PART A

IONOSPHERIC DATA

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

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PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

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

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

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

There was an expansion in meaning of the following:

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

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

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

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

Values missing because of G are counted:

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

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

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

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

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

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

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

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

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

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

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

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

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

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

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

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

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

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

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

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

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	184	183	181	179	179
1959	177	175	173	167								

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 141 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:

Meteorological Service, Province of Macau, Asia:
Macau

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

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

University of Graz:
Graz, Austria

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

Electronics Directorate of the Brazilian Navy:
Natal, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Inverness, Scotland
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada

Universidad de Concepcion:
Concepcion, Chile

Instituto Geofisico de Los Andes Colombianos:
Bogota, Colombia

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

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

French National Center for Telecommunications Studies:
Kerguelen I.

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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

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

General Directorate of Telecommunications, Mexico:
El Cerillo, Mexico

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.
Cape Hallett (Adare), Antarctica
Christchurch, New Zealand
Rarotonga, Cook Is.

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

Manila Observatory:
Baguio, P. I.

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

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:
Schwarzenburg, Switzerland

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

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Byrd Station, Antarctica
Chimbote, Peru
Fairbanks (College), Alaska (Geophysical Institute of the University of Alaska)
Ilo, Peru
Little America, Antarctica
Maui, Hawaii
Point Barrow, Alaska
Pole Station, Antarctica
Washington, D. C.
Wilkes Station, Antarctica

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by CRPL and the U. S. Army Signal Corps. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. These data are in place of the standard ionogram reductions formerly provided by this Station. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed for an IBM 650 computer.

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

Quantity	Units	Remarks
Electron Density (N)	$x10^3$ = electrons/cm^3	Body of table; given at each 10 km of height.
NMAX	$x10^3$ = electrons/cm^3	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
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.

Two tabulations of arithmetic mean electron densities are also given for each hour. An average for the undisturbed ionosphere includes the soundings taken when the magnetic character figure K_p is less than 4+; the remaining data are combined to form a disturbed average. The latter may have little physical significance because the number of disturbed hours is usually small and the behavior of the ionosphere during disturbed hours is not consistent. On these tabulations the number of profiles in each average is given by CNT.

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 integrated electron densities estimated to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

ELECTRON DENSITY

PUERTO RICO 60 W 1 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL								A	A			
HMIN	269	246	238	229	240	255	287			104	105	106
HMAX	388	365	341	343	345	400	405			367	332	361
SHMAX	986	1163	734	761	616	756	693			971	850	1042
KM												
410							814					
400						854	812					
390	1393					849	804					
380	1386					833	787					
370	1355	1528				807	761			565		616
360	1301	1525				770	727			564		616
350	1221	1504	1290	1050	1004	726	684			560		614
340	1119	1462	1290	1049	1001	667	631			554	573	608
330	990	1398	1267	1035	977	608	565			544	573	599
320	834	1314	1207	1003	923	532	484			528	570	586
310	608	1216	1107	954	850	454	380			511	562	569
300	362	1073	975	889	745	371	240			491	550	548
290	179	896	794	804	625	262	71.4			470	531	524
280	67.6	679	590	704	477	152				446	508	497
270	12.4	389	375	585	323	77.6				422	482	469
260		143	161	446	161	33.2				398	452	444
250		44.9	65.7	240	65.7					379	423	420
240			12.4	97.2	3.1					362	397	399
230				12.4						351	374	382
220										341	356	368
210										330	343	358
200										319	332	352
190										307	323	346
180										292	314	339
170										276	300	324
160										260	279	286
150										234	254	240
140										202	222	221
130										167	197	211
120										153	187	203
110										143	161	179

ELECTRON DENSITY

PUERTO RICO 60 W 1 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OUAL		A	A	A	A	A	A	A	A	A	A	A
HMIN	106	107						229	226	338	323	322
HMAX	339	336						333	432	448	427	436
SHMAX	966	1080						430	598	394	347	395
KM												
450										573		
440									540	570		582
430									540	555	590	580
420									537	526	586	566
410									529	488	563	540
400									516	441	519	503
390									499	378	462	452
380									477	316	396	389
370									449	240	323	316
360									417	161	240	248
350									381	77.6	143	161
340	735	875						608	340	21.7	79.7	90.5
330	730	873						607	298		43.3	46.5
320	713	858						599	258			
310	682	830						581	215			
300	643	789						552	179			
290	598	735						516	140			
280	546	673						465	112			
270	499	608						403	86.1			
260	455	540						327	68.2			
250	417	482						229	52.6			
240	389	435						127	40.2			
230	371	401						12.4	12.4			
220	359	378										
210	352	361										
200	346	355										
190	340	348										
180	331	342										
170	312	335										
160	274	314										
150	243	276										
140	223	240										
130	212	216										
120	203	204										
110	161	143										

ELECTRON DENSITY

PUERTO RICO 60 W 2 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL	A	A								A	A	
HMIN	269	248	239	228	269	299	289	110	109	113	101	105
HMAX	407	347	343	382	379	434	383	277	276	320	294	363
SHMAX	596	418	413	521	394	452	321	636	730	1056	1009	1209
KM												
440						508						
430						507						
420						502						
410	754					491						
400	752					474						
390	739			573		452	508					
380	716			573	540	423	507					
370	683			568	537	389	499					735
360	638			556	525	368	481					735
350	585	707	643	535	505	305	452					731
340	514	702	642	508	479	253	417					722
330	427	679	631	477	442	198	367					706
320	327	638	604	434	395	135	294			834		687
310	198	580	564	389	329	71.4	198			831		664
300	107	508	508	341	255	12.4	77.6			822	794	636
290	65.7	408	446	286	161		12.4			807	793	604
280	43.9	298	362	235	77.6			784	896	787	789	570
270	3.1	152	274	184	12.4			780	891	764	781	537
260		63.8	143	132				765	863	734	768	502
250		12.4	71.4	90.5				734	814	693	751	474
240			12.4	57.4				690	739	643	734	444
230				12.4				636	652	580	716	423
220								565	562	519	679	405
210								484	477	459	633	389
200								380	411	409	583	381
190								286	357	372	527	373
180								205	314	341	465	365
170								157	267	313	396	351
160								129	223	282	328	333
150								109	183	244	301	307
140								95.8	149	209	269	272
130								88.8	127	177	233	235
120								77.6	118	156	201	213
110								12.4	83.8		184	198

ELECTRON DENSITY

PUERTO RICO 60 W 2 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OUAL	A	A	A	A		A	A		A	A		
HMIN					108			248	295	309	309	288
HMAX					359			377	420	431	429	397
SHMAX					1122			626	627	669	626	545
KM												
440										814		
430										814	834	
420									754	807	828	
410									749	791	809	
400									733	764	776	794
390									707	728	731	790
380								698	674	679	672	772
370								696	625	622	594	739
360					794			688	568	548	508	690
350					791			673	502	469	408	629
340					781			651	432	380	298	548
330					765			622	353	262	189	446
320					742			586	270	127	90.5	335
310					719			544	189	12.4	12.4	219
300					679			489	90.5			104
290					633			429				26.3
280					579			344				
270					529			251				
260					477			127				
250					432			26.3				
240					392							
230					364							
220					347							
210					332							
200					323							
190					313							
180					301							
170					287							
160					259							
150					226							
140					198							
130					179							
120					169							
110					97.2							

ELECTRON DENSITY

PUERTO RICO 60 W 3 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL							S	A	A		A	A
HMIN	315	325	279	258	249	328	299		109	109		
HMAX	431	446	401	360	343	440	446		313	370		
SHMAX	514	577	561	508	365	321	383		1162	1661		
KM												
450		726					439					
440	698	724				461	438					
430	697	712				457	431					
420	690	691				444	419					
410	671	657	754			422	399					
400	639	616	754			392	375					
390	596	562	746			353	345					
380	540	502	725			310	306					
370	469	427	690			251	262			1119		
360	389	342	643	754		179	219			1115		
350	310	248	585	747	599	104	174			1104		
340	226	152	514	726	598	56.5	137			1085		
330	132	71.4	437	690	588	12.4	110			1059		
320	65.7		344	643	564		89.6		1167	1023		
310			240	573	532		65.7		1166	980		
300			143	484	483		12.4		1153	931		
290			77.6	389	410				1125	880		
280			12.4	274	318				1078	822		
270				143	179				1017	769		
260				60.0	83.8				943	716		
250					12.4				858	664		
240									770	613		
230									679	569		
220									601	528		
210									519	488		
200									437	450		
190									353	409		
180									278	366		
170									214	318		
160									161	279		
150									124	246		
140									112	213		
130									106	188		
120									101	169		
110									83.8	71.4		

ELECTRON DENSITY

PUERTO RICO 60 W 3 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	S	A	A							
HMIN		115		117		110	118	229	229	275	305	310
HMAX		381		363		340	347	369	398	417	409	422
SHMAX		2097		1691		1413	1234	913	973	835	561	632
KM												
430												885
420										939		885
410										936	906	874
400									982	923	895	848
390		1555							979	898	851	804
380		1555							967	863	786	748
370		1548		1446				1038	945	817	707	679
360		1527		1445				1033	913	760	608	585
350		1493		1430			1107	1015	875	686	508	477
340		1446		1395		1290	1105	980	822	608	398	362
330		1376		1341		1283	1091	933	761	516	274	219
320		1299		1263		1263	1066	880	686	417	152	104
310		1216		1172		1225	1027	814	615	323	65.7	12.4
300		1131		1068		1177	977	739	540	219		
290		1027		960		1119	922	657	454	135		
280		928		847		1038	854	562	348	65.7		
270		824		745		939	786	456	240			
260		716		652		824	701	335	143			
250		636		573		707	616	198	88.3			
240		568		519		596	529	83.8	49.6			
230		517		473		500	446	12.4	6.8			
220		474		438		417	368					
210		444		410		362	304					
200		422		387		324	253					
190		401		364		292	212					
180		380		340		262	182					
170		359		313		238	156					
160		332		288		215	137					
150		301		259		194	121					
140		269		229		172	109					
130		237		207		156	102					
120		219		71.4		146	71.4					
110						12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 4 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A	A	A	A
HMIN	285	287	257	233	267	251	210	109				
HMAX	378	388	368	333	382	351	278	280				
SHMAX	423	649	555	377	474	379	319	490				
KM												
390		960			634							
380	875	955			634							
370	834	931	774		627							
360	767	891	770		612	590						
350	586	834	753		588	590						
340	585	754	724	625	557	583						
330	487	661	679	624	513	564						
320	348	540	625	612	452	532						
310	152	403	557	585	380	490						
300	83.8	161	477	540	294	435						
290	33.2	49.6	375	483	161	362						
280			240	410	79.7	262	643	616				
270			97.2	323	30.9	127	637	611				
260			40.2	189		60.0	614	596				
250				83.8			577	570				
240				43.3			516	536				
230							417	487				
220							198	424				
210							12.4	353				
200								262				
190								173				
180								119				
170								94.2				
160								81.3				
150								73.1				
140								68.7				
130								65.4				
120								62.0				
110								12.4				

ELECTRON DENSITY

PUERTO RICO 60 W 4 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A	A				A
HMIN						109		260	269	288	303	278
HMAX						373		377	446	441	429	409
SHMAX						1734		1046	1093	1052	953	1241
KM												
450									1072	1191		
440									1071	1191		
430									1059	1182	1240	
420									1037	1157	1232	
410									1004	1117	1206	1420
400									960	1062	1160	1413
390									905	990	1096	1392
380						1367		1215	841	909	1013	1354
370						1367		1212	767	814	896	1301
360						1358		1197	686	716	781	1233
350						1338		1168	608	608	643	1158
340						1307		1127	516	487	492	1050
330						1265		1073	424	362	310	917
320						1210		1004	327	219	135	781
310						1149		926	248	119	54.8	625
300						1073		824	173	60.0		446
290						987		716	117	12.4		143
280						892		573	71.4			26.3
270						794		389	12.4			
260						688		12.4				
250						590						
240						502						
230						435						
220						384						
210						345						
200						316						
190						291						
180						248						
170						219						
160						191						
150						171						
140						158						
130						151						
120						144						
110						60.0						

ELECTRON DENSITY

PUERTO RICO 60 W 5 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A							A	A	A	A	A
HMIN	280	287	280	277	289	243	248		110	110	110	109
HMAX	385	403	408	377	403	359	341		326	324	369	392
SHMAX	898	784	897	611	633	637	623		1247	1374	2138	2310
KM												
410		1004	1004		824							
400		1004	1001		823							1555
390	1240	993	988		814							1555
380	1238	969	966	939	794							1547
370	1219	931	933	934	758						1500	1526
360	1181	880	892	911	716	844					1497	1492
350	1123	814	844	869	661	839	875				1484	1446
340	1050	735	770	807	594	821	875				1462	1376
330	939	643	688	732	508	789	867		949	1131	1431	1302
320	814	540	596	634	424	745	847		949	1130	1391	1224
310	667	389	487	524	286	691	815		943	1121	1341	1143
300	508	127	362	362	104	622	769		933	1101	1282	1059
290	219	40.2	127	112	12.4	548	716		919	1067	1218	978
280	12.4		12.4	40.2		456	643		898	1027	1143	896
270						335	551		877	977	1057	820
260						143	417		846	917	960	754
250						54.8	83.8		812	857	865	695
240									769	794	774	643
230									716	723	688	604
220									655	655	608	570
210									587	587	546	540
200									516	524	487	511
190									439	459	438	480
180									362	400	397	443
170									286	346	358	405
160									224	295	326	365
150									186	251	293	332
140									159	214	255	294
130									141	190	222	256
120									130	170	191	228
110									12.4	40.2	60.0	83.8

ELECTRON DENSITY

PUERTO RICO 60 W 5 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A		S									
HMIN	110	109		109	116	113	118	239	259	259	279	276
HMAX	379	371		375	363	346	354	402	414	404	403	386
SHMAX	2451	2426		2271	1825	1639	1410	1382	1193	1033	869	647
KM												
420									1215			
410								1215	1214	1191	1191	
400								1215	1204	1190	1190	
390								1209	1183	1176	1172	1050
380	1876	2063		1815				1196	1150	1147	1133	1044
370	1868	2063		1813	1640			1174	1106	1103	1072	1010
360	1842	2049		1796	1639		1290	1144	1050	1042	987	939
350	1797	2010		1761	1623	1583	1289	1106	982	968	885	844
340	1723	1947		1708	1587	1580	1278	1060	900	875	767	742
330	1640	1852		1634	1524	1559	1256	1004	804	774	643	619
320	1545	1739		1545	1446	1519	1217	942	698	667	492	492
310	1435	1612		1436	1359	1460	1171	868	596	540	323	348
300	1319	1474		1329	1240	1382	1116	794	477	417	170	198
290	1204	1312		1191	1107	1291	1041	707	348	286	77.6	97.2
280	1084	1159		1050	960	1171	949	616	219	161	12.4	40.2
270	971	1004		917	820	1038	844	519	97.2	77.6		
260	865	865		804	698	889	735	389	12.4	12.4		
250	774	745		707	599	742	619	219				
240	694	643		616	521	596	519	40.2				
230	631	567		547	467	477	417					
220	573	508		495	424	400	335					
210	531	467		456	389	348	274					
200	488	435		426	359	310	227					
190		408		395	330	274	192					
180		384		367	301	240	163					
170		362		342	271	207	139					
160		335		316	243	181	117					
150		307		282	214	157	100					
140		276		251	187	142	93.1					
130		248		224	170	134	87.9					
120		228		208	143	127	60.0					
110		97.2		112								

ELECTRON DENSITY

PUERTO RICO 60 W 6 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		A						A	A	A	A	A
HMIN	277	272	269	264	279	239	258	115		109		110
HMAX	385	374	357	395	392	349	403	357		328		378
SHMAX	655	635	505	587	587	598	633	1187		1801		2227
KM												
410							679					
400				745	834		679					
390	1050			743	833		673					
380	1046	960		732	823		660					1669
370	1018	959		709	797		640					1664
360	960	943	939	674	758		613	1016				1643
350	875	908	931	628	701	844	580	1014				1607
340	781	854	897	573	625	838	540	1004				1555
330	655	784	834	508	532	819	492	986		1640		1478
320	508	679	742	432	437	785	435	960		1635		1394
310	362	557	608	344	318	738	375	924		1615		1301
300	209	417	462	248	189	679	302	883		1579		1197
290	97.2	262	262	161	97.2	599	226	834		1525		1086
280	30.9	97.2	112	83.8	12.4	497	152	774		1465		987
270			12.4	40.2		362	79.7	701		1385		892
260						219	26.3	625		1285		804
250						83.8		540		1182		724
240						12.4		456		1065		661
230								375		931		602
220								304		774		553
210								249		608		508
200								202		477		473
190								168		383		441
180								139		325		411
170								117		278		379
160								100		240		343
150								89.0		209		306
140								81.3		182		262
130								76.4		159		228
120								71.4		149		205
110										83.8		49.6

ELECTRON DENSITY

PUERTO RICO 60 W 6 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	S				A		A	A		
HMIN	110			110	115	112		219	248	289	337	299
HMAX	387			398	406	352		369	386	437	446	451
SHMAX	2635			2543	2505	1867		1393	966	905	677	808
KM												
460												875
450											1004	875
440										1050	1000	869
430										1046	976	853
420										1027	928	828
410					1907					993	858	797
400				1907	1904					942	774	749
390	2063			1901	1885				1143	881	679	691
380	2058			1879	1850				1140	802	562	629
370	2034			1341	1798			1528	1120	724	432	557
360	1988			1786	1723	1907		1521	1080	634	286	469
350	1922			1702	1638	1906		1499	1024	540	143	389
340	1832			1612	1534	1884		1460	953	437	40.2	302
330	1727			1512	1423	1832		1405	875	335		212
320	1598			1400	1303	1743		1333	794	240		127
310	1460			1278	1171	1626		1248	698	152		65.7
300	1312			1143	1034	1487		1143	596	77.6		12.4
290	1159			1016	903	1341		1016	487	12.4		
280	1019			907	784	1167		861	380			
270	907			804	688	1004		679	262			
260	804			707	608	847		524	112			
250	724			629	540	704		335	26.3			
240	658			568	490	585		179				
230	608			517	453	492		90.5				
220	570			477	420	423		12.4				
210	540			440	394	367						
200	499			409	369	320						
190	451			381	343	282						
180	403			356	316	244						
170	357			329	288	214						
160	310			296	257	187						
150	272			260	231	163						
140	240			236	206	145						
130	216			216	188	136						
120	203			201	135	129						
110	49.6			49.6								

ELECTRON DENSITY

PUERTO RICO 60 W 7 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL											A	A
HMIN	309	250	244	256	263	292	278	116	109	109	115	
HMAX	408	320	330	367	381	412	381	310	314	346	348	
SHMAX	541	519	363	483	359	400	380	610	960	1397	1461	
KM												
420						508						
410	1050					508						
400	1041					502						
390	1004				524	489	557					
380	934				524	467	557					
370	844			661	517	440	551					
360	729			658	499	403	536					
350	596			647	469	356	511			1119	1155	
340	446			625	427	305	477			1117	1151	
330	310		698	594	375	257	432			1105	1137	
320	161	1143	686	554	316	198	368		960	1083	1112	
310	44.9	1119	652	500	255	138	294	716	959	1050	1075	
300		1050	594	424	186	77.6	189	710	946	1004	1029	
290		931	508	335	122		90.5	690	917	948	973	
280		735	403	219	75.6		26.3	655	875	882	910	
270		524	262	104	42.5			608	814	814	841	
260		240	127	44.9				553	739	739	770	
250		12.4	49.6					489	661	665	694	
240								410	582	596	629	
230								335	497	535	562	
220								262	423	477	503	
210								203	367	427	451	
200								164	321	385	405	
190								134	283	347	362	
180								109	253	313	329	
170								87.7	224	282	299	
160								77.2	198	251	273	
150								70.4	174	222	240	
140								67.1	154	196	205	
130								63.7	139	176	186	
120								60.4	128	163	143	
110									60.0	112		

ELECTRON DENSITY

PUERTO RICO 60 W 7 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A		S							S	
HMIN			108		109	110	113	232	222	287	292	299
HMAX			379		382	368	339	359	396	450	453	420
SHMAX			1864		1670	1502	1103	735	741	689	623	538
KM												
460											707	
450										716	706	
440										712	698	
430										701	681	
420										682	653	735
410										656	612	729
400									774	622	568	710
390					1290				772	582	513	678
380			1316		1290				762	531	459	634
370			1311		1281	1215			743	477	389	579
360			1298		1259	1212		982	716	417	316	508
350			1274		1225	1198		973	679	348	251	417
340			1240		1177	1174	1143	941	633	278	189	327
330			1194		1116	1139	1136	860	573	212	132	229
320			1147		1050	1096	1114	805	514	149	93.9	127
310			1080		960	1037	1075	735	452	92.8	62.9	60.0
300			1004		875	960	1017	657	382	56.6	42.1	5.5
290			917		784	883	946	573	316	18.0		
280			834		688	786	865	484	255			
270			747		599	691	764	389	194			
260			665		524	599	655	294	143			
250			594		467	516	540	179	97.2			
240			531		421	446	437	65.7	60.0			
230			486		392	389	348		35.5			
220			450		370	350	281					
210			428		353	318	237					
200			408		338	291	202					
190			389		322	267	177					
180			364		303	245	154					
170			342		276	219	134					
160			323		236	196	118					
150			303		195	177	104					
140			262		178	159	94.8					
130			225		172	142	88.7					
120			206		165	131	77.6					
110			127		112	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 8 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A		A		A
HMIN	269	244	255	278	288	262	282	118	108		108	109
HMAX	382	342	372	391	419	392	392	286	301		352	370
SHMAX	474	387	338	305	361	325	346	593	909		1542	1972
KM												
420					439							
410					437							
400				424	428	396	469					
390	679			424	414	396	469					
380	679		439	420	394	392	464					
370	670		439	407	369	382	452					1420
360	647		434	386	339	367	432				1096	1415
350	612	625	422	358	298	346	405				1096	1400
340	562	625	403	323	251	321	372				1090	1375
330	502	615	377	281	198	289	331				1076	1340
320	427	591	345	229	149	251	278				1055	1295
310	348	555	306	179	92.8	211	212		875		1022	1240
300	251	502	262	119	53.1	165	127		875		984	1171
290	152	432	214	71.4	12.4	122	56.5	814	870		941	1096
280	71.4	344	161	21.7		79.7		810	856		891	1013
270	12.4	229	104			44.9		787	834		839	917
260		119	53.1					744	803		782	814
250		49.6						679	763		727	716
240								599	716		669	636
230								497	650		613	568
220								389	573		557	513
210								294	484		503	470
200								226	406		459	438
190								179	342		417	412
180								143	280		379	386
170								118	227		343	362
160								99.0	187		310	332
150								85.2	152		274	301
140								79.4	132		237	266
130								74.4	122		207	231
120								44.9	115		187	209
110									71.4		112	143

ELECTRON DENSITY

PUERTO RICO 60 W 8 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			A	A	A	A	A	A			A	
HMIN	109	117	115	112				258	267	289	288	297
HMAX	360	351	356	351				389	405	432	417	419
SHMAX	1964	1748	1688	1682				1029	967	1028	903	773
KM												
440										1215		
430										1215		
420										1204	1191	993
410									1191	1177	1186	987
400									1189	1135	1163	966
390								1240	1171	1076	1120	926
380								1233	1136	1004	1057	875
370								1209	1083	907	971	814
360	1555	1528	1420	1341				1168	1012	804	875	739
350	1548	1528	1417	1341				1109	926	691	754	643
340	1525	1518	1397	1334				1031	824	551	608	529
330	1487	1490	1361	1316				939	716	417	462	398
320	1432	1446	1298	1286				834	590	262	310	274
310	1362	1376	1224	1245				726	446	127	179	152
300	1277	1295	1143	1189				596	310	63.8	79.7	40.2
290	1182	1201	1050	1129				462	179	12.4	21.7	
280	1084	1096	949	1050				310	77.6			
270	971	960	834	960				161	30.9			
260	865	834	735	865				26.3				
250	764	691	643	764								
240	679	594	568	667								
230	601	521	513	573								
220	535	473	470	503								
210	486	438	438	446								
200	446	412	409	407								
190	420	389	383	376								
180	396	362	357	352								
170	372	324	332	328								
160	344	286	303	301								
150	310	253	273	271								
140	277	236	248	240								
130	240	225	229	216								
120	211	179	198	200								
110	40.2											

ELECTRON DENSITY

PUERTO RICO 60 W 9 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		A									A	
HMIN	290	238	209	258	272	291	301	114	107	105		115
HMAX	376	347	358	419	370	443	412	279	305	312		358
SHMAX	608	685	554	475	331	486	450	573	902	1114		1784
KM												
450						500						
440						500						
430						496						
420				492		488	573					
410				490		475	573					
400				484		457	568					
390				472		434	556					
380	1061			456		408	536					
370	1056			435	557	375	513					
360	1025		557	411	549	335	480					1555
350	960	982	555	379	527	291	432					1549
340	875	978	548	340	495	240	375					1523
330	754	958	536	291	439	189	304					1477
320	608	922	519	245	368	138	229			1050		1406
310	432	875	495	194	286	83.8	97.2		949	1049		1321
300	251	802	468	143	198	47.2			947	1041		1216
290	12.4	707	435	97.2	112				929	1020		1096
280		590	399	67.6	53.1			834	892	984		949
270		446	362	44.9				825	844	939		820
260		262	320	7.8				794	774	881		707
250		97.2	274					742	688	810		616
240		26.3	219					670	608	732		547
230			155					562	527	643		500
220			71.4					432	462	557		465
210			12.4					323	412	477		439
200								240	369	411		421
190								174	325	351		400
180								137	268	300		374
170								110	214	253		339
160								92.8	173	212		303
150								82.3	149	188		273
140								78.6	133	176		243
130								74.8	122	168		217
120								65.7	114	161		192
110									77.6	119		

ELECTRON DENSITY

PUERTO RICO 60 W 9 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A					A	A	A	A	A		
HMIN		113	116	114	114	113		208		258	260	287
HMAX		401	400	409	378	374		387		385	402	427
SHMAX		2187	2243	2339	1839	1779		1609		859	784	830
KM												
430												1004
420												1001
410		1446		1640							1004	985
400		1446	1555	1635							1004	955
390		1440	1549	1618				1528		1119	991	912
380		1424	1531	1588	1612	1669		1525		1117	960	857
370		1399	1500	1544	1604	1667		1511		1098	905	784
360		1363	1456	1487	1574	1648		1484		1061	841	691
350		1313	1397	1424	1526	1609		1446		1004	764	585
340		1257	1333	1349	1476	1547		1396		926	679	477
330		1191	1256	1258	1331	1463		1333		834	573	362
320		1119	1162	1162	1228	1362		1256		729	477	251
310		1042	1077	1068	1107	1240		1169		619	362	135
300		960	987	960	993	1127		1073		508	262	65.7
290		882	900	854	875	990		946		362	161	19.3
280		802	818	762	754	834		807		219	92.8	
270		724	739	672	652	679		667		97.2	49.6	
260		657	673	601	565	551		508		26.3		
250		598	618	536	497	456		310				
240		550	569	490	446	389		179				
230		508	524	453	411	343		104				
220		477	484	425	381	307		56.5				
210		449	450	403	357	277		12.4				
200		422	417	383	333	248						
190		398	386	362	308	221						
180		376	362	338	283	196						
170		354	332	310	260	172						
160		327	300	278	232	152						
150		299	262	240	204	137						
140		266	229	206	179	125						
130		232	209	190	169	119						
120		179	161	161	143	113						

ELECTRON DENSITY

PUERTO RICO 60 W 10 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A		A		
HMIN	288	289	244	236	231	219	290	118	110	110	116	115
HMAX	422	413	357	359	330	378	378	309	311	306	377	383
SHMAX	763	754	651	699	448	507	453	844	1229	1394	2293	2292
KM												
430	993											
420	993	1004										
410	981	1004										
400	952	991										
390	911	964										1528
380	867	917				548	698				1669	1527
370	764	861				546	694				1665	1521
360	667	786	971	917		538	678				1650	1506
350	562	688	966	912		524	650				1622	1483
340	456	573	942	893		503	612				1581	1451
330	348	432	896	860	745	479	560				1523	1411
320	240	298	834	817	736	446	487		1341		1459	1363
310	127	143	754	754	708	405	389	960	1341	1473	1376	1303
300	63.8	71.4	643	670	664	356	240	955	1330	1470	1286	1240
290	12.4	12.4	524	573	601	305	12.4	939	1300	1447	1196	1165
280			389	467	516	251		909	1252	1404	1105	1086
270			229	348	408	198		870	1184	1341	1027	993
260			97.2	209	274	143		820	1105	1257	943	896
250			40.2	90.5	135	97.2		747	982	1162	858	804
240				40.2	60.0	65.7		655	834	1034	774	724
230						43.3		540	679	875	694	657
220						3.1		417	540	735	615	596
210								286	437	608	540	540
200								198	355	487	477	490
190								152	292	389	423	446
180								119	245	323	377	405
170								97.2	209	276	339	365
160								86.1	179	248	298	329
150								80.7	151	215	251	299
140								76.8	129	176	209	266
130								73.0	121	156	187	219
120								26.3	115	147	143	161
110									12.4	12.4		

ELECTRON DENSITY

PUERTO RICO 60 W 10 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			S	S	S							A
HMIN	113	110	108	109	110	111	118	229	224	260	309	306
HMAX	376	374	369	378	361	367	352	373	393	430	447	448
SHMAX	2251	2403	2236	2323	1842	1771	1601	1274	1079	1031	931	946
KM												
450											1119	1119
440											1115	1114
430										1096	1097	1094
420										1089	1064	1059
410										1070	1016	1004
400									1119	1039	953	939
390									1119	993	875	858
380	1815	1969		1876				1341	1108	936	784	764
370	1812	1967	1876	1870	1669	1640		1341	1085	868	679	670
360	1791	1948	1867	1847	1668	1635	1612	1331	1050	794	562	562
350	1750	1907	1837	1805	1657	1611	1611	1311	998	707	432	437
340	1690	1835	1786	1746	1625	1567	1597	1279	936	608	274	310
330	1608	1754	1702	1669	1575	1497	1564	1235	867	508	152	189
320	1507	1646	1601	1566	1497	1418	1504	1181	786	398	67.6	90.5
310	1388	1528	1490	1457	1404	1316	1438	1119	701	294	12.4	40.2
300	1254	1394	1367	1329	1296	1184	1350	1031	608	198		
290	1143	1254	1240	1191	1159	1050	1240	917	519	127		
280	1004	1127	1096	1050	1019	903	1143	794	427	79.7		
270	885	990	960	917	861	754	1004	643	327	47.2		
260	764	861	844	784	729	625	834	446	229	1.3		
250	672	754	745	679	616	524	661	240	143			
240	601	665	657	590	527	446	524	97.2	75.6			
230	545	596	580	521	465	394	398	12.4	40.2			
220	502	540	519	472	417	350	304					
210	471	496	473	433	383	316	240					
200	444	458	435	404	353	288	202					
190	423	421	399	379	323	262	174					
180	397	385	368	354	292	238	148					
170	368	352	335	327	259	214	127					
160	332	319	304	296	228	190	110					
150	296	286	272	262	201	163	98.4					
140	262	251	237	231	181	147	92.4					
130	234	233	214	212	170	137	87.0					
120	198	220	202	201	161	130	49.6					
110		40.2	112	112	12.4							

ELECTRON DENSITY

PUERTO RICO 60 W 11 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A				A		A	A	A	A	A	
HMIN	278	227	257	245	236	212		110				109
HMAX	384	367	380	368	362	347		322				379
SHMAX	872	895	692	619	631	520		865				2209
KM												
390	1290											
380	1288		928									1727
370	1268	1050	920	865	834							1720
360	1221	1046	897	859	834							1698
350	1156	1030	857	837	825	634						1656
340	1068	1000	805	798	803	632						1593
330	946	955	732	742	769	622		854				1524
320	781	899	643	672	722	602		854				1446
310	590	834	548	590	657	576		849				1351
300	362	747	446	497	573	543		836				1240
290	143	652	323	389	484	497		811				1119
280	26.3	548	179	274	380	441		784				993
270		437	83.8	161	262	375		750				885
260		310	30.9	79.7	143	302		698				774
250		179		33.2	75.6	226		629				679
240		83.8			26.3	135		548				601
230		30.9				75.6		456				540
220						43.3		362				486
210								286				443
200								219				408
190								174				377
180								137				345
170								110				313
160								92.8				276
150								82.2				243
140								78.2				221
130								74.2				209
120								66.5				195
110												60.0

ELECTRON DENSITY

PUERTO RICO 60 W 11 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A	S		A	A	A		A	A	A	A
HMIN	110	109		112				229	240	254	264	247
HMAX	367	379		386				364	414	412	404	364
SHMAX	2211	2576		2223				1086	1107	1039	995	716
KM												
420									1143	1215		
410									1142	1215	1240	
400									1130	1204	1239	
390				1669					1105	1176	1224	
380		2063		1666					1067	1132	1192	
370	1938	2057		1650				1191	1016	1076	1143	1143
360	1932	2033		1621				1190	953	996	1077	1140
350	1904	1992		1577				1179	875	900	993	1115
340	1852	1934		1512				1157	794	794	875	1060
330	1775	1858		1438				1123	698	679	742	971
320	1669	1774		1350				1077	608	540	596	861
310	1555	1656		1258				1017	516	403	446	716
300	1416	1524		1169				946	417	262	286	573
290	1269	1359		1073				867	327	170	152	389
280	1096	1182		960				767	240	107	77.6	240
270	946	1004		858				655	161	65.7	40.2	127
260	807	861		764				524	90.5	34.6		65.7
250	691	729		670				335	49.6			19.3
240	608	634		594				127				
230	540	557		524				12.4				
220	492	503		472								
210	456	463		428								
200	426	430		392								
190	395	396		362								
180	362	365		332								
170	323	332		301								
160	282	294		269								
150	248	260		234								
140	225	234		207								
130	211	216		192								
120	201	204		180								
110	40.2	83.8										

ELECTRON DENSITY

PUERTO RICO 60 W 12 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A	A	A	A	A			A	A		A	A
HMIN	271	278	259	247	251	220	217			109	112	
HMAX	396	384	370	373	351	329	345			296	429	
SHMAX	697	647	709	617	646	537	511			1139	2528	
KM												
430											1341	
420											1339	
410											1333	
400	971										1323	
390	968	1050									1308	
380	949	1048		917							1289	
370	912	1025	1027	916							1266	
360	857	973	1018	899	1027						1239	
350	784	900	990	860	1027		698				1207	
340	688	804	944	800	1013		696				1171	
330	573	679	882	724	976	794	684				1130	
320	462	540	802	634	923	788	660				1085	
310	323	335	679	529	842	767	623				1034	
300	189	179	551	389	729	729	578			1240	982	
290	104	77.6	389	262	608	679	514			1236	928	
280	49.6	21.7	219	161	432	615	437			1214	875	
270			83.8	97.2	240	529	344			1172	824	
260			12.4	57.4	83.8	417	251			1109	771	
250				18.0		298	161			1022	721	
240						161	97.2			928	669	
230						65.7	57.4			807	613	
220						3.1	18.0			691	562	
210										573	513	
200										469	462	
190										396	411	
180										335	356	
170										290	304	
160										248	240	
150										207	211	
140										181	196	
130										169	187	
120										154	179	
110										97.2		

ELECTRON DENSITY

PUERTO RICO 60 W 12 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A					
HMIN								230	209	247	298	287
HMAX								363	374	412	429	417
SHMAX								1254	1101	907	726	715
KM												
430											960	
420										1004	954	960
410										1004	932	956
400										995	894	937
390										973	840	898
380									1240	934	770	846
370								1446	1239	885	679	781
360								1446	1223	827	573	698
350								1433	1191	754	462	596
340								1403	1141	670	348	477
330								1358	1073	590	219	348
320								1291	987	497	127	219
310								1213	896	403	63.8	119
300								1124	794	310	12.4	63.8
290								1004	670	219		19.3
280								875	562	143		
270								716	456	92.8		
260								524	348	54.8		
250								310	251	18.0		
240								127	152			
230									90.5			
220									52.2			
210									6.8			

ELECTRON DENSITY

PUERTO RICO 60 W 13 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A		A		
HMIN	266	254	254	276	250	202	275	113	112	113	116	110
HMAX	394	353	361	393	357	365	361	288	273	324	345	371
SHMAX	724	562	492	472	383	486	393	707	783	1189	1434	1876
KM												
400	960			643								1341
390	959			642								1341
380	946			633								1335
370	917		754	613		484	625				1131	1317
360	875	906	754	580	608	484	625				1129	1289
350	814	906	745	540	604	479	618			960	1116	1249
340	735	890	720	483	585	469	600			960	1088	1191
330	643	854	683	424	548	454	570			952	1050	1129
320	540	805	622	348	502	432	535			937	993	1063
310	417	726	540	274	446	406	477			914	936	987
300	262	619	446	179	371	377	389	854		881	869	910
290	135	487	344	97.2	286	345	274	850	917	845	807	834
280	71.4	323	219	40.2	198	307	97.2	834	917	807	805	761
270	26.3	143	112		112	270		805	907	799	742	691
260		54.8	46.5		53.1	232		767	884	744	674	631
250						195		709	849	685	623	578
240						157		634	804	625	578	532
230						121		529	739	568	540	492
220						83.8		417	643	517	508	454
210						46.5		298	540	468	472	420
200								219	389	422	427	386
190								168	298	362	375	359
180								138	245	306	331	337
170								115	205	269	290	306
160								98.8	177	233	255	262
150								89.7	154	198	219	214
140								80.1	137	172	192	198
130								62.9	117	135	161	40.2
120												
110												

ELECTRON DENSITY

PUERTO RICO 60 W 13 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	S	A	A	A	A	A	A	A	A	
HMIN	109		108	109	110	106		258	230	248	288	294
HMAX	368		387	370	379	380		367	373	395	421	425
SHMAX	1768		2143	1966	1857	1662		963	997	833	701	757
KM												
430											875	1004
420											875	1002
410											867	986
400										1004	847	951
390			1555							1002	815	899
380			1552		1420	1341			1167	987	769	834
370	1406		1537	1528	1415	1336		1420	1166	956	710	745
360	1402		1508	1522	1399	1320		1413	1151	911	643	643
350	1383		1467	1503	1371	1294		1380	1119	847	551	540
340	1350		1409	1471	1330	1258		1316	1067	778	456	417
330	1294		1347	1422	1274	1209		1229	1004	688	353	274
320	1232		1265	1360	1212	1158		1119	924	599	240	161
310	1151		1172	1282	1143	1088		975	842	497	143	83.8
300	1061		1077	1203	1050	1004		794	745	398	65.7	40.2
290	960		978	1119	960	896		590	643	298	12.4	
280	854		875	1016	854	781		362	540	189		
270	754		784	896	754	667		143	432	112		
260	661		694	784	661	562		26.3	310	60.0		
250	580		615	679	580	469			179	12.4		
240	522		551	590	508	400			77.6			
230	481		504	514	456	355			3.1			
220	452		471	462	417	323						
210	431		444	421	386	295						
200	410		423	392	359	270						
190	385		399	367	332	245						
180	350		371	342	300	215						
170	314		339	318	268	179						
160	267		304	283	237	143						
150	237		270	257	198	118						
140	219		235	228	174	102						
130	211		215	198	158	94.4						
120	202		204	186	149	89.8						
110	127		143	112	49.6	85.2						

ELECTRON DENSITY

PUERTO RICO 60 W 14 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A	A		A	A
HMIN	302	279	237	212	199	269	268	109	115	115		111
HMAX	416	387	327	318	343	380	371	287	294	331		371
SHMAX	673	687	583	451	399	279	261	552	857	1344		2123
KM												
420	960											
410	957											
400	937											
390	898	1050										
380	846	1044				389	403					1555
370	770	1017				386	403					1555
360	679	966				376	398					1549
350	573	892			461	359	383					1531
340	446	804			461	337	364			1096		1501
330	298	691	1072		456	307	332			1096		1461
320	161	551	1065	652	445	267	291			1090		1405
310	65.7	389	1028	648	426	219	235			1076		1347
300		198	960	632	404	161	179		960	1052		1271
290		90.5	861	604	375	102	107	679	959	1013		1187
280		12.4	716	564	339	63.8	60.0	675	943	969		1096
270			540	513	295	12.4	12.4	655	908	926		1004
260			310	452	251			619	854	883		907
250			104	375	207			567	786	842		804
240			40.2	286	161			502	698	794		716
230				179	119			439	616	726		629
220				65.7	79.7			362	532	631		553
210					49.6			298	454	519		495
200					6.8			245	389	427		442
190								202	325	362		406
180								171	272	310		379
170								143	223	272		352
160								122	187	240		317
150								106	159	210		276
140								94.5	141	182		237
130								87.8	130	164		214
120								71.4	97.2	112		200
110								43.3				

ELECTRON DENSITY

PUERTO RICO 60 W 14 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			S	A	A	A	A					
HMIN	111	110	109	110			105	229	230	258	289	288
HMAX	376	381	370	352			369	355	398	417	431	425
SHMAX	2149	2442	2191	1845			1534	1026	1031	951	807	784
KM												
440											982	
430											982	1004
420										1050	974	1002
410										1047	952	987
400									1119	1032	917	956
390		1876							1114	1004	869	911
380	1669	1876							1094	965	807	847
370	1665	1866	1876				1420		1059	911	732	774
360	1645	1839	1866	1669			1413	1240	1004	847	643	670
350	1606	1796	1835	1668			1390	1238	939	770	529	551
340	1547	1731	1784	1653			1351	1223	867	679	417	432
330	1463	1659	1712	1615			1294	1193	786	573	286	323
320	1370	1565	1617	1555			1230	1148	701	477	189	198
310	1262	1457	1507	1472			1133	1088	608	375	104	112
300	1154	1341	1371	1365			1038	1012	519	270	56.5	56.5
290	1050	1218	1221	1240			928	917	427	170	5.5	12.4
280	949	1096	1050	1111			820	814	327	104		
270	844	960	889	975			704	679	233	60.0		
260	754	844	754	844			596	524	143	12.4		
250	679	735	643	716			497	335	88.3			
240	619	636	567	625			417	97.2	49.6			
230	570	560	508	540			342	12.4	1.3			
220	537	503	467	482			291					
210	511	459	436	439			240					
200	480	424	409	406			202					
190	446	397	384	378			170					
180	407	380	359	350			141					
170	372	367	332	319			117					
160	341	344	300	286			102					
150	306	310	253	253			90.5					
140	266	270	225	216			82.5					
130	234	238	211	196			78.3					
120	211	221	201	184			74.0					
110		83.8	112	49.6			44.9					

ELECTRON DENSITY

PUERTO RICO 60 W 15 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL			A	A		A	A	A			A	A
HMIN	295	272	232	194	226		233	215	114	113		112
HMAX	415	369	324	324	340		342	346	334	354		349
SHMAX	681	609	564	510	357		239	544	1182	1693		1958
KM												
420	960											
410	958											
400	940											
390	903											
380	847											
370	778	1050										
360	688	1038								1341		
350	573	998					389	608		1340		1876
340	467	926				508	389	607	1004	1330		1864
330	335	834	1016	698	503		381	600	1004	1310		1824
320	189	704	1013	696	489		364	589	996	1278		1747
310	90.5	557	988	685	466		335	571	980	1235		1646
300	33.2	389	936	660	435		298	549	954	1181		1528
290		179	854	621	394		246	523	920	1119		1394
280		60.0	742	573	341		186	486	879	1042		1240
270			590	508	278		131	441	827	960		1050
260			389	427	198		87.2	382	761	867		903
250			179	344	117		57.4	302	698	774		767
240			60.0	262	67.6		30.9	198	631	679		661
230				179	26.3			97.2	567	594		567
220				112				43.3	508	521		502
210				67.6					441	462		451
200				34.6					382	417		415
190									316	373		391
180									251	335		368
170									202	294		339
160									164	251		298
150									132	219		259
140									113	176		218
130									105	156		208
120									98.6	145		192

ELECTRON DENSITY

PUERTO RICO 60 W 15 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A					A		A	
HMIN	110			111	110	112	199	255	270	278	279	273
HMAX	374			372	361	355	389	399	417	431	421	418
SHMAX	2360			2142	1951	1835	1398	1337	1031	1231	1247	1208
KM												
440										1420		
430										1420	1473	
420									1265	1409	1473	1446
410									1260	1382	1461	1440
400								1473	1236	1338	1430	1416
390							1341	1467	1192	1277	1380	1373
380	1846			1907			1337	1445	1127	1196	1310	1311
370	1344			1906	1727		1320	1407	1041	1105	1218	1230
360	1831			1891	1726	1612	1293	1354	939	990	1107	1133
350	1801			1853	1714	1610	1254	1274	834	847	990	1004
340	1757			1793	1682	1595	1202	1187	716	698	847	861
330	1697			1705	1629	1565	1148	1096	585	508	698	704
320	1620			1601	1555	1520	1065	971	456	335	540	524
310	1534			1474	1456	1460	971	834	335	198	348	335
300	1423			1341	1341	1382	865	679	198	97.2	170	179
290	1303			1162	1212	1295	754	508	104	56.5	77.6	83.8
280	1191			1004	1073	1191	619	335	53.1	12.4	12.4	44.9
270	1080			847	931	1073	492	179				
260	960			716	807	949	380	49.6				
250	834			608	698	820	286					
240	716			527	599	691	198					
230	608			472	524	562	127					
220	516			432	462	446	79.7					
210	456			398	409	368	49.6					
200	414			370	369	310	6.8					
190	381			341	338	269						
180	352			306	313	240						
170	314			269	288	214						
160	272			234	256	191						
150	232			206	225	166						
140	209			186	201	147						
130	194			173	179	137						
120	184			164	165	129						
110	49.6				40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 16 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	261	242	209	262	288	371	338	117	113	107	109	110
HMAX	378	354	332	399	468	545	458	336	314	447	432	457
SHMAX	991	880	610	496	531	546	553	668	540	1128	1259	1681
KM												
550						508						
540						507						
530						504						
520						496						
510						484						
500						468						
490						450						
480						427						
470					500	398						
460					499	365	679					804
450					493	324	676			477		803
440					482	281	665			476	573	798
430					467	236	645			475	573	791
420					450	189	614			473	572	780
410					425	138	580			469	569	765
400				608	395	93.9	535			465	564	745
390				604	365	62.9	482			459	557	723
380	1500			592	328	40.2	417			453	548	696
370	1490			570	290		335			444	537	668
360	1450	1240		540	251		240			433	523	640
350	1379	1238		503	212		112			422	508	608
340	1274	1220	875	456	170		26.3	854		410	491	576
330	1143	1182	875	403	127			850		397	473	546
320	960	1123	863	342	90.5			826	410	385	455	517
310	774	1041	834	270	64.6			782	410	373	438	490
300	540	931	787	198	43.9			716	408	360	421	465
290	286	807	723	127	8.4			625	403	348	405	442
280	107	643	643	74.5				529	396	336	389	423
270	49.6	462	551	43.3				408	387	327	376	406
260		219	432					302	375	317	364	390
250		65.7	298					229	364	308	354	381
240			179					193	348	301	345	372
230			97.2					168	328	294	335	363
220			53.1					146	301	287	331	356
210			5.5					125	271	277	326	350
200								105	243	266	321	343
190								92.1	216	253	316	337
180								83.3	193	238	311	323
170								80.6	168	222	291	308
160								77.9	146	202	258	289
150								75.2	131	181	219	262
140								72.5	123	163	187	232
130								65.7	117	153	173	211
120								49.6	107	144	164	194
110										97.2	97.2	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 16 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL				A			A					
HMIN	109	110	109		111	113		302	304	292	268	279
HMAX	370	336	369		363	398		480	451	410	378	425
SHMAX	1672	1292	1301		1162	1280		1352	1134	1061	1085	1069
KM												
480								1143				
470								1139				
460								1128	1316			
450								1109	1315			
440								1083	1305			
430								1050	1279			1341
420								1009	1234			1339
410								960	1173	1555		1317
400						854		905	1104	1539		1274
390						852		841	1004	1491		1210
380						843		774	875	1408	1612	1124
370	1303		814		754	825		701	754	1303	1601	1016
360	1296		811		754	803		616	625	1159	1559	903
350	1275		803		750	772		532	492	990	1485	767
340	1240	1143	788		742	735		446	348	814	1376	625
330	1186	1139	768		728	696		344	198	573	1240	477
320	1127	1118	745		709	652		209	104	335	1065	310
310	1050	1073	713		684	603		83.8	46.5	143	875	179
300	960	1011	675		655	559				60.0	643	97.2
290	865	934	638		624	513					362	53.1
280	764	850	596		589	469					127	5.5
270	679	762	557		553	432					26.3	
260	594	672	519		519	398						
250	529	594	484		484	372						
240	473	534	455		452	348						
230	437	481	431		423	327						
220	408	444	410		397	306						
210	388	420	394		373	288						
200	374	403	381		350	270						
190	360	387	370		326	251						
180	347	372	358		302	232						
170	333	326	342		277	213						
160	312	293	320		256	194						
150	288	260	295		234	172						
140	259	233	270		213	152						
130	229	214	243		194	139						
120	209	204	226		179	130						
110	97.2	71.4	127									

ELECTRON DENSITY

PUERTO RICO 60 W 17 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A	A	A	A	A
HMIN	288	259	222	273	269	298	309		110		110	
HMAX	396	384	404	473	436	459	464		437		386	
SHMAX	1051	1117	933	952	880	812	827		927		892	
KM												
480				917								
470				917			854					
460				909		885	854					
450				892		881	846					
440				865	885	867	831		446			
430				834	884	843	808		446			
420				788	875	808	777		444			
410			774	729	857	764	740		440			
400	1612		773	665	830	710	690		435			
390	1605	1341	769	599	797	643	631		428		417	
380	1568	1340	759	524	754	565	567		420		417	
370	1495	1326	745	454	700	484	492		409		416	
360	1388	1296	725	382	643	398	408		397		414	
350	1254	1251	700	316	580	310	310		384		412	
340	1073	1188	670	248	500	209	209		369		408	
330	854	1115	635	192	417	132	112		353		404	
320	508	1016	596	139	335	83.8	60.0		335		399	
310	362	889	551	101	240	52.2	5.5		316		393	
300	127	735	503	73.9	143	12.4			299		386	
290	26.3	573	456	51.7	88.3				283		376	
280		389	408	28.3	52.2				269		366	
270		179	362		6.8				258		356	
260		40.2	305						248		345	
250			240						240		334	
240			143						236		325	
230			60.0						231		316	
220									227		308	
210									223		302	
200									219		297	
190									209		291	
180									197		286	
170									179		266	
160									156		237	
150									138		213	
140									126		197	
130									120		188	
120									114		179	
110									12.4		49.6	

ELECTRON DENSITY

PUERTO RICO 60 W 17 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	S	A	A	A	A	A	A			
HMIN		112		117	115			264	279	242	264	259
HMAX		331		330	306			391	446	397	404	386
SHMAX		934		1042	874			525	788	685	653	573
KM												
450									854			
440									852			
430									841			
420									819			
410									785		814	
400								652	740	834	813	
390								652	690	830	802	754
380								646	629	814	778	752
370								630	560	781	742	739
360								604	492	733	695	713
350								569	417	679	637	679
340		661						522	335	615	567	625
330		661		314				471	240	540	484	560
320		657		809				411	167	462	398	484
310		646		796	834			348	107	380	298	398
300		626		775	831			278	71.4	294	189	302
290		604		743	814			205	44.9	219	112	209
280		570		702	781			127	3.1	143	65.7	119
270		537		656	733			54.8		97.2	34.6	60.0
260		502		608	673					62.9		5.5
250		471		561	613					35.5		
240		444		520	551							
230		425		484	497							
220		410		452	451							
210		399		427	411							
200		387		402	380							
190		370		374	347							
180		348		346	313							
170		317		318	279							
160		286		286	248							
150		260		253	223							
140		240		224	198							
130		229		205	175							
120		209		71.4	161							

ELECTRON DENSITY

PUERTO RICO 60 W 18 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A							B				
HMIN	277	293	284	293	276	292	269		109	117	116	111
HMAX	399	430	450	427	439	432	345		268	312	359	346
SHMAX	521	463	568	452	522	490	370		798	1136	1760	1797
KM												
450			608									
440			604		540	573						
430		573	593	573	538	573						
420		569	576	571	531	568						
410		556	548	560	518	557						
400	688	534	518	540	500	538						
390	684	504	481	511	479	515						
380	670	468	432	472	446	484						
370	646	422	378	427	413	442						
360	614	367	325	372	371	389					1303	
350	568	304	272	310	320	329	698				1299	1420
340	508	240	219	246	268	262	695				1285	1417
330	432	167	165	179	214	186	674				1262	1404
320	344	107	115	117	161	119	631			1050	1227	1379
310	240	65.7	77.6	68.6	112	71.4	573			1049	1183	1341
300	135	40.2	52.2	40.2	74.5	42.5	492			1038	1136	1288
290	67.6		26.3		47.7		389			1012	1069	1232
280	19.3				16.4		219			969	1004	1151
270							40.2		1050	910	926	1073
260									1041	841	850	993
250									1004	774	781	896
240									934	709	710	794
230									844	643	649	698
220									742	588	590	608
210									619	535	527	540
200									487	486	462	490
190									389	437	400	446
180									323	382	350	405
170									274	320	314	365
160									237	274	279	327
150									206	237	244	286
140									183	204	210	248
130									171	188	191	217
120									162	83.8	179	203
110									60.0			

ELECTRON DENSITY

PUERTO RICO 60 W 18 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		B										
HMIN	113		118	110	110	109	113	269	270	274	269	260
HMAX	395		359	535	361	341	354	413	397	411	373	373
SHMAX	2366		2222	1737	1712	1395	1179	1053	902	952	827	817
KM												
420								1143		1215		
410								1142		1215		
400	1640							1132	1191	1204		
390	1638							1109	1186	1172		
380	1626							1072	1162	1121	1290	1215
370	1601				1290			1021	1119	1050	1289	1214
360	1564		2032		1290		1061	960	1050	960	1267	1194
350	1510		2020		1284	1265	1060	889	969	861	1219	1149
340	1452		1981	1669	1267	1265	1049	804	875	742	1143	1077
330	1374		1915	1665	1240	1256	1027	707	754	619	1038	982
320	1286		1816	1640	1199	1233	991	616	619	477	903	861
310	1199		1695	1590	1159	1195	944	508	492	310	735	729
300	1115		1555	1506	1102	1143	887	389	335	161	540	557
290	1013		1394	1400	1027	1073	826	262	152	79.7	286	375
280	917		1221	1278	943	996	754	127	71.4	40.2	97.2	198
270	834		1050	1143	858	896	670	12.4	3.1		12.4	71.4
260	747		903	1004	778	794	587					3.1
250	672		767	861	701	691	508					
240	608		670	742	629	590	435					
230	554		587	636	560	508	372					
220	518		529	562	503	435	315					
210	488		481	503	455	380	267					
200	462		443	455	417	335	223					
190	436		411	413	385	296	192					
180	408		383	373	352	262	163					
170	371		356	339	317	232	139					
160	332		329	303	286	206	120					
150	300		298	269	253	181	106					
140	262		262	240	219	157	95.3					
130	232		245	219	195	141	88.9					
120	143		83.8	193	174	132	75.6					
110				12.4	12.4	60.0						

ELECTRON DENSITY

PUERTO RICO 60 W 19 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A	A	
HMIN	279	291	305	278	272	243	246	114	109			117
HMAX	392	427	435	418	395	348	372	287	320			383
SHMAX	656	780	747	750	681	629	533	432	750			2223
KM												
440			949									
430		960	948									
420		957	934	960								
410		942	907	955								
400	960	913	870	934	971							
390	960	875	814	894	969							1555
380	946	820	739	840	948		634					1555
370	912	747	652	774	905		634					1547
360	857	661	551	698	846		629					1529
350	786	562	446	608	770	960	616					1502
340	698	456	310	500	679	955	597					1464
330	596	323	179	398	573	931	570					1415
320	477	189	88.3	286	462	889	540		643			1362
310	335	102	33.2	170	335	834	497		639			1294
300	179	53.1		97.2	189	754	441		628			1213
290	77.6			54.8	90.5	631	380	652	610			1124
280	12.4			12.4	46.5	492	298	644	582			1031
270						335	198	608	548			934
260						143	90.5	540	511			842
250						49.6	40.2	456	473			747
240								348	437			665
230								268	403			594
220								226	368			535
210								189	335			482
200								161	303			442
190								136	266			405
180								115	227			372
170								100	187			339
160								90.5	150			307
150								83.0	133			280
140								79.0	120			248
130								75.0	109			214
120								65.7	102			112
110									60.0			

ELECTRON DENSITY

PUERTO RICO 60 W 19 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A	S			A	A	A	A	A		
HMIN	107	109		109	112				228	245	305	300
HMAX	352	358		353	385				381	421	440	431
SHMAX	2042	2111		1784	1924				783	764	635	671
KM												
440											834	949
430										804	827	949
420										804	806	937
410										798	767	904
400										782	721	854
390					1446				917	757	657	786
380					1445				917	723	573	698
370					1434				910	679	484	596
360	1669	1846		1555	1412				890	625	389	477
350	1668	1839		1555	1380				854	568	294	362
340	1657	1811		1540	1335				809	508	198	240
330	1629	1763		1508	1276				754	439	119	143
320	1584	1694		1458	1212				679	362	67.6	83.8
310	1516	1597		1382	1143				599	292	33.2	49.6
300	1437	1483		1291	1041				516	219		1.3
290	1341	1354		1191	943				427	155		
280	1240	1201		1080	844				327	108		
270	1143	1034		946	735				219	74.5		
260	1019	889		820	643				138	51.7		
250	907	767		707	560				83.8	21.7		
240	794	652		608	497				52.2			
230	688	565		534	446				12.4			
220	601	499		477	414							
210	535	455		435	381							
200	482	423		403	356							
190	432	401		375	326							
180	389	380		348	286							
170	356	356		317	250							
160	331	328		282	219							
150	312	290		244	194							
140	279	251		210	160							
130	244	221		193	152							
120	224	206		182	145							
110	161	143		60.0								

ELECTRON DENSITY

PUERTO RICO 60 W 20 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												A
HMIN	290	299	288	306	245	219	304	109	112	110	106	109
HMAX	421	410	418	430	323	349	464	350	332	335	372	365
SHMAX	755	712	658	582	524	478	560	1020	1323	1633	2457	2485
KM												
470							532					
460							532					
450							528					
440							519					
430	1004			844			506					
420	1004		854	834			488					
410	994	1004	850	906			467					
400	967	997	834	759			441					
390	922	974	803	694			410					
380	861	934	759	622			375			1846		
370	784	881	701	529			339			1845	2096	
360	688	804	629	427			300			1836	2093	
350	585	691	540	323		590	257	906		1813	2073	
340	462	562	446	209		587	209	902	1167	1528	1776	2032
330	335	403	344	112	1191	576	152	890	1167	1525	1726	1970
320	198	240	219	63.8	1188	556	97.2	869	1160	1506	1660	1888
310	102	97.2	119	26.3	1143	526	46.5	840	1143	1467	1573	1795
300	49.6	12.4	60.0		1050	491		802	1116	1404	1483	1669
290			12.4		875	446		759	1079	1332	1383	1524
280					661	395		698	1033	1240	1274	1359
270					389	329		636	977	1119	1155	1182
260					127	262		565	910	1004	1038	1019
250					49.6	192		492	841	875	917	875
240						112		417	754	754	807	745
230						56.5		348	661	643	716	643
220						5.5		286	562	548	625	562
210								235	456	477	540	508
200								191	362	417	477	459
190								155	286	366	417	421
180								129	227	327	373	381
170								110	189	289	335	343
160								96.5	158	255	307	306
150								89.0	136	219	278	266
140								82.1	124	194	251	235
130								76.5	119	174	224	215
120								67.6	113	163	204	204
110								12.4		12.4	83.8	97.2

ELECTRON DENSITY

PUERTO RICO 60 W 20 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A									A		
HMIN	109	116	109	110	110	116	112	262	233	272	291	300
HMAX	364	370	378	372	361	363	370	391	395	412	414	439
SHMAX	2420	2419	2338	2122	1823	1679	1612	1134	1057	927	799	918
KM												
440												1061
430												1056
420										1191	1167	1040
410										1191	1165	1011
400								1290	1191	1177	1141	969
390								1290	1189	1143	1092	922
380			1727	1669				1282	1172	1088	1013	854
370	2096	2032	1722	1668	1555	1500	1500	1262	1139	1012	917	770
360	2093	2021	1705	1657	1555	1500	1493	1226	1090	917	794	667
350	2070	1988	1675	1631	1544	1487	1469	1180	1027	814	679	551
340	2014	1934	1632	1588	1514	1457	1430	1129	943	691	524	417
330	1924	1851	1575	1526	1465	1411	1375	1050	854	573	375	274
320	1819	1750	1501	1454	1394	1348	1305	946	754	432	229	143
310	1704	1631	1420	1360	1311	1265	1229	820	655	286	112	65.7
300	1555	1507	1330	1260	1204	1164	1119	679	540	170	56.5	3.1
290	1401	1371	1218	1154	1096	1061	1004	524	432	90.5		
280	1240	1221	1107	1038	993	949	885	323	318	46.5		
270	1096	1061	993	917	885	824	754	143	212			
260	949	928	885	807	784	704	631		127			
250	834	804	784	707	694	599	508		75.6			
240	726	707	694	625	615	508	408		42.5			
230	650	622	622	557	547	435	323					
220	580	559	568	503	487	378	257					
210	524	508	517	455	437	327	211					
200	481	469	472	414	393	289	176					
190	443	432	427	385	350	256	148					
180	411	398	384	365	314	225	125					
170	383	323	343	342	276	196	106					
160	355	282	307	310	243	174	92.4					
150	323	246	272	274	213	154	83.5					
140	286	223	243	243	186	141	79.8					
130	248	209	216	217	172	134	76.2					
120	223	179	202	200	163	119	72.5					
110	112		49.6	49.6	12.4							

ELECTRON DENSITY

PUERTO RICO 60 W 21 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	280	251	201	249	258	239	268	110	110	108	110	109
HMAX	393	352	319	388	395	393	366	299	287	322	354	332
SHMAX	855	723	522	486	497	480	407	799	958	1530	2030	1938
KM												
400	1240				599	532						
390	1239			599	598	532						
380	1220			596	590	526						
370	1179			584	573	513	616					
360	1116	1167		563	549	491	614				1640	
350	1027	1166		532	518	463	601				1639	
340	907	1147		490	477	430	576				1625	1907
330	781	1102		446	427	393	543			1473	1595	1906
320	608	1031	735	389	368	348	495			1473	1549	1884
310	417	928	730	329	304	305	424			1461	1480	1832
300	219	807	711	268	233	258	344	1050		1431	1403	1743
290	77.6	661	679	205	161	214	251	1041	1240	1384	1314	1631
280		446	631	135	97.2	170	143	1013	1232	1320	1216	1493
270		219	573	88.3	54.8	122	26.3	960	1195	1247	1105	1341
260		83.8	492	52.2	12.4	79.7		892	1127	1143	996	1175
250			408	6.8		47.7		784	1027	1027	885	1004
240			318			6.8		667	903	889	784	861
230			219					524	767	754	698	742
220			119					380	619	619	625	643
210			49.6					278	497	519	560	565
200								214	398	439	502	502
190								164	318	378	446	446
180								130	262	327	398	401
170								106	219	282	357	358
160								91.6	185	244	314	318
150								82.7	157	212	274	286
140								79.1	141	186	237	258
130								75.4	134	173	214	237
120								71.8	128	163	198	224
110									12.4	83.8	49.6	143

ELECTRON DENSITY

PUERTO RICO 60 W 21 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					A	A	A	A	A			
HMIN	108	109	110	110	109				225	269	268	275
HMAX	365	385	376	394	380				382	421	416	403
SHMAX	2335	2690	2443	2644	2257				1074	1021	1108	935
KM												
430										1240		
420										1240	1303	
410										1229	1300	1240
400				2032						1198	1282	1239
390		2000		2030					1167	1149	1247	1223
380		1998	1922	2013	1922				1166	1080	1196	1186
370	1846	1979	1918	1976	1912				1156	993	1129	1127
360	1843	1943	1897	1920	1880				1131	885	1050	1050
350	1825	1884	1855	1837	1827				1091	774	946	949
340	1788	1808	1793	1743	1750				1037	655	824	834
330	1734	1717	1705	1631	1656				968	524	691	704
320	1658	1612	1601	1507	1531				883	398	540	557
310	1555	1501	1483	1381	1407				802	262	362	389
300	1446	1381	1354	1240	1269				707	161	198	198
290	1330	1253	1229	1096	1096				616	90.5	104	97.2
280	1216	1127	1111	971	960				516	52.2	56.5	44.9
270	1096	1004	982	854	824				417	5.5	12.4	
260	975	896	875	754	716				298			
250	867	810	774	672	616				179			
240	774	729	694	608	540				90.5			
230	694	661	625	554	482				43.3			
220	622	603	573	512	435							
210	564	551	532	473	397							
200	517	504	490	437	362							
190	472	467	450	403	328							
180	430	435	414	371	295							
170	392	406	379	335	265							
160	355	375	345	307	237							
150	318	342	313	277	212							
140	282	307	286	250	191							
130	248	274	253	224	176							
120	229	249	228	206	167							
110	143	83.8	60.0	49.6	83.8							

ELECTRON DENSITY

PUERTO RICO 60 W 22 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A	A	
HMIN	260	239	219	232	334	348	280	109	110	111		112
HMAX	374	326	303	424	513	484	360	266	273	304		405
SHMAX	817	720	389	734	617	417	447	671	922	1063		2122
KM												
520					573							
510					573							
500					569							
490					561	484						
480					548	484						
470					530	479						
460					508	467						
450					482	454						
440					450	436						
430				643	413	408						
420				642	371	371						
410				638	323	325						1265
400				630	274	274						1264
390				616	224	214						1258
380	1341			598	174	143						1246
370	1338			576	123	92.8						1227
360	1307			548	83.8	53.1	804					1203
350	1240			518	54.8	12.4	793					1172
340	1143			481	26.3		763					1134
330	1004	1341		437			710					1091
320	834	1334		389			643					1044
310	643	1292	754	341			529			1050		985
300	417	1211	753	286			403			1048		923
290	219	1096	734	229			219			1036		861
280	112	917	690	179			12.4		1420	1011		794
270	56.5	679	625	127				1191	1417	969		733
260		375	529	83.8				1180	1379	917		673
250		143	389	55.9				1116	1291	854		618
240		12.4	219	30.5				990	1171	778		569
230			83.8					834	939	694		529
220			12.4					643	679	608		497
210								462	492	529		473
200								335	389	446		454
190								233	327	382		435
180								174	282	316		413
170								138	248	262		373
160								115	216	222		327
150								101	191	179		289
140								92.8	170	159		240
130								86.4	155	152		212
120								74.5	138	145		198
110								40.2	12.4			

ELECTRON DENSITY

PUERTO RICO 60 W 22 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	S	A	A							
HMIN	110	112		110		111	113	251	259	245	269	308
HMAX	394	378		369		352	375	382	380	426	431	438
SHMAX	2502	2290		1744		1267	1248	878	705	904	710	576
KM												
440											754	735
430										814	754	732
420										812	749	717
410										806	736	692
400	1727									793	713	655
390	1726							1050		775	682	608
380	1716	1846					1050	1049	982	750	643	547
370	1696	1840		1316			1048	1040	972	720	596	477
360	1664	1817		1311		1143	1039	1016	939	683	540	398
350	1619	1777		1294		1142	1019	979	891	638	477	310
340	1574	1719		1267		1130	990	928	826	590	410	209
330	1512	1640		1224		1100	951	867	745	535	342	119
320	1438	1545		1170		1050	901	794	643	477	274	60.0
310	1350	1435		1109		982	846	698	540	410	205	12.4
300	1240	1312		1041		909	778	608	437	342	135	
290	1143	1159		952		826	701	497	310	262	83.8	
280	1004	1004		865		747	625	348	161	173	49.6	
270	885	875		764		661	547	198	71.4	104	6.8	
260	774	754		679		582	469	71.4	12.4	60.0		
250	679	652		601		508	400			29.1		
240	601	573		540		445	335					
230	540	517		490		401	286					
220	492	477		453		362	245					
210	460	446		425		332	213					
200	435	425		397		305	186					
190	414	403		372		277	163					
180	396	378		347		248	143					
170	375	348		325		219	126					
160	350	314		303		193	112					
150	317	274		279		168	99.6					
140	276	237		246		147	93.1					
130	238	213		217		136	87.9					
120	222	201		200		127	75.6					
110	40.2			40.2								

ELECTRON DENSITY

PUERTO RICO 60 W 23 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		A	A	A		A						
HMIN	311	288	278	288	281	246	238	119	110	109	109	110
HMAX	429	412	397	415	405	358	323	278	292	287	377	368
SHMAX	505	576	464	503	529	548	404	507	859	959	1926	2202
KM												
430	716											
420	710	774		670								
410	689	774		668	698							
400	652	765	661	657	696							
390	596	743	658	634	685							
380	534	708	643	599	664						1252	
370	469	661	615	551	631						1251	1697
360	389	601	573	495	588	754					1242	1693
350	310	524	521	424	534	751					1227	1677
340	219	437	454	353	465	736					1205	1647
330	127	335	371	270	389	709	716				1175	1605
320	60.0	229	286	189	298	671	715				1130	1549
310		127	192	112	189	625	701				1100	1485
300		63.8	112	60.0	97.2	560	670		949		1050	1408
290		12.4	60.0	12.4	53.1	477	623		949	1096	988	1307
280			12.4			371	557	599	935	1089	929	1184
270						219	446	596	900	1059	869	1050
260						97.2	310	586	847	997	811	903
250						40.2	143	566	781	917	754	781
240							26.3	543	701	814	695	661
230								508	622	704	638	582
220								462	540	596	585	524
210								403	462	508	529	481
200								318	395	446	477	446
190								219	335	398	427	420
180								156	286	358	375	394
170								122	244	318	335	365
160								104	213	282	296	328
150								94.9	185	246	253	293
140								90.3	164	214	214	249
130								85.7	153	192	194	219
120								40.2	144	176	183	204
110									12.4	60.0	71.4	40.2

ELECTRON DENSITY

PUERTO RICO 60 W 23 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			A							A	A	A
HMIN	114	114		110	109	111	113	249	285	279	329	279
HMAX	379	387		400	393	364	366	388	436	416	433	426
SHMAX	2199	2335		2218	2108	1710	1411	976	1034	867	775	1011
KM												
440									1167		1167	
430									1164		1166	1191
420									1147	1143	1144	1188
410									1115	1139	1097	1172
400				1528	1555				1067	1115	1022	1140
390		1756		1522	1555			1143	1004	1067	928	1094
380	1612	1752		1504	1544			1138	926	997	807	1033
370	1606	1731		1474	1519	1500	1290	1116	842	917	691	953
360	1586	1694		1431	1481	1499	1287	1075	745	824	557	865
350	1550	1633		1378	1425	1483	1271	1017	643	716	389	764
340	1492	1563		1318	1355	1451	1240	953	529	608	161	631
330	1430	1474		1240	1274	1391	1186	875	417	477	12.4	462
320	1349	1373		1152	1187	1326	1129	786	298	323		323
310	1265	1262		1059	1096	1248	1057	691	189	198		198
300	1178	1162		969	1004	1153	978	590	97.2	104		102
290	1086	1050		875	900	1050	875	477	44.9	56.5		54.8
280	982	939		794	810	939	784	362		5.5		5.5
270	885	834		716	716	834	679	219				
260	786	739		643	636	735	582	97.2				
250	709	661		588	573	631	492	12.4				
240	638	598		540	522	532	410					
230	588	553		505	477	454	346					
220	544	518		477	443	395	291					
210	516	490		453	412	347	245					
200	488	463		429	386	306	205					
190	456	433		403	355	271	174					
180	426	403		372	321	240	148					
170	397	374		341	289	211	127					
160	362	339		306	259	185	109					
150	318	302		266	228	157	98.3					
140	272	258		229	203	141	93.1					
130	237	232		211	190	135	88.4					
120	219	209		198	180	128	83.8					
110				12.4	49.6							

ELECTRON DENSITY

PUERTO RICO 60 W 24 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL					A				A		A	
HMIN	289	242	241	263	276	260	238	118	112	117	107	110
HMAX	403	364	375	411	404	372	355	320	341	350	356	362
SHMAX	853	797	680	067	620	546	583	943	1442	1977	2178	2405
KM												
420				774								
410	1240			774	774							
400	1239			768	773							
390	1220			752	764							
380	1179		834	726	743	794						
370	1111	1143	832	687	713	793						2000
360	1027	1141	820	643	674	783	834				1815	2000
350	903	1121	797	590	619	758	832		1143	1640	1812	1985
340	754	1079	758	524	553	716	817		1143	1633	1791	1950
330	608	1012	711	446	477	661	785		1138	1614	1750	1890
320	403	926	655	368	389	590	738	960	1126	1581	1690	1810
310	229	820	582	286	286	508	679	955	1106	1531	1603	1711
300	83.8	691	500	192	170	398	599	941	1076	1471	1501	1593
290	12.4	557	417	112	83.8	274	508	917	1041	1398	1388	1460
280		389	327	68.6	40.2	143	398	885	999	1314	1254	1327
270		209	219	40.2		65.7	262	843	949	1216	1119	1175
260		97.2	127			3.1	135	787	893	1105	990	1034
250		46.5	53.1				65.7	716	826	982	875	903
240							12.4	634	754	865	764	784
230								548	672	742	679	688
220								446	590	631	608	615
210								335	508	532	554	551
200								233	424	454	512	503
190								161	348	382	473	462
180								118	286	325	432	421
170								94.5	236	276	384	377
160								83.0	198	237	335	339
150								79.2	164	204	294	302
140								75.3	142	181	255	266
130								71.4	133	169	224	222
120								26.3	118	127	204	207
110											143	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 24 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL				A	A		A					
HMIN	110	110	110			110	112	244	267	281	283	278
HMAX	389	373	393			378	387	424	412	418	411	393
SHMAX	2814	2601	2822			2047	2099	1571	1154	1180	1025	994
KM												
430								1420				
420								1419	1420	1446	1473	
410								1409	1419	1440	1473	
400			2096					1388	1404	1415	1455	1446
390	2063		2095				1612	1357	1368	1371	1409	1445
380	2057	2096	2081			1697	1609	1309	1310	1302	1331	1423
370	2034	2095	2048			1692	1596	1256	1230	1221	1228	1375
360	1995	2077	1998			1671	1573	1191	1131	1119	1096	1299
350	1940	2039	1930			1634	1539	1119	1016	975	945	1191
340	1866	1979	1841			1581	1495	1031	875	834	754	1065
330	1786	1897	1739			1505	1439	928	729	667	524	875
320	1679	1796	1618			1415	1369	824	573	492	323	679
310	1555	1669	1487			1311	1286	716	417	310	179	477
300	1431	1524	1354			1208	1199	608	262	152	88.3	262
290	1291	1381	1212			1096	1107	492	135	60.0	43.3	97.2
280	1167	1240	1080			982	1004	375	71.4			26.3
270	1038	1096	949			861	907	251	19.3			
260	917	960	834			745	784	127				
250	818	834	739			643	655	49.6				
240	732	735	661			560	540					
230	661	657	603			489	446					
220	602	590	554			429	368					
210	546	540	515			372	305					
200	499	496	485			320	255					
190	458	460	455			274	216					
180	424	427	424			233	187					
170	392	392	392			198	163					
160	354	358	358			170	143					
150	314	326	323			150	128					
140	270	295	295			134	121					
130	237	268	276			123	114					
120	222	243	251			116	92.8					
110	12.4	49.6	40.2			49.6						

ELECTRON DENSITY

PUERTO RICO 60 W 25 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL												A
HMIN	259	221	258	275	258	239	240	116	107	110	110	109
HMAX	360	356	409	409	387	348	346	299	304	306	311	358
SHMAX	1001	968	695	649	670	626	566	790	1244	1361	1273	2236
KM												
410			804	834								
400			799	829								
390			784	811	875							
380			758	778	871							
370			720	735	855							
360	1555	1191	673	679	824							1907
350	1540	1188	613	608	779	906	774					1900
340	1493	1169	548	524	723	901	772					1873
330	1415	1134	477	432	650	881	759					1825
320	1303	1082	398	335	573	845	736				1446	1750
310	1159	1012	318	219	477	794	700		1316	1446	1438	1658
300	982	928	229	119	362	724	653	1004	1314	1442	1357	1555
290	754	824	152	63.8	229	643	594	995	1298	1414	1260	1420
280	462	704	88.3	29.1	119	524	516	965	1264	1362	1162	1291
270	143	573	52.2		60.0	375	417	905	1212	1282	1050	1167
260	12.4	446	12.4		12.4	219	286	834	1143	1179	939	1019
250		286				77.6	127	745	1059	1061	824	889
240		143				12.4		643	939	928	726	767
230		60.0						540	820	794	655	670
220								417	691	688	590	594
210								318	573	590	540	527
200								248	462	508	495	472
190								194	375	435	442	430
180								150	304	375	389	389
170								125	249	320	335	354
160								108	207	272	286	317
150								96.1	174	227	229	274
140								90.2	150	194	198	216
130								84.4	137	174	188	195
120								53.1	127	162	174	184
110									90.5	71.4	12.4	49.6

ELECTRON DENSITY

PUERTO RICO 60 W 25 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OUAL		B	S			A	A					
HMIN	111			111	110	112		247	238	279	330	293
HMAX	360			398	385	364		391	437	451	482	425
SHMAX	2298			2596	2489	1767		1087	1208	788	804	746
KM												
490											917	
480											917	
470											909	
460										896	889	
450										896	858	
440									1050	887	814	
430									1048	860	754	960
420									1039	820	694	958
410									1022	771	616	943
400				1376				1191	999	710	532	912
390				1871	1969			1191	967	649	439	863
380				1852	1966			1183	926	580	348	805
370				1818	1949	1612		1162	880	500	251	732
360	1876			1765	1915	1610		1128	827	424	152	643
350	1867			1696	1863	1593		1078	761	348	83.8	540
340	1838			1620	1793	1558		1017	686	270	49.6	437
330	1791			1534	1705	1503		943	615	192	1.3	310
320	1715			1425	1601	1429		865	540	132		179
310	1627			1316	1483	1341		767	456	90.5		90.5
300	1523			1184	1354	1240		661	371	62.3		43.3
290	1407			1061	1212	1096		551	278	42.1		
280	1278			949	1065	971		417	192	4.5		
270	1155			844	928	834		240	122			
260	1034			747	804	704		112	79.7			
250	917			672	698	596		40.2	49.6			
240	814			608	608	508			12.4			
230	716			561	535	441						
220	643			524	482	389						
210	573			494	438	344						
200	517			465	399	306						
190	472			432	368	266						
180	425			389	335	223						
170	384			348	301	179						
160	343			306	269	157						
150	302			269	233	145						
140	268			240	205	138						
130	234			215	189	133						
120	203			189	172	127						
110					12.4							

ELECTRON DENSITY

PUERTO RICO 60 W 26 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL												
HMIN	292	259	238	238	284	278	245	113	110	110	115	114
HMAX	406	367	348	396	418	392	377	290	316	371	369	372
SHMAX	588	590	462	441	328	316	389	649	1130	1755	2114	2365
KM												
420					417							
410	960				415							
400	958			461	406	446						
390	941			461	391	446						
380	909			455	367	441	500			1143		1907
370	863	875		445	338	427	498			1143	1555	1906
360	800	871		429	302	404	489			1139	1551	1893
350	704	852	643	412	262	377	472			1129	1535	1861
340	596	818	640	389	215	340	451			1113	1508	1811
330	462	771	626	354	170	286	420			1090	1470	1735
320	323	698	603	314	123	229	375		1004	1059	1413	1648
310	161	596	570	274	83.8	170	325		1003	1023	1348	1543
300	60.0	487	529	232	54.8	97.2	262		991	984	1271	1420
290		348	471	191	26.3	57.4	198	854	969	943	1195	1283
280		198	396	152		12.4	132	845	935	898	1115	1143
270		77.6	310	115			83.8	818	894	852	1027	1004
260		12.4	179	79.7			54.8	771	840	804	939	885
250			83.8	47.6			21.7	709	781	754	850	774
240			21.7	12.4				625	722	706	762	686
230								529	655	653	672	613
220								417	587	596	599	554
210								318	521	534	527	508
200								226	452	471	471	470
190								170	389	411	417	437
180								130	329	351	375	403
170								108	272	300	335	365
160								92.3	219	258	300	328
150								82.4	182	222	262	290
140								77.6	156	194	232	253
130								72.9	139	174	209	228
120								57.9	127	161	161	189
110									49.6	49.6		

ELECTRON DENSITY

PUERTO RICO 60 W 26 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OUAL							A					A
HMIN	110	110	110	109	110	110		261	267	280	299	329
HMAX	369	393	389	375	394	364		405	415	422	426	439
SHMAX	2427	2933	2503	2051	2115	1652		1259	947	953	870	769
KM												
440												1119
430										1191	1167	1109
420									1119	1191	1163	1076
410								1240	1117	1178	1140	1017
400		2063			1500			1239	1100	1146	1096	934
390		2063	1786		1500			1229	1067	1096	1027	834
380		2052	1780	1528	1489			1210	1016	1027	943	729
370	2032	2029	1760	1526	1468	1500		1181	946	939	844	596
360	2022	1992	1727	1513	1431	1499		1143	867	834	729	462
350	1990	1943	1680	1486	1381	1478		1096	778	726	608	310
340	1935	1878	1615	1446	1328	1433		1037	679	608	477	143
330	1851	1807	1546	1388	1260	1366		960	582	477	323	12.4
320	1750	1717	1455	1326	1183	1222		875	477	335	152	
310	1626	1612	1352	1248	1104	1135		774	371	189	65.7	
300	1487	1495	1250	1153	1013	1050		667	240	97.2	12.4	
290	1341	1367	1153	1061	926	949		551	135	53.1		
280	1184	1240	1038	969	842	844		403	67.6			
270	1034	1084	928	875	762	754		219	19.3			
260	896	949	834	786	686	665						
250	784	834	747	701	625	587						
240	688	726	673	629	568	521						
230	619	643	613	573	517	467						
220	565	585	564	526	477	417						
210	526	532	520	484	434	375						
200	491	492	481	450	393	335						
190	454	454	446	409	353	298						
180	417	420	409	369	314	259						
170	381	385	369	332	274	222						
160	343	352	328	296	232	190						
150	307	314	290	259	198	165						
140	270	282	257	231	181	147						
130	238	254	234	213	172	136						
120	221	219	220	201	163	128						
110	40.2	12.4	49.6	71.4	12.4	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 27 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												
HMIN	284	260	234	211	260	282	290	117	111	110	116	110
HMAX	395	387	313	376	402	401	373	278	282	311	372	376
SHMAX	664	714	467	566	434	341	359	720	890	1144	1930	2287
KM												
410					500	500						
400	1016				500	500						
390	1013	1004			495	494						
380	990	999		548	485	477	608				1406	1669
370	942	975		547	466	449	607				1406	1666
360	875	928		542	443	412	597				1398	1652
350	784	867		531	411	362	573				1379	1625
340	679	784		516	377	298	536				1349	1585
330	551	679		493	339	233	487				1296	1530
320	417	565	1004	468	291	170	417			1084	1240	1466
310	240	456	1002	439	240	107	318			1084	1179	1385
300	97.2	323	966	401	186	67.6	161			1074	1111	1295
290	46.5	198	892	362	127	42.1	12.4		1072	1045	1034	1201
280		104	767	318	80.7			1027	1072	998	953	1105
270		53.1	625	276	49.6			1019	1058	936	882	993
260			417	232	1.3			989	1024	867	807	885
250			161	189				936	967	794	742	784
240			54.8	139				858	892	716	684	701
230				97.2				754	804	650	628	629
220				49.6				608	698	593	578	562
210								462	590	540	524	516
200								323	477	487	471	477
190								226	375	435	412	443
180								165	286	368	362	410
170								130	229	304	310	373
160								110	187	246	262	339
150								96.5	156	196	219	302
140								89.5	140	176	194	266
130								79.7	131	168	186	237
120								49.6	114	161	161	220
110										40.2		49.6

ELECTRON DENSITY

PUERTO RICO 60 W 27 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	110	109	107	107	109	112	112	245	248	244	280	280
HMAX	369	385	393	389	383	386	367	374	407	417	423	406
SHMAX	2263	2615	2598	2275	2063	1914	1504	1117	1178	1110	1032	947
KM												
430											1265	
420										1191	1264	
410									1265	1187	1250	1290
400			1786						1261	1170	1218	1286
390		1907	1785	1612	1612	1612			1244	1137	1168	1261
380		1905	1775	1606	1611	1608		1393	1212	1089	1096	1213
370	1922	1890	1754	1587	1596	1589	1640	1392	1165	1024	1013	1143
360	1912	1862	1720	1555	1564	1549	1634	1374	1107	952	917	1050
350	1853	1818	1674	1501	1501	1489	1604	1335	1031	865	781	931
340	1786	1756	1609	1446	1430	1420	1547	1272	939	764	655	794
330	1696	1683	1539	1371	1349	1331	1463	1199	844	670	508	643
320	1589	1593	1455	1291	1258	1228	1362	1107	735	565	348	492
310	1460	1496	1367	1201	1169	1107	1229	990	619	467	198	298
300	1327	1388	1270	1105	1068	993	1119	847	508	353	104	143
290	1191	1265	1172	1013	960	875	960	716	375	248	53.1	65.7
280	1061	1154	1061	917	865	754	794	540	251	170		3.1
270	931	1027	960	834	764	661	608	335	143	107		
260	824	907	854	754	686	573	467	161	71.4	62.9		
250	732	804	762	685	619	508	353	49.6	21.7	34.6		
240	661	709	686	628	562	456	280					
230	608	636	619	582	516	410	232					
220	566	573	564	544	473	373	191					
210	529	524	520	511	439	335	154					
200	492	481	484	472	403	300	118					
190	454	446	450	430	368	266	91.5					
180	417	411	414	385	338	233	79.9					
170	377	379	377	344	307	198	73.4					
160	339	343	339	307	272	170	69.9					
150	302	307	302	276	240	151	67.6					
140	262	270	266	246	210	140	65.4					
130	237	238	239	219	190	134	63.1					
120	220	222	223	202	170	128	60.9					
110	40.2	60.0	143	112	40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 28 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL				A	A							
HMIN	258	259	238	237	233	238	228	113	111	110	110	111
HMAX	362	358	333	339	349	340	354	281	297	318	358	388
SHMAX	646	649	541	470	395	390	425	650	971	1360	1863	2312
KM												
390												1555
380												1552
370	1143											1539
360	1142	1050					540				1341	1517
350	1117	1042			608		540				1338	1484
340	1057	1010	960	764	602	557	533				1326	1440
330	960	953	959	757	582	553	518				1305	1378
320	834	875	938	734	544	540	497			1240	1275	1312
310	679	767	887	693	497	520	473			1236	1235	1240
300	508	631	814	636	435	492	432		1004	1218	1181	1165
290	286	477	704	551	362	451	382	917	1001	1187	1125	1077
280	143	286	573	446	274	389	323	917	982	1143	1063	987
270	60.0	97.2	389	310	189	318	255	904	944	1088	987	900
260	12.4	12.4	219	161	117	229	179	870	891	1012	903	818
250			83.8	77.6	71.4	112	104	818	834	934	826	739
240			21.7	30.9	40.2	26.3	56.5	735	761	844	747	673
230							12.4	631	691	754	679	613
220								508	625	661	613	565
210								375	557	573	559	526
200								262	484	492	508	491
190								189	403	417	459	456
180								143	318	355	412	424
170								114	246	300	366	381
160								96.2	195	255	323	343
150								85.9	161	215	282	303
140								79.7	142	188	244	269
130								74.5	134	172	217	238
120								62.3	121	161	200	219
110										12.4	49.6	

ELECTRON DENSITY

PUERTO RICO 60 W 28 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	110	109	109	110	109	110	110	238	268	278	277	299
HMAX	378	404	408	407	383	393	395	441	444	417	411	417
SHMAX	2258	2695	2627	2461	2038	2264	2070	2015	1547	1298	1194	1127
KM												
450								1500	1528			
440								1500	1527			
430								1496	1514			
420								1486	1488	1669	1612	1555
410		1786	1756	1669				1468	1448	1662	1611	1549
400		1785	1752	1666		1786	1640	1444	1394	1630	1594	1518
390		1774	1736	1651	1640	1785	1639	1413	1326	1571	1548	1461
380	1697	1752	1709	1624	1639	1774	1628	1376	1248	1476	1474	1370
370	1692	1719	1669	1585	1620	1749	1607	1331	1153	1365	1365	1262
360	1669	1674	1612	1530	1579	1710	1575	1280	1034	1226	1240	1127
350	1602	1612	1555	1466	1523	1654	1531	1227	903	1080	1080	960
340	1535	1548	1478	1390	1468	1584	1481	1162	754	896	903	754
330	1467	1470	1389	1304	1301	1505	1424	1086	625	698	716	524
320	1385	1379	1291	1211	1205	1415	1349	993	477	477	508	298
310	1295	1280	1191	1115	1107	1303	1258	885	335	310	310	112
300	1197	1175	1096	1013	1004	1171	1143	767	198	161	152	12.4
290	1096	1061	993	917	907	1034	1027	655	117	71.4	71.4	
280	996	960	892	827	810	889	903	519	60.0	21.7	30.9	
270	900	865	794	754	724	754	754	362	12.4			
260	818	778	716	685	655	643	631	198				
250	748	701	655	628	593	548	519	83.8				
240	685	638	603	582	545	477	417	21.7				
230	633	590	562	544	508	422	335					
220	583	548	527	511	473	377	268					
210	540	517	495	477	440	339	219					
200	500	486	463	443	408	307	179					
190	462	455	430	410	375	276	151					
180	424	424	396	373	342	246	127					
170	385	392	362	335	307	216	110					
160	352	355	324	300	277	191	96.3					
150	317	321	289	262	246	168	86.7					
140	283	286	257	233	219	150	80.8					
130	257	259	234	213	196	138	76.6					
120	240	242	220	200	183	130	72.3					
110	12.4	127	60.0	12.4	60.0	40.2						

ELECTRON DENSITY

PUERTO RICO 60 W 29 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL												A
HMIN	278	266	251	230	246	287	278	115	109	110	109	
HMAX	395	378	373	334	395	447	416	313	311	354	370	
SHMAX	1010	843	1090	593	588	583	608	1023	1217	1978	2136	
KM												
450						643						
440						641						
430						632						
420						614	754					
410						588	753					
400	1446				670	557	741					
390	1443				669	517	719					
380	1416	1341	1328		660	465	688					
370	1363	1332	1328		643	406	647				1555	
360	1277	1293	1317		616	348	590			1420	1550	
350	1175	1221	1294		581	286	521			1419	1532	
340	1034	1119	1258	417	540	229	437			1412	1502	
330	854	982	1213	916	489	170	344			1398	1461	
320	679	814	1169	898	432	112	248	1191	1240	1377	1403	
310	477	590	1096	860	368	74.5	161	1190	1240	1348	1341	
300	262	375	939	305	302	47.7	92.8	1175	1230	1304	1257	
290	97.2	198	735	732	233	12.4	54.8	1142	1203	1258	1175	
280	26.3	83.8	508	643	167		12.4	1090	1159	1208	1096	
270		40.2	240	529	102			1022	1096	1154	1004	
260			71.4	375	60.0			928	1022	1088	909	
250				179	23.5			820	934	1004	818	
240				71.4				691	834	926	732	
230				3.1				551	742	834	657	
220								417	643	735	596	
210								310	529	634	540	
200								240	437	540	495	
190								189	348	454	451	
180								152	278	383	408	
170								127	219	325	362	
160								109	179	278	318	
150								96.5	153	240	274	
140								89.9	139	209	237	
130								80.7	132	188	214	
120								52.2	115	164	194	
110									49.6	40.2	60.0	

ELECTRON DENSITY

PUERTO RICO 60 W 29 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OUAL	A					A	A					
HMIN	112	113	110	110	112	117		270	239	246	295	294
HMAX	400	400	407	407	415	364		413	413	408	443	420
SHMAX	2836	2813	2705	2560	2587	1621		1480	1441	987	1018	933
KM												
450											1191	
440											1190	
430											1178	
420					1786			1555	1341		1150	1240
410			1907	1786	1784			1555	1341	1143	1108	1231
400	2032	2128	1903	1782	1771			1543	1332	1137	1050	1202
390	2023	2118	1885	1765	1746			1518	1314	1113	978	1155
380	1999	2088	1851	1735	1708			1477	1284	1071	892	1088
370	1958	2038	1803	1690	1655	1669		1420	1245	1011	781	1004
360	1899	1961	1731	1626	1589	1666		1354	1191	934	667	885
350	1823	1876	1650	1555	1513	1636		1274	1136	850	540	754
340	1737	1773	1555	1465	1427	1572		1175	1065	754	389	596
330	1631	1643	1456	1370	1331	1408		1061	978	655	251	417
320	1507	1515	1341	1277	1230	1311		931	883	551	143	240
310	1388	1371	1229	1157	1131	1198		754	774	446	77.6	112
300	1265	1224	1119	1050	1016	1065		557	655	353	33.2	49.6
290	1143	1065	1004	943	907	939		335	540	262		
280	1027	928	896	850	804	807		127	417	179		
270	917	814	802	762	716	691			286	112		
260	824	724	724	694	643	585			152	65.7		
250	739	650	655	638	579	500			71.4	26.3		
240	673	598	598	588	532	435			12.4			
230	618	555	553	548	492	381						
220	573	521	515	511	456	340						
210	533	491	483	477	424	304						
200	496	464	452	443	392	272						
190	458	439	423	409	362	240						
180	421	415	392	369	326	205						
170	377	389	358	323	293	177						
160	335	355	321	282	259	157						
150	290	321	282	246	226	145						
140	256	282	250	223	201	138						
130	232	253	230	211	188	132						
120	205	209	198	200	161	97.2						
110			12.4	49.6								

ELECTRON DENSITY

PUERTO RICO 60 W 30 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL										A	A	
HMIN	264	279	264	265	260	262	270	111	110	110	109	108
HMAX	365	418	362	359	422	387	370	333	338	350	388	384
SHMAX	696	876	613	496	650	492	499	1062	1494	2058	2806	2641
KM												
430					625							
420		1004			625							
410		1001			621							
400		986			612							
390		960			596	625					1815	1953
380		927			576	623					1813	1952
370	1167	880	1004		550	611	679				1802	1936
360	1163	814	1004	774	519	590	674				1782	1901
350	1130	735	987	767	481	560	661			1640	1754	1840
340	1065	643	944	745	432	522	637	993	1240	1635	1717	1777
330	971	540	875	707	383	472	608	993	1237	1619	1672	1687
320	847	417	794	655	330	417	564	986	1224	1592	1618	1586
310	704	286	679	587	281	348	508	971	1202	1555	1555	1471
300	540	170	540	497	236	278	432	946	1171	1501	1491	1353
290	335	83.8	362	375	191	198	335	917	1129	1446	1418	1229
280	143	12.4	198	240	148	119	198	875	1078	1376	1321	1124
270	54.8		60.0	83.8	90.5	60.0	60.0	820	1017	1299	1218	1016
260					12.4			754	946	1208	1107	909
250								670	867	1096	1004	818
240								582	784	960	896	748
230								487	698	814	794	690
220								389	616	661	709	638
210								304	524	529	629	593
200								233	437	439	560	545
190								183	353	378	489	497
180								147	280	335	423	446
170								123	227	298	367	389
160								106	189	259	318	341
150								95.3	158	222	282	294
140								88.9	141	187	250	257
130								77.6	134	172	221	236
120								61.3	127	163	205	224
110									40.2	12.4	127	161

ELECTRON DENSITY

PUERTO RICO 60 W 30 AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OUAL	B						A					
HMIN		109	114	111	110	109		229	279	311	310	289
HMAX		400	407	417	405	378		391	432	435	424	408
SHMAX		2909	2906	2836	2714	2096		1354	1098	978	964	1002
KM												
440									1215	1265		
430									1215	1262	1341	
420				1969					1204	1242	1339	
410			2063	1965	1969				1176	1203	1318	1316
400		2177	2060	1946	1967			1367	1131	1143	1272	1310
390		2167	2040	1911	1952			1367	1069	1065	1199	1287
380		2137	2004	1852	1923	1801		1359	996	960	1107	1246
370		2086	1953	1792	1872	1794		1337	909	834	990	1187
360		2014	1881	1710	1814	1769		1301	824	698	847	1116
350		1924	1794	1617	1744	1725		1252	726	557	691	1016
340		1810	1690	1512	1658	1659		1188	625	417	508	875
330		1682	1578	1400	1555	1565		1115	519	262	310	716
320		1542	1446	1285	1435	1466		1022	403	127	161	477
310		1407	1330	1157	1316	1353		917	274		12.4	262
300		1269	1212	1050	1191	1240		814	167			112
290		1111	1073	939	1061	1096		698	90.5			12.4
280		982	960	834	931	960		585	12.4			
270		875	858	754	824	834		477				
260		774	778	685	726	716		348				
250		694	701	628	643	625		198				
240		633	643	582	579	540		90.5				
230		583	593	547	526	471		12.4				
220		544	548	517	484	411						
210		511	511	488	443	362						
200		482	473	454	407	317						
190		452	435	413	372	278						
180		420	399	373	335	243						
170		385	365	335	296	214						
160		350	332	300	262	189						
150		316	301	266	232	165						
140		283	271	233	209	147						
130		256	247	213	192	137						
120		232	198	200	179	129						
110		71.4			12.4	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 31 AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OUAL									A	A	A	
HMIN	276	279	259	250	241	249	310	114	112	112	115	113
HMAX	391	399	364	354	346	395	426	338	301	314	351	395
SHMAX	833	838	699	585	497	487	425	1085	1264	1503	1917	2518
KM												
430							508					
420							507					
410							501					
400	1191	1143				524	489					1,786
390	1191	1135				523	470					1784
380	1177	1108				517	449					1769
370	1141	1061	1096			504	417					1740
360	1080	996	1094	928		487	380				1473	1696
350	1004	907	1071	926	688	466	330				1473	1635
340	896	794	1017	906	686	435	280	1004			1467	1569
330	767	679	943	865	674	397	212	1001			1449	1476
320	625	540	854	802	652	353	135	989		1473	1407	1373
310	477	389	742	716	615	310	40.2	966	1569	1472	1363	1262
300	286	219	596	619	573	262		931	1569	1455	1311	1154
290	127	97.2	432	492	514	219		889	1550	1408	1252	1038
280	44.9	12.4	240	348	439	170		839	1500	1352	1180	939
270			97.2	189	353	127		774	1418	1274	1096	844
260			12.4	71.4	251	77.6		701	1312	1187	1013	767
250				3.1	127	12.4		625	1159	1096	917	700
240								547	990	982	834	655
230								462	814	865	747	618
220								380	643	745	672	584
210								302	487	643	602	550
200								240	371	532	540	508
190								191	298	446	487	462
180								155	240	368	424	417
170								129	202	310	362	373
160								110	171	262	310	332
150								97.2	149	226	262	291
140								90.2	138	196	226	248
130								82.1	131	184	205	226
120								54.8	114	161	170	189

ELECTRON DENSITY

PUERTO RICO 60 W 31 AUG 1959

TIME	1200	1300	1400	1.00	1600	1700	1800	1900	2000	2100	2200	2300
OUAL		A		A	A	A						
HMIN	112	111	110	117	112	113	113	260	260	280	315	309
HMAX	383	384	398	593	405	399	389	397	410	433	435	426
SHMAX	2548	2434	2463	2381	2339	2033	1793	1414	1027	1084	826	831
KM												
440										1191	1096	
430										1190	1093	1191
420										1178	1074	1187
410					1640				1143	1150	1036	1162
400			1786	1786	1638	1555		1528	1135	1108	975	1114
390	1907	1815	1780	1785	1626	1550	1583	1524	1110	1050	900	1041
380	1906	1814	1759	1772	1601	1532	1577	1506	1065	975	814	949
370	1892	1800	1722	1743	1564	1501	1555	1473	1004	892	707	820
360	1860	1770	1669	1697	1510	1457	1518	1426	939	804	596	691
350	1810	1724	1593	1631	1452	1397	1465	1363	861	704	467	540
340	1735	1660	1506	1555	1379	1333	1394	1282	778	596	335	375
330	1648	1573	1404	1465	1295	1256	1314	1191	688	497	189	198
320	1545	1476	1296	1353	1205	1154	1216	1084	590	380	77.6	90.5
310	1435	1373	1186	1240	1115	1059	1096	946	497	274		12.4
300	1319	1262	1073	1131	1016	949	982	794	398	170		
290	1198	1162	971	1004	917	844	861	608	298	90.5		
280	1073	1050	865	896	824	745	729	403	205	12.4		
270	971	949	778	794	739	661	608	198	104			
260	875	844	704	716	665	587	508	40.2	12.4			
250	800	754	648	649	603	521	424					
240	735	685	600	598	551	462	355					
230	679	623	562	553	503	412	292					
220	628	569	527	512	462	366	245					
210	573	522	495	473	421	320	202					
200	524	481	463	434	385	278	171					
190	472	438	428	396	347	243	146					
180	422	394	392	354	307	209	124					
170	380	348	354	314	270	177	107					
160	339	300	317	276	237	159	94.5					
150	300	260	279	249	213	147	85.6					
140	266	239	250	233	197	139	80.3					
130	248	228	232	220	187	133	75.9					
120	219	212	212	179	170	127	71.4					
110			12.4									

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	28	28	25	25	25	25	25	21	23	24	19	22
HMIN	280	263	248	247	259	262	266	118	110	110	110	110
NMAX	1076	1021	882	732	671	621	631	881	1092	1240	1392	1578
HMAX	393	375	358	374	383	389	375	302	305	330	358	372
SHMAX	724	700	589	550	500	486	451	744	1059	1442	1879	2107
SHINF	3760	3580	3077	2614	2391	2238	2231	3231	4140	4939	5807	6559
KM												
950	109	94.8	76.2	67.8	65.3	61.4	58.6	57.6	72.0	9205	142	145
900	139	122	97.8	87.0	83.7	78.7	75.2	73.8	92.3	119	156	186
850	179	156	125	112	107	101	96.3	94.7	118	152	201	239
800	229	200	161	143	137	129	123	122	152	195	257	305
750	292	255	205	182	175	165	158	156	195	250	328	390
700	372	325	262	232	223	210	201	199	249	319	418	497
650	470	411	332	294	282	265	255	254	317	406	531	631
600	588	517	418	370	352	331	320	322	403	515	639	793
550	725	640	520	458	434	407	396	407	509	646	832	984
500	869	774	634	554	520	487	479	507	634	799	1014	1195
490	897	801	657	573	537	502	495	529	662	831	1051	1238
480	924	828	680	592	553	517	512	551	690	864	1088	1280
470	951	853	703	611	569	532	527	574	718	897	1124	1321
460	975	878	726	628	583	545	543	597	747	931	1160	1361
450	998	902	747	645	597	557	557	621	776	964	1195	1399
440	1018	924	768	661	610	568	571	644	806	997	1228	1435
430	1035	944	787	675	621	577	583	668	835	1029	1259	1468
420	1049	961	805	688	630	583	594	691	864	1060	1287	1498
410	1058	975	820	698	637	586	602	714	893	1090	1312	1523
400	1061	984	833	706	641	586	608	737	921	1119	1334	1543
390	1054	988	842	709	641	582	611	758	948	1145	1352	1558
380	1035	986	847	707	637	573	610	779	974	1168	1365	1566
370	998	975	847	700	626	560	604	798	998	1188	1373	1566
360	944	952	841	685	609	541	593	816	1020	1204	1374	1556
350	868	916	827	662	584	517	574	832	1039	1216	1367	1533
340	773	864	801	630	551	487	549	845	1055	1223	1352	1498
330	656	795	764	589	506	452	512	855	1068	1224	1325	1448
320	525	711	717	537	454	410	464	861	1076	1217	1288	1386
310	375	609	653	476	389	365	400	863	1078	1202	1239	1313
300	243	490	571	405	315	315	322	859	1074	1176	1179	1228
290	124	378	467	327	242	259	241	849	1060	1138	1112	1133
280	51.1	268	354	255	174	203	171	830	1034	1088	1038	1034
270	14.9	169	244	185	116	148	115	798	995	1028	959	933
260	.8	87.0	147	124	65.2	90.3	73.4	750	941	956	878	836
250		33.4	76.3	73.4	32.8	49.8	32.1	684	870	877	797	744
240		9.4	39.1	43.0	14.3	22.7	8.9	602	786	791	722	666
230		3.2	18.3	19.3	5.8	12.2	2.7	509	691	700	653	600
220			8.1	9.0	3.1	5.3	.7	408	594	611	591	545
210			2.4	2.7	1.9	1.8		315	500	529	534	501
200				1.3	.2			238	418	456	483	463
190								180	343	395	433	429
180								140	281	342	386	396
170								114	231	295	342	361
160								97.0	191	256	300	325
150								86.2	161	220	262	288
140								80.2	142	191	229	252
130								74.4	131	172	205	223
120								54.5	119	151	181	199
110								4.5	33.7	4107	54.8	59.2

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	20	19	12	17	15	20	13	26	28	29	29	28
HMIN	110	110	109	110	110	111	113	243	251	272	293	290
NMAX	1778	1846	1769	1680	1577	1533	1381	1250	1110	1091	1088	1075
HMAX	373	379	388	381	383	367	366	384	409	421	424	417
SHMAX	2275	2393	2395	2194	2042	1740	1572	1157	1013	931	834	817
SHINF	7291	7599	7384	6933	6491	6063	5417	4684	4145	4009	3901	3851
KM												
950	165	177	177	163	154	138	124	124	123	128	129	123
900	212	227	227	209	198	177	159	159	158	164	165	158
850	272	291	290	268	254	227	204	203	202	210	212	202
800	348	372	372	343	325	290	262	260	258	268	271	259
750	445	476	474	438	415	371	334	332	329	342	345	330
700	567	605	604	557	528	473	426	423	418	433	437	419
650	719	767	764	705	668	600	541	535	527	545	549	527
600	904	963	957	885	838	756	681	670	656	677	681	655
550	1121	1191	1181	1094	1035	939	846	827	801	823	826	798
540	1167	1240	1228	1138	1077	979	882	860	831	852	855	827
530	1215	1290	1276	1183	1119	1019	918	893	861	881	884	855
520	1262	1339	1324	1228	1162	1060	955	927	890	910	912	884
510	1311	1389	1372	1274	1205	1101	992	960	919	938	940	912
500	1359	1439	1419	1319	1247	1143	1030	993	947	964	966	938
490	1407	1489	1465	1363	1289	1184	1067	1026	974	989	990	963
480	1454	1537	1511	1407	1330	1226	1104	1058	1000	1013	1012	987
470	1500	1584	1554	1449	1369	1266	1140	1088	1023	1033	1032	1008
460	1545	1630	1596	1489	1407	1305	1176	1118	1044	1051	1048	1027
450	1588	1672	1634	1527	1442	1343	1210	1144	1063	1066	1061	1043
440	1628	1712	1668	1561	1474	1379	1242	1169	1077	1077	1069	1055
430	1664	1747	1698	1592	1503	1413	1272	1190	1088	1082	1071	1061
420	1697	1778	1723	1618	1527	1443	1299	1208	1093	1079	1065	1061
410	1724	1803	1742	1639	1546	1469	1323	1222	1091	1066	1045	1051
400	1746	1821	1754	1654	1559	1491	1343	1230	1081	1041	1012	1027
390	1761	1832	1756	1660	1564	1508	1358	1233	1060	1002	961	990
380	1768	1833	1747	1657	1561	1518	1367	1228	1028	948	895	937
370	1764	1822	1727	1644	1546	1521	1369	1214	983	880	812	868
360	1747	1796	1691	1618	1519	1513	1363	1189	926	800	717	783
350	1711	1754	1642	1578	1478	1490	1346	1152	858	709	607	680
340	1659	1696	1576	1524	1424	1453	1315	1100	777	609	488	562
330	1588	1620	1497	1454	1349	1392	1271	1034	688	500	365	431
320	1501	1530	1403	1371	1268	1318	1212	958	592	387	255	306
310	1400	1427	1301	1275	1180	1232	1138	865	494	279	160	195
300	1289	1312	1195	1173	1079	1134	1054	760	393	192	89.5	108
290	1173	1186	1082	1063	973	1025	957	642	296	123	43.4	47.3
280	1052	1062	966	953	865	908	855	506	213	68.6	17.0	19.6
270	939	935	857	847	760	792	741	362	141	36.3	5.3	6.6
260	831	820	761	750	669	681	659	221	84.3	17.4		2.5
250	740	720	679	664	592	583	522	121	49.3	6.1		.6
240	663	637	612	594	529	500	431	47.5	24.0			
230	600	573	558	536	479	434	353	10.3	8.7			
220	550	522	515	491	440	381	289	2.6	1.8			
210	508	483	480	454	406	338	239	.4	.2			
200	472	451	449	422	375	302	200					
190	414	421	418	391	346	269	170					
180	382	393	387	357	314	236	145					
170	349	363	355	324	282	205	125					
160	314	330	321	290	250	180	109					
150	281	295	286	257	218	159	97.6					
140	249	263	254	227	194	143	90.8					
130	223	238	232	207	179	134	85.7					
120	200	214	211	185	165	125	72.1					
110	48.9	52.3	67.6	41.3	33.2	17.2	3.4					

AVERAGE ELECTRON DENSITY — KP ABOVE 4.5

PUERTO RICO — 60 W — AUG 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	3	3	6	6	6	5	5	4	3	2	3	3
HMIN	285	283	253	275	267	275	285	111	111	108	109	110
NMAX	1192	1102	783	745	748	621	665	857	602	787	747	1459
HMAX	403	407	396	416	402	419	406	316	347	367	398	391
SHMAX	820	869	668	609	573	539	533	744	775	1043	1359	1947
SHINF	4183	3977	2877	2710	2683	2290	2408	3160	2472	3261	3466	6062
KM												
950	127	119	81.0	87.6	78.2	77.1	77.3	60.5	47.6	64.6	76.2	139
900	162	152	104	112	101	98.7	99.2	77.6	61.1	82.8	98.0	178
850	208	195	133	144	129	126	127	99.4	78.2	106	125	229
800	266	250	170	184	164	161	162	128	100	136	160	293
750	340	319	217	234	210	204	206	163	128	174	205	374
700	433	405	276	296	266	257	261	209	163	220	261	475
650	546	511	348	372	335	319	327	266	207	279	329	601
600	682	638	435	461	417	388	403	338	260	349	412	752
550	837	781	534	557	509	459	484	425	323	431	506	927
540	869	810	554	577	528	472	500	444	336	448	526	964
530	901	840	575	596	546	484	515	464	350	466	546	1001
520	934	870	595	615	565	496	530	484	364	483	566	1039
510	966	899	616	633	583	506	544	505	378	501	586	1076
500	997	927	635	650	601	515	557	527	393	518	606	1113
490	1027	955	655	666	618	523	569	549	407	536	625	1150
480	1056	982	673	680	634	530	580	571	421	553	643	1185
470	1084	1006	691	693	649	534	589	594	435	570	661	1220
460	1109	1029	707	703	662	537	596	616	449	586	678	1252
450	1132	1048	722	711	674	537	600	640	462	601	693	1283
440	1152	1065	734	715	683	534	599	662	475	616	706	1311
430	1168	1079	744	716	690	527	594	685	487	630	718	1337
420	1179	1087	750	711	693	518	584	707	499	644	727	1359
410	1184	1089	752	698	692	505	571	728	510	657	734	1379
400	1179	1081	750	678	686	491	553	749	520	670	739	1393
390	1162	1063	741	650	677	475	529	768	530	681	740	1403
380	1125	1031	724	614	661	457	501	786	538	693	739	1408
370	1064	985	699	570	640	433	466	802	545	702	735	1407
360	978	920	667	520	615	413	425	816	551	710	726	1401
350	875	835	627	465	583	391	372	827	556	716	716	1387
340	744	735	580	402	545	362	323	835	559	722	701	1362
330	595	614	528	337	502	333	283	838	560	725	684	1325
320	428	482	465	279	455	304	254	832	559	727	664	1271
310	266	363	401	221	396	275	221	818	556	728	644	1207
300	119	267	341	165	327	239	196	795	551	726	619	1134
290	34.6	191	285	113	252	204	178	760	545	722	590	1048
280	4.1	130	232	74.2	181	165	157	714	533	713	561	949
270		59.6	189	37.7	95.8	116	133	654	515	693	534	835
260		13.4	144	10.0	35.1	80.3	123	589	490	657	507	732
250			98.5		10.3	47.9	115	519	462	613	481	643
240			53.6			23.7	103	453	428	558	455	565
230			26.2			11.3	83.4	382	394	499	430	504
220			8.8			1.1	39.6	309	356	442	408	461
210			.9				2.4	248	319	393	386	427
200								193	286	356	365	401
190								146	253	326	345	383
180								115	225	298	324	362
170								97.7	197	270	297	337
160								86.8	172	242	264	305
150								80.0	151	214	228	271
140								75.6	138	189	199	233
130								70.7	130	173	185	213
120								62.7	122	160	175	197
110								6.2	8.2	78.6	72.7	29.9

AVERAGE ELECTRON DENSITY — KP ABOVE 4.5

PUERTO RICO — 60 W — AUG 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	3	3	5	7	7	2	1	3	2	2	2	3
KP							6					
DATE							15					
HMIN	111	112	112	111	112	112	199	273	268	282	279	279
NMAX	1587	1187	1610	1578	1411	1233	1341	1089	1254	1373	1390	1168
HMAX	374	351	376	372	365	376	389	423	423	411	396	409
SHMAX	2077	1520	2109	2024	1738	1557	1398	1071	1095	994	942	852
SHINF	6553	4867	6650	6476	5717	5035	5180	4144	4631	4866	4861	4147
KM												
950	147	103	151	149	130	113	134	133	150	153	142	129
900	189	132	193	192	167	144	171	170	193	196	182	166
850	242	170	248	245	214	185	220	218	247	250	233	212
800	310	217	317	314	273	237	281	278	315	320	298	271
750	396	278	406	401	349	302	359	354	402	409	381	346
700	504	354	516	511	445	385	457	448	508	519	484	439
650	640	450	655	648	564	488	578	561	639	654	612	554
600	804	567	822	813	709	614	725	692	791	816	766	690
550	998	706	1020	1006	879	762	894	832	956	997	943	842
540	1040	735	1062	1047	916	794	931	860	989	1035	980	873
530	1083	766	1105	1089	953	827	967	887	1022	1072	1018	904
520	1125	797	1148	1131	990	859	1003	912	1054	1109	1055	935
510	1168	828	1192	1173	1028	892	1040	937	1084	1146	1093	965
500	1212	860	1236	1215	1066	926	1076	960	1113	1181	1130	995
490	1255	892	1279	1257	1103	959	1112	981	1139	1215	1165	1023
480	1297	923	1322	1297	1141	992	1147	1000	1164	1247	1201	1049
470	1339	954	1363	1337	1177	1024	1180	1016	1186	1277	1234	1074
460	1380	985	1404	1375	1212	1055	1212	1028	1203	1304	1265	1096
450	1418	1014	1442	1411	1246	1084	1242	1037	1217	1327	1294	1115
440	1455	1043	1478	1445	1277	1113	1269	1041	1223	1347	1319	1130
430	1488	1069	1511	1475	1306	1138	1292	1040	1219	1362	1341	1141
420	1517	1094	1540	1501	1331	1162	1312	1036	1204	1370	1359	1145
410	1543	1115	1564	1522	1353	1182	1327	1025	1179	1373	1370	1133
400	1563	1134	1582	1538	1370	1199	1337	1010	1147	1358	1368	1108
390	1578	1148	1595	1547	1381	1211	1341	987	1097	1317	1349	1067
380	1585	1159	1600	1547	1386	1216	1337	955	1024	1248	1313	1012
370	1584	1161	1596	1536	1382	1214	1320	913	947	1158	1259	942
360	1571	1157	1580	1515	1366	1207	1293	858	858	1038	1177	858
350	1542	1142	1550	1479	1338	1191	1254	792	760	902	1082	759
340	1496	1122	1505	1434	1299	1165	1202	718	646	753	950	647
330	1438	1091	1444	1376	1238	1131	1148	637	526	573	808	534
320	1365	1049	1365	1306	1171	1086	1065	530	429	384	647	418
310	1283	994	1278	1226	1096	1032	971	422	351	215	494	319
300	1187	933	1180	1132	1013	971	865	319	270	115	350	219
290	1085	863	1076	1031	919	904	754	238	216	45.2	181	143
280	979	786	971	932	829	830	619	154	159	23.2	63.5	67.8
270	881	711	864	830	742	753	492	77.9	106		13.1	23.8
260	780	638	771	737	663	674	380	16.5	63.5			1.0
250	691	575	685	652	592	596	286		37.8			
240	609	525	616	585	532	520	198		21.2			
230	544	486	558	527	482	445	127					
220	489	457	513	483	439	376	79.7					
210	453	436	475	447	403	328	49.6					
200	425	418	441	414	372	290	6.8					
190	399	397	409	384	341	260						
180	375	374	380	357	311	236						
170	348	339	350	328	280	214						
160	315	306	320	298	251	193						
150	279	274	288	265	224	169						
140	247	244	258	235	199	150						
130	220	225	233	213	181	138						
120	204	207	180	177	160	130						
110	48.9	23.8	47.3	28.7	15.5							

TABLES OF IONOSPHERIC DATA

July 1959 - July 1956

Table 1

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6	290					2.65
01		6.3	285					2.60
02		5.8	280					2.65
03		5.4	280					2.65
04		5.0	300					2.65
05	---	4.9	290		(119)	(1.78)	1.8	2.80
06	(430)	5.5	250	---	109	2.50	2.8	2.88
07	375	5.9	235	4.5	107	3.05	3.6	2.80
08	435	6.0	220	4.8	105	3.40	3.9	2.70
09	455	6.2	210	5.0	101	3.70	4.1	2.65
10	460	6.5	210	5.3	101	3.85	4.3	2.60
11	462	6.6	210	5.3	103	3.95	4.3	2.60
12	455	6.8	210	5.5	103	4.00	4.3	2.55
13	460	6.9	210	5.5	105	4.00	4.6	2.55
14	465	6.85	220	5.4	105	4.00	4.2	2.55
15	430	7.1	220	5.3	105	3.80	4.0	2.60
16	410	7.2	220	5.2	105	3.60	3.6	2.65
17	370	7.65	230	4.8	107	3.30		2.65
18	(325)	7.55	(240)	---	111	2.75	2.8	2.70
19	---	7.6	270		119	2.10	>2.3	2.80
20		7.7	265		---	----	1.8	2.80
21		7.5	265					2.70
22		7.2	275					2.70
23		6.9	280					2.65

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

Table 2

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(10.45)	320					(2.70)
01		9.8	290					2.75
02		9.15	270					2.65
03		8.2	270					2.80
04		7.6	260					2.75
05		6.25	<270					2.75
06		7.7	280		(133)	(2.20)	2.5	2.80
07	---	9.0	260	---	121	(3.00)	3.7	2.80
08	---	9.8	250	---	119	(3.50)	5.8	2.55
09	---	10.3	245	---	119	(3.85)	6.2	2.25
10	---	10.8	(230)	---	119	(4.00)	6.0	2.15
11	(470)	11.3	225	---	119	(4.10)	5.1	2.15
12	480	11.5	(230)	(6.2)	119	(4.20)	4.8	2.12
13	(480)	11.5	(230)	6.0	119	(4.05)	5.0	2.10
14	510	11.8	(235)	6.0	119	(4.05)	4.9	2.15
15	(470)	12.0	(245)	---	119	3.80	4.3	2.20
16	---	(11.8)	250		119	3.55	4.1	(2.28)
17	---	(12.0)	<270		121	(3.00)	3.7	(2.35)
18		(12.3)	290		(129)	(2.20)	2.8	(2.45)
19		>11.0	330				2.8	(2.35)
20		10.95	400				2.3	(2.22)
21		(10.35)	400				2.6	(2.30)
22		>10.3	390				2.6	(2.35)
23		(10.75)	355					2.50

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

Table 3

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.55					3.4	2.55
01		5.9					3.5	2.55
02		5.65					3.8	2.50
03		5.5					2.1	2.50
04		5.55						2.45
05		5.5						2.45
06		5.6						2.30
07		5.3						2.25
08		5.2					2.7	2.20
09		5.7					3.0	2.22
10		5.9					3.2	2.30
11		5.7					>3.2	2.30
12		5.7						2.30
13		5.8						2.30
14		5.95						2.30
15		6.0						2.30
16		6.1						2.40
17		6.1						2.45
18		6.0					2.5	2.45
19		6.0					>2.6	2.50
20		5.8					3.0	2.60
21		5.7						2.65
22		5.7						2.60
23		5.6					3.8	2.58

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

Table 4

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	295				2.8	2.60
01		6.1	300				1.4	2.55
02		5.65	320				1.6	2.45
03	---	5.5	330		---	----	2.2	2.45
04	420	5.6	290	3.2	110	1.90	2.1	2.42
05	450	6.5	260	3.8	102	2.45	3.0	2.45
06	430	7.1	250	4.2	101	2.90	3.5	2.40
07	435	7.2	<240	4.6	101	3.22	4.1	2.45
08	445	6.95	(235)	4.9	101	3.50	4.4	2.45
09	450	6.9	<230	5.0	101	3.60	4.6	2.50
10	460	6.7	<220	5.1	100	3.70	4.6	2.50
11	500	6.5	<215	5.2	99	3.80	4.6	2.45
12	495	6.6	(210)	5.3	99	3.75	4.8	2.45
13	530	6.3	210	5.3	99	3.70	4.2	2.40
14	510	6.45	<215	5.2	99	3.65	4.2	2.45
15	460	6.3	220	5.1	99	3.60	4.0	2.55
16	450	6.3	230	5.0	101	3.40	3.8	2.55
17	415	6.3	(240)	4.6	101	3.10	4.0	2.65
18	(365)	6.5	(255)		101	2.75	3.8	2.75
19	---	6.65	(285)		109	(2.22)	3.9	2.80
20		6.9	<290		<111	----	4.6	2.80
21		6.8	285				3.7	2.70
22		7.0	280				3.3	2.65
23		6.9	<300				3.5	2.60

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

Table 5

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	295				3.0	2.62
01		6.45	<300				2.8	2.60
02		6.1	300				3.5	2.60
03		5.6	300				3.4	2.60
04		5.3	300				3.8	2.65
05		5.5	280		<133	1.88	3.6	2.70
06	(390)	5.95	240	---	109	2.58	3.2	2.80
07	435	6.55	240	4.8	105	3.15	3.8	2.70
08	430	6.7	230	5.0	101	3.42	4.4	2.65
09	445	6.85	225	5.3	101	3.75	4.4	2.62
10	480	6.9	215	5.3	103	3.98	4.8	2.50
11	450	7.1	210	5.6	103	(4.00)	4.8	2.55
12	465	7.2	210	5.6	105	(4.00)	4.8	2.55
13	460	7.2	220	5.5	103	4.00	4.7	2.52
14	440	7.0	220	5.5	105	4.00	4.2	2.55
15	450	7.0	220	5.3	105	(3.90)	4.1	2.55
16	415	7.25	225	5.2	105	3.60	3.8	2.60
17	380	7.35	235	4.9	109	3.30	3.8	2.65
18	350	7.2	250	---	111	2.80	3.6	2.65
19	(300)	7.4	275		119	(1.95)	4.1	2.75
20		7.45	270				4.0	2.70
21		7.6	285				3.4	2.65
22		7.45	280				3.2	2.65
23		7.15	290				3.2	2.65

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

Table 6

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(370)	5.8	260	---	121	2.12		2.82
01	(335)	6.2	270	---	119	(2.25)		2.80
02	(450)	6.0	260	(3.6)	115	2.32		2.85
03	(400)	6.0	245	3.8	111	2.45		2.80
04	385	6.1	240	4.0	109	2.60		2.80
05	380	6.3	240	4.2	109	2.75		(2.75)
06	440	5.55	230	4.2	109	2.85		2.70
07	510	5.7	235	4.4	109	3.05		(2.70)
08	462	6.3	235	4.5	107	3.18		2.60
09	470	5.8	225	4.6	105	3.20		2.45
10	480	5.7	225	4.6	105	3.30		(2.50)
11	485	5.95	225	4.7	105	3.38		2.58
12	495	6.1	225	4.7	103	3.40		2.55
13	465	6.0	220	4.7	105	3.35		2.50
14	448	6.3	225	4.8	105	3.20		2.62
15	450	6.3	225	4.6	105	3.15		2.62
16	448	6.35	230	4.5	107	3.02		2.60
17	445	6.2	230	4.3	107	2.90		2.62
18	408	6.05	240	4.1	109	2.80		2.70
19	428	5.9	240	(4.2)	111	2.60		2.80
20	(365)	6.1	250	4.0	(113)	2.50		2.70
21	(410)	5.9	255	3.6	113	2.35		2.70
22	<390	6.25	265	---	115	2.25		2.72
23	---	5.95	255	---	115	2.15		2.78

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

Table 7

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.55					4.8	2.50
01		5.9					3.2	2.50
02		5.8					4.3	2.50
03		5.85					4.4	2.55
04		5.5					2.7	2.48
05		5.4						2.35
06		5.55						2.32
07		5.85						2.35
08		5.6						2.30
09		5.8						2.30
10		6.0						2.38
11		5.6						2.25
12		5.65						2.35
13		6.2						2.38
14		6.25						2.35
15		6.5						2.38
16		6.4						2.38
17		6.45						2.45
18		6.2						2.48
19		6.05						2.55
20		6.1						2.65
21		5.7						2.65
22		5.95						2.70
23		5.6					4.2	2.60

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

Table 8

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)			(141)	(1.70)		(2.72)
01		(5.65)			<143	(1.68)		(2.60)
02		(5.0)			(139)	1.70		(2.60)
03		(5.0)			115	(1.98)		(2.65)
04		(4.85)		---	(111)	(2.20)		(2.80)
05		(4.9)		(3.6)	(109)	(2.40)		(2.65)
06		(4.7)		(3.8)	105	(2.65)		----
07		(4.7)		(4.1)	105	(2.95)		----
00		(4.95)		(4.2)	103	(3.15)		G
09		(6.1)		(4.4)	103	(3.30)		(2.30)
10		(6.45)		(4.7)	103	3.40		(2.60)
11		(6.7)		(4.9)	103	3.45		2.62
12		(7.2)		(5.0)	103	(3.50)		(2.60)
13		(6.1)		(4.8)	103	3.50		(2.45)
14		(6.5)		(4.8)	103	(3.40)		(2.55)
15		(5.95)		4.8	103	(3.35)	3.8	(2.35)
16		(6.0)		(4.8)	103	3.20		(2.50)
17		(6.2)		(4.6)	103	3.05	3.9	(2.62)
18		(6.0)		(4.4)	105	(2.88)	3.4	(2.60)
19		(6.2)		(4.3)	105	(2.75)	3.0	(2.60)
20		(6.1)		---	<112	2.55		(2.65)
21		(5.6)		---	<115	(2.25)		(2.75)
22		(5.6)		---	<114	(2.05)		(2.60)
23		(5.35)		---	<125	(1.90)		(2.60)

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

Table 9

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.3)					2.9	(2.40)
01		(4.35)					3.0	(2.45)
02		(4.45)			---	----	2.8	(2.50)
03		(4.75)			---	E	2.8	(2.40)
04		(5.2)		---	---	E	2.8	(2.40)
05		5.3		2.9	139	1.65	3.0	2.35
06		5.2		(3.3)	109	1.80	2.2	2.30
07		5.25		3.4	105	2.10	>2.2	2.28
00		5.05		3.7	101	2.30	2.4	2.30
09		4.9		3.7	101	2.40		2.30
10		5.1		3.8	101	2.50		2.30
11		5.3		4.0	101	2.60		2.38
12		5.2		4.0	101	2.50		2.30
13		5.3		4.0	101	2.55		2.35
14		5.45		4.0	101	2.55		2.40
15		5.45		3.8	101	2.32		2.40
16		5.3		3.7	103	(2.28)		2.45
17		5.5		(3.6)	105	1.95		2.60
18		5.75		---	121	1.68	1.9	2.60
19		5.3		---	---	E	2.3	2.65
20		5.3			---	E	2.1	2.70
21		5.0			---	E	2.2	2.75
22		(4.7)			---	----	2.3	(2.70)
23		(4.6)					2.6	(2.60)

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

Table 10

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.25)	<390				3.3	----
01		(5.4)	(350)				>3.5	----
02		(5.1)	<380				2.9	(2.55)
03	---	(5.3)	(345)					(2.55)
04	---	5.65	<310					2.70
05	<415	5.55	<280		---	----		2.70
06	---	6.0	250		---	----		2.75
07	(390)	6.35	(250)	---	---	----		2.70
00	(400)	6.6	(240)	---	113	(3.10)		2.75
09	(420)	6.45	<235	>4.6	111	----		2.70
10	420	6.9	230	(5.2)	---	----		2.65
11	<435	7.0	(235)	(5.2)	(111)	----		2.60
12	420	7.2	(230)	(5.2)	---	----		2.60
13	450	7.5	(240)	(5.3)	111	----		2.60
14	440	7.3	<245	(5.0)	(111)	----		2.60
15	430	7.3	(240)	(4.8)	---	----		2.50
16	450	7.0	(250)	(4.8)	---	----		2.60
17	420	6.9	(255)	(4.8)	---	----		2.65
18	<430	6.6	(260)	---	---	----		2.65
19	---	6.3	<300		---	----		2.75
20		(6.2)	(320)		---	----		(2.78)
21		(6.3)	(350)		---	----		(2.75)
22		(6.0)	<370					(2.60)
23		(5.4)	340					(2.60)

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

Table 11

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6					2.8	2.40
01		(4.8)					3.4	(2.45)
02		(4.8)					2.6	(2.48)
03		4.95			<123	----		2.52
04		(5.8)		(3.4)	<122	----	2.5	(2.45)
05		5.8		3.8	111	2.50		(2.35)
06		6.05		4.2	109	2.80		2.35
07		6.2		4.4	107	3.10		2.35
00		6.4		4.6	105	3.30		2.40
09		6.1		4.8	105	3.45		2.40
10		6.3		4.9	105	3.55		2.40
11		6.3		5.0	102	3.60		2.35
12		6.2		5.1	103	3.65		2.30
13		6.4		5.1	105	3.68		2.35
14		6.4		5.0	105	3.55		2.40
15		6.35		4.9	103	3.42		2.45
16		6.5		4.8	105	3.30		2.52
17		6.5		4.7	107	3.00		2.58
18		6.6		---	107	2.70		2.70
19		6.6			115	2.40	2.6	2.75
20		6.45			(123)	(1.85)		2.85
21		6.2			---	----		2.80
22		6.15						2.75
23		(5.3)						(2.65)

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

Table 12

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.85)			---	----	3.0	(2.50)
01		(4.7)			---	----	3.2	(2.45)
02		(4.6)			123	(2.05)	3.0	(2.50)
03		(4.85)			(121)	(2.45)	3.4	(2.60)
04		4.8		---	109	2.70	>3.3	2.72
05		5.4		---	109	2.85	3.1	2.82
06		5.4		4.2	104	3.00	3.2	2.75
07		5.7		4.6	105	3.10		2.70
00		6.2		4.8	103	3.50		2.60
09		6.3		4.8	103	3.55		2.65
10		6.85		5.2	103	3.60		2.70
11		6.9		5.2	103	3.72		2.60
12		7.2		5.3	101	3.72		2.60
13		7.5		5.3	103	3.70		2.60
14		7.5		5.0	101	3.60		2.55
15		6.9		4.8	103	3.50		2.50
16		6.75		4.8	103	3.30		2.70
17		6.35		4.9	105	3.15		2.60
18		6.6		---	107	2.95		2.65
19		6.15		---	111	2.60		2.65
20		(6.0)			117	(2.42)	2.5	(2.70)
21		(5.7)			(133)	(2.00)	3.1	(2.65)
22		(5.4)			---	----	3.4	(2.55)
23		(4.9)			---	----	3.6	(2.50)

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

Table 13

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.85	310				1.1	2.50
01		5.55	325					2.45
02		5.45	320					2.45
03		5.2	340				1.3	2.45
04	(440)	5.5	315	---	111	(1.70)	1.9	2.45
05	470	6.3	270	3.7	<110	(2.30)	2.5	2.45
06	470	6.8	245	4.2	102	2.80	3.1	2.45
07	440	7.6	230	4.7	101	3.15	3.5	2.50
08	470	7.1	230	4.9	101	3.40	3.8	2.48
09	475	7.2	220	5.0	101	3.60	4.2	2.48
10	480	7.25	220	5.2	101	3.70	4.4	2.48
11	440	7.3	<220	5.3	101	3.78	4.2	2.45
12	490	6.85	220	5.3	101	3.85	4.3	2.50
13	500	7.0	220	5.2	101	3.75	4.2	2.50
14	475	6.95	230	5.2	101	3.72	4.0	2.58
15	442	7.05	230	5.0	101	3.50	3.6	2.65
16	440	7.0	230	4.9	101	3.30	3.6	2.65
17	(390)	7.0	245	---	101	2.95	3.8	2.75
18	---	7.1	260		109	2.52	3.2	2.75
19		7.0	280		115	2.10	3.1	2.80
20		6.9	270		<141	----	3.6	2.75
21		6.95	265				1.4	2.70
22		6.75	275				1.2	2.65
23		6.25	290		---	----		2.58

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

Table 14

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.65	<295					2.60
01		6.4	<300					2.60
02		6.0	<300					2.52
03		>5.15	<300					2.62
04		(5.3)	<290					2.68
05	---	5.4	280	---	<127	(2.00)		2.85
06	---	6.0	250	---	119	2.60		2.85
07	420	6.4	240	4.6	111	3.10	3.1	2.75
08	428	6.55	225	5.0	109	3.40		2.60
09	500	6.8	220	5.2	111	3.70		2.55
10	460	6.9	215	5.4	109	3.90		2.50
11	490	7.0	210	5.5	111	4.00		2.60
12	490	7.15	220	5.6	110	(4.00)		2.50
13	450	7.5	220	5.6	111	(4.00)		2.55
14	450	7.6	230	5.5	109	3.90		2.55
15	440	7.5	230	5.4	111	3.70		2.60
16	410	7.8	230	5.0	111	3.50		2.65
17	370	7.85	245	4.6	115	3.00		2.68
18	(310)	7.8	(265)		119	2.42	2.8	2.65
19		8.1	275		---	----		2.70
20		7.8	<275					2.65
21		7.8	<285					2.60
22		7.6	<295					2.62
23		7.0	(290)					2.62

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

Table 15

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.9	285					2.58
01		6.5	300					2.55
02		6.1	<300					2.55
03		5.7	285					2.60
04		5.3	280					2.65
05		5.2	285		<129	1.75		2.75
06	---	6.0	250	---	109	2.50	2.7	2.85
07	(395)	6.5	235	4.5	105	3.00	3.3	2.72
08	420	6.7	225	4.9	103	3.35	3.5	2.70
09	465	6.8	215	5.2	103	3.65	3.8	2.60
10	495	6.9	210	5.5	103	3.85	4.0	2.50
11	450	7.2	210	5.5	105	3.95		2.55
12	455	7.4	215	5.6	103	4.00		2.55
13	450	7.7	220	5.6	105	4.00		2.55
14	450	7.7	220	5.4	105	3.95		2.55
15	420	8.0	225	5.4	105	3.80		2.55
16	410	7.8	230	5.1	105	3.50		2.60
17	380	7.85	235	4.8	107	3.15	3.3	2.65
18	(320)	7.9	255		115	2.58	2.8	2.70
19		7.9	270		<140	1.85	2.1	2.70
20		7.7	270					2.65
21		7.5	280					2.62
22		7.4	285					2.55
23		7.2	295					2.58

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

Table 16

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	320					2.55
01		6.8	300					2.60
02		6.5	<295					2.62
03		6.2	<300					2.55
04		5.8	(320)					2.55
05		5.55	315		118	----	1.7	2.58
06	---	6.95	260	---	115	2.50	2.6	2.78
07	(430)	8.15	240	4.5	109	3.00	3.4	2.70
08	425	8.95	235	5.0	106	(3.45)	3.9	2.68
09	480	9.7	225	5.4	108	(3.78)	4.0	2.55
10	400	10.5	220	5.8	109	4.00	4.2	2.55
11	390	10.8	215	6.0	109	4.12	4.2	2.52
12	390	10.6	215	6.0	107	4.18	4.4	2.50
13	390	10.85	220	5.8	109	4.10		2.55
14	370	10.9	230	5.7	109	4.00	4.2	2.60
15	370	10.5	230	5.5	109	3.80	4.1	2.60
16	370	10.0	230	---	109	3.50	3.9	2.65
17	(330)	9.65	245	---	111	3.08	3.6	2.70
18	---	9.2	260		119	2.50	3.0	2.78
19		8.8	265				1.9	2.78
20		8.0	250					2.65
21		7.4	(290)				2.4	2.60
22		7.0	<300					2.55
23		6.8	315					2.50

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

Table 17

Okinawa I. (26.3°N, 127.8°E) May 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(14.2)	280					(2.72)
01		13.4	265					(2.95)
02		12.7	250					2.92
03		11.1	240					2.82
04		>9.9	260					2.72
05		9.0	270					2.68
06		9.0	250		---	----		2.85
07		9.7	230		<111	----	3.3	2.95
08		10.1	(230)		(109)	(3.45)	4.0	2.80
09	---	10.8	(225)		109	----	4.4	2.60
10	---	11.85	(220)		109	----	5.0	2.55
11	---	12.55	<230		109	----	5.0	2.55
12	385	13.45	(230)	(6.8)	109	----	5.1	2.60
13	380	14.15	(230)	6.2	109	----	4.9	2.60
14	380	14.7	<235	---	109	----	5.2	2.60
15	360	15.2	(230)		109	(3.90)	4.9	2.65
16	350	15.4	(240)		(109)	(3.70)	4.4	2.65
17	330	(16.0)	(240)		(111)	(3.40)	4.3	(2.65)
18	---	15.0	(250)		---	----	4.6	2.70
19		(14.45)	270				3.7	(2.65)
20		(14.4)	290				3.2	(2.55)
21		(14.7)	300					(2.55)
22		(14.4)	295					(2.65)
23		>14.2	290					(2.62)

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

Table 18

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.5	<290				2.2	2.75
01		9.1	275				2.0	2.90
02		8.3	260				2.4	2.80
03		7.8	285				1.7	2.65
04		7.4	295				1.9	2.65
05		7.1	300				2.8	2.55
06		7.15	280		125	1.90	2.9	2.52
07		8.5	240		113	2.80	4.8	2.85
08	---	9.6	230		107	3.35	3.9	2.55
09	---	10.7	225	---	105	3.70	4.2	2.45
10	(380)	11.3	225	---	105	3.95	4.5	2.48
11	390	12.0	(220)	(6.0)	107	4.05	4.5	2.50
12	380	12.55	(220)	6.0	107	(4.15)	4.6	2.65
13	375	12.9	220	6.1	107	(4.10)	4.6	2.65
14	370	13.0	225	6.1	107	4.05	4.5	2.65
15	360	13.4	(230)	6.0	107	3.95	4.1	2.65
16	340	13.1	<235	---	109	3.60	4.3	2.70
17	320	13.1	<245		109	3.15	4.4	2.75
18	(295)	12.9	<260		113	2.50	3.8	2.85
19		11.8	270		---	----	3.6	2.80
20		11.0	280				3.8	2.70
21		10.6	285				3.3	2.65
22		10.5	300				3.2	2.70
23		10.1	<295				3.5	2.75

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

Table 19

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(13.3)	280					3.00
01		>12.5	245					3.00
02		10.5	245					2.85
03		9.0	245					2.90
04		8.05	255					2.80
05		7.2	250					2.75
06		8.6	280		(131)	(2.45)		2.80
07		10.0	260		121	(3.02)	3.6	2.75
08		11.25	250		119	(3.58)	5.7	2.45
09		12.15	245		119	(4.00)	5.2	2.30
10	---	12.5	(240)		119	(4.00)	5.0	2.20
11	---	13.0	(235)		119	(4.10)	4.4	2.15
12	---	13.3	(235)		119	(4.15)		2.10
13	---	13.2	(230)		119	(4.10)		2.10
14	---	(12.9)	240		119	(4.00)		(2.10)
15	---	(12.8)	240		119	(3.80)		(2.10)
16	---	(12.5)	250		119	3.50		(2.15)
17		(12.55)	270		123	(2.90)	3.4	(2.20)
18		>12.5	300		---	----	3.2	(2.30)
19		>11.5	<380				2.5	(2.10)
20		>11.0	(400)					(2.20)
21		>11.35	385					(2.28)
22		>12.0	350					(2.48)
23		(12.5)	310					(2.65)

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

Table 20

Chimbote, Peru (9.1°S, 78.6°W) — May 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.9	235					2.90
01		8.7	230				2.0	2.98
02		7.9	235					2.98
03		6.9	240					3.00
04		6.5	235					3.10
05		5.95	235					3.10
06		5.6	250					2.90
07		8.85	260		<127	2.50		2.92
08		11.0	240		119	3.18	4.4	2.80
09		11.5	230		115	3.60	5.5	2.55
10		11.7	225		115	(3.90)	6.6	2.35
11		11.4	220		115	(4.10)	8.4	2.25
12		11.1	215		115	(4.15)	8.3	2.20
13		10.6	210	---	111	(4.10)	7.8	2.20
14	---	11.0	(210)	---	111	(3.92)	8.3	2.20
15	---	11.2	(225)	---	113	(3.70)	8.4	2.20
16	---	11.1	235		115	(3.30)	7.9	2.20
17		11.0	(265)		(125)	2.75	4.5	2.20
18		10.3	(300)		<163	1.80	4.0	2.15
19		(9.5)	375					(2.15)
20		(9.25)	360				2.0	(2.25)
21		9.2	300				2.2	2.45
22		8.7	240				2.8	2.75
23		8.7	235				2.2	2.80

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

Table 21

Ilo, Peru (17.4°S, 71.2°W) — March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.8	250					3.08
01		11.7	230					3.10
02		9.4	225					3.00
03		8.3	235					3.00
04		6.75	240					3.02
05		5.45	245					3.02
06		7.5	270		<160	2.05		2.95
07		11.2	255		127	2.95	3.3	3.00
08		13.35	245		125	3.50	3.9	2.85
09		14.45	235		119	----	4.2	2.55
10		(14.85)	235		(119)	----	5.0	2.35
11		>14.4	<255		---	----	4.8	2.20
12		(13.2)	<235		118	----	4.7	(2.15)
13		13.2	<265		119	----		2.20
14		13.4	<230		121	----		2.20
15	---	13.3	(235)		119	----	3.8	2.25
16		13.55	245		121	3.30	4.1	2.20
17		13.6	265		122	2.70	4.8	2.20
18		12.85	310		---	----	2.4	2.15
19		11.85	<405					2.00
20		11.1	415					2.15
21		11.0	350				1.8	2.35
22		11.7	300				2.1	2.45
23		13.0	270				2.2	2.75

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

Table 22

Tromso, Norway (69.7°N, 19.0°E) — January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.8)	330		---	----	3.9	----
01		(4.4)	315				4.0	----
02		(5.0)	340				4.0	----
03		(5.8)	345		---	----	3.8	----
04		(5.8)	305		---	----	3.2	----
05		(5.4)	270		---	1.20	2.7	----
06		(5.1)	260		---	E	2.4	----
07		4.8	255		---	----	2.6	2.70
08		5.1	255		---	----	1.1	2.60
09		6.4	255		---	1.40		2.70
10		8.8	250		---	1.80		2.85
11		10.8	250		---	1.90		2.90
12		11.4	245		---	1.80		2.90
13		11.7	240		---	1.80		2.90
14		10.5	235		---	1.65		3.00
15		9.4	240		---	1.30	1.7	2.95
16		5.6	245		---	----	2.6	(2.90)
17		5.4	255		---	----	3.1	(2.70)
18		(4.3)	250		---	----	3.1	----
19		(4.4)	265		---	----	3.6	----
20		(5.5)	(275)				4.0	----
21		---	(305)				4.2	----
22		---	(310)				4.4	----
23		---	(300)				3.3	----

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

Table 23

Lulea, Sweden (65.6°N, 22.1°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.8)	340				2.5	(2.5)
01		(4.8)	340		---	---		(2.4)
02		(4.7)	310					2.4
03		(4.7)	320					(2.4)
04		(5.6)	305					(2.4)
05		(5.0)	270					2.5
06		(4.7)	<260					(2.5)
07		4.3	270					2.6
08		5.6	250					2.6
09		8.4	250		---	1.8		2.7
10		10.9	250		---	2.0		2.8
11		12.3	245		---	2.1		2.8
12		13.2	235		---	(2.1)		2.65
13		13.0	235		---	1.9		2.75
14		12.0	235		---	---		2.8
15		(11.2)	225					2.7
16		(7.6)	240					(2.7)
17		5.4	250					2.7
18		(4.5)	250					(2.7)
19		3.6	295					2.65
20		(4.1)	<295					2.6
21		(3.9)	310				2.1	2.5
22		(3.6)	320				2.2	(2.4)
23		(2.5)	340				2.5	(2.5)

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

Table 24

Lycksele, Sweden (64.6°N, 18.8°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.8	340				3.0	2.4
01		5.2	325				2.7	2.4
02		5.1	320				3.1	2.5
03		5.2	300				3.0	2.5
04		5.2	290				3.0	2.55
05		5.2	270				2.4	2.6
06		4.3	255				2.3	2.7
07		3.8	250		---	E	2.3	2.6
08		4.8	245		---	E	2.6	2.7
09		7.3	240		120	1.50	3.1	2.9
10		10.4	240		115	1.80	3.4	3.0
11		12.0	235		110	1.85	3.0	3.0
12		12.3	225		---	1.95	3.1	3.0
13		12.3	230		110	1.90	2.9	3.0
14		12.0	225		130	1.50	3.0	3.0
15		10.6	220		---	1.00	2.5	3.0
16		8.5	220		---	E	2.7	3.0
17		5.8	235				2.6	2.8
18		4.5	245				2.6	2.7
19		4.1	260				2.4	2.6
20		3.8	280				2.5	2.6
21		4.0	295				2.3	2.6
22		4.3	300				2.3	2.5
23		5.0	340				2.9	2.45

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

Table 25

Baker Lake, Canada (64.3°N, 96.0°W) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(5.0)	280		---	---	6.1	
01		5.0	270		---	---	5.7	
02		(5.0)	280		---	---	5.1	
03		(5.0)	270		---	---	6.0	
04		(4.9)	280		---	1.7	4.9	
05		(4.7)	290		---	(1.9)	4.7	
06		(4.5)	280		140	2.0	4.0	
07		4.5	280		---	2.0	5.0	
08		(4.9)	290		120	2.0	4.0	
09		5.1	280		115	2.2	4.5	
10		6.5	280		110	2.2	4.0	
11		7.5	260		110	2.4	4.0	---
12		8.8	250		110	2.4		(3.3)
13		11.5	250		120	2.2		(3.3)
14		12.1	250		115	2.1		(3.3)
15		(8.0)	250		110	2.0	3.8	---
16		(6.5)	280		120	1.9	2.2	---
17		(6.0)	280		120	2.1	4.3	
18		(6.0)	280		120	2.0	5.3	
19		(6.0)	270		130	2.1	6.0	
20		(6.0)	260		130	2.0	6.0	
21		(5.5)	290		---	1.9	7.0	
22		(5.3)	280		---	---	6.9	
23		(5.0)	280		---	---	6.5	

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 26

Nurmijarvi, Finland (60.5°N, 24.6°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.2)						(2.45)
01		(3.1)						(2.60)
02		(3.3)						(2.65)
03		3.0						2.70
04		3.2						2.65
05		3.0						2.70
06		2.9						2.75
07		2.9						2.80
08		4.0						2.70
09		7.0						3.00
10		10.0						3.10
11		11.8						3.10
12		13.3						3.10
13		13.5						3.10
14		13.4						3.00
15		12.4						3.00
16		11.2						3.10
17		9.5						3.10
18		6.8						3.10
19		5.1						2.90
20		4.2						2.90
21		3.6						2.80
22		3.3						2.70
23		3.2						2.70

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

Table 27

Upsala, Sweden (59.8°N, 17.6°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.1	330				2.5	2.4
01		3.0	315				2.5	2.4
02		3.0	310				2.8	2.5
03		3.0	300				2.6	2.5
04		3.1	290				2.5	2.5
05		3.4	265				2.5	2.6
06		3.2	250		---	E	2.4	2.6
07		3.5	260		---	E	2.5	2.65
08		5.7	245		140	1.15	2.5	2.8
09		8.4	240		120	1.75	2.7	3.0
10		11.2	230		120	2.00	2.8	3.1
11		12.9	230		120	2.20	2.8	3.0
12		13.4	230		115	2.30	2.8	3.0
13		13.5	235		115	2.20	3.1	3.0
14		12.9	225		120	1.90	2.7	3.0
15		12.1	225		125	1.40	3.0	3.0
16		10.5	215		---	E	2.7	3.0
17		8.0	225		---	E	2.6	3.0
18		6.0	225				2.4	2.9
19		5.0	245				2.4	2.8
20		4.4	260				2.5	2.7
21		3.8	275				2.5	2.6
22		3.5	295				2.5	2.5
23		3.2	310				2.4	2.4

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 6 minutes, automatic operation.

Table 28

Churchill, Canada (58.8°N, 94.2°W) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	300		130	2.0	4.5	
01		5.2	300		130	2.3	5.0	
02		5.0	300		140	2.0	4.4	
03		5.0	300		135	2.1	4.4	
04		5.2	310		125	2.3	4.4	
05		5.0	320		130	2.6	4.4	
06		5.0	330		120	2.6	4.4	
07		5.0	310		120	2.4	4.4	
08		5.2	300		115	2.0	4.4	
09		7.0	280		110	2.4	4.3	
10		9.6	260		115	2.4	4.3	---
11		11.7	250		120	2.6	3.8	---
12		12.6	240		125	2.5		(2.9)
13		13.2	240		125	2.5	3.7	(2.9)
14		14.0	240		130	2.3	4.2	---
15		13.4	240		130	2.1	3.8	(2.9)
16		11.8	250		135	1.7	4.0	---
17		8.2	260		120	2.0	4.0	---
18		6.0	300		120	2.2	3.7	---
19		5.9	290		120	2.6	4.2	
20		6.0	300		120	2.7	4.2	
21		5.3	300		125	2.3	4.2	
22		5.2	330		120	2.2	4.6	
23		5.2	310		130	2.1	4.3	

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

Table 29

Inverness, Scotland (57.4°N, 4.2°W) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.8	330				<1.2	2.40
01		2.9	310				<1.0	2.40
02		2.8	320				<1.1	2.40
03		2.6	310				<1.1	2.40
04		2.4	295				<1.1	2.60
05		2.6	270				<1.4	2.65
06		2.6	255				<1.6	2.60
07		2.6	250				<1.6	2.60
08		2.5	240				<1.5	2.60
09		2.6	240		110	1.90		3.00
10		3.1	230		110	2.25		3.05
11		3.1	225		110	2.50		3.05
12		3.1	230		120	2.60		3.00
13		3.1	225		115	2.60		2.95
14		3.1	230		120	2.45		3.00
15		3.1	220		135	2.10		3.00
16		3.1	220		---	----	<1.8	3.00
17		2.9	220				<1.6	3.00
18		3.0	220				<1.6	2.90
19		2.9	240				<1.6	2.70
20		2.9	250				<1.6	2.70
21		2.6	260				<1.6	2.60
22		2.7	275				<1.6	2.40
23		2.6	310				<1.6	2.40

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

Table 30

Moscow, U.S.S.R. (55.5°N, 37.3°E) — December 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	foEs	(M3000)F2
00	295	3.5				----	<1.3	2.55
01	300	3.5				----	<1.1	2.50
02	300	3.4				----		2.55
03	280	3.4				----		2.65
04	265	3.3				----		2.70
05	245	3.3				----	<1.2	2.85
06	240	3.0				----	<1.3	2.80
07	230	4.6				1.20		2.85
08	230	8.1				2.00	2.1	3.05
09	215	11.0				2.40		3.20
10	220	12.2				2.70		3.10
11	220	13.1				2.90		3.05
12	220	13.3				2.90	3.0	3.05
13	225	13.5				2.70		3.05
14	215	12.6				2.30	2.3	3.05
15	220	12.0				1.90		3.05
16	205	10.0				E	<1.6	3.10
17	210	8.3				E	<1.4	3.10
18	215	6.4				----	<1.4	3.10
19	220	4.8				----	<1.4	3.00
20	260	3.8				----	<1.4	2.80
21	260	3.7				----	<1.3	2.70
22	270	3.6					<1.4	2.70
23	280	3.4					<1.3	2.65

Time: 30.0°E.
Sweep: 1.0 Mc to 18.0 Mc in 20 seconds.

Table 31

De Bilt, Holland (52.1°N, 5.2°E) December 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<350	3.8						2.70
01	<360	3.9						2.70
02	<375	3.7						2.70
03	<350	3.4						2.70
04	<340	3.4						2.80
05	<300	3.3						2.95
06	<300	3.2						2.90
07	<275	4.3						2.90
08	225	8.1						3.20
09	225	11.5						3.30
10	225	(12.0)			---	---		3.15
11	220	>12.5			---	---		3.25
12	225	>12.5			---	---		3.10
13	225	>12.4			---	---		3.10
14	225	(12.2)			---	---		3.10
15	220	12.0						3.15
16	220	11.2						3.15
17	220	9.1						3.15
18	230	7.1						3.15
19	250	5.8						3.10
20	(275)	4.9						2.95
21	<300	4.3						2.85
22	<330	4.0						2.80
23	<345	4.0						2.70

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

Table 32

Slough, England (51.5°N, 0.6°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0	<305				<1.3	2.50
01		3.8	310				(1.1)	2.50
02		3.6	310				(1.1)	2.50
03		3.4	<305				<1.1	2.55
04		3.6	280				<1.2	2.60
05		3.6	<255				<1.5	2.70
06		3.4	<270				2.2	2.65
07		(3.8)	<240			----	<1.8	(2.55)
08		(7.3)	230			<1.90	2.8	(3.00)
09		11.5	230			2.45	3.0	3.05
10		13.0	225		115	2.80	3.0	3.10
11		13.5	230		110	3.00	3.1	3.00
12		13.8	220		115	3.05	3.2	2.95
13		13.8	230		120	2.95	3.1	2.95
14		(13.4)	230		120	2.75	3.0	2.95
15		13.0	230		---	2.40	2.8	3.00
16		(12.2)	220			1.80	2.3	(2.95)
17		(10.4)	<215				2.0	(2.95)
18		8.2	215				2.1	2.95
19		6.6	<220				<1.6	2.95
20		5.2	<240				<1.6	2.75
21		4.8	<255				<1.6	2.65
22		4.5	<255				<1.6	2.55
23		4.4	<305				<1.6	2.50

Time: 0.0°.
Sweep: Union Radio Mk II from December 1957.

Table 33

Graz, Austria (47.1°N, 15.5°E) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>5.1	350					
01		(4.4)	---					
02		(4.8)	---					
03		---	---					
04		(4.5)	---					
05		---	---					
06		---	---					
07		>4.7	(320)					
08		(8.2)	240					
09		(10.8)	240					
10		(12.6)	240					
11		(12.2)	240					
12		(12.3)	240					
13		(12.4)	240					
14		(12.2)	240					
15		(10.3)	240					
16		>9.3	240					
17		>8.9	250					
18		(8.0)	255					
19		>5.7	270					
20		>5.1	---					
21		(5.0)	---					
22		(5.1)	---					
23		>5.0						

Time: 15.0°E.
Sweep: 2.0 Mc to 18.0 Mc in 50 seconds.

Table 34

Schwarzenburg, Switzerland (46.8°N, 7.3°E) December 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.4						2.9
01	310	4.1						2.9
02	300	4.1						2.9
03	300	4.1						3.0
04	280	3.6						3.0
05	270	3.5						3.1
06	250	3.5						3.2
07	250	3.7						3.2
08	210	6.7						3.5
09	200	9.6			100	2.4		3.5
10	210	12.8			100	2.8		3.4
11	210	13.3			100	3.1		3.4
12	210	13.0			100	3.2		3.4
13	200	13.2			100	3.1		3.3
14	210	12.6			100	3.0		3.3
15	220	12.7			100	2.8		3.35
16	210	11.0			110	2.2		(3.4)
17	200	10.0						(3.3)
18	210	9.0						3.4
19	210	7.1						3.4
20	220	5.3						3.4
21	240	4.8						3.0
22	280	4.7						3.0
23	300	4.3						3.0

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

Table 35

Wakkanai, Japan (45.4°N, 141.7°E) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0	325					2.60
01		3.8	320					2.55
02		4.0	315					2.60
03		3.8	300					2.60
04		3.9	305					2.60
05		3.8	290					2.70
06		3.6	250					2.95
07		6.4	240			----		3.00
08		10.3	225			2.40	2.6	3.10
09		13.1	230			2.90		3.10
10		13.8	230			3.10		3.05
11		13.3	230			3.25		3.05
12		12.6	230			3.20		2.95
13		12.8	230			3.05		2.95
14		12.6	235			2.75		2.95
15		11.8	225			2.30		2.95
16		11.0	230					2.90
17		9.3	230					2.85
18		(8.0)	235				3.2	3.00
19		6.5	235				3.1	3.00
20		5.0	250					2.85
21		4.7	295				2.6	2.70
22		4.4	295					2.70
23		4.2	305					2.60

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

Table 36

Monte Capellino, Italy (44.6°N, 9.0°E) October, November, December 1958

Time	October foEs	November foEs	December foEs
00			
01			
02			
03			
04			
05			
06			
07			
08			2.3
09	3.4		
10	3.7	3.3	3.2
11	3.8	3.5	
12	3.9	3.6	
13	3.7	3.4	
14	3.5	3.5	
15	3.2	3.3	3.0
16	3.2	2.9	2.4
17	3.3	3.1	1.3
18	3.1	2.2	
19	2.4	2.1	2.0
20	1.8	1.9	
21	1.3		
22			
23			

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

Table 37

Rome, Italy (41.0°N, 12.5°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	<300					2.60
01		4.4	310					2.60
02		4.5	<310					2.65
03		4.4	<300					2.70
04		4.2	290					2.65
05		3.8	270					2.85
06		(3.7)	270					(2.80)
07		(5.2)	240		---	---		(2.80)
08		(8.8)	230		140	2.2		(3.25)
09		(11.2)	230		120	2.8		(3.10)
10		(11.5)	230		110	3.1		(2.90)
11		----	240		110	3.4		----
12	---	(12.0)	230	---	110	3.5		(3.00)
13		11.0	230		110	3.4		(2.85)
14		11.8	240		110	3.2		2.80
15		(11.6)	240		120	2.9		(2.80)
16		10.8	240		130	2.3		2.90
17		(10.4)	230		---	---		(2.90)
18	---	(8.6)	230	---				2.90
19		(7.3)	240				2.2	(3.00)
20	---	(5.8)	240	---				(3.00)
21		4.9	260					2.60
22		4.8	300					2.60
23		4.8	300					2.65

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

Table 38

Akita, Japan (39.7°N, 140.1°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.4	300				2.2	2.60
01		4.3	310					2.55
02		4.3	305					2.60
03		4.3	310					2.55
04		4.2	300					2.55
05		4.1	300					2.65
06		4.3	250					2.90
07		7.6	240			1.70	2.9	3.10
08		10.8	225			2.55	2.6	3.20
09	---	13.4	240			3.05	3.4	3.10
10	---	14.7	240			3.40		3.00
11	---	14.1	240			3.55		2.95
12		13.8	235			3.50		2.90
13		13.3	240			3.40		2.80
14	---	13.2	240			3.10		2.85
15	---	12.5	240			2.60		2.90
16	---	11.4	240			1.95		2.90
17		10.4	235					2.90
18		9.0	240				2.4	3.00
19		7.4	225					3.10
20		5.5	240					3.00
21		5.0	280					2.60
22		4.8	290					2.70
23		4.6	290				2.2	2.70

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

Table 39

Tokyo, Japan (35.7°N, 139.5°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	300					2.60
01		4.4	335					2.55
02		4.3	305					2.55
03		4.1	305					2.60
04		3.9	300					2.45
05		4.1	330					2.55
06		4.5	260					2.90
07		8.3	245					3.05
08		10.9	230			2.70		3.10
09		13.6	230			3.15		3.00
10		15.2	240			3.50		2.95
11		14.6	235			3.60		2.85
12		14.4	240			3.65		2.75
13	---	13.7	240			3.55		2.70
14		13.8	245			3.30		2.70
15		13.6	250			2.90		2.80
16		12.3	240			----		2.85
17		11.0	235					2.80
18		9.6	250					2.90
19		(8.4)	235					(3.00)
20		6.6	245					2.90
21		5.7	260					2.60
22		5.5	300					2.65
23		5.0	300					2.65

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

Table 40

Yamagawa, Japan (31.2°N, 130.6°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	250					2.80
01		5.5	250					2.70
02		5.3	250					2.75
03		5.0	250					2.90
04		4.4	250					2.95
05		3.7	270					2.60
06		4.1	285					2.80
07		6.8	250					3.00
08		10.6	225			2.50		3.30
09		12.6	225			3.10		3.20
10		14.0	225			3.50	4.0	3.10
11		14.2	225			3.60	3.9	3.00
12		14.4	225			3.75	4.0	2.90
13		14.5	225			3.80		2.80
14		14.0	225			3.60	3.8	2.80
15		14.0	230			3.25	3.3	2.80
16		14.0	240			2.75	3.4	2.85
17		13.0	225			1.90	3.1	2.90
18		12.0	220				3.0	2.95
19		11.2	230				2.3	2.95
20		10.0	220					3.00
21		(8.6)	205					(2.95)
22		7.3	230					2.80
23		6.4	250					2.70

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 41

Macau (22.2°N, 113.6°E) — December 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	14.5						2.40
01	335	14.0						2.30
02	305	12.0						2.30
03	300	9.5						2.10
04	300	6.0						2.05
05	350	5.8						2.05
06	360	5.8						2.05
07	400	8.5						2.10
08	390	12.5			160	2.8		2.40
09	370	14.5	---	---	150	3.2		2.50
10	360	14.8	350	---	150	3.5		2.30
11	500	14.8	350	8.3	145	3.7		2.20
12	570	14.8	350	8.2	150	3.9		2.20
13	570	14.8	350	8.5	140	3.9		2.20
14	570	14.8	350	8.1	---	---		2.20
15	570	15.0	355	8.0	150	3.5		2.15
16	530	14.8	360	7.8	150	3.0	3.2	2.20
17	500	14.8	370	7.4				2.20
18	345	14.8					2.2	2.40
19	365	14.7						2.40
20	360	14.8						2.50
21	320	14.8						2.60
22	300	14.8						2.70
23	300	14.6						2.45

Time: 120.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 42

El Cerillo, Mexico (19.1°N, 99.6°W) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(4.9)						(2.85)
01		5.2						2.90
02		(4.2)						(3.00)
03		3.4						2.90
04		(3.1)						(2.65)
05		3.1						2.65
06		3.0						2.80
07		5.8						2.80
08		10.2						3.20
09		12.4						3.10
10		13.3						3.10
11		13.0						3.00
12		11.9						2.75
13		12.9						2.70
14		12.8						2.70
15		12.3						2.65
16		11.5						2.65
17		11.0						2.70
18		10.4						2.90
19		9.4						2.90
20		8.0						2.90
21		7.6						3.05
22		6.7						2.95
23		5.6						2.90

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 43

Bunia, Belgian Congo (1.5°N, 30.2°E) — December 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	10.0					1.5	2.48
01	260	9.5						2.55
02	240	9.0						2.62
03	250	8.4					2.0	2.75
04	265	7.9			130	1.5	3.0	2.80
05	260	9.3	260	---	120	2.9	3.5	2.70
06	---	10.6	240	---	115	3.5	4.0	2.40
07	---	11.0	240	---	110	3.7		2.17
08	---	11.4	235	---	110	4.0		2.01
09	---	11.7	240	6.5	110	4.1		1.92
10	(520)	12.4	250	6.6	110	4.1		1.94
11	(450)	13.0	240	6.2	110	4.0		1.99
12	520	12.7	250	6.0	110	4.0		1.99
13	(550)	12.2	240	5.8	110	3.7		1.95
14	560	12.4	250	---	120	3.3		1.96
15	(580)	12.6	270	---	120	2.6	3.3	2.00
16	---	(12.0)	330	---	---	---	2.8	(2.02)
17	420	>11.3					2.0	1.93
18	430	>11.5					1.8	<1.99
19	350	>12.1					2.0	(2.16)
20	280	>11.3						(2.34)
21	260	>10.7						<2.30
22	270	10.7					1.5	<2.36
23	280	11.0						2.45

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

Table 44

Leopoldville, Belgian Congo (4.4°S, 15.2°E) — December 1958

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	11.3						2.41
01	270	10.6						2.46
02	255	10.1						2.46
03	245	8.6						2.57
04	240	6.7					1.9	2.60
05	270	8.0			140	2.0	3.0	2.62
06	(265)	>9.0	250	---	115	3.0	3.6	2.64
07	---	9.8	240	---	110	3.5		2.48
08	---	10.5	230	---	110	3.9	4.1	2.19
09	---	11.0	240	---	110	4.0		<2.03
10	(570)	>11.3	250	---	110	4.1		1.90
11	510	12.5	250	6.6	110	---		2.00
12	470	13.0	245	6.0	110	4.2		2.04
13	465	12.9	250	6.1	110	4.0		2.02
14	485	13.0	245	6.0	115	3.9		2.02
15	460	13.0	250	5.3	120	3.4	3.6	2.05
16	420	13.3	270	---	120	2.8	3.4	2.12
17	320	13.1	315	---	---	---	3.0	2.15
18	370	13.0					3.0	2.08
19	350	13.6					2.7	2.15
20	300	14.0					2.7	2.31
21	260	14.4						2.49
22	250	12.6						2.39
23	270	>11.5						2.35

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

Table 45

Rarotonga I. (21.2°S, 159.8°W) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(10.2)	300				3.6	(2.40)
01		(10.0)	330				3.8	(2.40)
02		(9.9)	330				3.2	(2.40)
03		(9.9)	320				3.5	(2.40)
04		(9.6)	300				<2.0	(2.40)
05		(9.8)	290		---	1.6	2.5	(2.55)
06		(10.9)	250		110	2.7	3.6	(2.75)
07		11.0	250		105	3.4	4.5	2.65
08		11.3	240		105	3.8	4.7	2.50
09	---	12.0	240		105	4.0	<5.0	2.40
10	420	12.7	<240	---	105	(4.2)	5.5	2.35
11	430	13.6	240	(6.9)	105	(4.3)	4.6	2.40
12	420	14.0	<250	7.0	105	(4.4)	5.0	2.40
13	410	14.2	<250	(6.5)	(105)	4.3	4.8	2.40
14	400	13.4	<250	(6.4)	105	4.1	4.4	2.40
15	400	13.3	250	---	105	3.9	4.4	2.40
16	400	12.8	(250)		105	3.5	4.8	2.40
17	(380)	(12.5)	(270)		110	2.9	4.7	(2.35)
18		(11.8)	(310)		---	---	4.3	(2.35)
19		(11.6)	(350)				4.3	(2.30)
20		(11.4)	<360				4.4	(2.35)
21		(11.5)	340				3.4	(2.40)
22		(11.7)	320				3.8	(2.45)
23		(10.9)	300				4.0	(2.45)

Time: 165.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 46

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.3	<280				1.8	2.60
01		6.8	<270				2.1	2.55
02		6.2	<290				1.7	2.55
03		6.0	<280				1.8	2.55
04		5.6	<280				<1.5	2.55
05		5.7	300			1.6		2.60
06	---	7.6	250	---		2.6		2.80
07	---	9.1	240	---		3.2		2.70
08	---	10.2	230	---		3.7		2.55
09	385	10.8	225	6.0		4.0		2.50
10	410	11.0	220	6.2		4.1		2.45
11	425	11.2	215	6.4		4.3		2.35
12	425	11.1	215	6.2		4.4		2.35
13	430	11.1	220	6.2		4.4		2.35
14	430	10.9	225	6.0		4.2	4.4	2.35
15	425	10.6	230	6.0		4.0		2.40
16	405	10.1	230	5.8		3.8	4.0	2.45
17	(395)	9.6	245	---		3.4	3.6	2.45
18		9.4	260			2.6	2.8	2.55
19		9.3	280			1.7		2.60
20		>9.2	270				<1.9	2.65
21		9.0	<265				<1.7	2.60
22		8.2	<275				1.4	2.55
23		7.8	<290				<1.5	2.60

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

Table 47

Brisbane, Australia (27.5°S, 152.9°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	300				4.0	2.60
01		8.6	<310				4.2	2.50
02		8.5	320				4.2	2.40
03		8.0	320				2.9	2.45
04		8.0	310				2.0	2.45
05		7.6	280		135	1.80	2.4	2.60
06	---	8.2	250	---	120	2.75	3.5	2.75
07	(480)	8.6	250	5.3	120	3.40	4.4	2.65
08	(460)	8.9	250	6.0	120	3.80	6.5	2.60
09	(430)	9.4	250	6.1	110	4.00	6.2	2.50
10	400	9.9	235	6.5	110	4.20	6.0	2.50
11	420	10.6	(240)	6.5	110	4.25	6.6	2.45
12	430	10.3	<235	6.4	110	4.30	5.5	2.45
13	400	10.4	230	6.4	120	4.30	>4.8	2.45
14	400	10.5	240	6.3	120	4.20	5.0	2.45
15	400	9.9	240	6.0	120	3.95	4.4	2.45
16	390	9.6	240	5.8	120	3.70	4.1	2.55
17		9.0	250		120	3.10	3.6	2.50
18		8.9	275		120	2.30	4.0	2.55
19		8.9	<320		---	<1.80	4.1	2.50
20		9.4	330				3.5	2.50
21		9.4	340				3.6	(2.50)
22		>9.5	315				3.2	2.55
23		9.5	300				3.5	2.65

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

Table 48

Capetown, Union of S. Africa (34.1°S, 18.3°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.1)	<300				2.6	2.55
01		>5.8	<300				2.7	2.55
02		>5.5	<310				2.6	2.50
03		>5.3	<310				2.2	2.55
04		>4.9	<300				2.1	2.50
05		>4.8	335			<1.3	<1.4	2.50
06		(6.6)	270			2.2	2.2	2.75
07	---	>8.1	250	---		2.9		2.65
08	---	>9.1	250	---		3.5		2.50
09	420	>9.8	240	5.8		3.8		2.45
10	425	>10.2	230	6.3		4.0	4.4	2.35
11	440	(10.7)	220	6.1		4.1	4.3	(2.35)
12	430	>10.6	(225)	6.2		---	4.3	(2.30)
13	450	>10.6	(225)	6.1		---	4.6	(2.30)
14	450	>10.4	225	6.1		---	4.2	(2.30)
15	445	(10.4)	235	6.0		4.1	4.4	(2.30)
16	435	(10.1)	235	5.8		4.0	4.4	2.35
17	410	>9.4	240	5.5		3.6	3.9	2.45
18	---	>8.9	250	---		3.1	3.5	2.50
19		>8.6	270			2.5	3.0	2.60
20		>8.5	270			1.7	2.0	2.65
21		>7.7	270				<1.5	2.60
22		>6.9	<280				2.4	2.60
23		(6.4)	<290				2.6	2.55

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

Table 49

Hobart, Tasmania (42.9°S, 147.2°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.9	300					(2.40)
01		>4.5	320					(2.40)
02		>4.5	310					(2.25)
03		>4.5	320					(2.35)
04		>4.5	330		---	1.30		2.45
05		>4.5	300		130	2.20		----
06	---	(5.7)	260	---	120	2.90	3.0	2.60
07	---	6.6	250	---	120	3.35	3.9	2.65
08	450	7.2	250	---	110	----	4.5	2.60
09	500	>7.5	230	(5.2)	---	----	4.5	2.50
10	480	>8.0	(240)	6.2	---	----	5.0	2.50
11	480	8.2	(230)	(5.4)	---	----	5.0	2.50
12	480	8.0	(250)	(6.0)	---	----	5.0	2.40
13	500	8.2	---	6.0	---	----	5.0	2.45
14	480	8.0	230	5.9	110	4.10	4.5	2.45
15	480	7.9	230	5.8	120	4.00	4.2	2.45
16	450	7.9	230	5.4	120	3.75		2.50
17	410	7.9	240	---	120	3.45	4.0	2.50
18	---	7.8	260	---	120	3.00	3.6	2.60
19		7.8	290		---	----	4.5	2.65
20		(7.8)	300				4.2	2.55
21		(7.8)	320				4.2	2.45
22		>7.8	320				4.0	2.45
23		>7.0	320					2.50

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 50

Cape Hallett (72.3°S, 170.3°E) — December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(480)	(5.0)	280	(3.6)	105	2.3		(2.40)
01	470	(5.3)	275	3.5	103	(2.4)		(2.40)
02	---	(5.2)	260	(3.6)	105	(2.5)		(2.40)
03	(590)	(5.4)	250	3.8	103	(2.9)		(2.40)
04	(550)	(5.6)	255	(4.1)	103	(3.1)		(2.40)
05	(515)	(5.6)	(250)	(4.3)	101	(3.2)		(2.30)
06	(515)	(6.0)	230	(4.6)	101	3.4		(2.30)
07	(480)	(6.7)	235	(4.9)	101	3.5		2.45
08	(490)	(6.8)	230	5.1	99	3.6		(2.40)
09	460	(7.2)	230	5.0	99	3.7	3.9	(2.40)
10	470	(7.0)	220	5.1	99	3.7	3.8	2.40
11	490	(6.8)	220	5.0	99	3.6		(2.30)
12	515	(6.7)	215	5.0	99	3.7		(2.35)
13	560	(6.6)	220	5.1	99	3.6		(2.30)
14	515	(6.6)	220	5.1	99	3.6	4.0	(2.30)
15	490	(6.7)	220	5.0	99	3.5	4.6	2.30
16	510	(6.5)	220	4.8	99	3.4	4.0	(2.25)
17	485	(6.5)	240	4.7	101	3.3	3.4	(2.35)
18	470	(6.7)	250	4.5	101	3.0		(2.35)
19	455	(6.8)	255	(4.3)	103	2.9		(2.35)
20	460	(6.4)	260	4.0	103	2.7		(2.40)
21	440	(6.1)	265	3.8	103	2.5		(2.35)
22	435	(5.8)	275	3.5	103	2.4		(2.40)
23	(470)	(5.6)	280	3.4	105	2.3		(2.40)

Time: 165.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 51

Churchill, Canada (58.8°N, 94.2°W) — November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.4	290		125	2.2	5.6	
01		5.5	320		---	2.3	4.4	
02		5.4	300		120	2.2	4.3	
03		5.2	300		125	2.1	4.0	
04		5.1	310		125	2.4	4.4	
05		5.3	320		120	2.5	4.2	
06		5.5	320		125	2.5	4.3	
07		5.4	300		150	2.1	4.1	
08		6.8	280		120	2.4	4.2	----
09		8.3	270		125	2.6	4.0	(3.0)
10		10.5	250		115	2.8	3.7	(2.95)
11		11.7	250		110	2.8	4.0	2.85
12		13.0	240		120	3.0		(2.85)
13		13.2	240		120	2.7		----
14		14.0	240		120	2.6		----
15		14.0	240		130	2.3	2.9	
16		13.8	240		135	1.9	2.6	----
17		11.8	240		130	2.0	3.8	
18		7.4	270		125	2.2	3.4	----
19		7.0	280		125	2.3	3.6	----
20		6.2	280		120	2.3	4.0	
21		6.2	300		130	2.0	4.1	
22		6.0	280		130	2.2	5.0	
23		6.0	290		130	2.2	4.4	

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

Table 52

Slough, England (51.5°N, 0.6°W) — November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.2	290				<1.8	2.55
01		5.0	285				<1.4	2.60
02		4.7	285				<1.2	2.60
03		4.4	280				<1.1	2.70
04		4.1	255				<1.1	2.75
05		3.9	245				<1.4	2.70
06		3.8	255				2.0	2.65
07		6.0	240			<1.60	2.0	2.75
08		(10.4)	225		115	2.25	2.5	3.05
09		(12.9)	225		110	2.65	3.0	3.10
10		(14.4)	225		105	2.90	3.1	(3.00)
11		(14.8)	230		105	3.05	3.0	(2.95)
12		(14.8)	225		105	3.10		(2.85)
13		(14.6)	230		100	3.00		(2.80)
14		(14.4)	235		115	2.80		(2.85)
15		(14.0)	235		115	2.50	2.6	(2.90)
16		13.3	225			1.95	2.8	2.95
17		11.9	220				2.8	2.90
18		9.8	210				2.5	2.90
19		8.2	230				2.2	2.90
20		6.8	240				<1.6	2.90
21		5.8	250				<1.6	2.80
22		5.4	260				<1.6	2.60
23		5.3	280				<1.6	2.50

Time: 0.0°.
Sweep: Union Radio Mk II from December 1957.

Table 53

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.3	<290				2.8	----
01		(6.5)	<290				3.2	----
02		6.2	<290				3.2	(2.60)
03		>6.6	<300				3.0	(2.60)
04		(6.5)	<300				1.6	(2.55)
05		>6.5	300		---	<1.30	1.3	2.70
06		>6.6	250	---	110	2.30		(2.80)
07	---	>7.5	245	---	100	3.10	3.2	(2.50)
08	(480)	>8.0	240	5.7	100	3.50	3.8	(2.45)
09	400	8.5	<250	6.4	100	3.85		(2.45)
10	375	9.8	<250	6.6	100	(4.00)		(2.35)
11	400	>8.6	<250	>6.6	100	(3.90)		----
12	405	>10.0	(250)	6.8	100	>3.90		----
13	400	>9.1	<255	6.6	100	3.90		
14	410	>9.2	<255	6.6	100	3.90		----
15	400	>9.8	<260	6.4	100	3.90		----
16	390	(9.8)	(240)	6.3	100	3.60	4.2	----
17	---	---	<250	---	100	3.15	3.8	----
18	---	---	<250	---	105	2.30	3.3	----
19		---	(260)				2.7	----
20		---	(260)				1.6	
21		---	(270)				1.5	----
22		---	<290				1.5	
23		(7.0)	<300				2.8	----

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

Table 54

Christchurch, New Zealand (43.6°S, 172.8°E) — November 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.2)	300				2.9	(2.35)
01		(7.8)	300				2.7	2.40
02		7.3	300				2.8	2.35
03		6.8	300				1.5	2.40
04		6.6	300				<1.2	2.45
05		6.6	300		155	1.7		2.50
06		7.2	260	---	115	2.5		2.60
07	---	7.6	250	---	105	3.0		2.60
08	(400)	8.4	250	5.5	100	3.5	3.9	2.60
09	(420)	9.3	240	6.0	100	3.7	4.3	2.60
10	420	9.5	(230)	6.1	100	4.0	4.4	2.60
11	430	9.8	(230)	6.3	100	4.1	4.6	2.55
12	410	9.8	220	6.4	100	---	4.5	2.50
13	420	9.7	220	6.4	100	---	4.2	2.50
14	410	9.5	220	6.1	100	4.0	4.0	2.55
15	440	9.4	230	6.1	105	3.9		2.50
16	450	9.1	240	5.9	105	3.6		2.50
17	(400)	9.1	250	5.4	105	3.2		2.50
18		8.4	250	---	110	2.9	2.3	2.55
19		(8.6)	280		120	---	3.0	(2.50)
20		(8.6)	300		---	---	3.5	(2.50)
21		(9.0)	300				3.4	(2.50)
22		(8.6)	300				3.8	(2.55)
23		(8.6)	300				3.9	(2.50)

Time: 180.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 55

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	320				3.1	2.35
01		6.0	300				3.2	2.35
02		5.7	(300)				2.5	2.35
03		5.5	300		---	1.5	2.1	2.40
04		5.7	280		115	2.0	2.1	2.50
05		6.3	250		105	2.5		2.60
06	---	6.9	240	---	105	3.0	3.1	2.60
07	---	7.5	230	---	100	3.3	3.4	2.55
00	(530)	7.5	230	5.4	105	3.6	3.7	2.50
09	490	7.8	220	5.8	105	3.7	4.0	2.45
10	450	8.0	220	5.9	105	3.8		2.45
11	460	8.0	210	6.2	105	3.9		2.45
12	460	8.0	210	6.0	105	3.9		2.50
13	460	8.0	220	6.0	105	3.8		2.45
14	460	8.0	220	5.9	105	3.7		2.45
15	450	8.0	220	5.5	105	3.6		2.40
16	(430)	8.0	230	(5.3)	105	3.4		2.45
17	---	8.2	250	---	105	3.0		2.45
18		8.5	(260)		110	2.5	3.2	2.50
19		(8.5)	280		120	1.7	3.0	2.45
20		(8.5)	290		---	1.7	2.2	2.50
21		8.5	290		---	---	2.3	2.45
22		(7.8)	300		---	---	3.1	2.40
23		7.2	300		---	---	2.1	2.35

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 56

Kiruna, Sweden (67.8°N, 20.3°E) 5eptember 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.0	340				4.0	2.4
01		6.0	340				3.0	2.4
02		6.0	330				3.4	2.4
03		5.5	310				3.0	2.4
04		5.6	300		---	1.9		2.5
05	---	6.0	280	---	---	1.6		2.6
06	---	6.8	260	---	120	2.1		2.6
07	---	7.6	250	---	115	2.4		2.6
00	---	7.2	250	---	115	2.8		2.6
09	455	8.0	245	4.6	110	2.9		2.6
10	435	8.9	240	5.2	110	3.0		2.6
11	465	9.4	240	5.4	110	3.1		2.6
12	500	9.0	240	5.3	110	3.1		2.6
13	---	9.0	240	---	110	3.1		2.6
14	---	9.0	245	---	110	3.0		2.6
15	---	8.4	250	---	110	2.9		2.6
16	---	8.8	255	---	115	2.6		2.6
17	---	7.5	270	---	125	2.2		2.6
18		7.4	270		---	1.8	2.4	2.6
19		7.2	280		---	1.4	2.8	2.6
20		6.8	285		---	---	2.2	2.6
21		6.1	300				4.0	2.5
22		6.0	330				3.9	2.4
23		5.8	350				3.8	2.4

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 57

Bogota, Colombia (4.5°N, 74.2°W) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.2	230				(2.2)	3.05
01		10.4	215					3.05
02		8.0	230					2.98
03		7.35	230					2.95
04		5.75	230				1.9	3.00
05		4.5	240				2.2	2.70
06		6.9	270		<129	2.05	2.9	2.82
07		10.0	240		109	3.00	3.1	3.00
08		12.05	230		107	3.60		2.80
09		13.25	230		107	3.95	4.1	2.70
10		14.3	220		107	4.20		2.65
11	---	14.8	220		105	4.30	4.6	2.60
12	420	15.25	220	(7.0)	105	4.35	4.6	2.55
13	420	15.55	220	(7.3)	107	4.30		2.50
14	430	15.5	(220)	---	104	4.10	4.4	2.50
15	425	15.35	225	(7.0)	107	3.90	4.6	2.45
16	425	15.1	<240	---	107	3.40	4.5	2.50
17	---	15.05	250		113	2.80	4.5	2.50
18		15.75	290		---	(1.90)	4.2	2.55
19		16.65	320				3.8	2.55
20		17.9	280				3.1	2.60
21		17.5	240				2.1	2.75
22		17.1	240					2.80
23		14.15	230				1.9	2.95

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

Table 58

Natal, Brazil (5.3°S, 35.1°W) 5eptember 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.0	265				(4.2)	(2.60)
01		(7.2)	260				4.3	(2.75)
02		7.8	260				4.3	2.85
03		7.9	250				4.0	2.90
04		7.2	240				3.4	2.90
05		6.6	235				(4.1)	3.05
06		6.2	240		---	----	(4.0)	3.10
07		10.2	250		(119)	2.60	4.2	3.10
00		12.7	240		110	3.30		2.95
09		14.05	225		107	(3.78)	5.8	2.75
10		14.75	<220		109	(4.00)	7.2	2.55
11		14.9	(210)		---	----	9.0	2.35
12		14.6	<215		---	----	10.0	2.25
13		14.45	<210		---	(4.20)	10.0	2.20
14	---	14.0	(210)		---	(4.00)	9.0	2.15
15	---	13.7	(215)		(109)	(3.92)	6.5	2.15
16		13.95	<230		(108)	(3.50)	6.0	2.20
17		13.6	260		(109)	(3.05)	4.6	2.18
18		>13.0	295		---	(2.10)	4.5	(2.05)
19		>10.8	400					(1.92)
20		(9.15)	(480)					(2.00)
21		>9.5	(440)					(2.05)
22		(9.2)	(350)				3.0	(2.22)
23		(9.0)	295				3.0	(2.62)

Time: 30.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 32.4 seconds.

Table 59

Pole Station (90.0°S) August 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.0)	250		---	----		(2.62)
01		(5.85)	<265		---	----		(2.60)
02		(6.6)	250		---	----		(2.58)
03		(7.4)	265					(2.70)
04		(6.6)	260					(2.58)
05		(6.7)	255					(2.50)
06		(5.7)	285					(2.55)
07		(6.2)	280		---	----		(2.45)
08		(5.5)	270		---	----		(2.45)
09		(5.55)	295		119	----		(2.50)
10		(5.3)	280		111	----		(2.55)
11		(5.0)	(290)		105	----		(2.50)
12		(4.9)	(310)		(111)	----		(2.58)
13		4.9	295		115	----	3.4	2.62
14		(4.8)	285		111	----		(2.85)
15		(5.2)	260		(115)	----		(2.80)
16		(5.9)	265		(111)	----		(2.90)
17		(5.5)	270		105	----		(2.90)
18		(4.15)	(310)		(118)	----		(2.58)
19		(4.2)	(295)		(119)	2.40		(2.70)
20		(3.6)	290		124	2.15		(2.70)
21		(4.0)	<280		121	----		(2.80)
22		(3.65)	<285		(128)	----		(2.62)
23		(4.8)	230		---	----	3.3	(2.80)

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 60

Bogota, Colombia (4.5°N, 74.2°W) July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	250				2.7	2.80
01		8.3	255				2.6	2.80
02		7.6	250				2.6	2.95
03		6.8	240				2.1	3.00
04		6.25	265				2.6	2.82
05		5.65	280				2.5	2.68
06		5.95	275		(138)	(1.82)	2.5	2.75
07		7.8	240		107	2.85	2.9	3.05
00	---	8.7	225		105	3.50		2.80
09	---	9.45	220	---	105	3.85		2.48
10	---	10.4	215	---	105	4.08		2.35
11	440	11.35	215	(6.1)	105	4.18	4.2	2.35
12	435	11.9	210	6.1	105	4.25	4.3	2.40
13	445	12.25	(210)	6.0	105	4.15	4.6	2.45
14	430	12.5	210	6.0	107	(4.05)	4.4	2.45
15	430	12.65	<230	6.0	105	3.80	4.6	2.45
16	425	12.4	(235)	5.8	107	(3.45)	4.4	2.50
17	(410)	12.0	<250		<117	2.90	4.5	2.50
18		12.0	280		<133	(1.90)	3.9	2.50
19		11.0	305				3.7	2.50
20		10.55	320				3.6	2.50
21		10.8	290				2.9	2.70
22		10.9	<265				3.2	2.80
23		9.7	255				3.0	2.95

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

Table 61

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.5	310					2.55
01		5.4	300					2.70
02		5.2	285				2.2	2.80
03		5.0	260				1.5	2.85
04		4.6	250				2.0	2.90
05		4.3	265				2.0	2.65
06		4.1	275		---	----		2.70
07		6.8	240		<163	1.85		3.15
08		9.4	220		115	2.70		3.40
09		10.5	225		111	3.05	3.4	3.40
10		11.5	220		109	(3.38)	3.7	3.35
11	---	11.4	220	---	109	3.50	3.9	3.20
12	---	11.2	215		109	3.55	4.0	3.10
13	---	12.0	225		109	3.50	4.0	3.05
14	---	12.0	225		111	3.35		3.05
15	---	11.6	230		115	3.10		3.05
16		11.3	230		119	2.55	3.0	3.15
17		10.7	220		---	----	2.8	3.18
18		9.2	210				2.5	3.18
19		8.0	225				2.5	2.95
20		8.0	230					2.92
21		7.1	235				2.2	2.90
22		6.5	260					2.62
23		6.1	300					2.60

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

Table 62

Byrd Station (80.0°S, 120.0°W) — July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.2)	340				3.5	(2.52)
01		(5.0)	335				3.4	(2.65)
02		(5.4)	340				3.6	(2.60)
03		(5.4)	(360)				4.0	(2.55)
04		(5.6)	320				4.2	(2.65)
05		(5.6)	<315				4.0	(2.72)
06		4.85	290					2.75
07		(3.65)	275				2.3	(2.90)
08		3.35	300					2.90
09		3.2	285					2.75
10		4.0	300					2.75
11		(4.0)	<300					(2.85)
12		3.95	310					2.75
13		(4.0)	350					(2.65)
14		(3.6)	<350				2.8	(2.55)
15		3.45	360				2.9	2.60
16		(3.7)	(410)				3.2	(2.45)
17		(4.0)	390				4.8	(2.50)
18		(4.2)	380				5.9	(2.45)
19		(5.0)	<395				4.5	(2.55)
20		(5.75)	340				4.4	(2.60)
21		(6.2)	335				4.0	(2.58)
22		(5.65)	340				3.9	(2.50)
23		(6.4)	300				3.4	(2.70)

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

Table 63

Pole Station (90.0°S) — July 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.55)	<270		---	---		(2.68)
01		(5.0)	270		---	---		(2.75)
02		(5.25)	280		---	---		(2.75)
03		(5.5)	275		---	---		(2.80)
04		(5.5)	250					(2.75)
05		(5.5)	270					2.70
06		(5.5)	265		---	---		(2.65)
07		(5.6)	290		---	---		(2.55)
08		(4.85)	285		---	---		(2.60)
09		(4.75)	<310		---	---		(2.52)
10		(4.5)	<300		109	---		(2.65)
11		(4.2)	295		119	---		(2.70)
12		(4.5)	(275)		111	---		(2.85)
13		(5.35)	285		113	---		(2.85)
14		(4.7)	275		113	---		(2.70)
15		(5.2)	270		---	---		(2.85)
16		(5.1)	260		---	---		(3.00)
17		---	270		115	---		----
18		(3.9)	260		113	---		(2.70)
19		(3.8)	260		---	---		----
20		(3.5)	(235)		(115)	---		(2.95)
21		(3.55)	240		---	---	2.3	(2.85)
22		(4.25)	235		---	---	4.4	(2.80)
23		(4.2)	240		---	---	2.9	(2.80)

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 64

Wilkes Station (66.2°S, 110.5°E) — June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.5)	240				3.0	(3.00)
01		(3.5)	235				3.1	3.02
02		(3.25)	230				2.4	----
03		(3.45)	240				3.0	(3.05)
04		(3.5)	<260				3.0	(2.90)
05		(3.4)	<260				2.2	(2.90)
06		(3.7)	260				2.2	----
07		(3.7)	260				3.0	(2.70)
08		(4.25)	250				2.5	----
09		(4.5)	240		133	----	2.2	----
10	---	(6.95)	240	---	111	(1.65)		(2.60)
11		(7.15)	255		(111)	(1.80)	2.2	(2.75)
12		(9.0)	260		(103)	(2.00)		2.62
13		(8.0)	255		113	(1.70)		(2.75)
14		(6.9)	250		120	(1.52)	2.7	----
15		(6.25)	260		---	----	2.0	(2.75)
16		(6.4)	260				3.0	(2.45)
17		(6.9)	260				3.4	(2.60)
18		(5.3)	<270				4.3	(2.95)
19		(6.0)	<300				2.0	----
20		(5.15)	270				1.4	(2.95)
21		(4.5)	250				3.8	(2.70)
22		(4.4)	250					(3.00)
23		(3.75)	250				1.9	(2.95)

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

Table 65

Pole Station (90.0°S) — June 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.8)	235		---	----		(2.80)
01		(5.15)	275		---	----		(2.65)
02		(5.1)	250		---	----		(2.65)
03		(5.2)	290					(2.55)
04		(6.0)	280					(2.50)
05		(5.4)	290					(2.48)
06		(5.1)	290		---	----		(2.40)
07		(5.25)	300		---	----		(2.55)
08		(5.3)	320		---	----		(2.45)
09		(5.3)	320		119	----		(2.55)
10		(5.2)	280		119	----		(2.65)
11		(5.2)	270		125	----		(2.70)
12		(5.0)	270		117	----		(2.70)
13		(4.9)	<300		---	----		(2.75)
14		(5.2)	290		---	----		(2.78)
15		(4.9)	295		---	----		(2.80)
16		(5.0)	290		115	----		(2.75)
17		(5.5)	295		120	----		(2.68)
18		(4.7)	260		117	----		----
19		(4.35)	265		133	----		----
20		(4.5)	260		135	2.15		(2.85)
21		---	270		129	----		----
22		(4.85)	<255		---	----		(3.08)
23		(5.0)	<270		---	----		(2.80)

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 66

Bogota, Colombia (4.5°N, 74.2°W) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.3	250				2.7	2.80
01		9.7	265				2.0	2.80
02		9.5	250					2.95
03		8.6	230				2.4	3.00
04		7.0	230				2.2	2.80
05		6.6	260				2.5	2.65
06		7.5	270		<135	2.00	3.3	2.75
07		9.5	240		109	3.00	3.0	2.95
08		10.75	230		105	3.60		2.75
09		11.6	225		105	3.95	4.1	2.55
10	---	12.4	220		107	4.15		2.50
11	---	13.0	215	---	108	4.30	4.4	2.45
12	---	13.3	215	---	107	4.30	4.4	2.45
13	470	13.6	215	---	107	4.20	4.6	2.45
14	440	14.3	(220)	---	105	4.10	4.6	2.50
15	415	14.0	(220)	---	105	3.80	4.4	2.45
16	(420)	13.9	230	---	105	(3.35)	4.1	2.45
17	---	13.35	255		109	2.80	4.1	2.45
18		12.8	295		---	----	4.5	2.45
19		12.3	330				4.0	2.45
20		13.2	320				3.1	2.55
21		14.0	290				3.0	2.70
22		13.45	260					2.88
23		11.7	240					2.90

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

Table 67

Wilkes Station (66.2°S, 110.5°E) — May 1958*

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	235				2.1	----
01		(4.4)	230				1.9	(2.80)
02		(4.1)	245				1.4	(3.00)
03		(4.2)	240				3.0	(2.85)
04		(3.9)	270				2.5	----
05		(3.9)	(240)				(1.7)	----
06		(5.0)	240				3.5	----
07		---	250				3.0	----
08		(5.8)	240		---	----	2.2	(2.75)
09		(6.1)	255		113	(1.75)		(2.68)
10		(7.75)	280		---	----		(2.60)
11	---	(9.0)	250	---	---	----		(2.68)
12	---	(6.95)	270		---	----	2.2	(2.60)
13		(7.0)	260		---	----	5.3	(2.60)
14		(8.35)	(260)		---	----	2.3	(2.72)
15		(8.0)	275		---	----	3.3	----
16		(6.25)	260				3.4	----
17		(6.0)	280					----
18		(5.75)	250					(2.80)
19		(6.2)	250					(3.00)
20		(5.5)	250					(2.95)
21		(6.4)	250		---	----	3.6	(3.00)
22		(4.2)	250		---	----		----
23		(4.05)	240				1.7	(2.80)

Time: 105.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Observations taken from 17th through 31st only.

Table 68

Byrd Station (80.0°S, 120.0°W) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.3)	330				3.3	(2.38)
01		(6.5)	(365)				3.5	(2.40)
02		(6.1)	370				3.5	(2.35)
03		(6.15)	340				3.4	(2.40)
04		(6.1)	(310)				3.8	(2.50)
05		(5.6)	(300)				3.3	(2.58)
06		(4.5)	(300)					(2.60)
07		(4.3)	(280)					(2.65)
08		4.65	<290					2.68
09		(5.6)	285					(2.75)
10		6.8	265					2.85
11		7.35	275					2.85
12		(5.3)	280					(2.85)
13		(4.45)	305				1.7	(2.75)
14		4.0	320				3.0	2.65
15		(3.8)	<365				3.2	(2.65)
16		(3.95)	370				3.4	(2.60)
17		(4.0)	340				5.2	(2.65)
18		(4.75)	330				3.7	(2.55)
19		(5.1)	320				5.1	(2.50)
20		(7.0)	(320)				4.3	(2.45)
21		(7.6)	320				4.4	(2.55)
22		(6.0)	295				3.8	(2.45)
23		(6.45)	330				3.7	(2.45)

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

Table 69

Pole Station (90.0°S) — May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.95)	230		---	---		(2.78)
01		(5.4)	255				2.5	(2.60)
02		(6.9)	250				4.3	(2.62)
03		(6.1)	265					(2.42)
04		(6.7)	270					(2.55)
05		(6.1)	275					(2.50)
06		(6.3)	275		---	---		(2.45)
07		(5.5)	295		---	---		(2.40)
08		(5.75)	305		---	---		(2.42)
09		(5.3)	295		---	---		(2.55)
10		(5.0)	310		121	---		(2.35)
11		(5.8)	280		120	---		(2.55)
12		(5.6)	310		117	---		(2.50)
13		(5.2)	295		115	---		(2.60)
14		(5.2)	300		121	---		(2.55)
15		(6.5)	290		124	---		2.68
16		(6.3)	275		---	---		(2.85)
17		(5.2)	250		---	---		(2.85)
18		(5.5)	270		---	---		(2.80)
19		(4.9)	240		---	---		(2.88)
20		(4.85)	235		129	---		(2.80)
21		(4.7)	250		---	---		(2.80)
22		(4.95)	235		---	---		(2.80)
23		(5.4)	250		---	---	4.2	(2.75)

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 70

Little America (78.2°S, 162.2°W) — April 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.1)	315		---	----	1.4	(2.35)
01		(4.15)	325		---	----	2.6	----
02		(4.7)	320		121	----	3.0	----
03		(5.0)	325		---	----	2.3	(2.50)
04		(4.9)	310		---	----	2.8	(2.60)
05		(5.5)	310		113	----		(2.80)
06		(5.2)	330		---	----		(2.78)
07		(7.5)	305		119	(1.45)		2.80
08		(9.2)	295		112	(1.90)		2.75
09	---	(6.4)	295		111	----	2.7	(2.90)
10		(5.7)	275		105	(1.78)	2.5	(2.90)
11		(6.4)	260		107	(2.10)		(2.82)
12		(6.8)	260		109	(2.30)	2.5	(2.98)
13		(7.15)	260		109	----	2.8	(2.90)
14		(7.3)	260		110	(2.00)	3.2	(2.85)
15		(8.0)	270		116	(2.05)	4.1	(2.75)
16		(7.3)	285		<125	(1.40)	2.5	(2.70)
17		(7.35)	280		131	(1.40)	2.8	(2.60)
18		(8.5)	270		---	----	1.5	(2.65)
19		(8.5)	270		---	----		(2.52)
20		(8.5)	280				1.4	(2.58)
21		(6.25)	290				1.3	(2.32)
22		(8.0)	300				1.1	----
23		(6.5)	315		---	----	1.3	----

Time: 165.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 71

Townsville, Australia (19.3°S, 146.7°E) — February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.0	290				3.1	
01		>7.0	295				3.2	----
02		>6.6	300				2.7	----
03		(6.9)	300					
04		>7.0	300					----
05		>6.5	310					----
06		>7.0	310		---	<1.75		----
07	---	>7.1	250	---	110	2.70	3.0	----
00	---	>8.2	240	---	110	3.20	4.0	----
09	(480)	>11.2	230	---	110	3.55	4.0	(2.60)
10	(440)	>11.5	225	5.9	100	3.80	4.5	2.70
11	(405)	11.9	220	---	100	3.95	4.3	2.60
12	(400)	12.2	220	6.3	110	4.10	4.8	2.60
13	(400)	12.8	220	6.4	110	4.10	4.7	2.60
14	370	12.4	220	(6.3)	110	4.10	4.3	2.60
15	(390)	11.7	240	---	110	3.90	4.6	2.55
16	(410)	>11.0	<250	---	110	3.65	4.0	----
17	---	>11.0	250	---	110	3.20	4.0	
18	---	>8.0	270		120	2.60	3.4	
19		>7.5	280		---	<1.70	2.8	
20		>7.0	310				3.0	
21		>7.0	310				2.8	
22		>7.0	300				2.8	
23		>6.5	300				>2.7	

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

Table 72

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

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(1.5)	275				1.7	3.00
01		1.6	280				2.2	3.00
02		1.6	280				2.3	2.95
03		1.7	260				1.6	2.95
04		1.7	290				2.4	2.80
05		1.8	<300				1.6	2.75
06		2.0	285				1.5	2.80
07		2.5	260		---	----		2.80
08		5.1	225		---	----	1.5	3.25
09		7.1	215		109	2.30		3.40
10		8.4	215		110	2.80		3.25
11	---	9.7	220	---	110	3.00	3.1	3.15
12	---	11.2	220	---	110	3.10	3.1	3.10
13		11.4	220		110	3.05	3.2	3.10
14		11.6	220		110	2.90		3.10
15		11.6	220		110	2.65		3.20
16		10.4	210		---	----	1.6	3.25
17		7.8	195					3.35
18		5.5	210				1.5	3.25
19		4.6	205				1.4	3.45
20		2.2	<215				1.0	3.40
21		1.5	290				0.9	3.20
22		1.5	265				1.4	3.00
23		1.5	280				1.6	3.10

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

USCOMM-NBS-BL

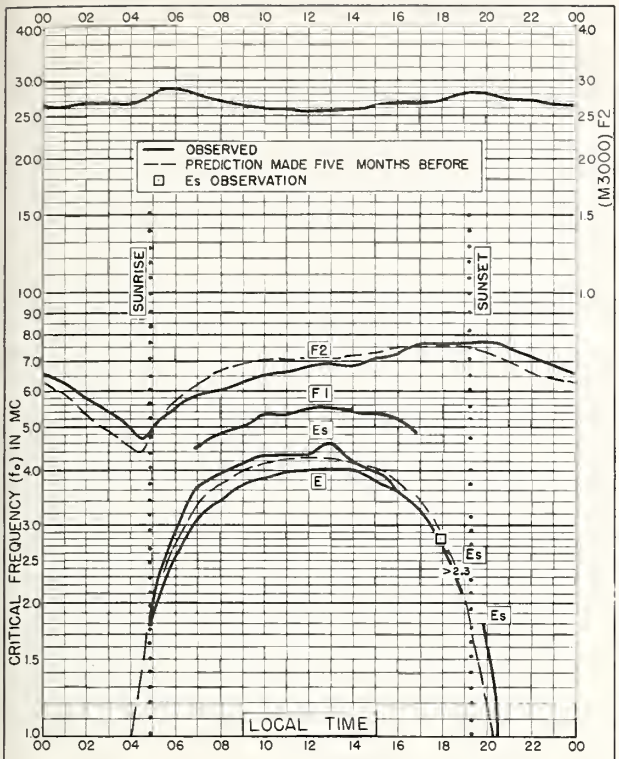


Fig. 1. WASHINGTON, D.C.
38.7°N , 77.1°W JULY 1959

Commerce-Standards-Boulder, Colo. NBS 503

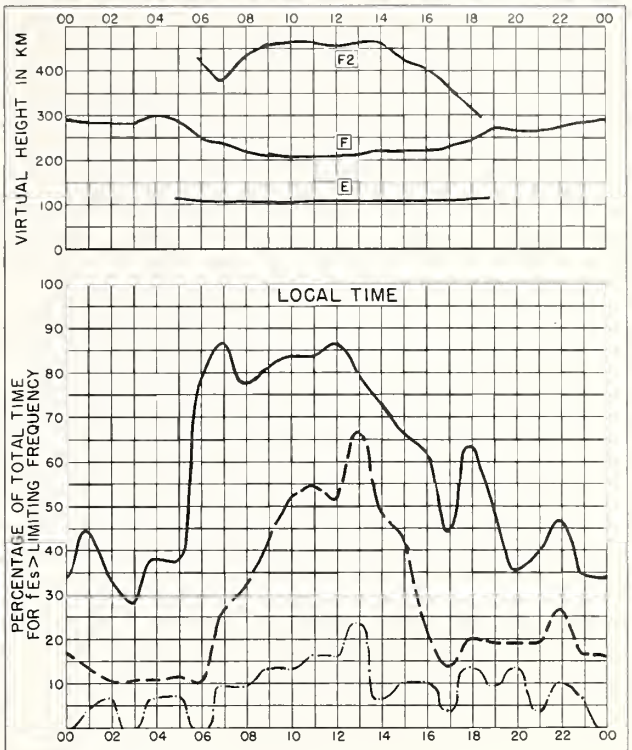


Fig. 2. WASHINGTON, D.C. JULY 1959

Commerce-Standards-Boulder, Colo. NBS 490

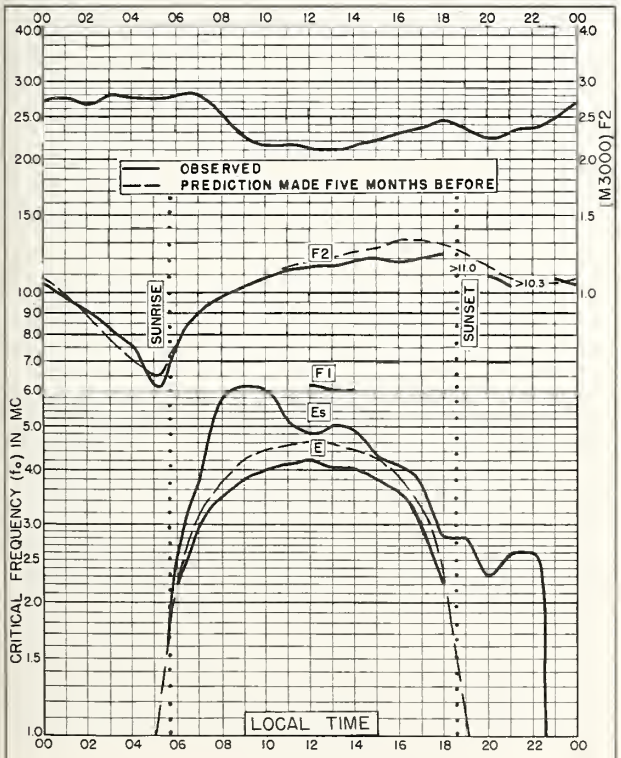


Fig. 3. BAGUIO, P. I.
16.4°N , 120.6°E JULY 1959

Commerce-Standards-Boulder, Colo. NBS 503

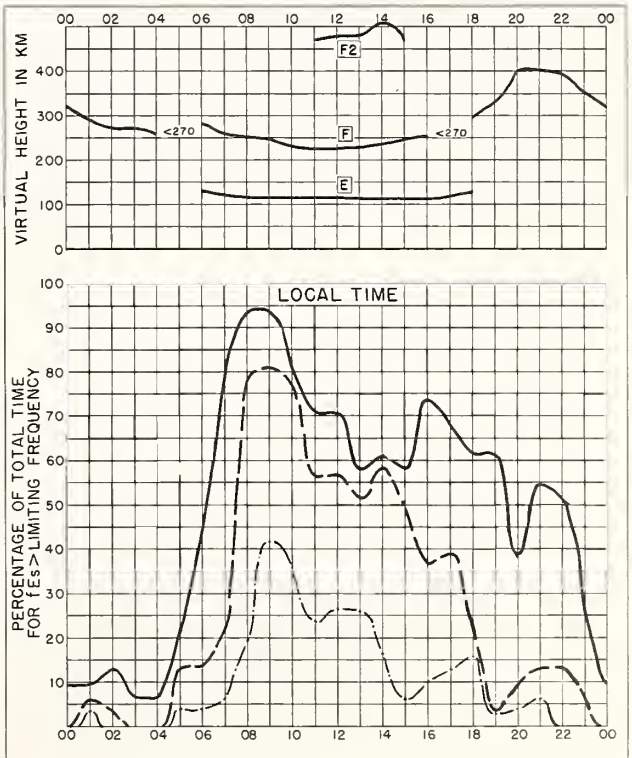


Fig. 4. BAGUIO, P. I. JULY 1959

Commerce-Standards-Boulder, Colo. NBS 490

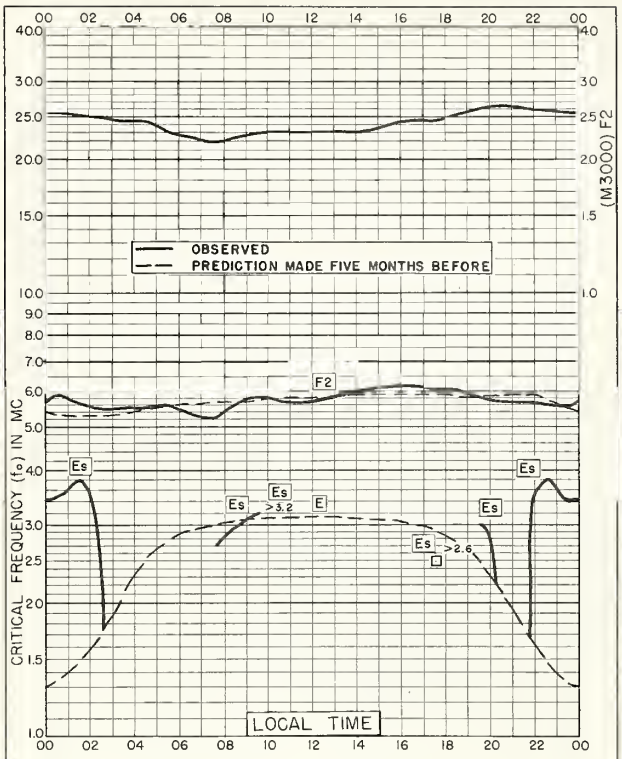


Fig. 5. POINT BARROW, ALASKA
71.3°N , 156.8°W JUNE 1959

NBS 503

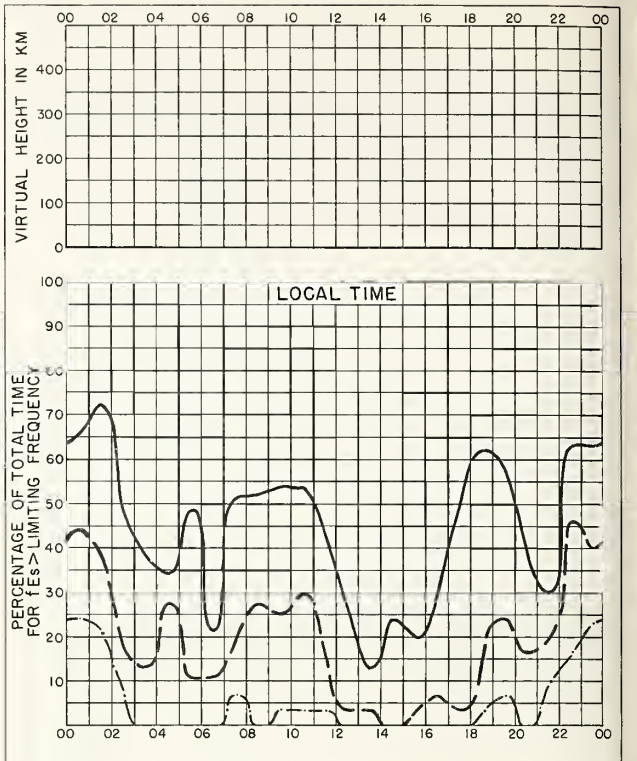


Fig. 6. POINT BARROW, ALASKA JUNE 1959

NBS 450

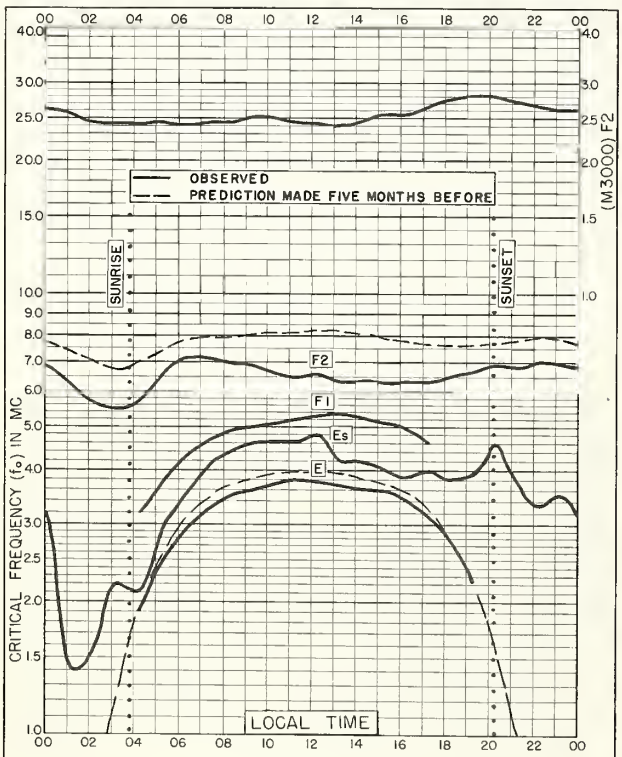


Fig. 7. ADAK, ALASKA
51.9°N , 176.6°W JUNE 1959

NBS 503

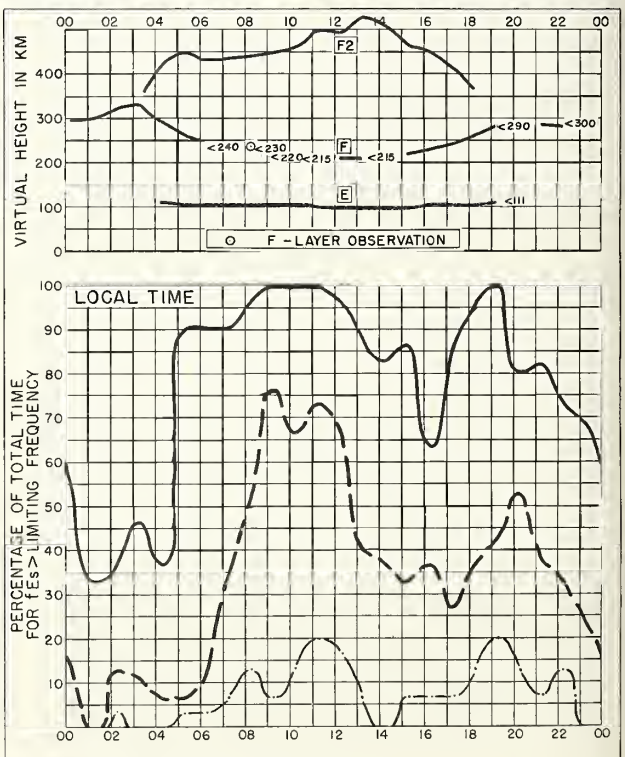


Fig. 8. ADAK, ALASKA JUNE 1959

NBS 450

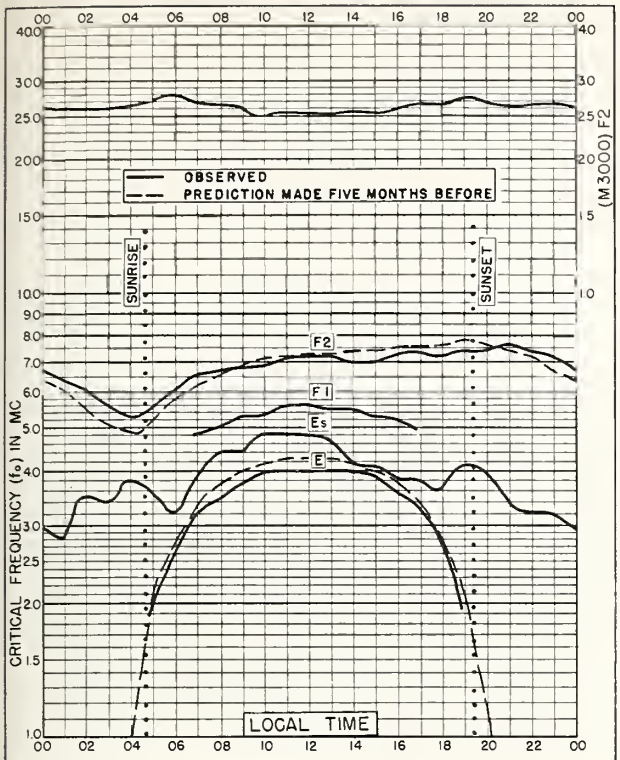


Fig. 9. WASHINGTON, D.C.
38.7°N , 77.1°W JUNE 1959

NBS 503

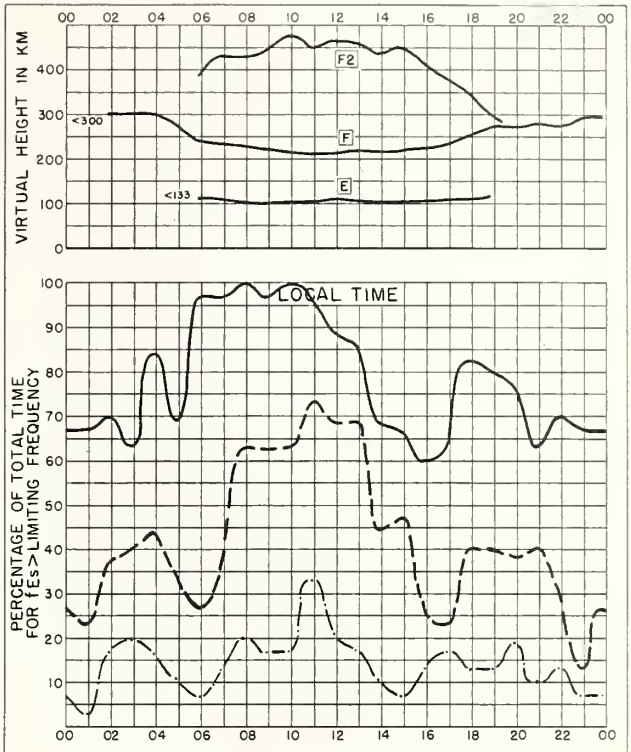


Fig. 10. WASHINGTON, D.C. JUNE 1959

NBS 490

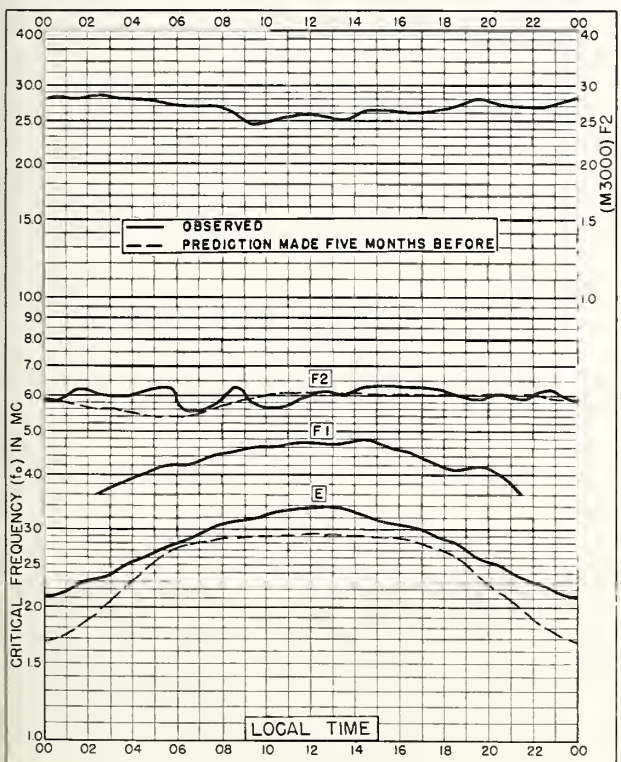


Fig. 11. THULE , GREENLAND
76.6°N , 68.7°W MAY 1959

NBS 503

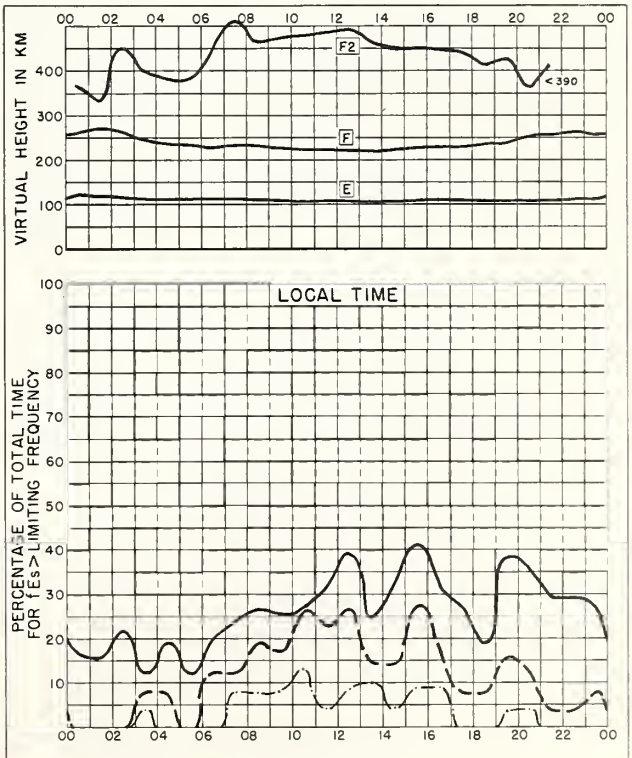


Fig. 12. THULE , GREENLAND MAY 1959

NBS 490

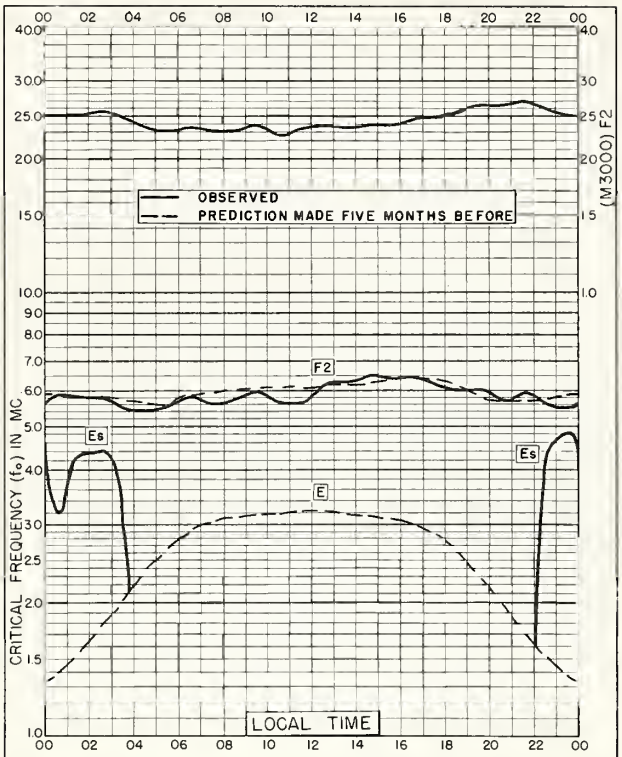


Fig. 13. POINT BARROW, ALASKA
71.3°N, 156.8°W MAY 1959

NBS 503

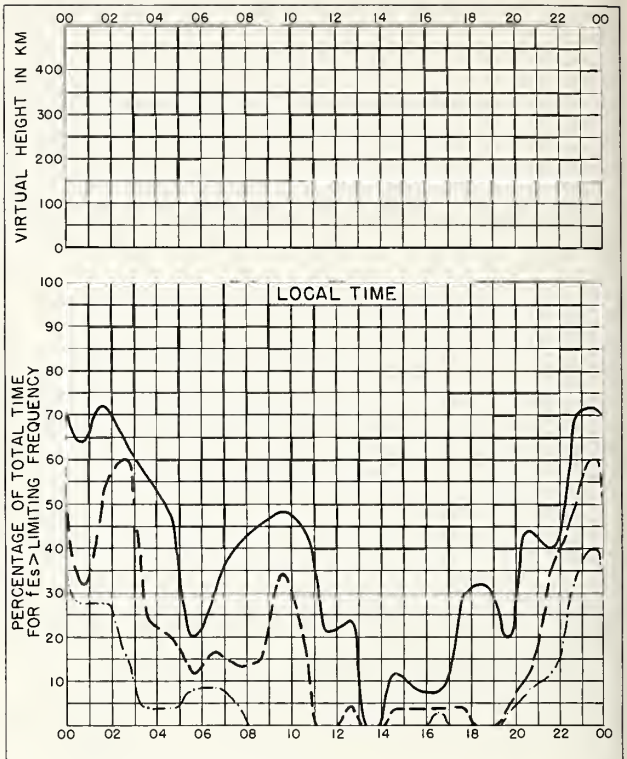


Fig. 14. POINT BARROW, ALASKA MAY 1959

NBS 490

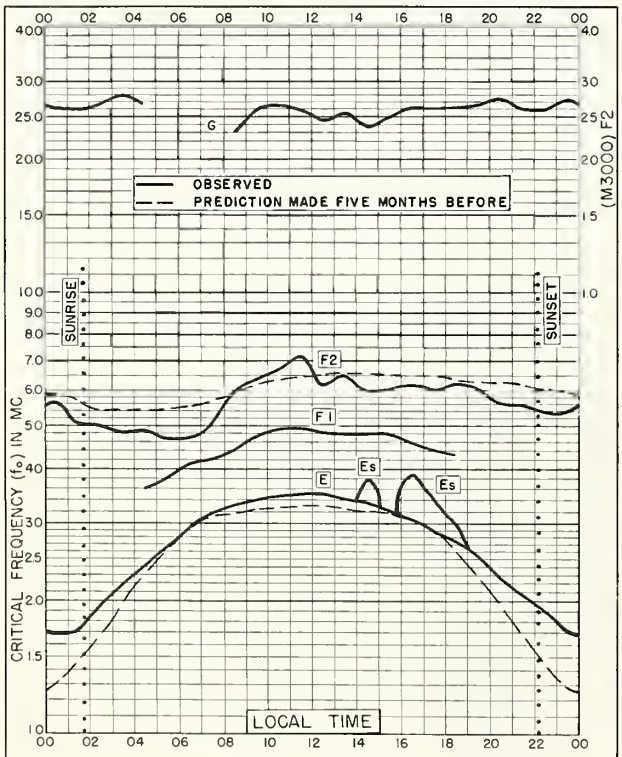


Fig. 15. GODHAVN, GREENLAND
69.3°N, 53.5°W MAY 1959

NBS 503

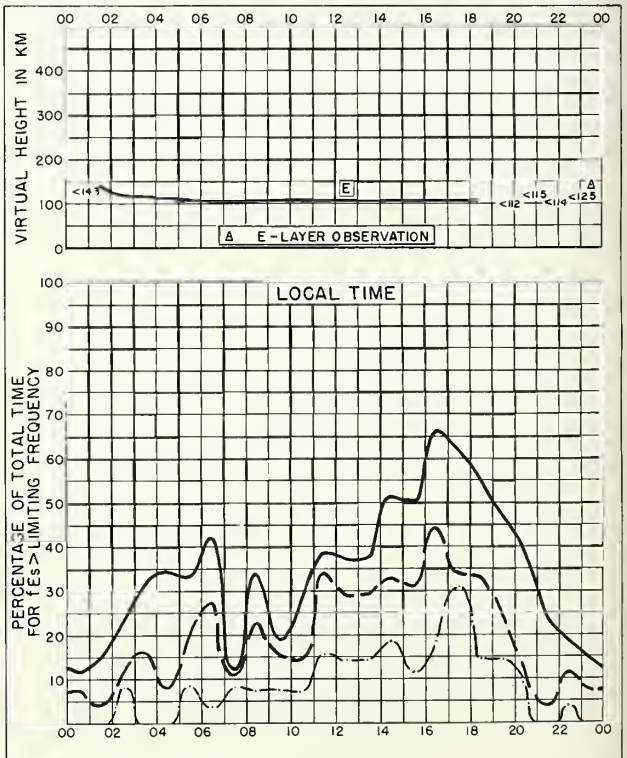


Fig. 16. GODHAVN, GREENLAND MAY 1959

NBS 490

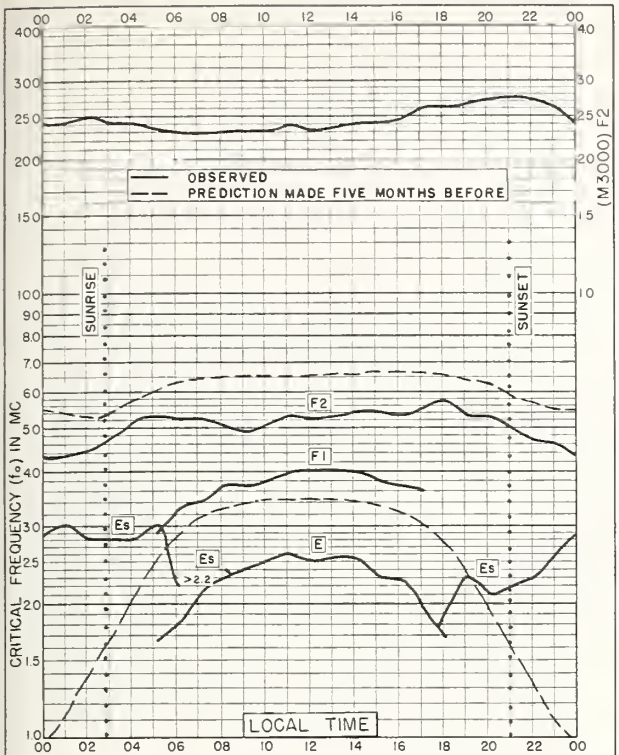


Fig. 17. FAIRBANKS, ALASKA
64.9°N, 147.8°W MAY 1959

NBS 503

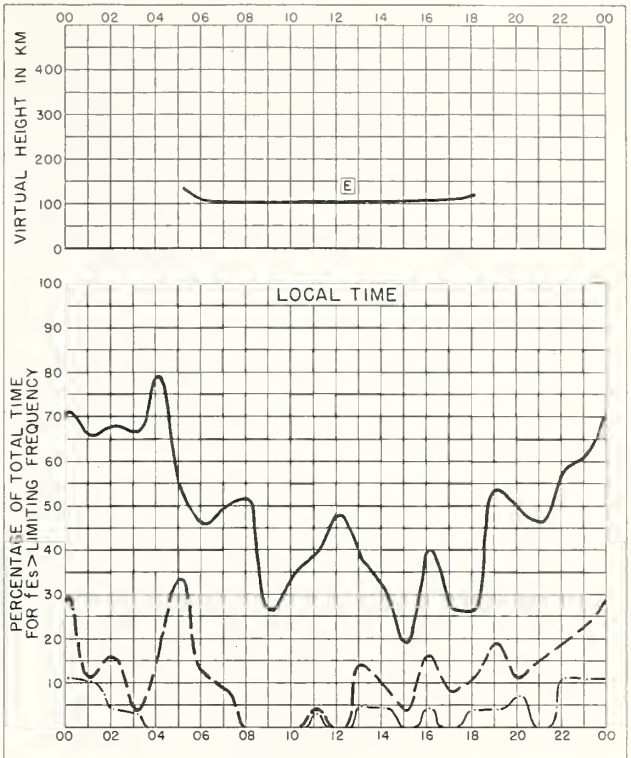


Fig. 18. FAIRBANKS, ALASKA MAY 1959

NBS 490

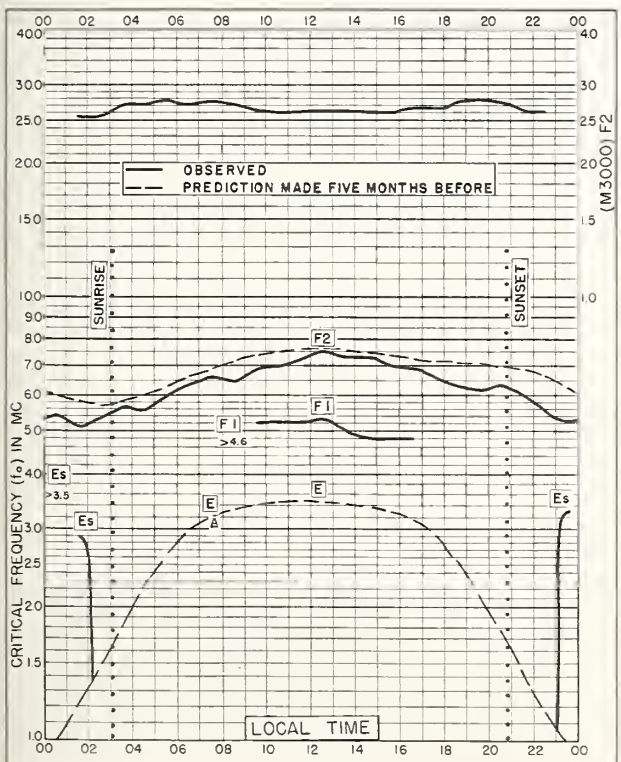


Fig. 19. REYKJAVIK, ICELAND
64.1°N, 21.8°W MAY 1959

NBS 503

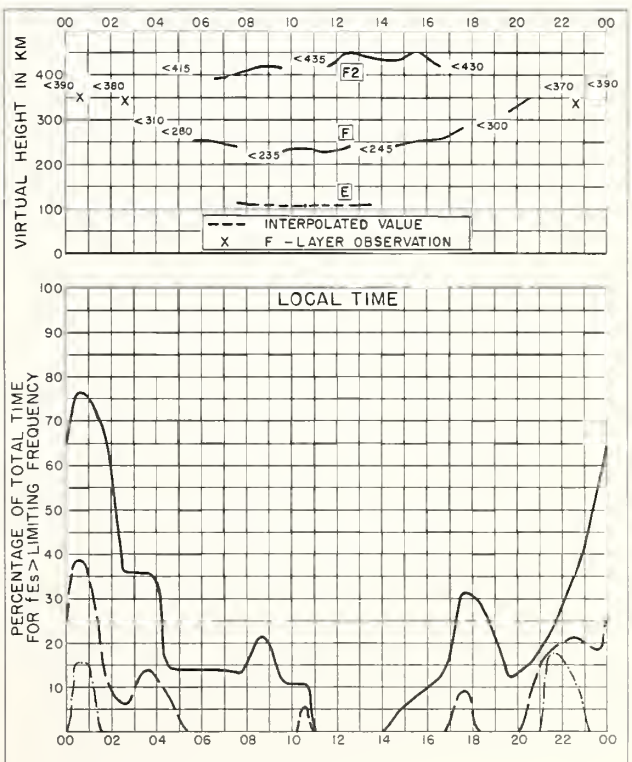


Fig. 20. REYKJAVIK, ICELAND MAY 1959

NBS 490

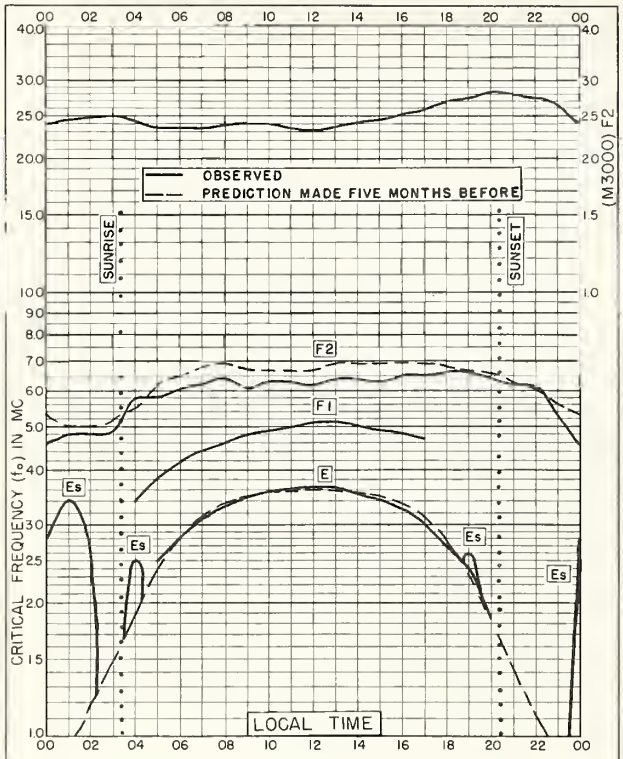


Fig. 21. ANCHORAGE, ALASKA
61.2°N, 149.9°W MAY 1959

NBS 503

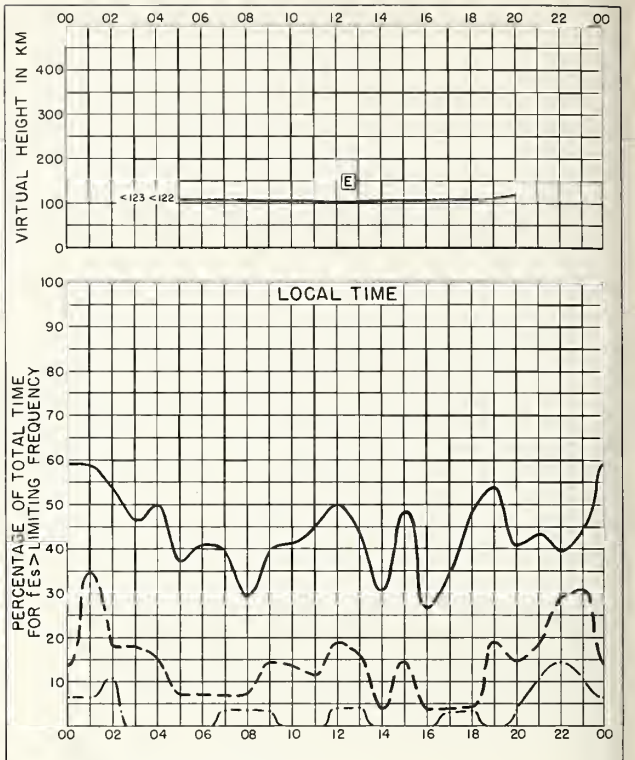


Fig. 22. ANCHORAGE, ALASKA MAY 1959

NBS 490

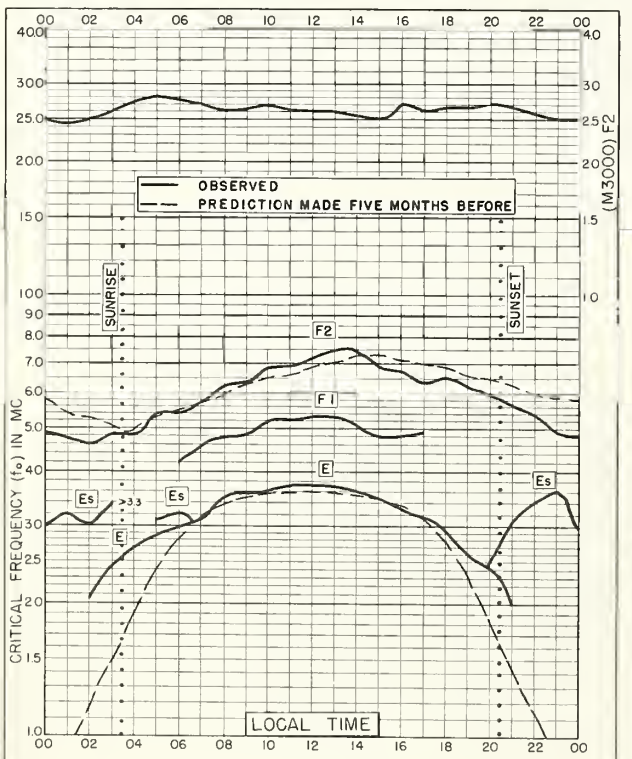


Fig. 23. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W MAY 1959

NBS 503

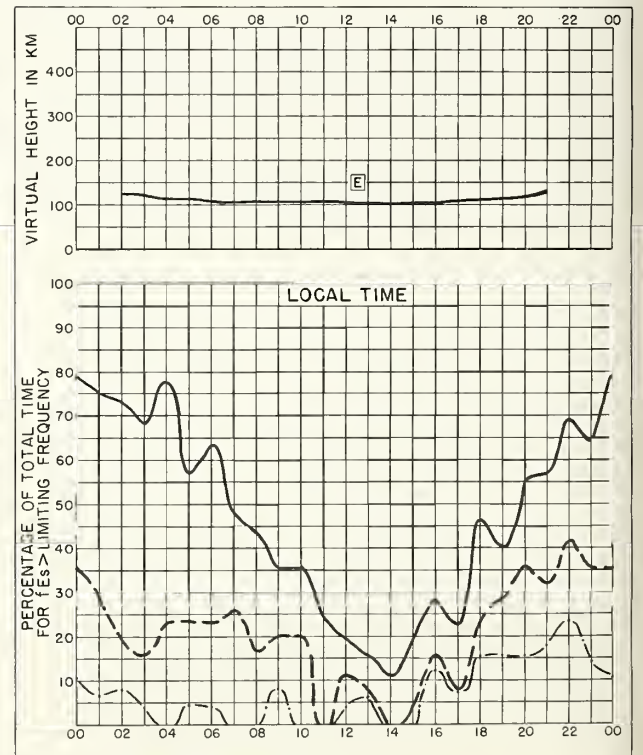


Fig. 24. NARSARSSUAK, GREENLAND MAY 1959

NBS 490

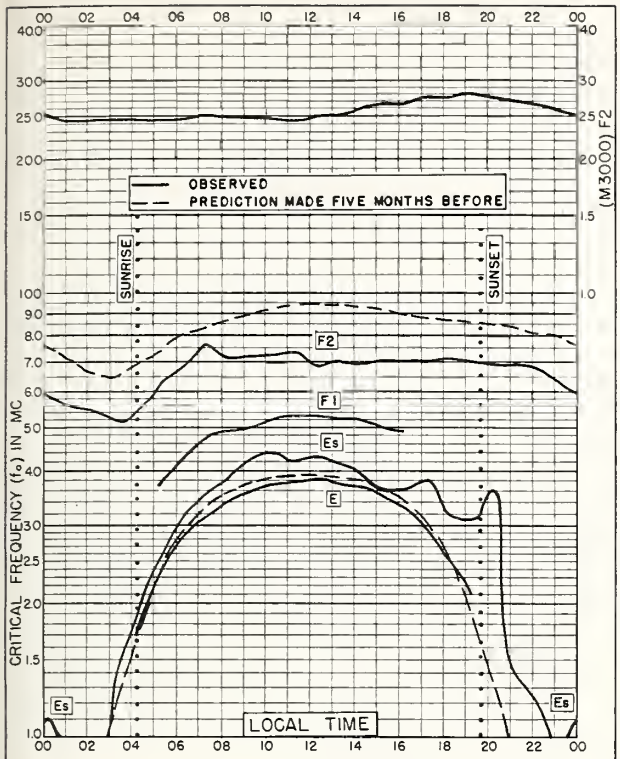


Fig. 25. ADAK, ALASKA
51.9°N, 176.6°W MAY 1959

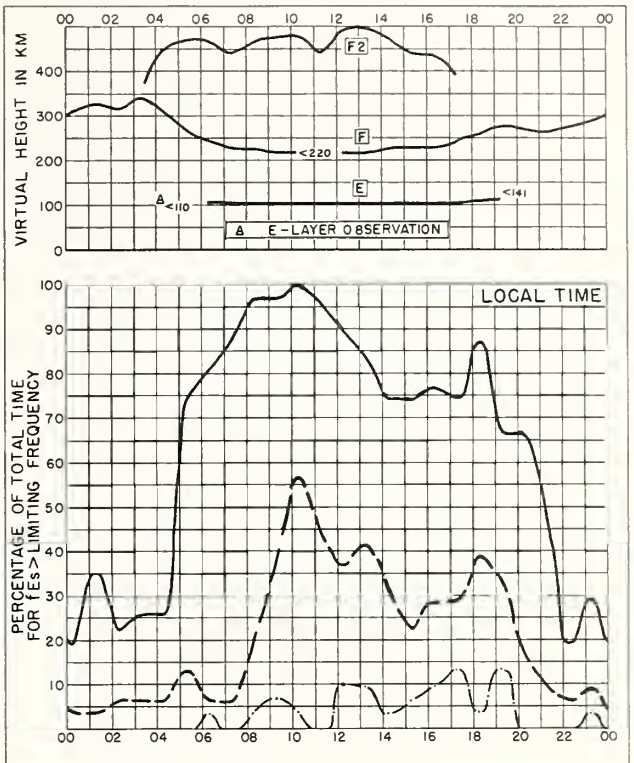


Fig. 26. ADAK, ALASKA MAY 1959

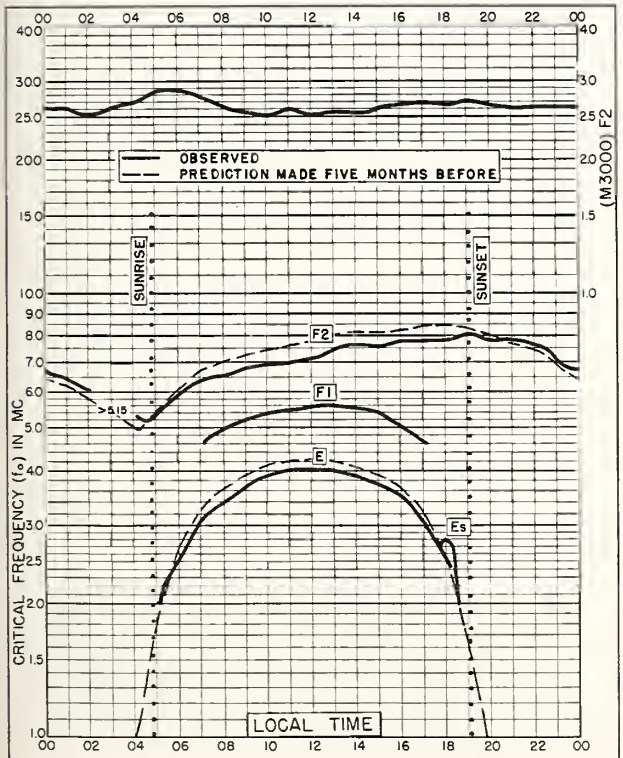


Fig. 27. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W MAY 1959

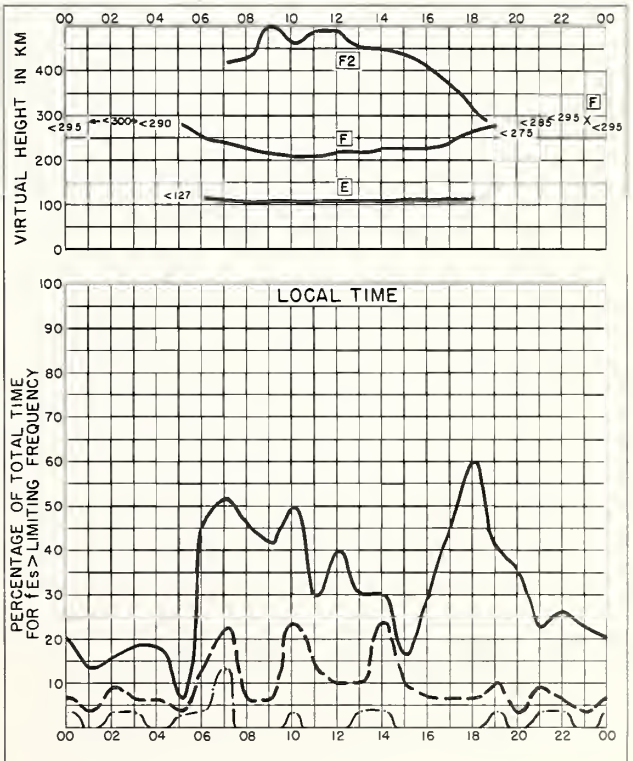


Fig. 28. FT. MONMOUTH, NEW JERSEY MAY 1959

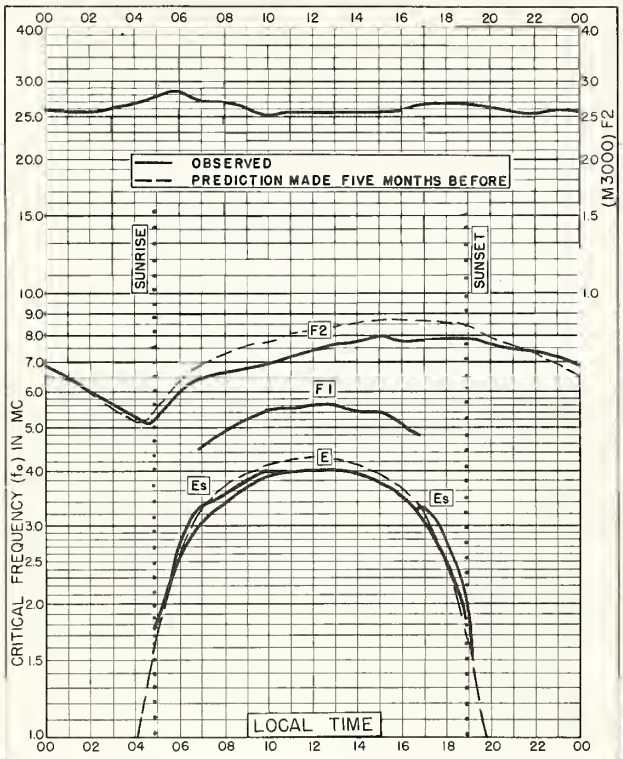


Fig. 29. WASHINGTON, D.C.
38.7°N, 77.1°W MAY 1959

NBS 503

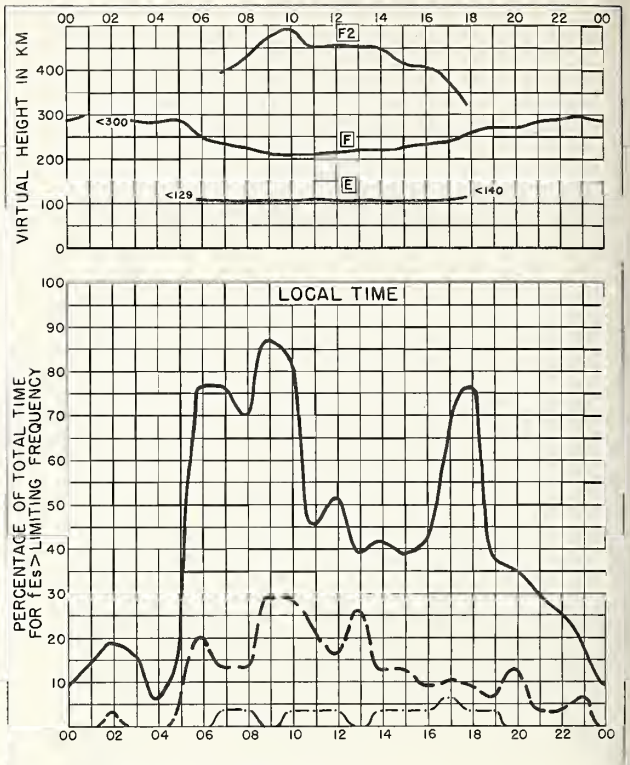


Fig. 30. WASHINGTON, D.C. MAY 1959

NBS 490

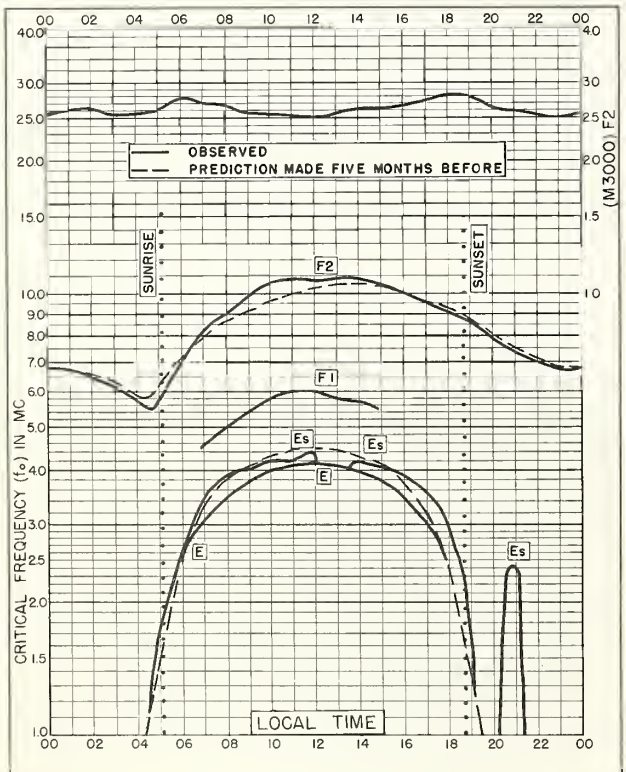


Fig. 31. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MAY 1959

NBS 503

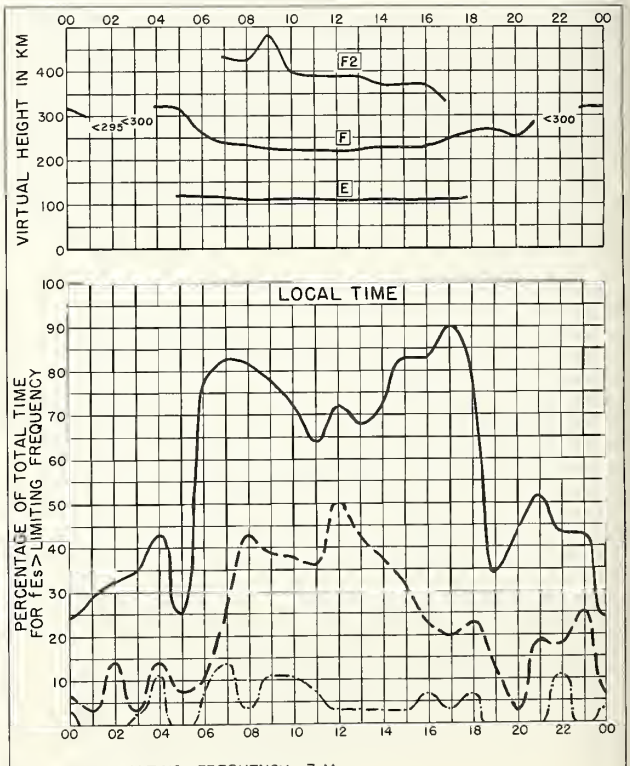


Fig. 32. WHITE SANDS, NEW MEXICO MAY 1959

NBS 490

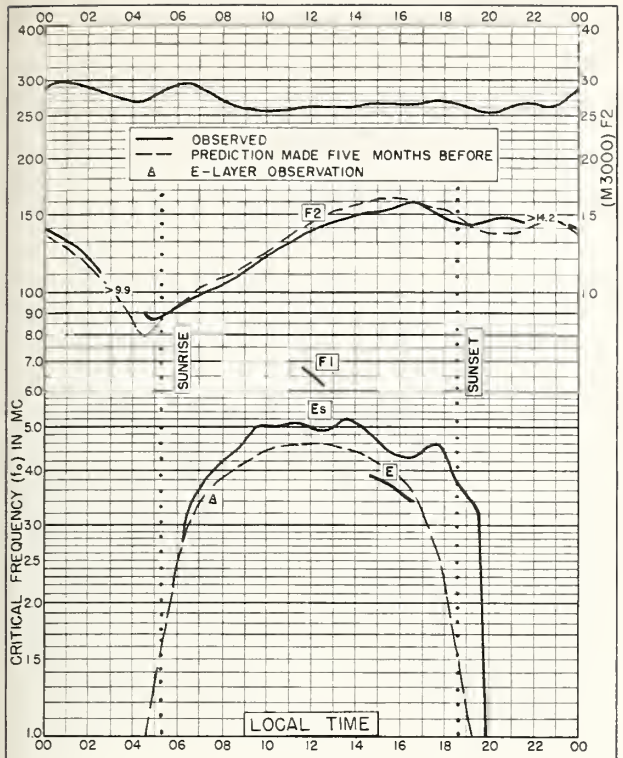


Fig. 33. OKINAWA I.
26.3°N , 127.8°E
MAY 1959

NBS 503

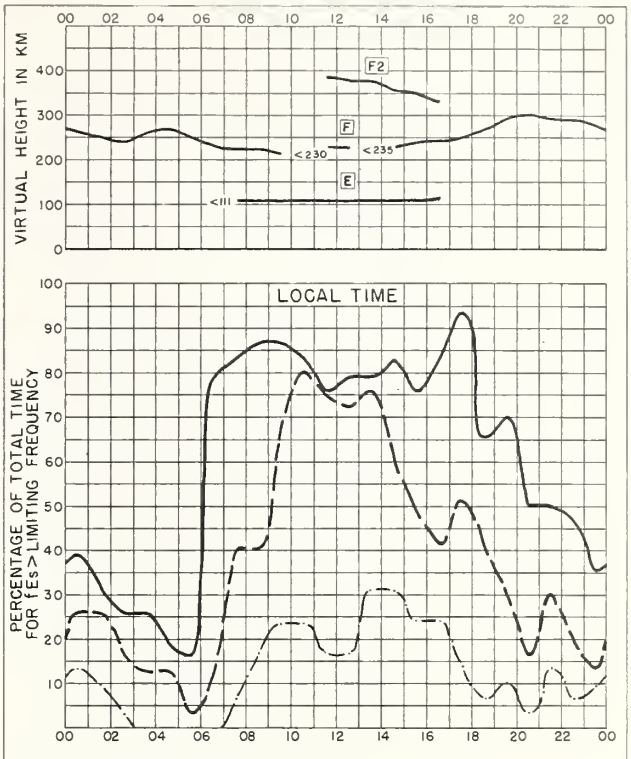


Fig. 34. OKINAWA I.
MAY 1959

NBS 490

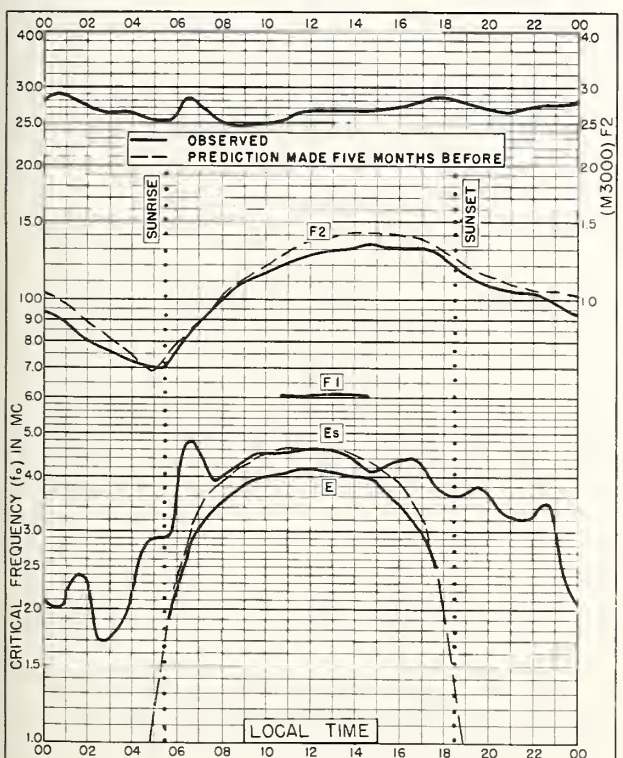


Fig. 35. MAUI, HAWAII
20.8°N, 156.5°W
MAY 1959

NBS 503

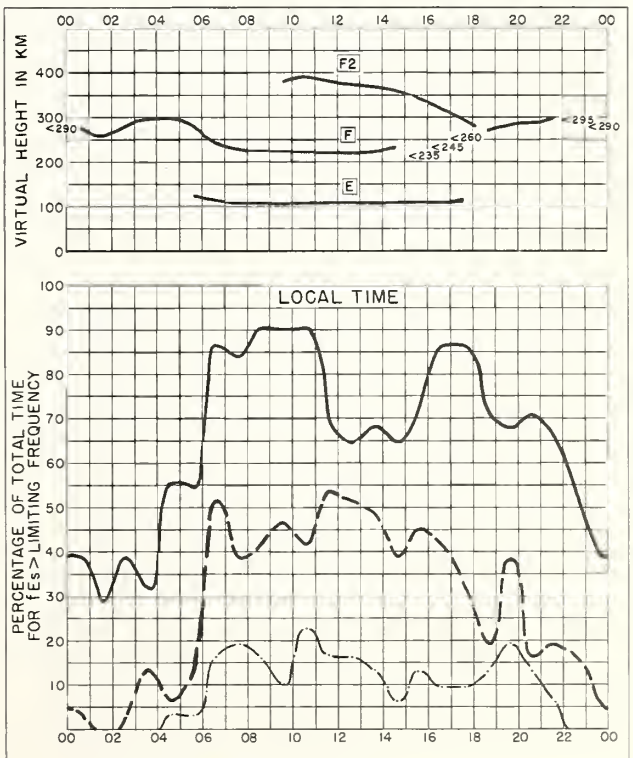


Fig. 36. MAUI, HAWAII
MAY 1959

NBS 490

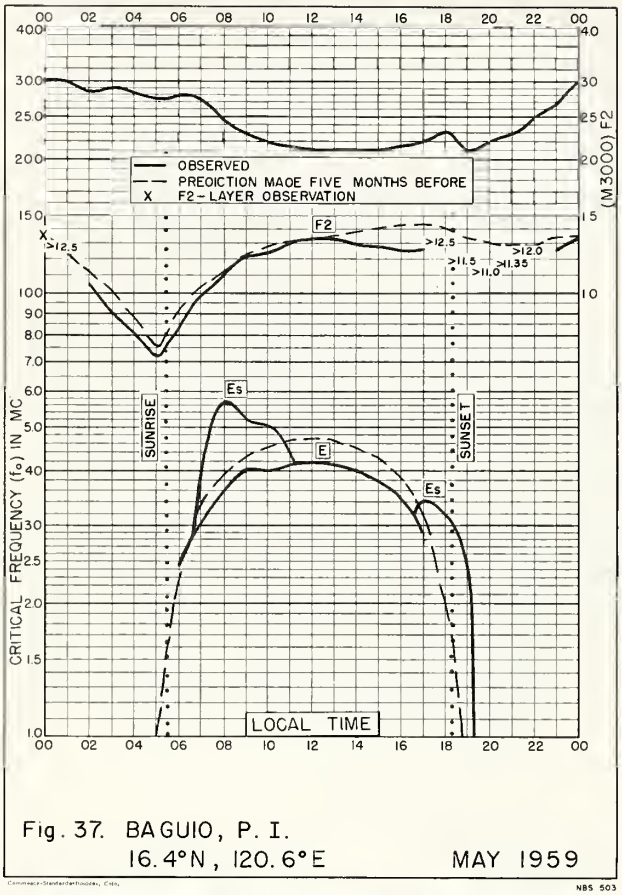


Fig. 37. BAGUIO, P. I.
16.4°N, 120.6°E MAY 1959

NBS 503

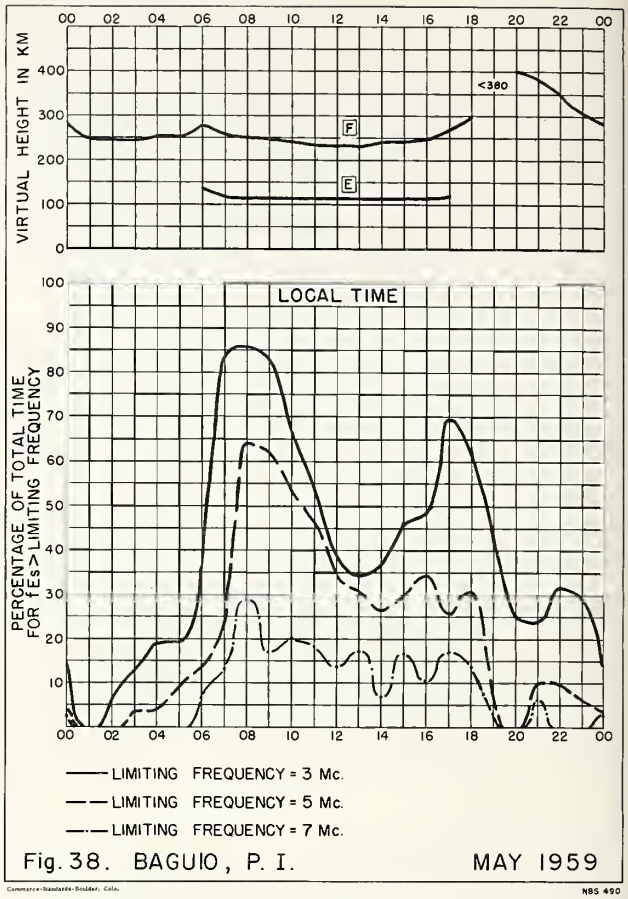


Fig. 38. BAGUIO, P. I. MAY 1959

NBS 490

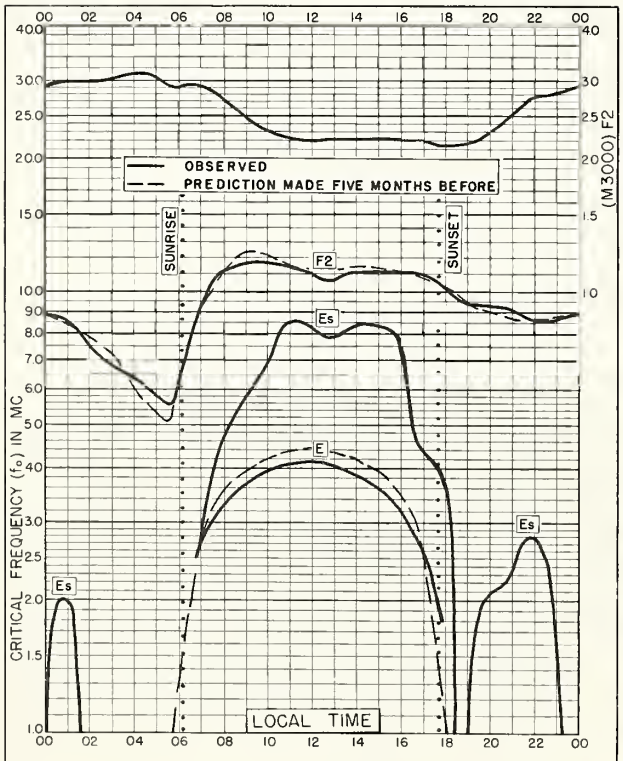


Fig. 39. CHIMBOTE, PERU
9.1°S, 78.6° W MAY 1959

NBS 503

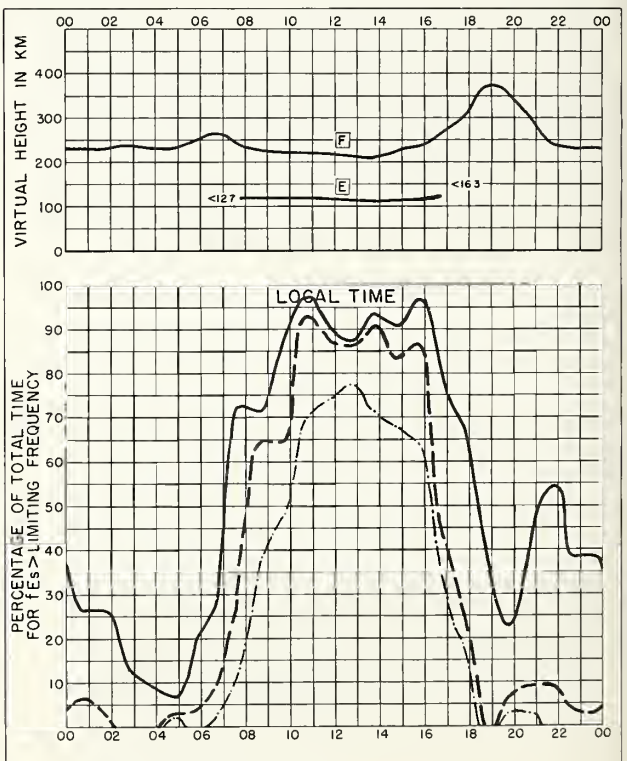


Fig. 40. CHIMBOTE, PERU MAY 1959

NBS 490

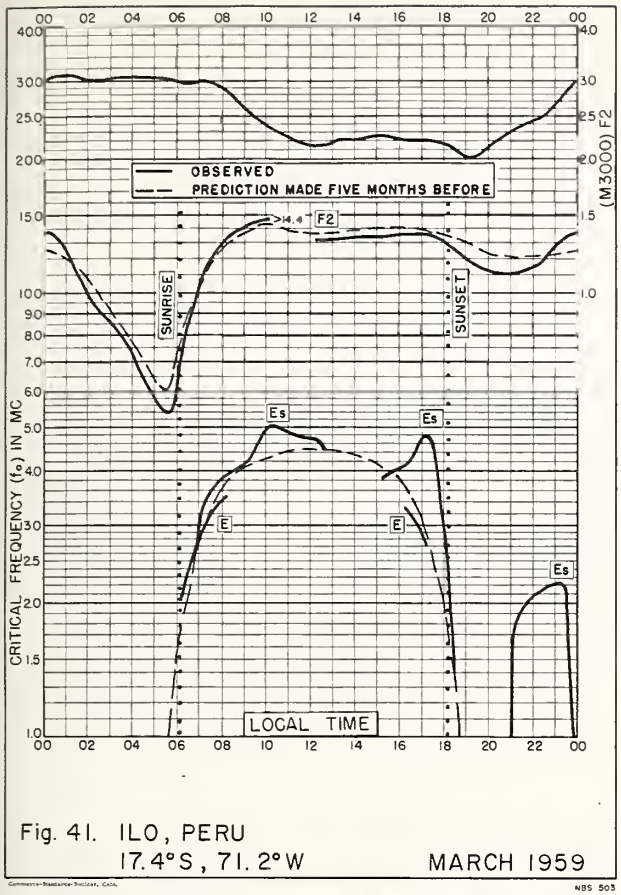


Fig. 41. ILO, PERU
17.4°S, 71.2°W MARCH 1959

NBS 503

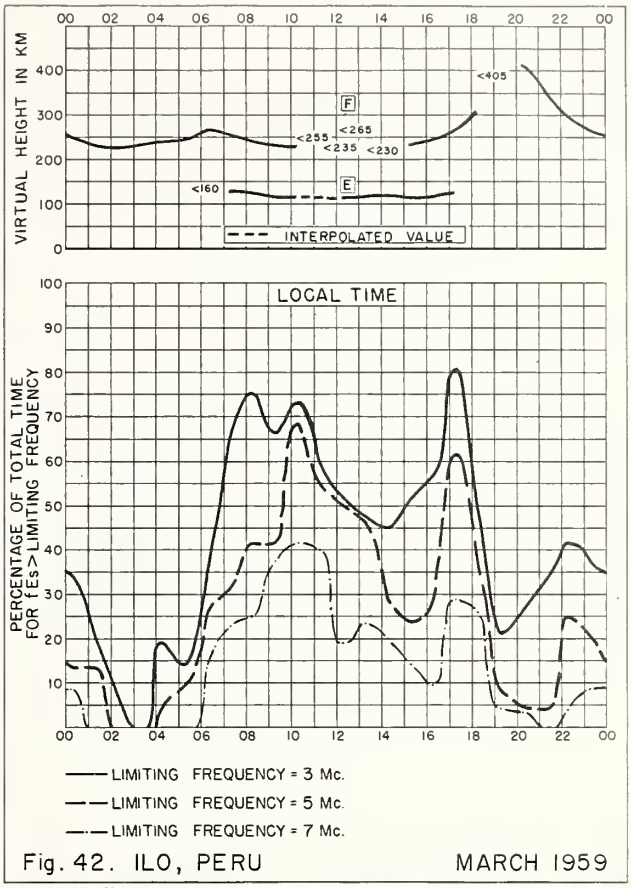


Fig. 42. ILO, PERU MARCH 1959

NBS 490

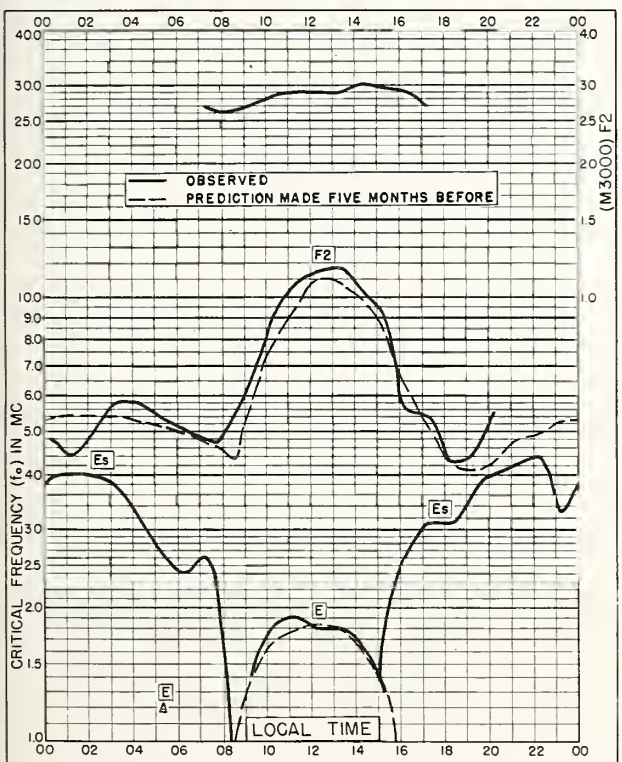


Fig. 43. TROMSO, NORWAY
69.7°N, 19.0°E JANUARY 1959

NBS 503

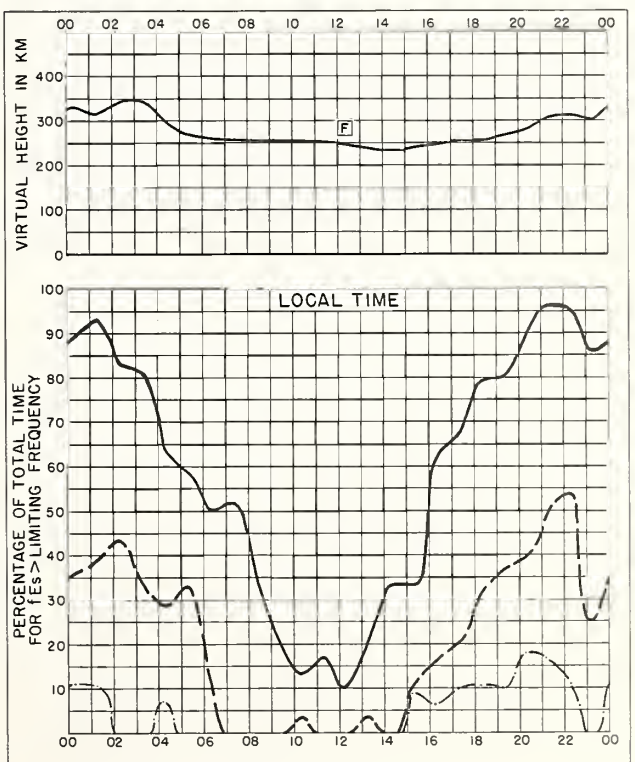


Fig. 44. TROMSO, NORWAY JANUARY 1959

NBS 490

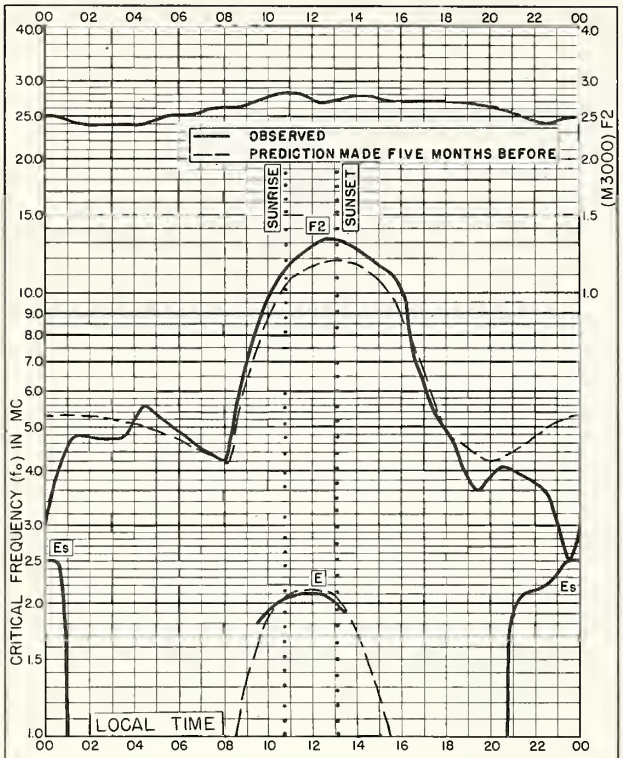


Fig. 45. LULEA, SWEDEN
65.6°N, 22.1°E DECEMBER 1958

NBS 503

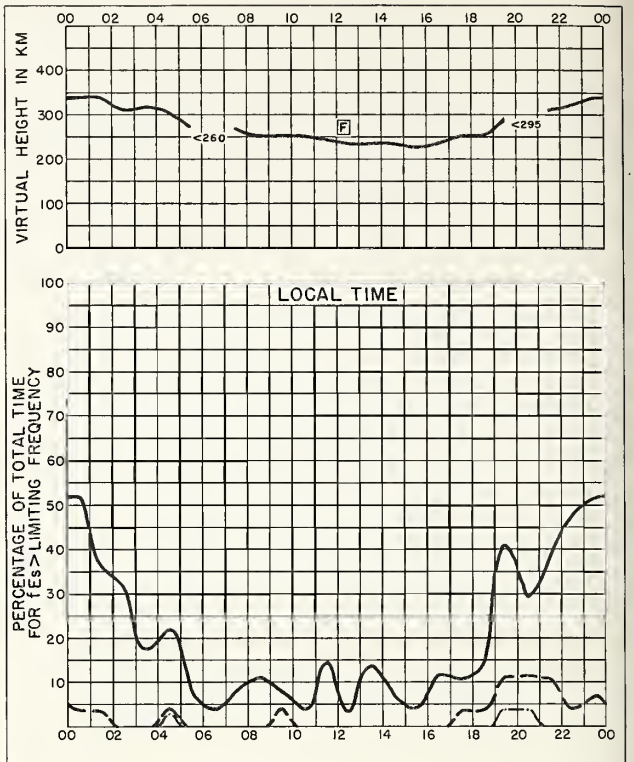


Fig. 46. LULEA, SWEDEN DECEMBER 1958

NBS 490

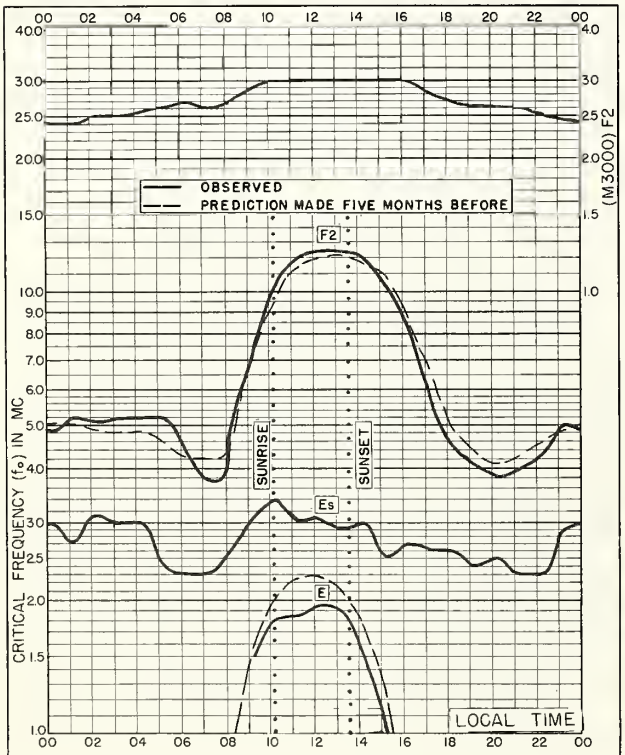


Fig. 47. LYCKSELE, SWEDEN
64.6°N, 18.8°E DECEMBER 1958

NBS 503

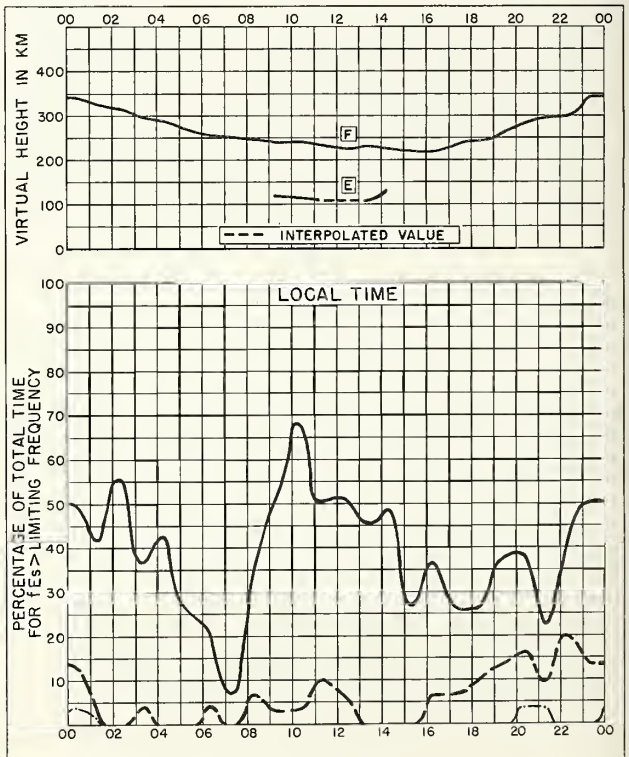


Fig. 48. LYCKSELE, SWEDEN DECEMBER 1958

NBS 490

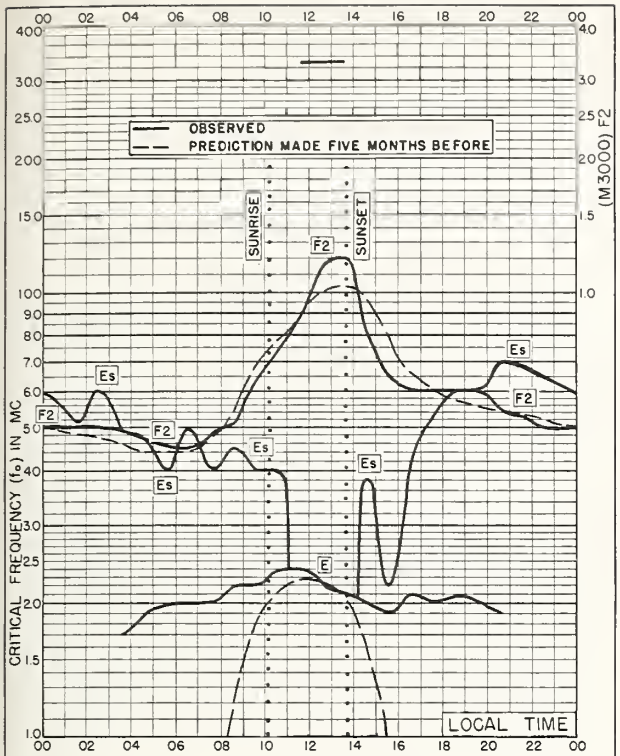


Fig. 49. BAKER LAKE, CANADA
64.3°N, 96.0°W DECEMBER 1958

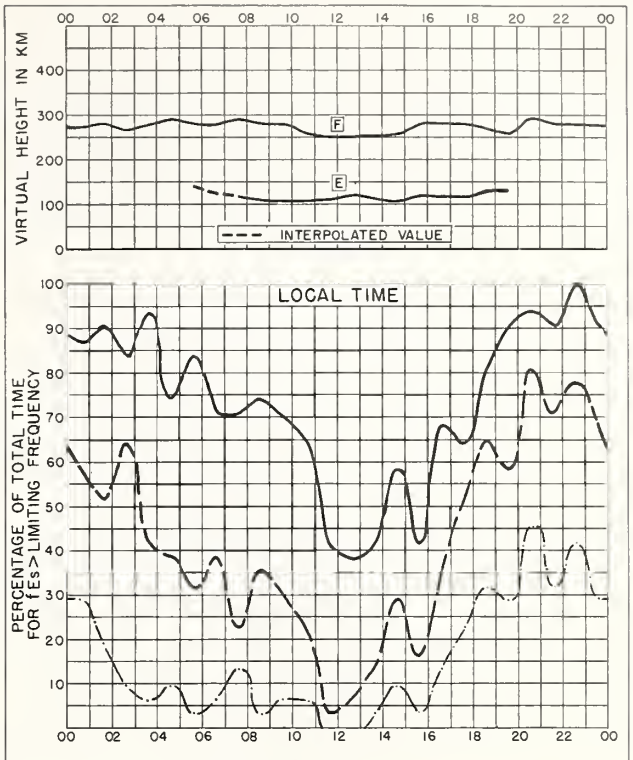


Fig. 50. BAKER LAKE, CANADA DECEMBER 1958

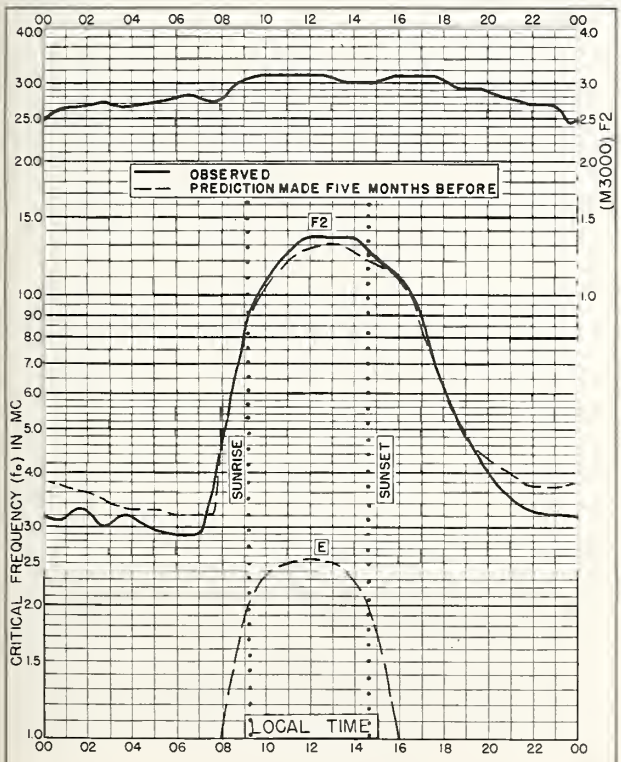


Fig. 51. NURMIJARVI, FINLAND
60.5°N, 24.6°E DECEMBER 1958

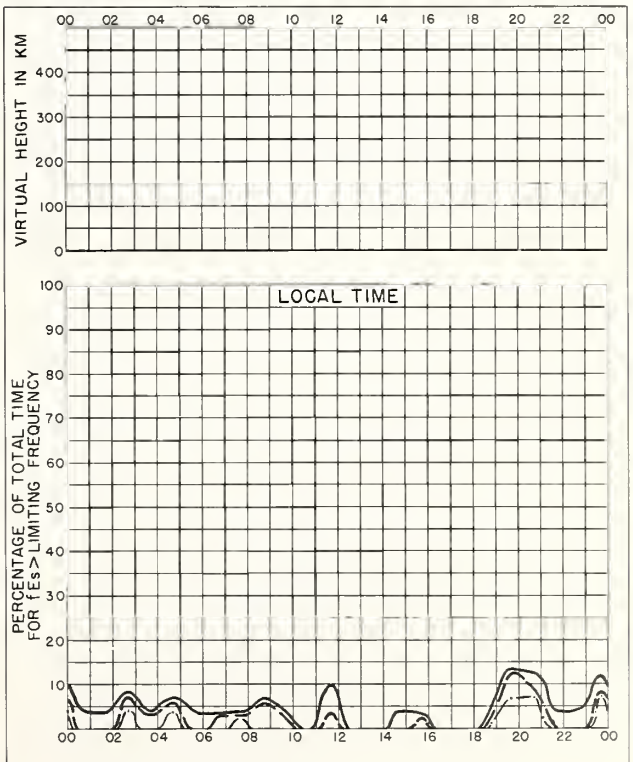


Fig. 52. NURMIJARVI, FINLAND DECEMBER 1958

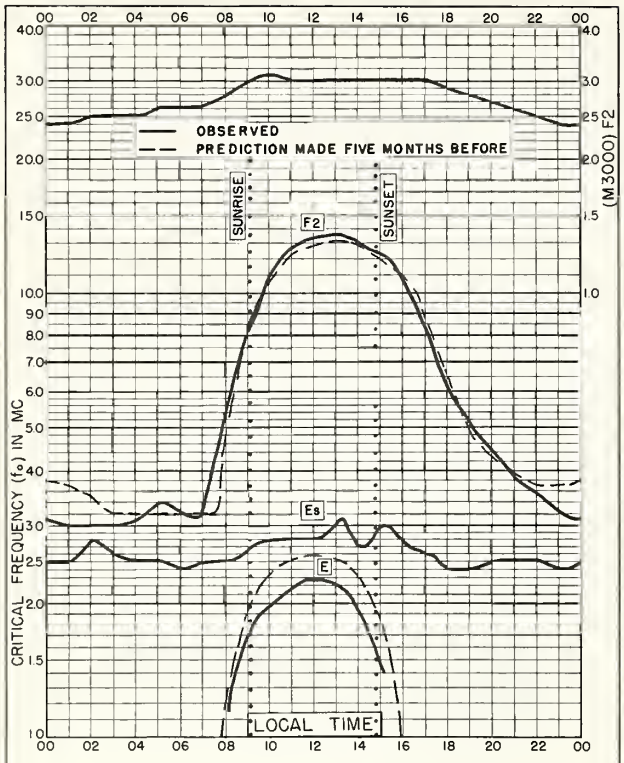


Fig. 53. UPSALA, SWEDEN
59.8°N ,17.6°E DECEMBER 1958

NBS 503

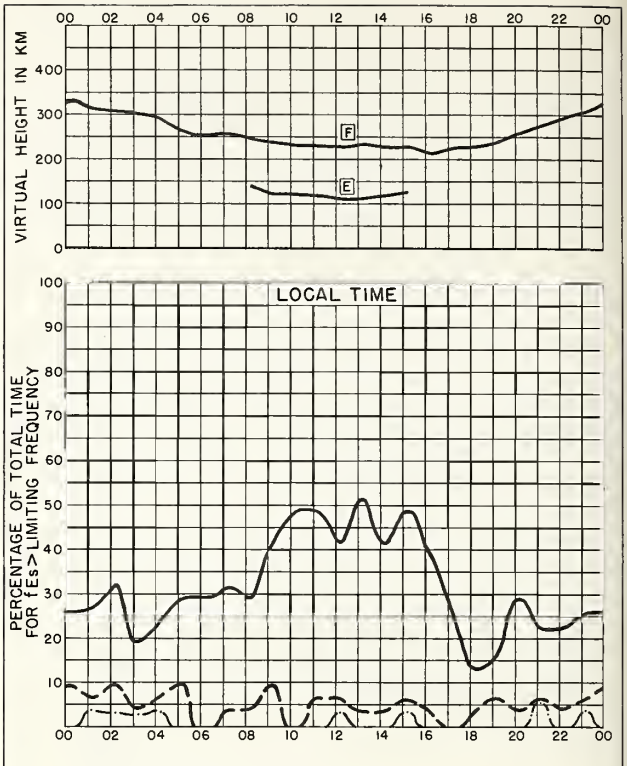


Fig. 54. UPSALA, SWEDEN DECEMBER 1958

NBS 490

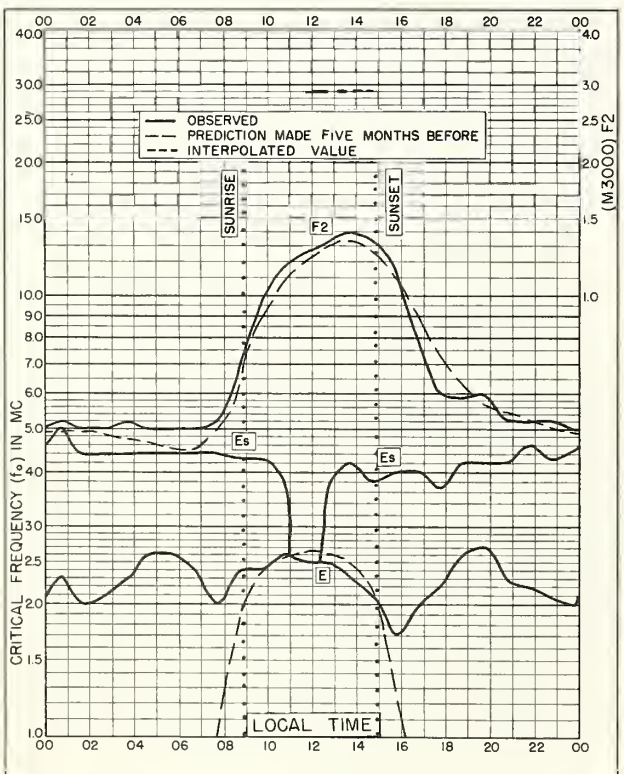


Fig. 55. CHURCHILL, CANADA
58.8°N , 94.2°W DECEMBER 1958

NBS 503

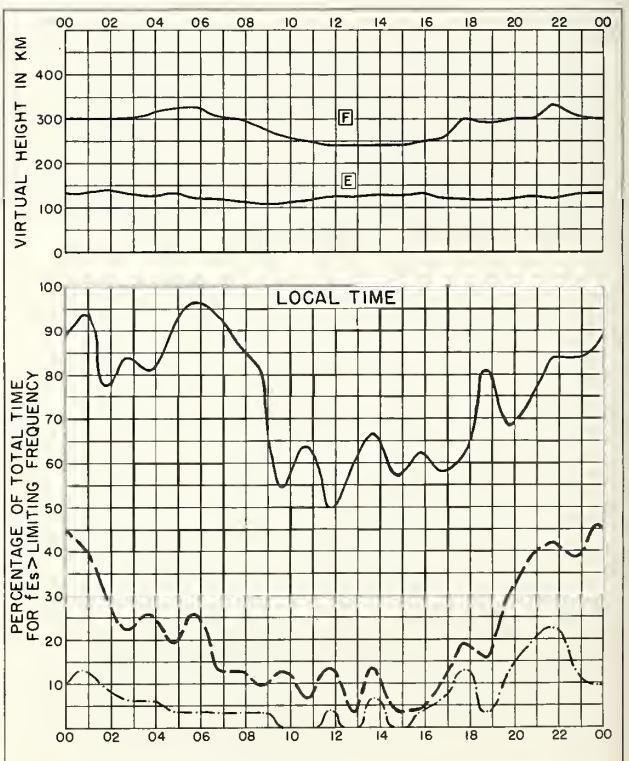


Fig. 56. CHURCHILL, CANADA DECEMBER 1958

NBS 490

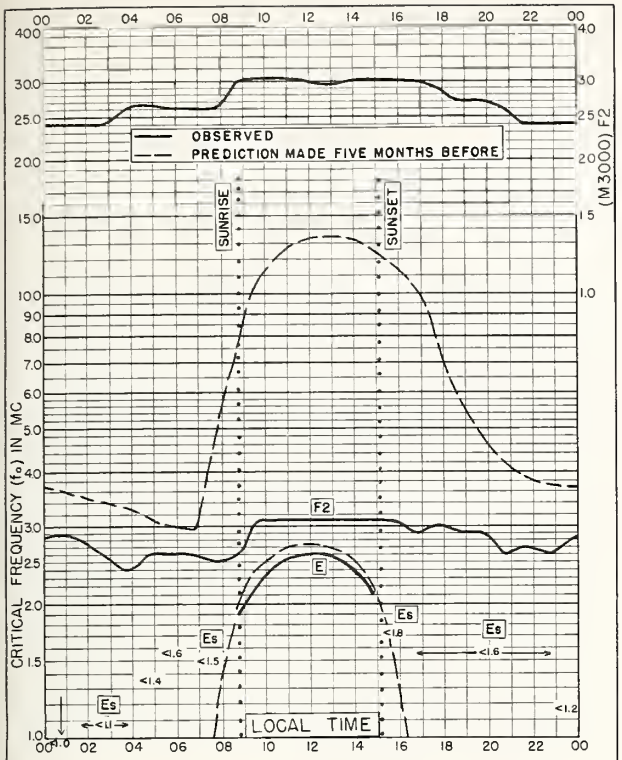


Fig. 57. INVERNESS, SCOTLAND
57.4°N, 4.2°W DECEMBER 1958

NBS 503

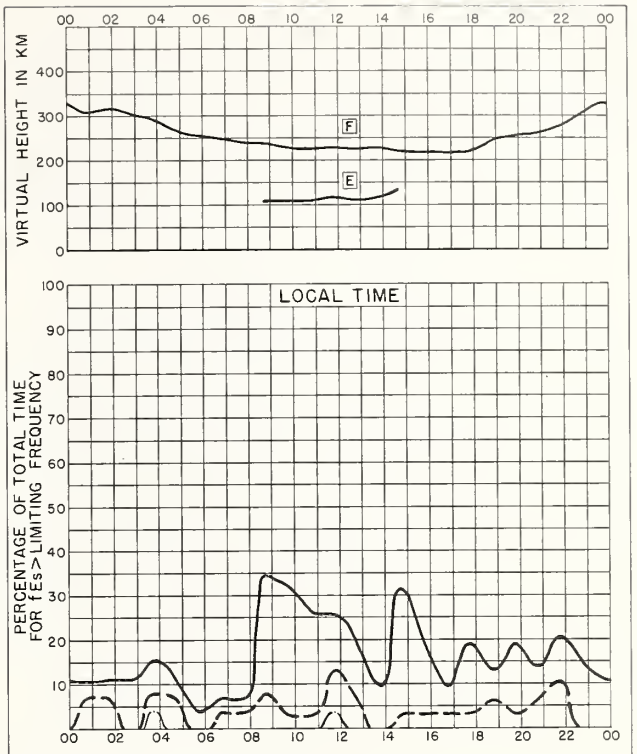


Fig. 58. INVERNESS, SCOTLAND DECEMBER 1958

NBS 490

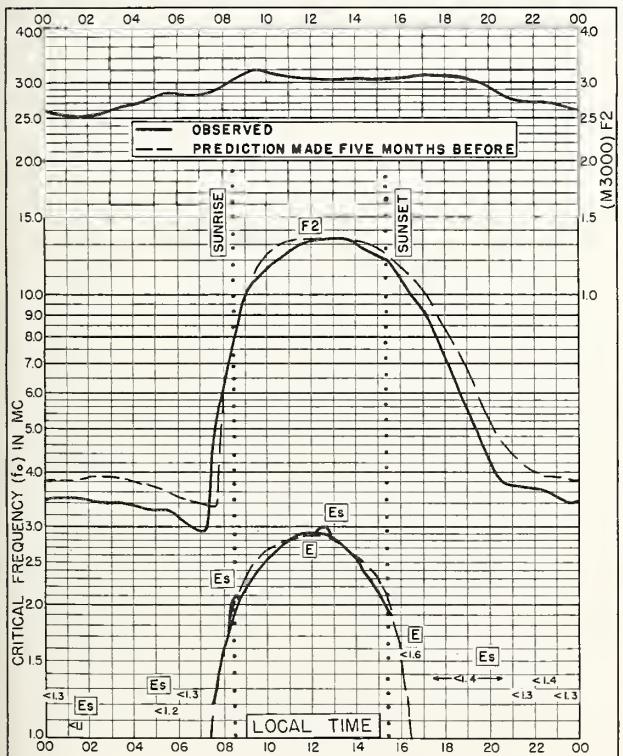


Fig. 59. MOSCOW, U.S.S.R.
55.5°N, 37.3°E DECEMBER 1958

NBS 503

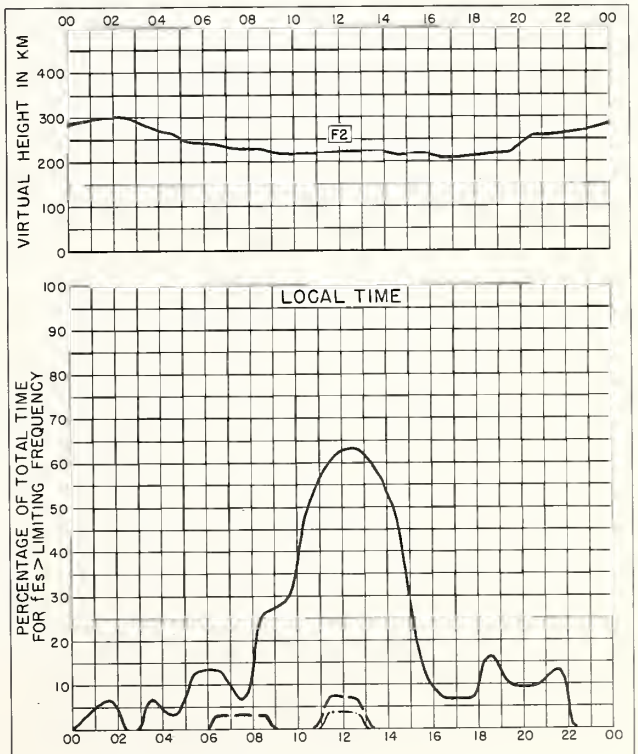


Fig. 60. MOSCOW, U.S.S.R. DECEMBER 1958

NBS 490

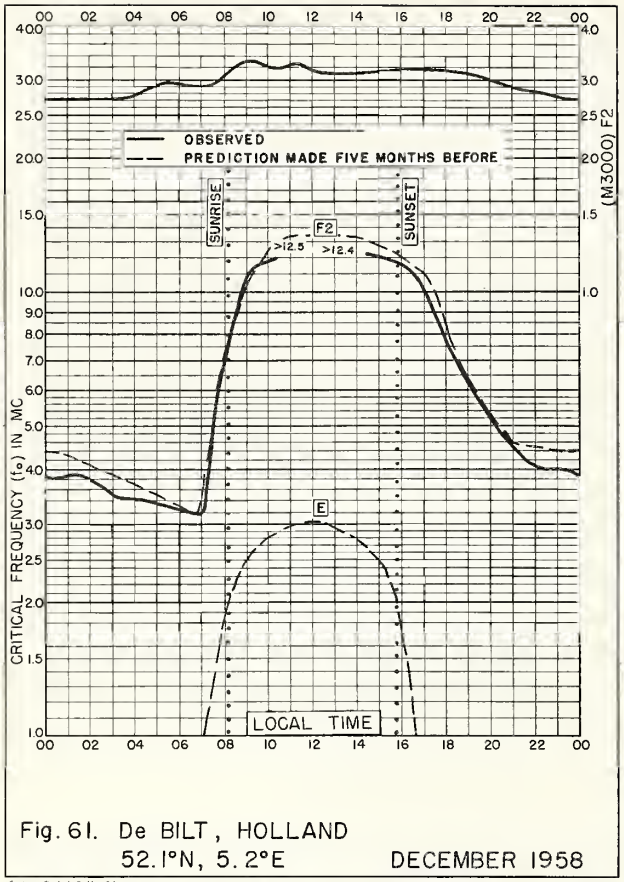


Fig. 61. De BILT, HOLLAND
52.1°N, 5.2°E DECEMBER 1958

NBS 503

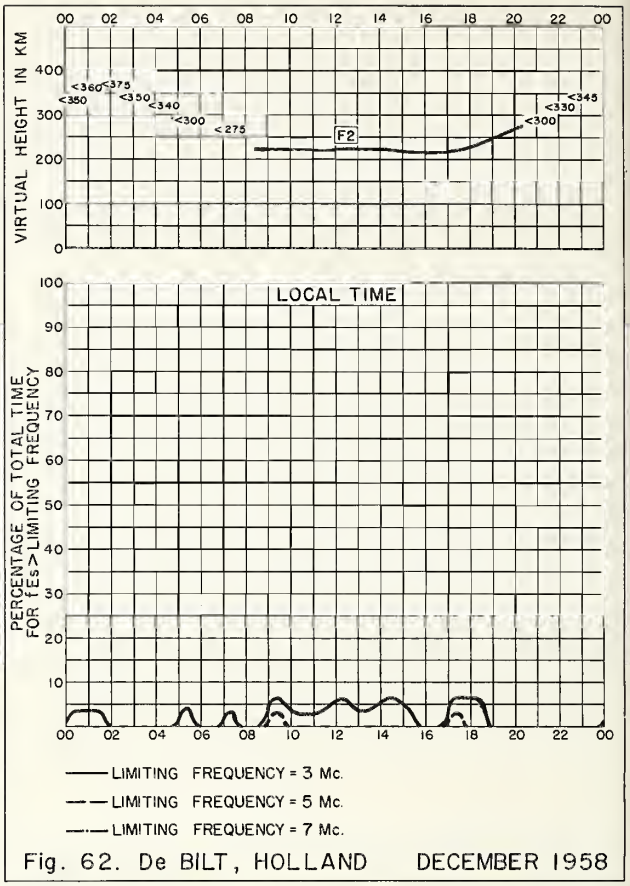


Fig. 62. De BILT, HOLLAND DECEMBER 1958

NBS 490

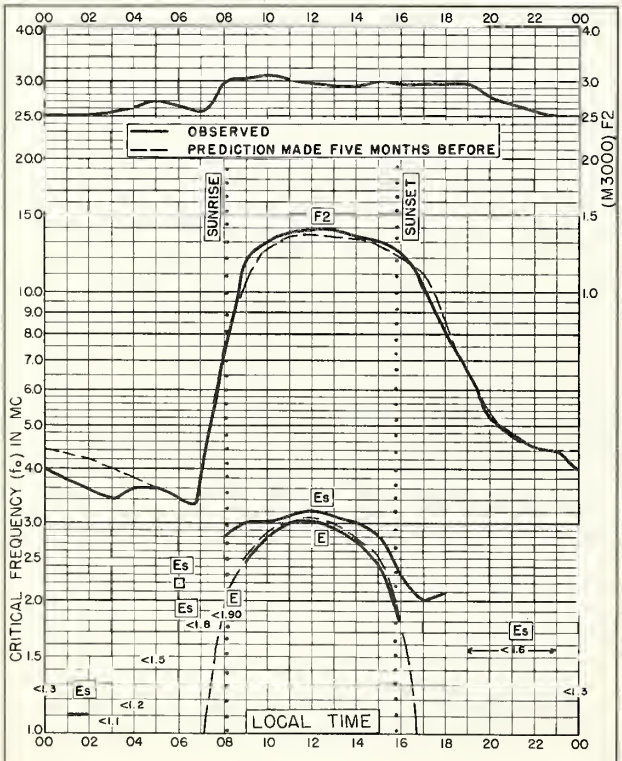


Fig. 63. SLOUGH, ENGLAND
51.5°N, 0.6°W DECEMBER 1958

NBS 503

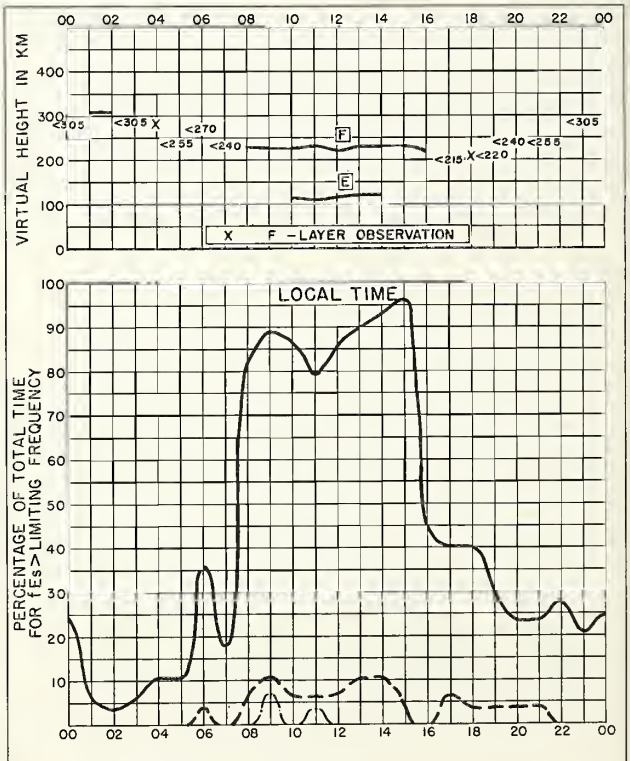


Fig. 64. SLOUGH, ENGLAND DECEMBER 1958

NBS 490

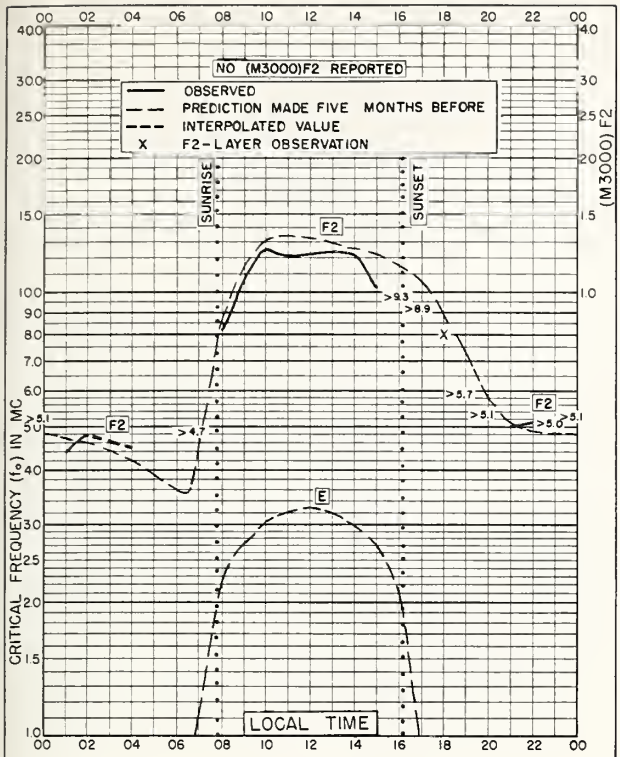


Fig. 65. GRAZ, AUSTRIA
47.1°N, 15.5°E DECEMBER 1958

NBS 503

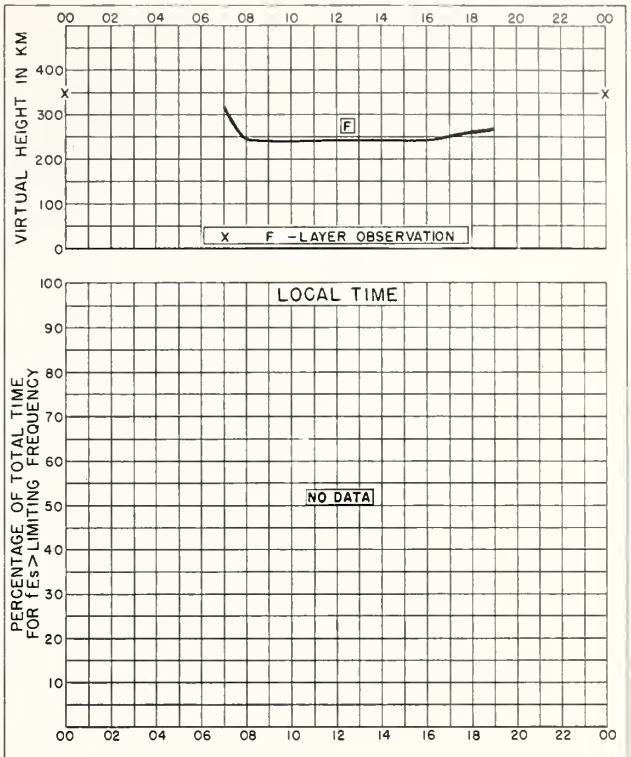


Fig. 66. GRAZ, AUSTRIA DECEMBER 1958

NBS 490

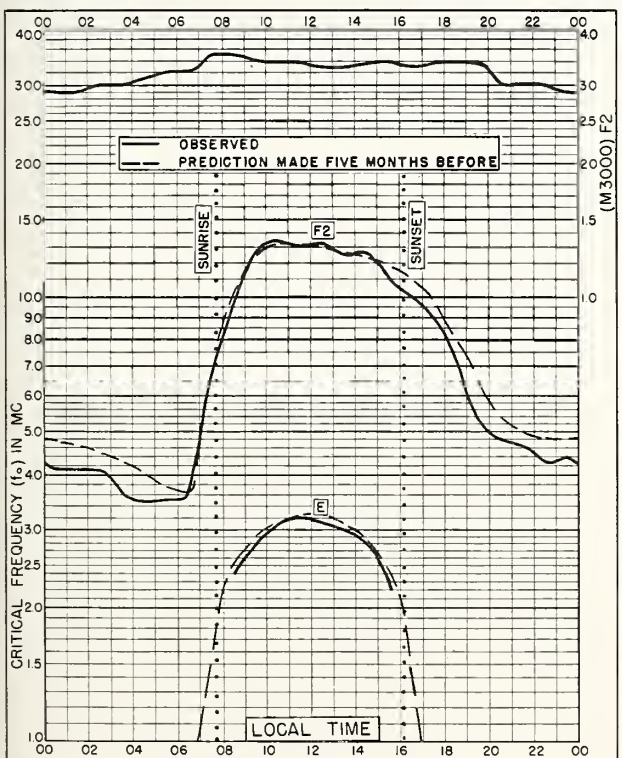


Fig. 67. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E DECEMBER 1958

NBS 503

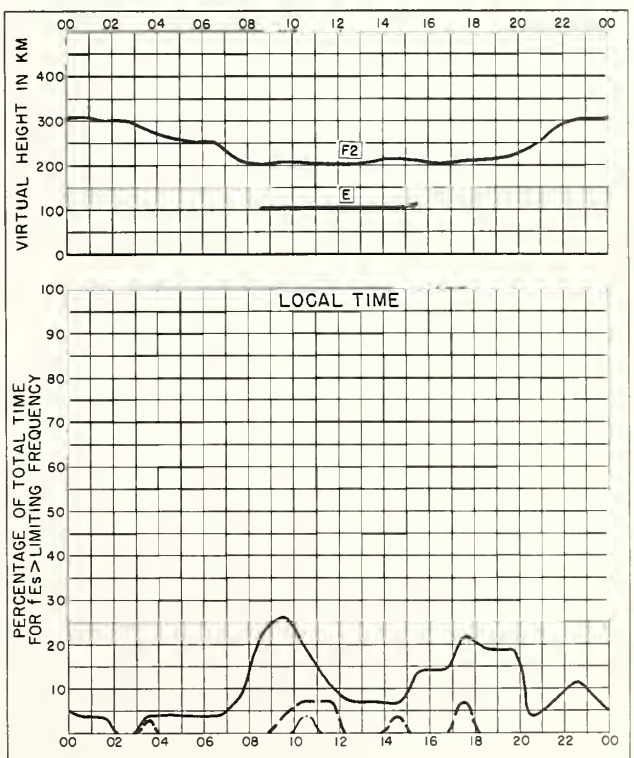


Fig. 68. SCHWARZENBURG, SWITZERLAND DECEMBER 1958

NBS 490

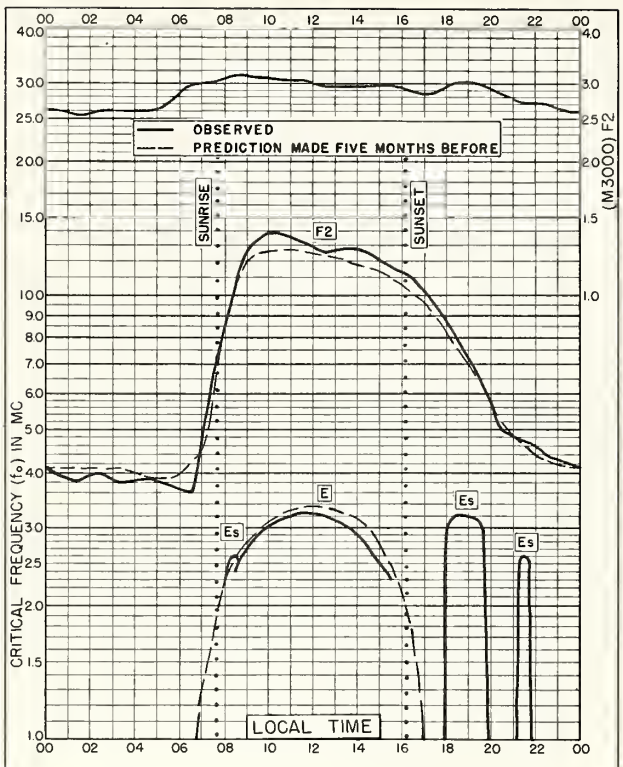


Fig. 69. WAKKANAI, JAPAN
45.4°N, 141.7°E DECEMBER 1958

NBS 503

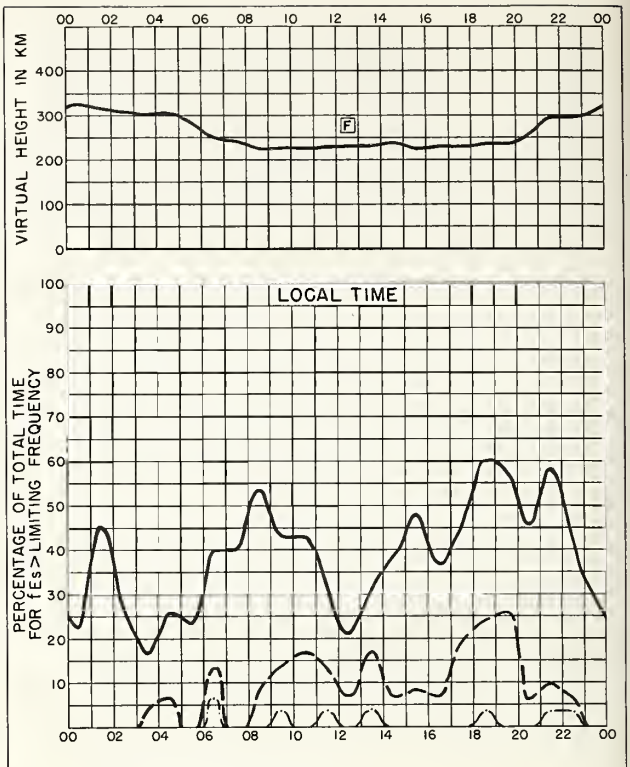


Fig. 70. WAKKANAI, JAPAN DECEMBER 1958

NBS 490

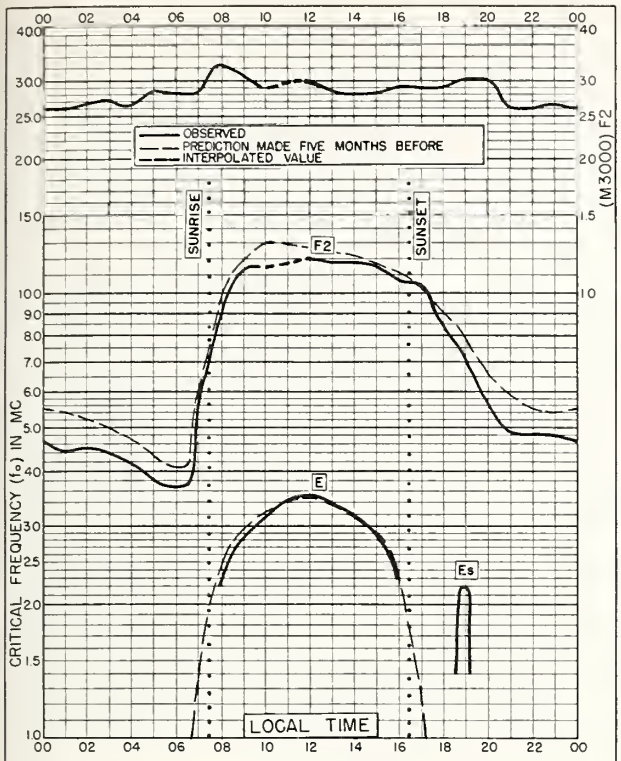


Fig. 71. ROME, ITALY
41.8°N , 12.5°E DECEMBER 1958

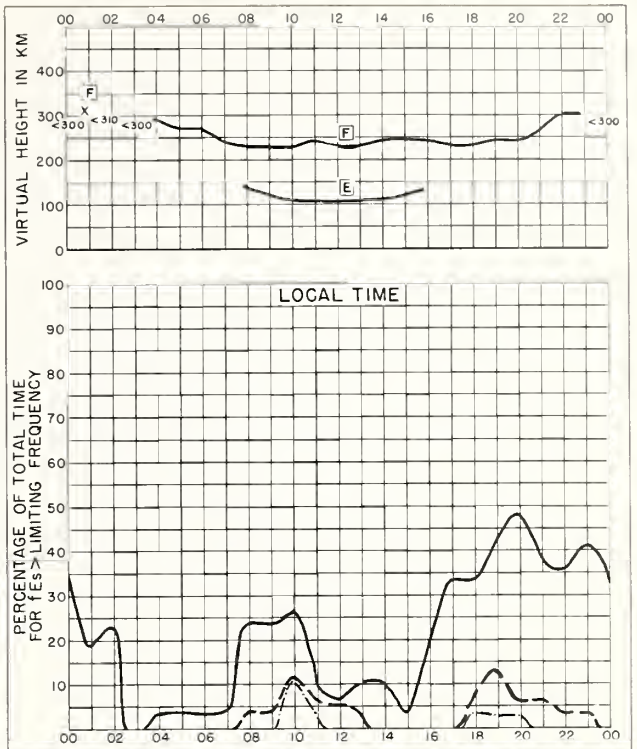


Fig. 72. ROME, ITALY DECEMBER 1958

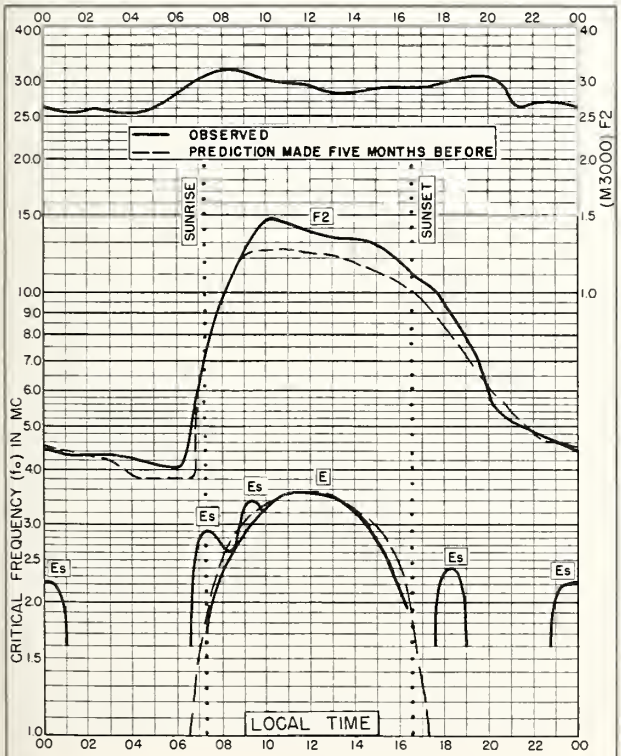


Fig. 73. AKITA , JAPAN
39.7°N , 140. 1°E DECEMBER 1958

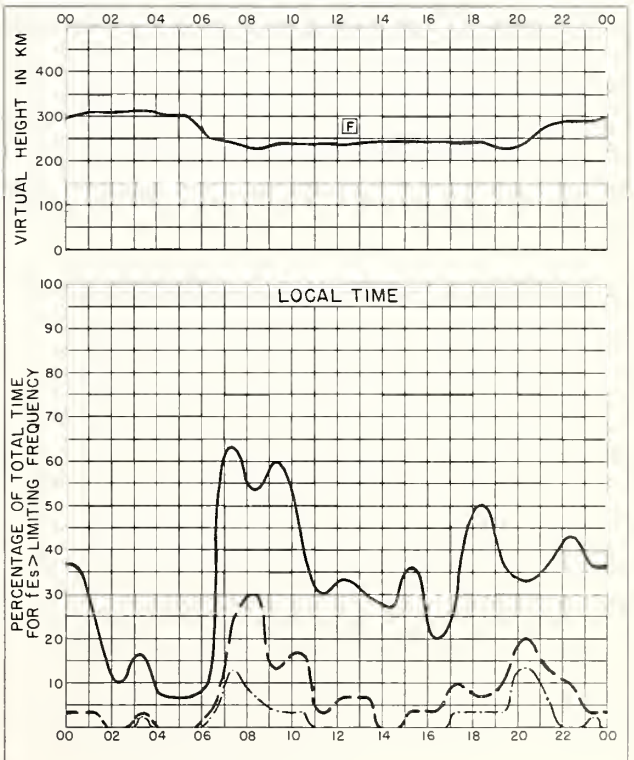


Fig. 74. AKITA , JAPAN DECEMBER 1958

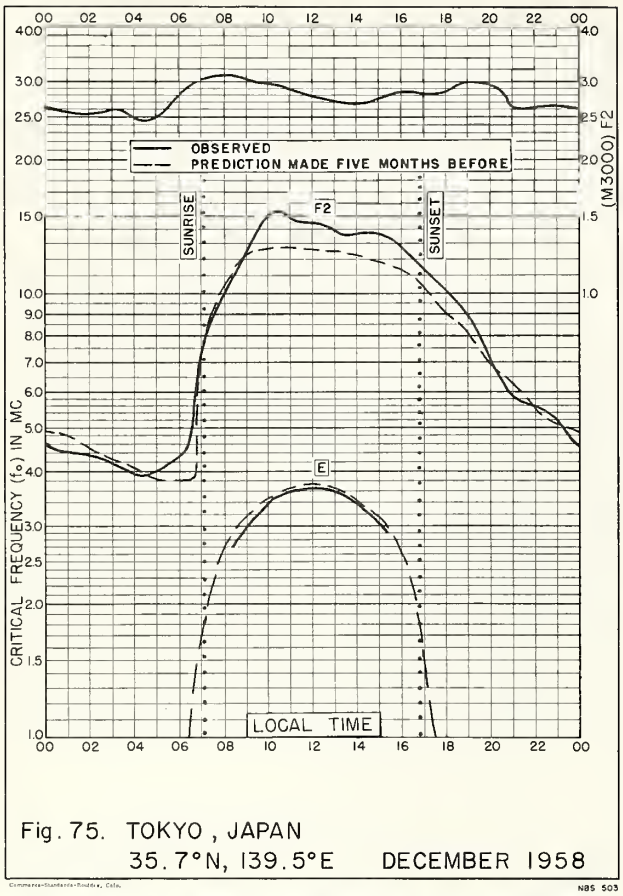


Fig. 75. TOKYO, JAPAN
35.7°N, 139.5°E DECEMBER 1958

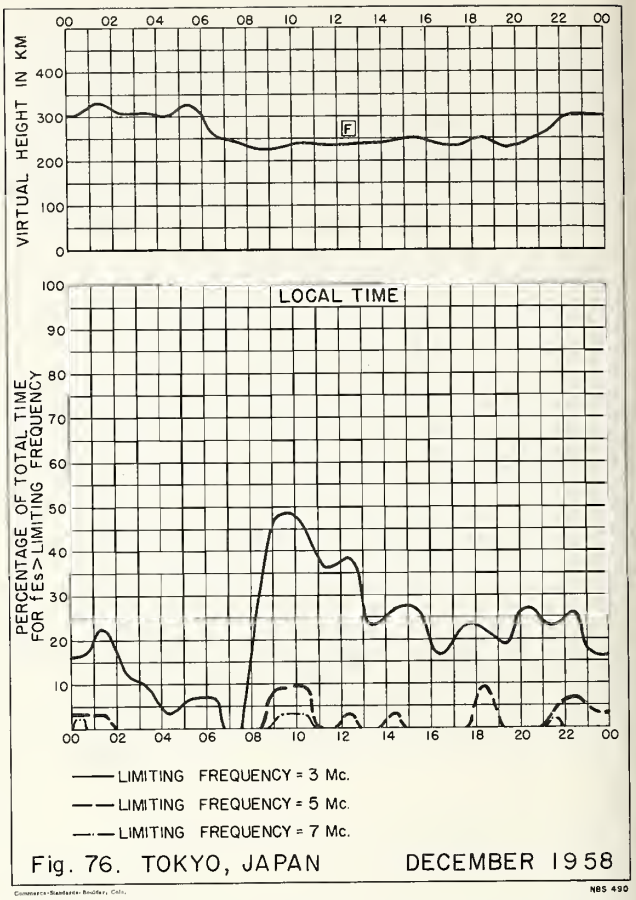


Fig. 76. TOKYO, JAPAN DECEMBER 1958

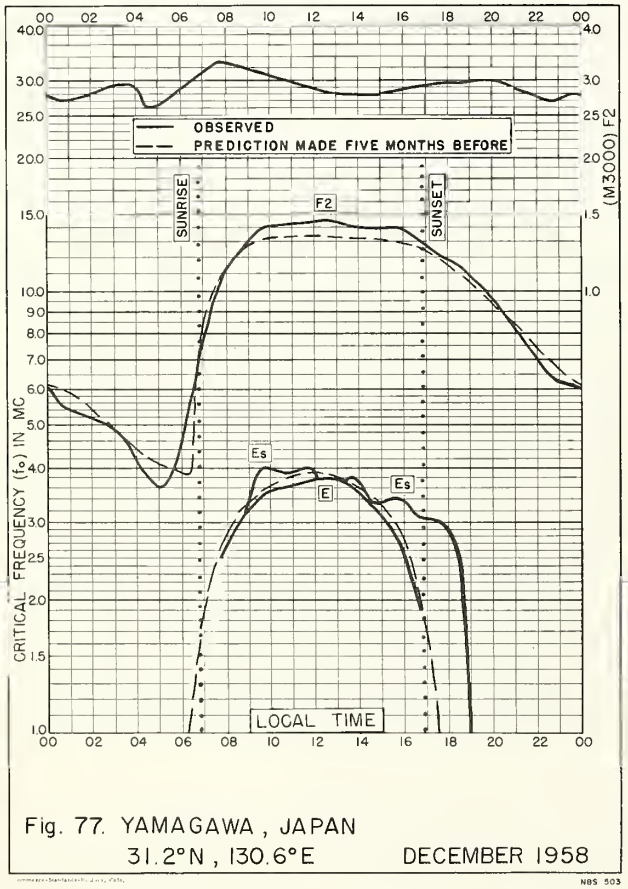


Fig. 77. YAMAGAWA, JAPAN
31.2°N, 130.6°E DECEMBER 1958

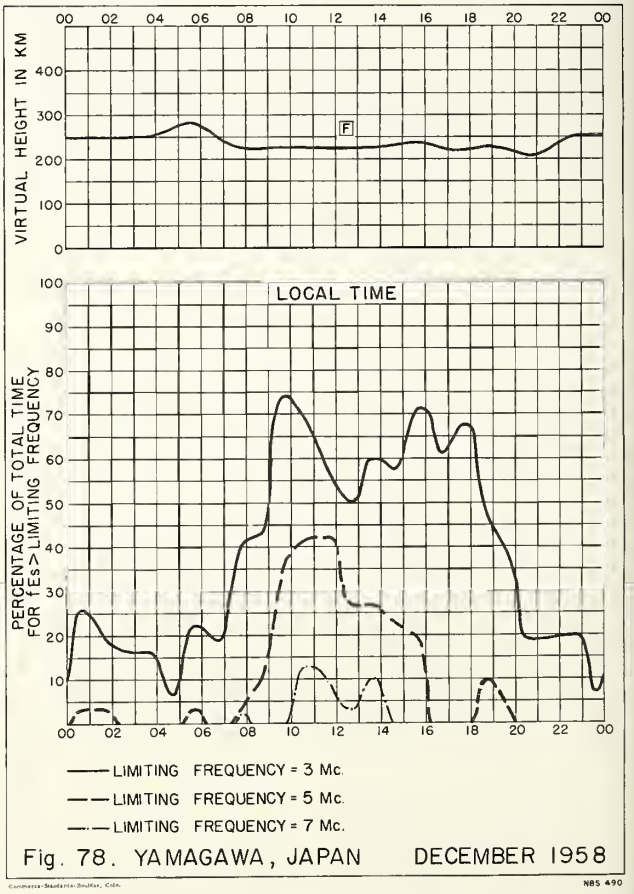


Fig. 78. YAMAGAWA, JAPAN DECEMBER 1958

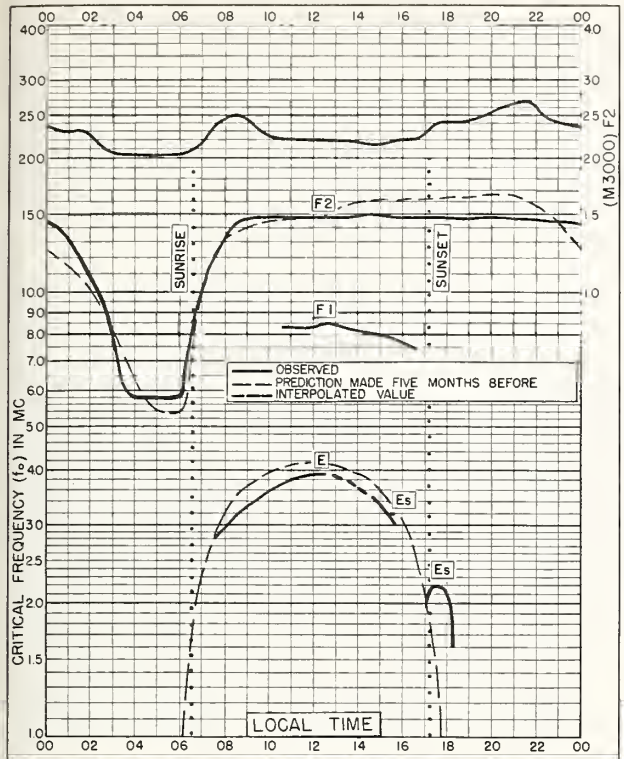


Fig. 79. MACAU
22.2°N , 113.6°E DECEMBER 1958

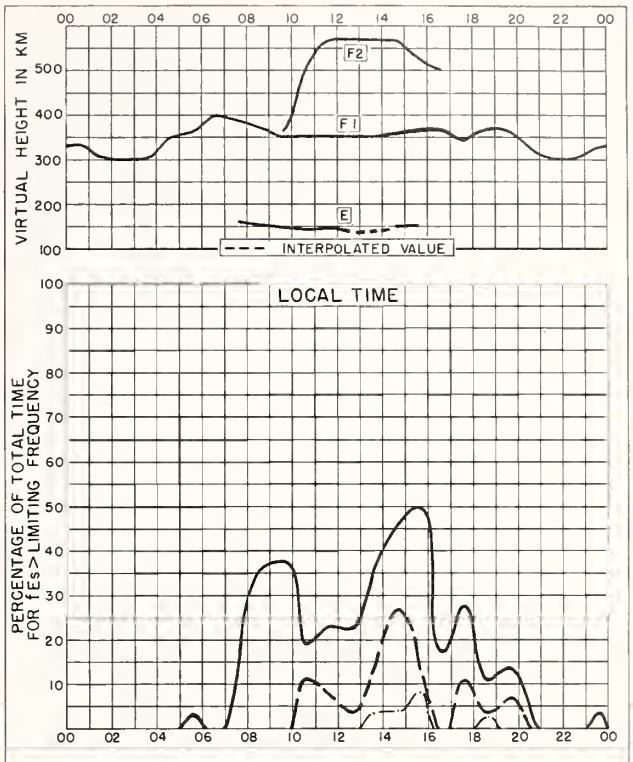


Fig. 80. MACAU DECEMBER 1958

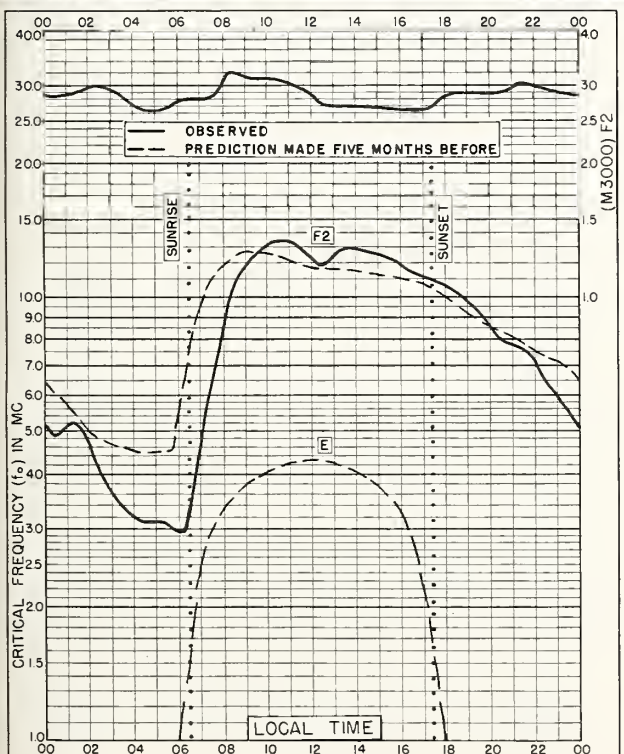


Fig. 81. EL CERILLO, MEXICO
19.1°N , 99.6°W DECEMBER 1958

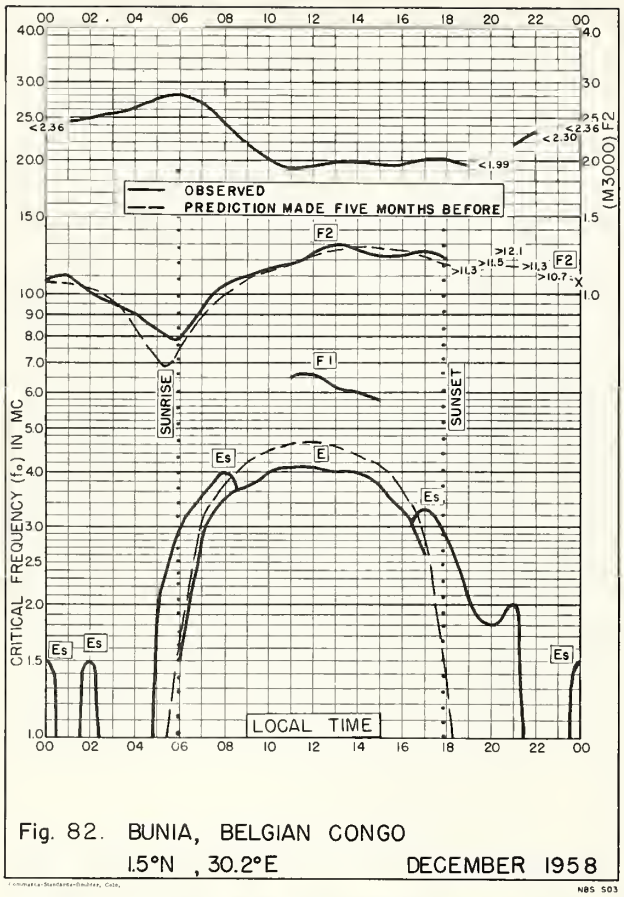


Fig. 82. BUNIA, BELGIAN CONGO
1.5°N , 30.2°E DECEMBER 1958

NBS 503

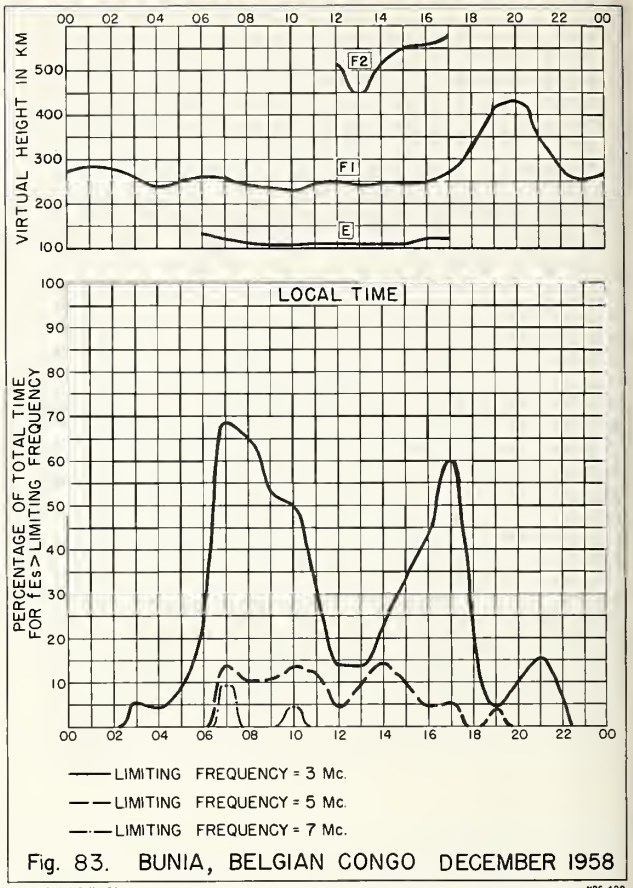


Fig. 83. BUNIA, BELGIAN CONGO DECEMBER 1958

NBS 490

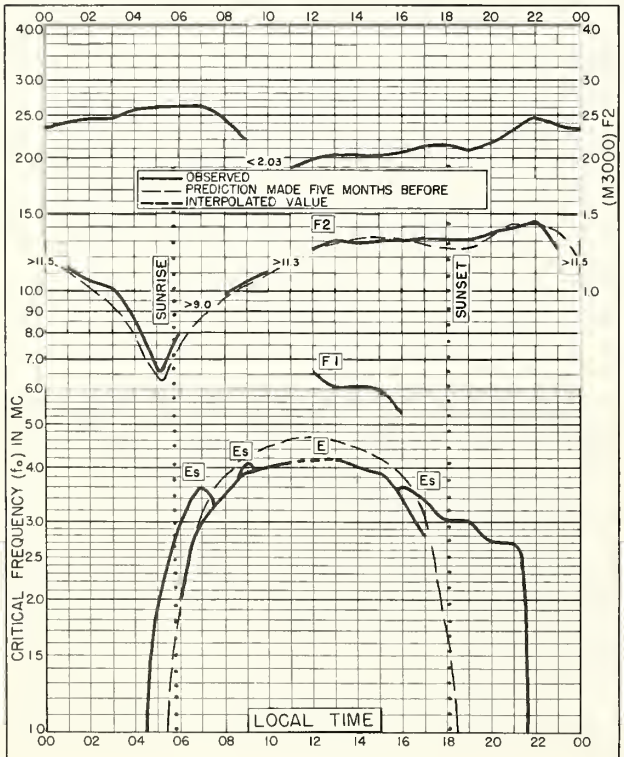


Fig. 84. LEOPOLDVILLE, BELGIAN CONGO
4.4°S , 15.2°E DECEMBER 1958

NBS 503

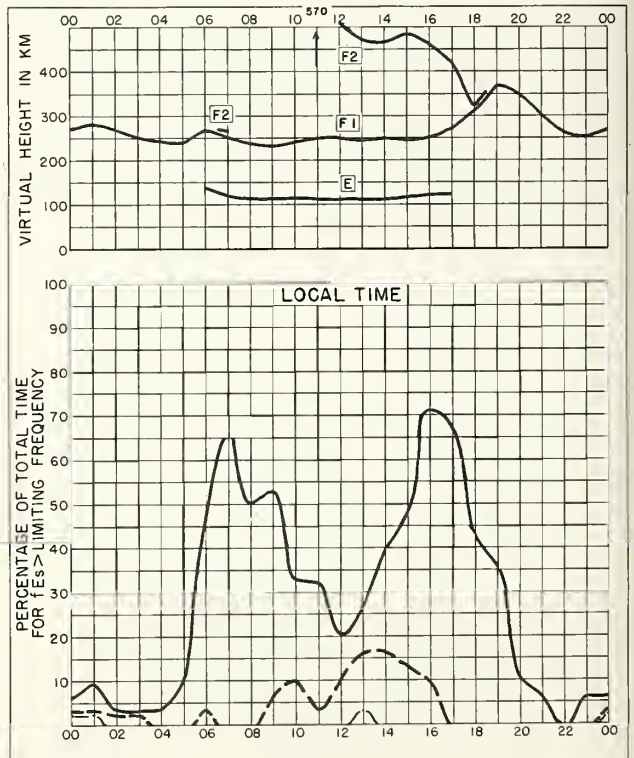


Fig. 85. LEOPOLDVILLE, BELGIAN CONGO DECEMBER 1958

NBS 490

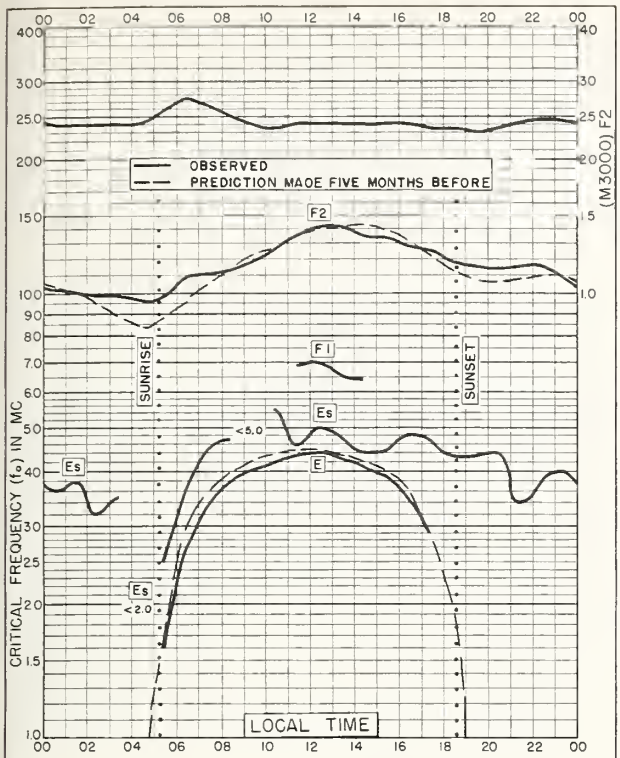


Fig. 86. RAROTONGA I.
21.2°S, 159.8°W DECEMBER 1958

NBS 503

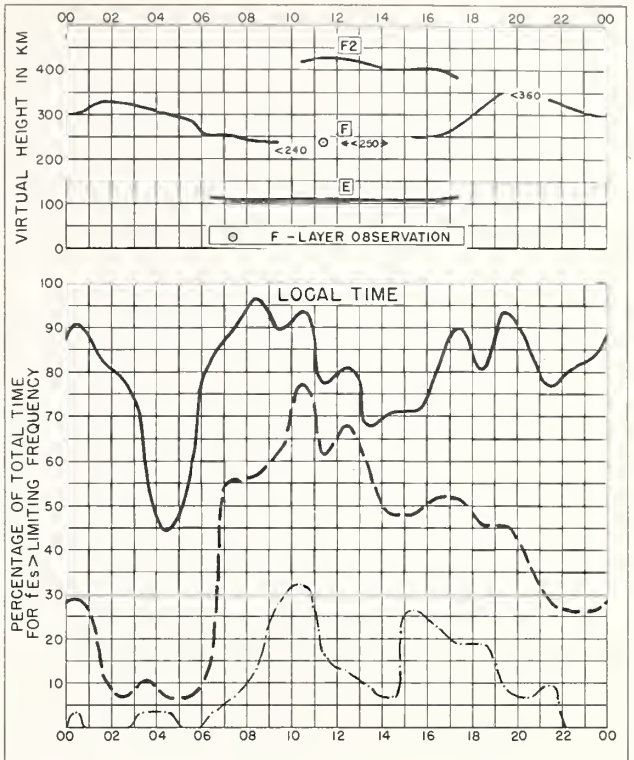


Fig. 87. RAROTONGA I. DECEMBER 1958

NBS 490

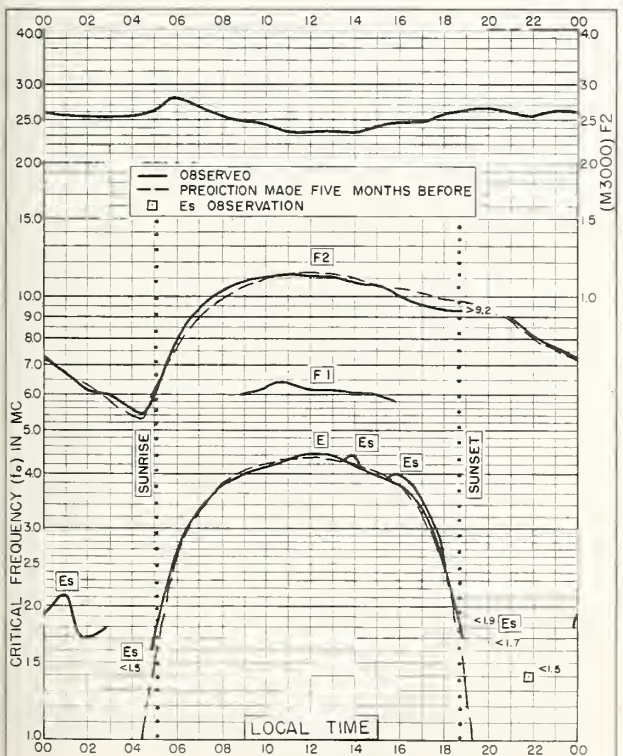
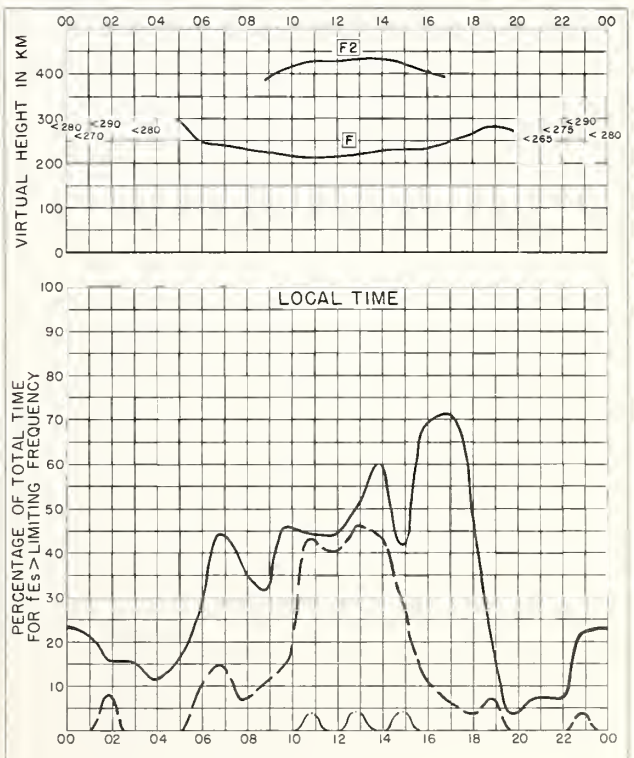


Fig. 88. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E DECEMBER 1958

NBS 503



DECEMBER 1958

Fig. 89. JOHANNESBURG, UNION OF S. AFRICA

NBS 490

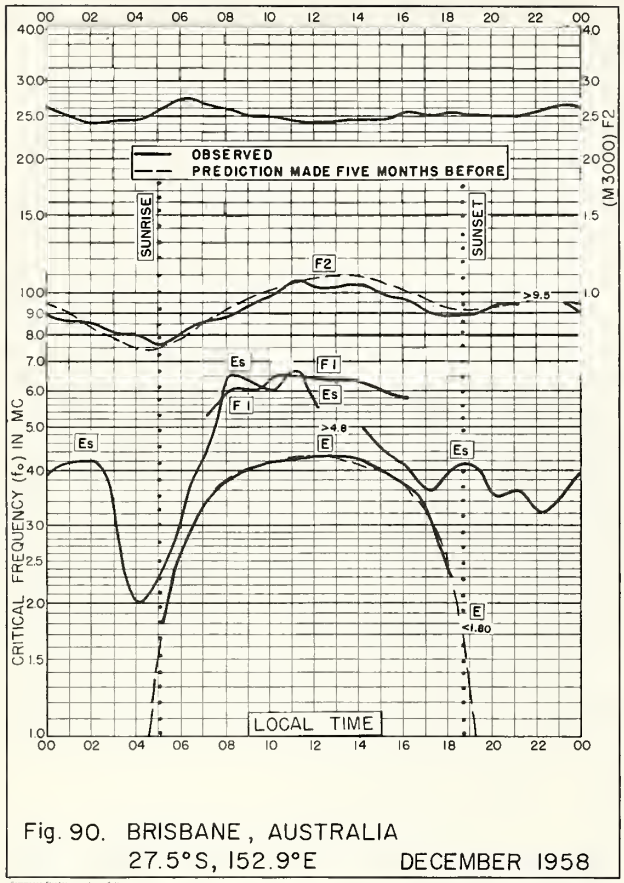


Fig. 90. BRISBANE, AUSTRALIA
27.5°S, 152.9°E DECEMBER 1958

NBS 503

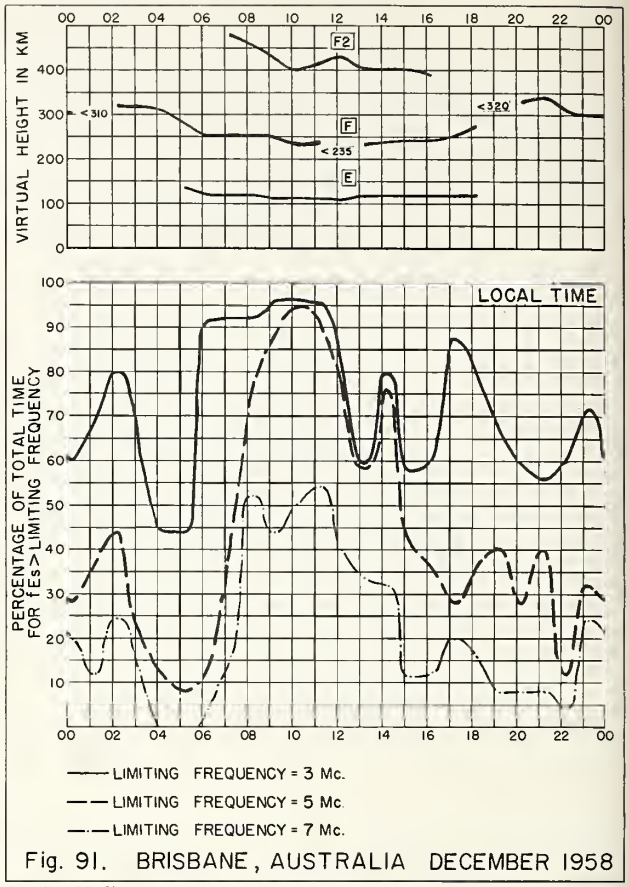


Fig. 91. BRISBANE, AUSTRALIA DECEMBER 1958

NBS 490

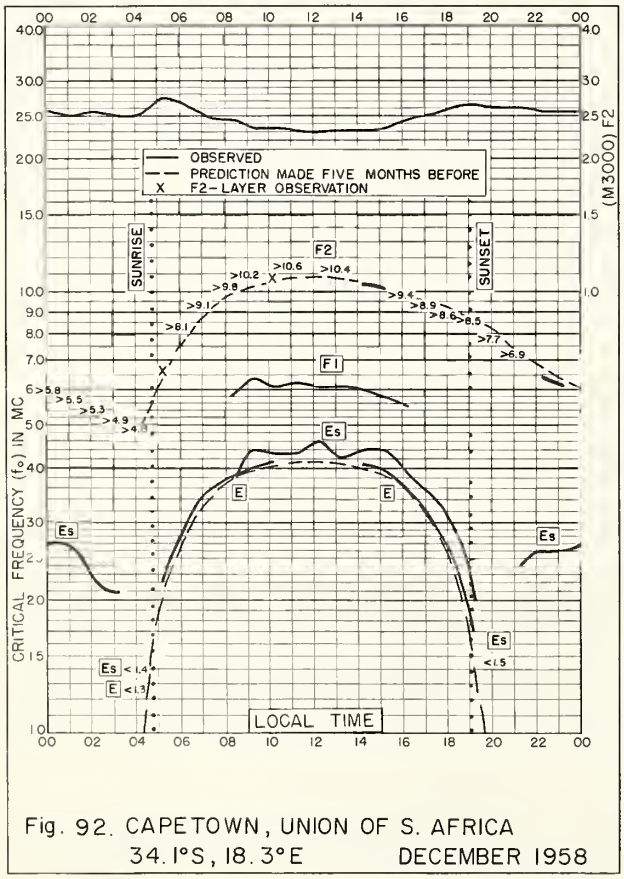
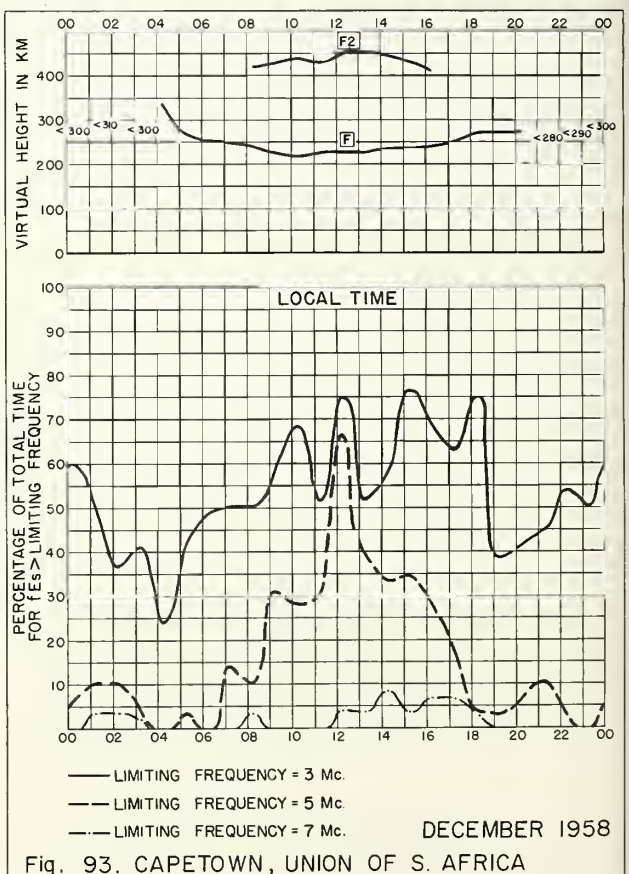


Fig. 92. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E DECEMBER 1958

NBS 503



DECEMBER 1958

Fig. 93. CAPETOWN, UNION OF S. AFRICA

NBS 490

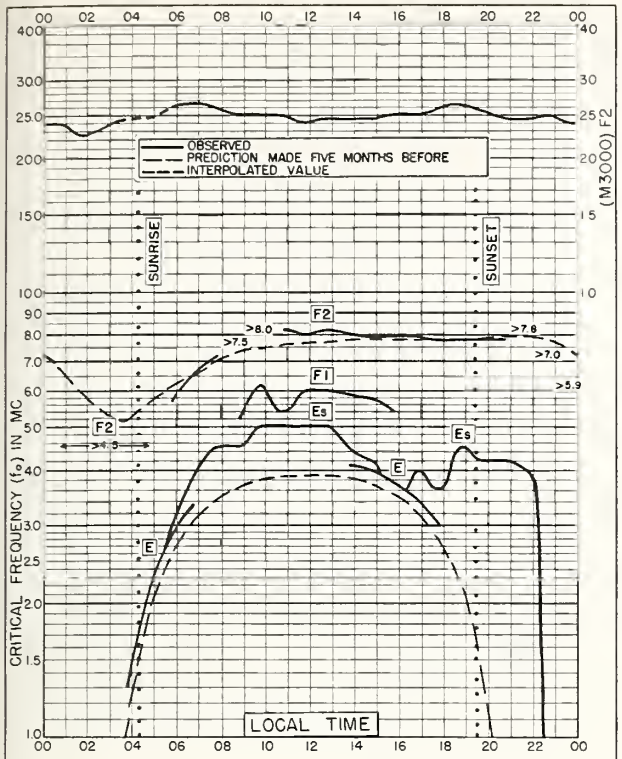


Fig. 94. HOBART, TASMANIA
42.9°S, 147.2°E DECEMBER 1958

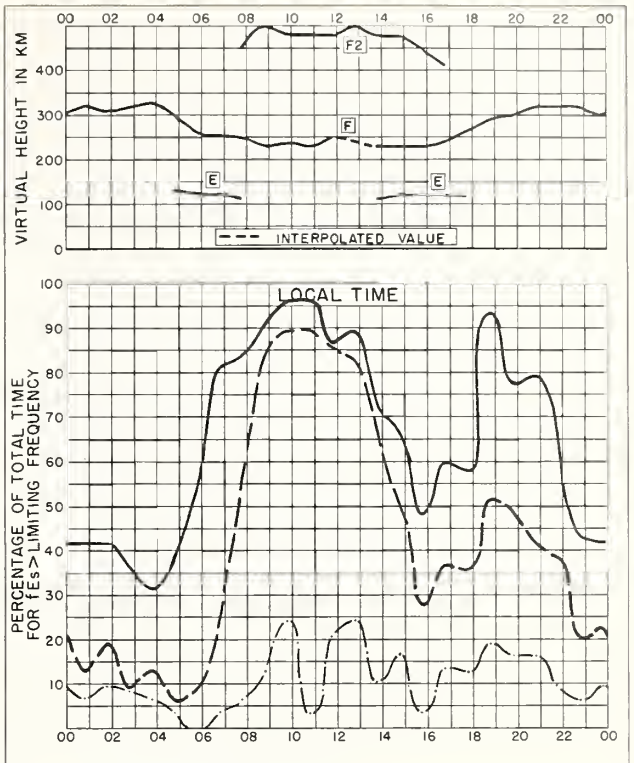


Fig. 95. HOBART, TASMANIA DECEMBER 1958

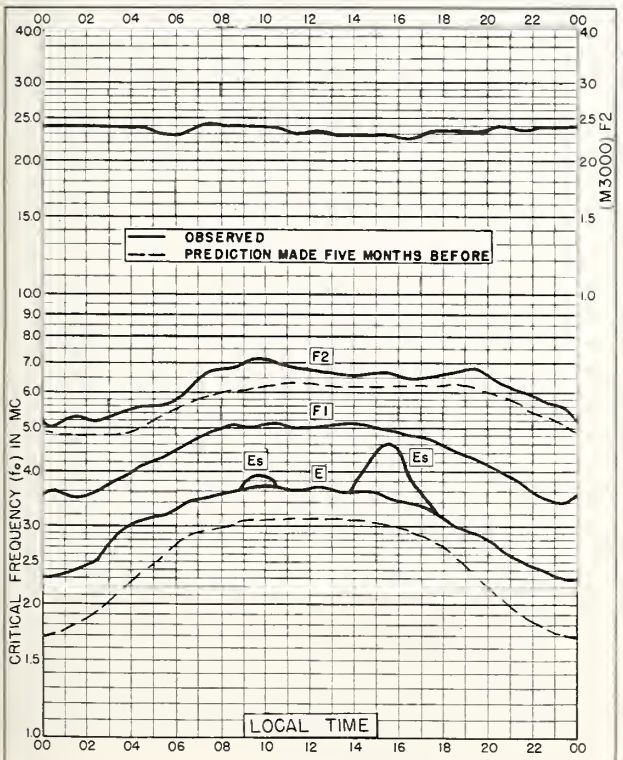


Fig. 96. CAPE HALLETT
72.3°S, 170.3°E DECEMBER 1958

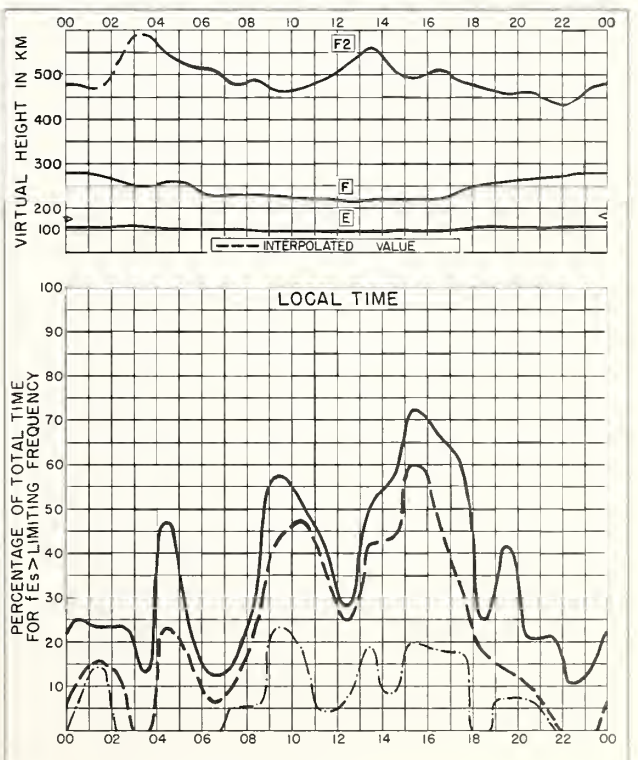


Fig. 97. CAPE HALLETT DECEMBER 1958

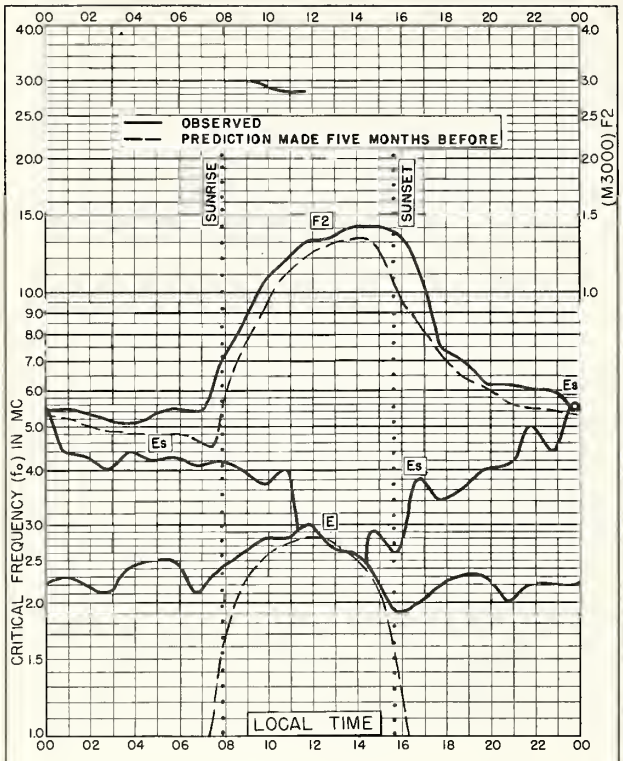


Fig. 98. CHURCHILL, CANADA
58.8°N , 94.2°W NOVEMBER 1958

Commerce-Standards-Boulder, Colo. NBS 503

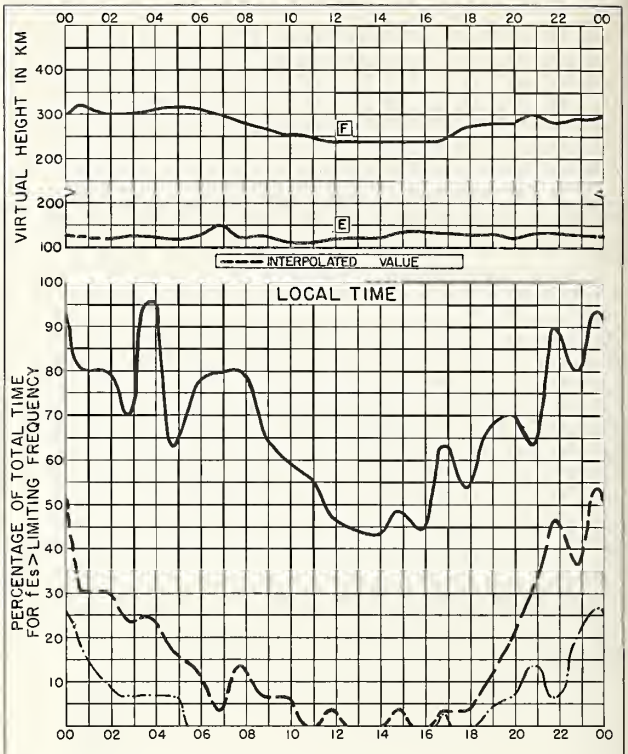


Fig. 99. CHURCHILL, CANADA NOVEMBER 1958

Commerce-Standards-Boulder, Colo. NBS 490

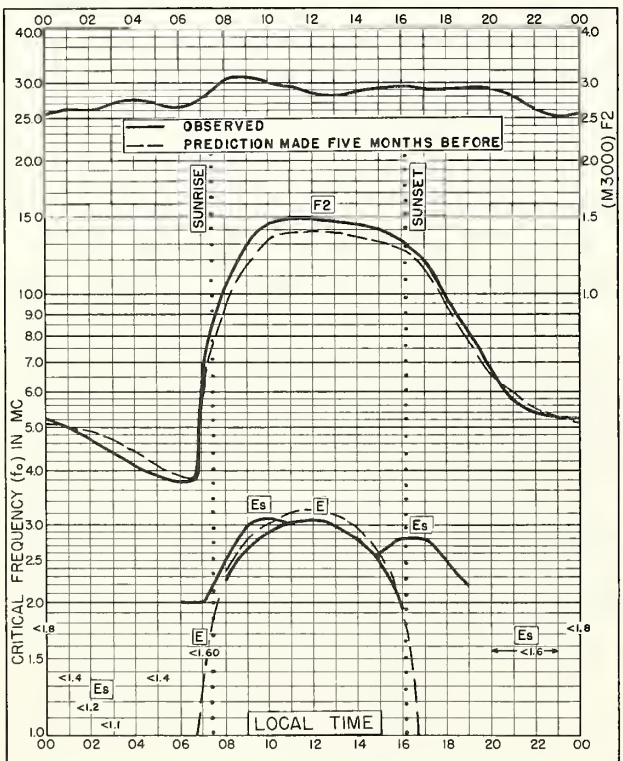


Fig. 100. SLOUGH, ENGLAND
51.5°N , 0.6°W NOVEMBER 1958

Commerce-Standards-Boulder, Colo. NBS 503

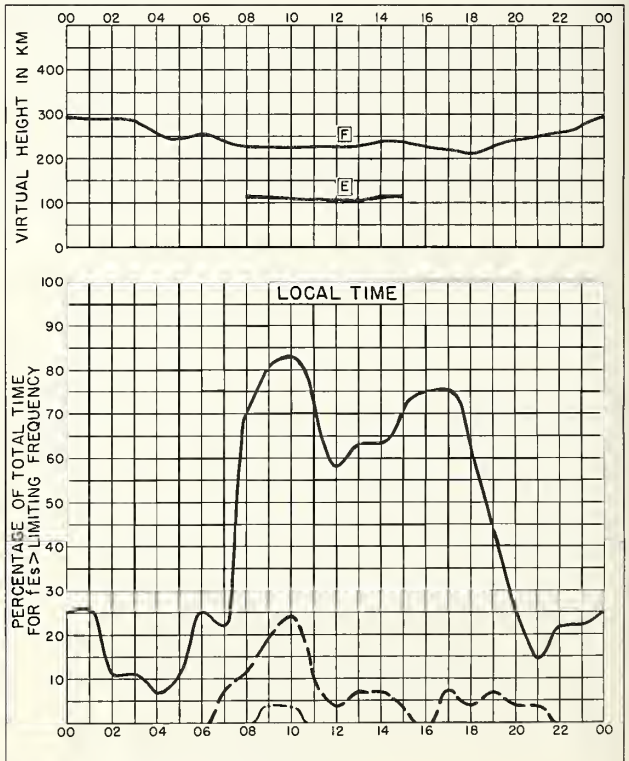


Fig. 101. SLOUGH, ENGLAND NOVEMBER 1958

Commerce-Standards-Boulder, Colo. NBS 490

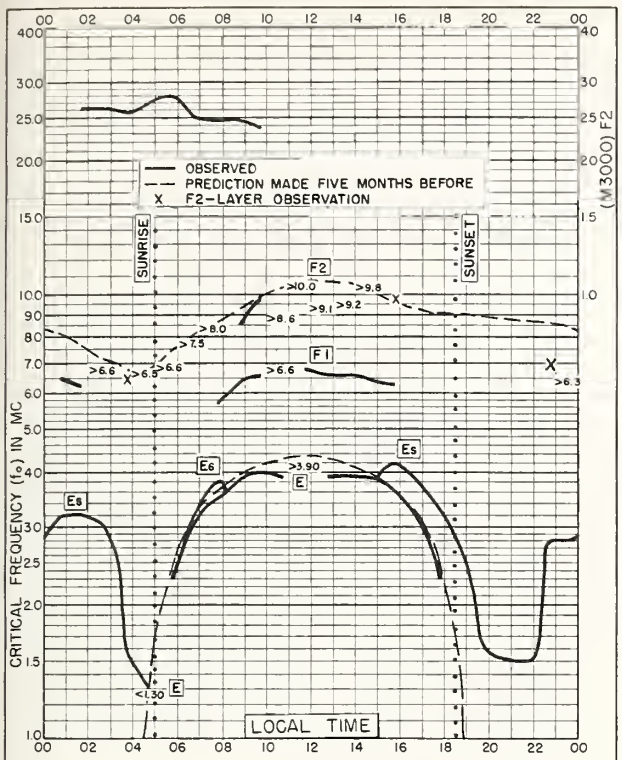


Fig. 102. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E NOVEMBER 1958

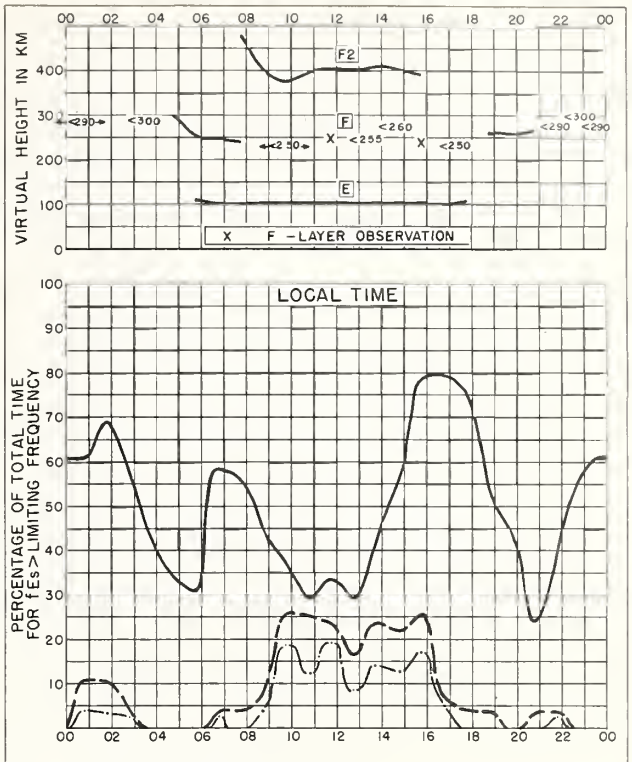


Fig. 103. WATHEROO, W. AUSTRALIA NOVEMBER 1958

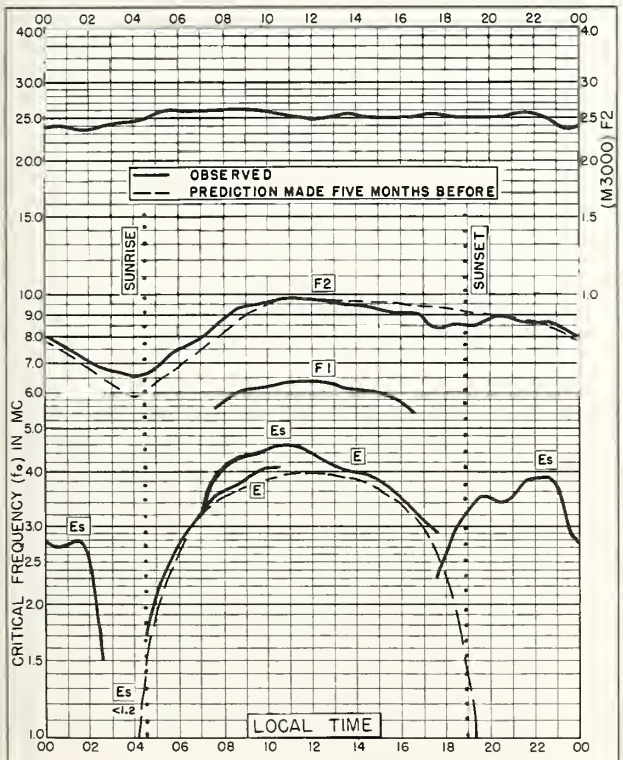
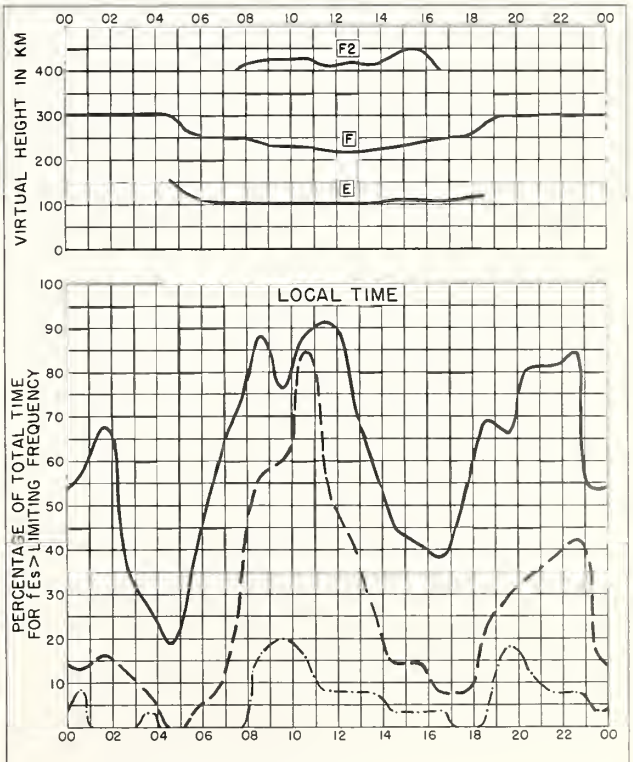


Fig. 104. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E NOVEMBER 1958



NOVEMBER 1958

Fig. 105. CHRISTCHURCH, NEW ZEALAND

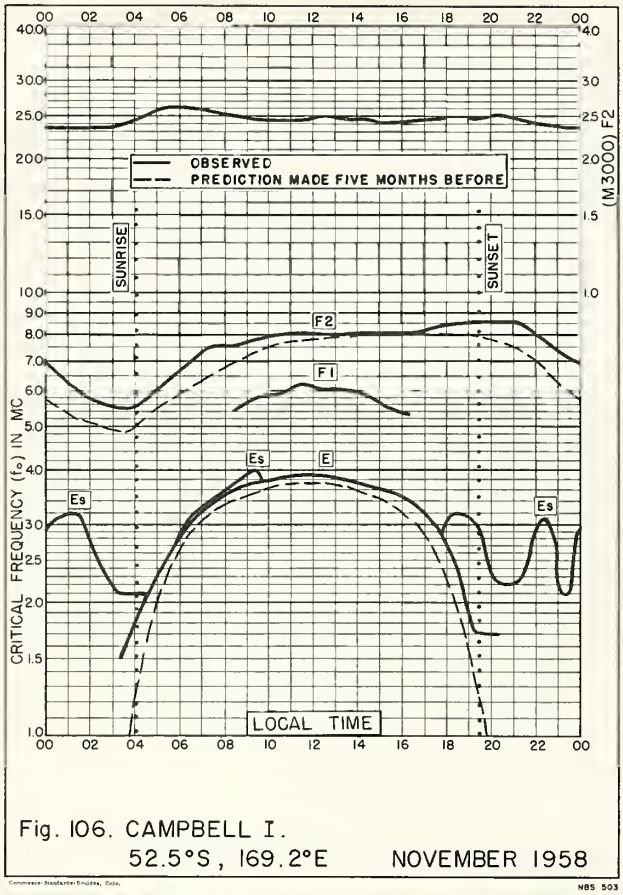
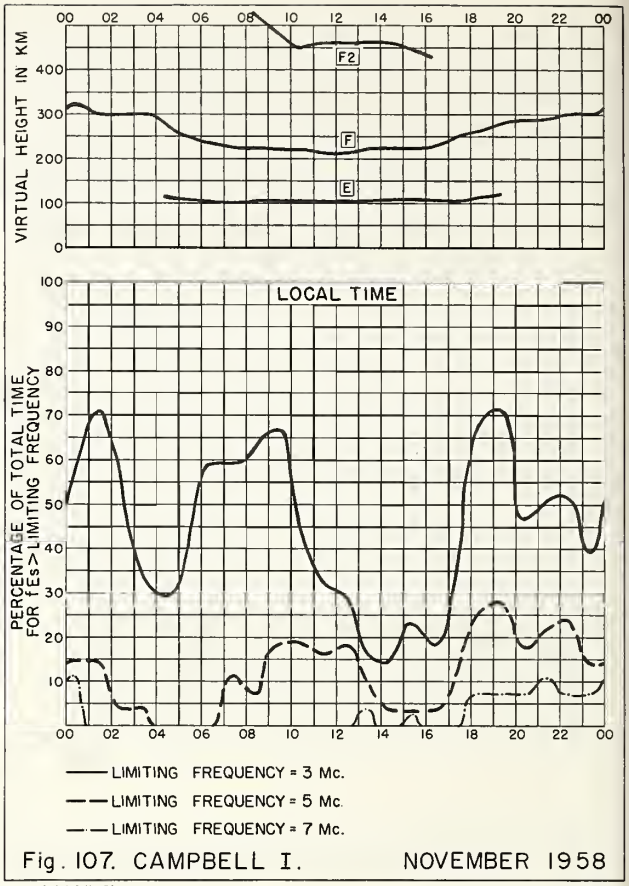


Fig. 106. CAMPBELL I.
52.5°S, 169.2°E NOVEMBER 1958



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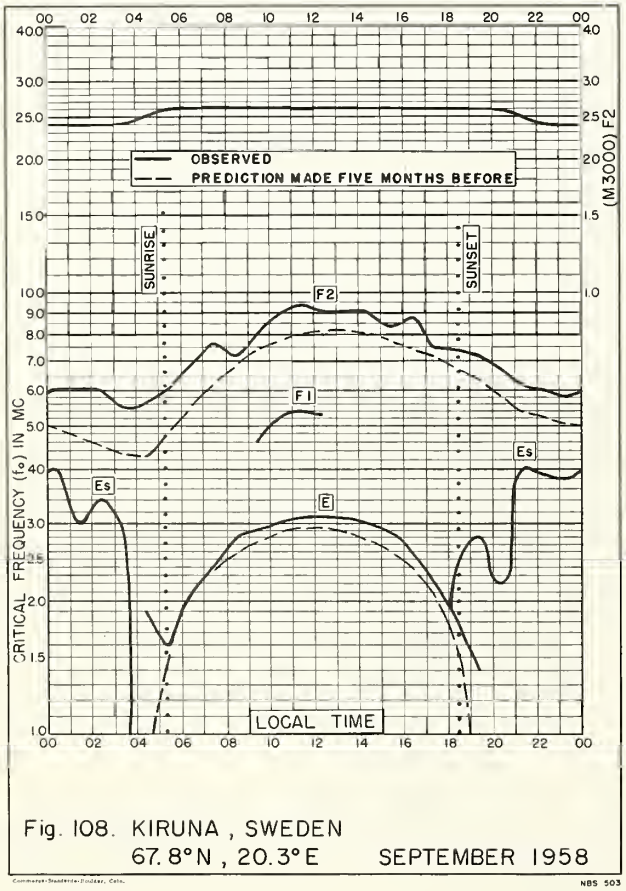

Fig. 108. KIRUNA, SWEDEN
67.8°N, 20.3°E SEPTEMBER 1958

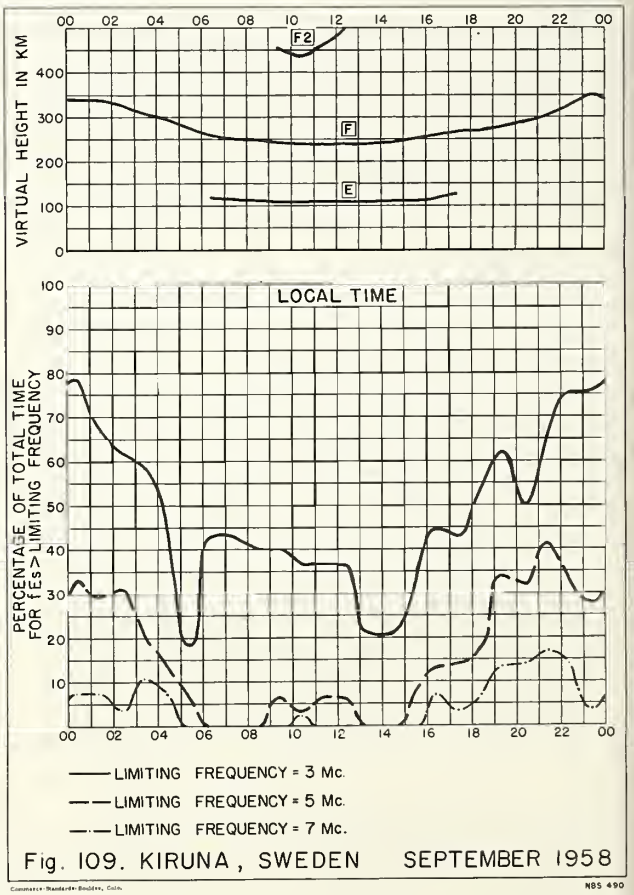

Fig. 109. KIRUNA, SWEDEN SEPTEMBER 1958

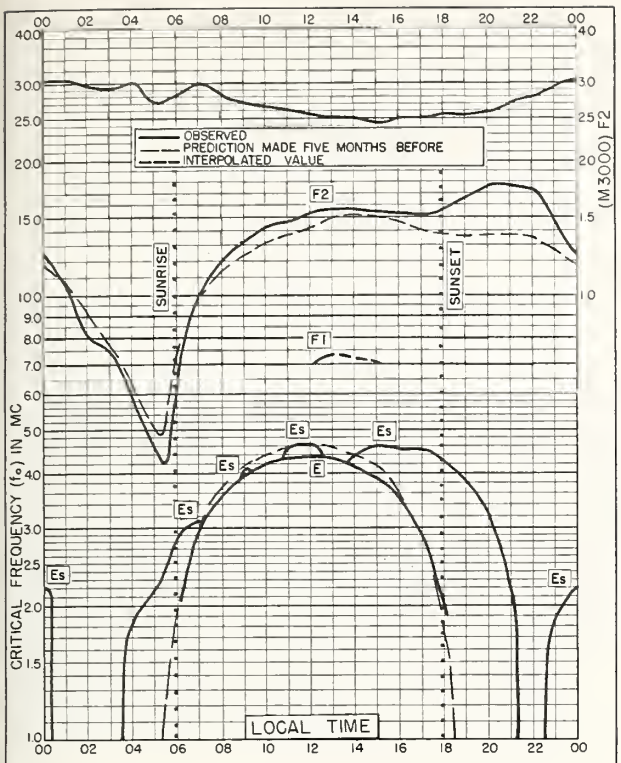

Fig. 110. BOGOTA, COLOMBIA
4.5°N , 74.2°W SEPTEMBER 1958

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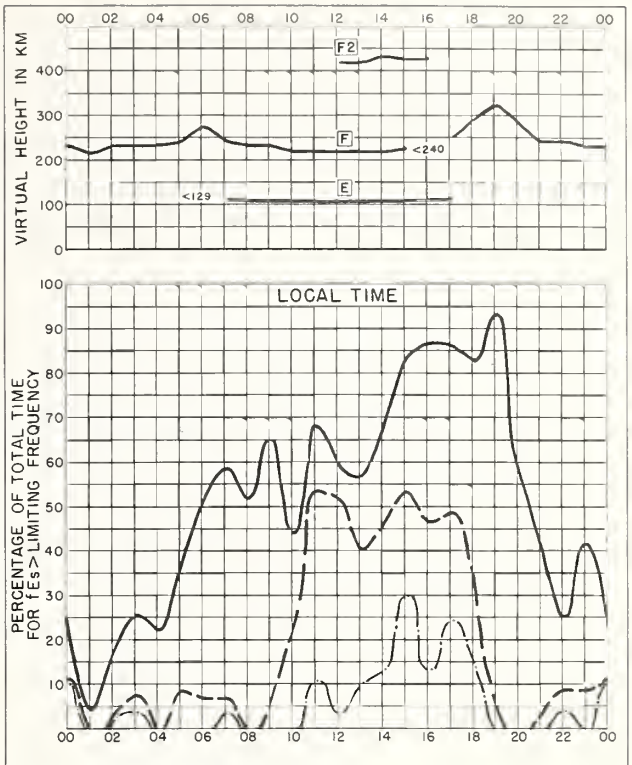

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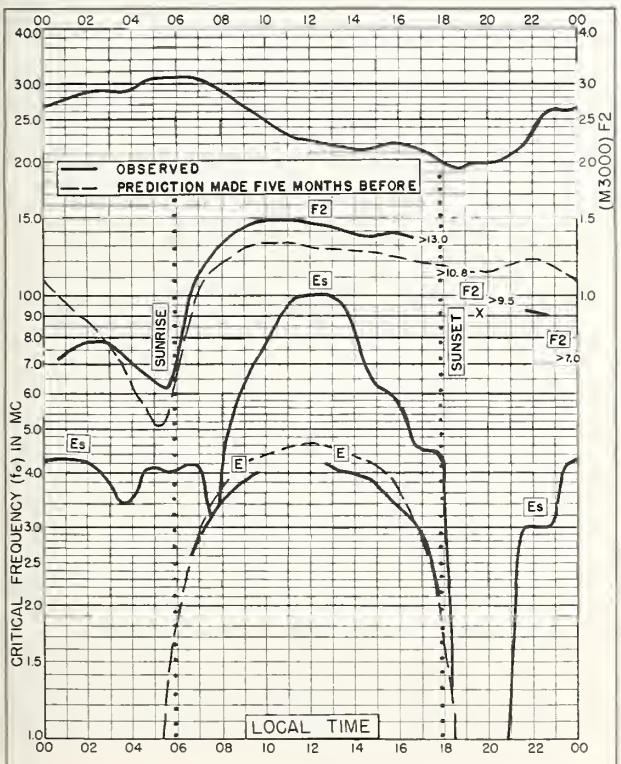

Fig. 112. NATAL , BRAZIL
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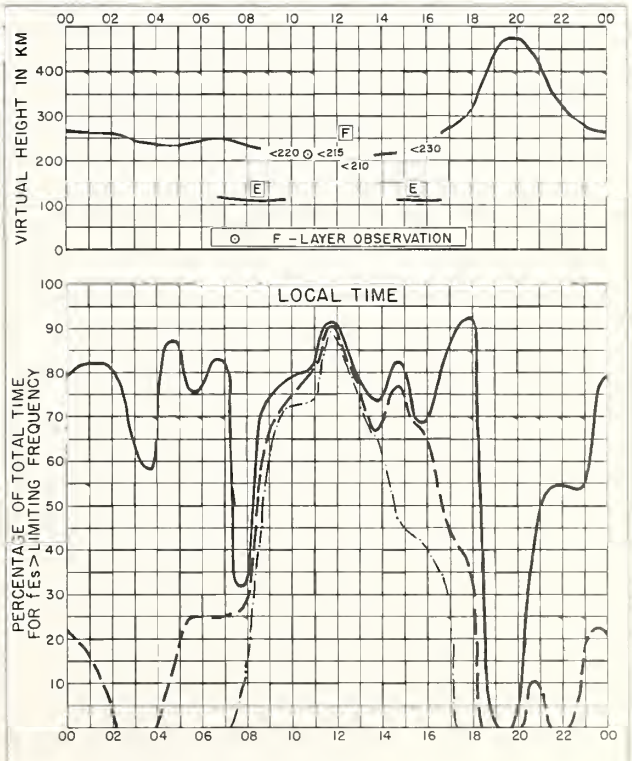

Fig. 113. NATAL , BRAZIL SEPTEMBER 1958

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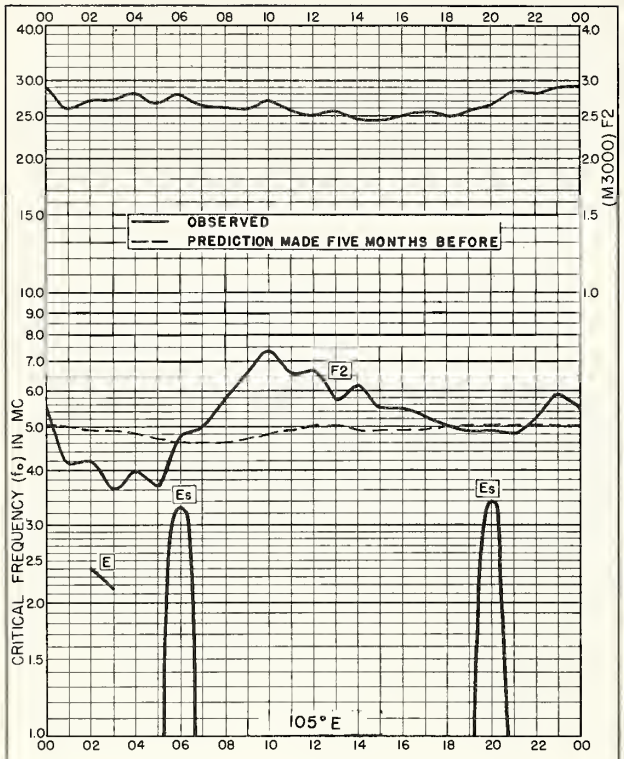

Fig. 114. POLE STATION
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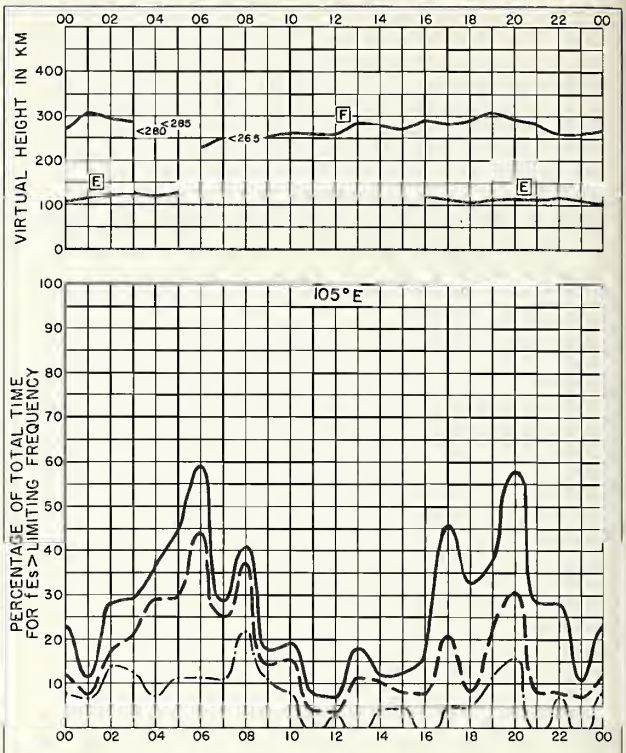

Fig. 115. POLE STATION AUGUST 1958

Commerce-Standards-Boulder, Colo.
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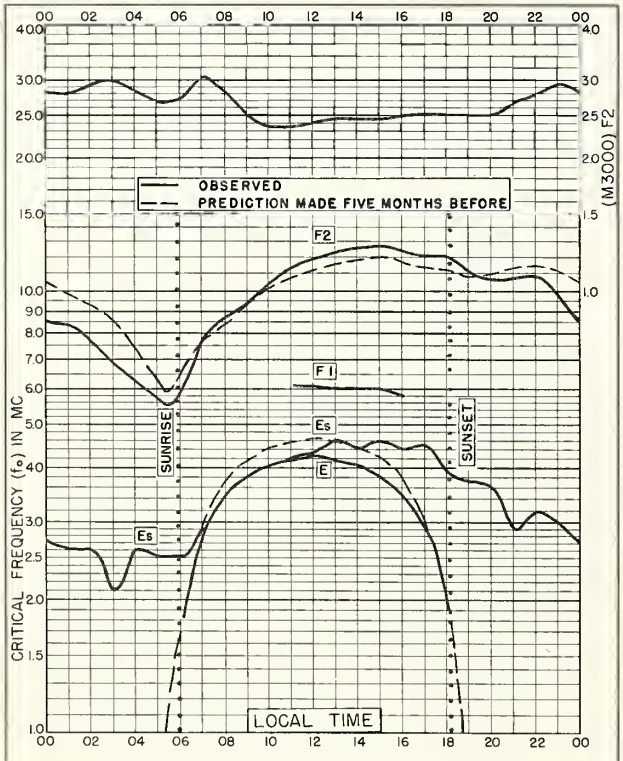

Fig. 116. BOGOTA, COLOMBIA
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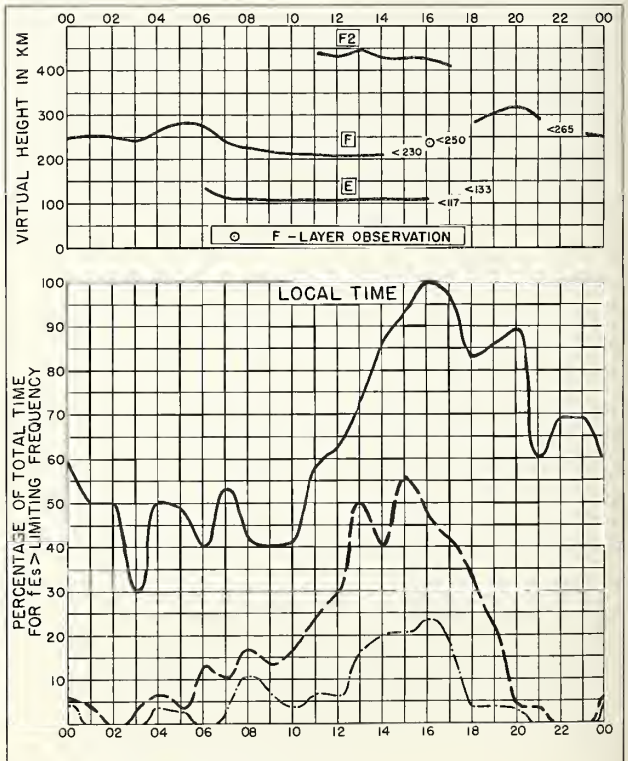

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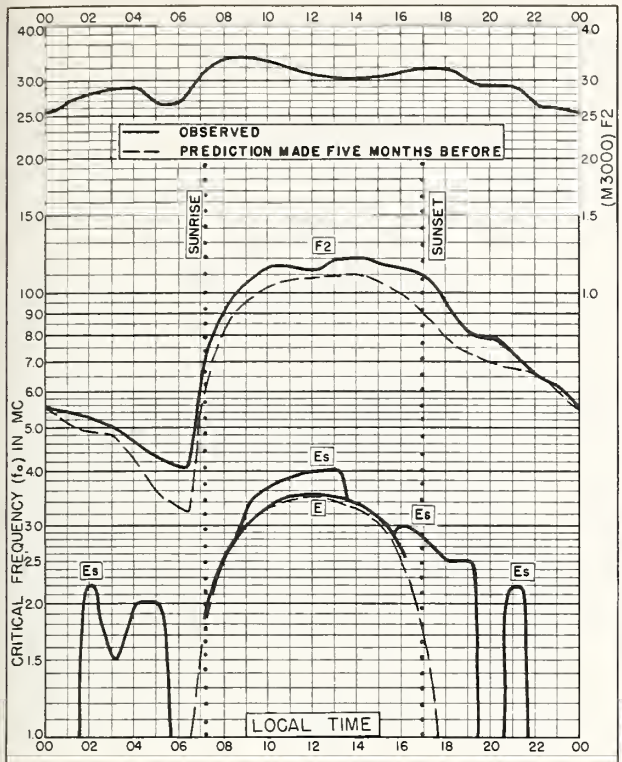

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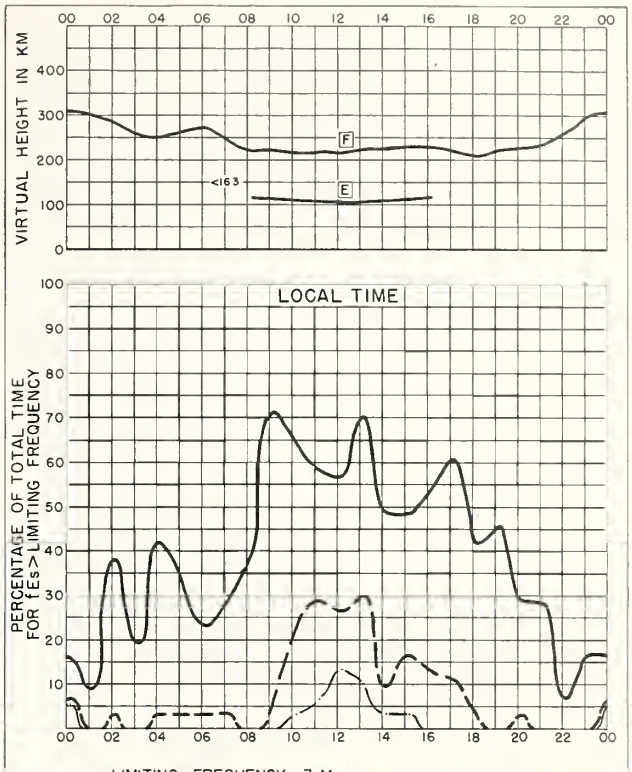
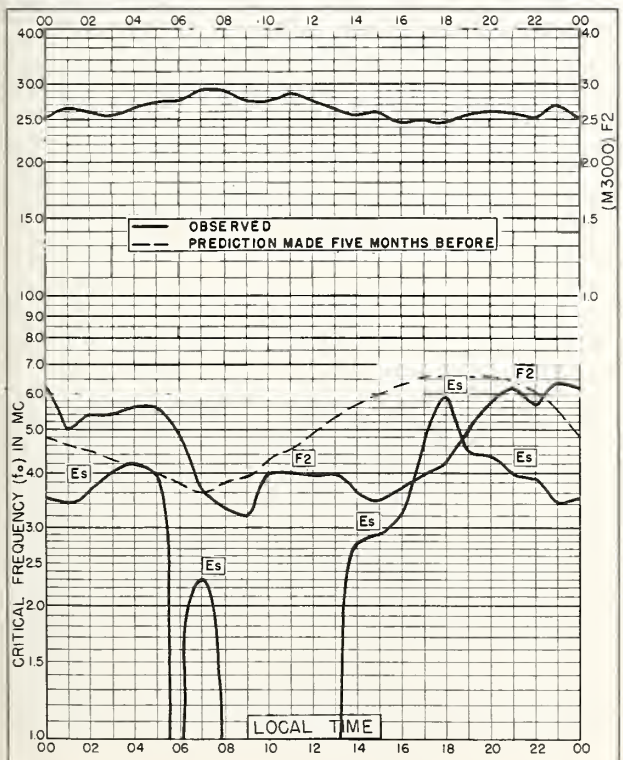


Fig. 119. CONCEPCION, CHILE JULY 1958



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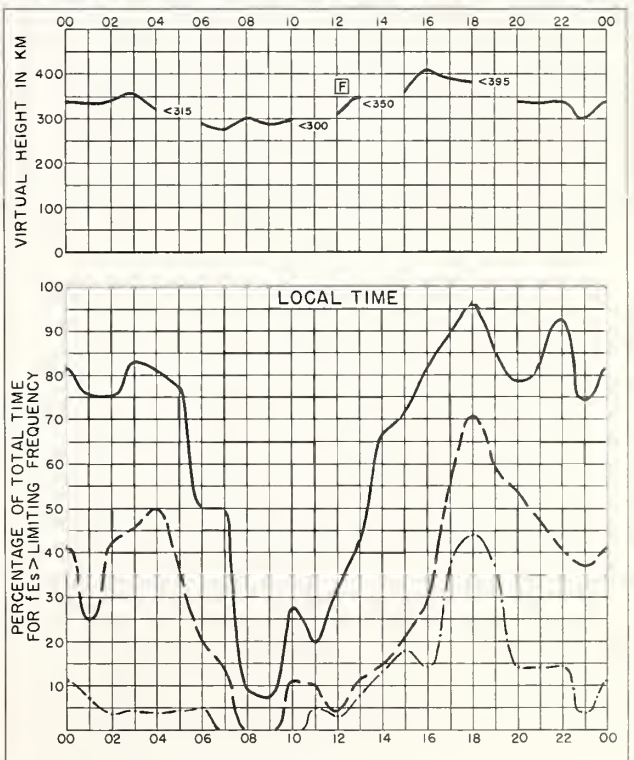

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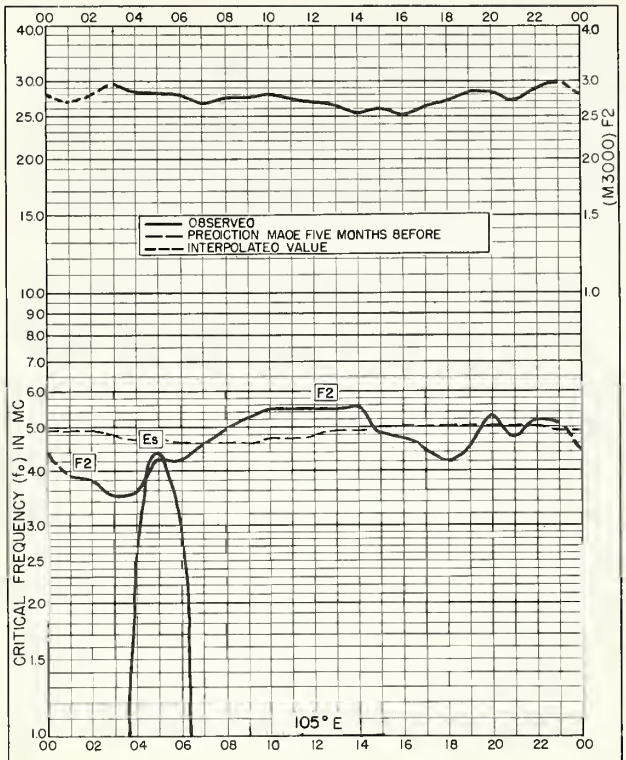

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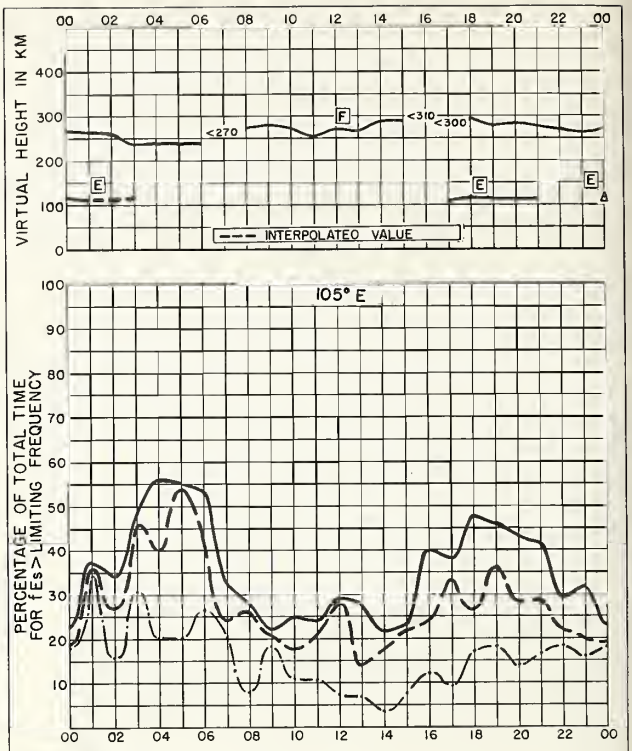

Fig. 123. POLE STATION JULY 1958

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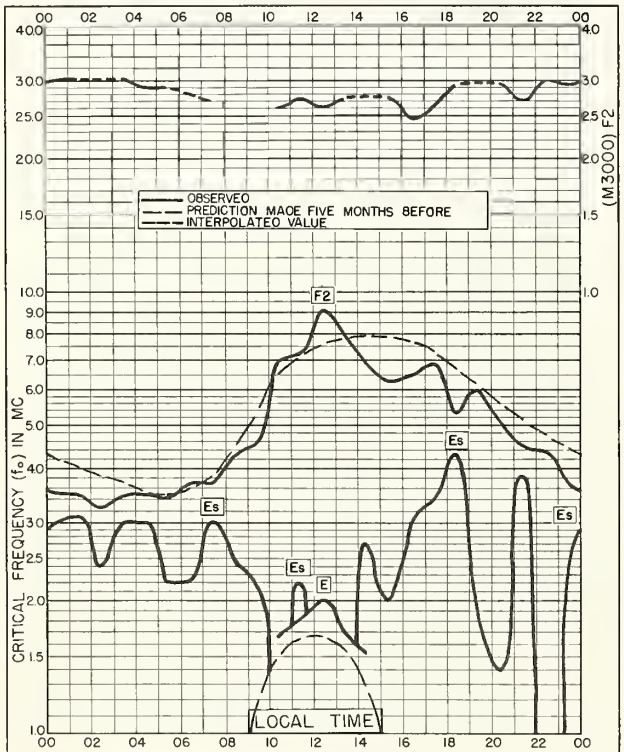

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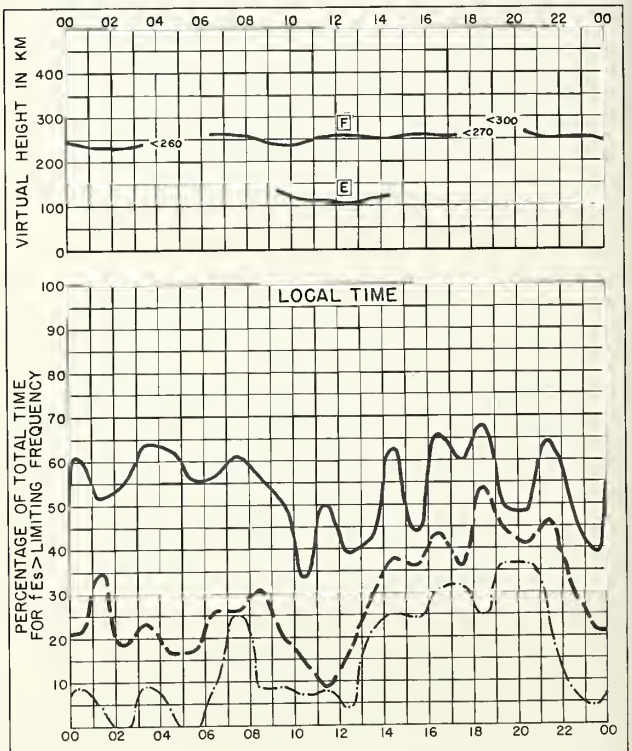

Fig. 125. WILKES STATION JUNE 1958

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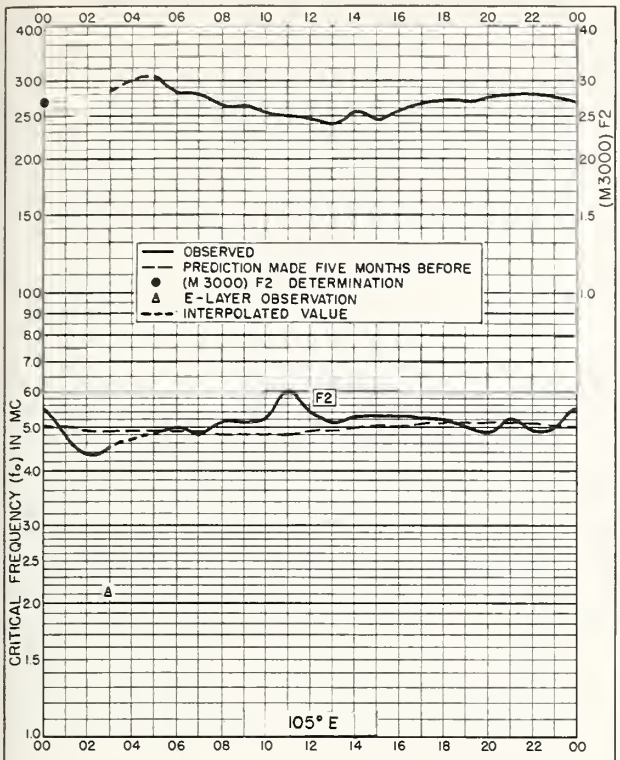

Fig. 126. POLE STATION
90.0°S
JUNE 1958

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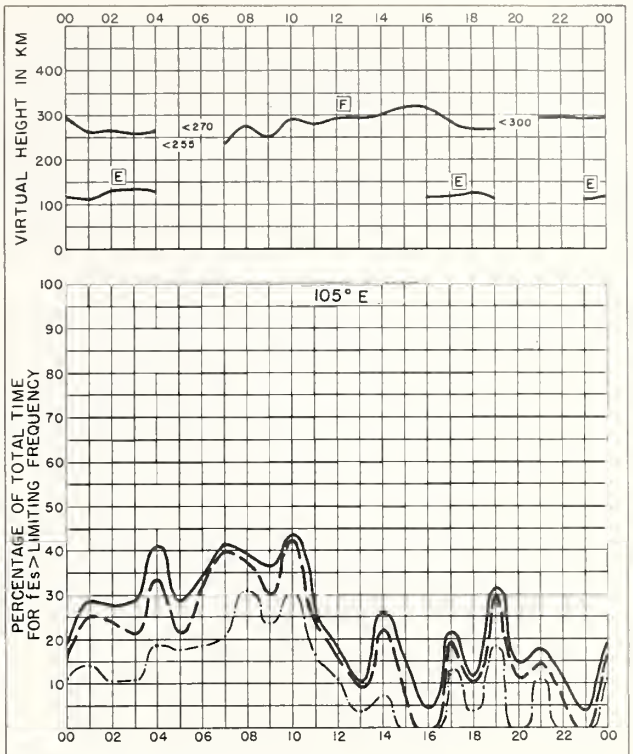

Fig. 127. POLE STATION
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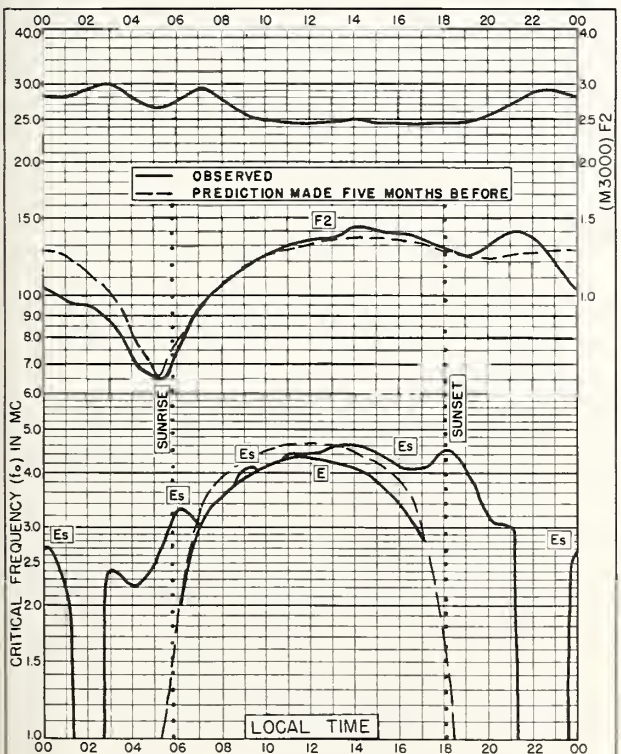

Fig. 128. BOGOTA, COLOMBIA
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MAY 1958

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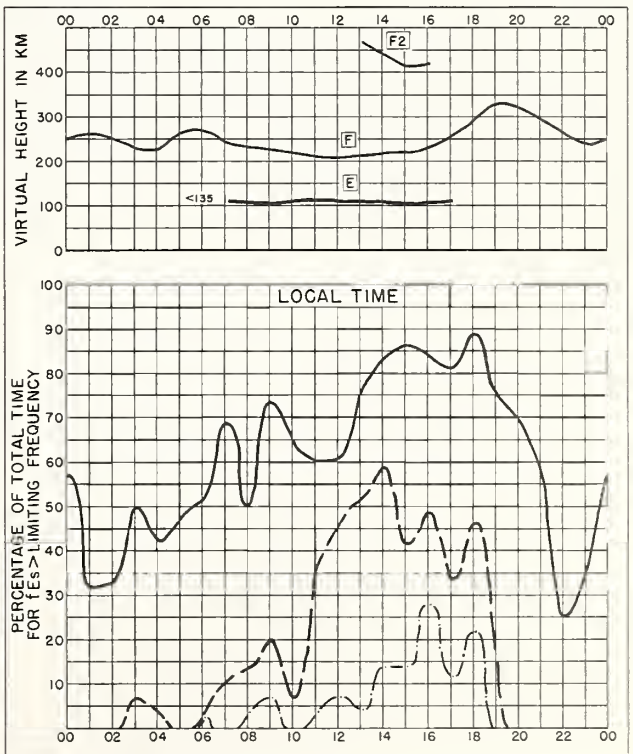

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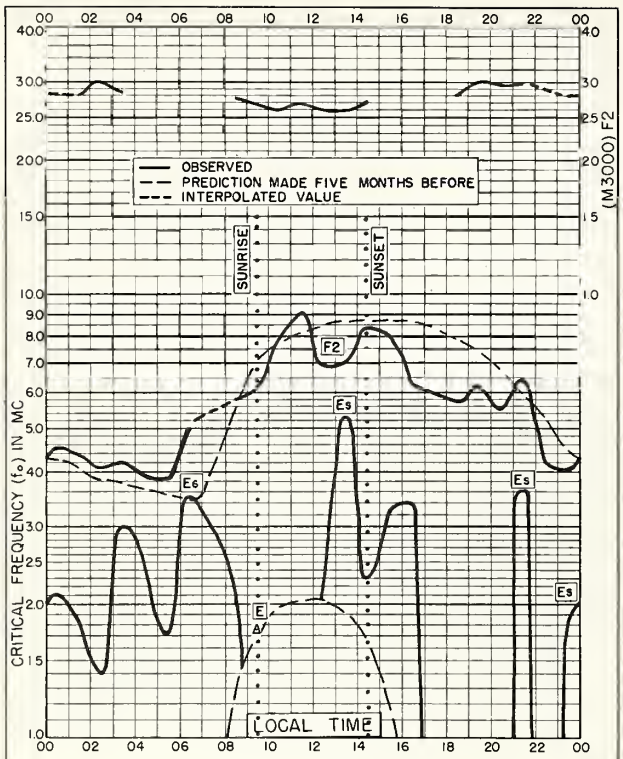

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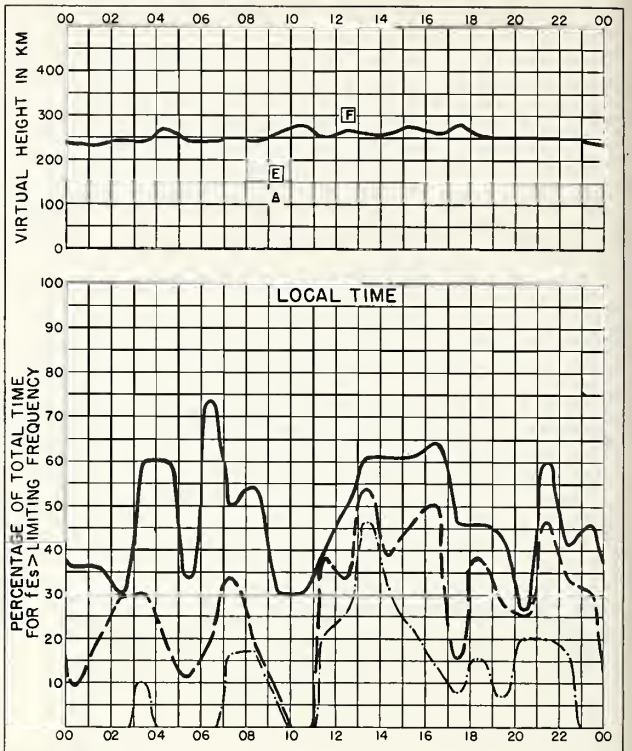

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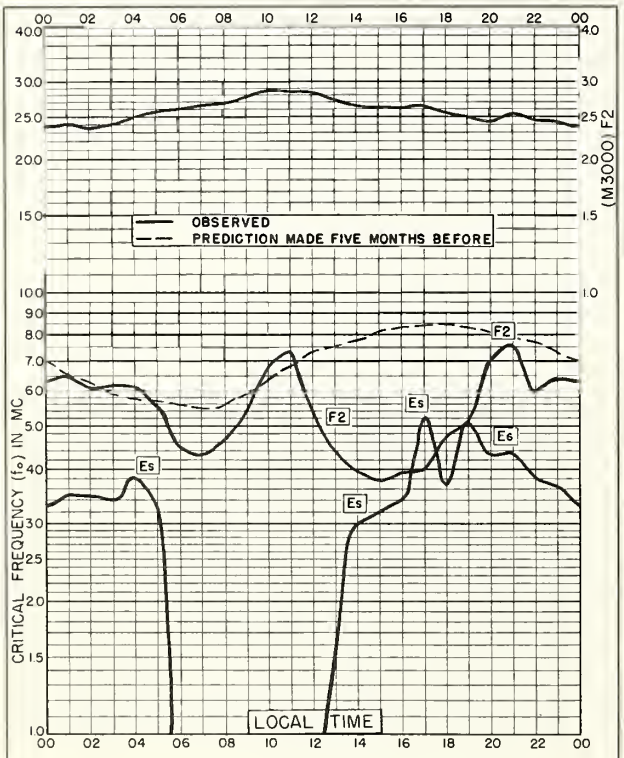

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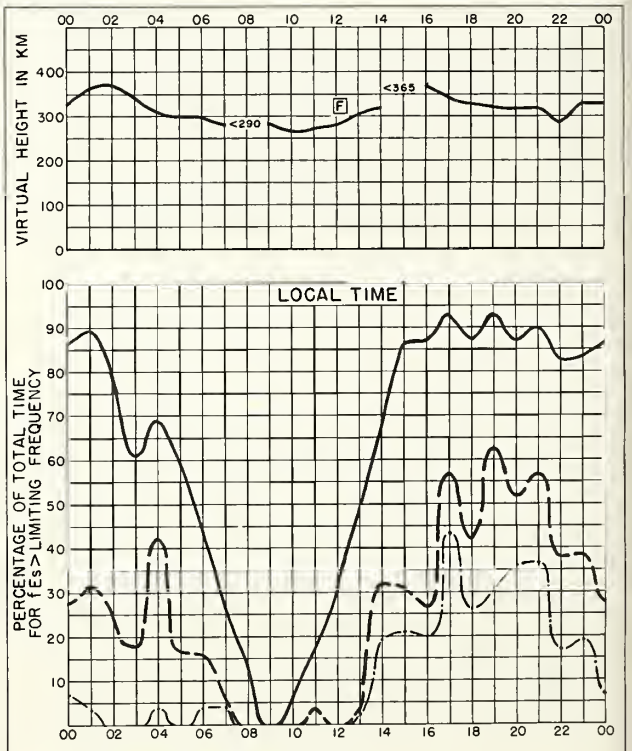

Fig. 133. BYRD STATION MAY 1958

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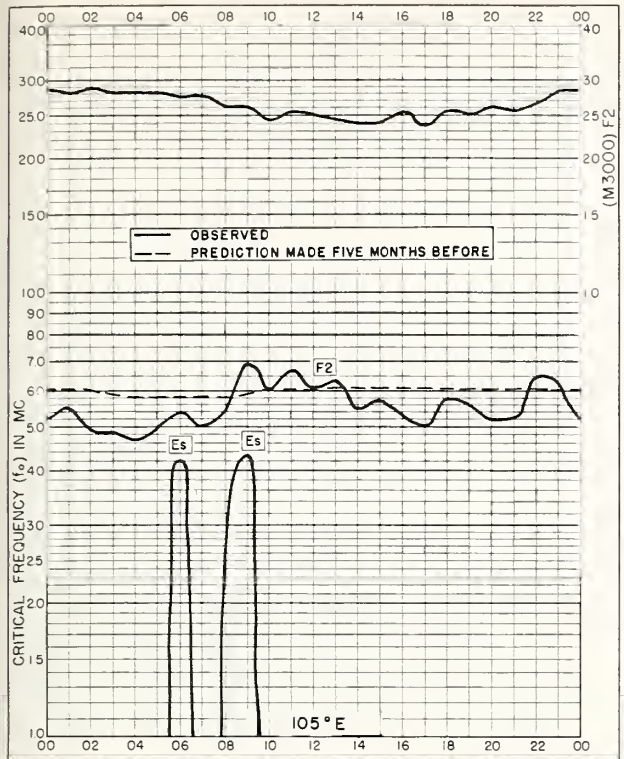

Fig. 134. POLE STATION
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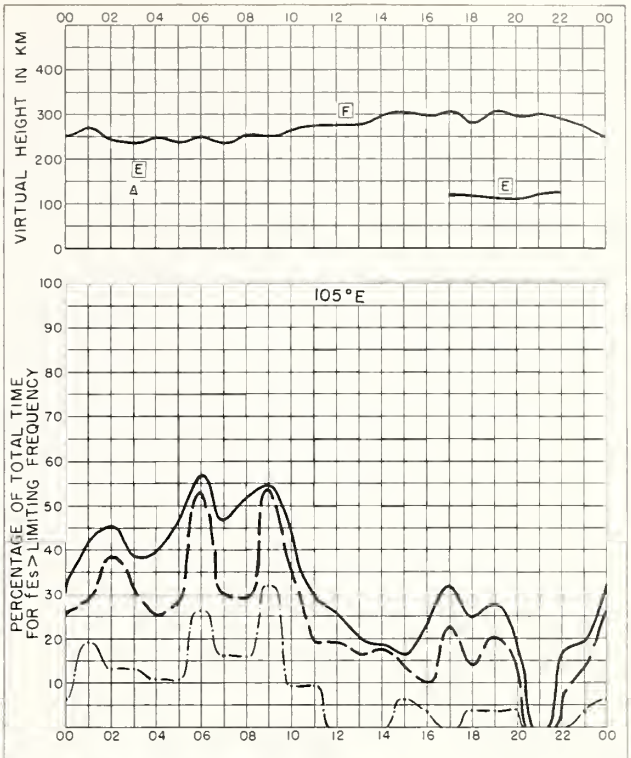

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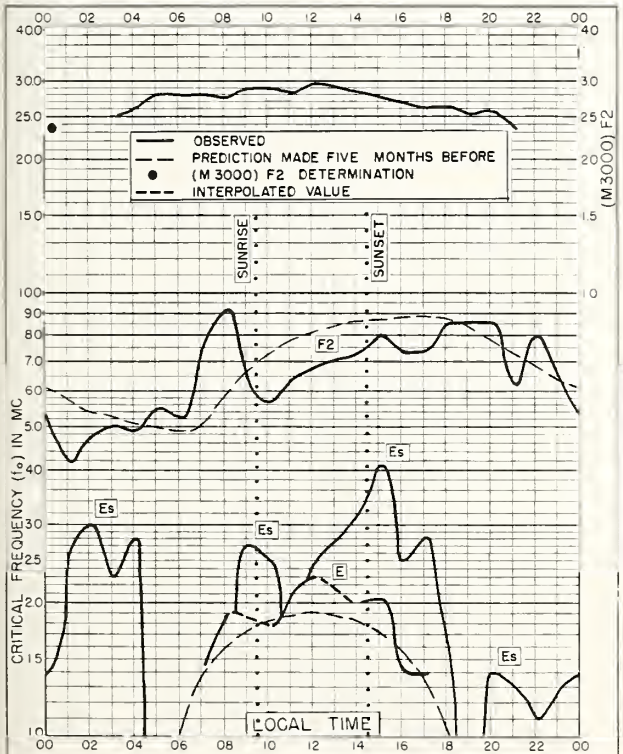

Fig. 136. LITTLE AMERICA
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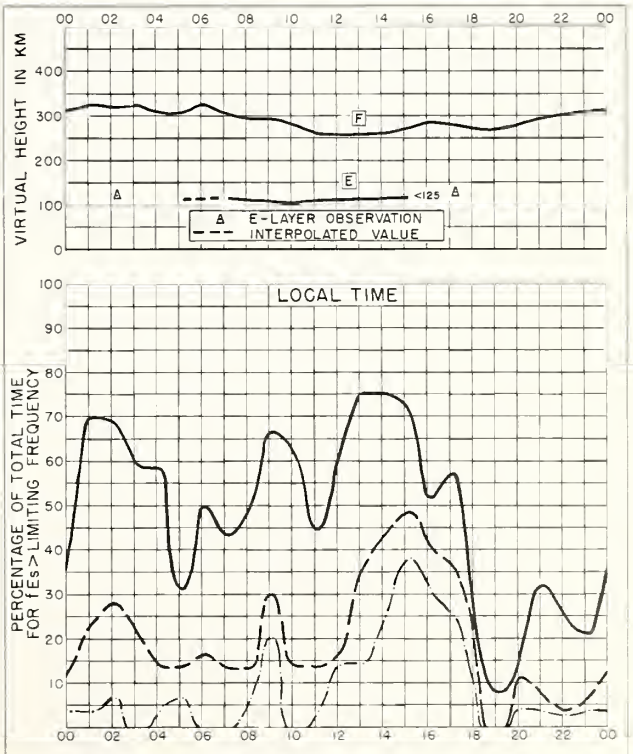

Fig. 137. LITTLE AMERICA APRIL 1958

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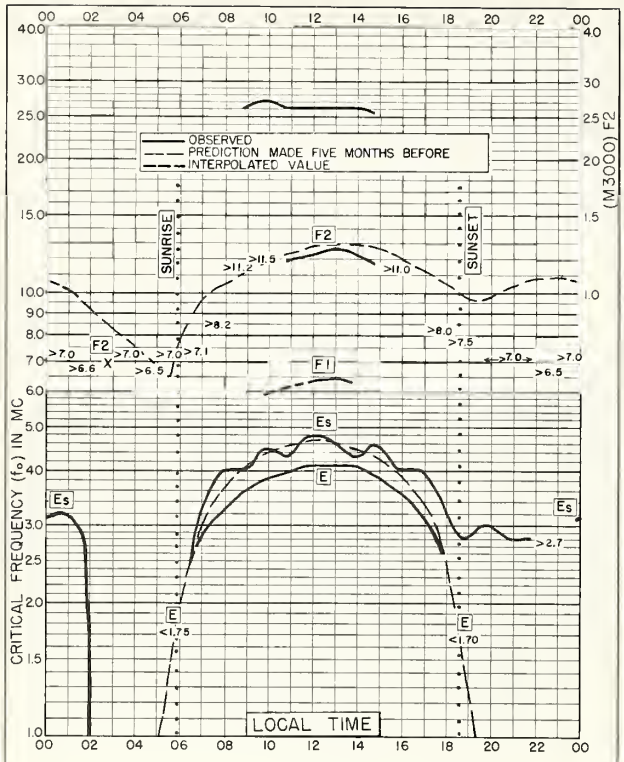

Fig. 138. TOWNSVILLE, AUSTRALIA
19.3°S , 146.7°E FEBRUARY 1958

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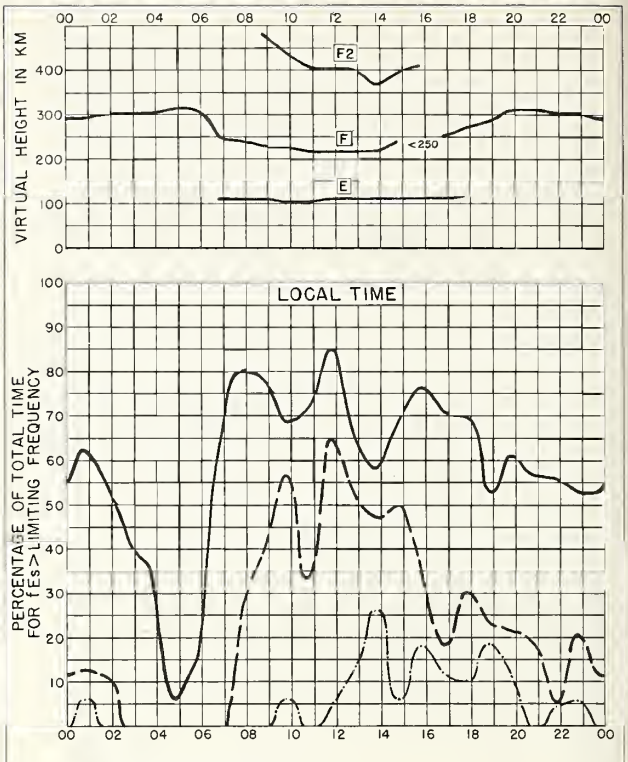

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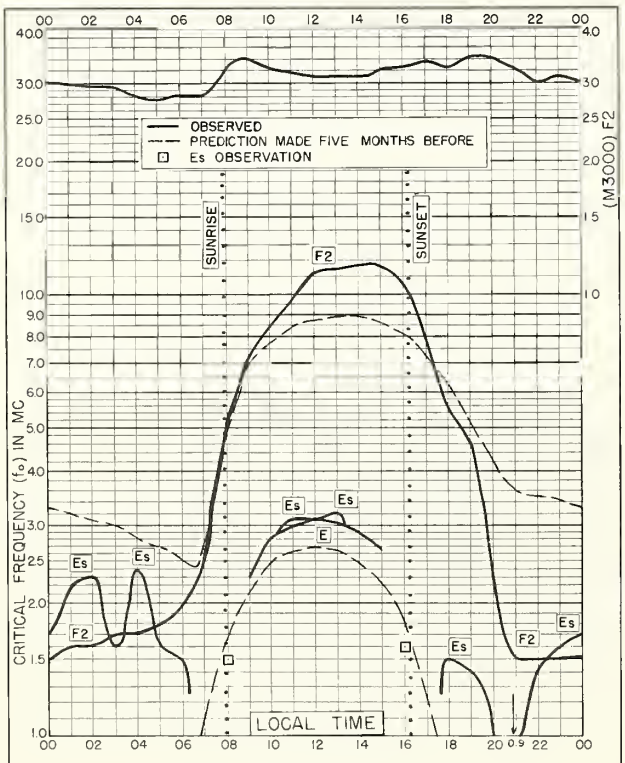

Fig. 140. KERGUELEN I.
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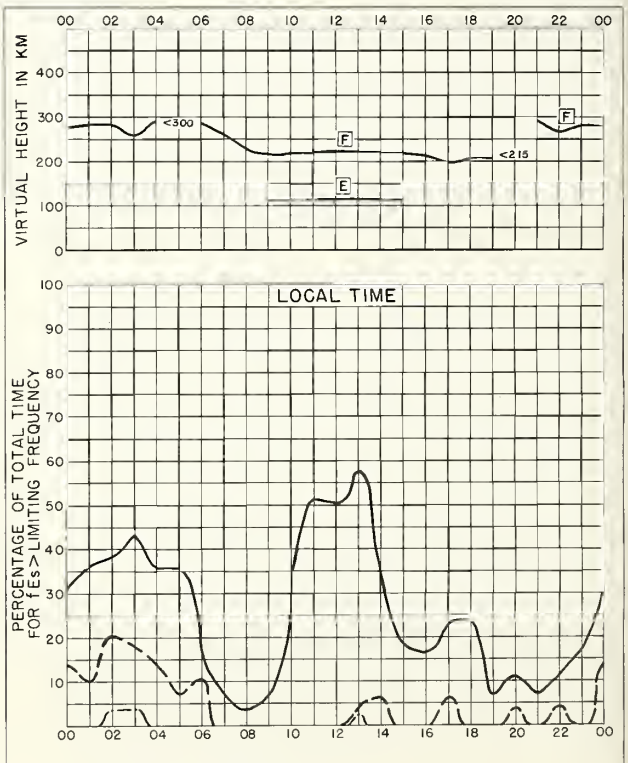

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(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic or other radio propagation data.

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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.

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