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 204
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 numerical 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 CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

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.

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

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.

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1960.

Smoothed 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	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	108	102	97	93	87	83
1961	79											

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

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

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina

Meteorological Service, Province of Macau, Asia:
Macau

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
Brisbane, Australia
Mawson
Townsville, Australia

Australian Department of National Development, Bureau of Mineral Resources, Geology and Geophysics:
Mundaring, 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

Belgian Royal Meteorological Institute:
Dourbes, Belgium
Lwiro (Central African Institute for Scientific Research)

Escola Politecnica, University of Sao Paulo:
Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Halley Bay
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Port Lockroy

Defence Research Board, Canada:
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
St. John's, Newfoundland
Winnipeg, Canada

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

Czechoslovak Academy of Sciences:
Pruhonice, Czechoslovakia

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:
Dakar, French West Africa
Djibouti, French Somaliland
Kerguelen I.
Tahiti, Society Is.
Tananarive, Madagascar

Heinrich Hertz Institute, German Academy of Sciences, Berlin:
Juliusruh/Rügen, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany
Tsumeb, South West Africa

Ionospheric Institute, Breisach, Germany:
Freiburg, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

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

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.
Scott Base, Antarctica

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

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, U.S.S.R.:
Moscow
Murmansk

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

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

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

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

National Bureau of Standards (Central Radio Propagation Laboratory):
Huancayo, Peru (Instituto Geofisico de Huancayo)
Talara, Peru (Instituto Geofisico de Huancayo)

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 several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. 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 by Dr. H. H. Howe for a CDC-1604 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.
KP		The standard Kp magnetic index, to one digit.
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 4+ or less. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, and the mean value of Kp are given for each hour.

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

RAMEY AFB, PUERTO RICO 60 W 1 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	4	4	4	4	54	53	53	B3	52	2	2	2
HMIN	259	227	200	200	198	275	295		106	109	108	109
SCAT	41.6	45.5	32.8	36.7	43.5	77.2	59.9		42.7	45.6	53.4	41.5
HMAXF	378	345	267	264	269	423	410		282	287	320	302
SHMAX	580	613	467	207	53	114	113		704	1016	1410	1509
KM												
430						112						
420						112						
410						111	143					
400						109	142					
390						106	140					
380	917					103	135					
370	909					98.3	128					
360	876					91.8	119					
350	815	960				85.1	109					
340	731	957				77.5	95.9					
330	636	933				69.6	79.6					
320	532	884				61.3	61.0				1542	
310	416	814				53.0	44.6				1529	2032
300	290	719				44.6	15.9				1488	2030
290	182	601				30.4			906	1328	1415	1989
280	103	466				10.4			906	1321	1316	1884
270	56.4	328	1096	446	97.2				889	1285	1196	1721
260	4.9	200	1083	445	94.1				843	1213	1061	1516
250		118	1021	430	92.3				778	1116	908	1282
240		64.1	909	398	88.3				696	983	755	995
230		19.9	736	351	77.4				608	817	612	771
220			473	277	66.8				515	640	499	598
210			202	171	52.3				423	497	416	479
200			12.4	12.4	12.4				340	387	358	402
190									273	318	318	352
180									223	274	286	314
170									184	240	258	284
160									151	207	224	255
150									126	178	189	222
140									111	155	167	193
130									105	140	155	176
120									98.1	130	147	165
110									73.0	64.0	67.3	85.1

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 1 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	2	A2	2	A2	A2	A3	A3	A3	2	2	2	3
HMIN	108		107					199	198	229	231	238
SCAT	47.0		47.3					37.4	40.4	40.8	49.9	50.5
HMAXF	302		299					304	318	329	349	369
SHMAX	1634		1476					615	487	411	409	392
KM												
370												540
360												536
350											573	521
340											568	494
330										716	552	459
320									794	708	523	413
310	2032							1096	787	679	485	355
300	2030		1891					1092	756	625	433	290
290	1997		1875					1055	696	555	374	225
280	1917		1816					974	624	461	311	162
270	1796		1709					863	535	352	242	114
260	1621		1571					732	434	248	172	76.4
250	1408		1385					578	323	140	111	49.0
240	1177		1118					412	219	67.8	56.7	12.4
230	935		881					273	139	12.4		
220	710		672					147	88.7			
210	558		515					70.1	53.8			
200	452		416					12.4	12.4			
190	386		355									
180	344		315									
170	314		283									
160	291		254									
150	268		223									
140	226		193									
130	195		176									
120	182		167									
110	78.2		135									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	3	4	4	4	2	2	2	3	3	3	A2
HMIN	246	219	231	269	230	236	236	119	109	109	107	108
SCAT	31.1	30.7	36.2	44.1	49.5	45.1	51.7	36.8	40.6	36.3	61.2	58.9
HMAXF	318	297	303	357	333	344	353	255	268	259	297	330
SHMAX	198	197	171	158	163	157	202	381	608	654	901	1391
KM												
360				262			280					
350				261		229	280					
340				252	240	229	275					1316
330				236	240	225	266					1316
320	446			213	236	215	250					1306
310	438		362	186	228	201	230					1277
300	406	446	361	155	214	183	205				875	1227
290	352	441	351	120	197	160	176				872	1159
280	284	412	325	81.5	174	133	142				859	1077
270	204	360	288	12.4	145	105	106		875		833	977
260	112	289	233		115	74.5	72.5	679	867	1004	795	870
250	43.6	206	161		83.4	49.8	48.8	674	834	989	748	759
240		113	75.6		50.2	17.2	16.8	646	770	933	689	656
230		56.3						590	690	842	623	564
220		4.9						512	591	723	557	484
210								392	472	572	493	421
200								265	365	424	430	380
190								168	282	331	369	348
180								117	219	273	318	319
170								91.4	174	232	278	288
160								75.2	143	200	243	259
150								62.5	122	168	207	232
140								55.9	107	140	174	206
130								50.7	94.4	125	156	178
120								12.4	86.8	117	146	164
110									49.0	98.5	107	112

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A2	2	3	A3	A3	3	B3	3	4	4	4	6
HMIN		110	108			108		199	197	250	267	259
SCAT		53.7	58.8			42.8		39.6	37.4	54.1	43.1	39.8
HMAXF		311	321			288		304	330	383	383	351
SHMAX		1626	1690			952		563	493	521	469	434
KM												
390										679	745	
380										678	744	
370										669	727	
360										648	687	794
350										614	631	793
340									764	570	557	777
330			1771						764	517	469	735
320		1907	1770						745	453	366	671
310		1906	1754					960	698	380	265	580
300		1885	1712					958	638	303	176	458
290		1831	1641			1341		930	568	224	105	322
280		1741	1556			1329		866	491	149	61.3	184
270		1627	1434			1281		782	408	87.6	19.6	85.4
260		1470	1285			1194		675	322	48.7		12.4
250		1258	1105			1076		550	231	.7		
240		989	925			916		409	159			
230		774	751			732		276	109			
220		588	600			562		170	74.1			
210		468	491			428		83.6	48.5			
200		389	412			320		12.4	12.4			
190		344	360			251						
180		313	321			209						
170		292	288			177						
160		269	260			150						
150		238	234			125						
140		199	208			104						
130		175	182			94.1						
120		164	166			88.1						
110		12.4	69.4			69.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	6	6	5	5	5	4	4	B4	2	2	2	3
HMIN	269	249	239	219	198	206	237		107	107	109	106
SCAT	37.3	37.1	36.7	46.7	49.0	52.6	50.4		42.9	55.9	47.3	59.1
HMAXF	354	329	320	317	306	328	359		263	292	306	313
SHMAX	373	412	322	280	207	179	147		472	765	1134	1297
KM												
360	716						198					
350	715						197					
340	693						191					
330	644	854				240	182					
320	572	842	643	446		239	167					1341
310	485	795	632	444	304	233	149				1341	1340
300	372	723	594	432	303	224	129			794	1336	1325
290	240	616	536	409	296	209	110			793	1304	1290
280	102	448	459	376	282	191	89.6			784	1242	1235
270	12.4	243	364	335	261	168	69.3		625	762	1153	1162
260		96.9	226	284	236	141	51.5		624	725	1027	1070
250		12.4	93.8	224	205	112	40.3		611	679	872	941
240			12.4	141	170	86.5	31.4		576	621	724	788
230				69.6	131	62.4			530	550	583	645
220				12.4	87.2	45.4			468	473	469	533
210					53.7	16.1			392	405	391	443
200					12.4				321	349	342	380
190									264	306	308	337
180									218	274	282	307
170									183	247	259	282
160									156	220	233	258
150									136	191	205	235
140									118	164	177	208
130									99.8	137	151	176
120									88.6	120	134	155
110									71.9	96.3	65.5	129

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	2	2	2	3	3	3	3	3	3	1
HMIN	109	109	108	107	108	108	107	212	237	271	268	246
SCAT	57.8	48.9	55.3	52.8	54.2	52.7	41.1	65.9	52.4	44.3	52.3	46.2
HMAXF	321	308	315	321	300	279	267	339	379	384	393	350
SHMAX	1406	1285	1356	1405	1266	805	521	438	352	305	368	337
KM												
400											508	
390										477	508	
380									446	476	500	
370									443	465	483	
360									432	441	457	540
350									412	406	423	540
340								508	384	360	377	534
330	1433			1542				506	349	302	321	515
320	1433		1446	1541				498	309	240	253	483
310	1420	1446	1444	1525	1555			484	266	175	182	439
300	1387	1437	1421	1481	1555			462	222	120	129	377
290	1330	1397	1374	1406	1542			438	175	74.8	83.5	299
280	1255	1324	1296	1313	1502	1004		408	132	45.4	52.1	217
270	1157	1221	1201	1186	1435	997	794	366	96.0		12.4	139
260	1036	1097	1092	1032	1349	972	788	313	68.3			70.9
250	900	956	951	861	1222	928	759	252	46.4			27.5
240	752	804	797	712	1062	870	708	184	12.4			
230	614	664	660	588	818	785	631	113				
220	507	548	538	481	602	681	538	55.7				
210	429	453	444	401	440	565	423					
200	375	387	379	344	338	438	319					
190	339	345	334	305	281	327	235					
180	312	315	304	277	244	246	168					
170	289	292	279	252	217	195	117					
160	265	269	255	226	192	162	91.7					
150	240	245	225	199	169	137	76.6					
140	212	218	192	171	145	115	66.0					
130	183	191	164	148	128	98.6	58.0					
120	164	170	151	135	118	90.1	52.1					
110	62.7	119	110	109	88.5	73.2	40.8					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	1	A1	3	3	3	1	1	H1	A1	1	1	0
HMIN	198	198	198	236	248	225	195	114	107	107	108	109
SCAT	32.4	45.0	41.9	56.1	67.7	53.9	48.1	38.4	30.8	40.8	58.5	60.7
HMAXF	276	291	277	336	371	332	297	255	254	264	276	309
SHMAX	239	186	94	70	85	63	74	293	471	639	814	1038
KM												
380					97.2							
370					97.2							
360					96.5							
350					94.9							
340				97.2	92.2	87.1						
330				96.9	88.4	87.0						
320				95.2	83.5	85.9						
310				91.9	76.9	83.0						960
300		310		87.1	70.2	77.3	112					955
290		310		80.7	62.1	71.6	111					938
280	540	305	170	72.3	53.2	64.2	108				906	905
270	536	293	169	62.6	44.4	56.4	103			876	904	869
260	508	273	163	52.0	28.5	48.5	94.3	446	716	873	889	805
250	455	246	152	41.3	5.5	41.3	82.7	444	714	849	861	742
240	369	209	139	12.4		25.9	70.3	429	694	797	824	672
230	249	161	117			9.0	58.2	397	649	722	767	602
220	138	107	89.4				47.4	352	584	612	685	533
210	68.0	59.6	60.3				35.0	289	489	497	578	471
200	12.4	12.4	12.4				12.4	228	381	404	470	417
190								177	278	328	382	373
180								140	214	276	324	336
170								114	173	240	284	304
160								95.5	140	210	253	274
150								82.6	113	183	223	241
140								73.5	98.3	155	193	202
130								53.3	92.7	134	167	170
120								43.1	87.8	121	151	153
110									76.1	106	128	110

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	0	0	1	1	1	0	0	0	2	2	2	3
HMIN	105	109	107	106	108	109	115	209	208	215	260	251
SCAT	55.5	40.3	47.5	63.6	59.1	50.8	39.7	44.1	53.6	49.7	53.2	41.4
HMAXF	318	289	292	317	307	295	283	300	340	334	388	364
SHMAX	1464	1364	1391	1445	1220	963	748	500	566	445	404	313
KM												
390											532	
380											529	
370											517	500
360											492	499
350									745		461	486
340									745	643	423	456
330									738	642	377	415
320	1542			1433					718	631	325	362
310	1534			1429	1328				682	606	267	304
300	1502		1786	1409	1324	1215		875	638	567	205	242
290	1444	1969	1785	1370	1302	1214	1203	864	579	518	138	175
280	1359	1946	1756	1310	1261	1142	1081	830	514	454	88.5	120
270	1250	1854	1688	1241	1192	1144	1170	775	438	380	50.1	77.0
260	1122	1717	1586	1157	1126	1070	1090	693	365	299		48.6
250	965	1511	1438	1033	1021	978	992	583	252	210		
240	808	1220	1241	895	895	858	846	440	171	127		
230	661	915	1021	758	755	713	682	261	105	70.9		
220	542	662	779	631	606	547	500	115	58.7	33.1		
210	452	500	582	522	477	409	333	12.4	12.4			
200	390	401	446	431	381	313	223					
190	346	346	362	361	309	250	151					
180	316	312	318	314	264	207	113					
170	295	293	286	280	232	173	88.5					
160	277	275	259	253	204	144	71.7					
150	257	257	231	225	178	119	61.4					
140	227	234	206	195	151	96.9	56.9					
130	180	207	177	167	126	82.0	54.4					
120	157	177	155	150	117	87.1	49.8					
110	145	139	137	120	87.7	55.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	1	1	1	2	2	2	1	1	1	1
HMIN	239	217	199	218	197	194	257	120	110	109	109	108
SCAT	39.1	29.3	45.6	44.2	87.9	65.4	47.1	41.4	45.4	56.2	46.4	45.7
HMAXF	324	284	285	308	352	330	342	241	268	289	292	307
SHMAX	270	180	156	116	181	109	79	254	448	760	855	1037
KM												
360					161							
350					161		129					
340					160		139					
330	508				158	121	127					
320	506				155	120	121					
310	491			193	152	118	115					1143
300	458			192	147	114	105				960	1137
290	409	446	262	186	141	109	90.9			834	960	1104
280	343	444	262	174	136	102	73.8			829	943	1040
270	257	421	256	160	130	95.2	54.3	375	565	810	903	958
260	166	371	243	138	122	85.9	38.7	375	561	777	841	854
250	81.9	298	225	111	110	75.6		368	544	734	766	745
240	12.4	201	201	81.8	95.1	65.1		349	510	676	678	637
230		89.6	167	53.1	78.2	55.4		322	465	600	580	542
220		31.0	124	12.4	60.5	46.4		281	413	507	493	460
210			75.4		44.3	33.8		230	357	421	419	399
200			12.4		12.4	12.4		179	300	347	359	354
190								136	249	293	318	321
180								101	207	254	287	296
170								78.9	168	224	262	274
160								65.8	136	194	237	248
150								58.6	114	166	211	217
140								55.1	100	142	185	186
130								51.7	92.7	126	162	163
120								12.4	86.7	118	149	152
110									12.4	90.8	55.6	130

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	50	0	0	0	0	0	A1	1	1	1
HMIN	109	109	108	108	106	108	110	209	209	206	240	257
SCAT	41.5	40.6	43.5	61.7	65.7	47.9	49.0	35.3	43.9	52.1	49.3	45.2
HMAXF	301	293	289	310	330	311	306	289	313	325	371	378
SHMAX	1224	1251	1079	1218	1306	1037	1031	552	467	397	321	289
KM												
380											446	439
370											446	436
360											441	422
350											426	397
340					1215						401	364
330					1215					548	368	316
320				1215	1208	1240			754	547	326	259
310	1555			1215	1186	1240	1420		754	535	277	201
300	1555	1727		1207	1150	1223	1415		738	514	223	144
290	1528	1725	1241	1182	1100	1179	1384	1143	701	486	170	100
280	1456	1685	1326	1141	1038	1107	1321	1124	647	446	119	69.7
270	1335	1588	1275	1085	952	1011	1243	1057	573	395	83.0	47.0
260	1176	1449	1182	1012	858	898	1113	948	483	338	59.1	12.4
250	988	1249	1065	921	757	769	942	799	382	276	41.0	
240	797	999	927	814	652	637	753	596	283	207		
230	642	754	779	701	559	515	548	352	167	133		
220	514	573	634	587	478	417	372	156	82.0	69.8		
210	424	453	509	486	412	341	256	12.4	12.4	27.9		
200	369	377	418	406	356	281	185					
190	333	332	356	346	308	237	144					
180	307	304	313	303	270	202	117					
170	288	284	285	272	237	171	95.6					
160	268	265	259	248	210	145	80.3					
150	246	243	232	225	184	123	68.8					
140	216	216	207	195	156	106	59.9					
130	185	187	184	166	129	95.0	55.8					
120	168	169	168	150	119	88.7	51.6					
110	79.3	84.6	120	106	99.9	73.1	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	1	1	1	1	1	1	1	H1	1	A1	1	A2
HMIN	248	219	209	199	254	257	206	114	106	109	107	108
SCAT	37.1	34.7	49.2	45.5	50.0	42.3	55.6	31.7	33.9	33.6	42.2	42.0
HMAXF	344	309	299	285	352	343	323	244	254	274	278	290
SHMAX	227	225	240	148	96	78	123	250	431	639	846	993
KM												
360					143							
350	417				143	135						
340	416				141	135						
330	402				136	132	161					
320	372				128	125	161					
310	328	446			118	114	159					
300	271	438	389		105	100	154					
290	209	411	386	251	87.7	82.8	147					1240
280	146	366	375	250	69.0	63.4	136			917	1084	1223
270	95.3	304	356	245	48.8	46.4	124			913	1074	1170
260	56.3	230	334	232	23.7	12.4	109		698	876	1030	1080
250	12.4	154	295	215			91.3	446	695	796	962	962
240		92.1	239	190			72.5	444	665	690	853	828
230		53.5	169	155			56.0	424	610	564	744	689
220		5.8	84.5	116			41.8	378	512	444	593	560
210			12.4	66.8			12.4	316	391	361	474	451
200				12.4				240	293	310	388	377
190								172	235	278	335	330
180								127	196	252	301	299
170								99.7	166	222	277	276
160								81.7	140	183	251	253
150								70.6	121	148	222	228
140								65.6	105	127	190	195
130								60.7	93.6	121	164	164
120								46.9	86.9	115	151	151
110									68.7	86.9	114	102

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	2	4	4	4	4	4	4	4	4	4	3
HMIN	106	104	109	109	108	109	109	216	211	238	240	222
SCAT	50.8	41.9	42.0	54.6	55.8	53.3	40.4	43.9	37.2	40.5	38.5	34.5
HMAXF	307	289	283	311	317	313	306	320	303	344	335	313
SHMAX	1425	1330	1149	1280	1306	1203	917	744	588	504	447	327
KM												
350										844		
340										842	834	
330										815	830	
320				1341	1446	1446		1240		768	803	679
310	1640			1341	1441	1445	1341	1225	1096	698	741	677
300	1631			1328	1414	1426	1333	1178	1094	609	662	654
290	1592	1786	1555	1292	1363	1381	1286	1099	1061	507	548	599
280	1518	1764	1554	1233	1281	1305	1190	987	987	393	420	521
270	1424	1691	1519	1153	1188	1210	1067	846	878	260	276	417
260	1286	1565	1440	1050	1070	1094	918	664	745	154	135	268
250	1100	1391	1327	935	999	926	737	465	592	77.1	63.7	135
240	906	1154	1152	814	743	750	553	256	408	23.0	3.6	73.7
230	736	930	967	691	599	585	414	111	207			43.0
220	586	725	762	579	476	447	316	43.6	82.7			
210	472	561	581	486	383	345	242					
200	398	447	444	411	322	279	191					
190	351	372	361	357	283	234	153					
180	320	329	314	317	253	199	124					
170	297	302	285	285	228	168	102					
160	276	281	261	258	203	139	95.6					
150	257	264	232	232	176	117	73.4					
140	233	234	196	202	149	102	63.9					
130	198	199	175	168	125	93.1	57.5					
120	173	176	166	151	118	87.1	53.0					
110	144	152	85.1	96.9	101	49.0	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 7 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	3	3	1	1	1	2	2	2	1	1	1	1
HMIN	212	210	208	199	197	198	215	109	109	108	108	103
SCAT	36.2	35.7	33.9	43.7	47.6	56.9	53.1	39.4	47.8	47.7	46.0	48.9
HMAXF	289	299	288	282	303	294	322	258	273	300	294	303
SHMAX	370	259	208	156	133	89	86	285	528	868	1021	1252
KM												
330							119					
320							119					
310						198	118			1004		1446
300		508				198	123	114		1004	1240	1445
290	794	499	446	274	195	123	108			993	1237	1422
280	783	470	441	274	187	121	100		643	959	1210	1369
270	740	423	416	269	174	118	90.8		642	901	1154	1277
260	671	352	372	256	158	112	78.7	417	631	827	1067	1168
250	556	265	309	239	137	105	64.7	413	605	731	955	1025
240	396	184	220	211	113	97.6	50.8	396	567	623	822	859
230	202	105	132	174	88.0	86.0	38.8	365	512	516	683	702
220	69.5	58.1	65.3	127	64.2	71.1	12.4	321	452	426	555	566
210		4.1	12.4	73.3	44.8	52.3		266	382	362	454	465
200				12.4	12.4	12.4		210	316	318	379	392
190								165	262	282	324	351
180								130	217	249	286	316
170								105	181	217	255	291
160								86.3	153	185	223	269
150								73.4	129	154	190	246
140								67.0	111	133	159	219
130								61.7	100	122	140	185
120								50.9	90.3	114	132	158
110								12.4	71.4	56.1	89.9	145

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 7 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A1	1	1	1	1	1	B1	1	1	1	1	1
HMIN	108	107	107	106	106	108		109	227	228	227	261
SCAT	48.5	47.6	41.9	55.7	39.3	37.6		43.8	46.1	60.1	47.7	45.6
HMAXF	307	291	288	300	273	267		294	331	362	362	363
SHMAX	1427	1374	1220	1268	880	681		384	303	344	274	243
KM												
370										417	382	389
360										417	382	388
350										413	376	381
340									461	403	362	364
330									461	387	340	338
320									455	365	309	302
310	1654			1420					436	339	270	259
300	1646	1771		1420				634	407	305	224	205
290	1603	1770	1669	1407				633	370	265	180	142
280	1522	1746	1652	1372	1341			619	327	220	139	85.7
270	1413	1682	1588	1310	1339	1050		586	275	171	104	46.7
260	1265	1579	1474	1232	1302	1041		540	219	125	76.8	
250	1087	1437	1321	1133	1221	996		478	158	81.6	56.4	
240	907	1247	1086	991	1104	917		402	88.7	51.7	41.0	
230	736	989	859	834	909	802		318	33.5	12.4	9.1	
220	596	753	653	672	679	664		216				
210	492	561	497	527	478	510		117				
200	417	437	399	415	356	379		12.4				
190	367	363	343	347	295	284						
180	332	323	309	306	257	225						
170	306	298	285	279	229	186						
160	284	275	263	255	200	155						
150	261	251	241	226	171	130						
140	233	225	209	195	146	109						
130	198	195	181	169	127	95.6						
120	175	172	167	153	119	88.9						
110	130	141	112	139	99.2	66.2						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 8 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	1	1	2	2	2	3	3	3	1	1	A1	1
HMIN	264	237	209	208	197	248	258	111	106	109	104	105
SCAT	44.1	38.6	40.3	51.6	73.4	55.0	54.7	38.2	47.1	37.0	47.4	50.9
HMAXF	358	326	291	310	343	363	373	259	250	262	278	298
SHMAX	233	218	186	178	178	122	105	276	378	518	708	1021
KM												
380							139					
370						161	139					
360	389					161	137					
350	386				179	158	133					
340	373				179	154	127					
330	350	403			178	146	117					
320	318	401		262	175	136	106					
310	274	385		262	170	124	92.8					
300	219	359	355	260	163	108	78.2					1084
290	160	316	355	252	155	90.1	63.1					1077
280	96.2	264	348	240	145	71.9	49.2				794	1049
270	46.9	206	330	224	133	54.7	34.6			679	789	996
260		133	304	202	121	40.0	6.8	417	477	678	766	929
250		66.4	262	173	107	5.5		411	477	660	726	846
240		19.9	200	134	90.5			391	471	615	669	755
230			119	92.2	74.6			356	454	549	595	652
220			58.1	56.2	59.2			308	426	468	513	544
210			4.5	12.4	44.3			251	388	385	430	451
200					12.4			193	341	327	366	380
190								148	289	286	324	334
180								116	240	257	295	305
170								94.2	200	234	273	284
160								79.9	169	211	251	270
150								70.0	145	187	225	252
140								62.0	125	165	199	227
130								54.2	109	146	174	197
120								45.4	95.2	133	156	174
110									84.3	92.6	140	146

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 8 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	1	1	2	2	2	1	1	1	2	2	2	2
HMIN	109	109	107	108	109	109	115	199	228	222	231	279
SCAT	63.8	49.0	39.7	37.3	41.0	41.3	45.4	47.4	40.8	39.8	40.5	40.3
HMAXF	321	308	290	280	275	272	285	323	335	330	345	378
SHMAX	1370	1396	1211	1049	893	667	555	469	342	315	273	242
KM												
380												417
370												413
360												397
350											446	366
340									573	540	445	324
330	1316							643	571	540	431	274
320	1315							642	554	531	403	216
310	1305	1626						631	518	504	362	152
300	1278	1615	1669					605	467	462	311	97.5
290	1235	1572	1669	1555			754	563	401	400	252	54.6
280	1176	1490	1641	1555	1240	960	752	511	326	323	196	5.5
270	1106	1382	1560	1525	1235	960	733	452	244	245	139	
260	1006	1239	1414	1438	1197	941	692	390	160	171	95.9	
250	887	1057	1239	1295	1121	893	637	329	96.8	112	63.1	
240	764	871	1008	1101	1011	819	569	266	55.6	68.0	40.3	
230	644	707	793	874	858	715	488	204	12.4	41.4		
220	532	565	607	652	700	584	399	137				
210	442	463	469	489	549	451	306	81.9				
200	377	391	384	382	429	341	226	12.4				
190	334	347	334	320	338	266	169					
180	306	316	305	284	282	218	129					
170	286	291	283	260	247	185	103					
160	271	271	266	238	219	156	85.6					
150	251	253	243	215	195	130	72.8					
140	220	232	217	187	170	108	62.2					
130	188	198	200	166	147	94.8	55.8					
120	169	171	175	150	133	88.4	50.5					
110	90.6	92.6	141	91.7	86.2	63.2						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 9 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	2	F2	3	3	3	6	6	6	5	C5	C5	C3
HMIN	247	262	221	199	199	257	196	108	109			
SCAT	46.4	39.6	30.0	31.3	55.7	42.2	56.7	47.9	54.3			
HMAXF	355	346	291	259	287	327	304	260	265			
SHMAX	278	233	208	138	74	44	84	274	380			
KM												
360	439											
350	438	439										
340	428	437										
330	407	422				83.8						
320	378	392				83.2						
310	338	350				80.3	112					
300	283	291	508			75.1	111					
290	215	216	508		108	67.2	110					
280	149	126	490		107	57.7	107					
270	90.0	58.5	442		105	45.4	102	355	432			
260	54.8		368	348	101	12.4	94.6	355	431			
250	17.9		254	341	95.7		85.5	351	424			
240			140	318	88.5		75.2	339	408			
230			59.9	276	80.2		64.0	320	390			
220				197	69.6		52.8	294	360			
210				93.7	54.8		41.6	257	321			
200				12.4	12.4		12.4	215	278			
190								173	238			
180								139	201			
170								112	170			
160								92.0	145			
150								78.6	126			
140								67.5	113			
130								57.3	93.8			
120								49.4	79.6			
110								12.4	50.7			

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 9 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	3	3	3	A3	A3	2	2	2	4	4	4	4
HMIN	109	109	109	109		109	199	189	203	206	264	296
SCAT	61.8	45.2	59.5	52.4		40.0	36.2	38.5	51.3	53.3	50.1	60.6
HMAXF	320	301	324	317		291	268	282	322	346	393	424
SHMAX	1337	1185	1397	1252		1178	641	446	325	243	203	229
KM												
430												280
420												279
410												276
400											274	269
390											274	257
380											270	244
370											259	226
360											244	202
350										304	223	172
340										303	198	138
330			1420						446	297	169	104
320	1316		1418	1420					446	286	138	75.6
310	1307	1446	1400	1414					441	268	109	50.1
300	1282	1446	1361	1383		1876			427	246	82.7	17.3
290	1240	1426	1297	1324		1875		794	403	220	61.9	
280	1177	1371	1221	1242		1838		793	372	192	45.6	
270	1105	1278	1127	1141		1738	1446	774	334	163	34.1	
260	1005	1151	1006	1002		1589	1430	725	290	135		
250	886	995	865	846		1368	1361	655	242	107		
240	765	816	719	690		1079	1237	564	190	80.5		
230	645	657	589	537		723	1052	455	135	60.1		
220	531	526	477	422		471	745	339	85.4	43.4		
210	440	432	393	347		330	200	231	44.7	12.4		
200	373	366	341	302		259	12.4	134				
190	325	325	307	271		219		43.1				
180	293	297	282	246		193						
170	273	275	261	221		170						
160	255	255	238	197		146						
150	235	234	214	178		124						
140	202	208	187	163		106						
130	178	182	165	154		95.3						
120	167	168	151	147		89.2						
110	74.3	79.2	74.3	55.6		74.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 10 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	4	A4	3	A3	3	4	4	4	3	A3	A3	A3
HMIN	268	213	199	208	244	237	227	109	109	109	108	
SCAT	42.8	47.7	30.8	32.7	61.6	63.2	47.6	39.5	49.7	51.4	51.7	
HMAXF	363	301	262	267	356	349	315	253	265	288	292	
SHMAX	201	250	125	51	77	91	79	253	469	670	924	
KM												
370	335											
360	335				97.2							
350	328				97.0	112						
340	312				95.7	111						
330	284				93.0	109						
320	250				89.1	106	127					
310	211	432			83.9	101	127					
300	165	432			76.3	94.5	124				1050	
290	114	426			68.4	87.0	118			716	1049	
280	63.5	410			59.6	78.2	109			712	1035	
270	12.4	391	310	119	50.1	68.1	98.2		573	694	1001	
260		356	310	118	40.8	56.2	84.4	368	572	660	944	
250		294	297	111	15.1	43.5	67.2	368	561	615	875	
240		207	271	99.0		12.4	47.4	356	538	559	791	
230		105	226	81.4			12.4	336	505	495	690	
220		49.9	145	56.7				302	458	428	583	
210			68.8	12.4				257	396	368	463	
200			12.4					204	331	319	367	
190								161	271	281	308	
180								127	225	253	271	
170								106	188	228	243	
160								90.3	159	204	217	
150								75.4	138	182	188	
140								67.4	123	161	160	
130								61.9	113	142	142	
120								54.2	93.0	129	134	
110								12.4	67.0	43.7	118	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 10 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	3	3	3	3	3	3	3	A3	4	4	4	5
HMIN	108	109	109	109	109	109	207	199	199	249	243	238
SCAT	53.7	48.4	51.2	60.5	58.6	42.5	42.7	35.2	50.1	55.0	46.6	46.3
HMAXF	313	306	306	322	319	295	296	281	303	369	348	348
SHMAX	1265	1247	1244	1332	1265	1008	773	548	455	422	357	341
KM												
370										573		
360										569		
350										556	557	532
340										532	552	528
330				1341						502	534	511
320	1341			1341	1341					458	508	482
310	1340	1446	1446	1327	1333				679	400	462	442
300	1323	1441	1443	1296	1306	1446	1433		678	333	403	383
290	1281	1407	1417	1246	1259	1442	1426	1143	667	256	335	314
280	1213	1342	1363	1178	1193	1402	1382	1143	643	177	261	244
270	1125	1248	1275	1096	1115	1318	1297	1113	603	112	179	165
260	1019	1118	1170	981	992	1197	1180	1027	552	59.1	93.7	94.2
250	893	968	1030	849	858	1037	997	903	483	4.5	48.9	54.7
240	763	807	876	711	726	826	712	747	403			12.4
230	641	657	718	582	598	620	397	556	314			
220	523	527	562	482	478	458	141	326	215			
210	434	431	444	398	387	337	40.6	132	107			
200	372	367	364	341	324	270		12.4	12.4			
190	331	327	315	305	279	228						
180	302	299	284	279	245	197						
170	278	277	260	258	216	171						
160	256	257	235	239	191	144						
150	234	233	203	219	167	119						
140	209	207	172	189	143	103						
130	181	181	157	161	126	94.0						
120	168	167	148	146	117	88.2						
110	98.5	80.9	55.6	64.4	74.2	60.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 11 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	5	5	3	3	3	3	3	3	A3	A3	A3	A5
HMIN	258	225	235	208	211	198	198	199	109	109		109
SCAT	35.2	38.4	35.8	36.8	36.3	48.6	50.6	40.2	51.7	59.0		55.0
HMAXF	346	310	319	302	291	302	302	277	279	319		324
SHMAX	226	306	244	222	191	201	166	198	492	906		1302
KM												
350	446											
340	443											
330	423											1341
320	382	608	477							854		1339
310	330	608	469	417		304	240			849		1319
300	263	597	442	417	389	304	240			832		1276
290	187	566	397	407	389	299	236			800		1208
280	114	516	335	381	380	289	228	389	540	759		1126
270	59.6	438	265	340	356	270	215	386	536	708		1013
260	12.4	329	191	285	320	248	197	372	521	650		885
250		190	106	220	265	218	175	346	496	587		757
240		88.1	46.6	153	191	181	150	309	462	518		640
230		36.2		91.4	109	139	122	251	418	449		535
220				52.9	55.7	94.0	89.0	154	365	386		443
210				12.4		58.5	57.3	77.2	315	337		379
200						12.4	12.4	12.4	278	300		333
190									248	271		301
180									221	247		279
170									193	224		261
160									163	199		243
150									135	171		218
140									115	145		186
130									97.9	125		160
120									88.9	114		150
110									55.6	86.5		96.9

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 11 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	A5	5	3	3	3	A2	A2	A2	A2	2	2	2
HMIN	108	106	108	106	106	104		200	197	258	241	237
SCAT	50.9	45.8	55.9	52.6	43.4	52.3		43.7	54.4	38.8	46.2	39.1
HMAXF	323	313	321	317	293	295		275	347	361	351	335
SHMAX	1566	1514	1688	1566	1289	1000		459	414	297	351	285
KM												
370										508		
360										508	557	
350									500	498	557	
340									498	469	569	508
330	1771		1891						488	423	527	506
320	1769	1907	1891	1786					468	369	494	488
310	1743	1905	1873	1778					440	307	449	454
300	1682	1870	1824	1739	1786	1240			406	243	386	404
290	1587	1790	1740	1668	1784	1237			367	173	308	338
280	1460	1661	1635	1563	1748	1214		865	324	104	223	259
270	1293	1492	1497	1430	1663	1169		861	278	59.1	138	184
260	1134	1257	1303	1258	1547	1101		838	231	12.4	79.4	116
250	930	1044	1050	1061	1355	1009		790	183		46.5	63.7
240	738	811	846	851	1156	890		723	137			19.6
230	583	616	665	672	918	750		630	99.1			
220	470	469	514	537	671	607		477	69.1			
210	392	383	418	428	484	463		232	47.0			
200	340	335	356	358	360	327		12.4	12.4			
190	307	306	318	315	293	238						
180	285	287	292	285	252	195						
170	272	271	271	264	224	166						
160	256	252	250	245	198	139						
150	230	225	228	223	171	117						
140	196	189	206	199	148	103						
130	165	160	183	173	131	94.4						
120	151	152	167	153	120	89.0						
110	98.5	139	115	127	111	81.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 12 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	3	3	3	2	2	2	3	A3	3	3
HMIN	222	211	198	206	227	227	213	112	110	108	109	108
SCAT	33.5	33.9	34.8	43.8	54.2	37.2	56.4	33.3	35.8	55.5	71.9	54.0
HMAXF	300	285	278	303	335	310	330	252	250	274	323	329
SHMAX	239	213	130	133	127	101	138	308	398	578	1000	1233
KM												
340					174		179					
330					174		179				834	1215
320					171		178				833	1206
310				219	165	193	173				827	1176
300	524			218	155	190	166				812	1125
290	512	477		214	145	180	156				789	1054
280	478	474	262	203	130	162	145			643	759	963
270	419	452	259	187	111	138	130			642	719	852
260	329	413	245	166	89.5	108	110	540		632	673	739
250	222	344	220	138	68.0	75.8	88.3	540	582	612	623	640
240	116	237	184	106	47.2	48.5	67.5	523	570	582	572	556
230	52.1	130	143	73.6	12.4	12.4	49.0	482	532	542	521	479
220		56.5	98.1	48.5			26.8	418	481	488	470	415
210			56.2	16.7				327	419	429	419	364
200			12.4					235	351	366	363	326
190								167	291	302	311	299
180								128	240	250	273	277
170								103	199	213	247	259
160								85.4	164	181	226	245
150								73.3	136	155	204	226
140								63.2	116	135	178	196
130								56.1	97.3	122	151	165
120								50.3	87.0	115	133	151
110									12.4	69.4	49.0	110

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 12 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	2	A2	A2	A2	A2	2	2	2	2	2
HMIN	109	107	108	108	109			210	199	199	250	249
SCAT	47.9	39.6	42.5	54.9	47.7			44.5	49.6	50.1	40.5	38.3
HMAXF	315	299	298	307	294			290	314	325	350	333
SHMAX	1434	1424	1324	1338	1041			524	460	348	242	231
KM												
350											417	
340											411	446
330										477	392	446
320	1756								643	475	358	433
310	1751			1542					642	465	315	404
300	1711	2032	1846	1535	1341				630	446	261	363
290	1631	2008	1828	1504	1339			960	605	418	201	304
280	1526	1920	1755	1447	1313			949	565	378	136	229
270	1365	1775	1639	1372	1257			913	516	332	80.6	135
260	1152	1550	1471	1270	1173			854	458	280	48.4	70.1
250	914	1276	1250	1121	1057			765	390	228	.7	12.4
240	718	951	1015	948	896			634	319	179		
230	557	706	745	761	715			450	248	124		
220	441	535	531	587	558			200	175	79.2		
210	363	424	395	450	422			12.4	103	49.0		
200	319	359	324	354	329				12.4	6.9		
190	291	322	285	302	272							
180	272	297	263	267	235							
170	257	277	225	236	208							
160	245	259	191	203	184							
150	224	234	172	175	160							
140	187	207	160	155	140							
130	158	183	153	141	125							
120	148	166	147	133	116							
110	49.0	112	98.8	106	77.9							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	2	2	2	C1	C1	C1	C4	A4	A4	A5
HMIN	221	212	200	217	218							
SCAT	35.5	36.9	43.3	42.6	35.7							
HMAXE	305	288	295	317	294							
SHMAX	217	173	144	121	98							
KM												
320				198								
310	446			197								
300	444		240	191	198							
290	427	355	239	179	198							
280	393	350	233	161	190							
270	338	333	220	138	175							
260	259	306	200	112	152							
250	164	258	174	86.8	122							
240	93.5	192	142	61.4	86.3							
230	48.3	115	107	44.3	53.4							
220		54.3	69.8	12.4	12.4							
210			43.1									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	5	5	3	3	3	2	2	2	3	3	3	3
HMIN	107	108	102	107	108	106	207	199	209	224	229	259
SCAT	47.9	48.5	42.0	38.3	42.7	46.7	46.4	48.1	49.5	39.1	34.2	40.8
HMAXE	306	314	340	303	298	299	295	314	330	309	318	348
SHMAX	1579	1574	1587	1565	1454	1363	748	653	670	412	295	300
KM												
350												540
340			1907									535
330			1881						960			513
320		1907	1801					960	951		582	476
310	2000	1904	1674	2294				958	921	794	575	421
300	1992	1868	1479	2289	2032	1891	1341	939	870	783	538	346
290	1944	1792	1246	2233	2012	1873	1337	897	803	744	485	260
280	1849	1673	1058	2073	1937	1812	1307	838	715	682	416	172
270	1722	1515	859	1855	1802	1702	1245	759	615	592	329	81.2
260	1535	1319	686	1565	1617	1561	1156	660	503	471	239	12.4
250	1283	1106	558	1236	1382	1360	1023	561	375	312	135	
240	1002	866	472	950	1135	1134	838	429	243	152	64.2	
230	764	666	411	703	869	847	548	299	142	55.1	12.4	
220	574	523	366	517	641	591	196	168	71.4			
210	447	422	333	407	468	401	43.1	78.0	12.4			
200	372	358	307	336	358	297		12.4				
190	326	319	298	298	295	239						
180	296	291	273	273	256	203						
170	274	269	257	254	228	176						
160	258	250	238	236	201	153						
150	245	228	207	217	177	134						
140	226	203	176	190	158	113						
130	200	182	157	164	133	96.5						
120	177	155	149	147	119	90.1						
110	113	76.6	68.6	107	74.8	82.3						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	3	3	3	4	4	4	4	4	4	5
HMIN	231	219	213	218	220	198	228	219	107	106	106	109
SCAT	41.2	31.9	41.5	43.2	43.8	37.6	41.2	30.6	41.7	54.3	78.7	73.0
HMAXE	326	294	296	330	330	286	313	275	261	273	340	393
SHMAX	316	213	197	193	183	135	132	215	487	640	1177	1692
KM												
400												1240
390												1240
380												1231
370												1210
360												1178
350											917	1133
340											917	1078
330	573			286	286						913	1011
320	571			282	282		240				902	932
310	552			271	271		240				883	849
300	517	469	362	250	251		234				855	764
290	466	467	360	224	226	251	221				823	687
280	390	445	349	191	193	250	202	608		707	782	619
270	291	400	327	154	157	240	175	604	679	706	733	560
260	179	336	296	118	119	222	136	573	679	697	677	507
250	94.6	258	251	85.9	85.4	195	88.3	517	667	674	618	461
240	48.6	159	186	60.9	58.4	158	54.2	364	636	640	558	421
230		76.0	121	43.3	40.4	120	12.4	123	586	594	496	387
220		12.4	55.0	8.4	.2	81.3		12.4	516	538	435	358
210						51.2			434	473	382	334
200						12.4			348	407	339	317
190									271	345	307	302
180									216	295	284	289
170									180	252	263	272
160									151	217	241	250
150									122	189	214	224
140									101	166	182	197
130									93.0	137	157	175
120									87.8	121	137	160
110									73.1	112	114	59.0

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	5	5	7	7	7	7	7	7	8	8	8	7
HMIN	107	109	109	108	107	106	99	208	209	211	247	212
SCAT	52.7	41.8	39.0	48.3	50.6	53.6	45.4	41.9	57.7	45.2	49.1	67.2
HMAXE	352	322	312	320	326	324	308	312	345	334	353	348
SHMAX	1908	1775	1771	1853	1886	1883	1438	1029	1278	861	845	1072
KM												
360	2032										1328	
350	2031								1626		1327	1228
340	2005								1622	1341	1303	1223
330	1942	2294			2277	2294			1597	1338	1252	1206
320	1838	2293	2571	2430	2268	2291		1786	1546	1308	1175	1174
310	1703	2248	2570	2406	2218	2257	2096	1785	1473	1245	1070	1129
300	1535	2134	2511	2329	2120	2182	2079	1749	1376	1147	921	1074
290	1333	1952	2360	2197	1986	2066	2008	1662	1253	1021	723	999
280	1083	1722	2132	2023	1802	1915	1898	1518	1100	874	482	904
270	887	1445	1827	1786	1565	1716	1729	1338	931	703	260	797
260	729	1187	1436	1495	1306	1465	1492	1114	742	492	109	677
250	609	948	1097	1103	1059	1204	1203	829	525	295	38.8	538
240	514	736	802	802	824	947	903	476	326	159		380
230	440	580	599	576	630	695	646	236	168	89.6		180
220	384	474	475	436	480	497	445	108	73.0	49.0		63.2
210	344	402	399	352	382	366	296	26.8	12.4			
200	313	352	351	305	324	286	209					
190	290	320	316	274	284	238	161					
180	273	296	288	247	253	203	132					
170	259	278	266	220	227	174	111					
160	249	260	244	182	202	150	93.6					
150	237	236	216	155	176	129	79.9					
140	211	216	196	142	151	113	68.9					
130	186	190	173	136	130	98.6	60.2					
120	168	169	155	131	119	90.7	56.0					
110	112	84.6	116	74.7	79.1	80.3	51.9					
100							12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	7	7	6	6	6	3	3	A3	A3	G3	G3	G4
HMIN	217	208	236	294	312	287	253			109	109	106
SCAT	44.0	65.7	64.1	85.2	44.9	77.0	61.6			50.8	36.3	24.1
HMAXF	328	359	374	451	397	431	374			196	177	161
SHMAX	537	515	202	177	73	106	80			133	116	92
KM												
460				161								
450				161								
440				160		104						
430				158		104						
420				156		104						
410				152		102						
400				147	123	100						
390				140	122	96.7						
380			229	134	118	92.1	97.2					
370			229	127	112	87.5	97.1					
360		540	227	117	101	82.5	96.0					
350		538	221	106	87.9	75.5	93.6					
340		529	212	92.1	72.6	67.9	89.9					
330	875	515	202	74.4	55.1	59.3	84.9					
320	867	491	188	57.5	33.8	51.2	77.7					
310	837	462	172	43.8		43.5	70.0					
300	786	430	152	18.5		27.8	60.6					
290	708	398	131			5.8	51.6					
280	606	364	107				43.8					
270	486	326	83.0				30.6					
260	343	284	62.7				12.4					
250	222	238	45.4									
240	127	182	16.1									
230	68.4	120										
220	20.3	63.6										
210		12.4										
200										198		
190										198		
180										193	224	
170										185	222	235
160										172	209	235
150										155	189	223
140										135	164	185
130										122	144	150
120										110	131	136
110										43.1	55.6	120

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	4	B4	3	3	3	3	3	3	3	3	3	3
HMIN	109		106	107	108	109	111	197	256	209	228	238
SCAT	114		69.1	86.6	63.5	58.4	57.0	54.7	45.6	57.8	57.6	56.7
HMAXF	268		263	279	263	269	296	326	371	349	341	344
SHMAX	351		396	451	390	347	330	223	204	235	168	114
KM												
380									304			
370									304			
360									300			
350									288	286	219	152
340									268	284	219	152
330								286	243	278	217	150
320								285	211	268	211	145
310								279	176	252	203	137
300							342	269	141	234	190	129
290							341	253	105	211	176	117
280				362			335	234	74.8	184	157	103
270	262		348	361	382	362	322	209	49.6	151	135	86.5
260	262		348	357	382	359	310	180	17.1	119	109	68.5
250	261		345	351	378	352	287	149		92.2	78.9	48.7
240	259		339	343	369	339	259	118		68.7	52.1	12.4
230	255		326	332	354	321	230	89.3		51.6	12.4	
220	241		311	317	337	298	201	64.6		36.0		
210	246		292	300	313	269	174	44.9		2.7		
200	240		273	283	286	238	150	12.4				
190	235		258	266	258	210	129					
180	230		248	251	234	185	111					
170	226		238	237	213	164	96.5					
160	221		229	225	193	144	79.9					
150	207		220	207	173	122	67.4					
140	182		197	182	152	104	58.8					
130	159		167	152	133	93.8	54.9					
120	146		152	135	119	87.5	51.0					
110	76.3		127	77.9	74.6	50.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	2	2	2	C2	C2	C2	C3	C3	C3	3
HMIN	229	230	196	217	255							108
SCAT	61.2	34.2	55.2	58.5	60.5							98.0
HMAXF	368	304	296	324	365							345
SHMAX	132	67	69	74	76							937
KM												
370	152				97.2							
360	151				97.0							
350	149				95.7							608
340	144				93.0							607
330	137			97.2	88.9							604
320	129			97.1	83.5							598
310	118	139		95.8	75.8							588
300	105	139	97.2	93.1	67.5							575
290	90.8	133	96.9	89.0	58.6							557
280	76.1	121	95.1	83.4	49.0							539
270	62.6	104	91.7	75.6	38.4							517
260	51.4	81.5	86.8	67.0	12.4							492
250	42.0	58.1	79.3	57.4								464
240	23.1	40.4	70.6	47.4								431
230	1.7	.2	60.6	32.8								397
220			50.7	7.3								364
210			40.5									337
200			12.4									315
190												299
180												285
170												271
160												256
150												234
140												198
130												175
120												164
110												131

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	3	3	3	4	A4	4	1	1	1	2
HMIN	107	110	108	109	107	107	115	229	208	209	205	236
SCAT	97.6	47.5	41.7	44.8	46.0	54.7	48.4	53.7	43.8	42.9	49.5	45.6
HMAXF	357	291	282	284	278	302	311	346	318	309	331	340
SHMAX	1416	1010	868	793	672	679	622	639	539	398	371	292
KM												
360	1004											
350	1003							906				469
340	997							904			508	469
330	985							887			508	463
320	968						754	852	875		502	446
310	946					716	754	806	868	679	486	420
300	924	1215				716	745	739	839	672	457	379
290	892	1215	1143	917		708	720	651	788	647	420	325
280	849	1199	1142	916	814	687	679	543	712	603	375	258
270	790	1156	1119	896	808	654	620	419	614	541	325	184
260	716	1089	1065	851	781	610	546	275	502	456	271	114
250	633	989	976	788	738	555	466	154	374	352	217	63.6
240	552	868	850	703	678	495	388	72.2	237	238	163	25.6
230	475	713	684	609	601	432	311	12.4	130	136	106	
220	413	548	535	515	513	366	244		66.5	68.3	63.8	
210	366	432	416	430	422	310	199		12.4	12.4	32.2	
200	332	360	341	365	342	265	166					
190	308	320	303	323	290	228	140					
180	294	299	281	294	256	196	119					
170	281	282	268	272	229	174	100					
160	270	265	250	252	203	146	85.1					
150	253	240	222	231	176	120	73.7					
140	224	212	185	205	146	103	68.1					
130	191	179	159	174	126	93.5	64.0					
120	170	161	150	152	118	87.4	59.3					
110	133	49.6	115	116	101	72.3						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	1	1	1	1	1	A1	2	A2	A2	1
HMIN	228	218	210	223	239	217	207	110	107			108
SCAT	50.9	37.8	49.1	59.7	46.2	55.1	43.7	41.4	37.4			63.3
HMAXF	345	305	305	343	341	334	309	257	259			320
SHMAX	336	218	222	211	155	173	141	320	459			1303
KM												
350	477			262	240							
340	475			262	240	229						
330	466			259	237	229						1215
320	447			253	228	226						1215
310	421	417	355	242	213	218	229					1207
300	383	415	354	227	192	206	227					1184
290	334	400	346	209	167	193	219					1145
280	280	371	331	188	139	174	205					1093
270	221	327	311	164	108	152	186					1023
260	154	263	282	137	72.1	125	158	446	643			933
250	91.7	193	237	106	46.8	96.7	123	443	634			835
240	53.8	117	177	74.8	7.3	69.2	89.0	427	603			730
230	12.4	61.1	104	42.0		47.4	63.4	395	551			630
220		12.4	53.7			12.4	44.7	354	469			537
210							12.4	302	369			459
200								246	293			401
190								199	253			358
180								160	226			326
170								131	202			301
160								108	180			278
150								91.5	158			254
140								79.2	137			226
130								69.5	118			195
120								62.7	104			171
110								12.4	80.3			132

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	1	1	1	0	0	0	1	1	1	2
HMIN	108	109	109	109	106	110	110	209	199	208	230	248
SCAT	40.1	36.3	40.8	58.2	65.2	53.4	47.4	39.7	44.6	49.4	50.8	45.8
HMAXF	300	301	281	309	317	301	306	302	315	325	352	359
SHMAX	1163	1381	1264	1322	1313	978	837	549	520	438	361	284
KM												
360											508	432
350											508	427
340											501	411
330										643	485	386
320					1341					794	641	458	352
310		2032		1420	1338	1143	1096	1004		791	628	423	309
300	1446	2031		1411	1319	1143	1091	1004		772	600	375	258
290	1424	1981	1907	1382	1285	1131	1064	981		730	560	317	205
280	1357	1849	1806	1331	1234	1100	1009	924		672	508	255	152
270	1244	1647	1871	1261	1170	1048	934	838		598	442	192	96.1
260	1089	1370	1779	1174	1091	976	840	724		513	358	129	54.7
250	926	1013	1637	1048	977	886	733	579		418	270	80.2	12.4
240	759	772	1419	900	834	774	614	413		313	184	47.1	
230	624	578	1136	750	676	641	469	200		211	106	1.5	
220	513	456	816	607	529	506	355	88.1		123	57.9		
210	434	384	558	490	424	397	265	12.4		64.5	12.4		
200	378	344	394	400	350	315	194			12.4			
190	341	319	323	340	300	259	145						
180	316	303	289	301	264	223	114						
170	300	291	264	275	236	194	91.2						
160	285	278	235	251	210	169	72.9						
150	267	262	207	222	185	146	62.6						
140	228	229	175	180	151	124	57.8						
130	184	187	158	156	127	109	54.9						
120	168	166	150	144	118	99.1	51.9						
110	106	92.6	115	94.1	99.6	12.4	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	C2	C1	1	1	A1
Q*KP	2	2	2	2	2	2	2			1	1	
HMIN	258	238	212	198	227	238	202			110	109	
SCAT	39.0	34.2	39.5	56.9	53.4	46.4	40.2			45.5	60.3	
HMAXF	360	318	295	315	349	335	276			257	300	
SHMAX	241	228	219	202	165	145	139			479	740	
KM												
370	417											
360	417											
350	410				219							
340	389				217	229						
330	352				212	229						
320	305	477		262	203	223						
310	254	470		262	190	212					670	
300	194	443	417	258	174	198					670	
290	134	396	415	250	153	175					665	
280	84.6	328	402	237	128	147	274				651	
270	52.5	243	376	223	103	115	272				626	
260	12.4	155	338	204	78.4	81.7	263			573	596	
250		78.9	277	177	57.9	49.5	246			570	553	
240		21.7	203	146	41.3	12.4	222			554	502	
230			123	113	9.0		177			522	449	
220			55.3	80.6			111			479	401	
210				51.7			55.2			425	361	
200				12.4						372	333	
190										327	312	
180										288	294	
170										255	275	
160										227	253	
150										203	226	
140										172	191	
130										134	151	
120										119	135	
110										12.4	76.3	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	A1	1	0	0	0	A1	A1	A1	2	2	2	2
HMIN	107	109	109	109	109	108		199	210	230	250	257
SCAT	48.8	50.0	47.6	54.2	48.1	58.8		57.1	43.6	42.5	46.3	44.5
HMAXF	312	302	294	308	301	306		321	344	341	365	364
SHMAX	1222	1256	1250	1261	1112	1131		678	557	484	457	412
KM												
370											716	670
360											714	669
350									814	794	698	654
340									812	793	664	620
330								905	793	779	616	572
320	1341							906	750	741	547	509
310	1340	1446		1406	1341	1290		899	690	683	459	427
300	1320	1446	1528	1393	1341	1287		877	619	604	354	329
290	1271	1426	1516	1368	1322	1267		839	539	509	241	217
280	1187	1376	1477	1308	1276	1225		792	452	400	151	127
270	1086	1297	1393	1232	1192	1169		725	353	276	87.1	67.6
260	965	1193	1292	1134	1090	1100		637	255	174	49.1	19.9
250	827	1055	1136	1001	960	988		539	174	96.4	.2	
240	685	882	946	850	808	853		423	112	51.4		
230	562	714	749	687	652	696		286	72.0			
220	462	574	577	535	515	543		167	45.6			
210	394	468	459	429	410	403		76.9	1.8			
200	352	393	379	359	337	313		12.4				
190	324	348	332	319	294	255						
180	305	318	306	290	263	217						
170	292	297	287	266	238	188						
160	275	279	269	243	214	162						
150	252	261	245	221	188	137						
140	223	230	212	191	162	119						
130	195	202	181	160	143	109						
120	169	172	168	149	133	102						
110	135	65.5	119	68.6	68.6	81.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 19 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	A2	A2	A2	2	2	1	1	B1	C1	A1	A1	A2
HMIN	234	208	210	198	212	227	222					
SCAT	47.5	36.5	25.8	51.9	71.9	52.5	48.3					
HMAXF	353	297	261	309	351	335	329					
SHMAX	582	369	186	204	206	121	128					
KM												
360	854				219							
350	853				219							
340	839				218	170						
330	799				214	169	189					
320	747				209	166	187					
310	686			286	201	160	181					
300	610	754		284	191	151	171					
290	516	747		276	180	141	160					
280	405	712		264	167	125	141					
270	281	649	540	245	150	104	119					
260	151	552	540	222	130	82.1	94.8					
250	80.1	409	517	194	106	62.7	71.7					
240	41.2	239	456	162	80.9	44.6	51.6					
230		129	350	127	56.9	12.4	30.4					
220		65.9	214	89.3	34.4							
210		12.4	12.4	56.4								
200				12.4								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 19 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A2	2	3	3	3	2	2	2	3	3	3	2
HMIN		110	110	110	109	109	109	204	202	218	248	258
SCAT		49.4	45.0	63.8	49.7	47.5	45.6	45.5	46.9	40.9	44.3	43.1
HMAXF		310	292	330	316	307	300	304	325	340	368	369
SHMAX		1415	1187	1455	1202	1145	908	658	510	407	373	339
KM												
370											573	540
360											568	534
350											549	514
340										643	513	480
330				1406					754	634	465	431
320				1398	1341				752	604	403	368
310		1669		1372	1336	1446	1240	1096	734	554	333	301
300		1652	1500	1326	1307	1439	1240	1094	697	492	259	227
290		1602	1500	1265	1250	1400	1225	1071	646	421	180	157
280		1515	1475	1191	1156	1329	1179	1020	579	342	120	94.2
270		1400	1406	1096	1053	1236	1104	944	496	262	78.3	55.3
260		1245	1312	971	926	1094	999	833	403	189	49.5	12.4
250		1043	1178	838	793	931	865	690	302	122	12.4	
240		849	1017	702	667	753	718	527	206	77.8		
230		680	836	580	554	587	572	336	132	49.3		
220		544	659	476	459	454	435	160	76.5	12.4		
210		440	514	398	382	353	310	57.5	44.1			
200		375	410	347	328	285	222					
190		334	347	312	292	245	171					
180		310	313	287	262	214	138					
170		291	293	264	238	188	115					
160		266	269	246	213	163	97.1					
150		232	240	224	185	138	82.3					
140		199	206	192	158	117	70.4					
130		176	177	165	141	106	63.7					
120		164	163	150	131	99.1	56.0					
110		12.4	12.4	12.4	65.5	59.0	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTD RICO — 60 W — 20 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	2	2	3	3	3	1	1	1	1	A1	A1	1
HMIN	250	209	199	209	227	215	217	109	109	109	110	107
SCAT	35.0	39.3	41.6	38.4	60.5	51.3	39.0	32.6	43.3	41.2	55.6	52.2
HMAXF	345	295	279	277	355	332	305	245	258	268	312	322
SHMAX	295	338	217	118	135	105	99	258	438	558	918	1210
KM												
360					161							
350	573				160							
340	571				158	143						
330	548				154	143						1215
320	500				147	142					854	1215
310	433				138	137	179				854	1200
300	346	661			128	130	178				844	1162
290	257	658			114	118	172				816	1103
280	167	637	410	240	98.9	105	160				778	1019
270	95.9	597	405	238	83.2	90.7	141			670	729	916
260	52.3	530	388	228	68.3	75.8	118		573	664	672	807
250		430	363	209	54.0	62.0	92.5	432	568	637	608	701
240		303	320	184	40.7	49.8	66.8	429	548	589	544	598
230		156	256	147	9.2	37.9	46.0	405	513	531	482	505
220		69.9	177	95.0		12.4	12.4	363	460	474	428	433
210		12.4	77.5	12.4				309	399	420	383	382
200			12.4					244	337	369	348	350
190								187	281	325	320	327
180								141	236	285	296	308
170								108	197	250	273	291
160								87.0	163	216	251	270
150								78.9	135	183	226	241
140								72.7	115	150	198	202
130								64.2	106	126	167	178
120								54.9	98.9	118	148	166
110								12.4	49.0	76.3	12.4	135

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 20 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	1	1	S1	A1	A1	A1	A1	1	0	0	0	A0
HMIN	109	109	109					209	218	235	238	238
SCAT	40.9	44.7	45.8					45.1	43.5	41.7	40.6	48.4
HMAXF	305	306	300					323	338	340	347	351
SHMAX	1256	1402	1441					619	563	472	438	440
KM												
360												679
350										794	745	679
340									875	794	740	670
330								960	867	782	713	647
320								959	836	746	663	610
310	1555	1786	1907					940	780	687	594	558
300	1549	1777	1907					896	706	612	503	485
290	1503	1728	1882					831	615	521	396	390
280	1407	1633	1812					744	511	417	291	279
270	1282	1502	1695					642	394	283	182	180
260	1095	1309	1539					523	280	157	101	102
250	918	1057	1314					381	176	80.7	58.1	59.2
240	749	831	1050					244	101	34.0	12.4	12.4
230	608	640	781					138	57.9			
220	496	502	552					67.9	12.4			
210	420	413	426					12.4				
200	371	359	358									
190	337	329	321									
180	316	308	300									
170	299	295	282									
160	284	279	254									
150	258	253	224									
140	225	216	195									
130	193	178	166									
120	170	154	151									
110	76.3	105	96.9									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 21 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	0	A0	A0	A0	A0	A0	0	0	1	1	A1	0
HMIN	261	229	204	223	217	219	220	110	110	110		110
SCAT	45.7	33.3	52.5	41.6	49.6	48.4	40.1	36.1	40.9	41.2		56.8
HMAXF	369	306	315	323	336	328	304	250	264	281		315
SHMAX	395	311	334	234	227	177	131	303	505	737		1189
KM												
360	634											
350	628											
340	607				323							
330	570			389	321	262						
320	519		477	388	314	260						1167
310	447	679	476	379	299	253	240					1164
300	361	673	467	357	281	240	239					1146
290	259	638	451	326	254	222	232			949		1105
280	147	574	425	283	219	199	218			949		1052
270	58.4	477	391	234	180	167	199		679	932		985
260		356	347	181	140	133	167		678	885		907
250		205	293	130	100	96.6	125	477	660	812		818
240		86.6	232	80.8	68.9	67.2	85.0	468	618	714		725
230		12.4	157	43.2	46.2	43.9	50.6	441	561	601		627
220			82.3		12.4	3.3		398	492	492		529
210			41.2					331	416	402		439
200								256	338	339		369
190								197	273	299		324
180								155	227	267		294
170								127	192	233		278
160								107	164	195		266
150								91.2	139	160		248
140								80.6	119	141		211
130								73.3	108	135		178
120								63.7	101	129		156
110								12.4	12.4	12.4		49.6

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 21 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A0	0	1	1	1	A1	A1	1	0	0	0	0
HMIN		109	109	110	110			219	218	229	218	215
SCAT		47.9	56.6	58.5	43.6			50.9	42.9	45.0	42.4	37.0
HMAXF		300	310	315	295			334	333	333	315	314
SHMAX		1287	1428	1335	807			766	674	625	507	394
KM												
340								1096	1084	1038		
330								1094	1083	1037		
320			1500	1420				1074	1059	1018	875	716
310		1555	1490	1417				1030	1004	972	872	715
300		1555	1457	1396	1143			969	922	903	847	692
290		1538	1398	1354	1139			887	818	802	797	643
280		1487	1331	1285	1108			785	685	675	724	569
270		1401	1229	1206	1046			665	536	516	636	479
260		1296	1088	1106	957			531	391	329	518	386
250		1128	927	965	868			373	248	164	373	270
240		947	756	813	721			203	127	73.7	205	170
230		760	605	665	584			92.9	63.3	12.4	81.3	82.9
220		586	493	526	451			12.4	12.4		22.3	43.3
210		459	415	423	356							
200		381	367	356	298							
190		337	336	314	262							
180		311	313	284	236							
170		296	292	269	199							
160		275	269	237	160							
150		237	245	217	147							
140		203	214	179	140							
130		180	180	157	134							
120		168	166	146	129							
110		92.6	110	12.4	12.4							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 22 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	0	0	1	A1	F1	2	2	A2	A3	3	A3	A3
HMIN	210	239	216	217	208	208	230	110		110		
SCAT	36.5	46.7	34.2	51.5	50.8	46.1	43.8	40.8		46.3		
HMAXF	295	336	294	322	321	321	322	270		292		
SHMAX	300	333	254	300	235	176	168	377		809		
KM												
340		540										
330		538		446	335	262	286					
320		525		446	335	262	286					
310		498		440	332	259	281					
300	608	461	540	425	321	249	268			917		
290	604	411	536	403	304	232	248			917		
280	580	343	510	373	281	210	221	532		902		
270	535	260	461	330	252	182	185	532		863		
260	459	170	390	276	216	151	136	524		803		
250	360	80.1	295	209	174	119	89.7	499		732		
240	249	12.4	174	133	131	86.9	50.3	461		650		
230	137		82.4	67.7	86.2	61.7		402		562		
220	64.1		41.4	20.3	52.4	43.3		332		479		
210	4.1				12.4	8.4		269		408		
200								213		351		
190								170		308		
180								136		273		
170								108		243		
160								86.4		214		
150								74.3		183		
140								68.7		154		
130								65.0		139		
120								61.3		131		
110								40.2		12.4		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 22 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A3	A3	A3	A3	3	A3	A3	3	1	1	1	2
HMIN	109		107	108	106			229	211	199	208	219
SCAT	45.8		55.7	50.5	53.0			51.5	37.4	53.3	47.2	42.6
HMAXF	309		319	321	318			335	297	316	327	326
SHMAX	1381		1539	1406	1376			885	665	616	427	295
KM												
340								1316				
330				1542				1312			634	477
320			1654	1541	1555			1286		865	630	474
310	1669		1644	1572	1545			1235		862	612	459
300	1652		1608	1473	1507			1161	1341	846	580	430
290	1596		1543	1385	1439			1060	1328	812	535	390
280	1497		1459	1269	1352			922	1269	767	475	338
270	1365		1339	1144	1225			760	1160	705	400	280
260	1180		1187	994	1067			569	1007	628	325	218
250	991		1009	847	900			335	785	528	239	149
240	802		833	704	733			141	480	412	153	89.1
230	627		676	575	586			12.4	227	284	96.3	53.2
220	502		541	476	457				76.1	154	55.1	5.8
210	422		445	405	374					76.0	12.4	
200	371		380	357	321					12.4		
190	338		338	325	287							
180	316		310	300	262							
170	296		288	277	239							
160	277		268	252	212							
150	251		245	218	187							
140	207		216	179	165							
130	179		184	159	146							
120	168		168	149	134							
110	119		131	117	109							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 23 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	2	2	2	2	2	2	2	A2	A0	A0	A0	A1
HMIN	240	238	250	247	235	227	223			110		
SCAT	38.9	46.9	49.5	52.0	42.6	44.1	41.6			47.0		
HMAXF	337	340	352	362	334	321	297			270		
SHMAX	235	248	224	218	183	216	201			564		
KM												
370				304								
360			335	304								
350			335	300								
340	417	389	330	290	304							
330	413	385	319	274	303	362						
320	396	371	300	254	296	362						
310	365	349	276	227	279	356						
300	320	320	243	195	255	341	389					
290	265	278	201	157	222	316	386					
280	204	225	156	117	183	283	374			643		
270	143	170	109	79.3	143	242	349			643		
260	85.1	112	59.5	51.0	98.8	190	315			635		
250	48.4	59.5	4.1	17.5	58.7	125	262			613		
240	1.1	12.4			29.6	67.0	184			572		
230						19.9	74.2			522		
220										469		
210										417		
200										371		
190										329		
180										290		
170										255		
160										221		
150										183		
140										141		
130										124		
120										116		
110										12.4		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 23 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A1	A1	0	0	0	0	A0	0	3	3	3	3
HMIN			109	109	109	109		219	209	208	218	247
SCAT			54.7	55.1	43.5	46.6		47.6	59.6	40.8	46.2	47.3
HMAXF			320	321	303	304		310	345	315	329	360
SHMAX			1525	1589	1215	1204		747	786	494	397	359
KM												
370												540
360												540
350									960			534
340									959			515
330			1669	1771					946		608	485
320			1669	1771				1240	919	834	601	442
310			1654	1754	1555	1555		1240	879	824	581	385
300			1612	1709	1554	1553		1225	825	789	545	320
290			1540	1633	1523	1521		1193	755	728	498	249
280			1447	1543	1451	1453		1115	666	648	436	174
270			1316	1404	1344	1356		1019	570	550	364	113
260			1128	1223	1188	1221		877	470	431	284	63.9
250			948	1037	1010	1043		696	367	308	202	19.9
240			770	830	827	862		464	264	182	121	
230			616	634	649	674		293	172	104	63.5	
220			498	497	505	517		47.7	90.3	57.9	12.4	
210			416	402	407	383			12.4	12.4		
200			365	345	344	298						
190			331	310	302	249						
180			307	285	271	216						
170			287	265	245	189						
160			266	244	221	163						
150			242	218	195	139						
140			211	186	163	119						
130			178	161	141	108						
120			166	150	132	101						
110			110	96.9	85.5	64.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 24 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	3	1	1	1	2	2	A2	2	A2	2	2
HMIN	258	268	241	220	209	219	198		107		108	109
SCAT	42.9	45.3	49.6	42.6	37.4	28.9	45.6		42.5		57.0	53.5
HMAXF	368	380	348	309	283	284	292		255		306	307
SHMAX	296	301	313	278	186	124	172		515		981	1181
KM												
380		461										
370	477	456										
360	472	437										
350	456	409	477									
340	425	371	473									
330	383	323	461									
320	329	268	438									
310	266	212	407	500							960	1240
300	199	146	365	494			286				957	1235
290	133	83.7	308	474	389	310	286				940	1209
280	82.1	54.5	238	446	388	309	281				907	1162
270	51.3	12.4	160	394	377	293	270				861	1094
260	12.4		86.3	322	351	261	251		698		800	1002
250			47.1	230	315	204	228		695		722	890
240				129	253	134	193		674		630	765
230				63.2	152	69.5	145		637		540	642
220				4.1	76.5	12.4	94.4		578		466	532
210					12.4		56.3		501		407	448
200							12.4		412		365	391
190									332		338	353
180									274		317	326
170									231		293	304
160									197		266	284
150									169		242	258
140									143		216	229
130									122		171	199
120									107		150	173
110									94.1		101	124

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 24 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A2	A2	3	53	3	3	B3	3	4	4	4	2
HMIN			109	111	109	109		211	198	228	218	250
SCAT			66.9	55.7	57.2	41.7		43.3	59.5	51.7	42.9	39.0
HMAXF			340	337	335	306		299	352	350	338	355
SHMAX			1470	1434	1513	1187		755	783	612	458	373
KM												
360									917			643
350			1290						917	875		640
340			1290	1446	1555				908	867	716	619
330			1282	1440	1553				887	843	711	577
320			1260	1411	1530				852	804	686	513
310			1219	1358	1483	1649			806	748	641	433
300			1167	1276	1410	1650		1341	744	667	579	346
290			1104	1179	1322	1607		1325	673	565	501	260
280			1027	1060	1204	1501		1274	593	457	416	178
270			939	925	1064	1356		1187	506	341	325	102
260			843	790	911	1148		1066	417	217	233	52.5
250			739	662	755	928		900	321	121	150	
240			638	549	626	708		688	225	63.5	88.9	
230			541	462	516	521		397	146	12.4	51.3	
220			460	397	428	400		121	88.3		12.4	
210			404	354	364	319			52.9			
200			362	325	322	268			12.4			
190			330	302	290	232						
180			304	279	265	206						
170			280	255	243	184						
160			256	230	217	161						
150			230	201	189	137						
140			202	176	164	118						
130			177	158	144	108						
120			165	147	132	101						
110			73.2		62.7	49.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 25 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	2	2	1	A1	1	1	1	1	1	A1	A1	A1
HMIN	238	248	239	233	201	210	252	115	108	109	109	
SCAT	42.1	57.4	43.0	45.2	45.6	43.6	33.1	40.2	54.6	60.3	55.4	
HMAXF	345	378	346	344	311	310	317	256	280	293	298	
SHMAX	349	418	299	306	268	190	157	364	652	806	990	
KM												
380		540										
370		537										
360		526										
350	573	507	484	477								
340	571	483	482	476								
330	555	448	463	465								
320	520	396	437	441	417	310	362					
310	474	337	397	409	417	310	357					
300	408	274	345	362	412	306	337			794	1050	
290	334	205	285	305	396	293	300		716	793	1045	
280	253	134	218	243	370	271	244		716	785	1023	
270	177	80.7	147	177	335	242	174		710	765	983	
260	110	50.4	89.4	109	288	207	69.2	608	691	736	930	
250	59.6	12.4	49.9	66.0	234	164		604	658	697	856	
240	12.4		6.9	41.1	176	117		582	617	641	767	
230					117	75.1		545	564	580	662	
220					73.4	46.3		484	506	518	554	
210					44.5	1.5		388	447	459	460	
200								250	389	408	392	
190								169	330	362	342	
180								129	274	316	305	
170								98.0	225	272	276	
160								76.0	185	235	250	
150								67.9	149	197	226	
140								63.2	120	159	206	
130								57.8	107	131	169	
120								51.2	101	118	148	
110									75.4	73.2	46.8	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 25 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	1	1	2	2	2	A1	A1	1	3	3	3	3
HMIN	109	109	109	107	108	109		109	198	248	257	250
SCAT	52.5	57.7	58.9	51.3	45.9	46.0		53.4	48.5	45.5	44.8	41.1
HMAXF	307	304	315	306	301	316		306	343	367	372	362
SHMAX	1202	1228	1162	1081	943	1089		585	568	448	433	365
KM												
380											679	
370										679	679	599
360										675	667	599
350									735	656	637	587
340									734	619	592	556
330									722	569	529	510
320			1119			1341			689	503	446	446
310	1316	1290	1117	1167	1084	1336		960	646	429	356	373
300	1310	1288	1101	1163	1084	1302		957	591	340	265	295
290	1282	1271	1064	1137	1070	1236		939	530	242	174	216
280	1228	1232	1018	1088	1027	1138		901	463	160	105	137
270	1154	1172	954	1023	963	1012		849	393	99.9	61.9	82.6
260	1054	1102	875	928	876	873		782	322	56.6	19.6	48.0
250	928	1002	783	816	773	715		695	252	12.4		1.5
240	781	882	687	692	668	563		599	185			
230	640	747	591	573	559	446		490	131			
220	521	618	504	477	468	359		352	87.8			
210	429	503	438	407	393	300		161	53.7			
200	372	415	387	358	336	261		12.4	12.4			
190	335	358	350	324	295	232						
180	313	324	319	297	264	206						
170	295	299	291	274	239	181						
160	272	276	267	253	211	159						
150	240	250	241	232	182	138						
140	199	217	209	209	156	117						
130	177	185	182	187	141	106						
120	166	170	167	168	133	99.0						
110	96.9	110	55.6	118	101	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 26 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	3	3	2	2	2	2	2	2	3	A3	A3	B4
HMIN	242	228	218	271	218	227	239	110	108			
SCAT	43.2	34.8	47.7	45.0	47.3	48.9	43.4	36.2	46.7			
HMAXF	359	319	324	326	324	345	325	271	277			
SHMAX	368	290	307	253	205	186	178	366	651			
KM												
360	573											
350	568					262						
340	547					262						
330	510		477	403	310	256	310					
320	458	573	476	401	309	246	309					
310	393	564	467	390	303	229	300					
300	325	531	447	367	290	208	283					
290	256	476	418	337	268	180	260					
280	188	393	377	296	241	151	226	524	834			
270	118	306	323	246	208	121	181	524	829			
260	72.4	216	259	193	169	91.2	127	512	806			
250	43.6	120	189	130	127	64.5	71.5	480	764			
240		61.8	104	78.3	85.3	45.4	12.4	426	704			
230		12.4	58.1	45.8	53.2	12.4		363	613			
220			12.4		12.4			297	497			
210								243	390			
200								200	314			
190								165	264			
180								138	230			
170								116	202			
160								97.9	175			
150								83.0	148			
140								70.5	127			
130								65.5	114			
120								60.5	104			
110								40.2	86.8			

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 26 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	B4	B4	B4	4	4	1	1	1	2	2	2	3
HMIN	107			109	109	109	110	209	198	220	248	275
SCAT	61.9			52.0	70.8	63.7	50.5	42.6	50.1	43.2	45.7	43.0
HMAXF	329			311	328	319	305	312	319	351	365	385
SHMAX	1389			1291	1321	1226	972	653	625	441	357	283
KM												
390												
380												
370												
360												
350												
340												
330	1341				1191							
320	1335			1446	1187	1240		1096	896	558	407	215
310	1311			1446	1171	1233	1240	1095	889	501	344	158
300	1270			1431	1143	1212	1236	1074	860	438	278	103
290	1209			1389	1104	1175	1211	1019	816	369	207	62.7
280	1140			1317	1055	1122	1161	939	759	298	142	30.7
270	1060			1223	985	1058	1085	834	682	230	90.7	
260	921			1101	899	967	988	708	594	169	53.4	
250	784			950	798	859	863	546	490	114	12.4	
240	657			787	698	734	716	366	360	71.9		
230	544			632	598	611	562	187	229	45.8		
220	445			504	507	499	414	80.6	125	1.8		
210	384			415	427	404	304	12.4	61.2			
200	347			359	364	327	228		12.4			
190	324			321	318	276	178					
180	305			294	283	239	147					
170	283			272	257	211	124					
160	253			250	234	188	107					
150	217			226	212	167	92.1					
140	191			201	187	147	79.9					
130	176			178	163	131	70.5					
120	167			166	150	119	64.5					
110	142			55.6	76.3	72.9	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 27 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	3	3	3	3	3	3	3	A3	A3	A3	3	2
HMIN	253	267	238	228	227	209	224	110			109	108
SCAT	46.1	50.4	50.7	49.7	50.0	37.3	48.6	46.1			65.7	66.5
HMAXF	360	388	349	345	341	291	304	253			309	337
SHMAX KM	308	276	266	221	211	164	181	325			945	1237
400		389										
390		387										
380		377										
370		359										
360	477	335	389	310	304							
350	454	301	386	309	304							1050
340	425	261	375	303	300							1047
330	387	214	357	291	290							1033
320	337	165	334	271	274		310				865	1007
310	278	119	299	246	253	329	310				861	965
300	216	77.6	251	216	224	329	304				847	917
290	149	48.7	199	182	188	322	292				823	859
280	87.5	12.4	145	146	148	303	274				794	792
270	44.2		91.6	110	106	276	251	446			747	717
260			52.8	75.6	72.2	230	214	446			690	635
250			12.4	49.0	48.2	166	149	437			621	555
240				12.4	12.4	98.8	59.2	418			542	480
230						54.0		390			467	420
220						6.1		349			404	373
210								296			356	341
200								238			321	318
190								187			297	300
180								146			278	284
170								115			260	263
160								91.7			241	239
150								75.2			216	209
140								64.3			173	182
130								55.7			149	169
120								12.4			76.3	112
110												

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 27 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	2	2	2	2	2	2	2	2	3	3	3	2
HMIN	108	109	109	109	109	109	110	209	199	215	263	268
SCAT	63.8	51.3	41.5	63.2	50.0	46.0	56.8	47.6	52.9	57.4	56.6	44.5
HMAXF	350	327	301	306	309	307	311	312	325	354	393	380
SHMAX KM	1521	1464	1349	1315	1018	990	1009	675	680	546	461	346
400											599	
390											599	540
380											591	540
370											574	533
360										670	546	512
350	1341									669	512	476
340	1333									660	467	429
330	1309	1555							917	641	408	366
320	1268	1547					1215	1096	915	611	341	299
310	1208	1510	1786	1393	1096	1215	1215	1095	898	572	265	230
300	1140	1444	1785	1390	1087	1208	1204	1078	863	523	192	155
290	1046	1346	1753	1370	1057	1173	1175	1035	813	465	124	98.2
280	940	1223	1670	1329	1000	1108	1125	973	748	398	74.5	56.6
270	829	1077	1529	1269	929	1016	1061	872	666	330	41.8	12.4
260	724	918	1346	1201	844	901	967	737	572	261		
250	626	770	1107	1116	746	770	848	584	469	190		
240	539	640	891	989	648	628	701	368	355	124		
230	464	534	700	832	553	498	544	197	242	73.0		
220	407	447	534	673	467	399	402	88.1	142	34.0		
210	366	392	428	521	396	323	293	12.4	70.9			
200	339	354	366	400	340	272	215		12.4			
190	317	328	330	330	297	237	169					
180	298	307	306	288	262	212	141					
170	279	288	288	259	235	192	120					
160	256	268	267	232	211	170	102					
150	224	241	241	199	188	145	87.3					
140	200	209	210	172	165	123	76.2					
130	189	180	180	157	143	109	68.0					
120	180	166	168	149	133	102	61.6					
110	132	84.6	90.8	84.6	65.5	55.6	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 28 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	2	2	2	2	2	1	1	B1	1	1	A1	1
HMIN	257	248	223	198	215	207	240	109	106	110		108
SCAT	40.3	53.4	32.8	54.6	53.6	51.3	45.3	48.2	41.7	71.5		51.1
HMAXF	356	359	295	324	334	326	321	266	261	312		304
SHMAX KM	311	369	224	242	206	175	162	352	477	831		1198
360	540	532										
350	537	528										
340	518	515			280							
330	482	494		310	279	240	286					
320	430	468		310	275	239	286			716		
310	357	420		305	266	235	282			716		1341
300	284	356	508	295	250	225	271			711		1339
290	207	286	504	278	232	211	252			700		1315
280	130	202	480	258	209	193	228			681		1266
270	64.8	123	434	232	179	169	195	446	608	654		1186
260	19.9	62.9	356	203	144	143	143	445	608	622		1090
250		12.4	254	172	109	116	71.3	435	597	583		963
240			137	142	76.5	88.2	2.5	414	569	538		821
230			54.4	109	51.4	62.1		387	520	489		689
220				77.0	21.7	44.4		346	464	437		564
210				51.4		12.4		298	397	386		448
200				12.4				249	335	343		375
190								203	283	307		332
180								162	245	275		303
170								128	214	247		277
160								106	188	219		252
150								90.6	164	190		230
140								78.8	141	162		198
130								68.7	121	129		177
120								60.4	104	117		167
110								12.4	84.3	40.2		128

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 28 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	1	1	S2	2	A2	A1	A1	1	2	2	2	0
HMIN	107	109	109	109		109		218	222	229	225	240
SCAT	45.4	53.0	50.1	59.2		55.8		46.4	41.6	35.1	42.5	40.3
HMAXF	304	307	293	303		331		327	337	318	334	345
SHMAX KM	1276	1366	1080	949		947		728	752	540	503	419
350												716
340						960			1191		834	713
330						960		1096	1182		832	690
320						951		1090	1138	1072	812	644
310	**1555**	**1555**		**949**		**927**		**1061**	**1059**	**1059**	**768**	**578**
300	1553	1548	1265	949		883		1065	957	999	702	494
290	1520	1514	1264	938		829		925	835	902	613	396
280	1450	1453	1245	913		763		831	701	766	502	294
270	1345	1359	1189	876		690		720	552	598	379	195
260	1205	1242	1126	825		609		595	395	411	263	105
250	1023	1097	1035	757		525		457	237	231	152	52.1
240	830	900	918	675		442		281	120	101	77.9	
230	663	727	773	588		367		120	55.6	12.4	36.2	
220	530	573	620	507		308		26.8				
210	437	455	493	438		264						
200	373	377	399	380		232						
190	332	334	339	329		203						
180	307	308	303	290		173						
170	288	289	281	261		144						
160	262	267	265	232		125						
150	229	232	236	188		114						
140	199	203	197	164		108						
130	178	190	177	155		104						
120	167	179	167	148		99.4						
110	88.1	59.0	76.3	105		46.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 29 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	0	0	0	0	0	2	2	2	1	A1	1	1
HMIN	227	219	217	226	240	228	209	110	107	105	109	109
SCAT	42.4	34.3	37.0	44.7	54.2	38.0	32.8	38.8	56.7	66.2	46.0	41.7
HMAXF	327	295	308	339	360	315	275	250	259	305	305	301
SHMAX	392	280	221	234	286	208	184	364	466	782	1032	1096
KM												
360					389							
350					386							
340				362	376							
330	679			358	359							
320	675			345	337	396						
310	653		417	322	308	394				670	1143	1446
300	611	608	413	292	270	377				669	1139	1446
290	551	605	394	251	223	350				662	1112	1422
280	473	580	357	204	172	312	439			647	1054	1357
270	369	530	310	157	118	255	437			621	975	1256
260	247	454	251	112	74.2	191	416	573	532	591	879	1101
250	134	343	183	75.7	45.6	119	376	573	529	554	769	928
240	69.9	200	114	49.6	1.8	60.2	313	563	517	515	656	734
230	20.3	94.7	61.7	17.1		12.4	255	533	495	473	546	555
220		12.4	19.3				86.7	489	467	433	457	416
210							12.4	414	432	394	392	348
200								323	387	359	350	310
190								238	335	327	322	285
180								179	282	298	302	262
170								141	234	270	286	219
160								116	194	244	266	195
150								94.8	162	217	242	182
140								79.0	134	186	202	174
130								68.9	112	156	161	168
120								62.7	102	136	148	162
110								12.4	74.4	110	54.1	55.6

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 29 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	1	1	1	3	3	3	2	2	2	2
HMIN	109	109	108	108	107	107	109	219	197	247	265	259
SCAT	50.8	46.0	50.8	53.3	47.1	45.3	49.4	58.8	57.4	47.7	46.6	40.8
HMAXF	308	304	310	318	306	300	294	326	371	373	388	357
SHMAX	1359	1230	1249	1319	1260	1146	971	740	663	496	455	386
KM												
390											679	
380									754	716	674	
370									754	716	653	
360									747	704	616	679
350									729	675	564	675
340									697	631	501	651
330								1004	656	573	423	606
320				1393				1002	604	503	329	543
310	1555	1446	1341	1385	1612	1555		986	540	422	237	461
300	1545	1443	1328	1352	1605	1555	1341	954	472	332	157	358
290	1504	1411	1289	1289	1564	1535	1339	912	402	240	96.2	240
280	1431	1345	1221	1213	1483	1477	1313	851	334	157	60.3	139
270	1323	1251	1129	1107	1374	1385	1261	765	269	96.4	30.0	67.8
260	1193	1109	1020	974	1220	1263	1179	654	214	57.2		12.4
250	1042	968	900	833	1004	1070	1074	532	165	19.0		
240	874	816	769	696	778	856	920	380	121			
230	706	668	644	579	598	643	720	209	90.0			
220	548	543	543	486	456	462	523	54.1	65.4			
210	440	446	461	413	361	343	366		45.8			
200	374	379	393	363	308	275	247		12.4			
190	333	335	347	329	276	236	183					
180	306	307	315	302	252	209	146					
170	287	286	291	280	230	185	123					
160	269	263	270	259	207	161	104					
150	242	227	249	236	185	138	87.5					
140	204	192	223	210	162	118	74.7					
130	190	176	188	185	141	108	66.9					
120	180	166	168	158	132	101	60.7					
110	72.7	85.1	88.2	109	97.9	76.5	12.4					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 30 APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	1	1	1	2	2	2	3	3	A3	A3
HMIN	238	231	220	204	203	228	234	110	108	109		
SCAT	40.7	34.5	32.4	36.1	33.8	44.3	41.4	48.1	57.3	52.3		
HMAXF	344	315	296	278	275	317	301	268	275	281		
SHMAX	353	294	255	199	121	119	127	358	612	721		
KM												
350	608											
340	606											
330	590											
320	552	608				198						
310	500	604				197	254					
300	431	579	573			191	254					
290	343	526	568			180	250			794		
280	250	450	538	417	262	163	238		679	794		
270	158	350	481	412	261	142	220	446	678	785		
260	91.1	237	395	390	249	116	194	443	667	762		
250	54.5	128	280	355	226	85.1	154	430	646	723		
240	12.4	58.0	150	298	192	55.0	69.2	407	617	672		
230			65.0	232	144	12.4		375	577	604		
220			4.1	126	89.0			334	519	527		
210				49.8	44.9			285	451	449		
200								239	378	380		
190								196	315	328		
180								160	265	289		
170								130	225	259		
160								107	189	232		
150								90.6	162	205		
140								79.3	140	182		
130								70.4	119	155		
120								61.7	104	134		
110								40.2	84.4	62.7		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO — 60 W — 30 APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	A3	3	2	2	2	3	A3	3	3	3	3	4
HMIN	109	107	109	107	109	106		209	208	238	258	253
SCAT	41.5	52.5	57.5	56.1	56.9	42.9		50.6	53.5	44.7	47.2	42.8
HMAXF	302	302	317	309	306	298		321	361	359	376	351
SHMAX	1311	1427	1417	1225	1120	903		773	754	571	504	455
KM												
380											754	
370											751	
360									917			
350									917	875	732	794
340									908	867	694	794
330									883	837	642	781
320			1446					1143	839	785	574	745
310	1786	1669	1441	1316	1215			1143	782	711	489	689
300	1785	1668	1415	1307	1212	1143		1130	717	622	388	610
290	1750	1647	1367	1279	1193	1132		1096	642	518	290	500
280	1663	1596	1294	1227	1154	1089		1034	560	409	195	374
270	1520	1510	1206	1159	1097	1014		959	478	291	112	225
260	1335	1402	1091	1067	1020	919		863	389	178	60.7	119
250	1045	1260	952	948	921	801		737	302	101	12.4	52.4
240	814	1067	810	805	803	669		581	216	57.0		
230	609	875	682	666	681	547		393	147	12.4		
220	472	703	572	542	551	434		203	93.3			
210	388	552	483	435	434	354		82.6	56.6			
200	343	427	414	362	352	297		12.4	12.4			
190	317	354	366	316	301	256						
180	297	314	331	284	267	226						
170	278	289	302	263	242	197						
160	254	264	277	245	216	169						
150	221	233	249	225	190	141						
140	191	198	213	201	165	119						
130	175	176	181	173	144	108						
120	166	166	165	153	133	102						
110	128	96.8	84.6	124	59.0	86.1						

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

RAMEY AFB, PUERTO RICO — 60 W — APR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	27	27	28	28	28	27	27	20	21	22	18	18
KP	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.0	1.9	1.8	1.9	1.7
HMIN	240	228	215	216	220	225	227	121	108	109	108	108
RATIO	6.0	6.4	6.4	5.7	5.2	5.3	5.7	5.5	4.7	4.3	4.1	4.2
SCAT	41.2	39.6	40.6	45.7	52.3	50.1	46.8	38.9	44.8	49.8	54.5	53.8
NMAX	533	498	419	301	236	218	230	481	659	785	962	1183
HMAXF	339	319	301	313	328	331	322	259	265	279	295	305
SHMAX	306	270	221	185	161	142	137	305	508	685	917	1123
SHINF	1809	1677	1403	1035	827	756	784	1661	2367	2901	3630	4460
KM												
950	41.5	35.4	27.0	20.7	17.3	15.8	16.0	25.1	35.4	46.2	61.9	80.0
900	53.3	45.5	34.6	26.6	22.2	20.3	20.6	32.2	45.5	59.2	79.4	103
850	68.3	58.3	44.4	34.1	28.5	26.0	26.4	41.3	58.4	76.0	102	132
800	87.5	74.8	57.0	43.7	36.5	33.3	33.8	53.0	74.9	97.5	131	169
750	112	95.7	73.0	56.0	46.7	42.7	43.3	67.9	96.0	125	167	216
700	143	122	93.3	71.6	59.7	54.5	55.3	87.0	123	160	214	276
650	182	156	119	91.3	76.0	69.4	70.5	111	157	204	273	352
600	230	198	151	116	96.3	88.0	89.4	142	200	260	347	448
550	288	248	191	146	121	110	112	180	254	329	438	564
500	355	308	238	181	150	137	140	227	321	413	547	703
490	369	320	249	189	156	142	145	238	335	432	571	733
480	383	333	259	197	162	148	151	249	350	451	596	763
470	397	347	270	205	168	154	157	260	366	470	620	795
460	412	360	281	213	175	159	163	272	382	490	646	826
450	426	373	292	221	181	165	170	283	399	511	671	858
440	439	386	303	229	187	171	176	296	416	532	697	890
430	453	399	314	237	193	176	182	308	433	553	723	922
420	466	412	326	244	199	182	188	321	451	574	749	954
410	478	424	337	252	205	187	193	334	469	595	775	985
400	489	436	347	260	211	192	199	347	486	616	800	1015
390	499	447	358	267	216	197	204	360	504	637	824	1043
380	507	457	368	273	220	201	209	373	522	658	847	1070
370	514	465	377	279	224	204	213	386	540	677	869	1096
360	518	472	386	284	228	208	216	399	557	696	890	1118
350	518	476	393	289	230	210	219	411	574	714	908	1137
340	511	477	400	292	231	211	221	423	590	730	923	1153
330	494	475	404	292	231	211	221	434	604	745	936	1165
320	468	468	405	291	227	209	220	445	618	757	945	1171
310	431	455	404	285	221	205	217	454	630	767	950	1168
300	384	434	398	276	211	196	209	463	640	774	948	1155
290	329	403	387	261	197	183	199	470	649	776	935	1124
280	268	360	366	242	179	167	184	475	654	771	908	1071
270	206	304	336	216	158	146	164	478	656	757	868	996
260	144	241	297	188	132	121	136	476	651	730	811	904
250	94.9	172	245	157	104	93.2	106	467	634	689	740	799
240	55.5	105	183	123	76.4	65.0	75.0	441	601	631	660	684
230	26.8	50.9	124	88.5	48.2	38.9	44.5	396	552	560	574	577
220	10.1	20.0	70.4	52.3	27.2	21.0	21.0	341	487	483	491	484
210	2.7	3.3	25.2	24.3	12.7	8.9	8.9	280	412	412	419	411
200	.5	.5	3.1	3.1	2.2	1.8	1.4	214	340	352	363	360
190								163	280	306	321	326
180								127	233	269	291	300
170								101	196	238	267	278
160								83.3	165	209	242	257
150								71.0	139	179	215	234
140								62.8	119	153	186	204
130								55.9	105	133	159	176
120								45.5	95.4	122	143	161
110								11.0	64.6	66.2	81.9	114

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

RAMEY AFB, PUERTO RICO — 60 W — APR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	22	21	28	26	24	24	15	29	29	29	29	27
KP	2.0	1.7	2.0	2.1	2.0	1.9	2.0	1.9	2.3	2.3	2.3	2.1
HMIN	108	109	109	108	108	108	130	208	209	226	240	250
RATIO	4.1	4.5	4.3	4.1	4.3	4.6	5.1	5.5	5.1	5.3	5.3	5.6
SCAT	56.0	47.2	50.3	55.6	52.0	48.7	46.4	46.7	47.5	46.8	46.3	43.9
NMAX	1443	1637	1537	1394	1327	1264	1131	978	793	677	588	532
HMAXF	313	302	304	310	303	299	295	311	333	343	356	356
SHMAX	1311	1331	1301	1267	1136	993	774	609	544	441	382	324
SHINF	5383	5948	5638	5199	4880	4560	3963	3368	2780	2350	2040	1825
KM												
950	98.6	106	101	94.5	87.2	81.0	70.8	66.1	59.3	53.3	49.7	44.7
900	127	136	130	121	112	104	90.9	84.9	76.1	68.4	63.7	57.4
850	162	174	167	156	144	133	117	109	97.7	87.8	81.7	73.6
800	208	223	214	199	184	171	150	140	125	112	105	94.3
750	267	286	274	255	236	219	192	179	160	144	134	121
700	341	366	350	327	302	280	245	229	205	184	171	154
650	435	467	447	417	385	358	313	292	261	234	217	195
600	552	594	567	529	489	455	398	370	330	295	273	247
550	695	750	716	667	617	574	503	467	414	370	341	308
500	865	937	893	831	770	718	630	581	512	456	417	377
490	902	978	932	866	803	749	657	606	533	474	433	391
480	940	1020	971	902	837	781	686	631	554	492	449	405
470	978	1062	1011	939	872	814	715	657	576	510	464	420
460	1017	1106	1052	977	907	847	745	683	597	528	480	434
450	1056	1150	1093	1015	943	881	775	710	618	546	495	447
440	1095	1194	1135	1053	979	916	805	736	639	564	509	460
430	1134	1239	1177	1090	1015	950	836	763	660	581	523	473
420	1173	1283	1218	1128	1050	984	867	789	680	597	536	485
410	1210	1327	1259	1164	1086	1018	897	814	699	612	547	495
400	1247	1370	1298	1200	1120	1051	927	839	717	626	558	505
390	1282	1412	1337	1234	1153	1084	957	863	734	639	566	513
380	1315	1452	1373	1266	1185	1115	985	885	749	650	572	519
370	1345	1490	1407	1296	1215	1144	1012	906	762	658	574	522
360	1372	1525	1438	1323	1242	1172	1037	925	771	663	571	521
350	1395	1557	1466	1346	1266	1196	1060	941	778	662	561	513
340	1413	1584	1489	1365	1286	1217	1081	954	779	655	543	496
330	1426	1606	1506	1378	1302	1235	1098	963	774	640	515	468
320	1433	1621	1516	1386	1312	1248	1112	966	758	613	476	430
310	1430	1630	1515	1383	1314	1255	1121	961	730	574	425	380
300	1413	1626	1500	1365	1305	1253	1123	943	688	522	366	320
290	1370	1599	1466	1324	1280	1233	1112	908	633	457	301	253
280	1297	1535	1410	1261	1231	1190	1079	852	564	383	237	185
270	1196	1434	1323	1176	1159	1122	1025	775	483	302	174	125
260	1065	1296	1204	1065	1062	1029	947	672	395	223	118	73.4
250	911	1118	1056	933	938	907	839	548	302	149	73.8	35.7
240	757	919	888	789	802	765	702	405	208	91.4	38.8	15.4
230	618	733	721	649	657	615	544	258	130	48.2	16.2	6.6
220	502	576	568	526	522	482	386	136	71.4	22.3	5.7	1.8
210	420	461	454	431	415	375	250	50.5	30.1	7.1	1.5	
200	365	385	378	363	341	298	172	8.9	4.7	.7		
190	329	339	331	319	292	245	130	1.5				
180	305	310	301	288	258	209	104					
170	286	290	278	263	231	180	84.9					
160	267	269	255	240	205	155	70.8					
150	242	244	229	215	180	131	60.4					
140	211	214	200	187	156	113	53.0					
130	183	186	175	164	136	101	48.2					
120	168	168	161	149	126	94.8	44.1					
110	103	88.9	97.4	86.9	81.7	62.0	8.5					

MARCH 1961 - MAY 1954

Table 1

Talara, Peru (4.6° S, 81.3° W) March 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.4	13	205				2.2	3.30
01		8.0	18	215				2.3	3.20
02		6.3	20	230				1.7	3.20
03		5.3	20	230				1.7	3.40
04		4.3	21	230				1.9	3.45
05		3.5	19	(240)				1.9	3.32
06		2.75	20	<260				2.0	3.20
07		6.2	28	250		125	2.10		3.25
08		8.7	31	230		115	2.80	2.8	2.95
09		9.15	30	215		115	3.25		2.60
10	---	9.9	30	200	---	111	3.50		2.30
11	---	10.4	29	200	(5.0)	111	3.70	3.8	2.25
12	330	10.65	30	190	5.0	111	3.80		2.30
13	320	10.8	30	190	5.0	111	3.75		2.42
14	---	11.7	31	200	5.0	111	3.70		2.60
15		12.2	31	200		109	3.50	3.7	2.65
16		12.1	31	210		111	3.20	3.6	2.60
17		12.0	31	<230		111	2.80	3.2	2.60
18		11.5	31	250		<126	2.20	3.9	2.60
19		11.4	31	285				3.2	2.55
20		11.5	21	320				1.8	2.65
21		(11.7)	10	270				1.8	(2.82)
22		12.8	10	225				2.0	3.15
23		12.0	13	210				2.5	3.35

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

Table 2

Huancayo, Peru (12.0° S, 75.3° W) February 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.25)	8	260					(3.20)
01		6.7	11	230					(3.30)
02		5.6	17	225					3.30
03		4.5	20	230					3.35
04		3.7	23	235					3.40
05		3.2	21	240					3.35
06		4.7	24	260		---	1.40		3.15
07		7.9	26	235		119	2.40		3.30
08	---	9.5	27	220		113	3.00	4.6	3.10
09	(290)	10.45	28	210	---	115	(3.45)	7.3	2.82
10	(300)	10.6	28	210	---	---	(3.75)	7.4	2.52
11	(330)	10.45	28	205	5.1	---	----	7.6	2.48
12	330	10.0	28	200	5.0	---	(3.90)	7.6	2.50
13	(320)	9.75	28	200	4.9	---	(3.90)	7.4	2.48
14	(330)	10.15	28	200	---	113	(3.75)	7.4	2.50
15		10.75	28	200	---	112	(3.50)	7.4	2.55
16		11.4	28	205		111	(3.20)	7.2	2.55
17		11.25	28	230		115	(2.70)	6.0	2.55
18		11.0	28	255		<127	2.00	4.7	2.58
19		10.75	28	280					2.55
20		10.15	26	325					2.52
21		9.3	17	<300					2.60
22		9.1	11	285					2.70
23		(9.0)	7	295					(2.95)

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

Table 3

Resolute Bay, Canada (74.7° N, 94.9° W) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.4	28	270					(3.0)
01		3.6	28	270					(3.0)
02		3.4	29	270					(3.0)
03		3.5	29	260					----
04		3.4	22	270					(2.8)
05		3.4	20	290					----
06		3.5	27	260					(2.95)
07		3.5	22	<285					(3.0)
08		3.6	24	265					----
09		4.6	21	260					----
10		5.3	25	260					(2.9)
11		5.8	26	250					(3.0)
12		5.8	22	250					(3.05)
13		6.0	26	240					(3.0)
14		5.6	22	240					(2.95)
15		5.6	22	250					(2.95)
16		5.0	24	250					(2.95)
17		5.1	22	250					----
18		4.8	24	260					----
19		4.0	23	260					----
20		3.7	22	260					----
21		3.7	25	270					----
22		3.7	20	260					(2.9)
23		3.5	27	260					----

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 4

Tromso, Norway (69.7° N, 19.0° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.7)	3	---				3.8	----
01		(2.4)	4	---				4.1	----
02		(2.4)	4	(330)				4.2	----
03		(2.2)	5	(300)				4.0	----
04		(2.8)	9	(290)		---	----	3.6	----
05		(3.0)	14	300		---	----	2.6	(2.75)
06		2.5	13	(265)				2.6	(2.90)
07		2.3	16	290					2.90
08		2.6	22	260				1.5	2.95
09		3.8	23	250		---	----		2.95
10		5.0	23	245		---	1.15	1.8	3.10
11		5.8	25	235		---	----		3.20
12		6.2	28	230		---	1.60		3.25
13		6.1	29	230		---	1.60		3.30
14		5.3	22	240		---	1.35		3.10
15		4.2	19	245		---	1.40		3.10
16		4.0	16	250		---	----	2.4	3.10
17		(2.7)	9	240				3.0	----
18		(3.1)	7	(250)				3.4	----
19		(2.8)	8	---				3.1	(2.90)
20		(2.6)	7	---				4.0	----
21		(2.6)	3	---				3.9	----
22		(3.0)	4	---				3.5	----
23		(2.6)	3	---		---	----	3.5	----

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

Table 5

Kiruna, Sweden (67.8° N, 20.3° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(2.4)	6	335				3.4	(2.6)
01		(2.3)	7	315				4.0	(2.7)
02		(2.3)	7	315				3.0	(2.65)
03		(2.9)	8	320				2.8	(2.8)
04		2.6	11	290				2.4	(2.7)
05		2.6	13	285				2.0	2.8
06		2.2	12	275					2.8
07		2.2	17	290					2.8
08		2.8	21	255					2.8
09		3.8	20	240		---	1.4		3.0
10		5.4	24	235		---	1.6		3.1
11		(6.4)	24	230		---	1.8		3.2
12		6.7	24	230		---	1.5		3.2
13		6.0	23	225		---	2.0		3.2
14		5.4	20	225		---	1.2		3.2
15		4.6	18	235					3.0
16		3.8	16	240				2.6	3.0
17		3.2	12	240				3.0	3.0
18		2.6	10	260				3.0	2.9
19		(2.8)	8	315				3.6	(2.9)
20		(2.7)	9	300				3.4	(2.9)
21		(2.5)	6	335				4.0	(2.8)
22		(2.8)	4	320				4.0	---
23		(2.5)	7	340				3.9	(2.7)

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

Table 6

Sodankyla, Finland (67.4° N, 26.6° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	0	340				2.8	
01		(3.5)	1	350				3.1	----
02		(3.7)	1	340				2.3	
03		---	0	325				(2.5)	
04		(4.2)	1	325				2.2	
05		(2.2)	3	310					----
06		---	0	295					
07		---	0	300					
08		(3.6)	2	280					----
09		(3.6)	8	260		---	E		(3.05)
10		4.8	16	240		---	E		3.10
11		5.9	22	230		---	1.70		3.20
12		6.3	22	230		150	1.90		3.20
13		6.9	21	230		160	1.80	2.2	3.25
14		6.8	22	230		---	1.85		3.25
15		5.8	18	230		---	E		3.20
16		5.2	14	230		---	E		3.10
17		(4.5)	7	235		---	----		(3.10)
18		(4.1)	3	250					----
19		(3.2)	4	290				2.2	----
20		(2.7)	2	300				2.2	----
21		(2.9)	1	310				2.1	
22		---	0	345				2.3	
23		(2.8)	2	350				2.8	----

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

Table 7

Lulea, Sweden (65.6° N, 22.1° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(2.7)	11	325				(1.8)	(2.8)
01		(2.3)	11	310				1.7	(2.8)
02		(2.4)	18	320					2.9
03		2.3	17	295					2.8
04		2.2	18	300					2.9
05		2.2	20	275					2.9
06		2.2	18	280					3.0
07		2.0	18	275					3.0
08		2.9	27	260					3.0
09		4.6	22	240		---	1.5		3.3
10		5.8	21	240		---	1.8		3.3
11		6.8	21	240		---	1.9		3.4
12		>7.0	22	240		---	2.0		3.4
13		6.8	22	230		---	1.8		3.4
14		6.6	19	230		---	1.8		3.3
15		5.8	19	230		---	---		3.3
16		4.8	16	230					3.3
17		4.0	14	230					3.4
18		3.0	16	250					3.2
19		2.7	16	270					3.0
20		2.7	13	260					(3.1)
21		2.3	15	290				1.1	(3.0)
22		2.4	13	320				2.0	(3.0)
23		2.8	12	325				(2.0)	(3.0)

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

Table 8

Lycksele, Sweden (64.6° N, 18.8° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(2.2)	25	300				3.2	(2.6)
01		(2.6)	25	300				3.0	(2.7)
02		(2.2)	30	300				3.0	(2.6)
03		(2.2)	29	300				3.0	(2.6)
04		(2.0)	30	290				2.8	(2.7)
05		(2.0)	27	280				2.7	2.7
06		(2.0)	28	270				2.6	(2.8)
07		(2.0)	31	260				2.2	(2.8)
08		(2.9)	30	250		135	1.10	3.0	(2.8)
09		(4.6)	30	230		110	1.40	3.0	(3.1)
10		(5.8)	31	225		---	1.80	3.2	(3.2)
11		(7.1)	31	220		110	1.90	3.0	(3.2)
12		(7.3)	31	220		135	1.90	3.0	(3.2)
13		(6.7)	31	215		130	1.90	2.9	3.3
14		(6.6)	30	215		---	1.70	3.0	(3.2)
15		(5.8)	29	210		130	1.50	3.0	(3.2)
16		(5.0)	29	215		---	1.10	2.7	(3.2)
17		(3.8)	27	220				2.7	(3.0)
18		(3.0)	25	235				3.0	(2.9)
19		(2.4)	26	250				2.6	(2.8)
20		(2.5)	25	280				2.7	(2.8)
21		(2.4)	24	270				3.0	(2.75)
22		(2.5)	23	285				2.7	(2.7)
23		(2.6)	21	300				3.0	(2.7)

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 9

Nurmijarvi, Finland (60.5° N, 24.6° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	0						
01		---	0						
02		---	0						
03		---	0						
04		(1.9)	1						----
05		---	0						
06		---	0						
07		(2.2)	2						----
08		(2.6)	4						----
09		4.5	15						3.30
10		6.0	20						3.50
11		7.8	23						3.50
12		8.0	29						3.45
13		8.3	27						3.40
14		7.4	27						3.45
15		7.2	28						3.45
16		6.2	22						3.50
17		5.4	18						3.40
18		4.3	10						(3.30)
19		(3.2)	7						(3.15)
20		(2.6)	5						(3.10)
21		(2.3)	3						----
22		---	0						
23		---	0						

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

Table 10

Upsala, Sweden (59.8° N, 17.6° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		1.9	20	300				2.4	2.7
01		(1.8)	21	300				2.9	(2.7)
02		(1.6)	25	295				2.5	(2.7)
03		(1.7)	28	275				2.4	(2.7)
04		(1.8)	30	280				3.2	(2.75)
05		1.8	27	260				3.4	2.9
06		1.9	27	250				2.4	2.9
07		2.0	30	250		---	----	2.5	2.9
08		3.8	31	240		<125	1.30	2.9	3.0
09		(5.7)	31	215		110	1.80	3.9	3.3
10		6.8	30	215		<130	2.00	4.2	(3.35)
11		7.7	30	210		<120	2.25	4.1	3.3
12		8.4	30	220		<125	2.30	4.3	3.4
13		7.8	30	220		<130	2.25	4.5	3.3
14		7.6	30	215		<130	2.00	3.4	3.4
15		6.9	30	210		<130	1.70	3.1	3.4
16		5.9	31	205		(120)	1.30	3.0	3.3
17		4.8	30	210		---	----	2.4	3.2
18		3.5	28	225		---	----	2.4	3.1
19		(2.8)	28	240				2.3	(2.95)
20		2.5	23	260				2.3	2.9
21		(2.2)	23	260				2.3	(2.9)
22		1.9	21	285				2.3	2.8
23		(1.9)	21	300				2.3	(2.8)

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 11

Churchill, Canada (58.8° N, 94.2° W) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.4	22	280			---	4.4	---
01		3.4	24	280			---	4.0	---
02		3.3	23	280			---	4.1	---
03		3.3	21	300			---	3.5	---
04		3.3	21	(330)			---	4.0	---
05		3.6	22	325			---	3.3	---
06		3.7	19	330			---	3.6	(2.9)
07		3.9	15	305			---	4.0	(3.0)
08		3.8	19	310			---	3.9	(2.9)
09		4.8	26	270			2.2		3.1
10		5.8	20	250			2.3		3.2
11		7.0	27	250			2.4		3.2
12	---	7.6	30	250			2.7		3.2
13		8.7	31	250			2.7		3.2
14		8.3	31	245			2.4		3.2
15		8.3	30	240			2.2		3.2
16		7.8	30	240			1.8		3.2
17		6.4	28	250			---	2.3	3.1
18		4.9	28	255			---	2.4	3.1
19		4.2	30	285			---	3.0	(3.0)
20		4.0	29	305			2.3	3.0	---
21		4.0	26	300			2.6	3.1	(3.0)
22		3.5	19	280			2.3	5.2	---
23		3.7	24	270			---	5.0	---

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

Table 12

De Bilt, Holland (52.1° N, 5.2° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		2.9	28	300					2.80
01		3.1	29	310					2.80
02		3.0	27	(315)					2.80
03		2.7	29	(310)					2.85
04		2.3	29	300					2.95
05		2.3	29	<300					3.05
06		2.4	31	300					3.05
07		3.2	31	260					2.90
08	---	5.8	30	225		---	1.9		3.40
09	---	7.4	30	225		<150	2.2		3.35
10	(240)	8.4	30	230		123	2.4	2.6	3.40
11	240	8.6	31	220	---	124	2.6		3.45
12	240	8.7	31	220	---	126	2.6	<2.8	3.35
13	(250)	8.5	31	230	---	124	2.6	<2.8	3.35
14	---	8.0	31	225	---	<129	2.3	<2.9	3.40
15		7.5	29	225		<160	2.1	<2.3	3.40
16		6.6	28	215		---	1.9		3.40
17		5.2	28	220					3.20
18		4.3	31	240					3.25
19		3.7	31	260					3.10
20		3.2	30	275					2.95
21		2.8	28	290					2.95
22		2.8	28	<300					2.90
23		2.8	29	300					2.85

Time: 0.0°.
Sweep: 1.8 Mc to 18.0 Mc in 4 minutes.

Table 13

Winnipeg, Canada (49.9° N, 97.4° W) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		2.6	27	<290					3.0
01		2.4	24	290					3.0
02		2.6	23	<300					3.0
03		2.6	25	(300)					2.9
04		2.9	25	300					3.0
05		2.7	23	300					3.0
06		2.7	20	<300					(3.0)
07		2.5	19	<300					(3.0)
08		3.2	25	270			---		3.2
09		5.3	27	240			2.0		3.2
10	---	6.6	28	240			2.4		3.3
11	---	7.5	28	230			2.7		3.2
12	---	7.7	28	230	---		2.8		3.2
13	---	8.1	28	235	---		2.8		3.1
14	---	8.3	30	240			2.8		3.2
15	---	8.4	30	230			2.6		3.2
16		7.6	30	230			2.3		3.2
17		7.3	30	225			---		3.2
18		6.5	29	225					3.2
19		5.2	28	230					3.2
20		3.8	28	250					3.2
21		3.2	28	260					3.1
22		2.7	28	280					3.1
23		2.4	25	290					3.0

Time: 90.0°W.
Sweep: 1.8 Mc to 20.0 Mc in 15 seconds.

Table 14

St. John's, Newfoundland (47.6° N, 52.7° W) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		2.7	23	<305					2.9
01		2.7	25	(300)					2.9
02		2.8	26	300					2.9
03		2.8	25	280					3.0
04		2.8	25	<275					3.1
05		2.5	20	(295)					3.0
06		(3.0)	19	<290					(3.2)
07		3.9	31	240					3.2
08		6.3	31	210			----		3.4
09		7.8	31	220			----		3.3
10	---	9.0	31	220	---		2.75		3.4
11	---	9.1	31	215	---		2.90		3.4
12	---	8.9	31	215			3.00		3.3
13		9.0	31	220			2.80		3.3
14		9.0	30	230			----		3.3
15		8.4	30	220			----		3.3
16		8.0	31	215			----		3.2
17		7.4	29	225					3.2
18		6.2	28	225					3.1
19		5.0	30	230					3.2
20		4.1	27	250					3.05
21		3.6	26	275					3.0
22		3.2	25	(290)					2.9
23		2.9	22	<300					2.9

Time: 60.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 15

Graz, Austria (47.1° N, 15.5° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	<310	>3.3	20						(2.9)
01	<330	(3.3)	22						(2.9)
02	(320)	>3.6	15						(3.0)
03	(310)	>3.5	21						(3.0)
04	(290)	>3.2	20						(3.0)
05	<270	>3.2	16						(3.1)
06	<270	>3.2	15						(3.1)
07	<295	>3.5	19						(3.1)
08	220	>5.7	24						(3.5)
09	220	>7.6	25						(3.5)
10	230	8.4	23						(3.6)
11	230	>8.7	27						3.5
12	230	>8.5	27						3.5
13	230	8.3	24						3.5
14	230	8.4	27						3.6
15	220	7.6	26						3.5
16	220	(6.9)	27						(3.5)
17	230	>5.7	30						(3.5)
18	240	>4.7	27						(3.5)
19	240	(3.9)	24						(3.3)
20	(270)	(3.4)	22						(3.0)
21	<300	>3.2	19						(3.0)
22	<300	>3.2	17						(3.0)
23	<300	>3.3	19						(2.9)

Time: Local.
Sweep: 2.0 Mc to 18.0 Mc in 50 seconds.

Table 16

Sottens, Switzerland (46.6° N, 6.7° E) January 1961

Time	h'F2	foF2—Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.6	22						3.0
01	280	3.4	24						2.8
02	290	3.6	24						2.9
03	300	3.6	26						2.8
04	280	3.6	27						2.9
05	270	3.4	29						3.0
06	260	3.0	29						3.0
07	250	2.8	29						3.1
08	230	4.3	31						3.25
09	230	6.7	30			140	2.1		3.5
10	230	7.9	29			120	2.5		3.45
11	240	8.7	29			120	2.7		3.45
12	230	8.5	29			110	2.9		3.5
13	240	8.2	29			110	2.8		3.5
14	240	8.8	29			120	2.8		3.4
15	240	7.9	30			120	2.6		3.4
16	230	7.2	31			120	2.3		3.4
17	220	6.8	30			---	---		3.5
18	230	5.6	29						3.3
19	240	4.6	30						3.3
20	230	4.0	29						3.2
21	260	3.4	22						3.1
22	270	3.4	25						2.9
23	280	3.5	19						2.9

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

Table 17

Ottawa, Canada (45.4° N, 75.9° W) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.1	29	280					(2.9)
01		3.0	30	300					(3.1)
02		3.0	27	295					---
03		3.0	25	280					---
04		2.8	26	300					---
05		2.9	23	290					---
06		2.6	24	290					---
07		3.0	27	280					---
08		5.2	31	240			2.0		3.3
09		6.4	30	230			2.5		3.3
10	260	7.6	30	230	---		2.8		3.3
11	250	8.4	30	220	(4.0)		3.0		3.3
12	250	8.2	30	210	(4.0)		3.0		3.3
13	260	8.9	30	220	---		3.0		3.25
14	260	9.0	30	230	(3.9)		2.8		3.2
15	(260)	8.6	30	240	---		2.6		3.3
16	---	8.2	30	240			2.0		3.3
17		7.7	30	230			1.6		3.2
18		7.0	31	230					3.2
19		5.6	30	230					3.2
20		4.5	31	240					3.15
21		3.9	31	260					(3.0)
22		3.3	31	270					---
23		3.2	28	280					(3.0)

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 18

Wakkanai, Japan (45.4° N, 141.7° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.3	29	320					2.80
01		3.4	28	310					2.85
02		3.5	27	290					2.95
03		3.3	26	270					3.00
04		3.4	27	260					2.95
05		3.0	26	275					3.00
06		3.0	26	280					3.00
07		4.5	29	245					3.25
08		7.4	29	230			----		3.40
09		8.6	30	235			2.60		3.45
10		9.4	30	230			2.80		3.40
11	---	9.2	30	225	---		2.90		3.40
12	---	8.3	30	225			2.95		3.35
13		8.2	30	230			2.85		3.35
14		8.0	30	240			2.60		3.40
15		6.9	30	230			2.20		3.40
16		6.4	30	225					3.35
17		5.3	31	230					3.30
18		4.2	30	240					3.35
19		3.4	30	250					3.30
20		3.2	30	300					2.90
21		3.4	29	300					2.90
22		3.3	28	310					2.85
23		3.3	29	310					2.80

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 1 minute.

Table 19

Rome, Italy (41.0° N, 12.5° E) January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.7	28	250					3.00
01		3.7	28	260				2.3	3.00
02		3.7	27	260					3.00
03		3.8	20	260					2.90
04		3.8	27	260					3.00
05		3.8	26	230					3.10
06		3.4	26	240					3.35
07		(3.4)	28	220					(3.20)
08		6.2	20	200		<150	1.7		3.40
09		(8.4)	22	210		110	2.4		(3.50)
10		(9.5)	25	210		110	2.8		(3.50)
11	---	9.4	25	200	---	110	3.0		3.50
12		8.8	29	200		110	3.0		3.50
13		8.7	30	200		110	3.0		3.35
14		8.5	29	210		110	2.9		3.40
15		8.3	27	210		110	2.7		3.40
16		7.8	25	210		110	2.2		3.40
17		(6.6)	23	210		150	1.7		3.40
18		(5.6)	25	200					(3.25)
19		4.7	23	210					3.40
20		3.9	29	210					3.25
21		3.5	26	240					3.00
22		3.6	29	250					3.00
23		3.6	27	260					3.05

Time: 15.0°E.
Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 20

Akita, Japan (39.7° N, 140.1° E) January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	26	295					2.80
01		3.3	27	290					2.00
02		3.4	28	280					2.95
03		3.2	27	280					2.95
04		3.2	28	265					3.00
05		3.0	28	290					2.85
06		3.0	27	255					3.05
07		5.1	29	245					3.30
08		7.4	30	240			2.30		3.45
09	---	8.8	30	245			2.00	2.9	3.40
10	250	9.2	31	240			3.00		3.40
11	245	9.2	31	225			3.10		3.35
12	250	0.5	31	225	---		3.15		3.40
13	250	8.1	31	225	---		3.05		3.35
14	(250)	7.8	31	245			2.95		3.35
15		7.6	30	245			2.50		3.45
16		6.4	30	230			----	2.3	3.45
17		5.6	30	240					3.25
18		5.1	30	240					3.30
19		4.0	29	240					3.25
20		3.2	20	245					3.10
21		3.0	27	270					2.85
22		3.3	25	275					2.80
23		3.3	25	290					2.80

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

Table 21

Tokyo, Japan (35.7° N, 139.5° E) January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	30	(310)					2.80
01		3.4	31	(310)					2.80
02		(3.2)	31	<300					(2.85)
03		3.1	31	285					2.90
04		2.9	31	295					2.85
05		(2.9)	30	(310)					(2.80)
06		3.1	30	<290					(3.00)
07		(5.3)	31	245					(3.25)
08		7.6	31	230			2.35	2.5	3.40
09	<255	9.1	31	230	---		2.85	3.0	3.25
10	250	10.3	31	230	---		(3.05)		3.30
11	250	9.3	31	230	---		3.20		3.35
12	250	8.7	31	225	---		3.25		3.25
13	250	8.2	31	225	---		3.15		3.25
14	255	8.1	31	230	---		3.00		3.25
15		7.7	31	235			(2.70)		3.30
16		6.9	31	230			----		3.30
17		5.8	31	230					3.25
18		5.3	31	250					3.25
19		4.4	31	<245					3.30
20		3.4	30	255					3.05
21		3.1	30	(305)					2.85
22		3.2	29	310					2.00
23		3.2	29	<330					2.75

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

Table 22

Yamagawa, Japan (31.2° N, 130.6° E) January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	29	300					2.85
01		3.2	29	300					2.85
02		3.3	29	<270					3.00
03		3.1	29	260					3.05
04		3.0	29	265					2.85
05		2.8	29	310					2.75
06		2.8	29	300					2.85
07		3.8	30	260					3.10
08		7.1	30	240			2.15		3.50
09		9.1	31	240			2.75	2.9	3.40
10	(250)	10.2	30	225	---		3.10	3.4	3.30
11	255	11.2	30	220	4.7		3.30		3.25
12	250	10.3	27	220	4.8		3.40		3.20
13	255	10.2	27	220	4.5		3.40		3.10
14	(255)	10.2	20	230	---		3.30		3.10
15	---	10.1	28	235			3.10		3.20
16		8.7	31	240			2.70	2.9	3.30
17		7.6	31	230			2.00	2.5	3.40
18		6.0	30	225				2.2	3.25
19		5.6	30	240				2.3	3.20
20		5.3	30	230				2.2	3.30
21		4.3	28	240					3.15
22		3.3	29	300					2.75
23		3.3	29	305					2.80

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 23

Formosa, China (25.0° N, 121.5° E) January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	30	270					2.90
01		4.4	31	260					3.15
02		4.0	27	240					3.20
03		3.0	26	265					3.10
04		2.8	26	320					2.80
05		2.6	26	330					2.75
06		3.2	27	300					2.90
07		6.5	30	250					3.25
08		9.0	28	235		---	----		3.40
09	---	10.4	30	230		(115)	----		3.20
10	(275)	11.7	29	240		---	----		3.20
11	(285)	13.0	28	220	---	(115)	----	3.5	3.10
12	(290)	13.7	29	230	---	(115)	----		3.05
13	(290)	14.5	25	230	---	113	----	3.6	3.05
14	(280)	>14.5	28	230	---	(113)	----		3.05
15	(295)	>14.5	28	230		(116)	----	3.3	3.10
16	(260)	14.2	29	230		<115	----		3.20
17		12.4	30	220					3.30
18		9.3	29	210				2.3	3.25
19		8.4	29	230				2.2	3.10
20		9.0	29	220					3.25
21		7.0	29	220					3.20
22		5.5	31	250					2.95
23		5.0	31	260					2.90

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation, Jan. 1 through 23.
1.0 Mc to 25.0 Mc in 27 seconds, Jan. 24 through 31.

Table 24

Huancayo, Peru (12.0° S, 75.3° W) January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.5)	5	270					(3.05)
01		(5.4)	5	250					(3.20)
02		4.8	12	240					3.30
03		3.85	16	245					3.30
04		3.4	19	240					3.28
05		2.9	21	<255					3.20
06		5.3	28	260		(145)	1.60		3.10
07		8.15	30	230		115	2.55	5.5	3.15
08	---	9.55	28	215		113	(3.10)	6.0	2.90
09	---	10.2	29	200	---	---	(3.50)	7.1	2.60
10	(340)	10.1	30	200	5.0	---	(3.70)	7.3	2.42
11	(350)	9.8	31	195	5.1	---	(3.85)	7.3	2.45
12	355	9.4	31	195	5.1	---	(3.90)	7.3	2.48
13	(340)	9.8	31	195	5.0	<115	(3.85)	7.2	2.40
14	(330)	10.6	31	195	4.9	115	(3.72)	7.2	2.50
15	---	10.6	31	195	---	113	(3.60)	7.0	2.55
16	---	10.7	31	205		115	(3.20)	6.8	2.55
17		10.8	31	230		116	(2.80)	5.8	2.55
18		10.65	30	260		(129)	(2.10)	4.7	2.50
19		10.6	29	285					2.55
20		9.1	23	(335)					2.25
21		(8.3)	9	345					(2.45)
22		(8.5)	5	315					----
23		(7.8)	5	305					----

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

Table 25

Johannesburg, Union of S. Africa (26.1° S, 28.1° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.2	25	---				1.8	2.85
01		4.9	25	---				<1.5	2.90
02		4.4	25	(230)				1.5	2.90
03		4.1	25	---				1.5	2.90
04		3.9	25	---				1.4	2.85
05		3.6	25	270			<1.2	<1.3	2.85
06	---	5.1	25	250			2.1	2.1	3.10
07	(310)	6.2	25	230	---		2.8	3.0	3.00
08	320	7.2	25	220	4.7		3.2	3.4	2.85
09	325	8.0	26	210	4.9		3.4	3.8	2.80
10	350	8.4	26	205	5.0		3.6	4.2	2.70
11	350	9.0	26	205	5.1		3.8	4.1	2.65
12	350	9.6	25	200	5.1		3.9	4.2	2.65
13	345	9.7	25	210	5.0		3.8	4.2	2.70
14	335	9.7	24	205	5.0		3.8	4.0	2.75
15	320	8.8	24	220	5.0		3.6	4.2	2.80
16	315	8.4	24	220	4.6		3.4	3.8	2.85
17	300	7.7	25	220	4.2		3.0	3.5	2.85
18	265	7.2	25	240			2.5	2.7	2.90
19		7.0	25	250			<1.8	<2.0	2.90
20		(7.2)	25	250				1.7	(2.90)
21		6.3	25	245				<1.7	2.90
22		5.6	25	(255)				1.7	2.85
23		5.2	25	---				<1.7	2.80

Time: 30.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 26

Mundaring, W. Australia (32.0° S, 116.2° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	24	(270)				3.8	2.95
01		5.2	24	270				3.9	2.95
02		4.6	26	<270				3.1	2.90
03		4.3	25	260				3.1	2.95
04		4.0	25	270				3.0	2.90
05		4.0	26	290			E	1.8	2.95
06		4.7	25	245			2.10	2.2	3.10
07		5.8	22	225	>4.1		2.70	3.3	2.95
08		6.2	24	215	4.4		3.15	3.8	2.95
09		6.6	24	200	4.8		3.45	4.0	2.90
10		7.0	23	200	4.9		3.65	4.0	2.90
11		8.1	23	(200)	5.0		3.70	4.8	2.85
12		8.1	24	<200	5.1		3.75	4.3	2.90
13		7.5	25	200	5.0		3.75	4.2	2.90
14		7.8	25	200	4.8		3.65	4.0	2.90
15		7.9	25	<225	4.8		3.55	4.0	2.90
16		7.2	26	210	4.7		3.40	3.8	2.90
17		>7.0	26	220	4.3		3.05	3.4	3.00
18		6.8	26	<240			2.60	3.0	2.95
19		6.6	26	250			(1.90)	2.2	2.95
20		>6.5	26	250				1.9	2.90
21		6.2	25	260				2.3	2.85
22		6.0	26	280				2.4	(2.80)
23		>6.1	26	280				3.0	2.85

Time: 120.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 18 seconds.

Table 27

Capetown, Union of S. Africa (34.1° S, 18.3° E) January 1961

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4	31	---				2.0	2.80
01		4.2	30	---				1.9	2.80
02		4.2	30	---				1.8	2.85
03		4.1	30	---				1.6	2.80
04		3.8	30	---				1.6	2.80
05		3.7	30	---				1.4	2.80
06		4.4	29	265			1.7		3.00
07	---	5.7	29	245	---		2.3	2.4	2.95
08	(320)	6.4	29	235	4.4		2.8	3.0	2.85
09	350	7.2	28	220	4.7		3.2	3.2	2.75
10	350	7.9	28	215	4.8		3.5	3.7	2.70
11	355	8.6	28	210	4.9		3.8	3.8	2.70
12	350	8.8	28	200	4.9		3.8	4.1	2.70
13	350	8.6	28	210	5.0		(3.9)		2.70
14	350	9.0	28	205	5.0		3.8	4.0	2.75
15	340	8.6	28	210	4.9		3.7	3.9	2.75
16	330	8.5	28	210	4.7		3.5	3.7	2.85
17	330	7.6	29	220	4.5		3.2	3.5	2.85
18	300	7.3	29	225	4.2		2.9	3.1	2.95
19	270	6.8	30	245	---		2.4	2.4	3.00
20		6.6	31	240			<1.8	<1.8	3.00
21		6.1	31	240				1.6	3.00
22		5.4	31	---				<1.6	2.90
23		4.7	31	---				<1.6	2.80

Time: 30.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 28

Moscow, U.S.S.R. (55.5° N, 37.3° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.0	31	315				<1.4	2.60
01		3.0	30	330				<1.4	2.55
02		2.9	28	330					2.55
03		2.8	29	300					2.60
04		2.6	30	280					2.70
05		2.7	30	270			E	<1.2	2.85
06		2.6	31	270			E	<1.3	2.80
07		3.5	30	255			E	<1.3	2.85
08		6.8	31	230			1.80	1.9	3.10
09		9.5	31	230			2.40		3.20
10		11.5	30	225			2.60		3.15
11		12.2	31	225			2.70		3.15
12		12.5	31	225			2.70		3.10
13		12.5	31	225			2.60		3.10
14		12.0	31	225			2.40		3.10
15		11.4	31	220			2.00		3.10
16		10.1	31	220			1.50	1.8	3.10
17		7.7	31	210			E	<1.4	3.10
18		5.7	31	220				<1.4	3.10
19		4.2	31	240			E	<1.5	3.00
20		3.8	31	255				<1.4	2.90
21		3.3	31	280				<1.4	2.80
22		3.3	31	300				<1.4	2.70
23		3.1	31	300				<1.4	2.65

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 29

Juliusruh/Rügen, Germany (54.6° N, 13.4° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	28	320					2.60
01		3.3	29	315			----		2.50
02		3.2	27	<310			E		2.60
03		3.0	26	300			E		2.55
04		3.0	27	<300			----	1.0	2.65
05		2.9	26	270			----	1.3	2.80
06		2.7	26	<270			----		2.80
07		2.6	23	300			----		2.70
08		5.4	21	240			(1.75)		2.95
09		8.4	24	230			2.15		3.10
10		10.6	25	230			2.60		3.10
11		12.0	26	230			----		3.05
12		12.8	26	230			----		3.00
13		12.8	25	230			----		3.00
14		12.5	28	230			----		3.00
15		11.7	28	230			2.45		3.05
16		10.8	30	220			2.05		3.00
17		9.4	28	220					2.95
18		7.3	26	220					3.00
19		5.1	26	235					3.00
20		4.4	29	260					2.85
21		3.8	28	280					2.80
22		3.8	26	300					2.75
23		3.7	26	305					2.75

Time: 15.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 25 seconds.

Table 30

Lindau/Harz, Germany (51.6° N, 10.1° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.56	28	293					2.56
01		3.56	26	296					2.60
02		3.53	27	298					2.54
03		3.40	24	304					2.59
04		3.15	27	286					2.61
05		3.22	28	270					2.80
06		2.98	27	250					2.70
07		2.90	29	259		---	----		2.78
08		5.40	27	238		---	E		3.01
09		9.04	28	220		---	2.02	3.0	3.20
10		10.70	27	224		---	2.53	3.3	3.20
11		12.30	27	225		111	2.80	3.0	3.19
12		12.78	28	221		110	2.90	3.8	3.11
13		12.40	29	226		---	2.93	3.6	3.07
14		12.30	29	228		---	2.79	3.6	3.10
15		11.78	26	223		---	2.56	3.6	3.10
16		11.10	28	220		---	2.14	3.0	3.11
17		10.22	30	220		---	E	2.6	3.08
18		8.05	31	213					3.08
19		6.15	31	220					3.07
20		4.77	31	238					2.90
21		4.40	30	246					2.82
22		3.94	28	263					2.75
23		3.68	30	280					2.70

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

Table 31

Dourbes, Belgium (50.1° N, 4.6° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	28	<300				<1.2	2.70
01		3.5	29	295					2.70
02		3.4	30	300					2.65
03		3.1	29	290					2.75
04		3.2	29	260				<1.2	2.80
05		3.2	30	---				<1.6	2.90
06		2.9	30	---				<1.6	2.90
07		4.2	29	240		---	<1.50	<1.5	2.95
08		7.7	30	220		<141	1.95		3.30
09		10.1	29	225		121	2.50		3.30
10	---	11.8	30	225		117	2.80		3.30
11		12.3	31	220		117	2.85	3.0	3.25
12		11.8	30	220		117	2.90	3.0	3.15
13		11.9	29	230		117	2.90		3.20
14		11.6	28	230		<119	<2.70	2.8	3.15
15		10.8	28	220		<121	<2.35	2.6	3.20
16		10.3	29	220		<128	<1.60	1.9	3.20
17		8.8	29	220				1.9	3.15
18		6.9	29	215				1.7	3.15
19		5.4	30	230				<1.6	3.10
20		4.4	31	240				<1.6	3.00
21		3.8	27	260				<1.6	2.85
22		3.7	27	280				<1.6	2.85
23		3.7	28	<290				<1.6	2.70

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 32

Pruhonice, Czechoslovakia (50.0° N, 14.6° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.8	30	300					
01		3.6	30	300					
02		3.6	30	290					
03		3.5	31	270					
04		3.4	31	250					
05		3.0	28	260					
06		3.2	31	260					
07		6.5	31	220		---	---		
08		9.2	26	210		135	2.0		
09		11.1	24	215		100	2.3		
10		12.0	20	215		105	2.6		
11		12.2	27	215		105	2.8		
12		12.0	23	220		100	3.8		
13		11.4	23	220		110	3.0		
14		11.0	24	215		105	2.8		
15		10.4	29	210		105	2.5	2.0	
16		9.6	28	210		115	2.2	2.0	
17		7.3	31	210		---	---		
18		5.8	29	210					
19		4.5	31	240					
20		4.3	27	250					
21		4.0	29	260					
22		4.1	26	290					
23		3.8	30	300					

Time: 0.0°.
Sweep: 1.0 Mc to 18.0 Mc.

Table 33

Macau (22.2° N, 113.6° E) January 1960

Time	h'F2	foF2—Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	405	7.3	14						2.50
01	430	9.0	18						2.50
02	400	9.0	15						2.70
03	400	6.8	19						2.50
04	370	4.0	21						2.55
05	445	3.4	10						2.30
06	500	3.2	10						2.40
07	500	(5.7)	5						(2.50)
08	460	8.0	15			---	---		2.45
09	440	9.6	19	(440)	---	---	---		2.50
10	---	10.1	18	435	---	---	---		2.40
11	(600)	10.4	14	450	8.0	---	---		2.30
12	---	11.0	13	450	8.4	---	---		2.10
13	(700)	10.9	16	440	8.0	---	---		2.10
14	---	10.2	15	445	8.0	---	---		2.20
15	(680)	10.0	12	440	7.3	---	---		2.20
16	(600)	(10.5)	5	440	7.0	---	---		(2.20)
17	445	(10.0)	5						(2.40)
18	440	(9.0)	1						----
19	---	----	0						----
20	---	----	0						----
21	---	----	0						----
22	400	(9.0)	9						2.70
23	400	(9.0)	7						(2.65)

Time: 120.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 50 seconds.

Table 34

Dakar, French W. Africa (14.8° N, 17.4° W) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(15.8)	9	245		---	E	2.4	----
01		D	17	235		---	E	2.4	(3.10)
02		15.3	15	225		---	E	2.2	(3.20)
03		>9.0	9	210		---	E	2.6	(3.25)
04		(6.6)	9	200		---	E	2.6	(3.20)
05		5.4	14	230		---	E	2.7	3.00
06		4.1	12	<240		---	E	3.1	2.95
07		3.6	12	<250		---	E	3.1	3.15
08		7.8	18	260		---	1.90	3.5	3.10
09		12.5	25	245		110	2.85	4.6	3.15
10		15.0	27	230		100	3.40	4.8	3.15
11		15.0	27	220		100	3.70	4.7	3.00
12		15.1	28	210		100	3.85	4.6	2.70
13		14.8	26	200		100	3.95	4.7	2.55
14		14.3	26	200		100	3.95	4.6	2.50
15		14.2	27	220		105	3.85	4.2	2.45
16		>14.0	26	225		105	3.60	4.3	2.45
17		14.2	26	230		110	3.20	4.0	2.55
18		14.2	24	250		110	2.50	4.5	2.60
19		14.2	26	275		---	E	3.1	2.50
20		14.1	15	330		---	E	3.0	2.40
21		>14.8	6	310		---	E	2.6	----
22		>14.9	4	275		---	E	3.0	----
23		>14.0	9	250		---	E	2.8	(2.75)

Time: 0.0°.
Sweep: 1.2 Mc to 17.0 Mc.

Table 35

Djibouti, French Somaliland (11.6° N, 43.2° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.6)	2	255				3.4	----
01		(8.8)	4	250		---	----	3.2	----
02		(8.6)	4	240		---	----	3.3	----
03		6.8	10	235		---	----	3.2	(3.05)
04		6.0	19	220		---	E	2.0	3.10
05		5.0	27	230		---	E	2.0	3.20
06	---	3.4	23	235	---	---	E	2.0	3.20
07		(8.3)	4	265		135	2.00	3.4	----
08		(9.0)	1	250		120	2.90	4.2	----
09		(11.6)	9	235		115	3.40	6.6	(2.55)
10		11.1	14	230		---	3.75	8.6	2.40
11		11.4	19	220		---	3.90	8.8	2.30
12		11.4	16	215		---	3.95	9.0	2.30
13		11.4	19	225		---	4.00	6.8	2.30
14		11.5	14	225		110	3.90	7.7	2.25
15		11.2	10	230		110	3.60	6.5	2.20
16		(11.4)	3	240		115	3.25	6.4	----
17		----	0	260		120	2.60	5.6	
18		(9.5)	1	290		---	E	4.0	----
19		(9.3)	3	360		---	E	3.2	----
20		(8.8)	3	---				2.0	----
21		(8.9)	2	(290)				3.1	----
22		(9.3)	1	270				3.5	----
23		(8.7)	3	265				3.8	----

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 36

Ibadan, Nigeria (7.4° N, 3.9° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	31	250					2.85
01		9.2	30	250					2.90
02		9.2	30	250				0.9	2.90
03		9.0	30	240					(3.10)
04		7.6	29	220					(3.15)
05		5.9	29	215					(3.20)
06		6.0	29	260			1.55		2.95
07		9.3	30	250			2.70		2.90
08		11.0	30	235			3.30	6.5	2.75
09		11.4	30	220			3.70	6.6	2.50
10		11.3	28	210			3.90	9.0	2.40
11		11.4	28	205			(4.10)	7.7	2.35
12		11.8	31	205			4.10	9.0	2.30
13		11.9	29	205			4.10	8.9	2.25
14		11.9	31	210			3.90	6.5	2.25
15		12.5	31	230			3.60	6.3	2.30
16		12.6	31	245			3.20	6.6	2.30
17		(12.2)	31	260			2.50	6.1	2.35
18		>11.0	30	305			(1.40)		(2.20)
19		10.2	30	380					(2.15)
20		>9.3	31	350					2.30
21		(9.2)	31	305					2.45
22		(9.2)	31	300					(2.55)
23		9.5	31	260					(2.75)

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

Table 37

Tahiti, Society Is. (17.7° S, 149.3° W) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.5	13	240		---	----	2.8	3.00
01		>8.0	16	265		---	E	2.8	2.75
02		7.7	17	<290		---	----	2.7	2.60
03		7.5	10	310		---	----	2.6	2.60
04		7.7	14	<305		---	----	3.1	2.70
05		7.3	19	295		---	----	2.8	2.70
06		8.0	20	270		125	2.10	2.8	2.80
07		10.0	21	<250		110	3.00	4.1	3.05
08		10.8	20	240		110	(3.50)	4.2	2.65
09		11.7	13	230	---	110	(4.00)	4.8	(2.50)
10	---	13.0	16	230	---	---	----	4.8	(2.50)
11	---	14.0	17	225	---	---	(4.50)		2.40
12	(405)	15.0	17	220	---	---	----		2.55
13	395	16.0	21	(230)	---	---	----		(2.50)
14	370	15.5	18	230	---	---	(4.30)		2.60
15	380	14.8	24	225	---	105	4.00	4.2	2.55
16	---	14.0	17	225	---	110	(3.70)	4.3	2.50
17		13.4	18	245		110	(3.25)	3.8	2.50
18		12.8	18	275		110	2.40	3.3	2.50
19		12.0	11	340		---	----	4.0	(2.45)
20		10.8	13	360		---	----	3.0	2.40
21		>11.0	13	340		---	----	3.1	(2.60)
22		(11.5)	21	300		---	----	2.8	(2.70)
23		(10.9)	16	270		---	----	2.8	(2.90)

Time: 150.0°W.
Sweep: 1.2 Mc to 17.0 Mc.

Table 38

Tananarive, Madagascar (18.8° S, 47.5° E) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.9	31	270		---	----	3.1	2.70
01		7.1	31	<270		---	----	3.2	2.70
02		6.8	30	275		---	E	3.1	2.65
03		6.3	31	<200		---	E	2.8	2.65
04		5.7	31	(270)		---	E	3.1	2.70
05		5.3	30	280		---	E	2.9	2.65
06		6.7	31	260		125	2.10	3.2	2.90
07	---	8.1	31	250	---	115	2.95	3.4	2.75
08	(415)	9.2	29	245	5.0	110	3.50	3.9	2.65
09	370	10.6	29	245	5.4	110	3.75	4.2	2.50
10	410	11.2	27	230	5.6	110	3.95	4.5	2.40
11	420	11.6	30	(220)	5.8	110	4.10	4.3	2.40
12	400	11.8	29	(250)	6.0	105	(4.20)		2.45
13	390	11.9	31	(255)	6.0	110	(4.10)		2.45
14	400	11.7	31	(240)	5.8	110	4.10	4.4	2.45
15	400	10.9	31	240	5.6	115	3.80	4.3	2.45
16	390	10.5	29	250	5.2	115	3.45	3.9	2.45
17	---	10.5	29	250		115	2.95	3.5	2.55
18		9.8	31	275		---	2.15	3.1	2.60
19		10.0	31	290		---	E	3.1	2.60
20		10.0	30	285		---	----	3.1	2.65
21		9.5	31	290		---	----	3.1	2.65
22		9.2	29	290		---	----	3.1	2.65
23		8.6	30	280		---	----	3.1	2.65

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 39

Townsville, Australia (19.3° S, 146.7° E) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.5	1	290				4.4	
01		>6.5	1	290				3.9	
02		---	0	295				3.6	
03		>7.0	5	290				3.5	
04		>6.5	11	295				3.0	----
05		>6.5	10	290				3.0	----
06		>6.7	6	280			2.10	2.6	----
07		>7.0	6	250			2.90	3.6	----
08		>8.5	5	240			3.40	4.3	----
09		>10.6	10	(235)	---		3.70	4.6	----
10		(11.2)	11	(230)	6.2		3.90	5.5	(2.50)
11		12.0	16	225	6.0		4.05	6.0	2.55
12		12.4	21	(220)	6.0		4.15	6.5	2.60
13		13.2	22	(230)	6.0		4.05	6.2	2.70
14		>12.3	20	(230)	6.0		4.00	6.5	2.70
15		>11.8	14	<235	5.9		3.85	4.8	----
16		>11.1	6	<235	---		3.60	4.9	----
17		----	0	240			3.20	4.0	
18		----	0	250			2.50	3.3	
19		>7.0	3	300				3.5	
20		>7.0	1	340				3.2	
21		>8.7	2	330				3.5	
22		>10.0	3	310				4.2	
23		>8.6	2	300				3.5	

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

Table 40

Sao Paulo, Brazil (23.5° S, 46.5° W) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.5	17	275					2.90
01		11.8	19	260					3.00
02		10.0	22	250					2.90
03		9.6	22	250					2.90
04		7.7	21	250					2.85
05		6.8	23	245					2.65
06		7.6	28	245			>2.40		2.85
07		8.6	30	240			(3.00)		2.70
08		9.6	29	230			(3.50)	3.6	2.50
09	---	10.4	27	230			(3.85)	3.9	2.30
10	---	11.0	27	(220)	---		----	3.9	2.30
11	---	11.5	29	---	5.9		----		2.30
12	---	12.0	29	---	---		----		2.40
13	435	12.6	24	---	---		----		2.45
14	435	13.0	26	<250	6.0		----		2.50
15	415	13.3	25	(225)	---		----		2.55
16	375	13.5	29	225	(5.6)		----		2.55
17	365	13.0	28	230			----	3.6	2.55
18		13.0	30	255			----	2.8	2.50
19		13.0	29	305					2.50
20		13.0	25	395					(2.40)
21		(13.8)	8	330					(2.40)
22		>13.5	12	320					(2.55)
23		13.0	14	300					2.70

Time: 45.0°W.
Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 41

Brisbane, Australia (27.5° S, 152.9° E) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.3	23	270				4.5	2.75
01		8.5	21	270				3.3	2.70
02		>7.5	20	275				2.6	2.60
03		7.5	21	285				2.6	2.65
04		6.8	21	270				2.1	2.60
05		6.7	23	280			1.55		2.70
06		7.5	24	250	---		2.50	2.8	2.85
07		8.2	24	230	---		3.00	4.0	2.80
08		9.0	24	230	---		3.55	4.4	2.75
09		10.0	24	240	5.6		3.80	>4.4	2.65
10		10.7	23	(250)	5.7		3.90	6.6	2.55
11		11.0	24	(220)	5.8		4.05	(5.7)	2.60
12		11.4	23	(225)	5.8		4.10	>4.5	2.60
13		11.0	21	225	5.7		4.05	>4.4	2.60
14		10.9	23	220	5.7		4.05	4.4	2.65
15		10.0	23	220	5.5		3.80	4.4	2.65
16		9.5	23	230	5.5		3.50	4.2	2.65
17		9.0	23	240	---		3.00	4.5	2.65
18		8.6	24	260			2.20	4.4	2.60
19		8.9	24	290			----	4.5	2.55
20		9.0	24	320				4.4	2.55
21		9.6	24	320				2.7	2.55
22		9.9	24	300				3.8	2.65
23		9.7	23	300				4.4	2.70

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

Table 42

Port Lockroy (64.8° S, 63.5° W) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.2	24	320			(1.40)	1.6	2.50
01		10.2	26	325			----	1.4	2.45
02		10.4	27	320			1.60		2.45
03		10.3	27	310			1.80		2.40
04		10.2	28	285	---		(2.15)	2.1	2.40
05		10.2	29	265	---		2.50	2.6	2.40
06		9.8	28	255	4.1		(2.80)	>3.3	2.45
07		9.8	28	250	4.3		(3.00)	3.8	2.50
08		8.6	27	250	4.7		(3.20)	4.3	2.55
09		8.0	25	240	4.9		(3.50)	4.6	2.55
10		8.1	25	240	5.2		----	5.2	2.65
11		7.6	28	230	5.2		(3.60)	5.0	2.65
12		7.4	26	230	5.4		----	4.8	2.70
13		7.5	27	230	5.5		3.75	4.9	2.75
14		7.2	29	230	5.2		3.70	5.0	2.70
15		7.2	26	230	5.0		3.55	5.3	2.70
16		7.2	25	240	4.8		3.30	4.0	2.75
17		7.3	27	245	---		3.20	4.1	2.70
18		7.4	28	250	---		(3.00)	3.6	2.75
19		7.6	28	250			(2.70)	3.6	2.70
20		8.0	25	270			(2.35)	3.0	2.65
21		8.2	21	280			2.05	2.4	2.50
22		(9.4)	16	300			1.75	1.7	(2.45)
23		10.0	18	320			(1.60)		2.45

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 43

Mawson (67.6° S, 62.9° E) January 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.0)	6	(200)					(2.80)
01		(7.5)	5	(200)					(2.55)
02		(7.2)	6	(250)					(2.50)
03		(7.8)	4	(225)					----
04		(8.2)	4	(350)					----
05		(8.8)	2	---					----
06		(7.8)	6	(240)					(2.40)
07		(8.0)	6	(400)					(2.50)
08		(8.0)	7	200					(2.40)
09		(9.0)	9	225					(2.55)
10		9.0	10	220					2.50
11		8.0	11	190					2.50
12		8.5	13	220					2.60
13		(7.4)	8	(200)					(2.90)
14		(7.0)	9	(205)					(3.00)
15		(7.0)	9	(225)					(3.00)
16		6.8	12	225					3.00
17		(7.0)	8	(230)					(3.00)
18		(6.6)	4	---					----
19		(6.0)	4	---					----
20		(6.0)	3	---					----
21		(6.0)	3	---					----
22		(6.0)	4	---					----
23		(7.0)	5	(225)					(2.55)

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 15 seconds.

Table 44

Dourbes, Belgium (50.1° N, 4.6° E) December 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4	27	300				(1.1)	2.70
01		3.3	27	300				<1.1	2.70
02		3.3	27	300					2.70
03		3.0	27	275					2.80
04		2.9	27	<270				<1.2	2.90
05		2.9	27	250				<1.4	2.95
06		2.7	25	(260)				<1.5	2.95
07		4.0	27	230		---	----	<1.5	2.95
08		6.8	27	220		<139	2.00	2.1	3.30
09		9.6	27	220		(115)	2.35		3.30
10		10.8	24	220		115	2.60	2.9	3.25
11		11.2	26	220		117	2.70		3.25
12		10.8	28	220		<116	2.80		3.20
13		11.0	28	225		<119	2.70		3.20
14		10.8	28	230		(119)	2.45		3.25
15		10.0	29	220		(121)	1.95		3.25
16		8.9	29	215		---	<1.60	1.8	3.20
17		7.4	28	215				1.7	3.20
18		4.9	28	220				<1.6	3.10
19		4.6	28	240				<1.6	3.10
20		3.7	28	240				<1.6	2.95
21		3.5	27	290				<1.6	2.80
22		3.5	27	300				<1.6	2.75
23		3.2	27	305				<1.6	2.70

Time: 0.0°
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 45

Wakkanai, Japan (45.4° N, 141.7° E) December 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4	31	340					2.65
01		3.5	31	325					2.60
02		3.5	31	310					2.70
03		3.4	31	310					2.65
04		3.4	30	320					2.65
05		3.4	30	280					2.80
06		3.3	29	270					2.95
07		5.6	29	240			----		3.00
08		9.0	29	225			2.30	3.4	3.20
09		11.8	26	230			(2.70)	3.5	3.20
10		12.5	25	230			2.95		3.20
11		12.8	26	225			3.10	3.4	3.20
12		11.6	29	225			3.00		3.15
13		11.5	29	225			2.90		3.15
14		11.1	29	230			2.60		3.10
15		10.0	30	220			2.15		3.10
16		8.7	31	220					3.15
17		6.8	31	220					3.10
18		5.4	31	230					3.10
19		4.4	31	235					3.10
20		3.3	31	265					2.95
21		3.2	31	320					2.70
22		3.3	31	335					2.65
23		3.4	31	335					2.65

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

Table 46

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

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	30	320					2.60
01		3.5	30	325					2.60
02		3.6	30	305					2.65
03		3.6	31	325					2.60
04		3.5	31	320					2.60
05		3.6	31	300					2.70
06		3.6	30	250					3.00
07		6.2	30	240			----		3.20
08		9.6	30	230			2.45		3.30
09		12.1	29	235			2.95		3.20
10	---	13.1	30	240			3.20		3.20
11	---	13.3	31	230			3.30		3.20
12	---	12.0	30	230			3.40		3.15
13		11.3	29	230			3.25		3.15
14		10.9	29	235			2.95		3.10
15		10.7	29	230			2.50		3.20
16		9.5	30	220			----		3.20
17		7.4	30	210					3.15
18		6.6	30	230					3.25
19		5.2	30	220					3.20
20		3.8	30	245					3.05
21		3.2	30	285					2.65
22		3.4	30	310					2.60
23		3.4	30	330					2.55

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

Table 47

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

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.6	31	350					2.55
01		3.7	31	325					2.65
02		3.5	31	305					2.70
03		3.4	31	310					2.65
04		3.3	30	310					2.60
05		3.4	30	320					2.60
06		3.6	30	270					2.85
07		(6.8)	28	250			----		(3.15)
08		9.4	28	240			2.65		3.20
09		11.7	27	240			(3.10)	3.3	3.20
10		13.1	26	250			(3.30)	3.5	3.10
11		13.4	27	245			(3.40)		3.05
12		12.8	29	240			(3.50)	3.8	3.05
13		12.4	30	245			3.40		3.00
14		11.7	30	245			3.10		3.00
15		11.6	31	245			2.80		3.05
16		(10.7)	31	230			----		(3.10)
17		8.5	31	220				3.0	3.10
18		7.0	30	230					3.10
19		5.8	30	230					3.10
20		4.6	31	250					3.00
21		3.8	31	290					2.70
22		3.6	31	305					2.60
23		3.6	31	320					2.60

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

Table 48

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

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	28	300					2.55
01		4.1	27	305					2.60
02		4.1	27	280					2.80
03		3.8	27	265					2.80
04		3.6	26	290					2.65
05		3.2	26	320					2.50
06		3.3	27	300					2.70
07		5.5	26	265			----		2.90
08		9.6	27	240			2.30		3.25
09		11.8	27	245			2.95		3.15
10	---	12.8	27	240			3.25	3.7	3.15
11	---	13.3	24	240			3.40	4.2	3.05
12	---	14.0	24	240			3.50	4.0	2.95
13	---	14.1	23	235			3.50	4.0	2.95
14	---	14.0	23	240			3.40	3.8	2.90
15	---	13.9	24	240			3.10	3.7	2.95
16		13.4	22	240			2.60	3.4	3.00
17		12.0	23	230			----	2.9	3.00
18		10.3	21	210				3.0	3.00
19		(8.8)	24	230				2.2	(2.95)
20		7.8	22	230					2.90
21		6.8	23	230					2.90
22		5.4	26	250					2.70
23		4.9	27	295					2.60

Time: 135.0°E.
Sweep: 1.0 Mc to 20.3 Mc in 30 seconds.

Table 49

Lwiro, Belgian Congo (2.3° S, 28.8° E) Oecember 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.1	29	240				(1.6)	2.74
01		10.3	30	260				(1.4)	2.84
02		9.8	29	255				(1.5)	2.95
03		8.8	28	240				(1.5)	2.99
04		7.4	29	235					3.00
05		7.1	29	230				(1.4)	3.10
06		7.3	30	250	---	131	1.70	(1.9)	3.14
07	250	8.7	27	240	---	117	2.70		3.16
08	265	10.0	22	220	---	111	3.30	(3.6)	2.86
09	290	10.9	28	220	---	111	3.65	3.8	2.76
10	310	11.3	27	210	---	109	3.90	4.1	2.61
11	325	11.2	29	210	---	109	4.05		2.45
12	405	12.0	30	205	---	109	4.05		2.47
13	360	12.8	30	210	---	109	4.00		2.59
14	360	12.4	29	210	(5.0)	109	3.90	3.9	2.52
15	445	12.3	29	210	---	111	3.65	(3.9)	2.45
16	430	12.9	29	225	---	111	3.30	(3.8)	2.49
17	---	13.0	30	250	---	113	2.75	(3.2)	2.54
18		12.7	31	280	---	---	----	(3.1)	2.53
19		12.5	31	340				(2.5)	2.46
20		13.3	30	340				(1.7)	2.56
21		14.5	27	280				(1.7)	2.80
22		14.0	29	230				(1.6)	3.08
23		11.2	30	210				1.8	2.88

Time: 30.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 50

Buenos Aires, Argentina (34.5° S, 58.5° W) December 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.1	27	325				3.6	2.50
01		9.6	24	300				2.7	2.60
02		8.9	26	290				2.5	2.60
03		8.7	26	305				3.7	2.50
04		8.2	26	320				3.0	2.40
05		8.6	26	270		141	2.05	2.5	2.40
06		9.2	26	240		109	2.00	3.8	2.40
07		9.8	27	240		105	----	4.0	2.35
08	---	>10.2	28	230	---	107	----	4.0	2.35
09	---	>11.0	26	(240)	---	105	----		2.35
10	410	11.1	29	---	6.4	105	----		2.40
11	390	11.9	29	---	---	---	----		2.50
12	375	12.8	30	(240)	---	---	----		2.60
13	360	12.4	29	---	---	---	----		2.60
14	360	12.2	28	(225)	---	---	----		2.65
15	340	12.9	29	(240)	---	107	----		2.70
16	330	11.6	29	240	---	109	----		2.70
17	320	11.0	29	240	---	110	----	4.2	2.70
18		10.8	29	270		---	----	4.0	2.65
19		10.3	26	300				3.6	2.50
20		10.2	30	345				4.4	2.40
21		10.0	27	365				3.6	2.40
22		10.0	26	360				4.0	2.40
23		10.2	29	340					2.45

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

Table 51

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

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.8	30	320					2.70
01		3.8	29	315					2.80
02		3.5	29	320					2.80
03		3.0	30	310					2.80
04		3.0	30	(300)					2.80
05		2.9	30	<300					2.95
06		3.0	30	<300					2.95
07		5.3	30	230		---	1.9		3.30
08		8.2	30	220		125	2.3		3.40
09	---	10.0	30	220	---	120	2.8		3.35
10	---	11.2	30	225	---	115	2.9	3.0	3.30
11	250	11.7	30	220	4.1	115	3.0		3.25
12	---	11.6	30	225	---	125	3.0		3.20
13	---	11.3	30	220	---	125	2.9		3.15
14		11.6	30	225		125	2.7		3.25
15		11.0	30	220		<150	2.3		3.25
16		9.8	30	210		---	1.8		3.30
17		8.0	30	215					3.20
18		6.3	30	225					3.25
19		5.1	30	240					3.15
20		4.2	30	250					3.00
21		4.0	29	300					2.85
22		3.8	30	300					2.80
23		3.8	29	(310)					2.80

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

Table 52

Budapest, Hungary (47.4° N, 19.2° E) November 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.2	29	300					
01		4.0	27	300					
02		3.8	28	300					
03		3.5	27	280					
04		3.2	28	260					
05		3.4	30	260					
06	---	6.4	30	235	---	160	2.0		
07	---	9.0	30	225	---	125	2.3		
08	---	11.1	26	225	---	120	2.8	3.2	
09	---	11.7	27	230	---	115	2.9	3.6	
10	---	12.5	27	225	---	115	3.0	3.3	
11	---	12.0	28	230	---	115	3.1	3.1	
12	---	11.8	28	230	---	120	3.0	3.0	
13		11.8	27	235		120	2.8	3.1	
14		11.6	28	230		135	2.4		
15		10.3	28	220		---	---	2.5	
16		8.4	26	220					
17		6.7	27	225				2.0	
18		5.8	26	240					
19		4.8	28	250					
20		4.2	27	285					
21		4.2	26	300					
22		4.1	25	300					
23		4.2	27	315					

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 53

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

Time	h'F2	foF2—Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	10.5	12					2.4	2.64
01	260	9.5	13					2.0	2.76
02	230	8.5	12					2.0	2.96
03	220	6.4	11					2.0	3.11
04	250	7.1	14			---	---	3.0	2.94
05	250	9.5	24	250	---	120	2.9	3.7	2.84
06	---	10.7	24	240	---	115	3.4	4.0	2.64
07	---	11.4	26	230	---	110	3.8	4.0	2.36
08	---	11.9	25	230	---	110	4.0		2.24
09	---	12.4	22	250	---	110	4.0	2.8	2.18
10	---	12.8	20	250	---	110	4.0		2.12
11	---	13.2	21	250	---	110	4.0		2.11
12	---	13.7	17	235	---	110	3.8		2.14
13	---	14.0	20	240	---	115	3.6		2.17
14	---	13.9	17	250	---	115	3.0	3.7	2.16
15	---	13.7	19	265	---	125	2.4	3.0	2.14
16	---	(14.1)	5	320	---			3.0	(2.19)
17	385	(13.6)	5						(2.11)
18	330	>14.2	2					2.0	----
19	280	>14.4	3					1.8	----
20	235	(13.6)	7					1.9	(2.67)
21	220	>12.1	8						(2.70)
22	230	10.5	14					2.0	2.56
23	255	10.4	12					2.0	2.56

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

Table 54

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

Time	h'F2	foF2—Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	>11.4	10						2.60
01	260	10.2	20						2.68
02	240	8.4	20						2.79
03	230	7.0	22					1.4	2.78
04	240	5.6	22					1.9	2.82
05	250	7.2	21	---	---	130	1.9	2.8	2.87
06	250	>8.8	20	240	---	120	3.0	3.5	<2.83
07	---	10.0	22	240	---	115	3.4		2.58
08	---	10.6	22	230	---	110	3.8		2.36
09	---	11.5	21	230	---	110	4.0		2.24
10	---	(13.0)	6	---	---	(110)	---		(2.34)
11	---	13.5	11	240	---	(110)	---		<2.23
12	---	14.0	19	250	---	110	---		2.24
13	430	14.7	27	240	---	110	3.8		2.24
14	390	>15.0	27	240	---	112	3.5		2.27
15	345	>15.0	26	250	---	115	3.0		<2.35
16	(290)	14.0	14	260	---	120	2.4	3.0	2.30
17	290	14.0	11	---	---			2.7	(2.33)
18	330	>13.8	6					2.0	<2.30
19	300	(13.5)	5						(2.43)
20	265	>15.7	10						<2.56
21	240	16.4	12						2.71
22	220	14.1	20						2.73
23	225	12.2	16						2.56

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

Table 55

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

Time	h'F2	foF2—Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	8.6	24						2.65
01	250	>6.9	17						2.74
02	250	6.8	21						2.73
03	250	5.9	23						2.63
04	260	>6.7	22	---	---	135	1.9	2.5	2.84
05	260	9.0	26	250	---	120	2.9		2.87
06	(280)	10.1	27	240	---	115	3.4		2.70
07	290	10.5	28	240	---	110	3.7		2.54
08	(320)	11.3	27	235	---	110	3.9		2.43
09	345	11.9	28	230	---	110	4.0		2.38
10	360	12.3	28	230	---	110	4.0		2.35
11	375	13.0	28	230	---	110	4.0		2.34
12	360	13.4	29	245	---	110	4.0		<2.38
13	350	13.0	28	250	---	115	3.7	4.3	2.36
14	350	12.8	26	250	---	120	3.4	4.0	2.43
15	315	13.0	26	260	---	120	2.6	3.9	2.48
16	280	12.6	22	280	---			3.2	2.56
17	280	12.5	10					2.5	2.51
18	290	12.2	10						2.50
19	270	12.6	17						2.56
20	260	12.2	19						2.64
21	250	11.0	21						2.71
22	250	10.3	25						2.66
23	255	9.4	22						2.60

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

Table 56

Brisbane, Australia (27.5° S, 152.9° E) November 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	28	280				2.0	2.70
01		7.8	26	270					2.65
02		7.5	26	280					2.65
03		7.2	26	280					2.60
04		7.1	25	280					2.65
05		7.2	25	260			<1.70		2.80
06		8.0	25	250			2.65	2.8	2.85
07		8.8	25	230	---		3.15	3.7	2.85
08		9.5	25	230	5.1		3.50	4.0	2.75
09		10.0	25	220	---		3.80	4.3	2.75
10		10.8	25	210	5.6		3.95	4.4	2.70
11		11.0	27	220	5.7		4.00	4.4	2.65
12		11.0	26	220	5.6		4.00	4.4	2.70
13		11.0	28	225	5.6		3.95	4.2	2.65
14		10.6	28	230	5.4		3.80	4.1	2.65
15		10.0	28	240	5.3		3.55	4.0	2.70
16		9.4	28	250	---		3.30	4.0	2.75
17		9.6	28	250			2.70	3.4	2.75
18		9.4	28	260			<1.75	3.4	2.75
19		9.0	28	270				2.6	2.70
20		9.0	27	290				1.8	2.60
21		9.0	29	300				1.8	2.60
22		9.0	29	300					2.60
23		8.9	29	290					2.65

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

Table 57

Brisbane, Australia (27.5° S, 152.9° E) October 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.2	29	260					2.75
01		7.6	29	260					2.70
02		7.0	29	260				2.0	2.60
03		6.6	29	280					2.60
04		6.5	29	290				1.9	2.60
05		6.8	29	290			<1.50		2.65
06		8.4	29	250			2.40		3.05
07		9.7	28	240			2.95	3.0	2.95
08		10.0	28	225			3.35	3.6	2.90
09		10.4	28	220			3.60	4.0	2.85
10		11.0	28	210			3.70	4.0	2.75
11		11.3	28	210			3.80	3.8	2.80
12		11.2	27	210			3.00	3.8	2.75
13		11.0	28	220			3.85		2.75
14		11.0	27	220			3.80	3.8	2.70
15		10.8	28	230			3.50	3.5	2.75
16		10.6	27	240			3.10	3.4	2.75
17		10.3	29	250			2.50		2.80
18		10.0	28	250			<1.65	1.8	2.85
19		9.3	28	255					2.70
20		9.0	28	265					2.65
21		8.6	28	290					2.65
22		8.5	28	290					2.65
23		8.4	28	280					2.70

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

Table 58

Brisbane, Australia (27.5° S, 152.9° E) July 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	22	260					2.75
01		4.6	18	260					2.70
02		4.6	22	260					2.75
03		4.4	23	260					2.70
04		4.3	23	250				1.8	2.75
05		3.9	22	260					2.75
06		3.7	25	250			<1.60		2.75
07		7.4	26	230			2.25		3.25
08		9.9	26	230			2.80	3.0	3.20
09		11.1	26	230			3.25	3.5	3.15
10		11.0	25	230			3.50	4.0	3.15
11		10.9	24	230			3.70	4.4	3.05
12		10.6	24	225			3.70	4.4	2.95
13		10.0	21	230			3.55	4.4	2.85
14		10.9	21	240			3.50	4.6	2.90
15		10.8	21	230			3.10	4.8	2.90
16		10.6	22	240			2.80	4.9	2.95
17		9.6	24	230			2.20	4.4	3.00
18		7.8	25	230			<1.60	4.1	2.90
19		6.7	25	240				3.3	2.85
20		6.0	24	250				3.0	2.75
21		5.5	24	250				1.8	2.80
22		5.4	21	250					2.75
23		5.4	21	260					2.75

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

Table 59

Tsumeb, South W. Africa (19.2° S, 17.7° E) January 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.98	31	260					2.65
01		7.34	30	260					2.64
02		6.60	31	265					2.65
03		5.97	29	260					2.64
04		5.29	31	270					2.57
05		5.50	25	300		---	----	2.0	2.53
06		7.35	31	260		115	2.28	2.5	2.85
07	---	9.02	31	245	----	110	3.17		2.81
08	---	10.23	31	235	----	108	3.69	3.8	2.66
09	---	10.90	31	225	----	---	4.08		2.51
10	---	11.38	29	220	----	---	4.24		2.38
11	425	11.62	31	220	6.66	---	4.42		2.33
12	415	11.98	29	220	6.55	---	4.44	4.8	2.36
13	420	11.91	30	220	6.39	---	4.41	4.5	2.35
14	415	11.58	31	220	6.15	---	4.24		2.35
15	415	11.02	31	225	6.14	---	4.05		2.35
16	415	10.62	30	235	5.95	107	3.65		2.38
17		10.36	30	245		110	3.13	3.8	2.42
18		10.40	31	280		120	2.30	3.5	2.48
19		10.77	27	290				2.8	2.58
20		10.50	29	200				2.2	2.62
21		9.00	29	270				1.0	2.65
22		9.02	31	265				1.7	2.64
23		8.39	31	270				1.7	2.63

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

Table 60

Campbell I. (52.5° S, 169.2° E) January 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	25					3.5	2.30
01		6.0	24					3.5	2.30
02		5.5	27					3.4	2.35
03		5.0	30					3.5	2.40
04		5.2	26					2.6	2.50
05		5.8	27					2.7	2.60
06		6.0	28					3.2	2.55
07		6.6	30						2.45
08		7.0	29						2.50
09		7.2	29					3.9	2.40
10		7.5	29					4.2	2.40
11		7.7	29					4.3	2.40
12		7.8	27						2.35
13		7.6	31						2.35
14		7.6	31						2.35
15		7.8	31						2.40
16		7.8	31						2.40
17		7.9	31						2.40
18		8.0	29					3.4	2.40
19		7.6	30					2.6	2.45
20		8.0	30					2.3	2.40
21		7.6	26					2.1	2.30
22		(7.5)	27					3.2	2.30
23		6.6	26					3.5	2.30

Time: 165.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 2 minutes.

Table 61

Campbell I. (52.5° S, 169.2° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	23	<315				3.4	2.35
01		5.4	25	320				3.5	2.30
02		4.8	26	340				2.6	2.35
03		4.8	28	310		105	1.5	2.4	2.40
04		5.4	29	270		100	2.1	2.4	2.50
05	---	5.8	29	240	4.2	100	2.7	2.9	2.55
06	560	6.5	27	230	4.8	100	3.1	3.4	2.55
07	510	6.8	28	230	5.3	100	3.5	3.6	2.50
08	430	7.3	28	215	5.6	100	3.6		2.50
09	500	7.5	29	210	5.8	100	3.8	4.1	2.40
10	460	7.7	30	210	6.0	100	3.9	4.2	2.40
11	455	7.9	29	210	6.0	100	4.0	4.2	2.40
12	470	7.9	29	200	6.0	100	4.0		2.40
13	460	8.0	29	200	6.0	100	4.0		2.40
14	450	8.0	30	210	5.7	100	3.8		2.40
15	440	8.0	30	210	5.6	100	3.7		2.40
16	435	8.0	29	220	(5.2)	100	3.5		2.40
17	420	8.0	30	240	4.8	100	3.2	3.5	2.45
18	(400)	8.1	30	250	---	100	2.7	3.2	2.45
19	---	8.1	29	270	---	105	2.2	2.6	2.50
20		8.0	29	300		110	1.7	2.2	2.40
21		7.6	30	310		---	---	2.8	2.35
22		7.8	24	310		---	---	2.2	2.40
23		7.0	25	<340				3.5	2.35

Time: 165.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 2 minutes.

Table 62

Scott Base (77.9° S, 166.8° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	540	5.2	20	270	3.8	110	2.6		2.25
01	540	5.1	21	270	4.0	110	2.5		2.20
02	560	5.2	26	260	3.9	110	2.6		2.20
03	560	5.4	22	260	4.0	110	2.7		2.10
04	550	5.4	17	260	4.0	105	2.8		2.15
05	510	5.8	18	250	4.3	105	3.0		2.20
06	540	5.7	17	250	4.4	105	3.2		2.10
07	530	6.1	19	250	4.5	100	3.2		2.20
08	560	6.1	22	240	4.6	100	3.3		2.25
09	550	6.0	25	240	4.8	100	3.4		2.25
10	550	6.0	23	230	5.0	100	3.5		2.20
11	560	6.1	26	230	5.0	100	3.5		2.15
12	520	6.5	26	230	5.0	100	3.5		2.25
13	550	6.3	26	230	5.0	100	3.5		2.20
14	530	6.4	29	240	5.0	100	3.4		2.20
15	510	6.5	29	240	4.9	100	3.4		2.25
16	500	6.5	26	240	4.8	100	3.3		2.25
17	500	6.6	28	230	4.7	100	3.2		2.20
18	470	6.6	25	250	4.5	105	3.1		2.25
19	550	6.3	25	260	4.3	105	3.0		2.15
20	500	6.0	22	250	4.2	105	2.8		2.20
21	470	6.1	24	260	4.1	110	2.7		2.30
22	480	5.7	21	260	4.0	110	2.6		2.30
23	510	5.2	25	260	4.0	110	2.6		2.20

Time: 165.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 7 seconds.

Table 63

Ibadan, Nigeria (7.4° N, 3.9° E) November 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.6	25	260				1.2	----
01		10.5	25	250				1.4	----
02		10.2	25	250				1.4	(2.95)
03		10.0	24	240				1.1	3.10
04		8.6	25	215					(3.20)
05		6.2	25	220					(3.35)
06		8.3	27	260		140	2.20		3.00
07		(11.3)	26	245		110	3.10	5.3	(2.85)
08		12.7	27	235		105	3.60	8.6	2.50
09		13.0	29	220		105	3.90	11.0	2.30
10		12.8	28	210		105	(4.15)	11.2	2.20
11		12.4	30	210		105	(4.30)	11.2	2.15
12		12.4	30	210		105	(4.30)	9.9	2.15
13		12.4	30	205		105	(4.15)	8.6	2.10
14		12.4	30	220		105	(3.95)	8.6	2.10
15		(12.6)	30	235		105	3.60	7.8	2.05
16		12.2	29	245		110	3.05	7.0	(2.05)
17		>11.4	29	290		120	2.25		(2.00)
18		(10.0)	26	390		---	(1.15)		(1.95)
19		8.6	27	450					<1.90
20		8.5	26	420					----
21		8.5	28	360					----
22		8.8	26	320					----
23		9.2	28	300					----

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

Table 64

Lindau/Harz, Germany (51.6° N, 10.1° E) October 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.93	30	306					2.46
01		6.75	29	300					2.47
02		6.44	31	296				2.7	2.44
03		6.16	30	297				2.5	2.42
04		5.91	30	286				2.8	2.49
05		5.55	29	270					2.63
06		5.50	27	260		---	E		2.61
07		7.48	31	247		---	1.90	2.6	2.79
08		9.60	31	232		110	2.56	3.2	2.93
09		11.88	30	230		108	3.02	3.5	2.88
10		13.41	29	226		108	3.26	4.2	2.85
11		14.10	30	228		104	3.37	4.4	2.80
12		13.80	31	227		106	3.40	4.3	2.74
13		13.71	31	230		104	3.41	4.2	2.72
14		13.58	30	232		104	3.34	3.9	2.70
15		13.42	30	234		103	3.07	3.8	2.69
16		13.15	31	238		---	2.66	3.5	2.77
17		12.59	30	238		---	2.02	3.3	2.80
18		11.74	30	240		---	E	3.5	2.79
19		10.40	31	238		---	----	3.1	2.81
20		9.05	29	234					2.75
21		8.34	30	248					2.64
22		7.55	31	261					2.60
23		7.18	30	278					2.58

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

Table 65

Inverness, Scotland (57.4° N, 4.2° W) June 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	24	300				2.2	2.45
01		6.8	26	320				2.3	2.45
02		6.8	24	330		135	----	2.2	2.45
03		6.8	24	325		115	1.50	2.0	2.45
04	880	7.0	24	290	---	105	2.00		2.60
05	450	6.7	25	265	---	110	2.45		2.60
06	520	7.1	21	250	4.4	105	2.85	3.1	2.60
07	475	6.8	22	250	4.8	105	3.15	3.4	2.50
08	475	6.9	24	240	5.2	105	3.40	3.6	2.45
09	475	6.9	26	230	5.3	100	3.50	3.8	2.45
10	480	7.0	26	240	5.5	100	3.60	4.0	2.50
11	480	7.3	27	220	5.5	100	3.70	4.0	2.45
12	500	7.0	28	225	5.5	100	3.80		2.40
13	500	7.0	29	225	5.6	100	3.80	3.8	2.40
14	490	7.0	29	240	5.5	105	(3.80)		2.45
15	450	7.3	29	235	5.5	105	(3.70)		2.50
16	450	7.4	29	240	5.4	105	3.55	4.0	2.55
17	430	7.6	28	250	5.1	105	3.35	4.1	2.55
18	585	7.4	26	250	---	105	3.05	3.6	2.65
19		7.3	27	255		110	2.75	3.3	2.70
20		7.3	27	275		115	2.25	3.2	2.70
21		7.0	27	290		135	1.75	2.5	2.60
22		7.2	27	300			----	<1.6	2.50
23		7.2	27	305				1.9	2.50

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

Table 66

Inverness, Scotland (57.4° N, 4.2° W) April 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	30	380				<1.3	2.15
01		6.0	28	360				<1.2	2.15
02		5.5	28	360				<1.2	2.15
03		5.4	28	370				1.5	2.20
04		5.2	29	340		150	1.35		2.30
05		5.2	29	310		125	1.70		2.50
06		5.9	28	275		110	2.30		2.60
07	505	6.8	27	250	---	110	2.75	3.2	2.65
08	460	7.3	28	250	5.1	110	3.15		2.60
09	400	8.1	28	250	5.4	110	3.40		2.55
10	465	8.6	29	245	5.7	105	3.55		2.50
11	430	8.9	28	245	5.7	105	3.80		2.50
12	450	9.6	27	240	6.2	105	3.80		2.45
13	450	9.6	28	245	6.1	105	3.80		2.45
14	430	9.6	28	245	(5.7)	105	3.80		2.50
15	420	9.7	27	250	5.8	105	3.60		2.50
16	410	9.8	28	250	---	110	3.30		2.50
17	440	9.6	29	250	---	110	2.95		2.60
18	400	9.6	29	255		115	2.60		2.65
19		9.8	25	265		140	2.05		2.60
20		8.6	28	260		---	1.80		2.60
21		7.0	29	285				<1.6	2.40
22		6.9	27	360				<1.6	2.30
23		6.0	26	380				<1.6	2.15

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

Table 67

Halley Bay (75.5° S, 26.6° W) January 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	>7.1	26	300	----	110	1.90	2.3	(2.20)
01	(460)	(7.2)	24	300	----	110	2.10	2.4	----
02	<500	>7.0	24	300	(4.00)	110	2.20	2.3	(2.20)
03	490	>7.1	25	300	4.15	110	2.30	2.5	----
04	500	>7.0	24	285	4.10	110	2.60		(2.15)
05	500	>7.4	23	260	4.30	110	2.90		2.15
06	545	6.8	26	250	4.50	105	>3.00		2.10
07	545	(6.5)	28	250	>4.65	105	>3.10		2.10
08	605	6.6	27	245	4.80	105	>3.30		2.15
09	605	6.4	26	250	5.00	105	>3.25	3.4	2.20
10	650	6.3	28	250	5.10	105	>3.40		2.20
11	650	6.4	27	250	5.20	105	>3.40		2.15
12	585	6.5	29	240	>5.25	105	(3.70)		2.20
13	600	6.4	29	250	5.20	105	<3.60		2.30
14	550	6.7	29	250	>5.25	105	(3.50)	<3.5	2.25
15	555	6.7	28	250	>5.00	105	(3.50)	<3.8	2.35
16	525	6.8	25	250	5.00	105	>3.30	<3.6	2.40
17	(560)	6.8	26	250	(4.80)	105	>3.10	3.2	2.50
18	(565)	6.9	28	(260)	4.75	105	(3.10)	<3.3	2.40
19	---	(7.1)	25	(270)	----	105	>2.95		(2.45)
20	---	7.1	29	280	----	110	(2.70)		2.45
21	---	7.4	26	290	----	110	(2.35)		2.50
22	---	(7.6)	23	295	----	110	2.20	2.2	(2.40)
23	---	(7.7)	25	300	----	110	>2.05	2.4	(2.35)

Time: 30.0°W.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 68

Murmansk, U.S.S.R. (69.0° N, 33.0° E) December 1957

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.2)	6	<420				4.1	(2.55)
01		(5.2)	4	(370)				<3.7	----
02		(6.8)	6	<360				3.4	(2.40)
03		(6.1)	11	350				>3.8	(2.50)
04		6.2	13	(330)			----	<3.1	2.55
05		5.6	10	<300			----	<2.6	(2.55)
06		6.0	13	(290)			----	2.2	2.60
07		6.0	13	<290			----	(2.2)	2.60
08		5.5	19	(280)			----	<2.0	2.60
09		6.5	25	<280			----	<1.9	2.60
10		8.4	23	(270)			<1.70	<2.0	2.80
11		10.5	21	240			<1.00	<2.3	2.80
12		11.6	15	230			<2.00	<2.1	2.90
13		12.0	10	220			<2.00	<2.4	3.00
14		11.4	16	230			----	<2.3	2.85
15		10.3	17	240			----	<2.0	2.90
16		7.1	19	240				(2.0)	2.80
17		6.4	18	<270				2.4	2.85
18		6.3	15	270				2.7	2.85
19		5.0	13	<290				<2.0	2.85
20		(5.1)	9	300				>3.5	(2.75)
21		(5.1)	7	(330)				3.5	(2.60)
22		(5.4)	8	(350)				4.0	(2.55)
23		(5.4)	6	(370)				4.0	(2.45)

Time: 30.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 69

Halley Bay (75.5° S, 26.6° W) December 1957

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(510)	>6.7	29	310	3.90	105	2.40		(2.20)
01	550	(6.4)	29	310	4.10	105	2.40		(2.20)
02	550	>5.9	24	310	4.10	110	2.40	2.8	----
03	530	(6.5)	25	300	4.20	110	2.70		(2.10)
04	530	>6.6	24	285	4.20	105	2.90		(2.20)
05	585	>6.0	26	270	4.40	105	3.00		(2.00)
06	615	>5.8	26	260	4.50	105	(3.10)		2.00
07	640	5.8	24	250	>4.60	105	3.25		2.10
08	605	6.2	23	250	(4.80)	105	>3.40		2.10
09	650	6.0	24	250	(4.90)	105	>3.50		2.10
10	655	6.0	22	250	>4.90	105	(3.50)		2.10
11	750	5.9	23	250	>5.10	105	(3.50)		6
12	715	6.0	24	250	(5.10)	105	(3.55)		2.05
13	660	6.0	27	250	<5.20	105	>3.65		2.15
14	650	6.1	27	250	5.10	105	(3.55)	3.5	2.15
15	575	6.3	27	250	(5.05)	105	(3.50)		2.30
16	550	6.4	27	250	4.90	105	(3.40)		2.30
17	550	6.5	29	255	4.80	105	(3.20)		2.30
18	540	6.6	27	<265	(4.70)	105	(3.10)		2.35
19	530	6.8	26	265	4.50	105	(3.00)	<3.2	2.35
20	530	6.8	30	290	4.20	105	2.80		2.40
21	(525)	>6.6	27	290	----	105	(2.65)		2.35
22	---	>6.6	29	300	----	105	2.40		2.30
23	<600	>6.6	29	300	3.80	110	2.30		(2.20)

Time: 30.0°W.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 70

Kerguélen I. (49.4° S, 70.3° E) December 1956

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4	22	340		---	----	3.2	2.40
01		4.1	20	355		---	----	3.1	2.35
02		3.8	21	360		---	----	3.3	2.25
03	---	(3.7)	19	375	---	---	----	3.8	2.40
04	---	4.8	16	350	---	---	----	2.7	2.40
05	---	5.6	20	290	3.7	110	2.50	4.4	2.25
06	550	6.3	25	250	4.6	105	2.90	3.1	2.25
07	535	6.8	27	245	5.0	100	3.40		2.20
08	540	7.0	26	240	5.2	100	3.65		2.25
09	555	7.0	23	240	5.4	105	4.00	4.3	2.20
10	550	7.3	22	230	5.5	105	4.05	4.7	2.20
11	580	>7.2	19	225	5.5	100	4.10	5.0	2.20
12	560	7.3	19	230	5.6	105	4.20	5.0	2.20
13	570	7.4	22	235	5.6	100	4.20	5.2	2.20
14	550	>7.2	23	240	5.5	100	4.05	4.7	2.20
15	560	7.0	24	230	5.5	100	3.90	5.0	2.20
16	540	7.0	23	240	5.2	100	3.60	4.2	2.25
17	500	>6.8	20	240	5.0	105	3.45	3.9	2.35
18	---	6.5	27	250	---	100	3.00	3.5	2.50
19	---	6.3	27	270	---	110	2.50	3.5	2.55
20		6.0	25	295		110	2.00	2.8	2.65
21		5.5	27	295		---	----	3.5	2.60
22		5.0	25	310		---	----	3.2	2.50
23		4.8	23	300		---	----	3.1	2.50

Time: Local.
Sweep: 0.88 Mc to 14.14 Mc in 10 minutes, automatic operation.

Table 71

Freiburg, Germany (48.1° N, 7.8° E) August 1954

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.3	29	275				2.2	2.97
01		3.1	28	280				2.1	3.00
02		3.1	30	265				1.8	3.00
03		2.9	27	280				2.0	2.96
04		2.8	30	275				1.7	3.00
05	---	3.2	28	250		---	E	1.8	3.08
06	315	3.7	28	240	3.20	121	1.90	2.6	3.27
07	360	4.1	27	225	3.50	115	2.35	3.1	3.16
08	340	4.5	27	(220)	3.80	111	2.70	3.7	3.16
09	350	4.8	28	220	4.00	108	2.90	4.0	3.13
10	315	5.2	29	205	4.10	107	3.00	3.6	3.18
11	340	5.1	29	215	4.20	107	3.10	3.8	3.14
12	340	4.9	28	210	4.20	108	3.15	>3.5	3.15
13	365	4.9	25	220	4.15	105	3.15	3.4	3.07
14	370	4.7	28	220	4.10	107	3.10	3.3	3.09
15	390	4.6	28	215	4.00	109	2.95	3.0	2.98
16	360	4.7	30	220	3.90	110	2.75	3.0	3.04
17	320	4.7	29	220	3.60	112	2.45	3.0	3.05
18	300	5.0	29	240	3.30	121	2.05	2.7	3.09
19	(265)	5.8	31	260	----	---	----	2.6	3.06
20		6.1	31	245				2.9	3.20
21		5.3	29	240				3.0	3.25
22		4.3	28	240				3.0	3.16
23		3.6	26	250				2.6	3.06

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

Table 72

Freiburg, Germany (48.1° N, 7.8° E) May 1954

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.7	31	260				1.6	3.02
01		3.6	30	270					3.02
02		3.3	30	275					2.97
03		3.1	28	270					2.94
04		3.1	31	270				1.5	3.07
05	(320)	3.7	29	240	2.90	139	1.60	2.0	3.17
06	305	4.3	30	235	3.45	119	2.15	2.4	3.26
07	355	4.3	28	235	3.70	113	2.45	2.9	3.03
08	340	4.8	27	230	3.90	111	2.75	3.0	3.15
09	325	5.0	26	220	4.10	108	2.95	3.5	3.21
10	330	5.1	28	215	4.15	107	3.05	3.6	3.23
11	350	5.1	26	(210)	4.20	106	3.15	3.4	3.18
12	340	5.2	27	220	4.20	105	3.20	3.6	3.18
13	355	5.1	25	220	4.20	107	3.20	3.4	3.00
14	350	5.2	27	220	4.15	109	3.10		3.10
15	340	5.1	24	225	4.05	109	2.95	3.4	3.10
16	320	5.0	27	(240)	3.90	108	2.75	3.1	3.17
17	310	5.3	23	230	3.70	113	2.50	3.1	3.14
18	290	5.3	29	(240)	3.35	119	2.10	3.0	3.15
19	265	5.8	25	255	----	131	----	2.8	3.13
20		6.2	29	245				3.0	3.14
21		5.8	27	240				2.1	3.19
22		5.0	31	235				2.1	3.20
23		4.3	29	250				1.8	3.11

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

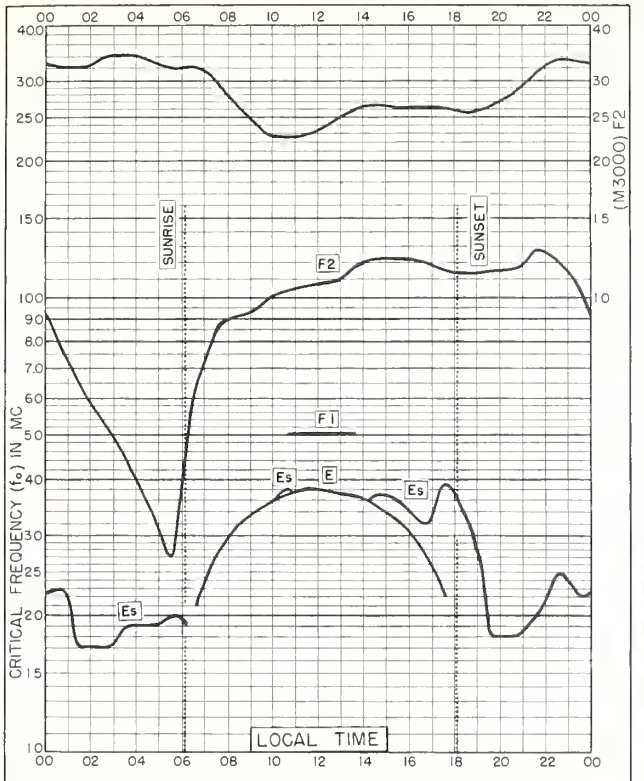


Fig. 1. TALARA, PERU
4.6°S, 81.3° W MARCH 1961

NBS 503

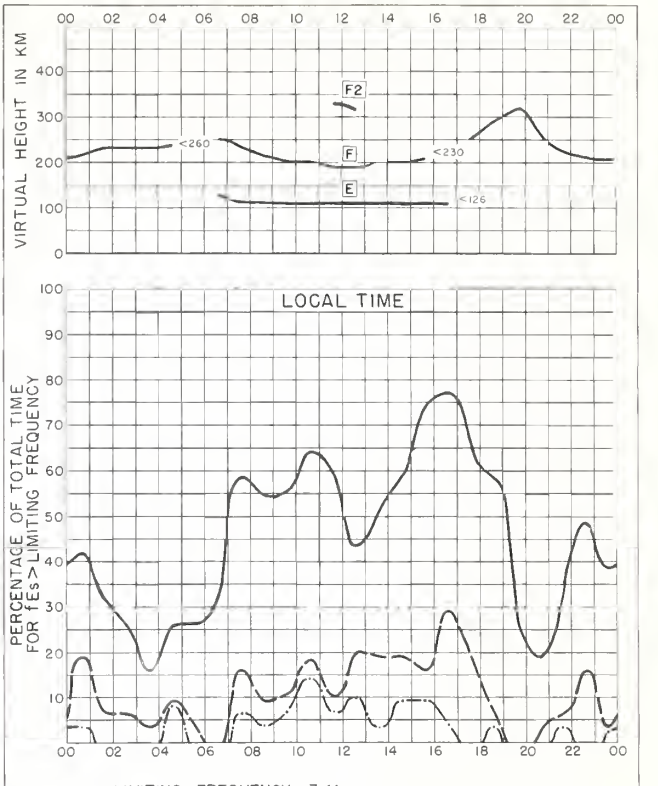


Fig. 2. TALARA, PERU MARCH 1961

NBS 490

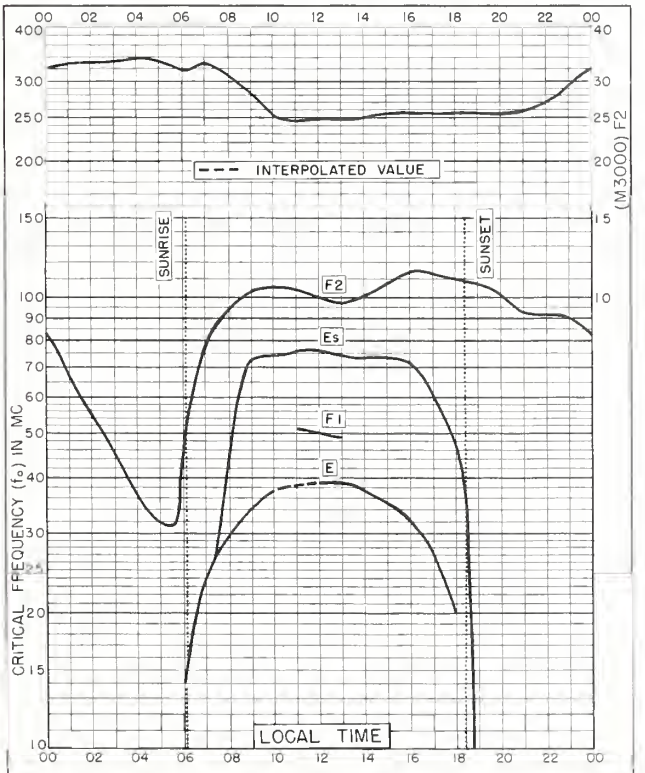


Fig. 3. HUANCAYO, PERU
12.0°S, 75.3° W FEBRUARY 1961

NBS 503

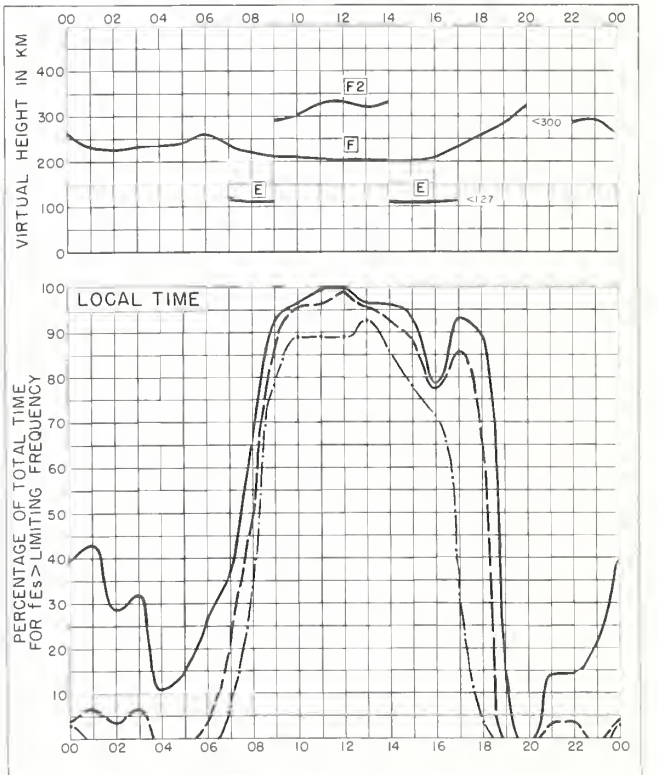


Fig. 4. HUANCAYO, PERU FEBRUARY 1961

NBS 490

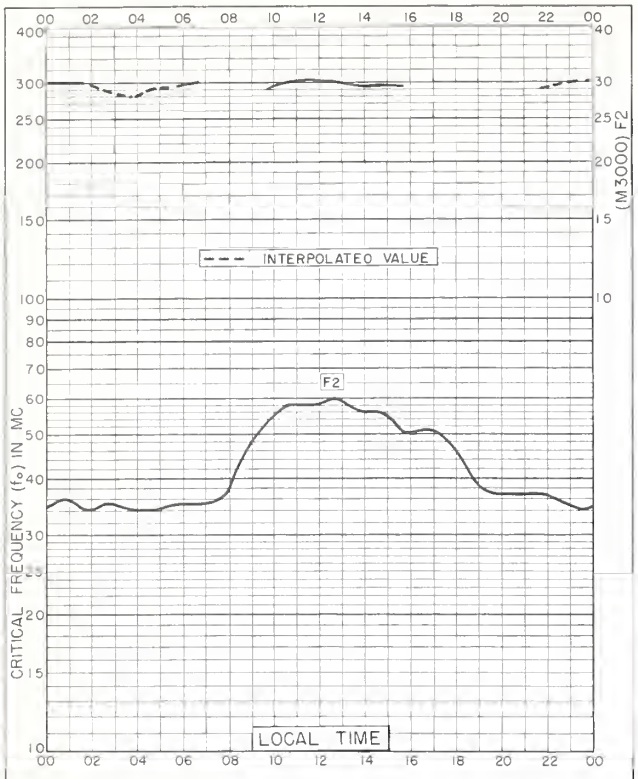


Fig. 5. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JANUARY 1961

NBS 503

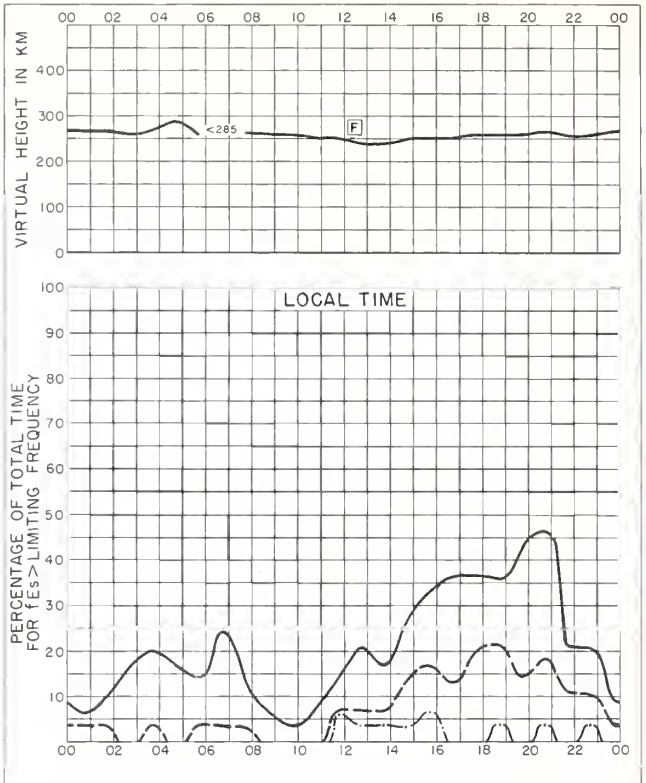


Fig. 6. RESOLUTE BAY, CANADA JANUARY 1961

NBS 490

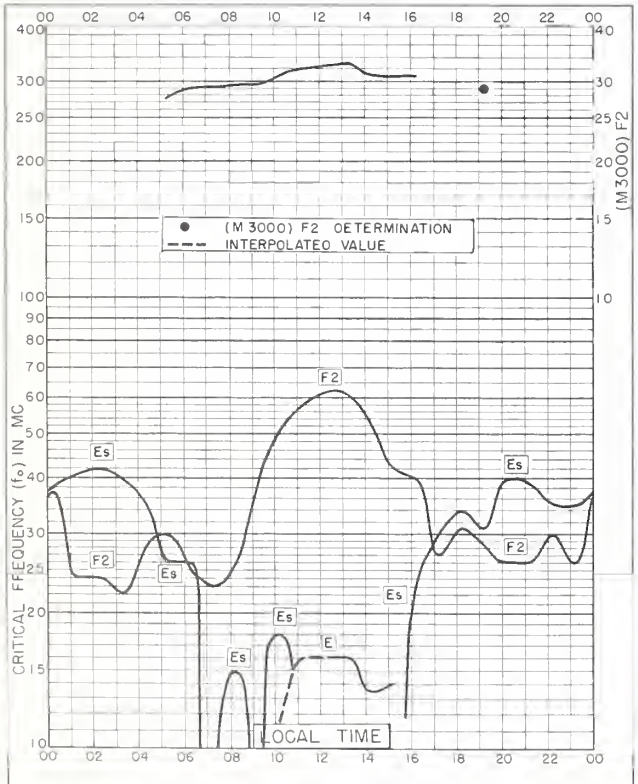


Fig. 7. TROMSO, NORWAY
69.7°N, 19.0°E JANUARY 1961

NBS 503

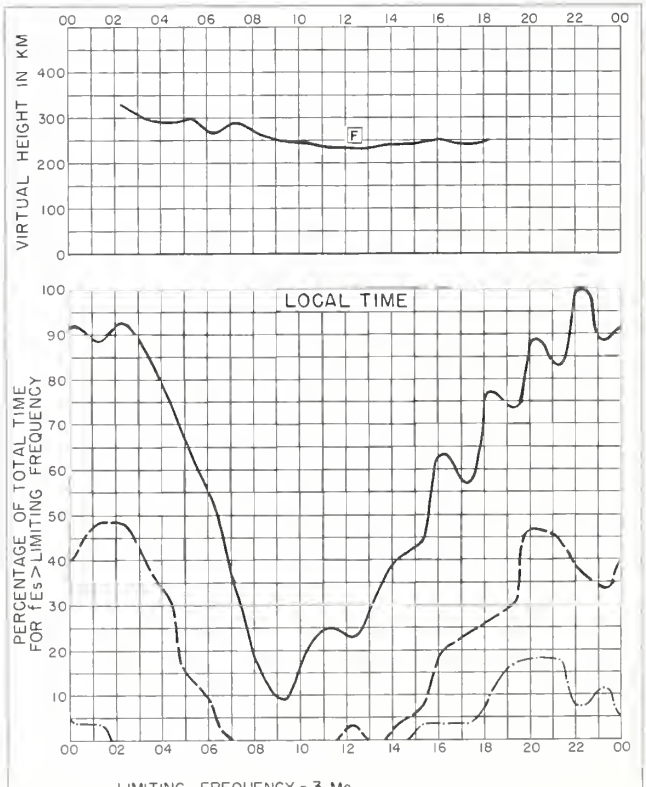


Fig. 8. TROMSO, NORWAY JANUARY 1961

NBS 490

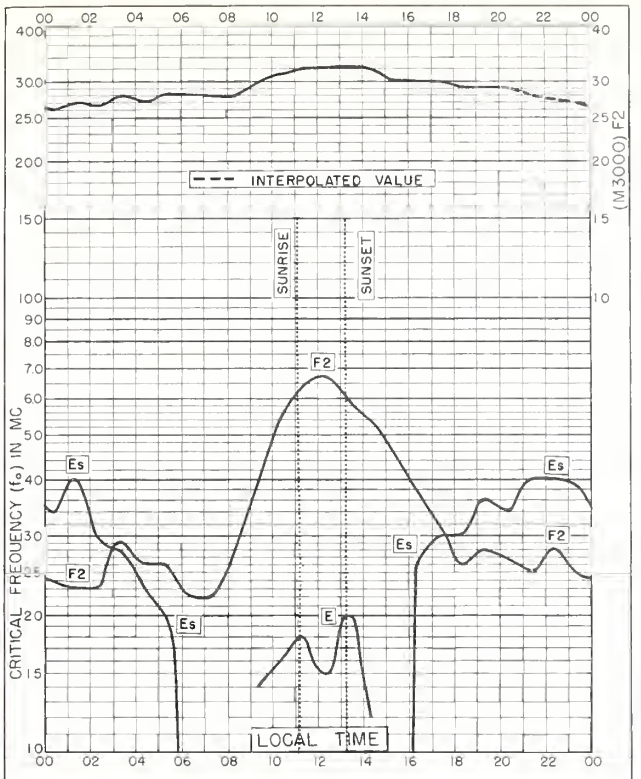


Fig. 9. KIRUNA, SWEDEN
67.8°N, 20.3°E JANUARY 1961

NBS 503

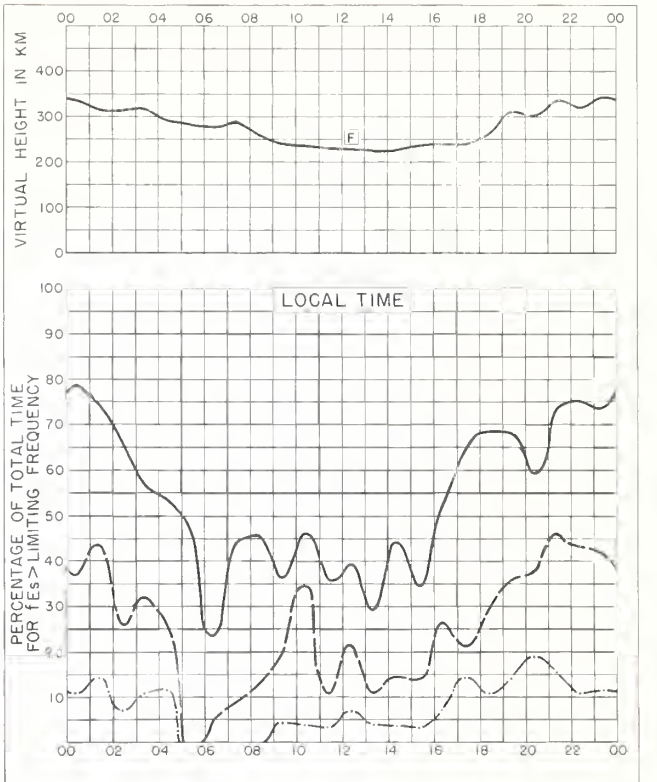


Fig. 10. KIRUNA, SWEDEN JANUARY 1961

NBS 490

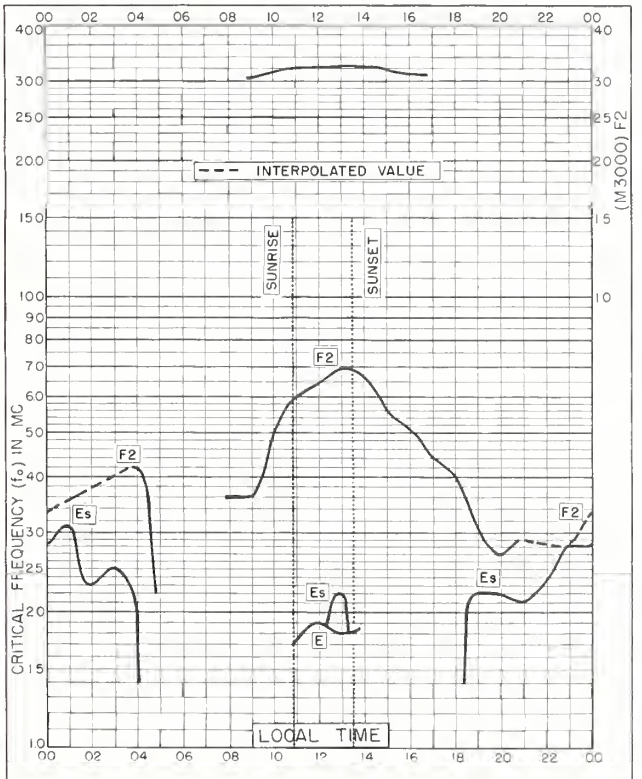


Fig. 11. SODANKYLA, FINLAND
67.4°N, 26.6°E JANUARY 1961

NBS 503

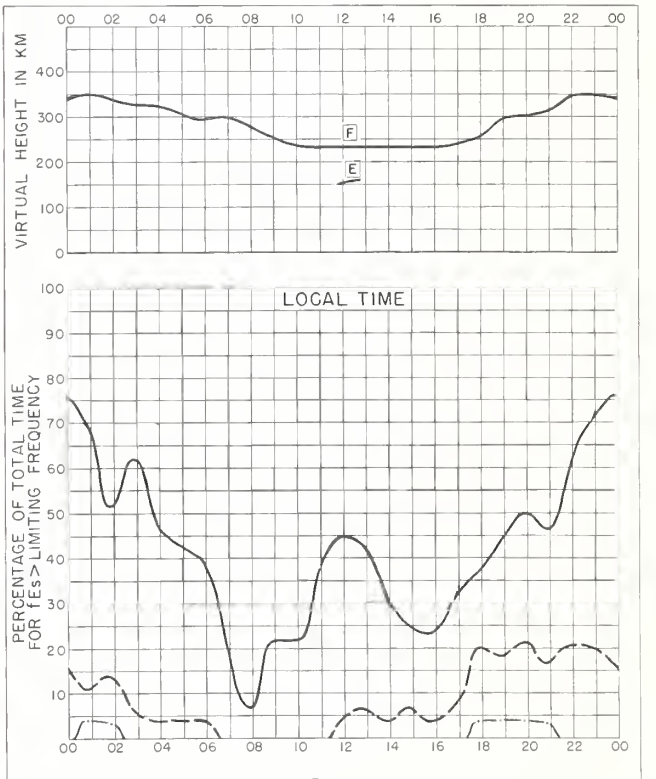


Fig. 12. SODANKYLA, FINLAND JANUARY 1961

NBS 490

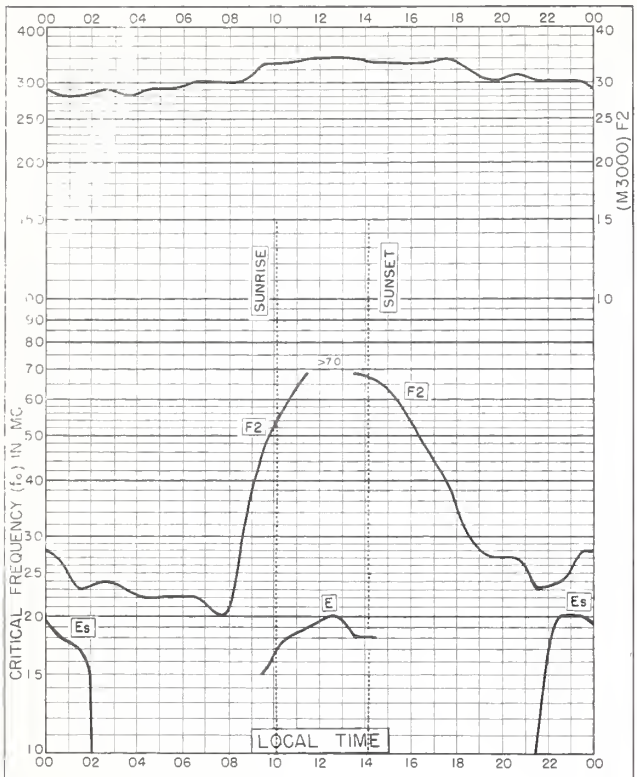


Fig. 13. LULEA, SWEDEN
65.6°N, 22.1°E JANUARY 1961

NBS 503

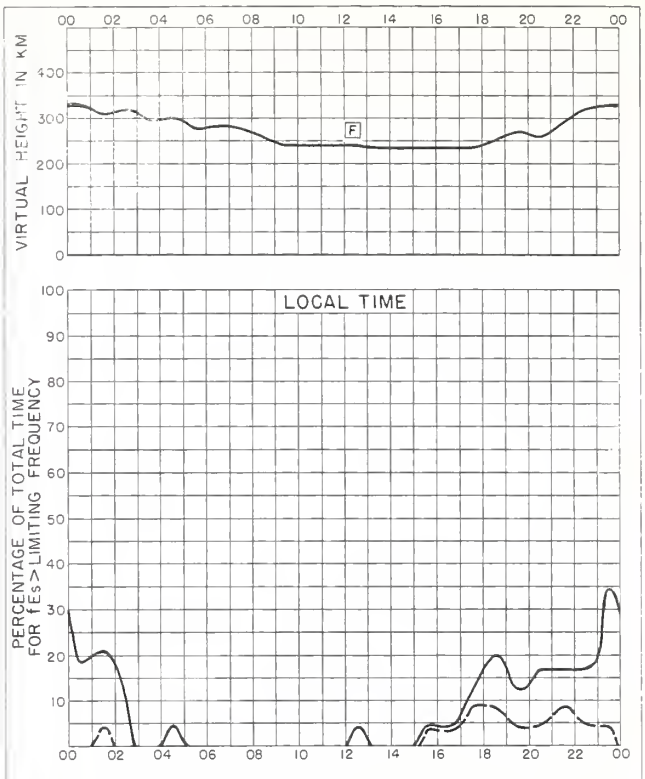


Fig. 14. LULEA, SWEDEN JANUARY 1961

NBS 490

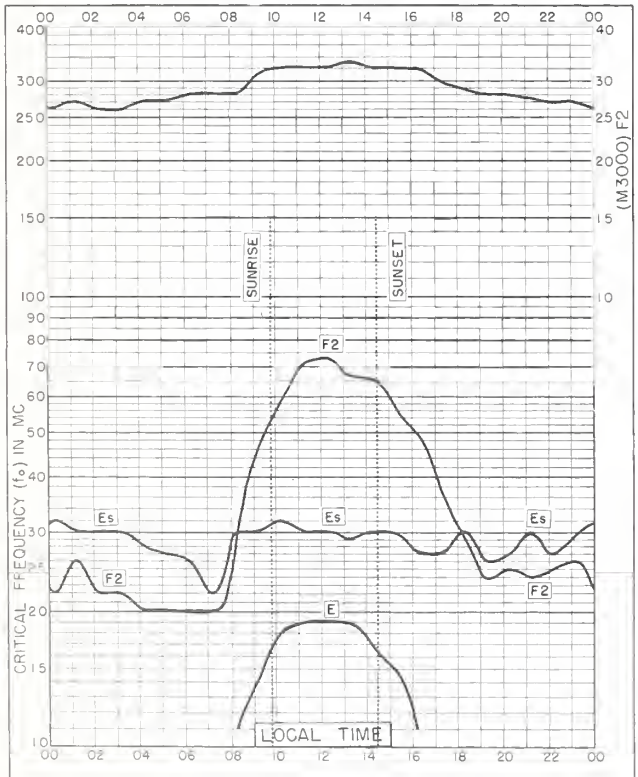


Fig. 15. LYCKSELE, SWEDEN
64.6°N, 18.8°E JANUARY 1961

NBS 503

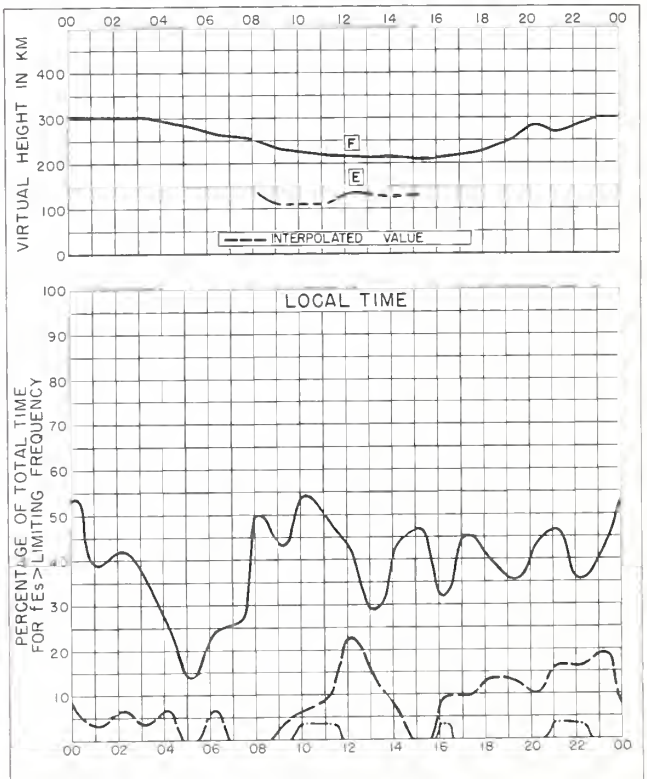


Fig. 16. LYCKSELE, SWEDEN JANUARY 1961

NBS 490

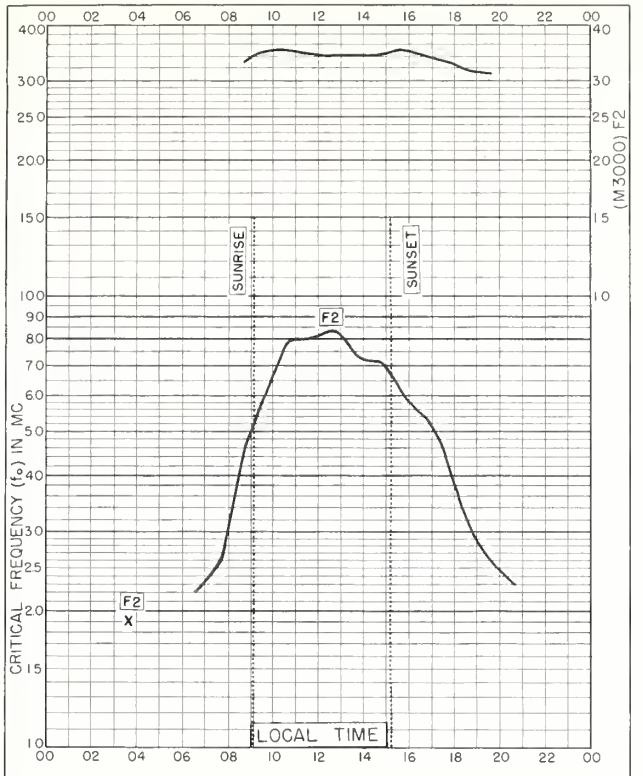


Fig. 17. NURMIJARVI, FINLAND
60.5°N, 24.6°E JANUARY 1961

NBS 503

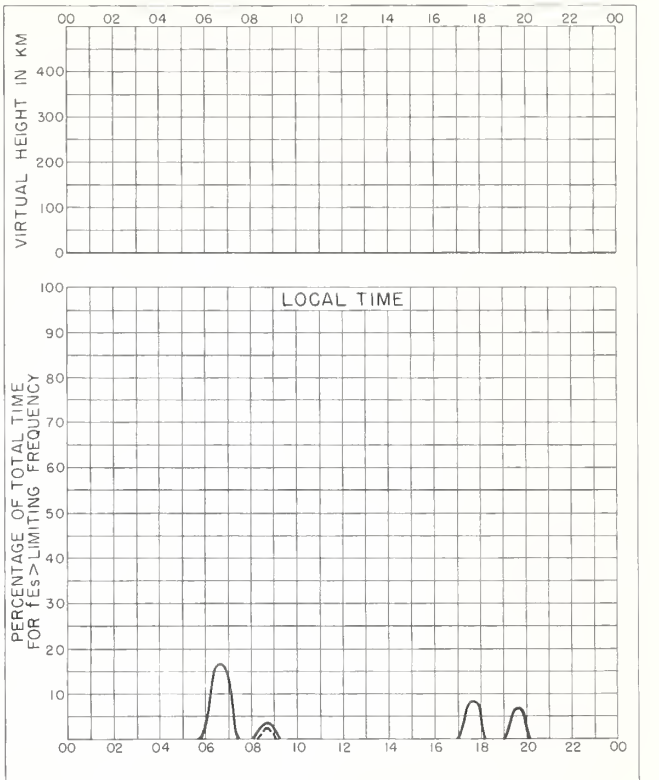


Fig. 18. NURMIJARVI, FINLAND JANUARY 1961

NBS 490

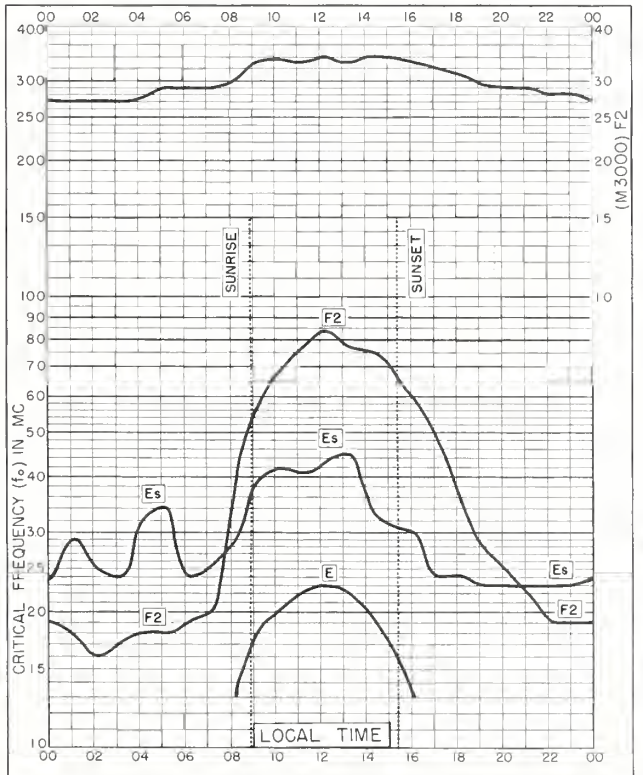


Fig. 19. UPSALA, SWEDEN
59.8°N, 17.6°E JANUARY 1961

NBS 503

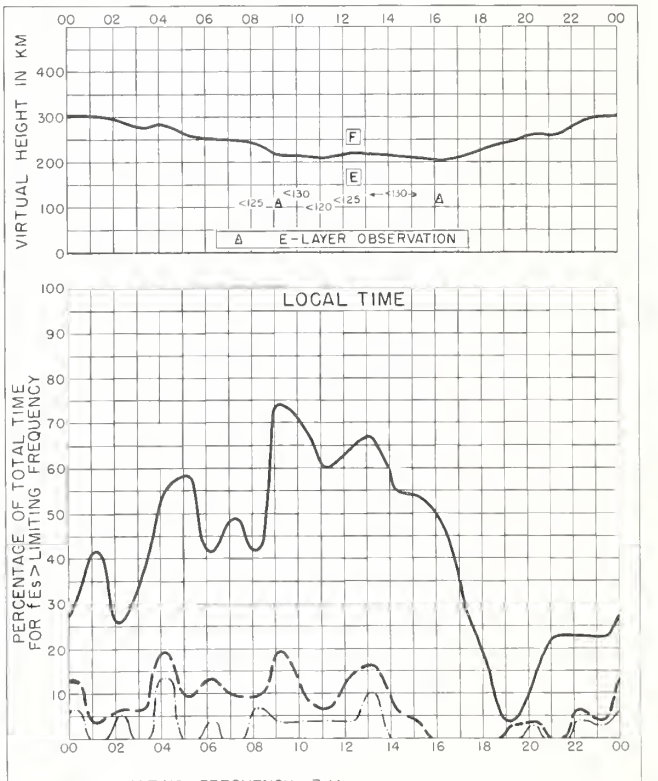


Fig. 20. UPSALA, SWEDEN JANUARY 1961

NBS 490

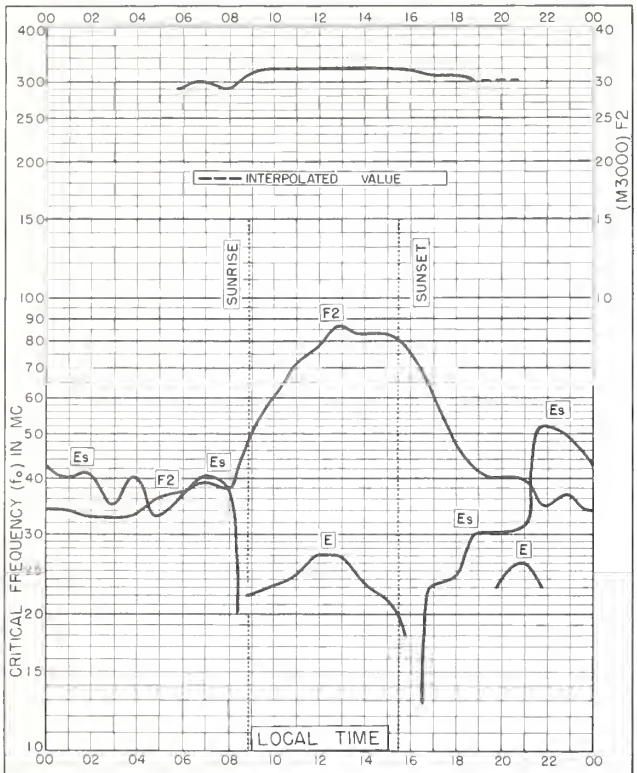


Fig. 21. CHURCHILL, CANADA
58.8° N, 94.2°W JANUARY 1961

NBS 503

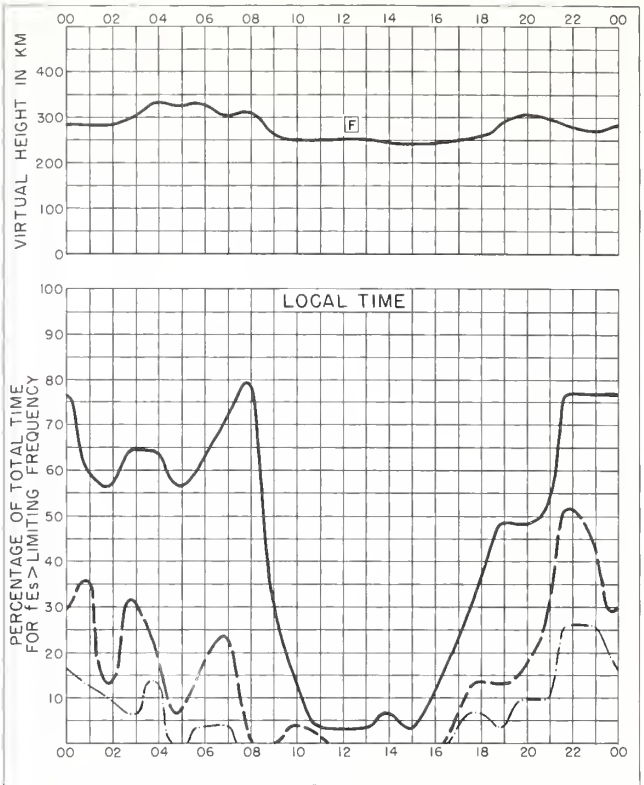


Fig. 22. CHURCHILL, CANADA JANUARY 1961

NBS 490

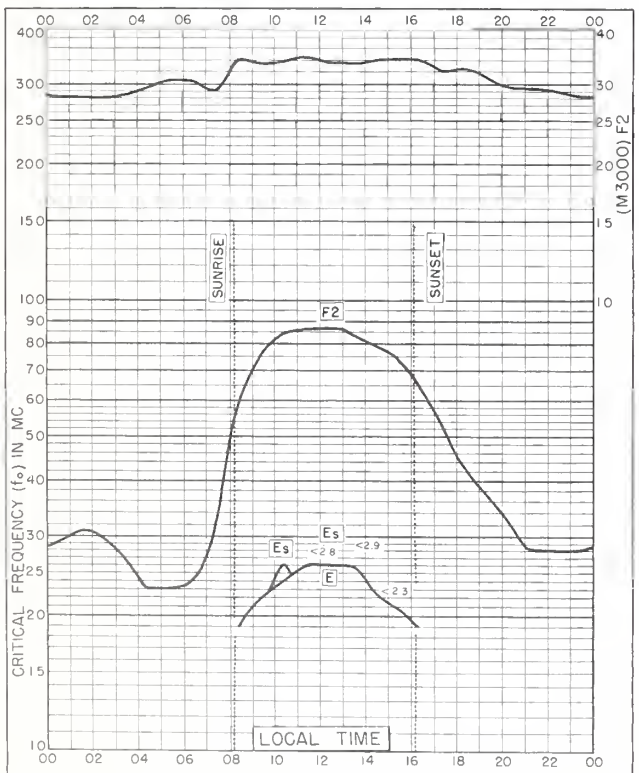


Fig. 23. De BILT, HOLLAND
52.1°N, 5.2°E JANUARY 1961

NBS 503

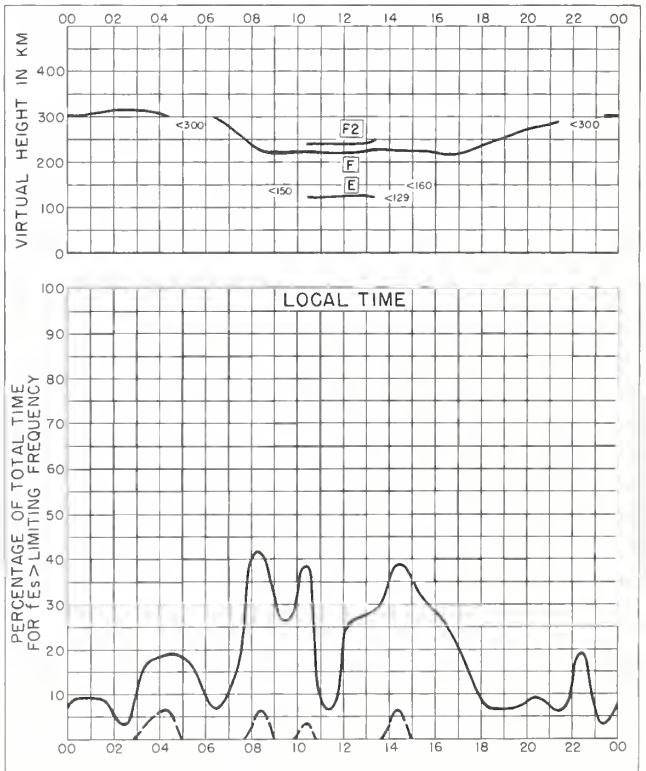


Fig. 24. De BILT, HOLLAND JANUARY 1961

NBS 490

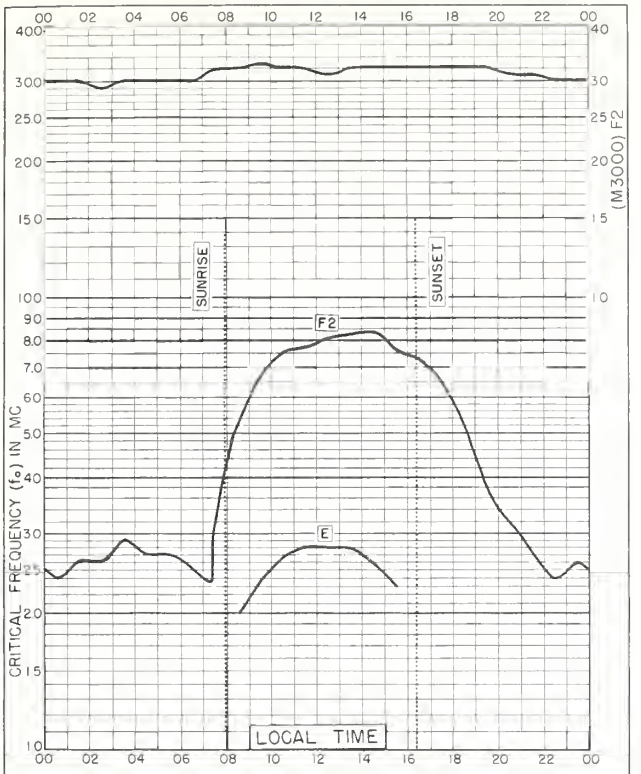


Fig. 25. WINNIPEG, CANADA
49.9°N, 97.4°W JANUARY 1961

NBS 503

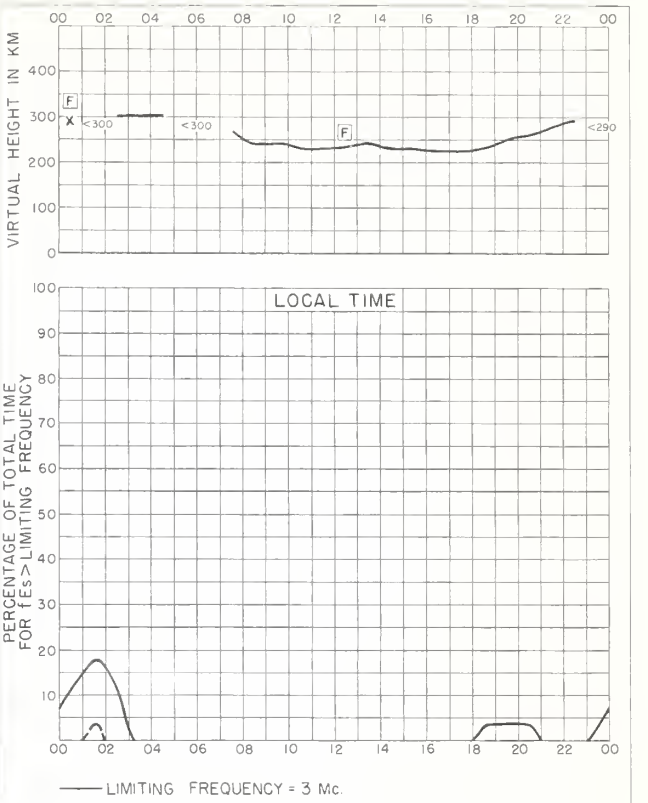


Fig. 26. WINNIPEG, CANADA JANUARY 1961

NBS 490

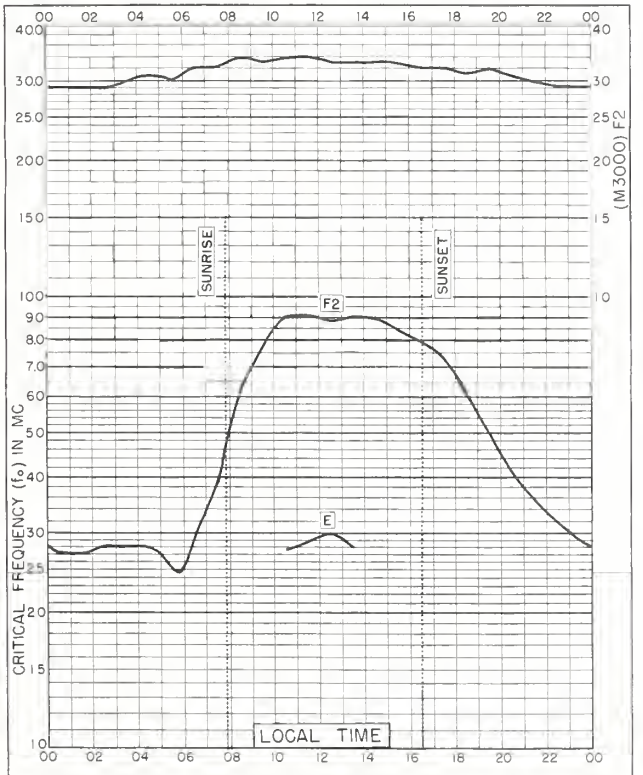


Fig. 27. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7° W JANUARY 1961

NBS 503

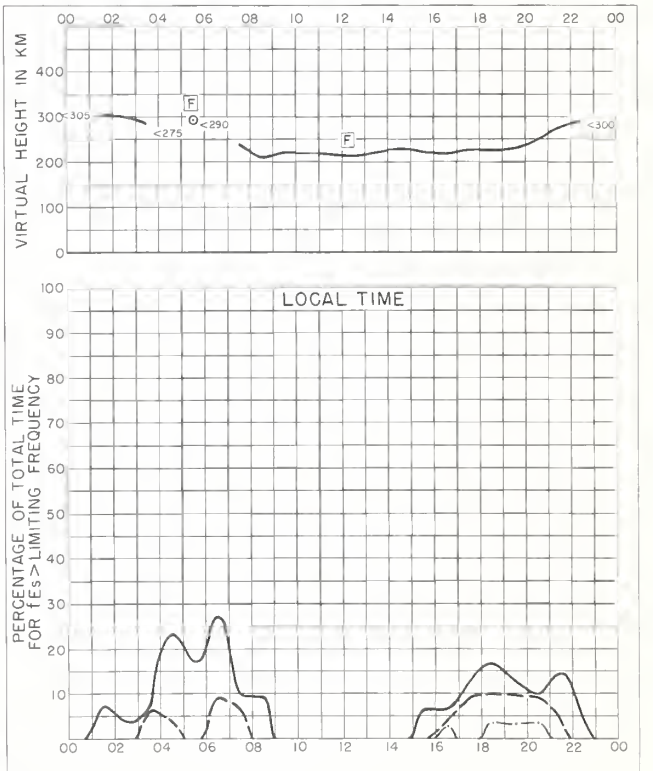


Fig. 28. ST. JOHN'S, NEWFOUNDLAND JANUARY 1961

NBS 490

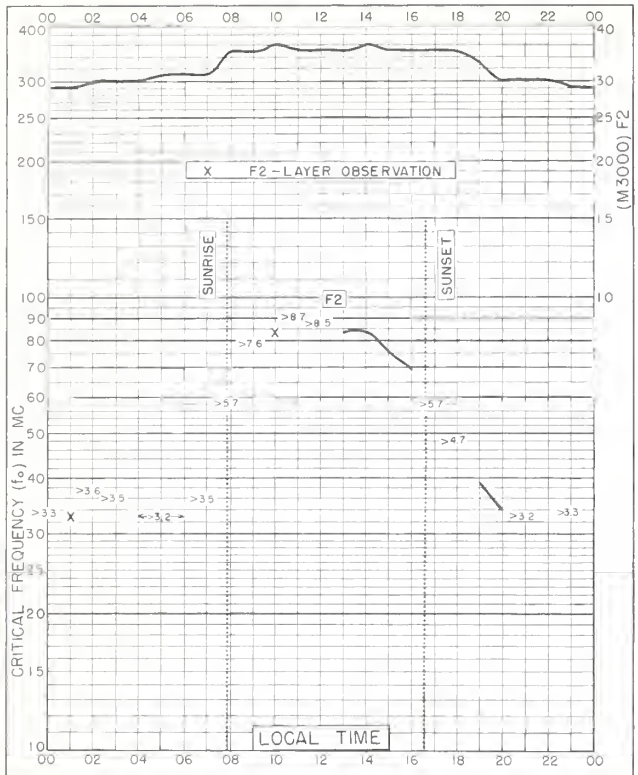


Fig. 29. GRAZ, AUSTRIA
47.1°N, 15.5°E JANUARY 1961

NBS 503

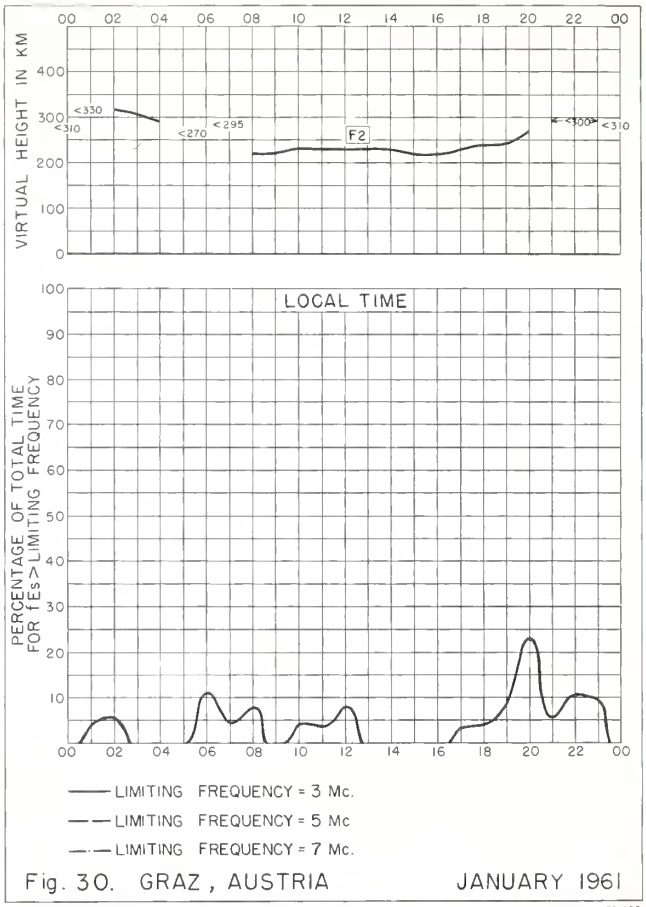


Fig. 30. GRAZ, AUSTRIA JANUARY 1961

NBS 490

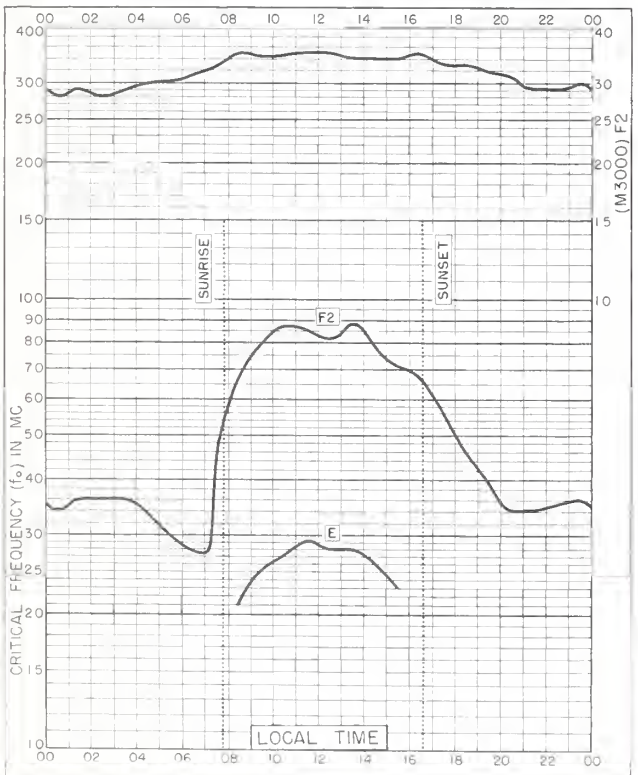


Fig. 31. SOTTENS, SWITZERLAND
46.6°N, 6.7°E JANUARY 1961

NBS 503

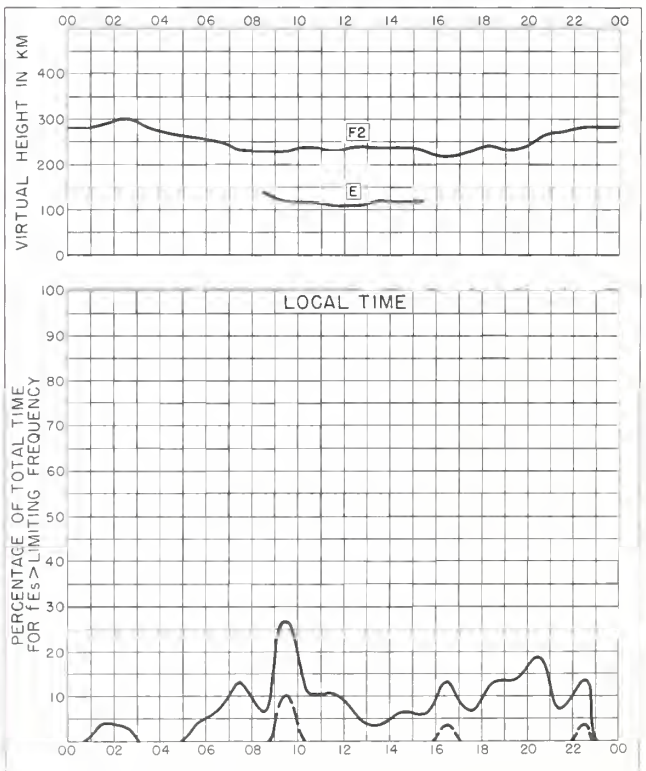


Fig. 32. SOTTENS, SWITZERLAND JANUARY 1961

NBS 490

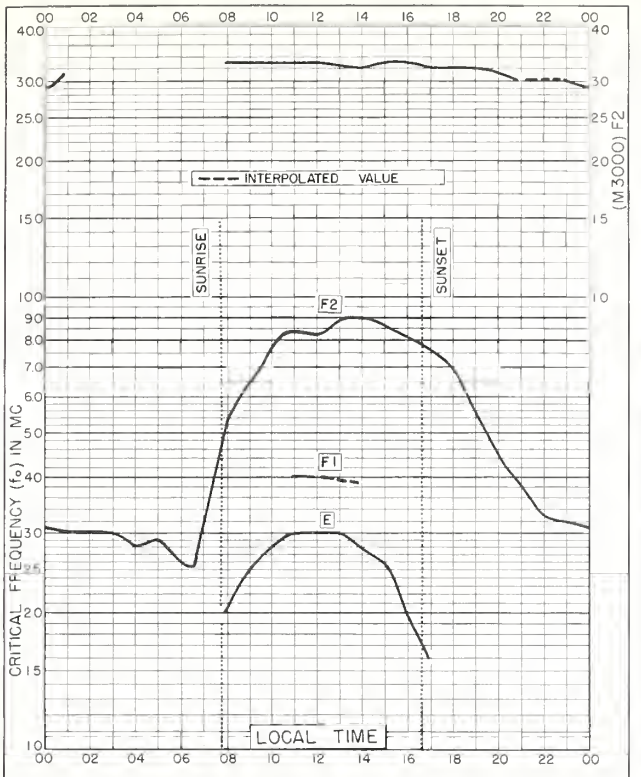


Fig. 33. OTTAWA, CANADA
45.4°N, 75.9°W JANUARY 1961

NBS 503

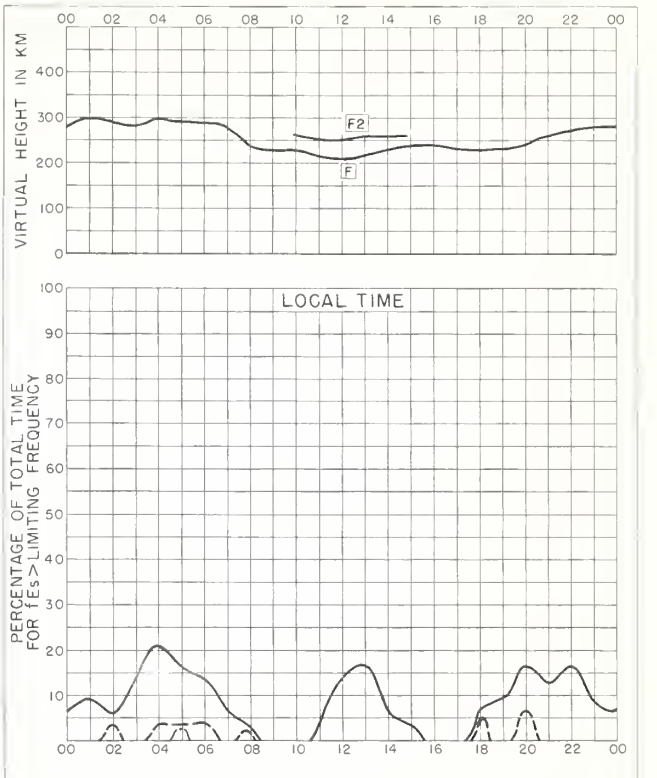


Fig. 34. OTTAWA, CANADA JANUARY 1961

NBS 490

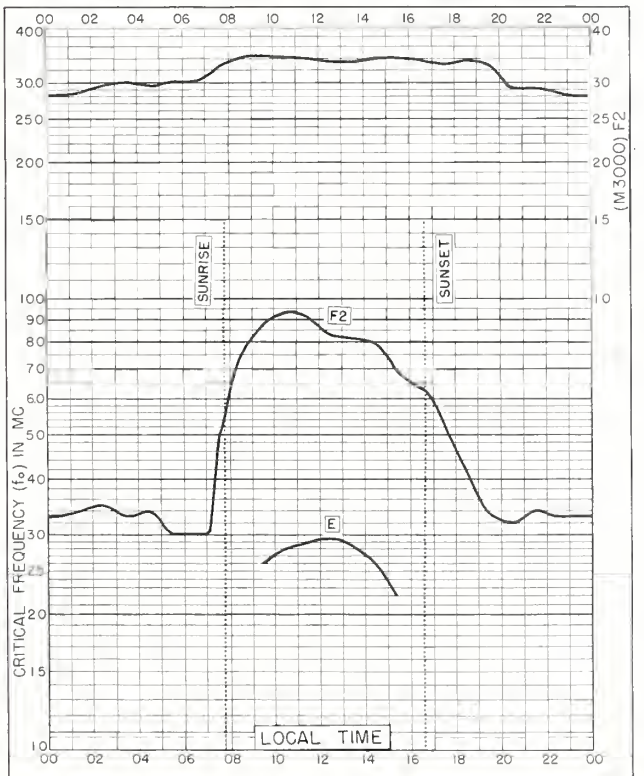


Fig. 35. WAKKANAI, JAPAN
45.4°N, 141.7°E JANUARY 1961

NBS 503

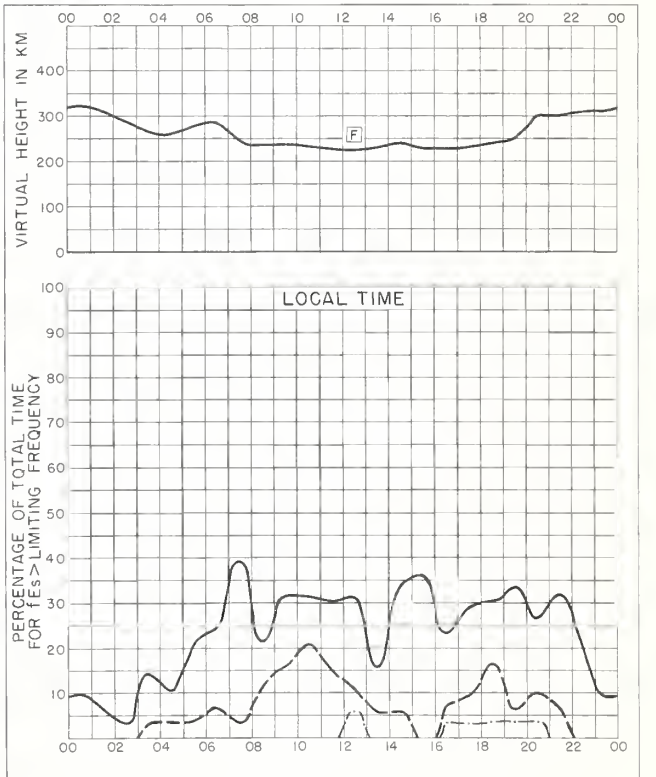


Fig. 36. WAKKANAI, JAPAN JANUARY 1961

NBS 490

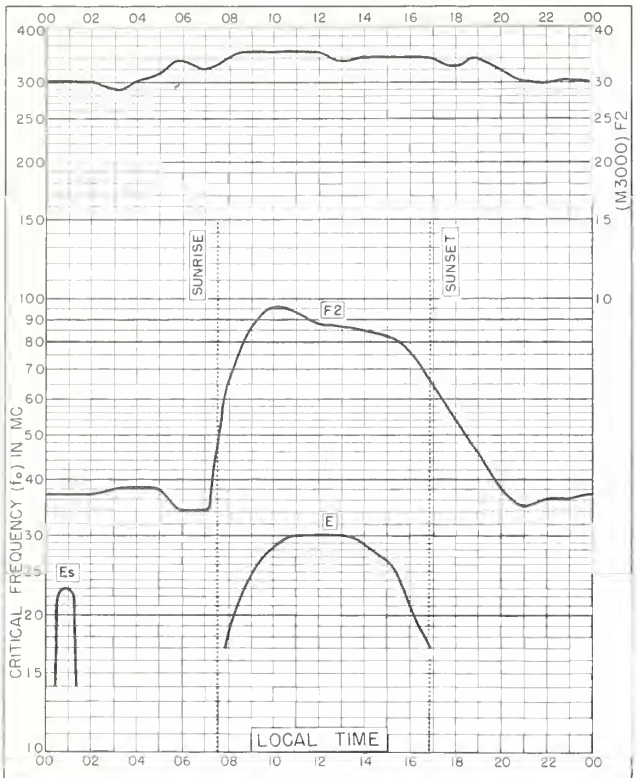


Fig. 37. ROME, ITALY
41.8°N, 12.5°E JANUARY 1961

NBS 503

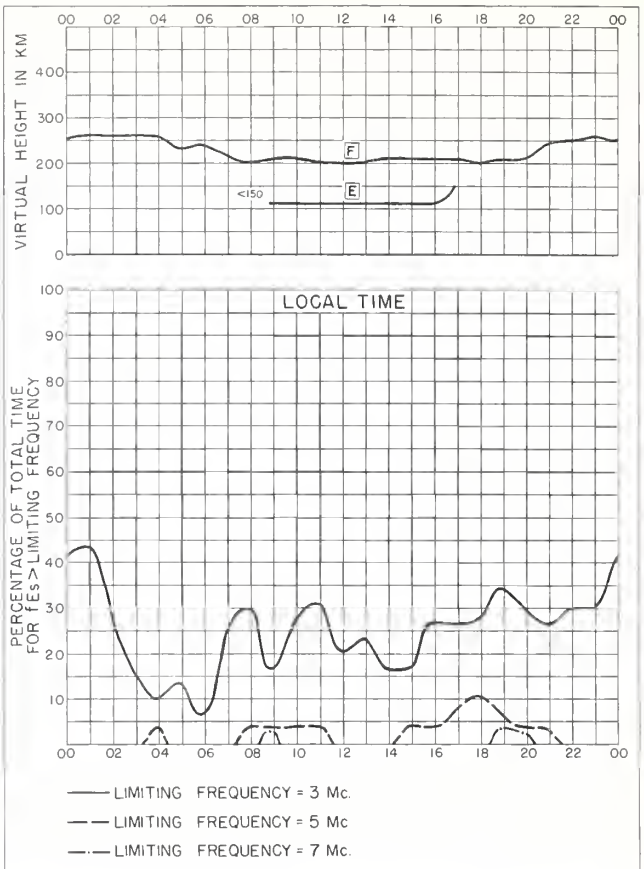


Fig. 38. ROME, ITALY JANUARY 1961

NBS 490

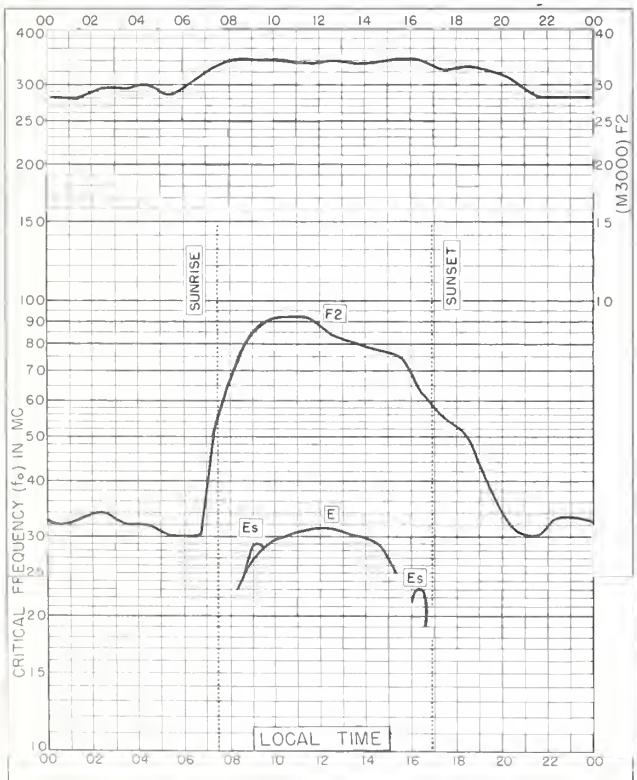


Fig. 39. AKITA, JAPAN
39.7°N, 140.1°E JANUARY 1961

NBS 503

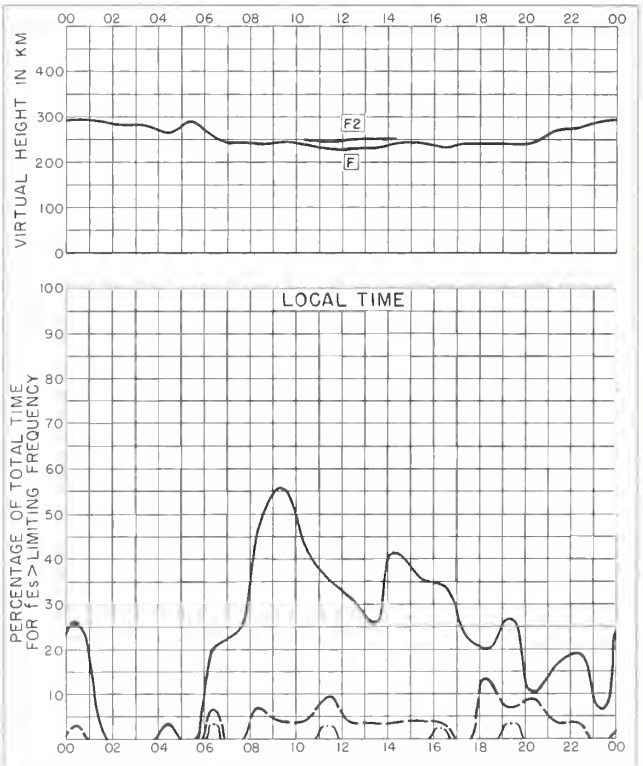


Fig. 40. AKITA, JAPAN JANUARY 1961

NBS 490

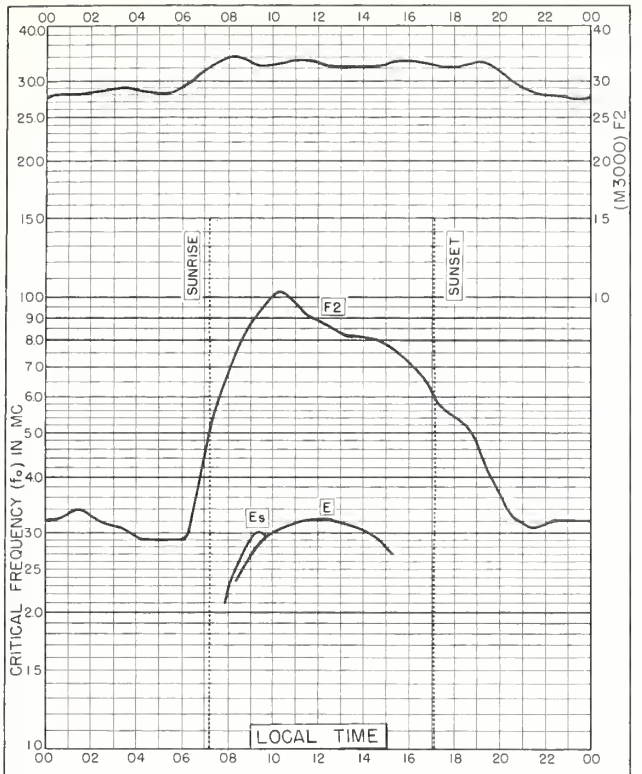


Fig. 41. TOKYO, JAPAN
35.7°N, 139.5°E JANUARY 1961

NBS 503

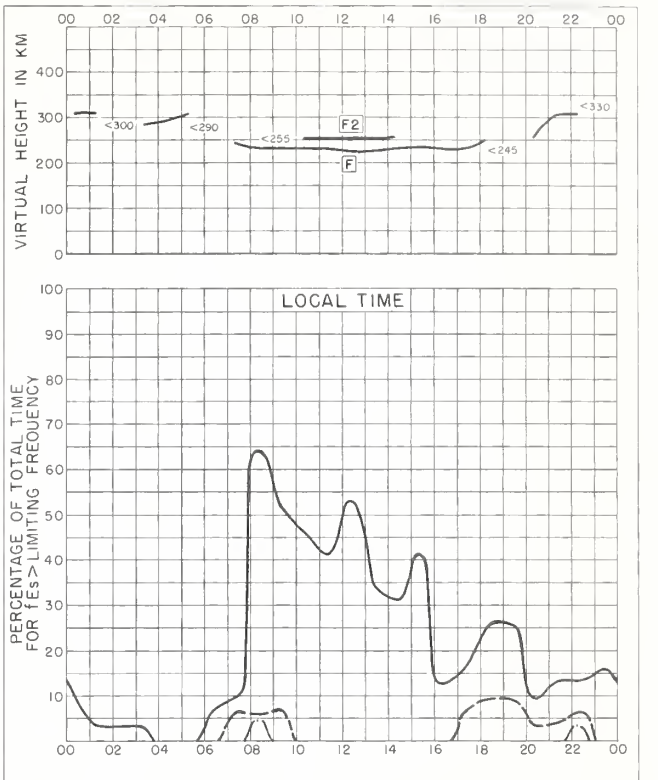


Fig. 42. TOKYO, JAPAN JANUARY 1961

NBS 490

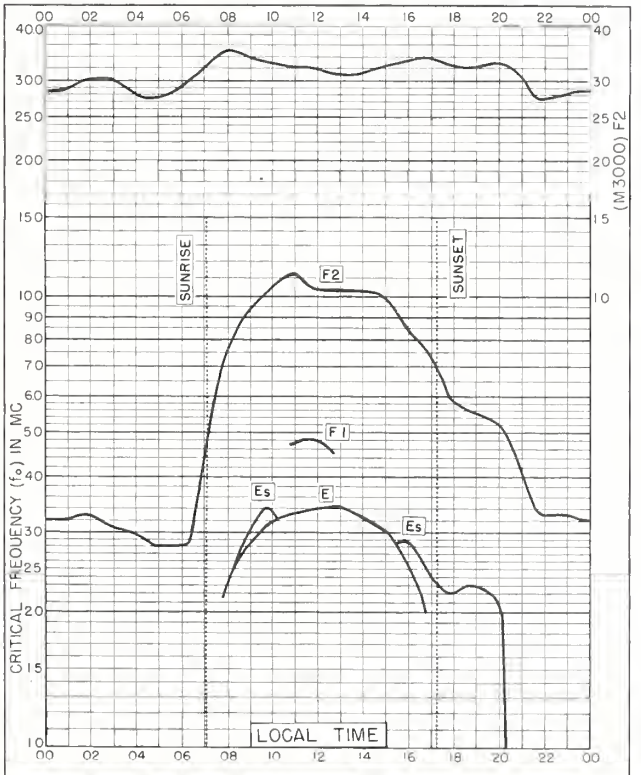


Fig. 43. YAMAGAWA, JAPAN
31.2°N, 130.6°E JANUARY 1961

NBS 503

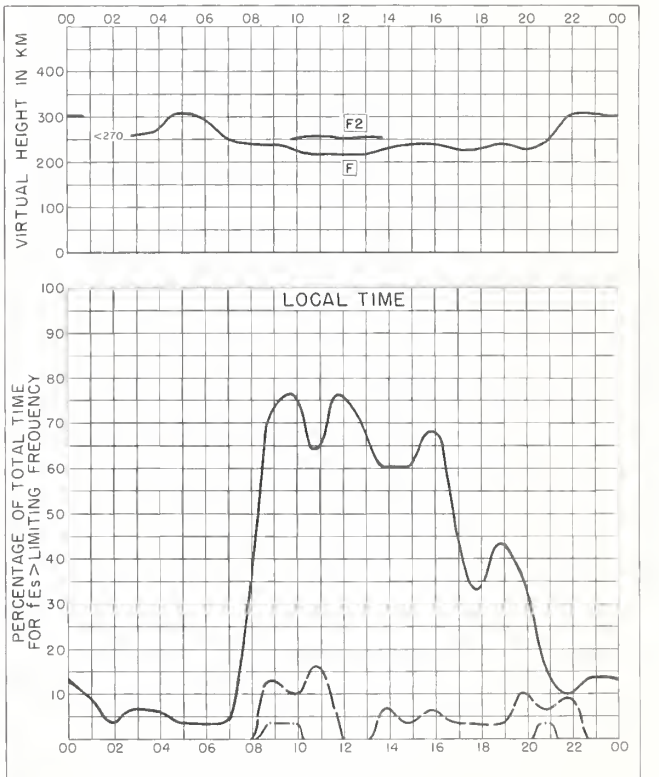


Fig. 44. YAMAGAWA, JAPAN JANUARY 1961

NBS 490

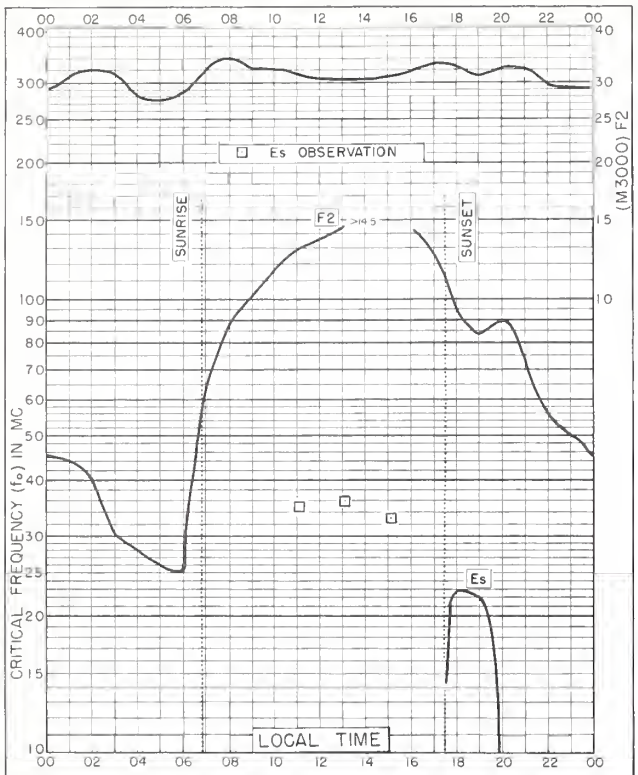


Fig. 45. FORMOSA, CHINA
25.0°N, 121.5°E JANUARY 1961

NBS 503

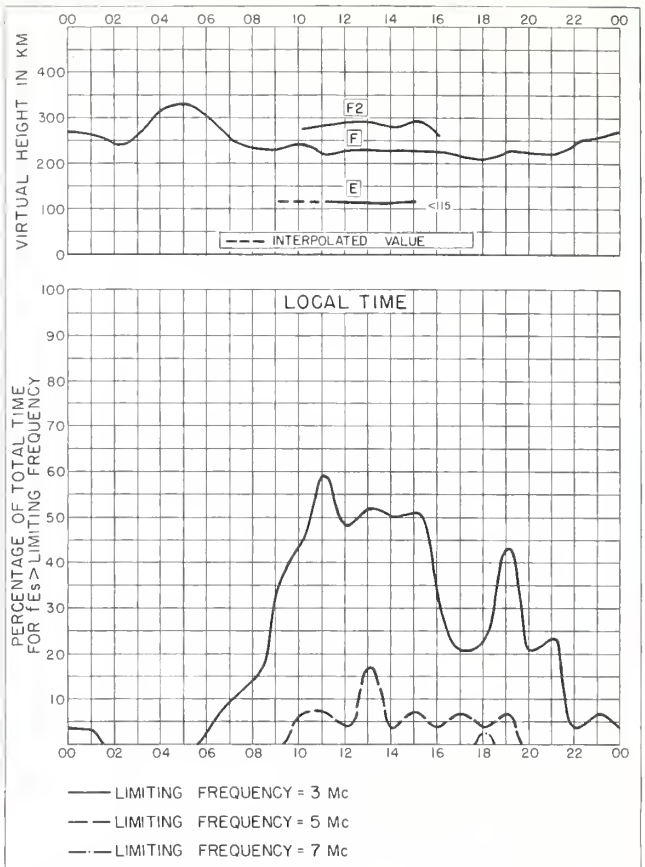


Fig. 46. FORMOSA, CHINA JANUARY 1961

NBS 490

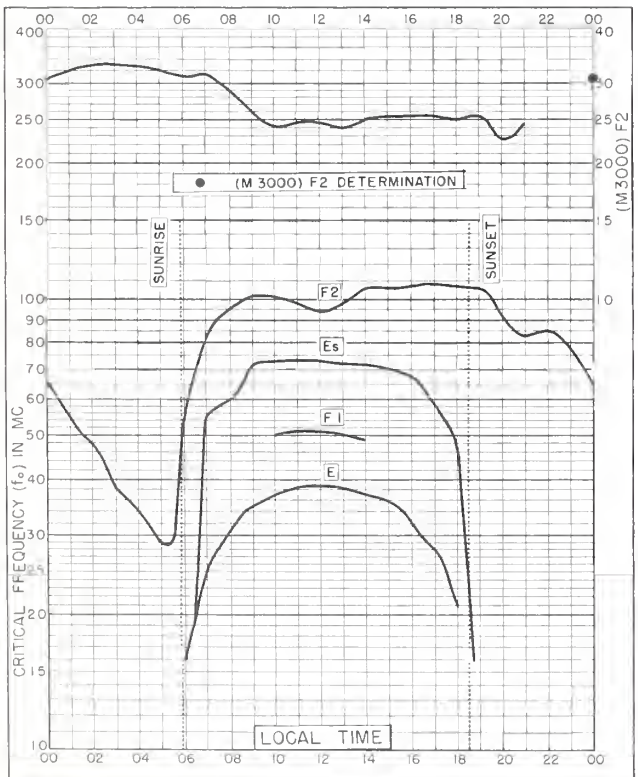


Fig. 47. HUANCAYO, PERU
12.0°S, 75.3°W JANUARY 1961

NBS 503

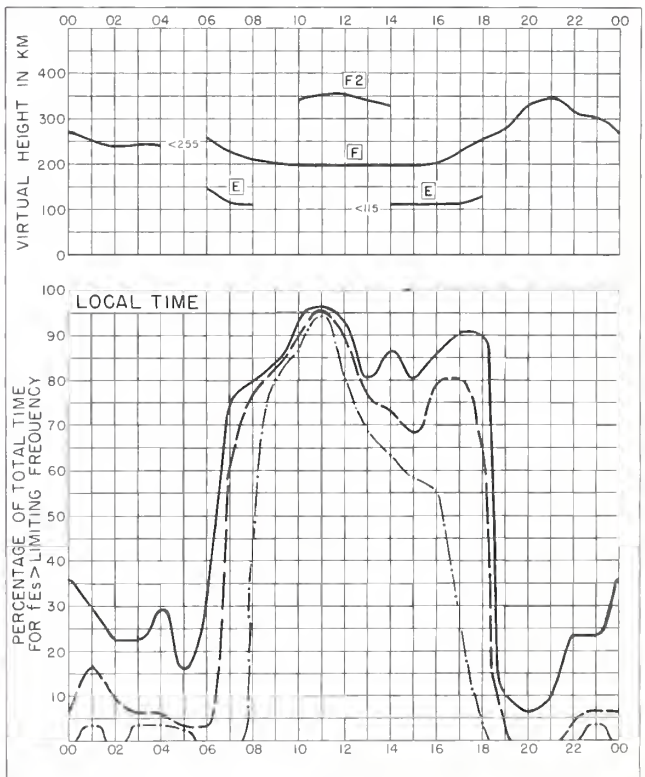


Fig. 48. HUANCAYO, PERU JANUARY 1961

NBS 490

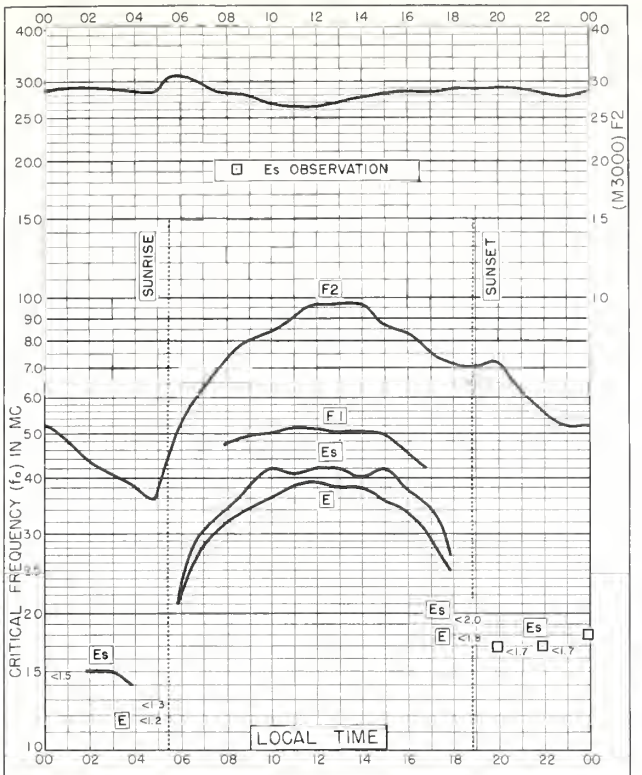


Fig. 49. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E JANUARY 1961

NBS 503

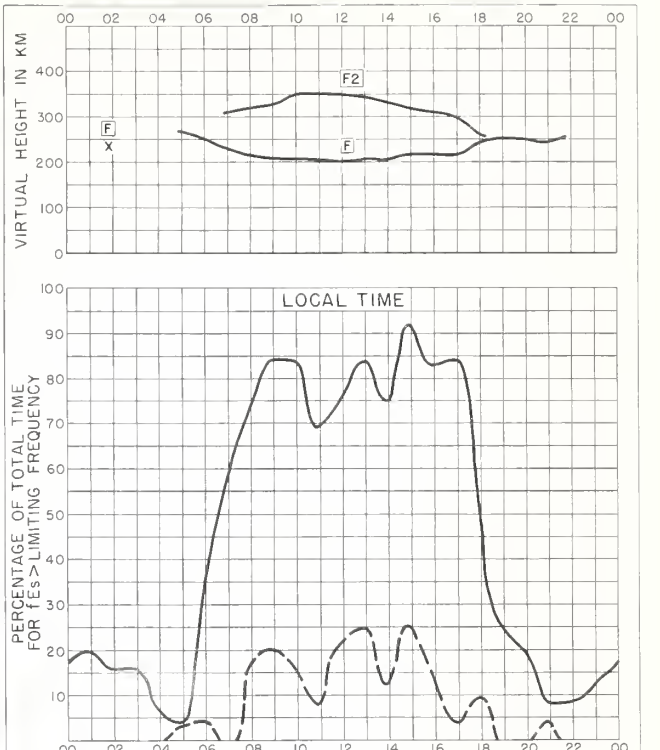


Fig. 50. JOHANNESBURG, UNION OF S AFRICA

NBS 490

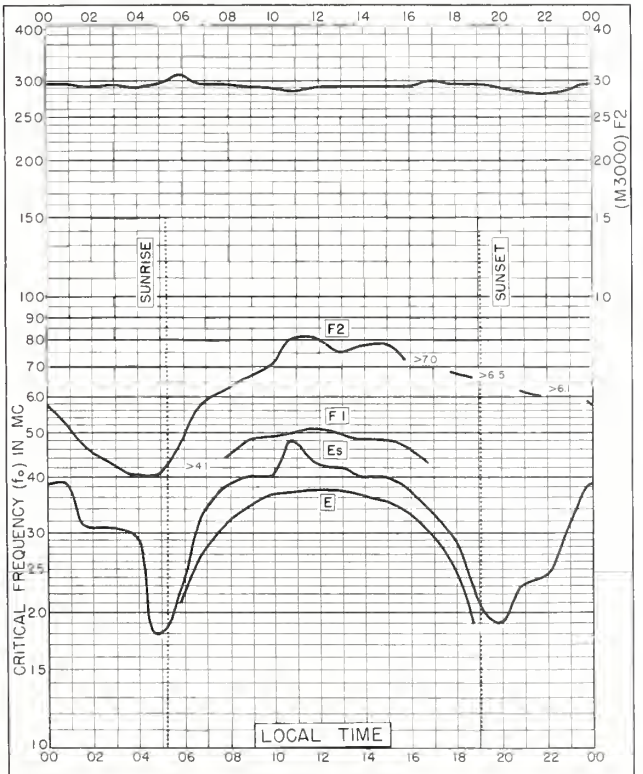


Fig. 51. MUNDARING, W. AUSTRALIA
32.0°S, 116.2°E JANUARY 1961

NBS 503

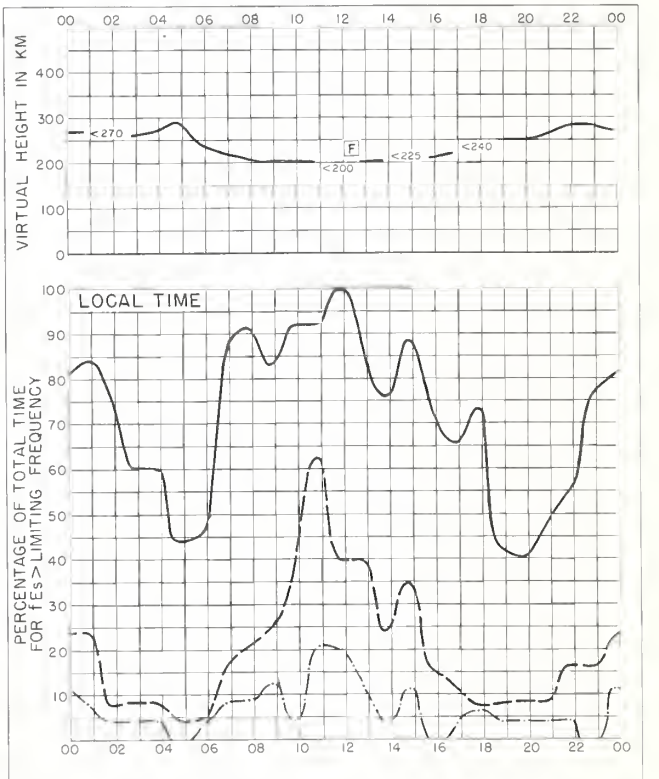


Fig. 52. MUNDARING, W. AUSTRALIA

NBS 490

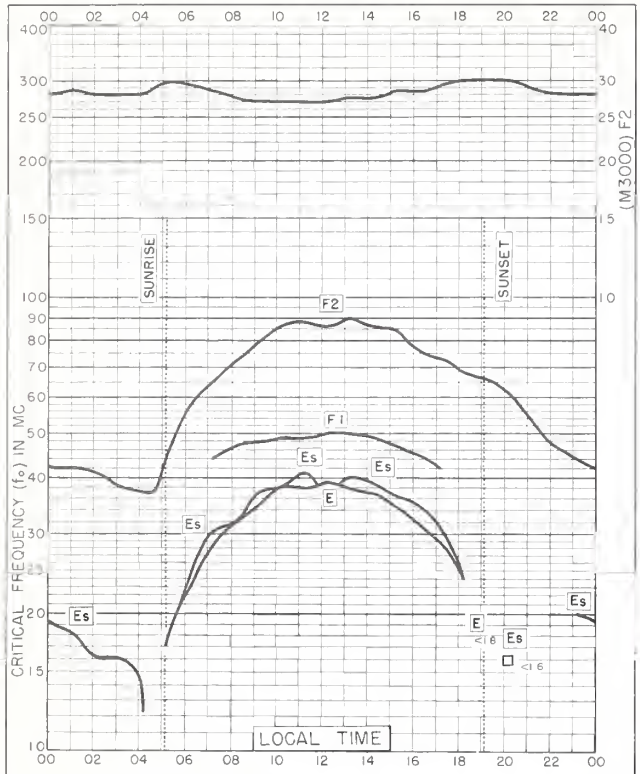


Fig. 53. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E JANUARY 1961

NBS 503

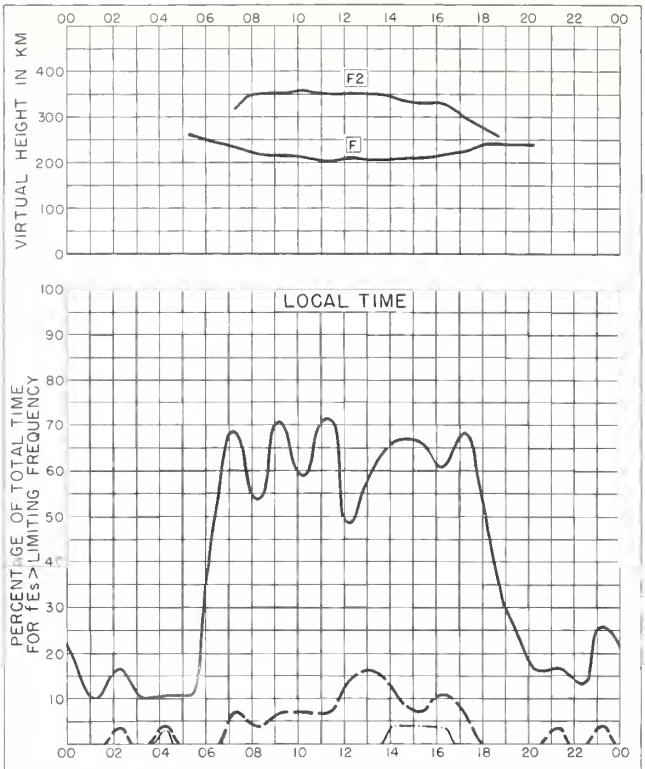


Fig. 54. CAPETOWN, UNION OF S. AFRICA JANUARY 1961

NBS 490

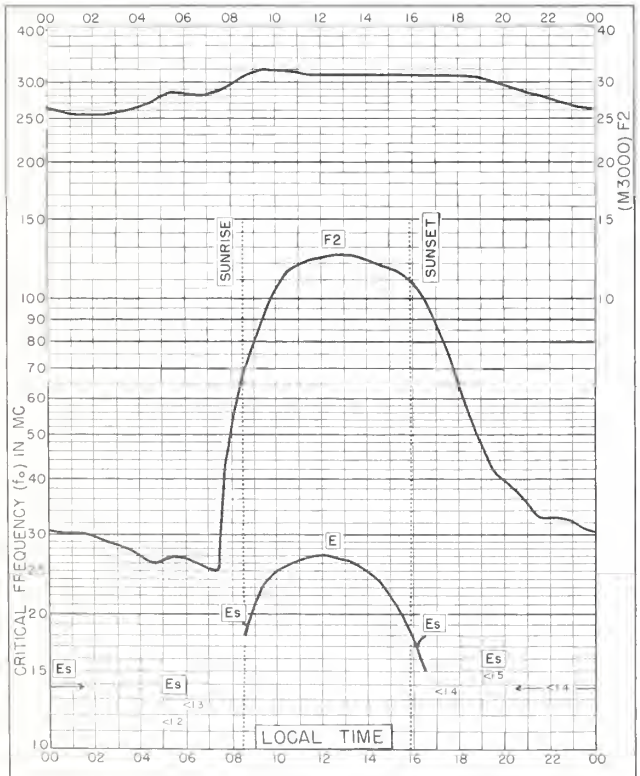


Fig. 55. MOSCOW, U.S.S.R.
55.5°N, 37.3°E JANUARY 1960

NBS 503

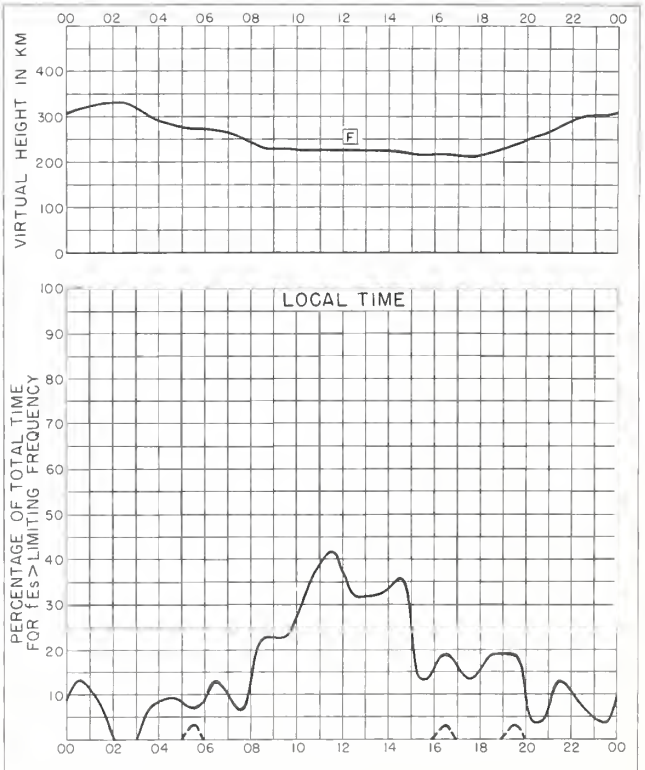


Fig. 56. MOSCOW, U.S.S.R. JANUARY 1960

NBS 490

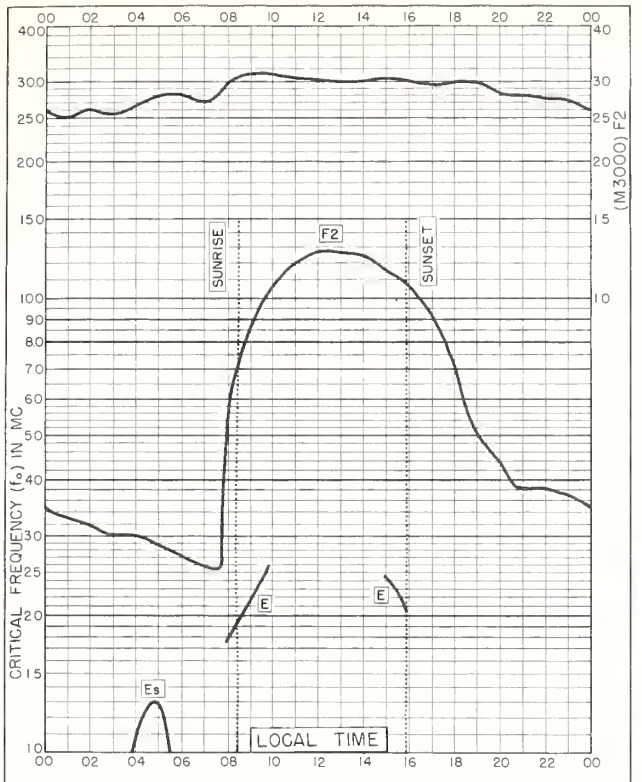
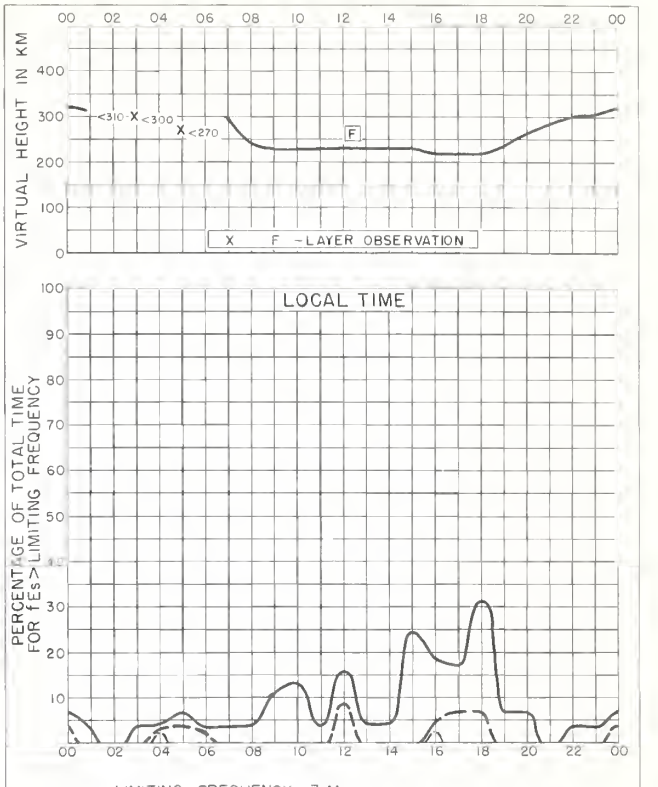


Fig. 57. JULIUSRUH/RÜGEN, GERMANY
54.6° N, 13.4° E JANUARY 1960

NBS 503



JANUARY 1960

Fig. 58. JULIUSRUH/RÜGEN, GERMANY

NBS 490

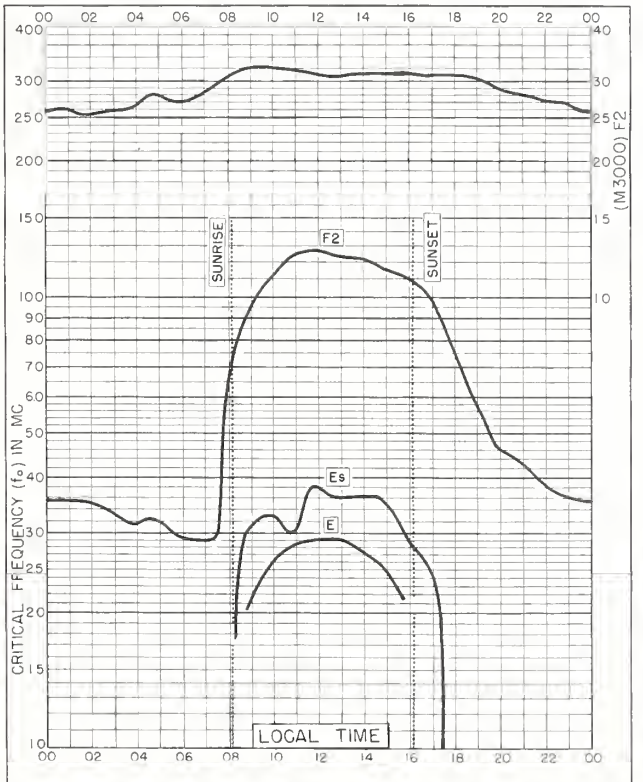
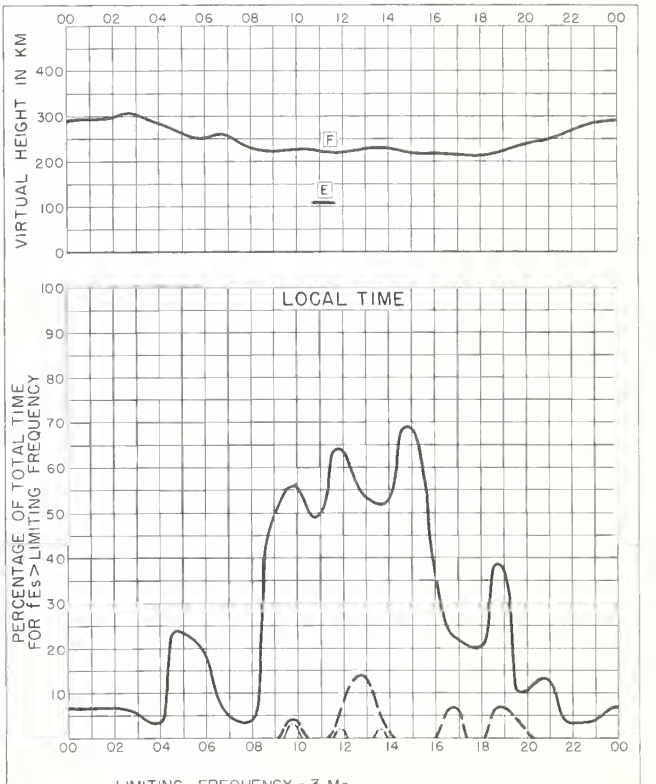


Fig. 59. LINDAU/HARZ, GERMANY
51.6° N, 10.1° E JANUARY 1960

NBS 503



JANUARY 1960

Fig. 60. LINDAU/HARZ, GERMANY

NBS 490

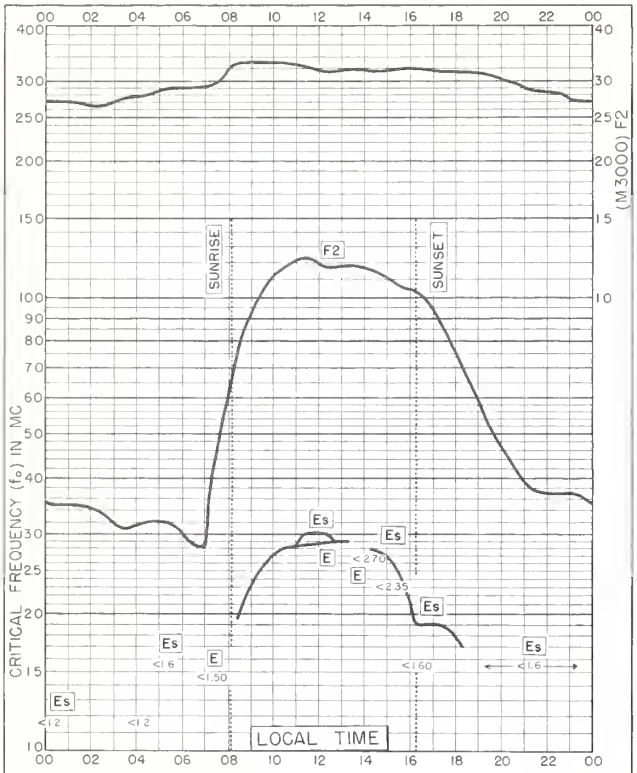


Fig. 61. DOURBES, BELGIUM
50.1° N, 4.6° E JANUARY 1960

NBS 503

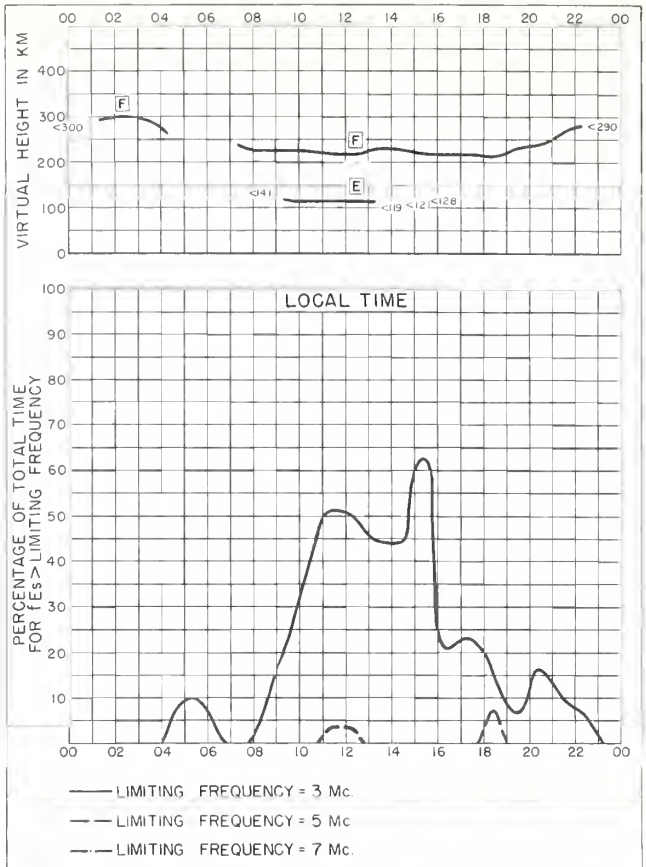


Fig. 62. DOURBES, BELGIUM JANUARY 1960

NBS 490

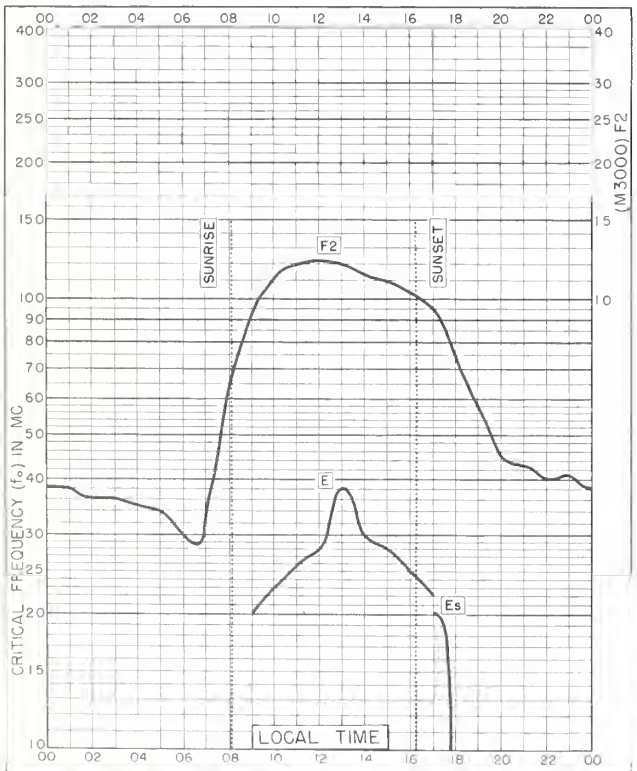


Fig. 63. PRUHONICE, CZECHOSLOVAKIA
50.0° N, 14.6° E JANUARY 1960

NBS 503

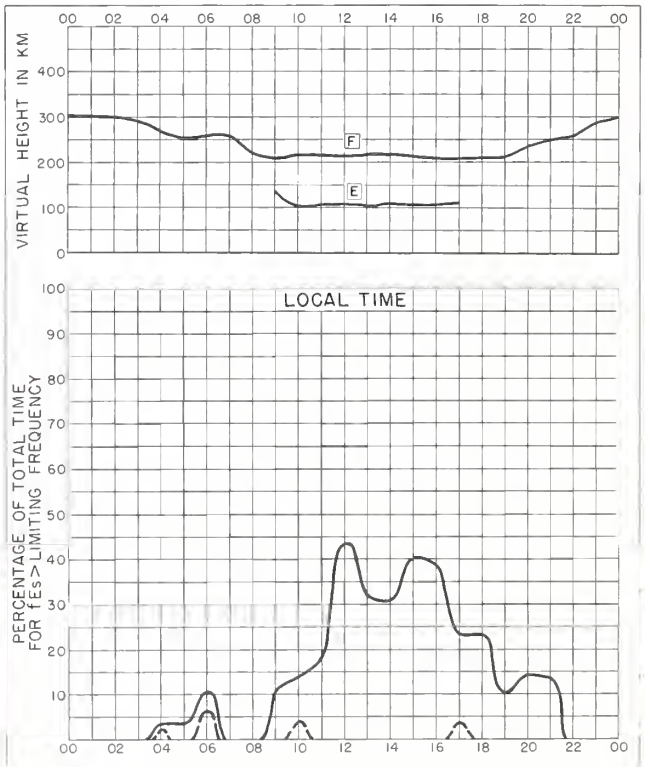


Fig. 64. PRUHONICE, CZECHOSLOVAKIA JANUARY 1960

NBS 490

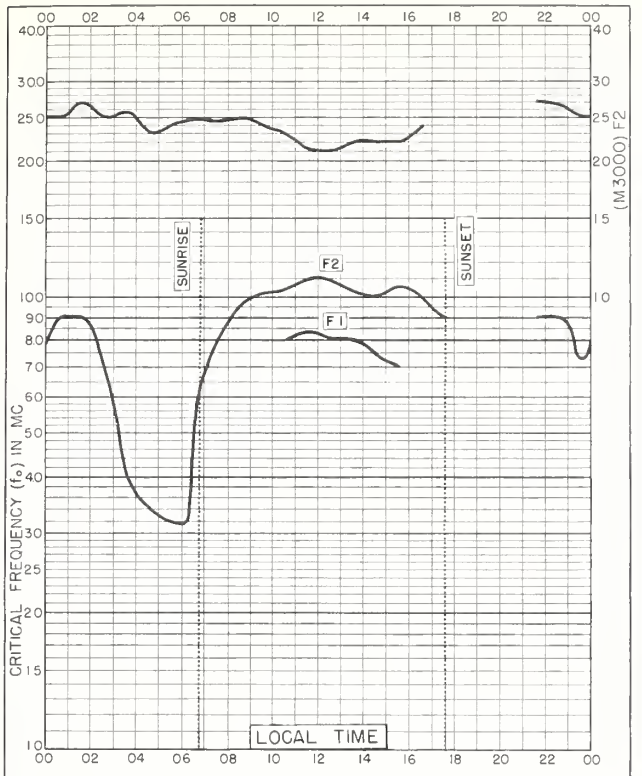


Fig. 65. MACAU
22.2°N, 113.6°E JANUARY 1960

NBS 503

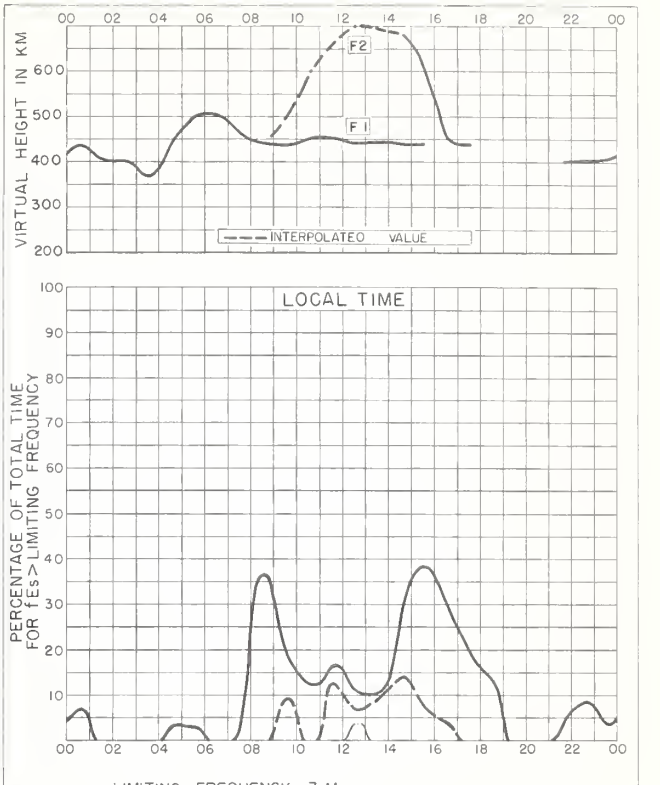


Fig. 66. MACAU JANUARY 1960

NBS 490

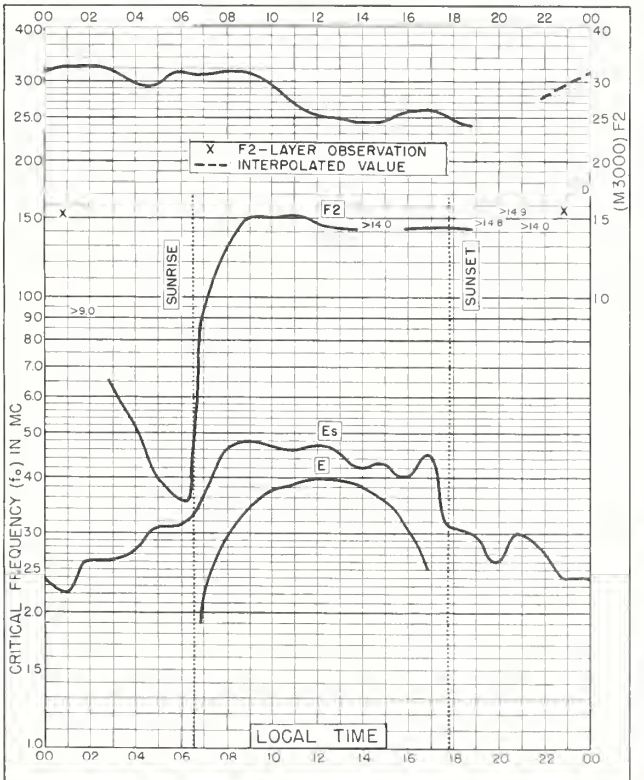


Fig. 67. DAKAR, FRENCH W. AFRICA
14.8°N, 17.4° W JANUARY 1960

NBS 503

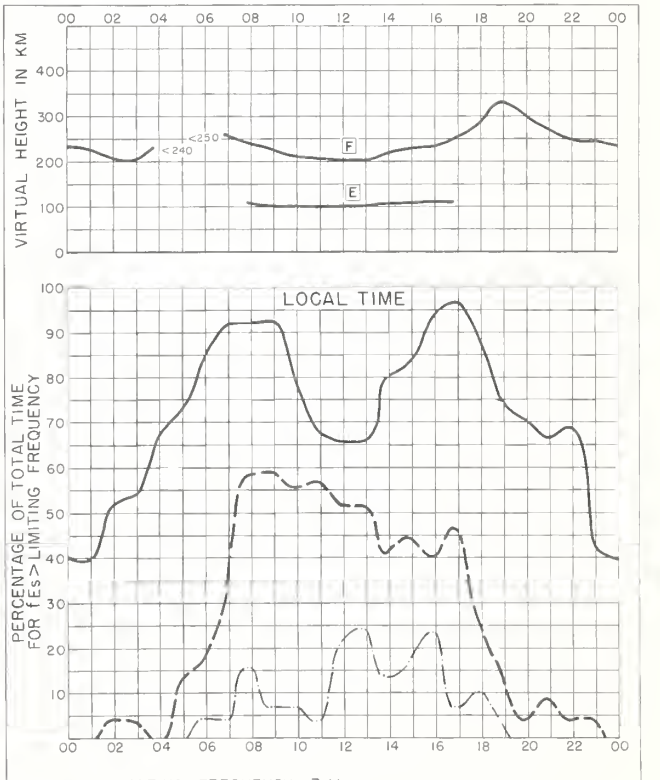


Fig. 68. DAKAR, FRENCH W. AFRICA JANUARY 1960

NBS 490

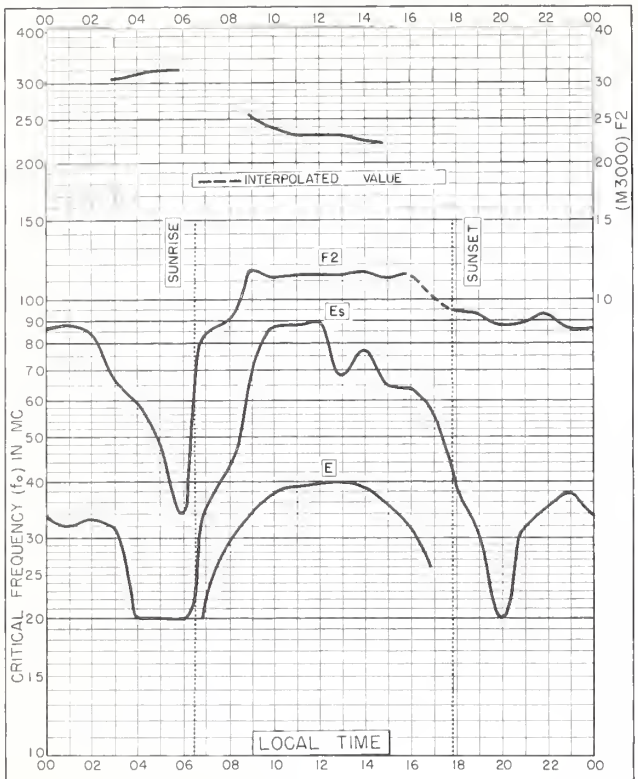
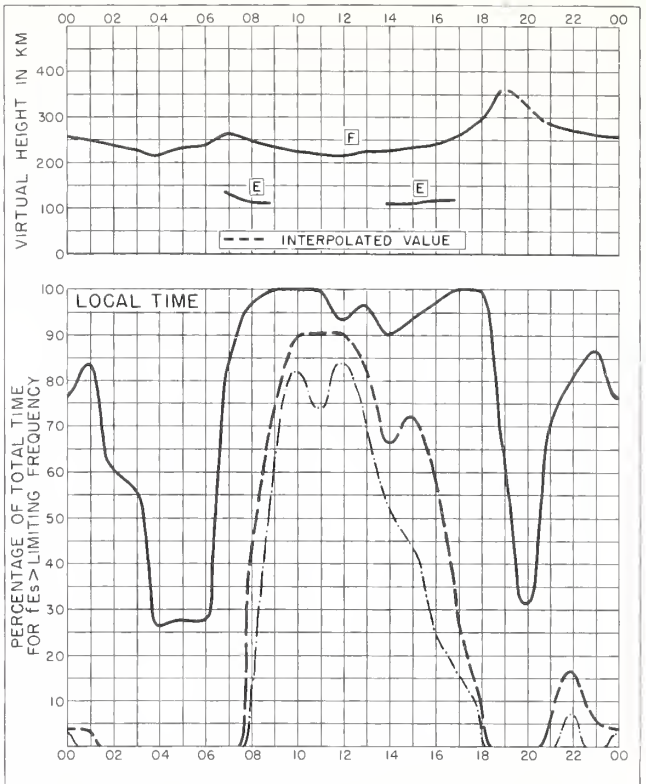


Fig. 69. DJIBOUTI, FRENCH SOMALILAND
11.6° N, 43.2° E JANUARY 1960

NBS 503



JANUARY 1960

Fig. 70. DJIBOUTI, FRENCH SOMALILAND

NBS 490

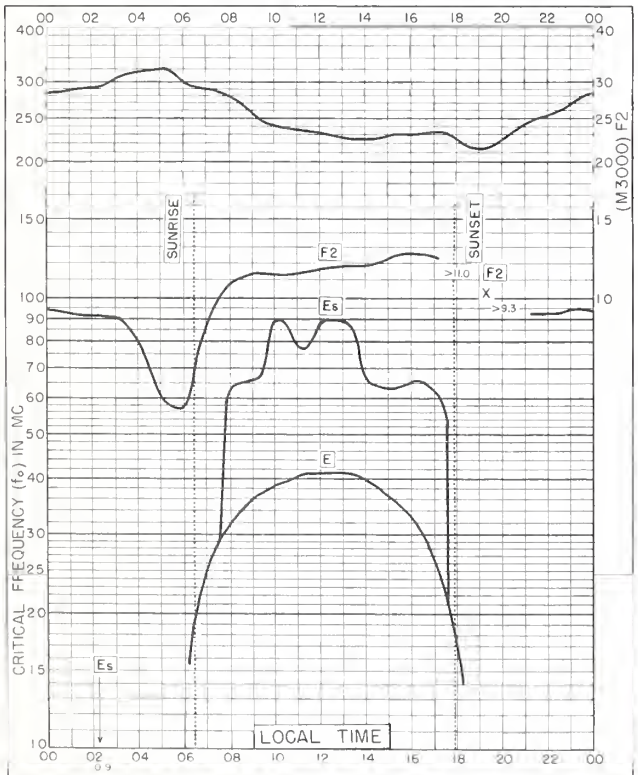


Fig. 71. IBADAN, NIGERIA
7.4°N, 3.9°E JANUARY 1960

NBS 503

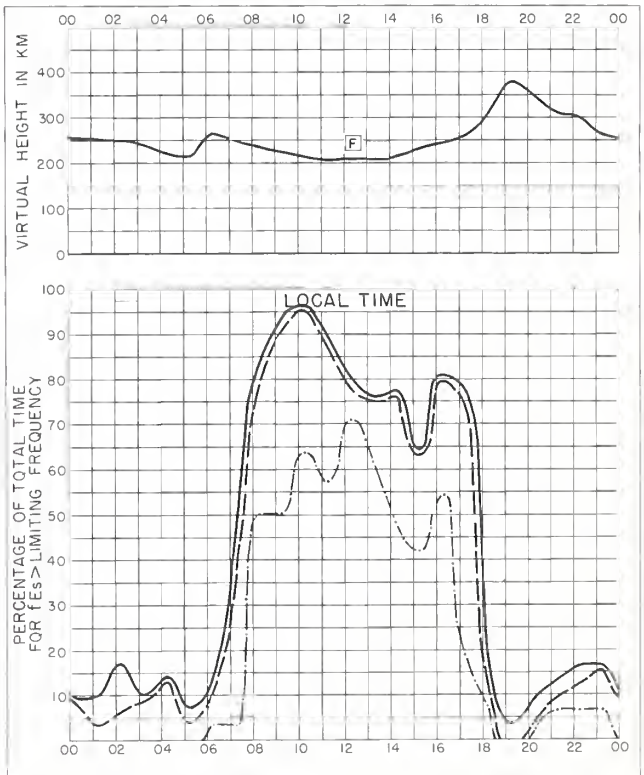


Fig. 72. IBADAN, NIGERIA JANUARY 1960

NBS 490

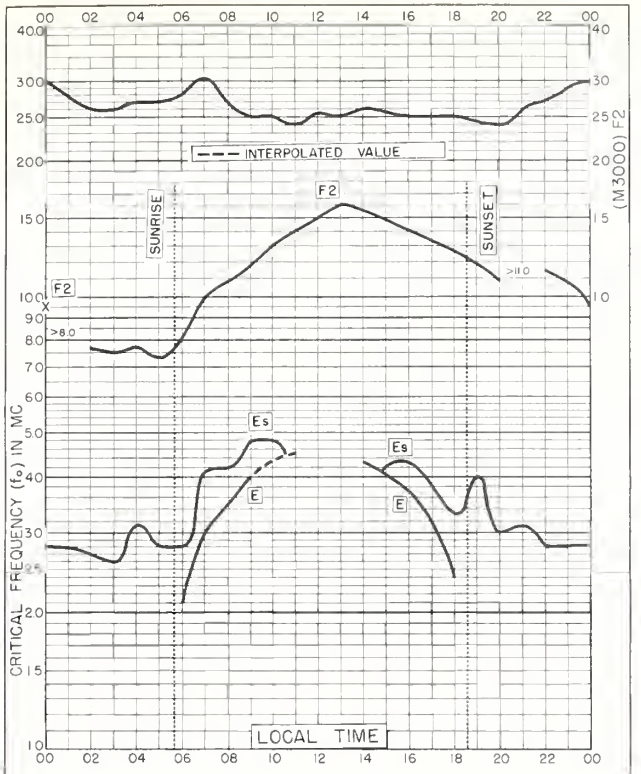


Fig. 73. TAHITI, SOCIETY IS. 17.7°S, 149.3°W JANUARY 1960

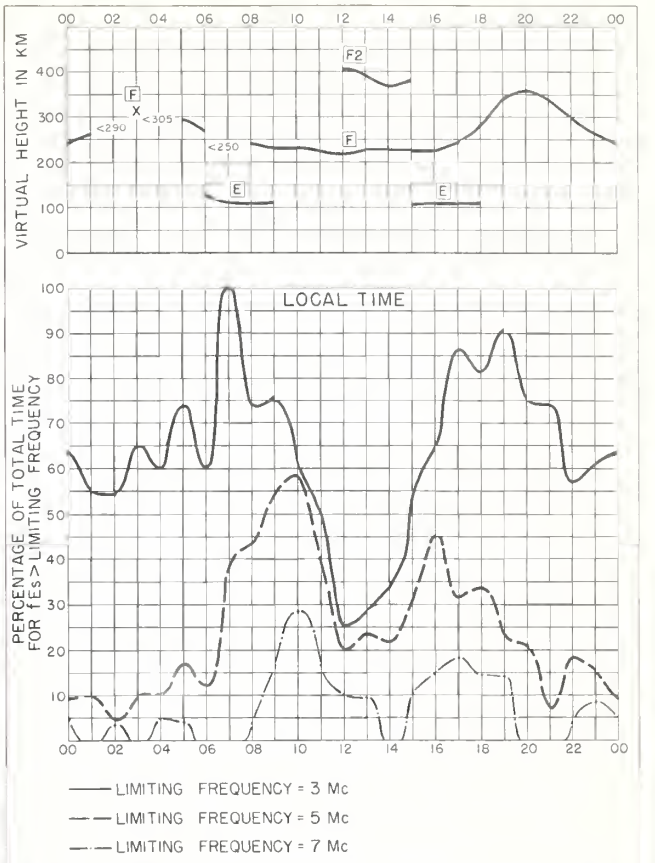


Fig. 74. TAHITI, SOCIETY IS. JANUARY 1960

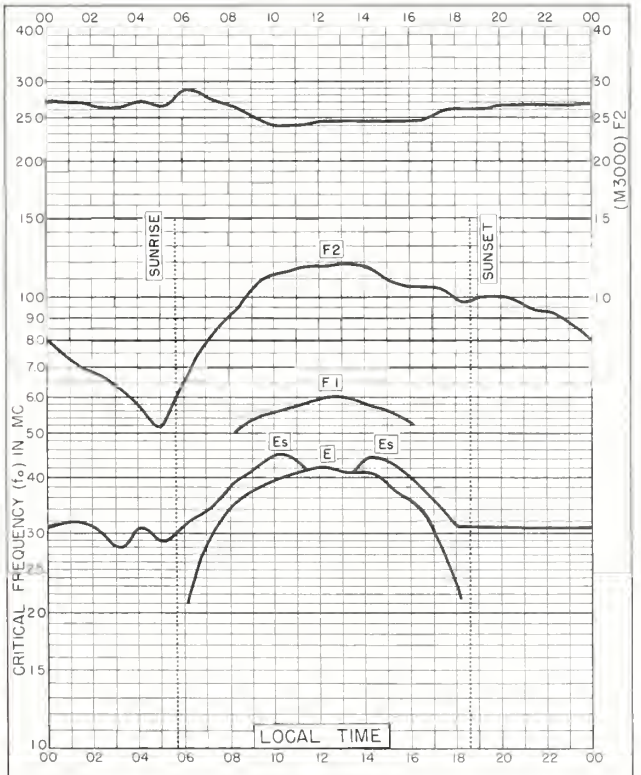


Fig. 75. TANANARIVE, MADAGASCAR 18.8°S, 47.5°E JANUARY 1960

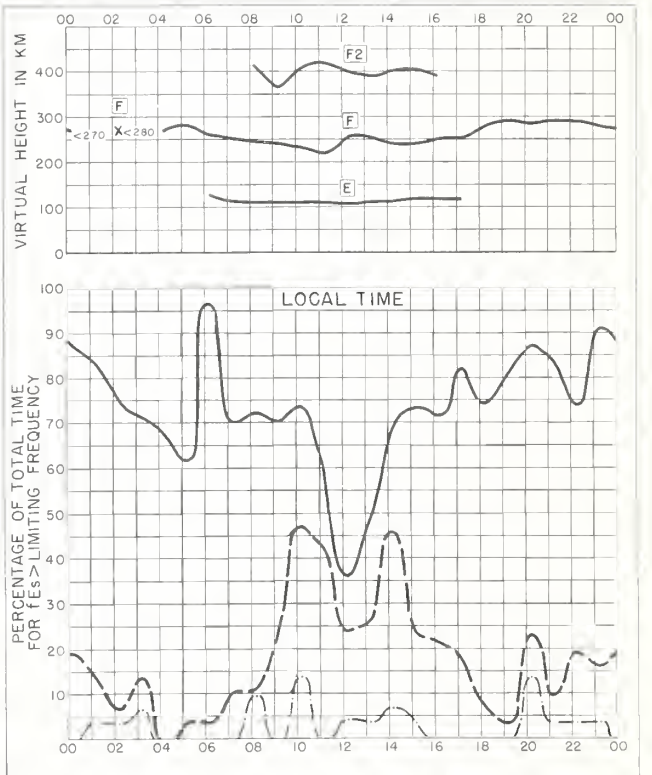


Fig. 76. TANANARIVE, MADAGASCAR JANUARY 1960

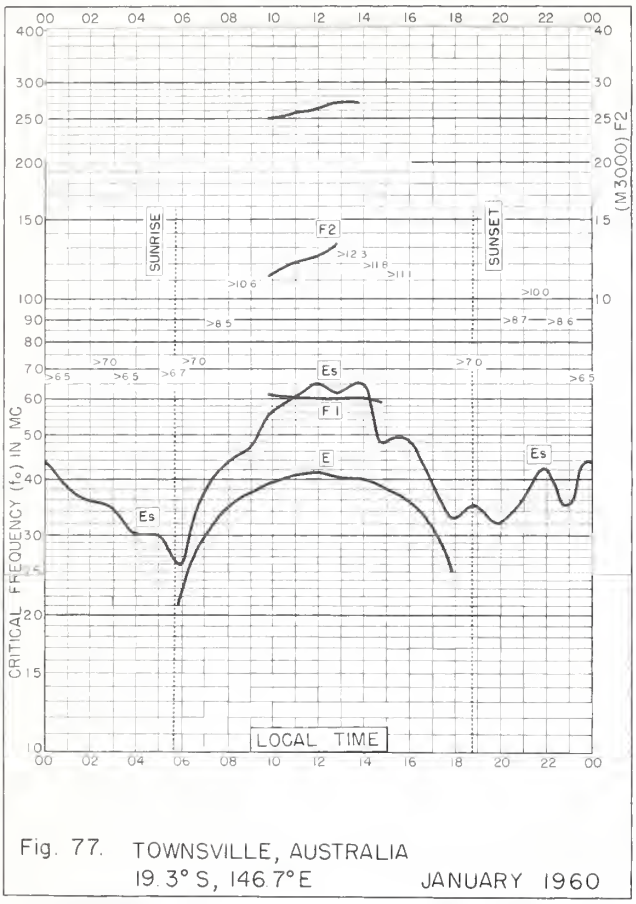


Fig. 77. TOWNSVILLE, AUSTRALIA
19.3° S, 146.7° E JANUARY 1960

NBS 503

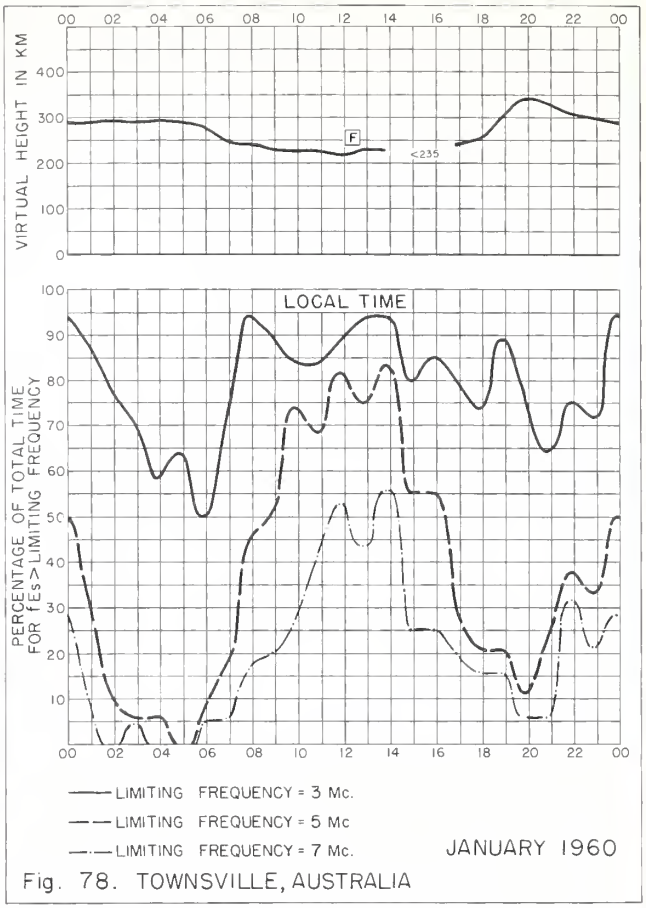


Fig. 78. TOWNSVILLE, AUSTRALIA JANUARY 1960

NBS 490

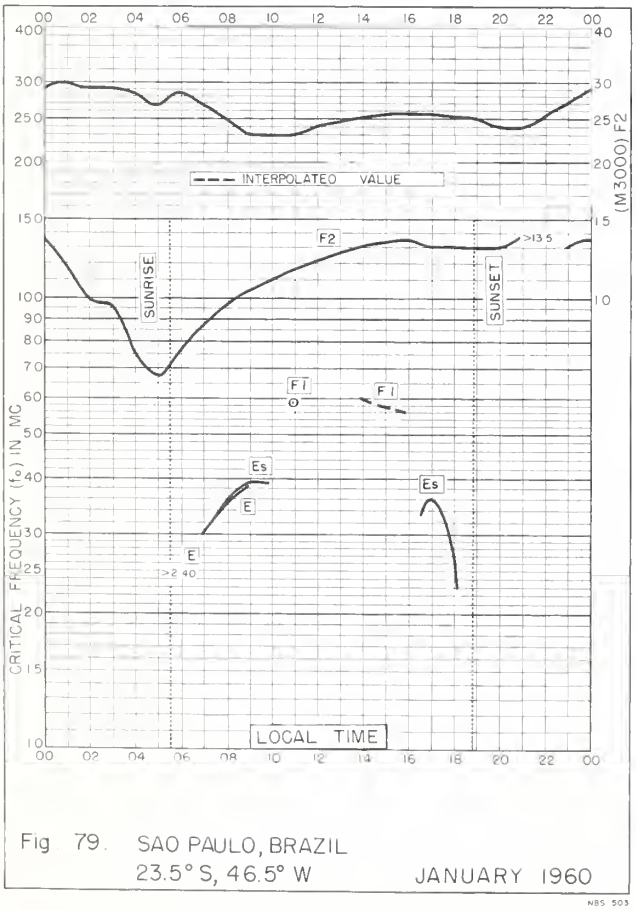


Fig 79. SAO PAULO, BRAZIL
23.5° S, 46.5° W JANUARY 1960

NBS 503

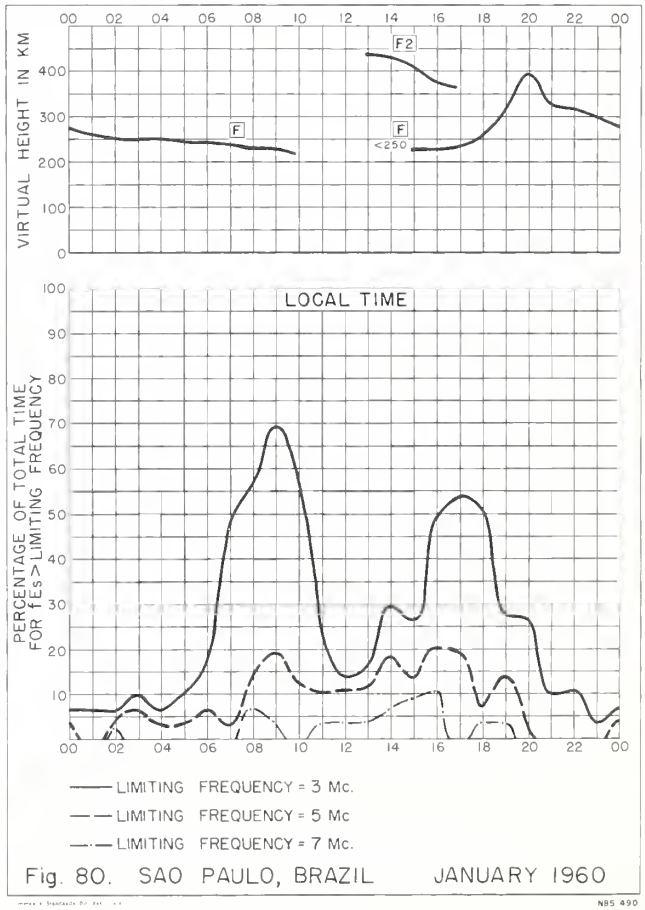


Fig. 80. SAO PAULO, BRAZIL JANUARY 1960

NBS 490

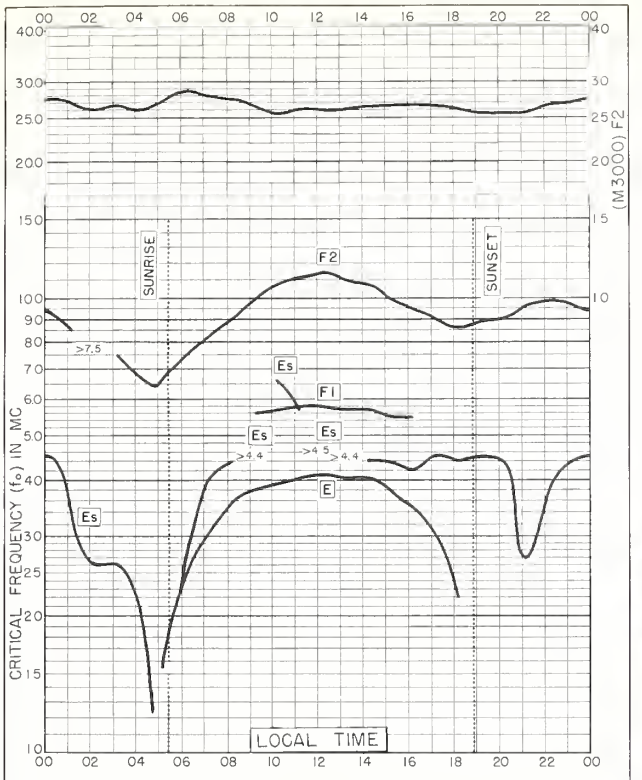


Fig. 81. BRISBANE, AUSTRALIA
27.5° S, 152.9° E JANUARY 1960

NBS 503

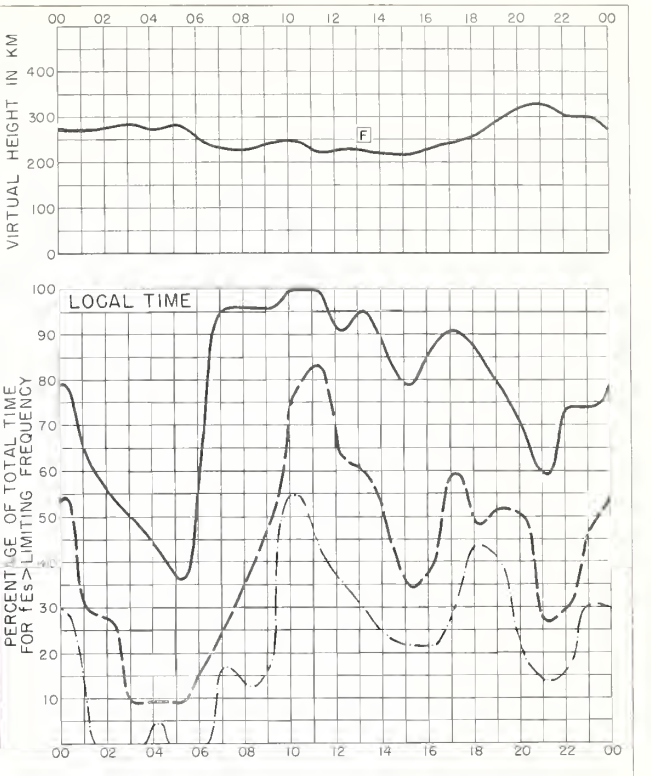


Fig. 82. BRISBANE, AUSTRALIA JANUARY 1960

NBS 490

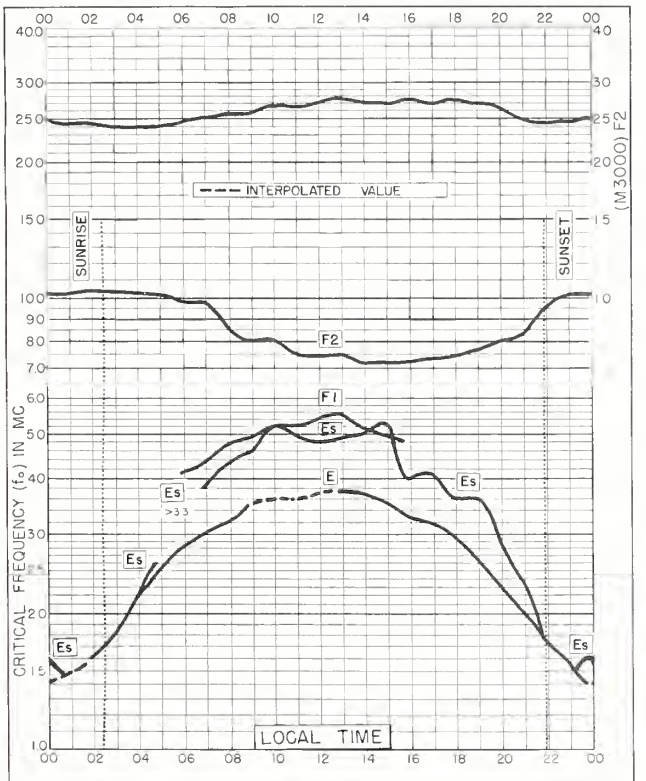


Fig. 83. PORT LOCKROY
64.8° S, 63.5° W JANUARY 1960

NBS 503

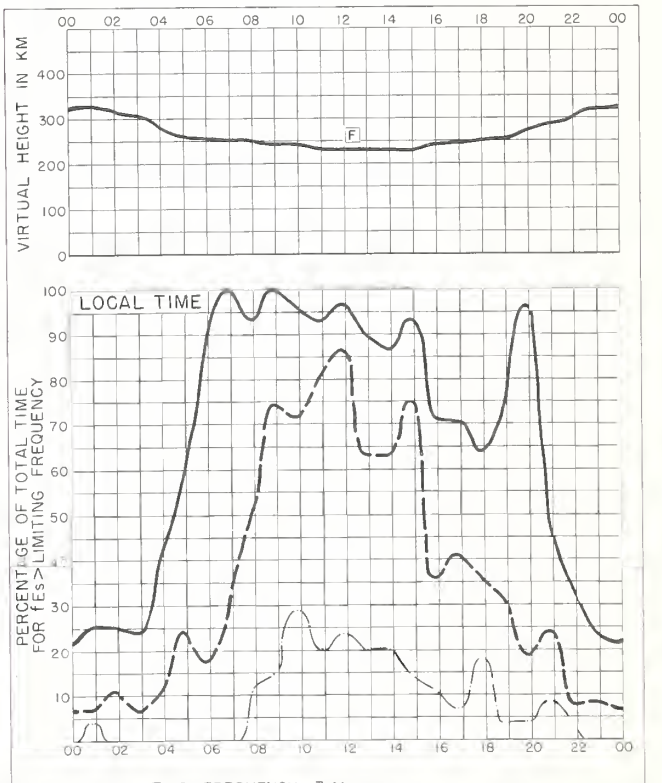


Fig. 84. PORT LOCKROY JANUARY 1960

NBS 490

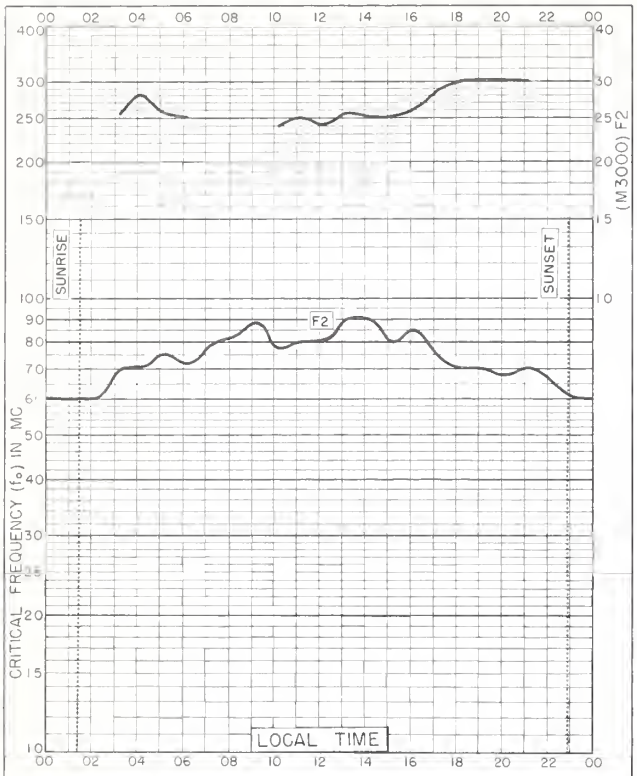


Fig. 85. MAWSON
67.6°S, 62.9°E JANUARY 1960

NBS 503

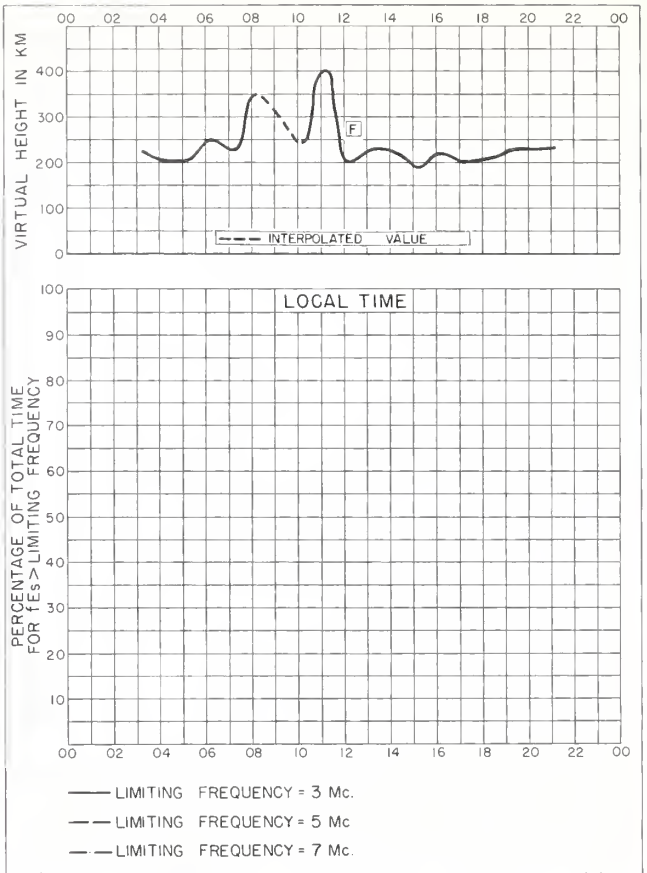


Fig. 86. MAWSON JANUARY 1960

NBS 490

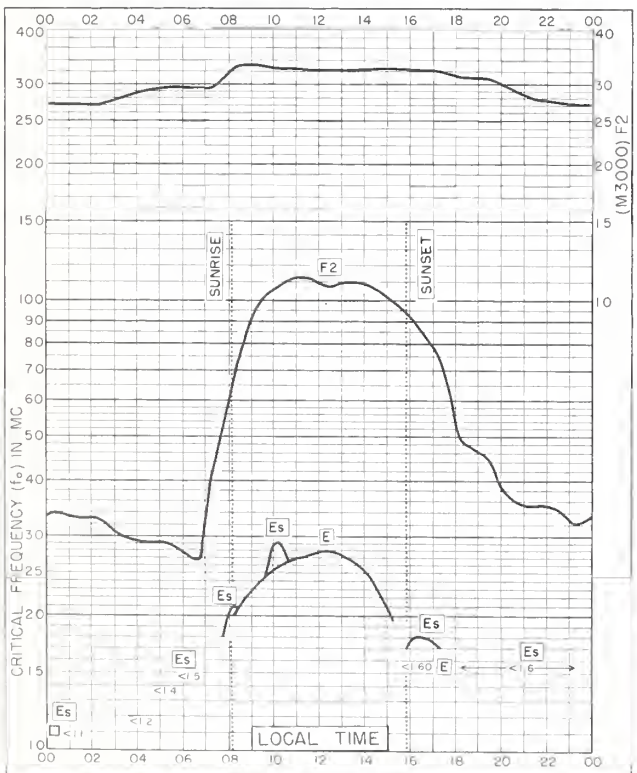


Fig. 87. DOURBES, BELGIUM
50.1°N, 4.6°E DECEMBER 1959

NBS 503

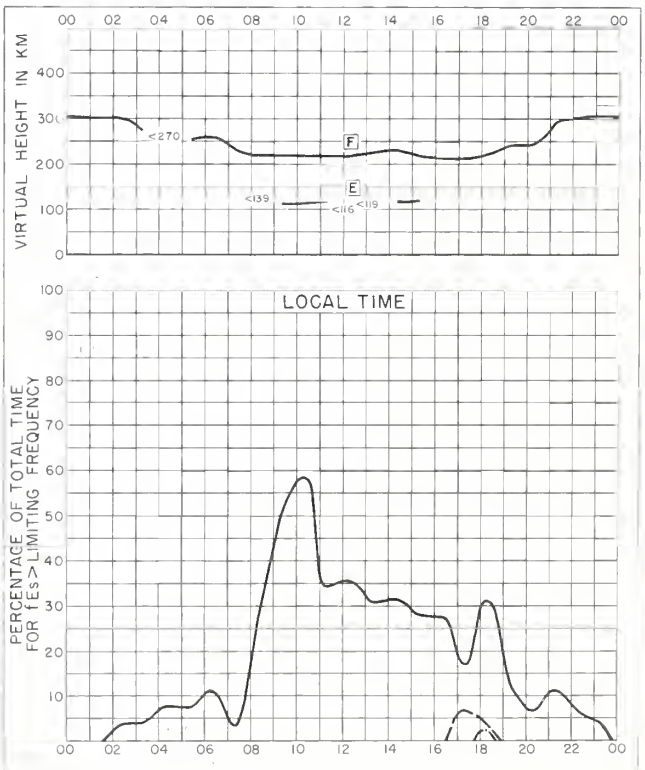


Fig. 88. DOURBES, BELGIUM DECEMBER 1959

NBS 490

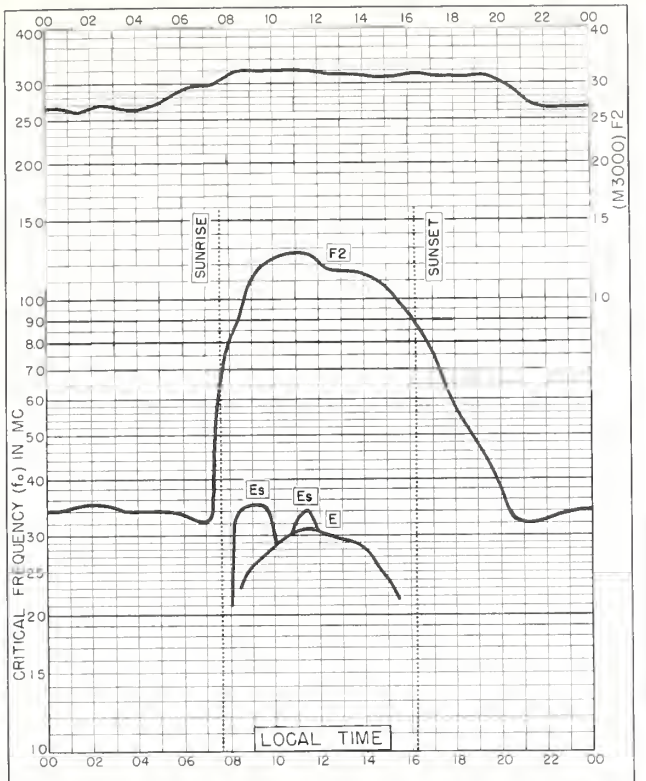


Fig. 89. WAKKANAI, JAPAN
45.4°N, 141.7 E
DECEMBER 1959

NBS 503

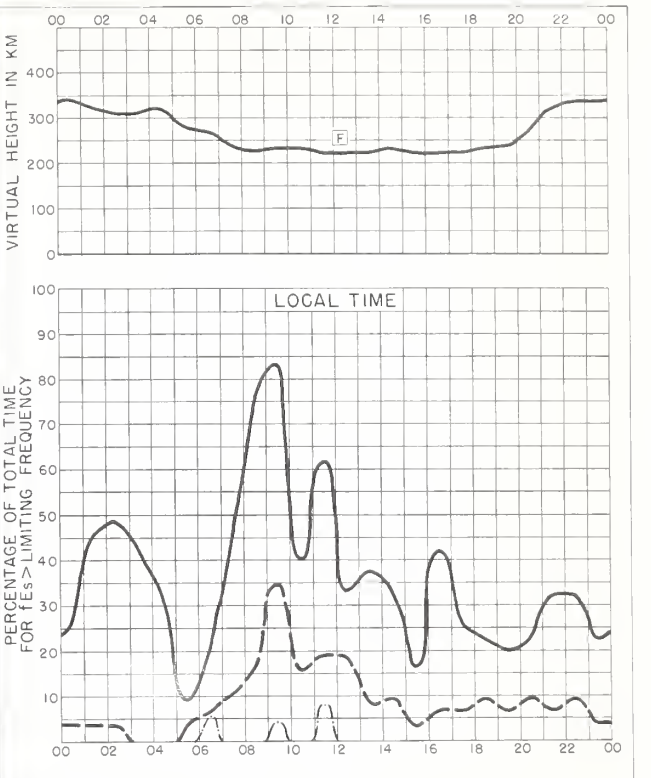


Fig. 90. WAKKANAI, JAPAN DECEMBER 1959

NBS 490

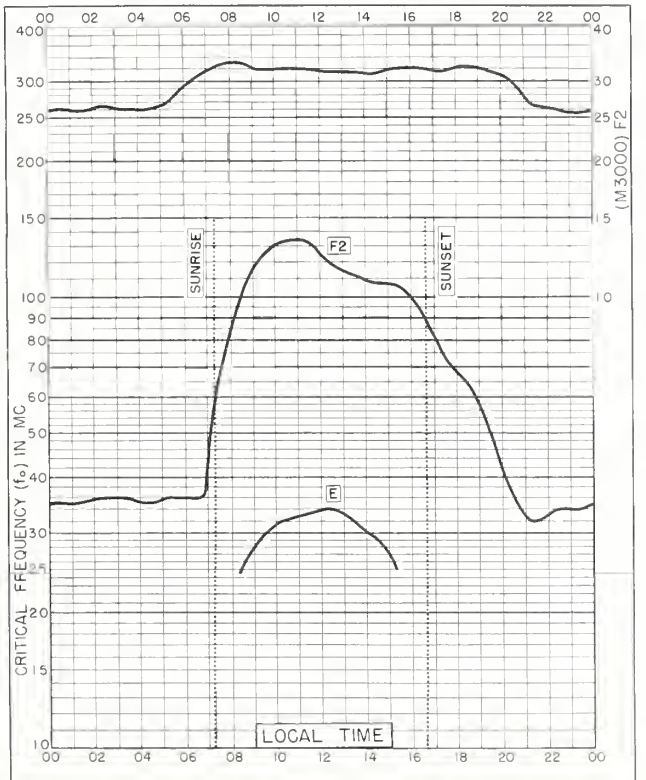


Fig. 91. AKITA, JAPAN
39.7°N, 140.1°E
DECEMBER 1959

NBS 503

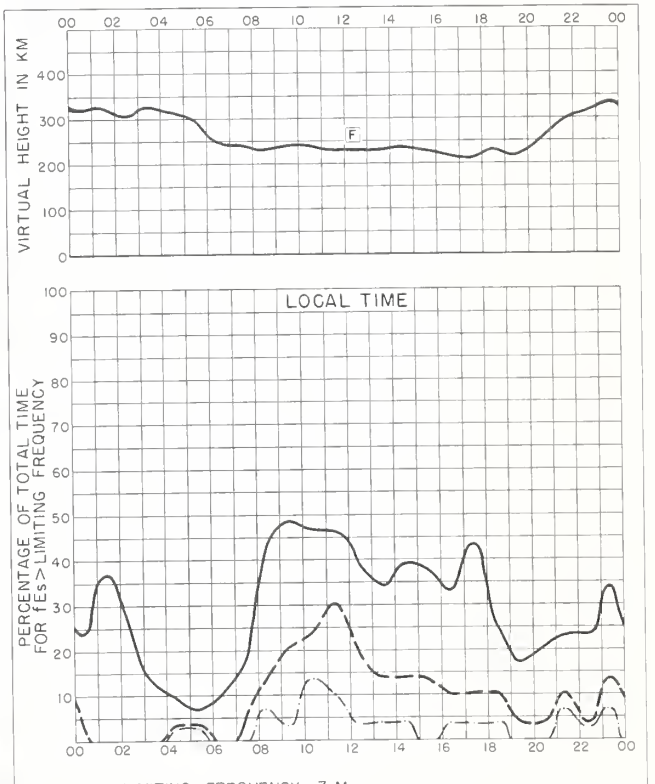


Fig. 92. AKITA, JAPAN DECEMBER 1959

NBS 490

Fig. 93. TOKYO, JAPAN
35.7° N, 139.5° E DECEMBER 1959

NBS 503

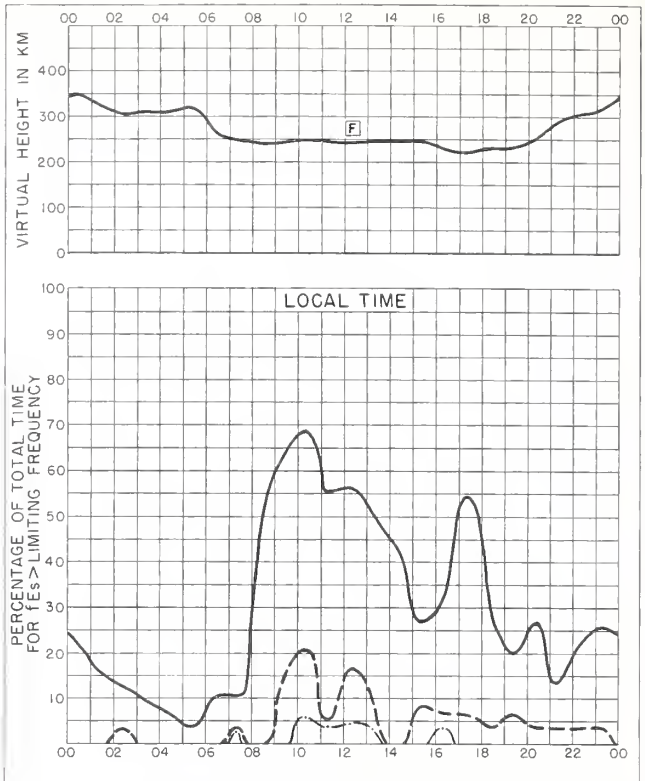


Fig. 94. TOKYO, JAPAN DECEMBER 1959

NBS 490

Fig. 95. YAMAGAWA, JAPAN
31.2° N, 130.6° E DECEMBER 1959

NBS 503

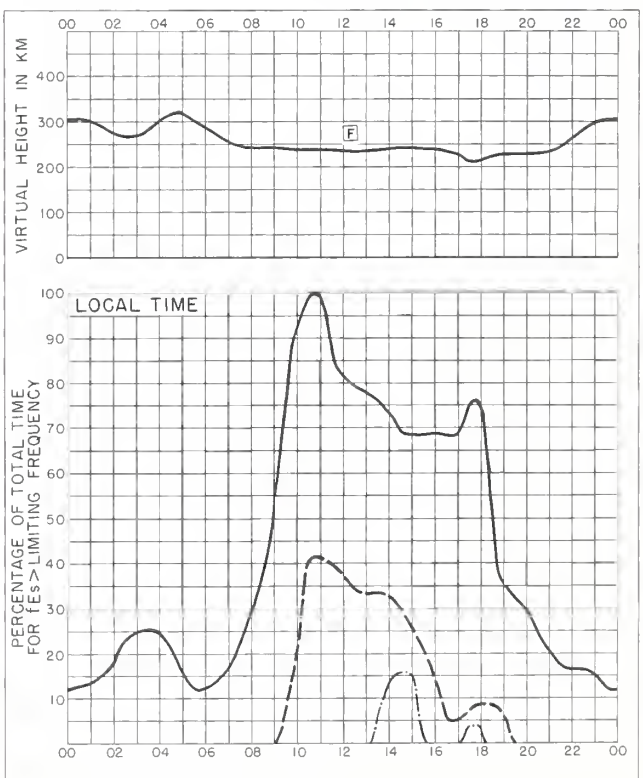


Fig. 96. YAMAGAWA, JAPAN DECEMBER 1959

NBS 490

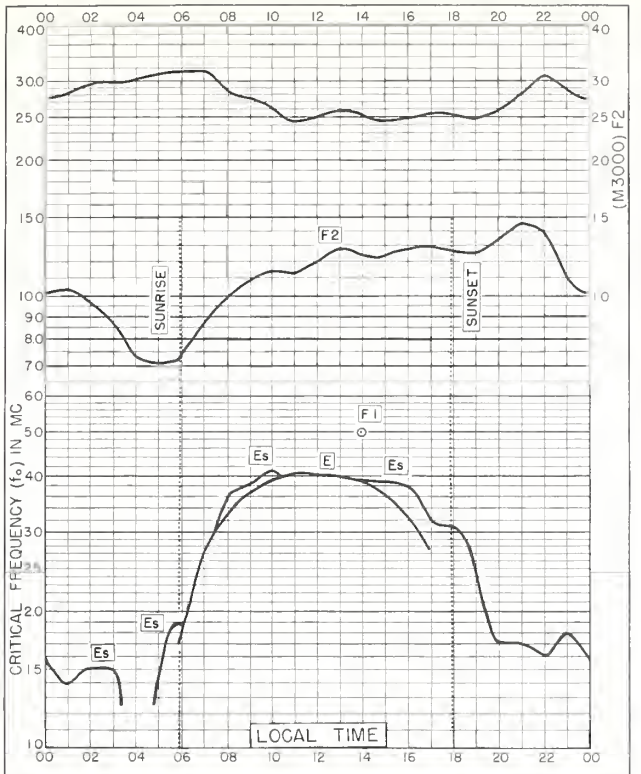


Fig. 97. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E DECEMBER 1959

NBS 503

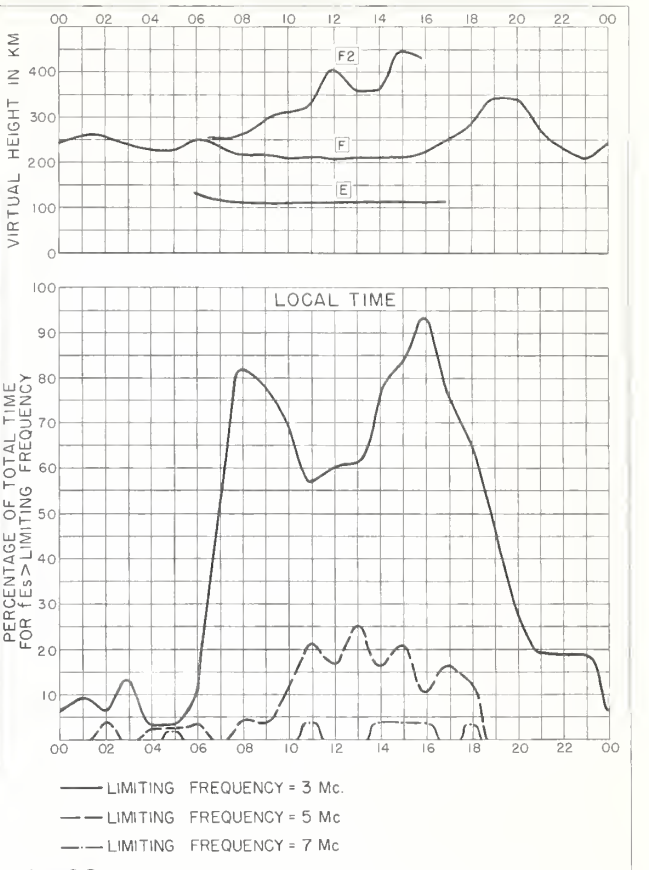
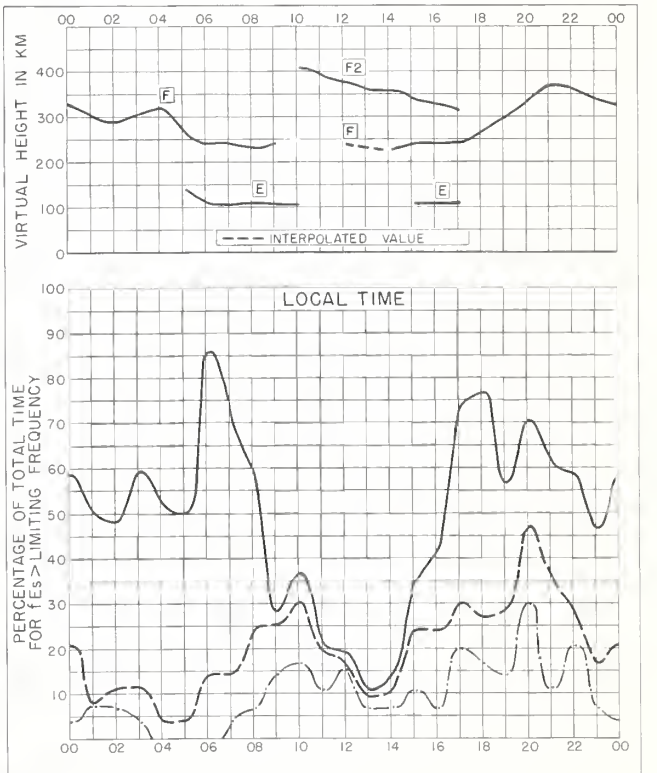


Fig. 98. LWIRO, BELGIAN CONGO DECEMBER 1959

NBS 490

Fig. 99. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W DECEMBER 1959

NBS 503



DECEMBER 1959

Fig. 100. BUENOS AIRES, ARGENTINA

NBS 490

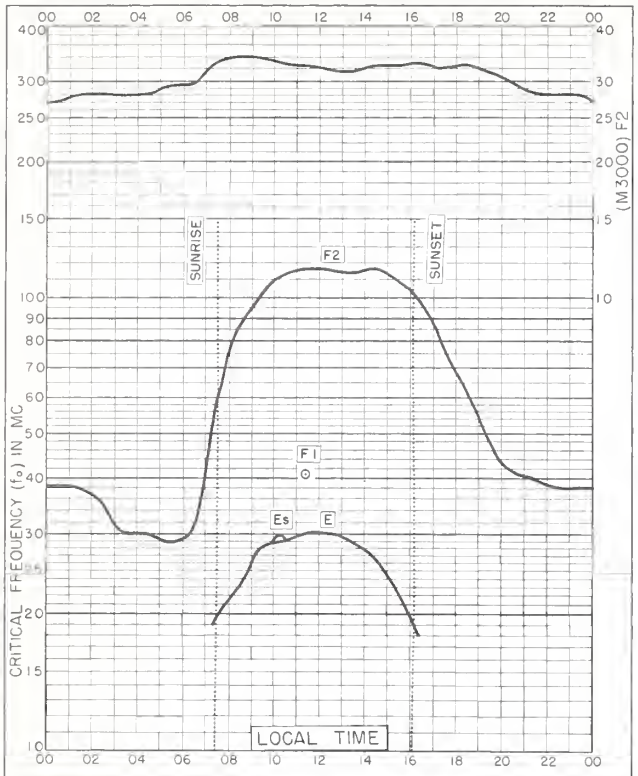


Fig. 101. DE BILT, HOLLAND
52.1° N, 5.2° E NOVEMBER 1959

NBS 503

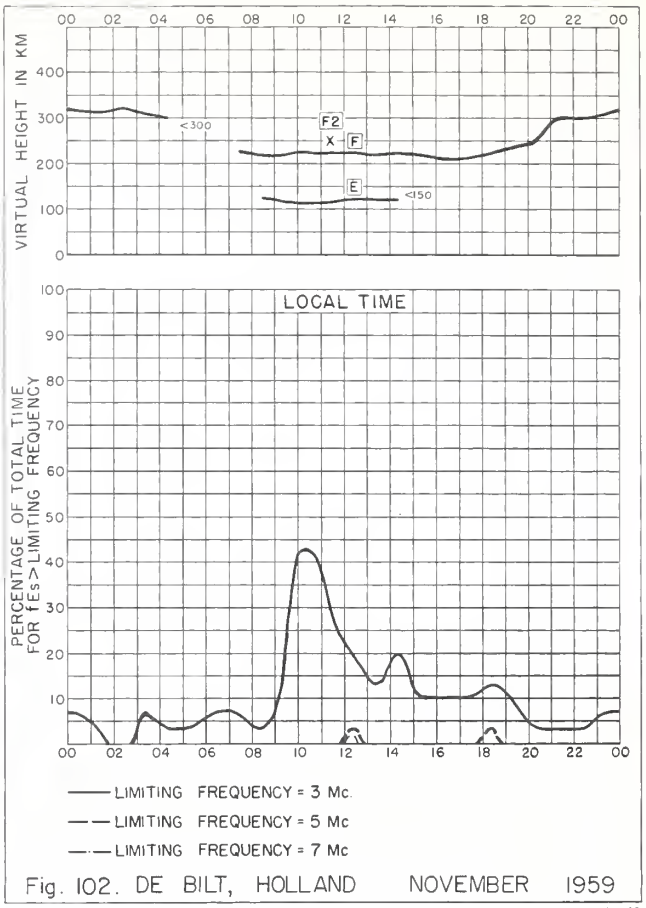


Fig. 102. DE BILT, HOLLAND NOVEMBER 1959

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Fig. 103. BUDAPEST, HUNGARY
47.4° N, 19.2° E NOVEMBER 1959

NBS 503

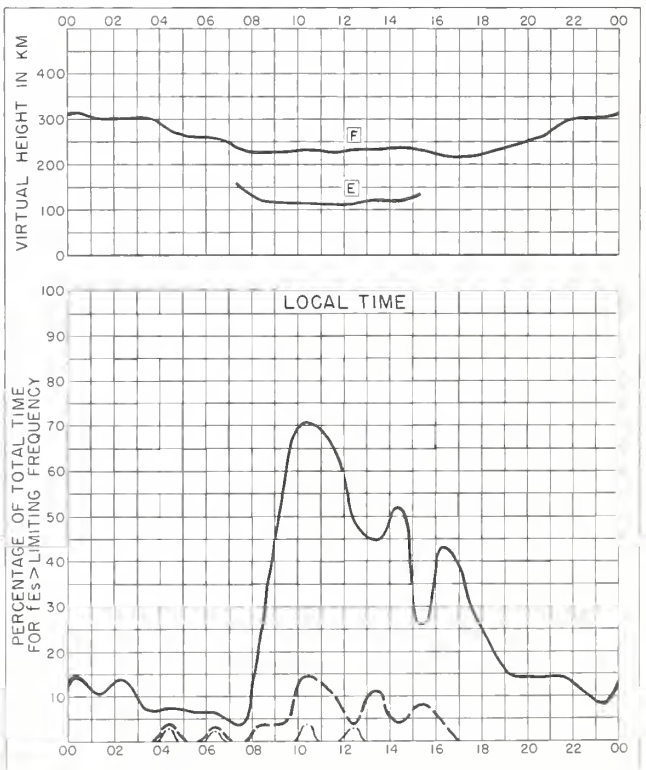


Fig. 104. BUDAPEST, HUNGARY NOVEMBER 1959

NBS 490

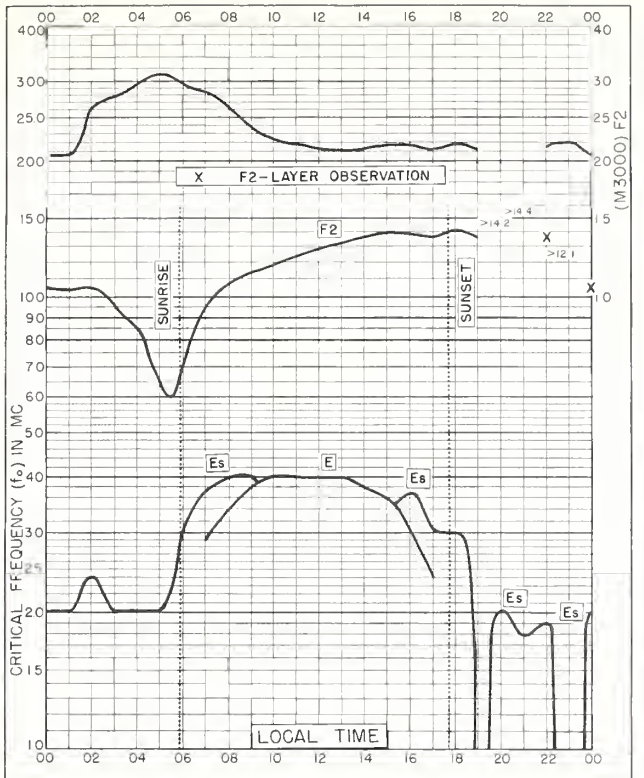


Fig. 105. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E NOVEMBER 1959

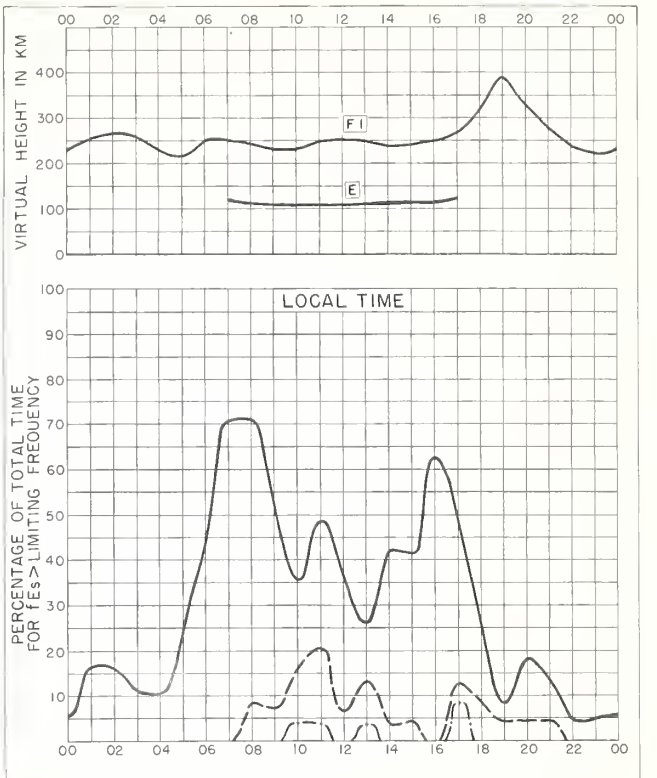


Fig. 106. BUNIA, BELGIAN CONGO NOVEMBER 1959

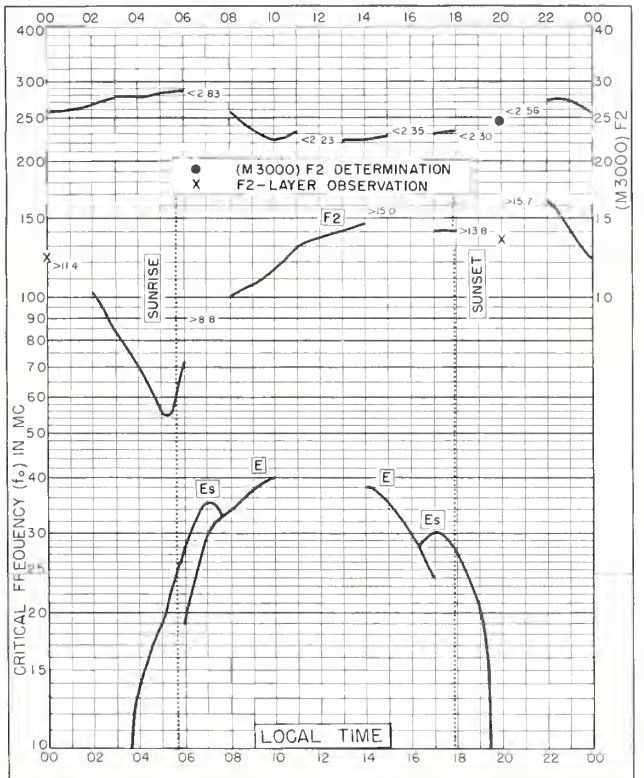
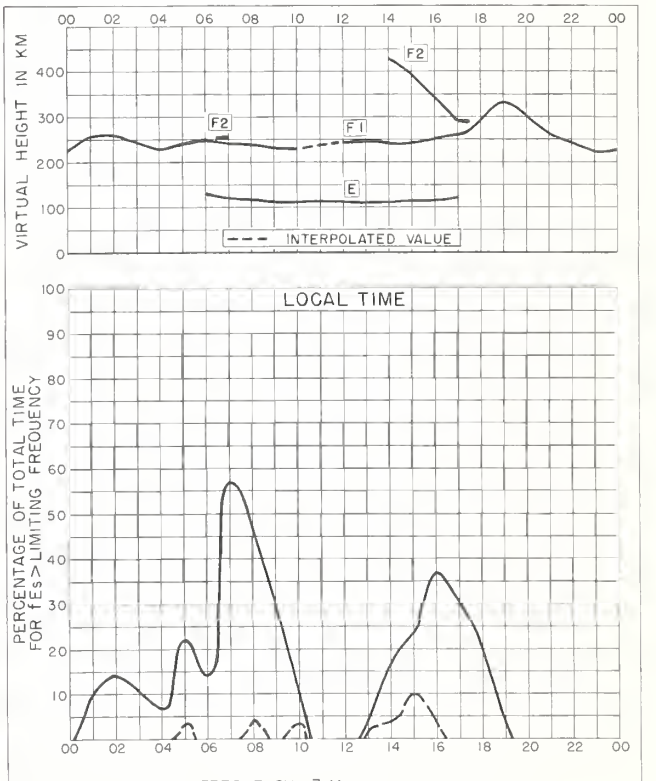


Fig. 107. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E NOVEMBER 1959



NOVEMBER 1959

Fig. 108. LEOPOLDVILLE, BELGIAN CONGO

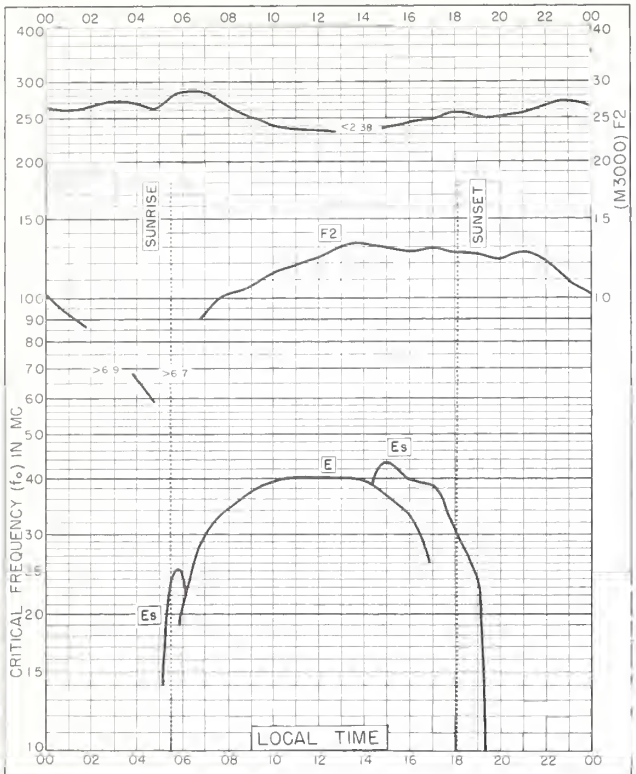
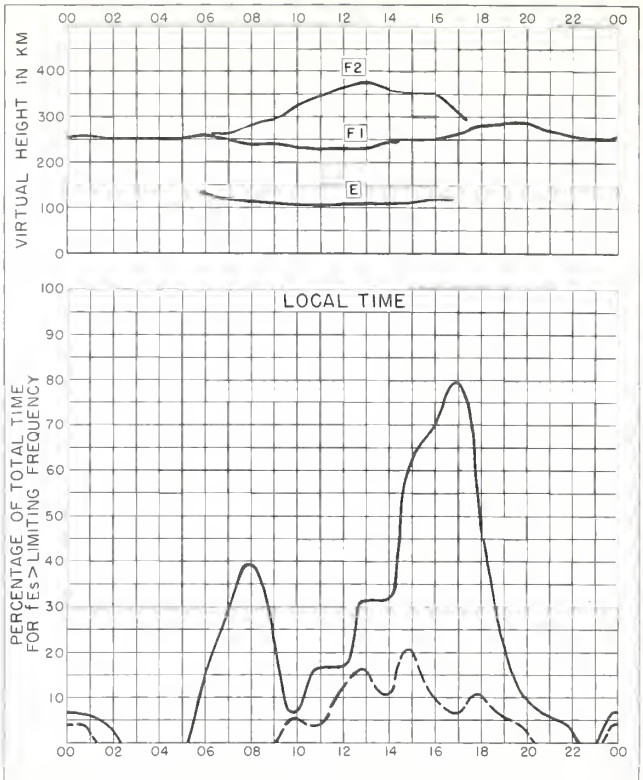


Fig. 109. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E NOVEMBER 1959

NBS 503



NOVEMBER 1959

Fig. 110. ELISABETHVILLE, BELGIAN CONGO

NBS 490

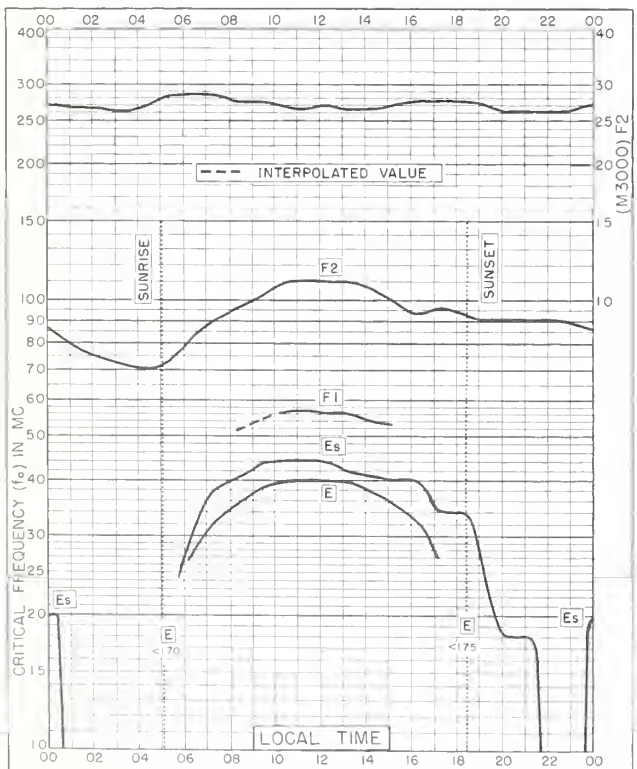


Fig. 111. BRISBANE, AUSTRALIA
27.5°S, 152.9°E NOVEMBER 1959

NBS 503

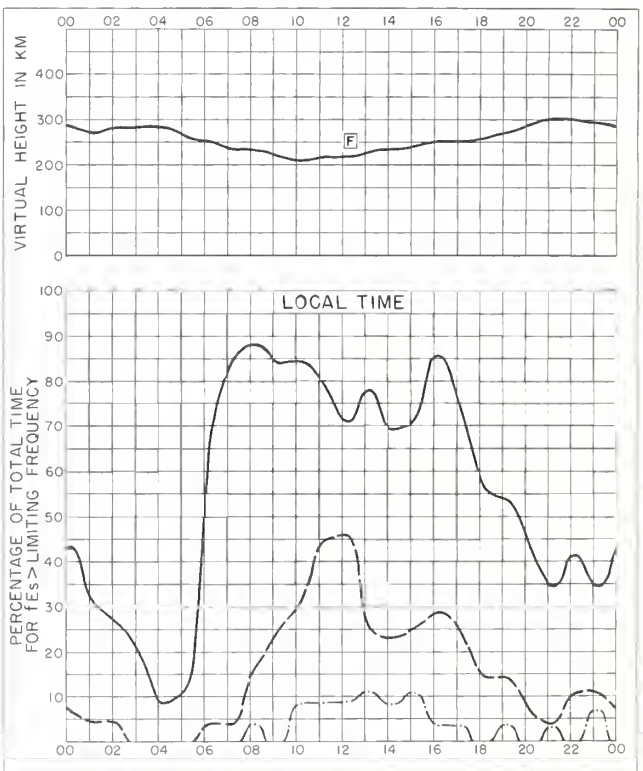


Fig. 112. BRISBANE, AUSTRALIA NOVEMBER 1959

NBS 490

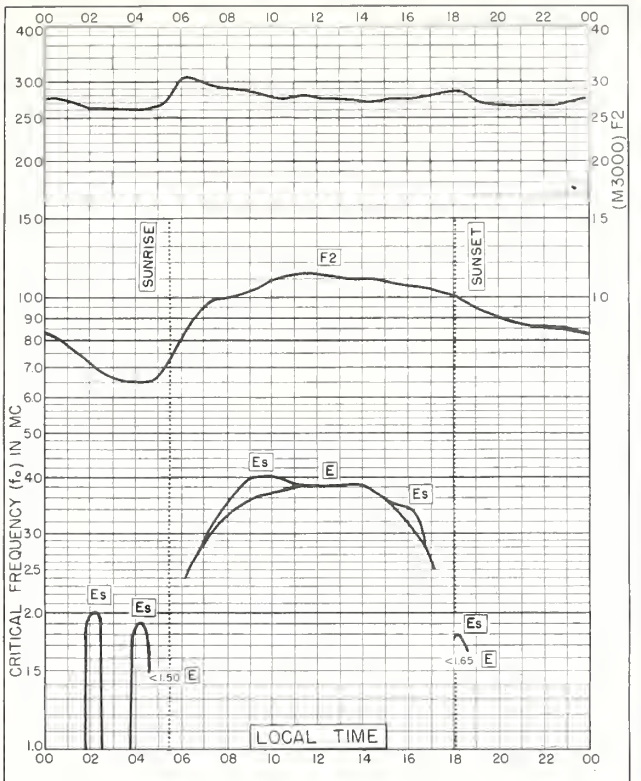


Fig. 113. BRISBANE, AUSTRALIA
27.5°S, 152.9°E OCTOBER 1959

NBS 503

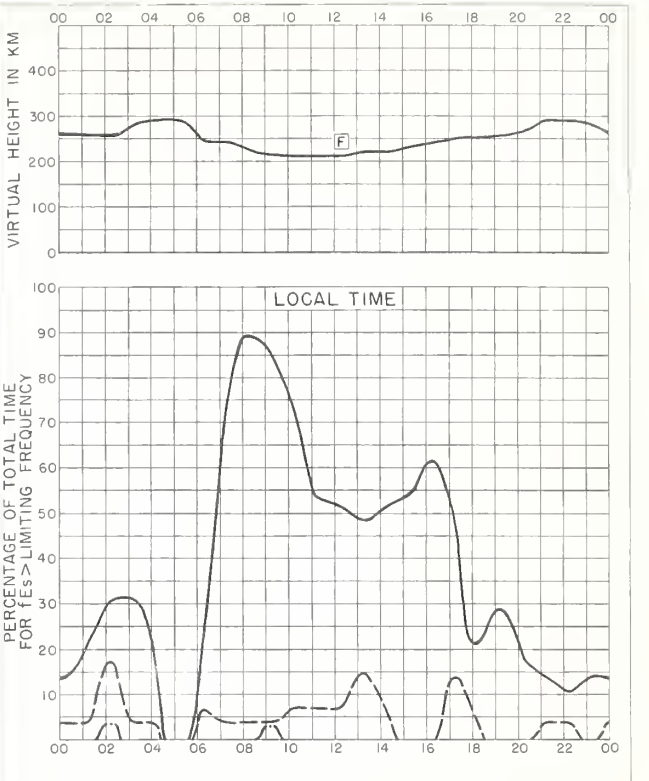


Fig. 114. BRISBANE, AUSTRALIA OCTOBER 1959

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Fig. 115. BRISBANE, AUSTRALIA
27.5° S, 152.9° E JULY 1959

NBS 503

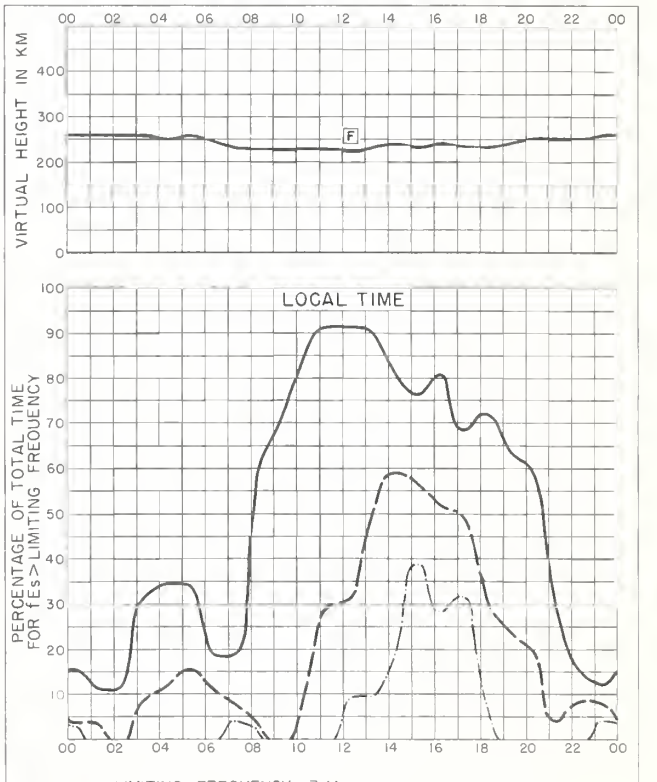

Fig. 116. BRISBANE, AUSTRALIA JULY 1959

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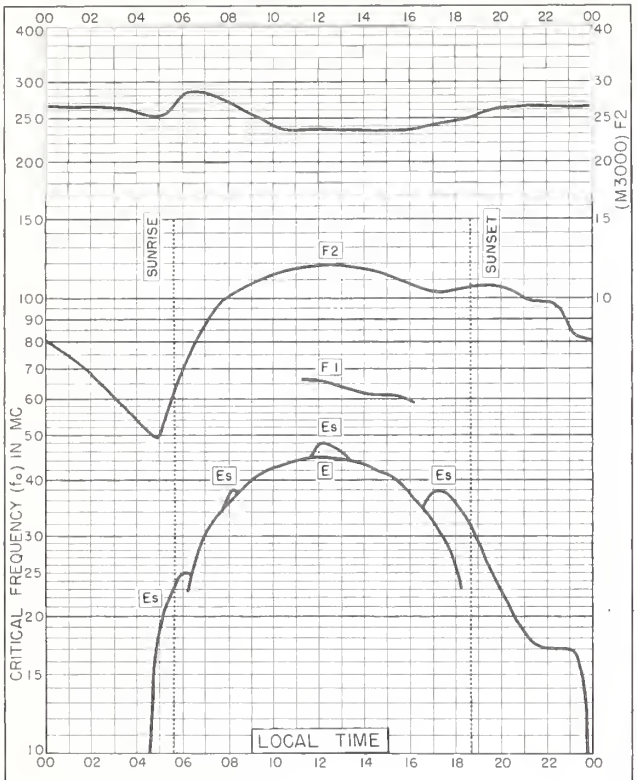

Fig. 117. TSUMEB, SOUTH W. AFRICA
19.2° S, 17.7° E JANUARY 1959

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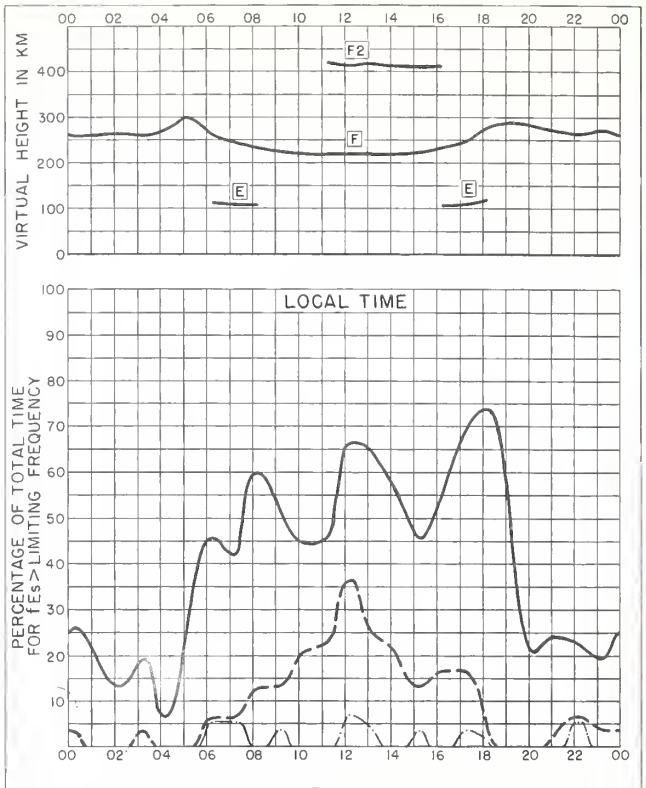

JANUARY 1959

Fig. 118. TSUMEB, SOUTH W AFRICA

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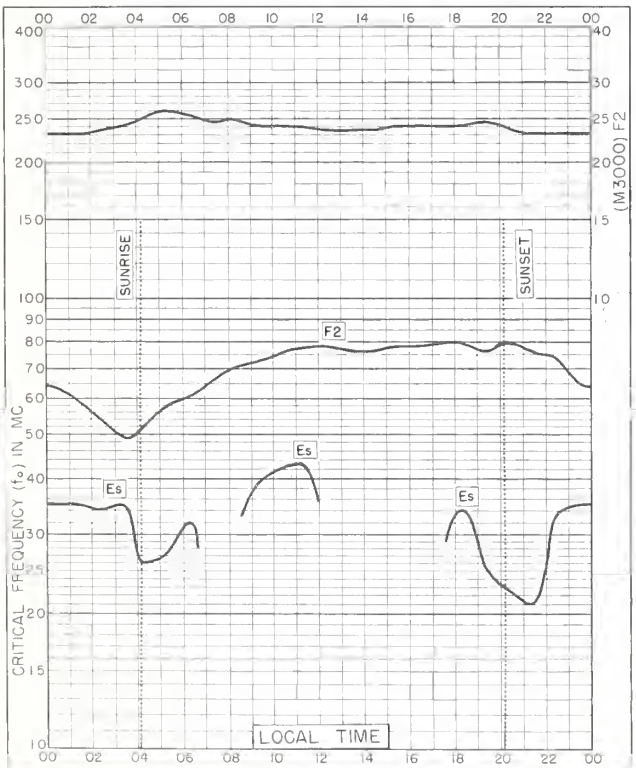

Fig. 119. CAMPBELL I.
52.5°S, 169.2°E JANUARY 1959

NBS 503

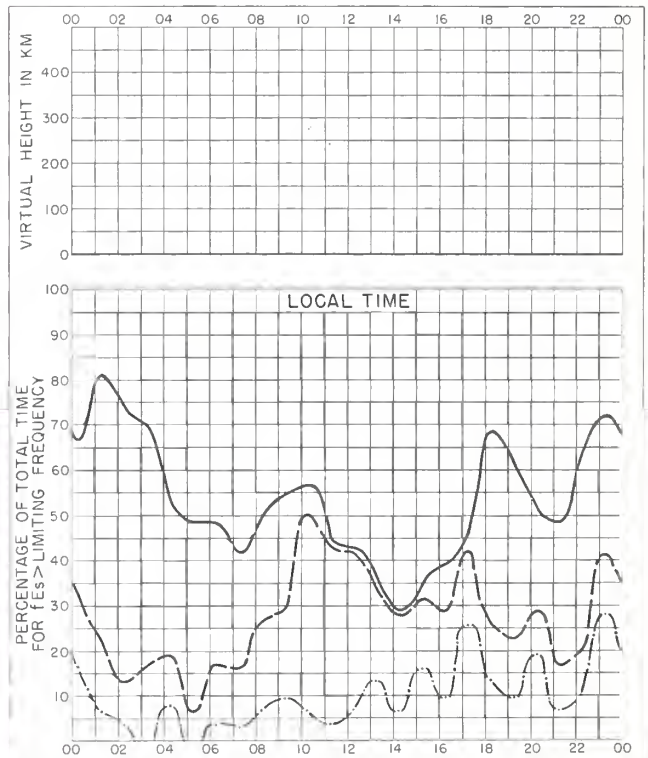

Fig. 120. CAMPBELL I. JANUARY 1959

NBS 490

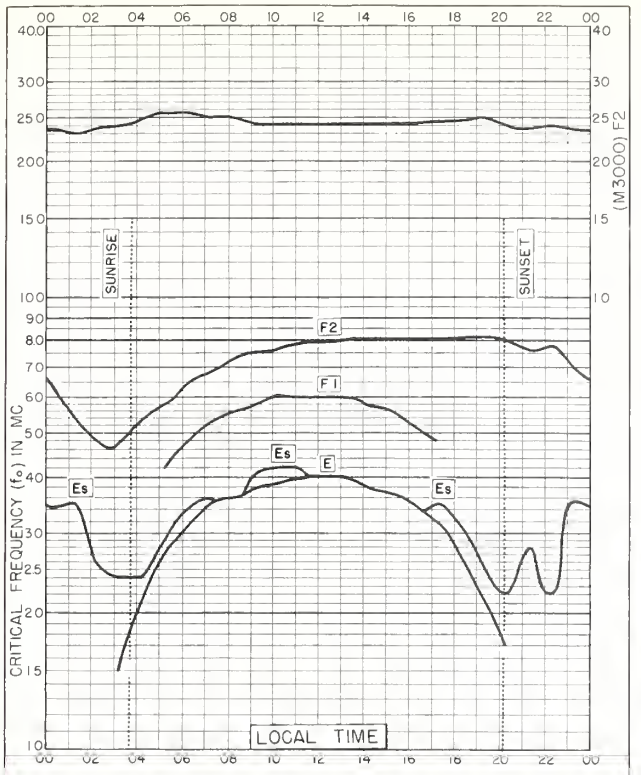

Fig. 121. CAMPBELL I.
52.5°S, 169.2°E DECEMBER 1958

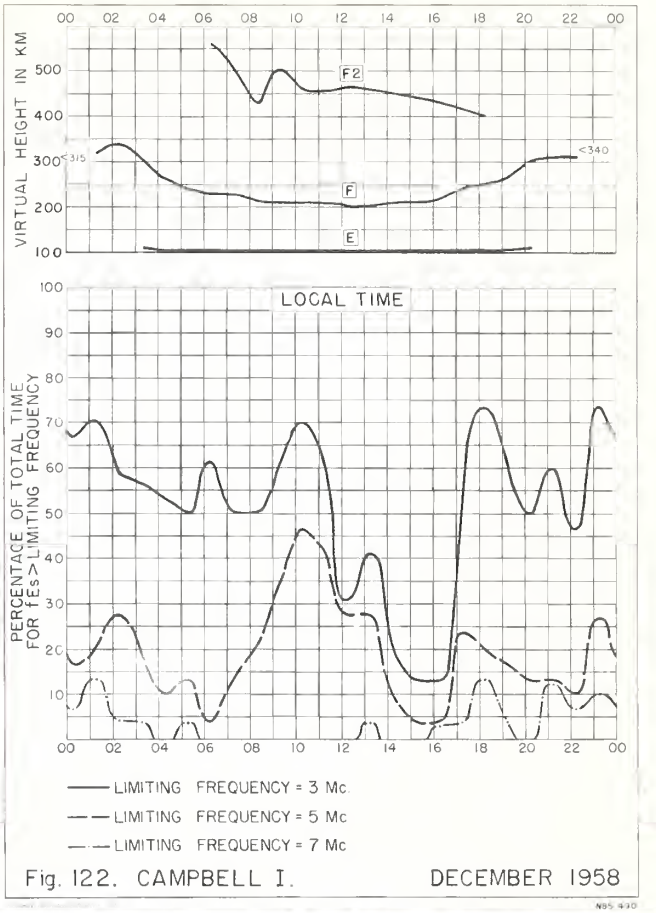

Fig. 122. CAMPBELL I. DECEMBER 1958

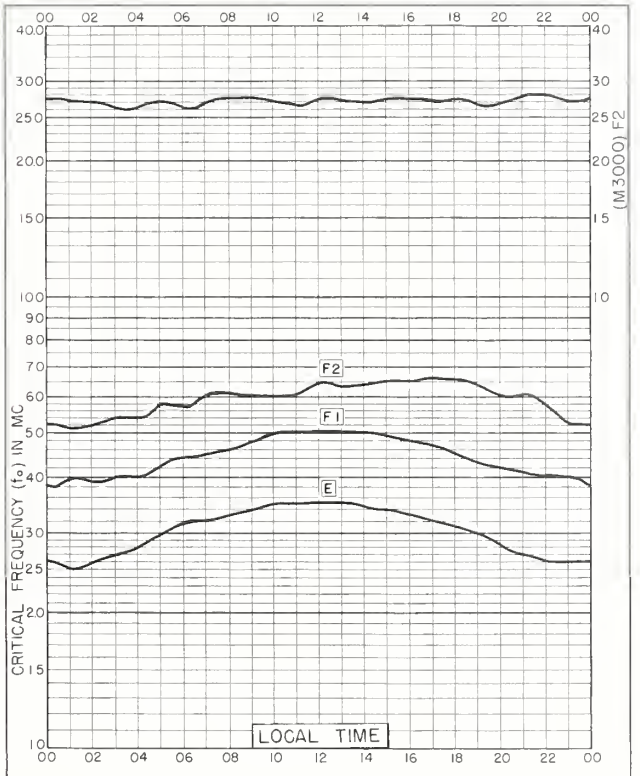

Fig. 123. SCOTT BASE
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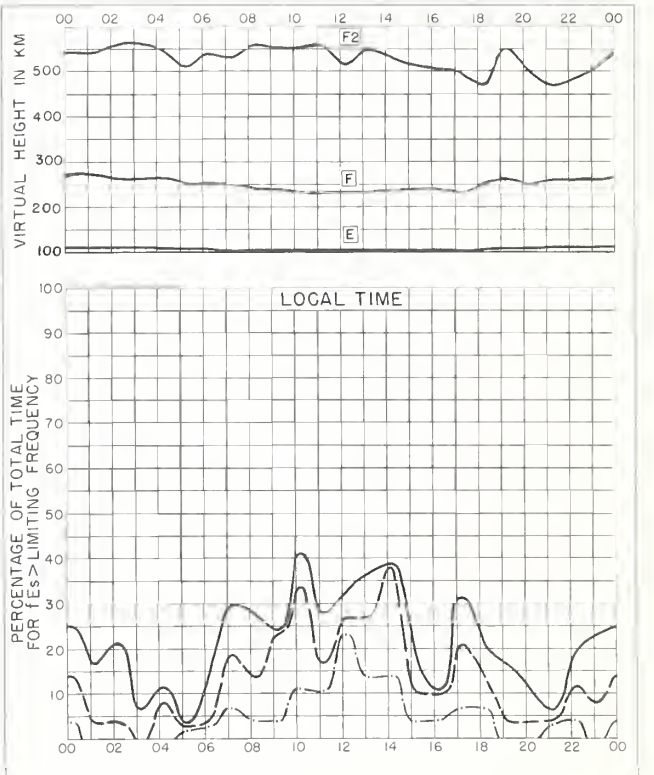

Fig. 124. SCOTT BASE DECEMBER 1958

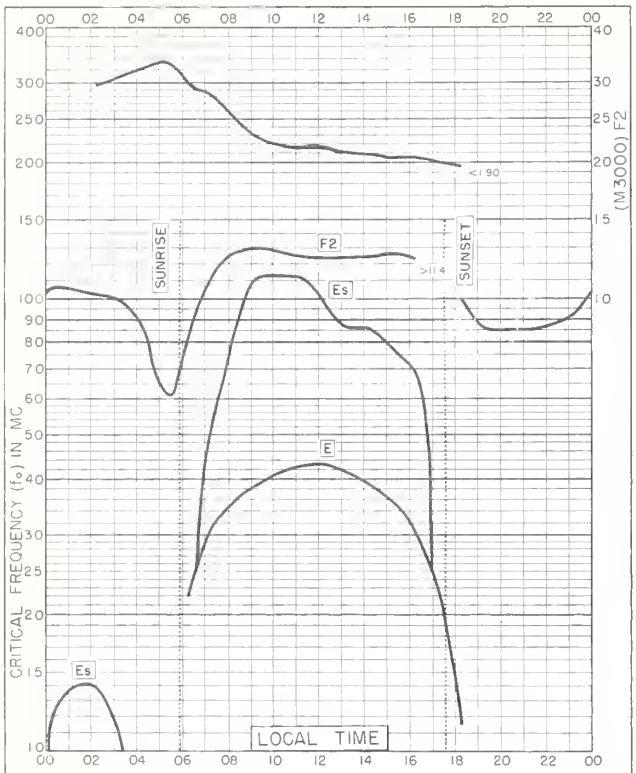

Fig. 125. IBADAN, NIGERIA
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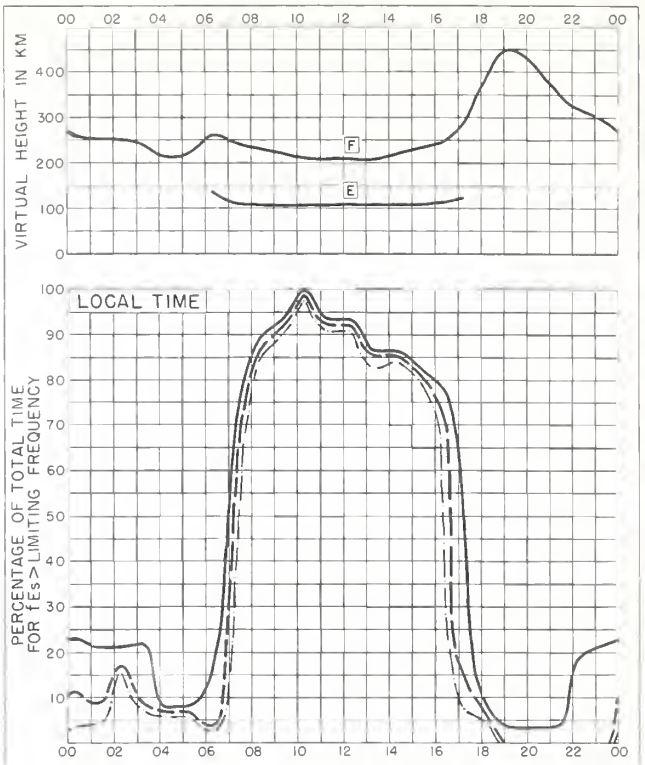

Fig. 126. IBADAN, NIGERIA NOVEMBER 1958

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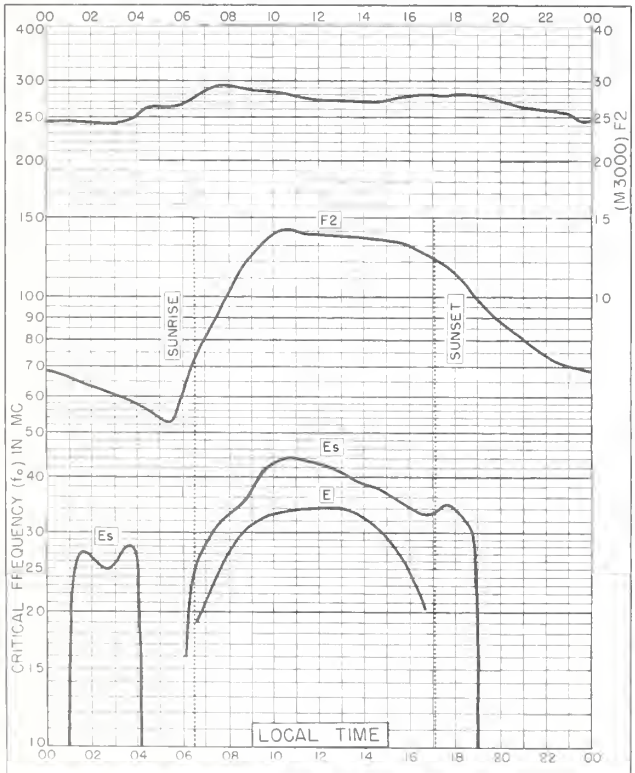

Fig 127. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E OCTOBER 1958

NBS 503

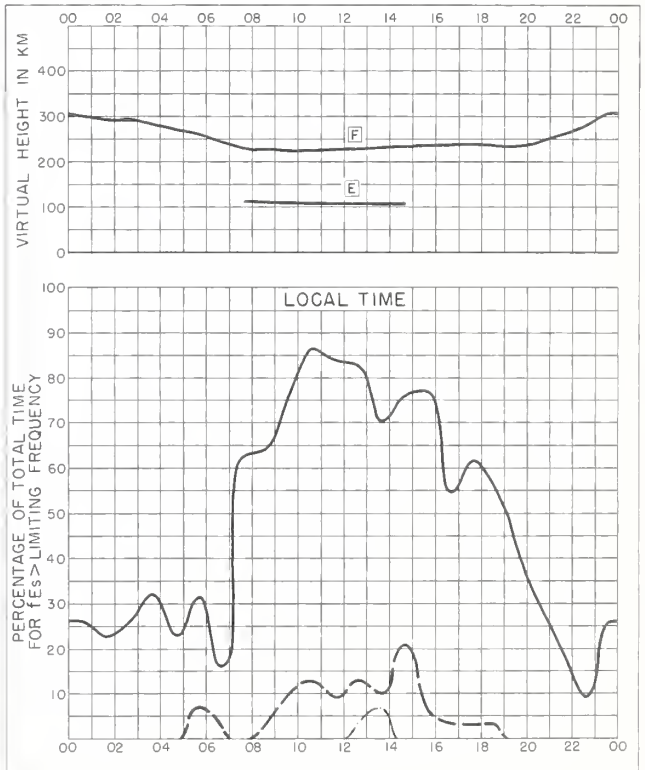

Fig. 128. LINDAU/HARZ, GERMANY OCTOBER 1958

NBS 490

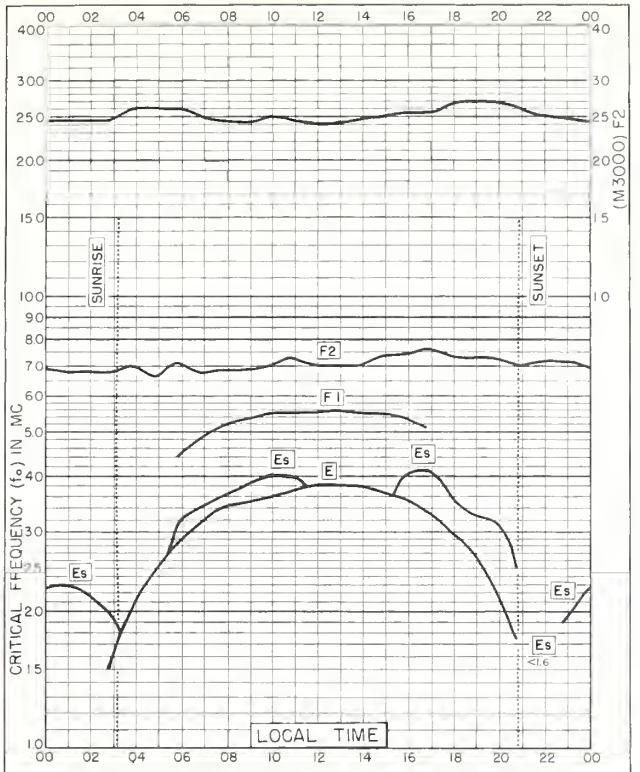

Fig. 129. INVERNESS, SCOTLAND
57.4°N, 4.2°W JUNE 1958

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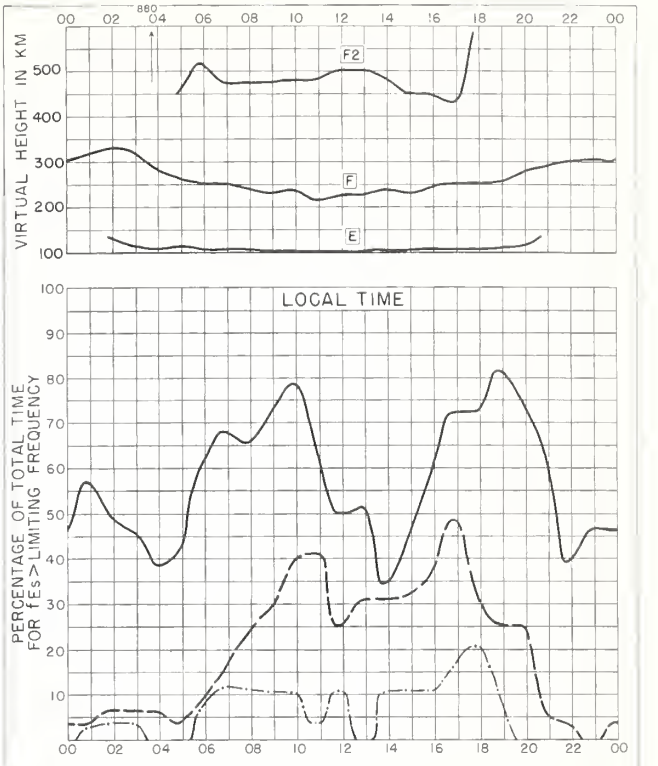

Fig. 130. INVERNESS, SCOTLAND JUNE 1958

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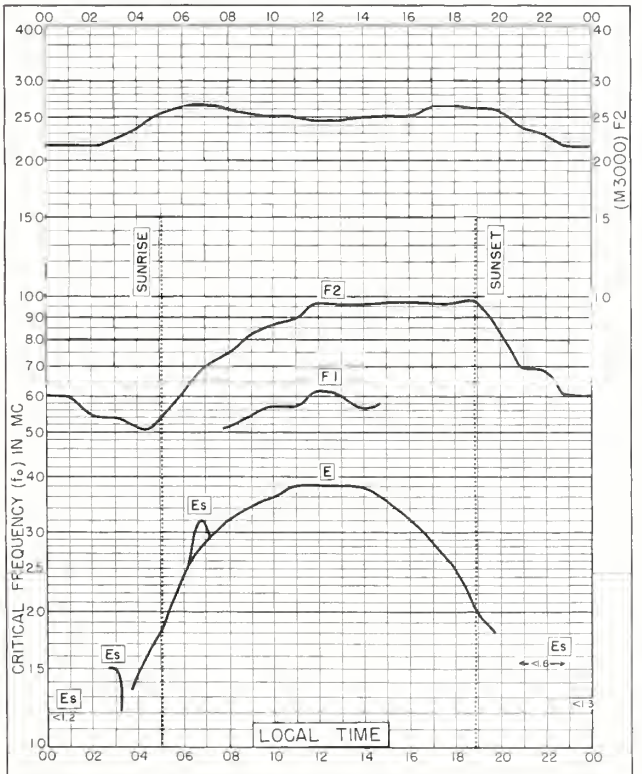

Fig. 131. INVERNESS, SCOTLAND
57.4°N, 4.2°W APRIL 1958

NBS 503

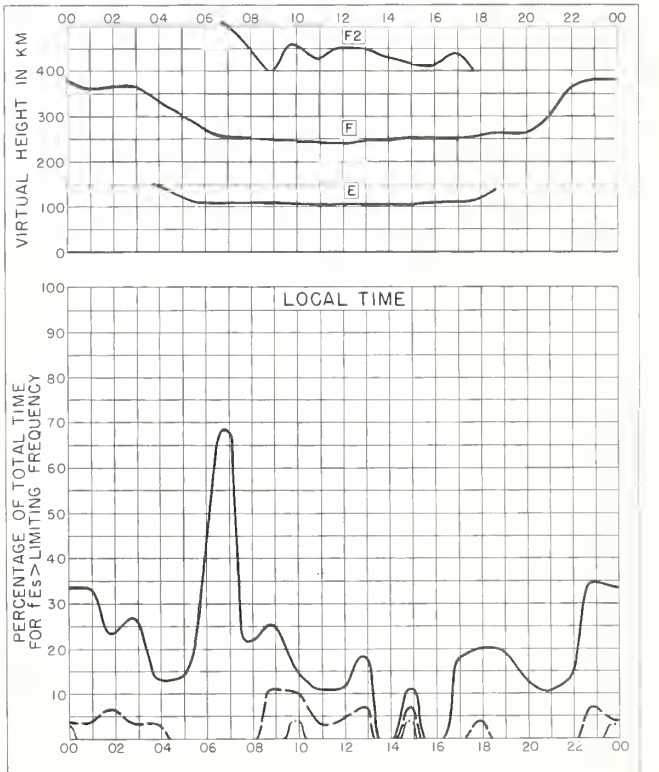

Fig. 132. INVERNESS, SCOTLAND APRIL 1958

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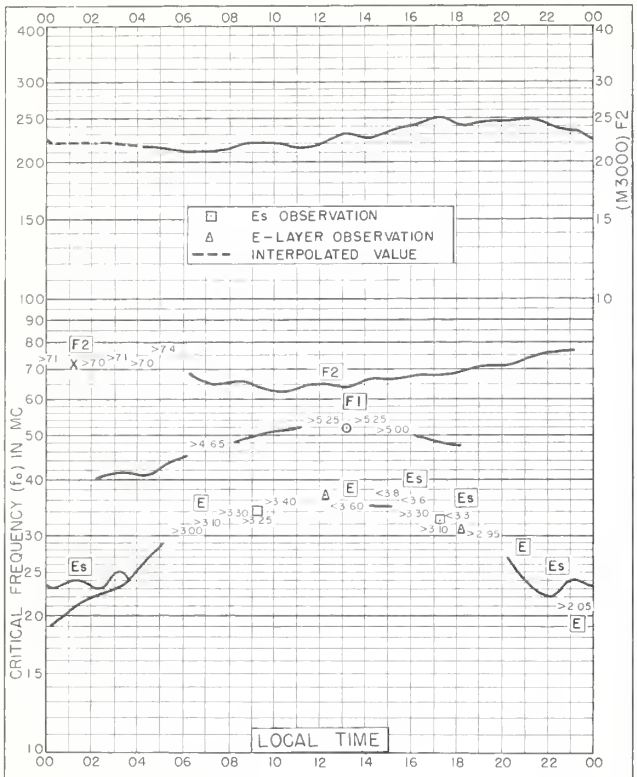

Fig. 133. HALLEY BAY
75.5°S, 26.6°W JANUARY 1958

NBS 503

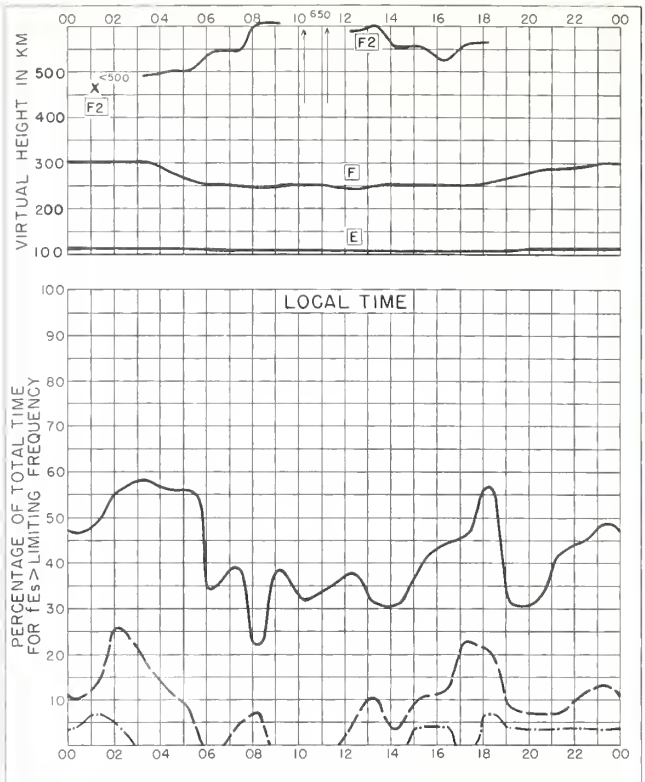

Fig. 134. HALLEY BAY JANUARY 1958

NBS 490

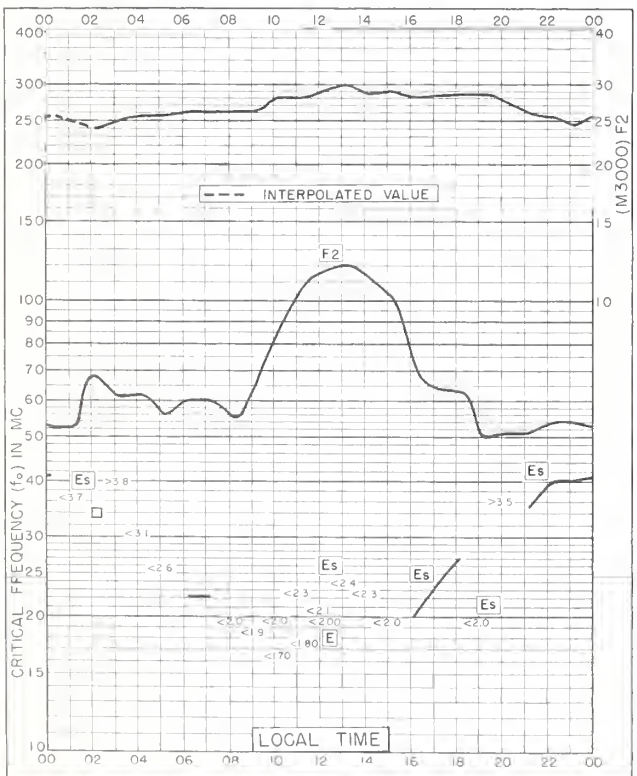

Fig. 135. MURMANSK, U.S.S.R.
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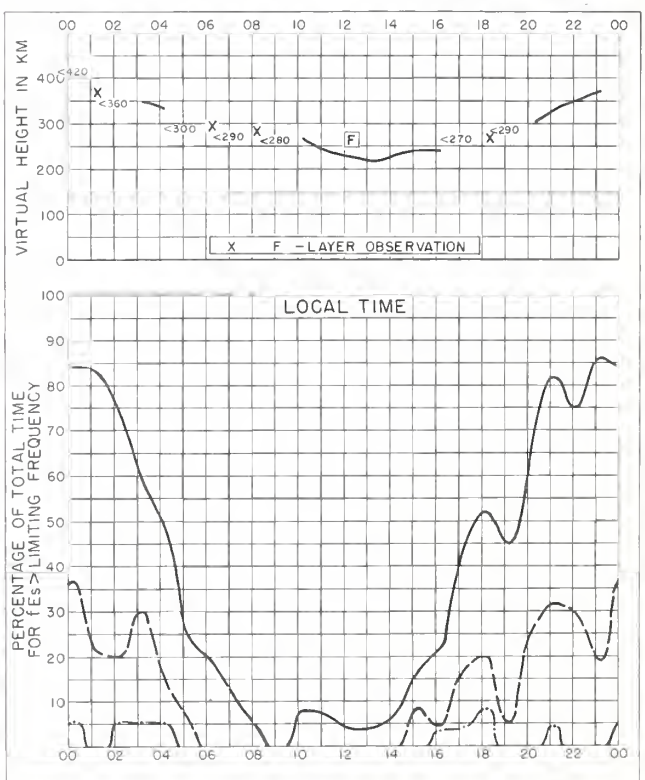

Fig. 136. MURMANSK, U.S.S.R. DECEMBER 1957

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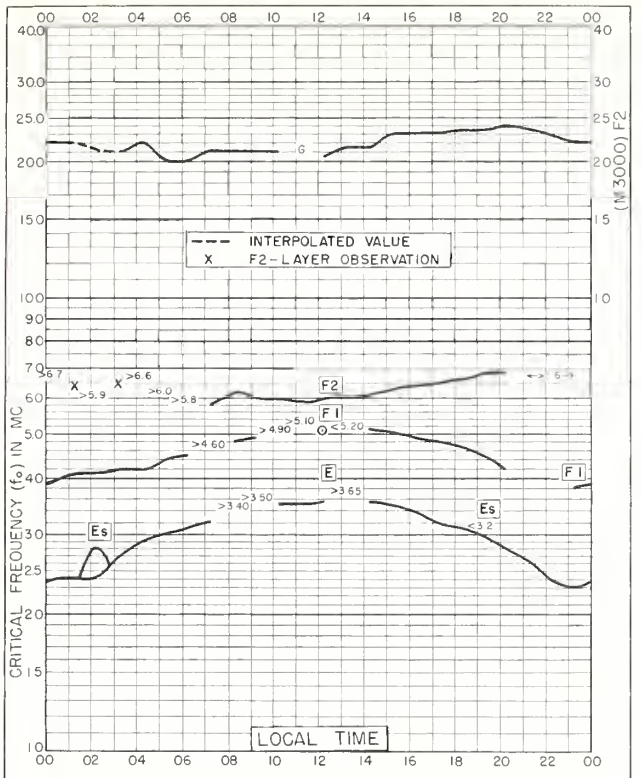

Fig. 137. HALLEY BAY
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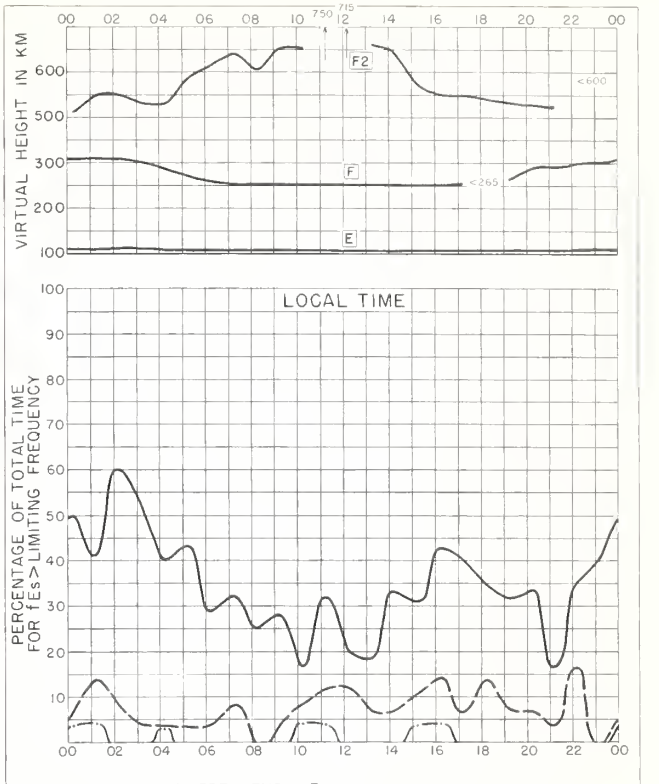

Fig. 138. HALLEY BAY DECEMBER 1957

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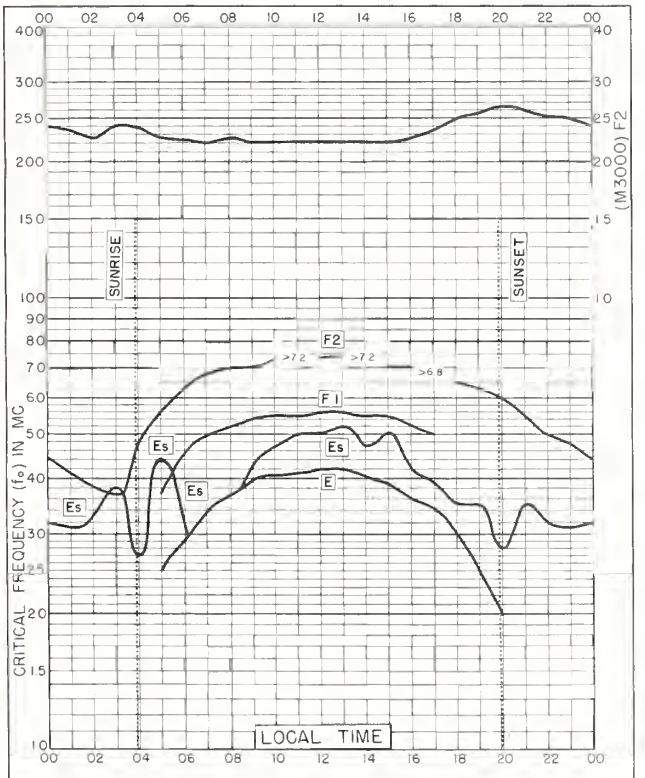

Fig. 139. KERGUELEN I.
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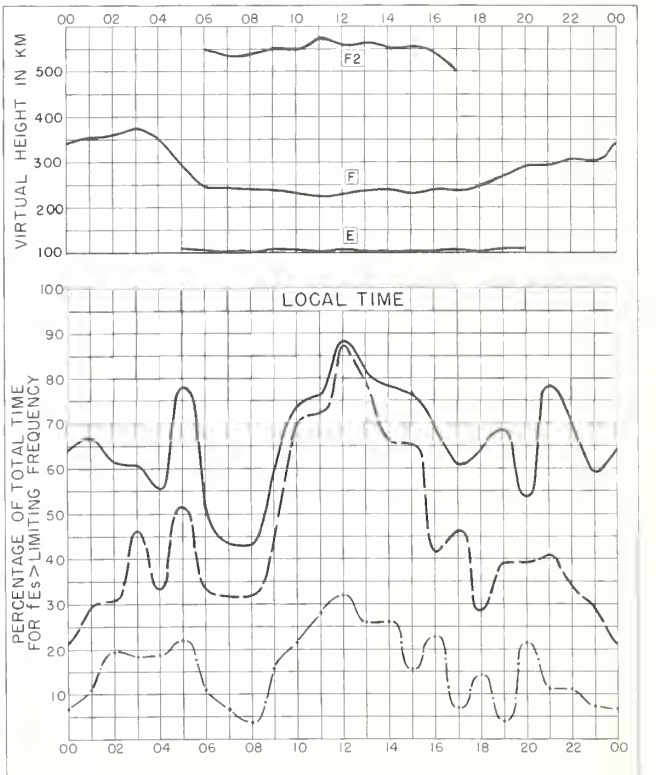

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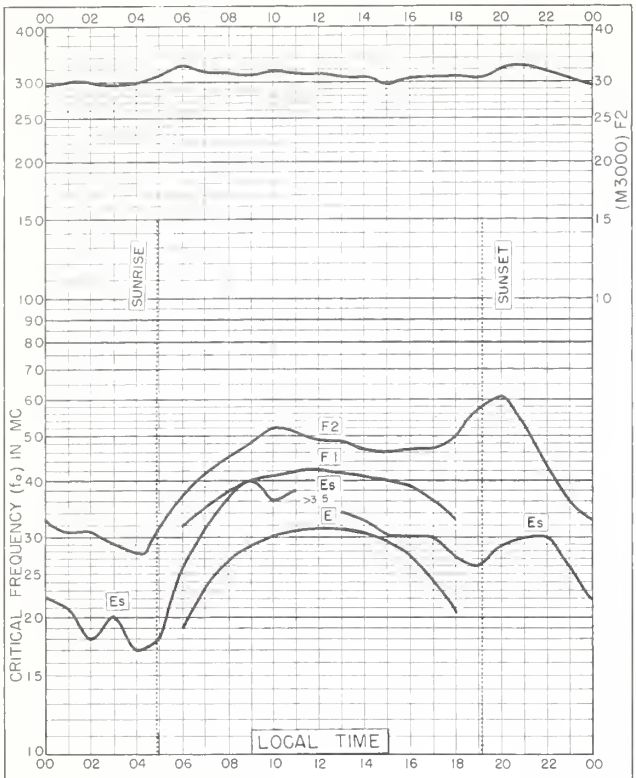

Fig. 141. FREIBURG, GERMANY
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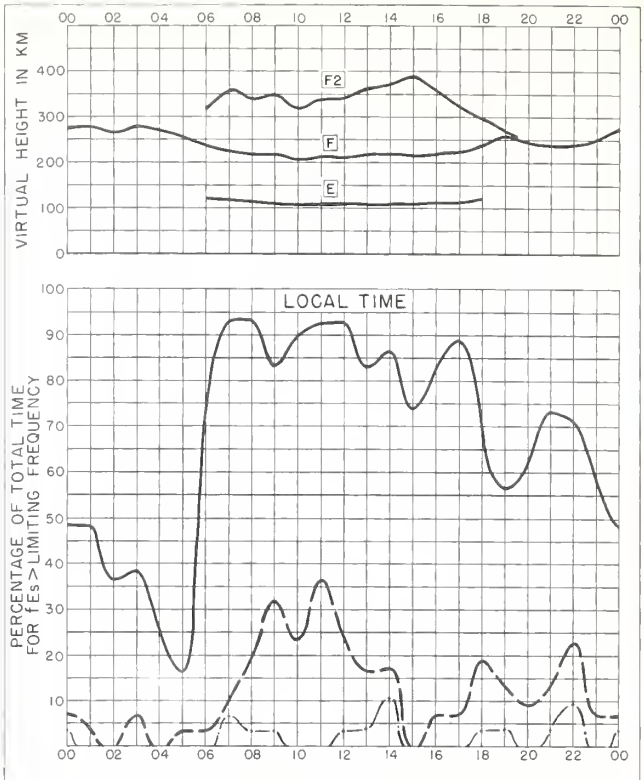

Fig. 142. FREIBURG, GERMANY AUGUST 1954

NBS 490

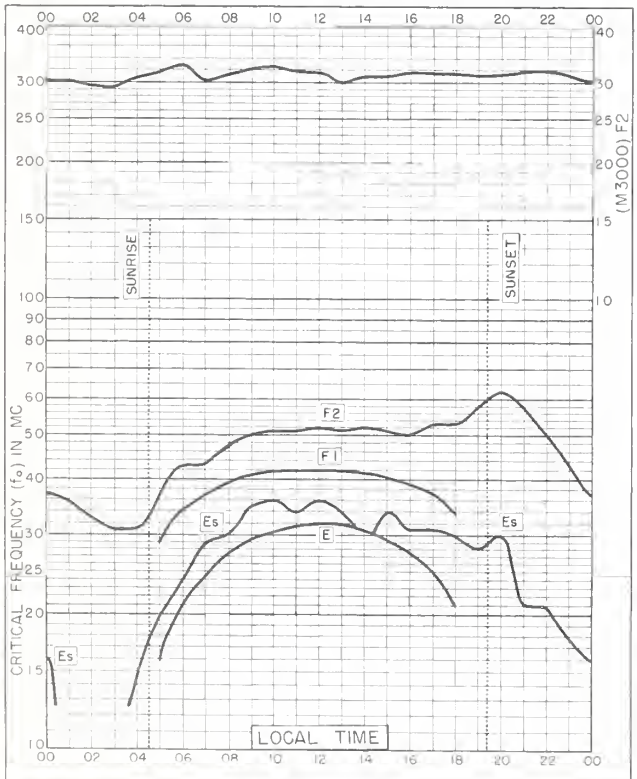

Fig. 143. FREIBURG, GERMANY
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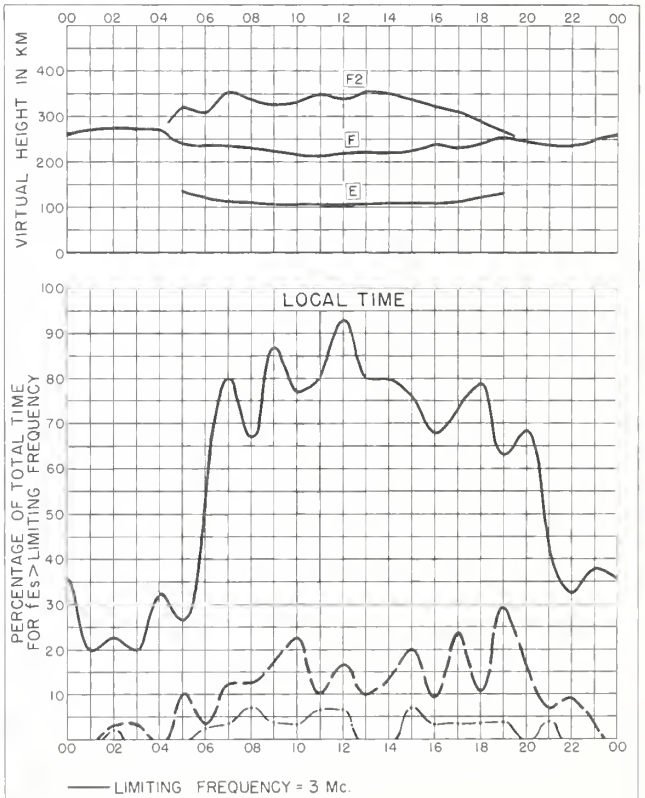

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CRPL Reports

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

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL—J. North Atlantic Radio Propagation Forecast.

CRPL—Jp. North Pacific Radio Propagation Forecast.

Semimonthly:

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

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499—, monthly supplements to TM 11—499; Dept. of the Air Force, TO 31—3—28 series). On sale by Superintendent of Documents. Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.
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.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. $1.25.

NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.

NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 megacycles. 30 cents.

NBS Circular 582. Worldwide Occurrence of Sporadic *E*. $3.25.

These Circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

Selected Technical Notes of the National Bureau of Standards:

NBS Tech. Note 2. PB151361. World Maps of F2 Critical Frequencies and Maximum Usable Frequency Factors. $3.50. PB151361–2. $3.50.

NBS Tech. Note 13. PB151372. Technical Considerations Leading to an Optimum Allocation of Radio Frequencies in the Band 25 to 60 Mc. $2.50.

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