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PART A
IONOSPHERIC DATA

ISSUED
JUNE 1964

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

CRPL-F 238
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
23 June 1964

IONOSPHERIC DATA

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IONOSPHERIC DATA

The CRPL-F series bulletins are issued as part of the responsibility of the Central Radio Propagation Laboratory for the exchange and distribution of ionospheric and related geophysical data. Part A, "Ionospheric Data," and Part B, "Solar-Geophysical Data," of the CRPL-F series present a variety of data in convenient form for use in research in radio propagation and the ionosphere and in other geophysical problems.

The current form of the tables of ionospheric data provides the monthly medians and, in addition, the number of values entering into the median determination (count) for all ionospheric characteristics listed. Also, when available, the upper and lower quartile values indicated by UQ and LQ in the tables, are listed for foF2, h'F2, h'F, and M(3000)F2. Quartile values are not listed for the other characteristics because of space limitations. The tables are prepared by IBM machine methods.

Beginning with CRPL-F221, Part A, "Ionospheric Data," the hourly median values for the graphs of critical frequencies and M(3000)F2 were plotted by machine methods instead of manually, as in earlier issues. Graphs of critical frequencies and M(3000)F2 will continue to appear. Graphs of percentage of time of occurrence for fEs and virtual heights of the regular ionospheric layers are no longer included. Data on percentage of time of occurrence of fEs above 3, 5, and 7 Mc are available from the CRPL and the IGY World Data Center for Airglow and Ionosphere.

For many years, the tables of ionospheric data appearing in the F series, Part A, listed values of medians recomputed at CRPL. While this practice enforced a certain uniformity, it was subject to some valid criticism for tampering with the original data. The tables and graphs now show the ionospheric data as they are provided by the originating laboratory. Responsibility for the accuracy and reliability of the data rests entirely with the originator.

Medians of data for the U.S. stations are computed in accordance with the recommendations of the World-Wide Soundings Committee. Data will appear in the F series, Part A, only when the complete daily-hourly tabulations have been received by the CRPL or the IGY World Data Center A for Airglow and Ionosphere.

Information on symbols, terminology, and conventions may be found in the "URSI Handbook of Ionogram Interpretation and Reduction, of the World-Wide Soundings Committee," edited by W. R. Piggott and K. Rawer (Elsevir, 1961), which supersedes previous documents. A list of symbols is available from CRPL on request.

The following table contains the latest available information on smoothed observed Zurich sunspot numbers, beginning with the minimum of April 1954. Final numbers are listed through June 1963, the succeeding values being based on provisional data.

Smoothed Observed Zurich Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	10	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	109	102	98	93	88	84
1961	80	75	69	64	60	56	53	52	52	51	50	49
1962	45	42	40	39	39	38	37	35	33	31	30	30
1963	29	30	30	29	29	28	28	27	27	26	23	
1964												

Units of Ionospheric Data Tables

foF2, foEs - - - Tenths of a megacycle
 foF1, foE - - - Hundredths of a megacycle
 h'F2, h'F, h'E - Kilometers
 M(3000)F2 - - - Hundredths

NOTE: Occasionally, when the median falls between two of the observed values, the median is carried an extra decimal place beyond these units. Those cases are easily identifiable by the extra digit appearing to the right of the number, in a column usually left blank.

MED - Median
 CNT - Count
 UQ - Upper Quartile
 LQ - Lower Quartile

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

THE IONOSPHERIC DATA GIVEN IN TABLES 1 TO 100 AND FIGURES 1 TO 100 WERE ASSEMBLED BY THE CENTRAL RADIO PROPAGATION LABORATORY FOR ANALYSIS, CORRELATION AND DISTRIBUTION. THE FOLLOWING ARE THE SOURCES OF THE DATA IN THIS ISSUE:

REPUBLICA ARGENTINA, MINISTERIO DE MARINA
BUENOS AIRES, ARGENTINA

COMMONWEALTH OF AUSTRALIA, DEPARTMENT OF THE INTERIOR
COCOS IS.

COMMONWEALTH OF AUSTRALIA, IONOSPHERIC PREDICTION SERVICE OF
THE COMMONWEALTH OBSERVATORY
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TOWNSVILLE, AUSTRALIA
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TAMANRASSET, ALGERIA

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MACAU

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EL CERILLO, MEXICO

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UNITED STATES ARMY SIGNAL CORPS., UNITED STATES OF AMERICA
ADAK, ALASKA
FT. MONMOUTH, NEW JERSEY

NATIONAL BUREAU OF STANDARDS, UNITED STATES OF AMERICA
(CENTRAL RADIO PROPAGATION LABORATORY)
ANCHORAGE, ALASKA
BARROW, ALASKA
MAUI, HAWAII

TABLE 9

TRONSO, NORWAY 184°27N, 19°40E TIME 15:00

HOURL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	47	47	46	44	45	45	47	46	48	50	52	52	52	50	50	50	49	50	49	49	46	46	45	51	50
MED CNT	7	6	12	13	17	18	19	22	20	23	22	27	26	23	27	26	30	29	26	24	21	16	16	15	15
UO	34	30	32	43	40	41	51	54	52	46	50	49	47	48	46	45	47	47	47	42	41	41	45	42	
LQ	43	44	42	43	40	41	51	54	52	46	50	49	47	48	46	45	47	47	47	42	41	41	45	42	
N'F2	4	2	5	6	5	8	12	17	20	22	25	25	22	20	11	9	4	2	1	1	1	1	1	2	
MED CNT	280	370	455	415	465	470	485	470	400	400	450	450	380	305	300	295	290	280	270	260	250	240	230	220	
UO	260	280	310	350	350	370	340	345	370	340	340	340	310	240	210	210	210	210	210	210	210	210	210	210	
LQ	260	280	310	350	350	370	340	345	370	340	340	340	310	240	210	210	210	210	210	210	210	210	210	210	
N'F	205	275	250	250	240	240	235	230	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	
MED CNT	300	290	310	305	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
UO	300	290	310	305	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
LQ	290	285	280	280	280	275	255	270	285	290	270	270	270	270	270	270	270	270	270	270	270	270	270	270	
M13000F2	3	3	300	290	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
MED CNT	3	3	300	290	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
UO	300	290	300	290	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
LQ	290	285	280	280	280	275	255	270	285	290	270	270	270	270	270	270	270	270	270	270	270	270	270	270	
f6F1	3	5	8	12	17	20	22	25	25	22	20	11	9	4	2	1	1	1	1	1	1	1	1	1	
MED CNT	3	5	8	12	17	20	22	25	25	22	20	11	9	4	2	1	1	1	1	1	1	1	1	1	
UO	300	290	300	290	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
LQ	290	285	280	280	280	275	255	270	285	290	270	270	270	270	270	270	270	270	270	270	270	270	270	270	
f6E	2	3	185	180	200	225	245	255	260	260	260	300	300	300	270	280	270	250	210	160	140	130	120	110	
MED CNT	2	3	185	180	200	225	245	255	260	260	260	300	300	300	270	280	270	250	210	160	140	130	120	110	
UO	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
LQ	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
N'E	1	2	4	110	110	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	
MED CNT	1	2	4	110	110	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	
UO	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
LQ	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
f6Es	32	32	32	30	25	24	21	21	18	32	32	6	6	6	6	6	6	6	6	6	6	6	6	6	
MED CNT	32	32	32	30	25	24	21	21	18	32	32	6	6	6	6	6	6	6	6	6	6	6	6	6	
UO	300	290	300	290	300	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	285	290	
LQ	290	285	280	280	280	275	255	270	285	290	270	270	270	270	270	270	270	270	270	270	270	270	270	270	

SWEEP 0.7 MC TO 25.0 MC IN 5 MINUTES, AUTOMATIC. MAY, 1963.

TABLE 10

ANCHORAGE, ALASKA 161°27N, 159°04W TIME 15:00

HOURL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fF2	35	32	30	30	33	36	40	42	46	47	48	48	47	47	46	46	46	47	48	48	46	47	40	37
MED CNT	20	24	26	30	30	30	31	29	30	31	30	30	30	30	30	30	30	29	30	28	28	26	22	22
UO	54	38	35	29	34	37	39	42	41	40	42	41	40	40	40	40	40	40	40	40	40	40	40	40
LQ	54	38	35	29	34	37	39	42	41	40	42	41	40	40	40	40	40	40	40	40	40	40	40	40
N'F2	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
MED CNT	308	300	300	290	290	280	275	275	270	280	275	280	275	275	288	285	300	300	312	315	320	315	310	312
UO	325	310	308	300	302	285	285	290	288	298	300	295	295	300	305	310	315	320	325	330	320	320	320	320
LQ	295	280	282	285	282	265	265	265	260	255	262	265	255	270	270	270	288	285	300	315	312	310	300	300
f6F1	280	320	350	370	390	390	410	420	420	420	420	420	420	420	420	410	400	380	360	360	360	360	360	360
MED CNT	9	30	31	29	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
UO	175	200	230	250	272	265	290	300	300	300	300	300	300	300	300	290	270	248	230	200	165	165	165	165
LQ	10	44	48	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
f6E	9	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MED CNT	9	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
UO	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
LQ	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
N'E	1	11	5	135	111	107	103	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
MED CNT	1	11	5	135	111	107	103	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
UO	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
LQ	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
f6Es	20	24	20	21	23	25	27	28	29	31	30	32	31	30	30	29	29	27	25	25	24	26	26	23
MED CNT	20	24	20	21	23																			

TABLE 10

17% IN. 55,4SEI

RESOLUTE BAY, CANADA

SHEEP 1.4 MC TO 25.0 MC IN 5. MINUTES, AUTOMATIC.

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	MED	35	37	40	41	47	24	46	01	08	74	89	92	114	133	179	155	121	131	120	33	64	56	59	36
	CNT	19	19	21	24	17	25	22	24	24	25	27	17	24	24	23	20	26	26	28	25	22	23	19	
	UQ																								
	LG																								
nF2	MED							245	265	295	375	350	340	315	360	285									
	CNT							7	7	24	26	27	28	27	25	25									
	UQ																								
	LG																								
nF	MED	110	180	255	240	350	275	225	235	225	210	215	225	220	230	225	235	235	230	200	210	210	250	315	330
	CNT	26	25	28	26	38	28	22	26	24	24	22	24	25	24	21	23	24	27	25	28	28	24	24	27
	UQ																								
	LG																								
MIS0001F2	MED																								
	CNT																								
	UQ																								
	LG																								
fF1	MED																								
	CNT																								
	UQ																								
	LG																								
fE	MED																								
	CNT																								
	UQ																								
	LG																								
nE	MED																								
	CNT																								
	UQ																								
	LG																								
fEs	MED																								
	CNT																								
	UQ																								
	LG																								

TABLE 11

17% IN. 56,2SEI

RESOLUTE BAY, CANADA

SHEEP 1.4 MC TO 25.0 MC IN 5. MINUTES, AUTOMATIC.

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	MED	30	35	30	37	34	32	34	35	38	40	42	44	44	48	53	47	43	46	45	41	46	36	31	31
	CNT	18	18	18	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
	UQ																								
	LG																								
nF2	MED																								
	CNT																								
	UQ																								
	LG																								
nF	MED	240	240	250	230	235	230	235	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	
	CNT	26	25	29	29	28	28	31	31	31	31	31	29	210	210	210	210	210	210	210	210	210	210	210	
	UQ																								
	LG																								
MIS0001F2	MED																								
	CNT																								
	UQ																								
	LG																								
fF1	MED																								
	CNT																								
	UQ																								
	LG																								
fE	MED																								
	CNT																								
	UQ																								
	LG																								
nE	MED																								
	CNT																								
	UQ																								
	LG																								
fEs	MED																								
	CNT																								
	UQ																								
	LG																								

TABLE 12

11% IN. 52,4SEI

RESOLUTE BAY, CANADA

SHEEP 1.4 MC TO 25.0 MC IN 5. MINUTES, AUTOMATIC.

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fF2	MED	37	38	36	35	33	43	44	45	47	41	42	41	43	43	44	47	43	43	41	42	41	43	35
	CNT	24	28	28	28	27	28	27	29	29	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	UQ																							
	LG																							
nF2	MED																							
	CNT																							
	UQ																							
	LG																							
nF	MED	300	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160	150						

TABLE 21
BOME, HESAT
104LBN, 12-24-61

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
16 F2	MED	35	34	33	32	32	31	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
	CNT	21	26	23	23	26	26	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	UQ	38	37	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	LQ	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
16 F2	MED																								
	CNT																								
	UQ																								
	LQ																								
16 F	MED	350	306	300	300	299	280	250	234	228	210	200	190	180	170	160	150	140	130	120	110	100	90	80	70
	CNT	21	26	23	23	26	26	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	UQ	350	310	300	300	300	280	250	234	228	210	200	190	180	170	160	150	140	130	120	110	100	90	80	70
	LQ	260	280	270	270	270	260	240	228	210	200	190	180	170	160	150	140	130	120	110	100	90	80	70	60
MIS000IF2	MED	300	290	290	290	290	335	345	340	340	335	320	325	335	330	325	335	340	345	340	345	340	345	340	345
	CNT	17	16	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	UQ	300	290	290	290	290	335	345	340	340	335	320	325	335	330	325	335	340	345	340	345	340	345	340	345
	LQ	285	275	285	280	285	300	305	325	335	320	320	315	315	320	320	320	320	320	320	320	320	320	320	320
16 F1	MED																								
	CNT																								
	UQ																								
	LQ																								
16 E	MED																								
	CNT																								
	UQ																								
	LQ																								
16 E	MED																								
	CNT																								
	UQ																								
	LQ																								

MARCH, 1963

SWEEP 1-4 MC TO 15.0 MC IN 5 MINUTES, AUTOMATIC.

TABLE 22
OTTAWA, CANADA
183AN, 75-00

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
16 F2	MED	32	30	29	29	29	29	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
	CNT	31	29	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	UQ	24	22	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
	LQ	20	20	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
16 F2	MED																								
	CNT																								
	UQ																								
	LQ																								
16 F	MED	320	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	
	CNT	30	29	26	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
	UQ	320	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	
	LQ	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	
MIS000IF2	MED	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	CNT																								
	UQ	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	LQ																								
16 F1	MED																								
	CNT																								
	UQ																								
	LQ																								
16 E	MED																								
	CNT																								
	UQ																								
	LQ																								
16 E	MED																								
	CNT																								
	UQ																								
	LQ																								

MARCH, 1963

SWEEP 1-4 MC TO 16.0 MC IN 16 SECONDS.

TABLE 24
RESOLUTE BAY, CANADA
175L, 75, 24-04-61

HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
16 F2	MED	27	27	28	26	28	29	30	35	39	40	42	47	48	48	46	42	42	40	37	36	30	30	28
	CNT	22	23	24	25	26	27	28	27	27	26	27	28	27	27	27	28	28	26	26	25	24	25	23
	UQ	22	23	24	25	26	27	28	27	27	26	27	28	27	27	27	28	28	26	26	25	24	25	23
	LQ	22	23	24	22	24	24	27	31	32	32	40	40	42	42	42	42	38	34	34	32	30	28	26
16 F2	MED																							
	CNT																							
	UQ																							
	LQ																							
16 F	MED	260	255	255	250	260	260	270	320	325	325	325	320	320	320	320	320	320	320	320	320	320	320	320
	CNT	21	18	20	20	23	24	26	29	26	26	27	27	27	27	27	28	28	28	26</				

TABLE 30

SOTTENAS, SWITZERLAND (LGS=NR, A=TE) TIME 15.00

Table with columns for HOUR, MED, CNT, LO, and time slots from 00 to 23. Data includes values for f6F2, N'F2, N'F, MIS000IF2, f6FI, f6E, N'E, and f6Ea.

SWEEP 1.0 MC TO 25.0 MC IN 30 SECONDS FEBRUARY, 1963

TABLE 31

AKITA, JAPAN (LGS=NR, 191=TE) TIME 13.40

Table with columns for HOUR, MED, CNT, LO, and time slots from 00 to 23. Data includes values for f6F2, N'F2, N'F, MIS000IF2, f6FI, f6E, N'E, and f6Ea.

SWEEP 1.0 MC TO 18.0 MC IN 1 MINUTE FEBRUARY, 1963

TABLE 32

AKITA, JAPAN (LGS=NR, 191=TE) TIME 13.40

Table with columns for HOUR, MED, CNT, LO, and time slots from 00 to 23. Data includes values for f6F2, N'F2, N'F, MIS000IF2, f6FI, f6E, N'E, and f6Ea.

SWEEP 1.0 MC TO 18.0 MC IN 1 MINUTE FEBRUARY, 1963

TABLE 33

OTTAWA, CANADA (LGS=NR, 75=NR) TIME 75.30

Table with columns for HOUR, MED, CNT, LO, and time slots from 00 to 23. Data includes values for f6F2, N'F2, N'F, MIS000IF2, f6FI, f6E, N'E, and f6Ea.

SWEEP 1.0 MC TO 16.0 MC IN 16 SECONDS FEBRUARY, 1963

TABLE 34

OTTAWA, CANADA (LGS=NR, 75=NR) TIME 75.30

Table with columns for HOUR, MED, CNT, LO, and time slots from 00 to 23. Data includes values for f6F2, N'F2, N'F, MIS000IF2, f6FI, f6E, N'E, and f6Ea.

SWEEP 1.0 MC TO 16.0 MC IN 16 SECONDS FEBRUARY, 1963

CHANNING-UNION OF S. AERICA (12x15, 25x15)

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values for each hour and row type.

SLEEP 14.0 MC TO 15.0 MC IN 1 MINUTE 30 - 60MIN.

SLEEP 14.0 MC TO 15.0 MC IN 5 MINUTES AUTOMATIC.

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values.

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values.

DOBT STANLEY (FALKLAND IS.) (151.75, 57.00)

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values.

COPEFOWN, UNION OF S. AERICA (13x15, 19x15)

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values.

SLEEP 14.0 MC TO 15.0 MC IN 5 MINUTES AUTOMATIC.

SLEEP 14.0 MC TO 15.0 MC IN 7 SECONDS.

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values.

Table with columns for HOUR (00-23) and rows for MED, CNT, UG, LG. Data points are numerical values.

TABLE 74
110.3N, 09.4W

EL CERILLO, MEXICO

HOUR	TIME 07.00																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fFZ	55	56	54	53	55	56	58	58	58	57	56	56	55	55	55	55	55	55	55	55	55	55	55	55
MED CNT	24	24	24	24	23	23	23	22	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
UO	70	72	72	68	68	62	60	84	70	80	78	97	102	108	112	120	118	116	120	102	97	86	79	73
LO	58	58	58	51	47	42	44	53	58	64	69	76	84	94	100	102	100	94	88	86	76	73	64	64
nFZ																								
MED CNT																								
UO																								
LO																								
nF																								
MED CNT																								
UO																								
LO																								
MIX000IF2																								
MED CNT																								
UO																								
LO																								
fFI																								
MED CNT																								
UO																								
LO																								
fE																								
MED CNT																								
UO																								
LO																								
nE																								
MED CNT																								
UO																								
LO																								
fE*																								
MED CNT																								
UO																								
LO																								

SWEEP 1.0 MC TO 25.0 MC IN 18 SECONDS.

MAY, 1961

TABLE 75
106.35S, 110.4E

MILKES STATION, ANTARCTICA

HOUR	TIME 04.00																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fFZ	28	33	40	44	45	46	45	50	42	36	34	36	32	30	30	29	29	23	23	22	18	24	24	24
MED CNT	14	11	16	17	21	17	17	14	16	16	17	16	14	17	16	12	12	11	9	9	11	11	9	9
UO																								
LO																								
nFZ																								
MED CNT																								
UO																								
LO																								
nF																								
MED CNT																								
UO																								
LO																								
MIX000IF2																								
MED CNT																								
UO																								
LO																								
fFI																								
MED CNT																								
UO																								
LO																								
fE																								
MED CNT																								
UO																								
LO																								
nE																								
MED CNT																								
UO																								
LO																								
fE*																								
MED CNT																								
UO																								
LO																								

SWEEP 1.0 MC TO 25.0 MC IN 18 SECONDS.

JULY, 1961

TABLE 76
150.0N, 14.4E

PRUHONICE, CZECHOSLOVAKIA

HOUR	TIME 04.00																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fFZ	32	33	33	30	28	25	29	56	81	95	99	99	99	89	88	70	64	60	40	38	33	31	31	32
MED CNT	30	30	30	30	24	23	26	29	29	29	29	30	30	25	30	30	30	30	29	29	29	29	27	26
UO																								
LO																								
nFZ																								
MED CNT																								
UO																								
LO																								
nF																								
MED CNT																								
UO																								
LO																								
fFI																								
MED CNT																								
UO																								
LO																								
fE																								
MED CNT																								
UO																								
LO																								
nE																								
MED CNT																								
UO																								
LO																								
fE*																								
MED CNT																								
UO																								
LO																								

SWEEP 1.0 MC TO 25.0 MC IN 18 SECONDS.

MAY, 1961

TABLE 77
150.0N, 14.4E

PRUHONICE, CZECHOSLOVAKIA

HOURL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	157	110	117	70	55	47	82	140	120	134	140	146	130	155	140	140	160	160	160	160	160	160	160	160	160
hF2	157	110	117	70	55	47	82	140	120	134	140	146	130	155	140	140	160	160	160	160	160	160	160	160	160
hF	250	248	235	405	205	200	450	645	210	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
M13000IF2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
fF1	420	470	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510	510
fE	215	282	341	371	487	537	570	541	465	321	165	321	165	321	165	321	165	321	165	321	165	321	165	321	165
hE	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
fEh	20	19	20	18	21	23	26	47	38	45	50	48	44	40	36	31	32	28	18	22	28	18	22	28	18

SWEEP 1.4 MC TO 17.2 MC IN 1 MINUTE
 * observations recorded through 14 only, equipment failure.

OCTOBER, 1959

TABLE 9a
 RANGING - CENTRAL AIRPORT REPUBLIC - 1.4 MC - 18.4 MC

HOURL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	114	119	106	97	84	56	78	109	112	127	126	127	127	130	130	160	132	158	176	115	170	110	110	110	110
hF2	114	119	106	97	84	56	78	109	112	127	126	127	127	130	130	160	132	158	176	115	170	110	110	110	110
hF	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
M13000IF2	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
fF1	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470
fE	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
hE	130	115	110	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
fEh	22	20	23	19	22	24	24	31	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34

SWEEP 1.4 MC TO 17.2 MC IN 1 MINUTE
 * observations recorded through 14 only, equipment failure.

OCTOBER, 1959

HOURL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	168	166	162	161	164	168	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
hF2	168	166	162	161	164	168	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
hF	310	310	300	295	270	250	240	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
M13000IF2	17	15	21	18	18	21	22	23	11	6	13	16	11	11	11	11	11	11	11	11	11	11	11	11	11
fF1	340	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
fE	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
hE	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
fEh	20	19	20	18	21	23	26	47	38	45	50	48	44	40	36	31	32	28	18	22	28	18	22	28	18

SWEEP 1.4 MC TO 15.6 MC IN 1 MINUTE
 * observations recorded through 14 only, equipment failure.

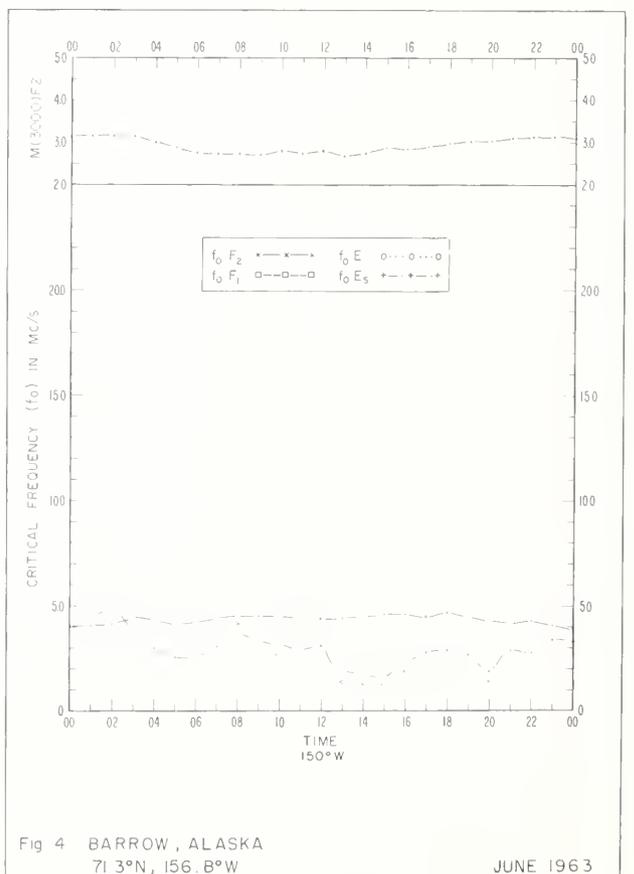
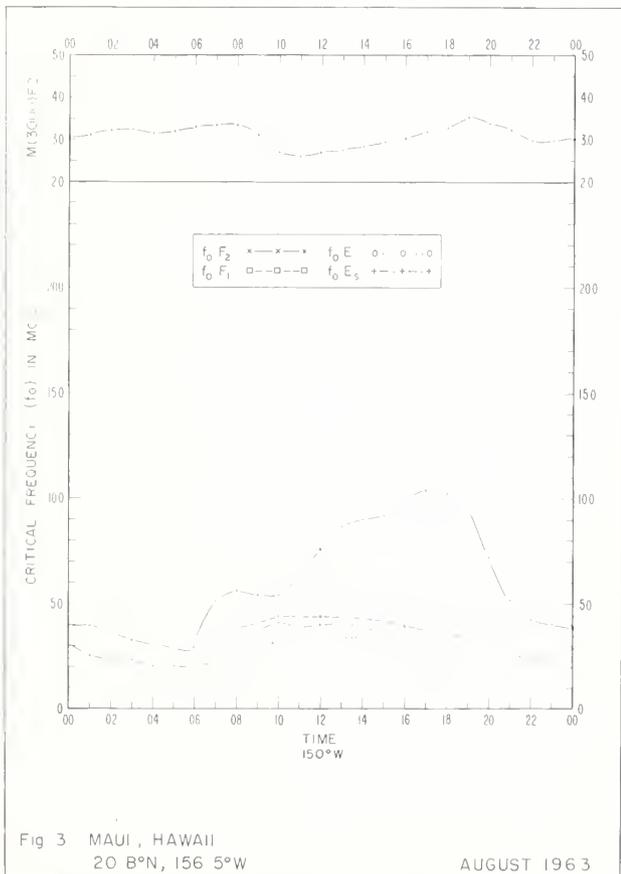
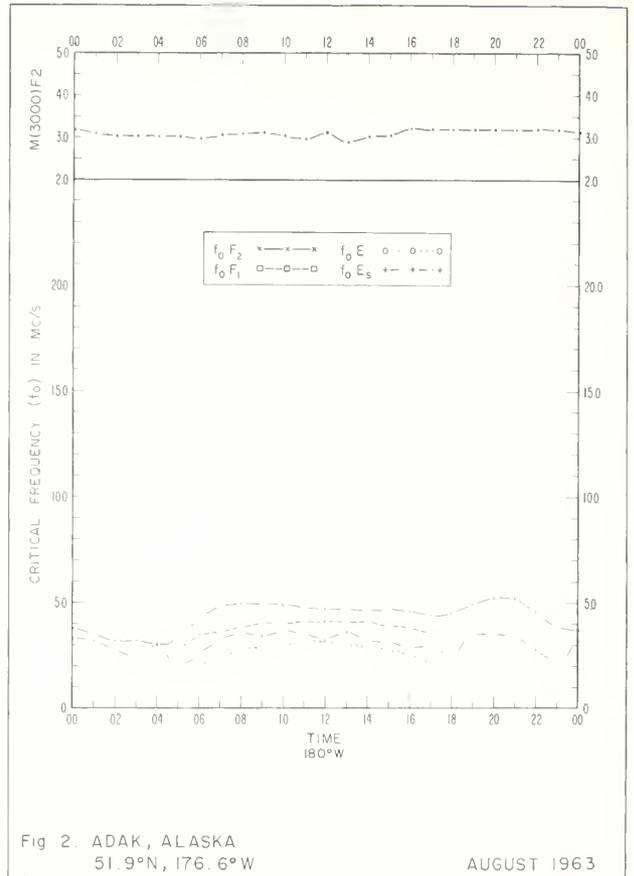
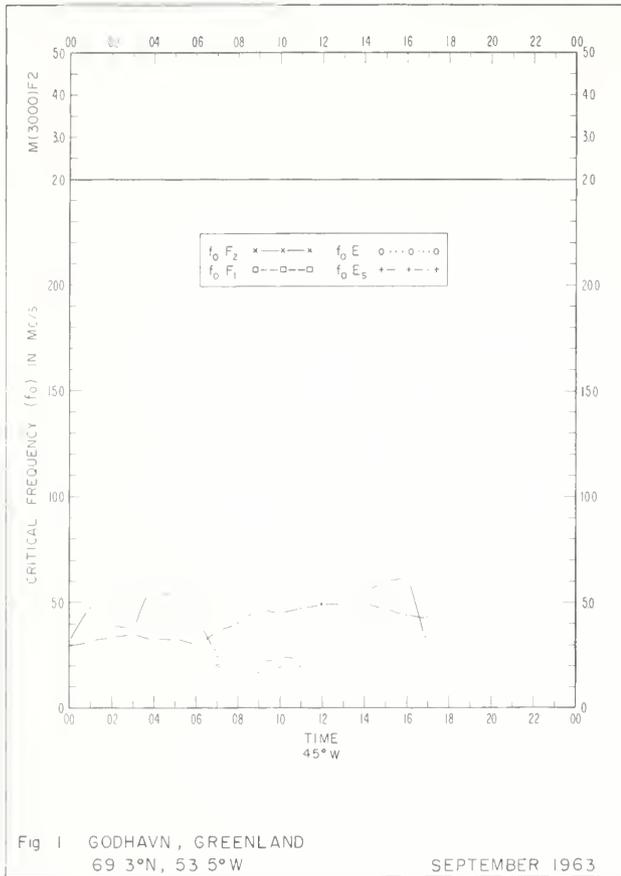
OCTOBER, 1959

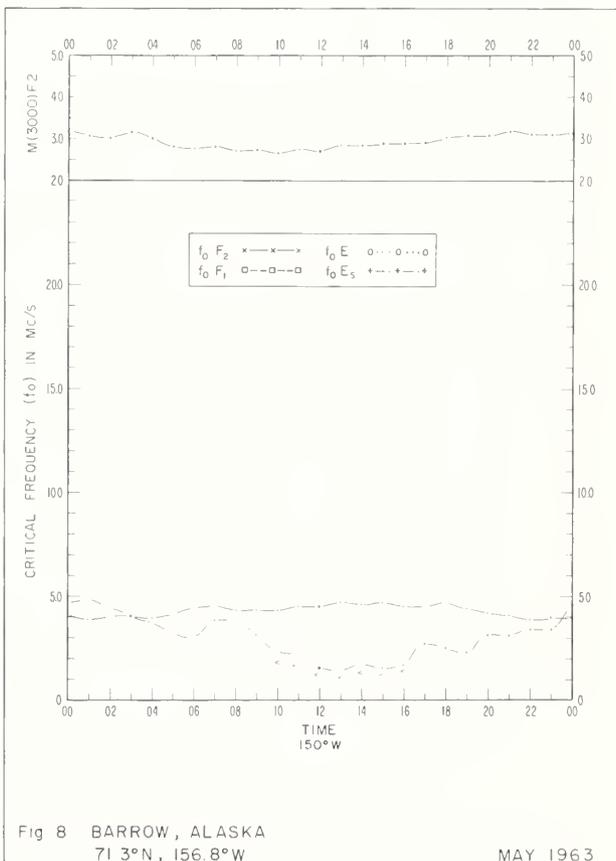
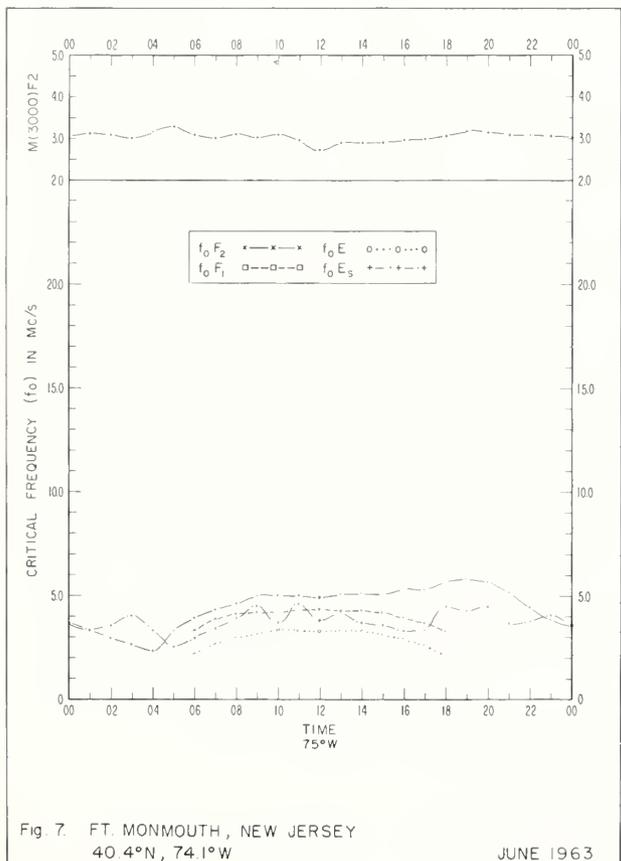
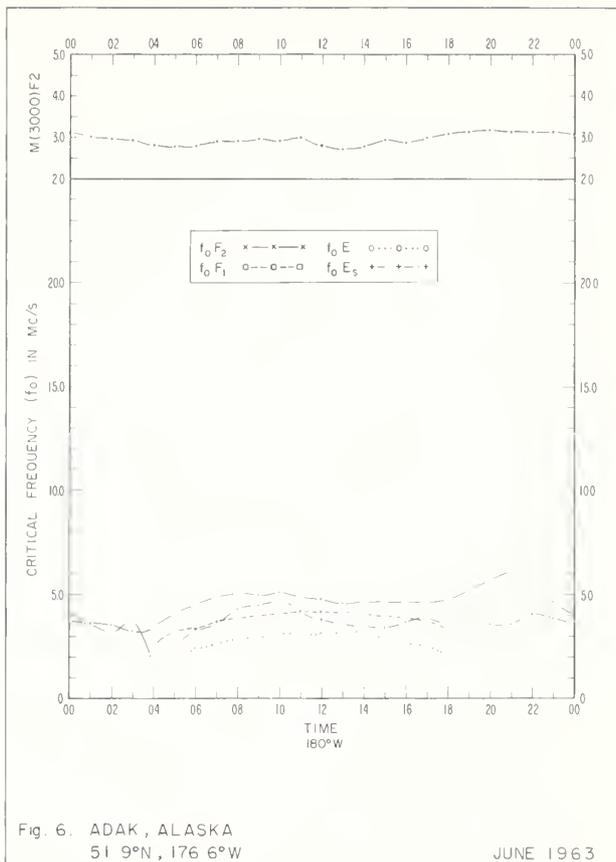
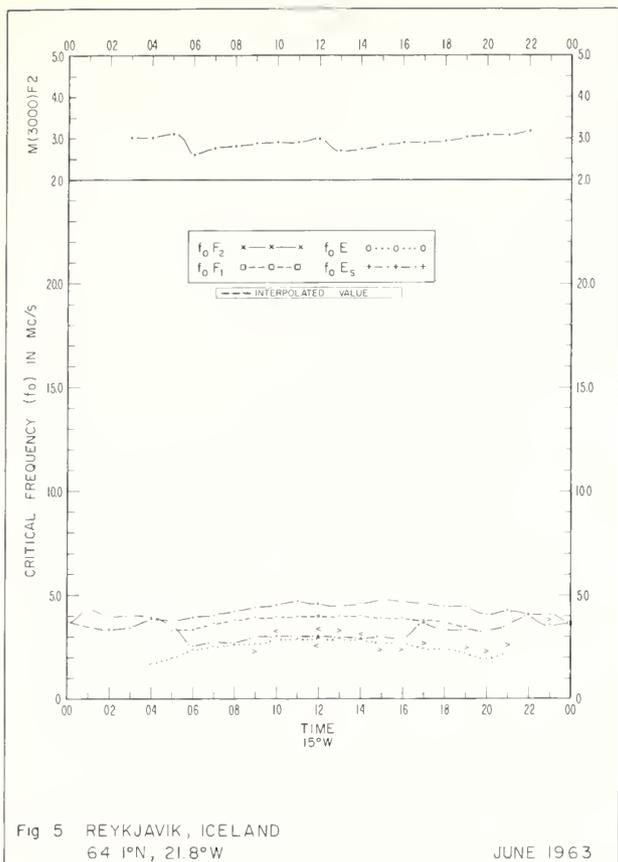
TABLE 9b
 SWEEP 1.4 MC TO 24.0 MC IN 1 SECOND

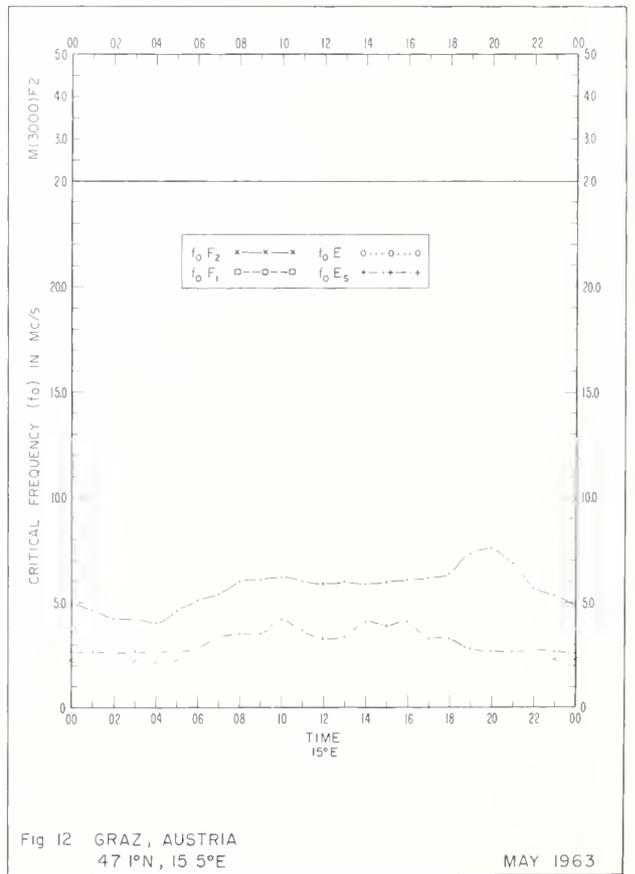
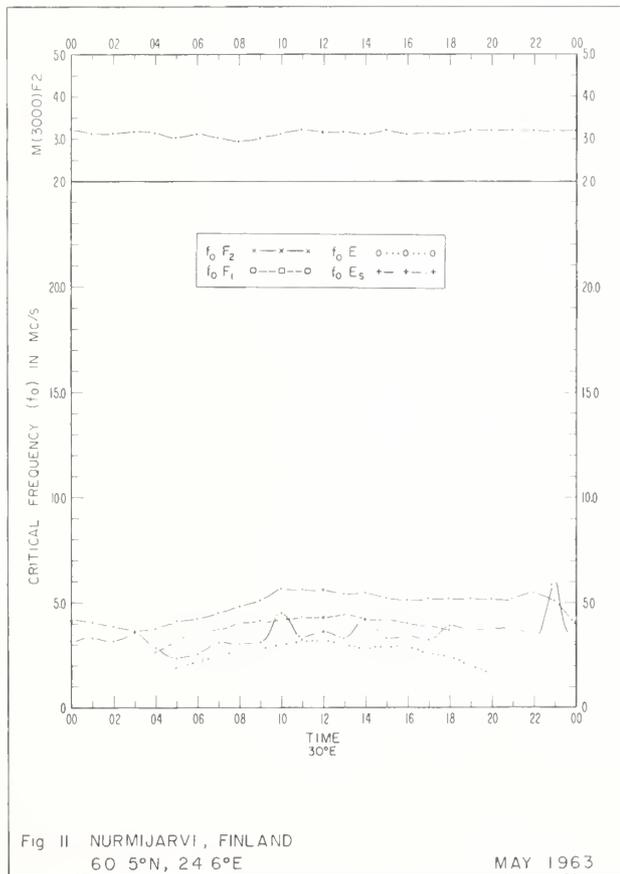
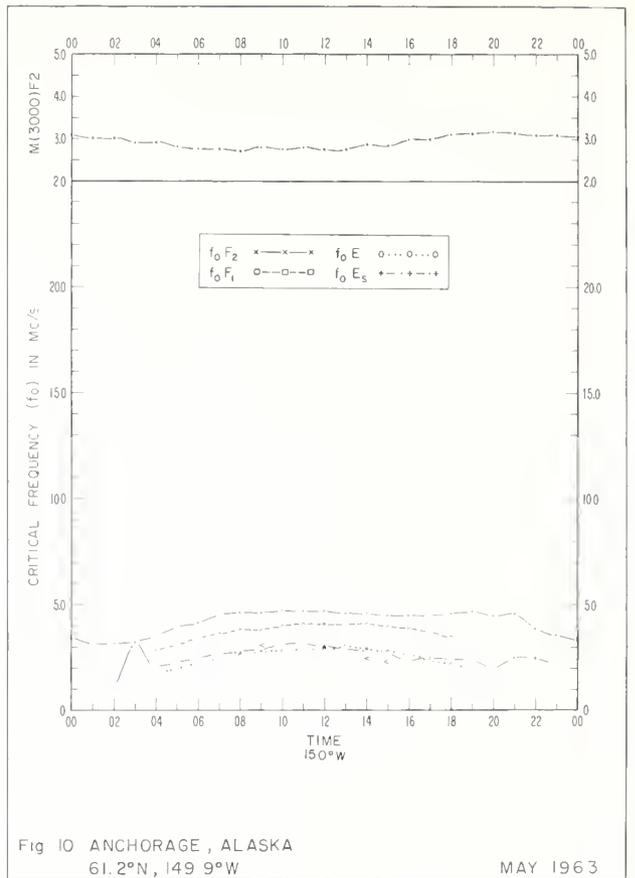
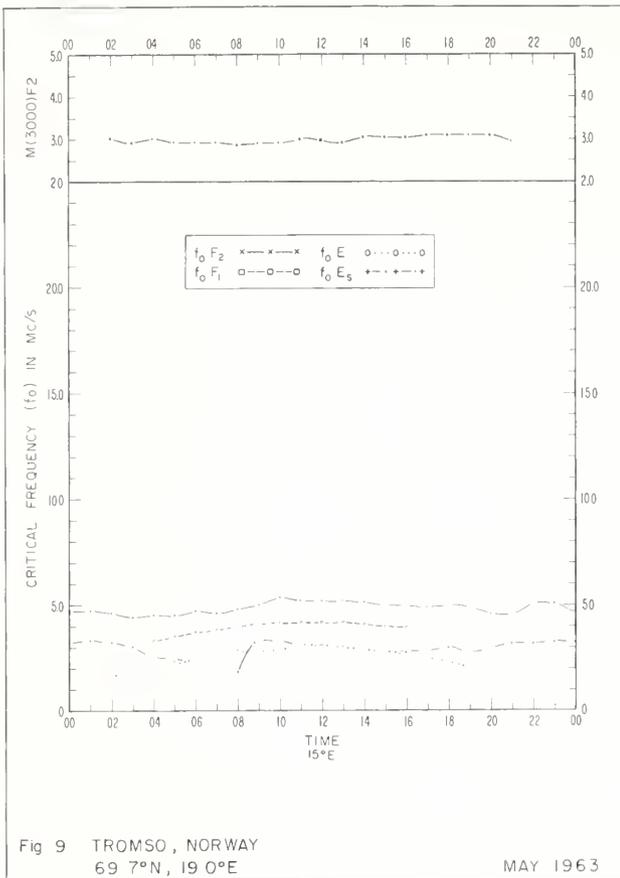
HOURL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
fF2	148	147	129	113	88	1	177	140	139	144	147	158	120	148	148	148	148	148	148	148	148	148	148	148	148
hF2	148	147	129	113	88	1	177	140	139	144	147	158	120	148	148	148	148	148	148	148	148	148	148	148	148
hF	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
M13000IF2	205	205	205	205	220	1	235	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205
fF1	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470	470
fE	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
hE	130	115	110	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
fEh	22	20	23	19	22	24	24	31	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34

SWEEP 1.4 MC TO 24.0 MC IN 1 SECOND
 * observations recorded through 14 only, equipment failure.

OCTOBER, 1959







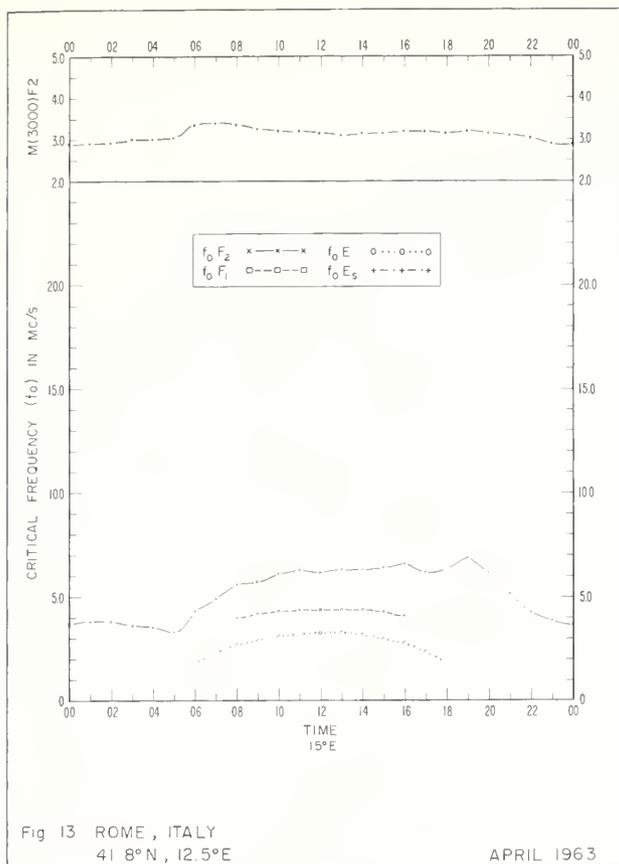


Fig 13 ROME , ITALY
41 8°N , 12.5°E

APRIL 1963

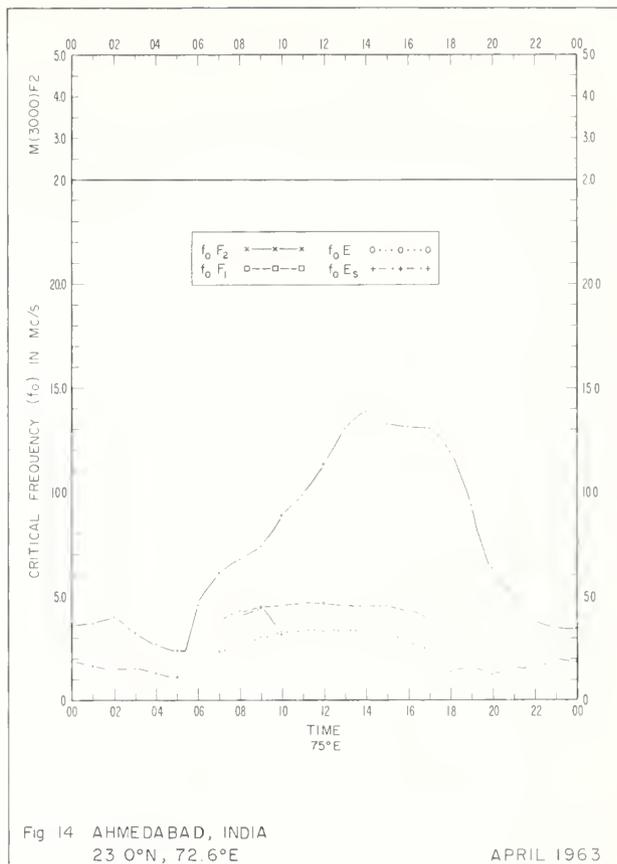


Fig 14 AHMEDABAD, INDIA
23 0°N , 72.6°E

APRIL 1963

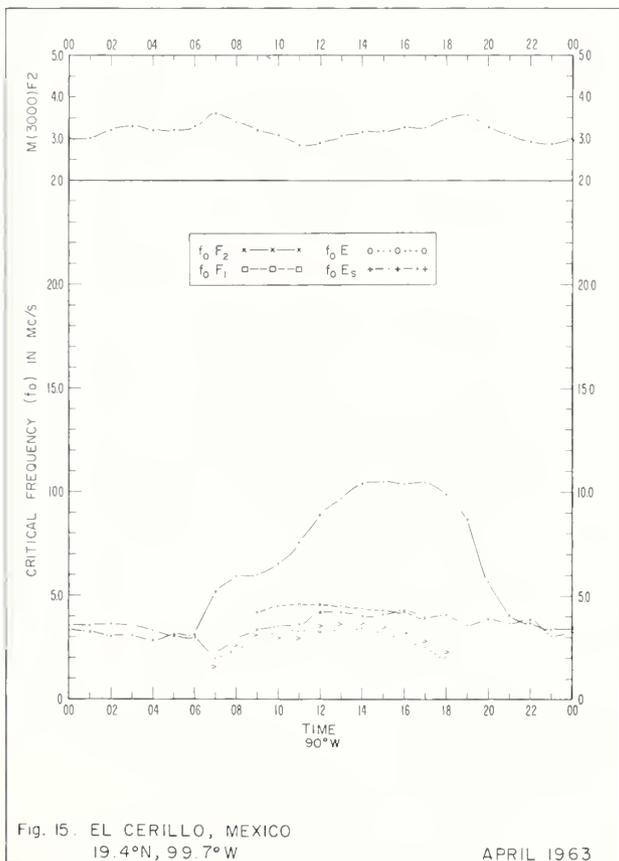


Fig. 15. EL CERILLO, MEXICO
19.4°N, 99.7°W

APRIL 1963

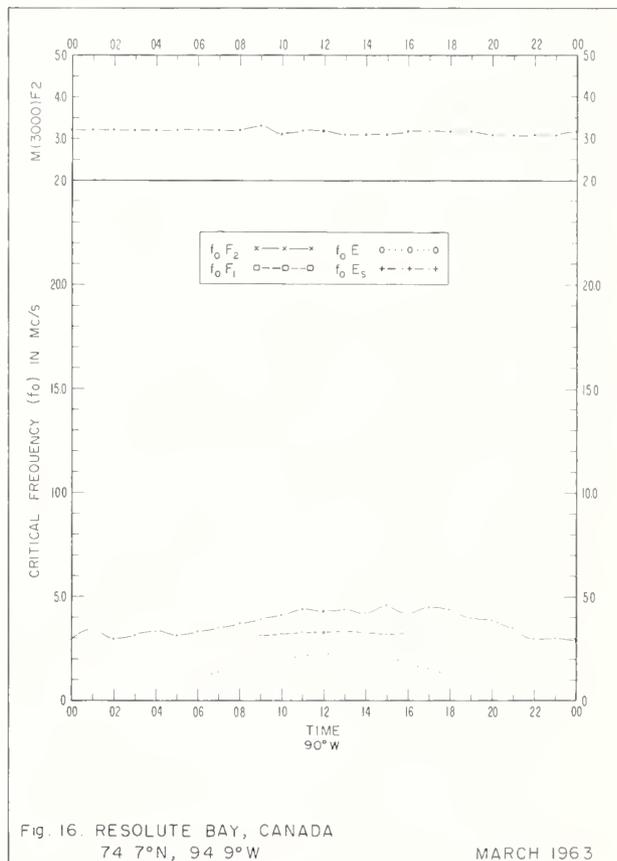
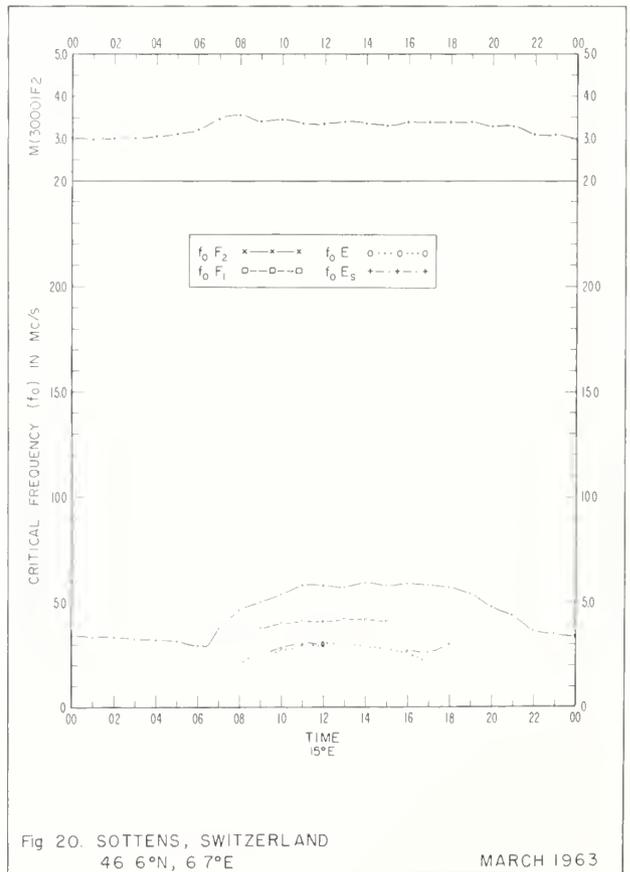
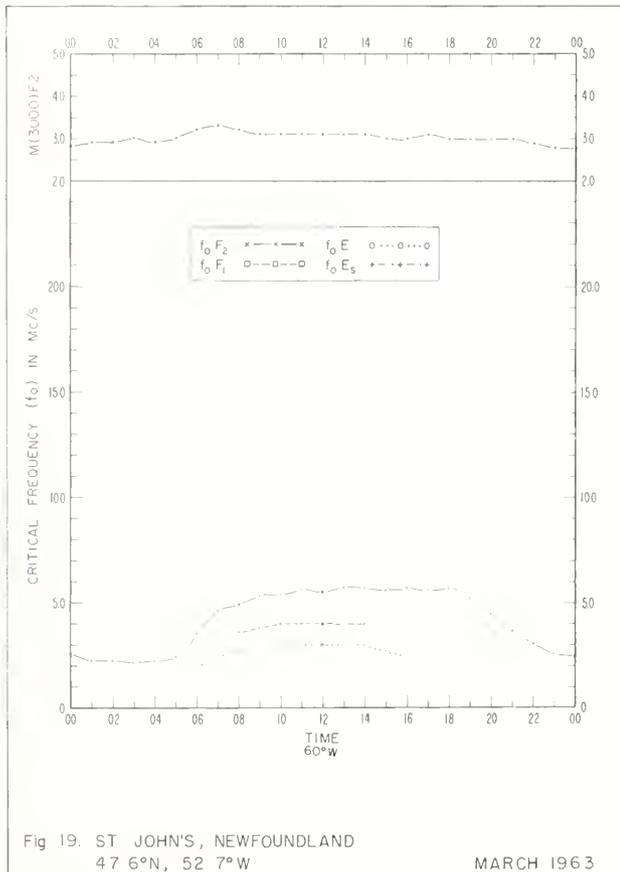
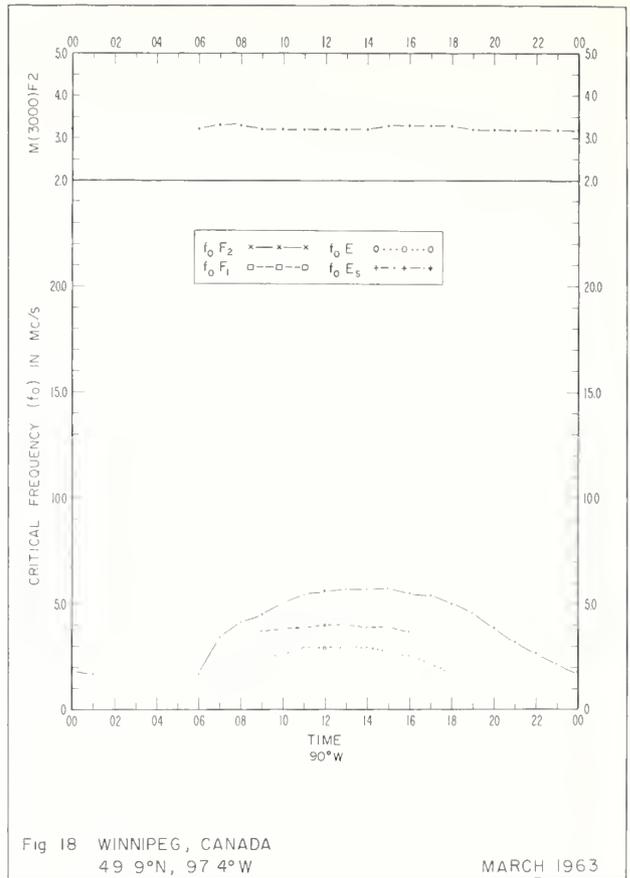
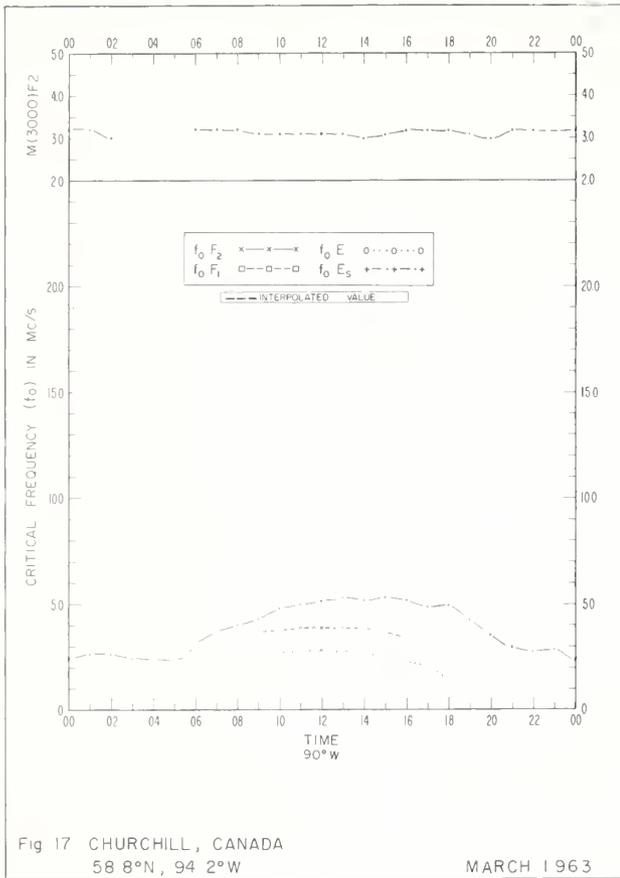
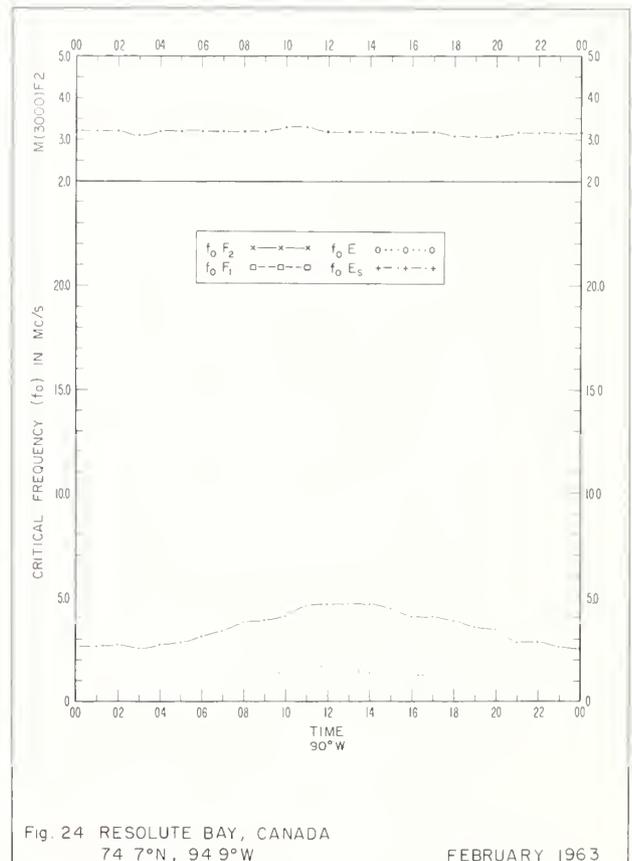
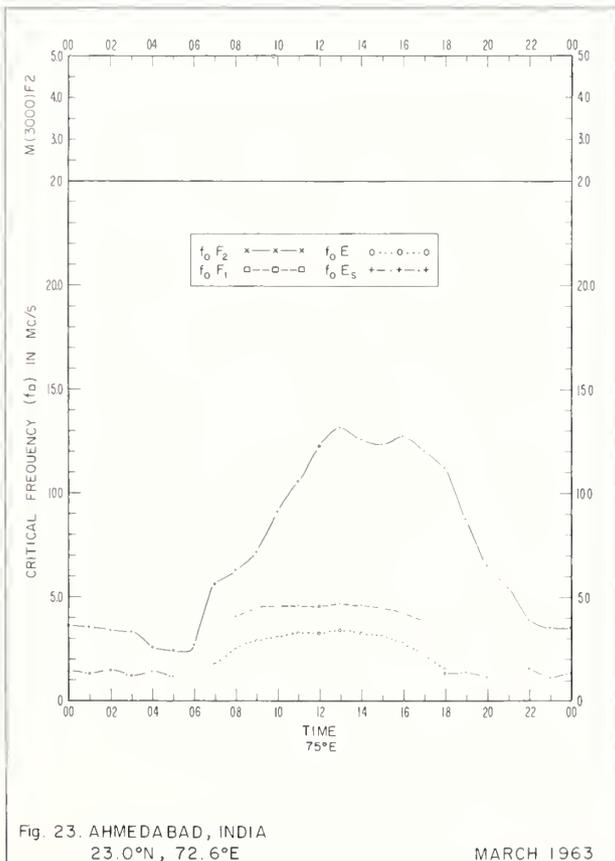
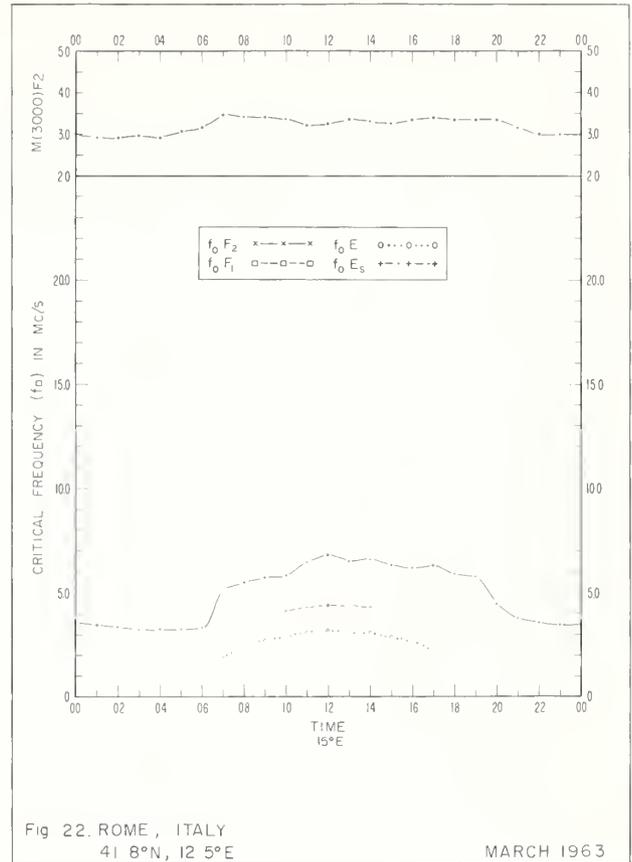
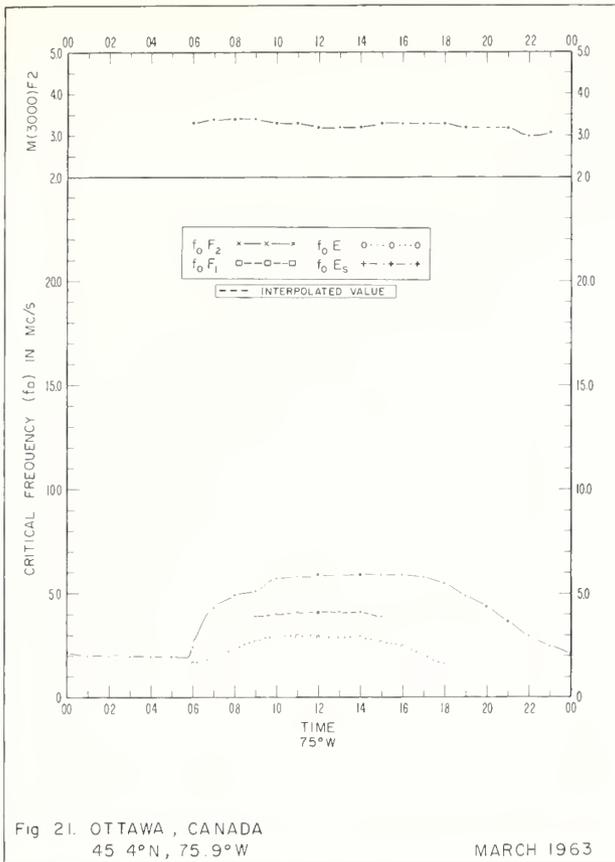
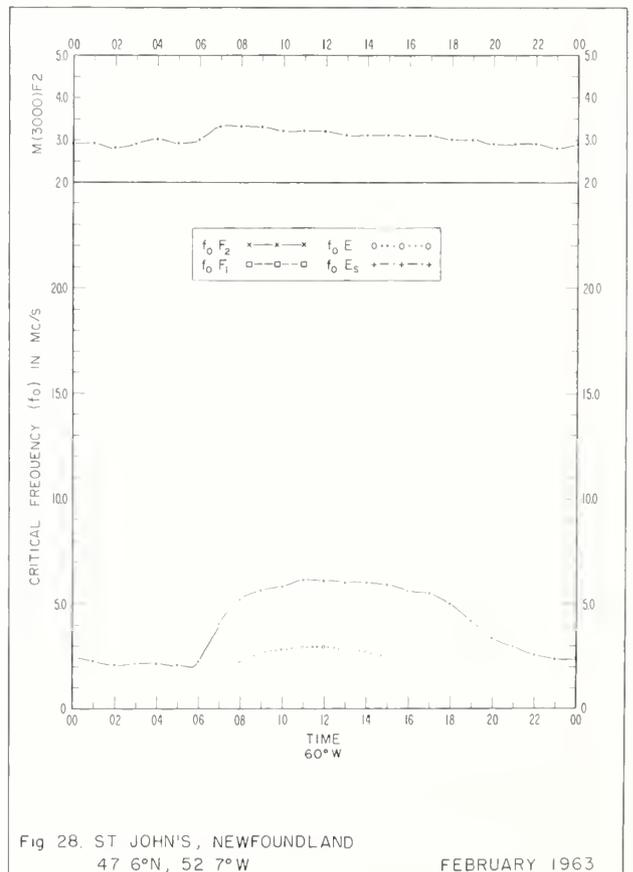
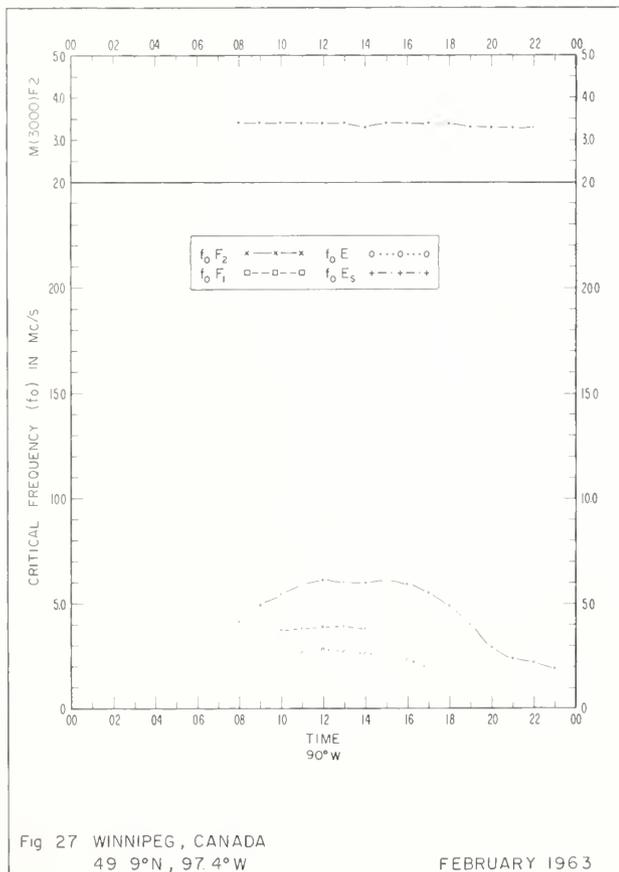
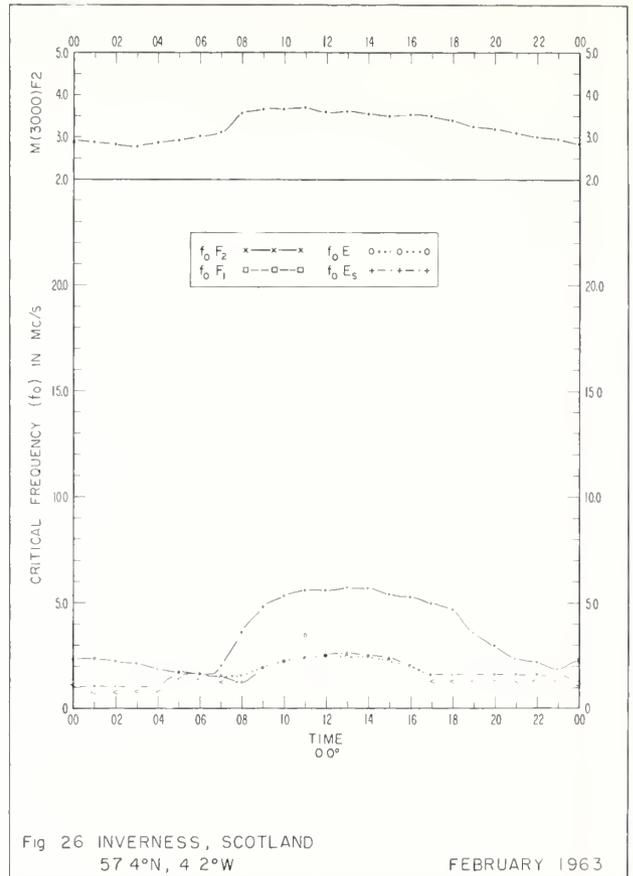
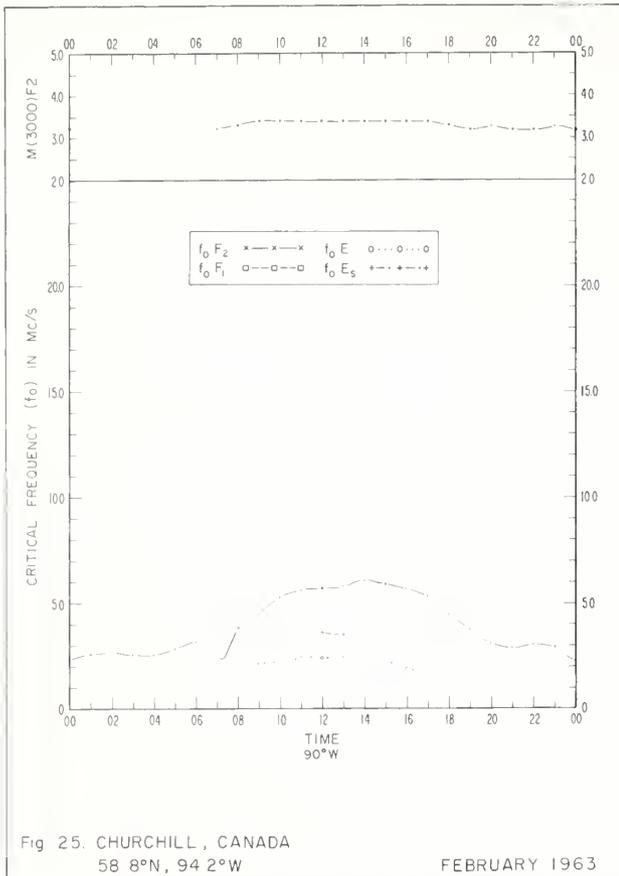


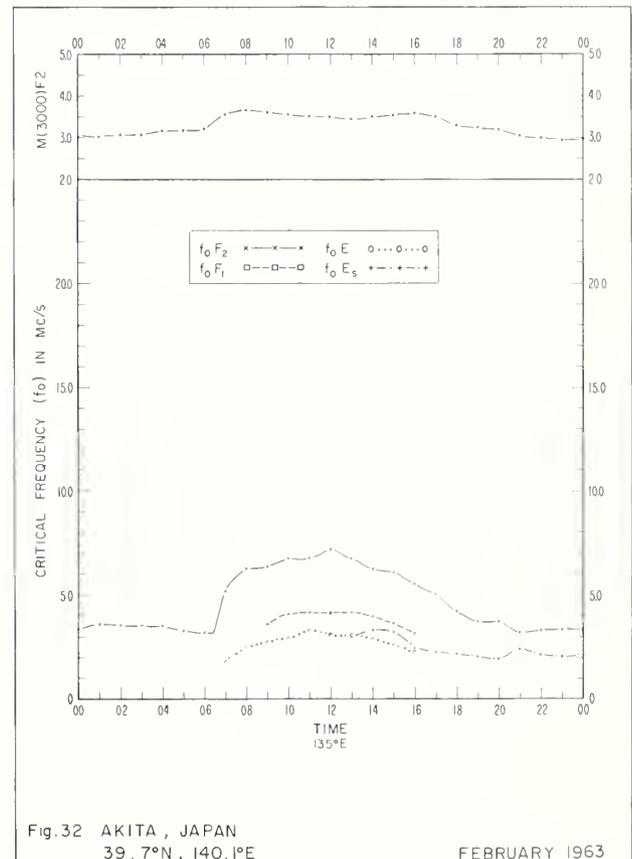
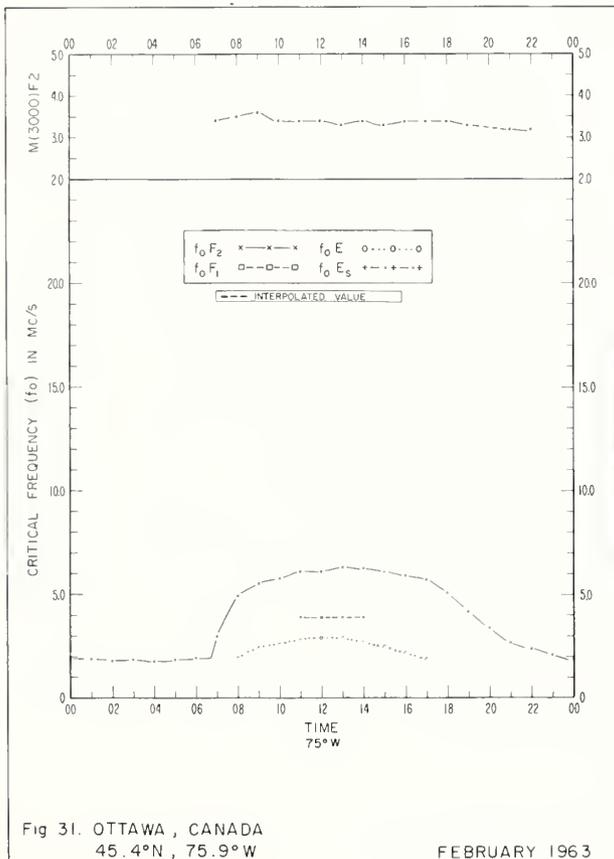
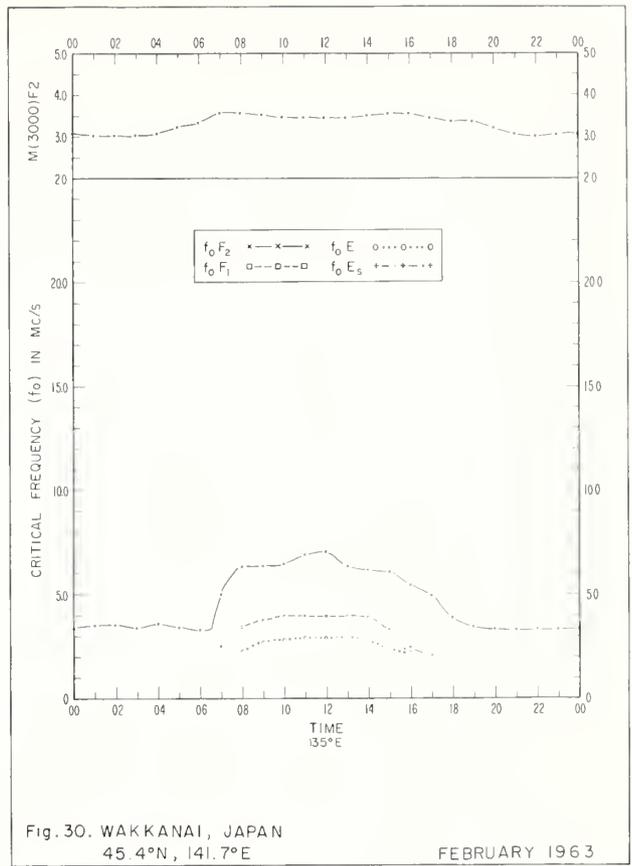
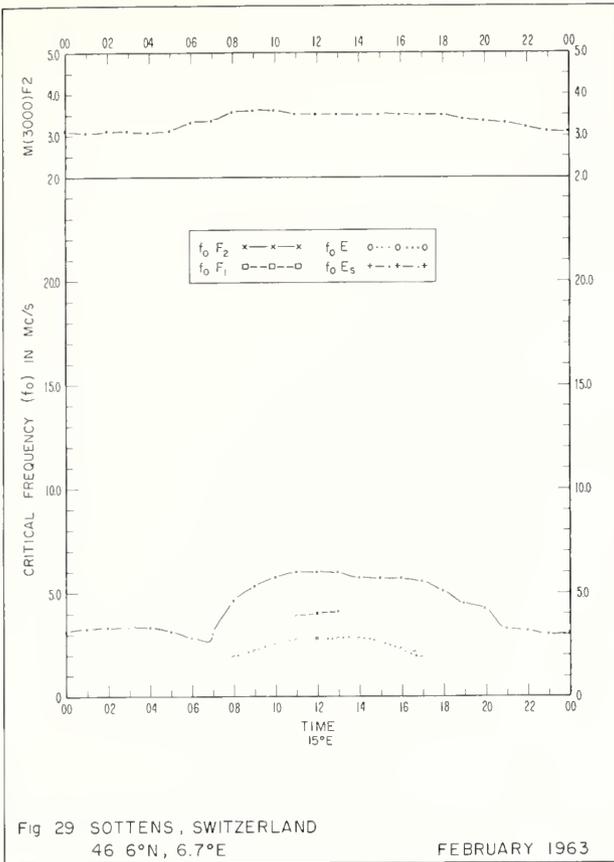
Fig. 16. RESOLUTE BAY, CANADA
74 7°N , 94 9°W

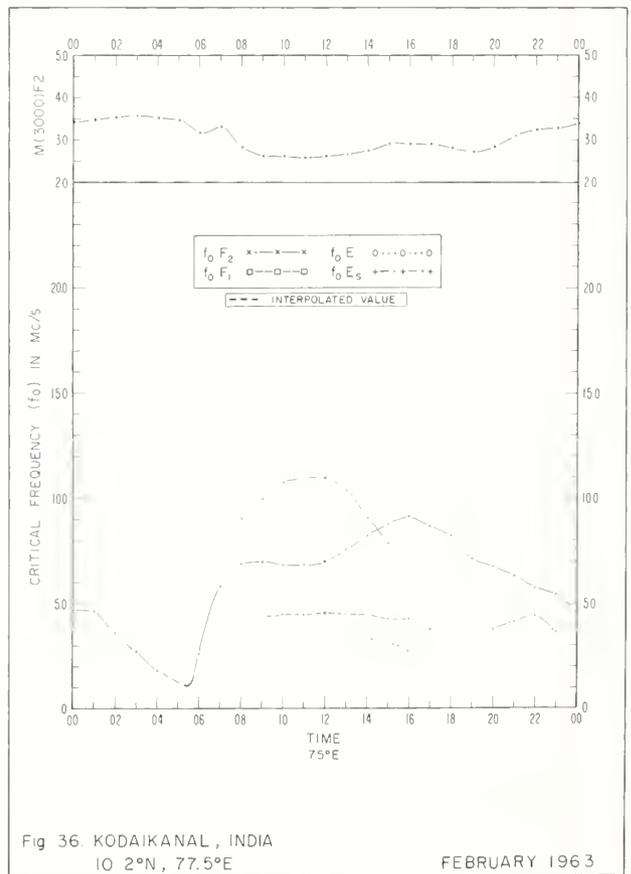
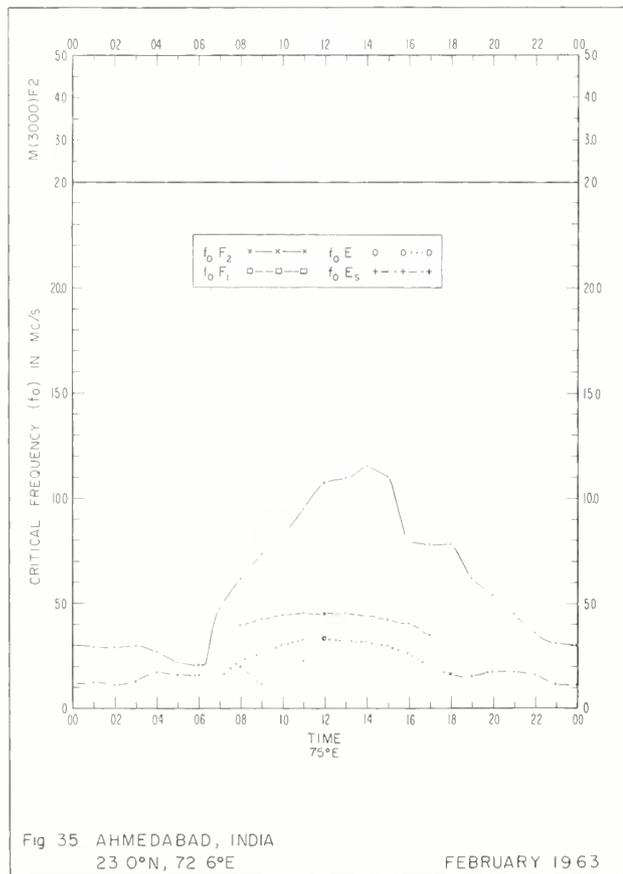
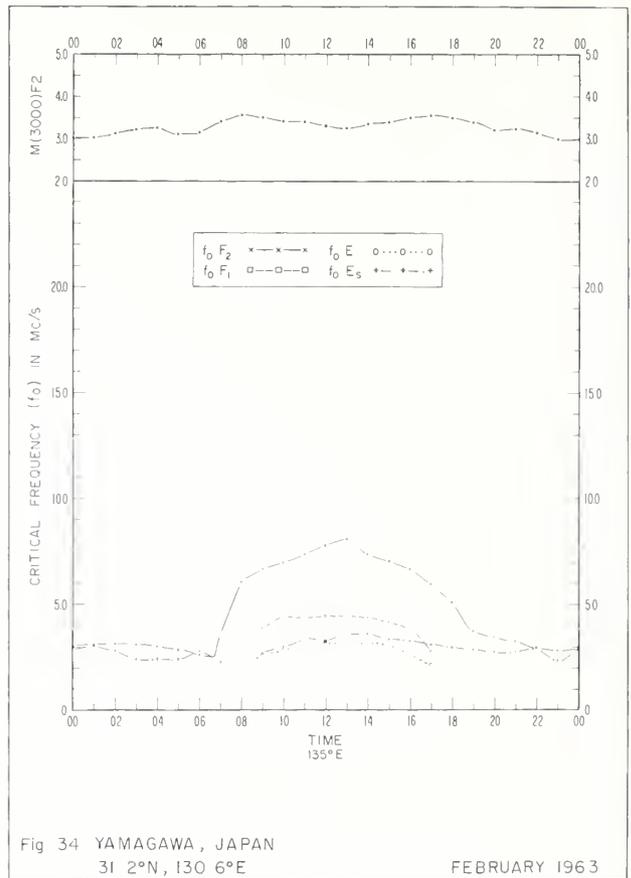
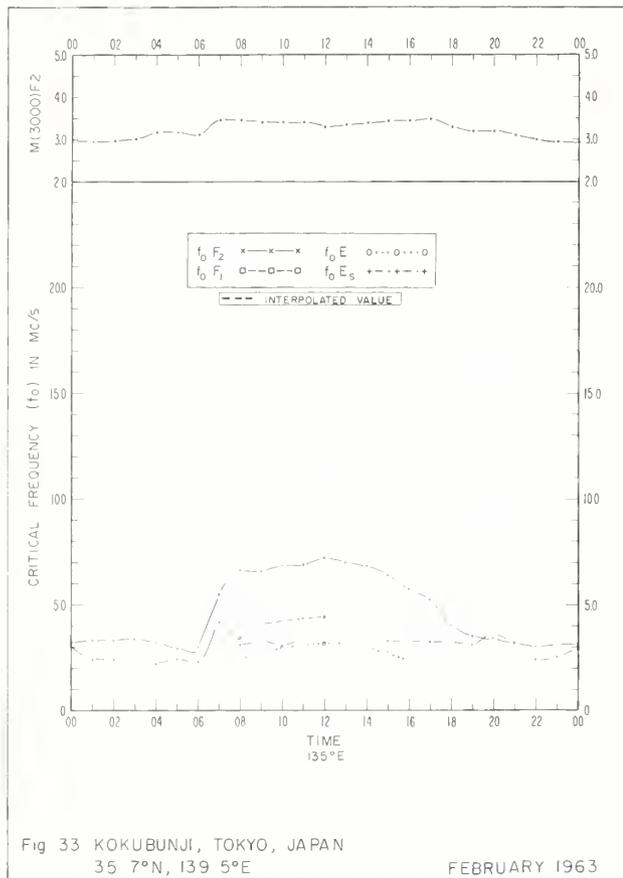
MARCH 1963

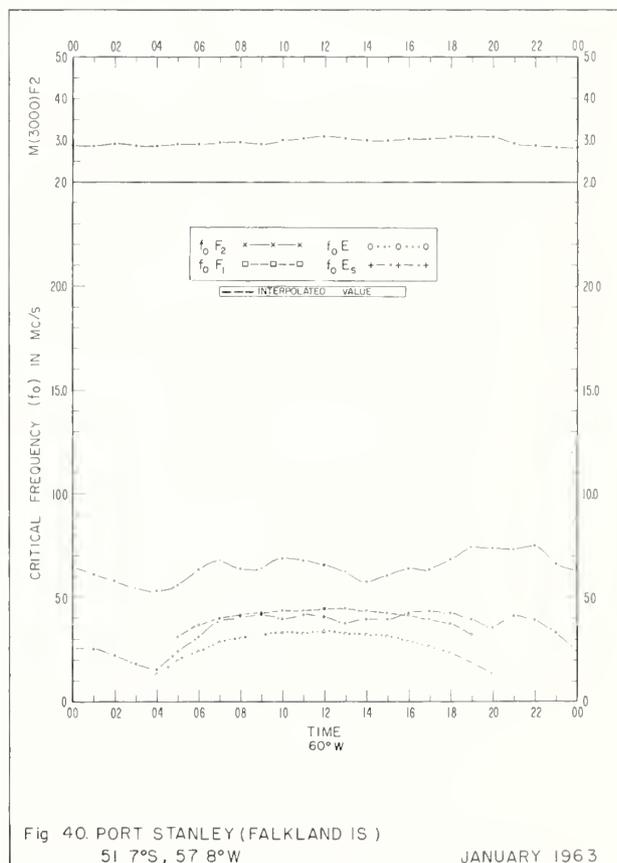
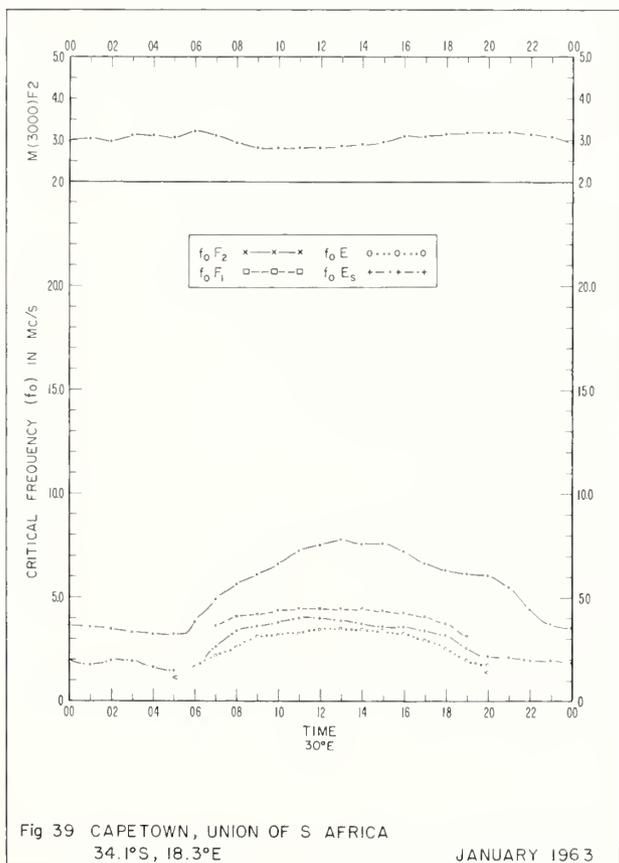
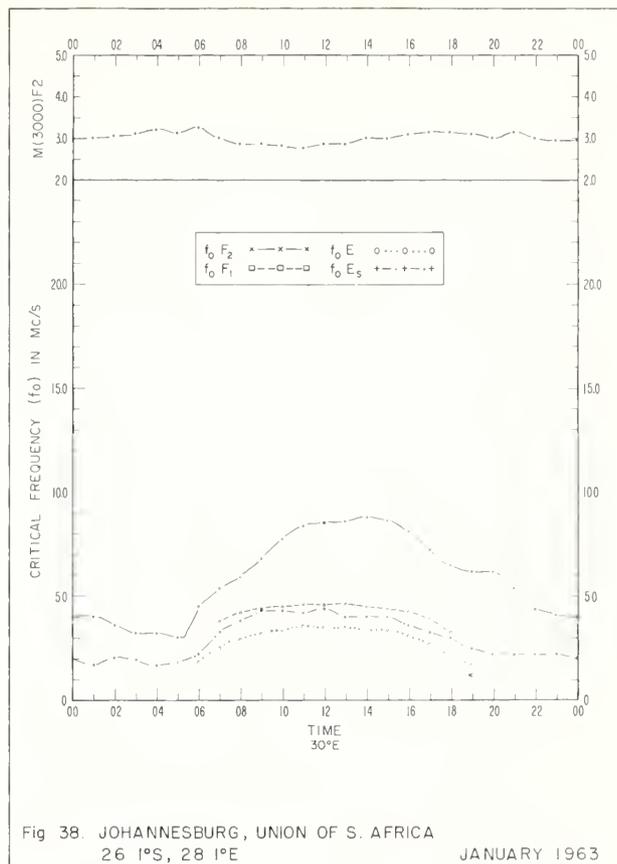
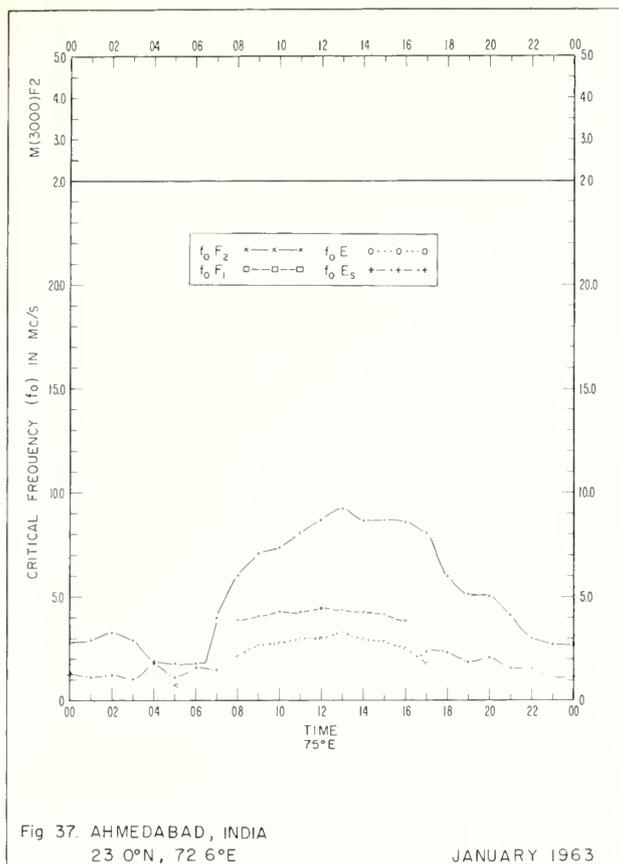


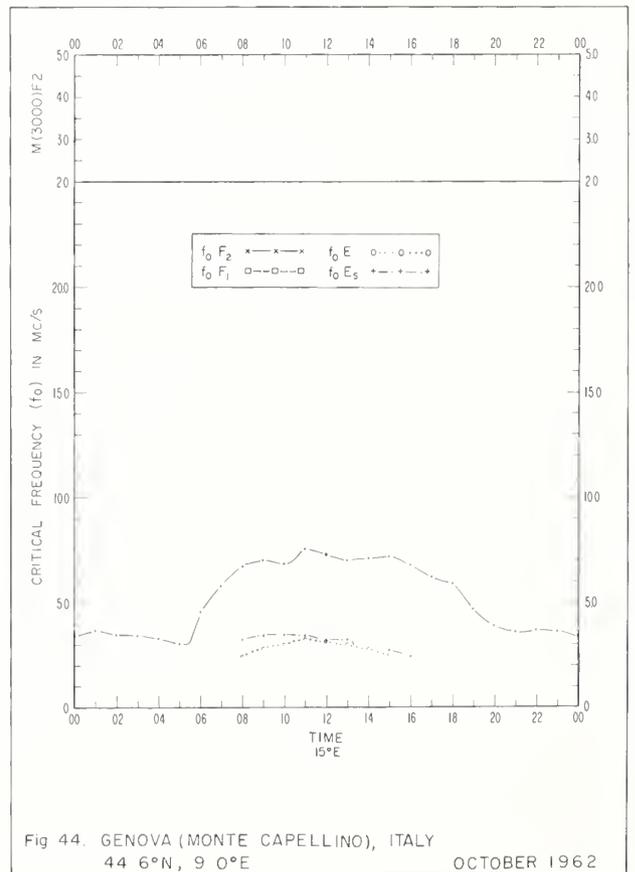
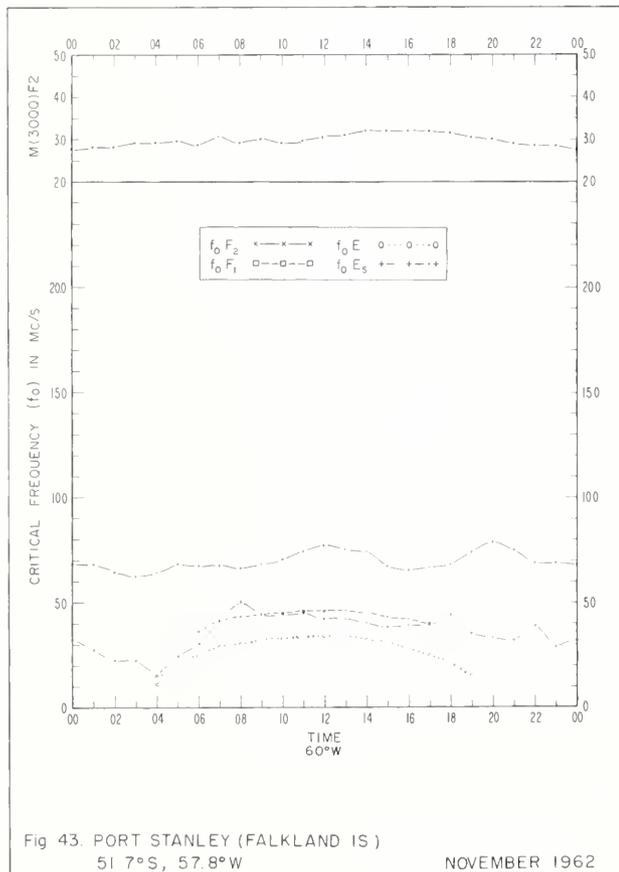
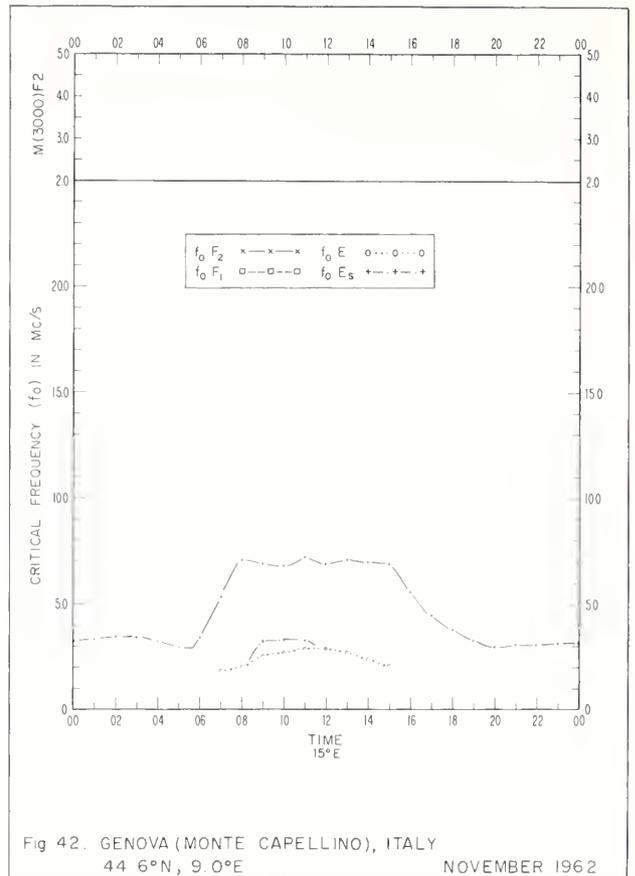
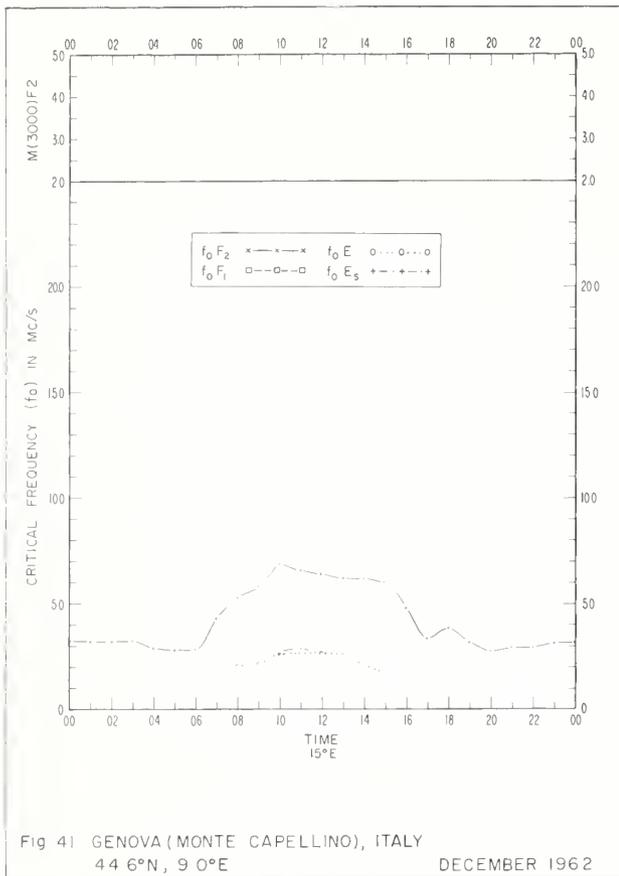












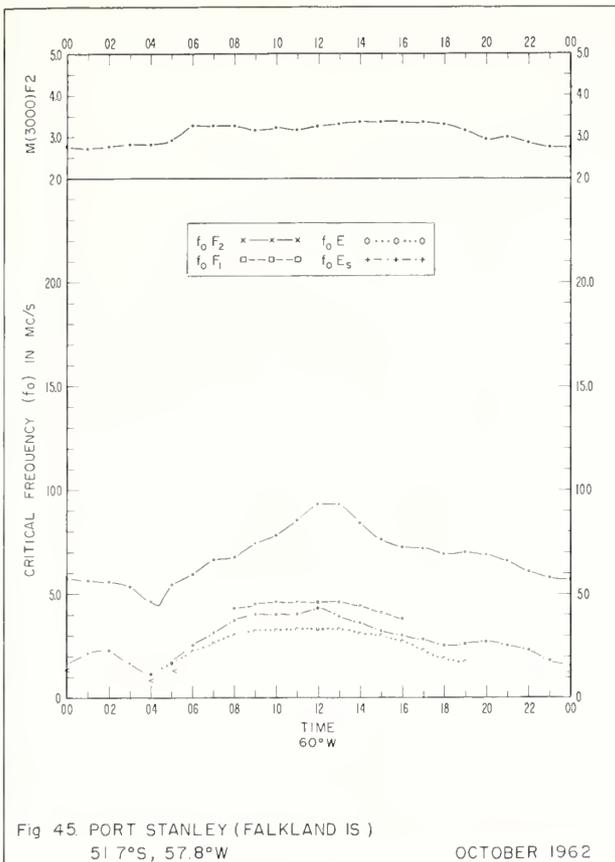


Fig 45 PORT STANLEY (FALKLAND IS.)
51 7°S, 57.8°W

OCTOBER 1962

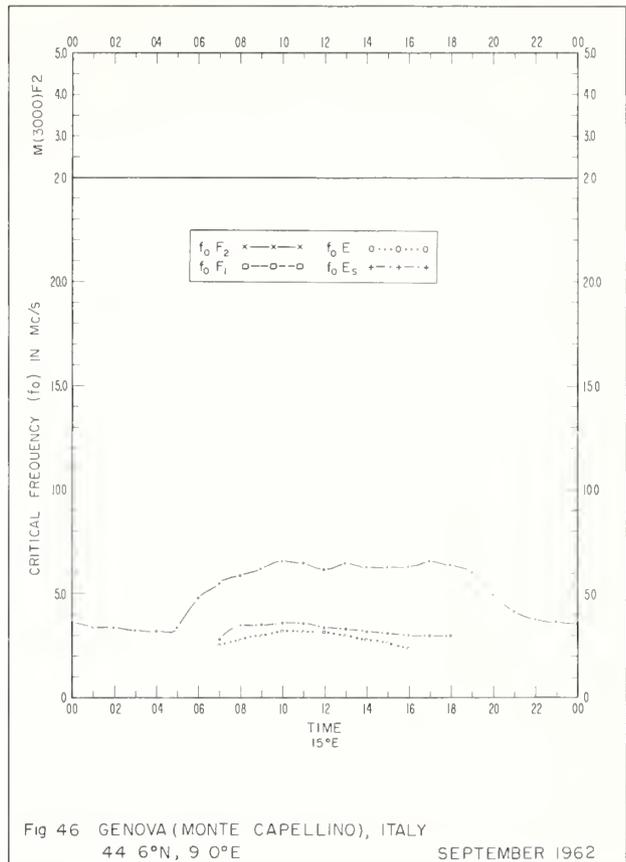


Fig 46 GENOVA (MONTE CAPELLINO), ITALY
44 6°N, 9 0°E

SEPTEMBER 1962

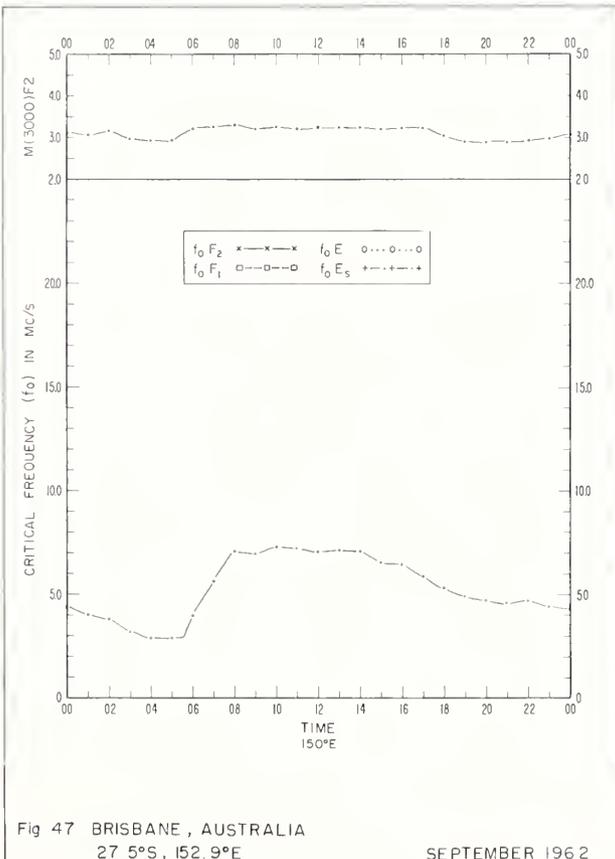


Fig 47 BRISBANE, AUSTRALIA
27 5°S, 152.9°E

SEPTEMBER 1962

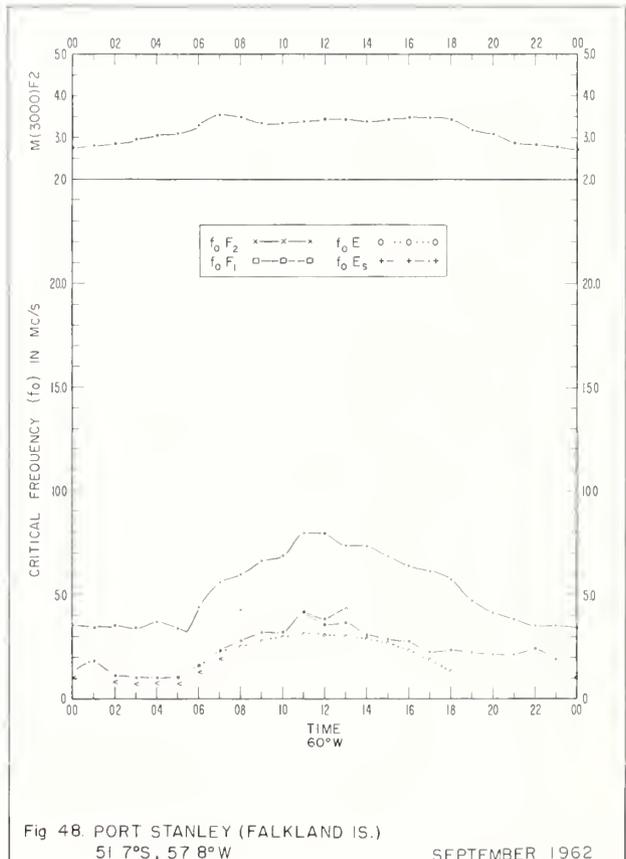
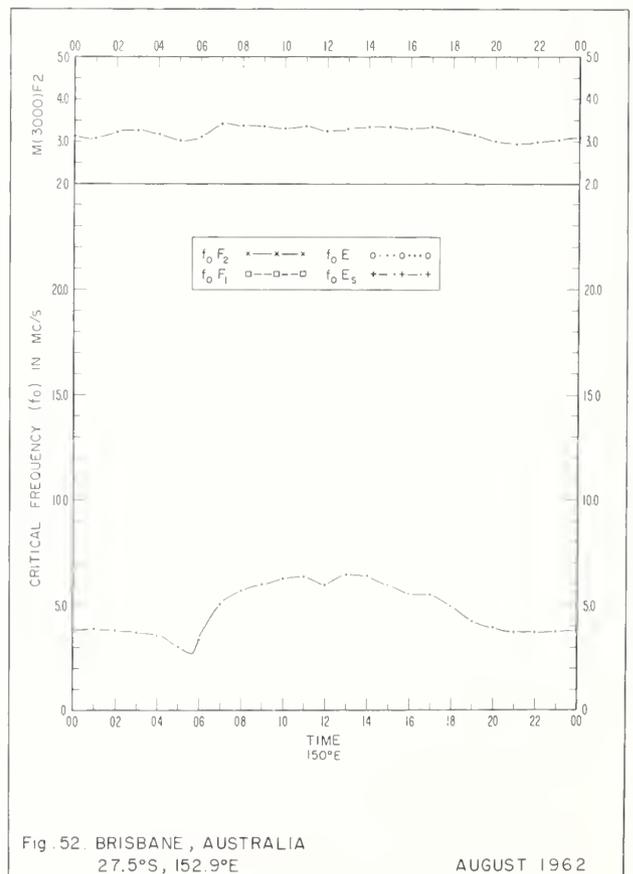
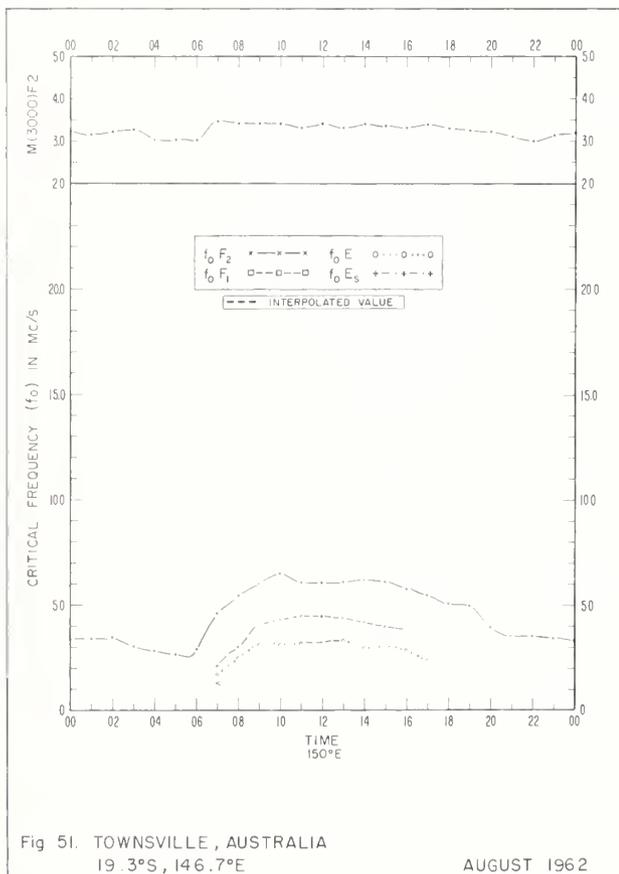
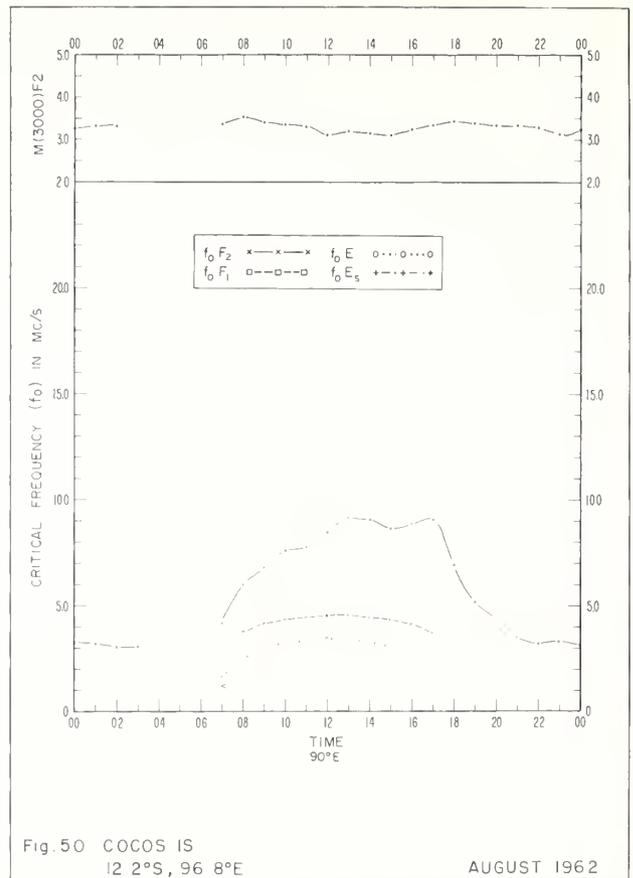
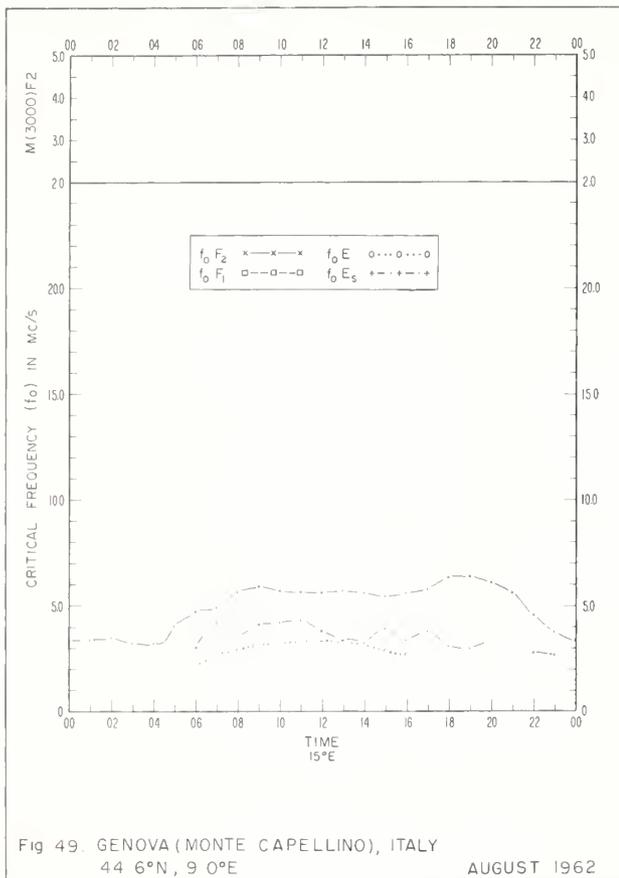
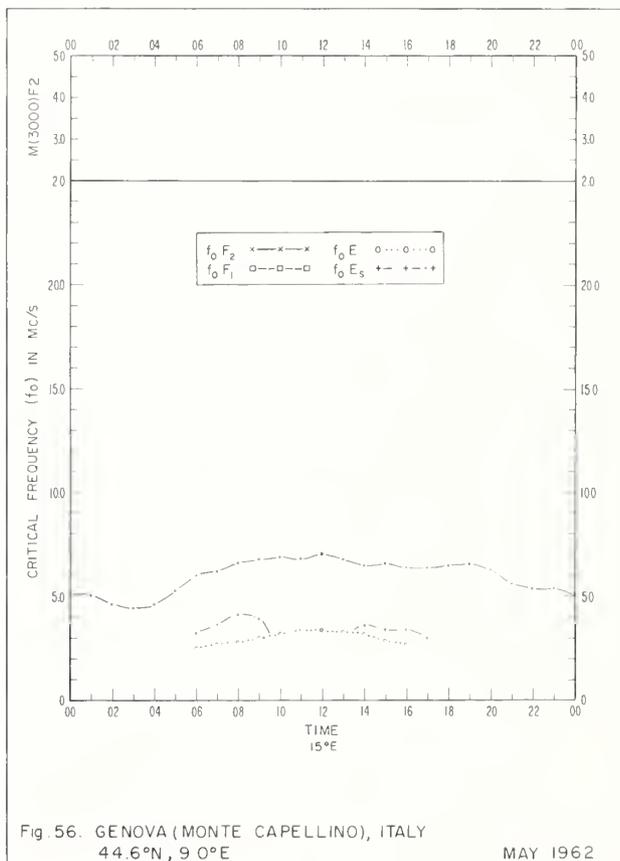
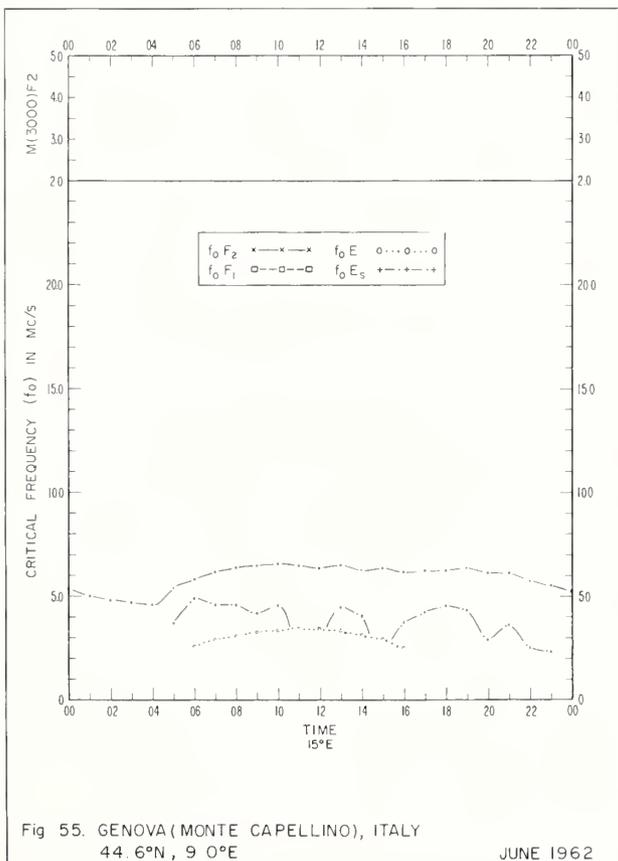
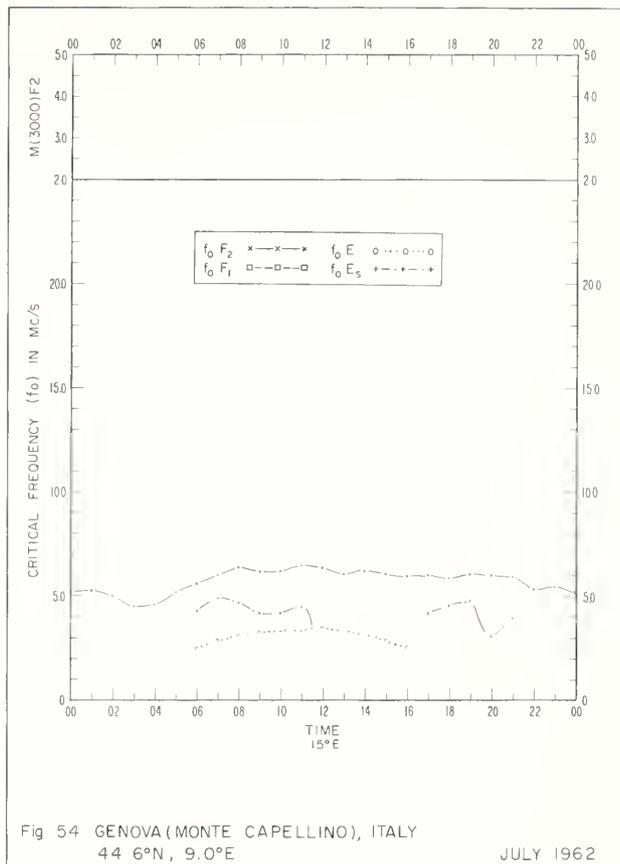
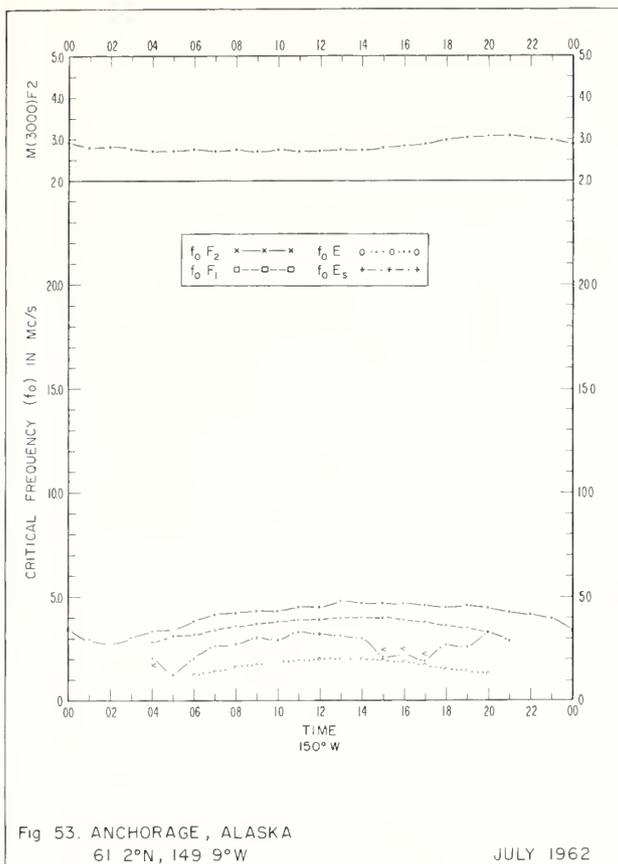
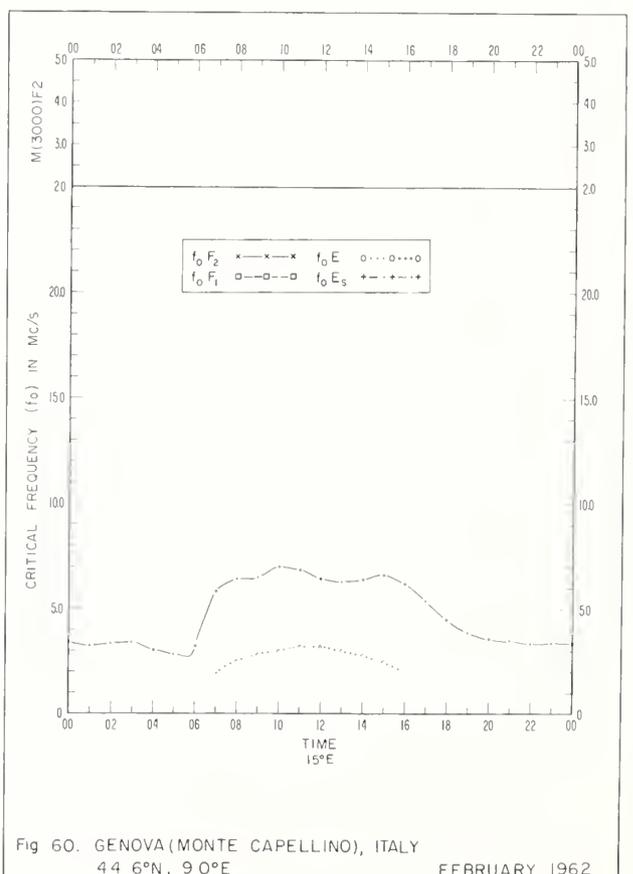
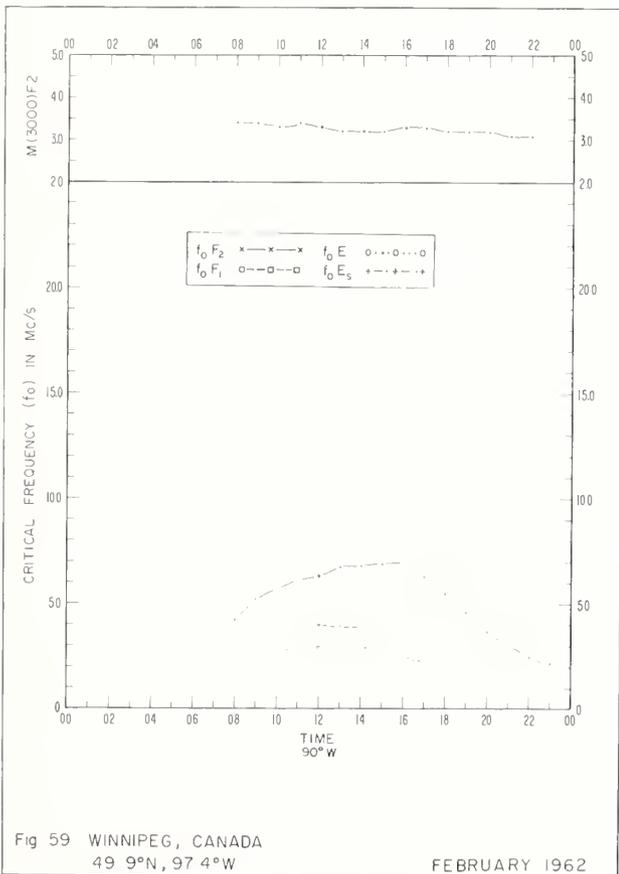
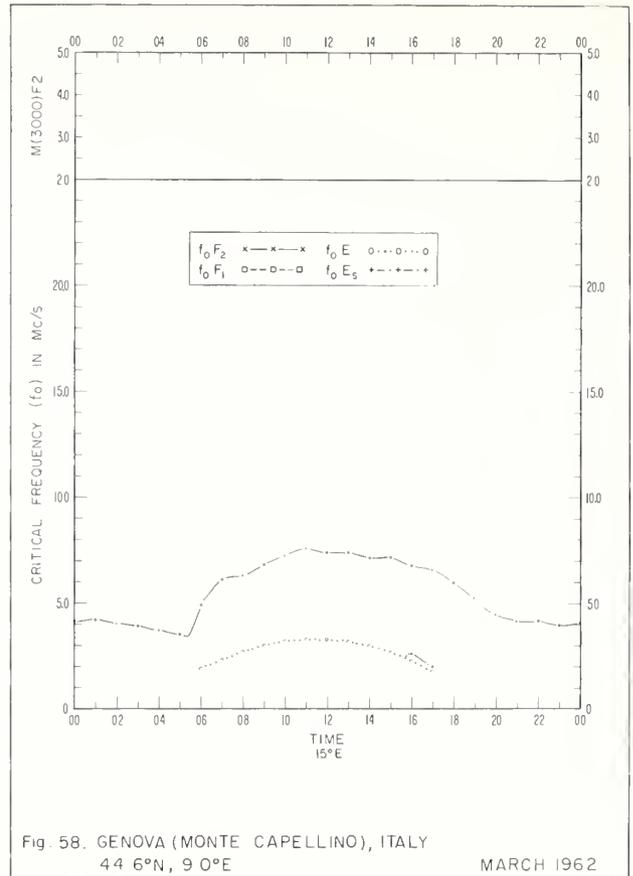
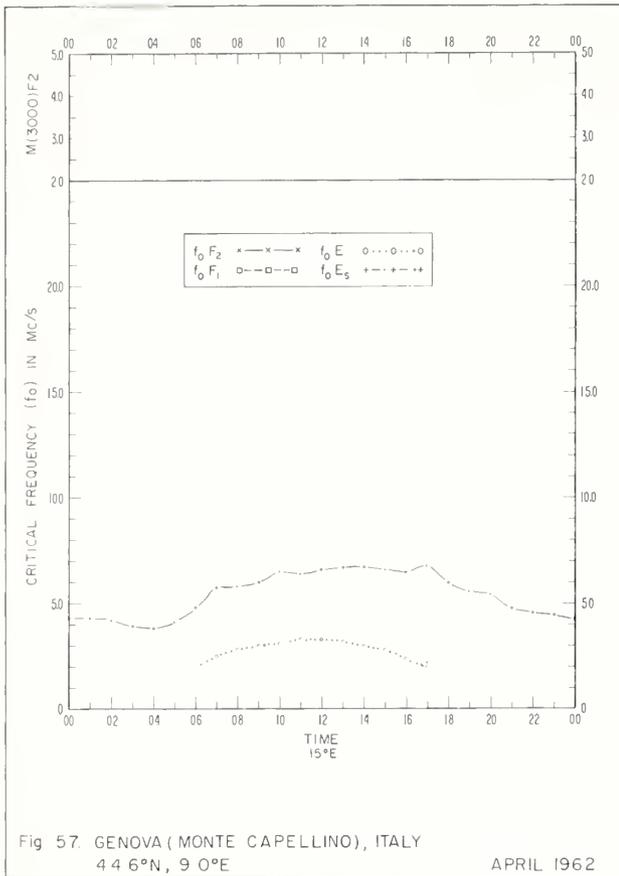


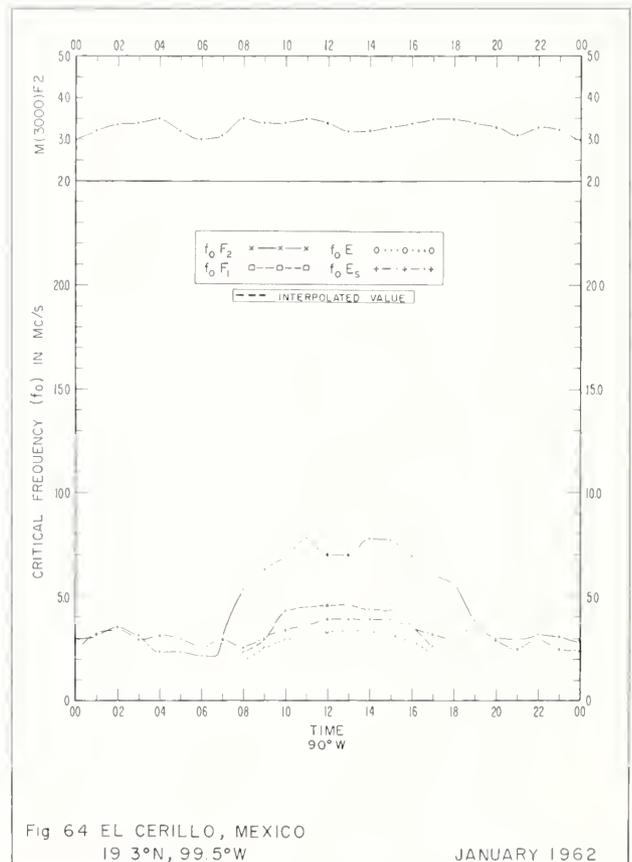
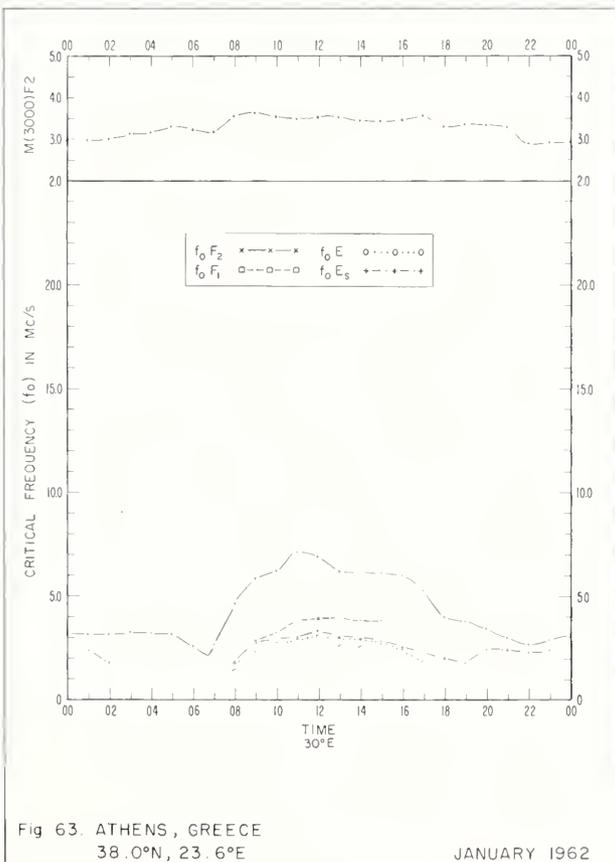
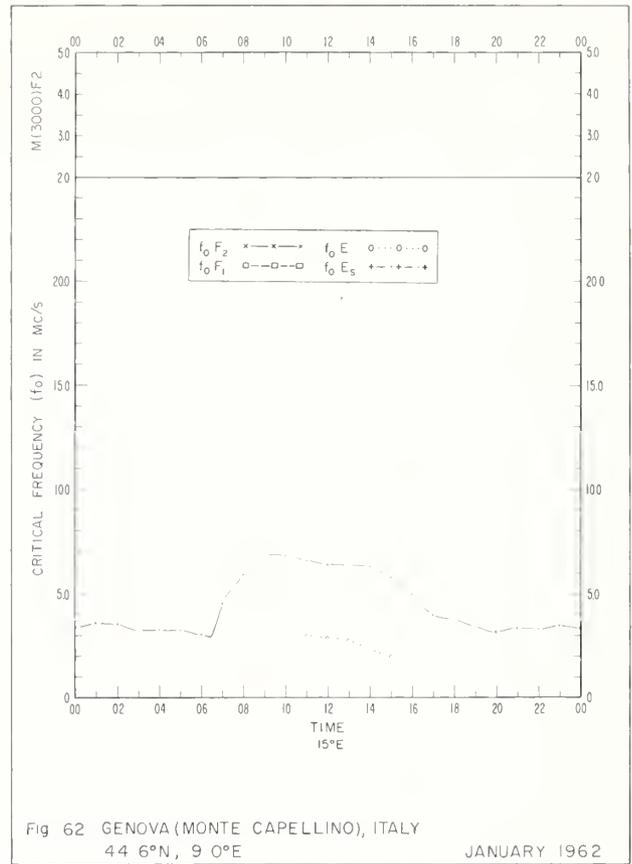
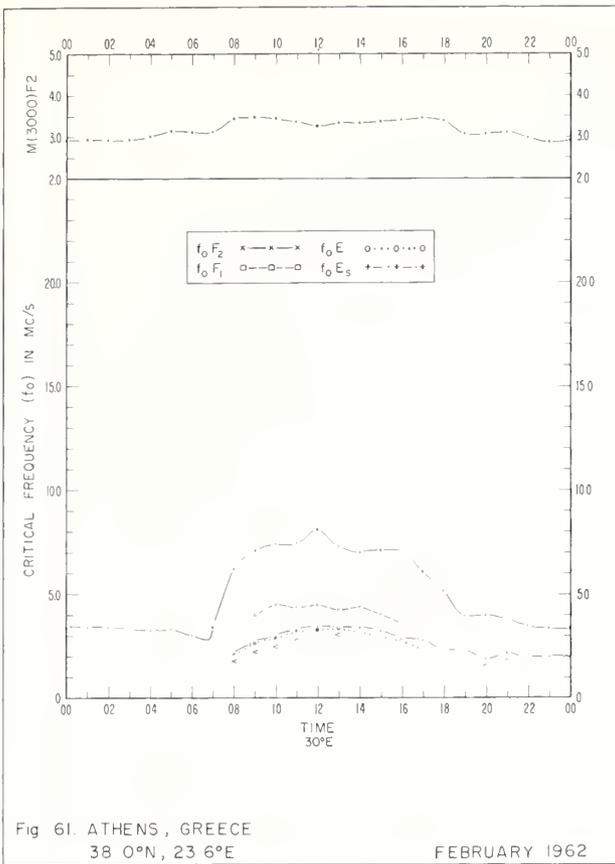
Fig 48. PORT STANLEY (FALKLAND IS.)
51 7°S, 57 8°W

SEPTEMBER 1962









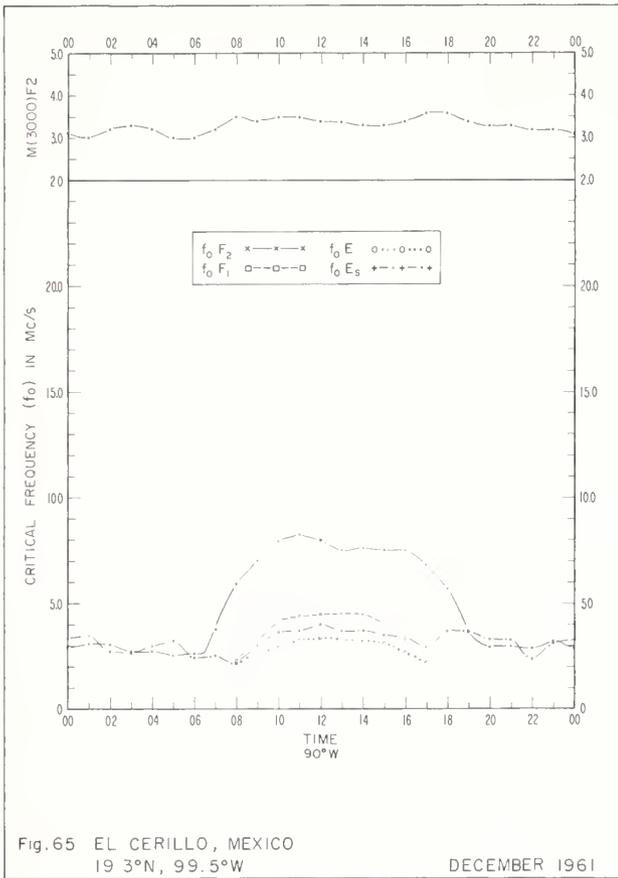


Fig. 65 EL CERILLO, MEXICO
19 3°N, 99.5°W DECEMBER 1961

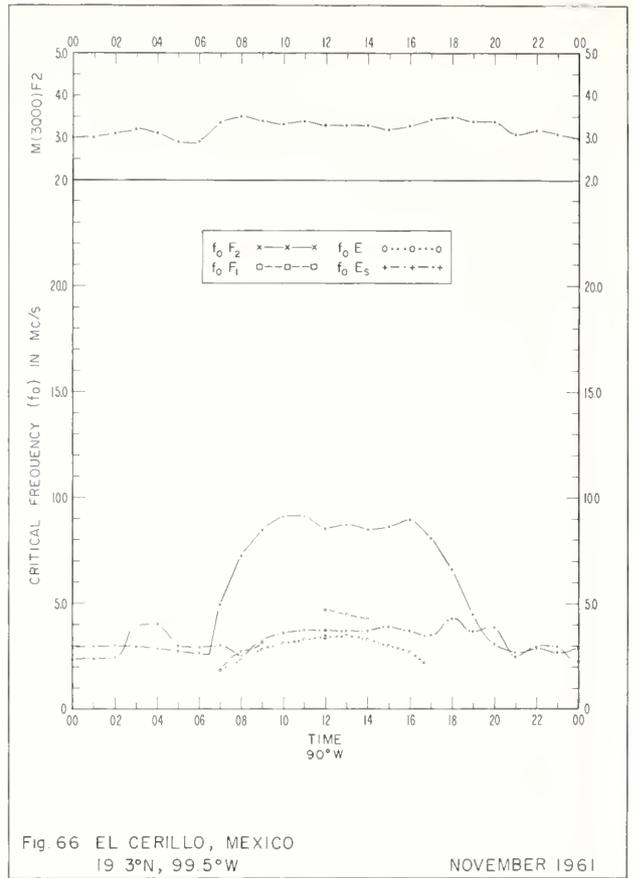


Fig. 66 EL CERILLO, MEXICO
19 3°N, 99.5°W NOVEMBER 1961

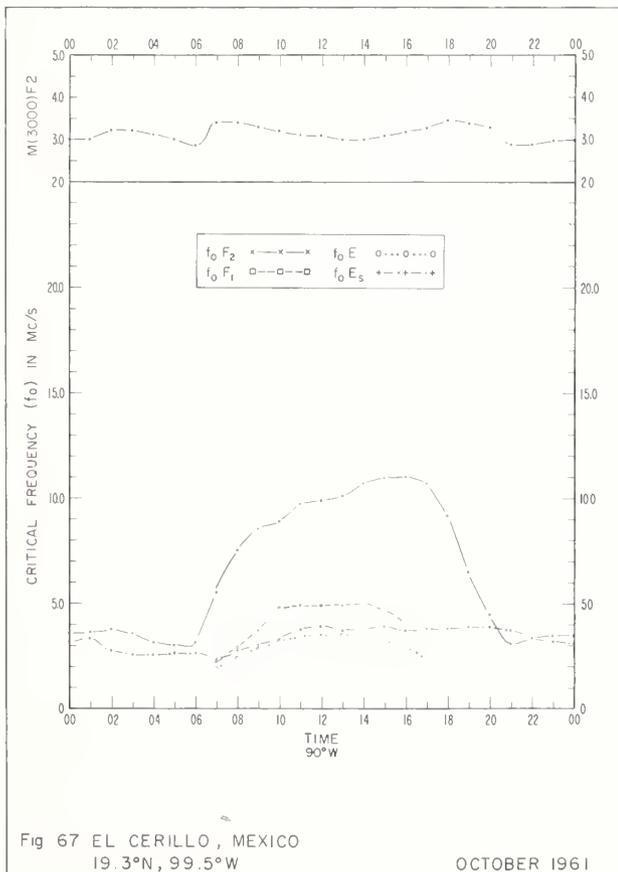


Fig. 67 EL CERILLO, MEXICO
19.3°N, 99.5°W OCTOBER 1961

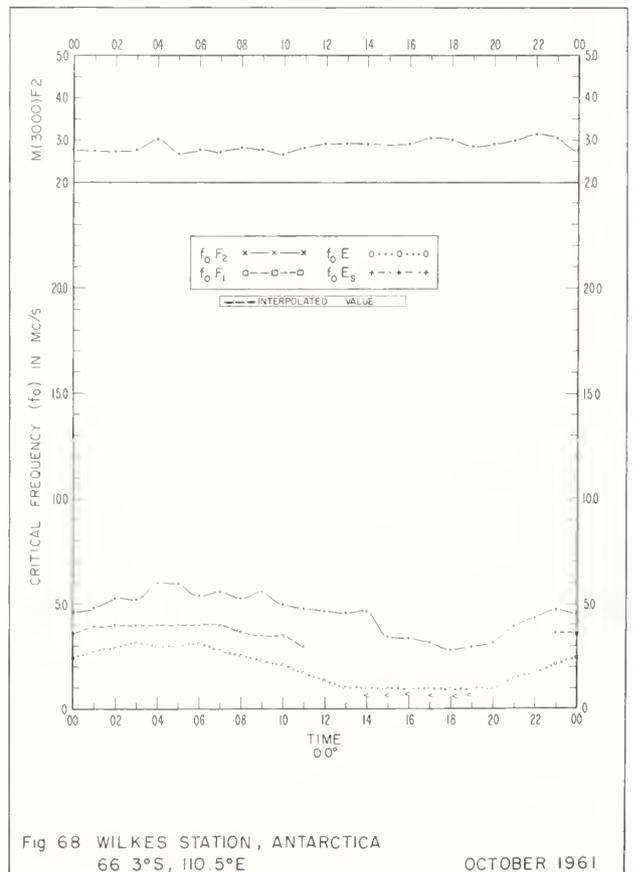
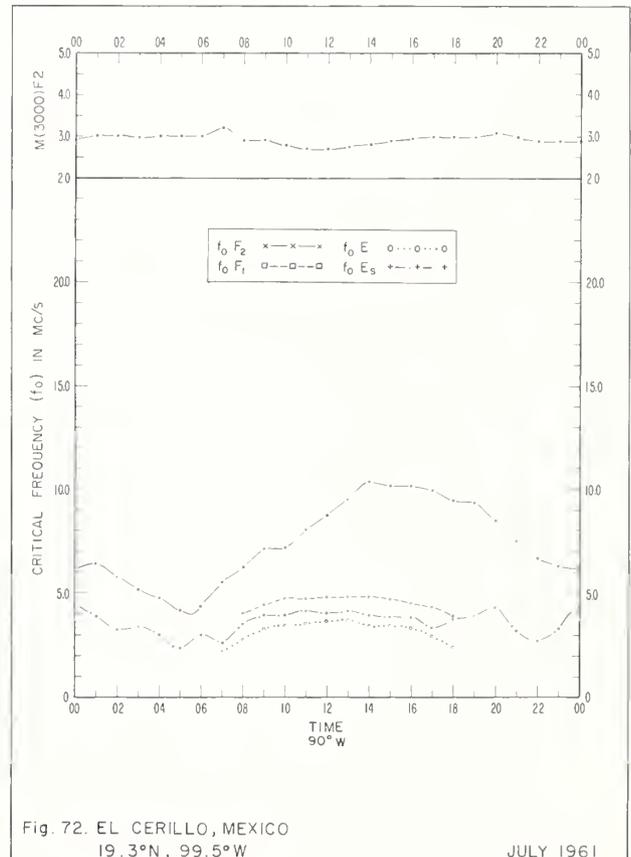
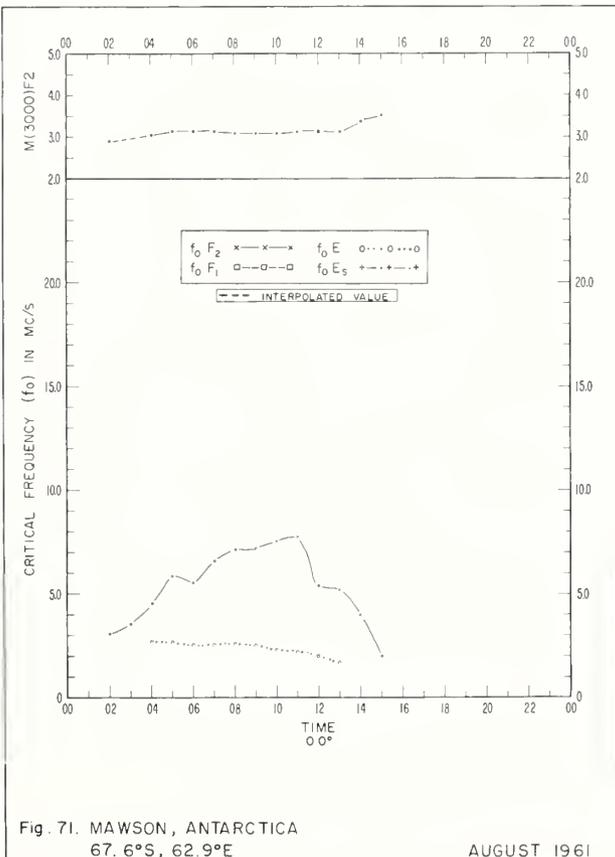
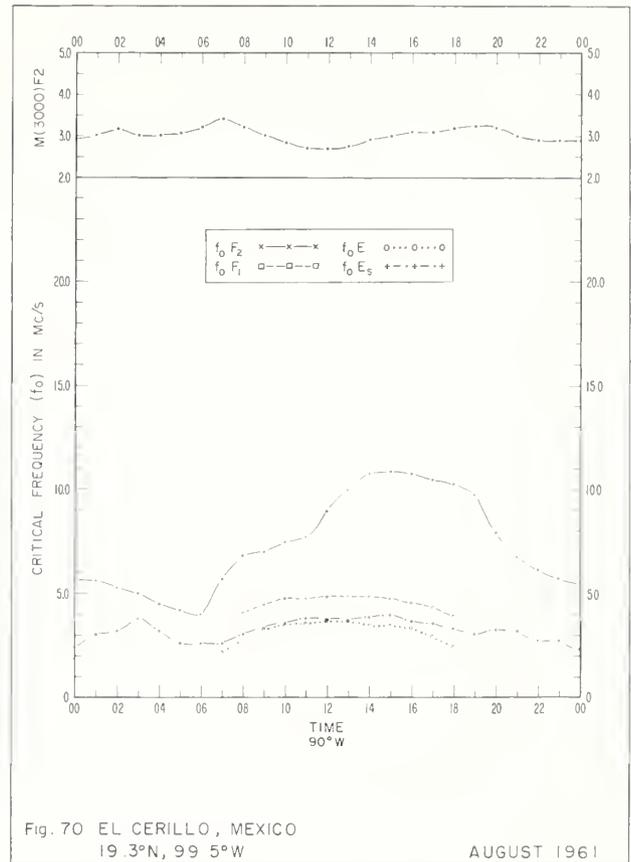
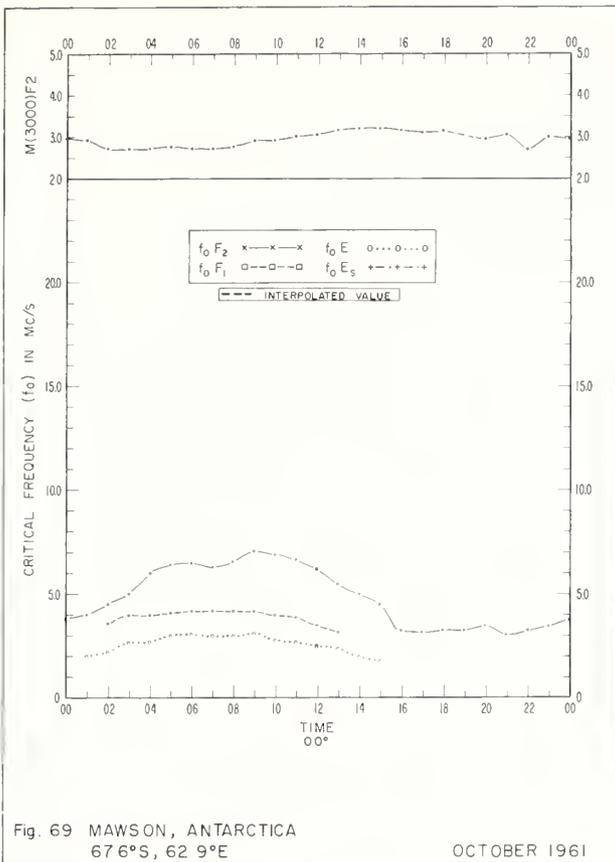
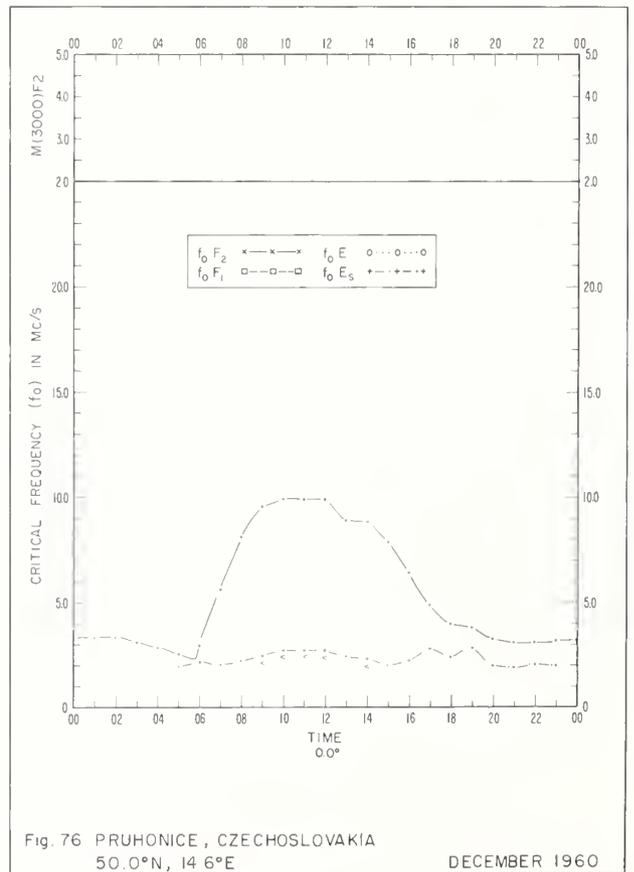
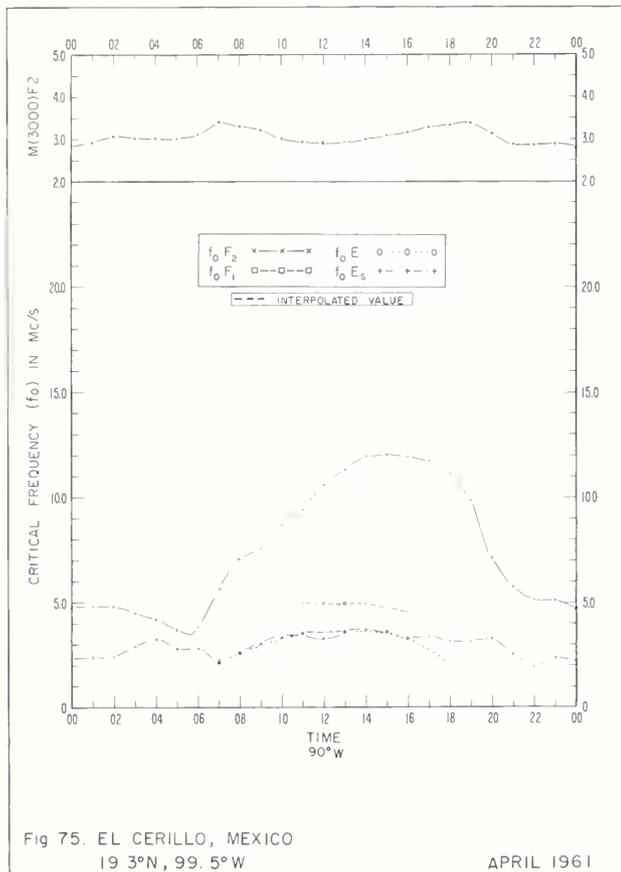
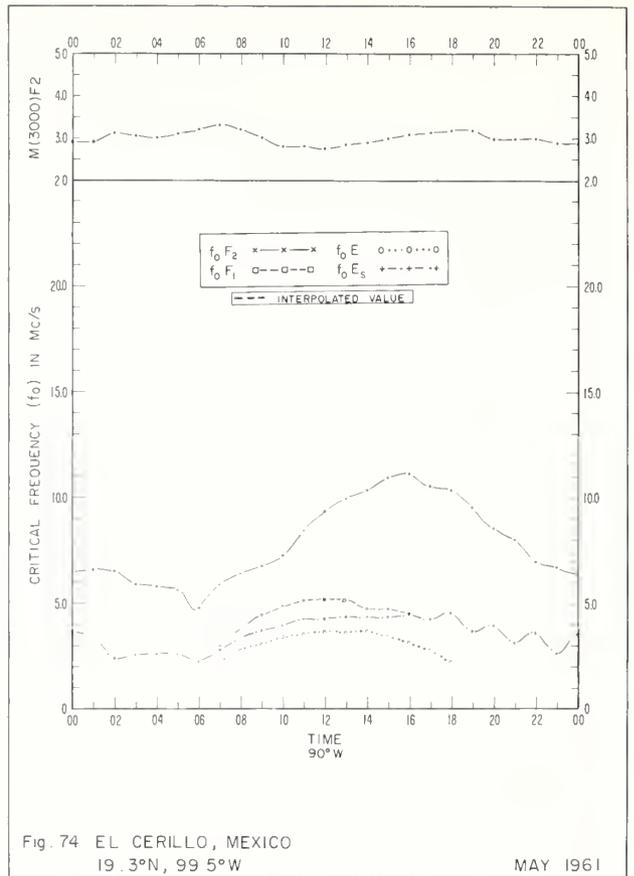
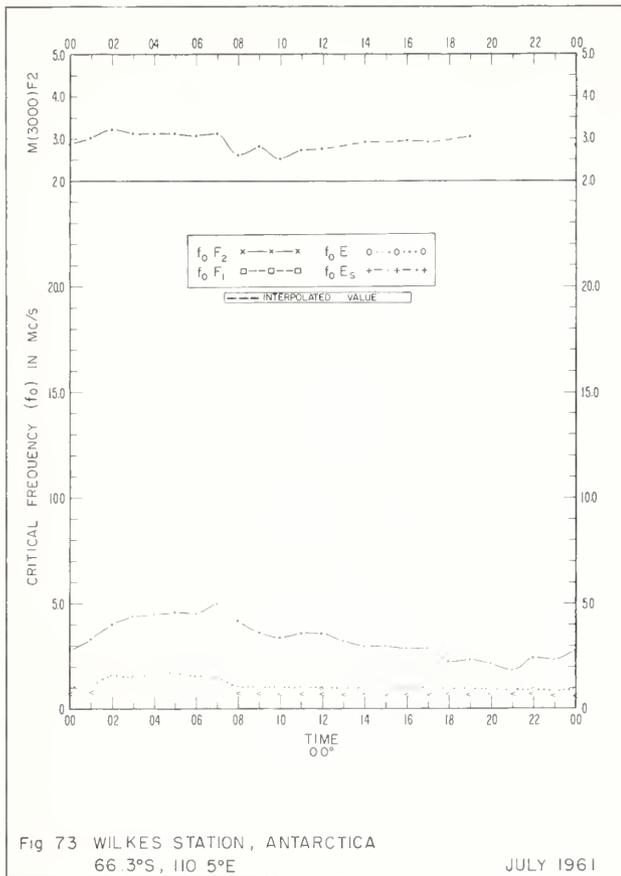
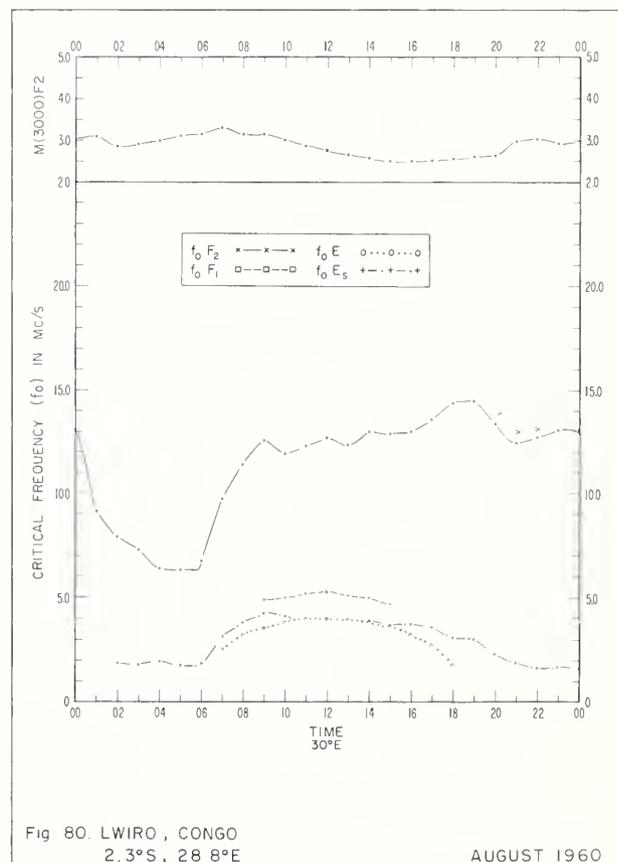
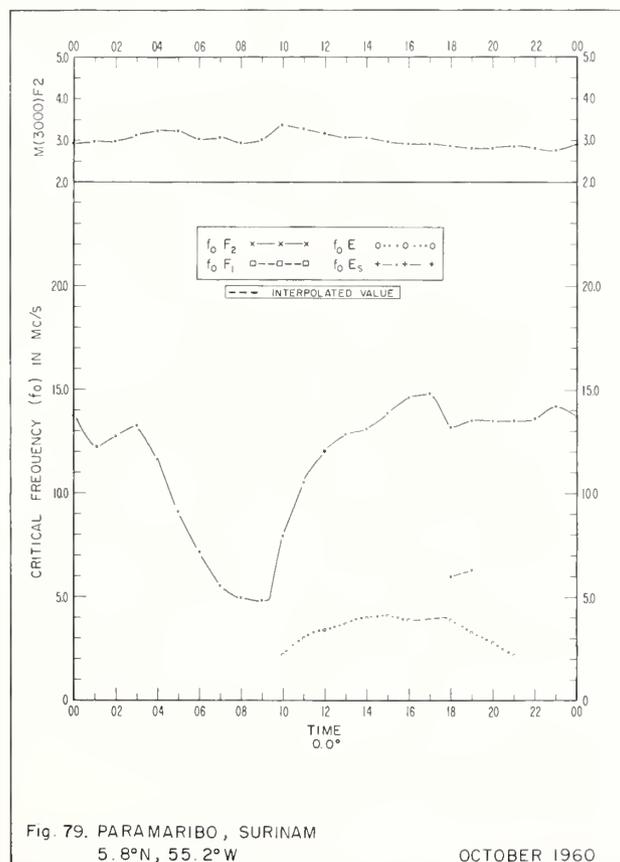
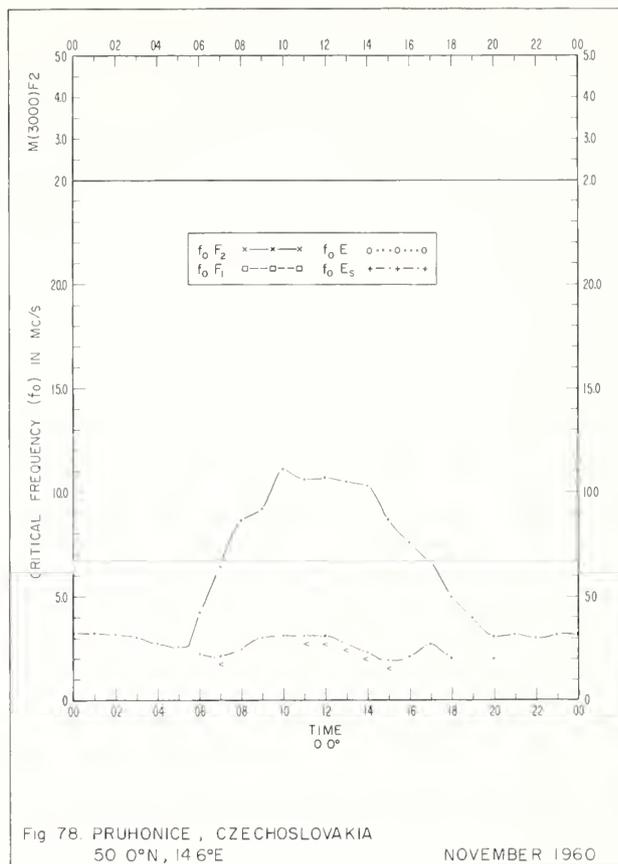
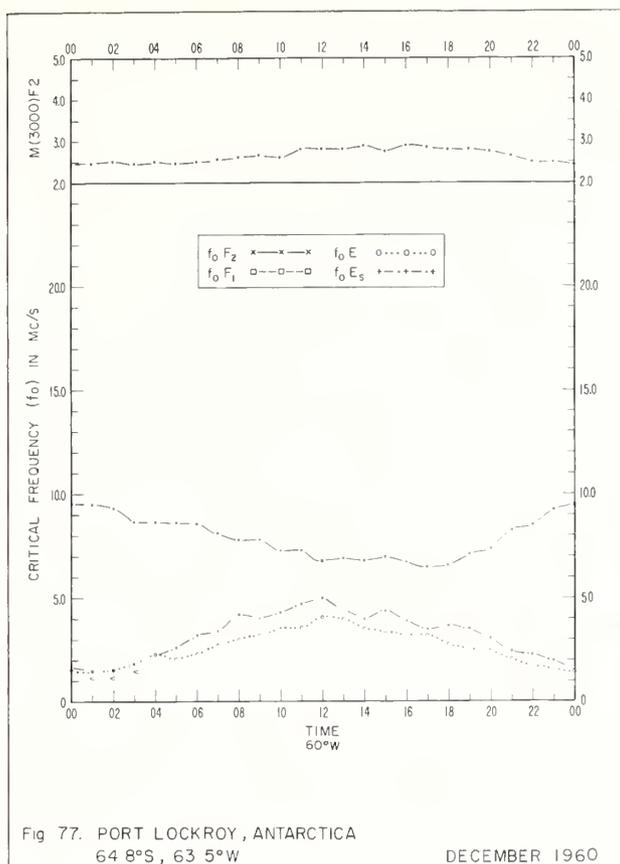
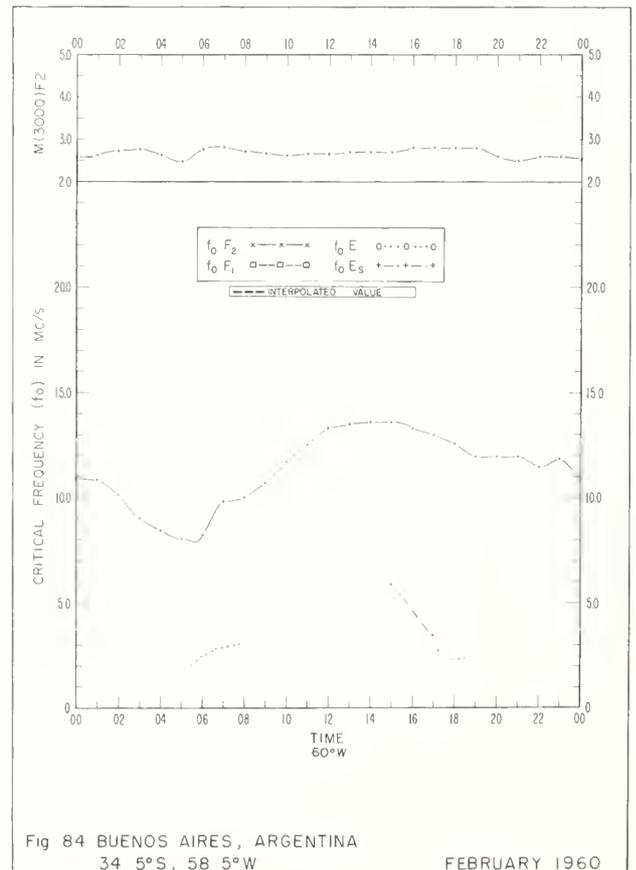
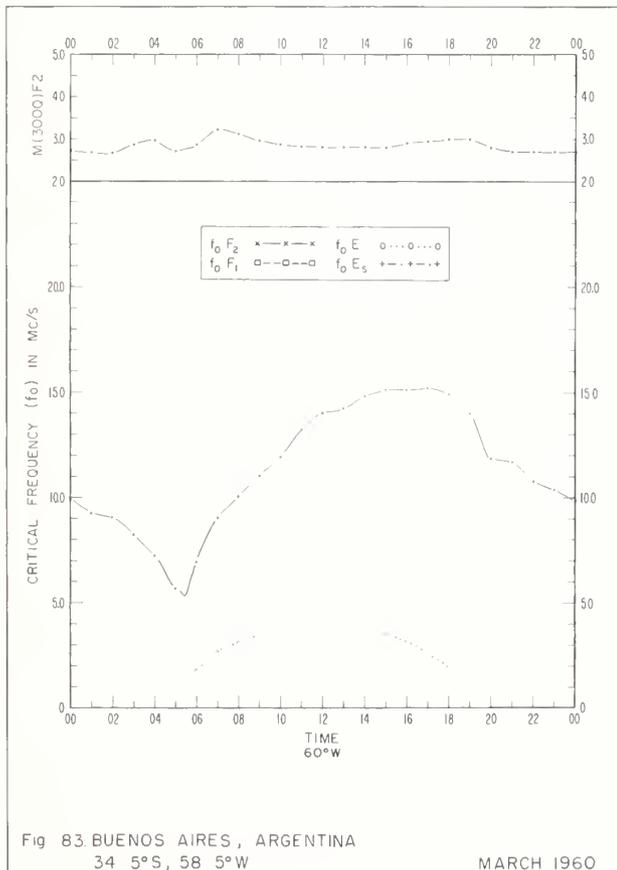
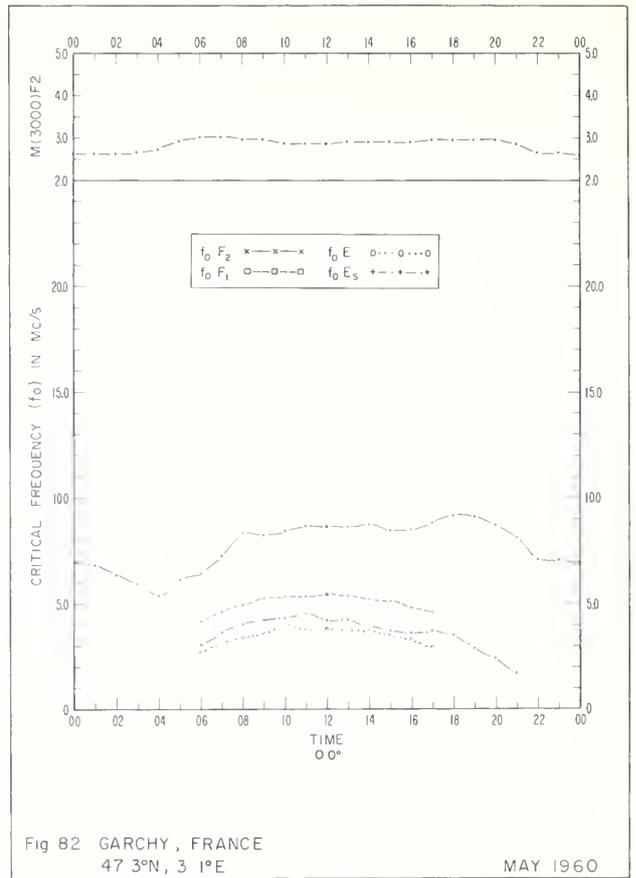
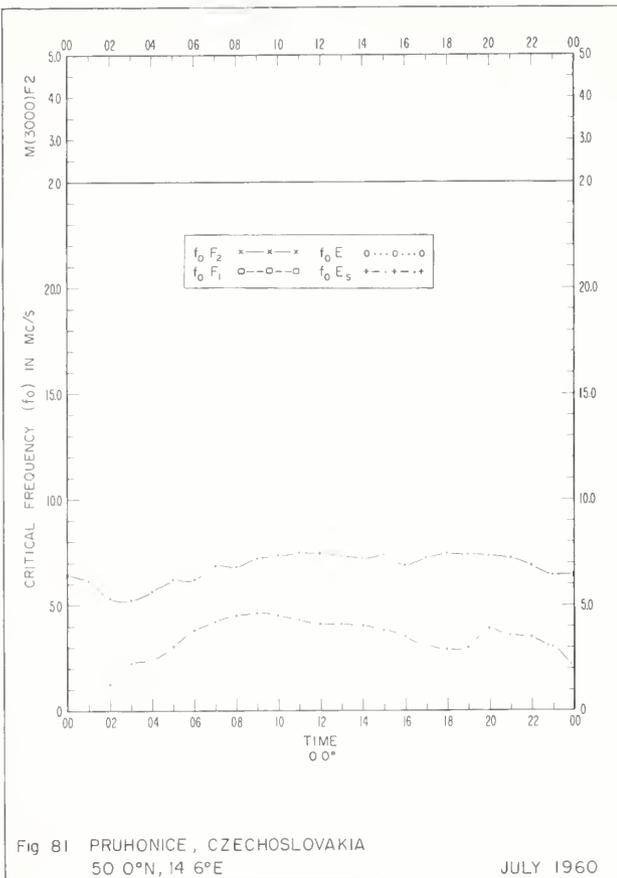


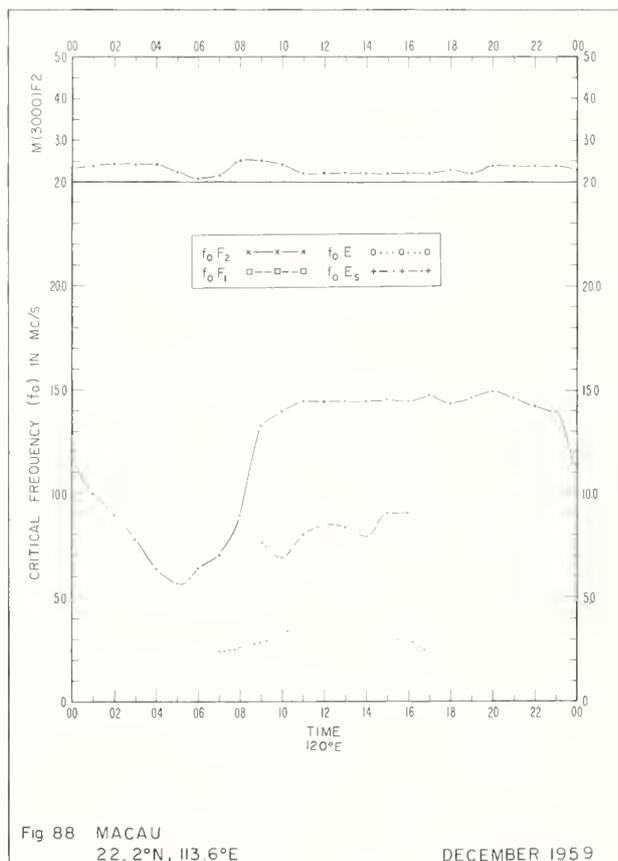
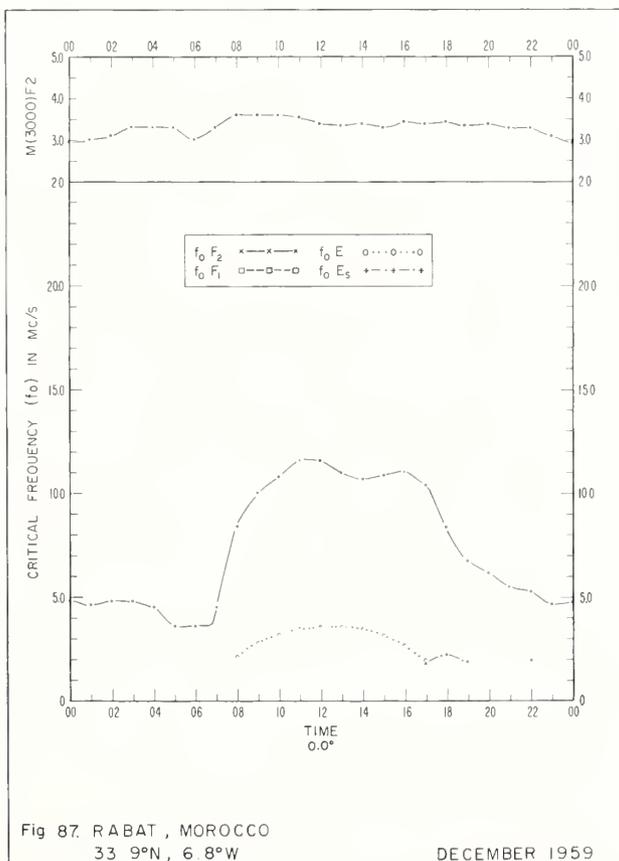
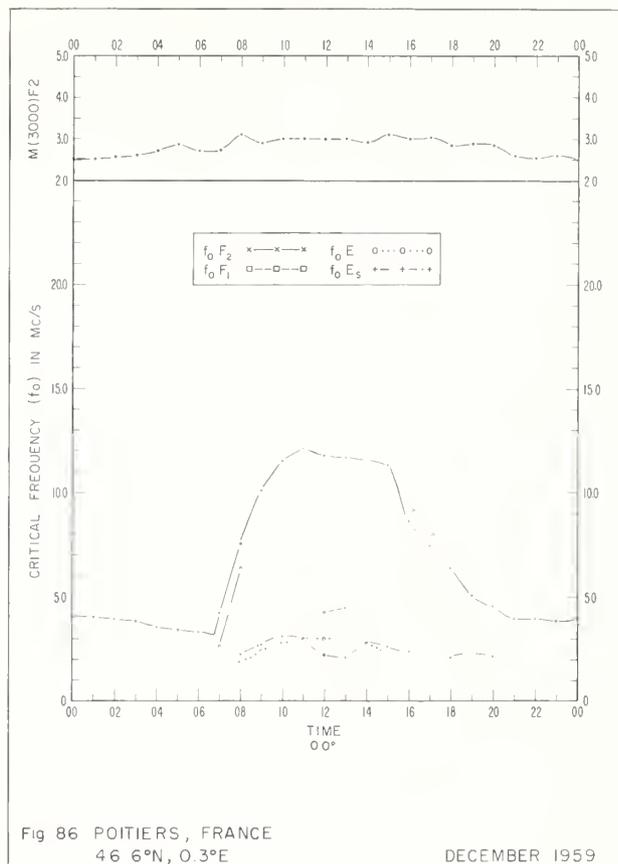
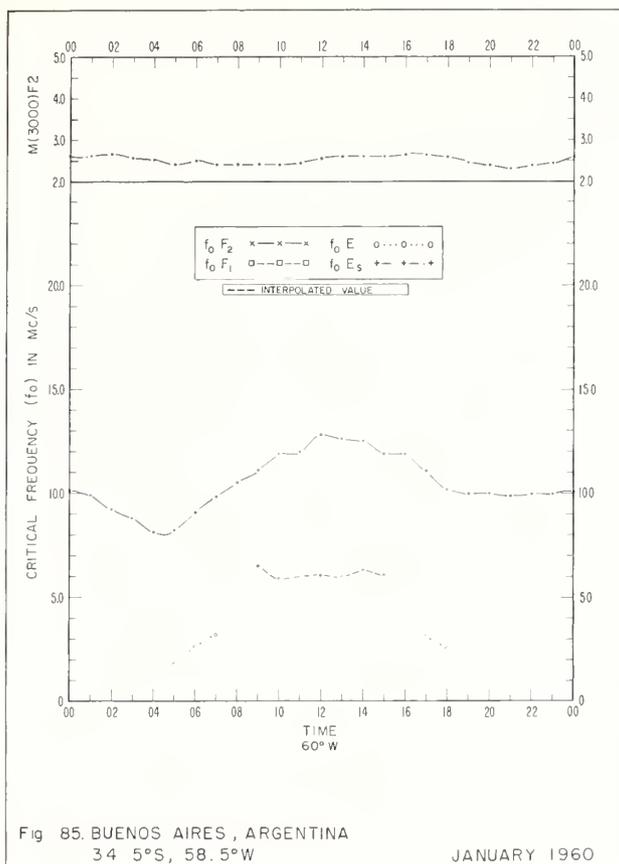
Fig. 68 WILKES STATION, ANTARCTICA
66 3°S, 110.5°E OCTOBER 1961

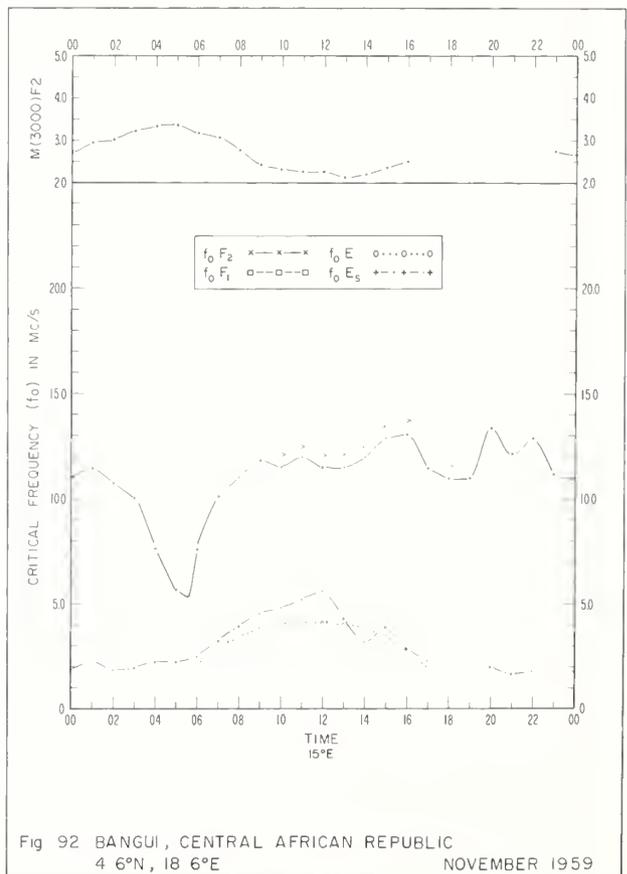
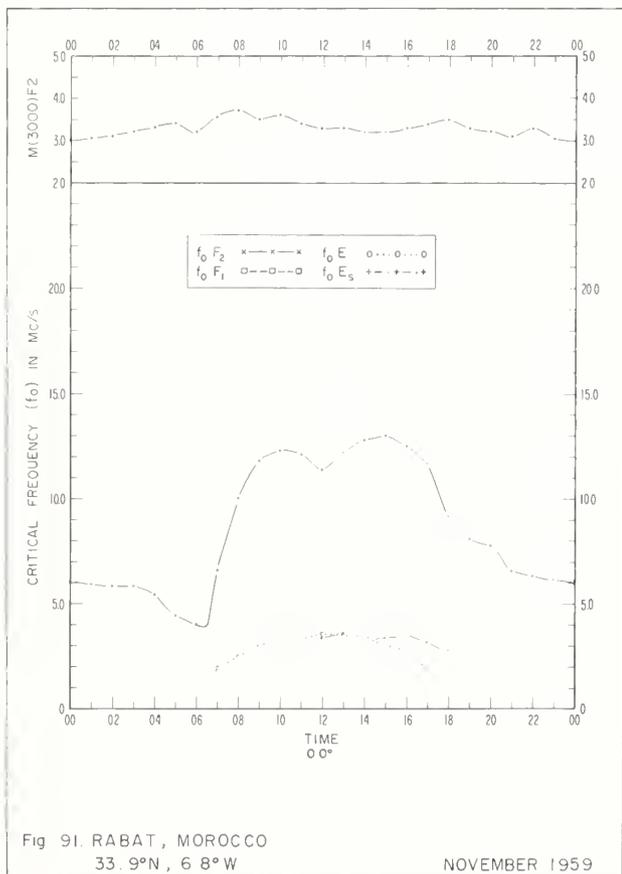
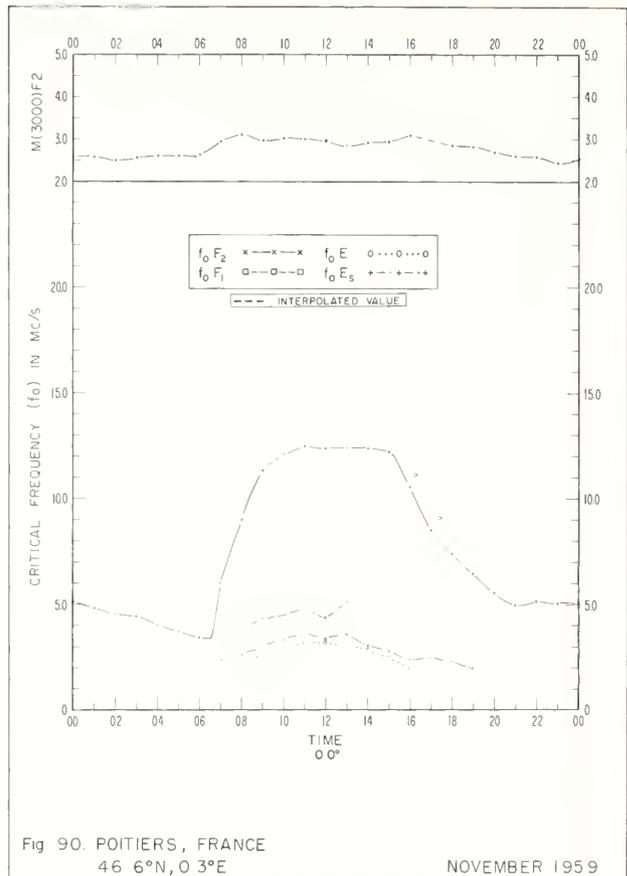
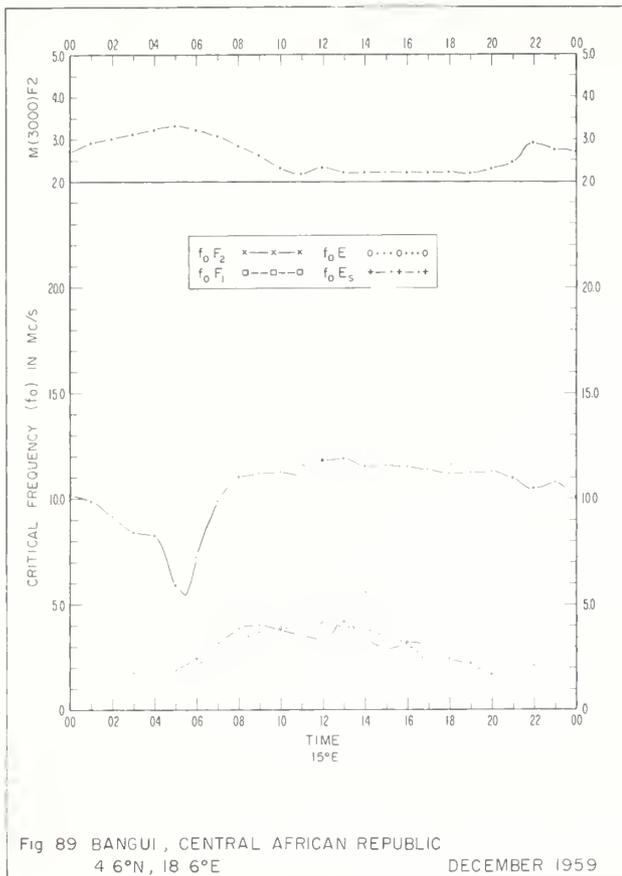


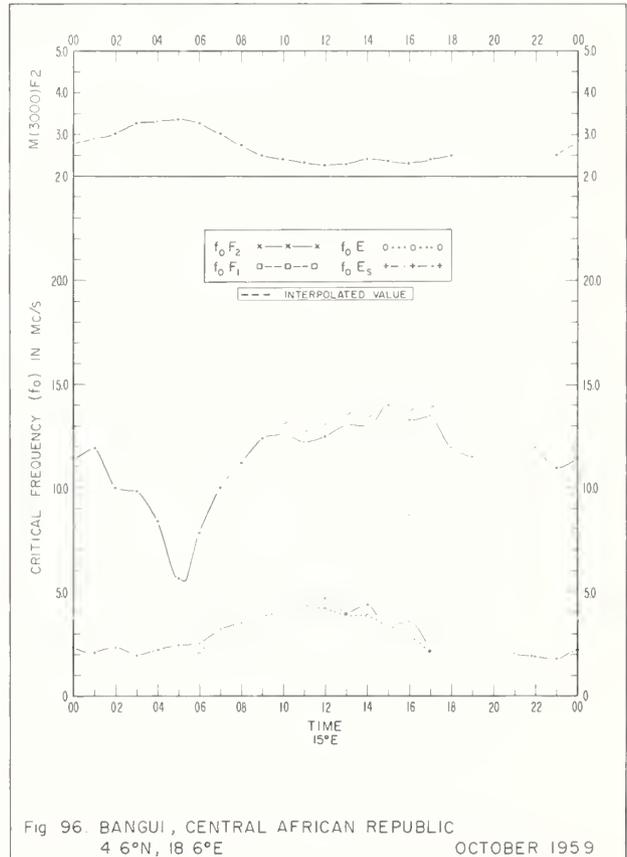
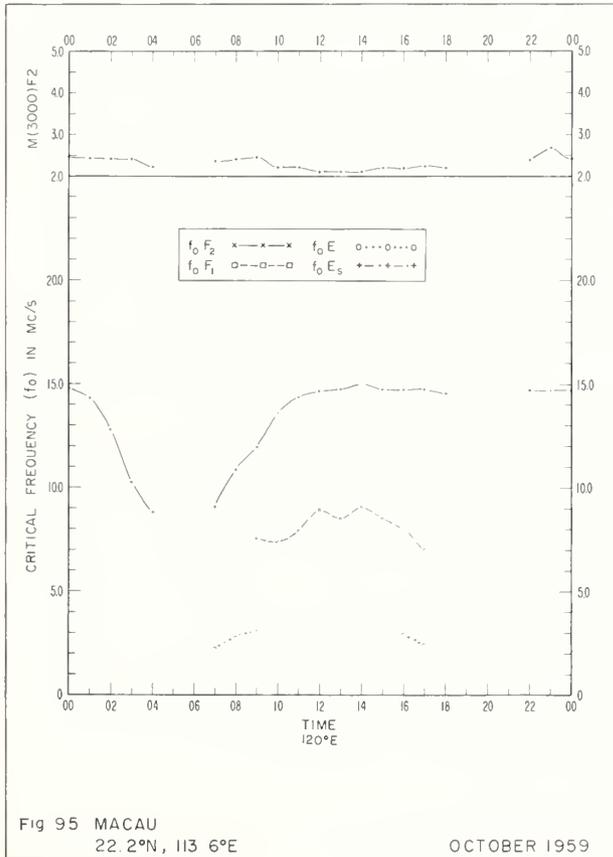
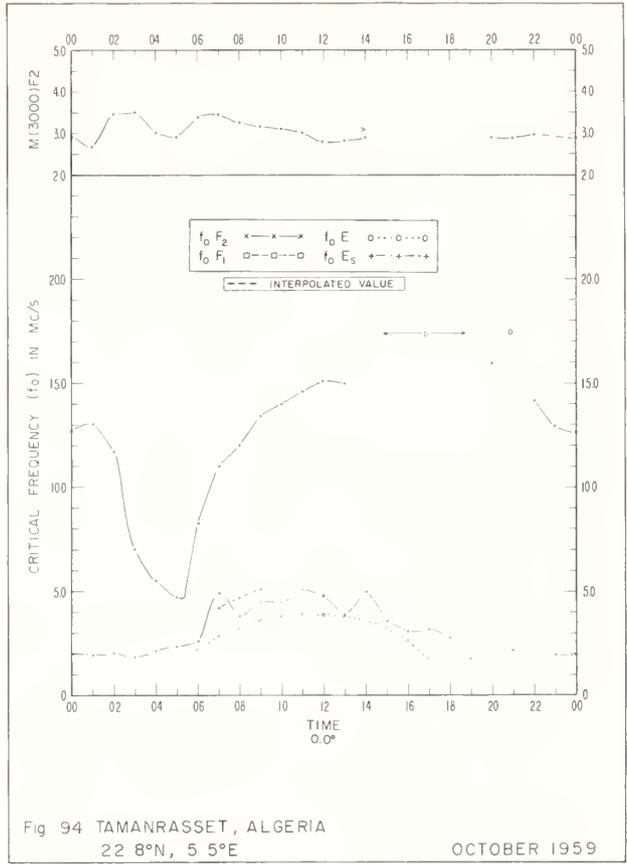
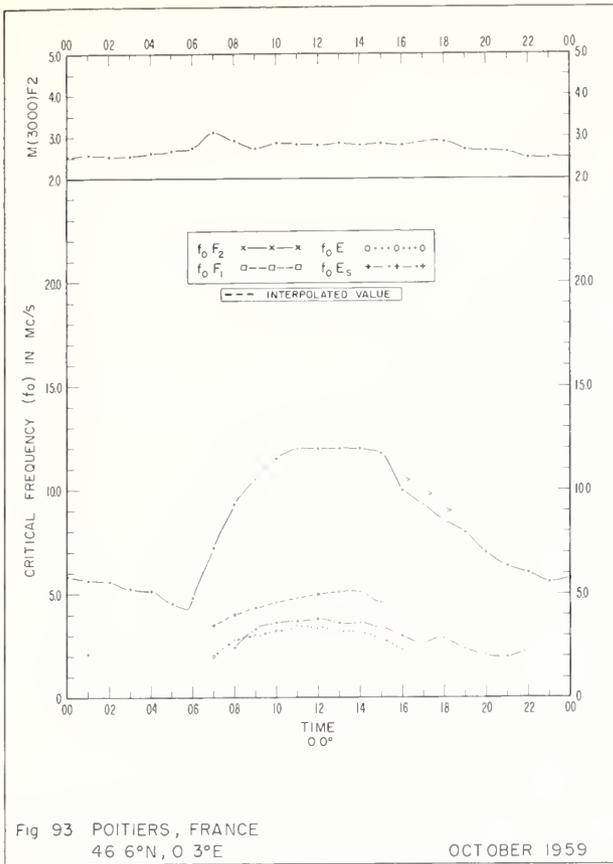


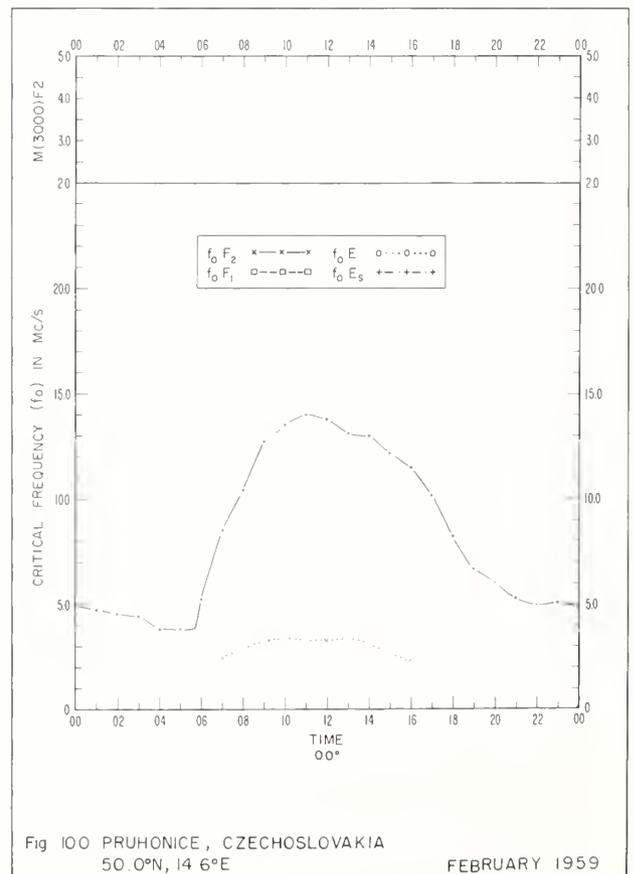
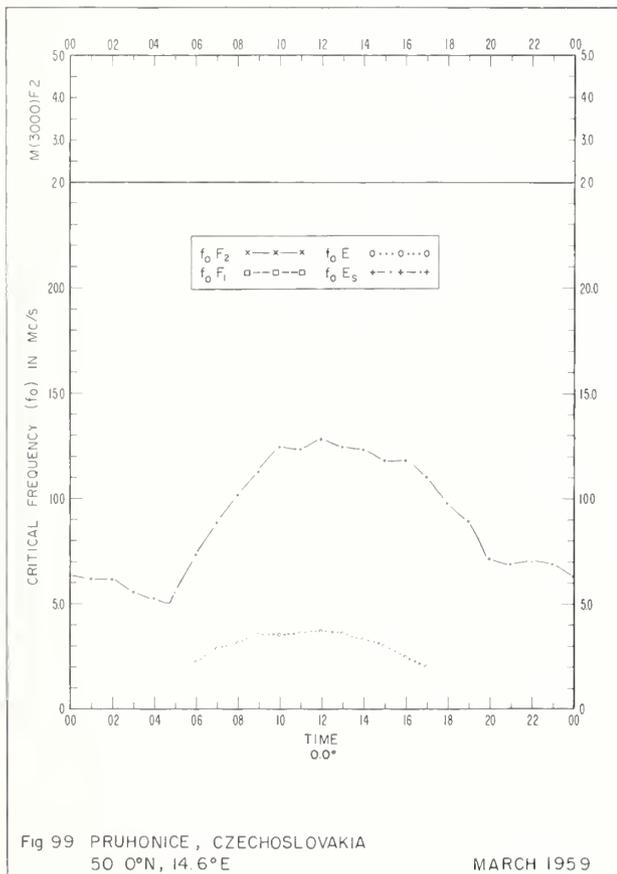
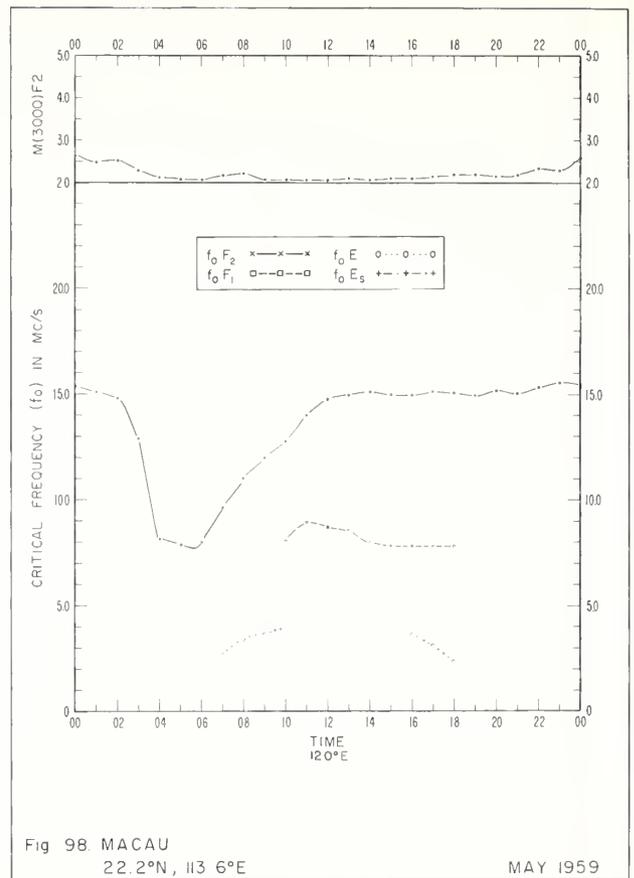
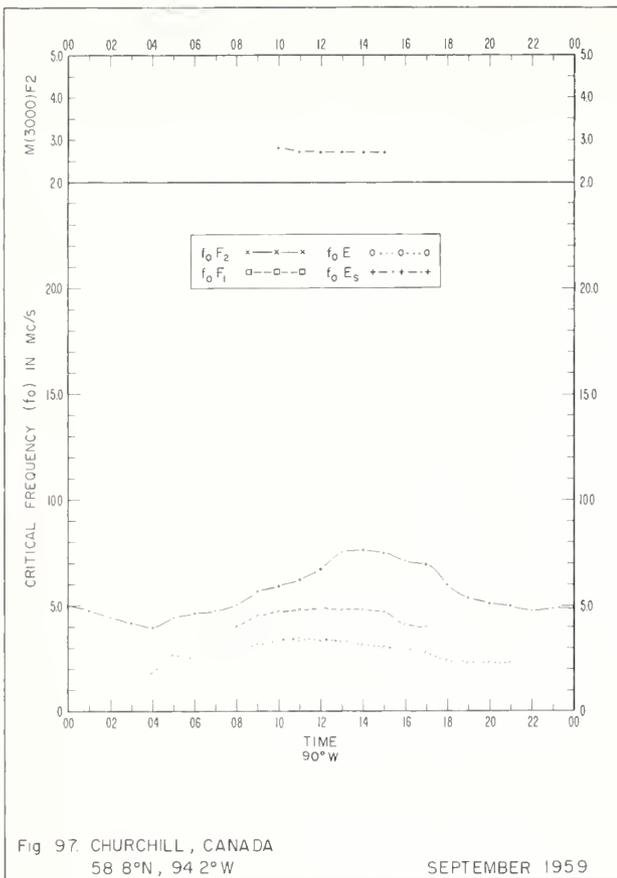












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