PART A

IONOSPHERIC DATA

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

CRPL-F 187
PART A

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CENTRAL RADIO PROPAGATION LABORATORY
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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, 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 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

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 above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R 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'F (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 descriptive 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 are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numberical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

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 the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians 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.

Ordinarily, a blank space in the fEs or foEs 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'F2 or 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.

d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table Percentage curves of fEs are estimated from values of foEs when necessary.

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										
	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950
December		137	150*	150*	150	42	11	15	33	53	86
November		137	150*	150*	147	35	10	16	38	52	87
October		139	150*	150*	135	31	10	17	43	52	90
September		141	150*	150*	119	30	8	18	46	54	91
August	115	142	150*	150*	105	27	8	18	49	57	96
July	118	141	150*	150*	95	22	8	20	51	60	101
June	120	143	150*	150*	89	18	9	21	52	63	103
May	125	146	150*	150*	77	16	10	22	52	68	102
April	130	150*	150*	150*	68	13	10	24	52	74	101
March	133	150*	150*	150*	60	14	11	27	52	78	103
February	135	150*	150*	150*	53	14	12	29	51	82	103
January	136	150*	150*	150*	48	12	14	30	53	85	105

*This number is believed represesentative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1958.

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	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	184	183	181	179	179
1959	177	175	173	167	162	158	152	151				

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

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:
Bunia, Belgian Congo
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Ibadan, Nigeria (University College of Ibadan)
Singapore, British Malaya

Defence Research Board, Canada:
Churchill, Canada

Universidad de Concepcion:
Concepcion, Chile

Danish National Committee of URSI:
Godhavn, Greenland
Narsarssuak, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

French National Center for Telecommunications Studies:
Kerguelen I.

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Geophysical and Geodetic Institute, Genoa, Italy:
Monte Capellino, Italy

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

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

Manila Observatory:
Baguio, P. I.

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

United States Army Signal Corps:
Adak, Alaska
Cape Canaveral, Florida
Ft. Monmouth, New Jersey
Grand Bahama I.
Okinawa I.
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Boulder, Colorado
Fairbanks (College), Alaska (Geophysical Institute of the University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Juliaca, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Point Barrow, Alaska
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

ERRATUM

Attention is invited to the ERRATA on page vii of the previous issue, CRPL-F186 (Part A), which item was inadvertently omitted from the table of contents.

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by CRPL and the U. S. Army Signal Corps. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. These data are in place of the standard ionogram reductions formerly provided by this Station. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed for an IBM 704 computer.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

Quantity	Units	Remarks
Electron Density (N)	$x10^3$ = electrons/cm^3	Body of table; given at each 10 km of height.
NMAX	$x10^3$ = electrons/cm^3	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$x10^{10}$ = electrons/cm^2 column.	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure Kp is less than 4+. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, are averaged in a similar way.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region.* Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

*See Wright,J.W. "A Model of the F-Region Above HMAX F2" J.Geophys.Res. V.65 pp 185-191.

ELECTRON DENSITY

PUERTO RICO 60 W 1 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												S
HMIN	229	248	225	294	257	257	212	249	111	107	109	109
SCAT	48.7	33.0	57.9	58.2	53.6	55.5	48.9	47.1	45.4	42.9	49.7	50.0
HMAX	333	325	321	425	374	386	327	324	297	286	296	307
SHMAX	263	168	146	181	174	185	172	373	1153	1552	1736	1887
KM												
430				219								
420				218								
410				215								
400				209								
390				198		235						
380				185	235	234						
370				169	234	230						
360				150	231	222						
350				129	223	209						
340	410			108	211	195						
330	410	362	203	86.6	197	175	246	670				
320	403	360	203	66.4	176	151	244	669				
310	387	344	202	48.4	152	126	238	655				2177
300	366	310	196	23.5	124	100	226	626	1555		2161	2168
290	335	262	188		95.8	76.9	209	585	1547	2227	2153	2117
280	286	198	179		68.2	56.6	187	520	1504	2216	2105	2022
270	226	132	165		46.8	41.0	161	417	1422	2149	2011	1884
260	161	64.3	147		12.4	9.1	132	262	1316	2021	1874	1703
250	88.3	12.4	123				103	49.6	1143	1830	1698	1493
240	49.6		91.3				74.9		960	1592	1482	1273
230	6.8		49.6				53.1		754	1314	1253	1076
220							30.8		587	960	1064	891
210									453	730	834	729
200									351	550	632	608
190									269	424	477	508
180									211	335	362	432
170									171	271	278	368
160									142	219	223	310
150									124	181	182	266
140									111	155	160	231
130									104	140	154	202
120									93.7	132	147	185
110										97.2	97.2	83.8

ELECTRON DENSITY

PUERTO RICO 60 W 1 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	B	A	B	S		A	A	A	A	A	A	
HMIN		110		112	110		207	210	206			249
SCAT		63.6		59.5	56.4		51.3	45.9	44.0			52.4
HMAX		329		317	317		328	317	303			360
SHMAX		2023		1770	1554		999	749	481			194
KM												
370												268
360												268
350												266
340												258
330		1907					1406					246
320		1897		1891	1683		1398	1191				228
310		1863		1884	1676		1364	1185	834			207
300		1806		1851	1643		1297	1152	833			179
290		1719		1791	1584		1214	1090	817			150
280		1616		1702	1495		1096	1004	778			118
270		1490		1591	1383		960	875	722			87.0
260		1349		1446	1248		794	728	634			54.8
250		1206		1290	1116		621	573	515			4.9
240		1070		1096	948		433	389	374			
230		930		899	779		262	198	210			
220		794		716	643		107	83.8	97.2			
210		679		573	521		40.2		40.2			
200		573		466	433							
190		487		385	370							
180		412		324	316							
170		350		274	252							
160		297		235	191							
150		253		205	151							
140		217		185	129							
130		195		172	121							
120		183		162	115							
110		12.4			40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 2 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										B	A	
HMIN	268	220	215	242	313	248	275	250	109			117
SCAT	45.1	28.9	101	88.3	65.7	52.0	50.3	36.2	46.6			48.2
HMAX	358	286	376	430	451	362	367	309	289			300
SHMAX	160	142	230	223	162	145	167	330	1197			1766
KM												
460					179							
450					179							
440				184	178							
430				184	174							
420				183	169							
410				181	162							
400				178	151							
390				173	141							
380			189	168	127							
370			188	164	112	198	257					
360	268		187	157	94.4	198	256					
350	266		186	147	76.9	196	250					
340	256		183	136	60.0	189	238					
330	241		179	124	45.1	179	224					
320	220		173	110	21.5	165	204					
310	192		168	96.2		148	174	754				2161
300	157		163	82.0		127	136	742				2161
290	112	355	156	68.8		103	94.5	700	1669			2138
280	60.0	351	147	57.1		80.2	49.6	631	1651			2070
270	12.4	326	138	47.2		60.0		518	1596			1946
260		282	126	37.1		43.3		349	1501			1786
250		213	112	16.5		8.4		40.2	1372			1591
240		127	89.3						1172			1372
230		60.0	62.2						932			1160
220			29.4						716			950
210									540			776
200									406			626
190									304			508
180									240			403
170									188			326
160									152			275
150									127			235
140									112			200
130									105			186
120									98.1			83.8
110									12.4			

ELECTRON DENSITY

PUERTO RICO 60 W 2 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A	A	A	A	A	A	A	A			
HMIN	109		115		110		219	208	199	195	214	203
SCAT	53.4		70.1		62.6		65.6	44.1	51.4	48.1	53.0	51.5
HMAX	312		359		330		349	327	308	304	346	344
SHMAX	1787		2078		1803		1244	785	619	364	270	237
KM												
360			1801									
350			1792				1473				348	304
340			1766		1846		1466				347	303
330			1721		1846		1443	1240			340	298
320	1907		1656		1835		1402	1232			326	288
310	1906		1573		1800		1341	1194	917	540	310	270
300	1882		1475		1742		1272	1122	911	539	283	248
290	1824		1358		1659		1183	1021	888	529	252	221
280	1727		1240		1555		1060	892	846	508	216	190
270	1604		1086		1421		904	740	789	477	179	159
260	1446		960		1277		739	573	710	429	143	127
250	1281		834		1143		540	389	598	371	112	100
240	1133		724		982		335	240	477	310	79.1	76.7
230	960		631		816		143	123	345	240	53.5	58.4
220	812		550		643		12.4	64.1	207	172	26.4	44.7
210	689		480		508			12.4	90.4	97.2		21.4
200	588		417		389				12.4	47.1		
190	508		353		297							
180	431		297		233							
170	365		238		188							
160	310		202		157							
150	259		184		138							
140	219		174		126							
130	196		167		120							
120	184		143		114							
110	112				12.4							

ELECTRON DENSITY

PUERTO RICO 60 W 3 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL					F			A	A	A	A	A
HMIN	259	219	197	248	344	260	274					
SCAT	43.4	38.5	60.7	84.9	58.4	61.9	62.7					
HMAX	364	296	324	402	446	405	421					
SHMAX	223	216	162	266	175	217	257					
KM												
450					235							
440					234							
430					230		292					
420					223		292					
410				246	211	246	290					
400				246	198	245	284					
390				244	181	242	274					
380				242	161	235	261					
370	362			236	136	226	245					
360	361			229	106	212	224					
350	352			222	60.0	196	198					
340	334			213		177	170					
330	306		193	202		155	140					
320	269		193	188		132	110					
310	221		191	173		109	82.3					
300	170	446	186	154		86.4	60.0					
290	119	444	178	132		67.0	45.0					
280	76.8	428	168	108		49.6	19.0					
270	49.6	398	155	81.6		31.0						
260	6.9	352	140	53.7								
250		271	122	12.4								
240		151	103									
230		66.8	83.8									
220		12.4	65.5									
210			47.0									
200			12.4									

ELECTRON DENSITY

PUERTO RICO 60 W 3 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	B	A	A	A	A	A	A	A	A	
HMIN										206	197	226
SCAT										40.4	48.3	56.8
HMAX										296	317	342
SHMAX										310	259	199
KM												
350												262
340												262
330												259
320											375	252
310											373	241
300										573	363	226
290										570	345	207
280										550	321	183
270										513	286	152
260										458	240	118
250										382	192	83.8
240										277	143	55.1
230										161	104	22.6
220										83.8	71.4	
210										40.2	47.4	
200											12.4	

ELECTRON DENSITY

PUERTO RICO 60 W 4 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL				F								
HMIN	239	257	228	219	226	247	259	218	110	109	110	110
SCAT	48.7	53.0	46.0	42.0	48.5	71.8	52.2	41.8	39.4	38.8	44.8	44.4
HMAX	346	374	320	295	333	377	368	315	270	263	279	286
SHMAX	141	188	166	135	125	119	116	340	992	1200	1272	1422
KM												
380		257				127						
370		256				127	161					
360		252				125	160					
350	208	244				122	156					
340	208	231			184	118	149					
330	203	216	280		184	113	139					
320	193	192	280		180	106	127	608				
310	182	161	277		173	99.2	113	606				
300	163	127	267	251	162	90.4	92.7	589				
290	139	97.2	251	250	148	80.4	75.1	555				1876
280	112	68.5	231	243	129	68.8	57.6	508	1640		1669	1868
270	83.8	46.7	198	229	106	56.8	40.2	427	1640	1984	1652	1817
260	58.9	12.4	153	209	83.8	44.0	5.0	326	1612	1981	1595	1716
250	41.5		92.2	183	62.3	12.4		212	1528	1929	1489	1573
240	4.7		53.3	139	45.2			118	1400	1812	1341	1381
230			12.4	83.8	16.1			60.0	1195	1627	1195	1143
220				12.4				12.4	917	1367	1041	917
210									643	1004	863	734
200									446	716	679	588
190									310	477	530	477
180									227	344	404	401
170									179	262	310	338
160									146	212	251	286
150									124	177	205	242
140									110	154	169	204
130									103	140	155	177
120									92.8	131	146	165
110									12.4	97.2	49.6	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 4 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			A	B		A	A	A				
HMIN	110	110	116	116	110		218	199	199	237	214	244
SCAT	53.9	53.9	61.1	58.2	61.9		54.0	43.5	60.8	41.2	48.9	26.7
HMAX	290	321	324	326	321		322	297	336	333	331	305
SHMAX	1384	1618	1754	1790	1704		1062	549	407	260	302	176
KM												
340									477	454	439	
330		1683	1756	1818	1756		1528		475	453	439	
320		1683	1754	1814	1756		1527		468	442	433	
310		1660	1732	1785	1742		1510		454	417	417	461
300	1569	1602	1687	1729	1706		1466	917	433	379	392	458
290	1569	1537	1613	1644	1642		1394	911	407	327	362	422
280	1556	1438	1525	1539	1560		1305	882	374	262	317	362
270	1516	1300	1409	1400	1456		1177	830	335	189	262	277
260	1446	1143	1274	1240	1330		1004	754	288	119	208	179
250	1352	984	1116	1096	1179		794	649	240	66.5	152	71.4
240	1225	834	960	930	1029		540	527	191	19.9	100	
230	1088	706	817	786	875		310	389	147		63.0	
220	933	608	698	669	716		71.4	240	106		34.3	
210	773	530	594	573	573			104	66.4			
200	643	474	508	496	460			12.4	12.4			
190	528	428	428	424	369							
180	439	386	362	358	297							
170	369	341	301	303	243							
160	310	292	253	257	203							
150	260	246	215	222	174							
140	223	203	184	197	153							
130	195	176	168	184	139							
120	179	165	97.2	97.2	129							
110	49.6	40.2			12.4							

ELECTRON DENSITY

PUERTO RICO 60 W 5 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL				B						A	A	
HMIN	210	210	206	199	199	264	229	241	110	111	108	104
SCAT	38.0	34.1	38.2	55.2	53.7	51.4	60.1	38.4	46.6	49.9	56.7	72.3
HMAX	292	298	287	321	295	354	349	310	278	295	291	335
SHMAX	171	132	121	153	110	85	141	288	833	1474	1646	2064
KM												
360						127						
350						127	174					
340						125	173					1786
330				198		120	170					1783
320				198		113	164	599				1766
310				196		103	156	599				1731
300	335	262		191	156	91.7	146	588		1907	1969	1680
290	335	259	235	183	156	77.6	133	557		1901	1969	1604
280	327	244	233	171	153	61.5	117	508	1143	1861	1952	1519
270	308	219	223	157	148	43.5	99.1	432	1134	1786	1907	1420
260	280	179	206	138	139		80.1	310	1100	1674	1826	1304
250	233	137	182	116	130		60.0	161	1041	1516	1724	1175
240	171	94.5	146	92.6	115		42.0		952	1311	1578	1050
230	107	63.6	99.7	69.7	98.2		4.3		834	1050	1395	924
220	55.3	41.9	60.0	52.3	79.7				698	794	1181	806
210			25.1	36.0	57.4				548	608	917	691
200				2.3	12.4				417	477	679	583
190									310	376	489	488
180									230	302	371	411
170									173	247	300	349
160									136	204	250	299
150									113	170	210	260
140									102	143	179	226
130									91.4	132	161	198
120									80.5	112	149	175
110									49.6		118	161

ELECTRON DENSITY

PUERTO RICO 60 W 5 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A		A	A	A	A			J		
HMIN	110		110	113	111		209	199	199	265	251	220
SCAT	72.4		71.5	61.7	63.2		56.5	59.3	55.3	49.3	40.7	39.6
HMAX	340		380	354	351		342	345	337	377	340	306
SHMAX	2253		2503	2482	2130		1443	1127	700	501	451	384
KM												
390			2048									
380			2048							735		
370			2037							732		
360			2007	2430	2032					713		
350	2032		1957	2428	2031		1846	1316		680	834	
340	2032		1883	2398	2016		1845	1313	854	631	834	
330	2023		1786	2337	1975		1824	1294	851	568	822	
320	1994		1679	2236	1907		1775	1257	834	493	784	
310	1947		1555	2111	1808		1696	1196	804	406	723	745
300	1876		1425	1958	1692		1587	1127	758	301	633	741
290	1792		1287	1786	1555		1446	1031	700	198	508	715
280	1683		1143	1586	1407		1288	917	632	106	362	666
270	1555		1004	1384	1252		1116	802	558	45.6	198	592
260	1406		875	1190	1079		917	679	477		78.3	486
250	1254		771	1004	917		679	565	394			348
240	1077		679	834	769		433	446	319			143
230	917		595	696	643		240	326	240			66.1
220	772		523	573	547		97.2	198	161			
210	643		460	477	466		12.4	83.8	83.8			
200	545		405	397	395			12.4	12.4			
190	458		357	332	332							
180	381		316	281	280							
170	313		281	240	234							
160	262		248	204	196							
150	216		215	177	168							
140	179		183	158	148							
130	167		168	145	135							
120	112		139	71.4	115							

ELECTRON DENSITY

PUERTO RICO 60 W 6 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		F	A	A	F	F	F					
HMIN	209	249	219		209	199	227	219	109	110	110	110
SCAT	65.7	50.7	37.4		44.1	62.6	63.4	45.1	36.2	36.0	54.8	65.1
HMAX	335	349	286		292	327	353	309	277	279	290	312
SHMAX	389	325	237		156	194	153	345	1039	1357	1762	1960
KM												
360							179					
350		484					179					
340	446	480					177					
330	446	467				229	173					
320	441	443				229	167					2000
310	431	410				225	158	582				1999
300	415	369			268	219	147	576			2128	1983
290	395	318	524		268	208	135	553			2128	1942
280	370	257	520		263	197	120	521	1727	2161	2111	1878
270	338	179	498		251	182	103	471	1710	2125	2058	1786
260	302	90.9	460		232	164	86.4	404	1631	2003	1972	1681
250	262	12.4	399		207	143	68.0	324	1489	1799	1864	1541
240	219		293		175	119	47.4	230	1278	1532	1689	1387
230	167		127		137	92.7	12.4	112	1030	1240	1467	1201
220	97.2		12.4		93.8	66.8		12.4	773	917	1209	992
210	12.4				12.4	45.0			540	679	960	809
200						2.5			389	508	728	652
190									280	403	559	526
180									210	325	438	417
170									161	268	353	335
160									129	222	293	276
150									109	186	249	232
140									96.8	159	213	195
130									91.3	141	187	173
120									85.9	132	170	162
110									12.4	12.4	60.0	

ELECTRON DENSITY

PUERTO RICO 60 W 6 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A			A							A
HMIN	110		107	110	120	113	208	189	197	249	238	240
SCAT	57.7		54.0	54.1	69.7	61.2	45.1	57.4	48.7	34.5	41.1	51.2
HMAX	312		319	325	339	325	302	304	337	334	337	345
SHMAX	1948		1759	1763	1985	1681	989	696	469	299	334	322
KM												
350												477
340					1907				643	608	582	475
330				1846	1899	1907			640	605	577	466
320	2032		1876	1842	1872	1904			623	581	556	446
310	2031		1863	1810	1825	1879	1669	917	591	531	518	422
300	2009		1819	1734	1756	1828	1668	916	548	456	463	385
290	1956		1733	1635	1675	1749	1638	903	493	362	389	335
280	1870		1621	1515	1570	1653	1568	877	428	262	300	274
270	1763		1487	1378	1446	1525	1461	834	362	143	211	203
260	1614		1341	1232	1301	1369	1307	782	286	74.8	121	123
250	1446		1168	1096	1159	1162	1096	716	212	12.4	60.0	62.5
240	1263		993	936	989	930	851	634	147		12.4	
230	1096		826	794	814	716	540	540	101			
220	917		687	667	643	540	198	423	69.5			
210	754		573	560	499	389	40.2	286	46.5			
200	634		485	477	389	286		119	12.4			
190	536		417	400	300	212		12.4				
180	452		362	335	237	161						
170	385		319	277	192	125						
160	327		280	233	158	103						
150	279		246	195	136	89.2						
140	240		212	168	123	81.2						
130	210		182	154	116	76.2						
120	189		161	143	40.2	71.4						
110	112		131	60.0								

ELECTRON DENSITY

PUERTO RICO 60 W 7 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	239	232	196	203	245	261	264	217	111	110	110	109
SCAT	45.6	34.5	29.0	242	69.3	62.0	43.9	39.2	30.9	43.6	46.9	67.5
HMAX	344	311	252	588	377	383	349	292	251	266	285	313
SHMAX	268	246	177	589	103	113	108	357	703	1026	1489	1681
KM												
590				198								
580				198								
570				198								
560				198								
550				197								
540				196								
530				196								
520				194								
510				193								
500				192								
490				190								
480				189								
470				187								
460				185								
450				182								
440				180								
430				177								
420				173								
410				170								
400				166								
390				162		135						
380				159	112	135						
370				156	111	134						
360				152	110	130						
350	424			149	107	125	184					
340	423			145	104	118	182					
330	414			142	98.8	112	175					
320	394	524		137	92.3	100	164					1555
310	365	524		132	85.4	88.0	148					1555
300	325	511		128	76.7	75.1	127	735				1541
290	273	477		122	67.2	62.0	101	735			1969	1511
280	219	417		117	57.5	48.5	74.2	718			1964	1463
270	151	340		111	48.2	28.6	46.1	679		1500	1920	1393
260	88.1	240	492	103	38.0			617	1354	1494	1831	1310
250	49.6	112	492	95.3	12.4			508	1354	1451	1701	1211
240	6.7	52.7	471	85.7				362	1315	1372	1523	1104
230			424	74.8				143	1198	1259	1298	984
220			335	61.4				40.2	1021	1077	1029	875
210			143	42.5					778	875	794	775
200			45.1						540	654	623	684
190									376	477	489	596
180									262	351	389	502
170									192	274	320	402
160									150	222	265	319
150									125	179	225	262
140									110	155	194	219
130									102	138	170	194
120									82.0	127	151	180
110										12.4	60.0	71.4

ELECTRON DENSITY

PUERTO RICO 60 W 7 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL				A		A					S	F
HMIN	110	109	110	110	110		220	189	209	234	218	198
SCAT	63.4	72.0	63.9	53.7	56.7		47.3	54.5	55.7	40.7	36.1	39.4
HMAX	307	315	331	318	316		308	311	361	323	303	288
SHMAX	1423	1501	1775	1735	1627		861	641	502	366	332	225
KM												
370									608			
360									608			
350									602			
340			1654						586			
330			1654						559	670		
320		1290	1641	1922	1801			875	523	669		
310	1446	1289	1608	1911	1795		1446	875	480	652	670	
300	1442	1277	1555	1868	1764		1437	866	429	615	669	
290	1422	1252	1478	1791	1705		1397	843	373	558	649	410
280	1383	1209	1385	1681	1613		1322	805	310	477	603	405
270	1324	1161	1271	1534	1498		1220	754	252	375	532	389
260	1251	1102	1131	1365	1358		1079	684	198	255	430	358
250	1162	1031	992	1183	1208		875	597	143	127	310	313
240	1042	956	859	1004	1050		608	494	95.3	49.6	173	255
230	909	881	737	817	875		286	373	64.6		80.1	190
220	782	810	633	659	701		12.4	252	43.1		22.3	123
210	663	743	549	540	549			153	3.8			64.4
200	557	669	485	446	428			71.4				12.4
190	466	578	435	378	330			12.4				
180	382	471	392	324	257							
170	298	367	350	281	207							
160	219	303	304	243	171							
150	176	259	258	211	143							
140	161	225	214	182	127							
130	154	198	181	161	121							
120	148	186	167	149	115							
110	83.8	97.2	60.0	49.6	40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 8 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	F	F										
HMIN	229	239	219	234	265	210	195	199	109	109	109	107
SCAT	59.3	58.5	45.2	51.7	52.0	46.1	33.5	48.0	33.8	44.9	41.8	44.4
HMAX	345	356	313	331	379	315	272	285	256	278	283	275
SHMAX	277	238	164	123	159	152	106	294	638	1144	1416	1375
KM												
380					219							
370					217							
360		310			211							
350	355	309			201							
340	354	304		179	186							
330	349	295		179	167							
320	339	280	274	177	147	235						
310	324	263	274	171	123	234						
300	304	240	269	162	98.5	228						
290	282	211	257	150	71.4	217		500			2000	
280	250	173	242	136	49.6	200	229	499		1612	1998	1922
270	208	129	216	116	21.0	179	229	487		1599	1955	1915
260	161	87.3	179	92.6		151	222	466	1167	1546	1853	1866
250	112	51.1	130	68.5		120	205	437	1157	1463	1703	1766
240	67.9	6.5	83.8	45.5		87.6	181	389	1100	1341	1481	1628
230	12.4		51.1			60.0	138	316	994	1143	1225	1421
220			6.7			40.2	89.8	219	819	906	984	1123
210							54.4	97.2	596	698	754	857
200							22.3	12.4	417	515	584	655
190									286	396	458	501
180									205	314	362	405
170									157	253	297	339
160									129	203	245	291
150									110	167	202	252
140									98.3	143	169	219
130									87.7	131	154	189
120									71.4	117	146	170
110									12.4	83.8	97.2	127

ELECTRON DENSITY

PUERTO RICO 60 W 8 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					A	S						
HMIN	110	109	110	110	111		205	200	217	236	200	208
SCAT	55.0	56.0	53.2	60.6	55.7		54.6	53.6	46.1	41.6	36.3	52.0
HMAX	299	314	316	320	321		312	296	337	329	283	309
SHMAX	1427	1534	1544	1501	1611		1028	567	387	354	252	171
KM												
340									573			
330				1500	1786				570	643		
320		1555	1640	1500	1785		1500		555	635		
310		1553	1634	1491	1769		1500		523	610		251
300	1569	1531	1601	1461	1723		1482	824	480	569		249
290	1560	1484	1536	1405	1645		1438	821	428	501	508	243
280	1525	1408	1446	1344	1544		1370	804	367	405	507	231
270	1463	1315	1328	1255	1410		1279	772	300	286	492	217
260	1375	1197	1176	1137	1257		1162	727	226	161	458	196
250	1269	1066	1017	1023	1096		1004	669	152	83.8	404	170
240	1125	942	864	905	907		773	599	97.2	40.2	330	136
230	981	822	729	787	729		477	508	57.6		240	97.2
220	834	716	623	679	583		179	389	18.5		127	60.0
210	703	620	540	573	467		49.6	240			60.0	12.4
200	590	540	477	477	382			12.4				
190	490	470	426	389	318							
180	398	400	380	315	262							
170	330	335	335	255	219							
160	277	278	289	203	187							
150	234	227	244	163	158							
140	191	183	207	143	137							
130	173	172	179	136	123							
120	162	164	163	130	114							
110	12.4	60.0	12.4	40.2								

ELECTRON DENSITY

PUERTO RICO 60 W 9 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							J			S		
HMIN	209	239	207	205	268	308	213	210	109	108	109	108
SCAT	65.2	31.2	43.9	51.7	73.3	58.3	38.7	31.7	33.3	52.9	51.2	56.7
HMAX	344	308	301	309	416	420	308	276	256	290	284	294
SHMAX	202	130	156	139	197	169	185	268	597	1186	1287	1398
KM												
430						219						
420					198	219						
410					198	217						
400					196	212						
390					192	204						
380					186	193						
370					179	179						
360					169	162						
350	229				158	140						
340	229				145	114						
330	227				130	87.9						
320	222				112	60.0						
310	213	298	262	198	94.1	12.4	329					
300	202	293	262	197	76.8		326			1446		1528
290	189	273	259	192	60.0		312			1446	1555	1526
280	174	240	248	183	44.2		286	643		1433	1554	1503
270	155	187	230	169	8.0		248	638		1394	1528	1457
260	132	131	207	152			205	603	1050	1327	1473	1391
250	108	71.4	175	133			161	540	1041	1233	1379	1312
240	83.8	12.4	133	112			112	431	988	1125	1260	1183
230	60.0		88.8	86.3			68.6	286	890	960	1131	1035
220	41.8		52.7	57.8			40.2	127	745	803	979	884
210	4.5		17.5	28.8					592	643	821	735
200									437	508	679	598
190									302	389	527	492
180									207	296	411	411
170									152	232	321	349
160									121	186	259	295
150									105	153	216	250
140									92.6	133	183	211
130									81.6	123	161	181
120									75.5	117	151	170
110									49.6	83.8	97.2	143

ELECTRON DENSITY

PUERTO RICO 60 W 9 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL				A					J			
HMIN	109	110	108	110	112	117	194	208	239	239	203	193
SCAT	55.8	51.9	68.7	61.9	57.5	60.0	44.9	53.6	54.4	40.3	32.1	42.0
HMAX	318	317	321	326	315	304	305	332	378	331	281	290
SHMAX	1716	1838	1791	1620	1595	1331	797	672	565	500	332	229
KM												
380									716			
370									713			
360									697			
350									670			
340								917	631	928		
330			1669	1555				917	573	928		
320	1801	2048	1668	1552	1786			906	515	909		
310	1792	2038	1657	1530	1783	1555	1290	880	446	861		
300	1755	1992	1628	1487	1757	1554	1287	837	374	787		389
290	1689	1907	1581	1420	1704	1534	1256	779	303	679	754	389
280	1586	1786	1513	1334	1618	1492	1190	702	229	540	754	383
270	1464	1623	1435	1226	1511	1428	1103	608	154	362	732	367
260	1320	1446	1333	1116	1381	1350	960	508	90.4	188	674	340
250	1143	1257	1215	995	1240	1240	794	389	52.5	77.8	573	302
240	981	1035	1086	875	1085	1109	624	262	6.3	12.4	446	251
230	834	865	960	765	894	948	417	143			262	198
220	699	716	834	665	703	754	240	71.4			112	137
210	589	596	707	573	532	550	112	21.2			51.6	80.4
200	508	501	586	494	396	401	49.6					43.6
190	441	424	477	417	306	281						
180	386	362	389	353	243	198						
170	335	314	322	294	198	152						
160	286	273	270	246	166	124						
150	240	234	230	208	143	107						
140	201	195	198	176	127	95.0						
130	176	174	175	156	120	86.7						
120	166	163	162	143	113	53.5						
110	97.2	83.8	97.2	12.4								

ELECTRON DENSITY

PUERTO RICO 60 W 10 OEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL			F		F						A	
HMIN	195	265	238	206	223	250	241	218	110	108	110	110
SCAT	72.9	49.5	50.3	42.4	99.2	57.3	46.6	37.6	41.9	48.4	40.1	47.8
HMAX	359	355	343	298	420	380	345	295	277	290	272	281
SHMAX	280	192	221	165	313	203	198	326	786	1306	1277	1367
KM												
430					235							
420					235							
410					234							
400					232							
390					229	251						
380					225	251						
370					220	249						
360	280	298			212	243						
350	279	297	329		205	232	310					
340	275	291	329		196	220	309					
330	268	278	324		186	202	302					
320	259	263	312		174	181	288					
310	248	238	295		162	157	266					
300	235	202	273	286	148	130	238	670		1669		
290	219	161	240	283	133	104	203	667		1669		1815
280	197	118	198	273	117	79.4	157	643	1191	1649	2032	1815
270	171	71.4	148	254	101	57.7	112	600	1182	1594	2030	1791
260	143		100	230	83.8	40.2	71.4	524	1140	1505	1982	1726
250	115		57.5	194	67.3		44.7	417	1068	1386	1870	1619
240	90.9		12.4	143	49.6			262	944	1209	1704	1480
230	69.8			97.2	27.1			127	777	1004	1461	1295
220	53.4			60.0				28.2	608	794	1143	1050
210	41.3			25.1					456	633	794	794
200	15.2								335	508	529	608
190									240	406	384	462
180									179	326	304	373
170									139	262	247	314
160									113	216	202	267
150									97.2	182	166	226
140									92.6	157	146	190
130									88.1	140	137	171
120									82.4	127	130	156
110									12.4	97.2	83.8	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 10 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL				A		A	A					
HMIN	110	112	111	119	109	115	220	208	189	232	230	208
SCAT	56.3	59.6	55.2	63.0	70.2	51.2	49.6	43.7	57.6	37.6	33.3	36.9
HMAX	309	302	315	316	333	308	316	296	314	317	307	290
SHMAX	1628	1451	1480	1443	1663	1233	959	538	469	291	235	169
KM												
340				1555								
330				1555								
320			1528	1433	1543		1500		608	565		
310	1741	1514	1525	1430	1514	1569	1496		607	560	508	
300	1730	1514	1501	1410	1471	1560	1463	939	598	535	502	335
290	1691	1499	1451	1372	1406	1522	1400	934	581	492	473	335
280	1618	1462	1378	1311	1331	1454	1305	907	553	427	422	330
270	1529	1399	1285	1240	1240	1360	1184	854	518	341	346	311
260	1409	1327	1154	1148	1143	1240	1016	780	473	240	255	282
250	1261	1229	1004	1042	1014	1081	794	672	417	133	150	240
240	1079	1108	867	930	886	917	540	540	355	60.0	68.3	179
230	917	986	748	811	754	738	262	389	279			117
220	778	865	651	690	643	540	40.2	179	188			60.0
210	660	736	573	580	526	376		40.2	108			12.4
200	562	608	508	477	426	258			57.2			
190	477	491	446	400	340	190			4.9			
180	405	394	385	335	267	149						
170	335	320	319	280	211	121						
160	282	267	262	234	174	102						
150	233	223	222	198	149	89.6						
140	191	198	191	170	132	81.3						
130	173	175	173	152	121	76.1						
120	164	163	162	97.2	112	65.9						
110	83.8			12.4								

ELECTRON DENSITY

PUERTO RICO 60 W 11 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	B										A	A
HMIN	213	224	223	236	298	254	214	221	111	112	109	109
SCAT	49.6	53.4	49.7	52.0	62.3	54.2	35.3	30.1	47.4	55.3	36.8	51.0
HMAX	320	340	326	358	443	374	289	274	280	280	280	274
SHMAX	156	148	153	162	191	198	158	179	807	1082	1285	1287
KM												
450					214							
440					213							
430					211							
420					206							
410					198							
400					187							
390					174							
380					158	262						
370					140	262						
360				219	121	258						
350		198		217	101	250						
340		198		212	81.9	237						
330	229	197	229	202	64.6	220						
320	229	191	228	188	49.6	198						
310	227	183	223	170	34.6	171						
300	220	170	213	149	6.8	142						
290	207	154	201	125		112	335		1143	1354	2032	
280	192	135	182	99.9		80.7	330	477	1143	1354	2032	1669
270	170	115	156	76.6		54.4	310	475	1131	1343	1997	1667
260	143	93.1	124	57.1		26.4	281	452	1096	1309	1884	1639
250	112	71.4	89.9	42.3			232	405	1037	1253	1697	1580
240	81.3	49.6	57.7	12.4			165	324	940	1177	1446	1487
230	55.9	24.0	31.6				91.0	198	794	1078	1096	1364
220	30.9						45.4		643	945	834	1199
210									477	782	619	991
200									346	608	477	782
190									254	429	383	573
180									190	299	317	417
170									148	222	265	323
160									120	172	222	268
150									102	140	182	224
140									93.6	125	148	191
130									88.3	119	138	174
120									80.3	113	131	164
110											60.0	83.8

ELECTRON DENSITY

PUERTO RICO 60 W 11 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A		C				A	A			J
HMIN	110	108	110		113	112	201	196	191	228	224	202
SCAT	51.9	45.7	66.6		43.6	52.7	40.9	48.8	57.2	53.6	44.9	30.9
HMAX	289	297	322		300	303	299	311	350	343	329	270
SHMAX	1381	1365	1496		1047	1016	650	526	476	377	316	195
KM												
360									540			
350									540	532		
340									536	532		
330			1420						524	524	508	
320			1419					764	502	508	503	
310			1408		1303	1252		764	472	483	485	
300		1612	1381		1303	1251	1143	754	436	450	454	
290	1654	1602	1337		1285	1232	1130	728	393	401	411	
280	1642	1555	1271		1230	1191	1081	685	347	342	357	469
270	1600	1453	1199		1136	1127	1004	627	300	270	286	469
260	1525	1341	1113		1028	1044	887	553	254	192	219	456
250	1431	1179	1004		896	929	744	472	210	112	133	417
240	1289	1004	875		762	794	582	382	169	60.0	73.5	357
230	1096	847	754		643	665	389	286	132	12.4	40.2	262
220	917	716	652		534	532	198	179	97.2			143
210	742	608	564		446	403	76.2	87.9	68.4			60.0
200	601	530	488		372	286		40.2	44.5			
190	496	464	412		310	209						
180	417	409	335		262	159						
170	347	358	272		219	126						
160	286	306	223		179	105						
150	237	262	187		149	90.4						
140	194	229	158		127	81.5						
130	174	198	151		118	76.5						
120	164	167	145		101	71.4						
110	12.4	127	12.4									

ELECTRON DENSITY

PUERTO RICO 60 W 12 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL			A		A			C				
HMIN	213	230	235	225	219	205	218	229	110	110	110	110
SCAT	48.1	42.3	42.1	43.0	65.4	69.7	48.8	38.2	42.1	46.6	35.7	38.5
HMAX	328	330	333	327	348	357	317	308	277	297	271	265
SHMAX	187	172	156	160	197	220	145	230	848	1378	1326	1250
KM												
360						229						
350					229	229						
340		286	262		228	226						
330	274	286	262	262	225	220						
320	272	282	256	261	219	213	219					
310	264	270	242	252	210	204	217	461				
300	250	250	221	237	201	194	212	456		1786		
290	233	223	193	215	188	177	201	435		1776		
280	206	187	157	185	168	158	187	398	1290	1728	2177	
270	174	147	120	148	143	137	169	345	1281	1638	2177	1984
260	138	104	82.0	110	117	113	143	262	1236	1517	2129	1976
250	103	68.9	52.4	76.2	87.7	91.7	114	154	1155	1341	1990	1907
240	73.3	45.1	22.3	49.6	61.6	71.4	81.6	75.2	1050	1153	1786	1786
230	52.3			21.0	42.1	55.5	52.7	12.4	862	936	1470	1575
220	28.6				4.3	42.3	12.4		661	730	1157	1286
210						15.4			477	565	834	960
200									351	446	588	716
190									262	362	440	496
180									193	290	350	389
170									153	235	290	320
160									127	191	245	273
150									108	159	210	233
140									95.6	133	181	200
130									88.7	122	161	177
120									78.2	116	149	164
110									40.2	49.6	83.8	97.2

ELECTRON DENSITY

PUERTO RICO 60 W 12 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL						S						
HMIN	110	110	110	110	111		220	201	210	188	198	200
SCAT	46.0	65.0	48.8	62.6	62.5		39.2	51.4	41.7	55.5	59.5	42.9
HMAX	274	310	288	311	315		301	318	327	315	318	305
SHMAX	1049	1414	1142	1357	1228		729	665	504	430	347	200
KM												
330									814			
320		1341		1328	1240			960	808	565	432	
310		1341		1328	1238		1420	954	780	564	430	323
300		1334		1319	1222		1420	930	728	555	421	322
290		1310	1341	1292	1190		1393	888	654	536	404	313
280	1341	1271	1333	1249	1143		1315	834	561	511	383	296
270	1338	1212	1297	1185	1083		1198	741	461	477	357	268
260	1309	1143	1232	1112	999		1032	643	362	425	329	234
250	1248	1058	1143	1017	891		794	521	240	369	296	194
240	1143	960	1023	917	794		508	389	149	301	256	150
230	1031	850	891	804	685		179	252	86.6	232	206	108
220	896	744	763	703	580		12.4	127	49.6	167	148	71.4
210	746	651	643	613	485			57.6		104	75.8	45.8
200	600	573	535	525	404					60.0	21.7	
190	486	501	446	446	335					12.4		
180	395	423	374	368	273							
170	327	349	313	299	223							
160	276	293	265	248	185							
150	233	246	226	208	157							
140	196	198	196	179	136							
130	173	176	176	159	122							
120	163	163	161	146	114							
110	12.4	49.6	40.2	40.2								

ELECTRON DENSITY

PUERTO RICO 60 W 13 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	S								A		A	
HMIN	253	276	291	249	230	216	237	239	109	110	110	110
SCAT	53.3	50.1	52.9	48.5	54.7	58.7	49.3	35.5	38.4	45.6	42.3	38.6
HMAX	363	401	396	356	345	367	349	305	277	279	281	282
SHMAX	164	166	174	177	174	183	180	263	754	1036	1272	1293
KM												
410		224										
400		224	246									
390		221	245									
380		212	239									
370	224	201	229			208						
360	224	185	219	262		208						
350	220	164	201	261	235	204	262					
340	213	143	175	255	234	197	260					
330	202	118	145	244	230	187	253					
320	186	95.4	112	227	223	176	240					
310	168	73.2	80.1	205	210	161	222	599				
300	145	55.3	52.4	176	195	141	198	596				
290	121	41.7		143	175	121	169	571			1846	1907
280	93.2	12.4		110	152	101	134	527	1265	1420	1846	1905
270	65.8			75.3	123	83.8	99.6	446	1254	1405	1817	1859
260	42.3			47.3	93.0	69.1	71.4	318	1202	1355	1731	1748
250				7.3	64.2	56.2	46.9	143	1107	1261	1608	1584
240					41.6	45.8	12.4	12.4	960	1153	1416	1341
230						32.8			754	1004	1166	1050
220						10.1			540	805	875	794
210									362	630	656	619
200									254	493	508	523
190									179	380	399	424
180									131	290	328	354
170									102	228	271	298
160									89.6	182	226	247
150									82.5	151	188	203
140									79.1	131	162	179
130									75.7	121	151	169
120									72.3	114	137	154
110									40.2	49.6	49.6	40.2

ELECTRON DENSITY

PUERTO RICO 60 W 13 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A		A			C			
HMIN	110		109	109	113		215	188	230	244	222	190
SCAT	41.5		51.6	48.2	57.8		44.7	64.4	38.5	39.3	68.6	37.1
HMAX	277		305	299	307		299	351	333	331	322	272
SHMAX	1112		1331	1157	1264		729	628	398	356	512	179
KM												
360								679				
350								679				
340								674	716	670		
330								660	715	670	688	
320								639	697	657	688	
310			1473		1446			608	654	623	683	
300			1470	1393	1441		1303	569	585	568	671	
290			1442	1381	1414		1289	524	495	488	651	
280	1542		1387	1339	1365		1240	473	389	389	627	355
270	1532		1303	1267	1292		1165	412	286	270	602	355
260	1480		1193	1159	1203		1050	348	168	127	554	346
250	1387		1060	1035	1096		886	286	91.9	52.9	460	324
240	1261		917	896	931		643	225	49.6		310	292
230	1062		772	754	754		362	169			83.8	240
220	875		643	617	586		97.2	121				179
210	688		547	508	446			78.4				112
200	540		466	417	362			49.6				55.1
190	436		404	348	293			12.4				
180	353		352	286	240							
170	286		302	230	206							
160	228		255	179	173							
150	195		216	154	145							
140	179		190	141	126							
130	171		173	135	117							
120	163		161	129	103							
110	40.2		83.8	49.6								

ELECTRON DENSITY

PUERTO RICO 60 W 14 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL						F	F		A			
HMIN	243	265	275	198	246	248	211	208	112	110	109	109
SCAT	74.2	58.2	42.5	46.3	64.4	67.0	69.8	49.9	47.9	43.1	49.7	43.2
HMAX	387	402	369	285	384	384	371	306	300	297	292	283
SHMAX	224	190	159	135	142	183	191	274	762	1374	1730	1586
KM												
410		229										
400		229										
390	229	227				156	198					
380	229	221				156	198	193				
370	226	211	268			154	196	193				
360	222	198	265			151	192	192				
350	215	183	255			145	186	189				
340	206	164	237			137	177	184				
330	197	143	214			128	165	176				
320	184	118	179			117	152	163				
310	168	95.0	140			104	137	153	439	960		
300	150	73.8	101		89.9	121	144	437	960	1907	2227	
290	128	56.5	63.5	229	76.4	104	129	428	950	1893	2226	2227
280	104	42.8	30.7	229	63.6	86.2	112	409	920	1830	2196	2224
270	79.9	15.5		224	51.7	68.5	95.3	389	866	1715	2121	2176
260	60.0			213	40.9	49.6	79.2	348	794	1555	1998	2061
250	40.2			201	12.4	12.4	64.8	286	708	1325	1834	1907
240				180			52.7	208	615	1096	1623	1669
230				143			42.4	127	518	848	1371	1392
220				97.2			21.9	64.1	417	634	1096	1073
210				57.0				12.4	329	487	816	813
200				12.4					240	389	608	620
190									175	315	446	488
180									125	262	362	397
170									98.6	219	301	330
160									88.6	185	256	280
150									82.1	158	219	240
140									78.6	138	188	207
130									75.0	124	164	181
120									71.4	115	150	167
110										40.2	60.0	71.4

ELECTRON DENSITY

PUERTO RICO 60 W 14 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A				F	
HMIN	109			109			211	212	187	218	216	221
SCAT	57.1			51.1			54.8	41.8	63.1	49.6	50.3	34.2
HMAX	308			306			327	302	335	344	352	302
SHMAX	1730			1594			1256	664	616	472	474	373
KM												
360											643	
350										661	643	
340									716	659	634	
330							1727		715	647	612	
320							1719		706	621	578	
310	1861			1907			1685	1191	688	580	532	814
300	1853			1901			1621	1190	660	527	471	813
290	1817			1862			1527	1168	624	465	408	787
280	1746			1786			1411	1112	580	389	335	728
270	1657			1669			1259	1020	525	310	266	628
260	1535			1521			1075	899	456	232	198	477
250	1393			1354			834	738	380	161	123	310
240	1240			1143			573	540	302	97.2	77.1	136
230	1050			960			335	310	219	57.7	49.6	60.0
220	875			794			127	83.8	143	12.4	17.4	
210	728			608					89.8			
200	589			477					56.3			
190	477			376					18.3			
180	397			293								
170	335			231								
160	283			186								
150	235			161								
140	196			146								
130	175			138								
120	164			131								
110	112			83.8								

ELECTRON DENSITY

PUERTO RICO 60 W 15 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		A				F	F	F	S			
HMIN	209	219	188	200	266	258		109	112	109	112	108
SCAT	25.8	28.5	30.5	43.5	69.6	58.6		55.4	44.8	39.6	58.0	45.3
HMAX	272	277	253	276	407	404		304	290	291	303	290
SHMAX	189	167	116	71	137	181		447	800	1473	1845	1773
KM												
410					143	208						
400					143	208						
390					141	205						
380					138	200						
370					133	189						
360					127	178						
350					118	163						
340					109	146						
330					98.1	127						
320					86.5	108						
310					74.7	90.2		516			2096	
300					63.3	74.0		515	1191	2294	2094	2448
290					52.3	60.0		508	1191	2293	2070	2448
280	516	454		127	41.5	47.8		492	1176	2249	2015	2418
270	515	447		126	12.4	31.2		468	1131	2129	1929	2329
260	483	413	292	123		4.3		436	1061	1946	1812	2185
250	417	353	291	116				395	951	1669	1669	1975
240	324	240	278	106				343	808	1301	1483	1694
230	198	97.2	255	93.8				286	608	960	1279	1341
220	77.5	12.4	203	75.3				228	433	716	1083	1050
210	12.4		122	51.2				179	310	522	857	767
200			60.0					143	211	389	643	573
190			12.4					114	143	306	468	446
180								93.6	108	246	354	367
170								78.9	91.8	198	282	307
160								67.7	83.0	161	231	260
150								59.1	79.9	135	190	221
140								53.7	76.8	124	163	183
130								47.1	73.7	117	153	161
120								31.9	66.6	110	144	151
110								4.1		60.0		112

ELECTRON DENSITY

PUERTO RICO 60 W 15 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL						S	A	F				
HMIN	110	110	109	109	110	109	209	178	197	252	258	217
SCAT	49.0	53.9	50.3	51.4	63.6	43.9	48.6	57.9	63.8	46.2	37.9	41.4
HMAX	302	307	303	299	314	295	304	309	331	361	337	294
SHMAX	1897	1892	1701	1475	1533	1120	879	597	421	327	285	305
KM												
370										508		
360										508		
350										501		
340									508	482	573	
330									508	450	569	
320					1569				504	408	545	
310	2361	2161	1969		1568		1433	774	494	353	502	
300	2361	2151	1967	1786	1550	1569	1431	769	478	289	438	599
290	2327	2105	1934	1773	1513	1564	1405	753	456	219	348	597
280	2235	2021	1851	1726	1456	1522	1348	725	428	143	227	581
270	2104	1907	1738	1641	1370	1438	1260	684	391	83.8	97.2	550
260	1928	1741	1598	1526	1270	1317	1143	632	342	44.7	24.6	498
250	1724	1555	1437	1381	1165	1143	977	573	280			417
240	1467	1341	1264	1193	1050	960	754	490	215			295
230	1143	1115	1076	990	909	772	477	389	143			112
220	917	902	898	794	768	591	143	278	92.3			40.2
210	716	716	716	628	631	446	12.4	179	55.2			
200	573	573	582	490	508	335		102	18.3			
190	455	462	469	389	402	250		57.9				
180	376	384	389	325	310	189		12.4				
170	316	327	325	278	240	143						
160	271	281	276	235	191	113						
150	230	244	234	198	159	95.9						
140	191	210	200	161	139	84.4						
130	172	181	179	141	124	76.7						
120	161	163	165	132	114	64.0						
110	40.2	40.2	49.6	71.4	12.4	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 16 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	F			F	F	F	F				A	
HMIN	194	198	195	231	297	246	260	229	112	109	110	108
SCAT	45.9	40.5	31.2	77.3	64.2	55.4	54.2	33.1	38.2	39.7	37.7	46.7
HMAX	297	291	254	391	425	382	380	296	269	286	271	277
SHMAX	244	219	59	135	144	167	231	327	708	1166	1363	1359
KM												
430					165							
420					165							
410					163							
400				127	159							
390				127	153	203	310					
380				126	145	203	310					
370				125	134	201	307					
360				122	123	194	299					
350				118	109	185	286					
340				113	92.7	174	268					
330				107	76.3	158	244					
320				99.8	60.0	140	214					
310				91.6	45.3	121	177					
300	389	396		82.5	12.4	103	136	784				
290	386	396		72.7		84.9	101	778		1697		
280	375	389		63.0		68.6	71.4	739		1686	2310	1786
270	353	370		53.9		53.5	45.0	667	1131	1616	2310	1776
260	324	338	143	45.7		40.2		540	1115	1511	2258	1727
250	286	295	143	35.0		12.4		335	1060	1341	2122	1632
240	230	240	136	16.2				143	966	1155	1907	1500
230	172	167	121					12.4	834	917	1595	1341
220	115	97.2	102						679	699	1096	1130
210	71.4	54.0	69.4						508	532	754	917
200	40.2	12.4	35.0						362	403	540	716
190									258	325	397	540
180									191	266	314	426
170									150	219	256	346
160									123	179	207	286
150									106	151	167	246
140									94.4	131	145	213
130									86.4	122	138	186
120									76.0	116	132	170
110										71.4	60.0	127

ELECTRON DENSITY

PUERTO RICO 60 W 16 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			A									
HMIN	108	109	109	110	110	111	215	215	220	196	211	210
SCAT	50.2	54.6	56.4	59.3	48.5	39.6	48.8	35.3	41.1	45.6	43.0	45.1
HMAX	299	306	307	317	294	293	309	307	324	306	325	316
SHMAX	1930	1663	1655	1784	1366	1062	799	463	438	410	308	300
KM												
330									754		492	
320				1876					753		490	492
310		1815	1846	1869			1290	885	734	652	477	490
300	1697	1810	1838	1837	1727	1569	1279	875	690	649	446	476
290	1685	1775	1802	1775	1723	1566	1240	824	627	631	408	451
280	1639	1711	1738	1683	1689	1524	1177	754	547	597	356	417
270	1555	1610	1642	1572	1608	1416	1096	655	446	549	296	362
260	1431	1485	1520	1446	1503	1252	947	540	324	487	227	292
250	1278	1341	1369	1284	1366	1112	768	389	198	398	157	198
240	1182	1161	1200	1127	1202	960	557	219	106	301	97.2	122
230	1101	982	1025	960	1037	771	335	112	55.0	198	62.8	74.0
220	930	816	816	782	845	585	83.8	46.0		117	40.2	45.9
210	754	679	643	631	643	435				65.6		
200	617	573	516	508	499	318				26.2		
190	508	490	417	411	389	233						
180	423	413	345	335	297	169						
170	351	353	290	279	233	127						
160	300	303	247	236	189	102						
150	262	258	208	198	159	85.3						
140	228	221	175	179	138	77.3						
130	193	192	156	157	123	70.2						
120	172	172	144	137	114	63.1						
110	127	83.8	49.6	12.4	12.4							

ELECTRON DENSITY

PUERTO RICO 60 W 17 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL						A	F			A	A	A
HMIN	195	205	196	195	226	268	243	228	110	109	110	109
SCAT	47.6	35.7	35.7	32.8	52.1	58.3	70.5	52.0	38.7	39.2	40.2	42.3
HMAX	302	274	268	251	338	375	389	315	269	280	281	282
SHMAX	268	158	113	55	102	140	194	355	756	1138	1329	1395
KM												
390							198					
380						184	198					
370						184	195					
360						181	190					
350						175	183					
340					139	167	173					
330					138	159	162					
320					135	145	149	565				
310	424				129	127	135	564				
300	424				119	107	120	554				
290	417				107	83.8	104	532		1669	1937	2000
280	400	348			93.5	60.0	87.4	503		1669	1937	1999
270	377	347	240		80.1	20.7	71.4	461	1167	1644	1903	1962
260	340	335	237	131	66.2		56.8	403	1151	1565	1808	1866
250	286	312	225	131	52.0		40.2	320	1096	1430	1651	1724
240	219	270	204	127	40.2			198	1004	1240	1446	1514
230	150	198	174	118	12.4			49.6	875	1050	1184	1240
220	93.3	112	130	103					716	822	917	960
210	58.7	46.5	74.8	81.7					554	643	716	716
200	28.8		28.2	45.6					417	495	540	540
190									310	389	432	426
180									237	305	352	349
170									179	243	286	291
160									143	198	240	246
150									121	165	202	204
140									105	139	173	173
130									92.2	123	155	156
120									74.8	115	141	146
110									12.4	71.4	40.2	97.2

ELECTRON DENSITY

PUERTO RICO 60 W 17 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A							S		F	F
HMIN	110	109	113	112	112	113	219	197	183	219	286	259
SCAT	60.4	56.0	57.3	57.0	57.1	50.3	39.6	35.5	61.0	55.7	51.0	43.7
HMAX	303	296	307	303	299	294	296	272	317	340	412	369
SHMAX	1589	1429	1538	1442	1297	1038	655	302	240	192	213	207
KM												
420											286	
410											286	
400											282	
390											273	
380											257	
370											236	329
360											210	326
350										251	184	314
340										251	155	292
330										249	123	264
320									280	243	91.6	226
310	1712		1669	1612					279	232	65.7	179
300	1711	1612	1662	1610	1500	1341	1303		274	221	46.1	135
290	1693	1607	1630	1589	1490	1339	1294		266	203	16.3	97.2
280	1651	1578	1574	1544	1458	1315	1247	652	253	179		65.7
270	1586	1519	1490	1474	1402	1265	1159	651	238	149		43.9
260	1497	1450	1384	1375	1320	1184	1025	634	219	119		3.1
250	1388	1341	1250	1252	1218	1086	811	592	195	87.3		
240	1250	1202	1096	1112	1096	951	540	523	169	60.0		
230	1064	1050	943	944	943	794	262	424	143	42.0		
220	886	875	773	766	770	632	49.6	262	115	4.3		
210	730	716	631	608	596	477		119	89.5			
200	585	573	517	487	454	362		40.2	64.1			
190	471	459	428	399	351	275			40.2			
180	389	379	362	332	279	203						
170	326	321	305	281	228	154						
160	274	276	257	240	189	122						
150	230	234	212	204	158	102						
140	192	192	179	175	137	88.8						
130	170	171	157	155	122	79.9						
120	148	150	143	134	112	72.9						
110	12.4	49.6										

ELECTRON DENSITY

PUERTO RICO 60 W 18 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	F			A	F	F	F				A	A
HMIN	239	207	201	211	228	255	239	241	109	109	109	108
SCAT	38.3	30.1	28.7	43.7	61.0	55.8	67.3	37.4	35.7	47.3	35.8	39.9
HMAX	318	276	256	285	334	376	378	308	278	300	277	283
SHMAX	214	159	129	66	96	103	157	181	743	1379	1314	1256
KM												
380						131	170					
370						131	169					
360						128	167					
350						122	162					
340					123	115	156					
330					123	106	148					
320	424				121	95.8	139					
310	420				118	84.7	127	389		1786		
300	401				113	73.0	113	384		1786		
290	368			119	106	61.6	97.2	366		1765		1922
280	319	389		119	98.8	50.4	80.9	335	1215	1704	2177	1920
270	254	385		116	89.1	40.2	65.9	286	1201	1600	2157	1874
260	161	362	362	109	77.6	12.4	51.8	208	1143	1466	2057	1767
250	71.4	319	358	99.3	64.1		35.5	97.2	1032	1277	1868	1605
240	12.4	250	335	87.5	48.7		2.5		875	1096	1602	1372
230		151	294	72.4	12.4				679	875	1276	1096
220		71.4	198	52.4					508	666	917	794
210		20.3	71.4						381	508	643	551
200									281	401	463	417
190									211	323	362	341
180									165	259	301	286
170									133	208	254	238
160									110	172	214	193
150									96.6	146	179	159
140									90.5	127	155	139
130									84.5	120	140	125
120									73.6	113	131	118
110									12.4	60.0	71.4	97.2

ELECTRON DENSITY

PUERTO RICO 60 W 18 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A					A	A
HMIN	109	109	113				220	190	189	196	182	218
SCAT	56.9	48.6	51.2				46.8	45.8	46.2	45.4	71.4	31.4
HMAX	296	302	302				308	310	303	304	334	297
SHMAX	1527	1493	1505				738	559	427	257	295	142
KM												
340											304	
330											304	
320								834			301	
310		1741	1771				1240	834	670	403	295	
300	1712	1740	1770				1230	824	669	402	287	310
290	1707	1715	1745				1193	794	658	393	275	307
280	1678	1647	1686				1128	742	630	373	261	289
270	1623	1544	1590				1035	675	586	346	243	253
260	1540	1408	1467				901	592	528	306	223	207
250	1446	1252	1308				716	497	446	256	198	154
240	1298	1050	1153				508	395	352	202	173	97.2
230	1120	875	984				262	286	255	143	145	55.9
220	939	716	807				12.4	189	155	91.7	114	12.4
210	765	596	643					112	91.9	56.5	83.8	
200	615	501	508					55.7	53.5	23.0	58.0	
190	489	433	407						5.8		35.0	
180	394	379	321									
170	331	335	259									
160	286	299	212									
150	246	266	181									
140	207	232	165									
130	178	194	154									
120	167	170	145									
110	97.2	112										

ELECTRON DENSITY

PUERTO RICO 60 W 19 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		A	F			F	F	F	A	A	A	A
HMIN	193	226	210	218	244	237	247	256			108	110
SCAT	36.5	33.3	47.1	58.1	46.0	68.7	61.2	47.8			49.3	43.6
HMAX	298	317	319	335	363	388	364	345			303	282
SHMAX	162	161	189	186	180	218	134	290			1954	1525
KM												
390						224						
380						223						
370					262	220	165					
360					262	215	165					
350					257	207	163	477				
340				240	246	197	158	476				
330				240	227	183	151	465				
320		323	286	236	203	168	144	445				
310		319	283	229	175	151	133	417			2571	
300	286	300	274	218	143	134	120	373			2569	
290	282	270	259	203	114	117	103	310			2529	2294
280	268	223	238	185	87.4	99.9	84.9	240			2430	2293
270	244	169	209	164	64.6	82.3	66.5	152			2301	2252
260	209	119	175	138	48.0	64.4	47.4	49.6			2096	2149
250	165	79.1	136	106	23.5	46.4	12.4				1824	1989
240	125	51.0	97.2	73.6		12.4					1491	1766
230	92.6	17.2	64.4	47.0							1096	1486
220	68.1		42.2	7.4							834	1118
210	49.6										625	794
200	26.8										477	477
190											377	345
180											310	275
170											262	216
160											222	177
150											190	157
140											156	144
130											140	138
120											133	132
110											97.2	71.4

ELECTRON DENSITY

PUERTO RICO 60 W 19 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A	A				F
HMIN	102						199	199	237	209	226	218
SCAT	59.7						45.5	69.6	35.7	40.6	54.2	44.4
HMAX	312						297	333	310	308	352	348
SHMAX	1981						957	766	315	271	297	306
KM												
360											389	
350											389	446
340								854			384	443
330								854			373	429
320	2048							847	670		354	401
310	2047							831	670	477	331	364
300	2028						1569	807	656	472	299	318
290	1979						1560	774	617	454	262	268
280	1907						1515	732	550	422	222	219
270	1793						1429	682	446	375	175	169
260	1655						1303	619	321	310	132	125
250	1503						1152	540	172	236	91.0	89.4
240	1341						960	454	49.6	155	57.2	63.1
230	1174						716	350		92.1	23.3	43.8
220	1004						446	228		52.7		8.3
210	834						179	112		6.1		
200	679						12.4	12.4				
190	540											
180	427											
170	348											
160	290											
150	240											
140	200											
130	173											
120	157											
110	147											

ELECTRON DENSITY

PUERTO RICO 60 W 20 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL			F	F	F	F	F		A			
HMIN	217	201	186	188	303	269	237	187	107	110	108	108
SCAT	44.4	35.6	42.7	23.0	50.3	58.8	47.7	42.8	42.1	42.6	37.9	48.9
HMAX	316	277	255	235	401	377	331	303	282	286	281	286
SHMAX	352	307	85	35	100	142	135	290	753	1176	1389	1619
KM												
410					148							
400					148							
390					146							
380					141	184						
370					133	183						
360					122	180						
350					109	173						
340					92.4	166	214					
330					75.0	156	214					
320	608				57.4	142	211					
310	605				40.2	125	203	469				
300	588					105	190	468				
290	556					83.8	174	458	1143	1756	2177	2128
280	508	670				60.0	152	434	1142	1748	2176	2120
270	446	663				12.4	123	400	1118	1696	2130	2071
260	344	631	161				88.2	350	1063	1597	2005	1979
250	219	573	160				56.9	286	975	1456	1811	1856
240	118	485	155	112			19.6	219	842	1240	1513	1655
230	64.6	335	146	110				152	679	1004	1201	1399
220	19.9	179	134	99.9				105	518	716	917	1096
210		64.4	119	77.9				71.4	377	508	630	834
200			89.8	51.1				47.2	262	362	463	608
190			45.4	12.4				12.4	184	275	367	466
180									130	214	310	381
170									97.2	161	262	324
160									85.2	135	222	283
150									81.3	125	185	248
140									78.3	121	160	215
130									75.4	117	153	187
120									72.5	113	147	169
110									45.1	12.4	97.2	127

ELECTRON DENSITY

PUERTO RICO 60 W 20 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A											
HMIN	112	110	111	112	109	113	205	181	194	239	269	261
SCAT	55.6	59.2	57.4	52.1	49.8	50.3	49.0	42.0	44.2	44.7	56.0	61.9
HMAX	289	303	309	314	309	285	310	295	296	325	395	387
SHMAX	1530	1583	1577	1483	1405	1093	726	434	301	170	219	292
KM												
400											280	
390											279	362
380											274	361
370											265	355
360											251	345
350											233	330
340											210	312
330										286	185	288
320				1669			1072			285	156	255
310		1756	1697	1666	1697		1072			278	122	214
300		1755	1687	1639	1682		1061	716	500	264	89.5	164
290	1876	1734	1650	1581	1633	1500	1027	714	498	243	65.1	116
280	1865	1689	1588	1488	1548	1497	967	693	483	215	44.4	76.5
270	1823	1622	1499	1368	1428	1468	890	651	457	179	2.8	45.6
260	1748	1555	1388	1224	1276	1404	794	591	417	135		
250	1653	1414	1240	1068	1119	1320	679	508	362	86.9		
240	1519	1240	1085	902	929	1199	540	417	286	40.2		
230	1341	1023	917	754	743	1050	402	310	207			
220	1110	818	754	617	590	848	240	208	127			
210	834	643	620	508	463	643	83.8	127	71.4			
200	608	524	500	422	370	446		76.3	40.2			
190	446	434	414	354	305	279		45.6				
180	362	369	354	300	254	195						
170	299	318	310	256	212	152						
160	258	274	270	219	179	125						
150	227	233	234	193	152	108						
140	198	195	200	172	133	95.0						
130	174	171	174	155	122	86.8						
120	143	139	148	131	114	55.7						
110					40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 21 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												A
HMIN	216	208	181	196	251	253	274	227	108	108	109	104
SCAT	28.7	26.0	35.1	70.9	75.4	53.7	64.3	48.0	38.9	47.5	40.4	51.9
HMAX	291	268	254	322	390	348	389	302	265	284	280	284
SHMAX	177	190	90	108	126	88	151	282	594	1177	1337	1483
KM												
400					127							
390					127		179					
380					126		178					
370					125		175					
360					122		170					
350					118	127	162					
340					113	126	152					
330				119	107	123	142					
320				119	99.8	118	127					
310				118	91.5	111	112	524				
300	432			116	81.8	101	92.0	524				
290	432			113	71.4	89.2	71.4	516		1612	2096	1876
280	417			108	60.0	75.7	49.6	499		1609	2096	1873
270	376	540		103	47.8	60.0		481	960	1576	2065	1842
260	310	526	189	97.8	29.3	41.3		430	957	1508	1969	1774
250	219	477	188	89.6				335	926	1400	1813	1684
240	121	377	181	80.2				179	864	1251	1586	1555
230	69.0	228	167	68.3				44.7	767	1078	1289	1353
220	26.8	97.2	147	54.0					634	834	897	1096
210		23.7	112	41.0					488	632	643	834
200			74.4	12.4					344	458	456	643
190			45.0						240	335	355	477
180									168	262	286	381
170									127	209	229	318
160									104	170	179	273
150									82.1	142	154	235
140									78.9	127	141	201
130									75.8	122	136	176
120									72.7	117	130	163
110									60.0	112	97.2	127

ELECTRON DENSITY

PUERTO RICO 60 W 21 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A	A	A	A	F	A
HMIN	110							227	232	236	268	198
SCAT	47.6							42.4	50.8	44.0	40.2	44.5
HMAX	280							317	325	340	370	302
SHMAX	1163							383	339	330	286	389
KM												
380											500	
370											500	
360											493	
350										540	469	
340										540	430	
330									532	534	378	
320								679	531	513	316	
310								675	521	477	240	652
300								653	500	429	143	652
290	1446							612	471	369	87.9	640
280	1446							551	430	292	53.4	613
270	1432							467	375	211	12.4	567
260	1385							362	302	127		508
250	1307							240	198	71.4		427
240	1202							127	83.8	26.8		310
230	1050							40.2				192
220	904											112
210	762											60.0
200	618											12.4
190	494											
180	396											
170	329											
160	276											
150	229											
140	187											
130	172											
120	163											
110	49.6											

ELECTRON DENSITY

PUERTO RICO 60 W 22 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		F	F		F	F	F					
HMIN	207	196	206	199	248	257	213	218	110	110	109	106
SCAT	46.4	35.0	35.5	26.2	48.0	59.3	53.7	39.4	46.2	46.7	48.4	40.1
HMAX	291	274	279	256	353	378	334	295	290	287	285	263
SHMAX	305	223	156	70	90	153	148	262	863	1159	1428	1095
KM												
380						189						
370						188						
360					131	184						
350					131	178						
340					129	168	193					
330					122	158	193					
320					113	143	190					
310					102	127	184					
300	540				89.9	107	174	516	1167			
290	540				78.0	87.9	162	514	1167	1555	1815	
280	533	484	335		66.2	67.9	145	497	1154	1546	1810	
270	514	482	330		54.4	47.7	125	463	1114	1503	1771	1669
260	484	464	312	193	42.0	12.4	104	417	1050	1418	1692	1666
250	440	425	281	191	8.7		83.8	340	952	1290	1578	1624
240	367	367	235	174			64.2	240	834	1155	1420	1528
230	262	286	161	146			47.2	118	679	976	1240	1385
220	127	143	83.8	97.2			22.7	26.8	540	794	1034	1169
210	40.2	71.4	40.2	54.1					417	592	824	875
200		27.5		5.5					318	446	643	654
190									240	335	490	477
180									185	266	381	379
170									143	214	310	321
160									112	174	262	280
150									96.1	143	221	245
140									90.3	126	189	214
130									84.5	120	166	187
120									73.0	115	152	171
110										40.2	97.2	112

ELECTRON DENSITY

PUERTO RICO 60 W 22 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A		A		S	A	A	A	A	F		
HMIN	109	108	111	110	110	112	207	186	197	282	231	221
SCAT	46.1	54.5	72.8	70.3	54.9	46.6	45.9	45.7	65.4	50.8	50.3	49.8
HMAX	272	298	335	329	300	298	302	306	347	380	332	327
SHMAX	1049	1087	1375	1483	1142	958	693	445	373	307	295	347
KM												
390										461		
380										461		
370										457		
360										442		
350									410	420		
340			1240						409	389	446	
330			1238	1393					403	347	446	540
320			1226	1387					393	297	441	537
310			1203	1368	1341		1131	661	376	235	426	524
300		1084	1167	1331	1341	1252	1130	658	358	150	403	499
290		1079	1120	1276	1331	1243	1112	639	333	75.8	374	466
280	1341	1055	1064	1217	1299	1205	1067	605	303		329	417
270	1340	1009	993	1150	1244	1138	995	556	266		268	349
260	1318	951	904	1050	1169	1043	897	495	225		205	262
250	1264	882	802	929	1070	917	773	417	185		137	161
240	1173	803	688	794	942	776	619	341	148		71.4	89.6
230	1061	725	573	657	794	630	446	262	112			49.6
220	917	650	468	540	630	495	219	186	80.9			
210	772	579	383	442	485	382	49.6	122	52.7			
200	624	513	322	368	373	298		71.4	17.5			
190	501	451	282	315	295	232		28.2				
180	405	393	252	275	240	184						
170	335	339	214	245	204	149						
160	289	291	179	217	174	124						
150	247	250	165	190	151	107						
140	210	211	156	169	134	95.3						
130	179	178	150	156	123	87.4						
120	166	162	143	146	115	71.4						
110	71.4	60.0		12.4	40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 23 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	080D	0900	1000	1100
QUAL			F	F	F	F	F					
HMIN	208	195	189	250	341	273	186	240	110	109	109	108
SCAT	32.7	26.0	60.5	64.7	64.5	51.8	68.6	42.4	29.4	44.1	50.9	49.9
HMAX	282	249	295	404	466	397	330	325	262	278	294	288
SHMAX	214	103	163	249	180	217	253	280	584	968	1356	1320
KM												
470					208							
460					208							
450					205							
440					200							
430					192							
420					182							
410				268	168							
400				268	153	292						
390				265	136	290						
380				259	117	283						
370				249	97.2	271						
360				236	71.4	252						
350				221	46.2	229						
340				202		201	268					
330				179		171	268	516				
320				156		139	267	514				
310				132		106	262	498				
300			208	108		76.5	255	472			1741	
290	477		208	85.8		51.7	245	429			1738	1626
280	476		205	66.3		27.1	231	369		1393	1708	1616
270	461		199	49.6			216	286	1072	1381	1642	1575
260	422		189	31.4			197	173	1071	1332	1564	1496
250	362	304	178				176	71.4	1019	1245	1421	1395
240	280	295	163				152		917	1143	1240	1255
230	179	266	147				127		770	960	960	1115
220	83.8	208	130				102		608	754	741	932
210	23.0	104	109				77.8		446	559	558	745
200		45.8	80.7				53.9		310	406	434	573
190			12.4				22.6		219	304	355	435
180									165	240	295	343
170									127	195	240	286
160									103	161	192	240
150									94.1	138	158	198
140									89.4	125	143	174
130									84.7	120	137	159
120									70.2	114	131	150
110									12.4	83.8	83.8	97.2

ELECTRON DENSITY

PUERTO RICO 60 W 23 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A	A	A		A						
HMIN	110				111	116	208	198	218	281	243	217
SCAT	52.8				50.9	70.4	46.5	52.5	54.6	49.1	43.1	46.5
HMAX	302				314	342	316	346	341	403	344	312
SHMAX	1408				1540	1657	899	795	605	581	513	512
KM												
410										844		
40D										843		
390										830		
380										800		
370										75D		
360										685		
350						1569		1050	844	603	896	
340						1569		1046	844	508	894	
330						1557		1024	836	400	872	
320					1846	1530	1367	981	814	286	824	875
310	1555				1843	1486	1362	923	777	172	754	874
300	1555				1811	1424	1322	842	727	97.2	656	860
290	1534				1734	1349	1254	741	661	49.6	519	824
280	1486				1632	1258	1161	632	573		335	772
270	1407				1497	1154	1043	508	470		198	690
260	1309				1341	1038	899	389	335		97.2	573
25D	1174				1168	917	734	273	198		49.6	417
240	1035				976	794	573	184	105			240
230	884				770	661	389	118	57.9			97.2
220	736				589	529	161	78.5	12.4			33.5
210	608				461	417	40.2	49.6				
200	513				362	310		12.4				
190	437				294	233						
180	375				240	174						
170	324				201	138						
160	282				166	114						
150	240				141	97.2						
140	203				127	85.0						
130	179				119	77.6						
120	167				112	67.6						
110	40.2											

ELECTRON DENSITY

PUERTO RICO 60 W 24 OEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							A	A				
HMIN	193	192	217	218	301	290	208	219	111	110	110	109
SCAT	48.8	35.5	105	111	61.3	56.2	60.6	32.8	34.5	40.1	53.6	53.2
HMAX	279	268	407	396	432	413	350	282	266	255	280	285
SHMAX	378	112	215	169	126	134	221	236	596	761	1045	1248
KM												
440					148							
430					148							
420					146	170						
410			156		143	170						
400			156	123	137	167						
390			155	123	130	162						
380			154	122	120	154						
370			151	121	109	144						
360			148	120	95.9	131	257					
350			145	118	81.6	115	257					
340			140	115	67.8	97.2	255					
330			135	112	54.8	79.7	250					
32D			129	108	43.6	63.1	241					
310			123	104	22.8	48.9	227					
300			116	101		30.7	211					
290			108	96.3			192	573			1215	1446
280	679		99.1	90.5			170	573			1215	1443
270	673	229	89.4	84.7			146	553	1096		1205	1417
260	654	226	79.5	77.4			119	510	1088	1240	1173	1366
250	611	213	69.3	69.3			93.7	432	1037	1235	1120	1287
240	555	194	58.1	60.0			71.4	298	943	1198	1050	1185
230	484	161	44.3	47.1			53.5	127	776	1122	949	1060
220	335	123	12.4	12.4			40.2	12.4	573	1004	834	917
210	143	81.4					5.8		380	834	716	754
200	56.5	45.1							252	608	608	625
190									172	417	494	508
180									127	286	389	412
170									95.9	223	305	340
160									83.8	181	253	286
15D									80.8	147	217	244
140									77.8	126	182	211
130									74.8	120	159	184
120									71.7	114	146	166
110										40.2	40.2	71.4

ELECTRON DENSITY

PUERTO RICO 60 W 24 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL											S	
HMIN	109	110	109	109	113	108	217	207	202	196	241	194
SCAT	53.3	56.2	54.0	69.1	70.8	51.9	49.6	34.8	43.7	52.6	52.2	54.7
HMAX	289	317	310	323	327	320	317	292	288	322	359	326
SHMAX	1095	1422	1379	1571	1461	1261	995	635	470	351	313	284
KM												
360											439	
350											436	
340											425	
330				1473	1367	1460				469	405	362
320		1446	1500	1473	1364	1460	1569			469	378	361
310		1440	1500	1461	1347	1447	1562			463	343	354
300		1411	1487	1434	1317	1406	1525	1240		449	297	342
290	1155	1360	1446	1391	1274	1341	1455	1239	865	425	240	322
280	1146	1281	1370	1331	1214	1240	1359	1204	858	394	183	297
270	1117	1184	1270	1254	1147	1119	1223	1096	829	354	130	268
260	1064	1069	1169	1167	1061	992	1050	981	783	307	79.7	233
250	996	934	1050	1067	960	857	794	834	703	257	47.2	196
240	912	803	917	950	848	716	477	643	583	206		157
230	825	687	766	823	734	585	198	446	417	150		120
220	738	589	643	692	620	477	49.6	219	240	97.2		83.8
210	652	508	533	573	508	378		65.0	83.8	60.0		56.2
20D	567	446	446	477	412	300				24.1		26.4
190	488	393	376	399	335	236						
180	413	349	325	335	271	185						
170	345	310	282	278	219	146						
160	291	275	240	233	183	119						
150	250	238	195	198	155	101						
140	215	198	163	173	133	87.6						
130	183	174	154	156	121	80.0						
120	167	157	147	143	113	74.5						
110	112	60.0	97.2	60.0		40.2						

ELECTRON DENSITY

PUERTO RICO 60 W 25 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	J											
HMIN	210	203	231	222	188	195	235	258	108	104	107	100
SCAT	46.9	35.5	37.8	41.1	59.3	58.6	54.3	39.7	44.8	34.4	49.7	92.8
HMAX	321	282	324	304	301	358	372	331	283	268	273	324
SHMAX	214	143	181	183	125	190	193	256	935	1286	1372	1970
KM												
380							240					
370							240					
360						208	237					
350						208	230					
340						204	219	516				
330	323		329			196	203	516				1583
320	322		328			186	183	504				1582
310	318		317	342	161	173	161	477				1574
300	306		293	341	161	157	136	435				1556
290	286	298	260	332	159	140	110	373	1354			1529
280	260	298	219	313	156	122	88.6	280	1353		1786	1493
270	226	290	173	287	150	104	69.7	143	1327	2227	1784	1446
260	185	270	123	244	142	87.9	55.1	30.0	1268	2198	1753	1373
250	143	240	71.4	185	132	74.3	43.1		1176	2077	1687	1295
240	101	193	43.7	112	121	62.4	15.7		1050	1868	1588	1223
230	66.5	134		49.6	105	52.4			856	1555	1446	1164
220	42.7	71.4			83.8	44.0			643	1206	1266	1111
210		40.2			61.2	30.0			466	875	1074	960
200					43.3	10.4			341	608	834	754
190					8.4				256	417	643	591
180									202	318	466	469
170									165	251	347	381
160									137	201	275	316
150									117	165	229	262
140									103	141	192	221
130									93.5	126	168	191
120									87.0	119	153	172
110									60.0	113	127	143

ELECTRON DENSITY

PUERTO RICO 60 W 25 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL							A					
HMIN	110	110	109	110	109	116	217	186	199	247	202	224
SCAT	70.8	70.8	73.4	63.1	61.4	49.0	43.3	46.9	46.2	51.5	46.3	42.9
HMAX	307	307	332	311	312	308	309	306	307	339	332	329
SHMAX	1298	1298	1740	1463	1350	1124	794	620	396	276	273	224
KM												
340			1528							424	389	
330			1527							421	389	362
320			1517	1514	1446					408	382	357
310	1203	1203	1493	1514	1446	1446	1380	917	608	391	367	343
300	1200	1200	1454	1502	1433	1437	1365	913	604	366	341	317
290	1186	1186	1398	1471	1400	1399	1304	890	588	328	310	286
280	1160	1160	1341	1415	1348	1329	1217	845	556	279	267	243
270	1122	1122	1261	1346	1269	1240	1096	780	513	213	223	195
260	1076	1076	1159	1256	1183	1103	933	694	452	139	179	147
250	1010	1011	1050	1155	1076	960	732	592	379	65.0	135	101
240	927	928	917	1022	944	794	477	484	300		97.2	63.2
230	834	834	794	875	806	623	198	362	219		71.4	35.0
220	735	736	679	716	667	477	49.6	262	143		51.6	
210	643	643	573	573	508	362		161	79.5		30.4	
200	548	549	484	458	396	274		83.8	12.4			
190	463	464	413	374	310	198		40.2				
180	389	389	351	317	245	151						
170	329	329	305	272	198	117						
160	282	282	265	231	166	95.4						
150	246	247	230	192	142	83.8						
140	210	210	198	167	126	78.9						
130	177	177	177	153	120	74.1						
120	166	165	165	143	113	62.8						
110	71.4	71.4	112	40.2	71.4							

ELECTRON DENSITY

PUERTO RICO 60 W 26 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	S											A
HMIN	235	194	197	213	252	232	211	222	111	113	116	117
SCAT	38.9	55.7	62.3	50.9	61.8	76.3	49.4	29.9	38.2	48.9	37.2	55.8
HMAX	311	304	328	337	414	416	315	284	264	296	270	299
SHMAX	241	204	204	190	218	301	205	215	620	1162	1067	1467
KM												
420					235	280						
410					234	279						
400					232	277						
390					226	272						
380					217	264						
370					204	255						
360					189	242						
350					172	229						
340				257	152	214						
330			240	255	132	193						
320	477		239	249	113	168	310					
310	477	280	235	238	93.6	142	309					
300	467	279	228	222	76.8	117	303			1528		1727
290	441	275	218	201	62.6	94.1	290	548		1522		1716
280	400	267	203	176	50.5	75.6	271	546		1486	1801	1678
270	340	253	187	147	41.0	60.0	247	519	1027	1414	1801	1613
260	272	238	168	119	19.3	48.9	211	465	1024	1318	1767	1517
250	143	215	147	93.2		38.8	166	362	990	1183	1669	1399
240	49.6	186	121	68.8		16.8	118	219	925	1004	1505	1249
230		149	94.1	49.6			77.2	83.8	823	776	1273	1050
220		106	69.2	26.8			45.6		679	598	875	865
210		66.1	47.7						508	462	620	679
200		35.9	12.4						362	362	446	529
190									248	286	352	402
180									179	232	286	316
170									135	183	237	256
160									108	147	194	209
150									91.5	131	168	174
140									81.9	123	145	149
130									76.9	117	135	137
120									72.0	105	112	128

ELECTRON DENSITY

PUERTO RICO 60 W 26 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A						A					
HMIN	116	111	114	114	115	112	209	207	206	221	231	105
SCAT	54.3	64.6	60.5	56.6	63.3	50.5	44.0	57.1	47.2	38.6	42.6	74.3
HMAX	288	331	331	325	325	306	307	346	324	325	319	247
SHMAX	1197	1610	1619	1662	1610	1271	873	809	563	479	424	317
KM												
350								1050				
340		1446	1612					1046				
330		1446	1611	1741	1640			1028	834	854		
320		1435	1597	1738	1637			993	833	850	794	
310		1407	1561	1710	1615	1683	1487	944	816	821	785	
300		1361	1495	1651	1574	1678	1477	875	779	760	754	
290	1354	1294	1419	1563	1504	1643	1424	788	727	679	705	
280	1346	1216	1320	1455	1422	1575	1341	679	658	573	626	
270	1315	1118	1203	1328	1323	1470	1221	540	581	446	508	
260	1261	1012	1083	1190	1208	1341	1050	417	490	310	335	
250	1179	899	938	1041	1096	1143	834	286	379	179	161	310
240	1083	794	786	875	950	960	586	179	247	92.9	65.3	309
230	960	697	643	737	801	716	323	107	135	49.6		306
220	834	614	540	615	643	523	134	60.0	68.8			300
210	701	547	455	508	496	383	12.4	18.7	27.5			291
200	587	493	389	425	389	277						278
190	493	446	335	353	301	198						264
180	411	398	294	297	243	153						246
170	341	348	256	253	201	122						226
160	286	293	219	216	168	102						205
150	237	247	179	186	143	89.5						183
140	194	208	161	163	126	81.6						163
130	170	176	152	152	118	76.8						143
120	143	161	138	135	97.2	71.9						122
110												88.3

ELECTRON DENSITY

PUERTO RICO 60 W 27 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A			A	A	A				A		
HMIN	195	214	289	259	281	223	238	229	110		113	110
SCAT	43.6	42.2	66.7	63.0	56.3	38.6	34.8	40.7	28.9		42.7	52.7
HMAX	319	323	404	417	417	308	324	310	282		280	293
SHMAX	222	191	236	264	284	197	168	271	683		1511	1580
KM												
420				286	355							
410			280	285	353							
400			280	281	347							
390			277	273	334							
380			271	261	316							
370			261	245	292							
360			250	227	262							
350			238	205	230							
340			219	181	192							
330		304	192	156	151		335					
320	335	303	161	131	112		334	508				
310	331	297	123	106	78.7	382	322	508				
300	319	280	88.0	84.9	55.0	378	295	501				1846
290	296	256	45.4	66.6	34.5	362	255	478	1096		2243	1844
280	266	224		51.2		333	206	441	1095		2243	1818
270	228	188		35.5		290	149	389	1050		2211	1752
260	184	150		2.5		227	92.6	315	932		2109	1669
250	143	114				153	53.8	219	822		1956	1540
240	108	78.9				79.8	12.4	118	695		1741	1376
230	81.0	53.5				43.8		12.4	564		1475	1208
220	60.0	26.4							446		1143	1027
210	44.3								351		834	847
200	15.8								281		608	679
190									224		428	551
180									173		329	437
170									129		267	344
160									101		219	280
150									88.1		179	232
140									79.3		155	192
130									72.1		138	163
120									65.0		122	152
110									12.4			60.0

ELECTRON DENSITY

PUERTO RICO 60 W 27 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A	A		A	A	
HMIN	108	108				114	223	192	207	225	230	211
SCAT	66.9	59.4				88.2	55.1	51.1	49.1	44.4	40.2	34.2
HMAX	319	322				363	332	325	326	314	333	298
SHMAX	1862	1629				2257	1302	989	762	466	402	297
KM												
370						1861						
360						1860						
350						1850						
340						1828	1815				716	
330		1612				1795	1815	1393	1107		715	
320	1727	1611				1749	1793	1390	1103	814	699	
310	1718	1596				1691	1742	1363	1078	812	659	
300	1690	1559				1619	1661	1304	1027	794	599	616
290	1643	1488				1541	1555	1231	956	754	508	607
280	1577	1406				1446	1411	1123	863	692	406	573
270	1487	1305				1341	1240	986	745	608	286	512
260	1380	1172				1214	1027	825	616	501	161	417
250	1260	1042				1085	754	643	477	335	92.9	310
240	1128	917				917	417	446	335	179	51.8	198
230	1004	805				754	143	278	190	49.6		97.2
220	875	697				573		161	92.0			49.6
210	754	600				431		91.9	40.2			
200	648	514				310		47.3				
190	554	439				214						
180	468	371				156						
170	389	310				121						
160	324	268				99.6						
150	273	227				86.0						
140	229	158				80.0						
130	192	141				75.3						
120	172	134				63.8						
110	143	118										

ELECTRON DENSITY

PUERTO RICO 60 W 28 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		F	F	F				F				A
HMIN	198	197	211	193	305	294	238	209	110	109	109	106
SCAT	45.7	51.6	45.7	72.4	59.0	60.9	38.2	41.3	42.6	35.3	43.8	55.9
HMAX	302	316	288	351	436	434	333	308	279	280	277	296
SHMAX	239	224	136	133	138	164	172	445	956	1288	1448	1641
KM												
440						165	189					
430						165	188					
420						162	186					
410						156	181					
400						148	173					
390						139	163					
380						127	151					
370						113	135					
360					131	97.2	119					
350					131	81.4	101					
340					130	66.0	82.6	310				
330					128	51.6	66.4	309				
320		310			125	38.8	52.3	301				
310	382	309			120	12.4	40.9	280	814			
300	382	302			115		15.1	250	806			1846
290	376	290	240	107				211	776		2128	1841
280	360	271	238	98.4				165	723	1500	2128	2063	1809
270	335	248	231	88.4				117	643	1482	2089	2051	1747
260	302	219	217	78.2				77.2	525	1423	1962	1988	1655
250	260	183	200	68.1				49.6	362	1320	1759	1867	1536
240	202	143	175	58.5				12.4	206	1181	1463	1699	1385
230	143	105	140	49.6					112	960	1181	1475	1213
220	90.3	71.4	83.8	42.9					58.2	695	891	1206	1019
210	55.3	47.7		29.6					4.9	477	627	939	834
200	12.4	12.4		12.4						318	446	679	664
190										225	324	496	540
180										173	252	375	442
170										140	203	298	362
160										118	167	250	305
150										102	141	217	256
140										92.4	125	185	216
130										85.2	120	160	182
120										75.7	115	149	162
110										12.4	60.0	83.8	127

ELECTRON DENSITY

PUERTO RICO 60 W 28 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A					A	A		A	A		A
HMIN	112	113	110	111	112			220	199	229	224	234
SCAT	59.8	58.3	69.2	55.8	60.5			43.5	50.4	56.2	49.9	41.6
HMAX	311	323	352	329	336			316	308	372	343	321
SHMAX	1717	1765	2160	2016	2056			973	619	553	466	420
KM												
380										697		
370										697		
360			1907							690		
350			1906							671	679	
340			1891		2096					643	678	
330		1801	1857	2161	2091					600	667	794
320	1786	1799	1802	2146	2060			1697		548	643	793
310	1786	1777	1724	2097	1992			1689	960	484	603	779
300	1771	1728	1632	2011	1907			1639	954	407	551	741
290	1732	1651	1519	1894	1786			1543	930	328	483	679
280	1669	1549	1384	1740	1652			1411	887	248	398	594
270	1575	1423	1240	1555	1495			1216	829	175	310	460
260	1460	1267	1072	1365	1321			960	730	118	219	262
250	1326	1126	917	1171	1154			643	596	77.3	127	112
240	1172	960	786	982	982			310	438	48.1	74.2	49.6
230	1016	804	679	807	824			104	286	7.1	40.2	
220	860	673	593	667	679				161			
210	716	564	522	551	552				78.8			
200	601	477	462	453	435				12.4			
190	497	417	408	372	342							
180	409	362	355	307	262							
170	335	310	304	256	206							
160	284	270	258	217	167							
150	240	236	219	190	140							
140	182	207	190	169	125							
130	168	189	174	154	119							
120	139	168	163	144	112							
110			40.2									

ELECTRON DENSITY

PUERTO RICO 60 W 29 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL					A							A
HMIN	213	191	209	234	274	298	230	233	113	112	111	
SCAT	30.7	49.8	62.7	51.4	102	72.0	44.6	45.2	32.9	36.5	46.0	
HMAX	277	301	328	324	459	431	341	329	281	267	264	
SHMAX	222	204	226	124	259	217	194	335	920	1235	1121	
KM												
460					198							
450					198							
440					197	235						
430					194	235						
420					191	233						
410					187	230						
400					182	224						
390					176	216						
380					169	207						
370					163	196						
360					154	181						
350					143	161	298					
340					131	136	298					
330			280	189	117	108	293	557				
320			279	188	100	81.4	280	551				
310		298	274	185	82.4	55.0	262	529				
300		298	266	178	63.3	12.4	233	495				
290		294	254	167	46.3		201	451	1583			
280	565	285	242	155	19.4		165	389	1583			
270	557	269	223	138			127	302	1540	2161	1612	
260	521	248	198	114			89.7	219	1425	2142	1608	
250	453	221	164	83.8			60.0	120	1260	2046	1572	
240	335	186	127	52.0			40.2	53.5	1004	1866	1498	
230	161	146	89.7						794	1593	1382	
220	57.1	105	53.1						594	1274	1224	
210		68.6	5.8						417	917	1037	
200		43.7							300	573	794	
190									214	362	540	
180									161	262	377	
170									124	207	297	
160									101	168	245	
150									87.4	142	205	
140									80.9	126	176	
130									76.8	120	158	
120									72.7	114	148	

ELECTRON DENSITY

PUERTO RICO 60 W 29 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	S						
HMIN	110	109				108	198	195	198	232	218	187
SCAT	47.6	59.2				56.1	51.3	51.9	50.5	48.1	54.0	51.0
HMAX	287	302				328	309	307	317	324	334	318
SHMAX	1300	1494				1778	1249	798	457	331	301	262
KM												
340											417	
330						2096				540	417	
320						2086			616	539	410	355
310		1555				2044	1937	1119	613	529	397	352
300		1555				1969	1924	1114	599	508	376	343
290	1555	1538				1857	1873	1089	573	477	349	326
280	1547	1499				1717	1786	1042	532	428	314	304
270	1506	1437				1543	1669	978	482	362	262	274
260	1429	1354				1341	1506	886	426	277	210	240
250	1325	1255				1114	1279	773	362	179	153	198
240	1179	1124				857	960	643	299	71.4	101	153
230	1018	995				643	508	508	236		57.1	112
220	861	861				465	198	370	179		12.4	83.8
210	716	716				347	63.8	240	112			60.0
200	600	594				262	12.4	97.2	49.6			43.8
190	508	477				206						12.4
180	431	394				167						
170	362	335				138						
160	306	294				116						
150	266	257				101						
140	219	219				92.0						
130	179	179				85.0						
120	168	169				72.6						
110	49.6	97.2				49.6						

ELECTRON DENSITY

PUERTO RICO 60 W 30 DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							J					
HMIN	220	228	198	184	237	219	179	251	112	110	110	110
SCAT	37.3	41.9	58.3	49.8	69.6	47.8	107	45.3	55.8	40.8	42.2	39.4
HMAX	316	312	301	293	374	322	390	344	312	287	283	265
SHMAX	197	192	157	138	201	132	232	251	1240	1379	1588	1252
KM												
400							161					
390							161					
380					219		160					
370					219		159					
360					216		158					
350					212		155	417				
340					205		152	416				
330					196	198	148	407				
320	362	355			186	198	144	389	1500			
310	359	355	214		174	195	138	362	1500			
300	344	348	214	198	158	188	133	320	1483			
290	316	331	212	198	137	176	126	266	1442	2161	2294	
280	275	310	206	195	113	161	117	202	1377	2145	2290	
270	225	267	198	187	88.2	140	109	127	1288	2068	2237	1846
260	167	209	187	176	64.9	115	99.6	57.6	1178	1922	2116	1838
250	112	132	175	161	44.9	90.1	91.0		1029	1715	1936	1776
240	71.4	63.5	157	142	12.4	66.5	82.5		846	1446	1700	1659
230	45.3	12.4	130	119		46.6	73.1		662	1096	1404	1479
220			97.2	94.2		7.3	63.8		497	794	1127	1240
210			60.0	71.4			54.6		362	540	834	1004
200			12.4	49.6			44.8		262	380	608	794
190				24.0			26.6		198	286	446	608
180							2.9		157	219	362	469
170									127	165	292	379
160									103	132	240	319
150									93.0	112	198	270
140									87.1	106	168	229
130									80.1	101	155	198
120									71.4	92.8	146	182
110										49.6	40.2	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 30 DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	109	110	110	110	109	110	206	200	192	201	204	202
SCAT	65.2	57.6	57.1	68.0	72.8	58.8	55.9	51.1	51.2	51.6	56.7	59.7
HMAX	305	315	303	326	348	333	324	321	296	325	313	324
SHMAX	1510	1672	1429	1711	1920	1703	1393	1072	629	567	395	295
KM												
350					1669							
340					1663	1907						
330				1569	1642	1906	1969	1555		794		375
320		1727		1567	1606	1884	1966	1555		792	557	375
310	1446	1724	1500	1549	1555	1835	1937	1539		777	556	370
300	1444	1699	1499	1513	1481	1753	1876	1492	960	747	550	360
290	1426	1642	1481	1461	1398	1646	1786	1411	957	702	534	345
280	1392	1566	1436	1388	1299	1517	1669	1307	937	643	512	328
270	1341	1463	1359	1304	1195	1364	1512	1174	898	566	481	300
260	1264	1341	1267	1202	1084	1167	1294	1004	842	477	435	264
250	1181	1190	1170	1090	960	971	960	794	764	375	371	222
240	1083	1031	1050	972	834	767	608	560	655	276	294	173
230	972	875	925	852	716	596	310	335	508	172	204	122
220	857	754	794	735	608	455	120	161	362	92.2	112	80.1
210	746	654	673	624	508	353	43.9	71.4	179	49.6	47.0	45.3
200	643	562	561	524	426	269			71.4			
190	540	482	467	440	354	209						
180	452	401	393	370	286	163						
170	389	331	335	315	236	127						
160	339	286	286	270	195	106						
150	286	244	245	233	165	91.3						
140	240	198	212	202	142	82.2						
130	204	174	193	179	125	77.9						
120	185	162	181	164	117	73.5						
110	60.0	12.4	40.2	49.6	71.4	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 31 OEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	235	198	185	197	262	207	253	208	111	110	110	110
SCAT	40.8	43.1	48.1	56.5	58.0	69.5	55.6	53.6	36.6	35.6	41.3	44.6
HMAX	338	305	291	307	395	374	369	327	284	276	280	274
SHMAX	207	193	152	137	149	211	179	362	1075	1492	1579	1316
KM												
400					179							
390					179							
380					176	208						
370					171	208	235					
360					163	206	233					
350					151	202	228					
340	348				138	195	219					
330	345				123	186	205	508				
320	331				105	175	188	506				
310	308	310		184	88.2	163	168	495				
300	274	309	229	183	71.4	149	143	477				
290	232	300	229	179	57.4	133	117	450	1815		2327	
280	182	283	226	171	44.9	116	89.6	412	1809	2643	2327	1801
270	133	258	218	163	23.7	99.9	65.3	362	1746	2623	2293	1796
260	90.0	224	205	151		83.8	40.2	293	1612	2506	2190	1753
250	56.0	184	189	137		69.7		219	1417	2294	2011	1669
240	28.2	138	164	117		57.0		143	1111	1960	1786	1530
230		97.2	129	93.2		45.9		91.9	834	1514	1498	1353
220		67.6	97.2	69.0		31.0		55.0	592	1096	1205	1096
210		45.4	70.0	47.4		7.7		12.4	417	716	941	875
200		7.9	49.6	12.4					296	446	679	687
190			20.5						228	327	477	540
180									179	252	349	440
170									147	201	276	362
160									124	164	223	296
150									109	139	182	246
140									97.2	125	160	205
130									80.9	119	153	177
120									67.3	113	145	165
110										12.4	40.2	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 31 OEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A				A	A	A	A	A	A	A	A
HMIN	110	109	109	111	109	110		197	198			221
SCAT	47.4	56.0	63.0	51.9	59.0	54.2		49.4	47.7			51.1
HMAX	300	307	322	307	321	324		310	310			347
SHMAX	1410	1594	1760	1436	1507	1611		672	450			346
KM												
350												484
340												482
330			1669		1555	1907						471
320			1668		1555	1904		1004	688			450
310	1640	1683	1654	1612	1542	1875		1004	688			420
300	1640	1676	1618	1604	1506	1813		995	680			381
290	1620	1644	1562	1567	1446	1714		965	657			332
280	1564	1586	1479	1493	1358	1591		917	618			270
270	1470	1496	1381	1400	1258	1432		843	565			205
260	1341	1386	1265	1277	1143	1240		746	495			143
250	1193	1248	1143	1143	1029	1050		625	405			97.2
240	1040	1105	1017	981	917	834		497	310			63.4
230	875	933	891	826	785	643		347	198			40.2
220	741	777	771	691	652	477		198	120			
210	629	652	661	573	532	362		106	63.4			
200	549	551	562	484	417	286		40.2	12.4			
190	487	477	477	404	325	219						
180	427	414	405	335	251	175						
170	335	362	344	279	193	143						
160	248	315	293	232	164	121						
150	179	272	255	196	149	106						
140	162	237	226	172	140	95.9						
130	154	209	202	157	134	90.5						
120	147	188	184	148	127	85.1						
110	49.6	97.2	71.4		83.8	40.2						

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — DEC 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	28	28	29	28	29	24	23	24	26	24	26	24
HMIN	219	222	213	219	257	246	230	221	110	109	110	109
RATIO	5.8	6.5	5.8	5.2	4.4	4.4	4.9	6.5	5.5	5.1	5.0	4.7
SCAT	46.6	40.3	49.2	61.1	62.1	60.1	55.3	41.3	39.3	43.3	44.4	49.9
NMAX	384	349	266	200	192	206	235	548	1291	1787	1991	1880
HMAX	320	311	309	340	385	377	347	306	276	281	282	287
SHMAX	231	185	162	161	163	173	173	290	822	1217	1412	1477
SHINF	1315	1169	912	726	704	753	836	1836	4465	6258	7029	6780
KM												
950	26.6	23.4	18.0	17.0	19.4	19.6	18.9	36.1	73.9	104	117	113
900	34.1	30.0	23.0	21.8	24.9	25.1	24.2	46.3	94.9	134	150	145
850	43.7	38.4	29.5	27.9	31.9	32.1	31.0	59.4	122	171	192	186
800	56.0	49.3	37.8	35.7	40.8	41.2	39.7	76.1	156	220	246	238
750	71.8	63.1	48.4	45.4	52.1	52.6	50.8	97.5	200	282	315	305
700	91.7	80.6	61.9	57.6	66.1	66.9	64.9	125	256	361	404	390
650	117	103	78.9	72.5	83.5	84.7	82.5	159	327	461	516	499
600	148	130	100	90.3	104	106	104	202	417	587	657	635
550	187	164	126	111	128	131	130	255	528	743	832	803
500	232	204	156	134	152	159	160	318	663	934	1044	1007
490	242	213	163	139	157	164	166	332	693	976	1091	1052
480	252	221	169	144	161	169	172	346	724	1019	1140	1098
470	262	230	176	148	165	174	179	360	756	1063	1189	1146
460	272	239	183	153	169	179	185	375	789	1109	1240	1194
450	282	248	189	158	173	184	191	389	822	1155	1292	1243
440	292	257	196	162	176	188	197	404	856	1203	1345	1293
430	302	266	203	166	178	192	202	419	891	1251	1399	1344
420	312	275	210	170	179	195	208	434	925	1299	1453	1395
410	322	284	216	174	180	198	213	448	960	1348	1507	1446
400	331	292	222	177	179	199	217	462	995	1396	1561	1496
390	340	300	228	179	177	200	221	476	1030	1444	1614	1546
380	348	308	233	181	174	199	225	489	1064	1492	1667	1595
370	356	314	238	182	169	197	227	501	1098	1537	1718	1642
360	362	319	242	183	163	192	228	512	1130	1581	1767	1686
350	368	324	245	182	155	184	227	522	1160	1623	1813	1728
340	371	326	248	180	144	175	225	530	1189	1661	1855	1765
330	373	327	248	177	134	163	220	536	1215	1695	1893	1798
320	371	326	248	173	122	149	212	538	1237	1725	1926	1826
310	365	322	245	168	109	132	200	536	1256	1750	1953	1848
300	354	314	240	160	93.8	115	185	527	1271	1768	1972	1861
290	338	301	231	151	82.3	97.7	167	508	1279	1777	1982	1864
280	313	282	221	140	70.1	81.9	147	477	1279	1771	1977	1850
270	280	256	208	127	56.8	63.8	123	427	1259	1733	1942	1808
260	238	221	190	111	44.4	46.6	97.6	356	1209	1655	1858	1729
250	187	182	168	93.2	33.0	31.5	75.2	269	1123	1525	1720	1612
240	135	140	141	73.8	24.5	22.5	50.7	177	992	1350	1526	1452
230	88.4	92.6	107	53.4	15.5	16.1	32.2	92.5	822	1127	1281	1252
220	48.3	51.3	71.7	34.9	9.0	10.1	20.1	36.1	642	887	1016	1025
210	16.3	24.5	37.5	21.0	4.5	4.1	8.4	15.0	473	670	778	806
200	6.0	7.8	16.8	6.8	1.9	.5	5.3	8.4	341	493	587	627
190			4.7	1.3	.3		2.1	5.3	246	368	447	489
180							.1	3.9	184	283	351	394
170								3.3	143	224	283	325
160								2.8	117	182	233	272
150								2.5	101	152	194	231
140								2.2	92.4	134	166	197
130								2.0	85.7	124	152	175
120								1.3	76.9	117	141	158
110								.2	15.6	54.6	62.7	80.4

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — DEC 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	24	20	21	19	22	15	23	26	26	25	25	28
HMIN	110	110	111	111	111	112	211	200	204	230	226	217
RATIO	4.2	3.9	3.9	4.0	4.0	4.5	5.5	5.4	5.1	5.5	5.5	5.8
SCAT	54.1	57.9	59.4	59.0	59.4	54.3	49.0	47.7	51.4	46.7	47.1	44.7
NMAX	1631	1609	1627	1628	1612	1613	1470	989	663	571	516	461
HMAX	297	310	317	316	317	312	312	309	324	336	335	318
SHMAX	1455	1549	1592	1560	1510	1351	946	645	464	363	324	273
SHINF	6057	6088	6180	6153	6057	5901	5093	3435	2335	1975	1779	1572
KM												
950	103	108	114	113	113	111	101	66.8	47.9	44.5	39.1	32.2
900	132	139	146	145	145	143	129	85.6	61.4	57.0	50.1	41.2
850	170	178	187	186	186	183	165	110	78.7	73.1	64.2	52.9
800	218	228	240	239	238	235	212	141	101	93.6	82.3	67.8
750	279	293	307	306	305	300	272	180	129	120	105	86.8
700	357	374	392	391	390	384	348	231	165	153	135	111
650	456	477	500	498	496	490	443	294	210	195	171	141
600	580	606	635	632	630	621	563	373	267	246	217	179
550	732	764	799	796	793	783	709	471	335	308	272	226
500	916	953	993	991	986	973	883	587	416	379	335	280
450	1126	1165	1209	1207	1201	1186	1077	717	504	455	404	341
440	1170	1209	1253	1252	1244	1229	1117	744	521	470	417	353
430	1214	1252	1297	1296	1288	1272	1157	771	539	484	430	365
420	1259	1296	1340	1339	1330	1315	1196	797	556	497	443	377
410	1303	1338	1382	1382	1372	1356	1234	823	572	510	455	389
400	1346	1380	1423	1423	1412	1396	1272	849	588	522	466	400
390	1388	1419	1461	1462	1450	1434	1307	873	603	533	477	410
380	1429	1457	1497	1498	1486	1470	1341	896	616	541	485	420
370	1467	1492	1529	1531	1518	1503	1371	917	628	547	492	429
360	1503	1524	1557	1561	1546	1532	1399	936	638	550	497	436
350	1536	1551	1581	1585	1570	1556	1422	953	645	549	499	442
340	1565	1574	1599	1605	1588	1575	1441	967	649	543	498	446
330	1589	1591	1610	1618	1599	1588	1454	977	649	533	492	447
320	1607	1601	1612	1624	1602	1592	1460	982	643	515	478	443
310	1619	1601	1602	1616	1593	1584	1454	980	630	486	455	436
300	1621	1586	1576	1587	1566	1561	1431	965	607	448	422	422
290	1607	1549	1527	1536	1516	1516	1381	931	574	399	379	399
280	1571	1488	1455	1461	1443	1446	1301	877	529	339	327	367
270	1511	1399	1358	1364	1346	1347	1189	798	472	275	267	323
260	1421	1294	1243	1246	1231	1217	1038	700	403	208	210	265
250	1309	1167	1110	1115	1103	1068	838	579	323	145	154	201
240	1175	1025	969	969	957	899	599	444	242	92.2	106	137
230	1021	884	829	823	803	729	342	310	168	50.7	65.9	86.2
220	867	754	699	685	652	563	122	187	106	28.7	34.5	45.5
210	719	641	586	566	517	422	32.6	96.5	56.3	15.3	15.8	21.7
200	593	546	492	469	411	313	3.2	33.9	21.0	5.3	3.7	6.9
190	489	466	416	391	329	230		7.6	2.7	.5	1.4	.4
180	406	396	353	327	264	174		.5				
170	338	337	300	275	215	136						
160	283	289	255	232	178	112						
150	238	247	217	197	151	96.2						
140	202	209	189	172	133	86.4						
130	178	182	170	156	122	80.0						
120	164	166	154	137	110	68.1						
110	62.6	57.7	40.8	26.2	20.4	10.3						

TABLES OF IONOSPHERIC DATA

December 1959 - January 1960

Table 1

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) — December 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.1	<280					2.90
01		4.0	(280)					2.85
02		3.95	<275					2.90
03		3.7	<275					2.95
04		3.35	<260					2.88
05		3.3	<280					2.85
06		3.2	<290					2.90
07		4.8	250		---	----		3.05
08		8.0	220		119	----		3.35
09		9.95	220		116	2.82		3.35
10		11.0	215		114	3.00		3.20
11		11.9	215		114	3.20		3.20
12		12.0	215		114	3.30		3.15
13		11.9	220		113	3.20		3.10
14		12.0	220		115	3.00		3.10
15		11.9	220		(119)	2.70		3.12
16		11.3	220		---	----		3.15
17		10.25	210					3.10
18		9.0	220					3.10
19		7.8	225					3.10
20		6.5	230					3.00
21		5.4	<250					3.00
22		4.8	(255)					3.00
23		4.4	<260					3.00

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

Table 2

Okinawa I. (26.3°N, 127.8°E) — December 1959

Time	h'F2	foF2	h'F	foF1	h'E	fnE	foEs	(M3000)F2
00		(6.3)	270					(2.65)
01		(6.1)	265					(2.70)
02		6.1	255					3.05
03		(5.9)	240					(3.00)
04		(4.75)	250					(2.88)
05		(3.85)	300					(2.62)
06		3.8	(330)					(2.70)
07		>5.7	270					(2.90)
00		10.65	240		---	2.50		3.25
09		13.0	235		111	(3.10)		(3.30)
10		(14.25)	230		109	(3.48)	>3.5	(3.25)
11		13.65	225		109	----	4.2	(3.05)
12	---	14.5	225		109	----	4.5	(2.95)
13	---	(15.5)	225		110	----	4.6	(2.90)
14	---	(17.2)	<230		(109)	(3.60)	4.0	(2.85)
15		(17.5)	230		(110)	----	3.8	(2.92)
16		>17.15	240		110	----	3.8	(3.00)
17		>16.0	230		---	----		(3.05)
18		>14.0	210					(3.10)
19		>12.3	210					(3.00)
20		>11.65	225					(3.08)
21		>10.4	220					(3.05)
22		>9.0	220					(3.10)
23		>7.0	240					(2.90)

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

Table 3

Thule, Greenland (76.6°N, 68.7°W) — November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.7)	255					----
01		(3.8)	260					----
02		(3.2)	265					(2.58)
03		(4.15)	250					----
04		(3.7)	275					----
05		(3.95)	275					(2.60)
06		(3.05)	250					----
07		(4.0)	240					----
08		(5.2)	250					(2.75)
09		---	240					----
10		(6.3)	235		---	----		(3.00)
11		(6.6)	240		---	----		(3.20)
12		(5.0)	245		---	----	2.6	(2.95)
13		(5.9)	240		---	----		(2.80)
14		(6.55)	250				3.3	(2.95)
15		(7.0)	240				2.0	----
16		(6.4)	240					(2.90)
17		(6.0)	250					(2.90)
18		(5.3)	245				2.9	(2.92)
19		(5.2)	255				3.4	(2.78)
20		(5.3)	250					----
21		(4.3)	270					(2.80)
22		(4.2)	<275					(2.80)
23		(3.95)	<280					(2.80)

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

Table 4

Point Barrow, Alaska (71.3°N, 156.8°W) — November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.6)					5.4	(2.72)
01		(4.5)					5.0	(2.70)
02		(4.75)					4.6	(2.65)
03		(3.85)					3.5	(2.60)
04		(3.55)					4.4	(2.58)
05		(3.4)					3.4	(2.50)
06		(4.0)					3.9	(2.60)
07		(4.4)					3.9	(2.45)
08		(4.45)					4.0	(2.58)
09		(4.45)					3.9	(2.65)
10		5.05					3.5	2.85
11		6.2					2.9	2.90
12		6.45						2.08
13		7.15						2.05
14		7.6						2.00
15		8.0						2.85
16		7.5						2.85
17		6.0					2.5	2.80
18		(4.7)					3.0	(2.75)
19		(4.0)					3.0	(2.80)
20		(3.8)					3.6	(2.82)
21		(4.0)					3.6	(2.92)
22		(4.0)					3.5	(2.82)
23		(4.0)					5.4	(2.95)

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

Table 5

Anchorage, Alaska (61.2°N, 149.9°W) — November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(2.8)					1.9	(2.60)
01		(2.5)					1.6	(2.60)
02		(2.5)						(2.60)
03		(3.0)						(2.60)
04		(2.9)						(2.62)
05		(2.7)						(2.60)
06		(3.5)						(2.60)
07		(3.6)						(2.75)
08		4.9						3.00
09		6.3			115	---		3.15
10		7.8			---	---		3.20
11		8.6			---	---		3.15
12		9.7			---	---		3.18
13		10.8			---	---		3.20
14		10.45			---	---		3.20
15		9.7			---	---		3.22
16		8.9						3.15
17		7.8						3.15
18		5.9						3.10
19		4.6						3.12
20		(3.6)						3.15
21		(2.8)						(3.05)
22		(2.45)						(3.00)
23		(2.9)						(2.80)

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

Table 6

Adak, Alaska (51.9°N, 176.6°W) — November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.7	345					2.58
01		2.75	345					2.55
02		2.9	345					2.50
03		2.8	345					2.60
04		2.8	345					2.50
05		2.75	<330					2.50
06		2.9	300				1.2	2.65
07	---	4.7	<260	---	120	1.60	2.0	3.02
08	---	7.65	230	---	(120)	(2.40)		3.32
09	---	9.5	225	---	115	2.60	2.7	3.22
10	---	11.15	225	---	<119	2.00	3.0	3.20
11	---	12.3	230	---	115	2.92		3.20
12	---	12.75	225	---	115	3.00		3.20
13	---	11.95	230	---	<119	2.90		3.15
14		11.5	230		120	2.65		3.10
15		11.15	225		<125	2.25		3.25
16		>9.0	215		(145)	(1.00)		3.30
17		7.2	220		---	----	2.1	3.22
18		5.2	215		---	----	1.2	3.35
19		3.6	230					3.20
20		2.8	255					3.10
21		2.5	275					3.00
22		2.5	315					2.05
23		2.6	300					2.75

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.25	(275)					2.90
01		4.8	(270)					2.85
02		5.0	(270)					2.90
03		4.65	(265)					2.90
04		4.2	(260)					2.92
05		3.5	<260					2.98
06		3.4	<275					2.90
07		6.35	235		---	----		3.18
08		8.8	225		111	2.55		3.30
09	---	10.3	220		111	3.00		3.30
10	(234)	11.3	215		109	3.25		3.20
11	(250)	11.8	210		110	3.35		3.15
12	(237)	12.2	215		110	3.40		3.10
13	---	12.05	220		112	3.30		3.10
14	---	12.0	220		113	3.12		3.10
15	---	12.0	225		116	2.75		3.10
16		11.65	220		(119)	2.35		3.10
17		10.75	215					3.10
18		9.0	220					3.05
19		7.75	225					3.00
20		6.7	235					3.00
21		5.9	<245					2.95
22		5.6	(255)					2.90
23		5.4	<260					2.90

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

Table 8

Washington, D. C. (38.7°N, 77.1°W) November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	270					2.80
01		4.75	280					2.80
02		4.7	270					2.85
03		4.6	270					2.90
04		4.3	260					2.90
05		3.8	(260)					2.90
06		(3.2)	<280				3.0	(2.90)
07		5.9	245		(132)	1.85		3.15
08	---	9.0	235		113	2.50		3.25
09	---	10.4	230		109	2.95	3.0	3.20
10	240	11.4	220		105	3.20		3.15
11	(240)	11.75	220		105	3.35		3.10
12	(250)	12.2	220		108	3.35		3.00
13	(260)	12.3	230		107	3.35		3.00
14	---	12.1	230		109	3.20		3.00
15	---	12.0	235		114	2.90	3.0	3.00
16		12.0	230		119	2.40	2.4	3.00
17		11.05	225		---	----		3.08
18		9.45	220					3.00
19		7.9	230					2.95
20		6.9	235					3.00
21		6.0	245					2.90
22		5.5	260					2.85
23		5.3	260					2.90

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

Table 9

Okinawa I. (26.3°N, 127.8°E) November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.7)	240					(3.05)
01		>6.65	245					(2.85)
02		>6.6	250					(2.90)
03		>6.1	245					2.90
04		(5.45)	230					(3.25)
05		(3.85)	(260)					(2.80)
06		(3.4)	(325)					2.70
07		>6.45	260		---	---		(3.15)
08		11.1	240		116	---		3.25
09		(12.5)	235		110	---		3.28
10	---	(13.9)	<235		(109)	---		(3.15)
11	---	(13.9)	230		109	---		(3.10)
12	---	>14.0	<230		---	---		(2.90)
13	---	>14.4	<230		---	---		(2.85)
14	---	>14.6	<235		---	---		(2.92)
15	---	>14.4	<240		---	---		(2.95)
16		>14.4	240		---	---		----
17		(13.5)	235					(3.02)
18		>12.6	230					----
19		>11.6	230					----
20		>11.4	235					----
21		>11.5	230					----
22		>11.2	230					----
23		>9.0	235					(2.98)

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

Table 10

Maui, Hawaii (20.8°N, 156.5°W) November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	<230					3.10
01		5.4	235					3.10
02		>4.35	230				1.8	3.00
03		3.8	250				1.9	2.90
04		>3.2	<280					2.60
05		2.95	(320)					2.50
06		3.35	320					2.45
07		7.1	255		<126	2.15		3.10
08	---	11.0	240		111	2.90	3.2	3.15
09	(250)	13.05	<235		108	3.32	3.6	3.20
10	(250)	13.95	220		107	3.60	4.2	3.10
11	(260)	14.0	220		105	3.80	4.1	2.95
12	(305)	14.8	215		105	3.80	4.0	2.90
13	(300)	15.55	220	---	107	3.80	3.9	2.90
14	(295)	15.6	225		105	3.70	4.2	2.90
15	(290)	15.85	230		107	3.40	4.1	2.90
16	---	15.4	235		109	3.00	4.0	2.95
17		14.0	230		(119)	2.42	4.3	3.05
18		13.0	215				4.2	3.10
19		11.95	220				4.2	3.15
20		10.55	220				3.1	3.00
21		10.45	235				3.4	3.05
22		9.65	220				2.6	3.20
23		7.65	220				1.8	3.10

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

Table 11

Baguio, P. I. (16.4°N, 120.6°E) November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(11.0)	245					(3.02)
01		10.2	245					3.05
02		9.6	245					3.10
03		7.1	230					3.12
04		5.45	250					2.78
05		5.05	270					2.70
06		6.5	300					2.80
07		10.4	270		(129)	(2.60)	2.9	2.95
08		>13.2	260		(119)	(3.20)	3.6	2.90
09		14.85	(250)		119	(3.55)	4.2	(2.80)
10	---	>14.4	(245)		119	(3.80)	4.4	(2.50)
11	---	(14.3)	<245		119	(3.90)	4.4	(2.35)
12	---	>13.2	(240)		(119)	(3.90)	4.4	(2.25)
13	---	>13.5	(240)		(119)	(3.80)	4.3	(2.35)
14	---	>13.3	(245)		119	(3.60)	4.0	2.45
15	---	(13.8)	255		<121	(3.25)	3.8	(2.40)
16		(13.8)	270		(121)	2.82	3.4	(2.50)
17		(13.75)	290		<142	(2.15)	3.2	(2.58)
18		>12.0	320				2.1	(2.50)
19		>11.0	330					----
20		>11.0	300					----
21		>12.0	270					(2.78)
22		>12.0	250					(2.95)
23		(11.8)	250					(2.95)

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 12

Huancayo, Peru (12.0°S, 75.3°W) November 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(9.95)	330					(2.82)
01		(9.1)	300					(2.90)
02		(9.0)	255					(3.05)
03		7.3	230					3.15
04		6.7	230					3.20
05		5.6	230					3.20
06		8.8	255		129	2.25	3.6	3.15
07		11.5	240		119	3.00		3.10
08		13.1	230		113	3.50	7.2	2.90
09	---	14.1	220		111	(3.80)	8.6	2.65
10	---	14.4	215		---	(4.00)	9.3	2.50
11	---	14.3	210	---	---	(4.10)	9.2	2.30
12	---	13.9	210	---	---	(4.15)	9.4	2.25
13	---	12.95	210		---	(4.10)	9.6	2.20
14	---	12.2	210		---	(3.90)	8.2	2.20
15		12.3	215		---	(3.65)	8.1	2.22
16		11.9	230		---	(3.20)	7.7	2.25
17		11.6	260		115	(2.70)	6.4	2.22
18		11.5	285		<155	1.75	4.5	2.30
19		>10.5	350					2.25
20		9.3	405					2.15
21		8.8	400					2.30
22		(9.1)	405					(2.45)
23		---	355					----

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

Table 14

Point Barrow, Alaska (71.3°N, 156.8°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		----					6.6	----
01		(4.95)					4.8	(2.60)
02		(4.4)					4.6	(2.60)
03		(4.5)					4.7	(2.55)
04		(4.65)					4.0	(2.60)
05		(4.5)					3.6	(2.50)
06		(4.0)					3.7	(2.45)
07		(4.55)					3.6	(2.60)
00		(5.2)					3.8	(2.75)
09		6.0					3.7	2.90
10		6.0						2.92
11		6.7						2.95
12		7.1						2.85
13		7.4						2.82
14		8.3						2.85
15		8.55						2.85
16		8.7						2.90
17		7.7					2.0	2.90
10		6.5					2.5	2.85
19		(5.6)					3.5	(2.80)
20		(5.25)					3.6	(2.75)
21		(4.3)					4.0	(2.75)
22		(4.3)					5.1	(2.85)
23		(4.9)					4.7	(2.70)

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

Table 15

Reykjavik, Iceland (64.1°N, 21.8°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		----	(340)				3.7	----
01		----	(375)		---	----	4.1	----
02		>4.3	(390)		---	----	3.7	----
03		(4.3)	350		---	----	3.2	----
04		(4.2)	300					----
05		(4.05)	300					(2.80)
06		(4.0)	(300)		---	----		(2.72)
07		4.75	<275		---	----		3.00
08		5.8	(255)		---	----		3.10
09	---	6.65	(250)	---	121	2.40		3.00
10	---	7.2	(250)	---	114	(2.60)		3.00
11	(405)	8.25	<250	---	(123)	(2.75)		2.98
12	<325	8.5	240	---	119	(2.80)		3.00
13	(390)	8.3	240	---	121	----		3.02
14	(425)	8.7	240	---	119	2.70		3.00
15	---	8.5	245	---	121	----		3.00
16	---	8.6	250	---	---	----		3.05
17	---	6.7	260	---	---	----	1.4	3.00
18	---	(5.0)	275	---	---	----	2.6	(2.90)
19		(5.0)	320		---	----	3.0	2.80
20		(4.5)	(330)		---	----	3.1	(2.80)
21		(5.6)	330		---	----	3.6	(2.62)
22		>4.95	(325)				4.1	(2.65)
23		(4.85)	(370)				>4.1	(2.60)

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

Table 17

Adak, Alaska (51.9°N, 176.6°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4	320					2.55
01		3.3	325				1.2	2.58
02		3.4	340					2.55
03		3.4	320					2.55
04		3.35	325				1.5	2.50
05		3.3	320				1.5	2.55
06		4.2	280		130	1.62		2.75
07	---	6.3	235	---	(114)	2.20	2.2	3.15
08	---	8.3	230	---	112	2.60		3.20
09	(480)	9.7	235	---	110	2.95	3.1	3.20
10	(470)	11.0	225	---	110	3.10	3.3	3.15
11	---	11.1	225	---	106	3.18	3.4	3.05
12	---	11.5	225	---	110	3.20	3.4	3.05
13	---	11.0	230		110	3.10	3.3	3.05
14		10.7	230		110	2.92	3.0	3.10
15		10.0	230		112	2.70		3.10
16		9.8	230		(117)	2.32		3.15
17		8.6	225		<139	1.75	1.9	3.15
18		7.2	225		---	----	1.7	3.15
19		6.0	230				1.5	3.15
20		4.8	240				1.3	3.10
21		4.1	255				1.3	3.05
22		3.65	<280					2.80
23		3.35	310					2.65

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Fairbanks, Alaska (64.9°N, 147.8°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.4)					4.0	(2.90)
01		(4.3)					4.1	----
02		(3.6)					4.0	(2.60)
03		(3.6)					4.2	(2.65)
04		(3.7)					2.6	(2.60)
05		---					3.3	----
06		(3.6)					3.0	----
07		4.95						3.00
08		(6.0)						(3.08)
09		6.2						3.00
10		7.0						3.05
11		7.65						3.00
12		8.0						3.00
13		8.75						3.00
14		9.0						3.00
15		9.3						3.00
16		8.6						3.05
17		(8.2)						(3.10)
10		(6.0)						(3.00)
19		(6.0)						(3.10)
20		(5.6)					2.9	(3.10)
21		(4.5)					2.6	(3.10)
22		(4.8)					3.6	(3.05)
23		(4.0)					3.8	(2.90)

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

Table 16

Anchorage, Alaska (61.2°N, 149.9°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.3)						(2.70)
01		(3.2)					2.5	(2.55)
02		(3.0)					2.2	(2.55)
03		(3.0)					1.4	(2.50)
04		(2.8)						(2.50)
05		(2.9)						(2.50)
06		(3.5)						(2.60)
07		(4.7)			---	----		(3.00)
08		5.9		---	124	2.30		3.02
09		6.6		---	117	>2.55		3.05
10		7.45		---	115	>2.72		3.02
11		8.4		---	119	2.80		2.95
12		8.9		---	119	2.85		3.00
13		9.05		---	117	2.80		3.00
14		9.5		---	119	2.70		3.00
15		9.6			121	2.40		3.00
16		9.5			(139)	1.95		3.10
17		8.75			---	----		3.00
10		7.2						3.00
19		6.45						3.00
20		5.05						3.00
21		4.1						3.00
22		(3.7)						(2.90)
23		3.1						2.75

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

Table 18

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	<275					2.85
01		5.7	<280					2.80
02		5.4	<265					2.85
03		5.0	(260)					2.85
04		4.5	(265)					2.85
05		4.1	<295					2.80
06		4.8	<255					3.00
07		7.5	230		<119	(2.52)		3.28
08	---	9.4	220	---	112	2.90		3.30
09	---	10.4	215	---	109	3.20		3.20
10	(245)	10.9	205	---	107	3.45		3.10
11	(253)	11.3	200	---	109	3.50		3.05
12	---	11.7	210	---	109	3.50		3.00
13	(255)	11.8	215	---	111	3.50		3.00
14	---	11.65	220		110	3.40		3.00
15	---	>11.5	225		116	3.05		3.00
16	---	>11.3	230		117	2.60		3.05
17		11.0	225					3.10
18		9.7	220					3.05
19		8.2	225					2.95
20		7.2	235					2.95
21		6.6	(250)					2.90
22		6.2	<260					2.85
23		5.85	<270					2.82

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

Table 19

Washington, D. C. (38.7°N, 77.1°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	280					2.80
01		5.5	280					2.75
02		5.1	280					2.75
03		4.95	270					2.80
04		4.5	270					2.80
05		(4.0)	270					(2.75)
06		4.4	265		---	----		2.90
07		7.25	240		119	2.20		3.20
08	---	9.4	230		109	2.80	2.8	3.20
09	(245)	10.4	220		109	3.10	3.2	3.20
10	(250)	11.0	215		107	3.30		3.10
11	(260)	11.3	210		105	3.45		3.00
12	(280)	11.8	220		105	3.50		2.95
13	(270)	12.0	220		105	3.45		2.90
14	(270)	11.9	230		105	3.35		2.90
15	---	11.7	230		109	3.10		2.90
16	---	11.6	240		111	2.70		2.95
17	---	11.0	235		130	2.10		3.05
18		9.7	220					3.00
19		8.3	230					3.00
20		7.2	240					2.88
21		6.6	250					2.90
22		6.2	260					2.80
23		5.8	270					2.80

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

Table 20

White Sands, New Mexico (32.3°N, 106.5°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.8	(290)					2.70
01		4.8	(295)					2.70
02		4.8	<290					2.75
03		4.7	<290					2.75
04		4.5	<290					2.70
05		4.45	<295					2.72
06		5.3	270		---	----		2.90
07		8.55	240		121	2.30	>2.3	3.30
08		10.2	230		111	2.90		3.22
09		11.15	215		111	(3.22)		3.15
10		11.65	210		109	3.50		3.02
11		12.0	210		111	3.60		2.90
12	---	12.5	210		111	3.70		2.90
13	---	12.5	220		111	3.70		2.90
14	---	12.5	230		114	3.50		2.85
15		12.35	235		111	3.22	3.3	2.90
16		12.2	240		115	2.80	3.0	2.98
17		11.6	230		<125	2.20		3.05
18		10.2	215					3.10
19		7.6	210					3.05
20		6.35	245					2.95
21		5.3	250					2.95
22		5.0	(270)					2.80
23		4.7	<280					2.75

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Okinawa I. (26.3°N, 127.0°E) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.4	240					(2.90)
01		10.4	240					(2.90)
02		8.5	235					2.90
03		8.0	235					2.92
04		6.3	225					3.10
05		4.7	235					2.80
06		4.6	(280)					2.80
07		0.5	240		---	----		3.20
08		11.2	230		109	3.00	3.2	3.30
09		12.3	230		(109)	3.40	>3.6	3.12
10		13.5	<225		(110)	(3.70)	4.0	3.00
11		14.2	210		(109)	----	4.0	2.95
12		14.55	210		111	----	>3.7	2.85
13	(320)	(15.4)	210		(114)	(3.90)		(2.80)
14	---	(16.7)	230		111	(3.80)		(2.00)
15	---	>17.0	230		(111)	(3.52)	>3.6	(2.80)
16	---	(16.5)	240		(115)	(3.20)	3.6	(2.90)
17		(15.5)	240		117	----	3.1	(2.95)
18		(14.5)	240				2.3	(3.00)
19		>14.4	240					(2.90)
20		>14.2	230					(2.80)
21		>14.2	235					(2.88)
22		>13.2	230					(2.90)
23		>12.6	240					(2.88)

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

Table 22

Maui, Hawaii (20.8°N, 156.5°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.4	225					3.08
01		6.05	235					3.05
02		5.0	235					2.95
03		4.3	245					2.85
04		3.4	(260)					2.70
05		3.1	315					2.60
06		3.9	320					2.60
07		8.2	250		<123	2.30	2.4	3.20
08	---	10.7	235		110	3.00	3.3	3.20
09	---	12.5	220		107	3.40	3.7	3.10
10	(290)	13.2	215		107	3.65	4.0	3.00
11	(280)	14.2	215		107	3.80	4.1	3.00
12	(300)	14.4	210		107	3.90	4.2	2.90
13	(320)	15.0	210	---	107	3.90	4.0	2.85
14	(320)	16.1	215	---	(107)	3.80	4.0	2.85
15	(290)	15.7	230		107	3.50	4.0	2.90
16	(260)	15.1	235		(111)	3.10	4.0	2.95
17	---	14.0	235		<115	2.50	4.1	3.00
18		13.2	230		---	----	4.5	3.05
19		12.6	230				3.9	3.05
20		12.3	230				3.0	3.10
21		11.2	230				2.2	3.05
22		10.5	240					3.10
23		9.0	225					3.20

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

Table 23

Baguio, P. I. (16.4°N, 120.6°E) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.0	250					3.00
01		11.8	245					3.08
02		10.5	235					3.20
03		7.3	225					3.10
04		5.95	245				1.7	2.90
05		4.6	255				1.8	2.80
06		6.8	285		<142	(1.85)		2.90
07		10.5	265		125	(2.68)	2.9	3.00
08		12.5	250		119	(3.25)	3.9	2.85
09		13.9	240		117	(3.60)	4.2	2.65
10		14.5	230		118	(3.00)	4.6	2.42
11		14.0	230		(119)	(3.95)	4.4	2.28
12	---	13.5	(230)	---	(119)	(4.00)	4.2	2.15
13		13.7	230		(119)	3.88		2.25
14		14.05	230		119	3.70		2.40
15		>14.2	250		119	3.40	3.6	2.45
16		14.5	265		121	3.00	3.5	(2.45)
17		>14.1	280		129	2.20	3.1	(2.50)
18		(14.1)	320				2.4	(2.35)
19		>13.0	370					(2.35)
20		>13.25	310					(2.58)
21		13.5	270					(2.70)
22		14.2	260					2.95
23		13.5	250					3.00

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 24

Talara, Peru (4.6°S, 81.3°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>11.7	220				4.2	3.05
01		10.45	230				3.2	3.10
02		0.55	230				3.2	3.15
03		6.8	230				2.6	3.10
04		5.85	240				2.1	3.20
05		5.15	255				2.3	3.05
06		6.0	275		---	----	2.0	2.90
07		9.6	250		123	2.65		3.10
08		12.2	235		119	3.30		2.90
09		13.5	225		114	3.70		2.78
10		14.0	215		111	3.95		2.50
11	---	>14.1	210	---	111	4.05		2.30
12	---	>13.6	210	---	111	4.10		2.25
13	---	13.3	205		111	4.08		2.25
14	---	13.1	205		109	4.00		2.25
15	---	12.8	210		109	3.65	4.0	2.20
16	---	12.55	220		111	3.30	4.1	2.20
17	---	12.3	250		115	2.05	3.2	2.25
18		>12.0	275		<155	2.10	3.6	2.35
19		(12.0)	320				2.0	(2.40)
20		(11.8)	335					(2.40)
21		>11.45	<290				1.7	(2.68)
22		>12.0	240				2.1	2.80
23		11.75	220				4.0	2.95

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

Table 25

Huancayo, Peru (12.0°S, 75.3°W) October 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.65	225					3.00
01		7.9	235					3.02
02		7.5	235					3.05
03		7.3	240					3.08
04		6.5	240					3.12
05		5.4	235					3.20
06		8.0	255		131	2.05		3.10
07		11.25	240		119	2.95		3.10
08		12.9	225		117	(3.45)	7.8	2.80
09		13.5	220		---	(3.75)	8.6	2.68
10		>13.4	210		---	(4.00)	9.5	2.40
11	---	12.0	205	---	---	(4.05)	9.7	2.30
12	---	11.6	200	---	---	(4.00)	9.6	2.25
13	---	11.4	200	---	---	(4.00)	9.4	2.25
14		11.3	200		---	(3.85)	8.5	2.25
15		11.3	200		---	(3.60)	7.8	2.25
16		11.2	240		---	(3.30)	7.3	2.25
17		11.1	260		117	2.60	6.2	2.30
18		11.3	290		---	(1.60)		2.30
19		10.0	375					2.25
20		9.3	370					2.32
21		9.6	290					2.60
22		10.1	265					2.90
23		9.65	230					2.95

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

Table 26

Thule, Greenland (76.6°N, 68.7°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.95)	290		---	----	2.4	(2.55)
01		----	270		---	----	3.4	----
02		(5.05)	280		137	----		(2.55)
03		(4.05)	280		(131)	(1.70)		----
04		(5.5)	275		130	1.82	2.9	(2.70)
05		(5.2)	265		118	1.90	3.4	(2.90)
06	---	(4.8)	250	---	117	2.15	3.5	(2.85)
07	---	(5.5)	250	---	111	2.32	4.1	(2.95)
08	6	5.4	250	---	110	2.45	4.2	2.80
09	(425)	(5.5)	245	---	111	2.58	3.0	(2.70)
10	(450)	(6.35)	245	4.0	111	2.70	4.8	(2.65)
11	(515)	(5.6)	240	(4.1)	111	2.70	3.7	(2.80)
12	445	(5.7)	240	4.3	111	2.70	3.4	(2.65)
13	(465)	(5.45)	240	4.1	111	2.70		(2.72)
14	(415)	(5.5)	240	4.2	113	2.60	3.6	(2.60)
15	(400)	(6.0)	240	4.1	116	2.45	3.9	(2.70)
16	(420)	(5.7)	250	---	<121	2.30	4.3	(2.60)
17	---	(5.9)	260	---	(121)	2.10	3.6	(2.70)
18	---	(5.8)	260	---	(129)	1.90	4.2	(2.70)
19		(5.6)	270		<155	----	3.6	(2.70)
20		(5.8)	290		---	----	3.5	(2.70)
21		---	270		---	----	3.2	----
22		(5.1)	270		---	----	2.9	(2.55)
23		(5.45)	280		---	----		(2.70)

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

Table 27

Point Barrow, Alaska (71.3°N, 156.6°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	fnE	foEs	(M3000)F2
00		(6.0)					7.8	----
01		(5.0)					5.6	----
02		(5.4)					5.0	(2.50)
03		---					4.5	
04		(4.5)					4.1	----
05		---					3.7	----
06		(4.8)					4.5	----
07		(4.8)					3.6	(2.45)
08		(5.95)						(2.52)
09		(5.7)						(2.62)
10		5.8						2.65
11		5.35						2.55
12		5.75						2.55
13		5.55						2.45
14		6.05						2.55
15		6.4						2.65
16		6.6						2.70
17		6.8						2.80
18		6.5					2.8	2.88
19		(5.7)					4.8	(2.80)
20		(4.6)					4.6	(2.68)
21		(3.8)					6.2	(2.45)
22		(4.6)					5.2	(2.60)
23		(4.8)					6.5	(2.62)

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

Table 28

Godhavn, Greenland (69.3°N, 53.5°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.7)			---	----		(2.50)
01		(3.45)			---	----		(2.60)
02		(3.7)			---	----		----
03		(3.2)			---	----		----
04		(3.25)			---	----		----
05		(4.0)		---	---	----		----
06		(3.9)		---	100	----		----
07		(4.6)		---	107	(2.12)		----
08		(4.8)		(3.6)	107	(2.35)		----
09		(5.35)		(3.8)	105	2.70		----
10		(6.5)		(4.0)	105	2.90		----
11		(6.8)		(4.2)	104	(2.95)		(2.75)
12		(6.8)		(4.1)	103	3.00		----
13		(6.7)		(4.2)	103	(3.00)	3.0	----
14		(6.6)		(4.4)	103	3.00	3.0	----
15		(6.7)		(4.3)	105	2.80		----
16		(6.5)		(4.3)	105	2.70	4.0	2.82
17		(6.6)		---	<111	(2.52)	2.6	(2.75)
18		(6.8)		---	(111)	(2.25)	4.0	(2.75)
19		(6.55)			<125	(1.75)	3.0	(2.72)
20		(6.75)					5.0	(2.50)
21		(6.3)					3.8	(2.60)
22		(6.0)			---	----		(2.60)
23		(4.2)			---	----		----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 29

Fairbanks, Alaska (64.9°N, 147.8°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	fnE	foEs	(M3000)F2
00		---					4.8	----
01		---					4.4	----
02		---					4.6	----
03		---					4.9	----
04		---					4.2	----
05		(4.6)					4.3	(2.50)
06		(5.2)						(2.65)
07		(5.55)						(2.52)
08		(5.8)						(2.60)
09		6.15						2.70
10		6.4						2.75
11		6.1						2.68
12		5.65						2.58
13		5.85						2.60
14		6.0						2.60
15		6.45						2.70
16		(6.65)						(2.78)
17		(6.7)						(2.85)
18		(6.2)						(2.90)
19		(5.7)						(2.85)
20		(5.85)					3.1	(2.85)
21		----					3.6	----
22		(5.15)					4.0	(2.70)
23		----					4.6	----

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

Table 30

Reykjavik, Iceland (64.1°N, 21.8°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00								
01		----	(405)				4.3	----
02		>4.65	(420)				4.3	----
03		>4.5	<440				4.0	----
04		----	(410)				4.5	----
05		(4.5)	(380)				4.4	----
06		(4.3)	(330)		---	----	3.6	(2.62)
07		4.9	(300)		---	----		2.85
08	---	5.35	(270)	---	---	----		2.90
09	---	6.1	(260)	---	<121	(2.65)		2.90
10	(480)	6.2	(245)	---	117	(2.90)		2.85
11	(500)	6.6	(240)	1.7	117	3.00		2.78
12	520	6.7	<240	4.6	113	3.20		2.70
13	485	6.85	230	4.6	115	3.20		2.70
14	530	7.2	230	4.7	111	3.20		2.70
15	<485	7.2	235	---	115	3.15		2.70
16	(465)	7.2	240	4.4	113	3.00		2.65
17	(370)	6.6	250	---	115	2.90		2.78
18	---	6.2	280	---	121	2.70		2.85
19	---	5.9	300		121	(2.68)	4.1	2.82
20	---	(5.75)	<320		125	----	3.6	2.75
21		5.5	(350)				3.8	(2.60)
22		----	<390				5.4	----
23		----	(360)				4.7	----
		----	<405				4.2	----

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

Table 31

Narsarssuak, Greenland (61.2°N, 45.4°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)					5.0	(2.55)
01		(4.0)			---	----	3.7	(2.50)
02		(3.9)			---	----	3.6	(2.50)
03		(4.3)			---	----	3.6	(2.58)
04		(4.2)			---	----	3.4	(2.70)
05		(4.7)			(109)	----	3.8	(2.80)
06		4.9		---	109	(2.20)	3.6	2.90
07		5.6		---	<121	2.70		2.90
08		5.85		---	(111)	2.95		2.90
09		5.85		4.4	112	3.15		2.80
10		6.5		4.5	113	3.30		2.80
11		7.0		4.6	111	3.30		2.65
12		7.7		(4.9)	107	3.30		2.62
13		7.0		4.8	107	3.30		2.65
14		6.95		4.6	109	3.20		2.60
15		6.9		4.4	110	3.05		2.70
16		(6.6)		---	107	2.90	3.2	(2.75)
17		(6.5)		---	113	2.70		2.72
18		(5.95)		---	116	(2.75)	3.6	(2.70)
19		(5.9)			115	----	4.6	(2.70)
20		(5.35)			---	----	5.8	(2.60)
21		(5.1)			---	----	5.2	(2.50)
22		(5.1)			---	----	5.0	(2.55)
23		(5.1)					5.2	(2.45)

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

Table 32

Adak, Alaska (51.9°N, 176.6°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.3	310					2.50
01		4.3	320					2.50
02		4.2	340					2.45
03		4.1	340					2.50
04		4.0	350				1.2	2.45
05	---	4.1	330	---	(111)	----	1.6	2.50
06	---	5.1	265	---	111	2.10	2.2	2.75
07	(590)	6.25	250	4.0	109	2.65	2.8	2.90
08	(540)	6.75	235	4.6	105	3.00	3.2	2.85
09	(655)	7.3	225	4.7	104	3.20	3.6	2.90
10	430	7.8	220	4.8	102	3.40	3.6	2.80
11	500	8.35	215	4.9	101	3.48	3.7	2.80
12	(640)	8.8	220	5.0	101	3.50		2.82
13	390	9.0	220	5.1	101	3.50		2.85
14	---	8.8	225	---	101	3.32		2.90
15	---	8.4	235	---	102	3.10		2.90
16	---	8.25	240		102	2.80		2.90
17	---	8.05	245		(111)	2.30	2.4	3.00
18		7.7	245		<125	(1.75)	2.0	3.00
19		6.75	240		---	----	1.7	3.00
20		6.2	245		---	----	1.5	2.90
21		5.65	260		---	----	1.2	2.90
22		4.7	<270		---	----		2.70
23		>4.4	300		---	----		2.55

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 33

White Sands, New Mexico (32.3°N, 106.5°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.6	325					2.40
01		5.5	<345					2.45
02		5.4	330					2.45
03		5.1	325					2.48
04		5.0	345					2.40
05		1.9	330					2.42
06		6.0	290		<149	----	1.9	2.75
07	---	8.25	260	---	124	2.70	2.9	2.90
08	---	9.2	250	---	121	3.20	3.3	2.90
09	(360)	9.3	240	---	119	(3.60)		2.80
10	(360)	9.8	225	---	<119	3.75	>3.8	2.65
11	(395)	10.7	230	---	117	(3.85)		2.60
12	(380)	11.3	235	---	117	3.98	3.6	2.60
13	400	11.4	235	---	119	3.90		2.60
14	(390)	10.9	240	---	119	3.80		2.60
15	---	10.9	250		117	3.55		2.65
16	---	10.3	255		119	3.20		2.70
17		9.9	265		125	2.70	2.8	2.75
18		9.6	260		<135	----	2.0	2.80
19		8.1	250				2.1	2.75
20		6.7	260					2.65
21		6.2	295					2.60
22		5.8	310					2.55
23		5.7	325					2.50

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 34

Grand Bahama I. (26.6°N, 78.2°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.85	280					2.65
01		6.9	275					2.78
02		6.55	255					2.80
03		5.9	260					2.72
04		5.65	<280					2.65
05		5.35	290					2.68
06		6.25	280		<131	(1.90)	1.9	2.78
07		>9.0	240		115	2.68	2.9	3.10
08	---	10.0	230	---	109	3.15	3.3	3.05
09	---	10.6	215	---	108	3.50	3.6	2.85
10	(340)	11.3	210	---	110	3.85		2.80
11	(320)	11.3	210	(6.0)	107	4.00		2.75
12	(330)	11.85	220	---	107	4.00		2.75
13	(340)	12.1	220	6.0	107	4.00		2.75
14	(350)	11.85	220	---	109	3.90		2.70
15	(340)	(11.5)	230	---	107	3.70		2.70
16	---	(11.5)	230	---	110	3.30	3.4	2.75
17		(10.3)	240		111	2.78	3.0	2.85
18		>9.0	240		121	2.08	2.1	(2.90)
19		8.95	230					2.82
20		7.8	<240					2.70
21		7.2	280					2.70
22		>7.0	280					2.75
23		7.0	270					2.70

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

Table 35

Maui, Hawaii (20.8°N, 156.5°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.85	260					2.95
01		8.0	255					2.85
02		7.2	250					2.90
03		6.35	250					2.90
04		4.95	<265					2.80
05		4.55	<300					2.60
06		4.8	315		129	----		2.68
07	---	7.85	245	---	115	2.50	2.5	3.08
08	---	10.05	230	---	111	3.10	3.7	3.00
09	---	11.5	225	---	109	3.55	4.2	2.90
10	---	12.1	220	---	108	3.80	4.4	2.68
11	(375)	12.8	215	---	109	4.00	4.5	2.70
12	(350)	13.6	210	(6.4)	109	4.10	4.5	2.75
13	355	14.3	<220	(6.6)	109	4.08	4.3	2.75
14	345	14.6	220	(6.4)	109	4.00	4.2	2.75
15	340	14.5	230	---	109	3.85	4.2	2.80
16	330	14.55	235	---	109	3.50	4.0	2.85
17	285	14.75	245		112	2.90	3.6	2.90
18		13.8	250		118	2.15	3.8	3.00
19		12.8	240				3.2	3.02
20		11.8	245				3.2	2.90
21		11.45	250				2.4	2.85
22		10.5	260				2.2	2.85
23		9.55	260					2.90

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

Table 36

Talara, Peru (4.6°S, 81.3°W) September 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.6	230					3.05
01		10.55	230					3.10
02		8.6	235					3.05
03		7.7	240					3.15
04		6.5	240					3.20
05		5.1	250					3.00
06		5.1	280					2.70
07		8.2	250		125	2.50		3.00
08		10.6	235		119	3.30		2.80
09		12.05	220		115	3.75		2.55
10		12.7	210		111	4.00		2.35
11		12.95	210		109	4.15		2.25
12		12.95	<205	---	109	4.20		2.20
13		12.6	205	---	109	4.15		2.15
14		12.7	200	---	109	4.00		2.15
15		12.4	205	---	109	3.85		2.18
16		12.1	220		110	3.45	3.8	2.15
17		11.95	245		115	3.00		2.15
18		11.7	275		<149	2.20		2.20
19		>11.0	350					(2.30)
20		(11.5)	375					(2.30)
21		>11.65	300					(2.58)
22		>12.0	230				2.0	2.80
23		11.9	225					2.98

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

Table 37

Boulder, Colorado (40.0°N, 105.3°W) — August 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.95	300				3.0	2.55
01		4.9	315				2.2	2.50
02		4.75	310				2.2	2.55
03		4.5	310				2.4	2.55
04		4.2	<320				2.8	2.52
05	---	4.3	305	---	(119)	(1.65)	2.0	2.60
06	395	5.35	250	4.0	(107)	2.30	2.8	2.72
07	440	6.0	235	4.5	103	2.90	3.7	2.70
08	410	6.6	220	5.0	101	3.32	3.9	2.68
09	495	6.5	210	5.2	101	3.60	4.2	2.50
10	440	7.2	200	5.3	101	3.80	4.0	2.60
11	450	7.2	<210	5.6	101	3.90	4.2	2.55
12	450	7.1	215	5.5	101	4.00		2.50
13	440	7.4	220	5.5	101	4.00	4.3	2.50
14	440	7.35	215	5.5	101	3.90		2.52
15	420	7.2	220	5.4	101	3.70	3.8	2.60
16	420	7.3	<230	5.1	101	3.48	3.8	2.65
17	350	7.1	230	4.8	101	3.10	3.5	2.70
18	---	7.2	250	---	(109)	2.40	3.1	2.80
19		7.3	250		---	----	3.6	2.85
20		7.0	250				4.0	2.80
21		6.4	250				3.5	2.72
22		5.7	270				3.4	2.70
23		5.05	290				3.2	2.60

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 38

Talara, Peru (4.6°S, 81.3°W) — August 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.0	215					2.85
01		9.4	235					3.02
02		9.3	240					3.10
03		8.15	240					3.15
04		6.75	240					3.20
05		5.85	245					3.10
06		5.1	260				2.4	2.85
07		7.3	265		131	2.25	2.4	2.85
08		9.2	240		119	3.10	3.2	2.78
09		10.3	230		115	3.60		2.45
10	---	10.8	215	---	111	3.95		2.30
11	---	11.3	215	---	111	4.10	4.1	2.20
12	---	11.7	210	(7.0)	111	4.20		2.15
13	---	12.0	210	(6.5)	111	4.20		2.15
14	---	12.0	210	(6.1)	111	4.10		2.10
15	---	12.0	215	(6.2)	110	3.90		2.15
16	---	11.75	<225	---	111	3.55		2.10
17		11.6	<240		115	3.05	3.1	2.15
18		11.4	270		(139)	2.30	2.3	2.10
19		(10.9)	345				1.9	2.15
20		>11.0	365					2.20
21		(11.4)	315				1.7	2.45
22		>11.65	260					2.65
23		(11.6)	230					(2.90)

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

Table 39

White Sands, New Mexico (32.3°N, 106.5°W) — July 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	320				3.1	2.50
01		6.0	300				3.1	2.55
02		5.9	300				2.5	2.52
03		5.8	310				2.9	2.50
04		5.5	<305				2.8	2.55
05		5.3	300		---	----	3.0	2.62
06	(420)	6.05	250	3.8	113	2.50	2.6	2.72
07	(445)	6.0	235	4.4	105	3.02	3.8	2.70
08	440	7.35	<240	5.0	104	(3.50)	4.2	2.55
09	440	7.9	(220)	5.3	103	3.70	4.8	2.55
10	425	8.2	(210)	5.5	105	(3.90)	5.2	2.50
11	430	8.3	(220)	5.5	105	----	4.5	2.50
12	440	8.3	(210)	5.6	105	----	4.5	2.50
13	440	8.5	215	5.6	107	----	4.5	2.50
14	420	8.4	225	5.5	<109	4.00	4.2	2.50
15	420	8.0	225	5.4	<108	3.80	4.0	2.55
16	<405	8.1	230	5.2	105	3.60	3.8	2.55
17	390	8.0	(245)	4.9	105	3.30	4.2	2.60
18	(370)	7.9	(260)	---	112	----	4.0	2.70
19		7.9	(270)		110	----	4.6	2.75
20		7.5	(270)				3.9	2.72
21		7.0	(270)				3.5	2.60
22		6.7	<300				4.4	2.55
23		6.25	300				3.0	2.50

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Singapore, British Malaya (1.3°N, 103.8°E) — June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.2	240				3.6	2.95
01		10.8	235				3.5	3.20
02		8.6	240				3.4	3.10
03		7.2	240				3.1	3.05
04		6.0	240				2.4	3.05
05		5.1	240		---	----	2.2	3.00
06	---	7.2	290		110	----	2.7	2.90
07	---	10.9	255		115	2.70	3.0	2.95
08	---	13.2	245		110	3.35		2.95
09	---	14.5	235		105	3.75	4.1	2.80
10	---	14.6	225		105	4.00	4.3	2.50
11	300	14.6	220	(5.6)	105	4.20		2.30
12	290	13.9	220	---	105	4.20		2.05
13	---	13.4	220	---	105	4.20	4.2	2.00
14	370	12.6	210	---	105	4.00	4.2	2.05
15	---	12.6	230		105	3.75	3.9	2.10
16	---	12.4	245		110	3.40	3.4	2.15
17	---	12.6	250		115	2.75	3.2	2.25
18	---	13.0	270		115	----	2.8	2.40
19		13.2	300				3.2	2.50
20		13.1	300				2.8	2.50
21		13.4	260				3.1	2.70
22		13.0	235				4.2	2.80
23		13.2	240				4.0	2.80

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 41

Juliaca, Peru (15.5°S, 70.2°W) — May 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.0	215				4.0	3.08
01		8.0	225				3.7	3.10
02		7.0	220				3.9	3.20
03		5.85	225				3.8	3.15
04		5.4	230				3.8	3.20
05		4.6	230				4.0	3.20
06		6.6	270		(139)	1.00	4.4	3.00
07		10.5	240		113	2.72	4.4	3.05
08		12.55	230		109	3.30	7.4	2.88
09		13.3	215		---	(3.70)	8.0	2.68
10		13.1	210		---	(3.90)	9.0	2.45
11		12.55	210		---	----	9.2	2.25
12		12.0	200		---	----	9.2	2.25
13		11.4	210		---	(3.95)	9.0	2.20
14		11.5	210		---	(3.70)	9.0	2.25
15		11.5	225		---	(3.45)	0.2	2.30
16		11.5	245		---	(2.95)	7.8	2.32
17		11.25	270		130	(2.05)	4.8	2.30
18		10.6	330					2.25
19		9.6	325					2.25
20		9.6	280				3.1	2.45
21		9.3	230				3.6	2.75
22		0.9	225				3.9	2.92
23		9.1	220				4.0	3.00

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 42

Sodankyla, Finland (67.4°N, 26.6°E) — April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.8)	355				3.7	(2.35)
01		---	365				4.2	----
02		---	375		---	---	4.4	----
03		(5.6)	365		---	---	3.2	(2.40)
04		5.2	360		---	E	3.2	2.50
05		5.0	305		---	E	3.6	2.60
06		6.4	270		120	2.40	3.8	2.65
07		6.9	260		115	2.70	4.0	2.70
08		7.2	250	---	115	2.85	4.2	2.65
09		8.0	240	---	115	3.10	4.2	2.65
10		8.0	240	---	115	3.20	4.4	2.60
11		8.9	240	---	115	3.30		2.55
12		9.0	240	---	115	3.40	4.0	2.60
13		0.7	235	---	115	3.45	4.0	2.65
14		8.2	230	---	115	3.30	4.3	2.65
15		0.8	240		115	3.30	4.2	2.65
16		9.3	240		115	3.10	4.2	2.70
17		0.9	250		115	2.80	3.9	2.75
18		8.6	260		115	2.55	4.2	2.80
19		7.9	260		125	2.20	4.0	2.80
20		7.2	270		150	1.85	3.4	2.75
21		7.1	290		---	E	3.4	2.65
22		6.6	325		---	E	3.2	2.55
23		(6.8)	340				4.1	(2.45)

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 43

Lulea, Sweden (65.6°N, 22.1°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.8)	335				2.6	---
01		(5.5)	360				2.4	(2.3)
02		(5.4)	350					(2.4)
03		(5.3)	325		---	1.5		(2.5)
04	---	5.4	290		130	1.8		2.6
05	---	5.9	270	---	120	2.2		2.5
06	(530)	6.2	260	4.3	120	2.6		2.65
07	(535)	6.7	250	4.6	115	2.9		2.65
08	(485)	7.5	240	5.0	110	3.2		2.7
09	(530)	7.8	240	5.0	110	3.3		2.7
10	(510)	8.6	230	5.0	110	3.4		2.7
11	(500)	8.6	230	5.4	110	3.5		2.6
12	470	8.6	230	5.3	110	3.5		2.6
13	(465)	8.8	235	5.3	110	3.4		2.7
14	(425)	8.6	240	5.0	110	3.3		2.7
15	---	8.8	240	---	115	3.2		2.7
16	---	8.9	250	---	115	2.9		2.8
17	---	7.8	260		120	2.6		2.9
18	---	8.1	260		125	2.2		2.9
19	---	7.0	270		<150	1.8		2.75
20		6.9	270		---	1.7		2.7
21		(6.4)	290		---	---		(2.6)
22		(5.8)	300		---	---	2.4	(2.4)
23		(6.2)	310		---	---	2.8	---

Time: 15.0°E.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 44

Churchill, Canada (58.8°N, 94.2°W) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.4	310		---	---	4.6	
01		5.7	300		---	---	5.0	
02		5.0	320		---	1.6	4.0	
03		4.9	320		---	1.3	4.4	
04		4.6	340		160	1.8	4.5	
05		4.7	330		120	2.2	4.2	
06	---	4.9	300	3.8	120	2.9	4.2	---
07	(540)	5.3	260	4.1	110	3.0	4.8	---
08	580	6.1	260	4.6	110	3.2	4.6	(2.7)
09	480	6.3	260	5.0	110	3.4	4.8	2.55
10	490	7.0	240	5.0	110	3.5	4.8	2.5
11	560	7.0	230	5.1	105	3.5	4.5	2.4
12	460	7.7	230	5.2	105	3.5		2.5
13	450	8.3	230	5.2	110	3.5		2.5
14	450	8.2	230	5.2	105	3.4		2.5
15	440	8.0	230	4.8	110	3.3	4.2	2.6
16	410	7.6	240	4.6	110	3.1	4.2	2.5
17	410	7.3	250	4.4	110	3.0	4.2	(2.6)
18	(420)	7.0	280	4.1	120	2.7	4.1	(2.6)
19	---	6.3	300	---	120	2.6	4.0	(2.8)
20		6.0	310		120	2.1	3.8	---
21		5.5	330		125	2.2	5.2	---
22		5.3	340		140	2.2	6.5	
23		5.5	300		---	1.6	5.6	

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 45

Wakkani, Japan (45.4°N, 141.7°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.2	310					2.60
01		8.0	295					2.60
02		7.8	290					2.60
03		7.4	270					2.55
04		7.3	295			----		2.50
05	---	8.0	270	---		1.90		2.70
06	---	9.3	240	---		2.55		2.90
07	---	10.8	240	---		3.10		2.85
08	---	11.5	235	---		3.40		2.80
09	---	12.3	230	---		3.60		2.70
10	---	12.2	230	---		3.70		2.80
11	---	12.5	225	---		3.80		2.70
12	---	12.5	230	---		3.80		2.75
13	---	12.3	235	---		3.80		2.75
14	---	12.0	240	---		3.65		2.75
15		11.7	240			3.50		2.75
16		11.1	245			3.10		2.75
17		10.8	250			2.60		2.80
18		10.3	250			2.00	2.3	2.80
19		9.8	260					2.80
20		9.0	260					2.75
21		8.6	265					2.75
22		8.3	290					2.70
23		8.3	300					2.65

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 46

Monte Capellino, Italy (44.6°N, 9.0°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	315					2.24
01		8.5	320					2.30
02		8.2	310					2.26
03		7.6	300					2.32
04		7.2	300					2.30
05		6.8	300					2.30
06		7.6	275			1.7		2.45
07		8.3	250			2.5		2.58
08		9.3	240			3.2		2.58
09		10.2	230			3.5		2.58
10		11.2	225			3.7	3.8	2.50
11		12.1	220			3.9	4.0	2.51
12		12.5	225			4.0		2.47
13		12.9	225			4.0		2.42
14		12.9	230			3.9		2.43
15		12.1	235			3.7		2.44
16		12.0	240			3.5	3.6	2.46
17		12.2	240			3.1	3.4	2.46
18		12.0	260			2.5	2.8	2.50
19		11.8	260			1.7	2.0	2.55
20		10.6	250				1.5	2.47
21		9.7	275					2.37
22		9.0	285					2.31
23		8.8	300					2.27

Time: 15.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 5 minutes, automatic operation.

Table 47

Akita, Japan (39.7°N, 140.1°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.0	300					2.60
01		8.9	295					2.70
02		8.6	290					2.70
03		7.9	260					2.70
04		7.5	295					2.55
05		8.1	290			----		2.65
06		10.0	245			2.40		2.95
07		11.5	245			3.05	3.3	2.95
08		12.4	245			3.50	4.0	2.85
09	(250)	13.0	240			3.70	4.1	2.80
10	(245)	13.2	230			3.85	4.2	2.75
11	245	13.4	220			3.95	4.1	2.70
12	(250)	13.6	225			4.00	4.2	2.70
13	(250)	13.5	240			3.95		2.65
14	---	13.4	245			3.90		2.65
15		13.0	245			3.60		2.70
16		12.4	245			3.20	3.6	2.70
17		11.7	250			2.60	3.1	2.80
18		11.5	250			----	3.0	2.80
19		10.6	250				3.3	2.80
20		9.2	260				2.4	2.65
21		9.1	285					2.60
22		9.2	295					2.60
23		9.1	300					2.60

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 48

Tokyo, Japan (35.7°N, 139.5°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(9.3)	305					(2.60)
01		9.6	300					2.60
02		8.9	280					2.65
03		8.1	265					2.65
04		7.6	280					2.50
05		8.0	300					2.55
06		10.0	250			2.55		2.85
07		11.4	240			3.10	3.3	2.85
08		12.5	240			3.50	3.8	2.80
09	---	12.9	240			3.70	4.4	2.75
10	---	13.5	240			(3.85)	4.0	2.65
11	320	13.9	245			(3.95)		2.60
12	320	14.1	250			(4.00)	4.0	2.60
13	315	14.1	250			(4.00)	4.2	2.60
14	310	13.9	250			(3.90)		2.60
15	(310)	13.5	245			(3.70)		2.60
16	---	12.9	250			(3.35)	3.7	2.65
17		12.6	255			2.80	3.2	2.70
18		12.0	260				3.1	2.75
19		11.0	255					2.70
20		9.7	260					2.55
21		(9.6)	300					(2.50)
22		9.5	305					2.50
23		9.6	300					2.55

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 49

Yamagawa, Japan (31.2°N, 130.6°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.0	270					2.75
01		10.8	260					2.80
02		10.5	250					2.90
03		9.1	240					2.95
04		8.1	230					2.70
05		7.6	250					2.70
06		8.6	250			1.95		2.85
07		10.5	230			2.70	2.8	3.05
08		11.8	225			3.25	3.7	3.00
09		12.5	220			3.60	4.2	2.90
10		13.2	205			3.90	4.3	2.80
11		13.9	200			4.00	4.3	2.80
12		14.5	210			4.00	4.3	2.75
13	---	14.6	225	---		4.10	4.4	2.70
14	350	14.7	220	7.2		4.00	4.5	2.75
15	345	14.5	225	7.1		3.80	4.2	2.75
16	320	13.9	230	---		3.50	3.8	2.70
17	---	13.6	240			3.10	3.4	2.80
18		13.4	250			2.35	3.0	2.85
19		12.7	250				3.2	2.90
20		11.5	250				3.2	2.70
21		11.3	275				2.2	2.60
22		11.5	290				2.8	2.65
23		11.3	285				2.5	2.70

Time: 135.0°E.
Sweep: 1.0 Mc to 19.4 Mc in 1 minute.

Table 50

Ibadan, Nigeria (7.4°N, [illegible]) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	295					(2.55)
01		8.4	275					(2.75)
02		8.7	250					(2.90)
03		8.3	245					(3.05)
04		7.5	240					3.15
05		6.9	240					3.30
06		8.5	250			2.10		3.15
07		12.1	245			3.05		3.10
08		14.2	245			3.55	6.8	2.85
09		(14.6)	220			3.95	7.0	(2.50)
10		(14.7)	215			(4.15)	7.0	(2.30)
11		13.9	205			(4.30)	7.0	2.30
12		13.2	200			(4.35)	7.0	2.15
13		13.0	200			(4.20)	7.0	2.10
14		12.7	205			(4.10)	7.0	2.10
15		12.5	215			(3.75)	7.0	2.10
16		(12.6)	240			3.30	7.0	(2.10)
17		(12.0)	260			2.65	3.7	(2.10)
18		11.3	310			1.60		(2.10)
19		8.8	460					(1.90)
20		7.0	470					----
21		7.7	425					----
22		8.2	390					----
23		8.4	345					(2.40)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 51

Bunia, Belgian Congo (1.5°N, 30.2°E) April 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	(11.0)					1.8	(2.69)
01	240	(9.9)					2.0	(2.79)
02	230	>9.9					2.1	2.89
03	220	(8.6)					2.7	(3.12)
04	250	6.7			---	---	3.0	2.84
05	250	11.3	250	---	120	2.7	4.0	2.86
06	(280)	12.9	245	---	115	3.4	4.2	2.72
07	---	13.6	240	---	110	3.9	4.4	2.52
08	---	14.1	250	---	110	4.0		2.29
09	---	14.8	250	---	110	4.0		2.17
10	---	>15.1	250	---	110	4.1		2.13
11	---	14.8	250	---	110	4.0		2.04
12	(465)	>14.4	240	---	110	4.0		(2.01)
13	(480)	14.2	240	---	110	3.9		(1.98)
14	(465)	14.2	250	---	115	3.2		2.06
15	---	(14.2)	260	---	120	2.6	3.6	(2.08)
16	(300)	>13.3	300	---	---	---	3.0	<2.08
17	395	----					2.0	----
18	360	----						
19	290	----						
20	265	----					1.6	
21	240	----					2.0	----
22	235	----					2.1	----
23	230	----					2.0	

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 52

Singapore, British Malaya (1.4°N, 103.8°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		14.0	245		115	----	<1.2	2.80
01		11.6	230		---	----	<1.2	2.90
02		10.1	235		---	----	<1.1	2.90
03		9.4	240		---	----	<1.2	3.00
04		8.9	225		---	----	<1.4	3.10
05		6.6	220		---	----	1.3	3.20
06	---	6.8	260	---	140	(1.50)	2.3	2.85
07	---	10.9	250	---	125	2.75	3.0	3.05
08	---	13.4	245	---	110	3.45	3.5	2.80
09	---	14.2	235	---	110	3.80	3.8	2.55
10	---	14.6	220	---	110	4.10		2.25
11	---	14.7	215	---	110	4.25		2.10
12	---	14.6	210	---	110	4.30		2.10
13	---	14.6	215	---	110	4.25		2.10
14	---	14.6	220	---	110	4.10		2.10
15	---	14.9	225	---	110	3.80		2.15
16	---	14.2	245	---	110	3.40		2.20
17	---	14.2	260	---	115	2.80		2.25
18	---	14.4	295	---	---	----		2.25
19		14.1	370		---	----	<1.3	2.10
20		14.0	365		---	----	<1.5	(2.20)
21		(14.6)	290		---	----	<1.4	(2.30)
22		14.3	240		---	----	1.8	(2.60)
23		14.4	230		---	----	<1.3	2.70

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 53

Leopoldville, Belgian Congo (4.4°S, 15.2°E) April 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	14.8						2.70
01	220	12.2						2.74
02	230	9.0						2.80
03	230	6.0						2.81
04	235	4.6						2.91
05	260	6.2	---	---	---	---	2.0	2.76
06	(250)	10.7	245	---	125	2.7	3.5	2.75
07	(250)	12.0	240	---	120	3.4	3.9	2.62
08	---	13.2	230	---	115	3.8		2.56
09	---	13.6	250	---	110	4.0		2.41
10	---	14.2	245	---	110	---		2.29
11	395	15.1	250	---	---	---		2.27
12	400	15.2	250	---	110	---		2.24
13	400	15.6	245	---	115	4.0		2.22
14	400	15.9	245	---	115	3.6		2.24
15	(385)	15.5	250	---	120	3.2	3.8	2.25
16	---	15.5	260	---	120	2.6	3.6	2.27
17	290	>15.1	285	---	---	---	2.6	2.33
18	335	----					2.4	----
19	300	----						
20	250	----						
21	230	----						
22	230	>17.0						<2.60
23	225	16.4						2.72

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 54

Elisabethville, Belgian Congo (11.6°S, 27.5°E) April 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.6						2.86
01	240	5.9						2.70
02	235	5.1						2.85
03	240	4.0						2.98
04	265	4.6	---	---			1.7	2.67
05	250	9.1	250	---	125	2.4	3.0	2.96
06	250	11.2	240	---	110	3.1		2.87
07	265	12.4	235	---	110	3.6		2.70
08	(285)	13.0	240	---	110	3.9		2.61
09	---	13.0	250	---	110	4.0		2.50
10	350	13.7	250	---	110	4.0		2.44
11	350	14.0	250	---	110	4.0		2.37
12	370	14.0	250	6.6	110	3.9		2.32
13	355	14.0	250	---	110	3.6	4.3	2.34
14	340	13.9	250	---	110	3.4	4.2	2.34
15	310	13.4	260	---	120	2.8	4.0	2.44
16	270	13.4	---	---	---	---	3.0	2.54
17	260	>13.0					2.5	2.58
18	260	13.0					2.4	2.60
19	245	>13.0					2.2	<2.60
20	240	(12.7)						<2.71
21	235	12.3						<2.72
22	235	10.5						2.81
23	240	9.5						2.75

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 55

Tromso, Norway (69.7°N, 19.0°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.3)	355				4.0	----
01		(6.8)	350				3.2	----
02		(6.2)	345				3.3	----
03		(4.8)	330		---	----	3.2	----
04		(5.2)	330		---	----	3.2	----
05		6.0	295		---	1.40	2.4	(2.50)
06	---	6.6	265		130	1.80	1.8	2.70
07	(255)	7.7	255		110	2.25		2.70
08	255	8.7	(260)	---	120	2.55		2.70
09	---	9.3	250	---	115	2.80		2.70
10	(250)	9.7	250	---	110	3.00		2.70
11	(405)	10.1	250	---	110	3.00		2.70
12	(265)	10.5	245	---	115	3.00		2.70
13	---	10.7	245	---	115	3.00		2.70
14	(245)	10.4	250	---	120	2.90		2.70
15	245	9.7	255	---	125	2.70		2.70
16	250	9.7	255	---	120	2.45		2.00
17	(250)	9.5	250	---	140	2.10		2.70
18		(7.0)	250		140	1.60	3.0	2.65
19		(6.0)	280		---	----	3.4	(2.55)
20		(5.6)	300				3.1	----
21		(5.0)	305				4.0	----
22		(6.6)	320				3.2	(2.40)
23		(6.2)	350				3.4	----

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

Table 56

Churchill, Canada (58.8°N, 94.2°W) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
08		(5.2)	300		---	---	4.5	
81		6.0	310		---	2.0	4.3	
02		(5.5)	320		---	1.6	4.5	
83		4.8	330		140	2.0	3.8	
04		4.8	370		130	2.2	3.8	
05		(4.8)	360		125	2.1	4.1	
06		5.0	340		120	2.3	4.3	
87	---	5.6	300	---	115	2.7	4.0	
88	---	6.6	280	---	115	3.0	3.8	(2.8)
09	(620)	7.4	250	4.4	110	3.0	4.4	(2.9)
10	(700)	8.2	250	4.3	110	3.2	4.2	(2.8)
11	(440)	9.0	240	4.5	110	3.3	3.8	2.7
12	(450)	9.0	240	4.7	110	3.4		2.7
13	(420)	10.6	240	4.6	110	3.4		2.7
14	(400)	10.9	240	4.6	110	3.2		(2.7)
15	(480)	10.8	240	4.4	110	3.1	3.3	(2.7)
16	(450)	10.4	250	---	115	3.0		(2.7)
17	---	10.2	250	---	120	2.6	3.0	---
18	---	9.0	260	---	130	2.1	3.3	---
19		7.0	280		125	2.1	4.0	---
20		6.4	290		130	2.0	4.3	
21		6.0	300		125	2.0	4.1	
22		5.6	320		140	1.9	5.0	
23		5.5	290		---	1.8	5.2	

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 57

De Bilt, Holland (52.1°N, 5.2°E) March 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	6.4						2.60
01	295	6.3					2.0	2.50
02	300	5.0					2.1	2.50
83	305	5.5						2.50
04	300	5.0						2.60
05	280	4.6			---	E	2.2	2.60
06	260	5.8	---	---	---	1.8	2.2	2.80
07	230	8.0	---	---	105	2.4	2.6	3.05
88	240	8.9	225	4.0	100	3.0	3.2	3.00
09	230	9.8	220	4.5	100	3.2	3.2	2.95
18	250	10.8	220	4.6	100	3.4	3.6	2.90
11	250	11.7	220	4.9	100	3.5		2.85
12	230	11.7	220	5.0	100	3.6	3.9	2.85
13	230	11.9	210	4.8	100	3.5		2.80
14	230	11.6	225	5.1	100	3.4		2.80
15	235	11.4	225	5.5	100	3.2		2.85
16	230	11.2	---	---	105	2.8		2.90
17	240	10.9			110	2.3		2.90
18	230	10.7			---	1.6	1.9	2.90
19	225	9.7			---	---		2.05
20	240	8.0						2.75
21	250	7.1						2.75
22	270	6.8						2.60
23	290	6.5						2.60

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 58

Boulder, Colorado (40.0°N, 105.3°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4	265					2.00
01		4.25	(265)					2.80
02		4.15	270					2.82
03		4.1	265					2.80
04		4.0	<280					2.72
05		3.9	<280					2.72
06		3.85	(280)					2.80
07		5.2	250				3.2	2.90
08		9.0	225		119	2.38		3.25
09		11.2	220		111	2.85		3.15
18	---	13.0	225		111	3.20	3.2	3.10
11	---	13.8	225		109	3.40		3.05
12	---	13.7	225		113	3.50		2.95
13	---	13.6	225		<114	3.40		2.90
14	---	13.25	230		113	3.20		2.05
15		13.0	230		115	2.80		2.88
16		12.55	230		125	2.30		2.90
17		11.3	220					2.90
18		10.0	225					2.95
19		8.5	220					3.00
20		6.6	<230					2.95
21		5.4	245					2.95
22		4.9	260					2.90
23		4.7	(260)					2.80

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 59

Boulder, Colorado (40.0°N, 105.3°W) November 1958*

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.8	275				2.5	2.75
01		4.9	280				2.7	2.75
02		4.7	275					2.75
03		4.6	295					2.65
04		4.6	290					2.70
05		4.4	280					2.70
06		4.5	275					2.75
07		7.2	240		---	----		3.10
00		10.6	225		(115)	2.58		3.20
09		12.5	220		<111	3.00		3.15
10		14.25	220		105	3.28		3.10
11		15.05	215		103	3.40		3.00
12		14.9	215		104	3.50		2.90
13		14.7	220		105	3.42		2.80
14		14.4	225		106	3.20		2.80
15		14.2	225		109	2.80	3.1	2.80
16		14.0	<230		<116	2.25	2.0	2.90
17		12.8	220		---	----	2.6	2.90
18		11.4	220				2.3	3.00
19		9.6	215					3.00
20		7.7	220					3.00
21		6.1	235				2.7	3.00
22		5.3	250					2.95
23		4.7	260				2.5	2.90

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Observations taken 15th through 30th only.

Table 60

Cape Canaveral, Florida (20.4°N, 00.6°W) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.9	<300					2.65
01		7.5	290					2.65
02		7.4	285					2.70
03		6.9	200					2.60
04		6.3	<285					2.55
05		6.0	<300					2.55
06		6.75	280					2.70
07	---	9.3	250		<129	(2.70)		3.00
08	---	11.15	230	---	115	3.30		2.92
89	---	11.7	220	---	112	3.75		2.05
10	---	12.0	220	---	110	4.00		2.70
11	---	12.3	220	---	109	(4.10)		2.65
12	(370)	12.6	220	---	109	(4.20)		2.60
13	395	12.3	220	(7.0)	111	4.20		2.55
14	(380)	12.35	230	(6.8)	112	4.10		2.55
15	---	12.15	230	---	111	3.85	4.0	2.55
16	---	11.9	235	---	111	3.50	3.7	2.55
17		11.6	245		<118	(3.00)	3.4	2.65
18		11.0	250		---	----		2.65
19		9.9	245					2.65
20		8.8	<275					2.60
21		8.6	<290					2.60
22		8.4	(285)					2.60
23		0.0	<300					2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 61

Concepcion, Chile (36.6°S, 73.0°W) — September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.3	280					2.75
01		10.45	270					2.90
02		9.45	250					3.00
03		7.75	225					3.05
04		6.5	220					2.50
05		6.3	280		<161	----		2.50
06		8.15	260		<141	2.10		2.90
07		11.0	230		111	2.90		3.10
08		12.6	230		107	3.40		3.05
09		13.3	225		109	3.75		3.00
10		13.7	220		109	3.95	4.1	2.85
11	---	13.7	(220)		109	(4.02)	4.4	2.80
12	(365)	13.8	<220	---	109	4.02	4.6	2.65
13	---	13.75	<230	---	111	4.00	4.5	2.65
14	(360)	13.9	230	---	109	3.90	4.2	2.60
15	---	13.9	230		110	3.60		2.65
16		14.0	240		111	3.15	3.4	2.70
17		13.7	260		118	2.45	2.6	2.75
18		13.35	265				2.0	2.75
19		12.8	285					2.60
20		12.45	290					2.58
21		11.8	300					2.55
22		11.2	290					2.65
23		10.7	290					2.68

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

Table 62

Watheroo, W. Australia (30.3°S, 115.9°E) — April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.9	(250)				1.8	2.85
01		6.8	<255				1.8	2.90
02		6.7	(250)				1.7	2.90
03		6.5	<255				2.9	3.05
04		>6.0	<250				1.5	<2.95
05		6.0	<270					(2.70)
06		6.0	(250)					2.90
07		(7.7)	245		120	2.10		----
00		---	230		100	2.90	3.0	----
09		---	225		100	3.30	3.7	
10		---	225		100	3.60	4.0	
11		---	(235)		100	3.80	4.1	
12		---	<240		100	3.80		
13		---	<245		100	3.90		----
14		---	<250		100	3.75		
15		---	230		100	3.55	3.8	
16		---	240		100	3.20	3.8	
17		---	240		105	2.60	3.0	----
18		---	240		100	1.65	1.9	
19		---	(240)				2.4	
20		---	<245				2.6	----
21		>7.1	(240)				1.4	<3.05
22		>7.0	<250				1.7	<2.95
23		>6.9	<250				2.8	2.85

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

Table 63

Graz, Austria (47.1°N, 15.5°E) — March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>6.6	335					
01		(6.4)	335					
02		(5.6)	340					
03		>4.6	350					
04		>4.7	350					
05		>4.6	320					
06		(5.0)	280					
07		(7.7)	250					
08		>8.9	230		---			
09		>9.3	230		---	---	3.3	
10		>9.7	230		110	3.6		
11		>10.3	230		---	---	3.4	
12		>9.9	230		115	---		
13		>9.6	230		110	3.7		
14		>10.5	240		120	3.6		
15		>9.4	235		115	(3.4)		
16		>9.5	240		---	(3.1)		
17		>9.3	240					
18		>8.9	240					
19		>8.8	240					
20		>8.0	260					
21		>6.9	280					
22		>6.6	290					
23		>6.6	310					

Time: 15.0°E.
Sweep: 2.5 Mc to 11.5 Mc in 2 minutes or 2.5 Mc to 21.0 Mc in 50 seconds.

Table 64

Singapore, British Malaya (1.3°N, 103.0°E) — November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.4	300		140	----	<1.3	2.30
01		11.4	300		145	----	<1.1	2.35
02		11.0	295		130	----	<1.1	2.50
03		9.0	270		120	----	<1.0	2.50
04		9.0	260		110	----	<1.1	2.60
05		7.7	250		135	1.10		2.70
06		8.6	290		145	2.00	2.0	2.60
07		10.6	255		120	3.10		2.60
08		11.5	250		115	3.70		2.30
09		12.3	240		110	4.05		2.00
10		13.0	235	(6.5)	110	4.30		1.90
11	605	13.1	230	5.9	110	4.40		1.75
12	575	13.0	220	6.2	110	4.40		1.75
13	540	12.8	220	5.9	110	4.35	4.4	1.70
14	670	12.6	230	5.6	105	4.15	4.6	1.75
15	620	12.7	245	5.2	105	3.80		1.80
16		12.6	255	(4.8)	110	3.45		1.80
17		12.5	290		115	2.75		1.75
18		12.3	345			1.65	3.4	1.00
19		(11.9)	415				3.1	1.75
20		(11.7)	400				2.8	1.95
21		>11.5	340		140	----	2.8	2.05
22		>11.4	285		125	----	2.2	2.10
23		11.5	295			----	<1.4	2.20

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 65

Nurmijarvi, Finland (60.5°N, 24.6°E) — June 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.3)						(2.60)
01		7.0					(3.6)	2.60
02		(7.0)				----	(3.0)	2.60
03		(7.0)				----	1.9	2.60
04		(7.0)		---		----	2.4	2.60
05		(6.9)		---		----	3.0	2.60
06		7.1		(4.7)		2.70	3.2	2.60
07		7.2		(5.0)		3.10	3.4	2.65
08		7.3		5.1		3.40	3.8	2.60
09		7.5		5.3		3.50	4.0	2.55
10		7.6		5.4		3.65	4.2	2.60
11		7.3		5.6		3.80	4.4	2.60
12		7.3		5.6		----	4.0	2.50
13		7.0		5.6		----	4.2	2.55
14		6.8		5.6		3.60	4.2	2.50
15		7.0		5.4		----	4.0	2.60
16		6.9		5.4		3.50		2.60
17		6.7		5.0		----		2.60
18		7.0		---		----	4.5	2.70
19		7.3		---		----	3.0	2.70
20		7.1		---			4.4	2.75
21		7.3		---			(4.7)	2.00
22		7.1					(3.4)	----
23		(7.1)					(2.4)	(2.60)

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 66

Nurmijarvi, Finland (60.5°N, 24.6°E) — May 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.3						(2.60)
01		6.8						(2.50)
02		6.7						(2.50)
03		(6.8)					(3.0)	(2.55)
04		6.9					(3.2)	2.60
05		6.6				2.15		2.70
06		7.2		---		2.90		2.70
07		7.2		5.2		----		2.70
08		7.4		5.3		3.35		2.60
09		7.4		5.3		3.50	3.7	2.60
10		7.7		5.5		3.60		2.60
11		7.7		5.6		3.00	4.0	2.60
12		8.0		5.7		3.70	3.9	2.50
13		8.0		5.8		----		2.50
14		8.0		5.8		----		2.55
15		8.0		5.6		----		2.60
16		7.9		5.6		----		2.60
17		7.9				----		2.70
18		7.9				----		2.70
19		7.8				----		2.75
20		7.7				----		2.80
21		7.4					3.0	2.70
22		7.5					(4.1)	2.60
23		7.6						2.60

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 67

Kerguelen I. (49.3°S, 70.5°E) June 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		1.5	---				2.4	(3.20)
01		1.6	<315				2.4	2.95
02		(1.6)	<305				2.3	(3.00)
03		1.7	<285				2.7	2.85
04		(1.7)	<315				1.8	2.75
05		(1.8)	<320				1.6	2.70
06		2.0	<310				1.6	2.60
07		2.4	(280)				3.2	2.70
08		5.0	<235		---	----	1.7	3.15
09		7.1	220	---	---	2.20		3.35
10		8.2	220	---	105	2.70		3.25
11	---	9.6	220	---	111	2.90		3.05
12		11.2	220		110	3.00	3.2	3.10
13		>12.2	220		110	2.95	3.2	3.05
14		11.9	225		---	2.90	2.9	3.05
15		11.8	215		---	2.50		<3.15
16		10.4	205		---	----	1.6	3.20
17		8.0	200		---	----	1.6	3.20
18		6.1	<215				1.5	3.30
19		3.8	<205				1.6	3.40
20		1.6	---				1.5	3.10
21		1.4	---					(3.15)
22		1.5	---				2.0	3.15
23		(1.5)	---				1.6	2.95

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

Table 68

Kerguelen I. (49.3°S, 70.5°E) May 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		1.7	<300				1.6	2.85
01		2.0	<305				1.6	2.90
02		1.8	<305				2.2	2.95
03		1.6	<305				2.0	2.90
04		1.8	310				1.6	2.75
05		1.8	320				1.6	(2.70)
06		2.1	<300					2.60
07		3.6	265					2.70
08		6.0	230		---	2.15		3.25
09		8.2	220		108	2.60		3.25
10		9.9	220	---	110	2.90		3.15
11		11.2	220	---	110	3.10		3.10
12		12.0	220	---	110	3.20		3.10
13		(12.1)	220	---	110	3.10		(3.10)
14		>12.6	220	---	110	3.00		3.05
15		>12.4	215		110	2.70		3.10
16		11.4	210		---	2.25		3.15
17		9.9	205		---	----		3.15
18		8.1	210					3.20
19		4.8	205					3.30
20		3.5	<220					3.35
21		2.8	250				1.5	3.15
22		2.1	245				1.6	3.10
23		1.8	<280				1.6	3.00

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

Table 69

Kerguelen I. (49.3°S, 70.5°E) April 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		2.4	<285				1.6	2.70
01		2.3	275				1.6	2.70
02		2.4	<310					2.60
03		2.6	<340				1.6	2.60
04		2.2	(355)				1.8	2.60
05		2.2	(360)					2.65
06		2.8	(320)				1.6	2.60
07		5.5	250		---	1.85		3.05
08	---	7.8	235	----	109	2.50		3.25
09	---	8.8	225	----	110	2.85		3.15
10	---	10.4	225	4.90	110	3.15		2.95
11	---	10.5	220	4.55	108	3.35		2.90
12	---	12.1	225	4.85	109	3.40		(2.90)
13	---	>12.5	220	4.75	107	3.35		2.95
14	---	12.1	225	----	110	3.30		<3.00
15	---	>12.5	220	----	109	3.10		3.00
16	---	>12.3	220		---	2.70		3.00
17	---	11.6	220		---	2.10		3.05
18	---	10.6	215			----		3.10
19		8.0	210					3.10
20		6.3	220					3.15
21		4.4	230					3.05
22		3.3	255				1.5	2.95
23		2.8	<260					2.95

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

Table 70

Kerguelen I. (49.3°S, 70.5°E) March 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.3	<300				1.5	2.65
01		3.2	300				2.0	2.60
02		3.1	<320				1.6	2.60
03		2.8	<325				1.6	2.55
04		2.8	<330				1.7	2.45
05		2.6	<320					2.60
06		4.2	<275		---	----		2.85
07	---	5.7	240	----	107	2.35		3.05
08	(310)	6.4	225	4.10	105	2.75		2.90
09	(340)	6.8	220	4.75	<108	3.10		2.80
10	390	7.1	<220	5.00	101	3.30		2.65
11	365	8.4	220	5.30	100	3.50		2.60
12	360	9.4	215	5.25	101	3.50		2.60
13	330	9.8	220	5.25	101	3.50		2.65
14	310	10.0	220	5.00	101	3.50		2.65
15	310	9.5	220	5.00	101	3.30		2.70
16	(290)	9.4	230	4.60	105	3.00		2.80
17		8.6	230		102	2.55		2.95
18		7.9	230		---	----		3.00
19		7.1	230				1.4	2.95
20		5.8	235				1.7	3.00
21		5.0	230				2.5	3.05
22		3.7	<250				1.8	2.95
23		3.3	<275				1.7	2.75

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

Table 71

Kerguelen I. (49.3°S, 70.5°E) February 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.0	<270				3.1	2.75
01		2.9	<280				2.6	2.70
02		2.8	300				3.2	2.55
03		2.6	<315				3.2	2.55
04		2.4	320				3.6	2.50
05		3.3	290				3.5	2.65
06	(480)	4.6	245	3.50	105	2.20	3.0	2.75
07	415	5.5	230	4.10	105	2.80	2.9	2.70
08	410	5.9	220	4.60	103	3.15	3.3	2.60
09	430	6.4	220	4.75	102	3.35	3.8	2.55
10	425	6.6	200	4.80	101	3.50		2.55
11	390	7.1	(200)	5.00	101	3.60	4.6	2.55
12	400	7.3	210	5.10	101	3.70	5.0	2.60
13	375	7.9	220	5.00	105	3.60	4.4	2.60
14	345	8.0	220	5.10	101	3.60	4.6	2.70
15	330	8.0	210	5.00	101	3.50	4.8	2.70
16	315	7.5	220	4.90	104	3.30	3.9	2.80
17	290	7.2	220	4.40	101	3.00	3.4	2.85
18	---	6.9	230	----	109	2.50	3.5	3.05
19		6.6	235		---	----	3.0	3.10
20		6.0	230				2.0	3.10
21		5.3	230				3.3	3.05
22		4.4	<240				3.4	2.95
23		3.7	<250				3.4	2.85

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

Table 72

Kerguelen I. (49.3°S, 70.5°E) January 1956

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.3	<300				3.2	2.65
01		3.0	375				3.3	2.55
02		3.0	390				2.2	2.45
03		3.0	400				2.2	2.50
04		3.2	325				1.6	2.60
05	400	4.2	270	3.25	---	----	1.8	2.70
06	440	4.9	240	3.75	105	2.50		2.50
07	440	5.4	230	4.30	108	2.85	3.1	2.50
08	450	5.8	210	4.50	106	3.25	3.3	2.50
09	480	6.0	205	4.70	105	3.40	3.4	2.50
10	500	6.0	210	4.80	107	3.50	4.2	2.40
11	460	6.2	(200)	4.90	102	3.60	4.3	2.40
12	425	6.2	(210)	4.95	111	3.70	3.9	2.45
13	455	6.3	220	4.95	102	3.70	4.0	2.50
14	450	6.2	(220)	4.95	105	3.65		2.45
15	410	6.2	220	4.85	104	3.50		2.60
16	400	6.2	(215)	4.85	100	3.30	3.6	2.60
17	380	6.1	(220)	4.60	103	3.05	3.3	2.70
18	(305)	6.0	230	4.20	108	2.65	3.4	2.85
19	---	6.2	245	----	---	2.20	3.5	2.95
20		5.6	245		---	---	2.8	3.05
21		5.0	250				1.6	2.85
22		4.4	265				1.9	2.85
23		3.5	285				3.2	2.60

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

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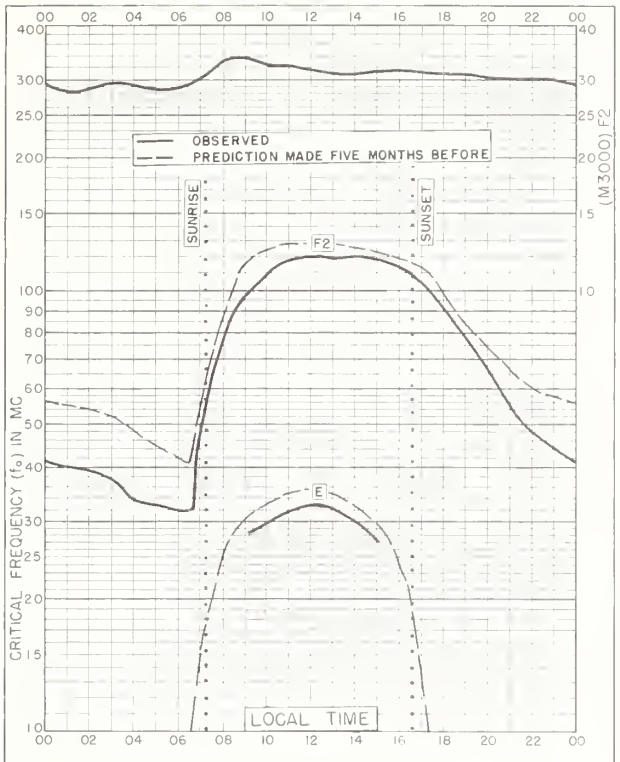


Fig. 1. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W DECEMBER 1959

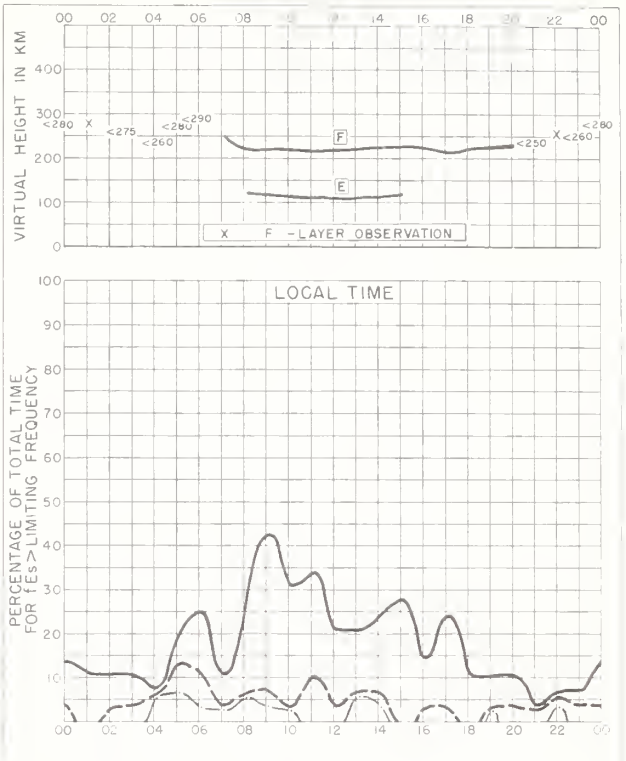


Fig. 2. FT. MONMOUTH, NEW JERSEY DECEMBER 1959

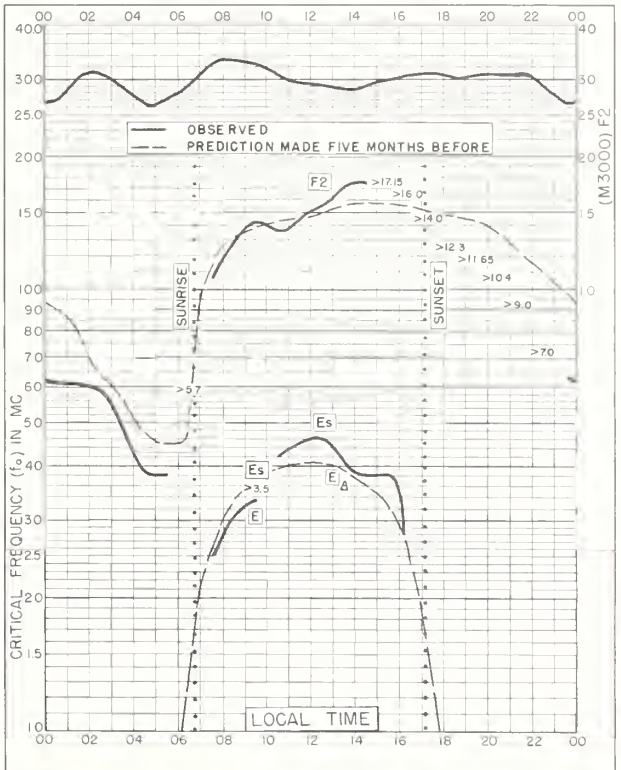


Fig. 3. OKINAWA I.
26.3°N, 127.8°E DECEMBER 1959

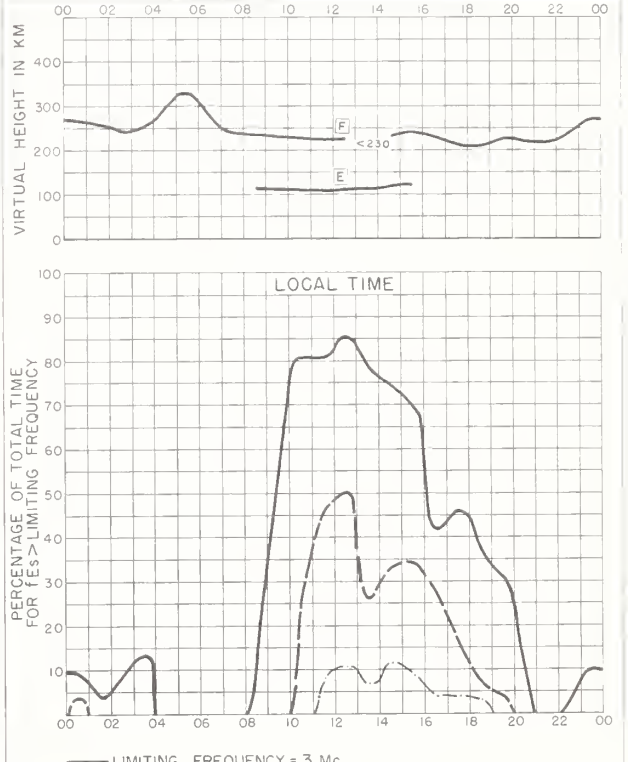


Fig. 4. OKINAWA I. DECEMBER 1959

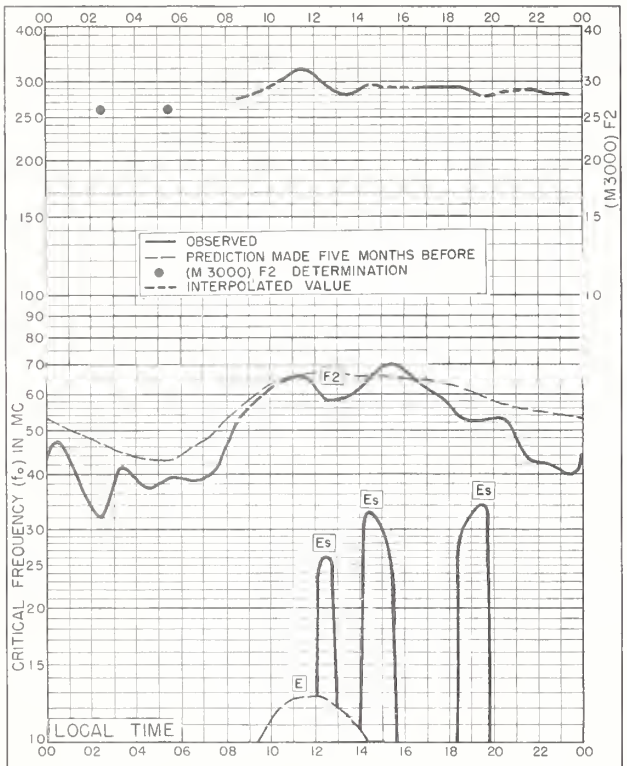


Fig. 5. THULE, GREENLAND
76.6°N, 68.7°W NOVEMBER 1959

NBS 503

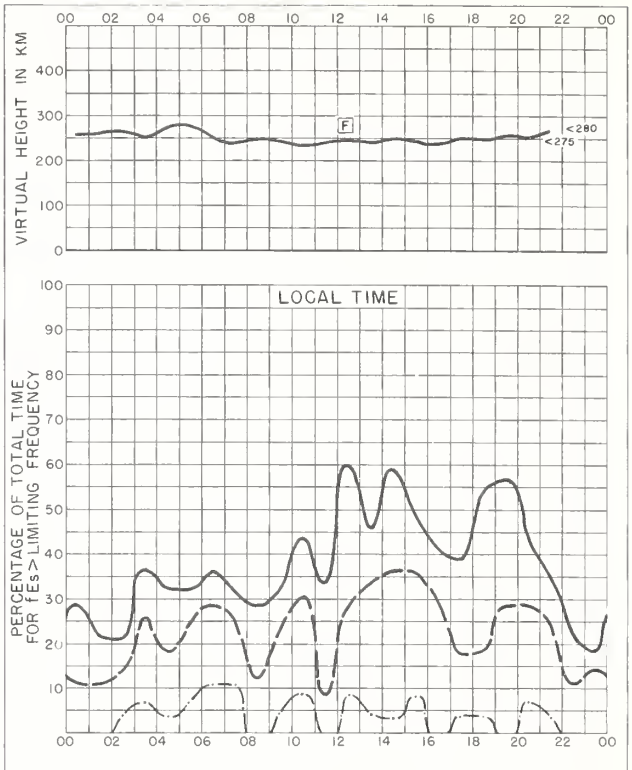


Fig. 6. THULE, GREENLAND NOVEMBER 1959

NBS 490

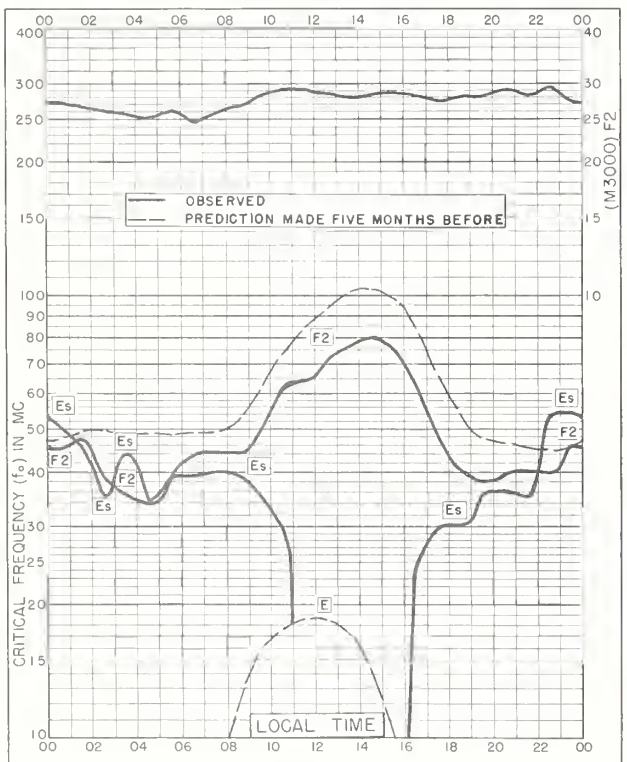


Fig. 7. POINT BARROW, ALASKA
71.3°N, 156.8°W NOVEMBER 1959

NBS 503

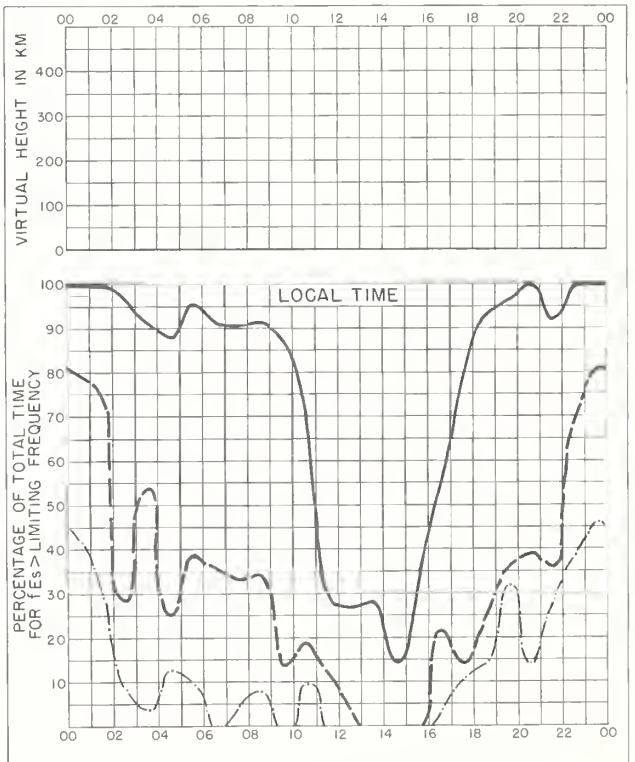


Fig. 8. POINT BARROW, ALASKA NOVEMBER 1959

NBS 490

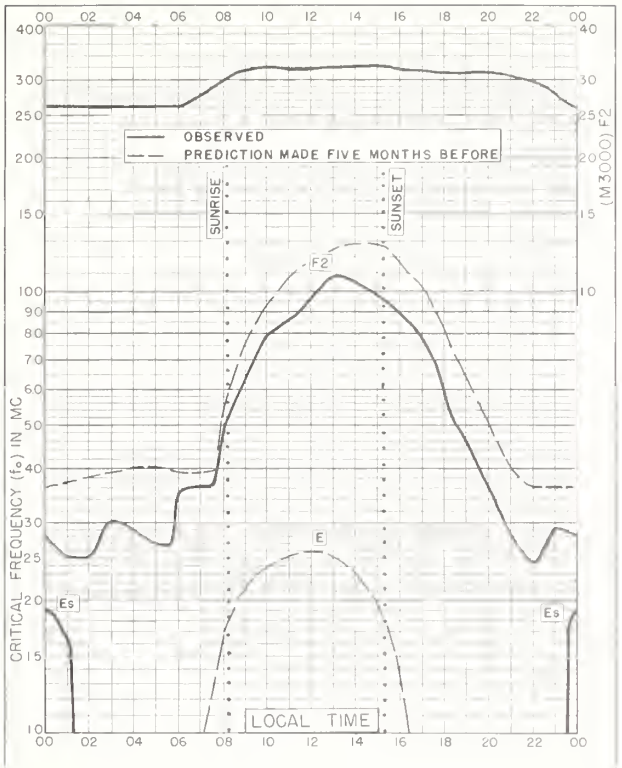


Fig. 9. ANCHORAGE, ALASKA
61.2°N, 149.9° W NOVEMBER 1959

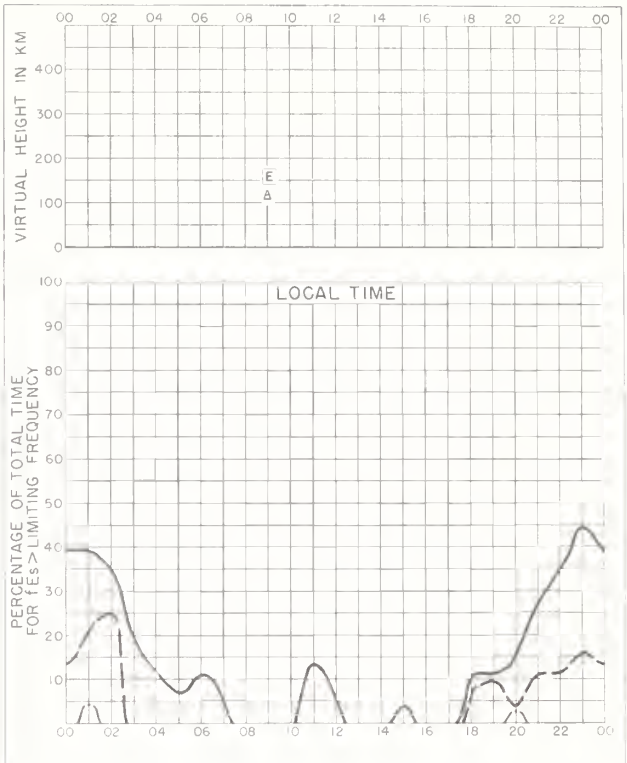


Fig. 10. ANCHORAGE, ALASKA NOVEMBER 1959

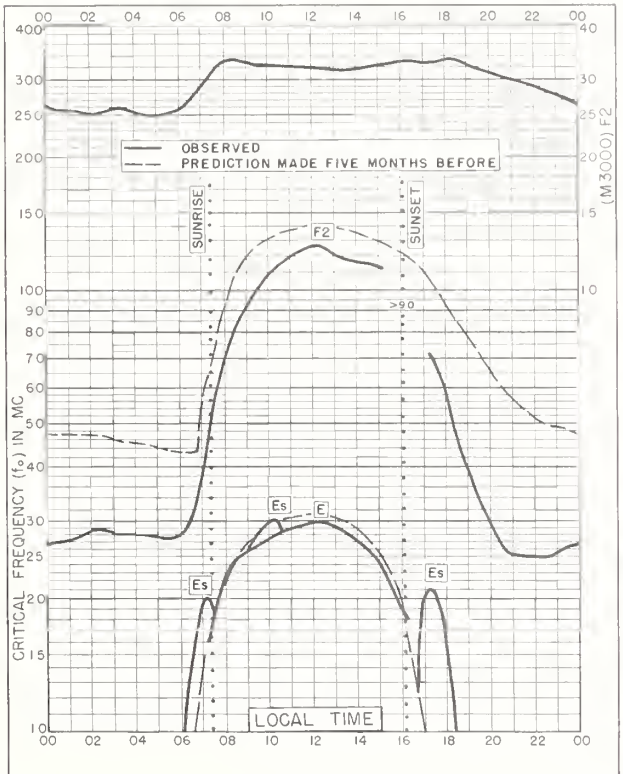


Fig. 11. ADAK, ALASKA
51.9°N, 176.6° W NOVEMBER 1959

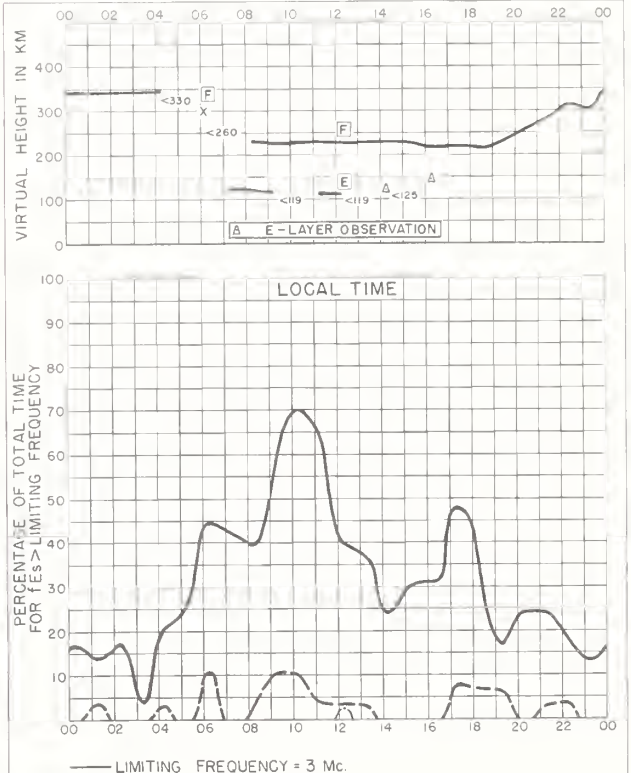


Fig. 12. ADAK, ALASKA NOVEMBER 1959

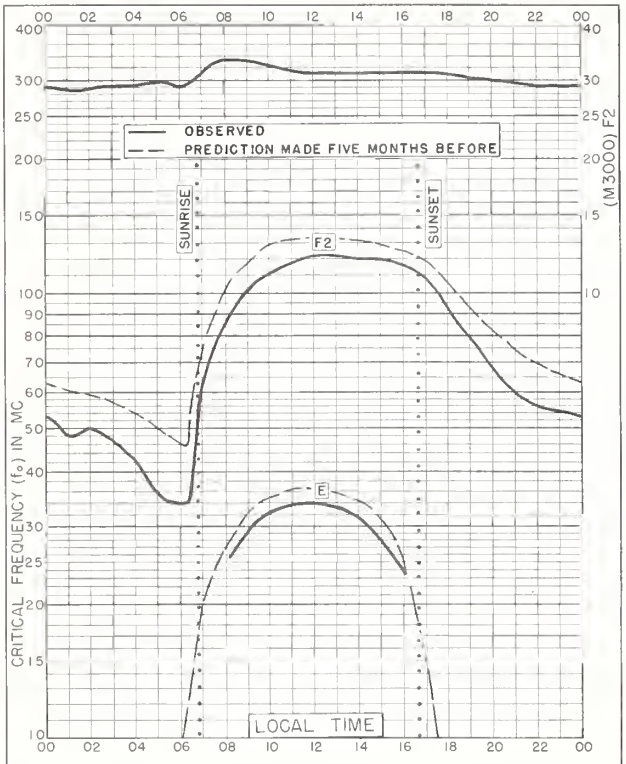


Fig. 13. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W NOVEMBER 1959

NBS 503

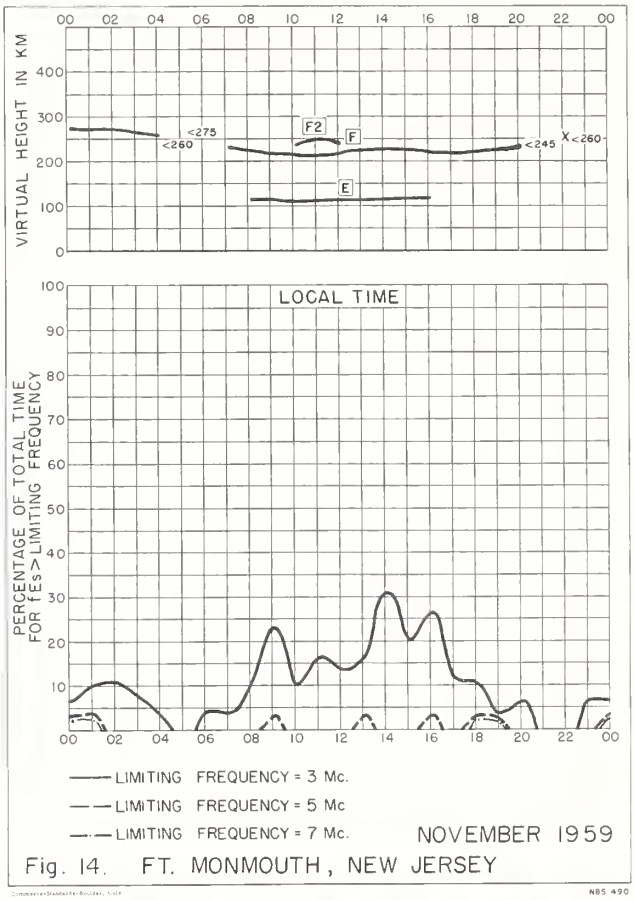


Fig. 14. FT. MONMOUTH, NEW JERSEY NOVEMBER 1959

NBS 490

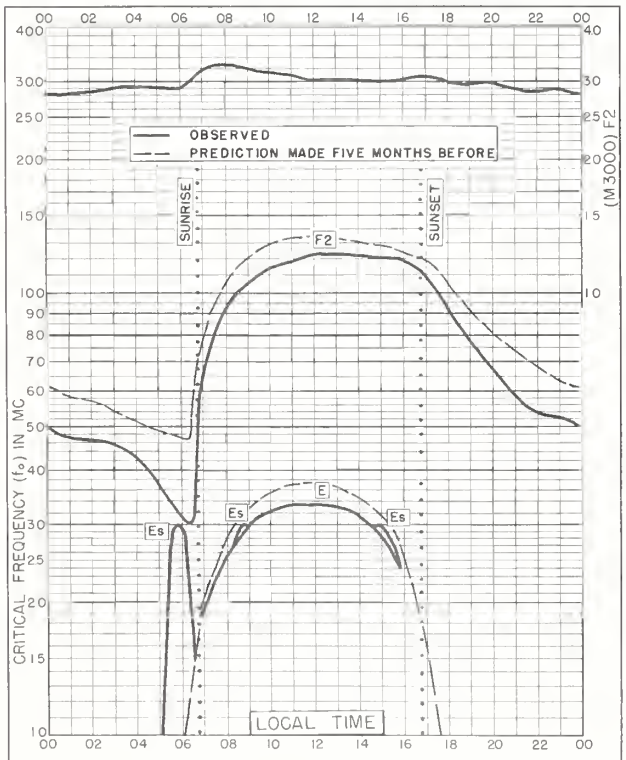


Fig. 15. WASHINGTON, D.C.
38.7°N, 77.1°W NOVEMBER 1959

NBS 503

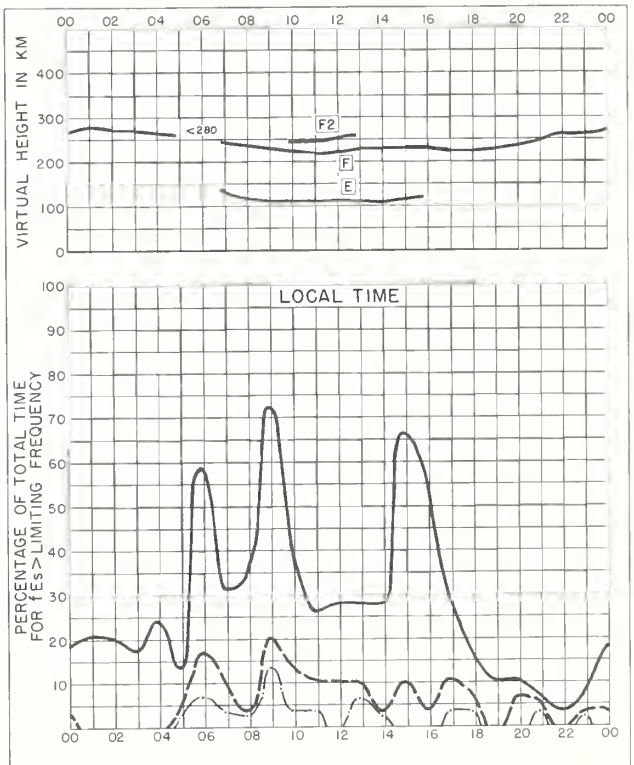


Fig. 16. WASHINGTON, D.C. NOVEMBER 1959

NBS 490

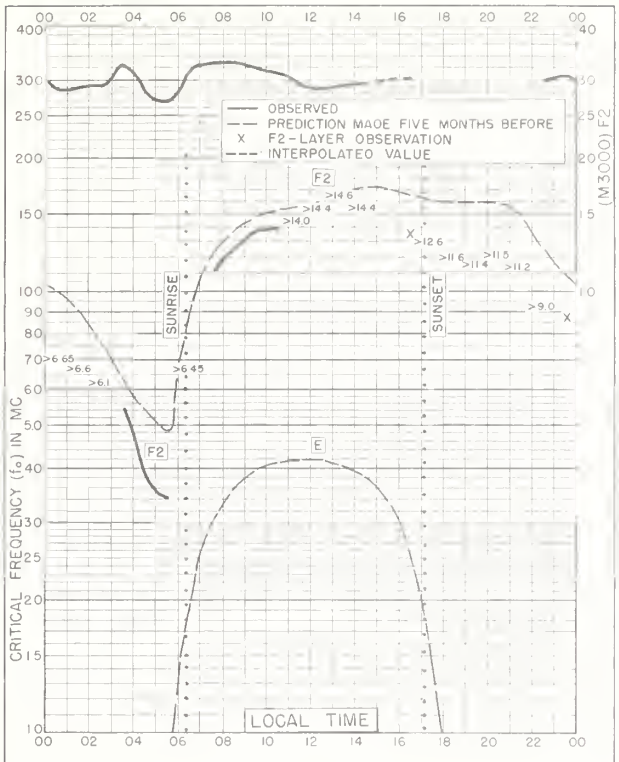


Fig. 17. OKINAWA I.
26.3°N, 127.8°E NOVEMBER 1959

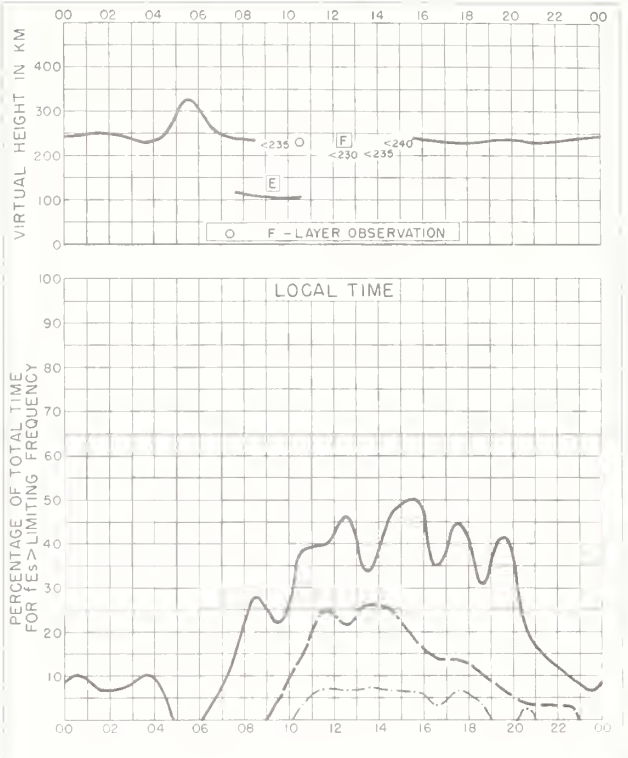


Fig. 18. OKINAWA I. NOVEMBER 1959

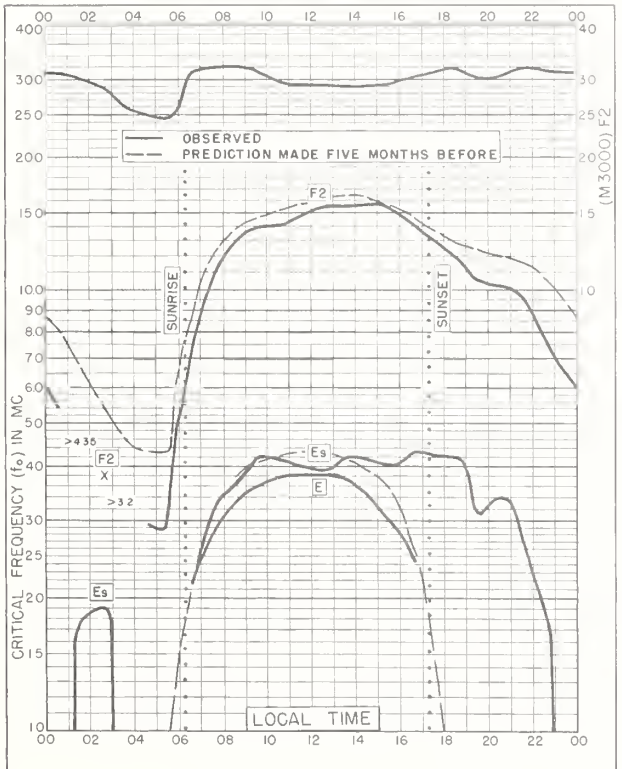


Fig. 19. MAUI, HAWAII
20.8°N, 156.5°W NOVEMBER 1959

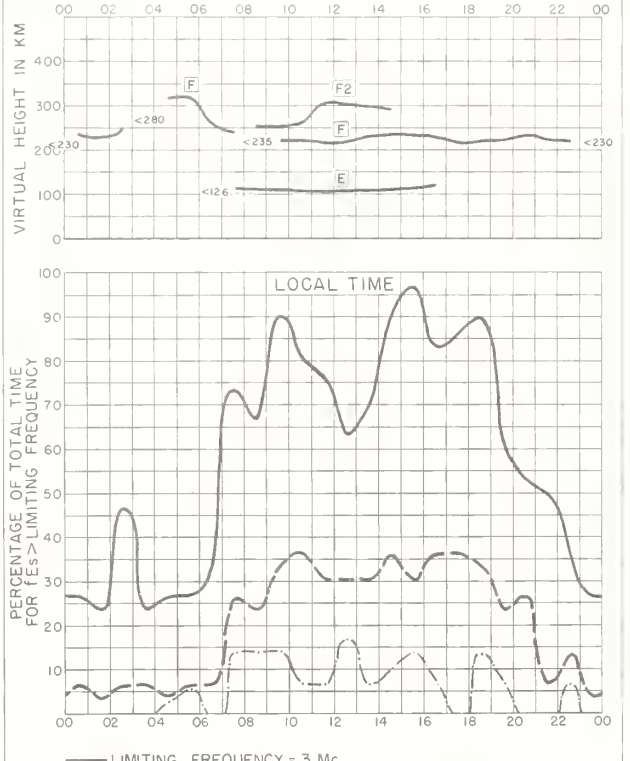


Fig. 20. MAUI, HAWAII NOVEMBER 1959

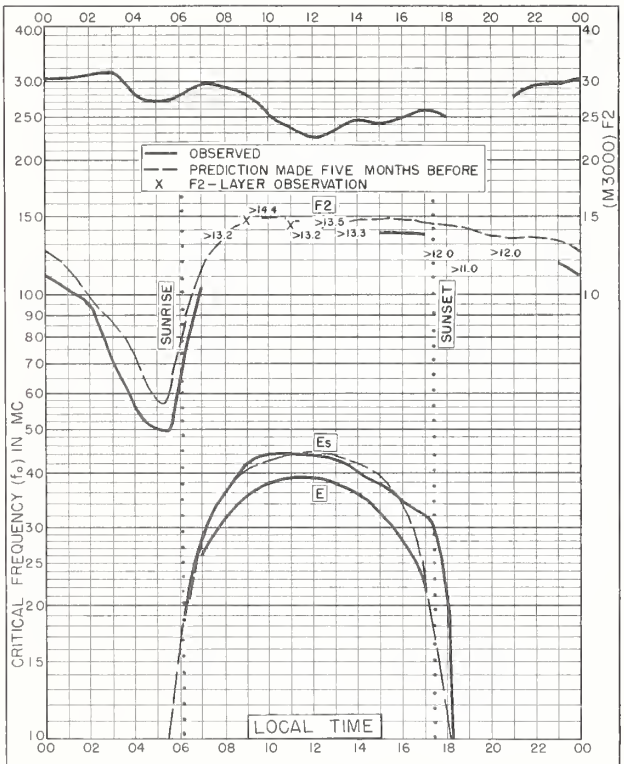


Fig. 21. BAGUIO, P. I.
16.4°N, 120.6°E NOVEMBER 1959

NBS 503

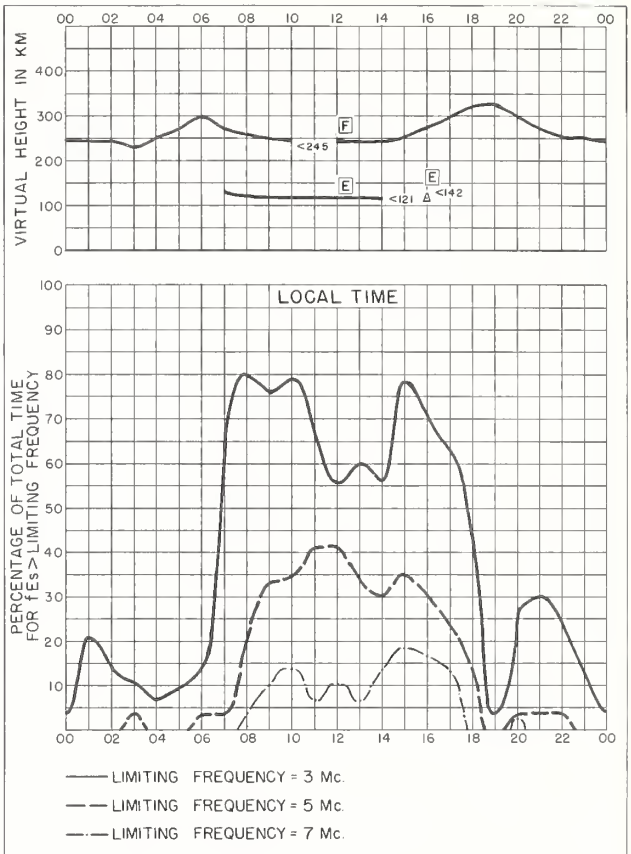


Fig. 22. BAGUIO, P. I. NOVEMBER 1959

NBS 490

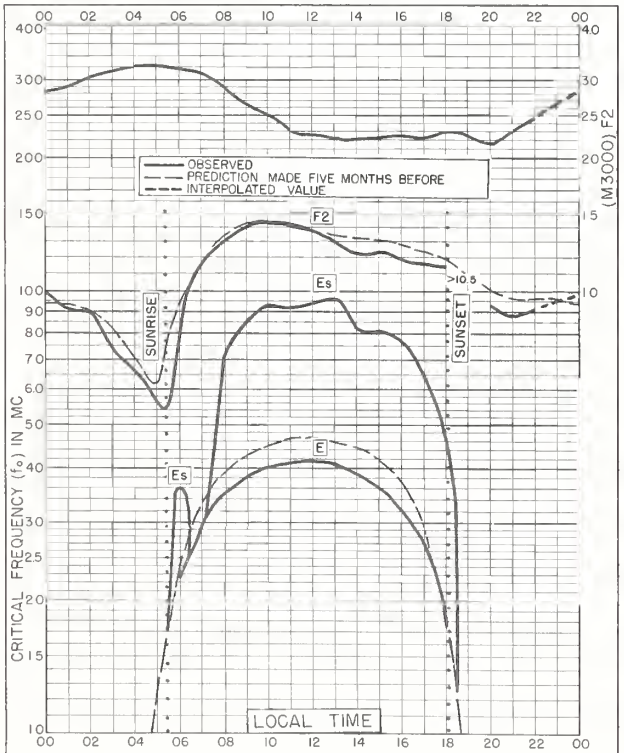


Fig. 23. HUANCAYO, PERU
12.0°S, 75.3°W NOVEMBER 1959

NBS 503

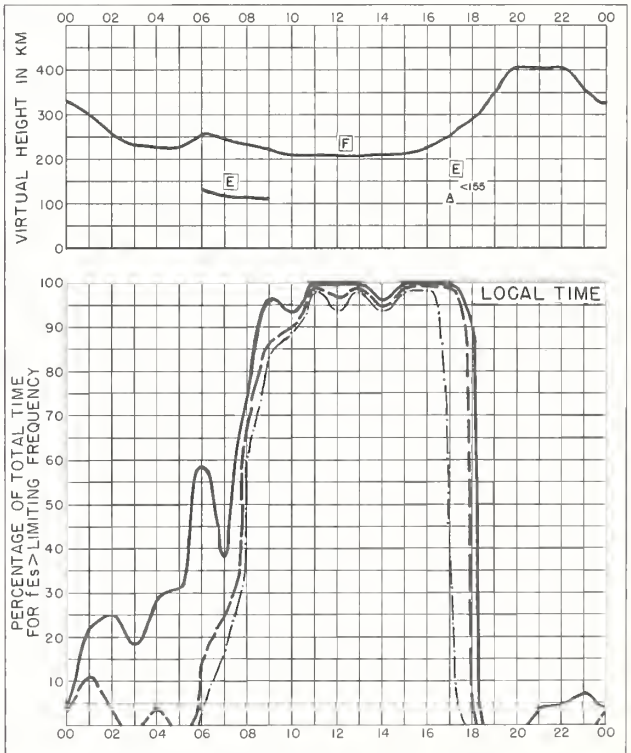


Fig. 24. HUANCAYO, PERU NOVEMBER 1959

NBS 490

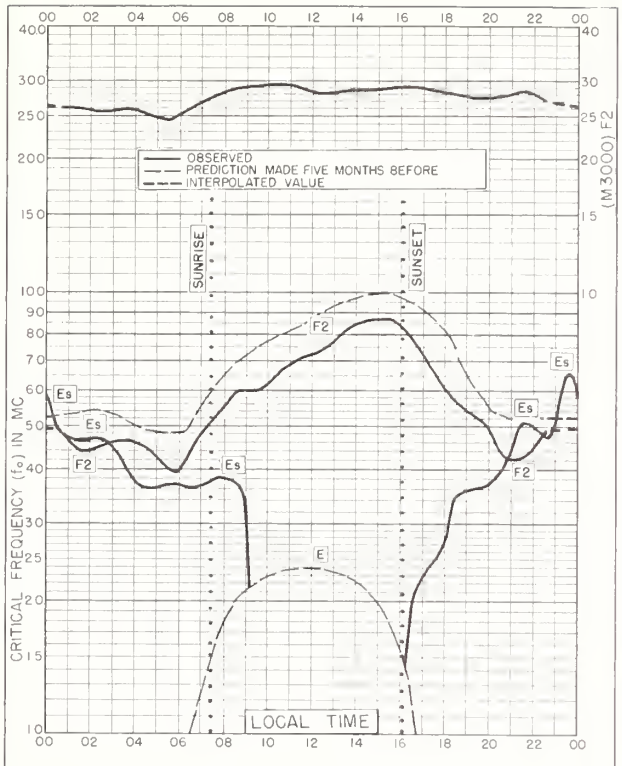


Fig. 25. POINT BARROW, ALASKA
71.3°N, 156.8°W OCTOBER 1959

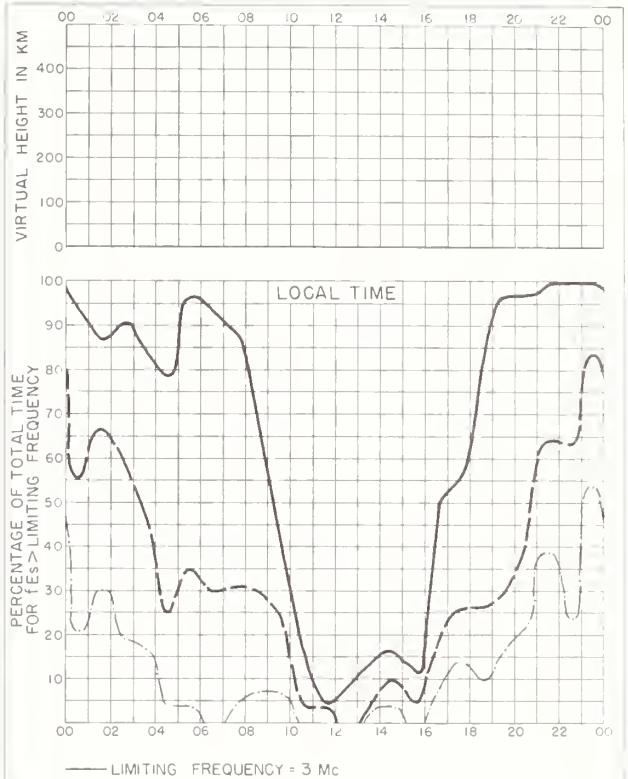


Fig. 26. POINT BARROW, ALASKA OCTOBER 1959

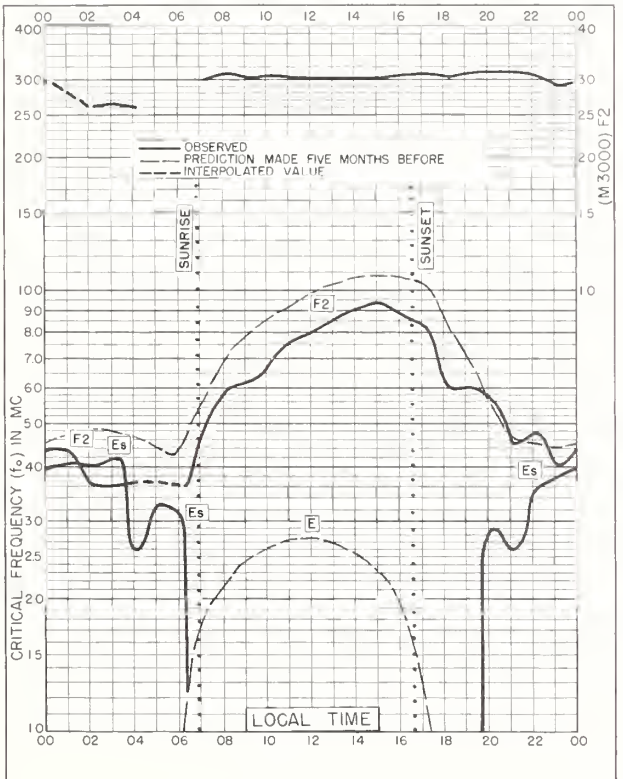


Fig. 27. FAIRBANKS, ALASKA
64.9°N, 147.8°W OCTOBER 1959

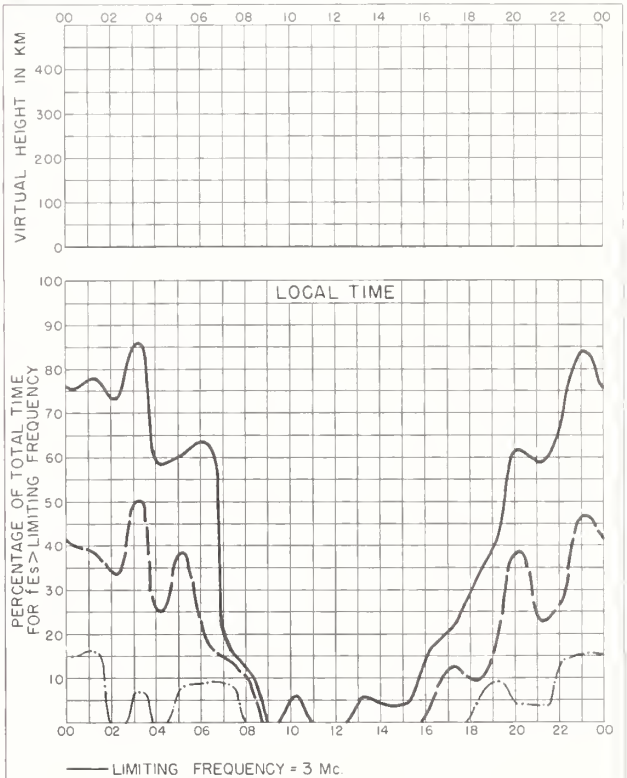


Fig. 28. FAIRBANKS, ALASKA OCTOBER 1959

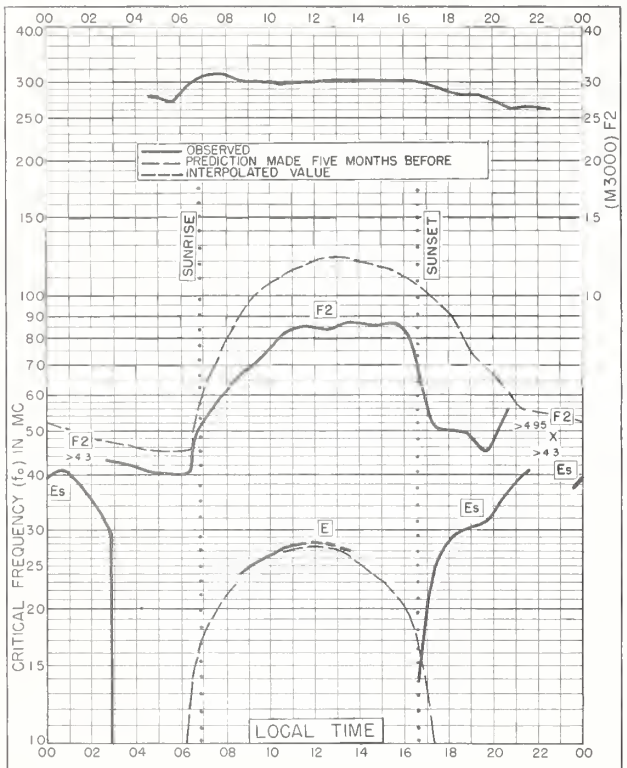


Fig. 29. REYKJAVIK, ICELAND
64.1°N, 21.8°W OCTOBER 1959

NBS 503

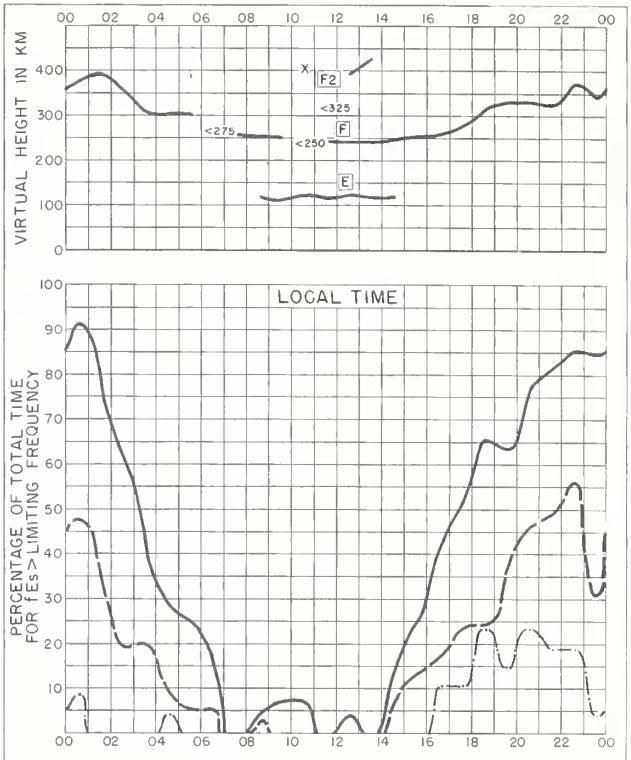


Fig. 30. REYKJAVIK, ICELAND OCTOBER 1959

NBS 490

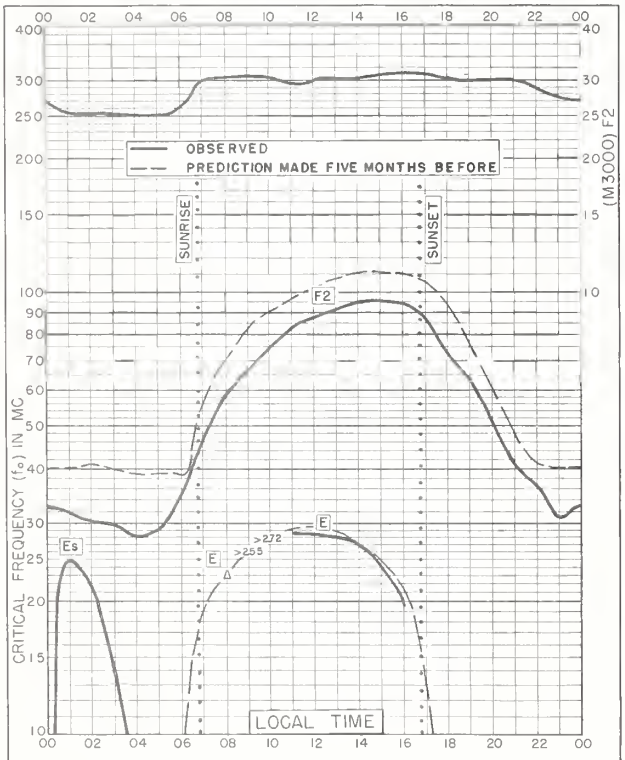


Fig. 31. ANCHORAGE, ALASKA
61.2°N, 149.9°W OCTOBER 1959

NBS 503

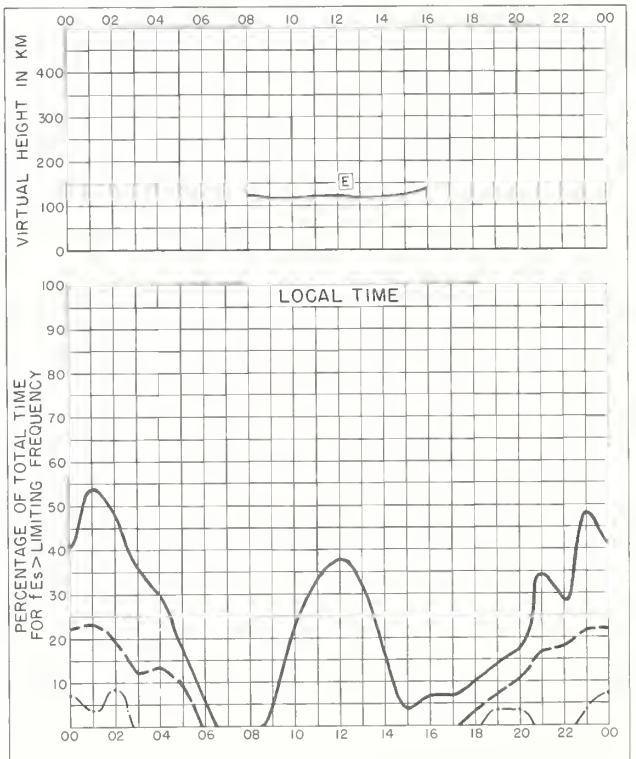


Fig. 32. ANCHORAGE, ALASKA OCTOBER 1959

NBS 490

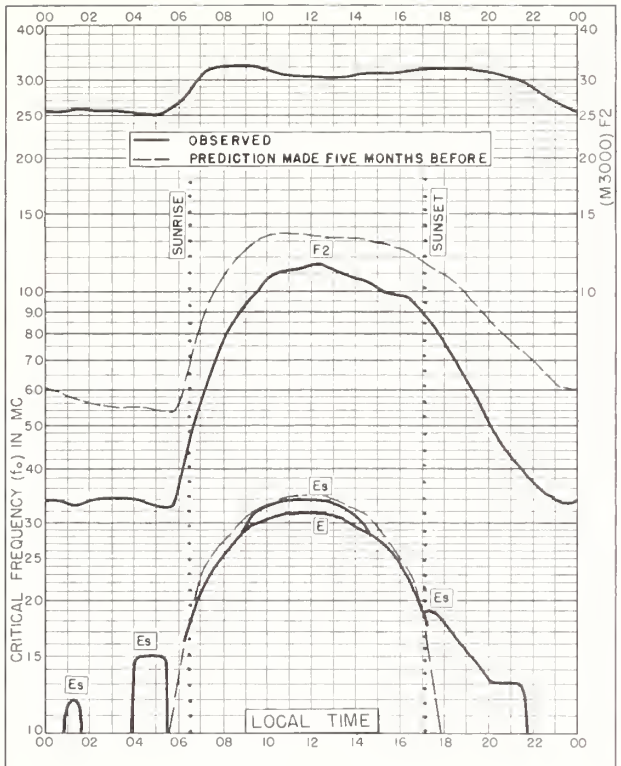


Fig. 33. ADAK, ALASKA
51.9°N, 176.6°W OCTOBER 1959

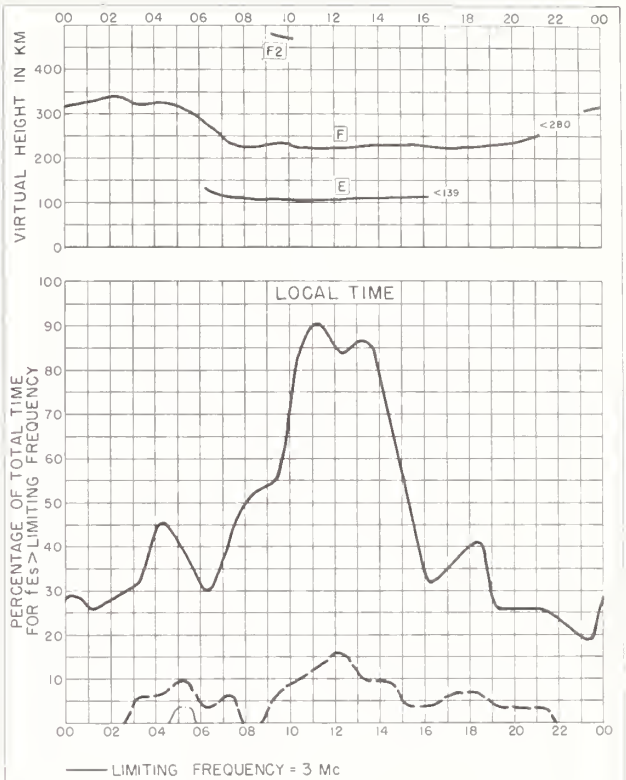


Fig. 34. ADAK, ALASKA OCTOBER 1959

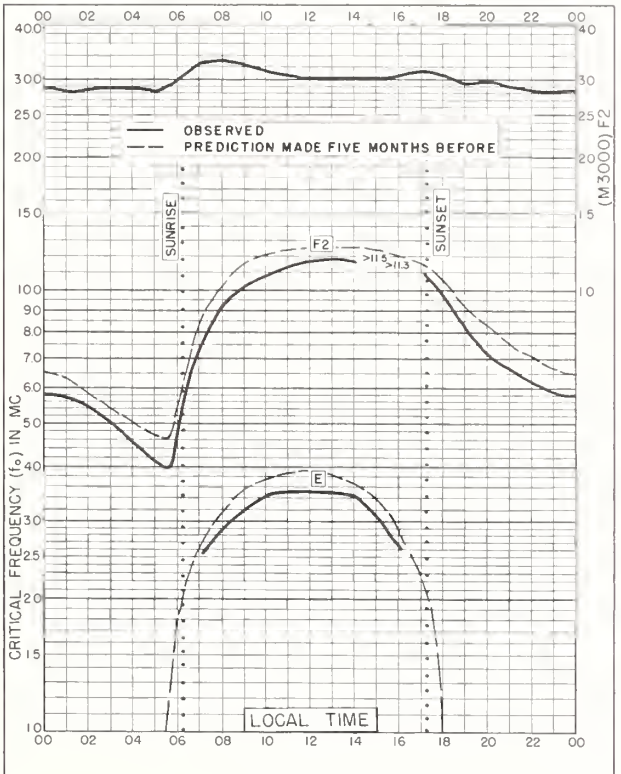


Fig. 35. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W OCTOBER 1959

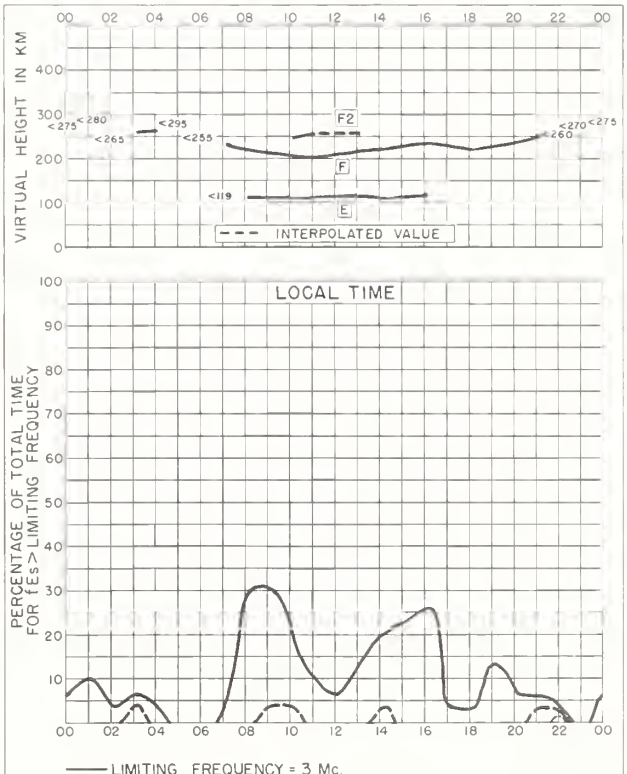


Fig. 36. FT. MONMOUTH, NEW JERSEY OCTOBER 1959

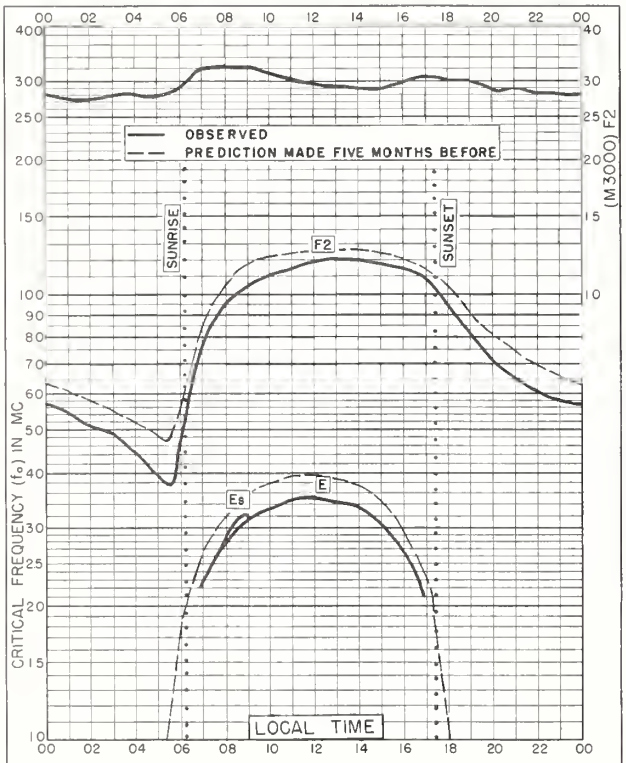


Fig. 37. WASHINGTON, D.C.
38.7°N, 77.1°W OCTOBER 1959

NBS 503

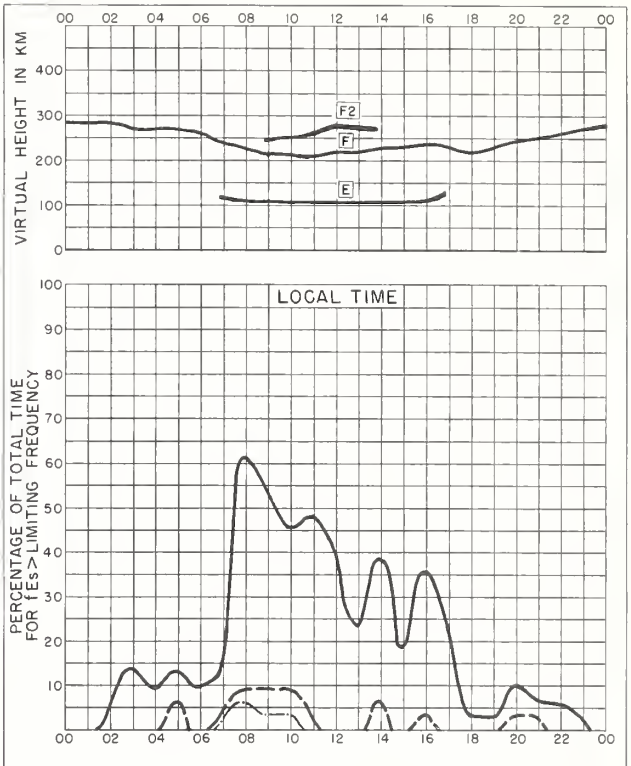


Fig. 38. WASHINGTON, D.C. OCTOBER 1959

NBS 490

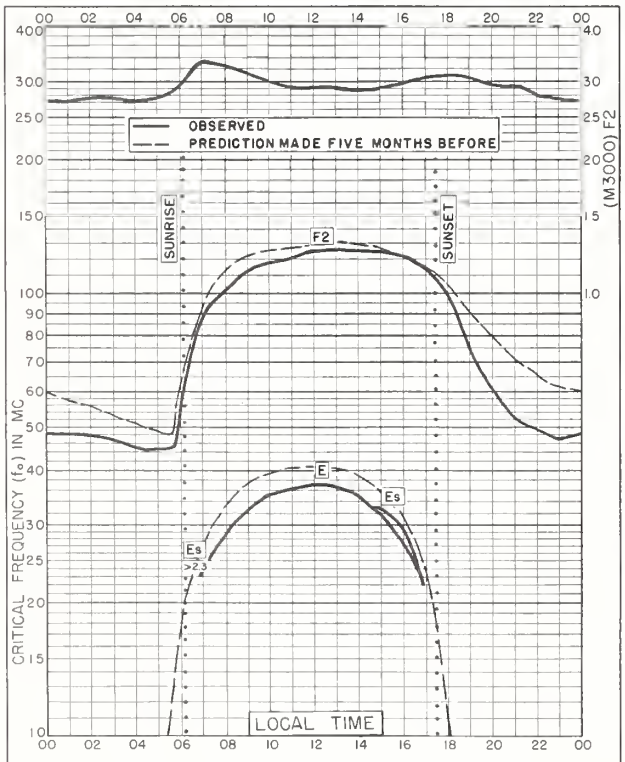


Fig. 39. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W OCTOBER 1959

NBS 503

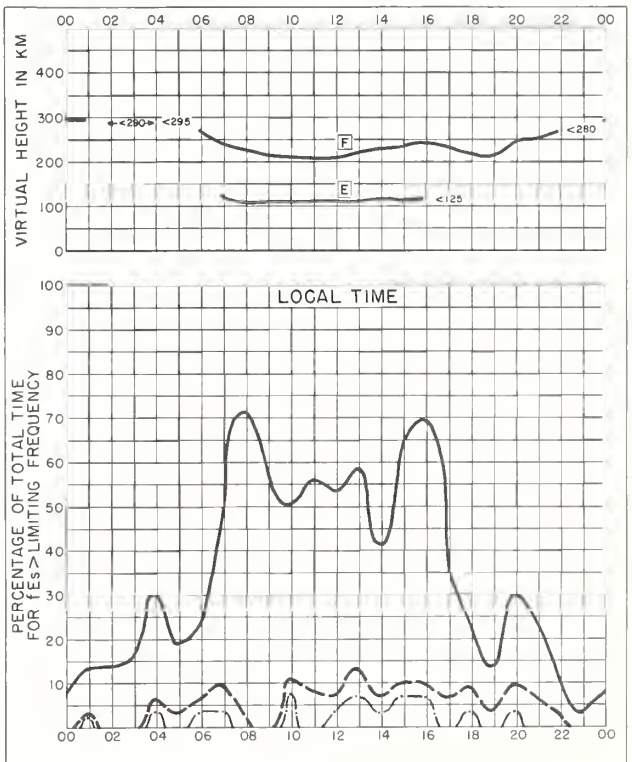


Fig. 40. WHITE SANDS, NEW MEXICO OCTOBER 1959

NBS 490

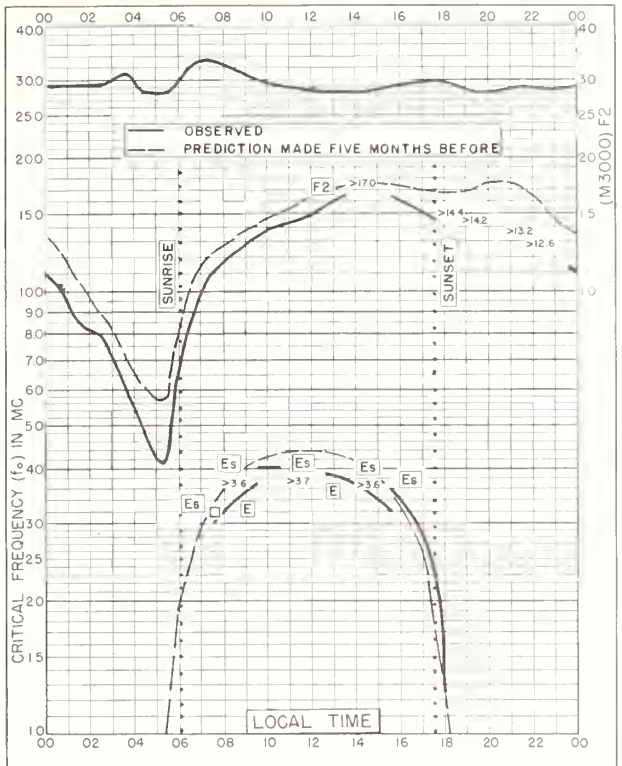


Fig. 41. OKINAWA I.
26.3°N, 127.8°E OCTOBER 1959

NBS 503

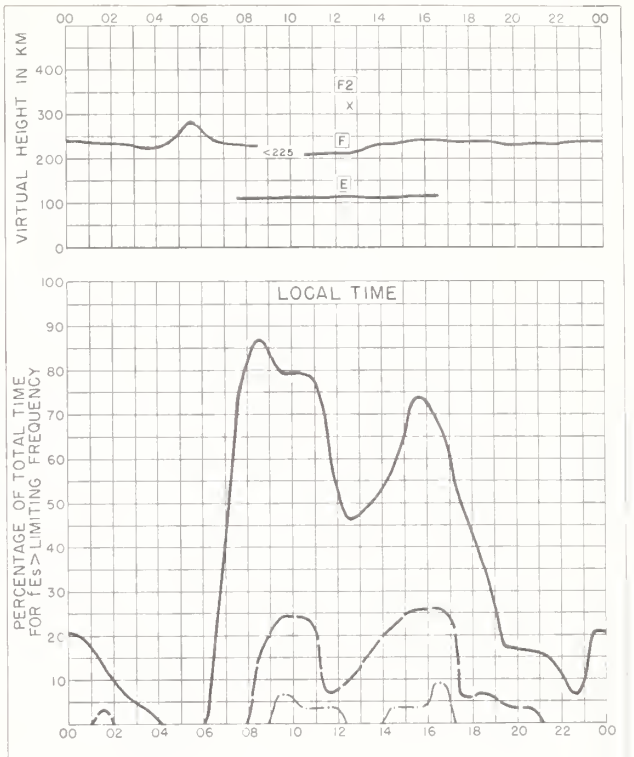


Fig. 42. OKINAWA I. OCTOBER 1959

NBS 490

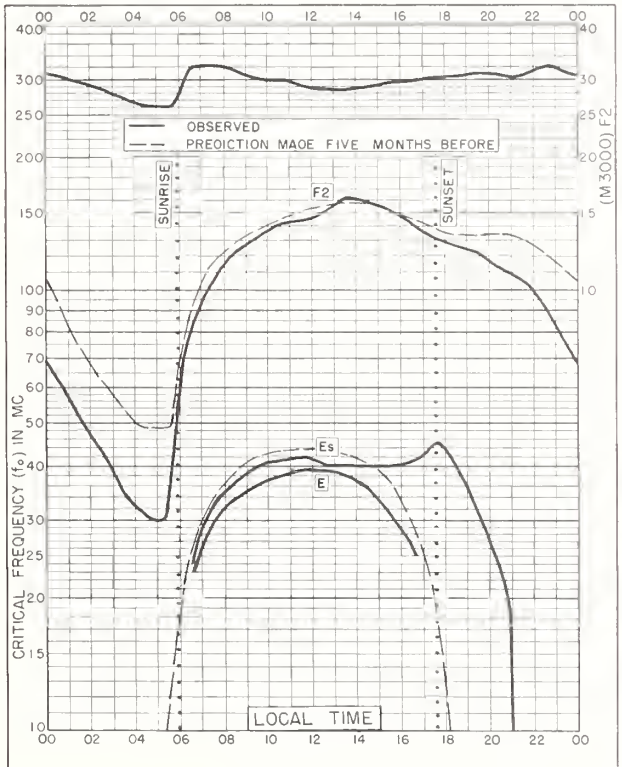


Fig. 43. MAUI, HAWAII
20.8°N, 156.5°W OCTOBER 1959

NBS 503

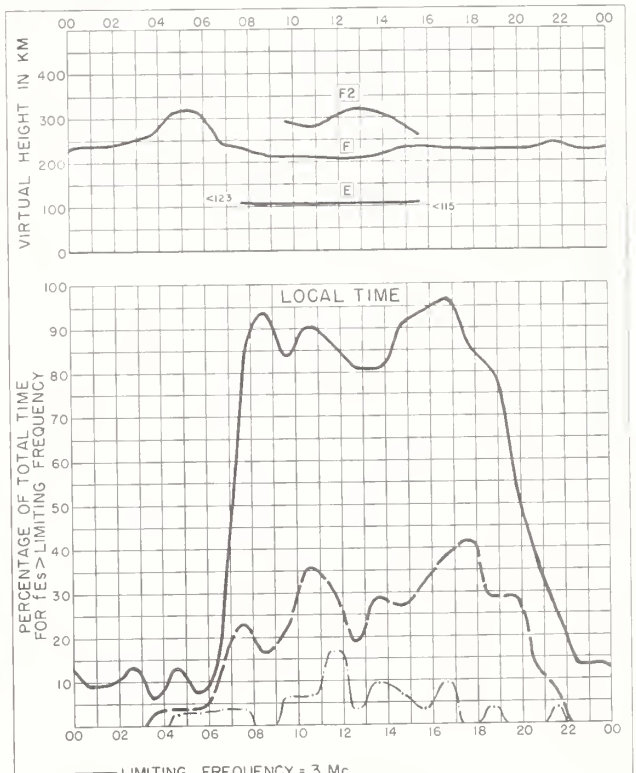


Fig. 44. MAUI, HAWAII OCTOBER 1959

NBS 490

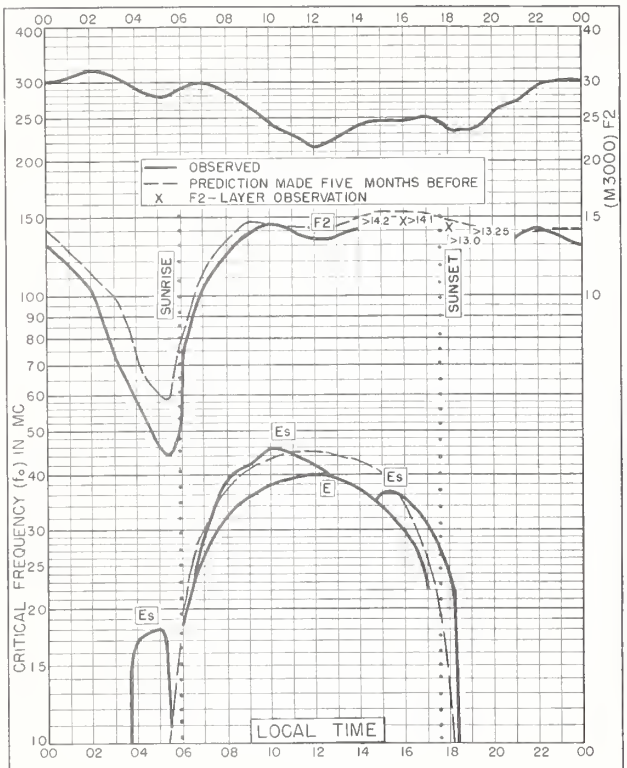


Fig. 45. BAGUIO, P. I.
16.4°N, 120.6°E OCTOBER 1959

NBS 503

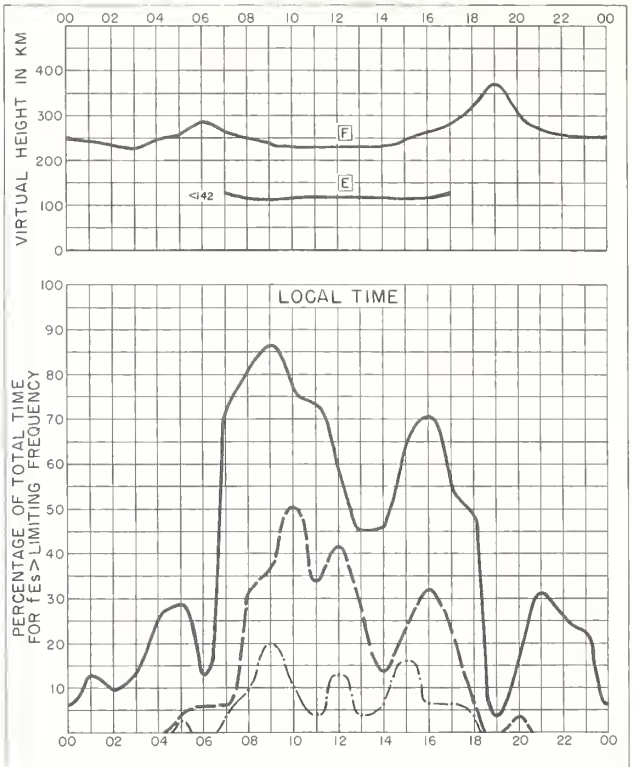


Fig. 46. BAGUIO, P. I. OCTOBER 1959

NBS 490

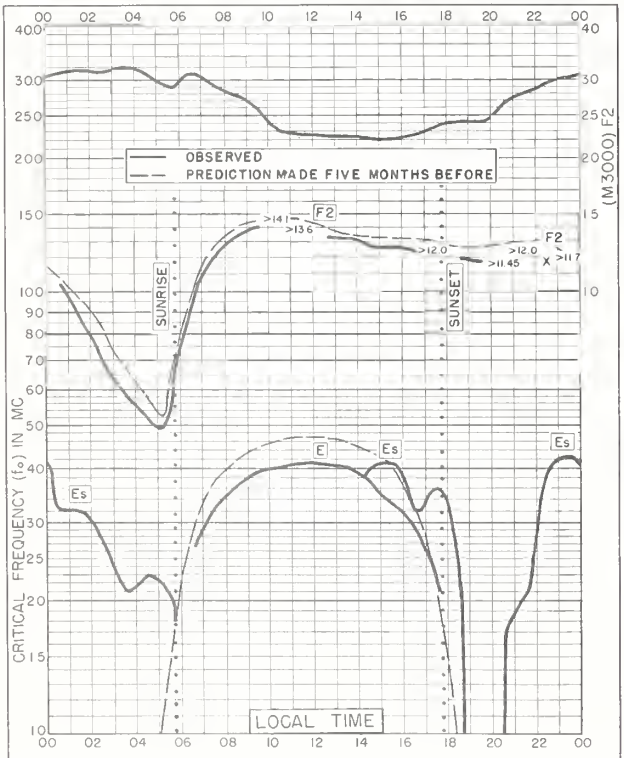


Fig. 47. TALARA, PERU
4.6°S, 81.3°W OCTOBER 1959

NBS 503

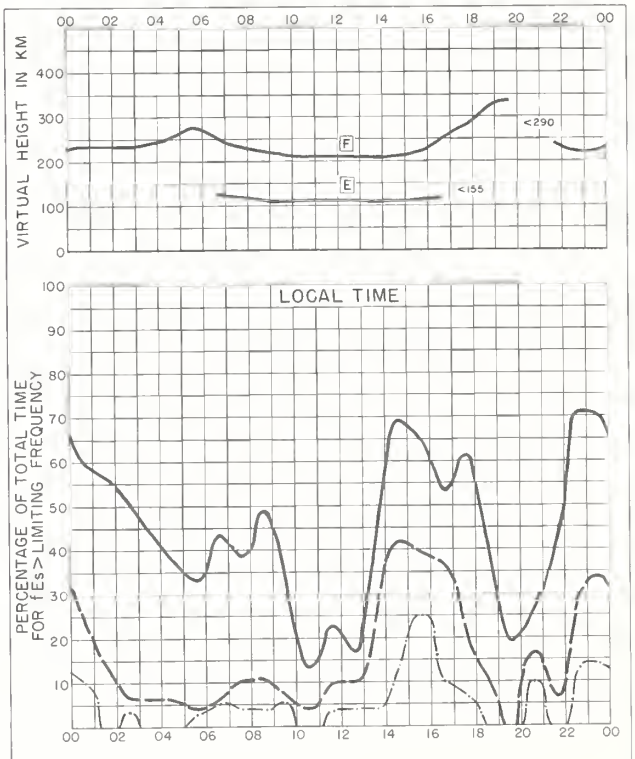


Fig. 48. TALARA, PERU OCTOBER 1959

NBS 490

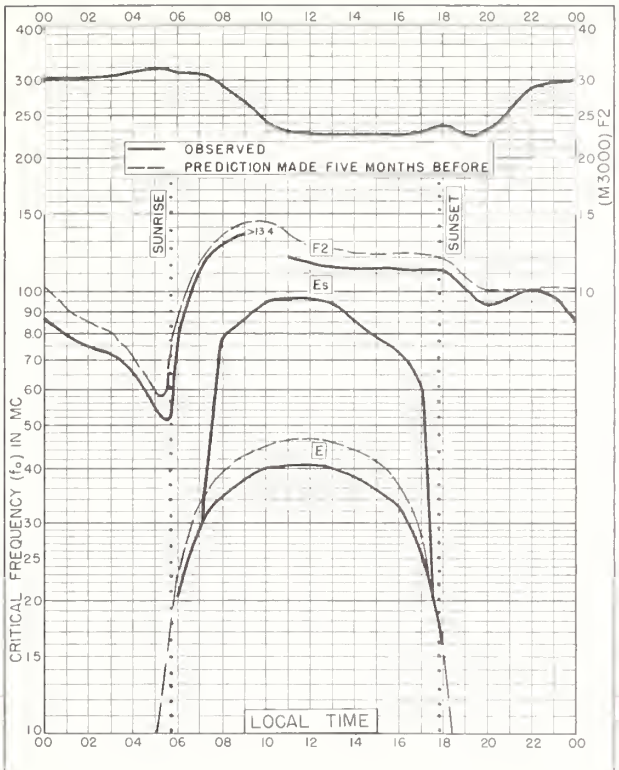


Fig. 49. HUANCAYO, PERU
12.0°S, 75.3°W OCTOBER 1959

NBS 503

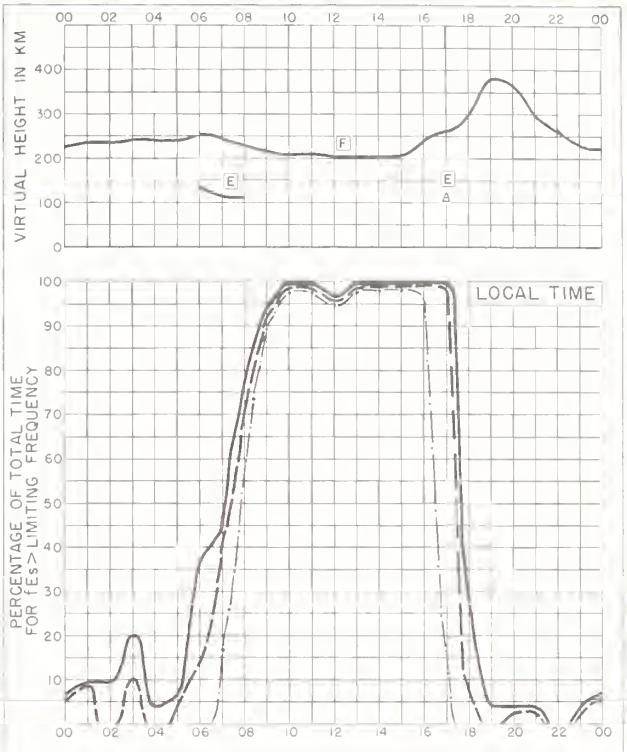


Fig. 50. HUANCAYO, PERU OCTOBER 1959

NBS 490

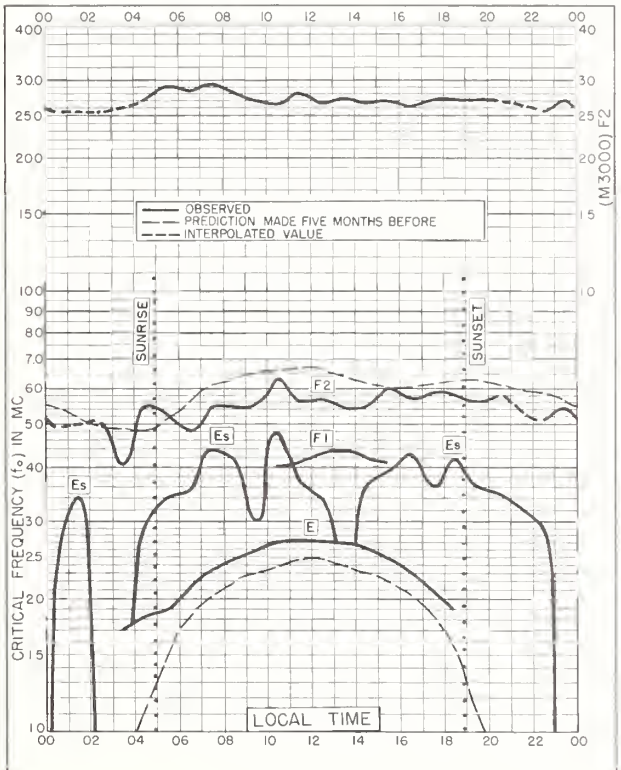


Fig. 51. THULE, GREENLAND
76.6°N, 68.7°W SEPTEMBER 1959

NBS 503

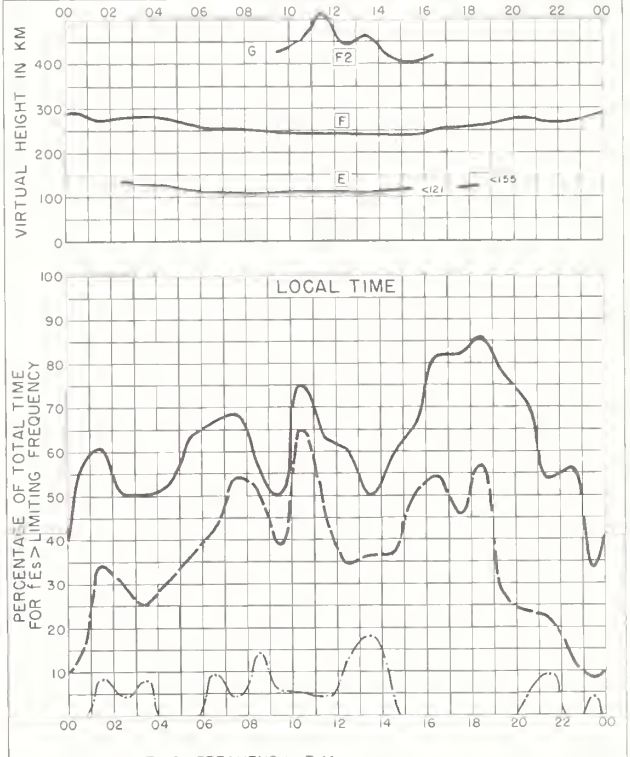


Fig. 52. THULE, GREENLAND SEPTEMBER 1959

NBS 490

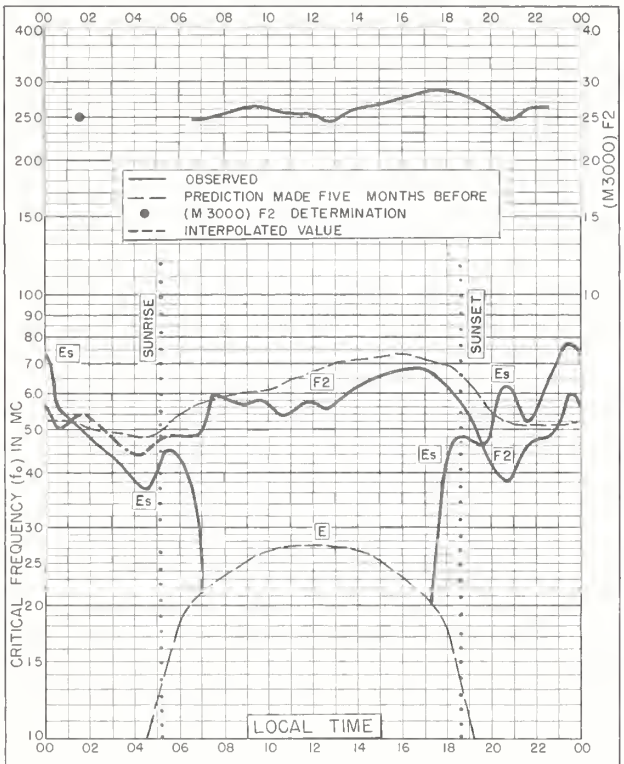
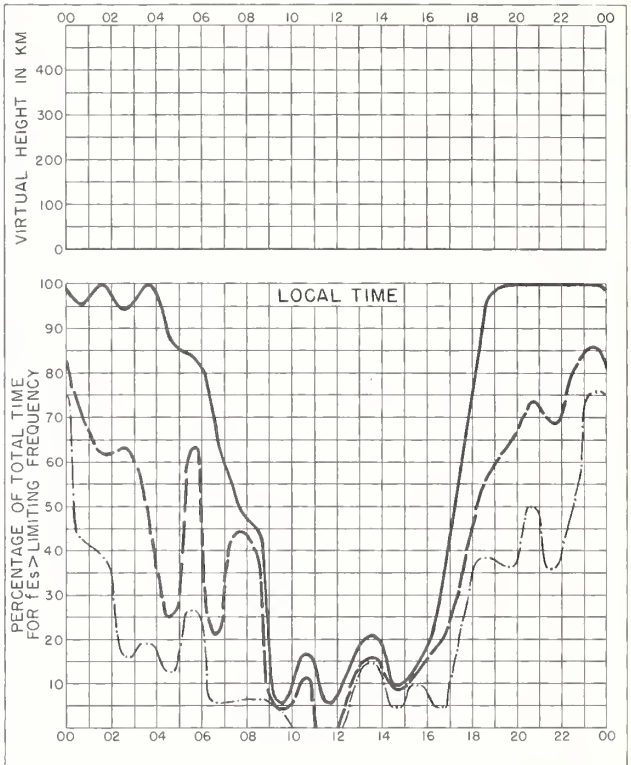


Fig. 53. POINT BARROW, ALASKA
71.3°N, 156.8°W SEPTEMBER 1959

NBS 503



SEPTEMBER 1959

Fig. 54. POINT BARROW, ALASKA

NBS 490

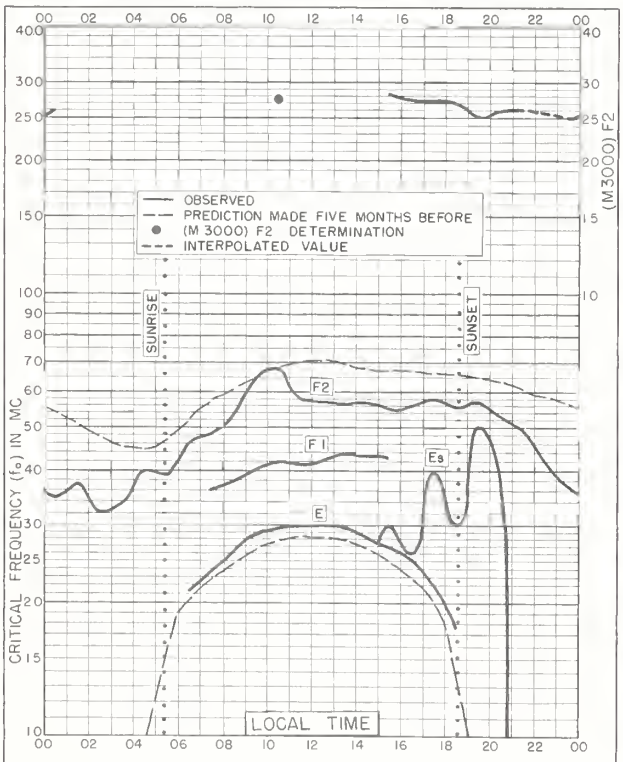
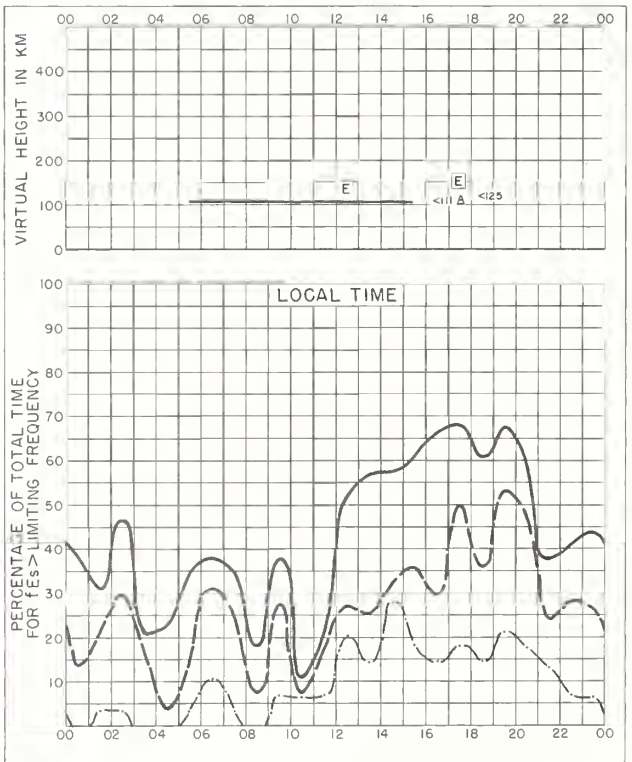


Fig. 55. GODHAVN, GREENLAND
69.3°N, 53.5°W SEPTEMBER 1959

NBS 503



SEPTEMBER 1959

Fig. 56. GODHAVN, GREENLAND

NBS 490

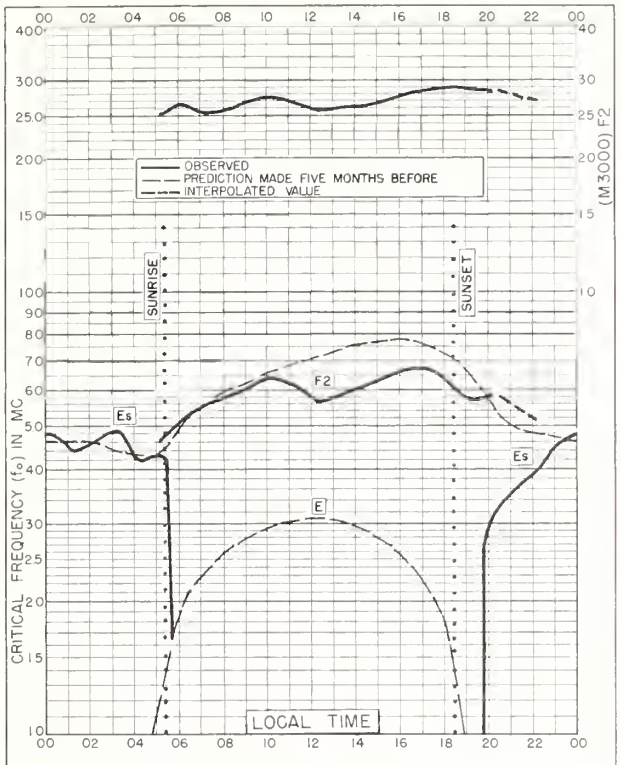


Fig. 57. FAIRBANKS, ALASKA
64.9°N, 147.8°W SEPTEMBER 1959

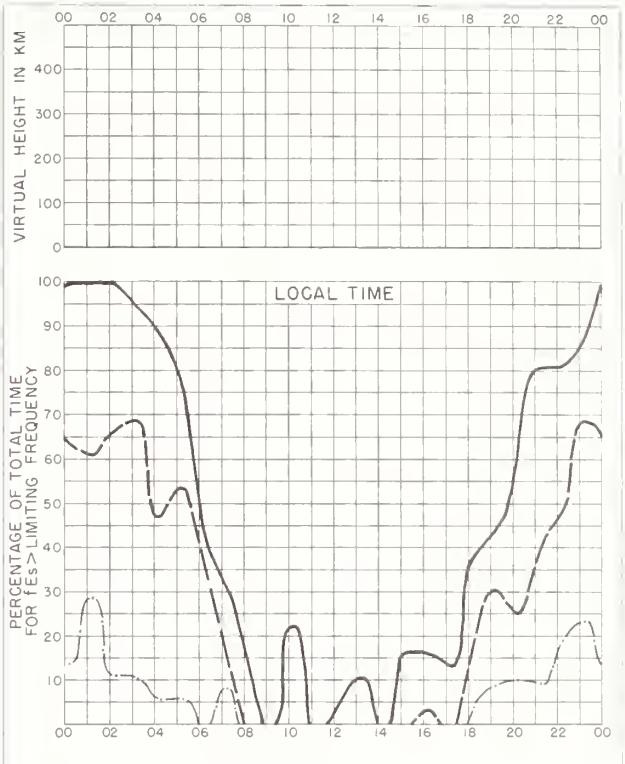


Fig. 58. FAIRBANKS, ALASKA SEPTEMBER 1959

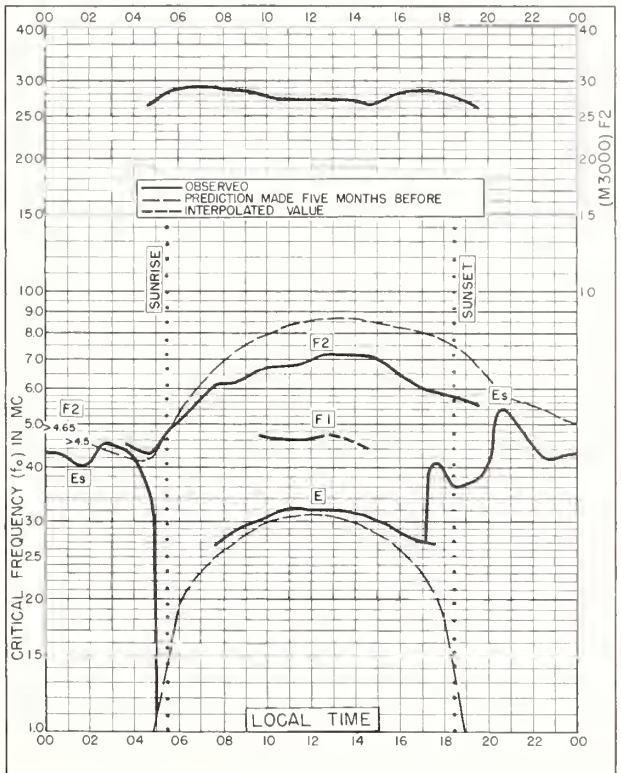


Fig. 59. REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1959

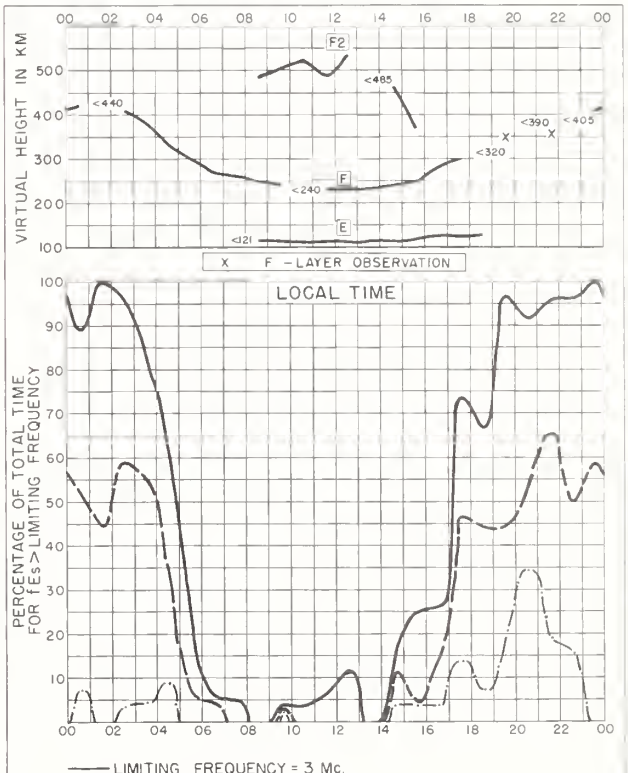


Fig. 60. REYKJAVIK, ICELAND SEPTEMBER 1959

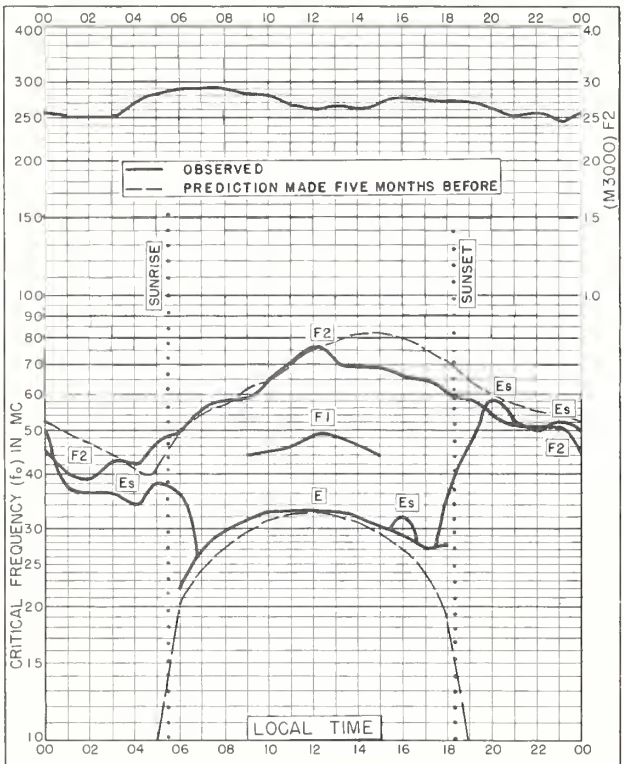


Fig. 61. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W SEPTEMBER 1959

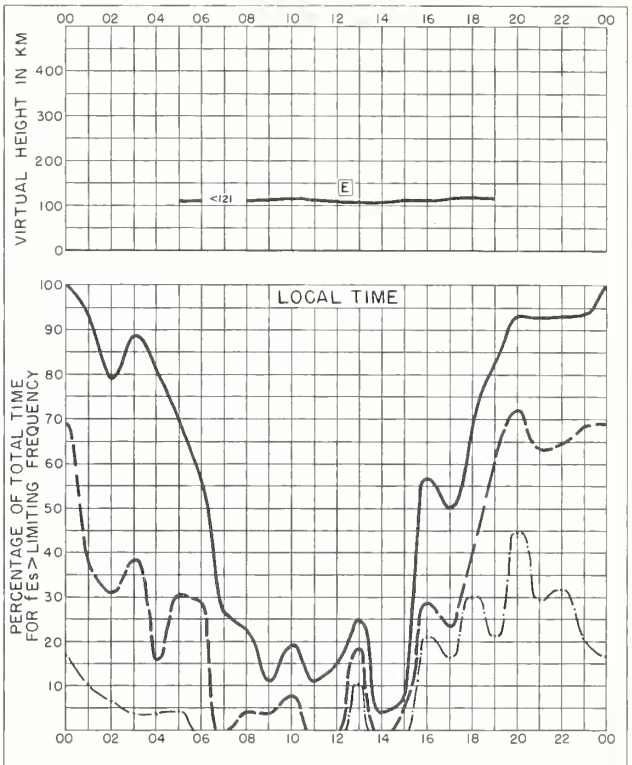


Fig. 62. NARSARSSUAK, GREENLAND SEPTEMBER 1959

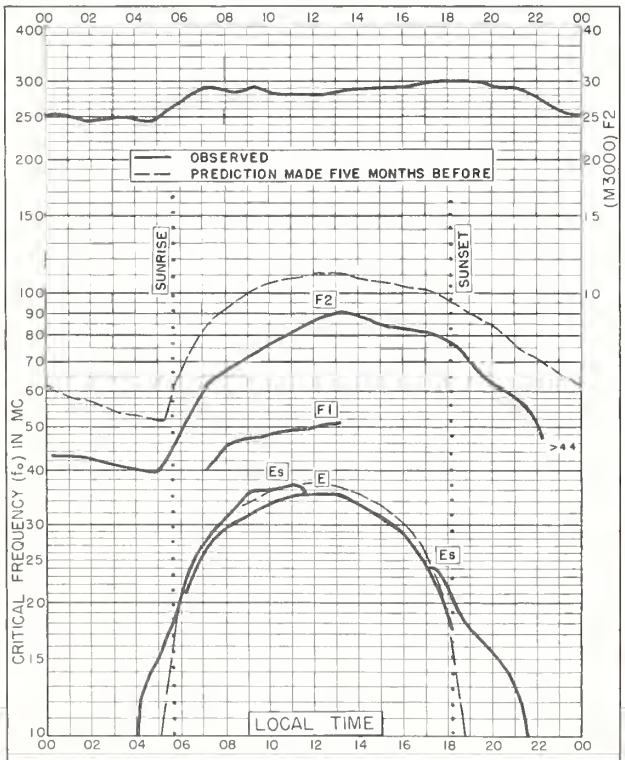


Fig. 63. ADAK, ALASKA
51.9°N, 176.6°W SEPTEMBER 1959

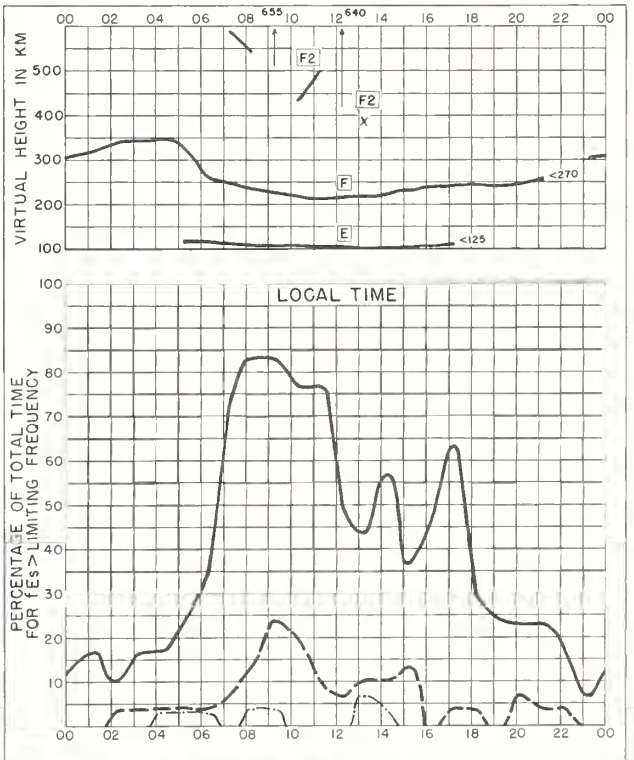


Fig. 64. ADAK, ALASKA SEPTEMBER 1959

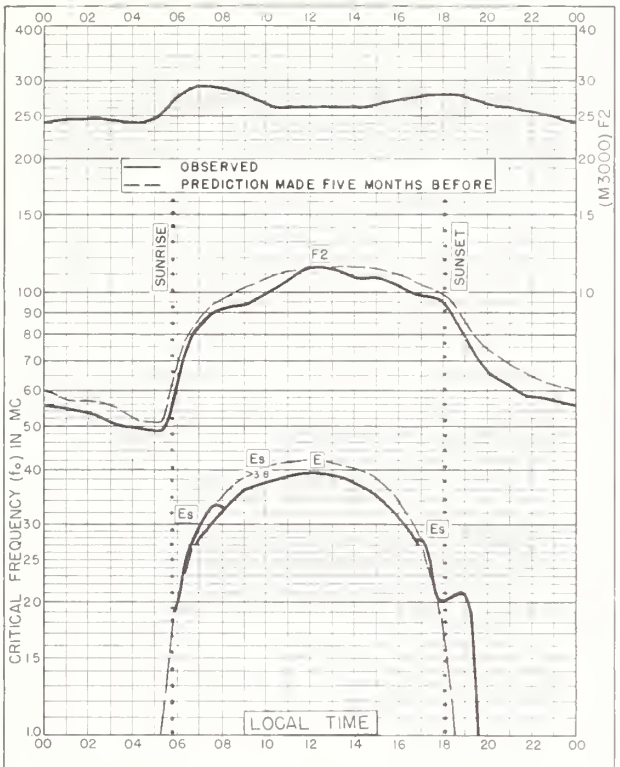
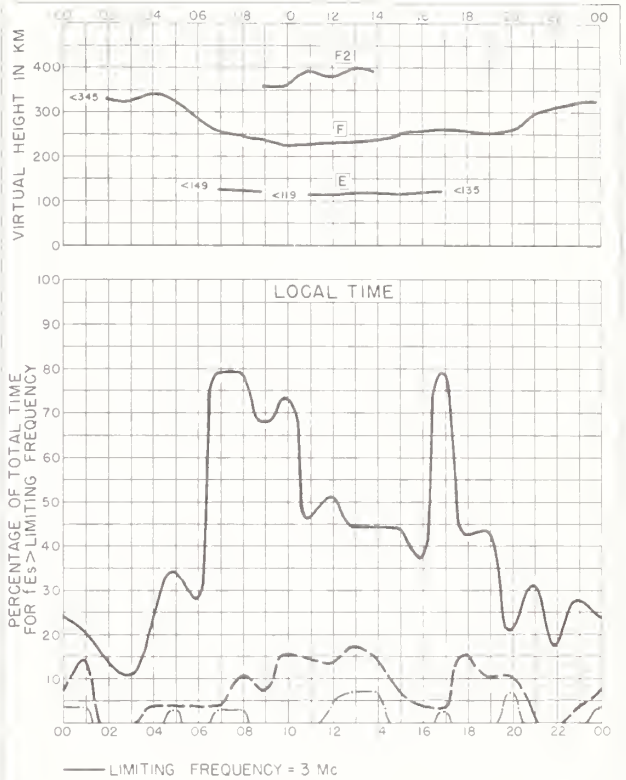


Fig. 65. WHITE SANDS, NEW MEXICO
32.3°N, 106.5° W SEPTEMBER 1959



SEPTEMBER 1959

Fig. 66. WHITE SANDS, NEW MEXICO

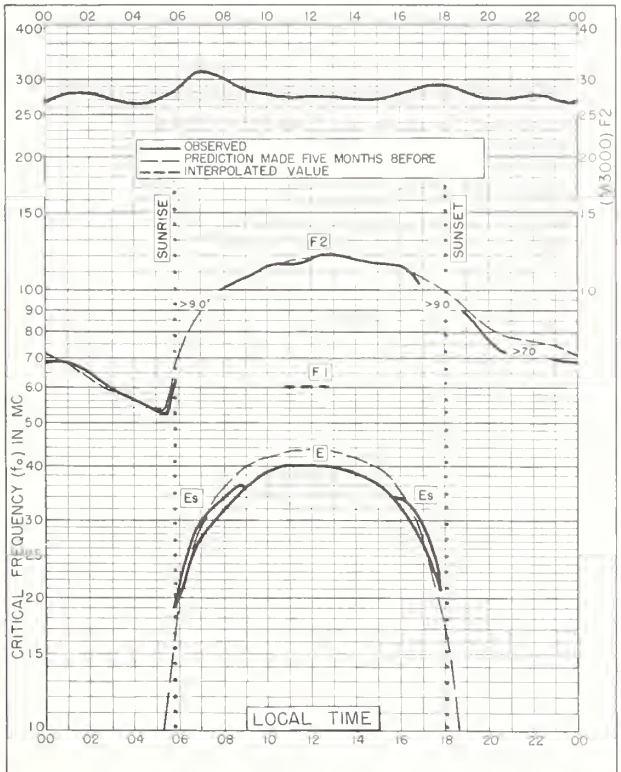


Fig. 67. GRAND BAHAMA I.
26.6°N, 78.2°W SEPTEMBER 1959

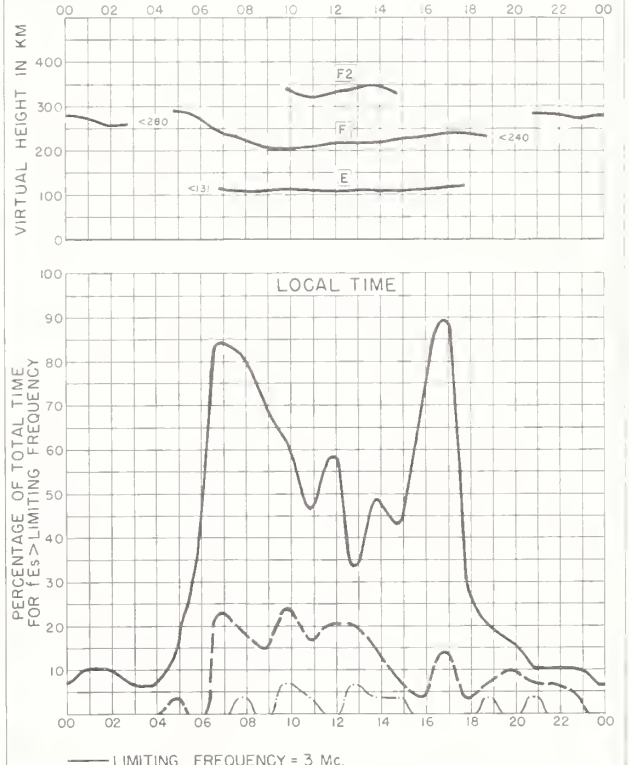


Fig. 68. GRAND BAHAMA I. SEPTEMBER 1959

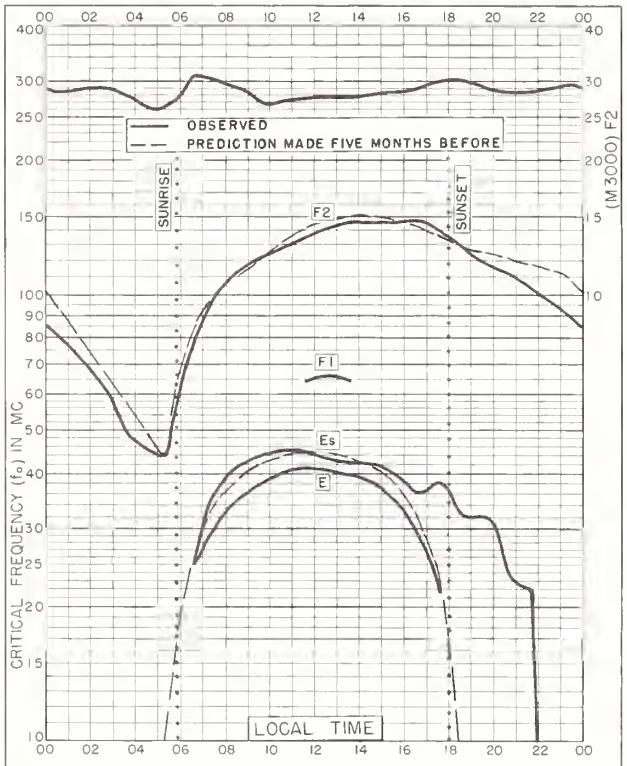


Fig. 69. MAUI, HAWAII
20.8°N, 156.5°W SEPTEMBER 1959

NBS 503

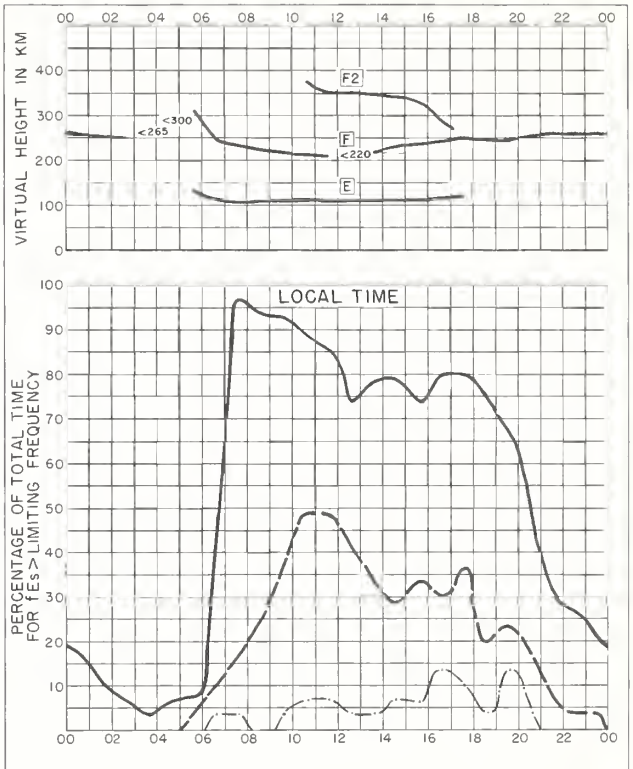


Fig. 70. MAUI, HAWAII SEPTEMBER 1959

NBS 490

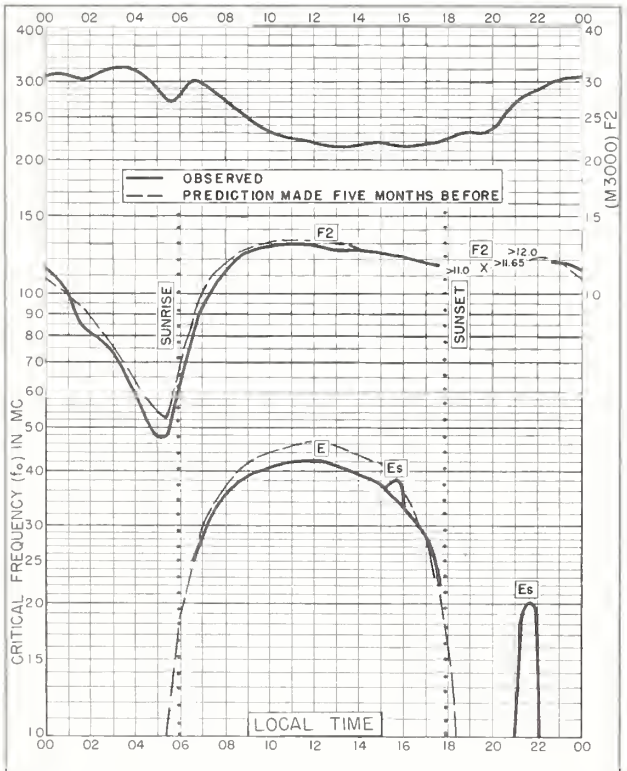


Fig. 71. TALARA, PERU
4.6°S, 81.3°W SEPTEMBER 1959

NBS 503

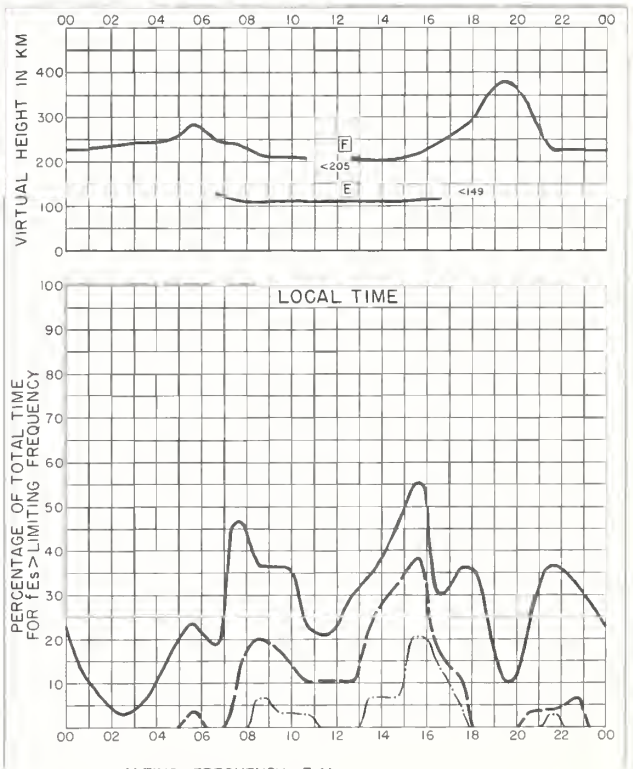


Fig. 72. TALARA, PERU SEPTEMBER 1959

NBS 490

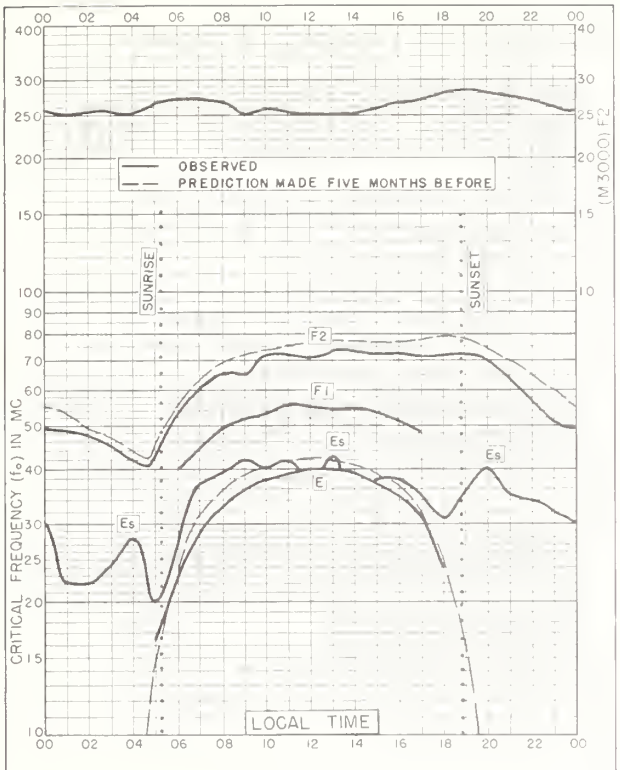


Fig. 73. BOULDER, COLORADO
40.0°N, 105.3° W AUGUST 1959

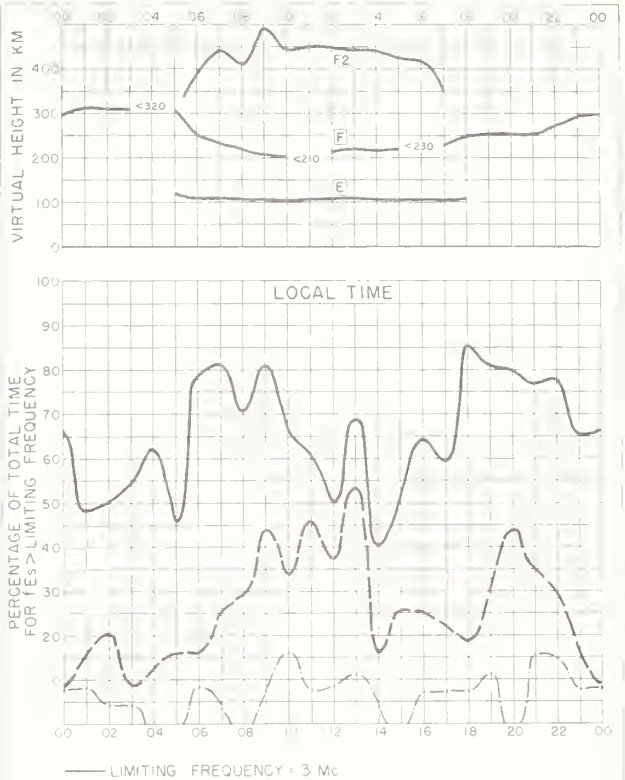


Fig 74. BOULDER, COLORADO AUGUST 1959

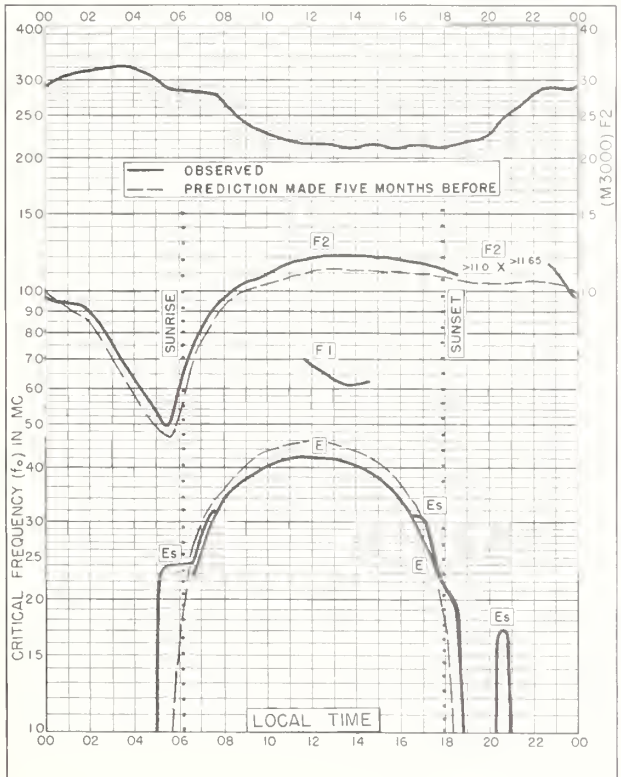


Fig. 75. TALARA, PERU
4.6°S, 81.3° W AUGUST 1959

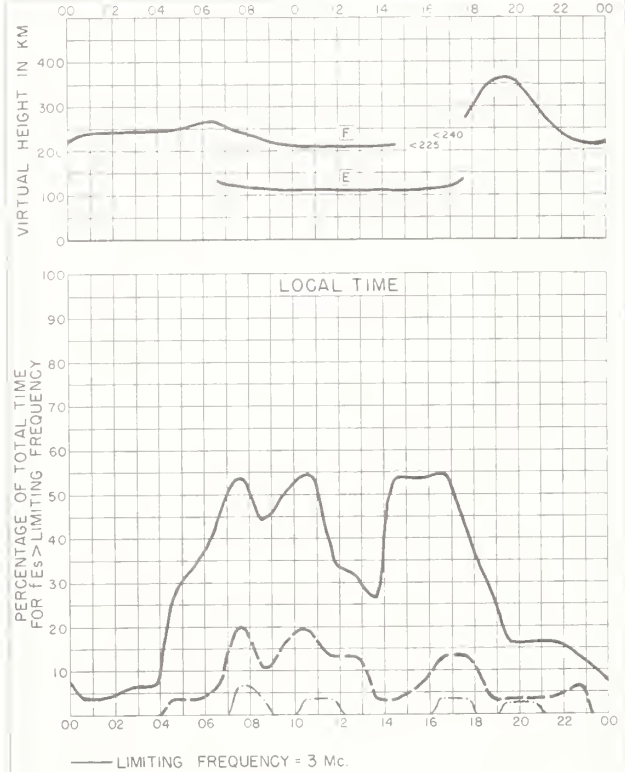


Fig. 76. TALARA, PERU AUGUST 1959

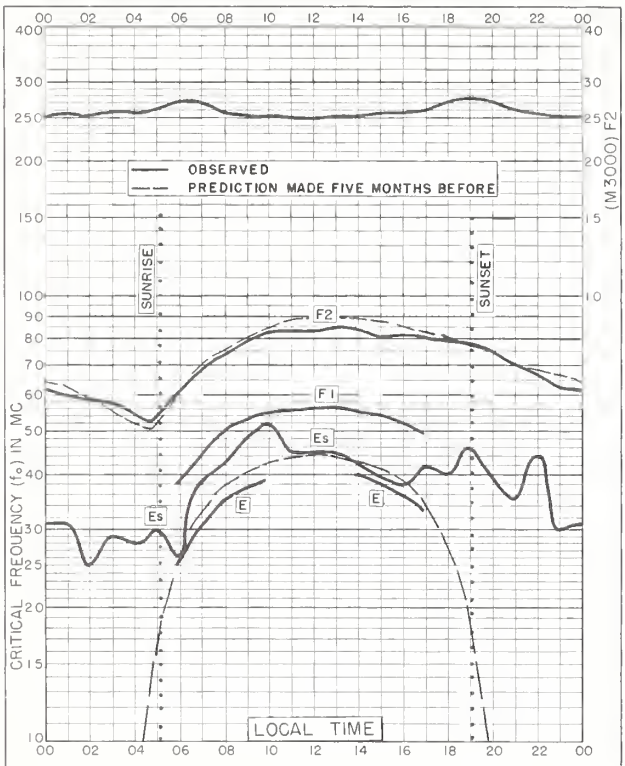


Fig. 77. WHITE SANDS, NEW MEXICO
32.3°N, 106.5° W JULY 1959

NBS 503

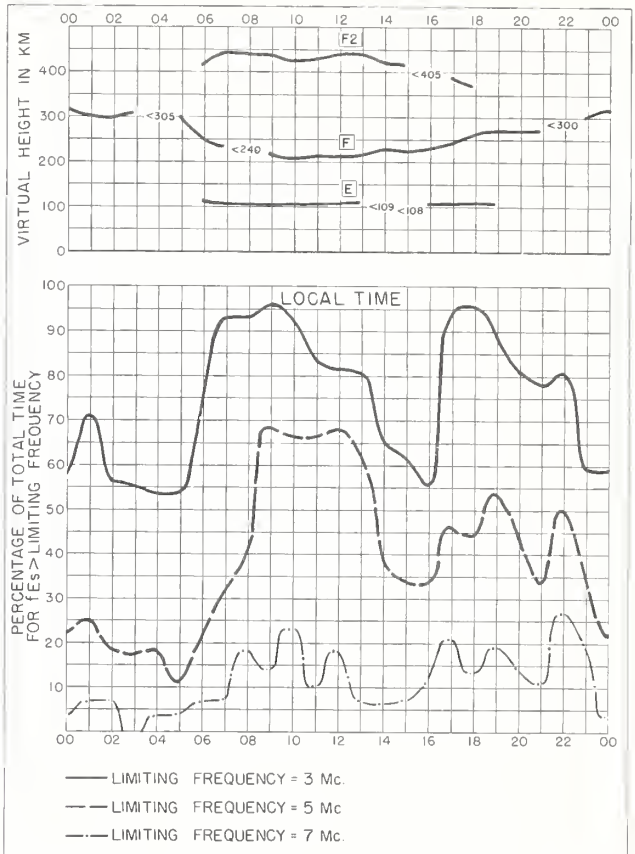


Fig. 78. WHITE SANDS, NEW MEXICO JULY 1959

NBS 490

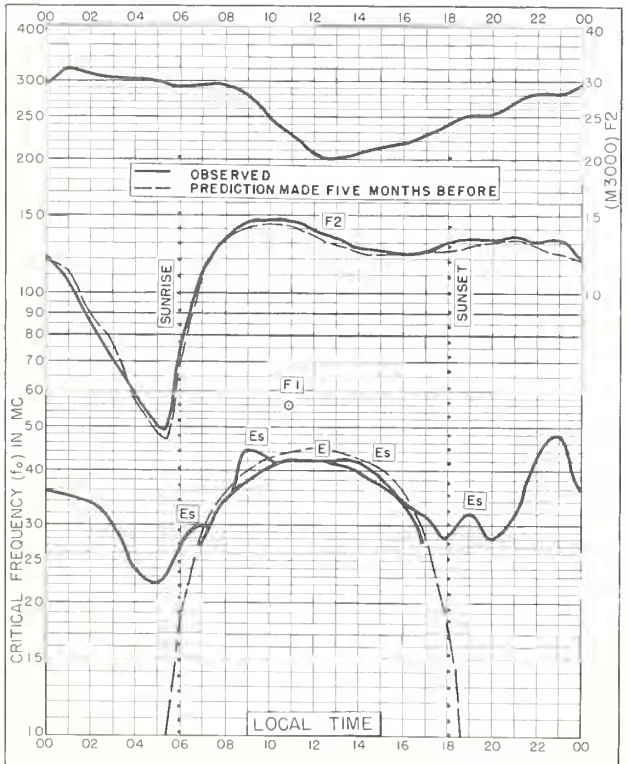


Fig. 79. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E JUNE 1959

NBS 503

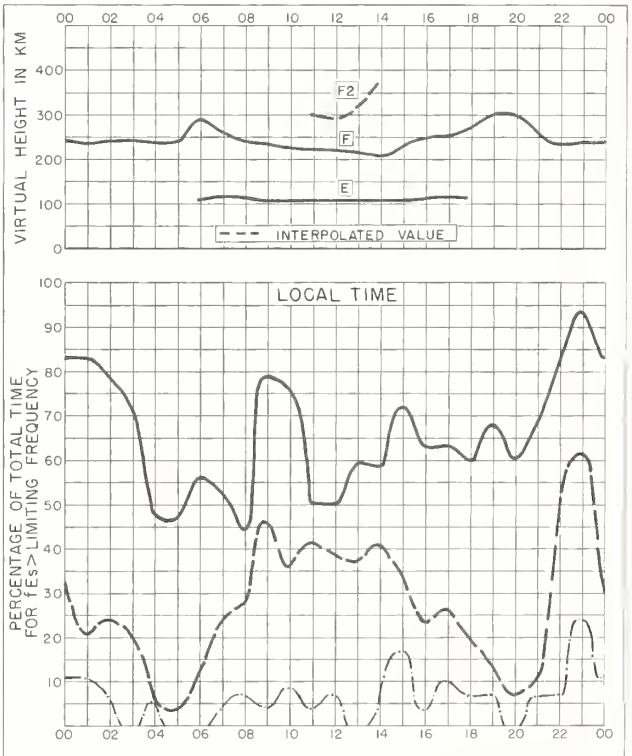


Fig. 80. SINGAPORE, BRITISH MALAYA JUNE 1959

NBS 490

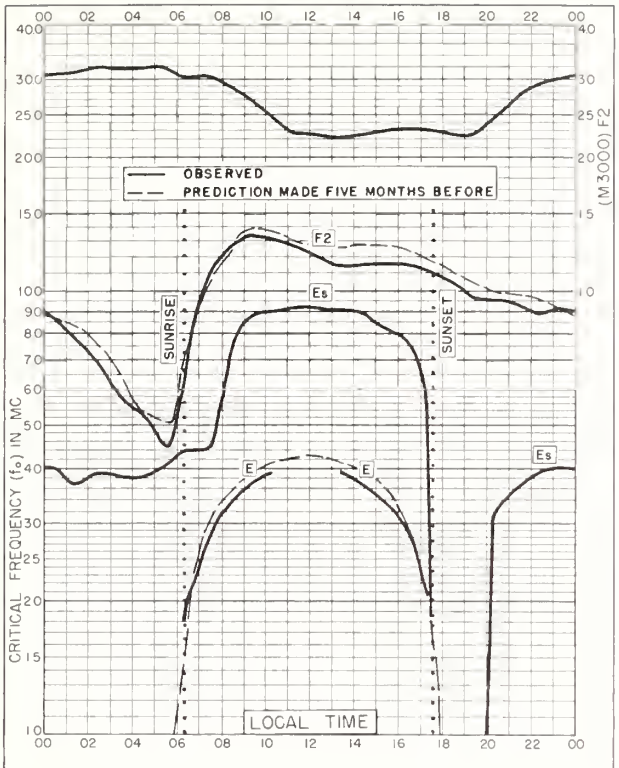


Fig. 81. JULIACA, PERU
15.5° S, 70.2° W MAY 1959

NBS 503

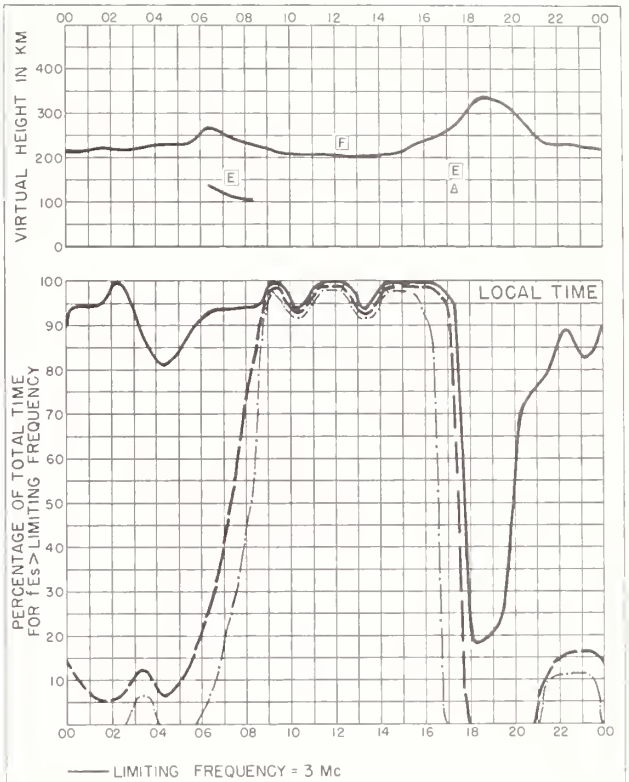


Fig. 82. JULIACA, PERU MAY 1959

NBS 490

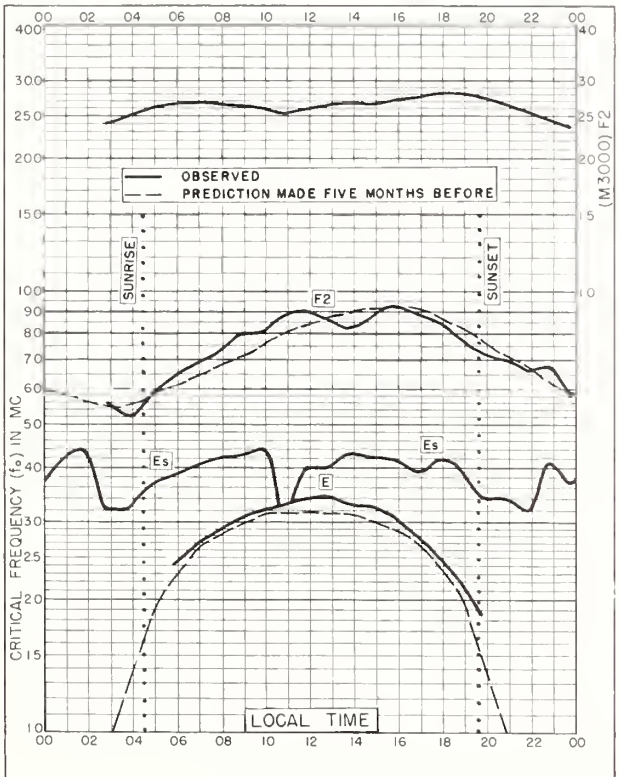


Fig. 83. SODANKYLA, FINLAND
67.4° N, 26.6° E APRIL 1959

NBS 503

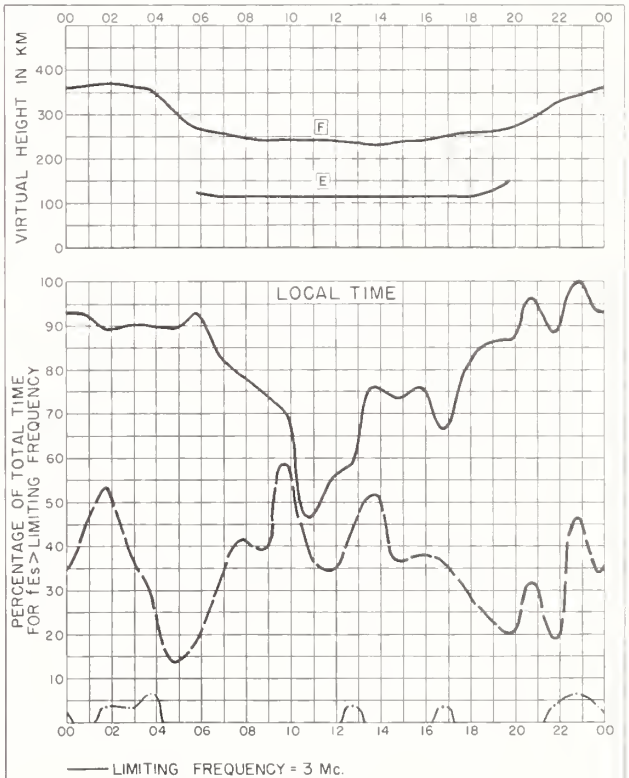


Fig. 84. SODANKYLA, FINLAND APRIL 1959

NBS 490

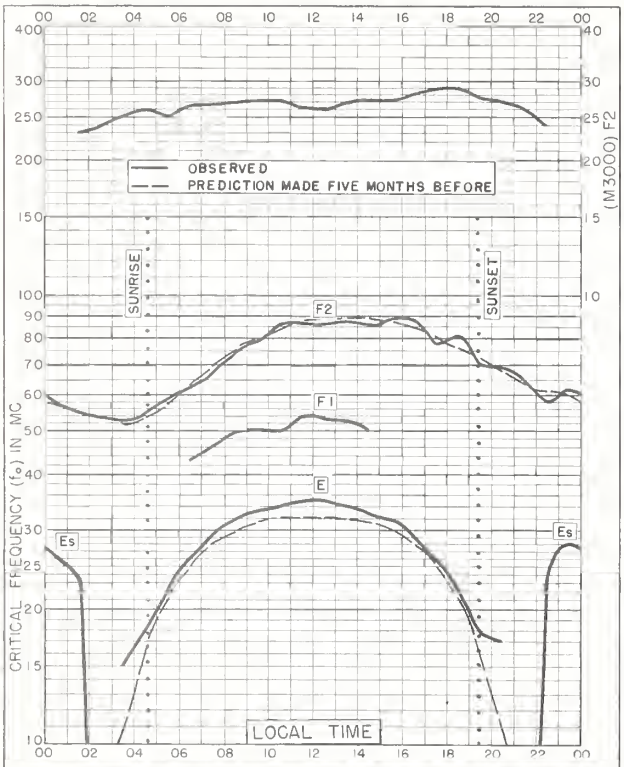


Fig. 85. LULEA, SWEDEN
65.6°N, 22.1°E APRIL 1959

NBS 503

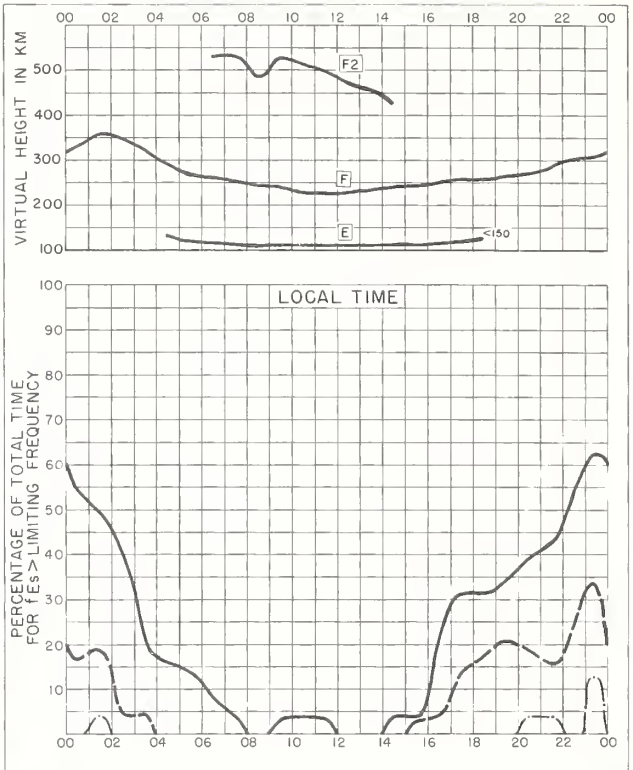


Fig. 86. LULEA, SWEDEN APRIL 1959

NBS 490

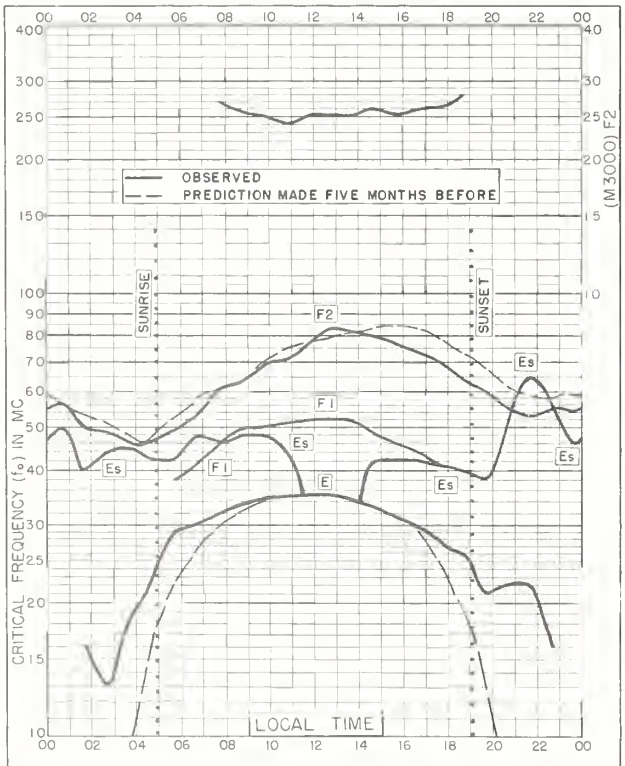


Fig. 87. CHURCHILL, CANADA
58.8°N, 94.2°W APRIL 1959

NBS 503

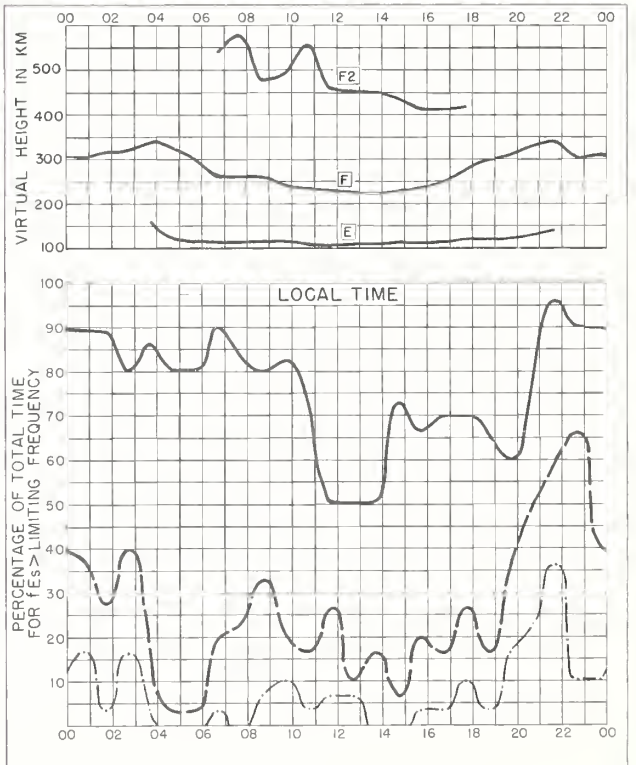


Fig. 88. CHURCHILL, CANADA APRIL 1959

NBS 490

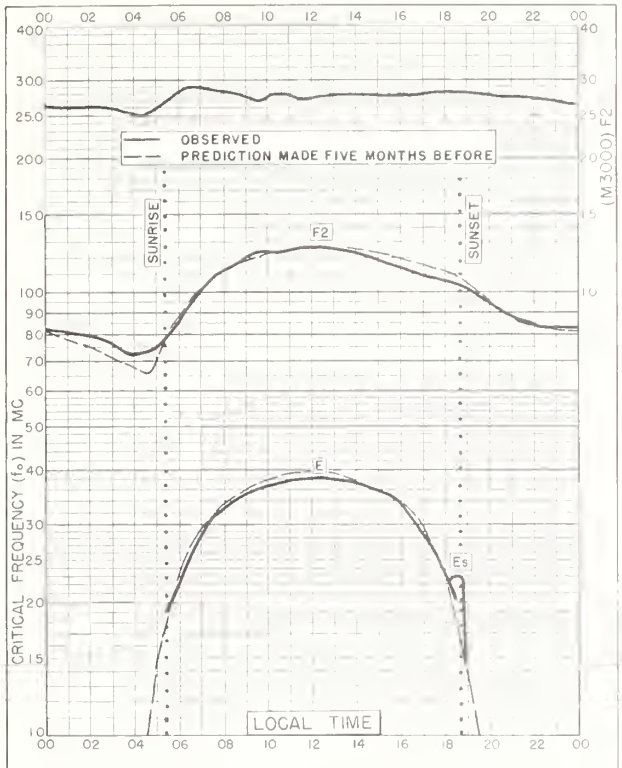


Fig. 89. WAKKANAI, JAPAN
45.4°N, 141.7°E APRIL 1959

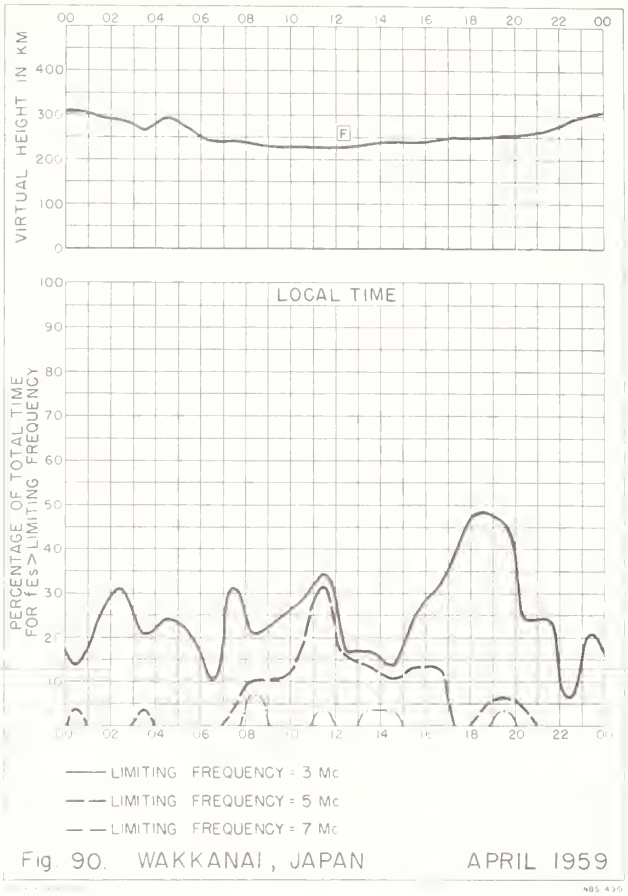


Fig. 90. WAKKANAI, JAPAN APRIL 1959

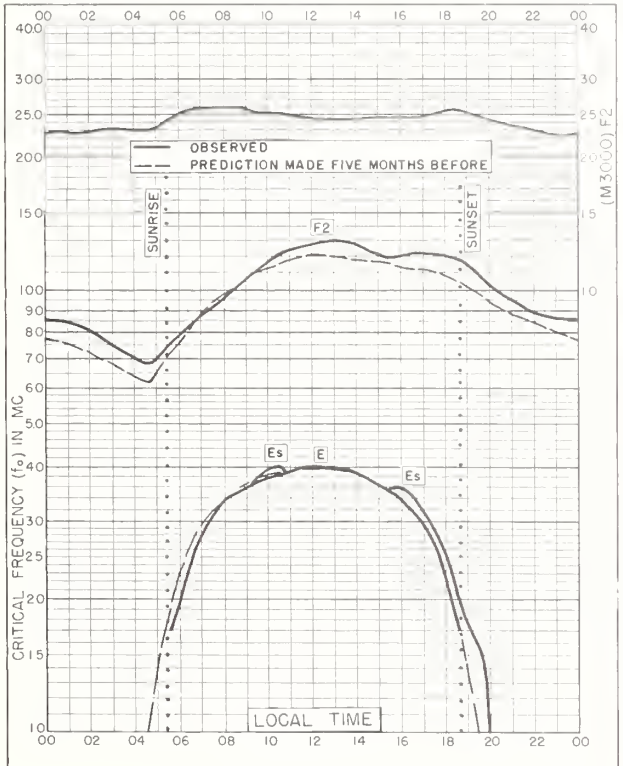


Fig. 91. MONTE CAPELLINO, ITALY
44.6°N, 9.0°E APRIL 1959

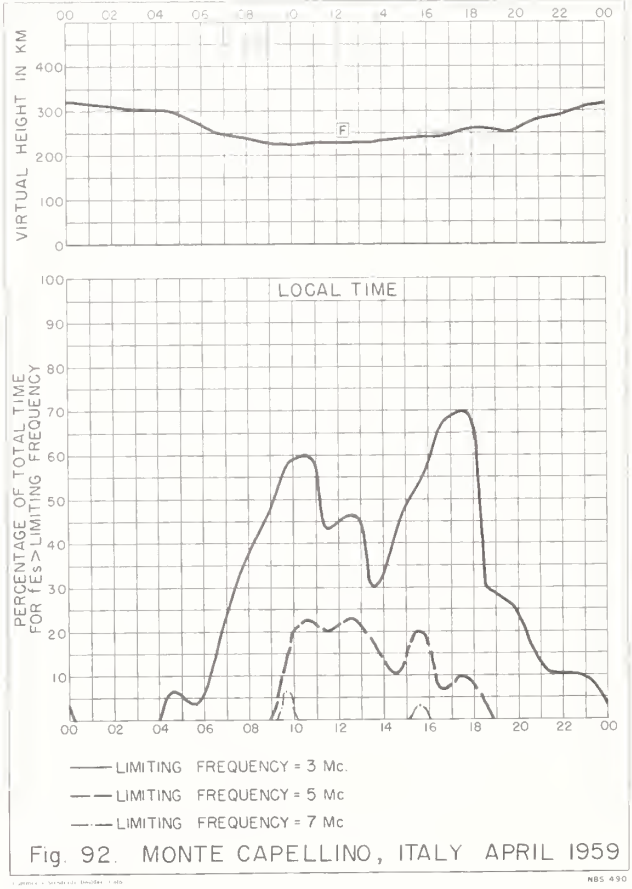


Fig. 92. MONTE CAPELLINO, ITALY APRIL 1959

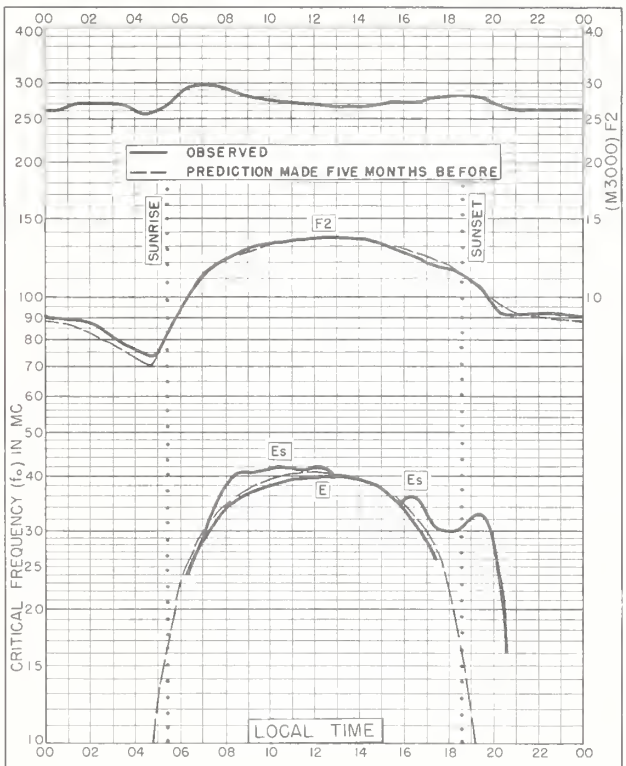


Fig. 93. AKITA, JAPAN
39.7°N, 140.1°E APRIL 1959

NBS 503

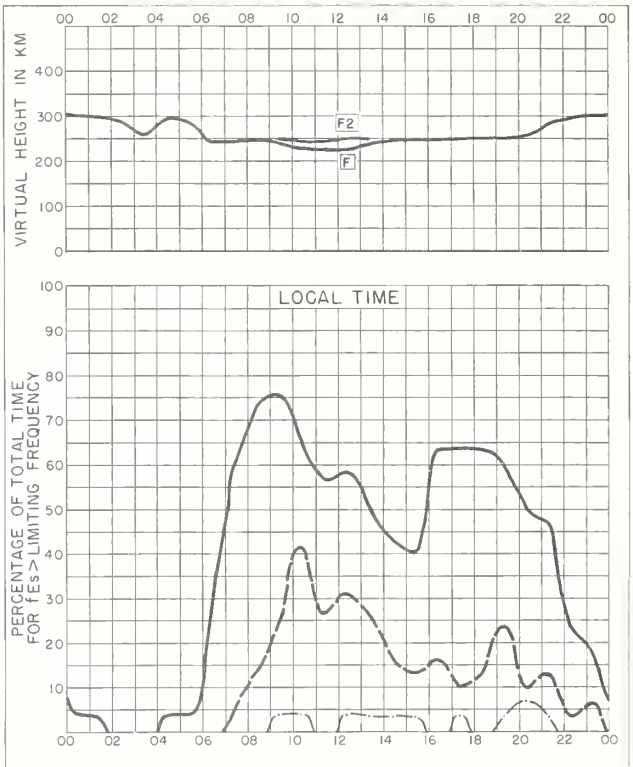


Fig. 94. AKITA, JAPAN APRIL 1959

NBS 490

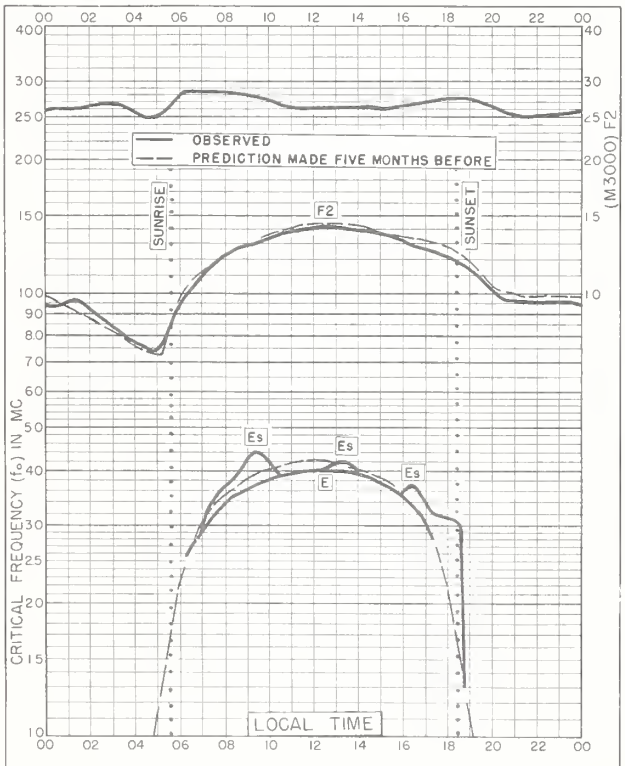


Fig. 95. TOKYO, JAPAN
35.7°N, 139.5°E APRIL 1959

NBS 503

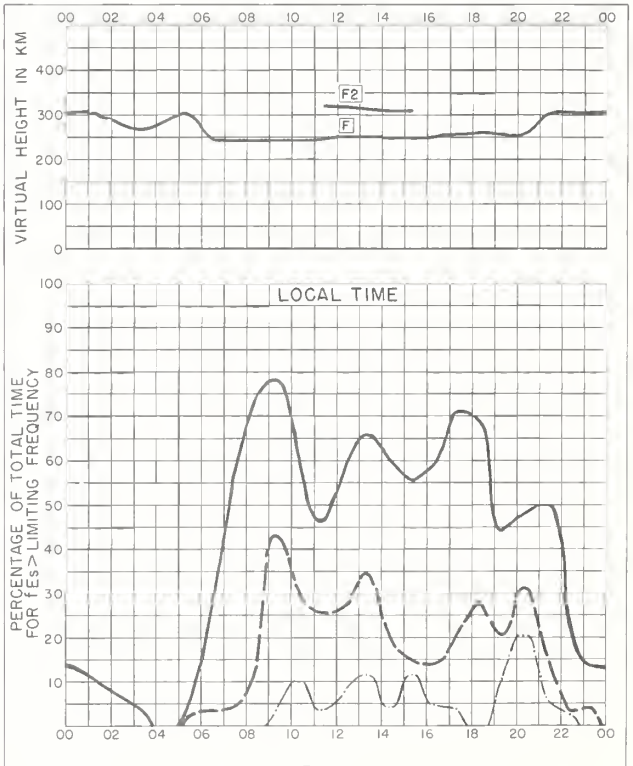


Fig. 96. TOKYO, JAPAN APRIL 1959

NBS 490

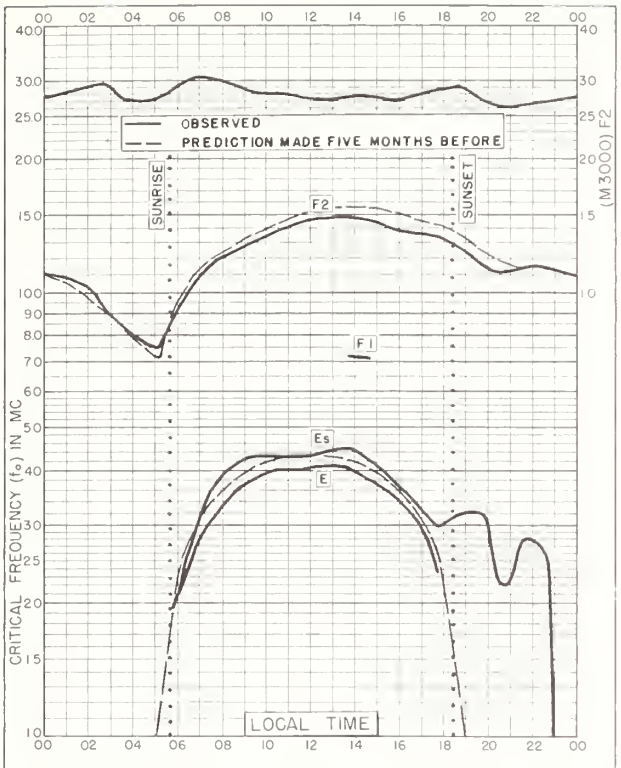


Fig. 97. YAMAGAWA, JAPAN
31.2°N, 130.6°E APRIL 1959

NBS 503

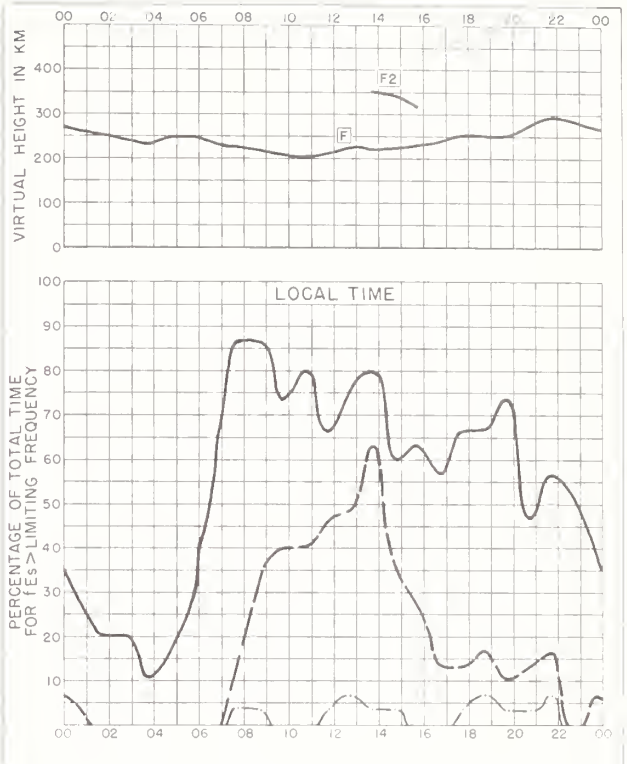


Fig. 98. YAMAGAWA, JAPAN APRIL 1959

NBS 490

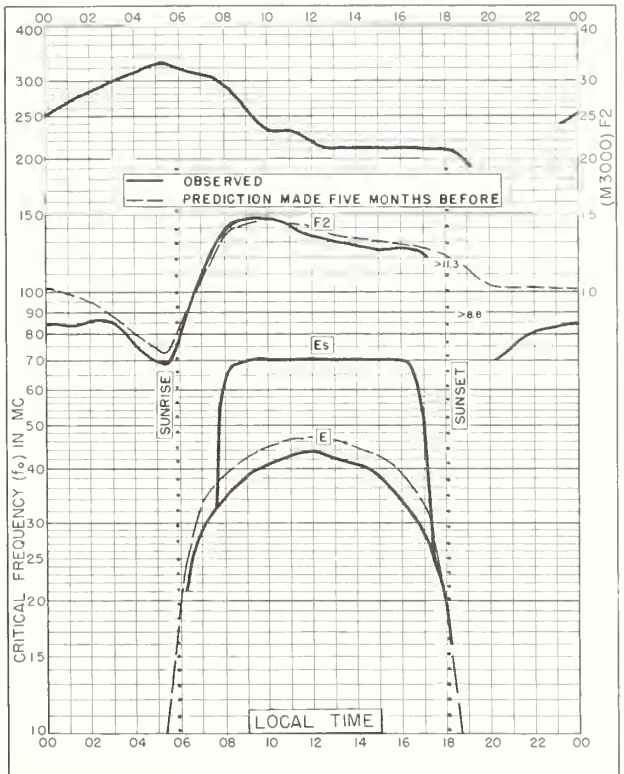


Fig. 99. IBADAN, NIGERIA
7.4°N, 3.9°E APRIL 1959

NBS 503

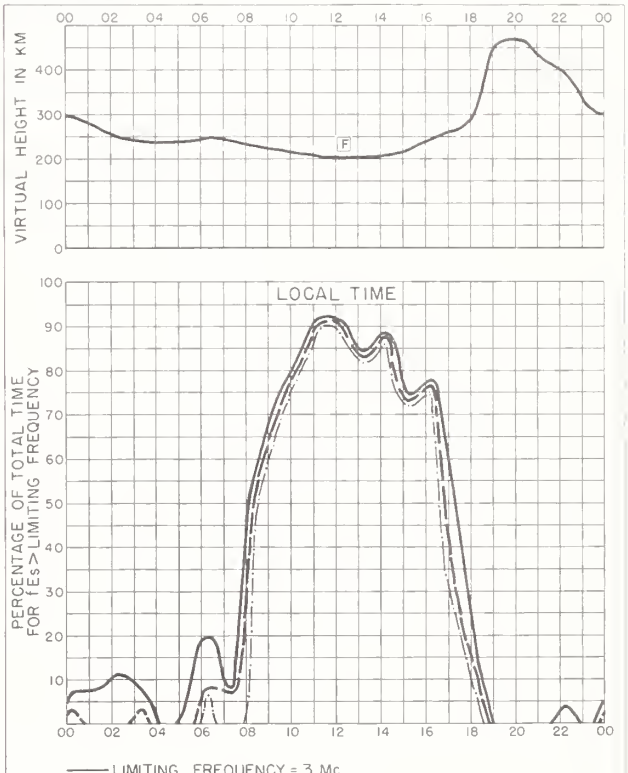


Fig. 100. IBADAN, NIGERIA APRIL 1959

NBS 490

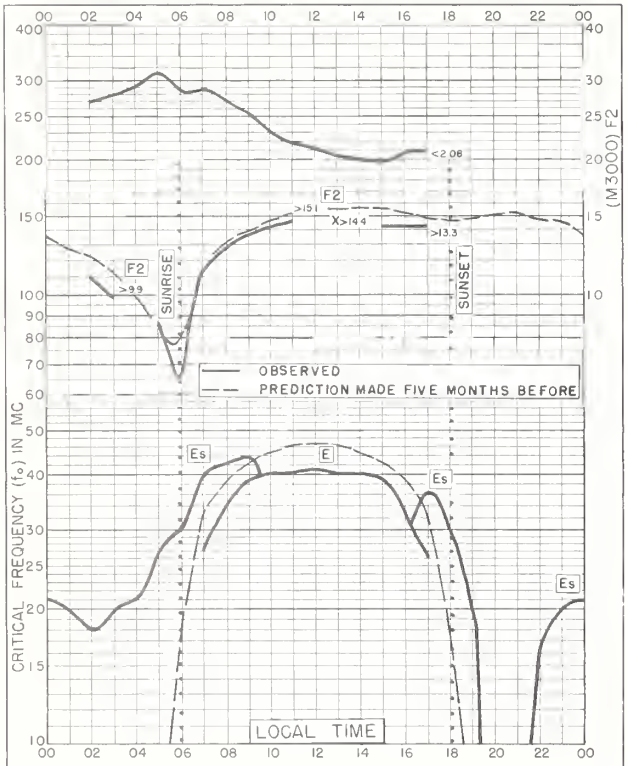


Fig. 101. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E APRIL 1959

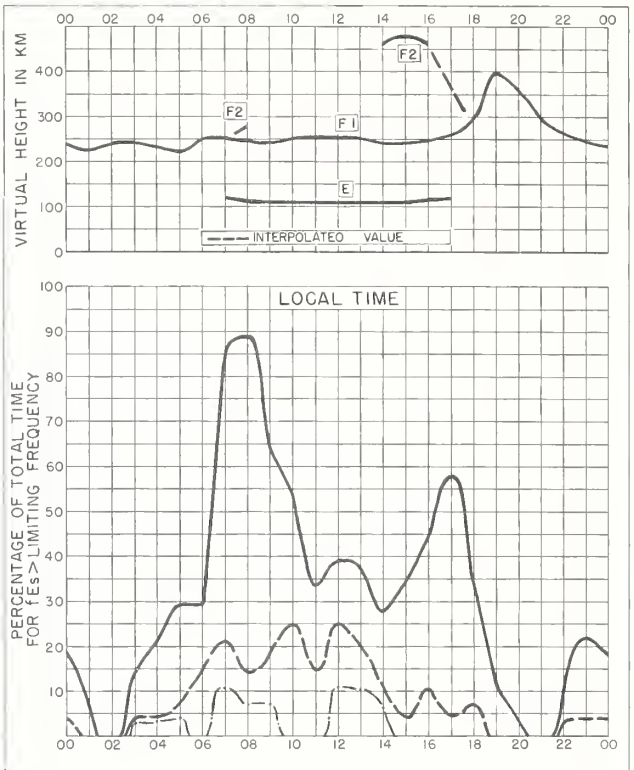


Fig. 102. BUNIA, BELGIAN CONGO APRIL 1959

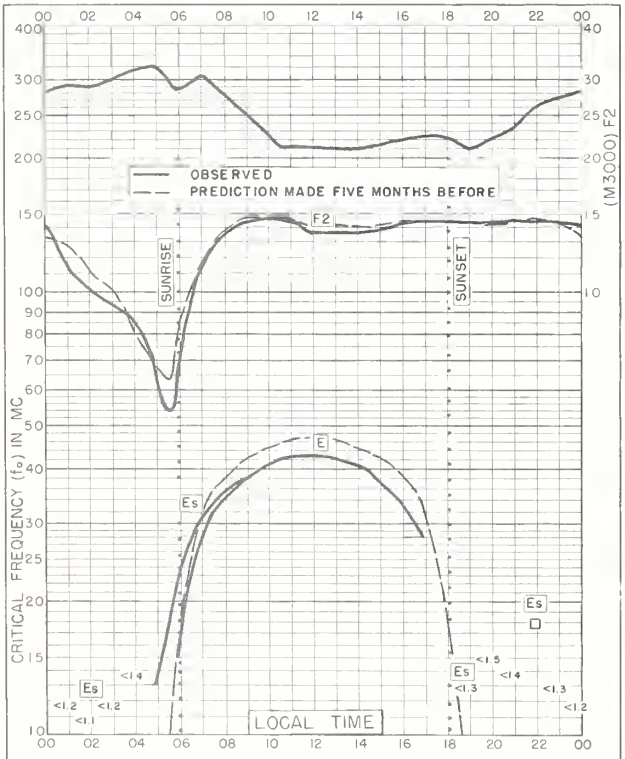


Fig. 103. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E APRIL 1959

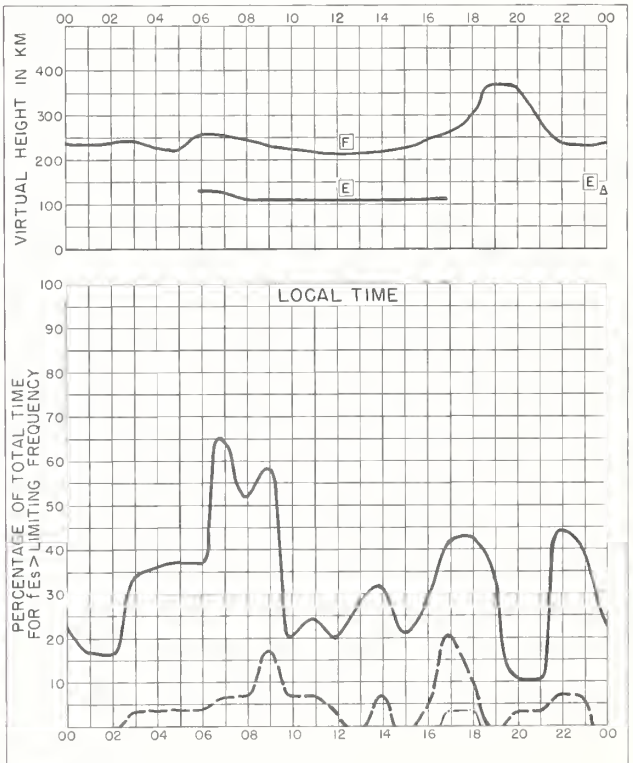


Fig. 104. SINGAPORE, BRITISH MALAYA APRIL 1959

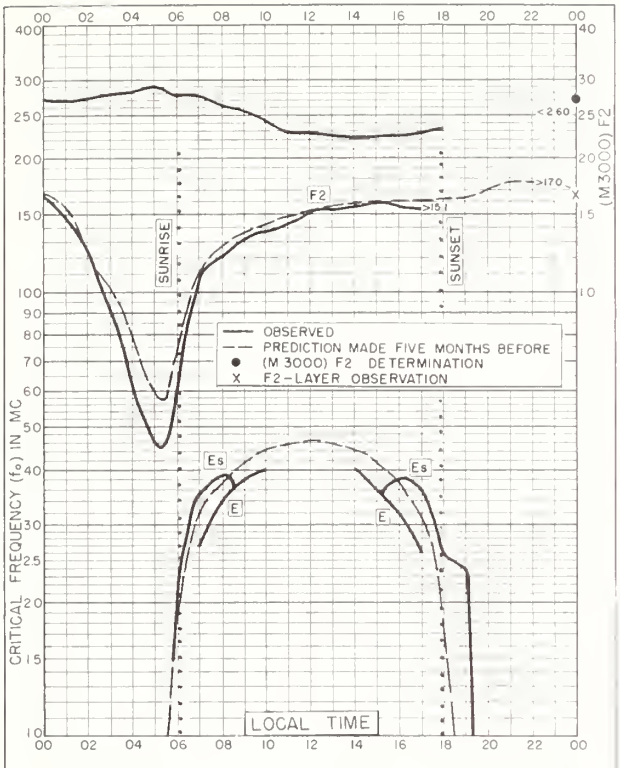
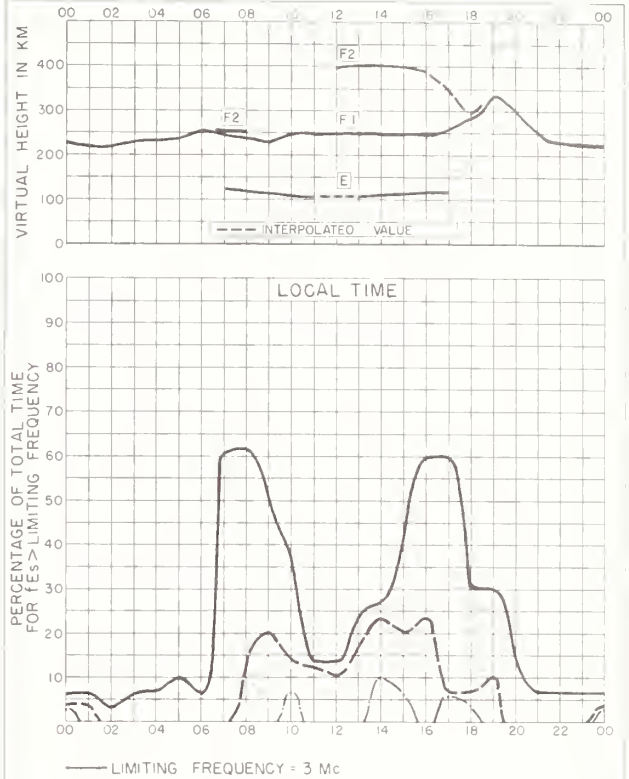


Fig. 105. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E APRIL 1959



APRIL 1959

Fig. 106. LEOPOLDVILLE, BELGIAN CONGO

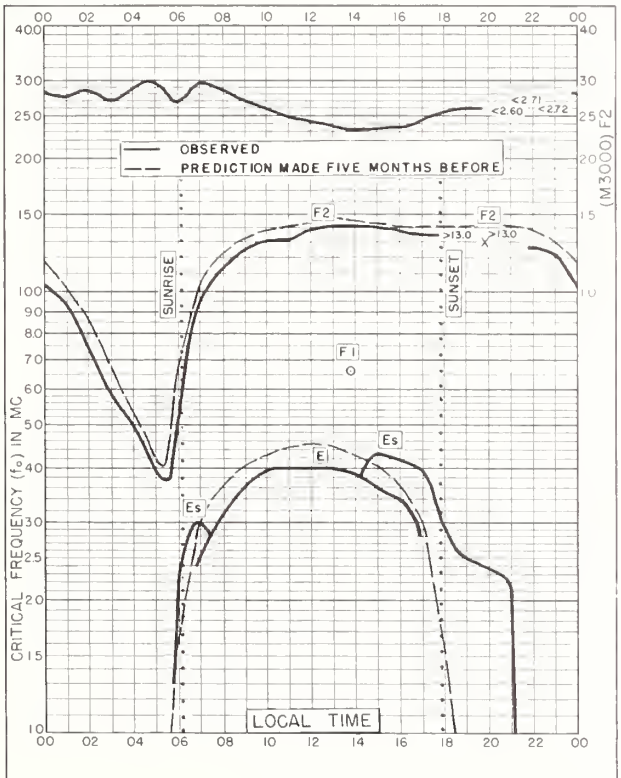
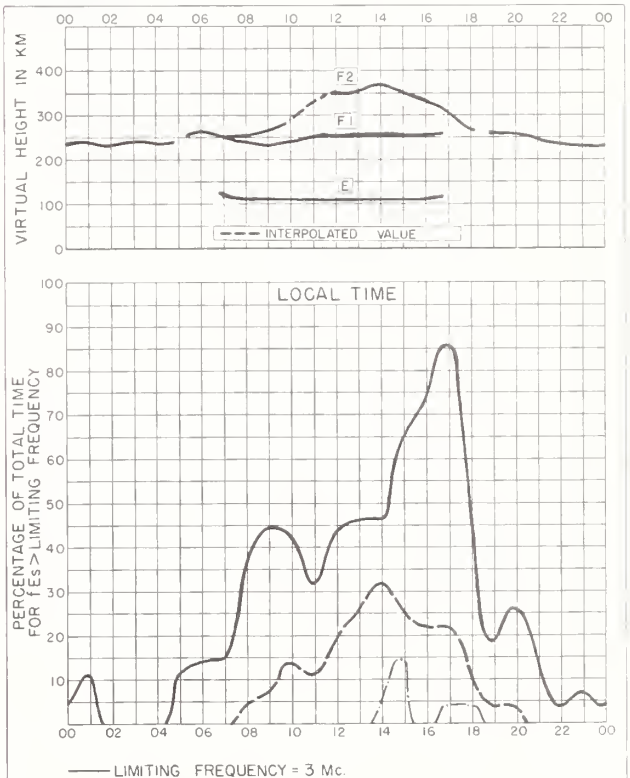


Fig. 107. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E APRIL 1959



APRIL 1959

Fig. 108. ELISABETHVILLE, BELGIAN CONGO

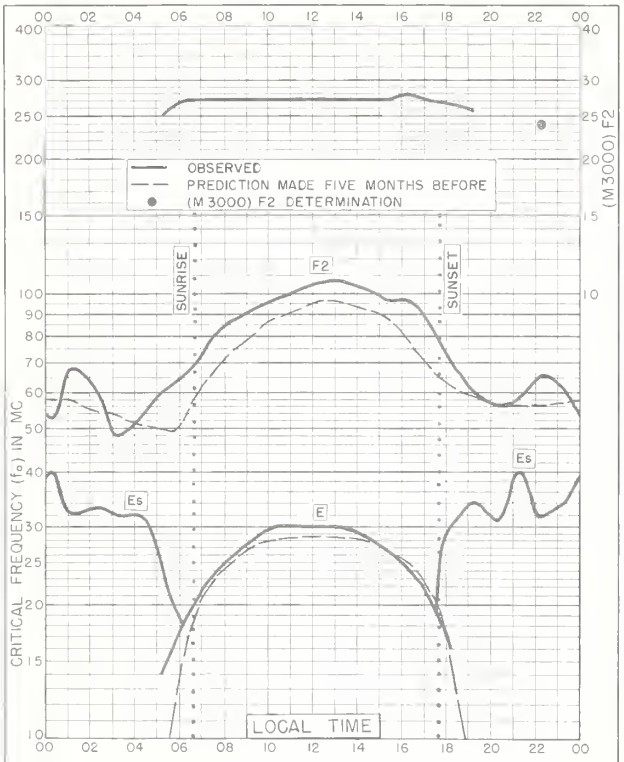


Fig. 109. TROMSO, NORWAY
69.7°N, 19.0°E MARCH 1959

NBS 503

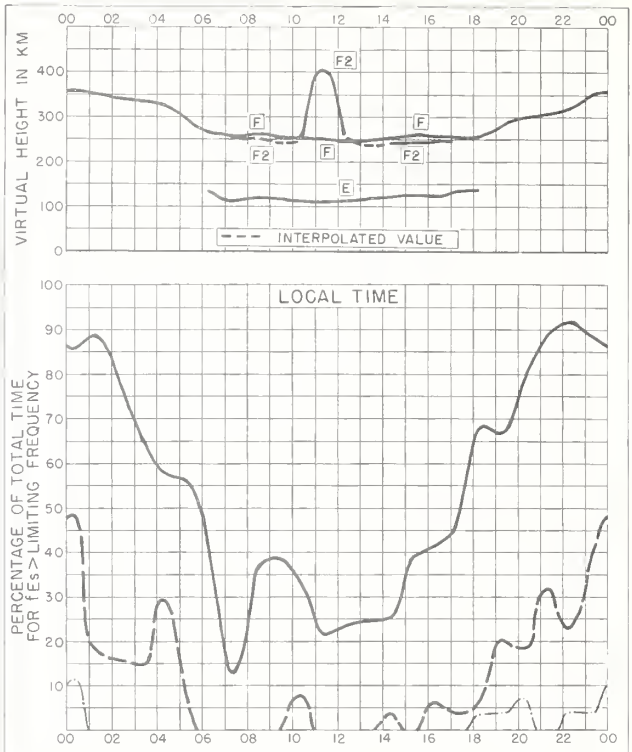


Fig. 110. TROMSO, NORWAY MARCH 1959

NBS 490

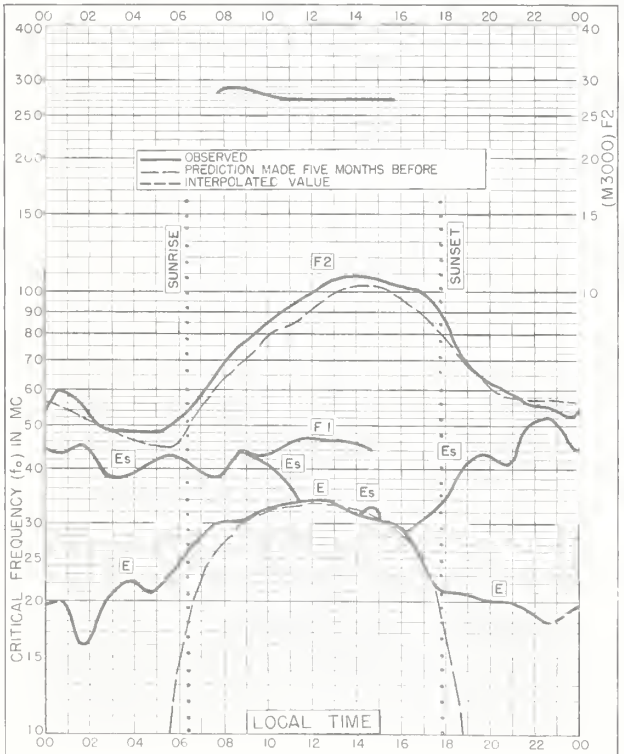


Fig. 111. CHURCHILL, CANADA
58.8°N, 94.2°W MARCH 1959

NBS 503

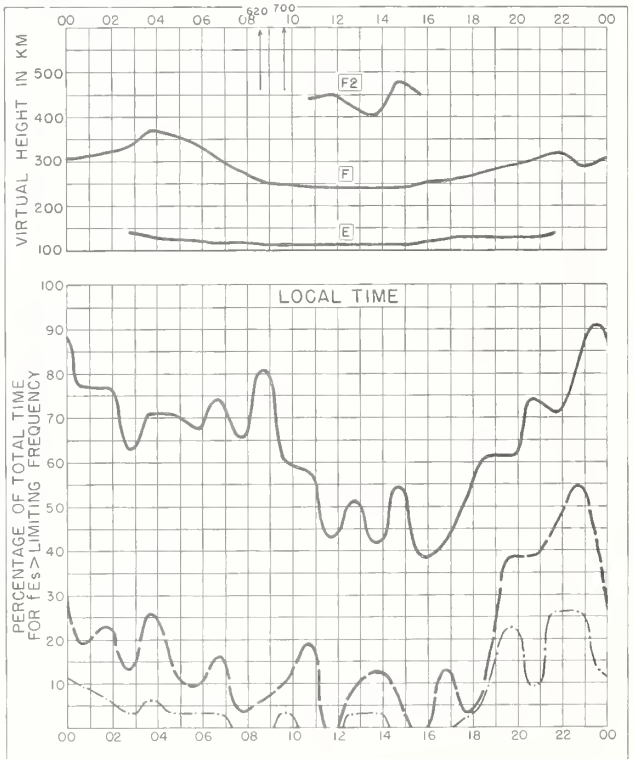


Fig. 112. CHURCHILL, CANADA MARCH 1959

NBS 490

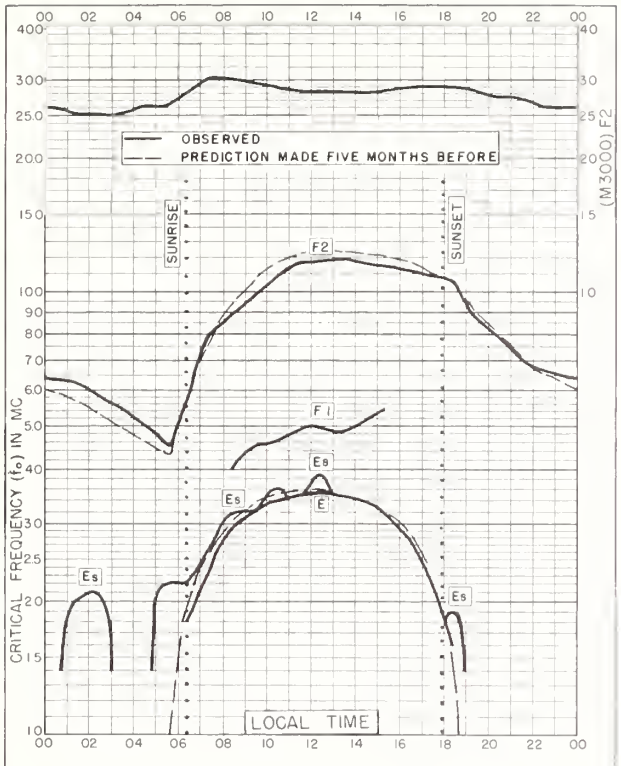


Fig. 113. De BILT, HOLLAND
52.1°N, 5.2°E MARCH 1959

NBS 503

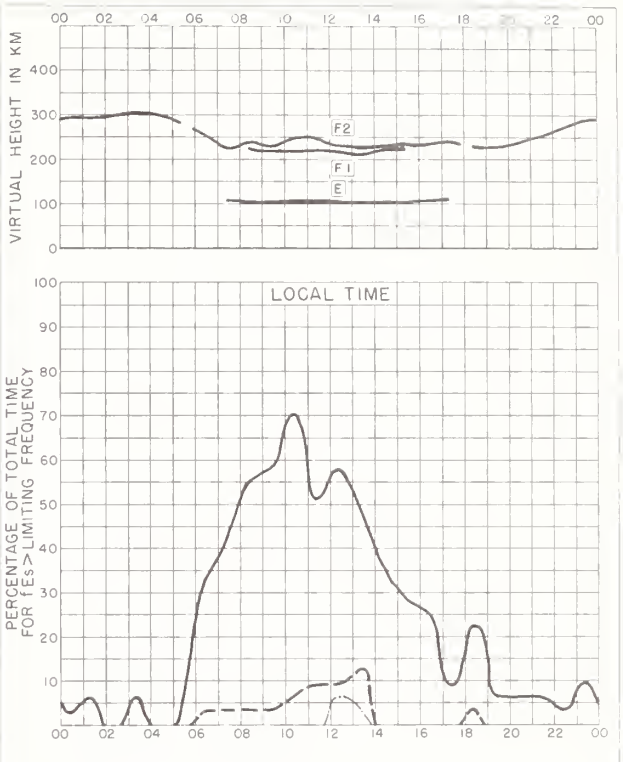


Fig. 114. De BILT, HOLLAND MARCH 1959

NBS 490

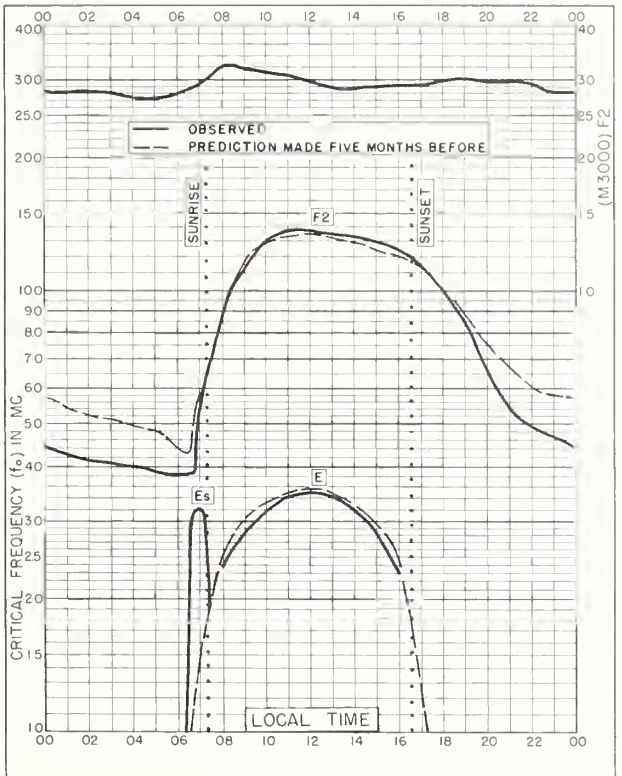


Fig. 115. BOULDER, COLORADO
40.0°N, 105.3°W DECEMBER 1958

NBS 503

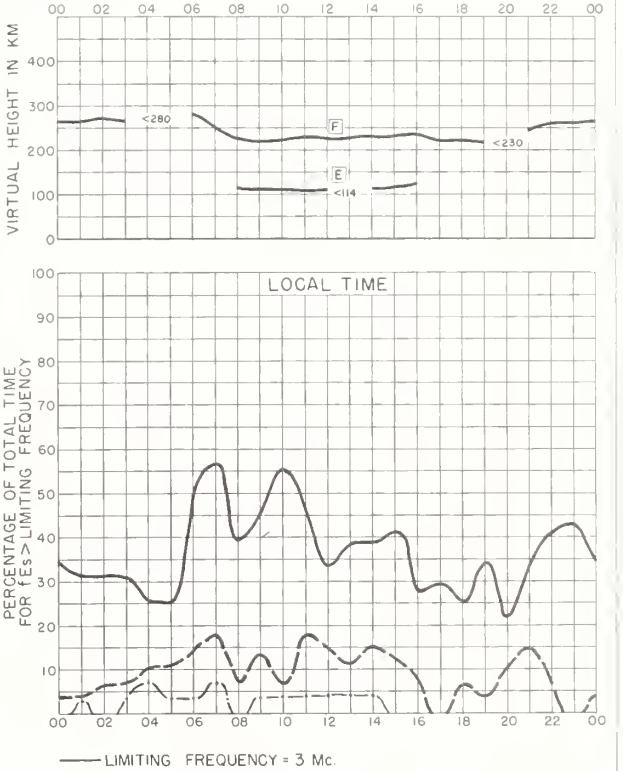


Fig. 116. BOULDER, COLORADO DECEMBER 1958

NBS 490

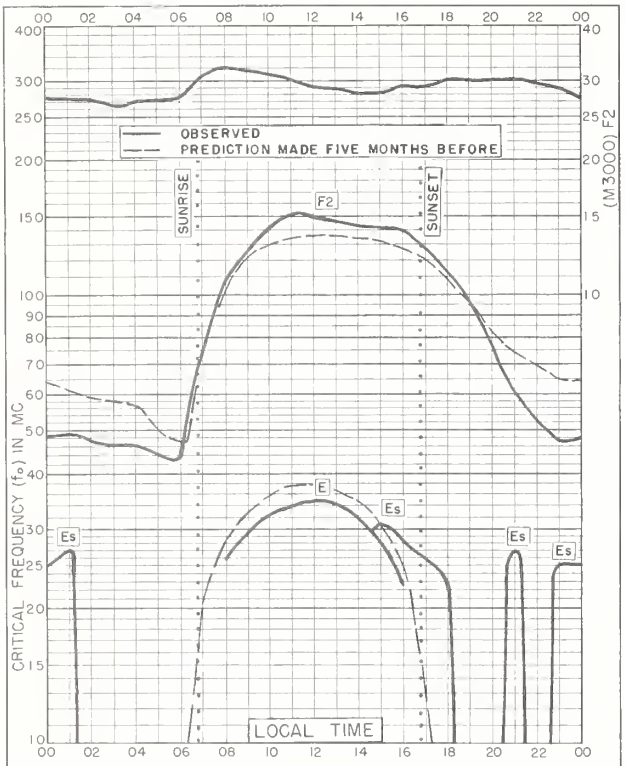


Fig. 117. BOULDER, COLORADO
40.0°N, 105.3°W NOVEMBER 1958

NBS 503

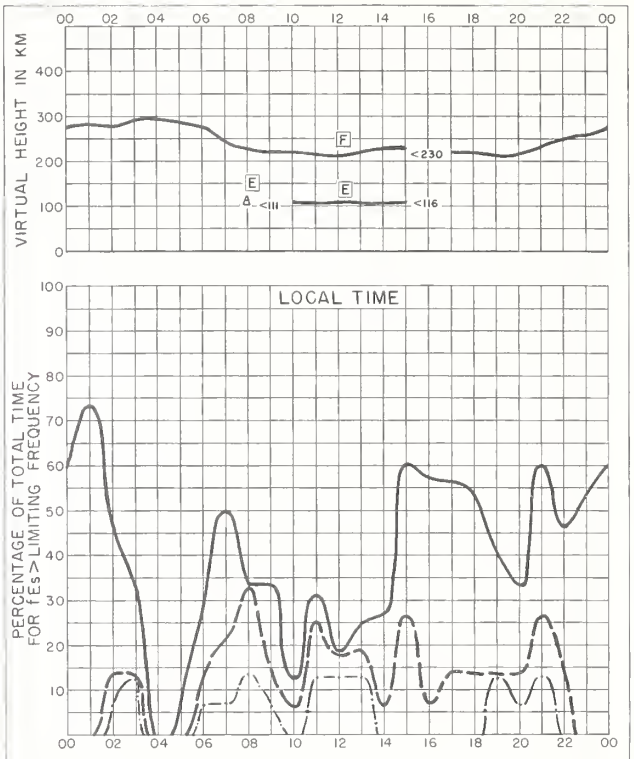


Fig. 118. BOULDER, COLORADO NOVEMBER 1958

NBS 490

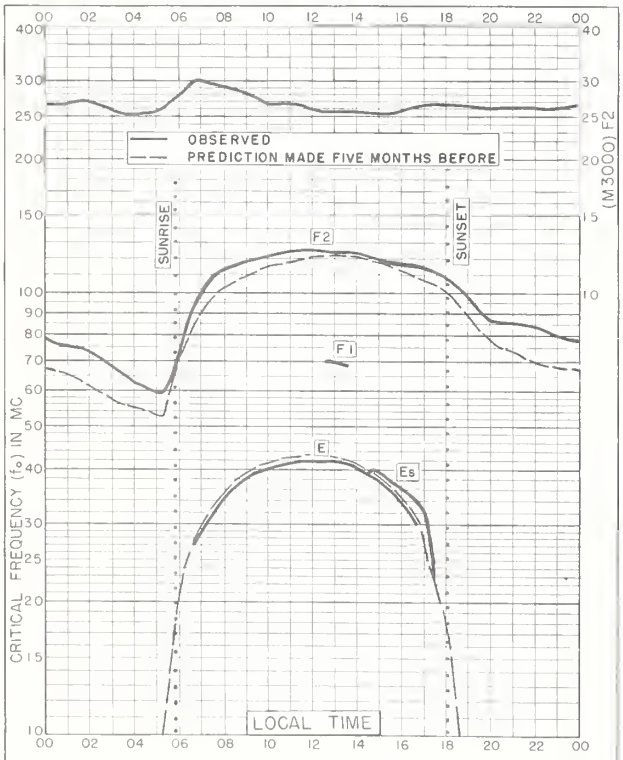


Fig. 119. CAPE CANAVERAL, FLORIDA
28.4°N, 80.6°W SEPTEMBER 1958

NBS 503

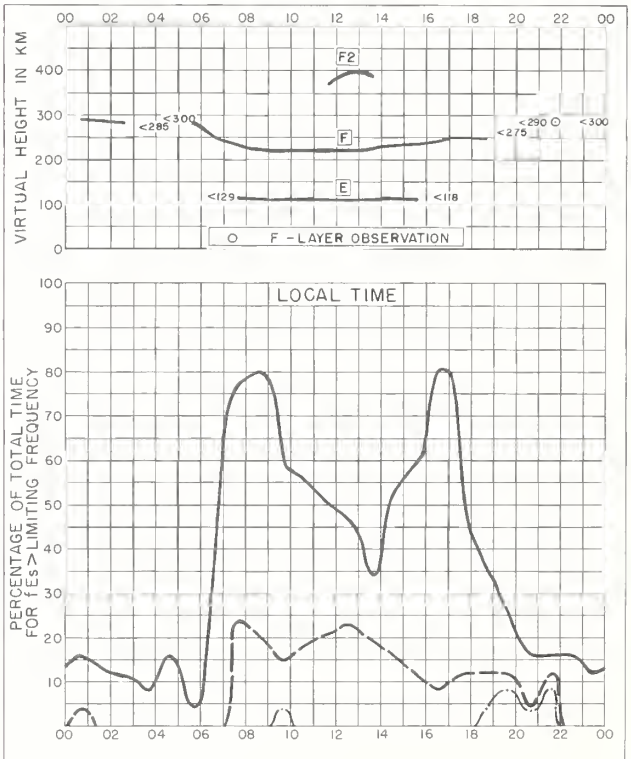


Fig. 120. CAPE CANAVERAL, FLORIDA SEPTEMBER 1958

NBS 490

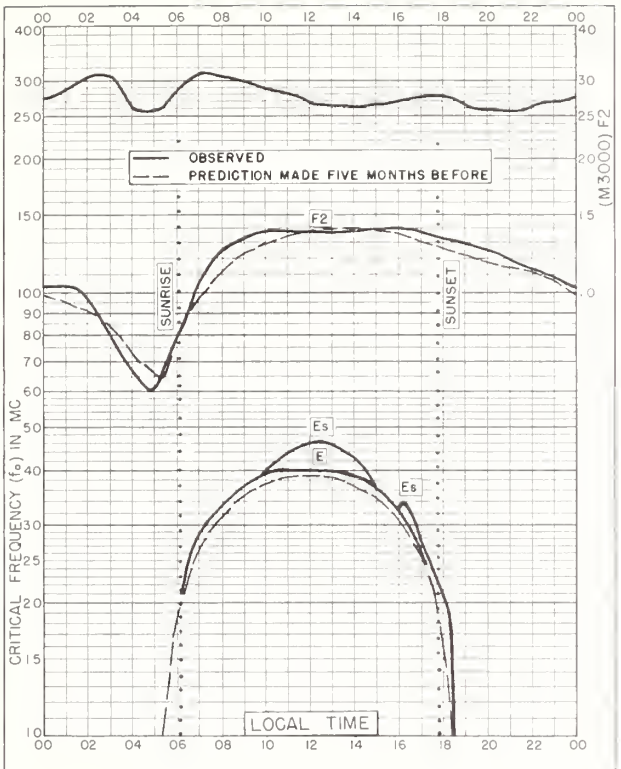


Fig. 121. CONCEPCION, CHILE
36.6°S, 73.0°W SEPTEMBER 1958

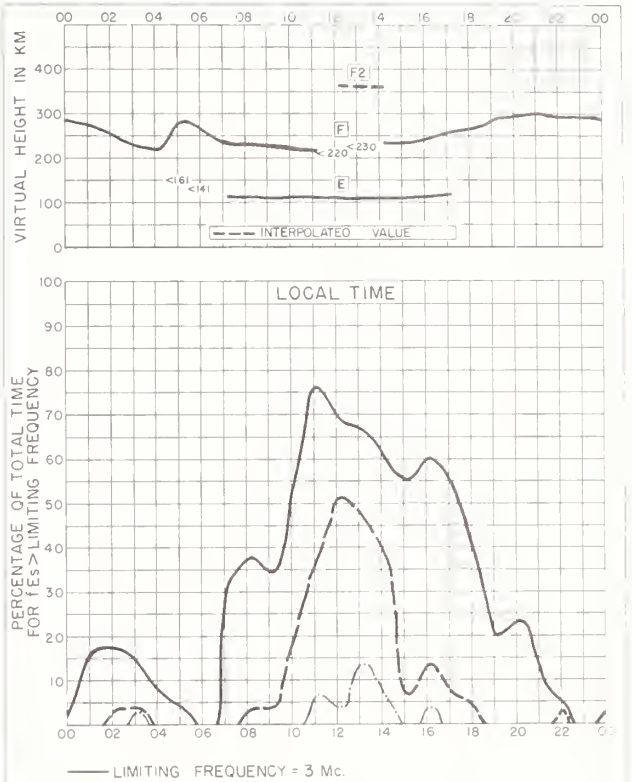


Fig. 122. CONCEPCION, CHILE SEPTEMBER 1958

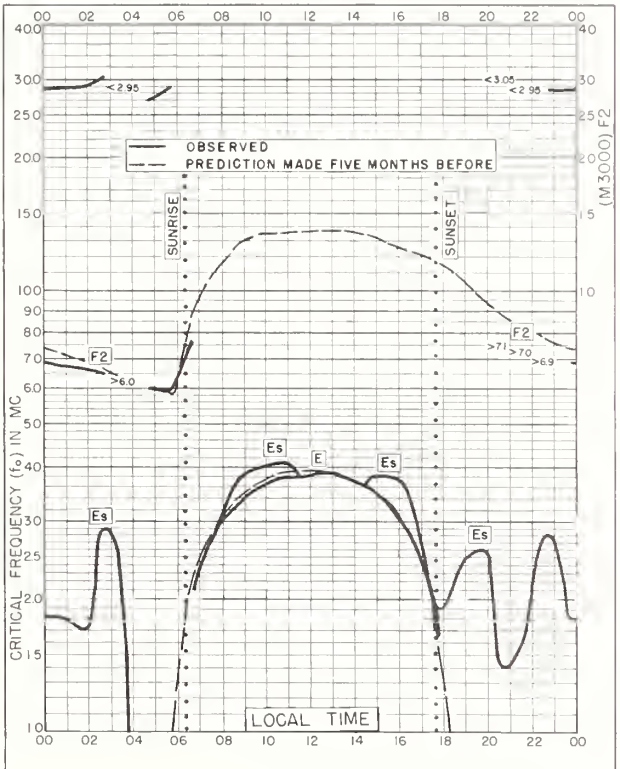


Fig. 123. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E APRIL 1958

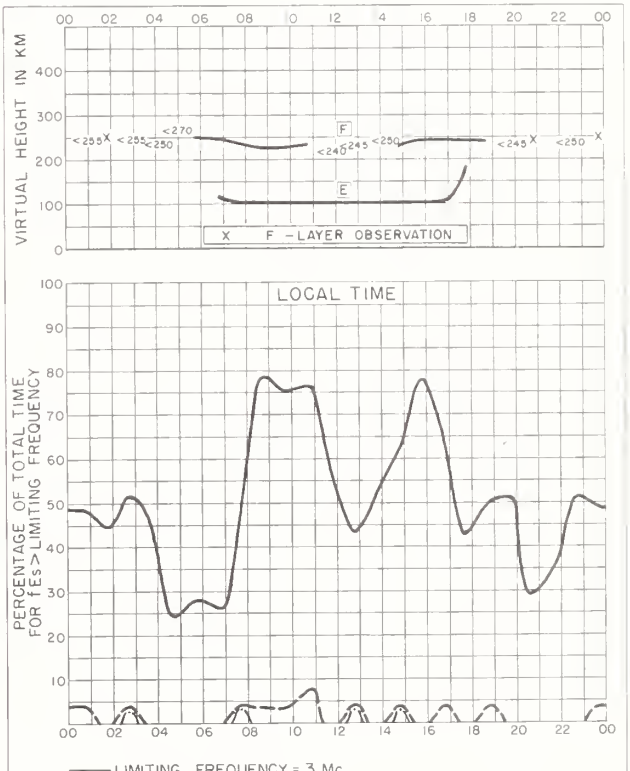


Fig. 124. WATHEROO, W. AUSTRALIA APRIL 1958

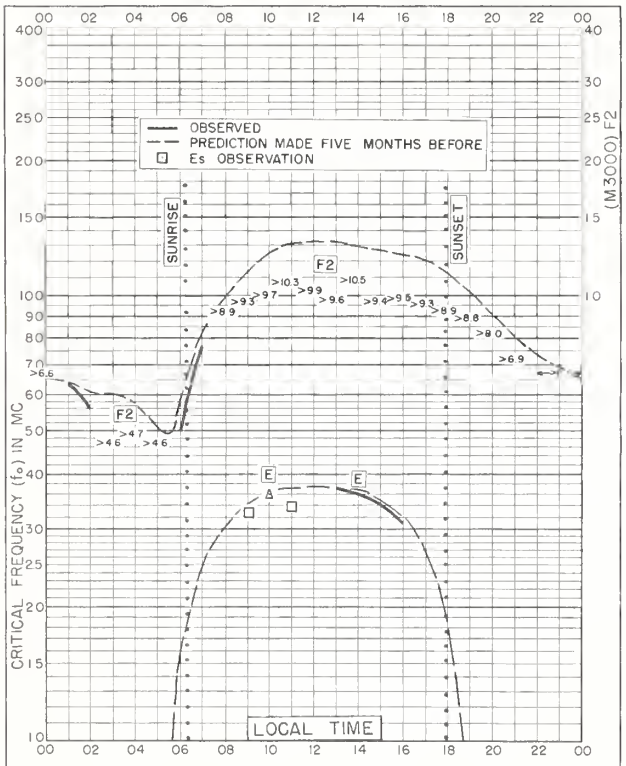


Fig. 125. GRAZ, AUSTRIA
47.1°N, 15.5°E MARCH 1958

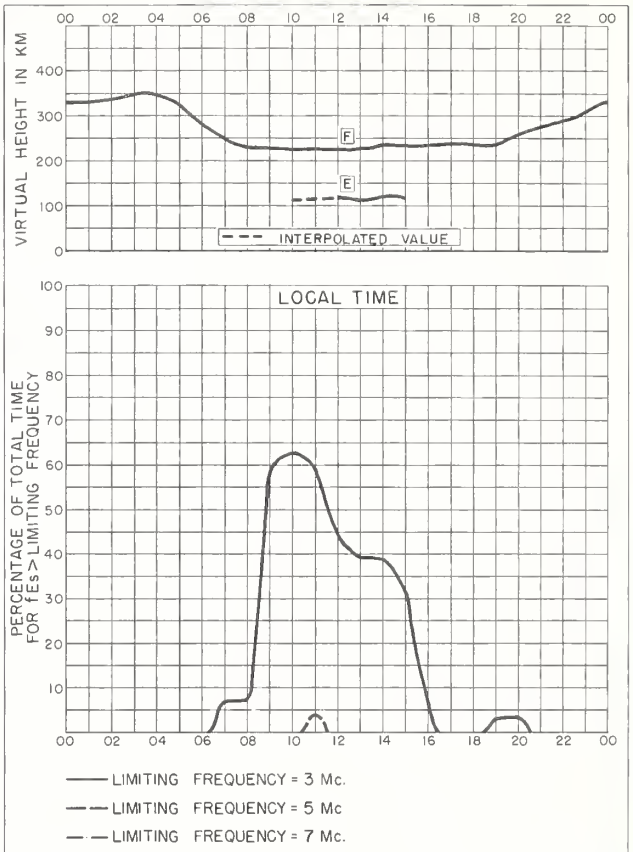


Fig. 126. GRAZ, AUSTRIA MARCH 1958

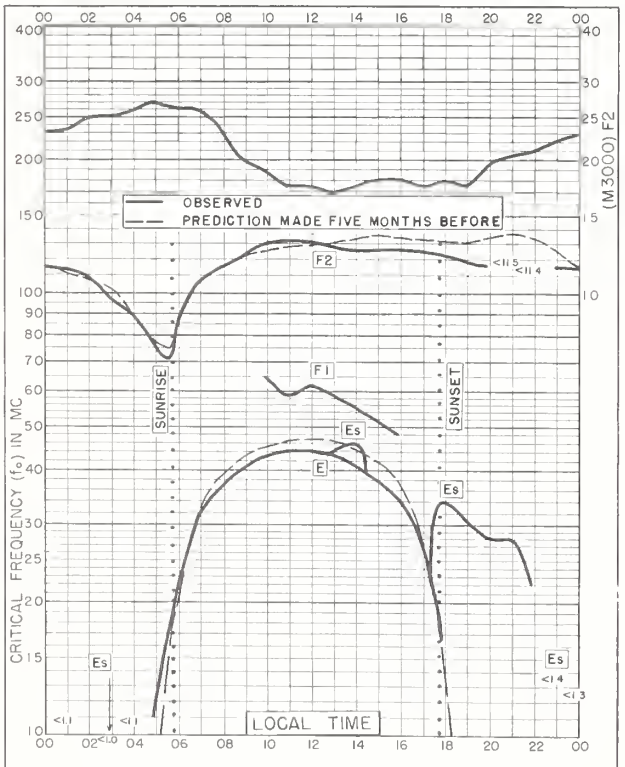


Fig. 127. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E NOVEMBER 1957

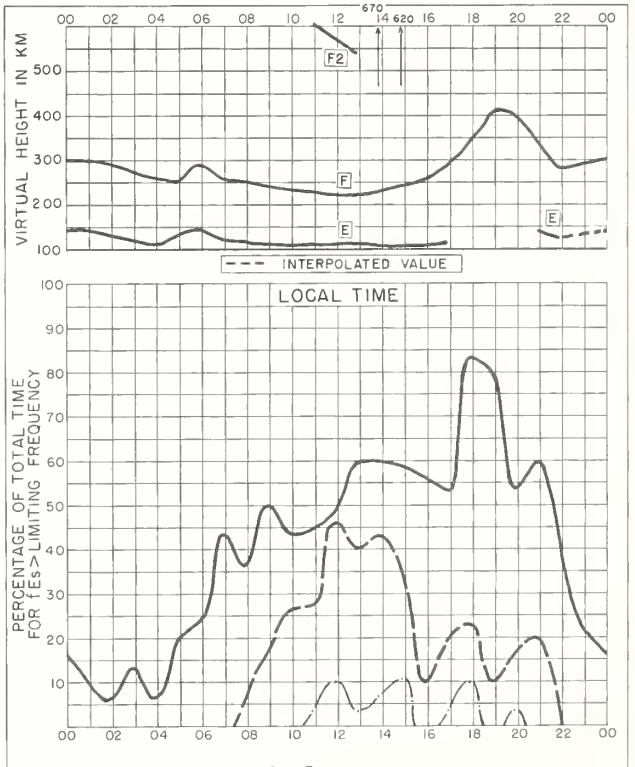


Fig. 128. SINGAPORE, BRITISH MALAYA NOVEMBER 1957

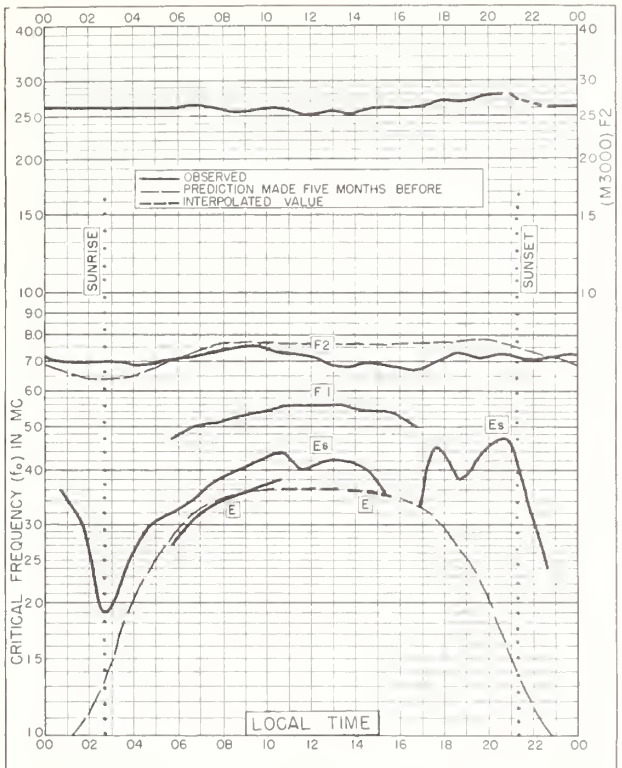


Fig. 129. NURMIJARVI, FINLAND
60.5°N, 24.6°E JUNE 1957

NBS 503

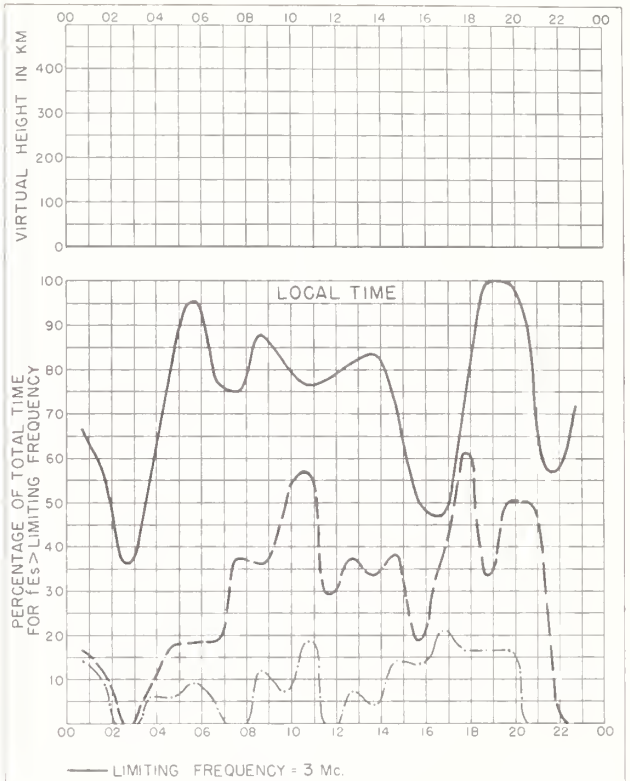


Fig. 130. NURMIJARVI, FINLAND JUNE 1957

NBS 490

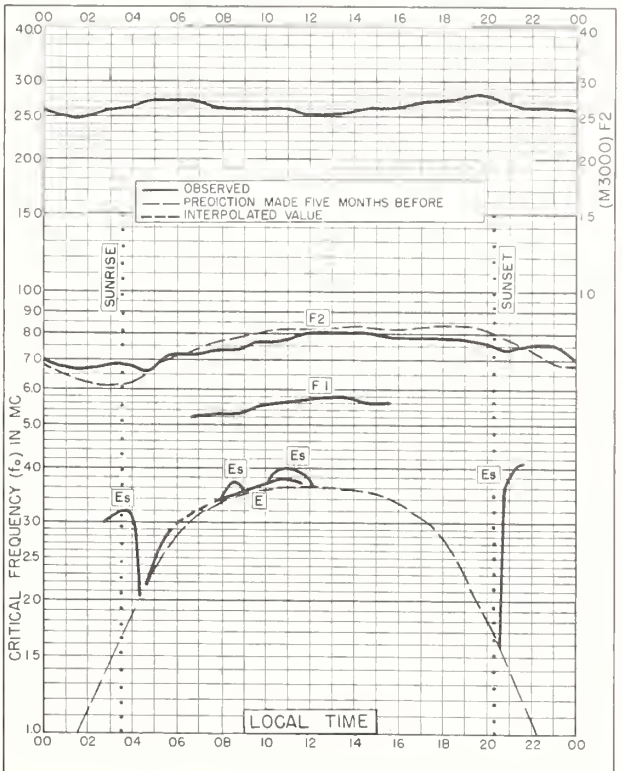


Fig. 131. NURMIJARVI, FINLAND
60.5°N, 24.6°E MAY 1957

NBS 503

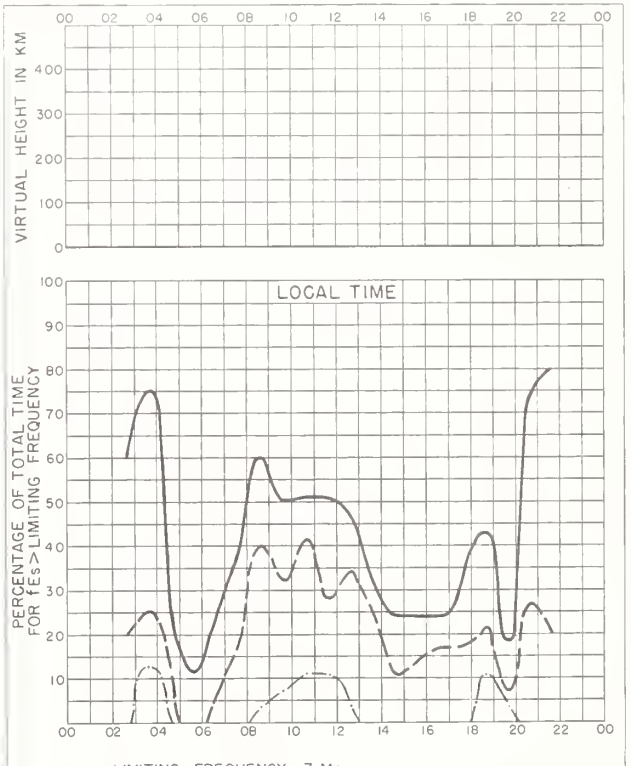


Fig. 132. NURMIJARVI, FINLAND MAY 1957

NBS 490

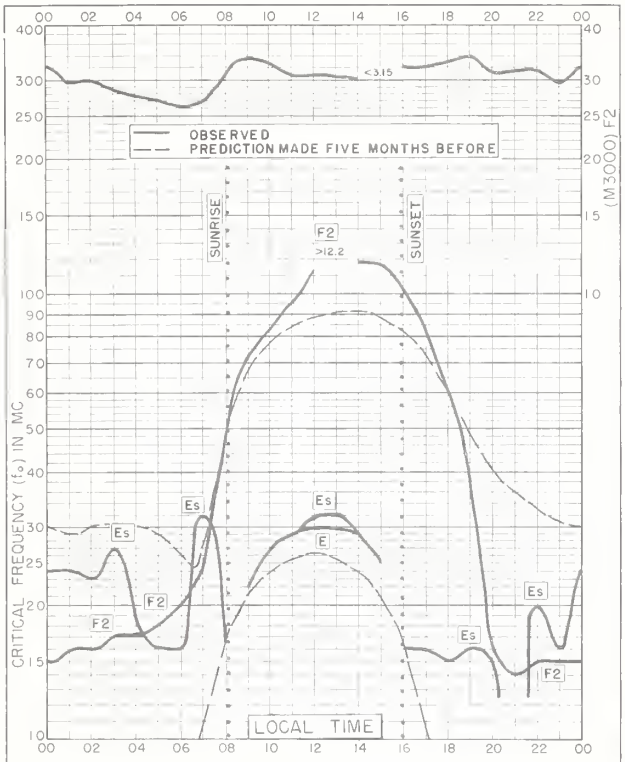


Fig. 133. KERGUELEN I.
49.3°S, 70.5°E JUNE 1956

NBS 503

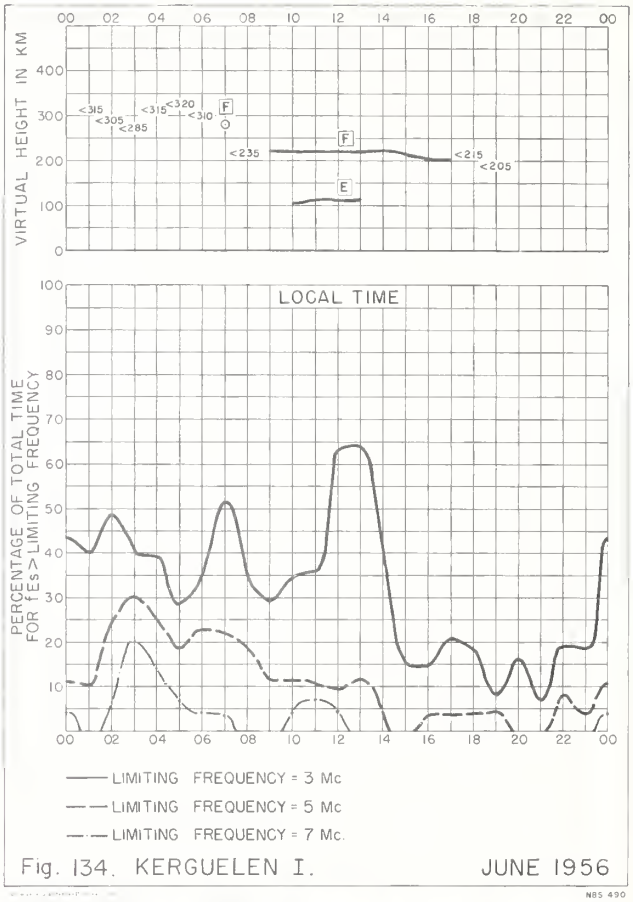


Fig. 134. KERGUELEN I. JUNE 1956

NBS 490

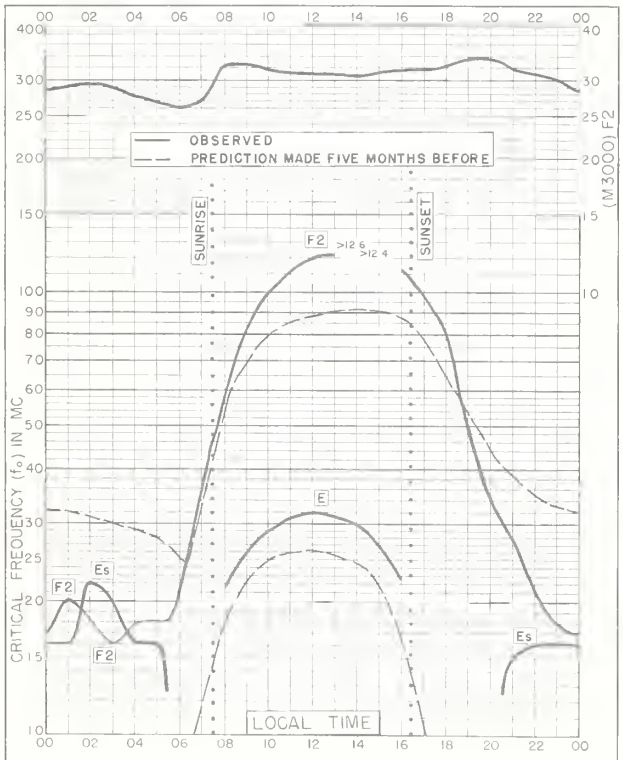


Fig. 135. KERGUELEN I.
49.3°S, 70.5°E MAY 1956

NBS 503

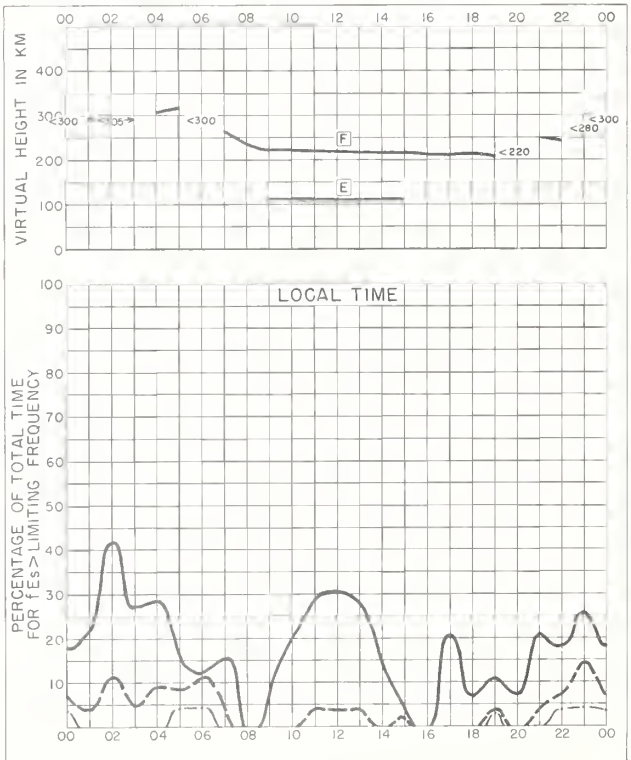


Fig. 136. KERGUELEN I. MAY 1956

NBS 490

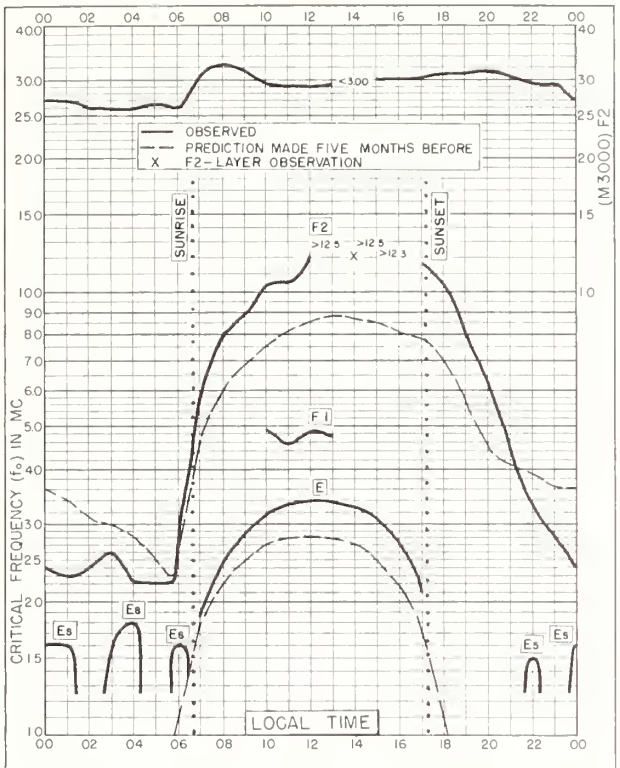


Fig. 137. KERGUELEN I.
49.3°S, 70.5°E APRIL 1956

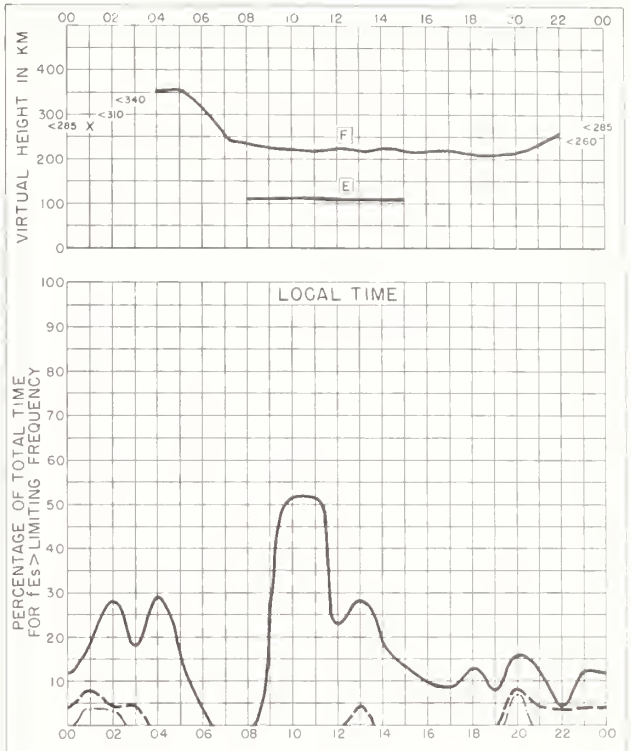


Fig. 138. KERGUELEN I. APRIL 1956

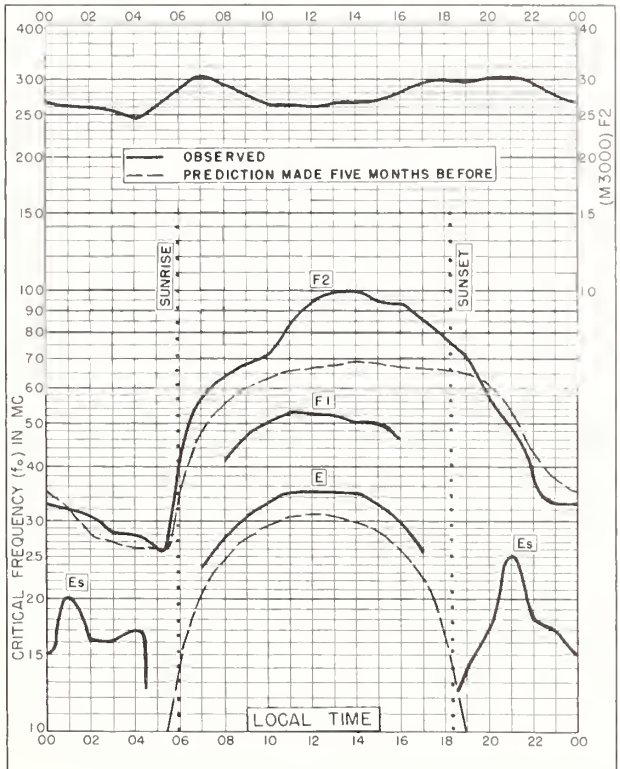


Fig. 139. KERGUELEN I.
49.3°S, 70.5°E MARCH 1956

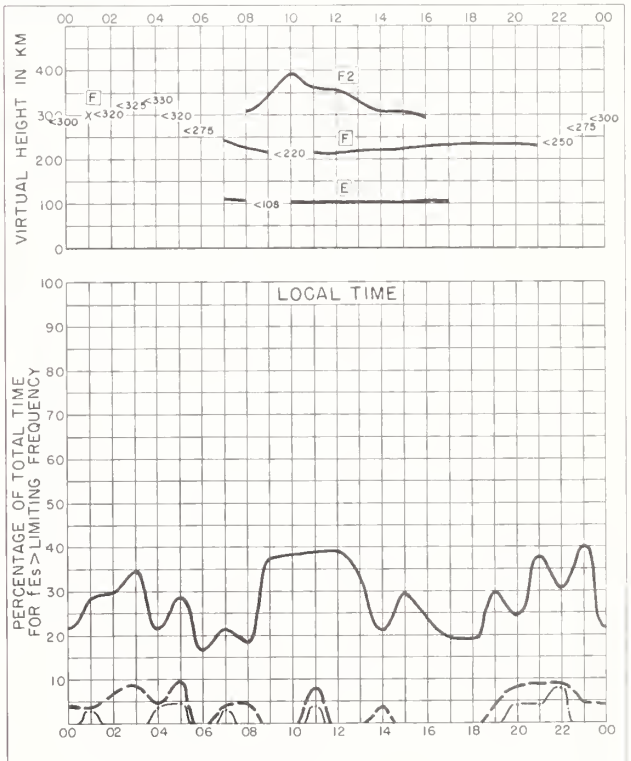


Fig. 140. KERGUELEN I. MARCH 1956

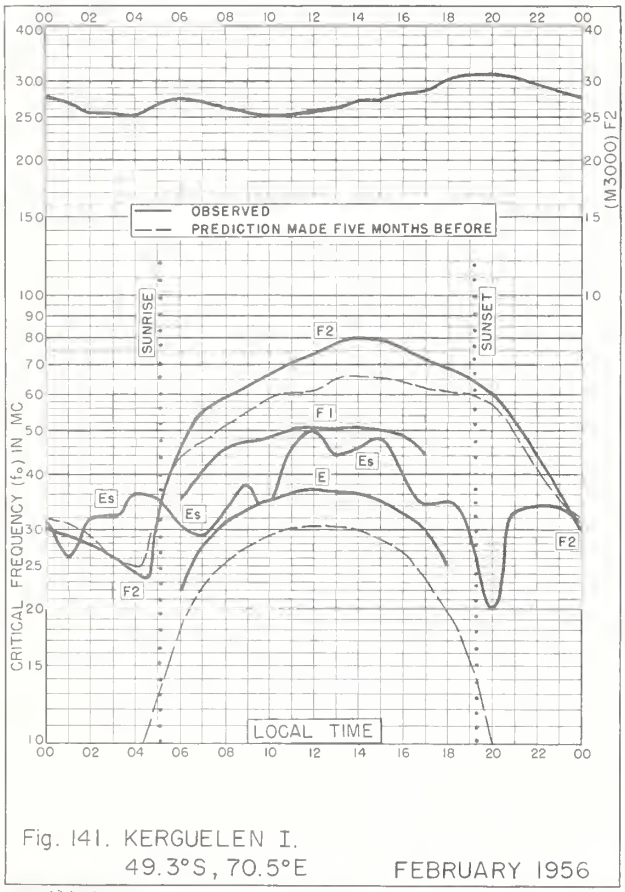


Fig. 141. KERGUELEN I.
49.3°S, 70.5°E FEBRUARY 1956

NBS 503

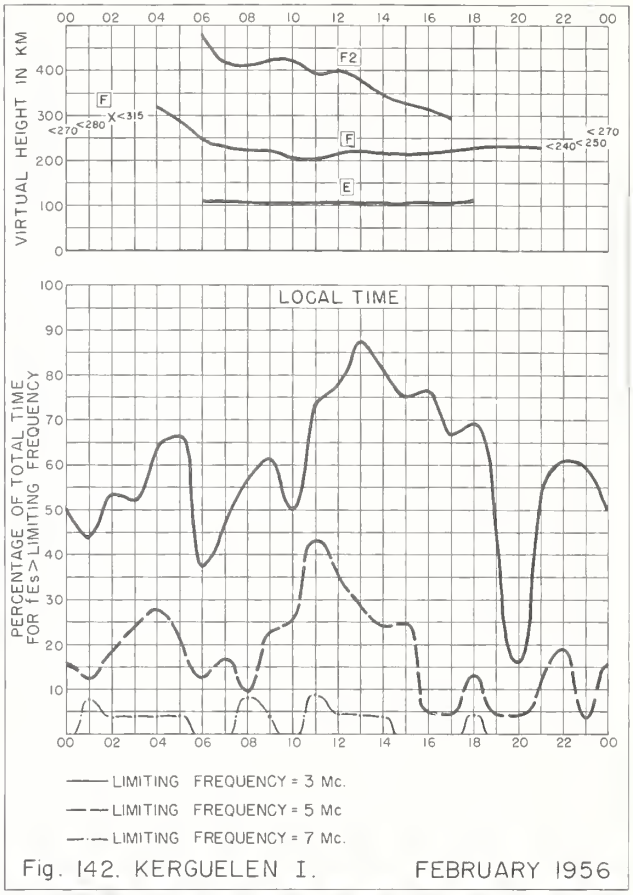


Fig. 142. KERGUELEN I. FEBRUARY 1956

NBS 490

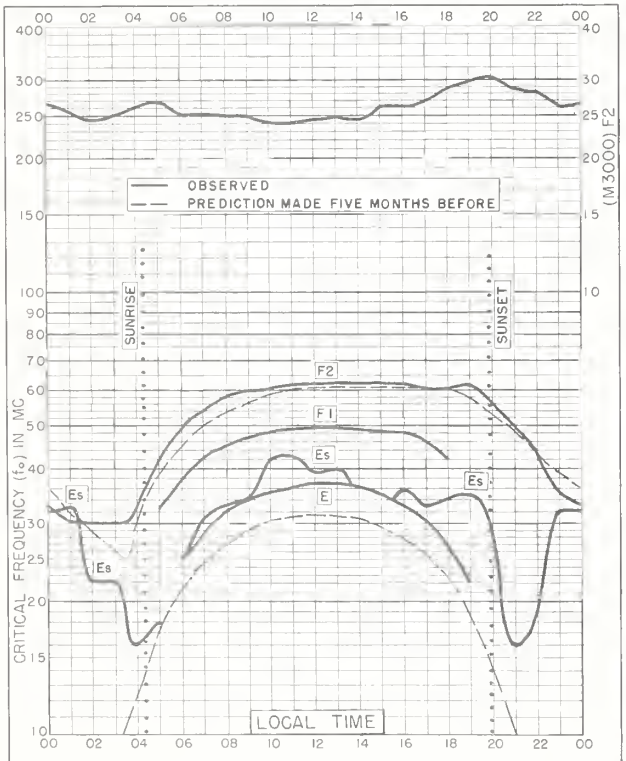


Fig. 143. KERGUELEN I.
49.3°S, 70.5°E JANUARY 1956

NBS 503

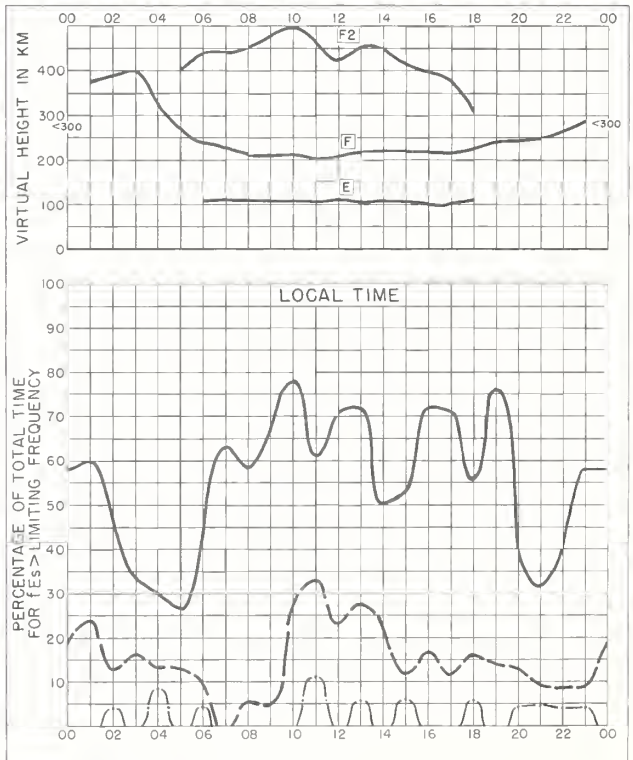


Fig. 144. KERGUELEN I. JANUARY 1956

NBS 490

Index of Tables and Graphs of Ionospheric Data

in CRPL-F107 (Part A)

Index (CRPL-F187 (Part A), continued)

Index (CRPL-F187 (Part A), concluded)

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

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

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Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

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