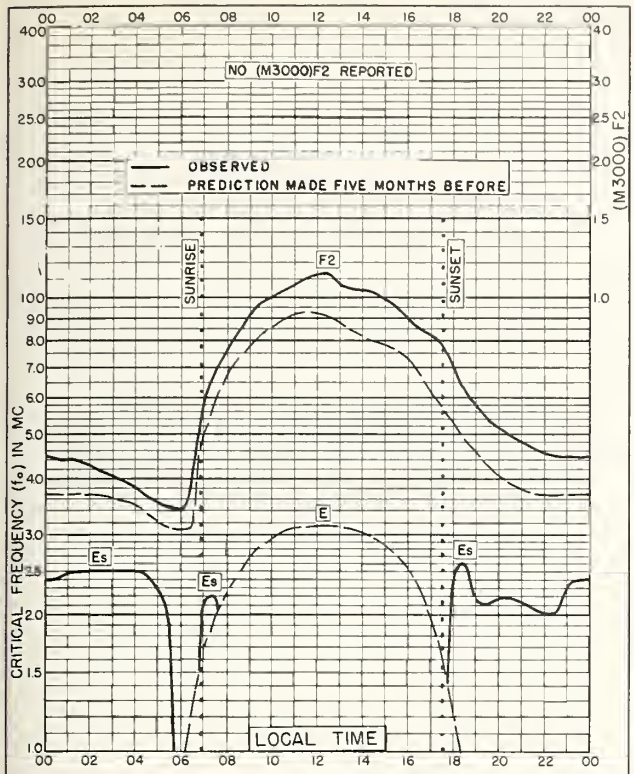


Fig. 61. AKITA, JAPAN
39.7°N, 140.1°E FEBRUARY 1956

NBS 503

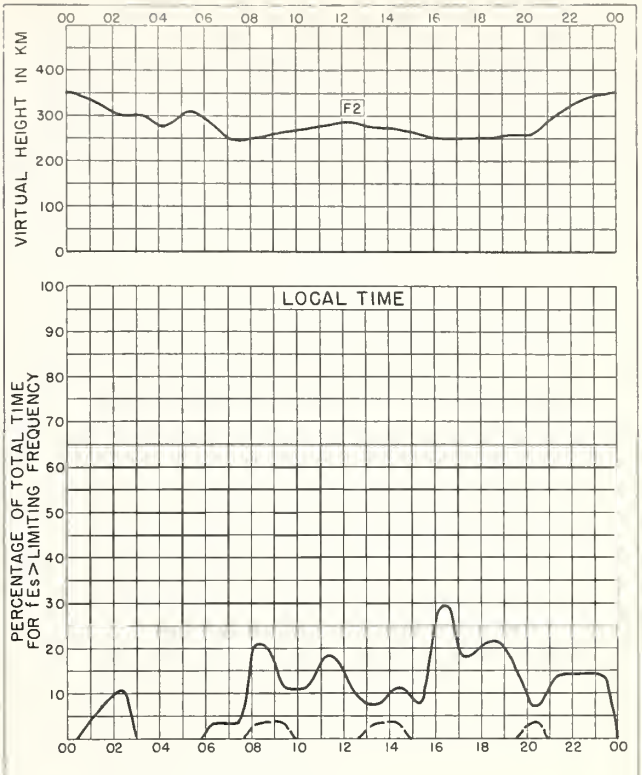


Fig. 62. AKITA, JAPAN FEBRUARY 1956

NBS 490

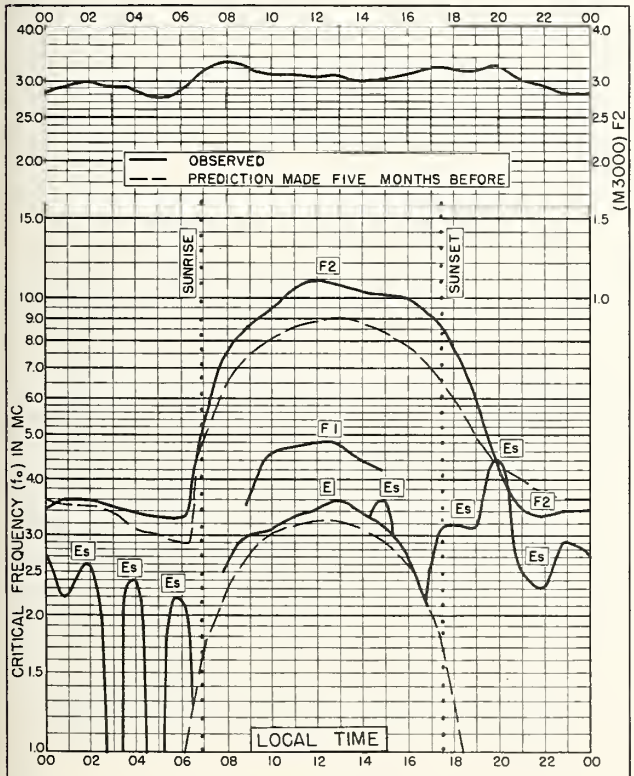
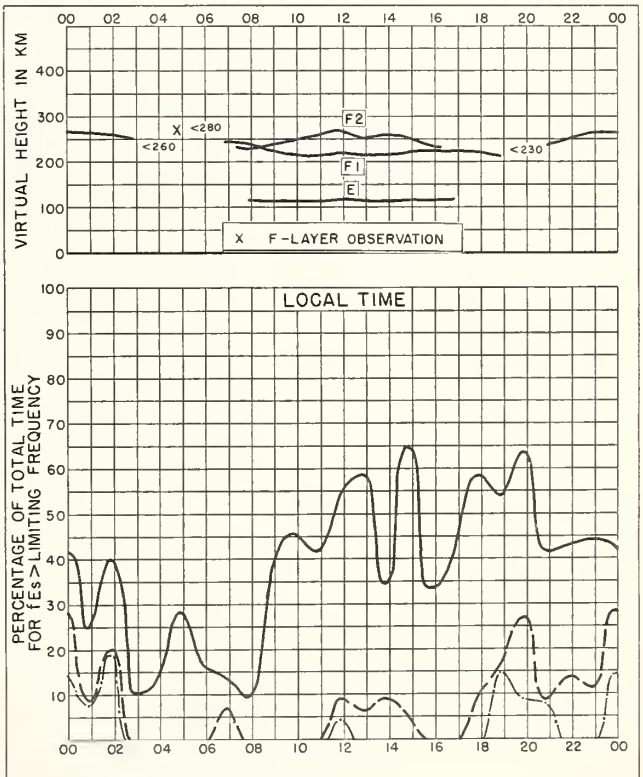


Fig. 63. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W FEBRUARY 1956

NBS 503



FEBRUARY 1956

Fig. 64. SAN FRANCISCO, CALIFORNIA

NBS 490

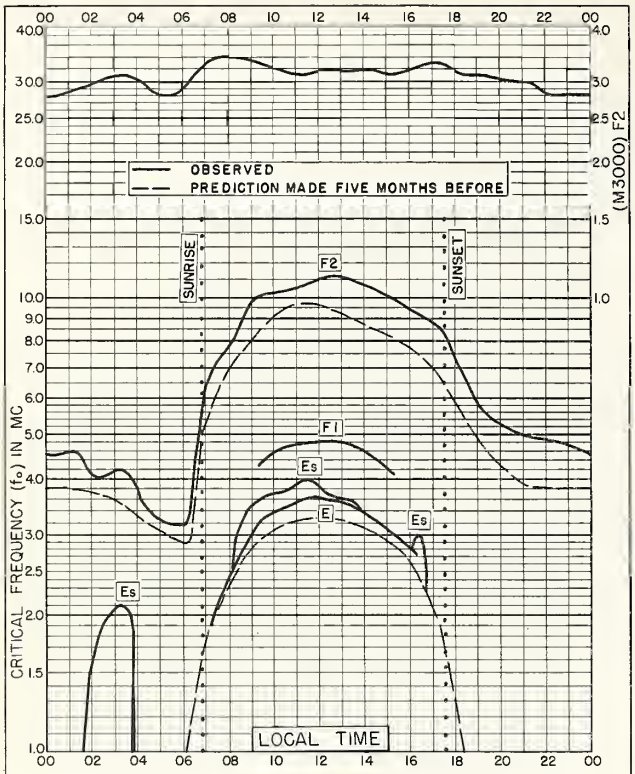


Fig. 65. TOKYO, JAPAN
35.7°N, 139.5°E FEBRUARY 1956

NBS 503

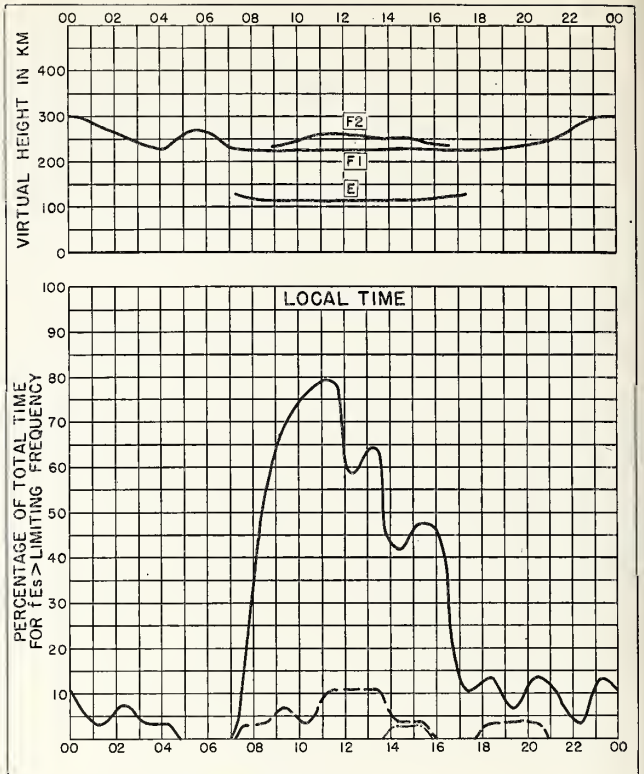


Fig. 66. TOKYO, JAPAN FEBRUARY 1956

NBS 490

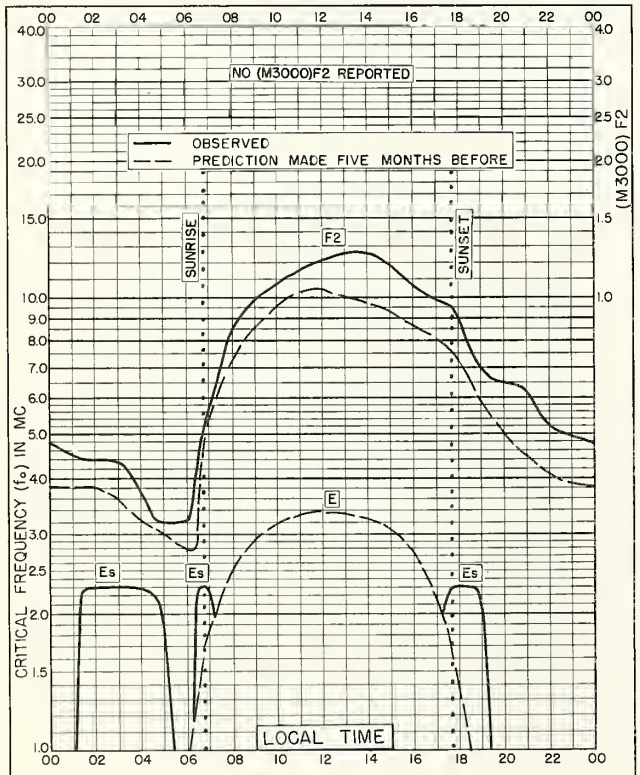


Fig. 67. YAMAGAWA, JAPAN
31.2°N, 130.6°E FEBRUARY 1956

NBS 503

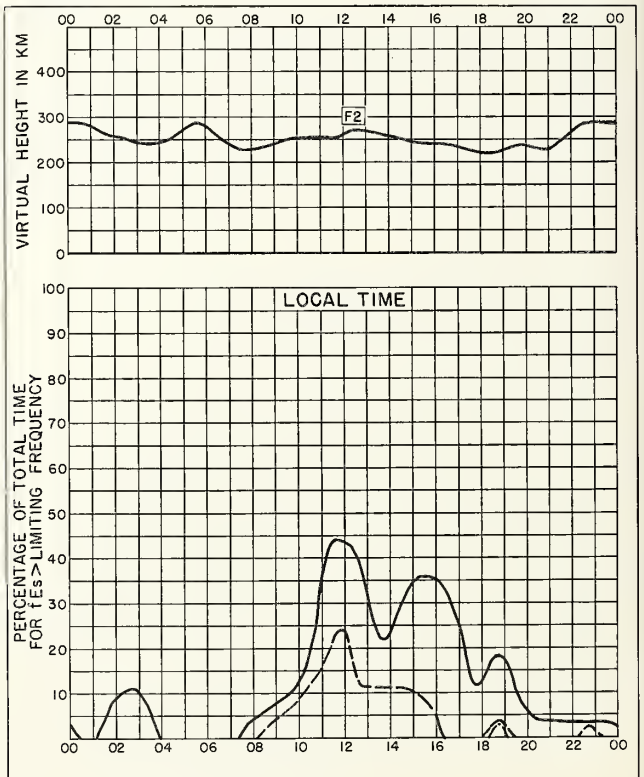


Fig. 68. YAMAGAWA, JAPAN FEBRUARY 1956

NBS 490

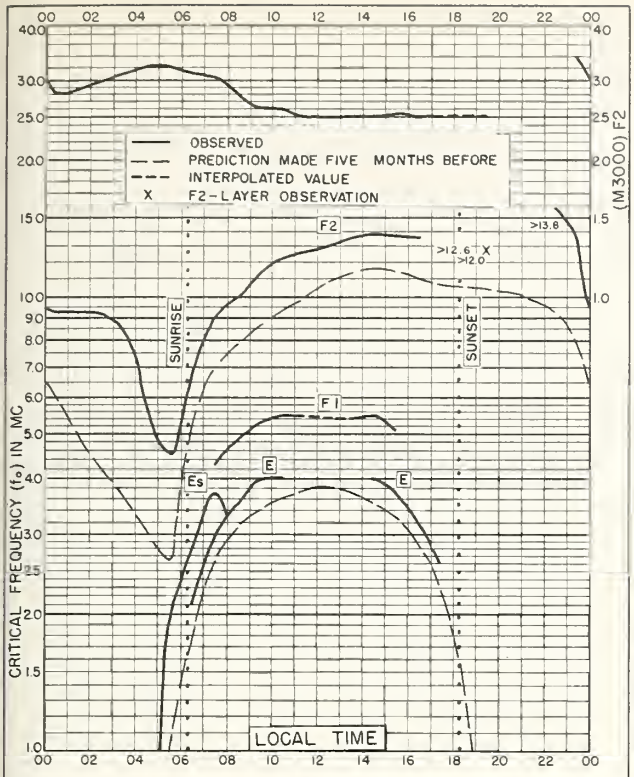


Fig. 69. NAIROBI, KENYA
1.3°S, 36.8°E FEBRUARY 1956

NBS 503

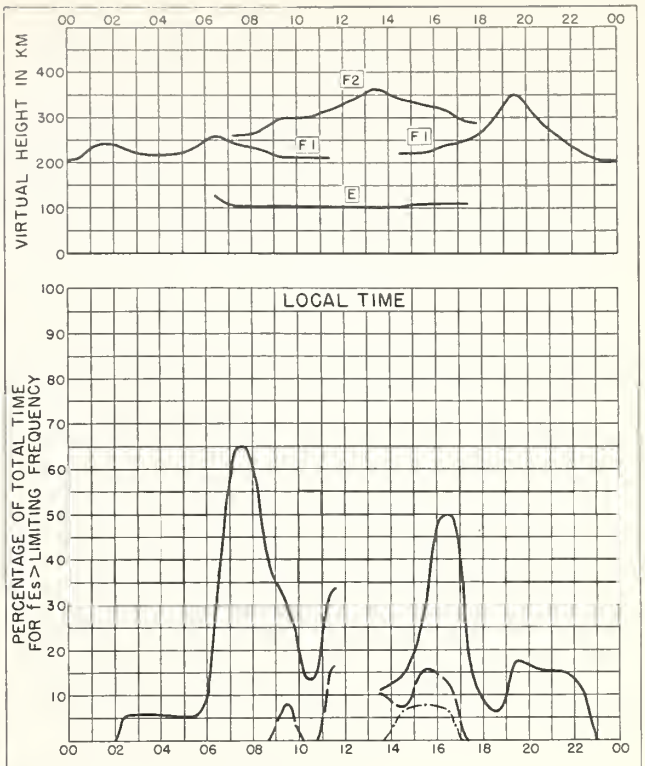


Fig. 70. NAIROBI, KENYA FEBRUARY 1956

NBS 490

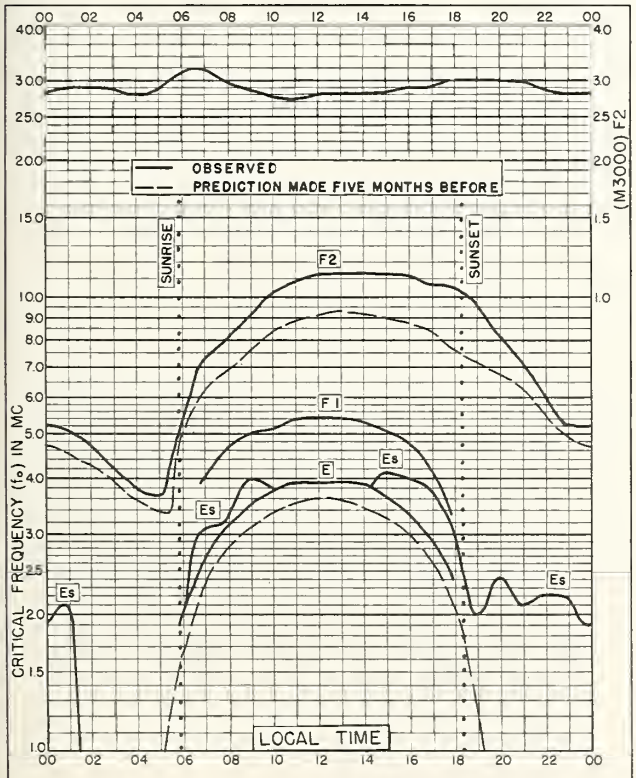


Fig. 71. JOHANNESBURG, UNION OF S. A.
26.2°S, 28.1°E FEBRUARY 1956

NBS 503

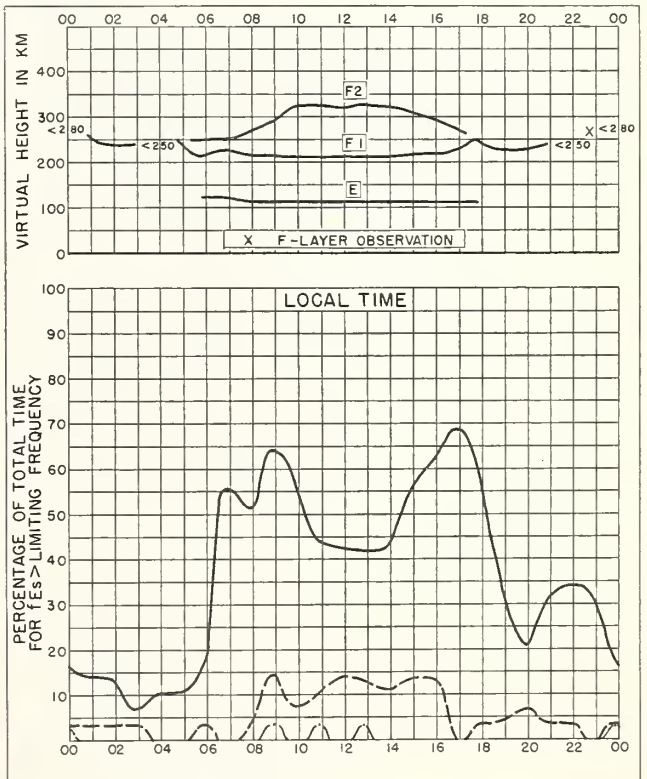


Fig. 72. JOHANNESBURG, UNION OF S. AFRICA FEBRUARY 1956

NBS 490

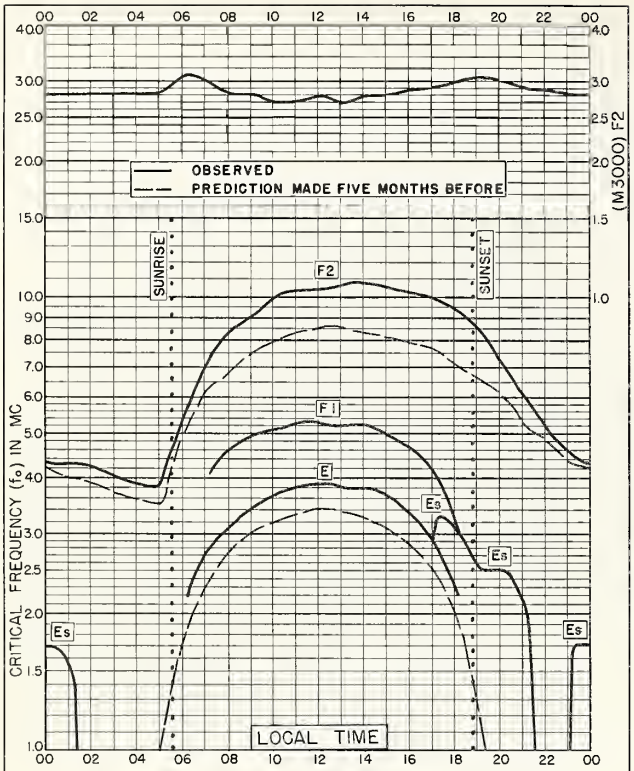
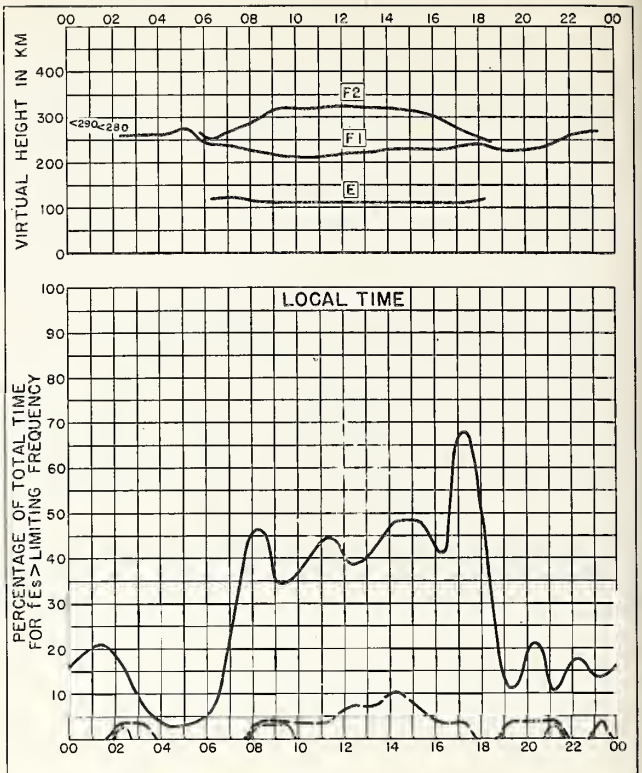


Fig. 73. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E FEBRUARY 1956

NBS 503



FEBRUARY 1956

Fig. 74. CAPETOWN, UNION OF S. AFRICA

NBS 490

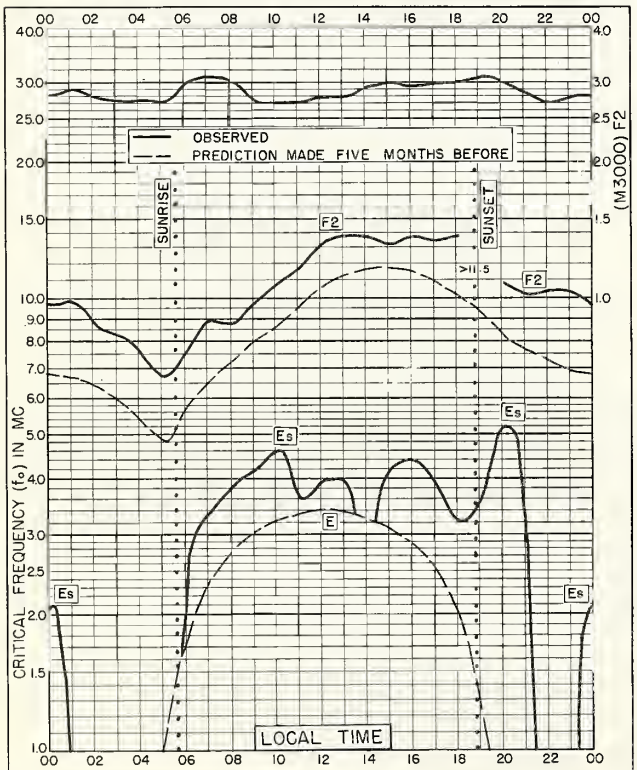
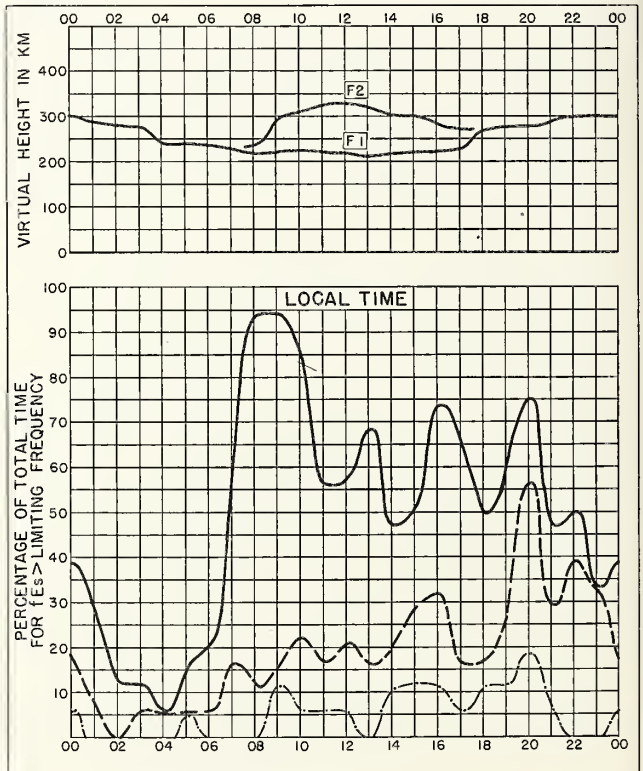


Fig. 75. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W FEBRUARY 1956

NBS 503



FEBRUARY 1956

Fig. 76. BUENOS AIRES, ARGENTINA

NES 490

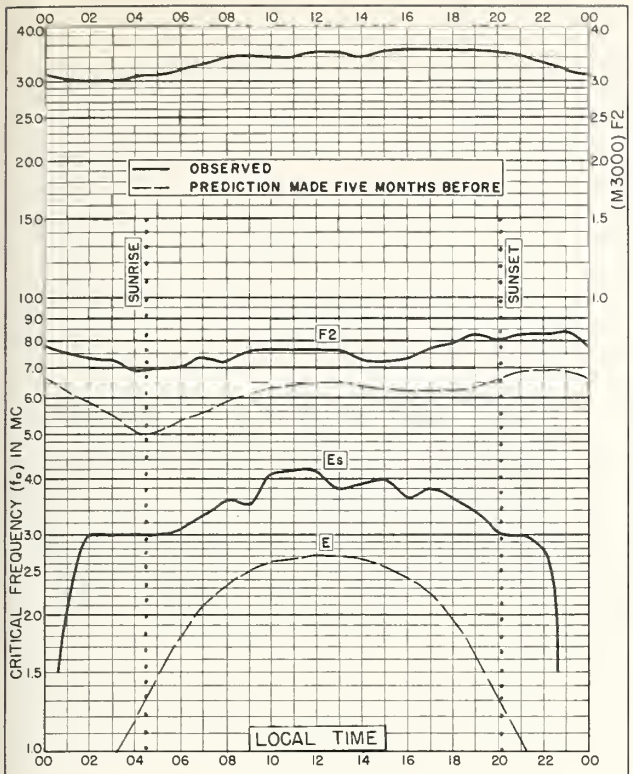


Fig. 77. DECEPCION I.
63.0°S, 60.7°W FEBRUARY 1956

NBS 503

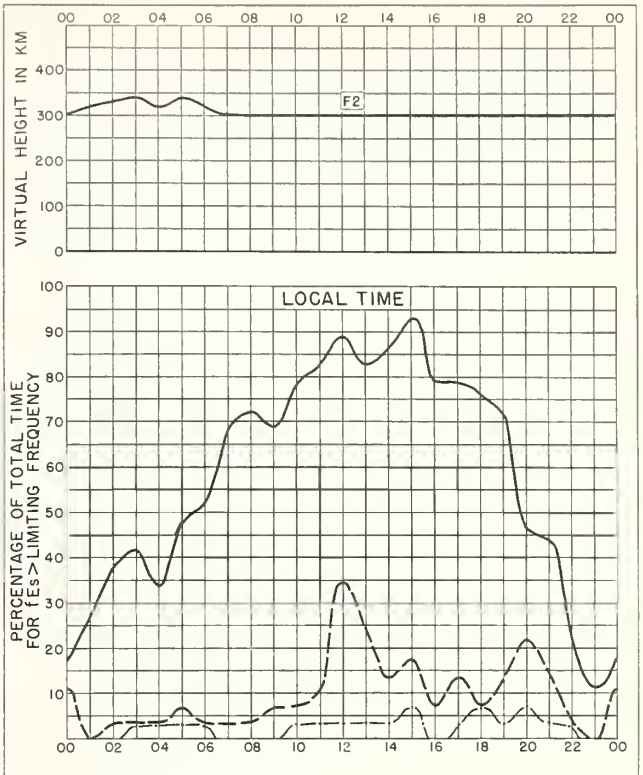


Fig. 78. DECEPCION I. FEBRUARY 1956

NBS 490

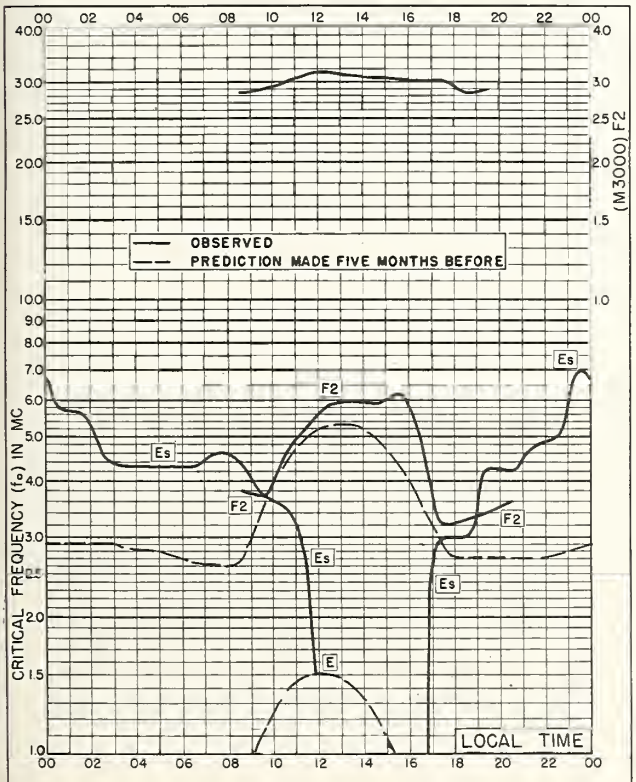


Fig. 79. POINT BARROW, ALASKA
71.3°N, 156.8°W JANUARY 1956

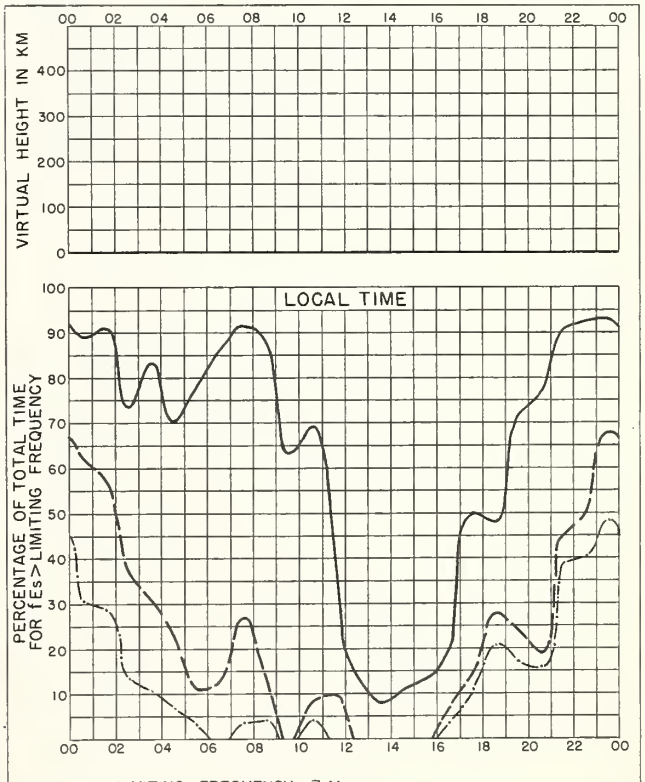


Fig. 80. POINT BARROW, ALASKA JANUARY 1956

NBS 490

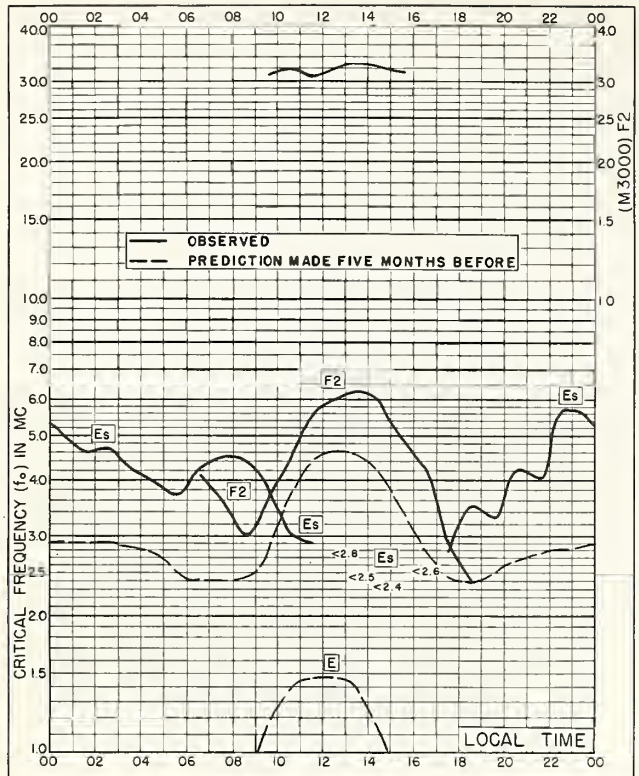


Fig. 81. POINT BARROW, ALASKA
71.3°N, 156.8°W DECEMBER 1955

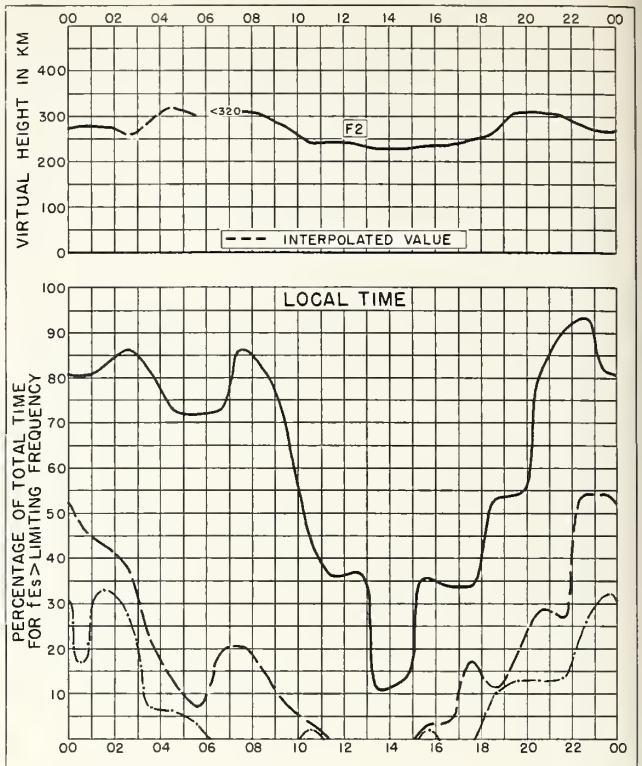


Fig. 82. POINT BARROW, ALASKA DECEMBER 1955

NBS 490

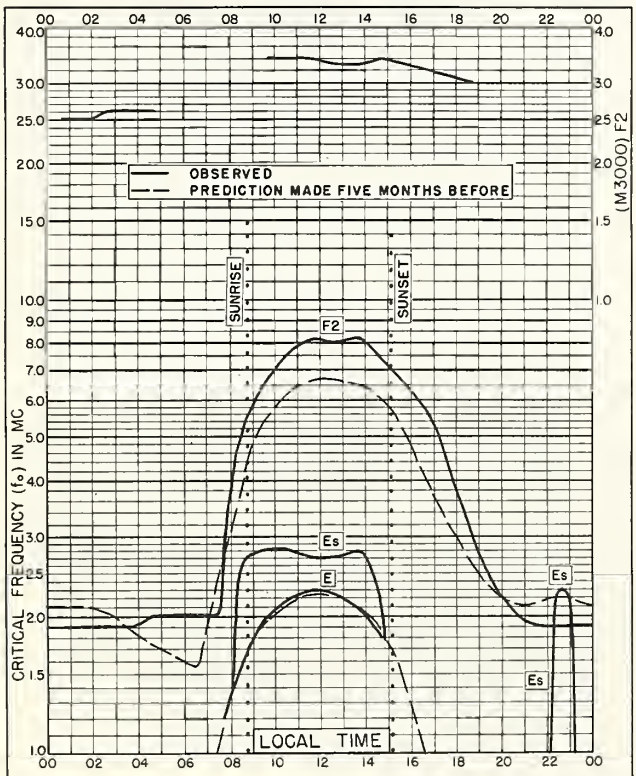


Fig. 83. INVERNESS, SCOTLAND
57.4°N, 4.2°W DECEMBER 1955

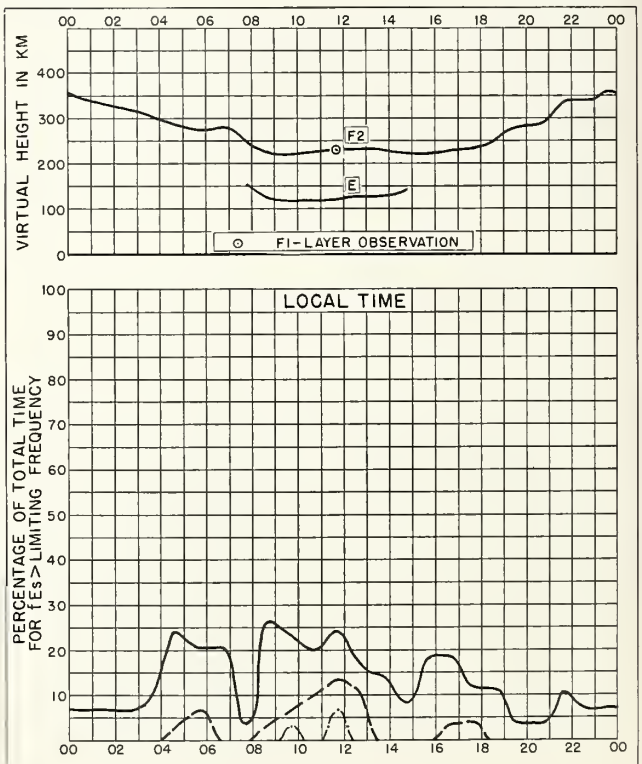


Fig. 84. INVERNESS, SCOTLAND DECEMBER 1955

NBS 490

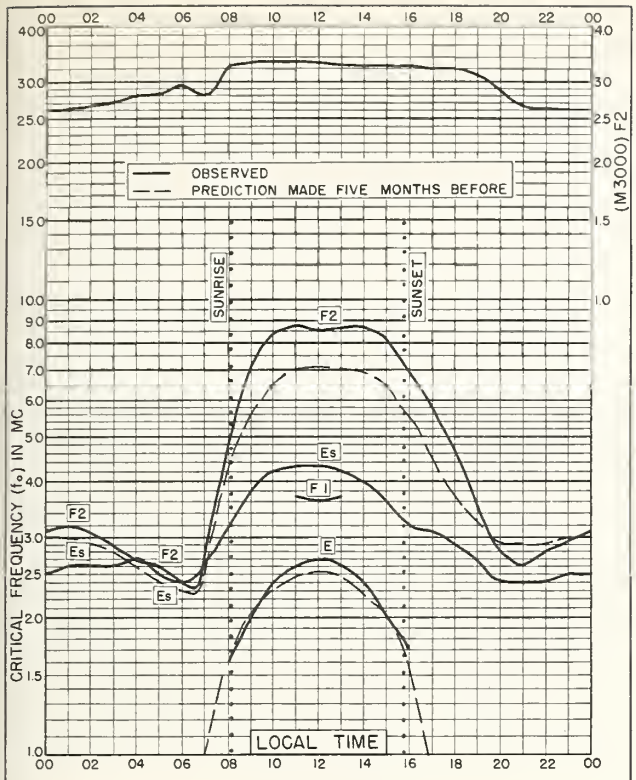


Fig. 85. SLOUGH, ENGLAND
51.5°N, 0.6°W DECEMBER 1955

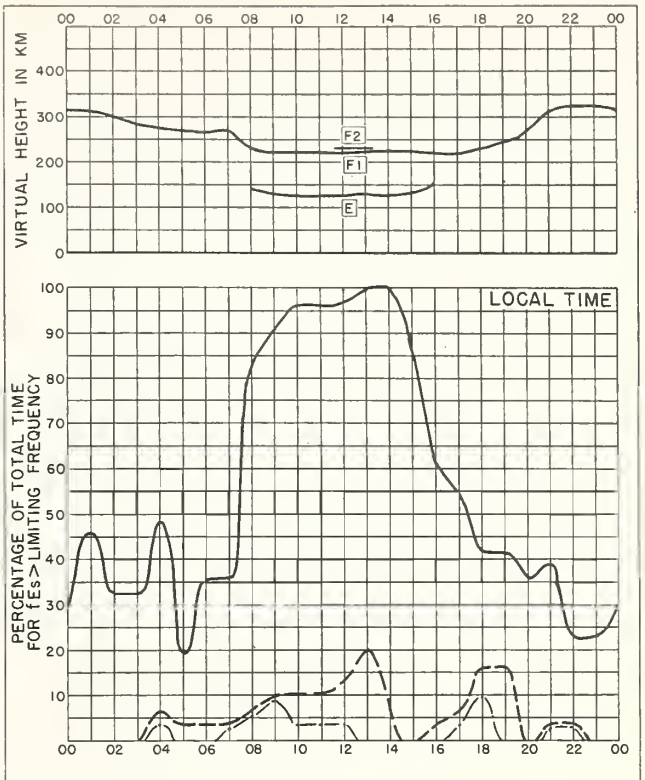


Fig. 86. SLOUGH, ENGLAND DECEMBER 1955

NBS 490

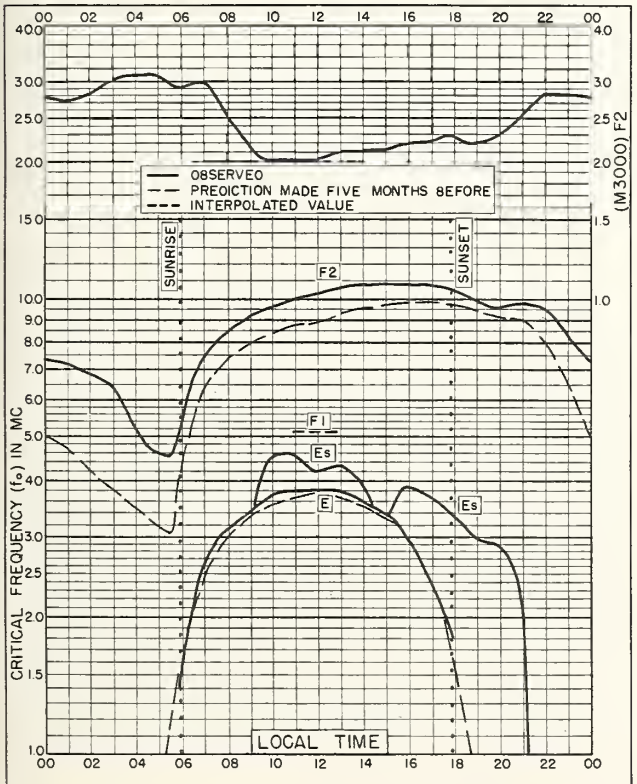


Fig. 87. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E DECEMBER 1955

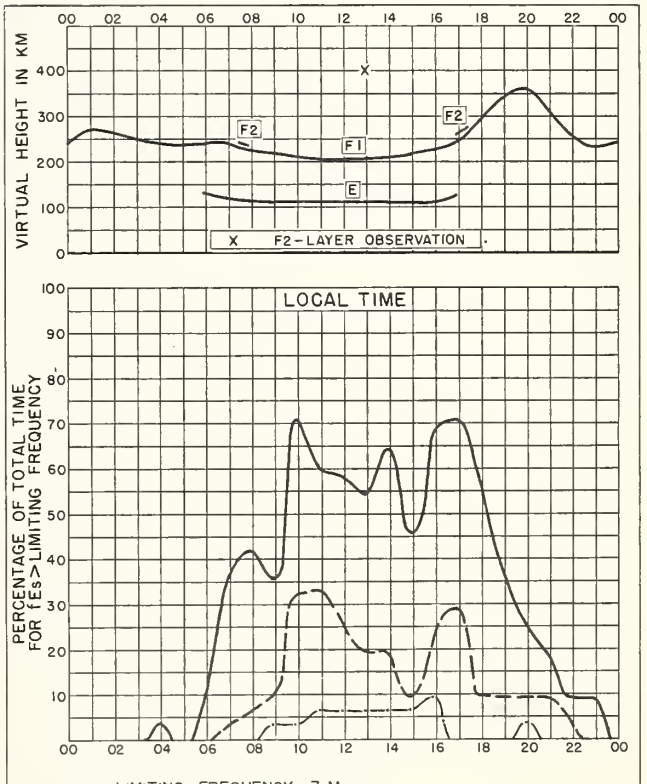


Fig. 88. SINGAPORE, BRITISH MALAYA DECEMBER 1955

NBS 490

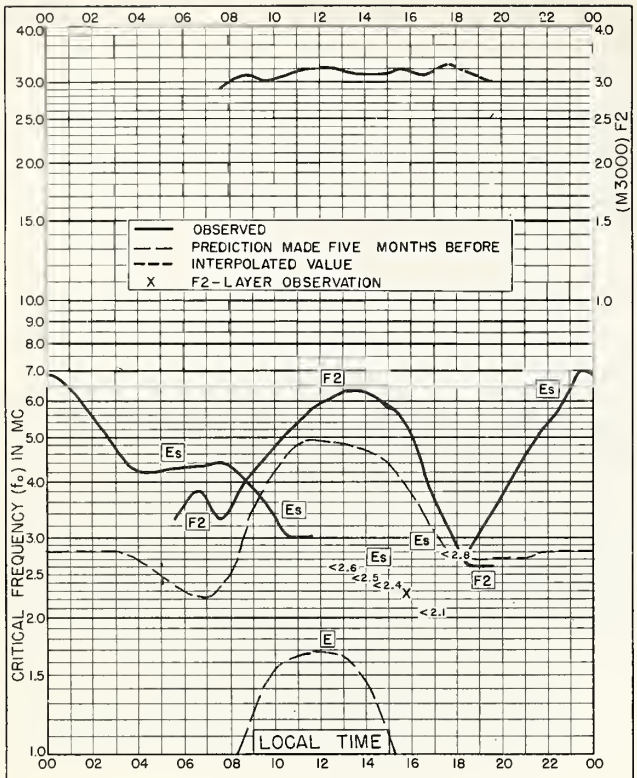
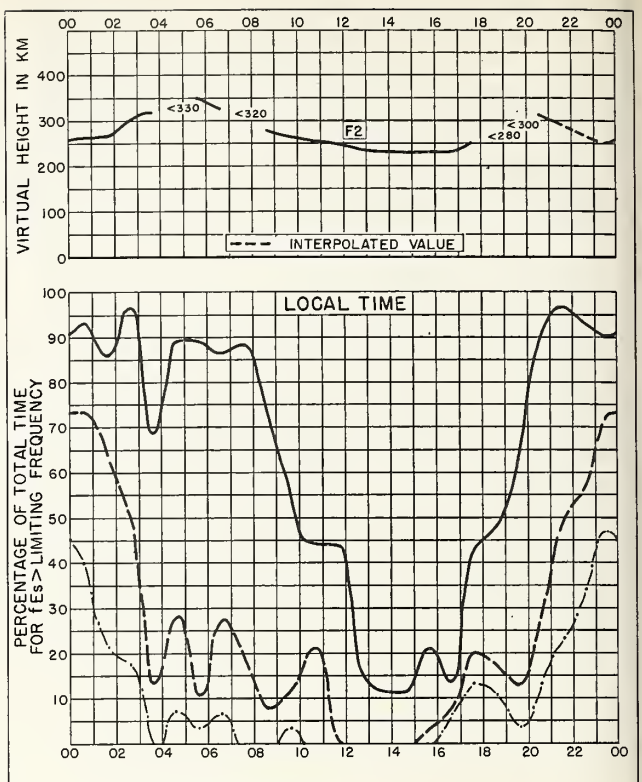


Fig. 89. POINT BARROW, ALASKA
71.3°N, 156.8° W NOVEMBER 1955



NOVEMBER 1955

Fig. 90. POINT BARROW, ALASKA

NBS 490

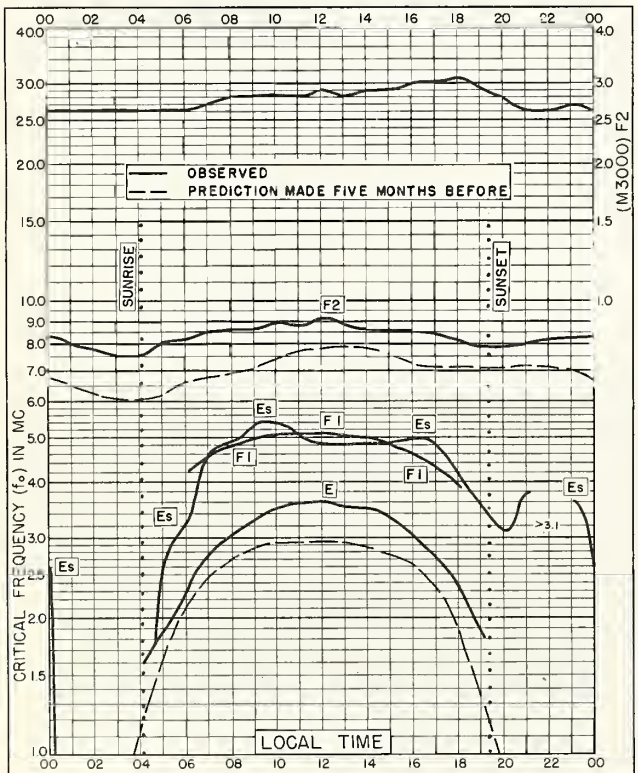


Fig. 91. FALKLAND IS.
51.7°S, 57.8°W NOVEMBER 1955

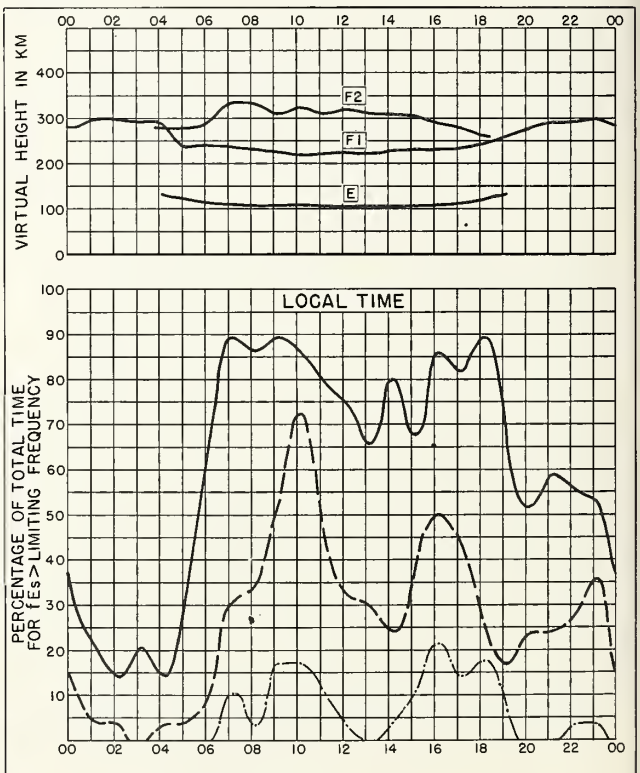


Fig. 92. FALKLAND IS. NOVEMBER 1955

NBS 490

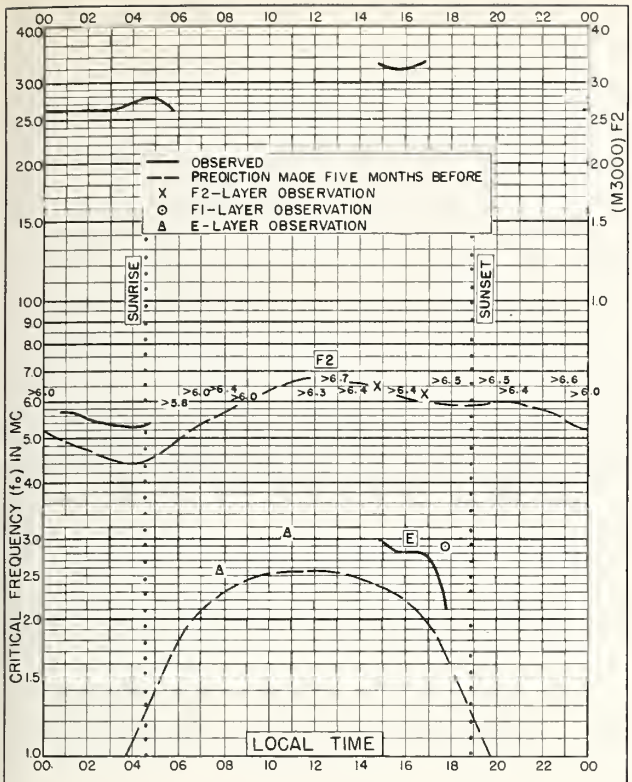


Fig. 93. PORT LOCKROY
64.8°S, 63.5°W OCTOBER 1955

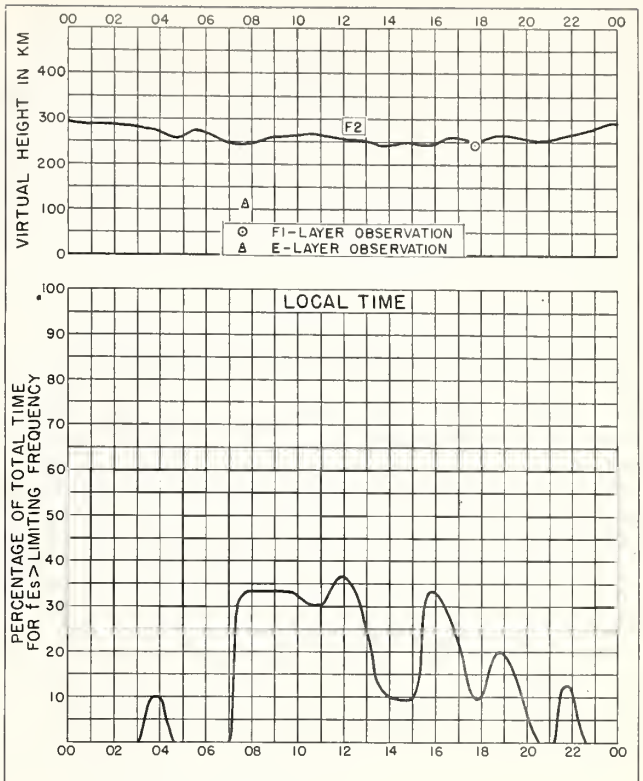


Fig. 94. PORT LOCKROY OCTOBER 1955

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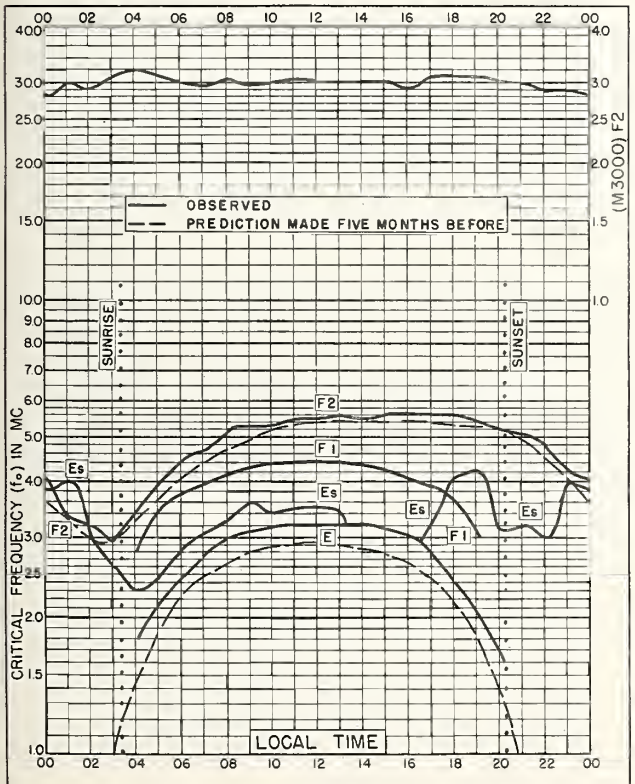

Fig. 95. MACQUARIE I.
54.5°S, 159.0°E DECEMBER 1954

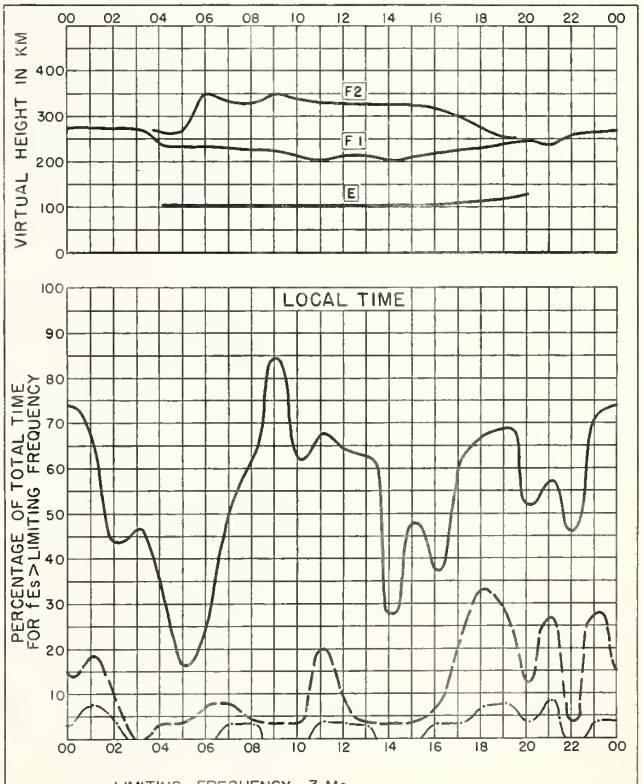

Fig. 96. MACQUARIE I. DECEMBER 1954

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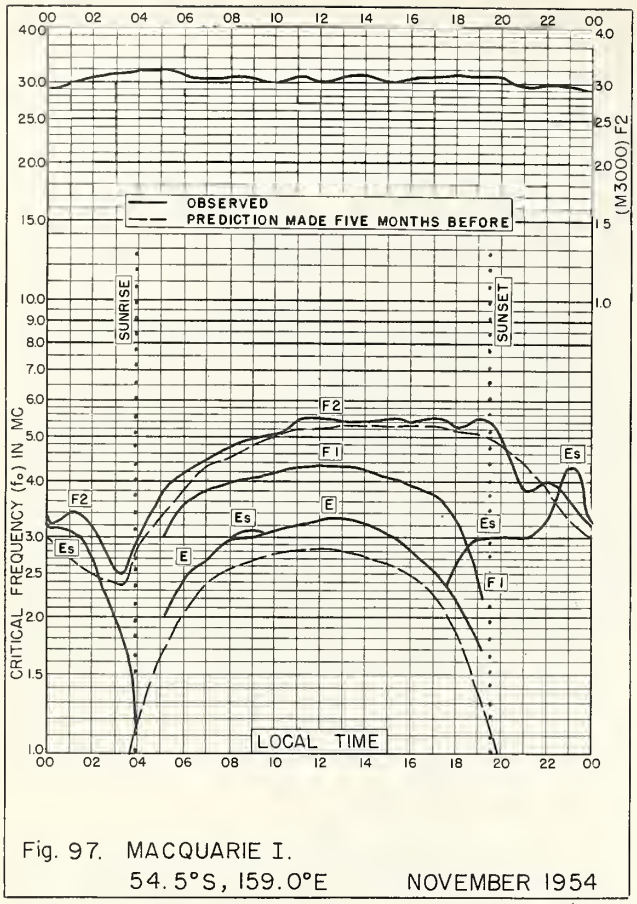

Fig. 97. MACQUARIE I.
54.5°S, 159.0°E NOVEMBER 1954

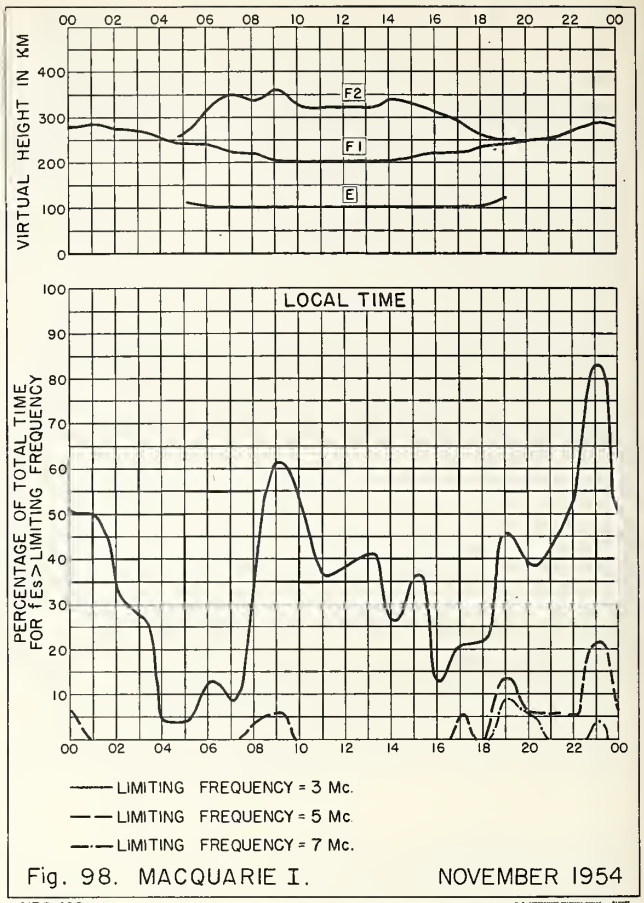

Fig. 98. MACQUARIE I. NOVEMBER 1954

NBS 490

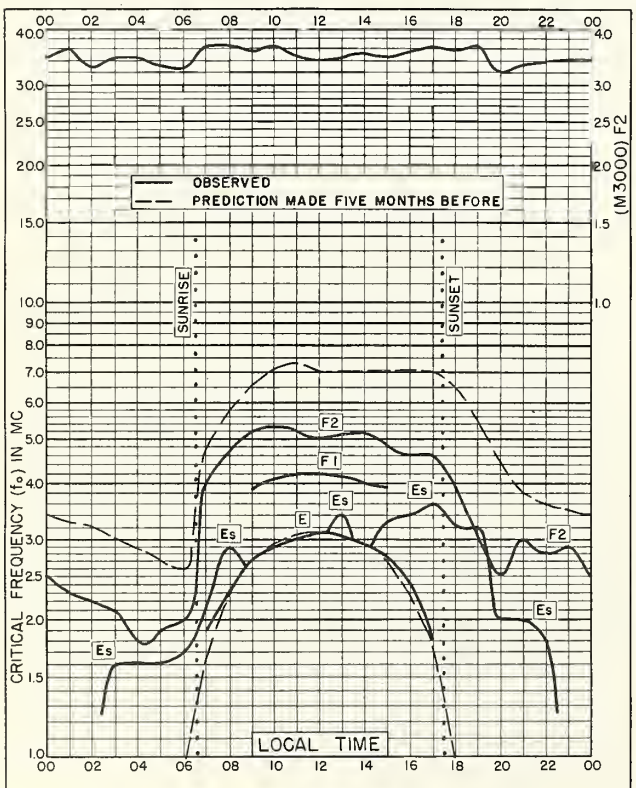

Fig. 99. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E JUNE 1954

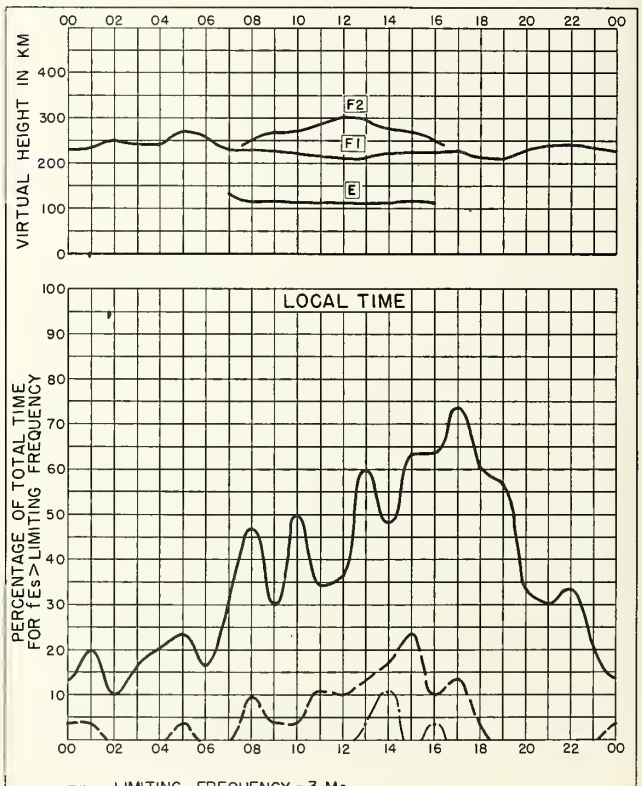

Fig. 100. TANANARIVE, MADAGASCAR JUNE 1954

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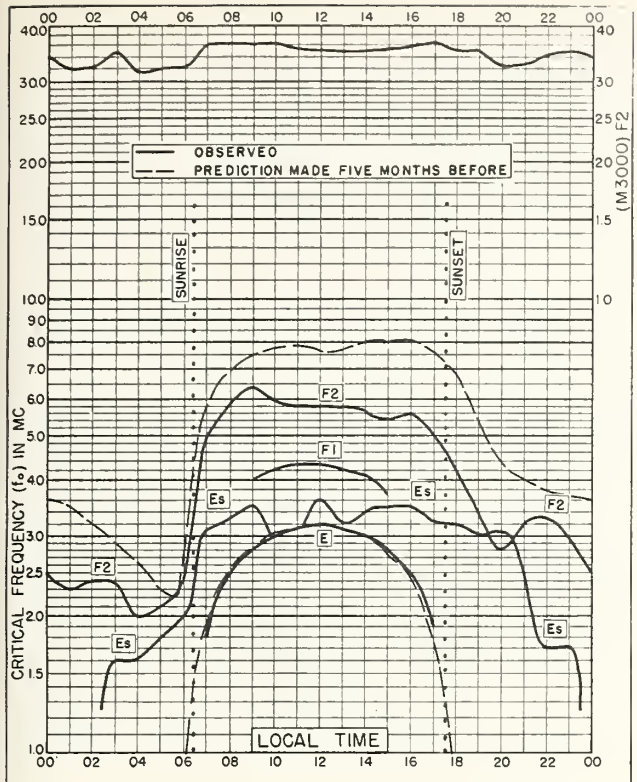

Fig. 101. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E MAY 1954

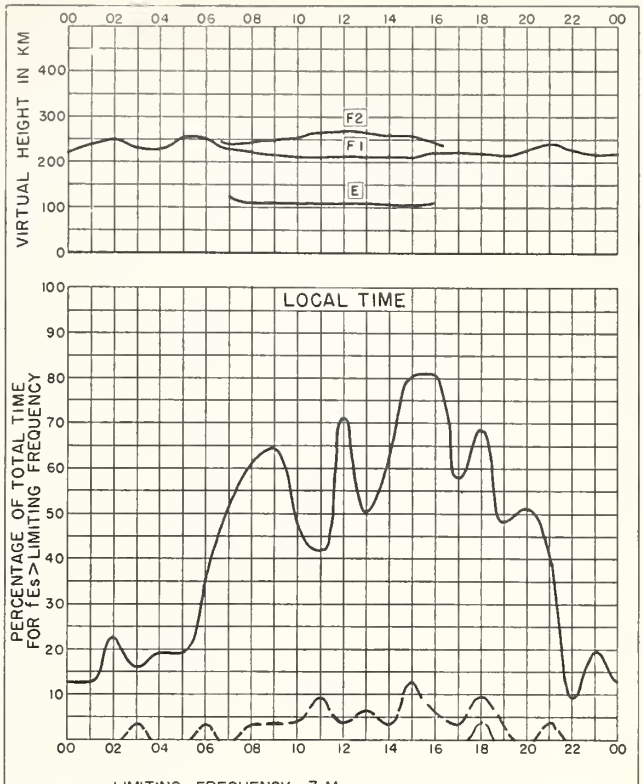

Fig. 102. TANANARIVE, MADAGASCAR MAY 1954

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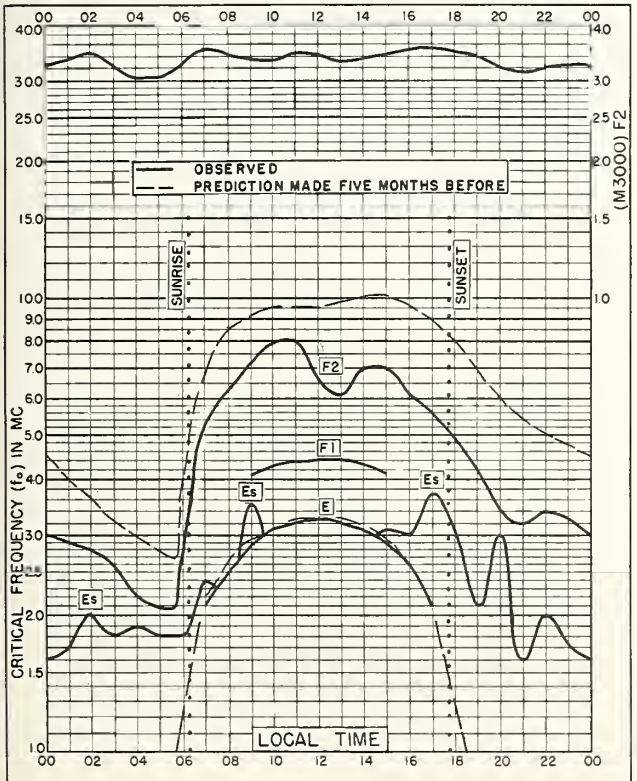

Fig. 103. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E APRIL 1954

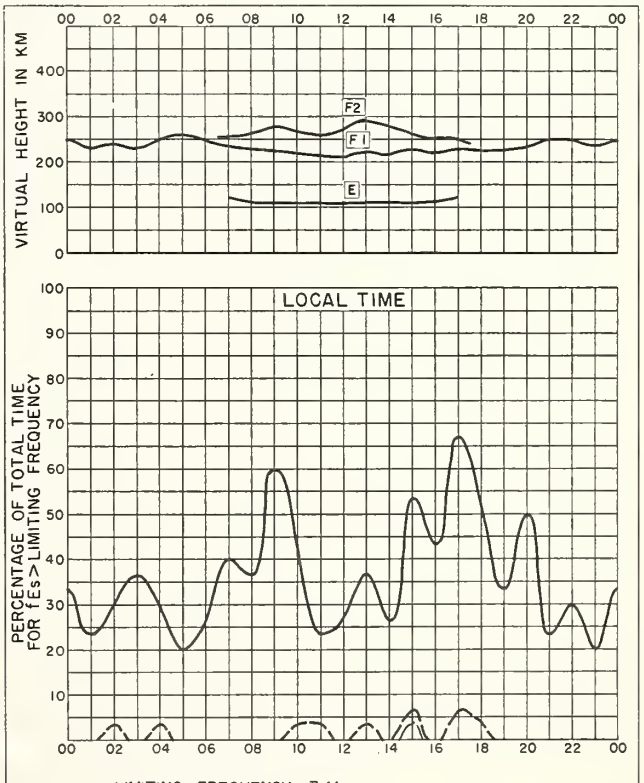

Fig. 104. TANANARIVE, MADAGASCAR APRIL 1954

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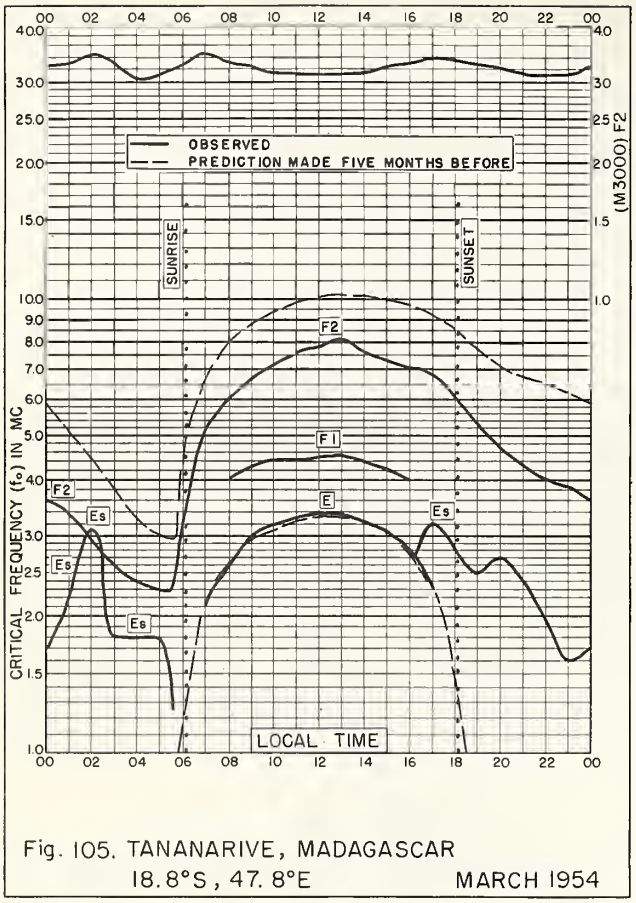

Fig. 105. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E MARCH 1954

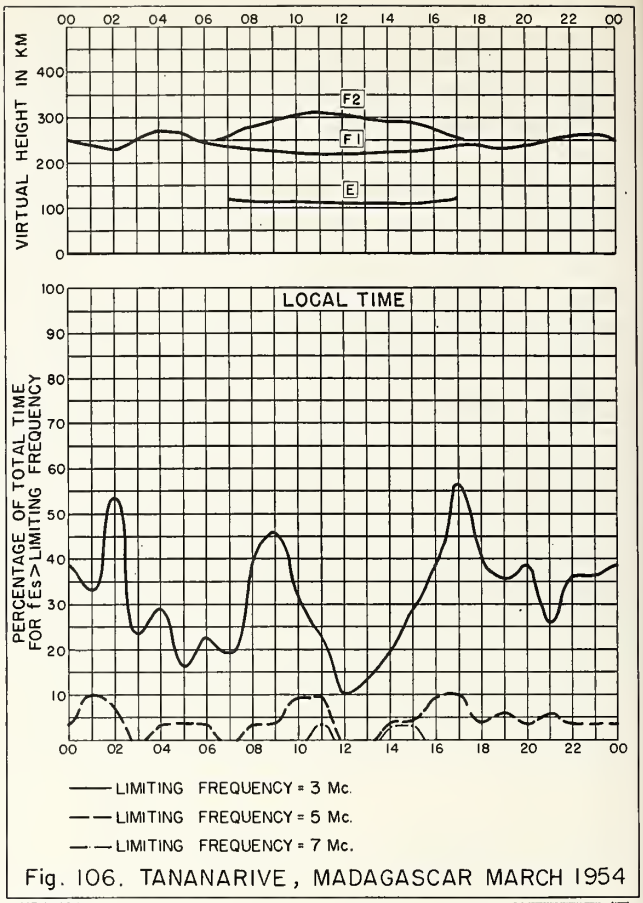

Fig. 106. TANANARIVE, MADAGASCAR MARCH 1954

NBS 490

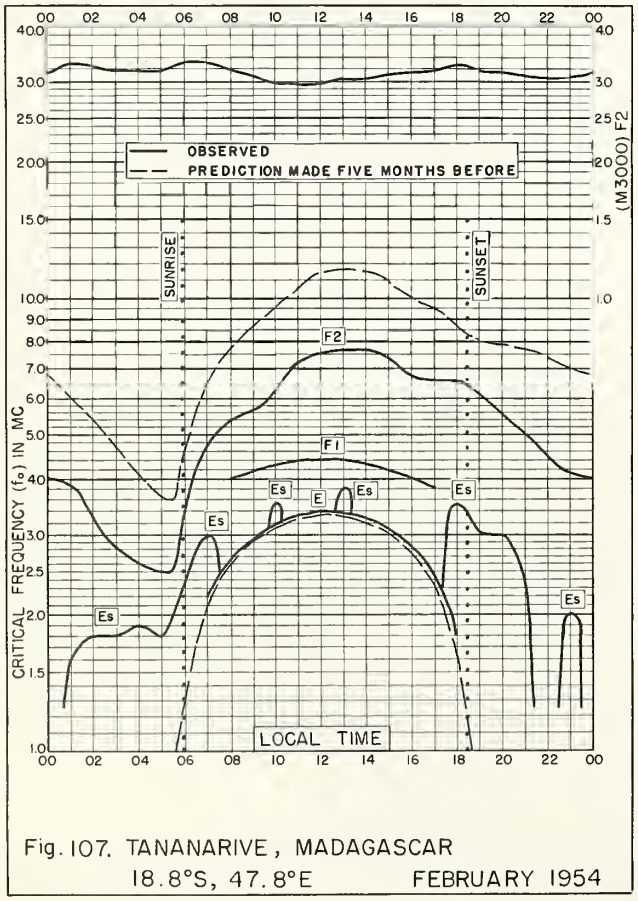

Fig. 107. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E FEBRUARY 1954

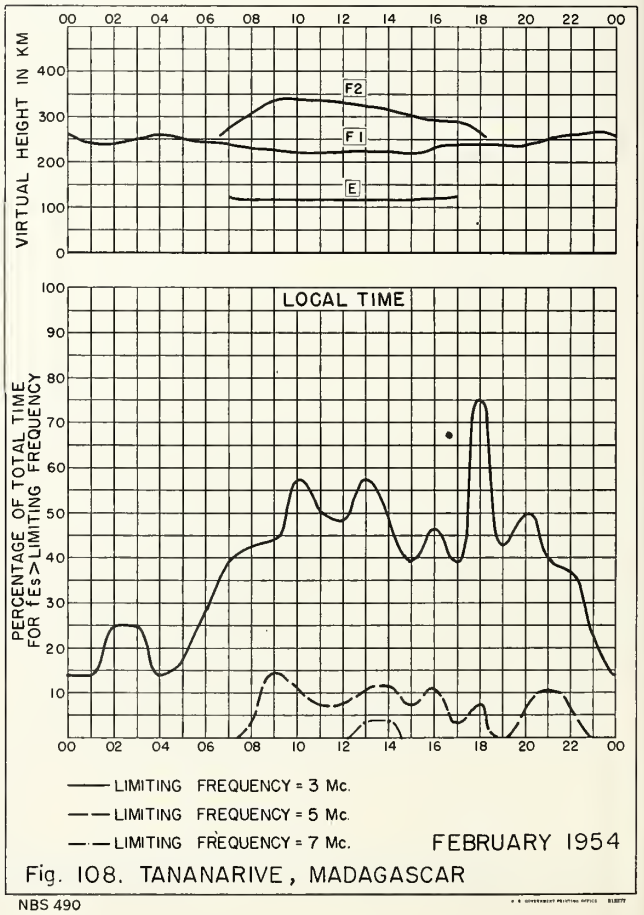

Fig. 108. TANANARIVE, MADAGASCAR FEBRUARY 1954

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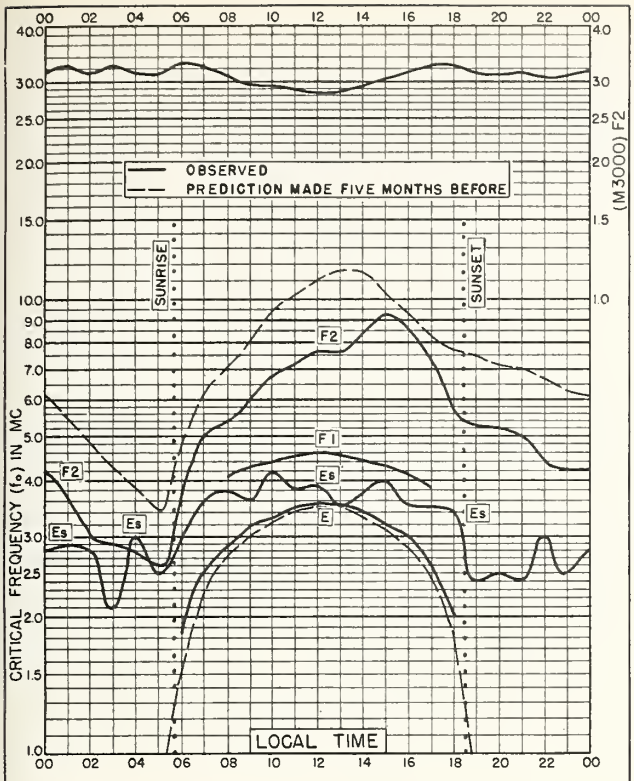
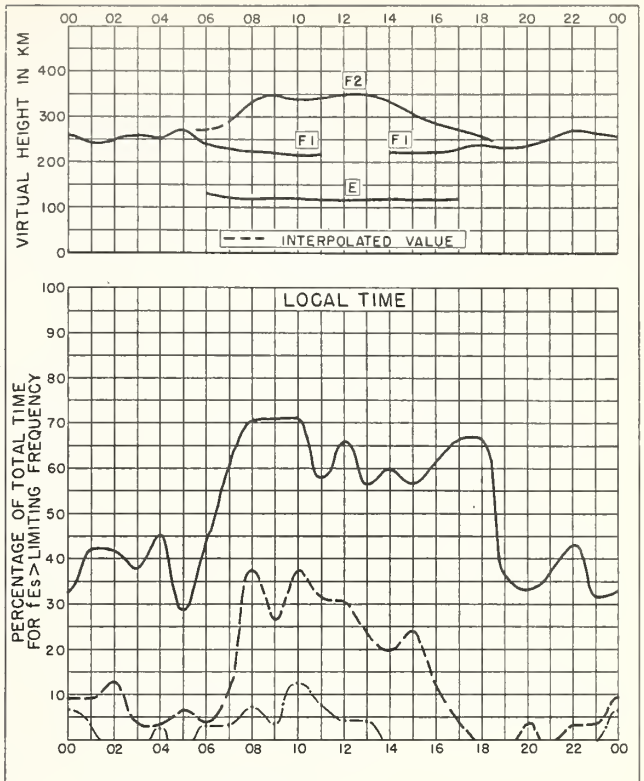


Fig. 109. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E JANUARY 1954



JANUARY 1954
Fig. 110. TANANARIVE, MADAGASCAR

NBS 490

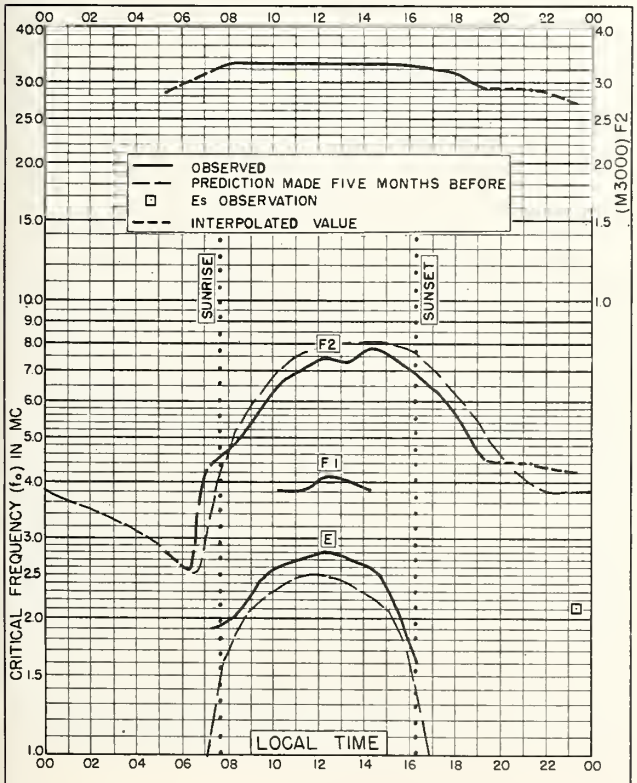


Fig. 111. CAMPBELL I.
52.5°S, 169.2°E MAY 1951

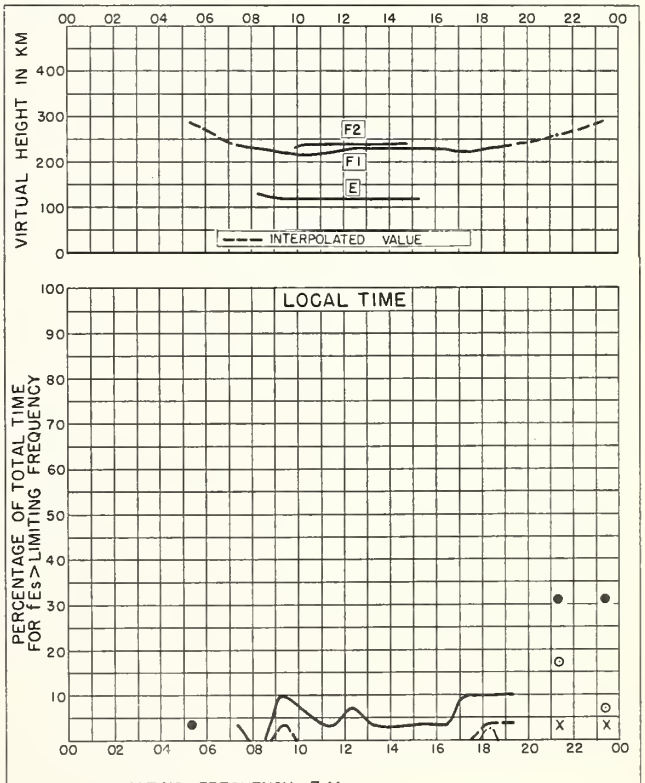


Fig. 112. CAMPBELL I. MAY 1951

NBS 490

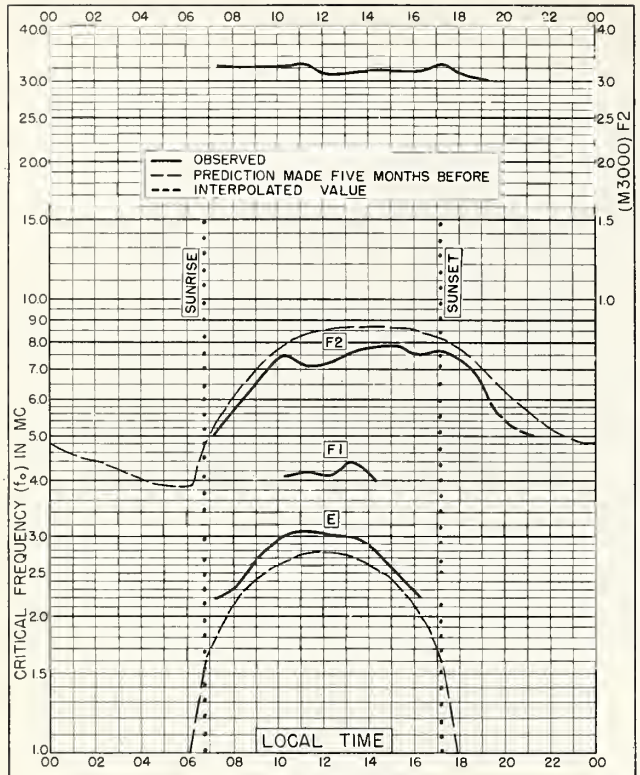


Fig. 113. CAMPBELL I.
52.5°S, 169.2°E APRIL 1951

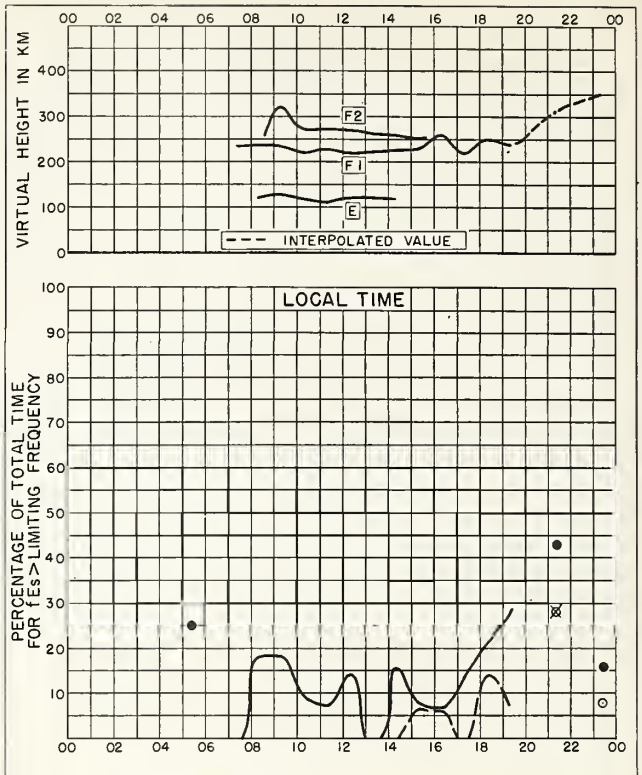


Fig. 114. CAMPBELL I. APRIL 1951

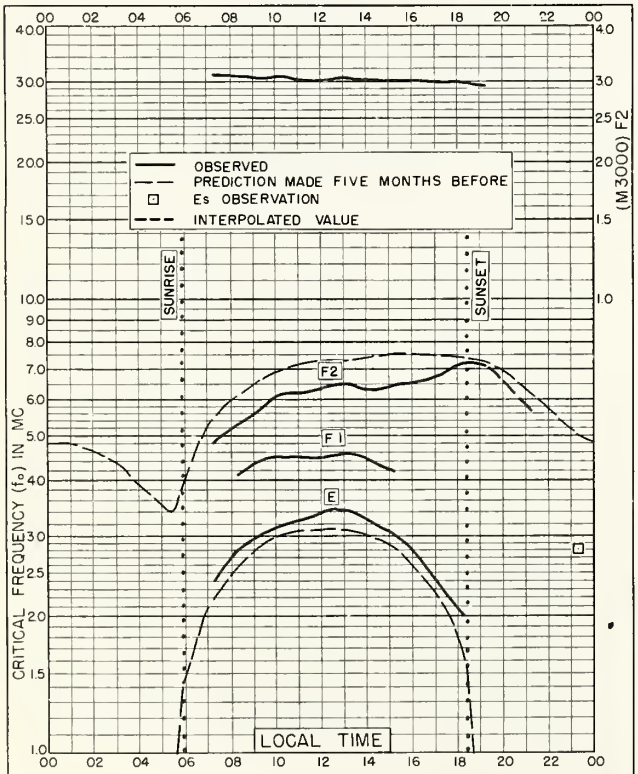


Fig. 115. CAMPBELL I.
52.5°S, 169.2°E MARCH 1951

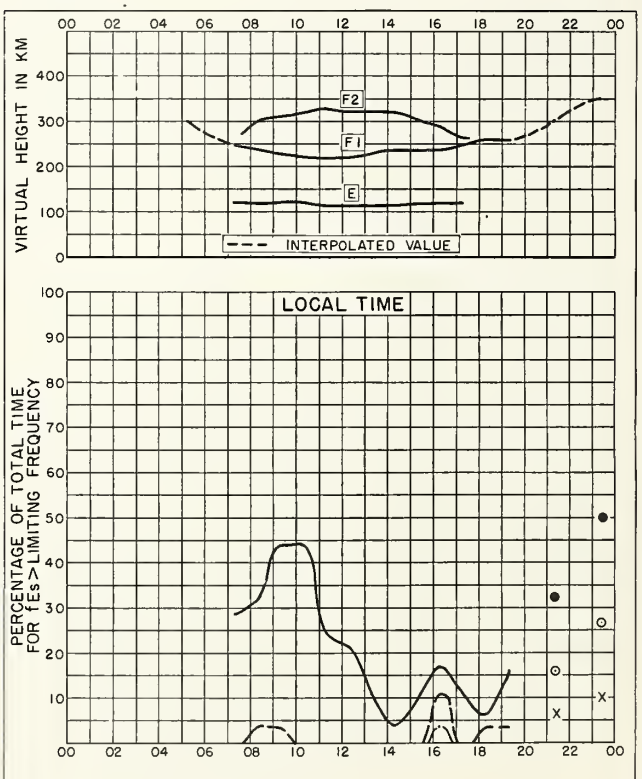


Fig. 116. CAMPBELL I. MARCH 1951

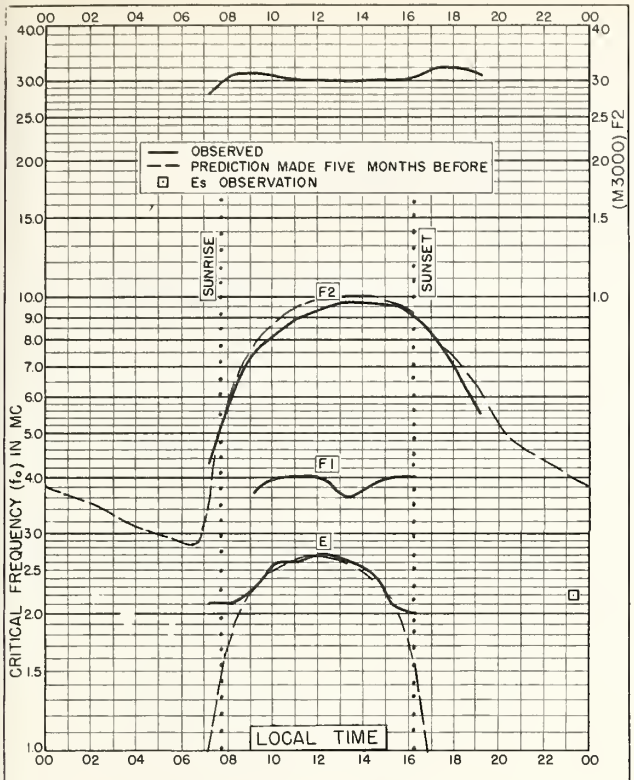


Fig. 117. CAMPBELL I.
52.5°S, 169.2°E MAY 1950

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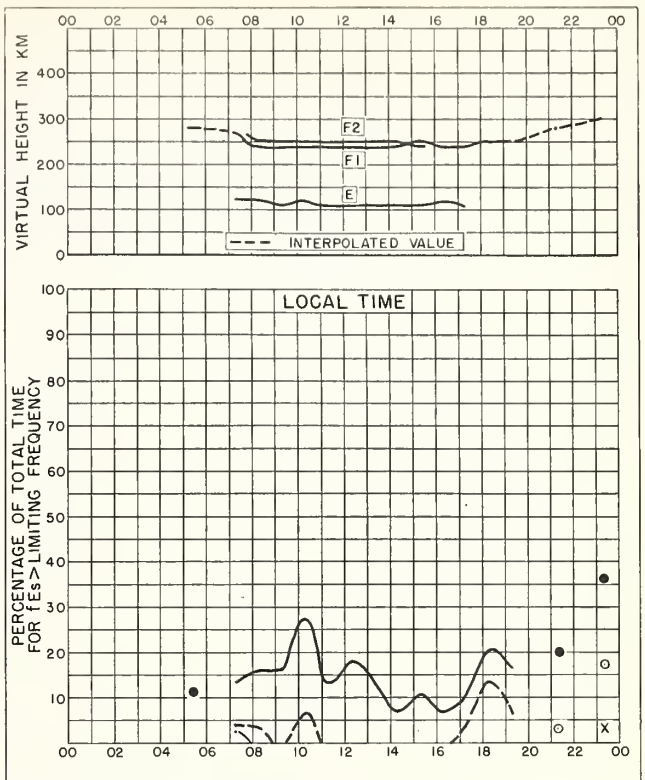

Fig. 118. CAMPBELL I. MAY 1950

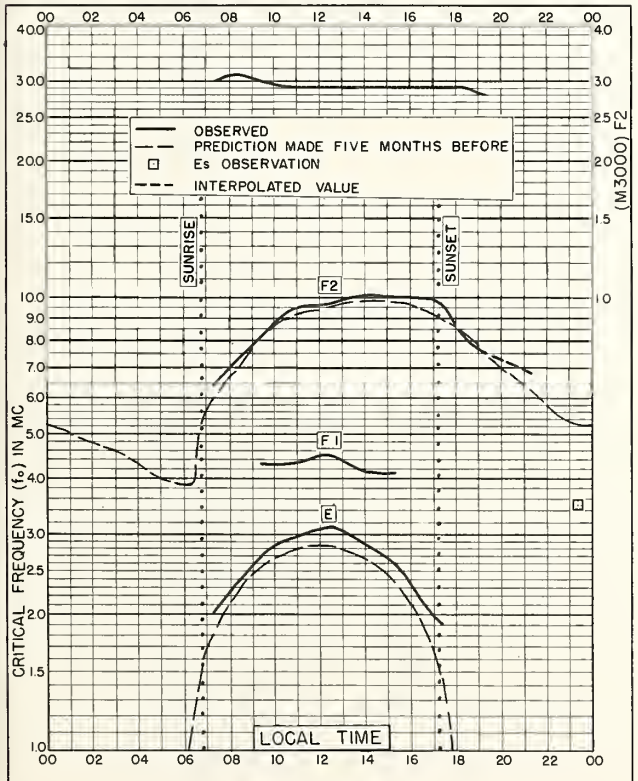

Fig. 119. CAMPBELL I.
52.5°S, 169.2°E APRIL 1950

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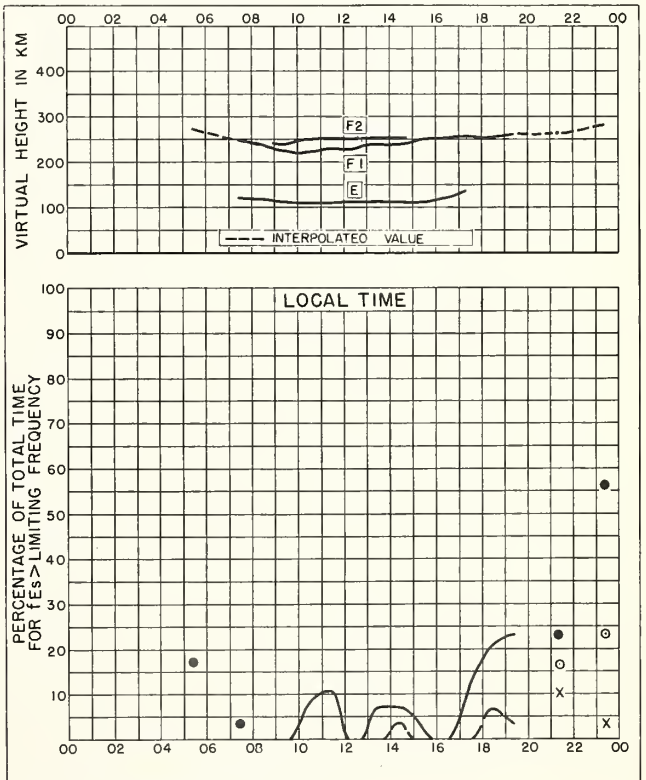

Fig. 120. CAMPBELL I. APRIL 1950

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